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SATELLITE OPTICAL
CHARACTERISTICS CATALOG
(1965 THROUGH 1968)

July 20, 1968

Prepared by

J. G. Williams
G. A. McCue
J. M. Morford

Approved by

C. R. Faulders

C. R. Faulders, Manager
Flight Technology
Science & Technology

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FOREWORD

This report was prepared from optical observations secured by North American Rockwell Corporation, Space Division under contracts AF 05(603)-2543, AF 05(603)-2895, F05603-67-C-0145, F05603-67-C-0303, and F05603-69-C-0001. It constitutes partial fulfillment of the optical observation effort required under contract F05603-69-C-0001.

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ABSTRACT

For the past ten years teams of the Western Satellite Research Network have undertaken an extensive program aimed at compiling and classifying satellite optical characteristics. In this the second optical characteristics catalog 7900 observations of the optical characteristics of 574 satellites are compiled, reduced and presented in tabular form. A detailed discussion of brightness data is included. This comprehensive summary of optical appearance data is a valuable aid for the identification of the nature or condition of satellites. For example, observations of spin rate increase have indicated leaks or ruptures in some orbiting vehicles' pressurized systems. Also, by noting such characteristics as flash pattern and magnitude variation, one may determine the general nature of a satellite's surface and orientation. Further reduction of these observations is intended in order to fully utilize existing data.

TECHNICAL REPORT INDEX/ABSTRACT

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ABSTRACT For the past ten years teams of the Western Satellite Research Network have undertaken an extensive program aimed at compiling and classifying satellite optical characteristics. In this the second optical characteristics catalog 7900 observations of the optical characteristics of 574 satellites are compiled, reduced and presented in tabular form. A detailed discussion of brightness data is included. This comprehensive summary of optical appearance data is a valuable aid for the identification of the nature or condition of satellites. For example, observations of spin rate increase have indicated leaks or ruptures in some orbiting vehicles' pressurized systems. Also, by noting such characteristics as flash pattern and magnitude variation, one may determine the general nature of a satellite's surface and orientation. Further reduction of these observations is intended in order to fully utilize existing data.

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1. INTRODUCTION

In an initial "Satellite Optical Characteristics Study" (Reference 1) and in Reference 2 it was shown that there is good agreement between the expected and the observed appearance of satellites. The equations were given which describe the spin rate decay and the brightness of satellites of various shapes. In Reference 1 over 11,000 observations of 365 different satellites were listed. Those observations were made by the teams of the Western Satellite Research Network prior to the middle of 1965. This report contains some new findings concerning the brightness of satellites and lists the observations made by the WSRN teams since the last report.

The 7900 observations of 574 satellites in this report are listed in the order of their Space Defense Center (SDC) numbers. The observations for each satellite are arranged chronologically. All available observations (including those in the earlier report) have been listed for those satellites with SDC numbers greater than 1000. In addition, complete listings of observations have been included for a few of the older objects of special interest such as manned launches.

To the quantities tabulated in the earlier report, four more have been added. The Modified Julian Day (MJD) is often more convenient than the calendar date (MJD 36933 is January 0, 1960). The absolute magnitude presented here is the observed magnitude corrected to a standard slant range of 1000 statute miles (those who prefer 1000 kilometers as the standard may subtract 1.03 magnitudes). The phase angle is the angle between the observer and the sun as seen from the satellite. New, quarter, and full moons correspond to phase angles of 180° , 90° , and 0° respectively.

The reader wishing to utilize these observations should give attention to the comments column. The pattern of variation for some of the satellites is wonderfully complex and the observer's comments may often be useful. For example, the period of variation is usually half that of the "true" tumble period, but instances of one, three, four, and even more maxima per true tumble are not unknown. See for example SDC numbers 751, 1716, and 2501 during March 1968. Cases are also known where a longer period modulates a shorter tumble period (for example, 751, 832, and 3226). This phenomenon may be due to precessions or nutations of the spin axis.

Particular thanks must be given to the members of the WSRN teams who have donated a considerable amount of time to this project. Without their unselfish efforts preparation of this report would not have been possible. The contributions of the following individuals are particularly noteworthy:

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**Michael McCants
Gregory Roberts
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Dr. U. Guntzel-Lingner
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Richard Reynolds
David Brierley
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Frank Kelly
Alan Stephenson
 (and his team)
Jim Williams
Donald Charles**

**Austin, Texas
Durban, South Africa
Edinburg and San Antonio, Texas
Heidelberg, West Germany
Oceanport, New Jersey
Phoenix, Arizona
Poynton, England
Stade/Elbe, West Germany
St. Petersburg, Florida
Townsville, Australia

Van Nuys, California
Walnut Creek, California**

2. BRIGHTNESS DATA ANALYSIS

A quick summary of the equations in References 1 and 2 will be given along with some new results.

The apparent magnitude M of a satellite with cross sectional area A , reflectivity γ , slant range R , and phase angle ϕ can be written as

$$(1) \quad M = -26.50 - 2.5 \log (A \gamma F(\phi)) + 5.0 \log R.$$

The units of A and R^2 must be the same. $F(\phi)$ will be called the brightness function. It is a function of the phase angle and the orientation of the body (if not spherical). The brightness function for diffusely reflecting bodies is based on the Lambert law of reflection.

For a specularly reflecting sphere

$$(2) \quad F(\phi) = \frac{1}{4\pi}$$

while for a diffuse sphere

$$(3) \quad F(\phi) = \frac{2}{3\pi^2} [(\pi - \phi) \cos \phi + \sin \phi].$$

For the diffuse circular cylinder a spherical coordinate system is used which is centered on the satellite. The axis of the cylinder points to the poles of the coordinate system. The ϕ_1 and ϕ_2 are the "latitudes" of the sun and the observer and θ is the difference in their "longitudes". The brightness function is

$$(4) \quad F(\phi) = \frac{\cos \phi_1 \cos \phi_2}{4\pi} [(\pi - \theta) \cos \theta + \sin \theta].$$

It is understood that the area A in Equation (1) now is the area of the cylinder as seen from the side (diameter x length). The coordinates ϕ_1 , ϕ_2 , and θ depend upon the orientation of the cylinder but are related to the phase angle by

$$(5) \quad \cos \phi = \sin \phi_1 \sin \phi_2 + \cos \phi_1 \cos \phi_2 \cos \theta.$$

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The orientation of the satellite is rarely known but the extrema of Equation (4) subject to the constraint of Equation (5) are calculable. For the brightest possible maxima of a tumbling cylinder (for all possible orientations)

$$(6) \quad F(\phi) = \frac{\cos^2(\phi/2)}{4}.$$

The faintest possible maxima and the brightest minima (for a cylinder without ends) have the value

$$(7) \quad F(\phi) = \frac{1}{4\pi} [(\pi - \phi) \cos \phi + \sin \phi].$$

This latter equation also represents the brightness of the tumbling cylinder whose spin axis is oriented so that the variation is imperceptible. The faintest possible minima for an endless cylinder is

$$(8) \quad F(\phi) = 0.$$

A procedure for determining the orientation of the spin axis of a tumbling cylinder is given in Reference 3.

The specular cylinder gives off bright flashes with nothing in between. Using the same coordinate system as for the diffuse cylinder the brightness function is given by

$$(9) \quad F(\phi) = \frac{\cos(\theta/2)}{4} \frac{\alpha(t)}{\Delta},$$

where Δ is the angular thickness (in radians) of the reflected fan of light. For a satellite with an "optical" quality finish Δ equals the diameter of the sun (.0093 radians), but normally it is much larger due to scratches and undulations of the cylinder surface. $\alpha(t)$ is the time dependent variation in the brightness during the flash. It is due to the shape of the sun and could also include the effects which broaden Δ . The value of $\alpha(t)$ is 0 outside of the flash and averages 1 during the flash. If Δ is much larger than the sun's diameter then $\alpha(t)$ may be approximated as 1 during the flash. For the optical quality cylinder

$$(10) \quad \alpha(t) = \begin{cases} \pi \sqrt{\frac{t}{t_0} \left(1 - \frac{t}{t_0}\right)} & , \text{ during flash } (0 < t < t_0) \\ 0 & , \text{ otherwise } (t > t_0) \end{cases}$$

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where t_0 is the flash length and t the time since the start of the flash.

The geometrical situation for the flashing, specular cylinder is of interest. The flash takes place when $\phi_1 = \phi_2 \pm \Delta/2$ and the reflected light takes the form of a fan having the opposite "latitude" of the sun. The shortest possible flash is Δ/π (at least .003) of the distance between flashes. Two flashes take place during each revolution. The brightest possible flash has

$$(11) \quad F(\phi) = \frac{1}{4} \frac{\alpha(t)}{\Delta}$$

while the faintest flash has

$$(12) \quad F(\phi) = \frac{\cos(\phi/2)}{4} \frac{\alpha(t)}{\Delta}.$$

For the diffuse flat plate one may again use spherical coordinates with the plane of the plate lying in the equatorial plane of the coordinate system. Then ϕ_1 and ϕ_2 are the latitudes of the sun and observer and

$$(13) \quad F(\phi) = \begin{cases} \frac{1}{\pi} \sin\phi_1 \sin\phi_2 & , \phi_1 \text{ and } \phi_2 \text{ same sign} \\ 0 & , \phi_1 \text{ and } \phi_2 \text{ different sign} \end{cases}$$

The equation of constraint (Equation (5)) still holds and the maximum possible brightness is

$$(14) \quad F(\phi) = \frac{1}{\pi} \cos^2(\phi/2).$$

The minimum possible brightness is

$$(15) \quad F(\phi) = 0.$$

For the specular flat plate during the flash

$$(16) \quad F(\phi) = \frac{4}{\pi} \frac{\cos(\phi/2)}{\Delta^2}.$$

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Δ again stands for the angular spread of the reflected beam and has a minimum value of .0093 radians for an optical quality surface. Flashes from flat surfaces are quite rare, but very bright. Satellite number 2142 is an example of an object which occasionally gives off bright, specular flashes.

Since the eye responds poorly to flashes which are shorter than about 0.1 seconds, the brightness of specular flashes is usually underestimated by observers. The frequent use of solar cells and metallic surfaces gives many satellites the potential for giving off specular flashes. The subject of specular reflections has been investigated by Liemohn in Reference 4.

With the brightness functions for the above simple geometries one can build more complex models. For example, one can replace $A \gamma F$ in Equation (1) with $A_1 \gamma_1 F_1 + A_2 \gamma_2 F_2$, where A_1 and γ_1 are the area and reflectivity of spherical end caps on a cylinder of area A_2 and reflectivity γ_2 , and where F_1 is Equation (3) while F_2 is Equation (4). Since most surfaces reflect both specularly and diffusely the effects of each could be summed together.

Some of the above results are summarized in Figure 1 which gives the brightness functions, or their limits, for the various surfaces discussed (Equations (2), (3), (6), (7), (11), (12), and (14)). The slant ranges were all taken as 1000 statute miles and $A\gamma$ was set equal to 1 square meter for all except the specular cylinder for which $A\gamma\alpha/\Delta$ was taken as 1 square meter (a very weak flash). The fact that the brightness of specular objects always dominates diffusely reflecting objects is clear.

It should be noted that J. A. Pilkington (References 5 through 8) has summarized brightness and spin data for a number of objects. The lists of King-Hele, Quinn, and Rees (References 9 through 13) give descriptions of shape and size for payloads and their rocket bodies. Figure 2 combines King-Hele's data with WSRN data to indicate how size and shape change the optical appearance of a number of typical satellites. The magnitudes are plotted for a phase angle of 90° .

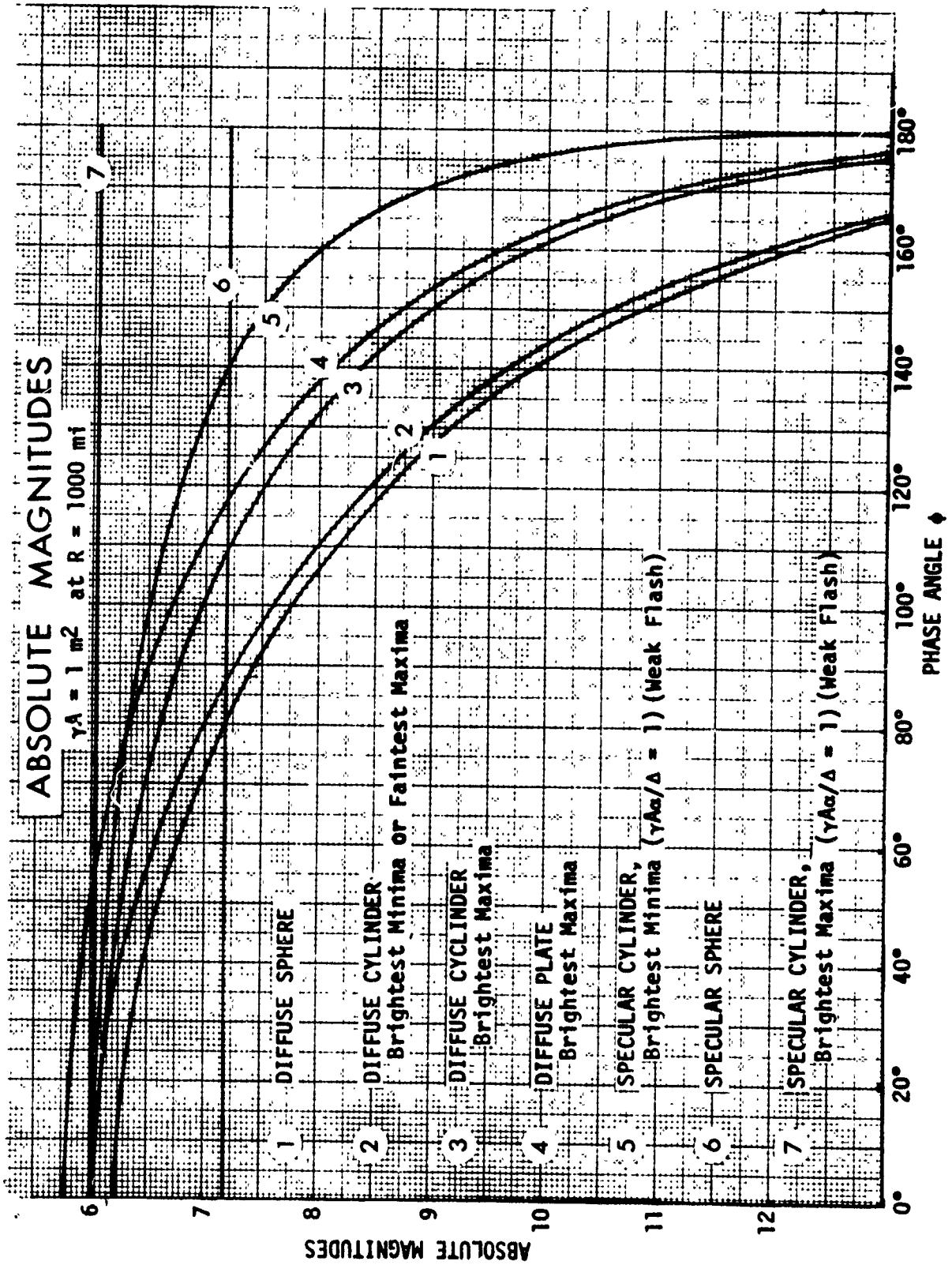


FIGURE 1. Theoretical Determination of Absolute Magnitude as a Function of Phase Angle

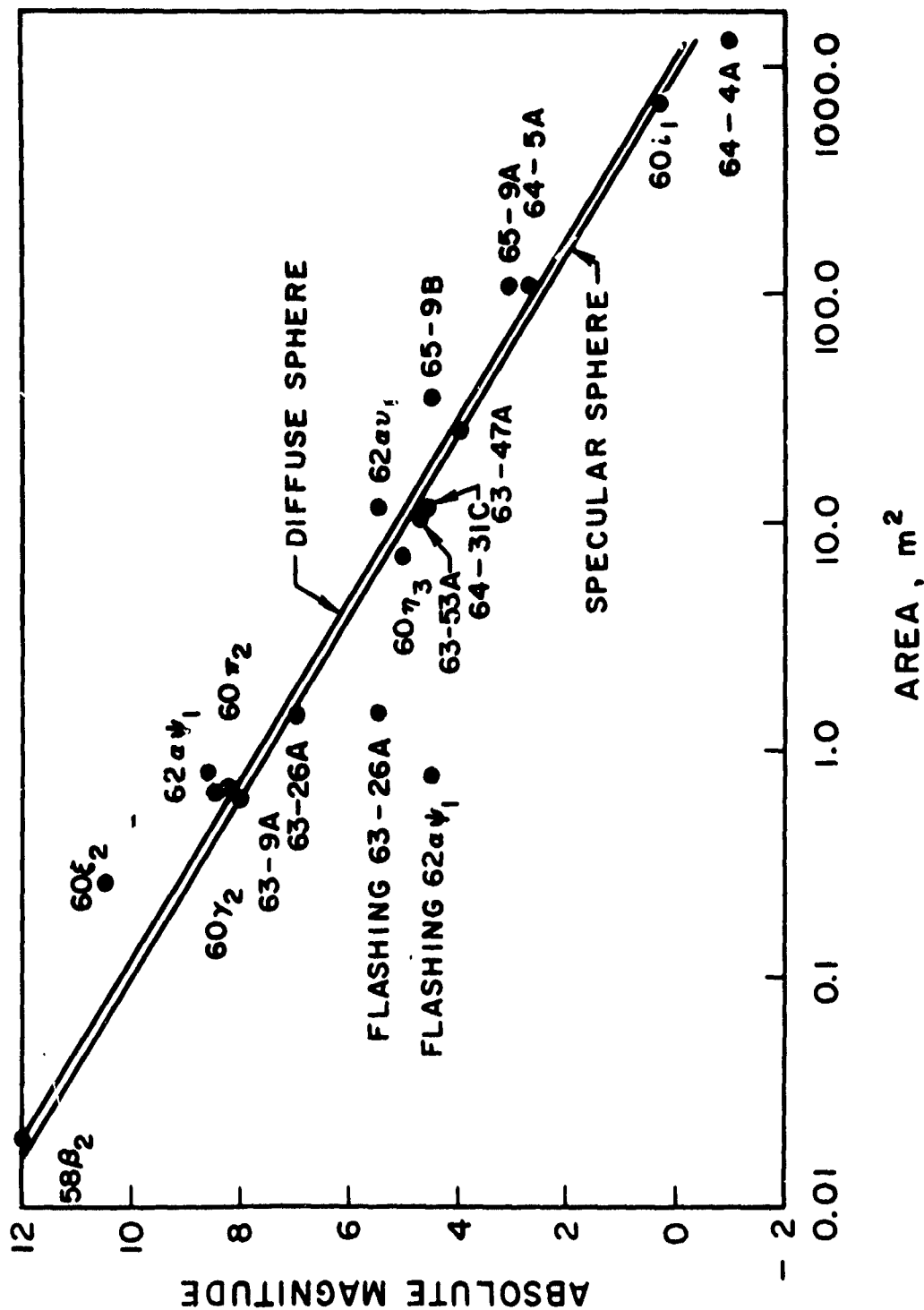


FIGURE 2. Absolute Magnitude Versus Size for Satellites

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3. CONCLUSION

This report has presented a large number of unique optical observations of earth satellites in partially reduced form. The availability of this data immediately suggests a number of empirical and analytical studies. The authors intend to undertake portions of this further work and they invite others to do the same.

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4. REFERENCES

- (1) G. A. McCue, J. G. Williams, H. J. DuPrie, and R. C. Hoy, "Satellite Optical Characteristics Study," NAA Report No. SID 65-1176, 1965.
- (2) J. G. Williams and G. A. McCue, "An Analysis of Satellite Optical Characteristics Data," Planetary and Space Science, vol. 14, 1966, p. 839.
- (3) J. G. Williams, paper at Symposium on Optical Properties of Orbiting Satellites 1967, proceedings in preparation.
- (4) H. B. Liemohn, "Optical Tracking of Deep-Space Probes," Icarus, in press.
- (5) J. A. Pilkington, "The Visual Appearance of Artificial Earth Satellites," Planetary and Space Science, vol. 12, 1964, p. 597.
- (6) J. A. Pilkington, "The Visual Appearance of Artificial Earth Satellites," Planetary and Space Science, vol. 13, 1965, p. 541.
- (7) J. A. Pilkington, "The Visual Appearance of Artificial Earth Satellites," Planetary and Space Science, vol. 14, 1966, p. 1281.
- (8) J. A. Pilkington, "The Visual Appearance of Artificial Earth Satellites," Planetary and Space Science, vol. 15, 1967, p. 1535.
- (9) J. M. Rees and D. G. King-Hele, "Table of the Artificial Satellites Launched in 1957-62," Planetary and Space Science, vol. 11, 1963, p. 1053.
- (10) D. G. King-Hele and Eileen Quinn, "Table of the Artificial Satellites Launched in 1963," Planetary and Space Science, vol. 12, 1964, p. 681.
- (11) D. G. King-Hele and Eileen Quinn, "Table of the Artificial Satellites Launched in 1964," Planetary and Space Science, vol. 13, 1965, p. 707.
- (12) D. G. King-Hele and Eileen Quinn, "Table of the Earth Satellites Launched in 1965," Planetary and Space Science, vol. 14, 1966, p. 817.
- (13) Eileen Quinn and D. G. King-Hele, "Table of the Earth Satellites Launched in 1966," Planetary and Space Science, vol. 15, 1967, p. 1181.

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APPENDIX I

WESTERN SATELLITE RESEARCH NETWORK

OBSERVING STATION LIST

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WSRN NUMBER	TEAM	GEODETTIC LATITUDE	WEST LONGITUDE	SAO NUMBER	GEOCENTRIC RADIUS
1	WHITTIER-D	33.9696	118.0240	8566.	3959.2549
2	AIKEN, S.C.	33.5683	81.7406	6023.	3959.3240
3	AKRON CANTON	41.1420	81.5010	8565.	3957.7588
4	ALBUQUERQUE	35.1100	106.5380	8534.	3959.9758
5	CINCINNATI	39.1916	84.7098	50.	3958.2100
6	CHINA LAKE	35.6570	117.6630	98.	3959.2588
7	DAYTON	39.8649	84.1298	8557.	3958.0239
8	PHOENIX	33.4840	112.0894	8576.	3959.5078
9	ROCHESTER	43.2470	77.6250	8564.	3957.1460
10	SACRAMENTO	38.5490	121.7525	8517.	3958.1399
11	SAN ANTONIO	29.4450	98.4970	8610.	3960.1958
12	EDINBURG	26.3057	98.1725	12.	3960.7520
13	SAN JOSE	37.3800	121.8128	8567.	3958.7830
14	SPOKANE	47.6830	117.3560	8147.	3956.9700
15	VAN NUYS	34.2400	118.5910	113.	3959.2339
16	WALNUT CREEK	37.9640	122.0630	8535.	3958.3198
17	TERRE HAUTE	39.5030	87.3980	8127.	3958.0549
18	AKRON-CANTON	41.0814	81.5767	8536.	3957.7839
19	AKRON-CANTON	40.8791	81.4117	8544.	3957.8669
20	AKRON-CANTON	40.9628	81.3906	8559.	3957.8638
21	AKRON-CANTON	40.7989	81.4086	8572.	3957.8682
22	AKRON-CANTON	40.7827	81.5318	8584.	3957.8494
23	AKRON-CANTON	40.9031	81.1122	8591.	3957.8728
24	AKRON-CANTON	40.9319	81.4654	53.	3957.8672
25	BRISTLE BACK	38.7110	93.6005	25.	3958.3352
26	ALBUQUERQUE	35.1110	106.5480	8579.	3959.9810
27	ALBUQUERQUE	35.0840	106.6440	41.	3959.9038
28	CHINA LAKE	35.6250	117.6660	8588.	3959.2520
29	ROCHESTER	43.2110	77.7330	5050.	3957.1938
30	SACRAMENTO	38.6128	121.3580	8590.	3958.1758
31	SAN ANTONIO	29.4607	98.5013	31.	3960.2749
32	SAN DIEGO	32.7656	117.0664	32.	3959.5420
33	SAN JOSE	37.3747	121.8183	8573.	3958.4768
34	SAN JOSE	37.3239	122.0258	8609.	3958.4888
35	WALNUT CREEK	37.9640	121.9970	8556.	3958.3728
36	WALNUT CREEK	37.9150	122.0720	8586.	3958.3799
37	WALNUT CREEK	37.9580	121.9670	8553.	3958.3899
38	SAN ANTONIO	29.5284	98.2818	38.	3960.2710
39	ROCHESTER	43.0130	78.1930	8585.	3957.3308
40	CINCINNATI	39.1477	84.4754	8555.	3958.1799
41	TERRE HAUTE	39.2900	87.3250	8593.	3958.1069
42	SACRAMENTO	38.6286	121.3224	8616.	3958.1499
43	AKRON-CANTON	40.9781	81.4055	8617.	3957.8572
44	MADISON	43.0055	89.4254	148.	3957.3462

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WSRN NUMBER	TEAM	GEODETTIC LATITUDE	WEST LONGITUDE	SAD NUMBER	GEOCENTRIC RADIUS
45	DENVER	39.6768	104.9483	8582.	3958.9448
46	VAN NUYS-B	34.1900	118.5690	8637.	3959.2869
47	531-G NIMITZ	35.6574	117.6394	8639.	3959.2500
48	SAN JOSE	37.3361	121.9339	48.	3958.7500
49	MILWAUKEE	42.9687	88.1484	74.	3957.3462
50	STPETERSBURG	27.7767	82.9733	8659.	3960.4629
51	STPETERSBURG	27.8560	82.7615	8631.	3960.4468
52	ADELAIDE-AUS	-34.9205	221.4055	600.	3959.0242
53	CAL TECH	34.1364	118.1261	8644.	3959.3108
54	KANSAS CITY	38.9600	95.2500	36.	3958.2878
55	NEWBERG	45.3009	122.9822	55.	3956.6648
56	PENDLETON	45.6878	118.7797	56.	3956.7678
57	SAN ANTONIO	29.4711	98.5392	8634.	3960.2749
58	SAN JOSE M	37.2450	122.1441	58.	3958.9268
59	SAN JOSE Z	37.2600	122.1279	59.	3958.9668
60	ALBUQUERQUE	35.1130	106.5568	60.	3959.9910
61	KANSAS-E	39.0330	94.5780	36.	3958.9019
62	PHOENIX R	33.5600	112.0500	8648.	3959.5659
63	ADELAIDE-2	-34.9647	221.3667	8597.	3959.0449
64	MILWAUKEE-B	42.9904	87.9791	198.	3957.1755
65	MILWAUKEE-C	42.9943	87.9077	8646.	3957.1863
66	WICHITA	37.7132	97.2082	8605.	3958.6299
67	STPETERSBURG	27.8133	82.7325	8604.	3960.4509
68	CLEVELAND	41.5111	81.6139	68.	3957.6289
69	MOUNT PINOS	34.8020	119.1620	69.	3960.8999
70	SAN ANTONIO	29.4944	98.5993	70.	3960.3022
71	MADISON	43.0321	89.5064	8654.	3957.3735
72	MILWAUKEE D	43.1283	87.9119	8645.	3957.2654
73	TOWNSVILLE	-19.2805	213.2264	8578.	3961.0000
74	DENVER	39.5986	104.9649	8643.	3958.9734
75	DENVER	39.6378	104.9808	8651.	3958.9487
76	TOWNSVILLE	-19.2575	213.2558	606.	3962.0000
77	VAN NUYS-F	34.0535	118.3616	8661.	3959.1790
78	DURBAN A	-29.8688	329.0198	407.	3960.0569
79	STPETERSBURG	27.7828	82.6899	8657.	3960.4700
80	CALTECH B	34.6953	118.1427	80.	3959.0742
81	WALNUT CREEK	37.9189	122.0728	81.	3958.3408
82	DURBAN B	-29.8443	328.9995	407.	3960.1128
83	STADE/ELBE	53.5889	350.5398	708.	3954.7100
84	ROCHESTER	43.2505	77.6378	8624.	3957.2000
85	FARNHAM	0.0	0.0	85.	0.0
86	OCEANPORT	40.3275	74.0069	8656.	3957.7839
87	HEIDELBERG	49.4300	351.2610	87.	3955.7268
88	LOUISVILLE	40.1656	105.1276	88.	3958.8279

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WSRN NUMBER	TEAM	GEODETTIC LATITUDE	WEST LONGITUDE	SAD NUMBER	GEOCENTRIC RADIUS
89	BELO HORIZON	-19.9289	43.9358	89.	3962.2898
90	ROCHESTER-E	42.3870	77.7190	8670.	3957.6238
91	INDIANAPOLIS	39.8550	86.0896	91.	3958.0229
92	DURBAN C	-29.8759	329.9546	92.	3960.4329
93	POYNTON	53.3447	2.1139	8686.	3954.8118
94	AUSTIN	30.3140	97.8667	94.	3960.1499
95	JOHNSTON	37.8200	88.9400	95.	3958.4214
96	WALNUT CREEK	37.9768	121.9950	96.	3958.3408
97	GRANBY	42.2444	72.5508	97.	3957.3799
98	PHOENIX-B	33.5139	112.0390	8154.	3959.5098
99	LIVERMORE	37.6800	121.7300	8637.	3958.3398
100	NOT ASSIGNED	0.0	0.0	0.	0.0
101	HANNOVER	52.3636	350.2476	8069.	3955.0142
102	CAPE TOWN	-33.9340	344.7681	3959.	3959.1620

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APPENDIX II

WESTERN SATELLITE RESEARCH NETWORK

OPTICAL CHARACTERISTICS OBSERVATIONS



OPTICAL CHARACTERISTICS LIST
WESTERN SATELLITE RESEARCH NETWORK

LEGEND

ABBREVIATIONS	DEFINITIONS	UNITS
UK	UNITED KINGDOM	
AUS	AUSTRALIA	
PERIOD	ANOMALISTIC PERIOD	MINUTES
PERIGEE	PERIGEE HEIGHT	STATUTE MILES
APOGEE	APOGEE HEIGHT	STATUTE MILES
INCL	INCLINATION	DEGREES
AU	ASTRONOMICAL UNITS	ASTRONOMICAL UNITS
D	DAYS	DAYS
MJD	MODIFIED JULIAN DAY	DAYS
Y M D	DATE OBSERVATION WAS MADE	YEAR, MONTH, DAY
H M	UNIVERSAL TIME	HOUR, MINUTE
MAX MIN	MAXIMUM AND MINIMUM BRIGHTNESS	MAGNITUDE
AMAX AMIN	ABSOLUTE MAGNITUDES	MAGNITUDES
PERIOD	PERIOD OF VARIATION	SECONDS
FLASH	FLASH DURATION	SECONDS
ALT	ALTITUDE	DEGREES
AZ	AZIMUTH	DEGREES
RANGE	SLANT RANGE	STATUTE MILES
ORS	OBSERVERS INITIALS	
PHASE	PHASE ANGLE	DEGREES

SDC NC. 3 57 BETA 1 SPUTNIK 2 USSR LAUNCHED 57/11/ 3 DECEASED 4/14/58
PERIOD = 103.7 PERIGEE = 139.8 APOGEE = 1034.6 INCL = 45.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
STADP/ELBF	26306	58	4	13	19	30	0.5	0.5	4.5	4.5	4.5		40.0	220.0	156.	STEADY SPUTNIK 2	-- HK	89.4

SDC NC. 4 58 ALPHA 1 EXPLORER 1 USA LAUNCHED 58/ 2/ 1 IN ORBIT SILENT
PERIOD = 114.7 PERIGEE = 206.9 APOGEE = 1066.9 INCL = 33.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	CBS	PHASE
TCMNSVILLE	28611	64	8	4	9	49	9.0	9.0	8.8	8.8			37.5	178.0	1105.	VAR. MIN INVISIBLE IN APOGEE	--APS	65.2
AKRON CANTON	28644	64	9	6	1	36	9.0	9.0	8.8	8.8			54.5	178.0	1100.	STEADY	--GNC	57.1
AKRON CANTON	28645	64	9	7	1	59	10.0	10.0	9.7	9.7			52.0	192.0	1172.	STEADY	--FMK	59.4
EDINBURG	29051	65	10	18	1	34	7.0	7.0	7.7	7.7			59.4	347.5	736.	MIN INVISIBLE	--PM	77.8
VAN NUYS-F	29148	66	1	23	13	42	8.8	8.8	9.7	9.7			70.5	180.0	670.		--JGM	79.9
VAN NUYS-F	29148	66	2	12	3	26	7.5	7.5	9.0	9.0			80.2	180.0	500.		--JGN	66.7
STPETERSBURG	29227	66	4	12	1	15	6.0	6.0	7.8	7.8		1.00	26.8	0.9	440.		--FJK	98.2
EDINBURG	29233	66	4	18	2	19	6.0	6.0	7.9	7.9			76.9	20.4	419.	ST AND FAST	--PM	72.6
STPETERSBURG	29259	66	5	14	9	7	6.0	6.0	0.0	0.0			74.1	159.8			--FJK	66.3
VAN NUYS-F	29281	66	6	5	5	19	8.3	8.3	9.9	9.9			92.9	180.0	475.		--JGN	61.7
STPETERSBURG	29284	66	6	8	2	17	8.0	8.0	0.0	0.0			55.3	7.1			--FJK	90.5
STPETERSBURG	29291	66	6	15	1	34	7.0	7.0	9.6	9.6		1.00	73.7	202.1	770.	MEASUR-D	--FJK	73.4
STPETERSBURG	29467	66	12	7	0	0	7.5	7.5	9.5	9.5			60.0	177.0	390.		--FK	80.8
STPETERSBURG	29519	67	1	29	0	21	8.0	8.0	8.4	8.4		1.00	73.8	14.5	850.		--FK	67.0
STPETERSBURG	29520	67	1	30	0	19	8.0	8.0	8.5	8.5			81.6	18.3	300.	VAR	--FK	70.1
PHCENIX P	29520	67	1	30	7	7	9.0	9.0	9.2	9.2			78.3	193.0	900.		--RR	81.3
STPETERSBURG	29620	67	5	10	2	29	7.5	7.5	8.9	8.9			72.9	51.5	520.		--FK	60.7
PHCENIX P	29624	67	5	14	3	24	7.0	7.0	9.2	9.2			77.0	171.0	370.		--RR	68.9
STPETERSBURG	29791	67	10	28	23	56	8.0	8.0	9.8	9.8		1.00	63.0	65.9	680.		--FK	49.3
STPETERSBURG	29800	67	11	6	0	20	8.0	8.0	0.0	0.0			64.4	15.8			--FK	60.9
STPETERSBURG	29907	68	2	21	0	17	8.0	8.0	9.3	9.3			37.5	36.3	550.		--FK	49.3

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSPLRG	35533	68/	3/18		1	14	5.0	5.0	0.0	0.0			53.5	355.0			--FK	81.3
STPETERSPLRG	35535	68/	3/20		1	15	7.0	7.0	0.0	0.0			49.2	3.0			--FK	79.4
STPETERSPLRG	35537	68/	3/22		1	15	7.0	7.0	0.0	0.0	1.50		49.2	7.6			--FK	77.2
STPETERSPLRG	35539	68/	3/24		1	16	7.0	7.0	0.0	0.0			78.7	76.9			--FK	59.7
TP EST .5 SEC																		

SL AC. 12 55 ALPHA 2 ROCKET BODY USA LAUNCHED 55/ 2/17 IN ORBIT
PERIOD = 129.5 PERIGEE = 338.0 APOGEE = 2281.7 INCL = 32.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
SAN ANTONIO	38491	64/	4/ 6		2	50	8.0		7.4				86.0	360.0	1305. VA		-- PM	66.9

SDC AC. 20 59 ETA 1 VANGUARD 3 USA LAUNCHED 55/ 9/18 IN ORBIT SILENT
PERIOD = 130.2 PERIGEE = 311.9 APOGEE = 2314.6 INCL = 33.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--QBS	PHASE
STPETERSPLRG	38520	64/	5/ 5		1	41	7.5	9.0	0.0	0.0			32.5	40.8		TP EST 1 SEC	-- FK	72.1
STPETERSPLRG	38526	64/	5/11		2	39	5.0	7.0	6.1	8.1			47.5	298.2	600.	TP EST .5 SEC	-- FK	102.5
SAN ANTONIO	38594	64/	7/18		2	21	8.0	8.0	8.4	8.4			79.6	0.0	820.	ST	-- PM	85.7
SAN ANTONIO	38595	64/	7/19		4	8	8.2	8.2	9.1	9.1			77.9	360.0	655.	ST, ONE FADE	-- PM	71.7
SAN ANTONIO	38597	64/	7/21		3	42	8.0	8.0	8.6	8.6			77.3	360.0	755.	VERY SLOW VAR	-- PM	75.0
SAN ANTONIO	38598	64/	7/22		3	29	8.7	9.0	9.1	9.4			77.0	360.0	825.	VERY SLOW VAR	-- PM	76.7
SAN ANTONIO	38600	64/	7/24		3	3	8.8		8.9				76.5	360.0	940.	VARIABLE	-- PM	80.3
SAN ANTONIO	38601	64/	7/25		2	50	8.8		8.8				71.0	360.0	998.		-- PM	81.7
SAN ANTONIO	38602	64/	7/26		2	37	8.5		8.4				77.5	360.0	1065.		-- PM	83.2
SAN ANTONIO	38604	64/	7/28		4	31	8.0		8.6				75.6	360.0	745.		-- PM	69.5
SAN ANTONIO	38607	64/	7/31		3	51	8.5		8.7				80.0	360.0	913.		-- PM	70.0
SAN ANTONIO	38608	64/	8/ 1		2	39	9.0		9.1				82.0	360.0	963.		-- PM	70.0
SAN ANTONIO	38609	64/	8/ 2		3	25	8.5		8.4				83.0	360.0	1025.		-- PM	71.2
SAN ANTONIO	38610	64/	8/ 3		3	12	9.2		9.0				84.5	360.0	1089.		-- PM	72.1
KANSAS-E	38610	64/	8/ 3		3	14	9.0		9.0				51.0	185.0		MIN FAINTER THAN 10	--SS	53.0
DURBAN B	38610	65/	5/18		16	35	8.5	9.5	9.6	10.6	5.50		84.0	105.0	600.	SCINT AND BRIGTH FLASHES	--AA	65.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
CURRAN R	29169	66/	2/	13	18	0	9.5		8.5				38.0	307.0	1600.	FLASHING	-- AA	100.0
EDINBURG	29205	66/	3/	21	2	1	1.0	-0.0				1.00	80.0	0.0	1608.		-- PM	73.8
CLEVELAND	29271	66/	5/	26	3	59	8.0	8.0	7.0	7.0			61.6	181.3	1574.		-- DS	40.4
PHCENTX R	29274	66/	5/	29	5	5	9.0	9.0	7.8	7.8			77.0	270.4	1700.	STEADY	--RKR	72.6
PHCENTX R	29277	66/	6/	1	4	43	9.0	7.4			0.50		73.5	270.8	2075.	MIN INVISIBLE	--RKR	79.1
PHCENTX R	29357	66/	8/	20	5	41	9.0	7.2					89.4	180.0	2270.	MIN INV	--RKR	52.6
PHCENTX R	29358	66/	8/	22	5	19	9.0	7.1					60.3	95.0	2425.	MIN INV IN 12 IN. SCOPE	--RKR	38.3
PHCENTX R	29375	66/	9/	7	3	47	9.0	7.3	7.3				61.3	213.2	2215.	STEADY	--PKR	71.6
PHCENTX R	29443	66/	11/	14	2	39	7.0	6.3					70.7	158.5	1400.	RAPID TP	--RKR	58.4
PHCENTX R	29445	66/	11/	20	3	34	9.0	8.4					73.2	271.0	1340.	MIN INV	--RKR	67.3
STPETERSBURG	29853	67/	12/	29	0	25	11.0	11.0	9.5	9.5			74.0	120.7	2000.		-- FK	57.8

SEC AC. 22 59 ICIA 1 EXPLORER 7 USA LAUNCHED 59/10/13 IN ORBIT SILENT
PERIOD = 101.2 PERIGEE = 150.5 APOGEE = 660.5 INCL = 50.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WFIDELBERG	29268	66/	5/	23	21	13	8.4	8.4	9.4	9.4			70.0	289.0	617.	STEADY, NOT TRACKED VERY LONG	--GLU	91.2
AUSTIN	29612	67/	5/	2	2	28	9.0	9.0	9.8	9.8			27.0	325.0	706.		-- MM	129.8
WFIDELBERG	29672	67/	7/	1	22	18	8.6	8.6	9.0	9.0			36.0	180.0	850.	STEADY	--GLU	29.2
WFIDELBERG	29677	67/	7/	6	21	59	8.5	8.5	8.6	8.6			39.0	100.0	950.	STEADY	--GLU	56.2
WFIDELBERG	29757	67/	9/	24	19	38	7.8	7.8	8.7	8.7			67.0	260.0	650.	STEADY	--GLU	86.2

SEC AC. 23 59 ICIA 2 ROCKET BODY USA LAUNCHED 59/10/13 IN ORBIT
PERIOD = 100.9 PERIGEE = 339.9 APOGEE = 659.9 INCL = 50.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
AUSTIN	29740	67/	9/	7	2	0	9.0		9.7				59.0	321.0	726.		--DCM	100.3

SDC NC. 29 60 RFTA 2 TRANSIT 1P USA LAUNCHED 60/ 4/ 1 IN ORBIT SILENT
 PERIOD = 99.1 PERIGE = 441.2 APOGEE = 454.2 INCL = 48.4
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CBS PHASE
 STPETERSBURG 29525 67/ 2/ 8 0 19 9.0 10.0 10.1 11.1 0.50 54.0 305.0 600. -- FK 101.6

SDC NC. 31 60 GAMMA 2 TRANSIT 1P USA LAUNCHED 60/ 4/13 DECAYED 1C/ 5/67
 PERIOD = 95.8 PERIGE = 233.0 APOGEE = 478.5 INCL = 51.3
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CBS PHASE
 STADE/ELBE 38999 65/ 8/27 21 1 6.7 6.7 8.7 8.7 STEADY 395. -- HK 49.6
 HEINELRERC 39133 66/ 1/ 8 16 57 6.4 6.4 9.0 9.0 STEADY 305. -- GLU 90.7
 ROCHESTER 39241 66/ 4/26 1 59 7.0 7.0 8.7 8.7 450. -- JD 124.4
 STADE/ELBE 39241 66/ 4/26 20 41 5.5 6.0 8.1 8.6 FAINT VARYING 305. -- HK 45.2
 ROCHESTER 39242 66/ 4/27 1 18 8.0 8.0 10.0 10.0 400. -- RJ 122.1
 STADE/ELBE 39244 66/ 4/29 20 14 6.0 6.0 8.8 8.8 STEADY 275. -- HK 54.8
 ROCHESTER 39245 66/ 4/30 2 29 9.0 9.0 10.1 10.1 601. -- RJ 110.6
 MILWAUKEE 39252 66/ 5/ 7 2 31 7.5 7.5 10.7 10.7 230. --EAM 77.5
 EDINBURG 39260 66/ 5/15 1 51 5.0 8.3 LOST IN 2 SEC. TWILIGHT --EAM 81.8
 STADE/ELBE 39300 66/ 6/24 22 11 6.5 6.5 8.5 8.5 STEADY 390. -- HK 45.7
 MILWAUKEE 39302 66/ 6/26 3 40 5.0 8.5 5.9 9.4 0.58 22.0 356.0 660. TRACKED 2 MIN STEADY PULSE --EAM 132.4
 WALNUT CREEK 39313 66/ 7/ 7 5 28 6.0 6.0 8.7 8.7 RATE 290. --DFC 70.2
 STADE/ELBE 39365 66/ 8/28 20 42 7.0 7.0 9.2 9.2 STEADY 360. -- HK 48.8

SDC NC. 36 60 EPSILON 3 METAL OBJECT USSR LAUNCHED 60/ 5/15 DECEASED 10/15/65
PERIOD = 92.7 PERIGEE = 172.7 APOGEE = 326.2 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	38661	64/	9/23	18	20	2.5	2.5	2.5	6.0	6.0			70.0	140.0	200.	STEADY	--HK	64.5
STADE/ELPE	38662	64/	9/24	18	37	3.0	3.0	3.0	5.8	5.8			50.0	310.0	280.	STEADY	--HK	114.0
STADE/ELPE	38748	64/12/19	16	17	1.0	2.0	4.7	5.7					80.0	315.0	180.	STEADY AND SLOWLY VARYING	--HK	83.4
DURBAN R	38934	65/ 6/23	16	0	3.0	3.0	3.5	3.5					11.0	2.0	800.	STEADY	--AA	105.3
DURBAN R	38934	65/ 6/23	16	3	2.0	2.0	4.0	4.0					28.0	95.0	400.	STEADY	--GR	21.0
DURBAN B	38935	65/ 6/24	16	3	0.5	0.5	4.0	4.0					74.0	114.0	200.	STEADY	--AA	61.7
DURBAN B	38936	65/ 6/25	16	2	3.0	3.0	5.6	5.6					45.0	266.0	300.	STEADY	--AA	118.9
STADE/ELPE	38958	65/ 7/17	23	39	2.0	2.0	5.2	5.2					50.0	140.0	225.	STEADY	--HK	48.8
VAN NUYS-F	39000	65/ 8/28	3	22	4.5	4.5	6.5	6.5					25.2	58.2	390.	STEADY	--JGM	51.2

SDC NC. 43 60 ZETA 1 MIDAS 2 USA LAUNCHED 60/ 5/24 IN ORBIT (SILENT)
PERIOD = 94.4 PERIGEE = 280.9 APOGEE = 326.2 INCL = 33.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38925	65/ 6/14	16	14	2.0	2.0	4.5	4.5					70.0	180.0	320.	STEADY	--AA	69.6
VAN NUYS-F	39093	65/11/29	2	2	1.5	3.0	4.0	5.5				5.00	77.0	180.0	310.	ONE FLASH IN 90 SEC TRACKING	--JGM	78.0
AUSTIN	39907	68/ 2/21	1	50	3.5	3.5	5.7	5.7					53.0	356.0	361.		--MM	76.0

SDC NC. 45 60 ETA 1 TRANSIT 2-A USA LAUNCHED 60/ 6/22 IN ORBIT ACTIVE
PERIOD = 101.7 PERIGEE = 380.9 APOGEE = 656.8 INCL = 66.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	38902	65/ 5/22	22	17	7.0	7.5	9.0	9.5					85.0	135.0	404.	STEADY NCASS FAINT FLASHES	--HK	71.0
STADE/ELPE	38924	65/ 6/13	22	58	7.5	8.0	8.8	9.3					86.0	55.0	551.	STEADY WITH FAINT VARYING	--HK	79.0
STADE/ELPE	39052	65/10/19	18	22	8.2	8.2	9.1	9.1					80.0	220.0	670.	STEADY	--HK	76.1
MFIDELMERC	39219	66/ 4/ 4	19	5	8.3	8.3	9.4	9.4					85.0	0.0	591.	STEADY	--GLU	81.0
STADE/ELPE	39240	66/ 4/25	21	48	5.8	6.5	7.6	8.3					80.0	220.0	430.	VARYING	--HK	65.6
STADE/ELPE	39241	66/ 4/26	21	30	6.7	6.7	8.5	8.5					80.0	220.0	430.	STEADY	--HK	67.7
STADE/ELPE	39244	66/ 4/29	20	38	6.5	6.5	8.4	8.4					87.0	60.0	422.	STEADY	--HK	75.8

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
MADISON	39246	66/	5/	1	3	10	8.3		9.5				42.8	51.1	565.		--GCL	73.1
OCEANPORT	39250	66/	5/	5	2	3	5.0	5.0	7.0	7.0			69.6	177.6	400.	-.5 MAG LIGHT VARIATIONS STEADY MAG.	--GFG	54.4
CLEVELAND	39252	66/	5/	7	1	26	7.0	7.0	8.4	8.4			48.1	53.4	517.		--OS	69.0
OCEANPORT	39252	66/	5/	7	1	28	7.0	7.0	8.9	8.9			62.8	144.6	410.	STEADY MAG.	--GFG	48.2
MADISON	39252	66/	5/	7	3	10	8.7		9.5				30.8	245.2	686.	SLIGHT LIGHT VAR.	--GCL	93.8
MILWAUKEE	39252	66/	5/	7	3	10	8.0	8.0	8.6	8.6			27.0	246.0	750.	CONSTANT FOR 1 MIN	--	94.9
TERRE HAUTE	39252	66/	5/	7	3	10	4.0	4.0	4.8	4.8			30.2	246.0	693.	STEADY	--LD	92.0
VAN NUYS-F	39252	66/	5/	7	4	53	6.7	6.7	8.5	8.6			69.7	243.0	410.		--JGM	74.1
OCEANPORT	39253	66/	5/	8	1	11	7.0	7.0	9.0	9.0			70.4	123.2	400.	NO CHANGE IN MAG.	--GFG	57.4
TERRE HAUTE	39253	66/	5/	8	2	54	8.0	8.0	8.9	8.9			32.4	246.0	457.	STEADY	--DD	94.8
WALNUT CREEK	39253	66/	5/	8	4	35	8.0	8.0	10.0	10.0			86.9	237.0	390.	STEADY	--DFC	74.7
EDINBURG	39254	66/	5/	9	2	38	7.0	7.0	8.0	8.0			33.6	59.8	636.	TRACKED PRETTY FAR, ST ALLWAY	--PM	56.2
MILWAUKEE-C	39255	66/	5/	10	2	18	8.0	8.0	8.9	8.9			33.4	245.0	650.	CONSTANT MAG FOR TWO MINUTES	--GVH	103.5
PHOENIX R	39257	66/	5/	12	3	27	8.0		9.7				55.6	244.0	456.	TRACKED #2 SEC NO TP OMS	--RKR	95.3
STADE/ELPE	39337	66/	7/	31	22	34	6.5	6.5	8.5	8.5			85.0	55.0	401.	STEADY	--HK	74.6
STADE/ELPE	39339	66/	8/	2	21	59	6.7	6.7	8.6	8.6			77.0	55.0	410.	STEADY	--HK	77.1
STADE/ELPE	39361	66/	8/	4	21	24	6.5	6.5	8.4	8.4			70.0	55.0	423.	STEADY	--HK	78.0
OCEANPORT	39425	66/	10/	27	23	55	7.0		7.7				31.5	329.8	710.		--	102.7
STADE/ELPE	39426	66/	10/	28	18	36	6.8	6.8	8.6	8.6			73.1	314.0	433.	STEADY	--HK	80.5
OCEANPORT	39428	66/	10/	30	0	20	7.5		8.5				37.4	323.8	630.		--	100.7
STADE/ELPE	39428	66/	10/	30	18	1	7.0	7.0	8.9	8.9			80.0	310.0	422.	STEADY	--HK	78.8
STADE/ELPE	39483	66/	12/	24	5	30	7.7	7.7	9.0	9.0			65.0	315.0	550.	STEADY	--HK	51.4
STPETERSPLRG	39564	67/	3/	15	1	2	8.0	9.0	8.6	9.6	1.00		56.2	297.4	730.		--FK	102.7
STADE/ELPE	39613	67/	5/	3	21	53	8.0	8.0	8.9	8.9			83.0	140.0	675.	STEADY	--HK	65.0
STADE/ELPE	39636	67/	5/	26	23	56	8.0	8.0	9.1	9.1			88.0	220.0	610.	STEADY	--HK	73.4
STADE/ELPE	39637	67/	5/	27	23	40	7.5	7.5	8.5	8.5			85.0	220.0	620.	STEADY	--HK	71.0
STADE/ELPE	39642	67/	6/	1	22	11	6.5	7.5	7.4	8.4			79.0	55.0	670.	STEADY AND SLOWLY VARYING	--HK	80.5
STPETERSPLRG	39654	67/	6/	15	3	0	7.0	7.0	8.2	8.2			64.5	323.6	580.		--FK	88.2
STPETERSPLRG	39658	67/	6/	17	2	25	4.0	4.0	0.0	0.0			70.2	4.4		STEADY	--FK	81.3
HFIDELRERC	39764	67/	10/	1	18	9	8.4	8.4	9.5	9.5			38.0	250.0	600.	STEADY	--GLU	124.1
STADE/ELPE	39864	68/	1/	9	18	5	8.5	8.5	10.3	10.3			75.0	220.0	440.	ST MOON	--	78.3
STADE/ELPE	39866	68/	1/	11	17	30	7.0	7.0	8.8	8.8			83.0	220.0	430.	ST MOON	--HK	78.2

SDC NC. 46 60 ETA 2 GRFR 1 USA LAUNCHED 60/ 6/22 IN ORBIT SILENT
 PERIOD = 101.6 PERIGEE = 380.9 APOGEE = 656.2 INCL = 56.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	38543	64/	5/28		2	29	8.0	10.0	9.0	11.0			65.5	311.6	625.	TP EST 4 SEC	-- FK	90.1
STPETERSBURG	38545	64/	5/30		1	54	7.0	9.0	8.0	10.0			72.5	336.1	625.	TP FST 1 SEC	-- FK	87.3
AUSTIN	39619	67/	5/ 9		2	11	8.0		9.0				76.0	115.0	643.		-- MM	63.4

SDC NC. 47 60 ETA 3 PCKET BCCY USA LAUNCHED 60/ 6/22 IN ORBIT
 PERIOD = 101.4 PERIGEE = 382.1 APOGEE = 643.1 INCL = 66.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	38626	64/	8/29		20	50	6.0	6.0	6.1	6.1			25.0	220.0	950.	STEADY	-- HK	73.5
STADE/ELBE	38639	64/	5/ 1		19	45	6.0	6.0	6.2	6.2			30.0	260.0	930.	STEADY	-- HK	119.2
STADE/ELBE	39245	66/	4/30		19	53	6.0	6.0	5.9	5.9			17.0	248.0	1039.	STEADY	--	113.6
WALNUT CREEK	39246	66/	5/ 1		4	24	4.0	4.0	5.4	5.4			46.0	244.0	519.	STEADY	--OFC	97.7
STADE/ELBE	39632	67/	5/22		0	27	5.5	7.0	6.1	7.6			62.0	360.0	750.	VARYING	-- HK	102.1
AUSTIN	39913	68/	2/27		2	22	7.0		8.4				46.0	300.0	518.		--PM	109.0

SDC NC. 49 60 IOTA 1 FCHC 1 USA LAUNCHED 60/ 8/12 DECEASED 5/23/68
 PERIOD = 118.3 PERIGEE = 945.7 APOGEE = 1048.9 INCL = 47.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
KANSAS-E	38585	64/	7/ 9		9	55	1.0	1.0	0.5	0.5			52.0	182.0	1250.	STEADY	--SS	55.5
KANSAS-E	38597	64/	7/21		9	20	1.0	4.0	0.4	3.4	15.20	1.00	53.0	314.0	1300.	4 TIMES AND AVG OF 10, ALL SAME DUR APPROX, SOME MIN +3	--SS	76.5
SAN ANTONIO	38602	64/	7/26		5	5	1.0	3.0	0.6	2.6			89.0	180.0	1183.		-- PM	53.2
SAN ANTONIO	38603	64/	7/27		5	51	1.0	3.0	0.2	2.2			50.0	360.0	1423.		-- PM	89.1
SAN ANTONIO	38604	64/	7/28		2	42	2.0	3.0	0.3	1.3			20.0	90.0	2175.		-- PM	31.3
SAN ANTONIO	38604	64/	7/28		4	39	0.1	1.0	-0.2	0.7			89.0	360.0	1170.		-- PM	57.5
SAN ANTONIO	38605	64/	7/29		3	23	1.0	3.0	0.1	2.1			45.0	180.0	1500.		-- PM	47.2
SAN ANTONIO	38605	64/	7/29		5	26	1.0	3.0	0.3	2.3			56.7	360.0	1352.		-- PM	82.8
SAN ANTONIO	38606	64/	7/30		4	9	0.1	4.0	-0.2	3.7			88.0	360.0	1165.		-- PM	61.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
SAN ANTONIO	38607	64/	7/31		2	55	1.0	4.0	0.1	3.1			45.0	270.0	1480.		--PM	110.2
SAN ANTONIO	38607	64/	7/31		4	55	1.0	4.0	0.3	3.3			50.0	270.0	1400.		--PM	79.7
SAN ANTONIO	38608	64/	8/1		3	44	1.0	3.0	0.7	2.7			86.0	360.0	1144.		--PM	66.5
SAN ANTONIO	38608	64/	8/1		5	41	1.0	3.0	-0.0	2.0			40.0	360.0	1604.		--PM	97.8
SAN ANTONIO	38609	64/	8/2		2	29	1.5	3.5	1.0	3.0			55.0	180.0	1233.		--PM	62.5
SAN ANTONIO	38609	64/	8/2		4	26	2.5	4.0	2.1	3.6			60.0	360.0	1195.		--PM	81.9
SAN ANTONIO	38610	64/	8/3		3	15	0.5	4.0	0.3	3.8			85.0	360.0	1121.		--PM	71.3
SAN ANTONIO	38610	64/	8/3		5	13	2.0	4.0	0.9	2.9			36.0	360.0	1690.		--PM	101.4
SAN ANTONIO	38611	64/	8/4		1	58	0.1	2.0	-0.1	1.8			65.0	180.0	1108.		--PM	72.9
DURBAN B	38699	65/	5/19		16	30	0.5	0.5	-0.5	-0.5			31.0	54.0	1600.	STEADY	--GR	46.4
DURBAN B	38900	65/	5/20		17	5	0.5	0.5	0.1	0.1			46.0	360.0	1220.	STEADY	--GR	78.5
DURBAN B	38900	65/	5/20		17	9	-1.0	-1.0	-1.0	-1.0			60.0	76.0	1000.	STEADY	--GR	37.6
DURBAN B	38914	65/	6/3		16	5	0.5	0.5	-0.4	-0.4			30.0	170.0	1500.	STEADY	--AA	59.0
DURBAN B	38920	65/	6/9		15	51	1.0	1.0	-0.9	-0.9			12.0	220.0	2400.	STEADY	--GR	106.4
DURBAN B	38931	65/	6/14		16	58	0.1	0.1	-0.1	-0.1			70.0	180.0	1100.	STEADY	--AA	62.6
DURBAN B	38931	65/	6/20		18	48	0.5	0.5	-0.8	-0.8			18.0	266.0	900.	STEADY	--AA	86.7
DURBAN B	38933	65/	6/22		16	6	-0.1	-0.1	0.3	0.3			82.0	264.0	840.	STEADY	--GR	112.6
DURBAN B	38933	65/	6/22		18	4	1.0	1.0	-0.3	-0.3			23.0	295.0	1800.	STEADY	--AA	84.2
DURBAN B	38974	65/	6/23		16	40	0.1	0.1	-0.3	-0.3			29.0	265.0	1200.	STEADY	--AA	119.9
DURBAN B	38975	65/	6/24		17	9	1.0	1.0	-0.4	-0.4			14.0	262.0	1900.	STEADY	--AA	126.9
DURBAN B	38976	65/	6/25		15	46	0.1	0.1	-0.3	-0.3			36.0	266.0	1200.	STEADY	--GR	134.9
STADE/ELRE	38937	65/	6/26		0	3	0.5	2.0	0.1	1.6			65.0	180.0	1180.	VARYING	--GR	128.9
DURBAN B	38937	65/	6/26		16	35	1.0	1.0	0.1	0.1			26.0	303.0	1500.	STEADY	--HK	52.8
STADE/ELRE	38939	65/	6/28		2	32	1.0	2.0	0.4	1.4			50.0	140.0	1333.	VARYING	--GR	132.5
STADE/ELRE	38940	65/	6/29		2	32	0.5	1.0	-0.1	0.4			50.0	180.0	1316.	VARYING	--HK	42.5
VAN NUYS-F	38943	65/	7/2		5	16	1.3	3.0	0.5	2.2	25.00		45.0	0.0	1470.	STEADY WITH FAINT VARYING	--HK	39.1
STADE/ELRE	38944	65/	7/3		20	57	1.0	1.5	0.4	0.9			60.0	180.0	1300.	HALF PERIOD DIPS AT 12.5 SEC	--JGW	104.6
STADE/ELRE	38944	65/	7/3		23	0	0.5	1.0	-0.0	0.5			65.0	180.0	1270.	FAINT VARYING	--HK	59.0
STADE/ELRE	38951	65/	7/10		21	16	1.0	-0.0	-0.0	0.5			40.0	140.0	1590.	STEADY NCASS VARYING	--HK	51.9
STADE/ELRE	38953	65/	7/12		22	20	1.0	1.5	0.1	0.6			45.0	220.0	1500.	STEADY AND FAINT VARYING	--HK	32.0
STADE/ELRE	38959	65/	7/18		21	52	2.0	2.0	0.7	0.7			30.0	220.0	1800.	FAINT VAR	--HK	57.0
VAN NUYS-F	39015	65/	9/12		10	3	1.0	1.7	0.3	1.0	12.85		33.0	0.0	1350.	STEADY	--HK	60.4
VAN NUYS-F	39023	65/	9/20		4	57	0.1	0.7	-0.1	0.5			66.0	310.0	1080.		--JGW	95.1
VAN NUYS-F	39024	65/	9/21		3	34					24.10					WHOLE TP	--JGW	77.0
STADE/ELRE	39026	65/	9/23		20	0	0.5	2.0	-0.1	1.4			40.0	180.0	1330.	VARYING IRREGULAR	--HK	48.7
HFIDELRRC	39126	66/	1/1		18	13	-0.4	0.9	-0.1	1.2			58.0	140.0	P67.	IRREG VAR PART FLASH	--GLU	52.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	P ANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29129	66/	1/	4	17	55	0.1	0.5	0.2	0.6			55.0	220.0	940.	STEADY WITH FAINT VARYING	-- HK	95.1
HEIDELBERC	29129	66/	1/	4	17	57	-0.3	0.8	0.1	1.2			58.0	215.0	930.	IRREG VAR PART FLASH	--GLU	92.5
HEIDELBERC	29130	66/	1/	5	16	30	-0.3	1.0	-0.0	1.3			50.0	255.0	876.	IRREG VAR WITHOUT FLASH	--GLU	121.4
HEIDELBERC	29130	66/	1/	5	18	32	0.6	1.4	0.5	1.3			41.0	195.0	1032.	IRREG VAR PART FLASH	--GLU	85.7
HEIDELBERC	29131	66/	1/	6	17	4	-0.6	0.8	-0.1	1.3			62.0	184.0	786.	IRREG VAR WITHOUT FLASH	--GLU	89.5
HEIDELBERC	29131	66/	1/	6	19	4	0.9	2.1	0.2	1.4			26.0	194.0	1355.	IRREG VAR MANY SHORT FLASHES	--GLU	85.9
STADE/ELPE	29132	66/	1/	7	17	35	0.5	1.0	0.4	0.9			45.0	220.0	1050.	STEADY OCCASIONAL VARYING	-- HK	107.7
HEIDELBERC	29132	66/	1/	7	17	41	0.1	1.2	0.1	1.2			40.0	170.0	1019.	IRREG VAR WITHOUT FLASH	--GLU	80.8
HEIDELBERC	29133	66/	1/	8	16	14	-0.3	0.8	0.2	1.3			58.0	146.0	811.	IRREG VAR	--GLU	83.0
VAN NUYS-F	29140	66/	1/	15	3	12	2.2	0.8	0.8	0.8			10.5	193.5	1400.	IRREG VAR	--JGM	105.3
VAN NUYS-F	29148	66/	1/	23	14	12	0.8	0.8	0.3	0.3			38.6	377.7	1250.	IRREG VAR	--JGM	47.0
DURBAN B	29168	66/	2/	12	18	15	1.0	0.8	0.6	0.3			44.0	94.0	1200.	SLOW FADE	-- GR	37.3
VAN NUYS-F	29183	66/	2/	27	3	21	1.5	3.5	0.5	2.5	11.07		25.0	155.0	1600.	DIPS ALTERNATE, GOOD TP	--JGM	56.7
VAN NUYS-F	29191	66/	3/	7	3	36	0.3	0.3	0.5	0.5			70.0	311.0	920.	IRREG VAR	--JGM	85.2
STADE/ELPE	29195	66/	3/	11	20	40	0.5	1.0	0.2	0.7			55.0	220.0	1230.	STEADY OCASS FAINT VAR	-- HK	67.2
EDINBURG	29196	66/	3/	12	2	50	1.0	1.0	-0.2	-0.2			18.0	0.0	1710.	STEADY	--LAA	90.9
EDINBURG	29197	66/	3/	13	2	50	1.0	1.0	-0.1	-0.1			22.0	0.0	1675.	STEADY	--LAA	89.1
STADE/ELPE	29197	66/	3/	13	19	45	0.5	1.0	0.3	0.8			65.0	180.0	1087.	STEADY OCASS FAINT VARYING	-- HK	59.6
STADE/ELPE	29199	66/	3/	15	18	50	0.1	1.0	-0.1	0.8			55.0	180.0	1100.	STEADY OCASS VARYING	-- HK	70.6
STADE/ELPE	29203	66/	3/	19	18	50	0.5	1.0	0.2	0.7			55.0	180.0	1130.	STEADY AND VARYING	-- HK	70.9
EDINBURG	29204	66/	3/	20	2	24	2.0	2.0	0.8	0.8			18.5	0.0	1715.	VARYING	--JDL	93.0
STADE/ELPE	29204	66/	3/	20	19	20	1.0	3.0	0.7	2.7			50.0	180.0	1150.	IRREG.VARIATIONS	-- HK	63.2
HEIDELBERC	29258	66/	5/	13	21	44	1.2	1.6	-0.1	0.3			30.0	141.0	1782.	IRREG.VARIATIONS	--GLU	17.4
STADE/ELPE	29259	66/	5/	14	22	8	1.0	1.5	-0.3	0.2			25.0	140.0	1930.	STEADY AND FAINT VARYING	-- HK	22.9
HEIDELBERC	29259	66/	5/	14	22	9	1.0	1.5	-0.0	0.5			37.0	171.0	1605.	IRREG.VARIATIONS	--GLU	18.8
HEIDELBERC	29260	66/	5/	15	22	33	0.9	1.4	-0.2	0.3			34.0	205.0	1683.	IRREG.VARIATIONS	--GLU	35.3
STPETERSBURG	29261	66/	5/	16	1	25	1.0	1.0	0.0	0.0			43.5	125.1		IRREG.VARIATIONS	--FJK	28.6
HEIDELBERC	29261	66/	5/	16	21	1	1.5	2.0	0.3	0.8			32.0	147.0	1745.	IRREG. VARIATIONS	--GLU	17.3
HEIDELBERC	29261	66/	5/	16	23	0	0.4	0.8	0.0	0.4			67.0	160.0	1194.	IRREG. VARIATIONS	--GLU	46.7
HEIDELBERC	29262	66/	5/	17	21	25	1.3	1.7	0.3	0.7			37.0	180.0	1619.	IRREG. VARIATIONS	--GLU	32.5
EDINBURG	29263	66/	5/	18	2	57	0.1	3.0	-1.1	1.8			25.0	180.0	1740.	IRREG. VARIATIONS	-- PM	49.4
EDINBURG	29263	66/	5/	18	4	49	1.0	3.0	0.2	2.2			45.0	0.0	1435.	IRREG. VARIATIONS	-- PM	92.4
STADE/ELBE	29265	66/	5/	20	22	44	1.0	1.5	0.6	1.1			60.0	180.0	1200.	STEADY OCASS FAINT VARYING	-- HK	44.4
STADE/ELBE	29265	66/	5/	20	22	44	1.0	1.5	0.6	1.1	11.20		60.0	180.0	1186.	STEADY OCASS FAINT VARYING	-- HK	44.4
VAN NUYS-F	29267	66/	5/	22	4	32	0.7	1.0	-0.0	0.3			45.0	240.0	1400.	IRREG. VARIATIONS	--JGM	89.7
HEIDELBERC	29268	66/	5/	23	20	4	0.7	1.0	0.0	0.2			50.0	160.0	1353.	IRREG. VARIATIONS	--GLU	47.7
HEIDELBERC	29268	66/	5/	23	22	1	0.5	1.2	0.1	0.8			58.0	237.0	1215.	IRREG.VAR.PARTIALLY FLASHES	--GLU	68.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	29272	66/	5/28		1	25	1.0	1.0	0.5	0.5			31.5	101.8	1250.			
HEIDELBERG	29275	66/	5/30		27	3	-0.2	0.6	-0.5	0.3			78.0	214.0	1137.	VAR. WITH MEAN PERIOD 4 SEC.	--FJK	26.8
STADE/ELPE	29276	66/	5/31		21	27	1.0	1.0	0.6	0.6			60.0	180.0	1186.	STEADY	--GLU	74.9
HEIDELBERG	29277	66/	6/1		21	54	0.3	0.7	-0.1	0.3			70.0	180.0	1184.	IRREG. VARIATIONS	--HK	53.1
VAN NUYS-F	29279	66/	6/3		5	28	-0.1	-0.1	-1.0	-1.0			42.0	67.0	1180.	IRREG. VARIATIONS	--JGM	55.8
HEIDELBERG	29279	66/	6/3		20	40	0.5	1.0	-0.1	0.4			50.0	263.0	1321.	IRREG. VARIATIONS	--GLU	64.4
HEIDELBERG	29279	66/	6/3		22	43	0.6	1.2	-0.1	0.5			49.0	204.0	1392.	IRREG. VARIATIONS	--GLU	101.3
HEIDELBERG	29280	66/	6/4		21	8	0.7	1.2	0.3	0.8			69.0	198.0	1176.	IRREG. VARIATIONS	--GLU	41.5
STPETERSBURG	29281	66/	6/5		2	47	1.5	1.5	1.5	1.5			36.0	199.0	1661.	IRREG. VARIATIONS	--GLU	65.0
HEIDELBERG	29283	66/	6/7		20	29	0.8	1.5	-0.0	0.7			30.5	15.2	1000.	IRREG. VARIATIONS	--FJK	26.8
STADE/ELPE	29285	66/	6/9		21	13	1.0	1.0	-0.1	-0.1			44.0	139.0	1474.	IRREG. VARIATIONS	--GLU	101.1
STPETERSBURG	29286	66/	6/10		2	49	1.0	1.0	0.0	0.0			35.0	215.0	1644.	STEADY	--HK	36.0
VAN NUYS-F	29298	66/	6/22		3	52	1.5	3.0	0.6	2.1	10.90		35.0	190.0	1500.	MIN ALTERNATE IN BRIGHTNESS	--FJK	64.4
STADE/ELPE	29324	66/	7/18		2	10	1.0	3.0	-0.3	1.7			10.0	140.0	1807.	VARYING	--JGM	63.9
STADE/ELPE	29330	66/	7/24		0	46	2.5	3.5	1.5	2.5			15.0	135.0	1583.	VARYING	--HK	76.6
STADE/ELPE	29334	66/	7/28		22	55	2.0	3.0	0.8	1.8			12.0	140.0	1712.	VARYING	--HK	61.5
STADE/ELPE	29341	66/	8/4		21	53	1.0	1.0	0.1	0.1			30.0	140.0	1715.	STEADY	--HK	31.1
STADE/ELPE	29341	66/	8/4		23	50	0.5	2.5	0.4	2.4			55.0	180.0	1029.	VARYING	--HK	20.3
STADE/ELPE	29348	66/	8/11		20	45	0.5	1.5	0.1	1.1			50.0	180.0	1212.	VARYING	--HK	36.2
STADE/ELPE	29349	66/	8/12		21	13	1.0	1.0	0.6	0.6			50.0	180.0	1212.	STEADY AND FLICKER	--HK	49.4
STADE/ELPE	29351	66/	8/14		21	57	0.1	1.5	-0.2	1.2			55.0	180.0	1154.	VARYING	--HK	43.7
STADE/ELPE	29352	66/	8/15		20	30	0.1	1.5	-0.2	1.2			55.0	180.0	1154.	VARYING	--HK	39.6
STADE/ELPE	29353	66/	8/16		20	55	0.5	3.5	0.2	3.2			55.0	180.0	1154.	VARYING	--HK	54.3
STADE/ELPE	29353	66/	8/16		22	58	1.0	2.0	0.3	1.3			20.0	140.0	1400.	VARYING	--HK	49.3
STADE/ELPE	29354	66/	8/17		21	17	0.1	3.5	-0.0	3.4			60.0	180.0	1064.	VARYING	--HK	30.4
STADE/ELPE	29355	66/	8/18		19	45	0.5	2.0	0.2	1.7			50.0	180.0	1142.	VARYING	--HK	48.6
STADE/ELPE	29356	66/	8/19		22	0	0.1	2.0	-0.2	1.7			50.0	180.0	1153.	VARYING	--HK	60.8
STADE/ELPE	29361	66/	8/24		20	10	0.1	2.0	-0.2	1.7			50.0	180.0	1165.	VARYING	--HK	33.8
VAN NUYS-F	29365	66/	8/28		4	53	0.8	2.5	0.5	2.2	10.60		50.0	180.0	1150.	MIN ARE DIPS	--JGM	54.1
STADE/ELPE	29365	66/	8/28		19	53	1.0	1.0	0.4	0.4			45.0	180.0	1294.	STEADY	--HK	66.8
VAN NUYS-F	29372	66/	9/4		3	48	0.1	2.0	0.1	2.0	10.55		60.0	30.0	1020.	MIN ARE DIPS	--JGM	55.4
STPETERSBURG	29429	66/	11/31		0	50	1.0	1.0	0.0	0.0			20.0	145.0	1000.	FAINT VARYING	--FK	70.4
STADE/ELPE	29435	66/	11/6		17	52	1.0	1.5	1.0	1.5			50.0	300.0	890.		--HK	52.0
VAN NUYS-F	29439	66/	11/10		2	15	-0.2	0.1	0.1	0.4			25.0	140.0	950.	VARYING	--JGM	104.4
STADE/ELPE	29439	66/	11/10		17	17	0.5	1.0	0.6	1.1			35.0	140.0	900.	IRREGULAR VARYING	--HK	55.1
STADE/ELPE	29440	66/	11/11		17	37	0.5	2.0	0.7	2.2							--	50.7

STATION NAME	MJC	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELPE	29455	66/11/26	16	38	0.5	1.0	0.9	1.4					45.0	180.0	850.	STEADY AND FAINT VARYING	-- HK	94.2
STADE/ELPE	29478	66/12/19	5	56	0.5	0.5	0.7	0.7					35.0	180.0	900.	STEADY	-- HK	99.1
STADE/ELPE	29480	66/12/21	6	30	0.1	0.1	0.1	0.1					50.0	180.0	1000.	STEADY	-- HK	100.1
STADE/FLBE	29483	66/12/24	5	30	0.5	1.0	0.3	0.8					40.0	140.0	1100.	FAINT VARYING	-- HK	114.4
STPETERSPLRG	29508	67/ 1/19	1	45	1.0	1.0	0.0	0.0									--FK	
STADE/FLBE	29517	67/ 1/27	16	45	1.5	1.5	0.9	0.9					15.0	140.0	1300.	STEADY	-- HK	69.6
STADE/ELBE	29529	67/ 2/ 8	10	7	0.5	1.5	-0.1	0.0					40.0	200.0	1300.	VARYING IPREGULAR	-- HK	81.5
VAN NUYS-F	29533	67/ 2/12	3	4	0.1	1.5	0.3	1.7			10.15		65.0	30.0	900.	DIPS	--JGM	58.4
STADE/ELBE	29534	67/ 2/13	18	0	1.0	2.0	0.3	1.3					35.0	220.0	1350.	IRREGULAR VARYING	-- HK	113.8
STADE/ELBE	29535	67/ 2/14	18	14	1.0	1.0	0.1	0.1					30.0	180.0	1500.	STEADY	-- HK	82.3
STADE/ELBE	29566	67/ 3/17	3	58	0.1	0.5	0.3	0.7					40.0	180.0	900.	STEADY OCCAS FAINT SHORT VAR	-- HK	66.8
VAN NUYS-F	29585	67/ 4/ 5	3	45	0.5	1.5	-0.2	0.8			19.60		40.0	150.0	1360.	EVERY OTHER MIN DEEPER, 39SEC	--JGM	39.7
STADE/ELBE	29585	67/ 4/ 5	20	30	0.1	0.1	-0.9	-0.9					30.0	140.0	1600.	STEADY CLOUDS	-- HK	11.8
STADE/ELBE	29588	67/ 4/ 8	20	22	1.0	0.1	0.1	0.1					40.0	180.0	1500.	STEADY	-- HK	46.7
VAN NUYS-F	29589	67/ 4/ 9	3	40	0.1	0.1	0.1	0.1					70.0	105.0	1010.	REDDISH	--JGM	53.2
VAN NUYS-F	29589	67/ 4/ 9	7	40	1.7	1.7	0.5	0.5					25.0	46.0	1750.	VARYING	--JGM	93.2
STADE/FLBE	29591	67/ 4/11	20	14	0.5	2.0	-0.4	1.1					40.0	180.0	1500.	VARYING	-- HK	48.6
STADE/ELBE	29593	67/ 4/13	20	10	0.5	1.5	-0.2	0.8					52.0	180.0	1350.	VARYING	-- HK	53.7
STADE/FLBE	29594	67/ 4/14	20	5	0.1	2.0	-0.8	1.1					40.0	180.0	1500.	STEADY AND VARYING	-- HK	50.9
STADE/ELBE	29594	67/ 4/14	22	5	0.1	1.5	-0.5	0.9					55.0	180.0	1340.	VARYING	-- HK	33.9
STADE/ELBE	29596	67/ 4/16	20	1	0.5	1.5	-0.2	0.8					50.0	180.0	1400.	VARYING MOON	-- HK	55.2
STADE/ELBE	29602	67/ 4/22	19	40	1.0	1.0	0.1	0.1					50.0	180.0	1500.	STEADY NOT DARK	-- HK	60.4
STADE/ELBE	29605	67/ 4/25	19	27	0.5	0.5	-0.5	-0.5					45.0	180.0	1550.	STEADY NOT DARK	-- HK	61.8
STADE/ELBE	29606	67/ 4/26	19	24	0.1	0.1	-0.8	-0.8					50.0	180.0	1500.	STEADY NOT DARK	-- HK	64.4
STADE/ELBE	29658	67/ 6/17	0	11	1.0	2.0	1.0	2.0					20.0	140.0	1000.	VARYING	-- HK	49.7
STADE/ELBE	29664	67/ 6/23	23	3	0.1	1.0	0.1	1.0					50.0	180.0	1000.	VARYING	-- HK	37.4
HEIDELBERC	29671	67/ 6/30	21	59	0.5	1.5	0.5	1.5					50.0	180.0	1000.	CCAS VAR 0.3 MAG	-- HK	42.4
HEIDELBERC	29672	67/ 7/ 1	21	52	0.1	0.1	-0.3	-0.3					58.0	245.0	1200.	VARYING IRREG	--GLU	76.7
STADE/ELBE	29675	67/ 7/ 4	21	28	0.5	1.0	0.5	1.0					60.0	150.0	1000.	VARYING IRREG	--GLU	47.2
STADE/ELBE	29676	67/ 7/ 5	21	14	0.1	0.5	0.1	0.5					50.0	180.0	1000.	FAINT VARYING	-- HK	48.7
HEIDELBERC	29681	67/ 7/10	20	25	0.3	0.6	0.3	0.6					57.0	220.0	1000.	IRREG VAR	--GLU	79.7
HEIDELBERC	29681	67/ 7/10	22	25	1.2	1.5	0.0	0.3					18.0	185.0	1705.	IRREG VAR	--GLU	19.8
STADE/FLBE	29727	67/ 8/25	3	1	0.5	0.5	0.1	0.1					35.0	140.0	1200.	STEADY	-- HK	87.2
GRANBY	29731	67/ 8/29	5	50	2.0	2.2	2.0	2.2					60.0	90.0	1000.	MOON INTERFERENCE	--MPC	67.1
OCEANPORT	29731	67/ 8/29	7	38	1.5	2.0	1.7	2.2					60.0	340.0	900.	VARYING MOON	--MPC	78.7
OCEANPORT	29731	67/ 8/29	7	51	1.0	0.8	0.8	0.8					39.5	288.6	1100.		--GFG	51.0
OCEANPORT	29731	67/ 8/29	7	57	1.0	0.7	0.7	0.7					37.9	48.0	1150.		--GFG	117.0

STATION NAME	MJD.	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
OCEANPORT	29733	67	8	31	7	36	1.0		0.0				21.0	620.0	1550.		--GFG	31.5
GRANBY	29735	67	9	2	6	56	1.5	2.0	1.9	2.4			30.0	70.0	950.	VARYING	--MPC	110.8
GRANBY	29742	67	9	9	1	31	1.5	2.0	1.5	2.0			40.0	190.0	1000.	VARYING MAZE	--MPC	56.5
GRANBY	29746	67	9	13	0	44	1.5	2.0	1.6	2.1			47.0	100.0	950.		--MPC	30.8
GRANBY	29748	67	9	15	0	15	1.0	1.5	1.3	1.8			57.0	165.0	800.		--MPC	60.7
STADE/ELRE	29748	67	9	15	20	23	0.5	1.5	0.6	1.6			50.0	180.0	950.	IRREGULAR VARYING	--HK	46.3
HEIDELBERC	29749	67	9	16	20	10	0.4	2.2	0.8	2.6			59.0	215.0	950.	IRREG VAP	--GLU	69.0
HEIDELBERC	29749	67	9	16	22	4	0.2	2.4	0.6	2.8			61.0	240.0	840.	IRREG VAP	--GLU	56.5
GRANBY	29749	67	9	16	23	45	0.1	0.5	0.6	1.0			65.0	180.0	810.	IRREG VAP	--MPC	76.5
STADE/ELRE	29751	67	9	18	19	43	0.1	1.5	0.2	1.6			50.0	180.0	950.	IRREGULAR VARYING	--HK	55.1
GRANBY	29752	67	9	19	1	10	0.1	0.5	0.7	1.1			75.0	300.0	775.		--MPC	80.3
STADE/ELRE	29753	67	9	20	19	15	0.1	0.5	0.2	0.6			55.0	180.0	940.	FAINT IRREG VAR	--HK	62.3
STADE/ELRE	29753	67	9	20	21	6	0.1	2.5	0.0	2.4			47.0	220.0	1040.	BRIGHT IRREG VARYING	--HK	61.2
HEIDELBERC	29755	67	9	22	18	43	0.2	3.5	0.4	3.7			49.0	230.0	900.	IRREG VAR	--GLU	100.1
STADE/ELRE	29755	67	9	22	20	38	-0.3	0.1	-0.2	0.2			50.0	200.0	950.	IRREG VAR MOST STEADY	--HK	53.9
HEIDELBERC	29755	67	9	22	20	38	-0.4	2.6	-0.4	2.6	9.50		40.0	260.0	1000.	VAR	--GLU	95.1
GRANBY	29756	67	9	23	23	58	0.1	1.0	0.5	1.4			60.0	335.0	920.		--MPC	103.0
GRANBY	29757	67	9	24	1	51	0.1	1.0	0.2	1.1			44.0	307.0	960.	IRREG VAR	--GLU	40.8
HEIDELBERC	29757	67	9	24	18	16	0.4	1.0	0.8	1.4			50.0	110.0	850.	IRREG VAR	--GLU	35.9
HEIDELBERC	29757	67	9	24	20	9	-0.5	1.0	-0.1	1.4			58.0	150.0	850.	STEADY	--HK	85.6
STADE/ELRE	29757	67	9	24	22	0	1.0	1.0	0.1	0.1			25.0	260.0	1540.	IRREG BRIGHT VAR	--GLU	96.5
HEIDELBERC	29758	67	9	25	17	57	0.1	1.8	0.7	2.4	9.73		73.0	240.0	770.	VAR	--GLU	43.1
STADE/ELRE	29758	67	9	25	19	55	-0.4	2.0	-0.0	2.4			59.0	160.0	850.	FAINT VAR MOST STEADY	--GLU	57.7
STADE/ELRE	29760	67	9	27	19	23	0.1	0.5	0.2	0.6			45.0	180.0	940.	STEADY	--HK	82.9
STADE/ELRE	29761	67	9	28	19	7	0.7	2.0	0.9	2.2			45.0	180.0	900.	IRREG VARYING	--HK	61.5
STADE/ELRE	29762	67	9	29	19	52	1.0	2.0	1.2	2.2			42.0	180.0	930.	IRREG VAR CLOUDS	--HK	65.0
STADE/ELPC	29763	67	9	30	19	40	1.0	1.0	-0.1	-0.1			15.0	140.0	1650.	STEADY BUT LOW ALTITUDE	--HK	32.4
OCEANPORT	29764	67	10	1	1	54	1.0		0.0				17.0	290.0			--GFG	125.6
HEIDELBERC	29764	67	10	1	18	20	-0.2	0.3	0.2	0.7			63.0	182.0	830.	IRREG VAP	--GLU	74.6
GRANBY	29764	67	10	1	23	47	1.0	4.0	1.6	4.6			68.0	330.0	750.	VARYING	--MPC	89.7
GRANBY	29765	67	10	2	1	40	1.0	3.0	1.1	3.1			44.0	277.0	935.	VARYING	--MPC	98.7
GRANBY	29765	67	10	2	23	30	1.0	2.0	1.8	2.8			75.0	10.0	705.	VARYING	--MPC	77.6
GRANBY	29766	67	10	3	1	25	1.0	2.5	1.2	2.7			45.0	217.0	920.	VARYING	--MPC	73.7
STADE/ELRE	29766	67	10	3	17	45	0.1	1.0	0.6	1.5			45.0	180.0	900.	VAR	--HK	81.1
GRANBY	29766	67	10	4	1	7	1.5	3.0	1.4	2.9			36.0	255.0	1050.	VARYING	--MPC	105.1
STADE/ELRE	29767	67	10	4	17	29	0.1	1.0	0.6	1.5			45.0	180.0	800.	VAR	--HK	84.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMX	AMN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
HFIDELBERG	39767	67/10/	4	17	30	-0.2	0.8	0.1	1.1	9.70			46.0	124.0	860.	VAR	--GLU	49.6
HEIDELBERG	39767	67/10/	4	20	26	0.6	1.8	0.1	1.3				25.0	193.0	1270.	BRIGHT VAR	--GLU	56.9
GRANBY	39768	67/10/	5	0	51	1.0	3.0	1.0	3.0				37.0	250.0	1020.	VARYING	--MPC	105.6
VAN NUYS-F	39768	67/10/	5	2	39	-0.1	-0.1	0.2	0.2				45.0	0.0	870.		--JGM	83.0
HEIDELBERG	39768	67/10/	5	19	7	1.0	1.8	0.5	1.3				27.0	233.0	1240.	BRIGHT IRREG VAR	--GLU	106.9
GRANBY	39769	67/10/	6	0	35	1.0	3.0	1.0	3.0				38.0	245.0	995.	VARYING	--MPC	106.1
GRANBY	39770	67/10/	7	0	20	1.0	3.0	1.1	3.1				40.0	220.0	975.	VARYING	--MPC	92.8
GRANBY	39771	67/10/	8	0	0	1.0	3.0	1.1	3.1				39.0	220.0	975.	VARYING	--MPC	99.5
GRANBY	39793	67/10/10	8	57	1.5	1.5	2.5	1.0	2.0				35.0	148.0	1250.	VARYING	--MPC	93.4
GRANBY	39799	67/11/	5	8	45	1.5	2.5	1.6	2.6				59.0	80.0	950.	VARYING	--MPC	90.6
GRANBY	39799	67/11/	5	10	34	1.5	2.5	1.0	2.0				35.0	280.0	1280.	VARYING	--MPC	24.7
STADE/ELBE	39801	67/11/	7	4	12	0.5	1.0	0.5	1.0				45.0	180.0	1000.	FAINT IRREG VAR	--HK	74.8
STADE/ELBE	39802	67/11/	8	5	41	0.5	1.0	0.8	1.3				53.0	180.0	880.	FAINT VAR	--HK	93.5
GRANBY	39822	67/11/28	0	20	1.0	2.0	0.6	1.6	1.6				31.0	186.0	1230.	VARYING	--MPC	78.1
GRANBY	39824	67/11/30	1	15	1.0	2.0	0.7	1.7	1.7				35.0	244.0	1140.	VAR	--MPC	95.5
HEIDELBERG	39826	67/12/	2	20	11	0.8	1.3	0.7	1.2				39.0	162.0	1035.	IRREG VAR	--GLU	38.2
GRANBY	39828	67/12/	4	22	32	0.5	1.5	0.9	1.9				49.0	115.0	840.	VAR	--MPC	50.2
GRANBY	39829	67/12/	5	18	28	0.1	0.1	0.0	0.0				70.0	300.0	720.	IRREG VAR	--MPC	74.0
STADE/FLBE	39829	67/12/	5	17	57	0.5	1.5	1.2	2.2				40.0	180.0	1040.	ST	--HK	71.2
GRANBY	39830	67/12/	5	23	59	0.5	1.5	1.2	2.2				64.0	57.0	740.	IRREG VAR	--MPC	39.3
STADE/ELBE	39834	67/12/	6	17	39	0.1	1.5	0.3	0.3				35.0	180.0	1100.	ST HAZE	--HK	80.4
VAN NUYS-F	39837	67/12/13	3	26	0.1	0.5	-0.2	0.2	0.2				30.0	355.0	1170.	VAR	--HK	81.1
VAN NUYS-F	39839	67/12/15	2	15	0.3	0.7	-0.0	0.4	0.4				28.0	357.0	1150.	IRREG VAR	--JGM	72.5
STADE/ELBE	39843	67/12/19	17	55	-1.0	0.1	-0.7	0.4	0.4				35.0	180.0	880.	IRREG VAR	--JGM	70.2
VAN NUYS-F	39844	67/12/20	17	59	-0.3	-0.1	-0.7	0.4	0.6				60.0	10.0	730.	IRREG VAR	--HK	56.6
STADE/ELBE	39844	67/12/20	17	17	-1.0	0.1	-0.8	0.3	0.3				40.0	180.0	900.	IRREG VAR	--JGM	89.1
VAN NUYS-F	39854	67/12/30	1	38	-0.5	-0.5	-0.2	-0.2	-0.2				35.0	240.0	870.	IRREG VAR	--JGM	134.9
STADE/ELBE	39866	68/	1/11	6	1	0.1	1.5	-0.1	1.3				25.0	180.0	1100.	IRREG VAR	--HK	101.4
STADE/ELBE	39867	68/	1/12	5	7	0.1	1.0	0.1	1.0				27.0	180.0	1000.	IRREG VAR	--HK	88.2
GRANBY	39867	68/	1/12	10	26	0.1	0.1	0.9	0.9				65.0	160.0	680.	STEADY	--MPC	84.0
GRANBY	39868	68/	1/12	10	32	2.0	2.5	1.2	1.7				15.0	75.0	1425.	VARYING	--MPC	136.5
STADE/ELBE	39868	68/	1/13	6	3	-0.5	0.1	-0.3	0.3				30.0	180.0	900.	IRREG VAR MOST ST	--HK	99.9
GRANBY	39868	68/	1/13	9	34	0.1	1.0	0.6	1.5				44.0	145.0	785.	VARYING	--MPC	92.4
GRANBY	39882	68/	1/27	9	40	-1.0	0.1	-0.1	1.0				75.0	359.0	675.	VARYING	--MPC	63.0
STPETERSBURG	39899	68/	2/13	1	27	1.0	1.0	3.0	3.0				29.1	232.3	400.		--FK	96.4
STPETERSBURG	39900	68/	2/14	0	2	1.0	1.0	3.0	3.0				28.2	260.6	400.		--FK	141.9

STATION NAME	WJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	39902	68/	2/	16	1	2	1.0	1.0	0.0	0.0			21.6	342.6			--FK	94.2
GRANBY	39905	68/	2/	19	0	30	-1.0	-0.5	-0.5	0.0			60.0	0.0	790.	VA	--MPC	72.4
GRANBY	39905	68/	2/	19	2	15	0.1	0.5	-0.2	0.2			30.0	290.0	1150.	VA	--MPC	107.4
GRANBY	39906	68/	2/	20	0	57	-1.0	0.1	-0.4	0.7			66.0	0.0	745.	VA	--MPC	68.5
STADE/ELRE	39906	68/	2/	20	18	20	1.0	3.0	0.5	2.5			30.0	140.0	1250.	IRREG VAR	--HK	46.0
STADE/ELRE	39906	68/	2/	20	20	8	0.1	1.0	0.1	1.0			50.0	140.0	1000.	IRREG VAR	--HK	26.3
STADE/ELRE	39910	68/	2/	24	18	2	0.1	2.0	0.7	2.6			50.0	180.0	750.	IRREG VAR	--HK	81.3
STADE/ELRE	39911	68/	2/	25	18	23	0.1	2.0	0.6	2.5			45.0	180.0	800.	IRREG VAR	--HK	76.9
GRANBY	39911	68/	2/	25	23	41	-1.0	0.5	-0.3	1.2			62.0	33.0	725.	VARYING	--MPC	63.1
HEIDELBERC	39912	68/	2/	26	18	44	0.2	1.4	0.8	2.0			56.0	211.0	750.	IRREG VAR	--GLU	88.3
HEIDELBERC	39913	68/	2/	27	19	2	0.1	1.8	0.1	1.8			35.0	248.0	590.	IRREG VAR	--GLU	116.8
VAN NUYS-F	39910	68/	2/	24	4	14	-0.1	-0.1	-0.0	-0.0			40.0	0.0	570.		--JGM	77.1
HEIDELBERC	39914	68/	2/	28	17	35	-0.2	1.8	0.4	2.4			56.0	150.0	750.	IRREG VAR	--GLU	71.9
HEIDELBERC	39914	68/	2/	28	19	23	0.2	0.5	5.1	5.4			33.0	212.0	106.	FAINT IRREG VAR	--GLU	90.4
HEIDELBERC	39916	68/	3/	1	18	9	-0.8	-0.2	-0.8	-0.2			39.0	179.0	980.	IRREG VAR	--GLU	81.7
STADE/ELRE	39917	68/	3/	2	18	22	1.0	2.0	0.3	1.3			20.0	220.0	1400.	IRREG VAR	--HK	116.3
STPETERSBURG	39921	68/	3/	6	0	19	-0.5	-0.5	0.0	0.0			56.7	135.2			--FK	57.9
STPETERSBURG	39924	68/	3/	9	0	54	0.1	0.1	0.0	0.0			16.2	207.1			--FK	105.3
STADE/ELRE	39940	68/	3/	25	3	29	0.5	0.5	-0.1	-0.1			11.0	140.0	1300.	ST	--HK	100.5
STADE/ELRE	39940	68/	3/	25	3	29	0.5	0.5	-0.7	-0.7			11.0	140.0	1700.	ST	--HK	100.5
STADE/ELRE	39945	68/	3/	30	3	15	1.0	1.0	-0.0	-0.0			25.0	180.0	1600.	ST	--HK	57.0
STADE/ELRE	39954	68/	4/	8	1	42	-0.5	0.1	-0.0	0.6			40.0	140.0	800.	IRREG VAR MOST ST	--HK	66.4
STADE/ELRE	39954	68/	4/	8	3	26	-1.0	-1.0	-0.5	-0.5			43.0	180.0	790.	ST	--HK	61.9
STADE/ELRE	39955	68/	4/	9	3	13	-1.0	-1.0	-0.5	-0.5			40.0	180.0	800.	ST	--HK	58.3
STADE/ELRE	39956	68/	4/	10	2	59	-1.0	-1.0	-0.5	-0.5			42.0	180.0	780.	ST	--HK	55.4
STADE/ELRE	39960	68/	4/	14	1	49	-0.5	-0.5	-0.0	-0.0			35.0	180.0	900.	ST	--HK	37.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39963	68	4	17	3	55	-0.1	1.5	1.1	2.7	9.25		70.0	170.0	590.		--JGM	60.7
STPETERSBURG	39963	68	4	17	2	15	-1.0	-1.0	0.0	0.0			42.0	323.0			--FK	106.2
HEIDELBERG	39963	68	4	17	20	54	0.1	3.8	0.2	3.9			33.0	206.0	935.	IRREG VAR	--GLU	59.0
STPETERSBURG	39965	68	4	19	1	30	-1.0	-1.0	0.0	0.0			41.0	319.0			--FK	115.0
VAN NUYS-F	39965	68	4	19	3	11	-0.7	-0.2	0.5	1.0			64.0	147.0	570.		--JGM	60.3
STADE/ELBE	39965	68	4	19	20	13	1.0	1.0	1.5	1.5			25.0	140.0	800.	ST HAZE	--HK	13.3
STADE/ELBE	39965	68	4	19	21	55	0.5	0.5	1.4	1.4			40.0	220.0	670.	ST	--HK	55.4
HEIDELBERG	39966	68	4	20	19	45	-1.5	0.9	-1.0	1.4			39.0	189.0	800.	IRREG VAR	--GLU	62.0
STADE/ELBE	39966	68	4	20	21	30	-0.5	-0.5	0.3	0.3			45.0	220.0	700.	ST	--HK	61.0
HEIDELBERG	39966	68	4	20	21	33	-1.0	0.8	-0.7	1.1			36.0	246.0	870.	IRREG VAR	--GLU	80.5
HEIDELBERG	39967	68	4	21	19	27	-1.2	1.0	-0.9	1.3			29.0	200.0	860.	IRREG VAR	--GLU	76.4
STADE/ELBE	39967	68	4	21	21	5	-0.5	-0.5	0.3	0.3			45.0	220.0	700.	ST	--HK	66.7
HEIDELBERG	39967	68	4	21	21	11	-1.7	0.8	-0.7	1.8			50.0	108.0	640.	IRREG VAR	--GLU	40.2
VAN NUYS-F	39968	68	4	22	3	41	1.0	1.0	0.8	0.8			20.0	100.0	1120.		--JGM	16.3
HEIDELBERG	39968	68	4	22	5	32	0.5	0.5	0.3	0.3			23.0	0.0	1100.	IRREG VAR	--JGM	111.2
VAN NUYS-F	39968	68	4	22	20	40	-1.5	0.5	-0.4	1.6			51.0	236.0	615.		--GLU	80.8
HEIDELBERG	39969	68	4	23	3	19	-0.2	-0.2	0.5	0.5			40.0	0.0	740.	IRREG VAR	--JGM	100.2
STADE/ELBE	39970	68	4	24	19	45	0.1	1.0	0.5	1.4			40.0	180.0	940.	IRREG VAR	--HK	55.9
STADE/ELBE	39972	68	4	26	20	30	0.1	0.5	0.5	0.9			43.0	220.0	830.	FAINT VAR	--HK	75.3
HEIDELBERG	39973	68	4	27	19	58	-1.7	-0.4	-0.4	0.9			68.0	223.0	545.	IRREG VAR	--GLU	80.0
HEIDELBERG	39974	68	4	28	19	27	-1.7	-1.0	-0.3	0.4			73.0	177.0	530.	IRREG VAR	--GLU	72.4
HEIDELBERG	39974	68	4	28	21	11	-1.0	0.1	-1.6	-0.5			39.0	105.0	1340.	IRREG VAR	--GLU	40.0

STATION NAME	50	60	60 DATA 2		ROCKET BODY			USA	LAUNCHED 60/ 8/12		IN ORBIT		COMMENTS	OBS	PHASE
			PERIOD =		H	M	MAX		MIN	AMAX	AMIN	PERIOD			
			Y	M	D	H	M								
STPETERSBURG	38487	64/ 4/ 2	1	46	9.0	9.0	10.0	9.1	55.0	12.9	952.	MIN INVISIBLE. TP EST .5 SEC--	FK	73.6	
STPETERSBURG	38489	64/ 4/ 4	0	55	9.0	10.0	10.0	9.0	77.5	334.4	990.	TP ABOUT .5 SEC	FK	83.3	
KANSAS-E	38585	64/ 7/ 9	5	56	7.0	10.0	6.8	9.8	6.80	0.02	83.0	DOUBLE FLASH EVERY 6.8S, FLASHES 0.3S APART	SS	66.3	
													SS		
SAN ANTONIO	38591	64/ 7/15	5	27	7.0	7.0	6.8	6.8	72.6	0.0	1085.	ST	PM	70.4	
SAN ANTONIO	38601	64/ 7/25	3	17	8.0	8.0	7.8	7.8	72.4	180.0	1085.	ST	PM	59.2	
SAN ANTONIO	38602	64/ 7/26	3	1	8.0	8.0	7.9	7.9	80.9	260.0	1050.	ST	PM	77.5	
CURBAN B	38618	64/ 8/11	18	39	9.0	10.0	8.5	9.5	50.0	266.0	1250.	FAINT AND 'TWINKLING'	GR	88.5	
CURBAN B	38622	64/ 8/15	17	4	1.0	1.0	0.6	0.6	61.0	145.0	1200.	VERY RAPID FLICKER	GR	53.4	
ADELAIDE-2	38632	64/ 8/25	9	14	7.5	10.0	7.1	9.6	45.0	164.0	1200.	FAST BLINK	ACB	62.0	
DURBAN B	38914	65/ 6/ 3	17	37	8.5	8.5	8.1	8.1	54.0	267.0	1200.	SCINTILLATING	GR	92.9	
DURBAN B	38917	65/ 6/ 6	16	24	8.5	8.3	8.3	8.3	76.0	265.0	1100.	SCINTILLATING	AA	85.9	
PHOENIX R	39277	66/ 6/ 1	5	18	9.0	9.0	8.7	8.7	63.3	330.0	1130.	MIN INVISIBLE	RR	90.0	
STPETERSBURG	39295	66/ 6/19	4	19	9.0	10.0	8.6	9.6	57.0	6.0	1200.	MEASURED	FJK	84.5	
PHOENIX R	39297	66/ 6/21	5	29	6.0	6.0	5.8	5.8	70.5	67.7	1075.	RR	62.6		
PHOENIX R	39375	66/ 9/ 7	3	16	8.0	8.0	7.6	7.6	50.4	318.6	1190.	RAPID TUMBLE	RR	106.8	
PHOENIX R	39389	66/ 9/21	3	40	9.0	9.0	8.7	8.7	53.6	33.5	1130.	MIN INV	RR	61.2	
STPETERSBURG	39402	66/10/ 4	0	34	8.0	8.0	9.0	9.0	75.0	40.4	1000.	FAST TUMBLE	FK	57.9	
STPETERSBURG	39460	66/12/ 1	0	8	7.0	7.0	7.0	7.0	70.2	155.8	980.	CLOCKED	FK	65.7	
PHOENIX R	39460	66/12/ 1	2	6	8.0	8.0	8.0	8.0	67.7	58.2	1000.	MIN IN: RAPID TP	FK	53.5	
STPETERSBURG	39460	66/12/ 1	23	44	7.0	9.0	9.0	9.0	50.2	148.0	1200.	MIN INV	RR	46.5	
PHOENIX R	39462	66/12/ 3	3	22	8.0	8.0	7.7	7.7	88.5	326.0	1040.	RAPID TP	RR	56.6	
STPETERSBURG	39535	67/ 2/18	1	34	9.0	9.0	8.6	8.6	74.0	47.5	1100.	MIN INV	RR	89.6	
PHOENIX R	39543	67/ 2/22	4	0	8.0	8.0	7.9	7.9	53.6	322.8	1210.	STEADY	RR	88.8	
STPETERSBURG	39547	67/ 2/26	0	23	9.0	10.0	8.8	8.8	60.4	330.8	1160.	MIN INV	RR	80.3	
PHOENIX R	39545	67/ 2/28	3	37	9.0	8.0	8.0	7.7	40.5	0.4	1200.	STEADY	RR	23.2	
PHOENIX R	39551	67/ 3/ 2	2	48	8.0	8.0	8.0	7.7	47.5	130.2	1270.	MIN INV	RR	64.7	
STPETERSBURG	39552	67/ 3/ 3	0	26	10.0	10.0	9.6	9.6	73.0	49.1	1100.	VARYING TO INV REG. M-17 USE	FK	72.9	
PHOENIX R	39624	67/ 5/14	4	40	9.0	9.0	8.5	8.5	70.0	30.0	990.	FLASHING MIN INV SHORT ORS	FK	51.3	
STPETERSBURG	39651	67/ 6/10	4	8	9.0	9.0	8.9	8.9	51.0	230.0	1200.	MIN INV, ONE FLASH AT 7.8	FK	73.1	
STPETERSBURG	39654	67/ 6/13	2	55	8.0	8.0	7.8	7.8	70.0	8.0	1100.	MIN INV	FK	60.8	
GRANBY	39736	67/ 9/ 3	1	2	9.0	9.0	9.0	9.0	85.0	325.0	1050.	MIN INV	FK	60.8	
STADE/ELKE	39790	67/10/27	4	44	8.5	8.5	8.1	8.1	0.50	0.50	0.50				
GRANBY	39793	67/10/30	9	29	8.3	8.3	8.1	8.1	0.50	0.50	0.50				
GRANBY	39799	67/11/ 5	9	5	8.3	8.3	8.2	8.2	0.50	0.50	0.50				

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	39814	67/11/20			0	43	9.0		0.0		0.50		50.6	316.9			--FK	87.7
STPETERSBURG	39815	67/11/21			23	54	9.0		0.0		0.50		58.7	316.0			--FK	89.9
GRANBY	39821	67/11/27			0	C	8.3		8.2		0.50		70.0	338.0	1050.	MIN. INV.	--MPC	69.1
GRANBY	39823	67/11/29			22	46	8.3		8.2		0.50		76.0	328.0	1025.	MIN INV	--MPC	78.9
STPETERSBURG	39839	67/12/15			0	54	8.5		0.0		1.00		76.7	311.6			--FK	68.9
STPETERSBURG	39841	67/12/17			23	42	9.0	10.0	0.0	0.0	0.75		70.7	64.0			--FK	57.0
GRANBY	39867	68/ 1/12			10	56	8.2		8.2		0.50		76.0	9.0	1005.	FLASHING, MIN INV, UNEQUAL MAX	--MPC	73.9
STPETERSBURG	39902	68/ 2/16			0	34	9.0		0.0		0.50		30.0	349.0	1648.		--FK	87.4
AUSTIN	39907	68/ 2/21			2	39	9.5	9.5	8.4	8.4			66.0	25.0	1125.	FLASHING MIN INV	--MPC	61.8
GRANBY	39912	68/ 2/26			0	42	8.0		7.7				30.0	8.0	1662.		--MM	74.9
AUSTIN	39913	68/ 2/27			2	17	9.5		8.4									

SDC NC. 51 60 ICIA 3 HEMISPHERE USA LAUNCHED 60/ 8/12 IN ORBIT
PERIOD = 118.2 PERIGEE = 946.3 APOGEE = 1043.9 INCL = 47.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
AUSTIN	39907	68/ 2/21			3	14	9.0	9.0	8.2	8.2			41.0	337.0	1422.		--MM	85.7

SDC NC. 53 60 ICIA 5 HEMISPHERE USA LAUNCHED 60/ 8/12 IN ORBIT
PERIOD = 118.9 PERIGEE = 958.2 APOGEE = 1042.7 INCL = 47.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
AUSTIN	39907	68/ 2/21			2	18	10.0	10.0	9.0	9.0			32.0	130.0	1601.		--MM	33.8

SDC NC. 58 60 NU 1 COURIER 18 USA LAUNCHED 60/10/ 4 IN ORBIT ACTIVE
 PERIOD = 106.9 PERIGEE = 597.8 APOGEE = 756.2 INCL = 28.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--GSS	PHASE
DURBAN B	38957	65/	7/	16	17	21	7.5	7.3					40.0	8.0	1100.	SCINTILLATING-IRREGULARLY	--GR	74.6
DURBAN B	38958	65/	7/	17	16	24	9.0	9.1					46.0	303.0	950.	SCINTILLATING	--AA	117.2
AUSTIN	39925	66/	3/	10	2	38	7.5	8.0	8.1	8.6			59.0	165.0	763.		--MM	53.3

SDC NC. 59 60 NU 2 ROCKET BODY USA LAUNCHED 60/10/ 4 IN ORBIT
 PERIOD = 106.4 PERIGEE = 572.3 APOGEE = 754.3 INCL = 28.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	38495	64/	4/	10	1	37	3.0	8.0	3.6	8.6			70.8	194.3	755.	TP ABOUT 3 SEC	--FK	65.6
STADE/ELBE	39396	66/	5/	28	19	8	5.5	5.5	5.5	5.5			15.0	180.0	1000.	STEADY NO PREDICTION	--HK	64.2

SDC NC. 63 60 PT 1 TIRCS 2 USA LAUNCHED 60/11/23 IN ORBIT SILENT
 PERIOD = 98.2 PERIGEE = 387.7 APOGEE = 451.1 INCL = 48.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--GSS	PHASE
KANSAS-E	38582	64/	7/	6	3	45	5.0	9.0	7.0	11.0			78.0	30.0	400.	LONG TP, TRACKED 2 MINUTES	--SS	76.7
KANSAS-E	38583	64/	7/	7	4	19	8.0	8.0	9.3	9.3			43.0	219.0	550.	TRACKED 11 SECONDS	--SS	60.8
WALNUT CREEK	38583	64/	7/	7	5	57	8.0		9.7				57.4	217.0	450.	STEADY	--DFC	61.7
WALNUT CREEK	38584	64/	7/	8	4	49	7.0		8.9				70.0	30.5	410.	STEADY	--DFC	82.0
DURBAN B	38944	65/	7/	3	16	24	7.0		8.6				77.0	103.0	480.	FADDED OUT	--AA	61.0

SDC NC.	70	61	ALPHA 1	PERIOD =	SANOS 2	USA	LAUNCHED 61/ 1/31	IN ORBIT SILENT	IMCL = 97.4	APGEE =	341.1	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
WALNUT CREEK	38573	64/	6/27		0	35	8.0		8.5				19.9	51.6	796.	STEADY	93.8
STADE/ELRE	38881	65/	5/ 1	22	3	4.0	4.0	4.0	6.2	6.2			65.0	100.0	356.	STEADY	60.3
STADE/ELRE	38930	65/	6/19	22	30	4.0	4.0	4.0	6.2	6.2			55.0	260.0	360.	STEADY	81.5
STADE/ELRE	38940	65/	6/29	22	32	3.0	3.0	3.0	5.0	5.0			55.0	260.0	390.	STEADY	81.4
STADE/ELRE	38949	65/	7/ 8	21	16	5.5	5.5	5.5	6.4	6.4			25.0	100.0	670.	STEADY	49.8
STADE/ELRE	38950	65/	7/ 9	22	33	3.5	3.5	3.5	5.6	5.6			55.0	260.0	380.	STEADY	80.9
STADE/ELRE	38958	65/	7/17	21	37	4.5	7.5	6.0	9.0	9.0			40.0	100.0	490.	STEADY AND SLOWLY FADING	95.0
STADE/ELRE	38971	65/	7/30	22	17	3.5	9.0	5.8	11.3	11.3			80.0	260.0	340.	STEADY FADING	75.2
STADE/ELRE	38972	65/	7/31	21	58	3.0	6.0	5.2	8.2	8.2			67.0	100.0	370.	STEADY WITH SLOWLY FADING	63.3
STADE/ELRE	38974	65/	8/ 2	21	22	5.0	5.0	6.1	6.1	6.1			30.0	100.0	610.	STEADY	48.0
STADE/ELRE	38976	65/	8/ 4	22	17	3.0	3.0	5.3	5.3	5.3			77.0	260.0	350.	STEADY	74.5
STADE/ELRE	38981	65/	8/ 9	22	17	3.0	3.0	5.3	5.3	5.3			77.0	260.0	350.	STEADY	73.2
STADE/ELRE	38983	65/	8/11	21	41	4.0	4.0	6.0	6.0	6.0			47.0	100.0	400.	STEADY	52.3
STADE/ELRE	38986	65/	8/14	22	18	4.5	4.5	6.9	6.9	6.9			76.0	260.0	325.	STEADY	71.9
STADE/ELRE	39240	66/	4/25	22	16	5.0	9.0	7.2	11.2	11.2			62.0	260.0	355.	VERY SLOWLY TUMBLING	74.0
STADE/ELRE	39241	66/	4/26	21	56	3.5	3.5	5.9	5.9	5.9			77.0	100.0	325.	STEADY	63.1
STADE/ELRE	39244	66/	4/29	20	59	5.0	5.0	5.6	5.6	5.6			20.0	100.0	750.	STEADY	42.7
HEIDELBERG	39244	66/	4/29	22	34	6.6	6.6	7.1	7.1	7.1			18.0	332.0	784.	STEADY	134.4
STADE/ELRE	39244	66/	4/29	22	34	3.5	3.5	5.2	5.2	5.2			42.0	260.0	450.	STEADY	77.3
STADE/ELRE	39245	66/	4/30	22	14	3.5	3.5	5.9	5.9	5.9			70.0	260.0	330.	STEADY	73.4
HEIDELBERG	39245	66/	4/30	22	15	6.0	6.0	7.1	7.1	7.1			27.0	346.0	610.	STEADY	128.8
HEIDELBERG	39246	66/	5/ 1	21	57	5.8	5.8	7.0	7.0	7.0			28.0	8.0	588.	STEADY	121.4
HEIDELBERG	39247	66/	5/ 2	21	35	6.7	6.7	7.7	7.7	7.7			26.0	35.0	619.	STEADY	103.2
STADE/ELRE	39253	66/	5/ 8	21	14	5.0	5.0	6.0	6.0	6.0			25.0	100.0	632.	STEADY	47.4
STADE/ELRE	39257	66/	5/12	21	33	5.5	9.0	7.2	10.7	10.7			40.0	100.0	454.	SLOWLY VARYING OR FLASHING	53.3
HEIDELBERG	39258	66/	5/13	22	46	3.8	3.8	5.3	5.3	5.3			34.0	278.0	511.	STEADY	91.1
HEIDELBERG	39259	66/	5/14	22	26	3.0	3.0	5.2	5.2	5.2			57.0	284.0	358.	STEADY	86.6
HEIDELBERG	39260	66/	5/15	22	7	3.2	3.2	5.7	5.7	5.7			78.0	47.0	311.	STEADY	75.6
STADE/ELRE	39260	66/	5/15	22	9	4.0	9.0	6.4	11.4	11.4			77.0	260.0	330.	SLOWLY FADING	76.0
HEIDELBERG	39261	66/	5/16	21	48	3.5	3.5	5.3	5.3	5.3			48.0	80.0	432.	STEADY	67.7
HEIDELBERG	39262	66/	5/17	21	29	5.0	5.0	6.1	6.1	6.1			31.0	82.0	591.	STEADY	64.9
HEIDELBERG	39277	66/	6/ 1	21	23	5.2	5.2	6.2	6.2	6.2			27.0	82.0	643.	STEADY	65.8
HEIDELBERG	39283	66/	6/ 7	21	2	5.5	5.5	5.8	5.8	5.8			17.0	81.0	877.	STEADY	64.0
STADE/ELRE	39285	66/	6/ 9	21	58	4.0	4.0	6.4	6.4	6.4			85.0	100.0	333.	STEADY	76.2
STADE/ELRE	39300	66/	6/24	21	52	4.0	4.0	6.3	6.3	6.3			70.0	100.0	344.	STEADY	69.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29309	66/	7/	3	22	6	3.5	3.5	5.9	5.9			85.0	260.0	326.	STEADY	-- HK	79.3
STADE/ELBE	29334	66/	7/28	21	52		3.0	3.0	5.5	5.5			72.0	100.0	314.	STEADY	-- HK	66.2
STADE/ELBE	29337	66/	7/31	20	54		7.0	7.0	7.4	7.4			15.0	100.0	850.	STEADY	-- HK	41.9
STADE/ELPE	29613	67/	5/	3	20	54	8.0	8.0	9.1	9.1			21.0	100.0	600.	STEADY	-- HK	42.4
STADE/ELPE	29615	67/	5/	5	21	46	2.7	9.0	5.0	11.3			79.0	100.0	350.	SLOWLY VARYING FADING	-- HK	66.8
STADE/ELPE	29620	67/	5/10	21	33		7.0	7.0	8.7	8.7			53.0	100.0	450.	STEADY BUT SLOWLY FADING	-- HK	56.5
STADE/ELPE	29637	67/	5/27	21	45		4.0	6.0	6.2	8.2			75.0	100.0	370.	STEADY AND SLOWLY FADING	-- HK	69.9
STADE/ELBE	29642	67/	6/	1	21	31	5.0	9.0	6.7	10.7			53.0	100.0	450.	SLOWLY FLASHING	-- HK	60.5
STADE/ELPE	29646	67/	6/	5	21	39	3.5	3.5	5.8	5.8			57.0	100.0	345.	STEADY	-- HK	66.4
STADE/ELPE	29649	67/	6/	8	22	9	3.8	3.8	5.9	5.9			72.0	260.0	322.	STEADY BUT SLOW FADE	-- HK	83.7
STADE/ELPE	29671	67/	6/30	22	2		3.7	3.7	6.2	6.2			69.0	270.0	340.	STEADY	-- GLU	82.3
HEIDELBERG	29675	67/	7/	4	22	9	3.2	3.2	5.5	5.5			85.0	100.0	330.	STEADY	-- GLU	76.6
STADE/ELBE	29676	67/	7/	5	21	47	5.0	5.0	7.4	7.4			37.0	100.0	500.	STEADY	-- GLU	51.3
HEIDELBERG	29677	67/	7/	6	21	25	4.8	4.8	6.3	6.3			44.0	100.0	450.	STEADY	-- GLU	53.6
HEIDELBERG	29681	67/	7/10	21	33		5.0	5.0	6.7	6.7			48.0	260.0	450.	STEADY	-- GLU	81.5
HEIDELBERG	29683	67/	7/12	22	23		5.2	5.2	6.9	6.9			69.0	280.0	350.	STEADY	-- GLU	84.2
HEIDELBERG	29688	67/	7/17	22	8		4.8	4.8	7.1	7.1			37.0	100.0	510.	STEADY	-- GLU	49.5
HEIDELBERG	29690	67/	7/19	21	25		5.4	5.4	6.9	6.9			30.0	260.0	550.	SLOWLY FLASHING	-- HK	84.4
STADE/ELBE	29691	67/	7/20	22	38		6.5	9.0	7.8	10.3			58.0	260.0	370.	STEADY	-- GLU	79.3
HEIDELBERG	29692	67/	7/21	22	15		4.5	4.5	6.7	6.7			84.0	260.0	325.	STEADY LATER SLOW FADE	-- HK	78.0
STADE/ELBE	29693	67/	7/22	21	54		2.5	2.5	4.9	4.9			35.0	100.0	535.	STEADY	-- HK	49.1
STADE/ELBE	29695	67/	7/24	21	10		4.8	4.8	6.2	6.2			70.0	285.0	330.	STEADY	-- GLU	82.9
HEIDELBERG	29701	67/	7/30	22	7		3.0	3.0	5.4	5.4			55.0	100.0	390.	STEADY	-- HK	55.8
STADE/ELBE	29707	67/	8/	5	21	30	2.0	2.0	4.0	4.0			14.0	24.0	910.	ST	-- GLU	109.7
HEIDELBERG	29966	68/	4/20	21	0		7.4	7.4	7.6	7.6			45.0	100.0	430.	ST BIG HAZE	-- HK	54.3
STADE/ELBE	29995	68/	5/19	21	15		4.5	4.5	6.3	6.3			89.0	100.0	330.	ST CLOUDS	-- HK	71.8
STADE/ELPE	29979	68/	5/	2	21	45	3.5	3.5	5.9	5.9								

SDC NC. 79 61 ALPHA 2 METAL OBJECT USA LAUNCHED 61/ 1/31 IN ORBIT
PERIOD = 94.8 PERIGEE = 289.6 APOGEE = 340.5 INCL = 97.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
MADISON	38194	63/	6/	14	6	4	8.0	0.0					19.2	292.8		STEADY	--JDR	100.4
NEWBERG	38206	63/	6/	26	7	5	6.0	9.0	7.8	10.8			40.8	85.3	440.	FLASHED IRREG DIS AFTER 10 S	--AMH	68.3
NEWBERG	38206	63/	6/	26	7	5	7.5	9.3					40.8	85.3	440.	STDY 1ST, LATER FLICKERED FOR 1/2MIN THEN DISAPPEARED SUDDENLY	--AMH	68.3
NEWBERG	38207	63/	6/	27	6	46	8.0	8.0	9.0	9.0			24.2	84.6	638.	STD THRU FIELD, NCT FOLLOWED	--JSH	68.3
SACRAMENTO	38207	63/	6/	27	6	46	4.5	8.0	5.1	8.6			19.1	43.0	770.	IRREGULAR TUMBLE	--BB	103.8
SACRAMENTO	38220	63/	7/	10	7	26	9.0	10.1					28.0	357.0	590.	IRREGULAR TUMBLE, SUDDENLY DISAPPEARED AFTER 2 MINUTES	--BB	123.2
ROCHESTER	38566	64/	6/	20	4	12	7.0	7.0	9.0	9.0			59.5	78.0	390.	STEADY	--REJ	69.8
KANSAS-E	38566	64/	6/	20	5	46	10.0	11.5					39.0	334.0	506.		--SS	112.0
STADE/ELBE	38937	65/	6/	26	22	8	8.0	8.5	10.4	10.9			65.0	100.0	335.	STEADY OCASS FAINT VARYING	--HK	68.2
STADE/ELBE	38974	65/	8/	2	22	20	7.0	8.5	9.3	10.8			86.0	100.0	340.	STEADY WITH SLOWLY FADING	--HK	70.9
STADE/ELBE	39676	67/	7/	5	22	47	8.5	10.0					40.0	264.0	491.	VARYING SHORT OBS	--HK	84.1

SDC NC. 107 61 NU 1 EXPLORER 11 USA LAUNCHED 61/ 2/27 IN ORBIT
PERIOD = 107.8 PERIGEE = 296.4 APOGEE = 1112.3 INCL = 28.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
TOWNSVILLE	38623	64/	8/	16	9	33	10.0	10.1					43.5	172.0	957.	SLIGHT VARIATION.VERY RAPID	--NOB	64.1
TOWNSVILLE	38675	64/	8/	18	10	8	8.0	9.0	8.5	9.5	1.50		64.4	163.0	802.	TUMBLE PERIOD APPROXIMATE	--APS	53.9

SOC NC. 116 61 CMICRON 1 TRANSIT 4A USA LAUNCHED 61/ 6/29 IN ORBIT
 PERIOD = 103.8 PERIGEE = 544.9 APOGEE = 622.0 INCL = 66.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELRE	28949	65/ 7/ 8	22	18	6.5	8.0	7.5	9.0	75.0	55.0	630.					STEADY AND IRREGULAR VAR	-- HK	82.6
STADE/ELRE	29240	66/ 4/25	20	31	8.0	8.8	8.8		55.0	135.0	695.					STEADY WITH SCINTILLATE	-- HK	41.0
STADE/ELRE	29375	66/ 5/ 7	21	59	6.7	6.7	7.8	7.8	78.0	220.0	591.					STEADY	-- HK	57.1
STADE/ELRE	29560	67/ 3/11	20	15	7.5	8.4	8.4		83.0	140.0	650.					STEADY	-- HK	57.3
STADE/ELRE	29565	67/ 3/16	19	40	8.5	9.0	9.1	9.6	72.0	310.0	750.					STEADY DCASS FAINT VARYING	-- HK	87.5
MEDELAERC	29773	67/10/10	20	10	8.5	8.5	9.4	9.4	62.0	281.0	650.					STEADY	--GLU	83.7
MEDELAERC	29774	67/10/11	18	39	8.6	8.6	9.1	9.1	43.0	110.0	800.					STEADY	--GLU	24.5
STADE/ELRE	29910	68/ 2/24	19	43	8.5	8.5	9.3	9.3	74.0	55.0	690.					ST	-- HK	55.6

SOC NC. 117 61 CMICRON 2 SR-3-INJUN USA LAUNCHED 61/ 6/29 IN ORBIT
 PERIOD = 103.8 PERIGEE = 545.6 APOGEE = 622.0 INCL = 66.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELRE	29240	66/ 4/25	21	9	7.0	9.0	8.1	10.1	4.00	86.0	135.0	600.				SLOWLY FLASHING OR VARYING	-- HK	68.5
STADE/ELRE	29339	66/ 8/ 2	23	6	8.0	9.0	8.5	9.5	40.0	35.0	801.					VARYING	-- HK	110.3
STADE/ELRE	29564	67/ 3/15	19	9	7.0	9.0	7.8	9.8	70.0	140.0	700.					SLOWLY VARYING	-- HK	57.2

SOC NC. 118 61 SIGMA 1 MICAS 3 USA LAUNCHED 61/ 7/12 IN ORBIT
 PERIOD = 161.5 PERIGEE = 2113.3 APOGEE = 2168.6 INCL = 91.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELRE	28461	64/ 2/ 7	19	42	2.0		-0.2		3.50	0.40	42.0	310.0	2750.			BRIGHT FLASHES DOUBLE MAX	-- HK	113.7
STADE/ELRE	28462	64/ 3/ 8	19	55	2.5		0.3		3.80	0.40	40.0	310.0	2800.			BRIGHT TRIPLE FLASHES	-- HK	114.8
STADE/ELRE	28467	64/ 3/13	18	25	5.0		3.1		3.60		62.0	260.0	2400.			TRIPLE FLASHES	-- HK	106.4
STADE/ELRE	28468	64/ 3/14	18	29	5.0		3.1		3.50		60.0	260.0	2430.			DOUBLE FLASHES	-- HK	106.0
SAN ANTONIO	28587	64/ 7/11	5	51	8.5	5.0	3.3	6.8	80.4	91.0	2156.					REG VAR	-- PM	53.3
SAN ANTONIO	28588	64/ 7/12	5	5	5.0	5.0	3.4	6.9	88.7	262.9	2136.					REG VAR	-- PM	56.7
SAN ANTONIO	28589	64/ 7/13	5	19	5.0	5.0	3.3		77.9	269.2	2166.					MOST MAX +6	-- PM	60.1
SAN ANTONIO	28590	64/ 7/14	5	32	4.5		2.7		4.30		67.5	269.6	2244.			MOST MAX +6	-- PM	63.6

STATION NAME	MJC	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38591	64/	7/15		3	3	6.0	8.5	3.6	6.1	4.00		32.8	90.1	2962.	REG VAR	--	PM 37.4
SAN ANTONIO	38591	64/	7/15		5	46	4.0		2.1				57.9	269.7	2364.	MOST MAX 6.5	--	PM 66.4
SAN ANTONIO	38592	64/	7/16		3	18	5.5	8.5	3.3	6.3			40.2	90.1	2752.	MOST MAX 6.5	--	PM 39.9
SAN ANTONIO	38593	64/	7/17		3	32	8.0	9.0	0.0	7.0	4.29		48.5	90.2	2532.	MOST MAX 6.5	--	PM 42.7
SAN ANTONIO	38594	64/	7/17		6	13	4.2		2.0		4.30		41.0	269.9	2710.		--	PM 70.7
SAN ANTONIO	38594	64/	7/18		3	46	6.5	9.0	4.6	7.1	4.35		57.6	90.3	2366.	MOST MAX 6.5	--	PM 46.0
SAN ANTONIO	38594	64/	7/18		6	26	5.5	9.0	3.2	6.7	4.33		33.8	269.9	2923.	MOST MAX 6.5	--	PM 72.2
SAN ANTONIO	38595	64/	7/19		4	0	6.2	9.0	4.4	7.2	4.30		67.4	90.4	2240.	MOST MAX 8.0, REG VAR	--	PM 49.8
SAN ANTONIO	38597	64/	7/21		4	28	5.0	9.0	3.4	7.4			88.8	98.2	2128.	MOST MAX 7.0	--	PM 58.4
SAN ANTONIO	38598	64/	7/22		4	41	5.5	9.0	3.8	7.3			91.0	269.8	2148.	MOST MAX +7	--	PM 62.7
SAN ANTONIO	38599	64/	7/23		4	55	5.5		3.8				70.5	269.9	2205.	MOST MAX 6.5	--	PM 66.9
SAN ANTONIO	38600	64/	7/24		5	8	6.0		4.2		4.30		60.5	268.9	2304.		--	PM 70.5
SAN ANTONIO		64/	7/25		5	21	7.0		5.0				50.7	277.0	2490.	REG VAR	--	PM 77.8
SAN ANTONIO		64/	7/26		5	34	7.0		4.9				42.6	279.4	2671.	REG VAR	--	PM 82.1
SAN ANTONIO		64/	7/27		5	48	6.0		3.7				35.3	281.9	2876.	REG VAR	--	PM 85.8
SAN ANTONIO		64/	7/30		4	50	7.0	7.5	5.4	5.9			86.6	50.7	2133.	REGULAR VAR	--	PM 53.1
SAN ANTONIO		64/	7/31		4	4	6.0	8.0	4.3	6.3			82.6	268.8	2141.	REG VAR	--	PM 65.9
SAN ANTONIO		64/	8/ 1		4	18	7.0	8.5	5.3	6.8			71.9	271.7	2199.	REG VAR	--	PM 71.5
SAN ANTONIO		64/	8/ 3		4	45	6.0	9.2	4.1	7.3			52.6	276.5	2446.	REG VAR	--	PM 82.2
SAN ANTONIO	38611	64/	8/ 4		2	18	7.0	8.0	4.9	5.9	4.30		46.2	78.8	2576.	REG VAR	--	PM 47.8
DURBAN B	38615	64/	8/ 8		18	56	7.2	7.8	5.5	6.1	4.36		84.0	270.0	2178.	TP 4.365	--	AA 50.5
DURBAN B	38616	64/	8/ 9		19	8	6.5	7.2	4.8	5.5	4.37		75.0	266.0	2224.	TP 4.365, +2 FLSHS AT ZENITH	--	GR 57.1
TOWNSVILLE	38622	64/	8/15		9	50	7.5	9.5	5.6	7.6	4.20		59.6	92.6	2347.	VARIABLE	--	33.6
TOWNSVILLE	38623	64/	8/16		10	4	6.5	8.5	4.8	6.8	4.20		70.3	91.0	2224.		--	41.0
ADELAIDE RVS	38626	64/	8/19		10	38					8.93		50.0	160.0	2500.	10 CYCLES LAST MAX 04 32 42.2	--	58.5
WALNUT CREEK	38644	64/	9/ 6		4	33	7.0	9.5	4.9	7.4	4.33		45.0	260.0	2600.	STEADY	--	102.6
STADE/ELRE	38762	65/	1/ 2		21	24	6.8	6.8	4.7	4.7			55.0	55.0	2580.	STEADY	--	43.3
STADE/ELRE	38781	65/	1/21		20	25	7.0	7.0	5.0	5.0			60.0	55.0	2510.	STEADY	--	40.8
STADE/ELRE	38790	65/	1/30		19	50	6.5	7.0	4.5	5.0			58.0	65.0	2550.	STEADY OCASS FAINT IRR FLASH	--	37.1
STADE/ELRE	38790	65/	1/30		22	29	7.0	8.0	5.0	6.0	3.70		60.0	315.0	2505.	REGULAR FLASHING	--	67.3
STADE/ELRE	38792	65/	2/ 1		20	14	6.5	7.5	4.6	5.6			70.0	100.0	2400.	VARYING	--	34.1
STADE/ELRE	38794	65/	2/ 3		20	39	7.0	8.5	5.2	6.7	3.40		83.0	100.0	2320.	REGULAR FLASHING	--	44.1
STADE/ELRE	38801	65/	2/10		19	41	6.5	8.0	4.6	6.1	4.80		70.0	100.0	2400.	REGULAR FLASHING	--	40.5
STADE/ELRE	38801	65/	2/10		19	46	6.0	8.0	4.0	6.0	7.80		65.0	140.0	2480.	DOUBLE FL-SHES	--	39.7
STADE/ELRE	38813	65/	2/22		19	47	7.0	8.5	5.2	6.7	4.85		88.0	100.0	2300.	REGULAR FLASHING	--	60.8
STADE/ELRE	38813	65/	2/22		19	50	7.5	8.5	5.6	6.6	7.80		95.0	140.0	2350.	REGULAR FLASHING	--	58.0
STADE/ELRE	38816	65/	2/25		20	26	4.0	7.0	2.5	5.5	3.95		75.0	260.0	2020.	REGULAR FLASHING	--	70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE	
STADE/ELRE	38936	65/	8/25	23	12		8.0	9.0	6.3	7.3	4.30	0.50	70.0	100.0	2205.	REGULAR FLASHING	--	HK 73.4	
STADE/ELRE	38986	65/	8/14	21	11		4.5	8.5	2.8	6.8	8.00	1.00	82.0	260.0	2200.	DOUBLE FLASHES PER 8.0 SEC	--	HK 77.2	
STADE/ELRE	38987	65/	8/15	21	25		5.0	8.5	3.3	6.8	8.00	1.00	72.0	260.0	2200.	DOUBLE FLASHES PER 8.0 SEC	--	HK 79.4	
STADE/ELRE	38988	65/	8/16	21	40		5.0	8.0	3.3	6.3	8.00	1.00	66.0	260.0	2230.	DOUBLE FLASH 8.0 SEC LATER	--	HK 79.4	
STADE/ELRE	38996	65/	8/24	20	47		6.5	8.0	4.8	6.3			72.0	260.0	2173.	IRREGULAR	--	HK 82.4	
STADE/ELRE	38997	65/	8/25	21	0		5.5	8.5	3.8	6.8			66.0	260.0	2227.	REGULAR FLASHING	--	HK 83.3	
SAN ANTONIO	39003	65/	8/31	3	22		6.5		0.0							VARIABLE	--	PM	
SAN ANTONIO	39004	65/	9/1	3	36		3.5		0.0		8.40							--	PM
VAN NUYS-F	39023	65/	5/20	2	36		6.2	9.0	4.5	7.3	4.12		71.4	84.6	2170.	VAR	--	JGM 62.5	
VAN NUYS-F	39024	65/	9/21	2	50		6.5		4.9		4.09		81.6	88.0	2110.	FLASHING	--	JGM 69.2	
STADE/ELRE	39026	65/	9/23	19	45		6.5	8.0	4.4	5.9	4.30	0.50	50.0	360.0	2620.	HALF TP. BRIGHT FLASHS TWICE	--	HK 92.0	
VAN NUYS-F	39034	65/	10/1	2	27		6.3	9.0	4.6	7.3	4.13		80.0	0.0	2150.	DURING PASS, +4.5 AND +2.5.	--	JGM 86.9	
VAN NUYS-F	39034	65/	10/1	2	32		2.5		0.5		4.12	0.20	50.0	355.0	2500.		--	JGM 93.5	
VAN NUYS-F	39036	65/	10/3	2	53		6.5		4.8		6.60	0.30	65.0	260.0	2150.	FLASHING	--	HK 100.8	
STADE/ELRE	39053	65/	10/20	17	43		6.5	8.5	4.7	6.7	8.45	0.30	55.0	260.0	2290.	FLASHING DOUBLE FLASH	--	HK 108.1	
STADE/ELRE	39054	65/	10/21	17	56		6.5	9.0	4.6	7.1	4.10	0.40	50.0	75.0	2420.	FLASHING	--	HK 101.7	
STADE/ELRE	39057	65/	10/24	2	59		6.0	7.5	3.9	5.4	4.10		34.0	21.0	2580.	NORMAL TUMBLING	--	GLU 77.4	
HEIDELBERG	39131	66/	1/6	22	36		7.8	9.6	5.4	6.2	4.10		35.0	97.0	2850.	STEADY	--	GR 25.7	
DURBAN B	39168	66/	2/12	18	21		7.0	7.0	4.7	4.7	4.10	0.50	78.0	260.0	2170.	FAINT FLASHES VAR 0.5 MAG	--	HK 61.5	
STADE/ELRE	39183	66/	2/27	21	10		7.0	8.0	5.3	6.3	7.28		73.0	266.0	2200.	REGULAR FLASHING	--	HK 75.2	
DURBAN B	39184	66/	3/0	18	55		6.5	10.0	4.8	8.3			53.0	95.0	2450.	SLCM REG PERIODIC FADE	--	AA 42.3	
DURBAN B	39198	66/	3/14	17	9		7.0	7.5	5.1	5.6			83.0	100.0	2140.	STEADY VAR IN MAG 0.5 MAG	--	HK 64.9	
STADE/ELRE	39199	66/	3/15	19	26		7.2	7.5	5.5	5.8			85.0	100.0	2100.	VARYING AND FLASHING	--	HK 71.4	
STADE/ELRE	39334	66/	7/28	22	50		7.5	9.0	5.9	7.4			53.0	360.0	2500.	IRREGULAR FLASHING	--	HK 109.5	
STADE/ELRE	39334	66/	7/28	22	57		5.5	9.0	3.5	7.0			65.0	360.0	2242.	IRREGULAR FLASHING	--	HK 96.8	
STADE/ELRE	39337	66/	7/31	23	37		4.0	8.5	2.2	6.7	18.75		53.0	100.0	2415.	TRIPLE FLASHES	--	HK 54.8	
STADE/ELRE	39339	66/	8/2	21	17		5.0	9.0	3.1	7.1			65.0	100.0	2242.	TRIPLE FLASHES	--	HK 61.1	
STADE/ELRE	39341	66/	8/4	21	45		5.0	9.0	3.2	7.2	17.10		85.0	100.0	2105.	TRIPLE FLASHES IN MAXIMA	--	HK 69.7	
STADE/ELRE	39343	66/	8/6	22	13		5.0	8.0	3.4	6.4	8.84		85.0	260.0	2130.	REGULAR FLASH WITH DOUBLE MAX	--	HK 70.5	
STADE/ELRE	39354	66/	8/17	22	1		5.5	8.5	3.9	6.9	13.80		70.0	260.0	2211.	REG FLASHING WITH DOUBLE MAX	--	HK 70.6	
STADE/ELRE	39356	65/	8/19	22	28		5.5	8.5	3.8	6.8			80.0	100.0	2125.	REGULAR FLASHING DOUBLE MAX	--	HK 64.6	
STADE/ELRE	39361	66/	8/24	20	55		5.5	8.5	3.9	6.9			65.0	30.0	2500.	REGULAR FLASHING BRIGHT MAX	--	HK 82.3	
STADE/ELRE	39361	66/	8/24	20	58		4.0	8.5	2.0	6.5	8.10	1.00	75.0	260.0	2178.	REGULAR FLASHING	--	HK 70.9	
STADE/ELRE	39365	66/	8/28	21	50		4.0	8.5	2.3	6.8	8.70	1.00	80.0	260.0	2151.	REGULAR FLASHING	--	HK 72.5	
STADE/ELRE	39373	66/	9/5	20	58		5.0	9.0	3.3	7.3			70.0	260.0	2216.	REGULAR FLASHING	--	HK 73.1	
STADE/ELRE	39375	66/	9/7	21	25		5.0	9.5	3.3	6.8	8.45	1.00	70.0	260.0			--	HK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39376	66/	9/	8	21	39	5.5	8.5	3.8	6.8	8.52	1.00	55.0	260.0	2200.	REGULAR FLASHING	-- HK	77.7
STADE/ELBE	39383	66/	9/15	20	34		5.0	8.5	3.4	6.9	8.74	1.00	80.0	260.0	2120.	REGULAR FLASHING	-- HK	72.0
STADE/ELBE	39388	66/	9/20	19	1		5.5	8.0	3.8	6.3	8.67	1.00	72.0	100.0	2130.	REGULAR FLASHING	-- HK	58.1
STPETERSBURG	39402	66/10/	4	0	30		6.0	8.0	4.4	6.4	4.00				2130.	6 N FLASH EACH 4 SEC	--FK	
STPETERSBURG	39415	66/10/17	0	46			6.0	6.0	4.4	4.4					2120.		--FK	
STADE/ELBE	39423	66/10/25	18	56			6.5	9.0	4.4	6.9	9.15	0.80	50.0	260.0	2640.	REGULAR FLASHING	-- HK	100.8
STPETERSBURG	39425	66/10/27	0	22			7.0		5.2		4.00				2300.	+5 FLASH EA 4 SEC	--FK	
STADE/ELBE	39439	66/11/10	17	16			5.7	9.0	3.7	7.0			70.0	310.0	2500.	REGULAR FLASHING	-- HK	13.4
STADE/ELBE	39440	66/11/11	17	25			2.5	9.0	0.3	6.8			65.0	260.0	2750.	BRIGHT FLASHES IN WEST	-- HK	98.2
STADE/ELBE	39440	66/11/11	17	27			5.0	8.0	2.8	5.8			60.0	295.0	2800.	REGULAR FLASHING	-- HK	98.9
STADE/ELBE	39529	67/	2/	8	22	8	5.5	8.5	3.5	6.5	10.35	0.50	60.0	55.0	2550.	REGULAR FLASHING	-- HK	51.2
STADE/ELBE	39551	67/	3/	2	19	9	6.5	9.0	3.8	6.3	10.00	0.80	30.0	100.0	3450.	REGULAR FLASHING	-- HK	11.2
STADE/ELBE	39560	67/	3/11	21	12		6.5	9.0	4.7	7.2	10.00	0.80	85.0	245.0	2300.	REGULAR FLASHING	-- HK	59.1
STADE/ELBE	39577	67/	3/28	19	41		7.0	9.0	5.3	7.3	9.00		80.0	100.0	2150.	REGULAR FLASHING WITH UNEQUAL	-- HK	64.0
STADE/ELBE	39577	67/	3/28	19	43		2.5	9.0	0.8	7.3	4.00	0.50	77.5	301.6	2200.	REG BRIGHT FLASHES UNEQUAL	-- HK	57.3
STPETERSBURG	39582	67/	4/	2	2	9	5.0	7.0	3.3	5.3	4.00		67.4	288.4	2150.	2.5 SEC FLASHES IN 4 SEC	--FK	78.9
STPETERSBURG	39583	67/	4/	3	2	23	4.0	7.0	2.5	5.5	4.00		42.0	100.0	2000.	FLASHING	--GLU	63.8
HEIDELBERG	39688	67/	7/19	23	56		7.2	8.2	5.1	6.1	10.10	0.80	54.0	100.0	2580.	FLASHING	--GLU	67.2
HEIDELBERG	39692	67/	7/21	23	51		7.1	8.4	5.2	6.5	10.20	0.70	67.0	100.0	2400.	FLASHING	--GLU	69.7
HEIDELBERG	39692	67/	7/30	23	12		7.2	8.4	5.3	6.5	10.15	1.00	66.0	100.0	2400.	FLASHING	--GLU	64.0
STADE/ELBE	39706	67/	8/	4	0	10	5.0	9.0	3.1	7.1	20.50	1.50	83.0	260.0	2350.	BRIGHT FLASHES DOUBLE MAXIMA	-- HK	69.3
STADE/ELBE	39709	67/	8/	7	22	25	5.0	9.0	3.0	7.0	20.50	1.50	56.0	55.0	2560.	BRIGHT FLASHES DOUBLE MAXIMA	-- HK	84.7
STADE/ELBE	39709	67/	8/	7	22	27	4.5	9.0	2.4	6.9	20.50	1.50	53.0	30.0	2650.	BRIGHT FLASHES DOUBLE MAXIMA	-- HK	98.2
STADE/ELBE	39719	67/	8/17	21	57		7.0	9.0	5.1	7.1	21.00	2.00	65.0	100.0	2440.	FLASHING WITH DOUBLE FLASHES	-- HK	57.9
STADE/ELBE	39721	67/	8/17	21	59		6.0	9.0	4.0	7.0	21.00	2.00	60.0	55.0	2500.	FLASHING WITH DOUBLE FLASHES	-- HK	78.3
STADE/ELBE	39725	67/	8/19	22	26		5.5	9.0	3.8	7.3	20.40	2.00	80.0	100.0	2200.	REGULAR FLASHING DOUBLE MAX	-- HK	63.6
STADE/ELBE	39725	67/	8/23	20	41		7.5		5.3				40.0	55.0	2800.	FLASHING MIN INV	-- HK	74.4
HEIDELBERG	39757	67/	9/24	19	52		7.5	8.3	5.7	6.5	10.22		70.0	100.0	2300.	FLASHING	--GLU	47.3
HEIDELBERG	39758	67/	9/25	20	5		7.5	8.2	5.8	6.5	10.23		77.0	100.0	2200.	FLASHING	--GLU	51.8
STADE/ELBE	39760	67/	9/28	20	34		6.8	8.5	5.0	6.7			85.0	260.0	2250.	FLASHING WITH UNEQUAL MAXIMA	-- HK	64.5
HEIDELBERG	39761	67/	9/28	20	54		7.5		5.6		10.00	1.00	60.0	360.0	2450.	FLASHING HAZE MIN INV	-- HK	82.7
HEIDELBERG	39764	67/10/	1	18	46		8.0	8.6	6.0	6.6	10.30		54.0	80.0	2490.	FLASHING	--GLU	42.0
HEIDELBERG	39773	67/10/10	20	49			7.8	8.4	5.9	6.5	10.20		59.0	279.0	2420.	FLASHING	--GLU	79.3
HEIDELBERG	39774	67/10/11	18	21			7.5	8.5	5.6	6.6	10.33		59.0	81.0	2420.	FLASHING	--GLU	44.4
STADE/ELBE	39776	67/10/13	18	50			7.0	9.0	4.9	6.9			77.0	100.0	2650.	FLASHING	-- HK	56.0
STADE/ELBE	39776	67/10/13	18	55			4.5		2.3		20.30	1.00	75.0	55.0	2700.	SHARP FLASHING OCCAS DOUBMAX	-- HK	59.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CDS	PHASE
STADE/ELBE	39701	67/10/18	20	5	5.5	3.6	20.00	60.0	330.0	2400.	SHARP FLASHING MOON	--	HK	84.4				
HEIDELBERG	39782	67/10/19	20	11	7.7	5.8	10.15	62.0	279.0	2360.	FLASHING	--	GLU	80.5				
HEIDELBERG	39783	67/10/20	17	43	7.2	8.5	6.6	57.0	81.0	2450.	FLASHING UNEQUAL MAX	--	GLU	44.3				
STADE/ELBE	39796	67/11/ 2	18	8	3.5	1.5	10.12	53.0	360.0	2700.	BRIGHT SHORT FLASHES MIN INV	--	HK	75.5				
STADE/ELBE	39801	67/11/ 7	19	9	6.5	4.4	10.00	57.0	260.0	2600.	SHARP FLASHES DOUBLE MAX	--	HK	89.2				
STADE/ELBE	39801	67/11/ 7	19	13	4.0	1.9	20.00	53.0	310.0	2650.	SHARP FLASHES DOUBLE MAX	--	HK	92.9				
STADE/ELBE	39804	67/11/10	19	56	6.5	4.2	21.20	53.0	310.0	2900.	BRIGHT FLASHES DOUBLE MAX	--	HK	100.6				
HEIDELBERG	39816	67/11/22	19	11	6.8	7.3	5.1	1.00	40.0	310.0	2900.	FLASHING SEC MAX	--	GLU	62.5			
STADE/ELBE	39825	67/12/ 1	3	40	5.5	9.0	7.2	10.44	83.0	283.0	2200.	FLASHING	--	GLU	80.7			
HEIDELBERG	39826	67/12/ 2	18	57	6.7	7.1	4.9	5.3	77.0	279.0	2240.	FLASHING SEC MAX	--	GLU	69.9			
STADE/ELBE	39906	68/ 2/20	22	10	6.0	7.0	3.9	4.9	58.0	100.0	2600.	VAR WITH FAINT FLASHES HAZE	--	HK	53.4			
STADE/ELBE	39909	68/ 2/23	22	49	6.5	7.5	4.8	5.8	84.0	100.0	2150.	REG TUMB	--	HK	42.3			
STADE/ELBE	39910	68/ 2/24	23	4	6.0	6.0	8.40	88.0	100.0	2050.	FLASHING MIN INV	--	HK	43.8				
STADE/ELBE	39917	68/ 3/ 2	0	23	7.0	8.5	6.4	10.50	50.0	300.0	2600.	REG TUMB	--	HK	65.9			
STADE/ELBE	39918	68/ 3/ 3	22	12	7.0	8.0	5.3	6.3	77.0	100.0	2200.	SLOWLY VAR	--	HK	43.0			
STADE/ELBE	39926	68/ 3/11	21	20	6.5	9.0	4.8	7.3	70.0	100.0	2200.	REG TUMB	--	HK	42.8			
STADE/ELBE	39941	68/ 3/26	22	4	5.8	4.0	11.00	65.0	260.0	2300.	FLASHING MIN INV	--	HK	67.7				
HEIDELBERG	39942	68/ 3/27	19	39	6.8	4.8	10.10	51.0	80.0	2500.	FLASHING MIN INV	--	GLU	44.3				
HEIDELBERG	39943	68/ 3/28	19	53	7.0	8.4	5.1	6.5	57.0	81.0	2380.	FLASHING	--	GLU	47.4			
STADE/ELBE	39944	68/ 3/29	20	5	6.5	4.7	10.20	67.0	100.0	2250.	REGULAR TUMB MIN INV	--	HK	50.7				
STADE/ELBE	39945	68/ 3/30	20	17	6.5	8.5	6.8	73.0	100.0	2180.	REG TUMB	--	HK	55.2				
HEIDELBERG	39945	68/ 3/30	20	20	6.0	6.0	4.3	10.20	72.0	82.0	2195.	FLASHING MIN INV UNEQUAL MAX	--	GLU	55.4			
STADE/ELBE	39949	68/ 4/ 3	21	13	5.8	4.1	10.70	77.0	260.0	2150.	FLASHING MIN INV	--	HK	71.7				
STADE/ELBE	39951	68/ 4/ 5	21	40	6.0	4.2	20.70	60.0	260.0	2300.	SHARP FLASHES MIN INV MOON	--	HK	76.5				
STADE/ELBE	39954	68/ 4/ 8	19	35	5.5	1.7	10.70	60.0	10.0	2300.	SHARP FLASHES MIN INV	--	HK	89.6				
STADE/ELBE	39957	68/ 4/11	20	20	6.5	4.8	20.70	88.0	260.0	2160.	SHARP FLASHES MIN INV MOON	--	HK	74.4				
STPETERSBURG	39959	68/ 4/13	2	9	6.0	3.0	0.0	83.0	26.8		TP EST 2 SEC	--	FK	61.8				
STPETERSBURG	39967	68/ 4/21	1	17	3.0	7.0	0.0	1.00	71.0	72.6	ONE 3 MAG FLASH IN 5 DEG	--	FK	59.1				

SDC NC. 188 61 SIGMA 3 METAL ORJECT USA LAUNCHED 61/ 7/12 IN ORBIT
 PERIOD = 161.2 PERIGEE = 2066.7 APOGEE = 2196.5 INCL = 91.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	29930	68/	3/15	20	2	10.5	8.5				47.0	69.0	2526.			VAR SHORT OBS MIN INV	-- HK	47.8

SDC NC. 192 61 ALPHA DELTA1 MIDAS 4 USA LAUNCHED 61/10/21 IN ORBIT
 PERIOD = 166.0 PERIGEE = 2189.1 APOGEE = 2317.1 INCL = 95.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	28669	64/10/	1	21	2	8.0	8.0	8.0	6.1	6.1			70.0	100.0	2350.	STEADY	-- HK	42.8
STADE/ELBE	28671	64/10/	3	20	5	8.0	8.0	8.0	6.0	6.0			50.0	100.0	2500.	STEADY	-- HK	29.3
STADE/ELBE	28676	64/10/	8	21	46	7.0	7.0	8.0	5.2	6.2			88.0	260.0	2270.	VARYING	-- HK	51.0
STADE/ELBE	28707	64/11/	8	19	18	7.5	8.0	8.0	5.6	6.1			72.0	100.0	2450.	STEADY OCASS SHORT VARYING	-- HK	39.4
STADE/ELBE	28750	64/12/21	19	17	7.0	8.0	8.0	5.0	6.0	6.0			60.0	270.0	2505.	VARYING	-- HK	83.9
STADE/ELBE	28837	65/ 3/14	2	16	7.0	7.0	8.0	4.8	5.8	5.8			55.0	260.0	2700.	VARYING	-- HK	34.4
DURBAN B	28931	65/ 6/20	18	3	6.5	6.5	6.5	4.6	4.6	4.6			65.0	94.0	2400.	MAINLY STEADY	--AA	27.3
DURBAN B	28932	65/ 6/21	18	57	6.5	6.5	6.5	4.6	4.6	4.6			83.0	266.0	2400.	STEADY	--GR	47.6
DURBAN B	28933	65/ 6/22	17	5	6.5	6.5	6.5	4.2	4.2	4.2			41.0	97.0	2920.	STEADY	--AA	16.6
DURBAN B	28934	65/ 6/23	17	59	7.0	7.0	7.0	5.1	5.1	5.1			67.0	94.0	2420.	STEADY	--GR	30.3
DURBAN B	28935	65/ 6/24	18	53	7.0	7.0	7.0	5.1	5.1	5.1			79.0	266.0	2400.	STEADY	--GR	52.6
DURBAN B	28936	65/ 6/25	17	1	6.5	6.5	6.5	4.2	4.2	4.2			43.0	96.0	2900.	STEADY	--GR	19.8
DURBAN B	28937	65/ 6/26	17	55	6.5	6.5	6.5	4.6	4.6	4.6			76.0	95.0	2400.	STEADY	--AA	40.3
DURBAN B	28938	65/ 6/27	18	49	7.5	7.5	7.5	5.6	5.6	5.6			75.0	266.0	2400.	STEADY	--GR	57.6
DURBAN B	28939	65/ 6/28	17	2	6.5	6.5	6.5	4.2	4.2	4.2			43.0	64.0	2900.	STEADY	--AA	37.6
DURBAN B	28943	65/ 7/ 2	17	47	6.5	6.5	6.5	4.6	4.6	4.6			78.0	93.0	2400.	STEADY	--GR	44.4
DURBAN B	28944	65/ 7/ 3	15	56	7.0	7.0	7.0	4.3	4.3	4.3			28.0	98.0	3400.	SCINTILLATING	--GR	21.3
DURBAN B	28944	65/ 7/ 3	18	42	6.5	6.5	6.5	4.6	4.6	4.6			69.0	266.0	2400.	STEADY	--AA	65.4
DURBAN B	28945	65/ 7/ 4	16	50	6.5	6.5	6.5	4.3	4.3	4.3			51.0	95.0	2700.	STEADY	--GR	30.6
DURBAN B	28946	65/ 7/ 5	17	44	7.5	7.5	7.5	5.6	5.6	5.6			81.0	93.0	2400.	STEADY	--GR	48.3
DURBAN B	28948	65/ 7/ 7	16	46	7.0	7.0	7.0	5.0	5.0	5.0			53.0	94.0	2500.	STEADY	--GR	33.7
DURBAN B	28948	65/ 7/ 7	19	32	7.5	7.5	7.5	5.1	5.1	5.1			40.0	263.0	3000.	STEADY	--GR	84.0
DURBAN B	28949	65/ 7/ 8	17	40	8.5	8.5	8.5	7.0	7.0	7.0			84.0	94.0	2000.	STEADY	--GR	52.3
DURBAN B	28950	65/ 7/ 9	15	48	7.5	7.5	7.5	5.2	5.2	5.2			32.0	98.0	2000.	STEADY	--AA	26.7
DURBAN B	28950C	65/ 7/ 9	19	34	8.5	8.5	8.5	6.9	6.9	6.9			63.0	266.0	2050.	STEADY	--GR	73.6
DURBAN B	28951	65/ 7/10	16	42	7.5	7.5	7.5	5.9	5.9	5.9			57.0	95.0	2100.	STEADY	--AA	38.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CDS	PHASE
DURRAN B	38954	65/	7/13	16	39	7.0	7.0	7.0	5.4	5.4	5.4		59.0	95.0	2100.	STEADY	-- AA	41.3
DURRAN B	38955	65/	7/14	17	33	6.5	6.5	6.5	5.0	5.0			89.0	238.0	2000.	SLOW TUMBLE	-- GR	61.0
DURRAN B	38956	65/	7/15	18	27	9.0	9.0	9.0	7.0	7.0			58.0	265.0	2500.	STEADY	--GR	80.5
DURRAN B	38957	65/	7/16	16	35	7.0	7.0	7.0	5.0	5.0			61.0	94.0	2500.	STEADY	--AA	44.4
DURRAN B	38957	65/	7/16	19	21	9.5	9.5	9.5	6.9	6.9			33.0	262.0	3300.	STEADY	--GR	94.0
DURRAN B	38958	65/	7/17	17	29	6.5	6.5	6.5	4.6	4.6			87.0	263.0	2400.	STEADY	--AA	64.2
DURRAN B	38960	65/	7/19	19	17	7.5	7.5	7.5	4.9	4.9			71.0	262.0	3300.	STEADY	--AA	57.2
DURRAN B	38963	65/	7/22	16	27	6.5	6.5	6.5	4.5	4.5			67.0	93.0	2550.	STEADY	-- AA	52.6
DURRAN B	38964	65/	7/23	17	22	7.5	7.5	7.5	5.6	5.6			80.0	266.0	2400.	STEADY	-- AA	73.2
STADE/ELPE	39052	65/10/19	3	50	6.5	8.5	4.5	6.5	250.00	0.50			55.0	260.0	2530.	FLASHING	-- HK	35.6
STADE/ELPE	39183	66/ 2/27	19	31	8.0	9.0	6.2	7.2					87.0	260.0	2320.	STEADY WITH VERY SLOWLY TUMB	-- HK	69.0
DURRAN B	39190	66/ 3/ 6	18	11	7.0	7.0	4.9	4.9					49.0	266.0	2600.	STEADY	--GR	106.0
STADE/ELBE	39191	66/ 3/ 7	18	27	6.0	9.0	4.2	7.2					75.0	100.0	2319.	TUMBLE MORE THAN 200 SEC	-- HK	62.8
STADE/ELBE	39199	66/ 3/15	20	7	7.5	7.7	5.3	5.5					50.0	260.0	2720.	STEADY	-- HK	97.4
PHOENIX R	39373	66/ 9/ 5	4	43	8.0	8.0	6.3	6.3					80.3	81.6	2234.	STEADY	--RKR	49.9
PHOENIX R	39374	66/ 9/ 6	5	38	6.0	8.0	4.2	6.2					65.0	290.5	2326.	TR 9R SEC SLOW INCREASE 8 TO 6 MAG	--RKR	69.9
VAN NUYS-F	39375	66/ 9/ 7	3	48	8.0	8.0	5.8						44.1	68.0	2710.	AT 0204 FADED TO +9.AT 0206	--JGM	44.2
ROCHESTER	39376	66/ 9/ 8	1	58	7.0	9.0	5.2	7.2					77.0	78.0	2247.	BRIGHTENED TO +7 AGAIN	--RJ	57.1
ROCHESTER	39376	66/ 9/ 8	2	6	7.0	9.0	4.6	6.6					42.0	358.0	3000.		--RJ	97.8
VAN NUYS-F	39376	66/ 9/ 8	4	35	7.8	7.8	6.0	6.0					70.0	78.0	2300.	TR 120 SEC IRR PATTERN OF	--JGM	47.7
PHOENIX R	39378	66/ 9/10	3	44	7.0	7.0	5.0						56.0	55.5	2463.	FLASH INV TWICE	--RKR	52.8
WALNUT CREEK	39378	66/ 9/10	3	46	6.0	7.0	0.0	0.0								STEADY 2.6 MIN EXCEPT 5 SEC	--DFC	
ROCHESTER	39379	66/ 9/11	1	54	8.0	8.0	6.3	6.3					78.0	79.0	2730.	MAX AT 034821	--DFC	
PHOENIX R	39379	66/ 9/11	4	38	7.0	8.0	5.0	6.0					75.0	0.0	2500.	STDY	--RN	56.8
ROCHESTER	39380	66/ 9/12	2	48	8.0	8.0	6.2	6.2					73.4	267.0	2260.	TR 156 SEC IRR PATTERN 7 TO 8 MAG. ONE 6 MAG FLASH	--RKR	64.5
PHOENIX R	39385	66/ 9/17	4	28	7.0	7.0	5.3	5.3					87.2	260.0	2204.	STDY	--RJ	68.4
VAN NUYS-F	39386	66/ 9/18	5	23	7.0	7.0	5.2	5.2					69.0	268.0	2300.	TRACKED 68 SEC STEADY	--RKR	56.8
ROCHESTER	39394	66/ 9/26	1	38	1.0	10.0	-0.8	8.7					70.5	344.0	2260.	STDY	--JGM	66.4
STADE/ELBE	39550	67/ 3/ 1	23	51	6.5	7.5	4.6	5.6					75.0	100.0	2350.	LONG FLASH PERIOD	--RJ	76.3
STADE/FLRE	39556	67/ 3/ 7	23	44	6.0	9.0	4.2	7.2					80.0	100.0	2320.	LONG FLASH PERIOD	-- HK	46.9
STADE/ELBE	39561	67/ 3/12	0	27	6.0	8.5	3.9	6.4					53.6	360.0	2625.	LONG FLASH PERIOD	-- HK	48.1
VAN NUYS-F	39589	67/ 4/ 9	6	34	6.5	6.5	4.6	4.6					72.0	28.0	2390.		--JGM	86.3
STADE/ELBE	39593	67/ 4/13	21	7	5.5	8.0	3.6	6.1	129.50				65.0	100.0	2450.	FLASHING	-- HK	57.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39596	67/	4/16	21	4	8.0	8.0	8.0	6.1	6.1			65.0	100.0	2450.	STEADY BUT SHORT OBS	-- HK	53.4
STADE/ELBE	39606	67/	4/26	21	46	6.0	6.0	8.5	4.2	6.7			85.0	260.0	2290.	REGULAR FLASHING MORE 200SEC	-- HK	71.3
STPETERSBURG	39607	67/	4/27	3	30	7.0	7.0	7.0	5.2	5.2			83.5	341.7	2300.		-- FX	56.5
GRANDY	39731	67/	8/29	6	31	7.5	7.5	7.5	5.5	5.5			52.5	93.0	2550.	FADED SLOWLY TO INV. NO SHW.	--MPC	78.1
GRANDY	39764	67/10/	1	3	10	7.5	7.5	7.5	4.9	4.9			25.0	51.0	3290.		--MPC	76.1
GRANDY	39764	67/10/	1	5	52	7.0	7.0	7.0	5.3	5.3			79.0	21.0	2200.	IRREGULAR .1 MAG VAR NCYSURE	--MPC	53.4
HEIDELBERC	39773	67/10/10	22	23	8.2	8.2	8.2	6.0	6.0	6.0			48.0	42.0	2720.	STEADY	--GLU	72.6
STADE/ELBE	39824	67/11/30	21	22	7.5	9.0	9.0	5.4	6.9	6.9			53.0	360.0	2600.	SLOWLY TUMBLING	-- HK	68.9
STADE/ELBE	39844	67/12/20	19	55	6.7	6.7	6.7	4.9	4.9	4.9			83.0	100.0	2250.	ST HAZE	-- HK	41.6
STADE/ELBE	39859	68/	1/	4	19	36	6.5	9.0	4.8	7.3			88.0	260.0	2230.	SLOWLY TUMB	-- HK	54.7

SDC NC. 202 61 A-ETA 1 TRANSIT 48 USA LAUNCHED 61/11/15 IN ORBIT
PERIOD = 105.6 PERIGEE = 587.8 APOGEE = 693.4 INCL = 32.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	28899	65/	5/19	16	5	7.0	7.0	7.5	7.8	8.5			60.0	359.0	700.	LONG FLASH	--GR	87.6
DURBAN B	28900	65/	5/20	16	48	7.5	7.5	7.5	8.5	8.5			85.0	116.0	640.	STEADY	--GR	63.7
DURBAN B	28900	65/	5/20	16	51	7.5	7.5	7.7	7.9	8.1			45.0	105.0	850.	PULSING -PERIOD ABOUT 1 SEC	--GR	23.1

SDC NC. 226 62 BETA 1 TIROS 4 USA LAUNCHED 62/ 2/ 8 IN ORBIT
PERIOD = 100.3 PERIGEE = 439.3 APOGEE = 525.7 INCL = 48.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERC	39876	68/	1/21	18	20	8.3	8.3	8.3	9.6	9.6			72.0	180.0	555.	ST	--GLU	70.7

SOC NC. 229 62 BETA 4 ROCKET BODY USA LAUNCHED 62/ 2/ 8 IN ORBIT
 PERIOD = 100.2 PERIGEE = 432.5 APOGEE = 528.8 INCL = 48.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WALNUT CREEK	38610	64/ 8/ 3	4	6	7.0	10.0	7.3	10.3	8.33	28.0	6.0	891.					--DFC	107.1
WALNUT CREEK	38612	64/ 8/ 5	4	37	6.0	9.0	6.8	9.8	8.43	39.2	19.0	705.					--JAB	93.4
MILWAUKEE	38615	64/ 8/ 8	2	49	7.0	9.0	8.0	10.0	8.20	47.9	214.4	617.					--EAM	72.3
WICHITA	38618	64/ 8/ 11	2	40	6.0	6.0	7.4	7.4		62.0	217.0	515.					--PMR	80.2

STEADY IN SCOPE

SOC NC. 255 62 ZETA 1 ORB. SOL. CRS1 USA LAUNCHED 62/ 3/ 7 IN ORBIT
 PERIOD = 95.9 PERIGEE = 341.8 APOGEE = 367.2 INCL = 37.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38932	65/ 6/ 21	15	35	4.5	6.0	7.7	7.7		67.0	264.0	380.				SCINTILLATING	--AA	103.2
DURBAN B	38935	65/ 6/ 24	15	35	6.0	6.0	7.7	7.7		52.0	134.0	450.				STEADY	--GR	48.4

SOC NC. 271 62 KAPPA 1 MIDAS 5 USA LAUNCHED 62/ 4/ 9 IN ORBIT
 PERIOD = 153.0 PERIGEE = 1741.7 APOGEE = 2107.7 INCL = 86.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
ACELAIDE-2	38546	64/ 5/ 31	10	54	7.0	9.5	5.2	7.7	13.00	55.6	168.2	2300.					--ACB	51.9
ADELAIDE-2	38547	64/ 6/ 1	9	52	8.0	10.5	6.1	8.6		43.0	140.0	2400.				SOME IRREGULAR VARIATION	--ACB	36.8
ADELAIDE, AUS	38552	64/ 6/ 6	9	45					13.20	48.1	139.0	2500.					--ACB	37.7
ADELAIDE-2	38553	64/ 6/ 7	11	15	4.0	8.0	2.1	6.1	13.20	54.9	212.5	2400.				OVER 15 PERIODS-CYCLES ALTER--	--ACB	70.7
ADELAIDE-2	38554	64/ 6/ 8	10	13	4.0	8.0	2.2	6.2	13.11	53.4	164.6	2250.				NAME IN GENERAL BRIGHTNESS	--	52.3
ADELAIDE-2	38558	64/ 6/ 12	11	0					13.18							LEVEL	--ACB	
STADE/ELBE	38669	64/ 10/ 1	21	32	6.0	6.0	4.4	4.4		65.0	100.0	2100.				ACC.+OR-.04 SEC	--ACB	40.8
STADE/ELBE	38670	64/ 10/ 2	23	7	7.5	7.0	6.0	6.0		77.0	260.0	2000.				STEADY	--HK	49.4
STADE/ELBE	38671	64/ 10/ 3	22	0	7.0	7.0	5.5	5.5		80.0	100.0	1575.				STEADY	--HK	46.6
STADE/ELBE	38673	64/ 10/ 5	22	27	7.0	7.5	5.6	6.1		85.0	260.0	1910.				STEADY NCASS FAINT VARYING	--HK	49.9
STADE/ELBE	38676	64/ 10/ 8	21	52	7.0	8.0	5.6	6.6		87.0	100.0	1900.				VARYING NCASS FLASHES	--HK	48.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/VELBE	38679	64/10/11	21	17	17	7.0	7.0	5.5	5.5	5.5			77.0	100.0	1954.	STEADY	--HK	42.8
STADE/VELBE	38686	64/10/18	21	36	18	6.7	6.7	5.2	5.2	5.2			82.0	260.0	1950.	STEADY	--HK	50.7
STADE/VELBE	38706	64/11/7	18	35	18	7.0	7.0	5.4	5.4	5.4			60.0	100.0	2085.	STEADY	--HK	33.7
STADE/VELBE	38727	64/11/28	4	51	4	7.0	7.0	5.4	5.4	5.4	10.60		72.0	100.0	2100.	VARYING	--HK	88.2
STADE/VELBE	38813	65/2/22	22	10	22	6.5	6.5	4.8	4.8	4.8			65.0	60.0	2150.	STEADY OCASS FLASHING	--HK	51.9
STADE/VELBE	38816	65/2/25	21	34	21	6.8	6.8	5.1	5.1	5.1			60.0	60.0	2180.	STEADY OCASS FAINT VARYING	--HK	52.1
STADE/VELBE	38822	65/3/3	22	59	22	7.0	7.0	5.5	5.5	5.5			75.0	260.0	1960.	STEADY	--HK	49.7
STADE/VELBE	38826	65/3/7	21	19	21	6.5	6.5	5.0	5.0	5.0			73.0	100.0	2030.	STEADY	--HK	43.2
STADE/VELBE	38838	65/3/19	21	34	21	6.0	6.0	4.6	4.6	4.6			80.0	260.0	1900.	STEADY	--HK	63.0
DURBAN B	38895	65/5/15	16	10	16	6.5	6.5	4.9	4.9	4.9			80.0	266.0	2100.	IRREGULAR TUMBLE	--GR	86.5
STADE/VELBE	3890C	65/5/20	16	4	16	6.5	6.5	7.0	4.8	5.3			70.0	266.0	2150.	SLOW IRREGULAR TUMBLE	--GR	96.6
STADE/VELBE	389R5	65/8/13	23	5	23	7.5	8.5	6.0	7.0	7.0			80.0	260.0	2000.	FLASHING	--HK	67.9
STADE/VELBE	38996	65/8/24	21	48	21	8.0	8.0	5.5	6.5	6.5			88.0	100.0	1971.	VARYING	--HK	66.6
VAN NUYS-F	39023	65/9/20	3	45	3	6.2	6.2	4.4	4.4	4.4			55.1	27.7	2300.	SLIGHT VAR ABOUT 13.7 SEC	--JGW	65.9
STADE/VELBE	39026	65/5/23	21	7	21	7.5	8.0	5.7	6.2	6.2			60.0	260.0	2300.	VARYING AND OCASS FLASHING	--HK	76.2
STADE/VELBE	39027	65/9/24	20	2	20	7.0	8.0	5.3	6.3	6.3			75.0	260.0	2140.	STEADY AND SLOWLY VARYING	--HK	76.9
STADE/VELBE	39034	65/10/1	2	23	2	6.5	6.7	4.7	4.9	4.9			54.0	85.4	2340.		--JGW	44.5
VAN NUYS-F	39052	65/10/19	4	3	4	6.7	8.5	4.4	6.2	6.2	13.42		33.3	291.7	2920.	HALF TP	--JGW	110.9
DURBAN B	3916R	66/2/12	19	16	19	7.0	7.0	5.4	5.4	5.4			88.0	120.0	2100.	STEADY	--GR	59.8
STADE/VELBE	39183	66/2/27	20	54	20	6.5	9.0	4.7	7.2	7.2			45.0	260.0	2270.	ONLY ONE FLASH OBSERVED	--HK	89.0
STADE/VELBE	39193	66/3/9	18	5	18	5.5	8.0	4.1	6.6	6.6			80.0	100.0	1890.	FLASHING 5.9 FLASH PERIOD	--HK	71.7
STADE/VELBE	39197	66/3/13	19	1	19	5.0	7.5	3.5	6.0	6.0			0.40	80.0	2000.	FLASHING	--HK	97.1
STADE/VELBE	39201	66/3/17	17	59	17	6.0	11.0	4.0	9.0	9.0			0.70	65.0	2480.	REGULAR FLASHING	--GR	104.5
HEIDELBERG	3928C	66/6/4	23	36	23	5.4	8.5	3.8	6.9	6.9			51.0	265.0	2056.	SHORT FLASHING LONG MIN.	--GLU	77.4
STADE/VELBE	39285	66/6/9	23	31	23	5.3	8.5	3.8	7.0	7.0			0.80	68.0	2016.	REGULAR FLASHING	--HK	75.1
STADE/VELBE	39286	66/6/10	22	28	22	5.0	9.0	3.2	7.2	7.2			0.70	50.0	2320.	FLASHING WITH UNEQUAL MAX	--HK	66.0
STADE/VELBE	39291	66/6/15	22	20	22	5.8	8.5	4.1	6.8	6.8			0.70	50.0	2202.	REGULAR FLASHING	--HK	66.7
STADE/VELBE	3930C	66/6/24	23	9	23	6.0	8.5	4.5	7.0	7.0			0.70	50.0	1974.	REGULAR FLASHING	--HK	76.6
STADE/VELBE	39302	66/6/26	23	37	23	6.5	9.0	4.9	7.4	7.4			1.00	70.0	2051.	REGULAR FLASHING	--HK	73.4
STADE/VELBE	39312	66/7/6	23	22	23	3.0	9.0	1.1	7.1	7.1			0.30	55.0	2374.	REGULAR FLASHING	--HK	73.7
STADE/VELBE	39377	66/9/9	19	25	19	4.5	9.0	1.8	6.3	6.3			1.00	40.0	3400.	REGULAR FLASHING	--HK	123.0
STADE/VELBE	39427	66/10/29	0	45	0	5.5	9.0	4.3	6.8	6.8			88.0	100.0	1770.	REGULAR FLASHING	--HK	45.7
STADE/VELBE	39489	66/12/30	20	10	20	5.5	9.0	4.0	7.5	7.5			88.0	260.0	2000.	REGULAR FLASHING	--HK	49.1
STADE/VELBE	39493	67/1/3	18	32	18	5.0	8.5	2.9	6.4	6.4			0.40	57.0	2600.	REGULAR FLASHING	--HK	30.3
STADE/VELBE	39496	67/1/6	20	27	20	5.0	9.0	3.4	7.4	7.4			0.40	66.0	2050.	REGULAR FLASHING	--HK	66.9
STADE/VELBE	39501	67/1/11	17	48	17	5.0	9.0	3.3	7.3	7.3			55.0	100.0	2200.	REGULAR FLASHING	--HK	38.1
STADE/VELBE	39504	67/1/14	19	46	19	5.0	9.0	3.4	7.4	7.4			65.0	260.0	2005.	REGULAR FLASHING	--UK	76.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--GBS	PHASE
STPETERSBURG	39507	67/	1/17		1	32	8.0		6.4			1.00	74.1	268.5	2052.	+6 FLASH EA 7 SEC	--FK	72.3
PHCNIX R	39507	67/	1/17		4	3	8.0	8.0	6.2	6.2			55.1	274.0	2246.	STEADY	--RR	83.7
STADE/ELBE	39507	67/	1/17		19	12	5.0	9.0	3.5	7.5	6.30		77.0	270.0	1954.	REGULAR FLASHING	--HK	71.6
STPETERSBURG	39508	67/	1/18		0	29	7.0	7.0	5.4	5.4			68.2	82.6	2100.		--FK	48.6
STPETERSBURG	39509	67/	1/19		0	57	7.0		5.4				1.00	88.0	262.0	+5 FLASH EA 7.5 SEC	--FK	66.4
STADE/ELBE	39509	67/	1/19		19	40	5.0	9.0	3.4	7.4			62.0	260.0	2092.	REGULAR FLASHING	--HK	81.2
STADE/ELBE	39510	67/	1/20		18	38	5.0	9.0	3.6	7.6			87.0	262.0	1936.	REGULAR FLASHING	--HK	67.3
STPETERSBURG	39515	67/	1/25		0	50	7.0	7.0	5.4				78.0	267.6	2060.	+4 FLASH EA 9 SEC	--FK	78.7
STPETERSBURG	39519	67/	1/29		0	43	4.0	7.0	2.3	5.3			0.50	68.4	269.7	+4 FLASH 7.5 SEC	--FK	90.2
PHCNIX R	39520	67/	1/30		3	14	7.0	9.0	5.1	7.1	7.00		49.5	272.0	2373.	INVISIBLE EXCEPT +5 FLASH	--RR	101.6
STPETERSBURG	39522	67/	2/ 1		1	11	5.0		3.1				0.50	48.4	274.3		--FK	104.2
PHCNIX R	39527	67/	2/ 1		3	41	8.0		5.8				0.50	74.0	279.0		--RR	111.5
STPETERSBURG	39523	67/	2/ 2		0	46	4.0	9.0	2.4	7.4			0.50	81.8	266.6	+5 FLASH EA 8 SEC	--FK	85.2
STADE/ELBE	39595	67/	4/15		21	50	5.5	9.0	3.9	7.4	7.70		88.0	100.0	2070.	FLASHING WITH TRIPLE MAXIMA	--FK	85.2
HEIDELBERC	39609	67/	4/29		21	50	7.2	8.5	5.0	6.3	6.53		45.0	100.0	2050.	FLASHING	--GLU	50.0
HEIDELBERC	39610	67/	4/30		23	20	7.0	8.3	5.2	6.5	6.60		83.0	100.0	2310.	FLASHING	--GLU	63.1
STADE/ELBE	39613	67/	5/ 3		22	46	5.5	8.0	3.8	6.3	7.80		75.0	100.0	2150.	TRIPLE FLASHES OBS	--HK	65.6
HEIDELBERC	39618	67/	5/ 8		22	38	7.4	8.2	5.6	6.4	6.65		80.0	100.0	2320.	REGULAR FLASHING	--GLU	63.9
HEIDELBERC	39620	67/	5/10		21	1	7.5	8.5	5.3	6.2	6.78		48.0	100.0	2750.	FLASHING	--GLU	48.8
STPETERSBURG	39636	67/	5/26		3	42	8.0	8.0	6.2	6.2			83.7	141.7	2300.		--FK	61.2
STADE/ELBE	39636	67/	5/26		21	43	7.0	9.0	5.3	7.3	7.33		85.0	260.0	2140.	FLASHING MAZE	--HK	78.7
STADE/ELBE	39760	67/	9/27		22	49	5.0	9.0	3.5	7.5	7.26		67.0	100.0	2040.	FLASHING	--HK	48.9
STADE/ELBE	39766	67/	10/ 3		21	37	5.0	9.0	3.5	7.5	7.26		80.0	100.0	1950.	FLASHING	--HK	38.0
STADE/ELBE	39781	67/	10/18		21	14	5.0	8.5	3.6	7.1	7.32		0.90	64.0	55.0	SHARP FLASHES DOUBLE MAX	--HK	53.1
STADE/ELBE	39793	67/	10/30		21	30	5.3	8.5	3.8	7.0	7.60		80.0	260.0	2000.	FLASHING UNEQUAL MAXIMA	--HK	48.9
STADE/ELBE	39796	67/	11/ 2		20	54	5.0	8.5	3.5	7.0	7.30		1.00	88.0	100.0	FLASHING DOUBLE MAX	--HK	45.0
STADE/ELBE	39802	67/	11/ 8		19	42	4.0		2.2		9.00		63.0	55.0	2300.	BRIGHT SHARP FLASHES DOUBLE MAX	--HK	44.1
HEIDELBERC	39807	67/	11/13		21	39	6.8	8.2	5.3	6.7	7.28		73.0	82.0	2030.	FLASHING	--GLU	31.0
STADE/ELBE	39810	67/	11/16		19	2	5.0	9.0	3.3	7.3	7.45		65.0	100.0	2200.	FLASHING DOUBLE MAX	--HK	33.1
STADE/ELBE	39811	67/	11/17		20	32	3.3		1.7		15.00		73.0	260.0	2100.	BRIGHT SHARP FLASHES MIN INV	--HK	58.7
HEIDELBERC	39814	67/	11/20		21	59	5.0	8.0	3.5	6.5	7.25		81.0	283.0	1980.	FLASHES SEC MAX	--GLU	39.8
HEIDELBERC	39815	67/	11/21		20	58	5.8	8.0	4.3	6.5	7.26		72.0	82.0	2025.	FLASHING SEC MAX	--GLU	29.1
HEIDELBERC	39816	67/	11/22		19	54	6.0	8.0	4.1	6.1	7.38		47.0	79.0	2390.	DOUBLE FLASHES	--GLU	22.0
HEIDELBERC	39826	67/	12/ 2		19	40	6.8		5.1		7.34		60.0	81.0	2160.	DOUBLE FLASHES SEC MAX	--GLU	24.4
HEIDELBERC	39833	67/	12/ 9		18	0	7.0		5.5		7.44		84.0	78.0	1970.	DOUBLE FLASHES MIN INV	--GLU	60.1
STADE/ELBE	39854	67/	12/30		16	28	6.0		4.3				88.0	100.0	2150.	SHARP FLASHES CLOUDS AND MAZE	--HK	77.8
STADE/ELBE	39868	68/	1/13		3	52	4.7	9.0	3.1	7.4	7.25		80.0	100.0	2050.	SHARP FLASHES	--HK	67.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	39904	68/	2/18		2	5	5.5		3.6				53.0	350.0	2350.	SHARP FLASHES BIG MAZE	--	74.5
STADE/ELPE	39910	68/	2/24		23	47	5.5		3.6				60.0	100.0	2350.	FLASHING MIN INV	--	48.9
STADE/ELPE	39916	68/	3/1		22	37	5.5		3.3				45.0	100.0	2700.	SHARP FLASHES MIN INV	--	42.9
STADE/ELPE	39917	68/	3/2		1	10	4.8	9.0	3.1	7.3			56.0	260.0	2180.	SHARP FLASHES	--	41.4
STADE/ELPE	39926	68/	3/11		22	23	5.5		3.6				56.0	100.0	2400.	FLASHING MIN INV	--	42.0
HEIDELBERC	39927	68/	3/12		21	19	6.2		3.9				34.0	76.0	2920.	FLASHING MIN INV	--	49.3
STADE/ELPE	39939	68/	3/24		21	34	4.8		2.8				60.0	100.0	2500.	FLASHING MIN INV	--	43.2
STADE/ELPE	39941	68/	3/26		22	2	4.0		2.3				75.0	100.0	2200.	SHARP FLASHES SEC MAX MIN INV	--	51.2
STADE/ELPE	39941	68/	3/26		22	16	6.0		3.2				25.0	358.0	3700.	SHARP FLASHES MIN INV	--	120.2
HEIDELBERC	39942	68/	3/27		20	58	6.2		4.2				50.0	79.0	2510.	FLASHING MIN INV	--	47.6
HEIDELBERC	39944	68/	3/29		21	27	6.0		4.2				65.0	100.0	2250.	FLASHING MIN INV	--	47.2
HEIDELBERC	39945	68/	3/30		20	24	6.0		3.9				43.0	78.0	2660.	FLASHING MIN INV	--	45.7
STADE/ELPE	39951	68/	4/5		21	53	4.5		2.6				53.0	5.0	2350.	VERY SHARP FLASHES MOON	--	95.6
STADE/ELPE	39952	68/	4/6		20	46	5.0		3.2				65.0	100.0	2250.	FLASHING SEC MAX MIN INV	--	50.2
STADE/ELPE	39956	68/	4/10		21	41	4.0		2.3				85.0	260.0	2150.	SHARP FLASHES MIN INV	--	67.1
STADE/ELPE	39959	68/	4/13		21	6	6.5		4.8				85.0	100.0	2170.	FLASHING BRIGHT MOON	--	65.6
STADE/ELPE	39960	68/	4/14		20	4	7.8		6.0				63.0	100.0	2250.	FLASHING MIN INV	--	53.0
STADE/ELPE	39961	68/	4/15		21	35	7.0		5.3				70.0	310.0	2200.	FLASHING MIN INV	--	86.3

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SDC NC.	273	62 KAPPA 3	PERIOD =	152.7	PERIGEE =	1737.4	USA	LAUNCHED 62/ 4/ 9	IN ORBIT	INCL =	86.7							
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
SAN ANTONIO	38074	63/	2/14		2	33	10.0		8.8				35.8	267.7	1765.	VISIBLE ABOUT .5 DEG-VARIABLE	--	65.1
SAN ANTONIO	38081	63/	2/21		2	29	9.8		8.4				67.2	269.5	1975.	VIS ONE DEG-2 SHARP MAXIMA	--	85.5
SACRAMENTO	38208	63/	6/28		5	6	11.0		9.6				70.0	270.0	1900.	SEEN ONLY 2 SEC, VERY FAINT	--	79.2
SAN ANTONIO	38396	64/	1/2		2	7	10.0	11.0	9.7	9.7			84.0	91.7	1860.	IRREGULAR	--	55.5
SAN ANTONIO	28397	64/	1/3		0	55	10.0	11.0	9.2	9.2			46.8	90.2	2260.	MOST MIN ABOUT +12	--	35.9
SAN ANTONIO	28399	64/	1/5		1	16	11.0		9.5				63.0	90.3	2005.	VARIABLE	--	45.9
SAN ANTONIO	28401	64/	1/7		1	37	11.0		9.6				82.8	91.4	1880.		--	60.4
WALNUT CREEK	38461	64/	3/7		10	15	11.0		9.5				80.4	91.1	1951.	273. PERIODIC VARIATION. MIN. INVIS. IN 10 INCH SCOPE. VIS. ABOUT ONE THIRD OF EA. PERIOD	--	49.2
SAN ANTONIO	38532	64/	5/17		3	26	11.0		9.8				80.2	90.8	1765.		--	58.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	39246	66	5	1	0	57	10.0		7.6				40.8	70.0	3024.	ONLY ONE SEC OBSERVED	-- HK	107.5
STADE/ELPE	39248	66	5	3	1	17	10.0	11.0	7.9	8.9			50.0	76.5	2579.	VARYING SHORT OBSERVED	-- HK	101.8
STADE/ELPE	39258	66	5	13	0	27	10.5	11.0	8.4	8.9			49.0	75.6	2670.	FAINT FLICKERING	-- HK	96.4
PHOENIX R	39520	67	1	30	2	54	12.0		10.2				59.9	272.9	2259.	MIN INV	--RKR	95.1

SDC NC. 274 62 KAPPA 4 METAL OBJECT USA LAUNCHED 62/ 4/ 9 IN ORBIT
PERIOD = 153.4 PERIGEE = 1730.5 APOGEE = 2136.3 INCL = 86.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WALNUT CREEK	39078	63	2	18	3	8	8.0		0.0				72.9	269.5	1910.		--JAB	75.7
SAN ANTONIO	39401	64	1	7	2	17	11.0		9.6				70.2	90.5	1940.		-- FB	52.6
SAN ANTONIO	39402	64	1	8	1	18	11.0		9.6				80.8	85.1	1984.	MIN INV	--RKR	54.0
PHOENIX R	39507	67	1	17	2	54	12.0		10.5				51.2	275.4	2376.	STEADY	--RKR	103.9

SDC NC. 285 62 OMICRON 1 ARIEL UK LAUNCHED 62/ 4/26 IN ORBIT
PERIOD = 100.8 PERIGEE = 242.3 APOGEE = 751.9 INCL = 51.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	39638	67	5	28	21	10	7.5	7.5	10.5	10.5			89.5	180.0	250.	STEADY HAZE	-- HK	79.6
STADE/ELPE	39703	67	8	3	23	45	8.0	9.0	8.0	9.0			89.5	220.0	650.	STEADY AND IRREG FLASHES	-- HK	70.8
STADE/ELPE	39907	68	2	21	4	51	6.5	7.0		9.1			89.0	5.0	375.	ST FCCAS VAR	-- HK	74.7
STADE/ELPE	39929	68	3	24	19	15	4.5	9.0	6.2	9.7	3.00		50.0	220.0	450.	FLASHING PER APPRCH	-- HK	99.8
STADE/ELPE	39990	68	5	14	22	37	7.0	9.0	7.8	9.8			72.0	180.0	703.	IRREG VAR OR FLASHING	-- HK	55.3

SDC NC. 288 62 OMICRON 2 ROCKET BODY USA LAUNCHED 62/ 4/26 IN ORBIT
 PERIOD = 100.9 PERIGEE = 239.2 APOGEE = 756.8 INCL = 53.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	39628	67	5	18	21	52	7.0	8.0	8.7	9.7			43.0	180.0	450.	VARYING MOON DISTURBED	-- HK	33.7
STADE/ELBE	39636	67	5	26	22	10	4.5	7.5	7.5	10.5			85.0	180.0	755.	REGULAR SLOWLY FLASHING	-- HK	71.4
WEIDELBERG	39934	68	3	19	18	51	5.0	7.7	7.9	10.6			81.0	347.0	265.	SLOWLY TUMB	--GLU	81.5
STADE/ELBE	39990	68	5	14	21	52	4.8	9.0	5.8	10.0	30.00		85.0	5.0	620.	SLOWLY TUMB PER APPROX	-- HK	79.2

SDC NC. 309 62 ALPHA ALPHA1 TIRCS 5 USA LAUNCHED 62/ 6/19 IN ORBIT
 PERIOD = 100.5 PERIGEE = 364.7 APOGEE = 606.5 INCL = 58.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURRAN R	38953	65	7	12	17	0	6.5	6.5	8.0	8.0			81.0	99.0	500.	STEADY	-- GR	58.1
STADE/ELBE	39637	67	5	27	23	23	8.5	8.5	9.3	9.3			77.0	360.0	700.	STEADY	-- HK	87.9
STPETERSBURG	39902	68	2	16	1	13	5.0	5.0	0.0	0.0			62.3	307.6			--FK	87.1

SDC NC. 311 62 ALPHA ALPHA2 ROCKET BODY USA LAUNCHED 62/ 6/19 IN ORBIT
 PERIOD = 100.4 PERIGEE = 366.0 APOGEE = 601.5 INCL = 58.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39492	67	1	3	17	12	7.0	8.0	8.1	9.1			45.0	360.0	400.	VARYING	-- HK	66.9
STADE/ELBE	39565	67	3	16	19	26	8.0	8.0	8.8	8.8			40.0	55.0	680.	STEADY OCCAS SCINTILLATE	-- HK	54.0

SDC NC. 340 62 A-EPSILON 1 TELSTAR 1 USA LAUNCHED 62/ 7/10 IN ORBIT
PERIOD = 157.6 PERIGEE = 589.7 APOGEE = 3502.7 INCL = 44.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38938	65/ 6/27	18	5	7.0	8.5	6.1	7.6					67.0	213.0	1500.	SCINTILLATING	--GR	64.4
DURBAN B	38943	65/ 7/ 2	16	19	8.5		8.4						87.0	255.0	1260.	SCINTILLATING	--GR	77.4
DURBAN B	38944	65/ 7/ 3	15	57	9.0	9.0	8.8	8.8					82.0	101.0	1100.	STEADY	--GR	71.6
STPETERSBURG	3926C	66/ 5/15	5	44	10.0	10.0	0.0	0.0					41.1	23.9			--FJK	94.0
PHOENIX R	39287	66/ 6/11	4	31	8.0	8.0	8.5	8.5					44.2	219.2	908.	STEADY	--RR	71.0
PHOENIX R	3938E	66/ 9/20	5	55	10.0	10.0	8.1	8.1					64.8	10.0	2440.	STEADY	--AKR	60.4
PHOENIX R	39406	66/10/ 8	2	15	9.0	9.0	7.6	7.6					56.0	5.7	1933.	STEADY	--AKR	76.0
PHOENIX R	39407	66/10/ 9	4	47	9.0	9.0	7.0	7.0					88.8	175.0	2490.	STEADY	--AKR	43.3
PHOENIX R	39408	66/10/10	4	25	10.0	10.0	8.1	8.1					87.7	32.9	2388.	STEADY	--AKR	47.5
PHOENIX R	39412	66/10/14	2	58	8.0	11.0	6.5	9.5					75.3	24.7	2014.		--AKR	60.4
PHOENIX R	39415	66/10/17	1	53	8.0	11.0	6.7	9.7					66.1	19.6	1780.		--AKR	69.2
PHOENIX R	39416	66/10/18	4	23	8.0	11.0	6.0	9.0					63.8	221.8	2520.		--AKR	59.0
PHOENIX R	3952C	67/ 1/30	5	16	10.0	12.0	7.7	9.7			2.00		66.7	12.8	2824.		--AKR	43.4
PHOENIX R	39521	67/ 1/31	4	54	10.0	12.0	7.7	9.7			2.00		66.2	10.9	2944.	MIN INV IRR TP	--AKR	46.6
PHOENIX R	39522	67/ 2/ 1	4	31	10.0		7.6						65.8	8.9	3059.		--AKR	50.2
PHOENIX R	39525	67/ 2/ 4	3	23	10.0		7.4						65.5	2.8	3363.	IRR TP	--AKR	61.7
PHOENIX R	39526	67/ 2/ 5	3	1	10.0	11.0	7.3	8.3					65.6	0.7	3444.	MIN INV IRR TP	--AKR	65.6
PHOENIX R	39527	67/ 2/ 6	2	34	10.0		7.3						66.0	358.6	3512.		--AKR	69.8

SDC NC. 341 62 A-EPSILON 2 ROCKFT BODY USA LAUNCHED 62/ 7/10 IN ORBIT
PERIOD = 157.5 PERIGEE = 587.8 APOGEE = 3496.4 INCL = 44.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
VAN NUYS-F	39149	66/ 1/24	4	1	10.5		8.6						67.3	15.3	2400.	WHOLE TP, SOME MULTIPLE MAX	--JGM	52.4
VAN NUYS-F	39165	66/ 2/ 9	3	32	10.7		8.8						74.4	217.3	2430.	VAR	--JGM	74.6
PHOENIX R	39392	66/ 9/24	5	22	10.0		7.9						67.3	14.8	2574.	2 TP CROSSING 1 DEG FIELD	--AKR	57.2
PHOENIX R	39406	66/10/ 8	2	47	10.0	10.0	9.5	8.5					61.0	15.4	1981.	STEADY	--AKR	67.2
PHOENIX R	39407	66/10/ 9	5	16	9.0		6.9						73.1	218.5	2629.	MIN INV	--AKR	42.1
PHOENIX R	39408	66/10/10	4	53	10.0	10.0	8.0	8.0					76.7	216.9	2496.	STEADY	--AKR	45.5
PHOENIX R	3941C	66/10/12	4	6	11.0	11.0	9.2	9.2					84.1	213.3	2245.	STEADY	--AKR	52.4
PHOENIX R	39412	66/10/14	3	19	9.0		7.5						88.2	34.0	2022.	MIN INV	--AKR	59.1
PHOENIX R	39415	66/10/17	2	10	9.0	11.0	7.8	9.8					76.3	26.1	1742.		--AKR	67.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	39416	66	10	18	4	37	10.0		7.8				51.4	225.5	2707.	MIN INV	--RKR	65.3
PHOENIX R	39507	67	1	17	4	44	9.0		6.5		1.00		69.5	345.0	3134.	MIN INV	--RKR	51.0
PHOENIX R	39519	67	1	29	2	52	10.0		7.3		1.00		72.6	342.4	3501.	MIN INV	--RKR	70.1
PHOENIX R	39520	67	1	30	2	27	10.0		7.3				69.7	346.9	3543.	VAR	--RR	73.5
PHOENIX R	39522	67	2	1	4	41	10.0		7.6				69.0	14.7	3011.	MIN INV	--RKR	45.9
PHOENIX R	39525	67	2	4	3	28	10.0		7.4				66.7	8.0	3354.	MIN INV	--RKR	58.8
PHOENIX R	39527	67	2	6	2	38	10.0		7.3				66.0	358.6	3523.	MIN INV	--RKR	69.8
PHOENIX R	39543	67	2	22	2	11	10.0		7.4				85.2	29.8	3379.	MIN INV	--RKR	75.5
PHOENIX P	39549	67	2	28	2	44	10.0	11.0	7.3	8.3			68.3	221.4	3424.		--RKR	86.7
AUSTIN	39907	68	2	21	3	30	9.0	10.5	6.2	7.7	4.00		72.0	29.0	3557.		--MH	46.4

SDC NC. 344 62 A-ETA 1 USA LAUNCHED 62/ 7/21 DECAYED 8/14/62

PERIOD = 90.0 PERIGEE = 122.4 APOGEE = 218.1 INCL = 70.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	37885	62	8	9	2	7	0.5	0.5	4.3	4.3			75.0	135.0	170.	STEADY 5 DAYS BEFORE DECAY	--HK	76.4

SDC NC. 343 62 A-MU 1 VOSTOK 3 USSR LAUNCHED 62/ 8/11 RE-ENTERED 8/15/63

PERIOD = 88.1 PERIGEE = 99.4 APOGEE = 122.4 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	37890	62	8	14	3	16	8.0	8.5	0.0	0.0			55.0	55.0	130.	20 CYCLES IN 3.7 SEC	--DFC	68.1
ROCHESTER	37891	62	8	15	1	4	2.5	2.5	6.9	6.9			18.9	236.9	350.	STEADY	--JMM	109.9
SPOKANE	37891	62	8	15	3	56	6.7	6.7	9.0	9.0					250.	SEE TELEGRAM, STEADY	--ASL	61.7
SACRAMENTO	37891	62	8	15	4	1	2.4	2.4	5.4	5.4			28.5	55.0	228.	STEADY	--JAB	62.3
SACRAMENTO	37891	62	8	15	4	2	2.3	2.3	5.5	5.5			21.0	53.9	290.	STEADY, TRACKED 19 SEC	--SWB	113.5
WALNUT CREEK	37891	62	8	15	4	2	4.0	4.0	6.7	6.7			15.0	0.0	290.	1962 ALPHA MU ONE STEADY	--DFC	
SAN JOSE	37891	62	8	15	4	3	5.5	5.5	8.2	8.2						TRACKED 2MTS 02.2 SEC	--JAB	
WALNUT CREEK	37893	62	8	17	3	50	5.5	6.0	0.0	0.0						MEASURED 110 CYCLES IN 31.25 SEC	--DFC	
																TIMED 30 CYCLES IN 8.28 SEC	--DFC	

SDC NC. 365 62 A-NU 1 VOSTOK 4 USSR LAUNCHED 62/ 8/12 RE-ENTERED 8/15/62
 PERIOD = 88.1 PERIGEE = 102.5 APOGEE = 129.2 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WALNUT CREEK	37890	62/	8/14	4	36	6.0	7.0	8.0	9.0			20.0	323.0	400.	FLUX		--DFC	138.9
ROCHESTER	37891	62/	8/15	1	10	2.0	2.0	6.1	6.1			44.0	256.0	150.	STEADY		--	112.9
SAN JOSE	37891	62/	8/15	4	7	2.0	2.0	5.8	5.8			31.0	0.0	170.	1962 ALPHA NU ONE STEADY		--SWR	107.2
WALNUT CREEK	37891	62/	8/15	4	7	2.0	2.0	6.1	6.1			50.0	55.0	150.	STEADY, TRACKED 1C SEC		--DFC	64.1
SACRAMENTO	37891	62/	8/15	4	8	1.6	1.6	5.9	5.9					135.	STEADY		--ASL	
SACRAMENTO	37891	62/	8/15	4	8	2.0	2.0	6.4	6.4			85.0	55.0	130.	62 A-NU1- STEADY-BRIGHT-FAST--BRB		--BRB	75.3

SDC NC. 369 62 A-CMICRON 1 USA LAUNCHED 62/ 8/23 IN ORBIT
 PERIOD = 99.6 PERIGEE = 386.5 APOGEE = 528.3 INCL = 98.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38922	65/	6/21	16	16	8.5	8.5	10.4	10.4			66.0	265.0	420.	STEADY		--AA	96.9
DURBAN B	38940	65/	6/29	16	47	8.0	8.0	9.0	9.0			28.0	266.0	620.	STEADY		--GR	127.4
DURBAN B	38956	65/	7/15	16	9	8.5	8.5	10.2	10.2			88.0	209.0	450.	STEADY		--GR	78.4
STPETERSBURG	39496	67/	1/ 6	0	32	2.0	2.0	3.8	3.8			65.7	7.9	430.			--FK	60.7

SDC NC. 385 62 A-UPST 1 USA LAUNCHED 62/ 9/ 1 DECEASED 1C/26/64
 PERIOD = 94.4 PERIGEE = 188.9 APOGEE = 417.6 INCL = 87.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELRE	38683	64/10/15	4	28	3.0	4.5	5.8	7.3				22.0	100.0	280.	LONG TUMBLE BEFORE DECAY		--MK	143.0

SDC NC. 397 62 A-PSI 1 TIROS 6 USA LAUNCHED 62/ 9/10 IN ORBIT
PERIOD = 98.7 PERIGEE = 422.5 APOGEE = 446.1 INCL = 58.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
KANSAS-E	38583	64/ 7/ 7	8	4	4.0	4.0	5.5	5.5	66.0	295.0	500.	STEADY				ST	--SS	68.0
SAN ANTONIO	38602	64/ 7/26	7	50	8.5	10.1	10.1		62.4	360.0	478.	ST				ST	--PM	90.3
SAN ANTONIO	38604	64/ 7/28	2	36	8.0	8.0	9.5	9.5	59.9	180.0	490.	ST				ST	--PM	62.6
DURBAN B	38932	65/ 6/21	15	51	8.0	8.0	8.8	8.8	34.0	266.0	700.	STEADY				ST	--AA	129.8
DURBAN B	38933	65/ 6/22	16	36	9.0	9.0	8.6	8.6	13.0	225.0	1200.	MAINLY STEADY				ST	--GR	111.3
STADE/ELBE	39481	66/12/22	5	53	7.0	7.5	8.3	9.3	85.0	140.0	440.	STEADY AND IRREGULAR				ST	--HK	80.3
STADE/ELBE	39910	68/ 2/24	18	48	8.5	9.5	9.4	9.4	53.0	359.0	650.	ST				ST	--HK	81.1

SDC NC. 423 62 A-OMEGA 2 ROCKET BODY USSR LAUNCHED 62/ 9/27 DECEASED 12/22/62
PERIOD = -0.0 PERIGEE = -0.0 APOGEE = -0.0 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	37964	62/10/27	4	15	2.5	5.8	1.00	80.0	135.0	220.	FLASHING 62 ALPHA OMEGA 2					ST	--HK	79.1

SDC NC. 424 62 B-ALPHA 1 ALCUETTE CANADA LAUNCHED 62/ 9/29 IN ORBIT
PERIOD = 105.5 PERIGEE = 623.9 APOGEE = 638.8 INCL = 80.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	39309	66/ 7/ 3	22	37	7.0	8.0	9.0	9.0	85.0	260.0	634.	IRREGULAR VARYING				ST	--HK	77.3
STADE/ELBE	38235	63/ 7/25	1	46	7.0	8.0	8.8	8.8	0.25	46.1	284.6	HALF SEC TWIX MAX				ST	--FJK	115.0
STADE/ELBE	38695	64/10/27	17	39	7.0	8.0	8.8	8.8	72.0	260.0	700.	IRREGULAR FLASHES				ST	--HK	92.5
STADE/ELBE	38791	65/ 1/31	18	58	5.5	9.0	6.1	9.6	70.0	260.0	750.	FLASHING				ST	--HK	83.3
STADE/ELBE	38792	65/ 2/ 1	17	50	5.0	8.0	5.5	8.5	60.0	100.0	800.	IRREGULAR FLASHES				ST	--HK	46.1
STADE/ELBE	38792	65/ 2/ 1	19	35	5.0	9.0	5.0	9.0	38.0	260.0	1000.	FLASHING				ST	--HK	107.3
DURBAN B	38964	65/ 7/23	17	5	3.0	8.0	1.1	6.1	81.0	104.0	2400.	MAINLY +R.5				ST	--GR	58.0

SDC NC. 426 67 R-ALPHA 2 ROCKET BODY USA LAUNCHED 62/ 9/29 IN ORBIT
PERIOD = 105.5 PERIGEE = 622.0 APGEE = 637.5 INCL = 80.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CRS	PHASE
DURBAN A	38597	64/ 7/21	17	57		4.5	7.0	4.8	7.2		13.08	0.20	41.0	270.0	870.	TP FROM 10 TUMBLES	-- GR	104.6
DURBAN A	38599	64/ 7/23	17	57		4.0	7.0	4.8	7.8		13.10	0.20	44.0	293.0	700.	TP FROM 20 TUMBLES	-- GR	97.4
DURBAN A	38602	64/ 7/26	17	31		4.5	7.3	4.4	7.2		13.11	0.50	32.0	274.0	1050.	TP FROM 20 TUMBLES	-- AA	119.7
STADE/ELBE	38650	64/ 9/12	22	52		4.0	5.0	4.8	5.8		10.00		70.0	55.0	700.	REGULAR FLASHING	-- HK	68.3
STADE/ELBE	38652	64/ 9/24	21	22		4.5	6.0	5.1	6.6		17.00		53.0	360.0	750.	REGULAR FLASHING	-- HK	89.8
STADE/ELBE	38666	64/ 5/28	20	18		5.0	7.5	5.6	8.1		10.00		45.0	55.0	750.	REGULAR FLASHING	APPROXIMATE--	60.0
STADE/ELBE	38669	64/ 5/28	20	23		3.5	5.5	4.3	6.3		10.00		65.0	70.0	700.	REGULAR FLASHING	APPROXIMATE--	51.2
STADE/ELBE	38671	64/ 10/ 3	19	57		4.0	6.0	4.7	6.7		10.00		55.0	55.0	740.	REGULAR FLASHING	PER APPROX.	55.6
STADE/ELBE	38672	64/ 10/ 4	20	27		3.0	5.0	3.9	5.9				85.0	260.0	654.	REGULAR FLASHING	APPR 10 SEC	66.7
STADE/ELBE	38679	64/ 10/11	19	27		3.0	5.0	3.9	5.9				87.0	260.0	660.	REGULAR FLASHING	-- HK	109.3
STADE/ELBE	38692	64/ 10/24	18	37		4.5	6.0	5.1	6.6		12.00		45.0	260.0	750.	FLASHING	-- HK	46.6
STADE/ELBE	38790	65/ 1/30	18	11		3.5	5.5	4.0	6.0		15.00		65.0	100.0	780.	REGULAR FLASHING	-- HK	80.1
STADE/ELBE	38791	65/ 1/31	18	43		3.0	5.0	3.7	5.7		13.70		55.0	100.0	820.	REGULAR FLASHING	-- HK	43.7
STADE/ELBE	38792	65/ 2/ 1	17	39		5.5	7.0	5.9	7.4		13.70		38.0	260.0	1000.	REGULAR FLASHING	-- HK	109.7
STADE/ELBE	38792	65/ 2/ 1	19	23		4.0	6.0	4.0	6.0		15.00		85.0	100.0	660.	REGULAR FLASHING	-- HK	76.5
STADE/ELBE	38800	65/ 2/ 8	17	17		4.0	5.5	4.9	6.4		13.90		85.0	100.0	660.	REGULAR FLASHING	-- HK	80.8
STADE/ELBE	38849	65/ 7/ 8	21	55		3.0	8.5	3.9	9.4		18.00	0.80	80.0	260.0	1300.	REGULAR FLASHING	-- AA	15.9
DURBAN B	38963	65/ 7/22	15	57		4.0	7.0	3.4	6.4		18.20		45.0	94.0	830.	REGULAR PERIOD	-- AA	29.6
DURBAN B	38964	65/ 7/22	16	35		4.5	7.0	4.9	7.4		18.20		45.0	94.0	830.	FLASHING	-- HK	52.3
STADE/ELBE	39057	65/ 10/19	18	12		3.5	4.0	4.3	8.8		21.50	0.20	70.0	95.0	680.	FLASHING	-- HK	79.4
STADE/ELBE	39077	65/ 11/12	4	58		3.0	7.5	3.9	8.4		22.50	0.20	85.0	100.0	651.	FLASHING	-- HK	71.1
STADE/ELBE	39300	66/ 6/24	23	8		4.0	6.5	4.4	6.9			5.00	45.0	100.0	339.	LONG TUMBLE 45 SEC ESTIMATE	-- HK	

SDC NC. 444 67 B-KAPPA 1 STARAD USA LAUNCHED 62/10/26 DECEASED 10/ 5/67
PERIOD = 147.8 PERIGEE = 120.5 APGEE = 3459.8 INCL = 71.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CRS	PHASE
STADE/ELBE	38763	65/ 1/ 3	4	50		6.0	8.0	4.8	6.8		2.50	0.40	85.0	315.0	1700.	REGULAR FLASHING	-- HK	62.6
STADE/ELBE	38764	65/ 1/ 4	4	42		6.5	8.0	5.4	6.9		2.60	0.40	89.0	315.0	1690.	REGULAR FLASHING	-- HK	64.5
STADE/ELBE	38826	65/ 3/ 7	19	6		3.5	7.5	5.0	8.0		3.60		75.0	315.0	500.	REGULAR FLASHING	-- HK	85.5
STADE/ELBE	38830	65/ 3/11	19	40		4.5	9.0	5.3	8.8		3.70		15.0	260.0	700.	REGULAR FLASHING	-- HK	130.3
STADE/ELBE	38831	65/ 3/12	19	14		4.0	8.0	5.1	9.1		3.50		30.0	315.0	500.	REGULAR FLASHING	-- HK	126.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--QBS	PHASE
STADE/ELBE	38822	65	3	13	18	49	3.5	9.0	4.7	9.2	3.60		35.0	315.0	580.	REGULAR FLASHING	-- HK	123.3
DURBAN B	38895	65	5	15	17	39	7.0	7.5	5.2	5.7	4.55		86.0	104.0	2320.	REGULAR	--AA	54.1
DURBAN B	38900	65	5	20	18	19	6.5	9.3	4.2	6.0	4.60		47.0	264.0	2850.	REGULAR PERIOD FROM FLASHES	--GR	91.7
STADE/ELBE	38958	65	7	17	21	47	4.0	6.5	4.2	6.7	5.50		1.00	65.0	900.	REGULAR FLASHING	-- HK	54.0
STADE/ELBE	38959	65	7	18	22	54	4.5	7.5	4.5	7.5	5.50		1.00	65.0	1010.	REGULAR FLASHING	-- HK	95.2
STADE/ELBE	38960	65	7	27	22	7	5.0	9.0	4.2	8.2	6.00		1.00	65.0	1470.	FLASHING	-- HK	107.8
STADE/ELBE	39025	65	9	22	19	59	6.5	9.0	5.3	6.8	6.00		0.30	87.0	1750.	FLASHING	-- HK	66.1
STADE/ELBE	39026	65	9	24	19	44	6.5	7.5	5.3	6.3	6.60		0.30	89.0	1750.	FLASHING	-- HK	69.0
STADE/ELBE	39117	65	12	23	4	51	3.5	6.0	5.2	7.7	8.00		0.40	40.0	450.	FLASHING	-- HK	104.9
VAN NUYS-F	39126	66	1	1	4	17	6.0	9.3	5.0	8.3	6.78		45.5	300.5	1590.		--JGM	88.6
VAN NUYS-F	39128	66	1	3	3	2	4.7	9.0	4.1	8.4	6.87		82.3	290.0	1310.		--JGM	71.2
HEIDELBERG	39132	66	1	7	18	54	4.6	7.0	4.5	6.9	8.20		1.50	63.0	1041.	TUMBL WITH SHOTY FLASHES	--GLU	86.6
HEIDELBERG	39261	66	5	16	22	0	3.8	8.0	4.5	8.7	5.07		0.50	34.0	732.	FLASHES, LONG MIN. SEMIPERIOD	--GLU	125.1
HEIDELBERG	39262	66	5	17	21	42	3.6	7.8	4.4	8.6	10.10		0.50	37.0	689.	FLASHING	--GLU	124.4
CLEVELAND	39275	66	5	30	1	43	5.0		4.7		7.00		26.7	309.8	1135.	MINIMUM INVISIBLE TWILIGHT	--DS	144.5
TOWNSVILLE	39333	66	7	27	9	57	7.0	9.0	6.0	8.0	10.40		21.0	15.0	1600.	FOLLOWED 84 SECONDS	--APS	77.7
STADE/ELBE	39419	66	10	21	18	23	4.7	8.0	4.5	7.8	13.20		0.60	77.0	1100.	REGULAR FLASHING	-- HK	81.4
STADE/ELBE	39477	66	12	18	16	15	5.0	7.5	4.3	9.8			60.0	220.0	350.	REGULAR FLASHING	-- HK	107.7
STADE/ELBE	39485	66	12	26	6	41	0.5	4.0	2.8	6.3	15.40		40.0	115.0	350.	REGULAR FLASHING	-- HK	35.1
POYNTON	39544	67	2	23	23	6					15.50		17.0	350.0		ONLY 4 CYCLES, +/- 0.5	--DMB	117.3
POYNTON	39549	67	2	28	18	48	2.1		0.0		15.20		45.0	140.0			--DMB	54.5
POYNTON	39554	67	3	5	21	1					14.30		22.0	350.0			--DMB	111.1
STADE/ELBE	39565	67	3	16	22	57	5.0	8.0	4.5	7.5			68.0	55.0	1250.	REGULAR FLASHING CLOUDS	-- HK	63.6
HEIDELBERG	39592	67	4	12	20	11	3.5	7.0	2.8	6.3	17.00		33.0	220.0	1400.	FLASHING	--GLU	81.4
HEIDELBERG	39597	67	4	17	19	15	3.8		2.9		16.00		37.0	220.0	1500.	SHARP FLASHES MIN INV	--GLU	93.9
POYNTON	39656	67	6	15	22	26					19.00		60.0	250.0		TP +/- 0.2 SECS	--DMB	83.1
POYNTON	39684	67	7	13	0	54	2.5	7.5	0.0	0.0			50.0	290.0		APPROX MAGS	--DMB	85.7
POYNTON	39694	67	7	23	22	7	1.0		0.0				35.0	70.0			--DMB	74.9
POYNTON	39599	67	7	28	21	21	1.0	7.0	0.0	0.0			80.0	90.0		MAGS +/- 0.5	--DMR	75.0

SDC NC. 446 62 B-WU 1 ANNA 18 USA LAUNCHED 62/10/31 IN ORBIT
PERIOD = 107.8 PERIGEE = 670.5 APOGEE = 713.8 INCL = 50.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
YOUNGVILLE	38608	64/	8/	1	9	39	9.0	9.5	9.6	10.1			57.0	100.0	775.	RAPID VARIATION	--NDB	33.0
DURBAN A	38898	65/	5/18		17	23	9.0	9.0	8.6	8.6			30.0	243.0	1220.	STEADY	--AA	112.7
STADE/ELBE	38930	65/	6/19		23	17	8.5	9.0	9.1	9.6			45.0	180.0	767.	STEADY WITH FAINT VARYING	--HK	52.0
STPETERSBURG	39241	66/	4/26		1	39	9.0	9.0	8.9	8.9			33.2	180.0	1064.		--SL	55.3
MADISON	39246	66/	5/	1	4	8	8.7	9.7	9.2	9.2			57.5	360.0	787.	STEADY	--GCL	91.9
CLEVELAND	39250	66/	5/	5	3	26	8.0	8.0	0.0	0.0							--DS	
MADISON	39252	66/	5/	7	4	0	9.7	9.7	10.0	10.0			48.0	360.0	871.	STEADY	--GCL	102.3
MILWAUKEE-C	39255	66/	5/10		3	56	8.0	8.0	8.5	8.5			54.2	360.0	800.	NCT TRACKED	--GVH	97.5
PHOENIX R	39507	67/	1/17		2	14	9.0	9.0	9.5	9.5			57.7	34.0	780.	MIN TIV	--PR	50.1
STPETERSBURG	39556	67/	3/	7	1	10	10.0	10.2	9.2	9.2	1.00		44.5	157.8	900.		--FK	55.3
STPETERSBURG	39580	67/	3/31		2	37	9.0	9.0	0.0	0.0			49.1	345.9	900.		--FK	84.7
STPETERSBURG	39584	67/	4/	4	1	55	9.0	9.0	0.0	0.0			67.7	310.5			--FK	83.8
STPETERSBURG	39655	67/	6/14		3	31	9.0	9.0	9.3	9.3			47.4	3.2	860.		--FK	95.0
STADE/ELBE	39715	67/	8/13		22	41	8.0	8.5	8.4	8.9			68.0	180.0	850.	STEADY AND FAINT VARYING	--HK	47.6
HEIDELBERG	39807	67/11/13		20	10		8.2	8.2	8.8	8.8			72.0	78.0	760.	ST OCCAS VAR	--GLU	34.6

SDC NC. 447 62 B-WU 2 ROCKEF BODY USA LAUNCHED 62/10/31 IN ORBIT
PERIOD = 107.5 PERIGEE = 668.0 APOGEE = 719.5 INCL = 50.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--DAS	PHASE
DURBAN A	38605	64/	7/25		17	18	5.8	5.8	6.3	6.3			50.0	270.0	900.	STEADY	--GR	104.5
DURBAN A	38307	64/	7/31		15	55	5.4	5.4	6.2	6.2			65.0	90.0	700.	STEADY	--GR	52.8
KANSAS-E	38629	64/	8/22		3	6	6.0	9.0	6.0	9.0			57.10	0.10	980.		--SS	102.5
WALNUT CREEK	38637	64/	8/30		4	51	5.0	8.0	5.7	8.7			69.0	180.0	725.	1 CYCLE	--DFC	55.4
WALNUT CREEK	38638	64/	8/31		4	9	5.0	8.0	5.8	8.8			88.0	50.0	700.	1 CYCLE	--DFC	71.8
WALNUT CREEK	38638	64/	8/31		4	10	6.0	8.0	6.2	8.2			60.0	60.0	900.	1 CYCLE	--DFC	58.4
STADE/ELBE	38706	64/11/	7	17	35		5.5	5.5	5.9	5.9			55.0	180.0	850.	STEADY	--HK	78.2
STADE/ELBE	39057	65/10/24		4	52		5.0	6.5	5.1	6.6	14.90		47.0	155.0	570.	FLASHING	--HK	103.7
STADE/ELBE	39387	66/	9/19		3	18	5.0	8.0	5.5	8.5			47.0	270.0	800.	REGULAR FLASHING	--HK	37.4
STADE/ELBE	39323	66/	7/17		22	44	5.0	8.5	5.4	8.9	23.60		4.00	53.0	830.	REGULAR FLASHING	--HK	39.3

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SDC NC. 502 62 R-TAU 1 USA LAUNCHED 62/12/13 DECEASED 2/ 9/67
PERIOD = 116.3 PERIGEE = 139.2 APOGEE = 1738.6 INCL = 70.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39245	66/ 4/30	20	21	6.0	8.8	9.3	10.1	1.00	27.0	82.0	547.	NORMAL TUMBLING	--GLU	50.6			
HEIDELBERG	39246	66/ 5/ 1	19	54	7.8	9.0	9.2	10.4	1.50	23.0	50.0	535.	ONLY ONE PERIOD OBSERVED	--GLU	76.0			

SDC NC. 503 62 R-UPST 1 RELAY 1 USA LAUNCHED 62/12/13 IN ORBIT
PERIOD = 184.9 PERIGEE = 819.0 APOGEE = 4620.5 INCL = 47.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
PHOENIX R	39441	66/11/12	2	58	9.0	8.9	64.2	220.9	1023.	ABOUT 10 TP PER SEC	--RKR	77.3						

SDC NC. 504 62 R-TAU 2 INJUN 3 USA LAUNCHED 62/12/13 IN ORBIT
PERIOD = 116.3 PERIGEE = 149.1 APOGEE = 1729.9 INCL = 70.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELPE	38743	64/12/14	5	4	7.0	7.5	7.8	8.3	65.0	100.0	700.	STEADY AND IRREGULAR FLASHES--	--HK	94.6				
STADE/ELPE	39056	65/10/23	18	27	7.5	8.0	8.5	9.0	88.0	55.0	625.	STEADY WITH VARYING	--HK	67.4				
STADE/ELPE	39188	66/ 3/ 4	0	30	4.0	4.0	0.0	0.0	67.0	64.5			--FJK	55.6				
STADE/ELPE	39241	66/ 4/26	5	22	9.0	10.0	8.0	9.0	28.3	313.0	1600.	1.00	--FJK	93.3				
PCYNTON	39614	67/ 5/ 4	21	21	5.3	5.3	9.1	9.1	75.0	305.0	170.		--DMB	92.2				
PCYNTON	39722	67/ 8/20	23	0	7.5	0.0	0.0	0.0	60.0	260.0		INVISIBLE, L.T. 9.5 APART FROM--	--DMB	75.0				
PCYNTON	39759	67/ 9/26	21	42	4.3	10.2	4.8	10.7	30.0	10.0	800.	FLASHES AND BROADER MAXIMA	--DMB	102.3				
GRANBY	39783	67/10/20	23	9	5.5	5.5	0.0	0.0	72.0	180.0		ONE SHARP FLASH	--MPC	78.1				
GRANBY	39795	67/11/ 5	9	58	7.5	0.0	0.0	0.0	50.0	55.0		STEADY NEAR PERIGEE	--MPC	104.0				
GRANBY	39889	68/ 2/ 3	23	42	7.5	0.0	0.0	0.0	79.0	31.0		MTY INV, VARYING IRREG.	--MPC	65.6				
STADE/ELPE	39955	68/ 4/ 9	1	52	8.0	9.0	8.0	9.9	45.0	65.0	670.	ST THEN FLSH NEAR APOGEE	--HK	109.8				
STADE/ELPE	39966	68/ 4/20	23	17	8.0	9.0	8.9	9.9	50.0	55.0	650.	FAINT FLASHES SHORT OBS	--HK	90.4				
												IRREG VAR OR FLASHING						

SDC AC. 506 62 R-CHI 1 EXPLORER 16 USA LAUNCHED 62/12/16 IN GRABT
 PERIOD = 104.3 PERIGEE = 463.5 APOGEE = 715.1 INCL = 52.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29651	64/	5/13	20	17	5.0	9.0	6.3	9.3	7.7	4.00	75.0	180.0	550.		FLASHING	-- HK	59.3
DURBAN R	29634	65/	6/23	18	12	6.5	7.5	6.7	7.7	7.6		48.0	266.0	900.		SLOW TURNLE PRIOR SHADOW ETV--	AA	91.9
DURBAN R	29536	65/	6/25	17	8	7.0	7.0	7.6	7.6			76.0	265.0	740.		MAINLY +7 MAG	--GR	77.6
STADE/ELPE	29253	66/	5/	22	30	4.5	9.0	5.2	9.7			75.0	180.0	719.		LONG FLASH WITH A 10 SEC MAX--	HK	56.9

SDC AC. 508 62 R-TAL 4 METAL ORJECT USA LAUNCHED 62/12/13 DECEASED 1/19/66
 PERIOD = 116.0 PERIGEE = 133.6 APOGEE = 1732.4 INCL = 70.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CBS	PHASE
DURBAN R	29939	65/	6/28	16	54	7.5	9.0					74.0	264.0	500.		RAPID PULSATING	--GH	82.4

SDC AC. 509 62 R-PSI 1 TRANSIT 5A USA LAUNCHED 62/12/19 IN GRABT
 PERIOD = 99.2 PERIGEE = 436.8 APOGEE = 452.4 INCL = 90.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29790	65/	1/20	17	49	7.0	7.5	8.7	9.7			82.0	100.0	450.		VARYING	-- HK	66.4
STADE/ELPE	29792	65/	2/1	17	64	6.8	6.8	8.5	8.5			80.0	100.0	455.		STEADY	-- HK	65.8
STADE/ELPE	29502	65/	5/22	22	32	7.5	7.5	8.7	8.7			50.0	100.0	576.		STEADY	-- HK	64.7
DURBAN R	29168	66/	2/12	17	51	8.0	8.0	9.4	9.4			55.0	266.0	520.		REGULAR FLUCTUATION	-- GR	108.8
STADE/ELPE	29556	67/	3/7	19	36	8.0	8.0	9.8	9.8			85.0	100.0	445.		STEADY OCCAS SCINTILLATE	-- HK	63.0
STADE/ELPE	29560	67/	3/11	19	23	7.0	7.0	8.8	8.8			89.0	100.0	440.		STEADY	-- HK	69.9
STADE/ELPE	29720	67/	8/28	20	19	7.0	7.0	7.9	7.9			40.0	65.0	450.		STEADY	-- HK	62.9
STADE/ELPE	29767	67/	10/4	18	43	7.0	7.0	8.7	8.7			85.0	100.0	450.		ST	-- HK	68.1

SDC NO. 513 62 R-TAU 5 USA LAUNCHED 62/12/13 DECEASED 2/ 5/67
 PERIOD = 116.1 PERIOD = 143.5 APPROX = 1728.0 INCL = 70.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29409	66/ 1/15	18	18			8.0		8.8				63.0	310.0	700	VAP MIN INV	-- HK	86.6
STADE/ELPE	29241	66/ 4/26	20	31			7.5	9.0	10.0	11.5			45.0	55.0	210	VAP SHORT OBSERVED	-- HK	75.2
STADE/ELPE	29245	66/ 4/20	20	36			8.2	8.2	10.7	10.7			55.0	284.0	220	STEADY	-- GLU	107.3
STADE/ELPE	29252	66/ 9/15	20	22			9.0	8.5	8.7	9.2			65.0	55.0	732	FLICKERING	-- HK	74.9

SDC NO. 514 62 R-TAU 5 USA LAUNCHED 62/12/13 IN ORBIT
 PERIOD = 184.7 PERIOD = 834.5 APPROX = 4505.0 INCL = 47.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WICHITA	29619	66/ 8/12	3	48			0.1		-1.5			0.50	73.0	0.0	2043	1 FLASH OBSERVED	--PWR	78.0
CLEVELAND	29262	66/ 5/17	3	9			7.0		4.3		3.00		71.2	180.0	3414	MINIMUM INVISIBLE	-- DS	52.1
PHOENIX R	29387	66/ 9/19	4	42			7.0		6.7				45.9	338.2	1132	FLASHES CROSSING 1 DEG FLD	--RKR	90.5
PHOENIX R	29388	66/ 9/20	5	23			8.0		7.4				37.9	347.2	1346	MAY QUICK FLASH THEN FADE	--RKR	91.9
STPETERSBURG	29390	66/ 5/22	1	2			9.0	9.0	9.0	9.0			70.9	37.1	1015	+4 FLASH 4 SECOND	--FK	46.4
STPETERSBURG	29434	66/11/ 5	1	15			9.0		9.0				65.7	220.5	688		--FK	90.3
PHOENIX R	29441	66/11/12	2	40			12.0	12.0	12.0	12.0			23.7	229.1	1400		--RKR	104.5
CCEANPORT	29443	66/11/14	0	53			10.0		9.0				90.3	20.3	290		--FK	68.0
STPETERSBURG	29445	66/11/14	23	42			9.0	9.0	9.0	9.0								

SDC NO. 520 62 R-TAU 4 USA LAUNCHED 62/12/13 DECEASED 2/24/68
 PERIOD = 116.0 PERIOD = 147.3 APPROX = 1733.6 INCL = 70.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	29053	65/10/20	18	4			4.8	4.8	5.2	5.2			71.0	220.0	920	STEADY	-- HK	85.1
STADE/ELPE	29125	66/ 1/ 4	17	58			5.0	7.0	4.6	6.6			60.0	125.0	1180	VERY SLOWLY TUMBLING	-- HK	52.4
STADE/ELPE	29132	66/ 1/ 7	17	45			5.6	7.8	5.4	7.6			78.0	76.0	1078	VERY SLOW TUMBLING	--GLU	59.0
STADE/ELPE	29132	66/ 1/ 7	19	16			5.0	7.0	4.8	6.8			85.0	125.0	1100	STEADY AND SLOWLY TUMBLING	-- HK	62.0
STPETERSBURG	29205	66/ 4/19	1	51			1.5	1.5	3.2	3.2			78.9	67.8	448		--FJK	68.7
CAN ANTONIO	29226	66/ 6/20	2	14			3.5	3.5	5.3	5.3			87.7	243.5	643	STYNAKED EYE, SLOW	-- PM	83.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39415	66/10/17	18	47	5.8	5.5	5.8	5.5	5.5	5.5			70.0	215.0	1150.	STEADY	--HK	75.8
STADE/ELBE	39481	66/12/22	4	37	2.0	3.5	2.0	3.5	3.5	3.5			65.0	55.0	500.	STEADY	--HK	84.6
POYNON	39535	67/ 2/14	18	29	1.9	6.0	1.9	6.0	6.0	6.0			90.0	0.0	150.	AT PERIGEE	--DMB	78.6
HEIDELBERG	39618	67/ 5/ 8	23	21	1.8	4.5	1.8	4.5	2.2	4.9	225.00		36.0	100.0	850.	SLOWLY FLASHING	--GLU	68.6
STADE/ELBE	39705	67/ 8/ 3	21	14	5.0	8.5	5.4	8.9					78.0	310.0	850.	SLOWLY FLASHING	--HK	88.2
POYNON	39753	67/ 9/20	19	10	0.8	0.8	0.8	0.0	0.0	0.0			60.0	130.0			--DMB	54.3
GRANBY	39759	67/ 9/26	0	6	4.0	4.0	4.0	0.0	0.0	0.0			16.5	250.0			--MPC	133.4
STADE/ELBE	39828	67/12/ 4	22	18	6.0	7.0	6.0	7.0	0.0	0.0			40.0	325.0			--APC	94.0
STADE/ELBE	39834	67/12/10	16	27	2.5	2.5	2.5	3.6	3.6				20.0	355.0	600.	ST	--HK	68.6
STADE/ELBE	39863	68/ 1/ 8	17	29	2.5	2.5	2.5	4.0	4.0				68.0	220.0	500.	ST	--HK	90.2
STADE/ELBE	39929	68/ 3/14	19	1	-1.0	-1.0	-2.5	-2.5					10.0	10.0	2000.	ST	--HK	94.2

SEC. NC. 527 63 3-A PERIOD = 94.6 PERIGEE = 285.8 USA LAUNCHED 63/ 1/16 IN ORBIT
 333.7 INCL = 81.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38546	64/ 5/31	8	26	4.0	9.0	4.0	9.0	5.7	9.7	5.68	0.50	46.5	119.9	450.	STEADY	--ACB	38.3
ADELAIDE-2	38547	64/ 6/ 1	9	39	7.0	7.0	7.0	7.2	7.2	7.2			11.9	238.0	920.		--ACB	124.8
ADELAIDE-2	38550	64/ 6/ 4	8	33	4.0	7.0	4.0	7.0	5.9	8.9	5.48		40.2	251.5	420.		--ACB	117.9
ADELAIDE-2	38625	64/ 8/18	9	58	5.0	5.0	5.0	5.5	5.5				17.0	280.0	400.	MIN-INVS.IN APOGEE SCOPE	--ACB	140.6
ADELAIDE-2	38627	64/ 8/20	9	12	4.0	9.0	4.0	9.1	9.1				28.0	226.0	600.		--ACB	116.7
STADE/ELBE	38727	64/11/28	5	47	3.5	9.0	3.5	9.0	4.8	10.3	6.92		36.0	280.0	550.	SEC. MAX OF MAG +7.5 ALSO	--ACB	132.2
STADE/ELBE	38728	64/11/29	5	23	3.5	9.0	3.5	9.0	4.9	9.4	8.40		25.0	260.0	530.	REGULAR FLASHING	--HK	31.3
STADE/ELBE	38798	65/ 2/ 7	5	31	3.0	7.5	3.0	7.5	5.0	8.5	8.00		35.0	260.0	500.	REGULAR FLASHING	--HK	30.2
STADE/ELBE	38938	65/ 6/27	0	2	3.0	8.0	3.0	8.0	5.1	10.1	15.00		60.0	260.0	480.	REGULAR FLASHING	--HK	48.8
STADE/ELBE	38940	65/ 6/29	22	52	3.5	7.0	3.5	7.0	5.4	8.9	16.50	1.00	56.0	260.0	382.	REGULAR FLASHING	--HK	69.1
STADE/ELBE	39053	65/10/20	18	50	3.0	6.5	3.0	6.5	4.5	8.0	21.20	0.50	35.0	260.0	410.	REGULAR FLASHING	--HK	68.7
STADE/ELBE	39077	65/11/13	4	25	2.0	4.5	2.0	4.5	4.4	6.9	21.10	0.30	60.0	100.0	490.	FLASHING	--HK	116.8
VAN NUYS-F	39148	66/ 1/23	3	8	3.5	5.5	3.5	5.5	5.5	7.5			56.3	281.6	390.	TP 25-30 SFC	--HK	99.4
VAN NUYS-F	39149	66/ 1/24	2	44	1.8	4.0	1.8	4.0	4.3	6.5	28.70		84.5	104.5	320.	MAX ALTERNATE +1.8, +2.5	--JGM	98.4
STADE/ELBE	39353	66/ 8/16	0	19	3.0	9.0	3.0	9.0	4.5	10.5	43.50		32.0	100.0	490.	REGULAR FLASHING	--JGM	66.6
STADE/ELBE	39357	66/ 8/20	0	12	3.0	9.0	3.0	9.0	5.0	11.0			65.0	100.0	400.	REGULAR FLASHING	--HK	81.8
STADE/ELBE	39388	66/ 9/20	20	6	3.0	8.0	3.0	8.0	5.0	10.0			60.0	360.0	400.	LONG FLASH PER REGULAR FLASH	--HK	70.2
STADE/ELBE	39388	66/ 9/20	20	6	3.0	8.0	3.0	8.0	5.0	10.0			60.0	360.0	400.		--HK	86.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CRS	PHASE
STADE/FLPE	39500	66/	5/22	19	17	3.0	2.0	2.0	4.5	9.5			35.0	100.0	500.	REGULAR FLASHING	-- HK	22.5
STADE/FLPE	39504	67/	1/14	17	42	2.0	4.0	4.0	4.3	6.3			65.0	260.0	350.	VARYING	-- HK	96.4
STADE/FLPE	39507	67/	1/17	17	55	5.0	5.0	5.0	6.5	6.5			23.0	260.0	500.	STEADY	-- HK	137.0
STADE/FLPE	39565	67/	3/16	19	13	3.0	5.0	5.0	4.7	6.7			55.0	100.0	450.	SLOWLY FLASHING	-- HK	39.4
PCYNTON	39567	67/	3/18	19	50	1.8			4.1				65.0	70.0	350.		--DMB	56.8
STADE/FLPE	39573	67/	3/24	18	30	2.0	2.0	2.0	5.3	5.3			89.0	260.0	222.	STEADY	-- HK	83.0
STADE/FLPE	39614	67/	5/4	2	20	1.0	5.0	5.0	3.7	8.7			89.0	260.0	293.	REGULAR SLOWLY FLASHING	-- HK	78.6
STADE/FLPE	39637	67/	5/27	23	18	2.3	6.0	6.0	3.0	7.6			57.0	260.0	480.	SLOWLY FLASHING	-- HK	7.1
STADE/FLPE	39642	67/	6/1	22	14	1.5	9.0	9.0	3.8	10.3			80.0	100.0	350.	SLOWLY FLASHING	-- HK	72.8
STADE/FLPE	39644	67/	6/3	21	12	4.5	9.0	9.0	5.2	9.7			22.0	260.0	710.	SLOWLY FLASHING	-- HK	104.5
STADE/FLPE	39644	67/	6/3	22	45	4.5	9.0	9.0	5.3	9.8			25.0	260.0	700.	SLOWLY FLASHING	-- HK	82.8
STADE/FLPE	39649	67/	6/8	21	40	3.0	3.0	3.0	4.8	4.8			55.0	260.0	430.	STEADY	-- HK	89.0
STADE/FLPE	39708	67/	8/6	23	8	2.5	8.5	8.5	4.0	10.0			37.0	100.0	500.	SLOWLY FLASHING	-- HK	66.6
STADE/FLPE	39725	67/	8/23	21	36	2.0	8.5	8.5	4.2	10.7			60.0	260.0	760.	SLOWLY FLASHING	-- HK	80.8
STADE/FLPE	39730	67/	8/28	20	23	2.0	9.0	9.0	4.1	11.1			57.0	100.0	375.	SLOWLY FLASHING	-- HK	48.0
STADE/FLPE	39852	67/12/28	17	10	2.7	2.7	2.7	2.7	5.2	5.2			85.0	260.0	710.	ST	-- HK	78.3
STADE/FLPE	39918	68/	3/3	18	51	5.0	5.0	5.0	6.6	6.6			40.0	260.0	480.	ST	-- HK	119.8
STADE/FLPE	39923	68/	3/8	18	22	4.6	5.6	5.6	6.3	7.3			35.0	250.0	460.	SLOWLY TUMR	--GLU	127.8
STADE/FLPE	39924	68/	3/9	0	20	2.5	2.5	2.5	0.0	0.0			34.1	271.8			--FK	131.0
STADE/FLPE	39956	68/	4/10	2	37	2.5	7.5	7.5	5.4	10.4			88.0	100.0	260.	SLOWLY TUMR	-- HK	75.1
STADE/FLPE	39900	68/	5/14	22	2	6.0	8.5	8.5	7.8	10.3			47.0	260.0	430.	VERY SLOWLY TUMR	-- HK	84.3

SEC AC. 533 63 5-A PERIOD = 97.8 PERIOD = 309.4 AMIN PERIOD FLASH ALT A7 RANGE IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CRS	PHASE
STADE/FLPE	39881	65/	5/1	1	7	6.5	8.0	8.0	9.0	10.5	5.00	1.00	80.0	260.0	124.	FLASHING	-- HK	66.5

SDC NC. 555 63 6-A PERIOD = -0.0 PERIGEE = -0.0 APOGEE = -0.0 LAUNCHED 63/ 3/21 DECEASED 4/9/63
 STATION NAME MJD Y M D H M MAX MIN APAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CBS PHASE
 STADE/ELPE 38111 63/ 3/23 18 30 3.0 5.0 0.50 25.0 190.0 400. RAPID FLASHING 63 6 B -- HK 74.9

SDC NC. 564 63 6-A PERIOD = 96.1 PERIGEE = 156.0 APOGEE = 558.6 INCL = 57.6 LAUNCHED 63/ 4/ 3 DECEASED 11/24/66
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CBS PHASE
 STADE/ELPE 38791 65/ 1/31 17 35 5.0 5.0 7.3 7.3 35.0 360.0 350. STEADY IN PERIGEE -- HK 73.6
 STADE/ELPE 38792 65/ 2/ 1 17 12 5.5 5.5 7.8 7.8 35.0 360.0 350. STEADY -- HK 72.0
 STADE/ELPE 38794 65/ 2/ 3 18 2 4.5 4.5 7.9 7.9 85.0 220.0 210. STEADY -- HK 76.6
 DURBAN B 38955 65/ 7/14 16 1 5.5 7.0 5.4 6.9 12.0 213.0 1,50. SLOW TUMBLE -- AA 101.2
 STADE/ELPE 38981 65/ 8/ 9 21 39 4.5 4.5 8.0 8.0 85.0 360.0 200. STEADY -- HK 77.6
 STADE/ELPE 38982 65/ 8/10 21 5 5.0 5.0 8.5 8.5 80.0 180.0 200. STEADY -- HK 67.4
 STADE/ELPE 38988 65/ 8/16 20 58 6.7 6.7 9.0 9.0 35.0 360.0 340. STEADY -- HK 118.0
 STADE/ELPE 39075 65/11/11 17 32 5.5 8.7 70.0 270.0 230. STEADY OCASS VARYING -- HK 86.9
 STADE/ELPE 39076 65/11/12 16 52 5.0 7.2 8.3 8.3 85.0 360.0 219. STEADY FAINT VARYING -- HK 76.7
 HFIDELBERG 39131 66/ 1/ 6 16 50 7.2 6.0 8.0 8.0 38.0 230.0 566. STEADY -- GLU 128.7
 STADE/ELPE 39132 66/ 1/ 7 17 43 6.0 6.0 8.0 8.0 70.0 15.0 400. STEADY -- HK 62.5
 HFIDELBERG 39133 66/ 1/ 8 16 56 6.5 6.5 8.1 8.1 47.0 0.0 482. STEADY -- GLU 67.4
 HFIDELBERG 39259 66/ 5/14 20 56 7.8 7.8 9.5 9.5 23.0 349.0 448. STEADY -- GLU 135.4
 STADE/ELPE 39259 66/ 5/14 20 58 5.0 5.0 8.2 8.2 53.0 360.0 230. STEADY -- HK 109.2
 VAN NUYS-F 39281 66/ 6/ 5 4 15 7.0 7.0 8.9 8.9 20.6 234.0 410. VARYING -- JGM 98.3
 STADE/ELPE 39331 66/ 7/25 21 37 5.5 6.5 7.3 8.3 40.0 50.0 445. STEADY -- HK 91.5
 STADE/ELPE 39331 66/ 7/25 23 11 5.0 5.0 7.4 7.4 65.0 215.0 329. STEADY -- HK 55.0
 STADE/ELPE 39334 66/ 7/28 21 23 5.2 5.2 7.7 7.7 75.0 360.0 310. STEADY -- HK 90.4
 STADE/ELPE 39426 66/11/ 7 5 19 5.0 5.5 6.1 6.6 27.0 360.0 600. STEADY SHORT FLICKER -- HK 74.1

STATION NAME	WJO	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	SECTD	FLASL	ALT	A7	RANGE	COMMENTS	REMARKS	PRICE
HEIDELBERG	29250	66/	5/14		20	36	8.5	2.5	9.0	9.0			47.0	149.0	709.	PAINTED AS 8.5, SLICKERING	1000	43.0
PHENIX R	29273	66/	5/28		3	43	11.0	11.0	11.2	11.2			40.0	9.1	907.	11 MAG STEADY CROSSING 1 DEG--RKR	102.5	
SAN ANTONIO	29275	66/	5/30		4	39	7.5	8.7	7.7	9.0			67.5	28.0	891.	IPP MOSTLY+8.7, ONE FL TD+7.5-- DM	73.9	
SAN ANTONIO	29280	66/	5/14		4	49	7.0	10.0	7.2	10.2			80.3	213.8	895.	SMOOTH IRREG MOTION	103.4	
SAN ANTONIO	29281	66/	5/14		3	14	9.1		9.4				48.3	32.1	875.	FAST, MIN UNDEFICABLE WITH SIN-- DM	87.0	
SAN ANTONIO	29286	66/	5/10		3	27	7.2	7.2	7.0	7.0			76.4	30.6	735.	MORE OR LESS STEADY	72.7	
PHENIX R	29421	66/10/22		5	27	12.0	12.0	9.0	9.0	9.0			78.3	346.2	5440.	STEADY	43.0	
PHENIX R	29422	66/10/24		3	35	12.0	12.0	8.4	8.4	8.4			88.5	170.5	5317.	STEADY	52.0	
OCEANPORT	29603	67/	4/23		2	50	9.5		9.2				80.3	350.1	1137.		57.3	
OCEANPORT	29604	67/	4/24		2	40	9.0		8.4				93.4	60.9	1203.		71.3	
OCEANPORT	29606	67/	4/29		1	27	9.0		0.0				85.3	745.8			75.4	
PHENIX R	29610	67/	4/29		5	18	11.0	11.0	10.4	10.4			51.7	0.0	1316.	STEADY	98.5	
PHENIX R	29613	67/	4/30		3	53	8.0		0.0				85.8	14.0			60.3	
PHENIX R	29612	67/	4/30		4	36	11.0	11.0	10.2	10.2			55.0	357.6	1453.	STEADY	50.3	

STATION NAME	CHD	Y	M	D	M	H	MAX	MIN	AMX	AMN	FLAS	ALT	RANGE	COMMENT	TEMP	WIND	
STADEVELDE	28670	64/10/7	23	23	7.5	5.0	5.6	5.1				70.0	240.0	2450.	FAINT VARYING	--	42.0
STADEVELDE	28676	64/10/8	20	54	7.5	7.5	5.4	5.6				65.0	100.0	2450.	STEADY	--	50.0
STADEVELDE	28679	64/10/11	21	7	7.5	7.5	5.6	5.6				70.0	100.0	2350.	STEADY	--	42.0
STADEVELDE	28705	64/11/7	19	32	7.0	7.0	5.2	5.2				80.0	100.0	2320.	STEADY	--	41.0
STADEVELDE	28717	64/11/19	19	7	7.5	7.0	5.7	6.2				80.0	240.0	2320.	STEADY	--	41.0
STADEVELDE	28724	64/11/25	17	34	5.0	5.0	4.0	4.0				65.0	100.0	2550.	STEADY	--	42.0
STADEVELDE	28772	65/1/12	5	24	6.5	5.0	4.5	4.5				50.0	240.0	2400.	STEADY	--	50.0
STADEVELDE	28816	65/2/25	23	13	6.5	4.0	4.6	4.1				65.0	100.0	2420.	STEADY	--	42.0
STADEVELDE	28822	65/3/3	23	3	7.3	7.3	5.0	5.0				80.0	100.0	2330.	STEADY	--	45.0
STADEVELDE	28828	65/3/10	22	24	7.0	7.0	5.2	5.2				80.0	100.0	2320.	STEADY	--	50.0
CURRAN B	28895	65/5/15	16	7	6.0	6.0	4.1	5.1				62.0	95.0	2400.	STEADY	--GR	50.2
CURRAN B	28905	65/5/16	18	54	7.0	7.0	4.4	4.4				32.0	262.0	2420.	MAINLY STEADY	--AA	59.7
CURRAN B	28900	65/5/22	19	13	7.7	7.7	5.5				48.00	39.0	262.0	2420.	LAG INVISIBILITY PERIOD	--GR	100.8

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
CURBAN R	38913	65/	6/	2	16	58	6.5		4.4				47.0	265.0	2600.	PERIOD ABOUT 50 SECS	--AA	107.0
DURBAN B	38921	65/	6/10		16	25	8.0	10.0	5.8	7.8	60.00		47.0	264.0	2750.	ROUGH PERIOD-ILL DEFINED	--GR	112.4
STADE/ELPE	38966	65/	7/25		0	19	8.0	9.0	6.1	6.1			66.0	100.0	2440.	STEADY	--HK	76.5
STADE/ELPE	38972	65/	7/31		0	36	7.5	9.0	5.7	7.2	67.00	1.00	85.0	100.0	2300.	SLOWLY TUMBLING	--HK	74.1
VAN NUYS-F	39023	65/	9/20		3	6	7.0		4.3				22.6	62.0	1530.		--JGW	38.7
VAN NUYS-F	39023	65/	9/20		5	57	6.5	7.1	4.7	5.3			82.6	267.0	2290.	TP ABOUT 1.5 MINUTES	--JGW	48.6
STADE/ELBE	39054	65/10/21			19	17	7.5	8.0	5.7	6.2			77.0	260.0	2291.	STEADY AND SLOWLY TUMBLING	--HK	73.6
STADE/ELBE	39183	66/	2/27		22	0	6.5	8.5	4.7	4.7			90.0	0.0	2273.	STEADY	--HK	49.2
STADE/ELPE	39195	66/	3/11		22	34	7.5	8.5	5.5	6.5	53.20	1.00	56.0	260.0	2550.	FLASHING	--HK	63.2
STADE/ELBE	39199	66/	3/15		20	55	6.5	8.5	4.7	6.7			87.0	260.0	2275.	SLOWLY FLASHING	--HK	62.5
STADE/ELPE	39203	66/	3/19		19	16	1.0	8.5	-1.0	6.5			60.0	100.0	2480.	IRREGULAR VAR ONE FLASH IMAG	--HK	45.0
STADE/ELBE	39203	66/	3/19		22	1	6.5	9.0	4.5	7.0	57.00	0.50	55.0	260.0	2550.	SLOWLY FLASHING	--HK	71.6
STADE/ELBE	39204	66/	3/20		20	13	8.0		6.2				85.0	100.0	2275.	STEADY WITH FAINT VARYING	--HK	62.6
HEDELBURG	39216	66/	4/	1	20	46	7.1	8.5	5.2	6.6	29.20		62.0	279.0	2438.	NORMAL TUMBLING	--GLU	88.1
STADE/ELBE	39323	66/	7/17		22	42	6.0	8.5	4.1	6.6			70.0	100.0	2360.	SLOWLY FLASHING	--HK	69.2
STADE/ELPE	39331	66/	7/25		22	11	7.5	8.5	5.6	6.6			70.0	140.0	2365.	VARYING	--HK	56.6
STADE/ELPE	39331	66/	7/25		22	9	7.5	7.5	5.7	5.7			73.0	100.0	2334.	STEADY	--HK	67.5
STADE/ELBE	39334	66/	7/28		22	17	7.5	8.5	5.7	6.7			80.0	100.0	2292.	VARYING	--HK	69.7
STADE/ELBE	39361	66/	8/24		20	48	6.0	9.0	4.2	7.2	84.00		89.0	260.0	2282.	IRREGULAR FLASHING	--HK	73.2
PHOENIX R	39399	66/10/	1		2	23	7.0	9.0	5.2	7.2			85.2	266.0	2265.	TRACKED 5 MIN APRX 45 S TP	--RKR	79.6
STPETERSBURG	39400	66/10/	2		0	38	9.0	9.0	7.2	7.2			74.0	252.0	2300.		--FK	86.0
EDINBURG	39401	66/10/	2		1	36	8.0	9.0	6.2	6.2			75.3	269.2	2310.	ST, EXCEPT FOR 1 SEC RISE OF 1 OR 4 MAGNITUDES	--PM	86.4
PHOENIX P	39408	66/10/10			2	49	7.0	9.0	4.9	6.9			51.7	276.8	2611.	51 SEC TP, GRADUAL CHANGE IN MAG	--RKR	105.5
STPETERSBURG	39411	66/10/12			0	13	5.0	5.0	3.1	3.1					2420.		--FK	
VAN NUYS-F	39414	66/10/16			3	5	8.5		6.3				43.0	279.5	2770.		--JGW	113.4
PHOENIX R	39416	66/10/18			2	16	8.0	8.0	5.9	5.9			49.0	272.5	2622.	STEADY	--RKR	112.8
STPETERSBURG	39417	66/10/19			0	29	6.0	6.0	3.8	3.8					2900.		--FK	
EDINBURG	39421	66/10/23			1	36	7.5		5.0				32.7	279.7	3113.	FADED TO INV SLOWLY, NO SHDW	--PM	123.7
PHOENIX R	39422	66/10/24			2	33	8.0		5.6				33.9	283.5	3037.	MIN INV 40 SEC TP	--RKR	121.8
STPETERSBURG	39423	66/10/25			0	46	8.0	9.0	5.4	5.4			26.7	281.5	3347.		--FK	127.0
OCEANPORT	39433	66/11/	4		22	13	8.5		5.7				19.1	298.6	3676.		--FK	129.9
STPETERSBURG	39434	66/11/	5		0	21	8.0		5.2				19.5	286.5	3650.		--FK	133.1
STADE/ELPE	39525	67/	2/14		20	5	7.0	8.0	5.2	6.2			78.0	100.0	2325.	SLOWLY FLASHING	--HK	46.3
STADE/FLPE	39529	67/	2/18		18	28	7.0	8.5	4.7	6.2			43.0	100.0	2860.	REGULAR FLASHING	--HK	26.5
STPETERSBURG	39545	67/	2/24		1	53	5.0	5.0	3.2	3.2			43.0	28.5	2263.		--FK	54.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	29649	67	6	8	23	14	7.0	8.0	5.1	6.1			75.0	100.0	2350.	VARYING	-- HK	73.9
HEIDELBERG	29655	67	6	24	22	11	7.0	7.8	5.1	5.9	26.00		72.0	100.0	2360.	SLOWLY FLASHING	--GLU	67.1
HEIDELBERG	29670	67	6	29	21	29	7.7	8.4	5.8	6.5	74.00		65.0	100.0	2450.	SLOWLY FLASHING	--GLU	63.1
STADE/ELBE	29671	67	6	30	22	26	8.2	8.2	6.4	6.4			89.0	260.0	2300.	STEADY	-- HK	77.9
HEIDELBERG	29672	67	7	1	23	26	7.5	8.6	5.6	6.7	73.00		63.0	260.0	2450.	SLOWLY FLASHING	--GLU	70.3
HEIDELBERG	29681	67	7	10	21	4	7.5	8.5	5.6	6.6	72.00		74.0	100.0	2360.	SLOWLY FLASHING	--GLU	67.9
HEIDELBERG	29701	67	7	30	21	6	7.3		5.4		74.00		68.0	260.0	2400.	SLOWLY FLASHING MIN INV	--GLU	85.4
STADE/ELBE	29772	67	10	9	3	31	5.5	8.5	3.7	6.7	85.70		87.0	100.0	2300.	SLOWLY TUMBLING	-- HK	73.4
STADE/ELBE	29864	68	1	9	20	48	5.5	9.0	3.7	7.2	29.50		88.0	100.0	2300.	SLOWLY TUMBLING	-- HK	41.8
HEIDELBERG	29875	68	1	20	20	22	7.6		5.8		46.00		84.0	285.0	2280.	VAR MIN INV PER APPROX	--GLU	54.1
STADE/ELBE	29876	68	1	21	1	45	7.0	8.0	5.2	6.2	1.00		76.5	62.3	2300.	SLOWLY TUMBLING	--FK	41.8
STADE/ELBE	29876	68	1	21	18	34	5.0		2.9		23.00		53.0	80.0	2610.	SLOWLY TUMBLING	--GLU	29.2
STADE/ELBE	29883	68	1	28	19	55	5.5	8.0	3.4	5.9			53.0	255.0	2600.	SLOWLY TUMBLING	--FK	74.4
STADE/ELBE	29888	68	2	2	1	30	7.0	7.0	5.2	5.2			70.0	82.0	2370.	SLOWLY TUMBLING	--GLU	51.4
STADE/ELBE	29890	68	2	4	18	18	7.6	8.6	5.7	6.7	24.00		85.0	100.0	2300.	ST HAZE	-- HK	72.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
VAN NUYS-F	29251	66	5	6	4	19	9.0		9.3		3.30		42.2	360.0	880.		--JGM	100.7
CLEVELAND	29262	66	5	17	3	58	6.0	6.0	6.5	6.5			81.3	180.0	798.		-- DS	55.8
CLEVELAND	29268	66	5	23	2	27	7.0		7.0				86.7	360.0	653.	SHORT FLASH	-- DS	76.6
SAN ANTONIO	29272	66	5	27	4	1	7.2		7.2				42.8	19.9	900.	FLASH EVERY 3 TO 4 SECONDS	-- PM	90.6
PHCENIX P	29277	66	6	1	4	7	8.0	9.0	8.5	8.5			52.6	17.7	788.	STEADY CROSSING 1 DEG FIELD	-- RR	90.7
SAN ANTONIO	29277	66	6	1	4	5	7.0		7.3				60.2	26.5	852.	DRILLING FL EVERY 4 SEC. MIN INV	-- PM	77.5
PHCENIX P	29284	66	6	8	4	53	8.0	8.0	8.5	8.5			66.0	213.0	800.	STEADY CROSSING 2.4 DEG FLD	-- RR	61.8
SAN ANTONIO	29287	66	6	11	4	10	6.2		6.5		3.00		62.4	217.0	888.	MIN INV, REG VAP. SMOOTH RISE	-- PM	58.9
SAN ANTONIO	29288	66	6	12	2	35	6.8		7.4				57.4	26.6	749.	LOCKED REF, LOST IT IN CLOUDS	-- PM	84.5
EDINBURG	29421	66	10	23	4	5	11.0	12.0	7.0	8.0			68.4	342.0	6224.	PROBABLY FAINTER, MOONLITE	-- PM	50.1
PHCENIX P	29439	66	11	10	3	16	12.0		8.3				75.0	349.0	5512.	BRIGHT, SEEN IN 17 INCH REFLECTOR	--RRK	59.1

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	39447	66/11/18	2	28	13.0	9.4							74.5	352.8	5156.	MIN INV, 2 FLASH CROSSING 10	--RKR	65.5
OCEANPORT	39606	67/4/26	3	55	8.0	8.2							79.7	42.0	903.		--GFC	61.0
OCEANPORT	39609	67/4/29	3	4	8.0	9.0	0.0	0.0					79.5	6.0			--GFC	68.4
OCEANPORT	39610	67/4/30	1	33	8.0	0.0	0.0	0.0					83.4	351.0			--GFC	76.8
PHOENIX R	39610	67/4/30	5	24	10.0	10.0	9.5	9.5					52.0	4.8	1288.	STEADY	--RKR	87.0
PHOENIX R	39611	67/5/1	3	49	10.0	10.0	8.8	8.8					62.9	349.6	1720.	STEADY	--RKR	90.4
PHOENIX R	39612	67/5/2	6	13	8.0	8.0							56.6	15.8	1013.	MIN INV	--RKR	79.7

SOC NC. 576 63 15-A FAITH 7 USA LAUNCHED 63/ 5/15 RE-ENTERED 5/16/63
PERIOD = 88.5 PERIGEE = 99.4 APOGEE = 165.3 INCL = 32.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
OUBAN B	39186	66/3/2	18	44	7.0	7.0	4.8	4.8	48.0	95.0	2700.	STEADY					AA	32.2

SOC NC. 579 63 14-B OISH T USA LAUNCHED 63/ 5/ 9 IN ORBIT
PERIOD = 166.4 PERIGEE = 2241.3 APOGEE = 2286.6 INCL = 97.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELPE	39864	68/	1/	9	20	11	9.0	6.8					78.0	100.0	2700.	ST SHORT OBS THEN LOST	-- HK	36.9

SOC NC. 588 63 17-C ROCKET BODY USSR LAUNCHED 63/ 5/22 DECEASED 4/3/64
PERIOD = 94.8 PERIGEE = 164.0 APOGEE = 471.0 INCL = 48.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELPE	39431	64/	2/	6	18	5	3.0	4.5	35.0	180.0	0.70				500.	RAPID FLASHING	-- HK	83.5

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SDC NC. 500 63 14-0 PERIOD = 166.5 TRS 3 USA LAUNCHED 63/ 5/ 9 IN ORBIT
 PERIOD = 2243.1 APOGEE = 2245.4 INCL = 87.4
 LAUNCHED 63/ 5/ 9 IN ORBIT
 APOGEE = 2245.4 INCL = 87.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	28209	63/ 4/29	4	36	9.0	6.8							46.4	283.3	2705.	ONE FLASH	-- FB	93.9
MOUNT PINES	29349	66/ 8/12	5	56	12.5	13.2	10.7	11.4					78.0	85.0	2280.	ABOUT A 2 SEC TP	--JGM	52.5
PHOENIX R	29359	66/ 8/22	4	33	13.0	11.2							71.4	82.7	2328.	MIN INV	--RRR	50.4

SDC NC. 591 63 20-A VCSTOK 5 USSR LAUNCHED 62/ 6/14 RE-ENTERED 6/15/63
 PERIOD = 89.3 PERIGEE = 108.1 APOGEE = 137.3 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELPE	28198	63/ 6/18	22	0	1.0	1.0	4.0	4.0					45.0	220.0	250.	STEADY 53 20A VCSTOK 5	-- HK	60.8

SDC NC. 594 63 22-A TRANSIT USA LAUNCHED 63/ 6/15 IN ORBIT
 PERIOD = 99.8 PERIGEE = 449.9 APOGEE = 475.3 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	28550	64/ 5/ 4	9	38	8.0	8.0	9.4	9.4					60.8	266.6	520.	STEADY	--ACB	94.9
STADE/ELPE	28748	64/12/19	17	0	7.0	7.0	8.7	8.7					89.5	260.0	466.	STEADY NCASS FAINT VARYING	-- HK	74.6
STADE/ELPE	28750	64/12/21	17	12	7.0	7.5	8.3	8.8					85.0	260.0	550.	VARYING MUST STEADY	-- HK	97.4
OURBAN B	28933	65/ 6/22	16	40	5.0	9.0	4.4	8.4	120.00				12.0	264.0	1300.	+5 MAX FO. 10 SEC, THEN +5 STD-- GR FLASHES ABOUT 2 MIN APART	-- GR	141.2
STADE/ELPE	29120	65/12/26	16	27	7.0	7.0	8.6	8.6					85.0	100.0	475.	STEADY	-- HK	75.1
STADE/ELPE	29260	66/ 5/15	1	32	7.0	7.0	0.0	0.0					69.2	346.9	464.	STEADY	--FJK	88.7
STADE/ELPE	29356	66/ 8/19	0	56	7.5	7.5	9.2	9.2					82.0	100.0	464.	STEADY	-- HK	71.4
STADE/ELPE	29461	66/12/ 2	0	36	6.0	6.0	7.6	7.6					53.1	295.0	480.		--FK	95.5
STADE/ELPE	29606	67/ 4/26	20	52	7.0	7.5	8.3	8.8					65.0	260.0	540.	STEADY AND SLOWLY VARYING	-- HK	86.5
FEIDELAFRC	29823	67/12/ 9	18	15	7.5	7.5	8.3	8.3					40.0	245.0	580.	ST	--GLU	111.0
STADE/ELPE	29967	68/ 4/21	20	51	6.8	6.8	8.3	8.3					81.0	260.0	500.	ST	-- HK	76.4
STADE/ELPE	29972	68/ 4/26	20	24	3.8	8.0	5.4	9.6					85.0	100.0	470.	VEPY SLOWLY VAR	-- HK	73.0

SOC NC. 595 63 23-A VOSTOK 6 USSR LAUNCHED 63/ 6/16 RE-ENTERED 6/19/63
PERIOD = 88.4 PERIGEE = 113.1 APOGEE = 144.2 INCL = 65.0

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
NEHRERG 28197 63/ 6/17 0 28 7.0 7.0 8.2 8.2 8.8 290.0 575. STEADY SHADOWED AFTER 10 SEC--AMH 128.5 --OBS PHASE

SOC NC. 604 63 24-A TIRCS 7 USA LAUNCHED 63/ 6/19 IN ORBIT
PERIOD = 97.4 PERIGEE = 383.4 APOGEE = 406.4 INCL = 58.2

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
KANSAS-E 38586 64/ 7/10 9 42 9.0 9.0 10.1 10.1 43.0 283.0 600. STEADY --SS 56.8
SAN ANTONIO 38604 64/ 7/28 2 56 7.5 7.5 8.8 8.8 45.3 180.0 550. ST --PM 53.6
STADE/ELBE 39615 64/ 8/ 8 21 43 4.0 8.5 5.3 9.8 1.50 50.0 350.0 ONLY ONE ARIGHT FLASH OBS --HK 111.5
DURBAN B 38951 65/ 7/10 16 27 7.0 7.0 9.0 9.0 72.0 95.0 400. STEADY --GR 56.3
STPETERSBURG 39241 66/ 4/26 1 58 8.0 8.0 9.7 9.7 59.0 43.7 450. --SL 63.1
STPETERSBURG 39263 66/ 5/18 9 7 9.0 10.0 9.0 0.0 40.0 67.7 --FJK 119.9
PHOENIX R 39312 66/ 7/ 6 5 32 8.0 8.0 9.4 9.4 45.0 238.0 530. MIN INV RAPID TP --RRR 70.9
STADE/ELBE 39472 68/ 4/26 20 57 8.5 8.5 10.4 10.4 45.0 180.0 410. ST --HK 69.9
HEIDELBERG 39973 68/ 4/27 21 18 8.2 8.2 9.3 9.3 40.0 344.0 590. ST --GLU 117.3

SOC NC. 605 63 24-B ROCKFT RCPY USA LAUNCHED 63/ 6/19 IN ORBIT
PERIOD = 97.4 PERIGEE = 380.3 APOGEE = 407.0 INCL = 58.2

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
STADE/ELBE 39502 67/ 1/12 4 54 7.5 7.5 8.3 8.3 20.0 100.0 700. STEADY SHORT OBSERVED --CBS PHASE
--HK 137.2

SOC NC. 608 63 14-C TRS 2 U.S. LAUNCHED 63/ 5/ 9 IN ORBIT
PERIOD = 166.5 PERIGEE = 2243.1 APOGEE = 2286.6 INCL = 97.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELPE	39864	68/	1/	9	20	6	9.0	7.1	70.0	100.0	2385.					ONLY SHORT FLASH NOT SURE	-- MK	29.7

SOC NC. 612 63 26-A GEOPHYSICS USA LAUNCHED 63/ 6/28 IN ORBIT
PERIOD = 102.1 PERIGEE = 257.9 APOGEE = 809.6 INCL = 49.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
WALNUT CREEK	38609	64/	8/	2	5	8	6.0	10.0	7.0	11.0	5.20		17.5	19.0	632.	15.6 SEC/3 CYCLES	--DPC	105.4
WALNUT CREEK	38611	64/	8/	4	4	44	6.0		7.0		5.24		21.0	21.0	631.		--DPC	99.3
MILWAUKEE	38615	64/	8/	8	2	17	5.0	6.0	7.5	8.5			55.7	212.5	317.	APPROX 5 SEC. BETWEEN MIN.	--EAM	78.0
STADE/ELPE	38679	64/10/11	19	53			6.0	9.0	6.4	8.4	4.90	0.40	52.0	220.0	850.	REGULAR FLASHING	--MK	72.5
DURBAN B	38935	65/ 6/24	17	17			5.5	7.5	6.0	8.0	9.33		40.0	243.0	810.	REGULAR PERIOD	--GR	71.8
DURBAN B	38936	65/ 6/25	17	0			6.5	8.0	6.9	8.4			72.0	266.0	950.	REGULAR FADE	--GR	83.1
DURBAN B	38939	65/ 6/28	16	25			7.0		7.2		9.44		41.0	4.0	920.	REGULAR	--AA	89.0
DURBAN B	38939	65/ 6/28	16	27			8.5		7.5		9.46		22.0	22.0	1400.	REGULAR	--AA	79.7
DURBAN B	38939	65/ 6/28	16	21			6.0		6.2		9.44		45.0	266.0	900.	REGULAR	--AA	116.0
DURBAN B	38940	65/ 6/29	16	13			6.5		6.5		9.10		41.0	353.0	1000.	GOES TO INVISIBILITY	--AA	99.2
DURBAN B	38940	65/ 6/29	16	8			6.5		6.5		9.72		40.0	266.0	1000.	GOES TO INVISIBILITY	--AA	122.6
DURBAN B	38941	65/ 6/30	15	59			6.0		5.8		9.65		40.0	343.0	1100.	REGULAR- TO INVISIBILITY	--GR	109.4
HEIDELBERG	39237	66/ 4/22	20	9			4.2	5.0	6.0	6.8	17.20		46.0	250.0	439.	NORMAL TUMBLING	--GLU	98.2
STADE/ELPE	39354	66/ 8/17	1	50			5.0	5.0	5.7	5.7			55.0	180.0	710.	STEADY	--MK	47.9
STADE/ELPE	39364	66/ 8/27	23	19			5.0	8.5	5.7	9.2	23.20	1.00	55.0	180.0	735.	REGULAR FLASHING	--MK	28.6
STADE/ELPE	39715	67/ 8/13	22	5			7.0	7.0	7.9	7.9			50.0	180.0	650.	STEADY SHORT DRS	--MK	34.8
STPETERSBURG	39782	67/10/19	0	16			5.0	5.0	5.0	0.0							--FK	
HEIDELBERG	39784	67/10/21	18	21			5.5		5.4			0.50	41.0	178.0	1050.	FLASHES LONG PERIOD	--GLU	70.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	PANGF	COMMENTS	--CBS	PHASE
STADE/VELPE	29308	66/	7/	2	23	55	2.5	9.0	4.9	10.3	15.80	1.50	47.0	100.0	244.	MAX REGULAR FLASHING	--	76.7
STADE/VELPE	29315	66/	7/	9	23	4	3.0	8.0	5.4	10.4			70.0	100.0	327.	REGULAR FLASHING	--	71.6
STADE/VELPE	29316	66/	7/10	22	44		3.0	9.0	5.1	10.1			53.0	100.0	375.	REGULAR FLASHING	--	67.0
STADE/VELPE	29321	66/	7/15	22	33		2.5	7.0	5.0	9.5			77.0	260.0	317.	REGULAR FLASHING	--	77.1
STADE/VELPE	29323	66/	7/17	21	52		2.5	8.0	4.6	10.1	15.00		55.0	100.0	379.	REGULAR FLASHING	--	61.3
STADE/VELPE	29331	66/	7/25	20	29		2.0	9.0	3.9	9.0			45.0	100.0	414.	REGULAR FLASHING	--	50.5
STADE/VELPE	29334	66/	7/28	21	12		2.5	8.5	4.5	10.2			40.0	260.0	450.	REGULAR FLASHING	--	99.2
STADE/VELPE	29337	66/	7/31	20	8		2.0	8.0	4.5	10.5			75.0	100.0	315.	REGULAR FLASHING	--	71.2
STADE/VELPE	29429	66/11/10	17	22			2.0	4.5	5.3	6.8			80.0	260.0	350.	REGULAR FLASHING	--	83.9
STADE/VELPE	29440	66/11/11	17	0			2.0	5.0	4.0	7.0			77.0	100.0	400.	REGULAR FLASHING	--	64.9
STADE/VELPE	29524	67/	2/13	19	2		2.5	5.0	5.0	7.5			80.0	260.0	320.	SLOWLY VARYING	--	85.4
STADE/VELPE	29671	67/	6/30	23	6		2.0	9.0	3.8	9.8	39.00	2.00	47.0	100.0	430.	REGULAR SLOWLY FLASHING	--	70.5
STADE/VELPE	29675	67/	7/	4	22	57	2.0	6.0	4.5	8.5			51.0	100.0	310.	SLOWLY FLASHING	--	76.4
STADE/VELPE	29677	67/	7/	6	22	3	4.4	7.8	5.7	9.1	35.10		33.0	100.0	420.	SLOWLY FLASHING	--	65.7
HEIDELBERG	29681	67/	7/10	21	54		2.0	7.5	4.2	9.7	34.60		58.0	100.0	370.	SLOWLY FLASHING	--	56.2
HEIDELBERG	29683	67/	7/12	21	2		3.5	7.5	4.4	8.4	36.00		23.0	100.0	540.	SLOWLY FLASHING	--	59.9
HEIDELBERG	29683	67/	7/12	22	39		4.5	9.0	5.2	8.7	36.00		22.0	320.0	710.	SLOWLY FLASHING	--	44.6
HEIDELBERG	29692	67/	7/21	20	16		2.8	9.0	4.5	10.7	37.00		45.0	100.0	450.	SLOWLY FLASHING	--	132.0
STADE/VELPE	29786	67/10/23	19	7			4.0	4.0	5.0	5.0	60.00		25.0	310.0	630.	ST SHADOW	--	47.8
STADE/VELPE	29793	67/10/30	17	26			3.2	4.6	5.0	6.4			42.0	91.0	440.	SLOWLY TUMB PER APPROX	--	124.1
STADE/VELPE	29796	67/11/	2	17	34		2.0	7.0	4.2	9.2			60.0	260.0	365.	SLOWLY TUMBLING	--	29.0
STADE/VELPE	29801	67/11/	7	16	44		1.8	6.0	4.4	8.6			85.0	260.0	300.	SLOWLY TUMBLING	--	103.8
STADE/VELPE	29812	67/11/18	4	56			2.0	5.0	4.2	7.2			60.0	260.0	360.	SLOWLY TUMBLING	--	84.9
AUSTIN	29888	68/	2/	2	1	6	2.0	4.0	4.0	6.6			76.0	99.0	302.	SLOW BRIGHTENING	--	45.4
WALNUT CREEK	29890	68/	2/	4	3	16	4.0	7.0	5.1	8.1			26.8	285.0	590.	REG VAR	--	64.1
HEIDELBERG	29890	68/	2/	4	17	21	3.5	5.2	4.8	6.5	56.00		30.0	94.0	550.	SLOWLY TUMB	--	128.9
GRANBY	29890	68/	2/	4	23	28	4.5	5.5	6.5	7.5			48.0	283.0	392.	REG VAR	--	26.5
EDINBURG	29891	68/	2/	5	1	5	3.5	3.5	5.3	5.3			40.9	280.6	431.	NO MAGNITUDE CHANGE	--	112.6
GRANBY	29893	68/	2/	5	23	4	4.0	5.0	6.6	7.6			79.0	101.0	305.	ONE BRIGHTENING TO 2.5	--	123.6
HEIDELBERG	29893	68/	2/	7	0	7	5.5	4.5	5.7	6.7			13.0	292.0	907.	REG VAR	--	69.2
STADE/VELPE	29893	68/	4/	6	19	35	3.2	5.8	5.4	8.0	57.00		57.0	99.0	360.	SLOWLY TUMB	--	138.1
STADE/VELPE	29893	68/	4/	6	19	35	5.5	5.5	6.8	6.8			32.0	100.0	540.	ST MOON	--	51.5
STADE/VELPE	29894	68/	4/	8	20	0	2.5	6.5	5.5	9.1			89.0	260.0	300.	VERY SLOWLY TUMB	--	27.0
STADE/VELPE	29897	68/	4/11	19	50		3.0	5.0	5.2	7.2			55.0	26.0	370.	SLOWLY TUMB	--	75.2

SDC NC. 614 63 25-A HITCH-HIKER 1 USA LAUNCHED 63/ 6/27 IN ORBIT
 PERIOD = 132.6 PERIGEE = 201.3 APOGEE = 2571.2 INCL = 82.1
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CDS PHASE
 VAN NUYS-F 29129 66/ 1/14 2 11 8.2 9.0 9.5 10.3 74.8 80.0 550. TP ABOUT 1 SEC --JGM 61.4
 STADE/ELBE 29241 66/ 4/26 20 21 6.5 9.0 8.9 11.4 75.0 100.0 330. MANY SHORT FLASHES IN ONESEC-- HK 65.2

SDC NC. 622 63 30-A USA LAUNCHFC 63/ 7/19 IN ORBIT
 PERIOD = 167.9 PERIGEE = 2242.5 APOGEE = 2305.9 INCL = 88.4
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --CDS PHASE
 WALNUT CREEK 28528 64/ 5/13 5 38 8.0 8.5 6.1 6.7 71.0 269.4 2382. STEADY --DFC 78.4
 TOMNSVILLE 28592 64/ 7/16 8 50 8.5 8.5 6.0 6.7 85.3 88.9 2343. STEADY.FOLLOWED 25DEGREES --NDB 71.8
 WALNUT CREEK 28650 64/ 9/12 11 58 8.0 8.0 6.0 6.0 58.0 282.0 2546. POSSIBLE SLOW CYCLING --DFC 44.6
 STADE/ELBE 28706 64/11/ 7 22 31 7.5 7.5 5.7 5.7 88.0 260.0 2300. STEADY --HK 37.9
 STADE/ELBE 28737 64/12/ 8 20 9 7.0 7.5 5.2 5.7 85.0 100.0 2340. STEADY AND DCASS FLASHING --HK 41.5
 STADE/ELBE 28750 64/12/21 18 40 6.8 6.8 4.9 4.9 75.0 100.0 2380. STEADY --HK 44.9
 STADE/ELBE 28751 64/12/22 17 1 7.0 7.0 4.7 4.7 45.0 100.0 2840. STEADY --HK 37.6
 STADE/ELBE 28881 65/ 5/ 1 20 35 8.0 9.0 6.0 7.0 62.0 100.0 2515. VARYING --HK 56.7
 DURBAN B 28920 65/ 6/ 9 17 7 7.5 7.5 5.5 5.5 61.0 94.0 2500. VERY SHORT MIN TO INVIS --GR 35.4
 DURBAN B 28921 65/ 6/10 18 43 8.5 8.5 6.5 6.5 66.0 266.0 2500. STEADY --GR 67.2
 DURBAN B 28930 65/ 6/19 17 46 7.5 11.0 5.6 9.1 72.0 266.0 2400. REGULAR ROLL --AA 73.4
 DURBAN B 28931 65/ 6/20 16 9 8.0 9.0 5.9 5.9 56.0 96.0 2600. STEADY --AA 43.5
 DURBAN B 28932 65/ 6/21 17 20 8.0 8.0 6.2 6.2 36.0 262.0 3100. SLOW FADE OVER 1 MINUTE --GR 94.1
 DURBAN B 28933 65/ 6/22 15 39 7.0 7.0 4.7 4.7 81.0 266.0 2300. STEADY --AA 70.1
 DURBAN B 28933 65/ 6/22 15 44 7.0 7.0 4.7 4.7 41.0 66.0 2920. STEADY --GR 53.1
 DURBAN B 28933 65/ 6/22 18 32 7.0 9.5 4.7 7.2 49.0 96.0 2900. STEADY --AA 42.6
 DURBAN B 28934 65/ 6/23 16 50 8.5 8.5 6.6 6.6 43.0 263.0 2900. MAINLY AT 9.5 MAG --GR 92.4
 DURBAN B 28935 65/ 6/24 18 6 8.5 9.5 6.3 7.3 65.0 8.0 2420. STEADY --GR 73.0
 DURBAN B 28936 65/ 6/25 16 24 6.5 6.5 4.5 4.5 50.0 264.0 2700. SLOW ROLL --GR 91.0
 DURBAN B 28936 65/ 6/25 16 34 7.0 7.0 5.0 5.0 62.0 163.0 2500. STEADY --AA 70.6
 DURBAN B 28939 65/ 6/28 17 10 8.0 8.0 6.0 6.0 57.0 318.0 2500. STEADY --AA 91.9
 DURBAN B 28939 65/ 6/28 17 15 7.0 7.0 5.1 5.1 67.0 266.0 2400. STEADY --AA 85.1
 DURBAN B 28940 65/ 6/29 18 27 8.5 8.5 6.0 6.0 34.0 264.0 3200. STEADY --AA 102.9
 DURBAN B 28941 65/ 6/30 16 49 8.0 8.0 5.9 5.9 77.0 266.0 2600. STEADY --AA 80.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMX	APX	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38943	65	7	7	16	23	8.0	8.0	6.1	6.3			87.5	259.0	2350.	SCINTILLATING	--GR	76.2
DURBAN B	38944	65	7	7	17	34	8.5	8.5	6.3	6.3			48.0	265.0	2800.	STEADY	--GR	100.0
DURBAN B	38948	65	7	7	16	43	7.5	10.0	5.6	8.1			64.0	266.0	2400.	SLOW TUMBLE	--AA	94.9
DURBAN B	38950	65	7	9	16	18	7.5	10.0	5.6	8.1			74.0	266.0	2450.	SLOW ROLL	--AA	90.5
DURBAN B	38951	65	7	10	17	29	8.5		6.2				38.0	263.0	2900.	SLOW TUMBLE	--AA	110.9
DURBAN B	38952	65	7	12	17	3	7.5		5.3				45.0	264.0	2800.	SLOW ROLL	--GR	109.4
DURBAN B	38957	65	7	16	16	12	8.0	8.0	6.0	6.0			61.0	266.0	2500.	STEADY	--AA	104.5
DURBAN B	38958	65	7	17	17	22	8.8	8.8	6.2	6.2			30.0	261.0	3100.	NOT FOLLOWED	--AA	120.0
STADE/ELPE	39053	65	10	20	22	27	7.5	8.0	5.7	6.2			85.0	260.0	2331.	SLOWLY TUMBLING	--HK	44.4
STADE/ELPE	39054	65	10	21	20	50	7.0	8.5	5.0	6.5			60.0	90.0	2540.	SLOWLY TUMBLING	--HK	34.4
STADE/ELPE	39056	65	10	23	20	25	7.3	8.5	5.2	6.4			55.0	100.0	2670.	IRREGULAR VARYING	--HK	25.7
HEIDELBERG	39131	66	1	6	16	55	6.8	8.4	5.0	6.6			87.0	305.0	2331.	NORMAL TUMBLING	--GLU	80.3
STADE/ELPE	39195	66	3	11	23	24	6.5	9.0	4.6	6.1	55.00	1.00	73.0	100.0	2360.	FLASHING	--HK	48.4
STADE/ELPE	39199	66	3	15	22	34	6.0	9.0	4.0	7.0	41.5	2.00	63.0	100.0	2480.	FLASHING	--HK	43.0
STADE/ELPE	39203	66	3	19	21	42	8.0	8.0	5.8	5.8			50.0	100.0	2700.	STEADY	--HK	39.0
HEIDELBERG	39216	66	4	1	20	21	8.2	8.2	6.0	6.0			46.0	78.0	2780.	STEADY	--GLU	46.6
STADE/ELPE	39236	66	4	21	21	34	5.0	9.0	7.2	7.2			80.0	260.0	2325.	LONG FLASH PERIOD	--HK	72.3
HEIDELBERG	39237	66	4	22	20	3	6.0	6.0	4.0	4.0			62.0	68.0	2465.	STEADY	--GLU	64.2
STADE/ELPE	39356	66	8	19	1	1	8.2	9.0	4.4	7.2			85.0	100.0	2318.	SLOWLY FLASHING	--HK	71.0
STADE/ELPE	39365	66	8	28	0	30	6.0	9.0	4.2	7.2			85.0	100.0	2326.	REGULAR LONG FLASH	--HK	65.9
STADE/ELPE	39428	66	10	30	19	11	6.5	9.0	4.5	7.0	30.50	2.00	70.0	100.0	2500.	REGULAR FLASHING	--HK	40.8
STADE/ELPE	39435	66	11	6	19	5	6.8	9.0	4.9	7.1			75.0	100.0	2346.	REGULAR FLASHING	--HK	44.7
STADE/ELPE	39440	66	11	11	19	25	6.5	9.0	4.7	7.2			88.0	260.0	2340.	REGULAR FLASHING	--HK	57.4
STADE/ELPE	39440	66	11	11	19	32	3.5	9.0	1.5	7.0			53.0	360.0	2570.	BRIGHT FLASHES	--HK	72.9
STADE/ELPE	39585	67	4	5	21	10	3.0	9.0	1.2	7.2			85.0	260.0	2310.	BRIGHT FLASHES	--HK	68.4
STADE/ELPE	39591	67	4	11	19	57	6.0	9.0	4.1	7.1			70.0	100.0	2395.	FLASHING	--HK	58.0
STADE/ELPE	39594	67	4	14	20	30	6.0	9.0	7.2	7.2	58.40		85.0	260.0	2320.	BRIGHT FLASHES	--HK	74.6
STADE/ELPE	39596	67	4	16	20	12	6.0	9.0	4.2	7.2			89.0	100.0	2300.	FLASHING	--HK	74.4
STADE/ELPE	39602	67	4	22	2	19	6.0	9.0	4.1	4.1	3.00		80.0	308.0	2400.	FLASHING	--FK	70.8
HEIDELBERG	39702	67	7	21	23	45	7.5	9.5	5.4	6.4	3.00		53.0	100.0	2430.	SLOWLY TUMBLE	--GLU	68.6
AUSTIN	39741	67	5	9	3	52	7.5		5.1				38.0	75.0	2983.		--HM	40.7
STADE/ELPE	39760	67	5	27	20	58	6.5	9.0	4.7	7.2	13.00	1.50	85.0	100.0	2370.	FLASHING	--HK	55.2
STADE/ELPE	39760	67	5	27	21	0	5.5	9.0	3.6	7.1	13.00	1.50	77.0	55.0	2400.	FLASHING MAX DOUBLE FLASH	--HK	58.6
AUSTIN	39768	67	10	5	2	17	7.5		5.3				45.0	78.0	2902.	SLOWLY TUMBLING MCON	--HM	25.8
STADE/ELPE	39778	67	10	15	19	55	7.0		5.2				88.0	100.0	2295.	SLOWLY TUMBLING MCON	--HK	57.5
STADE/ELPE	39781	67	10	18	20	45	8.0		6.1				63.0	330.0	2450.	SLOWLY BRIGHT FLASHES	--HK	78.5
STADE/ELPE	39784	67	10	21	18	38	2.7	9.0	0.7	7.0	52.90	0.90	66.0	100.0	2500.	SHARP BRIGHT FLASHES	--HK	44.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39785	67	10	22	19	48	7.0	9.0	5.2	7.2	28.00		80.0	260.0	2310.	SLOWLY TUMBLING	--	HK 66.0
STADE/ELBE	39789	67	10	26	19	0	3.0		1.1				80.0	55.0	2350.	SHORT BRIGHT FLASHES MIN INV	--	HK 57.3
STADE/ELBE	39789	67	10	26	19	3	7.0		4.9				53.0	360.0	2630.	SLOWLY TUMBLING MIN INV	--	HK 77.9
STADE/ELBE	39796	67	11	2	18	51	7.0		5.2				85.0	260.0	2300.	SLOWLY TUMBLING MIN INV	--	HK 67.3
STADE/ELBE	39802	67	11	8	17	34	5.5		3.7				75.0	100.0	2300.	FLASHING DOUBLE MAX MIN INV	--	HK 58.2
STADE/ELBE	39910	68	2	24	23	2	5.5	9.0	3.6	7.1	20.00		75.0	260.0	2350.	SLOWLY TUMB PER APPROX	--	HK 46.9
STADE/ELBE	39929	68	3	24	21	2	4.8	2.9			24.75		75.0	260.0	2400.	SLOWLY TUMB MIN INV	--	HK 71.6
STADE/ELBE	39941	68	3	26	20	35	5.5		3.7		42.00		83.0	260.0	2310.	SLOWLY TUMB MIN INV	--	HK 71.0

SDC NC. 624 63 30-0 USA LAUNCHED 63/ 7/19 IN ORBIT
PERIOD = 168.0 PERIGEE = 2275.5 APOGEE = 2331.4 INCL = 98.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38543	64	5	28	5	56	6.5		4.8				82.8	91.5	2236.	STEADY 5 MINUTES	--OFC	62.9
WICHITA	38554	64	6	8	5	4	7.0	7.0	4.9	4.9			49.0	270.0	2647.	STEADY	--PWR	83.2
WICHITA	38555	64	6	9	3	26	7.0	7.0	5.2	5.2			83.0	91.0	2289.	STEADY	--PWR	69.4
STADE/ELBE	38706	64	11	7	22	44	8.3	8.3	6.1	6.1			78.0	260.0	2750.	STEADY	--	HK 38.7
STADE/ELBE	38717	64	11	18	21	44	8.0	8.0	5.9	5.9			85.0	260.0	2660.	STEADY MOON	--	HK 40.0
STADE/ELBE	38762	65	1	2	18	40	6.7	6.7	4.5	4.5			85.0	260.0	2720.	STEADY	--	HK 65.9
STADE/ELBE	38764	65	1	4	18	25	7.5	8.0	5.1	5.6			55.0	330.0	3000.	STEADY AND OCCAS FAIN VARY	--	HK 82.4
STADE/ELBE	38792	65	2	1	17	41	7.7	7.7	5.4	5.4			55.0	360.0	2900.	STEADY OCCAS FAIN VARYING	--	HK 75.0
STADE/ELBE	38832	65	3	13	0	46	7.5	8.0	5.8	6.3			77.0	100.0	2150.	FAIN VARYING	--	HK 56.8
STADE/ELBE	38833	65	3	14	1	57	7.8	8.0	6.0	6.2			68.0	260.0	2250.	STEADY AND FAIN VARYING	--	HK 42.6
DURBAN B	38913	65	6	2	19	50	7.5	7.5	5.0	5.0			45.0	263.0	3200.	STEADY	--GR	73.8
DURBAN B	38914	65	6	3	18	11	7.0	7.0	4.8	4.8			89.0	132.0	2704.	STEADY	--GR	49.4
DURBAN B	38920	65	6	9	16	44	7.5	7.5	5.1	5.1			60.0	95.0	3000.	STEADY	--AA	39.4
DURBAN B	38921	65	6	10	17	53	8.0	8.0	5.8	5.8			83.0	266.0	2800.	STEADY	--GR	60.9
DURBAN B	38925	65	6	14	16	54	6.0	6.0	3.8	3.8			73.0	90.0	2800.	STEADY	--GR	50.3
DURBAN B	38928	65	6	17	17	4	7.0	7.0	4.8	4.8			89.0	240.0	2780.	STEADY	--GR	65.4
DURBAN B	38932	65	6	21	16	30	7.0	7.0	4.7	4.7			64.0	28.0	2900.	STEADY	--GR	69.1
DURBAN B	38933	65	6	22	17	44	7.0	7.0	4.6	4.6			63.0	265.0	2980.	STEADY	--GR	82.7
DURBAN B	38934	65	6	23	16	6	7.0	7.0	4.7	4.7			70.0	95.0	2900.	STEADY	--GR	57.7
DURBAN B	38934	65	6	23	18	53	8.0	8.0	5.0	5.0			32.0	261.0	3900.	STEADY	--GR	98.9
DURBAN B	38935	65	6	24	17	12	7.0	7.0	4.7	4.7			73.0	266.0	2900.	STEADY	--AA	79.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38937	65	6	26	16	45	7.0	7.0	4.8	4.8			84.0	265.0	2800.	STEADY	--GR	74.7
DURBAN B	38940	65	6	29	17	25	7.0	7.0	4.6	4.6			57.0	265.0	3050.	STEADY	--AA	92.7
DURBAN B	38941	65	6	30	15	46	7.0	7.0	4.6	4.6			74.0	94.0	3000.	STEADY	--AA	66.3
DURBAN B	38949	65	7	8	16	37	7.5	7.5	5.0	5.0			62.0	265.0	3200.	STEADY	--GR	97.9
DURBAN B	38950	65	7	9	17	45	7.5	7.5	4.5	4.5			33.0	261.0	4000.	STEADY	--AA	112.2
DURBAN B	38951	65	7	10	16	7	7.5	7.5	5.1	5.1			73.0	267.0	3050.	STEADY	--GR	93.8
DURBAN B	38956	65	7	15	16	17	6.5	6.5	4.0	4.0			61.0	265.0	3200.	STEADY	--GR	103.3
STADE/ELBE	39052	65	10	19	21	45	7.8	7.8	5.6	5.6			85.0	260.0	2700.	STEADY	--HK	48.2
STADE/ELBE	39053	65	10	20	20	8	8.0	8.0	5.6	5.6			55.0	90.0	3000.	STEADY	--HK	31.1
STADE/ELBE	39053	65	10	20	22	56	7.5	7.5	5.2	5.2			67.0	260.0	2830.	STEADY	--HK	45.6
STADE/ELBE	39054	65	10	21	21	14	8.0	8.0	5.8	5.8			75.0	95.0	2700.	STEADY	--HK	39.1
STADE/ELBE	39056	65	10	23	20	48	7.7	7.7	5.3	5.3			55.0	360.0	3000.	STEADY	--HK	77.3
STADE/ELBE	39199	66	3	15	23	18	6.0	6.0	4.8	4.8			87.0	260.0	1740.	STEADY	--HK	51.4
STADE/ELBE	39203	66	3	19	22	10	6.5	6.5	5.2	5.2			70.0	100.0	1420.	STEADY	--HK	46.4
HEIDELBERG	39216	66	4	1	22	44	7.3	7.3	6.0	6.0			72.0	278.0	1819.	STEADY	--GLU	63.1
HEIDELBERG	39237	66	4	22	20	46	5.8	5.8	4.5	4.5			86.0	293.0	1860.	STEADY	--GLU	74.3
STADE/ELBE	39240	66	4	25	21	15	7.0	7.0	5.5	5.5			65.0	260.0	2000.	STEADY	--HK	82.6
STADE/ELBE	39244	66	4	29	20	4	7.0	7.0	5.7	5.7			85.0	260.0	1820.	STEADY	--HK	82.9
STADE/ELBE	39245	66	4	30	21	10	7.8	7.8	6.2	6.2			55.0	260.0	2131.	STEADY	--HK	89.0
HEIDELBERG	39247	66	5	2	20	35	7.5	7.5	6.0	6.0			77.0	278.0	2000.	STEADY	--GLU	84.6
STADE/ELBE	39352	66	8	16	0	5	7.8	7.8	5.7	5.7			60.0	360.0	2588.	STEADY	--HK	97.6
STADE/ELBE	39354	66	8	17	1	6	7.5	7.5	5.7	5.7			85.0	260.0	2321.	STEADY	--NN	67.7
STADE/ELBE	39356	66	8	19	0	30	7.8	7.8	6.0	6.0			85.0	100.0	2318.	STEADY	--HK	68.7
STADE/ELBE	39357	66	8	20	1	37	7.5	7.5	5.6	5.6			63.0	260.0	2400.	FAINT VARYING	--HK	54.9
STADE/ELBE	39359	66	8	22	1	0	7.7	7.7	5.8	5.8			75.0	260.0	2371.	STEADY	--HK	60.7
STADE/ELBE	39361	66	8	24	22	45	7.5	7.5	5.5	5.5			57.0	100.0	2500.	STEADY	--HK	58.2
STADE/ELBE	39376	66	9	8	22	26	8.0	8.0	6.0	6.0			75.0	100.0	2550.	STEADY	--HK	54.9
STADE/ELBE	39383	66	9	15	21	42	8.0	8.0	5.9	5.9			70.0	100.0	2600.	STEADY	--HK	49.3
STPETERSBURG	39402	66	10	4	3	8	8.0	8.0	5.8	5.8					2692.		--FK	
STPETERSBURG	39417	66	10	19	2	29	7.0	7.0	4.8	4.8					2700.		--FK	
STPETERSBURG	39426	66	10	28	0	59	7.0	7.0	4.6	4.6					3000.		--FK	
STPETERSBURG	39427	66	10	29	2	8	8.0	8.0	5.7	5.7					2900.		--FK	
STADE/ELBE	39435	66	11	6	19	28	8.0	8.3	5.3	5.6			53.0	360.0	3500.	STEADY	--HK	74.3
STPETERSBURG	39439	66	11	10	1	6	8.0	8.0	0.0	0.0							--FK	
STADE/ELBE	39439	66	11	10	18	12	8.0	8.0	5.3	5.3			53.0	360.0	3500.	STEADY	--HK	73.0
STADE/ELBE	39440	66	11	11	19	6	8.0	8.4	5.5	5.5			80.0	260.0	3100.	STEADY	--HK	67.6
STPETERSBURG	39444	66	11	15	0	54	7.0	7.0	0.0	0.0			72.0	288.0			--FK	76.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	ΔMAX	ΔMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBURG	39446	66/11/17			0	16	6.5	6.5	0.0	0.0			84.0	332.2			--FK	70.3
STPETERSBURG	39449	66/11/20			0	43	9.0	9.0	0.0	0.0			67.2	285.4			--FK	83.4
STADE/ELRE	39470	66/12/11			18	7	8.0	8.0	5.6	5.6			55.0	310.0	3000.	STEADY	--HK	90.7
STADE/ELRE	39550	67/ 3/ 1			23	35	6.7	6.7	5.3	5.3			45.0	260.0	1900.	STEADY	--HK	54.5
STADE/ELRE	39556	67/ 3/ 7			21	33	6.8	6.8	5.7	5.7			83.0	100.0	1650.	STEADY	--HK	49.1
STADE/ELRE	39560	67/ 3/11			20	13	6.8	6.8	5.2	5.2			55.0	100.0	2100.	STEADY	--HK	33.4
STADE/ELRE	39564	67/ 3/15			21	40	6.5	6.5	5.0	5.0			75.0	260.0	2010.	STEADY	--HK	63.4
STADE/ELRE	39565	67/ 3/16			19	54	7.0	7.0	5.3	5.3			55.0	100.0	2200.	STEADY	--HK	36.1
STPETERSBURG	39572	67/ 3/23			2	22	5.0	5.0	3.5	3.5			65.2	72.0	2000.		--FK	38.6
STADE/ELRE	39579	67/ 3/30			20	43	7.3	7.3	5.8	5.8			74.0	260.0	2030.	STEADY	--HK	76.5
STPETERSBURG	39582	67/ 4/ 2			1	43	7.0	7.0	5.4	5.4			68.5	70.5	2100.		--FK	49.2
STPETERSBURG	39583	67/ 4/ 3			2	46	7.0	7.0	5.5	5.5			66.4	288.3	2000.		--FK	75.2
STADE/ELRE	39583	67/ 4/ 3			19	18	7.0	7.0	5.5	5.5			73.0	100.0	2010.	STEADY	--FK	61.9
STPETERSBURG	39588	67/ 4/ 8			2	42	3.0	3.0	2.3	2.3			61.4	53.0	1400.		--FK	49.8
STPETERSBURG	39591	67/ 4/11			1	6	5.0	5.0	0.0	0.0			23.5	56.4			--FK	49.4
STPETERSBURG	39596	67/ 4/16			3	0	4.0	4.0	0.0	0.0			47.9	262.6	1290.		--GLU	88.2
STPETERSBURG	39597	67/ 4/17			1	48	4.0	4.0	3.4	3.4			63.9	16.8	1310.		--GLU	65.9
STPETERSBURG	39600	67/ 4/20			2	8	5.0	5.0	4.4	4.4			55.5	302.7	1580.		--GLU	59.9
HEIDELBERG	39651	67/ 6/10			9	14	7.0	7.0	6.0	6.0			75.6	40.5	2640.	STEADY	--GLU	52.0
HEIDELBERG	39658	67/ 7/17			23	11	7.8	7.8	5.7	5.7			50.0	100.0	2700.	STEADY	--GLU	62.8
HEIDELBERG	39690	67/ 7/19			22	21	7.9	7.9	5.7	5.7			48.0	100.0	3280.	STEADY	--GLU	50.8
HEIDELBERG	39692	67/ 7/21			21	50	8.0	8.0	5.4	5.4			29.0	100.0	2400.	IRREGULAR	--DMB	81.6
PCYNTON	39701	67/ 7/30			22	56	8.0	8.0	6.1	6.1			67.0	100.0	2600.	STEADY	--HK	64.9
STADE/ELRE	39712	67/ 8/10			23	17	7.2	7.2	5.1	5.1			70.0	150.0	3000.	STEADY	--HK	98.8
STADE/ELRE	39730	67/ 9/28			22	33	8.5	8.5	6.2	6.2			70.0	315.0	3400.	STEADY	--MM	64.2
STADE/ELRE	39734	67/ 9/ 1			21	3	8.0	8.0	5.6	5.6			85.0	100.0	3200.	STEADY	--GLU	69.0
AUSTIN	39740	67/ 9/ 7			4	47	7.5	7.5	5.2	5.2			53.0	360.0	2945.	STEADY	--GLU	72.7
HEIDELBERG	39755	67/ 9/22			20	19	8.2	8.2	5.7	5.7			81.0	260.0	3900.	STEADY	--GLU	77.6
HEIDELBERG	39758	67/ 5/25			20	37	8.5	8.5	5.5	5.5			70.0	260.0	3350.	STEADY	--GLU	78.7
HEIDELBERG	39768	67/10/ 5			19	40	8.2	8.2	5.6	5.6			75.0	278.0	3230.	STEADY	--GLU	48.2
HEIDELBERG	39773	67/10/10			19	11	8.3	8.3	5.8	5.8			77.0	279.0	3180.	STEADY	--GLU	70.8
HEIDELBERG	39774	67/10/11			20	12	8.4	8.4	5.9	5.9			78.0	81.0	3100.	STEADY	--GLU	87.2
STADE/ELRE	39782	67/10/19			17	33	8.3	8.3	5.8	5.8			82.0	81.0	3160.	ST OCCAS FAINT FLICKER	--GLU	85.9
HEIDELBERG	39786	67/10/23			19	2	9.0	9.0	6.5	6.5			65.0	310.0	3100.	ST	--GLU	98.6
HEIDELBERG	39788	67/10/25			18	10	8.3	8.3	5.8	5.8			75.0	279.0	3100.	ST	--GLU	
STADE/ELRE	39804	67/11/10			19	0	8.0	8.0	5.4	5.4			52.0	310.0	3100.	ST	--HK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELRE	39906	68	2	20	19	29	6.5	6.5	5.3	5.3			63.0	100.0	1750.	ST	--	HK 37.8
STADE/ELRE	39910	68	2	24	20	41	6.5	6.5	5.4	5.4			75.0	260.0	1650.	ST	--	HK 67.2
STADE/ELRE	39911	68	2	25	18	53	6.7	6.7	5.5	5.5			57.0	100.0	1750.	ST	--	HK 38.1
HEIDELBERG	39912	68	2	26	19	57	6.8	6.8	5.7	5.7			85.0	64.0	1670.	ST	--	GLU 57.8
AUSTIN	39913	68	2	27	4	24	7.5	7.5	5.7	5.7			47.0	280.0	2304.	ST	--	MM 81.2
HEIDELBERG	39913	68	2	27	18	10	7.4	7.4	5.6	5.6			39.0	79.0	2240.	ST	--	GLU 29.2
HEIDELBERG	39913	68	2	27	20	56	6.4	6.4	5.3	5.3			83.0	287.0	1690.	ST	--	GLU 59.6
HEIDELBERG	39914	68	2	28	19	9	6.5	6.5	5.2	5.2			66.0	82.0	1785.	ST	--	GLU 47.0
HEIDELBERG	39916	68	3	1	18	22	6.6	6.6	5.1	5.1			49.0	80.0	2010.	ST	--	GLU 37.9
STADE/ELRE	39917	68	3	2	19	21	6.5	6.5	5.3	5.3			80.0	100.0	1750.	ST	--	HK 58.8
HEIDELBERG	39919	68	3	4	18	31	7.0	7.0	5.5	5.5			59.0	82.0	1970.	ST	--	GLU 46.7
STADE/ELRE	39926	68	3	11	19	59	7.5	7.5	5.9	5.9			60.0	260.0	2050.	ST	--	HK 90.3

SDC NC. 630 63 30-C PERIOD = 167.4 PERIGEE = 2269.9 USA LAUNCHED 63/ 7/19 IN ORBIT
APOGEE = 2309.0 INCL = 88.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
AUSTIN	39740	67	9	7	4	9	10.0	10.5	7.7	7.7			43.0	77.0	2820.		--	MM 40.0
AUSTIN	39768	67	10	5	2	19	10.0	10.5	7.8	7.8			47.0	78.0	2756.		--	MM 26.9

SDC NC. 632 63 33-A PERIOD = 92.0 PERIGEE = 170.3 USSR LAUNCHED 63/ 8/ 6 DECEASED 3/30/64
APOGEE = 299.5 INCL = 40.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
SACRAMENTO	38252	63	8	11	11	52	4.0		6.3				39.0	340.0	340.	LONG TUMBLE WITH IRREGULAR	--	RR 91.5
SACRAMENTO	38253	63	8	12	12	29	5.0		6.1				16.5	340.0	610.	SUDDEN BRIGHT RISKS 9-4 MAG	--	RR 94.8
KANSAS-F	38254	63	8	13	9	58	2.0	8.0	3.3	9.3	50.60	1.00	23.0	340.0	540.	30 SFC BETWEEN 2 SUDDEN 7-5	--	RR 97.3
SACRAMENTO	38259	63	8	19	12	45	6.0	6.0	0.0	0.0			14.3	360.0		POSITIVE FAINT FLUCTUATION	--	RR 110.8
																MOSTLY AT MIN	--	ASL
																STEADY	--	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
NEWBERG	38278	63	9	6	4	56	7.5	8.5	0.0	0.0	0.30		12.5	15.3	950.	VA, ALREADY IN SHADOW	--AMH	89.7
VAN NUYS-E	38281	63	9	9	3	28	7.5	9.0	7.6	9.1						RAPIDLY FADING FLICKER - LOST	--LDH	
AKRON CANTON	38282	63	9	10	0	56	6.5	7.5	8.2	9.2			39.0	19.0	462.	AFTER 2 DEGREES	--LDH	
MADISON	38283	63	9	11	1	29	2.0		0.0			0.50	75.4	11.4		SLOW TUMBLE	--FHK	82.0
PHOENIX	38283	63	9	11	3	1	7.0		7.4		4.00		16.7	0.0	824.	2ND MAG FLASH	--MAN	79.1
SAN ANTONIO	38284	63	9	12	2	3	7.0	7.0	7.3	7.3			15.0	28.3	860.	MINIMUM INVISIBLE	--BE	101.4
WILNAUREE	38286	63	9	14	1	36	7.0	7.0	8.2	8.2			26.0	217.0	572.	CFEN ONLY FEW SEC	--PM	73.9
MADISON	38286	63	9	14	1	37	7.5		0.0				26.0	215.0		STEADY FOR 70 SEC	--EAM	95.8
SAN ANTONIO	38289	63	9	17	1	42	6.0	6.0	8.2	8.2			49.0	180.0	360.	ALMOST NO VAR, TRACKED 2 MIN	--MAN	95.2
ADELAIDE-2	38313	63	10	11	9	40	7.0	7.0	8.0	8.0			20.0	130.0	630.	STEADY AT LEAST ONE MIN.	--FB	71.6
																STEADY OVER 40 SECONDS	--ACB	54.3

SDC NC. 633 63 33-R PERIOD = 91.9 PERIGEE = 168.4 LAUNCHED 63/ 8/ 6 DECEASED 12/8-9/63 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
SACRAMENTO	38251	63	8	10	0	20	2.0		3.5						500.	SLIGHT VARIATION	--BB	95.3
SACRAMENTO	38253	63	8	12	12	24	3.0	6.0	4.1	7.1	17.30	6.00	17.0	340.0	600.	TRACKED 2 MINUTES	--BRB	97.4
KANSAS-E	38254	63	8	13	9	53	3.0	6.5	4.5	8.0	14.20	4.10	24.0	340.0	500.		--CRL	
KANSAS-E	38254	63	8	13	9	54					16.60	5.10			600.		--CRL	
KANSAS-E	38254	63	8	13	9	55					17.20	5.80			700.		--CRL	
NEWBERG	38270	63	8	29	4	30	1.0	3.0	2.9	4.9	5.62		48.0	204.0	415.	6 MAX TIMED	--AMH	73.0
NEWBERG	38271	63	8	30	5	2	2.3	3.0	4.3	5.0	4.95		72.0	320.0	400.	STEADY	--AMH	87.0
SACRAMENTO	38272	63	8	31	4	0	3.0	3.0	0.0	0.0			30.0	360.0			--ASL	102.8
VAN NUYS-E	38272	63	8	31	4	0	4.5	5.5	4.9	5.9	5.10		15.0	350.8	920.		--LDH	116.1
NEWBERG	38278	63	9	6	3	59	2.3	3.0	0.0	0.0						MINOR VAR IN W, ST IN E	--AMH	88.4
AKRON CANTON	38281	63	9	9	0	53	3.5	3.5	4.0	4.9			29.0	14.0	535.	STEADY	--FHK	
NEWBERG	38281	63	9	9	3	58	2.0	2.5	0.0	0.0	3.84					SURTLE TP, TIME ACCURATE	--AMH	75.2
AKRON CANTON	38282	63	9	10	1	24	2.0	3.0	4.3	5.3			56.0	24.0	350.	SLOW TUMBLE	--FHK	80.2
SAN ANTONIO	38283	63	9	11	1	52	5.0	5.0	4.8	4.8			9.0	22.4	1000.	STEADY	--FB	59.7
MADISON	38283	63	9	11	1	54	2.0	5.0	0.0	0.0	3.00		64.5	154.2		EVEN VARIATION	--MAN	100.1
PHOENIX	38283	63	9	11	3	25	5.0	5.0	5.0	5.0			22.7	0.0	663.	STEADY	--BE	97.5
MADISON	38286	63	9	14	1	49	3.0	7.0	0.0	0.0	3.50		21.0	219.0			--MAN	92.2
ROCHESTER	38286	63	9	14	0	15	2.0	5.0	4.0	7.0	3.30	0.10	52.0	211.0	400.	10 TUMBLES IN 33 SECONDS	--REJ	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
VAN NUYS-E	38286	63	9	14	3	21	1.5	3.5	4.1	6.1	3.54		75.0	30.0	305.		--LDH	70.7
ARRON CANTON	38287	63	9	15	0	45	4.0	8.0	5.6	9.6	3.50	1.50	30.6	218.0	478.	SECONDARY MAX +5	--FHK	100.9
VAN NUYS-E	38287	63	9	15	3	52	3.5	7.0	5.1	8.6	3.49		30.0	230.0	480.		--LDH	101.1
VAN NUYS-E	38288	63	9	16	2	45	2.0	4.5	4.7	7.2	3.40		80.0	220.0	290.		--LDH	85.3
SAN ANTONIO	38289	63	9	17	1	43	2.0	7.0	4.3	9.3	13.40		50.0	222.5	350.	AV. OF 3 CYCLES	--PM	97.2
VAN NUYS-E	38289	63	9	17	3	15	4.0	7.0	5.1	8.1	3.34		21.0	224.5	600.		--LDH	110.4
ROCHESTER	38315	63	10	13	10	28	1.0	1.0	4.0	4.0	2.00	1.00	45.0	24.0	250.	2 SFC TUMBLF AT 24 AZIMUTH	--REJ	98.5
PHOENIX	38327	63	10	25	1	45	2.0		0.0		2.00		30.0	130.0		MTN MAG INV	--BJE	45.3
MILWAUKEE	38336	63	11	3	23	23	4.0		5.6				25.3	357.0	488.	NO MAG VAR IN 2.5 DEG.	--EAM	77.3
ARRON CANTON	38342	63	11	9	23	16	1.5	1.5	4.3	4.3			46.0	24.4	272.	TRACKED	--FHK	56.4
																STEADY, YELLOWISH WHITE		

SDC NC. 669 63 38-A ABLESTAR USA LAUNCHED 63/ 9/28 IN ORBIT
PERIOD = 107.1 PERIGEE = 669.2 APOGEE = 692.2 INCL = 99.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELNE	38772	65	1	12	5	24	5.0	5.0	5.4	5.4			55.0	260.0	850.	STEADY	--HK	40.4
STADE/ELNE	39241	66	4	26	20	25	5.0	5.5	5.5	6.0			55.0	140.0	805.	STEADY OCCASS FAINT VAR	--HK	41.9

SDC NC. 670 63 38-B TRANSIT USA LAUNCHED 63/ 9/28 IN ORBIT
PERIOD = 107.4 PERIGEE = 676.7 APOGEE = 707.1 INCL = 99.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELNE	38752	64	12	23	17	37	8.0	8.0	8.8	8.8			80.0	170.0	680.	STEADY	--HK	59.9
DURBAN B	38919	65	6	8	16	22	8.5	9.5	8.1	8.1			31.0	95.0	1200.	STEADY	--GR	18.1
DURBAN B	38920	65	6	9	16	20	7.5	7.5	7.1	7.1			33.0	95.0	1200.	STEADY	--GR	20.2
DURBAN B	38920	65	6	9	18	7	8.5		8.1				32.0	266.0	1200.	SCINTILLATING	--GR	108.4
DURBAN B	38921	65	6	10	17	24	9.5	9.5	10.2	10.2			69.0	266.0	720.	STEADY	--GR	80.7
DURBAN B	38930	65	6	19	16	15	7.0		7.7				64.0	96.0	720.	SCINTILLATING	--AA	49.7
DURBAN B	38931	65	6	20	17	18	9.5		9.3				35.0	266.0	1100.	FADING OUT	--GR	115.0
DURBAN B	38932	65	6	21	16	35	8.0	9.0	8.9	8.8			75.0	265.0	700.	STEADY MAINLY	--GR	84.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
DURBAN B	38923	65	6	22	15	51	8.0	9.0	8.4	8.4			49.0	95.0	930.	STEADY	--AA	41.3
DURBAN B	38933	65	6	22	17	38	8.5	8.5	7.7	7.7			20.0	264.0	1420.	STEADY	--AA	125.4
DURBAN B	38934	65	6	23	16	55	8.0	9.0	8.2	8.2			44.0	265.0	900.	STEADY	--GR	110.5
DURBAN B	38935	65	6	24	16	11	8.5	8.5	9.3	9.3			87.0	131.0	700.	STEADY	--GR	73.2
DURBAN B	38937	65	6	26	16	31	7.5	7.5	8.0	8.0			55.0	266.0	800.	STEADY	--GR	104.8
DURBAN B	38944	65	7	3	16	48	8.5	8.5	7.9	7.9			23.0	265.0	1200.	STEADY	--GR	131.8
DURBAN B	38945	65	7	4	16	5	8.5	8.5	8.9	8.9			49.0	266.0	920.	STEADY	--GP	115.4
STADE/ELBE	39240	66	4	25	21	33	9.0	9.0	9.7	9.7			80.0	260.0	710.	STEADY	--HA	74.0
HEIDELBERG	39244	66	4	29	20	27	8.5	8.5	8.8	8.8			48.0	82.0	865.	STEADY	--GLU	54.9
STADE/ELBE	39972	68	4	26	20	45	8.0		8.7				85.0	100.0	720.	FAINT FLASH OBS THEN LOST	--HK	71.2

SOC NC. 671 63-38-C PERIOD = 107.3 RADIATION USA LAUNCHED 63/ 9/28 IN ORBIT
 63 671 63-38-C PERIOD = 107.3 PEPICFE = 676.7 APNGEE = 706.5 INCL = 89.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38752	64	12	23	17	35	8.0	9.0	8.8	8.8			77.0	100.0	690.	STEADY	--HK	77.4
DURBAN B	38920	65	6	9	17	26	7.5	7.5	8.2	8.2			70.0	266.0	720.	STEADY	--AA	79.3
DURBAN B	38921	65	6	10	16	42	8.5	8.5	9.0	9.0			55.0	94.0	800.	STEADY	--GR	35.2
DURBAN B	38921	65	6	10	18	29	7.0		6.3				19.0	264.0	1400.	FADED TO INFINITY AND LOST	--GR	116.6
DURBAN B	38930	65	6	19	17	17	9.5		9.7				39.0	266.0	920.	SLOW ROLL- FADED OUT	--GR	111.3
DURBAN B	38931	65	6	20	16	33	7.5	9.0	8.3	9.8			83.0	261.0	700.	SLOW FADE	--AA	77.6
DURBAN B	38933	65	6	22	16	53	8.5		8.9				49.0	266.0	840.	8.5 THEN SLOW FADE TO INVIS	--GR	106.3
DURBAN B	38936	65	6	25	16	29	8.5	8.5	9.0	9.0			62.0	266.0	800.	OVER PERIOD OF 2 MINS	--GR	
DURBAN B	38937	65	6	26	15	46	6.0	6.0	6.5	6.5			63.0	95.0	900.	STEADY	--AA	98.6
DURBAN B	38938	65	6	27	16	49	8.5		8.3				37.0	266.0	1100.	STEADY	--AA	55.6
DURBAN B	38939	65	6	28	16	5	9.0	10.0	9.6	10.6			79.0	265.0	750.	DOWN TO INFINITY	--GR	118.6
DURBAN B	38941	65	6	30	16	25	9.0	9.0	9.3	9.3			46.0	266.0	800.	SLOW FADE	--GR	87.5
DURBAN B	38943	65	7	2	16	44	9.0		9.4				27.0	265.0	1300.	STEADY	--GR	114.5
STADE/ELBE	39120	65	12	26	17	22	7.8	7.8	8.6	8.6			88.0	100.0	679.	FADED OUT AND LOST	--GR	128.7
STADE/ELBE	39240	66	4	25	21	21	7.0	7.5	7.8	8.3			85.0	100.0	700.	STEADY	--HK	69.7
STADE/ELBE	39357	66	8	20	1	44	7.8	9.0	8.6	8.8			88.0	260.0	690.	STEADY WITH SCINTILLATE	--HK	68.3
STADE/ELBE	39479	66	12	20	18	12	1.5	8.0	1.9	8.4			5.00	55.0	260.0	STEADY AND FAINT SCINTILLATE	--HK	71.1
STADE/ELBE	39483	66	12	24	4	52	8.0	9.0	8.4	8.4			63.0	100.0	850.	STEADY ONE FLASH 1.5	--HK	98.5
															850.	STEADY	--HK	94.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	39607	67	4	27	21	37	6.0	7.0	6.4	7.4			58.0	260.0	820.	SLOWLY VARYING	-- HK	82.2
STADE/ELBE	39613	67	5	3	20	47	7.0	7.0	7.8	7.8			80.0	260.0	690.	STEADY	-- HK	81.3
STADE/ELBE	39615	67	5	5	21	9	8.0	8.0	8.2	8.2			55.0	260.0	900.	STEADY	-- HK	90.0
STADE/ELBE	39844	67	12	20	17	52	8.5	8.5	9.0	9.0			62.0	260.0	800.	ST SHORT OBS	-- HK	94.6
STADE/ELBE	39860	68	1	5	4	44	8.0	8.0	8.4	8.4			65.0	260.0	930.	ST	-- HK	41.9
STADE/ELBE	39961	68	4	15	22	3	6.3	5.3	6.8	6.8			62.0	260.0	800.	ST	-- HK	73.9
STADE/FLBE	39967	68	4	21	21	14	8.0	9.0	8.6	8.6			82.0	260.0	750.	ST	-- HK	74.3
STADE/ELBE	39972	68	4	26	21	9	6.5	6.5	7.0	7.0			67.0	260.0	780.	ST	-- HK	82.9

SDC NC. 603 63 43-A PCLYCT 1 USSR LAUNCHED 63/11/ 1 IN ORBIT
PERIOD = 102.5 PERIGEE = 210.0 APGEE = 838.8 INCL = 58.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--QBS	PHASE
ADELAIDE-2	38553	64	6	7	8	30	2.0	4.5	4.3	6.8	7.00		34.0	168.0	350.	ASTLVAT MAXIMUM DIPS TO MIN	--ACB	57.3
CLEVELAND	38572	64	6	26	3	33	6.0	6.0	5.6		19.00		22.6	221.9	1185.	NOT FOLLOWED	--DES	64.9
ADELAIDE-2	38602	64	7	26	10	52							47.2	183.3	1100.	PERIOD APPROX	--ACB	66.9
ADELAIDE-2	38604	64	7	28	8	52	6.5	8.0	6.3	7.8	9.50		41.8	105.7	1100.	COULD BE TWICE THIS	--ACB	31.1
STADE/ELBE	38639	64	9	1	2	23	5.0	6.5	7.1	8.6			60.0	55.0	380.	REGULAR VARYING	-- HK	102.4
STADE/ELBE	38650	64	9	12	19	41	4.0	5.0	6.0	7.0			48.0	360.0	400.	VARYING	-- HK	97.2
STADE/ELBE	38831	65	3	12	20	29	7.0	8.0	6.9	7.9			65.0	220.0	1750.	MOON DISTURBED	-- HK	66.9
STADE/ELBE	38899	65	5	19	21	18	7.5	8.0	8.4	8.9			52.0	360.0	651.	STEADY FAINT VARYING	-- HK	111.2
DURBAN B	38931	65	6	20	17	24	7.5	7.5	7.3	7.3			39.0	34.0	1100.	STEADY	-- GR	55.5
DURBAN B	38932	65	6	21	17	15	7.5	7.5	7.1	7.1			41.0	25.0	1200.	STEADY	-- GR	63.5
DURBAN B	38933	65	6	22	17	3	6.5	7.0	5.2	5.7			20.0	352.0	1900.	MAINLY STEADY	-- GR	100.0
DURBAN B	38935	65	6	24	16	53	6.5	6.5	6.7	6.7			66.0	95.0	900.	STEADY	--AA	43.8
DURBAN B	38936	65	6	25	16	41	7.0	7.0	6.6	6.6			42.0	339.0	1200.	STEADY	--GR	101.0
DURBAN B	38936	65	6	25	16	45	8.0	9.0	8.2	8.2			76.0	95.0	900.	STEADY	--GR	15.3
DURBAN B	38936	65	6	25	18	27	9.0	10.0	7.7	8.7			20.0	263.0	1800.	SLOW ROLL	--AA	116.3
DURBAN B	38936	65	6	25	18	32	9.5	10.5	8.6	9.6			28.0	225.0	1500.	SLOW ROLL	--GR	95.0
DURBAN B	38937	65	6	26	16	36	7.0	7.0	7.2	7.2			96.0	116.0	900.	STEADY	--GR	67.0
DURBAN B	38939	65	6	28	16	19	7.0	7.0	7.2	7.2			73.0	266.0	900.	MAINLY STEADY	--AA	90.4
HFIDELREPC	39237	66	4	22	19	35	6.0	7.5	6.5	8.0	5.20		33.0	0.0	805.	NORMAL TUMBLING	--GLU	110.7
STADE/FLBE	39240	66	4	25	20	52	5.0	7.0	5.8	7.8			62.0	360.0	700.	IRREGULAR VARYING	-- HK	96.5
STADE/ELBE	39241	66	4	26	20	43	5.0	5.5	5.8	7.3			65.0	360.0	480.	IRREGULAR VAR	-- HK	94.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
HEIDELBERG	29245	66/	4/	30	20	5	4.5	5.6	5.2	6.3	4.92		51.0	7.0	718.	NORMAL TUMBLING	--GLU	100.0
HEIDELBERG	29246	66/	5/	1	19	57	4.4	4.7	5.0	5.3	4.95		48.0	81.0	743.	NORMAL TUMBLING	--GLU	54.8
HEIDELBERG	29247	66/	5/	2	19	45	5.3	5.8	6.0	6.5	5.10		50.0	347.0	728.	NORMAL TUMBLING	--GLU	111.3
STADE/ELRE	29410	66/10/12	10	40			5.5	7.5	6.6	8.6			55.0	360.0	400.	VARYING	--HK	81.7
STADE/ELRE	29466	66/12/17	5	22			5.0	8.0	5.5	8.5			73.0	220.0	800.	VARYING	--HK	67.0
STPETERSBURG	29479	66/12/20	0	38			5.0	5.0	5.5	5.5			57.0	294.3	780.		--FK	91.4
STPETERSBURG	29480	66/12/21	0	13			6.5	6.5	6.9	6.9			47.5	289.0	850.		--FK	105.3
STADE/ELRE	29496	66/12/21	0	25			6.0	6.0	6.5	6.5			52.0	291.1	900.		--FK	98.9
STADE/ELRE	29496	67/1/6	17	49			5.5	8.0	5.6	8.1	27.50		60.0	360.0	850.	FLASHING OR VARYING	--HK	67.0
STADE/ELRE	29575	67/3/26	19	33			7.0	9.5	7.9	9.4			55.0	360.0	650.	VARYING	--HK	91.4
HEIDELBERG	29580	67/3/31	20	9			5.4	6.8	6.0	7.4	16.00		44.0	315.0	750.	FLASHING	--GLU	114.1
STADE/ELRE	29636	67/5/26	23	32			5.5	8.0	7.2	9.7			45.0	360.0	450.	IRREGULAR FLASHES	--HK	119.7
STADE/ELRE	29642	67/6/1	22	3			5.0	8.5	6.5	10.0			37.0	360.0	500.	IRREGULAR FLASHING	--HK	127.6
STADE/ELRE	29642	67/6/1	23	50			6.5	8.5	7.9	9.9			30.0	360.0	530.	IRREGULAR FLASHING	--HK	135.4
STADE/ELRE	29725	67/9/23	20	51			5.0	7.5	6.3	8.8	37.20		88.0	180.0	545.	FLASHING	--HK	71.3
HEIDELBERG	29749	67/9/16	19	37			5.4	5.5	6.7	7.8			62.0	265.0	540.	IRREG. VAR	--GLU	94.3
STADE/ELRE	29802	67/11/8	4	43			5.0	8.0	5.0	8.2			50.0	220.0	900.	SLOWLY TUMBLING	--HK	55.5
HEIDELBERG	29814	67/11/20	19	49			5.8	6.5	5.9	6.6			53.0	91.0	570.	SLOWLY VAR	--GLU	22.3
HEIDELBERG	29815	67/11/21	19	32			5.2	5.2	5.2	5.2			52.0	82.0	980.	SLOWLY VAR	--GLU	21.0
HEIDELBERG	29816	67/11/22	19	14			5.0	5.0	5.1	5.1			52.0	82.0	570.	ST	--GLU	21.3
STADE/ELRE	29824	67/11/30	18	23			5.0	9.0	5.0	9.0			55.0	360.0	1000.	SLOWLY TUMBLING	--HK	67.9
HEIDELBERG	29826	67/12/2	19	48			5.2	5.5	4.9	6.2			42.0	8.0	1130.	SLOWLY TUMBLE P.GT. 1 MIN	--GLU	68.1
HEIDELBERG	29833	67/12/9	17	22			5.2	5.2	5.0	5.0			42.0	335.0	1110.	ST	--GLU	85.3
GRANBY	29893	68/2/7	0	20			7.0	7.0	8.7	8.7			45.0	245.0	450.	ST SHORT ORS	--MPC	104.7
GRANBY	29893	68/2/7	0	20			6.0	6.0	7.6	7.6			75.0	0.0	340.	STEADY SHORT ORS	--MPC	98.0
STADE/ELRE	29910	68/2/24	18	57			5.0	6.0	7.3	8.3			65.0	355.0	650.	VARYING	--HK	73.8
HEIDELBERG	29912	68/2/26	20	4			5.5	6.7	6.6	7.8			77.0	200.0	590.	IRREG. VAR	--GLU	78.6
HEIDELBERG	29913	68/2/27	18	1			5.2	6.3	6.1	6.7			75.0	47.0	835.	IRREG. VAR	--GLU	45.4
HEIDELBERG	29917	68/2/27	19	45			5.0	6.0	6.1	7.1			79.0	295.0	590.	IRREG. VAR	--GLU	74.1
HEIDELBERG	29914	68/2/28	19	45			5.0	6.0	6.1	7.0			77.0	49.0	865.	VAR	--GLU	42.7
HEIDELBERG	29916	68/2/28	19	25			5.0	5.8	6.2	7.0			81.0	302.0	585.	IRREG. VAR	--GLU	75.2
HEIDELBERG	29916	68/2/28	19	41			5.0	5.8	6.0	7.0			85.0	0.0	580.	IRREG. VAR	--GLU	74.0
HEIDELBERG	29919	68/3/4	17	47			5.1	5.8	6.3	7.0			79.0	61.0	570.	IRREG. VAR	--GLU	73.6
STADE/ELRE	29960	68/4/14	20	11			5.5	8.0	7.0	9.5			33.0	5.0	500.	IRREG. VAR	--HK	117.1
HEIDELBERG	29969	68/4/23	20	50			4.4	6.4	6.7	6.7			39.0	79.0	340.	IRREG. VAR	--GLU	57.0
HEIDELBERG	29973	68/4/27	19	36			4.0	4.0	5.5	5.5			25.0	92.0	480.	ST	--GLU	43.5

SDC NC. 684 63 43-B PERIOD = 102.6 PERIGEE = 200.7 APOGEE = 893.5 INCL = 58.6
USSR LAUNCHED 63/11/1 DECEASED 11/23/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38351	63/11/18	11	35	7.5	9.0	6.9	8.4	2.10	23.3	184.5	1200.				SMOOTH VARIATION PERIOD ACC +OR - .2 SEC	--ACB	120.3
STADE/ELBE	39406	66/10/8	19	18	5.7	8.0	7.2	9.5		60.0	360.0	500.				REGULAR FLASHING	--HK	80.7

SDC NC. 685 63 43-C PERIOD = 101.5 PERIGEE = 182.7 APOGEE = 848.2 INCL = 59.0
USSR LAUNCHED 63/11/1 DECEASED 10/29/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38345	63/11/12	11	10	9.0	9.0	9.7	9.7		47.0	55.9	740.				STEADY OVER THE 5 SEC OBS FLASHING	--ACB	28.1
STADE/ELBE	38461	64/3/7	2	36	6.0	7.0	0.0	0.0	1.50	60.0	360.0						--HK	80.2

SDC NC. 686 63 43-D PERIOD = 102.2 PERIGEE = 203.2 APOGEE = 868.7 INCL = 59.8
USSR LAUNCHED 63/11/1 DECEASED 12/18/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38899	65/5/19	23	14	7.0	7.5	8.1	8.6		87.0	180.0	613.				STEADY FAINT VARYING	--HK	70.5
STADE/ELBE	39321	66/7/15	21	37	7.5	8.0	10.8	11.3		88.0	160.0	218.				STEADY AND FAINT VAR	--HK	80.6

SDC NC. 693 63 46-A PERIOD = 5583.0 PERIGEE = 743.8 APOGEE = 121522.6 INCL = 33.3
EXPLORER 18 USA LAUNCHED 63/11/27 DECEASED 12/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	APAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FINBURG	39421	66/10/23	2	28	9.2	9.5	9.2	9.5		76.3	360.0	1010.				LIKE BULLET AS NOTED IN 17 INCH RFLCTR, PERIODIC MAYBE	--PM	57.9

SDC NC. 694 63 47-A CENTAUR 2 USA LAUNCHED 63/11/27 IN ORBIT
PERIOD = 107.6 PFRIGEE = 297.0 APOGEE = 1106.7 INCL = 30.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBLRG	38397	64/	1/	3	1	7	7.0	9.0	8.0	10.0			23.9	235.8	640.	TP EST 3 SEC	--FK	123.1
STPETERSBLRG	38461	64/	3/	7	1	6	2.0	9.0	2.7	9.7			77.5	328.3	720.	TP EST 4 SEC	--JS	76.8
STPETERSBLRG	38462	64/	3/	8	0	24	4.0	8.0	4.5	8.5			83.0	334.4	800.	TP EST 2 SEC	--FK	81.5
STPETERSBLRG	38466	64/	3/	12	1	29	4.0	7.0	4.6	7.6			82.2	32.9	760.	TP EST 6 SEC	--JS	61.9
STPETERSBLRG	38466	64/	3/	12	1	29	4.0	6.0	4.6	6.6			82.2	32.9	760.	TP EST 7 SEC	--FK	61.8
STPETERSBLRG	38520	64/	5/	5	2	34	3.0	6.0	2.8	5.8		2.00	77.5	343.7	1120.	STEADY	--JS	71.6
STPETERSBLRG	38521	64/	5/	6	1	52	3.5	3.5	3.1	3.1			65.5	59.4	1200.	STEADY	--JS	59.8
STPETERSBLRG	38523	64/	5/	8	2	24	3.0	3.0	2.6	2.6			64.7	74.6	1200.	STEADY	--JS	51.2
STPETERSBLRG	38524	64/	5/	9	1	42	3.5	3.5	3.1	3.1			61.4	71.2	1200.	STEADY	--JS	55.2
ADELAIDE-2	38618	64/	8/	11	9	5	2.5	7.0	3.8	8.3		15.00	50.0	0.0	560.	STEADY	--ACB	87.9
MURBAN A	38620	64/	8/	13	16	46	2.0	2.0	2.7	2.7			83.0	3.0	717.	STEADY	--GR	73.9
DURBAN B	38914	65/	6/	3	16	33	5.0	6.5	5.2	6.7		14.69	60.0	360.0	900.	REGULAR PERIOD	--AA	81.1
DURBAN B	38916	65/	6/	5	16	58	4.0	7.0	2.2	5.2		15.10	23.0	282.0	2300.	REGULAR PERIOD	--GR	132.8
DURBAN B	38920	65/	6/	9	16	9	3.0	5.0	3.0	5.0		15.30	75.0	266.0	1000.	REGULAR ROLL	--AA	89.9
DURBAN B	38920	65/	6/	9	18	0	3.0	5.0	2.0	4.0		15.70	28.0	264.0	1600.	REGULAR PERIOD	--AA	113.4
DURBAN B	38921	65/	6/	10	17	24	5.0	7.0	4.8	6.8		9.60	71.0	266.0	1100.	REGULAR PERIOD	--GR	78.7
VAN NUYS-F	39011	65/	9/	8	3	56	2.7	4.3	4.3	6.9			45.0	180.0	480.	REGULAR PERIOD	--JGM	58.3
VAN NUYS-F	39012	65/	9/	9	3	14	2.5	5.0	4.4	6.9		15.30	57.0	190.0	420.	SHORT FLASH 1 SEC DURATION	--GLU	74.9
HEIDELBERG	39131	66/	1/	6	17	14	7.6	6.3	6.3	5.5			12.0	156.0	1927.	STEADY	--GLU	81.4
TOWNSVILLE	39282	66/	6/	6	8	26	6.0	6.0	5.5	5.5			49.3	190.4	1250.	STEADY	--AGM	75.5
TOWNSVILLE	39283	66/	6/	7	9	41	7.0	7.0	6.3	6.3			45.2	178.0	1377.	STEADY DIDNT FOLLOW	--AGM	58.6
TOWNSVILLE	39288	66/	6/	12	10	1	4.0	5.5	3.9	6.3		15.70	66.8	161.3	1121.	SMOOTH VARIATION	--NDB	47.7
VAN NUYS-F	39377	66/	9/	9	3	34	1.2	1.2	3.1	3.1			42.8	191.7	420.		--JGM	72.2
STPETERSBLRG	39436	66/	11/	7	0	57	5.0	5.0	5.2	5.2			78.5	360.0	930.	STEADY	--FK	60.2
PHOENIX R	39436	66/	11/	7	2	45	6.0	6.0	6.1	6.1			72.8	180.0	965.	STEADY	--RKR	63.7
STPETERSBLRG	39437	66/	11/	8	0	15	4.0	4.0	4.0	4.0			65.4	180.0	1000.	STEADY	--FK	68.1
PHOENIX R	39439	66/	11/	10	2	33	6.0	5.9	5.9	5.9			84.8	360.0	1066.	STEADY	--RR	71.0
STPETERSBLRG	39440	66/	11/	11	0	2	4.0	4.0	3.9	3.9			64.7	180.0	1237.		--FK	60.4
STPETERSBLRG	39441	66/	11/	12	3	4	3.0	3.0	0.0	0.0			40.7	166.7	1300.	STEADY	--RR	60.3
PHOENIX R	39441	66/	11/	12	3	4	6.0	6.0	5.4	5.4			47.5	166.2	1300.	STEADY	--RR	67.8
PHOENIX R	39442	66/	11/	13	2	21	6.0	6.0	5.4	5.4			47.5	166.2	1300.	STEADY	--RR	67.8
STPETERSBLRG	39444	66/	11/	15	1	4	3.0	3.0	2.4	2.4			38.9	180.0	1300.		--FK	95.3
STPETERSBLRG	39447	66/	11/	18	23	26	4.0	4.0	0.0	0.0			67.1	352.1	337.		--FK	76.8
STPETERSBLRG	39553	67/	3/	4	0	52	1.0	1.0	3.4	3.4			55.4	359.4	357.		--FK	78.9
STPETERSBLRG	39556	67/	3/	7	0	38	1.5	1.5	3.7	3.7							--FK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBLRG	39558	67	3	9	1	8	1.5	1.5	3.5	3.5			70.8	9.2	400.		--FK	68.8
EDINBURG	39560	67	3	11	1	32	1.2	2.5	3.5	4.8			58.4	10.6	348.	PERIOD OF 15SEC FOR A WHILE	--FK	74.5
STPETERSBLRG	39561	67	3	12	0	54	1.5	1.5	4.0	4.0			63.2	7.5	314.		--FK	73.2
STPETERSBLRG	39617	67	5	7	1	17	5.0	5.0	5.6	5.6			74.0	21.2	750.		--FK	77.6
AUSTIN	39619	67	5	9	3	36	3.0	4.0	3.4	4.4			40.0	202.0	828.		--MM	56.4
AUSTIN	39913	68	2	27	1	37	3.5		4.6				50.0	161.0	600.		--MM	66.5

SDC NC. 656 63 47-R FRAGMENT USA LAUNCHED 63/11/27 IN ORBIT
PERIOD = 107.3 PERIGEE = 364.1 APOGEE = 1007.9 INCL = 30.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBLRG	38522	64	5	7	2	32	6.5	8.0	6.6	8.1			83.4	8.5	976.	TP EST 3 SEC	--FK	65.3
STPETERSBLRG	38523	64	5	8	1	42	7.0	9.0	7.2	9.2			79.6	5.0	927.	TP ABOUT 1 SEC	--FK	75.7
STPETERSBLRG	38523	64	5	8	1	42	7.0	9.0	7.2	9.2			79.6	5.0	927.		--JS	75.6
STPETERSBLRG	38525	64	5	10	1	57	6.0	6.0	6.2	6.2			89.1	190.4	920.		--FK	67.8
STPETERSBLRG	39526	64	5	11	1	7	8.0	9.0	8.3	9.3			84.6	9.7	864.	TP EST 1 SEC	--FK	79.3
VAN NUYS-F	39182	65	2	26	3	36	7.8	8.9	8.9		2.72		56.3	180.0	610.	MIN UNDER +9.5	--JGW	67.8
VAN NUYS-F	39183	66	2	27	2	46	8.5	9.3	9.3		1.36		54.7	180.0	700.	MAX ALTERNATE IN BRIGHTNESS	--JGW	80.4
SAN ANTONIO	39424	66	10	26	1	50	9.0	9.0					88.0	360.0	1004.	FLASHING	--FB	64.2

SDC NC. 658 63 47-D FRAGMENT USA LAUNCHED 63/11/27 IN ORBIT
PERIOD = 108.1 PERIGEE = 397.7 APOGEE = 1019.0 INCL = 29.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBLRG	38522	64	5	7	1	25	9.0		9.1				81.4	353.8	940.	MIN INV. TP EST 1 SEC	--FK	78.9
STPETERSBLRG	38523	64	5	8	2	42	7.5	7.5					82.3	6.7	1001.		--JS	64.9
STPETERSBLRG	38524	64	5	9	2	6	7.0	7.1					81.3	6.4	967.		--JS	71.0

SDC NC. 7C0 63 47-F FRAGMENT USA LAUNCHED 63/11/27 IN ORBIT
PERIOD = 108.7 PERIGEE = 358.5 APOGEE = 1093.0 INCL = 30.5

STATION NAME	MJD	Y	M	D	H	M	PAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
WALNUT CREEK	38649	64	9	11	4	4	7.0	11.0	7.5	11.5	0.77	42.0	178.0	785.	15 CYCLES IRREGULAR FLASHES	58.4	
TOWN'S LEE	39287	66	6	11	9	35	8.5	9.5	8.2	9.2	1.00	52.8	29.2	1145.		58.4	
																--APS	62.5

SDC NC. 7C1 63 47-G FRAGMENT USA LAUNCHED 63/11/27 IN ORBIT
PERIOD = 107.9 PERIGEE = 384.6 APOGEE = 1020.3 INCL = 30.0

STATION NAME	MJD	Y	M	D	H	M	PAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STPETERSBURG	38522	64	5	7	1	34	7.0	8.0	7.1	8.1		79.2	356.3	960.	TP ABOUT 3 SEC	--FK	78.3
STPETERSBURG	38523	64	5	8	2	48	7.5	9.0	7.5	9.0		84.3	8.3	996.	TP EST .5 SEC	--FK	62.6
STPETERSBURG	38524	64	5	9	2	3	8.5	10.0	8.6	10.1		80.3	4.7	974.	TP EST .5 SEC	--FK	72.3
STPETERSBURG	38527	64	5	12	1	57	5.0	7.0	5.2	7.2		86.6	192.9	919.	TP ABOUT 2 SEC	--FK	67.3
SAN ANTONIO	38588	64	7	12	2	10	6.7	8.8				85.1	188.2	386.	FAST VAR	--PM	81.0
SAN ANTONIO	38590	64	7	14	2	42	5.5	7.0				48.7	197.6	499.	TP APPROX	--PM	68.9
TOWNVILLE	39283	66	6	7	9	49	9.0	10.0	8.6	9.6	4.00	40.4	182.0	1184.		--ACW	61.6

SDC NC. 7C3 63 49-A ROCKET BODY USA LAUNCHED 63/12/ 5 IN ORBIT
PERIOD = 106.7 PERIGEE = 666.7 APOGEE = 669.2 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	PAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE	
KANSAS-E	38460	64	3	6	2	15						14.30	84.0	268.0	662.	MIN INV	--CBS	71.9
WALNUT CREEK	38632	64	8	25	4	59	6.0	8.0	6.7	8.7	16.40	65.0	269.6	739.		--DDC	66.5	
WALNUT CREEK	38635	64	8	28	4	13	5.0	9.0	5.8	9.8	17.80	91.0	90.6	690.		--OFC	101.9	
STADE/ELBE	39772	67	10	9	4	20	5.5	5.5	6.0	6.0		65.0	100.0	780.		--HK		

SDC NC. 704 63 49-R PERIOD = 107.1 PERIGEE = 658.0 USA LAUNCHED 63/12/ 5 IN ORBIT
APOGEE = 697.2 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	38813	65/	2/22	18	58	7.8	8.0	8.0	8.2	8.4			45.0	100.0	850.	STEADY OCASS FAINT VARYING	--	HK 24.8
DURBAN B	39169	66/	2/13	18	59	6.0			6.8				86.0	257.0	700.	FADING TO INVISIBILITY	--	AA 66.8
	39198	66/	3/14	17	54	9.0			8.6				33.0	266.0	1200.	OCCASIONALLY TO +5 MAG	--	AA 123.7
STADE/ELBE	39556	67/	3/ 7	18	49	6.5	6.5	7.3	7.3				88.0	260.0	695.	STEADY	--	HK 76.4
STADE/ELBE	39556	67/	3/ 7	18	51	8.5	8.5	8.5	8.5				53.0	360.0	1000.	STEADY	--	HK 84.9
STADE/ELBE	39777	67/10/14	4	11	8.7	8.7	9.4	9.4					87.0	100.0	720.	ST	--	HK 78.1
STADE/ELBE	39910	68/	2/24	18	36	5.5	8.0	5.4	7.9				45.0	55.0	1050.	IRREG SHORT FLASHES	--	HK 44.7
STADE/ELBE	39911	68/	2/25	19	37	5.5	5.5	5.4					53.0	350.0	1050.	IRREG SHARP FLASHES MIN INV	--	HK 86.0
STADE/ELBE	39917	68/	3/ 2	18	31	7.5	9.0	7.9	9.4				65.0	100.0	850.	IRREG VAR	--	HK 51.0

SDC NC. 705 63 49-C PERIOD = 107.0 PERIGEE = 667.4 USA LAUNCHED 63/12/ 5 IN ORBIT
APOGEE = 690.3 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	38816	65/	2/25	19	59	8.0	8.0	8.0	8.8	8.8			74.0	260.0	690.	STEADY	--	HK 75.4
DURBAN R	39198	66/	3/14	17	44	7.5	8.0	7.5	8.0				40.0	266.0	1000.	MAINLY STEADY, 2MAG FLASHES	--	GR 119.2
AUSTIN	39913	68/	2/27	2	5	7.5			8.1				64.0	87.0	761.		--	PM 42.4

SDC NC. 714 63 53-A PERIOD = 115.8 PERIGEE = 367.2 USA LAUNCHED 63/12/19 IN ORBIT
APOGEE = 1485.7 INCL = 78.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	37035	60/	4/11	2	14	4.0	4.0	4.0	3.4	3.4			73.2	75.6	1320.		--	FJK 48.8
WALNUT CREEK	38575	64/	6/29	6	14	7.0			6.3				49.0	97.3	1377.	STEADY	--	DFC 49.2
KANSAS-E	38595	64/	7/19	2	19	4.0	4.0	4.0	4.6	4.6			51.0	52.0	750.	STEADY	--	SS 73.4
KANSAS-E	38597	64/	7/21	2	29	3.5	3.5	4.6	4.6				83.0	285.0	600.	STEADY	--	SS 87.6
STADE/ELBE	38639	64/	5/ 1	0	45	5.0	5.0	4.8	4.8				75.0	260.0	1100.	STEADY	--	HK 57.0
STADE/ELBE	38662	64/	9/24	20	53	5.0	5.0	4.2	4.2				80.0	100.0	1410.	STEADY	--	HK 52.7
STADE/ELBE	38676	64/10/ 8	20	5	5.0	5.0	5.0	4.0	4.0				70.0	260.0	1450.	STEADY	--	HK 75.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STADE/ELBE	38937	65/	6/	26	22	43	5.5	5.5	5.4	5.4			55.0	100.0	1024.	STEADY	-- HK	68.4
STADE/ELBE	38940	65/	6/	29	21	50	5.7	5.7	5.3	5.3			40.0	100.0	1219.	STEADY	-- HK	58.8
DURBAN B	38956	65/	7/	15	17	45	6.5	6.5	5.8	5.8			74.0	93.0	1350.	STEADY	--GR	41.8
DURBAN B	38957	65/	7/	16	16	48	5.0	5.0	3.8	3.8			40.0	94.0	1700.	STEADY	--AA	21.7
DURBAN B	38957	65/	7/	16	18	44	6.5	6.5	5.5	5.5			51.0	266.0	1580.	STEADY	--AA	84.0
DURBAN B	38958	65/	7/	17	17	47	5.5	5.5	4.9	4.9			90.0	270.0	1293.	STEADY	--GR	57.5
STADE/ELBE	38958	65/	7/	17	22	7	5.5	5.5	5.4	5.4			30.0	260.0	1070.	STEADY	-- HK	91.3
STADE/ELBE	38959	65/	7/	18	21	11	4.5	4.5	5.1	5.1			55.0	260.0	750.	STEADY	-- HK	94.3
DURBAN B	38960	65/	7/	19	15	55	6.0	6.0	4.3	4.3			26.0	96.0	2200.	STEADY	--AA	21.3
DURBAN B	38960	65/	7/	19	17	50	5.5	5.5	4.8	4.8			73.0	266.0	1400.	STEADY	--GR	73.8
DURBAN B	38961	65/	7/	20	18	45	6.0	6.0	4.3	4.3			26.0	235.0	2200.	STEADY	-- AA	102.3
DURBAN B	38962	65/	7/	21	15	54	5.0	5.0	3.6	3.6			34.0	129.0	1900.	STEADY	-- GR	31.7
DURBAN B	38963	65/	7/	24	16	58	5.0	5.0	4.6	4.6			84.0	263.0	1200.	STEADY	-- GR	74.3
STADE/ELBE	39026	65/	4/	23	21	13	5.5	5.5	4.8	4.8			73.0	100.0	1400.	STEADY	-- HK	47.6
EDINBURG	39048	65/	10/	15	2	19	4.0	4.0	3.0	3.0			51.9	71.8	1567.	ST	-- PM	27.7
VAN NUYS-F	39051	65/	10/	18	3	15	6.2	6.2	5.5	5.5			73.0	74.0	1350.		--JGM	49.2
VAN NUYS-F	39052	65/	10/	19	4	14	6.0	6.0	5.2	5.2			55.0	272.0	1460.		--JGM	86.9
EDINBURG	39055	65/	10/	22	1	23	4.6	4.6	4.0	4.0			62.4	74.0	1311.	ST	-- PM	43.9
EDINBURG	39056	65/	10/	23	2	21	4.8	4.8	4.2	4.2			57.0	280.6	1341.	ST	-- PM	90.2
EDINBURG	39057	65/	10/	24	1	24	3.5	3.5	3.1	3.1			76.0	76.9	1183.	NO VARIANCE	-- PM	56.2
STADE/ELBE	39077	65/	11/	13	4	40	5.5	5.5	4.6	4.6			70.0	90.0	1510.	STEADY	-- HK	91.7
STPETERSBURG	39216	66/	4/	1	2	27	5.0	5.0	3.5	3.5			35.4	59.5	2000.		--FJK	47.8
HEIDELBERG	39216	66/	4/	1	19	37	5.5	5.5	4.2	4.2			43.0	80.0	1810.	STEADY	--GLU	41.9
HEIDELBERG	39216	66/	4/	1	21	32	5.0	5.0	4.2	4.2			74.0	281.0	1437.	STEADY, LITTLE FLICKERING	--GLU	71.6
STPETERSBURG	39218	66/	4/	3	2	25	4.0	4.0	2.7	2.7			19.8	50.2	1800.	STEADY AND EASY TO FOLLOW	--FJK	53.6
EDINBURG	39220	66/	4/	5	2	18	6.0	6.0	4.0	4.0			70.8	355.1	2555.	STEADY AS ROCK	-- PM	61.0
STPETERSBURG	39222	66/	4/	7	2	19	3.0	3.0	2.1	2.1			52.2	44.2	1525.		--FJK	55.9
EDINBURG	39223	66/	4/	8	3	12	5.0	5.0	4.0	4.0			35.6	283.0	1620.	7-3LAMP FL SEEN, FL MAX +5.0	-- PM	85.6
EDINBURG	39223	66/	4/	8	5	11	7.0	7.0	5.6	5.6			38.8	58.7	1923.	6-3LAMP FL SEEN, FL MAX +5.5	-- PM	52.0
STPETERSBURG	39227	66/	4/	12	0	12	4.0	4.0	2.7	2.7			64.9	24.3	1800.	STEADY	--FJK	65.3
EDINBURG	39227	66/	4/	12	3	7	6.0	6.0	5.2	5.2			27.8	107.5	1435.		--LAA	108.2
STPETERSBURG	39263	66/	5/	18	8	56	4.0	4.0	0.0	0.0			81.2	283.1	1450.		--FJK	60.5
STPETERSBURG	39281	66/	6/	5	8	17	4.0	4.0	3.2	3.2			67.0	16.5			--FJK	77.9
STPETERSBURG	39290	66/	6/	14	6	56	3.0	3.0	0.0	0.0			75.0	100.0	932.	STEADY	-- HK	76.5
STADE/ELBE	39300	66/	6/	24	23	49	5.0	5.0	5.2	5.2			87.6	297.6	1010.	STEADY	--RKR	58.5
PHOENIX R	39305	66/	6/	29	7	5	5.0	5.0	5.0	5.0								

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
PHOENIX R	29309	66/ 7/ 3			4	57	7.0	7.0	5.7	5.7			21.5	90.8	1800.	STEADY	--RKR	46.7
STADE/ELBE	29309	66/ 7/ 3			22	18	5.5	5.5	5.9	5.9			20.0	100.0	844.	STEADY	--HK	66.7
PHOENIX R	29312	66/ 7/ 6			5	45	5.0	5.0	5.0	5.0			64.0	100.5	1020.	STEADY	--RKR	48.2
PHOENIX R	29313	66/ 7/ 7			6	40	5.0	5.0	5.0	5.0			51.0	287.0	1000.	STEADY	--RR	82.0
PHOENIX R	29318	66/ 7/12			5	25	5.0	5.0	5.5	5.5			77.0	1.0	790.	STEADY	--RR	74.4
PHOENIX R	29320	66/ 7/14			5	18	5.0	5.0	5.6	5.6			75.5	301.0	770.	STEADY	--RR	77.5
PHOENIX R	29321	66/ 7/15			4	17	6.0	6.0	6.0	6.0			40.7	74.5	1000.	STEADY	--RKR	54.5
STADE/ELBE	29321	66/ 7/15			21	36	4.5	4.5	5.4	5.4			70.0	260.0	659.	STEADY	--HK	85.0
SAN ANTONIO	29325	66/ 7/19			4	1	4.8	4.8	5.1	5.1			50.6	287.1	860.	STEADY	--PM	98.0
SAN ANTONIO	29326	66/ 7/20			2	59	4.0	4.0	4.5	4.5			60.7	100.5	788.	NO VARIATION AT ALL	--PM	47.7
SAN ANTONIO	29327	66/ 7/21			3	54	5.0	5.0	5.2	5.2			41.8	289.2	919.	STEADY	--PM	107.5
STADE/ELBE	29331	66/ 7/25			21	0	4.0	4.0	4.3	4.3			30.0	260.0	852.	STEADY	--HK	106.0
STADE/ELBE	29387	66/ 9/19			23	7	5.0	5.0	4.3	4.3			72.0	260.0	1400.	STEADY	--HK	54.7
STADE/ELBE	29388	66/ 9/20			22	4	5.3	5.3	4.6	4.6			75.0	100.0	1380.	STEADY	--HK	49.8
PHOENIX R	29407	66/10/ 9			4	19	6.0	6.0	5.2	5.2			64.0	27.0	1460.	STEADY	--RR	52.8
PHOENIX R	29410	66/10/12			5	1	6.0	6.0	5.0	5.0			49.6	308.5	1600.	STEADY	--RR	80.9
STPETERSBURG	29417	66/10/19			1	35	3.0	3.0	1.7	1.7			50.0	220.0	1800.	STEADY	--FK	76.0
STADE/ELBE	29418	66/10/20			19	36	5.8	5.8	4.9	4.9			57.0	79.0	1500.	STEADY	--RR	40.1
PHOENIX R	29422	66/10/24			2	6	6.0	6.0	5.4	5.4					1325.	STEADY	--FK	
STPETERSBURG	29423	66/10/25			1	4	4.0	4.0	0.0	0.0								
STPETERSBURG	29425	66/10/27			0	53	4.0	4.0	3.6	3.6					1180.	STEADY	--FK	
STADE/ELBE	29425	66/10/27			17	58	5.2	5.2	4.6	4.6			77.0	260.0	1300.	STEADY	--HK	84.7
STADE/ELBE	29426	66/10/28			18	51	5.5	5.5	4.5	4.5			50.0	260.0	1550.	STEADY	--HK	101.1
STPETERSBURG	29428	66/10/30			1	36	4.0	4.0	0.0	0.0								
STPETERSBURG	29432	66/11/ 3			1	14	4.0	4.0	2.7	2.7			18.6	272.8	1860.			128.3
STPETERSBURG	29433	66/11/ 4			0	11	3.0	3.0	1.7	1.7			47.3	261.7	1800.			113.4
PHOENIX R	29433	66/11/ 4			2	4	6.0	6.0	5.7	5.7			49.7	255.7	1170.	STEADY	--RKR	110.8
STPETERSBURG	29434	66/11/ 5			1	3	3.0	3.0	1.5	1.5			16.5	283.1	2000.			130.4
STADE/ELBE	29440	66/11/11			5	39	5.0	5.0	4.3	4.3			85.0	100.0	1380.	STEADY	--FK	85.9
STPETERSBURG	29518	67/ 1/28			0	16	3.0	3.0	2.8	2.8			25.3	96.6	1086.			20.9
STPETERSBURG	29519	67/ 1/29			1	56	4.0	4.0	3.7	3.7			23.1	274.6	1125.			119.4
PHOENIX R	29519	67/ 1/29			3	0	6.0	6.0	5.6	5.6			43.4	182.0	1220.	STEADY	--RKR	77.3
STPETERSBURG	29522	67/ 2/ 1			1	40	4.0	4.0	3.8	3.8			22.4	274.4	1100.			123.9
PHOENIX R	29525	67/ 2/ 4			2	15	5.0	5.0	6.5	6.5			79.2	100.0	500.	STEADY	--RR	64.1
PHOENIX R	29526	67/ 2/ 5			3	5	5.0	5.0	5.3	5.3			26.5	293.5	860.	STEADY	--RR	121.8
STADE/ELBE	29529	67/ 2/ 8			19	0	4.5	4.5	5.6	5.6			35.0	260.0	600.	STEADY	--HK	118.2
STADE/ELBE	29534	67/ 2/13			17	20	3.0	3.0	4.5	4.5			78.0	100.0	500.	STEADY	--HK	70.5

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CBS	PHASE
STPETERSBLRG	39583	67/	4/	3	2	44	4.0	4.0	0.0	0.0			42.1	49.4			--FK	54.2
PHOENIX R	39586	67/	4/	6	5	1	7.0	7.0	6.4	6.4			74.3	77.5	1325.	STEADY	--RR	45.2
PHOENIX R	39587	67/	4/	7	5	46	7.0	7.0	6.4	6.3			61.5	266.7	1350.	STEADY	--RR	66.1
PHOENIX R	39588	67/	4/	8	4	35	7.0	7.0	6.4	6.3			66.9	76.1	1320.	STEADY	--RR	45.4
PHOENIX R	39590	67/	4/10	4	11	5.0	5.0	5.0	4.3	4.3			63.0	82.0	1360.	STEADY	--RR	43.9
STADE/ELBE	39591	67/	4/11	20	1	6.0	6.0	6.0	5.3	5.3			85.0	260.0	1350.	STEADY	--HK	78.5
STADE/ELBE	39593	67/	4/13	19	36	5.0	5.0	5.0	4.4	4.4			89.0	100.0	1340.	STEADY	--HK	77.8
PHOENIX R	39599	67/	4/19	3	17	7.0	7.0	7.0	6.6	6.6			71.6	73.9	1200.	STEADY TRACKED 75 SEC	--RR	60.9
STPETERSBLRG	39651	67/	6/10	8	17	5.0	5.0	5.0	4.3	4.3			42.5	144.7	1400.		--FK	93.8
STADE/ELBE	39658	67/	6/17	0	1	6.0	6.0	6.0	5.1	5.1			35.0	100.0	1500.	STEADY	--HK	82.0
HEIDELBERG	39672	67/	7/1	23	1	6.0	6.0	6.0	5.8	5.8			44.0	180.0	1100.	STEADY	--GLU	27.4
STADE/ELBE	39675	67/	7/4	23	16	4.8	4.8	4.8	5.3	5.3			74.0	260.0	800.	STEADY	--HK	74.9
HEIDELBERG	39681	67/	7/10	21	39	6.2	6.2	6.0	6.0	6.0			38.0	170.0	1100.	STEADY	--GLU	27.9
HEIDELBERG	39688	67/	7/17	20	53	4.5	4.5	4.5	5.3	5.3			63.0	100.0	690.	STEADY	--GLU	60.1
HEIDELBERG	39690	67/	7/19	20	21	4.6	4.6	4.6	5.4	5.4			47.0	100.0	700.	STEADY	--GLU	49.5
STADE/ELBE	39691	67/	7/20	21	4	3.5	3.5	3.5	4.8	4.8			85.0	260.0	560.	STEADY NOT DARK	--HK	82.6
GRANBY	39735	67/	9/2	6	3	6.9	6.9	6.9	6.1	6.1			47.0	90.0	1465.		--MPC	76.9
GRANBY	39735	67/	9/2	7	58	6.9	6.9	6.9	6.0	6.0			49.0	270.0	1500.	MOON	--MPC	38.7
HEIDELBERG	39757	67/	9/24	3	24	6.8	6.8	6.8	5.6	5.6			42.5	10.0	1700.	STEADY	--GLU	86.7
STADE/ELBE	39758	67/	9/25	21	9	6.0	6.0	6.0	5.2	5.2			52.0	100.0	1450.	STEADY	--GLU	33.7
STADE/ELBE	39760	67/	9/27	20	32	5.5	5.5	5.5	4.6	4.6			50.0	100.0	1500.	STEADY	--HK	32.9
HEIDELBERG	39764	67/10/1	21	14	5.8	5.8	5.8	5.8	5.2	5.2			81.0	74.0	1300.	STEADY	--GLU	49.9
HEIDELBERG	39768	67/10/5	20	3	6.0	6.0	6.0	6.0	5.2	5.2			58.0	82.0	1470.	STEADY	--GLU	39.1
HEIDELBERG	39768	67/10/5	21	57	6.2	6.2	6.2	6.2	5.3	5.3			53.0	279.0	1530.	STEADY	--GLU	73.6
GRANBY	39770	67/10/7	0	30	7.2	7.2	7.2	7.2	5.8	5.8			30.0	52.0	1930.	SOME 0.1 MAG VARIATIONS	--MPC	47.8
GRANBY	39771	67/10/8	1	10	7.0	7.0	7.0	7.0	6.0	6.0			45.0	41.0	1580.	SOME 0.1 MAG VARIATIONS	--MPC	56.7
HEIDELBERG	39773	67/10/10	19	31	5.5	5.5	5.5	5.5	4.8	4.8			61.0	12.0	1410.	STEADY	--GLU	40.0
HEIDELBERG	39774	67/10/11	20	9	5.8	5.8	5.8	5.8	5.3	5.3			88.0	356.0	1240.	STEADY	--GLU	58.3
STADE/ELBE	39776	67/10/13	19	32	5.5	5.5	5.5	5.5	4.9	4.9			82.0	100.0	1300.	ST	--HK	55.4
GRANBY	39779	67/10/16	0	35	7.0	7.0	7.0	7.0	6.4	6.4			57.0	90.0	1300.		--MPC	31.1
STPETERSBLRG	39780	67/10/17	1	21	4.0	4.0	4.0	4.0	0.0	0.0			85.0	100.0	1260.	ST 0.2 MAG VAR	--FK	
STADE/ELBE	39781	67/10/18	18	58	5.5	5.5	5.5	5.7	5.0	5.2			70.0	100.0	1320.	ST MAZE	--HK	61.1
STADE/ELBE	39783	67/10/20	18	22	6.0	6.0	6.0	6.0	5.4	5.4			68.0	49.0	1130.		--HK	50.6
GRANBY	39784	67/10/21	0	7	6.8	6.8	6.8	6.8	6.5	6.5			75.0	260.0	1250.	ST	--MPC	53.0
STADE/ELBE	39784	67/10/21	19	1	5.5	5.5	5.5	5.5	5.0	5.0							--HK	78.2
STPETERSBLRG	39785	67/10/22	0	50	4.0	4.0	4.0	4.0	0.0	0.0							--FK	
STPETERSBLRG	39787	67/10/24	0	15	5.0	5.0	5.0	5.0	0.0	0.0							--FK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--CBS	PHASE
STPETERSPLRG	39791	67/10/28	23	38	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	40.7	54.8	930.		--FK	37.4
GRANBY	39793	67/10/30	0	14	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	46.0	285.0	1210.		--MPC	106.1
STPETERSPLRG	39793	67/10/30	0	17	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	70.0	355.6			--FK	71.1
STPETERSPLRG	39797	67/11/3	0	57	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	25.8	278.3			--FK	124.0
WIDELEBFC	39797	67/11/3	19	55	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	54.0	250.0	1135.	ST	--GLU	80.7
GRANBY	39799	67/11/5	23	1	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	55.0	290.0	990.		--MPC	105.8
STPETERSPLRG	39802	67/11/8	0	21	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	22.0	271.1			--FK	135.3
STPETERSPLRG	39803	67/11/9	0	37	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	35.8	270.7			--FK	118.3
STADE/ELBE	39881	68/1/26	4	14	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	25.0	100.0	1100.	ST	--HK	126.5
STADE/ELBE	39882	68/1/27	4	52	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	40.0	100.0	550.	ST	--HK	118.4
STPETERSPLRG	39883	68/1/28	1	12	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	39.0	180.0	700.		--FK	78.3
STPETERSPLRG	39885	68/1/30	0	31	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	32.0	52.7			--FK	27.2
STADE/ELBE	39894	68/2/9	4	16	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	89.0	260.0	815.	ST	--HK	64.9
GRANBY	39910	68/2/24	5	51	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	23.0	52.0	1950.		--MPC	96.9
STADE/ELBE	39917	68/3/2	7	45	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	60.0	355.0	1225.		--MPC	65.2
WIDELEBFC	39927	68/3/12	22	42	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	55.0	70.0	1400.	ST	--HK	71.4
STADE/ELBE	39934	68/3/19	22	46	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	42.0	31.0	1590.	ST	--GLU	84.9
STADE/ELBE	39941	68/3/26	20	52	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	50.0	100.0	1350.	ST	--GLU	50.6
WIDELEBFC	39942	68/3/27	21	27	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	69.0	82.0	1300.	ST	--HK	37.2
STADE/ELBE	39944	68/3/29	20	35	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	58.0	100.0	1300.	ST	--GLU	50.7
STADE/ELBE	39945	68/3/30	21	7	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	75.0	100.0	1300.	ST	--HK	42.5
STADE/ELBE	39945	68/3/30	21	10	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	70.0	81.0	1290.	ST	--GLU	52.6
STADE/ELBE	39951	68/4/5	20	34	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	85.0	100.0	1250.	ST MORN	--HK	65.7
STADE/ELBE	39952	68/4/6	21	7	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	67.0	260.0	1255.	ST MORN	--HK	78.7
STPETERSPLRG	39954	68/4/10	2	35	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	45.5	5.5			--FK	82.4
STADE/ELBE	39956	68/4/10	21	20	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	45.0	260.0	1400.	ST MORN	--HK	89.0
STADE/ELBE	39957	68/4/11	20	0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	85.0	260.0	1200.	ST MORN	--HK	78.8
STADE/FLPE	39960	68/4/14	19	43	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	80.0	260.0	1200.	ST	--HK	85.5
STPETERSPLRG	39962	68/4/16	2	4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	77.0	160.6			--FK	53.3
WIDELEBFC	39966	68/4/20	19	10	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	77.0	281.0	2000.	VAP	--GLU	95.1
STPETERSPLRG	39972	68/4/26	1	42	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	33.2	281.5			--FK	122.9

SDC NC. 716 63 54-A
PERIOD = 99.3 PERIGEE = 435.6 APOGEE = 468.5 IN ORBIT
LAUNCHED 63/12/21 INCL = 58.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CDS	PHASE
STADE/ELBE	38891	65/	5/	1	23	21	8.5	9.5	10.2	10.2			83.0	360.0	447.0	STEADY	--HK	75.8
STADE/ELBE	39522	67/	2/	1	0	29	7.0	7.0	8.5	8.5			57.5	51.7	500.0		--FK	45.0
STADE/ELBE	39536	67/	2/	15	18	58	9.0	9.0	9.9	9.9			45.0	360.0	650.0	STEADY	--HK	80.4
STADE/ELBE	39894	68/	2/	8	4	5	7.0	7.0	8.6	8.6			85.0	359.0	480.0	ST	--HK	65.1

SDC NC. 717 63 54-B
PERIOD = 99.3 PERIGEE = 439.3 APOGEE = 466.0 IN ORBIT
LAUNCHED 63/12/21 INCL = 58.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CDS	PHASE
WALNUT CREEK	39572	64/	6/	26	4	45	6.0	7.0	8.8	8.8		4.50	40.6	320.0	644.0	CYCLING, MIN BELOW +7	--DFC	127.1
STADE/ELBE	38582	64/	7/	6	23	11	7.0	7.0	8.3	8.3			89.0	10.0	440.0	ST OCCAS FAINT VAR	--HK	77.2
STADE/ELBE	38639	64/	9/	1	1	46	5.5	6.7	6.7	6.7			54.0	360.0	550.0	FLASHING	--HK	98.0
OURRAN R	38930	65/	6/	19	16	41	8.0	8.5	8.9	8.9			53.0	266.0	580.0	IRREGULAR FADE TO INFINITY	--AA	104.6
STADE/ELBE	39362	66/	8/	25	3	50	7.0	7.0	8.1	8.1			50.0	360.0	650.0	NO PREDICTION ROCKET STEADY	--HK	104.3
GRANDY	39783	67/	10/	20	23	35	7.0	7.0	8.3	8.3			46.0	38.0	592.0	MIN INV, TP EST 51A, OFTEN LOST	--MPC	52.6
GRANDY	39785	67/	10/	22	23	33	7.0	7.0	8.8	10.1			77.0	44.0	442.0	DIFFUSE FLASHING, TP EST 41NTP	--MPC	63.3
STPETERSBURG	39789	67/	10/	26	0	21	0.1	4.0	0.0	0.0		0.30				DECREASED WITH ALT DECREASE	--FK	
																.3 SEC FLASH CLOCKED		

SDC NC. 719 63 55-B
PERIOD = 91.7 PERIGEE = 195.7 APOGEE = 244.2 INCL = 64.5
LAUNCHED 63/12/21 DECEASED 11/ 9/64

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--CDS	PHASE
STADE/ELBE	38515	64/	4/	30	19	58	3.5	3.5	6.8	6.8			89.5	55.0	220.0	STEADY	--HK	80.8

SDC NO.	725	63 53-F	PERIOD =	115.8	ROCKET BODY	USA	LAUNCHED	63/12/19	IN ORBIT									
					PERIGEE =	367.9	APOGEE =	1491.3	INCL = 78.6									
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WICHITA	38565	64/	6/19		5	39	9.0	8.1				3.00	45.0	90.0	1538.	MIN. INV., FLASH DURAT. APRX--PWR		61.8
WALNUT CREEK	38576	64/	6/30		6	20	8.0	8.0				9.87	57.1	90.3	982.	49.3 SEC/ 5 CYCLES,MIN INV --DFC		55.2

SDC NO.	727	64	1-A	ROCKET BODY	USA	LAUNCHED 64/ 1/11	IN ORBIT											
			PERIOD =	103.5	PERIGEE =	563.0	APOGEE = 582.2 INCL = 69.9											
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ROCHESTER	38543	64/	5/28		1	36	7.0	7.0	6.1	6.1			19.0	95.0	1500.	STEADY	--REJ	36.4
ADELAIDE-2	38546	64/	5/31		10	15	7.5	7.5	8.0	8.0			41.6	269.6	810.	STEADY	--ACB	107.4
SAN ANTONIO	38595	64/	7/19		2	39	2.7	2.7	2.6	2.6			28.3	253.2	1025.	ST	--PM	116.1
SAN ANTONIO	38595	64/	7/19		4	25	4.3	4.3	4.4	4.4			33.1	60.2	935.	ST, MANY CLOUDS	--PM	68.7
WALNUT CREEK	38595	64/	7/19		6	7	8.0		7.5				19.0	256.0	1280.	STEADY	--DFC	98.3
WALNUT CREEK	38596	64/	7/20		4	30	4.5		5.7				87.0	67.0	580.	STEADY	--DEC	77.4
KANSAS-E	38597	64/	7/21		2	56	4.0	4.0	4.8	4.8			56.0	248.0	700.	STEADY	--SS	93.6
WHITTIER-D	38597	64/	7/21		4	40	5.5	5.5	6.3	6.3			50.0	250.0	700.	STEADY	--RCH	93.3
SAN ANTONIO	38598	64/	7/22		3	7	4.5	4.5	5.6	5.6			68.2	248.1	614.	ST	--PM	83.4
KANSAS-E	38599	64/	7/23		3	14	5.0	5.0	4.8	4.8			25.0	254.0	1100.	STEADY	--SS	108.8
SAN ANTONIO	38599	64/	7/23		3	16	4.3	4.3	4.8	4.8			43.0	250.9	790.	ST, 26 SEC AFTER R	--PM	97.5
SAN ANTONIO	38600	64/	7/24		3	25	6.5	6.5	6.4	6.4			27.3	253.4	1044.	ST	--PM	106.3
SAN ANTONIO	38601	64/	7/25		3	34	8.0	8.2	7.4	7.6	4.31		17.1	255.7	1332.	SLIGHTLY VARIABLE	--PM	111.9
SAN ANTONIO	38604	64/	7/28		2	16	7.0	7.0	7.5	7.5			41.6	251.1	805.	ST	--PM	112.5
SAN ANTONIO	38605	64/	7/29		2	25	7.2	7.2	7.1	7.1			26.4	253.5	1063.	ST	--PM	121.1
TOWNSVILLE	38607	64/	7/31		9	50	5.0		6.2				84.5	68.0	571.	STEADY THROUGH APOGEE SCOPE WITH ONE FADE TO INVISIBILITY	--ARD	59.8
																Y OF ONE SECOND DURATION	--ARD	
TOWNSVILLE	38609	64/	8/	2	10	8	6.0	6.0	6.3	6.3			36.0	245.0	866.	STEADY	--NDB	105.8
TOWNSVILLE	38611	64/	8/	4	10	27	7.0	7.0	6.2	6.2			14.0	240.4	1444.	STEADY	--LJ	119.4
DURBAN B	38612	64/	8/	5	17	30	4.0	4.0	4.2	4.2			35.0	270.0	900.	NO TUMBLE IN 1.5 MIN TRACKING	--AA	117.8
DURBAN A	38612	64/	8/	5	17	30	4.0	4.0	4.2	4.2			35.0	270.0	900.		--GR	117.8
DURBAN B	38613	64/	8/	6	15	56	4.5	4.5	5.0	5.0			40.0	93.0	800.	NO TUMBLE IN 1 MIN TRACKING	--GR	34.8
DURBAN B	38613	64/	8/	6	17	38	6.0	6.0	5.7	5.7			23.0	264.0	1150.	NO TUMBLE	--AA	127.5
DURBAN B	38615	64/	8/	8	16	12	3.2	3.2	4.4	4.4			80.0	330.0	580.	EASY NAKED EYE	--GR	86.8

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38616	64/	8/	9	16	23	4.5	4.5	5.3	5.3			60.0	230.0	700.		--AA	97.0
STADE/ELBE	38666	64/	9/28		19	22	4.5	4.5	5.4	5.4			50.0	140.0	650.	STEADY	--HK	35.3
STADE/ELBE	38669	64/10/	1	19	50		5.0	5.0	6.0	6.0			75.0	315.0	630.	STEADY	--HK	79.4
STADE/ELBE	38707	64/11/	8	18	38		5.0	5.0	5.7	5.7			50.0	55.0	730.	STEADY	--HK	40.2
STADE/ELBE	38821	65/	3/	2	19	33	4.0	4.0	4.8	4.8			70.0	55.0	690.	STEADY	--HK	57.0
STADE/ELBE	38826	65/	3/	7	18	33	3.0	4.0	3.8	4.8			70.0	55.0	680.	STEADY AND OCCAS VARYING	--HK	63.2
DURBAN B	38895	65/	5/15	15	41		2.5	2.5	2.7	2.7			37.0	94.0	900.	STEADY-VERY EASY	--AA	32.6
DURBAN B	38895	65/	5/15	17	24		5.0	5.0	4.8	4.8			23.0	265.0	1100.	STEADY	--GR	127.1
DURBAN B	38899	65/	5/19	16	15		6.0	6.0	6.4	6.4			36.0	266.0	820.	STEADY	--GR	126.5
DURBAN B	38900	65/	5/20	16	24		3.5	3.5	2.9	2.9			22.0	266.0	1300.	STEADY	--GR	137.7
DURBAN B	38955	65/	7/14	16	52		7.0	7.0	7.4	7.4			39.0	94.0	850.	STEADY	--GR	19.8
DURBAN B	38956	65/	7/15	16	59		5.5	5.5	6.3	6.3			61.0	93.0	700.	STEADY	--GR	39.2
DURBAN B	38957	65/	7/16	17	8		4.0	4.0	5.1	5.1			84.0	93.0	600.	STEADY	--AA	59.8
DURBAN B	38960	65/	7/19	15	51		5.5	5.5	5.9	5.9			40.0	93.0	850.	STEADY	--GR	35.3
DURBAN B	38960	65/	7/19	17	35		5.5	5.5	5.0	5.0			21.0	265.0	1280.	STEADY	--GR	127.7
DURBAN B	38962	65/	7/21	16	8		5.0	5.0	6.1	6.1			82.0	262.0	600.	STEADY	--GR	86.1
DURBAN B	38963	65/	7/22	16	17		4.5	4.5	5.2	5.2			51.0	266.0	710.	STEADY	--AA	113.7
DURBAN B	38964	65/	7/23	16	26		5.0	5.0	5.0	5.0			32.0	266.0	1000.	STEADY	--AA	129.9
STADE/ELBE	38999	65/	8/27	1	51		6.0	6.0	5.8	5.8			25.0	315.0	1103.	STEADY	--HK	87.6
DURBAN B	39186	66/	3/	2	17	23	5.0	5.0	6.2	6.2			80.0	105.0	575.	STEADY	--GR	69.1
STADE/ELBE	39241	66/	4/26	21	8		3.0	3.0	3.9	3.9			60.0	310.0	650.	STEADY	--HK	101.7
HEIDELBERG	39244	66/	4/29	19	48		2.8	2.8	4.0	4.0			85.0	335.0	578.	STEADY	--GLU	83.9
STADE/ELBE	39244	66/	4/29	19	50		6.0	6.0	7.2	7.2			80.0	135.0	580.	STEADY	--HK	71.5
HEIDELBERG	39245	66/	4/30	19	58		5.4	5.4	6.3	6.3			62.0	280.0	647.	STEADY	--GLU	102.8
HEIDELBERG	39246	66/	5/	1	20	8	5.3	5.3	5.9	5.9			45.0	335.0	762.	STEADY	--GLU	118.8
HEIDELBERG	39247	66/	5/	2	20	18	5.4	5.4	5.6	5.6			35.0	330.0	896.	STEADY	--GLU	129.3
HEIDELBERG	39283	66/	6/	7	20	36	2.8	4.8	3.8	5.8	160.00		63.0	281.0	636.	LONG NORMAL TURNING	--GLU	101.9
STADE/ELBE	39352	66/	8/15	21	34		5.5	5.5	6.9	6.9			85.0	310.0	521.	STEADY	--HK	76.4
STADE/ELBE	39353	66/	8/16	21	42		4.0	4.0	5.3	5.3			70.0	315.0	549.	STEADY	--HK	89.9
STADE/ELBE	39387	66/	9/19	21	43		5.0	5.0	6.1	6.1			60.0	55.0	600.	STEADY	--HK	66.3
STADE/ELBE	39396	66/	9/28	19	33		6.0	6.0	7.1	7.1			45.0	55.0	600.	STEADY	--HK	56.2
STADE/ELBE	39493	67/	1/	3	17	43	5.0	5.0	6.1	6.1			40.0	315.0	600.	STEADY	--HK	100.1
STADE/ELBE	39517	67/	1/27	17	55		5.5	5.5	6.0	6.0			37.0	55.0	800.	STEADY	--HK	31.0
STADE/ELBE	39653	67/	7/22	22	12		6.0	6.0	6.9	6.9			63.0	140.0	670.	STEADY	--HK	51.0
STADE/ELBE	39708	67/	8/	6	20	58	6.5	6.5	7.1	7.1			30.0	360.0	750.	STEADY	--HK	124.6
STADE/ELBE	39734	67/	5/	1	21	28	5.3	5.3	5.7	5.7			57.0	55.0	840.	STEADY	--HK	72.5
STADE/ELBE	39790	67/10/27		3	23		5.5	5.5	6.1	6.1			54.0	310.0	750.	ST	--HK	48.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39833	67	12	9	18	10	3.8	3.8	4.5	4.5	4.5		50.0	320.0	720.	ST	--GLU	89.7
STADE/ELBE	39834	67	12	10	18	19	5.0	5.0	5.6	5.6	5.6		46.0	310.0	750.	ST	--HK	97.2
STADE/ELBE	39944	68	3	29	20	15	7.5	8.5	7.5	8.5	8.5		25.0	310.0	1000.	SLOWLY VAR	--HK	134.7
STADE/ELBE	39960	68	4	14	22	48	3.0	3.5	4.0	4.5	4.5		75.0	55.0	630.	ST MOON	--HK	70.9
STADE/ELBE	39961	68	4	15	22	57	5.5	5.5	6.6	6.6	6.6		87.0	220.0	600.	ST	--HK	61.8
STADE/ELBE	39971	68	4	25	20	56	6.0	6.0	7.1	7.1	7.1		85.0	220.0	600.	ST	--HK	72.6

SDC NO. 728 64 1-8 PERIOD = 103.5 GGSE 1 USA LAUNCHED 64/ 1/11 IN ORBIT
 PERIGEE = 560.5 APOGEE = 584.7 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38596	64	7	20	4	30	8.0	9.5	9.2	10.0	12.00	0.20	86.7	67.0	580.	STEADY 1 DEG.25 SEC BEFORE	A--DFC	77.2
WALNUT CREEK	38598	64	7	22	4	48	9.0	9.5	9.5	10.0	12.00	0.20	42.3	250.0	800.	TP APPROX, SOME FLASHES	--DFC	100.7
SAN ANTONIO	38599	64	7	23	3	15	9.0	9.5	9.5	10.0	12.00	0.20	43.0	250.9	790.	GENERALLY ST.26 SEC BEFORE	A--PM	97.7
TOWNSVILLE	38610	64	8	3	10	17	8.5	8.5	8.2	8.2	8.2		22.0	242.0	1145.	STEADY	--NDB	114.9
TOWNSVILLE	38611	64	8	4	10	26	9.0	9.0	8.2	8.2	8.2		14.0	240.4	1444.	STEADY	--LJ	119.5
DURBAN B	31964	65	7	23	16	30	9.5	9.7	9.7				36.0	266.0	920.	SCINTILLATING	--AA	125.5

SDC NO. 729 64 1-C PERIOD = 103.5 EGRS 1 USA LAUNCHED 64/ 1/11 IN ORBIT
 PERIGEE = 563.0 APOGEE = 582.2 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38881	65	5	1	23	31	8.0	8.5	9.2	9.7			85.0	310.0	587.	STEADY	--HK	71.9

SDC NO. 730 64 1-D PERIOD = 103.5 SOLAR RAD. USA LAUNCHED 64/ 1/11 IN ORBIT
 PERIOD = 103.5 PERIGEE = 563.0 APOGEE = 582.2 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/VELBE	38826	65/ 3/ 7	18	58	8.0	9.0	9.1	10.1	5.00	89.5	55.0	595.	FLASHING	--	HK	73.1		
STADE/VELBE	38881	65/ 5/ 1	23	12	5.0	8.0	6.1	9.1		75.0	140.0	602.	FLASHING	--	HK	57.4		
STADE/VELBE	39055	65/10/22	19	20	7.7	8.0	8.8	9.1		89.0	310.0	590.	STEADY	--	HK	62.5		
STADE/VELBE	39351	66/ 8/14	22	8	6.7	7.5	7.6	8.4		65.0	310.0	653.	VARYING	--	HK	92.0		
STADE/VELBE	39354	66/ 8/17	20	50	8.0	8.0	9.3	9.3		72.0	140.0	543.	STEADY AND SCINTILLATE	--	HK	56.8		

SDC NO. 731 64 1-E PERIOD = 103.5 SOLAR RAD. USA LAUNCHED 64/ 1/11 IN ORBIT
 PERIOD = 103.5 PERIGEE = 554.9 APOGEE = 590.9 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/VELBE	38826	65/ 3/ 7	19	15	8.3	8.3	9.2	9.2		75.0	220.0	660.	STEADY	--	HK	77.1		
STADE/VELBE	39241	66/ 4/26	20	36	8.0	8.0	9.2	9.2		90.0	140.0	576.	STEADY	--	HK	75.7		
STADE/VELBE	39353	66/ 8/16	21	20	6.5	7.0	7.9	8.4		89.5	315.0	520.	STEADY AND FAINT VARYING	--	HK	73.0		
STADE/VELBE	39354	66/ 8/17	21	29	8.0	9.0	9.2	10.2		62.0	315.0	580.	FAINT VARYING	--	HK	98.6		
STADE/VELBE	39561	67/ 3/12	3	9	7.5	9.0	8.0	9.5		45.0	310.0	800.	VARYING	--	HK	58.4		
STADE/VELBE	39734	67/ 9/ 1	21	27	8.0	8.0	8.4	8.4		55.0	55.0	850.	STEADY	--	HK	73.0		
STADE/VELBE	39961	68/ 4/15	23	4	6.5	7.6	7.6		1.45	89.5	220.0	600.	FLASHING MIN INV	--	HK	63.4		

SDC NO. 733 64 2-A PERIOD = 101.3 SOLAR RAD. USA LAUNCHED 64/ 1/19 IN ORBIT
 PERIOD = 101.3 PERIGEE = 499.6 APOGEE = 517.6 INCL = 99.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/VELBE	38651	64/ 9/13	2	49	4.0	5.5	5.1	6.6		50.0	100.0	600.	REGULAR FLASHING	--	HK	102.1		
STADE/VELBE	38658	64/ 9/20	3	44	4.0	5.5	5.4	6.9		75.0	260.0	520.	FLASHING	--	HK	62.8		
STADE/VELBE	38833	65/ 3/14	4	6	2.5	4.0	3.9	5.4		89.0	260.0	530.	REGULAR FLASHING	--	HK	74.3		
STADE/VELBE	39862	68/ 1/ 7	16	46	5.0	7.0	5.0	7.6		30.0	100.0	750.	SLOWLY TUMB PER APPROX	--	HK	34.5		

SDC NO. 737 64 3-A RELAY 2 USA LAUNCHED 64/ 1/21 IN ORBIT
 PERIOD = 194.7 PERIGEE = 1302.4 APOGEE = 4601.9 INCL = 46.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39216	66/	4/	1	3	37	8.5	8.5	6.6	6.6			65.6	342.1	2410.	UNUSUALLY BRIGHT	--JGW	87.4
VAN NUYS-F	39228	66/	4/	13	4	37	10.5	8.1					64.1	11.4	3000.	ABOUT 1/4 SFC FLICKER	--JGW	75.0
PHOENIX R	39386	66/	9/	18	5	9	9.0	10.0	6.8	7.8	1.00		58.5	0.0	2756.	GRADUAL INCREASE IN MAG	--RRR	71.4
PHOENIX R	39407	66/	10/	9	4	10	12.0	9.9					68.9	21.2	2587.	MIN INV	--RRR	54.3
OCEANPORT	39557	67/	3/	8	4	23	9.0	8.2					82.2	17.9	1438.		--GFG	43.0
OCEANPORT	39560	67/	3/	11	0	11	6.0	4.8					86.3	335.9	1771.		--GFG	77.0

SDC NO. 738 64 3-B ROCKET BODY USA LAUNCHED 64/ 1/21 IN ORBIT
 PERIOD = 194.8 PERIGEE = 1296.2 APOGEE = 4611.8 INCL = 46.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	39388	66/	9/	20	4	47	10.0	7.7					59.1	358.6	2843.	MIN INV	--RRR	72.0
PHOENIX R	39389	66/	9/	21	3	21	11.0	11.0	8.4	8.4			66.9	344.4	3261.	STEADY	--RRR	80.0
PHOENIX R	39406	66/	10/	8	4	38	11.0	9.1					71.6	24.0	2427.	MIN INV	--RRR	50.1
PHOENIX R	39407	66/	10/	9	3	14	11.0	8.6					62.7	10.7	2996.	INV TWICE CROSSING 1 DEG FLD	--RRR	66.0
PHOENIX R	39409	66/	10/	11	4	1	12.0	9.9					69.8	22.0	2596.	MIN INV	--RRR	54.0
PHOENIX R	39415	66/	10/	17	2	46	11.0	8.6					67.2	17.7	2960.	MIN INV	--RRR	63.0
PHOENIX R	39416	66/	10/	18	4	56	10.0	8.3					78.7	217.9	2205.	MIN INV	--RRR	42.6
EDINBURG	39434	66/	11/	5	1	20	10.0	7.9					82.2	37.8	2634.	IRREGULAR, MIN INVISIBLE	--PM	63.7
PHOENIX R	39551	67/	3/	2	2	26	10.0	8.9					80.6	143.5	1632.	3 TP CROSSING 1 DEG FIELD	--RRR	70.9
OCEANPORT	39583	67/	4/	3	0	46	13.0	11.4					79.9	17.3	2137.		--GFG	74.5
OCEANPORT	39585	67/	4/	5	1	32	12.5	10.7					87.3	205.3	2328.		--GFG	65.8

SDC NO. 740 64 4-A PERIOD = 108.8 ECHO 2 USA LAUNCHED 64/ 1/25 IN ORBIT
PERIOD = 108.8 PERIGEE = 634.4 APOGEE = 822.1 INCL = 81.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38590	64/	7/14		5	17	-1.0	-1.0	-1.8	-1.8			20.0	270.0	1420.	ST	--	PM 96.5
SAN ANTONIO	38591	64/	7/15		4	50	-2.0	-1.0	-1.2	-0.2			86.7	270.0	692.	MOSTLY ST	--	PM 59.2
SAN ANTONIO	38592	64/	7/16		4	24	-2.0	-2.0	-1.3	-1.3			70.0	90.0	715.	ST	--	PM 50.1
SAN ANTONIO	38593	64/	7/17		3	57	-2.0	0.1	-1.5	0.6			55.0	90.0	801.		--	PM 45.0
SAN ANTONIO	38594	64/	7/18		3	31	-2.0	-2.0	-1.9	-1.9			40.0	90.0	970.	ST	--	PM 40.0
SAN ANTONIO	38594	64/	7/18		5	20	0.1	1.0	0.0	0.9			35.0	270.0	1045.		--	PM 85.8
SAN ANTONIO	38595	64/	7/19		3	14	0.1	1.5	0.0	1.4			35.0	90.0	1030.		--	PM 37.9
SAN ANTONIO	38595	64/	7/19		4	57	-1.0	1.0	-0.6	1.4			50.0	300.0	830.		--	PM 91.9
SAN ANTONIO	38597	64/	7/21		4	1	-2.0	-1.0	-1.2	-0.2			89.0	270.0	680.		--	PM 63.7
SAN ANTONIO	38598	64/	7/22		3	34	-2.0	-1.0	-1.2	-0.2			75.0	90.0	700.		--	PM 56.4
SAN ANTONIO	38599	64/	7/23		3	6	-2.0	-2.0	-1.5	-1.5			55.0	90.0	797.	ST	--	PM 46.2
SAN ANTONIO	38600	64/	7/24		2	43	-1.0	-1.0	-1.0	-1.0			37.0	90.0	1001.		--	PM 37.2
SAN ANTONIO	38600	64/	7/24		4	32	0.1	0.1	0.1	0.1			35.0	270.0	1015.	ST	--	PM 96.2
SAN ANTONIO	38601	64/	7/25		4	5	-1.0	-1.0	-1.0	-1.0			44.0	270.0	1005.		--	PM 95.6
SAN ANTONIO	38602	64/	7/26		3	39	-1.5	-1.5	-0.7	-0.7			70.0	270.0	705.	ST	--	PM 80.9
ADELAIDE-2	38602	64/	7/26		10	34	8.5	8.5	9.0	9.0			61.9	158.8	800.	AT LEAST 20SEC AFTER SHAD.ENT	--	PM 51.4
SAN ANTONIO	38603	64/	7/27		3	13	-2.0	-2.0	-1.1	-1.1			89.0	90.0	674.	ST	--	PM 69.0
SAN ANTONIO	38604	64/	7/28		2	47	-2.0	-2.0	-1.2	-1.2			70.0	90.0	703.	ST	--	PM 58.0
SAN ANTONIO	38605	64/	7/29		2	19	-2.0	-1.0	-1.8	-0.8			45.0	90.0	898.		--	PM 42.3
SAN ANTONIO	38607	64/	7/31		3	17	-1.0	-1.0	-0.5	-0.5			55.0	270.0	795.	ST	--	PM 97.0
SAN ANTONIO	38608	64/	8/ 1		2	50	-1.0	-1.0	-0.2	-0.2			80.0	270.0	680.	ST	--	PM 81.5
SAN ANTONIO	38609	64/	8/ 2		2	23	-2.0	-2.0	-1.1	-1.1			89.0	90.0	673.	ST	--	PM 77.1
SAN ANTONIO	38610	64/	8/ 3		1	58	-2.0	-2.0	-1.4	-1.4			58.0	90.0	760.	ST	--	PM 54.2
SAN ANTONIO	38610	64/	8/ 3		3	45	2.0	2.0	1.0	1.0			15.0	270.0	1580.	ST	--	PM 121.4
SAN ANTONIO	38611	64/	8/ 4		3	21	0.1	0.1	0.9	0.9			75.0	270.0	698.	ST	--	PM 79.1
STADE/ELBE	38639	64/	9/ 1		2	20	-1.0	-1.0	-0.5	-0.5			80.0	100.0	790.	STEADY	--	PM 78.5
STADE/ELBE	38666	64/	5/28		22	49	-1.5	-1.5	-0.9	-0.9			89.5	100.0	770.	STEADY	--	PM 51.3
STADE/ELBE	38676	64/10/ 8		22	0		-1.0	-1.0	-0.4	-0.4			89.5	100.0	770.	STEADY	--	PM 49.2
STADE/ELBE	38813	65/ 2/22		18	50		-1.0	-1.0	-0.4	-0.4			89.0	100.0	770.	STEADY	--	PM 69.9
STADE/ELBE	38826	65/ 3/ 7		19	42		1.0	1.0	1.0	1.0			25.0	260.0	1000.	STEADY	--	PM 122.0
STADE/ELBE	38882	65/ 5/ 2		20	45		-1.0	-1.0	-0.6	-0.6			65.0	100.0	840.	STEADY	--	PM 58.9
DURBAN B	38914	65/ 6/ 3		17	17		0.1	0.1	-0.0	-0.0			38.0	334.0	1050.	STEADY	--	PM 97.2
DURBAN B	38916	65/ 6/ 5		16	16		0.1	0.1	-0.6	-0.6			38.0	45.0	1400.	STEADY	--	PM 59.0
DURBAN B	38920	65/ 6/ 9		15	58		-0.5	-0.5	-0.9	-0.9			30.0	43.0	1200.	STEADY	--	PM 64.2
DURBAN B	38921	65/ 6/10		15	30		0.1	0.1	0.1	0.1			38.0	94.0	1000.	STEADY	--	PM 36.3

STATION NAME	NJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38921	65	6/10	17	18	-0.5	-0.5	-0.5	-0.9	-0.9			26.0	265.0	1200.	STEADY	--GR	123.2
DURBAN B	38925	65	6/14	16	57	-0.5	-0.5	-0.5	-1.1	-1.1			25.0	270.0	1300.	STEADY	--AA	129.2
DURBAN B	38930	65	6/19	16	12	-0.5	-0.5	-0.5	-0.9	-0.9			28.0	265.0	1200.	STEADY	--GR	131.6
DURBAN B	38933	65	6/22	16	25	1.0	1.0	1.0	0.3	0.3			12.0	263.0	1400.	STEADY	--AA	142.1
DURBAN B	38934	65	6/23	15	54	-1.0	-1.0	-1.0	-1.7	-1.7			21.0	264.0	1350.	STEADY	--AA	138.7
STADE/ELBE	38971	65	7/30	22	25	0.1	0.1	0.1	-0.6	-0.6			25.0	100.0	1360.	STEADY	--MK	60.1
STADE/ELBE	38972	65	7/31	23	42	-1.2	-1.2	-1.2	-0.6	-0.6			75.0	100.0	760.	STEADY	--MK	70.7
STADE/ELBE	38974	65	8/2	22	37	-1.0	-1.0	-1.0	-0.9	-0.9			40.0	100.0	950.	STEADY	--MK	61.3
STADE/ELBE	38976	65	8/4	23	21	-1.0	-1.0	-1.0	-0.4	-0.4			80.0	100.0	750.	STEADY	--MK	69.0
STADE/ELBE	38981	65	8/9	22	27	-1.0	-1.0	-1.0	-0.3	-0.3			85.0	100.0	737.	STEADY	--MK	68.4
STADE/ELBE	38982	65	8/10	21	52	0.1	0.1	0.1	0.3	0.3			45.0	100.0	900.	STEADY	--MK	53.4
STADE/ELBE	38982	65	8/10	23	47	-0.5	-0.5	-0.5	-0.5	-0.5			40.0	260.0	1000.	STEADY	--MK	65.5
STADE/ELBE	38983	65	8/11	21	22	0.1	0.1	0.1	-0.0	-0.0			35.0	100.0	1050.	STEADY	--MK	47.1
STADE/ELBE	38985	65	8/13	23	55	0.1	0.1	0.1	-0.1	-0.1			35.0	260.0	1100.	STEADY	--MK	64.0
STADE/ELBE	38987	65	8/15	20	58	0.1	0.1	0.1	-0.3	-0.3			30.0	100.0	1200.	STEADY	--MK	41.6
VAN NUYS-F	39000	65	8/28	4	47	-1.5	-1.5	-1.5	-0.6	-0.6			87.0	280.0	660.	STEADY	--JCM	65.2
STADE/ELBE	39022	65	9/19	18	10	-1.5	-1.5	-1.5	-1.3	-1.3			40.0	360.0	900.	STEADY	--MK	44.3
VAN NUYS-F	39023	65	9/20	3	2	0.5	0.5	0.5	0.1	0.1			25.0	280.0	1200.	STEADY	--JCM	140.2
STADE/ELBE	39095	65	12/1	18	57	0.5	0.5	0.5	0.1	0.1			35.0	260.0	1180.	STEADY	--MK	110.0
STADE/ELBE	39098	65	12/4	19	5	0.5	0.5	0.5	0.6	0.6			50.0	360.0	960.	STEADY	--MK	69.4
STADE/ELBE	39102	65	12/8	18	33	1.0	1.0	1.0	0.3	0.3			25.0	360.0	1360.	STEADY	--MK	79.0
STADE/ELBE	39113	65	12/19	17	49	1.0	1.0	1.0	1.5	1.5			70.0	260.0	780.	STEADY	--MK	87.0
STADE/ELBE	39114	65	12/20	6	4	1.5	1.5	1.5	1.7	1.7			55.0	100.0	930.	STEADY	--MK	111.7
STADE/ELBE	39121	65	12/27	5	41	1.0	1.0	1.0	1.5	1.5			75.0	95.0	800.	STEADY	--MK	88.6
STADE/ELBE	39122	65	12/28	16	16	1.5	1.5	1.5	2.3	2.3			90.0	-0.0	700.	STEADY	--MK	80.8
STADE/ELBE	39123	65	12/29	4	36	-0.5	-0.5	-0.5	-1.2	-1.2			25.0	75.0	1360.	STEADY	--MK	125.9
STADE/ELBE	39123	65	12/29	6	21	-1.0	-1.0	-1.0	-0.4	-0.4			85.0	260.0	750.	STEADY	--MK	75.4
STADE/ELBE	39129	66	1/4	17	37	1.0	1.0	1.0	-0.1	-0.1			15.0	290.0	1640.	STEADY	--MK	133.2
HEIDELBERG	39129	66	1/4	17	40	2.8	3.0	1.8	2.0	2.0			16.0	285.0	1594.	IRREG VAR	--GLU	135.5
STADE/ELBE	39130	66	1/5	5	52	-1.0	-1.0	-1.0	-1.0	-1.0			45.0	260.0	980.	STEADY	--MK	38.9
HEIDELBERG	39130	66	1/5	16	12	-1.0	-0.8	-0.7	-0.5	-0.5			48.0	278.0	873.	IRREG VAR	--GLU	117.6
HEIDELBERG	39131	66	1/6	16	31	0.4	0.6	0.1	0.3	0.3			32.0	279.0	1125.	IRREG VAR	--GLU	128.2
DURBAN B	39186	66	3/2	17	50	0.5	0.5	0.1	0.1	0.1			30.0	95.0	1200.	STEADY	--GR	25.5
DURBAN B	39186	66	3/2	19	38	0.1	0.1	0.1	0.8	0.8			80.0	264.0	720.	STEADY	--AA	60.2
DURBAN B	39190	66	3/6	17	14	0.5	0.5	0.1	0.1	0.1			27.0	95.0	1200.	STEADY	--AA	23.3
DURBAN B	39191	66	3/7	18	28	0.1	0.1	0.1	0.6	0.6			60.0	90.0	800.	STEADY	--GR	37.0
STADE/ELBE	39195	66	3/11	21	56	0.1	0.1	0.1	0.4	0.4			50.0	260.0	879.	STEADY	--MK	74.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39197	66/	3/	13	20	45	-1.0	-1.0	-0.3	-0.3			85.0	260.0	720.	STEADY	--HK	64.4
DURBAN B	39198	66/	3/	14	17	55	-0.5	-0.5	0.3	0.3			85.0	90.0	700.	STEADY	--AA	63.0
STADE/ELBE	39199	66/	3/	15	19	35	-1.0	-1.0	-1.2	-1.2			35.0	100.0	1100.	STEADY	--HK	20.1
STADE/ELBE	39199	66/	3/	15	21	22	-1.0	-1.0	-0.9	-0.9			45.0	260.0	950.	STEADY	--HK	85.2
DURBAN B	39201	66/	3/	17	17	57	-0.5	-0.5	0.2	0.2			69.0	266.0	728.	STEADY	--GR	87.1
EDINBURG	39202	66/	3/	18	3	15	0.1	0.1	0.8	0.8			63.0	270.0	730.	STEADY	--PM	81.4
EDINBURG	39203	66/	3/	19	2	39	-1.5	-1.5	-0.7	-0.7			80.0	90.0	680.		--LAA	53.6
VAN NUYS-F	39203	66/	3/	19	4	25	-0.2	-0.2	-0.3	-0.3			35.0	205.0	1030.		--JGW	76.2
STADE/ELBE	39203	66/	3/	19	18	56	-1.0	-1.0	-0.9	-0.9			42.0	120.0	950.	STEADY	--HK	31.0
STADE/ELBE	39203	66/	3/	19	20	47	-1.0	-1.0	-0.8	-0.8			45.0	260.0	910.	STEADY	--HK	93.3
EDINBURG	39204	66/	3/	20	2	2	-1.0	-1.0	-0.8	-0.8			45.0	90.0	893.		--LAA	27.6
STADE/ELBE	39204	66/	3/	20	20	10	-1.0	-1.0	-0.3	-0.3			80.0	260.0	710.	STEADY	--HK	74.8
STADE/ELBE	39205	66/	3/	21	19	37	-0.5	-0.5	0.3	0.3			85.0	100.0	705.	STEADY	--HK	67.2
VAN NUYS-F	39216	66/	4/	1	3	56	1.0	1.0	0.4	0.4			25.0	290.0	1300.		--JGW	133.5
HEIDELBERG	39216	66/	4/	1	18	24	-1.5	-1.5	-0.8	-0.8			86.0	347.0	712.	IRREG. VAR. 0.3 MAG.	--GLU	86.4
HEIDELBERG	39216	66/	4/	1	20	12	1.8	1.8	0.9	0.9			19.0	282.0	1518.	STEADY	--GLU	133.4
HEIDELBERG	39219	66/	4/	4	18	24	-1.3	-1.3	-0.7	-0.7			67.0	280.0	771.	STEADY	--GLU	108.3
STADE/ELBE	39237	66/	4/	22	2	32	-1.0	-1.0	-0.2	-0.2			80.0	260.0	700.	STEADY	--HK	68.7
STADE/ELBE	39243	66/	4/	28	0	39	0.1	0.1	-0.0	-0.0			35.0	100.0	1060.	STEADY	--HK	86.6
STADE/ELBE	39245	66/	4/	30	1	14	0.1	0.1	0.9	0.9			85.0	100.0	692.	STEADY	--LAA	74.1
STADE/ELBE	39246	66/	5/	1	0	37	-0.5	-0.5	-0.6	-0.6			35.0	100.0	1056.	STEADY	--HK	86.7
STADE/ELBE	39246	66/	5/	1	2	27	-0.5	-0.5	-0.6	-0.6			35.0	260.0	1056.	STEADY	--HK	39.4
HEIDELBERG	39258	66/	5/	13	22	4	1.5	1.5	0.6	0.6			18.5	78.0	1511.	STEADY	--GLU	77.0
STADE/ELBE	39259	66/	5/	14	23	13	1.0	-1.0	-0.3	-0.3			77.0	100.0	710.	STEADY	--HK	70.2
HEIDELBERG	39259	66/	5/	14	23	15	-1.4	-1.4	-0.9	-0.9			57.0	82.0	802.	IRREG. VAR. 0.2 MAG.	--GLU	75.2
STADE/ELBE	39260	66/	5/	15	1	2	0.1	0.1	-0.5	-0.5			25.0	260.0	1300.	STEADY	--HK	52.3
HEIDELBERG	39261	66/	5/	16	22	1	1.2	1.2	0.2	0.2			36.0	81.0	1047.	IRREG. VAR. 0.2 MAG.	--GLU	76.3
HEIDELBERG	39262	66/	5/	17	23	12	1.5	-1.5	-0.8	-0.8			17.0	78.0	1567.	STEADY	--GLU	77.1
HEIDELBERG	39262	66/	5/	17	23	12	-1.5	-1.5	-0.8	-0.8			74.0	77.0	718.	STEADY	--GLU	72.6
HEIDELBERG	39274	66/	5/	23	21	16	0.2	0.4	-0.4	-0.4			26.0	80.0	1303.	SMALL VARIATIONS	--GLU	65.7
STADE/ELBE	39274	66/	5/	29	21	5	-1.2	-1.2	-0.9	-0.9			47.0	100.0	885.	STEADY	--HK	55.7
STADE/ELBE	39274	66/	5/	29	22	53	0.1	0.1	0.2	0.2			40.0	260.0	975.	STEADY	--HK	78.0
HEIDELBERG	39274	66/	5/	29	22	55	-0.4	-0.4	-0.4	-0.4			42.0	279.0	985.	STEADY	--GLU	88.7
STPETERSBURG	39275	66/	5/	30	4	21	0.1	0.1	0.5	0.5			32.5	353.7	830.	STEADY	--FJK	108.5
HEIDELBERG	39275	66/	5/	30	20	30	0.1	0.1	-0.4	-0.4			29.0	80.0	1247.	STEADY	--GLU	59.4
HEIDELBERG	39277	66/	6/	1	21	3	-1.0	-1.0	-0.6	-0.6			57.0	82.0	840.	STEADY	--GLU	66.5
HEIDELBERG	39279	66/	6/	3	21	35	-1.6	-1.6	-1.0	-1.0			76.0	287.0	748.	STEADY	--GLU	85.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	ANAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39280	66/	6/	4	20	58	-1.3	-1.1	-0.7	-0.5			77.0	78.0	771.	LITTLE VARIATIONS	--GLU	74.2
HEIDELBERG	39283	66/	6/	7	20	51	-1.6	-1.6	-0.9	-0.9			84.0	82.0	737.	STEADY	--GLU	77.1
STADE/ELBE	39285	66/	6/	9	21	23	0.1	0.1	0.2	0.2			47.0	260.0	963.	STEADY	--MK	94.8
STPETERSBURG	39286	66/	6/	10	2	52	0.1	0.1	0.0	0.0							--FJK	
STADE/ELBE	39286	66/	6/	10	20	45	-1.5	-1.5	-0.9	-0.9			85.0	260.0	746.	STEADY	--MK	85.9
STADE/ELBE	39287	66/	6/	11	21	57	1.5	1.5	0.8	0.8			25.0	260.0	1367.	STEADY	--MK	94.0
STADE/ELBE	39287	66/	6/	11	21	57	1.5	1.5	0.8	0.8			35.0	260.0	1160.	STEADY	--MK	86.9
STADE/ELBE	39353	66/	8/	16	2	37	-1.5	-1.5	-1.3	-1.3			55.0	260.0	896.	STEADY	--MK	50.9
STADE/ELBE	39353	66/	8/	16	2	37	-1.5	-1.5	-1.3	-1.3			30.0	100.0	1264.	STEADY	--MK	80.8
STADE/ELBE	39354	66/	8/	17	0	12	-0.8	-0.8	-1.3	-1.3			35.0	100.0	1157.	STEADY	--MK	85.1
STADE/ELBE	39356	66/	8/	19	0	40	-1.0	-1.0	-1.3	-1.3			25.0	100.0	1453.	STEADY	--MK	79.9
STADE/ELBE	39357	66/	8/	20	0	1	0.1	0.1	-0.7	-0.7			70.0	260.0	800.	STEADY	--MK	59.1
STADE/ELBE	39365	66/	8/	28	0	10	-1.5	-1.5	-1.2	-1.2			60.0	35.0	866.	STEADY	--MK	92.4
STADE/ELBE	39373	66/	9/	5	21	45	-0.5	-0.5	-0.7	-0.7			40.0	100.0	1084.	STEADY	--MK	45.9
STADE/ELBE	39373	66/	9/	5	23	34	-1.5	-1.5	-0.9	-0.9			85.0	260.0	772.	STEADY	--MK	59.3
STADE/ELBE	39375	66/	9/	7	22	13	-1.0	-1.0	-1.0	-1.0			45.0	100.0	1012.	STEADY	--MK	50.1
STADE/ELBE	39377	66/	9/	9	22	42	-1.5	-1.5	-0.9	-0.9			75.0	100.0	750.	STEADY	--MK	55.1
STADE/ELBE	39383	66/	9/	15	22	15	-1.5	-1.5	-0.9	-0.9			70.0	360.0	750.	STEADY	--MK	77.1
STADE/ELBE	39387	66/	9/	19	21	21	-1.5	-1.5	-0.7	-0.7			88.0	100.0	700.	STEADY	--MK	58.6
STADE/ELBE	39388	66/	9/	20	20	41	-1.0	-1.0	-0.4	-0.4			45.0	100.0	750.	STEADY	--MK	33.8
STADE/ELBE	39390	66/	9/	22	19	20	0.5	0.5	-1.0	-1.0			17.0	100.0	2000.	STEADY	--MK	15.5
STADE/ELBE	39390	66/	9/	22	21	8	-1.5	-1.5	-0.8	-0.8			85.0	100.0	720.	STEADY	--MK	56.3
STADE/ELBE	39396	66/	9/	28	20	40	-1.5	-1.5	-0.7	-0.7			80.0	260.0	700.	STEADY	--MK	66.4
STADE/ELBE	39398	66/	9/	30	19	20	-1.0	-1.0	-0.5	-0.5			40.0	100.0	800.	STEADY	--MK	23.2
STPETERSBURG	39402	66/	10/	4	2	10	-1.0	-1.0	-0.2	-0.2					680.		--FK	
STPETERSBURG	39406	66/	10/	8	1	11	-1.0	-1.0	-0.2	-0.2					690.		--FK	
STADE/ELBE	39406	66/	10/	8	19	17	-1.5	-1.5	-0.6	-0.6			85.0	100.0	675.	STEADY	--MK	61.9
STADE/ELBE	39410	66/	10/	12	18	21	-1.0	-1.0	-0.5	-0.5			60.0	100.0	800.	STEADY	--MK	43.3
STPETERSBURG	39411	66/	10/	13	1	25	-1.0	-1.0	-0.5	-0.5					800.		--FK	
VAN NUYS-F	39412	66/	10/	14	2	33	-1.5	-1.5	-0.8	-0.8			65.0	80.0	730.		--JGM	50.1
STADE/ELBE	39413	66/	10/	15	18	7	-1.0	-1.0	-0.6	-0.6			53.0	100.0	850.	STEADY	--MK	37.5
STADE/ELBE	39415	66/	10/	17	18	32	-1.5	-1.5	-0.6	-0.6			80.0	260.0	650.	STEADY	--MK	75.4
STADE/ELBE	39418	66/	10/	20	18	17	-1.2	-1.2	-0.3	-0.3			80.0	260.0	650.	STEADY	--MK	80.8
STADE/ELBE	39420	66/	10/	22	2	53	0.	0.5	0.9	0.9			25.0	100.0	850.	STEADY	--MK	118.7
STADE/ELBE	39420	66/	10/	22	16	54	-1.0	-1.0	-0.4	-0.4			45.0	100.0	750.	STEADY	--MK	41.4
STADE/ELBE	39423	66/	10/	25	18	25	-1.2	-1.2	-1.2	-1.2			37.0	260.0	1000.	STEADY	--MK	119.0
STADE/ELBE	39425	66/	10/	27	17	3	-1.5	-1.5	-0.6	-0.6			85.0	100.0	650.	STEADY	--MK	75.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39426	66/10/28	18	7	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1			35.0	260.0	1050.	STEADY	-- HK	123.7
STADE/ELBE	39428	66/10/30	18	35	0.5	0.5	0.1	0.1	0.1	0.1			20.0	260.0	1200.	STEADY	-- HK	131.7
STADE/ELBE	39430	66/11/1	17	10	-1.0	-1.0	-0.8	-0.8	-0.8	-0.8			45.0	260.0	900.	STEADY	-- HK	122.8
STADE/ELBE	39489	66/12/30	19	55	0.5	0.5	0.5	0.5	0.5	0.5			40.0	360.0	1000.	STEADY	-- HK	75.5
STADE/ELBE	39493	67/1/3	18	47	-1.0	-1.0	-0.6	-0.6	-0.6	-0.6			75.0	80.0	850.	STEADY	-- HK	45.3
STADE/ELBE	39496	67/1/6	16	39	0.1	0.1	-0.1	-0.1	-0.1	-0.1			20.0	100.0	1100.	STEADY	-- HK	33.0
STADE/ELBE	39496	67/1/6	18	25	-1.5	-1.5	-1.1	-1.1	-1.1	-1.1			75.0	100.0	850.	STEADY	-- HK	49.1
STADE/ELBE	39501	67/1/11	19	17	-1.5	-1.5	-0.9	-0.9	-0.9	-0.9			89.0	260.0	750.	STEADY	-- HK	66.7
STADE/ELBE	39501	67/1/11	19	59	1.0	1.0	0.6	0.6	0.6	0.6			15.0	315.0	1200.	STEADY	-- HK	119.9
STADE/ELBE	39502	67/1/12	1	28	-1.0	-1.0	-0.7	-0.7	-0.7	-0.7			37.5	290.1	890.	STEADY	-- FK	104.2
STADE/ELBE	39504	67/1/14	17	50	-1.5	-1.5	-0.9	-0.9	-0.9	-0.9			85.0	100.0	750.	STEADY	-- HK	65.5
STADE/ELBE	39507	67/1/17	17	22	-1.5	-1.5	-0.9	-0.9	-0.9	-0.9			85.0	100.0	750.	STEADY	-- HK	70.3
STADE/ELBE	39507	67/1/17	19	7	1.5	1.5	1.3	1.3	1.3	1.3			20.0	315.0	1100.	STEADY	-- FK	117.1
STADE/ELBE	39508	67/1/18	0	38	-1.0	-1.0	0.0	0.0	0.0	0.0			10.0	315.0	1200.	STEADY	-- HK	125.8
STADE/ELBE	39509	67/1/19	19	25	2.0	2.0	1.6	1.6	1.6	1.6			47.0	100.0	900.	STEADY	-- HK	118.9
STADE/ELBE	39510	67/1/20	5	49	0.1	0.1	0.3	0.3	0.3	0.3			75.0	100.0	800.	STEADY	-- HK	66.4
STADE/ELBE	39510	67/1/20	16	55	-1.0	-1.0	-0.5	-0.5	-0.5	-0.5			85.0	260.0	750.	STEADY	-- HK	82.3
STADE/ELBE	39512	67/1/22	17	12	-1.0	-1.0	-0.4	-0.4	-0.4	-0.4			89.0	100.0	745.	STEADY	-- HK	79.0
STADE/ELBE	39517	67/1/27	5	55	-1.5	-1.5	-0.9	-0.9	-0.9	-0.9			55.0	260.0	900.	STEADY	-- HK	114.8
STADE/ELBE	39517	67/1/27	17	0	-1.0	-1.0	-0.8	-0.8	-0.8	-0.8			30.0	100.0	1000.	STEADY	-- HK	103.0
STADE/ELBE	39533	67/2/12	2	37	0.5	0.5	0.5	0.5	0.5	0.5			45.0	100.0	850.	STEADY	-- HK	94.0
STADE/ELBE	39535	67/2/14	2	53	-1.0	-1.0	-0.6	-0.6	-0.6	-0.6			45.0	290.0	1150.	STEADY	-- HK	38.6
STADE/ELBE	39546	67/2/25	3	17	-1.0	-1.0	-1.3	-1.3	-1.3	-1.3			50.0	35.0	870.	STEADY	-- HK	89.3
STADE/ELBE	39561	67/3/12	0	21	-1.0	-1.0	-0.7	-0.7	-0.7	-0.7			60.0	285.0	780.	STEADY	-- HK	66.4
STADE/ELBE	39572	67/3/23	23	31	-1.5	-1.5	-1.0	-1.0	-1.0	-1.0			63.0	100.0	800.	STEADY	-- HK	47.0
STADE/ELBE	39581	67/4/1	21	25	-1.5	-1.5	-1.1	-1.1	-1.1	-1.1			53.0	360.0	850.	STEADY	-- HK	96.6
STADE/ELBE	39585	67/4/5	21	39	-1.5	-1.5	-1.1	-1.1	-1.1	-1.1			77.0	100.0	700.	STEADY	-- HK	58.8
STADE/ELBE	39588	67/4/8	20	53	-1.0	-1.0	-0.2	-0.2	-0.2	-0.2			25.0	346.0	1210.	STEADY	-- JGW	110.9
VAN NUYS-F	39589	67/4/9	5	48	0.1	0.1	-0.3	-0.3	-0.3	-0.3			50.0	100.0	800.	STEADY	-- HK	41.7
STADE/ELBE	39591	67/4/11	20	10	-0.5	-0.5	-0.0	-0.0	-0.0	-0.0			80.0	100.0	690.	STEADY	-- HK	65.5
STADE/ELBE	39593	67/4/13	20	16	-1.5	-1.5	-0.7	-0.7	-0.7	-0.7			30.0	260.0	1100.	STEADY	-- HK	86.8
STADE/ELBE	39593	67/4/13	22	4	1.0	1.0	0.8	0.8	0.8	0.8			32.0	100.0	1090.	STEADY	-- HK	29.4
STADE/ELBE	39594	67/4/14	19	27	-1.0	-1.0	-1.2	-1.2	-1.2	-1.2			45.0	260.0	1000.	STEADY	-- HK	91.1
STADE/ELBE	39594	67/4/14	21	12	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5			50.0	100.0	800.	STEADY	-- HK	44.1
STADE/ELBE	39596	67/4/16	19	33	-1.0	-1.0	-0.5	-0.5	-0.5	-0.5			35.0	260.0	1080.	STEADY	-- HK	95.2
STADE/ELBE	39596	67/4/16	21	18	-1.0	-1.0	-1.2	-1.2	-1.2	-1.2			79.0	100.0	660.	STEADY	-- HK	69.8
STADE/ELBE	39598	67/4/18	19	38	-1.5	-1.5	-0.6	-0.6	-0.6	-0.6								

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	39599	67	4	19	4	26	1.0	1.0	0.7	0.7			31.5	266.0	1160.	STEADY	--RKR	108.4
STADE/ELBE	39602	67	4	22	19	47	-1.5	-1.5	-0.6	-0.6			80.0	100.0	650.	STEADY	--HK	71.0
STADE/ELBE	39605	67	4	25	20	50	1.0	1.0	1.0	1.0			22.0	260.0	1000.	STEADY	--HK	108.4
STADE/ELBE	39606	67	4	26	19	59	0.1	0.1	0.3	0.3			35.0	260.0	900.	STEADY	--HK	114.1
STADE/ELBE	39607	67	4	27	20	54	1.0	1.0	0.8	0.8			15.0	260.0	1100.	STEADY	--HK	110.4
STADE/ELBE	39637	67	5	27	0	35	-1.0	-1.0	-1.0	-1.0			40.0	100.0	1000.	STEADY	--HK	87.5
STADE/ELBE	39637	67	5	27	0	35	-1.0	-1.0	-1.0	-1.0			13.0	100.0	1400.	STEADY	--HK	82.7
STADE/ELBE	39642	67	6	1	22	49	1.0	1.0	0.3	0.3			10.0	100.0	1900.	STEADY	--HK	70.9
STADE/ELBE	39646	67	6	5	22	50	1.0	1.0	-0.2	-0.2			20.0	100.0	1700.	STEADY	--HK	69.5
STADE/ELBE	39653	67	6	12	23	40	-1.5	-1.5	-0.7	-0.7			89.0	260.0	700.	STEADY	--HK	76.6
STADE/ELBE	39656	67	6	15	22	45	-1.0	-1.0	-0.6	-0.6			60.0	100.0	850.	STEADY	--HK	69.7
STADE/ELBE	39657	67	6	16	21	54	-1.0	-1.0	-1.3	-1.3			35.0	100.0	1150.	STEADY	--HK	58.9
STADE/ELBE	39657	67	6	16	23	37	-1.0	-1.0	-0.6	-0.6			60.0	260.0	850.	STEADY	--HK	72.1
STADE/ELBE	39664	67	6	23	22	40	-1.0	-1.0	-0.6	-0.6			63.0	100.0	850.	STEADY	--HK	78.9
STADE/ELBE	39665	67	6	24	21	45	-1.0	-1.0	-0.6	-0.6			90.0	0.0	700.	STEADY	--HK	66.5
VAN NUYS-F	39668	67	6	27	6	42	-1.2	-1.2	-0.4	-0.4			80.0	260.0	780.	STEADY	--JGM	60.0
STADE/ELBE	39671	67	6	30	21	40	-1.5	-1.5	-1.0	-1.0			37.0	260.0	1900.	STEADY	--HK	82.7
HEIDELBERG	39672	67	7	1	22	33	0.2	0.2	-1.2	-1.2			53.0	265.0	850.	STEADY	--GLU	82.8
HEIDELBERG	39675	67	7	4	21	35	-0.7	-0.7	-0.3	-0.3			35.0	260.0	1150.	STEADY	--GLU	91.9
HEIDELBERG	39681	67	7	10	21	27	0.5	0.5	0.2	0.2			36.0	225.0	1100.	STEADY	--GLU	87.4
HEIDELBERG	39688	67	7	17	20	25	0.1	0.1	-0.1	-0.1			51.0	90.0	850.	MOON	--GLU	83.6
GRANBY	39731	67	8	29	8	15	0.1	0.1	0.5	0.5			77.0	60.0	750.		--MPC	102.2
GRANBY	39735	67	9	2	8	16	0.1	0.1	0.7	0.7			21.5	339.0	1350.		--MPC	81.8
GRANBY	39757	67	9	24	6	44	1.0	1.0	0.3	0.3			10.0	55.0	1800.	STEADY	--MPC	95.6
STADE/ELBE	39760	67	9	27	21	33	1.5	1.5	0.2	0.2			16.0	2.0	1450.		--MPC	87.9
GRANBY	39764	67	10	1	5	14	1.0	1.0	0.2	0.2			16.0	63.0	1500.	NOT DARK	--MPC	113.3
GRANBY	39793	67	10	30	10	25	1.5	1.5	0.6	0.6			15.0	30.0	1600.	STEADY	--MPC	135.7
STADE/ELBE	39793	67	10	30	18	59	2.0	2.0	1.0	1.0			40.0	182.0	940.		--MPC	70.1
GRANBY	39799	67	11	5	0	23	0.5	0.5	0.6	0.6			34.0	85.0	1000.		--MPC	67.7
GRANBY	39799	67	11	5	23	25	0.5	0.5	0.5	0.5			26.3	199.7			--FK	14.2
STPETERSBURG	39800	67	11	6	1	1	0.1	0.1	0.0	0.0			40.0	298.0	950.	IN / OUT OF SHDN, 0.5, 4.0, 1.5	--MPC	93.8
GRANBY	39800	67	11	6	1	10	0.5	0.5	0.6	0.6			50.0	180.0	800.	ST	--HK	100.0
STADE/ELBE	39801	67	11	7	5	52	-1.0	-1.0	-0.5	-0.5			35.0	100.0	1000.	ST	--HK	17.6
STADE/ELBE	39801	67	11	7	17	53	-0.5	-0.5	-0.5	-0.5			42.0	260.0	850.	ST	--HK	97.3
STADE/ELBE	39811	67	11	7	19	38	-1.0	-1.0	-0.6	-0.6			60.0	100.0	700.	ST	--HK	104.4
STADE/ELBE	39802	67	11	8	4	49	-1.0	-1.0	-0.2	-0.2			75.0	100.0	720.	ST	--HK	48.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39804	67/11/10	18	21	-1.5	-1.5	-0.8	-0.8	75.0	100.0	740.	ST	50.3					
STADE/ELBE	39804	67/11/10	20	7	0.5	0.5	0.3	0.3	30.0	160.0	1100.	ST	101.4					
STADE/ELBE	39806	67/11/12	18	6	-1.0	-1.0	-0.4	-0.4	70.0	120.0	750.	ST	47.3					
STADE/ELBE	39807	67/11/13	17	4	-0.5	-0.5	-0.6	-0.6	32.0	100.0	1050.	ST	26.5					
HEIDELBERG	39807	67/11/13	19	1	0.1	0.1	-0.0	-0.0	32.0	81.0	1070.	ST	15.6					
HEIDELBERG	39807	67/11/13	20	47	-0.7	-0.7	-0.2	-0.2	53.0	279.0	790.	ST	77.1					
STADE/ELBE	39809	67/11/15	18	33	-1.0	-1.0	-0.4	-0.4	65.0	260.0	750.	ST	86.7					
STADE/ELBE	39810	67/11/16	17	30	-1.5	-1.5	-0.9	-0.9	65.0	100.0	750.	ST	48.0					
STADE/ELBE	39810	67/11/16	19	16	-0.7	-0.7	-0.9	-0.9	30.0	260.0	1080.	ST	111.8					
GRANBY	39810	67/11/16	22	44	0.1	0.5	0.4	0.8	42.0	10.0	880.	VARYING	63.8					
STADE/ELBE	39811	67/11/17	16	28	0.1	0.1	-0.0	-0.0	36.0	100.0	1050.	ST	37.3					
STADE/ELBE	39811	67/11/17	18	14	-1.0	-1.0	-0.3	-0.3	60.0	260.0	740.	ST	94.4					
STADE/ELBE	39812	67/11/18	5	12	-1.0	-1.0	-1.1	-1.1	35.0	260.0	1050.	ST	28.8					
HEIDELBERG	39814	67/11/20	18	56	-1.5	-1.5	-0.8	-0.8	64.0	80.0	715.	ST	33.8					
HEIDELBERG	39815	67/11/21	19	39	-1.3	-1.3	-0.6	-0.6	59.0	279.0	740.	ST	82.0					
HEIDELBERG	39816	67/11/22	18	38	-1.3	-1.3	-0.6	-0.6	61.0	81.0	730.	ST	32.8					
GRANBY	39819	67/11/25	22	20	0.1	0.5	0.6	1.0	50.0	330.0	800.	ST	89.1					
GRANBY	39822	67/11/28	22	46	1.0	1.5	0.2	0.7	27.0	293.0	1430.	ST	123.8					
STADE/ELBE	39824	67/11/30	17	12	-0.5	-0.5	-0.8	-0.8	35.0	310.0	1150.	ST	107.4					
GRANBY	39877	68/ 1/22	0	30	2.0	2.0	0.8	0.8	10.0	10.0	1700.	ST	75.7					
STADE/ELBE	39881	68/ 1/26	18	52	-1.0	-1.0	-0.4	-0.4	65.0	100.0	750.	ST	38.7					
GRANBY	39882	68/ 1/27	1	55	1.0	1.3	0.4	0.7	24.0	25.0	1325.	VARYING	55.5					
GRANBY	39882	68/ 1/27	1	55	1.0	1.3	0.3	0.6	20.0	328.0	1400.	VARYING	105.3					
STADE/ELBE	39883	68/ 1/28	18	22	-0.5	-0.5	-0.0	-0.0	45.0	100.0	800.	ST	25.4					
STADE/ELBE	39883	68/ 1/28	20	8	0.1	0.1	0.6	0.6	45.0	260.0	800.	ST	93.3					
HEIDELBERG	39884	68/ 1/29	19	0	-1.6	-1.6	-0.9	-0.9	70.0	78.0	730.	ST	44.0					
HEIDELBERG	39886	68/ 1/31	17	49	-1.3	-1.3	-0.9	-0.9	55.0	82.0	815.	ST	40.1					
STPETERSBURG	39888	68/ 2/ 2	2	13	1.0	1.0	0.0	0.0	24.5	304.5	740.	VA	107.9					
GRANBY	39891	68/ 2/ 5	0	27	-0.5	-0.5	0.1	0.2	65.0	272.0	915.	VA	88.9					
GRANBY	39891	68/ 2/ 5	23	20	-0.5	-0.5	-0.3	-0.3	43.0	60.0	800.	ST	34.4					
STADE/ELBE	39893	68/ 2/ 7	17	24	-0.5	-0.5	-0.0	-0.0	60.0	100.0	800.	ST	52.0					
STADE/ELBE	39894	68/ 2/ 8	5	22	2.0	2.0	1.0	1.0	12.0	100.0	1600.	ST	153.4					
STPETERSBURG	39899	68/ 2/13	0	1	0.1	0.1	0.0	0.0	16.0	260.0	1475.	SLIGHT VA	143.5					
GRANBY	39902	68/ 2/16	0	2	1.0	1.5	0.2	0.7	40.0	100.0	1000.	ST	128.3					
STADE/ELBE	39903	68/ 2/17	5	25	0.1	0.1	0.1	0.1	24.0	100.0	1400.	ST	131.3					
STADE/ELBE	39907	68/ 2/21	4	15	2.0	2.0	1.3	1.3	36.0	95.0	1125.	ST	124.7					
GRANBY	39908	68/ 2/22	10	0	0.1	0.3	-0.2	0.0										

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39911	68	2/25	4	45	1.0	-1.0	-1.0	-1.0	-1.0			55.0	100.0	1000.	ST	-- HK	108.9
STADE/ELBE	39927	68	3/12	3	9	-1.3	-1.3	-0.6	-0.6	-0.6			72.0	100.0	730.	ST	-- HK	81.4
STADE/ELBE	39952	68	4/6	22	57	0.5	0.5	0.3	0.3				34.0	100.0	1100.	ST	-- HK	60.3
STADE/ELBE	39959	68	4/13	22	42	-1.5	-1.5	-1.1	-1.1				57.0	100.0	850.	ST	-- HK	56.6
STADE/ELBE	39960	68	4/14	0	32	0.1	0.1	0.1	0.1				30.0	310.0	1000.	ST	-- HK	93.8
STADE/ELBE	39960	68	4/14	21	25	0.5	0.5	-0.4	-0.4				20.0	100.0	1530.	ST	-- HK	45.3
STADE/ELBE	39960	68	4/14	23	11	-1.7	-1.7	-0.8	-0.8				89.0	260.0	660.	ST	-- HK	63.2
STADE/ELBE	39966	68	4/20	22	25	-1.2	-1.2	-0.3	-0.3				89.5	100.0	655.	ST	-- HK	66.2
STADE/ELBE	39967	68	4/21	0	11	1.0	1.0	0.8	0.8				22.0	310.0	1100.	ST	-- HK	103.2
HEIDELBERG	39967	68	4/21	21	7	0.6	0.6	0.6	0.6				34.0	81.0	1000.	ST	-- GLU	56.1
STADE/ELBE	39967	68	4/21	21	7	0.5	0.5	0.7	0.7				30.0	100.0	900.	ST	-- HK	42.7
HEIDELBERG	39968	68	4/22	21	33	-1.2	-1.2	-0.6	-0.6				55.0	81.0	745.	ST	-- GLU	59.2
HEIDELBERG	39969	68	4/23	20	17	1.0	1.0	0.2	0.2				17.0	79.0	1460.	ST	-- GLU	51.4
HEIDELBERG	39969	68	4/23	22	1	-1.5	-1.5	-0.5	-0.5				85.0	28.0	635.	ST	-- GLU	68.0
STADE/ELBE	39970	68	4/24	20	42	-0.5	-0.5	-0.4	-0.4				30.0	100.0	950.	ST	-- HK	39.5
STADE/ELBE	39971	68	4/25	21	7	-0.5	-0.5	-0.3	-0.3				47.0	100.0	900.	ST	-- HK	48.1
STADE/ELBE	39972	68	4/26	21	35	-1.5	-1.5	-0.6	-0.6				80.0	100.0	650.	ST	-- HK	65.2
STADE/ELBE	39972	68	4/26	23	19	3.5	3.5	3.1	3.1				15.0	260.0	1200.	ST	-- HK	75.4
HEIDELBERG	39973	68	4/27	20	16	0.4	0.4	0.0	0.0				26.0	80.0	1175.	ST	-- GLU	51.0
STADE/ELBE	39973	68	4/27	22	0	-1.0	-1.0	-0.4	-0.4				65.0	260.0	750.	ST	-- HK	76.1
HEIDELBERG	39974	68	4/28	20	42	-1.2	-1.2	-0.9	-0.9				44.0	82.0	855.	ST	-- GLU	54.9
VAN NUYS-F	39977	68	5/1	4	29	-0.2	-0.2	-0.1	-0.1				35.0	75.0	950.	ST	-- JGM	47.3
STADE/ELBE	39979	68	5/3	21	7	0.1	0.1	0.9	0.9				67.0	260.0	700.	ST	-- HK	84.7
STADE/ELBE	39990	68	5/14	20	30	-0.5	-0.5	-0.4	-0.4				30.0	260.0	950.	ST	-- HK	110.4
VAN NUYS-F	39991	68	5/15	3	24	-1.2	-1.2	0.0	0.0				80.0	90.0	570.	ST	-- JGM	73.6
VAN NUYS-F	39992	68	5/16	3	47	-1.2	-1.2	-0.5	-0.5				50.0	250.0	710.	ST	-- JGM	103.1

SDC NO. 741 64 4-8 PERIOD = 108.8 ROCKET BODY USA LAUNCHED 64/ 1/25 IN ORBIT
 PERIOD = 642.5 APOGEE = 815.9 INCL = 81.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39130	66/	1/	5	6	6	5.5	6.5	6.1	7.1	71.00	1.00	50.0	350.0	755.	STEADY AND SLOWLY TUMBLING	--	HK 60.5
STADE/ELBE	39195	66/	3/11	22	23	3	5.0	8.5	5.2	8.7	71.00	1.00	47.0	260.0	900.	FLASH PERIOD 71 SEC	--	HK 70.2
STADE/ELBE	39203	66/	3/19	21	3	3	5.0	8.5	5.5	9.0	74.00	0.50	65.0	260.0	790.	SLOWLY FLASHING	--	HK 76.4
STADE/ELBE	39204	66/	3/20	20	39	3	5.0	9.0	5.7	9.7	70.40	0.50	80.0	260.0	740.	SLOWLY FLASHING	--	HK 70.5
STADE/ELBE	39209	66/	3/25	20	31	4.5	4.5	9.0	4.8	9.3	70.05	0.50	55.0	260.0	870.	SLOWLY FLASHING	--	HK 90.5
STADE/ELBE	39257	66/	5/12	23	54	5.0	8.5	8.5	5.5	9.0	71.00	0.50	60.0	100.0	810.	SLOWLY FLASHING	--	HK 74.1
STADE/ELBE	39387	66/	5/19	12	35	4.5	4.5	9.0	4.9	9.4			45.0	315.0	850.	LONG FLASH PER NO PREDICTION	--	HK 87.8
STADE/ELBE	39415	66/10/17	12	2	6.5	7.5	6.5	7.5	7.3	8.3			45.0	100.0	700.	VARYING	--	HK 29.7
STADE/ELBE	39419	66/10/21	18	16	5.0	8.5	5.0	8.5	5.4	8.9	121.50	1.50	73.0	100.0	850.	REGULAR FLASHING	--	HK 54.2
STADE/ELBE	39423	66/10/25	18	32	6.5	7.0	6.5	7.0	6.9	7.4			66.0	260.0	850.	VARYING	--	HK 90.3
STADE/ELBE	39425	66/10/27	17	44	6.0	6.5	6.0	6.5	6.6	7.1			80.0	100.0	770.	LONG FLASH PERIOD	--	HK 64.3
STADE/ELBE	39426	66/10/28	17	21	5.5	8.0	5.5	8.0	5.9	8.4			65.0	100.0	850.	REGULAR LONG FLASH	--	HK 53.2
STADE/ELBE	39504	67/ 1/14	18	2	5.5	8.0	5.5	8.0	5.7	8.2	83.50		53.0	100.0	900.	SLOWLY FLASHING	--	HK 34.1
STADE/ELBE	39546	67/ 2/25	3	3	4.5	8.0	4.5	8.0	4.7	8.2			75.0	100.0	900.	REGULAR LONG FLASH	--	HK 72.8
STADE/ELBE	39561	67/ 3/12	0	51	6.5	6.5	6.5	6.5	6.8	6.8			45.0	55.0	860.	FLASH PER MORE THAN 100 SEC	--	HK 93.2
STADE/ELBE	39591	67/ 4/11	21	45	5.5	9.0	5.5	9.0	5.5	9.7			80.0	100.0	730.	FLASH PER MORE THAN 105 SEC	--	HK 73.6
STADE/ELBE	39593	67/ 4/13	22	46	5.5	8.0	5.5	8.0	5.1	7.6			30.0	260.0	1180.	FLASHING	--	HK 77.0
STADE/ELBE	39594	67/ 4/14	20	34	5.0	9.0	4.8	9.0	4.8	8.8			40.0	100.0	1100.	FLASH PER MORE THAN 105 SEC	--	HK 38.3
STADE/ELBE	39594	67/ 4/14	22	23	5.0	9.0	4.8	9.0	4.8	8.8	108.70	1.00	40.0	260.0	1100.	SLOWLY FLASHING	--	HK 78.2
STADE/ELBE	39598	67/ 4/18	20	50	4.5	9.0	4.5	9.0	5.1	9.6			75.0	100.0	750.	SLOWLY FLASHING	--	HK 60.9
STADE/ELBE	39602	67/ 4/22	21	4	4.8	9.0	4.8	9.0	5.2	9.4	127.00	10.00	60.0	260.0	820.	REGULAR FLASHING BRIGHT MAX	--	HK 86.2
STADE/ELBE	39605	67/ 4/25	19	54	4.5	8.5	4.5	8.5	5.0	9.0			68.0	100.0	800.	SLOWLY FLASHING	--	HK 61.0
STADE/ELBE	39609	67/ 4/29	20	9	4.5	9.0	4.5	9.0	5.0	9.5			65.0	260.0	790.	REGULAR SLOWLY FLASHING	--	HK 94.5
STADE/ELBE	39656	67/ 6/15	23	53	5.0	8.0	5.0	8.0	5.1	8.1	128.50	3.00	55.0	100.0	950.	SLOWLY FLASHING	--	HK 77.9
STADE/ELBE	39657	67/ 6/16	23	30	5.0	8.0	5.0	8.0	5.8	7.8	128.50	3.00	42.0	100.0	1100.	SLOWLY FLASHING	--	HK 75.2
GRANBY	39828	67/12/ 4	23	16	8.0		8.0		8.0				52.0	288.0	984.	LONG TP MIN INV, SHORT OBS.	--	MPC 102.5
STADE/ELBE	39830	67/12/ 6	17	6	5.0	8.5	5.0	8.5	5.4	8.9			85.0	100.0	823.	SLOWLY TUMB PER APP 3 MIN	--	HK 68.6
STADE/ELBE	39831	67/12/ 7	16	42	5.0	8.5	5.0	8.5	5.3	8.8			72.0	100.0	855.	SLOWLY TUMB PER APP 3 MIN	--	HK 61.1

SDC NO. 742 64 4-C HEMISPHEROID USA LAUNCHED 64/ 1/25 IN ORBIT
PERIOD = 108.8 PERIGEE = 640.0 APOGEE = 814.0 INCL = 81.5

STATION NAME	MJD	Y	M	D	H	M	H	M	MAX	MIN	ANX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39964	67/ 6/23	22	23	8.5	9.5	8.9	9.9							80.0	125.0	850.	VARYING WITH FLICKER SHORTOB	HK	70.7

SDC NO. 744 64 5-A SATURN 5 USA LAUNCHED 64/ 1/29 DECEASED 4/30/66
PERIOD = 94.8 PERIGEE = 164.7 APOGEE = 467.3 INCL = 31.5

STATION NAME	MJD	Y	M	D	H	M	H	M	MAX	MIN	ANX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
ADELAIDE,AUS	38425	64/ 1/31	12	7	1.5			3.0							40.0	330.0	500.	FADED TO BELOW NAKED EYE VIS	ACB	64.2
CAL TECH	38425	64/ 1/31	14	1	1.5	7.0	3.1	8.6	64.00						28.7	167.0	475.	FAINT MIN	AWH	107.6
CAL TECH	38426	64/ 2/ 1	13	41	1.5	7.0	3.2	8.7							33.3	161.8	460.		AWH	104.9
ADELAIDE,AUS	38427	64/ 2/ 2	11	5	1.5			3.0							47.0	326.8	500.	ONLY VERY SLIGHT VARIATION	ACB	80.1
VAN NUYS-B	38427	64/ 2/ 2	13	20	1.5	6.0	2.9	7.4	64.30						36.0	179.9	530.		LOH	85.0
ADELAIDE,AUS	38428	64/ 2/ 3	10	48	1.5			2.3							15.0	58.0	700.	ANOTHER SINGLE MIN.LESSTHAN +4.5		4.5
VAN NUYS-B	38431	64/ 2/ 6	13	37	1.0	7.0	2.9	8.9							60.5	180.0	420.	VAR	LOH	81.2
CAL TECH	38432	64/ 2/ 7	13	16	0.7	8.0	2.7	10.0	68.00						58.0	207.0	400.	FAINT MIN	AWH	63.0
SAN ANTONIO	38451	64/ 2/26	1	28											60.0	360.0	230.	VA BECNG ALMST ST AND BRITER	FB	77.0
SAN ANTONIO	38451	64/ 2/26	1	29	-1.5	5.0	2.0	8.5							58.0	360.0	200.	IRREGULAR	PM	77.0
CAL TECH	38451	64/ 2/26	3	5	0.5	6.0	3.1	8.6							41.0	180.0	300.	POSSIBLY RESOLVED	AWH	78.3
CAL TECH	38452	64/ 2/27	2	45	0.5	6.0	3.0	8.5							45.0	180.0	320.	STEADY IN EAST	AWH	82.1
SAN ANTONIO	38496	64/ 4/11	2	13	-0.5	-0.5	2.5	2.5							80.0	0.0	253.	ST	PM	77.1
SACRAMENTO	38497	64/ 4/12	3	25	3.0	3.0	0.0	0.0									400.	STEADY	ASL	98.6
STPETERSBURG	38498	64/ 4/13	1	28	2.0	7.0	4.0	9.0							1.00	41.4	349.9	TP EST 8 SEC	PM	78.1
SAN ANTONIO	38500	64/ 4/15	2	12											80.0	0.0	295.		PM	84.6
SAN ANTONIO	38501	64/ 4/16	1	46											75.0	0.0	305.		PM	84.6
STPETERSBURG	38503	64/ 4/18	0	57	3.5	3.5	4.6	4.6							21.0	286.1	600.		FR	145.3
STPETERSBURG	38542	64/ 5/27	2	10	3.0	3.0	4.5	4.5							53.5	306.6	500.		FR	105.0
STPETERSBURG	38543	64/ 5/28	1	43	2.0	8.0	3.8	9.8							61.5	4.9	440.	TP EST 10 SEC	FR	89.2
SAN ANTONIO	38543	64/ 5/28	3	19	1.5	3.5	3.2	5.2							72.9	360.0	452.	MOSTLY ST	PM	80.7
VAN NUYS-F	38544	64/ 5/29	4	26	0.9	1.2	2.5	2.8							65.0	160.0	480.	REDDISH, MORE VAR IN EAST	JCM	52.7
VAN NUYS-F	38545	64/ J/30	3	59	1.0	1.3	2.6	2.9							65.0	170.0	480.		JCM	61.2
STPETERSBURG	38547	64/ 6/ 1	1	31	2.0	2.0	0.0	0.0										VARIATION	JS	72.6
SAN ANTONIO	38547	64/ 6/ 1	3	7	2.0	4.0	3.9	5.9							88.0	360.0	420.		PM	72.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	'Z	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38548	64	6	2	2	38	1.2	4.0	3.0	5.8			88.0	360.0	432.	VARIABLE	-- PM	77.6
SACRAMENTO	38548	64	6	2	4	14	3.0	3.0	0.0	0.0			28.4	180.0		STEADY	--ASL	52.9
SAN ANTONIO	38549	64	5	3	2	12	0.2	1.0	2.1	2.9			88.0	360.0	423.	VARIATION	-- PM	82.3
VAN NUYS-F	38549	64	6	3	3	47	1.7	3.0	2.7	4.0	26.50		40.0	175.0	630.		--JGM	54.1
SAN ANTONIO	38550	64	6	4	3	22	2.2	4.0	3.0	4.8			33.0	180.0	704.	VARIATION	-- PM	43.2
SAN ANTONIO	38552	64	6	6	2	26	2.5	5.0	3.2	6.2			31.1	180.0	708.	NO PERIOD DISCERNIBLE	-- PM	55.2
STPETERSBURG	38573	64	6	27	9	25	5.0	5.0	6.2	6.2	13.70		31.7	71.4	580.	FIRST STEADY AT LEAST 2 MIN, THEN IRREG TUMBLE SOME MIN+8--	--FK	130.8
KANSAS-E	38576	64	6	30	9	29	4.0	4.4	4.4				28.0	199.0	830.	SOME FAINTER THAN +10	--SS	26.9
SAN ANTONIO	38588	64	7	12	3	31	2.2	4.0	5.1	6.9			80.0	0.0	258.		-- PM	75.6
SAN ANTONIO	38590	64	7	14	2	31	-1.0	5.0	2.3	8.3			80.0	0.0	216.		-- PM	84.3
VAN NUYS-F	38590	64	7	14	4	8	-0.1	3.2	2.1	5.4	16.70		35.8	138.0	360.	MINIMA ALTERNATE +3.2 AND +2.0. FULL PERIOD 33.4 SEC	--JGM	26.2
SAN ANTONIO	38592	64	7	16	3	11	0.1	4.0	2.7	6.6			46.5	0.0	300.	SHADOWED AFTER 10 SEC	-- PM	100.5
CALTECH B	38592	64	7	16	4	45	1.0	5.0	3.8	7.8			40.0	200.0	270.		--AMH	61.3
SAN ANTONIO	38593	64	7	17	2	40	-0.5	4.0	2.5	7.0			59.5	0.0	253.		-- PM	94.6
CALTECH B	38593	64	7	17	4	15	0.3	3.5	3.1	6.3	17.30		40.0	200.0	270.	GOOD T.P.	--AMH	68.3
VAN NUYS-F	38593	64	7	17	4	16	-0.1	3.2	2.5	5.8	17.00		45.0	195.0	300.	TP OVER 5 CYCLES	--JGM	64.8
SAN ANTONIO	38594	64	7	18	2	10	-1.0	2.0	2.6	5.6			70.5	0.0	192.		-- PM	92.1
CALTECH B	38594	64	7	18	3	45	1.0	2.5	3.8	5.3	17.30		40.0	200.0	270.	MIN INVIS IN WEST	--AMH	75.3
SAN ANTONIO	38595	64	7	19	3	19	2.5	4.0	2.2	7.2			30.0	270.0	320.	GOING INTO SHADOW	-- PM	116.8
SAN ANTONIO	38597	64	7	21	2	18	-1.0	4.0	2.2	7.2			47.0	180.0	230.	PROBABLY BRIGHTER, CLOUDY	-- PM	62.8
DURBAN B	38613	64	8	6	16	34	1.8	1.8	2.9	2.9			33.0	349.0	600.	NO TUMBLE	-- GR	99.2
DURBAN B	38616	64	8	9	16	39	1.5	1.5	5.0	5.0			70.0	180.0	200.		-- GR	72.0
DURBAN B	38617	64	8	10	16	5	-1.0	-1.0	2.6	2.6			80.0	180.0	190.	TP GREATER THAN 1 MIN	--AA	79.5
VAN NUYS-F	38640	64	5	2	3	14	0.5	3.5	2.7	5.7	14.70		60.0	170.0	360.	SMOOTH VAR. REDISH COLOR	--JGM	65.8
AKRON CANTON	38645	64	9	7	0	39	5.0	5.0	5.1	5.1			12.0	208.0	962.	STEADY	--FKH	98.4
DURBAN B	38651	64	9	13	3	0	2.5	10.0	4.0	11.5	14.40		18.0	30.0	500.		-- GR	110.3
STPETERSBURG	38667	64	9	29	10	23	4.5	4.5	7.2	7.2			30.2	306.0	290.	SLOW FADE	--FK	40.7
DURBAN B	38668	64	9	30	17	0	2.1	5.3	2.9	6.1			37.0	66.0	680.		-- GR	24.9
PHOENIX R	38687	64	10	19	2	15	2.0	2.0	3.7				57.5	180.0	450.	STEADY	--RR	74.6
STPETERSBURG	38692	64	10	24	1	5	2.0	2.0	3.5	3.5			20.0	285.3	500.		--FK	128.8
STPETERSBURG	38693	64	10	25	0	30	3.0	3.0	4.7	4.7			22.0	286.5	450.		--FK	132.3
STPETERSBURG	38712	64	11	13	10	52	4.0	4.0	5.7	5.7			43.2	60.5	460.		--FK	111.1
DURBAN B	38712	64	11	13	18	0	2.5	2.5	5.1	5.1			80.0	180.0	300.	STEADY-TUMBLING IN WEST	-- GR	77.4
SAN ANTONIO	38735	64	12	6	1	5	2.5	6.0	4.4	7.9			20.0	275.0	410.	SHADOW ENTRY	-- PM	136.0

STATION NAME	MJF	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	AUT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38746	64/12/7	0	27	-2.0	6.0	1.8	9.8	69.3	180.0	175.		69.3	180.0	175.	PERIODIC VARIATION	--	PM
SAN ANTONIO	38741	64/12/12	0	28	-1.0	6.0	2.8	9.8	89.0	180.0	176.		89.0	180.0	176.	HAD PERIOD TIL OVERHEAD, THEN STEADY FOR 70 DEG	--	PM
SAN ANTONIO	38743	64/12/14	0	49	2.5	7.0	4.2	8.7	19.6	130.0	465.		19.6	130.0	465.	VARIABLE	--	PM
DURBAN B	38754	64/12/25	17	25	-1.0	2.0	0.8	3.8	20.0	94.0	430.		20.0	94.0	430.	IRREGULAR TUMBLE	--	AA
VAN NUYS-F	38753	64/12/30	13	19	1.5	3.2	3.6	16.40	44.0	156.0	450.	16.40	44.0	156.0	450.	SMOOTH VARIATION	--	JGM
DURBAN B	38761	65/1/1	17	40	1.0	1.0	3.6	3.6	35.0	43.0	300.		35.0	43.0	300.	STEADY	--	AA
STPETERSBURG	38750	65/1/20	0	41	2.0	2.0	4.0	4.0			400.				400.		--	FK
STPETERSBURG	38765	65/1/25	23	49	1.5	1.5	0.0	0.0									--	FK
VAN NUYS-F	38785	65/1/26	2	57	2.5	4.0	3.8	5.3	35.0	215.0	550.	10.30	35.0	215.0	550.	MIN ALTERNATE +3.0, +4.0	--	JGM
STPETERSBURG JR.	38740	65/1/30	0	17	3.0	3.0	3.9	3.9			675.				675.		--	FK
TOWNSVILLE	38755	65/2/4	9	32	3.5	6.0	3.7	6.2	21.0	17.0	900.	15.00	21.0	17.0	900.	SMOOTH VARIATION	--	APS
DURBAN B	38797	65/2/6	17	30	2.0	5.0	2.5	5.5	22.0	359.0	800.		22.0	359.0	800.	IRREGULAR TUMBLE PERIOD	--	AA
DURBAN B	38800	65/2/9	18	38	2.0	6.0	3.1	7.1	34.0	266.0	600.	17.30	34.0	266.0	600.	PERIOD FROM 3 TUMBLES	--	AA
DURBAN B	38800	65/2/9	18	38	2.1	5.8	3.2	6.9	34.0	266.0	600.	16.55	34.0	266.0	600.	PERIOD FROM 2 TUMBLES	--	GR
DURBAN B	38807	65/2/16	16	58	2.0	3.0	3.9	4.9	50.0	94.0	420.		50.0	94.0	420.	SLOW TUMBLE	--	AA
DURBAN B	38808	65/2/17	17	49	2.0	3.5	1.9	3.4	15.0	265.0	1050.		15.0	265.0	1050.	SLOW TUMBLE	--	GR
STPETERSBURG	38821	65/3/2	1	11	2.0	2.0	3.0	3.0			625.				625.		--	FK
STPETERSBURG	38822	65/3/3	0	27	3.0	3.0	4.1	4.1	35.0	90.0	560.		35.0	90.0	560.	REGULAR VARIATION	--	FK
SAN ANTONIO	38825	65/3/6	1	29	1.0	5.0	2.3	6.3	75.5	0.0	344.		75.5	0.0	344.		--	PM
SAN ANTONIO	38827	65/3/8	1	36	1.0	6.0	3.3	8.3	46.0	121.0	440.	19.80	46.0	121.0	440.	SEVERAL MAG SMOOTH VAR.	--	JGM
VAN NUYS-F	38828	65/3/9	2	26	0.8	2.6	2.6	4.6	52.0	165.0	380.	19.10	52.0	165.0	380.		--	JGM
VAN NUYS-F	38830	65/3/11	2	34	0.5	2.5	2.6	4.6	39.0	182.0	490.		39.0	182.0	490.	MIN UNDEP +3.5	--	JGM
VAN NUYS-F	38831	65/3/12	3	27	1.8	3.3	3.3	3.0	36.0	36.0	300.		36.0	36.0	300.	FLASHING TO +0.5, IREG. SHAP	--	EAA
DURBAN B	38847	65/3/28	16	45	1.5	2.0	4.1	4.6			200.		70.0	150.0	200.	SLOW PERIOD	--	FK
STPETERSBURG	38852	65/4/2	10	37	3.0	3.0	4.0	0.0			450.				450.		--	AA
DURBAN B	38853	65/4/3	16	55	1.0	3.0	4.5	5.5			230.		45.5	180.0	230.		--	FK
STPETERSBURG	38860	65/4/10	9	10	3.0	3.0	4.7	4.7	45.5	180.0	371.	21.40	45.5	180.0	371.	APPR. TP, SMOOTH VAR.	--	PM
SAN ANTONIO	38871	65/4/21	3	21	-2.0	6.0	1.2	9.2	23.5	167.5	180.	30.00	23.5	167.5	371.		--	JDR
CAL TECH	38871	65/4/21	3	21	0.5	3.5	2.7	5.7	66.9	0.0	200.	20.63	66.9	0.0	180.	ENTERING SHADOW	--	PM
SAN ANTONIO	38873	65/4/23	1	46	-0.5	5.5	3.2	9.2	59.9	0.0	200.		59.9	0.0	200.		--	PM
SAN ANTONIO	38874	65/4/24	2	34	3.0	6.5	6.5	8.5	48.0	0.0	202.		48.0	0.0	202.		--	PM
SAN ANTONIO	38875	65/4/25	1	45	0.1	5.0	3.6	8.5	71.4	0.0	170.		71.4	0.0	170.		--	PM
SAN ANTONIO	38877	65/4/27	1	44	-1.5	7.0	2.3	5.8			250.				250.	SLOW TUMBLE- WEST TO OVERHEAD	--	GR
DURBAN B	38895	65/5/15	16	51	2.5	7.0	5.5	10.0	20.0	100.0		20.90	20.0	100.0		BECAME SLOW IN EAST	--	AA
DURBAN B	38856	65/5/16	16	0	3.5	0.0	0.0		20.0	266.0	600.	20.80	20.0	266.0	600.	REGULAR	--	AA
DURBAN B	38858	65/5/18	15	57	1.0	3.0	2.1	4.1									--	AA

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURBAN B	38899	65	5	19	16	43	1.0	1.0	3.0	3.0	3.0		30.0	265.0	400.	STEADY THRU CLOUD GAPS	--GR	127.1
DURBAN B	38900	65	5	20	15	54	-2.0	-1.5	1.4	1.9	19.90		64.0	183.0	210.	ILL DEFINED PERIOD	--GR	74.6
DURBAN B	38902	65	5	22	15	52	-1.0	3.0	2.3	6.3	25.00		86.0	180.0	220.	FAIRLY WELL DEFINED ROLL	--AA	78.9
VAN NUYS-F	38916	65	6	5	4	40	0.5	0.5	2.8	2.8			45.0	180.0	350.		--JGM	47.1
PHOENIX R	38917	65	6	6	3	50	1.0	5.0	3.5	7.5			56.5	159.7	310.	IRR TP	--RRR	48.6
PHOENIX R	38918	65	6	7	4	29	1.0	5.0	2.3	6.3			31.2	216.6	560.	IRR TP	--RRR	71.6
PHOENIX R	38919	65	6	8	3	42	1.0	5.0	3.3	7.3			53.5	227.0	350.	IRR TP	--RRR	85.2
PHOENIX R	38921	65	6	10	3	34	1.0	5.0	3.3	7.3			42.5	233.0	350.	IRR TP 1 BRILLIANT FLASH	--RRR	94.2
DURBAN B	38937	65	6	26	16	28	2.0	2.0	2.4	2.4			21.0	17.0	850.	STEADY	--GR	84.2
DURBAN B	38939	65	6	28	16	13	2.0	2.0	1.6	1.6			15.0	320.0	1200.	STEADY	--GR	137.7
DURBAN B	38941	65	6	30	16	8	1.5	4.0	2.0	4.5	22.50		21.0	94.0	800.	REGULAR	--GR	16.8
DURBAN B	38942	65	7	1	16	47	1.5	4.0	2.8	5.3	25.20		34.0	266.0	550.	ILL DEFINED	--AA	122.0
DURBAN B	38943	65	7	2	15	56	1.5	2.5	3.7	4.7			70.0	270.0	360.	SLOW TUMBLE	--GR	98.3
DURBAN B	38944	65	7	3	16	41	0.5	0.5	2.8	2.8			83.0	345.0	350.	STEADY ALL THF WAY	--GR	74.1
DURBAN B	38945	65	7	4	15	48	0.5	0.5	2.2	2.2			44.0	119.0	460.	STEADY	--GR	36.0
DURBAN B	38946	65	7	5	16	26	1.0	1.0	1.2	1.2			15.0	270.0	900.	STEADY	--GR	144.3
DURBAN B	38951	65	7	10	16	50	2.0	2.0	2.2	2.2			17.0	336.0	900.	STEADY	--AA	116.7
VAN NUYS-F	38969	65	7	28	4	19	2.3	3.7	3.2	4.6			21.0	180.0	650.	TP 20SEC ON ONE CYCLE	--JGM	51.0
VAN NUYS-F	39012	65	9	9	3	20	1.0	1.0	4.0	4.0			40.0	210.0	250.	VARIABLE	--JGM	89.6
EDINBURG	39055	65	10	22	1	4	0.1	6.0	3.1	9.0			74.1	0.0	255.	MIN LFSS THAN +5	--PM	74.1
EDINBURG	39056	65	10	23	1	35	3.0	5.0	4.8	6.8			41.9	0.0	433.		--PM	74.0
VAN NUYS-F	39058	65	10	25	2	37	2.2	2.7	3.7	4.2	30.00		35.0	245.0	510.		--JGM	122.0
VAN NUYS-F	39059	65	10	26	3	8	2.7	3.3	3.8	4.4			55.0	150.0	370.		--JGM	58.6
VAN NUYS-F	39061	65	10	28	2	35	1.5	3.5	3.5		27.50		27.0	250.0	600.	TP ABOUT 28 SEC	--JGM	123.3
VAN NUYS-F	39148	66	1	23	2	32	0.5	3.5	3.5	6.5			55.0	190.0	400.	TP ABOUT 20 SEC	--JGM	81.6
DURBAN B	39169	66	2	13	17	8	-2.0	4.0	0.0	0.0			45.0	185.0	250.	SLOW REGULAR ROLL	--GR	90.7
STPETERSBURG	39189	66	3	5	0	6	2.0	5.0	0.0	0.0			33.6	60.1			--FJK	35.6
EDINBURG	39189	66	3	5	1	38	2.0	2.0	4.2	4.2			39.0	0.0	365.	STEADY	--PM	80.9
VAN NUYS-F	39191	66	3	7	3	19	0.5	4.2	3.0	6.7	35.00		47.0	205.0	320.	TP FROM 1 CYCLE ONLY	--JGM	88.8
STPETERSBURG	39218	66	4	3	10	42	3.0	3.0	5.8	5.8			39.6	40.4	280.		--FJK	119.6
STPETERSBURG	39222	66	4	7	10	31	1.0	1.0	3.0	3.0			20.4	180.0	400.	14 MIN EARLY	--FJK	73.9
VAN NUYS-F	39230	66	4	15	3	14	2.0	2.0	3.4	3.4			13.3	193.7	520.		--JGM	82.0
VAN NUYS-F	39231	66	4	16	3	5	1.4	2.7	3.4	4.7	35.00		20.5	169.8	390.	TP FROM ONLY ONE CYCLE	--JGM	60.2
STPETERSBURG	39232	66	4	17	1	27	2.0	2.0	3.9	3.9			17.1	305.8	425.		--FJK	141.2
STPETERSBURG	39233	66	4	18	1	16	3.0	3.0	4.9	4.9			16.2	315.0	425.		--FJK	139.7
STPETERSBURG	39236	66	4	21	0	37	1.0	3.0	4.0	6.0	3.00		32.1	360.0	250.	ORBIT GETTING LOWER	--FJK	100.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
EDINBURG	39238	66	4	23	1	37	-1.0		1.0				16.5	94.2	405.	THRU CLOS,MT 139,MAX BRIGHTER--	PM	15.9

SDC NO. 746 64 6-A ELEKTRON 1 USSR LAUNCHED 64/ 1/30 IN ORBIT
PERIOD = 169.3 PERIGEE = 244.2 APOGEE = 4428.5 INCL = 60.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38438	64	2	13	18	23	6.5	6.5	8.5	8.5			65.0	220.0	400.	ST OCCAS FAINT FLASHES	-- HK	88.7
STADE/ELBE	38530	64	5	15	22	34	3.0	3.0	5.1	5.1			65.0	140.0	380.	STEADY	-- HK	52.1
STADE/ELBE	38532	64	5	17	22	35	3.0	3.0	5.6	5.6			85.0	310.0	300.	STEADY	-- HK	77.6
STADE/ELBE	38559	64	6	13	23	45	4.5	5.5	7.0	8.0			80.0	55.0	320.	VAR	-- HK	83.6
TOWNSVILLE	38613	64	8	6	12	11	9.5	10.5	7.4	8.4			55.2	232.0	2576.	IRREGULAR TUMBLE	--NDB	61.3
DURBAN B	38622	64	8	15	19	25	9.5	11.9	6.4	8.8			40.00	1.00	4150.	IRREGULAR TP 30-50 SEC	-- AA	60.4
STADE/ELBE	38859	65	5	19	23	20	6.0	6.5	6.8	7.3			53.0	220.0	680.	STEADY WITH OCCAS VARYING	-- HK	47.8
FEIDELBERG	39672	67	7	1	21	24	8.1		7.2				34.0	140.0	1500.	VAR 0.8 MAG	--GLU	23.8
FEIDELBERG	39677	67	7	6	22	38	6.8		6.2				87.0	305.0	1300.	FLASHING	--GLU	75.2
HEIDELBERG	39681	67	7	10	22	26	7.0		6.3				72.0	260.0	1350.	FLASHING	--GLU	75.6
VAN NUYS-F	39729	67	8	27	6	13	10.5		7.8				67.0	31.0	3450.	FEW SEC TP, LATER STEADY	--JGM	63.0
VAN NUYS-F	39742	67	9	9	4	0	10.0	11.0	7.4	8.4			60.0	25.0	3300.	TP ABOUT 5 SEC	--JGM	70.1
GRANBY	39746	67	9	13	3	52	9.8	11.2	7.1	8.5			69.0	59.0	3500.	STEADY	--JGM	56.2
STPETERSBURG	39793	67	10	30	10	11	6.5	6.5	0.0	0.0			78.0	151.0		VARYING, MIN INV	--MPC	83.8
GRANBY	39860	68	1	5	0	58	3.0	3.0	0.0	0.0			58.1	47.5		VARYING	--FK	36.8
GRANBY	39866	68	1	11	23	37	6.5		0.0				76.0	248.0		ST	--MPC	82.2
STADE/ELBE	39868	68	1	13	23	29	6.5	7.0	0.0	0.0			68.0	300.0		ST	--MPC	87.2
STADE/ELBE	39881	68	1	26	18	25	7.0	7.0	7.9	7.9			52.0	359.0	650.	ST	-- HK	72.1
GRANBY	39883	68	1	28	18	17	7.0	7.0	7.9	7.9			52.0	358.0	650.	VA ONE SHARP FLASH	-- HK	73.2
GRANBY	39904	68	2	18	23	53	8.0	8.5	7.2	7.2			40.0	32.0	1850.	VA	--MPC	54.4
GRANBY	39908	68	2	22	1	10	7.8	8.3	7.1	7.6			77.0	87.0	1400.	VARYING	--MPC	47.4
GRANBY	39912	68	2	26	0	49	8.0	9.0	7.3	8.3			87.0	48.0	1400.	FLASHES MIN INV	--MPC	62.6
HEIDELBERG	39913	68	2	27	18	57	7.2		6.5				74.0	280.0	1410.		--GLU	86.7

SDC NO. 748 64 6-B PERIOD = 1356.0 PERIGEE = 270.9 APOGEE = 42250.7 INCL = 60.9
ELECTRON 2 USSR LAUNCHED 64/ 1/30 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
CAL TECH	38444	64/	2/	19	4	52	8.5		7.2				36.7	322.2	1801.	ONE MAX SEEN (MAYBE)	--AMH	95.6
VAN NUYS-F	39108	65/12/14	5	56	8.8	10.0	6.9	8.1					39.6	298.3	2350.	BROAD FLASHES, IRREGULAR	--JGM	76.7
VAN NUYS-F	39109	65/12/15	4	32	8.0	9.5	6.6	8.1				1.00	68.8	351.7	1900.	MAX ARE IRREGULAR FLASHES	--JGM	50.9
VAN NUYS-F	39126	66/ 1/ 1	3	22	7.5	9.7	6.0	8.2				2.00	40.5	330.2	2040.	IRREGULAR BROAD FLASHES	--JGM	84.9
VAN NUYS-F	39126	66/ 1/ 1	3	38	9.3	10.7	6.2	7.6					46.7	137.3	4080.	FLASHES ABOUT 5 SEC APART	--JGM	43.0
VAN NUYS-F	39127	66/ 1/ 2	1	56	8.0		6.4						30.3	352.3	2050.	FLASHES +8 TO +9	--JGM	73.7
VAN NUYS-F	39127	66/ 1/ 2	2	2	8.0	9.2	6.2	7.4					46.8	59.6	2250.	IRREGULAR VAR	--JGM	34.6
VAN NUYS-F	39385	66/ 9/17	3	27	8.5		6.1					1.00	29.8	294.6	3030.	MIN UNDER +10.5	--JGM	130.8
PHOENIX R	39385	66/ 9/17	3	34	8.0		6.0						28.0	336.7	2500.	IRR TP MIN INV	--RR	111.4
STADE/ELBE	39440	66/11/11	17	28	2.5	8.0	1.4	6.9					73.0	360.0	1650.	VARYING SHORT OBSERVED	--HK	71.8
VAN NUYS-F	39499	67/ 1/ 9	3	5	8.5		6.1						35.0	295.0	3090.	SINGLE FLASH SEEN	--JGM	110.9

SDC NO. 751 64 6-D PERIOD = 1384.0 PERIGEE = 261.0 APOGEE = 42942.9 INCL = 60.9
ROCKET BODY USSR LAUNCHED 64/ 1/30 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38573	64/ 6/27	9	26	7.0		5.9				1.55		40.2	166.5	1670.	SMOOTH VARIATION	--JGM	32.3
VAN NUYS-F	38574	64/ 6/28	8	31	7.0		5.5						27.2	125.5	1990.	FLASHING	--JGM	54.9
STADE/ELBE	38606	64/ 7/30	1	58	3.0		4.6						75.0	310.0	480.	FLASHING MOON	--HK	80.4
STADE/ELBE	38608	64/ 8/ 1	0	4	5.0		6.1				0.76		35.0	140.0	600.	4.0SEC/5 TUMBLER. LARGE VAR	--HK	46.4
VAN NUYS-F	38651	64/ 9/13	6	3	6.3		5.3				0.80		24.2	267.0	1620.	WHOLE TP. MIDDLE MAX +5.8	--JGM	95.3
VAN NUYS-F	38652	64/ 9/14	5	7	5.2	7.0	5.0	6.8			1.58		51.1	244.8	1120.	MAX ALTERNATE IN BRIGHTNESS	--JGM	77.2
VAN NUYS-F	38653	64/ 9/15	4	8	6.7		5.7				0.80		45.0	185.9	1610.	STEADY	--JGM	59.4
VAN NUYS-F	38654	64/ 9/16	3	12	6.5		5.2						36.9	139.0	1780.		--JGM	37.4
PHOENIX R	38655	64/ 9/17	2	19	5.5	5.5	4.2	4.2					59.0	69.8	1060.	TUMBLING	--RRR	42.8
STPETERSBURG	38656	64/ 9/18	1	23	3.0	6.0	2.9	5.9			0.75		24.0	138.0	1385.	REGULAR FLASHING	--WM	19.7
ROCHESTER	38656	64/ 9/18	1	23	8.0	10.0	7.3	9.3					0.40	65.0	950.	SMOOTH VARIATION	--HK	65.3
STADE/ELBE	38762	65/ 1/ 2	18	13	5.5	8	5.6	8.1			0.83		28.5	348.3	1740.	TRIPLET FLASHES .45 APART	--JGM	80.8
VAN NUYS-F	38778	65/ 1/18	3	23	7.3		6.1				0.81		56.5	68.5	2020.	STILL TRIPLETS, MODULATING	--JGM	29.8
VAN NUYS-F	38778	65/ 1/18	3	29	7.0		5.5				1.65		38.0	114.0	3650.	PERIOD ABOUT 16.5 SEC	--JGM	25.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	38779	65	1	19	2	33	9.0	10.0	7.4	8.4	1.63		35.5	48.0	2059.	TP EST 1 SEC	--FK	31.5
VAN NUYS-F	38779	65	1	19	2	30	7.0	8.5	5.5	7.0			26.3	95.3	1970.	JUST STARTING TRIPLET FLASHS	--JGW	18.5
VAN NUYS-F	38779	65	1	19	2	39	8.2		5.3						3860.	FLASHES SPACED AT 1/4 TP, 1/4 TP, 1/2 TP	--JGW	
WICHITA	38779	65	1	19	2	39	6.0		4.		4.93		31.0	329.0	1680.	4 MIN/CYCLE. MIN INVIS.	--PMR	93.8
STPETERSBURG	38780	65	1	20	1	33	9.0		7.1						1953.	TP EST 1.5 SEC	--FK	
SAN ANTONIO	38794	65	2	3	1	29	8.0		7.8				62.4	56.4	1102.		--PM	48.5
VAN NUYS-F	38803	65	2	12	3	12	7.5	9.5	6.0	8.0			34.9	312.5	1960.	MODULATING PERIOD ABOUT 13 S	--JGW	109.5
VAN NUYS-F	38803	65	2	12	3	20	8.5	9.3	6.3	7.1	0.82		69.2	184.9	2740.	MIN ALT +8.8,+9.3	--JGW	71.4
ROCHESTER	38806	65	2	15	23	44	0.1		-1.2		1.50		72.0	171.0	1800.		--REJ	77.7
VAN NUYS-F	39124	65	12	30	4	10	9.0	10.0	5.9	6.9	1.74		51.1	146.9	4100.		--JGW	42.3
VAN NUYS-F	39124	65	12	30	4	18	10.5	11.5	6.6	7.6			37.8	148.5	5900.		--JGW	45.8
VAN NUYS-F	39126	66	1	1	2	5	8.0	9.0	6.1	7.1	1.73		44.5	60.0	2380.	3 MAX AND 1 GAP PER CYCLE	--JGW	31.8
STADE/ELBE	39301	66	6	25	0	6	8.0	9.0	7.0	8.0	0.50	0.40	84.0	140.0	1568.	REGULAR FLASHING	--HK	73.7
STADE/ELBE	39376	66	9	9	22	36	7.5	8.5	6.5	7.5	0.88	0.80	80.0	360.0	1570.	REGULAR FLASHING	--HK	69.7
STADE/ELBE	39377	66	9	9	21	39	7.0	8.5	6.0	7.5	0.89	0.80	75.0	360.0	1570.	REGULAR FLASHING	--HK	75.9
VAN NUYS-F	39417	66	10	19	7	31	8.5	9.5	6.3	7.3	1.69		26.0	321.0	2700.	TP=16.9S / 10 OR 11 CYCLES	--JGW	84.5
STADE/ELBE	39428	66	10	30	20	20	8.5	9.5	7.2	8.2	1.78	0.60	88.0	220.0	1785.	REGULAR FLASHING MOON	--HK	51.6
PHOENIX R	39447	66	11	18	2	39	7.0		4.9				41.0	37.3	2588.		--RRR	40.6
OCEANPORT	39449	66	11	20	0	43	7.0		5.3				51.2	343.6	2168.		--	74.0
OCEANPORT	39450	66	11	21	22	51	8.0		6.1				40.4	38.9	2380.		--	41.3
VAN NUYS-F	39470	66	12	11	4	26	8.5		6.4				54.5	303.5	2650.	VAR	--JGW	77.6
VAN NUYS-F	39495	67	1	5	4	9	8.8		6.0				37.0	277.0	3580.	MINIMA BELOW +11	--JGW	103.5
PHOENIX R	39496	67	1	6	3	13	9.0	11.0	6.4	8.4	1.00		46.6	275.8	3300.	TP SEEN ONLY AT MAX MAG	--JGW	100.1
VAN NUYS-F	39497	67	1	7	2	15	8.5	11.5	6.3	9.3	1.80		76.0	290.0	2700.	WHOLE TP	--JGW	85.8
OCEANPORT	39767	67	10	4	4	10	8.0	9.5	5.8	7.3			80.4	278.6	2766.		--GFG	41.7
AUSTIN	39768	67	10	5	3	16	8.0	9.0	5.2	6.2	1.00		32.0	59.0	3672.		--MM	42.7
GRANBY	39794	67	10	31	2	1	7.5		5.4		1.40		50.0	300.0	2600.	MIN INV	--MPC	83.5
HEIDELBERG	39826	67	12	2	20	19	8.5		6.3		2.00		63.0	279.0	2730.	FLASHES MIN INV	--GLU	70.5

SDC NO. 758 64 10-8 PERIOD = 92.1 PERIGEE = 159.1 APOGEE = 336.2 INCL = 49.0
 LAUNCHED 64/ 2/27 DECAYED 6/18/64

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38496	64/	4/11	20	14	2.0	2.0	2.0	3.1	3.1	0.20		35.0	220.0	600.	RAPID FLASHING	-- HK	80.1
STADE/ELBE	38495	64/	4/14	19	53	2.0	2.0	2.0	3.3	3.3	0.20		35.0	200.0	550.	RAPID FLASHING	-- HK	69.0
WALNUT CREEK	38529	64/	5/14	4	54						0.83		35.0	290.0	400.	7 CYCLES	--DFC	122.9
WALNUT CREEK	38529	64/	5/14	4	54						0.84		50.0	250.0	300.	14 CYCLES	--DFC	92.7
WALNUT CREEK	38529	64/	5/14	4	55	4.0	6.0	5.5	9.5	9.5	0.78		70.0	210.0	200.	21 CYCLES - CHANGED PHASE	--DFC	68.7
STADE/ELBE	38552	64/	6/ 6	21	18	1.5	1.5	1.5	2.8	2.8	0.70		25.0	200.0	550.	ST AND RAPID FLASHING	-- HK	48.7

SDC NO. 759 64 11-A PERIOD = 94.7 PERIGEE = 305.7 APOGEE = 318.8 INCL = 82.1
 LAUNCHED 64/ 2/28 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-AUS	38552	64/	6/	6	8	35	1.5	3.0	3.8	5.3			50.0	100.0	340.	SEEN FOR 15 SEC. STEADY	--RM	69.2
ADELAIDE-2	38553	64/	6/	7	8	12	1.5		3.4				40.0	153.0	420.	STEADY	--ACB	48.7
WALNUT CREEK	38632	64/	8/25	4	47	7.0	7.0		8.0				25.4	265.8	636.	STEADY	--DFC	119.4
STADE/ELBE	38728	64/11/29	5	14	3.5	5.5	3.5	2.0	3.7	5.5			65.0	260.0	400.	STEADY	--HK	50.9
STADE/ELBE	38833	65/ 3/14	4	30	2.0	3.0	2.0	3.7	3.7				60.0	260.0	450.	STEADY	--HK	48.8
DURBAN B	38899	65/ 5/19	16	28	3.0	3.0	3.0	3.0	5.0	5.0			52.0	96.0	400.	STEADY	--GR	35.3
DURBAN B	38900	65/ 5/20	16	7	2.0	2.0	2.0	2.0	3.2	3.2			31.0	94.0	580.	STEADY	--GR	21.2
STADE/ELBE	38944	65/ 7/ 3	23	51	2.7	2.7	4.9	4.9	4.9				60.0	260.0	360.	STEADY	--HK	70.6
STADE/ELBE	39077	65/11/13	4	38	5.0	5.0	5.0	5.0	5.8	5.8			23.0	80.0	700.	STEADY	--HK	135.9
STADE/ELBE	39240	66/ 4/25	20	28	4.5	4.5	4.5	6.6	6.6	6.6			55.0	100.0	380.	STEADY	--HK	50.2
STADE/ELBE	39241	66/ 4/26	20	6	5.0	5.0	5.0	6.6	6.6				40.0	100.0	470.	STEADY	--HK	40.4
HEIDELBERG	39244	66/ 4/29	20	35	4.2	4.2	4.2	6.1	6.1	6.1			48.0	280.0	417.	STEADY	--GLU	107.5
STADE/ELBE	39245	66/ 4/30	20	14	1.0	5.0	3.4	7.4	7.4				75.0	260.0	336.	FLASH PER MORE THAN 120 SEC	--HK	87.9
HEIDELBERG	39245	66/ 4/30	20	14	2.8	2.8	5.1	5.1	5.1				68.0	290.0	342.	STEADY	--GLU	96.7
HEIDELBERG	39246	66/ 5/ 1	19	51	3.7	3.7	6.2	6.2	6.2				79.0	50.0	320.	STEADY	--GLU	77.6
HEIDELBERG	39247	66/ 5/ 2	19	29	3.2	3.2	5.3	5.3	5.3				56.0	78.0	376.	STEADY	--GLU	60.7
TOWNSVILLE	39257	66/ 5/12	9	15	7.5	7.5	7.5	7.5	7.8	7.8			15.7	274.6	859.	FOLLOWED SEVENTY EIGHT SECON--	--APS	142.6
	39300	66/ 6/24	22	29	1.0	1.0	1.0	2.3	2.3				32.0	100.0	548.	OS STEADY	--APS	
STADE/ELBE	39302	66/ 6/26	23	19	0.1	0.1	1.9	1.9	1.9				45.0	260.0	433.	STEADY	--HK	64.2
STADE/ELBE	39306	66/ 6/30	21	50	1.0	1.0	1.0	2.6	2.6				40.0	100.0	470.	STEADY	--HK	74.8
																STEADY	--HK	58.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39309	66/	7/	3	22	18	5.5	5.5	7.5	7.5			50.0	260.0	406.	STEADY	-- HK	84.6
STADE/ELBE	39511	67/	1/27		17	30	1.0	1.0	3.4	3.4			80.0	100.0	330.	STEADY	-- HK	66.7
STADE/ELBE	39530	67/	2/	9	5	33	2.0	5.0	4.2	7.2			70.0	260.0	370.	SLOWLY VARYING	-- HK	58.7
STADE/ELBE	39535	67/	2/14		5	3	3.0	5.0	4.5	6.5			45.0	260.0	500.	SLOWLY VARYING	-- HK	31.0
HEIDELBERG	39753	67/10/30			16	47	3.2	3.2	4.9	4.9			38.0	81.0	460.	ST	--GLU	31.3
HEIDELBERG	39875	68/	1/20		17	15	4.7	4.7	6.3	6.3			33.0	250.0	485.	ST	--GLU	135.0
HEIDELBERG	39876	68/	1/21		16	38	2.7	2.7	5.4	5.4			77.0	312.0	290.	ST	--GLU	89.3
STADE/ELBE	39952	68/	4/	6	19	54	2.0	3.0	2.6	3.6			20.0	310.0	750.	SLOWLY VAR	-- HK	144.3
STADE/ELBE	39953	68/	4/	7	19	10	3.5	3.5	6.3	6.3			85.0	100.0	280.	ST NOT DARK	-- HK	75.8
STADE/ELBE	39991	68/	5/15		0	15	5.5	5.5	7.2	7.2			42.0	100.0	450.	ST	-- HK	81.9

SDC NJ. 766 64-13A PERIOD = 91.1 COSMOS 26 USSR LAUNCHED 64/ 3/18 DECEASED 9/28/44
 APOGEE = 172.1 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AKRON LANTON	38517	64/	5/	2	1	13	4.2	4.2	7.6	7.6			74.7	149.5	208.	VARIATION	--FHK	67.6
KANSAS-C	38518	64/	5/	3	2	58	5.0	6.0	6.2	8.0			17.0	343.0	566.	STEADY	--SS	131.7
ROCHESTER	38519	64/	5/	4	1	38	6.0	6.0	8.0	8.0			33.0	348.0	400.	VARIABLE FADED FOR 20 SECS	--RJ	119.8
ROCHESTER	38520	64/	5/	5	1	51	6.0	8.0	8.0	10.0			30.0	359.0	400.	NO VAR	--BF	115.3
MILWAUKEE-C	38529	64/	5/14		1	57	5.0	5.0	8.1	8.5			62.7	209.1	200.	STEADY	--GVH	79.1
MILWAUKEE-C	38529	64/	5/14		1	57	5.0	5.0	8.2	8.2			62.7	209.1	225.	STEADY	--GVH	79.1
CAL TECH	38530	64/	5/15		3	38	6.5	7.5	8.3	9.3			23.4	30.9	430.	LITTLE FLASHES EVERY 30 SEC	--GLW	86.3
SAN ANTONIO	38531	64/	5/16		2	18	3.0	4.0	4.5	5.5			20.0	34.7	509.	MOSTLY +4, VISIBLE FOR 10 SEC	--PM	81.9
CAL TECH	38531	64/	5/16		3	49	3.0	4.0	6.3	7.3	30.40		63.5	36.7	216.	MOSTLY +3.5	--AMH	77.7
SAN ANTONIO	38532	64/	5/17		2	28	3.0	3.5	6.1	6.6			53.0	39.8	236.	STEADY	--PM	74.3
SAN ANTONIO	38533	64/	5/18		2	38	6.0	6.0	8.4	8.4			42.0	223.9	327.	STEADY	--PM	86.9
SAN ANTONIO	38533	64/	5/18		2	38	5.5	5.5	8.0	8.0			39.0	220.0	320.	STEADY	--F0	85.0

SDC NO. 771 64-15A ARIEL 2 CANADA LAUNCHED 64/ 3/27 DECAYED 11/18/67
 PERIOD = 101.4 PERIGEE = 182.1 APOGEE = 838.2 INCL = 51.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38521	64/	5/	6	5	55	8.0	8.5	7.9	8.4		1.00	41.2	21.7	1065.	ONE SHARP MAX AT +7.5	--DFC	93.3
WALNUT CREEK	38522	64/	5/	7	5	7	8.0	8.5	7.8	8.3	13.00	40.2	20.2	20.2	1115.	UNSURE OF VARIATION	--DFC	93.2

SDC NO. 775 64-15B ROCKET BODY CANADA LAUNCHED 64/ 3/27 IN ORBIT
 PERIOD = 101.3 PERIGEE = 175.2 APOGEE = 846.3 INCL = 51.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38520	64/	5/	5	5	8	8.0	7.5	8.1	6.61	1.00	33.6	12.3	1241.	59.5 SEC / 9 FLASHES	--DFC	101.6	
STADE/ELBE	38639	64/	5/	1	1	8	7.0	8.0	7.1	8.1	8.00	65.0	180.0	950.	REGULAR FLASHING	--WK	44.9	

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SDC NO. 784 64-19B POLYOT 2 USSR LAUNCHED 64/ 4/12 IN ORBIT
 PERIOD = 92.4 PERIGEE = 194.5 APOGEE = 298.3 INCL = 58.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38692	64/	10/	24	17	53	2.5	4.0	5.8	7.3			85.0	315.0	220.	VARYING	--WK	77.2
STADE/ELBE	38707	64/	11/	8	17	8	5.0	5.0	7.8	7.8			65.0	220.0	280.	STEADY	--WK	95.7
STADE/ELBE	38764	65/	1/	4	16	47	3.0	4.0	4.7	5.7			55.0	315.0	450.	STEADY AND FAINT VARYING	--WK	92.7
STADE/ELBE	38791	65/	1/	31	6	7	4.0	4.5	5.7	6.2			40.0	155.0	450.	FAINT VARYING	--WK	113.4
STADE/ELBE	38826	65/	3/	7	18	56	4.5	5.0	6.2	6.7			55.0	360.0	450.	STEADY	--WK	84.4

5068-629

SDC NO.	801	64-26A	PERIOD = 103.1	TRANSIT	USA	LAUNCHED 64/ 6/ 4	IN ORBIT	PERIOD = 103.1	PERIGEE = 542.5	APOGEE = 594.0	INCL = 90.4							
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38651	64/	9/	13	1	30	7.0	8.0	7.9	8.9	4.90		55.0	260.0	650.	FLASHING	-- HK	42.2
STADE/ELBE	38764	65/	1/	4	5	45	6.0	6.0	7.0	7.0			75.0	100.0	630.	STEADY	-- HK	89.3
STADE/ELBE	38764	65/	1/	4	17	27	6.5	6.5	7.1	7.1			60.0	100.0	750.	STEADY	-- HK	45.4
STPETERSBURG	38908	65/	5/	28	3	10	10.0		0.0							TP ABOUT .5 SEC	-- FK	
DURBAN B	38943	65/	7/	2	17	45	7.5	8.5	8.2	9.2			54.0	266.0	740.	SLOW FADE	-- GR	92.0
DURBAN B	38944	65/	7/	3	16	6	8.0	8.0	7.4	7.4			19.0	95.0	1300.	STEADY	-- AA	15.5
DURBAN B	38945	65/	7/	4	16	9	8.0	8.0	7.6	7.6			74.0	266.0	600.	STEADY LATER SCINTILLATING	-- AA	71.6
DURBAN B	38949	65/	7/	8	16	25	6.5	6.5	6.9	6.9			20.0	95.0	1200.	STEADY	-- AA	15.3
DURBAN B	38950	65/	7/	9	16	29	6.5	6.5	7.2	7.2			42.0	93.0	850.	STEADY	-- GR	29.8
DURBAN B	38951	65/	7/	12	16	40	7.5	7.5	8.6	8.6			50.0	93.0	720.	STEADY	-- AA	35.1
DURBAN B	38954	65/	7/	13	16	44	6.5	6.5	7.6	7.6			82.0	99.0	600.	STEADY	-- GR	63.4
DURBAN B	38955	65/	7/	14	16	48	6.5	6.5	7.6	7.6			83.0	257.0	600.	STEADY	-- AA	76.8
DURBAN B	38956	65/	7/	15	16	52	7.5	7.5	8.3	8.3			72.0	265.0	600.	STEADY	-- GR	86.9
DURBAN B	38957	65/	7/	16	16	55	6.5	6.5	7.2	7.2			61.0	266.0	700.	STEADY	-- GR	96.8
DURBAN B	38958	65/	7/	17	16	59	8.5		9.0				52.0	267.0	730.	STEADY	-- AA	105.2
STADE/ELBE	39145	66/	1/	20	17	54	6.8	7.0	7.9	8.1			44.0	266.0	780.	SCINTILLATING	-- AA	112.1
VAN NUYS-F	39148	66/	1/	23	2	32	7.7	7.7	9.0	9.0			65.5	100.0	600.	STEADY	-- HK	47.9
VAN NUYS-F	39149	66/	1/	24	2	36	8.0	8.0	9.3	9.3			79.4	90.0	550.		-- JGW	63.5
VAN NUYS-F	39150	66/	1/	25	2	40	8.0	8.3	9.3	9.6			87.6	265.0	540.		-- JGW	75.5
STPETERSBURG	39529	67/	2/	8	0	34	6.0	6.0	0.0	0.0			74.8	270.0	560.		-- JGW	87.4
STADE/ELBE	39529	67/	2/	8	17	55	7.5	8.5	8.4	9.4			69.2	30.2		VARYING HAZE	-- FK	60.3
STADE/ELBE	39534	67/	2/	13	18	10	6.8	8.5	8.0	9.7			50.0	50.0	650.		-- HK	45.0
STADE/ELBE	39535	67/	2/	14	18	14	5.0	8.5	6.0	9.5			89.0	260.0	585.	SLOWLY FLASHING	-- HK	75.2
STADE/ELBE	39614	67/	5/	4	1	0	8.0	8.0	8.8	8.8			78.0	260.0	620.	FLASH PER MORE THEN 180 SEC	-- HK	85.8
STADE/ELBE	39642	67/	6/	1	23	17	8.0	8.0	8.8	8.8			70.0	100.0	700.	STEADY	-- HK	78.8
STADE/ELBE	39656	67/	6/	15	22	23	8.3	8.3	9.2	9.2			73.0	100.0	700.	STEADY	-- HK	73.2
STADE/ELBE	39772	67/	10/	9	3	0	7.8	7.8	8.4	8.4			70.0	100.0	650.	STEADY	-- HK	70.6
STADE/ELBE	39772	67/	10/	9	3	0	7.8	7.8	8.4	8.4			60.0	100.0	750.	ST	-- HK	92.0

SD68-629

SOC NO. 804 64-288 PERIOD = 91.7 PERIGEE = 144.8 LAUNCHED 64/ 6/ 6 DECEASED 8/16/64
APOGEE = 302.6 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38577	64/ 7/ 1	5	17	8.0	10.0	8.5	10.5	0.42	14.0	352.0	805.	10	CYCLES			--OBS	135.0

SOC NO. 811 64-30A PERIOD = 91.7 PERIGEE = 218.7 LAUNCHED 64/ 6/13 DECEASED 6/ 2/65
APOGEE = 223.1 INCL =115.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38584	64/ 7/ 8	5	4	2.0	7.0	5.3	10.3	80.00	48.0	55.0	220.				1 CYCLE, BRIGHTNESS DROPS FAST--OFC		72.5
STADE/ELBE	38717	64/11/18	17	14	1.0	6.0	3.3	8.3	45.00	48.0	55.0	350.				IN NORTH TOWARD SUN AFTERMAX--OFC		37.4
STADE/ELBE	38748	64/12/19	16	50	2.0	2.0	3.7	3.7		35.0	315.0	450.				FLASH PER APPROXIMATE	-- HK	101.1
STADE/ELBE	38903	65/ 5/23	1	35	2.0	2.0	6.0	6.0		80.0	220.0	161.				STEADY SHORT OBSERVED	-- HK	69.0
																STEADY SAT. BEFORE DECAY	-- HK	

SOC NO. 812 64-31A PERIOD = 101.6 PERIGEE = 515.1 LAUNCHED 64/ 6/18 IN ORBIT
APOGEE = 522.0 INCL = 99.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELÄIDE-2	38693	64/10/25	12	17	6.0	6.0	6.4		0.44	35.0	220.0	850.				MAX ARE OF IRREG. BRIGHTNESS	--ACB	111.7
EDINBURG	39881	68/ 1/26	1	46	6.0	6.3				31.2	263.6	885.				SEEN BRIEFLY	-- PM	127.0
GRANBY	39881	68/ 1/26	23	52	7.0	7.4			9.10	35.0	264.0	830.				RFG VAR. MIN INV	--MPC	123.5
POYNTON	39883	68/ 1/28	18	16	9.0	10.4				80.0	255.0	530.				MIN BELOW 9.5 IRREG	--DMB	86.1
HEIDELBERG	39890	68/ 2/ 4	17	54	5.5	6.3	6.6	7.4	5.00	63.0	258.0	590.				VAR PER APPROX	--GLU	102.1

SDC NO. 813 64-318 PERIOD = 101.6 PERIGEE = 515.1 APOGEE = 522.6 INCL = 99.8
 LAUNCHED 64/ 6/18 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	387C6	64/11/7	12	28	7.0	7.2	5.00	0.10	34.0	232.0	920.	3.5 SEC +1 FLS. EVRY 5 SEC					--ACB	112.8
ADELAIDE-2	388C4	65/ 2/13	11	48	7.0	7.0			28.0	120.0	1000.	T.P. APPROX 1 MINUTE					--ACB	60.5
GRANBY	39892	68/ 2/ 6	23	15	7.0	8.4			85.0	255.0	528.	FADED TO INV, NO SHDW					--MPC	82.5

SDC NO. 815 64-31C PERIOD = 101.6 PERIGEE = 513.9 APOGEE = 522.6 INCL = 99.8
 LAUNCHED 64/ 6/18 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
STADE/ELBE	39237	66/ 4/22	2	38	5.0	5.1	5.0	5.0	5.1	5.1	5.1		55.0	260.0	960.	STEADY	-- NK	42.1	
STADE/ELBE	39246	66/ 5/ 1	1	43	5.0	6.0	5.0	5.0	6.0	6.0	6.0		52.0	100.0	644.	STEADY	-- NK	93.3	
STADE/ELBE	39781	67/10/18	18	14	7.0	7.5	1.80	0.70	12.0	290.0	800.		53.0	76.0	636.	FLASHING LOW ALTITUDE	-- NK	148.1	
AUSTIN	39880	68/ 1/25	0	50	4.0	5.0	5.0	5.0	5.0	5.0	5.0		24.9	264.7	1022.	SMOOTH AND PERIODIC VAR	-- NK	127.7	
EDINBURG	39881	68/ 1/26	2	12	5.0	5.0	5.0	5.0	5.0	5.0	5.0		88.0	260.0	531.	ST	-- NK	77.0	
STADE/ELBE	39882	68/ 1/27	0	17	7.2	8.2	7.3	8.3	11.70	29.0	266.0	939.		40.0	263.0	761.	FLASHING	-- MPC	124.9
GRANBY	39883	68/ 1/28	3	22	4.5	8.0	5.1	8.6	11.60	32.0	275.0	790.		68.0	259.0	562.	5 CYCLES	-- DFC	116.9
WALNUT CREEK	39883	68/ 1/28	18	42	5.0	8.5	5.5	9.0	11.76	32.0	275.0	790.		55.0	260.0	630.	REGULAR TUMBLE	-- NK	123.4
STADE/ELBE	39883	68/ 1/28	18	42	5.0	8.5	5.5	9.0	11.76	32.0	275.0	790.		55.0	260.0	630.	FLASHING	-- MPC	94.7
GRANBY	39889	68/ 2/ 3	23	38	6.5	8.5	7.8	9.8	11.80	55.0	260.0	630.		85.0	78.0	529.	FLASHING	-- GLU	105.9
HEIDELBERG	39890	68/ 2/ 4	23	21	6.5	8.5	7.9	9.9	12.33	42.0	70.0	734.		60.0	70.0	600.	FLASHING	-- MPC	71.0
GRANBY	39892	68/ 2/ 6	22	46	6.5	8.0	7.2	8.7	11.90	60.0	70.0	600.					FLASHING	-- MPC	35.1
HEIDELBERG	39893	68/ 2/ 7	17	22	4.6	6.6	5.7	7.7	11.90	60.0	70.0	600.					TUM3	-- GLU	91.3

SDC NO. 816 64-33A COSMOS 33 LAUNCHED 64/ 6/23 RE-ENTERED 7/1/64
 PERIOD = 89.4 PERIGEE = 134.2 APOGEE = 170.3 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
MADISON	38573	64/	6/27		3	46	5.0		7.8				34.0	270.0	280.	SHADOWED QUICKLY, STEADY	--JDR	105.1
NEWBERG	38573	64/	6/27		5	13	2.3	2.3	5.3	5.3			37.7	49.6	250.	STEADY	--AWH	83.0
ROCHESTER	38574	64/	6/28		2	6	6.0	6.0	9.8	9.8			36.7	51.0	172.	STEADY	--WM	80.1
MADISON	38574	64/	6/28		3	35	3.0		5.3				22.0	270.0	340.	STEADY	--JDR	113.9
NEWBERG	38574	64/	6/28		5	4	2.1	2.1	5.6	5.6			56.0	51.0	199.	STEADY	--AWH	80.2
ROCHESTER	38575	64/	6/29		1	56	1.0	1.0	4.6	4.6			54.0	53.0	190.	STEADY NAKED EYE	--REJ	77.6
ROCHESTER	38575	64/	6/29		1	56	1.0	1.0	4.7	4.7			54.0	60.0	180.	STEADY	--REJ	73.5
VAN NUYS-F	38575	64/	6/29		4	55	5.0	5.0	6.7	6.7			19.1	6.5	450.	STEADY	--JGW	118.2
ROCHESTER	38576	64/	6/30		1	45	1.0	1.0	5.0	5.0			90.0	10.0	155.	STEADY NAKED EYE	--REJ	82.0
MILWAUKEE	38576	64/	6/30		3	14	4.0	4.0	5.2	5.2			10.0	273.0	580.	STEADY	--EAH	125.8
WALNUT CREEK	38576	64/	6/30		4	44	3.0		6.0				32.0	50.0	250.	STEADY	--DFC	77.3
WALNUT CREEK	38577	64/	7/ 1		4	33	3.0		6.5				53.0	50.0	200.	STEADY	--DFC	76.0
VAN NUYS-F	38577	64/	7/ 1		4	34	2.0	2.0	5.4	5.4			53.0	357.5	205.	STEADY	--JGW	101.6
VAN NUYS-F	38577	64/	7/ 1		4	35	1.5	1.5	5.2	5.2			65.0	40.0	180.	STEADY	--JGW	77.2

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SDC NO. 817 64-33B PERIOD = 89.5 LAUNCHED 64/ 6/23 RE-ENTERED 7/10/64
 PERIGEE = 141.7 APOGEE = 175.8 INCL = 65.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
NEWBERG	38573	64/	6/27		5	20	1.5	2.5	5.0	6.0	0.90		48.6	51.3	200.	DOUBLE MAX AND IRREG FLICKER	--AWH	81.0
NEWBERG	38574	64/	6/28		5	10	1.3	2.5	4.9	6.1	0.90	0.30	53.6	69.0	190.	TP UNCERTAIN	--AWH	69.8
ROCHESTER	38575	64/	6/29		2	0	2.0		5.9		0.90		72.0	56.0	165.	VARIABLE	--REJ	77.3
ROCHESTER	38575	64/	6/29		2	1	2.0	6.0	5.9	9.9	0.90		83.0	56.0	165.	TUMBLE ACCURATE	--REJ	78.7
ROCHESTER	38576	64/	6/30		1	49	1.0	4.0	5.0	8.0	0.82		84.0	234.0	160.	TUMBLE ACCURATE	--REJ	82.6
VAN NUYS-F	38577	64/	7/ 1		4	36	2.0	4.0	5.2	7.2	1.95		40.0	340.0	230.	TP ON BRT MAX, FAINTER *3.5	--JGW	119.0
																MAX IN BETWEEN ART FLASHES	--JGW	
																FAST FLICKER ALL THRU CYCLE	--JGW	
WALNUT CREEK	38577	64/	7/ 1		4	36	2.0	3.0	5.5	6.5			45.0	90.0	200.	TP ABOUT 2 SEC	--DFC	48.9
WALNUT CREEK	38578	64/	7/ 2		4	22	1.5	3.0	5.2	6.7	0.97		60.0	100.0	180.	10 CYCLES, CHOPPY IRREGULAR	--DFC	55.7
VAN NUYS-F	38578	64/	7/ 2		4	23	2.2	3.4	5.5	6.7	0.99		41.7	319.0	220.	MANY LITTLE FLASHES DURING	--JGW	124.2
VAN NUYS-F	38578	64/	7/ 2		4	24	1.5	2.8	5.6	6.9			75.0	210.0	150.	EACH TUMBLE CYCLE. ALTERNATE	--JGW	74.1
																MAX ARE BRIGHTER (EACH 2SEC)	--JGW	

SD68-629

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38579	64	7	3	2	34	3.0	3.0	5.5	5.5	2.07		24.0	58.3	321.0	GEN ST, SLIGHT VARIATION	-- PH	64.0
VAN NUYS-F	38579	64	7	3	4	7	2.3	5.5	5.5	5.5			40.0	305.0	225.0	SMOOTH VAR HERE. DEEP MINIMA	--JGW	129.0
VAN NUYS-F	38579	64	7	3	4	8	1.5	2.0	5.3	5.8			55.0	220.0	175.0	MIDDLE MAX APPEAR, IRREG FLSH	--JGW	82.2
VAN NUYS-F	38579	64	7	3	4	9	2.5	3.2	5.2	5.9			30.0	175.0	290.0	MIDDLE MAX ALMOST-MAJOR MAX	--JGW	47.5
SAN ANTONIO	38580	64	7	4	2	23	2.5	3.0	5.1	5.6			34.2	58.4	300.0	APPROXIMATE MINIMA	-- PH	63.9

SDC NO. 822 64-34A PERIOD = COSMOS 34 USSR LAUNCHED 64/ 7/ 1 RE-ENTERED 7/9/64
PERIOD = 90.0 PERIGEE = 129.9 APOGEE = 215.6 INCL = 64.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ROCHESTER	38583	64	7	7	2	23	5.0	5.0	6.7	6.7			17.0	71.0	460.0	STEADY	--REJ	66.1

SDC NO. 824 64-35A PERIOD = USA LAUNCHED 64/ 7/ 3 IN ORBIT
PERIOD = 94.9 PERIGEE = 317.5 APOGEE = 329.3 INCL = 82.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38639	64	5	1	20	8	4.0	4.0	6.2	6.2			77.0	100.0	370.0	STEADY DCASS FAINT VARYING	-- MK	62.7
STADE/ELBE	38826	65	3	7	18	48	4.0	4.0	6.2	6.2			78.0	100.0	360.0	STEADY	-- MK	62.8
STADE/ELBE	38833	65	3	14	4	33	3.0	3.0	5.5	5.5			85.0	100.0	320.0	STEADY	-- MK	83.9
DURBAN B	38919	65	6	8	16	1	3.0	3.0	4.1	4.1			31.0	95.0	600.0	STEADY	--GR	22.9
DURBAN B	38919	65	6	8	16	2	3.0	3.0	4.1	4.1			31.0	94.0	600.0	STEADY	--GR	23.2
DURBAN B	38920	65	6	9	15	45	3.0	3.0	3.5	3.5			23.0	94.0	800.0	STEADY	--AA	21.6
DURBAN B	38921	65	6	10	15	28	4.0	4.0	4.5	4.5			19.0	95.0	800.0	STEADY	--GR	21.7
STADE/ELBE	38972	65	7	31	22	41	4.0	4.0	5.7	5.7			45.0	100.0	450.0	STEADY	-- MK	62.4
STADE/ELBE	38976	65	8	4	21	35	6.0	6.0	6.5	6.5			20.0	100.0	780.0	STEADY	-- MK	49.6
STADE/ELBE	38981	65	8	9	21	46	5.5	5.5	7.7	7.7			65.0	100.0	360.0	STEADY	-- MK	59.7
STADE/ELBE	38988	65	8	16	21	24	7.0	7.0	8.9	8.9			50.0	260.0	420.0	STEADY	-- MK	89.2
STADE/ELBE	38996	65	8	24	20	43	6.0	6.0	7.1	7.1			30.0	260.0	604.0	STEADY	-- MK	106.8
VAN NUYS-F	39030	65	8	28	3	44	3.0	3.0	5.1	5.1			58.4	306.8	380.0		--JGW	104.7
VAN NUYS-F	39059	65	12	5	1	26	4.5	4.5	5.6	5.6			31.0	358.0	600.0		--JGW	69.2
STADE/ELBE	39236	66	4	21	21	42	5.5	5.5	7.7	7.7			62.0	100.0	360.0	STEADY	-- MK	54.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39247	66/	5/	2	20	3	3.6	3.6	5.1	5.1			35.0	82.0	507.	STEADY	--GLU	50.2
STADE/ELBE	39331	66/	7/25		22	57	2.5	2.5	4.4	4.4			50.0	260.0	415.	STEADY	--MK	76.0
STADE/ELBE	39331	66/	7/25		22	58	7.0	7.0	8.7	8.7			45.0	320.0	463.	STEADY	--MK	111.8
STADE/ELBE	39334	66/	7/28		22	2	6.0	6.0	8.4	8.4			80.0	100.0	331.	STEADY	--MK	69.9
STADE/ELBE	39341	66/	8/	4	21	29	2.5	8.0	4.5	10.0			55.0	260.0	391.	VAR ONLY ONE FLASH OBS	--MK	88.6
STADE/ELBE	39539	67/	2/18		18	14	3.5	3.5	5.9	5.9			89.0	100.0	325.	STEADY	--MK	74.0
STADE/ELBE	39541	67/	2/20		17	33	3.0	3.0	4.3	4.3			43.0	100.0	550.	STEADY	--MK	37.7
AUSTIN	39619	67/	5/	9	2	15	7.0	9.0	8.0	10.0			25.0	271.0	630.	APP 1 SEC PER	--MM	133.3
HEIDELBERG	39683	67/	7/12		22	21	5.0	5.0	7.0	7.0			52.0	100.0	400.	STEADY	--GLU	60.3
STPETERSBURG	39894	68/	2/	8	0	4	5.0	5.0	7.6	7.6					300.		--FK	
STADE/ELBE	39951	68/	4/	5	20	0	4.0	4.0	5.3	5.3			30.0	100.0	550.	ST	--MK	27.6

SDC NO. 826 64-368 PERIOD = 91.4 PERIGEE = 187.0 APOGEE = 243.0 INCL = 93.0
 LAUNCHED 64/ 7/ 6 DECAYED 1/ 3/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38594	64/	7/18		21	41	5.0	5.5	7.3	7.8			53.0	260.0	350.	ST 0.5 MAG VAR	--MK	89.5
STADE/ELBE	38613	64/	8/	6	21	13	5.5	7.0	7.0	8.5	1.00		30.0	260.0	500.	VAR	--MK	102.1
STADE/ELBE	38616	64/	8/	9	20	46	3.0		5.4		0.50		60.0	260.0	330.	RAPID FLASHING	--MK	93.0
STADE/ELBE	38620	64/	8/13		20	40	4.5		6.8		0.46		55.0	260.0	340.	RAPID FLASHING	--MK	96.0
STADE/ELBE	38662	64/	9/24		18	49	4.0	6.0	7.0	9.0	1.30	0.30	78.0	100.0	250.	REGULAR FLASHING	--MK	63.8
STADE/ELBE	38671	64/10/	3	18	19	5.0	7.0	7.0	7.0	9.0	1.30		50.0	100.0	400.	REGULAR FLASHING	--MK	36.6
STADE/ELBE	38671	64/10/	3	18	20	5.0	5.0		7.4		1.30		50.0	100.0	330.	FLASHING	--MK	36.5

SDC NO.	829	64-38A	PERIOD =	ELEKTRON 3 168.2	USSR LAUNCHED 64/ 7/11 IN ORBIT APOGEE = 4365.7 INCL = 60.8	PERIOD	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
STATION NAME	MJD	Y	M	D	H	M	N	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38611	64/ 8/ 4	10	8	7.0	10.0	5.2	8.2	0.20	35.7	8.0	2300.				VARIATION LIKE 64 6 A	--ACB	72.5	
WALNUT CREEK	38622	64/ 8/15	3	17	5.0		7.2		70.0	127.0		370.				STEADY	--DFC	67.3	
PHOENIX R	38627	64/ 8/20	3	14	0.1	5.5	1.4	6.8	39.0	310.5		543.				10 IRREGULAR FLASHES IN 51 S	--RKR	129.6	
VAN NUYS-F	39113	65/12/19	2	24	9.5	11.0	6.4	7.9	63.5	116.6		4100.				TP ESTIMATED AS 2 MINUTES	--JGM	52.4	
VAN NUYS-F	39114	65/12/20	3	45	10.2		7.4		85.0	306.3		3580.				DIDNT FOLLOW	--JGM	57.9	
VAN NUYS-F	39124	65/12/30	4	55	10.0	11.5	7.4	8.9	39.9	336.8		3320.				SEVERAL MINUTE PERIOD	--JGM	74.8	
VAN NUYS-F	39127	66/ 1/ 2	2	45	9.7	10.7	7.0	8.0	5.00	67.0	315.8	3540.				VAR	--JGM	80.7	
VAN NUYS-F	39127	66/ 1/ 2	2	45	10.0		7.6		26.2	357.1		2970.					--JGM	75.1	
PHOENIX R	39639	67/ 5/29	5	1	11.0	12.0	7.5	8.5	59.2	43.2		4900.					--RKR	73.3	
PHOENIX R	39641	67/ 5/31	4	36	11.0	12.0	7.5	8.5	58.0	48.5		4900.					--RKR	71.9	
VAN NUYS-F	39642	67/ 6/ 1	5	56	10.5	11.0	7.2	7.7	68.8	86.0		4600.				FEW SECONDS TO	--JGM	54.9	
VAN NUYS-F	39644	67/ 6/ 3	5	16	10.8		7.4		66.0	16.0		4800.				TP ESTIMATE 8 SEC	--JGM	82.1	
VAN NUYS-F	39644	67/ 6/ 3	5	21	10.3		7.0		70.0	40.0		4600.					--JGM	72.1	
VAN NUYS-F	39644	67/ 6/ 3	8	29	11.0	11.0	7.5	7.5	49.0	245.0		4900.					--JGM	43.1	
VAN NUYS-F	39669	67/ 6/28	4	27	9.5	10.5	6.0	7.0	56.0	230.0		4900.				ONE MAG FADE IN 20 SEC	--JGM	83.0	
HEIDELBERG	39757	67/ 9/24	20	23	8.5	8.5	7.0	7.0	51.0	170.0		2000.				STEADY	--GLU	38.3	
HEIDELBERG	39758	67/ 5/25	21	38	8.5	8.5	7.5	7.5	80.0	260.0		1600.				STEADY	--GLU	57.2	
GRANBY	39759	67/ 9/26	0	20	8.5	8.5	6.6	6.6	32.0	94.0		2400.				SHORT OBS.	--MPC	17.9	
GRANBY	39769	67/10/ 6	1	0	8.5	8.5	0.0	0.0	70.0	355.0							--MPC	71.4	
GRANBY	39771	67/10/ 8	0	32	8.3	8.3	0.0	0.0	79.0	294.0						STEADY	--MPC	76.3	
VAN NUYS-F	39780	67/10/17	2	45	9.7	9.7	6.3	6.3	42.0	348.0		4700.					--MPC	87.3	
GRANBY	39785	67/10/22	0	14	7.0	7.0	3.7	3.7	47.0	341.0		4500.				STEADY UNUSUALLY BRIGHT	--JGM	88.5	
STADE/ELBE	39868	68/ 1/13	4	47	8.5	8.5	8.2	8.2	60.0	140.0		1150.				ST HA7F	--MK	88.7	
STPETERSBURG	39927	68/ 3/12	0	21	7.0	7.0	0.0	0.0	23.3	110.3							--FK	21.9	
STADE/ELBE	39930	68/ 3/15	20	45	8.0	8.0	8.5	8.5	80.0	5.0		800.				ST MOON	--MK	68.1	
STADE/ELBE																			

SDC NO.	830	64-388	ELEKTRON 4				USSR	LAUNCHED 64/ 7/11 IN ORBIT										
		PERIOD = 1314.0	PERIGEE = 282.1	APOGEE = 41047.7	INCL = 60.8													
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38556	64/ 7/20	0	56	4.5	5.5	6.0	7.0	45.0	140.0	500.					VARYING REV NO 10	-- MK	60.2
STPETERSBURG	38754	65/ 2/ 3	1	0	9.0	11.0	7.5	9.5			1968.					TP EST 1 SEC	--	
STADE/ELBE	39077	65/11/13	18	52	6.0	8.0	6.3	8.3	35.50	0.50	60.0	360.0	880.			FLASHING WITH IRREGULAR VARYING	-- MK	49.2
STADE/ELBE	39120	65/12/26	16	1	7.5	7.5	7.8	7.8			65.0	360.0	870.			STEADY	-- MK	71.0
VAN NUYS-F	39126	66/ 1/ 1	3	32	7.3	9.7	6.0	8.4			57.2	317.1	1830.			IRREGULAR BROAD FLAMES	--JGM	79.7
VAN NUYS-F	39127	66/ 1/ 2	1	26	8.0	8.2	7.4	7.8			37.2	60.8	2210.			SLOW TUMBLING	--JGM	31.1
HEIDELBERG	39130	66/ 1/ 5	16	56	7.8	8.0	6.6	6.6			58.6	60.2	1900.			RAPID TP MIN INV	--RR	66.5
PHOENIX A	39445	66/11/20	3	3	8.0	7.9	7.9	7.9			44.7	241.4	2653.				--	31.3
OCEANPORT	39449	66/11/20	3	6	10.0	10.2	8.9	8.9			67.5	353.0	1830.				--JGM	66.5
VAN NUYS-F	39470	66/12/11	2	39	10.2	10.5	8.7	8.7	1.80	0.20	65.0	270.0	2250.			FLASHING, MOD PERIOD 20 SEC	--JGM	96.9
VAN NUYS-F	39491	67/ 1/ 1	2	19	8.5	11.0	9.0	9.0			69.0	226.0	2500.			STEADY NOM	--JGM	91.1
VAN NUYS-F	39491	67/ 1/ 1	2	22	11.0	11.0	8.0	6.2			54.4	303.7	2250.			VARYING NOT DARK	--FK	107.9
STPETERSBURG	39637	67/ 5/27	1	47	8.0	8.0	6.6	7.6			68.0	360.0	1220.			FLASHING	--GLU	100.4
STADE/ELBE	39658	67/ 6/17	1	11	7.0	8.0	6.6	7.1			1.65	0.40	56.0	310.0	1400.	FLASHING MIN INV	--GLU	107.9
HEIDELBERG	39690	67/ 7/19	21	24	7.8	7.2	6.6	6.6			1.68	0.50	65.0	340.0	1300.	FLASHING	--GLU	103.5
HEIDELBERG	39701	67/ 7/30	20	9	7.2	8.0	7.2	8.0			1.70	0.50	62.0	52.0	1420.	FLASHING	--GLU	97.2
HEIDELBERG	39764	67/10/ 1	19	11	8.0	10.7	9.2	9.2			30.0	357.0	2030.			REG TUMB	--GFG	84.3
VAN NUYS-F	39782	67/10/19	3	14	10.7	10.7	6.0	6.0			62.4	344.0	1621.			FLASHING MIN INV	--MK	73.2
OCEANPORT	39783	67/10/20	1	10	7.0	5.5	9.0	8.2			75.0	140.0	1470.				--MK	74.0
STADE/ELBE	39917	68/ 3/ 2	3	43	5.5	6.8	6.3	6.3	11.90		85.0	358.0	1270.			FLASHING MIN INV	--MK	75.0
STADE/ELBE	39938	68/ 3/23	3	23	6.8													

SDC NO.	832	64-380	ROCKET BODY				USSR	LAUNCHED 64/ 7/11 IN ORBIT										
		PERIOD = 1341.0	PERIGEE = 272.2	APOGEE = 41872.3	INCL = 60.9													
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38639	64/ 5/ 1	2	0	5.5	7.0	6.8	8.3	0.60	0.30	40.0	360.0	550.			REGULAR RAPID FLASHING	-- MK	108.7
VAN NUYS-F	38651	64/ 5/13	4	25	4.5	5.2	5.2	5.2			64.0	193.0	740.			TP ABOUT .8S, MIN ABOUT +7	--JGM	58.0
STADE/ELBE	39022	65/ 9/13	20	7	5.5	8.0	6.4	8.9	0.55	0.20	70.0	360.0	660.			FLASHING	-- MK	80.2
STADE/ELBE	39077	65/11/13	19	7	5.5	6.0	5.9	6.4	0.65	0.10	65.0	360.0	840.			FLASHING	-- MK	66.5
STADE/ELBE	39078	65/11/14	17	25	6.0	7.0	6.2	7.2	0.68	0.10	56.0	360.0	910.			FLASHING	-- MK	71.5
VAN NUYS-F	39114	65/12/20	3	7	8.5	6.5	6.5	6.5			48.5	86.2	2500.			VAR	--JGM	21.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39114	65/12/20	3	11	9.6	9.6	6.9	1.25	39.5	105.5	3400.						--JGM	23.4
VAN NUYS-F	39126	66/1/1	5	59	9.5	9.5	5.8	1.29	37.2	218.5	5500.					VAR	--JGM	67.2
VAN NUYS-F	39126	66/1/1	6	8	10.0	10.0	5.7	1.29	33.0	206.6	7150.					30 SEC MODULATING PERIOD	--JGM	44.4
VAN NUYS-F	39127	66/1/2	4	5	8.5	8.5	6.8	1.30	69.0	269.4	2210.					VAR	--JGM	72.5
VAN NUYS-F	39127	66/1/2	4	9	8.8	10.0	6.5	7.7	67.8	200.2	2840.					WHOLE TP 1.305 SEC FROM 100	--JGM	61.9
VAN NUYS-F	39127	66/1/2	4	43	11.0	11.0	6.1	1.30	27.6	165.5	9600.					CYCLES, 25SEC MODULATING PER	--JGM	59.7
VAN NUYS-F	39128	66/1/3	2	26	7.8	7.8	5.9	1.30	57.1	87.9	2350.					3 MAX AND 1 GAP PER WHOLE TP	--JGM	40.2
VAN NUYS-F	39128	66/1/3	2	30	8.6	8.6	6.1	1.30	46.0	110.5	3230.						--JGM	39.9
VAN NUYS-F	39141	66/1/16	3	32	9.3	9.3	6.4	0.67	54.8	190.6	3870.					REGULAR FLASHING	--JGM	75.2
STADE/ELBE	39361	66/8/24	21	5	5.5	8.0	5.3	7.8	65.0	360.0	1103.					REGULAR FLASHING	--MK	91.6
STADE/ELBE	39388	66/9/20	21	26	6.5	8.5	6.3	8.3	75.0	360.0	1100.					MIN INV	--MK	72.1
PHOENIX R	39439	66/11/10	2	7	11.0	9.2	9.2	27.2	44.0	2302.	2029.					REGULAR SHORT FLASHING	--RRR	35.9
STADE/ELBE	39531	67/5/21	23	40	6.8	8.0	6.0	8.2	36.5	329.2	1450.					SHARP FLASHING MOON	--RRR	84.0
STADE/ELBE	39659	67/6/18	22	20	7.5	9.0	6.9	8.4	0.50	73.0	140.0					FLASHING	--MK	62.4
STADE/ELBE	39672	67/7/1	23	22	7.5	8.5	6.3	7.3	0.30	84.0	140.0					FLASHING MIN INV	--MK	72.8
STADE/ELBE	39701	67/7/30	20	16	7.0	7.0	6.4	1.15	0.20	47.0	225.0					FLASHING	--GLU	48.2
STADE/ELBE	39756	67/9/23	19	17	7.3	8.3	6.4	7.4	0.40	57.0	360.0					FLASHING MIN INV	--GLU	103.0
STADE/ELBE	39767	67/10/4	1	16	7.5	7.5	6.3	1.12	54.0	54.0	1756.					FLASHING MIN INV	--GLU	86.2
STADE/ELBE	39782	67/10/19	21	21	7.7	8.5	6.1	6.9	49.0	233.0	2050.					FLASHING MOON	--MPC	49.1
STADE/ELBE	39783	67/10/20	19	38	7.0	8.5	6.3	7.8	77.0	281.0	1380.					FLASHING	--GLU	59.3
STADE/ELBE	39783	67/10/20	19	39	7.7	7.7	6.7	1.30	0.50	60.0	160.0					FLASHING	--GLU	71.3
STADE/ELBE	39783	67/10/20	19	36	8.3	8.3	7.5	1.30	0.50	60.0	160.0					FLASHING DOUBLE MAX	--MK	41.6
STADE/ELBE	39784	67/10/21	17	55	7.5	7.5	6.9	1.30	0.70	73.0	220.0					FLASHING	--MK	65.6
STADE/ELBE	39784	67/10/21	17	57	6.5	8.2	5.9	7.6	0.70	78.0	360.0					FLASHING	--MK	75.4
STADE/ELBE	39784	67/10/21	17	57	6.5	8.2	5.9	7.6	64.0	31.0	1340.					FLASHING	--GLU	63.4

SDC NO. 844 64-42A PERIOD = COSMOS 36 U.S.R. LAUNCHED 64/ 7/30 DECAYED 2/28/65
 92.0 PERIGEE = 159.7 APOGEE = 302.6 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38623	64/ 8/16	4	13	7.5	9.6	47.0	330.0	380.	STEADY							--	113.6

SDC NO. 845 64-428 ROCKET BODY USSR LAUNCHED 64/ 7/30 DECAYED 11/29/64
PERIOD = 91.9 PERIGEE = 156.0 APOGEE = 303.8 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38622	64/	8/15	5	0	7.0	8.5	8.6	10.1	0.34			32.4	335.2	476.	10 CYCLES	--DFC	121.0
WALNUT CREEK	38623	64/	8/16	3	54	7.0	8.5	9.6	11.1	0.30			68.1	328.0	304.	15 CYCLES	--DFC	90.3
STADE/ELBE	38623	64/	8/16	20	48	4.0		5.5		0.37			0.20	27.0	200.0	500.	--HK	56.7
AKRON CANTON	38634	64/	8/27	1	25	3.5	6.0	5.4	7.9	0.43			0.20	40.7	20.7	416.	--FMK	85.8
AKRON CANTON	38635	64/	8/28	1	54	3.0	6.0	5.8	8.8				0.20	81.0	206.0	278.	--FMK	69.8
WICHITA	38636	64/	8/29	2	18	3.0	5.0	4.8	6.8	0.33			42.0	360.0	434.	15 CYCLES TIMED	--PMR	97.4
AKRON-CANTON	38638	64/	8/31	1	42	3.5		4.7					24.0	219.0	565.	TP .4 SEC	--RME	90.2

SDC NO. 848 64-44A COSMOS 37 USSR LAUNCHED 64/ 8/14 RE-ENTERED 8/22/64
PERIOD = 89.4 PERIGEE = 130.5 APOGEE = 176.5 INCL = 64.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38628	64/	8/21	4	22	3.5		6.5					39.0	357.0	250.	STEADY PASSINE POLE STAR	--DFC	103.5
WALNUT CREEK	38629	64/	8/22	4	12	1.5	2.5	5.4	6.4						166.	7ENITH	--DFC	

SDC NO. 849 64-448 ROCKET BODY USSR LAUNCHED 64/ 8/14 DECAYED 9/3/64
PERIOD = 89.6 PERIGEE = 136.1 APOGEE = 186.4 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38629	64/	8/22	4	19	4.0	7.0	7.6	10.6	0.46			50.0	290.0	190.	7 CYCLES IRREGULAR	--DFC	113.0
CAL TECH	38633	64/	8/26	3	28	3.0	5.0	4.5	6.5	1.08			13.0	258.0	490.		--AMW	197.3

SDC NO. 851 64-45B
 PERIOD = 127.4 PERIGEE = 169.0 APOGEE = 2331.4 INCL = 95.7
 USA LAUNCHED 64/ 8/14 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38764	65/	1/	4	18	23	7.5	6.3	0.70	85.0	96.0	1770.	SCINTILLATES TO INVISIBILITY--	GR	70.7			
STADE/ELBE	39331	66/	7/	25	21	56	8.0	9.0	11.1	12.1	67.0	260.0	236.	SHORT OBSERVED VARYING	-- MK	81.8		

SDC NO. 853 64-46A
 PERIOD = 94.4 PERIGEE = 126.8 APOGEE = 479.7 INCL = 56.1
 USSR LAUNCHED 64/ 8/18 DECEASED 11/ 9/64

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-B	38628	64/	8/	21	3	39	4.2	7.1	67.0	47.0	260.	IRREG FLASHING +4 TO +7	--LDM	69.1				
CAL TECH	38628	64/	8/	21	3	39	4.5	8.5	7.4	11.4	2.80	78.5	47.0	260.	SEVERAL FLASHES PER CYCLE	--AMH	72.4	

SDC NO. 854 64-46B
 PERIOD = 94.7 PERIGEE = 127.4 APOGEE = 496.5 INCL = 56.1
 USSR LAUNCHED 64/ 8/18 DECEASED 11/17/64

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
KANSAS-E	38626	64/	8/	19	3	0	6.0	0.0	42.0	228.0	64-46B, SEEN ONLY 3 SECONDS	--BS	84.6					
KANSAS-E	38627	64/	8/	20	2	38	6.0	7.0	41.0	228.0	64-46B	--CRL	90.3					
CAL TECH	38627	64/	8/	20	4	0	7.0	9.8	70.0	50.0	270.	TP 4 OR 5 SEC, MIN INVISIBLE--	AMH	66.7				
SAN ANTONIO	38628	64/	8/	21	2	17	6.7	8.5	32.0	46.4	430.	REG VAR	-- PM	63.0				
VAN NUYS-B	38628	64/	8/	21	3	52	4.5	8.5	7.5	11.5	6.25	LATER HAD IRREGULAR FLASHING--	LDM	77.1				
SAN ANTONIO	38629	64/	8/	22	1	54	6.5	8.3	30.1	46.4	438.	IRREGULAR, FAST	-- PM	82.1				

SDC NO. 856 64-46D PERIOD = 95.3 PERIGEE = 129.9 APOGEE = 531.3 INCL = 56.1
 LAUNCHED 64/ 8/18 DECEASED 2/19/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
CAL TECH	38625	64/	8/	18	4	41	3.0	6.5	4.8	8.3	5.10		31.0	286.0	430.		--AMH	121.7
KANSAS-E	38626	64/	8/	19	-0	-0	2.0		4.2						360.	TP ESTIMATED 3-4 SEC	--CRL	83.1
WALNUT CREEK	38626	64/	8/	19	4	39	2.0	8.0	4.6	10.6	5.85		60.8	235.0	300.	ONE CYCLE	--JGW	92.7
VAN NUYS-F	38627	64/	8/	20	4	31	3.5	5.5	5.8	7.8			45.6	244.0	350.	SMOOTH VAR	--DFC	104.4
WALNUT CREEK	38628	64/	8/	21	4	17	2.5	6.0	4.0	7.5	7.80		34.0	240.0	500.		--AMH	91.8
WALNUT CREEK	38628	64/	8/	21	4	17	2.5	6.0	4.5	8.0	6.30		34.0	240.0	400.		--JGW	81.3
CAL TECH	38628	64/	8/	21	4	19	3.0	9.0	4.8	4.8			30.0	227.0	440.	REGULAR FLASHING	--AMH	91.8
SAN ANTONIO	38629	64/	8/	22	2	31	1.0	4.0	4.1	7.1	5.00		80.0	270.0	242.	1 CYCLE. WHOLE TP. ALT MAX	--JGW	91.6
VAN NUYS-F	38650	64/	9/	12	12	8	4.0		5.7		9.60		25.0	352.5	450.	REGULAR FLASHING	--MK	65.0
STADE/ELBE	38679	64/	10/	11	18	45	1.0	3.0	3.0	5.0			50.0	180.0	450.	REGULAR FLASHING	--MK	72.6
STADE/ELBE	38680	64/	10/	12	18	13	1.0	3.0	2.7	4.7			83.0	360.0	290.	STEADY	--MK	73.8
STADE/ELBE	38692	64/	10/	24	17	54	1.0	1.0	3.7	3.7			45.0	220.0	480.	VARYING	--MK	96.6
STADE/ELBE	38694	64/	10/	26	18	17	2.0	3.0	3.6	4.6			65.0	220.0	400.	STEADY	--MK	91.5
STADE/ELBE	38695	64/	10/	27	17	40	1.8	1.8	3.8	3.8			89.8	360.0	395.	STEADY	--MK	74.0
STADE/ELBE	38728	64/	11/	29	5	19	2.0	2.0	4.0	4.0			85.0	360.0	310.	STEADY	--MK	68.6
STADE/ELBE	38751	64/	12/	22	17	33	2.0	2.0	4.5	4.5			35.0	220.0	300.	STEADY	--MK	71.5
STADE/ELBE	38791	65/	1/	31	6	32	0.1	0.1	2.7	2.7								

SDC NO. 861 64-48A PERIOD = 91.7 PERIGEE = 216.9 APOGEE = 226.2 INCL = 115.0
 LAUNCHED 64/ 8/21 DECEASED 3/31/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38651	64/	9/	13	19	42	1.0	7.0	3.3	9.3			45.0	220.0	350.	REGULAR FLASHING	--MK	83.1
STADE/ELBE	38686	64/	10/	18	17	59	1.5	2.0	3.8	4.3			55.0	140.0	350.	STEADY FAINT VARYING	--MK	52.6
STADE/ELBE	38707	64/	11/	8	4	14	3.0	3.0	5.6	5.6			55.0	55.0	300.	STEADY	--MK	98.3

SDC NO. 863 64-49A ROCKET BODY USSR LAUNCHED 64/ 8/22 DECAYED 9/15/64
PERIOD = 91.1 PERIGEE = 123.0 APOGEE = 288.3 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38648	64/	9/10	12	41	0.3	4.0	3.8	7.5	8.30	35.0	120.0	200.			WHOLE TP. MAX ALTERNATE +0.3, ---JGW 117.6 +2.5. SMOOTH VAR EXCEPT FOR --- 2 SPORADIC SHARP FLASHES --- MIN UNDER +4. WHOLE TP, MAX ---JGW 119.8 ALTERNATE IN BRTNESS. BAD --- PHASE ANG, MUST REPLY BE DIG---		
VAN NUYS-F	38649	64/	9/11	12	31	0.1	4.2			8.41	45.0	90.0	150.					

SDC NO. 864 64-50A COSMOS 42
PERIOD = 98.1 PERIGEE = 141.7 APOGEE = 690.4 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	39650	64/	9/12	11	20	7.0	11.0	7.8	11.8	6.10	6.10	0.50	56.0	334.0	684.	SEE LIGHT CURVE		

SDC NO. 866 64-50B ROCKET BODY USSR LAUNCHED 64/ 8/22 DECAYED 8/ 2/65
PERIOD = 98.0 PERIGEE = 141.7 APOGEE = 680.4 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38648	64/	5/10	11	12	4.5	6.5	5.4	7.4	0.41	0.41	57.2	327.8	670.			--JGM	64.6
VAN NUYS-F	38650	64/	9/12	12	5	4.8	7.0	4.6	6.8	0.40	0.40	22.7	340.0	1090.	TP=12.1S/30 CYCLES		--JGM	81.7
WALNUT CREEK	38650	64/	9/12	12	5	7.0	10.0	7.4	10.4	0.35	0.35	37.5	342.0	819.	15 CYCLES, CHARACTERISTIC		--DFC	81.3
STADE/ELBE	38651	64/	9/13	2	43	2.0	4.5	2.9	5.4	0.38	0.38	0.20	35.0	180.0	650.	PTULAR RAPID FLASHING	--HK	51.2
VAN NUYS-F	38651	64/	9/13	12	31	5.5	5.5	5.1		0.40	0.40	18.2	352.0	1200.			--JGM	91.5
ADELAIDE-2	38652	64/	9/14	10	36	3.5	6.0	4.6	7.1	0.50	0.50	60.3	163.3	600.	TP APPROX		--ACB	67.2
ADELAIDE-2	38655	64/	9/17	10	6	3.0	5.0	4.5	6.5	0.40	0.40	70.0	300.0	500.			--ACB	86.7
STADE/ELBE	38658	64/	9/20	3	53	2.5	6.0	3.4	6.9	0.40	0.40	0.30	35.0	180.0	650.	REGULAR RAPID FLASHING	--HK	69.3
WALNUT CREEK	38666	64/	9/28	3	8	3.0	5.0	3.0	5.0	0.42	0.42	31.0	134.0	1000.	180 CYCLES		--	35.7
VAN NUYS-F	38666	64/	9/28	3	8	3.0	5.0	3.6	5.6	0.44	0.44	51.5	138.5	750.	70 TUMBLES GIVES .442 SEC		--JGM	44.6
BRISTLE BACK	38667	64/	9/29	1	53	3.5	7.0	4.4	7.9	0.45	0.45	68.0	146.0	675.	1964-50R LGT CURVE SMOOTH		--SWR	51.9
VAN NUYS-F	38667	64/	9/29	3	30	3.3	6.0	4.4	7.1	0.44	0.44	87.2	0.0	605.	95 TUMBLES GIVES .444 SEC		--JGM	67.5

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	38667	64/	9/29		3	31	4.0		4.9		0.46		62.5	325.5	669.	35 FLASHES IN 16.2 SEC	--RKR	84.1
ROCHESTER	38668	64/	9/30		0	38	5.0	7.0	5.7	7.7	0.67		51.0	144.0	730.	TUMBLING	--WM	44.0
PHOENIX R	38668	64/	9/30		2	11	5.0	7.0	5.9	7.9	0.50		63.0	139.0	648.	10 FLASHES IN 4.95 SEC	--RR	58.9
BRISTLE BACK	38668	64/	9/30		2	15	4.0	9.0	4.9	8.9	0.44		66.0	10.0	650.	1964-508 LGT CURVE SMOOTH 2	--SWB	69.4
WALNUT CREEK	38668	64/	9/30		3	52	3.0	5.0	4.1	6.1	0.44		88.0	324.0	614.	180 CYCLES	--	67.7
AKRON-CANTON	38669	64/	10/ 1		0	57	2.0		3.1		0.62		82.0	149.0	615.	POSS LOW FREQ VARIATION	--RHE	63.3
BRISTLE BACK	38670	64/	10/ 2		1	18	4.5	8.5	5.6	9.6	0.47		87.4	324.0	595.	1964-508 LGT CURVE SMOOTH 7	--SWB	75.2
PHOENIX R	38670	64/	10/ 2		2	56	5.0	7.0	5.5	7.5	0.46		45.0	333.5	784.	64 508	--RKR	97.5
BRISTLE BACK	38670	64/	10/ 2		3	0	5.5	9.0	5.8	9.3	0.47		40.9	345.0	890.	1964-508 LGT CURVE SMOOTH 3	--SWB	92.4
VAN NUYS-F	38671	64/	10/ 3		3	17	4.5		4.8		0.45		37.5	330.0	880.	30 TUMBLFS GIVES .455 SEC	--JGM	104.6
MOUNT PINOS	38672	64/	10/ 4		3	39	5.5		5.4		0.46		30.0	340.0	1030.	25 TUMBLFS GIVES .456 SEC	--AMH	102.3
STADE/ELBE	38673	64/	10/ 5		20	16	3.0	5.0	3.6	5.6	0.45	0.30	55.0	220.0	750.	REGULAR RAPID FLASHING	--HK	67.2
ROCHESTER	38676	64/	10/ 8		19	37	3.8	6.0	4.4	6.6	0.50	0.30	55.0	220.0	740.	REGULAR RAPID FLASHING	--HK	73.2
STADE/ELBE	38676	64/	10/ 8		19	37	3.8	6.0	4.4	6.6	0.45		64.0	38.0	170.	RAPID TUMBLE	--AA	75.5
DURBAN 8	38778	65/	1/18		17	53	0.1	5.0	3.9	8.8	1.00		50.0	115.0	600.	PERIOD FROM 5 FLASHES	--GR	112.3
DURBAN 8	38798	65/	2/ 7		2	5	1.5		2.6		1.14		50.0	115.0	600.	PERIOD FROM 50 FLASHES	--AA	112.3
DURBAN 8	38798	65/	2/ 7		2	5	1.5		2.6		1.14		10.2	330.0	700.	STEADY	--DFC	109.0
WALNUT CREEK	38798	65/	2/ 7		3	4	4.0		4.8				9.0	350.0	680.	STEADY	--DFC	90.1
WALNUT CREEK	38799	65/	2/ 8		2	54	3.5		4.3		1.26		38.8	325.0		1964-508 PRD TRIPLIED LST OBS	--SWB	103.4
BRISTLE BACK	38809	65/	2/18		1	11	2.0	3.0	0.0	0.0	1.00	0.20	22.0	218.0	361.	TP ON 27 CYCLES	--DD	118.2
TERRE HAUTE	38811	65/	2/20		0	47	4.0	6.5	6.2	8.7	1.26		37.8	46.1	250.		--JGM	43.7
VAN NUYS-F	38811	65/	2/20		2	22	0.6	1.7	3.6	4.7	2.34						--	
FARNHAM	38861	65/	4/11		19	34	1.0	4.0	0.0	0.0			61.0	95.0	240.	SLOW TUMBLE	--GR	42.0
DURBAN 8	38956	65/	7/15		16	45	2.0	6.0	5.1	9.1								

SDC NU. 867 64-50C COSMOS 43 USSR LAUNCHED 64/ 8/22 RE-ENTERED 12/27/65
PERIOD = 98.1 PERIGEE = 140.4 APOGEE = 687.9 INCL = 49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38650	64/	9/12		12	38	8.0	11.0	8.2	11.2	6.00	0.60	30.0	348.0	896.	FLASHES PERIOD APPROX	--DFC	87.0

SDC NO. 869 64-490 COSMOS 41 USSR LAUNCHED 64/ 8/22 IN ORBIT
PERIOD = 714.6 PERIGEE = 265.9 APOGEE = 24711.9 INCL = 64.9

STATION NAME	WJD	Y	M	D	H	M	MAX	MIN	ANAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--065	PHASE
WALNUT CREEK	38770	65/	1/10	8	0	8.5	5.3						54.0	44.0	4300.	STEADY--FADING FOR 15 MIN	--JAB	46.7
WALNUT CREEK	38770	65/	1/10	8	15	10.2	5.9						39.0	36.0	7100.		--JAB	64.4
PHOENIX R	38850	65/	3/31	6	12	11.0	6.4								8240.	MIN INV. OME +9 FLASH SEEN	--RRR	
CLEVELAND	38853	65/	4/ 3	5	40	10.0	5.4					1.60	39.3	323.8	8390.	MIN INV	--DS	90.0
PHOENIX R	38868	65/	4/18	2	49	11.0	7.2						50.4	342.5	5840.	IMAG TO INV	--RRR	104.2
CLEVELAND	38870	65/	4/20	2	27	9.5	9.5	5.6	5.6				41.9	312.7	6120.		--DS	115.1
VAN NUYS-B	39455	66/	11/26	7	12	11.8	12.0	6.6	6.8				54.3	2.5	11200.	SOME FLICKERING	--JGM	49.0
VAN NUYS-F	39459	66/	11/30	5	54	10.5	10.7	6.4	6.6				0.10	71.0	6600.	LITTLE FLASHES	--JGM	41.7
PHOENIX R	39462	66/	12/ 3	5	5	9.0	5.9					2.00			4195.	MIN INV	--8JE	
EDINBURG	39463	66/	12/ 4	5	43	10.0	10.0	4.7	4.7				44.6	354.2	11600.	RANGE 11571 MILES	--PM	50.7
PHOENIX R	39472	66/	12/13	3	15	9.0	9.0	6.0	6.0						4037.	STEADY TRACKED 15 SEC	--RRR	
PHOENIX R	39473	66/	12/14	3	4	8.0	8.0	5.0	5.0						4048.	STEADY	--RR	
VAN NUYS-F	39475	66/	12/16	3	0	10.5	10.8	6.3	6.6				60.4	47.0	6930.	LITTLE FLASHES	--JGM	39.8
VAN NUYS-F	39476	66/	12/17	2	39	10.0	10.3	6.3	6.6				64.3	75.0	5400.	FLASHES	--JGM	41.6
PHOENIX R	39476	66/	12/17	2	41	10.0	11.0	6.4	7.4						5240.	SLOW INR TP	--RRR	
VAN NUYS-F	39477	66/	12/18	2	20	10.0	10.0	6.8	6.8				60.1	111.2	4300.		--JGM	49.2
VAN NUYS-F	39477	66/	12/18	2	38	10.7	10.7	6.4	6.4				57.6	51.0	7100.		--JGM	39.8
VAN NUYS-F	39584	67/	4/ 4	5	36	10.7	10.7	5.6	5.6				52.0	150.0	10300.		--JGM	18.0
VAN NUYS-F	39585	67/	4/ 5	5	25	10.5	10.5	5.4	5.4				51.0	146.0	10300.		--JGM	18.2
VAN NUYS-F	39589	67/	4/ 9	4	45	10.7	10.7	5.5	5.5				47.0	135.0	10800.		--JGM	20.3
OCEANPORT	39589	67/	4/ 9	4	34	12.0	6.6						45.5	271.7	12000.		--GFC	67.0
OCEANPORT	39589	67/	4/ 9	4	44	12.0	6.8						37.7	218.8	11000.	2.5 MINS. LATE	--GFC	33.2
PHOENIX R	39590	67/	4/10	4	48	10.0	10.0	5.2	5.2				37.8	151.6	9045.	STEADY 45 SEC CROSS 10EG FLD	--RRR	18.4
VAN NUYS-F	39597	67/	4/17	3	20	11.0	11.0	5.8	5.8				37.0	120.0	11200.		--JGM	26.6
OCEANPORT	39732	67/	8/30	5	10	11.0	0.0						66.1	142.4			--GFC	34.8

SDC NO.	870	64-51A	PERIOD =	EXPLORER 20	USA	LAUNCHED 64/ 8/25	IN ORBIT											
			PERIOD = 103.9	PERIGEE = 540.6	APOGEE = 634.4	INCL = 79.9												
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39000	65/ 8/28	1	59			7.0	9.0	8.2	10.2	1.70	0.50	80.0	100.0	570.	REGULAR FLASHING	-- HK	76.8
STADE/ELBE	39051	65/10/18	18	42			5.0	9.0	5.9	9.9	2.60	0.10	70.0	70.0	670.	FLASHING	-- HK	52.2
STADE/ELBE	39052	65/10/19	18	58			8.0	9.0	9.0	10.0	2.60	0.10	85.0	260.0	634.	FLASHING	-- HK	70.1
STADE/ELBE	39053	65/10/20	19	13			8.0	9.0	8.7	9.7	2.65	0.10	60.0	260.0	720.	FLASHING	-- HK	89.7
STADE/ELBE	39035	65/10/22	18	1			7.5	8.0	8.3	8.8	2.60	0.10	63.0	100.0	700.	FLASHING	-- HK	46.2
STADE/ELBE	39300	66/ 6/24	22	18			7.7	9.0	8.6	9.9	3.12	0.40	66.0	100.0	652.	REGULAR FLASHING	-- HK	69.1
STADE/ELBE	39356	66/ 8/19	0	46			6.7	9.0	7.6	9.9	3.17	0.60	60.0	100.0	647.	REGULAR FLASHING	-- HK	77.0
STADE/ELBE	39357	66/ 8/20	1	1			6.5	9.0	7.7	10.2	3.17	0.60	89.0	100.0	572.	REGULAR FLASHING	-- HK	69.6
STADE/ELBE	39362	66/ 8/25	0	36			6.5	9.0	7.6	10.1	3.16	0.60	75.0	260.0	598.	REGULAR FLASHING	-- HK	59.8
STADE/ELBE	39364	66/ 8/27	23	39			6.5	9.0	7.6	10.1	3.20	0.50	67.0	100.0	614.	REGULAR FLASHING	-- HK	63.7
STADE/ELBE	39373	66/ 9/ 5	22	30			6.5	8.5	7.7	9.7	3.20	0.80	77.0	100.0	585.	REGULAR FLASHING	-- HK	56.6
STADE/ELBE	39386	66/ 9/18	20	41			7.0	9.0	8.1	10.1	3.20	0.50	70.0	100.0	600.	REGULAR FLASHING	-- HK	48.7
STADE/ELBE	39565	67/ 3/16	20	13			6.8	9.0	7.9	10.1	4.00	0.40	85.0	100.0	593.	REGULAR FLASHING	-- HK	61.2
STADE/ELBE	39649	67/ 6/ 8	22	31			6.7	9.0	7.7	10.0	4.92	0.40	84.0	100.0	640.	REGULAR SHARP FLASHING	-- HK	75.0
STADE/ELBE	39653	67/ 6/12	21	49			7.0	9.0	7.8	9.8	4.95	0.40	74.0	100.0	680.	SHARP FLASHES	-- HK	71.3
STADE/ELBE	39730	67/ 8/28	21	12			7.0	9.0	7.8	9.4	6.50	0.50	55.0	100.0	700.	FLASHING MIN INV HAZE	-- HK	52.0
STADE/ELBE	39734	67/ 9/ 1	20	30			6.5	9.0	6.9	9.4	6.50	0.50	55.0	100.0	850.	FLASHING	-- HK	45.2
STADE/ELBE	39750	67/10/27	3	25			6.0	7.0	7.0		6.00	0.90	89.0	260.0	640.	FLASHING MIN INV	-- HK	64.1
STADE/ELBE	39855	67/12/31	18	24			6.0	7.3	7.3		6.80	85.0	260.0	560.	SHARP FLASHES MIN INV	-- HK	67.9	
STADE/ELBE	39990	68/ 5/14	23	34			6.5	7.6	7.6		7.00	78.0	100.0	600.	FLASHING MIN INV PER APPROX	-- HK	71.6	

SD68-629

SDC NO.	871	64-51B	PERIOD =			ALTAR			USA			LAUNCHED 64/ 8/25			IN ORBIT			
			PERIOD = 103.9			PERIGEE = 540.0			APOGEE = 630.7			INCL = 79.9						
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38795	65/ 2/ 4	11	27			7.0		6.4		12.70		17.0	271.0	1340.	TRIPLET MAXIMA 1 SEC APART	--ACB	129.3
VAN NUYS-F	38806	65/ 2/15	2	21			5.0		5.7		13.50		61.0	99.5	710.	ALT 5 MAG 2 SEC AND 6 MAG 1	--JGM	52.9
PHOENIX R	38809	65/ 2/18	3	7			5.0	6.0	4.5	5.5	15.80	2.00	22.0	293.0	1277.	SEC FLASH MIN INV	--RKR	129.5
STPETERGBURG	38811	65/ 2/20	0	6			6.0	9.0	0.0	0.0						MAX 1.25 SEC APART	--FK	
SAN ANTONIO	38811	65/ 2/20	1	51			5.0		4.4		15.00		21.0	291.2	1305.	ROUGH PERIOD MAYBE BRIGHTER	--PM	133.9
MADISON	38813	65/ 2/22	0	40			4.7	8.3	5.1	8.7			46.6	290.6	816.	IRREGULAR VARIATIONS	--GCL	117.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	40004	68	5	28	5	19	5.0	6.2	5.7	6.9	34.00	1.50	48.0	98.0	730.	MOST MAX +5.5	--JGW	41.8

SDC NO. 872 64-52A NIMBUS 1 USA LAUNCHED 64/ 8/28 IN ORBIT
PERIOD = 98.4 PERIGEE = 266.6 APOGEE = 581.0 INCL = 98.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38881	65	5	1	0	19	6.5	8.0	8.2	9.7	1.50	0.80	35.0	100.0	453.	FLASHING PERIOD 1.5 SEC	-- HK	82.7
STADE/ELBE	38882	65	5	2	0	54	4.2	7.5	7.0	10.3	1.50	0.80	82.0	260.0	279.	FLASHING OR VARYING	-- HK	67.4
STADE/ELBE	38973	65	8	1	0	45	5.5	6.0	6.0	6.5	2.40	1.00	47.0	100.0	810.	FLASHING OR VAR	-- HK	84.0
STADE/ELBE	38986	65	8	14	1	50	4.5	5.5	6.5	7.5	1.00	0.80	43.0	260.0	400.	FLASHING NIMBUS 1	-- HK	46.6
STADE/ELBE	39561	67	3	12	3	59	3.5	6.5	4.8	7.8	4.50	1.00	50.0	100.0	550.	FLASHING MIN INV LOW ALTITUD	-- HK	109.3
STADE/ELBE	39781	67	10	18	18	13	7.0	9.0	3.3	10.3	1.80	0.80	12.0	31.0	800.	FLASHING SEC MAXIMA	-- HK	64.3
STADE/ELBE	39834	67	12	10	16	57	2.0	9.0	3.3	10.3	8.30	43.0	260.0	550.	FLASHING MIN INV	-- HK	120.9	
STADE/ELBE	39854	67	12	30	16	35	2.0	3.9	12.10	85.0	100.0	420.	BRIGHT FLASHES	-- HK	74.3			

SDC NO. 876 64-53A COSMOS 44 USSR LAUNCHED 64/ 8/28 IN ORBIT
PERIOD = 99.5 PERIGEE = 379.7 APOGEE = 495.2 INCL = 65.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DENVER	38637	64	8	30	2	54	2.5	7.0	3.6	8.1	3.94	45.0	275.0	600.	FLASHING	--	117.0	
STADE/ELBE	38662	64	9	24	18	33	4.0	4.0	4.9	4.9		35.0	55.0	650.	STEADY	-- HK	51.1	
STADE/ELBE	38662	64	9	24	20	13	4.0	4.0	5.5	5.5		89.5	55.0	490.	STEADY	-- HK	64.5	
STADE/ELBE	38663	64	9	25	20	26	4.0	4.5	5.1	5.6		65.0	55.0	600.	FAINT VARYING	-- HK	59.8	
STADE/ELBE	38665	64	9	27	19	34	3.0	3.0	4.5	4.5		85.0	220.0	490.	STEADY	-- HK	69.4	
STADE/ELBE	38669	64	10	1	18	6	2.5	2.5	4.0	4.0		75.0	55.0	500.	STEADY OCASS FAINT VARYING	-- HK	68.7	
STADE/ELBE	38671	64	10	3	18	13	4.5	4.5	5.9	5.9		75.0	220.0	520.	STEADY	-- HK	85.2	
STADE/ELBE	38748	64	12	19	16	9	5.0	6.5	5.2	6.7		50.0	315.0	900.	VARYING	-- HK	94.0	
STADE/ELBE	38830	65	3	11	19	44	4.0	5.0	5.3	6.3		60.0	315.0	550.	VARYING	-- HK	96.6	
STADE/ELBE	39122	65	12	28	17	4	5.0	7.0	5.2	7.2	18.00	1.00	30.0	300.0	920.	FLASHING	-- HK	114.9
STADE/ELBE	39203	66	3	19	18	36	6.0	6.5	7.5	8.0		82.0	310.0	510.	STEADY WITH FLASH 12.8 SEC	-- HK	87.0	
HEIDELBERG	39280	66	6	4	23	15	5.6	5.6	6.5	6.5		39.0	330.0	669.	STEADY	-- GLU	117.2	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39283	66/	6/	7	20	52	4.8	5.5	5.7	6.4			41.0	82.0	661.	IRREG. VARIATIONS	--GLU	62.8
STADE/ELBE	39383	66/	9/15	19	8		5.0	5.5	5.9	6.4			30.0	140.0	670.	STEADY AND FAINT VARYING	--HK	28.7
STADE/ELBE	39387	66/	5/19	19	21		5.0	6.0	7.0	8.0			75.0	315.0	400.	VARYING	--HK	87.6
STADE/ELBE	39388	66/	9/20	18	33		5.0	5.0	6.5	6.5			70.0	140.0	500.	STEADY	--HK	63.2
STADE/ELBE	39510	67/	1/20	18	0		5.0	5.0	6.3	6.3			60.0	100.0	550.	STEADY	--HK	41.8
STADE/ELBE	39593	67/	4/13	20	56		5.0	5.0	5.8	5.8			58.0	55.0	700.	STEADY	--HK	71.0
STADE/ELBE	39594	67/	4/14	20	11		5.0	6.5	6.1	7.6			60.0	55.0	600.	VARYING	--HK	69.8
STADE/ELBE	39596	67/	4/16	20	18		6.0	6.0	6.5	6.5			30.0	140.0	800.	STEADY SHORT OBSERVED	--HK	16.1
HEIDELBERG	39672	67/	7/	1	23	33	6.2	6.2	7.0	7.0			31.0	50.0	700.	STEADY	--GLU	112.5
STADE/ELBE	39676	67/	7/	5	23	44	5.5	6.0	6.9	7.4			85.0	220.0	515.	STEADY OCCAS FAINT VARYING	--HK	72.4
STADE/ELBE	39681	67/	7/10	23	8		6.5	6.5	7.3	7.3			50.0	220.0	700.	STEADY	--HK	50.9
HEIDELBERG	39681	67/	7/10	23	9		4.4	4.4	5.3	5.3			63.0	260.0	650.	STEADY	--GLU	71.7
HEIDELBERG	39683	67/	7/12	21	34		6.4	6.4	7.0	7.0			43.0	100.0	750.	STEADY	--GLU	53.2
HEIDELBERG	39692	67/	7/21	21	8		5.3	5.3	5.9	5.9			34.0	240.0	750.	STEADY	--GLU	66.1
HEIDELBERG	39755	67/	9/22	21	2		7.2	7.2	7.8	7.8			25.0	25.0	750.	STEADY	--GLU	94.7
HEIDELBERG	39756	67/	5/23	20	10		5.4	5.4	6.7	6.7			73.0	260.0	550.	STEADY	--GLU	76.0
HEIDELBERG	39757	67/	5/24	19	23		5.1	5.1	6.0	6.0			60.0	100.0	650.	STEADY	--GLU	41.2
HEIDELBERG	39758	67/	9/25	20	17		3.9	3.9	4.6	4.6			45.0	335.0	720.	STEADY	--GLU	102.5
STADE/ELBE	39760	67/	5/27	18	42		5.0	5.5	5.9	6.4			52.0	140.0	650.	STEADY	--HK	45.9
HEIDELBERG	39764	67/10/	1	18	53		4.5	6.5	5.3	7.3			42.0	330.0	680.	SLOWLY TUMB	--GLU	108.0
HEIDELBERG	39774	67/10/11	17	40			6.2	6.2	6.0	6.0			21.0	327.0	1100.	STFADY	--GLU	116.8
STADE/ELBE	39862	68/	1/	7	17	42	5.0	5.7	6.1	6.8			60.0	315.0	600.	FAINT SLOWLY VAR MOST STEADY	--HK	88.1
STADE/ELBE	39907	68/	2/21	5	11		7.0	7.0	8.0	8.0			88.0	140.0	630.	ST RIG HAZE	--HK	97.9
GRANBY	39910	68/	2/24	9	21		6.0	6.0	0.0	0.0			67.3	92.6			--MPC	66.0
STPETERSBURG	39941	68/	3/26	1	13		3.0	3.0	0.0	0.0			66.0	310.0	600.	VERY SLOWLY TUMB	--FK	47.7
STADE/ELBE	39941	68/	3/26	21	17		5.3	7.0	6.4	8.1			86.0	60.0	520.		--HK	85.8
VAN NUYS-F	39942	68/	3/27	3	47		6.0	6.0	7.4	7.4			68.0	283.0	580.	ST	--JGW	66.8
HEIDELBERG	39942	68/	3/27	20	26		5.2	5.2	6.4	6.4			48.1	339.6			--GLU	85.8
STPETERSBURG	39943	68/	3/28	1	19		7.0	7.0	0.0	0.0			40.0	339.0	750.		--FK	95.5
VAN NUYS-F	39944	68/	3/29	3	53		7.0	7.0	7.6	7.6			52.5	316.6			--JGW	103.5
STPETERSBURG	39946	68/	3/31	0	35		5.5	5.5	0.0	0.0			40.0	37.0	735.	ST	--FK	109.2
HEIDELBERG	39968	68/	4/22	19	55		5.1	5.1	5.8	5.8			83.0	319.0	495.	ST	--GLU	82.1
HEIDELBERG	39969	68/	4/23	20	49		3.8	3.8	5.3	5.3			54.0	81.0	605.	ST	--GLU	77.8
HEIDELBERG	39973	68/	4/27	19	17		4.2	4.2	5.3	5.3							--GLU	57.1

SDC NO.	877	64-538	PERIOD =		ROCKET BODY		USSR		LAUNCHED 64/ 8/28		IN ORBIT							
					99.6		PERIGEE =		428.1		APOGEE =		490.9		INCL = 65.1			
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38650	64/	9/12	23	9	9	4.0	6.5	5.7	8.2	0.60	0.40	88.0	55.0	455.	REGULAR RAPID FLASHING	-- HK	58.6
STADE/ELBE	38661	64/	9/23	19	47	19	4.5	6.5	5.8	7.8	0.66	0.40	55.0	55.0	550.	REGULAR RAPID FLASHING	-- HK	59.3
STADE/ELBE	38662	64/	9/24	19	2	4.5	4.5	6.0	5.4	6.9	0.69	0.40	40.0	55.0	650.	REGULAR RAPID FLASHING	-- HK	54.5
STADE/ELBE	38663	64/	9/25	19	55	19	4.5	6.0	6.2	7.7	0.69	0.40	89.5	55.0	460.	REGULAR RAPID FLASHING	-- HK	66.3
STADE/ELBE	38665	64/	9/27	20	5	4.0	4.0	6.5	4.8	7.3	0.70	0.40	55.0	220.0	700.	REGULAR RAPID FLASHING	-- HK	71.6
STADE/ELBE	38669	64/10/	1	18	42	4.0	4.0	6.0	5.4	7.4	0.70	0.40	75.0	220.0	520.	REGULAR RAPID FLASHING	-- HK	80.4
STADE/ELBE	38830	65/	3/11	18	34	5.0	7.5	6.6	9.1	4.30	20.00	1.50	80.0	315.0	480.	REGULAR FLASHING	-- HK	86.3
STADE/ELBE	38936	65/	6/25	22	42	6.0	8.0	7.0	6.4	8.4	20.00	1.50	50.0	225.0	641.	SLOWLY FLASHING	-- HK	58.3
STADE/ELBE	38937	65/	6/26	21	55	5.0	7.0	6.4	6.4	8.4	20.00	1.50	75.0	225.0	526.	LONG FLASHING	-- HK	73.6
DURBAN 8	39190	66/	3/	6	17	31	5.0	5.0	5.6	5.6			40.0	266.0	750.	STEADY	--AA	123.9
STADE/ELBE	39203	66/	3/19	19	42	6.0	6.5	7.0	7.0	7.5			50.0	310.0	630.	STEADY NCASS FAINT VARYING	-- HK	109.8
STADE/ELBE	39309	66/	7/	3	22	3	5.0	5.0	6.6	6.6			70.0	50.0	469.	STEADY	-- HK	86.1
STADE/ELBE	39383	66/	9/15	20	6	5.5	5.5	5.5	7.2	7.2			65.0	140.0	450.	STEADY	-- HK	44.9
STADE/ELBE	39386	66/	9/18	19	28	5.0	5.0	5.0	6.7	6.7			70.0	140.0	450.	STEADY	-- HK	54.3
STADE/ELBE	39387	66/	5/19	2	22	6.0	6.0	6.0	8.0	8.0			80.0	55.0	400.	STEADY	-- HK	77.4
STADE/ELBE	39493	67/	1/	3	17	29	5.0	5.0	5.9	5.9			45.0	315.0	650.	STEADY	-- HK	97.1
STADE/ELBE	39594	67/	4/14	20	9	7.0	7.0	7.0	7.9	7.9			40.0	55.0	650.	STEADY	-- HK	69.3
STADE/ELBE	39596	67/	4/16	20	18	7.0	7.0	7.0	8.2	8.2			64.0	55.0	580.	STEADY	-- HK	70.9
STADE/ELBE	39676	67/	7/	5	23	48	6.7	6.7	7.6	7.5			66.0	55.0	650.	STEADY	-- HK	92.4
HEIDELBERG	39756	67/	9/23	20	23	5.0	6.0	6.0	6.3	7.3			68.0	85.0	540.	SLOWLY TUMBLE	--GLU	47.4
HEIDELBERG	39757	67/	9/24	19	37	6.2	6.2	6.2	6.7	6.7			37.0	100.0	800.	STEADY	--GLU	21.3
STADE/ELBE	39761	67/	5/28	19	54	6.0	8.0	8.0	7.1	9.1			78.0	310.0	600.	SLOWLY TUMBLING HAZE	-- HK	77.6
HEIDELBERG	39791	67/10/28	17	2	6.5	6.5	6.5	6.5	6.4	6.4			21.0	31.0	1070.	ST	--GLU	48.9
STADE/ELBE	39862	68/	1/	7	17	8	6.5	6.5	7.4	7.4			50.0	140.0	650.	ST	-- HK	64.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADEFELBE	38881	65/	5/	1	0	40	3.0	3.0	5.6	5.6	1.00	0.50	65.0	100.0	302.	STEADY	-- HK	77.0
STADEFELBE	39204	66/	3/	20	2	45	7.0	8.0	8.7	9.7	1.00	0.50	55.0	310.0	450.	OBSERVATION ENTRY SHADOW	-- HK	62.5
STADEFELBE	39246	66/	5/	1	2	26	3.5	7.5	5.5	9.5	5.36	0.50	65.0	100.0	396.	FLASHING MAX VERY BRIGHT	-- HK	94.2
PPOYNTON	39832	67/12/	8	17	13	2.1	3.6	4.7	6.2	6.2	0.64	90.0	0.0	300.	TP 0.639 +/- 0.002	--DMB	78.6	
PPOYNTON	39846	67/12/16	17	28	3.4	4.9	5.9	7.4	7.4	7.4	0.66	60.0	270.0	320.	TP 0.656 +/- 0.005	--DMB	104.6	
STADEFELBE	39843	67/12/19	17	8	4.7	4.7	6.4	6.4	6.4	6.4	0.66	0.30	37.0	270.0	450.	SHARP FLASHES MIN INV	-- HK	123.7
STADEFELBE	39844	67/12/20	17	34	5.0	5.0	6.5	6.5	6.5	6.5	0.66	0.30	20.0	270.0	510.	SHARP FLASHING MIN INV	-- HK	137.7
PPOYNTON	39849	67/12/25	18	5							0.67	30.0	290.0		TP 0.670 +/- 0.002	--DMB	121.2	
PPOYNTON	39853	67/12/29	18	10							0.68	27.0	300.0		TP 0.683 +/- 0.005	--DMB	117.4	
STADEFELBE	39863	68/ 1/ 8	17	32	5.0	5.0	5.8	5.8	5.8	5.8	0.70	0.40	35.0	260.0	700.	SHARP FLASHES MIN INV	-- HK	126.6
PPOYNTON	39864	68/ 1/ 9	17	57							0.74	50.0	240.0		TP 0.705	--DMB	114.0	
PPOYNTON	39878	68/ 1/26	18	54							0.77	25.0	270.0		TP 0.742	--DMB	134.1	
STADEFELBE	39881	68/ 1/26	5	51	5.0	9.0	6.1	10.1	10.1	10.1	0.76	60.0	100.0	600.	FLASHING	-- HK	112.1	
PPOYNTON	39883	68/ 1/28	6	41							0.80	50.0	270.0		TP 0.756	--DMB	108.1	
GRANBY	39892	68/ 2/ 6	23	0	4.0	8.0	0.0	0.0	0.0	0.0	0.75	31.9	278.7		SHARP FLASHING	--FK	133.0	
STPETERSBURG	39900	68/ 2/14	0	11	5.0	5.0	8.0	8.0	8.0	8.0	0.83	18.6	271.5			--MPC	143.8	
STPETERSBURG	39901	68/ 2/15	0	34	6.0	6.0	0.0	0.0	0.0	0.0	0.84	31.0	263.0		SHARP FLASHING MIN INV	--MPC	137.1	
GRANBY	39905	68/ 2/19	23	27	5.0	5.0	0.0	0.0	0.0	0.0	0.84	31.0	262.0		SHARP FLASHING MIN INV	--MPC	138.4	
GRANBY	39909	68/ 2/23	23	24	6.0	6.0	0.0	0.0	0.0	0.0	0.84	18.0	269.0		SHARP FLASHING MIN INV	--GLU	147.5	
GRANBY	39910	68/ 2/24	23	47	6.0	6.0	6.6	6.6	6.6	6.6	0.84	24.0	279.0		IRREG VAR	--GLU	143.6	
HEIDELBERG	39912	68/ 2/26	18	5	6.2	6.2	6.6	6.6	6.6	6.6	0.84	13.3	264.4	815.	TP EST 1 SEC	--FK	148.3	
STPETERSBURG	39955	68/ 4/ 9	0	40	3.0	3.0	0.0	0.0	0.0	0.0	0.84	13.3	264.4			--FK	148.3	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
STPETERSBURG	39545	67	2	24	0	31	5.0	5.0	5.8	5.8	5.8		71.2	26.8	700.		--	FK	66.5

SDC NO. 892 64-628 PERIOD = 90.1 M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS

STATION NAME	MJD	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN JOSE	38679	64/10/11	2	29	-1.0	5.0	2.8	8.8	2.38	0.20	58.0	60.0	177.	FLASH 1.5 EVERY OTHER CYCLE	--KRW	52.1	
VAN NUYS-F	38679	64/10/11	2	30	1.0	5.0	5.0	8.0	2.37	0.30	75.0	10.0	160.	TP ABOUT 35.8RT EST THRU FOG	--JDR	74.0	
SAN JOSE	38680	64/10/12	2	15	-1.5	4.0	2.5	8.0	2.37	0.30	77.4	57.9	155.	RPT FLSH EVERY OTHER CYCLE	--KRW	70.6	
VAN NUYS-F	38680	64/10/12	2	15	0.1	2.7	4.1	6.7	2.48		75.0	260.0	160.	GOOD MAG. 2 SPURADIC FLASHES	--JGM	93.5	
															SEEN BETWEEN SMOOTH MAX	--JGM	

SDC NO. 893 64-63A PERIOD = 106.3 M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS

STATION NAME	MJD	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38686	64/10/18	19	26	4.5	4.5	5.4	5.4	5.4			75.0	100.0	675.0	STEADY	--MK	47.4
DURGAN B	38895	65/ 5/15	16	32	6.5	7.0	7.4	7.9	7.9			78.0	265.0	670.0	SLOW FADE	--AA	83.9
DURGAN B	38899	65/ 5/19	16	18	6.5	6.5	7.4	7.4	7.4			75.0	265.0	670.0	STEADY	--GR	89.1
STADE/ELBE	39199	66/ 3/15	21	18	6.0	6.0	5.5	5.5	5.5			25.0	360.0	1250.0	STEADY	--MK	111.6
STADE/ELBE	39335	66/ 7/29	23	52	3.0	3.0	3.1	3.1	3.1			35.0	100.0	969.0	STEADY	--MK	76.7
STADE/ELBE	39579	67/ 3/30	19	38	6.0	8.0	6.6	8.6	8.6			60.0	55.0	750.0	REGULAR FLASHING	--MK	63.9
STADE/ELBE	39776	67/10/13	18	13	6.0	6.5	6.6	7.1	7.1			53.0	360.0	750.0	ST OR 6504803	--MK	82.5
STADE/ELBE	39941	68/ 3/26	19	21	5.5	6.0	5.5	6.0	6.0			42.0	100.0	1000.0	SLOWLY TUMB MOST ST	--MK	30.5
STADE/ELBE	39941	68/ 3/26	21	7	6.2	6.2	6.3	6.3	6.3			47.0	260.0	950.0	ST	--MK	88.6
HEIDELBERG	39942	68/ 3/27	20	12	5.0	5.0	5.9	5.9	5.9			84.0	91.0	675.0	ST	--GLU	62.5
HEIDELBERG	39943	68/ 3/28	19	15	7.0	7.0	7.0	7.0	7.0			39.0	79.0	980.0	ST	--GLU	38.6
VAN NUYS-F	39944	68/ 3/29	4	12	5.8	5.8	6.3	6.3	6.3			53.0	86.0	810.0	ST	--JGM	34.6
STADE/ELBE	39944	68/ 3/29	20	3	5.8	5.8	6.6	6.6	6.6			86.0	100.0	700.0	ST	--MK	67.6
HEIDELBERG	39945	68/ 3/30	19	7	6.9	6.9	7.0	7.0	7.0			39.0	79.0	970.0	ST	--GLU	39.2
HEIDELBERG	39945	68/ 3/30	20	54	7.3	7.3	7.6	7.6	7.6			45.0	279.0	885.0	ST	--GLU	100.8
STADE/ELBE	39950	68/ 4/ 4	19	39	7.0	7.0	7.8	7.8	7.8			87.0	100.0	700.0	ST BIG HAIR CLOUDS	--MK	73.1
STADE/ELBE	39952	68/ 4/ 6	19	31	6.2	6.2	7.0	7.0	7.0			87.0	100.0	700.0	ST MOON	--MK	74.7
VAN NUYS-F	39956	68/ 4/10	3	25	7.0	7.0	7.5	7.5	7.5			54.0	86.0	800.0	ST	--JGM	44.3
STADE/ELBE	39956	68/ 4/10	19	17	5.5	5.5	5.6	5.6	5.6			50.0	180.0	950.0	ST MOON	--MK	64.8
VAN NUYS-F	39958	68/ 4/12	3	17	5.8	5.8	6.3	6.3	6.3			54.0	86.0	800.0	ST	--JGM	45.9

SDC NO. 897 64-638 TRANSIT USA LAUNCHED 64/10/ 6 IN ORBIT
PERIOD = 106.6 PERIGEE = 656.2 APOGEE = 673.6 INCL = 89.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38858	65	5	18	16	40	8.5	8.5	8.8	8.8			50.0	266.0	890.	STEADY	--AA	109.0
STADE/ELBE	39356	66	8	19	23	9	9.0	9.0	9.8	9.8			83.0	100.0	684.	STEADY	--MK	64.8
STADE/ELBE	39802	67	11	8	17	43	9.0	9.0	9.8	9.8			83.0	260.0	700.	ST 3 RT OBS THEN LOST	--MK	70.2

SDC NO. 898 64-45E USSR LAUNCHED 64/ 8/22 IN ORBIT
PERIOD = 715.8 PERIGEE = 219.3 APOGEE = 24795.1 INCL = 64.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38787	65	1	27	10	58	8.9	8.8	5.1	5.1			27.4	309.8	5500.		--JGW	44.4
VAN NUYS-F	38787	65	1	27	11	12	10.2	10.7	5.9	6.4			41.0	336.0	7100.	TP ABOUT 2 MINUTES	--JGW	52.3
OCEANPORT	39522	67	2	1	23	40	12.5		7.7				64.5	325.5	9091.		--GFG	85.5
OCEANPORT	39523	67	2	2	0	33	13.0		7.1				57.1	2.1	15200.	RANGE 15,208	--GFG	66.6
OCEANPORT	39523	67	2	2	1	16	13.5		7.1				54.4	12.5	18800.	RANGE 18,793	--GFG	59.3
OCEANPORT	39526	67	2	5	23	18	11.0		6.6				60.4	293.9	7431.		--GFG	102.7
OCEANPORT	39529	67	2	8	23	30	11.0		6.1				61.3	319.2	9489.		--GFG	92.7
OCEANPORT	39530	67	2	8	23	51	12.5		7.1				59.9	341.1	12100.	+10ENTERING, +10LEAVING, FLARE	--GFG	81.7
OCEANPORT	39530	67	2	9	1	5	13.0		6.6				55.3	8.2	18900.	RANGE 18,860	--GFG	64.0
OCEANPORT	39530	67	2	9	2	3	13.0		6.3				56.2	17.9	22200.	RANGE 22,108	--GFG	56.2
OCEANPORT	39531	67	2	10	23	27	12.0		7.1				60.4	317.9	9533.		--GFG	94.7
OCEANPORT	39532	67	2	11	23	25	12.0		7.1				59.7	317.2	9555.		--GFG	95.9
OCEANPORT	39532	67	2	11	23	47	12.0	13.0	6.6	7.6			59.1	338.8	12200.		--GFG	84.4
OCEANPORT	39533	67	2	12	23	24	11.0		6.1				59.3	316.7	9578.		--GFG	96.7
OCEANPORT	39534	67	2	13	1	1	13.0		6.6				55.7	6.2	18900.		--GFG	66.4
OCEANPORT	39535	67	2	13	2	2	13.0		6.3				57.2	15.8	22200.		--GFG	58.1
OCEANPORT	39535	67	2	14	23	21	12.0		7.1				58.2	315.7	9625.		--GFG	98.7
OCEANPORT	39536	67	2	15	1	13	13.0		6.6				56.0	8.0	18900.	1 MINUTE TP, RANGE 18,939	--GFG	65.4
OCEANPORT	39545	67	2	24	23	29	12.0		6.6				55.6	331.3	12300.	RANGE 12,325	--GFG	95.2
OCEANPORT	39546	67	2	25	0	0	12.5		6.6				55.9	346.4	15400.	RANGE 15,425	--GFG	84.9
OCEANPORT	39547	67	2	26	23	24	12.0		6.5				54.9	329.1	12400.	RANGE 12,372	--GFG	97.7
OCEANPORT	39547	67	2	26	23	57	12.0		6.0				55.6	345.4	15500.	RANGE 15,465	--GFG	86.4
OCEANPORT	39548	67	2	27	0	42	13.0		6.6				56.5	358.1	18900.	RANGE 18,911	--GFG	76.3
OCEANPORT	39550	67	3	1	23	52	13.0		7.0				55.7	343.8	15500.		--GFG	88.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
OCEANPORT	39551	67	3	2	0	36	13.0		6.6				56.3	356.1	19000.	+11 FLARE	--GFG	78.0
OCEANPORT	39552	67	3	3	0	35	13.5		7.1				56.3	355.5	19000.	+11.5 FLARE	--GFG	79.6
OCEANPORT	39552	67	3	3	1	36	13.5		6.8				59.5	4.0	22200.	+13.5 TO INV.	--GFG	70.0
OCEANPORT	39552	67	3	3	23	49	13.0		7.0				54.7	342.5	15600.	+13 TO INV.	--GFG	90.6
OCEANPORT	39553	67	3	4	0	35	13.0		6.6				56.2	355.0	19000.	+11.5 FLARE	--GFG	80.2
OCEANPORT	39557	67	3	8	0	30	12.5		6.1				56.1	353.2	19100.	+13 FLARE	--GFG	82.9
OCEANPORT	39559	67	3	10	1	29	13.0		6.3				60.0	359.4	22200.		--GFG	74.7
OCEANPORT	39560	67	3	11	1	27	13.0		6.3				59.9	358.6	22300.		--GFG	75.6
VAN NUYS-F	39910	68	2	24	7	17	10.8	11.5	5.9	6.6			64.0	214.0	9440.	TP ABOUT 2 MINUTES, FLICKER	--JGM	26.5
VAN NUYS-F	39911	68	2	25	7	10	10.5	11.5	5.6	6.6	94.00		65.0	213.0	9420.		--JGM	27.4
VAN NUYS-F	39933	68	3	18	4	40	10.7	11.5	5.9	6.7			67.0	167.0	9160.	FLICKER TOO.	--JGM	46.1
VAN NUYS-F	39934	68	3	19	4	33	10.3	11.3	5.5	6.5	92.00		67.0	164.0	9160.		--JGM	46.7
VAN NUYS-F	39935	68	3	20	4	26	10.2	11.2	5.4	6.4	93.00		67.0	162.0	9150.	SOME MAX AT HALF PERIOD	--JGM	47.7

SDC NO. 899 6'-64A PERIOD = 104.8 EXPLORER 22 USA LAUNCHED 64/10/10 IN ORBIT
PERIGEE = 550.5 APOGEE = 672.3 INCL = 79.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38937	65	6	26	17	20	6.5	6.5	7.4	7.4			89.0	209.0	660.	STEADY	--AA	62.0
DURBAN B	38938	65	6	27	17	47	6.5	6.5	6.7	6.7			47.0	266.0	900.	STEADY	--AA	98.1
DURBAN B	38939	65	6	28	16	30	6.5	6.5	7.0				47.0	94.0	800.	SCINTILLATING	--AA	31.3
DURBAN B	38940	65	6	29	16	57	6.5	6.5	7.4	7.4			87.0	253.0	660.	STEADY	--GR	69.3
DURBAN B	38941	65	6	30	17	25	7.5	7.5	7.9	7.9			45.0	266.0	850.	STEADY	--AA	104.6
DURBAN B	38942	65	7	1	16	7	8.0	8.0	8.4	8.4			49.0	93.0	840.	SCINTILLATING	--GR	38.7
DURBAN B	38943	65	7	2	16	25	7.0	7.0	7.9	7.9			83.5	260.0	660.	STEADY	--GR	79.4
DURBAN B	38944	65	7	3	17	3	3.0	7.5	3.2	7.7			41.0	266.0	920.	REACHED +3 ONCE IN A FLASH	--GR	112.8
DURBAN B	38950	65	7	9	16	17	7.0	7.0	7.2	7.2			38.0	266.0	920.	STEADY	--AA	123.9
STADE/ELBE	38973	65	8	1	1	20	7.0	7.5	8.2	8.7			87.0	100.0	570.	STEADY AND FAINT VARYING	--HK	76.5
STADE/ELBE	38999	65	8	27	21	54	7.5	7.5	8.6	8.6			75.0	260.0	603.	STEADY	--HK	70.7
STADE/ELBE	39057	65	10	24	4	20	8.0	8.0	8.4	8.4	1.50		50.0	260.0	830.	STEADY	--FK	34.3
STPETERSBURG	39814	67	11	20	0	38	9.0	9.0	0.0	0.0			26.1	161.9			--FK	71.2
STPETERSBURG	39817	67	11	23	0	18	7.0	7.0	0.0	0.0			56.0	80.7			--FK	33.8
GRANDY	39819	67	11	25	23	59	8.0	8.2	9.0	9.2			78.0	256.0		IRREG. VARYING	--MPC	73.1
STPETERSBURG	39821	67	11	27	0	22	7.0	7.0	0.0	0.0			66.9	297.2			--FK	85.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
GRANBY	39821	67/11/27	0	27	8.3	8.5	8.6	8.8					42.0	277.0	880.	IRREG VARYING	--MPC	103.9
GRANBY	39821	67/11/27	23	8	8.2	8.7	8.8	9.3					56.0	114.0	750.	IRREG RAPID VARYING	--MPC	45.0
STADE/ELBE	39824	67/11/30	17	34	8.0	8.3	8.6	8.9					55.0	100.0	750.	ST WITH FAINT FLICKER .5 SEC	--MK	37.1
GRANBY	39828	67/12/4	22	49	8.2	8.7	9.1	9.6					73.0	261.0	660.	IRREG VAR	--MPC	90.6
STADE/ELBE	39937	68/3/22	2	16	8.0	8.5	8.8	9.3					69.0	100.0	700.	FAINT IRREG VAR	--MK	78.0
STADE/ELBE	39971	68/4/25	21	8	6.5	7.5	6.9	7.9					47.0	100.0	850.	VERY SLOWLY VAR	--MK	48.1
STADE/ELBE	39972	68/4/26	21	33	7.7	7.7	8.6	8.6					84.0	100.0	650.	ST	--MK	67.5

SDC NO. 900 64-63C CALSPHERE 1 USA LAUNCHED 64/10/6 IN ORBIT
PERIOD = 106.6 PERIGEE = 652.4 APOGEE = 676.1 INCL = 89.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38895	65/5/15	16	39	9.0	9.8	9.8						66.0	266.0	700.	SCINTILLATING	--GR	94.1
STADE/ELBE	39765	67/10/2	19	49	6.5	6.5	7.1	7.1					77.0	100.0	750.	ST	--MK	52.8
STADE/ELBE	39765	67/10/2	19	51	8.5	8.5	9.0	9.0					53.0	360.0	800.	ST	--MK	86.9
STADE/ELBE	39939	68/3/24	20	23	9.0	9.0	9.8	9.8					85.0	100.0	700.	ST	--MK	62.9

SDC NO. 902 64-63E CALSPHERE 2 USA LAUNCHED 64/10/6 IN ORBIT
PERIOD = 106.6 PERIGEE = 656.2 APOGEE = 673.6 INCL = 89.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39765	67/10/2	20	17	9.0	9.0	9.6	9.6					72.0	260.0	770.	ST	--MK	74.0
STADE/ELBE	39939	68/3/24	20	22	9.0	9.0	9.8	9.8					85.0	100.0	700.	ST	--MK	63.0

SDC NO. 905 64-65B PERIOD = 90.0 PERIGEE = 108.7 APOGEE = 233.6 INCL = 64.7
 LAUNCHED 64/10/12 DECEASED 10/20/64
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
 VAN NUYS-F 38688 64/10/20 1 55 -0.5 1.5 3.0 5.0 5.90 36.5 67.0 200. BRIGHT. ONE SPORADIC FLASH --JGW 31.3

SDC NO. 913 64-65A COSMOS 49 PERIOD = 91.9 PERIGEE = 161.6 APOGEE = 295.2 INCL = 48.9
 LAUNCHED 64/10/24 RE-ENTERED 8/21/65
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
 STADE/ELBE 38724 64/11/25 17 30 5.5 5.5 7.6 7.6 30.0 180.0 380. STEADY -- HK 87.5

SDC NO. 922 64-72A PERIOD = 95.0 PERIGEE = 318.1 APOGEE = 326.8 INCL = 82.0
 LAUNCHED 64/11/ 4 IN ORBIT
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
 STADE/ELBE 38792 65/ 2/ 1 5 50 3.5 3.5 5.0 5.0 35.0 260.0 500. STEADY 31.4
 STADE/ELBE 38940 65/ 6/29 22 42 2.0 2.5 4.2 4.7 65.0 260.0 361. STEADY 78.7
 DUBAN B 38963 65/ 7/22 16 34 2.5 2.5 4.2 4.2 45.0 93.0 450. STEADY -- AA 30.0
 DUBAN B 38964 65/ 7/23 16 19 2.0 2.0 3.9 3.9 38.0 95.0 420. STEADY -- GR 26.5
 STADE/ELBE 38999 65/ 8/27 1 50 6.0 6.0 6.8 6.8 25.0 315.0 680. STEADY -- HK 87.6
 STADE/ELBE 39145 66/ 1/20 5 43 3.5 3.5 5.2 5.2 45.0 310.0 450. STEADY -- HK 37.3
 VAN NUYS-F 39150 66/ 1/25 2 27 5.2 7.3 59.5 280.0 380. STEADY --JGW 103.3
 STADE/ELBE 39150 66/ 1/25 18 21 4.0 6.1 6.1 6.1 55.0 260.0 380. STEADY -- HK 102.7
 STADE/ELBE 39356 66/ 8/19 23 55 3.0 4.1 4.1 4.1 35.0 100.0 600. STEADY -- HK 75.1
 STADE/ELBE 39396 66/ 5/28 19 10 4.0 4.0 6.3 6.3 85.0 260.0 350. STEADY -- HK 75.6
 STADE/ELBE 39510 67/ 1/20 17 29 6.0 6.0 7.7 7.7 55.0 260.0 450. STEADY -- HK 109.4
 STADE/ELBE 39636 67/ 5/26 23 57 4.0 4.0 6.5 6.5 89.0 100.0 320. STEADY -- HK 75.2
 STADE/ELBE 39642 67/ 6/ 1 23 25 3.0 3.0 5.0 5.0 60.0 260.0 400. STEADY -- HK 72.0
 STADE/ELBE 39708 67/ 8/ 6 23 50 3.5 3.5 4.5 4.5 27.0 100.0 630. STEADY -- HK 77.5

SDC NO.	924	64-74A	PERIOD =	EXPLORER 23	USA	LAUNCHED 64/11/ 6	IN ORBIT											
			99.2	PERIGEE =	288.3	APOGEE =	608.3	INCL = 51.9										
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38999	65/ 9/27	20	48	2.0	9.0	3.2	10.2	0.50	75.0	180.0	579.				BRIGHT FLASHES OF MAG 2	-- HK	60.5
STADE/ELBE	39076	65/11/12	16	49	2.0	9.0	2.5	9.5	0.10	65.0	180.0	790.				FLASHING	-- HK	85.3
STADE/ELBE	39076	65/11/12	18	32	2.5	9.0	4.3	10.8	0.10	70.0	180.0	430.				FLASHING	-- HK	62.7
STADE/ELBE	39077	65/11/13	17	39	2.0	9.0	3.8	10.8	0.10	70.0	180.0	430.				FLASHING	-- HK	73.5
STADE/ELBE	39078	65/11/14	16	47	2.5	9.0	4.5	11.0	0.10	73.0	180.0	405.				FLASHING	-- HK	83.0
STADE/ELBE	39114	65/12/20	5	22	2.5	9.0	3.6	10.1	0.20	75.0	180.0	606.				FLASHING	-- HK	76.1
STADE/ELBE	39260	66/ 5/15	0	32	3.5	9.0	5.1	10.6	0.40	50.0	180.0	470.				ONLY ONE FLASH OBSERVED	-- HK	37.0
STADE/ELBE	39276	66/ 5/31	21	25	2.5	9.0	4.2	10.7	0.20	65.0	180.0	448.				BRIGHT FLASHES	-- HK	46.9
STADE/ELBE	39146	66/ 1/21	17	13	2.0	9.0	4.4	11.4	0.20	65.0	180.0	330.				FLASHING	-- HK	84.9
STADE/ELBE	39209	66/ 3/25	20	18	2.0	9.0	3.0	10.0	0.10	75.0	180.0	620.				BRIGHT FLASHES OF MAG 2	-- HK	59.5
OCEANPORT	39280	66/ 6/ 4	1	23	4.0	10.0	4.4		0.10	15.0	9.6	843.				1 FLASH OF +4 NOTED	--GFG	117.1
ROCHESTER	39284	66/ 6/ 8	2	59	10.0	10.0	11.8		40.5	218.0	432.					64-74A	--RJ	63.2
STADE/ELBE	39337	66/ 7/31	22	33	2.5	9.0	3.6	10.1	0.20	75.0	180.0	599.				BRIGHT REGULAR FLASHING	-- HK	58.3
STADE/ELBE	39339	66/ 8/ 2	22	30	2.0	9.0	3.1	10.1	0.20	75.0	180.0	599.				BRIGHT REGULAR FLASHING	-- HK	57.9
STADE/ELBE	39341	66/ 8/ 4	20	42	2.0	9.0	3.1	10.1	0.20	72.0	180.0	607.				BRIGHT REGULAR FLASHING	-- HK	65.8
STADE/ELBE	39341	66/ 8/ 4	22	25	2.0	9.0	3.1	10.1	0.20	70.0	180.0	513.				BRIGHT REGULAR FLASHING	-- HK	53.0
STADE/ELBE	39343	66/ 8/ 6	22	21	2.0	9.0	3.0	10.0	0.50	63.0	180.0	642.				BRIGHT REGULAR FLASHING	-- HK	46.2
STADE/ELBE	39418	66/10/20	17	39	1.5	9.0	3.2	10.7	0.20	60.0	180.0	450.				BRIGHT FLASHES	-- HK	78.6
STADE/ELBE	39418	66/10/20	19	21	2.5	9.0	3.8	10.3	0.20	50.0	220.0	550.				ONLY ONE FLASH THEN SHADOW	-- HK	79.5
STADE/ELBE	39419	66/10/21	18	29	1.5	9.0	3.5	11.0	0.20	77.0	180.0	400.				BRIGHT FLASHES	-- HK	67.5
STADE/ELBE	39425	66/10/27	18	14	1.5	9.0	2.6	10.1	0.20	46.8	180.0	595.				BRIGHT FLASHES	-- HK	71.3
STPETERSBURG	39432	66/11/ 3	23	45	8.0	8.0	8.9		0.20	38.7	360.0	650.				BRIGHT FLASHES	--FK	73.7
STADE/ELBE	39493	67/ 1/ 3	17	46	1.0	9.0	2.3	10.3	0.50	60.0	180.0	550.				FLASH PER MORE THAN 200 SEC	-- HK	76.9

SDC NO.	931	64-76A	PERIOD =	EXPLORER 24	USA	LAUNCHED 64/11/22	IN ORBIT											
			116.3	PERIGEE =	329.9	APOGEE =	1552.2	INCL = 81.4										
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38743	64/12/14	4		5	5.0	5.0	5.0	5.9				20.0	100.0	650.	STEADY	--	HK 130.1
STADE/ELBE	38750	64/12/21	17		55	3.0	3.0	3.0	3.4				70.0	100.0	850.	STEADY	--	HK 47.5
STADE/ELBE	38752	64/12/23	18		24	3.5	3.5	3.5	4.6				70.0	260.0	600.	STEADY	--	HK 82.0
STADE/ELBE	38762	65/ 1/ 2	16		46	3.0	3.0	3.0	4.7				80.0	100.0	450.	STEADY	--	HK 69.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38826	65	3	7	20	13	6.0	6.0	5.1	5.1			89.5	260.0	1540.	STEADY	-- HK	63.5
STADE/ELBE	38830	65	3	11	18	52	5.0	5.0	4.0	4.0			70.0	100.0	1600.	STEADY	-- HK	55.5
STADE/ELBE	38838	65	3	19	20	18	5.5	5.5	4.8	4.8			50.0	260.0	1400.	STEADY	-- HK	95.9
STADE/ELBE	38937	65	7	26	21	40	3.7	3.7	4.7	4.7			30.0	260.0	635.	STEADY	-- HK	97.2
DURBAN B	38946	65	7	5	17	34	4.5	4.5	5.0	5.0			64.0	266.0	800.	STEADY	--AA	84.7
DURBAN B	38949	65	7	8	16	58	3.0	3.0	4.5	4.5			86.0	255.0	500.	STEADY	--GR	70.7
DURBAN B	38950	65	7	9	18	3	4.5	4.5	3.9	3.9			18.0	264.0	1300.	STEADY	-- GR	124.1
DURBAN B	38955	65	7	14	15	45	6.5	6.5	7.5	7.5			45.0	93.0	640.	STEADY	-- GR	40.9
DURBAN B	38956	65	7	15	16	50	5.0	5.0	5.2	5.2			30.0	266.0	900.	STEADY	--GR	126.7
DURBAN B	38958	65	7	17	17	5	7.5	7.5	6.9	6.9			14.0	265.0	1300.	STEADY	--AA	139.0
STADE/ELBE	38986	65	8	14	1	36	5.7	5.7	4.8	4.8			88.0	100.0	1500.	STEADY	-- HK	74.2
STADE/ELBE	39023	65	9	20	21	58	5.0	5.0	5.2	5.2			65.0	260.0	920.	STEADY	-- HK	65.5
EDINBURG	39056	65	10	23	1	22	2.3	2.3	4.4	4.4			84.9	180.0	372.	STEADY	-- PM	71.0
STADE/ELBE	39145	66	1	20	6	7	7.0	7.0	5.8	5.8			50.0	100.0	1740.	STEADY	-- HK	118.2
STADE/ELBE	39196	66	3	12	0	53	5.0	5.0	4.9	4.9			55.0	100.0	1030.	STEADY	-- HK	68.1
STADE/ELBE	39240	66	4	25	20	35	3.0	3.0	5.1	5.1			80.0	260.0	380.	STEADY	-- HK	80.9
STADE/ELBE	39241	66	4	26	19	40	3.5	3.5	4.7	4.7			35.0	100.0	575.	STEADY	-- HK	36.1
STPETERSBURG	39248	66	5	3	1	45	3.0	3.0	3.9	3.9			42.0	69.7	650.	STEADY	--FK	48.2
STADE/ELBE	39330	66	7	24	0	38	5.0	5.0	4.2	4.2			62.0	260.0	1459.	STEADY	-- HK	64.4
STADE/ELBE	39331	66	7	25	22	40	5.0	5.0	4.1	4.1			57.0	100.0	1489.	STEADY	-- HK	64.7
STADE/ELBE	39334	66	7	28	21	43	6.0	6.0	4.8	4.8			42.0	100.0	1724.	STEADY	-- HK	54.4
STADE/ELBE	39337	66	7	31	22	41	5.5	5.5	4.8	4.8			80.0	100.0	1378.	STEADY	-- HK	69.1
STADE/ELBE	39351	66	8	14	20	38	5.5	5.5	4.5	4.5			65.0	100.0	1577.	STEADY	-- HK	58.0
STADE/ELBE	39352	66	8	15	21	36	5.0	5.0	4.1	4.1			75.0	260.0	1538.	STEADY	-- HK	76.8
PHOENIX R	39357	66	8	20	5	5	6.0	6.0	5.0	5.0			60.2	290.0	1575.	TRACKED 130 SEC	--RKR	85.1
PHOENIX R	39359	66	8	22	5	5	6.0	6.0	4.8	4.8			52.0	308.0	1700.	TRACKED 90 SEC	--RKR	95.0
PHOENIX R	39371	66	9	3	4	50	6.0	6.0	4.2	4.2			20.8	305.0	2275.	STEADY	--RR	124.7
PHOENIX R	39374	66	9	6	3	47	7.0	7.0	5.7	5.7			33.0	314.2	1800.	STEADY	--RR	120.4
STPETERSBURG	39463	66	12	4	1	23	4.0	4.0	3.2	3.2			80.2	31.0	1450.	STEADY	--FK	47.9
STPETERSBURG	39465	66	12	6	1	4	4.0	4.0	3.2	3.2			76.0	118.0	1470.	STEADY	--FK	47.4
STPETERSBURG	39467	66	12	8	0	41	4.0	4.0	3.2	3.2			71.0	104.0	1450.	STEADY	--FK	46.5
PHOENIX R	39468	66	12	9	3	19	6.0	6.0	5.0	5.0					1550.	STEADY	--RR	
PHOENIX R	39472	66	12	13	2	34	6.0	6.0	5.2	5.2					1455.	STEADY	--RR	
PHOENIX R	39473	66	12	14	3	21	6.0	6.0	4.7	4.7					1800.	STEADY	--RKR	
PHOENIX R	39476	66	12	17	1	46	6.0	6.0	5.2	5.2					1414.	STEADY	--RR	
STADE/ELBE	39477	66	12	18	17	35	5.0	5.0	4.1	4.1			75.0	260.0	1500.	STEADY	-- HK	84.0
STADE/ELBE	39479	66	12	20	17	12	5.0	5.0	4.2	4.2			83.0	260.0	1450.	STEADY	-- HK	79.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39480	66/12/21			0	57	5.0	5.0	3.4	3.4			31.5	281.9	2100.		--FK	114.8
STPETERSBURG	39480	66/12/21			23	47	4.0	4.0	3.1	3.1			69.0	334.0	1500.		--FK	79.0
STPETERSBURG	39484	66/12/25			0	6	5.0	5.0	3.8	3.8			42.5	216.0	1700.		--FK	110.7
STADE/VELBE	39485	66/12/26			5	55	4.8	4.8	4.5	4.5			88.0	260.0	1130.	STEADY	--HK	74.3
STADE/VELBE	39577	67/ 3/28			19	16	3.0	3.0	4.3	4.3			60.0	260.0	550.	STEADY	--HK	101.8
STADE/VELBE	39637	67/ 5/27			23	14	5.5	5.5	4.6	4.6			55.0	260.0	1500.	STEADY	--HK	72.7
STPETERSBURG	39658	67/ 6/17			1	34	4.0	4.0	3.6	3.6			31.0	39.5	1200.		--FK	80.1
STPETERSBURG	39661	67/ 6/20			2	16	4.0	4.0	4.6	4.6			55.5	297.2	750.		--FK	103.1
GRANBY	39757	67/ 9/24			2	52	7.0	7.0	6.3	6.3			13.0	1.0	1400.		--MPC	115.0
HEIDELBERG	39768	67/10/ 5			20	22	4.0	4.0	4.7	4.7			53.0	279.0	710.	STEADY	--GLU	91.2
STADE/VELBE	39771	67/10/ 8			18	40	5.0	5.0	5.5	5.5			47.0	100.0	800.	ST	--HK	29.3
HEIDELBERG	39773	67/10/10			19	19	4.7	4.7	5.5	5.5			82.0	298.0	690.	STEADY	--GLU	72.7
HEIDELBERG	39774	67/10/11			18	45	4.0	4.0	4.7	4.7			71.0	79.0	740.	STEADY	--GLU	52.7
HEIDELBERG	39775	67/10/12			18	9	4.4	4.4	4.6	4.6			49.0	82.0	910.	STEADY	--GLU	36.0
HEIDELBERG	39776	67/10/12			19	58	4.7	4.7	4.7	4.7			42.0	278.0	990.	STEADY	--GLU	103.7
STADE/VELBE	39776	67/10/13			19	25	4.8	4.8	5.0	5.0			55.0	260.0	900.	ST	--HK	93.9
HEIDELBERG	39782	67/10/19			17	37	5.4	5.4	5.7	5.7			67.0	81.0	880.	STEADY	--GLU	55.3
HEIDELBERG	39783	67/10/20			19	45	5.4	5.4	5.2	5.2			43.0	250.0	1080.	STEADY	--GLU	107.7
HEIDELBERG	39784	67/10/21			18	10	5.4	5.4	5.7	5.7			72.0	282.0	890.	STEADY	--GLU	90.0
STADE/VELBE	39784	67/10/21			18	10	5.0	5.0	5.4	5.4			80.0	260.0	850.	ST	--HK	81.7
GRANBY	39784	67/10/21			23	31	6.5	6.5	6.6	6.6			59.0	279.0	950.	STEADY	--MPC	103.2
GRANBY	39787	67/10/24			23	24	5.8	5.8	5.7	5.7			51.0	275.0	1050.		--MPC	111.8
HEIDELBERG	39788	67/10/25			17	25	5.5	5.5	5.7	5.7			86.0	318.0	910.	ST	--GLU	80.7
HEIDELBERG	39791	67/10/28			17	17	5.7	5.7	5.8	5.8			75.0	283.0	970.	ST CLOUDS	--GLU	92.9
STPETERSBURG	39792	67/10/29			0	21	5.0	5.0	0.0	0.0			17.4	293.5			--FK	133.2
GRANBY	39793	67/10/30			9	15	5.0	5.0	5.0	5.0			68.0	313.0	1000.		--MPC	52.4
GRANBY	39866	68/ 1/11			23	17	4.5	4.5	5.4	5.4			46.0	66.0	675.		--MPC	29.4
GRANBY	39868	68/ 1/13			0	11	4.5	4.5	5.4	5.4			48.0	271.0	650.		--MPC	104.2
GRANBY	39868	68/ 1/13			23	16	5.0	5.0	6.2	6.2			60.0	70.0	580.	MOON,HAZF	--MPC	42.9
HEIDELBERG	39875	68/ 1/20			16	45	4.0	4.0	4.7	4.7			55.0	81.0	710.	ST	--GLU	48.8
HEIDELBERG	39876	68/ 1/21			17	33	3.8	3.8	4.7	4.7			62.0	280.0	660.	ST	--GLU	101.1
HEIDELBERG	39942	68/ 3/27			21	37	4.9	4.9	4.8	4.8			60.0	82.0	1035.	ST	--GLU	49.6
HEIDELBERG	39945	68/ 3/30			21	27	5.0	5.0	5.0	5.0			66.0	81.0	995.	ST	--GLU	51.6
STADE/VELBE	39951	68/ 4/ 5			20	46	5.0	5.0	5.1	5.1			70.0	100.0	950.	ST MOON	--HK	53.3
STPETERSBURG	39955	68/ 4/ 9			1	25	4.0	4.0	0.0	0.0			36.0	80.5			--FK	30.7
STPETERSBURG	39956	68/ 4/10			1	51	5.0	5.0	0.0	0.0			52.3	47.3			--FK	56.6
STPETERSBURG	39959	68/ 4/13			1	20	5.0	5.0	0.0	0.0			50.2	63.0			--FK	49.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39962	68	4	16	2	31	6.0	6.0	0.0	0.0			33.0	285.0			--FK	112.1
HEIDELBERG	39963	68	4	17	20	18	5.0	5.0	5.2	5.2			59.0	279.0	895.	ST	--GLU	99.1
STPETERSBURG	39968	68	4	22	1	37	3.0	5.0	0.0	0.0		0.50	31.5	283.5		3 MAG FLASH VIOLET COLOR	--FK	125.8

SDC NO. 932 64-768 EXPLORER 25 USA LAUNCHED 64/11/22 IN ORBIT
PERIOD = 116.2 PERIGEE = 326.2 APOGEE = 1552.8 INCL = 81.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38945	65	7	4	17	12	8.0	8.0	8.8	8.8			73.0	97.0	700.	STEADY MAINLY	--GR	47.0
HEIDELBERG	39244	66	4	29	19	36	7.6	7.6	8.7	8.7			37.0	82.0	616.	STEADY	--GLU	47.9
STADE/ELBE	39979	68	5	3	22	40	6.8	6.8	6.2	6.2			35.0	260.0	1300.	ST	--HK	78.6

SDC NO. 933 64-76C ROCKET BODY USA LAUNCHED 64/11/22 IN ORBIT
PERIOD = 116.3 PERIGEE = 330.6 APOGEE = 1550.3 INCL = 81.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39979	68	5	3	22	40	6.8	6.8	6.2	6.2			35.0	260.0	1300.	ST	--HK	78.6

SDC NO. 947 64-80A COSMOS 51 USSR LAUNCHED 64/12/ 9 RE-ENTERED 11/14/65
PERIOD = 92.6 PERIGEE = 160.3 APOGEE = 337.4 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38943	65	7	2	16	48	6.5	6.5	8.8	8.8			45.0	264.0	350.	STEADY	--GR	111.1

SDC NO.	959	64-83C	RADIATION										USA	LAUNCHED 64/12/13 IN ORBIT			
			PERIOD = 106.3 PERIGEE = 639.4 APOGEE = 673.6 INCL = 90.0														
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	39581	67/ 4/ 1	19	57		8.0	8.0	8.0	8.8	8.8			79.0	100.0	700.	STEADY	-- HK 62.6
STADE/ELBE	39765	67/10/ 2	20	15		8.0	8.0	8.6	8.6				70.0	260.0	770.	ST	-- HK 75.8
STADE/ELBE	39944	68/ 3/29	20	50		8.7	8.7	8.7	8.7				46.0	260.0	980.	ST	-- HK 93.3
HEIDELBERG	39945	68/ 3/30	20	52		8.2	8.2	9.0	9.0				70.0	77.0	690.	ST	-- GLU 57.4
STADE/ELBE	39945	68/ 3/30	19	53		8.0	8.0	8.7	8.7				77.0	100.0	720.	ST	-- HK 60.8
STADE/ELBE	39951	68/ 4/ 5	19	28		3.2	8.0	4.0	8.8				78.0	100.0	700.	SLOWLY VAR MOON	-- HK 66.3

SDC NO.	965	64-83D	TRANSIT										USA	LAUNCHED 64/12/13 IN ORBIT			
			PERIOD = 106.3 PERIGEE = 638.8 APOGEE = 675.4 INCL = 90.0														
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
SAN ANTONIO	38875	65/ 4/25	2	29		8.0	8.0	8.4	8.4				49.2	273.6	828.	STEADY	-- PM 110.1
SAN ANTONIO	38881	65/ 5/ 1	2	5		9.0	9.0	9.4	9.4				49.1	273.6	835.	VERY SLIGHT VARIANCE	-- PM 116.1
DURBAN B	38898	65/ 5/18	15	46		7.0	7.0	7.9	7.9				87.0	139.0	670.	STEADY	-- AA 79.1
STADE/ELBE	39052	65/10/19	18	54		6.0	6.5	7.0	7.5				80.0	100.0	645.	STEADY FAINT VARYING	-- HK 56.2
STADE/ELBE	39203	66/ 3/19	20	12		8.0		8.1					40.0	100.0	939.	IRREGULAR VAR LATER MAG 7	-- HK 26.5
STADE/ELBE	39375	66/ 9/ 7	21	37		7.0	7.0	7.8	7.8				80.0	100.0	699.	STEADY	-- HK 57.4
STADE/ELBE	39579	67/ 3/30	20	14		9.0	9.0	9.9	9.9				85.0	100.0	650.	STEADY	-- HK 65.5
HEIDELBERG	39701	67/ 7/30	23	10		8.0	8.0	8.2	8.2				34.0	100.0	900.	STEADY	-- GLU 65.6

SDC NO. 973		65-3A		PERIOD = 97.6 PERIGEE = 287.1 APOGEE = 517.6 INCL = 98.8										USA		LAUNCHED 65/ 1/19 IN ORBIT			
STATION NAME		MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE		38881	65/	5/	1	22	16	6.5	9.0	7.2	9.7	2.20	0.50	42.0	260.0	727.	FLASHING DOUBLE FLASH PER	--	HK 81.3
STADE/ELBE		38882	65/	5/	2	21	3	7.0	8.5	8.2	9.7	4.50	0.50	60.0	100.0	588.	FLASHING WITH DOUBLE FLASH	--	HK 56.0
STADE/ELBE		38937	65/	6/26	21	30		6.5	9.0	8.5	11.0	2.00	0.50	47.0	100.0	394.	FLASHING	--	HK 58.8
STADE/ELBE		38938	65/	6/27	21	55		6.5	8.0	9.1	10.6	2.15	0.50	85.0	260.0	298.	REGULAR FLASHING	--	HK 80.3
STADE/ELBE		38958	65/	7/17	22	11		6.5	8.5	8.8	10.8	2.50	0.50	72.0	260.0	350.	FLASHING	--	HK 79.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	38971	65	7	30	22	46	6.0	9.0	6.5	9.5	1.10	0.50	45.0	260.0	800.	FLASHING	-- HK	78.1
STADE/ELBE	38986	65	8	14	22	34	6.5	9.0	7.8	10.3			60.0	260.0	550.	FLASHING	-- HK	73.5
STADE/ELBE	39259	66	5	14	23	54	6.5	9.0	8.5	11.0			88.0	275.0	400.	FLASHING OCASS DOUBLE FLASH	-- HK	72.6
HEIDELBERG	39261	66	5	16	23	8	6.5	9.0	7.5	10.0	3.10	0.20	34.0	82.0	644.	FLASHING, MIN. INVISIBLE	--GLU	81.9
STADE/ELBE	39291	66	6	15	23	59	5.5	8.5	8.1	11.1			78.0	100.0	306.	FLASHING	-- HK	77.3
STADE/ELBE	39301	66	6	25	0	25	4.5	9.0	6.7	11.2	3.90	0.30	60.0	260.0	367.	FLASHING	-- HK	67.7

SDC NO. 978 65-4A PERIOD = 119.2 TIROS 9 USA LAUNCHED 65/ 1/22 IN ORBIT
PERIGEE = 440.6 APOGEE = 1603.1 INCL = 96.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
SAN ANTONIO	38973	65	8	1	3	41	8.7		9.7				79.2	216.6	626.		-- PM	63.8
SAN ANTONIO	38977	65	8	5	3	3	8.0		9.6						484.		-- PM	
SAN ANTONIO	38979	65	8	7	2	44	8.5		9.7				84.9	148.0	573.		-- PM	68.6
SAN ANTONIO	38980	65	8	8	2	34	7.7	7.7	8.6	8.6			86.7	138.2	653.		-- PM	71.7
SAN ANTONIO	38981	65	8	9	2	25	8.0	8.0	8.6	8.6					744.		-- PM	
SAN ANTONIO	38987	65	8	15	2	26	8.5		8.9						849.		-- PM	
SAN ANTONIO	38990	65	8	18	2	58	8.5		9.3						680.		-- PM	
SAN ANTONIO	38995	65	8	23	2	10	9.5		10.0						794.		-- PM	
SAN ANTONIO	38996	65	8	24	2	1	9.2		9.5						871.		-- PM	

SDC NO. 983 65-6A PERIOD = 98.8 COSMOS 53 USSR LAUNCHED 65/ 1/30 RE-ENTERED 8/12/66
PERIGEE = 137.3 APOGEE = 731.4 INCL = 48.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
WICHITA	38835	65	3	16	2	40	5.0	5.0	4.9	4.9			36.7	360.0	1066.	STEADY THROUGH FIELD	--PMR	88.7
STADE/ELBE	39022	65	5	19	19	15	5.5	6.5	7.3	8.3			42.0	200.0	430.	STEADY SLOWLY VARYING	-- HK	75.3

SDC NO. 984 65-68 ROCKET BODY USSR LAUNCHED 65/ 1/30 DECAYED 1/11/65
PERIOD = 98.7 PERIGEE = 139.2 APOGEE = 728.2 INCL = 48.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38826	65/	3/	17	19	18	5.5	8.0	5.9	8.4	0.40		50.0	220.0	850.	REGULAR RAPID FLASHING	-- HK	88.7
DURBAN B	38941	65/	6/	30	16	40	2.0	3.0	4.0	5.0	0.93		27.0	266.0	400.	PULSING	--AA	129.5
HEIDELBERG	39133	66/	1/	8	17	26	5.8	6.7	7.5	8.4	1.00		19.0	223.0	466.	ROCKET OF COSMOS 53	--GLU	133.7

SDC NO. 987 65-7A OSO 2 USA LAUNCHED 65/ 2/ 3 IN ORBIT
PERIOD = 96.4 PERIGEE = 339.9 APOGEE = 389.6 INCL = 32.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38882	65/	5/	2	2	55	7.0		8.6				55.0	96.0	480.	SLOW SCINTILLATION	-- AA	104.3
DURBAN B	38882	65/	5/	2	2	57	8.0		8.5				27.0	85.0	800.	SCINTILLATING MORE RAPIDLY	-- GR	133.5
DURBAN B	38893	65/	5/	13	16	14	6.0		6.5		0.35		22.0	353.0	800.	RAPID SCINTILLATION	--GR	103.3
DURBAN B	38954	65/	7/	13	16	18	6.5		7.9				46.0	93.0	520.	SCINTILLATING	-- AA	34.2
SAN ANTONIO	38976	65/	8/	4	2	40	9.0		11.0						393.		-- PM	
SAN ANTONIO	38977	65/	8/	5	2	47	7.0		9.1						373.		-- PM	
SAN ANTONIO	38979	65/	8/	7	3	0	8.0	8.0	9.4	9.4					532.		-- PM	
VAN NUYS-F	39023	65/	9/	20	2	51	7.0	7.0	9.0	9.0			59.8	169.0	390.		--JGW	68.6
VAN NUYS-F	39024	65/	9/	21	2	57	7.0	7.0	9.2	9.2			71.7	174.0	360.		--JGW	71.5

SDC NO. 1000 65-88 TRUSS USA LAUNCHED 65/ 2/11 IN ORBIT
PERIOD = 145.6 PERIGEE = 1727.4 APOGEE = 1738.6 INCL = 32.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-2	38815	65/	2/	24	10	17	8.0		6.5				73.0	290.0	2000.	SEEN FOR 10 SECONDS	--ACB	93.1
ADELAIDE-2	38816	65/	2/	25	10	37	7.0		5.6	8.1			71.1	45.3	1900.	T.P. ABOUT 5 MINUTES	--ACB	58.5
VAN NUYS-B	38868	65/	4/	18	5	14	8.0	9.5	6.7	8.2			72.7	195.7	1790.	HAS FLASHES, DIPS, CYCLES	--JGW	52.4
CAL TECH	38869	65/	4/	19	5	31	7.0	9.0	5.8	7.8	180.00		66.5	199.3	1700.	QUITE FAINT, LONG TP	--JDR	48.4
VAN NUYS-F	38870	65/	4/	20	5	48	7.8	8.5	6.4	7.1			60.1	200.0	1910.	IRREGULAR OR SEMIREGULAR	--JGW	44.2
CAL TECH	38871	65/	4/	21	3	27	7.0	8.0	5.8	6.8	40.00		81.3	187.4	1750.	IRREGULAR, SMOOTH VARIATION	--AWH	75.3
VAN NUYS-F	38871	65/	4/	21	3	27	7.3	8.8	6.1	7.6			81.6	187.4	1750.		--JGW	75.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38871	65/	4/	21	6	5	7.7	8.0	6.2	6.5			53.1	206.0	2010.	ALMOST STEADY	--JGM	43.4
CAL TECH	38871	65/	4/	21	6	5	8.5	8.5	7.0	7.0			52.5	206.1	2010.	CLOUDS, HARD TO FOLLOW	--AMH	43.3
MOUNT PINUS	38882	65/	5/	2	3	57	8.0	10.0	6.4	9.4			48.0	209.0	2100.	IRREGULAR VARIATION	--JGM	77.0
DURBAN B	38907	65/	5/	27	17	59	8.5	9.0	7.2	7.7			67.0	310.0	1850.	SCINTILLATING	--GR	72.6
DURBAN B	38915	65/	6/	4	17	39	9.0		7.6				64.0	266.0	1800.	SCINTILLATING OR TUMBLE	--GR	82.5
DURBAN B	38913	65/	6/	2	17	9	8.5	8.5	7.2	7.2			78.0	94.0	1900.	STEADY	--AA	51.6
DURBAN B	38913	65/	6/	2	19	5	9.5	9.5	8.0	8.0			62.0	253.0	2000.	STEADY	--AA	65.8
DURBAN B	38914	65/	6/	3	17	24	7.5	7.5	6.3	6.3			84.0	264.0	1740.	STEADY	--GR	66.0
DURBAN B	38919	65/	6/	8	16	12	8.0	8.0	6.7	6.7			88.0	253.0	1400.	STEADY	--GR	77.0
DURBAN B	38920	65/	6/	9	16	27	8.0	8.0	6.7	6.7			69.0	267.0	1800.	STEADY	--GR	92.1
DURBAN B	38921	65/	6/	20	16	59	9.5	10.5	8.3	9.3			77.0	272.0	1750.	SCINTILLATING	--AA	78.6
DURBAN B	38933	65/	6/	22	17	35	8.0	8.0	6.7	6.7			74.0	338.0	1840.	STEADY	--AA	67.8
DURBAN B	38934	65/	6/	23	17	51	8.5	8.5	7.0	7.0			59.0	295.0	2000.	SLOW TUMBLE	--AA	85.0
DURBAN B	38935	65/	6/	24	18	10	8.5	8.5	7.0	7.0			56.0	329.0	2000.	STEADY	--AA	75.3
DURBAN B	38935	65/	6/	24	18	15	9.0	9.0	7.3	7.3			46.0	11.0	2220.	STEADY	--AA	59.7
DURBAN B	38935	65/	6/	24	18	20	10.0	10.0	7.8	7.8			31.0	29.0	2700.	STEADY	--AA	53.8
DURBAN B	38936	65/	6/	25	18	30	7.0	7.0	5.8	5.8			78.0	266.0	1750.	STEADY	--GR	91.6
DURBAN B	38937	65/	6/	26	18	44	8.5	9.5	6.8	6.8			46.0	344.0	2220.	STEADY	--AA	71.8
DURBAN B	38938	65/	6/	27	16	24	7.5	7.5	5.6	5.6			40.0	322.0	2350.	STEADY	--AA	83.5
DURBAN B	38939	65/	6/	28	16	39	7.5	7.5	6.2	6.2			74.0	344.0	1840.	STEADY	--AA	82.8
DURBAN B	38940	65/	6/	29	16	58	8.0	8.0	6.6	6.6			62.0	300.0	1900.	STEADY	--GR	97.7
DURBAN B	38942	65/	7/	1	17	36	8.5	9.0	7.0	7.0			50.0	335.0	2000.	SCINTILLATING	--GR	93.9
DURBAN B	38943	65/	7/	2	17	51	9.0	8.5	6.6	6.6			36.0	354.0	2420.	STEADY	--GR	83.6
DURBAN B	39058	65/	12/	4	3	32	7.0	7.7	5.4	6.1			33.0	335.0	2450.	STEADY	--AA	94.3
VAN NUYS-F	39113	65/	12/	19	2	32	9.7	10.7	7.3	8.3			49.4	206.5	2070.	SOME SMALL FLASHES	--JGM	81.8
VAN NUYS-F	39148	66/	1/	23	13	6	7.7	8.2	6.5	7.0			19.3	217.5	2580.		--JGM	125.2
VAN NUYS-F	39281	66/	6/	5	4	13	9.0	9.0	7.7	7.7			82.9	185.0	1740.		--JGM	67.9
SAN ANTONIU	39281	66/	6/	5	4	19	8.2	8.2	7.0	7.0			67.1	160.6	1840.		--JGM	57.7
WALNUT CREEK	39281	66/	6/	5	6	50	7.5	7.5	6.2	6.2			84.6	350.9	1746.	COULD SEE NO FLUCTUATN AT ALL	--PH	65.9
SAN ANTONIU	39284	66/	6/	8	2	32	6.8	6.8	5.6	5.6			71.6	179.0	1800.	ST TRACKED 3.5 MINUTES	--DFC	45.9
PHOENIX R	39284	66/	6/	11	5	7	5.0	5.0	3.8	3.8			84.6	163.4	1746.	COMPLETELY NONFLUCTUATING	--PH	73.7
PHOENIX R	39284	66/	6/	11	5	58	7.0	8.0	5.8	6.8			82.9	187.7	1750.	STEADY	--RRR	60.4
PHOENIX R	39284	66/	6/	13	3	54	7.0	8.0	5.8	6.8			84.6	175.0	1748.	TRACKED 2 MIN IRR TP	--RRR	54.5
PHOENIX R	39293	66/	6/	17	5	4	7.0	8.0	5.8	6.8			80.0	185.0	1760.	IRR TP	--RR	72.4
VAN NUYS-F	39254	66/	6/	18	5	18	8.5	10.0	7.3	8.8			77.8	191.0	1770.	TRACKED 70 SEC NG TP OBS	--RRR	59.2
STPETERSBURG	39255	66/	6/	19	3	10	9.0	10.0	7.8	8.8			86.6	15.4	174.4.	ESTIMATED TUMBLE	--JGM	60.8
											2.00						--FJK	63.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	39255	66/	6/19		5	38	9.0	9.0	7.7	7.7			69.8	198.4	1818.	TRACKED 114 SEC NO TP OBS	--RKR	50.4
SAN ANTONIO	39296	66/	6/20		3	22	8.5	8.5	7.3	7.3			85.7	10.4	1746.	PERHAPS A MINUTE VARIATION	--PM	72.8
PHOENIX R	39257	66/	6/21		6	12	9.0		7.5				56.1	205.1	1968.	MIN INV IRREGULAR TP TRACKED 90 SEC	--RKR	41.2
VAN NUYS-F	39298	66/	6/22		6	27	8.5	8.5	7.0	7.0			53.5	205.5	2000.	STEADY	--JGM	43.0
SAN ANTONIO	39299	66/	6/23		4	13	9.0	9.0	7.8	7.8			76.7	200.7	1774.	SLIGHT VARIATION	--PM	56.6
STPETERSBURG	39301	66/	6/25		2	15	9.0	9.5	7.8	8.3	2.00		88.4	195.7	1750.		--FJK	69.3
PHOENIX R	39301	66/	6/25		4	43	9.0	9.0	7.6	7.6			64.6	202.0	1866.		--LH	60.0
SAN ANTONIO	39302	66/	6/26		5	5	7.5	7.5	6.0	6.0			51.7	209.6	2036.	NO APPARENT VARIATION	--PM	43.5

SOC NO. 1001 65-8A PERIOD = 145.4 ROCKET BODY USA LAUNCHED 65/ 2/11 IN ORBIT
PERIGEE = 1720.0 APOGEE = 1732.4 INCL = 32.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38808	65/	4/24		11	32	6.8	8.3	4.8	6.3	0.88		33.6	149.0	2460.	SMOOTH VAR	--JGM	81.8
VAN NUYS-F	38866	65/	4/16		4	19	6.5	7.5	5.3	6.3	1.15		84.0	180.0	1730.	WHOLE TP 1.153SEC FROM 80CYC	--JGM	64.3
CAL TECH	38871	65/	4/21		5	30	6.5	7.5	5.1	6.1	1.16		59.8	202.7	1895.	DIP MIN., ALT -1, -.5MAG.DIP--AMM	--AMM	49.5
VAN NUYS-F	38871	65/	4/21		5	30	6.2	7.0	4.8	5.6	1.16		60.3	203.0	1900.	WHOLE TP 1.156 SEC FROM 50	--JGM	49.9
CAL TECH	38874	65/	4/24		3	35	6.0	7.0	4.8	5.8	1.16		74.9	193.9	1761.	CYCLES. MIN ARE DIPS	--JGM	74.0
VAN NUYS-F	38874	65/	4/24		3	35	6.5	8.0	5.2	6.7	1.15		75.5	200.0	1780.	ALT.81L, SMALL DIPS..IS LONG	--JDR	75.0
DURBAN B	38937	65/	6/26		17	44	6.0		4.6		1.19		57.0	9.0	1900.	WHOLE TP 1.154SEC FROM 50CYC	--JGM	62.9
DURBAN B	38937	65/	6/26		17	48	6.5		4.3		1.23		28.0	33.0	2700.	WINKING TO INFINITY	--AA	56.1
DURBAN B	38940	65/	6/29		18	14	6.5		4.3				25.0	285.0	2700.	FULSUNG TO INFINITY	--AA	114.9
DURBAN B	38940	65/	6/29		18	21	6.5		4.6				34.0	322.0	2450.	V.RAPID TUMBLE TO INVIS.	--GR	93.7
DURBAN B	38940	65/	6/29		18	24	6.0		4.0		0.66		33.0	338.0	2500.	TUMBLE WITH LIMP TO INVIS.	--GR	85.8
DURBAN B	38940	65/	6/29		18	26	6.0		4.0		0.59		31.0	348.0	2550.	REGULAR TUMBLE	--GR	81.0
VAN NUYS-F	39055	65/12/	1		4	4	6.5	7.5	5.3	6.3	0.87		74.3	194.2	1770.	REGULAR TUMBLE	--JGM	81.9
VAN NUYS-F	39095	65/12/	1		4	41	7.0	7.8	5.2	6.0	0.87		39.8	211.0	2260.	4 MAX PER WHOLE CYCLE	--JGM	75.2
VAN NUYS-F	39096	65/12/	2		2	18	6.7	7.5	5.4	6.2	1.75		69.6	197.6	1800.	HALF TP, 4 MAX / CYCLE	--JGM	82.3
VAN NUYS-F	39096	65/12/	2		4	55	7.2	8.2	5.3	6.3	1.74		33.7	213.3	2420.	WHOLE TP, 4 MAX / CYCLE	--JGM	78.2
VAN NUYS-F	39097	65/12/	3		2	32	6.7	7.5	5.4	6.2			63.9	200.8	1850.	3 MAX AND 1 GAP PER CYCLE	--JGM	83.6
VAN NUYS-F	39098	65/12/	4		5	24	7.5	8.5	5.2	6.2	1.75		22.5	217.0	2825.	WHOLE TP 1.747 SEC	--JGM	83.7
VAN NUYS-F	39099	65/12/	5		5	38	8.5	10.0	6.1	7.6			17.3	218.1	3050.		--JGM	86.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--ORS	PHASE
VAN NUYS-F	39105	65/12/11	1	48	6.5	8.5	4.9	6.9	1.77	49.2	207.6	2060.	WHOLE TP, 4 ALT MAX / CYCLE		2060.	WHOLE TP, 4 ALT MAX / CYCLE	--JGM	107.1
VAN NUYS-F	39148	66/ 1/23	12	36	6.5	9.5	5.3	8.3	1.87	83.9	183.0	1740.	WHOLE TP		1740.	WHOLE TP	--JGM	61.5
VAN NUYS-F	39278	66/ 6/ 2	4	38	6.8	8.0	5.5	6.7	2.13	68.0	161.0	1820.	WHOLE TP		1820.	WHOLE TP	--JGM	53.5
SAN ANTONIO	39279	66/ 6/ 3	2	20	5.8	7.8	4.5	6.5	1.09	70.1	156.6	1801.	MOST FL DEFNTE, SOME BLENDING		1801.	MOST FL DEFNTE, SOME BLENDING	--PM	63.4
VAN NUYS-F	39279	66/ 6/ 3	4	52	6.5	7.8	5.2	6.5	2.13	73.3	164.0	1780.			1780.		--JGM	56.1
SAN ANTONIO	39279	66/ 6/ 3	4	58	5.5	6.5	4.3	5.3	1.10	81.8	355.4	1737.	THRU HI CLDS, FASY TO FOLLOW		1737.	THRU HI CLDS, FASY TO FOLLOW	--PM	64.1
VAN NUYS-F	39279	66/ 6/ 3	6	17	9.2	9.2	8.0	8.0		81.8	173.0	1750.			1750.		--JGM	52.9
SAN ANTONIO	39280	66/ 6/ 4	2	34	6.8	8.2	5.6	7.0	1.05	77.3	159.6	1756.	NOT ALL FL HVE SAME TIME SEP		1756.	NOT ALL FL HVE SAME TIME SEP	--PM	66.9
SAN ANTONIO	39280	66/ 6/ 4	5	8	6.2	8.2	5.0	7.0	1.07	80.9	359.2	1739.			1739.		--PM	64.1
STPETERSBURG	39281	66/ 6/ 5	2	54	7.0	9.0	5.8	7.8	0.80	79.5	350.8	1746.			1746.		--FJK	71.8
SAN ANTONIO	39281	66/ 6/ 5	3	49	5.5	7.0	4.3	5.8		83.8	162.9	1734.			1734.		--PM	59.5
WALNUT CREEK	39281	66/ 6/ 5	5	20	6.0	8.0	4.7	6.7	2.10	67.0	169.0	1825.	REGULAR TUMBLING		1825.	REGULAR TUMBLING	--PM	59.5
													2 MAG DIPS 2.1 SEC INTERVALS			2 MAG DIPS 2.1 SEC INTERVALS	--DFC	52.5
													SECONDARY DIPS AT TIMES			SECONDARY DIPS AT TIMES	--DFC	
SAN ANTONIO	39281	66/ 6/ 5	5	28	5.5	6.8	4.3	5.6	1.05	81.3	3.1	1738.	TUMBLE PERIOD PRETTY ACCURTE		1738.	TUMBLE PERIOD PRETTY ACCURTE	--PM	62.4
SAN ANTONIO	39283	66/ 6/ 7	3	18	5.5	7.0	4.3	5.8	1.08	86.4	348.8	1729.	REG VAP		1729.	REG VAP	--PM	73.0
STPETERSBURG	39283	66/ 6/ 7	3	24	7.0	8.0	5.8	6.8	1.50	75.6	358.3	1700.	STOPWATCH MEASURED TUMBLE		1700.	STOPWATCH MEASURED TUMBLE	--FJK	71.3
SAN ANTONIO	39284	66/ 6/ 8	3	32	5.5	7.0	4.3	5.8	1.08	83.3	352.7	1735.	A FEW DOUBLE MAX		1735.	A FEW DOUBLE MAX	--PM	73.4
PHOENIX R	39284	66/ 6/ 8	6	6	5.0	5.0	3.8			83.4	173.5	1730.	RAPID TP		1730.	RAPID TP	--RRR	53.2
STPETERSBURG	39286	66/ 6/10	1	28	7.0	9.0	0.0	0.0	1.50	82.2	348.1		CLOCKED			CLOCKED	--FJK	83.1
SAN ANTONIO	39287	66/ 6/11	4	15	5.5	6.0	4.3	4.8	1.08	81.7	4.2	1739.	SEEMED TO FL REGULARLY		1739.	SEEMED TO FL REGULARLY	--PM	68.6
STPETERSBURG	39289	66/ 6/13	2	12	6.0	8.0	4.8	6.8	1.00	359.4	75.6	1770.	TUMBLE SLOWING		1770.	TUMBLE SLOWING	--FJK	
PHOENIX R	39289	66/ 6/13	4	40	6.0	7.0	4.8	5.8		76.2	116.5	1731.	11 FLASHES IN 10 SEC		1731.	11 FLASHES IN 10 SEC	--RRR	56.8
PHOENIX R	39290	66/ 6/14	4	55	6.0	7.0	4.8	5.8		80.0	145.5	1734.	11 FLASHES IN 10 SEC		1734.	11 FLASHES IN 10 SEC	--RRR	57.5
VAN NUYS-F	39290	66/ 6/14	8	30	6.8	8.0	5.4	6.6	1.08	59.0	202.9	1910.	HALF TP 1.079 SEC		1910.	HALF TP 1.079 SEC	--JGM	28.3
SAN ANTONIO	39291	66/ 6/15	2	34	6.0	8.0	4.8		1.08	81.2	357.6	1743.	VARIABLE		1743.	VARIABLE	--PM	83.7
WALNUT CREEK	39291	66/ 6/15	5	5	6.0	8.0	4.7	6.7	1.07	70.5	185.0	1800.	DIPS		1800.	DIPS	--DFC	62.3
SAN ANTONIO	39292	66/ 6/16	2	49	5.0	7.0	3.8	5.8	1.08	81.0	1.4	1744.	SOME DOUBLE MAX NOTED		1744.	SOME DOUBLE MAX NOTED	--PM	81.1
STPETERSBURG	39293	66/ 6/17	3	10	6.0	8.0	0.0	0.0	1.50	71.0	197.6	1790.	11 FLASHES IN 10 SEC		1790.	11 FLASHES IN 10 SEC	--FJK	64.6
PHOENIX R	39293	66/ 6/17	5	37	6.0	7.0	4.7	5.7		71.0	197.6	1790.	PULSATING APPEARANCE		1790.	PULSATING APPEARANCE	--RRR	50.9
WALNUT CREEK	39294	66/ 6/18	5	50	7.0	9.0	5.5	7.5	1.13	60.0	180.0	2000.	11 FLASHES IN 10 SEC		2000.	11 FLASHES IN 10 SEC	--DFC	46.2
PHOENIX R	39295	66/ 6/19	6	7	6.0	7.0	4.6	5.6		56.2	183.0	1913.	11 FLASHES IN 10 SEC		1913.	11 FLASHES IN 10 SEC	--RRR	31.7
PHOENIX R	39296	66/ 6/20	3	47	4.5	6.0	3.3	4.8	1.09	86.9	194.9	1728.	PASSIVE AND WELL REG LTD FLUX		1728.	PASSIVE AND WELL REG LTD FLUX	--PM	64.9
SAN ANTONIO	39297	66/ 6/21	4	1	5.5	6.2	4.3		1.07	80.9	198.7	1741.	ACCURATE TP		1741.	ACCURATE TP	--PM	60.1
SAN ANTONIO	39299	66/ 6/23	4	32	5.7	6.2	4.4	4.9	1.08	66.6	204.7	1829.	ALMOST ST AT AZ180		1829.	ALMOST ST AT AZ180	--PM	50.6
SAN ANTONIO	39299	66/ 6/23	2	12	6.0	8.0	0.0	0.0	0.75	87.5	197.2		ESTIMATED			ESTIMATED	--FJK	69.5
STPETERSBURG	39300	66/ 6/24	4	39	6.0	7.0	4.7	5.7		63.4	201.7	1862.	11 FLASHES IN 10 SEC		1862.	11 FLASHES IN 10 SEC	--RRR	60.4
PHOENIX R	39300	66/ 6/24	4	39	6.0	7.0	4.7	5.7		63.4	201.7	1862.	11 FLASHES IN 10 SEC		1862.	11 FLASHES IN 10 SEC	--RRR	60.4
STPETERSBURG	39301	66/ 6/25	2	26	6.0	8.0	0.0	0.0	1.00								--FJK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39301	66/	6/25	4	51	6.8	8.0	5.4	6.6	1.11			61.7	201.8	1880.		JGM	63.1
PHOENIX R	39301	66/	6/25	4	53	6.0	7.0	4.6	5.6				57.0	204.7	1940.	APPEARED AS THOUGH NOT THE	RR	57.5
SAN ANTONIO	39302	66/	6/26	2	35	5.5	8.7	4.3	7.5	1.10			85.3	196.1	1733.	COMPLETE TRNSTGE WAS FLASHING--	PM	77.0
PHOENIX R	39302	66/	6/26	5	8	6.0	7.0	4.6	5.6				50.4	207.4	1940.		BJE	55.0
SAN ANTONIO	39302	66/	6/26	5	13	5.5	6.5	3.8	4.8	1.10			43.7	211.8	2174.	FEW FL BLENDING WITH MINIMUM	PM	43.3
SAN ANTONIO	39303	66/	6/27	2	49	5.0							79.0	199.6	1751.	SEEN WHILE LOOKING FOR 2186	PM	72.9
SAN ANTONIO	39304	66/	6/28	3	38	5.5		4.2		1.10			72.0	202.7	1789.	VARIABLE	PM	62.1
SAN ANTONIO	39305	66/	6/29	3	18	6.5	8.0	5.2	6.7	1.10			64.4	205.5	1852.	REGULAR VAR	PM	66.0
VAN NUYS-F	39310	66/	7/4	4	22	8.0	9.5	6.2	7.7	2.20			40.8	210.7	2250.	WHOLE TP, MIN ALTERNATE	JGM	74.2

SDC NO. 1002 65-8C LES 1 USA LAUNCHED 65/ 2/11 IN ORBIT
PERIOD = 145.7 PERIGEE = 1725.5 APOGEE = 1744.8 INCL = 32.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39097	65/12/	3	4	59	8.5		6.6				0.10	33.4	213.0	2450.	MIN BELOW +11.5, ONLY FLSHS	JGM	77.6
VAN NUYS-F	39101	65/12/	7	3	33	8.0		6.2				0.05	41.0	210.7	2260.	2 FLASHES 2.8 SEC APART	JGM	90.1
VAN NUYS-F	39105	65/12/11	2	7	10.0			8.4				0.50	48.7	207.8	2090.	FAINT GLIMMER, MIN INVIS	JGM	103.2
VAN NUYS-F	39106	65/12/12	2	25	8.0			6.2		5.80		0.50	41.3	210.5	2250.	TP FROM 2 CYCLES, MIN INVIS	JGM	105.8
VAN NUYS-F	39112	65/12/18	1	35	7.5			5.6		6.03			34.6	212.9	2420.	TP FROM 23 CYCLES, FLASHES	JGM	124.2
VAN NUYS-F	39113	65/12/19	1	52	9.0			6.9		6.02			28.0	215.3	2640.	OF DIFF MAG, MIN BELOW +10.5, DOUBLE	JGM	126.6
SAN ANTONIO	39280	66/ 6/ 4	3	13	6.8			5.6					80.4	161.0	1762.	FLASHES 1 SEC APART	JGM	62.3
PHOENIX R	39281	66/ 6/ 5	6	6	12.0	12.0	10.8	10.8					85.4	177.5	1748.	REG FLSHNG, MIN INV, EACH FLSH--	PM	54.9
PHOENIX R	39284	66/ 6/ 8	4	21	10.0		8.8						80.1	169.1	1764.	INSTANTANEOUS, TWINKLD LIKE RO--	PM	63.5
WALNUT CREEK	39287	66/ 6/11	5	12	11.0		9.8			1.00			71.0	176.0	1747.	TATNG CHNDELIER, SAW 8-10 FL --	PM	59.1
PHOENIX R	39287	66/ 6/11	5	16	10.0		8.8			0.50			85.6	181.3	1749.	STEADY CROSSING 1 DEG FIELD	RRR	61.1
SAN ANTONIO	39287	66/ 6/11	5	21	6.2		5.0						84.9	9.5	1749.	MIN INV IN 12 IN SCOPE	RRR	59.8
PHOENIX R	39289	66/ 6/13	5	52	10.0		8.8						81.5	189.5	1758.	FLUCTUATING ABOUT 1 MAG	RRR	54.3

SDC NO.	1085	65-9A	PERIOD =	PEGASUS 1	USA	LAUNCHED 65/ 2/16	IN ORBIT											
				PERIGEE =	309.4	APOGEE =	453.6	INCL = 31.7										
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-AUS	38808	65/ 2/17	10	48	2.0	2.6	19.60						34.9	293.5	750.	STEADY 5 DEG	--ACB	112.0
WALNUT CREEK	38808	65/ 2/17	13	6	3.0	0.0							28.0	168.0		STEADY	--DFC	87.9
DURBAN B	38808	65/ 2/17	17	15	1.0	1.0	2.5						47.0	107.0	490.		--GR	49.6
CAL TECH	38809	65/ 2/18	5	22	3.0	5.0							58.1	172.5	400.	SURPRISINGLY FAINT	--AMH	38.0
VAN NUYS-F	38809	65/ 2/18	13	21	3.0	4.8							57.2	180.0	440.		--JGW	78.4
ADELAIDE-2	38813	65/ 2/22	10	24	1.5	1.6							19.1	9.4	950.	VARIABLE	--ACB	58.0
DURBAN B	38813	65/ 2/22	18	33	2.5	2.7							21.0	345.0	900.	SLOW TUMBLE	--GR	69.5
ADELAIDE-2	38814	65/ 2/23	10	40	1.0	6.0							8.2	12.8	1000.	TP OF ORDER OF 150 SEC.	--ACB	53.3
STPETERSBURG	38815	65/ 2/24	9	54	-1.0	-1.0	0.0	0.0	0.0	0.0	51.00		44.3	50.0		2 CYCLES 103 SEC 2/107 SEC	--FK	100.1
WALNUT CREEK	38815	65/ 2/24	13	10	1.0	3.0	0.0	0.0	0.0	0.0			29.0	170.0		2 SHORT CYCLS ABOUT 5 SEC	--DFC	85.9
WALNUT CREEK	38816	65/ 2/25	13	25	1.0	3.0	0.0	0.0	0.0	0.0						STEADY	--DFC	
SAN ANTONIO	38824	65/ 3/ 5	1	49	3.5	3.5	3.0	3.0	3.0	3.0			9.0	155.0	1280.	FAIRLY ST	--PM	61.3
SAN ANTONIO	38825	65/ 3/ 6	2	3	3.0	3.0	3.7	3.7	3.7	3.7			28.8	154.6	728.	TRACKED 140 SEC STEADY	--PM	55.0
PHOENIX R	38826	65/ 3/ 7	2	17	3.0	2.9							15.0	153.0	1033.	NEARING SHADOW	--RRR	60.7
SAN ANTONIO	38826	65/ 3/ 7	2	18	2.0	6.0	3.4	7.4	7.4	7.4	54.48		47.5	159.0	520.		--PM	54.8
STPETERSBURG	38827	65/ 3/ 8	0	54	1.0	5.0	0.0	0.0	0.0	0.0						STEADY	--FK	60.7
MADISON	38827	65/ 3/ 8	-0	55	3.2	3.2	2.5	2.5	2.5	2.5			6.5	155.6	1402.	STEADY TRACKED 150 SEC	--GCL	61.4
PHOENIX R	38827	65/ 3/ 8	2	31	4.0	4.5							24.5	157.4	783.		--BJE	68.9
SAN ANTONIO	38828	65/ 3/ 9	1	6	1.0	2.5	2.2	3.7	3.7	3.7			37.4	157.2	570.		--PM	72.0
SAN ANTONIO	38829	65/ 3/10	1	22	0.1	5.0	2.0	6.9	6.9	6.9			61.4	162.0	416.		--PM	
PHOENIX R	38829	65/ 3/10	3	1	3.0	4.6							52.0	167.5	474.	STEADY TRACKED 60SEC	--RRR	62.2
STPETERSBURG	38829	65/ 3/10	23	57	1.0	0.0											--FK	
SAN ANTONIO	38830	65/ 3/11	1	36	0.1	5.5	2.3	7.7	7.7	7.7			89.2	169.7	370.		--PM	76.7
MADISON	38830	65/ 3/11	1	39	2.6	2.6	2.7	2.7	2.7	2.7			18.0	171.9	940.	STEADY	--GCL	64.8
VAN NUYS-F	38830	65/ 3/11	3	15	0.8	2.0	2.5	3.7	3.7	3.7			53.4	170.0	460.	SMOOTH VAR	--GCL	66.4
MADISON	38832	65/ 3/13	-0	27	3.6	3.6	3.7	3.7	3.7	3.7			15.5	169.6	960.	STEADY	--GCL	77.4
SAN ANTONIO	38832	65/ 3/13	2	6	0.1	5.0	2.0	6.9	6.9	6.9			65.8	358.3	409.		--PM	76.7
KANSAS-E	38832	65/ 3/13	2	8	2.0	3.1							32.0	180.0	600.	SLOW TUMBLE	--DDC	67.6
TERRE HAUTE	38833	65/ 3/14	0	42	3.0	6.0	3.9	6.9	6.9	6.9			28.6	180.0	663.	TRACKED 150SEC STEADY	--LD	81.1
PHOENIX R	38833	65/ 3/14	2	19	0.1	0.1	2.2	2.2	2.2	2.2			69.0	176.5	379.	ST THRU CLOUDS	--RRR	78.1
SAN ANTONIO	38833	65/ 3/14	2	22	1.0	3.0							65.8	4.2	403.	1 MAX. SLOW DECLINE	--PM	71.9
WALNUT CREEK	38833	65/ 3/14	3	59	2.0	4.0	3.1	5.1	5.1	5.1			36.0	190.0	590.		--DFC	74.4
WALNUT CREEK	38834	65/ 3/15	2	32	0.1	2.0	1.4	3.3	3.3	3.3			35.0	180.0	560.		--DFC	87.2
PHOENIX R	38834	65/ 3/15	2	34	1.0	3.1							70.0	182.3	376.	STEADY TRACKED 120 SEC	--RR	76.5
WALNUT CREEK	38834	65/ 3/15	4	14	1.0	3.0	1.8	3.8	3.8	3.8	47.00		29.0	195.0	700.	47 SEC MIN TO MIN	--DFC	76.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38835	65/	3/	16	1	9	-1.7	2.0	0.4	4.1			62.4	1.9	385.		--	PM
BRISTLE BACK	38835	65/	3/	16	1	10	1.0		1.8				30.8	184.7	685.	1965-9A STEADY	--	SWB
TERRE HAUTE	38835	65/	3/	16	1	12	3.0	5.0	3.7	5.7			25.7	180.0	709.	SLOW TUMBLE 1MIN	--	LD
WALNUT CREEK	38835	65/	3/	16	2	47	1.0		2.3				35.0	183.0	560.	STEADY CULM TO SHADOW 025116	--	DFC
STPETERSBURG	38837	65/	3/	18	0	1	1.0	4.0	0.0	0.0	112.25		55.8	8.5			--	FK
SAN ANTONIO	38837	65/	3/	18	1	40	0.1	4.0	2.4	6.3			87.9	192.1	345.	TP 6J SEC OP MORE	--	PM
VAN NUYS-F	38837	65/	3/	18	3	18	1.0	3.5	2.1	4.6			34.0	185.0	610.	STEADY TRACKED 60 SEC	--	JGM
PHOENIX R	38837	65/	3/	18	3	19	3.8		6.1				32.0	199.0	354.		--	ACH
SAN ANTONIO	38838	65/	3/	19	1	55	0.1	4.0	2.1	6.0			58.4	191.2	578.	PERIOD MAX TO MAX	--	RC
WALNUT CREEK	38838	65/	3/	19	3	31	2.0	4.0	2.5	4.5	87.00		17.0	190.0	800.	VARIATION EXCEEDS 60 SEC	--	JGM
VAN NUYS-F	38838	65/	3/	19	3	33	1.3	2.8	2.0	3.5			24.0	192.0	710.	STEADY AT 0 MAG FOR 2 MIN	--	RR
PHOENIX R	38840	65/	3/	21	2	22	0.1	4.0	0.8	4.7			23.0	201.7	714.	THEN FADE IN 2 MIN TO 4 MAG	--	RKR
DURBAN B	38854	65/	4/	4	17	8	2.0	6.0	2.2	6.2			17.0	287.0	900.	SLOW TUMBLE	--	AA
DURBAN B	38854	65/	4/	4	17	9	1.5	1.5	3.3	3.3			75.0	308.0	440.	STEADY	--	GR
DURBAN B	38854	65/	4/	4	17	11	1.0	1.0	2.5	2.5			45.0	98.0	510.	STEADY BEFORE SHADOW ENTRY	--	GR
DURBAN B	38855	65/	4/	5	17	21	2.5	2.5	3.1	3.1			28.0	274.0	760.	FAIRLY STEADY	--	GR
DURBAN B	38855	65/	4/	5	17	23	1.5	5.5	3.3	7.3			72.0	164.0	440.	SLOW TUMBLE- APPROX 30SECS	--	GR
DURBAN B	38858	65/	4/	8	16	25	1.0	1.0	2.8	2.8			86.0	180.0	440.	APPARENTLY STEADY	--	AA
DURBAN B	38960	65/	4/	10	16	57	3.5	3.5	3.7	3.7			30.0	277.0	900.	STEADY-HAZY REGION OF SKY	--	AA
DURBAN B	38860	65/	4/	10	16	58	-2.0	-2.0	-1.2	-1.2			65.0	220.0	680.	STEADY-VERY BRIGHT	--	GR
DURBAN B	38860	65/	4/	10	17	0	-1.5	-1.5	-1.1	-1.1			40.0	95.0	840.	STEADY-SHADOW ENTRY	--	GR
DURBAN B	38861	65/	4/	11	17	10	-3.0	-3.0	-3.6	-3.6			12.0	262.0	1300.	EXTREMELY BRIGHT-STEADY	--	GR
DURBAN B	38861	65/	4/	11	17	13	1.2	1.2	2.9	2.9			90.0	180.0	450.	VERY HAZY OVERHEAD-STEADY	--	GR
DURBAN B	38865	65/	4/	15	16	29	0.1	2.0	1.0	2.9			40.0	350.0	670.	SLOW IRREGULAR TUMBLE	--	AA
CAL TECH	38879	65/	4/	29	3	54	0.1	2.0	1.8	3.7			45.0	180.0	450.	LONG TUMBLE, NO -12 FLASHES	--	JDR
SAN JOSE	38881	65/	5/	1	4	23	1.0	4.0	1.5	4.5			36.0	181.3	810.	PERIOD ESTIMATED 8 SEC	--	RLG
STPETERSBURG	38886	65/	5/	6	0	41	1.5	1.5	0.0	0.0							--	FK
STPETERSBURG	38887	65/	5/	7	0	58	2.0	2.0	0.0	0.0							--	FK
DURBAN B	38903	65/	5/	23	16	2	1.0	5.0	1.5	5.5			26.0	42.0	800.	SLOW FADE	--	GR
DURBAN B	38903	65/	5/	23	16	3	1.0	5.0	1.2	5.2			26.0	42.0	900.	LONG SLOW TUMBLE	--	AA
DURBAN B	38906	65/	5/	26	16	36	1.0	1.0	3.0	3.0	95.90		83.0	68.0	400.	STEADY	--	AA
DURBAN B	38914	65/	6/	3	17	6	1.0	1.0	2.4	2.4			40.0	294.0	520.	STEADY	--	GR
DURBAN B	38915	65/	6/	4	15	39	0.1	0.1	1.8	1.8			67.0	266.0	450.	STEADY	--	GR
DURBAN B	38915	65/	6/	4	15	45	2.0	2.0	1.4	1.4			10.0	73.0	1320.	STEADY ALL TRANSIT	--	GR
DURBAN B	38915	65/	6/	4	17	20	0.5	0.5	1.2	1.2			25.0	298.0	740.	STEADY	--	GR
DURBAN B	38916	65/	6/	5	15	51	2.0	2.0	0.7	0.7			20.0	266.0	1800.	STEADY	--	GR

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38916	65/	6/	5	15	54	1.0	1.0	2.8	2.8			62.0	340.0	440.	STEADY	--GR	97.4
DURBAN B	38917	65/	6/	6	16	10	2.0		2.4				33.0	10.0	850.	SLOW TUMBLE	--AA	89.0
DURBAN B	38917	65/	6/	6	16	11	2.0	2.0	2.5	2.5			33.0	10.0	800.	SLOW TUMBLE	--AA	88.8
DURBAN B	38954	65/	7/13	17	3	17	1.0	1.0	1.9	1.9			25.0	303.0	650.	STEADY	--GR	127.7
DURBAN B	38955	65/	7/14	17	22	1.0	1.0	1.0	3.0	3.0			51.0	282.0	390.	STEADY	--GR	101.6
DURBAN B	38956	65/	7/15	15	53	17	1.0	1.0	2.1	2.1			45.0	327.0	600.	STEADY	--GR	116.8
DURBAN B	38956	65/	7/15	15	53	17	1.0	1.0	2.0	2.0			32.0	266.0	800.	STEADY	--GR	116.9
DURBAN B	38958	65/	7/17	16	23	16	1.0	1.0	2.3	2.3			48.0	266.0	550.	STEADY	--GR	114.8
DURBAN B	38960	65/	7/19	16	53	16	0.1	0.1	1.2	1.2			47.0	243.0	600.	STEADY	--AA	103.3
DURBAN B	38963	65/	7/22	15	53	15	1.0	1.0	1.4	1.4			26.0	254.0	850.	STEADY	--AA	132.1
DURBAN B	38964	65/	7/23	16	6	16	0.5	0.5	-0.2	-0.2			8.0	257.0	1400.	STEADY	--GR	144.7
DURBAN B	38965	65/	7/24	16	23	2.0	2.0	2.0	2.5	2.5			32.0	266.0	800.	STEADY	--GR	130.5
SAN ANTONIO	38976	65/	8/	4	3	6	3.0	3.0	4.5	4.5					499.		--PM	
SAN ANTONIO	38977	65/	8/	5	3	21	0.1	0.1	2.0	2.0					425.		--PM	
SAN ANTONIO	38979	65/	8/	7	2	10	-1.0	-1.0	0.0	0.0					397.		--PM	
SAN ANTONIO	38980	65/	8/	8	2	24	0.1	0.1	2.1	2.1					419.		--PM	
SAN ANTONIO	38981	65/	8/	9	2	39	0.1	0.1	2.0	2.0					371.		--PM	
SAN ANTONIO	38986	65/	8/14	2	27	0.1	0.1	0.1	2.3	2.3					550.		--PM	
VAN NUYS-F	39034	65/10/	1	2	22	1.0	1.0	1.0	2.3	2.3			35.0	110.0	380.	UNUSUALLY BRIGHT	--JGM	29.7
VAN NUYS-F	39036	65/10/	3	2	50	-1.2	-1.2	0.9	0.9	0.9			63.0	180.0	730.		--JGM	72.8
VAN NUYS-F	39037	65/10/	4	3	2	2.3	2.3	3.0	3.0	3.0			23.0	261.0	410.		--JGM	135.0
VAN NUYS-F	39037	65/10/	4	3	4	0.3	0.3	2.2	2.2	2.2			56.0	194.0	780.		--JGM	77.3
VAN NUYS-F	39038	65/10/	5	3	17	3.0	3.0	3.5	3.5	3.5			20.0	255.0	460.	VAR	--JGM	131.3
VAN NUYS-F	39040	65/10/	7	2	7	0.6	0.6	2.3	2.3	2.3			45.0	180.0	500.		--JGM	84.8
VAN NUYS-F	39137	66/	1/12	2	34	0.5	0.5	2.0	2.0	2.0			45.0	140.0	650.		--JGM	59.0
VAN NUYS-F	39140	66/	1/15	3	18	0.1	0.1	1.8	1.8	1.8			52.0	160.0	450.		--JGM	85.4
VAN NUYS-F	39140	66/	1/15	3	18	2.7	2.7	3.6	3.6	3.6			31.0	220.0	650.		--JGM	109.8
VAN NUYS-F	39141	66/	1/16	1	51	0.1	0.1	1.7	1.7	1.7			45.0	170.0	480.		--JGM	89.9
VAN NUYS-F	39143	66/	1/18	2	21	2.5	2.5	3.4	3.4	3.4			30.0	175.0	650.		--JGM	91.1
EDINBURG	39190	66/	3/	6	2	10	-0.5	-0.5	1.5	1.5			48.3	0.0	405.	VARIABLE	--PM	76.6
VAN NUYS-F	39191	66/	3/	7	2	22	0.8	0.8	2.2	2.2			36.7	153.2	520.		--JGM	66.3
VAN NUYS-F	39230	66/	4/15	3	32	1.7	1.7	2.4	2.4	2.4			30.0	150.0	720.		--JGM	38.1
STPETERSBURG	39232	66/	4/17	0	45	2.0	2.0	2.6	2.6	2.6			27.0	72.1	775.		--FJK	37.3
EDINBURG	39232	66/	4/17	2	27	2.2	2.2	3.8	3.8	3.8			56.1	46.3	435.	SEEN 15 SEC THROUGH CLOUDS	--PM	60.6
STPETERSBURG	39233	66/	4/18	0	57	2.0	2.0	3.8	3.8	3.8			56.0	41.7	435.	ST	--FJK	66.7
EDINBURG	39243	66/	4/28	1	35	1.0	1.0	2.5	2.5	2.5			62.4	180.0	496.		--PM	74.0
STPETERSBURG	39273	66/	5/28	7	29	1.0	3.0	3.0	2.7	4.7	20.00		45.0	111.5	450.	SLOW TURN	--FJK	75.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39279	66/	6/	3	5	16	2.8	2.8	3.9	3.9			46.1	207.7	590.		--JGM	57.9
SAN ANTONIO	39281	66/	6/	5	2	24	0.1	1.2	1.6	2.7			65.0	180.0	490.	RIG AND BRIGHT	--PM	66.3
STPETERSBURG	39281	66/	6/	5	2	28	2.0	4.0	3.7	5.7	20.00		56.5	318.0	460.		--FJK	100.1
VAN NUYS-F	39282	66/	6/	6	4	18	-0.2	-0.2	1.0	1.0			46.8	119.3	570.	LATER DROPPED TO +.7	--JGM	34.1
STPETERSBURG	39283	66/	6/	7	1	14	2.0	4.0	3.5	5.5	25.00		63.5	326.0	500.		--FJK	104.0
STPETERSBURG	39286	66/	6/	10	1	58	1.0	1.0	0.0	0.0			48.5	180.0	530.	STEADY	--PM	54.0
SAN ANTONIO	39290	66/	6/	14	2	51	1.2	1.2	2.6	2.6			26.1	169.6	620.		--JGM	45.8
VAN NUYS-F	39330	66/	7/	24	3	58	1.0	1.0	2.0	2.0			34.4	194.4	530.	WAS -0.3 MAG ON MERIDIAN	--JGM	45.8
VAN NUYS-F	39331	66/	7/	25	4	12	0.7	0.7	2.1	2.1			51.6	158.3	400.		--JGM	42.7
VAN NUYS-F	39332	66/	7/	26	4	27	0.3	0.3	2.3	2.3			67.2	163.0	450.		--JGM	56.0
VAN NUYS-F	39386	66/	9/	18	1	43	2.0	2.0	3.7	3.7			32.0	182.8	800.		--FK	95.3
STPETERSBURG	39432	66/	11/	3	23	36	2.0	2.0	2.5	2.5			40.5	41.5	560.		--FK	42.2
STPETERSBURG	39439	66/	11/	10	23	32	1.0	1.0	2.3	2.3			62.0	161.0	450.		--JGM	56.2
VAN NUYS-F	39589	67/	4/	9	3	42	0.8	0.8	2.5	2.5			34.0	114.0	610.		--JGM	23.5
VAN NUYS-F	39687	67/	7/	16	4	33	1.0	1.0	2.1	2.1			65.0	329.8	435.		--FK	81.7
STPETERSBURG	39838	67/	12/	14	23	43	1.0	1.0	2.8	2.8			40.0	204.0	460.		--JGM	80.9
VAN NUYS-F	39935	68/	3/	20	3	53	0.7	0.7	2.4	2.4			58.0	159.0	360.		--JGM	68.3
VAN NUYS-F	39939	68/	3/	24	2	43	0.7	0.7	2.9	2.9			61.0	160.0	350.		--JGM	67.9
VAN NUYS-F	39940	68/	3/	25	2	51	0.5	0.5	2.8	2.8								

SDC NO.	1088	65-9B	PERIOD =			APOLLO			USA			LAUNCHED 65/ 2/16			IN ORBIT			
						97.1			PERIGEE = 310.1			APOGEE = 456.1			INCL = 31.8			
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ADELAIDE-AUS	38808	65/	2/	17	10	48	3.0	3.0	3.6	3.6			35.0	293.5	750.	STEADY	--AC9	112.0
VAN NUYS-F	38808	65/	2/	17	13	6	3.0	3.0	4.5	4.5			41.0	205.0	510.	VARIABLE	--JGM	60.0
VAN NUYS-F	38808	65/	2/	17	13	7	3.5	5.1	5.1	5.1			45.5	170.2	470.	TP ABOUT 45 SEC	--JGM	84.2
WALNUT CREEK	38808	65/	2/	17	13	7	3.0	0.0	0.0	0.0			28.5	168.0		STEADY 5 DEG 42 SEC AFTER 1	--DFC	87.9
CAL TECH	38809	65/	2/	18	13	23	1.0	3.0	3.0	3.0			58.4	172.5	400.		--AMH	82.6
VAN NUYS-F	38809	65/	2/	18	13	23	2.0	2.0	3.7	3.7			52.0	160.0	450.		--JGM	91.5
VAN NUYS-F	38810	65/	2/	19	13	39	2.2	2.2	4.2	4.2			65.0	183.0	390.		--JGM	80.1
WALNUT CREEK	38815	65/	2/	24	13	17	2.0	0.0	0.0	0.0						STEADY 6.6 MIN AFTER 1	--DFC	
WALNUT CREEK	38816	65/	2/	25	13	33	2.0	0.0	0.0	0.0						STEADY 7.3 MIN AFTER 1	--DFC	
STPETERSBURG	38818	65/	2/	27	10	39	1.0	4.0	0.0	0.0	12.00						--FK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	38826	65/	3/	7	2	32	6.0		6.1				18.5	153.0	940.	TRACKED 8R SEC STEADY	--RR	57.8
SAN ANTONIO	38827	65/	3/	8	1	9	3.0	3.0	3.7	3.7			27.3	154.5	716.	STEADY	--PM	65.2
MADISON	38827	65/	3/	8	1	11	5.2	5.2	4.6	4.6			8.7	157.5	1321.	STEADY	--RDW	59.4
STPETERSBURG	38827	65/	3/	8	1	11	1.0	1.0	0.0	0.0							--FK	
PHOENIX R	38827	65/	3/	8	2	48	5.0		5.8				29.0	159.0	707.	STEADY TRACKED 90 SEC	--RJE	59.0
SAN ANTONIO	38828	65/	3/	9	1	23	3.6	4.5	5.1	6.0			46.3	159.0	501.	+3.6IN EAST, 4.5IN SSEAST	--PM	67.5
STPETERSBURG	38829	65/	3/10		0	0	1.0	1.0	0.0	0.0			62.5	159.8			--FK	76.1
STPETERSBURG	38830	65/	3/11		0	16	1.5	1.5	0.0	0.0			81.0	349.2	381.	STEADY	--FK	75.5
SAN ANTONIO	38830	65/	3/11		1	55	2.0	2.0	4.1	4.1			58.8	172.0	380.		--JGM	63.1
VAN NUYS-F	38830	65/	3/11		3	34	2.3		4.4				17.1	172.3	923.	STEADY	--FK	75.5
STPETERSBURG	38831	65/	3/12		0	32	1.5	1.5	0.0	0.0			63.3	176.0	395.		--GCL	
MADISON	38832	65/	3/13		-0	48	3.3	3.3	3.5	3.5			71.0	179.5	381.	TRACKED 120SEC STEADY	--FK	78.9
STPETERSBURG	38832	65/	3/13		0	49	1.5	1.5	0.0	0.0			71.0	179.5	381.	ST	--JGM	73.8
VAN NUYS-F	38833	65/	3/14		2	39	2.3	2.8	4.3	4.8			65.9	5.0	382.		--RR	78.9
PHOENIX R	38833	65/	3/14		2	41	3.9	3.9	6.0	6.0			29.2	187.8	650.	1965-98 STEADY	--PM	81.1
SAN ANTONIO	38835	65/	3/16		1	34	3.0	3.0	5.1	5.1			71.5	196.1	369.		--SMB	74.9
BRISTLE BACK	38835	65/	3/16		1	34	4.3		5.2				43.6	201.1	487.		--FK	81.4
STPETERSBURG	38837	65/	3/18		0	27	1.5	1.5	0.0	0.0			14.0	200.0	1000.	STEADY	--PM	89.0
SAN ANTONIO	38837	65/	3/18		2	4	1.0	4.0	3.2	6.2			30.0	130.0	600.	STEADY	--RC	26.5
SAN ANTONIO	38838	65/	3/19		2	21	3.5	3.5	5.1	5.1			50.0	180.0	450.		--LDH	57.7
WALNUT CREEK	38838	65/	3/19		3	58	4.5		4.5				49.0	330.0	400.	STEADY	--GR	91.5
CAL TECH	38879	65/	4/29		3	13	2.0		3.1				32.0	97.0	700.	STEADY	--GR	17.1
MOUNT PINOS	38882	65/	5/	2	4	2	1.7	1.7	3.4	3.4			66.0	80.0	450.	STEADY	--AA	50.9
DURBAN B	38953	65/	7/12		17	23	2.0	2.0	4.0	4.0					530.		--PM	
DURBAN B	38956	65/	7/15		16	32	2.0	2.0	2.8	2.8					416.		--PM	
DURBAN B	38963	65/	7/22		16	39	2.5	2.5	4.2	4.2					440.		--PM	
SAN ANTONIO	38977	65/	8/	5	2	34	2.5	2.5	3.9	3.9					438.		--PM	
SAN ANTONIO	38979	65/	8/	7	3	6	2.0	2.0	4.0	4.0					625.		--PM	
SAN ANTONIO	38980	65/	8/	8	3	21	2.2	2.2	4.0	4.0					400.		--PM	
SAN ANTONIO	38989	65/	8/17		2	20	3.3	3.3	5.1	5.1					470.		--PM	
SAN ANTONIO	38990	65/	8/18		2	36	3.0	3.0	4.0	4.0					450.		--PM	
VAN NUYS-F	39114	65/12/20			14	4	2.2	2.2	4.2	4.2			57.9	188.8	400.		--JGM	87.8
VAN NUYS-F	3914C	66/	1/15		2	3	2.7	2.7	3.6	3.6			28.7	116.0	670.		--JGM	44.1
VAN NUYS-F	39443	66/11/14			2	26	2.7	2.7	4.3	4.3			50.0	180.0	470.		--JGM	80.5
VAN NUYS-F	39589	67/	4/	9	4	17	2.5	2.5	4.2	4.2			60.0	180.0	450.		--JGM	55.6
AUSTIN	39740	67/	9/	7	2	24	2.0	2.0	3.7	3.7			74.0	3.0	454.		--NM	74.9
VAN NUYS-F	39991	68/	5/15		3	49	2.5	2.5	4.4	4.4			65.0	193.0	410.		--JGM	70.7

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
VAN NUYS-F 39992 68/ 5/16 4 2 3.3 3.3 5.2 5.2 65.0 210.0 410. --JGM 75.0

SDC NO. 1089 65-11A COSMOS 54 USSR LAUNCHED 65/ 2/21 IN ORBIT
PERIOD = 105.0 PERIGEE = 160.3 APOGEE = 1073.1 INCL = 56.0

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
WALNUT CREEK 38873 65/ 4/23 5 11 9.0 9.0 0.10 73.2 318.0 1016. 0.5 DEG NW 37 SEC LATE --DFC 81.8
WALNUT CREEK 38874 65/ 4/24 3 48 10.0 9.7 62.7 129.0 1151. SOME FLUX IN 1 DFG. --DFC 52.4
HEIDELBERG 39131 66/ 1/ 6 17 29 8.4 8.4 69.0 0.0 991. STEADY OCC FLASHES --GLU 69.0
STADE/ELBE 39204 66/ 3/20 19 13 6.5 7.0 9.9 10.4 60.0 180.0 210. IRREGULAR VARYING --MK 66.4
STADE/ELBE 39960 68/ 4/14 21 2 5.5 7.5 7.9 9.9 4.00 65.0 5.0 330. VAR PER APPROX --MK 89.0
STADE/ELBE 39961 68/ 4/15 20 44 5.5 5.5 7.9 7.9 65.0 5.0 330. ST --MK 89.8

SDC NO. 1090 65-11B COSMOS 55 USSR LAUNCHED 65/ 2/21 RE-ENTERED 2/ 2/68
PERIOD = 105.3 PERIGEE = 162.2 APOGEE = 1099.3 INCL = 56.0

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
WALNUT CREEK 38873 65/ 4/23 5 28 9.0 9.0 0.10 66.0 320.0 1020. 1.5 DEG SE R SEC LATE --DFC 86.6
WALNUT CREEK 38875 65/ 4/25 4 38 8.5 8.3 0.10 71.4 319.0 1080. FLASHES ALTERNATING 1 AND 2 --DFC 88.7
WALNUT CREEK 38876 65/ 4/26 5 9 9.0 8.5 0.10 49.8 327.0 1249. -- 105.1
WALNUT CREEK 38881 65/ 5/ 1 4 30 9.0 8.1 0.10 33.2 339.0 1520. 1 FLASH INTERVAL TIMED --DFC 120.6
SAN JOSE 38883 65/ 5/ 3 4 58 7.5 6.4 1.00 25.9 349.2 1690. 64 11 8 FLASHES VIS ONLY --RLG 120.2
SAN JOSE 38883 65/ 5/ 3 4 59 6.5 5.3 8.52 1.20 25.5 352.0 1700. 10 CYCLES MEASURED --RRR 118.8
PHOENIX R 38850 65/ 5/10 4 48 10.0 8.9 3.00 21.5 22.4 1631. 3 FLASHES ORS MIN INV --RR 100.9
PHOENIX R 38857 65/ 5/17 4 28 9.1 9.1 52.0 41.2 950. STEADY --RR 74.5
STPETERSBURG 39349 66/10/ 1 0 32 1.0 1.0 3.1 3.1 374. --FK

SDC NO. 1091 65-11C PERIOD = 104.6 COSMOS 56 USSR LAUNCHED 65/ 2/21 RE-ENTERED 11/ 2/67
PERIOD = 104.6 PERIGEE = 160.3 APOGEE = 1049.5 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX R	38508	64/	4/23		3	45	6.0		0.0							TER 6TH MAG 1 3RD MAG FLASH--RRR	--RRR	
PHOENIX R	38508	64/	4/23		3	45	6.0		0.0							IN 90 SEC TRACK	--RRR	27.1
VAN NUYS-F	38869	65/	4/19		4	18	8.0		7.5				48.9	125.0	1260.		--JGM	87.1
PHOENIX R	38870	65/	4/20		2	37	9.0		9.0				84.7	311.4	1005.	MIN INVISIBLE	--RRR	
STPETERSBURG	38870	65/	4/20		2	52	8.0	10.0	0.0	0.0						1 6 MAG FLASH ONE-HALF SEC	--FK	
VAN NUYS-F	38870	65/	4/20		4	36	8.0		7.9		2.41	1.00	73.5	130.0	1045.	MAX OF DIFF MAG +9.0 TO +9.0	--JGM	48.7
PHOENIX R	38871	65/	4/21		3	7	8.0		7.4		1.64		44.3	123.7	1336.	MIN INVISIBLE	--RR	31.9
VAN NUYS-F	38871	65/	4/21		4	55	7.5		7.5		4.90		78.8	313.0	1015.	MIN INVIS. WHOLE TP. CYCLE	--JGM	73.4
CAL TECH	38871	65/	4/21		4	55	7.0		7.0		4.90		78.2	313.9	1018.	SMOOTH MAX, SPIKES DETWIXT	--AMH	73.9
																CONSISTS OF +7.5 SMOOTH MAX, --JGM		
																+8.2 SMOOTH MAX HALF WAY, --JGM		
																THEN +7.5 FLASH .2 SEC LONG --JGM		
PHOENIX R	38873	65/	4/23		3	45	6.0		6.0		5.10		84.0	311.3	1019.	MIN INV SEVERAL TWINKLES AF--RRR	--JGM	75.9
SAN JOSE	38875	65/	4/25		4	20	6.5	9.5	6.1	9.1	4.90	0.10	73.0	335.0	1200.	MAG BUILD-UP, QUICK TAILOFF	--RRR	87.6
WALNUT CREEK	38876	65/	4/26		4	40	9.0		8.7							FLASH (MAG+5), LULL 2 SEC	--RLG	
SAN ANTONIO	38901	65/	5/21		3	9	7.5	7.5	8.2	8.2		0.10	56.6	324.0	1134.	IRREGULAR FLASHES	--	102.4
													89.7	203.5	725.	STEADY	-- PM	69.3

SDC NO. 1092 65-11D PERIOD = 106.3 ROCKET BODY USSR LAUNCHED 65/ 2/21 IN ORBIT
PERIOD = 106.3 PERIGEE = 169.0 APOGEE = 1140.2 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38833	65/	3/14		17	30	1.5	1.5	2.3	2.3			70.0	50.0	700.		-- GR	55.5
DURBAN C	38833	65/	3/14		17	33	3.8	3.8	4.0	4.0			27.0	135.0	900.	STEADY ALL THE TRANSIT	-- GR	54.5
CAL TECH	38869	65/	4/19		4	59	6.0	8.0	5.5	7.5	36.70		60.4	126.7	1239.	SMOOTH	--JDR	31.5
VAN NUYS-F	38869	65/	4/19		5	0	5.0	6.5	4.5	6.0	35.00		60.2	127.0	1240.	HAS SMOOTH DIPS	--JGM	31.2
TERRE HAUTE	38870	65/	4/20		2	12	7.0		6.0				35.5	122.0	1608.	STEADY 8 MIN	--DD	17.0
VAN NUYS-F	38870	65/	4/20		3	57	5.0	5.5	3.9	4.4			35.2	123.0	1640.		--JGM	17.7
SAN ANTONIO	38870	65/	4/20		3	59	5.8	8.5	5.6	8.3	34.00		83.7	309.7	1116.	ST OVERHEAD FOR 1MIN, 34SEC	-- PM	61.6
SAN ANTONIO	38871	65/	4/21		2	55	4.5	5.0	4.0	4.5			61.2	125.6	1245.	TOUGH TO GET PERIOD	-- PM	38.2
VAN NUYS-F	38871	65/	4/21		4	44	4.4	5.5	4.1	5.2	29.50		72.1	130.0	1160.	TP FROM 6 CYCLES	--JGM	46.1
CAL TECH	38871	65/	4/21		4	45	4.0	5.0	3.7	4.7	28.00		72.5	123.1	1158.	GRFAT T.P. CONSISTENCY	--AMH	46.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38872	65	4	22	1	51	4.9	5.0	3.8	3.9			35.0	120.7	1651.	NOT MUCH VAR IN FIELD	--PM	26.2
WALNUT CREEK	38872	65	4	22	3	41	5.5	5.2	4.3	4.9			32.0	120.0	1721.	STEADY 2 MIN. 1.6 MIN LATE	--DFC	22.3
SAN ANTONIO	38872	65	4	22	3	44	5.2	5.2	4.9	4.9			70.9	312.8	1162.	RELATIVELY ST	--PM	77.2
SAN ANTONIO	38873	65	4	23	2	39	4.4	7.0	4.1	6.9			73.9	127.8	1163.	DIDN'T FOLLOW TO GET MIN	--PM	54.3
ROCHESTER	38873	65	4	23	2	46	4.7	7.0	4.5	5.3			88.0	314.0	1063.	STDY	--MMW	66.6
VAN NUYS-F	38873	65	4	23	4	28	4.7	5.5	4.5	5.3	18.30		85.1	132.0	1115.	TP FROM 17 CYCLES, SMOOTH VA	--JGM	62.3
VAN NUYS-F	38874	65	4	24	3	24	4.7	5.0	4.1	4.4			53.3	130.0	1330.	NEARLY STEADY	--JGM	44.1
SAN ANTONIO	38874	65	4	24	3	27	5.0	5.2	4.5	4.7			59.8	315.5	1245.	NO REG PER NOTED	--PM	91.4
WALNUT CREEK	38874	65	4	24	5	16	5.0	6.0	4.8	5.7			75.0	318.0	1117.	STEADY 6 MIN.	--LB	79.5
SAN ANTONIO	38875	65	4	25	2	23	6.0	6.0	5.7	5.7			87.3	132.1	1130.	LOOKED STEADY	--PM	71.0
VAN NUYS-F	38876	65	4	26	3	8	4.7	5.0	4.3	4.6	9.42		64.8	111.5	1220.		--JGM	57.1
VAN NUYS-F	38876	65	4	26	5	0	5.4	5.8	4.7	5.1	9.38		47.3	323.8	1360.		--JGM	104.5
PHOENIX R	38877	65	4	27	3	57	6.0	6.0	5.5	5.5			55.0	320.0	1272.	STEADY TRACKED 5 MIN	--RRR	102.5
WALNUT CREEK	38877	65	4	27	5	45	6.0	7.0	5.2	6.2			41.0	333.0	1426.	STEADY	--LB	109.4
VAN NUYS-F	38878	65	4	28	4	44	6.0	7.0	5.1	6.1	7.40		41.0	327.0	1480.	MIN ARE DIPS	--JGM	112.4
PHOENIX R	38879	65	4	29	3	40	6.0	7.0	5.3	6.3	6.50		47.3	323.0	1369.	GRADUAL FADE 6 TO 7 MAG	--RRR	112.0
PHOENIX R	38880	65	4	30	4	29	6.0	6.0	4.8	4.8	6.30		28.5	335.0	1723.	GRADUAL FADE 6 TO 8 MAG	INV--RRR	121.0
PHOENIX R	38880	65	4	30	4	29	6.0	6.0	0.0	0.0						3 TIMES DURING 10 TUMBLES	--RRR	
PHOENIX R	38881	65	5	1	3	24	6.0	7.0	5.2	6.2	7.83	2.00	41.7	326.0	1472.	FLASH ONLY SEEN WHEN IN WEST	--RJE	118.5
STADE/ELBE	38881	65	5	1	21	15	5.0	5.0	4.9	4.9			75.0	360.0	1028.	STEADY	--MK	86.7
MCUNT PINUS	38882	65	5	1	4	11	6.5	9.0	5.5	8.0	7.22		35.0	333.3	1600.		--JGM	120.6
VAN NUYS-F	38885	65	5	1	4	44	6.0	6.0	4.5	4.5	7.35		20.4	350.0	1960.	4 CYCLES. MINIMA BELOW +8.0	--JGM	122.1
VAN NUYS-F	38889	65	5	1	4	11	7.0	7.0	5.5	5.5	7.40		19.4	352.6	2000.	10 CYCLES DROPS FAST COMES	--DFC	121.2
WALNUT CREEK	38889	65	5	1	4	11	4.5	4.5	3.3	3.3	7.68		26.8	357.0	1747.	UP SLOW AND FLICKERING	--DFC	115.2
PHOENIX R	38889	65	5	1	6	8	6.0	7.0	5.3	6.3	7.67		28.0	30.3	1368.	GRADUAL CHANGE MAX TO MIN	--RR	98.9
PHOENIX R	38890	65	5	10	5	3	6.0	7.0	4.8	5.8	7.63		21.5	20.8	1700.	SAME AS MAY 9 OBS.	--RRR	103.5
MADISON	38892	65	5	12	2	58	6.5	6.5	6.1	6.1			44.5	19.7	1227.		--RDW	96.0
MADISON	38893	65	5	13	3	46	4.3	4.3	4.4	4.4			63.6	32.5	950.		--GCL	80.6
ROCHESTER	38893	65	5	13	3	48	6.5	6.5	6.9	6.9			81.0	140.0	820.	STDY	--MMW	55.6
ROCHESTER	38894	65	5	14	2	44	7.0	7.0	7.1	7.1			72.0	140.0	962.		--MMW	52.0
STPETERSBURG	38895	65	5	15	3	34	7.0	7.0	0.0	0.0	5.00					INVISIBLE AFTER 5 SEC	--FK	
VAN NUYS-F	38895	65	5	15	5	17	4.8	4.8	4.4	4.4			38.6	41.7	1200.		--JGM	79.8
PHOENIX R	38895	65	5	15	5	18	5.0	7.0	5.0	5.0			47.3	39.5	1022.	TRACKED 105 SEC NO TP OBS	--RRR	78.3
TERRE HAUTE	38896	65	5	16	2	26	5.0	7.0	4.6	6.6	9.60	3.00	45.0	29.0	1199.	IRREGULAR	--LD	87.8
WALNUT CREEK	38896	65	5	16	4	10	6.0	7.0	5.2	6.2	7.62		33.8	22.4	1453.	37.9/5 38.2/5 DIPS ARE LESS	--JAB	94.1
WALNUT CREEK	38896	65	5	16	4	10	6.0	7.0	0.0	0.0						THAN ONE SEC STEADY AFTER 20--DEG	--DEG	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38897	65/	5/17		4	58	4.0	4.5	3.8	4.3			51.1	34.8	1076.	SL FLUX AT CULM THEN STEADY	--DFC	81.6
CAL TECH	38897	65/	5/17		4	59	5.0	5.5	4.9	5.4	7.46		46.2	38.1	1050.		--AWH	78.9
VAL NUYS-F	38897	65/	5/17		5	0	5.0	5.0	4.8	4.8			43.0	43.0	1100.		--JGM	76.7
PHOENIX K	38857	65/	5/17		5	1	5.0	5.0	5.2	5.0			57.0	42.4	925.	STEADY TR 3 MIN NO TP OBS	--RR	72.3
PHOENIX K	38898	65/	5/18		3	57	5.0	5.5	4.5	5.0	7.68		36.9	34.4	1282.	SMOOTH CHANGE MAX TO MIN	--RKR	83.1
PHOENIX R	38900	65/	5/20		3	40	5.0	5.0	4.7	4.9			44.2	37.4	1172.	TRACKED 5 MIN NO TP OBS	--RKR	79.3
MADISON	38900	65/	5/20		3	42	5.1	5.1	4.9	4.9			44.8	231.6	1093.		--RDW	72.3
SAN ANTONIO	38901	65/	5/21		2	39	6.0	5.0	5.5	5.3			37.3	39.5	1254.	SLIGHT VARIATION	--PM	76.8
TERRE HAUTE	38901	65/	5/21		2	40	5.0	5.0	5.3	5.3			80.9	225.0	872.	STEADY	--DD	74.0
PHOENIX R	38902	65/	5/22		3	23	4.0	4.0	3.9	5.4			52.0	40.2	1070.	STEADY NO TP OBS IN 70SEC	--RKR	77.3
SAN ANTONIO	38902	65/	5/22		3	26	3.7	4.9	4.2	5.4			77.8	49.3	808.	MAX IN SEAST, MIN IN NORTH	--PM	65.9
SAN ANTONIO	38904	65/	5/24		3	9	5.0	5.0	5.5	5.4			85.3	229.2	802.	SLIGHT VAR, MAYBE PERIODIC	--PM	70.7
PHOENIX R	38904	65/	5/24		4	58	5.0	6.0	4.6	5.6			33.0	237.4	1221.	GRADUAL CHANGE MAX TO MIN	--RKR	80.9
STADE/ELBE	39285	66/	6/9		0	54	4.5	6.5	5.3	7.3	8.00		60.0	180.0	706.	REGULAR TUMBLING	--HK	50.8
STADE/ELBE	39285	66/	6/9		23	30	4.5	7.5	5.5	8.5	6.43		77.0	360.0	639.	REGULAR FLASHING	--HK	89.6
STADE/ELBE	39286	66/	6/10		22	11	4.5	7.5	5.3	8.3	4.50		77.0	180.0	702.	REGULAR FLASHING	--HK	65.7
SAN ANTONIO	39290	66/	6/14		2	57	5.0	5.0	5.1	5.1			37.3	318.2	976.	IN WEST, THEN REG VAR, PHTGRHD	--PM	126.2
SAN ANTONIO	39315	66/	7/9		3	25	3.0	3.0	4.1	4.1			70.1	0.0	605.	ST, NAKED EYE	--PM	83.7
STADE/ELBE	39362	66/	8/25		0	46	4.5	6.5	4.8	6.8	4.64		85.0	360.0	878.	REGULAR FLASHING	--HK	71.5
STADE/ELBE	39373	66/	9/5		21	31	4.0	6.5	5.0	7.5	4.82		75.0	360.0	644.	REGULAR FLASHING	--HK	77.7
STADE/ELBE	39376	66/	9/8		19	18	3.5	5.0	4.5	6.0	5.10		65.0	180.0	625.	REGULAR FLASHING	--HK	67.4
STADE/ELBE	39387	66/	9/19		19	1	3.5	6.0	4.1	6.6	4.62		70.0	360.0	750.	REGULAR FLASHING	--HK	84.2
STADE/ELBE	39388	66/	9/20		19	29	3.5	6.0	4.5	7.0	4.60		85.0	360.0	630.	REGULAR FLASHING	--HK	74.3
STADE/ELBE	39436	66/	11/7		5	33	0.1	4.5	2.7	7.1	4.80		75.0	360.0	300.	REGULAR FLASHING	--HK	77.4
STADE/ELBE	39440	66/	11/11		5	19	1.0	1.0	3.3	3.3			40.0	220.0	350.	STEADY	--HK	61.7
STADE/ELBE	39469	66/	12/10		17	19	1.0	5.0	3.0	7.0	5.26		75.0	360.0	400.	REGULAR FLASHING	--HK	68.4
STADE/ELBE	39477	66/	12/18		16	36	2.0	5.0	4.3	7.3			60.0	360.0	340.	REGULAR FLASHING	--HK	67.9
STADE/ELBE	39478	66/	12/19		16	58	1.5	5.5	3.9	7.9			80.0	360.0	330.	REGULAR FLASHING	--HK	71.4
STADE/ELBE	39479	66/	12/20		17	21	2.0	5.0	4.5	7.5			80.0	220.0	320.	REGULAR FLASHING	--HK	79.3
STADE/ELBE	39510	67/	1/20		5	53	5.0	7.0	5.7	7.7			80.0	360.0	720.	REGULAR FLASHING	--HK	74.1
POYNTON	39533	67/	2/12		20	15					5.05		39.0	175.0			--DMB	58.4
POYNTON	39533	67/	2/12		22	2					5.09		30.0	244.0			--DMB	85.1
POYNTON	39544	67/	2/23		19	25					5.14		35.0	260.0		TP +/- 0.05	--DMB	125.3
STADE/ELBE	39545	67/	2/24		19	45	4.5	8.0	4.5	8.0	5.32		83.0	360.0	1000.	REGULAR FLASHING	--HK	66.2
STADE/ELBE	39547	67/	2/26		18	24	4.0	8.0	4.0	8.0	5.32		80.0	360.0	1000.	REGULAR FLASHING	--HK	76.7
STADE/ELBE	39551	67/	3/2		19	23	4.0	8.0	4.0	8.0	5.30		88.0	360.0	1000.	REGULAR FLASHING	--HK	68.9
POYNTON	39602	67/	4/22		2	8	2.8		5.6		5.57		60.0	270.0	280.	TP +/- 0.03	--DMB	57.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39614	67	5	4	22	33	0.1		2.9		5.71		67.0	350.0	270.		--DMB	94.5
POYNTON	39615	67	5	5	0	20	0.1		2.9		5.70		68.0	0.0	270.	STEADY	--DMB	91.4
STADE/VELBE	39615	67	5	5	20	54	1.0	1.0	4.0	4.0			89.0	140.0	253.	STEADY	--HK	75.4
STADE/VELBE	39617	67	5	7	21	8	2.0	2.0	3.6	3.6			60.0	360.0	480.	STEADY	--HK	101.4
STADE/VELBE	39618	67	5	8	23	2	2.0	2.0	3.9	3.9			78.0	360.0	420.	STEADY	--HK	82.7
HEIDELBERG	39618	67	5	8	23	3	2.4	2.7	3.5	3.8	5.64		38.0	340.0	600.	FLASHING	--GLU	117.0
STADE/VELBE	39620	67	5	10	21	29	2.0	2.5	3.6	4.1			65.0	360.0	470.	STEADY FAINT VARYING	--HK	97.4
STADE/VELBE	39620	67	5	10	23	15	2.0	2.5	3.6	4.1			70.0	220.0	480.	FLASHING	--HK	56.8
HEIDELBERG	39620	67	5	10	23	20	3.1	3.6	4.4	4.9	5.66		61.0	100.0	550.	FLASHING	--GLU	65.1
STADE/VELBE	39623	67	5	13	21	47	1.5	2.0	3.8	4.3			85.0	360.0	350.	STEADY BUT FAINT VARYING	--HK	79.2
HEIDELBERG	39683	67	7	12	22	13	2.8	2.8	3.6	3.6			34.0	170.0	700.	STEADY	--GLU	19.1
POYNTON	39683	67	7	12	23	59					6.39		55.0	150.0	500.	TP +/- 0.05	--DMB	45.3
STADE/VELBE	39684	67	7	13	22	14	4.8	4.8	6.0	6.0			27.0	140.0	580.	STEADY	--HK	25.3
STADE/VELBE	39684	67	7	13	23	58	2.0	4.0	3.8	5.8			89.0	180.0	440.	SLOWLY FLASHING	--HK	74.7
HEIDELBERG	39690	67	7	19	21	55	3.6	3.6	4.5	4.5			60.0	260.0	650.	STEADY	--GLU	82.2
STADE/VELBE	39691	67	7	20	21	53	2.0	3.5	3.4	4.9	6.40	0.90	85.0	180.0	525.	FLASHING	--HK	72.5
STADE/VELBE	39693	67	7	22	21	47	3.0	4.0	4.5	5.5			83.0	360.0	510.	FLASHING	--HK	83.4
POYNTON	39694	67	7	23	21	42					6.39		90.0	-0.0		TP +/- 0.05	--DMB	80.5
STADE/VELBE	39695	67	7	24	21	40	3.5	6.5	4.6	7.6	6.52	0.90	75.0	360.0	590.	REGULAR FLASHING	--HK	90.6
HEIDELBERG	39701	67	7	30	21	17	4.2	7.6	5.0	8.4	6.43		33.0	310.0	700.	REGULAR FLASHING	--GLU	128.6
STPETERSBURG	39774	67	10	11	0	50	5.0	5.0	0.0	0.0			41.0	243.0	830.	FLASHING	--GLU	97.7
HEIDELBERG	39775	67	10	12	19	28	3.8	6.6	4.2	7.0	7.23	1.00	27.0	140.0	800.	FLASHING SLOWLY TUMBLING	--HK	49.3
STADE/VELBE	39776	67	10	13	17	35	4.5	9.0	5.0	9.5			40.0	340.0	930.	TP 7.0 SFC + OR - .5	--MPC	95.7
GRANBY	39779	67	10	16	0	5	5.0	7.0	5.2	7.2			89.0	360.0	650.	FLASHING	--HK	70.2
STADE/VELBE	39781	67	10	18	18	31	3.0	7.0	3.9	7.9	7.10		60.0	335.0	690.	FLASHING	--GLU	88.5
HEIDELBERG	39782	67	10	19	18	17	3.5	6.3	4.3	7.1	7.28		53.0	18.0	790.	FLASHING	--GLU	68.1
HEIDELBERG	39783	67	10	20	18	9	3.4	6.5	3.9	7.0	7.22		54.0	8.0	790.	FLASHING	--GLU	73.8
HEIDELBERG	39784	67	10	21	17	58	3.3	6.3	3.8	6.8	7.20		25.0	355.0	1250.	TP +1- 0.1, FLICKER OUR MIN	--GLU	92.8
GRANBY	39785	67	10	22	0	50	5.5	7.5	5.0	7.0	7.20		26.0	3.0	1250.	FLASH DUR EST 3SFC, FLICK-MIN	--MPC	85.3
GRANBY	39786	67	10	23	0	39	5.5	7.5	5.0	7.0	7.20		27.0	15.0	750.	FLASHING	--HK	66.1
STADE/VELBE	39787	67	10	24	0	29	6.0	7.5	4.1	8.1	7.43	1.00	27.0	15.0	1300.	FLICKERING DURING MIN	--MPC	74.3
GRANBY	39788	67	10	25	0	16	6.0	7.5	5.4	6.9			27.0	6.0	1300.	RFG DIFFUSED FLASHING	--MPC	80.2
GRANBY	39788	67	10	25	23	53	6.0	7.5	5.4	6.9			27.0	25.0	1300.	FLASHING	--MPC	62.1
POYNTON	39789	67	10	25	18	57					7.18		65.0	50.0			--DMB	54.7
HEIDELBERG	39789	67	10	25	18	59	3.4	6.6	3.8	7.0	7.27		56.0	12.0	820.	SLOWLY TUMB CLOUDS	--GLU	68.8
STADE/VELBE	39789	67	10	26	18	47	3.0	7.0	3.7	7.7	8.00	1.00	83.0	360.0	730.	FLASHING	--HK	67.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39751	67/10/28	18	22		3.6	6.6	4.0	7.0	7.25			55.0	344.0	820.	TUMB CLOUDS	--GLU	83.7
GRANBY	39753	67/10/30	1	3		5.5	7.5	5.7	7.7	7.50			48.0	337.0	900.	UNEQUAL MAX TUMB	--MPC	84.2
GRANBY	39753	67/10/30	18	0		3.0	4.0	3.0	4.0	7.32			41.0	82.0	980.		--GLU	23.5
GRANBY	39753	67/10/30	23	5		5.5	7.5	5.3	7.3	7.40			29.0	16.0	1100.		--MPC	64.5
GRANBY	39754	67/10/31	0	50		5.5	7.5	5.8	7.8	7.40			50.0	335.0	870.		--MPC	84.1
GRANBY	39757	67/11/ 3	0	13		4.5	5.0	5.2	5.7				83.0	290.0	720.	FLASHING CLOUDS	--MPC	68.6
HEIDELBERG	39757	67/11/ 3	20	55		3.5	6.5	3.7	6.7	7.34			48.0	250.0	920.		--GLU	72.3
GRANBY	39758	67/11/ 4	23	49		4.5	5.0	5.2	5.7				87.0	298.0	710.		--MPC	68.7
STPETERSBURG	39801	67/11/ 7	1	5		4.0	4.0	0.0	0.0				79.7	257.3		--FK	69.8	
STPETERSBURG	39802	67/11/ 8	0	54		3.5	3.5	0.0	0.0				43.8	159.7		--FK	59.0	
STPETERSBURG	39805	67/11/11	23	52		3.0	0.0	0.0	0.0	3.00			48.0	288.0	235.	ST	--GLU	59.7
HEIDELBERG	39875	68/ 1/20	17	24		1.5	1.5	4.6	4.6				72.0	56.0	255.	ST	--GLU	48.3
STPETERSBURG	39876	68/ 1/21	17	2		1.6	1.6	4.6	4.6				58.0	68.0		VERY FAST SLOW TUMBLE	--FK	54.8
STADE/ELBE	39881	68/ 1/26	0	6		1.0	4.0	0.0	0.0	3.00			41.0	130.4	650.	REGULAR TUMB	--HK	67.8
GRANBY	39907	68/ 2/21	3	57		3.5	6.0	4.4	6.9	1.50			85.0	358.0	1270.	FLASHING DOUBLE MIN	--MPC	83.9
GRANBY	39908	68/ 2/22	10	17		5.5	7.5	5.0	7.0				23.0	0.0	1130.	FLASHING DOUBLE MIN	--MPC	102.7
GRANBY	39910	68/ 2/24	7	36		6.0	8.0	5.7	7.7				28.0	25.0	1450.	FLASHING MIN INV	--MPC	115.6
GRANBY	39910	68/ 2/24	9	24		7.0	6.2	6.2	0.0				17.0	30.0			--FK	89.6
STPETERSBURG	39925	68/ 3/10	1	39		4.5	4.5	0.0	0.0	5.17			59.2	310.2	1100.	TUMB	--HK	34.3
STADE/ELBE	39926	68/ 3/11	19	43		4.5	5.5	4.3	5.3				50.0	140.0	830.	VAR MIN INV SHOPT OBS SHADOW	--HK	57.1
STADE/ELBE	39926	68/ 3/11	21	27		5.5	5.9	5.9	5.9				89.0	355.0			--FK	81.3
STPETERSBURG	39927	68/ 3/12	0	36		7.0	7.0	0.0	0.0				83.9	307.2			--FK	81.3
HEIDELBERG	39927	68/ 3/12	19	9		3.6	4.8	3.4	4.6	4.97			43.0	186.0	1105.	TUMB NOON	--GLU	70.7
HEIDELBERG	39927	68/ 3/12	20	55		3.5	4.0	3.6	4.1	5.02			57.0	278.0	940.	TUMB MINN	--GLU	86.3
HEIDELBERG	39934	68/ 3/19	18	56		3.4	6.7	3.7	7.0	5.22			67.0	328.0	880.	TUMB	--GLU	93.7
HEIDELBERG	39934	68/ 3/19	20	42		3.5	7.5	3.5	7.5	5.22			53.0	349.0	985.	TUMB	--GLU	91.2
STADE/ELBE	39937	68/ 3/22	20	52		4.0	6.5	4.4	6.9	5.30			83.0	359.0	850.	REG TUMBLE	--HK	68.6
STADE/ELBE	39941	68/ 3/26	20	26		4.0	6.5	4.3	6.8	5.38			77.0	220.0	870.	TUMB	--HK	68.2
HEIDELBERG	39942	68/ 3/27	19	52		4.0	7.0	3.9	6.9	5.31			47.0	315.0	1045.	TUMB	--GLU	111.8
HEIDELBERG	39943	68/ 3/28	19	20		4.4	7.5	4.4	7.5	5.30			53.0	325.0	985.	TUMB	--GLU	106.9
HEIDELBERG	39943	68/ 3/28	21	5		3.8	5.0	4.0	5.2	5.35			55.0	260.0	925.	TUMB	--GLU	82.8
HEIDELBERG	39945	68/ 3/30	20	0		3.6	6.0	3.9	6.3	5.48			65.0	280.0	860.	TUMB	--GLU	93.1
STPETERSBURG	39946	68/ 3/31	2	47		6.0	8.0	0.0	0.0				32.4	1.3		TP FST 2 SEC	--FK	90.0
VAN NUYS-F	39950	68/ 4/ 4	4	0		4.0	4.0	4.4	4.4				57.0	95.0	850.		--JGW	37.9
STADE/ELBE	39990	68/ 5/14	23	46		3.0	4.0	4.3	5.3				35.0	140.0	550.	SLOWLY TUMB	--HK	45.1

SDC NO. 1095 65-128 PERIOD = 90.9 PERIGEE = 108.1 APOGEE = 290.8 INCL = 64.7
 LAUNCHED 65/ 2/22 DECAYED 3/5-6/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	38819	65/	2/	28	2	41	0.1	4.0	3.3	7.2	3.50		40.0	57.0	230.	ONE -2. MAG FLASH OBSERVED	--DFC	40.8
SAN ANTONIO	38820	65/	3/	1	1	10	0.2	3.5	3.6	6.9			55.0	60.6	205.	VARIABLE ONE BRIGHT FL IN SE	--PM	50.4
WALNUT CREEK	38820	65/	3/	1	2	39	0.1	4.0	3.9	7.8	4.01		56.0	240.0	170.	REGULAR FLUX	--	111.9
SAN ANTONIO	38821	65/	3/	2	1	5	0.1	5.0	3.7	8.6	4.05		70.0	242.0	192.		--PM	100.7

SDC NO. 1097 65-14A PERIOD = 96.8 PERIGEE = 348.0 APOGEE = 403.3 INCL = 65.0
 LAUNCHED 65/ 2/26

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38819	65/	2/	28	17	30	3.0	3.0	5.1	5.1			73.0	82.0	380.	STEADY-REV NO 37	--GR	59.9
DURBAN B	38858	65/	4/	8	17	33	5.5	6.8	6.3	7.6			36.0	266.0	700.	SLOW TUMBLE	--AA	119.7
DURBAN B	38858	65/	4/	8	17	34	4.0	4.0	4.7	4.7			32.0	342.0	710.	NOW STEADY	--GR	86.9
DURBAN B	38860	65/	4/	10	16	23	5.0	5.0	6.5	6.5			60.0	96.0	500.		--AA	50.5
STPETERSBURG	38863	65/	4/	13	1	5	2.0	2.0	0.0	0.0							--FK	
PHOENIX R	38863	65/	4/	13	4	22	6.0	7.0	6.9	7.9			47.00	34.0	306.5	2 6TH MAG FLASH 3 SEC APART	--RKR	117.4
VAN NUYS-F	38864	65/	4/	14	4	35	6.5	7.2	7.3	8.0			26.50	32.6	307.5	TP MAYBE 1/3 OF THIS. SMOOTH	--JGM	121.3
TOWNSVILLE	38864	65/	4/	14	9	10	7.5	7.5	7.7				19.3	294.0	898.	SMOOTH VARIATION MINIMA INV	--APS	139.5
CAL TECH	38865	65/	4/	15	3	8	6.0	6.0	7.4	7.4			47.4	117.1	535.	STEADY	--JDR	38.3
SAN ANTONIO	38866	65/	4/	16	1	41	6.5	8.4	8.4				76.7	118.8	432.	VARIABLE	--PM	67.7
CAL TECH	38866	65/	4/	16	3	21	5.0	5.0	7.0	7.0			85.6	298.8	405.	STEADY, DID NOT TRACK	--JDR	82.3
PHOENIX R	38866	65/	4/	16	3	22	6.0	7.0	7.3	8.3			1.00	45.1	304.3	2 6TH MAG FLASH 3 SEC APART	--RKR	117.2
VAN NUYS-F	38866	65/	4/	16	3	20	3.5	5.0	5.5	7.0			3.00	88.5	297.0	MAX APF BROAD FLASHES	--JGM	79.7
TERRE HAUTE	38866	65/	4/	17	1	59	7.0	9.0	8.0	10.0			1.00	37.5	310.0	STEADY 1 MIN	--LD	124.6
TERRE HAUTE	38868	65/	4/	18	2	12	10.0	10.3	10.3				22.5	315.0	874.		--DD	136.8
VAN NUYS-B	38868	65/	4/	18	3	46	7.5	8.5	7.9	8.9			24.5	309.4	820.		--JGM	137.2
STPETERSBURG	38902	65/	5/	22	1	13	5.0	5.0	0.0	0.0						STEADY	--FK	
DURBAN B	38915	65/	6/	4	17	1	6.0	6.0	5.6	5.6			13.0	218.0	1200.	STEADY	--GR	106.5
DURBAN B	38917	65/	6/	6	15	44	4.5	6.0	0.0	0.0						SLOW TUMBLE	--AA	
DURBAN B	38948	65/	7/	7	17	29	5.0	6.0	5.5	6.5			28.0	266.0	800.	MAINLY +6	--GR	120.9
DURBAN B	38949	65/	7/	8	16	4	5.5	5.5	6.1	6.1			34.0	93.0	770.	STEADY	--GR	26.9
STADE/ELBE	38949	65/	7/	8	21	20	5.0	6.5	6.8	8.3			70.0	140.0	430.	STEADY WITH SLOW TUMBLE	--HK	61.2
DURBAN B	38950	65/	7/	9	16	15	3.0	6.0	4.6	7.6			84.0	106.0	470.	SLOW ROLL	--AA	70.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38951	65/	7/10	16	27	3.0	3.0	3.8	6.2	6.2			40.0	266.0	680.	IRREGULAR TUMBLE	--	AA 120.6
STADE/ELBE	38968	65/	7/27	22	3	5.0	5.0	6.2	6.3	7.8			40.0	55.0	570.	STEADY	--	HK 90.8
STADE/ELBE	38972	65/	7/31	21	14	5.0	6.5	6.5	6.3	7.8			42.0	55.0	560.	VARYING	--	HK 93.3
STADE/ELBE	38972	65/	7/31	22	54	1.0	4.5	2.4	5.9	5.9	15.00		43.0	220.0	520.	TUMBLING MAX MAG 1	--	HK 47.9
STADE/ELBE	38974	65/	8/ 2	21	39	4.5	4.5	6.6	6.6	6.6			89.0	55.0	388.	STEADY	--	HK 75.2
STADE/ELBE	39077	65/11/13	17	32	3.5	3.5	3.5	5.5	5.5	5.5			67.0	50.0	400.	STEADY	--	HK 53.5
STADE/ELBE	39078	65/11/14	17	45	1.5	3.0	3.0	3.6	5.1	5.1			80.0	220.0	375.	STEADYSLOWLYFADINGGREATMAX	--	HK 76.8
STADE/ELBE	39145	66/ 1/20	17	37	6.0	6.5	7.3	7.8	7.8	7.8			40.0	310.0	560.	STEADY	--	HK 105.8
STADE/ELBE	39240	66/ 4/25	21	44	5.0	6.5	7.1	8.6	7.1	8.6			80.0	50.0	380.	STEADY VERY SLOWLY TUMBLING	--	HK 72.8
STADE/ELBE	39244	66/ 4/29	20	55	5.5	5.5	7.6	7.6	7.6	7.6			80.0	215.0	375.	STEADY	--	HK 71.8
STADE/ELBE	39302	66/ 6/26	22	11	5.0	5.0	7.1	7.1	7.1	7.1			80.0	140.0	375.	STEADY	--	HK 69.4
STADE/ELBE	39481	66/12/22	5	10	4.5	4.5	6.2	6.2	6.2	6.2			80.0	220.0	450.	STEADY	--	HK 65.5
STADE/ELBE	39581	67/ 4/ 1	18	55	5.5	5.5	7.4	7.4	7.4	7.4			80.0	140.0	410.	STEADY	--	HK 72.0
AUSTIN	39613	67/ 5/ 3	2	42	6.5	6.5	7.4	7.4	7.4	7.4			33.0	245.0	650.	STEADY	--	MM 105.0
STADE/ELBE	39656	67/ 6/15	23	7	6.0	6.0	7.4	7.4	7.4	7.4			64.0	310.0	530.	STEADY	--	HK 95.3
HEIDELBERG	39681	67/ 7/10	23	8	5.0	5.0	6.8	6.8	6.8	6.8			82.0	55.0	430.	STEADY	--	GLU 75.9
STADE/ELBE	39681	67/ 7/10	23	9	5.0	5.0	6.6	6.6	6.6	6.6			70.0	220.0	480.	STEADY	--	HK 62.2
HEIDELBERG	39683	67/ 7/12	21	53	6.4	6.4	7.3	7.3	7.3	7.3			32.0	100.0	650.	STEADY	--	GLU 53.8
STADE/ELBE	39684	67/ 7/13	22	3	7.0	7.0	8.9	8.9	8.9	8.9			85.0	220.0	410.	STEADY	--	HK 75.2
HEIDELBERG	39688	67/ 7/17	21	11	5.8	5.8	7.3	7.3	7.3	7.3			73.0	80.0	500.	STEADY	--	GLU 71.1
HEIDELBERG	39690	67/ 7/19	21	34	5.9	5.9	6.8	6.8	6.8	6.8			39.0	245.0	650.	STEADY	--	GLU 83.0
HEIDELBERG	39758	67/ 9/25	19	10	5.3	5.3	6.7	6.7	6.7	6.7			63.0	260.0	530.	STEADY MOON	--	GLU 94.7
HEIDELBERG	39782	67/10/19	18	53	6.8	6.8	7.4	7.4	7.4	7.4			27.0	0.0	760.	STEADY MOON	--	GLU 90.2
HEIDELBERG	39791	67/10/28	17	21	5.5	5.5	7.4	7.4	7.4	7.4			70.0	72.0	420.	ST CLOUDS	--	GLU 58.6
HEIDELBERG	39793	67/10/30	17	43	7.6	7.6	8.9	8.9	8.9	8.9			41.0	250.0	560.	ST	--	GLU 120.8
HEIDELBERG	39875	68/ 1/20	17	43	6.2	6.2	6.7	6.7	6.7	6.7			25.0	0.0	780.	ST	--	GLU 72.4
HEIDELBERG	39876	68/ 1/21	17	54	5.7	5.7	6.5	6.5	6.5	6.5			30.0	0.0	685.	ST	--	GLU 72.7
HEIDELBERG	39934	68/ 3/19	19	40	5.4	5.4	6.9	6.9	6.9	6.9			49.0	2.0	505.	ST	--	GLU 88.9
STADE/ELBE	39939	68/ 3/24	18	56	5.0	5.5	6.3	6.8	6.3	6.8			53.0	310.0	550.	ST	--	HK 113.1
STADE/ELBE	39956	68/ 4/10	20	27	6.0	6.0	8.1	8.1	8.1	8.1			89.0	55.0	375.	ST MOON	--	HK 71.9
HEIDELBERG	39963	68/ 4/17	20	5	7.6	7.6	8.3	8.3	8.3	8.3			27.0	250.0	710.	ST	--	GLU 108.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39753	67/10/30	18	1	5.0	5.0	5.0	5.0	6.5	6.5			44.0	250.0	490.	ST	--GLU	114.3
STADE/ELBE	39812	67/11/18	5	17	5.0	5.0	5.0	5.0	6.9	6.9			85.0	310.0	420.	ST	--HK	71.7
STADE/ELBE	39852	67/12/28	17	40	5.5	5.5	5.5	5.5	6.6	6.6			47.0	140.0	600.	ST	--HK	55.4
HEIDELBERG	39875	68/ 1/20	17	22	6.6	6.6	6.6	6.6	6.7	6.7			15.0	23.0	945.	ST	--GLU	49.5
HEIDELBERG	39934	68/ 3/19	19	53	3.2	3.2	3.2	3.2	5.4	5.4			73.0	295.0	370.	ST	--GLU	84.8
STADE/ELBE	39941	68/ 3/26	19	35	6.7	6.7	6.7	6.7	8.0	8.0			30.0	310.0	540.	ST	--HK	132.4
STADE/ELBE	39954	68/ 4/ 8	20	30	5.0	5.0	5.0	5.0	7.0	7.0			35.0	55.0	500.	FAINT VAR MOST ST	--HK	70.5
STADE/ELBE	39956	68/ 4/10	20	53	5.3	5.3	5.3	5.3	7.6	7.6			95.0	55.0	350.	ST MOON	--HK	69.1
HEIDELBERG	39963	68/ 4/17	18	57	5.1	5.1	5.1	5.1	6.5	6.5			37.0	80.0	520.	ST	--GLU	44.0
HEIDELBERG	39966	68/ 4/20	19	28	5.2	5.2	5.2	5.2	6.5	6.5			34.0	250.0	555.	ST	--GLU	114.2

SDC NO. 1152 65-158 PERIOD = 89.7 ROCKET BODY USSR LAUNCHED 65/ 3/ 7 DECAYED 3/19/65
 PERIGEE = 116.2 APOGEE = 204.4 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38830	65/ 3/11	19	17	3.0	7.0	7.0	7.0	4.7	8.7	1.50		30.0	260.0	450.	REGULAR FLASHING TP OF A FEW SEC	--HK	124.1
FARNHAM	38831	65/ 3/12	19	5	1.0	2.0	2.0	0.0	0.0	0.0							--	

SDC NO. 1208 65-16E PERIOD = 103.5 EGRS 3 USA LAUNCHED 65/ 3/ 9 IN ORBIT
 PERIGEE = 564.2 APOGEE = 584.1 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38854	55/ 4/ 4	20	20	9.0	9.0	9.0	9.0	0.0	0.0							--	
VAN NUYS-F	38901	65/ 5/21	3	48	6.8	6.8	6.8	6.8	7.8	7.8			1.00	60.2	248.0	SINGLE FLASH SEFN	--JGM	96.3
PHOENIX K	38902	65/ 5/22	3	56	7.0	7.0	7.0	7.0	6.7	6.7	5.00		23.0	254.7	1138.	2 FLASHES ORS MIN INV	--RR	113.5

SDC NO. 1228 65-17C PERIOD = 97.9 PERIGEE = 183.9 USA LAUNCHED 65/ 3/11 DECEASED 9/ 4/67
APOGEE = 635.7 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38900	65/	5/20	0	11	0	3.5	4.0	5.4	5.9	0.50	0.20	62.0	100.0	420.	RAPIDLY FLASHING	-- HK	77.5
STADE/ELBE	38902	65/	5/22	23	52	23	4.0		5.3		0.45	0.20	40.0	100.0	551.	RAPIDLY FLASHING	-- HK	78.6
STADE/ELBE	38930	65/	6/19	22	46	22	4.0		6.7		0.40	0.20	45.0	260.0	288.	RAPIDLY FLASHING	-- HK	80.3
STADE/ELBE	38936	65/	6/25	22	2	22	3.5	4.5	6.4	7.4	0.40	0.20	80.0	100.0	260.	RAPIDLY FLASHING	-- HK	74.3
STADE/ELBE	38937	65/	6/26	22	25	22	4.0		6.2		0.50	0.20	42.0	260.0	369.	RAPIDLY FLASHING	-- HK	85.0
STADE/ELBE	38938	65/	6/27	21	13	21	4.5		5.8		0.50	0.20	25.0	100.0	539.	RAPIDLY FLASHING	-- HK	50.2
STADE/ELBE	38939	65/	6/28	21	38	21	4.0	4.5	6.6	7.1	0.50	0.20	55.0	100.0	308.	RAPIDLY FLASHING	-- HK	62.5
STADE/ELBE	38940	65/	6/29	22	2	22	3.5	4.0	6.3	6.8	0.50	0.20	65.0	260.0	281.	RAPIDLY FLASHING	-- HK	83.9
STADE/ELBE	38955	65/	7/18	21	31	21	6.5	7.5	7.0	8.0	0.50	0.20	35.0	260.0	800.	RAPIDLY FLASHING	-- HK	97.7
STADE/ELBE	39246	66/	5/1	1	41	1	3.5	6.0	5.6	8.1	0.90	0.50	75.0	100.0	374.	FLASHING	-- HK	81.7
STADE/ELBE	39275	66/	5/30	0	25	0	4.8	6.5	5.6	7.3	0.75	0.50	52.0	260.0	686.	RAPIDLY FLASHING	-- HK	63.8
STADE/ELBE	39300	66/	6/24	21	58	21	4.0	6.5	6.2	8.7	0.79	0.50	60.0	100.0	356.	RAPIDLY FLASHING	-- HK	65.9
POYNTON	39581	67/	4/1	4	20	4	3.0	8.0	4.7	9.7	1.30	0.80	75.0	260.0	450.	TP +/- 0.03 REGULAR BRIGHT FLASHES	-- DMB	85.1
STADE/ELBE	39638	67/	5/28	0	12	0	3.0	8.0	4.7	9.7	1.50	0.80	75.0	260.0	450.	REGULAR BRIGHT FLASHES	-- HK	70.5
POYNTON	39641	67/	5/31	0	38	0					1.46		90.0	0.0			-- DMB	75.5
POYNTON	39646	67/	6/1	5	0	41					1.48		57.0	276.0		FLASHING	-- DMB	77.2
HEIDELBERG	39647	67/	6/1	6	23	12	3.6	7.8	4.7	8.9	1.56		56.0	100.0	600.		-- GLU	68.2
POYNTON	39648	67/	6/1	7	23	25					1.48		34.0	85.0			-- DMB	78.5
STADE/ELBE	39653	67/	6/12	23	15	23	3.0	9.0	5.3	10.3	1.50	0.80	65.0	260.0	350.	REGULAR SHARP FLASHING	-- HK	74.5
POYNTON	39656	67/	6/15	23	27	23					1.52		53.0	90.0		TP +/- 0.05 SECS.	-- DMB	73.9
POYNTON	39667	67/	6/26	23	20	23					1.58		40.0	270.0		TP +/- 0.04 SECS.	-- DMB	90.9
POYNTON	39668	67/	6/27	22	20	22					1.54		40.0	90.0			-- DMB	64.2
POYNTON	39671	67/	6/30	22	21	22	2.3	3.8	4.2	5.7	1.56		50.0	160.0	410.		-- DMB	40.5

SDC NO. 1244 65-168 PERIOD = 103.5 PERIGEE = 566.1 USA LAUNCHED 65/ 3/ 9 IN ORBIT
APOGEE = 583.5 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38846	65/	3/29	21	11	21	9.0	9.0	0.0	0.0							--	
FARNHAM	38854	65/	4/1	20	24	20	9.0	9.0	0.0	0.0							--	
DURBAN B	38960	65/	7/19	17	28	17	7.0	7.0	8.1	8.1			74.0	265.0	600.	STEADY	--GR	77.3
DURBAN B	38963	65/	7/22	16	13	16	8.5		9.2				48.0	93.0	720.	IRREGULAR SCINTILLATION	-- AA	37.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39651	67	7	20	22	56	4.5	4.5	5.4	5.4	5.4		70.0	220.0	670.	STEADY	-- HK	61.9
STADE/ELBE	39653	67	7	22	21	29	5.5	5.5	6.0	6.0	6.0		47.0	55.0	780.	STEADY	-- HK	85.8
STADE/ELBE	39717	67	10	14	4	24	5.7	5.7	6.3	6.3	6.3		67.0	55.0	750.	ST	-- HK	97.0
STADE/ELBE	39902	68	2	16	18	50	4.5	5.0	5.7	6.2	6.2		85.0	310.0	585.	FAINT SLOWLY VAR	-- HK	73.3
STADE/ELBE	39939	68	3	24	19	53	5.5	5.5	6.6	6.6	6.6		85.0	55.0	590.	ST	-- HK	69.0

SDC NO. 1267 65-20A COSMOS 61 USSR LAUNCHED 65/ 3/14 RE-ENTERED 1/15/68
PERIOD = 105.1 PERIGEE = 162.2 APOGEE = 1081.8 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38981	65	8	9	20	55	6.0	6.0	7.6	7.6	7.6		85.0	360.0	481.	STEADY	-- HK	80.6
STADE/ELBE	38983	65	8	11	21	44	6.5	7.5	7.4	8.4	3.50	0.80	73.0	360.0	650.	FLASHING	-- HK	87.6
STADE/ELBE	39077	65	11	13	17	6	8.0	8.0	9.7	9.7	9.7		70.0	360.0	450.	STEADY	-- HK	72.8
STADE/ELBE	39763	67	5	30	18	35	6.5	7.0	8.8	9.3			80.0	360.0	350.	ST OCCAS FAINT VAR	-- HK	78.5

SDC NO. 1268 65-20B COSMOS 62 USSR LAUNCHED 65/ 3/14 IN ORBIT
PERIOD = 104.8 PERIGEE = 160.9 APOGEE = 1064.4 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38856	65	5	16	3	26	7.5		7.3		3.71		70.7	130.0	1090.	SMOOTH MAXIMA	--JGW	63.2
VAN NUYS-F	38857	65	5	17	3	51	8.3		8.2				78.5	317.0	1050.	MAX ALTERNATE +8.3, +8.8	--JGW	89.1
CAL TECH	38857	65	5	17	3	51	7.0		6.9		3.00		78.0	314.0	1050.	INV. MIN.	--AWH	89.6
WALNUT CREEK	38858	65	5	18	4	16	7.0	10.0	6.9	9.9	3.94		73.5	318.0	1057.	BRIGHT FLASHES FOLLOW MINIM	--JAB	94.7
WALNUT CREEK	38903	65	5	23	6	22	9.5	9.8	9.8		0.10	22.5	1.8	863.	SINGLE FLASH IN ONE DEG	--DFC	123.4	
HEIDELBERG	39237	66	4	22	20	4	8.5	8.5	11.7	11.7			62.0	68.0	230.	FLICKERING	--GLU	64.1

5068-629

SDC NO. 1269 65-20C COSMOS 63 RF-ENTERED 11/ 4/67
 PERIOD = 104.4 PERIGEE = 161.6 APOGEE = 1041.4 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURBAN d	38855	65/	4/	5	17	13	6.0	6.0	7.1	7.1			60.0	93.0	600.	SCINTILLATING	--AA	41.1
VAN NUYS-F	38856	65/	5/16	3	52	8.3	8.3		8.3				84.6	312.0	1010.	SMOOTH MAXIMA	--JGM	82.9
VAN NUYS-F	38897	65/	5/17	4	9	7.8	7.8		7.6				0.10	318.0	1110.	ALT +7.8 FLASH, +8.7 SMOOTH	--JGM	103.3
CAL TECH	38897	65/	5/17	4	9	7.5	7.5		7.3				60.7	318.6	1110.	FLASHES TO 7TH	--AMH	103.4
TERRE HAUTE	38858	65/	5/18	2	45	9.0	9.0		8.7				0.20	329.0	1168.	SHORT FLMS	--LD	110.5
MADISON	38859	65/	5/19	3	20	10.7	12.0	10.4	11.7				52.9	333.9	1126.		--GCL	108.4
MADISON	38859	65/	5/19	4	53	11.1	12.9	10.5	12.3				33.1	357.0	1300.	TP APPROX 5 SEC	--GCL	119.9
DURBAN B	38938	65/	6/27	16	47	6.0	8.4		8.4				85.0	121.0	330.	STEADY	--GR	63.9
STADE/ELBE	39529	67/	2/	8	19	22	8.5	8.5	9.0	9.0			65.0	35.0	800.		--HK	55.7
STADE/ELBE	39534	67/	2/13	19	21	7.5	8.5	8.3	9.3	9.3			1.00	85.0	700.	FLASHING	--HK	65.1

SDC NO. 1270 65-20D FRAGMENT USSR LAUNCHED 65/ 3/14 DECAYED 8/ 5/66
 PERIOD = 106.0 PERIGEE = 164.7 APOGEE = 1130.3 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURBAN B	38854	65/	4/	4	17	58	3.0		4.1				53.0	298.0	600.	PULSING	--AA	91.8
DURBAN B	38855	65/	4/	5	16	56	4.0	4.0	4.4	4.4			37.0	94.0	850.	STEADY	--AA	22.1
DURBAN B	38855	65/	4/	5	17	0	4.5	4.5	4.8	4.8			27.0	115.0	880.	STEADY	--GR	27.4
DURBAN d	38856	65/	4/	6	17	6	2.0	5.0	2.7	5.7			75.0	285.0	720.	PULSING APPROX 1 SEC PERIOD	--AA	86.4
DURBAN B	38856	65/	4/	6	17	7	2.0	2.0	2.3	2.3			50.0	140.0	880.	STEADY	--GR	52.6
DURBAN B	38856	65/	4/	6	17	9	2.5	2.5	1.9	1.9			27.0	137.0	1300.	STEADY	--GR	46.6
STADE/ELBE	38899	65/	5/19	22	0	5.0	6.0	5.3	6.3				75.0	360.0	868.	STEADY SLOWLY TUMBLING	--HK	89.6
STADE/ELBE	38900	65/	5/20	22	13	7.0	7.5	7.4	7.9				77.0	360.0	830.	STEADY WITH SLOW TUMBLE	--HK	87.5
STADE/ELBE	38902	65/	5/22	22	33	5.0	5.5	5.3	5.8				89.0	360.0	872.	STEADY WITH SLOWLY TUMBLING	--HK	75.7

SDC NO. 1271 65-16A
 PERIOD = 103.5 GREB
 USA LAUNCHED 65/ 3/ 9 IN ORBIT
 APOGEE = 585.3 INCL = 70.1
 PERIGEE = 564.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38848	65/ 3/29	21	13	8.0	8.0	0.0	0.0	0.0	0.0								
STPETERSBURG	38853	65/ 4/ 3	1	9	4.0	4.0	0.0	0.0	0.0	0.0								
FARNHAM	38854	65/ 4/ 4	20	26	8.0	8.0	0.0	0.0	0.0	0.0								
CAL TECH	38856	65/ 5/16	5	0	8.0	8.0	8.8											
STADE/ELBE	38999	65/ 8/27	20	59	8.5	9.0	9.4	9.9										
DURBAN B	39190	66/ 3/ 6	17	16	7.0	7.0	7.5	7.5										
DURBAN B	39191	66/ 3/ 7	17	25	9.0	9.0	10.1	10.1										
STADE/ELBE	39440	66/11/11	18	41	4.5	5.5	5.4	6.4										
STADE/ELBE	39581	67/ 4/ 1	21	53	8.0	9.0	8.6	9.6										
STADE/ELBE	39649	67/ 6/ 8	23	29	7.5	9.0	8.4	9.9										
STADE/ELBE	39937	68/ 3/22	19	45	7.0		8.1											

NO PIECES OBSERVED
 STEADY WITH FAINT FADING
 STEADY
 STEADY
 VARYING
 IRREGULAR FLASHES
 REGULAR SHARP FLASHING
 VAR MIN INV

SDC NO. 1272 65-16H
 PERIOD = 103.5 DODECAHEDRON
 USA LAUNCHED 65/ 3/ 9 IN ORBIT
 APOGEE = 584.7 INCL = 70.1
 PERIGEE = 563.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38848	65/ 3/29	21	8	9.0	9.0	0.0	0.0										
FARNHAM	38854	65/ 4/ 4	20	21	8.0	8.0	0.0	0.0										
TOWNSVILLE	38909	65/ 5/29	8	43	8.0	9.0	8.1	9.1										
TOWNSVILLE	38910	65/ 5/30	8	52	8.0	9.0	8.8	9.8										
DURBAN B	38915	65/ 6/ 4	16	36	9.0	9.0	9.9	9.9										
DURBAN B	39190	66/ 3/ 6	17	51	8.0	9.1	9.1	9.7										
STADE/ELBE	39581	67/ 4/ 1	21	21	8.6	8.6	9.7	9.7										

TUMBLE PERIOD APPROX
 STEADY-NOT FOLLOWED
 FLASHING
 STEADY

SDC NO. 1273 65-21A
 PERIOD = 97.5 PERIGEE = 328.7 APOGEE = 469.1 INCL = 99.0
 USA LAUNCHED 65/ 3/18 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38852	65/ 4/ 2	20	34			6.0		0.0		1.65					FLASHING	--	
MADISON	38892	65/ 5/12	3	59			6.2	8.7	7.4	9.9	0.44		32.6	288.6	575.	4.4SEC/10 TUMB	--GCL	111.4
MADISON	38900	65/ 5/20	3	56			7.1	3.9	8.5	10.3	0.38		41.1	237.2	513.	AFTER 30SEC STEADY AT +8	--GCL	105.8

SDC NO. 1274 65-22A
 PERIOD = 90.9 PERIGEE = 108.7 APOGEE = 307.6 INCL = 64.8
 VCSKHOD 2 USSR LAUNCHED 65/ 3/18 RE-ENTERED 3/19/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
NEWBERG	38838	65/ 3/19	3	4			2.0	2.0	5.0	5.0			30.0	60.0	250.	STEADY	--AMH	41.2

SDC NO. 1285 65-22B
 PERIOD = 90.8 PERIGEE = 102.5 APOGEE = 290.8 INCL = 64.8
 ROCKET BODY USSR LAUNCHED 65/ 3/18 DECAYED 3/27/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
NEWBERG	38838	65/ 3/19	3	3			0.1	3.0	3.1	6.0	5.40		30.0	60.0	250.		--AMH	41.2

SDC NO. 1286 65-22C
 PERIOD = 91.0 PERIGEE = 104.4 APOGEE = 292.0 INCL = 64.7
 USSR LAUNCHED 65/ 3/18 DECAYED 3/25/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
NEWBERG	38838	65/ 3/19	3	5			2.2		5.2		1.00		30.0	60.0	250.	VARIATION LIKE 65 DEGREE	--AMH	41.3
STADE/ELBE	38838	65/ 3/19	18	39			3.5	5.5	7.2	9.2	1.00		45.0	220.0	180.	COSMOS ROCKETS	--	100.3
STADE/ELBE	38839	65/ 3/20	18	41			3.0	5.0	6.4	8.4	1.50		0.80	35.0	220.0	RAPID FLASHING	--	104.8
															212.	REGULAR TUMBLING	--	

SDC NO. 1289 65-21C
 PERIOD = 97.6 ALTAR ROCKET USA LAUNCHED 65/ 3/18 IN ORBIT
 APOGEE = 471.0 INCL = 99.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
MADISON	38852	65/	5/	12	2	36	7.5	7.5	8.3	8.3			25.1	94.7	691.		--RDW	36.6
MADISON	38892	65/	5/	12	4	11	8.6	8.6	9.3	9.3			23.5	291.1	720.		--GCL	117.1
MADISON	38893	65/	5/	13	3	0	7.8		9.5				47.1	98.7	450.		--RDW	43.6
ROCHESTER	38893	65/	5/	13	3	0	7.0		8.8		3.00		49.0	286.0	431.		--RDW	100.3
ROCHESTER	38894	65/	5/	14	3	24	7.0		7.9		3.00		27.0	290.0	664.		--RDW	114.5
MADISON	38894	65/	5/	19	3	48	7.3	9.1	9.1	10.9			50.4	285.8	445.		--GCL	99.5
MADISON	38900	65/	5/	20	2	35	8.3	9.7	8.4	10.3	1.81		22.8	93.7	768.		--RDW	38.6
MADISON	38900	65/	5/	20	4	11	9.1	10.7	10.0	11.6			28.1	290.0	666.		--GCL	114.0
TERRE HAUTE	38901	65/	5/	21	3	0	6.0	7.5	7.9	9.4	1.80	0.50	57.7	100.0	420.		--DD	48.2

18.2SEC/10 TUMR
 10 MAX

SDC NO. 1291 65-16D
 PERIOD = 103.5 SOLAR RAD. USA LAUNCHED 65/ 3/ 9 IN ORBIT
 APOGEE = 564.2 APOGEE = 584.7 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38848	65/	3/	29	21	12	6.0		0.0				70.0	55.0	614.	RAPID FLICKER	--	
FARNHAM	38854	65/	4/	4	20	25	7.0		0.0				89.0	55.0	580.	FLICKERING	--	76.2
STADE/ELBE	38881	65/	5/	1	21	30	7.7	7.7	8.8	8.8			78.5	248.0	600.	STEADY	--	72.5
STADE/ELBE	38882	65/	5/	2	21	39	8.5	8.5	9.7	9.7			51.0	62.0	700.	STEADY	--	71.5
CAL TECH	38896	65/	5/	16	4	59	7.0	7.5	8.1	8.6			80.5	65.9	579.	STEADY TRACKED 95 SEC	--	62.7
PHOENIX R	38857	65/	5/	17	3	23	8.0		8.8				24.8	254.0	1085.	STEADY TRACKED 100SEC	--	71.8
PHOENIX R	38858	65/	5/	18	3	33	8.0		9.2				43.0	250.8	788.	TP EST ON TIME 0.4 DEG	--	103.3
WALNUT CREEK	38858	65/	5/	18	5	17	10.0		9.8				45.0	250.0	760.	RAPID TP 1 5TH MAG FLASH	--	100.2
PHOENIX R	38901	65/	5/	20	3	54	7.0		7.5				55.3	249.6	672.	FLICKERING ROUGHLY ONCE/ SEC	--	102.8
VAN NUYS-F	38901	65/	5/	21	4	2	7.5	8.0	8.1	8.6			67.0	248.0	612.	VERY VERY FAST SCINTILLATION	--	98.0
SAN ANTONIO	38902	65/	5/	22	2	29	8.5		9.4				63.0	244.0	635.	VERY RAPID TUMBLE	--	86.1
TOMNSVILLE	38911	65/	5/	31	9	19	6.5	8.0	7.6	9.1			36.0	245.0	874.	STEADY	--	90.0
DURBAN 1	38914	65/	6/	3	16	44	7.5	7.5	8.5	8.5			17.0	234.0	1400.	MAINLY STEADY AT+7	--	115.8
TOMNSVILLE	38917	65/	6/	6	8	34	4.5	7.0	4.8	7.3			57.0	244.0	630.	STEADY	--	115.8
DURBAN 2	38917	65/	6/	6	17	14	10.5	10.5	9.8	9.8			67.0	96.0	720.	IRREGULAR SCINTILLATION	--	103.0
DURBAN 3	38919	65/	6/	8	15	48	7.0		8.0				30.0	265.0	1000.	TUMBLING	--	55.2
DURBAN 3	39191	66/	3/	7	17	22	6.5		7.2		1.02						--	128.6
DURBAN 3	39194	66/	3/	10	17	50	9.0		9.0								--	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39157	66	3	13	20	28	7.5	7.8	8.6	8.9			85.0	140.0	590.	STEADY WITH FAINT FLICKERING	-- HK	58.2
STADE/ELBE	39502	67	1	12	5	50	7.0	8.0	8.1	9.1			80.0	315.0	590.	VARYING	-- HK	66.7
STADE/ELBE	39649	67	6	8	23	30	7.0	9.0	7.9	9.9			70.0	330.0	665.	REGULAR SHARP FLASHES	-- HK	93.5
STADE/ELBE	39653	67	6	12	22	22	7.0	9.5	8.1	10.6			86.0	310.0	590.	IRREGULAR FLASHING	-- HK	81.1
STADE/ELBE	39693	67	7	22	21	57	8.0	9.0	9.1	10.1			78.0	55.0	600.	STEADY AND IRREG VARYING	-- HK	79.4
STADE/ELBE	39894	68	2	8	4	44	7.8	9.0	8.9	10.1			89.0	55.0	600.	VAR OCCAS SHORT FLICKER	-- HK	70.9
STADE/ELBE	39906	68	2	20	18	23	7.0	7.0	7.9				72.0	310.0	650.	VAR OR FLASHING MIN INV	-- HK	88.7

SUC NU. 1252 65-16C GOSE 3 USA LAUNCHED 65/ 3/ 9 IN ORBIT
PERIOD = 103.5 PERIGEE = 564.2 APOGEE = 584.7 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38848	65	3	29	21	12	9.0	9.0	0.0	0.0			73.0	265.0	600.	IRREGULAR TUMBLE	--	78.1
FARNHAM	38854	65	4	4	20	24	9.0	9.0	0.0	0.0			30.0	94.0	1000.	STEADY	-- GR	23.4
DURBAN B	38960	65	7	19	17	29	7.0	8.5	8.1	9.6			48.0	93.0	720.	STEADY	-- AA	37.6
DURBAN B	38962	65	7	21	16	4	7.0	7.0	7.0	7.0			45.0	94.0	800.	REGULAR SCINTILLATION	-- AA	38.1
DURBAN B	38963	65	7	22	16	13	7.5	7.5	8.2	8.2			85.0	310.0	590.	ST OCCAS SHORTFLASHES	-- HK	76.4
DURBAN B	39191	66	3	7	17	3	8.0	8.8	9.9	9.9								
DURBAN B	39994	68	5	18	23	55	8.8	8.8	9.9	9.9								

SUC NU. 1293 65-16F OSCAR 3 USA LAUNCHED 65/ 3/ 9 IN ORBIT
PERIOD = 103.5 PERIGEE = 563.0 APOGEE = 586.0 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
FARNHAM	38848	65	3	29	21	8	8.0	10.0	0.0	0.0			65.8	248.0	620.	VARIABLE	--	80.6
FARNHAM	38850	65	3	31	21	27	8.0	10.0	0.0	0.0			20.0	256.0	1235.	VAR	--	106.3
FARNHAM	38854	65	4	4	20	21	8.0	8.0	0.0	0.0			62.0	248.0	630.	SLOW FLUX 76 SEC EARLY	-- JGW	95.7
VAN NUYS-F	38896	65	5	16	4	44	7.5	8.0	8.5	9.0			74.9	247.6	585.	MIGHT HAVE HAD PERIOD	-- JGW	88.8
WALNUT CREEK	38900	65	5	20	5	21	8.0	10.5	7.5	10.0								
VAN NUYS-F	38901	65	5	21	3	46	7.5	8.5	8.5									
SAN ANTONIO	38902	65	5	22	2	13	3.7	8.5	4.9	9.7								

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	39190	66/	3/	6	17	35	8.0	8.0	9.1	9.1			70.0	97.0	610.	STEADY	--GR	56.0
DURBAN B	39191	66/	3/	7	17	44	8.0		9.1				73.0	265.0	600.	SCINTILLATING	--GR	88.6
STADE/ELBE	39585	67/	4/	5	20	53	8.0	8.5	8.7	9.2			60.0	220.0	720.	IRREGULAR FLASHING OR VARYING	--HK	66.5
STPETERSBURG	39654	67/	6/	13	3	6	9.5	10.4			3.00		68.5	36.4	650.		--FK	69.3
STADE/ELBE	39994	68/	5/	18	23	34	7.5	8.0	8.6	9.1			78.0	140.0	600.	VAR OCCAS SHORT FAINT FLASHES	--HK	65.0

SDC NO. 1310 65-16G SURCAL USA LAUNCHED 65/ 3/21 IN ORBIT
PERIOD = 103.5 PERIGEE = 558.0 APOGEE = 589.7 INCL = 70.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
FARNHAM	38854	65/	4/	4	20	20	9.0	9.0	0.0	0.0			75.0	55.0	598.	FLASHING	--	75.5
STADE/ELBE	38882	65/	5/	2	21	28	4.0	7.5	5.1	8.6	10.00	1.00	65.3	248.0	620.		--JGM	80.7
VAN NUYS-F	38896	65/	5/	16	4	45	7.5	6.0	5.8	5.8			25.4	254.2	1089.	STEADY 16F NOT SEEN	--RKR	98.2
PHOENIX R	38857	65/	5/	17	4	54	6.0	6.0	5.8	5.8			74.9	247.6	585.	RELATIVELY ST	--PM	88.6
SAN ANTONIO	38902	65/	5/	22	2	14	9.0	9.0	10.2	10.2			30.0	72.0	955.	STEADY THROUGH APOGEE SCOPE	--APS	37.1
TOWNSVILLE	38909	65/	5/	29	8	42	7.0	7.0	7.1	7.1			51.0	71.0	696.	STEADY	--AGM	45.7
TOWNSVILLE	38910	65/	5/	30	8	51	6.5	6.5	7.3	7.3			85.6	67.0	569.	STEADY	--NDB	68.1
TOWNSVILLE	38911	65/	5/	31	9	2	5.5	5.5	6.7	6.7			68.0	310.0	620.	STEADY AND VARYING	--HK	94.7
STADE/ELBE	38958	65/	7/	17	22	19	7.0	7.5	8.0	8.5			21.0	265.0	1300.	VERY LONG INVISIBILITY PERIOD	--AA	128.2
DURBAN B	38964	65/	7/	23	17	35	3.0		2.4		23.50	1.00	70.0	220.0	615.	FLASHING	--HK	59.6
STADE/ELBE	38999	65/	8/	27	21	50	4.0	8.5	5.1	9.6			46.0	266.0	720.	REG LONG TUMBLE SEVERAL SECS	--GR	96.9
DURBAN B	39186	66/	3/	2	19	7	5.0	8.0	5.7	8.7			44.0	266.0	800.	LONG PERIOD	--GR	111.8
DURBAN B	39191	66/	3/	7	18	6	4.0	10.0	4.5	10.5	20.00		83.0	80.0	631.	DOUBLE FLASH 0.7 DURATION	--GLU	59.3
HEIDELBERG	39237	66/	4/	22	20	14	2.5	7.8	3.5	8.8	28.00	2.00	83.0	310.0	600.	VARYING	--HK	70.1
STADE/ELBE	39440	66/	11/	11	18	26	6.0	7.0	7.1	8.1			75.0	315.0	600.	FLASHING	--HK	62.4
STADE/ELBE	39502	67/	1/	12	5	50	4.5	7.5	5.6	8.6			85.0	55.0	590.	LONG FLASH PER THAN SHARP FL	--HK	64.8
STADE/ELBE	39581	67/	4/	1	21	6	4.5	9.0	5.6	10.1			60.0	310.0	690.	FLASH PER MDPE THAN 40 SEC	--HK	95.7
STADE/ELBE	39649	67/	6/	8	23	28	4.8	8.0	5.6	8.8			63.0	220.0	650.	REGULAR FLASHING	--HK	65.4
STADE/ELBE	39695	67/	7/	24	21	55	5.5	8.5	6.4	9.4	36.20		50.0	220.0	750.	FLASHING MIN INV	--HK	55.1
STADE/ELBE	39894	68/	2/	8	5	11	5.5		6.1		11.40		40.0	310.0	760.	SHARP FLASHES MIN INV	--HK	115.9
STADE/ELBE	39910	68/	2/	24	18	16	6.5		7.1				89.0	140.0	590.	SHARP IRREG FLASHES	--HK	72.7
STADE/ELBE	39991	68/	5/	15	0	11	4.0	9.0	5.1	10.1	14.20	0.50	55.0	140.0	770.	SHARP FLASHES MIN INV	--HK	45.6
STADE/ELBE	39994	68/	5/	18	22	44	5.5		6.1								--	

SDC NO. 1314 65-27A PERIOD = 111.5 PERIGEE = 791.6 APOGEE = 820.2 INCL = 90.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38881	65/	5/	1	22	2	7.0	7.0	6.8	6.8			45.0	100.0	1086.	STEADY VERY CLOSE TO 1316	-- HK	55.7
STPETERSBURG	38856	65/	5/16	4	7	2.0	2.0		0.0			1.00				MAG 2 TO 4 3 SEC INV 3 SEC	--FK	
CAL TECH	38856	65/	5/16	5	58	7.0	7.0		6.9						1024.		--AHM	
VAN NUYS-F	38856	65/	5/16	5	58	6.5	6.5	6.5	6.4	6.4			47.0	58.0	1030.	STEADY	--JGW	68.8
VAN NUYS-F	38857	65/	5/17	8	0	6.9	6.9	6.8	5.8	5.8			21.0	291.0	1430.	BROAD FLASHES	--JGW	93.0
VAN NUYS-F	38899	65/	5/19	21	26	3.0	3.0	3.0	3.4	3.4			20.4	289.0	1610.	STEADY	--JGW	90.0
STADE/ELBE	38900	65/	5/20	21	34	4.5	4.5	4.5	5.0	5.0			70.0	100.0	848.	STEADY	--HK	66.0
STADE/ELBE	38900	65/	5/20	21	34	4.5	4.5	4.5	5.0	5.0			85.0	100.0	809.	STEADY	--HK	74.2
STADE/ELBE	38900	65/	5/20	23	31	5.0	5.0	5.0	4.4	4.4			30.0	260.0	1329.	STEADY	--JGW	70.9
VAN NUYS-F	38901	65/	5/21	4	58	6.0	6.0	6.0	5.2	5.2			25.0	70.0	1460.	ST	--PH	60.2
SAN ANTONIO	38902	65/	5/22	5	8	6.5	6.5	6.5	6.4	6.4			43.9	339.8	1069.	STEADY WITH SLOWLY FADING	--HK	99.7
STADE/ELBE	38902	65/	5/22	21	56	4.5	4.5	8.0	4.9	8.4			70.0	260.0	848.		--FK	80.4
STPETERSBURG	38903	65/	5/23	3	27	2.0	2.0	2.0	0.0	0.0			19.4	57.4	1641.	STEADY	--FK	69.6
SAN ANTONIO	38903	65/	5/23	3	27	4.0	4.0	4.0	0.0	0.0			53.7	97.6	954.	STEADY	--LH	48.8
STPETERSBURG	38910	65/	5/30	2	51	4.0	4.0	3.0	3.1	3.1			38.1	324.1	1155.	FADING	--PH	108.5
TERRE HAUTE	38911	65/	5/31	2	59	3.0	3.0	3.0	6.7	6.7			22.9	80.0	1511.		--PH	43.9
SAN ANTONIO	38919	65/	6/ 8	2	28	7.0	7.0	7.0	6.1	6.1			29.7	81.8	1322.		--PH	44.7
SAN ANTONIO	38920	65/	6/ 9	2	38	4.0	4.0	4.0	3.4	3.4			38.2	83.7	1145.		--PH	45.3
SAN ANTONIO	38921	65/	6/10	2	49	3.0	3.0	8.0	7.4	7.4			31.1	277.4	1289.		--PH	100.8
SAN ANTONIO	38921	65/	6/10	4	40	8.0	8.0	5.5	5.5	5.5			49.2	85.6	991.		--PH	48.3
SAN ANTONIO	38922	65/	6/11	2	59	5.5	5.5	5.5	5.5	5.5			87.7	93.0	800.		--JGW	69.8
VAN NUYS-F	38922	65/	6/11	4	52	4.7	4.7	5.0	5.2	5.5			80.4	89.9	803.		--PR	63.5
SAN ANTONIO	38924	65/	6/13	3	20	4.7	4.7	4.0	4.5	4.5			81.1	269.6	802.		--PH	75.2
SAN ANTONIO	38925	65/	6/14	3	30	4.0	4.0	4.0	7.8	7.8			63.8	272.1	867.		--PH	86.9
SAN ANTONIO	38926	65/	6/15	3	40	7.5	7.5	7.5	5.0	5.0			49.5	274.0	986.	ST	--PH	96.3
SAN ANTONIO	38927	65/	6/16	3	51	5.0	5.0	5.0	5.0	5.0			38.3	275.8	1142.	ST	--PH	103.3
SAN ANTONIO	38928	65/	6/17	4	2	8.0	8.0	8.0	7.7	7.7			40.0	84.0	1115.	ST	--PH	46.8
SAN ANTONIO	38929	65/	6/18	2	20	6.0	6.0	6.0	6.1	6.1			51.4	85.9	966.		--PH	51.4
SAN ANTONIO	38930	65/	6/19	2	31	6.0	6.0	6.0	6.1	6.1			66.1	87.8	854.		--PH	59.5
SAN ANTONIO	38931	65/	6/20	2	40	4.7	4.7	4.7	5.0	5.0			83.6	90.7	798.		--PH	70.4
SAN ANTONIO	38932	65/	6/21	2	52	6.8	6.8	4.5	4.5	4.5			47.3	274.3	1012.		--PH	104.7
SAN ANTONIO	38935	65/	6/24	3	22	4.5	4.5	4.5	4.6	4.6			36.6	276.2	1173.		--PH	111.6
SAN ANTONIO	38936	65/	6/25	3	33	4.9	4.9	4.9	6.9	6.9			69.1	88.2	841.		--PH	65.6
SAN ANTONIO	38939	65/	6/28	2	12	6.5	6.5	6.5	6.9	6.9							--PH	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
DURBAN B	38941	65	7	6/30	17	8	5.0	5.0	5.0	5.0	5.0		50.0	94.0	1000.	STEADY	--AA	25.5
DURBAN B	38942	65	7	1	17	18	4.5	4.5	4.8	4.8	4.8		65.0	93.0	880.	STEADY	--GR	37.9
DURBAN B	38943	65	7	2	17	28	4.5	4.5	4.9	4.9	4.9		82.0	96.0	815.	STEADY	--AA	52.4
DURBAN B	38944	65	7	3	15	47	5.5	5.5	4.2	4.2	4.2		14.0	97.0	1800.	STEADY	--GR	15.3
DURBAN B	38944	65	7	3	17	39	4.5	4.5	4.9	4.9	4.9		80.0	264.0	820.	STEADY	--GR	67.8
DURBAN B	38945	65	7	4	15	54	6.5	6.5	5.2	5.2	5.2		17.0	97.0	1800.	STEADY	--AA	15.2
DURBAN B	38945	65	7	4	17	45	6.5	6.5	6.8	6.8	6.8		64.0	266.0	870.	STEADY	--AA	62.4
DURBAN B	38946	65	7	5	16	8	7.5	7.5	6.6	6.6	6.6		25.0	95.0	1500.	STEADY	--GR	18.2
DURBAN B	38946	65	7	5	18	1	6.0	6.0	5.9	5.9	5.9		45.0	266.0	1050.	STEADY	--AA	97.9
DURBAN B	38948	65	7	7	16	29	5.5	5.5	5.3	5.3	5.3		30.0	93.0	1100.	STEADY	--GR	26.9
DURBAN B	38948	65	7	7	18	21	6.5	6.5	5.9	5.9	5.9		53.0	266.0	1300.	STEADY	--GR	108.9
DURBAN B	38949	65	7	8	16	39	7.0	7.0	7.0	7.0	7.0		22.0	264.0	1600.	STEADY	--GR	35.6
DURBAN B	38949	65	7	8	18	31	7.5	7.5	6.5	6.5	6.5		68.0	93.0	840.	STEADY	--AA	114.7
DURBAN B	38950	65	7	9	16	50	6.5	6.5	6.9	6.9	6.9		59.0	266.0	900.	STEADY	--AA	47.5
DURBAN B	38953	65	7	12	17	21	7.0	7.0	7.2	7.2	7.2		33.0	94.0	1300.	STEADY	--AA	92.8
DURBAN B	38955	65	7	14	15	50	5.0	5.0	4.4	4.4	4.4		36.0	265.0	1200.	SLOW TUMBLE	--AA	29.0
DURBAN B	38955	65	7	14	17	42	7.5	7.5	7.1	7.1	7.1		43.0	93.0	1100.	STEADY	--GR	111.2
DURBAN B	38956	65	7	15	16	0	7.0	7.0	6.8	6.8	6.8		28.0	265.0	1500.	STEADY	--GR	35.7
DURBAN B	38957	65	7	16	16	11	7.0	7.0	7.0	7.0	7.0		56.0	93.0	1010.	STEADY	--AA	117.2
DURBAN B	38957	65	7	16	18	3	8.5	8.5	7.5	7.5	7.5		21.0	264.0	1600.	STEADY	--GR	45.2
DURBAN B	38958	65	7	17	16	21	6.5	6.5	6.7	6.7	6.7		70.0	93.0	900.	STEADY	--GR	121.9
DURBAN B	38960	65	7	19	16	42	7.0	7.0	7.4	7.4	7.4		73.0	266.0	820.	STEADY	--AA	56.4
DURBAN B	38962	65	7	21	17	3	6.5	6.5	6.4	6.4	6.4		45.0	266.0	1056.	STEADY	--GR	87.8
DURBAN B	38963	65	7	22	17	13	8.0	8.0	7.6	7.6	7.6		34.0	265.0	1200.	STEADY	--AA	110.8
VAN NUYS-F	39000	65	8	28	11	32	6.0	6.0	6.3	6.3	6.3		66.1	88.0	865.	RATHER FAINT	--JGM	119.5
VAN NUYS-F	39015	65	9	12	10	25	7.2	7.2	7.4	7.4	7.4		56.1	86.3	930.	QUITE FAINT	--JGM	89.0
HEIDELBERG	39132	66	1	7	17	36	5.0	5.0	4.5	4.5	4.5		34.0	87.0	1268.	STEADY	--GLU	82.3
STADE/ELBE	39145	66	1	20	17	58	4.7	4.7	5.1	5.1	5.1		85.0	100.0	815.	STEADY	--GLU	19.3
VAN NUYS-F	39148	66	1	23	1	51	5.5	5.5	5.6	5.6	5.6		55.3	86.0	940.	STEADY	--HK	65.6
STADE/ELBE	39204	66	3	20	1	47	6.7	6.7	7.1	7.1	7.1		67.0	100.0	850.	STEADY	--JGM	48.6
STADE/ELBE	39237	66	4	22	0	4	6.5	6.5	6.9	6.9	6.9		88.0	100.0	828.	STEADY	--HK	73.5
HEIDELBERG	39237	66	4	22	22	21	7.2	7.2	6.1	6.1	6.1		21.0	79.0	1636.	STEADY	--GLU	66.3
STADE/ELBE	39244	66	4	29	23	36	5.0	5.0	5.4	5.4	5.4		89.0	100.0	825.	STEADY	--GLU	75.5
STADE/ELBE	39257	66	5	12	22	7	5.0	5.0	5.2	5.2	5.2		60.0	100.0	930.	STEADY	--HK	68.1
STADE/ELBE	39259	66	5	14	22	28	4.7	4.7	5.1	5.1	5.1		83.0	100.0	825.	STEADY	--HK	62.0
HEIDELBERG	39280	66	6	1	20	31	4.5	4.5	5.4	5.4	5.4		49.0	82.0	1028.	STEADY	--GLU	70.5
HEIDELBERG																		63.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39283	66/	6/	7	21	2	5.0	5.0	5.4	5.4			85.0	61.0	827.	STEADY	--GLU	78.5
STADE/ELBE	39387	66/	5/19		2	15	5.5	5.5	5.7	5.7			75.0	100.0	900.	STEADY	--HK	76.6
STADE/ELBE	39637	67/	5/27		22	51	6.5	8.5	6.6	8.6			63.0	260.0	950.	SLOWLY FLASHING	--HK	75.3
STADE/ELBE	39642	67/	6/	1	21	51	6.5	9.0	6.9	9.4			82.0	100.0	845.	SLOWLY FLASHING	--HK	74.0
STADE/ELBE	39644	67/	6/	3	22	12	5.0	9.0	5.4	9.4			74.0	260.0	830.	FLASH PER MORE THAN 200 SEC	--HK	79.5
STADE/ELBE	39653	67/	6/12		21	54	5.0	8.5	5.1	8.6			58.0	260.0	950.	SLOWLY FLASHING	--HK	86.2
STPETERSBURG	39654	67/	6/13		3	22	5.0	5.0	5.3	5.3			76.0	20.3	880.		--FK	68.3
STPETERSBURG	39805	67/11/11			23	44	6.0	6.0	0.0	0.0			45.6	329.0			--FK	92.3
HEIDELBERG	39875	68/	1/20		17	57	6.5	6.5	6.1	6.1			36.0	81.0	1200.	ST	--GLU	17.4
HEIDELBERG	39876	68/	1/21		18	7	6.5	6.5	6.4	6.4			43.0	82.0	1070.	ST	--GLU	23.0
STADE/ELBE	39881	68/	1/26		18	58	5.0	5.0	5.4	5.4			75.0	260.0	850.	ST	--HK	77.2
HEIDELBERG	39890	68/	2/	4	18	42	6.0	6.0	6.3	6.3			62.0	279.0	890.	ST	--GLU	95.2
HEIDELBERG	39893	68/	2/	7	17	21	5.8	5.8	5.9	5.9			55.0	41.0	940.	ST	--GLU	46.3
HEIDELBERG	39968	68/	4/22		20	38	6.4	7.1	5.8	6.5	5.40		27.0	231.0	1290.	VAR	--GLU	85.0
STADE/ELBE	39994	69/	5/18		23	17	4.5	8.5	4.9	8.9			83.0	100.0	850.	VERY SLOWLY TUMB	--HK	72.2

SDC NJ. 1315 65-278 EGRS 4 USA LAUNCHED 65/ 4/ 3 IN ORBIT
PERIOD = 111.4 PERIGEE = 790.4 APOGEE = 818.3 INCL = 90.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38880	65/	4/30		23	24	6.0	10.0	6.2	10.2			60.0	345.0	919.	ONLY ONE FLASH OBSERVED	--HK	97.5

SDC NJ. 1316 65-27C DEBRIS USA LAUNCHED 65/ 4/ 3 IN ORBIT
PERIOD = 111.5 PERIGEE = 792.2 APOGEE = 820.2 INCL = 90.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38881	65/	5/	1	22	2	4.0	8.0	3.8	7.8			45.0	100.0	1086.	BRIGHT FLASHES	--HK	95.7
VAN NUYS-F	38889	65/	5/	9	8	29	6.0	6.0	5.0	5.0			20.8	296.0	1610.	FLASHES	--JGW	87.9
VAN NUYS-F	38889	65/	5/	9	8	30	7.0	7.0	5.8	5.8			17.0	315.0	1750.		--JGW	103.4
VAN NUYS-F	38890	65/	5/10		8	39	7.0	7.0	5.7	5.7			16.2	294.3	1800.	FLASHIN.	--JGW	87.7
STPETERSBURG	38895	65/	5/15		3	56	7.0	7.0	0.0	0.0						TP EST 4 SEC	--FK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	38895	65/	5/15		7	40	5.7		5.0				30.0	308.0	1350.	FLASHING TP EST 3 SEC	--JGM	98.7
STPETERSBURG	38896	65/	5/16		4	7	4.0		0.0							ONLY FLASHES VISIBLE	--FR	
CAL TECH	38896	65/	5/16		5	58	8.0		7.9		3.18				1024.	FLASHES +6 AND +7	--AMH	68.8
VAN NUYS-F	38896	65/	5/16		5	58	6.0		5.9						1030.	VERY SHARP FLASHES	--JGM	89.5
VAN NUYS-F	38896	65/	5/16		7	50	6.0		5.2						1430.	SHARP FLASHES	--JGM	89.9
VAN NUYS-F	38897	65/	5/17		8	0	6.0		5.0						1610.	REGULAR FLASHING	--HK	66.0
STADE/ELBE	38899	65/	5/19		21	26	3.0	6.0	3.4	6.4					848.	REGULAR FLASHING	--HK	74.2
STADE/ELBE	38900	65/	5/20		21	34	3.0	6.0	3.5	6.5					809.	REGULAR FLASHING	--HK	70.9
STADE/ELBE	38900	65/	5/20		23	31	3.0	6.0	2.4	5.4					1329.	REGULAR FLASHING	--JGM	74.2
VAN NUYS-F	38901	65/	5/21		5	0	3.5		2.6						1500.	MAX ALTERNATE +3.5 SHARP, +7.5 BROAD	--JGM	
SAN ANTONIO	38902	65/	5/22		5	9	4.2		4.1						1069.	ST REGULAR FLASHING	--PM	99.6
STADE/ELBE	38902	65/	5/22		21	56	3.0	7.0	3.4	7.4					848.	PERIODIC, SHARP FLASHES	--HK	80.4
SAN ANTONIO	38903	65/	5/23		3	27	6.8		5.7						1641.	TP ABOUT 2 SEC	--PM	69.6
STPETERSBURG	38903	65/	5/23		3	21	5.0	8.0	0.0	0.0						TP ABOUT 5 SEC	--FR	
STPETERSBURG	38908	65/	5/28		4	20	3.0		0.0							SHOOT VAR FOR ONCE	--FR	
VAN NUYS-F	38908	65/	5/28		6	16	6.3	9.0	5.4	8.1					1510.	SMOOTH VAR FOR ONCE	--JGM	126.4
TERRE HAUTE	38911	65/	5/31		3	0	3.0	9.0	3.1	9.1					954.	2 MAX	--LD	49.0
SAN ANTONIO	38911	65/	5/31		4	51	4.8		4.5						1155.	VERY VA, DIFFERENT MAXIMA	--PM	108.3
SAN ANTONIO	38919	65/	6/ 8		2	29	3.8		2.9						1511.		--PM	44.0
SAN ANTONIO	38920	65/	6/ 9		2	39	3.5		2.9						1322.		--PM	44.2
SAN ANTONIO	38921	65/	6/10		2	49	3.0	8.0	2.7	7.7					1145.		--PM	45.3
SAN ANTONIO	38921	65/	6/10		4	41	2.7		2.1						1289.		--PM	100.6
SAN ANTONIO	38922	65/	6/11		3	0	4.0	8.9	4.0	8.9					991.		--PM	48.2
VAN NUYS-F	38922	65/	6/11		4	54	5.2	9.0	4.3	9.3					890.	TRIPLE FLASHES	--JGM	93.8
VAN NUYS-F	38922	65/	6/11		4	57	5.2		4.6						1300.	ALTERNATE DOUBLE FLASHES	--JGM	116.0
SAN ANTONIO	38924	65/	6/13		3	20	4.5	8.0	5.0	8.5					803.		--PM	63.5
SAN ANTONIO	38925	65/	6/14		3	30	2.4	9.0	2.9	9.5					802.		--PM	75.2
VAN NUYS-F	38925	65/	6/14		5	24	4.8		4.8						1020.	MIN ALTERNATE +9.0, INVIS	--JGM	98.5
SAN ANTONIO	38926	65/	6/15		3	41	7.5		7.8						867.		--PM	86.7
SAN ANTONIO	38927	65/	6/16		3	51	3.0		3.0						986.	VA	--PM	96.3
SAN ANTONIO	38928	65/	6/17		4	2	4.2		3.9						1142.	MIN SOMETIMES VISIBLE	--PM	103.3
SAN ANTONIO	38929	65/	6/18		2	20	3.1		2.9						1115.		--PM	44.8
SAN ANTONIO	38930	65/	6/19		2	31	3.4		3.5						966.		--PM	51.4
SAN ANTONIO	38930	65/	6/19		4	23	4.4		3.5						1515.		--PM	112.6
SAN ANTONIO	38931	65/	6/20		2	40	3.8		4.1						854.		--PM	59.5
SAN ANTONIO	38932	65/	6/21		2	52	2.7	8.2	3.2	8.7					798.		--PM	70.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
SAN ANTONIO	38935	65	6	24	3	22	2.5		2.5		3.30		47.3	274.3	1012.		-- PM	104.7
SAN ANTONIO	38936	65	6	25	3	33	4.5		4.2		3.32		36.6	276.2	1173.		-- PM	111.6
SAN ANTONIO	38939	65	6	28	2	12	2.1		2.7				69.1	88.2	841.		-- PM	65.6
DURBAN B	38941	65	6	30	17	8	9.5	9.5	9.5	9.5			50.0	94.0	1000.	STEADY	--GR	25.5
DURBAN B	38942	65	7	1	17	17	1.5	5.0	1.8	5.3			65.0	93.0	880.	REGULAR	--GR	38.1
DURBAN B	38943	65	7	2	17	27	2.5	5.0	2.9	5.4	6.50		82.0	96.0	815.	REGULAR TO INVISIBILITY	--AA	52.7
DURBAN B	38944	65	7	3	15	46	5.0		3.7				14.0	97.0	1800.	REGULAR TO INVISIBILITY	--AA	15.5
DURBAN B	38944	65	7	3	17	38	3.5		3.9				80.0	264.0	820.	REGULAR FLASH TO INVIS	--GR	68.0
DURBAN B	38945	65	7	4	15	53	4.0		2.7				17.0	97.0	1800.	REGULAR TO INVISIBILITY	--GR	15.4
DURBAN B	38945	65	7	4	17	44	3.5		3.8				64.0	266.0	870.	REGULAR TO INVISIBILITY	--AA	82.6
DURBAN B	38946	65	7	5	18	0	2.0		1.9				46.0	266.0	1050.	REGULAR TO INVISIBILITY	--AA	97.1
DURBAN B	38948	65	7	7	16	28	2.5	5.0	2.3	4.8	3.33		40.0	93.0	1100.	REGULAR PERIOD	--GR	26.3
DURBAN B	38948	65	7	7	18	20	3.5		2.9		3.34		30.0	266.0	1300.	REGULAR TO INVISIBILITY	--GR	109.1
DURBAN B	38949	65	7	8	16	40	3.0		3.0				54.0	93.0	1000.	REGULAR PERIOD	--GR	36.3
DURBAN B	38950	65	7	9	16	50	3.0		3.4				68.0	93.0	840.	REGULAR PERIOD	--AA	47.5
DURBAN B	38951	65	7	10	17	0	2.0		2.5				86.0	102.0	800.	REGULAR TUMBLE	--GR	62.9
DURBAN B	38956	65	7	15	16	2	4.5		4.3				43.0	93.0	1100.	REGULAR	--GR	35.3
DURBAN B	38957	65	7	16	16	8	3.0		3.0		6.66		53.0	93.0	1010.	REGULAR PERIOD TO INVIS	--AA	43.0
DURBAN B	38958	65	7	17	16	18	3.0		3.2		3.32		67.0	93.0	900.	REGULAR PERIOD	--AA	54.1
DURBAN B	38960	65	7	19	16	39	2.0		2.4		3.33		77.0	265.0	820.	REGULAR PERIOD TO INVIS	--AA	84.5
DURBAN B	38961	65	7	20	16	48	2.0		2.2		3.31		60.0	266.0	900.	REGULAR PERIOD	--AA	99.1
DURBAN B	38962	65	7	21	17	0	2.0		1.9				47.0	266.0	1050.	REGULAR PERIOD	--GR	109.5
DURBAN B	38963	65	7	22	17	9	3.0		2.8		3.40		38.0	265.0	1100.	REGULAR PERIOD	--AA	116.4
DURBAN B	38964	65	7	23	17	20	3.0		2.4				29.0	265.0	1300.	REGULAR PERIOD	--AA	123.2
VAN NUYS-F	39000	65	8	28	11	24	5.0	9.5	5.2	9.7	3.49		57.0	86.5	930.	BROAD MAXIMA	--JGM	95.8
VAN NUYS-F	39015	65	5	12	10	15	5.2	8.8	5.2	8.8	3.48		46.8	84.8	1020.	FLASHING	--JGM	88.8
STADE/ELBE	39285	66	6	9	21	20	5.0	8.5	5.2	8.7	4.20	0.80	65.0	260.0	895.	REGULAR FLASHING	--HK	89.2
STADE/ELBE	39286	66	6	10	21	30	4.7	8.5	4.8	8.6	4.20	0.80	57.0	260.0	951.	REGULAR FLASHING	--HK	90.3
STADE/ELBE	39287	66	6	11	21	40	4.5	8.5	4.4	8.4	4.50	0.80	47.0	260.0	1055.	REGULAR FLASHING	--HK	91.6
VAN NUYS-F	39529	67	2	8	2	52	5.2		4.8		5.07	0.10	35.6	278.5	1230.	SOME MULTIPLE FLSHS. MIN INV	--JGM	124.9
OCEANPORT	39531	67	2	10	23	36	5.0		5.4				43.1	278.4	822.	1 FLASH IN FIELD	--GFG	121.1
WALNUT CREEK	39532	67	2	11	3	20	6.0		6.4		5.05	0.10	23.0	283.0	821.	SINGLE FL-SHES ONE MINUTE	--DFC	134.3
																THEN DOUBLE FLASHES TO +8		
																ONE MINUTE THEN SINGLES		
STADE/ELBE	39534	67	2	13	18	26	4.5	9.0	4.0	8.5	5.09	0.30	34.5	287.0	1258.	REGULAR BRIGHT FLASHES	--HK	125.4
STPETERSBURG	39535	67	2	14	0	9	4.0		3.4		5.00	1.00	31.5	277.2	1309.	FLASH 5 SEC REST INV	--FK	134.3
STADE/ELBE	39535	67	2	14	18	36	4.5	9.0	3.8	8.3	5.60	0.30	29.6	290.0	1368.	REGULAR BRIGHT FLASHES	--HK	128.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POINTON	39535	67	2	14	18	37	2.0		2.0		5.07	0.05	50.0	280.0	1020.	MAX VERY APPROX. MIN BELOW 8--DMS	--DMS	116.0
STPETERSBURG	39536	67	2	15	0	19	4.0		3.1		4.64	1.00	24.2	279.1	1490.	FLASH 4.64 STOPWATCH	--FK	138.9
STADE/ELBE	39536	67	2	15	18	45	5.0	9.0	4.1	8.1			25.0	293.0	1482.	REGULAR BRIGHT FLASHES	--HK	131.8
OCEANPORT	39538	67	2	17	0	33	5.5		5.9				11.1	292.9	820.	1 QUICK +5 FLASH NOTED THEN INVISIBLE ON FOLLOW	--GFG	140.5
STADE/ELBE	39664	67	6	23	22	20	6.5	6.0	5.8	8.3	5.57	0.20	28.0	290.0	1401.	REGULAR SHARP FLASHING	--HK	113.6
VAN NUYS-F	39879	68	1	24	2	20	6.0		5.4		6.27		30.0	81.0	1310.	MINIMA UNDER +9	--JGM	17.0
EDINBURG	39881	68	1	26	2	40	3.0		2.8				42.7	274.9	1075.	FLSH EVERY 3-5 SEC. IRREGULAR-- PA FL UP TO +1 FROM FLAT FACE, SOME DOUBLE FLASHES	--PA	103.1
STADE/ELBE	39881	68	1	26	17	24	6.0		5.6		6.20		35.0	75.0	1213.	SHARP FLASHES MIN INV	--HK	21.5
STADE/ELBE	39881	68	1	26	19	14	4.8		5.1		6.95		65.0	260.0	865.	SHARP FLASHES SEC MAX MININV	--HK	84.2
STADE/ELBE	39883	68	1	28	17	42	5.0		5.0		6.25	0.50	47.0	100.0	1016.	SHARP FLASHES MIN INV	--HK	35.3
VAN NUYS-F	39885	68	1	30	3	14	5.0		5.4		6.34	0.10	76.0	271.0	820.	MINIMA UNDER +10	--JGM	80.2
HEIDELBERG	39890	68	2	4	18	46	4.0		4.2		6.27	0.80	60.0	276.0	900.	SHARP FLASHES MIN INV	--GLU	96.7
HEIDELBERG	39893	68	2	7	17	23	4.8		5.0		6.28	0.80	58.0	83.0	915.	SHARP FLASHES MIN INV	--GLU	49.1
STADE/ELBE	39902	68	2	16	18	41	5.5		5.0		5.16	0.30	35.0	270.0	1250.	SHARP FLASHES MIN INV	--HK	125.1
STADE/ELBE	39967	68	4	21	0	14	5.0		4.9		7.55		45.0	100.0	1050.	SHARP FLASHES MIN INV	--HK	76.4

SDC NO. 1321 65-298 PERIOD = 90.0 ROCKET BODY PERIGEE = 131.1 LAUNCHED 65/ 4/17 DECAYED 5/ 6/65
 PERIOD = 205.7 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
CAL TECH	38879	65	4	29	3	7	1.0	2.0	4.5	5.5	2.44		50.0	60.0	200.	TUMBLE ONLY IN SOUTHEAST	--AMH	61.2
VAN NUYS-F	38879	65	4	29	3	7	0.5	0.8	4.1	4.4	2.44		50.0	60.0	190.	SMOOTH VAR. TP FROM 20CYCLES--JGM	--JGM	61.3

SDC NO. 1324		65-30A		MULNIYA 1		USSR		LAUNCHED 65/ 4/23		IN ORBIT								
		PERIOD =		720.5		PERIGEE =		329.3		APOGEE = 24831.8								
										INCL = 65.1								
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
PHOENIX R	39286	66/	6/	10	4	14	8.0	8.0	4.5	4.5			36.5	58.5	5112.	STEADY	--RKR	68.4
VAN NUYS-F	39290	66/	6/	14	4	6	7.5		4.9				34.8	99.0	3310.	MIN UNDER +9	--JGW	35.6
VAN NUYS-F	39290	66/	6/	14	4	11	8.0	10.5	5.0	7.5	172.00		37.6	77.1	4050.	WHOLE TP FROM ONLY 2 CYCLES	--JGW	52.9
																SECONDARY MAX +9.5	--JGW	
PHOENIX R	39290	66/	6/	14	4	12	9.0		6.1				45.2	69.0	3780.	VARIABLES 8 TO 9 MAG, 1.5 MAG	--RKR	60.6
																FLASH SFEN IN 97 SEC TRACK	--RKR	
VAN NUYS-F	39291	66/	6/	15	4	12	8.0		5.0				39.4	77.0	3980.		--JGW	53.5
PHOENIX R	39293	66/	6/	17	4	9	8.0	8.0	5.7	5.7			50.4	107.8	2935.	TRACKED 2 MIN NO FLASH	--RKR	40.1
VAN NUYS-F	39293	66/	6/	17	4	14	8.5	10.5	5.5	7.5	175.00		43.0	77.5	3900.	TP FROM 3 CYCLES	--JGW	54.2
VAN NUYS-F	39294	66/	6/	18	4	1	8.7	10.5	5.8	7.6			44.9	77.5	3890.		--JGW	54.9
PHOENIX R	39297	66/	6/	21	4	9	8.0	8.0	6.1	6.1			44.0	150.3	2450.	R MAG STEADY	--RR	31.9
VAN NUYS-F	39298	66/	6/	22	4	13	7.3	9.0	5.0	6.7	174.00		50.3	109.5	2940.	WHOLE TP	--JGW	41.6
VAN NUYS-F	39298	66/	6/	22	4	37	10.0		5.7				37.0	40.0	7200.	SECONDARY MAX +10.8	--JGW	83.4
VAN NUYS-B	39302	66/	6/	26	5	55	11.0		4.8		174.40		20.0	31.7	17000.		--JGW	103.9
SAN ANTONIO	39306	66/	6/	30	4	20	7.5	9.0	5.3	6.8			60.7	262.0	2764.	ST+7.5 FOR 10SEC, THEN+9SAME	--PH	78.2
																PERIOD, THEN+7.5, LOST IN GLRE--	--PH	
PHOENIX R	39309	66/	7/	3	4	24	7.0	8.0	4.9	5.9	1.00		72.0	208.0	2636.	TP APPROX 1 PER SEC	--RKR	67.8
PHOENIX R	39310	66/	7/	4	4	26	7.0	8.0	4.8	5.8	1.00		76.0	221.5	2700.	TRACKED 95 SEC TP VISIBLE AT	--RKR	71.5
																IRREGULAR INTERVALS	--RKR	
SAN ANTONIO	39311	66/	7/	5	4	20	8.7	8.7	6.4	6.4			30.2	248.3	2868.	ST IN 3DEG FIELD, EASY IN SIN--	--PH	87.5
SAN ANTONIO	39311	66/	7/	5	4	39	9.5		6.0				56.0	339.0	5025.	STARTD 0429, RNGE 3571, MAX+8,--	--PH	93.2
																END 0439, RNGE 5025, SLOW RISE--	--PH	
																FALL, MIN INV, DIFFCLT IN SIN,--	--PH	
																LONG PERIOD, NO OFFNIT MAX PT--	--PH	
PHOENIX R	39313	66/	7/	7	4	27	7.0	8.0	4.8	5.8			65.0	239.0	2700.	NO TP ORS NO REG PATTERN FOR	--RKR	79.0
																BRIGHTNESS	--RKR	
SAN ANTONIO	39315	66/	7/	9	4	49	9.5		5.5				51.1	348.6	6200.	CAUGHT 0428, RANGE 3252, TRAC--	--PH	95.5
																KED 21 MINUTES, END 0449, RANGE--	--PH	
																6200, USED 5 INCH APOGEE, MIN--	--PH	
																ALWAYS INV, MAX+8.5 TO +9.5--	--PH	
SAN ANTONIO	39316	66/	7/	10	4	58	9.5		5.1				46.9	358.5	7634.	SINCH APGEE DOES IT AGAIN,--	--PH	96.8
																START 0440, RANGE 4700, FMD AT--	--PH	
																0458, RNGE 7634, LONG TIME AT--	--PH	
PHOENIX R	39317	66/	7/	11	4	30	7.0	8.0	4.7	5.7			55.5	247.5	2865.	MIN, INV, SHORT TIME AT MAXIMUM--	--PH	
																NO REG PATTERN FOR BRIGHTNES--	--RKR	86.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
SAN ANTONIO	39317	66	7	11	4	57	9.0		4.7				47.7	353.4	7275.	PERIOD ABOUT 3 MINUTES, SEEN 14H, TRKD 2542 MILES	-- PM	97.2
PHOENIX R	39318	66	7	12	4	31	8.0	9.0	5.7	6.7			51.5	248.5	2900.	NO REG PATTERN FOR BRIGHTNES	-- PM	88.3
SAN ANTONIO	39319	66	7	13	4	53	9.5		5.5				49.0	342.1	6372.	FOLLOWED 17M	-- PM	97.8
PHOENIX R	39320	66	7	14	4	42	8.0		5.2				68.0	318.0	3600.	MIN INV IRR PATTERN OF FADE	-- RKR	90.8
PHOENIX R	39321	66	7	15	4	40	9.0		6.2				65.5	295.0	3600.	MIN INV IRR PATTERN OF FADE	-- RKR	91.9
VAN NUYS-F	39324	66	7	18	4	41	8.5	10.7	5.8	8.0			68.0	283.1	3500.		-- JGM	92.1
SAN ANTONIO	39325	66	7	19	5	7	9.2		4.7				45.1	349.0	7997.	XD 20M FROM 5075 MILES, 5-IN	-- PM	98.8
SAN ANTONIO	39326	66	7	20	4	54	9.8		5.9				44.1	318.5	6056.	TRKD 6M FROM 5123 MILES	-- PM	101.6
SAN ANTONIO	39327	66	7	21	4	57	8.5		4.5				44.9	325.0	6381.	3-MINUTE TUMBLE	-- PM	100.8
SAN ANTONIO	39328	66	7	22	4	57	9.0		5.0				43.6	327.9	6371.	MAX VIS LESS THAN 15 SECONDS	-- PM	102.1
SAN ANTONIO	39329	66	7	23	4	50	9.2		5.6				37.7	308.9	5267.	NO MINIMA DETCTD WITH 5-INCH	-- PM	106.3
SAN ANTONIO	39329	66	7	23	4	58	9.2		5.2				42.7	326.9	6446.	MAXS SEPARATED BY ABOUT 4 NEG	-- PM	102.7
VAN NUYS-F	39331	66	7	25	4	45	9.0		6.1				54.0	281.5	3770.	VAR	-- JGM	102.6
VAN NUYS-B	39355	66	8	18	5	12	11.7	12.7	7.4	8.4			41.0	339.0	7200.	FAINT	-- JGM	106.6
VAN NUYS-B	39370	66	9	2	6	34	10.7		4.7				54.0	2.5	15800.	MIN BELOW +12.5	-- LDM	78.9
VAN NUYS-B	39370	66	9	2	7	20	11.0		4.6				59.8	10.7	19100.	MIN BELOW +12.0	-- JGM	71.6
VAN NUYS-B	39370	66	9	2	8	25	11.0		4.3		179.00		68.9	12.0	22200.		-- LDM	64.0
VAN NUYS-F	39375	66	9	7	6	36	11.0		5.0		179.50		53.5	356.7	15800.	VARIATION	-- JGM	78.4
VAN NUYS-F	39375	66	9	7	7	36	11.2		4.7				62.5	3.6	20000.	VARIABLE	-- JGM	67.7
VAN NUYS-F	39376	66	9	8	7	22	11.3		4.9				60.5	2.0	19100.		-- JGM	69.5
VAN NUYS-F	39377	66	9	9	7	30	11.2		4.7				61.6	0.6	19700.		-- JGM	68.0
VAN NUYS-B	39382	66	9	14	7	41	11.0	13.5	4.1	6.6			70.4	311.2	24300.		-- JGM	49.3
VAN NUYS-F	39384	66	9	16	7	45	11.3		4.7				63.2	348.7	20500.	CAN ONLY SEE MAXIMA	-- JGM	63.4
PHOENIX R	39386	66	9	18	5	41	13.0		7.8				30.6	329.0	11000.	FADES TO INVISIBLE	-- RKR	101.9
VAN NUYS-B	39413	66	10	15	6	18	12.5	13.5	6.7	7.7			32.0	330.0	14700.		-- JGM	89.5
VAN NUYS-B	39413	66	10	15	7	45	12.0	13.5	5.4	6.9			47.0	322.0	20800.		-- LDM	64.3
EDINBURG	39463	66	12	4	3	38	9.7	9.7	4.2	4.2			53.6	202.2	12800.	RANGE 12829 MILES	-- PM	61.0
EDINBURG	39464	66	12	5	2	20	13.0	13.0	6.6	6.6			80.1	183.0	18800.	RANGE 18813 MILES, STEADY	-- PM	57.7
SAN ANTONIO	39467	66	12	8	3	42	11.0		5.4				47.5	208.5	13000.	RNGE 13020 SLIGHT SMOOTH VAR	-- FB	66.7
OCEANPORT	39574	67	3	25	6	37	10.0		5.9				65.8	35.9	6642.		-- GFG	71.3
OCEANPORT	39574	67	3	25	6	19	9.0		5.9				80.5	153.5	4162.		-- GFG	40.4
PHOENIX R	39580	67	3	31	6	24	9.0	9.0	5.5	5.5			41.4	75.7	4929.	STEADY	-- RKR	52.7
OCEANPORT	39582	67	4	2	6	43	10.0		5.8				70.8	13.1	6816.		-- GFG	69.0
OCEANPORT	39583	67	4	3	6	26	9.0		5.9				74.2	240.7	4161.		-- GFG	36.8
PHOENIX R	39583	67	4	3	6	27	9.0	9.0	6.3	6.3			58.8	226.6	3434.	STEADY	-- RR	41.4
VAN NUYS-F	39583	67	4	3	6	34	10.7		6.7				37.0	60.0	6270.	PROBABLY MIN MAG, NOT FOLLOWED	-- JGM	63.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39584	67	4	4	6	21	8.5		5.4				38.0	96.0	4100.		--JGM	37.2
VAN NUYS-F	39585	67	4	5	6	35	9.0	11.0	5.0	7.0			40.0	58.0	6170.	TP ABOUT 3 1/4 MINUTES	--JGM	63.4
PHOENIX R	39588	67	4	8	6	27	8.0	8.0	5.2	5.2			51.5	94.5	3679.	3-7 MAG FLASH IN 2 MIN TRACK	--RKR	39.7
VAN NUYS-F	39589	67	4	9	6	25	8.0		5.1				47.0	102.0	3870.		--JGM	32.4
PHOENIX R	39590	67	4	10	6	29	9.0	9.0	6.2	6.2			60.7	94.5	3604.	STEADY	--RR	38.6
OCEANPORT	39592	67	4	12	5	27	8.0		5.0				41.5	244.7	4010.		--GFG	40.6
VAN NUYS-F	39596	67	4	14	6	45	9.0		5.2				55.0	54.0	5750.		--JGM	62.0
PHOENIX R	39598	67	4	18	6	33	8.0	8.0	5.3	5.3			72.9	142.8	3411.	STEADY TRACKED 70 SEC	--RKR	30.2
VAN NUYS-F	39598	67	4	18	6	33	7.5		4.8				64.0	121.0	3520.		--JGM	29.2
VAN NUYS-F	39598	67	4	18	6	47	8.8	10.5	5.0	6.7	197.00		58.0	52.0	5690.	TP FROM 3 CYCLES	--JGM	62.0
PHOENIX R	39599	67	4	19	6	47	8.0	9.0	5.3	6.3			74.2	150.6	3402.	SLOW FADE TRACKED 3 MIN	--RKR	30.9
VAN NUYS-F	39603	67	4	23	6	45	7.8	9.0	4.6	5.8			75.0	74.0	4290.		--JGM	49.2
VAN NUYS-F	39608	67	4	28	6	48	8.3	9.5	5.2	6.4			85.0	49.0	4240.	MID MAXIMA PROMINANT	--JGM	52.2
VAN NUYS-F	39608	67	4	28	7	7	9.5	11.0	5.2	6.7	197.60		57.0	75.0	7200.	TP FROM 8 1/2 CYCLES	--JGM	76.7
OCEANPORT	39609	67	4	29	6	56	9.0		5.1				44.6	290.7	6000.		--GFG	61.3
PHOENIX R	39609	67	4	29	6	57	8.0	8.0	4.3	4.3			71.3	158.5	5476.	STEADY	--RKR	66.9
VAN NUYS-F	39609	67	4	29	7	7	9.3	11.0	5.0	6.7	198.00		58.0	24.0	7170.	TP FROM 3 CYCLES	--JGM	76.4
PHOENIX R	39610	67	4	30	7	10	9.0		4.7				11.8	59.5	7124.	IRR TP MIN INV TRACKED 120S	--RKR	100.3
PHOENIX R	39612	67	5	2	6	45	8.0	9.5	5.2	6.7			62.0	249.4	3587.	65 SFC MAX TO MIN	--RR	51.7
VAN NUYS-F	39613	67	5	3	6	52	8.8	10.5	5.7	7.4			83.0	298.0	4260.	MAX AT 100 SECOND INTERVALS	--JGM	56.6
VAN NUYS-F	39617	67	5	7	6	55	8.8	10.3	5.6	7.1			75.0	287.0	4320.		--JGM	61.5
VAN NUYS-F	39623	67	5	13	7	19	10.0	11.5	5.7	7.2			62.0	351.0	7150.	100 SEC VARIATION	--JGM	80.8
VAN NUYS-F	39623	67	5	13	7	32	10.8		6.0				54.0	6.0	9200.		--JGM	87.9
PHOENIX R	39624	67	5	14	6	54	8.0		4.9				41.9	262.2	4094.	MIN INV 1 6 MAG FLASH SEEN IN 67 SEC TRACK	--RKR	66.9
VAN NUYS-F	39624	67	5	14	6	54	8.8	10.5	5.9	7.6			50.0	256.0	3850.		--JGM	64.7
VAN NUYS-F	39624	67	5	14	7	34	10.5	11.5	5.7	6.7			54.0	5.0	9200.		--JGM	88.3
OCEANPORT	39783	67	10	20	5	9	13.0		6.6				26.8	259.9	18900.	REACQUIRED,	--GFG	55.2
OCEANPORT	39783	67	10	20	5	42	13.0		6.9				15.8	255.4	16500.		--GFG	54.1
OCEANPORT	39785	67	10	22	5	11	12.5		0.0				24.7	261.5		14 MINS. LATE	--GFG	57.1
OCEANPORT	39785	67	10	22	5	44	12.5		6.1				13.6	257.0	19000.		--GFG	56.3
VAN NUYS-F	39885	68	2	3	8	43	9.0	11.0	5.2	7.2	208.00		52.0	77.0	5740.		--JGM	52.1
VAN NUYS-F	39911	68	2	25	9	1	8.8		5.2				87.0	310.0	5210.	NOT FOLLOWED	--JGM	28.3

SDC NO. 1325 65-308 PERIOD = 94.7 PERIGEE = 125.5 APOGEE = 500.2 INCL = 64.8
 LAUNCHED 65/ 4/23 DECEASED 7/20/65
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 STADE/ELBE 38902 65/ 5/22 21 45 4.0 5.0 8.1 9.1 60.0 55.0 149. STEADY OR SLOWLY VARYING -- HK 84.7

SDC NO. 1326 65-30C ROCKET BODY USSR LAUNCHED 65/ 4/23 DECEASED 7/ 2/65
 PERIOD = 94.4 PERIGEE = 126.8 APOGEE = 480.9 INCL = 64.8
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 VAN NUYS-F 38874 65/ 4/24 12 31 4.0 5.9 18.5 120.0 410. 2 CYCLES ONLY. DEEP MIN. -- JGM 121.7
 STADE/ELBE 38902 65/ 5/22 21 41 1.0 7.0 5.1 11.1 6.10 1.50 60.0 55.0 154. REGULAR FLASHING -- HK 84.4

SDC NO. 1328 65-32A EXPLORER 27 USA LAUNCHED 65/ 4/29 IN ORBIT
 PERIOD = 107.8 PERIGEE = 581.6 APOGEE = 817.7 INCL = 41.2
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 VAN NUYS-F 38888 65/ 5/ 8 11 55 6.3 6.3 6.8 6.8 44.5 355.0 790. SLOW TUMBLE -- JGM 98.8
 DURBAN B 38889 65/ 5/ 9 16 28 6.5 7.0 7.0 7.5 89.0 228.0 800. STEADY --GR 74.5
 DURBAN B 38938 65/ 6/27 17 20 8.0 8.0 8.4 8.4 80.0 96.0 820. STEADY --GR 51.8
 DURBAN B 38935 65/ 6/24 17 26 8.0 8.0 7.8 7.8 43.0 358.0 1100. STEADY --GR 79.1
 DURBAN B 38938 65/ 6/27 17 18 9.0 9.0 9.0 9.0 50.0 310.0 1000. STEADY --GR 98.4
 DURBAN B 38939 65/ 6/28 16 38 8.0 8.3 8.3 8.3 64.0 344.0 880. SCINTILLATING --GR 85.6
 DURBAN B 38940 65/ 6/29 15 56 8.0 8.0 7.8 7.8 42.0 341.0 1100. STEADY --GR 110.1
 DURBAN B 38941 65/ 6/30 17 10 8.0 10.0 7.9 9.9 45.0 266.0 1050. SCINTILLATING --GR 107.4
 DURBAN B 38942 65/ 7/ 1 16 30 8.0 8.0 8.2 8.2 61.0 266.0 900. STEADY --GR 99.7
 DURBAN B 38945 65/ 7/ 4 16 23 7.5 7.5 7.4 7.4 45.0 230.0 1050. STEADY --AA 99.9
 DURBAN B 38964 65/ 7/23 16 56 7.5 7.5 6.9 6.9 19.0 359.0 1300. STEADY -- AA 94.4

SOC NO. 1329 65-31R PERIOD = 95.1 PERIGEE = 313.8 APOGEE = 339.9 INCL = 95.2
 LAUNCHED 65/ 4/28 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
STADE/ELBE	38859	65/	5/19	21	54	8.0	8.5	9.2	9.7	35.0	100.0	566.				STEADY OCASS VARYING	-- HK	57.0
VAN NUYS-F	39143	66/	1/18	2	44	7.5	8.3	9.3	10.1	45.0	266.0	430.				LATER GAVE +4.5 FLASHES	--JGM	115.1
VAN NUYS-F	39144	66/	1/19	2	32	7.3	7.7	9.6	10.0	67.8	264.5	340.				+6 FLASHES IN NORTH	--JGM	95.1
VAN NUYS-F	39147	66/	1/22	1	54	7.3	8.0	9.8	9.5	36.8	80.2	500.					--JGM	29.0
STADE/ELBE	39980	68/	5/ 4	0	14	8.5		9.5		25.0	100.0	640.				SHORT OPS THEN LOST	-- HK	85.4

SOC NO. 1335 65-20E PERIOD = 112.2 PERIGEE = 369.1 APOGEE = 1280.6 INCL = 56.1
 LAUNCHED 65/ 3/15 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
VAN NUYS-F	38857	65/	5/17	5	7	8.0	8.0	7.3	7.3	66.5	120.3	1370.				STEADY	--JGM	43.8
STPETERSBURG	38858	65/	5/18	1	35	7.0	7.0	0.0	0.0								--FK	
VAN NUYS-F	38901	65/	5/21	4	26	8.0	8.0	7.4	7.4	79.3	131.0	1300.					--JGM	62.0
VAN NUYS-F	38901	65/	5/21	4	33	8.8	8.8	7.6	7.6	37.0	47.0	1750.					--JGM	74.8

SOC NO. 1344 65-20P PERIOD = 106.2 PERIGEE = 174.0 APOGEE = 1129.7 INCL = 56.1
 LAUNCHED 65/ 3/15 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
VAN NUYS-F	39066	65/11/	2	2	27	5.0	5.0	5.4	5.4	46.3	126.5	820.					--JGM	44.4
VAN NUYS-F	39067	65/11/	3	3	9	4.8	5.8	5.9	6.9	72.4	314.0	615.				TP-23.0S/5 OR 6 CYCLES	--JGM	75.9
VAN NUYS-F	39097	65/12/	3	1	57	4.3		5.4		29.1	69.0	610.				FEW SFC TP	--JGM	14.7
STADE/ELBE	39844	67/12/20	5	57	2.7	2.7	2.7	5.5	5.5	67.0	360.0	280.				ST	-- HK	69.4
POYNON	39878	68/ 1/23	18	18	5.9	5.9	0.0	0.0		30.0	180.0					1965-20P	--DMB	92.7
STADE/ELBE	39927	68/ 3/12	2	59	4.5	5.5	5.4	6.4		5.37	1.00	180.0	650.			REG TUMB	-- HK	55.5
FEIDELBERG	39542	68/ 3/27	22	17	5.8	7.8	6.1	8.1		5.52		279.0	865.			VAR	--GLU	73.3
HEIDELBERG	39943	68/ 3/28	21	39	5.0	5.6	5.5	6.1		5.47		286.0	795.			VAR	--GLU	68.0
STADE/ELBE	39944	68/ 3/29	21	0	5.0	5.5	5.1	5.6				140.0	950.			FAINT VAR MOST ST	-- HK	34.9
FEIDELBERG	39545	68/ 3/30	20	23	5.0	5.8	5.3	6.1		4.95		81.0	865.			DOUBLE FLASHES	--GLU	51.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39951	68	4	5	19	57	6.5	7.5	7.0	8.0			85.0	5.0	800.	REG TUMB MOON	-- HK	76.6
STADE/ELBE	39952	68	4	6	21	2	6.3	7.5	6.7	7.9	5.70		77.0	5.0	850.	TUMB MOON	-- HK	77.0
STADE/ELBE	39953	68	4	7	20	22	6.3	7.3	6.7	7.7	5.70		78.0	355.0	830.	VAR	-- HK	80.6
STADE/ELBE	39954	68	4	8	19	42	6.5	7.5	6.9	7.9	5.60		78.0	5.0	830.	VAR	-- HK	82.5
STADE/ELBE	39956	68	4	10	20	7	7.0	8.0	7.5	8.5	5.60		75.0	5.0	800.	TUMB MOON	-- HK	83.0
STADE/ELBE	39957	68	4	11	19	27	6.5	7.5	7.0	8.0			75.0	5.0	800.	PEG TUMB MOON	-- HK	86.1

SDC NO. 1355 65-20AA FRAGMENT USSR LAUNCHED 65/ 3/15 DECAYED 10/ 9/66
PERIOD = 105.9 PERIGEE = 169.6 APOGEE = 1120.3 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39063	65	10	30	2	33	5.5		6.7				85.5	131.5	585.	VAR	--JGM	67.8
VAN NUYS-F	39066	65	11	2	2	45	5.3	7.5	5.7	7.9	7.08		34.1	320.0	830.	NMT SMOOTH VAR	--JGM	104.4
VAN NUYS-F	39067	65	11	3	2	49	5.7	7.3	5.6	7.2	7.17		25.2	324.0	1070.		--JGM	106.7
STADE/ELBE	39385	66	9	17	21	4	4.0	5.5	4.6	6.1			85.0	360.0	750.	REGULAR FLASHING NO PREDICT	-- HK	66.2

SDC NO. 1356 65-20AB FRAGMENT USSR LAUNCHED 65/ 3/15 DECAYED 8/14/65
PERIOD = 105.1 PERIGEE = 146.0 APOGEE = 1093.6 INCL = 56.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38972	65	7	31	22	42	4.0	8.0	5.8	9.8	0.50	0.20	45.0	100.0	430.	65 20 AB NO PREDICTION FLASH--	HK	62.5

SDC NO. 1358 65-32B ALTAR ROCKET USA LAUNCHED 65/ 4/29 IN ORBIT
 PERIOD = 107.8 PERIGEE = 580.4 APOGEE = 817.7 INCL = 41.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38888	65/ 5/ 8	11	54		5.7	6.2	14.00	0.30	44.7	355.0	790.				WHOLE TP. SECONDARY MAX +8.3--JGM		98.7

SDC NO. 1359 65-34A TRANSTAGE USA LAUNCHED 65/ 5/ 6 IN ORBIT
 PERIOD = 157.0 PERIGEE = 1726.2 APOGEE = 2327.7 INCL = 32.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38888	65/ 5/ 8	11	11		6.5	8.7	4.5	6.7	190.00			47.2	180.0	2480.	1 CYCLE TIMED. SMOOTH VAR	--JGM	49.6
DURBAN B	38898	65/ 5/18	16	16		7.0	8.5	5.7	7.2	121.90			69.0	94.0	1820.	SLOW TUMBLE	--AA	54.9
DURBAN B	38899	65/ 5/19	15	48		5.5	5.5	4.1	4.1				59.0	94.0	1900.	MAINLY STEADY	--GR	51.3
DURBAN B	38900	65/ 5/20	18	3		6.5	6.5	5.2	5.2				65.0	305.0	1800.	STEADY JUST BEFORE SHADOW	--GR	74.5
DURBAN B	38903	65/ 5/23	16	32		6.0	7.0	4.6	5.6				59.0	266.0	1920.	PERIOD ABOUT 2 MINUTES	--AA	101.3
DURBAN B	38903	65/ 5/23	16	33		6.0	7.0	4.6	5.6				59.0	266.0	1920.	PERIOD ABOUT 2 MINUTES	--AA	101.3
STPETERSBURG	39651	67/ 6/10	3	13		8.5	8.5	6.9	6.9				82.0	36.4	2050.	SLOW PERIOD ABOUT 2 MINS	--GR	101.1
AUSTIN	39913	68/ 2/27	3	13		6.5		5.1					88.0	12.0	1940.		--FK	63.2
																	--MM	53.7

SDC NO. 1360 65-34B LES-2 USA LAUNCHED 65/ 5/ 6 IN ORBIT
 PERIOD = 309.9 PERIGEE = 1730.5 APOGEE = 9194.4 INCL = 32.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39470	66/12/11	2	2		8.0		6.8					0.02	92.1	174.0	TP ESTIMATED .4 SEC, FLASHING--JGM		76.0
WALNUT CREEK	39490	66/12/31	2	18		7.0		5.7			0.25		0.10	67.5	190.0	30 FLASHS OFF 8 SEC 30 FLASH--DFC		85.8
VAN NUYS-F	39490	66/12/31	2	19		10.5		9.2					0.20	77.3	193.0	TP EST .8SEC, FLASHING	--JGM	79.3
VAN NUYS-F	39491	67/ 1/ 1	4	16		11.2		9.3					0.05	56.0	206.0	TP ESTIMATE 1.6 SEC, FLASHING--JGM		69.9

SDC NO. 1361 65-34C CALIBRATION USA LAUNCHED 65/ 5/ 6 IN ORBIT
PERIOD = 145.6 PERIGEE = 1724.3 APOGEE = 1739.2 INCL = 32.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	38921	65/	6/10	6	58	9.0	9.3	7.8	8.1			82.4	174.0	1750.	SUSPECTED SOME SMALL FLASHES	--JGM	51.0	
MADISON	38926	65/	6/15	3	16	8.5	8.5	7.3	7.3			52.4	168.2	1730.		--ROW	43.7	
MADISON	38927	65/	6/16	3	31	8.5	7.0					54.9	172.1	1972.	SLT VAR	--GCL	44.5	
MADISON	38928	65/	6/17	3	49	9.0	9.0	7.5	7.5			56.4	176.2	1950.		--ROW	44.7	
MADISON	38930	65/	6/19	4	22	10.1	8.6					56.3	184.3	1952.	SLT VAR	--GCL	41.9	
TERRE HAUTE	38936	65/	6/25	3	25	10.0	10.5	8.7	9.2		5.00	0.20	64.0	188.0	1854.		--LD	54.2
TERRE HAUTE	38937	65/	6/26	3	42	10.0	11.0	8.6	9.6		5.00	0.20	61.0	192.0	1887.		--LD	50.9
VAN NUYS-F	38939	65/	6/28	4	4	9.0	9.0	7.8	7.8			83.8	182.5	1735.	MAYBE SLIGHT VARIATION	--JGM	74.1	
VAN NUYS-F	38939	65/	6/28	6	43	9.0	9.0	7.6	7.6			61.4	202.1	1885.	SUSPECTED SLIGHT VARIATION	--JGM	41.5	
VAN NUYS-F	39148	66/	1/23	2	43	8.5	8.8	7.2	7.5			70.8	162.8	1800.		--JGM	70.8	
VAN NUYS-F	39149	66/	1/24	2	59	8.9	8.9	7.7	7.7			75.9	166.5	1770.		--JGM	68.2	
VAN NUYS-F	39150	66/	1/25	3	16	9.2	9.2	8.0	8.0			79.8	171.7	1750.		--JGM	65.4	
OURBAN 8	39198	66/	3/14	18	17	8.5	8.5	7.3	7.3			81.0	265.0	1750.	STEADY	--GR	72.0	
VAN NUYS-F	39386	66/	5/18	4	9	9.3	9.3	7.5	7.5			39.9	211.0	2270.		--JGM	78.2	
PHOENIX R	39386	66/	5/18	4	13	9.0	9.0	7.1	7.1			34.9	213.0	2414.	TRACKED 93 SEC STEADY	--RKR	74.9	

SDC NO. 1362 65-35A COSMOS 66 USSR LAUNCHED 65/ 5/ 7 RE-ENTERED 5/15/65
PERIOD = 89.3 PERIGEE = 124.3 APOGEE = 177.1 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	38895	65/	5/15	3	57	2.8	2.8	5.9	5.9			47.2	59.0	240.	STEADY	--JGM	63.4	

SDC NO. 1363 65-35B
PERIOD = 89.6 PERIGEE = 139.8 APOGEE = 174.0 INCL = 65.0
ROCKET BODY USSR LAUNCHED 65/ 5/ 7 DECAYED 5/24/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38896	65/ 5/16	3	51	1.0	2.5	4.8	6.3	1.17	65.0	150.0	170.				MAX ALTERNATE SMOOTH AND MULTIPLE FLASHES. KEEN PASS	--JGM	55.8
CAL TECH	38896	65/ 5/16	3	55	1.5	3.4	5.3	7.2	2.26	67.3	239.7	174.				1.0 FL AFTER ALT. MAXIMA	--JGM	87.3
CAL TECH	38897	65/ 5/17	3	35	0.5	2.0	4.2	5.7	1.15	65.0	240.0	180.					--AMM	93.7

SDC NO. 1375 65-20AG
PERIOD = -0.0 PERIGEE = -0.0 APOGEE = -0.0 INCL = 56.1
FRAGMENT USSR LAUNCHED 65/ 3/15 DECAYED 10/14/65

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38972	65/ 7/31	23	24	4.5	5.5	6.3	7.3		89.0	360.0	440.	65	20	AG NO PREDICTION	VAR -- HK		72.7

SDC NO. 1377 65-38A
PERIOD = 100.0 PERIGEE = 345.5 APOGEE = 598.4 INCL = 98.6
USA LAUNCHED 65/ 5/20 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39619	67/ 5/ 9	2	40	7.5	8.0	8.2	8.7	39.0	75.0	736.	APP 2	SEC	PFR			-- MM	46.6

SDC NO. 1378 65-383
PERIOD = 100.0 PERIGEE = 346.1 APOGEE = 59900.1 INCL = 98.6
USA LAUNCHED 65/ 5/20 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38921	65/ 6/10	4	6	8.2	9.0	1.32	54.7	87.0	690.	LATER MAX	ALTERNATE+0.2+0.0	--JGM					53.9

SDC NO. 1381				65-394				PERIOD =				PEGASUS 2				USA				LAUNCHED 65/ 5/25 IN ORBIT				APOGEE = 455.5 INCL = 31.7							
STATION NAME				MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS				--ORS				PHASE				
STPETERSBURG				38905	65/	5/25		9 25	5 18	2 5	6 0	3 2	6 7			22.2	165.2		1422.	2 TO 3 FLASH PER SEC.				-- FK				67.1			
PHOENIX R				38906	65/	5/26		4 23	4 23	5 0	3 0	3 5	3 5			14.5	206.0							--RKN				67.7			
STPETERSBURG				38907	65/	5/27		1 25	1 25	1 0	1 0	0 0	0 0			25.1	110.8							-- FK				16.5			
VAN NUYS-F				38908	65/	5/28		4 57	4 57	1 2	2 0	2 1	2 9			33.0	210.2		650.	ABOUT 30 SEC SMOOTH VAR				--JGM				65.3			
TERRE HAUTE				38912	65/	6/ 1		2 51	2 51	3 0	3 0	3 8	3 8			32.8	180.0		683.	STEADY				--DD				41.5			
WALNUT CREEK				38914	65/	6/ 3		5 1	5 1	0 1	3 0	1 1	4 0			38.0	180.0		635.	SLOW DECLINE AZI 210 TO MIN				--DFC				44.6			
																				AZI 155 UT 050130 THEN FAST				--UP							
WALNUT CREEK				38915	65/	6/ 4		5 18	5 18	2 5	6 0	3 2	6 7			32.0	190.0		720.	STEADY				-- RC				47.4			
TERRE HAUTE				38916	65/	6/ 5		2 18	2 18	3 0	3 0	3 5	3 5			29.0	180.0		793.					--LD				48.4			
VAN NUYS-F				38916	65/	6/ 5		3 55	3 55	0 8	1 2	2 4	2 8		31.00	64.0	180.0		480.					--JGM				65.5			
TERRE HAUTE				38917	65/	6/ 6		2 36	2 36	3 0	3 5	3 1	3 6		40.50	10.00	180.0		948.	TP FROM 1 TUMBLE				--LD				43.4			
DURBAN B				38934	65/	6/23		16 59	16 59	1 0	1 0	1 4	1 4			25.0	339.0		820.	STEADY				--AA				107.8			
DURBAN B				38936	65/	6/25		15 54	15 54	2 5	2 5	2 7	2 7			21.0	350.0		900.	STEADY				--AA				114.1			
DURBAN B				38936	65/	6/25		15 57	15 57	1 5	1 5	1 8	1 8			24.0	66.0		880.	STEADY				--AA				44.3			
DURBAN B				38936	65/	6/25		17 35	17 35	-0 5	-0 5	-0 7	-0 7			17.0	287.0		1100.	STEADY				--GR				131.1			
DURBAN B				38937	65/	6/26		16 9	16 9	3 0	3 0	3 8	3 8			28.0	309.0		700.	STEADY				--AA				134.4			
DURBAN B				38937	65/	6/26		16 12	16 12	0 1	0 1	2 0	2 0			89.0	358.0		426.	STEADY				--GR				76.3			
DURBAN B				38938	65/	6/27		16 25	16 25	1 0	1 0	1 0	1 0			23.0	294.0		1000.	STEADY				--GR				139.8			
DURBAN B				38939	65/	6/28		16 43	16 43	-0 5	1 5	-1 1	0 9			8.0	278.0		1300.	SLOW INCREASE				--GR				150.6			
DURBAN B				38941	65/	6/30		15 41	15 41	-1 0	-1 0	0 9	0 9			82.0	257.0		410.	STEADY				--AA				89.0			
DURBAN B				38941	65/	6/30		17 22	17 22	1 5	1 5	3 4	3 4			63.0	228.0		420.	STEADY				--GR				79.1			
DURBAN B				38942	65/	7/ 1		15 59	15 59	0 5	0 5	2 1	2 1			65.0	135.0		480.	STEADY ALL THF WAY				--GR				56.5			
DURBAN B				38942	65/	7/ 1		17 38	17 38	1 5	1 5	2 5	2 5			42.0	254.0		620.	STEADY				--GR				102.4			
DURBAN B				38944	65/	7/ 3		16 29	16 29	0 1	0 1	1 2	1 2			45.0	252.0		600.	STEADY				--AA				110.2			
DURBAN B				38945	65/	7/ 4		16 49	16 49	0 5	0 5	2 1	2 1			67.0	266.0		480.	STEADY				--GR				90.7			
DURBAN B				38948	65/	7/ 7		17 39	17 39	3 0	3 0	2 4	2 4			13.0	283.0		1300.	STEADY				--GR				135.3			
DURBAN B				38949	65/	7/ 8		16 16	16 16	1 0	1 0	3 0	3 0			45.0	327.0		400.	STEADY				--GR				111.2			
DOUREAN 3				38950	65/	7/ 9		16 32	16 32	2 5	2 5	3 3	3 3			18.0	287.0		700.	STEADY				--AA				144.7			
VAN NUYS-F				38965	65/	7/24		4 48	4 48	2 5	2 5	4 1				60.0	159.2		470.	SURPRISINGLY FAINT				--JGM				45.0			
VAN NUYS-F				38966	65/	7/25		5 5	5 5	0 8		2 1				45.0	180.0		560.	MAYBE LONG VARIATION				--JGM				42.9			
VAN NUYS-F				38969	65/	7/28		4 15	4 15	1 7	1 7	2 7	2 7			37.0	190.0		640.	SHARP DROP TO +2.5 IN EAST				--JGM				60.8			
VAN NUYS-F				38970	65/	7/29		4 30	4 30	3 5	3 5	3 6	3 6			18.0	230.0		950.					--JGM				95.4			
VAN NUYS-F				38970	65/	7/29		4 33	4 33	2 0	2 0	2 5	2 5			25.0	195.0		800.					--JGM				61.6			
VAN NUYS-F				39021	65/	5/18		2 35	2 35	0 1	0 1	2 0	2 0			50.0	180.0		410.					--JGM				78.0			
VAN NUYS-F				39024	65/	5/21		3 27	3 27	2 8	2 8	2 9	2 9			13.0	210.0		960.					--JGM				98.8			

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39045	65/10/12	13	15	0.5	2.2	60.0	225.0	450.								--JGM	61.8
VAN NUYS-F	39050	65/10/17	13	16	1.3	2.7	45.0	180.0	520.							1 OR 2 MIN TUMBLE	--JGM	82.4
DURBAN B	39186	66/ 3/ 2	17	53	1.5	1.5	24.0	170.0	690.							STEADY	--JGM	86.5
DURBAN B	39190	66/ 3/ 6	17	22	1.5	1.5	12.0	314.0	1100.							STEADY	--AA	109.9
VAN NUYS-F	39215	66/ 3/31	3	15	1.0	1.0	80.0	105.0	350.								--GR	68.2
VAN NUYS-F	39216	66/ 4/ 1	3	32	0.4	0.4	35.0	145.0	670.								--JGM	42.3
STPETERSBURG	39224	66/ 4/ 9	0	47	4.0	5.0	51.0	139.0	510.							TP EST 15 SFC	--JGM	42.5
STPETERSBURG	39226	66/ 4/11	1	25	3.0	3.0	33.0	287.2	700.								--FJK	134.3
EDINBURG	39227	66/ 4/12	1	38	1.6	1.6	32.1	184.4	675.							STEADY	--FJK	65.3
VAN NUYS-F	39262	66/ 5/17	4	57	2.2	2.2	48.0	180.0	560.								--PM	72.3
EDINBURG	39263	66/ 5/18	1	52	1.0	1.5	40.0	200.0	650.							IN GENERAL ST	--JGM	56.4
EDINBURG	39264	66/ 5/19	2	9	0.5	0.5	45.7	180.0	575.							ST	--PM	69.1
STPETERSBURG	39265	66/ 5/19	2	15	2.0	6.0	89.0	0.0	440.								--FJK	72.6
EDINBURG	39266	66/ 5/20	2	27	2.5	2.5	62.5	32.6	465.							ST ALL THE WAY	--PM	85.8
VAN NUYS-F	39268	66/ 5/23	4	57	2.8	2.8	63.0	180.0	500.							UNUSUALLY FAINT	--JGM	50.6
VAN NUYS-F	39269	66/ 5/24	3	31	2.3	2.3	57.0	230.0	510.								--JGM	93.5
VAN NUYS-F	39269	66/ 5/24	3	32	0.8	0.8	68.7	170.2	470.								--JGM	68.6
VAN NUYS-B	39304	66/ 6/28	12	3	1.0	1.0	50.0	180.0	550.								--JGM	61.5
SAN ANTONIO	39314	66/ 7/ 8	2	56	0.1	0.1	67.0	180.0	345.							STEADY	--PM	61.7
SAN ANTONIO	39315	66/ 7/ 9	3	12	2.5	2.5	80.2	0.0	338.							STEADY FROM WEST TO EAST	--PM	78.4
SAN ANTONIO	39316	66/ 7/10	3	29	3.0	3.0	69.0	0.0	355.							NO VARIATION ALONG WHOLE TRK	--PM	84.0
PHOENIX K	39318	66/ 7/12	3	59	4.0	4.0	36.0	254.0	350.							STEADY	--RR	107.2
SAN ANTONIO	39319	66/ 7/13	2	39	0.2	2.5	60.0	0.0	375.							M2.5 IN NNW RISING TO ST 0.2	--PM	95.0
VAN NUYS-F	39321	66/ 7/15	3	11	0.7	0.7	50.0	180.0	420.								--JGM	56.3
SAN ANTONIO	39322	66/ 7/16	3	29	3.5	3.5	85.0	0.0	324.							M3 IN NNW MAX OCCUR IN EAST	--PM	74.9
SAN ANTONIO	39325	66/ 7/19	2	40	1.0	1.0	53.2	180.0	399.							REALLY HARD TO SEE NAKED EYE	--PM	48.1
SAN ANTONIO	39367	66/ 8/30	2	43	-1.0	0.1	20.0	160.0	755.							VERY BRT AT LOW ALTITUDE	--PM	35.3
VAN NUYS-F	39375	66/ 9/ 7	3	11	1.3	1.3	85.0	360.0	387.								--PM	70.1
STPETERSBURG	39416	66/10/18	23	53	4.0	4.0	40.0	180.0	620.								--JGM	69.2
STPETERSBURG	39425	66/10/27	0	25	2.0	4.0	59.6	19.6	700.								--FK	60.3
VAN NUYS-F	39876	68/ 1/21	2	6	1.5	2.0	34.0	106.0	460.							UNUSUALLY FAINT	--JGM	37.3
VAN NUYS-F	39975	68/ 4/29	3	31	2.5	2.5	46.0	166.0	460.								--JGM	54.1
VAN NUYS-F	39977	68/ 5/ 1	3	56	1.8	3.0	54.0	159.0	410.								--JGM	48.2

SDC NO. 1385 65-398
 PERIOD = 97.2
 APOLO PERIGEE = 315.7
 USA LAUNCHED 65/ 5/25 IN ORBIT
 APOGEE = 459.2 INCL = 31.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	38905	65/	5/	25	9	25	4.0	4.0	0.0	0.0			22.2	166.0			--FK	66.4
PHOENIX R	38906	65/	5/	26	4	24	6.0	3.0	3.7	3.7			14.5	206.0	1422.	STEADY	--RKR	67.5
TERRE HAUTE	38911	65/	5/	31	2	32	3.0	3.0	0.0	0.0			30.0	180.0	718.	STEADY	--LD	45.3
STPETERSBURG	38913	65/	6/	2	1	32	1.5	1.5	0.0	0.0							--FK	
STPETERSBURG	38914	65/	6/	3	1	50	1.5	1.5	0.0	0.0							--FK	
VAN NUYS-F	38916	65/	6/	5	4	3	2.2	2.2	3.8	3.8			63.0	180.0	480.	AMFULLY DIM FOR A PEGASUS	--JGW	63.3
DURBAN B	38917	65/	6/	6	4	22	2.0	3.0	3.3	4.3			30.0	140.0	558.	STEADY	--AMM	17.5
DURBAN B	38945	65/	7/	4	17	19	4.5	4.5	6.2	6.2			54.0	284.0	450.	STEADY	--AA	98.4
DURBAN B	38946	65/	7/	5	15	56	2.0	2.0	3.5	3.5			71.0	95.0	500.	STEADY	--AA	61.6
VAN NUYS-F	39165	66/	2/	9	2	26	4.0	4.0	4.8	4.8			23.6	170.0	690.	STEADY	--JGW	89.1
DURBAN B	39190	66/	3/	6	17	53	1.0	1.0	2.7	2.7			53.0	266.0	450.		--AA	106.3
VAN NUYS-F	39268	66/	5/	23	5	3	2.5	2.5	3.9	3.9			57.7	141.8	520.		--JGW	35.3
VAN NUYS-F	39269	66/	5/	24	3	38	2.7	2.7	4.1	4.1			55.0	123.0	520.		--JGW	46.1
VAN NUYS-F	39375	66/	5/	7	3	20	2.2	4.5	3.2	5.5	15.50		40.0	170.0	620.	VERY CLEAR TUMBLE	--JGW	59.4
VAN NUYS-F	39876	68/	1/	21	2	37	2.8	2.8	4.3	4.3			57.0	156.0	510.		--JGW	69.2
VAN NUYS-F	39975	68/	4/	29	3	38	2.7	2.7	4.2	4.2			61.0	12.0	500.		--JGW	28.4
VAN NUYS-F	39977	68/	5/	1	4	9	2.0	2.0	3.9	3.9			55.0	1.0.0	410.		--JGW	39.1

SDC NO. 1389 65-270
 PERIOD = 111.5
 HEAT SHIELD PERIGEE = 788.5
 USA LAUNCHED 65/ 4/ 3 IN ORBIT
 APOGEE = 823.3 INCL = 90.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	38285	65/	5/	9	8	30	6.0		4.8				17.0	315.0	1750.	MULTIPLE FLASHES	--JGW	103.4
VAN NUYS-F	38890	65/	5/	10	6	39	6.5		5.2				16.1	294.3	1800.	ALTERNATE MAX DOUBLE FLASHES	--JGW	87.7
STPETERSBURG	38895	65/	5/	15	3	56	7.0		0.0			0.50				TP EST 1 SEC	--FK	
VAN NUYS-F	38895	65/	5/	15	7	40	4.0		3.5			0.20	33.1	293.0	1270.	FLASHES +4 TO +7	--JGW	87.9
STPETERSBURG	38896	65/	5/	16	4	6	4.0	8.0	0.0	0.0			47.0	58.0	1030.	TP EST 1 SEC	--FK	
VAN NUYS-F	38896	65/	5/	16	5	58	5.5		5.4						1026.	MULTIPLE FLASHES	--JGW	68.8
CAL TECH	38896	65/	5/	16	5	58	5.5	7.5	5.4	7.4	3.00		21.2	291.0	1026.	FLASH MAXIMA	--AMM	
VAN NUYS-F	38896	65/	5/	16	7	49	6.0		5.2				20.6	289.0	1430.	FLASHES	--JGW	93.0
VAN NUYS-F	38897	65/	5/	17	8	0	6.4		5.4						1610.		--JGW	89.9
STPETERSBURG	38898	65/	5/	18	2	35	3.0	6.0	0.0	0.0		1.00				TP EST 4 SEC	--FK	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38899	65/	5/12		21	26	6.0	8.0	6.4	4.4	5.80	0.80	70.0	100.0	848.	REGULAR FLASHING	-- MK	66.0
STADE/ELBE	38900	65/	5/20		21	34	6.0	7.5	6.5	8.0	5.80	0.80	85.0	100.0	809.	REGULAR FLASHING	-- MK	74.2
STADE/ELBE	38900	65/	5/20		23	31	6.0	7.5	5.4	6.9	5.80	0.80	30.0	260.0	1329.	REGULAR FLASHING	-- MK	70.9
SAN ANTONIU	38902	65/	5/22		5	8	4.0		3.9				43.9	339.8	1069.	MIN INV, IRREG FLASHES	-- PM	99.7
VAN NUYS-B	38902	65/	5/22		7	0	5.0		4.7		3.53		40.6	295.0	1140.	FLASHES	-- LDM	92.0
STADE/ELBE	38902	65/	5/22		21	56	6.5	8.5	6.9	4.9	5.80	0.80	70.0	260.0	848.	REGULAR FLASHING	-- MK	80.4
SAN ANTONIU	38903	65/	5/23		3	27	8.0		6.9				19.4	57.4	1641.	PERIODIC, FAINT	-- PM	69.6
STPETERSBURG	38903	65/	5/23		3	27	2.0	6.0	0.0	0.0	1.00					TP ABOUT 4 SEC	-- FK	
STPETERSBURG	38908	65/	5/28		4	18	4.0		4.7	9.7	7.46		57.7	313.5	930.	TP ABOUT 1 SEC	-- FK	
VAN NUYS-F	38908	65/	5/28		6	10	4.5	9.5	4.7				27.5	346.0	1510.	ABOUT 6 FLASHES FROM +4.5 TO +6.5 AT EACH MAX	-- JGM	71.2
VAN NUYS-F	38908	65/	5/28		6	14	5.3		4.4				38.1	324.1	1155.	VA	-- JGM	126.3
SAN ANTONIU	38911	65/	5/31		4	49	5.7		4.9				73.0	273.0	854.	LONG FLASH PERIOD	-- PM	100.6
STADE/ELBE	39534	67/	2/13		17	16	6.5	9.0	6.8	9.3			70.6	271.5	844.	NO VARIATION	-- MK	98.6
EDINBURG	39661	68/	1/26		2	5	9.0	9.0	9.4	9.4			65.0	274.0	876.	MANY FLICKERS THEN FADED INV	-- PM	63.3
GRANDY	39690	68/	2/ 4		23	53	8.0	8.3	8.3	8.6						NO SHADN	-- MPC	46.9
HEIDELBERG	39893	68/	2/ 7		18	50	6.2	6.4	6.2	6.4			48.0	280.0	1010.	TRFEG VAR	-- GLU	100.6

SDC NU. 1399 65-27E STRAP PERIOD = 111.5 PERIGEE = 792.2 USA LAUNCHED 65/ 4/ 3 IN ORBIT
 APOGEE = 820.2 INCL = 90.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39536	67/	2/15		18	42	8.5	8.5	7.5	7.5			22.0	310.0	1595.	STEADY	-- MK	122.2
STADE/ELBE	39653	67/	6/12		21	54	7.7	8.0	7.8	8.1			60.0	260.0	945.	STEADY WITH FAINT FLICKER	-- MK	85.7

SDC NU. 1400 65-20AL FRAGMENT USSR LAUNCHED 65/ 3/14 DECAVED 10/ 5/65
PERIOD = 107.0 PERIGEE = 174.0 APOGEE = 1180.6 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE		
STADE/ELBE	38972	65/	7/31	0	50	5.5	7.0	6.2	7.7	55.0	100.0	730.	65	20	AL	NO PREDICTION	VAR	--	NR	82.6

SDC NU. 1404 65-4033 COSMOS 68 USSR LAUNCHED 65/ 6/15 RE-ENTERED 6/23/65
PERIOD = 89.7 PERIGEE = 124.9 APOGEE = 201.3 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ALBUQUERQUE	38934	65/	6/23	3	37	1.8	1.8	5.6	5.6	70.0	60.0	170.					--JCM	71.9

SDC NU. 1405 65-468 ROCKET BODY USSR LAUNCHED 65/ 6/15 DECAVED 7/ 7/65
PERIOD = 90.0 PERIGEE = 134.9 APOGEE = 205.7 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE			
ALBUQUERQUE	38934	65/	6/23	3	37	2.0	3.5	6.0	7.5	90.0	60.0	160.	TP	=	13.5/	5	OR	4	TUMBLER	--JCM	77.0

SDC NU. 1410 65-20AR FRAGMENT USSR LAUNCHED 65/ 3/14 DECAVED 2/17/67
PERIOD = 105.6 PERIGEE = 183.3 APOGEE = 1087.4 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
STADE/ELBE	39440	66/11/11	14	50	5.0	5.0	5.2	5.2	77.0	160.0	900.	STEADY	NO PREDICTION				--	NR	63.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELLE	38974	65	4	2	21	29	4.0	5.0	4.6	5.6			53.0	360.0	770.	VARYING 65 20 AU NO PREDICT	--	109.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE			
STADE/ELDE	34984	65	8/12	21	38		6.0	7.0	9.0	10.0			89.0	360.0	250.	VARYING	65	20	AV NO PREDICT--	MX	70.1

STATION NAME	MJD	V	M	C	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
MAN NUTS-F	38946	65	7	5	0	28	7.0	7.1	7.6	7.6			62.5	84.9	767.		--JCM	75.5

[illegible]

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39802	67/11/	4	57	7.7	7.7	9.3	7.7	9.3	8.3			82.0	260.0	750.	ST OCCAS FADING	--	MR 68.0

SUC NJ. 1422 65-50A PERIOD = 94.7 CAPSULE PERICEE = 308.2 USA LAUNCHED 65/ 6/25 IN ORBIT
 APUGEE = 316.9 INCL -107.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38944	65/ 7/ 3	21	8	4.5	8.0	5.9	10.4	0.50	0.20	85.0	260.0	325.			FLASHING	--	MR 84.0
STADE/ELBE	38949	65/ 7/ 8	21	6	6.5	9.0	4.4	9.9	0.50	0.20	50.0	100.0	410.			FLASHING	--	MR 57.4
STADE/ELBE	38959	65/ 7/18	22	34	6.3	9.0	4.7	11.4	1.00	0.50	80.0	260.0	337.			FLASHING	--	MR 76.2
STADE/ELBE	38971	65/ 7/30	23	21	6.0	8.0	8.3	10.3	1.00	0.50	76.0	100.0	340.			FLASHING	--	MR 69.7
STADE/ELBE	38972	65/ 7/31	23	2	6.5	9.0	8.3	9.8	1.00	0.50	45.0	70.0	440.			REGULAR FLASHING	--	MR 86.4
STADE/ELBE	38987	65/ 8/15	0	53	7.5	8.0	9.9	10.4			82.0	70.0	325.			VARYING	--	MR 74.9
VAN NUYS-F	39165	66/ 2/ 9	2	29	8.0						35.7	252.0	510.			TP EST 3 SEC, MIN UNDER +10	--JCM	131.5
DURBAN 3	39169	66/ 2/13	19	10	4.0		6.3				59.0	265.0	350.			VERY SMOOTH--IRREGULAR	--	AA 100.9
DURBAN 8	39189	66/ 2/13	18	11	5.0		5.5				20.0	323.0	800.			REGULAR PERIOD MFM	--	GR 92.1
STADE/ELBE	39197	66/ 3/13	20	0	6.5	9.0	8.3	10.8	1.74	0.10	45.0	240.0	430.			FLASHING PER 1 SEC	--	MR 109.2
STADE/ELBE	39199	66/ 3/15	19	18	6.5	9.0	8.6	11.1	1.00	0.10	55.0	70.0	380.			FLASHING	--	MR 48.9
STADE/ELBE	39245	66/ 4/30	23	49	4.7	9.0	7.2	11.5	1.25	0.40	89.0	65.0	315.			FLASHING	--	MR 69.3
STADE/ELBE	39440	66/11/11	17	7	5.5	8.0	7.0	10.5			83.0	80.0	320.			IRREGULAR FLASHES	--	MR 68.9
STADE/ELBE	39535	67/ 2/14	19	31	6.5	9.0	7.6	10.1	3.50	0.30	20.0	310.0	600.			REGULAR FLASHING	--	MR 127.1
STADE/ELBE	39536	67/ 2/15	18	6	6.0	9.0	7.6	10.4	3.50	0.40	30.0	310.0	530.			REGULAR FLASHING	--	MR 119.9
STADE/ELBE	39536	67/ 2/15	18	7	6.0	9.0	7.2	10.2	1.75	0.30	25.0	260.0	580.			IN WEST DOUBLE FLASHES	--	MR 139.6
STADE/ELBE	39614	67/ 5/ 4	0	12	5.5	8.0	9.0	10.5			85.0	260.0	310.			IRREGULAR FLASHES	--	MR 69.3
STADE/ELBE	39734	67/ 5/ 1	20	15	5.5	9.0	7.2	10.7	2.00	0.20	42.0	250.0	455.			SHARP FLASHES PER APPROX	--	MR 104.8
STADE/ELBE	39804	67/11/10	18	3	4.0	5.5	5.7	7.2			50.0	310.0	450.			REGULAR FLASHING OR VAR	--	MR 100.0

SDC NJ. 1425 65-4AH

PERIOD = 106.0 PERIGEE = 636.9 APUGEE = 710.8 INCL = 90.0

USA LAUNCHED 65/ 6/24 14 ORBIT

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS

VAN NUYS-F 38945 65/ 7/ 4 10 13 9.8 10.4 62.5 273.0 760.0
STADE/ELBE 39203 66/ 3/19 20 19 6.5 7.0 7.6 8.1 45.0 100.0 605.0
STADE/ELBE 39776 67/10/13 14 13 6.0 6.5 6.6 7.1 53.0 360.0 750.0
VARYING
CY NR 4406301
--OBS PHASE
--JGM 56.0
--MK 61.6
--MK 82.5

SDC NJ. 1428 65-4PC

PERIOD = 106.6 PERIGEE = 642.5 APUGEE = 687.9 INCL = 90.0

USA LAUNCHED 65/ 6/24 14 ORBIT

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS

VAN NUYS-F 38945 65/ 7/ 4 4 35 4.5 5.5 5.2 6.2 67.5 94.8 720.0
VAN NUYS-F 38946 65/ 7/ 5 8 42 5.5 6.5 5.1 6.4 26.3 46.8 1230.0
STADE/ELBE 39386 66/ 9/19 14 50 5.5 5.5 6.3 6.3 60.0 100.0 720.0
ARMUT HALF MINUTE TP
TP MAYBE HALF THIS
STEADY NG PREDICTION
--OBS PHASE
--JGM 73.9
--JGM 89.4
--MK 43.3

SDC NJ. 1430 65-51A

PERIOD = 100.7 PERIGEE = 466.4 APUGEE = 510.5 INCL = 98.6

USA LAUNCHED 65/ 7/ 2 14 ORBIT

STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS

STADE/ELBE 38971 65/ 7/30 23 38 8.0 9.5 8.2 9.7 45.0 250.0 900.0
STADE/ELBE 39628 67/ 5/19 23 11 8.5 9.5 10.0 11.0 45.0 260.0 490.0
RAPIDLY FLICKERING
SUNNY VARYING THEN LOST
--OBS PHASE
--MK 68.7
--MK 72.5

SDC NO. 1431 65-52A CUSMOS 70 USSR LAUNCHED 65/ 7/ 2 IN ORBIT
PERIOD = 98.4 PERIGEE = 138.6 APGEE = 707.7 INCL = 48.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38959	65/	7/17	17	39	3.0	3.0	3.5	3.5	6.0	7.5	42.00	55.0	266.0	800.	SLOW FADE TO INVISIBILITY	--GR	93.6
VAN NUYS-F	38963	65/	7/22	6	5	5.0	6.5	6.0	7.5	7.7	8.2		76.8	0.0	630.	SMOOTH, DEFINITE VARIATION	--JCM	72.3
STADE/ELBE	38972	65/	7/31	20	48	7.0	7.5	7.0	7.5	7.7	8.2		55.0	140.0	730.	RAPIDLY FLICKERING	--MK	53.9
STADE/ELBE	38974	65/	8/ 2	21	55	6.5	7.0	7.2	7.7	7.7			45.0	140.0	740.	STEADY WITH FLICKERING	--MK	36.9

SDC NO. 1432 65-52B ROCKET BODY USSR LAUNCHED 65/ 7/ 2 IN ORBIT
PERIOD = 98.4 PERIGEE = 142.9 APGEE = 703.4 INCL = 48.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURBAN B	38957	65/	7/16	16	56	3.0	3.0	3.0	3.0	3.0	3.0		43.0	93.0	1000.	STEADY	--AA	22.8
DURBAN B	38958	65/	7/17	17	28	3.0	3.0	3.0	3.6	3.6			73.0	266.0	750.	STEADY	--AA	79.2
DURBAN B	38962	65/	7/21	16	48	3.0	3.0	3.5	3.5	3.5			62.0	266.0	780.	PULSATING	--AA	97.1
VAN NUYS-F	38963	65/	7/22	5	45	4.5	5.0	5.2	5.7	5.7	0.29		54.0	265.0	800.	SCINTILLATING	--GR	111.6
VAN NUYS-F	38965	65/	7/24	5	6	4.0	4.6	5.0	5.6	4.8	0.30		52.8	60.6	730.		--JCM	65.2
STADE/ELBE	38968	65/	7/27	21	25	4.5	4.5	4.8	4.8	4.8			40.0	140.0	645.	STEADY	--MK	37.9
STADE/ELBE	38971	65/	7/30	21	18	3.5	4.0	4.3	4.8	4.8	0.40	0.20	55.0	140.0	700.	RAPIDLY FLASHING	--MK	48.9
STADE/ELBE	38972	65/	7/31	21	52	3.5	3.0	3.3	3.3	3.3			45.0	140.0	860.	STEADY	--MK	27.8
STADE/ELBE	38976	65/	8/ 4	22	13	4.5	4.5	4.8	4.8	4.8			50.0	145.0	560.	STEADY WITH FAINT FLICKERING	--MK	39.7
HEIDELBERG	39275	66/	5/30	20	41	2.5	4.5	5.8	7.8	4.6	5.10		32.0	145.0	940.	STEADY	--MK	14.9
HEIDELBERG	39276	66/	5/31	20	39	1.5	3.8	5.7	9.0	5.7	5.05		38.0	250.0	215.	NORMAL TUMBLING	--GLU	97.2
HEIDELBERG	39277	66/	6/ 1	20	35	1.4	3.4	5.2	7.2	5.2	5.16		70.0	172.0	146.	NORMAL TUMBLING	--GLU	63.0
HEIDELBERG	39278	66/	6/ 2	20	27	1.7	3.5	5.2	7.0	5.2	5.20		51.0	140.0	172.	NORMAL TUMBLING	--GLU	52.4
HEIDELBERG	39279	66/	6/ 3	20	13	1.6	3.3	5.1	5.8	5.1	5.40		40.0	140.0	202.	NORMAL TUMBLING	--GLU	47.9
HEIDELBERG	39279	66/	6/ 3	20	13	1.6	3.3	5.1	5.8	5.1	5.40		40.0	172.0	202.	NORMAL TUMBLING	--GLU	45.9

SAC NJ. 1441 65-53A PERIOD = 95.3 PERIGEE = 324.4 USSR LAUNCHED 65/ 7/16 IN ORBIT
APOGEE = 336.0 INCL = 56.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39063	65/10/30	2	11	6.0	8.5	8.2	10.7			2.40		65.1	314.0	370.	FLASHING AT 1 SEC INTERVALS	--JCM	91.7
MEIDELBERG	39216	66/ 4/ 1	20	1	6.6	8.5	8.0	9.9			3.00		36.0	230.0	522.	NORMAL TUMBLING	--GLU	91.0
MEIDELBERG	39219	66/ 4/ 4	19	27	7.4	8.5	8.0	9.1					20.0	194.0	774.	MIN. FAINTER AS R.S. MAG	--GLU	76.9
STAPETERASH RU	39222	66/ 4/ 7	1	29	6.3	8.5						0.10	50.0	310.0	310.	TP EST 3 SEC	--FJK	106.3
MEIDELBERG	39268	66/ 5/23	20	24	7.8	7.8	9.6	9.6					49.0	291.0	436.	STEADY, OCCAS. FLICKERING	--GLU	112.9
MEIDELBERG	39277	66/ 6/ 1	21	57	8.0	8.0	10.3	10.3					74.0	295.0	347.	STEADY	--GLU	85.7
MEIDELBERG	39279	66/ 6/ 3	21	32	5.5	8.4	7.3	10.2				0.50	49.0	279.0	437.	STEADY WITH ONE FLASH	--GLU	100.6
MEIDELBERG	39683	67/ 7/12	22	2	8.7	8.7	9.6	9.6					26.0	35.0	660.	VAR	--GLU	111.1
STADEFELHE	39684	67/ 7/13	23	23	6.4	8.0	9.3	10.5					80.0	360.0	310.	SLOWLY VARYING	--MK	85.4

SAC NJ. 1442 65-53B PERIOD = 95.9 PERIGEE = 334.3 USSR LAUNCHED 65/ 7/16 IN ORBIT
APOGEE = 345.4 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38986	65/ 4/14	2	34	8.5	8.5	10.0	10.0					43.6	45.8	505.		--PM	85.6
VAN NUYS-F	39013	65/ 5/10	3	50	6.3	9.0	4.0						49.2	324.5	450.	VAR	--JCM	103.9
MEIDELBERG	39701	67/ 7/30	22	46	9.0	9.0	11.0	11.0					62.0	230.0	400.	VAR SHORT OBS	--GLU	58.0

SAC NJ. 1443 65-53C PERIOD = 95.6 PERIGEE = 333.7 USSR LAUNCHED 65/ 7/16 IN ORBIT
APOGEE = 346.1 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38987	65/ 8/15	3	19	8.0	9.2							35.0	303.1	480.		--PM	126.1

NOT REPRODUCIBLE

SDC NO. 1444 65-330															
COSMOS 74															
PERIOD - 96.2 PERIGEE - 334.9 APOGEE - 380.9 INCL - 56.0															
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMIN	PERIOD FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
SAN ANTONIO	38987	65/ 8/15	3	19	4.5	4.5	5.9	5.9			46.1	313.6	528.		PH 100.4

SDC NO. 1445 65-53E															
COSMOS 75															
PERIOD - 96.5 PERIGEE - 335.5 APOGEE - 400.8 INCL - 56.0															
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMIN	PERIOD FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
VAN NUYS-F	39065	65/11/ 1	2	4	7.0	7.3	9.2	9.5			79.6	132.0	355.	SUSPECTED 10-15 SEC TP	JCM 70.1
VAN NUYS-F	39066	65/11/ 2	2	13	6.0		7.6				51.5	330.0	430.		JCM 91.2

SDC NO. 1447 65-55A															
USA															
PERIOD - 94.4 PERIGEE - 293.3 APOGEE - 319.4 INCL - 70.2															
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMIN	PERIOD FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	38999	65/ 8/27	2	24	3.5	3.5	6.0	6.0			89.0	140.0	322.	STEADY	MK 74.3
STADE/ELBE	39139	66/ 1/14	17	4	4.5	4.5	6.8	6.8			65.0	320.0	350.	STEADY	MK 87.0
STADE/ELBE	39227	66/ 4/12	0	45	2.0	2.0	4.0	4.0			62.5	13.5	400.		FJK 80.8
STADE/ELBE	39245	66/ 4/30	22	10	5.0	5.0	5.8	5.8			23.0	60.0	705.	STEADY	MK 92.6
MADISON	39252	66/ 5/ 7	3	37	8.9	8.9	8.9	8.9			10.8	46.2	989.	STEADY	GCL 93.2
MILWAUKEE	39252	66/ 5/ 7	3	38	7.0		7.1				12.3	-0.0	950.	FOLLOWED INTO EARTH SHADOW	EAM 131.1
STADE/ELBE	39253	66/ 5/ 8	20	30	5.0	5.0	6.2	6.2			27.0	55.0	586.	IN 3 DEG. OF TRAVEL. STEADY	EAM 80.2
OCEANPORT	39257	66/ 5/12	1	37	7.0	7.0	7.0	7.0			10.1	51.2	1000.	STEADY MAG.	GFG 78.3
ROCHESTER-E	39260	66/ 5/15	2	0	6.0	6.0	7.9	7.9			37.5	94.0	412.	65 55A	JN 42.0
ROCHESTER-E	39260	66/ 5/15	2	1	6.0	11.0	7.8	12.8			27.0	108.0	430.	SHADOW ENTRY FADING	RJ 27.3
WALNUT CREEK	39261	66/ 5/15	5	9	5.0	5.0	7.6	7.6			40.0	55.0	300.	ST YEN SFCOMOS TO SHADOW	DPC 70.4
WALNUT CREEK	39261	66/ 5/16	4	45	5.0	5.0	6.4	6.4			30.0	59.0	529.	STEADY TO SECOSMOS TRACKING	DPC 66.7
HEIDELBERG	39261	66/ 5/16	20	26	4.5	6.2	6.2	7.9			39.0	250.0	444.	SLOW TURN. PERIOD ABOUT 2MIN	GLU 99.3
CLEVELAND	39262	66/ 5/17	2	48	3.5		5.1				35.8	248.0	476.	FLASHING THU FAST TO TIME	DS 91.4
COUNT OR ESTIMATE															

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
WALNUT CREEK	39262	66/	5/17		4	20	3.0	3.0	4.0	4.0			23.0	57.0	638.	STEADY 2-MINUTES TRACKING	--DFC	66.7
MEIDELBERG	39265	66/	5/17		20	1	4.2	5.0	6.2	7.0	120.00		45.0	281.0	407.	LONG TUMBL. PERIOD DOWNTURN	--GLU	119.5
WALNUT CREEK	39265	66/	5/20		4	42	6.0	6.0	9.1	8.1			49.0	247.0	391.	ST TRACKED 1.7 MINUTES	--DFC	94.6
OCEANPORT	39266	66/	5/21		1	9	5.5	5.5	7.0	7.0			47.2	205.4	510.	STEADY IN MAG.	--GFG	74.0
TERRE HAUTE	39267	66/	5/22		2	19	8.0	8.0	4.9	4.9			73.0	251.0	647.	STEADY	--LD	111.2
VAN NUYS-F	39267	66/	5/22		3	54	4.5	4.5	7.1	7.1			77.0	246.0	305.		--JGM	85.0
VAN NUYS-F	39268	66/	5/23		3	30	4.0	4.0	6.6	6.6			74.7	65.6	305.		--JGM	74.0
PHOENIX R	39268	66/	5/23		3	31	5.0	5.0	7.0	7.0			36.0	205.7	395.	TRACKED 60 SEC. STEADY	--RKR	75.1
STPETERSBURG	39269	66/	5/24		1	33	8.0	9.0	0.0	0.0			41.6	249.7		TRKED 10 DEG. TP APPRX 4 SEC	--FJK	104.1
VAN NUYS-F	39321	66/	7/15		4	47	2.5	2.5	4.5	4.5			50.0	13.0	390.		--JGM	94.2
STADE/ELBE	39321	66/	7/15		22	11	1.5	7.0	2.5	4.0			25.0	310.0	421.	REGULAR FLASH PER MORE 120SEC	--MK	131.0
STADE/ELBE	39351	66/	8/14		20	53	6.5	6.5	7.9	7.9			27.0	55.0	520.	STEADY	--MK	80.4
STADE/ELBE	39435	66/11/	6		17	46	4.5	5.0	7.0	7.5			85.0	310.0	320.	STEADY AND FAINT VARYING	--MK	75.0
STADE/ELBE	39483	66/12/24			5	55	6.5	6.5	8.0	8.0			45.0	140.0	500.	STEADY	--MK	115.4
STADE/ELBE	39485	66/12/26			6	37	1.0	1.0	3.3	3.3			35.0	315.0	350.	STEADY	--MK	30.7
STADE/ELBE	39564	67/	3/15		18	37	3.5	4.0	5.5	6.0			75.0	55.0	390.	STEADY AND SLOWLY VARYING	--MK	68.6
STADE/ELBE	39622	67/	5/12		1	18	4.0	4.0	5.1	5.1			24.6	71.2	600.		--FK	46.3
STADE/ELBE	39646	67/	6/	5	23	22	3.0	3.0	4.7	4.7			42.0	220.0	460.	STEADY	--MK	44.3
MEIDELBERG	39755	67/	5/22		20	18	6.7	6.7	7.5	7.5			24.0	360.0	700.	SLOWLY VAR	--GLU	108.0
STADE/ELBE	39760	67/	9/27		19	59	3.5	3.5	5.5	5.5			55.0	55.0	400.	STEADY	--MK	57.1
MEIDELBERG	39764	67/10/	1		18	12	5.0	5.0	6.7	6.7			38.0	81.0	460.	STEADY	--GLU	30.8
GRANBY	39765	67/10/	2		0	27	2.0	2.0	4.4	4.4			65.0	327.0	325.	STEADY THEN INV TWICE APPR.	--GLU	87.8
																10 SEC REFFORE SHOWN	--MPC	
GRANBY	39763	67/10/	5		0	16	4.0	4.2	5.6	5.6			34.0	253.0	485.	STEADY	--MPC	118.0
GRANBY	39769	67/10/	6		1	43	3.0	3.0	5.1	5.1			50.0	340.0	375.		--MPC	87.5
STPETERSBURG	39773	67/10/10			23	52	3.0	3.0	0.0	0.0							--FK	
STPETERSBURG	39825	67/12/	1		23	52	4.5	6.0	0.0	0.0		1.00	40.6	112.5			--FK	41.0
GRANBY	39828	67/12/	4		23	37	3.5	4.0	5.6	6.1			47.0	243.0	375.	SLOW VAR	--MPC	106.0
GRANBY	39829	67/12/	5		22	59	4.5	5.0	6.8	7.3			55.0	190.0	345.	SLOW VAR	--MPC	83.0
GRANBY	39832	67/12/	8		22	37	5.5	5.5	8.0	4.0			64.0	320.0	320.	STEADY	--MPC	86.5
STADE/ELBE	39866	68/	1/11		17	32	4.0	4.0	6.8	6.8			89.5	220.0	280.	ST MUDON	--MK	72.6
GRANBY	39867	68/	1/12		23	9	4.0	4.0	6.3	7.3			57.0	41.0	345.	VARYING	--MPC	40.9
STADE/ELBE	39881	68/	1/24		5	24	0.1	6.0	1.8	7.7			40.0	140.0	460.	VERY SLOWLY TURN	--MK	112.0
STADE/ELBE	39882	68/	1/27		0	16	5.0	5.0	10.4		0.31	0.02	4.4	10.3	85.	FLASHING MIN INV	--MPC	100.5
GRANBY	39824	68/	3/	9	0	26	3.0	3.0	0.0	0.0			63.6	335.9			--FK	99.9
STPETERSBURG	39926	68/	3/11		19	13	5.0	5.0	6.8	6.8			40.0	310.0	440.	ST	--MK	119.1
MEIDELBERG	39927	68/	3/12		18	24	4.6	6.8	7.1	9.3			60.0	247.0	310.	SLOWLY TURN MUDON	--GLU	109.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
STADE/ELBE	39954	68/	8/	8	19	20	5.5	5.5	7.2	7.2			40.0	55.0	450.	ST	--MK	62.8
STPETERSBURG	39956	68/	4/10	0	42		5.0	0.0					43.0	4.0		TP EST 3.5 SEC	--FR	90.3
STADE/ELBE	39956	68/	4/10	19	16		4.0	4.0	6.5	6.5			75.0	55.0	320.	ST MOON	--MK	74.1

SUC NO. 1448 65-53F PERIOD = 36.6 ROCKETS BODY USSR LAUNCHED 65/ 7/16 IN ORBIT
 PERIOD = 36.6 PFRIGEE = 338.6 APONGEE = 402.0 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
STADE/ELBE	38982	65/	8/10	23	8		3.0	5.0	5.2	7.2	0.60	0.20	60.0	140.0	370.	FLASHING	--MK	46.3
STADE/ELBE	38984	65/	8/12	21	46		3.5	4.5	4.3	5.3	0.54	0.20	30.0	140.0	700.	RAPIDLY FLASHING	--MK	17.5
STADE/ELBE	38986	65/	8/14	22	4		3.5	5.0	5.4	6.9	0.55	0.20	70.0	140.0	420.	RAPIDLY FLASHING	--MK	51.3
STADE/ELBE	38988	65/	8/16	22	22		4.0	5.5	5.9	7.4	0.60	0.20	70.0	140.0	410.	REGULAR FLASHING	--MK	87.8
STADE/ELBE	38996	65/	8/24	20	17		4.0	6.0	5.9	7.9	0.60	0.20	70.0	140.0	416.	RAPIDLY FLASHING	--MK	89.6
VAN NUYS-F	39065	65/11/	1	7	5		2.5	3.7	4.7	5.9	0.93		74.4	132.0	370.		--JGM	86.8
VAN NUYS-F	39066	65/11/	2	2	15		3.5	5.0	5.4	6.9	0.94		55.2	315.0	425.		--JGM	96.4
VAN NUYS-F	39067	65/11/	3	2	24		4.0	6.0	5.0	7.0	0.94		29.9	319.1	640.		--JGM	108.4
STADE/ELBE	39077	65/11/13	16	46		2.0	3.0	4.1	5.1		1.00	0.10	70.0	360.0	380.	FLASHING	--MK	74.2
STADE/ELBE	39078	65/11/14	16	56		2.0	3.5	4.0	5.5		1.03	0.20	67.0	360.0	390.	FLASHING	--MK	72.8
STADE/ELBE	39114	65/12/20	5	43		2.5	4.5	4.6	6.6		1.35	0.30	65.0	360.0	380.	FLASHING	--MK	68.2
DURBAN B	39184	66/	3/-0	17	30		3.0	5.0	5.0	7.0	2.33		56.0	266.0	400.	REGULAR PERIOD	--GR	109.8
HEIDELBERG	39216	66/	4/	1	19	26	3.5	4.7	4.6	5.8	2.27		38.0	0.0	610.	NORMAL TUMBLING	--GLU	100.1
STADE/ELBE	39266	66/	5/21	0	16		3.0	6.0	5.2	8.2	3.60	0.80	76.0	180.0	360.	FLASHING	--MK	61.1
HEIDELBERG	39268	66/	5/23	23	2		3.2	5.5	5.2	7.5	3.23		60.0	284.0	392.	NORMAL TUMBLING	--GLU	81.9
HEIDELBERG	39275	66/	5/30	20	44		3.0	6.5	5.0	8.5	3.95		56.0	283.0	407.	NORMAL TUMBLING	--GLU	105.6
STADE/ELBE	39275	66/	5/30	20	46		3.0	6.0	5.1	8.1	4.00	1.00	68.0	180.0	375.	REGULAR FLASHING	--MK	64.8
HEIDELBERG	39276	66/	5/31	20	56		3.7	6.9	4.7	7.9	3.97		30.0	36.0	627.	NORMAL TUMBLING	--GLU	100.6
HEIDELBERG	39276	66/	5/31	22	35		3.6	6.6	4.7	7.7	3.97		33.0	359.0	598.	NORMAL TUMBLING	--GLU	128.2
HEIDELBERG	39279	66/	6/	3	21	22	4.8	7.5	5.9	8.6	3.97		32.0	15.0	613.	NORMAL TUMBLING	--GLU	118.4
HEIDELBERG	39280	66/	6/	4	21	30	4.5	6.2	5.5	7.2	3.98		31.0	142.0	620.	MAX. WITH ALTERNAT. BRIGHTN.	--GLU	134.4
STADE/ELBE	39352	66/	8/15	21	23		3.5	5.0	5.3	6.8	8.50	1.00	65.0	360.0	437.	REGULAR FLASHING	--MK	94.1
STADE/ELBE	39428	66/10/30	18	23		2.0	3.5	5.0	3.5	5.0			70.0	360.0	500.	REGULAR FLASHING	--MK	71.4
STADE/ELBE	39435	66/11/	6	17	45		2.0	3.0	4.0	7.0			75.0	360.0	400.	REGULAR FLASHING	--MK	71.6
STADE/ELBE	39456	67/	1/	4	17	24	5.0	7.0	6.3	8.3			40.0	140.0	550.	FLASHING	--MK	59.6
STADE/ELBE	39573	67/	3/24	19	7		2.5	5.0	4.0	6.5			70.0	360.0	500.	REGULAR FLASHING	--MK	84.6

STATION NAME	WJC	Y	M	D	H	WAT	MIN	MAX	AVG	PERCENT FLAG	ALT	RANGE	COMMENTS	--CRS	PHASE
STADE/ELBL	39574	67/	1/25	19	15	2.5	5.0	4.7	6.7		78.0	450.	REGMAP FLASHING	--	90.9
STADE/ELBL	39575	67/	1/26	19	24	2.0	2.5	4.0	4.5		89.5	400.	STEADY	--	75.3
STADE/ELBL	39628	67/	5/18	22	23	2.5	7.0	4.7	9.2	57.00	80.0	370.	SLOWLY FLASHING	--	73.9
STADE/ELBL	39636	67/	5/26	21	47	3.0	7.0	4.7	8.7		68.0	450.	REGMAP SLOWLY FLASHING	--	97.8
STADE/ELBL	39637	67/	5/27	21	55	4.5	4.5	6.3	6.3		72.0	430.	REGMAP MATE	--	94.0
STADE/ELBL	39695	67/	7/24	22	3	4.5	6.0	5.4	6.0		35.0	650.	STEADY MATE	--	27.1
STADE/ELBL	39702	67/	7/31	21	17	3.5	7.0	5.4	9.0		49.5	400.	SLOWLY FLASHING	--	77.7
STADE/ELBL	39705	67/	7/3	21	42	2.5	7.5	4.3	9.3		70.0	440.	SLOWLY FLASHING	--	92.7
STADE/ELBL	39706	67/	7/4	23	30	2.0	2.0	3.6	3.5		75.0	500.	STEADY	--	59.6
STADE/ELBL	39708	67/	7/6	22	5	3.0	6.0	4.4	7.4		80.0	430.	STEADY	--	81.9
STADE/ELBL	39781	67/10/18	17	16	3.5	4.5	4.4	5.4	5.4		35.0	550.	SLOWLY TIMBLING	--	59.6
MEIDELBERG	39782	67/10/19	17	22	3.0	3.0	5.2	5.2	5.2		78.0	370.	STEADY	--	70.7
MEIDELBERG	39783	67/10/20	19	9	4.2	4.2	4.9	4.9	4.9		24.0	720.	STEADY	--	121.3
MEIDELBERG	39784	67/10/21	17	34	3.7	3.7	5.2	5.2	5.2		46.0	490.	STEADY	--	93.2
MEIDELBERG	39785	67/10/23	17	53	3.5	3.5	5.2	5.2	5.2		67.0	450.	STEADY	--	76.3
MEIDELBERG	39786	67/10/25	14	9	5.4	5.4	6.4	6.4	6.4		31.0	640.	SLOWLY TUNE	--	95.9
MEIDELBERG	39788	67/10/26	14	16	2.0	2.5	4.0	4.5	4.5		70.0	400.	STEADY	--	73.2
MEIDELBERG	39789	67/10/30	14	46	3.8	3.8	5.0	5.0	5.0		37.0	570.	STEADY	--	113.7
MEIDELBERG	39757	67/11/3	19	37	3.0	4.5	4.9	6.4	6.4		60.0	420.	SLOWLY TUNE P > 2 MIN	--	84.7
MEIDELBERG	39863	68/	1/6	14	3	6.0	6.0	9.1	8.1		98.0	380.	STEADY	--	67.1
MEIDELBERG	39894	68/	2/4	4	54	2.0	3.5	4.0	5.5		90.0	400.	SLOWLY TUNE	--	73.0
MEIDELBERG	39516	68/	3/1	14	12	5.3	5.3	5.4	5.4		18.0	950.	STEADY	--	44.2
MEIDELBERG	39419	68/	3/4	14	33	4.3	6.1	5.5	7.3		41.0	570.	SLOWLY TUNE	--	30.4
MEIDELBERG	39523	68/	3/8	14	58	3.5	6.5	4.7	7.7		41.0	570.	SLOWLY TUNE	--	114.9
MEIDELBERG	39425	68/	3/10	13	14	3.5	3.5	5.1	5.1		70.0	470.	STEADY	--	77.7
MEIDELBERG	39927	68/	3/12	19	26	5.2	5.2	5.9	5.9		29.0	725.	STEADY	--	117.5
MEIDELBERG	39934	68/	3/19	14	20	4.4	5.2	6.1	6.5		42.0	560.	SLOWLY TUNE	--	114.5
MEIDELBERG	39994	68/	5/19	22	22	3.5	3.5	5.2	5.2		65.0	450.	STEADY	--	60.9

SDC NO. 1451 65-54H PERIOD = 89.0 PERIGEE = 112.5 APGEE = 373.4 DECEASED 9/14/65 INCL = 63.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	38972	65/	7/31	3	40	0.3	1.5	2.5	3.7	10.30	35.0	190.0	360.			SMOOTH VAR. BIG.	--JGM	68.9
STADE/ELBE	38997	65/	8/25	3	30	-1.4	5.0	2.6	9.4	10.00	2.00	60.0	315.0	134.		FLASHING BRIGIT AS JUPITER	--MK	76.0
STADE/ELBE	39000	65/	8/24	2	32	0.5	6.0	2.6	4.1	13.00	1.50	15.0	55.0	390.		REGULAR FLASHING	--MK	149.2

SDC NO. 1457 65-57A PERIOD = 91.0 PERIGEE = 113.1 APGEE = 289.6 DECEASED 8/19/65 INCL = 85.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	38973	65/	8/1	0	41	1.0	1.0	4.5	4.5		60.0	360.0	200.			STEADY	--MK	102.0

SDC NO. 1464 65-59A PERIOD = 92.3 PERIGEE = 158.4 APGEE = 320.0 DECEASED 3/16/64 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
SAN ANTONIO	38980	65/	9/8	2	23	1.7	1.7	3.4	3.4		44.6	47.9	451.				--PM	66.4
SAN ANTONIO	38981	65/	8/9	2	58	3.5		5.4			37.4	116.1	419.				--PM	121.3

SDC NO. 1465 65-59B PERIOD = 92.2 PERIGEE = 154.4 APGEE = 115.7 DECEASED 12/4/65 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	38986	65/	8/14	21	3	1.5	1.5	3.0	3.0		33.0	140.0	500.			STEADY	--MK	37.0
STADE/ELBE	38987	65/	8/15	20	3	1.0	1.0	2.5	2.5		33.0	140.0	490.			STEADY	--MK	51.3
STADE/ELBE	38988	65/	8/16	20	33	1.5	1.5	3.0	3.0		30.0	140.0	500.			STEADY	--MK	43.2
VAN NUYS-F	39000	65/	8/24	3	41	2.3	2.3	4.5	4.5		40.0	200.0	370.			QUITE STEADY	--JGM	75.7
SAN ANTONIO	39003	65/	8/31	2	6	4.5	4.5	5.4	5.4		46.8	67.3	659.				--PM	47.2

SOC NO. 1426 65-54A PERIOD = 42.5 PERIGEE = 92.5 PERIHELION 1 7/16 ORBITED 10/11/66
PERIODE = 92.5 PERIGEE = 113.7 APHEE = 374.7 INCL = 63.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	38997	65/ 8/25	3	3	1.3	1.3	5.0	5.0	5.0	5.0			40.0	140.0	174.0	STEADY	-- MK	84.7
STADE/ELBE	39025	65/ 5/22	19	19	0.1	0.1	4.9	4.9	4.9	4.9			75.0	310.0	111.0	STEADY	-- MK	94.1
STADE/ELBE	39026	65/ 5/23	19	22	1.5	1.5	4.3	4.3	4.3	4.3			25.0	320.0	270.0	STEADY	-- MK	130.1

SOC NO. 1467 65-60A PERIOD = 95.2 PERIGEE = 320.0 PERIHELION 3 7/30 IN ORBIT
PERIODE = 95.2 PERIGEE = 320.0 APHEE = 320.3 INCL = 24.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
SAN ANTONIO	38985	65/ 8/17	2	3	0.1	0.1	1.5	1.5	1.5	1.5			17.8	124.7	531.0		-- PM	13.6
SAN ANTONIO	38991	65/ 8/10	3	12	1.5	1.5	3.9	3.9	3.9	3.9			84.2	190.0	325.0		-- PM	62.2
SAN ANTONIO	38992	65/ 8/20	2	58	0.1	0.1	2.5	2.5	2.5	2.5			84.2	180.0	326.0		-- PM	64.7
SAN ANTONIO	38993	65/ 8/21	2	43	-2.0	-2.0	0.5	0.5	0.5	0.5			84.2	180.0	319.0		-- PM	67.6
SAN ANTONIO	38995	65/ 8/23	2	15	-3.0	-3.0	-0.6	-0.6	-0.6	-0.6			79.3	180.0	332.0		-- PM	71.3
SAN ANTONIO	38996	65/ 8/24	2	2	-3.0	-3.0	-1.7	-1.7	-1.7	-1.7			74.8	180.0	545.0		-- PM	72.6
SAN ANTONIO	38997	65/ 8/25	1	46	-3.0	-3.0	-0.8	-0.8	-0.8	-0.8			68.6	180.0	357.0		-- PM	74.7
SAN ANTONIO	39045	65/10/12	2	10	0.7	1.3	2.1	2.1	2.1	2.1	60.00		33.9	155.5	520.0		--JGM	65.6
VAN NUYS-F	39112	65/12/14	13	11	3.2	3.2	4.1	4.1	4.1	4.1			25.0	170.0	670.0	VAR	--JGM	102.1
VAN NUYS-F	39113	65/12/17	12	57	3.7	3.7	4.5	4.5	4.5	4.5			24.0	170.0	680.0	VAR	--JGM	99.7
VAN NUYS-F	39138	66/ 1/13	3	24	5.2	5.2	5.9	5.9	5.9	5.9			23.5	234.2	720.0		--JGM	121.6
VAN NUYS-F	39183	66/ 2/7	2	38	1.5	1.5	2.6	2.6	2.6	2.6			30.7	246.5	590.0		--JGM	48.0
VAN NUYS-F	39186	66/ 3/ 2	0	18	1.0	1.0	2.0	2.0	2.0	2.0			75.0	180.0	345.0	VERY SLOW TIMBLE ABOUT 2 MIN	--JGM	127.7
EDINBURG	39189	66/ 3/ 5	1	12	-4.0	-4.0	-1.7	-1.7	-1.7	-1.7			64.4	181.0	355.0	TO MENONNIS FLAREUP IN WEST	-- PM	82.0
EDINBURG	39190	66/ 3/ 6	0	59	1.0	1.0	3.2	3.2	3.2	3.2			26.7	146.0	690.0	STEADY	-- PM	84.2
STPETERSBURG	39224	66/ 4/ 9	1	7	1.0	1.0	1.8	1.8	1.8	1.8			19.8	97.4	650.0		--FJK	72.0
STPETERSBURG	39226	66/ 4/11	0	40	2.0	2.0	2.9	2.9	2.9	2.9			45.1	120.1	450.0		--FJK	11.2
STPETERSBURG	39227	66/ 4/12	0	23	3.1	3.1	4.7	4.7	4.7	4.7			80.8	140.0	326.0	STEADY	--FJK	43.9
EDINBURG	39227	66/ 4/12	1	50	2.5	2.5	5.0	5.0	5.0	5.0			29.8	174.9	590.0		--JGM	72.5
VAN NUYS-F	39227	66/ 4/12	3	36	2.0	2.0	3.2	3.2	3.2	3.2			29.0	91.0	324.0	STEADY	-- PM	62.6
EDINBURG	39228	66/ 4/13	1	43	-0.5	-0.5	1.9	1.9	1.9	1.9			31.8	150.3	560.0		--JGM	46.7
VAN NUYS-F	39228	66/ 4/13	3	21	0.7	0.7	2.0	2.0	2.0	2.0			64.4	60.4	140.0		--JGM	43.4
STPETERSBURG	39229	66/ 4/14	1	33	2.3	2.3	4.1	4.1	4.1	4.1			33.8	15.3	641.0		--JGM	49.7
VAN NUYS-F	39229	66/ 4/14	3	6	1.0	1.0	2.3	2.3	2.3	2.3								

NOT REPRODUCIBLE

442 57.610000 4.33

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	AUT	AZ	RANGE	COMMENTS	--OBS	PHASE
EDINBURG	39233	66	4	18	7	10	-2.0	1.0	0.4	3.4			85.5	0.0	329.		--	PH
EDINBURG	39234	66	4	19	1	56	2.0	2.0	4.4	4.4			85.5	180.0	328.	NOT SEEN UNTIL PASSED OVERMO	--LAA	75.2
SAN ANTONIO	39278	66	6	2	2	41	2.0	2.0	4.3	4.3			59.0	180.0	350.		--	PH
VAN NUYS-F	39278	66	6	2	4	18	0.5	0.5	1.5	1.5			32.8	173.3	630.		--JGM	43.4
SAN ANTONIO	39279	66	6	3	2	28	0.1	0.1	2.2	2.2			61.0	180.0	375.	HIGHT AND ST	--	PH
VAN NUYS-F	39279	66	6	3	4	7	2.0	3.0	3.8	3.8			25.0	220.0	700.		--JGM	87.5
VAN NUYS-F	39279	66	6	3	4	7	2.0	2.0	3.1	3.1			24.1	166.2	610.	EASY TO SPOT IN TWILITE	--	PH
SAN ANTONIO	39280	66	6	4	2	12	0.7	0.7	2.8	2.8			58.0	180.0	345.		--	PH
STPETERSBURG	39283	66	6	7	1	30	1.0	1.0	2.3	2.3			74.2	167.2	550.		--FJK	41.3
SAN ANTONIO	39319	66	7	13	2	25	1.0	2.3	2.3	2.3			30.5	180.0	560.	STEADY	--	PH
SAN ANTONIO	39321	66	7	15	3	34	2.5	2.5	4.9	4.9			72.0	180.0	335.	PHOTOGRAPHED WITH PEGASUS 2	--	PH
SAN ANTONIO	39322	66	7	16	3	20	-1.0	-1.0	1.4	1.4			80.0	180.0	325.	ST AT -1 FOR 40 DEG	--	PH
SAN ANTONIO	39323	66	7	17	3	4	2.0	2.0	4.5	4.5			84.0	180.0	322.	NOT MUCH OF A VARIATION	--	PH
SAN ANTONIO	39324	66	7	18	7	48	2.0	2.0	4.4	4.4			79.9	180.0	324.	STEADY FROM W-E	--	PH
SAN ANTONIO	39325	66	7	19	2	32	0.5	2.0	2.3	3.8			45.0	95.0	440.	IMAG FL LOW IN W. REPRD OVERMO	--	PH
SAN ANTONIO	39326	66	7	20	2	16	0.1	0.1	1.9	1.9			69.0	180.0	452.	SAME MAG FROM W. SSM TO EAST	--	PH
SAN ANTONIO	39331	66	7	25	2	34	0.5	0.5	0.7	0.7			10.0	160.0	900.	NICE AND WHITE	--	PH
VAN NUYS-F	39375	66	5	7	3	5	2.5	2.5	3.6	3.6			30.0	160.0	600.		--JGM	53.5
VAN NUYS-F	39417	66	10	19	2	13	2.3	2.3	2.9	2.9			20.0	158.0	770.		--JGM	68.5
VAN NUYS-F	39696	67	7	25	4	9	1.3	1.3	2.2	2.2			25.0	175.0	650.		--JGM	48.2
VAN NUYS-F	39657	67	7	26	3	48	1.5	1.5	2.5	2.5			26.0	169.0	630.		--JGM	46.7
VAN NUYS-F	39702	67	7	31	3	39	0.7	0.7	2.2	2.2			35.0	180.0	510.		--JGM	61.0
VAN NUYS-F	39777	68	5	1	4	9	1.7	1.7	3.1	3.1			31.0	177.0	530.		--JGM	50.0

SD68-629

SDC NO. 1468 65-60H PERIOD = 95.2 APGLD USA LAUNCHED 65/ 7/30 IN ORBIT
PERIGEE = 316.0 APORCE = 318.0 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	AUT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	38989	65	8	17	2	12	2.0	2.0	4.3	4.3					350.	LOST ALTAR CONRD	--	PH
SAN ANTONIO	38997	65	8	25	7	3	1.2	1.2	3.3	3.3					385.		--	PH
VAN NUYS-F	39111	65	12	17	13	36	5.3	5.3	5.9	5.9			22.0	174.0	750.	MAYRE LONG TP	--JGM	105.3
VAN NUYS-F	39229	66	4	14	3	36	2.2	2.2	3.7	3.7			36.7	159.7	500.		--JGM	46.9
VAN NUYS-F	39230	66	4	15	3	22	2.0	2.0	3.5	3.5			36.4	155.2	500.		--JGM	46.5
STPETERSBURG	39283	66	6	7	1	25	2.0	2.0	3.5	3.5			33.5	173.5	500.		--FJK	47.9

SDC NO. 1472 65-62B CAPSULE USA LAUNCHED 65/ R/ 3 IN ORBIT
 PERIOD = 94.7 PERIGEE = 313.8 APOGEE = 316.9 INCL = 107.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39061	65/10/28	2	2	5.0	5.8	6.8	7.6	0.05	46.2	84.8	430.				FLASHES ABOUT 1 SEC APART	--JCM	34.1
STADE/ELBE	39285	66/ 6/ 9	22	39	8.3	8.7	10.8	11.2		84.0	70.0	320.				IRREGULAR VARYING	--MK	78.2
STADE/ELBE	39365	66/ 8/28	20	48	7.8	8.2	10.2	10.6		78.0	135.0	327.				VARYING	--MK	59.3

SDC NO. 1502 65-63A EGRS 5 USA LAUNCHED 65/ R/10 IN ORBIT
 PERIOD = 122.2 PERIGEE = 707.1 APOGEE = 1506.8 INCL = 69.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39000	65/ 8/28	1	17	8.5	9.0	8.3	8.8	1.20	0.40	85.0	140.0	1096.			REGULAR FLASHING	--MK	66.3
STADE/ELBE	39023	65/ 9/20	21	52	8.0	8.5	8.1	8.6	1.20	0.10	75.0	310.0	968.			FLASHING	--MK	71.0
STADE/ELBE	39026	65/ 5/23	21	10	8.3	9.5	8.4	9.6	1.50	0.10	83.0	305.0	970.			FLASHING	--MK	69.9
AUSTIN	39613	67/ 5/ 3	2	32	8.5	11.0	8.0	10.5	2.00	29.0	303.0	1236.				2ND MAX 95	--MK	139.9

SDC NO. 1504 65-65A SURCAL USA LAUNCHED 65/ R/13 IN ORBIT
 PERIOD = 108.1 PERIGEE = 667.4 APOGEE = 751.2 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	38999	65/ 8/27	1	18	7.0	7.0	7.4	7.4		60.0	260.0	844.				STEADY	--MK	51.5
STADE/ELBE	39000	65/ 8/28	0	45	7.2	7.2	7.8	7.8		85.0	260.0	752.				STEADY	--MK	63.2
STADE/ELBE	39253	66/ 5/ 8	20	43	7.5	8.5	7.7	8.7		50.0	260.0	926.				VARYING	--MK	97.9

100 TELECOMMUNICATIONS

NOT REPRODUCIBLE

SOC NO. 1510 65-ESC PERIOD = 107.4 PERIGEE = 675.4 USA LAUNCHED 65/ 4/13 IN ORBIT
APOGEE = 722.0 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39095	65/12/1	1	3	8	5.3	5.3	5.3	6.0	6.0			73.4	271.0	710.		--JGM	76.8
VAN NUYS-F	39096	65/12/2	2	32	4.4	5.0	5.0	5.0	5.4	5.0			62.1	97.0	760.		--JGM	40.7
VAN NUYS-F	39097	65/12/3	1	55	5.0	5.0	5.0	5.0	4.4	4.8			33.0	42.5	1080.		--JGM	21.3
VAN NUYS-F	39098	65/12/4	3	43	6.4	4.5	4.5	4.5	6.0	8.3	2.60		33.5	277.3	1090.	SHARP MAY	--JGM	109.3
VAN NUYS-F	39099	65/12/5	3	6	5.5	5.8	5.8	5.8	5.1	6.4			42.0	272.5	765.		--JGM	84.2
VAN NUYS-F	39100	65/12/6	2	29	5.0	5.3	5.3	5.3	5.7	6.0			74.5	49.0	710.		--JGM	53.6
VAN NUYS-F	39101	65/12/11	2	25	5.5	5.5	5.5	5.5	6.2	6.2			79.2	270.1	710.		--JGM	40.2
VAN NUYS-F	39102	65/12/12	1	44	5.0	5.3	5.3	5.3	5.5	5.8			58.1	97.0	900.		--JGM	46.9
VAN NUYS-F	39103	65/12/18	1	44	5.2	5.8	5.8	5.8	5.9	6.5	2.76		42.0	90.5	710.	MIN BELOW +9	--JGM	70.8
VAN NUYS-F	39104	65/12/19	2	55	7.0	5.3	5.3	5.3	6.4	6.4	2.77		25.5	279.0	1290.	VAP INCREASED IN SOUTH	--JGM	124.9
VAN NUYS-F	39105	65/12/20	13	41	5.3	5.5	5.5	5.5	6.0	6.0	2.84		61.9	144.2	800.	VAP INCREASED IN SOUTH	--JGM	83.5
STADE/ELBE	39106	65/12/27	4	49	4.0	6.0	6.0	6.0	4.6	6.0	3.00	0.40	45.0	260.0	744.	FLASHING	--MK	61.7
STADE/ELBE	39107	65/12/28	17	14	5.5	8.0	8.0	8.0	5.5	8.0	3.00	0.40	45.0	260.0	1000.	FLASHING	--MK	122.1
STADE/ELBE	39596	67/ 4/16	20	47	5.0	5.5	5.5	5.5	4.9	5.4	6.80		45.0	100.0	1050.	REGULAR FLASHING	--MK	42.3
STADE/ELBE	39598	67/ 4/14	21	22	5.0	5.5	5.5	5.5	5.6	6.1	6.00		45.0	260.0	745.	REGULAR FLASHING	--MK	71.1
STADE/ELBE	39860	68/ 1/ 5	4	5	5.0	6.0	6.0	6.0	5.6	6.0			75.0	100.0	770.	TUMBLING CLOUDS	--MK	74.5

SOC NO. 1510 65-ESC PERIOD = 108.1 PERIGEE = 670.8 USA LAUNCHED 65/ 4/13 IN ORBIT
APOGEE = 735.7 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39599	65/ 4/27	1	9	6.5	4.5	4.5	4.5	7.0	9.0			65.0	260.0	803.	SLOWLY TUMBLING PER 15-20SEC	--MK	54.1
STADE/ELBE	39600	65/ 4/28	0	35	6.5	9.0	9.0	9.0	7.1	9.0			45.0	100.0	742.	VARYING	--MK	66.2
VAN NUYS-F	39097	65/12/3	2	53	6.7	4.7	4.7	4.7	9.5	9.5			44.0	100.0	490.	MIN FOLLOW	--JGM	69.6
VAN NUYS-F	39098	65/12/4	2	19	5.5	4.7	4.7	4.7	6.0	9.2			46.6	46.7	705.	MIN MAX IN 15-5 MIN TRACKING	--JGM	38.2
VAN NUYS-F	39099	65/12/5	3	33	7.2	7.1	7.1	7.1	7.1	7.1			44.4	242.0	1070.	MIN BELOW +9	--JGM	109.3
STADE/ELBE	39236	66/ 4/21	21	11	8.0	8.5	8.5	8.5	4.6	9.1			45.0	260.0	755.	STEADY WITH FAINT SCINTILLAT	--MK	73.2
STADE/ELBE	39365	66/ 4/24	0	50	8.0	8.5	8.5	8.5	9.7	9.2			45.0	260.0	715.	FAINT VARYING	--MK	63.5
STADE/ELBE	39470	66/12/11	17	46	5.5	8.0	8.0	8.0	6.3	8.8			40.0	100.0	700.	VARYING	--MK	66.3
STADE/ELBE	39477	66/12/14	17	14	5.5	8.0	8.0	8.0	6.3	8.8			40.0	100.0	700.	VARYING	--MK	70.4
STADE/ELBE	39483	66/12/24	5	12	5.0	4.0	4.0	4.0	5.7	8.7			40.0	260.0	743.	VARYING	--MK	60.8
STADE/ELBE	39598	67/ 4/14	21	21	8.3	8.3	8.3	8.3	9.0	9.0			40.4	100.0	735.	STEADY WAGON	--MK	49.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39605	67	4	25	20	53	3.7	5.5	4.4	6.2	20.10		45.0	100.0	740.	SLOWLY FLASHING	-- MK	70.1
STADE/ELBE	39606	67	4	26	20	17	6.5	8.5	6.9	8.9			60.0	100.0	850.	SLOWLY VARYING	-- MK	53.9
PEIDELBERG	39609	67	4	29	20	22	3.5	5.2	3.9	5.6	5.45		64.0	100.0	850.	VAR	-- GLU	57.7
STADE/ELBE	39824	67	11	30	18	9	4.5	8.0	5.0	8.5	22.50	1.00	65.0	100.0	800.	SLOWLY FLASHING	-- MK	39.9
STADE/ELBE	39834	67	12	10	17	38	4.5	9.5	5.0	9.0			72.0	100.0	780.	SLOWLY FLASHING	-- MK	51.6

SDC NO. 1511 65-65D PERIOD = 108.1 PERIGEE = 680.4 USA LAUNCHED 65/ 8/13 IN ORBIT
APOGEE = 736.3 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39619	67	5	9	2	19	8.5	8.5	8.7	9.2			34.0	83.0	114.		-- MM	38.0

SDC NO. 1513 65-67A PERIOD = 90.4 PERIGEE = 111.2 USA LAUNCHED 65/ 8/17 DECEASED 10/11/65
APOGEE = 256.6 INCL = 70.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39022	65	5	19	18	22	1.5	1.5	4.9	4.3			40.0	135.0	220.	STEADY	-- MK	41.7
STADE/ELBE	39023	65	5	20	18	26	1.5	1.5	5.8	5.8			40.0	140.0	140.	STEADY	-- MK	72.3
STADE/ELBE	39027	65	5	24	18	38	4.0	4.0	7.0	7.0			10.0	320.0	250.	STEADY	-- MK	139.9

SDC NO. 1514 65-65F PERIOD = 108.1 PERIGEE = 676.7 USA LAUNCHED 65/ 8/13 IN ORBIT
APOGEE = 741.0 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39056	65	12	2	2	59	6.3	6.7	7.0	7.4			63.0	201.0	740.		-- JGM	77.4
VAN NUYS-F	39057	65	12	3	2	26	2.5	5.5	3.1	6.1			5.00	63.0	770.	ONE NAKED EYE FLASH SEEN	-- JGM	40.8
VAN NUYS-F	39058	65	12	4	1	53	7.5	7.5	7.4	7.4			45.0	85.5	1050.		-- JGM	24.0
STADE/ELBE	39059	65	12	4	14	12	7.7	7.7	8.5	8.5			11.0	200.0	730.	STEADY	-- MK	63.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39236	66/	4/21	20	54	7.5	7.5	8.1	8.1	8.1			77.0	100.0	775.	STEADY	-- MK	63.2
STADE/ELBE	39240	66/	4/25	20	28	6.5	6.5	7.1	7.1	7.1			70.0	100.0	770.	STEADY	-- MK	60.7
HEIDELBERG	39247	66/	5/2	20	12	8.0	8.0	8.6	8.6	8.6			73.0	77.0	774.	IMPG. FLASHES	--GLU	68.3
STADE/ELBE	39354	66/	8/17	1	33	7.5	7.5	8.3	8.3	8.3			84.0	260.0	703.	STEADY	-- MK	69.5
STADE/ELBE	39365	66/	8/28	0	50	7.0	7.5	7.7	8.2	8.2			85.0	260.0	715.	STEADY	-- MK	63.5
STADE/ELBE	39824	67/11/30	18	22		8.0	8.0	8.7	8.7	8.7			80.0	100.0	720.	STEADY	-- MK	52.4

SDC NO. 1515 65-65G USA LAUNCHED 65/ 8/13 IN ORBIT
PERIOD = 108.1 PERIGEE = 676.1 APGEE = 740.1 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39236	66/	4/21	20	34	8.0	8.3	8.4	8.7	8.7			60.0	100.0	825.	STEADY OCASS SCINTILLATE	-- MK	52.1
STADE/ELBE	39469	66/12/10	17	45	8.3	9.5	9.1	10.3	10.3	10.3			85.0	100.0	690.	STEADY SHORT OBS CLOUDY SKY	-- MK	62.6
STADE/ELBE	39473	66/12/14	17	15	8.5	9.0	9.1	9.6	9.6	9.6			70.0	55.0	750.	STEADY SHORT OBS CLOUDY	-- MK	53.2
STADE/ELBE	39483	66/12/24	4	38	8.0	8.0	8.5	8.5	8.5	8.5			75.0	100.0	800.	STEADY SHORT OBS CLOUDS	-- MK	80.0

SDC NO. 1520 65-65H SURCAL USA LAUNCHED 65/ 8/13 IN ORBIT
PERIOD = 108.1 PERIGEE = 679.8 APGEE = 739.4 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39465	66/12/10	17	15	8.5	8.5	8.5	8.7	8.7	8.7			57.0	100.0	900.	STEADY CLOUDY SKY	-- MK	42.7
STADE/ELBE	39834	67/12/10	17	49	8.8	8.8	9.2	9.2	9.2	9.2			53.0	5.0	850.	STEADY SHORT OBS	-- MK	64.2

SDC NO. 1522 65-65K SURCAL USA LAUNCHED 65/ 8/13 IN ORBIT
 PERIOD = 108.1 PERIGEE = 679.2 APGEE = 740.7 INCL = 90.0
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STADE/ELBE 39353 66/ 8/16 1 52 6.0 9.0 6.6 9.6 68.0 260.0 746. REGULAR FLASHING OR VARYING -- MK 59.1

SDC NO. 1528 64-83H USA LAUNCHED 64/12/13 IN ORBIT
 PERIOD = 106.3 PERIGEE = -0.0 APGEE = -0.0 INCL = 90.0
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STADE/ELBE 39260 66/ 5/15 21 13 7.5 8.0 6.6 7.1 36.0 260.0 1520. ONLY TWO SHORT FLICKERS -- MK 98.3

SDC NO. 1560 65-20DG (FRAGMENT) USSR LAUNCHED 65/ 3/14 IN ORBIT
 PERIOD = -0.0 PERIGEE = -0.0 APGEE = -0.0 INCL = 96.0
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STADE/ELBE 38984 65/ 8/12 20 44 6.0 6.0 7.3 7.3 45.0 100.0 450. STEADY 65 20DG NO PREDICTION-- MK 46.2

SDC NO. 1570 65-70A COSMOS 80 USSR LAUNCHED 65/ 9/ 3 IN ORBIT
 PERIOD = 115.0 PERIGEE = 863.4 APGEE = 973.7 INCL = 56.1
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 PEIDELBERG 39774 67/10/11 19 47 8.7 9.7 8.3 8.3 40.0 81.0 1190. FLICKER
 AUSTIN 39913 64/ 2/27 2 8 9.0 8.6 37.0 237.0 1322. --GLU 31.0
 --MM 111.6

SDC NJ. 1572 65-70C COSMOS M2 USSR LAUNCHED 65/ 9/ 3 IN ORBIT
 PERIOD = 115.7 PERIGEE = 876.1 APOGEE = 970.6 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
STADE/ELBE	34203	66/	3/	19	19	50	8.0	9.0	9.1	10.1	1.00	0.20	60.0	75.0	610.	FLASHING	FLASH MAG 2	-- MK	50.4

SDC NJ. 1573 65-70D COSMOS M3 USSR LAUNCHED 65/ 9/ 3 IN ORBIT
 PERIOD = 116.1 PERIGEE = 892.9 APOGEE = 974.9 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39913	68/	2/	27	2	40	9.5	8.5					29.0	33.0	1562.		--MM	55.3

SDC NJ. 1575 65-70F ROCKET BODY USSR LAUNCHED 65/ 9/ 3 IN ORBIT
 PERIOD = 114.6 PERIGEE = 845.7 APOGEE = 939.5 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39022	65/	5/	19	19	46	5.0	5.0	4.9	4.9			60.0	220.0	1060.	STEADY	-- MK	76.4
STADE/ELBE	39023	65/	5/	20	20	39	6.0	6.0	5.3	5.3			35.0	220.0	1400.	STEADY	-- MK	71.2
VAN NUYS-F	39034	65/	10/	1	4	56	7.7						12.4	267.0	2157.	AMBIT 1/4 MIN VARIATION	--JGM	119.4
VAN NUYS-F	39035	65/	10/	2	3	50	7.0				16.00		31.5	260.0	1490.	HAIF YD, MAX ALT +7.0, +7.5	--JGM	115.5
VAN NUYS-F	39035	65/	10/	2	3	54	5.5	6.2	6.1	5.3			31.0	215.0	1500.	MIN ALTENATE +5.7, +6.2	--JGM	89.3
VAN NUYS-F	39036	65/	10/	3	2	45	4.8	6.0	4.8	6.0	16.40		63.3	226.5	1020.	SMOOTH VAR	--JGM	93.0
STADE/ELBE	39209	66/	3/	25	20	21	5.0	5.5	5.2	5.7			85.0	220.0	925.	SLIMLY VARYING	--MK	67.9
MEIDELBERG	39277	66/	6/	1	22	27	5.0	6.4	4.9	6.7	29.00		56.0	92.0	1057.	NORMAL TUMBLING	--GLU	72.6
MEIDELBERG	39279	66/	6/	3	22	9	4.5	5.0	4.6	5.1	30.30		73.0	180.0	930.	SLIMLY TUMBLING	--GLU	57.6
MEIDELBERG	39280	66/	6/	4	21	2	5.0	5.0	4.9	4.9			54.0	130.0	1059.	STEADY	--GLU	44.5
MEIDELBERG	39283	66/	6/	7	21	39	4.6	4.6	4.4	4.8			86.0	37.0	917.	STEADY	--GLU	77.8
STADE/ELBE	39286	66/	6/	10	22	16	5.0	7.0	5.1	7.1	29.00	2.00	93.0	360.0	937.	REGULAR FLASHING	--MK	94.7
STADE/ELBE	39291	66/	6/	15	22	38	5.0	8.0	5.2	8.2	30.00	2.00	76.0	360.0	922.	REGULAR FLASHING	--MK	91.3
STADE/ELBE	39375	66/	9/	7	27	41	5.0	7.0	5.2	7.2	16.20	1.10	67.0	130.0	930.	REGULAR FLASHING	--MK	43.7
STADE/ELBE	39446	66/	12/	7	3	27	5.0	7.0	5.1	7.1			80.0	360.0	950.	REGULAR SLIMLY FLASHING	--MK	61.5
STADE/ELBE	39493	67/	1/	3	19	21	4.8	5.5	5.4	6.1			89.0	140.0	750.	VARYING	--MK	63.9
STADE/ELBE	39496	67/	1/	4	19	47	4.0	6.0	5.6	6.6			80.0	160.0	770.	VARYING	--MK	60.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39504	67/	1/14		17	56	5.0	7.5	5.1	7.6	40.50		40.0	360.0	950.	SLOWLY FLASHING	--	MR 68.2
STADE/ELBE	39517	67/	1/27		17	15	5.5	6.0	5.2	5.7			60.0	220.0	1150.	SLOWLY FLASHING	--	MR 102.0
STADE/ELBE	39575	67/	3/26		20	40	5.0	5.7	4.8	5.5	76.50		55.0	140.0	1100.	SLOWLY FLASHING	--	MR 31.2
HEIDELBERG	39580	67/	3/31		20	57	3.6	4.6	3.4	4.4	53.00		51.0	260.0	1170.	SLOWLY FLASHING	--	GLU 17.5
STADE/ELBE	39581	67/	4/1		19	52	4.5	5.5	4.7	5.7			75.0	140.0	930.	SLOWLY FLASHING	--	MR 18.9
STADE/ELBE	39591	67/	4/11		20	35	5.5	9.0	5.7	9.2	54.00	2.70	40.0	360.0	900.	SLOWLY FLASHING	--	MR 70.6
HEIDELBERG	39592	67/	4/12		19	24	4.0	6.6	3.9	6.5	60.00		56.0	10.0	1050.	SLOWLY FLASHING	--	GLU 90.3
HEIDELBERG	39592	67/	4/12		21	30	3.4	6.2	3.9	6.3	60.00		61.0	100.0	950.	SLOWLY FLASHING	--	GLU 46.9
HEIDELBERG	39596	67/	4/16		20	55	4.0	5.6	4.2	5.8	58.30		42.0	330.0	930.	SLOWLY FLASHING	--	GLU 75.9
HEIDELBERG	39665	67/	6/24		21	54	3.7	7.2	3.5	7.0	61.00		45.0	140.0	1100.	FLASHING	--	GLU 39.9
HEIDELBERG	39667	67/	6/26		21	44	3.4	7.0	3.6	7.0	62.00		48.0	100.0	1000.	SLOWLY FLASHING	--	GLU 57.2
HEIDELBERG	39670	67/	6/29		20	17	3.1	3.7	3.7		58.00		43.0	165.0	1050.	SLOWLY FLASHING	--	GLU 44.7
HEIDELBERG	39670	67/	6/29		22	17	3.5	6.3	3.7	6.5	59.00		67.0	260.0	900.	SLOWLY FLASHING	--	GLU 79.3
HEIDELBERG	39672	67/	7/1		21	59	3.7	6.6	3.9	6.7	54.00		50.0	240.0	970.	SLOWLY FLASHING	--	GLU 107.3
HEIDELBERG	39673	67/	7/1		0	1	3.2	7.0	3.2	7.0	62.00		54.0	350.0	1700.	SLOWLY FLASHING	--	MR 88.9
STADE/ELBE	39675	67/	7/1		22	39	5.0	6.0	5.2	6.2	56.00		78.0	360.0	920.	SLOWLY FLASHING	--	GLU 109.6
HEIDELBERG	39675	67/	7/1		22	39	3.6	7.2	3.6	7.2	63.00		47.0	315.0	1010.	SLOWLY FLASHING	--	GLU 91.0
HEIDELBERG	39677	67/	7/1		20	25	3.7	3.9	3.9		63.00		75.0	260.0	950.	SLOWLY FLASHING	--	GLU 106.3
STADE/ELBE	39681	67/	7/10		21	52	5.5	6.5	5.8	6.4			54.0	10.0	870.	SLOWLY FLASHING	--	MR 87.8
HEIDELBERG	39681	67/	7/10		21	55	3.7	6.7	3.5	6.5	64.30		54.0	340.0	1100.	SLOWLY FLASHING	--	GLU 110.7
HEIDELBERG	39688	67/	7/17		22	0	3.4	5.5	3.6	5.7	58.70		73.0	100.0	900.	SLOWLY FLASHING	--	GLU 65.1
AUSTIN	39700	67/	7/29		3	17	6.5		6.0				34.0	38.0	1280.		--	79.1
STADE/ELBE	39764	67/10/1		4	11		7.5		7.1				63.0	220.0	1100.	SHORT OBS THEN LOST SIG MAZE	--	MR 58.7
STADE/ELBE	39781	67/10/18		17	52		4.0	6.0	3.7	5.7	90.00		64.0	140.0	1150.	SLOWLY FLASHING	--	MR 49.1
STADE/ELBE	39789	67/10/26		24	51		6.0	6.0	5.6	5.6			55.0	90.0	1200.	ST SHORT OBS	--	MR 31.4
STADE/ELBE	39799	67/11/5		19	32		6.0	7.0	5.6	6.6			55.0	220.0	1200.	SLOWLY FLASHING	--	MR 72.3
STADE/ELBE	39801	69/1/26		17	50		5.7	5.7	6.1	6.1			73.0	190.0	850.	ST	--	MR 75.9
STADE/ELBE	39960	69/4/14		0	40		5.3	5.3	5.4	5.4			77.0	5.0	950.	ST CLUTS	--	MR 77.6
STADE/ELBE	39960	69/4/14		21	33		5.3	5.7	5.3	5.7			60.0	140.0	1000.	FAINT VAR MUST ST	--	MR 38.1
HEIDELBERG	39573	67/4/27		20	50		5.0	5.0	4.8	4.8			50.0	315.0	1085.	ST	--	GLU 111.7
HEIDELBERG	39574	69/4/28		19	45		4.5	4.5	4.5	4.5			60.0	17.0	900.	ST	--	GLU 90.7

SDC NO. 1577 65-651
 PERIOD = 109.1 PERIGEE = 676.1 USA LAUNCHED 65/ 9/13 IN ORBIT
 APGEE = 743.2 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	MIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	39475	66/12/20	17	26	6.5	9.0	6.8	9.3	1.40	0.40	50.0	360.0	865.			REG FLASHING ONE FLASH 635	-- MK	66.7
STADE/ELBE	39479	66/12/20	17	25	7.7	9.0	8.1	9.4	1.80	0.40	54.0	360.0	850.			REGULAR FLASHING	-- MK	66.6
STADE/ELBE	39497	67/ 1/ 7	4	5	7.5	9.0	8.1	9.6			85.0	260.0	760.			FLASHING	-- MK	54.9
STADE/ELBE	39607	67/ 4/27	21	44	8.5	10.0	8.5	10.0			43.0	260.0	1000.			REGULAR FLASHING SHORT ORS	-- MK	86.9
STADE/ELBE	39810	67/11/16	19	12	7.5	8.0	8.0	8.0			75.0	100.0	700.			FLASHING MIN INV MOON	-- MK	41.7
STADE/ELBE	39824	67/11/30	18	32	5.5	8.5	6.3	9.3			89.0	260.0	1000.			FLASHING DOUBLE MAX OCC IPREF	-- MK	61.7
STADE/ELBE	39855	67/12/31	17	21	8.5	8.5	8.5	8.5			45.0	260.0	1000.			VAP MIN INV	-- MK	117.0
STADE/ELBE	39961	68/ 4/15	21	14	5.0	8.0	5.8	8.8			73.0	100.0	690.			SLOWLY VAR MOST ST MAG R	-- MK	58.0

SDC NO. 1580 65-72A
 PERIOD = 101.9 PERIGEE = 405.8 USA LAUNCHED 65/ 9/10 IN ORBIT
 APGEE = 651.8 INCL = 98.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	MIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	39022	65/ 5/19	19	55	7.5	9.0	8.4	9.9	1.14	0.10	50.0	135.0	660.			FLASHING AND INVISIBLE	-- MK	30.0
STADE/ELBE	39026	65/ 5/23	20	46	8.0	9.0	9.3	10.3	1.70	0.10	70.0	260.0	550.			FLASHING	-- MK	73.6
WEIDELBERG	39219	66/ 4/ 4	19	15	7.4	8.0	7.6	8.2	1.90	0.30	36.0	92.0	902.			SHORT FLASHES	--GLU	37.6
WEIDELBERG	39237	66/ 4/22	20	43	7.5	8.2	8.1	8.8	2.20		55.0	279.0	759.			NORMAL TUMBLING	--GLU	98.9
AUSTIN	39619	67/ 5/ 9	5	49	8.5	9.0	9.0	9.0			51.0	283.0	799.				-- MK	107.4

SDC NO. 1583 65-72D
 PERIOD = 101.9 PERIGEE = 405.4 USA LAUNCHED 65/ 9/10 IN ORBIT
 APGEE = 652.4 INCL = 98.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	MIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	39026	65/ 5/23	20	54	6.5	9.0	7.8	10.3	5.90	0.10	70.0	260.0	550.			FLASHING	-- MK	72.3

SOL NO. 1584 65-73A				COSMOS-36				USSR				LAUNCHED 65/ 9/14 IN ORBIT			
PERIOD - 115.1 PERIGEE - 703.5 APGEE - 1014.6 PERI - 56.1															
STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE
STPETERSBURG	39178	66/ 2/22	1	9	1	9	8.0	9.0	8.1	9.1	2.6		54.0	125.8	950.
PHOENIX A	39178	66/ 2/22	3	6									46.1	125.2	1075.
VAN NUYS-F	39179	66/ 2/23	4	3			7.8		8.2				41.6	132.0	850.
OCEANPORT	39180	66/ 2/24	1	11			7.0	8.0	9.0	0.0					
ROCHESTER	39180	66/ 2/24	1	11			9.0	9.0	9.0	9.0			54.5	118.0	1030.
SAN JOSE	39180	66/ 2/24	5	2			6.5	9.0	5.8	9.3		0.20	64.8	110.7	857.
VAN NUYS-F	39181	66/ 2/25	4	0			8.5		4.8		2.76		75.7	114.0	870.
STPETERSBURG	39182	66/ 2/26	1	3			8.0	10.0	0.0	0.0					
VAN NUYS-F	39182	66/ 2/26	2	59			8.7		8.9				61.6	124.5	910.
ROCHESTER	39183	66/ 2/27	2	6			6.0	8.0	6.0	8.0	2.00	0.20	64.1	124.0	984.
VAN NUYS-F	39183	66/ 2/27	3	57			9.9	9.8	9.9	9.9			56.0	114.3	970.
SAN JOSE	39183	66/ 2/27	3	57			7.5	9.0	7.8	9.3	2.40	0.20	79.3	115.9	960.
WALNUT CREEK	39183	66/ 2/27	5	58			5.0	10.0	5.3	10.3	0.37		41.0	115.7	854.
OCEANPORT	39184	66/ 2/28	1	5			7.0	4.0	0.0	0.0					
CLEVELAND	39186	66/ 3/ 2	3	1			0.1	8.0	-0.5	7.4			34.9	144.7	1321.
OCEANPORT	39188	66/ 3/ 4	0	59			7.0	8.0	6.9	7.9			49.1	144.7	1060.
VAN NUYS-F	39191	66/ 3/ 7	0	1			7.0	7.0	5.8	5.8			18.6	151.4	1763.
CLEVELAND	39191	66/ 3/ 7	3	40			10.2		9.2		1.00		22.7	139.0	1620.
ROCHESTER	39200	66/ 3/16	0	41			9.0	9.0	7.4	8.4			34.4	18.2	1303.
OCEANPORT	39200	66/ 3/16	2	43			9.0		4.5				35.1	2.0	1324.
OCEANPORT	39201	66/ 3/17	1	39			8.0	9.0	7.6	8.6			43.0	21.3	1210.
OCEANPORT	39202	66/ 3/18	0	42			8.0		7.2				37.1	22.9	1230.
OCEANPORT	39203	66/ 3/19	1	40			8.5		4.2				28.4	4.9	1440.
CLEVELAND	39205	66/ 3/21	1	35			9.0		4.6		0.70		43.4	24.6	1130.
OCEANPORT	39205	66/ 3/21	1	37			8.5	10.0	4.6	9.9			44.9	25.7	1191.
WALNUT CREEK	39206	66/ 3/22	4	27			7.0	9.5	4.6	9.1	1.21	0.10	43.0	33.4	1760.
PHOENIX A	39207	66/ 3/23	3	29			8.0	9.0	7.2	8.2	1.29	0.10	30.0	45.0	1430.
OCEANPORT	39210	66/ 3/26	0	30			8.0	9.0	7.9	8.9	0.70	1.10	42.0	67.0	1050.
WALNUT CREEK	39211	66/ 3/26	4	21			8.0	9.0	8.0	9.0			65.8	39.8	987.
OCEANPORT	39211	66/ 3/27	1	23			7.0	9.0	8.4	9.4	1.10		79.7	176.1	950.
CLEVELAND	39213	66/ 3/29	1	23			7.0		7.2				92.5	217.4	921.
OCEANPORT	39218	66/ 4/ 3	0	17			4.0	4.0	0.0	0.0			5.3	105.7	857.

TRACKED 15 DEGREES TP EST 5--FJK 43.4
 10 DEG FLASH 2 TIMES IN 2 MIN-- 34.7
 47 MAG STDY BETWEEN FLASHES --
 VAR --JGM 53.6
 EPERRATIC TUMBLING TRACK. 1 MIN--GFG
 STEADY FOR 1 MIN -- RJ 30.9
 10 DEG. CYCLE. OCCASIONAL -- 74.9
 QUICK FLASHES, ONE TO 4TH MAG--KRM
 TP 30.45/11 WHOLE I THINK --JGM 73.3
 TP EST 1.5 SEC --FJK 54.7
 STEADY AT 4R EXCEPT FOR FLSH-- RJ 77.5
 OBS. 3 MIN. EPERRATIC FLASHING --BLG 74.4
 MAX VAR 5 TO 7, 10 CYCLES --JAB 51.5
 3 SECS BETWEEN FLASHES --GFG
 QUICK DOUBLE FLASH MIN INVIS --DS 94.8
 VARIABLE MAG. -- GG 87.8
 STEADY MAG. -- GG 97.6
 MIN BELOW +11 --JGM 105.5
 MINIMUM INVISIBLE -- DS 79.0
 NO REGULAR TUMBLE -- RJ 99.3
 MINIMUM INVIS VERY SHORT TP -- DS 74.6
 EPERRATIC MAG. -- GG 75.0
 1 FLASH IN FIELD. NO FOLLOW -- GG 89.7
 VARIABLE MAG. -- GG 69.3
 ONE TO MINIMUM INVISIBLE -- DS 71.4
 QUICK CHANGE IN MAG. -- GG 47.6
 MAX VAR 8.5 TO 7.0 --DFC 67.4
 --RRR 55.7
 VAR. IN MAG. -- GG 46.4
 3 QUICK FLASHES EACH 20 SEC --DFC 42.0
 VARIABLE -- GG 59.9
 ONE TO MINIMUM INVISIBLE -- DS 73.9
 FLASHES AT MAXIMUM --GFG 90.2

NOT REPRODUCIBLE

STATION NAME	INJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	AIT	A ₂	RANGE	COMMENTS	--OPS	PHASE
SAN ANTONIO	39281	66/	6/	5	2	19	7.5		7.3		35.00		51.3	314.3	1092.	MIN WVT VIS,NO MAX PFAK,SMTH--	PM	117.7
OCEANPORT	39281	66/	6/	5	2	27	8.0	10.0	7.6	9.6			38.8	335.9	1211.	VAP. QUICK FLASH	--GFG	121.7
HEIDELBERG	39283	66/	6/	7	21	38	8.6	9.0	8.7	9.1			36.0	353.0	965.	FLICKERING	--GLU	108.3
WALNUT CREEK	39295	66/	6/19		6	1	9.0		8.4		1.10		32.0	25.0	1305.	SEMI-REGULAR FLASHES	--DFC	103.8
OCEANPORT	39297	66/	6/21		2	7	9.0		8.4				31.4	44.8	1300.	IRREGULAR FLICKER PATTERN	--GFG	84.9
OCEANPORT	39298	66/	6/22		3	5	8.0	10.0	8.2	10.2			58.9	44.7	922.	VAP IRREGULAR FLICKERING	--GFG	78.8
ROCHESTER	39307	66/	7/	1	1	50	8.0	10.0	8.4	10.4	0.50	0.10	39.4	45.4	1180.	IRREGULAR PULSES	--GFG	83.7
SAN ANTONIO	39311	66/	7/	5	3	42	9.5		9.7				82.0	221.0	926.	65-79A	--PM	91.0
													57.5	234.0	920.	SOME SPUTTERING-FLASHES,STDY	--PM	75.2
																AT IRREGULAR INTERVALS	--PM	

STATION NAME	MJD	Y	M	D	M	H	M	MAX	MIN	AMAX	AKIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN JOSE	39161	66/	2/	5			3	55	7.0	10.5	7.2	10.7	0.10	66.3	130.0	925.	COULDN'T TRACK	--RCM	44.0
STPETERSBURG	39178	66/	2/22				0	48	7.0	7.0	6.5	6.5	2.00	34.8	122.2	1280.	ONE TM FLASH 2 SEC	--FJN	34.3
PHOENIX R	39178	66/	2/22				2	45	8.0		7.2			28.2	121.1	1423.	10 TP 21.2 SEC. INV. RETWFFEN--RCM	--	30.0
																	4.8 MAG FLASHES, TWINKLES	--	
																	OFFGPF FLASH	--	
VAN NUYS-F	39179	66/	2/23				3	48	8.0		8.1		5.22	57.1	127.2	970.	WHOLE CYCLE. MIN UNDER +11	--JCM	37.9
VAN NUYS-F	39181	66/	2/25				3	55	7.8	8.2				87.5	135.0	850.	2 MAX AND 2 FLASHES PER	--JCM	60.5
OCEANPORT	39183	66/	2/27				2	12	8.0	0.0							MIN UNDER +10	--JCM	
ROCHESTER	39183	66/	2/27				2	12	6.0	11.0	6.2	11.2	2.62	67.5	148.0	927.	31.2 SECS BETWEEN FLASHES	--GFG	69.2
OCEANPORT	39184	66/	2/28				1	15	8.3	10.0	0.0	0.0					5 FLASHES/TIME	--RJ	
																	VAR SPACED FLASHES OF 51/2 S--GFG	--	
PHOENIX R	39184	66/	2/28				3	7	8.3		8.4			73.2	314.4	848.	INV. 5 IPR FLASHES IN 30 SEC--	--	80.9
OCEANPORT	39186	66/	3/ 2				1	24	7.0	9.0	6.6	8.6		39.4	16.3	1202.	TRACKED 80 SEC. IRREG TP MIN--	--	72.1
CLEVELAND	39186	66/	3/ 2				1	21	0.1	7.0	0.4	7.3		75.3	321.8	891.	FLASHES EVERY 5 SECS.	--GG	78.4
ROCHESTER	39193	66/	3/ 9				0	48	7.0	11.0	6.7	10.7	3.00	46.0	138.0	1124.	ONE SHORT FLASH MIN INVIS	--PS	97.5
ROCHESTER	39200	66/	3/15				2	17	8.0	11.0	7.6	10.6	20.00	38.3	21.7	1222.	TUMBLE IRREGULAR	--RJ	77.7
OCEANPORT	39200	66/	3/16				2	17	8.0		7.6			38.3	21.7	1222.	2 FLMS 20 SEC APART	--RJ	76.9
OCEANPORT	39202	66/	3/16				2	25	7.0		6.9			49.2	24.0	1070.	1 FLASH IN SCOPE. NO FOLLOW	--GG	68.2
																	APRX. 1 FLASH NOTED PER 7SEC--	--GG	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
OCEANPORT	39203	66/	3/	19	1	29	8.0	9.0	7.5	8.5			36.7	29.8	1240.	VARIABLE FLASHING.	--	GG
OCEANPORT	39206	66/	3/	22	0	39	8.0	9.0	7.5	8.5			35.7	36.9	1260.	5 FLASHES PER 17 SECS NOTED.	--	GG
WALNUT CREEK	39206	66/	3/	22	4	33	8.0	9.0	7.5	8.5		0.20	39.6	29.2	1285.	2 FLASHES ABOUT 4 SECS APART--DFC	--	GG
OCEANPORT	39210	66/	3/	26	0	56	8.0	9.5	7.0	9.4			48.9	74.0	1050.	10 MAX. FLASHES PER 23 SECS.	--	GG
CLEVELAND	39213	66/	3/	29	2	4	8.0	9.0	8.0	9.0			66.5	224.6	995.	APPEARED AT EDGE OF FIELD	--	DS
OCEANPORT	39213	66/	3/	29	2	6	8.0	9.0	7.9	8.9			48.3	214.0	1050.	VARIABLE	--	GG
OCEANPORT	39214	66/	3/	30	1	12	8.0	9.5	7.9	9.4			49.3	154.7	1050.	5 MAX. FLASHES PER SECS.	--	GG
STPETERSBURG	39216	66/	4/	1	1	18	6.0	5.0	5.9			0.50	61.9	44.9	1036.	6 MAX FLASH FA 6 SEC	--	FJK
STPETERSBURG	39218	66/	4/	3	1	25	5.0	10.0	7.2	10.2		0.50	47.5	227.8	941.	1 SEC FLASH 1 MW REST OFPASS--FJK	--	FJK
OCEANPORT	39221	66/	6/	5	3	3	7.0	10.0	6.6	9.6			33.7	24.5	807.	1 FLASH IN SCOPE	--	GFG
OCEANPORT	39222	66/	6/	6	2	9	7.0	10.0	6.6	9.6			43.2	357.2	1190.	3 FLASHES PER 13 SECS. AT MAX--GFG	--	GFG
SAN ANTONIO	39223	66/	6/	7	3	5	9.0	12.0	8.2				29.6	324.8	1472.	SPOTTED SEL EQUALLY SPACED	--	PM
ROCHESTER	39224	66/	6/	8	2	15	9.0	12.0	8.8	11.8		1.00	51.0	337.0	1076.	65-738 1 BLIP ONLY	--	RJ
PHOENIX	39224	66/	6/	8	4	9	5.0	5.0	4.2		0.10		30.9	329.7	1426.	TRACKED 60 SEC IRR SERIES 2	--	RJR
ROCHESTER	39229	66/	6/	13	3	36	8.0	11.0	7.5	10.5		0.10	35.0	7.0	1273.	TO 5 FLASHES 5 MAG TO INV	--	RJ
VAN NUYS-F	39303	66/	7/	2	5	42	9.0	9.3					66.9	231.0	980.	MIN INVISIBLE LESS THAN +12	--	RJ
VAN NUYS-F	39311	66/	7/	5	4	53	7.3	7.6					71.9	230.5	966.	FLASH	--	JGM
WALNUT CREEK	39313	66/	7/	7	4	58	7.0	11.0	5.9	10.9	2.00		46.6	233.0	1066.	FLASH MIN UNDER +9.5	--	JGM
AUSTIN	39907	66/	2/	21	2	34	9.0	9.0	8.6	8.6			43.0	236.0	1228.	3 OR 4 MAX TO NINE THEN MISS	--	DFC
																TWO MAX THEN PLUS SEVEN	--	DFC
																	--	MM

SDC NO. 1587 65-730 PERIOD = 116.2 COSMOS 89 USSR LAUNCHED 65/ 9/19 IN ORBIT

APPROX = 835.7 APPROX = 1042.7 INCL = 54.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PHOENIX	39312	66/	7/	6	5	3	9.5	9.8					75.0	230.0	984.	MIN INV	--	RJR

SOL NJ. 158H 65-731 CUSMUS 40 USSR LAUNCHED 65/ 9/19 IN ORBIT
PERIOD = 116.7 PERIGEE = 851.9 APOGEE = 1050.1 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
ROCHESTER	39307	66/ 7/ 1	2	6	9.0	11.0	9.2	11.2	0.25	55.0	27.0	903.				ONE FLASH ONLY	--RM	92.1

SOL NJ. 1589 65-73F ROCKET BODY USSR LAUNCHED 65/ 9/19 IN ORBIT
PERIOD = 116.8 PERIGEE = 852.5 APOGEE = 1056.3 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39113	65/12/19	14	45	5.0	5.0	4.9	4.9	80.0	220.0	1062.					STEADY FAINT VARYING	--MK	65.2
STADE/ELBE	39120	65/12/26	14	10	5.5	5.1	5.1	5.1	55.0	220.0	1230.					STEADY WITH FAINT VARYING	--MK	90.9
SAN JOSE	39161	66/ 2/ 5	3	41	7.0	7.5	6.3	6.8	0.20	30.6	121.9	1406.				LOOKS LIKE OLD TYPE ROCKET.	--RM	29.9
VAN NUYS-F	39181	66/ 2/25	3	41	6.0	6.5	5.7	6.2	0.90	43.1	119.0	1170.				WHOLE TP	--JGM	26.6
TERRE HAUTE	39182	66/ 2/26	1	6	7.0	8.0	6.1	7.1	0.54	0.20	26.7	121.0	1412.			60 MAX TIMED	--LD	27.2
VAN NUYS-F	39182	66/ 2/26	3	2	6.0	6.6	5.3	5.9	0.45	30.4	120.0	1410.				GOOD TP .44R SEC	--JGM	30.5
STPETERSBURG	39183	66/ 2/27	0	24	5.0	5.0	4.5	7.5	0.49	0.20	42.5	136.0	890.			TP FST .5 SEC	--FJK	40.2
TERRE HAUTE	39183	66/ 2/27	2	28	4.0	5.0	4.3	5.3	0.89	42.2	312.0	880.				1R MAX TIMED	--LD	50.3
VAN NUYS-F	39183	66/ 2/27	4	23	5.7	7.0	6.0	7.3	0.45	71.3	131.7	919.				WHOLE TP	--JGM	64.0
WALNUT CREEK	39183	66/ 2/27	4	23	7.0	10.0	7.2	10.2								REGULAR 20 CYCLES 9.6 ET R.6--JAN	--JGM	45.0
OCEANPORT	39184	66/ 2/28	1	51	7.0	0.0	0.0	0.0	0.90	76.1	131.0	900.				RAPID FLASHES	--GFG	54.2
VAN NUYS-F	39184	66/ 2/28	3	43	5.7	6.5	5.9	6.7								WHOLE TP .495 SEC	--JGM	48.1
PHOENIX R	39184	66/ 2/28	3	44	8.0	8.3	8.3	8.3								TPACKED 100 SEC. IRPEG TP	--	97.2
PHOENIX R	39185	66/ 3/ 1	5	8	9.0	8.2	8.2	8.2								25 IRREG FLASHES IN 17.8 SEC--	--	
STPETERSBURG	39186	66/ 3/ 2	0	26	3.0	5.0	0.0	0.0								MIN INVISIBLE	--	
CLEVELAND	39186	66/ 3/ 2	2	52	0.1	5.0	0.1	5.0	0.80	60.9	324.5	993.				TP FST .5 SEC	--FJK	79.5
ROCHESTER	39186	66/ 3/ 2	23	52	6.0	9.2	5.4	8.6								SHARP SUDDEN LIGHT CHANGE	--NS	
OCEANPORT	39187	66/ 3/ 3	1	56	6.0	6.5	5.6	6.1	0.55	0.20	35.8	125.0	1100.			GOOD TIMPLE PERIOD MIN INVIS--	--NS	40.2
STPETERSBURG	39188	66/ 3/ 4	1	9	5.0	10.0	0.0	0.0								10 TUMBLER TIMED	--RJ	73.6
ROCHESTER	39189	66/ 3/ 4	1	14	6.0	9.0	6.3	9.3								20 MAG FLASHES PER 19 SECS	--GG	
TERRE HAUTE	39189	66/ 3/ 5	0	32	4.0	5.0	4.0	5.0	0.89	87.6	314.0	887.				TP FST .75 SEC	--FJK	67.3
TERRE HAUTE	39189	66/ 3/ 5	0	33	4.0	5.0	4.0	5.0	0.50	0.10	40.0	130.0	981.			SEE PREVIOUS FOR DISCREPANCY--	--RJ	58.2
TERRE HAUTE	39190	66/ 3/ 6	1	56	5.0	5.0	4.0	5.0	0.92	0.40	50.0	160.0	1000.			40 MAX OBSERVED ORBITAL ANGL--	--LD	69.4
OCEANPORT	39191	66/ 3/ 7	1	19	5.0	5.5	4.6	5.1	0.82	0.40	56.0	175.0	1037.			70 MAX	--LD	91.5
																1 FLASH PER SEC. VAR. MAG.	--GG	81.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--DBS	PHASE
VAN NUYS-F	39151	66/ 3/ 7	3	9			7.0		6.9		0.90		54.1	319.0	1030.	VARIABLE MAG.	--JGM	99.9
OCEANPORT	39152	66/ 3/ 8	0	38			6.0		5.9				52.2	356.2	1050.	INV TO 9 IN IRR PATTERN	--GG	83.7
PHOENIX K	39153	66/ 3/ 8	2	30			7.0		6.9		0.85	0.05	52.5	320.0	1048.	BETWEEN FLASHES	--RRR	102.6
OCEANPORT	39152	66/ 3/ 8	23	57			6.0	6.5	6.2	6.7			68.1	360.6	930.	QUICK OFF CENTER FLASHES	--GG	86.8
OCEANPORT	39154	66/ 3/10	1	21			6.0	7.0	5.4	6.4			34.6	352.2	1310.	VARIABLE MAG.	--GG	94.0
OCEANPORT	39155	66/ 3/11	0	42			7.0	8.0	6.5	7.5			37.2	4.5	1260.	VARIABLE QUICK FLASHES	--GG	94.0
OCEANPORT	39159	66/ 3/15	0	4			7.0	8.0	6.5	7.5			35.5	350.5	1270.	VARIABLE IN MAG.	--GG	96.2
CLEVELAND	39200	66/ 3/16	1	26			8.3		7.2		0.90		31.9	353.3	1422.	TP AVER OF 9 0.7 TO 1.1 SEC	--	97.4
																MINIMUM INVISIBLE	--	
CLEVELAND	39200	66/ 3/16	3	31			7.0		6.4		0.80		40.1	19.5	1296.	TP AVER OF 7 0.7 TO 1.0 SEC	--DS	80.3
STADEVELBE	39203	66/ 3/19	21	0			6.0	8.0	6.2	8.2	0.43	0.20	95.0	300.0	925.	MINIMUM INVISIBLE	--	66.3
FEIDELBERG	39280	66/ 6/ 4	21	47			5.0	6.5	5.1	6.6	0.53		76.0	76.0	945.	RAPIDLY FLASHING	--MK	73.3
FEIDELBERG	39283	66/ 6/ 7	21	47			5.0	6.0	5.0	6.0	0.52		66.0	280.0	993.	MAX. WITH ALTERNAT. BRIGHTN.	--GLU	89.0
STADEVELBE	39285	66/ 6/ 9	22	32			5.0	7.0	5.2	7.2	0.55	0.30	80.0	360.0	917.	NORMAL TUMBLING	--GLU	87.1
STADEVELBE	39286	66/ 6/10	21	52			5.5	8.0	5.7	8.2	0.56	0.40	82.0	360.0	907.	REGULAR FLASHING	--MK	86.5
WALNUT CREEK	39306	66/ 6/30	5	16			7.0		6.4		0.49		37.0	26.0	1313.	FLASHING WITH UNEQUAL MAX	--MFC	97.1
ROCHESTER	39307	66/ 7/ 1	2	42			6.0	8.0	6.1	8.1	0.69		67.1	33.0	964.	IRREGULAR CYCLE	--RJ	84.1
OCEANPORT	39307	66/ 7/ 1	2	43			6.0	5.0	4.0	5.0	1.12		59.6	69.4	980.	CLOSE PULSES OF MAG. CHANGE	--GFG	67.4
VAN NUYS-F	39308	66/ 7/ 2	6	1			6.7	8.0	6.7	8.0	0.50		62.7	42.5	987.	WHOLE TP	--JGM	74.1
SAN ANTONIO	39311	66/ 7/ 5	4	6			6.0	6.2	3.9	6.1	0.50		51.9	43.8	1066.	TUMBLE AVERAGE, NOT CONSISTENT	--PM	73.7
WALNUT CREEK	39311	66/ 7/ 5	6	2			6.8		5.1	6.8	0.50		81.3	226.0	995.	100 CYCLES	--JMG	66.6
VAN NUYS-F	39311	66/ 7/ 5	6	4			5.5	6.5	5.7		1.14		81.8	234.0	990.	WHOLE TP	--JGM	61.5
WALNUT CREEK	39312	66/ 7/ 6	5	22			5.5		5.7		0.53		79.0	43.0	906.	15 FLASHES STEADY THEN HALF	--JMG	74.2
																MINIMUM AT 6.5 MAG	--	
VAN NUYS-F	39312	66/ 7/ 6	5	24			5.5	6.5	5.7	6.7	1.19		77.2	48.0	910.	WHOLE TP	--JGM	68.9
WALNUT CREEK	39313	66/ 7/ 7	4	42			5.5		5.5		0.57		62.0	39.0	940.	15 STEADY THEN HALF-MIN	--JMG	80.7
OCEANPORT	39314	66/ 7/ 8	2	9			4.0	5.0	4.2	5.2			67.4	189.1	925.	PULSATING LIGHT	--GFG	61.2
PHOENIX K	39317	66/ 7/11	4	8			6.0	8.0	6.3	8.3	0.61		44.0	233.0	990.	20 FLASHES IN 11.1 SEC	--RRR	75.0
PHOENIX K	39318	66/ 7/12	5	30			6.0	8.0	5.1	7.1	0.64		54.7	233.0	1546.	31 FLASHES IN 20.4 SEC	--RRR	80.4
SAN ANTONIO	39319	66/ 7/13	2	52			5.0	5.2	5.2		0.61		42.2	50.0	894.	MIN COULDN'T SEE IN BINOCULARS	--PM	73.4
PHOENIX K	39320	66/ 7/14	4	11			6.0	8.0	5.9	7.9	0.63		62.1	234.0	1066.	51 FLASHES IN 31.3 SEC	--RRR	84.4
OCEANPORT	39322	66/ 7/16	3	26			4.0	7.0	4.3	7.3			64.0	101.0	985.	LIGHT FLICKERING	--GFG	46.9
STADEVELBE	39326	66/ 5/14	19	31			5.5	6.5	5.3	6.3	0.73	0.20	59.0	143.0	1100.	REGULAR FLASHING	--MK	36.4
STADEVELBE	39327	66/ 5/16	20	53			5.5	7.0	5.4	6.9	0.73	0.40	64.0	140.0	1340.	REGULAR FLASHING	--MK	58.8
STADEVELBE	39328	66/ 5/20	20	13			5.0	7.0	4.7	6.9	0.73	0.40	76.0	141.0	1360.	REGULAR FLASHING	--MK	57.6

NOT REPRODUCIBLE

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--GPS	PHASE
STADE/ELBE	39453	67/	1/	3	14	40	5.5	6.0	6.0	6.5	1.01	0.40	68.0	140.0	800.	RAPID FLASHING	--MK	48.4
STADE/ELBE	39456	67/	1/	6	14	42	5.5	6.5	5.8	6.8	0.43	0.40	85.0	190.0	890.	RAPID FLASHING	--MK	61.2
STADE/ELBE	39504	67/	1/14	17	28		5.5	6.0	5.8	6.3			85.0	360.0	880.	FLASHING	--MK	72.3
STADE/ELBE	39510	67/	1/20	17	34		5.0	7.5	5.3	7.8	1.07	0.40	85.0	360.0	890.	REGULAR FLASHING	--MK	71.9
STADE/ELBE	39517	67/	1/27	17	0		5.5	8.0	5.8	8.3	1.08	0.40	85.0	360.0	880.	REGULAR FLASHING	--MK	78.7
STADE/ELBE	39561	67/	3/12	2	3		5.0	8.5	4.6	8.1	1.23	0.50	55.0	140.0	1200.	REGULAR FLASHING	--MK	62.4
STADE/ELBE	39593	67/	4/13	20	25		5.5	8.5	5.4	8.4	1.37	0.50	80.0	360.0	1050.	FLASHING	--MK	80.0
STADE/ELBE	39594	67/	4/14	21	49		5.5	8.5	5.4	8.4	1.37	0.70	80.0	360.0	1020.	FLASHING	--MK	80.6
STADE/ELBE	39596	67/	4/16	20	28		6.0	9.0	5.9	8.9	1.39	0.70	80.0	360.0	1030.	REGULAR FLASHING	--MK	75.1
PEIDELBERG	39610	67/	4/30	19	21		5.2	6.6	4.9	6.3	1.47		68.0	100.0	1150.	FLASHING	--MK	80.7
PEIDELBERG	39610	67/	4/30	21	24		5.0	5.5	4.4	4.9	1.48		68.0	200.0	1300.	FLASHING	--GLU	63.0
STADE/ELBE	39681	67/	7/10	21	57		5.5	9.5	5.5	8.5	1.73	0.70	79.0	180.0	1000.	SHARP FLASHES	--MK	47.7
STADE/ELBE	39684	67/	7/13	22	0		6.0	9.0	6.0	9.0	1.79	0.70	88.5	360.0	1010.	FLASHING HAZE	--MK	68.1
STADE/ELBE	39691	67/	7/20	23	29		5.5	9.0	5.5	9.0			88.5	360.0	1020.	REGULAR SHARP FLASHES	--MK	79.2
PEIDELBERG	39701	67/	7/30	23	55		5.0	7.8	4.7	7.5	1.84		63.0	340.0	1150.	FLASHING (REGULAR)	--GLU	74.8
PEIDELBERG	39701	67/	7/30	22	55		4.6	6.8	4.3	6.5	1.84		60.0	220.0	1160.	FLASHING	--GLU	102.1
STADE/ELBE	39801	67/11/	7	18	35		5.0	7.5	5.2	7.7	2.50	0.80	80.0	360.0	900.	FLASHING	--MK	51.5
STADE/ELBE	39802	67/11/	4	17	55		5.0	7.5	5.2	7.7	2.50		89.0	360.0	900.	FLASHING	--MK	65.6
STADE/ELBE	39806	67/11/12	17	18			5.5	8.0	5.7	8.2	2.72	0.80	85.0	360.0	900.	FLASHING	--MK	49.5
PEIDELBERG	39807	67/11/13	20	39			4.8	6.8	4.6	6.6	2.53		48.0	324.0	1110.	FLASHING	--MK	73.5
PEIDELBERG	39814	67/11/20	20	9			4.4	6.4	4.7	6.7	2.57		86.0	41.0	865.	FLASHING	--GLU	83.8
PEIDELBERG	39815	67/11/21	19	26			4.6	5.2	4.7	5.3	2.55		60.0	348.0	970.	FLASHING	--GLU	45.6
PEIDELBERG	39815	67/11/21	21	27			4.5	6.7	4.6	6.8	2.54		59.0	240.0	970.	FLASHING	--GLU	69.4
PEIDELBERG	39816	67/11/22	19	44			5.0	7.0	4.7	6.7	2.59		44.0	316.0	1140.	FLASHING	--GLU	58.5
PEIDELBERG	39826	67/12/	2	19	14		4.5	6.5	4.8	6.6	2.54		57.0	293.0	945.	FLASHING	--GLU	96.5
PEIDELBERG	39826	67/12/	2	19	16		5.7	8.0	4.9	7.2	2.63		30.0	236.0	1435.	FLASHING	--GLU	62.5
STADE/ELBE	39906	68/	2/20	13	2		5.5	8.0	5.3	7.9	3.46	0.40	85.0	360.0	1100.	FLASHING	--GLU	78.4
STADE/ELBE	39910	68/	2/24	14	25		5.0	7.5	4.9	7.4	3.50		85.0	360.0	1050.	FLASHING	--GLU	89.1
PEIDELBERG	39968	68/	4/12	23	34		5.2	5.7	4.5	5.0	4.28		40.0	41.0	1365.	FLASHING	--MK	69.6
STADE/ELBE	39972	68/	4/26	22	59		5.5	8.5	5.1	4.1	4.31		45.0	140.0	1220.	FLASHING	--MK	75.4
PEIDELBERG	39973	68/	4/27	22	21		5.0	5.8	4.3	5.1	4.30		34.0	40.0	1395.	VAR	--GLU	81.4
PEIDELBERG	39974	68/	4/28	21	40		5.0	7.4	5.6	8.0	4.30		40.0	235.0	760.	FLASHING	--GLU	36.0
STADE/ELBE	39979	68/	5/	3	22	23	5.5	9.0	5.4	4.9	4.42		77.0	180.0	1050.	FLASHING	--MK	70.1
STADE/ELBE	39994	68/	5/19	22	39		4.5	9.0	4.5	9.0	4.60		49.0	5.0	1000.	FLASHING	--MK	69.8
																		57.9
																		74.8

SDC NO. 1613 65-78A OVI-2 USA LAUNCHED 65/10/ 5 IN ORBIT
PERIOD = 125.7 PERIGEE = 250.4 APOGEE = 2151.2 INCL = 144.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
VAN NUYS-F	39146	66/	1/21	5	26	7.7	5.9				0.30	59.6	210.1	2330.		TP ABOUT 12.7 SEC. MIN INVT--JGM	--JGM	54.3	
VAN NUYS-F	39147	66/	1/22	4	32	7.0	5.4				12.54	74.8	202.8	2130.		MOSTLY UNDER +11.0	--JGM	55.6	
VAN NUYS-F	39148	66/	1/23	5	34	7.5	5.7					62.5	215.0	2320.		FLASH	--JGM	52.2	
VAN NUYS-F	39149	66/	1/24	4	39	6.5	4.9				12.50	78.0	210.3	2150.		MAX +6.5 TO +7.5, GOOD TP	--JGM	54.0	
SEFERSBURG	39437	66/11/	1	1	29	5.0	3.7	3.7				72.7	298.1	1800.		ONE FLASH	--FK	68.6	
AUSTIN	39907	68/	2/21	3	17	9.7	8.2				0.10	79.0	352.0	2050.		MIN UNDER +11.5	--JGM	56.0	
VAN NUYS-F	39910	68/	2/24	4	17	9.7	8.2					80.0	161.0	2000.		FLASHING. MIN UNDER +11.5	--JGM	53.2	
VAN NUYS-F	39911	68/	2/25	3	19	7.8	6.1				46.30	0.20	64.0	152.0	2190.			--JGM	58.8

SDC NO. 1616 65-78B ROCKET BODY USA LAUNCHED 65/10/ 5 IN ORBIT
PERIOD = 125.7 PERIGEE = 257.2 APOGEE = 2142.5 INCL = 144.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
VAN NUYS-F	39143	66/	1/18	3	24	8.8	11.5	7.5	10.2		7.08		40.2	198.8	1800.			--JGM	67.0
VAN NUYS-F	39144	66/	1/19	2	29	8.2	7.1						88.6	12.9	1660.		VARIABLE	--JGM	73.1
VAN NUYS-F	39144	66/	1/19	4	24	8.8	7.2						69.3	205.5	2070.		MIN BELOW +10.5	--JGM	60.9
VAN NUYS-F	39146	66/	1/21	4	30	9.2	7.6						73.0	203.9	2110.		MIN UNDER +11.0	--JGM	57.1
VAN NUYS-F	39148	66/	1/23	4	36	9.0	11.3	7.3	9.6				76.4	202.2	2140.			--JGM	53.8
VAN NUYS-F	39885	68/	2/	3	3	10	9.3	10.2	9.1	9.0			84.0	358.0	1750.			--JGM	67.6
VAN NUYS-F	39893	68/	2/	7	3	0	9.7	8.3			4.43		49.0	350.0	1870.		WHOLE TP. MIN UNDER +11	--JGM	70.7

SDC NO. 1620 65-81A OGO 2 USA LAUNCHED 65/10/14 IN ORBIT
PERIOD = 104.4 PERIGEE = 257.3 APOGEE = 942.6 INCL = 87.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39635	65/10/22	3	54	5.0	5.0	6.8						45.0	190.0	430.	STEADY	--MK	71.6
STADE/ELBE	39237	66/	4/22	0	21	5.0	7.5	6.0	9.5		73.00	5.00	52.0	100.0	645.	FLASHING	--MK	75.5
HEIDELBERG	39261	66/	5/16	21	11	5.3	8.5	4.8	7.5	6.2.00			24.00	79.0	1590.	ONE SHORT SEC. MAX. ABOUT 45FC	--GLU	64.6
HEIDELBERG	39261	66/	5/16	22	55	4.0	7.7	4.2	7.0	61.00			45.0	114.0	033.	NORMAL TUMBLING	--GLU	72.7

NOT REPRODUCIBLE

ALL INFORMATION

STATION NAME	MJ	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OPS	PHASE
HEIDELBERG	39262	66/	5/17		21	32	5.2	8.5	4.6	7.9	63.00		39.0	81.0	1300.	NORMAL TUMBLING	--GLU	65.6
HEIDELBERG	39263	66/	6/	4	21	4	4.3	7.8	4.5	8.0	61.50		79.0	73.0	901.	NORMAL TUMBLING	--GLU	75.5
STADE/ELBE	39466	66/12/	7		5	42	7.0	7.0	8.5	8.5			80.0	260.0	500.	STEADY	--MK	67.4
PHOENIX R	39468	66/12/	9		1	40	8.0	9.0	7.9	8.9					1030.	PACKED 25 SEC 1-5 MAG FLASH	--RRR	105.5
STADE/ELBE	39477	66/12/18			16	46	7.5	7.5	7.3	7.3	74.00		60.0	260.0	1100.	STEADY OCCAS SHORT FLICKER	--MK	31.5
STADE/ELBE	39577	67/	3/28		19	30	5.0	7.5	4.1	8.6			43.0	100.0	600.	SLOWLY FLASHING	--MK	81.5
STADE/ELBE	39579	67/	3/30		20	7	6.0	6.0	7.6	7.6	79.00		75.0	260.0	480.	STEADY	--MK	25.5
STADE/ELBE	39581	67/	4/	1	19	59	5.0	6.0	6.5	7.5			33.0	100.0	500.	SLOWLY FLASHING	--RRR	80.9
PHOENIX R	39582	67/	4/	2	3	37	5.0	5.0	5.9	5.9			40.0	15.2	650.	STEADY	--MK	95.6
STADE/ELBE	39583	67/	4/	3	19	37	5.0	5.0	5.8	5.8			53.0	160.0	680.	STEADY SHORT OPS CLOUDS	--RRR	80.7
PHOENIX R	39587	67/	4/	7	3	24	7.0	7.0	8.5	8.5			79.3	270.2	490.	STEADY	--GLU	83.9
HEIDELBERG	39592	67/	4/12		18	54	4.2	5.8	5.2	6.8	90.00		85.0	10.0	620.	SLOWLY FLASHING	--MK	66.8
STADE/ELBE	39672	67/	7/	1	0	7	4.5	5.5	5.8	6.8			40.0	260.0	550.	STEADY OCCAS SLOWLY VARYING	--GLU	64.3
HEIDELBERG	39672	67/	7/	1	22	42	4.5	4.5	5.1	5.1			74.0	100.0	750.	STEADY	--GLU	72.8
STADE/ELBE	39675	67/	7/	4	23	34	4.5	6.0	6.0	7.5			65.0	260.0	500.	SLOWLY VARYING	--MK	59.2
STADE/ELBE	39676	67/	7/	5	22	7	7.5	7.5	8.0	8.0			22.0	100.0	800.	STEADY OCCAS FAINT FLICKER	--MK	69.2
STADE/ELBE	39676	67/	7/	5	23	52	5.0	7.5	6.0	8.5			37.0	260.0	630.	REGULAR SLOWLY FLASHING	--GLU	60.5
HEIDELBERG	39677	67/	7/	6	22	28	6.0	6.0	6.7	6.7			35.0	100.0	730.	STEADY	--MK	76.5
STADE/ELBE	39684	67/	7/13		22	45	5.0	8.0	6.1	9.1			75.0	260.0	600.	SLOWLY FLASHING	--MK	77.7
STADE/ELBE	39653	67/	7/22		21	55	7.5	7.5	8.0	8.0			85.0	260.0	800.	STEADY	--MK	71.9
AUSTIN	39700	67/	7/29		5	0	6.5		6.5				62.0	273.0	1011.		--MK	15.6
STADE/ELBE	39777	67/10/14			3	53	4.5	5.0	5.4	5.9			33.0	260.0	650.	ST WITH FLASHES UNEQUAL MAX	--MK	59.4
STADE/ELBE	39959	68/	4/13		22	59	4.5	7.5	4.8	7.8	83.00		75.0	100.0	870.	SLOWLY TUMB	--MK	63.1
STADE/ELBE	39960	68/	4/14		23	11	6.5	6.5	6.9	6.9			88.0	260.0	825.	ST MORN	--MK	60.4
STADE/ELBE	39965	68/	4/19		22	30	5.0	7.0	5.2	7.2			74.0	100.0	930.	SLOWLY TUMB	--MK	69.1
STADE/ELBE	39972	68/	4/26		22	10	4.5	6.0	5.2	6.7			89.0	260.0	740.	SLOWLY VAR	--MK	

SUC NO. 1621 65-82A MOLNIYA 10 USSR LAUNCHED 65/10/14 IN ORBIT
PERIOD = 710.0 PERIGEE = 299.3 APOGEE = 24017.5 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39585	67	3	16	19	26	8.0	8.0	8.6	8.6	4.6		35.0	55.0	750.	STEADY OCCAS SCINTILLATE	--	NR 53.6
																SATELLITE 65-00A MOLNIYA 10	--	
																REFLECT DECAY NORMAN RLTM 21	--	
																ISSUE DATE MAR 16 1967	--	

SUC NO. 1624 65-82A FRAGMENT USA LAUNCHED 65/10/15 IN ORBIT
PERIOD = 100.0 PERIGEE = 447.4 APOGEE = 492.7 INCL = 32.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	37114	65	12	27	14	2	9.2		10.7				60.8	191.0	510.		--	NR 85.5

SUC NO. 1625 65-010 AGENA D USA LAUNCHED 65/10/14 IN ORBIT
PERIOD = 104.4 PERIGEE = 252.3 APOGEE = 945.7 INCL = 87.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
STADE/ELBE	39052	65	10	19	14	4	5.0	7.0	4.6	6.4			25.0	280.0	1220.	SLOWLY TUMBLING	--	NR 137.7	
STADE/ELBE	39055	65	10	22	17	25	2.5	3.0	5.0	5.5			40.0	260.0	312.	STEADY AND SLOWLY TUMBLING	--	NR 88.9	
STADE/ELBE	39055	65	10	22	17	25	5.0	7.0	5.1	7.1	120.00		33.0	260.0	953.	SLOWLY TUMBLING TWO MINUTES	--	NR 137.8	
STADE/ELBE	39237	66	4	22	0	52	4.5	8.0	5.5	9.0	2.74		0.40	85.0	100.0	623.	FLASHING WITH MULTIPLE FLASH	--	NR 69.7
STADE/ELBE	39245	66	4	30	1	13	7.0	9.0	6.3	8.3	2.40		0.50	33.0	135.0	1350.	FLASHING	--	NR 127.4
STADE/ELBE	39467	66	12	10	16	29	5.0	9.0	4.8	8.8	1.18		0.40	55.0	143.0	1100.	REGULAR FLASHING	--	NR 70.7
STADE/ELBE	39577	67	3	28	20	15	4.0	9.0	5.6	9.6	1.25		0.40	75.0	260.0	480.	REGULAR FLASHING	--	NR 79.7
STADE/ELBE	39579	67	3	30	14	8	5.0	9.0	5.0	9.0	2.55		0.40	33.0	100.0	653.	REGULAR FLASHING	--	NR 22.0
STADE/ELBE	39570	67	3	30	20	53	5.0	9.0	5.0	9.0	2.55		0.40	33.0	100.0	650.	REGULAR FLASHING	--	NR 102.8
STADE/ELBE	39561	67	4	1	19	43	4.5	9.0	5.0	10.4			0.40	100.0	530.	REGULAR SHARP FLASHING	--	NR 70.6	
STADE/ELBE	39675	67	7	4	23	1	3.0	6.0	6.7	7.7	3.40		0.40	65.0	450.	BRIGHT FLASHES	--	NR 71.2	
STADE/ELBE	39676	67	7	5	23	14	2.5	6.5	4.5	4.5	3.87		0.40	65.0	403.	SHARP FLASHING	--	NR 76.3	
STADE/ELBE	39681	67	7	10	22	54	3.5	6.5	4.0	7.0	3.04		0.40	65.0	523.	SHARP FLASHES	--	NR 75.9	

NOT REPRODUCIBLE

ALL INFORMATION

SDC NO. 1641 65-82C FRAGMENT USA LAUNCHED 65/10/15 IN ORBIT
 PERIOD = 99.6 PERIGEE = 455.5 APGEE = 475.3 INCL = 32.3
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 VAN NUYS-F 39114 65/12/20 13 5 6.6 6.6 8.1 8.1 72.4 180.0 490. 82F --JGM 73.2

SDC NO. 1646 65-82H FRAGMENT USA LAUNCHED 65/10/15 IN ORBIT
 PERIOD = 99.6 PERIGEE = 455.5 APGEE = 463.5 INCL = 32.3
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 VAN NUYS-F 39112 65/12/14 13 3 5.8 5.8 7.3 7.3 74.7 180.0 490. 82H --JGM 72.3
 VAN NUYS-F 39114 65/12/20 13 11 5.4 5.8 7.3 7.3 70.2 180.0 500. 82H --JGM 75.4
 VAN NUYS-F 39141 66/ 1/16 1 48 6.5 6.5 8.0 8.0 62.7 190.0 510. 82H --JGM 95.2
 VAN NUYS-F 39143 66/ 1/18 1 55 7.2 7.2 8.2 8.2 42.3 197.5 630. --JGM 108.3

SDC NO. 1668 65-82AF FRAGMENT USA LAUNCHED 65/10/15 IN ORBIT
 PERIOD = 99.9 PERIGEE = 457.9 APGEE = 478.5 INCL = 32.1
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 VAN NUYS-F 39114 65/12/20 13 4 5.3 5.6 6.8 7.1 70.6 180.0 500. TP MAYBE 1 SEC, 82AF --JGM 74.6

SDC NO. 1701 65-87A PROTON 2 USSR LAUNCHED 65/11/ 2 DECEASED 27 /65
 PERIOD = 92.6 PERIGEE = 114.1 APGEE = 180.3 INCL = 63.5
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STADE/ELBE 29121 65/12/27 5 16 3.1 3.1 4.1 4.1 45.0 220.0 156. STEADY --WK 77.5

SDC NO. 1702 65-878
 PERIOD = 92.6 PERIGEE = 114.3 APOGEE = 385.2 INCL = 63.5
 LAUNCHED 65/11/ 2 DECAYED 1/ 4/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	39102	65/12/ 8	5	57	2.0	5.0	6.1	9.1	37.50	1.00	55.0	305.0	150.	FLASHING			-- OBS --
																	-- HK -- 44.2

SDC NO. 1716 65-828X
 PERIOD = 100.4 PERIGEE = 456.1 APOGEE = 505.8 INCL = 32.7
 LAUNCHED 65/10/15 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
VAN NUYS-F	39114	65/12/20	13	13	6.3	6.3	7.8	7.8	0.47	0.10	44.5	198.0	490.			828X	-- JGW -- 74.9
VAN NUYS-F	39141	66/ 1/16	3	17	6.5	7.4										WHOLE TP 4X THIS, MIN INVIS, -- JGW -- 88.4	
VAN NUYS-F	39143	66/ 1/18	2	2	6.3	7.5			1.83	52.3	194.0	580.				3 FLASHES AND HOLE PER CYCLE -- JGW -- 99.3	
																WHOLE TP, 3 FLASHES OF DIFF -- JGW --	
																MAG AND GAP PER CYCLE	

SDC NO.	1726	65-89A	PERIOD =	EXPLORER 29	USA	LAUNCHED 65/11/16	IN ORBIT										
				PERIGEE = 120.3	PERIGEE = 692.8	APOGEE = 1414.9	INCL = 59.4										
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE		
EDINBURG	39082	65/11/18	8	56	5.0	4.6							64.3	17.4	1205.		
EDINBURG	39087	65/11/23	7	7	4.3	3.6							53.9	170.5	1412.		
EDINBURG	39087	65/11/23	7	13	3.8	3.1							53.8	64.6	1375.		
EDINBURG	39100	65/12/ 6	3	53	5.2	4.3							44.5	147.1	1505.		
EDINBURG	39107	65/12/13	2	21	6.5	5.8										1412.	
EDINBURG	39107	65/12/13	4	29	5.5	4.8										1365.	
VAN NUYS-F	39112	65/12/18	2	42	9.5	8.2	8.2						40.6	117.4	1800.		
EDINBURG	39114	65/12/20	2	52	9.0	8.4							53.1	313.0	1327.		
VAN NUYS-F	39125	65/12/31	1	33	9.3	8.6	8.6						81.0	308.9	1350.		
VAN NUYS-F	39127	66/ 1/ 2	1	42	9.5	8.7	8.7						61.0	315.0	1450.		
VAN NUYS-F	39127	66/ 1/ 2	3	51	9.7	10.2	8.1	8.6					22.8	339.7	2120.		
VAN NUYS-F	39140	66/ 1/15	2	46	10.3	10.8	8.5	9.0					16.1	1.8	2270.		
DURBAN B	39169	66/ 2/13	19	16	9.5	8.6							21.0	229.0	1500.		
STPETERSBURG	39177	66/ 2/21	10	36	7.0	7.0	0.0	0.0									
STPETERSBURG	39196	66/ 3/12	7	54	9.0	9.0	0.0	0.0									
ROCHESTER	39200	66/ 3/16	6	13	8.0	9.0	7.0	8.0				3.00					
STPETERSBURG	39200	66/ 3/16	8	11	9.0	9.0	0.0	0.0									
ROCHESTER	39200	66/ 3/16	8	17	7.0	9.0	6.0	8.0				3.00					
DURBAN B	39201	66/ 3/17	17	39	8.0	8.0	6.5						70.2	350.0	1600.		
EDINBURG	39206	66/ 3/22	4	18	4.8	4.2							17.0	127.0	2000.		
													26.7	124.6	1290.		
STPETERSBURG	39216	66/ 4/ 1	3	2	8.0	8.0	7.3	7.3					80.7	17.3	1358.		
STPETERSBURG	39218	66/ 4/ 3	3	9	8.0	8.0	7.3	7.3									
EDINBURG	39219	66/ 4/ 4	5	10	7.0	7.0	6.3	6.3					81.9	173.8	1395.		
EDINBURG	39220	66/ 4/ 5	3	15	6.2	6.2	5.5	5.5					92.1	300.4	1397.		
STPETERSBURG	39222	66/ 4/ 7	1	23	7.0	6.2	6.2						68.0	66.1	1450.		

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
EDINBURG	39223	66/	4/	8	3	29	8.2	8.2	7.2	7.2	7.2		50.6	314.7	1580.	STEADY	-- PM	94.4
EDINBURG	39223	66/	4/	8	3	33	7.0	7.0	5.7	5.7	5.7		39.5	354.8	1785.	STEADY	-- PM	90.5
STPETERSBURG	39224	66/	4/	9	1	31	8.0	8.0	7.3	7.3	7.3		79.0	320.9	1393.		--FJK	77.9
EDINBURG	39227	66/	4/	12	1	41	7.5	7.5	6.9	6.9	6.9		81.8	0.0	1440.	STEADY	-- PM	81.2
CLEVELAND	39249	66/	5/	4	3	35	6.0	6.0	5.2	5.2	5.2		64.3	38.2	1449.		-- DS	74.4
CLEVELAND	39250	66/	5/	5	3	39	8.0	8.0	7.3	7.3	7.3		71.7	41.5	1387.		-- DS	59.9
VAN NUYS-F	39251	66/	5/	6	5	45	9.0	9.0	8.0	8.0	8.0		49.4	40.6	1600.	LAMP FLASHES AT 5 45, 5 46	--JGM	74.7
CLEVELAND	39252	66/	5/	7	1	41	7.0	7.0	5.7	5.7	5.7		43.4	23.0	1792.		-- DS	90.5
VAN NUYS-F	39252	66/	5/	7	4	50	9.0	9.0	8.1	8.1	8.1		56.7	43.5	1490.		--JGM	59.8
STPETERSBURG	39253	66/	5/	8	3	53	8.0	8.0	0.0	0.0	0.0		47.0	356.0		ALINK 3 SEC	--FJK	90.2
EDINBURG	39253	66/	5/	8	3	53	8.7	9.0	7.3	7.6	7.6		32.7	40.9	1938.	SLIGHT VARIATION, 7 FLASHES	-- PM	75.7
EDINBURG	39254	66/	5/	9	3	58	8.0	8.0	6.8	6.8	6.8		38.5	43.7	1778.	SEEN, FL MAX +4 TO +5.2 MAC, 41	--	71.5
STPETERSBURG	39255	66/	5/	10	4	5	7.0	7.0	6.5	6.5	6.5		20.0	345.5	1260.	STEADY	--FJK	59.3
EDINBURG	39256	66/	5/	11	4	0	9.5	7.0	7.0	7.0	7.0		27.1	347.2	2052.	ALINK NOT SEEN TRACK 15 SEC	-- PM	113.2
EDINBURG	39256	66/	5/	11	4	5	8.5	8.5	7.5	7.5	7.5		48.2	18.1	1555.	4LMP FL MAX +4.0, 4FL SEEN, VA	-- PM	91.9
EDINBURG	39256	66/	5/	11	4	7	8.0	8.0	7.1	7.1	7.1		53.8	48.9	1484.	4LMP FL MAX +4.0, 7FL SEEN, ST	-- PM	52.7
EDINBURG	39256	66/	5/	11	4	12	4.5	3.2	3.2	3.2	3.2		26.6	104.2	1780.	NO FLASHES HERE, GENS STEADY	-- PM	29.4
EDINBURG	39257	66/	5/	12	4	12	7.5	7.5	6.8	6.8	6.8		43.8	51.3	1366.	GENS INV, 4LMP FL MAX, 5FL SEEN	-- PM	58.5
EDINBURG	39257	66/	5/	12	4	17	5.5	4.3	4.3	4.3	4.3		37.3	118.9	1755.	FLASH MAX, GENS NOT SEEN, 3	-- PM	17.5
STPETERSBURG	39258	66/	5/	13	2	15	8.0	8.0	0.0	0.0	0.0		38.7	77.4		4LMP FLASHES SIGHTED	--	45.4
STPETERSBURG	39258	66/	5/	13	2	17	9.0	9.0	0.0	0.0	0.0		33.5	89.5		TRACKED FROM ABOVE NO CHANGE	--FJK	35.7
STPETERSBURG	39258	66/	5/	13	4	16	9.0	9.0	0.0	0.0	0.0		47.5	294.0		TRACKED FROM ABOVE NO CHANGE	--FJK	79.8
STPETERSBURG	39258	66/	5/	13	4	18	10.0	10.0	0.0	0.0	0.0		53.0	250.2		STEADY 20 SECONDS TRACKING	--JGM	59.1
VAN NUYS-F	39258	66/	5/	13	6	16	8.3	8.8	8.1	8.1	8.1		59.1	237.9	1410.		--FJK	59.3
WALNUT CREEK	39259	66/	5/	14	5	19	8.0	8.0	7.1	7.1	7.1		52.5	238.7	1512.		--FJK	52.7
STPETERSBURG	39260	66/	5/	15	2	23	7.0	7.0	0.0	0.0	0.0		50.5	71.7		TRACKED FROM ABOVE NO CHANGE	--FJK	21.2
STPETERSBURG	39260	66/	5/	15	2	26	9.0	9.0	0.0	0.0	0.0		40.2	112.5	1440.	LAMP FLASHES AT 4 21	--JGM	70.8
VAN NUYS-F	39260	66/	5/	15	4	19	9.0	9.0	8.2	8.2	8.2		60.8	46.7		TRACKED FROM ABOVE NO CHANGE	--FJK	59.9
STPETERSBURG	39261	66/	5/	16	2	26	7.0	7.0	0.0	0.0	0.0		72.1	59.8		SMALL FLASHES	--FJK	17.9
STPETERSBURG	39261	66/	5/	16	2	31	9.0	9.0	0.0	0.0	0.0		43.5	125.1	1360.		--JGM	70.1
VAN NUYS-F	39261	66/	5/	16	4	24	8.7	9.0	8.0	8.3	8.3		72.3	48.6	1425.	STEADY 4 MINUTES TRACKING	--DS	77.9
CLEVELAND	39262	66/	5/	17	2	27	8.0	8.0	7.2	7.2	7.2		64.5	234.2	1740.	EXCISE 5 FLASHES UP 1 OR 2	--DEC	75.4
WALNUT CREEK	39262	66/	5/	17	4	27	7.0	8.0	6.4	7.4	7.4	4.00	93.0	49.0		MAC PER EST 4 SECONDS UT0420--DEC	--DEC	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39262	66/	5/17	4	28	8.5	8.5	8.8	7.9	8.2		0.10	82.9	51.7	1320.	LAMP FLASHES AT 4 28, 4 33	--JGM	70.4
VAN NUYS-F	39263	66/	5/18	4	33	9.0	9.0	9.0	8.4	8.4			85.5	231.2	1300.	GFOS ST, 7-3LMP FL SEEN, 6FLSH--	--JGM	71.9
EDINBURG	39264	66/	5/19	2	34	8.5	8.5	8.5	7.6	7.6			50.8	7.8	1525.	NE MAX+5.5, 7TH FL NE MAX+4.5--	--PM	91.8
EDINBURG	39264	66/	5/19	2	39	7.5	7.5	7.5	6.7	6.7			60.9	50.6	1422.	GFOS STILL ST, UNPROGRAMMED	--PM	55.3
EDINBURG	39265	66/	5/20	2	39	8.5	8.5	8.5	7.8	7.8			59.8	1.0	1405.	7 FL SH SEQUENCE SEEN, FMAX 6.7--	--PM	89.9
STPETERSBURG	39302	66/	6/26	8	19	9.0	9.0	9.0	0.0	0.0			34.5	85.0	1450.	PROGRAM 7FL 3-LAMP SEQUENCES--	--FJK	52.7
PHOENIX R	39321	66/	7/15	5	27	8.0	8.0	8.0	7.2	7.2			47.2	180.0	1109.	SEEN PLUS TWO NOT PROGRAM AS--	--RKR	42.7
SAN ANTONIO	39327	66/	7/21	3	44	7.5	7.5	7.5	7.3	7.3			78.0	360.0	1271.	IT WAS TRACKED ABOUT 505 SEC--	--RKR	81.8
STADE/ELBE	39352	66/	8/15	21	45	8.0	8.0	8.0	7.5	7.5			62.2	282.5	1771.	NO FL OR SV2L AND SV2L PUSSED--	--RKR	70.1
PHOENIX R	39357	66/	8/20	6	9	7.0	7.0	7.0	5.8	5.8			55.7	43.3	1568.	NO CHANGE EXCEPT FLASHED	--RKR	57.5
PHOENIX R	39359	66/	8/22	6	19	7.0	7.0	7.0	6.0	6.0			34.7	37.8	1947.	FLASHES 7 MAG	--RKR	75.5
SAN ANTONIO	39361	66/	8/24	4	24	9.0	9.0	9.0	7.6	7.6			40.5	40.5	1800.	ST, ONE 7-FLASH SEQUENCE NOT--	--RKR	59.9
PHOENIX R	39364	66/	8/27	4	35	8.0	8.0	8.0	6.7	6.7			43.0	47.0	1680.	STEADY AND FAINT VARYING	--RKR	55.4
PHOENIX R	39365	66/	8/28	4	39	8.0	8.0	8.0	6.9	6.9			53.1	42.4	1580.	TRACKED 150 SEC NO FLASH	--RKR	53.9
PHOENIX R	39366	66/	8/29	4	44	8.0	8.0	8.0	7.0	7.0			32.7	36.9	1971.	TRACKED 120 SEC NO FLASH	--RKR	58.8
SAN ANTONIO	39368	66/	8/31	2	49	6.0	6.0	6.0	4.5	4.5			80.9	51.2	1382.	NO SATELLITE JUST 2-5 MAG FL	--DM	56.4
PHOENIX R	39369	66/	9/1	4	57	7.0	7.0	7.0	6.3	6.3			88.1	228.6	1374.	NO 4TH-LAMP FLASH	--RKR	54.4
PHOENIX R	39370	66/	9/2	5	2	8.0	8.0	8.0	7.3	7.3			76.8	234.5	1405.	NO 4TH-LAMP FLASH TRX 1505	--RKR	54.4
PHOENIX R	39371	66/	9/3	5	17	7.0	7.0	7.0	6.3	6.3			82.9	230.0	1362.	NO FLASH TO 120 SEC	--RKR	54.5
WALNUT CREEK	39372	66/	9/4	5	8	7.0	7.0	7.0	6.3	6.3	0.65		66.0	237.0	1475.	NO FLASH TO 35 SEC	--DMG	52.3
PHOENIX R	39372	66/	9/4	5	11	7.0	7.0	7.0	6.2	6.2			56.0	239.2	1582.	NO FLASH TO 25 SEC	--RKR	50.3
PHOENIX R	39373	66/	9/5	5	15	7.0	7.0	7.0	6.0	6.0			47.0	241.3	1719.	NO FLASH TO 35 SEC	--RKR	55.1
PHOENIX R	39374	66/	9/6	5	20	7.0	7.0	7.0	5.8	5.8			39.0	244.0	1880.	NO FLASH TO 55 SEC	--RKR	70.0
PHOENIX R	39375	66/	9/7	5	24	9.0	9.0	9.0	7.6	7.6			73.0	48.4	1390.	NO FLASH TO 55 SEC	--RKR	75.5
VAN NUYS-F	39377	66/	9/9	3	26	8.2	8.2	8.2	7.5	7.5			80.0	238.4	1360.	TO 42 SEC NO NONLAMP FLASH	--JGM	55.0
PHOENIX R	39378	66/	9/10	3	32	8.0	8.0	8.0	7.3	7.3			51.0	242.5	960.	STEADY	--RKR	73.3
PHOENIX R	39449	66/	11/20	3	17	8.0	8.0	8.0	8.3	8.3			75.0	346.9	700.		--RKR	89.9
STPETERSBURG	39454	66/	11/25	23	37	6.0	6.0	6.0	6.8	6.8			83.0	360.0	740.		--FK	75.0
STADE/FIRE	39460	66/	12/10	16	44	7.8	7.8	7.8	8.5	8.5			32.5	24.5	1375.	STEADY	--FK	73.3
STPETERSBURG	39490	66/	12/31	0	17	8.0	8.0	8.0	7.3	7.3	1.00						--FK	45.5

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STPETERSBURG	39491	67	1	1	0	25	8.0	6.0	7.5	5.9	1.00		43.0	75.0	1250.		--FK	21.7
STPETERSBURG	39495	67	1	5	0	39	6.0	6.0	5.9	5.9	1.50		66.0	299.0	1050.		--FK	84.5
STPETERSBURG	39496	67	1	5	0	47	7.0	7.0	7.8	6.9	1.50		39.5	284.1	1100.		--FK	110.3
STPETERSBURG	39554	67	3	5	1	41	7.0	7.0	6.8	6.9	4.00		53.7	171.3	1100.		--FK	55.9
STPETERSBURG	39556	67	3	7	1	52	7.0	9.0	7.0	9.0	3.50		77.5	347.5	1000.		--FK	54.4
STPETERSBURG	39558	67	3	9	2	4	8.0	10.0	7.8	9.8			36.0	359.3	1100.		--FK	90.9
STADE/ELBE	39579	67	3	30	19	37	8.0	8.0	8.5	8.5			60.0	360.0	800.	STEADY	--HK	90.3
STPETERSBURG	39599	67	4	19	1	3	8.0	8.0	8.2	8.2			31.8	75.9	900.		--FK	35.3
STPETERSBURG	39654	67	6	13	3	51	8.0	8.0	7.0	7.0			49.0	75.7	1600.		--FK	57.0
STPETERSBURG	39657	67	6	16	4	7	7.0	7.0	6.3	6.3			81.0	6.0	1380.		--FK	53.3
STPETERSBURG	39661	67	6	20	1	10	9.0	9.0	8.1	8.1			46.5	75.5	1500.		--FK	54.9
STADE/ELBE	39684	67	7	13	27	5	8.0	8.0	7.8	7.8	2.00		73.0	360.0	1090.	STEADY SHORT ORS HAZE	--HK	93.6
STPETERSBURG	39777	67	10	14	1	14	8.0	9.0	0.0	0.0	2.00						--FK	
STPETERSBURG	39778	67	10	15	1	20	8.0	9.0	0.0	0.0	2.00						--FK	
STPETERSBURG	39780	67	10	17	1	26	7.5	9.0	0.0	0.0	2.00						--FK	
STPETERSBURG	39782	67	10	19	1	37	8.0	9.0	0.0	0.0	2.00						--FK	
STPETERSBURG	39784	67	10	21	1	43	9.0	10.0	0.0	0.0	2.00						--FK	
GRANBY	39784	67	10	21	23	47	8.5	8.5	7.5	7.5			55.0	160.0	1550.	STEADY	--MPC	59.6
GRANBY	39786	67	10	23	23	58	8.0	8.0	7.3	7.3			81.0	149.0	1365.	VARYING, NOT XENON LAMPS	--MPC	51.8
GRANBY	39789	67	10	26	0	13	8.3	8.3	7.4	7.4			62.0	10.0	1525.	VARYING, MAYBE VARYING	--MPC	55.9
STPETERSBURG	39790	67	10	27	0	5	0.1	10.0	0.0	0.0	2.00		59.5	312.1			--FK	94.5
GRANBY	39794	67	10	31	0	30	8.0	8.3	6.9	7.2			49.0	337.0	1650.	DEFINITELY VARYING	--MPC	85.3
STADE/ELBE	39801	67	11	7	19	5	9.0	9.0	8.1	8.1			68.0	360.0	1520.	ST	--HK	57.1
GRANBY	39820	67	11	26	0	26	8.0	8.0	7.3	7.3			72.0	99.0	1410.	REG VAR, MIN REINH 3.5	--MPC	38.5
STPETERSBURG	39821	67	11	27	0	31	8.5	8.5	0.0	0.0			35.7	27.3			--FK	44.9
STPETERSBURG	39822	67	11	28	0	38	9.0	9.0	0.0	0.0			43.1	49.2			--FK	29.2
GRANBY	39823	67	11	29	22	37	8.2	8.2	7.3	7.3			57.0	28.0	1530.	REG VAR, MIN INV.	--MPC	55.0
GRANBY	39824	67	11	30	0	45	8.2	8.2	7.3	7.3			63.0	219.0	1500.	REG VAR, MIN INV.	--MPC	70.4
STPETERSBURG	39826	67	12	2	0	55	9.0	9.0	0.0	0.0			78.9	19.0			--FK	54.8
STPETERSBURG	39888	68	2	2	1	57	7.0	9.0	0.0	0.0			40.9	199.3		TO EST 1 SEC	--FK	79.5
STPETERSBURG	39890	68	2	4	7	8	7.0	9.0	0.0	0.0			67.3	289.0		TO ESTIMATE 1 SEC	--FK	72.8
STPETERSBURG	39894	68	2	8	0	23	7.5	7.5	7.7	7.7			48.0	72.6	900.		--FK	33.3
STADE/ELBE	39910	68	2	24	19	42	8.3	8.3	7.7	7.7			65.0	358.0	1300.	ST	--HK	75.3
STADE/ELBE	39911	68	2	25	19	46	8.0	9.7	7.2	7.9			63.0	5.0	1450.	FAINT VAR	--HK	73.3
STADE/ELBE	39917	68	3	2	20	13	7.5	7.5	7.1	7.1			78.0	359.0	1230.	ST	--HK	58.3
STPETERSBURG	39932	68	3	17	1	17	7.5	7.5	0.0	0.0			52.8	52.0			--FK	47.9
STPETERSBURG	39933	68	3	18	1	22	7.5	7.5	0.0	0.0			62.2	54.7			--FK	50.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39934	68	3	19	1	26	7.5	7.5	0.0	0.0			72.8	56.9			--FK	54.9
STPETERSBURG	39935	68	3	20	1	31	7.5	7.5	0.0	0.0			84.6	56.5			--FK	51.4
STPETERSBURG	39937	68	3	22	1	39	8.5	9.5	0.0	0.0	2.00						--FK	

SDC NO. 1729 65-89R ALTAR ROCKET USA LAUNCHED 65/11/6 IN ORBIT
PERIOD = 120.3 PERIGEE = 692.2 APOGEE = 1414.2 INCL = 59.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39925	68	3	10	3	40	9.0	8.0					50.0	17.0	1600.	APX PER 5 SEC	--MM	53.6

SDC NO. 1738 65-92A EXPLORER 30 USA LAUNCHED 65/11/19 IN ORBIT
PERIOD = 100.8 PERIGEE = 437.4 APOGEE = 553.6 INCL = 59.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39240	66	4	25	20	53	8.0	9.0	9.9	9.9	0.55	0.20	55.0	360.0	655.	FLASHING FAINT FLASHES	--HK	102.1
STADE/ELBE	39241	66	4	26	20	23	8.0	9.0	10.0	10.0	1.00	0.50	60.0	360.0	640.	SOME FLASHES OF MAG 9.5	--HK	99.9
HEIDELBERG	39244	66	4	29	20	40	7.8	7.8	7.9	7.9			30.0	14.0	973.	STEADY, FAINT FLICKERING	--GLU	109.3
HEIDELBERG	39245	66	4	30	21	53	7.4	7.4	7.7	7.7			37.0	10.0	955.	STEADY	--GLU	115.3
STADE/ELBE	39426	66	10	28	18	27	8.5	9.5	9.8	10.8			70.0	360.0	550.	RAPIDLY FLICKERING AND SCINT	--HK	71.7
STADE/ELBE	39581	67	4	1	20	22	8.5	10.0	9.1	10.6			48.0	360.0	750.	SHORT AND FAINT PREG FLASH	--HK	99.4
STADE/ELBE	39657	67	6	16	22	53	8.5	10.0	9.1	10.6			53.0	360.0	750.	VAP SHORT FLICKER SHORT OBS	--HK	113.2
STADE/ELBE	39834	67	12	10	16	49	7.5	9.0	9.2	10.7	1.50		80.0	5.0	450.	FAINT FLASHES	--HK	71.4
STADE/ELBE	39844	67	12	20	16	59	8.3	9.6					45.0	5.0	550.	REG VAR IN BRIGHTNESS MIN INV	--HK	52.4
STADE/ELBE	39917	68	3	2	19	6	7.5	8.5	8.4	9.4			43.0	5.0	470.	PREG FAINT FLASHES	--HK	93.9

SDC NO. 1739 65-938 ALTAR ROCKET USA LAUNCHED 65/11/19 IN ORBIT
 PERIOD = 100.8 PERIGEE = 438.7 APOGEE = 549.3 INCL = 59.7
 STATION NAME MJD Y M D H M MAX MIN ΔMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STADE/ELRE 39844 67/12/20 17 11 8.5 9.9 75.0 130.0 530. DEG VAR FLICKER MIN INV -- HK 44.7

SDC NO. 1777 65-95A COSMOS 97 USSR LAUNCHED 65/11/26 DECEASED 4/ 2/67
 PERIOD = 109.0 PERIGEE = 133.0 APOGEE = 1332.2 INCL = 48.4
 STATION NAME MJD Y M D H M MAX MIN ΔMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 VAN NUYS-F 39143 66/ 1/18 4 21 7.7 8.0 7.0 7.3 50.2 339.0 1410. --JGW 72.0
 VAN NUYS-F 39146 66/ 1/21 4 18 7.5 8.5 6.5 7.5 41.0 349.0 1570. --JGW 73.2
 VAN NUYS-F 39148 66/ 1/23 2 56 7.8 8.5 7.1 7.8 44.8 341.0 1350. --JGW 81.4
 VAN NUYS-F 39149 66/ 1/24 2 15 7.7 9.3 7.3 8.9 48.6 337.0 1210. --JGW 85.8
 VAN NUYS-F 39165 66/ 2/ 9 2 15 6.7 8.5 6.6 8.4 73.0 33.0 1030. --JGW 88.7
 HEINELBERG 39216 66/ 4/ 1 19 44 7.4 7.4 8.2 8.2 56.0 154.0 700. --GLU 45.4

SDC NO. 1778 65-96A A-1 FRANCE LAUNCHED 65/11/26 IN ORBIT
 PERIOD = 108.7 PERIGEE = 327.5 APOGEE = 1123.4 INCL = 34.2
 STATION NAME MJD Y M D H M MAX MIN ΔMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS --OBS PHASE
 STPETERSBURG 39274 66/ 5/29 1 20 7.0 9.0 6.7 8.7 60.7 0.7 1168. MEASURED TUMBLE, 33S EARLY --FJK 92.8
 STPETERSBURG 39275 66/ 5/30 2 48 6.0 8.0 6.0 9.0 74.0 16.5 700. MEASURED 42 S LATE --FJK 71.8

SDC NO. 1779 65-958 PERIOD = 108.7 PERIGEE = 133.0 USSR LAUNCHED 65/11/26 DECEASED 2/21/67
 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39093	65/11/29	1	56	1.5	2.5	4.9	5.9	0.22	50.0	170.0	210.					--JGM	92.7
VAN NUYS-F	39141	66/ 1/16	2	3	5.0	6.5	4.5	6.0	0.28	43.6	133.0	1250.					--JGM	50.9
VAN NUYS-F	39141	66/ 1/16	3	57	5.7	6.5	5.4	6.2	0.28	69.5	328.2	1150.					--JGM	55.5
VAN NUYS-F	39143	66/ 1/18	4	23	6.0	7.0	5.3	6.3	0.28	48.5	339.0	1400.					--JGM	73.0
VAN NUYS-F	39144	66/ 1/19	3	28	6.0	7.0	5.5	6.5	0.30	53.9	334.5	1250.					--JGM	76.5
VAN NUYS-F	39146	66/ 1/21	4	3	6.5	7.3	5.6	6.4	0.30	41.1	350.0	1500.					--JGM	73.2
VAN NUYS-F	39147	66/ 1/22	3	17	6.0	7.0	5.3	6.3		43.8	345.0	1360.					--JGM	77.7
VAN NUYS-F	39148	66/ 1/23	4	26	5.8	7.0	5.6	6.6	0.32	37.1	356.8	1630.					--JGM	70.8
STADE/ELBE	39150	66/ 1/25	19	2	6.0	7.0	5.0	5.3	8.3	35.0	25.0	220.					--HK	51.8
WALNUT CREEK	39204	66/ 3/20	12	54	2.0	5.0	3.6	3.6	0.34	30.0	140.0	967.					--DFC	108.8
STADE/ELBE	39354	66/ 8/17	21	22	3.5	5.0	5.2	5.2		45.0	160.0	900.					--HK	14.1
STADE/ELBE	39425	66/10/27	17	50	5.0	5.0	5.2	5.2	0.70	0.30	62.0	180.0					--HK	53.4
STADE/ELBE	39435	66/11/ 6	17	0	4.5	5.0	5.1	5.6				750.					--HK	94.4

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SDC NO. 1804 65-98A PERIOD = 121.4 PERIGEE = 213.8 USA LAUNCHED 65/11/29 IN ORBIT
 INCL = 79.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39197	66/ 3/13	20	48	3.0	7.5	3.0	7.5	6.00	0.20	70.0	100.0					--HK	44.5
DURBAN B	39198	66/ 3/14	18	31	6.0	8.0	4.6	8.0	6.20	82.0	266.0	1869.					--GR	58.1
STADE/ELBE	39199	66/ 3/15	21	24	3.0	8.0	3.0	8.0	6.20	70.0	260.0	980.					--HK	58.7
DURBAN R	39201	66/ 3/17	17	23	6.0	10.0	4.5	8.5	6.77	67.0	94.0	2000.					--AA	51.7
STADE/ELBE	39203	66/ 3/19	20	34	3.0	9.0	3.8	8.8	6.90	0.20	85.0	260.0					--HK	57.5
STADE/ELBE	39209	66/ 3/25	20	16	4.7	8.0	5.8	9.1	7.00	0.20	60.0	260.0					--HK	99.8
STADE/ELBE	39246	66/ 5/ 1	1	2	5.0	9.0	5.1	9.1	7.00	0.50	62.0	100.0					--HK	51.4
STADE/ELBE	39259	66/ 5/14	23	3	5.5	9.0	4.7	8.2		56.0	100.0	1450.					--HK	57.8
STADE/ELBE	39425	66/10/27	18	37	2.5	9.5	4.0	10.0		45.0	310.0	500.					--HK	125.3
STADE/ELBE	39428	66/10/20	17	27	4.0	7.5	5.1	8.6		45.0	100.0	600.					--HK	32.0
STADE/ELBE	39505	67/ 1/ 6	19	11	8.0	9.5	6.5	7.0	5.00	0.50	70.2	222.2					--FK	58.9
STADE/ELBE	39517	67/ 1/27	17	10	7.7	9.0	6.6	7.9		80.0	100.0	1635.					--HK	59.8
STADE/ELBE	39504	67/ 4/14	22	13	4.0	9.0	4.4	9.4	4.30	53.0	360.0	950.					--HK	100.0

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39605	67/	4/25	21	9	4.5	9.0	5.8	10.3			65.0	260.0		550.	IRREGULAR FLASHES	-- HK	83.5
STADE/ELBE	39606	67/	4/26	21	27	1.0	9.0	1.8	9.8			38.0	295.0		700.	SHARP REGULAR FLASHES MAX +1	-- HK	116.0
STADE/ELBE	39607	67/	4/27	21	45	5.0	9.0	5.2	9.2			25.0	310.0		900.	REGULAR SHARP FLASHING	-- HK	128.9
STADE/ELBE	39609	67/	4/29	20	14	4.5	9.0	6.0	10.5		5.00	0.40	73.0	100.0	500.	RIGHT FLASHES DEP APPROX.	-- HK	54.9
AUSTIN	39700	67/	7/29	3	9	4.5	8.5	3.8	7.8			0.10	71.0	75.0	1350.	RIGHT FLASHES	--MM	59.7
STADE/ELBE	39834	67/12/10	18	1	1.7	8.5	3.0	9.8			6.00	65.0	260.0		550.	SHARP FLASHES SEC MAXIMA	-- HK	89.9
AUSTIN	39907	68/	2/21	3	5	6.0		6.0			8.00	64.0	333.0		982.		--MM	71.5

SOC NO. 1805 65-968 ROCKET BODY FRANCE LAUNCHED 65/11/26 IN ORBIT
PERIOD = 109.8 PERIGEE = 325.6 APOGEE = 1125.0 INCL = 34.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39147	66/	1/22	2	49	5.8	6.5	8.1	8.8			88.5	355.0		340.		--JGW	72.0
VAN NUYS-F	39148	66/	1/23	2	21	6.0	6.5	8.2	8.7			89.9	0.0		355.	TP ABOUT 1/2 SEC	--JGW	75.0
VAN NUYS-F	39151	66/	1/26	2	57	6.5	6.8	8.7	9.0		0.78	82.4	190.0		355.		--JGW	73.0
AUSTIN	39907	68/	2/21	2	26	7.5	7.5	7.4	7.4			87.0	158.0		1061.		--MM	51.5

SOC NO. 1806 65-988 EXPLODER 31 USA LAUNCHED 65/11/29 IN ORBIT
PERIOD = 121.3 PERIGEE = 313.8 APOGEE = 1850.4 INCL = 79.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39197	66/	3/13	20	42	7.0	8.0	7.0	8.0		2.61	0.50	65.0	100.0	1020.	FLASHING	-- HK	41.0
STADE/ELBE	39199	66/	3/15	21	15	6.5	8.0	6.6	8.1		2.51	0.50	75.0	260.0	970.	FLASHING	-- HK	57.1
STADE/ELBE	39426	66/10/28	17	58	7.0	7.5	9.4	9.9				85.0	100.0		320.	FAINT VAPVING	-- HK	56.8
STPETERSBURG	39914	68/	2/28	0	47	7.0	9.0	7.8	9.8			71.0	34.3		680.	TP EST 1 SEC	--FK	52.2

SOC NO. 1807 65-98C AGFNA B USA LAUNCHED 65/11/29 IN ORBIT
PERIOD = 121.4 PERIGEE = 313.8 APOGEE = 1851.1 INCL = 79.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39203	66/	3/19	21	29	2.0	5.0	2.7	5.7				75.0	100.0	720.	SLOWLY VARYING	-- HK	49.5
STADE/ELBE	39274	66/	5/29	22	44	6.5	8.5	5.3	7.3			5.40	1.00	72.0	1747.	REGULAR TIMBLING	-- HK	75.9
STADE/ELBE	39606	67/	4/26	20	49	3.0	5.0	4.6	6.6			5.00	0.90	75.0	480.	REGULAR BRIGHT FLASHES	-- HK	91.8
STADE/ELBE	39607	67/	4/27	21	6	3.0	5.5	4.1	6.6			5.50	0.90	50.0	600.	REGULAR BRIGHT FLASHES	-- HK	91.5
STADE/ELBE	39613	67/	5/ 3	20	39	5.5	9.0	6.3	9.8			5.60	0.80	30.0	700.	REGULAR SHARP FLASHING	-- HK	137.7
AUSTIN	39907	68/	2/21	3	1	6.0	6.5	6.1	6.6				64.0	340.0	963.		--MM	59.9

SOC NO. 1811 65-99C ROCKET BODY USSR LAUNCHED 65/12/ 3 DECAYED 12/ 6/65
PERIOD = 89.5 PERIGEE = 112.5 APOGEE = 137.3 INCL = 51.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39098	65/12/	4	16	27	4.5	4.5	7.6	7.6				30.0	140.0	240.	STEADY	-- HK	59.1

SOC NO. 1814 65-101A FR-1 FRANCE LAUNCHED 65/12/ 6 IN ORBIT
PERIOD = 99.9 PERIGEE = 453.5 APOGEE = 473.5 INCL = 75.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39144	66/	1/19	2	19	7.8	7.8	8.8	8.8				46.7	103.5	620.		--JSM	42.4
VAN NUYS-F	39147	66/	1/22	1	57	7.8	8.8	9.1	10.1				58.1	104.8	545.	FEW SECONDS VARIATION	--JSM	54.7
STADE/ELBE	39243	66/	4/28	1	28	6.5	9.0	8.1	10.6			2.50	0.50	83.0	475.	FLASHING	-- HK	75.7
STADE/ELBE	39246	66/	5/ 1	1	5	8.0		9.6					98.0	200.0	472.	STEADY WITH FLICKERING	-- HK	71.9
STADE/ELBE	39259	66/	5/14	22	12	8.0		9.3					55.0	140.0	560.	STEADY WITH SCINTILLATE	-- HK	42.7
STADE/ELBE	39560	67/	3/11	17	58	7.0	9.0	8.6	10.6				85.0	260.0	480.	FLASHING NOT DARK	-- HK	98.0
STADE/ELBE	39721	67/	8/19	22	39	6.5	9.0	7.6	10.1			0.75	65.0	100.0	600.	SHARP FLASHES 0.5-1.0 PERIOD	-- HK	53.0
STADE/ELBE	39725	67/	8/23	21	33	7.8		8.6					45.0	100.0	700.	VAP SHARP 0.5-1.0 PERIOD DISTURBED	-- HK	47.9
STADE/ELBE	39956	68/	4/10	20	11	9.0	9.0	10.3	10.3				65.0	100.0	550.	ST WITH FLICKER MAG 4.0	-- HK	52.0

SDC NO. 1815 65-1018 ALTAR ROCKET USA LAUNCHED 65/12/ 6 IN ORBIT
 PERIOD = 100.0 PERIGEE = 464.2 APOGEE = 481.6 INCL = 75.8

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39143	66/	1/	18	2	41	6.0	9.0	7.4	10.4	7.05		61.8	105.2	530.		--JGW	47.1
VAN NUYS-F	39144	66/	1/	19	2	1	6.2	9.5	6.6	9.9			30.1	101.0	820.	SHARP MAX	--JGW	32.9
AUSTIN	39746	67/	9/	13	2	27	7.0	8.5	7.9	9.4			42.0	27.0	667.		--MM	69.7

SDC NO. 1842 65-1058 DERRIS USA LAUNCHED 65/12/16 IN ORBIT
 PERIOD = 100.4 PERIGEE = 169.6 APOGEE = 789.8 INCL = 30.2

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
SAN ANTONIO	39226	66/	4/	11	2	1	2.0	2.0	5.3	5.3			98.0	0.0	221.	VISITABLE ABOUT 1 MIN, FAINTER OBJECT FOLLOWED	--PM	75.4
STPETERSBURG	39228	66/	4/	13	2	37	3.0	3.0	5.5	5.5			53.6	0.2	312.		--FJK	90.9
WALNUT CREEK	39228	66/	4/	13	3	59	4.0	4.0	5.0	5.0			16.0	186.0	630.		--DFC	58.3
STPETERSBURG	39230	66/	4/	15	0	54	3.0	3.0	5.8	5.8			71.2	9.2	279.		--FJK	80.3
EDINBURG	39233	66/	4/	18	2	56	3.7	3.7	6.1	6.1			75.0	185.0	330.	HIT SHADOW	--PM	59.2
TOWNSVILLE	39256	66/	5/	11	9	9	6.0	7.5	6.1	7.6			32.0	180.0	975.	TUMBLE PERIOD APPROX 1.0 SEC	--APS	59.4
VAN NUYS-F	39278	66/	6/	2	4	55	6.0	6.0	6.6	6.6			61.8	189.5	770.		--JGW	55.3
SAN ANTONIO	39279	66/	6/	3	2	26	4.0	4.0	4.6	4.6			45.1	2.0	742.	STEADY	--PM	91.2
STPETERSBURG	39279	66/	6/	3	2	31	3.0	3.0	3.8	3.8			84.5	10.5	700.		--FJK	59.1
VAN NUYS-F	39279	66/	6/	3	4	7	5.5	5.5	6.0	6.0			65.5	185.1	790.		--JGW	55.3
STPETERSBURG	39280	66/	6/	4	1	43	3.0	3.0	3.6	3.6			80.1	7.9	745.		--FJK	79.0
SAN ANTONIO	39280	66/	6/	4	3	25	5.3	5.3	6.0	6.0			79.3	192.4	727.	NO MAGNITUDE CHANGE	--PM	53.4
SAN ANTONIO	39281	66/	6/	5	2	37	5.5	5.5	6.1	6.1			85.3	189.8	749.	NO VARIATION	--PM	74.9
STPETERSBURG	39281	66/	6/	5	2	42	3.0	3.0	3.7	3.7			72.3	197.6	740.		--FJK	57.0
VAN NUYS-F	39281	66/	6/	5	4	19	5.2	5.2	5.4	5.4			49.0	156.0	930.		--JGW	40.7
STPETERSBURG	39283	66/	6/	7	1	6	3.0	3.0	3.6	3.6			98.5	191.8	750.		--FJK	80.7
SAN ANTONIO	39283	66/	6/	7	2	48	5.0	5.0	5.4	5.4			64.8	197.6	917.	STEADY AS A ROCK	--PM	58.1

SDC NO. 1843 65-106A PERIOD = 97.6 PERIGEE = 391.5 APOGEE = 408.9 INCL = 65.0

COSMOS 100 USSR LAUNCHED 65/12/17 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39240	66/	4/25	21	4	6.5	6.5	6.5	7.8	7.8	7.8	45.0	300.0	560.	STEADY	--	HK	113.8
STADE/ELBE	39241	66/	4/26	19	48	5.0	5.0	5.0	6.9	6.9	6.9	85.0	140.0	420.	STEADY	--	HK	76.0
STADE/ELBE	39259	66/	5/14	22	19	4.0	4.0	4.0	5.6	5.6	5.6	60.0	220.0	470.	STEADY	--	HK	58.4
STADE/ELBE	39260	66/	5/15	21	4	5.5	5.5	5.5	7.0	7.0	7.0	55.0	55.0	500.	STEADY	--	HK	81.8
STPETERSBURG	39273	66/	5/28	1	57	5.0	5.0	5.0	6.8	6.8	6.8	65.9	60.3	441.	TRACKED 10 DEGREES	--	FJK	53.5
TERRE HAUTE	39274	66/	5/29	2	19	4.0	4.0	4.0	5.0	5.0	5.0	37.0	243.0	630.	STEADY	--	LD	99.2
PHOENIX R	39274	66/	5/29	3	58	5.0	5.0	5.0	6.5	6.5	6.5	50.5	242.5	506.	TRACKED 60 SEC STEADY	--	RRR	90.9
VAN NUYS-F	39274	66/	5/29	3	58	3.0	3.0	3.0	5.0	5.0	5.0	86.5	62.0	405.	STEADY MAG.	--	JGM	76.9
OCEANPORT	39275	66/	5/30	1	4	6.5	6.5	6.5	7.5	7.5	7.5	35.9	217.5	640.	STEADY MAG.	--	GFG	85.0
STPETERSBURG	39275	66/	5/30	1	7	4.0	4.0	4.0	5.1	5.1	5.1	57.7	40.2	599.	STEADY MAG.	--	FJK	76.8
SAN ANTONIO	39275	66/	5/30	2	45	4.5	4.5	4.5	6.4	6.4	6.4	73.3	241.5	420.	POSSIBLE PERIODIC SLIGHT VAR	--	PM	82.2
ROCHESTER	39276	66/	5/31	1	29	5.0	5.0	5.0	5.2	5.2	5.2	19.7	246.0	933.	65-106A	--	RJ	111.2
ROCHESTER	39276	66/	5/31	1	30	5.0	5.0	5.0	5.0	5.0	5.0	18.0	232.0	990.	LOOKED ALMOST ST	--	RJ	98.6
SAN ANTONIO	39276	66/	5/31	3	10	4.5	4.5	4.5	5.0	5.0	5.0	25.0	246.6	807.	LOOKED ALMOST ST	--	PM	103.5
VAN NUYS-F	39278	66/	6/ 2	3	56	7.8	7.8	7.8	8.0	8.0	8.0	20.6	247.0	910.	LOOKED ALMOST ST	--	JGM	113.9
VAN NUYS-F	39278	66/	6/ 2	3	58	6.3	6.3	6.3	6.1	6.1	6.1	14.4	212.0	1100.	LOOKED ALMOST ST	--	JGM	82.9
STADE/ELBE	39435	66/11/	6	16	46	4.5	4.5	4.5	5.5	5.5	5.5	60.0	310.0	600.	VARYING	--	HK	98.2
STADE/ELBE	39517	67/	1/27	18	6	6.0	6.0	6.0	7.7	7.7	7.7	70.0	140.0	450.	STEADY	--	HK	60.3
STPETERSBURG	39636	67/	5/26	1	31	5.0	5.0	5.0	6.5	6.5	6.5	65.0	334.4	500.	STEADY	--	FK	96.9
HEIDELBERG	39681	67/	7/10	21	49	5.5	5.5	5.5	6.7	6.7	6.7	42.0	100.0	580.	STEADY	--	GLU	54.9
STADE/ELBE	39705	67/	8/ 3	21	36	6.0	6.0	6.0	7.1	7.1	7.1	30.0	55.0	600.	STEADY	--	HK	88.8
STADE/ELBE	39789	67/10/26	18	4	4	5.0	5.0	5.0	6.7	6.7	6.7	80.0	220.0	450.	STEADY OCCAS FAINT VAR	--	HK	54.0
HEIDELBERG	39815	67/11/21	18	55	4	4.8	4.8	4.8	5.4	5.4	5.4	85.0	310.0	450.	STEADY	--	HK	75.6
HEIDELBERG	39816	67/11/22	19	17	4	6.3	6.3	6.3	7.0	7.0	7.0	29.0	38.0	750.	STEADY	--	GLU	49.7
HEIDELBERG	39826	67/12/ 2	18	19	5.1	5.1	5.1	5.1	6.0	6.0	6.0	31.0	0.0	720.	STEADY	--	GLU	80.2
STADE/ELBE	39881	68/	1/26	17	33	5.0	5.0	5.0	6.9	6.9	6.9	34.0	250.0	670.	STEADY	--	GLU	117.0
STADE/ELBE	39881	68/	1/26	17	33	5.0	5.0	5.0	6.9	6.9	6.9	85.0	310.0	420.	STEADY	--	HK	78.3

6068-629

SDC NO. 1845 65-100C ADAPTER USA LAUNCHED 65/12/4 DECAVED 1/27/66
PERIOD = 90.4 PERIGEE = 174.6 APOGEE = 190.1 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39113	65/12/19	13	49			5.0	5.0	6.9	6.9			22.5	180.0	410.		--JGM	102.3
VAN NUYS-F	39114	65/12/20	13	54			5.0	5.3	7.0	7.3			24.5	180.0	390.		--JGM	102.6

SDC NO. 1847 65-107B ROCKET BODY USSR LAUNCHED 65/12/21 DECAVED 4/16/66
PERIOD = 89.7 PERIGEE = 157.2 APOGEE = 325.6 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39139	66/1/14	2	55			3.5	4.8	1.24				33.0	220.0	540.	MAX ALTERNATE +3.5, +3.8	--JGM	113.5
VAN NUYS-F	39140	66/1/15	1	55			3.0	5.5	6.8	1.25			32.6	130.0	550.	MAX ALTERNATE	--JGM	58.3
VAN NUYS-F	39141	66/1/16	2	29			2.5	4.0	4.7	6.2	1.25		65.0	337.0	360.		--JGM	78.4

SDC NO. 1063 65-108A TRANSTAGE USA LAUNCHED 65/12/21 IN ORBIT
PERIOD = 503.2 PERIGEE = 103.8 APOGEE = 20916.6 INCL = 26.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39129	66/1/4	13	30			5.8	6.2	5.0	5.4			57.7	180.0	1470.	AROUT 15-20 SEC TP	--JGM	92.8
VAN NUYS-F	39138	66/1/13	13	33			6.0	7.0	4.8	5.8			64.7	180.0	1720.	TP ABOUT 15 SEC	--JGM	85.1
VAN NUYS-F	39933	68/3/18	6	0			9.3	9.3	6.0	6.0			72.0	141.0	4500.		--JGM	25.9
VAN NUYS-F	39935	68/3/20	7	50			9.5	9.5	6.2	6.2			46.0	259.0	4630.		--JGM	50.4
VAN NUYS-F	39936	68/3/21	5	2			8.8	8.8	6.5	6.5			71.0	178.0	2870.		--JGM	45.0
VAN NUYS-F	39939	68/3/24	4	8			9.0	9.0	6.8	6.8			62.0	131.0	2750.		--JGM	39.3
VAN NUYS-F	39944	68/3/29	4	51			8.7	8.7	6.2	6.2			71.0	158.0	3700.		--JGM	43.7
VAN NUYS-F	39949	68/4/3	5	20			9.2	9.2	5.8	5.8			65.0	129.0	4930.		--JGM	29.0

SD68-629

SDC NO. 1864 65-109A TRANSIT USA LAUNCHED 65/12/22 IN ORBIT
 PERIOD = 105.0 PERIGEE = 564.8 APORGE = 674.8 INCL = 89.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
STADE/ELRE	39145	66/	1/	20	5	20	7.8	7.7	8.3	8.4			50.0	100.0	780.	STEADY WITH SCINTILLATE	--	HK 112.0
STADE/ELRE	39236	66/	4/	21	23	6	7.7	7.7	8.4	8.4			73.0	100.0	710.	STEADY	--	HK 52.7
STADE/ELRE	39257	66/	5/	12	21	49	8.0	8.0	8.9	8.9			85.0	100.0	656.	STEADY WITH FAINT SCINTILLATE	--	HK 71.7
STADE/ELRE	39480	66/	12/	21	17	41	9.3	9.3	9.2	9.2			89.5	260.0	650.	STEADY	--	HK 58.8
STADE/ELRE	39607	67/	4/	27	20	28	6.5	6.5	7.2	7.2			75.0	100.0	720.	REGULAR FLASHING	--	HK 55.0
STADE/ELRE	39801	67/	11/	7	18	23	8.5	8.5	9.2	9.2			77.0	100.0	720.	ST	--	HK 52.6

SDC NO. 1865 65-109B ALTAR ROCKET USA LAUNCHED 65/12/22 IN ORBIT
 PERIOD = 105.0 PERIGEE = 569.2 APORGE = 669.8 INCL = 89.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
VAN NUYS-F	39143	66/	1/	18	2	56	6.3	9.7	7.1	10.5	5.94		54.2	272.0	680.	SOME MULTIPLE MAX	--	JGW 103.1
VAN NUYS-F	39144	66/	1/	19	3	27	7.8	7.6	7.6	8.7	3.00		25.6	277.4	1080.	MIN INVIS	--	JGW 124.6
STADE/ELRE	39145	66/	1/	20	5	17	5.8	8.0	6.5	8.7			50.0	100.0	720.	FLASHING	--	HK 111.5
VAN NUYS-F	39147	66/	1/	22	3	16	8.5	8.3	8.3				25.1	277.0	1100.	MIN INVIS	--	JGW 127.6
VAN NUYS-F	39148	66/	1/	23	2	2	7.8	8.9	8.9				76.7	88.5	590.		--	JGW 57.0

SDC NO. 1968 65-112A COSMOS 103 USSR LAUNCHED 65/12/28 IN ORBIT
 PERIOD = 97.0 PERIGEE = 369.1 APORGE = 395.2 INCL = 56.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
STADE/ELRF	39120	66/	1/	4	17	37	5.0	5.0	6.9	6.9			65.0	310.0	410.	STEADY	--	HK 85.7
STADE/ELRF	39132	66/	1/	7	15	45	5.0	5.0	7.0	7.0			70.0	360.0	400.	STEADY	--	HK 71.6
STADE/ELRE	39133	66/	1/	8	17	0	5.0	5.0	7.1	7.1			85.0	360.0	375.	STEADY	--	HK 74.9
HEIDELBERG	39133	66/	1/	8	17	0	4.7	4.7	6.1	6.1			46.0	0.0	510.	STEADY	--	GLU 57.3
VAN NUYS-F	39138	66/	1/	13	2	11	5.5	5.5	6.8	6.8			41.2	42.5	540.		--	JGW 39.2
VAN NUYS-F	39139	66/	1/	14	2	26	5.0	5.0	7.1	7.1			87.5	46.0	175.		--	JGW 71.3
VAN NUYS-F	39140	66/	1/	15	2	42	6.0	6.5	7.3	7.8	60.00		39.4	230.0	550.	TP UNQUOTE	--	JGW 115.8
DURBAN R	39168	66/	2/	12	19	13	5.0	5.0	5.6	5.6			23.0	198.0	760.	STEADY	--	AA 113.4

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
DURRAN B	39169	66/	2/	13	18	31	5.0	5.0	7.0	7.0			90.0	209.0	394.	STEADY	--GR	59.2
STPETERSBURG	39182	66/	2/	26	0	56	8.0	8.0	10.0	10.0			83.4	314.0	400.		--FJK	74.8
VAN NUYS-F	39182	66/	2/	26	2	33	6.6	7.0	6.9	7.3			21.5	124.0	970.	ABOUT 1/2 MINUTE VAR	--JGM	37.8
SAN JOSE	39183	66/	2/	27	2	49	6.0	6.0	6.6	6.6			26.7	126.2	770.	TRACKED 190 SEC. STEADY MAG.	--RLG	39.9
VAN NUYS-F	39183	66/	2/	27	2	49	5.7	6.0	7.1	7.4	32.00		46.4	128.5	520.	TP UNSURE	--JGM	46.7
OCEANPORT	39183	66/	2/	27	23	51	5.0	5.0	0.0	0.0						FOLLOWED FOR APPX 3 MINS	--GFG	
CLEVELAND	39186	66/	3/	2	2	3	5.0	5.0	5.5	5.5			24.9	335.4	908.	STEADY	--DS	108.8
ROCHESTER	39187	66/	3/	3	0	28	6.0	6.0	7.6	7.6			55.1	325.0	480.		--RJ	95.2
ROCHESTER	39193	66/	3/	9	0	32	7.0	7.0	7.1	7.1			19.0	348.0	950.		--RJ	103.4
STADE/ELBE	39197	66/	3/	13	19	21	5.0	5.0	6.9	6.9			80.0	360.0	410.	STEADY	--HK	75.6
STADE/ELBE	39257	66/	5/	12	20	39	5.5	5.5	7.6	7.6			80.0	360.0	383.	STEADY	--HK	87.4
STADE/ELBE	39259	66/	5/	14	21	10	6.0	6.0	7.9	7.9			67.0	360.0	410.	STEADY	--HK	97.2
HEIDELBERG	39259	66/	5/	14	21	11	8.2	8.2	9.2	9.2			34.0	14.0	627.	STEADY	--GLU	113.5
HEIDELBERG	39259	66/	5/	14	22	54	7.6	7.6	8.2	8.2			26.0	82.0	760.	STEADY	--GLU	81.6
HEIDELBERG	39260	66/	5/	15	21	25	7.9	7.9	8.8	8.8			32.0	335.0	652.	STEADY	--GLU	130.9
HEIDELBERG	39261	66/	5/	16	21	42	6.5	6.5	7.7	7.7			39.0	13.0	567.	STEADY	--GLU	113.0
WALNUT CREEK	39273	66/	5/	28	5	18	5.0	5.0	7.0	7.0			68.9	43.2	403.	STEADY 80 SECONDS TRACKING	--DFC	74.5
TERRE HAUTE	39274	66/	5/	29	2	16	6.0	6.0	7.6	7.6			51.0	39.0	471.	STEADY	--LD	82.2
TERRE HAUTE	39274	66/	5/	29	3	54	7.0	7.0	7.5	7.5			89.3	55.4	777.	STEADY	--GPE	75.0
LOUISVILLE	39275	66/	5/	30	2	32	5.5	5.5	7.6	7.6			82.0	224.0	381.	STEADY	--DD	76.4
CLEVELAND	39275	66/	5/	30	2	33	7.0	7.0	8.3	8.3			41.5	228.2	540.	STEADY	--DS	79.1
LOUISVILLE	39275	66/	5/	30	4	10	8.0	8.0	8.4	8.4			64.1	228.7	946.	SKY SLIGHTLY OVERCAST	--GPE	74.5
OCEANPORT	39276	66/	5/	31	1	9	5.0	5.0	7.0	7.0			65.5	132.0	400.	MAG. STEADY	--GFG	56.7
VAN NUYS-F	39276	66/	5/	31	4	25	5.3	5.3	7.3	7.3			72.3	46.0	390.		--JGM	73.6
VAN NUYS-F	39277	66/	6/	1	4	40	6.5	6.8	8.1	8.4			50.6	231.0	475.		--JGM	80.7
SAN ANTONIO	39278	66/	6/	2	3	19	5.0	5.0	6.6	6.6			50.3	232.8	476.	NO VARIATION WHATSOEVER	--PM	80.6
STPETERSBURG	39279	66/	6/	3	1	57	3.0	3.0	4.8	4.8			58.5	232.6	434.		--FJK	91.2
SAN ANTONIO	39280	66/	6/	4	2	9	5.7	5.7	7.8	7.8			77.1	49.9	385.	MAYBE SLTLY BTR, STEADY	--PM	77.9
VAN NUYS-F	39281	66/	6/	5	4	2	7.5	7.7	7.8	8.0			20.1	236.0	870.		--JGM	103.0
STADE/ELBE	39321	66/	7/	15	21	14	6.0	6.0	6.8	6.8			30.0	140.0	698.	STEADY	--HK	22.0
STADE/ELBE	39329	66/	7/	23	23	18	5.5	5.5	7.5	7.5			85.0	360.0	391.	STEADY	--HK	78.6
STADE/ELBE	39337	66/	7/	31	22	1	5.5	5.5	6.8	6.8			42.0	215.0	540.	STEADY	--HK	54.8
STADE/ELBE	39615	67/	5/	5	20	33	5.5	5.5	7.6	7.6			89.0	360.0	380.	STEADY	--HK	79.1
STPETERSBURG	39637	67/	5/	27	1	38	3.0	3.0	4.7	4.7			62.2	29.4	450.		--FK	78.5
HEIDELBERG	39672	67/	7/	1	23	45	6.5	6.5	7.8	7.8			27.0	50.0	550.	STEADY	--GLU	117.0
HEIDELBERG	39675	67/	7/	4	22	48	5.5	5.5	7.0	7.0			44.0	145.0	490.	STEADY	--GLU	34.2
STADE/ELBE	39675	67/	7/	4	22	48	6.0	6.0	6.8	6.8			27.0	140.0	700.	STEADY	--HK	32.1

STATION NAME	MJD	Y	M	D	U	M	W	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELRE	39676	67	7	5	23	2	2	5.8	5.8	7.3	7.3			50.0	140.0	500.	STEADY	--HK	45.0
HEIDELBERG	39677	67	7	6	21	36	6.8	6.8	8.0	8.0	8.0			29.0	130.0	570.	STEADY	--GLU	26.5
GRANBY	39759	67	9	26	23	53	7.0	7.0	8.3	8.3	8.3			35.0	50.0	560.	HAZE	--MPC	50.5
STADE/ELRE	39760	67	9	27	1	31	7.5	7.5	8.2	8.5	8.5	1.20	0.50	23.0	324.0	725.		--MPC	121.6
STADE/ELRE	39763	67	9	30	18	16	2.5	4.0	3.2	4.7	7.0			57.0	140.0	730.	SLOWLY TUMBLING	--HK	42.4
GRANBY	39770	67	10	7	0	38	7.0	7.2	7.0	7.2	7.2			61.0	140.0	500.	STEADY	--HK	73.4
STADE/ELRE	39771	67	10	8	18	37	5.3	7.0	7.3	7.0	7.3			15.0	5.0	1015.	RFC VAR	--MPC	94.3
STPETERSBURG	39783	67	10	20	0	29	6.0	6.0	6.0	6.6	6.6			15.0	253.0	1015.	RFC VAR	--MPC	105.2
GRANBY	39784	67	10	21	0	44	3.0	5.2	5.5	7.6	7.9			60.0	360.0	550.	ST	--HK	81.8
STADE/ELRE	39808	67	11	14	4	6	5.0	5.0	7.0	7.0	7.0			71.0	266.0	335.	RAPID DIFFUSED FLASHING	--MPC	95.9
STADE/ELRE	39812	67	11	14	4	6	5.0	5.0	7.0	7.0	7.0			32.0	104.0	550.	RAPID FLASHING	--MPC	94.0
STADE/ELRE	39881	68	1	26	5	34	5.0	5.0	6.8	6.8	6.8			89.0	180.0	390.	ST HAZE	--HK	56.7
STPETERSBURG	39899	68	2	13	1	7	5.0	5.0	6.6	6.6	6.6			60.0	260.0	550.	ST	--HK	71.0
STADE/ELRE	39900	68	2	14	1	20	7.0	7.0	7.0	7.0	7.0			70.0	359.0	470.	ST	--HK	71.5
STADE/ELRE	39917	68	3	2	19	48	6.5	6.5	7.8	7.8	7.8			30.0	309.3	550.	ST	--FK	110.9
STADE/ELRE	39925	68	3	10	0	39	6.0	9.0	0.0	0.0	0.0			47.0	220.0	550.	TP FST 1 SEC	--HK	82.0
STADE/ELRE	39966	68	4	20	23	33	5.0	5.0	6.5	6.5	6.5			31.7	47.1	500.	ST	--FK	45.1
VAN NUYS-F	39968	68	4	22	4	26	5.8	5.8	7.9	7.9	7.9			67.0	5.0	500.	ST	--HK	98.4
STADE/ELRE	39971	68	4	25	21	20	5.0	5.0	7.1	7.1	7.1			84.0	136.0	375.	ST	--JGW	51.4
HEIDELBERG	39973	68	4	27	20	4	5.1	5.1	7.0	7.0	7.0			89.0	5.0	380.	ST	--HK	72.5
STADE/ELRE	39979	68	5	3	21	31	5.2	5.2	7.2	7.2	7.2			52.0	283.0	420.	ST	--GLU	101.6
														20.0	5.0	400.	ST	--HK	91.7

SDC NO. 1469 65-112R PERIOD = 77.1 PERIGEE = 369.5 USSP LAUNCHES 45/12/28 IN ORBIT
 473.3 INCL = 56.1

STATION NAME	MJD	Y	M	D	U	M	W	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELRE	39132	66	1	7	17	3	2.5	4.5	4.5	4.6	6.6	0.40	0.10	75.0	360.0	375.	FLICKERING	--HK	71.5
HEIDELBERG	39133	66	1	8	17	18	4.5	6.0	5.3	6.8	6.8	0.40	0.40	31.0	319.0	490.	ROCKET OF 1869 TUMBLING	--GLU	101.3
VAN NUYS-F	39182	66	2	26	2	20	5.3	5.7	5.2	5.6	5.6	0.20	0.20	15.2	122.0	1060.		--JGW	37.5
OCEANPORT	39183	66	2	26	23	24	5.0	5.0	5.0	0.0	0.0						STEADY IN MAGNITUDE	--GFC	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	A7	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39183	66/	2/27	2	37	5.0	5.0	5.3	5.9	6.2	0.30		33.8	126.5	650.		--JGM	42.5
OCEANPORT	39183	66/	2/27	23	40	5.0	5.0	0.0	0.0				58.0	315.0	463.	QUICK SLIGHT VAR. IN MAG. TRACKED 2 MIN 50. SEC, RAPID TO 5 TO 6 PER SEC, +6 MAG	--GFG	94.8
PHOENIX R	39184	66/	2/28	2	55	6.0	6.0	7.7	7.7								--	
OCEANPORT	39186	66/	3/2	0	14	5.0	5.0	5.0	6.8	6.8			66.6	4.0	430.	STEADY IN MAG.	--GG	74.5
CLEVELAND	39186	66/	3/2	1	55	0.1	0.1	6.0	0.7	6.6	0.70		27.4	332.7	756.	GOOD TUMBLE PERIOD MIN INVIS	--DS	108.5
OCEANPORT	39187	66/	3/3	0	10	7.0	7.0	5.0	8.1	6.8			36.5	332.9	600.	VARIABLE MAG.	--GG	103.9
ROCHESTER	39187	66/	3/3	0	31	5.0	5.0	5.0	6.8	6.8			63.7	323.0	446.	FOR 20 SECS STEADY	--RJ	91.5
ROCHESTER	39188	66/	3/4	0	49	5.0	5.0	7.0	6.1	8.1	0.48	0.20	36.0	346.0	411.		--RJ	96.2
OCEANPORT	39192	66/	3/8	0	17	8.0	8.0	7.0	7.8	7.1			14.3	359.0	1080.		--GG	93.8
ROCHESTER	39193	66/	3/9	0	34	7.0	7.0	7.0	7.1	7.1			19.4	348.0	950.		--RJ	103.4
STADE/ELBE	39197	66/	3/13	19	30	2.7	5.0	5.0	4.6	6.9			75.0	360.0	415.	FLASHING	--HK	76.9
STADE/ELBE	39203	66/	3/19	19	31	6.5	6.5	9.0	7.1	9.6	0.36	0.20	27.0	220.0	760.	RAPIDLY FLASHING	--HK	94.7
WALNUT CREEK	39230	66/	4/15	11	41	3.0	3.0	6.0	4.7	7.7	0.36		55.0	120.0	450.	FADTER TOWARDS THE SUN	--DPC	87.3
STADE/ELBE	39260	66/	5/15	21	41	5.0	6.0	6.0	6.9	7.9	0.48	0.20	65.0	360.0	420.	RAPIDLY FLASHING	--HK	98.9
STADE/ELBE	39321	66/	7/15	22	32	3.0	3.0	6.0	4.9	7.9	1.48	0.70	70.0	180.0	423.	FLASHING	--HK	56.7
STADE/ELBE	39324	66/	7/18	0	49	3.5	3.5	6.0	5.3	7.8	0.75	0.40	60.0	55.0	444.	REGULAR FLASHING	--HK	101.4
STADE/ELBE	39329	66/	7/23	23	7	3.0	3.0	6.0	5.0	8.0	0.75	0.40	75.0	360.0	402.	REGULAR FLASHING	--HK	88.7
STADE/ELBE	39330	66/	7/24	0	50	4.0	4.0	7.0	4.7	7.7	0.75	0.40	35.0	180.0	716.	REGULAR FLASHING	--HK	27.3
STADE/ELBE	39331	66/	7/25	22	1	3.0	3.0	6.0	4.6	7.6			70.0	360.0	476.	REGULAR FLASHING	--HK	94.3
STADE/ELBE	39334	66/	7/28	21	11	3.5	3.5	6.0	5.1	7.6	0.82	0.40	70.0	360.0	476.	REGULAR FLASHING	--HK	95.2
STADE/ELBE	39337	66/	7/31	22	2	3.0	3.0	5.5	4.6	7.1	0.80	0.40	50.0	215.0	482.	REGULAR FLASHING	--HK	56.5
STADE/ELBE	39418	66/	10/20	18	42	2.5	2.5	5.5	4.0	7.0	1.38	0.80	60.0	220.0	500.	REGULAR FLASHING	--HK	83.0
STADE/ELBE	39493	67/	1/3	16	53	3.5	3.5	6.0	5.5	8.0	2.25	1.00	89.0	360.0	390.	REGULAR FLASHING	--HK	76.2
STADE/ELBE	39556	67/	3/7	18	13	4.0	4.0	8.0	5.5	9.5			70.0	360.0	500.	REGULAR FLASHING	--HK	82.1
STADE/ELBE	39560	67/	3/7	19	53	3.8	3.8	7.5	5.8	9.5	3.46		89.5	360.0	400.	REGULAR FLASHING	--HK	55.8
STADE/ELBE	39609	67/	3/11	19	19	3.0	3.0	7.5	4.5	9.0	4.58		63.0	220.0	490.	REGULAR FLASHING	--HK	82.2
HEIDELBERG	39610	67/	4/29	21	37	3.6	3.6	6.7	4.9	8.0	4.70		45.0	100.0	550.	FLASHING	--GLU	48.3
HEIDELBERG	39615	67/	4/30	21	52	3.2	3.2	5.6	4.9	7.3	4.70		74.0	295.0	450.	FLASHING	--GLU	79.6
STADE/ELBE	39615	67/	5/5	19	52	3.0	3.0	5.0	4.1	6.1	4.87	0.80	50.0	140.0	610.	REGULAR FLASHING	--HK	43.3
STADE/ELBE	39615	67/	5/5	21	33	3.0	3.0	5.5	4.5	7.0	4.87	0.80	70.0	360.0	490.	REGULAR FLASHING	--HK	91.5
STADE/ELBE	39617	67/	5/7	20	25	3.0	3.0	5.0	5.0	7.0			84.0	360.0	400.	REGULAR FLASHING	--HK	84.1
HEIDELBERG	39618	67/	5/8	20	40	4.2	4.2	7.2	5.3	8.3	5.03		38.0	340.0	500.	FLASHING	--GLU	124.3
HEIDELBERG	39618	67/	5/8	22	23	4.2	4.2	6.5	5.3	7.6	4.99		36.0	25.0	510.	FLASHING	--GLU	110.5
HEIDELBERG	39620	67/	5/10	22	15	5.2	5.2	6.8	6.1	7.7	4.98		25.0	45.0	660.	FLASHING	--GLU	94.3
HEIDELBERG	39620	67/	5/10	22	56	3.6	3.6	5.3	5.0	6.7	4.96		50.0	100.0	530.	FLASHING	--GLU	62.3
HEIDELBERG	39681	67/	7/10	21	30	2.6	2.6	2.6	3.9	3.9			45.0	100.0	550.	STEADY	--GLU	53.7

SD68-629

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39681	67/	7/10	21	30	3.5	4.0	4.8	5.3				42.0	140.0	550.	REGULAR FLASHING	-- HK	33.8
STADE/ELBE	39695	67/	7/24	21	52	3.0	6.0	4.7	7.7				75.0	220.0	450.	REGULAR FLASHING	-- HK	70.1
HEIDELBERG	39701	67/	7/30	20	6	2.5	5.0	4.0	6.5		6.32		69.0	85.0	400.	FLASHING	-- GLU	57.8
STADE/ELBE	39843	67/12/19	16	48	3.0	4.0	5.0	6.0					85.0	55.0	400.	SLOWLY TURN	-- HK	70.9
STADE/ELBE	39844	67/12/20	17	4	2.5	4.0	4.0	5.5					60.0	280.0	500.	SLOWLY TURN	-- HK	100.4
STADE/ELBE	39852	67/12/28	17	26	3.0	6.0	4.6	7.6					70.0	220.0	480.	SLOWLY TURN	-- HK	97.5
STADE/ELBE	39906	68/	2/20	18	29	3.0	3.8	4.3	5.1				45.0	140.0	550.	REGULAR VARYING	-- HK	47.6
STADE/ELBE	39960	68/	4/14	1	43	2.5	5.5	4.6	7.6				89.0	359.0	380.	SLOWLY TURN	-- HK	70.4
STADE/ELBE	39972	68/	4/26	20	32	3.7	3.7	5.2	5.2				50.0	180.0	500.	ST	-- HK	49.7
STADE/ELBE	39972	68/	4/26	22	13	4.0	4.0	6.0	6.0				70.0	359.0	400.	ST HAZE	-- HK	89.1
HEIDELBERG	39973	68/	4/27	20	46	3.5	5.5	5.4	7.4		65.00		60.0	310.0	420.	SLOWLY TURN	-- GLU	101.8
STADE/ELBE	39973	68/	4/27	22	28	3.0	4.3	4.4	5.7				65.0	355.0	520.	SLOWLY TURN	-- HK	93.3
HEIDELBERG	39974	68/	4/28	21	4	3.6	7.6	4.8	8.8		67.00		36.0	25.0	585.	SLOWLY TURN	-- GLU	100.4

SDC NO. 1903 66-1A COSMOS 104 USSR LAUNCHED 66/ 1/ 7 RF-ENTERED 1/15/66
PERIOD = 90.2 PERIGEE = 119.0 APGEE = 236.1 INCL = 55.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39139	66/	1/14	16	34	2.0	2.0	4.5	4.5				25.0	45.0	320.	STEADY	-- HK	25.7

SDC NC. 1941 65-1080 IFS 3 USA LAUNCHED 65/12/21 IN ORBIT
PERIOD = 647.2 PERIGEE = 121.2 APGEE = 20615.2 INCL = 24.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39120	66/	1/ 4	13	31	5.0	5.0	4.2	4.2				50.0	180.0	1470.	POSSIBLY A SPECULAR REFLECTOR	--JGM	82.9

SDC NO. 1949 66-4A PERIOD = COSMOS 106 USSR LAUNCHED 66/ 1/25 DECEASED 11/14/66
 92.9 PERIGEE = 176.5 APOGEE = 341.8 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
MADISON	39252	66/	5/	7	3	17	6.4	6.4	8.0	8.0			35.7	360.0	485.	STEADY	--GCL	112.3
MILWAUKEE	39252	66/	5/	7	3	17	2.0	7.0	3.6	8.6			36.3	360.0	480.	MAG 2 FIRST 2 SEC. DIMINISHED--EAM RAPIDLY TO MAG 6 CONSTANT AT--EAM MAG 7 FOR NEXT 2 MIN. 40 SEC. --EAM MAG 3 FIRST SEFN. DIMMED --EAM RAPIDLY TO MAG 5. HELD AT --EAM MAG 7 AND LOST AT 03.18.21 --GVM STEADY MAG. --GFG STEADY --LD STEADY 1.5 MINUTES TRACKING --DFC TWINKLED, MIGHT HAVE FAST PER --PM SURPRISINGLY FAINT --JGM TRACKED 40 SEC STEADY --RKR		111.9
MILWAUKEE-C	39252	66/	5/	7	3	17	3.0	7.0	4.6	8.6			36.3	360.0	480.			111.9
OCEANPORT	39259	66/	5/	14	1	18	5.0	5.0	7.3	7.3			63.6	70.4	340.			
TERRE HAUTE	39260	66/	5/	15	1	53	4.0	4.0	6.4	6.4			63.0	360.0	338.			54.5
WALNUT CREEK	39262	66/	5/	17	4	38	8.0	9.0	9.3	9.3			32.0	220.0	540.			95.5
EDINBURG	39263	66/	5/	18	2	8	5.8	6.0	6.9	7.1			25.6	35.9	614.			82.1
VAN NUYS-F	39263	66/	5/	18	3	40	7.2	7.2	9.8	9.8			81.0	216.0	300.			78.7
PHOENIX R	39263	66/	5/	18	3	41	6.0	6.0	8.1	8.1			46.0	220.6	387.			80.7

SDC NO. 1950 66-4B PERIOD = ROCKET BODY USSR LAUNCHED 66/ 1/25 DECEASED 7/16/66
 93.0 PERIGEE = 170.9 APOGEE = 351.1 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39199	66/	3/	15	18	42	3.0	3.0	4.3	4.3			30.0	140.0	550.	STEADY	--HK	38.5
ROCHESTER	39250	66/	5/	5	2	7	5.0	7.0	6.7	8.7		0.30	33.8	0.0	450.	66-048	--BF	112.6
ROCHESTER	39250	66/	5/	5	2	8	5.0	8.0	6.6	9.6		0.32	27.5	31.0	470.		--RJ	93.3
MILWAUKEE	39252	66/	5/	7	2	57	4.0	8.5	5.7	10.2		2.28	32.6	360.0	460.	TIMED 19 PULSES(DIMMING)		114.1
MILWAUKEE-C	39252	66/	5/	7	2	58	1.0		2.7				32.6	360.0	460.	SAME RATE FOR 2 MIN	--EAM	114.2
STADE/ELBE	39253	66/	5/	8	20	9	1.0	1.0	2.4	2.4			25.0	180.0	527.	DID NOT SEE DIMMING PULSES	--GVM	46.2
MILWAUKEE-C	39255	66/	5/	10	2	37	2.0	3.0	4.3	5.3			47.1	360.0	350.	STEADY	--HK	104.7
VAN NUYS-F	39258	66/	5/	13	3	51	5.7	8.0	6.4	8.7		0.35	16.5	25.6	730.	CONSTANT MAG FOR 1.5 MIN	--GVM	93.1
EDINBURG	39259	66/	5/	14	2	44	4.7	4.7	4.8			0.32	9.4	29.5	948.	FAST FLASHING, MIN NOT VIS	--JGM	90.4
WALNUT CREEK	39260	66/	5/	15	4	38	1.5	1.5	4.1	4.1			57.0	216.0	306.	STEADY BRIGHTER TO EAST	--PM	75.1
VAN NUYS-F	39260	66/	5/	15	4	40	2.5	2.5	5.3	5.3			68.0	255.0	275.	QUITE STEADY	--DEC	82.3
EDINBURG	39262	66/	5/	17	2	22	3.2	4.0	4.7	5.5		0.30	27.3	37.2	510.	ALMOST STEADY, FL HARD TO SEE	--JGM	77.6
VAN NUYS-F	39262	66/	5/	17	3	52	2.2	2.2	5.0	5.0			65.4	220.1	280.			81.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE

SOC NO. 1952 66-5A PERIOD = 105.0 PERIGEE = 535.5 APOGEE = 754.3 INCL = 89.7
 LAUNCHED 66/ 1/28 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE

SOC NO. 1967 65-30D PERIOD = 702.7 PERIGEE = 320.3 APOGEE = 24276.9 INCL = -0.0
 LAUNCHED 65/ 4/23 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
OCEANPORT	39557	67	3	8	5	41	9.5		6.6				44.8	115.9	3860.		---GFG	49.3
OCEANPORT	39557	67	3	8	5	51	10.0		6.5				50.9	80.4	5103.		---GFG	53.5
OCEANPORT	39558	67	3	9	5	6	10.0		6.9				35.5	107.9	4153.		---GFG	51.7
VAN NUYS-F	39593	67	4	13	8	16	8.8	8.8	6.0	6.0			63.0	238.0	3670.		---JGW	31.9
VAN NUYS-F	39593	67	4	13	8	23	9.5	9.5	6.4	6.4			78.0	290.0	4230.		---JGW	45.6
VAN NUYS-F	39596	67	4	16	6	33	8.5	8.5	5.8	5.8			65.0	120.0	3480.		---JGW	29.4
VAN NUYS-F	39597	67	4	17	6	3	9.5	9.5	6.2	6.2			55.0	78.0	4570.		---JGW	45.4
VAN NUYS-F	39598	67	4	18	5	25	8.8	8.8	5.8	5.8			43.0	100.0	4000.		---JGW	29.0
VAN NUYS-F	39598	67	4	18	5	38	10.0	10.0	6.1	6.1			42.0	59.0	6110.		---JGW	50.1
OCEANPORT	39603	67	4	23	2	35	10.0		6.7				54.0	93.7	4617.		---GFG	42.5
VAN NUYS-F	39617	67	5	7	6	5	9.0	9.0	6.3	6.3			72.0	204.0	3430.		---JGW	47.6
EDINBURG	39622	67	5	12	3	38	8.0	8.0	5.8	5.8			67.0	173.1	2740.		---PM	44.9
AUSTIN	39925	68	3	10	3	31	9.0		5.1				31.0	61.0	6060.		---NM	41.0
VAN NUYS-F	39938	68	3	23	7	37	9.0	9.5	5.3	5.8			71.0	283.0	5500.		---JGW	45.9

5 MINS. LATE
NO APPARENT VARIATION

SDC NO. 1982 66- 8A PERIOD = 100.3 PERIGEE = 440.6 APOGEE = 521.3 INCL = 97.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39237	66	4	22	1	59	8.0	8.5	9.3	9.8			82.0	100.0	540.	STEADY AND WITH SCINTILLATE	---HK	77.9
STADE/ELBE	39658	67	6	17	0	20	8.0	8.5	9.7	10.2			85.0	260.0	450.	VARYING	---HK	75.0
HEIDELBERG	39681	67	7	10	23	34	8.1	8.1	9.2	9.2			50.0	100.0	600.	STEADY OCCAS VAR	---GLU	70.3
STADE/ELBE	39979	68	5	3	23	8	7.8	7.8	8.9	8.9			65.0	260.0	600.	ST	---HK	58.5
STADE/ELBE	39979	68	5	3	23	9	6.5		7.4		0.20		57.0	235.0	650.	RAPID FLASHES MIN INV	---HK	55.4

SOC NO. 1997 66- 9A PERIOD = 94.8 PERIGEE = 314.4 APOGEE = 318.1 INCL = 82.1
 USA LAUNCHED 66/ 2/ 9 IN ORBIT

STATION NAME	MJD	Y	M	D	T	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS.	PHASE
STADE/ELBE	39244	66/	4/	29	23	39	5.5	5.5	7.4	7.4	7.4		50.0	100.0	410.	STEADY	--	HK 70.5
STADE/ELBE	39245	66/	4/	30	23	21	5.5	5.5	7.1	7.1	7.1		40.0	100.0	471.	STEADY	--	HK 59.2
STADE/ELBE	39253	66/	5/	8	22	35	5.2	5.2	7.5	7.5	7.5		65.0	100.0	354.	STEADY	--	HK 54.3
STADE/ELBE	39257	66/	5/	12	21	23	5.5	5.5	6.4	6.4	6.4		25.0	55.0	664.	STEADY	--	HK 90.1
STADE/ELBE	39259	66/	5/	14	22	24	4.0	4.0	5.9	5.9	5.9		50.0	260.0	420.	STEADY	--	HK 79.4
HEIDELBERG	39259	66/	5/	14	22	25	2.8	2.8	5.0	5.0	5.0		61.0	284.0	364.	STEADY	--	GLU 84.5
HEIDELBERG	39260	66/	5/	15	22	7	2.9	2.9	5.3	5.3	5.3		77.0	306.0	327.	STEADY	--	GLU 81.1
HEIDELBERG	39261	66/	5/	16	21	49	4.3	4.3	6.7	6.7	6.7		60.0	76.0	368.	STEADY	--	GLU 74.7
HEIDELBERG	39262	66/	5/	17	21	32	3.6	3.6	5.8	5.8	5.8		45.0	100.0	440.	STEADY	--	HK 52.3
STADE/ELBE	39264	66/	5/	19	20	55	4.7	4.7	6.5	6.5	6.5		47.0	281.0	429.	STEADY	--	GLU 103.8
HEIDELBERG	39268	66/	5/	23	21	20	3.5	3.5	5.3	5.3	5.3		23.0	250.0	697.	STEADY	--	GLU 99.5
HEIDELBERG	39275	66/	5/	30	20	51	5.2	5.2	6.0	6.0	6.0		40.0	260.0	500.	STEADY	--	HK 38.8
STADE/ELBE	39481	66/	12/	22	5	0	4.0	4.0	5.5	5.5	5.5		70.0	260.0	400.	STEADY	--	HK 53.4
STADE/ELBE	39483	66/	12/	24	5	21	2.0	2.0	4.0	4.0	4.0		55.0	260.0	500.	STEADY	--	HK 106.7
STADE/ELBE	39560	67/	3/	11	18	55	6.5	7.0	8.0	8.5	8.5		50.0	100.0	450.	SLOWLY VARYING	--	HK 53.0
STADE/ELBE	39615	67/	5/	5	21	19	1.0	2.5	2.7	4.2	4.2		85.0	260.0	315.	STEADY AND SLOWLY VARYING	--	HK 79.1
STADE/ELBE	39620	67/	5/	10	21	1	3.5	4.0	6.0	6.5	6.5		63.0	100.0	420.	STEADY NOT DARK	--	HK 50.0
STADE/ELBE	39621	67/	5/	11	20	39	2.5	2.5	4.4	4.4	4.4		30.0	100.0	570.	STEADY	--	HK 57.6
STADE/ELBE	39705	67/	8/	3	22	16	4.5	4.5	5.7	5.7	5.7		46.0	260.0	430.	SLOWLY FLASHING	--	HK 100.7
STADE/ELBE	39725	67/	8/	23	20	32	6.0	8.0	7.8	9.8	9.8		40.0	100.0	465.	ST	--	HK 25.6
STADE/ELBE	39910	68/	2/	24	18	24	4.0	4.0	5.7	5.7	5.7		64.0	287.0	315.	ST	--	GLU 85.5
HEIDELBERG	39969	68/	4/	23	21	39	2.5	2.5	5.0	5.0	5.0		35.0	280.0	570.	SLOWLY TUMB	--	HK 137.2
HEIDELBERG	39972	68/	4/	26	21	30	0.5	4.5	1.7	5.7	5.7		64.0	188.0	320.	ST	--	GLU 54.4
HEIDELBERG	39973	68/	4/	27	20	57	2.0	2.0	4.5	4.5	4.5							

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SD68-629

SDC NO. 2002 66-11A PERIOD = COSMOS 109 USSR LAUNCHED 66/ 2/11 DECAVED 11/21/66
 PERIOD = 95.4 PERIGEE = 137.3 APOGEE = 531.3 INCL = 48.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
HEIDELBERG	39277	66/ 6/ 1	21	37	6.5	6.5	7.9	7.9	7.9	7.9	46.0	155.0	532.	STEADY			GLU	31.3
HEIDELBERG	39279	66/ 6/ 3	21	55	7.2	7.2	9.3	9.3	9.3	9.3	72.0	180.0	386.	STEADY			GLU	57.8

SDC NO. 2016 66-138 PERIOD = ROCKET BODY FRANCE LAUNCHED 66/ 2/17 IN ORBIT
 PERIOD = 118.7 PERIGEE = 310.1 APOGEE = 1706.3 INCL = 34.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURRAN B	39186	66/ 3/ 2	17	50	7.0	9.0	5.8	7.8	7.0	9.0	79.0	96.0	1700.			IRREGULAR TUMBLER	AA	52.2
STPETERSBURG	39210	66/ 3/ 26	1	23	7.0	7.0	6.1	6.1	7.0	7.0	89.5	360.0	1486.			STEADY	FJK	67.9
WALNUT CREEK	39213	66/ 3/ 29	4	34	8.0	8.0	7.0	7.0	7.0	7.0	73.4	180.0	1563.			INV 1 SEC FA 5 SEC	DFC	59.0
STPETERSBURG	39216	66/ 4/ 1	1	42	7.5	6.7	7.9	7.9	7.9	7.9	66.9	360.0	1442.				FJK	74.2
VAN NUYS-F	39216	66/ 4/ 1	5	49	9.0	9.0	7.9	7.9	7.9	7.9	83.5	180.0	1630.				JGW	44.5
STPETERSBURG	39218	66/ 4/ 3	1	6	7.0	7.0	6.3	6.3	6.3	6.3	65.5	360.0	1417.			HINT OF VARIATION	FJK	80.4
STPETERSBURG	39222	66/ 4/ 7	2	2	7.0	7.0	6.5	6.5	6.5	6.5	79.4	360.0	1278.				FJK	73.2
STPETERSBURG	39224	66/ 4/ 9	1	26	7.0	7.0	7.7	7.7	7.7	7.7	43.8	180.0	1920.				JGW	44.1
VAN NUYS-F	39226	66/ 4/ 11	4	56	9.0	9.0	7.3	7.3	7.3	7.3	40.2	182.0	1740.				JGW	54.1
VAN NUYS-F	39228	66/ 4/ 13	4	20	8.5	8.5	7.0	7.0	7.0	7.0	47.4	178.2	1619.				JS	49.2
STPETERSBURG	39229	66/ 4/ 14	2	6	8.0	8.0	7.6	7.6	7.6	7.6	39.5	180.0	1690.				JGW	57.0
VAN NUYS-F	39229	66/ 4/ 14	4	1	8.7	8.7	7.7	7.7	7.7	7.7	37.8	180.0	1640.				JGW	51.2
VAN NUYS-F	39230	66/ 4/ 15	3	43	8.8	8.8	8.9	8.9	8.9	8.9	83.5	340.3	675.				FK	73.2
STPETERSBURG	39436	66/ 11/ 7	0	6	7.5	7.5	7.8	7.8	7.8	7.8	36.6	180.3	891.			FADED TO 9 MAG IN 2.4 D FLD	RR	73.9
OCEANPORT	39436	66/ 11/ 7	0	6	8.0	8.0	8.0	8.0	8.0	8.0	62.0	161.2	723.				RR	57.5
PHOENIX R	39436	66/ 11/ 7	2	3	8.0	8.0	8.0	8.0	8.0	8.0	83.6	340.8	1000.				FK	75.9
STPETERSBURG	39436	66/ 11/ 7	23	45	8.0	8.0	8.0	8.0	8.0	8.0	47.9	178.4	1095.			VARIABLE	FK	90.7
OCEANPORT	39440	66/ 11/ 11	22	35	6.0	6.0	5.8	5.8	5.8	5.8	51.8	357.7	667.			SLOW FADE	FK	66.9
STPETERSBURG	39441	66/ 11/ 12	0	39	8.0	8.0	8.9	8.9	8.9	8.9	85.4	359.0	843.			SLOW FADE	RR	52.5
PHOENIX R	39441	66/ 11/ 12	2	39	6.0	6.0	6.4	6.4	6.4	6.4	51.7	177.0	780.			VARIABLE	RR	67.5
PHOENIX R	39443	66/ 11/ 14	0	5	6.0	6.0	8.5	8.5	8.5	8.5	82.2	58.5	2016.			VARIABLE	RR	62.7
PHOENIX R	39443	66/ 11/ 14	2	3	8.0	8.0	8.5	8.5	8.5	8.5	67.0	183.2	755.			IRR TP MIN INV	RR	63.6
STPETERSBURG	39443	66/ 11/ 14	23	45	8.0	8.0	8.0	8.0	8.0	8.0								
STPETERSBURG	39444	66/ 11/ 15	23	27	8.0	8.0	8.0	8.0	8.0	8.0								
PHOENIX R	39447	66/ 11/ 18	2	56	8.0	8.0	8.6	8.6	8.6	8.6								

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39449	66/11/20	0	21	9.0	9.0	9.4	8.0	8.1	8.1			78.0	17.4	848.	SMALL VARIATION	--FK	61.9
VAN NUYS-F	39449	66/11/20	2	18	8.0	8.0	8.1	8.0	8.1	8.1			76.7	194.0	940.	MIN INV	--JGW	77.4
PHOENIX R	39449	66/11/20	2	20	9.0	9.0	9.4	9.0	9.2	9.2			69.5	190.0	850.	5 TP 37.5 SEC	--RRR	73.5
STPETERSBURG	39450	66/11/21	0	3	9.0	9.0	9.4	9.0	9.2	9.2			79.0	17.5	900.	3 SMOOTH CYCLES	--FK	65.8
PHOENIX R	39580	67/ 3/31	3	31	9.0	9.0	9.4	9.0	9.2	9.2			72.5	131.5	1726.		--RRR	51.9
STPETERSBURG	39581	67/ 4/ 1	2	56	8.0	10.0	6.9	8.9	8.9	8.9			68.5	357.5	1655.		--FK	64.3
WALNUT CREEK	39581	67/ 4/ 1	4	53	7.5	9.5	6.4	8.4	8.4	8.4			74.6	172.0	1672.		--DEC	53.7
VAN NUYS-F	39581	67/ 4/ 1	4	53	8.0	8.0	7.0	7.0	7.0	7.0			89.0	175.0	1610.		--JGW	57.3
OCEANPORT	39582	67/ 4/ 2	0	32	8.0	8.0	0.0	0.0	0.0	0.0			62.2	164.9		IRR TP	--GFG	62.0
PHOENIX R	39582	67/ 4/ 2	4	38	8.0	8.0	7.0	7.0	7.0	7.0			82.7	72.0	1612.		--RRR	51.8
OCEANPORT	39583	67/ 4/ 3	0	13	8.0	8.0	6.7	6.7	6.7	6.7			61.7	157.5	1850.		--GFG	53.2
PHOENIX R	39583	67/ 4/ 3	4	18	8.0	8.0	6.9	6.9	6.9	6.9			88.0	357.9	1646.	IRR TP 11 FL 77.2 SEC MIN INV	--RRR	60.9
STPETERSBURG	39584	67/ 4/ 4	2	0	8.0	8.0	0.0	0.0	0.0	0.0			69.2	357.1		MIN BELOW +11.5	--FK	72.1
VAN NUYS-F	39584	67/ 4/ 4	3	56	8.5	8.5	7.4	7.4	7.4	7.4			89.0	175.0	1690.		--JGW	68.6
OCEANPORT	39585	67/ 4/ 5	3	37	8.5	8.5	7.3	7.3	7.3	7.3			89.0	175.0	1700.		--GFG	72.5
PHOENIX R	39586	67/ 4/ 6	1	24	9.5	9.5	8.0	8.0	8.0	8.0			69.6	183.0	1761.	MIN INV	--RRR	59.8
STPETERSBURG	39586	67/ 4/ 6	5	30	9.0	9.0	8.0	8.0	8.0	8.0			80.1	195.8	1597.	+8 TO INV TO +8.3 SEC	--FK	81.2
PHOENIX R	39587	67/ 4/ 7	1	2	8.0	8.0	6.8	6.8	6.8	6.8			69.6	357.6	1776.	IRR TP MIN INV	--RRR	66.9
PHOENIX R	39588	67/ 4/ 7	3	3	9.0	9.0	7.8	7.8	7.8	7.8			80.5	75.5	1700.	IRR TP	--RRR	50.5
OCEANPORT	39589	67/ 4/ 8	4	52	9.0	11.0	7.9	9.9	9.9	9.9			80.5	187.0	1668.		--GFG	72.9
PHOENIX R	39590	67/ 4/ 9	0	27	7.5	7.5	6.3	6.3	6.3	6.3			69.7	183.0	1771.	IRR TP	--RRR	59.6
STPETERSBURG	39591	67/ 4/ 10	4	14	9.0	9.0	7.8	7.8	7.8	7.8			80.4	194.8	1708.		--FK	55.1
OCEANPORT	39592	67/ 4/ 11	1	57	9.0	9.0	0.0	0.0	0.0	0.0			80.9	16.1	1720.		--GFG	53.2
STPETERSBURG	39596	67/ 4/ 16	1	38	9.0	9.0	0.0	0.0	0.0	0.0			53.9	200.6			--FK	59.7
STPETERSBURG	39596	67/ 4/ 16	2	31	8.0	8.0	0.0	0.0	0.0	0.0			61.9	210.0				

SOC NG. 2017 66-13A DIAPASON 1A FRANCE LAUNCHED 66/ 7/17 IN ORBIT
PERIOD = 118.7 PERIGEE = 311.9 APOGEE = 1700.7 INCL = 34.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURRAN R	39186	66/ 3/ 2	18	3	5.0	5.0	3.9	3.9	3.9	3.9			88.0	116.0	1684.	REGULAR PERIOD	--AA	69.1
STPETERSBURG	39224	66/ 4/ 9	2	20	9.0	10.0	8.2	9.2	9.2	9.2			83.2	180.0	1420.	TP EST 1.5 SEC	--FJK	55.1
STPETERSBURG	39226	66/ 4/ 11	1	46	9.0	10.0	8.4	9.4	9.4	9.4			80.3	180.2	1308.	TP EST 2 SEC	--FJK	51.7
OCEANPORT	39592	67/ 4/ 12	0	15	8.0	8.0	6.7	6.7	6.7	6.7			65.3	166.6	1800.	VAR. IRREGULAR FLASHING	--GFG	68.6

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
OCEANPORT	39433	66/11/	4	22	48	8.0	6.9	9.8	1.00	16.0	180.0	1690.	700.	96.8	--FK			
STPETERSBURG	39437	66/11/	8	0	2	9.0	9.8	9.8		47.8	350.6	789.		72.3	--PM	REGULAR FLASHES, SMOOTH VAR		
EDINBURG	39438	66/11/	9	1	47	8.7	9.2	9.2		85.7	1.6	671.		61.6	--RRR	VERY RAPID TP		
PHOENIX R	39442	66/11/13		2	42	8.0	8.9	8.9	0.10	68.0	176.0	870.		76.9	--463	CYCLING PERIOD ESTIMATED		
WALNUT CREEK	39443	66/11/14		2	22	8.0	8.3	8.3	4.00	86.0	1.9	724.		64.8	--RRR	IRREGULAR FLASH		
PHOENIX R	39443	66/11/14		2	25	8.0	8.7	8.7		56.8	2.0	914.		68.3	--FK	+7 FLASH EA 4 SEC		
STPETERSBURG	39444	66/11/15		0	9	7.0	7.2	7.2		71.0	10.7	790.		59.7	--FK	VARIABLE		
STPETERSBURG	39444	66/11/15		23	52	9.0	9.1	9.1		87.4	21.2	762.		60.8	--FK	15 TP 45.5 SEC		
SAN ANTONIO	39446	66/11/17		1	37	8.5	9.0	9.0		80.0	164.0	1677.		63.7	--RRR	SEC FLASHES TO PLUS 8		
STPETERSBURG	39449	66/11/20		0	50	8.5	9.5	9.5	3.00	0.05	58.9	158.0	1884.	52.3	--DFC	ABOUT 1 SEC TP		
PHOENIX R	39580	67/ 3/31		3	38	9.0	9.0	9.0	2.84	64.9	168.6	1560.		56.4	--JGM			
WALNUT CREEK	39581	67/ 4/ 1		3	17	6.0	9.0	11.5		88.8	2.1	1555.		51.3	--RR	IRR TP		
VAN NUYS-F	39581	67/ 4/ 1		5	28	9.0	8.0	0.0		81.7	343.3	1700.		81.3	--FK			
OCEANPORT	39582	67/ 4/ 2		1	7	8.0	9.0	9.5	4.00	65.3	168.8	1802.		61.1	--GFG	MIN INV		
PHOENIX R	39582	67/ 4/ 2		5	12	9.0	8.5	8.3		88.0	2.3	1597.		54.8	--RRR	MIN BELOW +11.5		
STPETERSBURG	39583	67/ 4/ 3		0	44	9.5	8.0	7.7		89.6	357.0	1660.		62.3	--JGM			
OCEANPORT	39583	67/ 4/ 3		4	54	9.0	9.0	7.9		85.7	169.1	1814.		69.9	--GFG	WHOLE TP SEEMS 4 MAX = 3.84S		
PHOENIX R	39584	67/ 4/ 4		4	33	9.0	7.2	7.2		89.7	358.0	1680.		65.8	--JGM	+R.5 TO INV.		
OCEANPORT	39585	67/ 4/ 5		0	12	8.5	7.9	7.9	0.96	67.8	187.4	1747.		52.2	--GFG	MIN INV		
VAN NUYS-F	39585	67/ 4/ 5		4	15	9.0	7.9	7.9		88.2	2.8	1683.		64.5	--RRR	MIN INV		
OCEANPORT	39586	67/ 4/ 6		2	3	8.0	6.8	6.8		72.7	202.3	1654.		56.6	--GFG	MIN UNDER +10.5		
PHOENIX R	39586	67/ 4/ 6		4	0	9.0	7.9	7.9		66.2	167.5	1795.		80.7	--JGM			
PHOENIX R	39588	67/ 4/ 8		5	33	9.0	7.9	7.9		89.4	358.0	1690.						
OCEANPORT	39589	67/ 4/ 9		1	10	9.0	7.7	7.7										
VAN NUYS-F	39589	67/ 4/ 9		3	2	9.0	7.9	7.9										

SD68-629

SDC NO. 2018 66-13C PERIOD = 119.2 PERIGEE = 317.5 APOGEE = 1728.0 INCL = 34.0 LAUNCHED 66/ 2/17 DECAYED 12/ 5/67

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39210	66/	3/	26	1	42	9.0	10.0	8.1	9.1			85.5	360.0	1537.	TP EST 1 SEC	--FJK	55.1
WALNUT CREEK	39210	66/	3/	26	5	49	9.5	9.5	8.4	8.4			75.6	180.0	1672.	STEADY	--DFC	43.6

SDC NO. 2021 66-13E PERIOD = 118.7 PERIGEE = 310.7 APOGEE = 1705.7 INCL = 34.0 LAUNCHED 66/ 2/17 DECAYED 8/25/67

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39210	66/	3/	26	1	28	8.0	9.0	7.1	8.1			87.6	360.0	1497.	TP EST 1 SEC	--FJK	57.3
WALNUT CREEK	39210	66/	3/	26	5	34	9.0	11.0	7.9	9.9	2.00		74.5	180.0	1639.	ESTIMATED PERIOD	--JAB	46.0
WALNUT CREEK	39213	66/	3/	29	4	38	8.5	9.5	7.5	8.5			74.0	180.0	1567.	3 OR 4 MAX AT SHORT INTERVAL	--DFC	58.3
STPETERSBURG	39224	66/	4/	9	1	31	8.0	9.0	7.5	8.5			80.3	13.1	1279.	TP EST 2 SEC	--FJK	59.8

SDC NO. 2070 66-15A PERIOD = 95.3 PERIGEE = 112.5 APOGEE = 553.0 INCL = 51.8 LAUNCHED 66/ 2/22 RE-ENTERED 4/16/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39190	66/	3/	6	0	21	3.0	3.0	5.2	5.2			28.5	359.2	360.	TRACKED 22 SEC	--FJK	84.7
STPETERSBURG	39191	66/	3/	7	0	9	4.0	4.0	5.8	5.8			22.3	316.1	430.	TRACKED 225 SEC NO C-CHANGE	--FJK	123.9
ROCHESTER	39192	66/	3/	8	0	1	3.0	3.0	6.4	6.4			58.0	124.0	205.	THE DOGS	--RJ	52.8
OCEANPORT	39192	66/	3/	8	0	1	2.0	2.0	4.9	4.9			45.8	330.2	260.	NO MAG. CHANGE NOTED	--GG	102.5
ROCHESTER	39192	66/	3/	8	23	48	2.0	2.0	5.6	5.6			80.0	148.0	190.		--RJ	76.5
OCEANPORT	39194	66/	3/	10	0	35	2.0	2.0	4.3	4.3			29.7	339.7	350.	NO MAG. OR TUMBLING C-CHANGE	--GG	105.2
STADE/ELRE	39197	66/	3/	13	18	0	0.1	0.1	3.3	3.3			35.0	180.0	230.	STEADY	--HK	83.0

SD68-629

SDC NO. 2071 66-15R ROCKET BODY USSR LAUNCHED 66/ 2/22 DECEASED 4/29/66
PERIOD = 95.3 PERIGEE = 113.7 APOGEE = 548.0 INCL = 51.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39199	66/	3/15	18	6	-0.5	3.5	3.3	7.3	12.25	1.00	47.0	180.0	170.	FLASHING		HK	81.0
EDINBURG	39211	66/	3/27	1	35	-2.0	5.0	2.4	9.4	5.00	89.0	180.0	130.		RANGE LESS THAN 180 MILES		PM	78.2

SDC NO. 2085 66-8C DESPIN WEIGHT USA LAUNCHED 66/ 2/ 3 IN ORBIT
PERIOD = 99.2 PERIGEE = 426.3 APOGEE = 472.2 INCL = 97.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39237	66/	4/22	2	18	8.3	10.0	9.8	11.5				72.0	260.0	500.	MIN MAG NOT OBS ONE FLASHORS	HK	51.3

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SDC NO. 2096 66-168 ALTAIR ROCKET USA LAUNCHED 66/ 2/28 IN ORBIT
PERIOD = 113.5 PERIGEE = 843.2 APOGEE = 883.0 INCL = 101.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39881	68/	1/26	16	59	5.8	8.0	5.9	8.1	9.00			80.0	260.0	950.	REGULAR TUMBLING	HK	89.9

SD68-629

SDC NO. 2104 66-19A AGEMA TARGET USA LAUNCHED 66/ 3/16 DECEASED 9/15/66
PERIOD = 90.2 PERIGEE = 177.1 APOGEE = 185.2 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
DURBAN B	39201	66/	3/17	17	18	2.0	2.0	5.5	5.5				60.0	101.0	200.	STEADY	GR	47.5
VAN NUYS-F	39227	66/	4/12	3	32	5.0	5.0	6.5	6.5				28.8	180.0	490.		JGW	64.5
VAN NUYS-F	39229	66/	4/14	3	21	4.5	5.3	6.3	7.1				32.6	180.0	440.	SUSPECT 40 SEC TP	JGW	66.4
VAN NUYS-F	39231	66/	4/16	3	11	5.0		6.6					29.0	170.4	480.	DIDN'T FOLLOW	JGW	59.9
EDINBURG	39234	66/	4/19	2	9	2.2		4.4					41.9	180.0	370.	+3 IN SW GRADUAL RISE TO +2 THEN INTERCEPTED SHADOW	PM	53.6
TOWNSVILLE	39255	66/	5/10	8	50	6.0	6.0	6.9	6.9				17.9	172.0	665.	FOLLOWED FORTY SECONDS STDY	APS	55.2

0-00002

FORM NO. 1028

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39273	66/	5/28	1	3	7.0	7.0	7.0	9.9	9.9			74.1	356.6	261.		--FJK	89.7
STPETERSBURG	39274	66/	5/29	1	46	7.0	7.0	7.0	10.0	10.0			79.6	5.8	255.		--FJK	78.4
VAN MUYS-F	39277	66/	6/1	3	45	5.5	5.5	5.5	6.5	6.5			18.7	193.8	640.		--JGM	67.7
VAN MUYS-B	39304	66/	6/28	11	29	3.5	3.5	3.5	5.0	5.0			25.0	180.0	510.		--JGM	47.3
SAN ANTONIO	39359	66/	8/22	2	7	2.0	4.0	4.0	3.9	5.9			34.7	180.0	412.	GRADUAL VAR	--PM	64.7
VAN MUYS-B	39359	66/	8/22	3	40	4.8	4.8	4.8	5.8	5.8			18.2	179.0	640.		--LDM	51.5
SAN ANTONIO	39361	66/	8/24	1	49	2.5	2.5	2.5	5.2	5.2			56.8	180.0	293.	42SEC BEFORE 66-66E	--PM	71.5
SAN ANTONIO	39362	66/	8/25	2	30	6.5	6.5	6.5	9.5	9.5			81.9	180.0	251.	34SEC BEFORE 66-66E, HIT SHDN	--PM	58.5
WALNUT CREEK	39364	66/	8/27	3	46	6.0	6.0	6.0	6.8	6.8			16.0	180.0	699.	STEADY 2 DEGREES	--DFC	59.9
SAN ANTONIO	39366	66/	8/29	1	56	0.1	1.0	1.0	2.8	3.7			59.6	180.0	284.	REAL BRIGHT, 66-66E 17S BEHND	--PM	59.9
WALNUT CREEK	39366	66/	8/29	3	29	6.0	6.0	6.0	6.5	6.5			13.0	180.0	782.	STEADY 1.5 DEGREES	--DFC	68.5

SDC NO. 2115 66-20C ADAPTER USA LAUNCHED 66/ 3/16 DECAYED 4/19/66
PERIOD = 90.5 PERIGEE = 180.2 APOGEE = 186.4 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN MUYS-F	39227	66/	4/12	3	20	5.8	5.8	5.8	7.7	7.7			20.9	180.0	420.		--JGM	67.6

SDC NO. 2119 66-24A TRANSIT USA LAUNCHED 66/ 3/26 IN ORBIT
PERIOD = 105.3 PERIGEE = 554.9 APOGEE = 700.9 INCL = 89.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39329	66/	7/23	23	36	5.5	6.5	6.5	6.0	7.0			50.0	260.0	780.	VARYING	--HK	70.0
STADE/ELBE	39331	66/	7/25	23	0	2.3	2.3	2.3	3.2	3.2			75.0	260.0	666.	STEADY	--HK	73.3
STADE/ELBE	39331	66/	7/25	23	1	8.0	8.0	8.0	8.6	8.6			65.0	320.0	760.	STEADY AND SCINTILLATE	--HK	94.6
STADE/ELBE	39376	66/	9/8	19	27	8.0	8.0	8.0	9.2	9.2			70.0	100.0	570.	STEADY	--HK	57.9
STADE/ELBE	39684	67/	7/13	23	41	5.5	8.5	8.5	9.0	9.0			45.0	260.0	900.	STEADY SHORT OBS HAZE	--HK	70.5
STADE/ELBE	39708	67/	8/6	21	53	8.5	8.5	8.5	9.0	9.0			52.0	260.0	780.	STEADY SHORT OBS HAZE	--HK	84.9

SD68-629

SDC NO. 2121 66-25A OVI-4 PERIOD = 104.1 PERIGEE = 550.5 USA LAUNCHED 66/ 3/30 IN ORBIT
 APOGEE = 629.4 INCL = 144.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	39183	66/	2/27		4	13	7.0	7.0	7.9	7.9			66.7	189.0	649.	STEADY TWO MINUTES AND MORE	--DFC	64.4
AUSTIN	39746	67/	9/13		2	35	7.0		8.1				88.0	339.0	604.		--MM	56.6
WALNUT CREEK	39904	68/	2/18		3	37	8.0		8.2				37.9	203.0	924.	STEADY TEN SECONDS FADING	--DFC	91.9
																SLOW BELOW MAG TEN THEN FLASHES TO PLUS 7	--	
GRANBY	39905	68/	2/19		0	24	7.8	8.5	7.6	8.3			28.0	203.0	1118.	VARYING	--MPC	94.4
GRANBY	39910	68/	2/24		0	1	8.0	8.5	8.4	8.9			45.0	188.0	825.	VA	--MPC	81.8
GRANBY	39913	68/	2/27		0	46	8.0		8.5				45.0	186.0	910.	VA MIN INV	--MPC	70.6

SDC NO. 2122 66-25B OVI-5 PERIOD = 105.6 PERIGEE = 612.7 USA LAUNCHED 66/ 3/30 IN ORBIT
 APOGEE = 657.4 INCL = 144.7

STATION NAME	MJD	Y	M	D	M	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39658	67/	6/17	2	4	5.0	5.0	5.8	72.5	28.5	680.						--FK	75.9

SDC NO. 2124 66-25D ROCKET BODY OVI-5 PERIOD = 104.1 PERIGEE = 549.9 USA LAUNCHED 66/ 3/30 IN ORBIT
 APOGEE = 629.4 INCL = 144.5

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	39183	66/	2/27	3	13	6.0	7.0	1.06	72.8	179.0	634.				FLAT PLUS 8 MAX ALTERNATING WITH SHARP PLUS 6 FLASH MIN FAINTER THAN PLUS TEN	--	74.6
AUSTIN	39741	67/	9/	R	2	37	7.9		59.0	349.0	670.					--DFC	85.4
GRAHBY	39905	68/	2/19	23	40	8.0	8.2		39.0	194.0	902.				VA, MIN INV, SHORT OBS	--MM	93.4
AUSTIN	39907	68/	2/21	1	39	7.0	8.0	8.9	69.0	14.0	658.					--MM	68.1
GRANBY	39912	68/	2/26	23	46	8.0	8.5		48.0	178.0	785.				REC VA MIN INV	--MPC	78.0

SDC NO. 2125 66-26A
 PERIOD = 100.5 PERIGEE = 392.7 APOGEE = 581.0 INCL = 98.6
 LAUNCHED 66/ 3/31 IN ORBIT
 APOGEE = 581.0 INCL = 98.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/HLBE	39606	67/ 4/26	21	0	8.5	10.0	9.8	11.3	1.50	0.40	65.0	260.0	540.			SHARP FLASHING	--	HK 85.2

SDC NO. 2142 66-31A
 PERIOD = 100.9 PERIGEE = 492.1 APOGEE = 499.0 INCL = 35.0
 LAUNCHED 66/ 4/ 8 IN ORBIT
 APOGEE = 499.0 INCL = 35.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39331	66/ 7/25	4	26	-0.1	0.8	0.8		5.00	45.0	295.0	570.				SAM TWO FLASHES 3 MINUTES APART	--JGM	117.9
VAN NUYS-F	39331	66/ 7/25	4	29	3.0	7.0	4.1	8.1	5.00	56.0	111.6	590.					--JGM	41.6
VAN NUYS-F	39332	66/ 7/26	4	0	0.5	6.0	1.3	6.8	4.00	40.4	105.8	700.				LONG PERIOD WITH BRIGHT FLSH	--JGM	32.7
STPETERSBURG	39462	66/12/ 3	23	58	7.0	7.0	7.2	7.2	66.0	209.7	920.					66-31A	--FK	89.3
STPETERSBURG	39466	66/12/ 7	23	35	7.0	7.0	7.0	7.0	67.5	302.0	1000.					66-31A	--FK	91.6
STPETERSBURG	39467	66/12/ 8	23	56	7.0	7.0	7.1	7.1	46.0	286.0	960.					66-31A	--FK	110.0
AUSTIN	39612	67/ 5/ 2	3	14	7.0	7.0	8.2	8.2	61.0	11.0	563.						--MM	80.0
VAN NUYS-F	39950	68/ 4/ 4	3	3	6.2	6.2	7.6	7.6	92.0	357.0	520.					TP GREATER THAN 1 MINUTE	--JGM	82.0
VAN NUYS-F	39957	68/ 4/11	3	4	2.5	7.0	3.5	8.0	3.00	50.0	201.0	630.				DIDN'T FOLLOW FULL CYCLE	--JGM	85.4
VAN NUYS-F	40004	68/ 5/28	4	28	5.3	5.8	6.3	6.8	48.0	79.0	640.						--JGM	52.9

SDC NO. 2144 66-31R
 PERIOD = 100.8 PERIGEE = 489.0 APOGEE = 500.2 INCL = 35.0
 LAUNCHED 66/ 4/ 8 IN ORBIT
 APOGEE = 500.2 INCL = 35.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39668	67/ 6/27	4	55	2.0	2.0	3.5	3.5	80.0	180.0	500.						--JGM	54.6
VAN NUYS-F	39670	67/ 6/29	3	56	1.8	3.1	3.1		62.0	116.0	560.					MIN 9 FLOW +2	--JGM	53.4
VAN NUYS-F	39950	68/ 4/ 4	3	51	6.5	6.5	8.0	8.0	45.0	6.0	500.						--JGM	71.5
VAN NUYS-F	39956	68/ 4/10	4	16	6.7	6.7	6.8	6.8	26.0	209.0	940.						--JGM	80.5
VAN NUYS-F	39957	68/ 4/11	3	44	6.0	6.0	6.3	6.3	27.0	209.0	890.						--JGM	87.3

SDC NO. 2148 66-328 PERIOD = 90.5 PERIGEE = 90.1 APGEE = 270.3 INCL = 117.0
USA LAUNCHED 66/ 4/19 DECAYED 4/22/66

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39237	66/	4/22	19	43	-3.0	0.0						40.0	82.0		REENTRY, TAIL 4 SEC. 4.5 D/SFC--GLU		47.3

SDC NO. 2151 66-35A PERIOD = 709.7 PERIGEE = 295.2 APGEE = 24531.7 INCL = 65.0
USSR LAUNCHED 66/ 4/25 IN ORBIT

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39695	67/	7/24	6	15	9.3	10.5	5.0	6.2				52.0	99.0	7280.	TP ESTIMATED AS 3 MINUTES	--JGM	43.6
VAN NUYS-F	39696	67/	7/25	5	46	9.7	11.0	5.3	6.6				45.0	94.0	7500.		--JGM	43.4
OCEANPORT	39704	67/	8/2	2	31	12.0		6.6					49.1	68.8	11900.		--GFG	62.2
VAN NUYS-F	39719	67/	8/17	6	31	10.0	11.0	5.8	6.8				78.0	200.0	6820.	SEVERAL MINUTE TP	--JGM	44.4
VAN NUYS-F	39723	67/	8/21	4	51	10.8	12.0	6.0	7.2				62.0	78.0	9070.	TP ABOUT 2.5-3 MINUTES LONG	--JGM	48.9
VAN NUYS-F	39863	68/	1/8	6	10	10.5	10.5	6.1	6.1				66.0	185.0	7700.		--JGM	30.7

SDC NO. 2152 66-36A PERIOD = 92.1 PERIGEE = 179.3 APGEE = 289.6 INCL = 48.4
COSMOS 116 LAUNCHED 66/ 4/26 DECAYED 12/ 3/66

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39273	66/	5/28	1	39	6.5	8.0	8.1	9.6				32.3	323.4	470.	ESTIMATED TP=4.0 SEC	--FJK	129.7
WALNUT CREEK	39273	66/	5/28	4	46	7.0	7.0	9.7	9.7				76.3	328.0	285.	STEADY 30 SECONDS TRACKING	--DFC	84.8
TERRE HAUTE	39274	66/	5/29	2	12	4.0	4.0	6.8	6.8				86.0	328.0	274.	STEADY	--LD	82.8
PHOENIX R	39274	66/	5/29	3	42	7.0	7.5	8.8	9.3		0.50		36.0	328.4	432.	TRACKED 130 SEC	--RKR	125.8
TERRE HAUTE	39275	66/	5/30	2	43	9.0	9.0	10.7	10.7				35.0	339.0	456.	STEADY	--DD	125.3
HEIDELBERG	39277	66/	6/1	20	34	5.2	5.2	7.9	7.9				74.0	175.0	288.	IRREFG. VAR. ABOUT 0.2 MAG	--GLU	57.7
HEIDELBERG	39280	66/	6/4	20	30	5.0	5.0	7.7	7.7				69.0	189.0	294.	STEADY	--GLU	68.2
ROCHESTER	39284	66/	6/8	2	34	7.0	7.0	9.7	9.7				73.8	208.0	290.	66-36A	--RJ	68.7
ROCHESTER	39284	66/	6/8	2	35	7.0	7.0	9.4	9.4				57.8	142.0	325.		--RJ	42.8
TERRE HAUTE	39287	66/	6/11	2	27	4.0	4.0	6.8	6.8				78.0	211.0	271.	STEADY	--LD	76.0
WALNUT CREEK	39288	66/	6/12	4	26	7.0	7.0	9.8	9.8				85.0	210.0	270.	STEADY 30 SECONDS TRACKING	--DFC	79.4
STPETERSBURG	39289	66/	6/13	1	53	3.0	3.0	4.8	4.8				37.4	37.2	440.		--FJK	81.0

SD68-629

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN MUYS-F	39290	66/	6/14		3	52	6.0	6.0	8.8	8.8			77.1	217.0	270.		--JCM	81.5
SAN ANTONIO	39291	66/	6/15		2	49	5.8	5.6	8.0	8.0			46.0	222.5	329.	FOLLOWED 25 DEG. NO FLUX	--PM	82.8

SDC NO. 2159 66-368 PERIOD = 92.0 ROCKET BODY USSR LAUNCHED 66/ 4/26 DECEASED 5/14/66
 APOGEE = 179.5 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
CLEVELAND	39275	66/	5/30		1	55	5.0		7.7				65.9	345.9	282.	SLIGHT DIMMING	--DS	99.6
OCEANPORT	39275	66/	5/30		1	57	4.0	5.0	5.5	6.5			28.6	10.7	490.	15 FLASHES PER 15 SECS.	--GFC	112.4
TERRE HAUTE	39275	66/	5/30		1	59	2.0	5.0	4.8	7.8			0.86	0.30	272.	30 MAXIMUMS OBSERVED	--LD	102.2
TERRE HAUTE	39276	66/	5/31		2	20	3.0	6.0	4.7	7.7			0.85	0.30	463.	30 MAX	--LD	130.9
OCEANPORT	39276	66/	5/31		2	21	4.0	5.0	5.1	6.1			20.7	9.7	600.	1 FLASH PER SEC.	--GFC	119.7
VAN MUYS-F	39276	66/	5/31		3	48	6.0		7.0				19.1	334.0	620.	ALTERNATING MAX. TP FROM 6CYC	--JCM	130.3
HEIDELBERG	39276	66/	5/31		20	38	3.0	4.5	5.8	7.3			68.0	172.0	274.	NORMAL TUMBLING	--GLU	61.5
HEIDELBERG	39277	66/	6/ 1		21	2	2.5	4.0	5.4	6.9			76.0	181.0	264.	NORMAL TUMBLING	--GLU	66.6
HEIDELBERG	39279	66/	6/ 3		20	12	1.5	3.5	4.4	6.4			75.0	182.0	260.	NORMAL TUMBLING	--GLU	73.8
HEIDELBERG	39280	66/	6/ 4		20	35	1.5	3.5	4.3	6.3			62.0	191.0	281.	NORMAL TUMBLING	--GLU	64.1
MILWAUKEE-B	39283	66/	6/ 7		3	23	4.0	4.0	7.0	7.0			88.0	202.0	250.	NOT TRACKED	--EAM	72.9
SAN ANTONIO	39286	66/	6/10		2	55	5.0		5.3				10.9	26.7	862.	FLASHING SEEN THRU BINOCULARS	--PM	98.4
ROCHESTER-E	39287	66/	6/11		1	44	1.0	5.0	4.0	8.0			46.2	212.0	248.	66-368	--RJ	75.7
ROCHESTER-E	39287	66/	6/11		1	45	1.0	5.0	3.6	7.6			33.0	182.0	300.		--RJ	35.5
SAN ANTONIO	39287	66/	6/11		3	17	3.0	5.0	4.5	6.5			26.8	34.0	513.	ROUGH PER. PHOTOGRAPH, LAST 5 FL EASY TO DISTING. MAX. NO MIN VISIBLE THEN, HERE SHOW ENTRY A BLEND OF MAX AND MIN	--PM	88.5
VAN MUYS-F	39287	66/	6/11		4	48	1.8		4.6				60.0	330.0	280.	MIN UNDER +3	--JCM	101.2
WALNUT CREEK	39287	66/	6/11		4	48	2.0	6.0	4.9	8.9			76.0	210.0	260.	TYPICAL NOT QUITE REGULAR	--DFC	74.0
VAN MUYS-F	39287	66/	6/11		4	49	1.2		4.1				68.6	101.2	260.		--JCM	54.9
TERRE HAUTE	39288	66/	6/12		7	4	2.0	5.0	3.3	6.3			0.30	59.0	545.	50 MAX	--LD	79.6
WALNUT CREEK	39288	66/	6/12		5	8	4.0		5.5				24.0	220.0	500.		--DEC	76.9
SAN ANTONIO	39290	66/	6/14		2	45	2.0		5.1				89.0	218.9	237.	BEGAN WITH SLIGHTLY IRREG FL	--PM	75.2
SAN ANTONIO	39291	66/	6/15		3	5	3.3		4.8				21.2	225.2	509.	NAKED EYE FLUSHES	--PM	88.1
STADE/ELRE	39331	66/	7/25		21	19	2.5	5.0	4.6	7.1			0.40	25.0	380.	REGULAR FLASHING	--HK	32.2

SDC NO. 2168		66-39A		PERIOD =		COSMOS 119		USSR		LAUNCHED 66/ 5/11		IN ORBIT						
						97.1		PERIGEE = 364.7		APOGEE = 408.2		INCL = 65.0						
STATION NAME	NJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39322	66/	7/16		0	29	5.0	5.0	6.5	6.5			55.0	140.0	494.	STEADY	--	58.8
STADE/ELBE	39351	66/	8/14		23	28	3.0	3.0	4.9	4.9			72.0	55.0	419.	STEADY	--	78.9
STADE/ELBE	39352	66/	8/15		23	46	2.3	2.3	4.2	4.2			70.0	220.0	423.	STEADY	--	51.9
STADE/ELBE	39361	66/	8/24		19	50	4.0	4.0	5.0	5.0			15.0	100.0	630.	STEADY	--	26.0
STADE/ELBE	39469	66/12/10		16	4	7.0	7.0	7.0	9.0	9.0			85.0	55.0	400.	STEADY NOT DARK	--	75.6
STADE/ELBE	39535	67/ 2/14		18	0	7.5	8.0	7.8	8.3	8.3			22.0	346.0	853.	STEADY AND FLICKER	--	94.5
STADE/ELBE	39630	67/ 5/20		21	25	5.5	5.5	6.6	6.6	6.6			50.0	220.0	600.	STEADY	--	65.9
STADE/ELBE	39631	67/ 5/21		21	42	5.5	5.5	6.3	6.3	6.3			30.0	220.0	700.	STEADY MOON	--	50.3
HEIDELBERG	39688	67/ 7/17		22	9	5.0	5.0	7.0	7.0	7.0			82.0	40.0	400.	STEADY	--	77.1
HEIDELBERG	39690	67/ 7/19		21	4	3.6	3.6	4.9	4.9	4.9			40.0	100.0	550.	STEADY	--	48.1
HEIDELBERG	39692	67/ 7/21		21	36	3.3	3.3	4.8	4.8	4.8			51.0	320.0	500.	STEADY	--	112.8
HEIDELBERG	39816	67/11/22		19	27	6.3	6.3	6.3	6.4	6.4			19.0	23.0	940.	ST	--	70.7
STADE/ELBE	39877	68/ 1/22		0	33	3.0	3.0	3.0	5.0	5.0			65.0	346.9	400.	VERY SLOWLY TUMB	--	72.1
STADE/ELBE	39906	68/ 2/20		18	0	1.0	5.5	5.5	2.4	6.9			50.0	55.0	530.	VERY SLOWLY TUMB	--	46.3
STADE/ELBE	39938	68/ 3/23		3	11	4.5	8.0	8.0	6.2	9.7			70.0	140.0	450.	ST	--	76.0
STADE/ELBE	39961	68/ 4/15		20	14	3.5	3.5	3.5	4.8	4.8			40.0	140.0	550.	ST	--	26.9
STADE/ELBE	39962	68/ 4/16		20	30	3.5	3.5	3.5	5.0	5.0			65.0	140.0	500.	ST	--	48.6
HEIDELBERG	39966	68/ 4/20		19	53	5.0	5.0	5.0	6.5	6.5			52.0	281.0	490.	ST	--	110.9

SDC NO. 2169		66-38B		ROCKET BODY		USSR		LAUNCHED 66/ 5/11		IN ORBIT								
		PERIOD =		97.0		PERIGEE =		418.2		INCL = 65.0								
STATION NAME	MJD	Y	M	D	H	M	MIN	MAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE	
STADE/ELBE	39322	66/	7/16		0	17	4.0	4.0	5.5	5.60	1.00	50.0	140.0	409.	VAR JR FLASHING	--	55.0	
STADE/ELBE	39331	66/	7/25		21	59	4.0	6.0	5.8	7.8		70.0	140.0	434.	REGULAR FLASHING	--	56.9	
STADE/ELBE	39334	66/	7/28		21	7	4.5	6.0	6.2	7.7		65.0	140.0	448.	REGULAR FLASHING	--	53.8	
STADE/ELBE	39337	66/	7/31		21	55	5.5	9.0	6.4	9.9	0.50	37.0	320.0	647.	REGULAR FLASHING	--	125.2	
STADE/ELBE	39352	66/	8/15		22	40	4.0	6.0	5.3	7.3		50.0	55.0	544.	REGULAR FLASHING	--	97.1	
STADE/ELBE	39353	66/	8/16		22	55	4.5	6.5	6.3	8.3	6.25	1.00	75.0	55.0	445.	REGULAR FLASHING	--	74.9
STADE/ELBE	39469	66/12/10		16	19	6.5	6.5	7.8	7.8	16.00		70.0	220.0	550.	STEADY BUT A LONG FLASH	--	97.7	
STADE/ELBE	39485	66/12/26		5	30	5.0	7.5	6.5	9.0			64.0	315.0	500.	REGULAR FLASHING	--	50.5	
STADE/ELBE	39535	67/ 2/14		17	53	7.0	7.5	7.3	7.8			23.0	347.0	984.	STEADY OCASS SHORT VARYING	--	92.5	

SD68-629

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FORM NO. 1429

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STATION NAME	NJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39536	67	2	15	18	9	7.5	7.5	7.7	7.7	40.00		21.5	354.0	931.	STEADY	--	HK 88.9
HEIDELBERG	39610	67	4	30	19	50	5.0	7.0	5.9	7.9			37.0	320.0	650.	SLOWLY VAR	--	GLU 131.1
HEIDELBERG	39816	67	11	22	19	0	7.5	7.5	7.7	7.7			17.0	24.0	930.	ST	--	GLU 86.9
HEIDELBERG	59826	67	12	2	18	9	4.9	5.2	7.0	7.3			74.0	64.0	375.	FAINT VAR	--	GLU 98.0
STADE/ELBE	39883	68	1	28	17	40	4.0	4.0	5.1	5.1			40.0	55.0	400.	ST	--	HK 32.8
STADE/ELBE	39906	68	2	20	18	13	4.5	5.0	6.7	7.2			89.0	55.0	370.	ST	--	HK 74.8
STADE/ELBE	39961	68	4	15	20	34	3.2	3.2	5.4	5.4			89.5	310.0	370.	ST	--	HK 73.3
HEIDELBERG	39966	68	4	20	20	4	5.8	5.8	6.7	6.7			29.0	325.0	665.	ST	--	GLU 133.6

SDC NO. 2172 66-398

LAUNCHED 66/ 5/14 IN ORBIT
PERIOD = 95.4 PERIGEE = 321.2 APOGEE = 347.3 INCL = 109.9

STATION NAME	NJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39361	66	8	24	21	33	6.5	7.5	8.8	9.8			89.0	290.0	352.	VARYING	--	HK 69.8
STADE/ELBE	39361	66	8	24	21	34	5.0	7.5	7.0	9.5	0.50	0.20	45.0	220.0	400.	RAPIDLY FLICKERING	--	HK 88.6
STADE/ELBE	39469	66	12	10	16	22	7.0	9.0	8.1	10.1	0.50		43.0	50.0	600.	FLICKERING	--	HK 33.9

SDC NO. 2173 66-40A

LAUNCHED 66/ 5/15 IN ORBIT
PERIOD = 108.1 PERIGEE = 685.4 APOGEE = 732.6 INCL = 100.3

STATION NAME	NJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39286	66	6	10	23	49	7.5	7.5	8.1	8.1			89.5	100.0	747.	STEADY	--	HK 76.8
STADE/ELBE	39613	67	5	3	23	2	8.0	8.0	7.8	7.8			35.0	100.0	1100.	STEADY	--	HK 66.9
HEIDELBERG	39683	67	7	12	23	1	8.2	8.2	8.0	8.0			34.0	100.0	1100.	STEADY	--	GLU 65.9
HEIDELBERG	39688	67	7	17	23	47	7.8	7.8	8.3	8.3			65.0	100.0	400.	STEADY AND IRREG. VAR	--	GLU 79.1
HEIDELBERG	39702	67	7	31	23	37	7.4	7.4	7.6	7.6			56.0	100.0	900.	STEADY	--	GLU 67.0

SD68-629

SDC NO. 2174 66-40R AGENA R USA LAUNCHED 66/ 5/15 IN ORBIT
 PERIOD = 107.9 PERIGEE = 674.2 APOGEE = 730.1 INCL = 100.3

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39615	67	5	5	23	15	5.5	6.0	6.3	6.8	9.00		89.0	260.0	690.	REGULAR FLASHING	--	HK
STADE/ELBE	39632	67	5	22	0	25	5.5	8.5	6.3	9.3	10.46	0.80	89.5	260.0	700.	REGULAR SHARP FLASHING	--	HK
STADE/ELBE	39638	67	5	28	0	20	4.5	9.0	5.3	9.8	10.50	0.80	89.5	100.0	700.	REGULAR SHARP FLASHES	--	HK

SDC NO. 2176 66-41A TRANSIT USA LAUNCHED 66/ 5/19 IN ORBIT
 PERIOD = 103.4 PERIGEE = 536.2 APOGEE = 608.9 INCL = 50.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39355	66	8	18	23	42	6.5	6.5	7.9	7.9			83.0	100.0	523.	STEADY	--	HK
STADE/ELBE	39801	67	11	7	17	41	8.0	9.0	8.8	8.8			55.0	100.0	700.	ST OCCAS FAINT FLICKER	--	HK
STADE/ELBE	39802	67	11	8	17	49	8.3	8.3	9.2	9.2			67.0	100.0	650.	ST	--	HK
STADE/ELBE	39944	68	3	29	20	34	8.0	8.5	9.0	9.5			88.0	100.0	620.	FAINT VAR	--	HK

SDC NO. 2182 66-43A COSMOS 119 USSR LAUNCHED 66/ 5/24 DECEASED 11/30/66
 PERIOD = 99.9 PERIGEE = 134.2 APOGEE = 799.7 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39375	66	9	7	3	26	1.0				3.0		38.0	60.0	400.	ABOUT 2 SEC TP	--	JGW

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SDC NO. 2183 66-44A EXPLORER 32 USA LAUNCHED 66/ 5/25 IN ORBIT
PERIOD = 116.0 PERIGEE = 175.8 APOGEE = 1692.6 INCL = 64.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39793	67/10/30	1	6	9.5	11.0	13.0	14.5	1.50	76.2	220.0	200.				IRREG FLICKERING	--FK	68.6
GRANBY	39793	67/10/30	1	12	8.0	8.0	7.9	7.9		76.0	230.0	1035.				SOME FLICKERING	--MPC	50.3
GRANBY	39794	67/10/31	2	8	8.3	8.3	7.6	7.6		50.0	313.0	1350.					--MPC	81.8
STPETERSBURG	39797	67/11/ 3	0	48	8.0	8.0	0.0	0.0		56.0	297.0					TRAIN OF UNUSUALLY BRIGHT FL	--FK	92.9
POYNTON	39811	67/11/17	18	57	7.0	7.0	0.0	0.0		60.0	350.0					TP EST 0.2 SECS THEN INVIS.	--DMB	74.1
GRANBY	39829	67/12/ 5	0	13	8.5	8.7	7.0	7.2		45.0	44.0	2000.				IRREG FLASHING	--MPC	35.2
STPETERSBURG	39841	67/12/17	23	52	9.0	9.0	0.0	0.0	1.00	54.4	48.1						--FK	42.6
STPETERSBURG	39907	68/ 2/21	0	49	8.0	8.0	7.7	7.7		75.2	47.1	1170.					--FK	59.8
VAN MUYLS-F	39949	68/ 4/ 3	3	48	6.2	8.0	5.5	7.3	0.78	66.0	104.0	1350.				ALSO LONG TP OF 1 OR 2 MIN.	--JGM	46.7
VAN MUYLS-F	39950	68/ 4/ 4	4	36	8.3	8.3	7.4	7.4		53.0	208.0	1500.				TP EST .75 SEC	--JGM	66.7
STPETERSBURG	39953	68/ 4/ 7	1	11	7.0	7.0	0.0	0.0		83.5	131.8						--FK	66.0

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SDC NO. 2184 66-44B ALTAR ROCKET USA LAUNCHED 66/ 5/25 IN ORBIT
PERIOD = 116.0 PERIGEE = 174.0 APOGEE = 1689.5 INCL = 64.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39782	67/10/19	19	9							6.63	60.0	130.0			TP FST 6 +/- 0.5 SECS SUBSIDIARY MAXIMA HERE	--DMB	43.3

SDC NO. 2186 66-46A ATDA USA LAUNCHED 66/ 6/ 1 DECEASED 7/11/66
PERIOD = 90.5 PERIGEE = 182.1 APOGEE = 184.5 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39288	66/ 6/12	9	32	2.5	2.5	6.0	6.0		67.2	357.0	195.					--FK	89.9
STPETERSBURG	39301	66/ 6/25	1	32	1.5	1.5	5.2	5.2		33.8	80.6	180.				TPACKED	--JS	45.8
SAN ANTONIO	39302	66/ 6/26	2	58	5.0	5.0	8.8	8.8		78.4	178.7	171.				M2.0 IN WEST, FADED SLOWLY TO	--PM	57.2
STPETERSBURG	39303	66/ 6/27	1	24	2.0	2.0	0.0	0.0	23.00								--JS	
SAN ANTONIO	39303	66/ 6/27	2	53	1.0	2.5	4.7	6.2		77.5	182.3	179.				M2.5 IN WEST, GRAD RISE TO +1	--PM	58.3

SDC NO. 2189

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
SAN ANTONIO	39304	66	6	28	2	48	2.7		6.4				68.0	181.8	179.	OBSRVD IN CHINABERRY TREE		PM	66.4
																AS ENTERING SHDN OVERHEAD			
SAN ANTONIO	39305	66	6	29	2	28	2.0	2.0	5.4	5.4			53.6	189.2	207.	ST IN APOGEE FIELD, REAL FAST		PM	57.1

SDC NO. 2188 66-46R ATLAS ROCKET USA LAUNCHED 66/ 6/ 1 DECAYED 6/22/66
PERIOD = 90.3 PERIGEE = 174.0 APOGEE = 185.2 INCL = 28.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
TOWNSVILLE	39285	66	6	7	8	19	1.0	8.5	0.4	9.9	15.00		12.0	182.0	537.	TP 15 SECONDS APPROX		AGM	69.7
TOWNSVILLE	39286	66	6	10	8	17	1.0	6.0	1.8	6.8	18.70		10.3	176.4	696.	NO OTHER OBJECTS SEEN		NUB	64.0
SAN ANTONIO	39300	66	6	24	2	35	2.8	2.8	6.0	6.0			35.0	180.0	225.	ST, SEEN ABOUT 30 SEC		PM	54.4
STPETERSBURG	39301	66	6	25	1	18	7.0	7.0	11.0	11.0			81.5	170.1	160.			FJK	74.3
SAN ANTONIO	39301	66	6	25	2	20	1.2	1.2	4.8	4.8			45.0	173.8	190.	SWIFT, ST		PM	56.4
SAN ANTONIO	39302	66	6	26	1	59	1.0	1.0	4.0	4.0			30.0	95.0	250.	ST, OBSRVD THRU HOLE IN CLDS,		PM	34.7
																22M AFTR SUNSET, HEIGHT 131M			
STPETERSBURG	39302	66	6	26	1	16	6.0	6.0	0.0	0.0									FJK
STPETERSBURG	39302	66	6	26	1	23	8.0	8.0	0.0	0.0						STEADY			FJK
PHOENIX R	39302	66	6	26	3	34	3.0	3.0	5.3	5.3			20.5	180.0	350.	FLASHING, MIN INV		RJE	52.1
PHOENIX R	39302	66	6	26	3	39	7.0	7.0	9.3	9.3			20.2	180.0	350.	FLASHING, MIN INV		RJE	51.1
SAN ANTONIO	39305	66	6	29	2	41	2.0	2.0	5.9	5.9			44.0	180.0	165.	NO VARIATION, HEIGHT 117MILES		PM	55.6

SDC NO. 2200 66-51A USA LAUNCHED 66/ 6/ 9 DECAYED 12/ 3/66
PERIOD = 89.9 PERIGEE = 108.1 APOGEE = 2246.9 INCL = 90.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
VAN NUYS-F	39308	66	7	2	7	16	4.2	4.2	4.3	4.3			52.5	274.0	970.			JGM	73.4
VAN NUYS-F	39308	66	7	2	7	17	4.5	7.0	3.9	6.4	0.62		30.0	325.0	1320.	SUDDENLY GAVE ABOUT 15 FLSHS		JGM	113.8
STADE/ELBE	39309	66	7	3	21	52	3.0	3.0	3.4	3.4			68.0	100.0	930.	STEADY IN NDRTH OCASS FLASH		HK	58.4
STADE/ELBE	39316	66	7	10	21	17	1.0	1.0	2.6	2.8			50.0	100.0	437.	STEADY		HK	57.8
STADE/ELBE	39321	66	7	15	21	27	1.0	1.0	4.1	4.1			65.0	260.0	239.	STEADY		HK	84.1
STADE/ELBE	39323	66	7	17	21	20	2.5	2.5	5.7	5.7			60.0	260.0	229.	STEADY IN NORTH +10 FLASHING		HK	90.9

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-B	39359	66	8	22	3	13	0.1	1.5	2.0	3.4	0.60		37.0	25.0	410.	MOSTLY ST BUT FLASHED SOME	--LDN	81.6

SDC NO. 2201 66-52A OV3-4 USA LAUNCHED 66/ 6/10 IN ORBIT
 PERIOD = 143.0 PERIGEE = 398.3 APOGEE = 2931.6 INCL = 40.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39619	67	5	9	4	3	9.0		8.4				62.0	214.0	1304.		--MM	56.0
STPETERSBURG	39621	67	5	11	1	16	4.0	7.0	4.4	7.4	4.00	0.50	59.2	347.4	840.	4-1/2S FLASH 2S INV REPEAT	--FK	96.9

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SDC NO. 2227 66-55A PERIOD = 90.1 PERIGEE = 120.5 APOGEE = 228.0 INCL = 80.1 LAUNCHED 66/ 6/21 DECEASED 7/14/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39308	66/	7/	2	0	17	1.5	8.0	5.1	11.6	14.00	2.00	65.0	100.0	192.	REGULAR FLASHING	--	HK 79.5
STADE/ELBE	39309	66/	7/	3	0	27	2.5	4.0	6.2	7.7			85.0	260.0	179.	VARYING	--	HK 75.7

SDC NO. 2228 66-46 PIECES FRAGMENTS USA LAUNCHED 66/ 6/ 1 DECEASED 6/30/66

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39300	66/	6/	24	4	3	7.0	8.5					15.6	180.0	500.		--	JGM 51.2
SAN ANTONIO	39302	66/	6/	26	2	46	4.7	8.5					76.0	178.1	171.	VERY RAPID FLASHING, MIN 71V	--	PM 68.1

SDC NO. 2253 66-56A PERIOD = 181.4 PERIGEE = 2614.1 APOGEE = 2653.9 INCL = 97.0 LAUNCHED 66/ 6/24

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-B	39304	66/	6/	28	11	45	2.0	2.0	0.1	-0.1			30.0	0.0	2650.		--	JGM 78.9
STADE/ELBE	39308	66/	7/	2	0	36	3.5	3.5	0.8	0.8			35.0	100.0	3491.	PAGES STEADY	--	HK 88.4
STADE/ELBE	39309	66/	7/	3	0	47	2.3	2.3	-0.3	-0.3			40.0	100.0	3355.	STEADY	--	HK 89.4
LOUISVILLE	39309	66/	7/	3	9	50	2.0	2.0	-0.6	-0.6			61.0	60.0	3244.	VERY STEADY	--	GPE 101.2
STADE/ELBE	39310	66/	7/	4	0	59	2.3	2.3	-0.3	-0.3			45.0	100.0	3388.	STEADY	--	HK 90.4
LOUISVILLE	39310	66/	7/	4	7	1	2.4	2.5	-0.9	-0.8			17.3	62.8	4500.	PHOTO SHOWS SLIGHT DIMMING DURING 4 DEGREES OF TRAVEL	--	GPE 104.0
TOWNSVILLE	39312	66/	7/	6	18	46	5.0	5.0	1.8	1.8			15.0	248.0	4420.	STEADY	--	MDB 13.9
STADE/ELBE	39312	66/	7/	6	22	28	5.0	5.0	1.7	1.7			8.0	100.0	4628.	STEADY	--	HK 55.1
STADE/ELBE	39312	66/	7/	6	22	40	3.0	3.0	-0.3	-0.3			18.0	50.0	4628.	STEADY	--	HK 112.2
STADE/ELBE	39312	66/	7/	6	22	46	3.5	3.5	0.2	0.2			15.0	25.0	4628.	STEADY	--	HK 135.6
STADE/ELBE	39314	66/	7/	8	23	10	3.0	3.0	-0.2	-0.2			20.0	100.0	4320.	STEADY	--	HK 72.3
STADE/ELBE	39315	66/	7/	9	23	17	3.0	3.0	-0.2	-0.2			27.0	100.0	4400.	STEADY	--	HK 72.8
GRANBY	39321	66/	7/	15	6	16	3.0	3.0	0.0	0.0			50.0	100.0	3310.	STEADY IN 9 INCH	--	MPC
STADE/ELBE	39322	66/	7/	16	0	23	1.5	1.5	-1.1	-1.1						STEADY	--	HK 81.3

STATION NAME	MJD	Y	M	D	H	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39323	66/	7/17	21	46	3.0	4.0	-0.0	1.0			15.0	100.0	4000.	PAGERS IS VARYING	--	54.1
STADE/ELBE	39323	66/	7/17	21	49	3.0	3.5	-0.0	0.5			15.0	60.0	4000.	VARYING	--	92.9
STADE/ELBE	39323	66/	7/17	21	51	3.5	3.5	0.5	0.5			10.0	50.0	4000.	STEADY	--	104.0
STADE/ELBE	39324	66/	7/18	0	35	3.0	3.0	0.2	0.2			27.0	135.0	3700.	STEADY	--	58.2
STADE/ELBE	39324	66/	7/18	0	37	2.7	3.5	-0.0	0.8			35.0	120.0	3500.	PAGERS IS VARYING	--	71.2
STADE/ELBE	39324	66/	7/18	0	42	2.7	3.5	0.0	0.8			65.0	110.0	3400.	VARYING	--	76.7
STADE/ELBE	39324	66/	7/18	0	48	3.0	3.0	0.3	0.3			60.0	60.0	3400.	STEADY	--	99.7
STADE/ELBE	39324	66/	7/18	0	49	3.0	3.0	0.3	0.3			58.0	55.0	3400.	STEADY	--	103.0
STADE/ELBE	39324	66/	7/18	0	56	1.5	4.5	-1.2	1.8	37.00		35.0	30.0	3500.	VARYING	--	131.3
STADE/ELBE	39324	66/	7/18	1	0	2.7	4.0	-0.1	1.2			25.0	25.0	3700.	VARYING	--	142.2
STADE/ELBE	39324	66/	7/18	1	3	3.0	4.0	0.1	1.1			20.0	20.0	3800.	VARYING	--	147.4
STADE/ELBE	39329	66/	7/23	22	56	3.5	4.5	0.8	1.8			35.0	100.0	3500.	VARYING	--	166.4
STADE/ELBE	39330	66/	7/23	23	3	2.7	4.5	-0.1	1.7			30.0	50.0	3700.	VARYING	--	168.0
STADE/ELBE	39330	66/	7/24	1	44	3.0	4.0	0.4	1.4			45.0	180.0	3300.	VARYING	--	169.9
STADE/ELBE	39330	66/	7/24	1	58	1.5	3.5	-0.7	1.3	37.00		85.0	260.0	2756.	REGULAR VARYING	--	43.9
STADE/ELBE	39330	66/	7/24	2	5	1.7	3.0	-0.7	0.6			54.0	360.0	3000.	VARYING	--	76.0
STADE/ELBE	39331	66/	7/25	23	25	2.0	3.5	-0.7	0.8			40.0	55.0	3500.	VARYING	--	109.7
STADE/ELBE	39331	66/	7/25	23	19	2.3	4.0	-0.3	1.4			45.0	100.0	3300.	VARYING	--	109.0
STADE/ELBE	39334	66/	7/28	20	55	4.0	4.0	0.7	0.7			15.0	100.0	4628.	STEADY	--	89.0
STADE/ELBE	39334	66/	7/28	23	46	2.7	3.5	0.1	0.9			50.0	140.0	3250.	VARYING	--	42.5
STADE/ELBE	39334	66/	7/28	23	58	2.3	3.0	-0.0	0.7			60.0	60.0	2900.	VARYING	--	48.1
STADE/ELBE	39335	66/	7/29	0	5	2.0	2.5	-0.6	-0.1			42.0	360.0	3300.	VARYING	--	91.9
STADE/ELBE	39335	66/	7/29	23	58	3.0	4.0	0.6	1.6			55.0	140.0	3000.	VARYING	--	120.3
STADE/ELBE	39336	66/	7/30	0	5	2.5	3.5	-0.2	0.8			65.0	100.0	3400.	VARYING	--	51.9
STADE/ELBE	39336	66/	7/30	0	10	2.2	3.0	-0.2	0.6			60.0	55.0	3000.	VARYING	--	74.0
STADE/ELBE	39337	66/	7/31	21	19	4.5	4.5	1.2	1.2			10.0	100.0	4600.	STEADY	--	94.8
STADE/ELBE	39337	66/	7/31	21	27	4.0	4.0	0.8	0.8			15.0	100.0	4400.	STEADY AND VARYING	--	47.6
STADE/ELBE	39337	66/	7/31	21	35	3.0	4.0	0.1	1.1			25.0	55.0	3830.	VARYING	--	48.8
STADE/ELBE	39338	66/	8/1	0	35	2.5	2.5	0.4	0.4			65.0	30.0	2640.	STEADY	--	90.5
STADE/ELBE	39338	66/	8/1	0	38	2.5	3.0	0.2	0.7			53.0	25.0	2950.	FADING VARYING	--	97.6
STADE/ELBE	39339	66/	8/2	21	50	2.5	3.5	-0.4	0.6			25.0	100.0	3830.	VARYING	--	113.0
STADE/ELBE	39340	66/	8/3	0	45	2.0	3.0	-0.4	0.6			50.0	180.0	3000.	VARYING	--	52.7
STADE/ELBE	39341	66/	8/4	22	15	3.0	3.0	0.4	0.4			40.0	100.0	3311.	STEADY	--	36.6
STADE/ELBE	39343	66/	8/6	22	37	3.0	3.0	0.5	0.5			45.0	100.0	3200.	STEADY	--	57.3
STADE/ELBE	39349	66/	8/12	20	55	2.7	3.5	-0.1	0.7			30.0	55.0	3700.	VARYING	--	50.7
STADE/ELBE	39352	66/	8/15	21	20	3.0	3.0	0.2	0.2			40.0	100.0	3700.	STEADY	--	80.6
STADE/ELBE	39353	66/	8/16	0	23	2.0	2.5	-0.3	0.2			85.0	260.0	2481.	FADING VARYING	--	47.3

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39353	66/	8/16	21	30	3.0	3.0	3.0	0.5	0.5			40.0	100.0	3200.	STEADY	--	48.1
STADE/ELBE	39354	66/	8/17	0	35	2.0	2.5	-0.3	0.2	0.2			85.0	260.0	2581.	FAINT VARYING	--	66.5
STADE/ELBE	39354	66/	8/17	21	40	2.7	3.5	0.2	1.0				45.0	100.0	3100.	VARYING	--	50.3
VAN MUYS-B	39355	66/	8/18	9	50	3.0	4.0	0.2	1.2		52.50		40.0	330.0	3600.	MIN ARE DIPS LIKE ECHO 1	--JGM	84.0
STADE/ELBE	39356	66/	8/19	1	13	3.0	3.0	0.0	0.0	0.0			25.0	360.0	3900.	STEADY	--	127.8
SAN ANTONIO	39356	66/	8/19	3	54	3.0	4.0	-0.4	0.6	0.6			15.0	90.0	4725.	VAR ALONG 15 MIN TRACK PERIOD	--PM	41.0
SAN ANTONIO	39356	66/	8/19	6	46	3.0	2.7	4.0	0.4	1.7			83.5	90.0	2930.	FOLLOWED 30 MINUTES	--PM	43.2
STADE/ELBE	39356	66/	8/19	22	8	3.0	3.0	0.0	0.5	0.5			45.0	100.0	3100.	STEADY	--	53.6
STADE/ELBE	39357	66/	8/20	1	10	2.3	3.5	0.0	1.2				80.0	260.0	2975.	VARYING	--	54.1
PHOENIX R	39357	66/	8/20	6	57	3.0	3.0	0.0	0.5	0.5			65.0	100.0	3100.	TRACKED 268 SEC	--RKR	42.9
STADE/ELBE	39361	66/	8/24	19	56	3.0	3.0	0.0	0.0	0.0			25.0	100.0	3900.	STEADY	--	29.4
STADE/ELBE	39364	66/	8/27	23	35	2.5	3.5	0.2	1.2				85.0	260.0	2906.	VARYING	--	62.6
PHOENIX R	39371	66/	9/ 3	6	33	3.0	3.0	0.6	0.6	0.6			78.0	29.0	3000.	STEADY 12 8 MIN	--RKR	51.8
PHOENIX R	39373	66/	9/ 5	6	52	3.0	3.0	0.0	0.6	0.6			86.5	268.5	3020.	STEADY OCCASS VARYING	--RKR	42.2
STADE/ELBE	39373	66/	9/ 5	22	10	2.0	3.0	-0.4	0.2	0.2			77.0	100.0	3000.	STEADY	--	55.3
STADE/ELBE	39375	66/	9/ 7	19	30	3.0	3.0	0.2	0.2	0.2			30.0	100.0	3625.	STEADY	--	25.1
STADE/ELBE	39375	66/	9/ 7	22	32	2.5	3.0	0.2	0.7				89.0	100.0	2950.	FAINT VAR	--	60.0
STADE/ELBE	39376	66/	9/ 8	19	39	3.5	3.5	0.8	0.8	0.8			35.0	100.0	3500.	STEADY	--	28.3
PHOENIX R	39378	66/	9/10	4	53	3.0	3.0	0.1	0.1	0.1			49.0	65.0	3800.	STEADY TRACKED 340 SEC	--RKR	47.1
PHOENIX R	39385	66/	9/17	5	55	3.0	3.0	0.5	0.5	0.5	29.00		85.0	201.6	3100.	STEADY	--RR	38.9
VAN MUYS-F	39385	66/	9/17	6	10	2.8	3.3	-0.0	0.5	0.5			42.7	6.2	3650.	STEADY	--JGM	82.5
STADE/ELBE	39387	66/	9/19	21	35	3.0	3.0	0.6	0.6	0.6			89.0	100.0	3000.	MOSTLY +2.5	--	58.2
EDINBURG	39388	66/	9/20	3	20	2.5	4.0	-0.3	1.2	1.2			45.0	90.0	3625.	STEADY	--PM	19.6
STADE/ELBE	39388	66/	9/20	21	41	2.7	2.7	0.2	0.2	0.2			89.0	260.0	3100.	STEADY	--	58.3
PHOENIX R	39389	66/	9/21	3	39	4.0	4.0	1.1	1.1	1.1			40.6	68.5	3780.	STEADY	--RR	37.6
STADE/ELBE	39390	66/	9/22	19	5	3.0	3.0	0.5	0.5	0.5			45.0	100.0	3150.	STEADY	--	31.3
EDINBURG	39392	66/	9/24	4	3	2.5	4.0	0.0	1.6	1.6			89.0	90.0	3069.	SLOWLY VARYING	--PM	42.1
STADE/ELBE	39396	66/	9/28	20	5	2.0	3.0	-0.7	0.3	0.3			70.0	100.0	3500.		--HK	46.7
STPETERSBURG	39398	66/	9/30	2	3	2.0	2.0	-0.6	-0.6	-0.6			3200.		3250.		--FK	
STPETERSBURG	39399	66/10/ 1	2	15	2.0	2.0	-0.5	-0.5	-0.5	-0.5			50.0	90.0	3560.	POSITION SECURED BY 17-INCH	--PM	18.1
EDINBURG	39402	66/10/ 4	2	52	2.5	4.0	-0.3	1.2	1.2				60.0	120.0	3200.	STEADY TRACKED 5 MIN	--RR	32.5
PHOENIX P	39406	66/10/ 8	3	23	3.0	3.0	0.5	0.5	0.5	0.5			55.0	100.0	3500.	FAINT VARYING	--	37.2
STADE/ELBE	39406	66/10/ 8	18	40	2.5	3.0	-0.2	0.3	0.3				61.0	164.5	3000.	STEADY	--RR	43.5
PHOENIX R	39409	66/10/11	3	50	4.0	4.0	1.6	1.6	1.6	1.6			67.0	177.5	3000.	STEADY	--RKR	47.0
PHOENIX R	39410	66/10/12	4	1	3.0	3.0	0.6	0.6	0.6	0.6			75.0	100.0	3200.	STEADY CLOUDY SKY	--HK	49.8
STADE/ELBE	39410	66/10/12	19	25	3.0	3.0	0.5	0.5	0.5	0.5							--FK	
STPETERSBURG	39411	66/10/13	0	17	2.0	2.0	-0.5	-0.5	-0.5	-0.5							--FK	

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39415	66/10/17	17	15	3.5	3.5	3.5	3.5	0.7	0.7			45.0	100.0	3700.	STEADY HAZE	--	HK 38.4
STADE/ELBE	39415	66/10/17	23	38	3.0	3.0	3.0	3.0	-0.2	-0.2			15.0	360.0	4410.	STEADY	--	HK 118.9
PHOENIX R	39416	66/10/18	2	5	4.0	4.0	4.0	4.0	1.2	1.2			48.7	92.5	3640.	STEADY	--	RR 32.9
VAN MUYS-F	39417	66/10/19	5	20	2.2	2.2	2.2	3.5	-0.6	0.7	113.00		50.0	290.0	3600.	QUAST PERIODIC VAR	--	JGM 79.6
STADE/ELBE	39419	66/10/21	17	54	2.5	2.5	3.0	3.0	-0.1	0.4			55.0	100.0	3300.	FAINT VARYING	--	HK 39.8
STADE/ELBE	39423	66/10/25	18	55	3.0	3.0	3.0	3.0	0.5	0.5			75.0	100.0	3200.	STEADY	--	HK 52.1
STADE/ELBE	39423	66/10/25	21	35	3.0	3.0	3.0	3.0	0.2	0.2			40.0	260.0	3600.	STEADY	--	HK 75.7
STPETERSBURG	39424	66/10/26	0	26	2.0	2.0	2.0	2.0	-0.5	-0.5			60.0	77.0	3200.		--	FK 39.4
STPETERSBURG	39425	66/10/27	0	36	1.5	1.5	1.5	1.5	-1.0	-1.0			87.0	260.0	3070.	STEADY NCASS VARYING	--	HK 64.6
STADE/ELBE	39426	66/10/28	19	5	2.3	2.3	3.0	3.0	-0.1	0.6			45.0	260.0	3500.	VARYING	--	HK 63.9
STADE/ELBE	39426	66/10/28	22	10	3.0	3.0	4.0	4.0	0.3	1.3					3200.		--	FK
STPETERSBURG	39427	66/10/29	1	1	1.5	1.5	1.5	1.5	-1.0	-1.0					3200.		--	FK
STPETERSBURG	39427	66/10/29	1	2	1.5	1.5	3.0	3.5	0.2	0.7			36.0	260.0	3700.	FAINT VARYING	--	HK 67.5
STADE/ELBE	39428	66/10/29	22	15	3.0	3.0	3.0	3.0	-0.4	0.3			75.0	260.0	3500.	FAINT VARYING	--	HK 71.7
STADE/ELBE	39430	66/11/1	16	43	3.0	3.0	3.0	3.0	0.6	0.6			52.0	100.0	3000.	STEADY	--	HK 47.7
PHOENIX R	39433	66/11/4	1	50	3.0	3.0	3.0	3.0	0.5	0.5			60.6	148.6	3200.	STEADY	--	RR 64.4
STADE/ELBE	39434	66/11/5	20	25	3.0	3.0	3.5	3.5	0.1	0.6			50.0	260.0	3900.	FAINT VARYING	--	HK 81.0
STADE/ELBE	39435	66/11/6	17	35	2.5	2.5	2.5	2.5	-0.1	-0.1			75.0	100.0	3300.	STEADY	--	HK 58.4
STADE/ELBE	39435	66/11/7	20	33	2.3	2.3	3.0	3.0	-0.6	0.1			40.0	260.0	3800.	STEADY NCASS FAINT VARYING	--	HK 87.6
PHOENIX R	39436	66/11/7	2	24	3.0	3.0	3.0	3.0	0.5	0.5			73.2	206.8	3200.	STEADY	--	RR 75.6
STPETERSBURG	39438	66/11/9	23	49	1.5	1.5	1.5	1.5	0.0	0.0			56.5	236.5	3400.	STEADY	--	RR 89.4
PHOENIX R	39439	66/11/10	2	52	3.0	3.0	3.0	3.0	0.3	0.3			85.0	260.0	3000.	STEADY	--	HK 70.9
STADE/ELBE	39439	66/11/10	18	15	2.5	2.5	2.5	2.5	0.1	0.1					3200.		--	FK
STPETERSBURG	39440	66/11/11	0	15	1.5	1.5	1.5	1.5	-1.0	-1.0			60.0	100.0	2600.	STEADY	--	HK 95.4
STADE/ELBE	39440	66/11/11	3	58	2.2	2.2	2.2	2.2	0.1	0.1			80.0	260.0	3100.	VARYING	--	HK 74.1
STADE/ELBE	39440	66/11/11	18	25	2.2	2.2	3.0	3.0	-0.3	0.5			48.6	301.6	3700.	STEADY	--	RR 90.9
PHOENIX R	39441	66/11/12	3	23	3.0	3.0	3.0	3.0	0.2	0.2			39.5	275.7	3600.	STEADY	--	RR 100.6
PHOENIX R	39443	66/11/14	3	38	3.0	3.0	3.0	3.0	0.2	0.2					3200.		--	FK
STPETERSBURG	39444	66/11/15	0	51	2.0	2.0	2.0	2.0	-0.5	-0.5			46.5	274.5	3300.		--	FK
STPETERSBURG	39445	66/11/16	0	5	1.5	1.5	1.5	1.5	-1.1	-1.1			66.0	260.0	3400.		--	FK
STPETERSBURG	39446	66/11/17	1	3	1.5	1.5	1.5	1.5	-1.2	-1.2			66.0	260.0	3000.	STEADY	--	HK 101.1
STADE/ELBE	39455	66/11/26	17	55	3.0	3.0	3.0	3.0	0.6	0.6			32.4	336.0	3200.		--	FK
STADE/ELBE	39456	66/11/27	0	13	1.5	1.5	1.5	1.5	-1.0	-1.0			50.0	260.0	2730.	STEADY	--	HK 87.3
STADE/ELBE	39466	66/12/7	5	18	2.5	2.5	2.5	2.5	0.3	0.3			55.0	315.0	2700.	STEADY	--	HK 38.3
STADE/ELBE /	39469	66/12/10	17	23	3.0	3.0	3.0	3.0	0.8	0.8			50.0	260.0	2730.	STEADY	--	HK 91.0
STADE/ELBE	39470	66/12/11	17	25	3.0	3.0	3.0	3.0	0.8	0.8						STEADY	--	HK 110.2

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STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39490	66/12/31			0	11	2.5	2.5	0.5	0.5			60.0	100.0	2565.	STEADY	--HK	46.5
STADE/ELBE	39529	67/ 2/ 8			21	10	1.8	2.3	-0.2	0.3			55.0	55.0	2565.	VARYING	--HK	48.4
STADE/ELBE	39530	67/ 2/ 9			0	15	2.0	2.0	-0.2	-0.2			55.0	310.0	2700.	STEADY	--HK	61.4
STADE/ELBE	39533	67/ 2/12			0	35	2.0	2.0	-0.2	-0.2			45.0	310.0	2780.	STEADY	--HK	67.3
STADE/ELBE	39534	67/ 2/13			21	55	1.8	2.5	-0.0	0.7			80.0	100.0	2320.	VARYING MOST STEADY	--HK	39.2
STADE/ELBE	39535	67/ 2/14			18	55	3.5	3.5	0.8	0.8			30.0	55.0	3440.	STEADY	--HK	39.2
STADE/ELBE	39535	67/ 2/14			22	2	2.0	2.0	0.2	0.2			80.0	100.0	2320.	STEADY	--HK	38.3
STADE/ELBE	39536	67/ 2/15			19	0	3.5	3.5	0.8	0.8			25.0	55.0	3450.	STEADY	--HK	40.5
STADE/ELBE	39536	67/ 2/15			22	9	1.5	2.0	-0.3	0.2			85.0	100.0	2300.	FAINT VARYING	--HK	41.3
STADE/ELBE	39539	67/ 2/18			19	30	2.0	2.5	-0.5	0.0			30.0	100.0	3130.	FAINT VARYING	--HK	7.0
STADE/ELBE	39539	67/ 2/18			22	30	1.8	2.5	-0.0	0.7			85.0	100.0	2300.	FAINT VARYING	--HK	41.4
STADE/ELBE	39545	67/ 2/24			20	10	2.0	2.5	-0.1	0.4			55.0	55.0	2580.	FAINT VARYING	--HK	50.3
STADE/ELBE	39551	67/ 3/ 2			20	49	1.8	2.5	-0.0	0.7			80.0	100.0	2330.	FAINT VARYING	--HK	48.5
STADE/ELBE	39554	67/ 3/ 5			3	15	2.0	2.0	-0.1	-0.1			83.1	44.7	2600.	STEADY	--FK	39.1
STADE/ELBE	39556	67/ 3/ 7			18	22	3.0	3.0	0.4	0.4			30.0	100.0	3285.	STEADY	--HK	18.7
STADE/ELBE	39556	67/ 3/ 7			21	20	1.8	2.5	-0.0	0.7			80.0	260.0	2315.	FAINT VARYING	--HK	61.0
STADE/ELBE	39560	67/ 3/11			18	43	2.0	2.0	-0.3	-0.3			45.0	100.0	2890.	STEADY	--HK	31.6
STADE/ELBE	39564	67/ 3/15			1	9	2.0	2.0	-0.5	-0.5			39.5	53.1	3200.	STEADY AND FAINT VARYING	--FK	42.9
STADE/ELBE	39564	67/ 3/15			19	4	1.7	2.5	-0.2	0.6			65.0	100.0	2450.	STEADY OCCAS FAINT VARYING	--HK	49.9
STADE/ELBE	39565	67/ 3/16			19	9	1.8	2.5	-0.1	0.6			74.0	100.0	2360.	STEADY	--FK	58.5
STADE/ELBE	39567	67/ 3/18			1	28	2.0	2.0	-0.4	-0.4			54.5	54.5	3000.	STEADY	--FK	46.1
STADE/ELBE	39570	67/ 3/21			19	35	2.0	2.0	0.1	0.1			84.0	100.0	2450.	STEADY	--HK	66.4
STADE/ELBE	39570	67/ 3/21			22	30	3.0	3.0	0.4	0.4			35.0	315.0	3300.	STEADY	--HK	105.8
STADE/ELBE	39573	67/ 3/24			19	58	2.0	2.0	0.1	0.1			85.0	260.0	2445.	STEADY	--HK	73.8
STADE/ELBE	39575	67/ 3/26			20	13	1.7	2.8	-0.2	0.9			70.0	260.0	2450.	VARYING	--HK	83.2
STADE/ELBE	39577	67/ 3/28			20	16	2.0	2.0	0.1	0.1			75.0	280.0	2450.	STEADY	--HK	82.5
STADE/ELBE	39579	67/ 3/30			20	34	2.0	2.0	-0.1	-0.1			60.0	260.0	2600.	STEADY	--HK	87.3
STADE/ELBE	39581	67/ 4/ 1			5	47	2.8	3.5	0.1	0.8			35.0	295.0	3400.	COMPLEX VARIATION	--JGM	102.3
VAN NUYS-F	39581	67/ 4/ 1			20	37	3.0	3.0	0.6	0.6			55.0	310.0	3000.	STEADY	--HK	102.9
STADE/ELBE	39581	67/ 4/ 1			20	37	3.0	3.0	0.6	0.6			75.8	276.5	2780.	STEADY	--RR	84.4
PHOENIX R	39587	67/ 4/ 7			3	24	6.0	6.0	3.8	3.8			70.0	270.2	2910.	STEADY	--RR	89.2
PHOENIX R	39588	67/ 4/ 8			3	30	6.0	6.0	3.8	3.8			43.0	350.0	3040.	STEADY	--JGM	100.3
VAN NUYS-F	39589	67/ 4/ 9			3	26	2.5	2.5	0.1	0.1			61.6	281.2	2910.	STEADY	--RR	95.6
PHOENIX R	39590	67/ 4/10			3	41	6.0	6.0	3.7	3.7			70.0	260.0	2730.	STEADY NOT DARK	--RR	99.1
STADE/ELBE	39594	67/ 4/14			19	5	3.0	3.0	0.8	0.8			43.0	276.0	3450.	STEADY	--JGM	109.8
VAN NUYS-F	39597	67/ 4/17			4	22	3.0	3.0	0.1	0.3			30.0	260.0	3800.	STEADY	--HK	114.4
STADE/ELBE	39607	67/ 4/27			20	9	3.0	3.0	0.1	0.1			25.0	260.0	3900.	STEADY	--HK	113.1
STADE/ELBE	39609	67/ 4/29			20	25	3.5	3.5	0.5	0.5								

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STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	39614	67/ 5/ 4	2	15			3.0	3.0	0.2	0.2			15.0	100.0	3700.	STEADY	-- HK	117.4
STPETERSBURG	39648	67/ 6/ 7	8	26			2.5	2.5	0.7	0.7			42.6	15.5	2750.		-- FK	109.2
STADE/ELBE	39651	67/ 6/10	8	48			2.0	2.0	0.0	0.0							-- FK	
STADE/ELBE	39654	67/ 6/13	0	1			2.5	3.0	-0.2	0.3			30.0	100.0	3500.	VARYING	-- HK	83.0
STADE/ELBE	39658	67/ 6/17	0	27			1.8	3.0	-0.7	0.5			50.0	100.0	3100.	VARYING	-- HK	84.2
STADE/ELBE	39671	67/ 6/30	22	50			2.0	3.0	-0.5	0.5			40.0	100.0	3230.	SLOWLY VARYING	-- HK	57.8
HEIDELBERG	39672	67/ 7/ 1	22	48			2.4	2.4	-0.2	-0.2			39.0	100.0	3380.	STEADY FAINT VAR	-- GLU	54.3
STADE/ELBE	39675	67/ 7/ 4	23	10			2.0	3.0	-0.5	0.5			47.0	100.0	3140.	VARYING	-- HK	70.8
STADE/ELBE	39676	67/ 7/ 5	23	15			2.0	3.0	-0.4	0.6			50.0	100.0	3050.	VARYING MOST STEADY	-- HK	71.5
HEIDELBERG	39681	67/ 7/10	23	37			2.5	2.8	0.2	0.5			64.0	145.0	2950.	VAR	-- GLU	52.0
STADE/ELBE	39684	67/ 7/13	23	57			2.0	3.0	-0.3	0.7			85.0	100.0	2920.	VARYING RUT MOST STEADY	-- HK	75.5
HEIDELBERG	39688	67/ 7/17	21	17			3.4	3.4	0.8	0.8			39.0	100.0	3240.	STEADY VAR 0.3 MAG	-- GLU	49.4
HEIDELBERG	39690	67/ 7/19	21	27			3.2	3.2	0.6	0.6			44.0	100.0	3300.	STEADY	-- GLU	51.7
STADE/ELBE	39691	67/ 7/20	21	33			3.0	4.0	0.5	1.5			50.0	100.0	3200.	VARYING	-- HK	57.5
HEIDELBERG	39692	67/ 7/21	21	40			2.6	2.6	0.0	0.0			48.0	100.0	3300.	STEADY VAR 0.4 MAG	-- GLU	53.8
STADE/ELBE	39693	67/ 7/22	21	51			3.0	4.0	0.5	1.5			55.0	100.0	3100.	VARYING	-- HK	50.4
STADE/ELBE	39695	67/ 7/24	21	52			2.0	3.0	-0.5	0.5			55.0	100.0	3200.	VARYING MOST STEADY	-- HK	50.1
STADE/ELBE	39705	67/ 8/ 3	22	30			3.0	3.0	0.5	0.5			89.5	260.0	3150.	STEADY	-- HK	72.2
STADE/ELBE	39706	67/ 8/ 4	22	30			2.0	3.0	-0.5	0.5			89.0	260.0	3150.	VARYING MOST STEADY	-- HK	71.5
STADE/ELBE	39707	67/ 8/ 5	22	35			2.3	3.0	-0.2	0.5			70.0	260.0	3150.	VARYING	-- HK	71.5
STADE/ELBE	39708	67/ 8/ 5	22	37			2.3	3.0	-0.4	0.4			85.0	260.0	3150.	FAINT VAR MOST STEADY	-- HK	71.5
STADE/ELBE	39715	67/ 8/14	22	57			2.3	3.0	0.4	0.4			60.0	100.0	3350.	STEADY	-- HK	54.3
STADE/ELBE	39719	67/ 8/ 17	22	10			3.0	3.0	0.4	0.4			52.0	120.0	3600.	VARYING	-- HK	98.3
STADE/ELBE	39719	67/ 8/ 17	22	10			3.5	4.5	0.4	1.4			30.0	160.0	4200.	VARYING	-- HK	127.0
STADE/ELBE	39721	67/ 8/19	22	10			2.5	3.0	-0.3	0.2			68.0	100.0	3550.	FAINT VARYING	-- HK	50.0
STADE/ELBE	39725	67/ 8/23	23	18			2.5	3.5	-0.2	0.8			77.0	100.0	3480.	VARYING	-- HK	55.4
STADE/ELBE	39725	67/ 8/23	23	29			3.5	5.0	0.5	2.0			50.0	310.0	3900.	VARYING 1.5 MAG	-- HK	92.4
STADE/ELBE	39726	67/ 8/24	23	20			3.0	4.0	0.3	1.3			80.0	100.0	3460.	VARYING	-- HK	57.3
VAN NUYS-F	39730	67/ 8/24	5	34			3.2	5.0	-0.0	1.8		50.00	40.0	355.0	4400.	HALE TP. MIN ARE DIPS	-- JGM	97.2
STADE/ELBE	39730	67/ 8/ 8	22	43			3.0	5.0	-0.0	2.0			53.0	360.0	4000.	VARYING	-- HK	100.2
GRANBY	39731	67/ 8/ 8	22	17			2.8	3.9	0.1	1.2			82.0	230.0	3450.	VARYING	-- MPC	53.6
GRANBY	39732	67/ 8/ 8	22	45			3.5	4.5	-0.0	1.0			26.0	270.0	5100.	VARYING	-- MPC	58.4
GRANBY	39734	67/ 8/ 1	23	58			3.5	4.5	0.0	1.2			85.0	360.0	3550.	VARYING	-- MPC	63.1
STADE/ELBE	39736	67/ 8/ 1	23	25			2.8	4.0	-0.0	1.2			33.0	360.0	4700.	VARYING	-- HK	114.6
STADE/ELBE	39748	67/ 8/ 1	23	25			4.0	5.0	1.0	2.0			70.0	270.0	3700.	VARYING	-- MPC	74.3
STADE/ELBE	39748	67/ 8/ 1	23	58			4.0	5.0	1.0	2.0			50.0	250.0	3300.	VARYING HAZE	-- HK	90.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39749	67	9	16	20	35	3.0	3.0	0.1	0.1			66.0	260.0	3790.	STEADY	--GLU	78.9
STADE/ELBE	39751	67	9	18	20	58	4.5	4.5	1.5	1.5			55.0	260.0	3980.	STEADY MOON	--HK	82.8
HEIDELBERG	39755	67	9	22	21	10	3.5	3.5	0.4	0.4			48.0	260.0	4200.	STEADY	--GLU	82.3
GRANBY	39757	67	9	24	0	15	4.0	4.5	1.1	1.6			77.0	1.0	3800.	SLOWLY VARYING	--MPC	76.8
GRANBY	39757	67	9	24	3	14	4.0	4.5	0.6	1.1			32.5	300.0	4850.	MOON	--MPC	99.6
HEIDELBERG	39757	67	9	24	6	48	4.5	5.0	1.1	1.6			15.5	20.0	4800.	IRREGULAR VARIATIONS MOON	--MPC	121.3
HEIDELBERG	39757	67	9	24	18	13	3.6	3.8	0.8	1.0			82.0	100.0	3700.	VAP	--GLU	72.7
HEIDELBERG	39757	67	9	24	21	6	4.4	4.4	1.2	1.2			42.0	235.0	4300.	STEADY	--GLU	71.9
HEIDELBERG	39758	67	9	25	18	13	3.6	4.0	0.8	1.2			80.0	100.0	3700.	VAP	--GLU	70.3
STADE/ELBE	39760	67	9	27	4	10	3.0	4.0	0.7	1.7			55.0	100.0	2950.	VAR MOON	--HK	112.0
STADE/ELBE	39760	67	9	27	18	20	3.0	4.0	0.1	1.1			89.0	100.0	3730.	VARYING	--HK	77.9
STADE/ELBE	39760	67	9	27	21	20	3.5	4.5	0.4	1.4			42.0	260.0	4230.	VARYING	--HK	83.8
STADE/ELBE	39761	67	9	28	18	23	3.5	4.0	0.6	1.1			89.0	260.0	3720.	VARYING	--HK	79.0
STADE/ELBE	39763	67	9	30	18	37	3.0	3.0	-0.0	-0.0			53.0	360.0	4000.	STEADY SHORT OBS CLOUDS	--HK	87.5
STADE/ELBE	39764	67	10	1	4	10	2.5	2.5	-0.3	-0.3			62.0	100.0	3700.	STEADY BIG HAZE	--GLU	104.7
HEIDELBERG	39764	67	10	1	18	24	3.6	3.6	0.8	0.8			87.0	256.0	3700.	STEADY	--GLU	79.1
STADE/ELBE	39765	67	10	2	18	40	3.5	4.0	0.6	1.1			53.0	360.0	3750.	IRREG VAR	--HK	86.7
GRANBY	39766	67	10	3	0	20	3.5	4.0	0.6	1.1			70.0	270.0	3860.	VAR	--MPC	88.5
STADE/ELBE	39766	67	10	3	21	25	4.0	5.0	0.6	1.6			32.0	260.0	4700.	VAR	--HK	87.8
GRANBY	39767	67	10	4	0	27	3.5	3.8	0.5	0.8			65.0	305.0	3950.	FADNT VARYING	--MPC	91.3
STADE/ELBE	39767	67	10	4	18	25	3.0	4.0	0.2	1.2			85.0	260.0	3700.	IRREG VAR	--HK	80.2
GRANBY	39768	67	10	5	0	28	3.5	4.0	0.5	1.0			64.0	303.0	3965.	VARYING	--MPC	92.0
HEIDELBERG	39768	67	10	5	18	29	3.4	3.6	0.5	0.7			77.0	279.0	3780.	IRREG VAR	--GLU	87.2
GRANBY	39770	67	10	7	0	26	3.5	4.0	0.5	1.0			51.0	250.0	4015.	VARYING	--MPC	91.2
GRANBY	39771	67	10	8	0	29	3.5	4.5	0.5	1.5			59.0	280.0	4045.	VARYING	--MPC	96.8
STADE/ELBE	39771	67	10	8	18	30	3.0	4.0	0.2	1.2			70.0	260.0	3600.	VAR CLOUDS	--HK	92.0
STADE/ELBE	39772	67	10	9	4	22	2.5	3.5	0.4	1.4			77.0	100.0	2600.	IRREG VAR	--HK	90.7
HEIDELBERG	39773	67	10	10	18	39	3.8	3.8	0.9	0.9			69.0	279.0	3820.	STEADY	--GLU	91.9
STPETERSBURG	39774	67	10	11	0	24	3.0	3.0	0.0	0.0			67.0	279.0	3850.	STEADY	--FK	93.2
HEIDELBERG	39774	67	10	11	18	41	3.0	3.0	0.1	0.1			64.0	279.0	3880.	STEADY	--GLU	95.9
STADE/ELBE	39775	67	10	12	16	41	3.8	3.8	0.9	0.9			62.0	260.0	3700.	VAP	--HK	95.5
STADE/ELBE	39776	67	10	13	18	43	3.0	4.0	0.2	1.2			99.0	100.0	2280.	ST	--FK	78.9
STPETERSBURG	39777	67	10	14	0	30	3.0	3.0	0.0	0.0			60.0	260.0	3750.	VAR	--HK	95.4
STADE/ELBE	39777	67	10	14	4	29	2.0	2.0	0.2	0.2			40.0	300.0	4500.	VARYING MOON	--HK	109.6
STADE/ELBE	39778	67	10	15	18	45	3.0	4.5	0.1	1.6			55.0	260.0	3900.	IRREG VAR	--MPC	99.2
GRANBY	39779	67	10	16	0	44	3.5	4.0	0.2	0.7							--HK	
STADE/ELBE	39781	67	10	18	18	50	3.3	4.0	0.4	1.1							--HK	

STATION NAME	MJD	Y	M	D	H	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39782	67/10/19	4	35		1.8	5.0	-0.1	3.1			85.0	260.0	2350.	BRIGHT IRREG VAR	--HK	72.5
HEIDELBERG	39782	67/10/19	18	52		3.1	3.4	0.1	0.4			52.0	282.0	4060.	IRREG VAR MOON	--GLU	104.0
STADE/ELBE	39783	67/10/20	18	55		3.0	4.0	0.1	1.1			52.0	260.0	3850.	IRREG VAR	--HK	100.5
HEIDELBERG	39783	67/10/20	18	46		3.4	3.4	0.2	0.2			43.0	252.0	4310.	STEADY	--GLU	108.2
GRANBY	39784	67/10/21	0	59		3.5	4.0	0.1	0.6			35.0	316.0	4700.	BRIGHTENED FOR 30 IN. TO 3.0	--MPC	106.7
STADE/ELBE	39784	67/10/21	18	52		2.8	4.0	-0.0	1.2			47.0	260.0	3700.	VAR	--HK	105.4
GRANBY	39785	67/10/22	0	56		4.0	4.2	0.6	0.8			35.0	302.0	4700.	FAINT VARYING	--MPC	110.5
GRANBY	39786	67/10/23	1	0		3.0	4.0	-0.3	0.7			33.0	306.0	4600.	VARYING	--MPC	110.7
STADE/ELBE	39786	67/10/23	19	10		3.5	4.0	0.6	1.1			50.0	310.0	3800.	FAINT VAR	--HK	100.5
GRANBY	39787	67/10/24	0	56		3.5	4.0	0.2	0.7			32.0	295.0	4650.	VARYING	--MPC	113.9
GRANBY	39788	67/10/25	0	59		3.5	4.0	0.1	0.6		7.20	30.0	295.0	4725.	VARYING	--MPC	115.1
HEIDELBERG	39788	67/10/25	19	1		3.6	3.6	0.4	0.4			44.0	285.0	4310.	VAR MOST ST CLOUDS	--GLU	108.8
STPETERSBURG	39793	67/10/30	0	58		4.0	4.0	0.0	0.0			23.8	292.5		--FK	122.8	
STPETERSBURG	39797	67/11/3	1	2		4.0	4.0	0.0	0.0			17.2	287.5		--FK	129.0	
STADE/ELBE	39801	67/11/7	19	44		4.0	4.0	0.0	0.0			15.8	290.2		--FK	128.0	
STADE/ELBE	39802	67/11/8	19	48		5.0	5.0	0.9	1.9			20.0	360.0	4100.	ST	--HK	96.0
STADE/ELBE	39804	67/11/10	19	48		4.0	4.0	0.9	0.9			15.0	360.0	4200.	ST	--HK	99.6
STADE/ELBE	39806	67/11/12	19	50		3.5	5.0	0.4	1.9			25.0	360.0	4100.	VAR	--HK	92.2
STADE/ELBE	39810	67/11/16	19	55		3.0	3.0	-0.1	-0.1			25.0	360.0	4100.	ST SHORT OBS CLOUDS	--HK	91.9
STADE/ELBE	39811	67/11/17	16	50		3.0	3.8	0.5	1.3			48.0	330.0	3100.	IRREG VAR MOON	--HK	91.3
GRANBY	39822	67/11/28	22	56		4.0	5.5	0.8	2.3			21.0	311.0	4300.	VARYING	--MPC	90.5
STADE/ELBE	39824	67/11/30	17	5		3.0	4.0	0.2	1.2			35.0	310.0	3600.	IRREG VAR	--HK	114.4
STADE/ELBE	39834	67/12/10	17	36		3.0	3.0	0.2	0.2			18.0	355.0	3600.	ST	--HK	107.2
STADE/ELBE	39852	67/12/28	18	13		3.0	3.0	0.3	0.3			18.0	355.0	3500.	ST CLOUDS	--HK	79.1
GRANBY	39867	68/1/12	0	35		3.0	3.5	0.8	1.3			18.0	29.0	2800.	VARYING	--MPC	82.4
HEIDELBERG	39875	68/1/20	18	33		2.4	3.4	0.5	1.5			27.0	50.0	2360.	IRREG VAR	--GLU	55.2
HEIDELBERG	39875	68/1/20	21	33		2.2	2.8	0.9	1.5			51.0	335.0	1845.	IRREG VAR	--GLU	33.3
HEIDELBERG	39876	68/1/21	18	33		2.6	2.9	0.8	1.1			28.0	50.0	2330.	IRREG VAR	--GLU	74.8
GRANBY	39877	68/1/22	0	30		2.5	6.0	0.6	4.1			29.0	31.0	2350.	VARYING	--GLU	33.4
GRANBY	39882	68/1/27	3	40		2.0	6.0	0.5	4.5			43.0	300.0	1980.	VARYING	--MPC	50.1
STADE/ELBE	39883	68/1/28	18	25		3.0	4.5	1.3	2.8			35.0	100.0	2150.	IRREG VAR	--MPC	75.4
VAN MUYS-F	39885	68/1/30	3	31		3.2	3.7	1.4	1.9			40.0	78.0	2250.	TP UNSURE. MIN ARE DIPS.	--HK	16.3
VAN MUYS-F	39885	68/1/30	6	32		2.3	3.0	0.4	1.1		85.00	37.0	270.0	2350.	VA	--JGM	14.4
GRANBY	39887	68/2/1	0	30		2.5	3.5	0.7	1.7			43.0	95.0	2250.	VA	--MPC	76.5
GRANBY	39890	68/2/4	3	25		2.5	3.5	0.6	1.6			35.0	270.0	2450.	VA	--MPC	15.8
GRANBY	39891	68/2/5	0	28		3.0	4.0	1.4	2.4			48.0	90.0	2050.	VA	--MPC	81.3
GRANBY	39891	68/2/5	0	28		3.0	4.0	1.4	2.4			48.0	90.0	2050.	VA	--MPC	21.7

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	ANIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
GRANBY	39893	68	2	7	-0	0	2.5	7.0	1.0	5.5			51.0	90.0	2000.	UNUSUAL MIN, NO SHADW	--MPC	30.4
STADE/ELBE	39894	68	2	8	5	50	2.5	3.0	0.8	1.3			15.0	100.0	2200.	ST LOW ALTITUDE	--HK	156.7
GRANBY	39902	68	2	16	0	7	2.0	6.0	0.6	4.6			69.0	112.0	1900.		--MPC	50.6
STPETERSBURG	39902	68	2	16	0	9	3.5	3.5	0.0	0.0							--FK	
GRANBY	39903	68	2	17	0	5	2.0	5.0	0.6	3.6			70.0	118.0	1910.	VA	--MPC	53.1
STADE/ELBE	39903	68	2	17	5	32	1.7	3.5	0.0	1.8			17.0	100.0	2150.	ST OCCAS IRREG VARYING	--HK	152.3
GRANBY	39904	68	2	18	23	59	2.5	5.0	1.1	3.6			73.0	57.0	1900.	VA	--MPC	58.2
GRANBY	39905	68	2	19	23	53	2.0	5.0	0.6	3.6			73.0	118.0	1900.	VA	--MPC	58.6
AUSTIN	39907	68	2	21	3	2	2.0	2.0	0.1	0.1			53.0	280.0	2364.		--MM	92.0
GRANBY	39909	68	2	23	23	56	2.0	5.0	0.6	3.6			81.0	71.0	1930.		--MPC	65.3
STADE/ELBE	39910	68	2	24	17	46	1.0	3.0	-0.5	1.5			75.0	100.0	1950.	IRREG VAR	--HK	66.1
GRANBY	39910	68	2	24	23	50	2.0	5.0	0.6	3.6			82.0	43.0	1930.	VA	--MPC	69.7
STADE/ELBE	39911	68	2	25	17	44	1.0	3.0	-0.5	1.5			75.0	100.0	1950.	IRREG VAR	--HK	66.7
WEIDELBERG	39912	68	2	26	17	45	1.8	2.4	0.4	1.0			75.0	81.0	1870.	IRREG VAR	--GLU	67.2
WEIDELBERG	39913	68	2	27	17	43	1.5	2.3	0.1	0.9			79.0	81.0	1930.	IRREG VAR	--GLU	71.7
WEIDELBERG	39914	68	2	28	17	42	2.0	2.4	0.7	1.1			78.0	80.0	1855.	IRREG VAR	--GLU	71.2
STADE/ELBE	39918	68	3	3	20	27	3.5	3.5	1.3	1.3			27.0	310.0	2800.	ST	--HK	122.9
WEIDELBERG	39919	68	3	4	17	34	1.7	2.3	0.4	1.0			85.0	67.0	1830.	IRREG VAR	--GLU	80.9
STADE/ELBE	39926	68	3	11	20	14	2.0	3.0	-0.5	0.5			22.0	310.0	3100.	IRREG VAR	--HK	131.8
STADE/ELBE	39937	68	3	22	20	1	4.0	4.0	1.5	1.5			15.0	280.0	3100.	ST	--HK	137.9
STADE/ELBE	39939	68	3	24	19	58	3.5	4.0	1.0	1.5			20.0	270.0	3200.	FADT VAR	--HK	129.1
STADE/ELBE	39960	68	4	14	0	55	3.5	3.5	1.5	1.5			23.0	100.0	2500.	ST	--HK	92.5
STADE/ELBE	39980	68	5	7	0	23	2.0	3.5	0.1	1.6			45.0	100.0	2350.	IRREG VAR	--HK	80.9
STADE/ELBE	39991	68	5	15	0	16	1.7	3.5	0.0	1.8			70.0	100.0	2150.	IRRE VAR	--HK	75.9

SDC NO. 2254 68-57A

SDC NO. 2254 68-57A COSMOS 122 USSR LAUNCHED 66/ 6/25 IN ORBIT
PERIOD = 37.1 PERIGEE = 341.8 APOGEE = 428.7 INCL = 65.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	ANIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39354	66	8	17	0	28	4.5	4.5	6.3	6.3			89.0	140.0	430.	STEADY	--HK	60.0
STADE/ELBE	39377	66	9	9	19	39	6.0	6.0	6.8	6.8			30.0	310.0	700.	STEADY	--HK	134.0
STADE/ELBE	39581	67	4	1	19	16	5.5	6.5	6.5	7.5			30.0	220.0	630.	VARYING CLOSE TOGETH W 2679	--HK	96.3
STADE/ELBE	39725	67	8	23	20	38	2.0	5.0	4.1	7.1			85.0	310.0	385.	SLOWLY VARYING	--HK	79.0
WEIDELBERG	39797	67	9	24	19	22	3.6	3.6	4.9	4.9			66.0	260.0	550.	STEADY	--GLU	90.1

SDC NO. 2254 68-57A

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
HEIDELBERG	39758	67	9	25	19	38	4.5	4.5	5.3	5.3	5.3		40.0	245.0	700.	STEADY	--GLU	100.3
HEIDELBERG	39913	68	2	27	17	32	2.5	2.5	4.5	4.5	4.5		73.0	67.0	405.	ST	--GLU	68.2
HEIDELBERG	39914	68	2	28	17	46	1.5	3.6	3.1	5.2	5.2		52.0	280.0	480.	SLOWLY TURN P 1.5MINV APPROX	--GLU	119.3
HEIDELBERG	39916	68	3	1	18	20	5.8	5.8	6.1	6.1	6.1		21.0	353.0	875.	ST	--GLU	94.9
STADE/ELBE	39990	68	5	14	21	27	5.5	5.5	7.1	7.1	7.1		70.0	310.0	470.	ST	--HK	94.7

SDC NO. 2255 66-56R AGENA D USA LAUNCHED 66/ 6/24 IN ORBIT
PERIOD = 181.2 PERIGEE = 2615.3 APOGEE = 2642.1 INCL = 87.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
MOUNT PINDS	39349	66	8	12	7	20	8.0	9.0	5.5	5.5	0.57		46.0	80.0	3160.	SOME EXTRAITIOUS FLASHING	--JGW	51.2
VAN NUYS-F	39361	66	8	24	6	23	7.5	9.0	5.0	6.5	0.55		44.8	80.0	3190.	TP .564 SEC	--JGW	50.4
STADE/ELBE	39361	66	8	24	21	39	8.0	9.5	5.6	7.1	0.48	0.20	50.0	100.0	3042.	ROCKET PAGES 1 RAPIDLY FLASH	--HK	49.5
STADE/ELBE	39361	66	8	24	21	42	8.5	9.5	6.0	7.0	0.48	0.20	45.0	60.0	3200.	REGULAR RAPIDLY FLASHING	--HK	75.7
VAN NUYS-F	39363	66	8	26	6	43	7.7	9.5	5.4	5.4	0.56		56.8	88.0	2930.	TP .564 SEC	--JGW	44.3
STADE/ELBE	39364	66	8	27	22	12	8.5	9.5	6.3	7.3	0.50	0.30	64.5	80.0	2812.	REGULAR RAPIDLY FLASHING	--HK	53.9
WALNUT CREEK	39365	66	8	28	7	6	8.0	10.0	5.8	7.8	0.54		64.8	86.0	2809.	NOT QUITE REGULAR FLASHING	--DFC	47.6
STADE/ELBE	39365	66	8	28	22	23	8.5	9.5	6.3	7.3	0.50	0.30	70.0	70.0	2754.	REGULAR RAPIDLY FLASHING	--HK	67.3
STADE/ELBE	39371	66	9	3	23	24	8.5	9.5	6.4	7.4	0.55	0.30	78.0	260.0	2681.	REGULAR RAPIDLY FLASHING	--HK	59.5
PHOENIX R	39372	66	9	4	5	16	7.0	9.5	4.5	4.5			46.4	80.2	3150.	5 FI PER 3 SEC MIN INV	--RKR	41.4
PHOENIX R	39373	66	9	5	5	26	7.0	9.5	4.6	4.6	0.78		52.3	83.0	3015.	MIN INV	--RR	39.4
STADE/ELBE	39373	66	9	5	20	43	8.0	9.5	5.6	7.1	0.57	0.30	49.6	70.0	3074.	REGULAR RAPIDLY FLASHING	--HK	59.6
STADE/ELBE	39373	66	9	5	23	46	8.5	9.5	6.3	7.3	0.50	0.30	68.0	260.0	2767.	REGULAR RAPIDLY FLASHING	--HK	55.4
PHOENIX R	39374	66	9	6	5	36	8.0	9.5	6.2	6.2			58.6	85.1	2335.	MIN INV	--RR	38.3
PHOENIX R	39375	66	9	7	5	47	8.0	9.5	5.8	5.8	0.77		65.4	85.0	2900.	MIN INV	--RKR	38.7
VAN NUYS-F	39376	66	9	8	5	58	7.5	10.0	5.2	7.7	0.57		61.0	86.0	2860.	REGULAR RAPIDLY FLASHING	--JGW	37.5
STADE/ELBE	39377	66	9	9	21	24	7.7	9.0	5.5	6.8	0.50	0.30	67.5	83.0	2772.	REGULAR RAPIDLY FLASHING	--HK	56.1
STADE/ELBE	39378	66	9	10	21	33	8.5	9.5	6.3	7.3	0.50	0.30	72.6	86.0	2721.	MIN INV TR 90 SEC	--HK	56.2
PHOENIX R	39379	66	9	11	6	29	8.0	9.5	5.6	5.6	0.54		80.0	325.0	3000.	MIN INV TR 40 SEC	--RKR	50.3
PHOENIX R	39380	66	9	12	6	39	8.0	9.5	5.8	5.8	0.57		75.7	294.0	2900.	MIN INV TR 90 SEC	--RKR	49.9
STADE/ELBE	39383	66	9	15	23	25	7.0	9.0	4.2	6.2	0.57	0.30	30.0	100.0	3660.	REGULAR RAPIDLY FLASHING	--HK	22.0
STADE/ELBE	39383	66	9	15	22	26	7.5	9.0	5.4	6.9	0.57	0.30	80.4	279.0	2668.	REGULAR RAPIDLY FLASHING	--HK	61.9
VAN NUYS-F	39394	66	9	16	4	20	8.0	11.0	5.3	8.3	0.58		35.7	75.6	3460.	MINIMA ALTERNATE IN RTNESS	--JGW	34.6
STADE/ELBE	39386	66	9	18	20	5	7.7	9.0	5.3	5.3	0.57	0.30	50.0	35.0	3010.	REGULAR RAPIDLY FLASHING	--HK	74.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39388	66/	9/20	20	24	7.8	9.0	5.3	6.5	0.57	0.30	45.0	35.0	3180.	REGULAR RAPIDLY FLASHING	--	HK	77.0
STADE/ELBE	39390	66/	9/22	20	49	7.7	9.0	5.2	6.5	0.57	0.30	50.0	35.0	3100.	REGULAR RAPIDLY FLASHING	--	HK	76.1
STADE/ELBE	39391	66/	9/23	20	48	8.0	9.0	5.0	6.9	0.57	0.30	74.5	100.0	2691.	REGULAR RAPIDLY FLASHING	--	HK	49.6
STPETERSBURG	39392	66/10/	4	1	19	8.0	9.0	5.5	6.5	0.50				3100.	FAST TUMBLE	--	FK	
EDINBURG	39396	66/10/	8	5	3	7.5		4.9						3268.	SLIGHT FLICKRNS IN 17-INCH	--	PM	73.1
STADE/ELBE	39413	66/10/15	18	33	8.2	9.5	5.9	7.2	7.2	0.57	0.30	63.0	100.0	2850.	REGULAR RAPIDLY FLASHING	--	HK	43.6
STADE/ELBE	39415	66/10/17	18	53	8.0	9.5	5.9	7.4	7.4	0.55	0.30	71.0	100.0	2634.	REGULAR RAPIDLY FLASHING	--	HK	48.2
VAN MUYF-F	39416	66/10/18	3	48	7.3	9.5	5.2	5.2		0.58		81.5	92.0	2660.	REGULAR RAPIDLY FLASHING	--	JGM	49.7
STPETERSBURG	39417	66/10/19	0	54	7.0	7.0	4.8	4.8		0.50				2775.	MEASURED W/ STOPWATCHES	--	FK	
VAN MUYF-F	39417	66/10/19	3	58	7.5	10.0	5.4	7.9	7.9	1.15				2640.	WHOLE TP	--	JGM	55.0
STADE/ELBE	39418	66/10/20	19	25	8.2	9.5	6.1	7.4		0.57	0.30	88.0	100.0	2634.	REGULAR RAPIDLY FLASHING	--	HK	59.6
PHOENIX R	39421	66/10/23	4	41	8.0		5.6							3037.	MIN INV APPROX 2 TP PER SEC	--	RKR	80.7
PHOENIX R	39422	66/10/24	4	52	8.5	9.5	5.5							3178.	MIN INV APPROX 2 TP PER SEC	--	RKR	83.9
STADE/ELBE	39423	66/10/25	20	23	8.5	9.5	6.2	7.2	7.2	0.57	0.20	60.0	310.0	2840.	REGULAR RAPID FLASHING	--	HK	82.5
STADE/ELBE	39426	66/10/28	17	46	8.5	9.5	6.3	7.3	7.3	0.57	0.30	64.8	81.0	2787.	REGULAR RAPID FLASHING	--	HK	48.7
EDINBURG	39427	66/10/29	2	37	8.7		6.5			0.40		67.2	277.6	2764.	MAX A MULTIPLE FLASH ABOUT ONE OUT OF EVERY THREE FLSHS	--	PM	75.6
STADE/ELBE	39428	66/10/30	18	7	8.5	9.5	6.4	7.4	7.4	0.57	0.20	75.0	87.0	2684.	REGULAR RAPIDLY FLASHING	--	HK	55.0
STPETERSBURG	39428	66/10/30	23	57	6.0	8.0	3.8			0.50				2800.	CHECKED W STOPWATCH	--	FK	
STADE/ELBE	39430	66/11/	1	18	27	8.5	9.5	6.4	7.4	0.57	0.20	85.8	95.0	2633.	REG RAPIDLY FLASHING MOON	--	HK	52.2
PHOENIX R	39433	66/11/	4	3	44	9.0		6.6				53.0	284.3	2983.	RAPID TUMBLE	--	RKR	87.0
STPETERSBURG	39434	66/11/	5	0	49	7.0		0.0				76.2	275.8			--	FK	75.8
STADE/ELBE	39435	66/11/	6	19	18	8.3	9.5	6.1	7.3	0.58	0.20	67.0	260.0	2750.	REGULAR RAPID FLASHING	--	HK	78.6
OCEANPORT	39436	66/11/	7	1	17	8.0		5.6				49.0	290.2	3047.		--	HK	90.7
STADE/ELBE	39436	66/11/	7	5	0	8.0	9.0	5.9	6.9	0.57	0.20	75.0	100.0	2684.	REGULAR RAPID FLASHING	--	HK	91.2
STADE/ELBE	39437	66/11/	8	5	10	8.2	9.5	6.1	7.4	0.57	0.20	80.0	100.0	2650.	REGULAR RAPID FLASHING	--	HK	87.4
STADE/ELBE	39440	66/11/11	17	10	7.8	9.0	5.6	5.6	6.8	0.58	0.20	73.4	86.0	2699.	REGULAR RAPID FLASHING	--	HK	75.0
OCEANPORT	39440	66/11/11	23	6	8.0		5.9					82.0	84.0	2647.		--		55.9
PHOENIX R	39441	66/11/12	2	4	9.0	11.0	6.9	8.9				83.4	273.9	2644.	RAPID TUMBLE	--	RKR	76.3
OCEANPORT	39441	66/11/12	23	15	8.0		5.9					88.1	17.3	2645.		--		71.1
PHOENIX R	39442	66/11/13	2	15	8.0		5.0			0.25		75.8	276.8	2642.	MIN INV.	--	RKR	81.3
OCEANPORT	39442	66/11/13	23	28	8.0		5.0					83.0	274.5	2642.		--		75.4
PHOENIX R	39443	66/11/14	2	25	8.0		5.8					68.4	279.2	2747.	APPROX .5 SEC TP	--	RR	85.2
STPETERSBURG	39444	66/11/15	23	41	7.0		4.9			0.50		86.8	271.2	2600.	.5 SEC FLASHES MEASURED	--	FK	73.1
OCEANPORT	39445	66/11/16	23	48	8.0		5.8					69.3	280.0	2730.		--		85.5
STPETERSBURG	39445	66/11/16	23	52	7.0		4.9			0.50		79.1	275.1	2660.	.5 SEC FLASHES MEASURED	--	FK	84.0
SAN ANTONIO	39446	66/11/17	2	58	8.0		5.1					27.7	293.4	3742.	PERIODIC FLASHING	--	FB	106.2

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39447	66/11/18	0	2	7.0	4.8	0.50	70.8	277.2	2700.					.5 SEC FLASHES MEASURED	--FK	89.6
VAN NUYS-F	39447	66/11/18	3	8	8.5	6.1	0.56	53.1	285.0	2980.					MIN UNDER +11	--JGW	96.4
PHOENIX R	39447	66/11/18	3	9	8.0	5.5		42.8	288.6	3224.					APPROX 2 TP PER SEC	--RKR	100.9
STPETERSBURG	39449	66/11/20	0	24	8.0	5.7	0.50	56.1	281.1	2924.					8 MAG .5 SEC FLASH CLOCKED	--FK	98.3
STPETERSBURG	39450	66/11/21	0	34	8.0	10.0	1.00	49.4	283.1	3060.					CLOCKED	--FK	102.2
STPETERSBURG	39454	66/11/25	1	18	9.5	9.5	6.6	27.2	292.2	3750.					SOME VARIATION	--FK	111.8
STADE/ELBE	39466	66/12/7	4	9	8.0	9.5	7.4	78.0	260.0	2659.					REGULAR RAPIDLY FLASHING	--HK	50.9
PHOENIX R	39473	66/12/14	1	36	9.0	6.3	0.50			3421.					MIN INV	--RKR	
PHOENIX R	39476	66/12/17	2	10	10.0	7.0	0.50			3943.					MIN INV	--RKR	
STADE/ELBE	39530	67/2/9	0	4	8.2	9.5	7.3	0.40	65.0	260.0					REGULAR RAPID FLASHING	--HK	37.0
STADE/ELBE	39533	67/2/12	0	37	8.3	9.5	7.2	0.40	50.0	260.0					REGULAR RAPID FLASHING	--HK	36.5
STADE/ELBE	39535	67/2/14	22	5	8.0	9.5	7.4	0.56	0.30	80.0	100.0				REGULAR RAPID FLASHING	--HK	38.2
STADE/ELBE	39536	67/2/15	19	7	9.0	10.0	7.0	0.55	0.30	25.0	55.0				REGULAR RAPID FLASHING	--HK	41.6
STADE/ELBE	39536	67/2/15	22	16	8.0	9.5	7.3	0.55	0.30	85.0	100.0				REGULAR RAPID FLASHING	--HK	40.9
STADE/ELBE	39550	67/3/1	21	38	7.8	9.5	7.4	0.55	0.30	85.0	280.0				REGULAR RAPID FLASHING	--HK	55.4
STADE/ELBE	39550	67/3/1	21	40	7.8	9.5	7.4	0.55	0.30	80.0	260.0				REGULAR RAPID FLASHING	--HK	53.9
STADE/ELBE	39551	67/3/2	21	49	7.7	9.5	7.4	0.55	0.30	80.0	260.0				REGULAR RAPID FLASHING	--HK	55.7
STADE/ELBE	39556	67/3/7	22	44	8.5	10.0	7.6	0.56	0.30	53.0	260.0				REGULAR RAPID FLASHING	--HK	51.9
STADE/ELBE	39560	67/3/11	20	22	7.8	9.5	7.4	0.57	0.30	82.0	100.0				REGULAR RAPID FLASHING	--HK	55.9
STADE/ELBE	39560	67/3/11	20	26	7.8	9.5	7.4	0.56	0.30	80.0	130.0				REGULAR RAPID FLASHING	--HK	52.6
STADE/ELBE	39564	67/3/15	21	11	8.5	10.0	7.5	0.55	0.30	48.0	200.0				REGULAR RAPID FLASHING	--HK	49.3
STADE/ELBE	39565	67/3/16	21	14	8.3	9.5	7.3	0.55	0.30	74.0	260.0				REGULAR RAPID FLASHING	--HK	58.0
STADE/ELBE	39565	67/3/16	21	17	8.3	9.5	7.3	0.55	0.30	70.0	230.0				REGULAR RAPID FLASHING	--HK	50.8
STADE/ELBE	39575	67/3/26	19	57	8.5	10.0	7.9	0.55	0.30	85.0	260.0				REGULAR RAPID FLASHING	--HK	74.5
PHOENIX R	39580	67/3/31	2	51	8.0	5.8	0.50	66.4	80.2	2775.					60 TP 20 SEC	--RKR	54.8
STPETERSBURG	39581	67/4/1	3	4	9.0	6.5		46.4	266.7	3137.					TP ABOUT 1.5 SEC	--FK	95.6
OCEANPORT	39582	67/4/2	0	6	7.0	0.0		67.8	78.6							--GFG	80.8
OCEANPORT	39583	67/4/3	3	15	10.0	7.2		31.9	291.4	3585.						--GFG	102.3
PHOENIX R	39583	67/4/3	3	22	8.0	5.9	0.50	88.8	94.7	2437.					MIN INV	--RKR	69.2
OCEANPORT	39585	67/4/5	0	38	8.0	5.9		88.3	91.5	2639.						--GFG	73.7
STPETERSBURG	39585	67/4/5	0	44	8.0	9.0	0.0	70.1	82.3							--FK	59.0
OCEANPORT	39586	67/4/6	0	48	8.0	5.9		85.1	266.0	2645.						--GFG	78.2
STPETERSBURG	39586	67/4/6	0	55	7.0	9.0	6.9	53.1	43.3	2670.					TP ABOUT .5 SEC	--FK	61.5
STPETERSBURG	39586	67/4/6	0	55	7.0	9.0	0.0	77.1	84.8							--FK	63.1
STPETERSBURG	39588	67/4/8	1	15	7.0	4.9	0.50	0.50	85.6	265.4						--FK	75.2
WALNUT CREEK	39588	67/4/8	4	12	9.0	11.0	8.9	0.52	0.15	270.0					NOT A SMOOTH CYCLING	--DFC	84.7
PHOENIX R	39588	67/4/8	4	14	8.0	5.7		55.2	276.0	2948.					RAPID TP	--RR	93.6

STATION NAME	UJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
OCEANPORT	39589	67/	4/	9	1	19	8.0		5.8	8.7	0.57		64.6	275.0	2799.0		--GFG	92.4
VAN NUYS-F	39589	67/	4/	9	4	24	8.0	11.0	5.7				60.0	274.0	2860.0	COMPLEX MODULATION	--JGW	92.3
PHOENIX R	39590	67/	4/10		4	34	8.0		5.5				42.5	280.2	3217.0	RAPID TP	--AR	102.3
STADE/ELBE	39593	67/	4/13		20	1	8.5	10.0	6.2	7.7	0.54	0.30	56.0	284.0	2931.0	RAPID FLASHING	--HK	106.8
STADE/ELBE	39671	67/	6/30		23	49	8.3	9.5	5.9	7.1	0.54	0.30	55.0	100.0	2960.0	RAPID FLASHING	--HK	75.8
STADE/ELBE	39684	67/	7/13		23	2	8.5	10.0	6.2	7.7	0.54	0.30	60.0	100.0	2855.0	REGULAR RAPID FLASHING	--HK	59.5
STADE/ELBE	39705	67/	8/3		23	40	7.8	9.5	5.6	7.3	0.54	0.30	73.6	283.0	2716.0	REGULAR SHAPP FLASHING	--HK	74.7
WALNUT CREEK	39708	67/	8/6		8	58	8.5		6.0		0.47		48.0	289.0	3100.0	20 FLASHES	--DFC	59.0
OCEANPORT	39709	67/	8/7		3	5	9.0		6.7				61.0	84.2	2958.0		--GFG	54.3
OCEANPORT	39711	67/	8/9		3	26	9.0		6.8				73.8	89.2	2710.0		--GFG	54.8
STADE/ELBE	39715	67/	8/13		22	20	7.8	9.5	5.7	7.4	0.64	0.30	86.0	260.0	2653.0	REGULAR RAPID FLASHING	--HK	70.3
STADE/ELBE	39715	67/	8/13		22	29	8.5		6.0		0.62	0.30	44.0	360.0	3200.0	RAPID FLASHING MIN INV	--HK	113.9
OCEANPORT	39718	67/	8/16		1	38	9.0		6.4				42.5	75.3	3251.0		--GFG	50.5
STADE/ELBE	39719	67/	8/17		23	3	8.3	9.5	6.1	7.3	0.63	0.30	65.0	280.0	2900.0	REGULAR RAPID FLASHING	--HK	75.9
STADE/ELBE	39719	67/	8/17		23	8	8.5		6.2		0.60	0.30	55.0	15.0	2950.0	REG RAPID FLASHING MIN INV	--HK	100.3
POYNTON	39721	67/	8/19		23	25	7.5		5.3		0.55		70.0	285.0	2750.0	MIN INVISIBL LFS THAN 9.5	--DMB	77.0
																MUCH MORE RAPID FL SUSPECTED	--DMB	
STADE/ELBE	39725	67/	8/23		21	5	8.5		6.4		0.60	0.30	80.0	100.0	2680.0	REGULAR RAPID FLASHING MIN INV	--HK	54.5
STADE/ELBE	39726	67/	8/24		21	15	8.7		6.6		0.57	0.30	85.0	100.0	2640.0	REGULAR RAPID FLASHING	--HK	65.9
OCEANPORT	39731	67/	8/29		3	51	8.0		5.6				54.9	289.3	2949.0	RAPID FLASHING MAYE MIN INV	--GFG	77.6
OCEANPORT	39732	67/	8/30		1	1	8.0		5.6				51.1	79.5	3070.0		--GFG	46.3
AUSTIN	39733	67/	8/31		1	11	8.0		5.7				56.6	82.0	2914.0		--GFG	47.5
AUSTIN	39740	67/	9/7		2	20	8.0		5.6				54.0	79.0	2958.0		--MM	41.6
AUSTIN	39741	67/	9/8		2	31	7.5		5.2	6.2			60.0	80.0	2900.0	PER ABOUT .5 SEC	--MM	43.4
HEIDELBERG	39749	67/	9/16		19	8	8.0	8.5	5.8	6.4	0.56		74.0	250.0	2730.0	RAPID FLASHING	--GLU	86.9
STADE/ELBE	39755	67/	9/22		20	13	8.7		6.5				60.0	80.0	2900.0	SHARP FAINT FLASHES MOON	--HK	83.4
HEIDELBERG	39756	67/	9/23		20	21	8.2	8.7	6.0	6.5	0.60	0.25	70.9	285.0	2745.0	RAPID FLASHING	--GLU	80.7
HEIDELBERG	39757	67/	9/24		20	32	8.4	8.8	6.1	6.5	0.52		64.0	260.0	2790.0	RAPID FLASHING	--GLU	80.5
HEIDELBERG	39764	67/	10/1		18	54	8.4	8.7	6.3	6.6	0.58		90.0	212.0	2930.0	FLASHING	--GLU	73.6
STADE/ELBE	39765	67/	10/2		18	42	7.5		5.4		0.50	0.20	83.0	260.0	2650.0	FLASHING UNEQUAL MAX	--HK	78.3
STADE/ELBE	39765	67/	10/2		19	1	8.5		6.2		0.50	0.20	60.0	330.0	2870.0	FLASHING UNEQUAL MAX	--HK	95.0
OCEANPORT	39766	67/	10/3		0	51	8.0		5.8				68.1	281.0	2772.0		--GFG	85.8
VAN NUYS-F	39782	67/	10/19		3	36	8.5	10.5	5.0	7.9	0.52		42.0	289.0	3260.0	HALE TP 0.524 SEC. GIVES	--JGW	107.7
																MANY SMALL FLASHES DURING	--JGW	
																EACH TURNLE.	--JGW	
STPETERSBURG	39783	67/	10/20		0	41	9.0	10.0	6.6	7.6	0.50				3000.0	FLASHING MOON	--FK	101.0
HEIDELBERG	39783	67/	10/20		10	0	8.4		6.1				53.0	294.0	2940.0		--GLU	

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39784	67/10/21	0	51	9.5	10.5	0.0	0.0	0.0	0.50	0.50	49.0	297.0	3070.	FLASHING MODN	--FK		102.9
HEIDELBERG	39784	67/10/21	19	11	8.4	6.0	6.0	7.8	2.00	0.60	3400.						--GLU	
STPETERSBURG	39785	67/10/22	1	4	9.5	10.5	6.8	7.2	0.60	0.60	3566.						--FK	
OCEANPORT	39785	67/10/22	1	10	10.0	8.5	5.7	7.4	0.60	0.60	3715.					MIN INV	--GFG	111.1
GRANBY	39786	67/10/23	1	23	8.5	9.0	10.0	6.4	7.4	0.50	3319.						--MPC	111.7
STPETERSBURG	39797	67/11/3	0	5	9.0	10.0	6.3	7.3	0.30	0.30	3500.						--FK	117.7
STPETERSBURG	39798	67/11/4	0	17	9.0	10.0	6.3	7.3	0.30	0.30	2750.						--FK	118.5
STADE/ELBE	39825	67/12/1	2	39	7.8	8.5	5.4	6.3	0.30	0.30	2950.	0.20	67.0	260.0	2750.	RAPID FLASHING	--HK	27.9
STADE/ELBE	39881	68/1/26	21	16	9.0	9.3	5.7	6.0	0.30	0.30	2700.	53.0	5.0	5.0	2950.	RAPID FLASHES	--HK	59.9
STADE/ELBE	39881	68/1/26	21	24	8.0	8.3	5.8	6.1	0.30	0.30	2730.	83.0	100.0	100.0	2700.	RAPID FLASHES	--HK	37.1
STADE/ELBE	39883	68/1/28	21	41	8.0	8.3	5.8	6.1	0.30	0.30	3170.	0.20	70.0	350.0	2730.	RAPID FLASHING	--HK	59.2
STADE/ELBE	39955	69/4/9	3	4	8.0	8.0	5.5	5.5	0.30	0.30	3140.	45.0	55.0	55.0	3170.	RAPID FLASHES	--HK	121.6
STADE/ELBE	39956	69/4/10	3	17	8.7	9.7	6.2	6.2				43.0	55.0	55.0	3140.	ST NOT DARK SHORT OBS	--HK	125.5

SDC NO. 2256 66-56C HEMISPHERE USA LAUNCHED 66/ 6/24 IN ORBIT
PERIOD = 181.4 PERIGEE = 2611.0 APGEE = 2652.6 INCL = 96.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39338	66/ 8/ 1	0	38	10.0	9.5	12.0	7.2	7.7	9.7	2950.					VARYING SHORT OBSERVED	--HK	110.0
MOUNT PINOS	39349	66/ 8/12	8	3	9.5	10.0	7.3	7.3	7.3	7.3	2920.					TP ABOUT 5 SEC	--AMH	55.9
PHOENIX R	39378	66/ 9/10	4	25	10.0	10.0	7.0	7.0	7.0	7.0	3412.					STEADY	--RKR	37.8
SAN ANTONIO	39400	66/10/ 2	5	30	10.5	10.5	7.0	7.0	7.0	7.0	3444.					SLIGHT VARIATION	--FR	59.8
EDINBURG	39406	66/10/ 8	3	32	8.5	10.0	6.4	7.0	7.0	7.0	2659.					SLOW TP	--PM	49.8
PHOENIX P	39407	66/10/ 9	3	47	9.0	10.0	6.8	7.8	7.8	7.8	2708.					SLOW TP	--PKR	41.1
PHOENIX R	39408	66/10/10	3	59	9.0	10.0	6.0	7.9	7.9	7.9	2664.					SLOW TP	--RKR	46.0
PHOENIX R	39409	66/10/11	4	10	9.0	9.0	6.0	6.0	6.0	6.0	2651.					STEADY	--RKR	51.1
PHOENIX R	39410	66/10/12	4	21	10.0	10.0	7.9	7.9	7.9	7.9	2669.					STEADY	--RKR	56.5
PHOENIX P	39416	66/10/18	2	27	10.0	10.0	7.6	7.6	7.6	7.6	2958.					STEADY	--RR	35.3
EDINBURG	39427	66/10/29	1	26	8.2	9.0	11.0	6.0	8.0	8.0	2705.					REGULAR FLUCTUATION	--PM	53.3
PHOENIX R	39433	66/11/ 4	2	37	9.0	9.5	7.4	7.4	7.4	7.4	2652.					IRREGULAR TUMBLE	--RKR	70.1
OCEANPORT	39454	66/11/ 5	0	54	9.5	10.0	7.4	7.4	7.4	7.4	2645.							
OCEANPORT	39452	66/11/23	0	25	10.0	10.0	7.4	7.4	7.4	7.4	3240.							
OCEANPORT	39583	67/ 4/ 3	1	22	10.5	10.5	8.3	8.3	8.3	8.3	2700.							
STADE/ELBE	39706	67/ 8/ 4	23	43	9.0	9.0	6.8	6.8	6.8	6.8	2750.					THREE SHORT FLICKER THEN LOST	--GFG	81.4
																	--HK	57.4

STATION NAME NJD 39709 67/ 8/ 7 3 0 9.0 6.7 59.3 83.4 2889. --OBS PHASE --GFG 54.3

SDC NO. 2257 66-578 PERIOD = 97.1 MIN ROCKET BODY USSR LAUNCHED 66/ 6/25 IN ORBIT INCL = 65.0

STATION NAME	NJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
STADE/ELBE	39377	66/	9/	9	19	27	5.0	6.0	5.9	6.0	1.50	0.80	35.0	310.0	650.	FLASHING	--	HK 130.2
STADE/ELBE	39387	66/	9/	19	20	37	5.5	7.0	5.5	7.0	2.10	0.50	30.0	360.0	1000.	REGULAR FLASHING	--	HK 109.3
STADE/ELBE	39510	67/	1/	20	5	58	5.0	7.5	6.5	9.0			51.0	140.0	500.	REGULAR FLASHING	--	HK 110.3
STADE/ELBE	39573	67/	3/	24	19	18	6.0	6.0	7.5	7.5			36.0	55.0	500.	STEADY	--	HK 56.0
STADE/ELBE	39574	67/	3/	25	19	35	6.0	6.0	8.0	8.0			65.0	55.0	400.	STEADY	--	HK 63.4
STADE/ELBE	39614	67/	5/	4	2	3	5.0	8.0	6.5	9.5			50.0	140.0	500.	SLOWLY FLASHING	--	HK 74.4
STADE/ELBE	39725	67/	8/	23	20	11	5.0	5.0	6.7	6.7			62.0	140.0	450.	STEADY	--	HK 49.4
HEIDELBERG	39757	67/	9/	24	18	41	4.2	4.2	5.3	5.3			50.0	100.0	600.	STEADY	--	GLU 36.5
HEIDELBERG	39758	67/	9/	25	18	55	4.0	4.0	5.7	5.7			52.0	320.0	450.	STEADY	--	GLU 80.5
STADE/ELBE	39812	67/	11/	18	4	37	5.0	5.0	6.3	6.3			30.0	220.0	550.	ST MOON	--	HK 53.8
STADE/ELBE	39824	67/	11/	30	16	57	5.5	5.5	6.8	6.8			65.0	220.0	550.	ST CLOUDS	--	HK 51.7
STADE/ELBE	39852	67/	12/	28	17	27	4.8	4.8	6.1	6.1			75.0	310.0	480.	ST NOT DARK	--	HK 91.5
STADE/ELBE	39868	68/	1/	13	6	27	3.5	3.5	5.1	5.1			89.0	310.0	420.	ST	--	HK 56.3
STADE/ELBE	39977	68/	5/	1	0	52	3.5	3.5	5.4	5.4						ST	--	HK 71.7

SDC NO. 2259 66-588 PERIOD = 101.7 MIN USA LAUNCHED 66/ 7/ 1 DECAYED 11/17/66

STATION NAME	NJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
VAN NUYS-F	39389	66/	9/	21	3	34	4.3	4.3	5.2	5.2			38.5	180.0	670.		--	JGM 54.2
SAN ANTONIO	39392	66/	9/	24	2	14	4.0	4.0	5.6	5.6			84.8	180.0	489.	STEADY	--	FB 55.6
EDINBURG	39392	66/	9/	24	2	15	4.0	4.0	5.4	5.4			67.2	360.0	523.	NO VARIATION	--	PM 72.2

SDC NO. 2290 66-60A PRNTON 3 USSR LAUNCHED 66/ 7/ 6 DECEASED 9/16/66
PERIOD = 89.3 PERIGEE = 115.0 APOGEE = 363.5 INCL = 63.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39315	66/	7/	9	22	47	1.0	2.0	4.4	5.4			55.0	220.0	208.	VAR WITH DCASS SHORT FLASHES	-- HK	55.4
VAN NUYS-F	39330	66/	7/	24	3	52	1.8	1.8	4.1	4.1			38.5	82.8	350.		--JGM	45.5

SDC NO. 2293 66-60B ROCKET BODY USSR LAUNCHED 66/ 7/ 6 DECEASED 8/21/66
PERIOD = 92.2 PERIGEE = 115.0 APOGEE = 363.5 INCL = 63.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39315	66/	7/	9	22	43	-1.5	6.0	1.9	9.4	30.00	3.00	55.0	220.0	208.	REGULAR FLASHING	-- HK	56.9
VAN NUYS-F	39332	66/	7/	26	3	39	0.1	0.1	3.2	3.2			62.8	250.8	240.		--JGM	99.8
VAN NUYS-F	39332	66/	7/	26	3	40	1.2	1.2	3.3	3.3			31.0	173.0	380.		--JGM	53.9

SDC NO. 2294 66-60C PERIOD = -7.0 PERIGEE = -3.0 APOGEE = -0.0 INCL = -0.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39315	66/	7/	9	22	43	4.0		7.4				55.0	220.0	208.	ONLY TWO FLASHES OBSERVED	-- HK	56.9

SDC NO. 2296 66-61B ROCKET BODY USSR LAUNCHED 66/ 7/ 8 DECEASED 10/7/66
PERIOD = 92.0 PERIGEE = 158.4 APOGEE = 310.1 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39334	66/	7/	28	21	59	3.0	6.5	4.8	8.3	2.12	0.80	30.0	180.0	429.	REGULAR FLASHING	-- HK	25.1
SAN ANTONIO	39411	66/	10/	13	0	58	2.0	2.0	4.5	4.5			32.0	224.1	310.	STEADY	-- FR	119.4

SD68-629

SDC NO. 2327 66-63A
PERIOD = 105.3 PERIGEE = 620.1 APOGEE = 628.2 IN ORBIT INCL = 144.3
USA LAUNCHED 66/ 7/14
STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
EDINBURG 39891 68/ 2/ 5 2 3 5.0 5.2 38.7 353.0 915. ONE FLASH OBSERVED -- PM 75.3

SDC NO. 2328 66-63C
PERIOD = 105.3 PERIGEE = 618.3 APOGEE = 630.7 IN ORBIT INCL = 144.3
ROCKET USA LAUNCHED 66/ 7/14
STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
VAN NUYS-F 39889 68/ 2/ 3 3 29 8.0 8.0 8.9 5.38 77.0 359.0 450. VAR STARTED IN WEST --JGM 54.1
EDINBURG 39891 68/ 2/ 5 1 8 7.0 9.0 7.5 8.75 47.5 345.8 810. LONG, REGULAR PERIOD -- PM 82.5
VAN NUYS-F 39893 68/ 2/ 7 3 52 6.8 7.8 7.9 8.8 81.3 353.0 640. --JGM 61.4

SDC NO. 2329 66-63D
PERIOD = 105.5 PERIGEE = 627.5 APOGEE = 631.9 IN ORBIT INCL = 144.3
USA LAUNCHED 66/ 7/14
STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
WALNUT CREEK 39890 68/ 2/ 4 3 38 8.0 8.0 75.2 181.0 650. FADING BELOW TEN IN TWO SEC --DFC 55.7

SDC NO. 2337 66-62E
PERIOD = 105.3 PERIGEE = 623.9 APOGEE = 628.2 INCL = 144.2
USA LAUNCHED 66/ 7/14 DECEASED 11/12/67
STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
VAN NUYS-F 39889 68/ 2/ 3 3 44 7.5 8.4 90.00 77.0 3.0 650. PUNCH TO --JGM 50.7

SDC NO. 2329 65-52J
 PERIOD = 95.6 PERIGEE = 335.5 APGEE = 348.0 IN ORBIT
 LAUNCHED 65/ 7/16 INCL = 56.1

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39425	66/10/27	18	7	6.5	7.5	8.2	9.2	450.				60.0	360.0	450.	VARYING ON FLASHING	-- HK	75.5
STADE/ELBE	39426	66/10/28	17	52	6.5	9.0	8.0	10.5	500.				55.0	360.0	500.	REGULAR FLASHING	-- HK	75.5
STADE/ELBE	39763	67/ 9/20	18	25	6.8	6.8	0.6	0.5	285.				80.0	360.0	285.	STEADY SHOT OBS NOT SUPE	-- HK	75.5

SDC NO. 2348 66-65A
 PERIOD = 91.5 PERIGEE = 213.8 APGEE = 218.1 INCL = 28.0
 TARGET AGENA USA LAUNCHED 66/ 7/18 DECEASED 12/20/66

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	39250	66/ 8/22	2	4	3.0	3.5	5.4	5.0	328.				39.2	180.0	328.	GRADUAL VAP	-- PM	55.6
VAN NUYS-B	39350	66/ 8/22	3	17	4.3	4.3	5.5	5.5	570.				18.2	170.0	570.		--JGM	52.1
SAN ANTONIO	39360	66/ 8/23	2	26	3.0	5.0	6.2	8.2	232.				67.1	180.0	232.	ONCE TO 43, THEN HIT SHADOW	-- PM	55.0
WALNUT CREEK	39362	66/ 8/26	3	27	5.0	5.0	5.0	5.9	668.				14.0	180.0	668.	STEADY	--DEC	58.4
VAN NUYS-F	39362	66/ 8/26	3	28	4.2	4.2	6.1	6.1	420.				27.7	181.0	420.		--JGM	65.5
SAN ANTONIO	39367	66/ 8/30	1	45	3.3	3.3	5.4	5.4	377.				32.0	180.0	377.	SEEMINGLY STEADY	-- PM	70.3

SDC NO. 2351 66-67A
 PERIOD = 89.1 PERIGEE = 127.4 APGEE = 160.3 INCL = 65.0
 COSMOS 125 USSR LAUNCHED 66/ 7/20 DECEASED 8/ 2/66

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39331	66/ 7/25	4	1	2.0	2.8	3.4	3.4	300.				27.0	110.0	300.	STEADY	--JGM	70.0

SDC NO. 2356 66-66F
 PERIOD = 92.5 PERIGEE = 239.8 USA LAUNCHED 66/ 7/18 DECEASED 4/18/67
 STATION NAME MJD Y M D T M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 SAN ANTONIO 39350 66/ 8/22 2 8 6.7 5.7 8.6 8.6 410. STEADY
 SAN ANTONIO 39361 66/ 8/24 1 50 7.5 7.5 10.2 10.2 294. 42SEC BEHIND ST-8 AGENA ST
 SAN ANTONIO 39362 66/ 8/25 2 31 7.2 7.2 10.2 10.2 254. 34SEC AFTER ST-8 AGENA ST
 SAN ANTONIO 39366 66/ 8/29 1 56 6.0 6.0 8.7 8.7 288. 17SEC BEHIND ST-8 TARGET
 --OBS PHASE
 -- PM 54.5
 -- PM 71.4
 -- PM 58.3
 -- PM 59.0

SDC NO. 2357 66-66F
 PERIOD = 91.5 PERIGEE = 185.2 USA LAUNCHED 66/ 7/18 DECEASED 10/15/66
 STATION NAME MJD Y M D T M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 VAN NUYS-F 39363 66/ 8/26 3 39 4.0 4.0 5.8 5.8 430.
 WALNUT CREEK 39363 66/ 8/26 3 39 4.0 4.0 4.9 4.9 674. STEADY 9 SECONDS
 --OBS PHASE
 --JGW 63.3
 --DFC 65.2

SDC NO. 2376 66-69A
 PERIOD = 88.7 PERIGEE = 105.5 USA LAUNCHED 66/ 7/29 DECEASED 8/ 6/66
 STATION NAME MJD Y M D T M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 STADE/ELRE 39336 66/ 7/30 21 27 2.0 6.2 144. ONLY ONE FLASH OBS BECAUSE VERY QUICKLY
 --OBS PHASE
 -- HK 89.3
 -- HK

SDC NO. 2383 66-66J DERRIS USA LAUNCHED 66/ 7/18 DECAYED 1/17/67
PERIOD = 92.5 PERIGEE = 236.1 APOGEE = 257.2 INCL = 28.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
SAN ANTONIO	39360	66/	8/	23	2	24	7.5	8.2	10.2	10.9			58.6	180.0	284.	FLARE TO +75, THEN ST AT MIN	--	PM 53.4

SDC NO. 2389 66-70A OVA-3 USA LAUNCHED 66/ 8/ 4 IN ORBIT
PERIOD = 136.9 PERIGEE = 223.7 APOGEE = 2785.6 INCL = 91.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39609	67/	4/	29	22	50	6.0	9.0	7.6	10.6	1.30	0.60	60.0	260.0	490.	SHARP SHORT FLASHES	--	HK 70.2
AUSTIN	39740	67/	9/	7	4	26	9.0	7.0					54.0	80.0	2517.		--	MM 37.6

SDC NO. 2397 66-74B CAPSULE USA LAUNCHED 66/ 8/16 IN ORBIT
PERIOD = 94.9 PERIGEE = 317.5 APOGEE = 325.0 INCL = 93.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39466	66/12/	7	5	16	5.0	5.0	9.0	6.5	10.5	0.80		42.0	100.0	500.	RAPIDLY FLASHING AND FLICKER	--	HK 120.3
STPETERSBURG	39466	66/12/	7	23	50	6.0	6.0	9.0	8.0	11.0	1.00		39.0	297.0	400.		--	FK 111.0
STPETERSBURG	39467	66/12/	8	23	34	6.0	6.0	6.0	8.3	8.3			56.0	325.0	340.		--	FK 88.0
STADE/ELBE	39469	66/12/10	16	49	6.5	6.5	6.5	8.5	8.5	8.5	0.50		65.0	100.0	400.	STEADY OCASS IRREG FLASHES	--	HK 54.1
STADE/ELBE	39478	66/12/19	5	15	6.7	6.7	6.7	9.1	9.1	9.1	1.00	0.30	85.0	100.0	330.	RAPIDLY FLICKERING	--	HK 75.8
STADE/ELBE	39804	67/11/10	16	58	6.5	6.5	9.0						85.0	100.0	320.	FLASHING MIN INV	--	HK 72.9

SDC NO. 2399 66-758 PERIOD = 97.2 PERIGEE = 156.0 USA LAUNCHED 66/ 8/17 DECEASED 8/ 7/67
APOGEE = 620.1 INCL = 33.0

STATION NAME	MJD	Y	M	D	M	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39377	66/	9/	9	2	51	4.2	4.2	5.9	5.9			33.1	162.5	460.		--JGM	59.4
PHOENIX R	39378	66/	9/10	3	7	6.0	6.0	6.0	6.6	6.6			69.0	157.5	300.	TRACKED 12 SEC STEADY	--RKP	59.2
WALNUT CREEK	39379	66/	9/11	3	19	3.5	3.5	3.5	5.1	5.1			29.0	170.0	680.	STEADY	--DFC	62.4
WALNUT CREEK	39380	66/	9/12	3	34	3.0	3.0	3.0	4.8	4.8			33.8	177.0	431.	STEADY 90 SEC	--JGM	54.9
VAN NUYS-F	39384	66/	9/16	2	49	2.3	2.3	2.3	5.3	5.3			54.0	170.0	250.		--JGM	59.0
VAN NUYS-F	39385	66/	9/17	3	3	3.5	3.5	3.5	5.6	5.6			30.0	170.0	380.	QUITE FAINT	--JGM	63.5
VAN NUYS-F	39386	66/	9/18	3	16	7.5	7.5	7.5	9.1	9.1			21.3	200.0	480.	SLIGHT VARIATION	--JGM	88.8
STPETERSBURG	39387	66/	9/19	3	13	3.0	3.0	3.0	6.7	6.7			72.0	18.0	186.		--FK	77.4

SDC NO. 2401 66-76A PERIOD = 105.8 PERIGEE = 653.7 USA LAUNCHED 66/ 8/18 IN ORBIT
APOGEE = 687.9 INCL = 98.9

STATION NAME	MJD	Y	M	D	M	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39507	67/	1/17	0	55	3.0	3.0	3.0	3.8	3.8			78.4	21.2	700.	STEADY	--FK	58.8
STADE/ELBE	39507	67/	1/17	18	47	8.0	8.0	8.0	8.9	8.9			89.0	100.0	675.	STEADY	--HK	61.4
STADE/ELBE	39509	67/	1/19	18	51	7.7	7.7	7.7	8.5	8.5			80.0	260.0	690.	STEADY	--HK	72.0
STADE/ELBE	39510	67/	1/20	18	0	8.0	8.0	8.0	8.5	8.5			60.0	100.0	780.	STEADY HALF	--HK	41.8
STADE/ELBE	39517	67/	1/27	17	24	8.3	8.3	8.3	8.8	8.8			50.0	100.0	780.	STEADY	--HK	41.4
STADE/ELBE	39972	68/	4/26	20	4	7.5	7.5	7.5	8.1	8.1			69.0	100.0	750.	ST NOT DARK	--HK	60.9

SDC NO. 2403 66-77A PERIOD = 167.6 PERIGEE = 2295.4 USA LAUNCHED 66/ 8/19 IN ORBIT
APOGEE = 2301.6 INCL = 90.1

STATION NAME	MJD	Y	M	D	M	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39364	66/	8/27	21	55	6.0	6.0	6.0	4.1	4.6			75.0	100.0	2363.	STEADY AND FAINT VAR	--HK	58.6
STADE/ELBE	39365	66/	8/28	20	18	6.5	6.5	6.5	4.3	4.8			45.0	100.0	2912.	FAINT VARYING	--HK	40.0
STADE/ELBE	39365	66/	8/28	23	6	6.5	6.5	6.5	4.5	5.1			70.0	295.0	2403.	FAINT VAR	--HK	74.3
STADE/ELBE	39373	66/	9/ 5	21	1	5.8	5.8	5.8	3.0	3.0			75.0	100.0	2363.	STEADY	--HK	55.4
STADE/ELBE	39375	66/	9/ 7	20	20	6.0	6.0	6.0	4.0	4.0			65.0	100.0	2456.	STEADY	--HK	49.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39377	66/	9/	9	20	0	5.5	5.5	3.5	3.6			60.0	100.0	2400.	STEADY	--HK	46.3
ROCHESTER	39378	66/	9/10		1	10	8.0	9.0	5.8	5.8			53.6	68.0	2710.	STDY	--RN	51.2
VAN NUYS-F	39385	66/	9/17		3	50	7.3	7.3	5.0	5.0			41.5	76.0	2900.		--JGM	33.9
VAN NUYS-F	39385	66/	9/17		6	37	7.0	7.0	4.9	4.9			54.4	279.5	2610.		--JGM	66.9
PHOENIX R	39386	66/	9/18		4	57	7.0	7.0	5.2	5.2			88.7	82.2	2301.	STEADY	--RKR	48.5
VAN NUYS-F	39386	66/	9/18		4	57	6.2	6.2	4.3	4.3			74.5	85.0	2350.		--JGM	42.5
STADE/ELBE	39386	66/	9/18		19	5	6.0	6.0	3.9	3.9			53.0	100.0	2645.	STEADY	--HK	40.2
PHOENIX R	39387	66/	9/19		6	7	7.0	7.0	4.0	4.0			52.2	287.8	2633.	STEADY	--RKR	71.3
STADE/ELBE	39387	66/	9/19		20	14	5.5	5.5	3.6	3.6			80.0	100.0	2350.	STEADY	--HK	58.0
PHOENIX R	39388	66/	9/20		4	26	7.0	7.0	5.2	5.2			76.1	87.1	2343.	STEADY TRACKED 4 MIN	--RKR	43.0
STADE/ELBE	39388	66/	9/20		21	19	5.7	5.7	3.8	3.8			75.0	260.0	2360.	STEADY	--HK	56.7
STADE/ELBE	39388	66/	9/20		21	24	4.5	7.0	2.6	5.1	0.60	0.40	70.0	315.0	2400.	REGULAR RAPIDLY FLASHING	--HK	78.9
PHOENIX R	39391	66/	9/24		6	13	8.0	8.0	5.7	5.7			41.2	283.9	2897.	STEADY	--RR	77.2
ROCHESTER	39395	66/	9/27		1	20	6.0	6.0	4.1	4.1			67.4	82.0	2417.	STDY	--RJ	46.4
STADE/ELBE	39396	66/	9/28		19	18	6.8	6.8	4.9	4.9			70.0	100.0	2398.	STEADY	--HK	51.1
STPETERSBURG	39398	66/	9/30		1	49	5.0	5.0	3.1	3.1			63.0	275.0	2500.		--FK	67.4
STPETERSBURG	39399	66/10/	1		2	58	4.0	4.0	2.0	2.0			55.0	80.8	2590.	STEADY	--FK	35.8
PHOENIX R	39399	66/10/	1		3	1	7.0	7.0	4.9	4.9			87.8	267.0	2301.	STDY	--RR	61.3
ROCHESTER	39405	66/10/	7		1	32	7.0	7.0	5.2	5.2			41.2	339.0	2350.	STDY	--RJ	65.3
ROCHESTER	39405	66/10/	7		1	34	7.0	7.0	5.1	5.1					2500.		--RJ	65.3
STPETERSBURG	39406	66/10/	8		2	34	7.0	7.0	5.0	5.0			89.5	100.0	2312.	STEADY	--FK	64.3
STADE/ELBE	39406	66/10/	8		19	32	6.0	6.0	4.2	4.2			73.0	100.0	2360.	STEADY	--HK	55.2
STADE/ELBE	39410	66/10/12			18	29	7.0	7.0	5.1	5.1			80.0	100.0	2350.	STEADY	--HK	59.5
STADE/ELBE	39415	66/10/17			18	36	6.5	6.5	4.6	4.6			37.0	260.0	3000.	REGULAR RAPIDLY FLASHING	--HK	82.0
STADE/ELBE	39415	66/10/17			21	31	7.8	7.8	5.2	5.2	0.62	0.30	30.0	310.0	3260.	STEADY	--HK	106.5
STADE/ELBE	39415	66/10/17			21	37	5.0	9.0	2.4	6.4	0.62	0.30	25.0	345.0	3350.	REGULAR RAPIDLY FLASHING	--HK	111.3
STADE/ELBE	39418	66/10/20			19	14	7.0	7.5	5.1	5.6	0.62	0.30	80.0	260.0	2650.	REGULAR RAPIDLY FLASHING	--HK	71.8
STADE/ELBE	39419	66/10/21			20	22	4.7	9.0	2.6	6.9	0.62	0.30	50.0	260.0	2781.	REGULAR RAPIDLY FLASHING	--HK	84.5
STADE/ELBE	39419	66/10/21			20	26	7.5	7.8	5.3	5.6	0.62	0.30	45.0	310.0	2910.	REGULAR RAPIDLY FLASHING	--HK	98.4
STADE/ELBE	39423	66/10/25			20	30	5.0	9.0	2.7	6.7	0.62	0.30	40.0	345.0	3061.	REGULAR RAPIDLY FLASHING	--FK	96.2
STPETERSBURG	39423	66/10/25			2	23	8.0	8.0	5.6	5.6			68.2	260.0	2406.	VARYING	--HK	80.1
STADE/ELBE	39423	66/10/25			19	19	6.8	7.2	4.9	5.3	9.00				2300.	+A FLASH EA 9 SEC EST	--FK	
STPETERSBURG	39425	66/10/27			1	52	8.0	8.0	6.2	6.2			65.5	77.0	2435.	STEADY	--FK	54.4
STADE/ELBE	39426	66/10/28			17	11	7.5	7.5	5.6	5.6	0.62	0.30	51.3	260.0	2657.	REGULAR RAPID	--HK	85.8
STADE/ELBE	39426	66/10/28			19	58	4.0	9.0	1.9	6.9			45.0	290.0	2907.	STEADY	--HK	99.0
STADE/ELBE	39426	66/10/28			20	0	8.0	8.0	5.8	5.8							--HK	

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STATION NAME	MJD	Y	M	D	TIME	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39426	66/10/28	20	3	4.0	9.0	1.8	6.8	0.62	0.30	45.0	310.0	2897.	REGULAR RAPID	FLASHING	--HK	98.6
STPETERSBURG	39427	66/10/29	1	21	5.0	8.0	2.8	5.8					2700.	R FLASHES IN 5 SEC MEAS	--FK	88.5	
STADE/ELBE	39427	66/10/29	21	4	4.5	9.0	2.0	6.5	0.62	0.30	32.0	260.0	3153.	REGULAR RAPID	FLASHING	--HK	98.8
STPETERSBURG	39432	66/11/3	1	28	5.0	9.0	2.7	5.7	0.50		44.4	282.6	2920.	STOPWATCH	--FK	94.5	
STPETERSBURG	39434	66/11/5	0	56	6.0	8.0	3.7	5.7	0.50		55.5	279.3	2900.		--FK	94.5	
OCEANPORT	39436	66/11/7	0	31	8.0		5.9				51.5	282.8	2653.		--	94.8	
STPETERSBURG	39437	66/11/8	1	34	5.0	9.0	2.5	5.5	0.50		85.0	260.0	3140.	INVISIBLE 2 SEC IN 7 SEC	--FK	77.2	
STADE/ELBE	39440	66/11/11	5	44	6.0	6.0	4.2	4.2			54.5	277.3	2320.	STEADY NOT DARK	--HK	100.1	
STPETERSBURG	39441	66/11/12	0	30	6.0						60.5	279.1	2500.	HALF SECOND FLASHES	--FK	95.4	
OCEANPORT	39445	66/11/16	23	35	8.5		6.5				41.7	280.7	2600.	VARIABLE	--FK	109.8	
STPETERSBURG	39446	66/11/17	0	37	8.5		6.4				40.5	281.1	2910.	ESTIMATED	--FK	102.9	
STPETERSBURG	39449	66/11/20	1	17	8.5		6.2		1.00		32.5	292.7	3170.		--FK	112.8	
OCEANPORT	39452	66/11/23	0	20	8.5		6.0		1.00		40.5	281.1	2910.	CLOCKED	--FK	114.4	
STPETERSBURG	39453	66/11/24	0	13	8.5		6.2				88.0	260.0	2297.	STEADY	--HK	40.4	
STADE/ELBE	39534	67/2/13	23	15	5.7	5.7	3.9	3.9	0.63	0.30	58.0	55.0	2560.	REGULAR RAPID FLASHING	--HK	51.1	
STADE/ELBE	39535	67/2/14	21	33	5.5	7.0	3.5	5.0			56.0	100.0	2580.	STEADY	--HK	32.5	
STADE/ELBE	39556	67/3/7	20	20	6.0	6.0	3.9	3.9			69.0	140.0	2450.		--JCM	45.4	
VAN NUYS-F	39581	67/4/1	4	15	5.5	5.5	3.6	3.6			62.0	100.0	2490.	STEADY	--HK	53.8	
STADE/ELBE	39706	67/8/4	22	44	6.5	6.5	4.5	4.5			42.0	30.0	2460.	STEADY .3 MAG VAR	--HK	56.4	
STADE/ELBE	39708	67/8/6	22	20	6.5	6.5	4.2	4.2			88.0	260.0	2320.	STEADY .3 MAG VAR	--HK	50.1	
STADE/ELBE	39721	67/8/19	23	7	6.7	7.0	4.9	5.2			75.0	100.0	2340.	STEADY	--HK	61.9	
STADE/ELBE	39730	67/8/28	27	7	6.5	6.5	4.7	4.7			83.0	100.0	2310.	STEADY	--HK	53.4	
STADE/ELBE	39734	67/9/1	21	3	6.5	6.8	4.6	4.9			68.0	100.0	2400.	STEADY VAP 0.3 MAG	--HK	54.8	
STADE/ELBE	39753	67/9/20	20	19	7.0	7.3	5.2	5.5			77.0	100.0	2300.	STEADY OCCAS 0.3 MAG VAR	--HK	45.3	
HEIDELBERG	39764	67/10/1	18	50	7.8	7.8	5.8	5.8	0.68	0.30	59.0	81.0	2520.	STEADY	--GLU	71.2	
STADE/ELBE	39766	67/10/3	21	7	6.5	8.0	4.2	5.7	0.58	0.40	63.0	260.0	2970.	FLASHING	--HK	94.9	
STADE/ELBE	39766	67/10/3	21	15	7.0		4.7		0.58	0.40	60.0	330.0	2990.	FLASHING	--HK	77.8	
HEIDELBERG	39773	67/10/10	20	42	6.5	9.0	4.5	6.0	0.62	0.20	62.0	279.0	2470.	FLASHING	--GLU	55.3	
HEIDELBERG	39774	67/10/11	19	27	7.2	7.2	5.4	5.4			73.0	81.0	2310.	STEADY	--GLU	55.3	
STADE/ELBE	39781	67/10/18	19	37	7.3	7.3	5.5	5.5			83.0	100.0	2320.	ST MOON	--HK	52.1	
HEIDELBERG	39782	67/10/19	19	45	7.2	7.2	5.3	5.3			70.0	278.0	2380.	STEADY MOON	--GLU	77.1	
HEIDELBERG	39783	67/10/20	18	5	7.1	7.1	5.2	5.2			69.0	82.0	2400.	STEADY	--GLU	52.8	
HEIDELBERG	39784	67/10/21	19	13	7.4	7.4	5.5	5.5			74.0	280.0	2350.	STEADY MOON	--GLU	78.0	
STADE/ELBE	39789	67/10/26	19	25	7.5	7.5	5.6	5.6			65.0	310.0	2440.	ST	--HK	93.7	
STADE/ELBE	39825	67/12/1	4	56	6.5	6.8	4.6	4.9			73.0	260.0	2365.	ST 0.3 VAP MAG	--HK	54.8	
STADE/ELBE	39906	68/2/20	21	30	5.5	8.5	3.6	6.4	0.63		63.0	100.0	2450.	SHARP FLASHES	--HK	31.4	

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39910	68/	2/	24	23	14	6.2	6.2	4.4	4.4			73.0	260.0	2340.	ST	--HK	45.1
HEIDELBERG	39913	68/	2/	27	21	6	6.3	6.3	4.3	4.3			58.0	80.0	2550.	ST	--GLU	37.2
HEIDELBERG	39914	68/	2/	28	22	14	6.0	6.0	4.2	4.2			87.0	60.0	2310.	ST	--GLU	45.0
STADE/ELBE	39916	68/	3/	1	21	39	5.0	5.0	3.1	3.1			80.0	100.0	2350.	SHARP FLASHES MIN INV	--HK	44.8
HEIDELBERG	39916	68/	3/	1	21	43	5.8	5.8	4.0	4.5		0.62	77.0	81.0	2340.	IRREG FLASHES	--GLU	43.0
STADE/ELBE	39918	68/	3/	3	21	19	6.0	6.0	4.1	4.1			70.0	100.0	2380.	ST	--HK	40.1
HEIDELBERG	39919	68/	3/	4	22	18	6.4	6.4	4.6	4.6			81.0	242.0	2320.	ST	--GLU	52.3
HEIDELBERG	39923	68/	3/	8	21	16	6.4	6.4	4.5	4.5			78.0	81.0	2345.	ST AND OCCAS FLASHES MOON	--GLU	47.3
STADE/ELBE	39925	68/	3/	10	20	43	7.0	7.0	5.1	5.1			70.0	100.0	2370.	ST MOON	--HK	43.8
STADE/ELBE	39926	68/	3/	11	21	47	6.5	6.5	4.5	4.5			63.0	359.0	2480.	ST	--HK	78.3
STADE/ELBE	39926	68/	3/	11	21	51	4.2	4.2	2.4	2.4			80.0	260.0	2320.	SHARP FLASHES MIN INV	--HK	58.4
HEIDELBERG	39927	68/	3/	12	20	14	6.1	6.1	4.1	4.1			58.0	81.0	2560.	ST MOON	--GLU	41.3
STADE/ELBE	39930	68/	3/	15	20	47	6.5	6.5	4.7	4.7			80.0	100.0	2320.	ST MOON	--HK	53.3
STADE/ELBE	39937	68/	3/	22	20	22	6.8	6.8	5.0	5.0			77.0	100.0	2300.	ST	--HK	55.4
STPETERSBURG	39941	68/	3/	26	2	46	8.0	8.0	0.0	0.0			83.5	336.8			--FK	56.0
HEIDELBERG	39942	68/	3/	27	20	30	6.6	6.6	4.8	4.8			88.0	190.0	2310.	ST	--GLU	63.8
HEIDELBERG	39943	68/	3/	28	18	51	7.0	7.0	4.9	4.9			52.0	79.0	2670.	ST	--GLU	47.6
STADE/ELBE	39944	68/	3/	29	19	57	6.3	6.3	4.4	4.4			84.0	100.0	2350.	ST	--HK	66.4
HEIDELBERG	39945	68/	3/	30	21	7	6.8	6.8	4.9	5.7		0.40	69.0	278.0	2410.	ST OCCAS FLASHES	--GLU	78.2
STPETERSBURG	39948	68/	4/	2	2	21	6.0	6.0	4.2	4.2			83.0	329.8	2300.	ST	--FK	62.9
STADE/ELBE	39951	68/	4/	5	19	31	7.3	7.3	5.5	5.5			83.0	100.0	2320.	ST MOON	--HK	70.7
STADE/ELBE	39952	68/	4/	6	20	40	6.5	7.0	4.6	5.1			67.0	260.0	2400.	FAINT VAR MOST ST	--HK	83.3
STADE/ELBE	39954	68/	4/	8	20	8	6.8	6.8	4.9	4.9			75.0	260.0	2380.	ST	--HK	83.7
STADE/ELBE	39956	68/	4/	10	19	37	7.5	7.5	5.7	5.7			85.0	260.0	2300.	ST MOON	--HK	81.6

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SDC NO. 2410 66-70B ROCKET BODY USSR LAUNCHED 66/ 8/27 DECAYED 9/ 7/66
PERIOD = 90.0 PERIGEE = 129.9 APGEE = 212.5 INCL = 65.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39365	66/	8/	28	20	44	1.0	6.0	5.1	10.1			76.0	220.0	154.	REGULAR FLASHING	--HK	70.2

SDC NO. 2411 66-77R EGRS 7 USA LAUNCHED 66/ 8/19 IN ORBIT
 PERIOD = 167.5 PERIGEE = 2286.5 APGEE = 2299.1 INCL = 90.1
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 SAN ANTONIO 39418 66/10/20 1 36 11.0 9.2 75.6 87.5 234.1 ONE FLASH-VISIBLE ONLY ABOUT
 ONE QUARTER DEGREE --OBS PHASE 54.0
 --FR

SDC NO. 2412 66-77C ERS 15 USA LAUNCHED 66/ 8/19 IN ORBIT
 PERIOD = 167.4 PERIGEE = 2290.4 APGEE = 2300.3 INCL = 90.1
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 AUSTIN 39740 67/ 9/ 7 5 27 0.5 7.6 69.0 274.0 2396.0 --OBS PHASE
 --MM 52.5

SDC NO. 2414 66-80A AGENA TARGET USA LAUNCHED 66/ 9/12 DECEASED 12/30/66
 PERIOD = 91.4 PERIGEE = 205.1 APGEE = 219.3 INCL = 29.8
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 STPETERSBURG 39400 66/10/ 2 0 24 2.5 2.5 4.3 4.3 25.0 180.0 440.0 --OBS PHASE
 EDINBURG 39402 66/10/ 4 1 0 3.0 3.0 6.2 6.2 69.9 180.0 224.0 --FK 79.5
 SAN ANTONIO 39407 66/10/ 9 1 0 2.0 2.0 5.3 5.3 74.5 180.0 217.0 --PM 80.1
 STPETERSBURG 39410 66/10/12 0 23 6.0 6.0 8.0 8.0 27.5 180.0 400.0 --FR 79.3
 --FK 80.8

SDC NO. 2417 66-81C ADAPTER USA LAUNCHED 66/ 9/12 DECEASED 10/ 8/66
 PERIOD = 90.3 PERIGEE = 172.1 APGEE = 186.6 INCL = 28.8
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 EDINBURG 39406 66/10/ 8 1 13 3.0 4.0 6.4 7.4 39.3 360.0 211.0 GRADUAL RISE TO +3
 SAN ANTONIO 39406 66/10/ 8 1 20 3.5 7.5 63.0 180.0 150.0 FLASHING-MIN. INVISIBLE IN
 3 INCH RINGUARS
 EDINBURG 39407 66/10/ 9 1 0 2.7 2.7 6.5 6.5 50.0 360.0 175.0 PRETTY WELL STEADY
 --OBS PHASE
 --PM 91.6
 --FR 75.4
 --PM 80.5

SDC NO. 2418 66-82A PERIOD = 100.8 PERIGEE = 438.1 USA LAUNCHED 66/ 9/16 IN ORBIT
 APOGEE = 553.6 INCL = 98.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39396	66/	9/28	20	54	7.5	9.0	8.6	10.1				55.0	300.0	600.	VARYING MOON DISTURBED	--	HK 92.4
STADE/ELBE	39605	67/	4/25	20	17	9.0	9.0	10.3	10.3				85.0	260.0	545.	STEADY	--	HK 83.2
STPETERSBURG	39608	67/	4/28	2	12	8.0	8.0	8.9	8.9				57.7	311.0	650.		--	FK 95.4

SDC NO. 2420 66-82R PERIOD = 94.2 PERIGEE = 285.8 USA LAUNCHED 66/ 9/16 IN ORBIT
 APOGEE = 311.3 INCL = 94.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STPETERSBURG	39495	67/	1/ 5	23	59	7.0	9.0	9.3	11.3				56.0	28.5	350.		--	FK 52.6
STADE/ELBE	39496	67/	1/ 6	17	21	5.5	8.0	7.8	10.3				0.30	70.0	100.0	REGULAR RAPID FLASHING	--	HK 55.2
STADE/ELBE	39507	67/	1/17	16	51	5.0	9.0	6.7	10.7				0.30	48.0	100.0	REGULAR SHORT FLASHES	--	HK 45.2
STADE/ELBE	39705	67/	8/ 3	23	13	5.5	8.5	6.2	9.2				20.0	100.0	710.	VAR WITH A LONG OUR THEN INV	--	HK 71.2

SDC NO. 2428 66-80A PERIOD = 167.0 PERIGEE = 99.4 USA LAUNCHED 66/-0/-0 IN ORBIT
 APOGEE = 4455.2 INCL = 35.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39377	66/	9/ 9	5	30	11.0							57.3	144.9	4630.	VARIABLE	--	JGM 20.5
VAN NUYS-F	39378	66/	9/10	6	27	11.0							70.7	151.8	4430.	SEEMS TO BE ABOUT 6 SEC TP	--	JGM 24.7
VAN NUYS-B	39382	66/	9/14	5	37	11.5	12.2	8.3	9.0				80.7	159.3	4300.	VAR SEEMED IRREGULAR	--	JGM 43.8
SAN ANTONIO	39387	66/	9/19	4	38	11.0							87.5	340.8	4260.	VARIABLE	--	FB 43.1
SAN ANTONIO	39391	66/	9/23	4	49	11.0	13.0	7.8	9.8				81.3	350.2	4290.	IRREG VARIATION	--	FB 45.2

SDC NO. 2437 66-88A
 PERIOD = 96.5 PERIGEE = 89.2 APOGEE = 649.3 INCL = 49.6
 LAUNCHED 66/ 9/17 DECAYED 11/11/66
 USSR
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS
 STADE/ELBE 39413 66/10/15 16 57 3.0 5.0 42.5 180.0 400. VARYING NOT DARK
 --OBS PHASE
 -- HK 91.0

SDC NO. 2438 66-88B
 PERIOD = 98.3 PERIGEE = 172.7 APOGEE = 666.7 INCL = 49.3
 LAUNCHED 66/ 9/17 DECAYED 3/ 4/67
 USSR
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS
 EDINBURG 39421 66/10/23 1 19 6.0 6.0 6.4 6.4 30.0 35.0 848. VERY STEADY
 SAN ANTONIO 39421 66/10/23 1 20 5.5 6.2 38.5 34.5 725. SMOOTH VARIATION
 --OBS PHASE
 -- PM 47.9
 -- FB 49.0

SDC NO. 2481 66-89A
 PERIOD = 167.6 PERIGEE = 2287.9 APOGEE = 2300.3 INCL = 90.2
 LAUNCHED 66/10/ 5 IN ORBIT
 USA
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS
 STADE/ELBE 39409 66/10/11 22 10 7.5 7.5 5.1 5.1 30.0 100.0 3000. STEADY
 STADE/ELBE 39415 66/10/17 23 30 6.0 6.0 4.1 4.1 65.0 100.0 2440. STEADY
 STADE/ELBE 39419 66/10/21 22 30 6.0 6.0 3.9 3.9 0.62 0.30 45.0 100.0 2781. REGULAR RAPIDLY FLASHING
 STADE/ELBE 39420 66/10/22 1 17 5.0 6.0 3.1 4.1 67.0 260.0 2400. VARYING
 STADE/ELBE 39420 66/10/22 1 25 5.8 9.0 3.8 7.0 0.62 0.30 60.0 345.0 2490. REGULAR RAPIDLY FLASHING
 STADE/ELBE 39423 66/10/25 21 29 5.8 9.0 3.3 6.5 0.62 0.30 32.0 100.0 3140. REGULAR RAPID FLASHING
 STADE/ELBE 39426 66/10/28 22 7 7.5 7.5 5.4 5.4 50.0 100.0 2660. STEADY
 STADE/ELBE 39427 66/10/29 0 56 4.5 9.0 2.6 7.1 0.63 0.30 65.0 260.0 2435. REGULAR RAPID FLASHING
 STADE/ELBE 39427 66/10/29 23 17 6.3 6.3 4.5 4.5 77.0 100.0 2300. STEADY
 STADE/ELBE 39428 66/10/30 21 38 5.0 9.0 2.7 6.7 0.63 0.30 42.0 100.0 2925. REGULAR RAPIDLY FLASHING
 STADE/ELBE 39428 66/10/30 21 47 6.0 6.0 3.6 3.6 35.0 30.0 3000. STEADY
 STADE/ELBE 39434 66/11/ 5 22 55 6.0 6.0 4.2 4.2 77.0 100.0 2335. STEADY
 STADE/ELBE 39435 66/11/ 6 21 16 6.5 9.0 4.3 6.8 0.63 0.30 45.0 100.0 2805. REGULAR RAPID FLASHING
 STADE/ELBE 39435 66/11/ 6 21 30 7.5 7.5 4.8 4.8 25.0 360.0 3480. STEADY
 STADE/ELBE 39479 66/12/20 18 38 6.0 6.0 3.8 3.8 50.0 100.0 2900. STEADY
 STADE/ELBE 39480 66/12/21 19 47 5.5 7.5 3.5 5.6 0.62 0.30 75.0 100.0 2400. REGULAR RAPID FLASHING
 --OBS PHASE
 -- HK 49.1
 -- HK 48.9
 -- HK 45.2
 -- HK 33.6
 -- HK 59.0
 -- HK 37.5
 -- HK 37.3
 -- HK 30.7
 -- HK 40.5
 -- HK 34.2
 -- HK 82.3
 -- HK 35.5
 -- HK 27.4
 -- HK 109.2
 -- HK 21.0
 -- HK 34.9

STATION NAME	MJD	Y	M	D	+	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39501	67/	1/	11	18	41	6.3	6.3	4.4	4.4			83.0	100.0	2350.	STEADY	-- HK	55.2
STPETERSBURG	39505	67/	1/	15	0	44	7.0	7.0	5.2	5.2			81.0	51.0	2300.		-- FK	58.6
STPETERSBURG	39509	67/	1/	19	0	52	7.0	7.0	5.2	5.2			79.0	305.0	2290.		-- FK	73.3
STADE/ELBE	39614	67/	5/	4	0	32	6.5	6.5	4.7	4.7			70.0	260.0	2300.	STEADY	-- HK	62.6
STADE/ELBE	39620	67/	5/	10	21	24	6.0	7.0	3.8	4.8			50.0	100.0	2700.	STEADY AND FADING	-- HK	54.7
STADE/ELBE	39636	67/	5/	26	27	56	6.5	6.5	4.6	4.6			74.0	260.0	2360.	STEADY	-- HK	74.3
STPETERSBURG	39641	67/	5/	31	3	42	3.0	3.0	1.2	1.2			74.5	65.3	2300.		-- FK	55.8
STADE/ELBE	39642	67/	6/	1	21	25	6.5	6.5	4.7	4.7			80.0	100.0	2300.	STEADY	-- HK	73.7
STPETERSBURG	39646	67/	6/	5	3	49	7.0	7.0	5.1	5.1			80.5	205.0	2350.		-- FK	50.6
STPETERSBURG	39648	67/	6/	7	3	21	7.0	7.0	5.1	5.1			79.5	84.7	2350.		-- FK	56.5
STADE/ELBE	39796	67/	11/	2	21	25	6.5	6.5	4.3	4.3		9.50	45.0	55.0	2780.	FLASHING OCCAS 8.5 STEADY	-- HK	58.3
STADE/ELBE	39813	67/	11/	19	21	24	5.0	5.0	2.2	2.2		13.20	20.0	15.0	3700.	SHARP FLASHES MIN INV	-- HK	94.4
STADE/ELBE	39843	67/	12/	19	22	4	4.8	7.5	2.8	5.5		10.60	60.0	260.0	2500.	BRIGHT FLASHES SEC MAXIMA	-- HK	51.8
STADE/ELBE	39862	68/	1/	7	18	47	4.8	9.0	3.0	7.2		15.80	53.0	10.0	2330.	SHARP BRIGHT FLASHES	-- HK	52.0
STPETERSBURG	39878	68/	1/	23	0	31	7.0	7.0	0.0	0.0		3.00	83.0	28.5	2300.	BRIGHT FLASH 3 MAG	-- FK	65.0
STPETERSBURG	39883	68/	1/	28	0	40	6.0	8.0	4.2	6.2			85.0	260.0	2300.	REG FLASHING OCCAS IRREG	-- FK	81.6
STADE/ELBE	39894	68/	2/	8	5	38	6.0	7.5	4.2	5.7			85.0	260.0	2300.	IRREG FLASHING	-- HK	73.3
STADE/ELBE	39994	68/	5/	18	22	33	6.8	8.0	5.0	6.2			85.0	100.0	2340.		-- HK	72.2

SDC NO. 2501 66-92A PERIOD = 718.0 PERIGEE = 718.0 PERIGEE = 273.5 USSR LAUNCHED 66/10/20 IN ORBIT
 APOGEE = 6176.4 INCL = 64.8

STATION NAME	MJD	Y	M	D	+	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-B	39420	66/	10/	22	6	0	12.0	12.5	5.8	6.3			64.8	297.4	17200.		--JGM	57.2
VAN NUYS-F	39429	66/	10/	31	5	24	10.0	10.0	5.2	5.2			63.3	213.2	9160.		--JGM	46.7
VAN NUYS-F	39430	66/	11/	1	5	11	9.8	10.3	5.0	5.5			64.7	206.8	9150.	TO ESTIMATE 2-4 MINUTES	--JGM	45.7
VAN NUYS-F	39431	66/	11/	2	5	24	8.8	8.8	4.8	4.8			35.0	187.0	6280.		--JGM	52.3
SAN ANTONIO	39433	66/	11/	4	4	36	9.5	9.5	4.6	4.6			58.0	247.0	9350.	STEADY	-- FK	53.7
EDINBURG	39434	66/	11/	5	3	25	11.0	11.0	5.1	5.1			68.1	306.5	15100.	ST, MAYRE FAINTER, EASY, 17-IN	-- PM	61.0
OCEANPORT	39434	66/	11/	5	4	16	10.0	10.0	4.9	4.9			31.6	253.5	10400.		-- PM	60.4
EDINBURG	39434	66/	11/	5	4	33	9.0	9.0	4.7	4.7			51.7	230.3	7374.	DEFINITELY NO VARIATION	-- PM	55.9
PHOENIX R	39435	66/	11/	6	4	19	9.0	9.0	4.7	4.7			52.4	187.3	7348.	STEADY	--RKR	51.1
OCEANPORT	39436	66/	11/	7	3	15	13.0	13.0	7.3	7.3			48.5	265.6	13800.		--RKR	64.1
PHOENIX R	39436	66/	11/	7	4	5	9.0	9.0	4.7	4.7			52.6	182.1	7340.	STEADY	--RKR	51.2

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STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	AIT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39581	67	4	1	6	48	9.5	9.5	5.1	5.1		83.0	68.0	7560.		--JGM	41.6
VAN NUYS-F	39583	67	4	3	6	37	9.5	9.5	5.1	5.1		83.0	70.0	7560.		--JGM	42.7
VAN NUYS-F	39583	67	4	3	6	58	10.5	10.5	5.5	5.5		73.0	30.0	10000.		--JGM	53.3
VAN NUYS-F	39584	67	4	4	6	32	9.0	9.3	4.6	4.9		82.0	70.0	7570.	NOT SURE IF VARYING	--JGM	43.3
VAN NUYS-F	39584	67	4	4	7	20	11.0	11.3	5.4	5.7		63.0	21.0	13000.		--JGM	54.1
VAN NUYS-F	39585	67	4	5	6	3	7.5	7.5	4.3	4.3		51.0	182.0	4300.		--JGM	29.5
VAN NUYS-F	39585	67	4	5	6	21	9.0	9.0	4.9	4.9		82.5	124.0	6620.		--JGM	38.9
VAN NUYS-F	39589	67	4	9	6	6	9.0	9.0	4.5	4.6		81.0	72.0	7500.		--JGM	45.4
OCEANPORT	39592	67	4	12	5	29	10.0		6.1			48.7	273.4	9309.		--GFG	54.2
OCEANPORT	39592	67	4	12	5	51	10.5	5.9				66.7	26.0	12300.		--GFG	52.9
VAN NUYS-F	39596	67	4	16	6	10	11.0	5.6	5.6			79.0	74.0	7640.		--JGM	54.8
VAN NUYS-F	39597	67	4	17	5	24	9.5	5.1	5.1			79.0	74.0	7640.		--JGM	51.8
VAN NUYS-F	39597	67	4	17	5	19	9.5	5.1	5.1			79.0	75.0	7650.		--JGM	52.5
VAN NUYS-F	39598	67	4	18	4	48	9.0	5.8	5.8			52.2	192.9	4324.	STEADY TRACKED 50 SEC	--RR	47.9
PHOENIX R	39599	67	4	19	5	3	8.0	4.6	5.1		9.20	78.0	75.0	7660.	ONE SMALL FLASH	--JGM	54.7
VAN NUYS-F	39601	67	4	21	4	11	8.2	5.0	5.0			51.0	169.0	4360.		--JGM	48.3
VAN NUYS-F	39606	67	4	26	4	11	8.2	5.0	5.0			44.6	263.4	7441.		--GFG	56.3
OCEANPORT	39606	67	4	26	4	28	11.0	6.6				77.0	77.0	7700.		--JGM	58.2
VAN NUYS-F	39606	67	4	26	4	37	9.5	5.1	5.1			70.0	42.0	10100.		--JGM	64.6
VAN NUYS-F	39606	67	4	26	4	53	10.3	5.3	5.3			67.0	40.0	10900.		--JGM	55.1
VAN NUYS-F	39607	67	4	27	4	54	10.5	5.3	5.3			52.3	270.3	8200.	MAYBE SOME SLIGHT VARIATION	--GFG	58.8
OCEANPORT	39609	67	4	29	4	19	11.5	6.9				68.0	40.0	11000.		--GFG	57.3
VAN NUYS-F	39609	67	4	29	4	43	10.8	5.6	5.6			78.4	160.3	5862.	STEADY	--RRR	58.8
PHOENIX R	39610	67	4	30	4	2	10.0	6.2	6.2			82.3	64.3	7542.	STEADY	--RRR	54.2
PHOENIX P	39611	67	5	1	4	9	9.0	4.6	4.6			51.4	270.2	8200.		--GFG	70.5
OCEANPORT	39610	67	4	30	4	13	11.0	6.4				75.0	75.0	7700.		--JGM	51.3
VAN NUYS-F	39610	67	4	30	4	15	9.8	5.4	5.4			62.0	232.0	5920.		--MM	58.2
AUSTIN	39612	67	5	2	3	43	8.5	5.0	5.0			75.0	75.0	7720.	MAYBE SLIGHT FLICKERING	--JGM	53.2
VAN NUYS-F	39612	67	5	2	4	4	10.0	5.6	5.6			67.0	38.0	11000.		--JGM	73.2
VAN NUYS-F	39612	67	5	2	4	27	11.3	6.1	6.1			75.0	75.0	7720.		--JGM	64.1
VAN NUYS-F	39613	67	5	3	3	59	9.8	5.4	5.4			69.0	43.0	10200.		--JGM	69.5
VAN NUYS-F	39613	67	5	3	4	15	10.8	5.8	5.8			62.0	29.0	13500.		--JGM	74.5
VAN NUYS-F	39613	67	5	3	4	42	11.5	5.8	6.0			64.0	178.0	4710.		--JGM	54.0
PHOENIX P	39616	67	5	6	3	21	9.0	5.6	5.6			74.0	76.0	9000.	STEADY	--RRR	67.2
VAN NUYS-F	39617	67	5	7	3	37	10.2	5.7	5.7			53.0	97.0	10600.		--JGM	42.9
VAN NUYS-F	39700	67	7	29	6	0	10.8	5.7	5.9			52.0	97.0	10500.		--JGM	41.5
VAN NUYS-F	39702	67	7	31	5	47	11.0	5.9	5.9			51.0	95.0	10600.	MAYBE SOME VARIATION	--JGM	38.6
VAN NUYS-F	39713	67	8	11	4	54	11.0	5.9	5.9								

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
VAN NUYS-F	39584	67	4	4	4	35	10.0	10.5	7.8	8.3			66.0	272.0	2790.		--JGW	93.4
VAN NUYS-F	39585	67	4	5	4	47	10.5		8.2				58.0	275.0	2900.		--JGW	98.9
OCEANPORT	39589	67	4	9	2	31	11.0		8.4				38.4	288.9	3369.		--GFG	105.6
STADE/ELBE	39706	67	8	4	23	11	9.0		6.9				83.0	260.0	2661.		--HK	70.4
AUSTIN	39741	67	9	8	4	5	9.5		7.4				78.0	92.0	2680.	SHORT FLICKER THEN LOST	--DCM	41.2
AUSTIN	39746	67	9	13	4	8	9.0		6.7				57.0	281.0	2906.	FADED TO LT 11 IN A FEW SEC	--MM	78.0
GRANBY	39767	67	10	4	0	49	9.0		6.8				66.8	280.0	2745.	20 SEC AT 9, THEN INV, NOT SH--	--MPC	85.6
AUSTIN	39907	68	2	21	2	23	9.0		6.7				60.0	79.0	2841.	THREE RAPID FLASHES THEN LOST	--MM	34.7
																90 FOR 15 SEC THEN INV		

SDC NO. 2515 66-96R

ROCKET BODY USA LAUNCHED 66/10/26 DECAYED 2/ 9/67
PERIOD = 92.3 PERIGEE = 151.5 APOGEE = 338.6 INCL = 28.7

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
SPETERSBURG	39507	67	1	17	23	39	2.0	2.0	5.8	5.8			63.2	180.0	177.		--FK	90.1

SDC NO. 2517 66-97A

OV3-2 USA LAUNCHED 66/10/28 IN ORBIT
PERIOD = 104.2 PERIGEE = 196.4 APOGEE = 994.8 INCL = 82.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
STADE/ELBE	39535	67	2	14	3	35	7.5	9.5	7.2	9.2	7.24	0.40	45.0	260.0	1150.	REGULAR FLASHING	--HK	36.8
STADE/ELBE	39802	67	11	8	18	24	5.0	5.0	5.4				55.0	260.0	850.	FLASHING SHARP MIN INV	--HK	99.1

5068-629

SDC NO. 2519 66-978 ALTAR ROCKET USA LAUNCHED 66/10/28 IN ORBIT
 PFRID = 104.2 PERIGEE = 198.2 APOGEE = 993.6 INCL = 42.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39535	67/	2/	14	2	58	8.0	9.5	8.1	9.6	1.00	0.40	88.0	100.0	970.	REGULAR FLASHING	--	HK 58.1
STADE/ELBE	39591	67/	4/	11	20	5	5.0	9.0	7.3	11.3	1.85	0.80	65.0	260.0	350.	SHARP FLASHES	--	HK 91.6
STADE/ELBE	39656	67/	6/	15	21	48	7.5	9.0	7.9	9.4	2.00	0.30	53.0	100.0	820.	SHARP FLASHING	--	HK 62.8
STADE/ELBE	39657	67/	6/	16	21	45	8.0	9.5	8.4	9.9	2.00	0.30	55.0	100.0	820.	SHARP FLASHING NOT DARK	--	HK 63.3
HEIDELBERG	39782	67/10/19	20	7	6.5	7.0	6.5	7.0	6.8	7.3	2.70	0.50	81.0	295.0	870.	FLASHING MOON	--	GLU 53.6
HEIDELBERG	39783	67/10/20	19	55	7.2	7.4	7.0	7.2	7.3	7.4	2.71	0.50	86.0	316.0	870.	FLASHING MOON	--	GLU 59.9
HEIDELBERG	39788	67/10/25	18	53	6.5	6.5	7.2	7.0	6.5	7.4	2.72	0.40	70.0	80.0	900.	FLASHING MIN INV	--	GLU 45.9
STADE/ELBE	39789	67/10/26	18	42	6.5	7.7	7.2	7.7	7.4	7.4	2.75	0.80	63.0	55.0	1000.	FLASHING MIN INV	--	HK 49.8
HEIDELBERG	39793	67/10/30	19	27	7.7	7.7	6.5	7.0	6.7	6.7	2.73	0.30	39.0	250.0	1150.	FLASHING MIN INV	--	GLU 100.0
STADE/ELBE	39796	67/11/ 2	18	49	6.5	7.0	6.5	7.0	6.7	6.7	2.79	0.30	63.0	260.0	900.	FLASHING MIN INV	--	HK 88.2
POYNON	39802	67/11/ 8	19	5	7.0	7.0	7.0	7.0	7.4	7.4	5.74	40.0	260.0	1150.	SHARP SHORT FLASHES MIN INV	--	OMB 114.6	
STADE/ELBE	39881	68/ 1/26	18	9	7.0	7.0	7.0	7.0	7.4	7.4	7.12	77.0	260.0	840.	SHARP SHORT FLASHES MIN INV	--	HK 82.8	

SDC NO. 2524 66-99A DV4-3
 PERIOD = 90.6 PERIGEE = 198.3 APOGEE = 190.1 INCL = 32.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
WALNUT CREEK	39453	66/11/24	1	53	2.0	2.0	2.0	3.4	3.4	3.4	16.0	180.0	518.	STEADY 90 SECONDS TO SHADOW	--	DFC 132.2		
VAN NUYS-F	39453	66/11/24	1	54	1.2	1.2	4.3	4.3	4.3	4.3	46.5	180.0	240.	STEADY	--	JGM 90.0		
SAN ANTONIO	39459	66/11/30	0	42	0.1	0.1	3.8	3.8	3.8	3.8	75.0	180.0	180.	STEADY	--	FB 80.4		
SAN ANTONIO	39460	66/12/ 1	0	43	4.0	4.0	6.8	6.8	6.8	6.8	39.0	199.0	280.	STEADY	--	FB 105.4		

SDC NO. 2526 66-99B OVI-1R USA LAUNCHED 66/11/ 3 DECEASED 1/ 5/67
 PERIOD = 90.5 PERIGEE = 183.3 APOGEE = 185.2 INCL = 32.8
 STATION NAME MJD Y M D I M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 STPETERSBURG 39458 66/11/29 23 49 6.0 6.0 0.0 0.0
 --OBS PHASE
 --FK

SDC NO. 2527 66-99C OVI-6 USA LAUNCHED 66/11/ 3 DECEASED 12/31/66
 PERIOD = 90.4 PERIGEE = 182.1 APOGEE = 183.3 INCL = 32.8
 STATION NAME MJD Y M D I M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 SAN ANTONIO 39459 66/11/30 0 52 6.0 9.4 210. PERIODIC FLASHING (TELEGRAM) -- FB 85.6
 SAN ANTONIO 39460 66/12/ 1 0 49 7.0 9.4 330. FLASHING -- FB 110.6
 --OBS PHASE

SDC NO. 2528 66-99D OVI-1T USA LAUNCHED 66/11/ 3 DECEASED 1/11/67
 PERIOD = 90.8 PERIGEE = 183.3 APOGEE = 201.3 INCL = 32.8
 STATION NAME MJD Y M D I M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 SAN ANTONIO 39452 66/11/23 1 4 4.0 7.0 6.2 9.2 355. MOSTLY +7 ONE +4 FLASH
 VAN NUYS-F 39456 66/11/27 1 27 5.5 9.0 200. DEEP MINIMA, ONE FLASH SEEN -- FB 123.2
 SAN ANTONIO 39460 66/12/ 1 0 19 4.0 7.5 200. VERY SHORT FLASHES -- JGM 99.0
 --OBS PHASE

SDC NO. 2529 65-34D POCKET BODY USA LAUNCHED 65/ 5/ 6 IN ORBIT
 PERIOD = 309.8 PERIGEE = 1723.1 APOGEE = 9197.5 INCL = -0.0
 STATION NAME MJD Y M D I M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 PHOENIX R 39460 66/12/ 1 3 31 9.0 9.0 7.6 1871. STEADY
 PHOENIX R 39468 66/12/ 9 2 30 10.0 8.7 1784. MIN INV
 SAN ANTONIO 39468 66/12/ 9 2 35 10.0 8.6 1918. TRPEG FLASHING
 --OBS PHASE
 --RKR 51.1
 --RKR
 -- FB 50.6

SDC NO. 2609 66-1108 AGENA D USA LAUNCHED 66/12/ 7 IN ORBIT
PERIOD = 548.5 PERIGEE = 107.5 APOGEE = 22808.6 INCL = 31.4

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39478	66/12/19	4	19	6.3	4.6	58.5	246.3	2140.							TP FST 16SEC. MIN BELOW +10	--JGM	76.8
VAN NUYS-F	39487	66/12/28	1	53	6.2	3.9	73.5	124.0	2820.							MINIMA FLOW +10. TP 1 CYCLE	--JGM	58.2
VAN NUYS-F	39494	67/ 1/ 4	4	0	5.8	3.8	18.00	252.0	2470.							TEN FLASHES ALTERN MAX 9.5	--JGM	98.8
WALNUT CREEK	39702	67/ 7/31	5	57	8.5	5.2	1.18	263.0	4572.							ABOUT 6SEC MODULATING PERIOD	--DEC	96.3
VAN NUYS-F	39702	67/ 7/31	6	46	9.5	4.5	1.18	222.0	10100.								--JGM	51.4
OCEANPORT	39704	67/ 8/ 2	1	36	8.5	5.1	63.2	221.3	4692.								--GFG	78.0
OCEANPORT	39709	67/ 8/ 7	4	28	12.0	14.0	65.3	225.0	11500.								--GFG	46.2
VAN NUYS-F	39713	67/ 8/11	3	31	8.5	10.7	77.0	223.0	8200.							MIN UNDER +12	--JGM	56.3
VAN NUYS-F	39714	67/ 8/12	5	52	9.0	4.4	1.13	223.0	8200.							TP 1.126 SEC	--JGM	47.7
VAN NUYS-F	39739	67/ 9/ 6	4	0	8.7	4.6	1.13	190.0	10400.							WHOLE TP TWICE THIS	--JGM	71.8
VAN NUYS-F	39739	67/ 9/ 6	4	34	9.5	12.0	69.0	150.0	10900.							TP .972 SEC. MIN ALTERNATE	--JGM	45.8
VAN NUYS-F	39740	67/ 9/ 7	6	10	9.5	4.7	0.97	255.0	9020.							DEEP MIN	--JGM	69.1
VAN NUYS-F	39744	67/ 9/11	5	32	9.7	4.7	0.96	226.0	10200.							HALF TP .963 SEC	--JGM	57.3
VAN NUYS-F	39766	67/10/ 3	3	57	10.0	4.7	0.95	194.0	11400.							TP .958 SEC. MAX OF DIFF MAG	--JGM	63.9
VAN NUYS-F	39780	67/10/17	3	17	9.2	4.4	0.95	211.0	9270.							TP .950 SEC. MIN BELOW +12	--JGM	84.6

SDC NO. 2610 66-111A OV1-9 USA LAUNCHED 66/12/11 IN ORBIT
PERIOD = 142.3 PERIGEE = 293.9 APOGEE = 2997.5 INCL = 99.1

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39561	67/ 3/12	20	28	5.0	8.0	3.40	89.0	100.0	405.						BRIGHT SHORT FLASHING CLOUDS	--HK	51.8
HEIDELBERG	39580	67/ 3/31	19	39	5.5	8.0	5.00	65.0	100.0	700.						SHARP FLASHES	--GLU	49.5
STADE/ELBE	39581	67/ 4/ 1	19	23	6.0	9.0	5.11	30.68.0	100.0	880.						SHARP FLASHING	--HK	56.0
AUSTIN	39613	67/ 5/ 3	2	49	8.5	10.0	5.00	0.10	74.0	1329.						FLSH TO 70 EVERY 3-5 SEC	--MM	82.0
STADE/ELBE	39916	68/ 3/ 1	23	27	5.5	3.9	18.50	0.15	53.0	2100.						VEPY SHAPP FLASHES MIN INV	--HK	82.7
STADE/ELBE	39916	68/ 3/ 1	23	31	6.0	5.1	18.50	0.20	80.0	1500.						SHARP FLASHES MIN INV	--HK	45.6

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SDC NO. 2611 66-111R OVI-10 USA LAUNCHED 66/12/11 IN ORBIT
 PERIOD = 98.0 PERIGEE = 398.3 APOGEE = 477.8 INCL = 93.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39565	67	3	16	20	7	7.0	7.5	8.6	9.1	1.00		85.0	260.0	480.0	STEADY AND FAINT FLASHING	-- HK	70.2
STADE/ELBE	39581	67	4	1	20	7	7.5	7.5	8.3	8.3			45.0	260.0	700.0	STEADY ONLY ONE FLASH	-- HK	103.6
STADE/ELBE	39917	68	3	2	18	23	6.5	6.5	7.4	7.4			35.0	100.0	650.0	ST	-- HK	22.5
STADE/ELBE	39918	68	3	3	10	6	5.0	6.7	8.4	20.00			85.0	100.0	450.0	SLOWLY TUMB PER APPROX	-- HK	55.2

SDC NO. 2615 66-112R ROCKET BODY USSR LAUNCHED 66/12/12 DECEASED 3/15/67
 PERIOD = 93.4 PERIGEE = 157.2 APOGEE = 394.6 INCL = 48.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39486	66	12	27	16	40	4.0	4.5	5.5	6.0	0.31	0.20	35.0	180.0	500.0	RAPID FLASHING	-- HK	100.4
VAN NUYS-F	39533	67	2	12	2	29	0.5	0.8	4.3	4.6			71.0	343.0	170.0	TP FST .3 SEC	--JGW	81.2
POYNON	39544	67	2	23	19	4	4.3	5.3	5.7	6.7	0.29		14.0	200.0	520.0	66-112R	--DMB	102.9

SDC NO. 2621 66-111C ROCKET BODY USA LAUNCHED 66/12/11 IN ORBIT
 PERIOD = 98.8 PERIGEE = 400.2 APOGEE = 477.2 INCL = 93.4

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39565	67	3	16	20	2	6.0	7.0	7.5	8.5	30.00		80.0	100.0	500.0	SLOWLY FLASHING	-- HK	57.8
VAN NUYS-F	39934	68	3	19	3	9	6.7	10.0	8.4	11.7			67.0	275.0	460.0	TP EST 15 SEC.	--JGW	98.6
VAN NUYS-F	39939	68	3	24	3	25	7.0		7.7				32.0	279.0	730.0	MIN UNDER +9.5	--JGW	131.1

SDC NO. 2627 66-117A COSMOS 137 USSR LAUNCHED 66/12/21 DECAYED 11/23/67
PERIOD = 104.4 PERIGEE = 137.3 APOGEE = 1063.2 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
PHOENIX R	39526	67	2	5	3	11	7.0		7.1				46.0	135.1	976.	RLINKED 3 TIMES THEN FADE TO--RRR INV IN 10 SEC TRACKED IN SEC--RRR TP FROM ONLY ONE CYCLE	--RRR	41.5
VAN NUYS-F	39526	67	2	5	3	15	6.5	9.0	6.1	8.6	32.00	1.00	34.0	132.0	1180.	TP FROM ONLY ONE CYCLE	--JGW	42.1
STPETERSBURG	39527	67	2	6	3	16	4.0	4.0	4.5	4.5			77.0	352.2	780.	TP FROM ONLY ONE CYCLE	--FK	60.5
VAN NUYS-F	39527	67	2	6	3	18	6.7	8.5	6.7	8.5	35.00		40.0	135.0	980.	ONE FLASH TO +6 IN 3 MINUTES--DFC	--JGW	44.0
WALNUT CREEK	39530	67	2	9	3	29	7.0	7.5	7.5	8.0	35.00		69.0	142.0	800.	TP MAYBE 73 SEC. MID MAX	--JGW	56.8
VAN NUYS-F	39531	67	2	10	3	31	5.5	8.0	5.9	8.4	63.00	1.50	68.0	328.0	820.	INCREASED TO 7 MAG 5 TIMES	--RRR	77.2
PHOENIX R	39531	67	2	10	3	33	7.0	8.0	7.1	8.1			50.0	343.5	969.	AT TR INT IN 150 SEC TRACK	--RRR	77.7
WALNUT CREEK	39532	67	2	11	3	34	7.0	8.0	7.6	8.6	40.00		79.0	328.0	768.	IRREG CYCLE OCSNL SLOW FLASH	--DFC	73.3
OCEANPORT	39533	67	2	12	0	9	6.0		6.7				77.1	52.3	736.		--GFG	59.7
VAN NUYS-F	39533	67	2	12	3	35	6.7	8.5	6.7	8.5		1.00	45.0	334.0	1010.	TWO FLASHES 13 SEC APART	--JGW	88.5
OCEANPORT	39546	67	2	25	1	44	9.0		9.3				77.6	214.7	861.	+9 QUICK VARIATLE	--GFG	58.9
OCEANPORT	39548	67	2	27	1	35	4.5	7.0	4.8	7.3			48.0	187.5	876.	VARYING BETWEEN +6 AND +7 IN--GFG MAG. 2 BRIGHT FLASHES NOTED IN 4.5 ON FOLLOW.	--GFG	59.1

SDC NO. 2630 66-117B PERIOD = 104.4 PERIGEE = 137.9 APOGEE = 1058.8 INCL = 48.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELRE	39510	67	1	20	4	32	4.5	5.5	4.6	5.6			57.0	180.0	950.	SLOWLY VARYING	--HK	69.4
VAN NUYS-F	39526	67	2	5	3	11	4.5	5.0	4.1	4.6			33.0	132.0	1180.		--JGW	42.9
VAN NUYS-F	39527	67	2	6	3	11	4.5	4.8	4.5	4.8	0.26		37.0	134.0	1010.		--JGW	44.7
WALNUT CREEK	39527	67	2	6	3	11	5.0	5.0	4.5	4.5			28.0	132.0	1243.	STEADY 6 MINUTES TO S-HADOW	--DFC	44.1
PHOENIX R	39527	67	2	6	3	12	6.0	6.0	6.4	6.4			62.0	138.0	847.	STEADY TRACKED 70 SEC	--RR	47.6
PHOENIX R	39528	67	2	7	3	12	6.0	6.0	6.6	6.6			76.0	113.0	774.	STEADY TRACKED 120 SEC	--RR	50.4
STPETERSBURG	39529	67	2	8	1	27	3.0	5.0	3.2	5.2	0.50		52.3	324.0	900.		--FK	84.6
WALNUT CREEK	39530	67	2	9	3	8	4.5	4.5	4.9	4.9			56.0	139.0	841.	STEADY	--DFC	55.4
VAN NUYS-F	39531	67	2	10	3	6	4.3	4.3	5.0	5.0			40.0	324.0	725.		--JGW	75.4
PHOENIX R	39531	67	2	10	3	7	6.0	6.0	6.4	6.4			60.5	328.1	835.	STEADY TRACKED 180 SEC	--RRR	81.5
OCEANPORT	39532	67	2	11	1	27	4.5		4.7				61.5	352.0	911.		--GFG	68.0

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STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39533	67/	2/	12	3	0	4.7	4.7	5.1	5.1	0.27		56.0	329.0	820.		--JCM	88.4
POYNTON	39533	67/	2/	12	20	10							25.0	225.0		66-1178. FLASHING IN WEST,	--DMB	103.3
POYNTON	39533	67/	2/	12	20	12	4.4	4.4	4.5	4.5			55.0	142.0	960.	RECOMING STEADY AT AZ 180	--DMB	49.8
POYNTON	39533	67/	2/	12	21	55							27.0	255.0		TP 0.265 +/- 0.005	--DMB	95.4
STADE/ELBE	39535	67/	2/	15	18	13	4.8	4.8	5.0	5.0	0.25		77.0	255.0	920.	VERY RAPID FLASHING	--HK	78.5
STADE/ELBE	39535	67/	2/	15	20	0	4.8	4.8	4.8	4.8	0.40		40.0	180.0	1000.	RAPID FLASHING	--HK	52.4
OCEANPORT	39538	67/	2/	17	1	2	5.0	5.0	4.9	4.9	0.40		45.8	359.4	1032.	REGULAR RAPID FLASHING	--GFG	75.6
STADE/ELBE	39538	67/	2/	17	17	56	5.0	5.0	4.6	4.6	0.35		25.0	250.0	1200.	TP 0.230 +/- 0.005	--HK	81.5
POYNTON	39544	67/	2/	23	20	47					0.23		54.6	24.3	813.	+6 STEADY	--DMB	110.9
OCEANPORT	39545	67/	2/	24	23	55	6.0		6.4				22.0	220.0		TP 0.220 +/- 0.003 200 CYCLES	--GFG	64.0
POYNTON	39549	67/	2/	28	19	54					0.22						--DMB	104.4
POYNTON	39601	67/	4/	21	21	18					0.23					RAPID FLASHING	--HK	71.5
STADE/ELBE	39605	67/	4/	25	19	47	5.0	5.5	5.4	5.9	0.30		50.0	200.0	850.	RAPID FLASHING	--GLU	53.7
HEIDELBERG	39609	67/	4/	29	21	25	5.2	6.2	5.8	6.8	0.37		28.0	220.0	750.		--NM	92.5
AUSTIN	39619	67/	5/	9	2	32	5.0	7.0	5.1	7.1	0.40		36.0	227.0	943.	SHARP FLASHES	--GLU	72.9
HEIDELBERG	39663	67/	6/	22	21	12	1.5	3.5	5.1	7.1	0.41		69.0	220.0	190.	SHARP FLASHES MIN INV	--GLU	43.6
HEIDELBERG	39665	67/	6/	24	20	12	2.8		5.4		0.45		33.0	100.0	300.	FLASHING RAPID	--GLU	68.3
HEIDELBERG	39665	67/	6/	24	21	49	3.0	5.2	5.7	7.9	0.48		36.0	230.0	290.			

SDC NO. 2634 66-118A PERIOD = 94.4 PERIGEE = 302.0 USA LAUNCHED 66/12/29 IN ORBIT
APOGEE = 308.2 INCL = 75.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39594	67/	4/	14	20	35	2.8	2.8	3.0	3.9			28.0	130.0	600.		--DMB	15.8
STADE/ELBE	39596	67/	4/	16	19	43	3.5	3.5	5.1	5.1			52.0	140.0	480.	STEADY	--HK	42.5
STADE/ELBE	39614	67/	5/	4	1	11	6.0	6.0	7.3	7.3			35.0	55.0	550.	STEADY	--HK	122.4
STADE/ELBE	39707	67/	8/	5	21	25	2.0	2.0	3.7	3.7			40.0	140.0	460.	STEADY	--HK	24.7
STADE/ELBE	39709	67/	8/	7	22	4	2.5	7.0	4.1	8.6			40.0	310.0	470.	SLOWLY FLASHING	--HK	115.3
STADE/ELBE	39781	67/	10/	18	17	18	5.0	7.0	5.8	7.8			20.0	260.0	700.	SLOWLY TUMBLING	--HK	150.1
STADE/ELBE	39954	68/	4/	8	19	46	3.5	3.5	4.5	4.5			25.0	100.0	625.	ST	--HK	25.1
STADE/ELBE	39956	68/	4/	10	20	1	2.0	3.0	4.6	4.6			78.0	140.0	300.	ST RIT SLOWLY VAR	--HK	43.3
STADE/ELBE	39957	68/	4/	11	19	21	2.0	3.0	3.3	4.3			35.0	140.0	540.	ST AND SLOWLY TUMR MOON	--HK	31.6
STADE/ELBE	39960	68/	4/	14	20	33	4.5	8.0	4.8	8.3	52.00		17.0	310.0	960.	SLOWLY TUMB	--HK	145.2

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SDC NO. 2640 67- 1R PERIOD = -0.0 PERIGEE = -0.0 APOGEE = -0.0 INCL = 29.7 LAUNCHED 67/ 1/11 DECAYED 4/13/67

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39522	67/ 2/ 1	23	43	5.0	5.0	8.2	8.2	8.2	8.2	225.		83.6	360.0	225.	STEADY	-- FK	83.8
EDINBURG	39560	67/ 3/11	1	21	2.0	2.0	5.8	5.8	5.8	5.8	175.		60.0	180.0	175.		-- PM	83.8
STPETERSBURG	39561	67/ 3/12	0	2	2.0	2.0	5.6	5.6	5.6	5.6	193.		49.0	180.0	193.		-- FK	85.7
EDINBURG	39561	67/ 3/12	1	35	1.0	1.0	4.8	4.8	4.8	4.8	171.		62.0	0.0	171.	NON VARIABLE	-- PM	79.4
STPETERSBURG	39564	67/ 3/15	0	38	2.0	2.0	5.8	5.8	5.8	5.8	171.		49.0	180.0	171.		-- FK	76.5

SDC NO. 2657 67- 6A PERIOD = 113.4 PERIGEE = 825.2 APOGEE = 896.6 INCL = 102.0 LAUNCHED 67/ 1/26 IN ORBIT

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39534	67/ 2/13	20	11	8.7	10.0	8.8	10.1	65.0	260.0	940.					TWO SHORT FLASHES THEN LOST	-- HK	78.1

SDC NO. 2661 67- 6R PERIOD = 113.6 PERIGEE = 835.1 APOGEE = 897.3 INCL = 102.0 LAUNCHED 67/ 1/26 IN ORBIT

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39526	67/ 2/ 5	21	34	8.3	8.3	8.3	8.3	8.3	8.3	1000.		40.0	258.0	1000.	67-068 MIN BELOW 9. TP EST 2 SECS.	--DMB	90.1
STADE/ELBE	39529	67/ 2/ 8	19	43	7.5	9.5	7.8	9.8	2.15	0.50	855.		45.0	260.0	855.	REGULAR FLASHING	--DMB	53.8
STADE/ELBE	39534	67/ 2/13	19	5	7.7	9.5	7.8	9.6	2.10	0.50	950.		63.0	200.0	950.	REGULAR FLASHING	-- HK	39.1
POYNTON	39535	67/ 2/14	19	41	8.0	9.0	9.0	9.0	2.30	0.40	1000.		49.0	109.0	1000.	TP +/- 0.05	--DMB	28.3
STADE/ELBE	39535	67/ 2/14	19	42	7.0	9.5	7.3	9.8	2.26	0.40	855.		88.0	260.0	855.	REGULAR FLASHING	-- HK	62.9
AUSTIN	39746	67/ 9/13	3	10	9.0	9.0	8.4	8.4	34.0	41.0	1294.						-- MM	62.5

SD60-629

SDC NO. 2669 67-11A
 PERIOD = 101.5 PERIGEE = 494.6 APOGEE = 539.3 INCL = 98.8
 LAUNCHED 57/ 2/ 8 IN ORBIT

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39671	67	6	10	23	58	7.5	8.5	8.9	9.9	0.77	0.30	89.5	100.0	531.0	IRREGULAR VARYING	-- HK	77.1
STADE/ELBE	39677	67	7	6	0	7	4.2	9.0	5.6	10.4			80.0	260.0	532.0	SHARP BRIGHT FLASHES	-- HK	73.7
STADE/ELBE	39980	68	5	4	0	24	8.0	9.0	9.2	10.2			78.0	260.0	570.0	VAP WITH FLASHES	-- HK	55.9

SDC NO. 2671 67-11B
 PERIOD = 104.3 PERIGEE = 37.0 APOGEE = 40.0 INCL = 40.0
 LAUNCHED 67/ 2/ 8 IN ORBIT

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39872	68	1	17	3	5	8.0	7.5	8.1	8.9	1.00	53.0	247.0	530.0	ROAD FLASH	--JGM	72.8	
VAN NUYS-F	39875	68	1	20	2	14	7.0	7.0	8.9	91.8			46.0	350.0	530.0	LONG PERIOD	--JGM	75.5
GRANBY	39876	68	1	21	2	32	7.0	8.5	8.9	10.4	0.60		62.0	172.0	441.0	FLASHING, SHORT OBS-CLDY	--MPC	80.8
WALNUT CREEK	39876	68	1	21	2	32	6.5	7.0	7.6	9.1			71.0	354.0	417.0	VARIABLE	--DEC	73.3
VAN NUYS-F	39876	68	1	21	2	34	7.5	90.0	9.1	91.6			40.0	356.0	590.0	TP ABOUT 45 SEC	--JGM	72.2
GRANBY	39881	68	1	26	23	12	7.5	90.0	9.1	91.6			48.0	195.0	489.0	REG. VARIATIONS, MIN. INV	--MPC	96.8
EDINBURG	39885	68	1	30	1	56	6.0	9.5	7.9	11.4			77.5	212.1	409.0	SMOOTH PERIODIC MAYBE	--PM	75.3

SDC NO. 2674 67-11A
 PERIOD = 104.7 PERIGEE = 365.1 APOGEE = 376.8 INCL = 39.9
 LAUNCHED 67/ 2/ 8 IN ORBIT

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WALNUT CREEK	39876	68	1	21	2	40	8.0	10.0	9.0	11.0	3.00		69.0	356.0	424.0	PERIOD ESTIMATED	--DFC	71.6
GRANBY	39876	68	1	21	23	30	7.0	7.3	8.0	9.2			68.0	180.0	426.0	VARYING	--MPC	76.8
GRANBY	39876	68	1	21	23	31	8.0	8.5	9.2	9.7			35.0	125.0	575.0	VARYING	--MPC	43.3
EDINBURG	39885	68	1	30	1	55	6.0	6.0	7.9	7.9			72.0	212.6	415.0	STEADY	--PM	79.6

SDC NO. 2678 67-13A COSMOS 142 LAUNCHED 67/ 2/14 DECAYED 7/ 6/67
 PERIOD = 100.2 PERIGEE = 128.5 APOGEE = 830.2 INCL = 48.4

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39561	67/	3/12	3	57	5.3	8.0	6.3	9.0				58.0	160.0	630.	RAPID IRREGULAR VARIATION	--DMB	56.5
POYNTON	39561	67/	3/12	4	0	7.0	9.0	6.9	8.9		0.64		20.0	110.0	1050.	NOW REGULAR ENOUGH TO MEASURE TP. FLICKERING .	--DMB	117.3
POYNTON	39575	67/	3/26	20	40						6.20		50.0	170.0		SLOW VARIATION AMPLITUDE 1.5--DMB MAG. RAPID VARN. SUSPECTED	--DMB	49.2
WALNUT CREEK	39584	67/	4/ 4	3	48	8.0	10.0	8.0	10.0		0.60	0.05	36.0	8.0	1000.	ERRATIC FLASHING OSCNL FLASH--DFC TO PLUS A SOMETIMES STEADY	--DMB	90.2
PHOENIX R	39590	67/	4/10	2	52	7.0	8.0	7.6	8.6		1.00		49.7	30.7	756.	60 TP IN 60 SEC	--RKR	72.4
INDIANAPOLIS	39591	67/	4/11	1	35	4.0	5.0	4.6	5.6		0.88	0.20	61.0	218.0	750.	25 MAX TIMED	--LD	83.3

SDC NO. 2679 67-13B ROCKET BODY LAUNCHED 67/ 2/14 DECAYED 6/15/67
 PERIOD = 100.3 PERIGEE = 130.5 APOGEE = 836.4 INCL = 48.4

STATION NAME	MJD	Y	M	D	1	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39561	67/	3/12	4	0	6.0	9.0	7.5	10.5		0.30	0.20	45.0	180.0	500.	REGULAR RAPID FLASHING	--HK	55.7
VAN NUYS-F	39570	67/	3/21	4	39	5.0	6.5	5.7	7.2				88.9	318.0	720.	TP FST 1 SEC	--JGM	59.1
STPETERSBURG	39572	67/	3/23	0	51	7.0	9.0	7.9	9.0		1.00		82.4	140.0	664.		--FK	68.5
STPETERSBURG	39573	67/	3/24	1	31	3.0	3.0	3.2	3.2				45.9	326.0	900.		--FK	100.6
STPETERSBURG	39575	67/	3/26	0	55	7.0	7.0	7.0	7.0				40.2	338.5	1000.		--FK	102.3
INDIANAPOLIS	39575	67/	3/26	1	6	5.0	5.0	5.8	5.8				79.0	148.0	684.	STEADY	--LD	69.1
STADE/ELBE	39581	67/	4/ 1	19	16	4.0	6.0	4.0	6.0				30.0	220.0	1000.	VARYING	--HK	96.3
POYNTON	39634	67/	5/24	22	4	2.4	3.4	4.3	5.3		0.57		34.0	180.0	425.		--DMB	34.6

SD68-629

SDC NO. 2682 67-148 PERIOD = 110.3 PERIGEE = -0.0 APOGEE = -0.0 INCL = 39.5
FRANCE LAUNCHED 67/ 2/15 IN ORBIT

STATION NAME	MJD	Y	M	D	H	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
AUSTIN	39907	68/	2/	21	2	12	6.5	6.5	7.4	7.4		75.0	150.0	666.		--MM	58.8
VAN NUYS-F	39975	68/	4/	29	3	39	7.0	7.0	7.4	7.4		41.0	148.0	930.		--JGW	38.4
VAN NUYS-F	39977	68/	5/	1	3	23	6.7	6.7	7.6	7.6		53.0	151.0	670.		--JGW	51.7

SDC NO. 2695 67-18A COSMOS 144 USSR LAUNCHED 67/ 2/28 IN ORBIT
PERIOD = 96.9 PERIGEE = 356.7 APOGEE = 400.2 INCL = 41.2

STATION NAME	MJD	Y	M	D	H	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39581	67/	4/	1	22	10	7.0	7.0	8.3	8.3		35.0	360.0	550.	STEADY	--MK	112.1
STADE/ELBE	39593	67/	4/	13	20	4	5.0	5.0	6.1	6.1		47.0	100.0	600.	STEADY	--MK	40.3
STADE/ELBE	39594	67/	4/	14	20	17	4.5	4.5	6.6	6.6		80.0	100.0	380.	STEADY	--MK	65.8
VAN NUYS-F	39600	67/	4/	20	3	57	6.5	6.5	7.1	7.1		25.0	49.0	750.		--JGW	63.9
OCEANPORT	39601	67/	4/	21	0	57	4.0	5.3				24.5	129.0	555.	FOLLOWED 2 MINS. INTO EARTH SHADOW.	--GFG	13.5
OCEANPORT	39601	67/	4/	21	2	34	8.0	8.0				14.9	261.5	994.	FOLLOWED 2 MINS. HELD STEADY IN MAG.	--GFG	108.7
VAN NUYS-F	39601	67/	4/	21	4	9	9.0	9.0	9.2	9.2		18.0	7.0	910.		--JGW	104.4
VAN NUYS-F	39601	67/	4/	21	4	11	5.5	5.5	7.3	7.3		58.0	80.0	430.		--JGW	47.7
INDIANAPOLIS	39603	67/	4/	23	1	23	6.0	6.0	7.1	7.1		34.4	73.0	610.	STEADY	--LD	45.7
VAN NUYS-F	39603	67/	4/	23	4	37	7.5	7.5	8.3	8.3		28.0	314.0	700.		--JGW	125.9
VAN NUYS-F	39603	67/	4/	23	4	39	6.8	6.8	8.1	8.1		40.0	265.0	550.		--JGW	104.4
OCEANPORT	39610	67/	4/	30	1	20	8.5	8.5				14.8	265.8	1000.		--	129.6
HEIDELBERG	39683	67/	7/	12	21	59	5.3	5.3	6.7	6.7		51.0	260.0	530.	STEADY	--GLU	85.1
HEIDELBERG	39688	67/	7/	17	21	30	6.7	6.7	7.9	7.9		32.0	220.0	580.	STEADY	--GLU	64.8
HEIDELBERG	39690	67/	7/	19	20	19	5.7	5.7	7.2	7.2		58.0	230.0	500.	STEADY	--GLU	85.0
STADE/ELBE	39778	67/	10/	15	18	51	6.0	6.0	8.0	8.0		85.0	260.0	400.	ST WOOD	--MK	72.6
VAN NUYS-F	39876	68/	1/	21	2	3	6.0	6.0	6.3	6.3		21.0	95.0	860.		--JGW	23.5
VAN NUYS-F	39879	68/	1/	24	2	41	6.0	6.0	7.9	7.9		65.0	282.0	420.		--JGW	95.1
AUSTIN	39880	68/	1/	25	1	15	7.0	7.0	8.6	8.6		50.0	282.0	483.		--MM	110.2
EDINBURG	39881	68/	1/	26	1	26	8.0	8.0	8.6	8.6		25.9	284.4	757.	STEADY	--PM	129.3
STADE/ELBE	39881	68/	1/	26	17	41	5.5	5.5	7.3	7.3		62.0	100.0	440.	ST	--MK	48.2
HEIDELBERG	39890	68/	2/	4	17	56	7.4	7.4	7.6	7.6		20.0	298.0	910.	ST	--GLU	130.4

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39939	68	3	24	20	7	3.5	3.5	5.5	5.5			80.0	100.0	400.	ST	--	HK 50.1

SDC NO. 2696 67-188 PERIOD = 97.0 PERIGEE = 351.7 APGEE = 412.6 INCL = 81.2

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
STADE/ELBE	39581	67	4	1	23	3	7.0	8.0	8.1	9.1			20.0	330.0	600.	FLASHING CLOUDS	--	HK 123.7	
STADE/ELBE	39591	67	4	11	20	46	5.5	9.0	7.0	10.5		0.50	0.20	53.0	360.0	500.	RAPID FLASHING	--	HK 98.7
HEIDELBERG	39592	67	4	12	21	1	6.0	7.0	6.8	7.8		0.20	0.10	27.0	360.0	700.	RAPID FLASHING	--	GLU 125.7
STADE/ELBE	39593	67	4	13	19	40	6.0	8.0	6.6	8.6		0.45	0.30	26.0	100.0	776.	RAPID FLASHING	--	HK 26.4
STADE/ELBE	39594	67	4	14	19	55	5.5	6.0	6.5	7.0		0.40	0.20	40.0	100.0	640.	STEADY WITH FLASHES PER 1 SEC	--	HK 35.7
STADE/ELBE	39596	67	4	16	20	26	5.5	6.0	7.5	8.0		0.40	0.20	63.0	260.0	400.	RAPID FLASHING	--	HK 90.2
HEIDELBERG	39596	67	4	16	20	27	4.2	5.4	5.9	7.1		0.45	73.0	280.0	450.	RAPID FLASHING	--	GLU 85.5	
OCEANPORT	39601	67	4	21	0	46	4.5	6.0	5.3	6.8			20.2	121.2	705.	PULSATING ONCE PER SEC. EVENLY SPACED BETWEEN MAGS. INDICATED. FOLLOWED 3 MINS. WHOLE TO	--	GFG 8.4	
VAN NUYS-F	39601	67	4	21	3	59	6.3	7.0	7.1	7.8		0.74	32.0	41.0	680.	1967-188 TP +/- 0.35	--	JGM 70.2	
POYNTON	39601	67	4	21	21	43	7.7	9.2	7.6	9.1		0.39	16.0	270.0	1050.	60MAX	--	DMB 117.9	
INDIANAPOLIS	39603	67	4	23	1	14	4.0	5.0	4.7	5.7		0.70	29.7	71.0	730.	MODULATED VARIATION	--	LD 45.4	
VAN NUYS-F	39603	67	4	23	4	29	7.5	9.5	8.1	10.1		0.37	28.0	330.0	760.		--	JGM 123.3	
VAN NUYS-F	39603	67	4	23	4	30	6.3	7.3	7.8	8.8			55.0	275.0	490.		--	JGM 97.5	
POYNTON	39603	67	4	23	20	36	3.7	5.0	5.0				43.0	260.0	560.	SHARP RAPID FLASHES	--	DMB 111.1	
OCEANPORT	39609	67	4	29	1	11	7.5	8.0	8.0				19.2	227.6	790.	MAG.VAR. 1/2 SEC. FLICKERING	--	HK 57.8	
STADE/ELBE	39671	67	6	30	22	48	5.5	8.5	6.6	9.6		0.78	46.0	100.0	600.	SHARP FLASHES	--	GLU 74.7	
HEIDELBERG	39672	67	7	1	23	2	3.7	4.7	5.3	6.3		0.81	79.0	75.0	470.	FLASHING	--	GLU 59.0	
HEIDELBERG	39675	67	7	4	22	13	4.8	6.0	6.1	7.3		0.82	44.0	100.0	550.	FLASHING	--	GLU 79.8	
STADE/ELBE	39691	67	7	10	22	4	5.3	8.5	7.3	10.5		0.86	80.0	260.0	400.	SHARP FLASHES	--	HK 121.5	
AUSTIN	39700	67	7	29	2	26	4.5	5.0	6.1	6.6			44.0	282.0	471.	SLOWLY TUMBLING MOON	--	M4 70.8	
STADE/ELBE	39778	67	10	15	18	51	3.0	4.0	5.3	6.3		8.70	87.0	260.0	350.	IRREGULAR TP	--	JGM 55.3	
VAN NUYS-F	39875	68	1	20	3	1	3.8	4.5	5.6	6.3			77.0	101.0	440.		--	MPC 17.9	
GRANBY	39876	68	1	21	22	41	7.0	8.0	6.8	7.8		8.42	16.0	89.0	690.	ALMOST ST	--	JGM 31.5	
VAN NUYS-F	39878	68	1	23	2	7	5.2	5.5	6.0	6.3			35.5	96.0	720.	STEADY	--	DMB 20.1	
POYNTON	39878	68	1	23	18	22	4.9	5.3	5.6	6.0			83.8	100.9	438.		--	PM 73.6	
EDINBURG	39880	68	1	25	0	56	5.0	5.0	6.8	6.8									

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STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39880	68/	1/25	0	57	3.5	5.0	5.3	6.8	7.5	20.00	82.0	100.0	440.			--MM	70.4
STADE/ELBE	39881	68/	1/26	4	52	3.3	6.0	4.8	7.5	7.1	5.00	62.0	260.0	490.		TUMBLING	--HK	41.6
STADE/ELBE	39881	68/	1/26	17	27	5.0	6.0	6.1	7.1	7.1		45.0	100.0	595.		FAINT VAP MOST ST	--HK	36.6
STADE/ELBE	39883	68/	1/28	17	56	4.8	4.8	6.6	6.6	6.6		78.0	260.0	446.		ST HAZE	--HK	84.2
HEIDELBERG	39890	68/	2/4	17	59	6.2	7.5	6.4	7.7	7.7	5.20	22.0	298.0	915.		TUMR	--GLU	129.0
STADE/ELBE	39939	68/	3/24	20	3	4.3	5.5	5.6	6.8	6.8		57.0	100.0	550.		SLOWLY TIMB	--HK	40.6

SDC NO. 2697 67-19A COSMOS 145 LAUNCHED 67/ 3/ 3 DECAVED 3/ 8/67
PERIOD = 108.6 PERIGEE = 133.5 APOGEE = 1314.8 INCL = 48.4

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39561	67/	3/12	4	6	7.0	7.0	8.1	8.1	8.1		21.0	140.0	600.		STEADY	--HK	106.1
STPETERSBURG	39581	67/	4/1	2	34	9.5	9.5	9.0	9.0	9.0		67.6	321.5	1240.			--FK	75.1
INDIANAPOLIS	39582	67/	4/2	3	31	7.0	8.0	6.8	7.8	7.8	62.00	3.00	80.0	334.0	1114.	EARLY 6 MIN	--LD	64.1
INDIANAPOLIS	39584	67/	4/4	2	1	8.0	9.0	7.6	8.6	8.6	32.00	10.00	77.0	147.0	1201.	1 MAX TIMED	--LD	57.8
INDIANAPOLIS	39591	67/	4/11	2	13	8.0	9.0	7.4	8.4	8.4	49.00	10.00	59.0	353.0	1300.	1 MAX TIMED	--LD	89.1
HEIDELBERG	39592	67/	4/12	19	35	4.2	5.2	4.0	5.0	5.0	0.41	60.0	100.0	1100.		FLASHING	--GLU	49.2
HEIDELBERG	39592	67/	4/12	21	28	3.8	4.8	3.9	4.9	4.9	0.40	50.0	135.0	950.		RAPID FLASHING	--GLU	25.3
PLYMOUTH	39594	67/	4/14	21	22	6.4	8.4	6.4	8.4	8.4		65.0	180.0	1000.		SLOW VERN. SIMILAR TO 65-95A	--DMB	55.2
HEIDELBERG	39875	68/	1/20	17	31	5.0	5.0	6.3	6.3	6.3		71.0	190.0	560.		ST	--GLU	90.9
HEIDELBERG	39876	68/	1/21	17	20	5.5	5.5	6.2	6.2	6.2		45.0	132.0	715.		ST	--GLU	58.9

SD68-629

SDC NC. 2698 67-19R ROCKET BODY COSMOS 145 LAUNCHED 67/ 3/ 3 DECAVED 12/ 1/67
PERIOD = 108.3 PERIGEE = 132.4 APOGEE = 1302.4 INCL = 48.4

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39561	67/	3/12	3	33	6.0	9.0	6.9	9.9	9.9	0.30	0.20	18.0	140.0	550.	REGULAR RAPID FLASHING	--HK	99.2
PLYMOUTH	39561	67/	3/12	5	22	4.5	6.5	5.8	7.8	7.8	0.31		28.0	190.0	550.	1967-19R TYPICAL COSMOS RKT.	--DMB	75.7
INDIANAPOLIS	39581	67/	4/1	2	16	6.0	6.0	5.3	5.3	5.3		58.0	139.0	1367.		STEADY	--LD	36.6
WALNUT CREEK	39581	67/	4/1	3	47	5.0	6.0	4.0	5.0	5.0	0.36		41.5	130.0	1570.	TEN FLASHES TIMED	--DFC	31.9
INDIANAPOLIS	39582	67/	4/2	3	4	4.0	5.0	3.8	4.8	4.8	0.20	0.10	90.0	329.0	1112.	EARLY 4 MIN	--LD	58.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
INDIANAPOLIS	39584	67	4	4	1	23	4.0	5.0	3.4	4.4	0.40	0.10	62.0	141.0	1295.	60 MAX TIMED	-- LD	52.6
VAN NUYS-F	39585	67	4	5	4	9	5.0	7.0	4.5	6.5	0.35		72.0	329.0	1250.		--JGM	82.0
HEIDELBERG	39592	67	4	12	21	22	3.6	4.5	3.4	4.3	0.40		70.0	220.0	1100.	RAPID FLASHING	--GLU	50.4
HEIDELBERG	39593	67	4	13	20	27	4.2	5.5	4.0	5.3	0.37		64.0	260.0	1100.	RAPID FLASHING	--GLU	87.0
HEIDELBERG	39593	67	4	13	22	20	4.3	5.8	3.8	5.3	0.38		52.0	220.0	1250.	RAPID FLASHING	--GLU	48.0
POYNTON	39594	67	4	14	21	22					0.33		65.0	180.0	1000.	IN SAME FIELD AS 1967-19A	--DMB	55.2
HEIDELBERG	39596	67	4	16	21	21	3.6	4.8	3.2	4.4	0.45		57.0	220.0	1200.	RAPID FLASHING	--GLU	50.9
HEIDELBERG	39597	67	4	17	20	25	3.8	5.0	3.4	4.6	0.37		67.0	180.0	1200.	RAPID FLASHING	--GLU	57.1
POYNTON	39658	67	6	17	22	26	2.0	2.5	0.0	0.0	0.51		30.0	180.0		TP +/- 0.5 SECS	--DMB	29.9
POYNTON	39797	67	11	3	18	12					0.82		20.0	180.0			--DMB	89.6

SDC NO. 2703 67-2CA OSO 3 USA LAUNCHED 67/ 3/ 8 IN ORBIT
PERIOD = 95.7 PERIGEE = 331.8 APOGEE = 350.5 INCL = 32.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39879	68	1	24	1	27	7.5	7.5	9.8	9.8			74.0	163.0	353.		--MM	70.5
EDINBURG	39880	68	1	25	1	19	8.0		9.8				50.0	345.8	432.	SEEMED ST	--PM	78.1
AUSTIN	39880	68	1	25	1	20	7.5	7.5	9.8	9.8			89.0	168.0	340.		--MM	72.8
EDINBURG	39881	68	1	26	1	12	6.0		7.6				42.1	348.6	484.	ERRATIC FLASHING, HAS GENERAL PATTERN	--PM	78.3
WALNUT CREEK	39883	68	1	28	2	34	9.0	9.0	10.5	10.5			39.0	175.0	510.	STEADY	--DFC	87.3
VAN NUYS-F	39885	68	1	30	2	19	8.0	8.0	10.3	10.3			76.0	193.0	350.		--JGM	81.8
VAN NUYS-F	39934	68	3	19	3	13	8.2	8.2	10.4	10.4			66.0	188.0	370.		--JGM	75.5
VAN NUYS-F	39935	68	3	20	3	16	8.0	8.5	10.0	10.5			59.0	191.0	390.		--JGM	79.4

SD68-629

SDC NO. 2704 67-208 ALTAR ROCKET USA LAUNCHED 67/ 3/ 8 IN ORBIT
PERIOD = 95.6 PERIGEE = 335.5 APOGEE = 344.2 INCL = 32.9

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
AUSTIN	39880	68/	1/	25	1	35	5.0	8.0	7.2	10.2	7.00		64.0	354.0	361.		--MM	59.6
EDINBURG	39881	68/	1/	26	1	21	6.0	9.0	7.2	10.2	7.86		32.1	355.4	565.	REGULAR VARIATION	--PM	74.1
VAN NUYS-F	39881	68/	1/	26	2	57	5.0	9.0	7.3	11.3			76.0	178.0	340.	TP ABOUT 7.5 SEC	--JGM	71.5
GRANBY	39881	68/	1/	26	23	33	7.5	8.2	8.2	8.0			21.5	178.0	739.	REG. VARIATIONS	--MPC	90.0

SDC NO. 2710 67-22A COSMOS 147 USSR LAUNCHED 67/ 3/13 RE-ENTERED 3/21/67
PERIOD = 89.4 PERIGEE = 121.2 APOGEE = 187.0 INCL = 64.6

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
POYNTON	39567	67/	3/	18	19	6	4.3	4.3	6.1	6.1			19.0	220.0	430.	1967-22A	--DMB	115.5

SDC NO. 2711 67-22B ROCKET BODY USSR LAUNCHED 67/ 3/13 DECAYED 3/22/67
PERIOD = 89.3 PERIGEE = 128.0 APOGEE = 159.0 INCL = 64.6

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39564	67/	3/	15	19	37	3.7	5.7	6.7	8.7	9.45		38.0	230.0	250.	1967-22B TP +/- 0.1	--DMB	107.2

SDC NO. 2712 67-23A COSMOS 148 USSR LAUNCHED 67/ 3/16 DECAYED 5/ 7/67
PERIOD = 91.3 PERIGEE = 157.8 APOGEE = 251.0 INCL = 71.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
POYNTON	39594	67/	4/	14	20	19	4.9	4.9	8.0	8.0			50.0	60.0	240.	1967-23A	--DMB	44.1

SDC NO. 2713

67-238
PERIOD = 91.1 PERIGEE = 170.3 APOGEE = 236.7 INCL = 71.0
ROCKET BODY USSR LAUNCHED 67/ 3/16 DECAYED 4/14/67

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39567	67/	3/18	19	41	5.0	6.9	0.23	24.0	310.0	410.	1967-238	1P +/-	0.02			--DMB	136.3

SDC NO. 2715 67-25A
PERIOD = 90.0 PERIGEE = 126.8 APOGEE = 217.5 INCL = 65.6
COSMOS 150 USSR LAUNCHED 67/ 3/22 DECAYED 3/30/67

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39573	67/	3/24	19	0	1.5	1.5	5.0	5.0	30.0	55.0	200.	STEADY				--HK	53.4

SDC NO. 2716 67-25B
PERIOD = 89.6 PERIGEE = 118.7 APOGEE = 201.3 INCL = 65.7
ROCKET BODY USSR LAUNCHED 67/ 3/22 DECAYED 3/30/67

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39574	67/	3/25	18	39	0.5	1.5	4.1	5.1	26.0	55.0	190.	STEADY WITH LONG FLASH			--HK	59.7	
POYNTON	39575	67/	3/26	19	57	0.7	0.7	3.3	3.3	25.0	190.0	300.	1967-25B			--DMB	73.4	

SD68-629

SDC NO. 2720 67-27A
PERIOD = 97.1 PERIGEE = 370.3 APOGEE = 405.1 INCL = 56.1
COSMOS 151 USSR LAUNCHED 67/ 3/24 IN ORBIT

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39628	67/	5/18	22	15	5.0	5.5	6.0	7.4	85.0	140.0	410.	STEADY			--HK	69.9	
STADE/ELBE	39631	67/	5/21	21	27	6.0	7.0	7.0	8.0	89.5	360.0	420.	SLOWLY VARYING MOON			--HK	78.0	
STADE/ELBE	39631	67/	5/21	23	8	7.0	7.0	8.5	8.5	70.0	360.0	500.	STEADY MOON			--HK	93.8	
STADE/ELBE	39695	67/	7/24	22	44	6.5	7.0	7.4	7.9	40.0	140.0	650.	FATNT VARYING MOON			--HK	35.0	
HEIDELBERG	39701	67/	7/30	21	7	5.2	5.2	6.7	6.7	66.0	100.0	500.	STEADY			--GLU	59.1	
STADE/ELBE	39705	67/	8/ 3	22	19	5.5	5.5	7.2	7.2	70.0	360.0	450.	STEADY			--HK	91.8	
STADE/ELBE	39708	67/	8/ 6	21	31	5.5	5.5	7.0	7.0	68.0	360.0	500.	STEADY			--HK	94.0	

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STPETERSBURG	39778	67/10/15	23	48		4.0	4.0	0.0	0.0	0.0	4.00		60.0	140.0	500.	ST	--FK	
STPETERSBURG	39779	67/10/16	0	5		5.0	6.0	0.0	0.0	0.0			61.0	308.0	440.	STEADY	--FK	47.8
STADE/ELBE	39781	67/10/18	18	34		5.5	5.5	5.5	7.6	7.6			40.0	190.0	600.		--GLU	93.0
HEIDELBERG	39782	67/10/19	18	49		5.8	5.8	7.6	8.7	8.7			40.0	140.0	600.	ST HAZE	--DMR	83.2
POYNTON	39782	67/10/19	18	49		7.6	7.6	6.5	7.6	7.6			42.0	81.0	560.	STEADY	--HK	53.6
STADE/ELBE	39783	67/10/20	17	29		5.6	5.6	6.9	6.9	6.9			82.0	322.0	400.	STEADY	--GLU	31.5
HEIDELBERG	39783	67/10/20	17	29		5.0	5.0	7.0	7.0	7.0			75.0	360.0	500.	ST	--GLU	81.2
HEIDELBERG	39784	67/10/21	17	45		6.0	6.0	7.5	7.5	7.5			15.0	345.0	1100.	STEADY	--HK	72.7
STADE/ELBE	39786	67/10/23	18	21		7.0	7.0	6.8	6.8	6.8			22.0	344.0	900.	VARYING	--MPC	104.8
GRANBY	39786	67/10/23	0	30		7.0	7.2	7.2	7.2	7.4			34.0	341.0	640.	ST CLOUDS	--GLU	95.7
GRANBY	39791	67/10/28	18	7		6.7	6.7	7.7	7.7	7.7			36.0	42.0	600.	FAINT VARYING	--MPC	53.8
HEIDELBERG	39798	67/11/4	23	22		6.8	7.0	7.9	8.1	8.7			60.0	25.0	450.	VARYING	--FK	92.3
GRANBY	39800	67/11/6	0	39		6.5	6.0	8.2	8.7	7.3			45.6	329.0	550.		--FK	77.4
STPETERSBURG	39805	67/11/11	23	44		5.0	5.0	0.0	0.0	0.0			41.2	167.9	450.		--JGM	68.2
STPETERSBURG	39847	67/12/23	0	28		6.0	6.0	7.7	7.7	7.7			58.0	160.0	500.		--JGM	105.9
VAN NUYS-F	39849	67/12/25	2	40		6.4	6.4	7.9	7.9	7.9			48.0	268.0	500.		--FK	77.4
STADE/ELBE	39850	67/12/26	2	57		6.0	6.0	7.6	7.6	7.6			70.0	345.0	480.	ST MOON	--JGM	105.9
STADE/ELBE	39864	68/1/9	18	13		7.0	7.0	7.4	7.4	7.4			22.0	29.0	850.	SHORT OBS	--HK	70.7
GRANBY	39867	68/1/12	23	56		5.0	5.0	0.0	0.0	0.0			48.5	58.5			--MPC	48.9
STPETERSBURG	39875	68/1/20	1	19		6.0	6.0	0.0	0.0	0.0			27.8	233.7			--FK	25.2
STPETERSBURG	39877	68/1/22	0	53		7.0	7.0	7.7	7.7	7.7			28.0	23.0	725.		--FK	122.3
GRANBY	39908	68/2/22	10	30		5.5	5.5	6.8	6.8	6.8			43.0	220.0	550.	ST	--MPC	101.4
STADE/ELBE	39911	68/2/25	4	47		6.0	6.0	0.0	0.0	0.0							--HK	48.3
STPETERSBURG	39917	68/3/2	1	8		6.0	6.0	0.0	0.0	0.0							--FK	
STPETERSBURG	39920	68/3/5	0	19		5.0	5.0	0.0	0.0	0.0			62.0	359.0	480.	ST	--FK	84.7
STADE/ELBE	39930	68/3/15	19	21		5.8	5.8	7.4	7.4	7.4			83.0	5.0	410.	ST	--HK	81.0
STADE/ELBE	39990	68/5/14	21	54		6.3	6.3	8.2	8.2	8.2							--HK	

SD68-629

SDC NO. 2721	67-278A	PERIOD =	ROCKET BODY	USSR	LAUNCHED 67/ 3/24	IN ORBIT												
		97.1	PERIGEE =	359.1	APOGEE =	405.8	INCL = 56.1											
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39614	67/ 5/ 4	2	28	3.0	8.0	4.1	9.1	3.08	0.80	55.0	140.0	600.	REGULAR FLASHING	--	HK	79.6	
STADE/ELBE	39631	67/ 5/21	21	53	3.0	8.0	4.7	9.7	2.07	0.80	80.0	360.0	455.	SHARP FLASHING	--	HK	85.4	
STADE/ELBE	39631	67/ 5/21	23	35	3.0	8.0	4.4	9.4	2.08	0.80	67.0	360.0	520.	SHARP FLASHING	--	HK	96.8	
STADE/ELBE	39703	67/ 8/ 1	0	5	3.5	6.0	5.2	7.7			78.0	360.0	450.	FLASHING HAZE	--	HK	84.1	
STADE/ELBE	39705	67/ 8/ 3	21	39	2.3	5.0	4.0	6.7	2.28	0.90	70.0	360.0	450.	REFLAP FLASHING	--	HK	92.8	
STADE/ELBE	39708	67/ 8/ 6	22	33	2.0	4.5	3.7	6.2	2.39	0.90	75.0	360.0	450.	REGULAR FLASHING	--	HK	95.9	
STADE/ELBE	39709	67/ 8/ 7	21	11	3.0	4.5	4.5	6.0	2.45	0.90	63.0	360.0	500.	REGULAR FLASHING	--	HK	98.6	
STADE/ELBE	39764	67/10/ 1	4	13	7.5		8.8				40.0	100.0	550.	FLASHING RIS HAZE MIN INV	--	HK	125.6	
STADE/ELBE	39781	67/10/18	18	28	2.0	4.0	3.1	5.1			52.0	140.0	600.	SLOWLY TUMR SHADOW	--	HK	44.5	
HEIDELBERG	39782	67/10/19	18	44	3.2	4.0	4.8	5.6	3.30		56.0	281.0	480.	FLASHING	--	GLU	101.3	
HEIDELBERG	39783	67/10/20	17	24	3.1	3.1	4.1	4.1			36.0	82.0	420.	STEADY	--	GLU	25.2	
STADE/ELBE	39783	67/10/20	19	3	3.0	6.0	5.0	8.0			88.0	360.0	400.	SLOWLY TUMBLING	--	HK	65.3	
HEIDELBERG	39784	67/10/21	17	41	3.0	3.0	5.0	5.0			79.0	53.0	400.	STEADY	--	GLU	58.1	
HEIDELBERG	39784	67/10/21	19	21	4.8	4.8	5.9	5.9			38.0	330.0	600.	STEADY	--	GLU	102.7	
STADE/ELBE	39786	67/10/23	18	17	1.8	2.5	3.5	4.2			80.0	360.0	450.	SLOWLY VAR	--	HK	72.0	
STADE/ELBE	39789	67/10/26	17	30	2.0	2.5	3.6	4.1			72.0	360.0	480.	ST	--	HK	75.4	
HEIDELBERG	39791	67/10/28	18	6	4.2	4.8	5.2	5.8	3.25		34.0	345.0	640.	TUMR CLOUDS	--	GLU	92.7	
STADE/ELBE	39825	67/12/ 1	4	44	5.5	7.5	6.0	8.0			30.0	100.0	800.	FLASHING PER APPROX 4 SEC	--	HK	128.8	
HEIDELBERG	39876	68/ 1/21	17	10	4.6	7.2	5.5	8.1	4.42		35.0	250.0	665.	TUMR	--	GLU	134.0	
STADE/ELBE	39894	68/ 2/ 8	5	36	2.5	3.5	4.5	5.5	4.30		75.0	190.0	400.	TUMBLING	--	HK	80.5	
STADE/ELBE	39930	68/ 3/15	18	30	2.7	2.7	4.6	4.6			57.0	5.0	420.	ST	--	HK	82.8	
STADE/ELBE	39930	68/ 3/15	20	9	2.7	3.5	4.6	5.4	4.90		70.0	359.0	410.	TUMR	--	HK	78.1	
STADF/ELBE	39934	68/ 3/19	19	38	2.7	2.7	4.2	4.2			48.0	18.0	490.	ST	--	GLU	79.5	
HEIDELBERG	39943	68/ 3/28	18	52	4.0	6.0	5.0	7.0	5.50		33.0	224.0	625.	TUMR	--	GLU	105.1	

SDC NO. 2722 67-28A
 PERIOD = 92.1 PERIGEE = 169.0 USSR LAUNCHED 67/ 3/25 DECAYED 8/ 5/67
 APGEE = 303.2 INCL = 71.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39613	67/	5/	3	23	5	8.0	8.0	9.1	9.1			20.0	360.0	600.	STEADY LOW ALTITUDE	-- HK	139.2
POYNTON	39617	67/	5/	7	23	6	6.8	6.8	8.6	8.6			23.0	310.0	440.	1967-28A	--DMB	124.0
STADE/ELBE	39620	67/	5/10	21	10	10	6.0	6.5	8.0	8.5			43.0	310.0	300.	STEADY	-- HK	120.9

SDC NO. 2723 67-28R
 PERIOD = 92.0 PERIGEE = 169.6 USSR LAUNCHED 67/ 3/25 DECAYED 5/22/67
 APGEE = 295.2 INCL = 71.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE	
POYNTON	39617	67/	5/	7	22	48	3.4	4.4	5.7	6.7			30.0	310.0	350.	1967-28R TP EST 2 SECS.	--DMB	123.7	
POYNTON	39620	67/	5/10	21	20	20	0.1	1.0	3.7	4.6		1.80	70.0	170.0	190.	MAGS. APPROX (CLIMID)	--DMB	50.7	
STADE/ELBE	39621	67/	5/11	21	34	34	5.5	8.0	6.6	9.1		1.00	0.70	12.0	335.0	600.	REGULAR FLASHING LOW ALTITUDE	-- HK	152.9

SDC NO. 2743 67-31A ATS 2 USA LAUNCHED 67/ 4/ 6 IN ORBIT
PERIOD = 219.3 PERIGEE = 107.5 APOGEE = 6928.3 INCL = 28.4

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
EDINBURG	39595	67	4	15	1	56	7.0	7.5	7.3	7.8		83.9	352.9	860.	ST AT +7.5, FLICKERED TO +7.0-- PM	PM	78.7
EDINBURG	39598	67	4	18	2	24	6.0	6.5	6.7	7.2		76.4	0.5	712.	ONE FLICKER TO +6.0THRWSE ST-- PM	PM	76.2
PHOENIX R	39599	67	4	19	3	45	7.0	7.0	7.8	7.8		57.5	179.5	707.	STEADY	--RR	56.3

SDC NO. 2744 67-31B AGENA USA LAUNCHED 67/ 4/ 6 IN ORBIT
PERIOD = 218.1 PERIGEE = 93.2 APOGEE = 6894.1 INCL = 28.4

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39592	67	4	12	4	26	6.0	6.9	7.3	7.3		49.0	185.0	650.	NOT FOLLOWED, SEEMED ST	--JGW	54.9
PHOENIX R	39594	67	4	14	3	25	7.0	7.0	7.3	7.3		51.2	169.5	960.	STEADY	--AKR	54.1
VAN NUYS-F	39597	67	4	17	3	35	4.5	7.0	4.7	7.2		58.5	174.0	920.	TP ABOUT 4 MINUTES	--JGW	62.5
VAN NUYS-F	39607	67	4	27	4	10	5.0	5.0	5.0			46.0	195.0	1000.		--JGW	64.5
EDINBURG	39609	67	4	29	2	38	5.0	5.0	5.5	5.5		84.9	192.9	800.	ST IN 3-DEGREE FIELD	--PM	58.1
VAN NUYS-F	39610	67	4	30	3	37	6.0	7.0	5.8	6.8		52.0	180.0	1100.	NOT FOLLOWED FAR	--JGW	53.3
PHOENIX R	39610	67	4	30	3	39	7.0	7.0	7.0	7.0		40.8	179.2	1000.	STEADY TRACKED 20 SEC	--AKR	53.9

SDC NO. 2754 67-34A USA LAUNCHED 67/ 4/14 IN ORBIT
PERIOD = 106.6 PERIGEE = 654.3 APOGEE = 672.9 INCL = 90.2

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39706	67	8	14	23	50	6.7	6.7	7.3	7.3		73.0	260.0	750.	STEADY	--HK	57.3
STADE/ELBE	39708	67	8	16	23	47	8.0	8.5	8.5	9.0		67.0	260.0	800.	STEADY OCCAS FAINT FLICKER	--HK	66.2
STADE/ELBE	39715	67	8	13	22	46	8.0	8.5	8.5	9.0		53.0	360.0	900.	STEADY BUT OCCAS FAINT FLICK	--HK	105.3
STADE/ELBE	39725	67	8	23	22	33	8.0	8.0	8.7	8.7		77.0	260.0	720.	STEADY	--HK	67.5
STADE/ELBE	39804	67	11	10	18	14	6.5	7.5	7.0	8.0		40.0	310.0	800.	SLOWLY VAR	--HK	107.6

SD68-629

SDC NO.	2755	67-34R	ALTAIR ROCKET	USA	LAUNCHED 67/ 4/14	IN ORBIT									
PERIOD =	106.6	PERIGEE =	653.7	APOGEE =	672.9	INCL = 90.2									
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	MAX	MIN	PERIOD	FLASH	ALT	AZ	RANGE
AUSTIN	39768	67/10/ 5	3	45	8.5	7.9	21.0	317.0	1344.						

SOC NO. 2762		67-39A		COSMOS 156		USSR		LAUNCHED 67/ 4/27		IN ORBIT						
PERIOD =		96.7		PERIGEE =		358.5		APOGEE =		394.6		INCL = 81.2				
STATION NAME	MJD	Y	M	D	1	W	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS
POYNON	39615	67/	5/	5	0	38	5.0	5.0	7.0	7.0			90.0	90.0	400.	1967-39A
STADE/ELBE	39721	67/	8/19	23	7	5.2	5.2	5.2	6.5	6.5			53.0	260.0	550.	STEADY
STADE/ELBE	39725	67/	8/23	22	28	5.5	5.5	5.5	6.9	6.9			60.0	260.0	530.	STEADY

SDC NO. 2763		67-398		ROCKET BODY		USSR		LAUNCHED 67/ 4/27 IN ORBIT									
		PERIOD =		PERIGE = 97.2		PERIGE = 357.9		APOGEE = 418.8		INCL = 81.2							
STATION NAME	MJD	Y	M	D	1	4	MAX	MIN	AMAX	AMIN	PERIOD FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
PONTON	39615	67/	5/	5	1	3	4.3	5.8	6.1	7.6		65.0	262.0	440.	1967-308. MAXIMA IRREGULAR AND TO ESTIMATED 7.35 SECS	--DMR	52.8
STADE/ELBE	39620	67/	5/	10	23	33	5.5	6.5	6.8	7.8	0.25	0.30	47.0	260.0	RADIO FLASHING	--DMR	55.4
STADE/ELBE	39721	67/	8/	19	23	0	5.3	9.0	5.6	10.3	0.84	0.80	55.0	260.0	REGULAR SHARP FLASHING	--HK	57.8
STADE/ELBE	39725	67/	8/	23	22	45	5.0	9.5	6.1	9.6	0.85	0.80	48.0	260.0	REGULAR SHARP FLASHING	--HK	72.5
STADE/ELBE	39959	68/	4/	12	23	52	5.5	6.0	6.8	7.3		50.0	0.0	550.	RADIO FAINT FLASHES	--HK	122.9

SDC NO. 2773 67-42A ARIEL 3 UK LAUNCHED 67/ 5/ 5 IN ORBIT
PERIOD = 95.7 PERIGEE = 308.8 APOGEE = 377.8 INCL = 80.2

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39615	67/ 5/ 5	20	28			6.0	6.0	8.0	8.0			56.0	100.0	400.	STEADY UK 3 REV NO 3 6704201	-- HK	53.8
POYNTON	39617	67/ 5/ 7	21	56			6.8	6.8	7.9	7.9			32.0	310.0	590.	1967-42A. ONLY SEEN FOR 20	-- DMB	130.3
STADE/ELBE	39657	67/ 6/16	0	2			4.7	8.0	4.9	8.2			35.0	100.0	920.	SECONDS IN CLOUD. NO FLASHES	-- HK	82.3
POYNTON	39668	67/ 6/27	23	5									32.0	107.0		IN 2 SEC APPROX 10 FLASHES	-- DMB	56.2
POYNTON	39673	67/ 7/ 2	22	41									37.0	137.0		CENTRE OF SEVERAL TRAINS OF	-- DMB	32.4
POYNTON	39674	67/ 7/ 3	22	36									38.0	142.0		RAPID (6/SEC) FLASHES	-- DMB	30.5
POYNTON	39681	67/ 7/10	22	1									35.0	186.0		CENTRE OF SEVERAL TRAINS OF	-- DMB	42.4
POYNTON	39862	68/ 1/ 7	18	23			2.5		4.7			0.50	60.0	90.0	370.	RAPID (6/SEC) FLASHES	-- DMB	41.8
POYNTON	39862	68/ 1/ 7	18	24			5.0		5.8				24.0	140.0	700.	ONE TRAIN 8 TO 10 FL	-- DMB	57.4
POYNTON	39864	68/ 1/ 9	18	7			3.0		5.2			0.48	65.0	90.0	370.	MIXED RAPID AND SLOW FL	-- DMB	49.6
STADE/ELBE	39864	68/ 1/ 9	18	9			3.0		3.8			0.70	23.0	150.0	700.	TP +/- 0.05 8 FL	-- DMB	59.9
STADE/ELBE	39990	68/ 5/14	22	32			3.5		5.5			1.00	60.0	310.0	400.	SEVERAL TRAINS 3 OR 4 FL	-- HK	97.0
STADE/ELBE	39990	68/ 5/14	22	33			7.0		9.0	9.0			63.0	260.0	390.	SHARP FLASHES MIN INV	-- HK	75.5
STADE/ELBE	39994	68/ 5/18	21	46			6.5		8.8	8.8			85.0	260.0	340.	ST	-- HK	77.1
STADE/ELBE	39996	68/ 5/20	21	24			6.5		8.9	8.9			89.5	100.0	335.	ST SHORT OBS CLOUDS	-- HK	77.4

SD68-629

SDC NO. 2774 67-42B ROCKET USA LAUNCHED 67/ 5/ 5 IN ORBIT
PERIOD = 95.8 PERIGEE = 307.0 APOGEE = 384.6 INCL = 90.2

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39671	67/ 6/30	22	50			6.0		8.0			13.00	50.0	70.0	400.	TP +/- 2 SECS	-- DMB	81.8

SOC NO. 2779 67-43A

PERIOD = 94.4 PERIGEE = 124.3 USA LAUNCHED 67/ 5/ 9 DECEASED 7/13/67
APOGEE = 482.8 INCL = 95.1

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39638	67/	5/28		0	31	5.0	5.0	6.5	6.5	9.80		12.0	320.0	500.	STEADY LOW ALTITUDE	-- HK	117.8
POYNTON	39648	67/	6/ 7		23	55					9.30					1967-43A TP +/- 0.4 SECS	--DMB	
POYNTON	39653	67/	6/12		22	55	0.8	1.8	4.6	5.6			50.0	90.0	170.	TP +/- 0.3 SECS. AMPLITUDE	--DMB	73.0
																INCREASING. ALTERNATE MAXIMA	--DMB	
POYNTON	39658	67/	6/17		22	50	1.0	8.2	3.3	10.5			20.0	280.0	350.	BRIGHTER	--DMB	
POYNTON	39660	67/	6/19		22	47	1.8		5.9				60.0	275.0	150.	VARYING, INCREASING AMPLITUDE	--DMB	111.8
																		95.4

SOC NO. 2780 67-43B

PERIOD = 98.4 PERIGEE = 344.9 USA LAUNCHED 67/ 5/ 9 IN ORBIT
APOGEE = 502.7 INCL = 85.1

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39642	67/ 6/ 1	23	51	5.0	8.0	6.4	9.4	1.20	0.30	55.0	260.0	520.			SHARP FLASHING	-- HK	68.5
STADE/ELBE	39644	67/ 6/ 3	23	25	7.0	8.5	8.6	10.1	1.20	0.30	72.0	260.0	470.			SHARP FLASHING	-- HK	73.2
STADE/ELBE	39646	67/ 6/ 5	22	59	6.8	9.0	8.5	10.7	1.00		84.0	100.0	450.			REGULAR SHARP FLASHING	-- HK	74.8
STADE/ELBE	39910	68/ 2/24	18	43	7.8	8.5	9.3	10.0			72.0	100.0	490.			FAINT FLASHERS PER APPROX	-- HK	54.3
STADE/ELBE	39990	68/ 5/14	21	46	5.8	5.8	7.2	7.2			63.0	260.0	530.			ST	-- HK	82.3

SOC NO. 2797 67-270

PERIOD = 97.1 PERIGEE = 370.3 USSR LAUNCHED 67/ 3/24 IN ORBIT
APOGEE = 401.4 INCL = 56.1

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39926	68/ 3/11	19	54	5.3	5.3	7.0	7.0			70.0	355.0	450.			ST	-- HK	78.6
HEIDELBERG	39934	68/ 3/19	18	49	6.5	6.5	7.7	7.7			38.0	9.0	580.			ST	--GLU	89.6
VAN NUYS-F	39944	68/ 3/29	3	49	6.5	6.5	8.5	8.5			72.0	229.0	390.				--JGW	79.0

SDC NO. 2801 67-45A COSMOS 158 USSR LAUNCHED 67/ 5/15 IN ORBIT
PERIOD = 100.3 PERIGEE = 458.6 APOGEE = 503.3 INCL = 74.1

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39631	67/	5/21	21	23	6.7	6.7	8.1	8.1	8.1	3.00		63.0	250.0	530.	1967-45A	--DMB	90.3
STPETERSBURG	39640	67/	5/30	1	21	8.0	8.0	9.2	9.2	9.2			50.2	69.3	588.	INV 2 OF 3 SEC	--FK	57.5
STADE/ELBE	39705	67/	8/ 3	21	53	8.0	8.0	9.5	9.0	9.5			55.0	310.0	620.	STEADY OCCAS SHORT FLICKER	--HK	135.5
STADE/ELBE	39852	67/12/28	17	18	6.5	7.0	7.4	7.9	7.4	7.9			50.0	140.0	650.	IRREG VAR MOST STEADY	--HK	60.7
STADE/ELBE	39927	68/ 3/12	4	9	7.6	7.6	8.7	8.7	8.7	8.7			68.0	310.0	600.	ST	--HK	63.5
VAN NUYS-F	39965	68/ 4/19	4	43	7.7	8.0	9.0	9.3					64.0	291.0	550.		--JGW	88.9

SDC NO. 2802 67-45B ROCKET BODY USSR LAUNCHED 67/ 5/15 IN ORBIT
PERIOD = 100.2 PERIGEE = 454.8 APOGEE = 526.3 INCL = 74.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39631	67/	5/21	21	42	4.7	6.6	5.7	7.6	7.6	6.30		43.0	260.0	645.	1967-45B. ASYMMETRIC LIGHT	--DMB	99.7
STADE/ELBE	39695	67/ 7/24	22	31	4.0	6.0	4.9	6.9	6.9	6.9	3.30	0.70	43.0	140.0	650.	CURVE, RAPID RISE, SLOW FALL	--DMB	
STADE/ELBE	39863	68/ 1/ 8	17	28	5.5	5.5	6.6	6.6	6.6	6.6			63.0	310.0	600.	REGULAR FLASHING MODN	--HK	35.3
STADE/ELBE	39937	68/ 3/22	3	48	5.5	5.5	5.5	5.5	5.5	5.5			22.0	310.0	1000.	ST	--HK	89.1
STADE/ELBE	39962	68/ 4/16	21	14	4.5	7.5	5.8	8.8	11.40				87.0	140.0	550.	SLOWLY TURN	--HK	58.3
STADE/ELBE	39994	68/ 5/18	23	41	5.0	5.5	6.0	6.5					55.0	55.0	630.	FATNT VAR, MOST ST	--HK	66.5
																	--HK	97.2

SDC NO. 2803 67-46C LAUNCHER USSR LAUNCHED 67/ 5/17 DECAYED 6/ 2/67
PERIOD = 90.5 PERIGEE = 129.2 APOGEE = 245.4 INCL = 51.7

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39643	67/ 6/ 2	20	45	3.0	6.0	5.8	8.8					40.0	180.0	280.	VARYING NDT DARK 6704603	--HK	45.8

SDC NO. 2805 67-46A COSMOS 159 USSR LAUNCHED 67/ 5/17 IN ORBIT
PERIOD = 1174.0 PERIGEE = 217.5 APOGEE = 37678.0 INCL = 51.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
VAN NUYS-F	39661	67/	6/20	4	58	8.3	5.8						69.0	112.0	3120.	MIN BELOW +0.5, LOOKED IPPEC	---	52.6
VAN NUYS-F	39670	67/	6/29	4	5	8.0	8.0	6.1	6.1				58.0	156.0	2400.		---	52.1
VAN NUYS-F	39670	67/	6/29	4	15	9.8	9.8	6.7	6.7				59.0	74.0	4250.	FLASH	---	52.1
VAN NUYS-F	39683	67/	7/12	5	16	8.8	8.8	5.8	5.8				73.0	294.0	3980.		---	93.7
VAN NUYS-F	39692	67/	7/21	4	29	9.5	9.5	6.6	6.6				75.0	298.0	3880.		---	88.9
VAN NUYS-F	39696	67/	7/25	6	35	11.2	12.0	6.9	7.7				58.0	317.0	7150.	SHORT PERIOD FLICKER + 1.5	---	88.1
VAN NUYS-F	39696	67/	7/25	6	49	12.2	12.5	7.1	7.6				64.0	340.0	9340.	MINUTE PERIOD	---	82.4
VAN NUYS-F	39700	67/	7/29	8	38	12.0	12.5	7.1	7.6				42.0	312.0	9620.	TO ABOUT 1 SEC	---	84.9
VAN NUYS-F	39700	67/	7/29	9	0	11.7	11.7	6.3	6.3				52.0	318.0	12300.	UNUSUALLY BOT GROUP 7F FLSHS	---	78.6
VAN NUYS-F	39723	67/	8/21	4	0	10.0	11.0	6.4	7.4				52.0	303.0	5150.		---	110.7
VAN NUYS-F	39732	67/	8/30	3	21	10.3	11.8	5.3	7.8				63.0	330.0	6410.	BROAD FLASHES 25 SEC APART	---	99.8
VAN NUYS-F	39732	67/	8/30	3	34	11.2	12.2	6.6	7.6				65.0	358.0	8430.	SOME FLICKERING ABOUT .4 SEC	---	95.4
AUSTIN	39741	67/	9/ 8	2	26	9.0	9.0	5.3	5.3				31.0	304.0	5510.		---	126.1
VAN NUYS-F	39965	68/	4/19	6	32	9.8	10.3	6.6	7.1				38.0	59.0	4320.		---	69.2
VAN NUYS-F	39969	68/	4/23	8	18	9.2	10.0	6.9	7.7				74.0	320.0	2900.	BROAD FLASH	---	58.5

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SDC NO. 2807 67-48A USA LAUNCHED 67/ 5/18 IN ORBIT
PERIOD = 107.0 PERIGEE = 667.4 APOGEE = 686.6 INCL = 89.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
POYNTON	39637	67/	5/27	0	4	7.6	7.6	8.0	8.0				50.0	120.0	850.	1967-48A	---	58.8
STADE/ELBE	39646	67/	6/ 5	23	8	7.7	7.7	8.5	8.5				85.0	100.0	590.	STEADY	---	75.1
HEIDELBERG	39677	67/	7/ 6	21	22	7.4	7.4	8.0	8.0				76.0	260.0	770.	STEADY	---	82.6

SD68-629

SDC NO. 2811 67-48R ALTAR USA LAUNCHED 67/ 5/18 IN ORBIT
PERIOD = 107.0 PERIGEE = 666.7 APOGEE = 687.2 INCL = 89.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
POYNTON	39637	67/	5/27	0	2	6.9	7.3	5.30	50.0	120.0	850.	1967-48R. MIN BELOW 9					--DMB	58.5
STADE/ELBE	39646	67/	6/5	23	1	5.5	8.5	5.30	0.80	78.0	100.0	720.					--HK	73.5
STADE/ELBE	39653	67/	6/12	22	42	5.8	8.5	5.25	0.60	88.0	100.0	685.					--HK	75.6

SDC NO. 2812 67-49A COSMOS 161 USSR LAUNCHED 67/ 5/22 RE-ENTERED 5/30/67
PERIOD = 89.7 PERIGEE = 124.9 APOGEE = 199.5 INCL = 65.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
POYNTON	39633	67/	5/23	21	39	1.5	2.3	5.1	5.0	50.0	190.	1967-49A. TP EST 5 SECS					--DMB	85.5
POYNTON	39634	67/	5/24	21	36	1.0	1.0	5.0	5.0	0.0	155.	1967-49A					--DMB	83.8
POYNTON	39635	67/	5/25	21	31	1.0	1.5	4.7	5.2	55.0	230.0	1967-49A. SLOW VARIATION					--DMB	80.7

SDC NO. 2813 67-50A AGENA D USA LAUNCHED 67/ 5/22 IN ORBIT
PERIOD = 88.9 PERIGEE = 93.9 APOGEE = 186.4 INCL = 91.5

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
POYNTON	39634	67/	5/24	22	18	2.3	2.3	6.6	6.6	90.0	0.0	140.					--DMB	77.6
POYNTON	39635	67/	5/25	22	6	2.3	2.8	5.9	6.4	45.0	80.0	190.					--DMB	59.1

SD68-629

SDC NO. 2814 67-49R PERIOD = 89.4 PERIGEE = 121.2 APOGEE = 187.0 INCL = 65.6
LAUNCHED 67/ 5/22 DECEASED 5/28/67

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39633	67/	5/23	21	36	2.0	3.0	5.6	6.6				45.0	60.0	190.	1967-49R. TP EST 5 SECS	--DMB	79.8
POYNTON	39634	67/	5/24	21	27	0.4	2.0	4.4	6.0	20.00			60.0	130.0	195.	1967-49R. RATHER IRREGULAR	--DMB	52.5

SDC NO. 2816

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39638	67/	5/28	21	15	7.5	9.0	10.8	11.3				75.0	100.0	220.	6705002 SHORT OBS CLOUDY SKY--	HK	70.5

SDC NO. 2819 67-52C PERIOD = 91.3 PERIGEE = 126.1 APOGEE = 293.3 INCL = 64.8
LAUNCHED 67/ 5/24 DECEASED 6/15/67

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39641	67/	5/31	2	11	2.7	2.7	7.1	7.1				70.0	315.0	130.		--DMB	85.7
POYNTON	39648	67/	6/7	23	54	3.0	3.0	7.1	7.1				50.0	315.0	150.		--DMR	106.3

SDC NO. 2822 67-52A PERIOD = 710.8 PERIGEE = 273.4 APOGEE = 24575.2 INCL = 64.9
LAUNCHED 67/ 5/24 IN ORBIT

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39644	67/	6/3	11	1	9.0	9.0	4.7	4.7				65.0	281.0	7120.		--JGW	59.5
VAN NUYS-F	39644	67/	6/3	11	17	10.0	10.0	5.2	5.2				67.0	312.0	9200.		--JGW	73.2
VAN NUYS-F	39695	67/	7/24	7	48	9.0	9.0	5.0	5.0				38.0	265.0	6700.		--JGW	57.7
VAN NUYS-F	39695	67/	7/24	8	1	10.5	10.7	6.1	6.3				50.0	282.0	7600.		--JGW	59.8
VAN NUYS-F	39695	67/	7/24	8	19	11.7	11.7	6.8	6.8				56.0	304.0	9700.		--JGW	74.4
VAN NUYS-F	39696	67/	7/25	7	31	9.5	9.5	5.6	5.6				45.0	263.0	6050.		--JGW	65.4

SLIGHT FLICKER

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39699	67	7	28	6	38	9.5	9.5	5.7	5.7			56.0	254.0	5700		JGM	66.6
VAN NUYS-F	39700	67	7	29	6	20	9.2	9.2	5.5	5.5			61.0	250.0	5600		JGM	66.1
VAN NUYS-F	39702	67	7	31	5	37	8.7	8.7	5.4	5.4			52.0	223.0	4500		JGM	63.6
VAN NUYS-F	39850	67	12	26	7	26	10.7	11.0	5.7	6.0			30.0	260.0	9830		JGM	65.0
VAN NUYS-F	39859	68	1	4	4	45	9.8	10.3	5.3	5.8	155.00		54.0	210.0	9100	RT AND FAINT MAX ALTERNATE	JGM	66.6
VAN NUYS-F	39860	68	1	5	4	25	10.4	10.8	5.7	6.1			62.0	214.0	8780	FLICKERING .6 SEC	JGM	66.7
VAN NUYS-F	39863	68	1	8	3	41	10.0	10.5	5.7	6.2			51.0	179.0	7120	LONG PERIOD WITH SOME FLASHES	JGM	69.2

SDC NO. 2823 67-45C PERIOD = 100.7 PERIGEE = 461.7 APOGEE = 522.6 INCL = 74.0
 USSR LAUNCHED 67/ 5/15

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39863	68	1	8	17	21	8.7	10.2					89.5	55.0	500	FAINT FLICKER MIN INV	HK	72.8
VAN NUYS-F	39965	68	4	19	4	53	8.7	10.0				0.30	66.0	291.0	560	FLASH, MIN UNDER +10.0	JGM	85.2

SDC NO. 2825 67-53A PERIOD = 103.4 PERIGEE = 567.9 APOGEE = 576.6 INCL = 70.0
 USA LAUNCHED 67/ 5/31

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
STADE/ELBE	39649	67	6	8	22	36	4.5	4.5	5.1	5.1			45.0	220.0	750	STEADY	HK	53.4
STADE/ELBE	39653	67	6	12	21	25	4.5	4.5	5.6	5.6			45.0	220.0	590	STEADY	HK	78.9
STADE/ELBE	39719	67	8	17	23	15	5.5	5.5	6.3	6.3			77.0	140.0	700	STEADY	HK	57.0
STADE/ELBE	39725	67	8	23	22	21	5.0	5.0	6.1	6.1			85.0	310.0	590	STEADY	HK	70.7
STADE/ELBE	39730	67	8	28	21	19	6.0	6.0	7.2	7.2			85.0	310.0	585	STEADY	HK	73.4
AUSTIN	39740	67	9	7	1	53	6.0	6.0	6.6	6.6			45.0	297.0	765		MM	119.8
STADE/ELBE	39789	67	10	26	17	40	6.5	6.5	7.0	7.0			55.0	220.0	900	ST	HK	98.6
STADE/ELBE	39864	68	1	9	17	15	5.5	5.5	6.6	6.6			76.0	140.0	600	ST	HK	69.1
STADE/ELBE	39960	68	4	14	21	44	3.0	9.0	3.0	9.0			75.0	310.0	450	SLOWLY TUMB	HK	80.4
STADE/ELBE	39961	68	4	15	20	7	4.9	4.8	5.3	5.3			37.0	140.0	800	ST	HK	24.4
STADE/FLRE	39961	68	4	15	21	53	4.0	9.0	4.7	9.7	60.00		57.0	310.0	730	SLOWLY TUMB	HK	95.4

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SDC NO. 2826	67-538	USA LAUNCHED 67/ 5/31 IN ORBIT									
		PERIOD = 103.5 PERIGEE = 571.0 APOGEE = 580.4 INCL = 70.0									
STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH
STADE/ELBE	39994	68/	5/18	22	7	8.5	8.5	9.4	9.4		
		ALT AZ RANGE									
		67.0 55.0 670. ST									
		COMMENTS									
		--OBS PHASE									
		-- HK 87.8									
SDC NO. 2828	67-53C	GGSE 4									
		PERIOD = 103.4 PERIGEE = 568.5 APOGEE = 577.3 INCL = 70.0									
STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH
AUSTIN	39740	67/	9/ 7	2	11	8.0	8.1				
STADE/ELBE	39961	68/	4/15	20	59	5.0	7.0	6.0	8.0	7.50	
STADE/ELBE	39962	68/	4/16	21	8	4.5	8.0	5.6	9.1		
STADE/ELBE	39990	68/	5/14	23	36	7.5	7.5	8.6	8.6		
		ALT AZ RANGE									
		32.0 300.0 947									
		COMMENTS									
		TUMB PER APPROX									
		SLOWLY VAR AND FLASHING									
		SY TOGETH WITH 67 53 C									
		--OBS PHASE									
		-- MM 128.8									
		-- HK 53.5									
		-- HK 74.8									
		-- HK 58.3									
SDC NO. 2832	67-56A	COSMOS 163									
		PERIOD = 93.1 PERIGEE = 151.5 APOGEE = 379.7 INCL = 48.4									
STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH
POYNTON	39668	67/	6/27	22	1	5.7	5.7	7.2	7.2		
		ALT AZ RANGE									
		38.0 180.0 500. 1967-56A. STEADY FOR 2 MINS. DMB 60.1									
		COMMENTS									
		--OBS PHASE									
		--DMB 60.1									
SDC NO. 2833	67-56B	ROCKET BODY									
		PERIOD = 93.0 PERIGEE = 157.8 APOGEE = 369.1 INCL = 48.4									
STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH
POYNTON	39659	67/	6/18	1	1	3.8	3.8	4.7	4.7		
POYNTON	39659	67/	6/18	1	3						
POYNTON	39667	67/	6/26	23	39	2.3	3.0	4.0	4.7	0.28	
POYNTON	39668	67/	6/27	22	45					0.24	
POYNTON	39674	67/	7/ 3	22	5					0.17	
		ALT AZ RANGE									
		20.0 180.0 650. 1967-56B. STEADY									
		COMMENTS									
		--OBS PHASE									
		--DMB 13.9									
		--DMB 41.5									
		--DMB 27.8									
		--DMB 39.9									
		--DMB 58.7									

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
POYNTON	39727	67	8	25	21	11						0.24	15.0	227.0		TP +/- 0.02	--DMB	88.8
POYNTON	39731	67	8	29	25	27						0.22				TP +/- 0.02	--DMB	

SDC NO. 2834 67-530
 PERIOD = 103.4
 GGSSE 5
 USA
 LAUNCHED 67/ 5/31 IN ORBIT
 APOGEE = 577.3 INCL = 70.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
STADE/ELBE	39711	67	8	9	1	31	7.0	7.0	8.0	8.0			79.0	310.0	630.	STEADY	-- HK	76.6

SDC NO. 2842 57-59A
 PERIOD = 102.8
 COSMOS 165
 USSR
 LAUNCHED 67/ 6/12 DECEASED 1/15/68
 APOGEE = 941.4 INCL = 81.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
POYNTON	39713	67	8	11	0	0	8.1	8.1	8.7	8.7			65.0	240.0	750.	1967-59A. STEADY FOR 10 SECS	--DMB	88.3
POYNTON	39723	67	8	21	22	25	6.1	7.4	7.4	7.4			75.0	270.0	550.	1967-59A. SLOW VARIATION	--DMB	76.8
STADE/ELBE	39855	57	12	31	17	11	5.8	5.8	7.3	7.3			40.0	5.0	500.	ST ONE SHORT FLASH MAG +4	-- HK	52.9

SDC NO. 2843 67-508
 PERIOD = 101.9
 ROCKET BODY
 USSR
 LAUNCHED 67/ 6/12 DECEASED 11/ 1/67
 APOGEE = 930.9 INCL = 91.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--ORS	PHASE
POYNTON	39760	67	7	29	2	11	4.0	0.0	0.0	0.0		0.28	45.0	80.0		1967-59A. TP +/- 0.02	--DMB	83.8
POYNTON	39706	67	8	4	23	12						0.27	42.0	60.0			--DMB	88.1
POYNTON	39712	67	8	10	22	48						0.26	50.0	60.0	600.		--DMB	80.9
POYNTON	39723	67	8	21	22	10	2.8	3.0	3.9	4.1		0.22	45.0	170.0			--DMB	31.1
POYNTON	39727	67	8	25	21	18						0.30	40.0	10.0		1967-508. TP +/- 0.02 TP SLOWER THAN PREVIOUSLY	--DMB	104.5
GRANBY	39770	67	10	7	9	49	2.5	7.5	5.5	10.5			35.0	9.0	250.	VARYING, LONG TP	--MPC	93.4

SDC NO. 2847 67-93F

USA LAUNCHED 67/ 5/31 IN ORBIT
 PERIOD = 103.4 PERIGEE = 568.5 APOGEE = 574.8 INCL = 69.9
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 AUSTIN 39741 67/ 9/ 8 1 55 7.5 7.7 34.0 299.0 910.0
 ---DCW 129.5

SDC NO. 2849 67-61B

ROCKET BODY USSR LAUNCHED 67/ 6/16 DECEASED 10/11/67
 PERIOD = 92.8 PERIGEE = 174.0 APOGEE = 343.0 INCL = 48.4

STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 POYNTON 39673 67/ 7/ 2 22 32 3.2 3.2 3.7 3.7 18.0 160.0 900. 1967-61B, STEADY THEN VARYING--DMS 0.1
 ---DCW 129.5

SDC NO. 2851 67-628
 PERIOD = 94.9 PERIGEE = 311.3 USA LAUNCHED 67/ 6/16 IN ORBIT
 APOGEE = 123.1 INCL = 90.1

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39675	67/	7/	4	23	49	5.5	6.0	7.8	8.3			67.0	260.0	340.	STEADY OCCAS IRREG FAINT FLA--	HK	71.7
STADE/ELBE	39676	67/	7/	5	23	31	6.0	6.0	8.4	8.4			83.0	260.0	330.	STEADY	HK	75.1
HEIDELBERG	39681	67/	7/	10	22	2	5.2	6.5	6.5	7.8			34.0	100.0	545.	IRREG FLICKER	GLU	55.7
STADE/ELBE	39684	67/	7/	13	22	44	7.5	7.5	9.2	9.2			42.0	260.0	458.	STEADY WITH FAINT SHORT FLAS--	HK	81.0

SDC NO. 2861 67-65A
 PERIOD = 172.1 PERIGEE = 2363.1 USA LAUNCHED 67/ 6/29 IN ORBIT
 APOGEE = 2452.5 INCL = 99.8

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39684	67/	7/	13	22	53	7.0	7.0	5.0	5.0			75.0	100.0	2500.	ONE SHORT FLASH OBS THEN LOST--	HK	73.6
WALNUT CREEK	39689	67/	7/	18	8	58	7.0	9.0	4.9	6.9	390.00		59.0	279.0	2602.	STEADY CYCLE	DFC	53.2

SDC NO. 2873 67-536
 PERIOD = 103.4 PERIGEE = 568.5 USA LAUNCHED 67/ 5/31 IN ORBIT
 APOGEE = 576.0 INCL = 69.9

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39740	67/	9/	7	2	11	4.0	7.0	4.1	7.1			32.0	300.0	944.		MM	128.8
STADE/ELBE	39961	68/	4/	15	20	59	7.0	9.0	8.0	10.0			73.0	140.0	630.	TUMR PER APPROX	HK	53.5
STADE/ELBE	39990	68/	5/	14	23	36	9.0	9.0	10.1	10.1			72.0	220.0	600.	ST TOGETH WITH 67 53 3	HK	58.3

SD68-629

SDC NO. 2874 67-53H PERIOD = 103.4 PERIGEE = 568.6 USA LAUNCHED 67/ 5/31 IN ORBIT
APDGE = 575.4 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39990	68/	5/14	22	53	8.0	9.0	9.1	10.1	70.0	55.0	600.	IRRES VAR OR FLASHING	--	HK	82.9		

SDC NO. 2877 67-65C TURNER 2 USA LAUNCHED 67/ 6/29 IN ORBIT
PERIOD = 172.1 PERIGEE = 2361.2 APDGE = 2452.5 INCL = 89.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39907	68/	2/21	3	34	9.0	9.0	7.1	7.1	77.0	86.0	2407.		--	MM	36.0		

SDC NO. 2890 67-71A USA LAUNCHED 67/ 7/25 IN ORBIT
PERIOD = 94.3 PERIGEE = 242.3 APDGE = 361.6 INCL = 75.1

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39727	67/	8/25	3	7	4.0	4.0	6.6	6.6	89.5	140.0	300.	STEADY	--	HK	80.0		
AUSTIN	39768	67/10/	5	1	20	3.0	5.2			60.0	105.0	362.	STBY	--	MM	45.6		
STADE/ELBE	39893	68/	2/	7	17	41	2.5	2.5	4.4	53.0	140.0	410.	ST	--	HK	60.8		
STADE/ELBE	39996	68/	5/20	21	5	2.7	2.7	4.7	4.7	63.0	140.0	400.	ST CLOUDS	--	HK	52.5		

SDC NO. 2893 67-72A OVI-86 USA LAUNCHED 67/ 7/27 IN ORBIT
PERIOD = 95.5 PERIGEE = 298.3 APDGE = 375.3 INCL = 101.7

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39706	67/	8/	24	22	41	7.5	7.5	8.4	8.4	28.0	250.0	660.	1967-72A	--	DMB	85.0	
STADE/ELBE	39707	67/	8/	5	21	1	5.5	9.0	7.7	11.2	87.0	260.0	355.	SLOWLY FLASHING	--	HK	78.6	
STADE/ELBE	39709	67/	9/	7	20	49	6.0	8.5	8.1	10.6	57.0	100.0	380.	SLOWLY VARYING	--	HK	54.8	
STADE/ELBE	39715	67/	8/13	21	20	5.5	9.0	8.0	11.5	45.0	260.0	320.	STEADY BUT SLOWLY FADING	--	HK	75.4		
HEIDELBERG	39913	68/	2/27	18	18	6.0	6.0	8.2	8.2	58.0	76.0	355.	ST	--	GLU	46.6		

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
HEIDELBERG	39914	68	2	28	18	6	6.8	6.8	8.5	8.5			39.0	81.0	460.	ST	--GLU	29.3
HEIDELBERG	39919	68	3	4	18	45	6.2	6.2	8.7	8.7			41.0	11.0	310.	VAR	--GLU	74.0
VAN NUYS-F	39949	68	4	3	3	23	6.0	8.0	7.3	9.3			35.0	99.0	540.	LONG FADE	--JGM	21.6

SDC NO. 2894 67-728
 PERIOD = 95.5
 ROCKET BODY USA LAUNCHED 67/ 7/27 IN ORBIT
 PERIGEE = 297.5 APOGEE = 374.7 INCL = 101.7

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
POYNTH	39699	67	7	28	21	44	5.6	5.6	7.4	7.4			63.0	221.0	430.	1967-72R	--DMB	74.6
STADE/ELBE	39709	67	8	7	20	49	6.0	8.5	7.7	10.2			57.0	100.0	450.	SLOWLY VARYING	--HK	54.8
STADE/ELBE	39866	68	1	11	16	57	5.5	6.0	7.0	7.5			65.0	260.0	500.	ST OCCAS SHORT VAR	--HK	101.9
VAN NUYS-F	39939	68	3	24	3	42	7.0	8.0	9.3	10.3	0.27		41.0	279.0	340.		--JGM	78.8
VAN NUYS-F	39949	68	4	3	4	10	6.5	6.7	8.6	8.8	0.30		64.0	285.0	380.	WHOLE TP TWICE THIS	--JGM	88.0
VAN NUYS-F	39950	68	4	4	3	52	5.2	5.5	7.3	7.6			64.0	103.0	380.	ST	--JGM	48.1
STADE/ELBE	39954	68	4	8	20	5	5.8	5.8	8.0	8.0			70.0	100.0	363.		--HK	56.6

SDC NO. 2897 67-72C
 PERIOD = 95.6
 ROCKET BODY USA LAUNCHED 67/ 7/27 IN ORBIT
 PERIGEE = 335.5 APOGEE = 344.2 INCL = 101.6

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORBS	PHASE
STADE/ELBE	39707	67	8	5	21	1	5.5	9.0	7.7	11.2	30.00		47.0	260.0	370.	SLOWLY FLASHING	--HK	79.6
STADE/ELBE	39924	68	3	9	18	51	6.0	6.5	8.3	8.8			75.0	260.0	340.	ST OCCAS FAINT VAR	--HK	88.8
STADE/ELBE	39951	68	4	5	19	48	6.5	6.5	8.4	8.4			75.0	260.0	410.	ST MORN	--HK	86.2
VAN NUYS-F	39955	68	4	9	3	26	6.0	6.0	7.8	7.8			48.0	101.0	440.		--JGM	34.6
CLEVELAND	39966	68	4	20	1	47	4.0	4.0	6.3	6.3			42.3	163.1	343.	STEADY	--DS	67.1

SDC NO. 2901 67-720 OVI-12 USA LAUNCHED 67/ 7/27 IN ORBIT
PERIOD = 95.6 PERIGEE = 336.8 APOGEE = 345.5 INCL = 101.6

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORR	PHASE
POYNTON	39699	67/	7/28	21	45	3	0	7.9	5.2	10.1			64.0	250.0	370.	1967-720. ONE VERY SHARP FL. THEN FADING RAPIDLY	--DMB	87.1
STADE/ELBE	39719	67/	8/17	21	35	1	5	8.5	3.5	10.5			80.0	260.0	400.	SLOWLY FLASHING BRIGHT MAX	--DMB	74.5
STADE/ELBE	39910	68/	2/24	18	34	5	5	8.0	7.2	9.7			53.0	260.0	450.	IRREG VAR	--HK	109.2
STADE/ELBE	39953	68/	4/7	19	54	7	0	8.0	6.2	10.2			65.0	260.0	370.	IRREG VAR MOON	--HK	92.9
VAN MUYS-F	39955	68/	4/9	3	51	7	5	8.0	9.7	10.2			71.0	285.0	160.		--JGM	89.8
WEIDELBERG	39966	68/	4/20	19	58	7	2	8.5	9.4	10.7			0.50	75.0	355.	IRREG FLASHES	--GLU	69.6
WEIDELBERG	39968	68/	4/22	19	43	7	4		9.1				0.40	45.0	465.	FLASHES OCCAS MIN INV	--GLU	50.4

SDC NO. 2909 67-53J USA LAUNCHED 67/ 5/31 IN ORBIT
PERIOD = 103.3 PERIGEE = 566.7 APOGEE = 574.1 INCL = 69.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORR	PHASE
STADE/ELBE	39725	67/	8/23	22	23	8	0	8.3	8.8	9.1			60.0	55.0	680.	STEADY OCCAS FLICKER	--HK	78.3
STADE/ELBE	39962	68/	4/16	20	35	8	5	8.5	9.4	9.4			63.0	140.0	670.	ST	--HK	45.1

SDC NO. 2920 67-80A USA LAUNCHED 67/ 8/23 IN ORBIT
PERIOD = 102.2 PERIGEE = 518.2 APOGEE = 554.3 INCL = 98.0

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORR	PHASE
STADE/ELBE	39734	67/	9/1	20	23	5	5	7.5	6.9	8.0			80.0	100.0	530.	FLASHING	--HK	64.2
POYNTON	39740	67/	9/7	21	14	4	9	7.3	6.2	8.6			90.0	0.0	550.	IRREG, TP EST 4 SECS	--DMB	59.6
POYNTON	39741	67/	9/8	21	5						4.18		70.0	140.0		ALTERNATE SHARP/BRAD MAXIMA	--DMB	50.9
STADE/ELBE	39755	67/	9/22	20	43	7	8		9.1				80.0	260.0	560.	FLASHING MIN INV MOON	--HK	88.3
STADE/ELBE	39760	67/	9/27	19	58	7	0		7.5				52.0	100.0	780.	FLASHING MIN INV	--HK	33.2
STADE/ELBE	39949	68/	4/3	20	52	5	5		6.7				77.0	260.0	580.	ONE SHARP FLASH SEEN THELOST	--HK	74.6
STADE/ELBE	39951	68/	4/5	20	35	8	5	8.5	9.8	9.8			83.0	100.0	560.	ST MOON SHORT ORR	--HK	64.0

SD68-629

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SDC NO. 2021 67-81A COSMOS 173 USSR LAUNCHED 67/ 8/24 DECEASED 12/17/67
PERIOD = 92.1 PERIGEE = 172.1 APGEE = 298.3 INCL = 71.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNON	39811	67/11/17	18	13	6.2	6.2	9.2	9.2	9.2	9.2	0.0	250.	55.0	0.0	250.		--DMB	70.9
HEIDELBERG	39814	67/11/20	19	9	4.8	4.8	8.0	8.0	8.0	8.0	0.0	225.	78.0	344.0	225.	ST	--GLU	51.8
HEIDELBERG	39815	67/11/21	19	19	5.4	5.4	7.8	7.8	7.8	7.8	0.0	325.	41.0	250.0	325.	ST	--GLU	98.2

SDC NO. 2022 67-81B ROCKET BODY USSR LAUNCHED 67/ 8/24 DECEASED 10/30/67
PERIOD = 92.1 PERIGEE = 176.5 APGEE = 292.0 INCL = 71.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNON	39776	67/10/13	18	32	1.2	3.0	4.3	6.1	6.1	6.1	0.27	240.	90.0	0.0	240.		--DMB	78.3
STADE/ELBE	39772	67/10/ 9	2	57	3.8	3.8	6.1	6.1	6.1	6.1	0.30	350.	50.0	55.0	350.	ST	--HK	135.4
STADE/ELBE	39776	67/10/13	18	32	4.0	5.0	5.2	6.3	6.3	6.3	0.30	550.	0.10	23.0	310.0	RAPID FLASHING	--HK	139.5

SDC NO. 2024 67-46F ROCKET BODY USSR LAUNCHED 67/ 5/17 IN ORBIT
PERIOD = 1171.0 PERIGEE = 217.5 APGEE = 37580.5 INCL = 51.6

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39687	67/ 7/16	3	51	10.0	10.0	5.6	5.6	5.6	5.6	50.0	50.0	50.0	50.0	7500.		--JGM	72.7
VAN NUYS-F	39687	67/ 7/16	4	3	10.8	10.8	5.8	5.8	5.8	5.8	43.0	48.0	48.0	48.0	10100.		--JGM	73.5
VAN NUYS-F	39687	67/ 7/16	4	22	11.7	11.7	6.1	6.1	6.1	6.1	39.0	48.0	48.0	48.0	13100.		--JGM	74.1
VAN NUYS-F	39695	67/ 7/24	7	36	11.7	12.0	6.2	6.5	6.5	6.5	66.0	360.0	12400.	66.0	4404.	STEADY	--JGM	78.2
AUSTIN	39700	67/ 7/29	3	47	8.5	5.3	5.3	5.3	5.3	5.3	45.0	294.0	4404.	45.0	5980.	SHORT TP	--JGM	85.3
VAN NUYS-F	39700	67/ 7/29	4	39	11.8	11.8	6.3	6.3	6.3	6.3	51.0	43.0	12600.	51.0	7040.	VARIABLE	--JGM	73.7
VAN NUYS-F	39717	67/ 8/15	5	54	11.0	6.3	6.3	6.3	6.3	6.3	45.0	309.0	7040.	45.0	11500.	SMALL FLSHS ABOUT 3SEC APART	--JGM	100.5
OCEANPORT	39718	67/ 8/16	1	15	10.0	6.5	6.5	6.5	6.5	6.5	59.5	286.5	5722.	59.5	6700.	FEW SEC TP	--GFG	78.7
VAN NUYS-F	39726	67/ 8/24	4	35	10.0	10.5	5.9	6.4	6.4	6.4	54.0	315.0	6700.	54.0	9170.		--JGM	101.3
VAN NUYS-F	39730	67/ 8/28	6	26	11.3	11.7	6.5	6.9	6.9	6.9	42.0	313.0	9170.	42.0	11600.		--JGM	95.3
VAN NUYS-F	39730	67/ 8/28	6	43	11.8	12.0	6.5	6.7	6.7	6.7	51.0	319.0	11600.	51.0	11600.		--JGM	83.1

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STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
OCEANPORT	39731	67	8	29	1	31	10.0		6.3				38.0	289.1	5553.		--GFG	119.2
VAN NUYS-F	39739	67	9	6	5	23	11.8	12.1	6.6	6.9			59.0	326.0	11200.	ABOUT 3 SEC TP	--JGM	83.9
VAN NUYS-F	39739	67	9	6	5	53	12.3	12.3	6.4	6.4			66.0	339.0	14900.		--JGM	72.5
OCEANPORT	39766	67	10	3	1	6	9.5		4.8				41.7	304.9	8640.		--GFG	109.6
VAN NUYS-F	39770	67	10	7	2	59	11.8		6.7				59.0	330.0	10600.	ROUGHLY 1 SEC TP	--JGM	90.7
OCEANPORT	39774	67	10	11	23	5	10.0		4.9				61.9	314.1	10500.		--GFG	100.9
OCEANPORT	39783	67	10	20	3	42	13.0		7.2				49.8	305.9	8247.		--GFG	107.9
VAN NUYS-F	39965	68	4	19	6	33	8.7	9.0	5.5	5.8			38.0	59.0	4320.		--GFG	90.4
VAN NUYS-F	39965	68	4	19	6	23	7.5	8.0	5.6	6.1			53.0	99.0	2450.		--JGM	69.3
VAN NUYS-F	39969	68	4	23	8	2	8.7	8.7	6.5	6.5			77.0	314.0	2770.		--JGM	55.8

SDC NO. 2925 67-82A COSMOS 174 USSR LAUNCHED 67/ 8/31 IN ORBIT
PERIOD = 715.0 PERIGEE = 267.2 APOGEE = 24728.0 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39740	67	9	7	6	53	10.5	10.5	5.6	5.6			51.0	242.0	9500.		--JGM	51.8
VAN NUYS-F	39744	67	9	11	5	52	11.3	11.3	6.0	6.0			65.0	253.0	11700.	PERHAPS SOME FLICKERING	--JGM	61.4
OCEANPORT	39766	67	10	3	1	24	10.0		4.8				54.3	308.9	10800.		--GFG	93.1
OCEANPORT	39766	67	10	3	1	51	11.0		5.3				63.8	310.4	14000.		--GFG	79.6
VAN NUYS-F	39911	68	2	25	4	13	8.9	8.9	4.4	4.4			54.0	78.0	7850.		--JGM	27.7
AUSTIN	39925	68	3	10	1	45	9.5		5.0				48.0	64.0	8100.		--MM	40.8

SDC NO. 2940 67-808 BURNER 2 USA LAUNCHED 67/ 8/23 IN ORBIT
PERIOD = 102.2 PERIGEE = 518.2 APOGEE = 554.3 INCL = 98.9

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39972	68	4	26	20	54	6.8	6.8	7.9	7.9			70.0	260.0	600.	ST	--MK	83.8

SDC NO. 2942 67-86A COSMOS 176 USSR LAUNCHED 67/ 9/12 DECEASED 3/ 3/68
PERIOD = 102.2 PERIGEE = 107.5 APOGEE = 963.1 INCL = 81.9

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39844	67/12/20	6	6	6.0	6.0	7.6	7.6	53.0	5.0	470.	ST					--	HK 69.4

SDC NO. 2959 67-86G FRAGMENT USSR LAUNCHED 67/ 9/12 DECEASED 4/ 2/68
PERIOD = 104.3 PERIGEE = 217.5 APOGEE = 981.8 INCL = 81.8

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39843	67/12/19	16	48	7.5	10.5			85.0	100.0	250.	SHARP SLOWLY FLASHES	MIN	INV--	HK	71.4		

SDC NO. 2965

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39844	67/12/20	17	11	7.5	7.5	8.0	8.0	60.0	100.0	810.	ST					--	HK 46.4
STADE/ELBE	39960	68/ 4/14	21	22	7.5	7.5	8.1	8.1	72.0	100.0	750.	ST					--	HK 56.9
STADE/ELBE	39971	68/ 4/25	20	54	8.0	8.0	8.8	8.8	89.0	260.0	690.	ST					--	HK 74.3

SDC NO. 2967 67-928 ALTAIR USA LAUNCHED 67/ 9/25 IN ORBIT
PERIOD = 106.8 PERIGEE = 646.2 APOGEE = 692.9 INCL = 89.3

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39833	67/12/ 9	19	2	7.2	7.7			15.80	0.40	60.0	279.0	780.	FLASHING	MIN	INV	--	GLU 95.9

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SDC NO. 2981 67-97A COSMOS 181 USSR LAUNCHED 67/10/11 RE-ENTERED 10/18/67
 PERIOD = 89.7 PERIGEE = 120.5 APOGEE = 203.2 INCL = 65.6
 STATION NAME MJD Y M D 1 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 POYNTON 39776 67/10/13 19 3 3.9 3.9 5.2 5.2 11.0 310.0 550. 67-97A --OBS PHASE
 --DMB 179.1

SDC NO. 2982 67-97B ROCKET BODY USSR LAUNCHED 67/10/11 DECAYED 10/19/67
 PERIOD = 89.2 PERIGEE = 116.8 APOGEE = 174.0 INCL = 65.6
 STATION NAME MJD Y M D 1 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 POYNTON 39778 67/10/15 18 20 0.1 0.1 3.6 3.6 45.0 100.0 200. 67-97B --OBS PHASE
 STADE/ELBE 39781 67/10/18 17 19 2.5 4.2 5.00 0.80 25.0 220.0 450. SHARP RIGHT FLASHES --DMB 35.4
 --HK 123.0

SDC NO. 2995 67-98A COSMOS 182 USSR LAUNCHED 67/10/16 RE-ENTERED 10/24/67
 PERIOD = 89.9 PERIGEE = 130.5 APOGEE = 205.1 INCL = 65.0
 STATION NAME MJD Y M D 1 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 POYNTON 39782 67/10/19 18 45 0.5 0.5 4.5 4.5 60.0 0.0 160. 67-98A --OBS PHASE
 --DMB 78.7

SDC NO. 2996 67-98B ROCKET BODY USSR LAUNCHED 67/10/16 DECAYED 10/24/67
 PERIOD = 87.7 PERIGEE = 126.8 APOGEE = 201.3 INCL = 65.0
 STATION NAME MJD Y M D 1 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 POYNTON 39782 67/10/19 18 30 1.2 4.5 42.0 40.0 220. 67-98B PERHAPS VARYING --OBS PHASE
 --DMB 52.7

SDC NO. 3000 67-100A NSD 4 USA LAUNCHED 67/10/18 IN ORBIT
PERIOD = 95.6 PERIGEE = 339.3 APOGEE = 348.0 INCL = 33.0
STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
VAN NUYS-F 39956 68/ 4/10 4 1 6.0 6.0 8.3 8.3 79.0 179.0 340. FIRST STEADY, THEN VARIABLE --JGM 54.8

SDC NO. 3004 67-100B ALTAR ROCKET USA LAUNCHED 67/10/18 IN ORBIT
PERIOD = 95.6 PERIGEE = 334.9 APOGEE = 352.3 INCL = 33.0
STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
AUSTIN 39907 68/ 2/21 1 32 6.0 7.5 8.1 9.6 64.0 351.0 381. --MM 78.3
VAN NUYS-F 39956 68/ 4/10 3 16 5.5 8.5 7.8 10.8 73.0 174.0 350. --JGM 71.5
VAN NUYS-F 39957 68/ 4/11 3 10 5.5 8.3 7.8 10.6 77.0 177.0 345. --JGM 75.0
VAN NUYS-F 39958 68/ 4/12 3 3 5.3 8.0 7.6 10.3 79.0 180.0 340. --JGM 77.6

SDC NO. 3005 67-101B LAUNCHER USSR LAUNCHED 67/10/22 DECEASED 11/ 7/67
PERIOD = 90.9 PERIGEE = 125.5 APOGEE = 275.3 INCL = 64.8
STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
POYNTON 39788 67/10/25 18 55 6.0 7.6 13.0 335.0 480. 67-101B PERHAPS VARIABLE --DMB 113.0
POYNTON 39792 67/10/29 18 7 4.4 8.4 60.0 50.0 160. 67-101B FAIRLY STEADY --DMB 53.6

SDC NO. 3006 67-101C FRAGMENT USSR LAUNCHED 67/10/22 DECEASED 11/ 3/67
PERIOD = 91.0 PERIGEE = 124.3 APOGEE = 273.4 INCL = 64.8
STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS --OBS PHASE
POYNTON 39788 67/10/25 18 39 6.0 7.7 15.0 350.0 450. 67-101C PERHAPS IN ECLIPSE --DMB 96.8
POYNTON 39792 67/10/29 17 25 3.2 3.2 5.2 5.2 18.0 50.0 400. 67-101C --DMB 2M.3
STADE/ELBE 39792 67/10/29 17 26 1.5 1.5 5.4 5.4 83.0 55.0 165. ST --HK 10.3
STADE/ELBE 39793 67/10/30 17 23 1.5 1.5 5.0 5.0 62.0 220.0 200. STEADY --HK 96.6

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SDC NO. 3008 67-101A MOLNIYA 1-7 USSR LAUNCHED 67/10/22 IN ORBIT
PERIOD = 717.0 PERIGEE = 316.9 APOGEE = 24730.5 INCL = 64.8

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39795	67/11/1	6	55	8.7	8.7	4.3	4.3					45.0	215.0	7520.		--JGM	39.2
VAN NUYS-F	39933	68/ 3/18	7	52	11.0	11.0	6.0	6.0					59.0	56.0	10100.		--JGM	54.8
VAN NUYS-F	39934	68/ 3/19	7	46	10.7	10.7	5.7	5.7					58.0	57.0	10200.		--JGM	54.9
VAN NUYS-F	39935	68/ 3/20	7	37	11.0	11.0	6.0	6.0					57.0	57.0	10200.		--JGM	54.9
VAN NUYS-F	39936	68/ 3/21	7	30	10.5	11.0	5.5	6.0					57.0	56.0	10200.	FLICKEPING	--JGM	54.8
VAN NUYS-F	39944	68/ 3/29	6	12	10.0	10.0	5.5	5.5					52.0	77.0	8100.		--JGM	41.6
VAN NUYS-F	39950	68/ 4/ 4	5	16	9.5	9.5	5.4	5.4					43.0	94.0	6580.		--JGM	27.7
VAN NUYS-F	39956	68/ 4/10	4	31	8.5	8.5	4.3	4.3					39.0	91.0	6800.		--JGM	28.3

SDC NO. 3010 67-102A COSMOS 184 USSR LAUNCHED 67/10/24 IN ORBIT
PERIOD = 97.2 PERIGEE = 372.8 APOGEE = 396.4 INCL = 91.2

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELRE	39825	67/12/1	4	48	7.0	7.0	7.5	7.5					28.0	100.0	400.	ST LOW ALT HAZE	--HK	131.4
AUSTIN	39907	68/ 2/21	1	54	4.5	4.5	6.5	6.5					73.0	78.0	405.		--MM	53.1
STADE/ELRE	39938	68/ 3/23	3	30	5.4	5.4	7.1	7.1					70.0	100.0	450.	ST	--HK	90.3
STADE/ELRE	39972	68/ 4/26	22	28	5.5	5.5	6.8	6.8					57.0	100.0	550.	ST	--HK	59.2
STADE/ELRE	39990	68/ 5/14	20	50	6.7	6.7	7.8	7.8					42.0	260.0	600.	ST OCCAS FAINT SHORT FLASHES	--HK	103.8

SDC NO. 3011 67-102B ROCKET BODY USSR LAUNCHED 67/10/24 IN ORBIT
PERIOD = 97.4 PERIGEE = 385.2 APOGEE = 402.6 INCL = 91.2

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELRE	39844	67/12/20	17	4	5.0	5.0	6.7	6.7					57.0	260.0	450.	RAPID FLASHING	--HK	106.3
AUSTIN	39907	68/ 2/21	2	0	5.5	7.0	7.8	9.3					81.0	79.0	345.		--MM	59.6
STADE/ELRE	39966	68/ 4/20	23	28	5.0	7.5	6.5	8.0					65.0	100.0	500.	FLASHING SEC MAX	--HK	34.5
STADE/ELRE	39979	68/ 5/ 3	22	42	6.5	7.4							35.0	260.0	650.	FLASHING MIN INV	--HK	78.2

SDC NO. 3013 67-104A COSMOS 185 USSR LAUNCHED 67/10/27 IN ORBIT
PERIOD = 98.7 PERIGEE = 321.9 APOGEE = 542.5 INCL = 64.1

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39798	67/11/	4	6	5	2.4	5.4	3.7	6.7		2.19		47.0	320.0	550.	67-104A SHARP FLASHES, BROAD WHEN LOW IN NE	--DMB	49.0
STADE/ELBE	39801	67/11/	7	4	36	3.0	7.5	4.3	8.8		3.80	0.40	45.0	310.0	550.	FLASHING	--HK	41.0
STADE/ELBE	39863	68/1/8	17	21	3.5	7.5	5.4	9.4			2.80		80.0	55.0	420.	FLASHING SEC MAXIMA	--HK	53.9
STADE/ELBE	39864	68/1/9	17	55	39864	4.0	8.0	5.1	9.1		2.74		50.0	220.0	600.	FLASHING SEC MAX MOON	--HK	99.7
STADE/ELBE	39866	68/1/11	17	19	4.5	8.0	5.8	9.3			2.75		50.0	220.0	550.	FLASHING MOON	--HK	107.4
STADE/ELBE	39881	68/1/26	5	5	3.8		4.8				7.00		23.0	140.0	630.	BRIGHT FLASHES SEC MAX MIN INV	--HK	119.5
POYNTON	39883	68/1/28	6	10							13.70		55.0	180.0		PERIOD BETWEEN FL	--DMB	81.8
HEIDELBERG	39923	68/3/8	18	14	2.5	5.5	4.8	7.8			7.70		73.0	63.0	350.	FLASHING	--GLU	65.9
HEIDELBERG	39927	68/3/12	18	30	3.7	6.5	4.6	7.4			7.60		27.0	330.0	670.	FLASHES MOON	--GLU	117.1
HEIDELBERG	39934	68/3/19	19	25	4.0	5.5	5.0	6.5			4.20		36.0	35.0	630.	FLASHING	--GLU	69.1
HEIDELBERG	39934	68/3/19	21	16	6.4		6.7				7.50		21.0	358.0	980.	FLASHING MIN INV	--GLU	114.1
STADE/ELBE	39944	68/3/29	20	9	4.5	6.0	6.0	7.5			4.30		45.0	220.0	500.	TUMB	--HK	78.7
HEIDELBERG	39945	68/3/30	18	54	3.2	3.2	4.0	4.0					34.0	82.0	480.	ST	--GLU	34.1
STADE/ELBE	39991	68/5/15	0	24	2.8	7.5	5.1	9.8			6.40	1.50	80.0	310.0	340.	FLASHING SEC MAX	--HK	78.0
VAN NUYS-F	40001	68/5/25	4	37	2.7	4.0	4.7	6.0			9.96		50.0	290.0	400.	4 MAX / WHOLE CYCLE, WHOLE TP	--JGW	108.7
VAN NUYS-F	40002	68/5/26	4	54	4.8	9.0	5.9	10.1					28.0	308.0	600.	COMPLEX VARIATION, EXTRA MAX	--JGW	130.7
VAN NUYS-F	40003	68/5/27	3	30	4.0	4.5	5.7	6.2					40.0	119.0	460.		--JGW	33.1

SDC NO. 3019 67-104R ROCKET BODY USSR LAUNCHED 67/10/27 IN ORBIT
PERIOD = 98.6 PERIGEE = 316.9 APOGEE = 543.1 INCL = 64.1

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39798	67/11/	4	5	57	2.6	4.0	4.1	5.5	4.10		50.0	320.0	500.		67-104R	--DMB	50.6
STADE/ELBE	39944	68/3/29	19	25	3.5	7.5	4.8	8.8	4.46			65.0	55.0	550.		FLASHING	--HK	65.5
VAN NUYS-F	40002	68/5/26	4	41	3.0		4.7		7.14			40.0	80.0	460.			--JGW	50.4

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SDC NO. 3021 67-108A
 PERIOD = 95.6 PERIGEE = 325.6
 COSMOS 189
 LAUNCHED 67/10/30 IN ORBIT
 APGEE = 351.1 INCL = 74.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
HEIDELBERG	39913	68/	2/27	19	20	4.9	4.9	6.7	6.7	6.7	56.0	310.0	470.	ST		--GLU	98.1	
HEIDELBERG	39914	68/	2/28	19	13	7.0	7.0	8.7	8.7	8.7	49.0	310.0	460.	ST		--GLU	105.5	
HEIDELBERG	39919	68/	3/ 4	18	46	6.2	6.2	6.7	6.7	6.7	22.0	330.0	790.	ST		--GLU	117.5	
HEIDELBERG	39923	68/	3/ 8	18	24	7.8	7.8	7.8	7.8	7.8	15.0	331.0	985.	ST	MOON	--GLU	119.6	
STADE/ELBE	39952	68/	4/ 6	20	32	6.0	6.0	7.8	7.8	7.8	47.0	220.0	440.	ST	MOON	--HK	73.1	
VAN NUYS-F	39965	68/	4/19	3	21	8.0	8.0	9.6	9.6	9.6	42.0	254.0	480.			--JGM	116.2	

SDC NO. 3023 67-108B
 PERIOD = 95.8 PERIGEE = 333.1
 ROCKEY BODY
 LAUNCHED 67/10/30 IN ORBIT
 APGEE = 359.2 INCL = 74.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39802	67/11/	8	17	25	2.5	5.5	4.8	7.8	1.20	0.30	89.0	55.0	345.	FLASHING	--HK	71.6	
STADE/ELBE	39807	67/11/13	17	27	4.5	5.4	5.4	5.4	5.4	1.00	0.70	35.0	310.0	450.	FLASHING MIN INV	--HK	111.3	
POYNTON	39808	67/11/14	18	56	6.0	5.0	5.0	5.0	5.0	1.00	15.0	320.0	1050.	67-108B SHARP FLASHES	--DMB	118.6		
STADE/ELBE	39907	68/ 2/21	4	12	5.5	6.0	6.0	6.0	6.0	1.70	22.0	55.0	900.	FLASHING MIN INV	--HK	130.7		
AUSTIN	39913	68/ 2/27	1	53	4.0	4.5	5.7	6.2	6.2	1.60	52.0	290.0	448.		--MM	106.9		
STADE/ELBE	39917	68/ 3/ 2	19	19	4.5	5.4	5.4	9.4	9.4	2.50	30.0	310.0	650.	SHARP FLASHES MIN INV	--HK	124.6		
STADE/ELBE	39952	68/ 4/ 6	20	30	3.0	7.5	4.9	9.4	9.4	2.50	50.0	220.0	420.	FLASHING MOON	--HK	73.0		
VAN NUYS-F	39965	68/ 4/19	3	45	6.0	6.7	6.7			2.50	24.0	257.0	720.	MIN UNDER +9.5	--JGM	124.9		

SDC NO. 3025 67-109A
 PERIOD = 94.4 PERIGEE = 282.7
 CAPSULE
 LAUNCHED 67/11/ 2 IN ORBIT
 APGEE = 325.6 INCL = 91.7

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39862	68/ 1/ 7	17	30	3.5	4.8	4.8	8.4	8.4	1.10	20.0	310.0	550.	BRIGHT FLASHES MIN INV	--HK	109.6		
POYNTON	39862	68/ 1/ 7	17	30	5.1	6.1	7.4	8.4	8.4	0.58	40.0	160.0	350.	SOME FL, OTHERWISE 5.7 - 6.1	--DMB	11.1		
STADE/ELBE	39862	68/ 1/ 7	17	31	6.5	7.9	7.9	9.4	9.4	0.58	25.0	340.0	530.	FLASHES MIN INV	--HK	84.9		
STADE/ELBE	39863	68/ 1/ 8	17	4	6.0	7.5	7.0	9.4	9.4	0.50	53.0	260.0	420.	FLICKERING	--HK	112.3		
STADE/ELBE	39863	68/ 1/ 8	17	5	3.8	5.5	5.5			0.50	45.0	335.0	450.	BRIGHT FLASHES MIN INV	--HK	94.6		

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
AUSTIN	39925	68	3	10	2	4	6.5	7.0	8.5	9.0			43.0	6.0	390.		--MM	77.3

SDC NO. 3030 67-111R AGENA D USA LAUNCHED 67/11/5 IN ORBIT
PERIOD = 626.0 PERIGEE = 111.8 APOGEE = 22058.6 INCL = 28.4

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
GRANBY	39828	67	12	4	22	50	7.0	4.8	4.8	2.50			46.0	197.0	2785.	FLASHING	--MPC	98.8
VAN NUYS-F	39839	67	12	15	1	39	6.0	8.5	4.2	6.7			55.0	201.0	2300.	FIRST STEADY, THEN FLASHES OF INCREASING BRIGHTNESS ABOUT 12 SEC APART	--JGM	102.6

SDC NO. 3043 67-115A COSMOS 191 USSR LAUNCHED 67/11/21 DECEASED 3/ 2/68
PERIOD = 92.2 PERIGEE = 165.9 APOGEE = 308.8 INCL = 71.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39843	67	12	19	17	19	5.5	5.5	8.5	8.5			75.0	220.0	250. ST		-- HK	83.7

SDC NO. 3044 67-115B ROCKET BODY USSR LAUNCHED 67/11/21 DECEASED 1/14/68
PERIOD = 91.9 PERIGEE = 167.8 APOGEE = 293.3 INCL = 71.0

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
STADE/ELBE	39843	67	12	19	17	26	4.0	4.5	6.3	6.8	0.25		47.0	220.0	350. RAPID FLASHING		-- HK	105.5

SDC NO. 3047 67-116A COSMOS 192 USSR LAUNCHED 67/11/23 IN ORBIT
PERIOD = 99.8 PERIGEE = 464.2 APOGEE = 472.9 INCL = 74.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39853	67/12/29	18	17	5.5	6.1	0.40	35.0	35.0	750.	2 FLASHES OTHERWISE INVISIBL	--DMB	40.0					
POYNTON	39855	67/12/31	18	35	3.5	5.0	3.58	60.0	90.0	520.	MAXIMA OF 1 OR 2 CLOSE FLASH	--DMB	38.8					
STADE/ELRE	39927	68/ 3/12	4	34	5.5	7.1	2.1	88.0	55.0	480.	FLASHING	--HK	80.6					
STADE/ELBE	39930	68/ 3/15	18	47	4.5	9.0	3.30	73.0	125.0	500.	FLASHING WITH UNEQUAL MAXIMA	--HK	51.5					
CLEVELAND	39975	68/ 4/29	2	28	4.0	5.4	7.4	61.8	250.3	530.	INSTANTANEOUS TWO MAG FLASH	--DS	93.1					
VAN NUYS-F	39977	68/ 5/ 1	4	25	5.0	6.5	87.0	73.0	470.			--JGW	67.5					

SDC NO. 3048 67-116B ROCKET BODY USSR LAUNCHED 67/11/23 IN ORBIT
PERIOD = 99.8 PERIGEE = 463.5 APOGEE = 472.2 INCL = 74.0

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39853	67/12/29	18	40	3.5	4.5	4.6	5.6	50.0	45.0	600.	TP FST 2.0 +/- 0.3				--DMB	39.2	
STADE/ELRE	39855	67/12/31	17	17	3.5	4.5	4.4	5.4	35.0	55.0	450.	TIJMA				--HK	24.7	
POYNTON	39855	67/12/31	18	50	3.0	3.0	4.4	4.4	60.0	160.0	520.					--DMB	60.9	
STADE/FLRE	39927	68/ 3/12	3	56	4.8	9.0	5.6	9.8	0.60	45.0	55.0	SHARP FLASHES				--HK	115.3	
STADE/ELBE	39930	68/ 3/24	18	39	6.5	7.0	3.33	27.0	310.0	800.	FLASHING MIN INV NOT DARK				--HK	136.8		
VAN NUYS-F	39975	68/ 4/29	3	59	5.5	7.5	5.8	7.8	28.0	64.0	840.	TP ABOUT 4 SEC				--JGW	53.4	
VAN NUYS-F	39977	68/ 5/ 1	4	15	3.7	4.5	5.2	6.0	69.0	69.0	500.					--JGW	60.1	

SDC NO. 3057 67-120A OV3-6 USA LAUNCHED 67/12/ 5 IN ORBIT
PERIOD = 93.1 PERIGEE = 256.0 APOGEE = 272.8 INCL = 90.7

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
POYNTON	39832	67/12/ 8	17	32	6.0	9.0	40.0	280.0	400.	67-120A TO FST 0.7 MINIMUM BELOW 8.5						--DMB	119.5	

SDC NO. 3059 67-120R PERIOD = 93.0 M 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE DECEYED 4/ 8/68
LAUNCHED 67/12/ 5 APOGEE = 270.9 INCL = 90.6

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNTON	39832	67/12/ 8	17	32	7.5	9.5	40.0	280.0	400.	67-120R ONLY 2 FLASHES, THEN--DMB INVISIBLE BELOW 8.5	--DMB	119.5						

SDC NO. 3074 67-125A PERIOD = 95.4 M 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE IN ORBIT
LAUNCHED 67/12/19 APOGEE = 534.4 INCL = 48.8

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
WEIDELBERG	39875	68/ 1/20	17	0	5.2	6.5	5.8	7.1	9.20	38.0	122.0	760.	VAR	TP +/- 1SEC, MAX SHARP FLASH	--GLU	54.4		
GRANBY	39875	68/ 1/20	23	20	5.5	7.0	6.6	8.1	16.00	56.0	343.0	590.	VAR	TP +/- 1SEC, MAX SHARP FLASH	--MPC	78.7		
WEIDELBERG	39876	68/ 1/21	18	22	5.4	6.7	6.0	7.3	9.10	39.0	89.0	745.	VAR	TP +/- 1SEC, MAX SHARP FLASH	--GLU	16.9		
GRANBY	39876	68/ 1/21	23	2	5.5	7.0	6.6	8.1	19.30	55.0	343.0	600.	IRREGULAR MIN	TPREG, NO FL	--MPC	80.2		
POYNTON	39878	68/ 1/23	19	21	6.1	7.1	7.2	8.2		55.0	180.0	600.	TPREG, NO FL		--DMB	70.1		
EDINBURG	39885	68/ 1/30	1	22	9.0	9.0	8.7	8.7		18.0	28.3	1145.	NO APPARENT MAG CHANGE		-- PM	46.9		

SDC NO. 3075 67-125R PERIOD = 95.2 M 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE DECEYED 2/20/68
LAUNCHED 67/12/19 APOGEE = 522.6 INCL = 48.8

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
GRANBY	39876	68/ 1/21	23	21	7.5	8.5	9.5	10.5	0.36	40.0	350.0	400.	VARVING	TP +/- 0.02	--MPC	77.8		
POYNTON	39878	68/ 1/23	18	51	4.0	5.0	6.3	7.3	0.34	50.0	140.0	350.	TP +/- 0.02		--DMB	78.4		
POYNTON	39883	68/ 1/28	18	2						40.0	140.0					--DMB	102.6	
EDINBURG	39891	68/ 2/ 5	1	19	5.0	5.6	20.6	228.6	774.	FAST FLASHING, TYPICAL COS RKT-- PM	--PM	134.3						

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SDC NO. 3081 67-127A COSMOS 198 USSR LAUNCHED 67/12/27 IN ORBIT
PERIOD = 89.7 PERIGEE = 154.7 APOGEE = 167.8 INCL = 65.1

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNON	39862	68/	1/	7	18	56	6.7	7.1	7.1	6.80	40.0	30.0	930.	MIN BELOW 7.7		--DMB	47.9
POYNON	39864	68/	1/	9	19	13	6.4	7.1	7.1	6.80	50.0	10.0	720.	MIN BELOW 8		--DMB	52.4
STADE/ELBE	39866	68/	1/11	17	48	5.5	6.5	6.2	7.2	4.00	50.0	55.0	720.	TIME DEP APPDY		--HK	35.9
VAN NUYS-F	39872	68/	1/17	3	15	6.7	6.7	7.4	7.4		48.0	349.0	740.	WAYRE VARIABLE		--JGM	77.5
VAN NUYS-F	39875	68/	1/20	3	45	7.0	7.0	7.0	7.0	6.91	30.0	248.0	1010.			--JGM	115.0
VAN NUYS-F	39876	68/	1/21	2	7	6.0	5.3	6.9	7.2		60.0	56.0	570.			--JGM	50.0
HEIDELBERG	39876	68/	1/21	17	36	5.3	6.5	6.0	7.2	6.90	54.0	250.0	720.	VAP		--GLU	110.7
GRANBY	39876	68/	1/21	22	47	5.0	6.5	7.1	7.6		87.0	58.0	596.	VAPYING		--MPC	75.4
VAN NUYS-F	39878	68/	1/23	2	24	7.0	10.0	7.9	10.9	6.87	60.0	243.0	670.			--JGM	104.1
VAN NUYS-F	39879	68/	1/24	2	35	7.0	7.0	7.3	7.3	6.87	38.0	246.0	800.	MINIMA UNDER +9.5		--JGM	126.2
EDINBURG	39881	68/	1/26	1	11	8.0	8.5	9.1	9.6		31.3	247.3	590.	TIMELE SLOW, VARIATION		--PM	118.1

SDC NO. 3093 68-2A EXPLORER 26 USA LAUNCHED 68/ 1/11 IN ORBIT
PERIOD = 112.2 PERIGEE = 573.5 APOGEE = 979.9 INCL = 105.8

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
POYNON	39878	68/	1/23	17	59	7.4	7.4	7.3	7.3		55.0	90.0	1030.		1988-02A	--DMB	44.3
VAN NUYS-F	39881	68/	1/26	3	51	8.0	8.0	7.8	7.8		47.0	240.0	1110.		ST	--JGM	97.2
STADE/ELBE	39881	68/	1/26	17	6	7.5	7.5	7.6	7.6		40.0	55.0	950.			--HK	50.8
STPETERSBURG	39882	68/	1/27	0	26	6.5	6.5	6.7	6.7		58.4	77.2	900.			--FK	40.6
GRANBY	39882	68/	1/27	0	30	8.0	8.0	7.9	7.9		50.0	277.0	1050.	STEADY		--MPC	101.2
EDINBURG	39882	68/	1/27	2	13	8.0	8.0	7.5	7.5		40.0	180.0	1285.	GENS-B, NO VAR		--PM	78.7
EDINBURG	39882	68/	1/27	2	16	7.0	7.0	7.1	7.1		68.0	238.0	940.	ST AS PERVERTIAL POKK		--PM	82.3
STPETERSBURG	39883	68/	1/28	0	44	5.0	5.0	5.2	5.2		77.3	60.8	900.			--FK	55.1
STPETERSBURG	39885	68/	1/30	1	25	7.0	7.0	0.0	0.0						ONE 4-LAMP FLASH SEEN, GENS-R	--FK	45.7
EDINBURG	39899	68/	2/13	2	13	4.0	4.0	4.3	4.3		70.9	86.0	858.			--PM	54.3
STADE/ELBE	39902	68/	2/16	1	20	7.0	7.0	7.5	7.5		78.1	49.8	900.	FAINT VAR MOST ST		--FK	57.9
GRANBY	39905	68/	2/19	0	31	7.0	7.5	7.6	8.1		85.0	198.0	770.	VA NOT YENDY LAMPS		--HK	57.3
GRANBY	39906	68/	2/20	0	50	7.5	8.0	8.0	8.5		67.0	269.0	310.	VA NOT YENDY LAMPS		--MPC	85.5
STPETERSBURG	39907	68/	2/21	1	5	7.0	7.0	0.0	0.0		74.5	54.1	845.			--FK	54.9
AUSTIN	39907	68/	2/21	2	57	8.0	8.0	8.3	8.3		61.0	254.0	845.			--MM	83.2

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
EDINBURG	39907	68/	2/	21	3	0	5.0		4.6				32.7	325.7	1225.	JUST FLASHES SPOTTED, 2 FOUR- LAMP FL SEEN VISUALLY, 2 OPT	PM	97.6
STPETERSBURG	39909	68/	2/	23	1	44	7.0	7.0	0.0	0.0			290.9	83.3		VA	--FK	52.1
GRANBY	39910	68/	2/	24	0	17	7.2	7.8	7.7	8.3			69.0	65.0		ST ONE SHORT FLASH MAG 6.5	--MPC	92.8
STADE/ELBE	39910	68/	2/	24	19	2	8.0	8.0	8.5	8.5			65.0	260.0		VA, XENON FLASHES AT 6.5	--HK	72.8
GRANBY	39912	68/	2/	26	0	55	7.5	8.0	8.1	8.6			71.0	219.0		VA XENON FLASHES AT 6.5	--MPC	101.6
GRANBY	39913	68/	2/	27	1	16	8.0	8.0	8.2	8.7			48.0	292.0		VA XENON FLASHES AT 6.5	--MPC	77.7
AUSTIN	39913	68/	2/	27	3	3	7.5	7.5	8.0	8.0			66.0	254.0		FLASHES	--MM	33.4
HEIDELBERG	39913	68/	2/	27	18	8	5.7	7.5	5.8	7.6		4.24	0.30	82.0	940.	FLAMES	--GLU	43.7
HEIDELBERG	39914	68/	2/	28	18	28	6.6	6.6	7.0	7.0			57.0	82.0		SLOWLY FLARE	--GLU	74.0
HEIDELBERG	39916	68/	3/	1	19	6	6.4	6.4	7.1	7.1			85.0	321.0		ST	--GLU	99.1
STADE/ELBE	39917	68/	3/	2	19	26	8.3	8.3	8.5	8.5			55.0	260.0		ST	--HK	31.8
HEIDELBERG	39919	68/	3/	4	18	13	7.2	7.2	7.2	7.2			41.0	82.0		ST	--GLU	96.6
STPETERSBURG	39923	68/	3/	8	2	34	7.0	7.0	0.0	0.0			43.1	297.2		ST MOON	--FK	85.9
HEIDELBERG	39923	68/	3/	8	19	31	6.5	6.5	7.2	7.2			72.0	283.0			--GLU	50.6
STPETERSBURG	39925	68/	3/	10	1	22	7.0	7.0	0.0	0.0			38.2	40.6			--FK	86.0
AUSTIN	39925	68/	3/	10	3	15	7.5	7.5	7.9	7.9			55.0	320.0		ST OCAS FLASHES .5 SEC MOON	--MM	51.1
HEIDELBERG	39927	68/	3/	12	18	57	6.5	6.5	7.1	7.1			64.0	80.0			--GLU	82.6
STPETERSBURG	39933	68/	3/	18	2	8	8.0	8.0	0.0	0.0			30.0	7.2		.5 SEC FLASH EA 3 SEC	--FK	41.8
STPETERSBURG	39934	68/	3/	19	2	27	3.0	8.0	0.0	0.0		3.00	0.50			IRREG FLASHES	--GLU	73.1
HEIDELBERG	39945	68/	3/	30	19	10	6.0	7.5	6.3	7.8			0.30	46.0	880.	IRREG FLASHES	--GLU	93.1
HEIDELBERG	39966	68/	4/	20	20	24	7.2	8.0	7.9	8.7			0.60	85.0	710.	TWO FLASHES	--GLU	53.6
HEIDELBERG	39968	68/	4/	22	21	3	7.0	8.5	7.5	9.0		3.70	0.20	58.0	910.		--FK	
STPETERSBURG	39972	68/	4/	26	3	34	8.0	8.0	0.0	0.0			25.0	80.0				

SDC NO. 3094 68-2P ALTAR ROCKET USA LAUNCHED 68/ 1/11 IN ORBIT
PERIOD = 112.2 PERIGEE = 674.2 APOGEE = 978.7 INCL = 105.8

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE	
HEIDELBERG	39875	68/	1/	20	18	43	8.0	8.0	8.0	8.0		2.00	0.50	54.0	250.0	1010.	FLASHES MIN INV PER APPROX	--GLU	98.3
PHYNTON	39878	68/	1/	23	17	51	8.4	9.9	8.4	9.9		5.10	53.0	90.0	1010.	1969-02R	--DMB	43.9	
AUSTIN	39913	68/	2/	27	2	30	7.5	8.0	8.0	8.0		5.00	72.0	69.0	780.		--MM	47.2	
VAN NUYS-F	39949	68/	4/	3	4	26	6.7	10.0	7.1	10.4		5.90	51.0	64.0	940.		--JGW	47.0	

SD68-629

SUC NO. 3096 68-38 PERIOD = 90.1 PERIGEE = 126.8 APOGEE = 226.2 INCL = 63.6
 LAUNCHED 68/ 1/16 DECEASED 1/25/68
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS OBS PHASE
 PONTON 39878 68/ 1/23 17 33 0.5 1.0 3.7 4.2 2.90 30.0 40.0 230. TP +/- 0.3 --DMS 34.4

SUC NO. 3097 68-4A PERIOD = 94.5 PERIGEE = 279.5 APOGEE = 320.3 INCL = 75.2
 LAUNCHED 68/ 1/17 IN ORBIT
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS OBS PHASE
 STADE/ELBE 39906 68/ 2/20 18 38 4.7 4.7 7.0 7.0 220.0 350. ST HAZE -- HK 123.8
 HEIDELBERG 39966 68/ 4/20 20 52 6.8 9.1 2.90 0.40 74.0 58.0 310. FLASHES MIN INV --GLU 68.3
 HEIDELBERG 39968 68/ 4/22 20 4 7.3 9.1 3.00 0.50 42.0 80.0 430. FLASHES MIN INV --GLU 50.9
 STADE/ELBE 39995 68/ 5/19 0 15 5.0 9.0 6.8 10.8 46.0 55.0 430. VAR -- HK 108.0

SUC NO. 3099 68-3A PERIOD = 90.1 PERIGEE = 125.5 APOGEE = 224.9 INCL = 65.6
 LAUNCHED 68/ 1/16 DECEASED 2/ 1/68
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS OBS PHASE
 PONTON 39878 68/ 1/23 18 33 2.0 3.5 5.3 6.8 35.0 260.0 220. COMPLEX VARN. TP EST 5 SECS --DMS 127.5

SUC NO. 3100 68-6A PERIOD = 95.2 PERIGEE = 325.0 APOGEE = 332.7 INCL = 74.0
 LAUNCHED 68/ 1/19 IN ORBIT
 STATION NAME MJD Y M D 4 M MAX MIN AMAX AMIN PERIOD FLASH ALT A7 RANGE COMMENTS OBS PHASE
 STADE/ELBE 39894 68/ 2/ 8 4 0 5.5 5.5 7.5 7.5 400. ST -- HK 88.4
 STADE/ELBE 39990 68/ 5/14 23 27 3.3 3.3 5.3 5.3 62.0 140.0 400. ST -- HK 53.3

SDC NO. 3101 68-48
 PERIOD = 94.6 PERIGEE = 287.7 APOGEE = 331.8 INCL = 75.1
 USA LAUNCHED 68/ 1/17 DECAYED 3/20/68
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 STADE/ELBE 39906 68/ 2/20 19 9 7.0 7.5 9.7 10.2 78.0 260.0 285. ST OCCAS. FAINT VARYING -- HK 89.0
 HEIDELBERG 39912 68/ 2/26 17 53 8.0 8.0 9.1 9.1 22.0 278.0 615. ST --GLU 147.0

SDC NO. 3102 68-68
 PERIOD = 95.0 PERIGEE = 310.1 APOGEE = 335.5 INCL = 74.0
 USSR LAUNCHED 68/ 1/19 IN ORBIT
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 PONTON 39879 68/ 1/24 6 51 6.0 7.0 6.0 7.5 20.0 50.0 900. --DMB 115.2
 STADE/ELBE 39902 68/ 2/16 18 25 5.5 5.5 0.47 0.47 0.20 35.0 310.0 580. SHARP FLASHES MIN INV -- HK 115.7

SDC NO. 3129 68-11A
 PERIOD = 109.2 PERIGEE = 737.0 APOGEE = 750.5 INCL = 74.1
 COSMOS 203
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 HEIDELBERG 39934 68/ 3/19 20 14 6.0 7.5 5.3 6.8 5.00 0.20 27.0 37.0 1360. FLASHES --GLU 75.3

SDC NO. 3131 68-11B
 PERIOD = 109.3 PERIGEE = 738.8 APOGEE = 748.1 INCL = 74.1
 USSR LAUNCHED 68/ 2/20 IN ORBIT
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS OBS PHASE
 STADE/ELBE 39926 68/ 3/11 22 53 4.0 5.5 4.5 6.0 60.0 335.0 900. PER TUMB -- HK 80.3
 HEIDELBERG 39934 68/ 3/19 20 27 4.8 5.2 4.3 4.7 30.0 32.0 1260. VAP --GLU 79.9

SDC NO. 3137 68-128 ALTAR USA LAUNCHED 68/ 3/ 2 IN ORBIT
 PERIOD = 107.0 PERIGEE = 639.4 APOGEE = 710.8 INCL = 90.0
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 WEIDELBERG 39927 68/ 3/12 19 0 6.5 7.2 2.00 0.50 71.0 283.0 710. FLASHING PER APPROX NOON --OBS PHASE
 --GLU 92.9

SDC NO. 3143 68-158 ROCKET BODY USSR LAUNCHED 68/ 3/ 5 IN ORBIT
 PERIOD = 95.7 PERIGEE = 172.1 APOGEE = 516.2 INCL = 71.0
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 VAN NUYS-F. 39991 68/ 5/15 3 38 1.8 3.0 4.3 5.5 0.53 61.0 112.0 320. --OBS PHASE
 --JGW 51.3

SDC NO. 3146 68-178 ALTAR ROCKET USA LAUNCHED 68/ 3/ 5 IN ORBIT
 PERIOD = 98.7 PERIGEE = 319.4 APOGEE = 548.0 INCL = 59.4
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 STADE/ELBE 39942 68/ 3/27 3 39 6.2 7.0 1.30 54.0 359.0 700. SHARP FLASHES MIN INV -- HK 91.9
 STADE/ELBE 39962 68/ 4/16 20 21 6.5 8.5 7.3 9.3 1.42 45.0 5.0 700. FLASHING -- HK 103.7

SDC NO. 3150 68-19A COSMOS 206 USSR LAUNCHED 68/ 3/14 IN ORBIT
 PERIOD = 97.1 PERIGEE = 371.6 APOGEE = 397.7 INCL = 81.2
 STATION NAME MJD Y M D H M MAX MIN AMAX AMIN PERIOD FLASH ALT AZ RANGE COMMENTS
 WEIDELBERG 39943 68/ 3/28 20 15 4.6 4.6 6.2 6.2 53.0 281.0 490. ST
 WEIDELBERG 39945 68/ 3/30 19 10 4.2 4.4 5.7 5.9 51.0 80.0 490. IPREG VAR

SDC NO. 3151		68-19R		ROCKET BODY		USSR		LAUNCHED 68/ 3/14		IN ORBIT							
PERIOD =		97.3		PERIGEE =		338.0		APOGEE =		442.4							
INCL =		91.2															
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
HEIDELBERG	39943	68/ 3/28	19	18	7.2	7.2	8.3	8.3	31.0	82.0	615.	ST ONE FLASH 4 MAG					--GLU 32.9
HEIDELBERG	39945	68/ 3/30	19	55	6.1	6.1	8.3	8.3	68.0	289.0	370.	ST OCCAS FLASHES MAG 3.5					--GLU 92.1

SDC NO. 3153		68-20R		CAPSULE		USA		LAUNCHED 68/ 3/14		IN ORBIT							
PERIOD =		94.7		PERIGEE =		298.0		APOGEE =		324.4							
INCL =		93.1															
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	39972	68/ 4/26	21	7	7.5	9.5	10.5	0.70	65.0	260.0	400.	SHORT FLASHES					--HK 84.2

SDC NO. 3158		68-23A		COSMOS 209		USSR		LAUNCHED 68/ 3/22		IN ORBIT							
PERIOD =		89.7		PERIGEE =		113.7		APOGEE =		249.8							
INCL =		65.0															
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	39939	68/ 3/24	19	52	5.5	5.5	6.6	6.6	85.0	55.0	590.	ST					--HK 59.1
STADE/ELBE	39994	68/ 5/18	23	29	6.5	6.5	7.4	7.4	68.0	140.0	650.	ST					--HK 58.0

SDC NO. 3174		68-26R		NVI-14		USA		LAUNCHED 68/ 4/ 6		IN ORBIT							
PERIOD =		208.0		PERIGEE =		354.8		APOGEE =		6159.6							
INCL =		100.0															
STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	PHASE
STADE/ELBE	39979	68/ 5/ 3	23	51	7.8	8.4	0.98	53.0	100.0	750.	SHARP FAINT FLASHES MIN INV						--HK 73.0

SDC NO. 3181 68-28A COSMOS 211 USSR LAUNCHED 68/ 4/ 9 IN ORBIT
 PERIOD = 102.3 PERIGEE = 123.7 APOGEE = 951.9 INCL = 91.9

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39991	68/	5/	15	4	35	8.5	9.2	8.6	9.3	120.00	60.0	264.0	960.	ROUGH TP, 2 CYCLES	--JGM	91.7	
VAN NUYS-F	39992	68/	5/	16	4	5	5.0	8.5	5.3	8.8	130.00	0.50	83.0	258.0	860.	MOSTLY +8.0 MAX, ONLY 1 FLSH--JGM	93.1	

SDC NO. 3182 68-28R ROCKET BODY USSR LAUNCHED 68/ 4/ 9 IN ORBIT
 PERIOD = 102.3 PERIGEE = 123.7 APOGEE = 951.9 INCL = 91.9

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39991	68/	5/	15	5	12	6.7	8.5	6.1	7.9	0.26	30.0	269.0	1330.		--JGM	107.3	
VAN NUYS-F	39992	68/	5/	16	4	29	5.2	6.5	5.3	6.6	0.26	55.0	264.0	940.		--JGM	95.7	

SDC NO. 3187 68-25F FRAGMENT USA LAUNCHED 68/ 4/ 4 IN ORBIT
 PERIOD = 90.9 PERIGEE = 149.1 APOGEE = 239.8 INCL = 32.6

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39972	68/	4/	26	3	33	1.0	1.2	3.6	3.6		40.0	155.0	300.		--JGM	44.0	

SDC NO. 3222 66-25F ROCKET BODY USSR LAUNCHED 66/ 4/ 25 IN ORBIT
 PERIOD = 702.7 PERIGEE = 292.0 APOGEE = 24314.2 INCL = 44.9

STATION NAME	MJD	Y	M	D	I	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-F	39695	67/	7/	24	5	33	12.0	10.0	7.1	7.1		41.0	75.0	9720.	66-35F	--JGM	56.3	
VAN NUYS-F	39739	67/	9/	6	3	19	10.0	10.7	6.2	6.9		53.0	130.0	5860.		--JGM	42.8	
VAN NUYS-F	39739	67/	9/	6	3	28	10.5	10.8	6.2	6.5		61.0	106.0	7240.		--JGM	45.5	
VAN NUYS-F	39781	67/	10/	18	3	1	11.0	11.7	6.2	6.9	0.88	72.0	281.0	9200.	TP UNSURE. COMPLEX VARIATION--JGM	--JGM	95.6	

SOC NO. 3223 66-920 PERIOD = 712.2 PERIOD = 288.9 APDSEE = 24618.7 IN ORBIT INCL = 64.7

STATION NAME	MJD	Y	M	D	4	M	MAX	MIN	AMAX	AMIN	PERIOD FLASH	ALT	AZ	RANGE	COMMENTS	--OBS	PHASE
VAN NUYS-B	39421	66/10/23			5	40	12-2	12-2	6-0	6-0		68.4	299.4	17000.		--JGM	57-0
VAN NUYS-B	39422	66/10/24			6	13	11-2	11-5	5-6	5-9	0-20	65-5	267-0	12900.	MAX ARE SMALL FLASHES	--JGM	49-5
VAN NUYS-F	39429	66/10/31			5	3	10-5	10-5	5-7	5-7		66-4	196-8	9150.		--JGM	44-2
VAN NUYS-F	39430	66/11/1			4	48	10-3	10-3	5-5	5-5		67-0	188-0	9100.		--JGM	44-3
VAN NUYS-F	39431	66/11/2			3	59	10-8	11-0	5-2	5-4	2-10	85-0	160-0	13000.	LITTE FLASHFS, FEW SEC TP	--JGM	50-5
PHOENIX R	39435	66/11/6			3	47	9-0	9-0	4-7	4-7		52-0	167-0	7363.	STEADY	--RKR	47-0
OCEANPORT	39436	66/11/7			2	21	13-0		7-1			61-6	267-2	15200.		--	64-2
PHOENIX R	39436	66/11/7			3	32	9-0	9-0	4-7	4-7		51-0	160-9	7387.	STEADY	--RKR	47-0
OCEANPORT	39439	66/11/10			1	54	12-0		6-4			64-4	249-2	13300.		--	63-6
OCEANPORT	39446	66/11/17			0	43	12-0		7-2			57-6	188-9	9289.		--	63-1
OCEANPORT	39446	66/11/17			0	59	12-0		7-6			42-3	185-4	7635.		--	64-1
OCEANPORT	39447	66/11/18			0	28	12-0		7-2			58-4	182-5	9277.		--	53-2
OCEANPORT	39447	66/11/18			0	43	12-0		7-6			43-2	188-5	7626.		--	69-4
OCEANPORT	39448	66/11/19			23	57	12-0		7-2			58-1	169-0	9281.		--	63-8
OCEANPORT	39449	66/11/20			0	13	12-0		7-6			42-8	170-3	7637.		--	64-4
OCEANPORT	39452	66/11/23			22	57	11-5		6-6			53-7	145-0	9390.		--	64-8
OCEANPORT	39536	67/2/15			3	36	10-0		5-7			20-7	90-6	7306.	RECOVERED 66-920	--GFG	48-7
OCEANPORT	39536	67/2/15			3	57	11-0		6-0			29-9	71-4	9785.	RECOVERED 66-920	--GFG	56-2
OCEANPORT	39584	67/4/4			3	21	9-0		5-2			62-7	172-9	5870.		--GFG	28-1
OCEANPORT	39585	67/4/4			2	54	9-0		5-7			35-2	178-6	4569.		--GFG	30-8
OCEANPORT	39585	67/4/5			3	7	9-5		5-7			65-2	160-7	5886.	6 MINS. LATE	--GFG	29-6
OCEANPORT	39585	67/4/5			3	20	10-0		5-6			77-2	125-4	7497.		--GFG	39-8
OCEANPORT	39586	67/4/6			2	40	9-0		5-7			36-2	172-9	4578.		--GFG	29-2
OCEANPORT	39586	67/4/6			2	47	9-0		5-4			55-2	161-9	5329.	6 DEG. HIGHER THAN PREDICTS	--GFG	25-0
OCEANPORT	39589	67/4/9			1	54	9-0		5-7			35-3	156-4	4671.	5 MINS. EARLY	--GFG	25-4
OCEANPORT	39589	67/4/9			2	14	10-0		5-8			63-5	116-2	6776.		--GFG	35-6
OCEANPORT	39592	67/4/12			1	9	5-0		1-6			31-6	142-1	4853.	FLASHING	--GFG	24-6
VAN NUYS-F	39623	67/5/13			5	46	10-0	10-7	5-5	6-2		58-0	281-0	8000.	FLASHING	--JGM	84-4
VAN NUYS-F	39623	67/5/13			6	4	11-0	11-5	6-0	6-5		62-0	307-0	10200.	FLASHING	--JGM	94-2
VAN NUYS-F	39624	67/5/14			5	17	9-5	10-5	5-5	6-5	0-10	52-0	258-0	6300.	MAX ARE FLASHES OF DIFF MAG	--JGM	85-3
VAN NUYS-F	39624	67/5/14			5	48	10-8	11-3	5-8	6-3	1-94	64-0	309-0	10200.	FLASHES AT 1/2 AND 1/4 CYCLE	--JGM	95-3
VAN NUYS-F	39625	67/5/15			5	32	10-3	11-3	5-3	6-3	1-90	66-0	312-0	10200.	MAX ARE FLASHES OF DIFF MAG	--JGM	95-7
VAN NUYS-F	39627	67/5/17			5	42	11-0		5-2		1-90	63-0	349-0	14700.	MODULATION OF 4 OR 5 CYCLES	--JGM	85-4
VAN NUYS-F	39709	67/8/7			5	32	12-0	14-0	6-9	8-9		61-9	235-5	10400.		--GFG	41-7
OCEANPORT	39711	67/8/9			5	1	12-0	14-0	6-9	8-9		67-4	224-7	10300.		--GFG	42-4

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STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN MUYS-F	39768	67/10/5	2	54	10.7	12.0	6.3	7.6				65.0	165.0	7650.		--JGW	65.3
VAN MUYS-F	39768	67/10/5	3	7	10.0	11.3	6.0	7.3	1.95			49.0	166.0	6240.	TP = 21.5 / 11(UNSURE)	--JGW	50.4

SDC NO. 3224 67-52F ROCKET BODY USSR LAUNCHED 67/ 4/24 IN ORBIT
PERIOD = 709.7 PERIGEE = 279.5 APOGEE = 24550.3 INCL = 64.8

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN MUYS-F	39723	67/ 8/21	5	45	11.0	11.5	6.6	7.1				54.0	282.0	7500.		--JGW	86.0
VAN MUYS-F	39726	67/ 8/24	4	40	11.5		7.2					69.0	282.0	7300.	SEEMED TO HAVE LONG PERIOD	--JGW	84.4
VAN MUYS-F	39728	67/ 8/26	3	47	10.0	10.3	6.2	6.5				70.0	225.0	5700.	FLICKERING	--JGW	81.4
VAN MUYS-F	39729	67/ 8/27	3	38	11.3	11.7	7.0	7.4				85.0	320.0	7270.	FLICKERING	--JGW	79.8
VAN MUYS-F	39730	67/ 8/28	3	18	11.2	11.7	6.9	7.4	0.72			85.0	10.0	7300.	MAX ARE LITTLE FLASHES	--JGW	79.8
VAN MUYS-F	39730	67/ 8/28	4	29	12.1	12.5	6.1	6.5				59.0	13.0	15700.	SEVERAL MINUTE PERIOD TOO	--JGW	78.6
OCEANPORT	39731	67/ 8/29	2	53	11.0		6.5					42.2	273.8	8063.		--GFG	92.8
VAN MUYS-F	39850	67/12/26	6	59	11.2	11.5	6.3	6.6	0.76			37.0	256.0	9700.	MAX ARE SMALL FLASHES	--JGW	63.6
VAN MUYS-F	39859	68/ 1/ 4	4	3	9.8	10.0	5.5	5.7				51.0	183.0	7120.		--JGW	65.3
VAN MUYS-F	39860	68/ 1/ 5	3	29	10.8	11.1	6.1	6.4	0.74			66.0	175.0	8670.		--JGW	63.4
VAN MUYS-F	39863	68/ 1/ 8	2	26	10.5	10.7	5.8	6.0				61.0	139.0	8810.		--JGW	62.5

SDC NO. 3225 67-95D ROCKET BODY USSR LAUNCHED 67/10/ 3 IN ORBIT
PERIOD = 709.2 PERIGEE = 304.5 APOGEE = 24513.0 INCL = 64.8

STATION NAME	MJD	Y	M	D	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN MUYS-F	39768	67/10/ 5	4	36	10.5	10.5	6.0	6.0				38.0	220.0	7850.	REVOLUTION 4	--JGW	78.2
VAN MUYS-F	39769	67/10/ 6	3	37	11.5		6.1					63.0	253.0	12200.		--JGW	87.5
VAN MUYS-F	39770	67/10/ 7	3	19	11.8	11.8	6.4	6.4				66.0	250.0	11900.		--JGW	88.1
VAN MUYS-F	39773	67/10/10	3	4	9.0	9.5	5.0	5.5				35.0	189.0	6300.	SEEMED TO HAVE FAST FLICKER	--JGW	80.2
OCEANPORT	39775	67/10/12	1	56	12.5		7.4					31.5	252.4	10300.		--GFG	95.7
OCEANPORT	39777	67/10/14	0	50	12.0		6.6					48.6	256.5	12000.		--GFG	97.3
OCEANPORT	39779	67/10/16	0	11	11.5		6.1					55.9	247.9	12000.		--GFG	97.5
OCEANPORT	39779	67/10/16	0	33	11.0		6.1					45.7	232.5	9714.		--GFG	96.3

700017

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	ORS	PHASE
OCEANPORT	39780	67/10/17	0	12	11.5	6.6							49.0	230.0	9596.		---	96.3
OCEANPORT	39780	67/10/17	0	27	11.0	6.5							36.4	219.9	7944.		---	95.5
AUSTIN	39907	68/ 2/21	6	14	9.0	9.0	4.5	4.5					60.0	298.0	8084.		---	47.6
VAN NUYS-F	39911	68/ 2/25	4	27	8.5	8.5	5.2	5.2					59.0	158.0	4480.		---	42.6

SDC NO. 3226 67-101F
 PERIOD = 711.5
 ROCKET BODY USSR LAUNCHED 67/10/22 IN ORBIT
 PERIGEE = 310.7 APOGEE = 24575.2 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39846	67/12/22	3	45	11.2	12.0	6.4	7.2			0.99	0.20	46.0	244.0	9130.	FLASHES OF DIFFERENT MAG	---	98.3
VAN NUYS-F	39847	67/12/23	3	27	11.3	12.0	6.5	7.2			0.97		50.0	242.0	9030.		---	96.2
VAN NUYS-F	39848	67/12/24	3	11	11.2	11.8	6.4	7.0			2.16		52.0	238.0	8950.	ABOUT 12 SEC MODULATION	---	97.2
VAN NUYS-F	39968	68/ 4/22	7	32	9.8	10.5	5.4	6.1					71.0	282.0	7730.		---	54.9
VAN NUYS-F	39968	68/ 4/22	8	13	10.8	12.0	5.4	6.6			2.16		68.0	345.0	12000.		---	67.3
VAN NUYS-F	39969	68/ 4/23	7	16	9.8	10.3	5.4	5.9					75.0	283.0	7700.		---	55.0

SDC NO. 87317 67-82F
 PERIOD = 710.0
 ROCKET BODY USSR LAUNCHED 67/ 8/31 IN ORBIT
 PERIGEE = 267.2 APOGEE = 24569.0 INCL = 64.8

STATION NAME	MJD	Y	M	D	H	M	MAX	MIN	AMAX	AMIN	PERIOD	FLASH	ALT	AZ	RANGE	COMMENTS	OBS	PHASE
VAN NUYS-F	39859	68/ 1/ 4	7	39	10.5	10.7	6.0	6.2					46.0	76.0	7950.	FLICKERING	---	43.8
VAN NUYS-F	39910	68/ 2/24	4	2	10.0	10.5	5.5	6.0					50.0	77.0	7910.		---	25.2
VAN NUYS-F	39911	68/ 2/25	3	42	10.0	10.0	5.5	5.5					46.0	77.0	9040.		---	25.7