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DR 1088  
NOVEMBER 1979  
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METEOROLOGICAL DATA REPORT

19307B GSRS  
Missile Nos. 1059 and 1093  
Round Nos. V-79 and V-80  
02 November 1979

by

White Sands Meteorological Team

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ELECTE  
APR 3 1980  
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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19307B GSRS, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80 are presented in tabular form.		

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JOB

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## INTRODUCTION

19307B GSRs, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80, were launched from SPEC, White Sands Missile Range (WSMR), New Mexico, at 0903 and 0903:04 MST, 02 Nov 79. The scheduled launch times were 0900 and 0900:02 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the SPEC Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

#### SITE AND ALTITUDE

SPEC	2 km
WCI	2 km

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 78,500 feet in 500-foot increments.

#### SITE AND TIME

AFSWC 0930 MST

TABLE 1. Surface Observations taken at 0900 MST, 02 November 1979, at SPEC Site, 19307B GSRS, Missile Numbers 1059 and 1093, Round Numbers V-79 and V-80.

ELEVATION	N/A	FT/MSL
PRESSURE	862.0	MBS
TEMPERATURE	10.0	°C
RELATIVE HUMIDITY	41	%
DEW POINT	-2.6	°C
DENSITY	1056	GM/M <sup>3</sup>
WIND SPEED	12	KTS
WIND DIRECTION	030	DEGREES
CLOUD COVER	4	ci





STATION ALTITUDE 4700.63 FEET MSL  
 2 NOV. 79 0930 HRS MST  
 ASSUMPTION NO. 140

GEODETIC COORDINATES  
 33.54680 LAT DEG  
 106.58531 LONG DEG

SIGNIFICANT LEVEL DATA  
 3950170113  
 AF54C

TABLE 4

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMIDITY PERCENT	
602.0	4700.6	10.0	-2.0	41.0
650.0	5031.7	7.8	-4.0	43.0
701.0	5319.5	1.2	-6.6	48.0
751.4	5617.1	.1	-9.0	49.0
781.6	5827.0	-1.2	-14.7	35.0
797.0	5927.1	-1.2	-15.4	53.0
653.0	4809.4	.7	-14.1	32.0
654.8	4878.5	-1.0	-15.0	32.0
617.0	4581.8	-1.7	-10.2	32.0
573.2	4044.1	-5.9	-19.5	32.0
509.0	3021.2	-13.2	-20.0	33.0
445.6	2170.9	-20.9	-33.2	32.0
432.8	2271.8	-21.4	-24.2	78.0
417.0	2533.6	-24.0	-25.2	90.0
409.0	2429.9	-26.1	-78.9	93.0
360.2	2007.5	-29.2	-32.2	75.0
329.6	2575.0	-34.7	-39.2	63.0
306.0	3009.3	-40.2	-44.2	65.0
264.4	3392.4	-47.0	-50.2	69.0
230.0	3470.1	-49.9		
220.6	3772.2	-54.6		
215.0	37912.6	-56.1		
200.0	39423.0	-55.9		
196.6	40434.9	-56.9		
181.2	41490.1	-54.0		
167.5	43141.3	-54.8		
150.0	45403.3	-57.9		
127.2	48053.3	-61.1		
124.0	50052.1	-63.5		
116.6	50637.4	-61.2		
113.0	53753.7	-64.8		
89.5	55930.3	-65.4		
77.9	55701.0	-62.7		
70.0	60949.1	-64.0		
57.8	64807.1	-61.4		
50.0	67300.5	-55.2		
38.0	73190.6	-56.6		
30.0	76597.1	-55.4		

GEODETIC COORDINATES  
 33.04686 LAT DEG  
 106.56581 LON DEG

UPPER AIR DATA  
 306370140  
 AFS JC

TABLE 5

STATION ALTITUDE 4700.03 FEET MSL  
 2 NOV. 73  
 ASSC. SIG. NO. 140

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEGREE CENTIGRADE	REL. HUM. PERCENT	DEENSITY 5% CUBIC METER	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4700.0	602.0	10.0	-2.0	41.0	1050.2	300	12.0	1.000260
5000.0	552.6	8.3	-3.7	42.0	1053.2	304.2		1.000257
5200.0	520.8	8.0	-4.0	43.0	1040.2	352.2		1.000252
5400.0	481.3	5.1	-5.6	45.1	1020.4	350.4		1.000248
5500.0	460.1	3.5	-6.9	46.2	1012.9	340.7		1.000244
7100.0	791.2	2.1	-7.9	47.3	999.6	345.9		1.000240
7500.0	770.5	.9	-8.8	48.3	985.5	345.4		1.000235
8000.0	751.9	.1	-9.3	48.0	969.0	344.5		1.000231
8500.0	747.5	-0.3	-11.0	48.2	955.5	343.9	16.6	1.000226
9000.0	735.4	-0.3	-12.0	39.2	937.1	343.3	16.1	1.000220
9500.0	719.6	-1.2	-14.7	34.8	920.0	342.6	14.5	1.000215
10000.0	703.0	-1.2	-15.2	33.0	905.0	342.0	13.1	1.000211
10500.0	682.7	-0.4	-14.8	32.6	883.7	343.7	12.0	1.000207
11000.0	679.0	.0	-14.2	32.0	864.2	344.0	10.9	1.000203
11500.0	668.3	-0.3	-14.9	32.0	850.3	343.9	9.4	1.000199
12000.0	654.5	-1.0	-15.6	32.0	830.0	343.0	0.8	1.000196
12500.0	641.9	-1.2	-15.8	32.0	821.5	342.7	9.4	1.000192
13000.0	629.8	-1.5	-16.0	32.0	806.7	342.5	9.1	1.000189
13500.0	617.4	-1.7	-16.2	32.0	792.1	342.2	9.6	1.000185
14000.0	605.1	-2.7	-17.0	32.0	779.8	341.0	12.8	1.000182
14500.0	594.5	-3.6	-17.9	32.0	767.8	339.9	16.0	1.000179
15000.0	583.2	-4.6	-18.8	32.0	755.3	339.7	19.1	1.000176
15500.0	572.0	-5.6	-19.5	32.0	744.2	337.5	21.3	1.000173
16000.0	560.9	-6.7	-20.6	32.0	732.8	335.1	22.0	1.000170
16500.0	549.5	-7.8	-21.5	32.5	721.6	334.8	22.7	1.000167
17000.0	539.5	-8.9	-22.4	32.4	710.5	333.5	23.7	1.000164
17500.0	529.7	-10.0	-23.4	32.6	699.6	332.1	24.8	1.000161
18000.0	520.5	-11.2	-24.3	32.7	688.9	330.6	26.4	1.000158
18500.0	510.5	-12.3	-25.2	32.9	678.4	329.4	28.1	1.000155
19000.0	490.4	-13.4	-26.2	33.0	668.1	328.0	30.0	1.000153
19500.0	480.4	-14.3	-27.5	32.0	658.2	326.2	32.0	1.000150
20000.0	470.5	-15.1	-28.7	32.6	648.4	324.7	33.5	1.000148
20500.0	459.6	-16.8	-29.0	32.4	638.0	323.1	34.7	1.000145
21000.0	450.4	-20.2	-31.5	32.3	629.3	321.4	34.7	1.000143
22000.0	441.3	-21.1	-32.5	32.1	620.0	319.7	34.3	1.000140
23000.0	432.5	-21.5	-29.3	47.3	609.0	318.7	34.0	1.000139
24000.0	423.4	-23.0	-24.8	78.4	593.0	318.3	33.8	1.000138
25000.0	414.4	-33.8	-35.3	85.4	589.3	316.4	34.3	1.000136
26000.0	404.9	-61.6	-63.9	74.1	603.0	312.8	35.3	1.000136
27000.0					660.8	300.0	36.0	1.000149

AX GRID DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES  
33.64586 LAT DEG  
106.58581 LON DEG

UPPER AIR DATA  
3060170140  
AF SMC

TABLE 5 (CONT)

STATION ALTITUDE 4700.63 FEET MSL  
2 NOV 79 0930 HRS MST  
ASCENDING: NO. 149

GEOMETRIC ALTITUDE MSL FT	PRESSURE MILLIBARMS	AIR TEMPERATURE DEGREES CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED KNOTS	DIRECTION DEGREES(TI)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4500.0	595.5	-71.0	69.8	601.7	555.8	273.8	36.5	1.000152
2500.0	509.5	-60.5	70.3	632.9	500.1	273.2	38.3	1.000141
2500.0	577.5	-50.0	71.9	589.0	502.0	273.0	40.3	1.000132
2500.0	566.5	-39.5	73.5	549.3	395.0	273.5	44.0	1.000123
2500.0	560.0	-29.2	74.9	513.9	608.0	274.1	47.5	1.000117
2700.0	552.4	-30.4	72.3	505.5	607.0	274.9	50.3	1.000115
2700.0	544.9	-31.0	69.7	497.3	605.0	275.2	52.4	1.000113
2700.0	537.5	-32.9	67.0	489.2	604.0	274.3	52.4	1.000111
2900.0	530.5	-34.1	64.4	481.2	602.5	275.0	52.4	1.000109
2900.0	523.2	-35.4	63.2	473.5	600.3	273.4	52.5	1.000107
2900.0	510.2	-35.0	63.3	460.0	599.0	273.2	52.7	1.000105
3000.0	509.5	-38.2	64.3	450.0	597.2	272.4	54.2	1.000103
3000.0	502.0	-39.5	64.3	451.4	595.4	271.7	55.6	1.000101
3100.0	495.9	-40.9	65.4	443.9	593.7	270.5	57.5	1.000100
3100.0	482.2	-42.2	66.2	430.2	592.1	269.2	59.1	1.000098
3200.0	484.0	-43.4	66.9	420.0	590.0	268.9	60.4	1.000096
3200.0	470.5	-44.0	67.0	421.4	589.0	269.2	61.5	1.000094
3300.0	465.5	-45.5	68.3	414.2	587.4	269.8	62.7	1.000093
3300.0	457.0	-47.0	68.0**	407.1	585.9	270.7	64.1	1.000091
3300.0	448.2	-48.2	68.1**	400.0	584.0	271.3	65.7	1.000089
3400.0	449.4	-49.4	68.2	393.0	582.7	271.5	67.4	1.000088
3400.0	440.6	-50.4	68.7	385.7	581.4	271.5	69.0	1.000086
3500.0	440.9	-51.3	68.3	378.2	580.3	270.7	70.1	1.000084
3500.0	435.5	-52.2	68.5	370.9	579.1	269.9	71.2	1.000083
3500.0	429.0	-53.1	68.5	363.0	578.0	269.1	72.2	1.000081
3700.0	424.5	-53.9	68.5	355.0	576.0	268.4	73.2	1.000079
3700.0	419.5	-55.0	68.5	350.0	575.0	268.0	74.5	1.000078
3800.0	414.1	-56.1	68.5	343.0	574.0	269.4	76.0	1.000077
3800.0	409.1	-56.0	68.5	335.4	574.1	270.7	77.5	1.000075
3900.0	404.1	-56.0	68.5	327.4	574.1	272.5	79.1	1.000073
3900.0	399.3	-56.0	68.5	315.7	574.1	274.0	80.0	1.000071
4000.0	394.0	-56.5	68.5	312.9	573.5	274.4	82.5	1.000070
4000.0	389.0	-56.8	68.5	305.9	573.1	274.6	84.2	1.000068
4100.0	384.5	-57.7	68.5	297.2	574.5	275.0	86.3	1.000066
41500.0	381.2	-54.6	68.5	280.0	575.9	275.2	88.4	1.000064
4200.0	376.9	-54.7	68.5	282.1	575.9	275.7	89.9	1.000063
4200.0	372.6	-54.7	68.5	275.0	575.8	270.4	91.1	1.000061
4300.0	368.7	-54.8	68.5	269.2	575.7	277.0	91.8	1.000060
4300.0	364.8	-55.3	68.5	263.4	575.0	277.5	91.7	1.000059
4400.0	360.9	-55.9	68.5	259.0	574.2	277.9	91.7	1.000057

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODLTIC COORDINATES  
 33.64086 LAT DEG  
 196.56581 LON DEG

SUPPLY AIR DATA  
 3060170140  
 A530C  
 TABLE 5 (CONT)

STATION ALTITUDE 4790.63 FEET MSL  
 2 NOV. 79 0930 HRS MS1  
 ASSET/STOR NO. 140

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GRAMS PER CUBIC CM	SPEED OF SOUND METERS PER SECOND	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4400.0	157.1	-56.5		252.7	575.3	273.4	90.4	1.000056
4500.0	153.6	-57.3		247.5	572.4	273.0	89.0	1.000055
4600.0	149.7	-57.9		242.4	571.5	279.0	87.8	1.000054
4700.0	145.2	-58.4		237.1	570.9	276.7	86.8	1.000053
4800.0	142.7	-58.5		231.9	570.3	273.5	85.8	1.000052
4900.0	139.2	-59.3		225.9	569.6	277.5	86.4	1.000051
4950.0	135.9	-59.8		221.9	569.0	275.5	87.3	1.000049
5000.0	132.8	-60.3		217.1	568.4	275.0	87.6	1.000048
5050.0	129.3	-60.8		212.4	567.9	275.0	86.2	1.000047
5100.0	125.4	-61.3		207.9	567.3	274.4	84.8	1.000046
5150.0	120.3	-62.4		203.8	565.0	274.5	80.5	1.000045
5200.0	120.3	-62.4		199.8	564.2	274.5	75.3	1.000044
5250.0	117.4	-61.7		195.4	563.4	274.8	71.3	1.000043
5300.0	114.5	-61.5		193.6	563.0	275.4	69.3	1.000042
5350.0	111.8	-62.2		189.5	563.8	275.1	67.3	1.000041
5400.0	109.0	-62.3		186.5	565.1	275.5	67.6	1.000040
5450.0	105.4	-63.1		176.0	564.3	275.9	68.0	1.000039
5500.0	103.0	-63.2		172.8	563.3	277.2	68.3	1.000038
5550.0	101.5	-64.5		169.1	562.7	277.1	67.2	1.000037
5600.0	98.8	-65.0		165.3	562.1	277.0	66.1	1.000036
5650.0	96.4	-65.3		161.5	561.0	275.9	65.0	1.000035
5700.0	94.0	-65.7		157.8	561.1	275.9	63.2	1.000034
5750.0	91.7	-65.1		154.2	560.0	275.9	61.3	1.000033
5800.0	89.4	-65.4		150.0	560.2	276.9	59.3	1.000034
5850.0	87.2	-65.7		145.5	561.1	277.2	53.9	1.000033
5900.0	85.1	-65.1		142.4	562.0	277.5	48.6	1.000032
5950.0	83.0	-64.4		138.5	562.9	277.8	43.2	1.000031
6000.0	81.0	-63.7		134.7	563.8	277.7	37.5	1.000030
6050.0	79.0	-63.1		131.0	564.7	277.0	31.8	1.000029
6100.0	77.1	-62.3		127.6	565.0	277.1	27.4	1.000028
6150.0	75.2	-63.1		124.7	564.6	276.0	26.0	1.000028
6200.0	73.4	-63.5		121.8	564.2	274.5	24.6	1.000027
6250.0	71.6	-63.7		119.0	563.0	275.1	22.6	1.000027
6300.0	69.8	-64.0		116.3	563.5	270.4	20.5	1.000026
6350.0	68.1	-63.6		113.5	563.9	267.1	18.2	1.000025
6400.0	66.5	-63.3		110.4	564.4	262.7	15.9	1.000025
6450.0	64.9	-63.0		107.5	564.8	258.4	13.5	1.000024
6500.0	63.3	-62.5		104.7	565.2	247.5	11.3	1.000023
6550.0	61.8	-62.3		102.0	565.7	244.9	11.3	1.000023
6600.0	60.3	-62.0		99.4	566.1	240.5	12.3	1.000022

STATION ALTITUDE 4700.63 FEET MSL  
 2 NOV 79 0930 HRS MST  
 A5015104 NO. 140

UPPER AIR DATA  
 3050170140  
 AF53C

GEODETIC COORDINATES  
 33.04086 LAT DEG  
 106.58581 LONG DEG

TABLE 5 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
6450.0	58.8	-61.6	96.8	247.9	13.3	1.000022
6300.0	57.4	-61.1	94.3	254.4	14.9	1.000021
6150.0	56.0	-60.1	93.0	260.4	16.7	1.000020
6000.0	54.7	-59.0	89.0	265.1	18.7	1.000020
5850.0	53.4	-58.0	86.4	267.4	18.9	1.000019
5700.0	52.1	-57.0	84.0	269.7	19.1	1.000019
5550.0	50.9	-55.9	81.0	271.9	19.4	1.000018
5400.0	49.7	-55.2	79.4	269.4	17.1	1.000018
5250.0	48.5	-55.4	77.0	265.3	14.6	1.000017
5100.0	47.4	-55.5	75.8	259.0	12.3	1.000017
4950.0	46.2	-55.7	74.1	246.9	9.3	1.000016
4800.0	45.2	-55.8	72.4	218.7	6.9	1.000015
4650.0	44.1	-56.0	70.7	190.0	7.1	1.000016
4500.0	43.1	-56.1	69.1	168.0	8.7	1.000015
4350.0	42.0	-56.3	67.5	199.2	9.3	1.000015
4200.0	41.1	-56.4	66.0	221.1	12.0	1.000015
4050.0	40.1	-56.6	64.5	233.9	15.8	1.000014
3900.0	39.2	-56.7	63.0	239.9	16.7	1.000014
3750.0	38.2	-56.7	61.5	244.1	21.5	1.000014
3600.0	37.3	-56.6	60.1	247.3	24.4	1.000013
3450.0	36.5	-56.5	58.0	240.8	24.7	1.000013
3300.0	35.6	-56.5	57.2	237.0	19.5	1.000013
3150.0	34.8	-56.2	55.8	221.0	15.2	1.000012
3000.0	33.9	-56.1	54.5	196.4	12.9	1.000012
2850.0	33.1	-55.9	53.2			1.000012
2700.0	32.4	-55.8	51.9			1.000011
2550.0	31.5	-55.7	50.0			1.000011
2400.0	30.9	-55.6	49.4			1.000011
2250.0	30.1	-55.4	48.2			1.000011

STATION ALTITUDE 4700.63 FEET MSL  
 2 NOV. 79 0930 HRS MST  
 ASCENSION NO. 140

MANDATORY LEVELS  
 3050170140  
 AF54C  
 TABLE 6

GEODETIC COORDINATES  
 33.04686 LAT DEG  
 106.50581 LON DEG

PRESSURE	TEMPERATURE	REL. HUM.	WIND DATA
MILLIBARS	AIR DEGREE	PERCENT	DIRECTION SPEED
FEET	CENTIGRADE		(IN) KNOTS
850.0	7.8	43.	9999.0 9999.0XX
800.0	3.0	47.	9999.0 9999.0XX
750.0	-3	45.	359.0 19.6
700.0	-1.2	53.	334.2 12.6
650.0	-1.1	52.	2.0 0.9
600.0	-3.2	52.	314.7 14.9
550.0	-7.8	32.	290.3 22.7
500.0	-13.2	33.	293.0 29.7
450.0	-20.2	32.	236.2 34.3
400.0	-26.1	56.	274.0 36.2
350.0	-30.3	71.	275.1 51.2
300.0	-40.2	65.	271.3 56.4
250.0	-49.9		271.6 60.1
200.0	-55.9		273.9 80.5
175.0	-54.7		270.0 90.4
150.0	-57.9		279.0 87.9
125.0	-61.8		274.3 63.6
100.0	-64.0		277.0 50.7
80.0	-63.4		277.7 35.0
70.0	-64.0		270.9 20.8
50.0	-61.9		246.7 12.4
50.0	-55.2		270.3 16.0
40.0	-50.6		234.3 16.0
30.0	-55.4		

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAY AZIMUTH AND ELEVATION ANGLES.