

AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

F/G 4/1

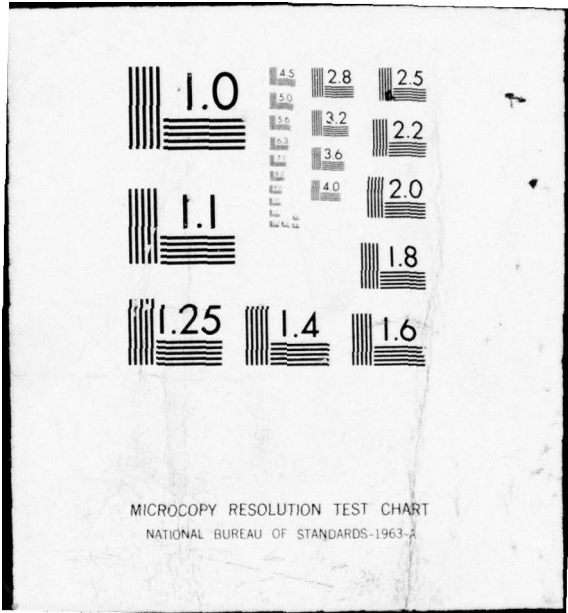
UNCLASSIFIED

NL

1 OF 6

AD
A032373





AD A032373

AFGL-TR-76-0113
ENVIRONMENTAL RESEARCH PAPERS, NO. 560

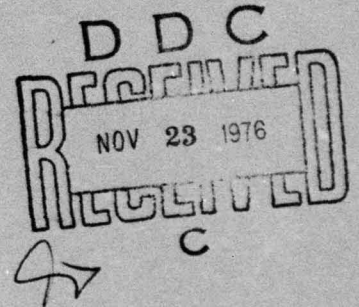
12
NW



Ionization Gauge Measurements of Atmospheric Density from a Low Altitude Satellite

J. P. McISAAC
K. S. W. CHAMPION
R. E. McNERNEY
D. DELOREY

24 May 1976



Approved for public release; distribution unlimited.

AERONOMY DIVISION PROJECT 6690
AIR FORCE GEOPHYSICS LABORATORY
HANSCOM AFB, MASSACHUSETTS 01731

AIR FORCE SYSTEMS COMMAND, USAF

AIR FORCE (1) SEPTEMBER 16, 1976--560

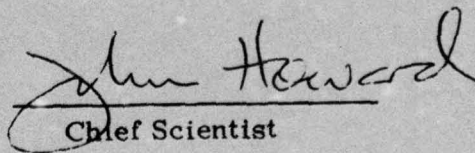


Ionization Gauge Measurements of Atmospheric

J. P. McIsaac
K. S. W. Champion

This technical report has been reviewed and
is approved for publication.

FOR THE COMMANDER:


Chief Scientist

Qualified requestors may obtain additional copies from the Defense
Documentation Center. All others should apply to the National
Technical Information Service.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFGL-TR-76-0113	2. GOVT ACCESSION NO. AFGL-ERP-560	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW ALTITUDE SATELLITE,		5. TYPE OF REPORT & PERIOD COVERED Scientific. Interim.
7. AUTHOR(s) J.P. McIsaac, R.E. McInerney K.S.W. Champion, D. Delorey		6. PERFORMING ORG. REPORT NUMBER ERP No. 560
9. PERFORMING ORGANIZATION NAME AND ADDRESS Air Force Geophysics Laboratory (LKB) Hanscom AFB Massachusetts 01731		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Air Force Geophysics Laboratory (LKB) Hanscom AFB Massachusetts 01731		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE62101F 66900201
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Environmental Research papers, Nov 74 - Jan 75		12. REPORT DATE 24 May 1976
		13. NUMBER OF PAGES 488
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES *Boston College		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Ionization gauge Satellite Atmospheric neutral density Direct measurements		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Results obtained from an Air Force Satellite launched in the fourth quarter of 1974 are presented. Ionization gauge measurements of atmospheric density were performed, and the values obtained from these measurements are presented in two appendices in the form of density vs altitude and time plots. The method of data reduction and its application is developed and discussed. The reduction technique differs from previously used techniques in that it is		

14

6

10

9

16

17 021

12 489p.

11

next page

409578

20. (Cont)

cont.

more suitable for the processing of large data files such as those obtained from satellite flights, as well as featuring a lessened dependence upon attitude determination. The experiment is also described and the theory of operation is given.



Form with fields: Write Section, Draft Section, UNFOUNDED, JUSTIFICATION, BY, DISTRIBUTION/AVAILABILITY CODES, and a signature 'A'.

Summary

Measurements of atmospheric neutral density over the altitude region from 160 to 300 km are given. These in situ measurements were performed over the northern hemisphere during the period from November 1974 to January 1975. In addition to the density results, the *experiment, theory, method of measurement, and reduction procedure* have been described in detail. It is recognized that certain subjects may have been entirely omitted while other areas, for instance gauge calibration and sensitivities, have been treated in a general manner. This was done in order to facilitate the completion of the report. It is intended that these subjects will be discussed in detail in a second report that will complete the compilation of results and provide a complete and unified density file for use in further studies, correlations, and analyses. As this is the case, no attempt has been made to interpret the data nor have any conclusions been presented concerning the results.

Preface

The authors wish to thank the many individuals who contributed to the successful preparation, launching, and operation of the satellite and its payloads. Special appreciation is acknowledged to Dr. R. Herzog for fabrication and calibration of the gauge sensors, to R. Thornton for instrument design and construction, and to C. Reynolds and Capt. D. Davenport for their advice and support throughout the program. Particular gratitude is expressed to Dr. C. R. Philbrick for his encouragement and helpful discussions.

Contents

1. INTRODUCTION	7
2. SATELLITE AND FLIGHT OPERATIONS	8
3. INSTRUMENTATION	10
4. THEORY	12
4.1 Oxygen Recombination	15
5. DATA REDUCTION	16
5.1 Processing	18
6. GENERAL OBSERVATIONS	20
7. DATA RESULTS	23
REFERENCES	25
APPENDIX A: Plots of Density vs U. T.	27
APPENDIX B: Plots of Density vs Altitude	259

Illustrations

1. Orbital Segment Depicting Perigee Pass	8
2. Spacecraft Shown With Solar Panels and Thermal Blankets Installed	9
3. Ionization Gauge Flight Unit; Electronics are Packaged in the Unit Shown to the Left	10
4. Cold Cathode Gauge	11
5. Gauge Response Curves Showing Variation of Gauge Internal Pressure Over Two Satellite Spin Cycles	13
6. Least-Squares-Fit Data Acquired on Orbit 59	17
7. Functional Flow Diagram	19
8. Systems Flow Diagram	21
A1. Satellite Location Diagram	28

Tables

1. Tubulated Gauge Sampling Functions	22
---------------------------------------	----

Ionization Gauge Measurements of Atmospheric Density From a Low Altitude Satellite

1. INTRODUCTION

One of the experiments flown onboard an Air Force satellite launched in October 1974 was a cold cathode ionization gauge. Measurements were acquired over a 7-month period, the life of the satellite, into May 1975. Atmospheric densities deduced from the measurements performed in the period from November 1974 to January 1975 have been processed and are given in Appendices A and B. Measurements performed after January 1975 are currently being processed and will be presented in a future report. The density results are for an altitude region near perigee covering a symmetric altitude range centered around the perigee and extending in height up to approximately 300 km (see Figure 1).

Depending upon the location and altitude of perigee, a recorded perigee pass could vary in time from 15 to 20 min and cover a latitude span of approximately 70 deg. Flight operations and the data acquisition plan are more fully described in Section 2 of this report.

Other sections include a description and discussion of the satellite, the experiment, theory of measurement, and the processing and reduction technique used to obtain the results. Density results are given in Appendices A and B. The results are presented, however, without any attempt to analyze or interpret them in terms of atmospheric structure, as that is planned for a future date.

(Received for publication 24 May 1976)

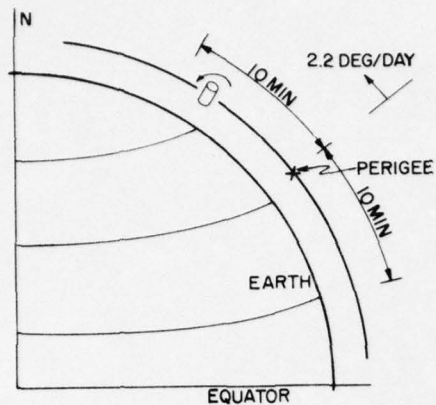


Figure 1. Orbital Segment Depicting Perigee Pass. Data acquisition occurs during the 10-min periods before and after perigee

2. SATELLITE AND FLIGHT OPERATIONS

The primary objective of the Air Force satellite mission was to investigate and perform measurements of thermospheric properties that influence upper atmospheric structure. To accomplish this objective, the spacecraft was instrumented with a complementary payload consisting of density, composition, and energy-source experiments.

The spacecraft payload was placed into an elliptical polar orbit inclined at 96.98 deg, with perigee and apogee heights of 158.6 and 3761.8 km respectively. Initial perigee location was at 44.9 deg north latitude, and it precessed northward at a rate of 2.22 deg per day. Following injection of the satellite into orbit, the satellite was maneuvered into its operational attitude, which was spin stabilized and oriented to have the spin axis directed within 5 deg of the normal to the orbit plane.

The maneuvering and maintenance of the satellite's attitude were accomplished by means of magnetic torquing coils that interacted with the earth's magnetic field to provide the forces needed to control or maintain the desired orientation. The magnetic torquing system functioned smoothly throughout the satellite's lifetime.

The adjunct to attitude control is attitude determination, and this information was provided by a combination of earth and sun sensors whose outputs served as a primary source of reference data. Backup capabilities were provided by a three-axis magnetometer. This backup capability was utilized very early in the flight as the earth sensor responded erratically when the vehicle was sun-lit. The operational attitude was then determined from a sun sensor-magnetometer combination during daylight hours, and from an earth sensor-magnetometer combination when the satellite was occulted.

Figure 2, a photograph of the satellite, shows the spacecraft's magnetometer boom, some solar panels, and some payload sensors mounted in their flight configuration. The earth sensor can be seen located about midpoint on the surface,

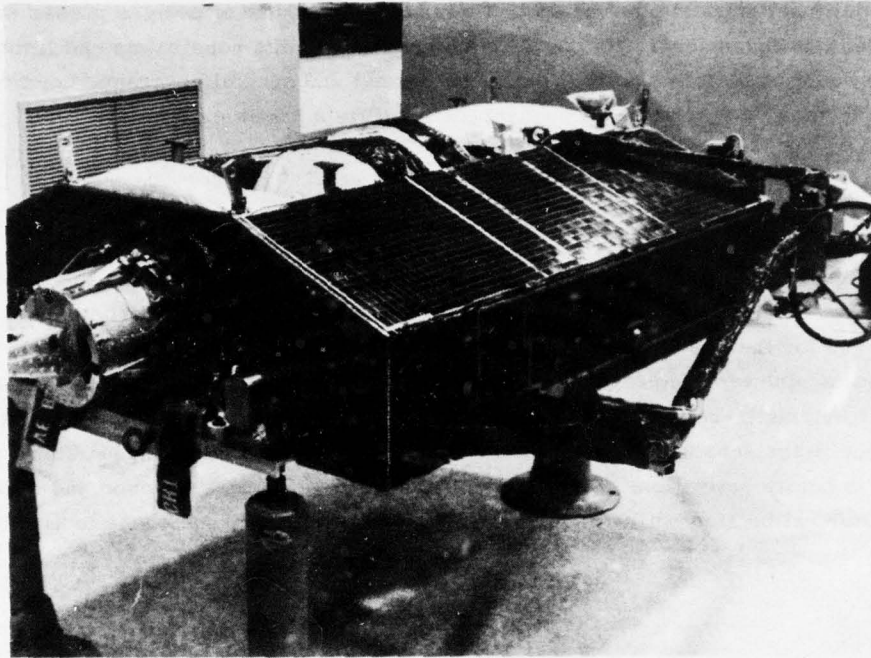


Figure 2. Spacecraft Shown With Solar Panels and Thermal Blankets Installed. On the forward surface some experimental sensors can be seen in their flight configuration

at the right of the figure, embedded in the solar panels. The solar panels were the principle power source, operating satellite systems directly during daylight hours. For night operation, systems were powered by batteries that had been charged from the solar cells. Normal on-orbit support consisted of payload operation during alternate orbits. Where a payload operation consisted of recorded measurements over a perigee pass (which is an orbital segment centered at perigee), the pass was automatically cycled to occur at a predetermined height before perigee and to terminate at the same predetermined height after perigee. Once per week, in addition to perigee pass coverage, a full orbit of payload operation was recorded.

In the event of an atmospheric disturbance—for instance, magnetospheric storms or strong solar flare activity, a plan for additional support was formulated. Criteria had been established that involved setting up alert indices with threshold values that when exceeded would identify the onset of the activity event. With the triggering of the threshold value, additional support coverage was initiated and continued as long as the event was in progress. Other criteria had been established to identify when the event had subsided; once this occurred, special coverage would cease and support would revert to normal orbital operations. In actual practice,

the additional support plan meant that a maximum number of perigee passes consistent with the spacecraft's power and thermal system's constraints and limitations would be obtained. Both plans, for normal and special coverage, functioned without a major disruption throughout the satellite's lifetime.

3. INSTRUMENTATION

Figure 3 shows the ionization gauge experiment that was flown on the Air Force satellite. The unit shown on the right of the figure houses the electronic circuitry required for the operation of the gauge sensor. Included in this unit are high and low voltage power supplies, monitor, calibration and conditioning circuits, and a linear automatic-range-switching amplifier. The unit with the reflective front surface is the sensor unit; it is shown with the gauge uncapping mechanism in place, as it is before activation. Figure 4 shows the ionization gauge sensor and its magnet after calibration but before installation into a flight package. The ionization

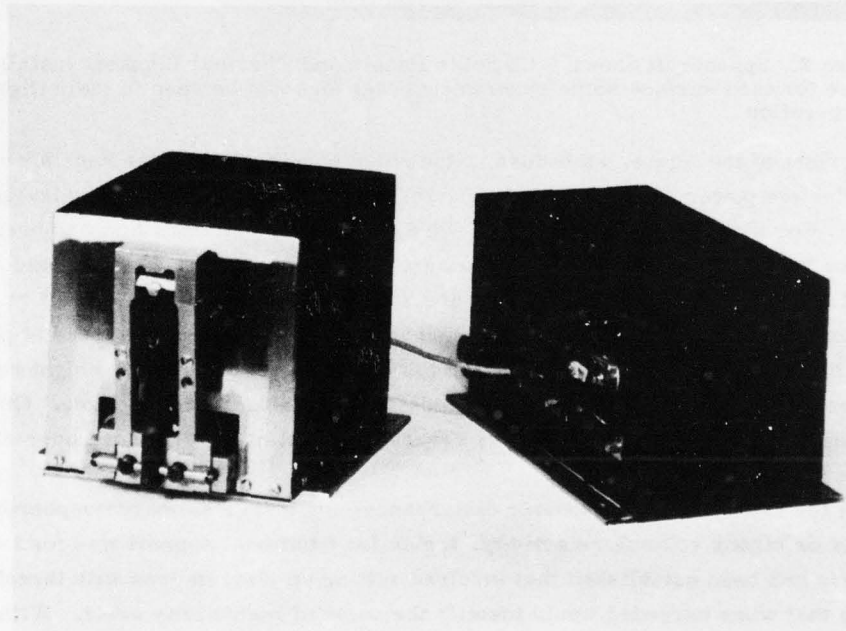


Figure 3. Ionization Gauge Flight Unit; Electronics are Packaged in the Unit Shown to the Left. The polished surface area on the sensor unit is the surface exposed to the ambient atmosphere

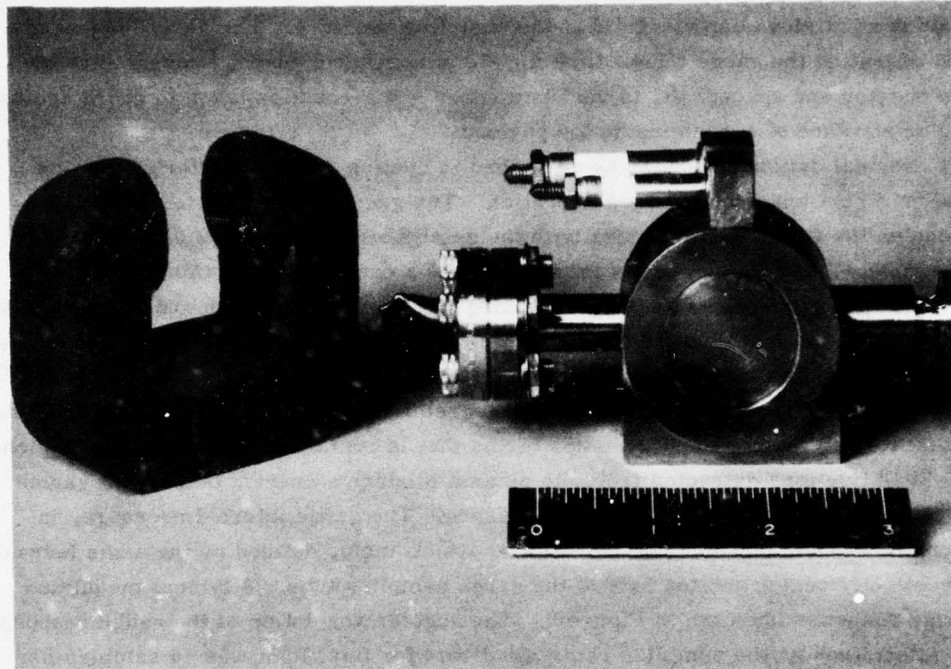


Figure 4. Cold Cathode Gauge

gauge is a cold cathode magnetron type. The connection with an attached demountable flange located to the left of the gauge body is for calibration purposes. Following calibration, the gauge is evacuated and sealed preparatory to being assembled into a flight unit. The sealing off process is performed by "pinching off" the copper calibration stem, which can be seen to the left of the flange attachment. Extending from the right-hand side of the gauge body is the sampling tabulation. This is the connection that is opened to the atmosphere once the gauge has been placed in orbit. The gauge opening or uncapping mechanism fits about the sampling tube and is firmly attached to the tube by means of a lever arm that is fastened onto the tube end cap. Upon activation of the lever arm, a torque is created that ruptures the sampling tube and exposes the gauge to the environment. The break-off interface for the sampling tube is defined by the groove located just to the rear of the end cap (Figure 4). At the midpoint of this groove the wall thickness has been reduced from 0.125 in. to 0.005 in.

The gauge is opened to the ambient atmosphere by means of explosive bellows that are enabled and fired by ground command some 24 hr after orbit has been obtained. The gauge end cap together with the break-off mechanism are ejected,

leaving a 2π steradian viewfield at the sampling aperture. The delay in opening and operating the gauge allows time for the atmospheric gases, brought aloft by the booster and spacecraft, to vent into space - a precaution taken to guard against the occurrence of corona inside the payload.

Normal data acquisition, as described in Section 1, begins after evaluation and confirmation of experiment operation. The gauge sensor located in the spin plane on the spin equator rotates with the satellite so that the sampling aperture alternately faces into and away from ram. As a consequence of this, the gauge internal pressure is modulated, increasing to a maximum at ram and subsequently decreasing to a minimum at wake. Ram is that portion of the spin cycle where the angle between the velocity vector and the sampling tube axis is less than 90 deg, with maximum ram occurring at a zero degree attack angle. Within the gauge, the internal gas is ionized and a plasma forms that is confined to the discharge region.

Positive ions extracted from the plasma produce a current output that varies in magnitude in proportion to gauge pressure. The gauge internal pressure, in turn, is a function of ambient density and attack angle, defined as the angle between the velocity vector and the axis of the gauge sampling tube. A typical modulated gauge response is shown in Figure 5. The angular resolution of the gauge response is determined by the sampling rate. That rate for this flight was 16 samples per sec, which was approximately 1 measurement every 2 deg of rotation.

4. THEORY

A number of investigators^{1, 2, 3} have developed the theory relating ambient density to ionization gauge measurements under the conditions of satellite flight. The expression relating ambient pressure to gauge pressure is:

$$P_g = \sqrt{\frac{T_g}{T_a}} P_a R(S, D, \alpha) \quad (1)$$

where

1. Pond, H. L. (1962) The effect of entrance velocity on the flow of a rarefied gas through a tube, J. Aerospace Sci., 29:917-920.
2. Ivanoskii, A. I. (1964) Interaction between an instrument cavity and a flow of rarefied gas, Trudy, 56:49-96.
3. Hughes, P. C. (1965) Theory for the Free Molecular Impact Probe at an Arbitrary Angle of Attack, University of Toronto UTIAS Report No. 103.

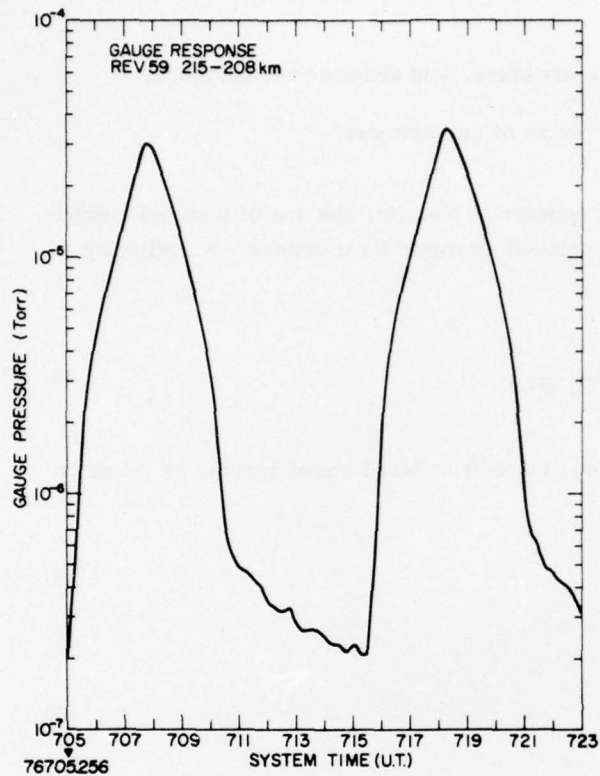


Figure 5. Gauge Response Curves Showing Variation of Gauge Internal Pressure Over Two Satellite Spin Cycles. Maximum ram points are at altitudes of 215 km and 208 km

P_g, P_a = gauge internal pressure and ambient pressure, respectively

T_g, T_a = absolute temperature of the gauge and ambient gas, respectively

$R(S, D, \alpha)$ = gauge sampling tube factor, a function of transmission probabilities

S = speed ratio u/v_m

u = satellite velocity

v_m = most probable velocity of the ambient gas

D = diameter to length ratio of the sample tube

α = attack angle.

Tabulated values and the derived theory for the $R(S, D, \alpha)$ function are given in reference 3. Ambient pressure is related to ambient density by means of the ideal gas law:

$$\rho_a = \frac{M}{R_m} \frac{1}{T_a} P_a \quad (2)$$

where

ρ_a, P_a, T_a = ambient density, pressure, and absolute temperature, respectively

M = mean molecular mass of ambient gas

R_m = gas constant.

Although ambient temperature appears in Eq. (2), the use of a model computation for this parameter is not as critical as would first appear. Substituting Eq. (1) into Eq. (2) gives:

$$\rho_a = \frac{M}{R_m} \frac{1}{T_a} P_g \sqrt{\frac{T_a}{T_g}} \frac{1}{R(S, D, \alpha)}. \quad (3)$$

With D and α fixed, R is a linear function of S at large speed ratios, as occur in satellite flight. Thus,

$$R = a S + b \quad (4)$$

or

$$R = \frac{a u}{\sqrt{\frac{2 R_m T_a}{M}}} + b, \quad (5)$$

where a and b are constants and the other symbols remain as previously defined. Hence, the dependence of the density calculation upon ambient temperature is less than a square root dependence; knowledge of T_a is still needed to determine s and, consequently, the sampling function. However, that dependence can be made less sensitive to changes in T_a with the proper choice of sampling geometry, which will determine the coefficient of s in Eq. (4).

In practice Eq. (1) is modified with an additive term becoming:

$$P_g = \sqrt{\frac{T_g}{T_a}} P_a R(S, D, \alpha) + P_{out} \quad (6)$$

where P_{out} = residual gauge pressure and the other symbols remain as defined in Eq. (1). The residual pressure is the pressure within the gauge volume that does not vanish as the gauge rotates through wake and enters the ram phase of the spin cycle.

4.1 Oxygen Recombination

In calculating the internal gauge pressure, we have assumed atomic oxygen recombining to form molecular oxygen. This is considered a reasonable assumption in view of the experimental results obtained from mass spectrometer measurements.⁴⁻⁸ The influence of recombination has been treated in some detail by Repnev,⁹ and his results agree with the approximation given below. We assume that atomic oxygen entering the gauge recombines to form molecular oxygen before ionization. Equating the number of particles entering and leaving the gauge results in the following expression:

$$\frac{n_a(o) v_a(o) R(S, D, \alpha) A}{2 \sqrt{\pi}} = \frac{n_g(o_2) v_g(o_2) A}{2 \sqrt{\pi}} \quad (7)$$

where

$n_a(o)$ = number density of ambient atomic oxygen

$n_g(o_2)$ = number density of molecular oxygen in the gauge

$v_a(o), v_g(o_2)$ = most probable velocity of ambient atomic oxygen and gauge molecular oxygen, respectively.

$R(S, D, \alpha)$ = tubular factor

A = tube aperture area.

Solving for n_g :

$$n_g = \frac{(n_a v_a R(S, D, \alpha))}{v_g}, \quad (8)$$

4. Philbrick, C.R. (1974) Satellite measurements of neutral atmospheric composition in the altitude range 150 to 450 km, Space Res., 15:151-156.
5. Hedin, A.E., Hinton, B.B., and Schmitt, G.A. (1973) Role of gas-surface interactions in the reduction of OGO-6 neutral particle mass spectrometer data, J. Geophys. Res. 78:4651-4668.
6. von Zahn, U., Fricke, K.H., and Trinks, H. (1973) ESRO 4 gas analyzer results, J. Geophys. Res., 78:7560-7562.
7. Nier, A.O., Potter, W.E., Kayser, D.C., and Finstad, R.G. (1974) The measurement of chemically reactive atmospheric constituents by mass spectrometers carried on high-speed spacecraft, Geophys. Res. Letters, 1:197-200.
8. Lake, L.R., and Krankowsky, D. (1975) Influence of surface recombination in satellite atomic oxygen measurements inferred from the AEROS-A mass spectrometer, Geophys. Res. Letters, 2:545:548.
9. Repnev, A.I. (1962) On the influence of recombination of atoms in instruments during measurements of composition and density of the upper atmosphere, Trudy, 40:77-84.

$$v = \sqrt{\frac{2 R_m T}{M}} \text{ and } 2 M(o) = M(o_2), \text{ then}$$

$$n_g = n_a \sqrt{\frac{T_a}{T_g}} R(S, D, \alpha) \sqrt{\frac{2}{T_g}} . \quad (9)$$

Since $p = nkT$, Eq. (6) in terms of pressure is:

$$P_g = P_a \sqrt{\frac{T_g}{T_a}} R(S, D, \alpha) \sqrt{2} . \quad (10)$$

Thus, for the case of total recombination, the internal gauge pressure is increased by a factor equal to the square root of two. Introducing a factor for recombination effects into Eq. (6) gives the following expression:

$$P_g = \sqrt{\frac{T_g}{T_a}} P_a R(S, D, \alpha) \delta + P_{out} \quad (11)$$

where

δ = recombination factor; for no recombination δ equals unity and for total recombinations equals $\sqrt{2}$.

The above expression is used to reduce the data in the manner discussed in the following section.

5. DATA REDUCTION

The first step in processing the ionization gauge measurements was to obtain internal gauge pressure measurements as a function of attack angle for each spin cycle. Following this a linear least squares fit of the form

$$P_g = m R(S, D, \alpha) + c \quad (12)$$

was performed twice per spin cycle, once for values entering ram and again for values leaving ram. An example of a fit obtained during revolution 59 is shown in Figure 6. The values of the parameters used in Eq. (9) for both the into and out of ram fits are restricted to attack angles in the interval from 70 deg to 20 deg. This interval is further reduced at low altitudes, due to the occurrence of gauge saturation. In that event, the fit interval is compressed in the direction away from ram to whatever value is required to exclude the saturation level. The slope of the least squares fit involving P_g and R is:

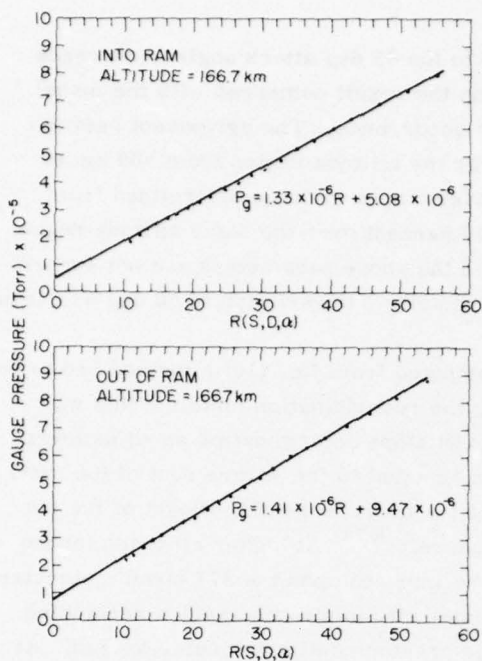


Figure 6. Least-Squares-Fit Data Acquired on Orbit 59. The 166.7 km altitude is the altitude at which maximum ram occurred. The solid line is a least-squares fit to the data

$$M = \sqrt{\frac{T_g}{T_a}} P_a \delta . \quad (13)$$

From this equation two values of ambient pressure are computed, one from data obtained as the gauge approaches ram and the second as it moves away from ram. For each spin cycle, a mean pressure value defined in Eq. (14) is also calculated:

$$P_{AVG} = \left[(P_a)_{in} + (P_a)_{out} \right] / 2 , \quad (14)$$

where $(P_a)_{in}$ and $(P_a)_{out}$ are the ambient pressure associated with the into and out of rams slopes respectively. The altitude assigned to the mean pressure found above is the altitude of maximum ram (that is, minimum attack angle). In order for Eq. (10) to be valid, the satellite spin period must be sufficiently short such that gauge temperature, ambient temperature, ambient pressure, and the recombination factor will not vary significantly over the fit interval.

The variation was tested by generating the appropriate Jacchia 1971 (J71) model values over spin cycles at altitudes of 300 km, 200 km, and perigee. The variation of ambient pressure over a quarter spin cycle (that is, 20 deg to 70 deg attack angle interval) for the model calculated values was less than 2.5 percent at 300 km, 1.8 percent at 200 km, and 0.10 percent at perigee. Two model values

computed under the conditions appropriate to the 45 deg attack angle occurrence entering and leaving ram were averaged and the result compared with the model value computed directly for maximum ram occurrence. The agreement between the two results was within 0.10 percent over the altitude region from 300 km to perigee. Ambient temperature variation over a spin cycle as determined from model computations was also less than 0.10 percent over the same altitude region, 300 km to perigee. The small variations in the above parameters are not surprising, as for this flight the time span for an attack angle variation of 50 deg was less than 2 sec.

Before ambient pressures could be computed from Eq. (10) a method had to be developed for assessing the value of delta, the recombination factor. This was performed in the following manner: For each slope determination an adjustment was performed wherein delta (δ) was taken as equal to the square root of the ratio of the molecular weight of oxygen to that of the mean molecular weight of the ambient gas as given in the J71 model atmosphere.^{10, 11} At higher altitudes (above 300 km) a lower limit of 16 would have to be imposed upon the J71 mean molecular weight. This adjustment, of course, assumes all atomic gas species recombine inside the gauge and that the internal gas is predominantly molecular oxygen. At perigee altitudes where the nitrogen content of the atmosphere is significant, the numerator of the delta ratio should be computed to include the molecular weight of nitrogen as well as oxygen; however, this was not undertaken in the calculation of delta. At an altitude of 160 km the effect of including molecular nitrogen into the delta computation was to reduce its value by less than 3 percent. For the purpose of this report, a 3 percent change was not considered large enough to justify the additional analysis procedures that would be required for an inclusion of a model composition factor. Also, it was desirable to formulate a delta factor that is amenable to later modification, particularly as current atmospheric models do not reflect the results obtained from more recent mass spectrometer measurements.

5.1 Processing

It was stated earlier, in the abstract, that the reduction technique simplified and reduced large data files to a more manageable size and format. To illustrate this, consider a perigee pass of 20 min duration. At a spin rate of 5 rpm a total of 100 spin cycles would be accumulated. Processing only ram angles (between

10. Jacchia, L.G., Slowey, J.W., and von Zahn, U. (1975) Latitudinal Changes of Composition in the Disturbed Thermosphere From ESRO 4 Measurements, Smithson. Astrophys. Obs. Report No. 309.
11. Jacchia, L.G. (1971) Revised Static Models of the Thermosphere and Exosphere With Empirical Temperature Profiles, Smithson. Astrophys. Obs. Report No. 332.

± 90 deg of the velocity vector) would produce a file of 9000 measurements. One computer pass listing of these point by point measurements would require 128 pages. The technique described in this report reduces that pass listing size from 128 pages to a total of 2 pages, without a significant loss of data quality or accuracy. As a result a data base is created that is easily manageable and adaptable to further computer analysis.

The unified data processing system (DPS) that was developed is illustrated in Figure 7. In this figure the data flow is depicted from its origin onboard the spacecraft to its termination point, the creation of a data base. The satellite data transmissions are pulse code modulated (PCM) and telemetered to tracking stations where the signals are recorded on tape. The station raw tapes are then forwarded to a central processing station where they are processed and put into a computer-compatible format. Referring to Figure 7, the data flow appears in four distinct

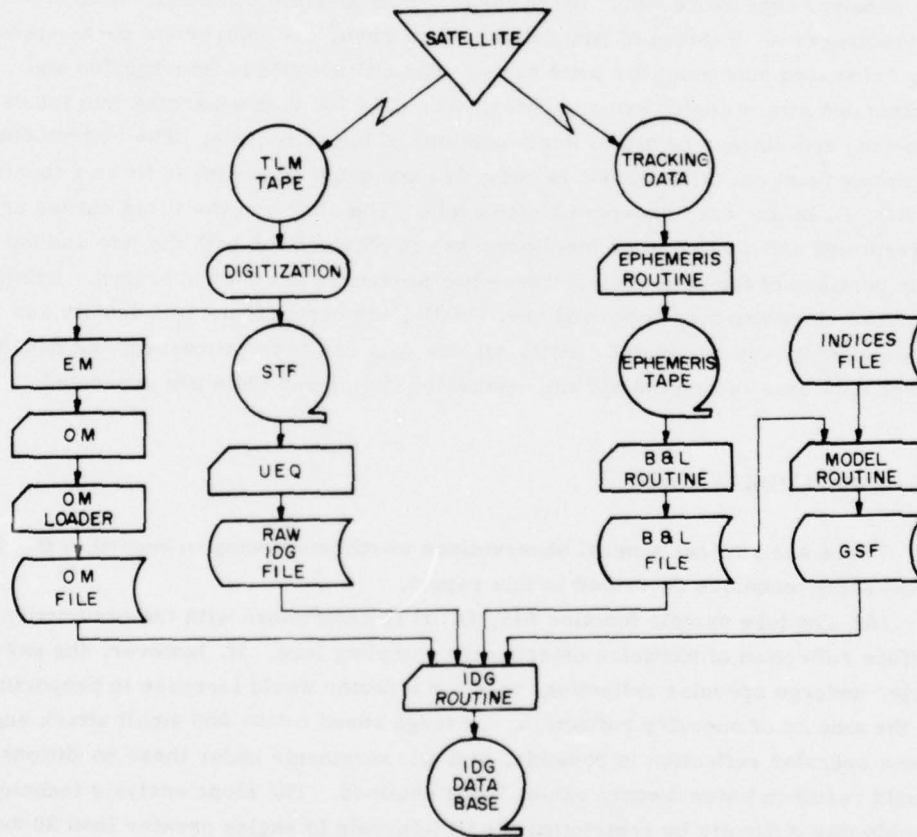


Figure 7. Functional Flow Diagram

branches. The first branch is a routine that processes the spacecraft attitude information, performs time correlations, and relates spacecraft attitude to payload sensor position. The second branch examines the experimental data outputs, unpacks, sorts, quality checks and edits experimental outputs, and converts and correlates these outputs to universal time. The third branch is a routine that receives tracking data as an input and generates an ephemeris file containing all pertinent position parameters as well as the appropriate geomagnetic parameters associated with that position. The fourth branch is an indices file created for use in the computation of atmospheric model (J71) values. This file contains quantities such as solar declination, K_p , $F_{10.7}$ indices, and other geophysical parameters.

The density gauge processing routine requires the usage of the data bases created in the four branches as inputs. Figure 8 is a functional flow diagram of the density gauge processor. All necessary initialization occurs in the first phase of the program. Frames of raw data are then input, and instrument parameters are calculated on a point for point basis. The attitude file is interrogated and instrument attack angles are computed. The data are then separated into the decreasing and increasing attack angle portions of the ram cycle. The instrument sampling function, $R(S, D, \alpha)$, is computed and gauge pressure is fit as a function of $R(S, D, \alpha)$ for each spacecraft spin cycle. The slopes of the fitted curves are determined and a value of ambient pressure is obtained for both the into and out of ram portions of the spin cycle. These two pressures are then averaged. Ephemeris parameters are then computed and, finally, atmospheric neutral density and model density are calculated. After all raw data has been processed, the density gauge data base is created and the associated listing and plots are generated.

6. GENERAL OBSERVATIONS

There are several general observations worth mentioning in regard to the data processing technique described in this report.

(A) The tube sample function $R(S, D, \alpha)$ is determined with the assumption of diffuse reflection of particles entering the sampling tube. If, however, the particles undergo specular reflection, then the R factor would increase in proportion to the amount of specular reflection. At large speed ratios and small attack angles some specular reflection is possible, and measurements under these conditions would result in lower density values being obtained. The slope analysis technique avoids this difficulty by restricting the fit intervals to angles greater than 20 deg of maximum ram. However, although not shown here, results that were processed at small attack angles did not produce conclusive evidence of specular reflection.

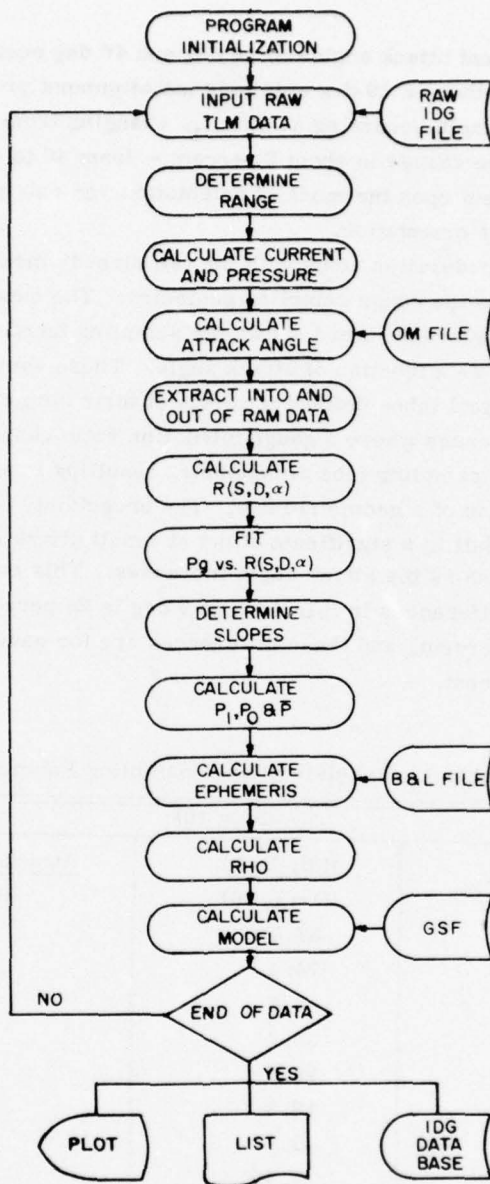


Figure 8. Systems Flow Diagram

(B) As instrument response is processed as a function of time, undetected variations in spin axis position will have their greatest impact at small attack angles, as the spin period is unaffected by the direction of the spin axis. For example,

consider the instrument attack angles of 10 deg and 40 deg occurring at times t_1 and t_2 , respectively; then, a 10 deg spin axis misalignment produces a 40 percent change in the attack angle occurring at time t_1 , changing from 10 deg to 14.1 deg, whereas at time t_2 the change is about 3 percent - from 40 to 41.2 deg. Of course, this result is dependent upon the mode of orientation and may not apply in the event of a different satellite orientation.

(C) Another consideration along with the two already mentioned is the relationship of the R factor to the gauge sampling geometry. The data shown in Table 1 were obtained from reference 3 and shows the sampling function $R(S, D, \alpha)$ for two tubulation ratios as a function of attack angle. These sampling functions are applicable to cylindrical tubes defined in terms of their diameter to length ratio. However, there are cases where a gauge tubulation ratio cannot be precisely defined in terms of the sampling tube dimensions, resulting in an equivalent or effective ratio in place of a geometric one. The uncertainty between the two tubulation ratios would result in a significant effect at small attack angles, but the effect would rapidly diminish as the attack angle increases. This can be seen from Table 1 where the differences in R factors at 0 deg is 26 percent, while at 30 deg the difference is 3 percent, and these differences are for gauge tubulation ratios that differ by 40 percent.

Table 1. Tubulated Gauge Sampling Functions

(S* = 10)		
$R(S, D^\dagger, \alpha)$ (D = 0.30)	$R(S, D, \alpha)$ (D = 0.50)	Attack Angle (α) (Deg)
110.3	87.7	0
82.7	74.1	10
50.3	52.4	20
34.5	35.7	30
25.0	25.6	40
18.1	18.3	50
12.4	12.4	60
7.53	7.49	70
3.43	3.38	80
0.515	0.504	90

S* = speed ratio, u/v_m

D[†] = diameter/length ratio of sampling tube

(D) A final observation concerning the analysis technique is its tendency to minimize the effects of certain types of systematic errors. An example of this would be a change in the spin frequency that produced a mislocation of the minimum ram angle. If the angular offset were in the direction leaving ram, then the out of ram gauge values would be processed with R factors that were too large; consequently, a smaller value of slope and ambient pressure would be obtained. Conversely, the R factor values used to process the gauge pressures entering ram would be too small. The subsequent averaging of the two pressures would have the effect of compensating for the aspect error. The same may be said of hysteresis effects present in the gauge response, where slight differences in response can occur depending upon whether the internal gauge pressure is increasing or decreasing. As approximately the same pressure region is being covered during the entering and leaving phases of the spin cycle, the hysteresis effects will also be reduced by the averaging process.

7. DATA RESULTS

Data shown in Appendices A and B were obtained during the period from 5 November 1974 to 17 January 1975. The 250 orbits shown are not all inclusive; additional orbits from this period are awaiting processing, and others require reworking to remove excessive noise. The orbits presented here, however, are a representative sample of the data obtained. Shown in Appendices A and B are two sets of density plots and a chart of satellite positional data. Figure A1 shows the satellite position in terms of perigee location where the local time, latitude, and altitude are given as a function of time and revolution number. In Appendix A, plots of density (gm/cc) vs universal time are shown. The circles are values of density obtained from gauge measurements, and the crosses are the appropriate Jacchia 71 model values (calculated under the same conditions as the measurements). In the upper portion of the same plots, the crosses denote the ratios of the measured densities to the J71 model values. The shade-sun nomenclature shown in the legend represents the time (U. T.) when the satellite was in darkness and sunlight, respectively. Other designations shown in the ordinates, abscissa, and legend are self-explanatory.

The ratios of measured/model density values are generally higher than unity. This is partially due to the method of processing gauge pressures wherein the sensitivity factor for nitrogen gas was used and, therefore, the results are given in terms of equivalent nitrogen pressures that have subsequently been converted to mass densities. As the atmosphere consists of a mixture of gases, the sensitivity factors for the individual gas species should properly be included in the pressure

conversion process. However, to accomplish this the relative concentrations of each gas specie must be determined. Hence, for the purposes of this report, such processing was not attempted as it was felt that the use of equivalent nitrogen pressures provided a more consistent data base that can later be modified to accommodate compositional data. The relative sensitivity factor for molecular oxygen ($R = S_{O_2}/S_{N_2}$) is 1.09. Thus, if the atmosphere were total oxygen, the pressures would be correspondingly reduced by 9 percent. Gauge sensitivity factors and their application will be discussed in more detail in a second report covering the data obtained during the period from February to May 1975.

In the altitude plots given in Appendix B, the circle and cross symbols denote gauge measurements, where the circles are for measurements performed when the satellite descended in altitude towards perigee and the crosses are for measurements performed when the satellite ascended in altitude away from perigee. The solid lines shown are least squares fits through the data points. In some altitude plots further processing is required to remove noise values. It is readily seen from examination of the density vs time plots which values are noise, and reference to the corresponding altitude plot will show the distortion the noise value has upon the least squares fit. At higher altitudes the downleg (circles) and upleg (crosses) profiles diverge. A major portion of this divergence is due to the spatial separation of the measurements. Perigee is initially located at midlatitudes in the northern hemisphere and precessing northward to the pole. The downleg measurements are performed at high northern latitudes, whereas the upleg measurements are taken at middle and equatorial latitudes nearer to the sub-solar point. The upleg measurements therefore reflect the higher densities associated with the larger temperatures due to the proximity of the solar bulge.

References

1. Pond, H. L. (1962) The effect of entrance velocity on the flow of a rarefied gas through a tube, J. Aerospace Sci., 29:917-920.
2. Ivanoskii, A. I. (1964) Interaction between an instrument cavity and a flow of rarefied gas, Trudy, 56:49-96.
3. Hughes, P. C. (1965) Theory for the Free Molecular Impact Probe at an Arbitrary Angle of Attack, University of Toronto UTIAS Report No. 103.
4. Philbrick, C. R. (1974) Satellite measurements of neutral atmospheric composition in the altitude range 150 to 450 km, Space Res., 15:151-156.
5. Hedin, A. E., Hinton, B. B., and Schmitt, G. A. (1973) Role of gas-surface interactions in the reduction of OGO-6 neutral particle mass spectrometer data, J. Geophys. Res. 78:4651-4668.
6. von Zahn, U., Fricke, K. H., and Trinks, H. (1973) ESRO 4 gas analyzer results, J. Geophys. Res., 78:7560-7562.
7. Nier, A. O., Potter, W. E., Kayser, D. C., and Finstad, R. G. (1974) The measurement of chemically reactive atmospheric constituents by mass spectrometers carried on high-speed spacecraft, Geophys. Res. Letters, 1:197-200.
8. Lake, L. R., and Krankowsky, D. (1975) Influence of surface recombination in satellite atomic oxygen measurements inferred from the AEROS-A mass spectrometer, Geophys. Res. Letters, 2:545-548.
9. Repnev, A. I. (1962) On the influence of recombination of atoms in instruments during measurements of composition and density of the upper atmosphere, Trudy, 40:77-84.
10. Jacchia, L. G., Slowey, J. W., and von Zahn, U. (1975) Latitudinal Changes of Composition in the Disturbed Thermosphere From ESRO 4 Measurements, Smithson. Astrophys. Obs. Report No. 309.
11. Jacchia, L. G. (1971) Revised Static Models of the Thermosphere and Exosphere With Empirical Temperature Profiles, Smithson. Astrophys. Obs. Report No. 332.

PRECEDING PAGE, BLANK, NOT FILMED

Appendix A

Plots of Density vs U.T.

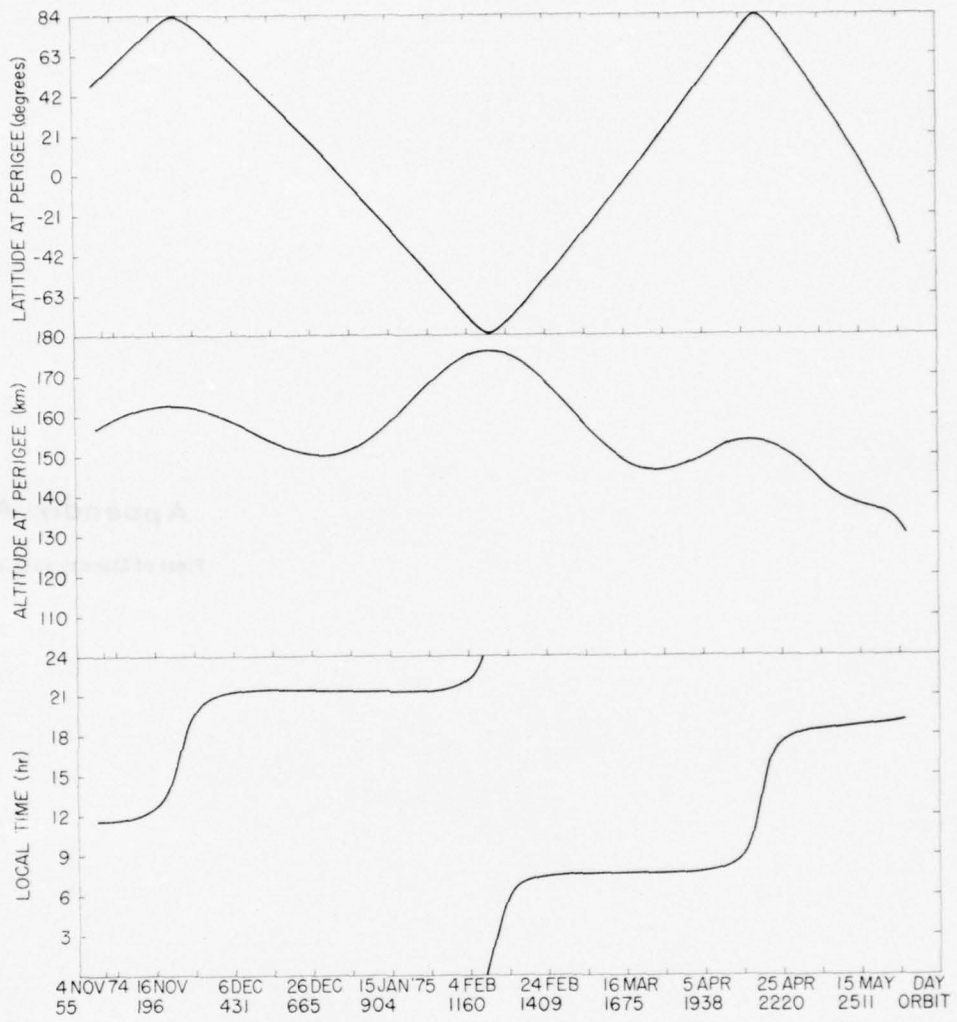
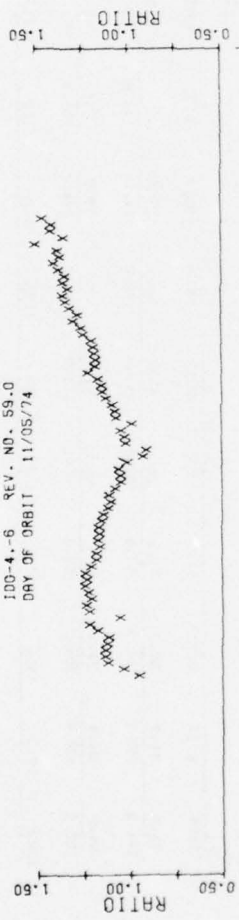


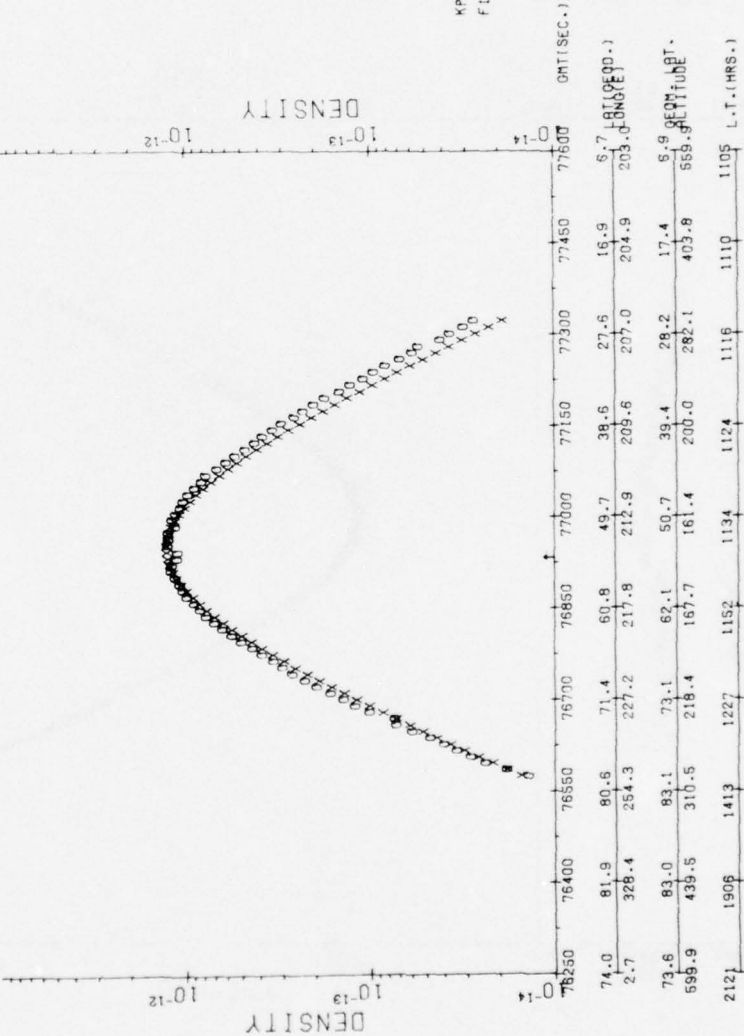
Figure A1. Satellite Location Diagram

100-4-6 REV. NO. 59.0
 DAY OF ORBIT 11/05/74



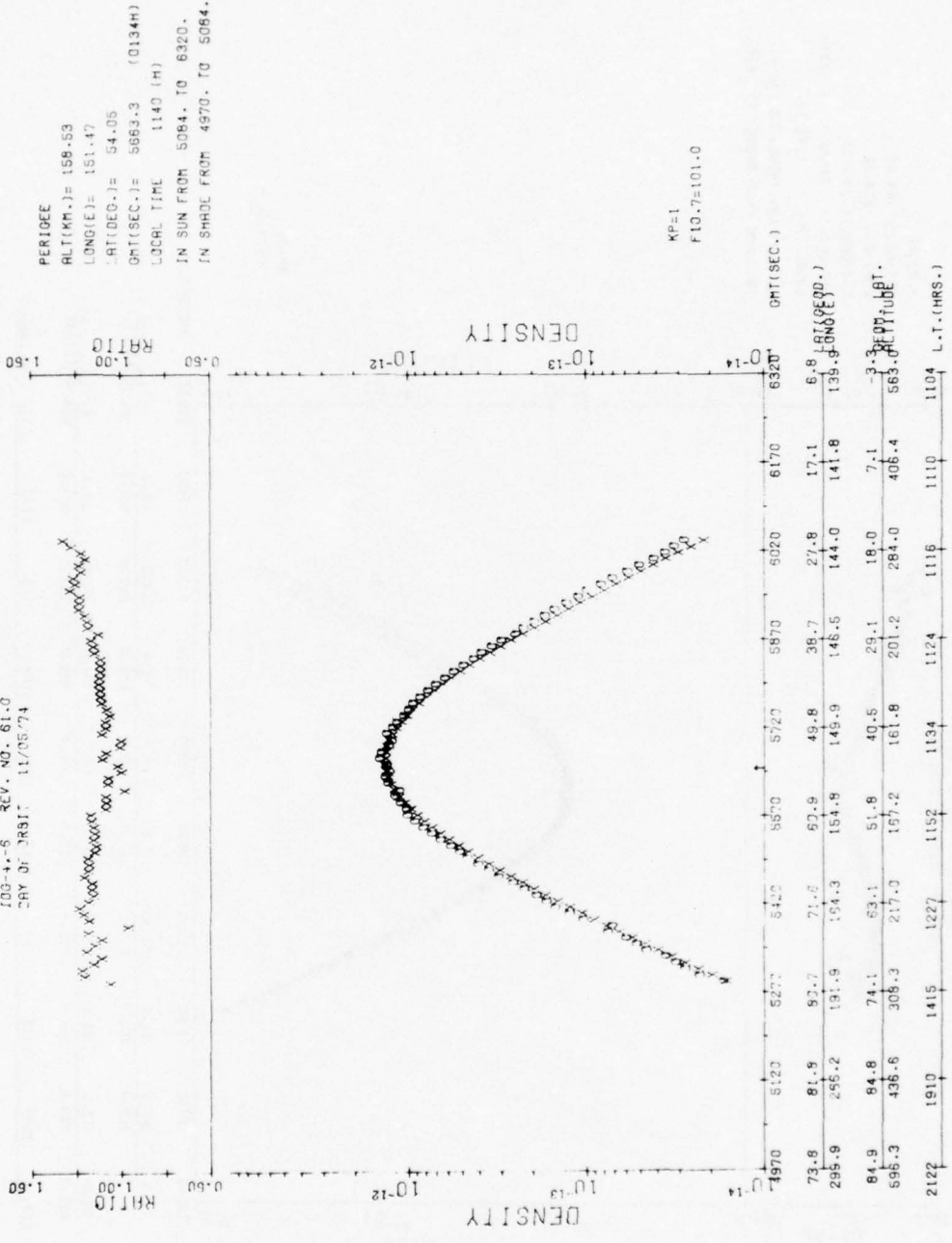
PERIODE
 ALTITUDE = 158.45
 LONGITUDE = 214.42
 LATITUDE = 53.70
 GMT(SEC.) = 76946.2 (2122H)
 LOCAL TIME 1140 (H)
 IN SUN FROM 76355. TO 77600.
 IN SHADE FROM 76250. TO 76355.

KP=0+
 F10.7=88.2

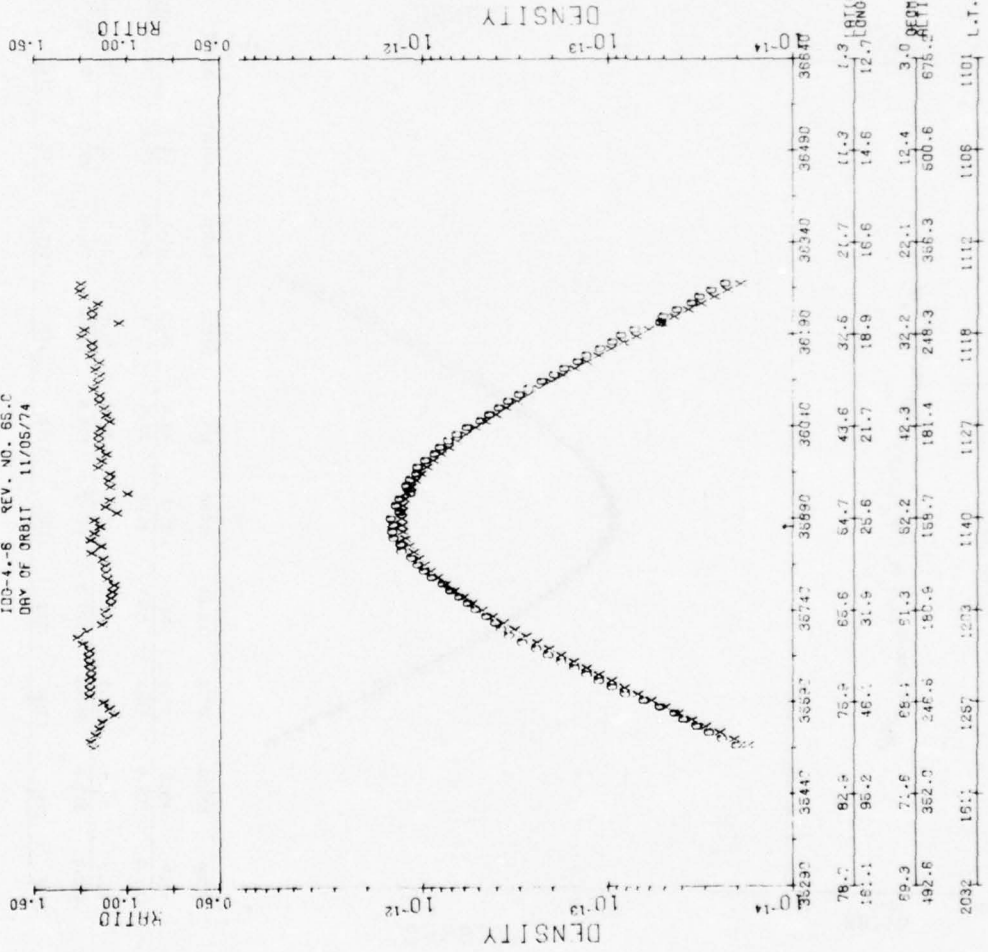


ALTITUDE (km)	LONGITUDE (deg)	PERIODE (SEC.)	L.T. (HRS.)						
76250									
76400									
76550									
76700									
76850									
77000									
77150									
77300									
77450									
77600									
74.0	81.9	80.6	71.4	60.8	49.7	38.6	27.6	16.9	6.7
2.7	328.4	254.3	227.2	217.8	212.8	209.6	207.0	204.9	203.0
73.6	83.0	83.1	73.1	62.1	50.7	39.4	28.2	17.4	6.9
599.9	439.5	310.5	218.4	167.7	161.4	200.0	282.1	403.8	559.9
2121	1906	1413	1227	1152	1134	1124	1116	1110	1105

LOG-4-5 REV. NO. 61-0
 COPY OF 3831 11/05/74



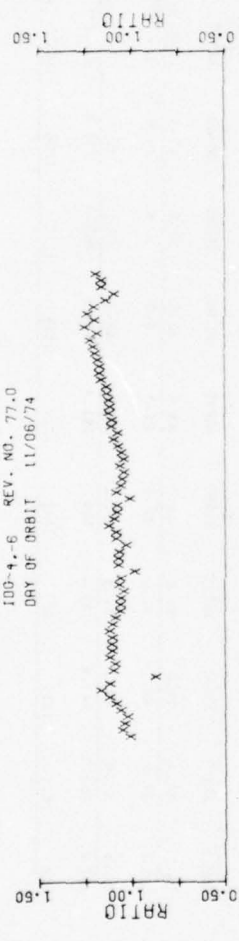
100-4-6 REV. NO. 65-C
 ORV OF ORBIT 11/05/74



PERIODE
 ALT(KM.)= 156.67
 LONG(°)= 25.62
 LAT(°E)= 54.74
 GMT(SEC.)= 35689.2 (0958H)
 LOCAL TIME 1140 (H)
 IN SUN FROM 35326 TO 36640.
 IN SHADE FROM 35290 TO 35326.

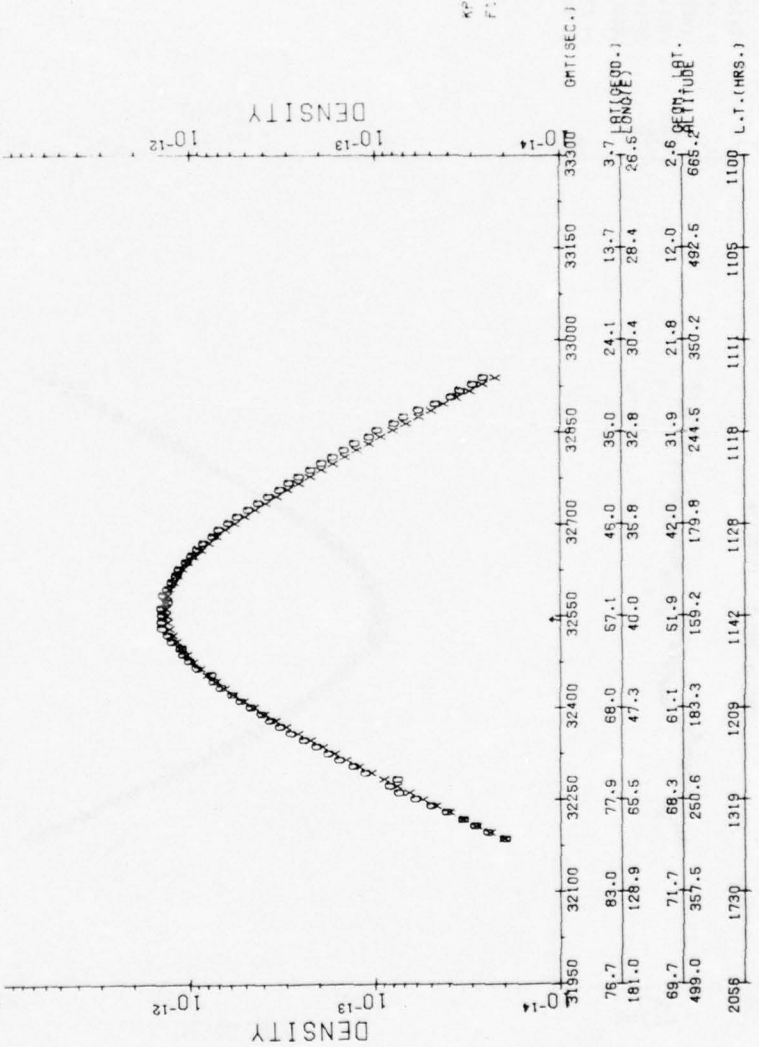
KP=1+
 F10.7=101.0

100-4-6 REV. NO. 77.0
 DAY OF ORBIT 11/06/74

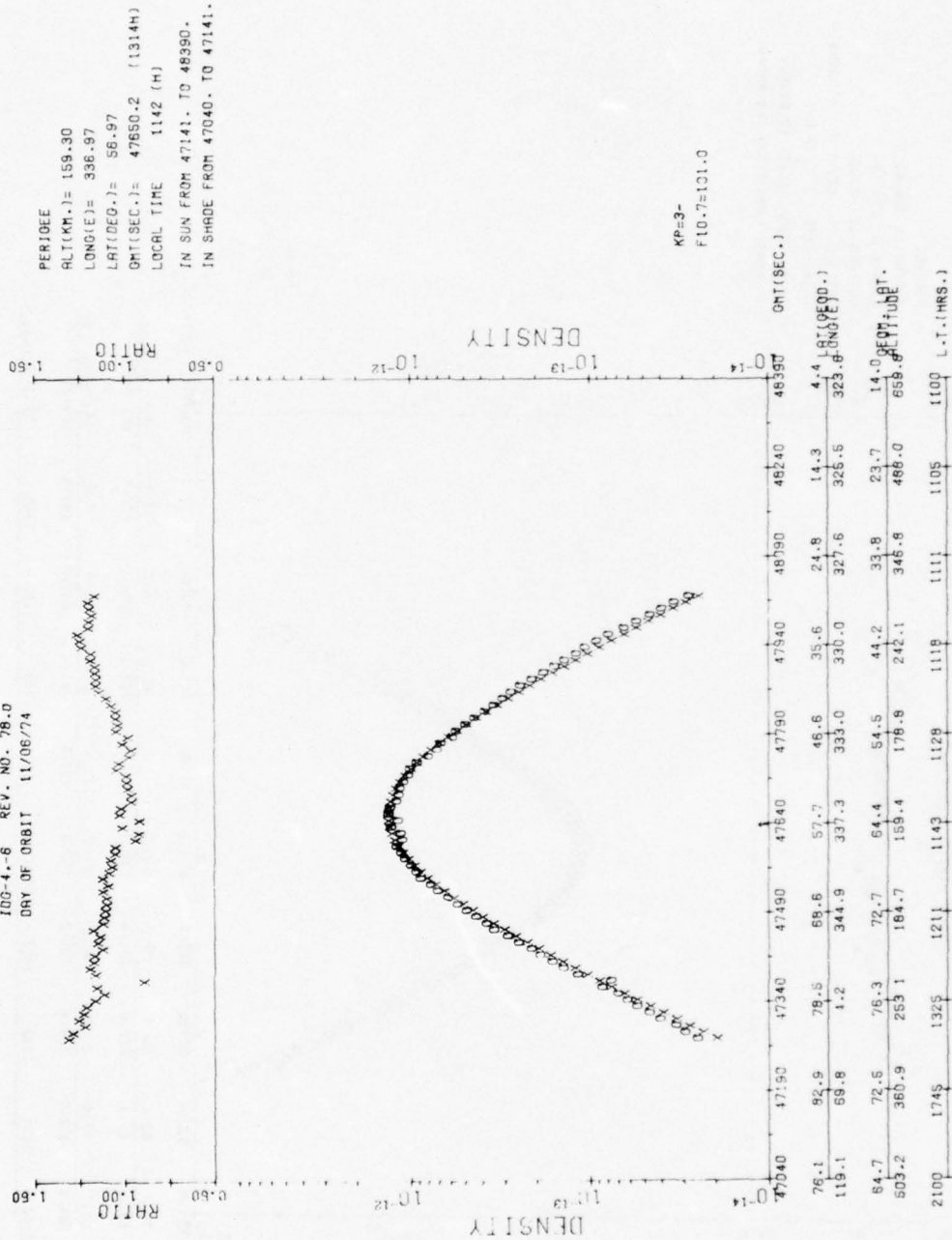


PERIODE
 ALTITUDE = 153.27
 CIRCUMF. = 32.97
 AREA = 35.93
 PERIODE = 30566.1 (090204)
 LABEL TIME 11: (h)
 IN SUN FROM 32039. TO 33300.
 IN SHADE FROM 31560. TO 32039.

K2-3
 F12-7-131.0



100-4-6 REV. NO. 78-0
 DRY OF ORBIT 11/06/74



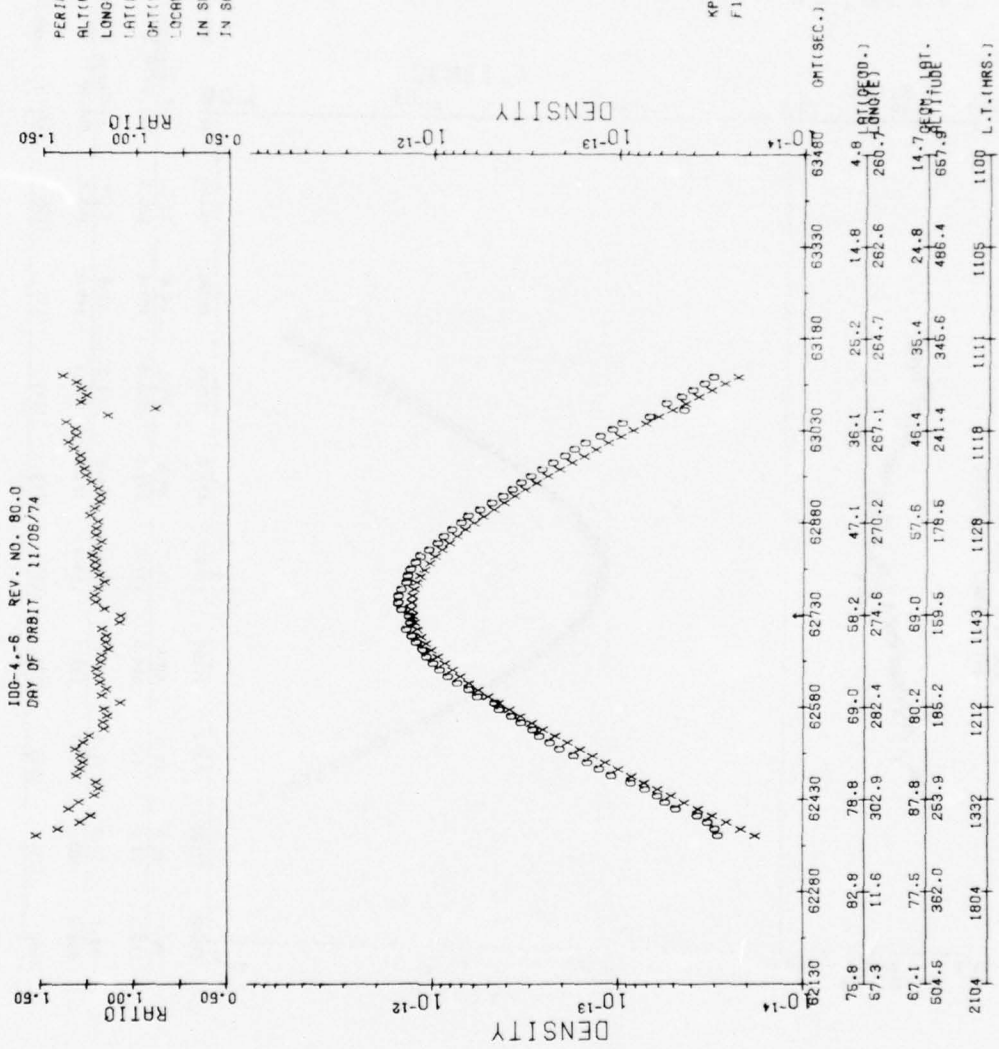
PERIGEE
 ALT(KM.)= 159.30
 LONG(E)= 336.97
 LAT(DEC.)= 56.97
 OMT(SEC.)= 47650.2 (1314H)
 LOCAL TIME 1142 (H)
 IN SUN FROM 47141. TO 48390.
 IN SHADE FROM 47040. TO 47141.

KP=3-
 F10.7=101.0

100-4.-6 REV. NO. 80.0
 DAY OF ORBIT 11/06/74

PERIODEE
 ALT(KM.)= 159.40
 LONGIE)= 274.15
 LAT(DEC.)= 57.3;
 OMT(SEC.)= 62741.6 (1725H)
 LOCAL TIME 1142 (H)
 IN SUN FROM 62240. TO 63480.
 IN SHADE FROM 62130. TO 62240.

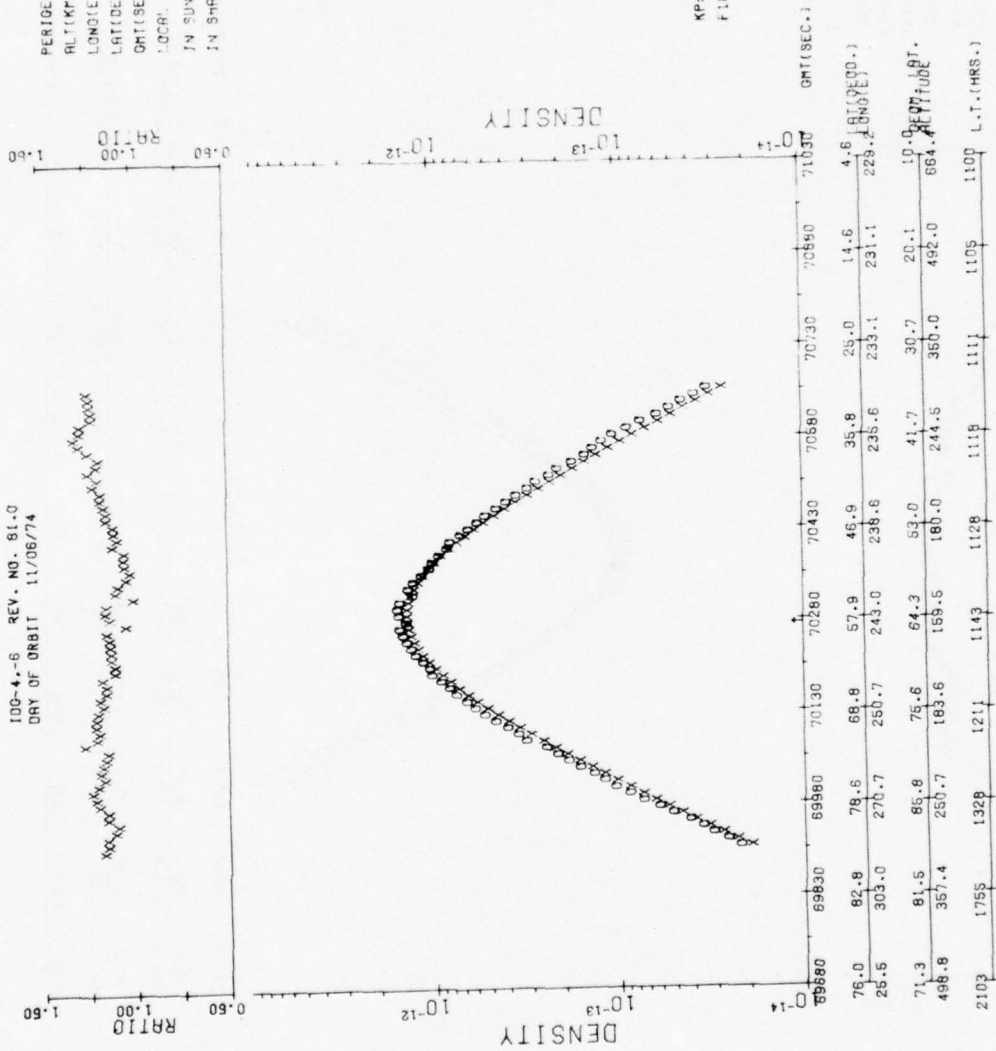
KP=2-
 F10.7=101.0



100-4,-6 REV. NO. 81.0
 DAY OF ORBIT 11/06/74

PERIGEE
 ALT(KM)= 159.46
 LONG(E)= 242.75
 LAT(DEC)= 57.49
 GMT(SEC)= 70285.2 (1331h)
 LOCAL TIME 114.7h
 IN SUN ASP 63788. TO 71330.
 IN SHADE TRJF 64852. TO 69789.

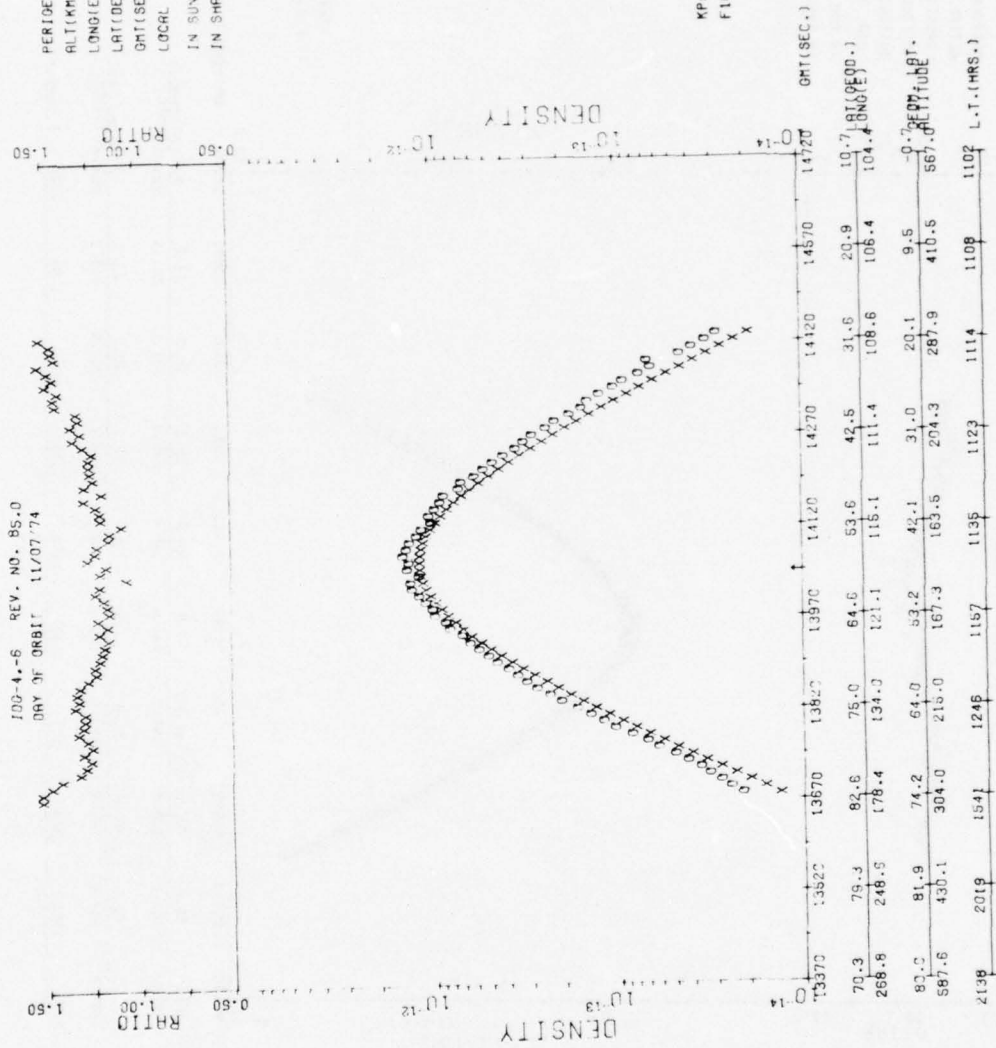
KP=3
 FIG. 75-101.0



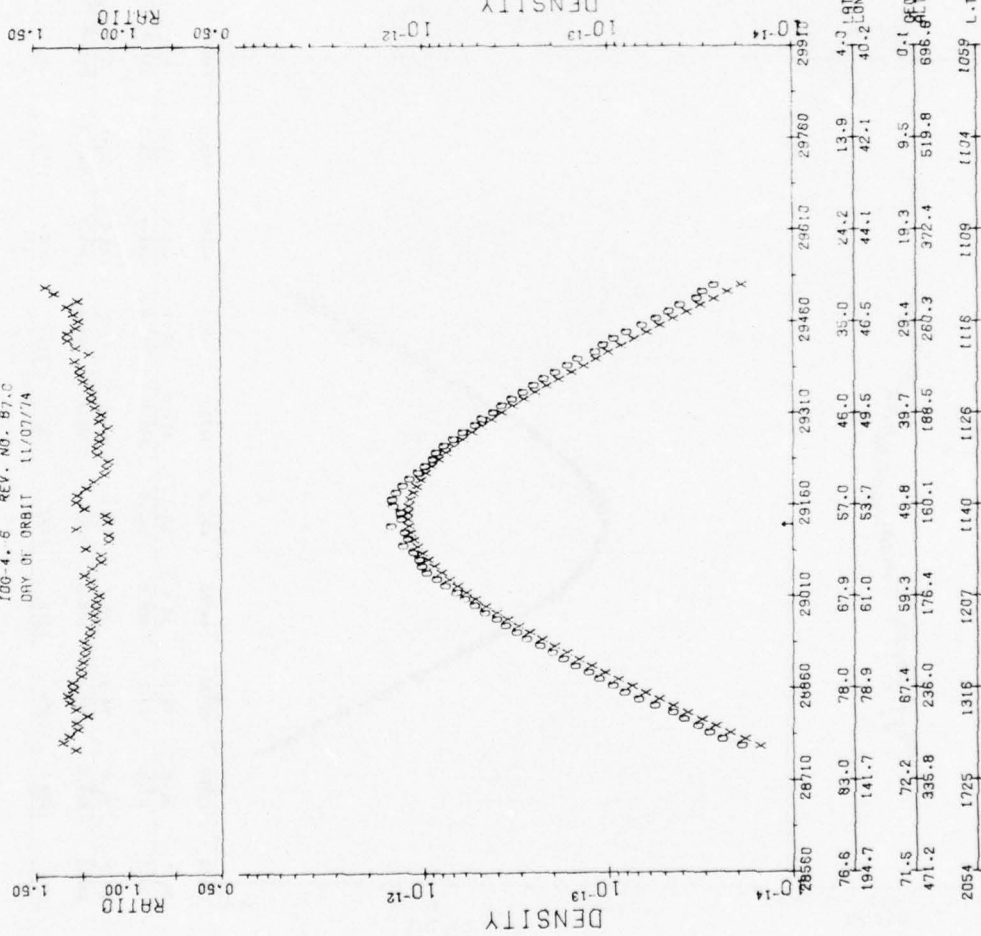
100-4,-6 REV. NO. 85-0
 DRY IN ORBIT 11/07/74

PERIODE
 ALT(KM.)= 159.66
 LONG(°E)= 117.18
 LAT(DEC.)= 58.17
 GMT(SEC.)= 14057.6 (0354H)
 LOCAL TIME 1142 (H)
 IN SUN FROM 13578. TO 14720.
 IN SHADE FROM 13370. TO 13578.

KP=1-
 F10.7=94.0



100-4.6 REV. NO. 87.0
 DRY ORBIT 11/07/74



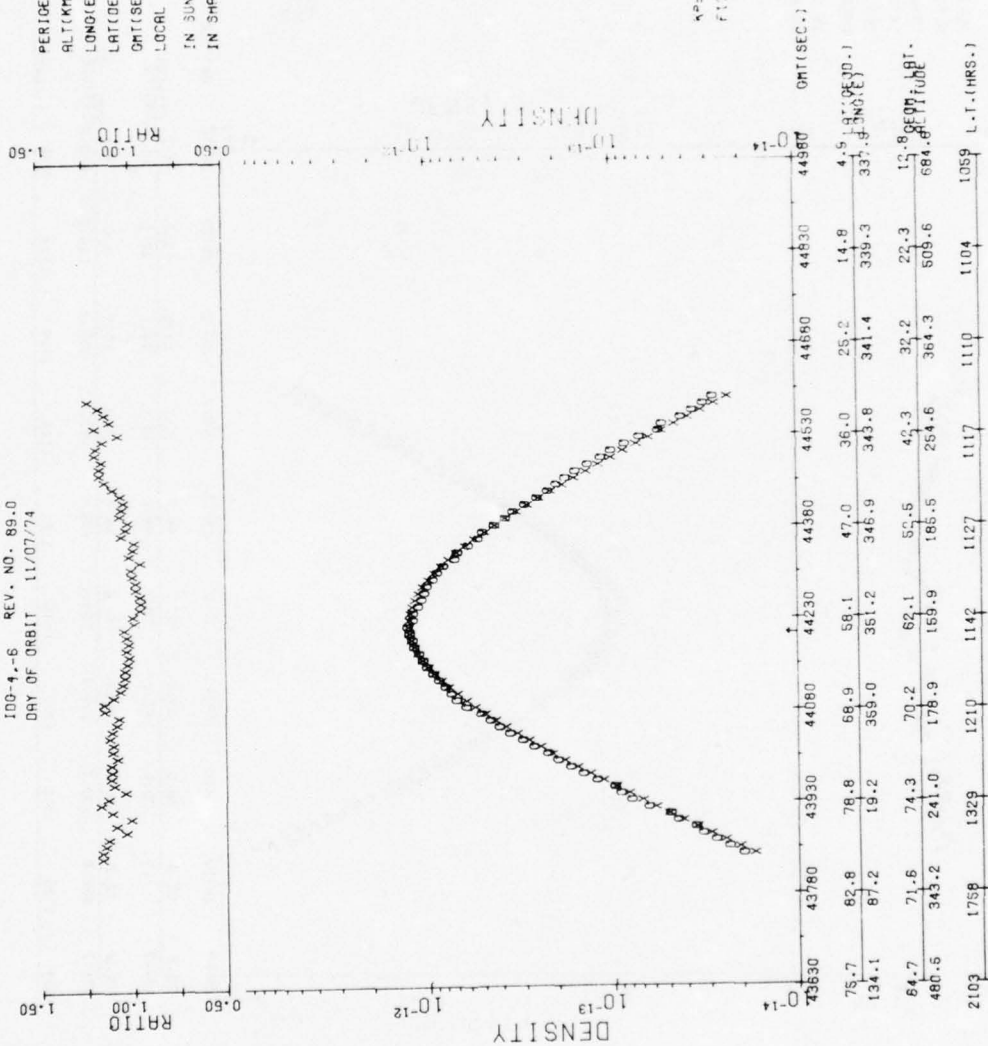
PERIGEE
 ALT (KM.) = 159.74
 LONG (E) = 54.4
 LAT (CG) = 35.32
 OMT (SEC.) = 29134.0
 LOCAL TIME = 1140
 IN SUN FROM 28569 TO 29910
 IN SHADE FROM 28560 TO 28669

APR 74
 110-0004.0

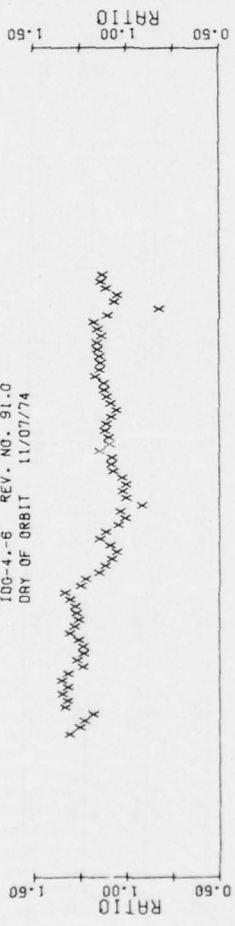
100-4-S REV. NO. 89.0
 DAY OF ORBIT 11/07/74

PERIOEE
 ALT(KM.)= 159.81
 LONG(E)= 351.65
 LAT(DEG.)= 58.66
 GMT(SEC.)= 44219.0 (12134)
 LOCAL TIME 1143 (H)
 IN SUN FROM 43755. TO 44980.
 IN SHADE FROM 43630. TO 43755.

AP=2
 F13.7=51.0

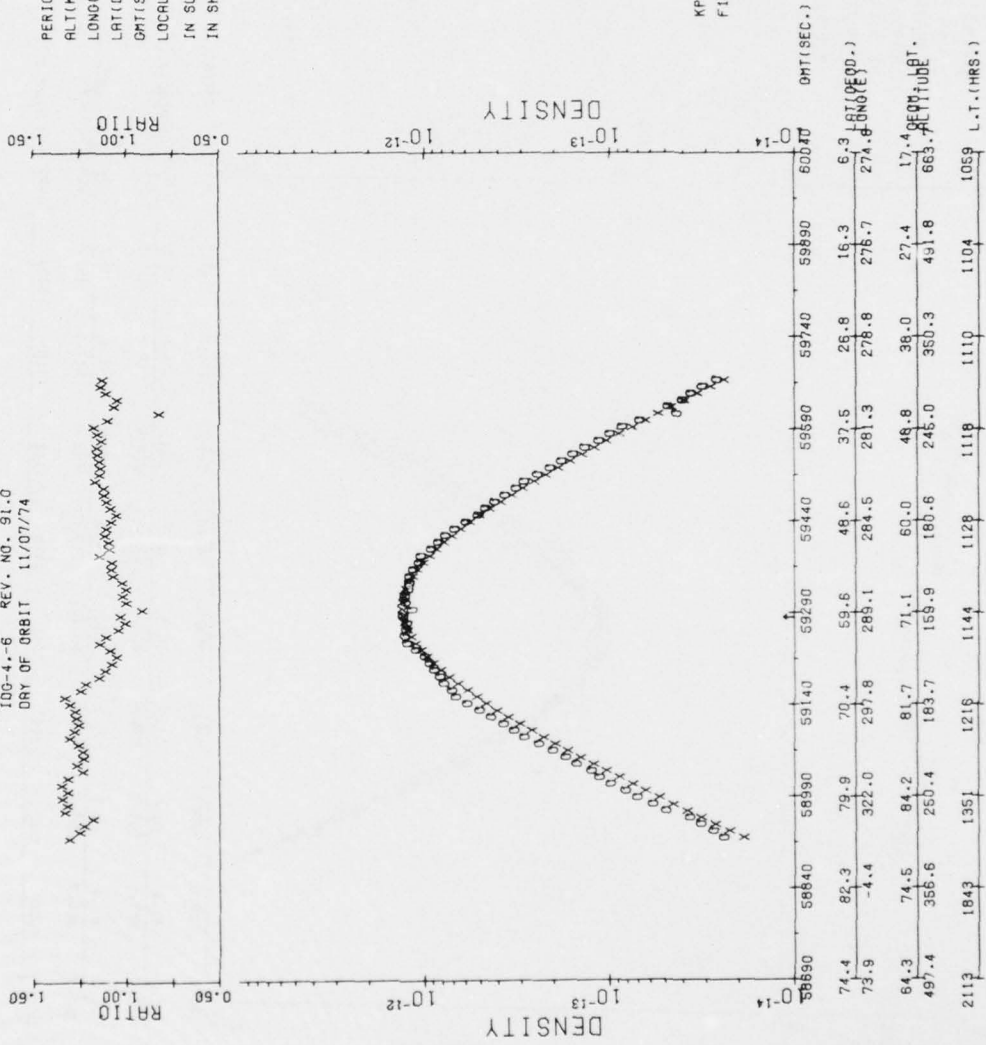


100-4.-6 REV. NO. 91.0
 DRY OF ORBIT 11/07/74



PERIOEE
 ALT(KM.)= 159.89
 LONG(E)= 288.92
 LAT(DEC.)= 59.21
 DMT(SEC.)= 59295.5 (1626H)
 LOCAL TIME 1143 (H)
 IN SUN FROM 58639. TO 60040.
 IN SHADE FROM 58630. TO 58639.

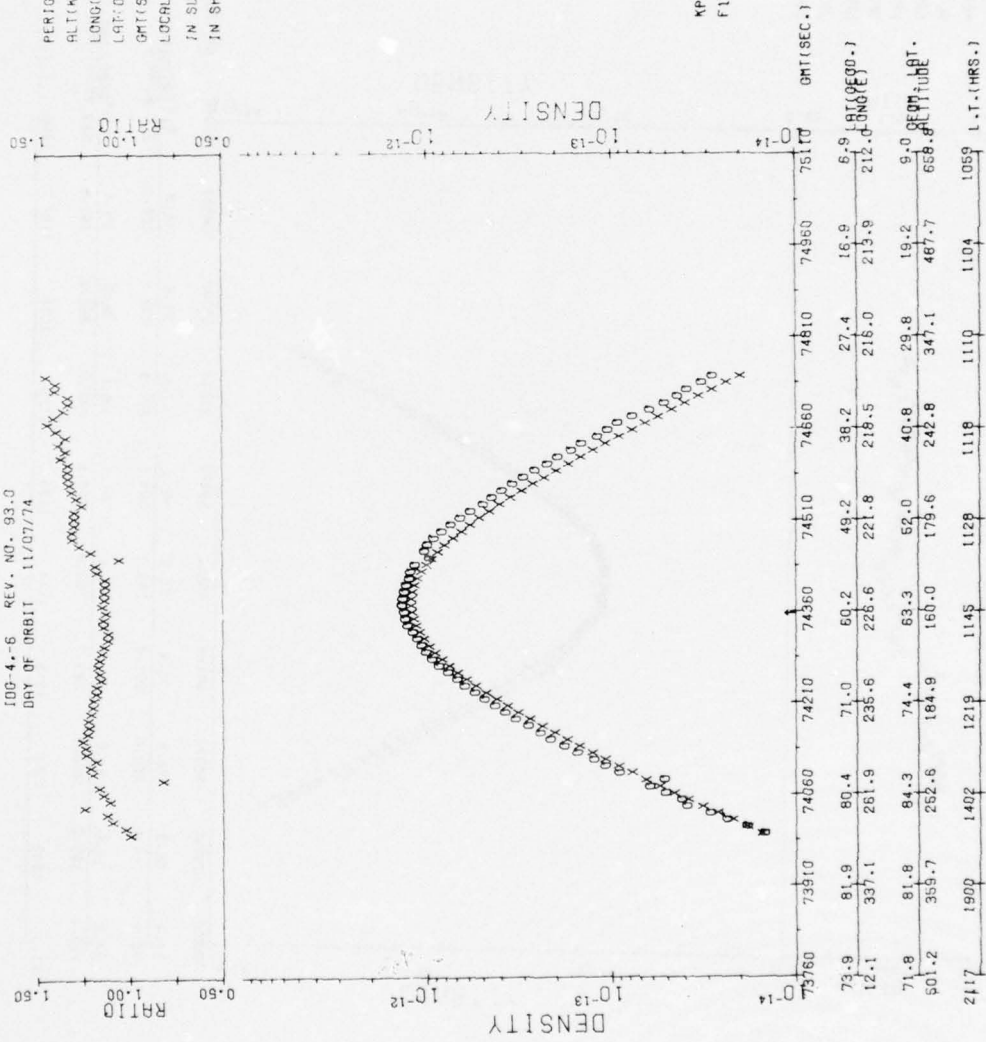
KP=3-
 F10.7=94.0



IDG-4-6 REV. NO. 93.0
 DAY OF ORBIT 11/07/74

PERIGEE
 ALT(KM.)= 159.96
 LONG(°E)= 226.20
 LAT(°DEC.)= 59.5E
 GMT(SEC.)= 74369.3 (2033H)
 LOCAL TIME 1:44 (H)
 IN SUN FROM 75920. TO 75110.
 IN SHADE FROM 73760. TO 73920.

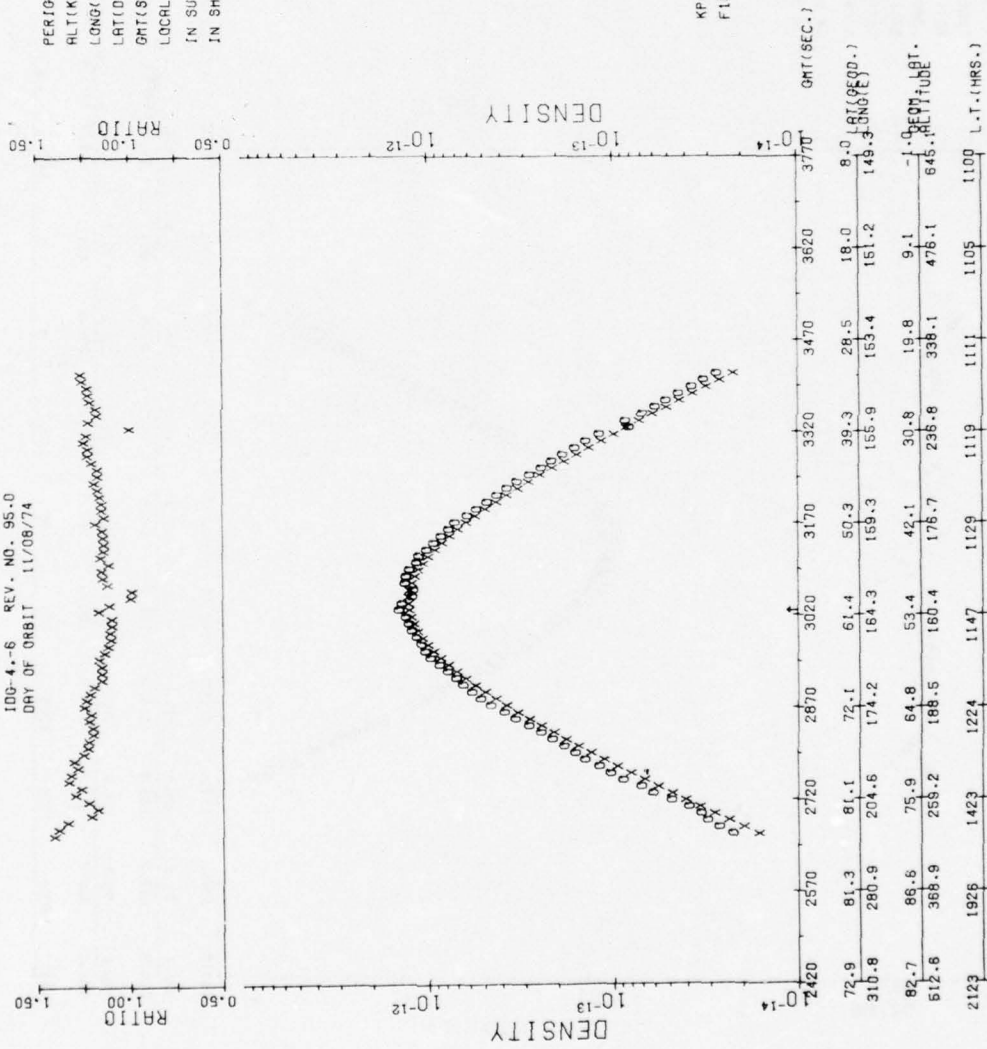
KP=1
 F10.7=94.0



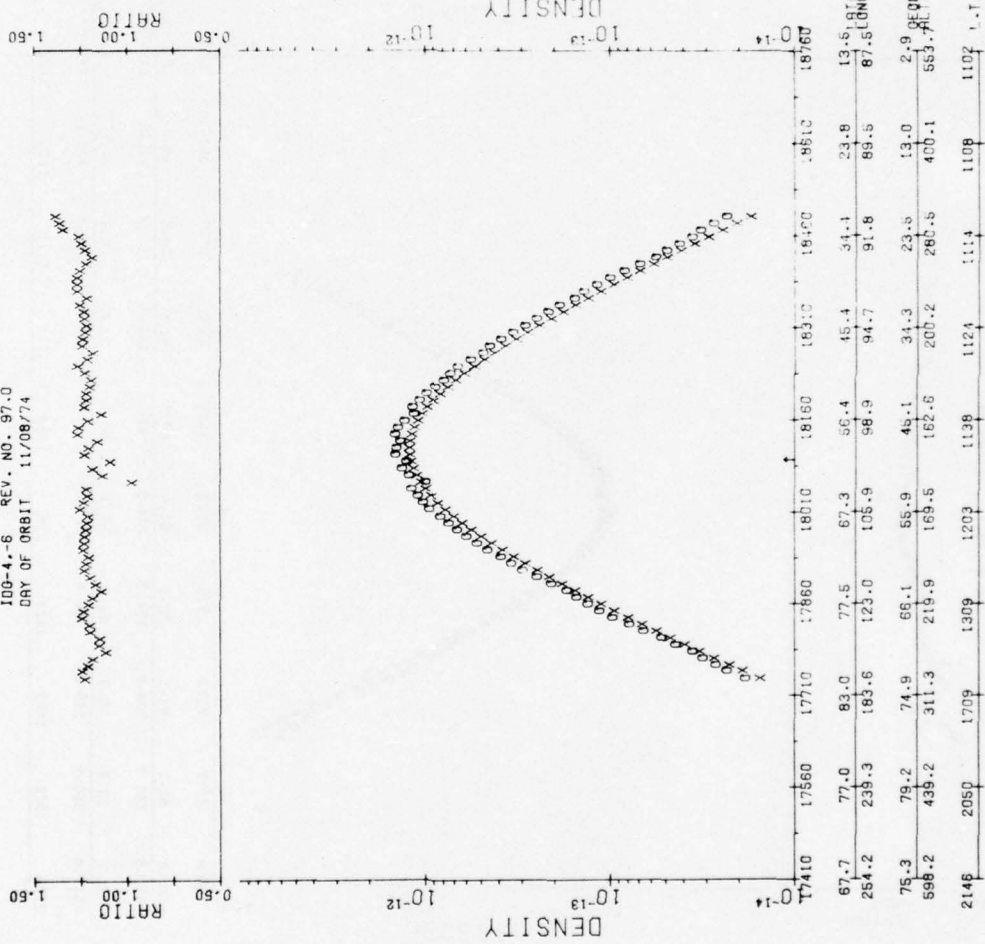
100-4-6 REV. NO. 95-0
 DRY OF ORBIT 11/08/74

PERIODE
 ALT(KM.)= 160.03
 LONG(E)= 163.49
 LAT(DEC.)= 59.89
 GMT(SEC.)= 3040.3 (0050H)
 LOCAL TIME 1144 (H)
 IN SUN FROM 2602. TO 3770.
 IN SHADE FROM 2420. TO 2802.

KP=2+
 F10.7=87.0



100-4-6 REV. NO. 97-0
 DAY OF ORBIT 11/08/74



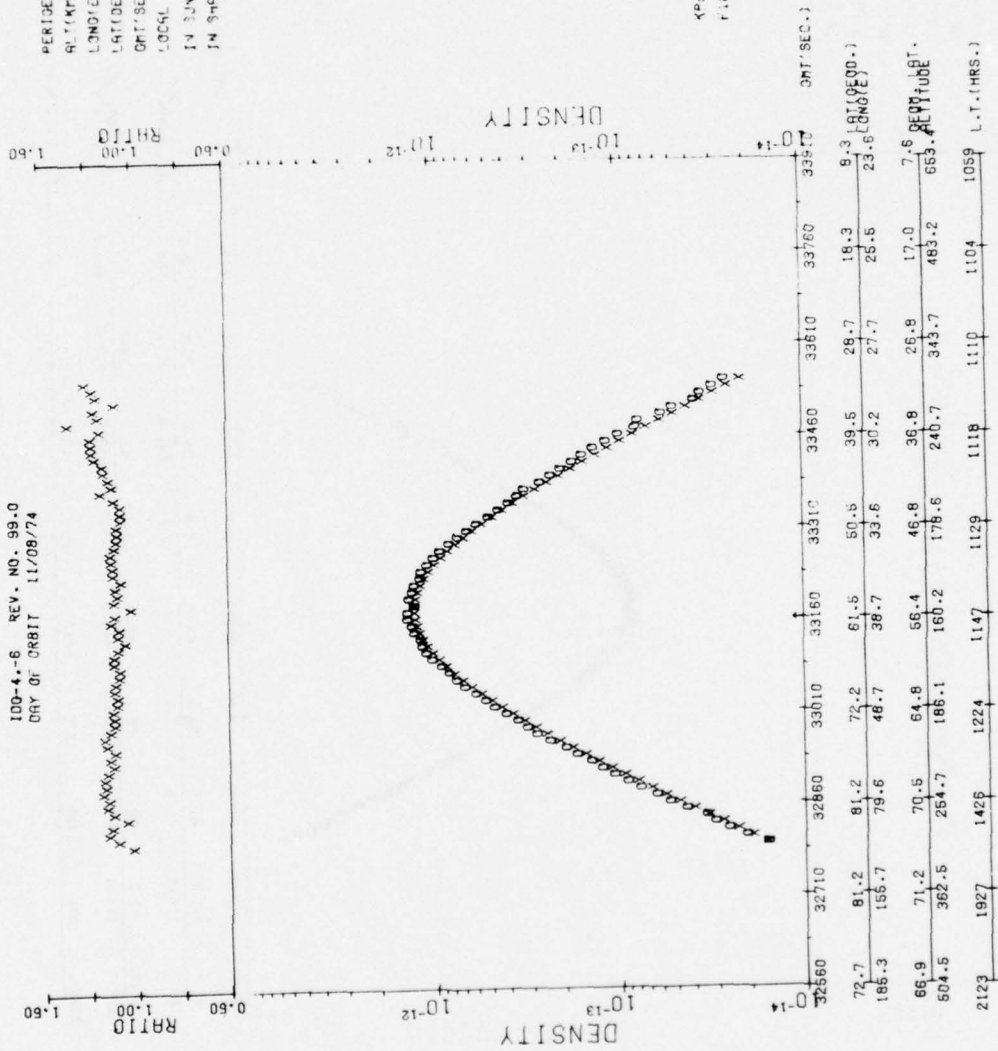
PERIODE
 ALT(KM)= 159.96
 LONG(E)= 100.78
 LAT(EO)= 60.23
 DM(TSEC)= 19.09.0 1360.14
 LOCAL TIME 1144 (H)
 IN SUN FROM 17577. TO 18760.
 IN SHADE FROM 17410. TO 17860.

XP=1
 F10.7=87.0

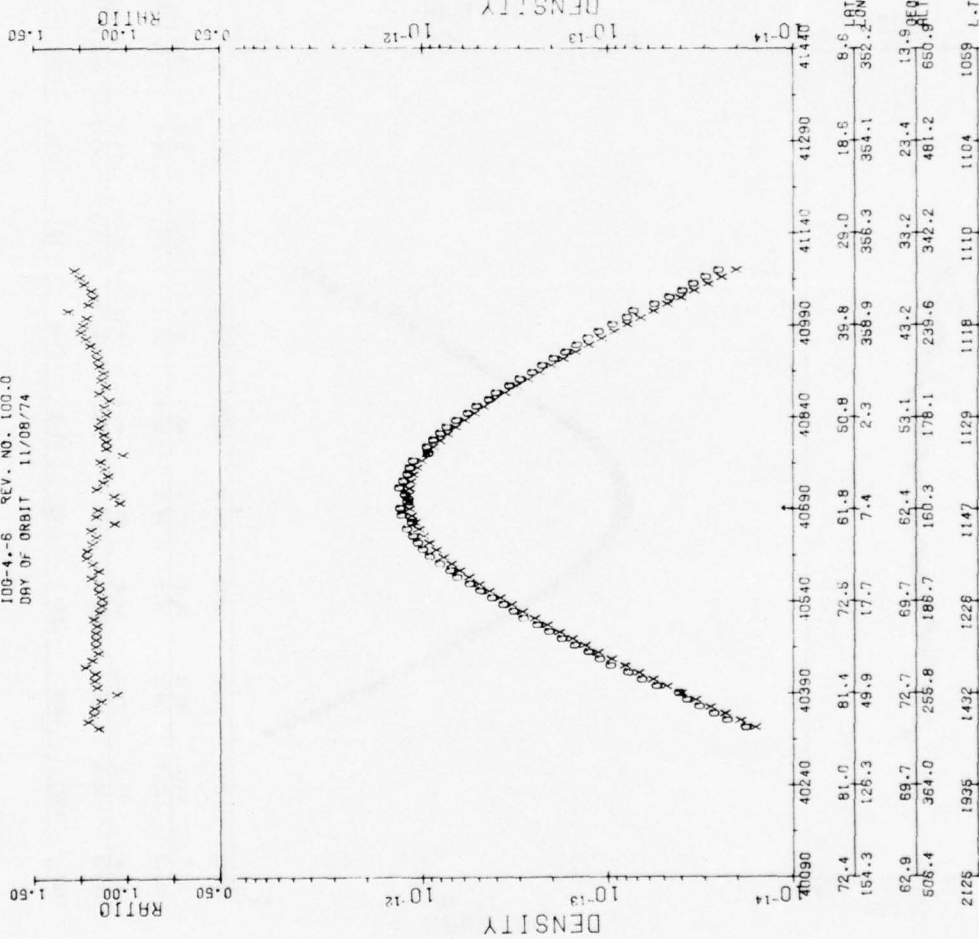
100-4-6 REV. NO. 99-0
 DAY OF ORBIT 11/08/74

PERIOD= 150.02
 R.L.(K.P.)= 150.02
 LONGITUDE= 35.12
 LATITUDE= 62.59
 GMT SEC.= 33.73.3 (0912m)
 LOCAL TIME 11:48 (7m)
 IN SUN FROM 30.44 TO 33.13.
 IN SHADE FROM 30.53 TO 32.77.

49-2
 F10.7=87.0



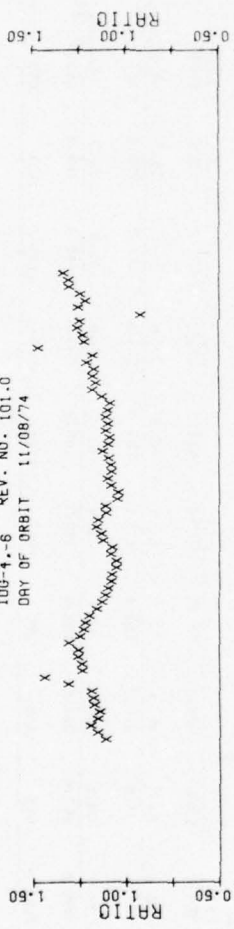
100-4--6 REV. NO. 100.0
 DAY OF ORBIT 11/08/74



PERIOD = 160.07
 ALT (KM) = 160.07
 LONG (E) = 6.90
 LAT (DEG) = 60.75
 GMT (SEC) = 40704.9 (1118M)
 LOCAL TIME 1145 (H)
 IN SUN FROM 40285 TO 41440.
 IN SHADE FROM 40090 TO 40285.

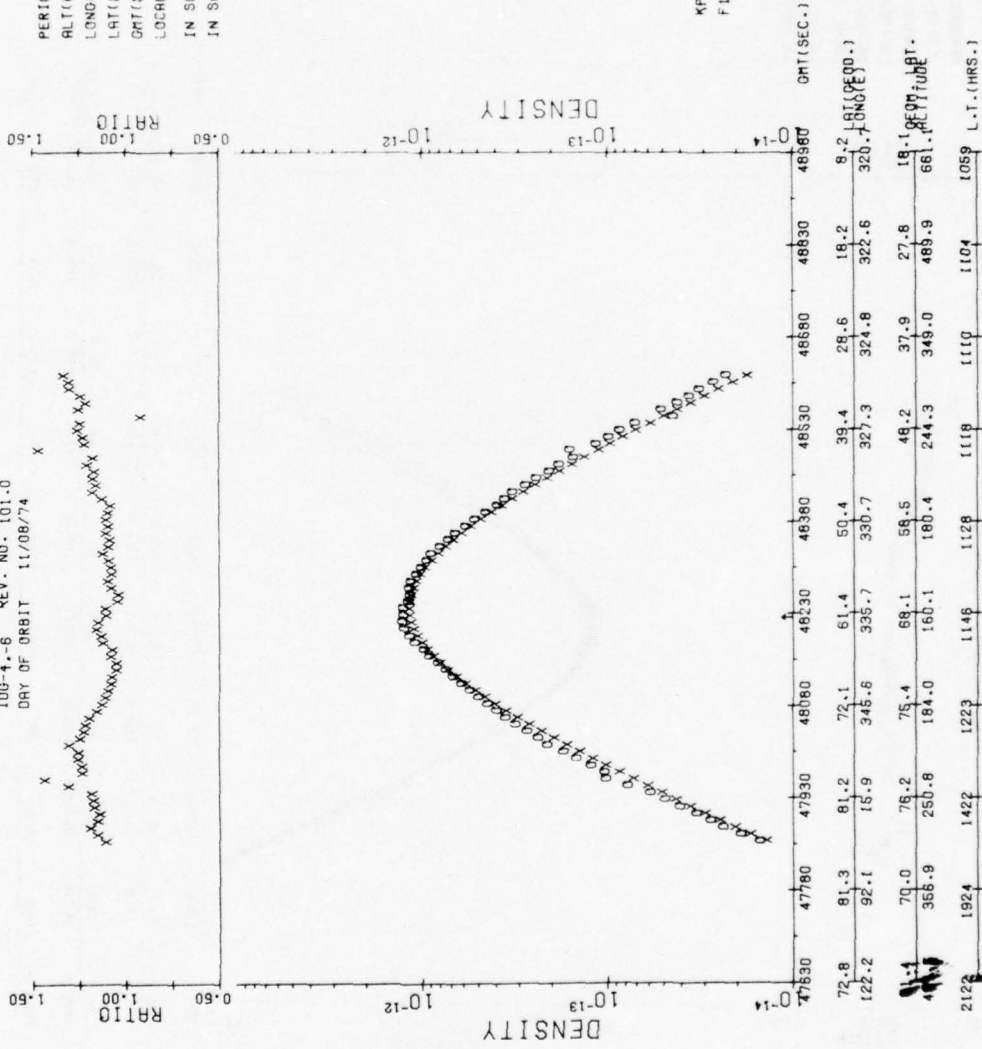
KP=2-
 F10.7=87.0

100-1-6 REV. NO. 101.0
 DRY OF ORBIT 11/08/74



PERIODE
 RL(KM.)= 160.04
 LONG(E)= 335.45
 LAT(DEC.)= 60.92
 GMT(SEC.)= 49236.4 (1323H)
 LOCAL TIME 11.45 (H)
 IN SUN FROM 47820. TO 48960.
 IN SHADE FROM 47630. TO 47820.

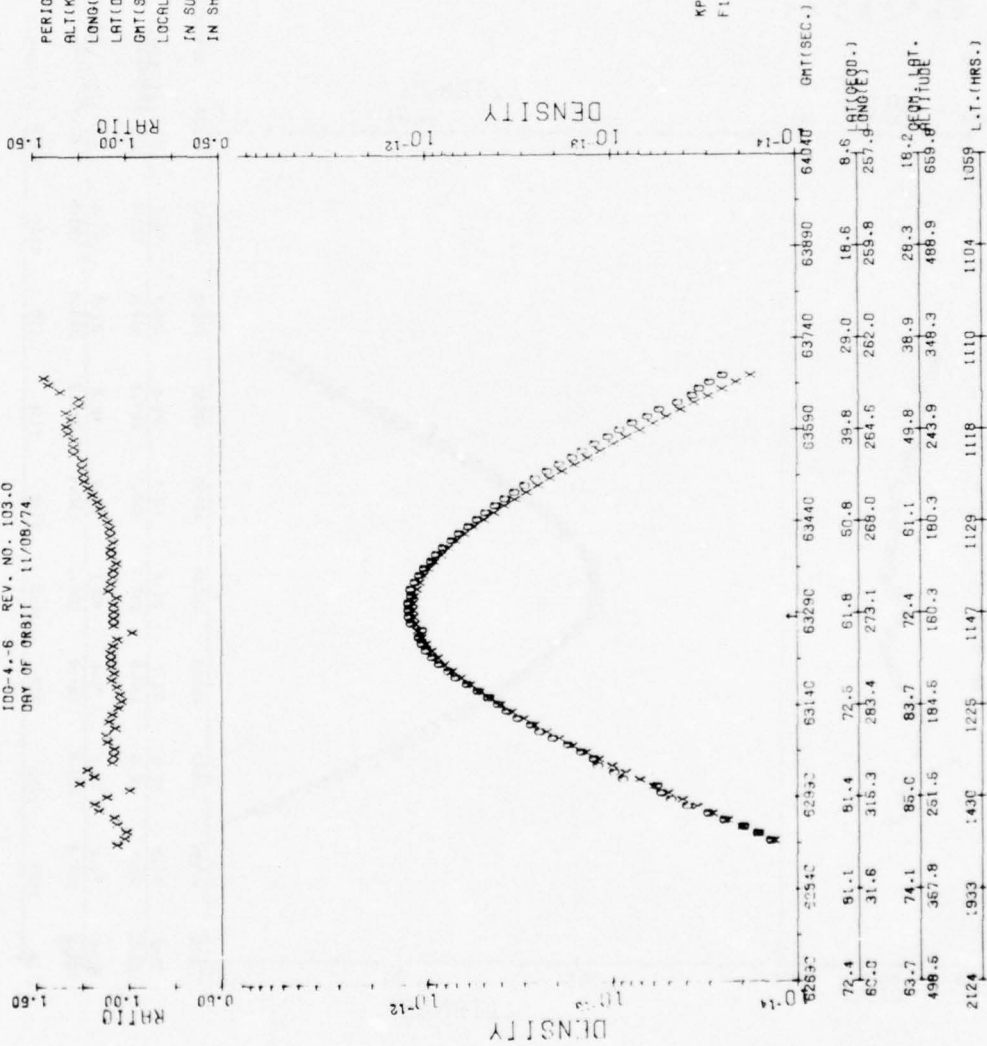
KP=1.
 F10.7=87.0



100-4--6 REV. NO. 103-0
 DRY OF ORBIT 11/08/74

PERIOEE
 ALT(KM.)= 160.23
 LONG(E)= 272.80
 LAT(DEC.)= 61.27
 GMT(SEC.)= 63297.3 (1734H)
 LOCAL TIME 1146 (H)
 IN SUN FROM 62888. TO 64040.
 IN SHADE FROM 62890. TO 62888.

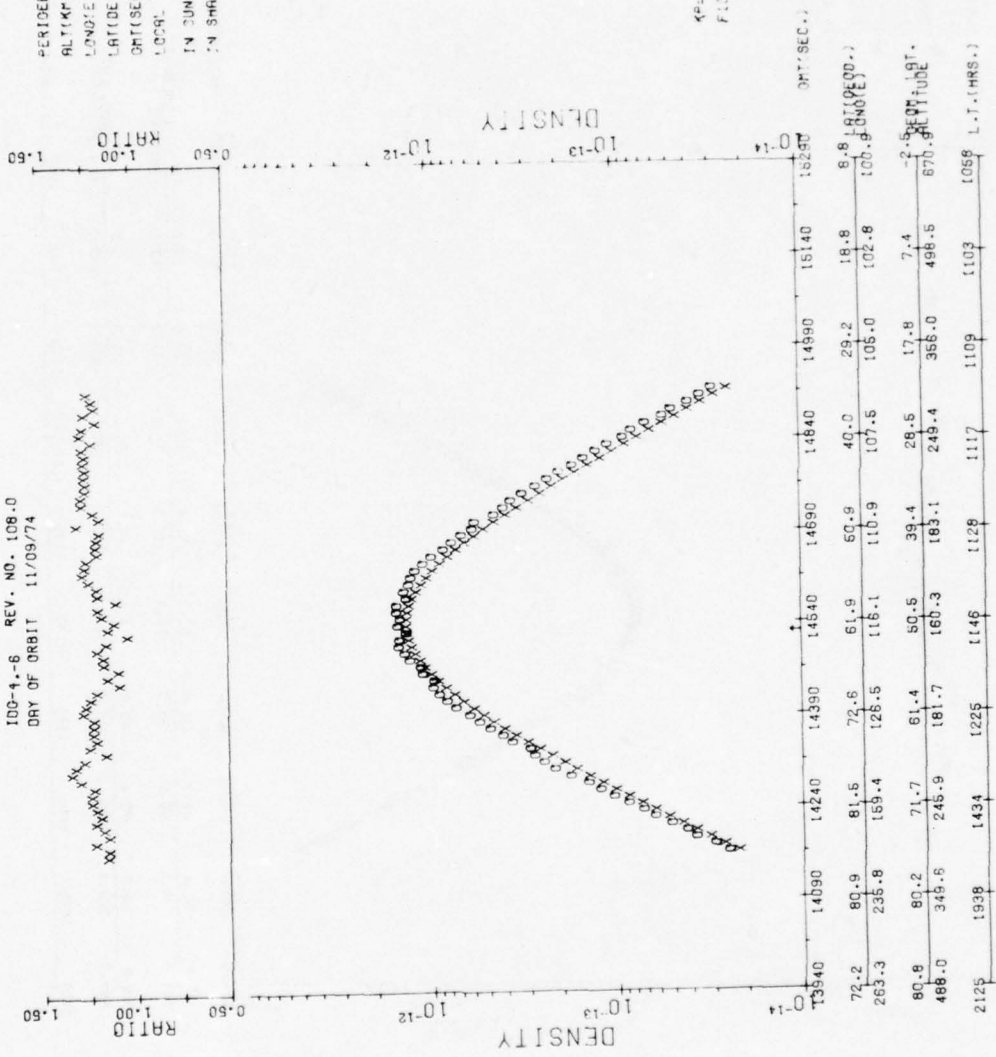
KP=1
 F10.7=87.0



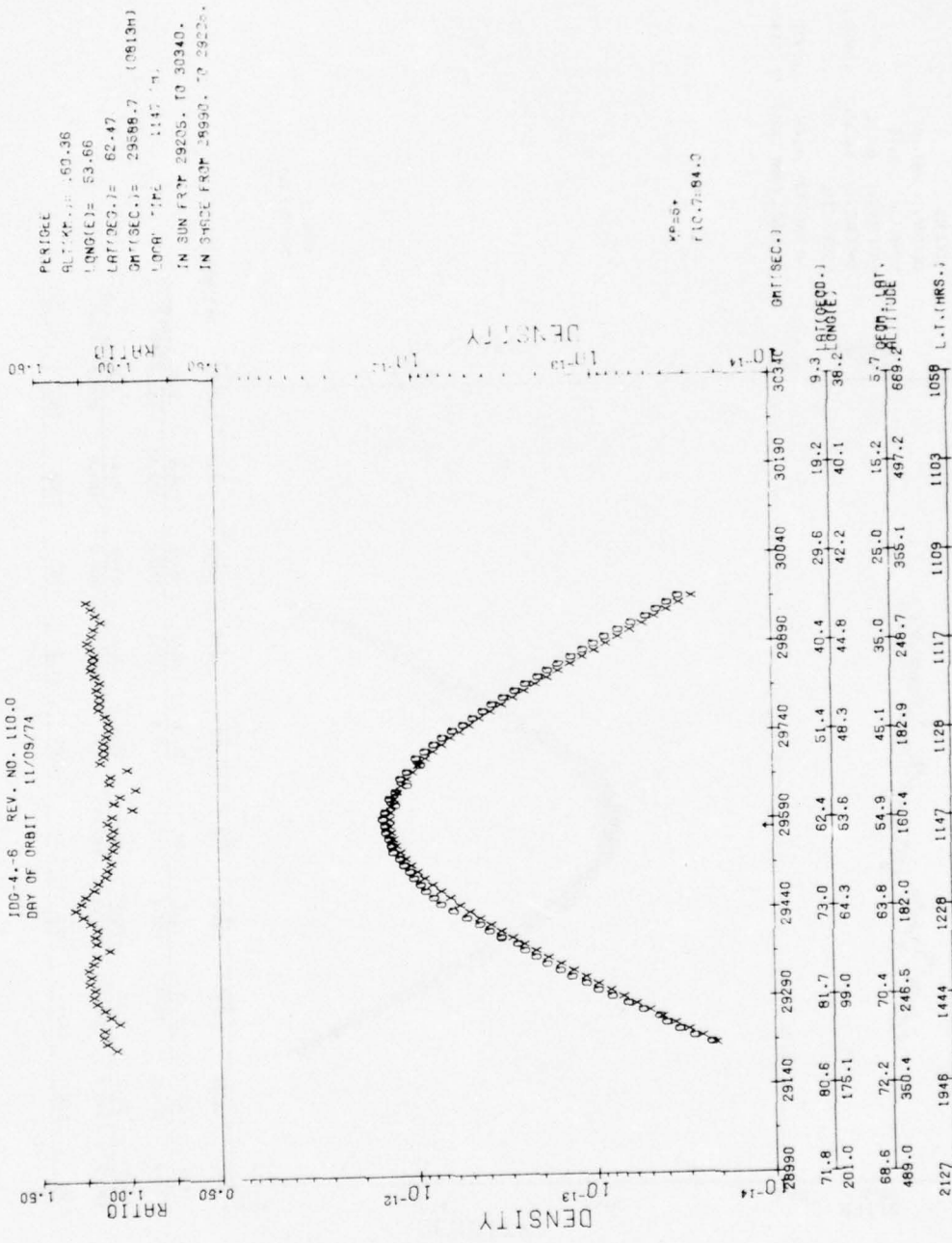
100-4--6 REV. NO. 108.0
 DRY OF ORBIT 11/09/74

PERIGEE
 ALTITUDE 180.32
 LONGITUDE 119.25
 LATITUDE 52.12
 OPT. SEC. 14637.7 (104024)
 LOCAL TIME 1117.0
 IN SUN FROM 14145.75 56290.
 IN SHADE FROM 13940.75 14145.

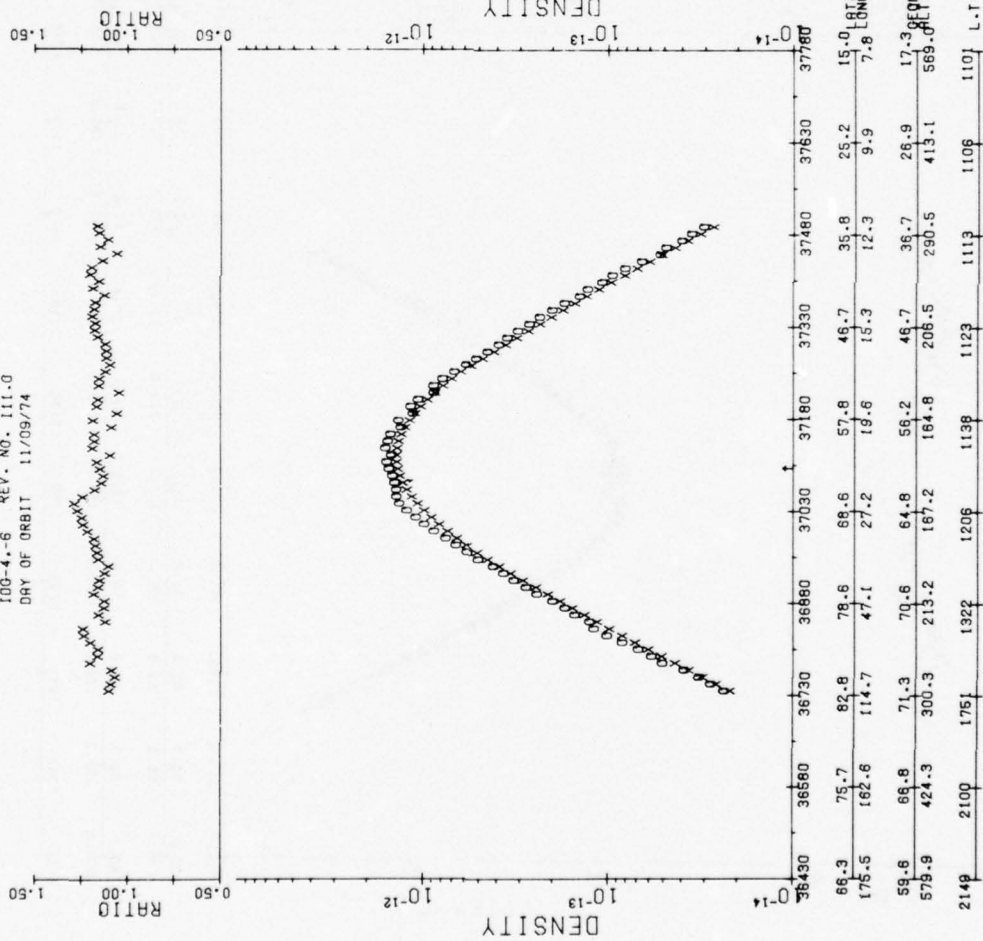
XP=6
 F12.7584.0



100-4.-6. REV. NO. 110-0
 DRY OF ORBIT 11/09/74



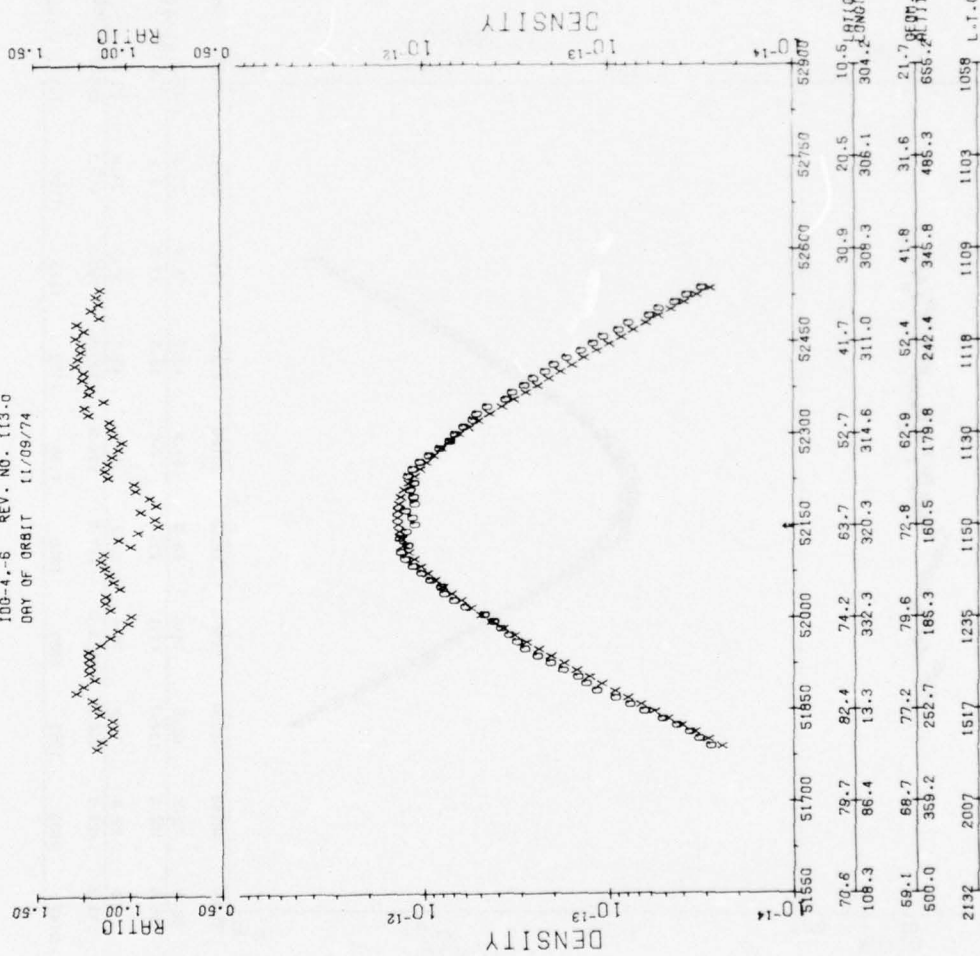
100-4--6 REV. NO. 1111.0
 DRY OF ORBIT 11/09/74



PERIGEE
 ALT (KM.) = 160.40
 LONG (E) = 22.38
 LAT (DEG.) = 62.64
 GMT (SEC.) = 37113.1 (1018H)
 LOCAL TIME 1148 (H)
 IN SUN FROM 36733 TO 37780.
 IN SHADE FROM 36430 TO 36733.

KP=6-
 F10.7=84.0

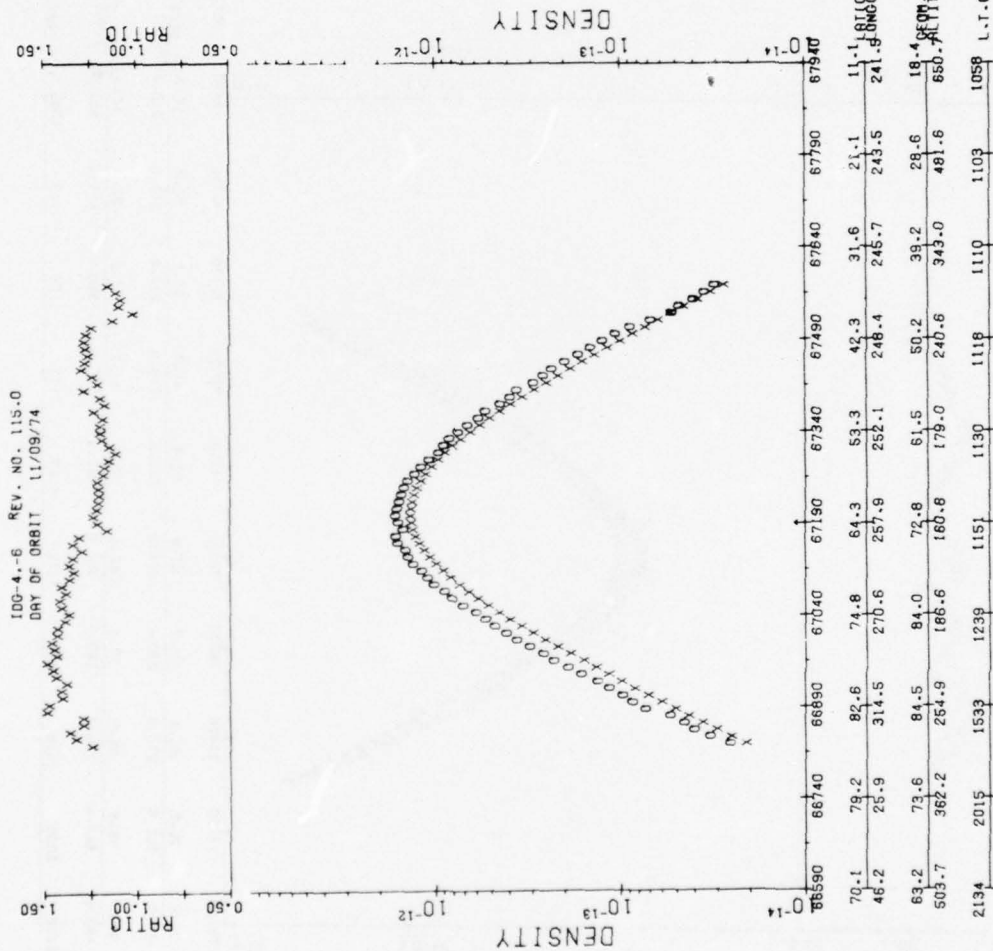
100-4.-5 REV. NO. 113-0
 DRY OF ORBIT 11/09/74



PERIDEE
 ALTITUDE 157.42
 LONGITUDE 315.90
 LATITUDE 82.30
 ORTISEC. 52159.7
 LOCAL TIME 1148 (H)
 IN SUN FROM 51.99 TO 20.53
 IN SHADE FROM 31.55 TO 21.58

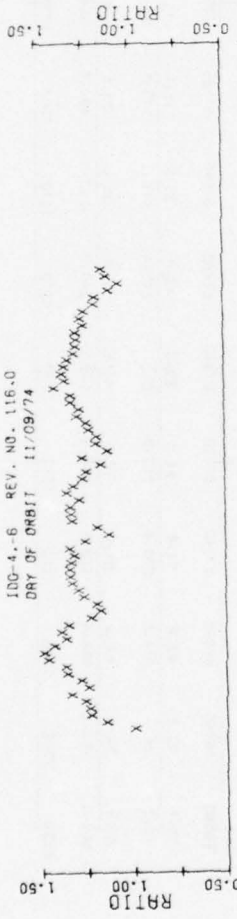
KF-6-
 FIG. 7-84.2

PERIGEE
 ALT(KM.)= 160.60
 LONG(EL)= 257.24
 LAT(DEG.)= 33.32
 GMT(SEC.)= 67203.2 (1840H)
 LOCAL TIME 1149 (H)
 IN SUN FROM 66837. TO 67940.
 IN SHADE FROM 66590. TO 66837.



MP-5-
 F 10.7-84.0

10G-4.-6 REV. NO. 116.0
 DRY OF ORBIT 11/09/74

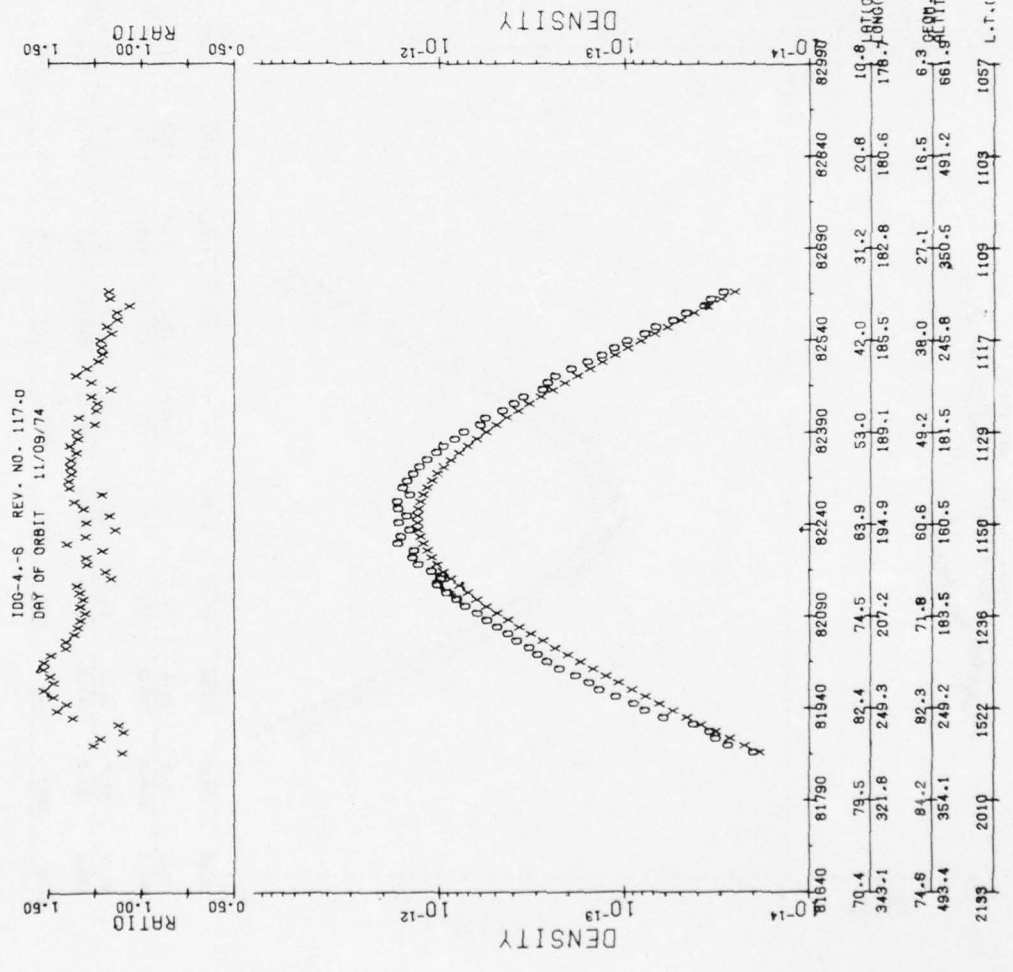
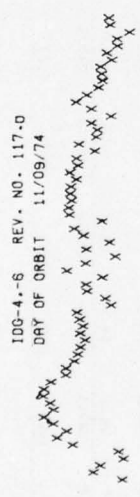


PERIGEE
 ALT(KM.)= 160.55
 LONG(L) = 225.99
 LAT(DEC.) = 69.49
 GMT(SEC.) = 74723.9 (2045H)
 LOCAL TIME 1149 (H)
 IN SUN FROM 74361. TO 75470.
 IN SHRDE FROM 74120. TO 74361.

KP=5-
 F10.7=84.0

GMT(SEC.)	LONG(L)	LAT(DEC.)	10.7	12.3	GEOP. HGT.	FUT. HGT.	L.T.(HRS.)
74120							
74270	79.6	82.4	279.9	77.4	185.7	249.4	2008
74420	74.3	63.8	226.2	66.4	160.6	181.5	1519
74570	74.3	63.8	226.2	66.4	160.6	181.5	1129
74720	63.8	52.8	220.5	44.0	246.8	350.5	1109
74870	41.8	41.8	216.9	33.0	360.5	491.2	1117
75020	31.1	20.6	214.2	22.4	491.2	661.3	1103
75170	20.6	10.7	212.0	22.4	491.2	661.3	1058
75320							
75470							

100-4.-6 REV. NO. 117-0
 DAY OF ORBIT 11/09/74



PERIODEE
 ALT(KM)= 160.49
 LONG(°)= 194.72
 LAT(°)= 63.66
 GMT(SEC.)= 82243.7 (2250M)
 LOCAL TIME 1149 (H)
 IN SUN FROM 81884. TO 82990.
 IN SHADE FROM 81640. TO 81864.

KP=4
 F10.7=84.0

GMT (SEC.)	LONG(°)	LAT(°)	ALT (KM)	PERIODEE
81640	194.72	63.66	160.49	1149
81790	194.72	63.66	160.49	1149
81940	194.72	63.66	160.49	1149
82090	194.72	63.66	160.49	1149
82240	194.72	63.66	160.49	1149
82390	194.72	63.66	160.49	1149
82540	194.72	63.66	160.49	1149
82690	194.72	63.66	160.49	1149
82840	194.72	63.66	160.49	1149
82990	194.72	63.66	160.49	1149
83140	194.72	63.66	160.49	1149
83290	194.72	63.66	160.49	1149
83440	194.72	63.66	160.49	1149
83590	194.72	63.66	160.49	1149
83740	194.72	63.66	160.49	1149
83890	194.72	63.66	160.49	1149
84040	194.72	63.66	160.49	1149
84190	194.72	63.66	160.49	1149
84340	194.72	63.66	160.49	1149
84490	194.72	63.66	160.49	1149
84640	194.72	63.66	160.49	1149
84790	194.72	63.66	160.49	1149
84940	194.72	63.66	160.49	1149
85090	194.72	63.66	160.49	1149
85240	194.72	63.66	160.49	1149
85390	194.72	63.66	160.49	1149
85540	194.72	63.66	160.49	1149
85690	194.72	63.66	160.49	1149
85840	194.72	63.66	160.49	1149
85990	194.72	63.66	160.49	1149
86140	194.72	63.66	160.49	1149
86290	194.72	63.66	160.49	1149
86440	194.72	63.66	160.49	1149
86590	194.72	63.66	160.49	1149
86740	194.72	63.66	160.49	1149
86890	194.72	63.66	160.49	1149
87040	194.72	63.66	160.49	1149
87190	194.72	63.66	160.49	1149
87340	194.72	63.66	160.49	1149
87490	194.72	63.66	160.49	1149
87640	194.72	63.66	160.49	1149
87790	194.72	63.66	160.49	1149
87940	194.72	63.66	160.49	1149
88090	194.72	63.66	160.49	1149
88240	194.72	63.66	160.49	1149
88390	194.72	63.66	160.49	1149
88540	194.72	63.66	160.49	1149
88690	194.72	63.66	160.49	1149
88840	194.72	63.66	160.49	1149
88990	194.72	63.66	160.49	1149
89140	194.72	63.66	160.49	1149
89290	194.72	63.66	160.49	1149
89440	194.72	63.66	160.49	1149
89590	194.72	63.66	160.49	1149
89740	194.72	63.66	160.49	1149
89890	194.72	63.66	160.49	1149
90040	194.72	63.66	160.49	1149
90190	194.72	63.66	160.49	1149
90340	194.72	63.66	160.49	1149
90490	194.72	63.66	160.49	1149
90640	194.72	63.66	160.49	1149
90790	194.72	63.66	160.49	1149
90940	194.72	63.66	160.49	1149
91090	194.72	63.66	160.49	1149
91240	194.72	63.66	160.49	1149
91390	194.72	63.66	160.49	1149
91540	194.72	63.66	160.49	1149
91690	194.72	63.66	160.49	1149
91840	194.72	63.66	160.49	1149
91990	194.72	63.66	160.49	1149
92140	194.72	63.66	160.49	1149
92290	194.72	63.66	160.49	1149
92440	194.72	63.66	160.49	1149
92590	194.72	63.66	160.49	1149
92740	194.72	63.66	160.49	1149
92890	194.72	63.66	160.49	1149
93040	194.72	63.66	160.49	1149
93190	194.72	63.66	160.49	1149
93340	194.72	63.66	160.49	1149
93490	194.72	63.66	160.49	1149
93640	194.72	63.66	160.49	1149
93790	194.72	63.66	160.49	1149
93940	194.72	63.66	160.49	1149
94090	194.72	63.66	160.49	1149
94240	194.72	63.66	160.49	1149
94390	194.72	63.66	160.49	1149
94540	194.72	63.66	160.49	1149
94690	194.72	63.66	160.49	1149
94840	194.72	63.66	160.49	1149
94990	194.72	63.66	160.49	1149
95140	194.72	63.66	160.49	1149
95290	194.72	63.66	160.49	1149
95440	194.72	63.66	160.49	1149
95590	194.72	63.66	160.49	1149
95740	194.72	63.66	160.49	1149
95890	194.72	63.66	160.49	1149
96040	194.72	63.66	160.49	1149
96190	194.72	63.66	160.49	1149
96340	194.72	63.66	160.49	1149
96490	194.72	63.66	160.49	1149
96640	194.72	63.66	160.49	1149
96790	194.72	63.66	160.49	1149
96940	194.72	63.66	160.49	1149
97090	194.72	63.66	160.49	1149
97240	194.72	63.66	160.49	1149
97390	194.72	63.66	160.49	1149
97540	194.72	63.66	160.49	1149
97690	194.72	63.66	160.49	1149
97840	194.72	63.66	160.49	1149
97990	194.72	63.66	160.49	1149
98140	194.72	63.66	160.49	1149
98290	194.72	63.66	160.49	1149
98440	194.72	63.66	160.49	1149
98590	194.72	63.66	160.49	1149
98740	194.72	63.66	160.49	1149
98890	194.72	63.66	160.49	1149
99040	194.72	63.66	160.49	1149
99190	194.72	63.66	160.49	1149
99340	194.72	63.66	160.49	1149
99490	194.72	63.66	160.49	1149
99640	194.72	63.66	160.49	1149
99790	194.72	63.66	160.49	1149
99940	194.72	63.66	160.49	1149

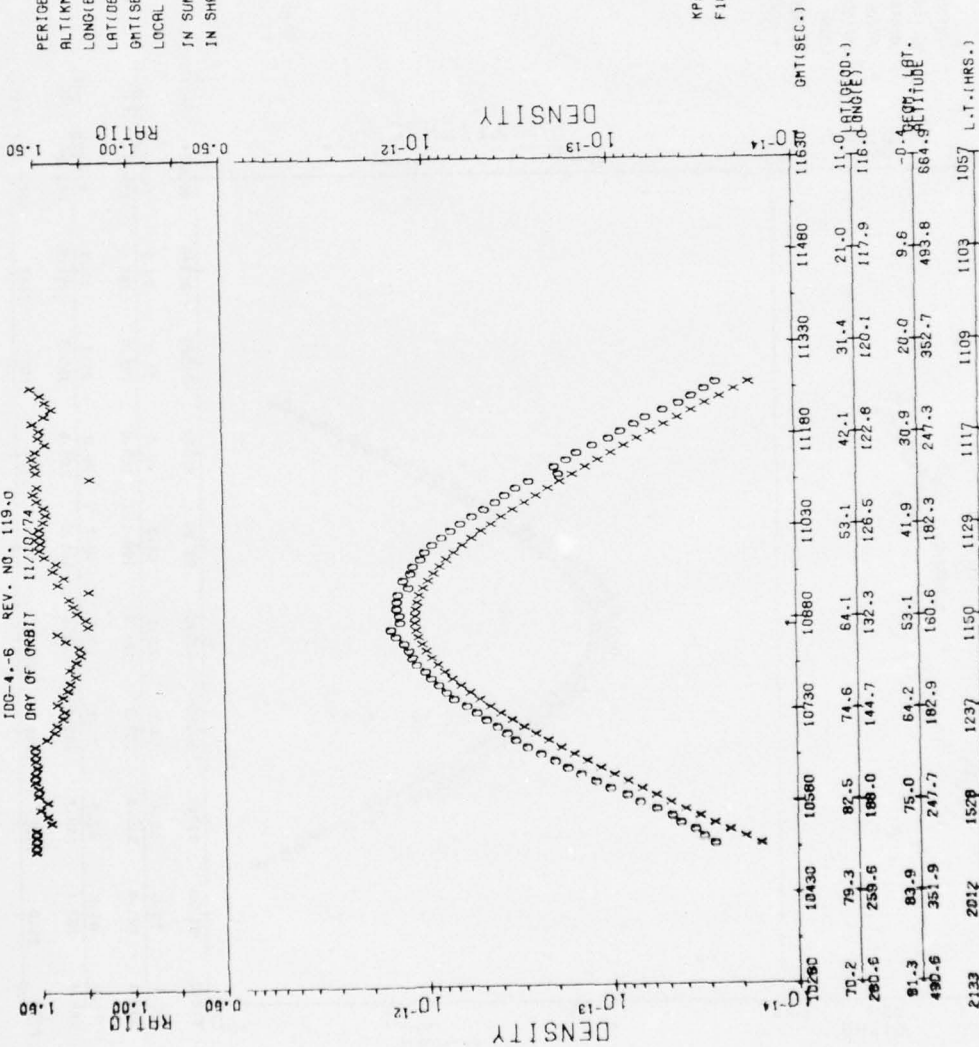
100-4-6 REV. NO. 119-0

DRY OF ORBIT 11/19/74

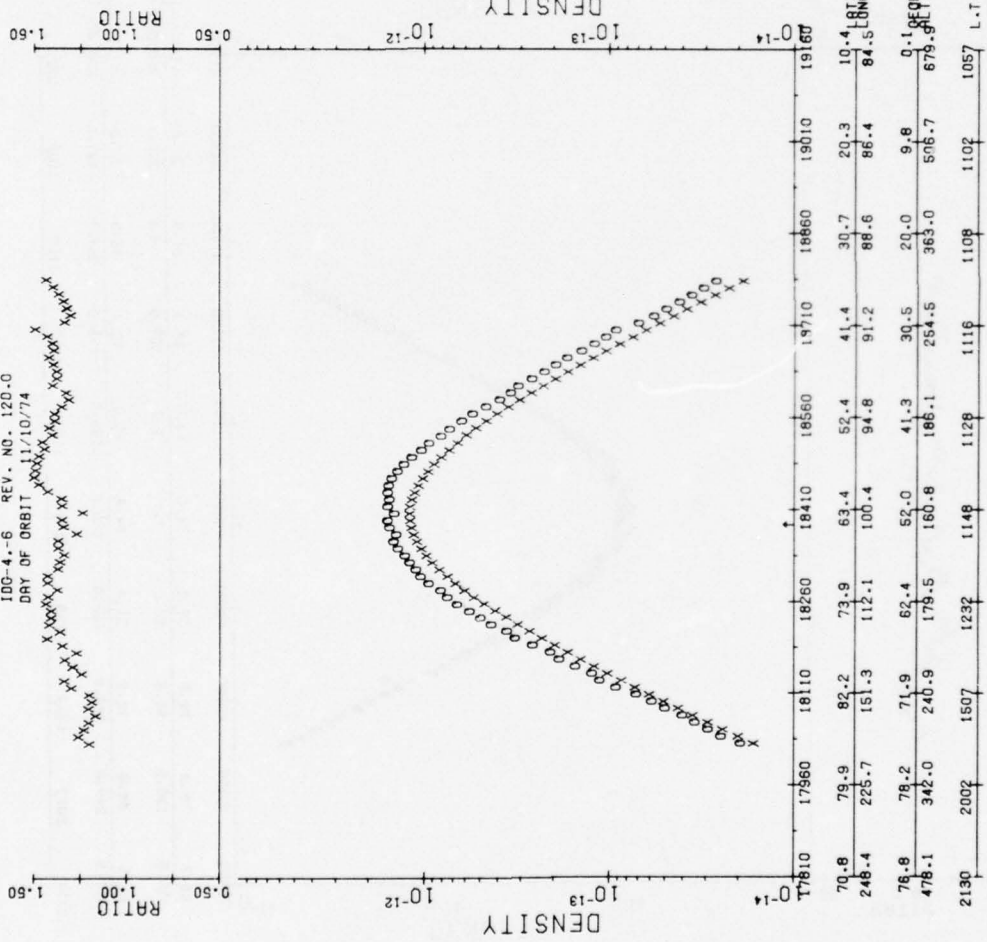


PERIGEE
 ALT(KM.)= 160.61
 LONG(E)= 132.21
 LAT(DEG.)= 64.00
 GMT(SEC.)= 10881.0 (0301H)
 LOCAL TIME 1150 (H)
 IN SUN FROM 10529. TO 11630.
 IN SHADE FROM 10280. TO 10529.

KP=2
 F10.7=80.0



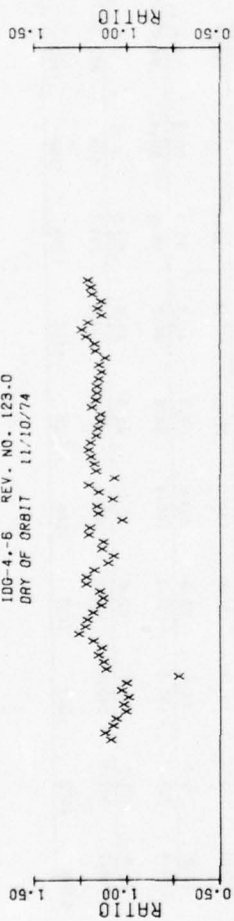
100-4.-6 REV. NO. 120.0
 DAY OF ORBIT 11/10/74



PERIGEE
 ALT(KM.)= 160.68
 LONG(°)= 100.95
 LAT(°)= 64.17
 GMT(SEC.)= 18398.8 (0508H)
 LOCAL TIME 1150 (H)
 IN SUN FROM 18050. TO 19160.
 IN SHADE FROM 17810. TO 18050.

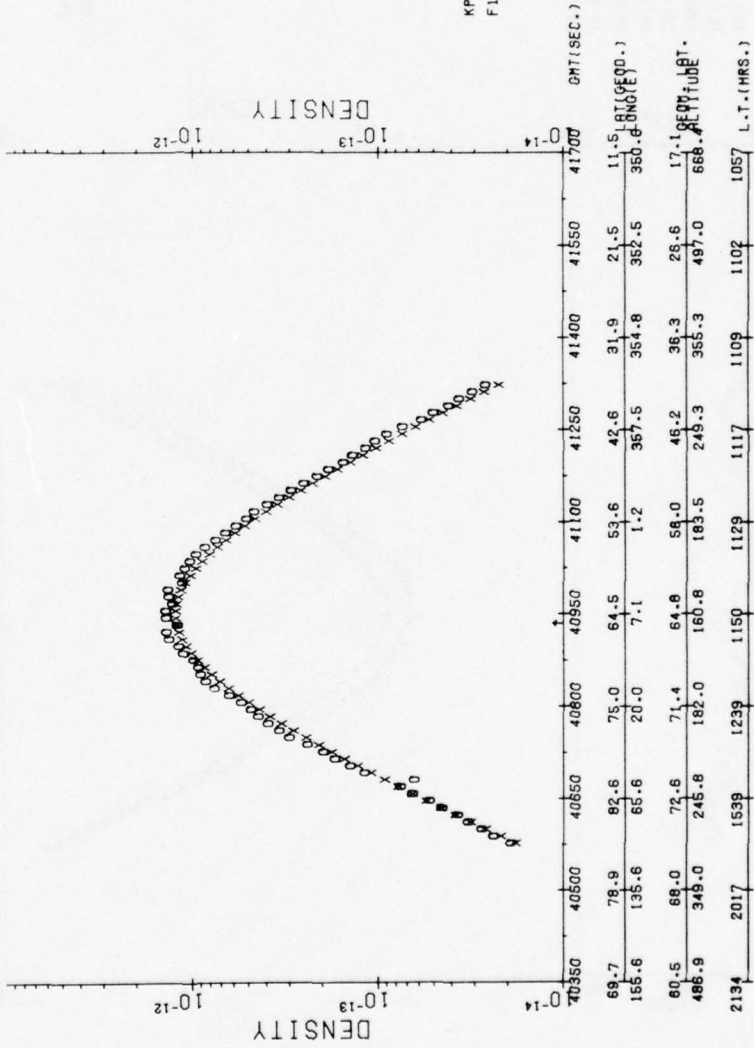
MP=2+
 F10.7=80.0

10G-4-6 REV. NO. 123-0
 DRY OF ORBIT 11/10/74



PERIODE
 ALT(KM.)= 160.76
 LONG(E)= 7.24
 LAT(DEG.)= 64.69
 GMT(SEC.)= 40947.6 (1122H)
 LOCAL TIME 1151 (H)
 IN SUN FROM 40609. TO 41700.
 IN SHADE FROM 40350. TO 40609.

KP=3
 F10.7=80.0

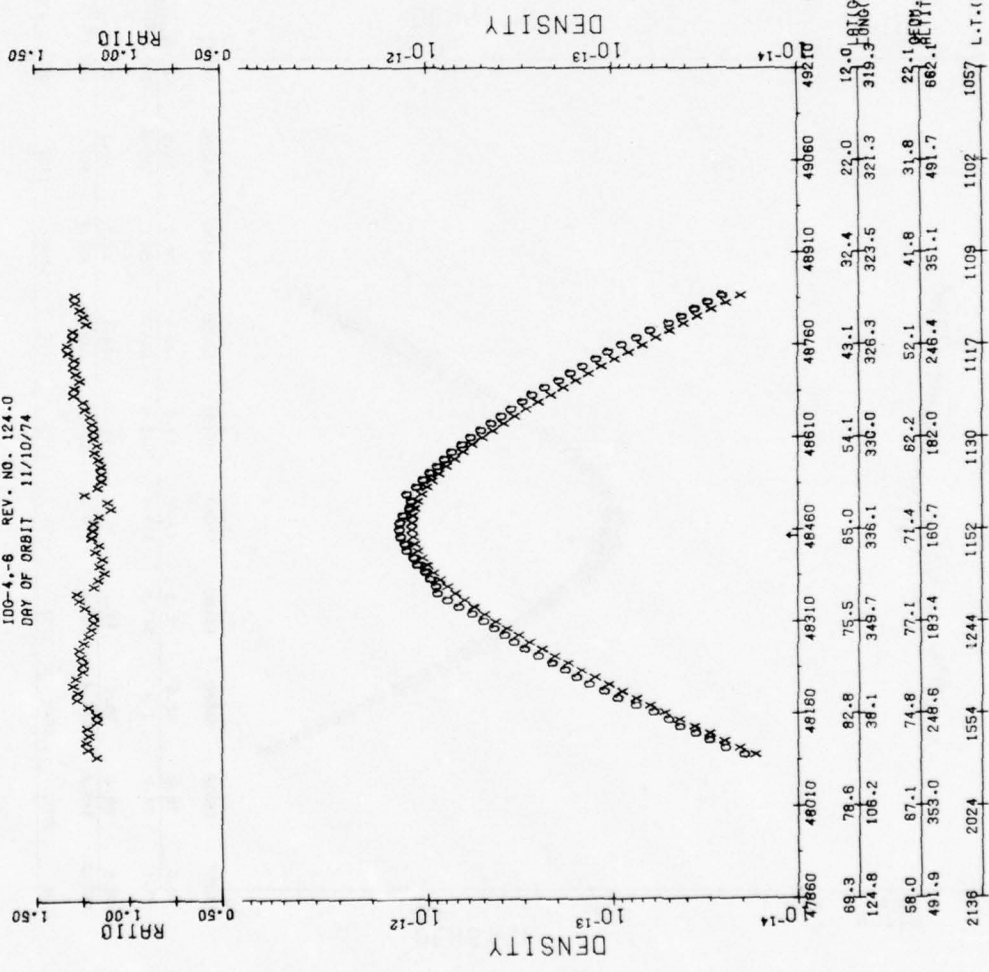


GMT(SEC.)	ALTITUDE (MRS.)	DENSITY	LONG(E)	LAT(SEC.)					
40350	2134								
40500	2017								
40600	1539								
40650	1239								
40700	1150								
40800	1129								
40850	1117								
40950	1109								
41000	1102								
41100	1057								
41250									
41400									
41550									
41700									
69.7	78.9	82.6	75.0	64.5	53.6	42.6	31.9	21.5	11.5
165.6	135.6	65.6	20.0	7.1	1.2	367.5	354.8	352.5	350.8
60.5	68.0	72.6	71.4	64.8	58.0	46.2	36.3	28.6	17.1
486.9	349.0	245.8	182.0	160.8	183.5	249.3	355.3	497.0	688.4

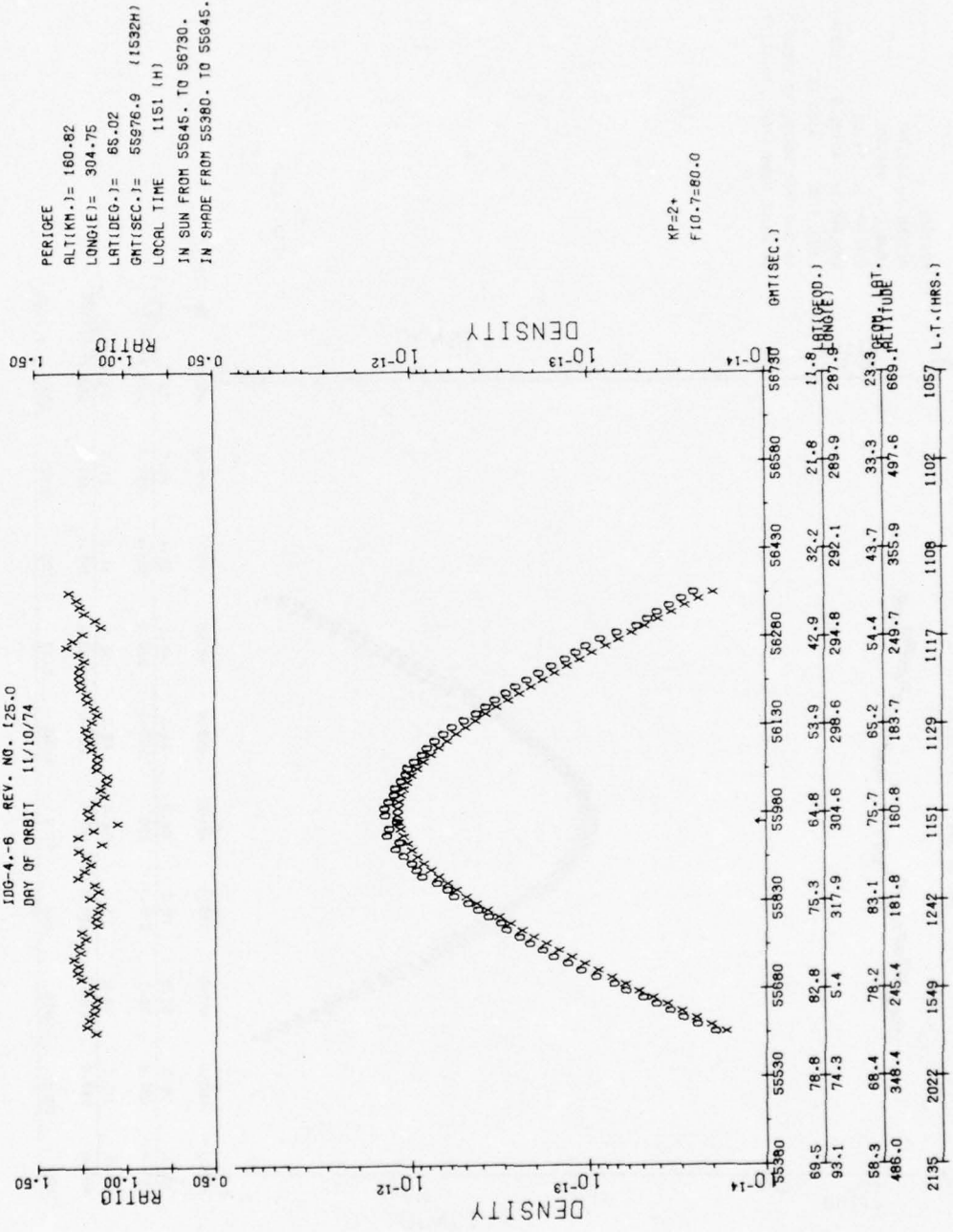
100-4,-6 REV. NO. 124-0
 DAY OF ORBIT 11/10/74

PERIGEE
 ALT(KM.)= 160.74
 LONG(E)= 336.00
 LAT(DEC.)= 84.85
 GMT(SEC.)= 48462.6 (1327H)
 LOCAL TIME 1151 (H)
 IN SUN FROM 48127. TO 49210.
 IN SHADE FROM 47860. TO 48127.

MP=2+
 F10.7=80.0



100-4-6 REV. NO. 125.0
 DRY OF ORBIT 11/10/74

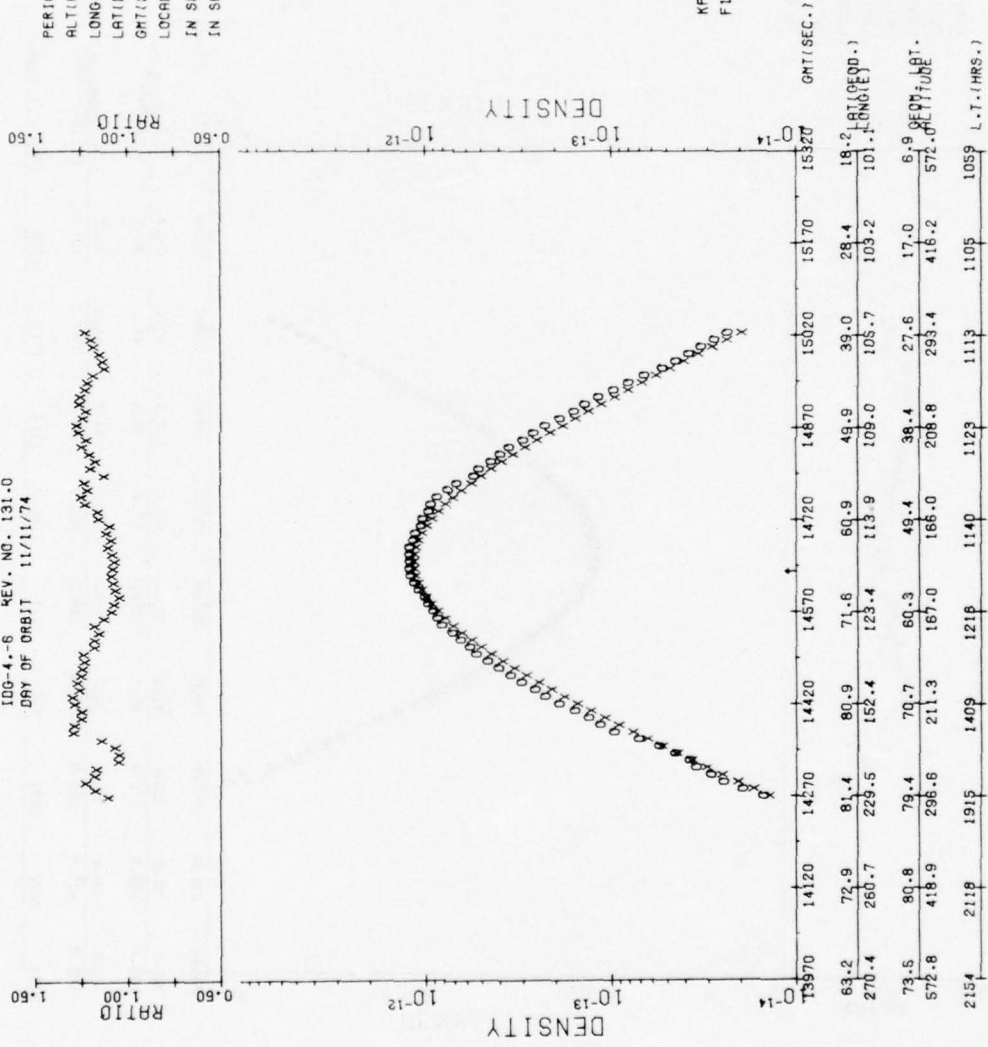


PERIGEE
 ALT(KM.)= 160.82
 LONG(E)= 304.75
 LAT(DEG.)= 65.02
 GMT(SEC.)= 55976.9 (1532H)
 LOCAL TIME 1151 (H)
 IN SUN FROM 55645 TO 56730.
 IN SHADE FROM 55380 TO 55645.

KP=2+
 F10.7=80.0

IDG-4-S REV. NO. 131.0
 DRY OF ORBIT 11/11/74

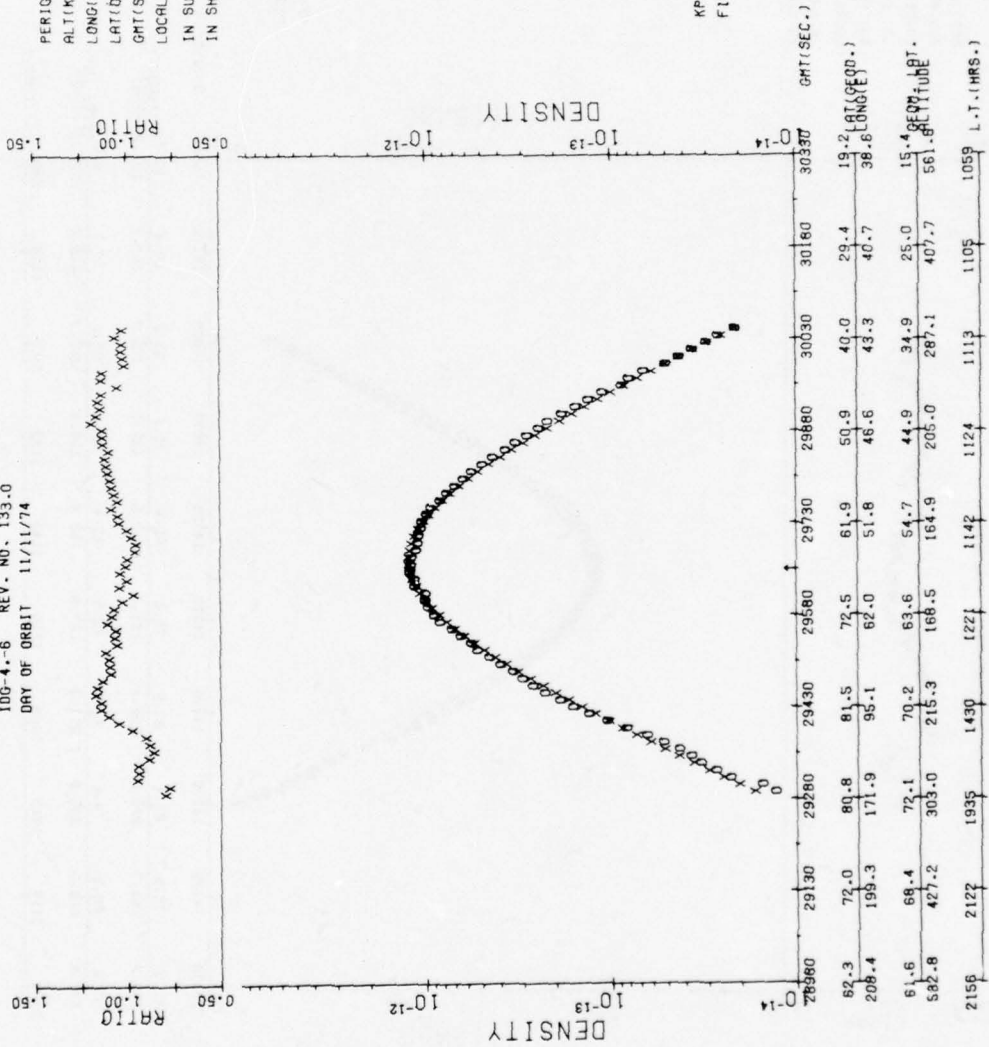
PERTGEE
 ALT.(KM.)= 161.00
 LONG.(E.)= 117.48
 LAT.(DEG.)= 66.04
 GMT.(SEC.)= 14648.3 (0404H)
 LOCAL TIME 1154 (H)
 IN SUN FROM 14337. TO 15320.
 IN SHADE FROM 13970. TO 14337.



KP=2
 F10.7=80.0

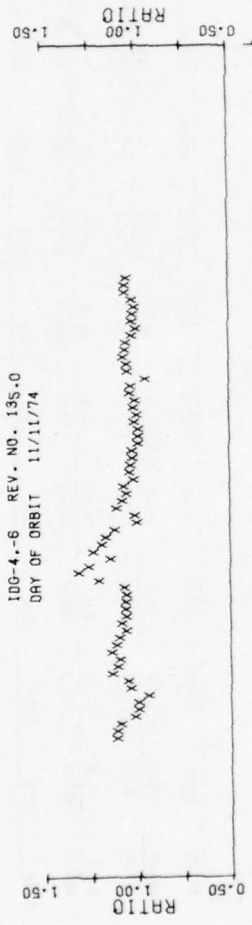
100-4.-6 REV. NO. 133.0
 DRY OF ORBIT 11/11/74

PERIOEE
 ALT(KM.)= 161.02
 LONG(E)= 55.11
 LAT(DEG.)= 56.39
 GMT(SEC.)= 29667.3 (0814H)
 LOCAL TIME 1154 1H)
 IN SUN FROM 29363. TO 30330.
 IN SHADE FROM 28980. TO 29363.



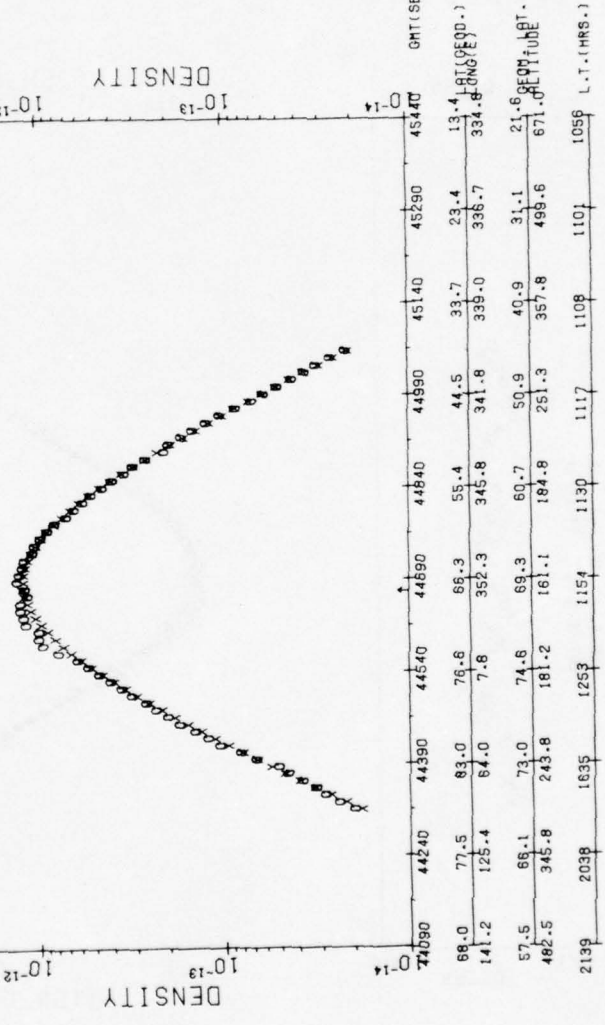
KP=3+
 FIG. 7-80.0

IDG-4.-6 REV. NO. 135-0
 DAY OF ORBIT 11/11/74



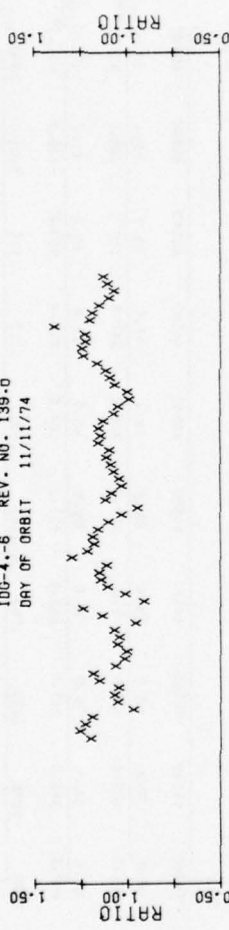
PERIGEE
 ALT(MH.)= 161.06
 LONG(E)= 352.72
 LAT(DEG.)= 86.72
 GMT(SEC.)= 44684.0 (1224H)
 LOCAL TIME 1155 (M)
 IN SUN FROM 44386. TO 45440.
 IN SHADE FROM 44090. TO 44386.

MP=3
 F10.7=80.0



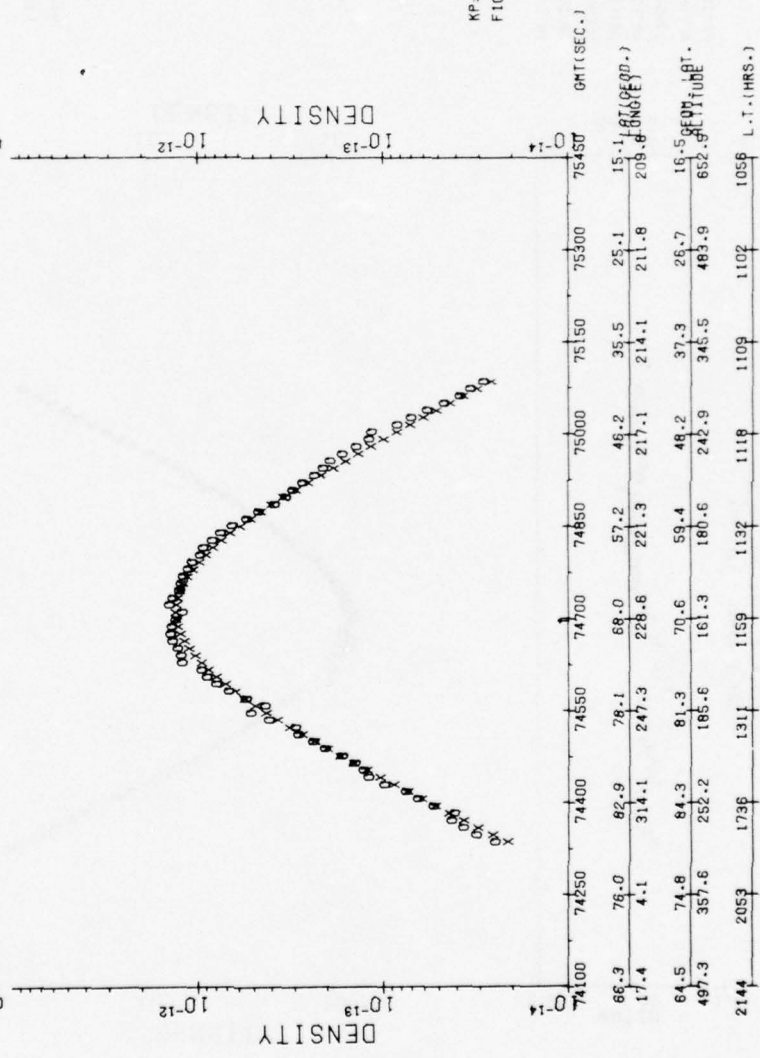
GMT(SEC.)	LONG(E)	LAT(CEPH.)	PERIUBET.
44090			
44240			
44390			
44540			
44690			
44840			
44990			
45140			
45290			
45470			
86.0	77.5	83.0	76.6
141.2	125.4	64.0	7.6
57.5	66.1	73.0	74.6
482.5	345.8	243.8	181.2
2139	2038	1635	1253
			1154
			1130
			1117
			1108
			1101
			1056
			L.T.(HRS.)

100-4.-6 REV. NO. 139-0
 DRY OF ORBIT 11/11/74



PERIOEE
 ALT(KM.)= 161.19
 LONG(E)= 228.02
 LAT(DEG.)= 67.40
 GMT(SEC.)= 74708.7 (2045H)
 LOCAL TIME 1157 (H)
 IN SUN FROM 74424. TO 75450.
 IN SHADE FROM 74100. TO 74424.

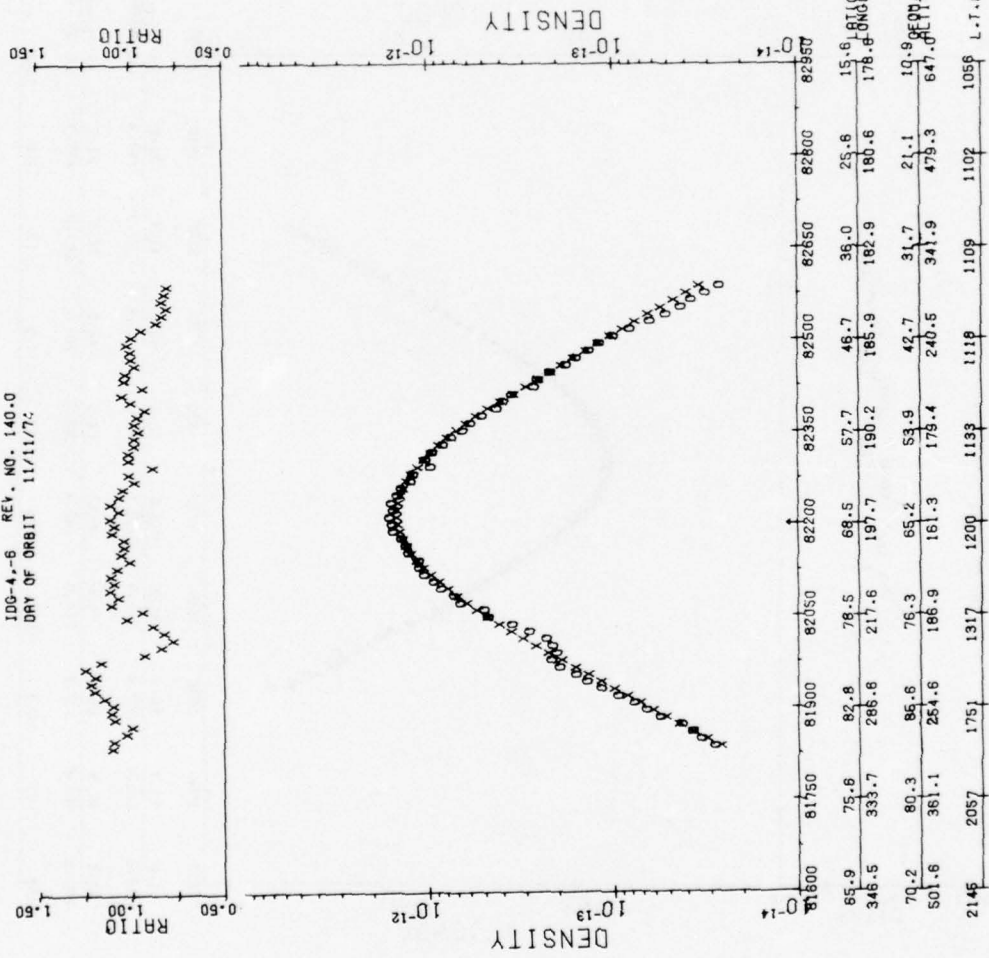
KP=5
 F10.7=80.0



100-4-B REV. NO. 140-0
 DRY OF ORBIT 11/11/72

PERIGEE
 ALT(KM.)= 161.13
 LONG(E)= 196.87
 LAT(DEG.)= 67.57
 GMT(SEC.)= 82213.1 (2250H)
 LOCAL TIME 1157 (H)
 IN SUN FROM 81932. TO 82950.
 IN SHADE FROM 81600. TO 81932.

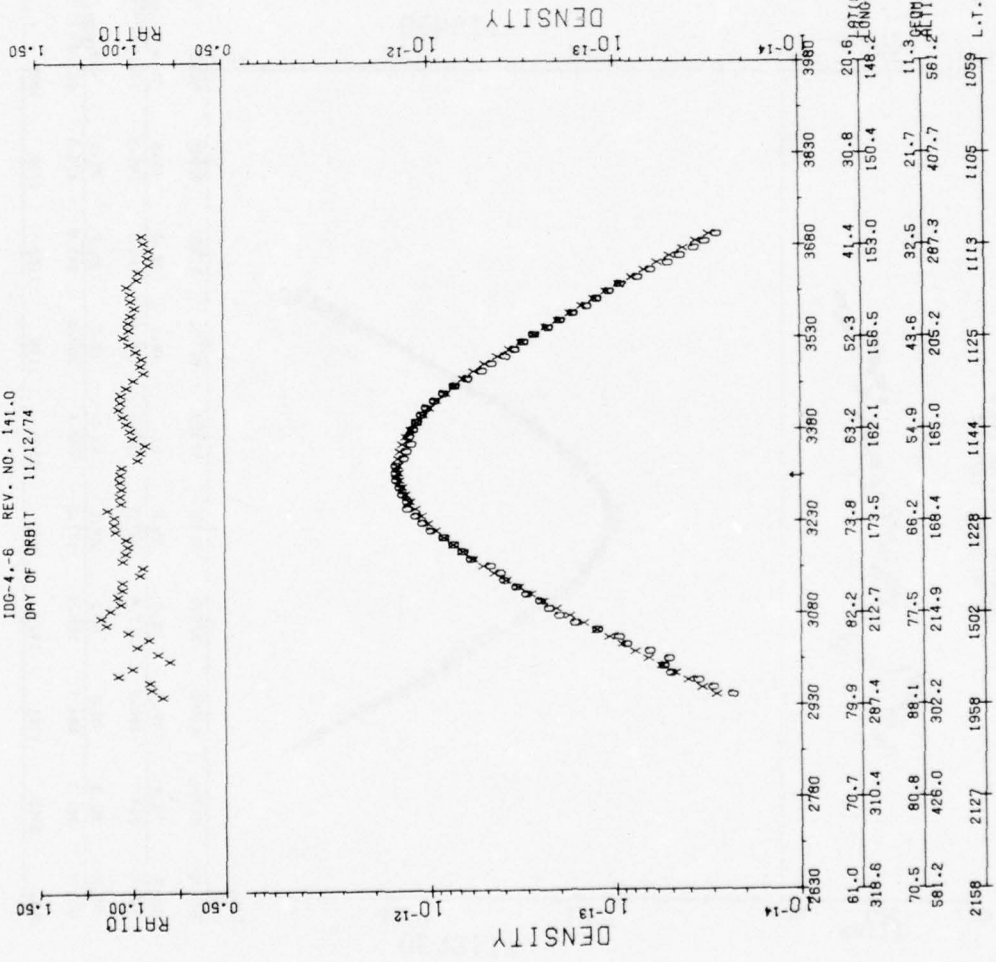
KP=7
 F10.7=80.0



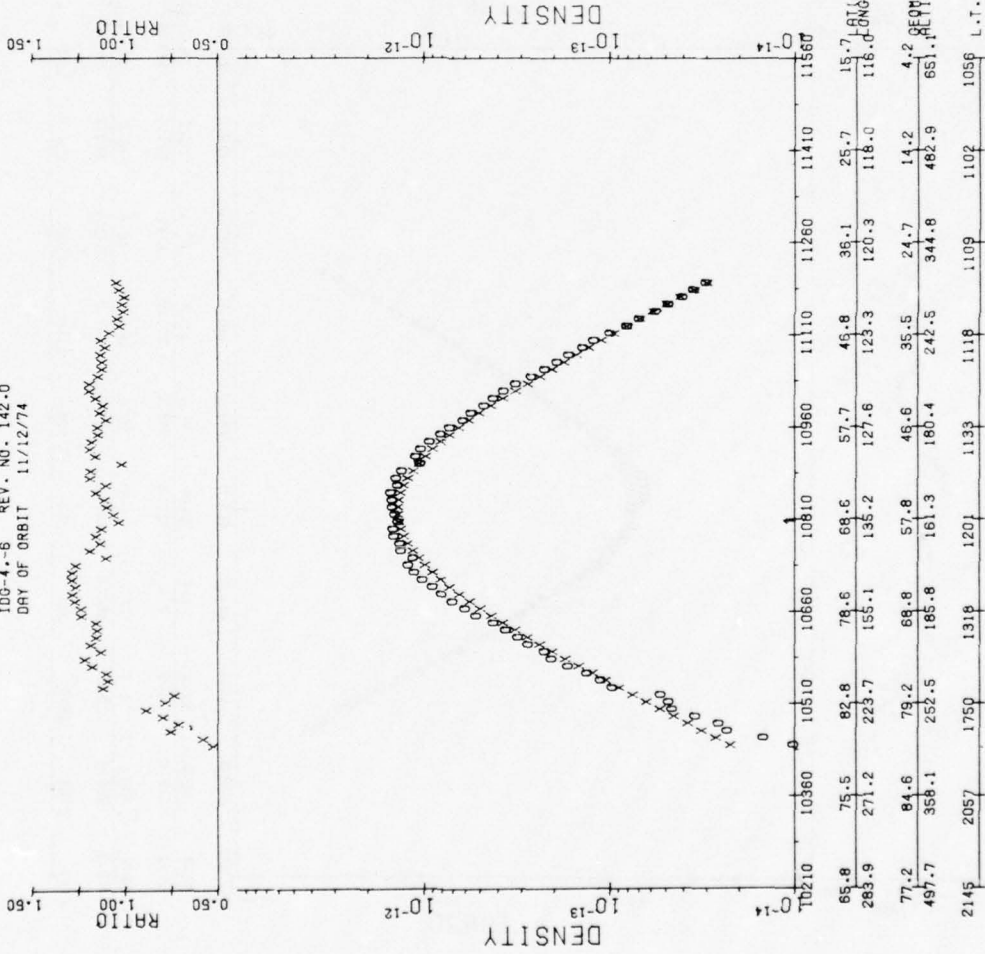
10G-4-6 REV. NO. 141-0
 DAY OF ORBIT 11/12/74

PERIGEE
 ALT(KM.)= 161.10
 LONG(L) = 165-72
 LAT(DEG.) = 67.74
 GMT(SEC.) = 3316.6 (0055H)
 LOCAL TIME 1158 (H)
 IN SUN FROM 3039. TO 3980.
 IN SHADE FROM 2630. TO 3039.

MP=7
 F10.7=79.0



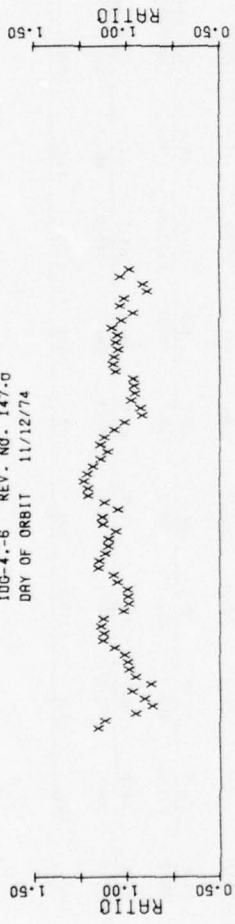
100-4-6 REV. NO. 142-0
 DRY OF ORBIT 11/12/74



PERIGEE
 ALT(KM.)= 161.24
 LONG(E)= 134.57
 LAT(DEG.)= 87.91
 GMT(SEC.)= 10819.4 (0300H)
 LOCAL TIME 1156 (H)
 IN SUN FROM 10545. TO 11560.
 IN SHADE FROM 10210. TO 10545.

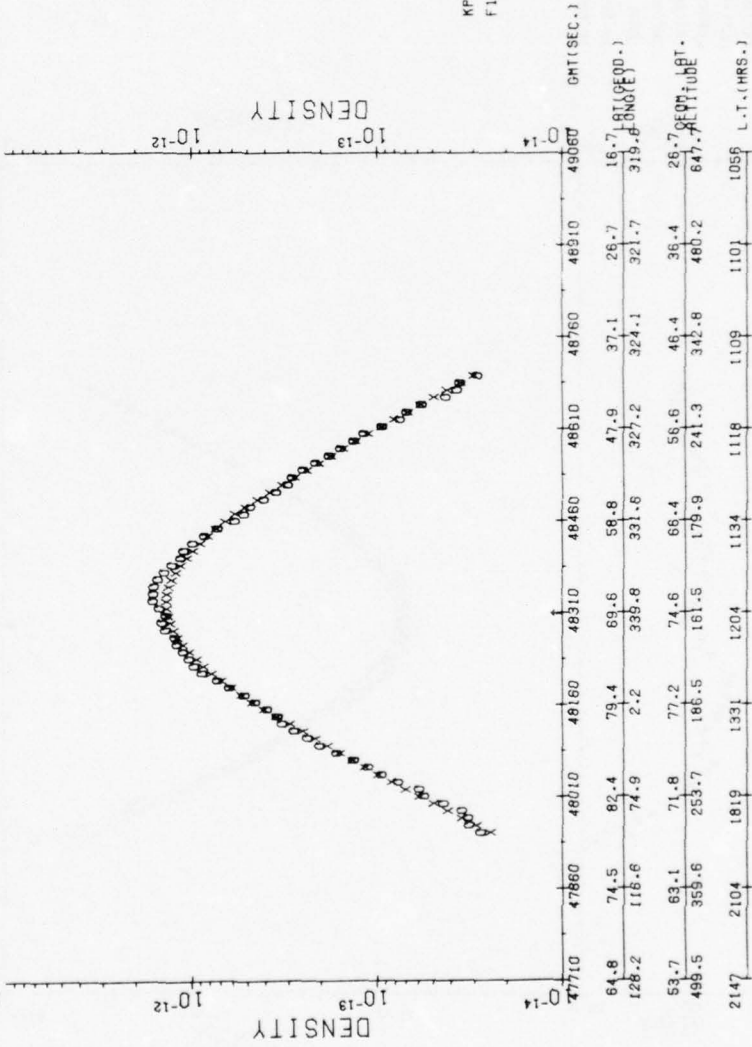
KF=6
 F10.7=79.0

100-4.-6 REV. NO. 147-0
 DRY OF ORBIT 11/12/74

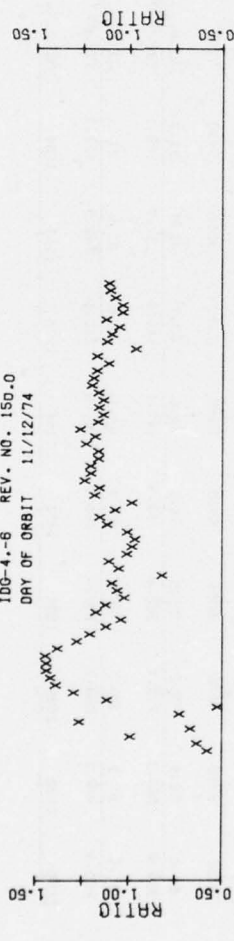


PERIGEE
 ALT(KM.)= 161.33
 LONG(L°)= 338.92
 LAT(DEG.)= 68.75
 GMT(SEC.)= 48321.5 (1325H)
 LOCAL TIME 1201 (H)
 IN SUN FROM 48063. TO 49060.
 IN SHADE FROM 47710. TO 48063.

KP=6
 F10.7=79.0



IDC-4--6 REV. NO. 150.0
 DRY OF ORBIT 11/12/74

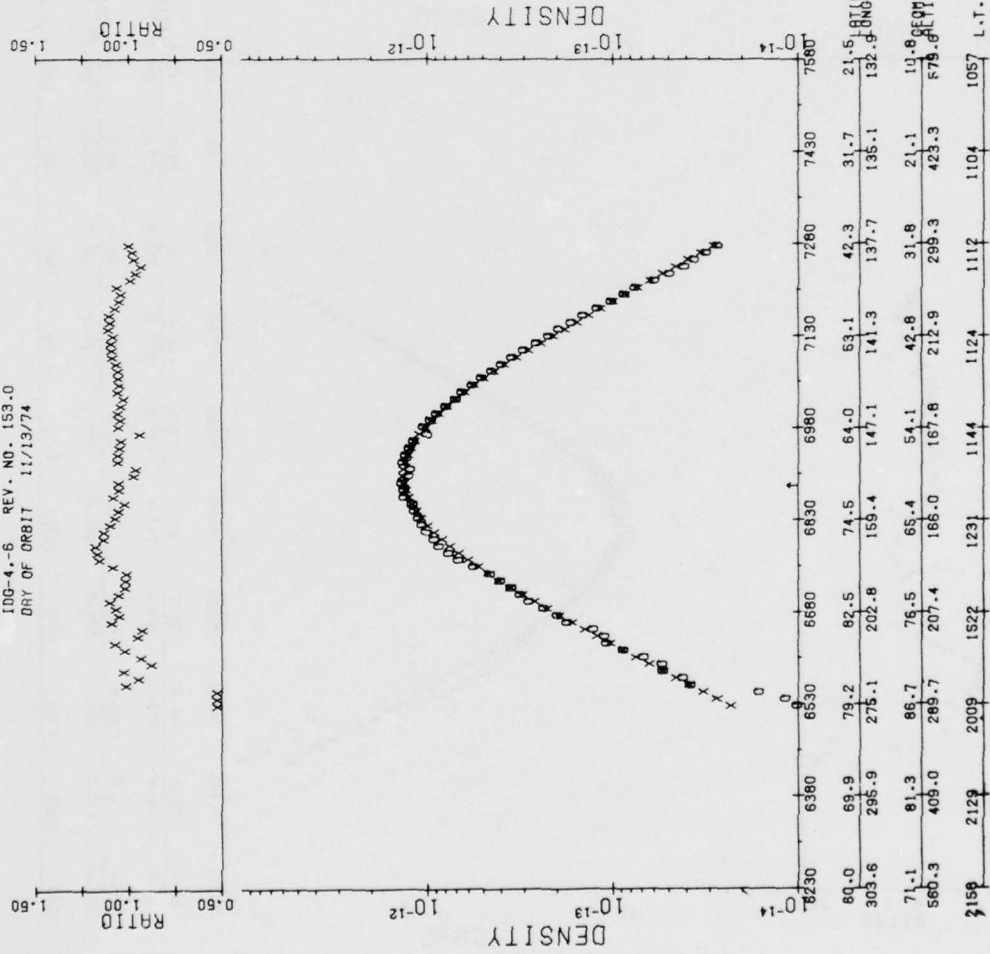


PERIODEE
 ALT(KM.)= 161.51
 LONG(E)= 245.58
 LAT(DEG.)= 69.26
 OMT(SEC.)= 70613.6 (1940H)
 LOCAL TIME 1202 (H)
 IN SUN FROM 70565. TO 71560.
 IN SHADE FROM 70230. TO 70565.

KP=6-
 F10.7=79.0



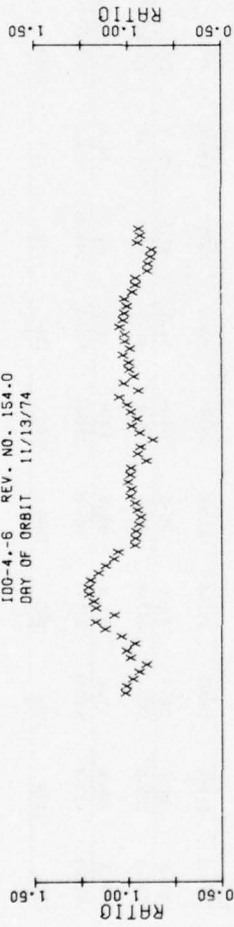
LOG-4-6 REV. NO. 153.0
 DRY OF ORBIT 11/13/74



PERIGEE
 ALT (KM.) = 161.42
 LONG (E.) = 152.27
 LAT (DEG.) = 69.76
 GMT (SEC.) = 6898.9 (0154H)
 LOCAL TIME 1204 (H)
 IN SUN FROM 6660. TO 7560.
 IN SHADE FROM 6230. TO 6660.

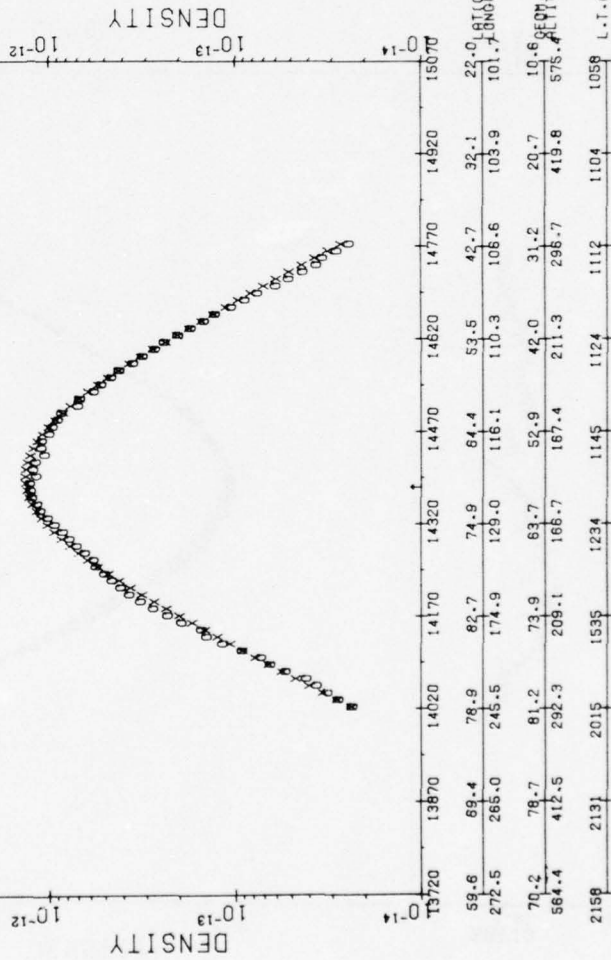
KF=6-
 F10-7=81.0

100-4-6 REV. NO. 154.0
 DRY OF ORBIT 11/13/74



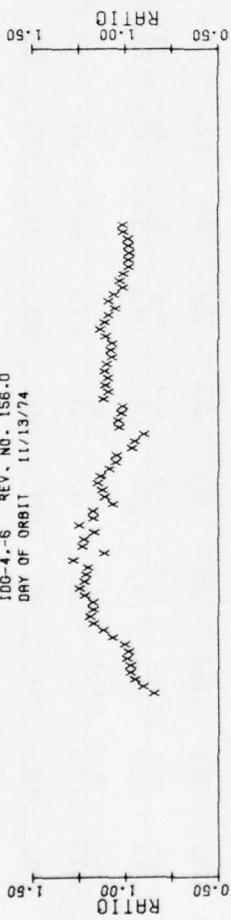
PERIGEE
 ALT.(KM.)= 101.56
 LONG(E)= 121.20
 LAT(DEC.)= 69.93
 GNT(SEC.)= 14392.6 (0359H)
 LOCAL TIME 1204 (H)
 IN SUN FROM 14157. TO 15070.
 IN SHADE FROM 14720. TO 14157.

KP=6-
 F10.7=81.0



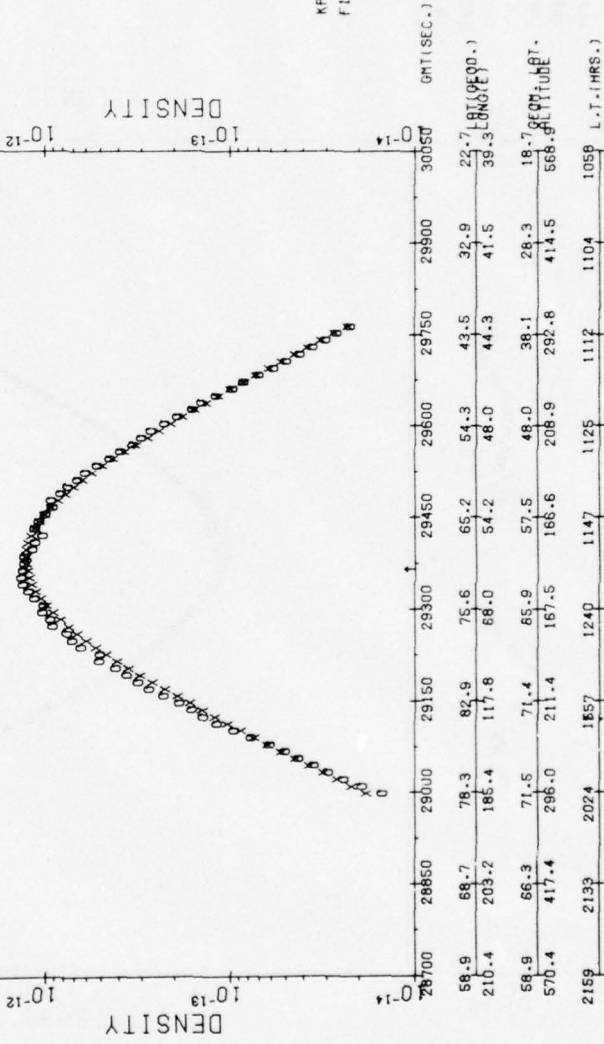
GNT(SEC.)	ALTITUDE (KM.)	LAT(DEC.)	LONG(E)	L.T.(HRS.)
13720	59.6	22.0	101.7	1059
13870	69.4	22.0	101.7	1104
14020	78.9	22.0	101.7	1145
14170	82.7	22.0	101.7	1182
14320	74.9	22.0	101.7	1224
14470	84.4	22.0	101.7	1234
14620	53.5	22.0	101.7	1145
14770	42.7	22.0	101.7	1104
14920	32.1	22.0	101.7	1059
15070	103.9	22.0	101.7	1059
13720	272.5	22.0	101.7	1059
13870	245.0	22.0	101.7	1104
14020	245.5	22.0	101.7	1145
14170	174.9	22.0	101.7	1182
14320	125.0	22.0	101.7	1224
14470	82.7	22.0	101.7	1234
14620	74.9	22.0	101.7	1145
14770	84.4	22.0	101.7	1104
14920	53.5	22.0	101.7	1059
15070	103.9	22.0	101.7	1059
13720	70.2	22.0	101.7	1059
13870	81.2	22.0	101.7	1104
14020	73.9	22.0	101.7	1145
14170	209.1	22.0	101.7	1182
14320	83.7	22.0	101.7	1224
14470	166.7	22.0	101.7	1234
14620	42.0	22.0	101.7	1145
14770	31.2	22.0	101.7	1104
14920	20.7	22.0	101.7	1059
15070	419.8	22.0	101.7	1059
13720	564.4	22.0	101.7	1059
13870	412.5	22.0	101.7	1104
14020	292.3	22.0	101.7	1145
14170	209.1	22.0	101.7	1182
14320	166.7	22.0	101.7	1224
14470	167.4	22.0	101.7	1234
14620	211.3	22.0	101.7	1145
14770	211.3	22.0	101.7	1104
14920	296.7	22.0	101.7	1059
15070	419.8	22.0	101.7	1059

100-4.-S REV. NO. 156.0
 DAY OF ORBIT 11/13/74

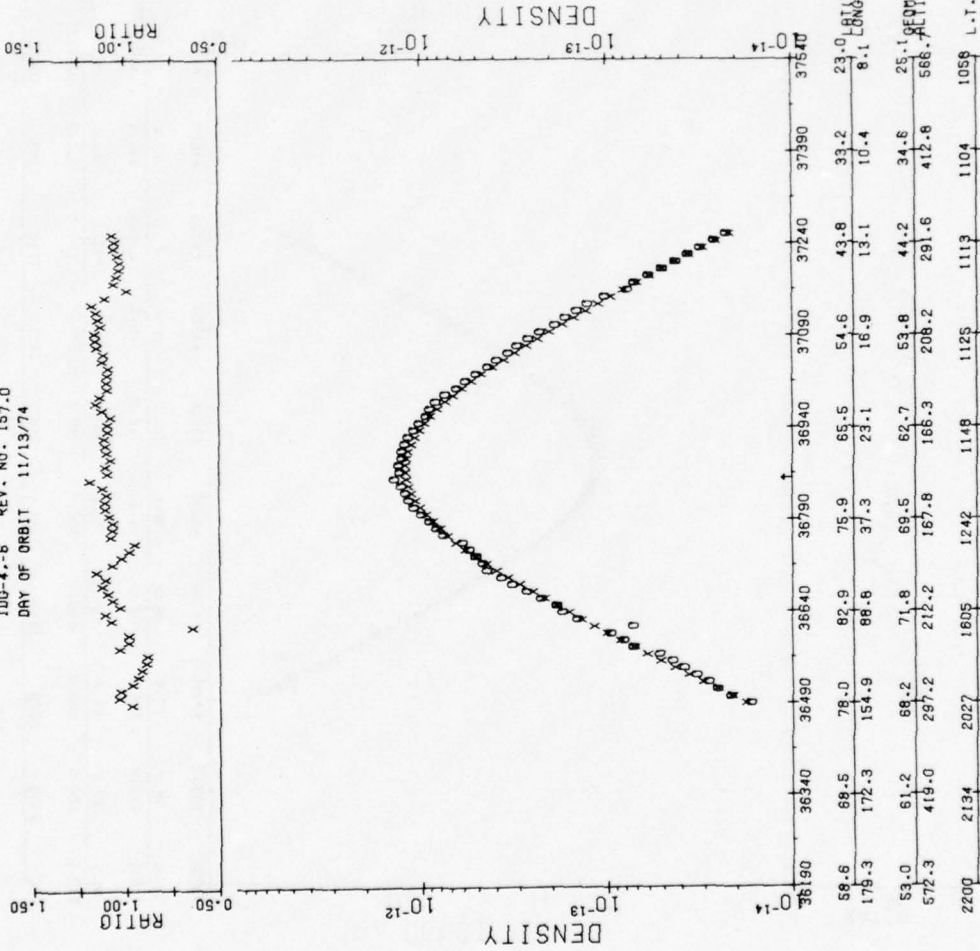


PERIOEE
 ALT(KM.)= 161.56
 LONG(E)= 59.10
 LAT(DEG.)= 70.27
 GMT(SEC.)= 29378.2 (0809H)
 LOCAL TIME 1206 (H)
 IN SUN FROM 29149. TO 30050.
 IN SHADE FROM 28700. TO 29149.

KP=5-
 F10.7=81.0



IDO-4-S REV. NO. 157.0
 DAY OF ORBIT 11/13/74

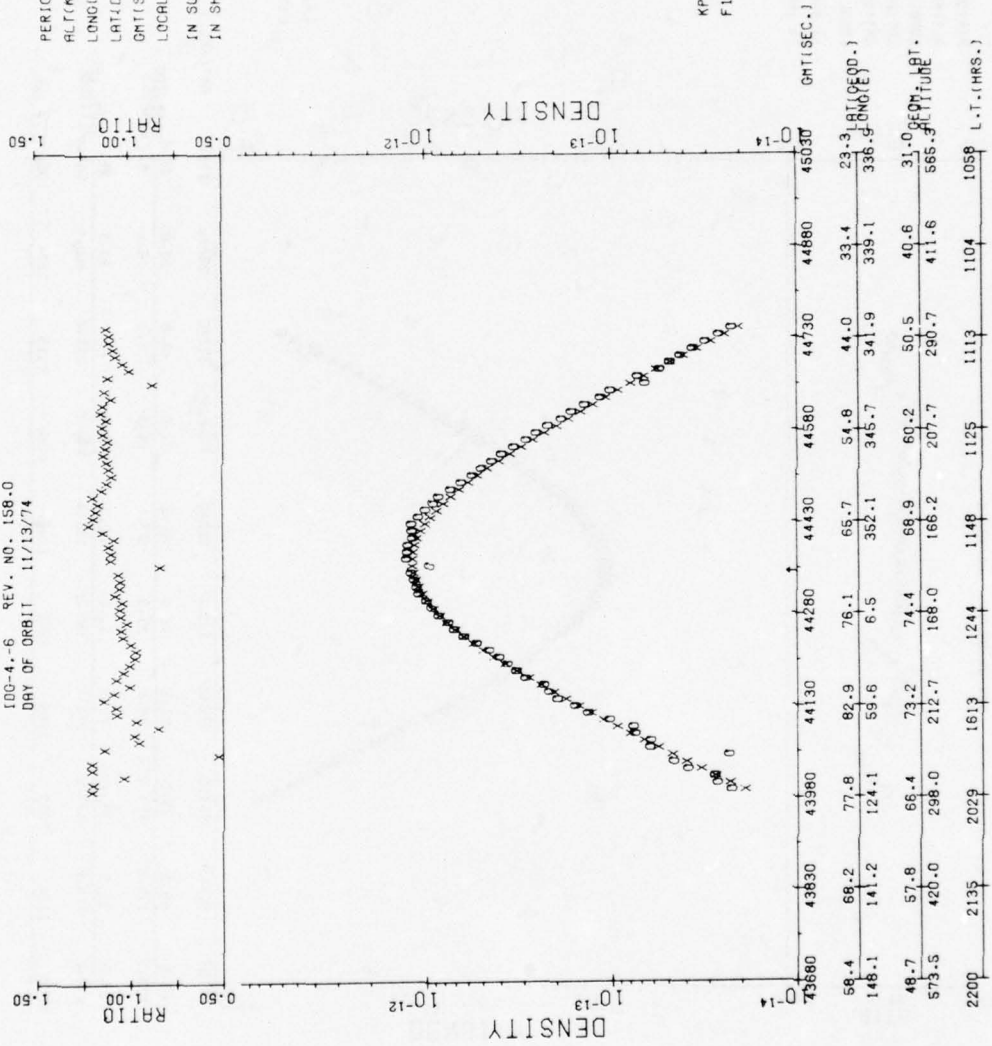


PERIODE
 ALT(KM.)= 161.59
 LONG(°)= 28.04
 LAT(°E)= 70.43
 GMT(SEC.)= 36689.9 (1014H)
 LOCAL TIME 1206 (H)
 IN SUN FROM 36643. TO 37540.
 IN SHADE FROM 36190. TO 36643.

KP=S-
 FIG. 7-81.0

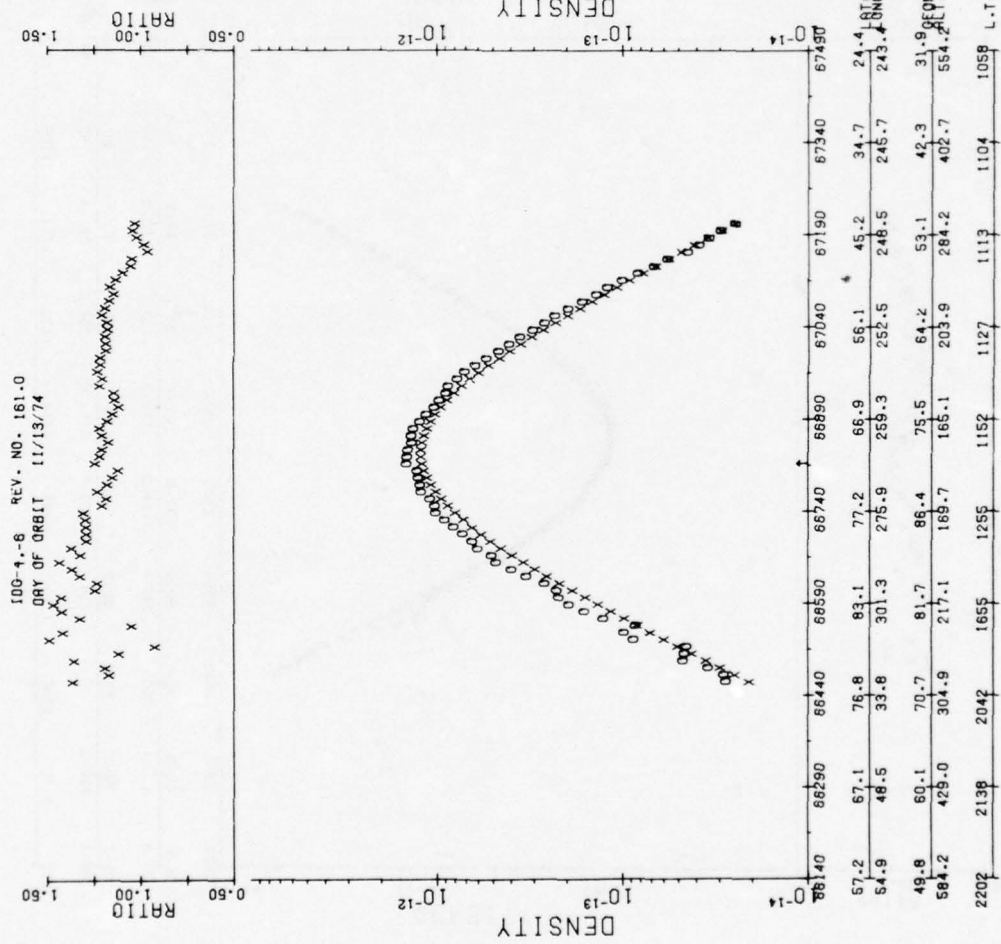
100-4.-6 REV. NO. 158-0
 DRY OF ORBIT 11/13/74

PERIOEE
 ALT(KM.)= 161.60
 LONG(°E)= 356.98
 LAT(°DEG.)= 70.60
 GMT(SEC.)= 44361.1 (1219H)
 LOCAL TIME 1207 (H)
 IN SUN FROM 44138. TO 45030.
 IN SHADE FROM 43680. TO 44138.



KP=4
 F10.7-81.0

100-4-8 REV. NO. 161.0
 DAY OF ORBIT 11/13/74



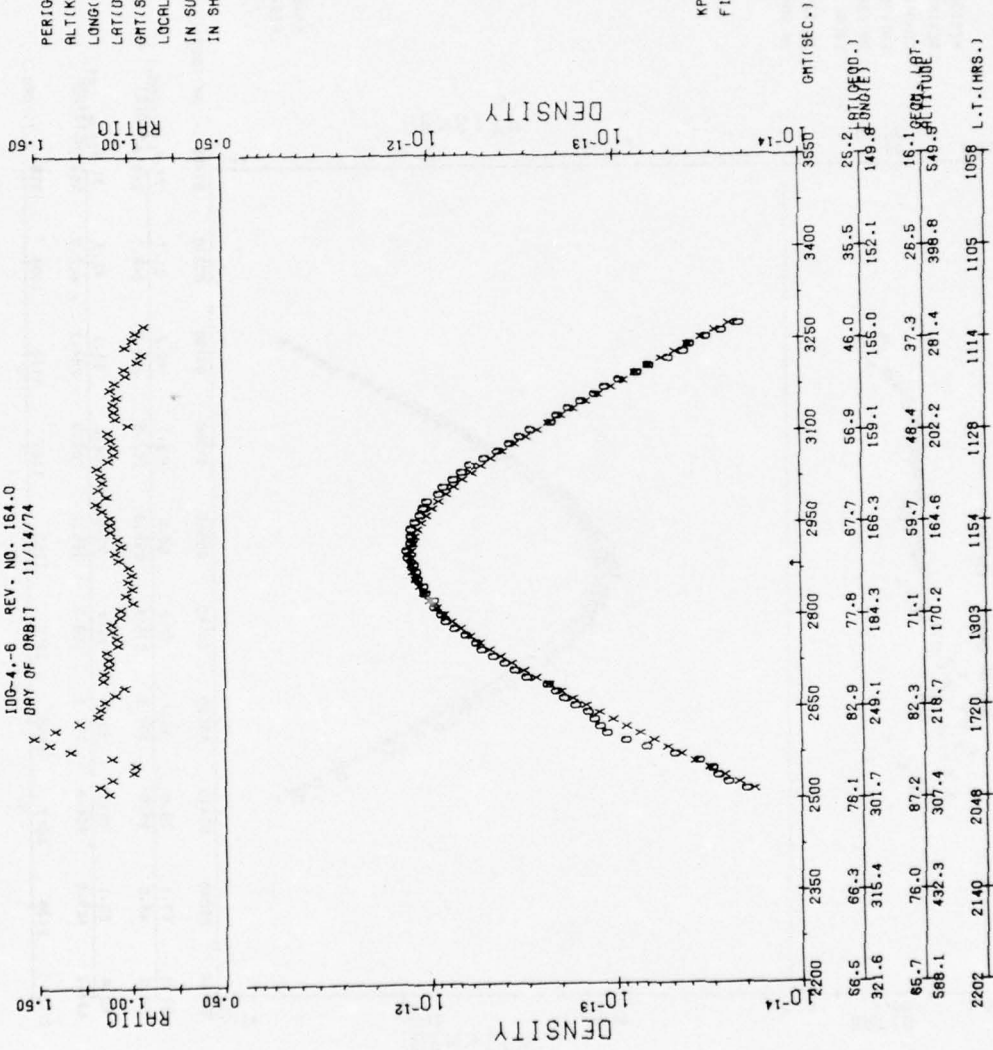
PERIGEE
 ALT(KM.)= 161.76
 LONG(E)= 263.81
 LAT(DEC.)= 71.10
 GMT(SEC.)= 66830.8 (1833H)
 LOCAL TIME 1209 (H)
 IN SUN FROM 66617. TO 67490.
 IN SHADE FROM 66140. TO 66617.

KF=S-
 F10.7=81.0

100-4.-6 REV. NO. 164.0
 DRY OF ORBIT 11/14/74

PERIGEE
 ALT(KM.)= 161.60
 LONG(E)= 170.75
 LAT(DEC.)= 71.59
 GMT(SEC.)= 2894.6 (0048H)
 LOCAL TIME 1211 (H)
 IN SUN FROM 2690. TO 3550.
 IN SHADE FROM 2200. TO 2690.

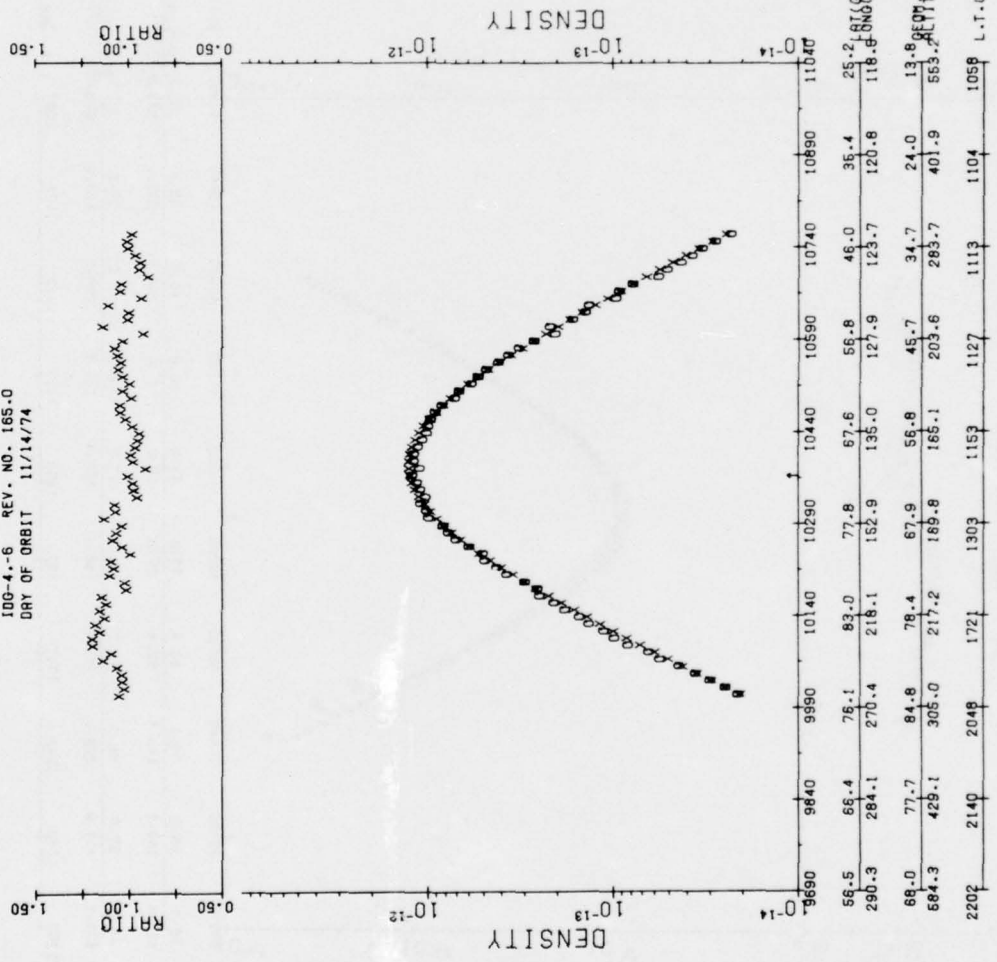
KP=5-
 F10.7=78.0



100-4-6 REV. NO. 165-0
 DRY OF ORBIT 11/14/74

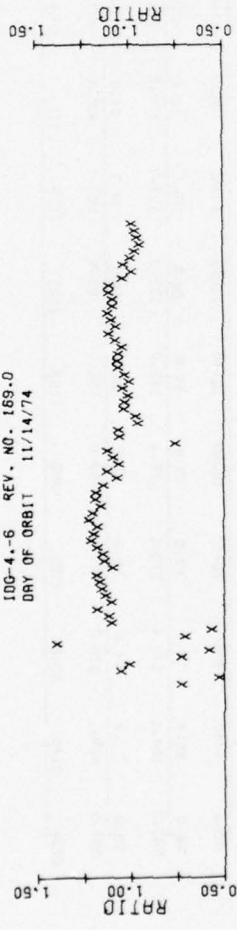
PERIODE
 ALT(KM.)= 161.74
 LONG(E)= 139.69
 LAT(DEC.)= 71.76
 GMT(SEC.)= 10361.2 (0253M)
 LOCAL TIME 1211 (H)
 IN SUN FROM 10179. TO 11040.
 IN SHADE FROM 9690. TO 10179.

KP=5-
 F10.7=78.0



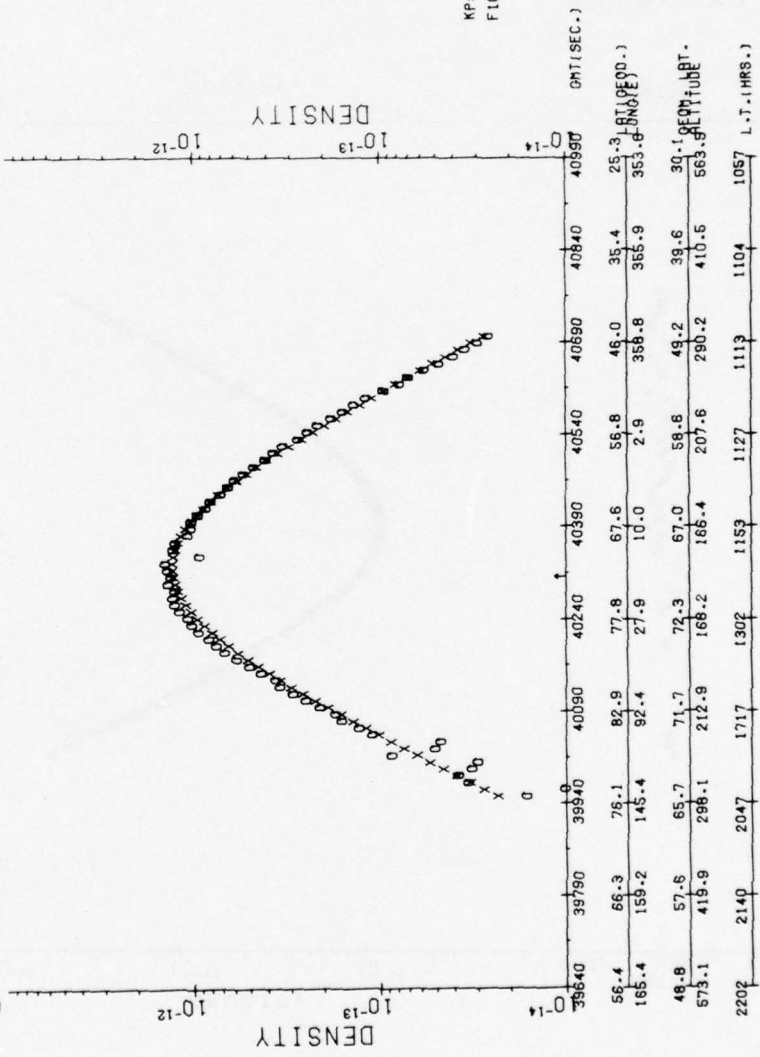
GMT(SEC.)	L.T.(HRS.)	DENSITY	RATIO
9690	2202		
9840	2140	56.5	284.1
9990	2048	76.1	270.4
10140	1721	83.0	218.1
10290	1303	77.8	152.9
10440	1153	67.6	135.0
10590	1127	56.8	127.9
10740	1113	46.0	123.7
10890	1104	36.4	120.8
11040	1058	25.2	118.8

100-4-S REV. NO. 169-0
 DRY OF ORBIT 11/14/74

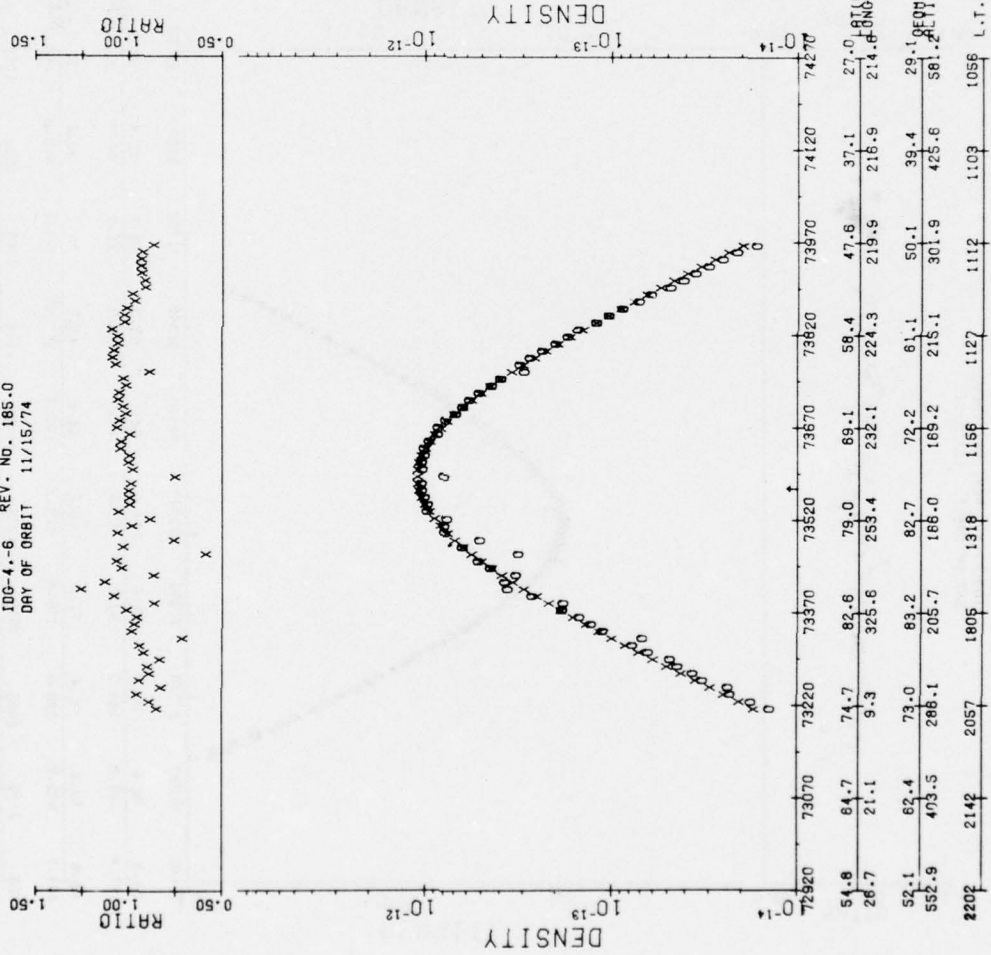


PERIGEE
 ALT(KM.)= 161.83
 LONG(E)= 15.71
 LAT(DEG.)= 72.43
 GMT(SEC.)= 40321.5 (112H)
 LOCAL TIME 1214 (H)
 IN SUN FROM 40132. TO 40990.
 IN SHROE FROM 39640. TO 40132.

KP=6-
 F10.7=78.0



IDG-4-6 REV. NO. 185-0
 DRY OF ORBIT 11/15/74

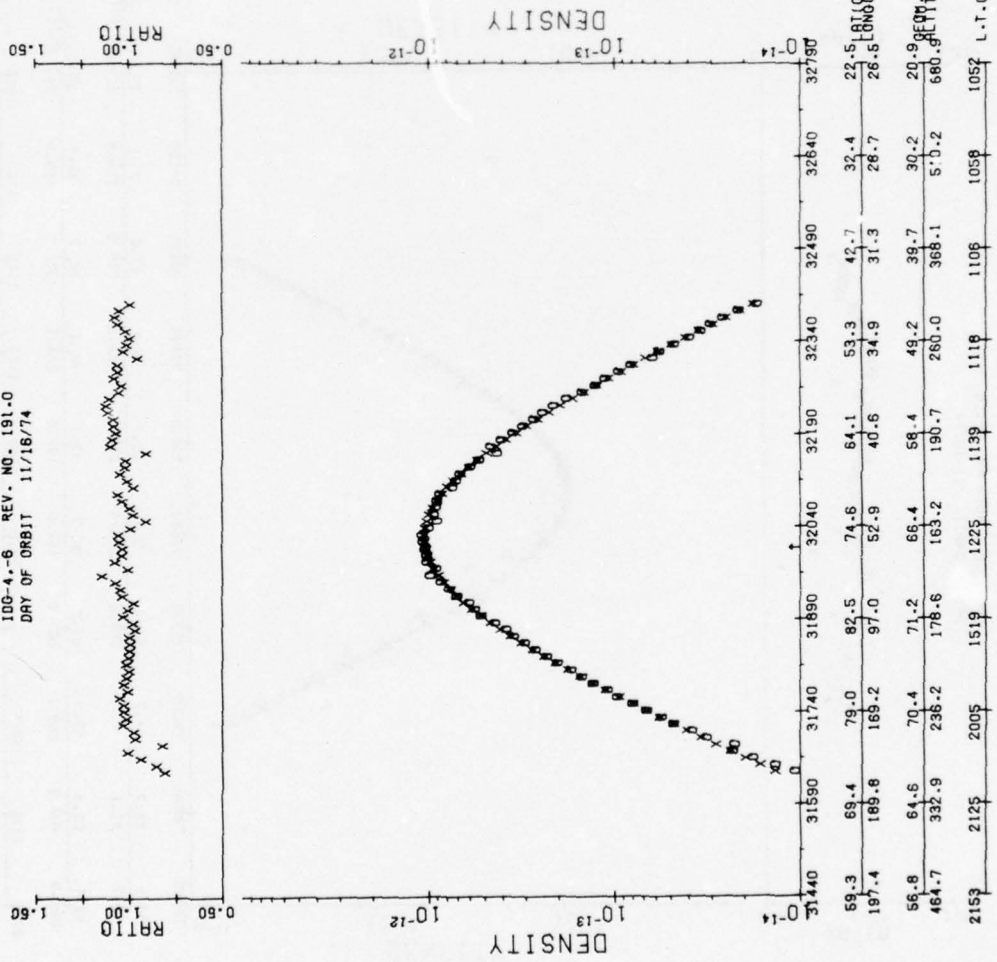


PERIGEE
 ALT (KM.) = 162.10
 LONGITUDE = 241.06
 LAT (DEG.) = 75.00
 GMT (SEC.) = 73584.1 (2026H)
 LOCAL TIME 1230 (H)
 IN SUN FROM 73442. TO 74270.
 IN SHADE FROM 72920. TO 73442.

KP=3+
 F10.7=79.0

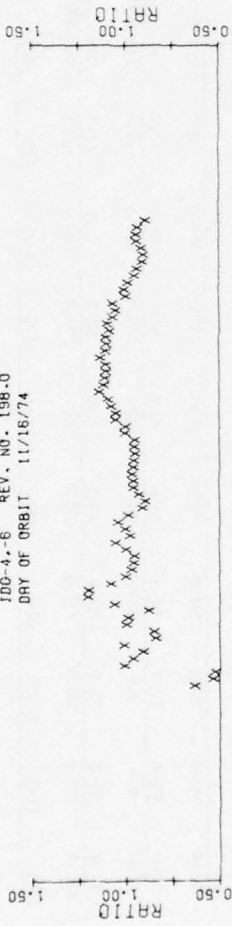
100-4.-6 REV. NO. 191.0
 DAY OF ORBIT 11/16/74

PERIOEE
 ALT(KM.)= 162.77
 LONG(E)= 56.13
 LAT(DEC.)= 75.96
 GMT(SEC.)= 32019.0 (0653M)
 LOCAL TIME 1238 (H)
 IN SUN FROM 31914. TO 32790.
 IN SHADE FROM 31440. TO 31914.

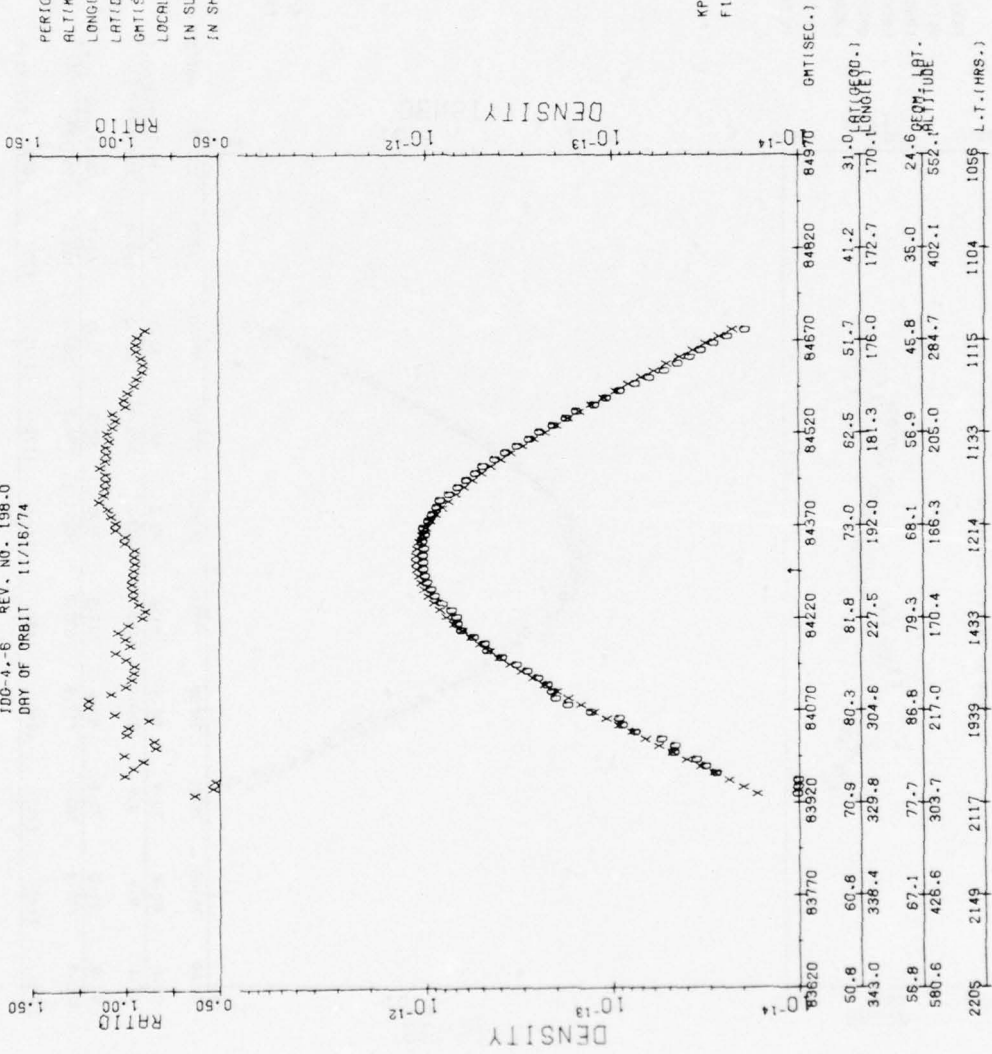


KP=2
 F10.7=82.0

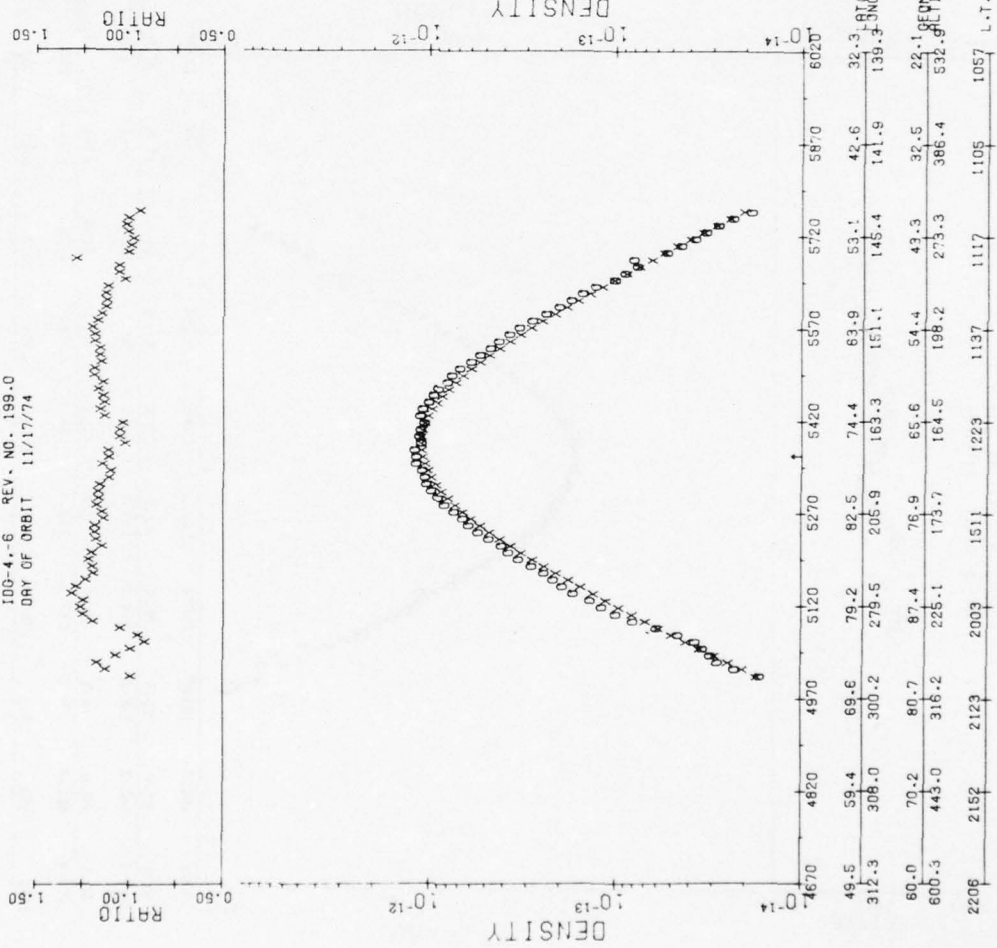
IDC-4-6 REV. NO. 198-0
 DAY OF ORBIT 11/16/74



KP=4-
 F10.7=82.0



100-4-6 REV. NO. 199.0
 DRY OF ORBIT 11/17/74

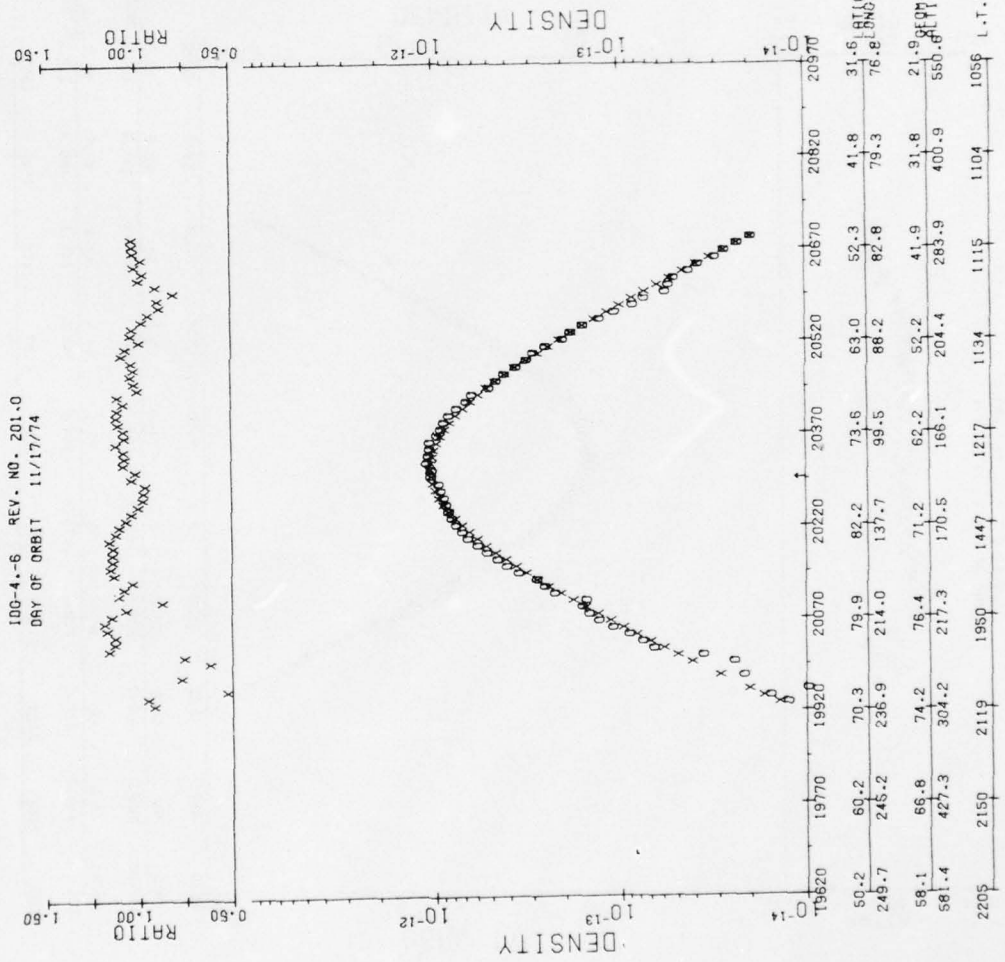


PERIOEE
 ALT(KM.)= 162.76
 LONG(E)= 170.10
 LAT(DEG.)= 77.17
 GMT(SEC.)= 5377.0 (0:129H)
 LOCAL TIME 1249 (H)
 IN SUN FROM 5296. TO 6020.
 IN SHADE FROM 4670. TO 5296.

KP=3*
 F10.7=84.0

100-4.-6 REV. NO. 201.-0
 DRY OF ORBIT 11/17/74

PERIOEE
 ALT(KM.)= 162.67
 LONG(E)= 108.72
 LAT(DEG.)= 77.47
 GMT(SEC.)= 20310.4 (0538H)
 LOCAL TIME 1253 (H)
 IN SUN FROM 20235. TO 20970.
 IN SHADE FROM 19620. TO 20235.

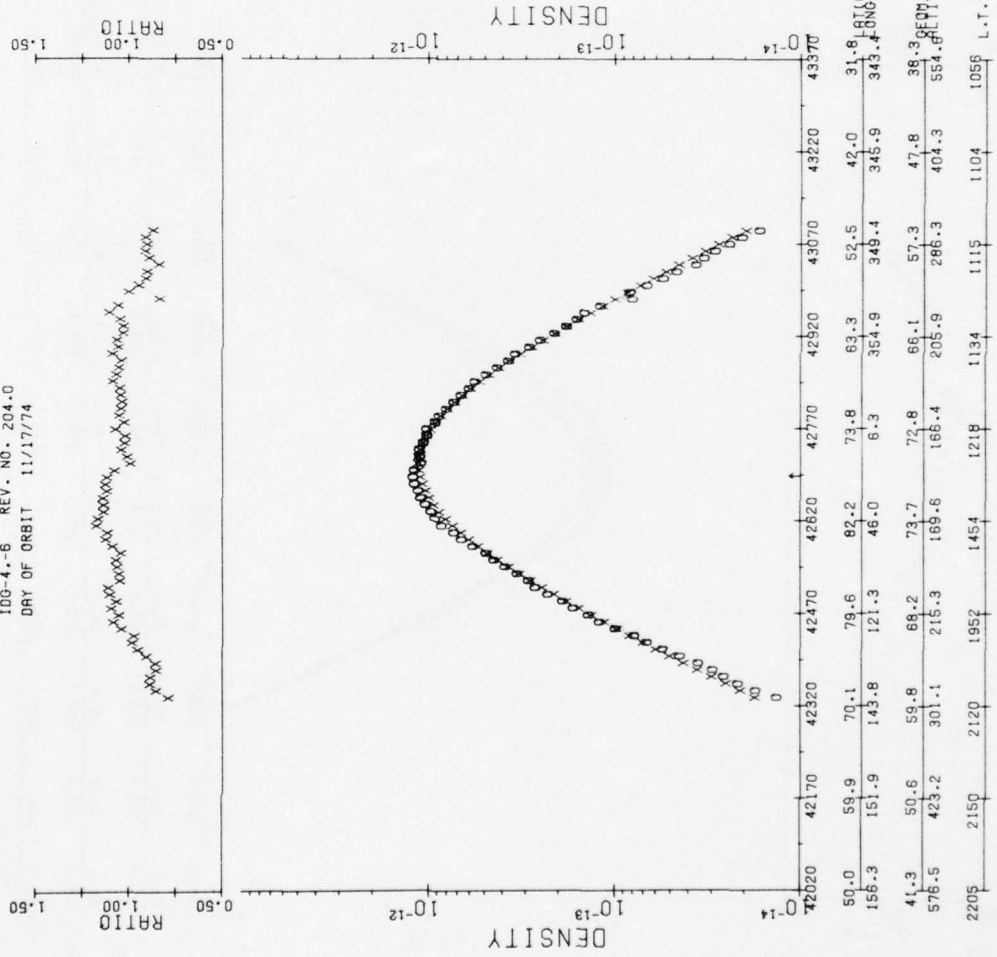


KP=3-
 F10.7=84.0

100-4.-6 REV. NO. 204.0
 DAY OF ORBIT 11/17/74

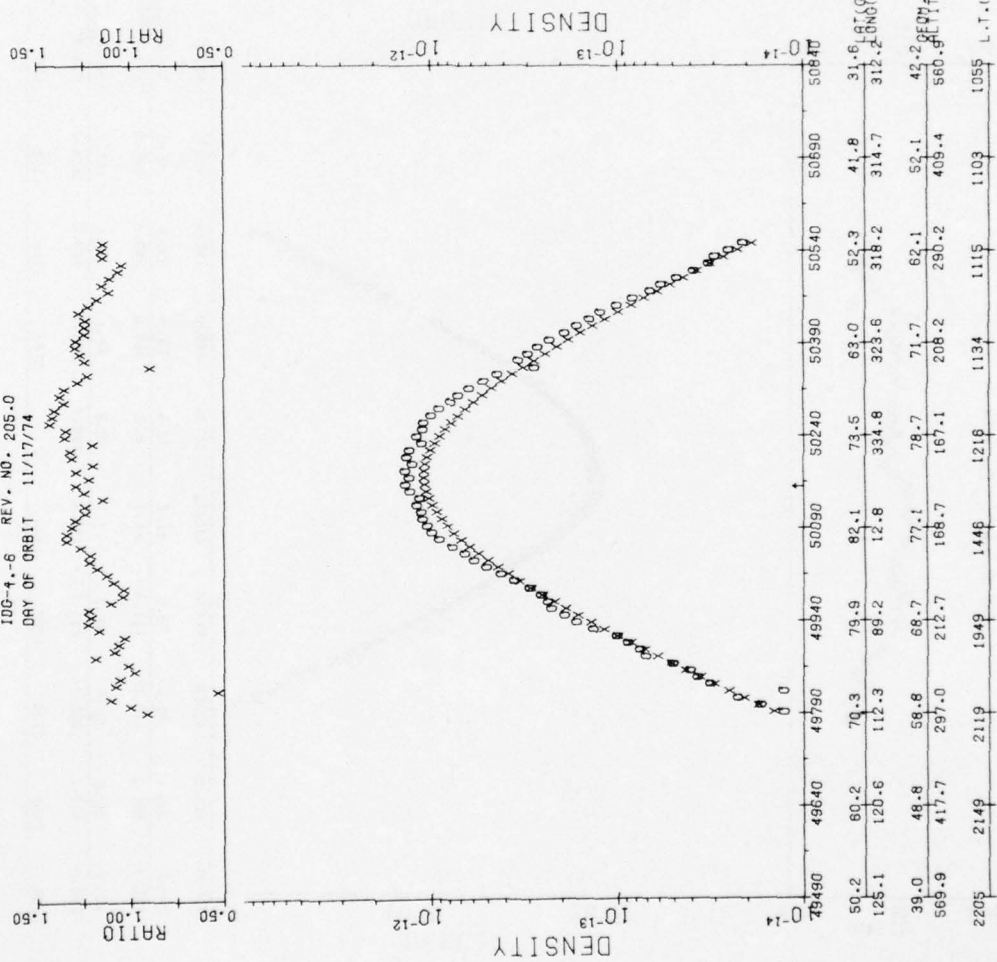
PERIOEE
 ALT(KM.)= 162.53
 LONGIE)= 16.85
 LAT(DEC.)= 77.91
 GMT(SEC.)= 42706.3 (1115H)
 LOCAL TIME 1258 (H)
 IN SUN FROM 42639. TO 43370.
 IN SHADE FROM 42020. TO 42639.

KP=4-
 F10.7=84.0



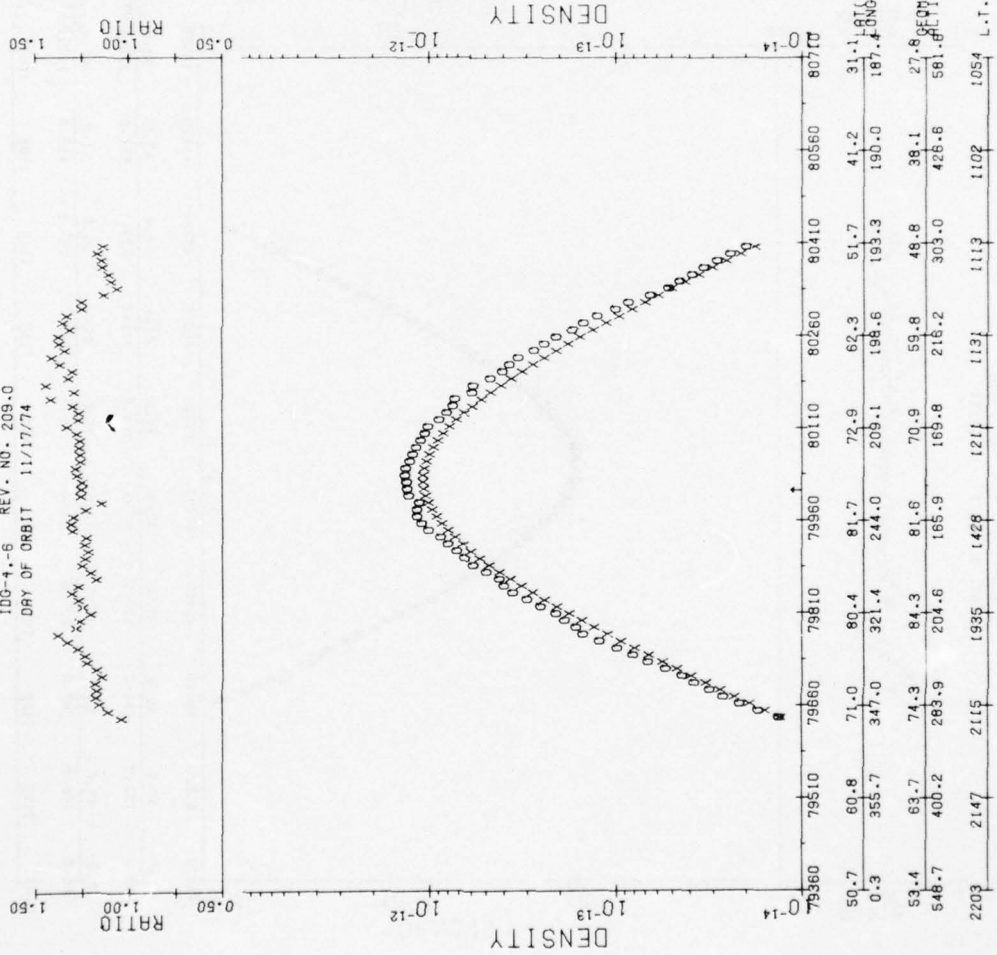
IDG-4,-6 REV. NO. 205-0
 DAY OF ORBIT 11/17/74

PERIGEE
 ALT(KM.)= 162.48
 LONG(E)= 346.00
 LAT(DEG.)= 78.06
 GMT(SEC.)= 50170.4 (1356H)
 LOCAL TIME 1300 (H)
 IN SUN FROM 50106. TO 50840.
 IN SHADE FROM 49490. TO 50106.



KP=3-
 F10.7=84.0

100-4-6 REV. NO. 209.0
 DRY OF ORBIT 11/17/74



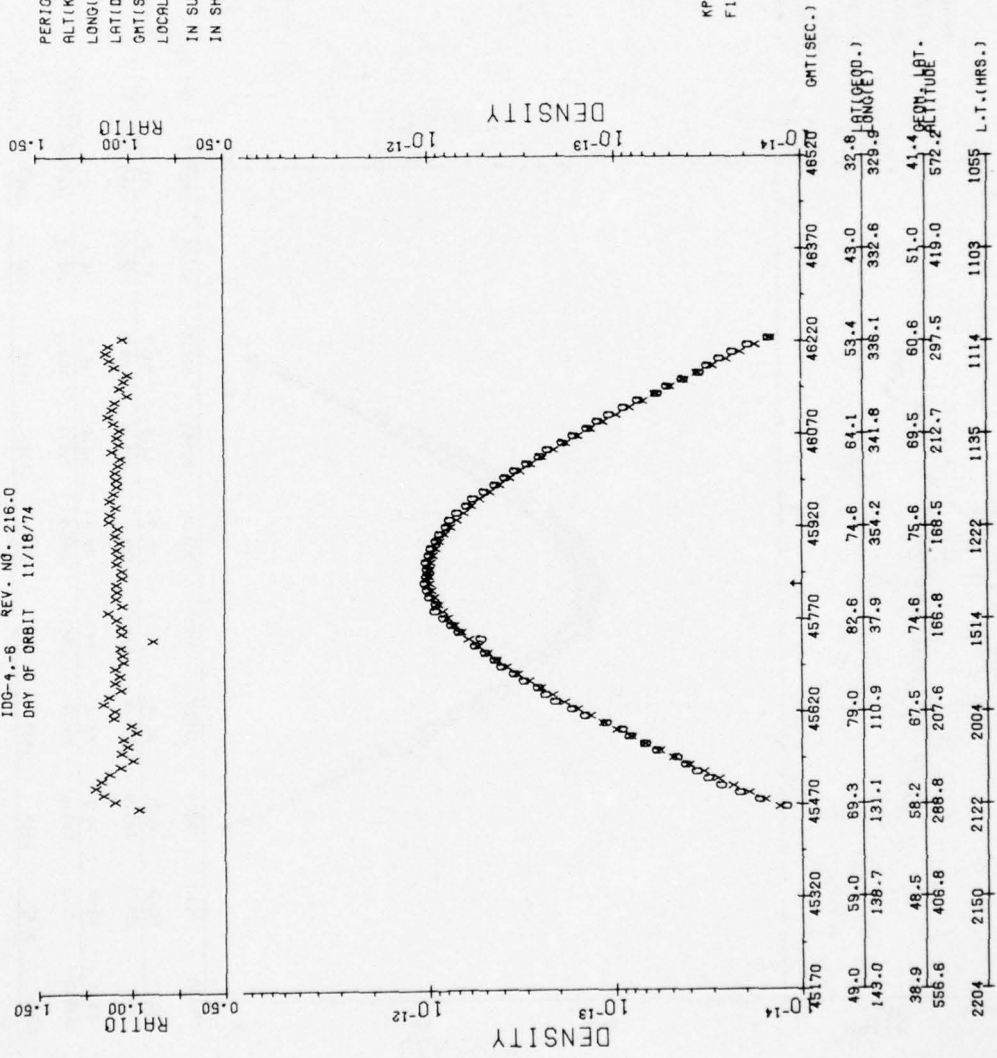
PERIODE
 ALT(KM.)= 162.29
 LONG(E)= 223.67
 LAT(DEC.)= 78.62
 GMT(SEC.)= 80021.4 (2213H)
 LOCAL TIME 1308 (H)
 IN SUN FROM 79967. TO 80710.
 IN SHADE FROM 79360. TO 79967.

KP=2+
 F10.7=84.0

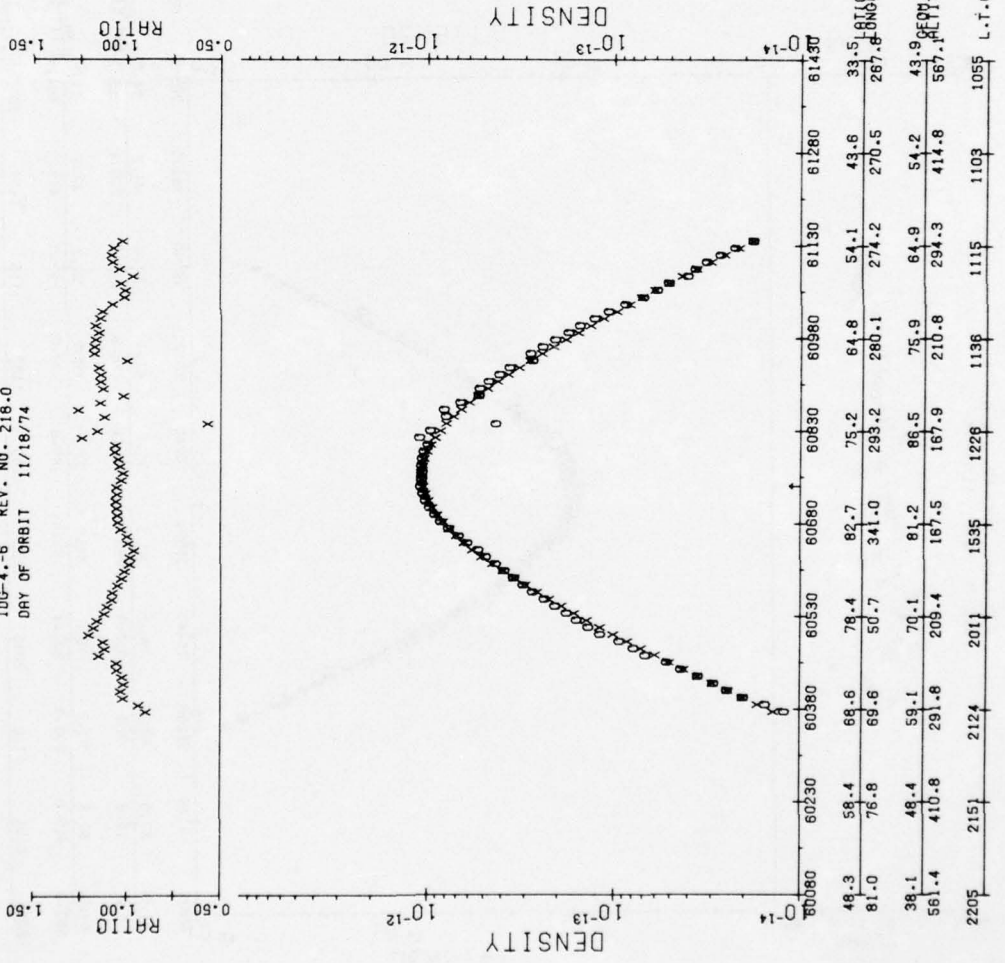
100-4,-6 REV. NO. 216.0
 DRY OF ORBIT 11/16/74

PERIGEE
 ALT(KM.)= 162.29
 LONG(°)= 9.89
 LAT(DEG.)= 79.61
 GMT(SEC.)= 45839.0 (1243H)
 LOCAL TIME 1323 (H)
 IN SUN FROM 45805. TO 46520.
 IN SHADE FROM 45170. TO 45805.

KP=1+
 F10.7=87.0



IDO-4.-6 REV. NO. 218.0
 DRY OF ORBIT 11/18/74

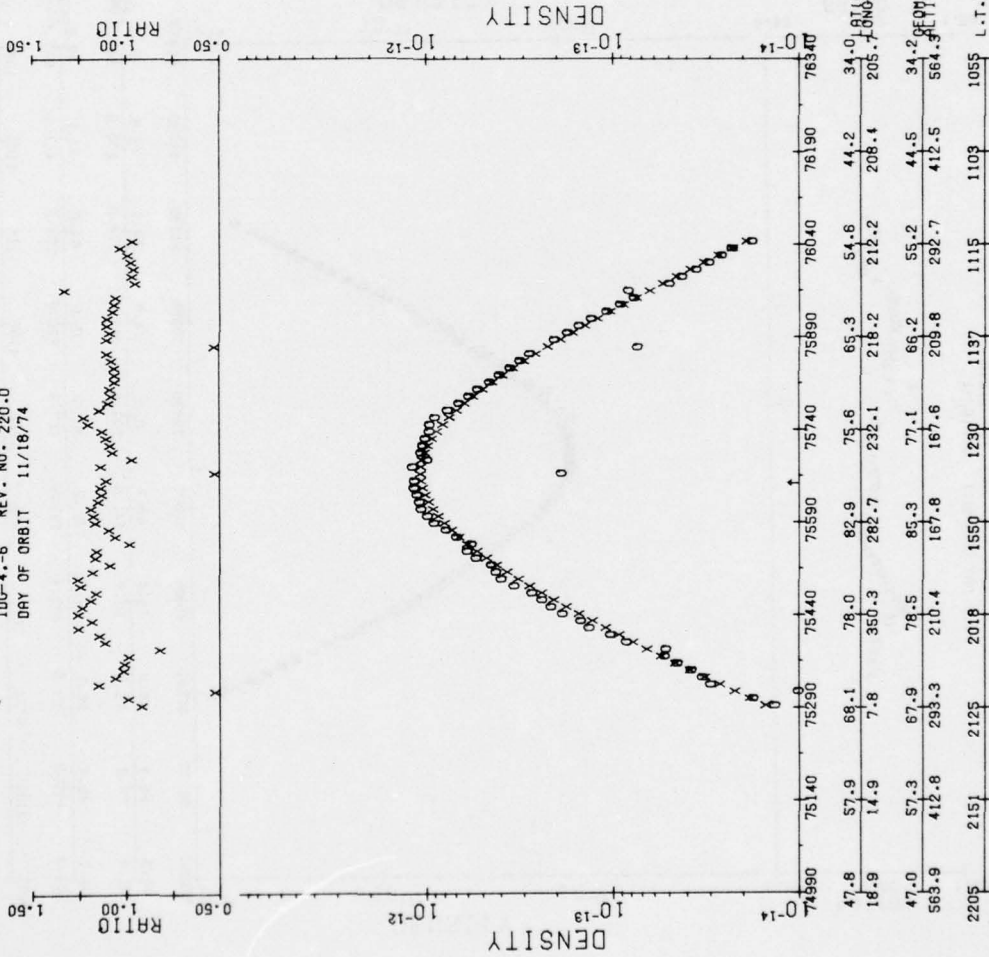


PERIGEE
 ALT(KM.)= 182.33
 LONG(E)= 309.41
 LAT(DEG.)= 79.84
 OMT(SEC.)= 60753.5 (1852H)
 LOCAL TIME 1330 (H)
 IN SUN FROM 60725. TO 61430.
 IN SHADE FROM 60080. TO 60725.

KF=2+
 F10.7=87.0

GMT (SEC.)	LONG (E)	ALT (KM.)	PERIGEE	LOCAL TIME	IN SUN FROM	IN SHADE FROM
60080	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60230	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60380	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60530	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60680	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60830	309.41	182.33	60753.5	1330 (H)	60725.	60080.
60980	309.41	182.33	60753.5	1330 (H)	60725.	60080.
61130	309.41	182.33	60753.5	1330 (H)	60725.	60080.
61280	309.41	182.33	60753.5	1330 (H)	60725.	60080.
61430	309.41	182.33	60753.5	1330 (H)	60725.	60080.

100-4,-6 REV. NO. 220.0
 DAY OF ORBIT 11/18/74



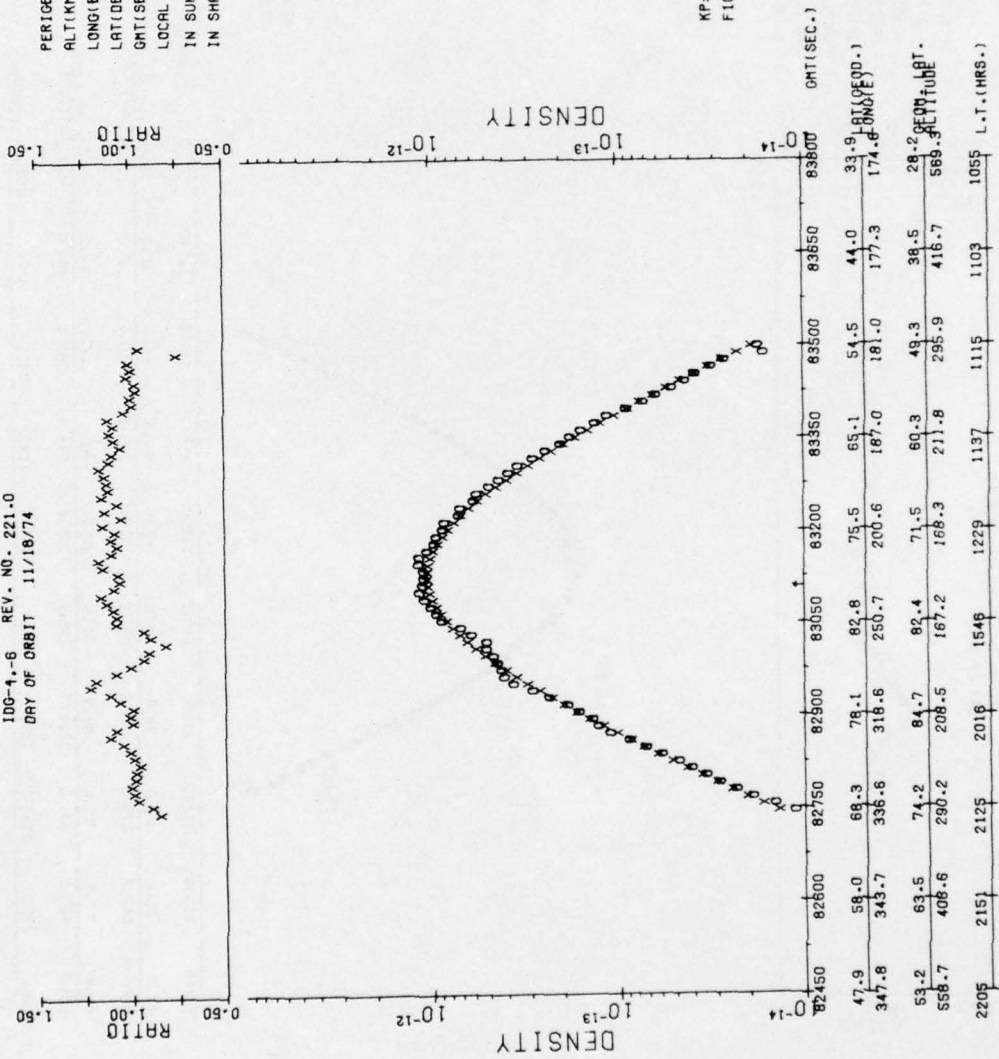
PERIGEE
 ALT(KM.)= 162.36
 LONG(E)= 248.43
 LAT(DEC.)= 80.13
 GMT(SEC.)= 75665.8 (2101H)
 LOCAL TIME 1334 (H)
 IN SUN FROM 75642. TO 76340.
 IN SHADE FROM 74990. TO 75642.

KF=2+
 F10.7=87.0

100-1-6 REV. NO. 221.0
 DRY OF ORBIT 11/18/74

PERIGEE
 ALT(KM.)= 162.38
 LONG(E)= 218.33
 LAT(DEC.)= 80.23
 GMT(SEC.)= 83121.2 (2305H)
 LOCAL TIME 1338 (H)
 IN SUN FROM 83100. TO 83800.
 IN SHADE FROM 82450. TO 83100.

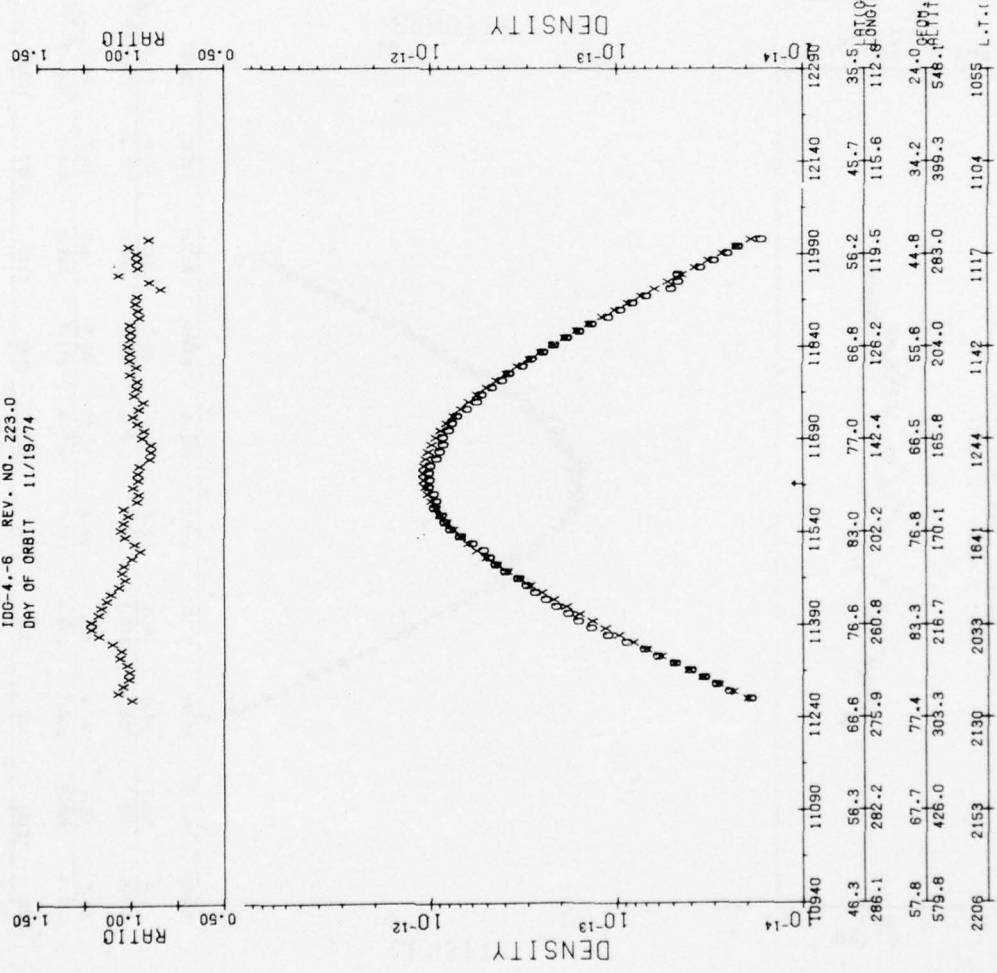
KP=2
 F10.7=87.0



IDC-4,-6 REV. NO. 223-0
 DAY OF ORBIT 11/19/74

PERIOEE
 ALT(KM.)= 162.41
 LONG(E)= 157.48
 LAT(DEC.)= 80.49
 GMT(SEC.)= 11630.3 (0319H)
 LOCAL TIME 1343 (H)
 IN SUN FROM 11616. TO 12290.
 IN SHADE FROM 10940. TO 11616.

KP=3-
 F10.7=91.0

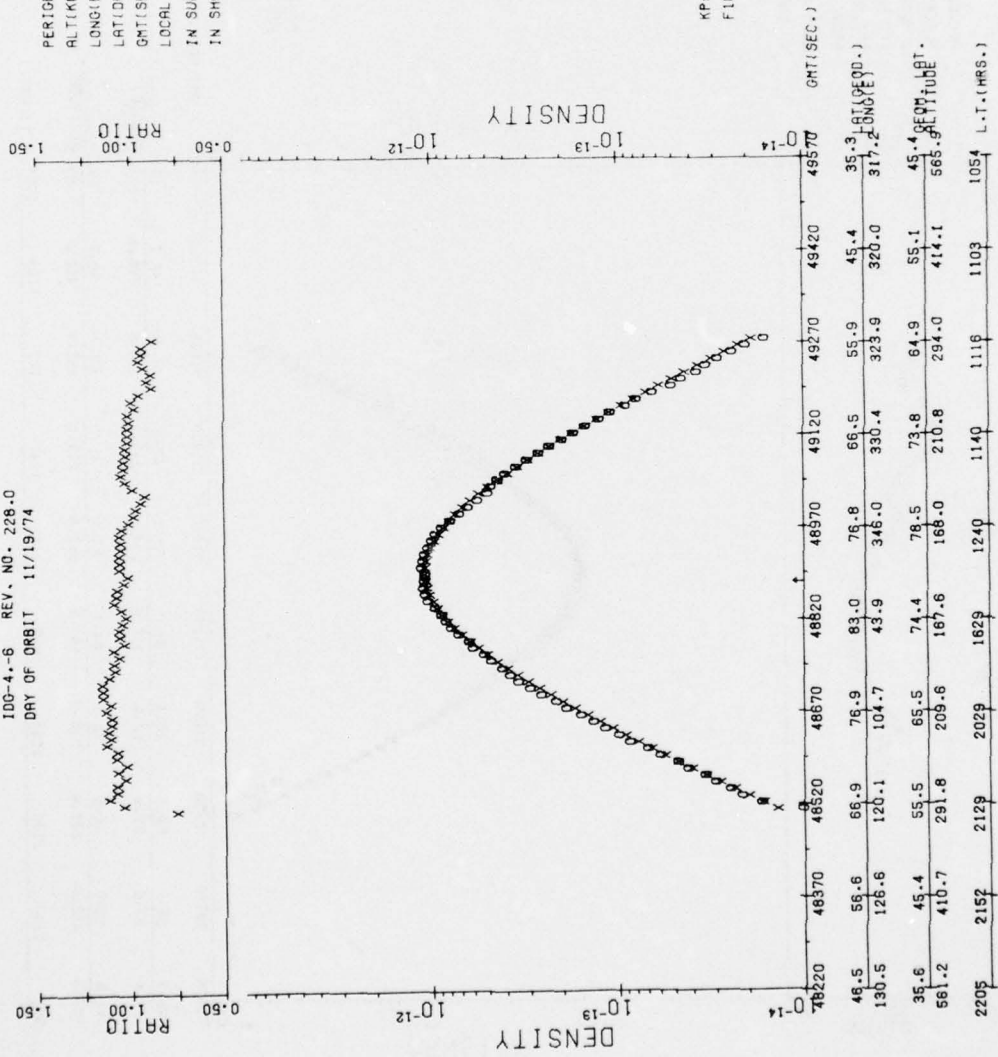


GMT(SEC.)	L.T.(HRS.)	DENSITY	RATIO						
10940	2206								
11090	2153								
111240	2130								
111390	2033								
111540	1841								
111690	1244								
111840	1142								
111990	1117								
12140	1104								
12290	1055								
46.3	56.3	86.6	76.6	83.0	77.0	66.8	56.2	45.7	35.5
286.1	282.2	275.9	260.8	202.2	142.4	126.2	119.5	115.6	112.8
57.8	67.7	77.4	83.3	76.8	66.5	55.6	44.8	34.2	24.0
575.8	426.0	303.3	216.7	170.1	165.8	204.0	283.0	399.3	548.1
	2153	2130	2033	1841	1244	1142	1117	1104	1055

100-4.-6 REV. NO. 228-0
 DAY OF ORBIT 11/19/74

PERIODE
 ALT(KM.)= 162.48
 LONG(E)= 6.24
 LAT(DEG.)= 81.09
 GMT(SEC.)= 48893.6 (1334H)
 LOCAL TIME 1359 (H)
 IN SUN FROM 48892. TO 49570.
 IN SHADE FROM 48220. TO 48692.

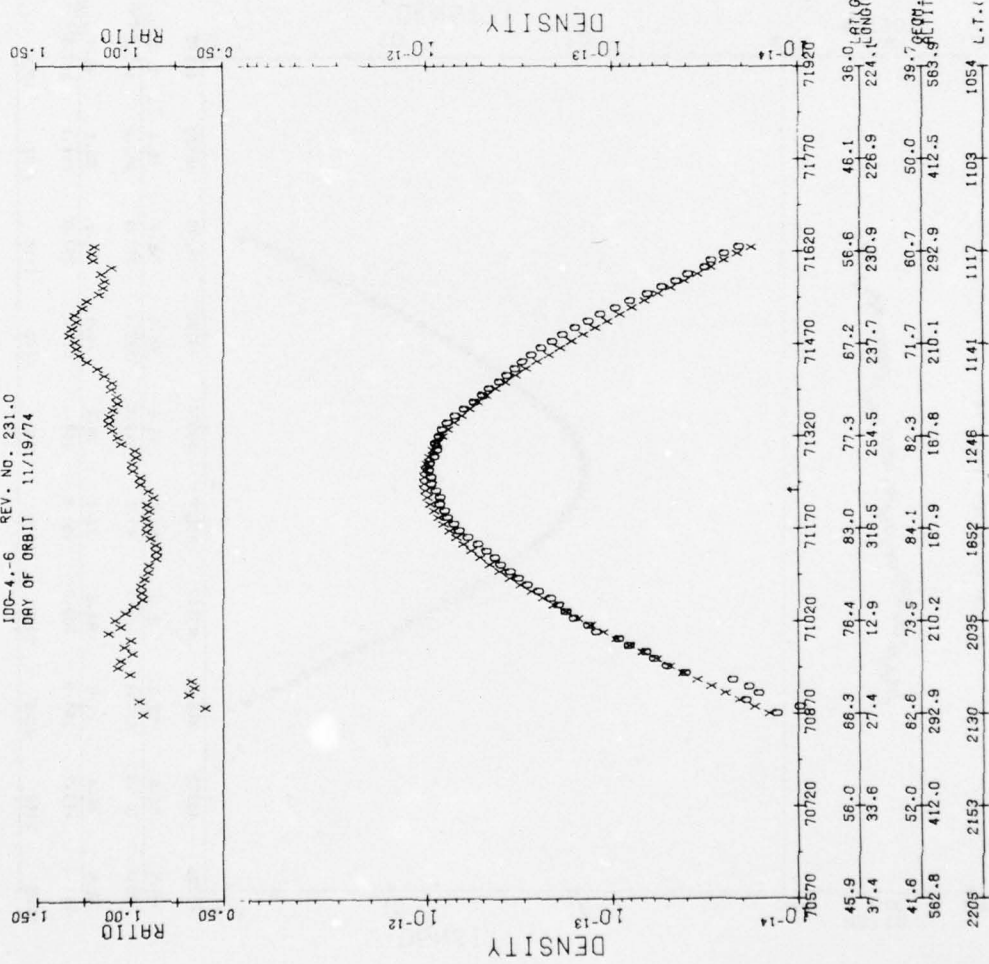
KP=3-
 F10.7=91.0



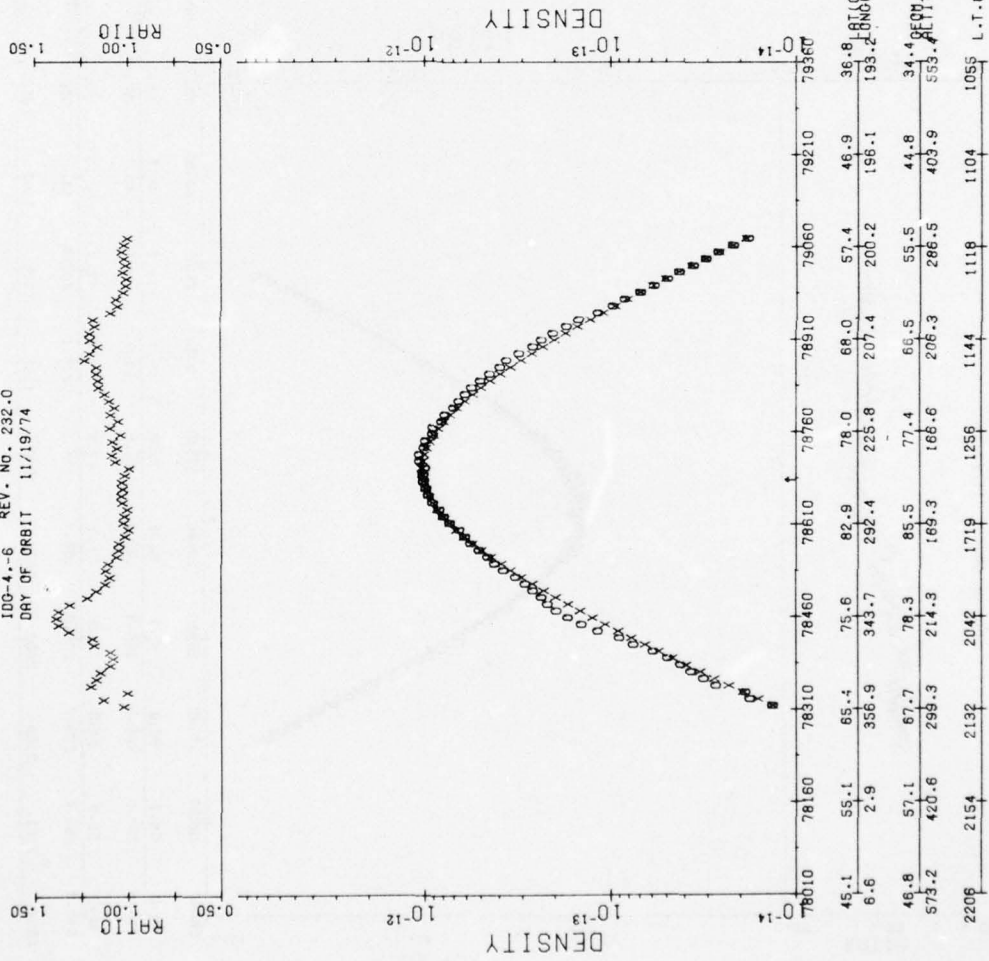
100-4.-6 REV. NO. 231.0
 DRY OF ORBIT 11/19/74

PERIGEE
 ALT(KM.)= 162.53
 LONG(E)= 276.20
 LAT(DEG.)= 81.37
 GMT(SEC.)= 71245.2 (1947H)
 LOCAL TIME 1412 (H)
 IN SUN FROM 71251. TO 71920.
 IN SHADE FROM 70570. TO 71251.

MP=2+
 F10.7=81.0



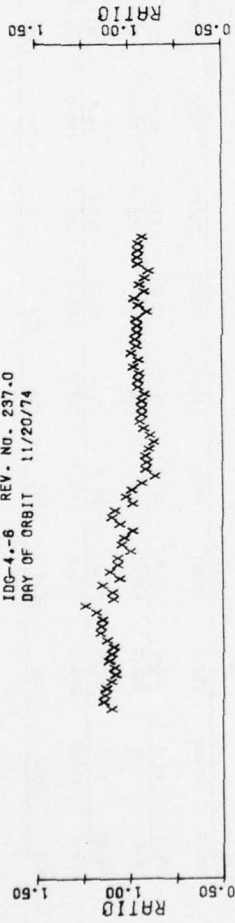
100-4-6 REV. NO. 232-0
 DRY OF ORBIT 11/19/74



PERIOEE
 ALT(KM.)= 162.54
 LONG(L) = 246.02
 LAT(DEC.) = 81.47
 OMT(SEC.) = 78694.7 (2151H)
 LOCAL TIME 1415 (H)
 IN SUN FROM 78703. TO 78860.
 IN SHADE FROM 78010. TO 78703.

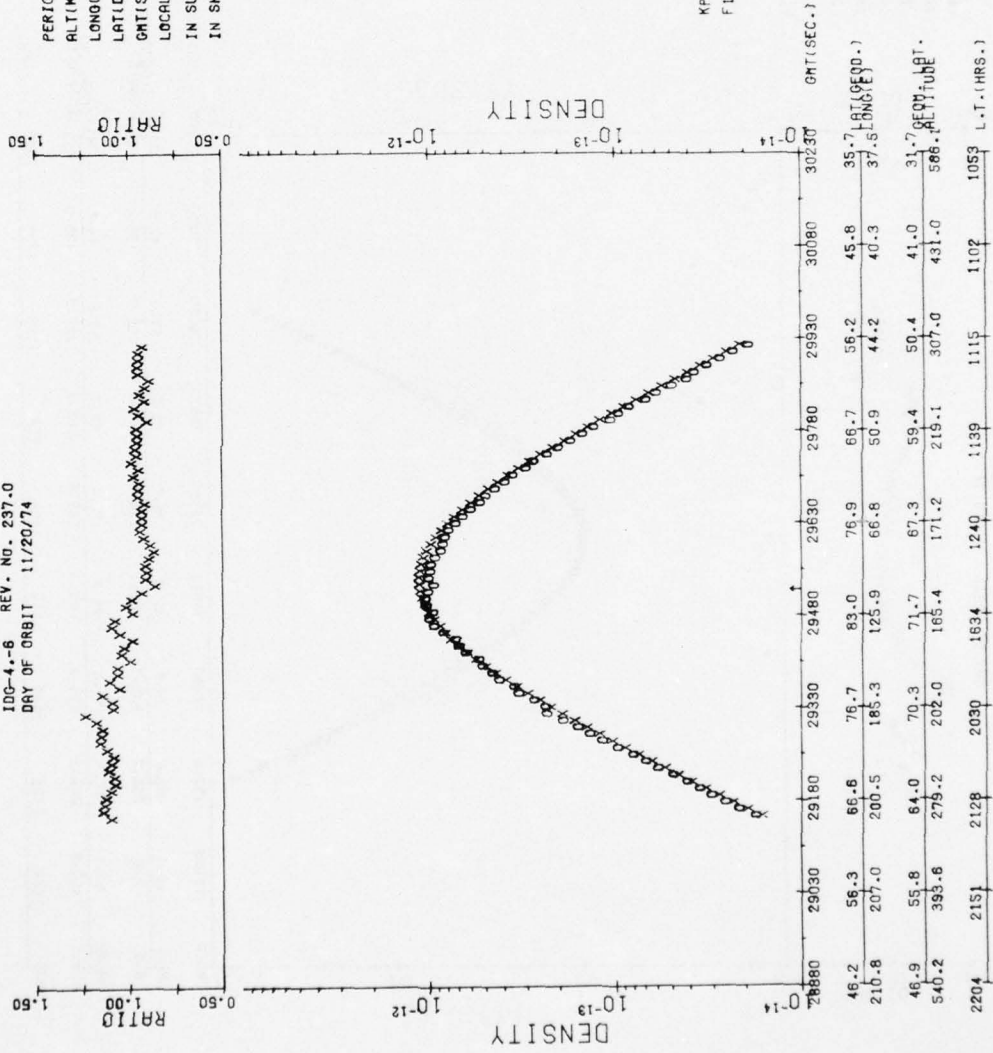
KP=2+
 FIG.7=91.0

IDG-4--6 REV. NO. 237.0
 DRY OF ORBIT 11/20/74



PERIGEE
 ALT(KM.)= 162.58
 LONG(E)= 96.02
 LAT(DEC.)= 81.96
 GMT(SEC.)= 29534.7 (0812H)
 LOCAL TIME 1436 (H)
 IN SUN FROM 28880. TO 32640.
 IN SHADE FROM 32640. TO 30230.

KP=4
 F10.7=98.0

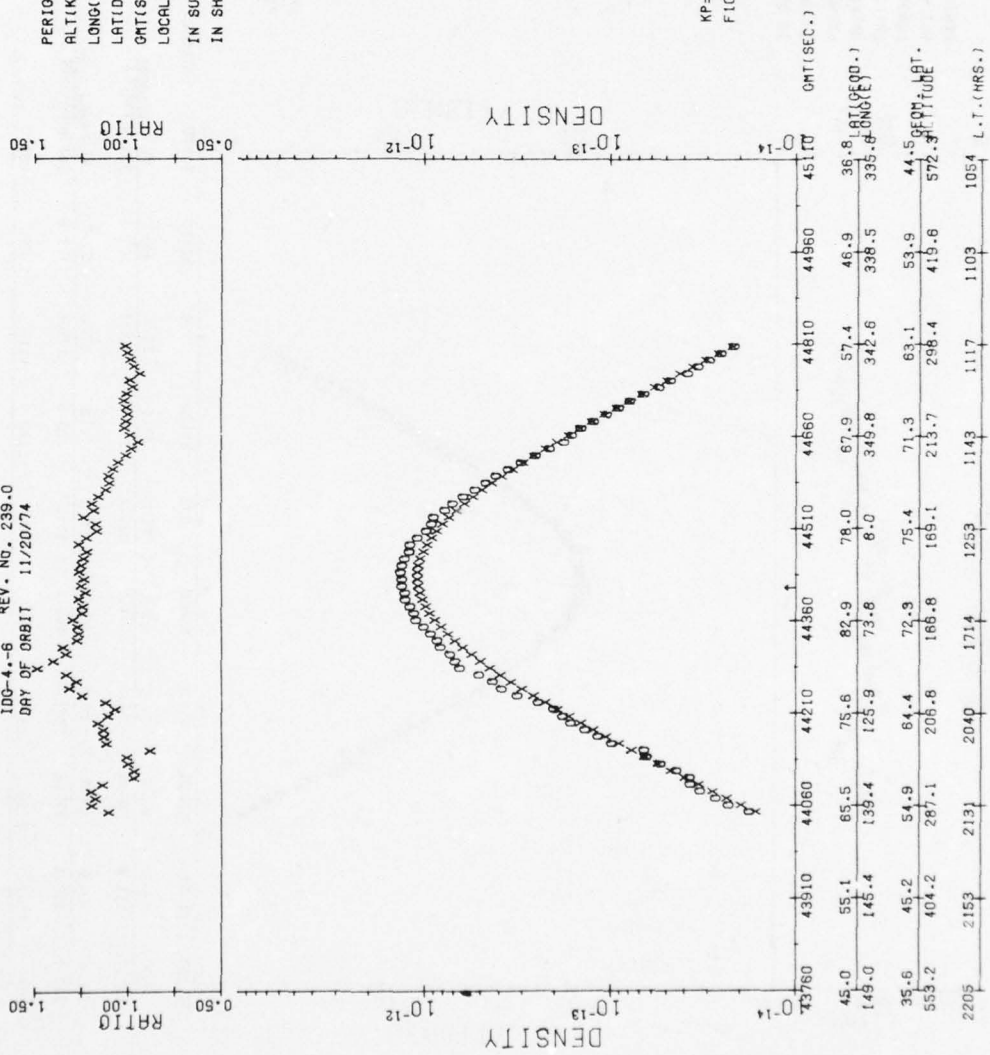


GMT (SEC.)	ALT (KM.)	LONG (E)	LAT (DEC.)	DENSITY
28880	46.2	56.3	66.6	0.14
29030	210.8	207.0	200.5	10 ⁻¹³
29180	46.9	55.8	64.0	10 ⁻¹²
29330	540.2	393.8	279.2	10 ⁻¹¹
29480	210.8	207.0	200.5	10 ⁻¹⁰
29630	46.2	56.3	66.6	10 ⁻⁹
29780	210.8	207.0	200.5	10 ⁻⁸
29930	46.9	55.8	64.0	10 ⁻⁷
30080	540.2	393.8	279.2	10 ⁻⁶
30230	210.8	207.0	200.5	10 ⁻⁵

IDG-4-6 REV. NO. 239.0
 DRY OF ORBIT 11/20/74

PERIOEE
 ALT(KM.)= 162.59
 LONG(E)= 36.12
 LAT(DEC.)= 82.11
 GMT(SEC.)= 44426.8 (1220H)
 LOCAL TIME 1444 (H)
 IN SUN FROM 44454. TO 45110.
 IN SHADE FROM 43760. TO 44454.

KP=4-
 F10.7=98.0



AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

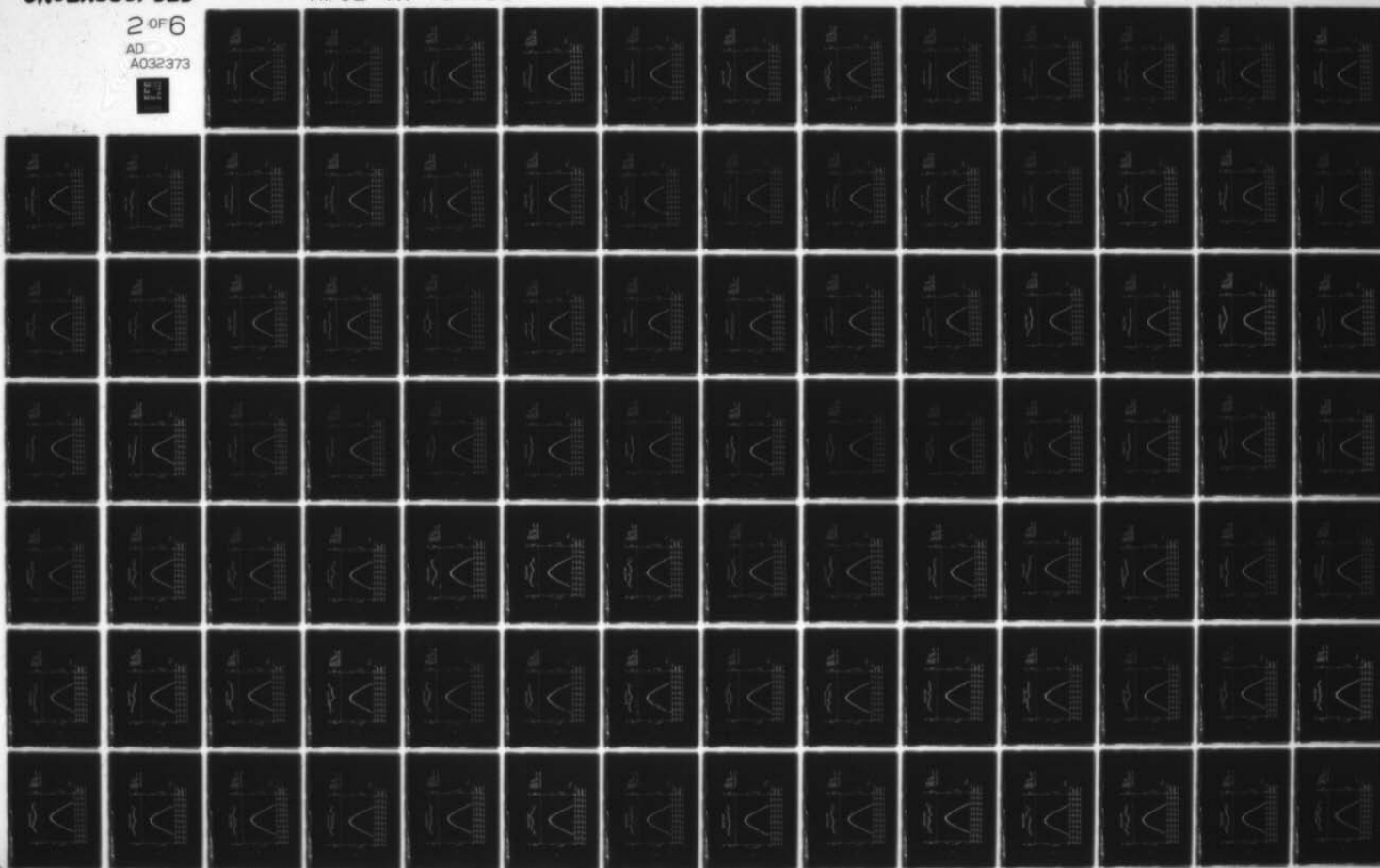
F/G 4/1

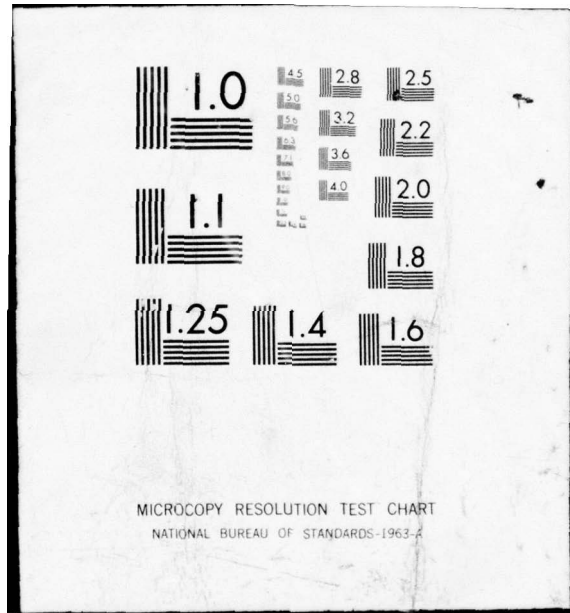
UNCLASSIFIED

NL

2 OF 6

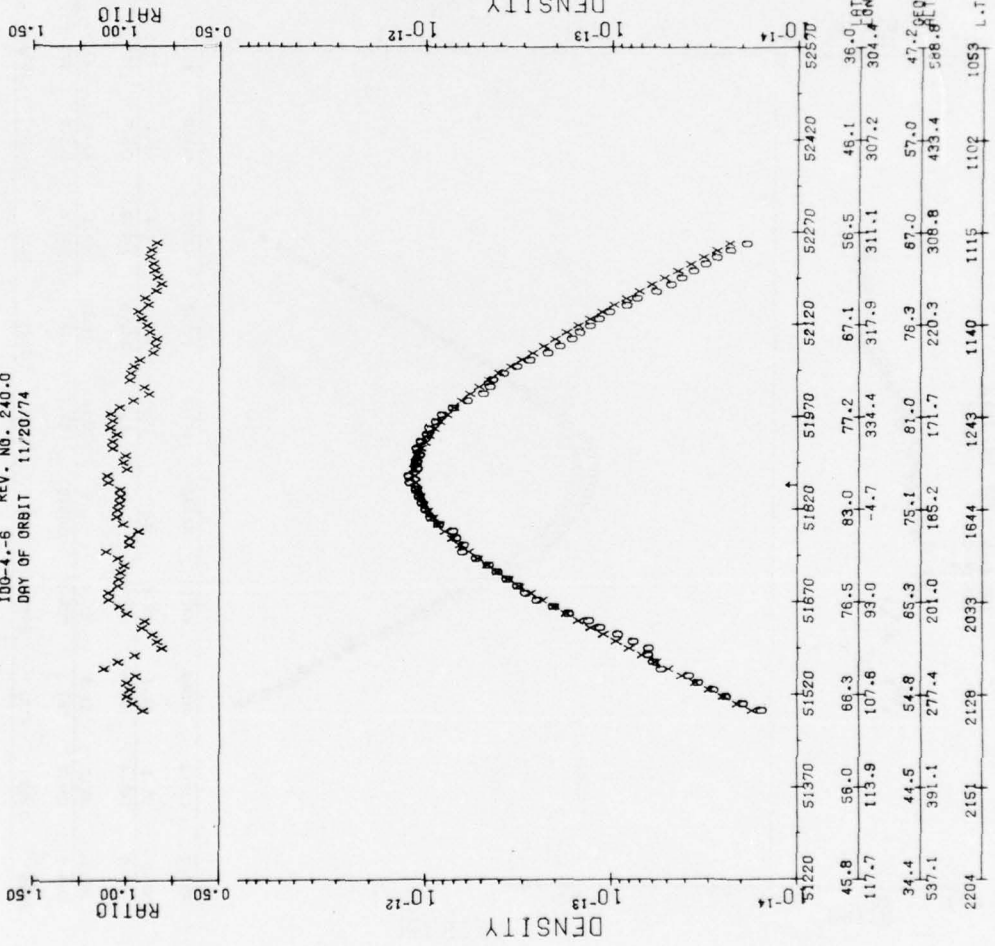
AD
A032373





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

100-4.-6 REV. NO. 240.0
 DRY OF ORBIT 11/20/74

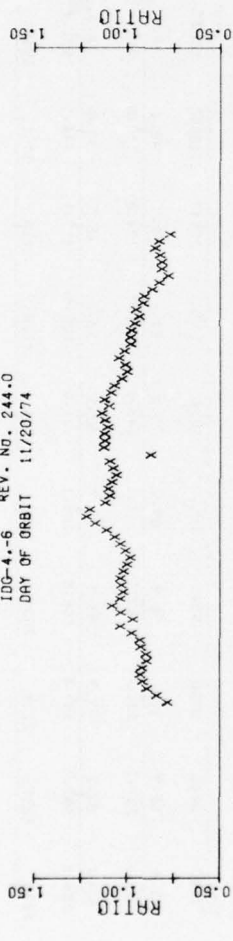


PERIGEE
 ALT(KM.)= 162.59
 LONG(L°)= 6.13
 LAT(DEC.)= 82.19
 GMT(SEC.)= 51872.0 (1424H)
 LOCAL TIME 1449 (H)
 IN SUN FROM 51220. TO 53160.
 IN SHADE FROM 53160. TO 52570.

KP=4
 F10.7=98.0

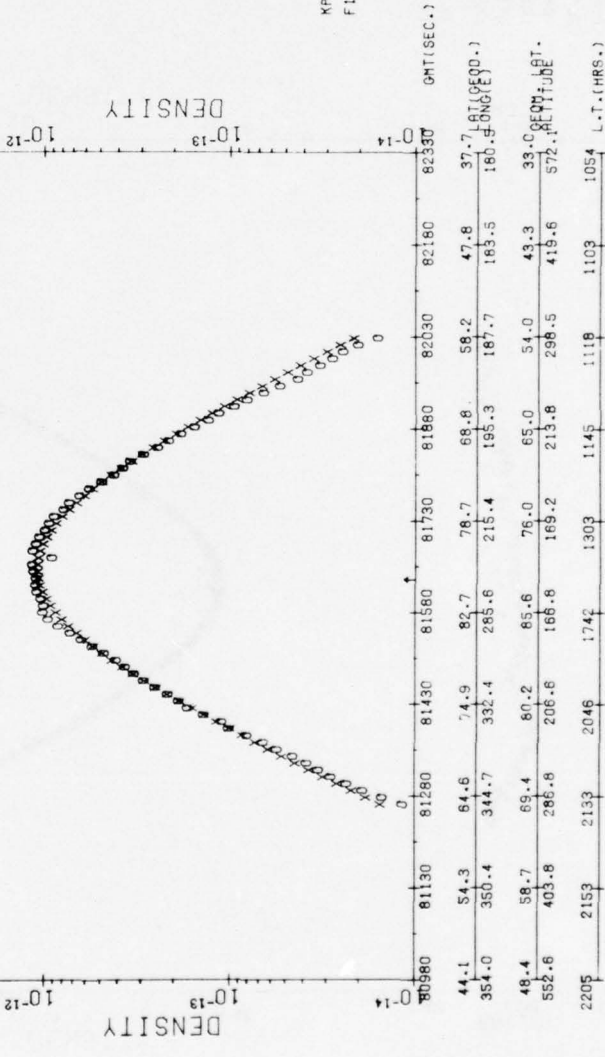
TIME (SEC.)	DENSITY	RATIO	LONGITUDE (L°)	LATITUDE (LAT.)	L.T. (HRS.)
51220	117.7				
51370	56.0				
51520	66.3				
51670	76.5				
51820	83.0				
51970	77.2				
52120	67.1				
52270	56.5				
52420	46.1				
52570	36.0				
51220	117.7	113.9			
51370	56.0	113.9			
51520	66.3	107.6			
51670	76.5	93.0			
51820	83.0	-4.7			
51970	77.2	334.4			
52120	67.1	317.8			
52270	56.5	311.1			
52420	46.1	307.2			
52570	36.0	304.4			
51220	34.4				
51370	44.5				
51520	54.8				
51670	65.3				
51820	75.1				
51970	81.0				
52120	76.3				
52270	67.0				
52420	57.0				
52570	47.2				
2204	537.1				
2151	391.1				
2128	277.4				
2033	201.0				
1644	165.2				
1243	171.7				
1140	220.3				
1115	308.8				
1102	433.4				
1053	568.8				

IDC-4-6 REV. NO. 244-0
 DAY OF ORBIT 11/20/74



PERIGEE
 ALT.(KM.)= 162.61
 LONG(°)= 246.57
 LAT(°)= 82.51
 GMT(SEC.)= 81646.5 (2240h)
 LOCAL TIME 1507 (H)
 IN SUN FROM 80980. TO 82920.
 IN SHADE FROM 82920. TO 82330.

KP=4-
 F10.7=98.0

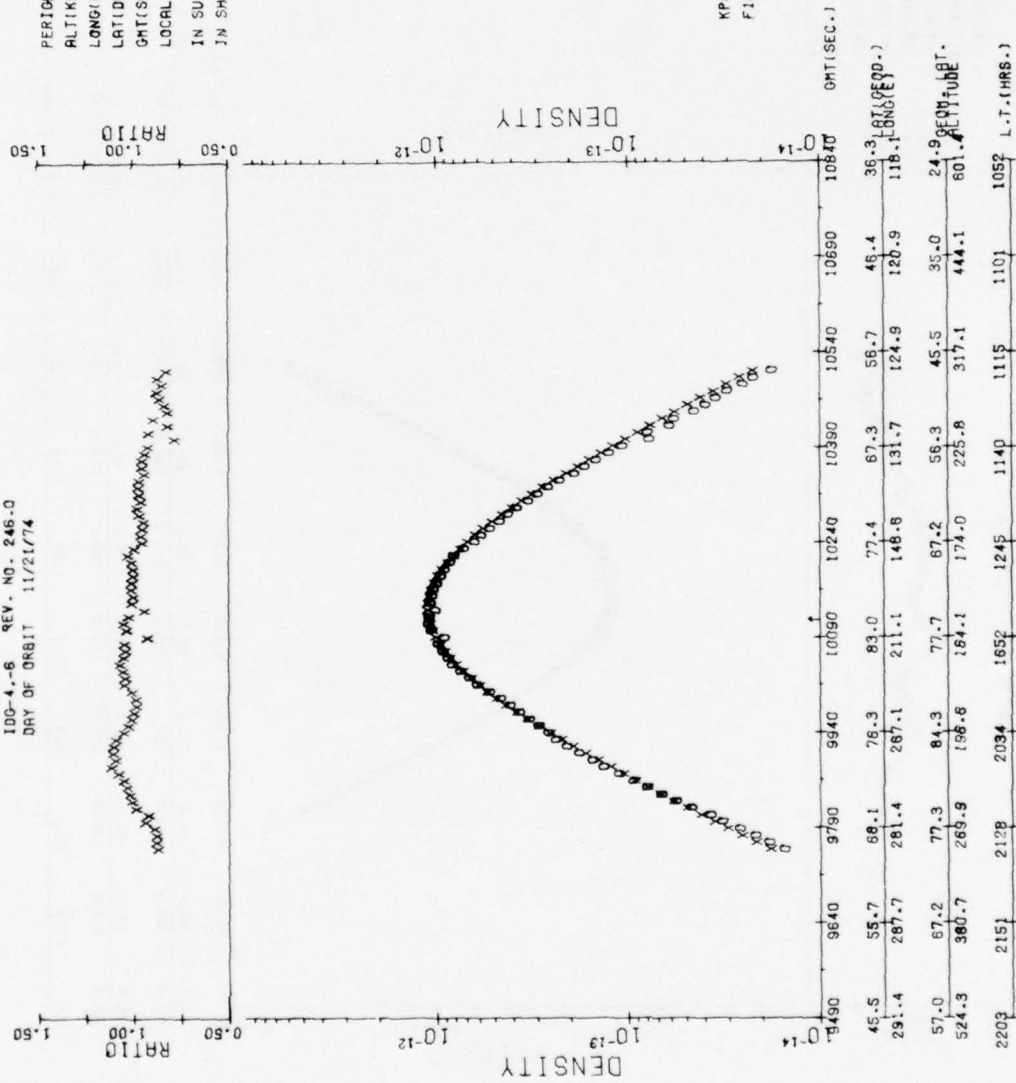


GMT (SEC.)	ALT. (KM.)	LONG. (°)	LAT. (°)	HEIGHT (FT.)	L.T. (HRS.)
80980	215.3	204.6	174.2	1303	11.45
81130	215.3	204.6	174.2	1303	11.45
81280	54.6	74.9	82.7	285.6	166.8
81430	344.7	332.4	285.6	166.8	166.8
81580	82.7	78.7	68.8	58.2	47.8
81730	215.4	215.4	185.3	187.7	163.5
81880	78.7	68.8	58.2	47.8	37.7
82030	58.2	47.8	37.7	180.5	180.5
82180	163.5	163.5	180.5	180.5	180.5
82330	43.3	43.3	33.0	572.1	105.4

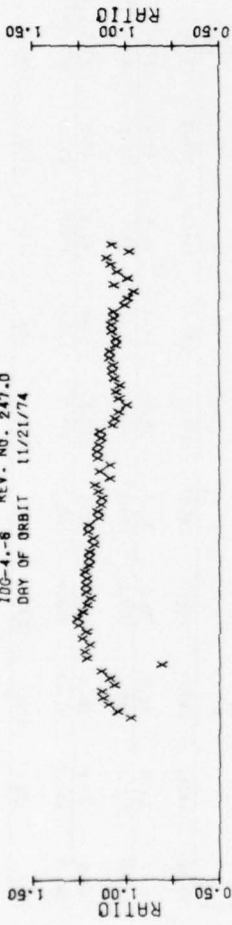
100-4-B REV. NO. 246.0
 DAY OF ORBIT 11/21/74

PERIODE
 ALT(KM.)= 152.61
 LONG(°E)= 187.08
 LAT(°EG.)= 82.65
 GMT(SEC.)= 10130.2 (0248H)
 LOCAL TIME 1517 (H)
 IN SUN FROM 10176. TO 10840.
 IN SHADE FROM 9490. TO 10176.

KP=4+
 F10.7=96.0

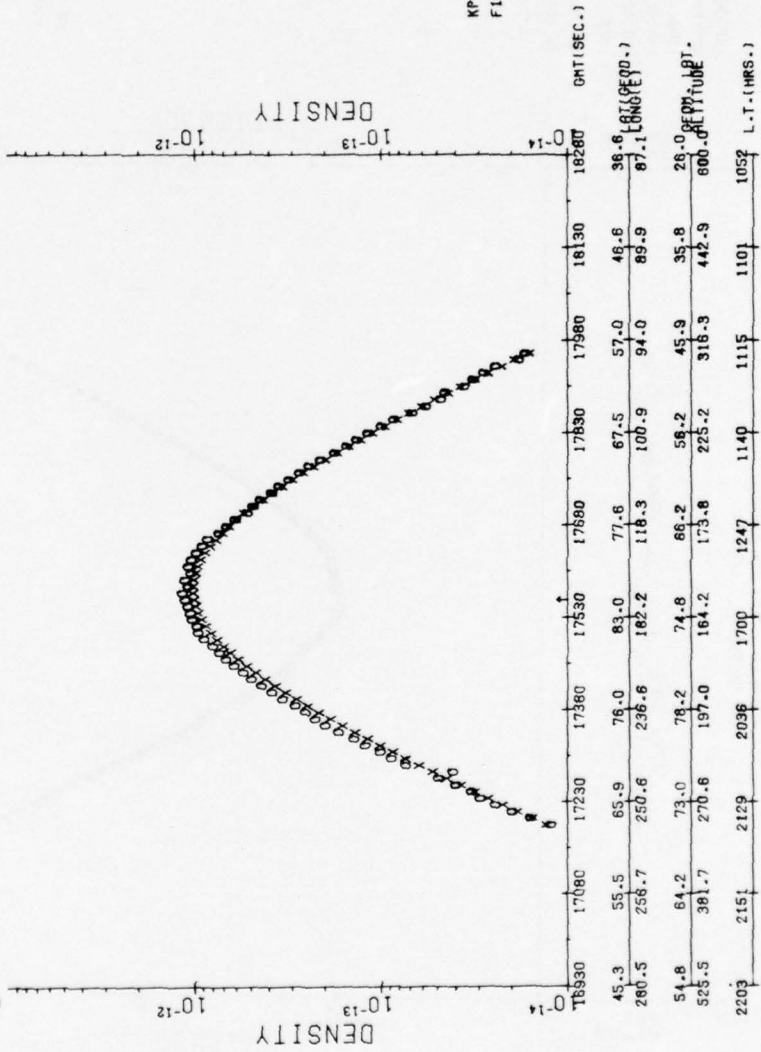


10G-4-6 REV. NO. 247-0
 DAY OF ORBIT 11/21/74

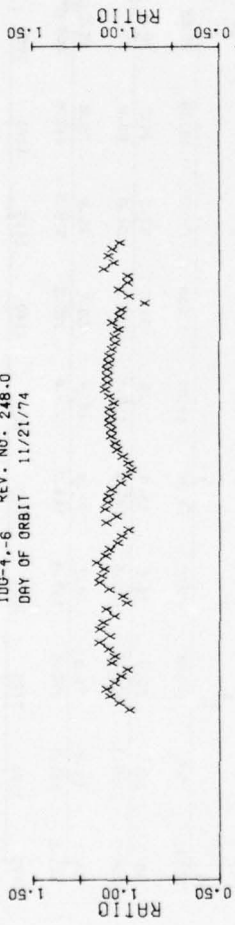


PERIOEE
 ALT(KM.)= 152.62
 LONGIE)= 157.39
 LATIDEG.)= 82.71
 GMT(SEC.)= 17571.3 (0452H)
 LOCAL TIME 1522 (H)
 IN SUN FROM 16930. TO 18840.
 IN SHADE FROM 18840. TO 18280.

KP=2-
 F10.7=98.0

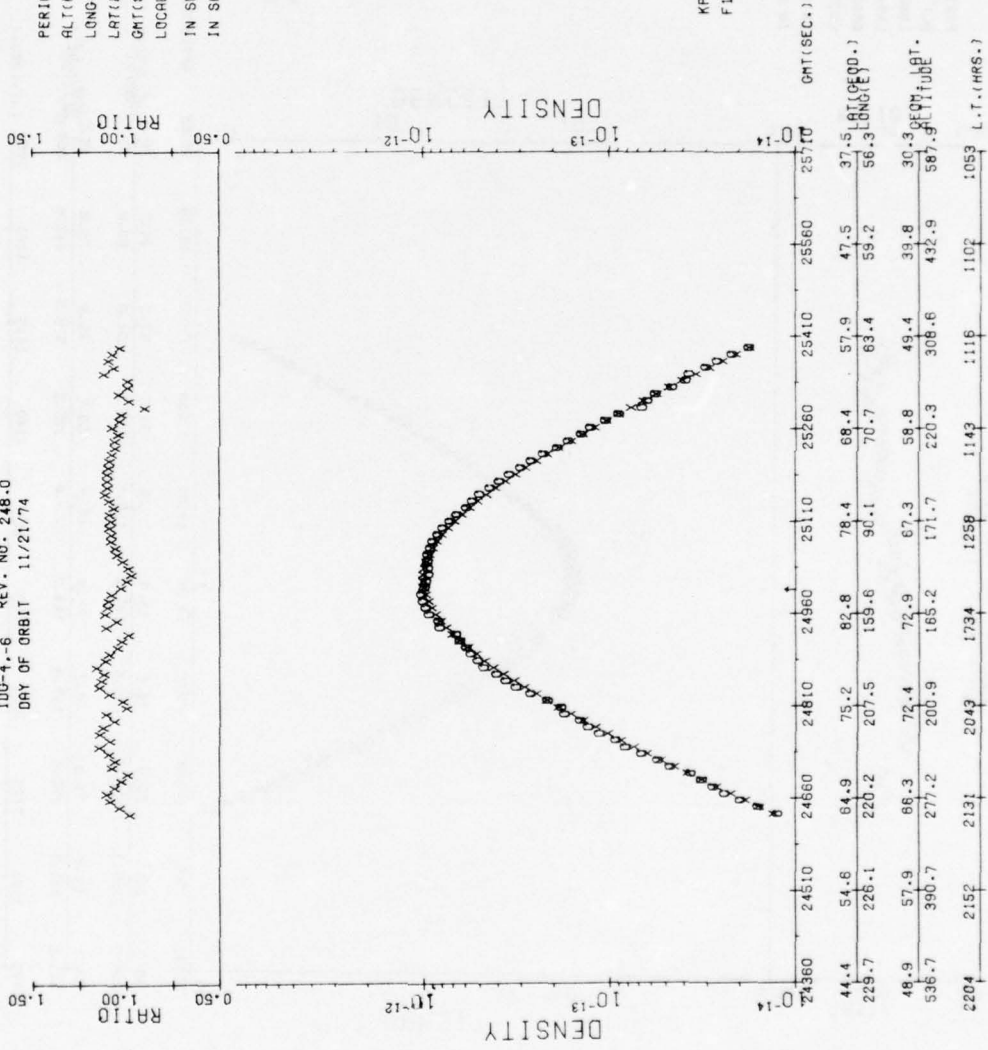


100-4,-6 REV. NO. 248.0
DAY OF ORBIT 11/21/74

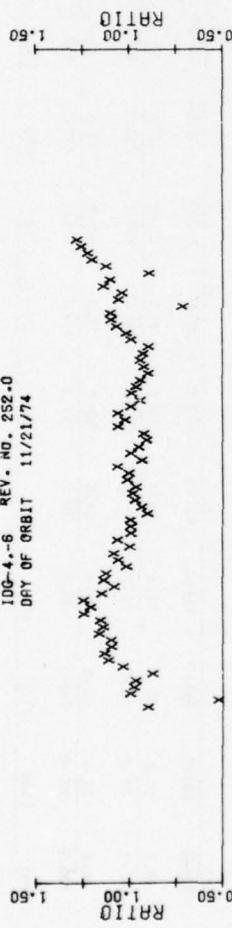


PERIODE
ALT(KM.)= 162.62
LONG(E)= 127.71
LAT(DEG.)= 82.76
GMT(SEC.)= 25011.9 (0656H)
LOCAL TIME 1527 (H)
IN SUN FROM 24360. TO 26280.
IN SHADE FROM 26280. TO 25710.

KP=2-
F10.7=98.0

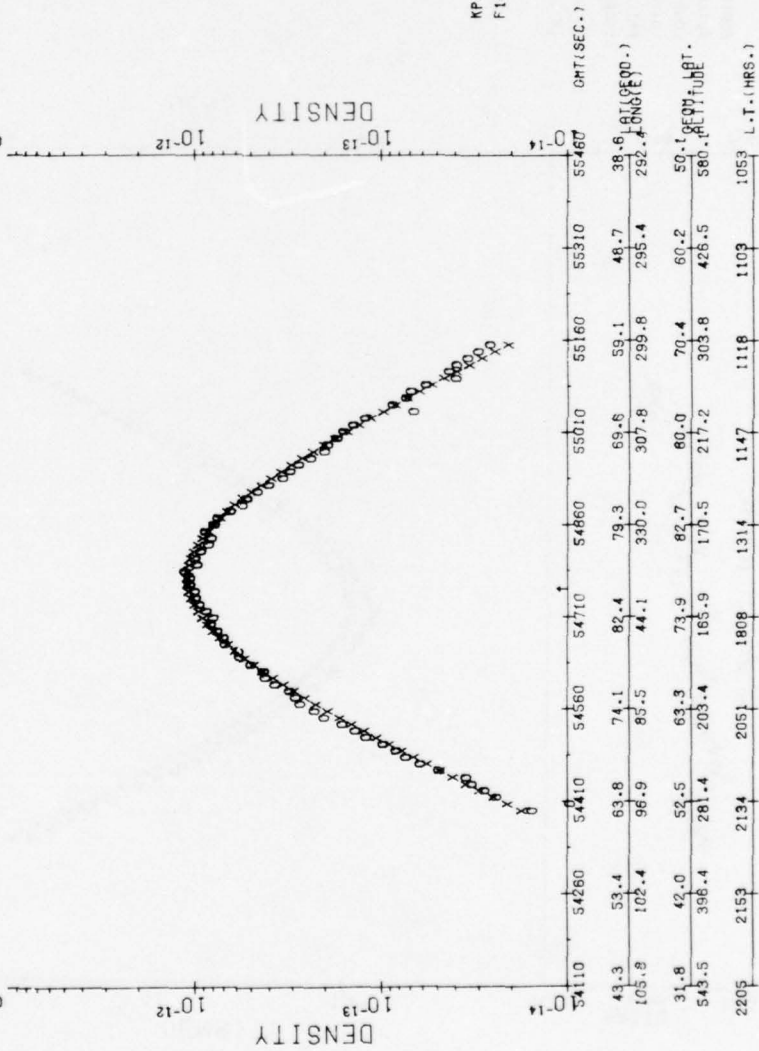


100-4--6 REV. NO. 252.0
 DRY OF ORBIT 11/21/74



PERIOD= 182.63
 ALT(KM.)= 182.63
 LONG(E)= -18.95
 LAT(DEG.)= 82.82
 GMT(SEC.)= 54768.5 (1512H)
 LOCAL TIME 1548 (H)
 IN SUN FROM 54110. TO 56040.
 IN SHADE FROM 56040. TO 55460.

MP=4
 F10.7=98.0

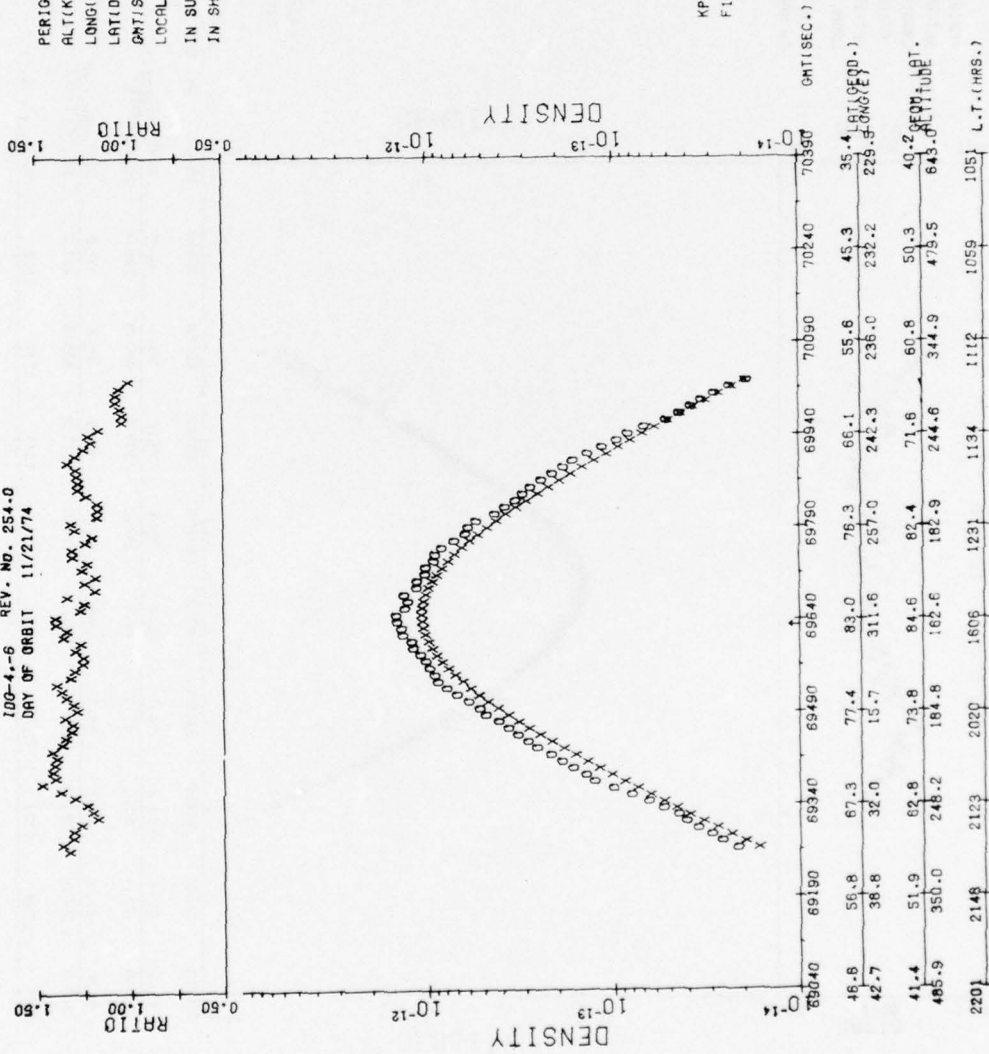


GMT(SEC.)	ALT(KM.)	LONG(E)	LAT(DEG.)	PERIOD	LOCAL TIME	IN SUN FROM	IN SHADE FROM
54110	182.63	-18.95	82.82	182.63	1548 (H)	54110.0	56040.0
54260	182.63	-18.95	82.82	182.63	1548 (H)	54260.0	56040.0
54410	182.63	-18.95	82.82	182.63	1548 (H)	54410.0	56040.0
54560	182.63	-18.95	82.82	182.63	1548 (H)	54560.0	56040.0
54710	182.63	-18.95	82.82	182.63	1548 (H)	54710.0	56040.0
54860	182.63	-18.95	82.82	182.63	1548 (H)	54860.0	56040.0
55010	182.63	-18.95	82.82	182.63	1548 (H)	55010.0	56040.0
55160	182.63	-18.95	82.82	182.63	1548 (H)	55160.0	56040.0
55310	182.63	-18.95	82.82	182.63	1548 (H)	55310.0	56040.0
55460	182.63	-18.95	82.82	182.63	1548 (H)	55460.0	56040.0
55610	182.63	-18.95	82.82	182.63	1548 (H)	55610.0	56040.0
55760	182.63	-18.95	82.82	182.63	1548 (H)	55760.0	56040.0
55910	182.63	-18.95	82.82	182.63	1548 (H)	55910.0	56040.0
56040	182.63	-18.95	82.82	182.63	1548 (H)	56040.0	56040.0

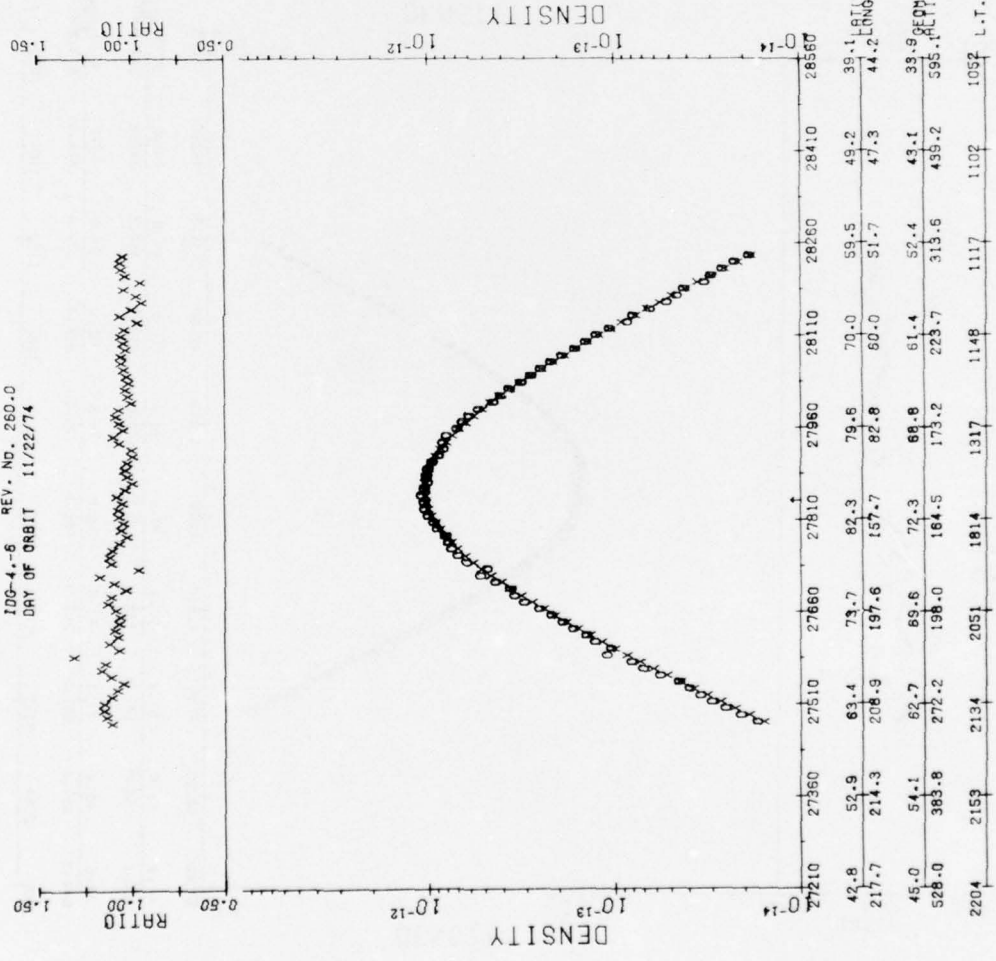
100-4-6 REV. NO. 254-0
 DRY OF ORBIT 11/21/74

PERIGEE
 ALT(KM.)= 162.69
 LONG(E)= 309.65
 LAT(DEC.)= 82.96
 CRT(SEC.)= 69643.3 (1920H)
 LOCAL TIME 1559 (H)
 IN SUN FROM 69040. TO 70920.
 IN SHADE FROM 70920. TO 70390.

KP=3+
 F10.7=96.0



IDG-4--6 REV. NO. 260.0
 DAY OF ORBIT 11/22/74

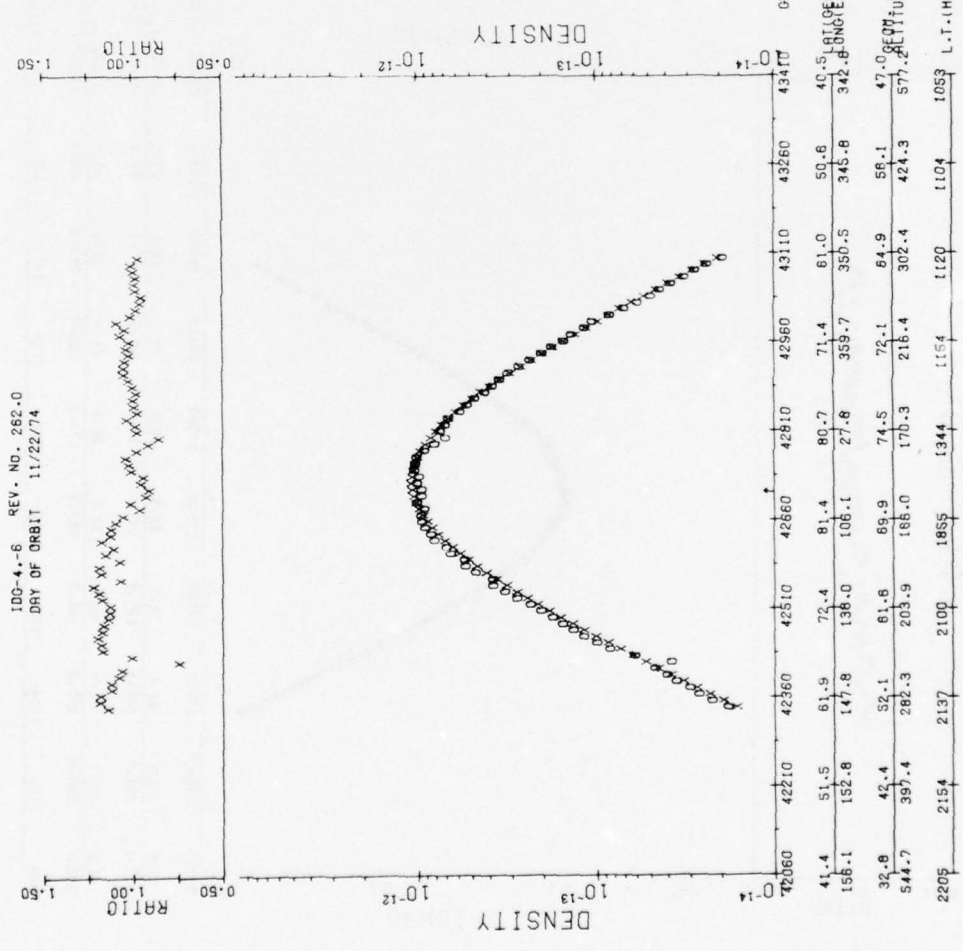


PERIODEE
 ALT(KM)= 162.64
 LONG(E)= 132.52
 LAT(DEG)= 83.00
 GMT(SEC.)= 27854.3 (0744H)
 LOCAL TIME 1634 (H)
 IN SUN FROM 27210. TO 28160.
 IN SHADE FROM 28160. TO 28550.

KP=3
 F10.7=99.0

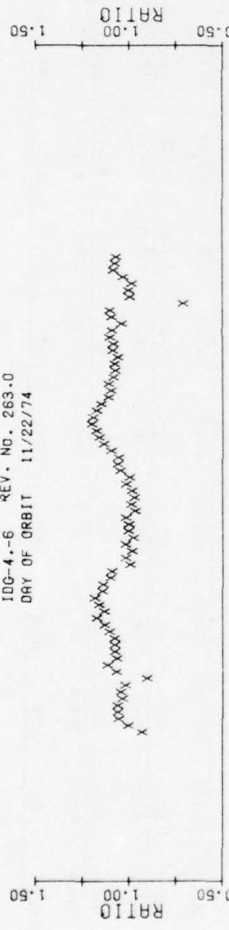
IDC-4-6 REV. NO. 262-0
 DRY OF ORBIT 11/22/74

PERIGEE
 ALT(KM.)= 162.64
 LONG(E)= 74.27
 LAT(DEG.)= 83.04
 GMT(SEC.)= 42720.0 (1152H)
 LOCAL TIME 1849 (H)
 IN SUN FROM 42804. TO 43410.
 IN SHADE FROM 42060. TO 42804.



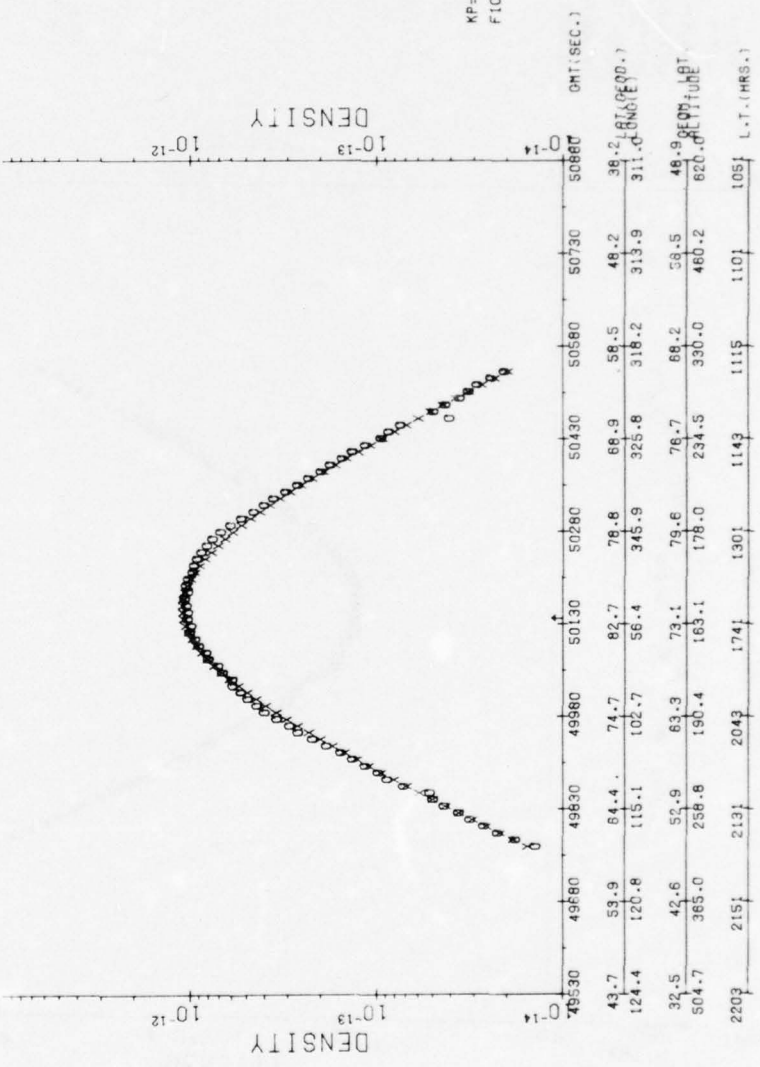
MP=4-
 FIG. 7-99.0

100-4.-6 REV. NO. 263.0
 DRY OF ORBIT 11/22/74

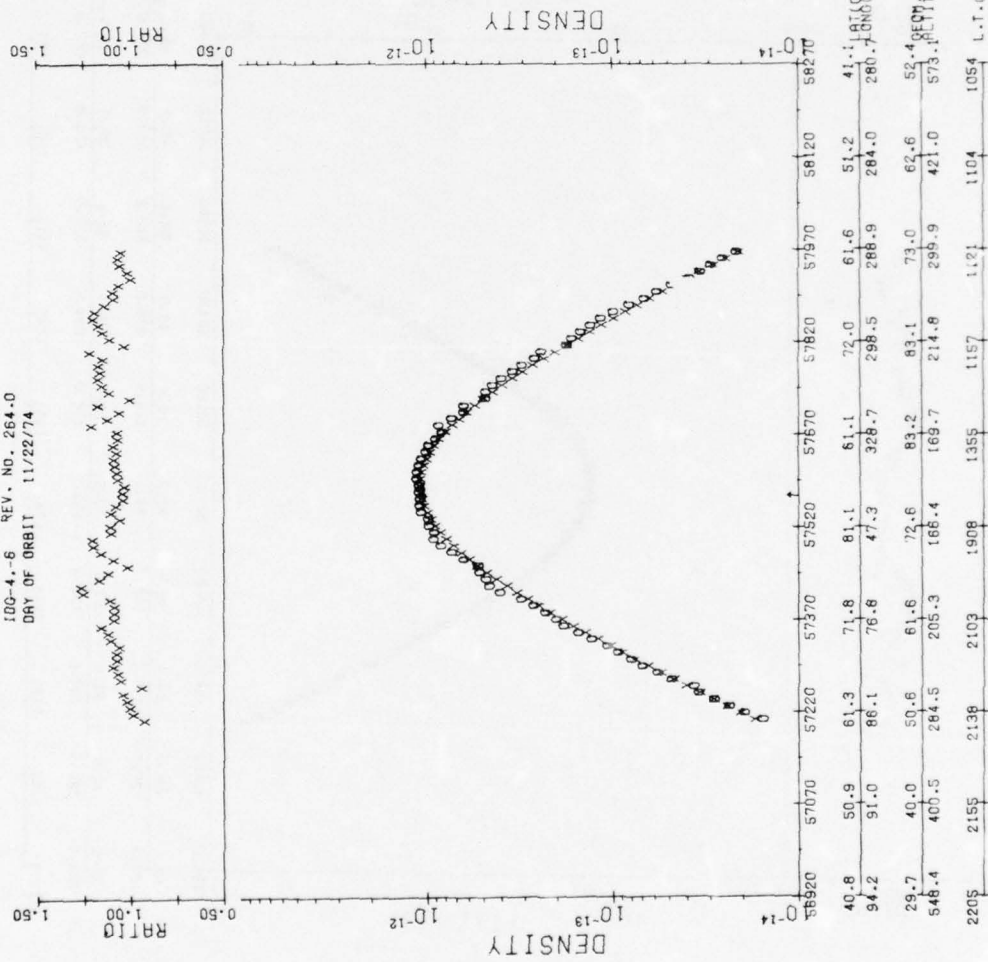


PERIGEE
 ALT (KM.) = 162.64
 LONG (E) = 44.21
 LAT (DEG.) = 83.02
 GMT (SEC.) = 50152.1 (1355H)
 LOCAL TIME 1652 (H)
 IN SUN FROM 49530. TO 51420.
 IN SHADE FROM 51420. TO 50880.

KP=4
 F10.7=99.0



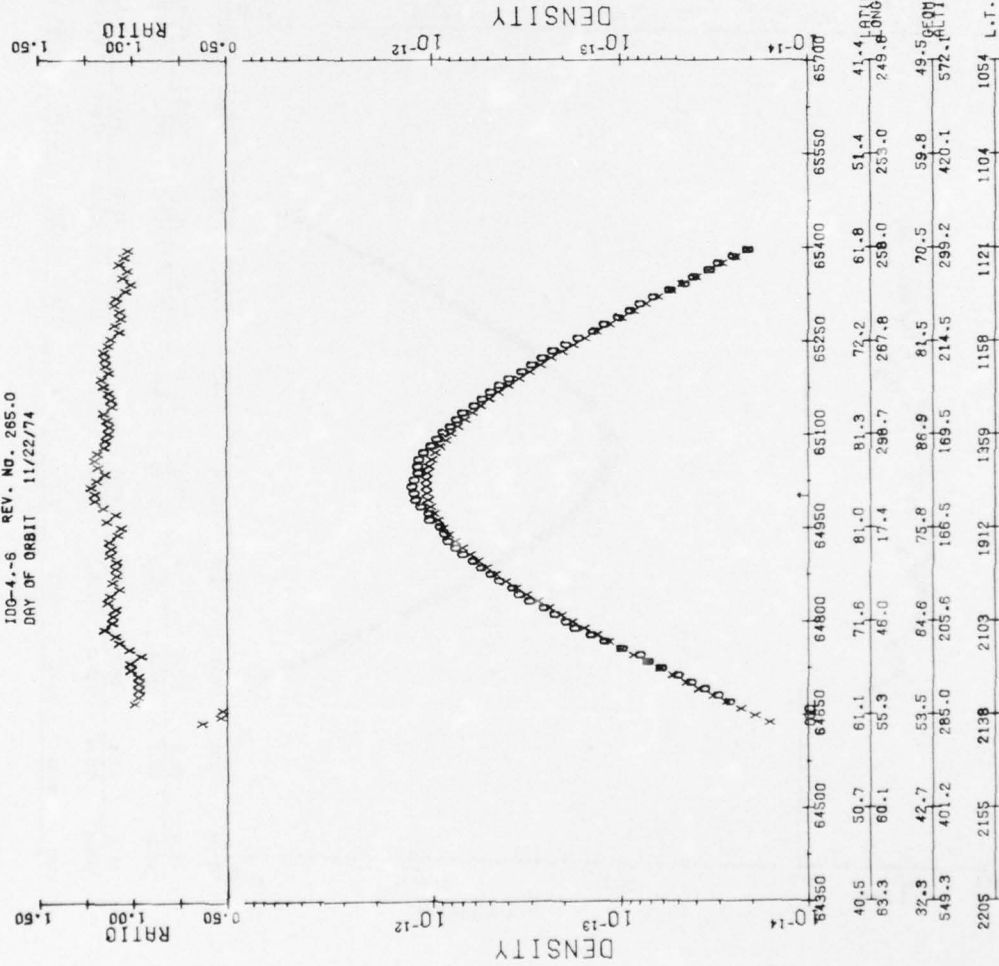
100-4-6 REV. NO. 264.0
 DRY OF ORBIT 11/22/74



PERIGEE
 ALT(KM.)= 162.64
 LONG(E)= -21.65
 LAT(DEC.)= 83.00
 GMT(SEC.)= 57583.8 (1559H)
 LOCAL TIME 1656 (H)
 IN SUN FROM 56920. TO 56860.
 IN SHADE FROM 56860. TO 56270.

KP=4
 F10.7=99.0

100-4--6 REV. NO. 265.0
 DRY OF ORBIT 11/22/74



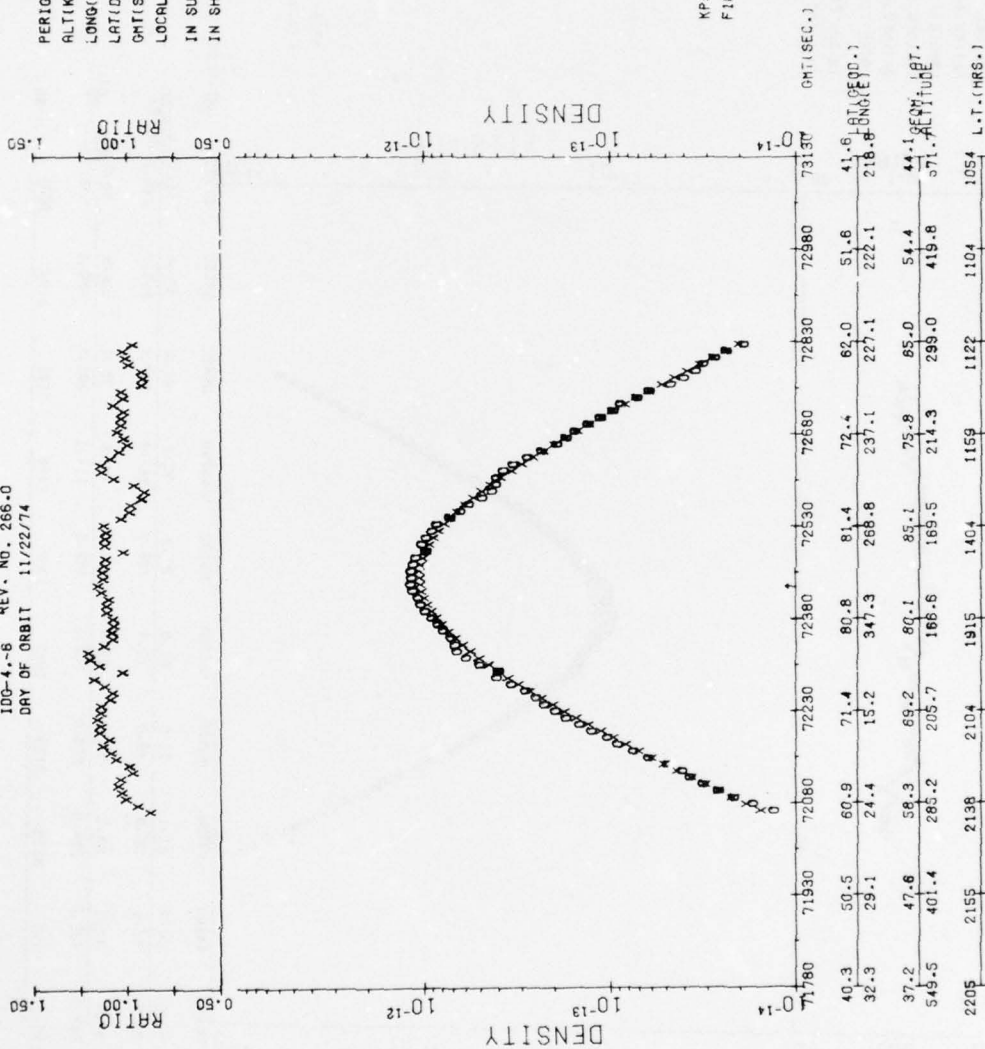
PERIODE
 ALT(KM.)= 162.63
 LONG(E)= 234.84
 LAT(DEC.)= 82.96
 GMT(SEC.)= 65014.4 (1803H)
 LOCAL TIME 1700 (H)
 IN SUN FROM 64350. TO 66300.
 IN SHADE FROM 66300. TO 65700.

MP-4-
 FIG. 7=89.0

100-4-6 REV. NO. 266.0
 DRY OF ORBIT 11/22/74

PERIGEE
 ALT(KM.)= 162.63
 LONG(E)= 314.64
 LAT(DEG.)= 82.82
 OBT(SEC.)= 72444.6 (2007H)
 LOCAL TIME 1705 (H)
 IN SUN FROM 71780. TO 73740.
 IN SHADE FROM 73740. TO 73130.

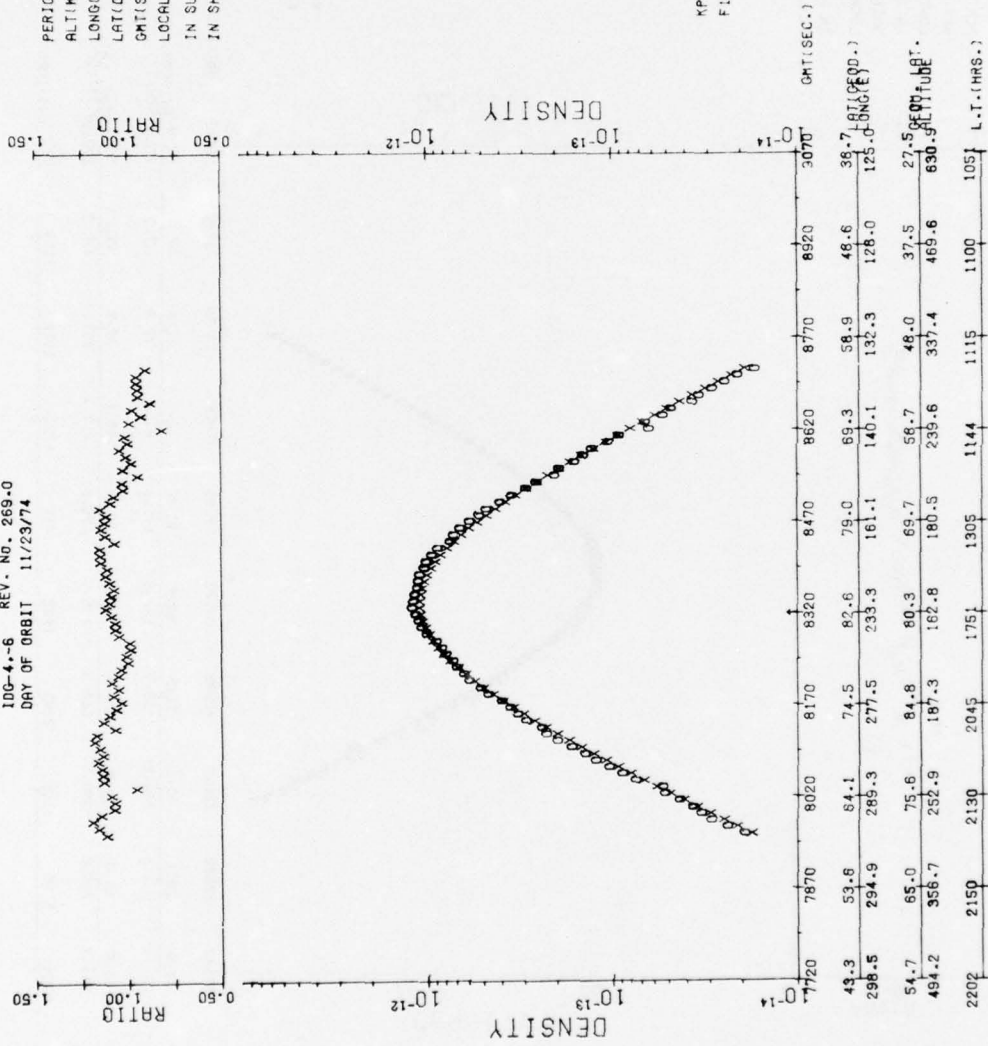
KP=3*
 F10.7=99.0



100-4-6 REV. NO. 269.0
 DAY OF ORBIT 11/23/74

PERIGEE ALTITUDE = 152.62
 LONGITUDE = 226.99
 LATITUDE = 82.84
 GMT(SEC.) = 8332.1 (0218H)
 LOCAL TIME 1726 (H)
 IN SUN FROM 8434. TO 9070.
 IN SHADE FROM 7720. TO 8434.

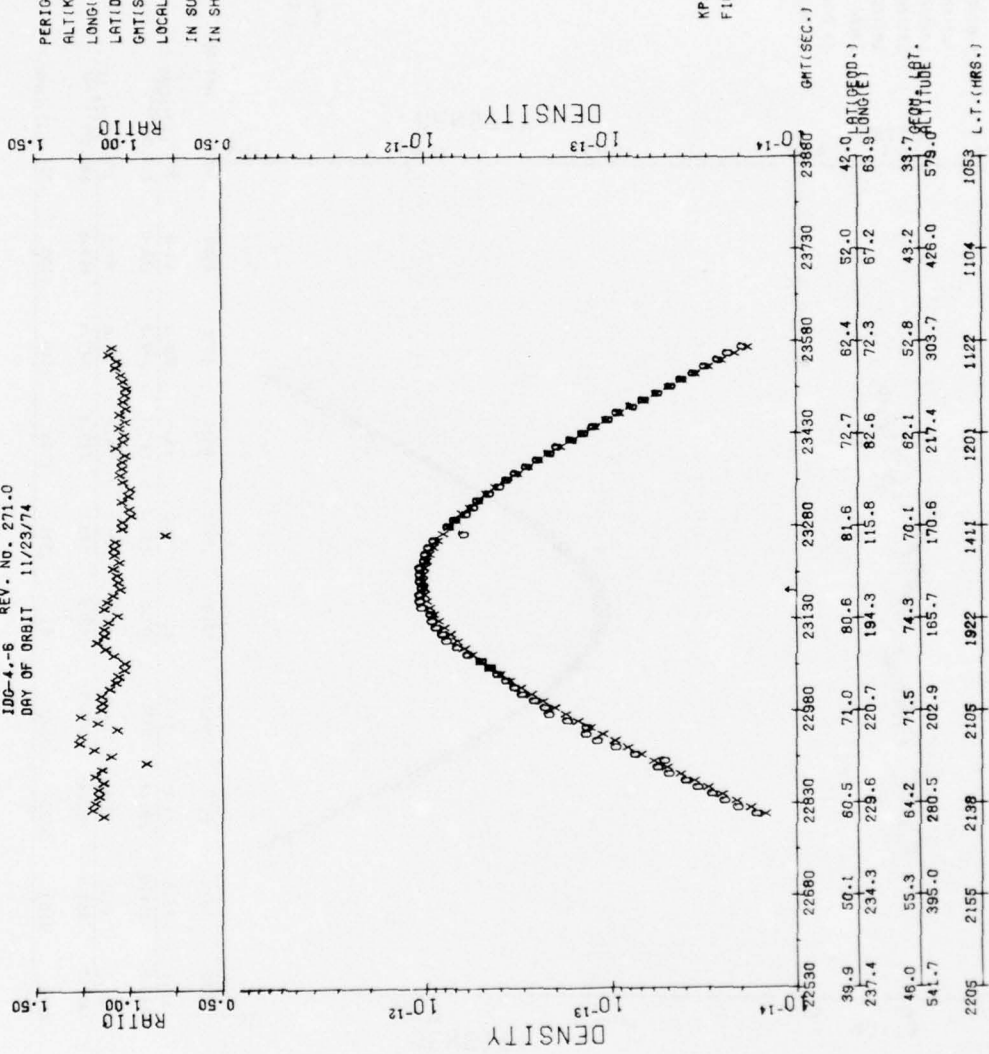
KP=3+
 F10.7=101.0



100-4--6 REV. NO. 271-0
 DAY OF ORBIT 11/23/74

PERIGEE
 ALT(KM.)= 162.61
 LONG(E)= 166.71
 LAT(DEG.)= 82.74
 GMT(SEC.)= 23187.6 (0626H)
 LOCAL TIME 1733 (H)
 IN SUN FROM 23294. TO 23880.
 IN SHADE FROM 22530. TO 23294.

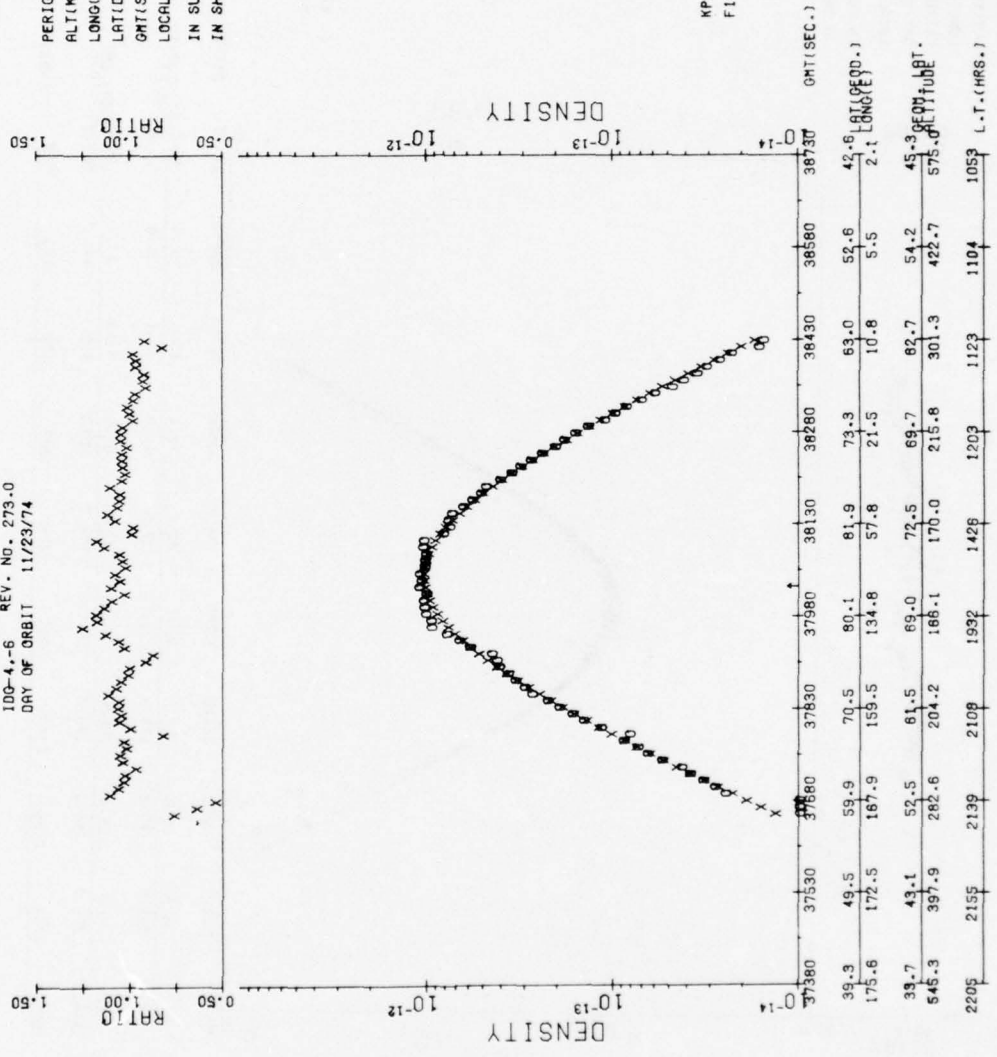
MP=3-
 F10.7=101.0



100-4-6 REV. NO. 273-0
 DRY OF ORBIT 11/23/74

PERIODE
 ALT(KM.)= 162.58
 LONGIE)= 108.82
 LAT(DEG.)= 82.60
 GMT(SEC.)= 38041.0 (1034H)
 LOCAL TIME 1749 (H)
 IN SUN FROM 38152. TO 38730.
 IN SHRDE FROM 37380. TO 38152.

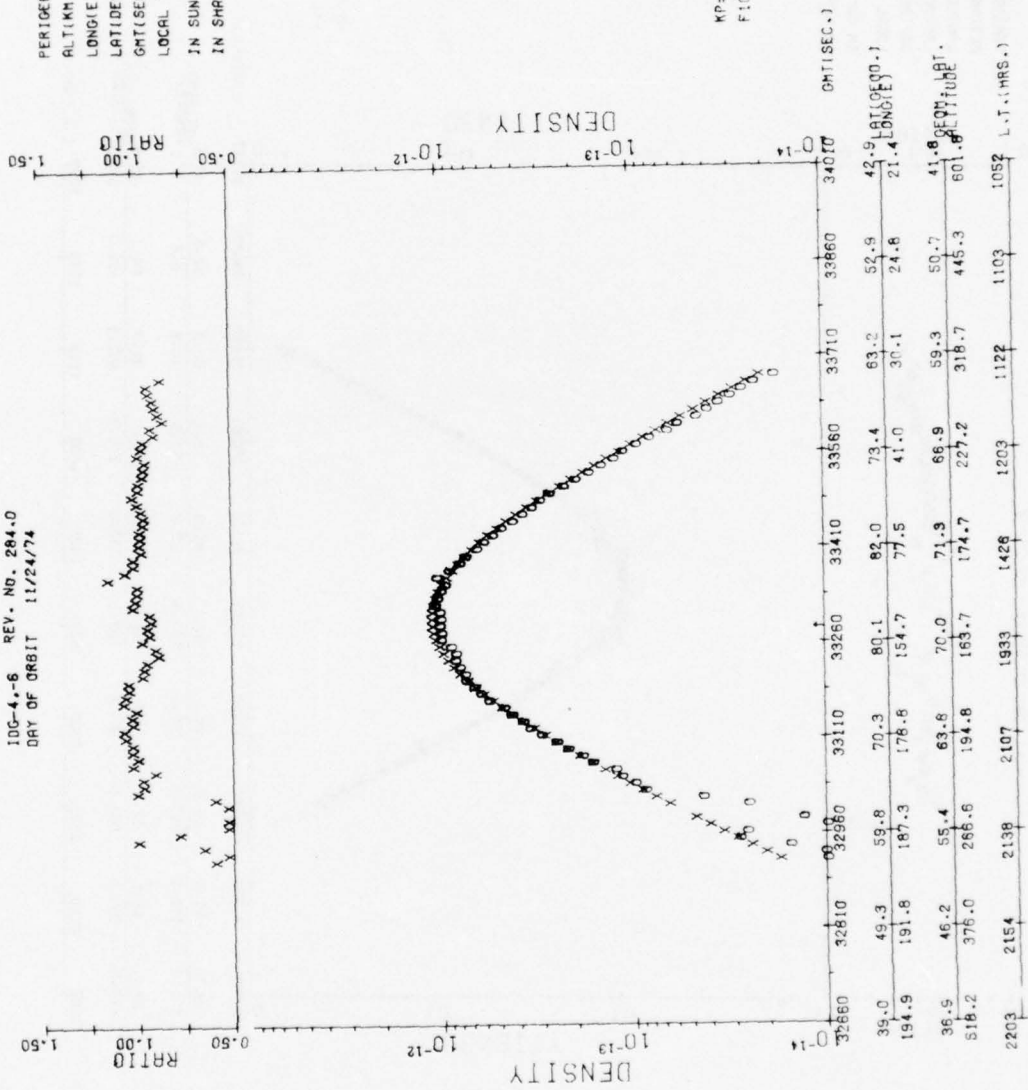
KP=3-
 F10.7=101.0



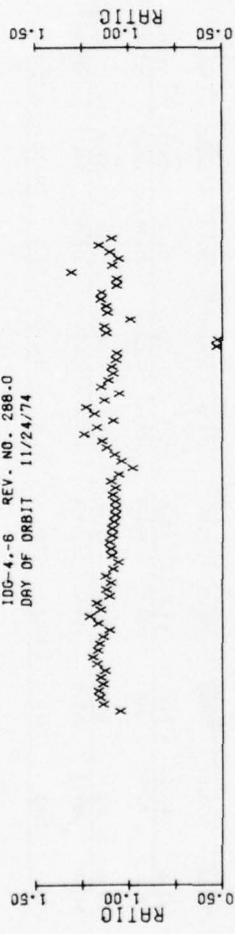
10G-4--6 REV. NO. 284.0
 DAY OF ORBIT 11/24/74

PERIODE
 ALT(KM.)= 162.48
 LONG(°)= 141.32
 LAT(DEC.)= 81.72
 GMT(SEC.)= 33296.0 (0914H)
 LOCAL TIME 1840 (H)
 IN SUN FROM 32660. TO 34560.
 IN SHADE FROM 34560. TO 34010.

KP=4+
 F10.7=101.0

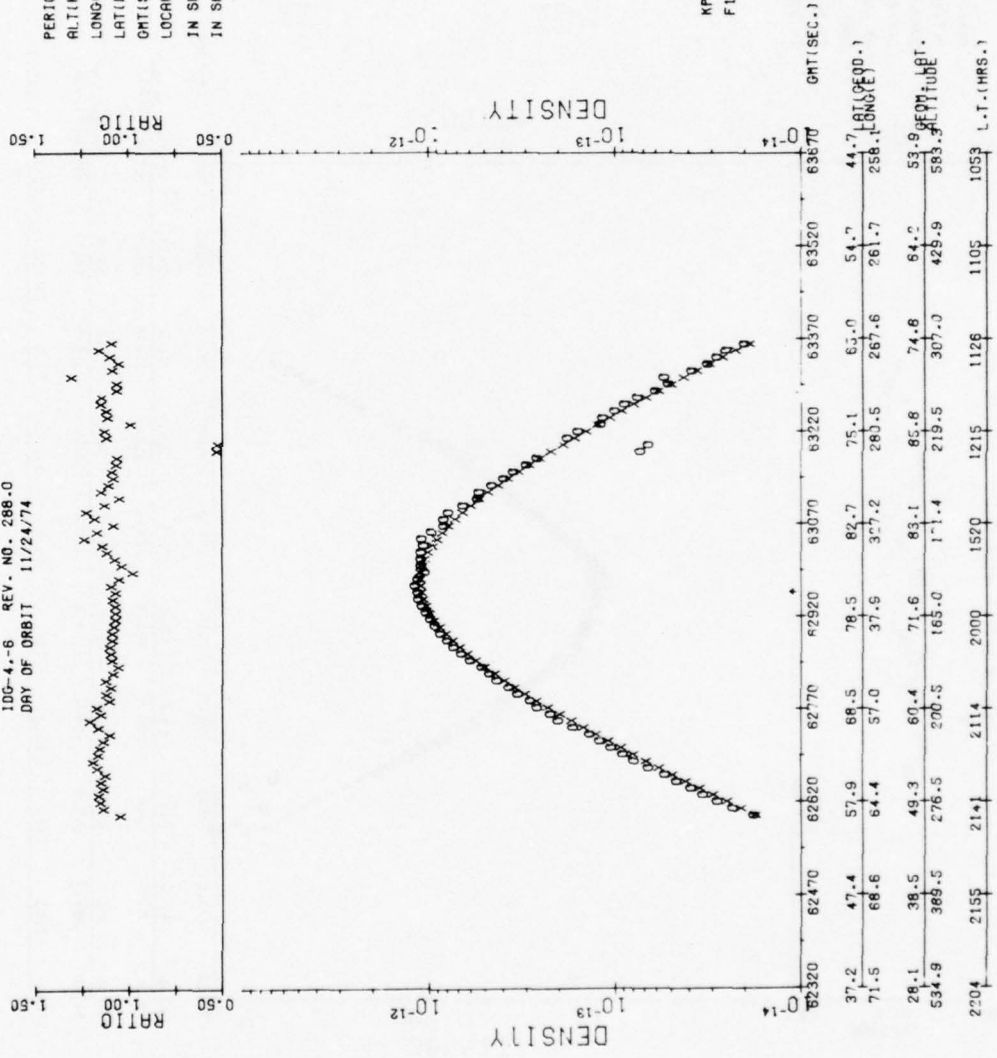


100-4.-6 REV. NO. 288-0
 DAY OF ORBIT 111/24/74

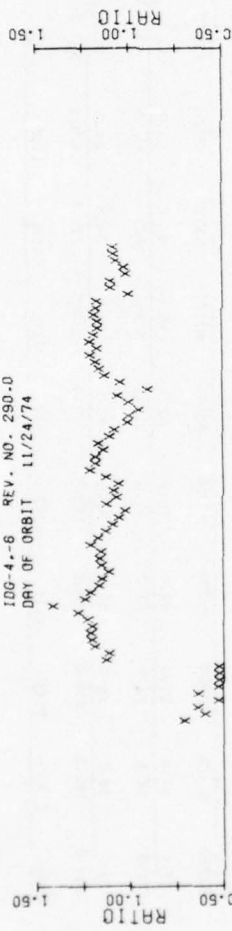


PERIODE
 ALT(KM.)= 162.41
 LONG(E)= 21.25
 LAT(DEG.)= 81.37
 GMT(SEC.)= 62972.0 (1729H)
 LOCAL TIME 1854 (H)
 IN SUN FROM 62320. TO 64260.
 IN SHADE FROM 64260. TO 63670.

MP=4
 F10.7=101.0

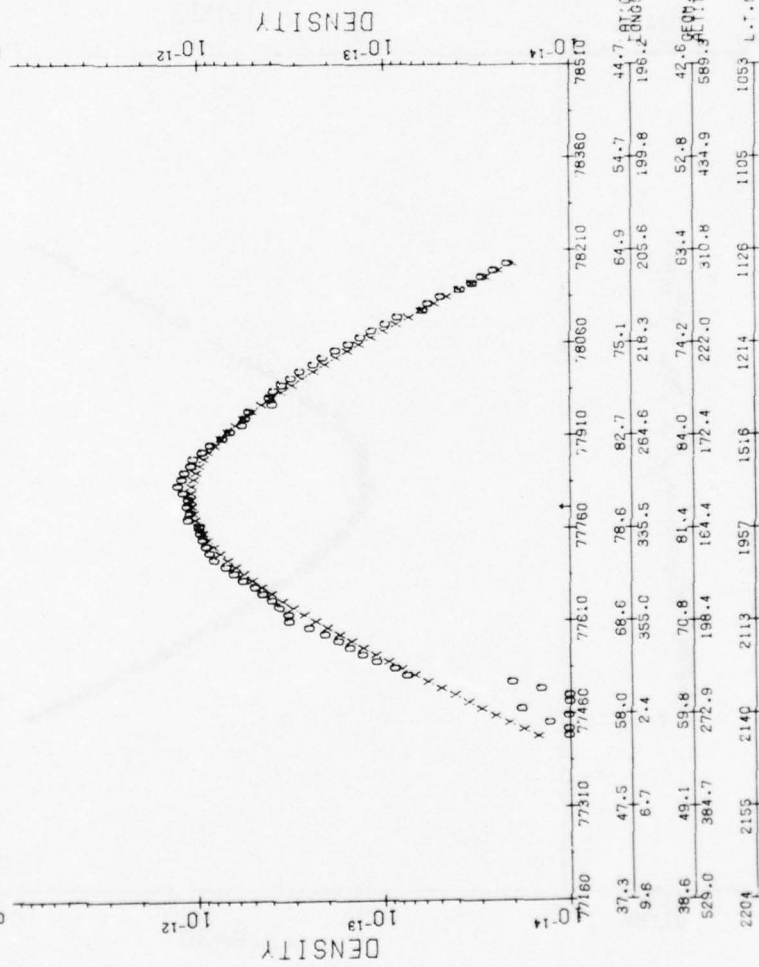


100-4--6 REV. NO. 290-0
 DRY OF ORBIT 11/24/74

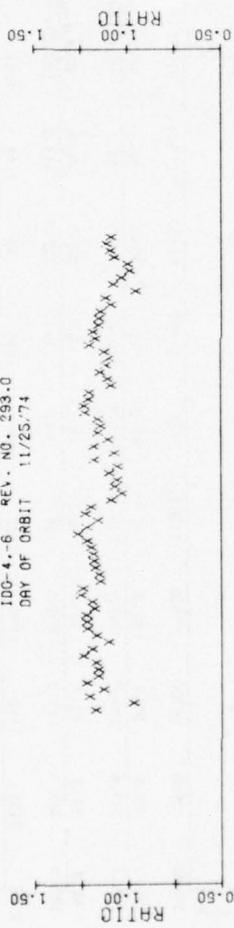


PERIOD
 ALT(KM)= 162.36
 LONG(E)= 321.56
 LAT(DEG)= 81.11
 GMT(SEC)= 77806.5 (2136H)
 LOCAL TIME 1903 (H)
 IN SUN FROM 77160. TO 79080.
 IN SHADE FROM 79080. TO 78510.

K²=3*
 F10.7=101.0

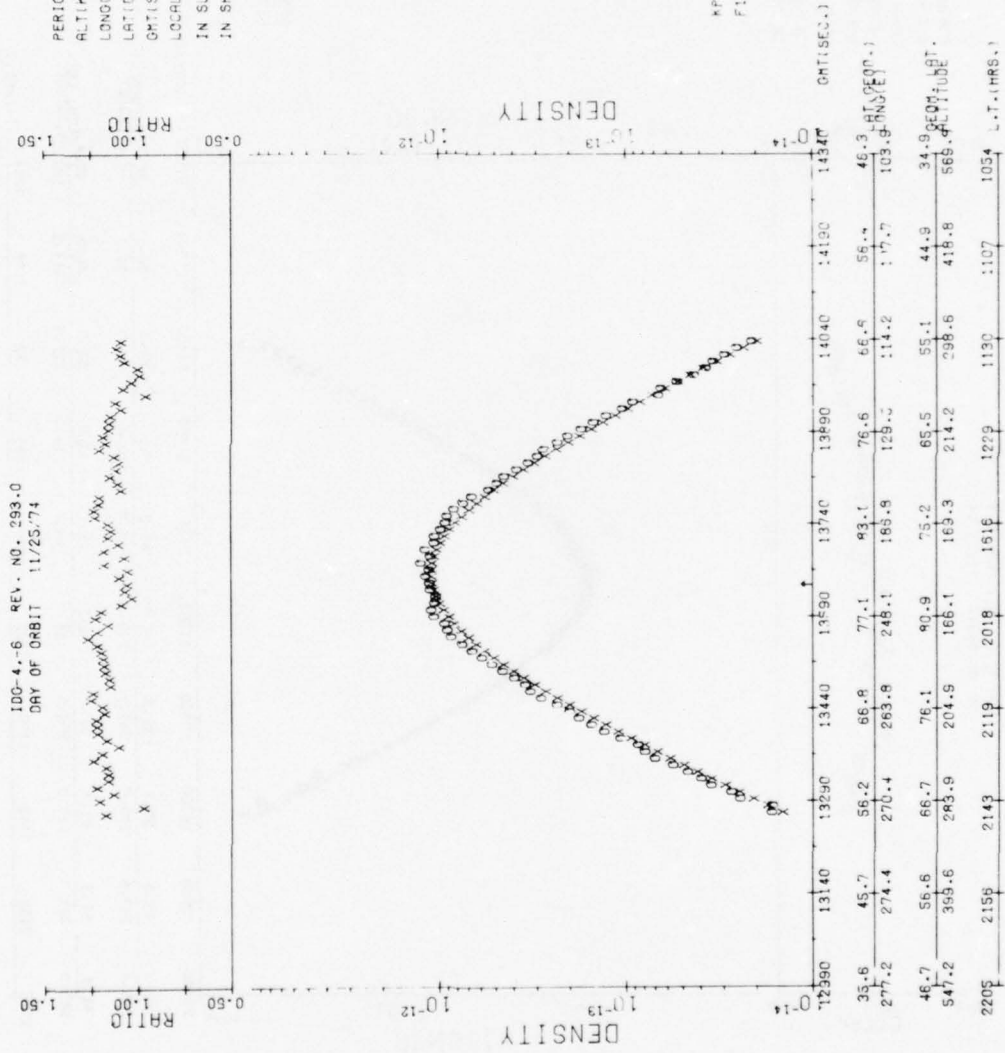


100-4--6 REV. NO. 293-0
 DRY OF ORBIT 11/25/74



PERIODE
 ALTITUDE = 162.52
 LONGITUDE = 231.86
 LATITUDE = 80.79
 GMT(SEC.) = 13653.7 (0347M)
 LOCAL TIME 19:12 (M)
 IN SUN FROM 12990 TO 14940.
 IN SHADE FROM 14940 TO 14340.

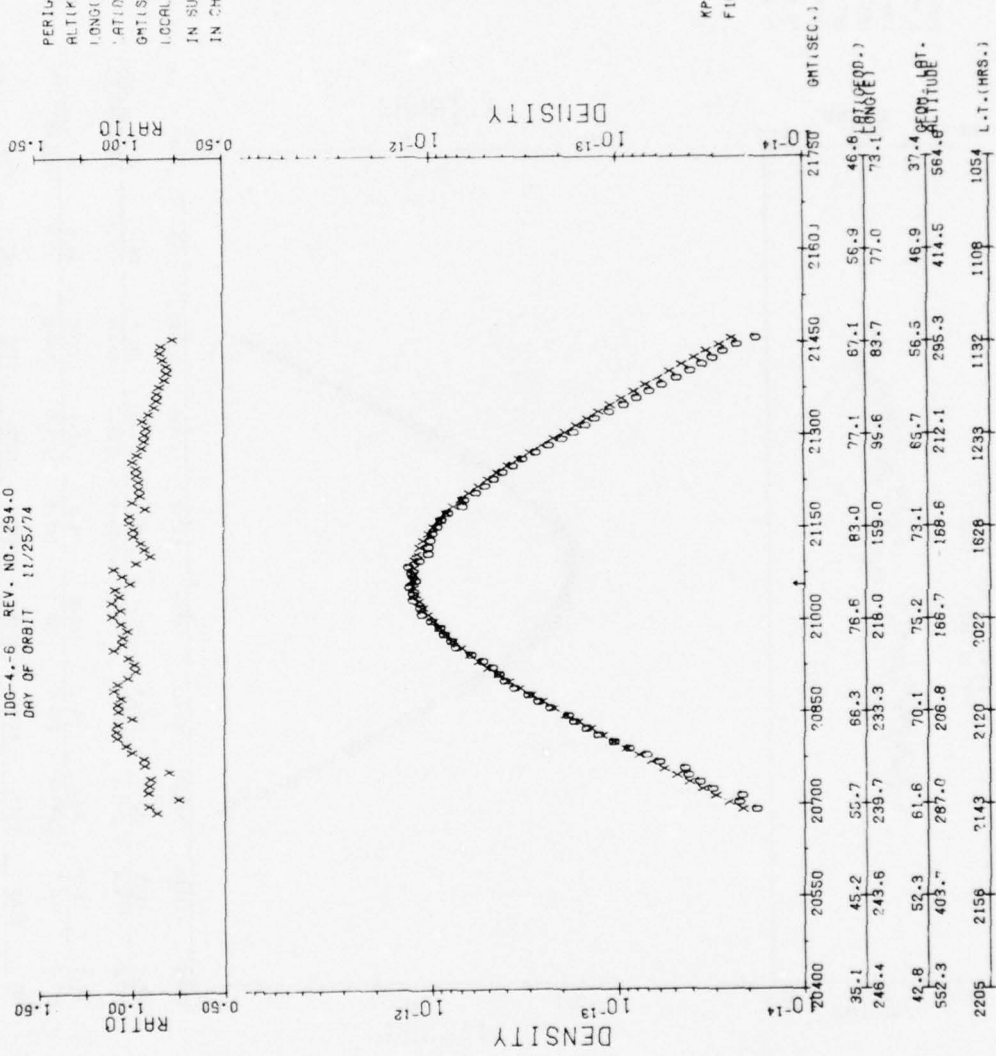
AP=3*
 F10.7=99.0



100-4.-6 REV. NO. 294.0
 DRY OF ORBIT 11/25/74

PERIGEE
 ALTITUDE = 162.32
 LONGITUDE = 200.98
 LATITUDE = 80.64
 GMT (SEC.) = 21068.4 (0551H)
 LOCAL TIME 1913 (H)
 IN SUN FROM 20400. TO 22320.
 IN SHADE FROM 22320. TO 21750.

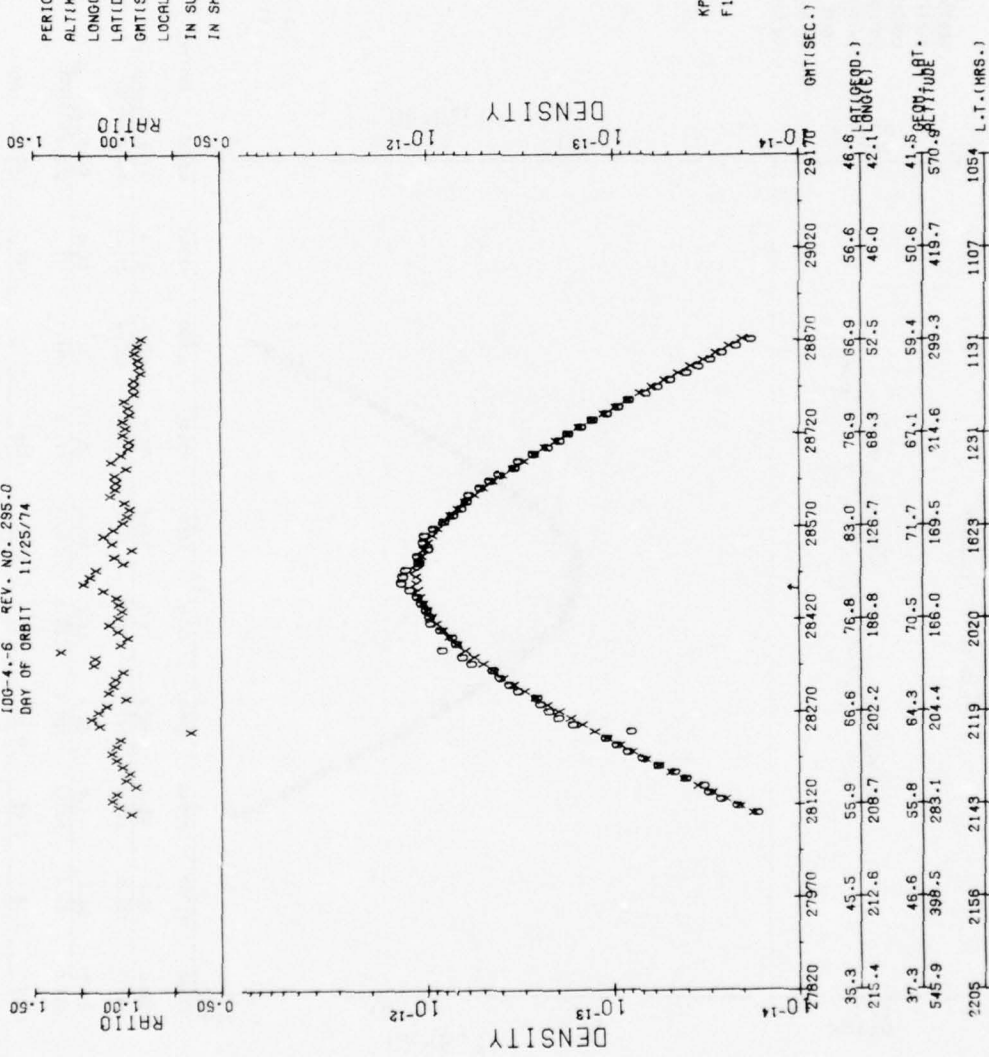
KP=6
 F10.7=99.0



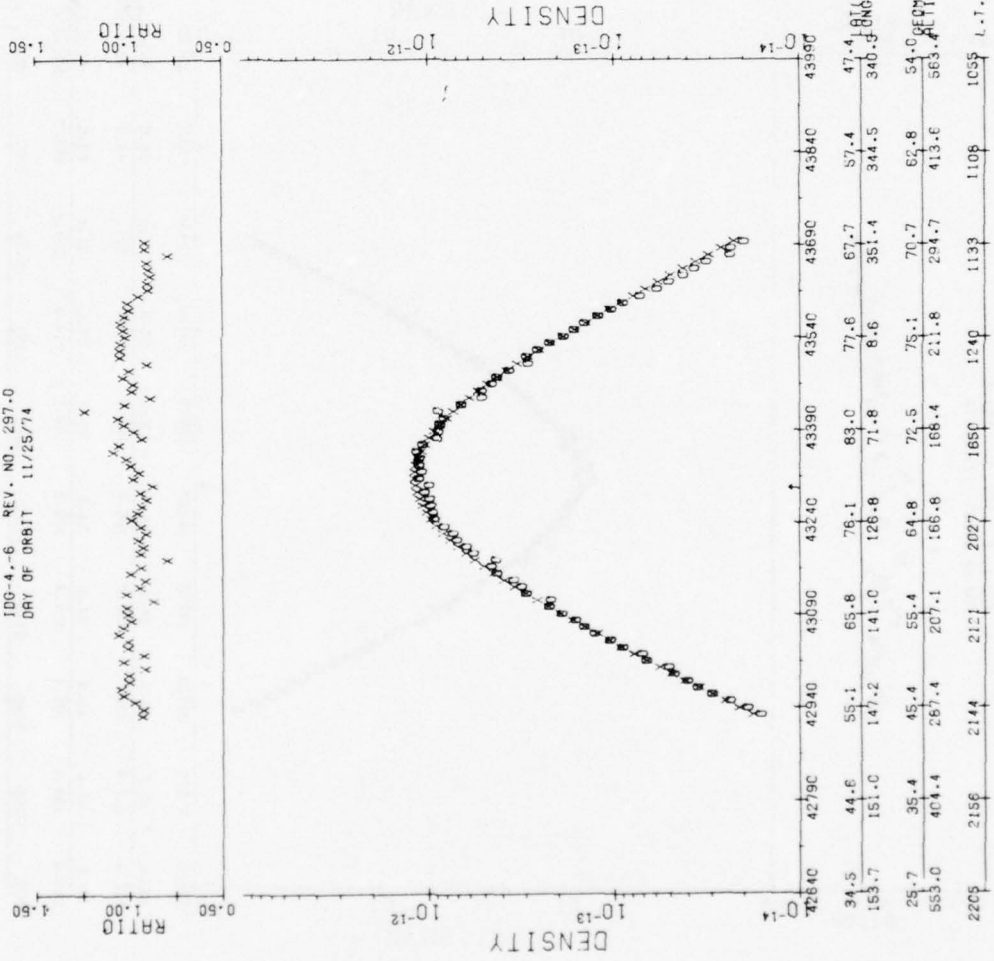
100-4-6 REV. NO. 295.0
 DRY OF ORBIT 11/25/74

PERIGEE
 ALT(KM.)= 162.33
 LONG(E)= 171.27
 LAT(DEG.)= 80.52
 GMT(SEC.)= 28482.6 (10754H)
 LOCAL TIME 1919 (H)
 IN SUN FROM 27820. TO 29760.
 IN SHADE FROM 29760. TO 29170.

KP=4+
 F10.7=99.0



100-4.-6 REV. NO. 297.0
 DRY OF ORBIT 11/25/74



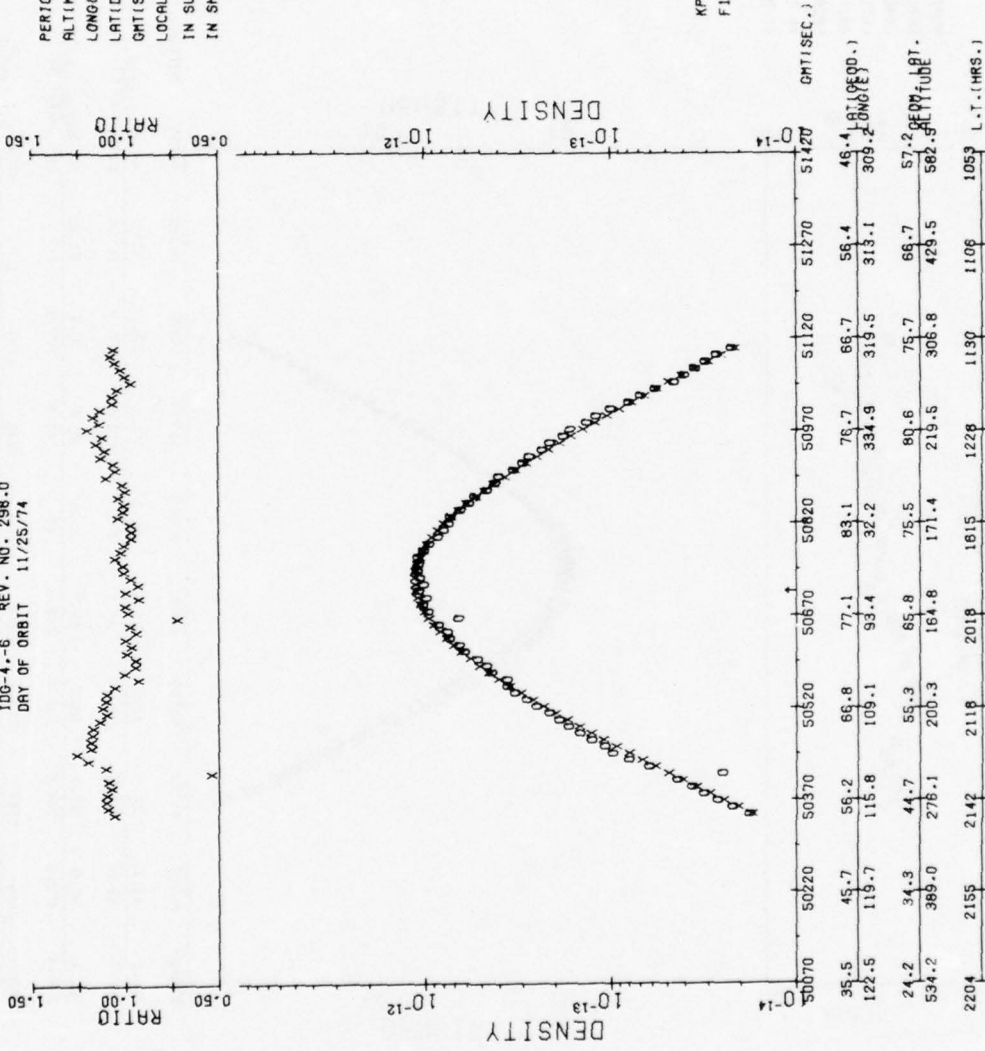
PERIGEE
 ALT (KM.) = 162.33
 LONG (E) = 110.96
 LAT (DEG.) = 80.25
 GMT (SEC.) = 43309.2 (1201H)
 LOCAL TIME 1925 (H)
 IN SUN FROM 43475 TO 43990.
 IN SHADE FROM 42640 TO 43475.

KP=5
 F10.7=99.0

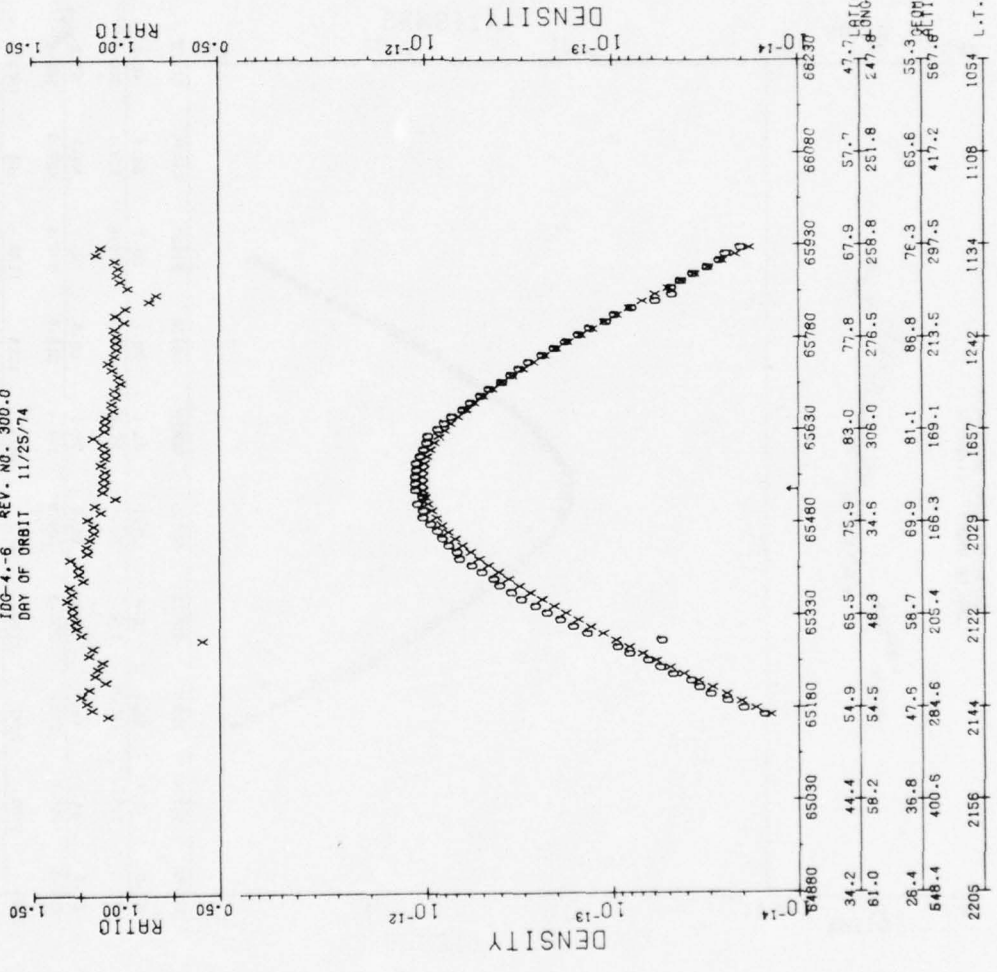
IDG-4,-6 REV. NO. 298-0
 DAY OF ORBIT 11/25/74

PERIOD = 162.33
 ALT(KM.) = 80.74
 LONG(°) = 80.17
 LAT(°) = 50721.7 (11405H)
 GMT(SEC.) = 1928 (H)
 IN SUN FROM 50070. TO 52020.
 IN SHADE FROM 52020. TO 51420.

KP=4
 F10.7=99.0



100-4.-6 REV. NO. 300.0
DRY OF ORBIT 11/25/74

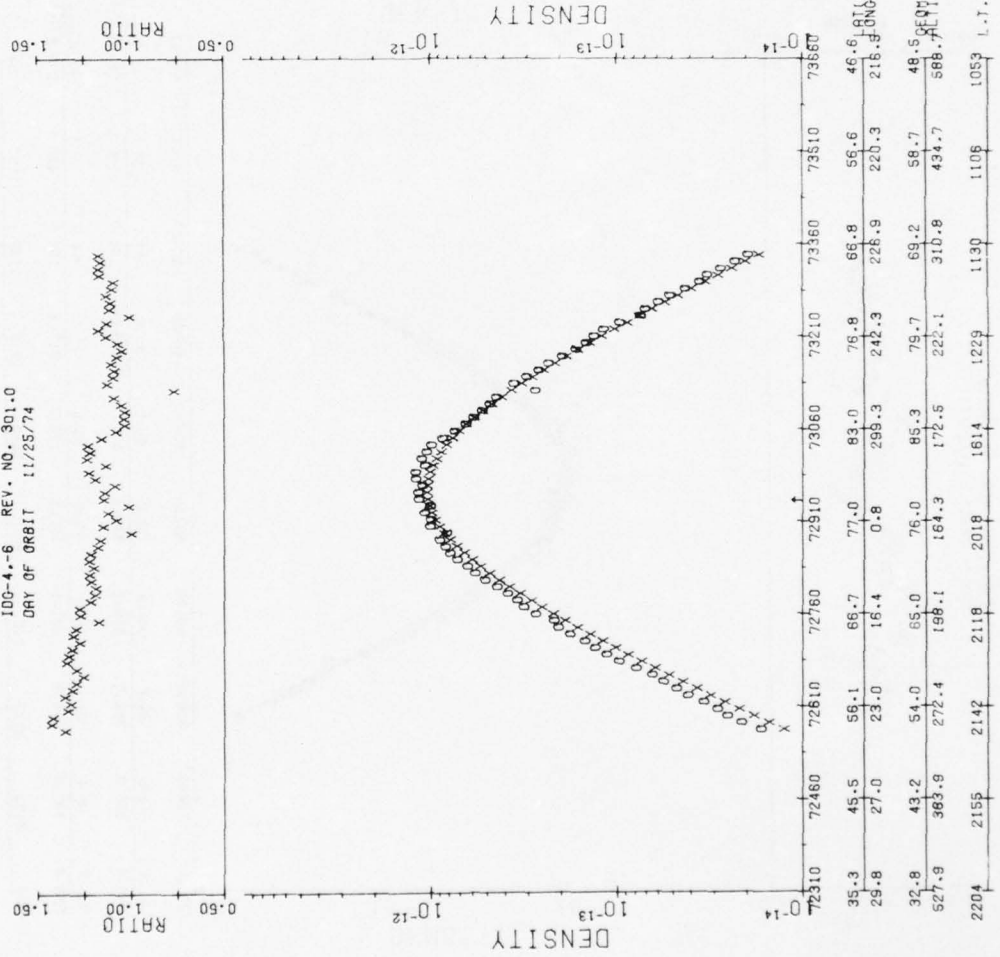


PERIGEE
 ALT(KM.)= 162.33
 LONG(E)= 20.47
 LAT(DEG.)= 79.90
 OMT(SEC.)= 65545.0 (1812H)
 LOCAL TIME 1934 (H)
 IN SUN FROM 64880. TO 66640.
 IN SHADE FROM 66840. TO 68230.

KP=2+
 F10.7=99.0

Altitude	Density	Ratio	GMT (SEC.)	L.T. (HRS.)
68860	0.14	1.50	68230	
68600				
68300				
68000				
67700				
67400				
67100				
66800				
66500				
66200				
65900				
65600				
65300				
65000				
64700				
64400				
64100				
63800				
63500				
63200				
62900				
62600				
62300				
62000				
61700				
61400				
61100				
60800				
60500				
60200				
59900				
59600				
59300				
59000				
58700				
58400				
58100				
57800				
57500				
57200				
56900				
56600				
56300				
56000				
55700				
55400				
55100				
54800				
54500				
54200				
53900				
53600				
53300				
53000				
52700				
52400				
52100				
51800				
51500				
51200				
50900				
50600				
50300				
50000				
49700				
49400				
49100				
48800				
48500				
48200				
47900				
47600				
47300				
47000				
46700				
46400				
46100				
45800				
45500				
45200				
44900				
44600				
44300				
44000				
43700				
43400				
43100				
42800				
42500				
42200				
41900				
41600				
41300				
41000				
40700				
40400				
40100				
39800				
39500				
39200				
38900				
38600				
38300				
38000				
37700				
37400				
37100				
36800				
36500				
36200				
35900				
35600				
35300				
35000				
34700				
34400				
34100				
33800				
33500				
33200				
32900				
32600				
32300				
32000				
31700				
31400				
31100				
30800				
30500				
30200				
29900				
29600				
29300				
29000				
28700				
28400				
28100				
27800				
27500				
27200				
26900				
26600				
26300				
26000				
25700				
25400				
25100				
24800				
24500				
24200				
23900				
23600				
23300				
23000				
22700				
22400				
22100				
21800				
21500				
21200				
20900				
20600				
20300				
20000				
19700				
19400				
19100				
18800				
18500				
18200				
17900				
17600				
17300				
17000				
16700				
16400				
16100				
15800				
15500				
15200				
14900				
14600				
14300				
14000				
13700				
13400				
13100				
12800				
12500				
12200				
11900				
11600				
11300				
11000				
10700				
10400				
10100				
9800				
9500				
9200				
8900				
8600				
8300				
8000				
7700				
7400				
7100				
6800				
6500				
6200				
5900				
5600				
5300				
5000				
4700				
4400				
4100				
3800				
3500				
3200				
2900				
2600				
2300				
2000				
1700				
1400				
1100				
800				
500				
200				
0				

100-4-6 REV. NO. 301.0
 DRY OF ORBIT 11/25/74



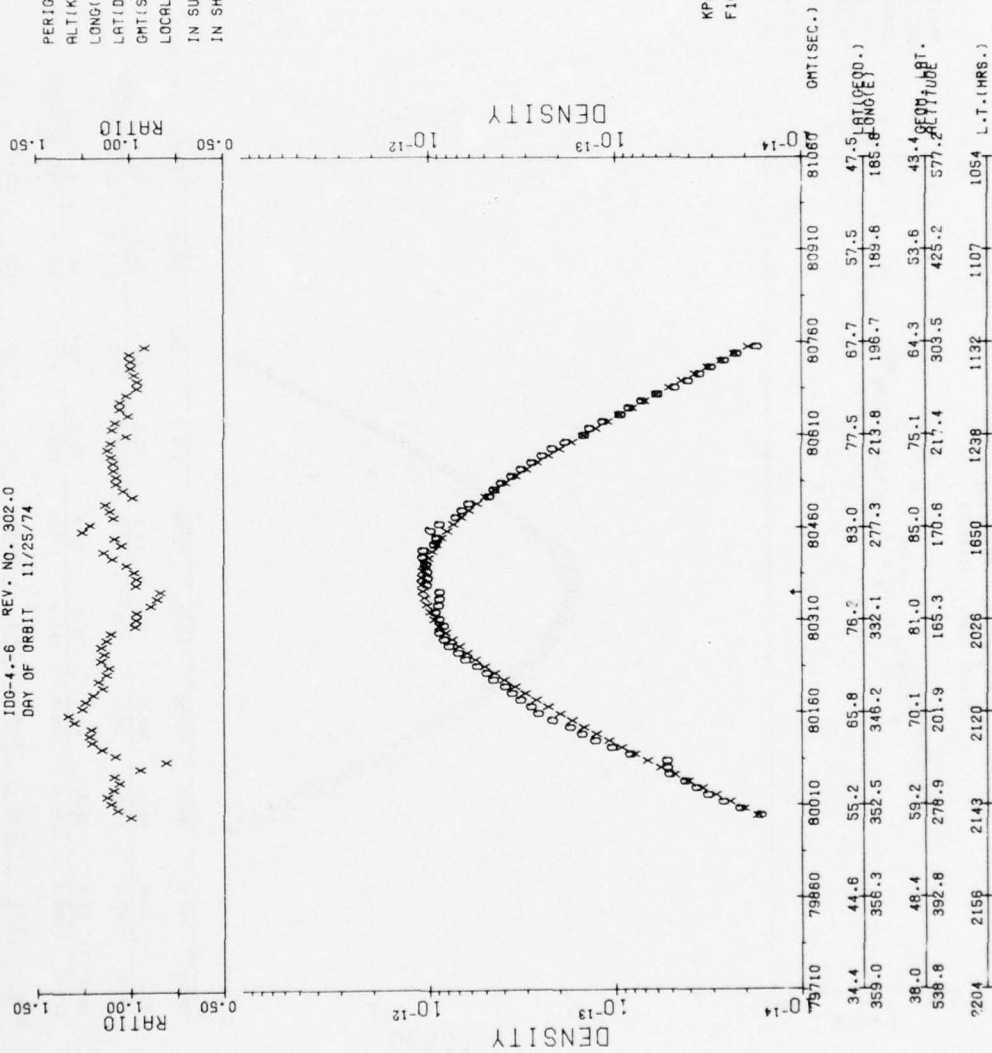
PERIGEE
 ALT (KM.) = 162.33
 LONG (E) = 350.08
 LAT (DEG.) = 79.70
 GMT (SEC.) = 72955.9 (20:15H)
 LOCAL TIME 1936 (H)
 IN SUN FROM 72310. TO 74220.
 IN SHADE FROM 74220. TO 73660.

KP=2*
 F10.7=99.0

IDG-4--6 REV. NO. 302-0
 DAY OF ORBIT 11/25/74

PERIODEE
 ALT(KM.)= 162.33
 LONG(E)= 320.06
 LAT(DEG.)= 79.63
 GMT(SEC.)= 80366.2 (2219H)
 LOCAL TIME 1939 (H)
 IN SUN FROM 79710. TO 81660.
 IN SHADE FROM 81660. TO 81060.

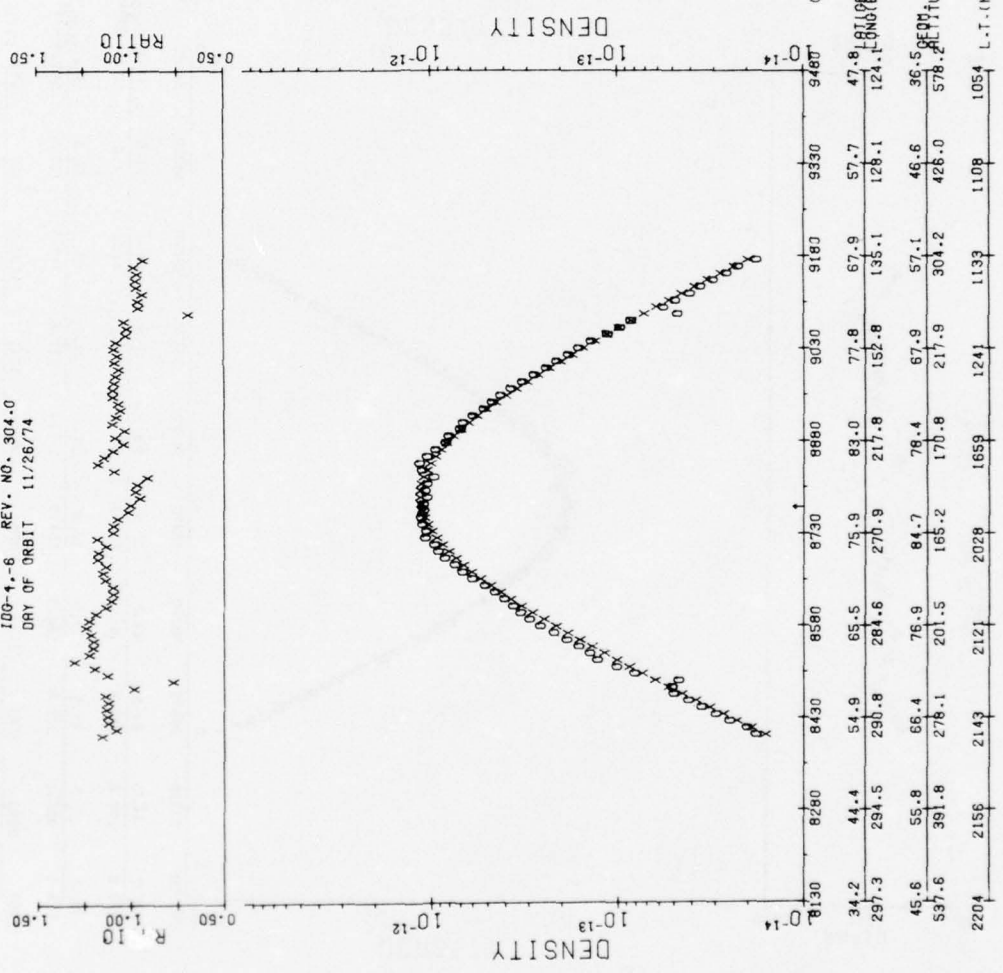
KP=4-
 F10.7=99.0



100-1-6 REV. NO. 304.0
 DRY OF ORBIT 11/26/74

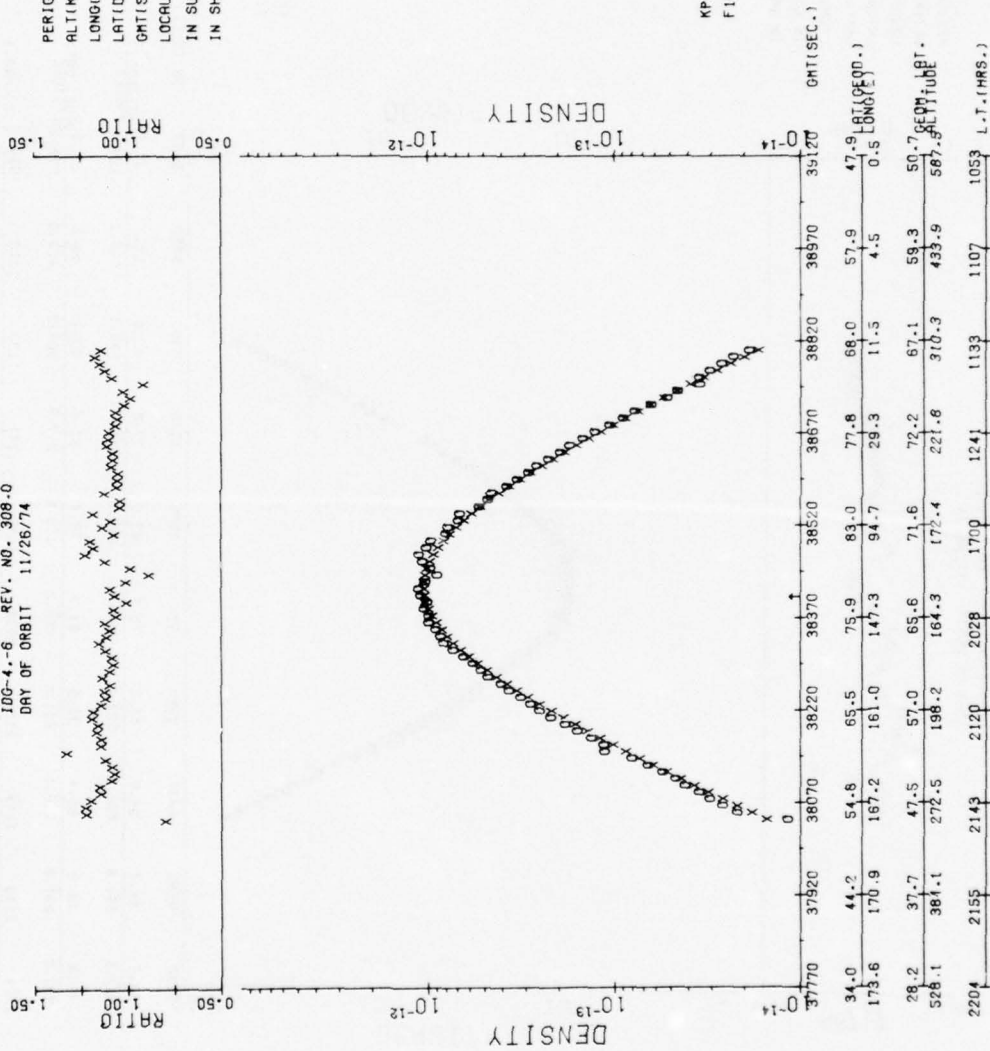
PERIGEE
 ALT(KM.)= 162.33
 LONG(L) = 259.60
 LAT(DEC.) = 79.35
 GMT(SEC.) = 8785.1 (0226H)
 LOCAL TIME 1944 (H)
 IN SUN FROM 8130. TO 10080.
 IN SHADE FROM 10080. TO 9480.

KP=4+
 F10.7=97.0



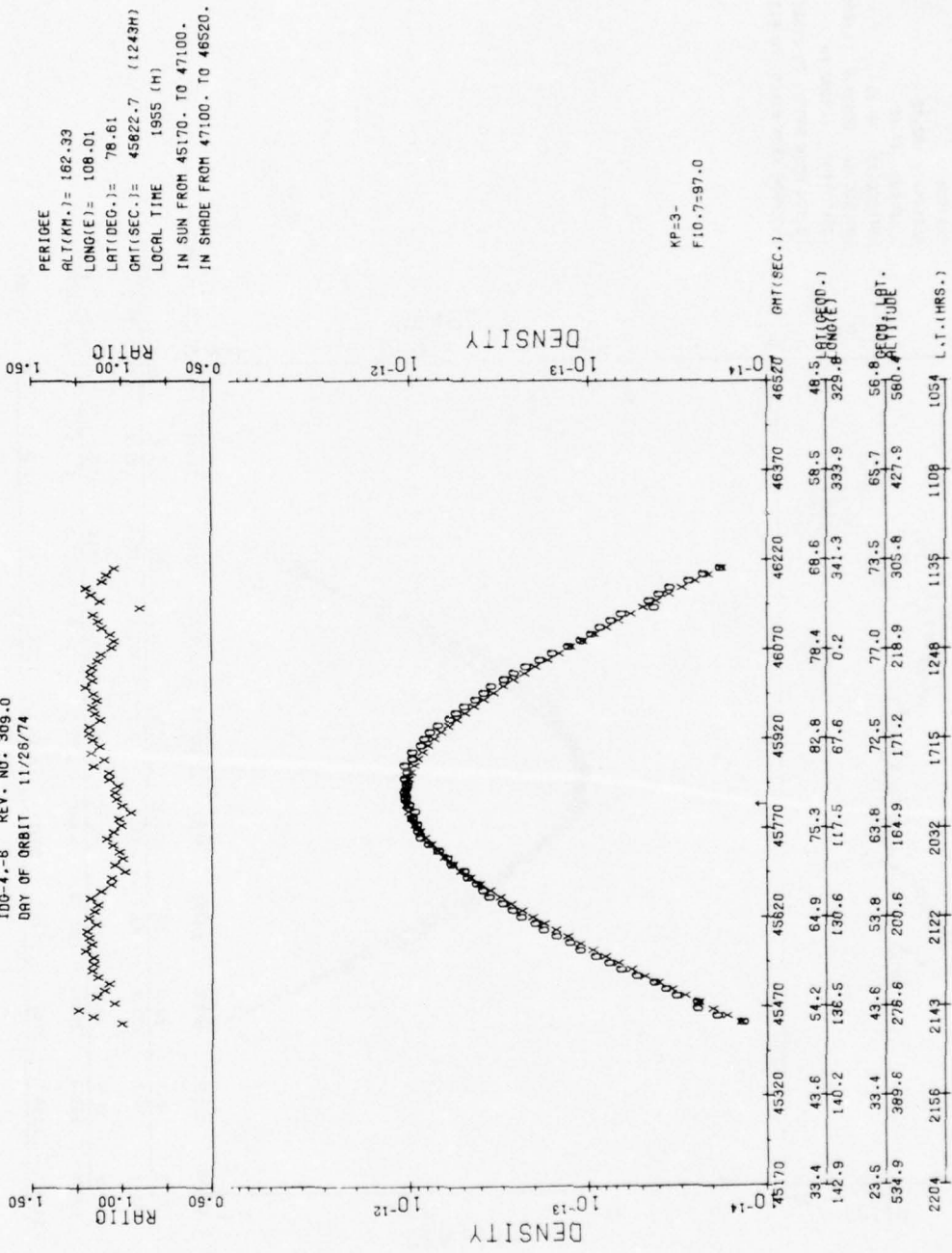
100-4-6 REV. NO. 308-0
 DAY OF ORBIT 11/26/74

PERIGEE
 ALT(KM.) = 162.33
 LONG(E) = 138.38
 LAT(DEC.) = 78.78
 GMT(SEC.) = 38416.3 (1040H)
 LOCAL TIME 1953 (H)
 IN SUN FROM 37770. TO 39720.
 IN SHADE FROM 39720. TO 39120.



KP=3-
 F10.7=97.0

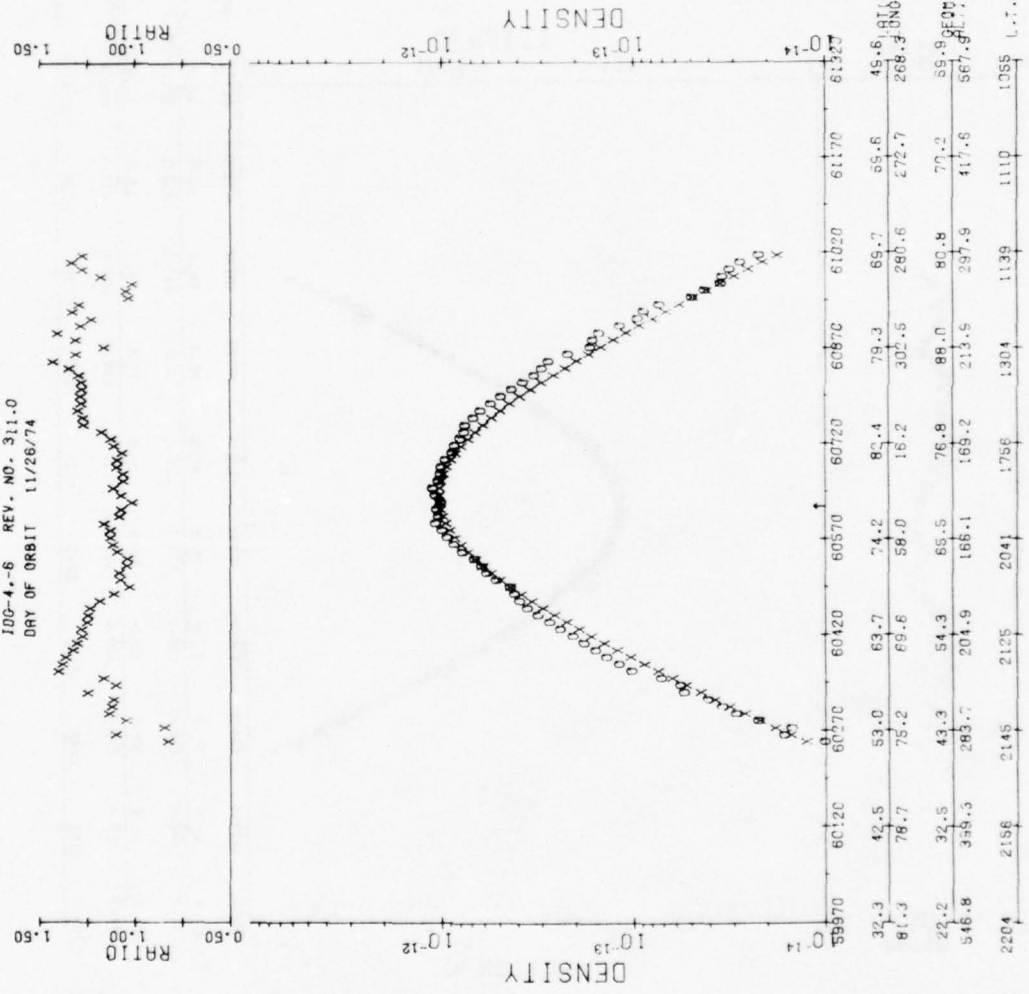
IDG-4--6 REV. NO. 309.0
 DAY OF ORBIT 11/28/74



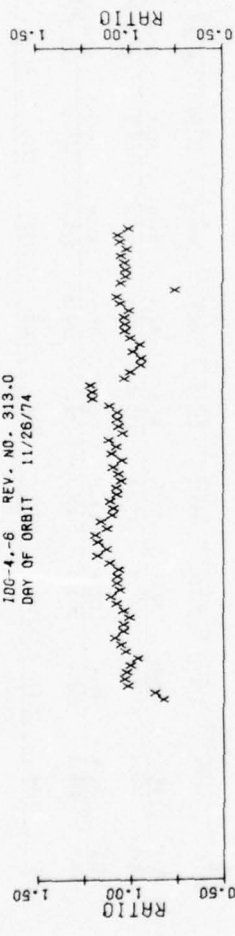
IDC-4-6 REV. NO. 311.0
 DRY OF ORBIT 11/26/74

PERIGEE
 ALT(KM.)= 162.32
 LONG(E)= 47.42
 LAT(DEC.)= 78.33
 GMT(SEC.)= 60633.9 (1650H)
 LOCAL TIME 2000 (H)
 IN SUN FROM 59970. TO 61920.
 IN SHADE FROM 61920. TO 61320.

KP=2+
 F10.7=97.0

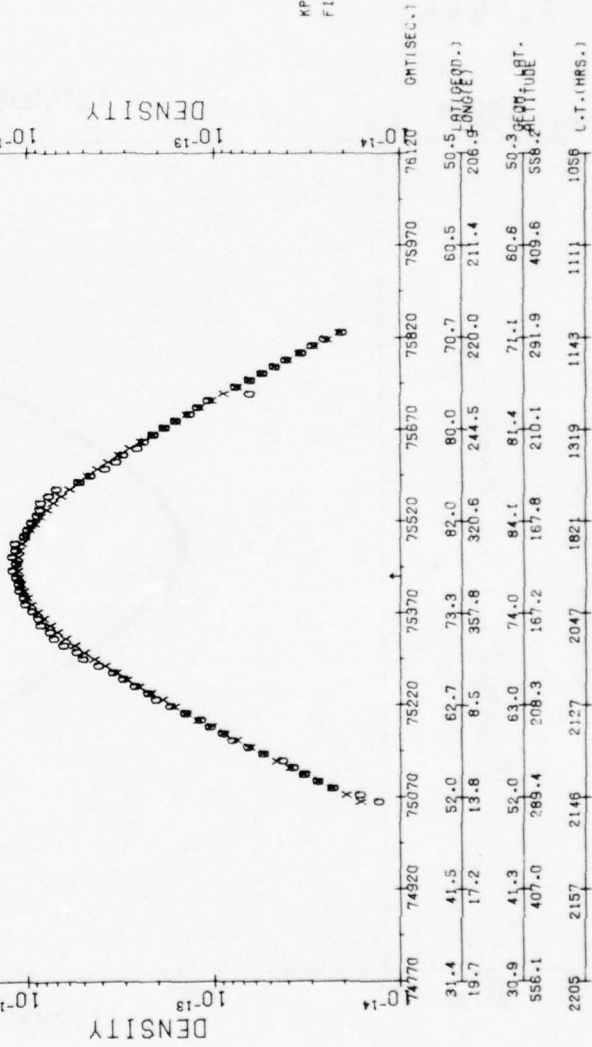


100-4-6 REV. NO. 313.0
 DRY OF ORBIT 11/26/74

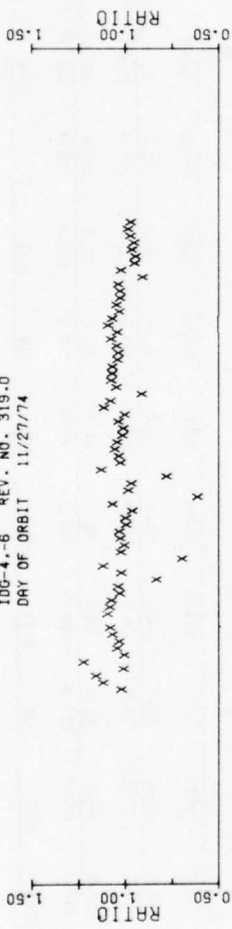


PERIGEE
 ALT(KM.)= 162.25
 LONG(E)= 346.71
 LAT(DEG.)= 78.05
 GMT(SEC.)= 75442.6 (2057H)
 LOCAL TIME 2004 (H)
 IN SUN FROM 74770. TO 76740.
 IN SHADE FROM 76740. TO 76120.

KP=4+
 F10.7=97.0

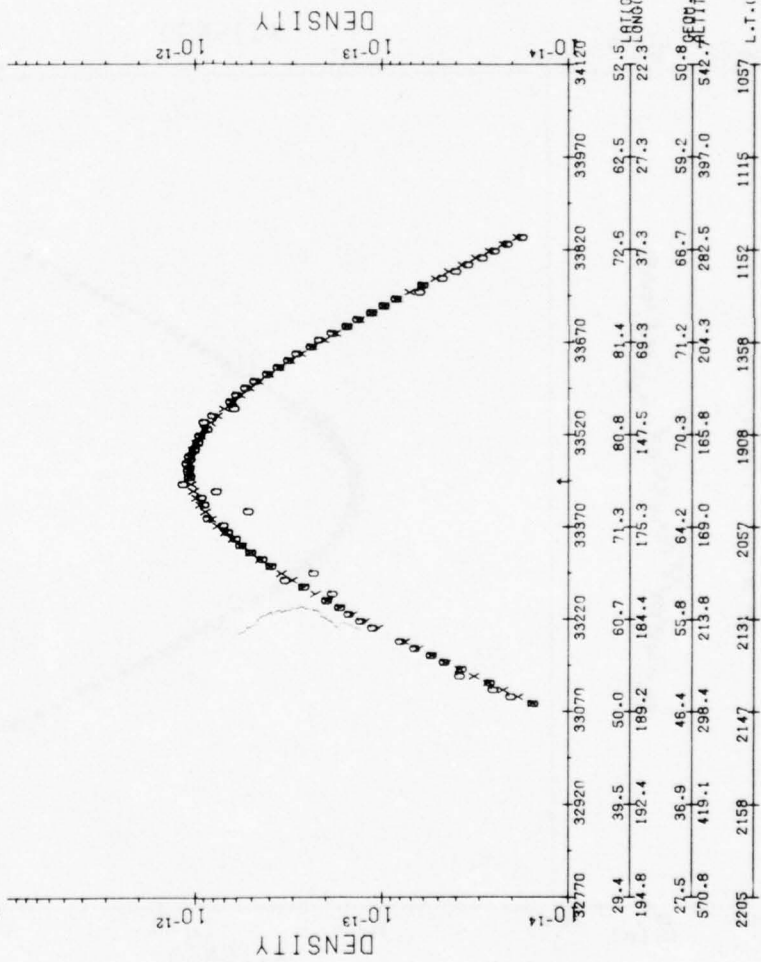


100-4,-6 REV. NO. 319-0
 DAY OF ORBIT 11/27/74



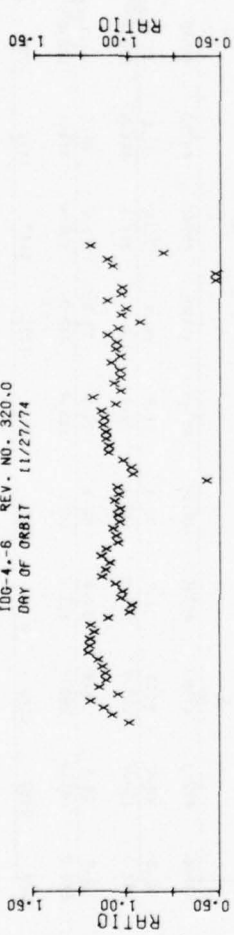
PERIOEE
 ALT(KM.)= 162.01
 LONG(E)= 164.16
 LAT(DEG.)= 77.12
 GMT(SEC.)= 33456.4 (0917H)
 LOCAL TIME 2014 (H)
 IN SUN FROM 32770. TO 34740.
 IN SHADE FROM 34740. TO 34120.

KP=3
 F10.7=95.0



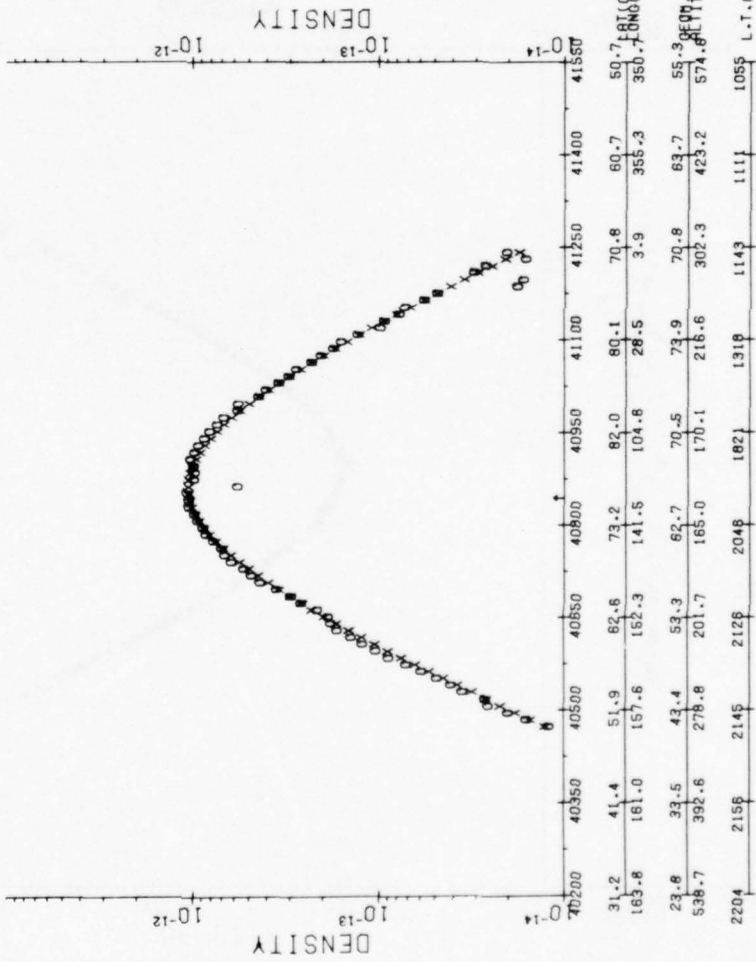
ALTITUDE	DENSITY	LONGITUDE	LATITUDE	GEOP. ALT.	L.T. (HRS.)
32770					
32520					
33070					
33220					
33370					
33520					
33670					
33820					
33970					
34120					
29.4	39.5	50.0	71.3	80.8	81.4
194.8	192.4	189.2	184.4	175.3	147.5
27.5	36.9	46.4	55.8	64.2	70.3
570.8	415.1	298.4	213.8	165.0	165.8
2205	2158	2147	2131	2057	1908
					1358
					1152
					1115
					1057

100-4.-6 REV. NO. 320.0
 DRY OF ORBIT 11/27/74



PERIOEE
 ALT(KM.)= 161.97
 LONG(°E)= 133.44
 LAT(°EG.)= 78.94
 GMT(SEC.)= 40856.9 (1120H)
 LOCAL TIME 2014 (H)
 IN SUN FROM 41074. TO 41550.
 IN SHADE FROM 40200. TO 41074.

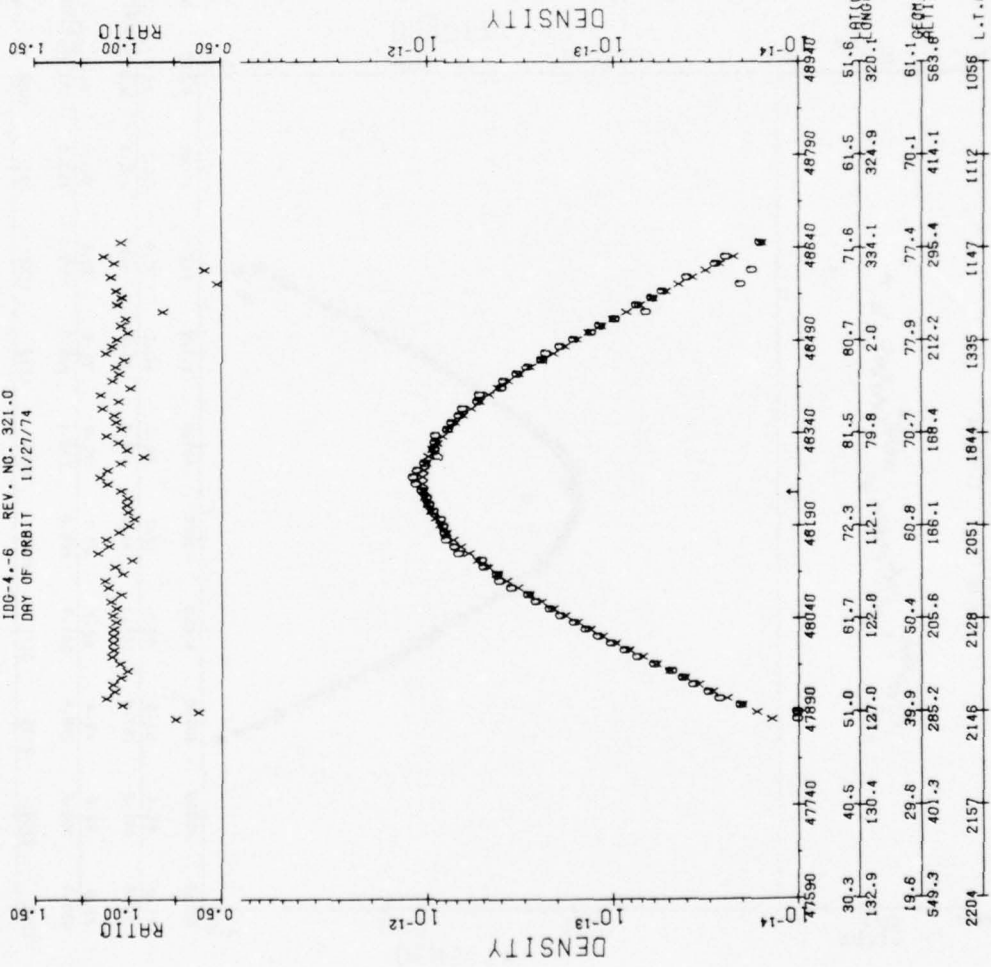
KP=3-
 F10.7=95.0



100-4-6 REV. NO. 321.0
 DRY OF ORBIT 11/27/74

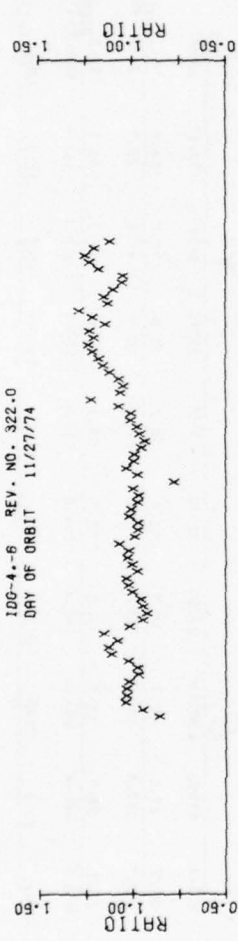
PERIGEE
 ALT(KM.)= 161.93
 LONG(L.)= 103.32
 LAT(DEC.)= 76.82
 QMT(SEC.)= 48256.8 (1324H)
 LOCAL TIME 2017 (H)
 IN SUN FROM 47590. TO 49500.
 IN SHRDE FROM 49500. TO 48940.

KP=3-
 F10.7=95.0



100-4-8 REV. NO. 322.0
DRY OF ORBIT 11/27/74

PERIGEE
ALTI(KM.)= 161.89
LONG(E)= 72.80
LAT(DEC.)= 76.86
QNT(SEC.)= 55656.3 (1527H)
LOCAL TIME 2018 (H)
IN SUN FROM 54990. TO 56940.
IN SHADE FROM 56940. TO 56340.



QNT(SEC.)

54990	55140	55290	55440	55590	55740	55890	56040	56190	56340
30.2	40.3	50.9	61.6	72.2	81.3	80.8	71.8	61.7	51.7
102.0	99.5	96.2	91.2	81.4	49.9	33.9	303.4	294.1	288.3
18.6	29.0	39.7	50.6	61.7	72.6	82.7	82.6	73.1	63.2
548.7	400.8	284.7	206.3	166.0	168.4	212.4	296.7	414.6	564.1
2204	2157	2148	2128	2052	1848	1339	1147	1113	1058
									L.T.(HRS.)

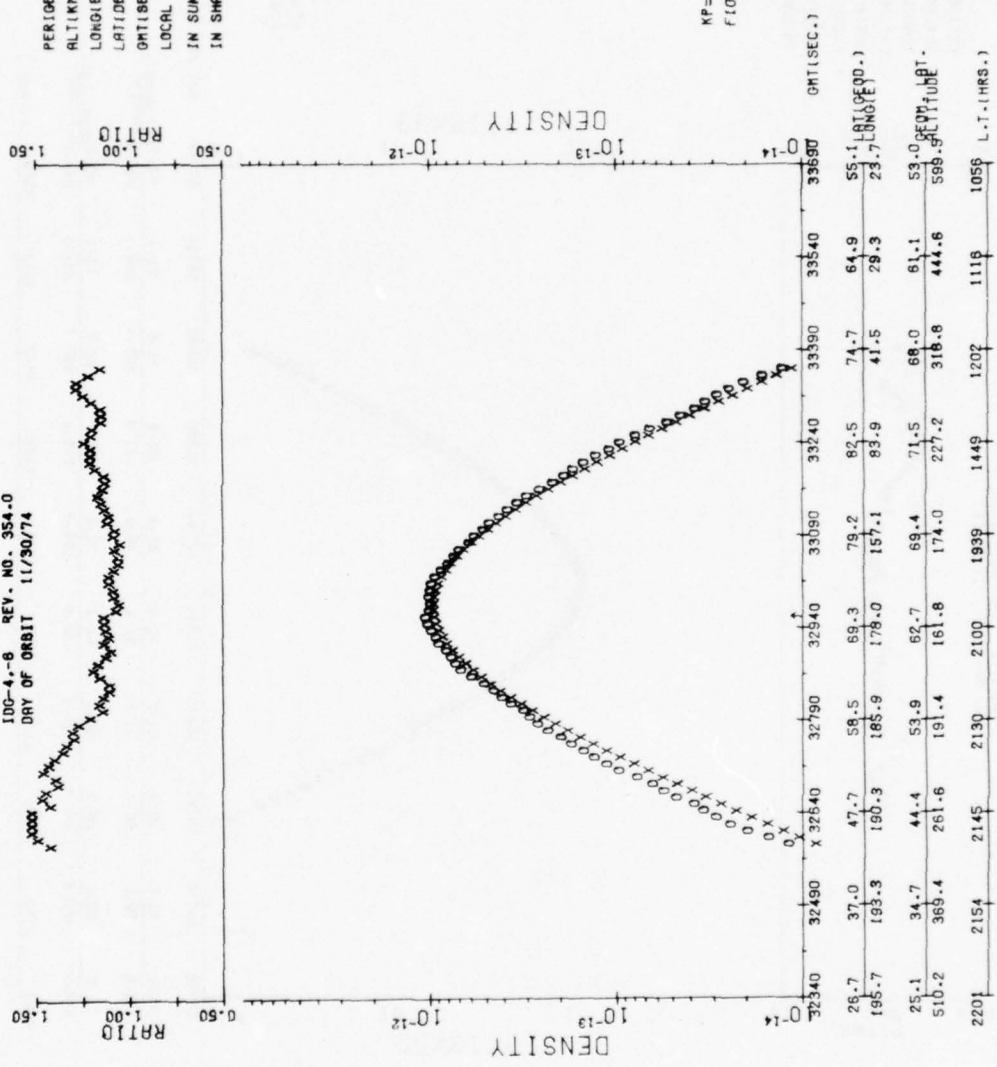
RAT(900.)
RANGE(Y)
RANGE(Y)
RANGE(Y)
RANGE(Y)

KP=3-
F10.7=95.0

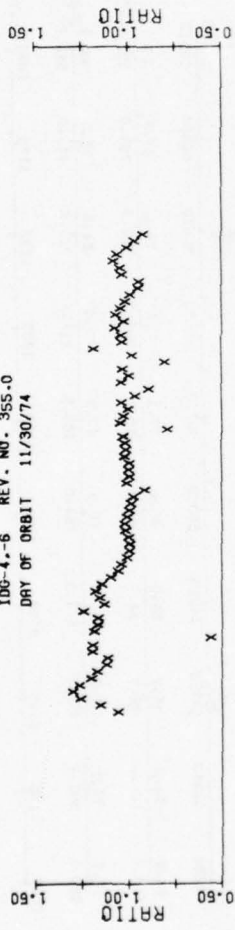
IDC-4-B REV. NO. 354.0
 DRY OF ORBIT 11/30/74

PERIOD = 160.86
 ALT(KM.) = 175.49
 LONG(°) = 71.45
 LAT(°) = 32971.2 (0909M)
 LOCAL TIME 2051 (H)
 IN SUN FROM 33282. TO 33680.
 IN SHADE FROM 32340. TO 33282.

KP=0
 F(10.7)=86.0

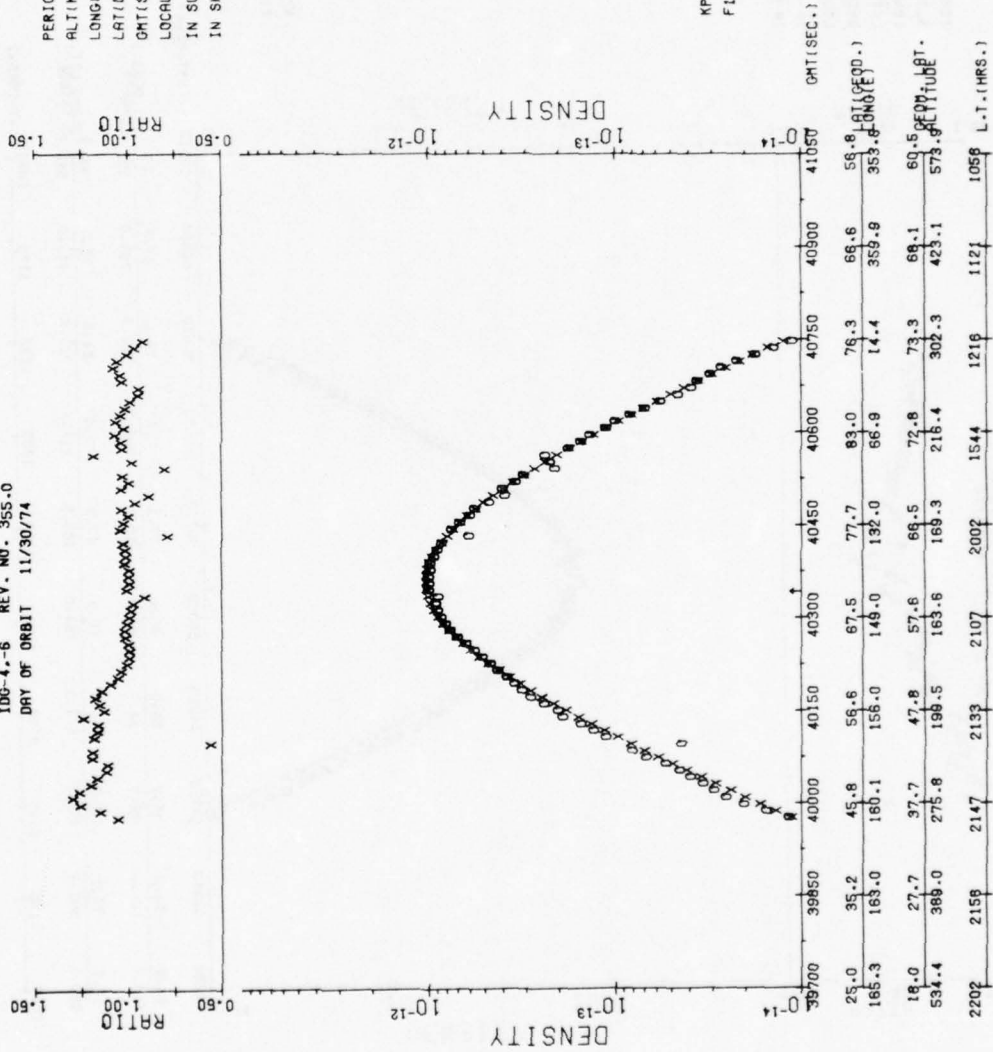


IDG-4-6 REV. NO. 355-0
 DRY OF ORBIT 11/30/74



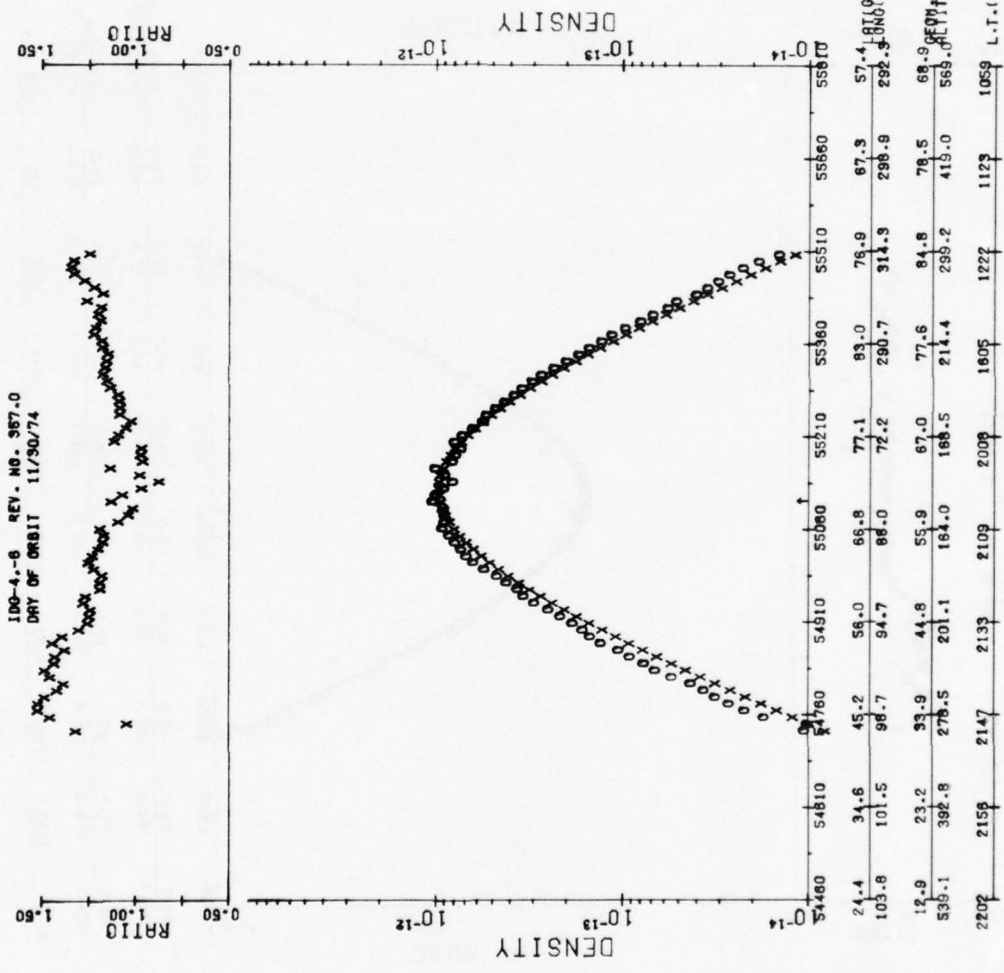
PERIGEE
 ALT(KM.)= 160.62
 LONG(L°)= 144.89
 LAT(DEG.)= 71.28
 GMT(SEC.)= 40354.3 (1112H)
 LOCAL TIME 2052 (H)
 IN SUN FROM 40647. TO 41050.
 IN SHADE FROM 39700. TO 40647.

MP=1+
 F10.7=86.0

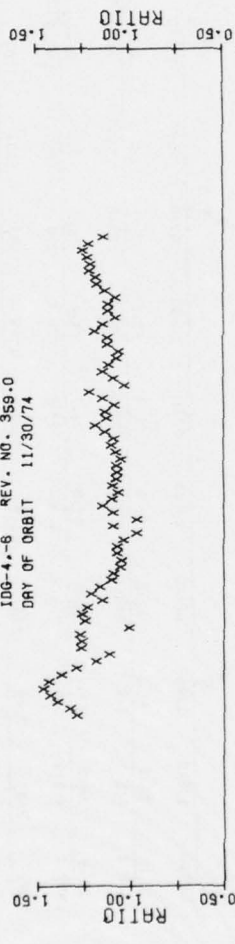


PERIGEE
 ALT(KM.)= 160.75
 LONG(E)= 89.69
 LAT(DEC.)= 70.94
 GMT(SEC.)= 55118.7 (1510H)
 LOCAL TIME 2053 (H)
 IN SUN FROM 54480. TO 56400.
 IN SHADE FROM 56400. TO 55810.

MF=0
 F10.7=86.0

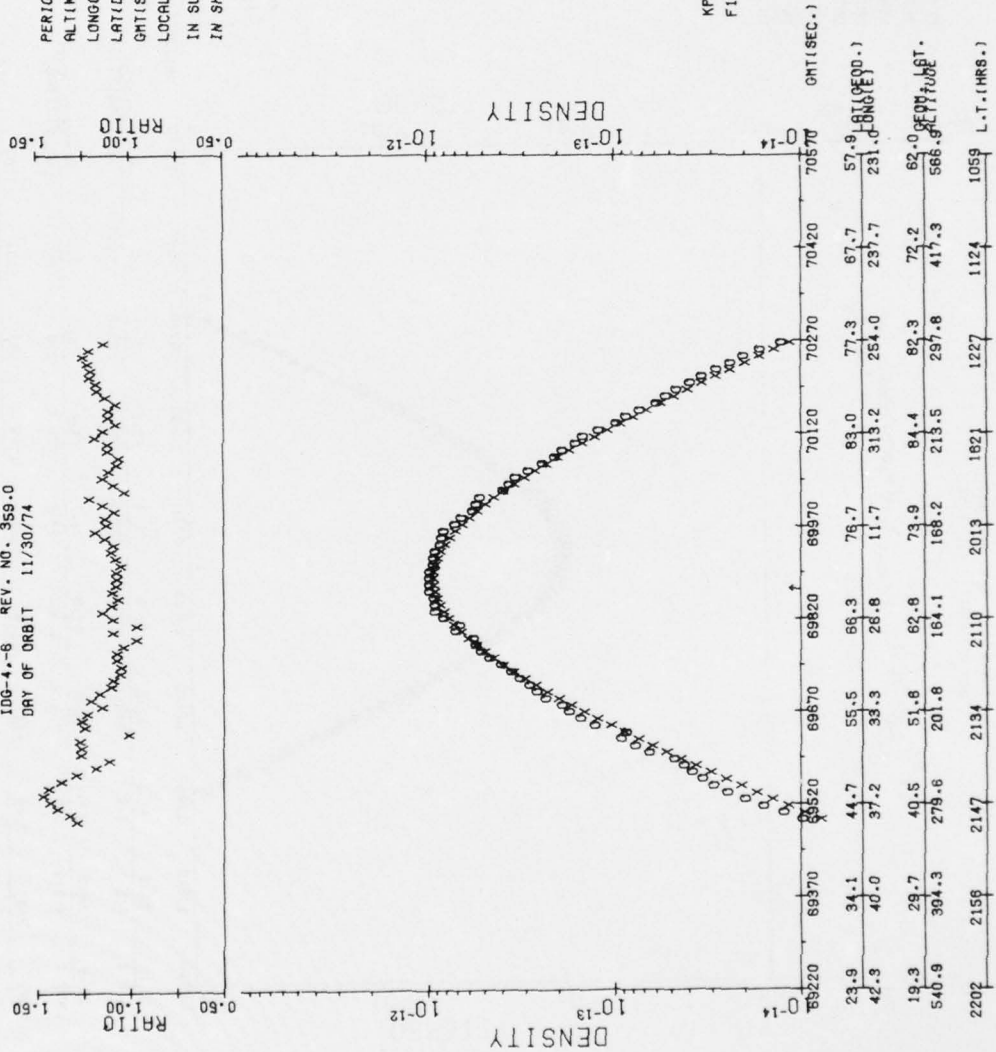


100-4-B REV. NO. 359.0
 DRY OF ORBIT 11/30/74



PERIOEE
 ALT(KM.)= 160.70
 LONG(L) = 22.50
 LAT(DEC.) = 70.60
 GMT(SEC.) = 69860.5 (1924H)
 LOCAL TIME 2054 (H)
 IN SUN FROM 69220. TO 71160.
 IN SHADE FROM 71160. TO 70570.

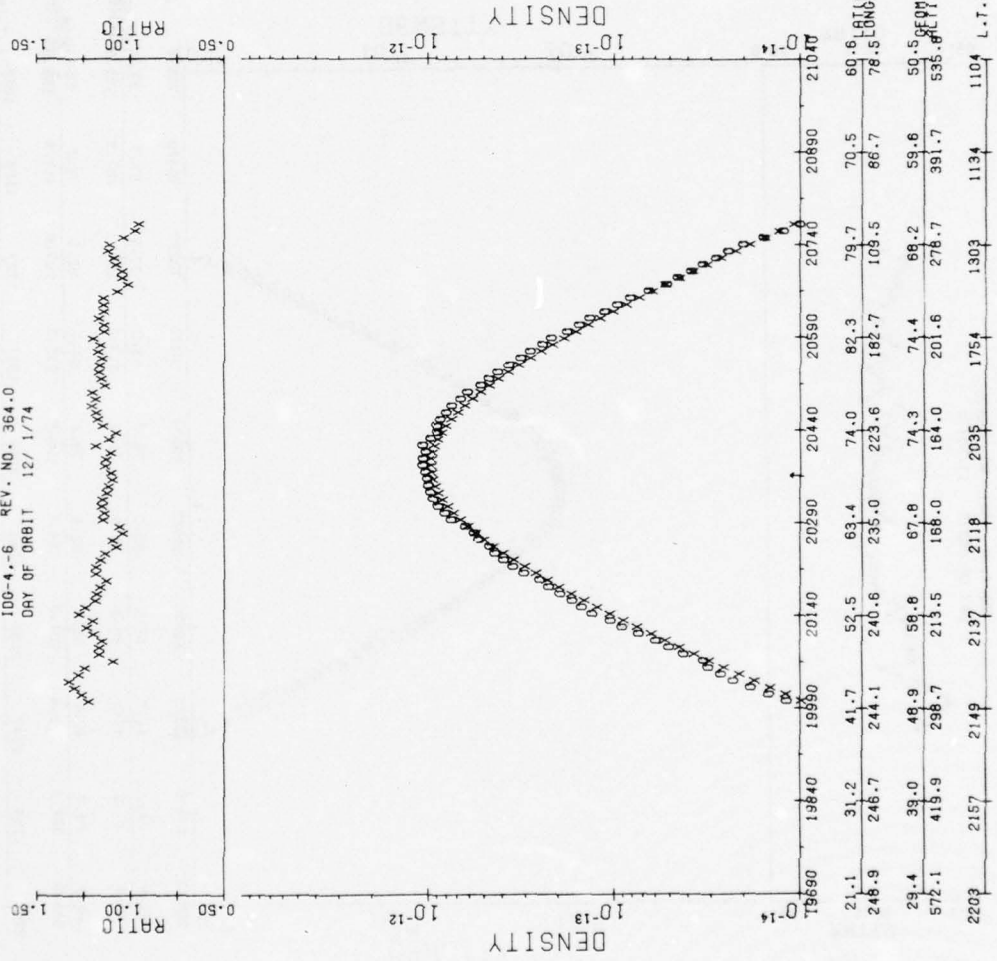
KP=0
 F10.7=86.0



100-4-6 REV. NO. 364.0
 DRY OF ORBIT 12/ 1/74

PERIOEE
 ALT(KM.)= 160.55
 LONG(E)= 229.52
 LAT(DEC.)= 69.75
 GMT(SEC.)= 20379.2 (0539H)
 LOCAL TIME 2057 (H)
 IN SUN FROM 20691. TO 21040.
 IN SHADE FROM 19690. TO 20691.

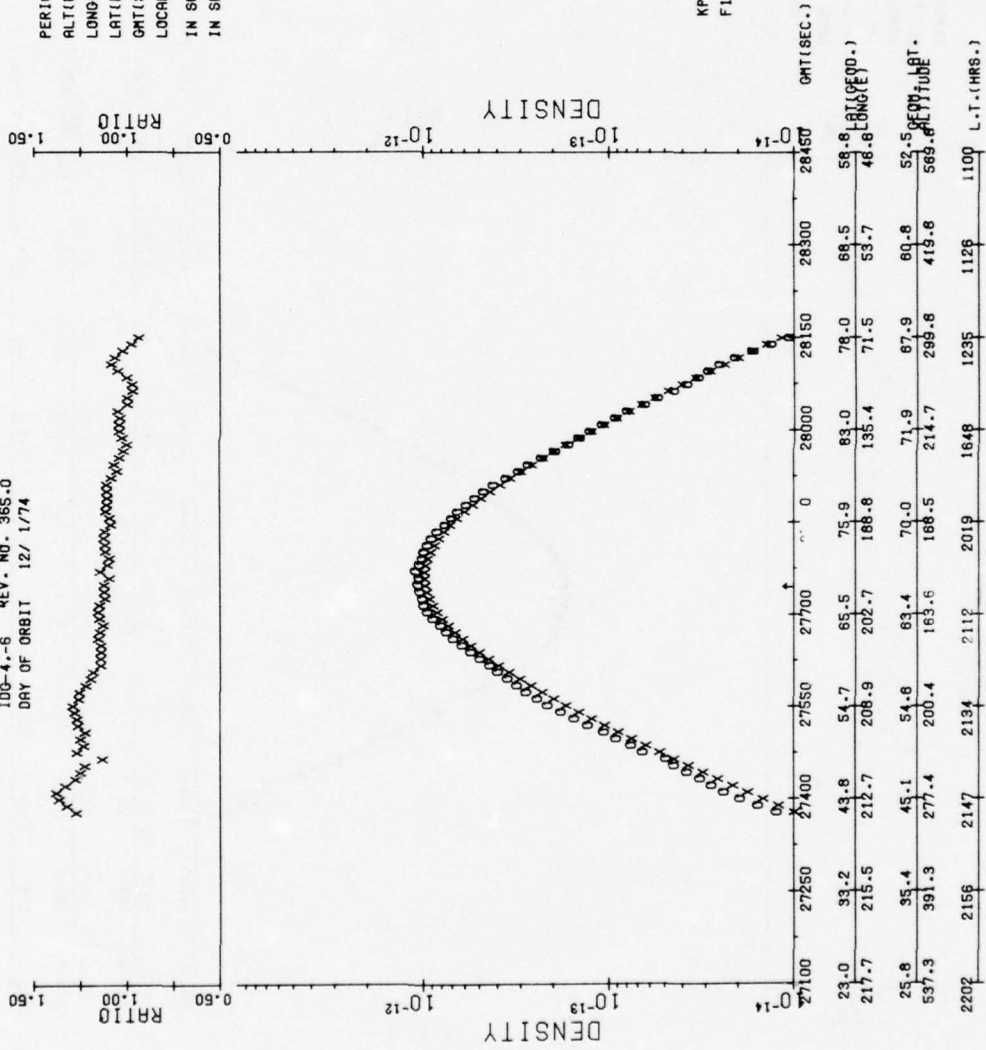
KP=1-
 F10.7=84.0



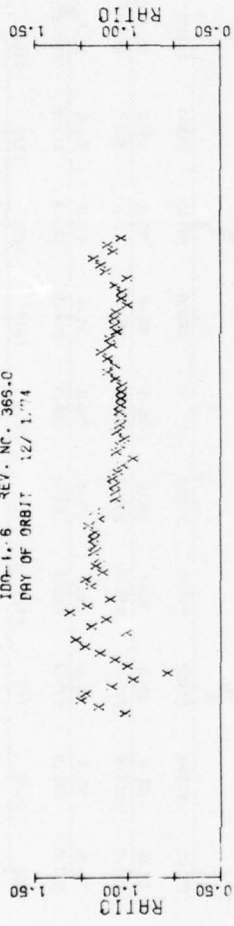
100-4.-6 REV. NO. 365-0
 DRY OF ORBIT 12/ 1/74

PERIOEE
 ALT(KM.)= 160.51
 LONG(E)= 198.92
 LAT(DEG.)= 69.58
 GMT(SEC.)= 27757.3 (0742H)
 LOCAL TIME 2058 (H)
 IN SUN FROM 27100. TO 29040.
 IN SHADE FROM 29040. TO 28450.

KP=1
 F10.7=84.0

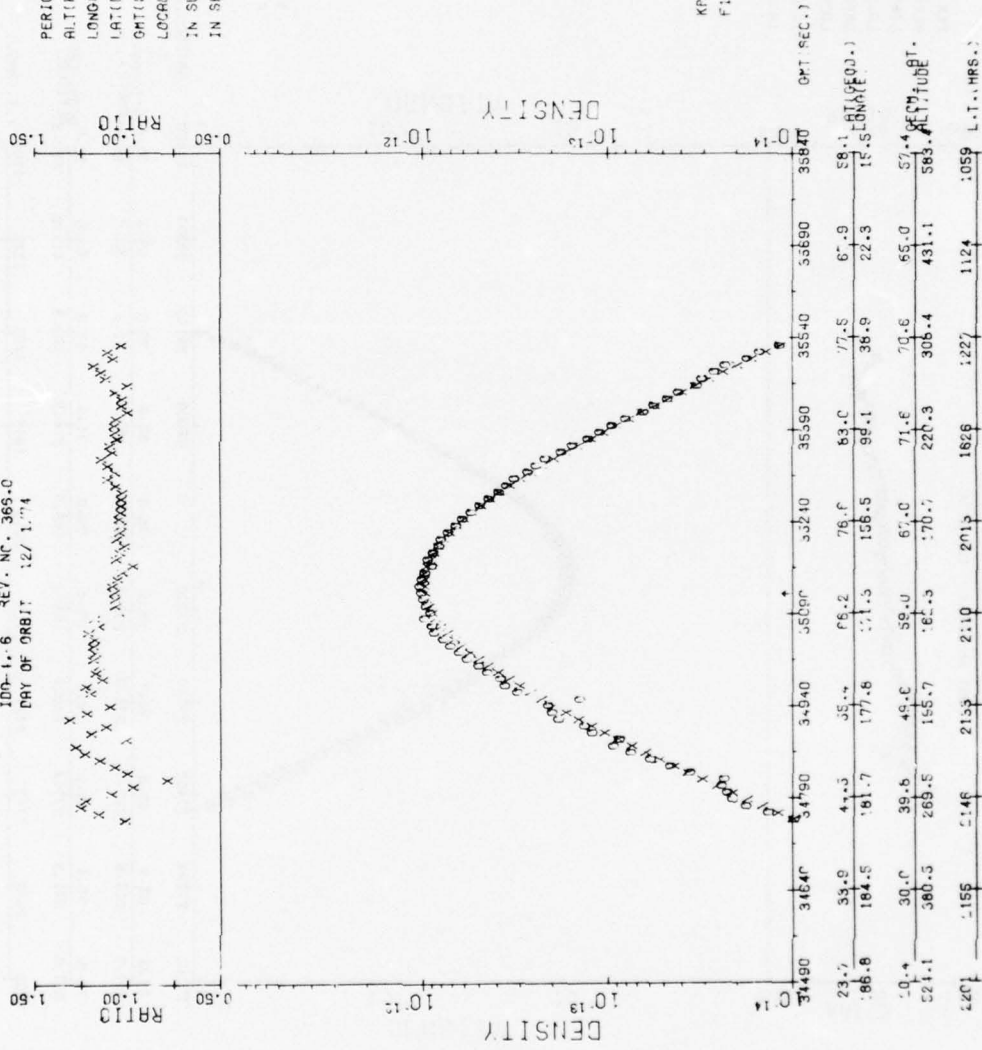


IDP-1-6 REV. NC. 365-0
 DRY OF ORBIT 12/1/74

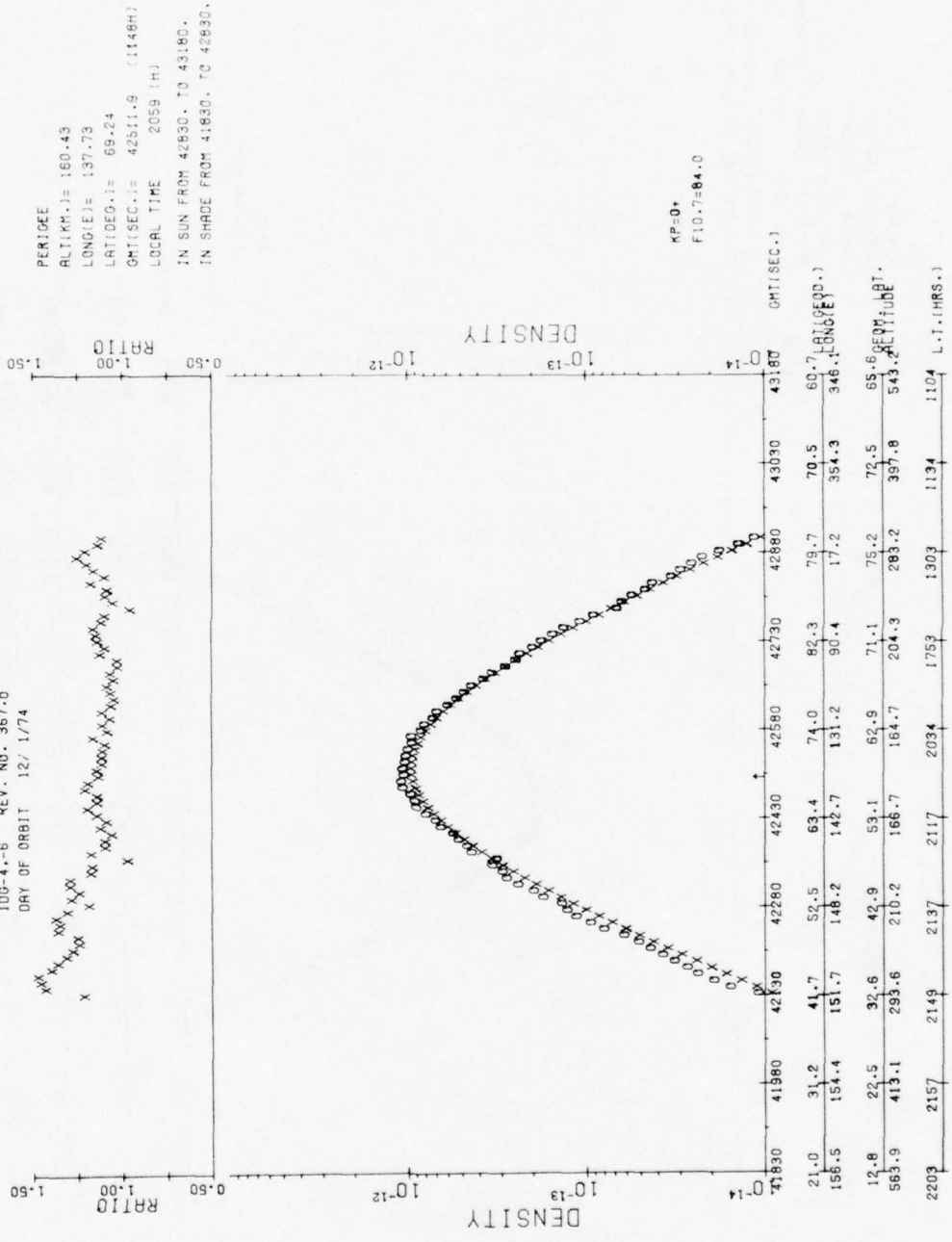


PERIOD
 ALTITUDE = 100.47
 LONGITUDE = 109.53
 LATITUDE = 68.41
 GMT (SEC.) = 35:34.8 (0945H)
 LOCAL TIME 2059 (14)
 IN SUN FROM 34190 TO 36420.
 IN SHADE FROM 36120 TO 35640.

KP =
 FIG. 7-84.0



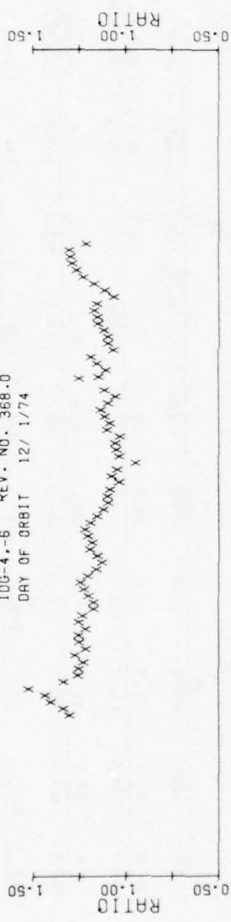
100-4-6 REV. NO. 367.0
 DRY OF ORBIT 12/ 1/74



PERIGEE
 ALTITUDE = 160.43
 LONGITUDE = 137.73
 LATITUDE = 69.24
 GMT SEC. = 42511.9 (11.48H)
 LOCAL TIME 2059 (H)
 IN SUN FROM 42830 TO 43180.
 IN SHADE FROM 41830 TO 42830.

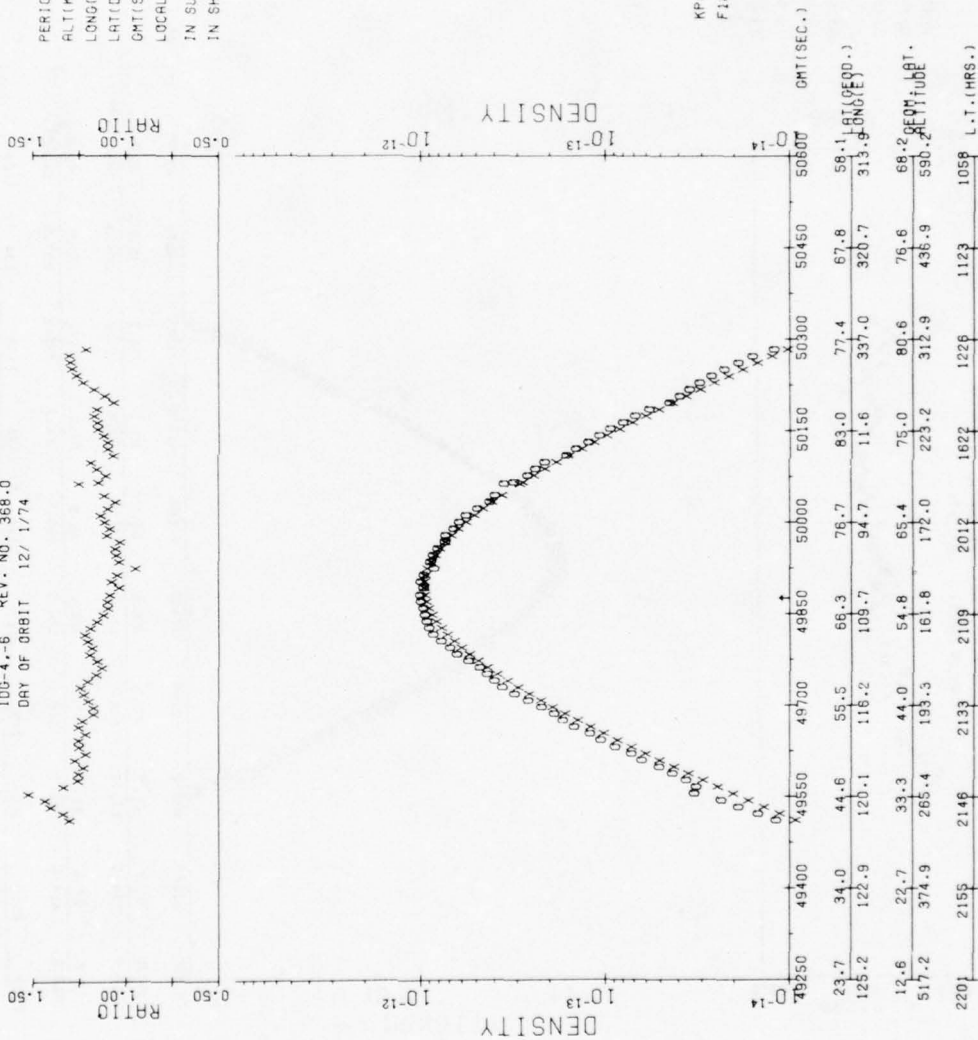
KP=0+
 F10.7=84.0

IDG-4-6 REV. NO. 368-0
 DAY OF ORBIT 12/ 1/74



PERIGEE
 ALT(KM.)= 160.36
 LONG(E)= 107.14
 LAT(DEG.)= 69.07
 GMT(SEC.)= 49666.4 (1351H)
 LOCAL TIME 2100 (H)
 IN SUN FROM 50208. TO 50600.
 IN SHADE FROM 49250. TO 50208.

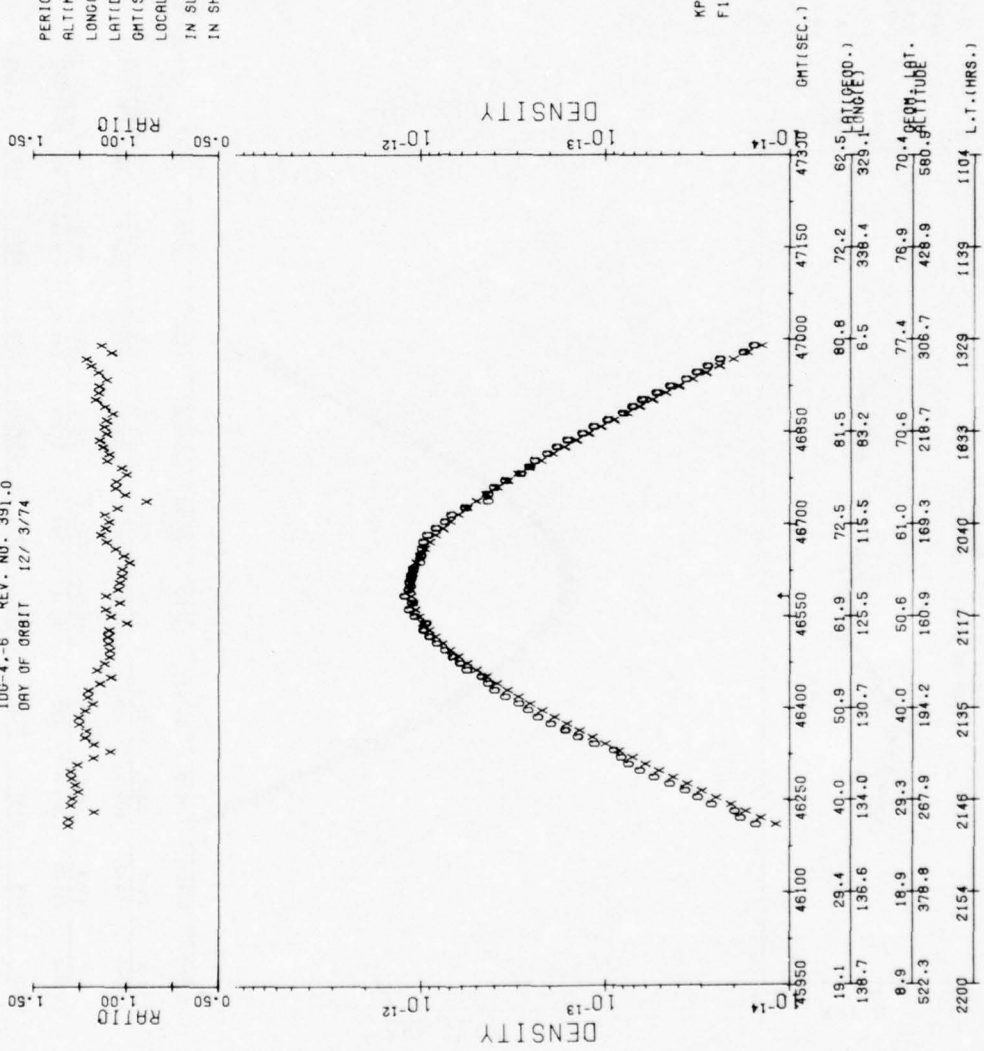
KP=0+
 F10.7=84.0



100-4.-6 REV. NO. 391.0
 DRY OF ORBIT 12/ 3/74

PERIGEE
 ALT(KM.)= 159.04
 LONG(E)= 123.31
 LAT(DEG.)= 65.09
 GMT(SEC.)= 46594.8 (1256H)
 LOCAL TIME 2109 (H)
 IN SUN FROM 46963. TO 47300.
 IN SHADE FROM 45950. TO 46963.

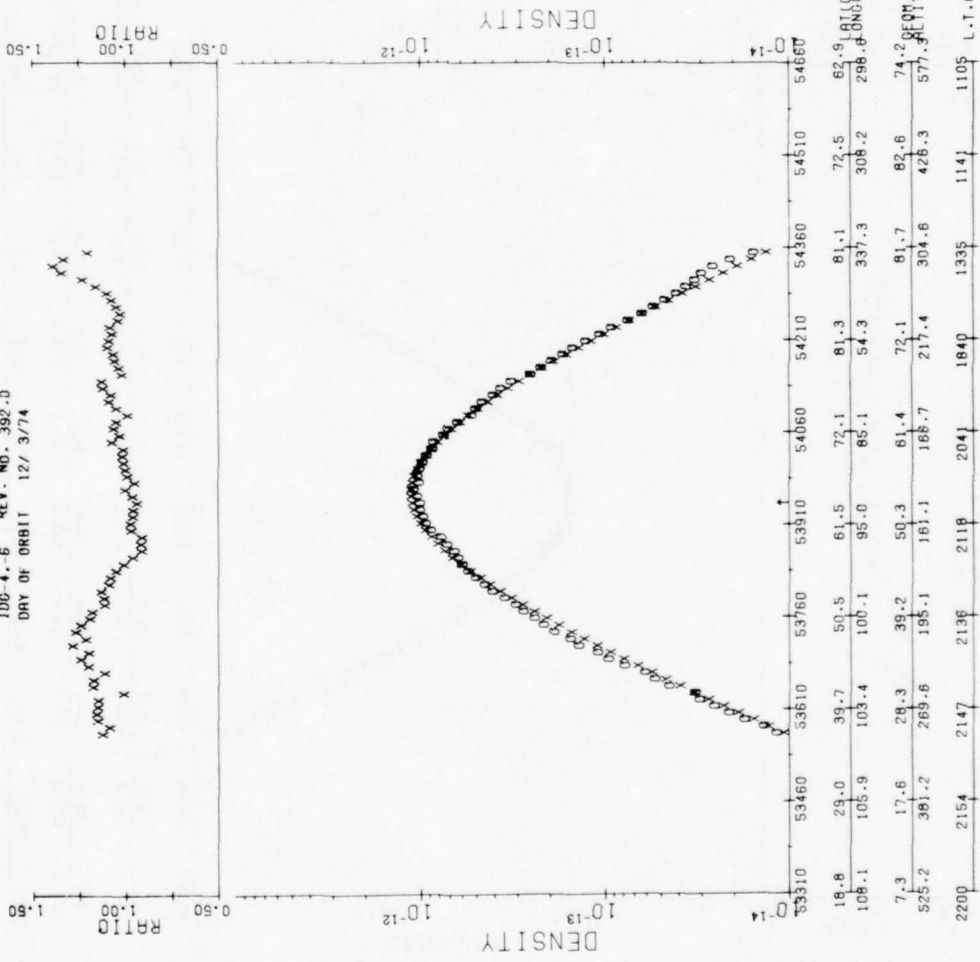
MP=3
 F10.7=81.0



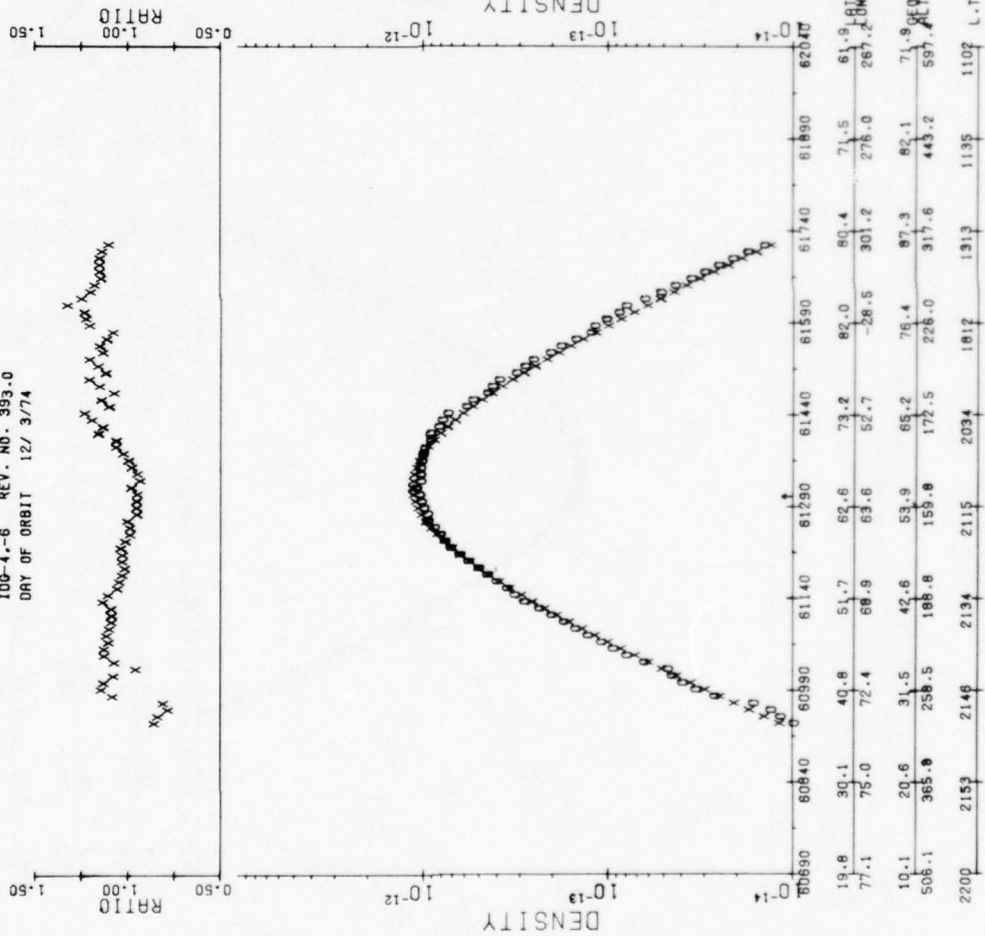
100-4-6 REV. NO. 392.0
 DAY OF ORBIT 12/ 3/74

PERIODE
 ALT(KM.)= 156.97
 LONG(E)= 92.73
 LAT(DEC.)= 64.91
 GMT(SEC.)= 53857.5 (1459H)
 LOCAL TIME 2110 (H)
 IN SUN FROM 54328. TO 54660.
 IN SHADE FROM 53310. TO 54328.

KP=2*
 F10.7=81.0



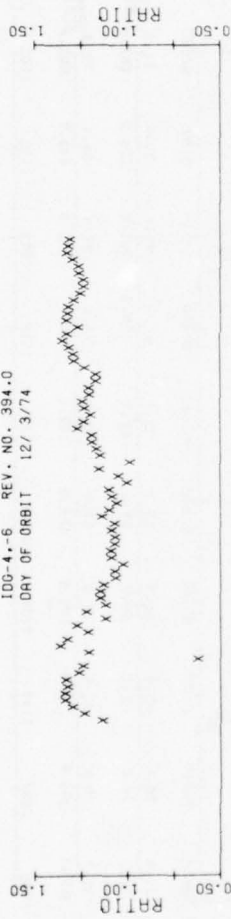
100-4-6 REV. NO. 393.0
 DRY OF ORBIT 12/ 3/74



PERIOD = 156.96
 ALT(KM.) = 62.10
 LONG(°) = 64.74
 GMT(SEC.) = 61919.3 (1701H)
 LOCAL TIME 2110 (H)
 IN SUN FROM 61691. TO 62040.
 IN SHADE FROM 60690. TO 61691.

KP=3-
 F10.7=81.0

100-4--6 REV. NO. 394-0
 DRY OF ORBIT 12/ 3/74



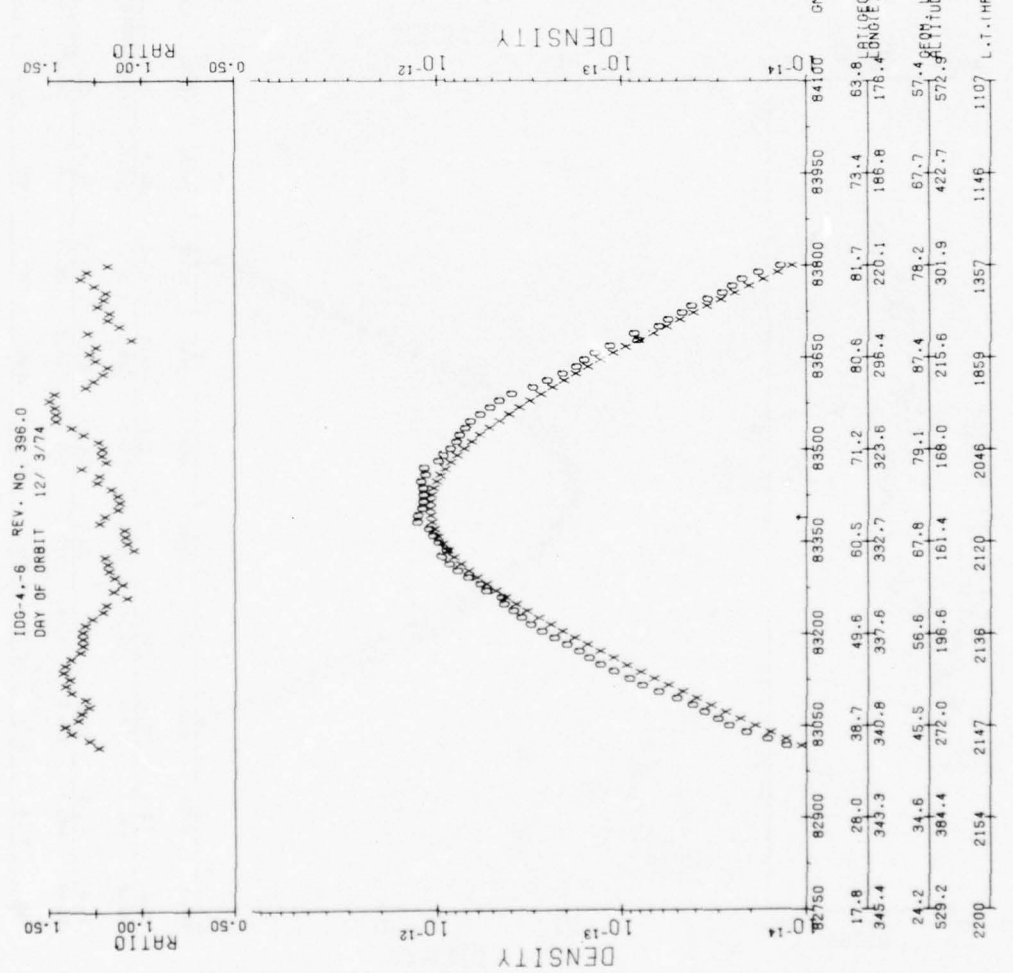
PERIGEE
 ALT(KM.)= 156.97
 LONGE)= 31.53
 LAT(DEC.)= 64.57
 GMT(SEC.)= 68680.5 (1904H)
 LOCAL TIME 2110 (H)
 IN SUN FROM 69054. TO 69390.
 IN SHADE FROM 68040. TO 69054.

KP=3-
 F10.7=81.0

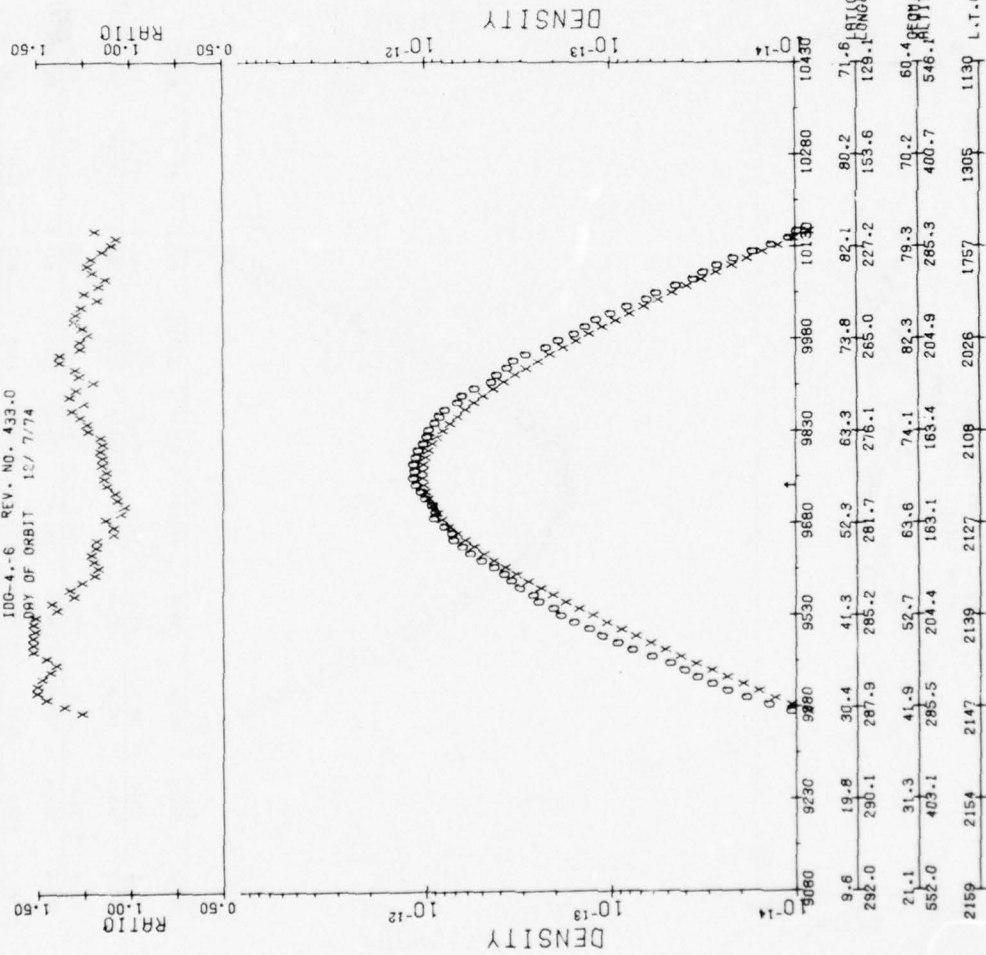
GMT(SEC.)	ALT(KM.)	LONGE)	LAT(DEC.)	PERIGEE ALT(KM.)	LOCAL TIME (H)	IN SUN FROM	IN SHADE FROM
68040	18.9	29.2	44.5	24.1	375.1	265.2	192.6
68190	29.2	44.5	41.9	34.9	375.1	192.6	160.5
68340	39.6	41.9	38.6	46.1	375.1	192.6	132.6
68490	50.7	38.6	33.5	57.3	375.1	192.6	105.5
68640	61.6	33.5	27.3	68.6	375.1	192.6	79.1
68790	72.3	27.3	23.6	79.5	375.1	192.6	53.6
68940	81.3	23.6	20.3	89.5	375.1	192.6	28.6
69090	81.0	20.3	17.5	98.0	375.1	192.6	4.0
69240	72.4	17.5	15.5	104.5	375.1	192.6	0.0
69390	62.8	15.5	14.5	109.0	375.1	192.6	0.0

PERIOD= 158.98
 ALT(KM)= 330.33
 LONG(E)= 64.22
 LAT(DEC)= 83401.4 (2310H)
 GMT(SEC)= 2111 (H)
 LOCAL TIME 2111 (H)
 IN SUN FROM 83779. TO 84100.
 IN SHADE FROM 82750. TO 83779.

KP=2
 F10.7=81.0



IDG-4.-6 REV. NO. 433.0
 XXXXXBY OF ORBIT 10/ 7/74



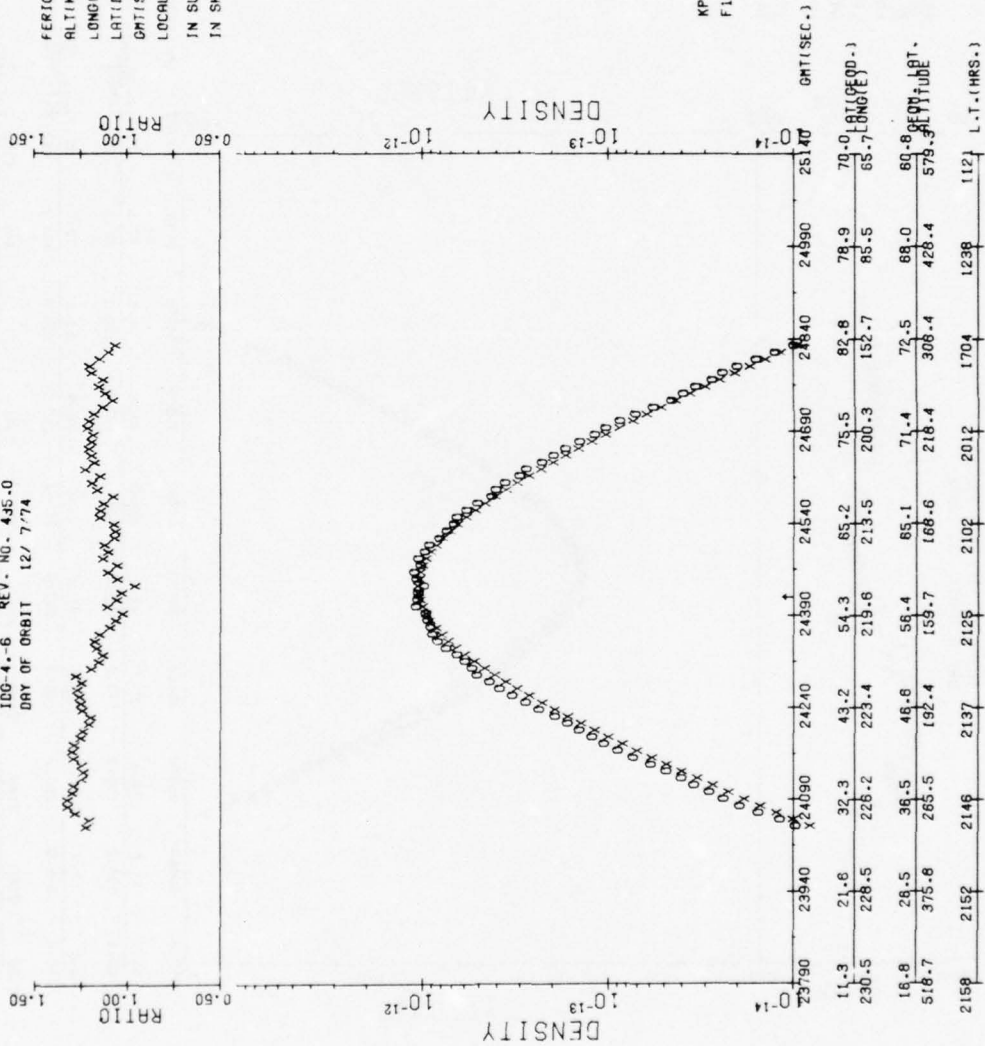
PERIGEE
 ALT (KM.) = 156.04
 LONG (E) = 279.31
 LAT (DEG.) = 57.75
 GMT (SEC.) = 9753.9 (0242H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 9080. TO 12640.
 IN SHADE FROM 12840. TO 10430.

KP=0+
 F10.7=74.0

100-4-6 REV. NO. 435-0
 DAY OF ORBIT 12/ 7/74

FERTIGEE
 ALT(KM.)= 157.97
 LONG(E)= 218.22
 LAT(PEG.)= 7.4C
 OMT(SEC.)= 24432.6 (0647H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 23790. TO 25740.
 IN SHADE FROM 25740. TO 25140.

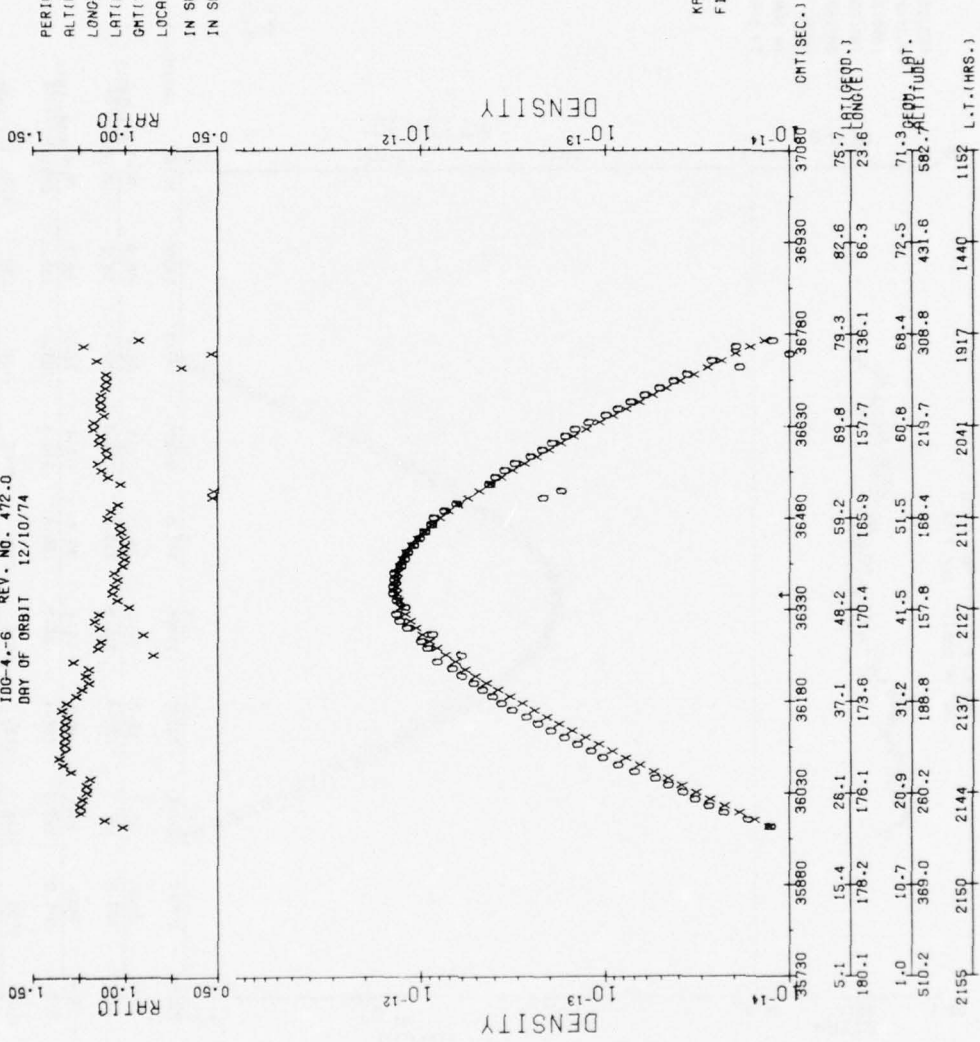
KP=1-
 FIG. 7=74-0



100-4-6 REV. NO. 472.0
 DRY OF ORBIT 12/10/74

PERIODEE
 ALT(KM.)= 156.56
 LONG(E)= 169.49
 LAT(DEG.)= 50.88
 GMT(SEC.)= 36366.7 (1006H)
 LOCAL TIME 2124 (H)
 IN SUN FROM 35730. TO 37620.
 IN SHADE FROM 37620. TO 37080.

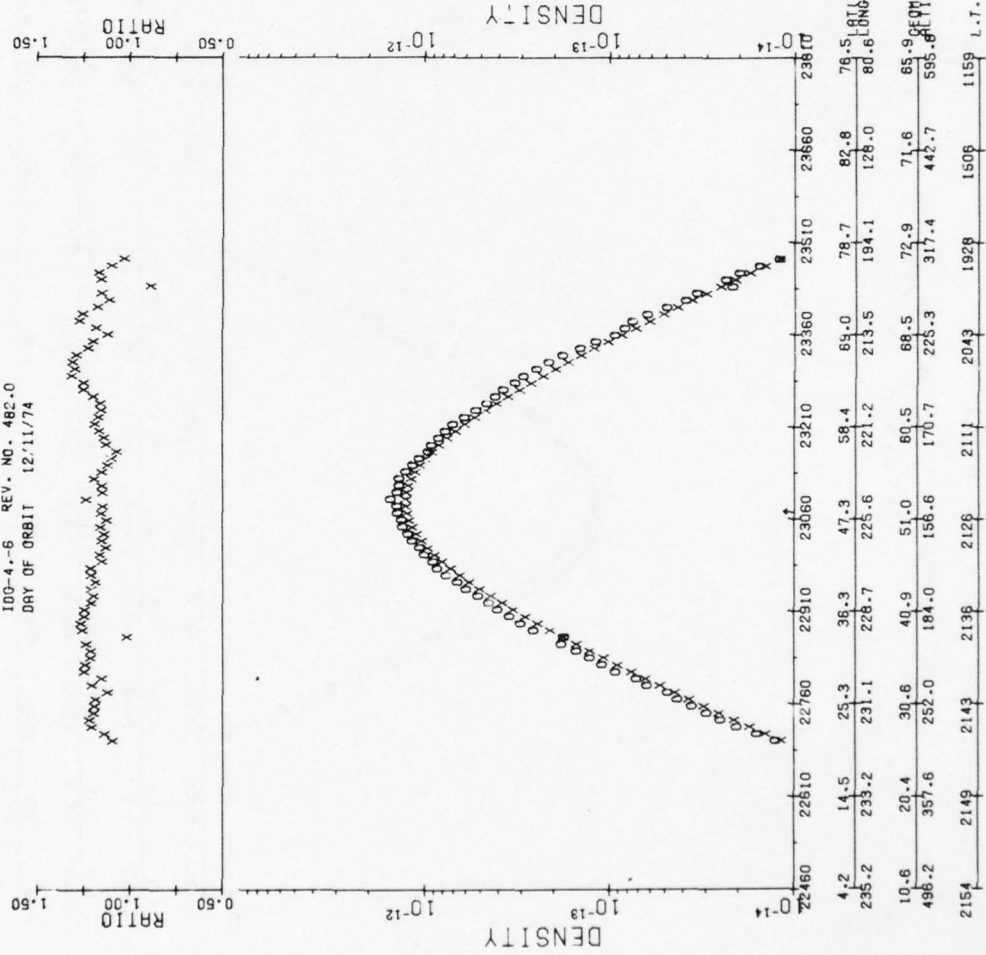
KP=4+
 F10.7=72.0



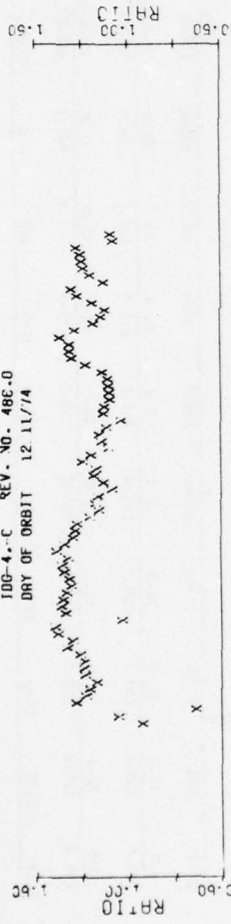
100-4--6 REV. NO. 482-0
DRY OF ORBIT 12/11/74

PERIGEE
ALT(KM.)= 156.04
LONGIE)= 225.00
LAT(DEC.)= 49.11
GMT(SEC.)= 23083.9 (0624H)
LOCAL TIME 2124 (H)
IN SUN FROM 22460. TO 24360.
IN SHADE FROM 24360. TO 23810.

KP=3-
F10.7=79.0

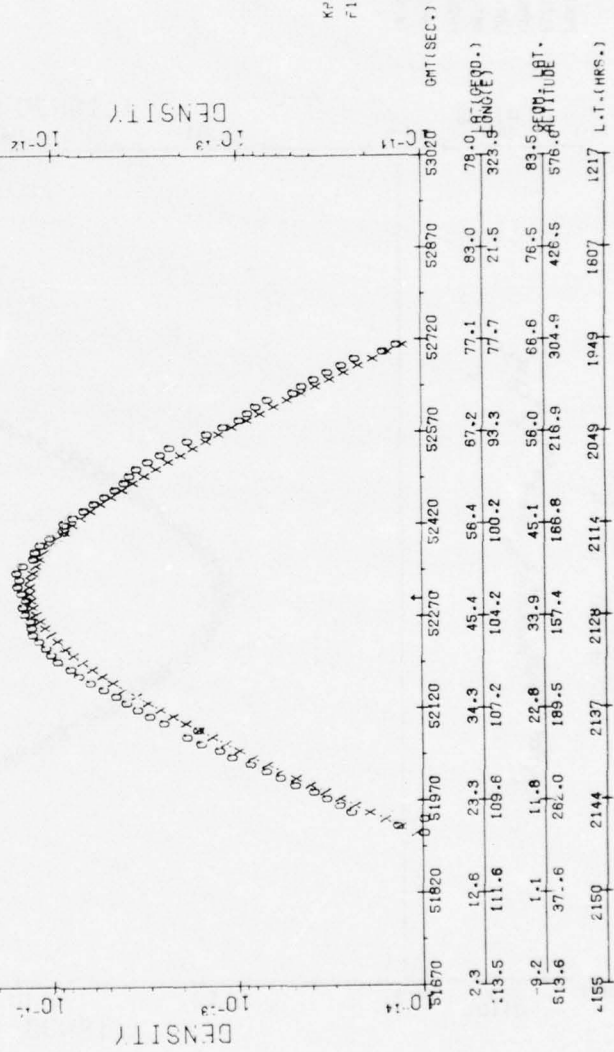


100-4-C REV. NO. 48C-0
 DRY OF ORBIT 12 11/74

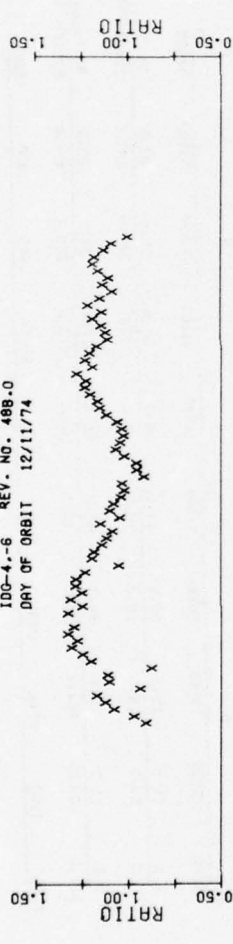


PERIGEE
 ALTITUDE = 156.83
 LONGITUDE = 103.28
 LATITUDE = 48.40
 GMT(SEC.) = 52311.1 (1451H)
 LOCAL TIME 2124 (4)
 IN SUN FROM 516/C. TO 53580.
 PH SHADE FROM 53580. TO 55020.

K2=3+
 F10.7-12.0

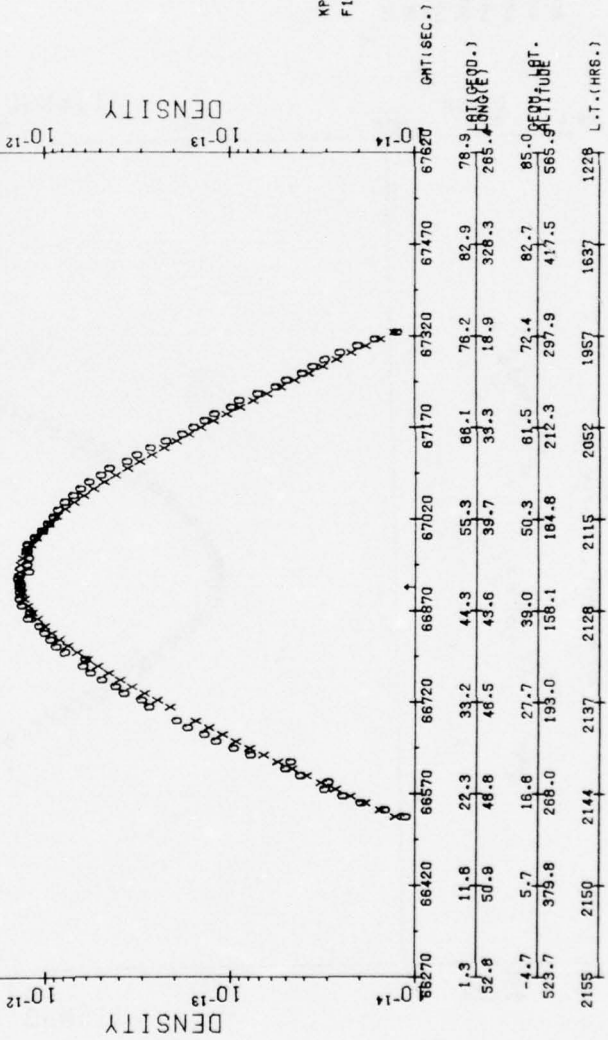


IDC-4-6 REV. NO. 48B.0
 DRY OF ORBIT 12/11/74

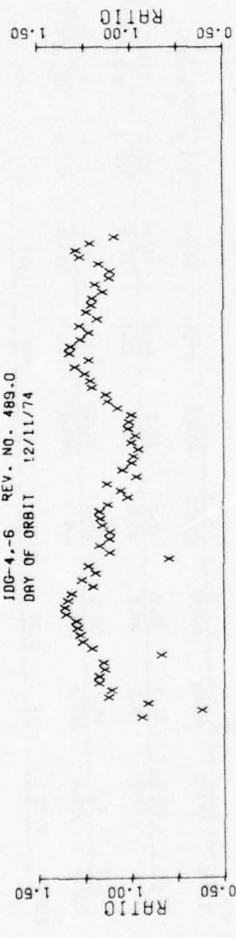


PERIGEE
 ALT(KM.)= 155.72
 LONG(E)= 42.43
 LAT(DEG.)= 48.05
 GMT(SEC.)= 66920.8 (1835H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 66270. TO 68220.
 IN SHADE FROM 68220. TO 67620.

KP=4
 F10.7=72.0

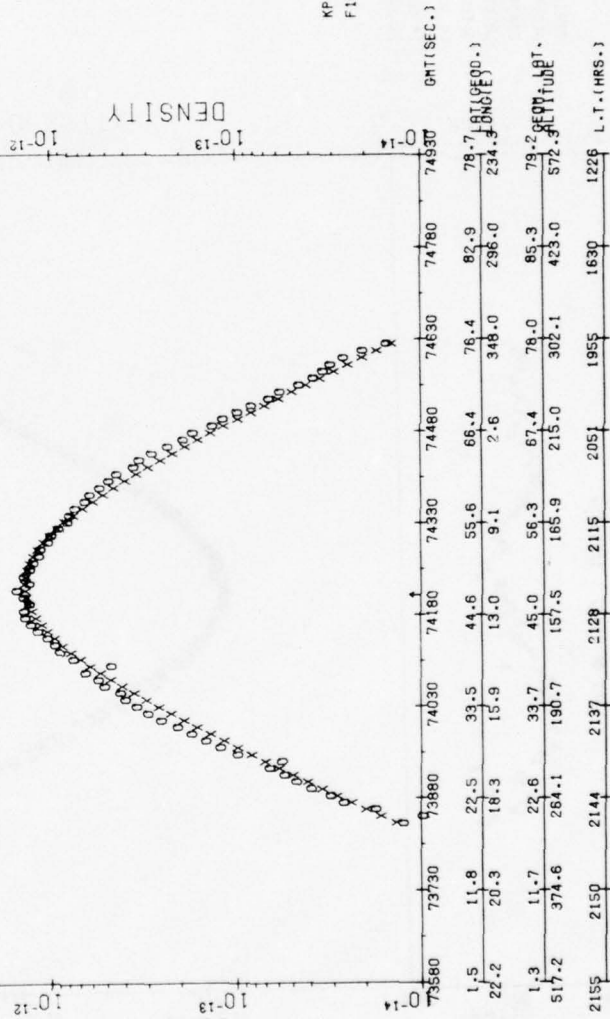


100-4-6 REV. NO. 489.0
 DRY OF ORBIT 12/11/74

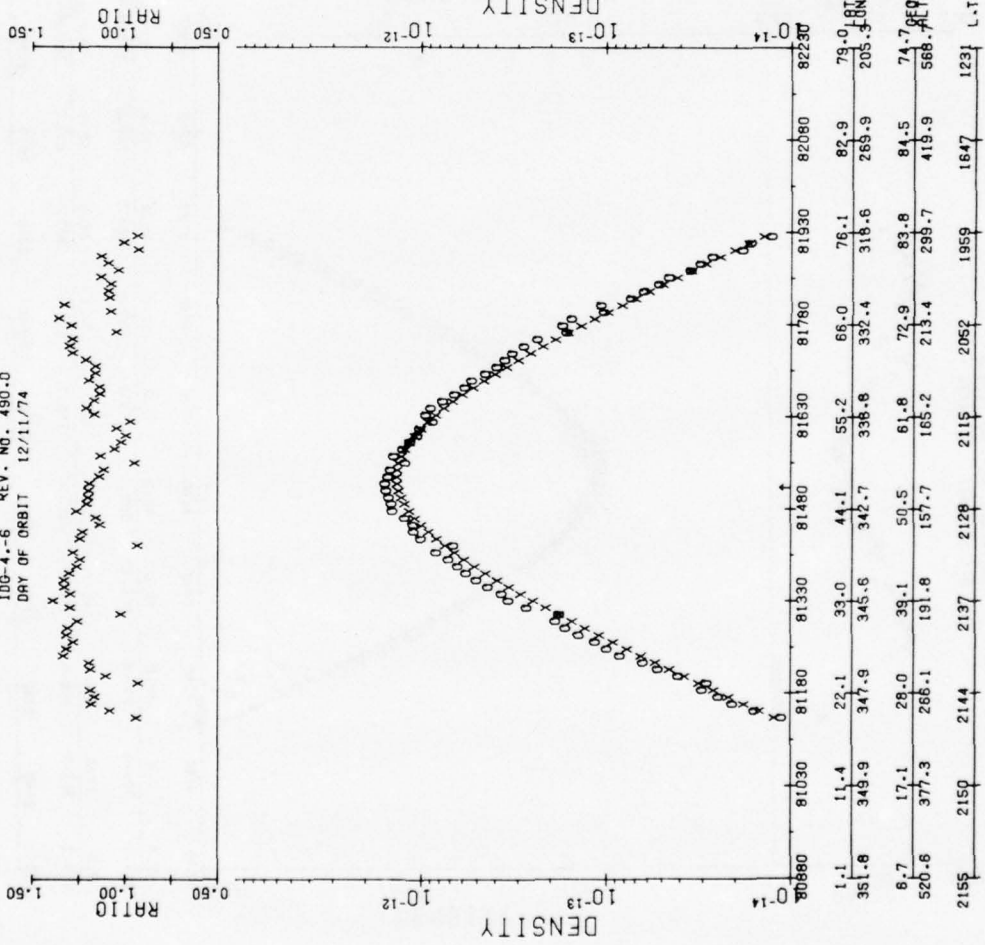


PERIGEE
 ALT(KM.)= 155.67
 LONG(L)= 12.01
 LAT(DEG.)= 47.67
 GMT(SEC.)= 74224.7 (2057H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 73580. TO 75460.
 IN SHADE FROM 75480. TO 74950.

KP=4
 F10.7=72.0



IDG-4-6 REV. NO. 490-0
 DRY OF ORBIT 12/11/74

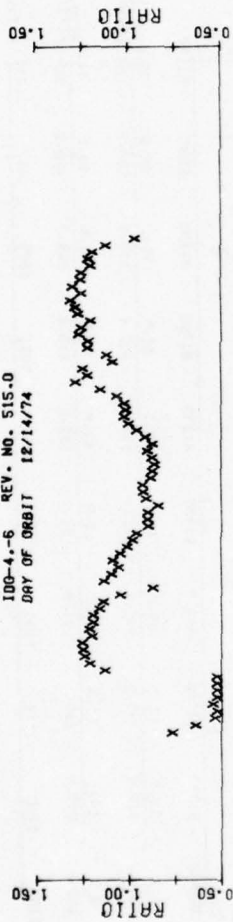


PERIGEE
 ALT(KM.)= 155.61
 LONG(E)= 341.59
 LAT(DEC.)= 47.69
 GMT(SEC.)= 81528.0 (2238H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 80880. TO 82800.
 IN SHADE FROM 82800. TO 82230.

KP=3+
 F10.7=72.0

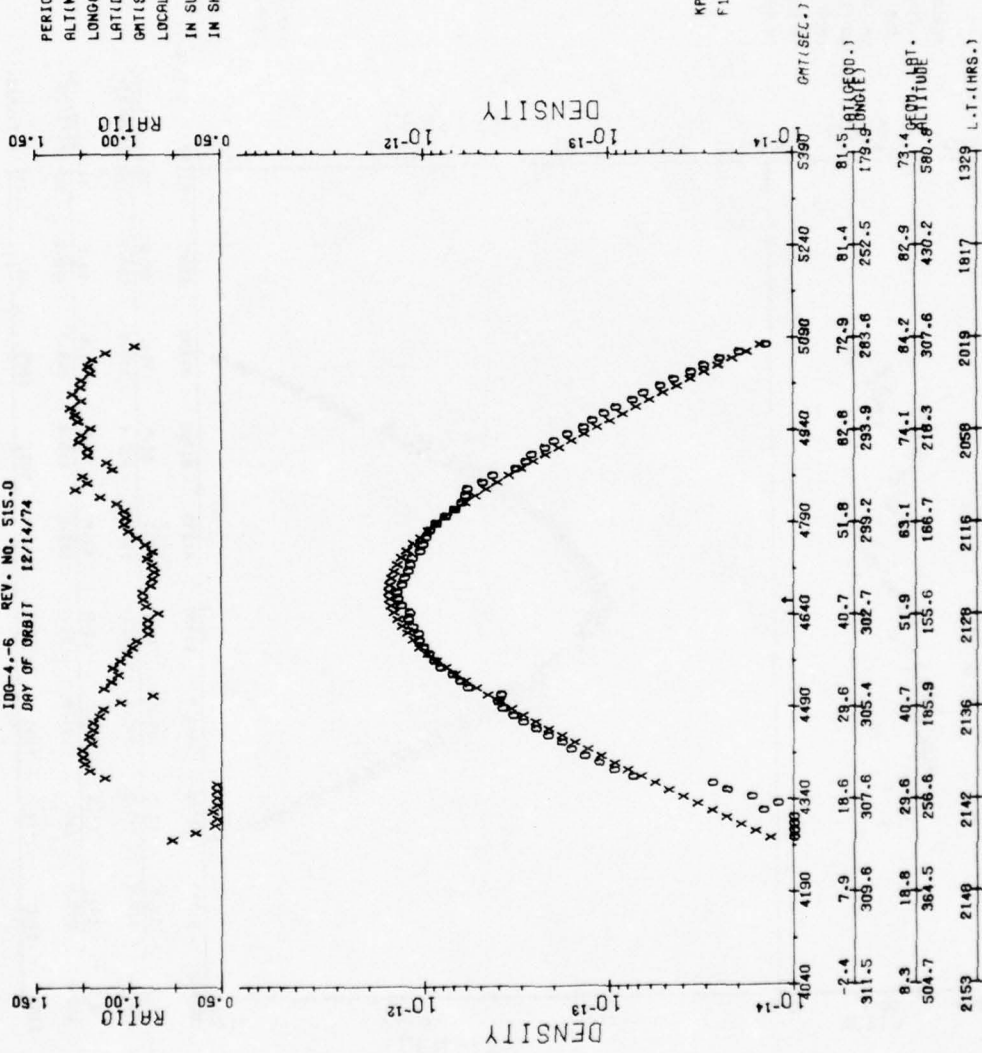
GMT (SEC.)	L.T. (HRS.)	DENSITY	RATIO	LONG (E)	ALT (KM.)
80880	2155	0.14	1.00	341.59	155.61
81030	2150	0.14	1.00	341.59	155.61
81180	2144	0.14	1.00	341.59	155.61
81330	2137	0.14	1.00	341.59	155.61
81480	2128	0.14	1.00	341.59	155.61
81630	2115	0.14	1.00	341.59	155.61
81780	2052	0.14	1.00	341.59	155.61
81930	1959	0.14	1.00	341.59	155.61
82060	1647	0.14	1.00	341.59	155.61
82230	1231	0.14	1.00	341.59	155.61

100-4.-6 REV. NO. 515.0
 DAY OF ORBIT 12/14/74



PERIODEE
 ALT(KM.)= 154.45
 LONG(E)= 302.02
 LAT(DEG.)= 43.27
 GMT(SEC.)= 4674.7 (0117H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 4040. TO 5940.
 IN SHADE FROM 5940. TO 5390.

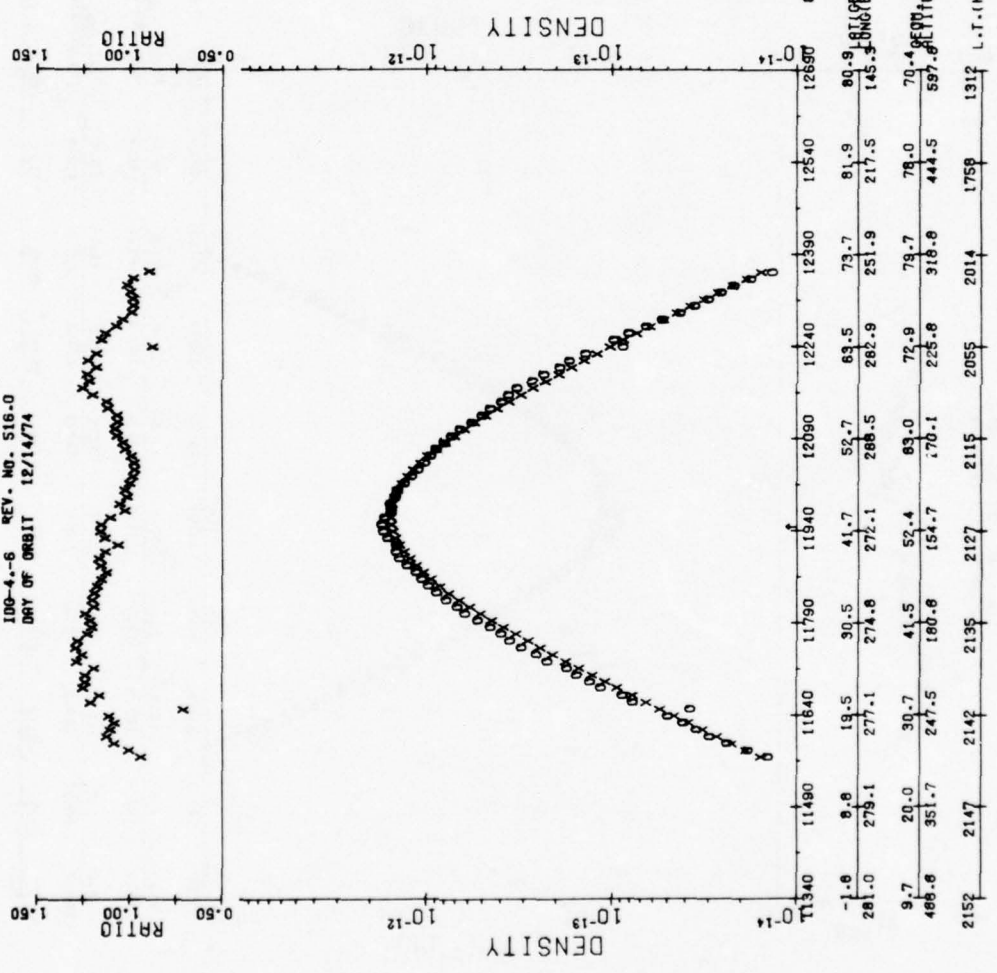
KP=5-
 F10.7=81.0



GMT (SEC.)	DENSITY	LONG (DEG.)	LAT (DEG.)	ALT (KM.)
4190	10 ⁻¹⁴	309.6	43.27	154.45
4240	10 ⁻¹⁴	309.6	43.27	154.45
4290	10 ⁻¹⁴	309.6	43.27	154.45
4340	10 ⁻¹⁴	309.6	43.27	154.45
4390	10 ⁻¹⁴	309.6	43.27	154.45
4440	10 ⁻¹⁴	309.6	43.27	154.45
4490	10 ⁻¹⁴	305.4	43.27	154.45
4540	10 ⁻¹⁴	302.7	43.27	154.45
4590	10 ⁻¹⁴	302.7	43.27	154.45
4640	10 ⁻¹¹	302.7	43.27	154.45
4690	10 ⁻¹²	302.7	43.27	154.45
4740	10 ⁻¹³	299.2	43.27	154.45
4790	10 ⁻¹³	299.2	43.27	154.45
4840	10 ⁻¹³	293.9	43.27	154.45
4890	10 ⁻¹³	293.9	43.27	154.45
4940	10 ⁻¹³	283.6	43.27	154.45
4990	10 ⁻¹³	283.6	43.27	154.45
5040	10 ⁻¹³	272.9	43.27	154.45
5090	10 ⁻¹³	272.9	43.27	154.45
5140	10 ⁻¹³	252.5	43.27	154.45
5190	10 ⁻¹³	252.5	43.27	154.45
5240	10 ⁻¹³	218.3	43.27	154.45
5290	10 ⁻¹³	218.3	43.27	154.45
5340	10 ⁻¹³	186.7	43.27	154.45
5390	10 ⁻¹³	186.7	43.27	154.45

100-4-S REV. NO. 516-0
 DRY OF ORBIT 12/14/74

PERIGEE
 ALT(KM.)= 154.40
 LONG(L°)= 271.67
 LAT(DEC.)= 43.09
 GMT(SEC.)= 11959.2 (0310H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 11340. TO 13280.
 IN SHADE FROM 13280. TO 12680.

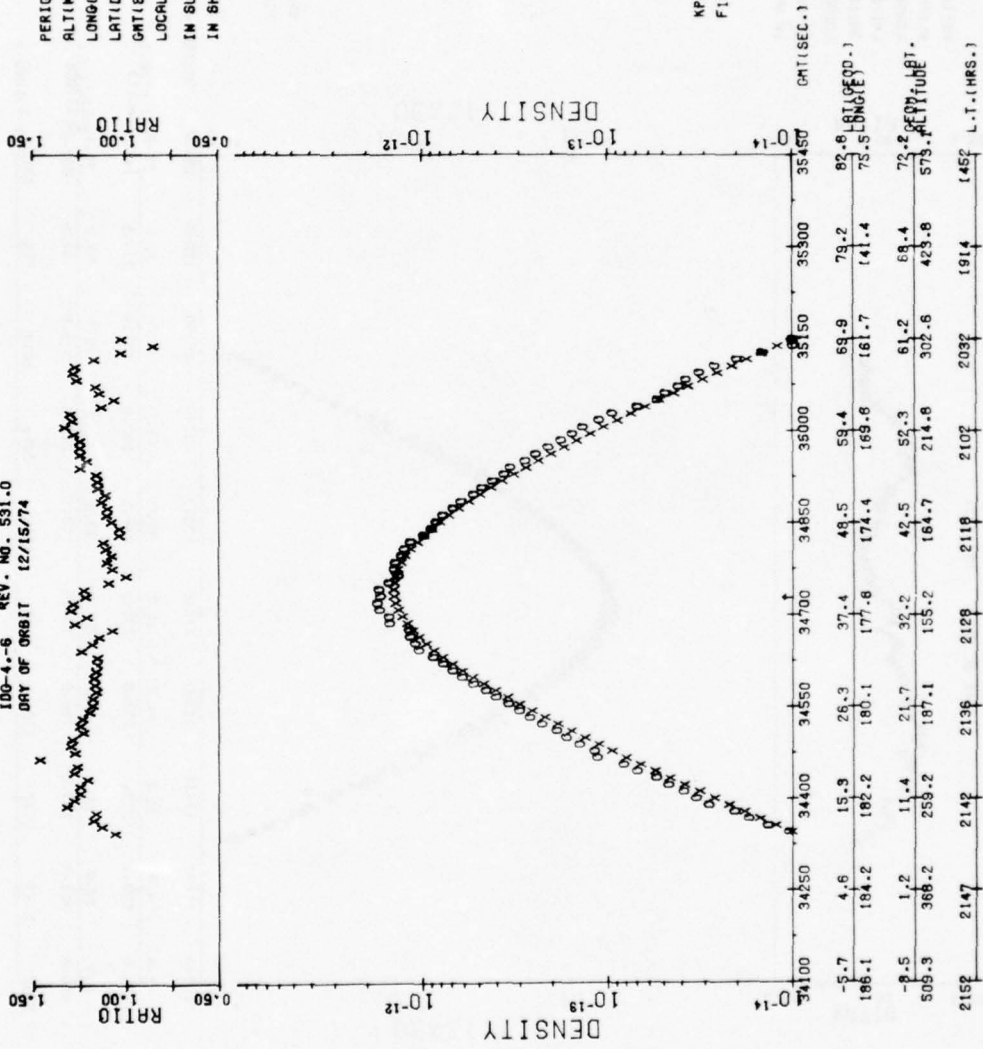


KP=S-
 F10-7=81.0

100-4.-6 REV. NO. 531.0
 DRY OF ORBIT 12/15/74

PERIODE
 ALT(KM.)= 153.68
 LONG(L) = 176.79
 LAT(DEC.) = 40.43
 GMT(SEC.) = 34740.5 (0939H)
 LOCAL TIME 2126 (M)
 IN SUN FROM 34100. TO 36000.
 IN SHADE FROM 38000. TO 35450.

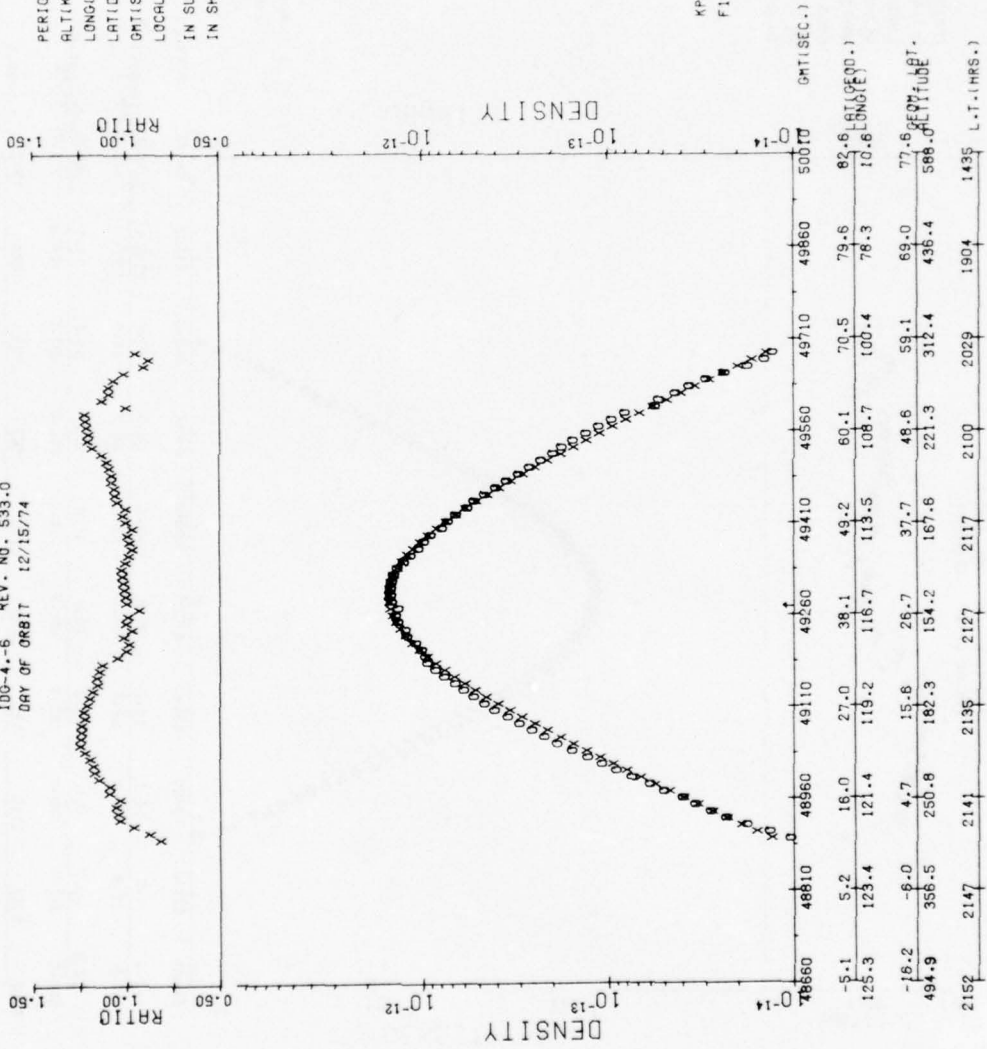
MP=2
 F10.7=81.0



100-4-6 REV. NO. 533.0
 DRY OF ORBIT 12/15/74

PERIODE
 ALT(KM.)= 153.59
 LONG(E)= 116.19
 LAT(DEG.)= 40.08
 GMT(SEC.)= 49286.5 (1341H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 48660. TO 50580.
 IN SHADE FROM 50580. TO 50010.

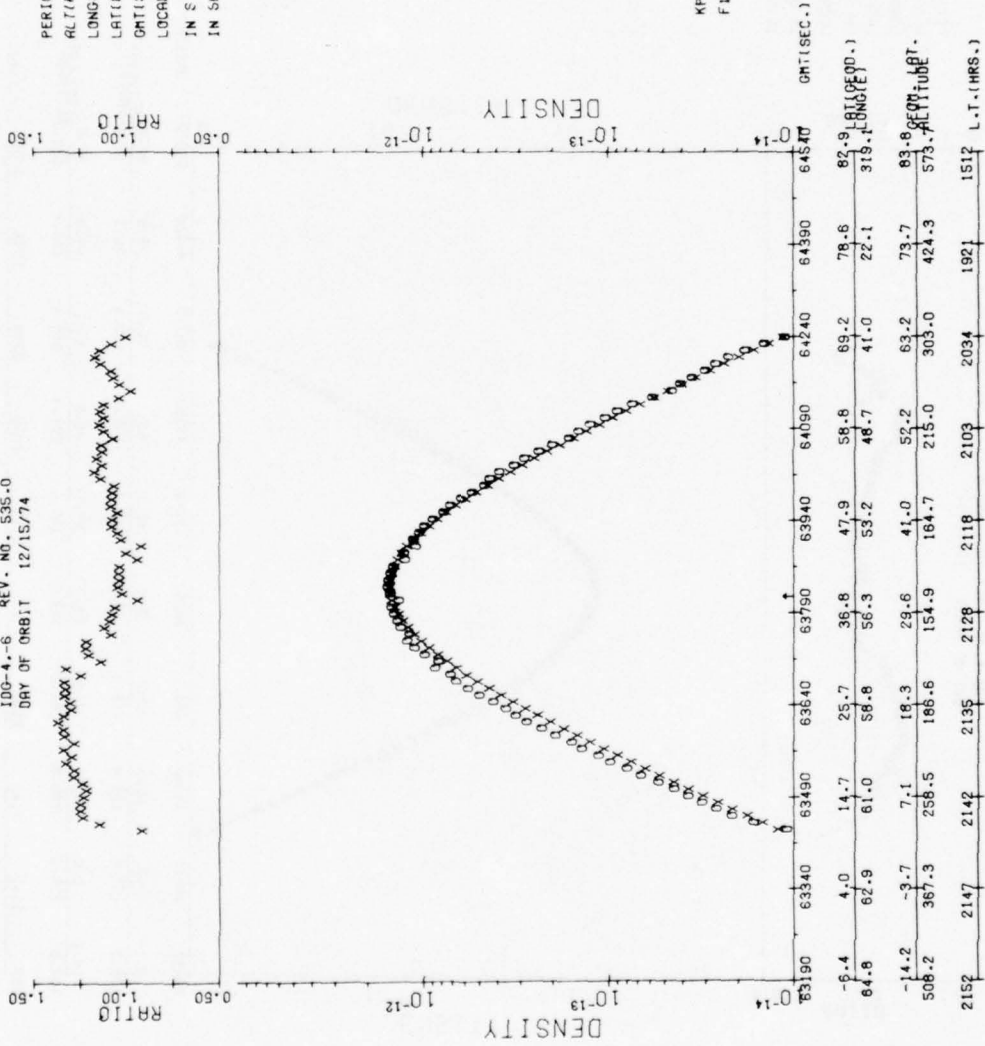
KP=4-
 F10.7=81.0



100-4.-6 REV. NO. 535.0
 DAY OF ORBIT 12/15/74

PERIODEE
 ALT(KM.)= 153.50
 LONG(L) = 55.59
 LAT(DEC.)= 39.73
 GMT(SEC.)= 63629.7 (1743H)
 LOCAL TIME 2126 (H)
 IN S.I. FROM 63190. TO 65100.
 IN SH.IDE FROM 65100. TO 64540.

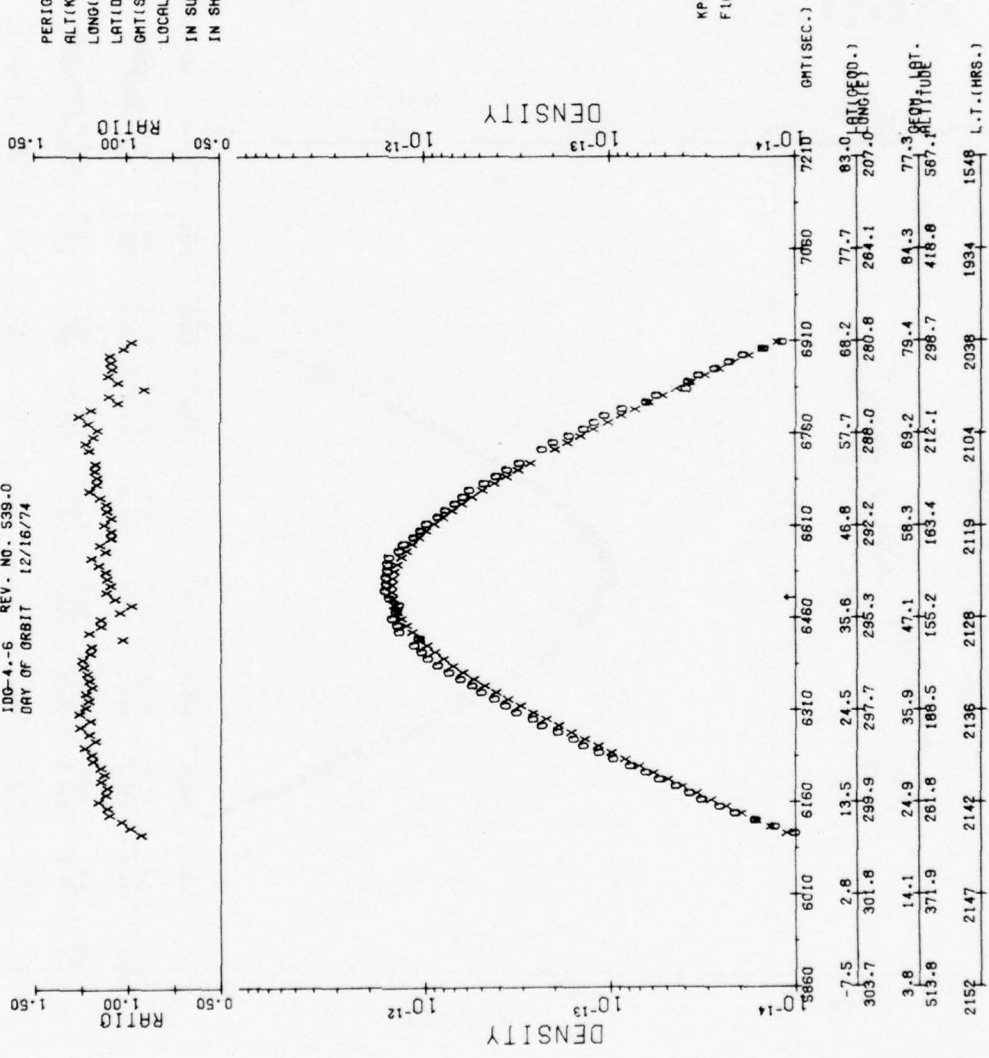
KP=3
 F10.7=81.0



100-4.-6 REV. NO. 539-0
 DRY OF ORBIT 12/16/74

PERIODE
 ALT(MM.)= 153.39
 LONG(E)= 294.45
 LAT(DEG.)= 39.02
 ORT(SEC.)= 6505.4 (01.48H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 5860. TO 7800.
 IN SHADE FROM 7800. TO 7210.

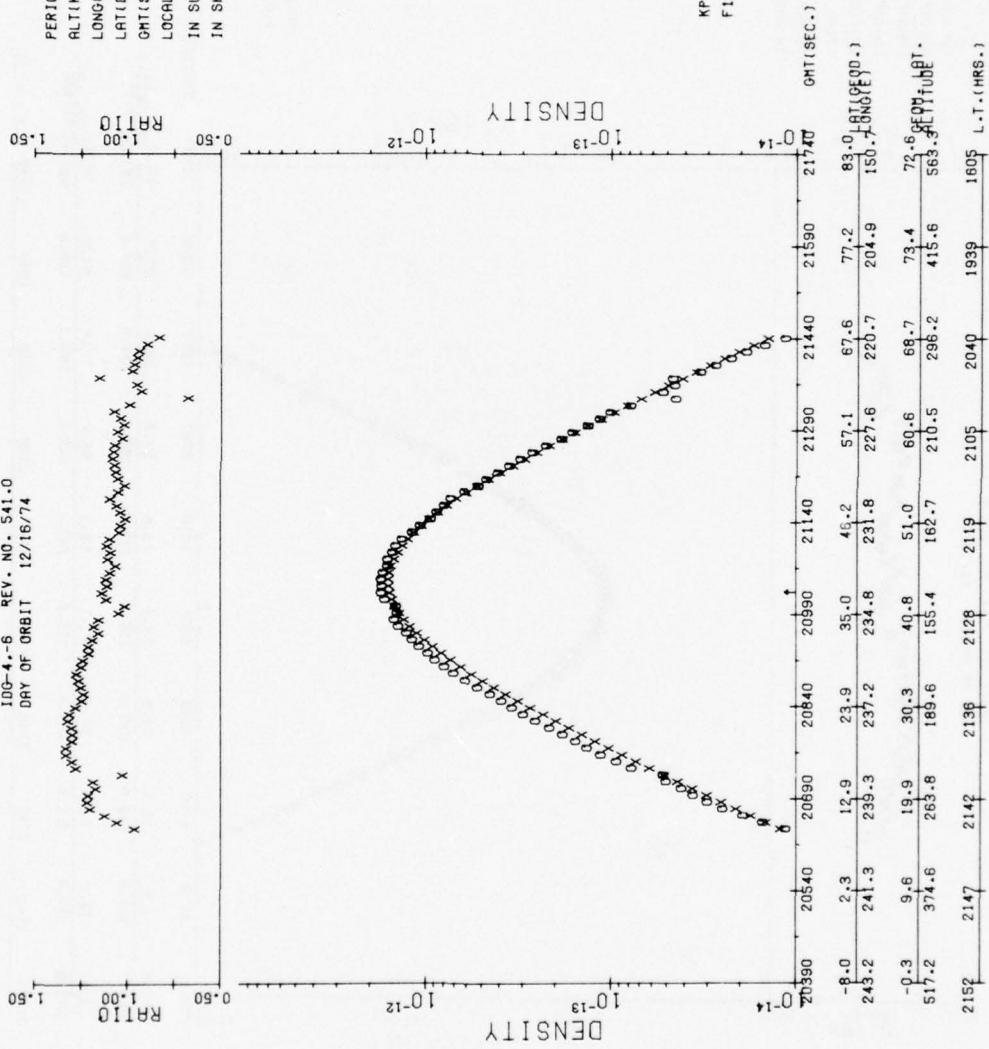
KP=3-
 F10.7=86.0



IDG-4-B REV. NO. 541-0
 DRY OF ORBIT 12/16/74

PERIODE
 ALT(KM.)= 153.24
 LONG(E)= 233.69
 LAT(DEG.)= 38.67
 OMT(SEC.)= 21038.9 (0550H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 20390. TO 22320.
 IN SHADE FROM 22320. TO 21740.

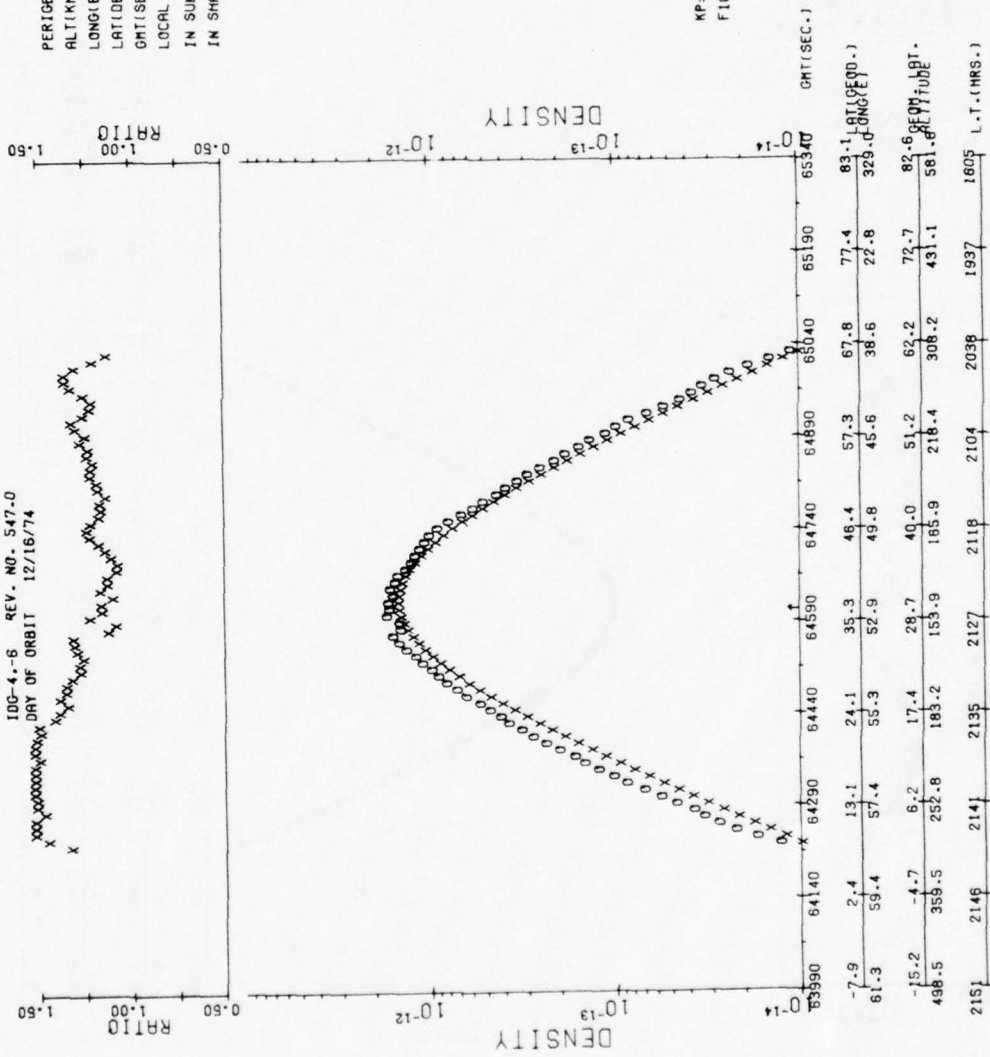
KP=3+
 F10.7=86.0



IDG-4-6 REV. NO. 547-0
 DRY OF ORBIT 12/16/74

PERIGEE
 ALT(KM.)= 152.98
 LONG(E)= 52.29
 LAT(DEG.)= 37.80
 GMT(SEC.)= 64621.3 (1757H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 63990. TO 65880.
 IN SHADE FROM 65880. TO 65340.

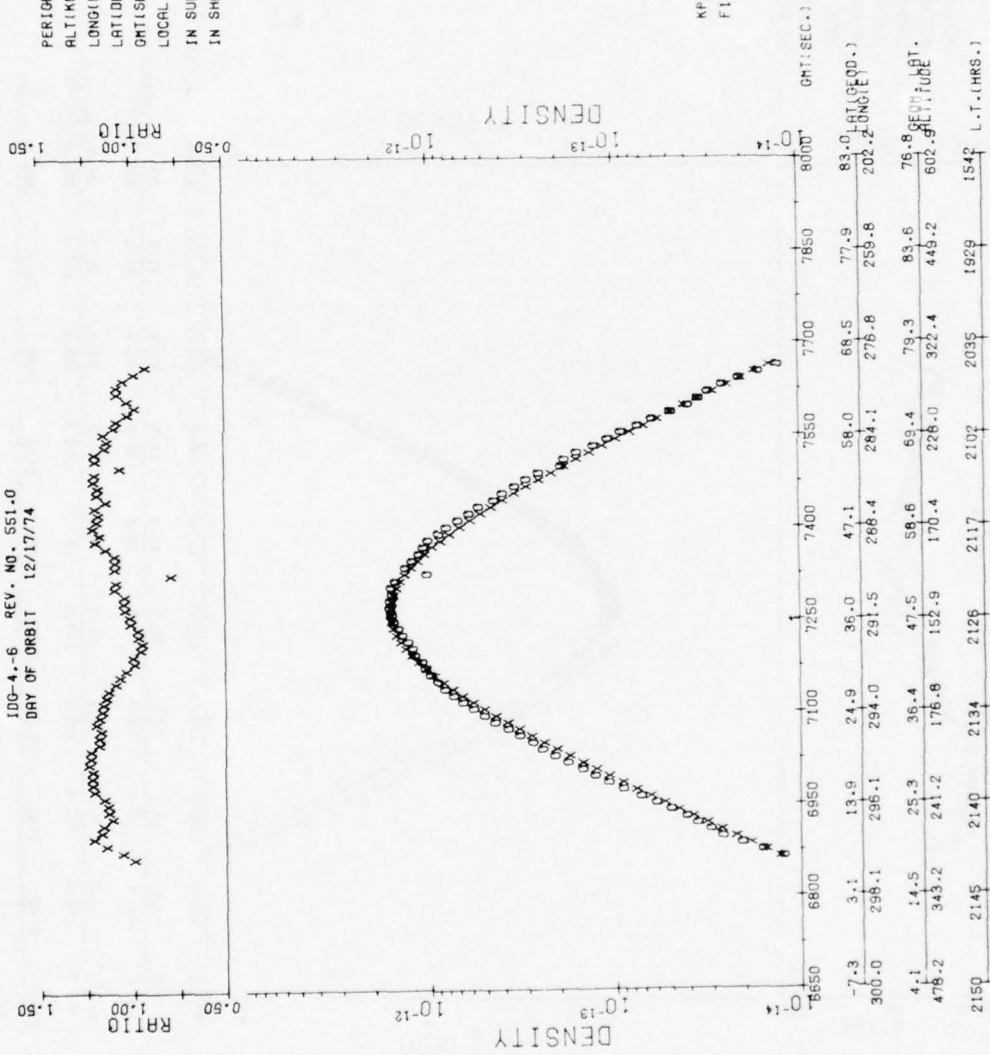
KP=1
 F10.7=86.0



IDO-4-6 REV. NO. 551-0
 DRY OF ORBIT 12/17/74

PERIODE
 ALT(KM.)= 152.82
 LONG(L.)= 291.29
 LAT(DEC.)= 36.90
 GMT(SEC.)= 7261.5 (0201H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 6650. TO 6580.
 IN SHADE FROM 8580. TO 8000.

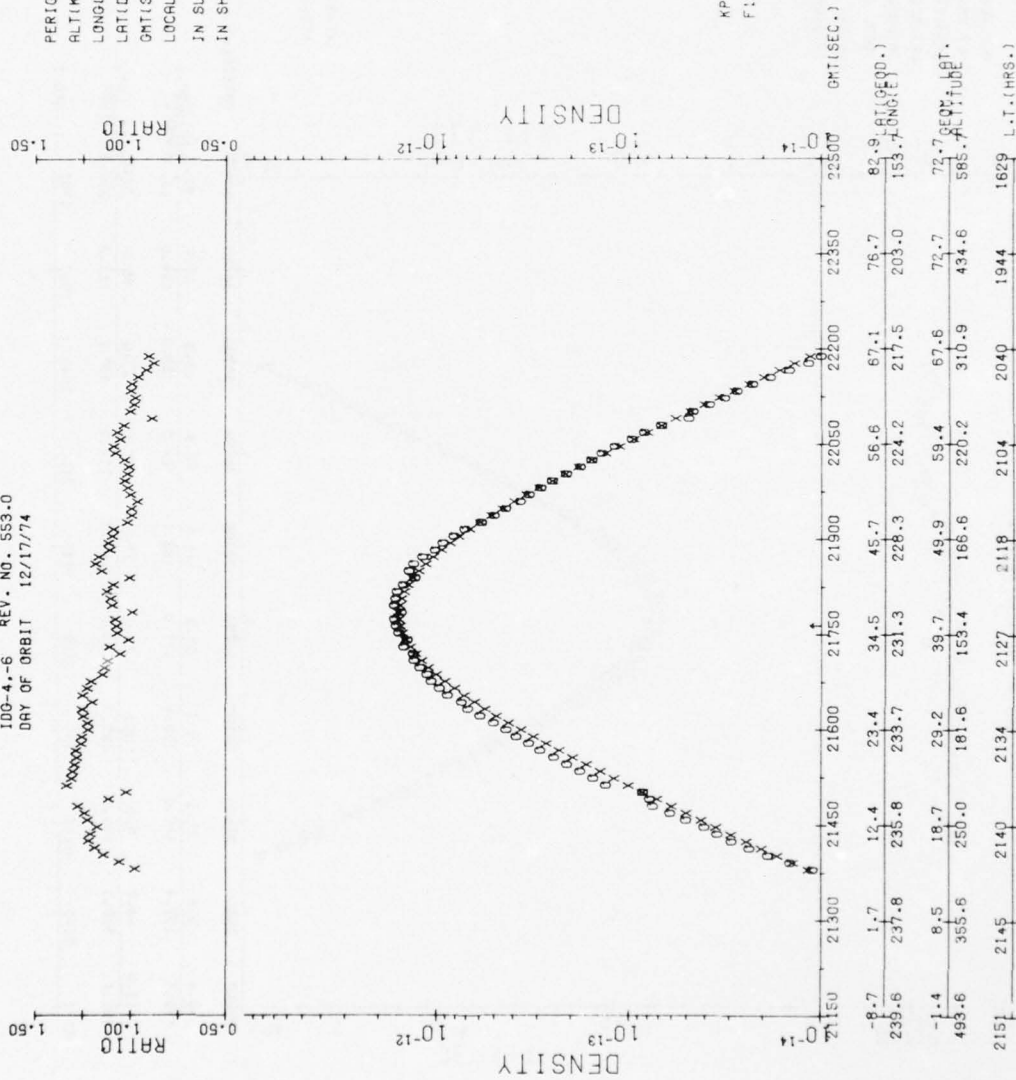
KP=3+
 F10.7=82.0



100-4-6 REV. NO. 553-0
 DRY OF ORBIT 12/17/74

PERIODE
 ALT(KM.)= 152.76
 LONG(°)= 230.80
 LAT(°)= 36.54
 DMT(SEC.)= 21777.0 (0602H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 21150. TO 23040.
 IN SHADE FROM 23040. TO 22500.

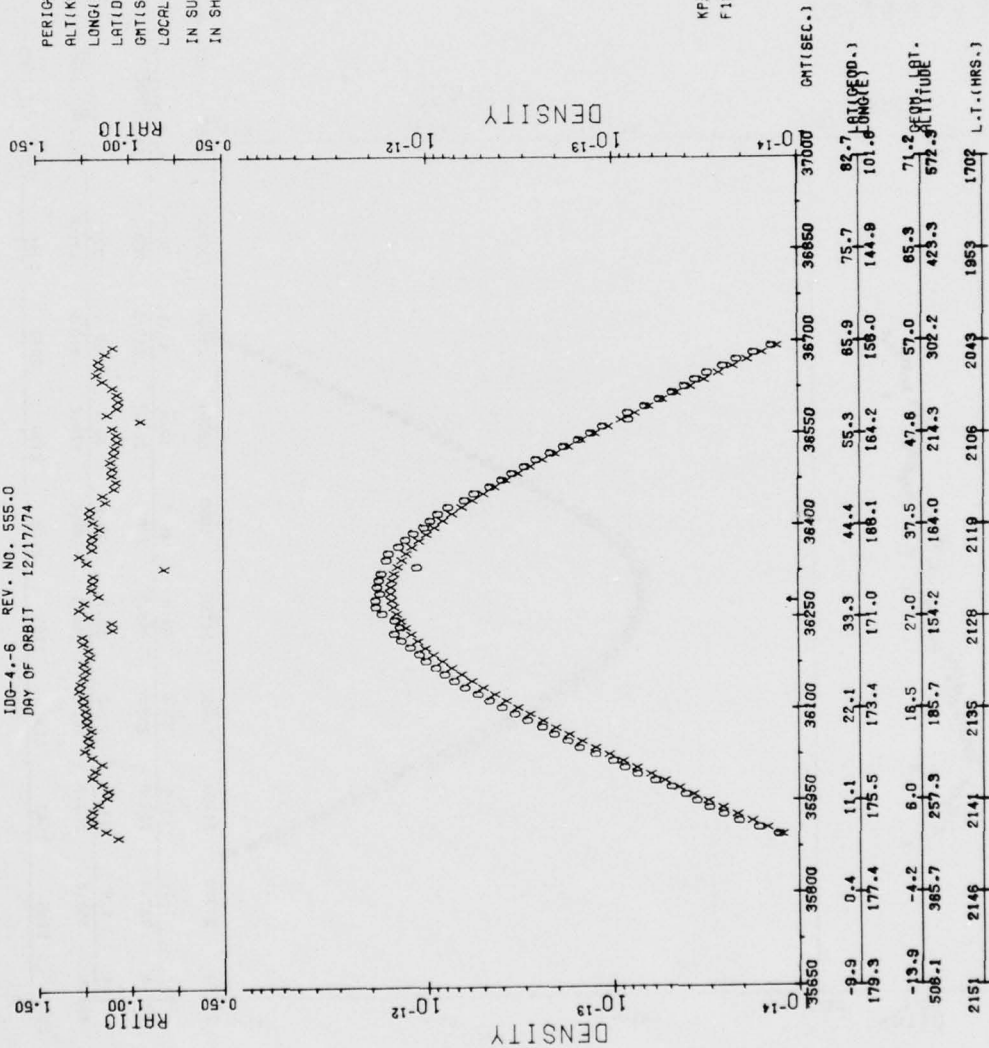
KP=9-
 F10.7=92.0



100-4-6 REV. NO. 555.0
 DRY OF ORBIT 12/17/74

PERIGEE
 ALT(KM.)= 152.76
 LONG(L) = 170.33
 LAT(DEC.) = 36.19
 GMT(SEC.) = 36289.3 (1004H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 35650. TO 37560.
 IN SHADE FROM 37560. TO 37000.

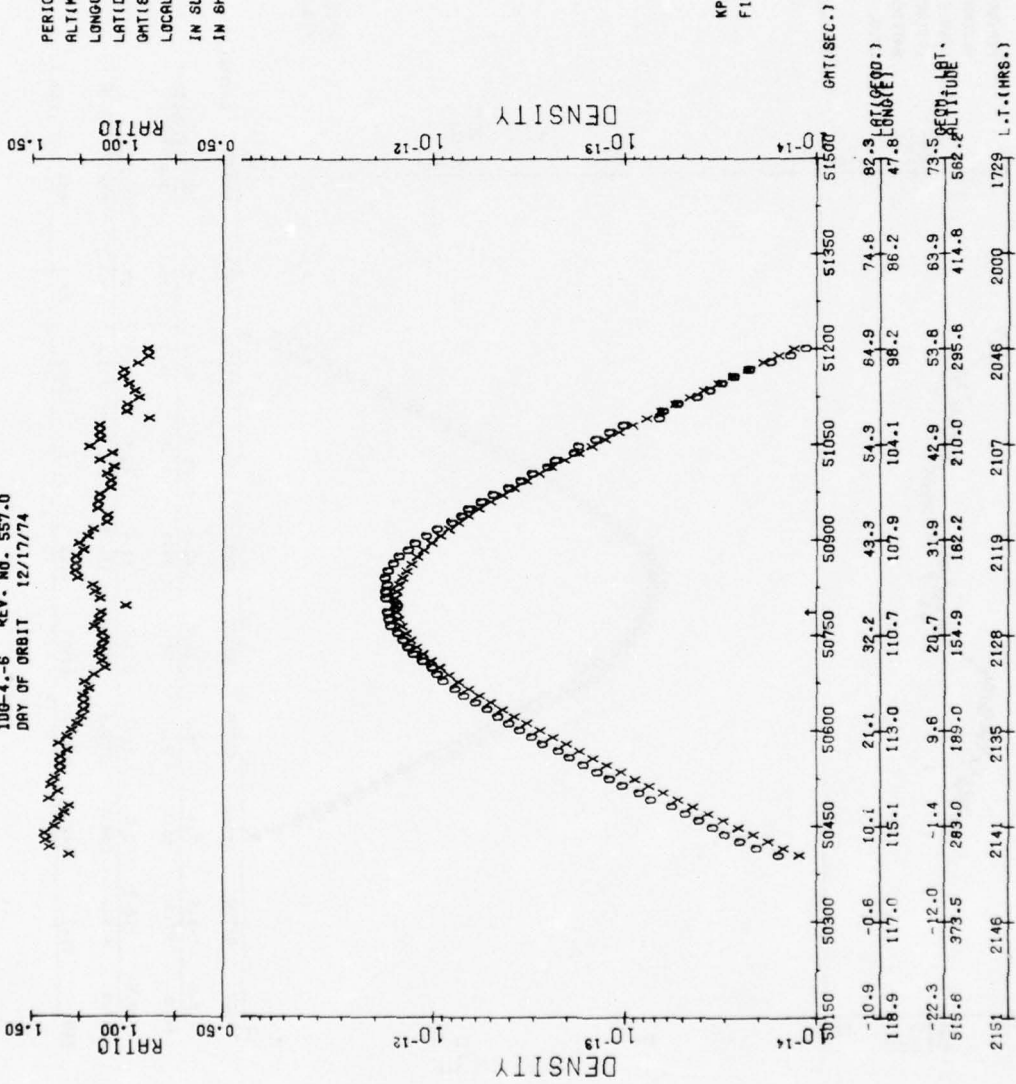
KP=3-
 F10.7=82.0



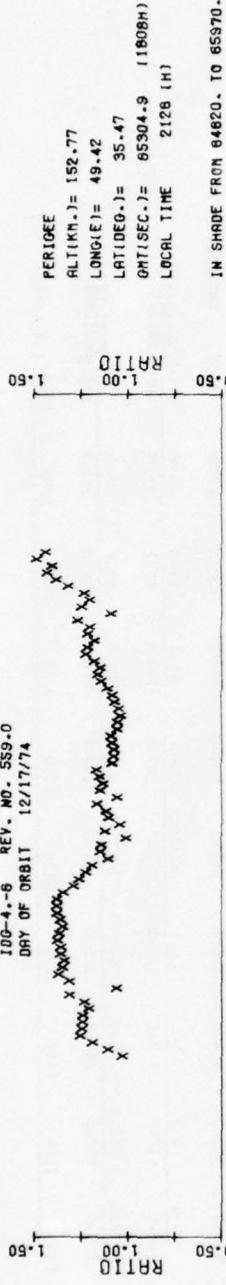
100-4-6 REV. NO. 557-0
 DRY OF ORBIT 12/17/74

PERIOD = 152.78
 ALT(KM) = 109.87
 LONG(°) = 109.87
 LAT(°) = 35.83
 GMT(SEC.) = 50798.7 (1406H)
 LOCAL TIME 2128 (H)
 IN SUN FROM 50150. TO 52080.
 IN SHADE FROM 52080. TO 51600.

KP-3-
 F10.7=92.0



100-4--8 REV. NO. 559-0
 DAY OF ORBIT 12/17/74



PERIGEE
 ALT(KM.)= 152.77
 LONG(E)= 49.42
 LAT(DEC.)= 35.47
 ORT(SEC.)= 65304.9 (1800H)
 LOCAL TIME 2128 (H)

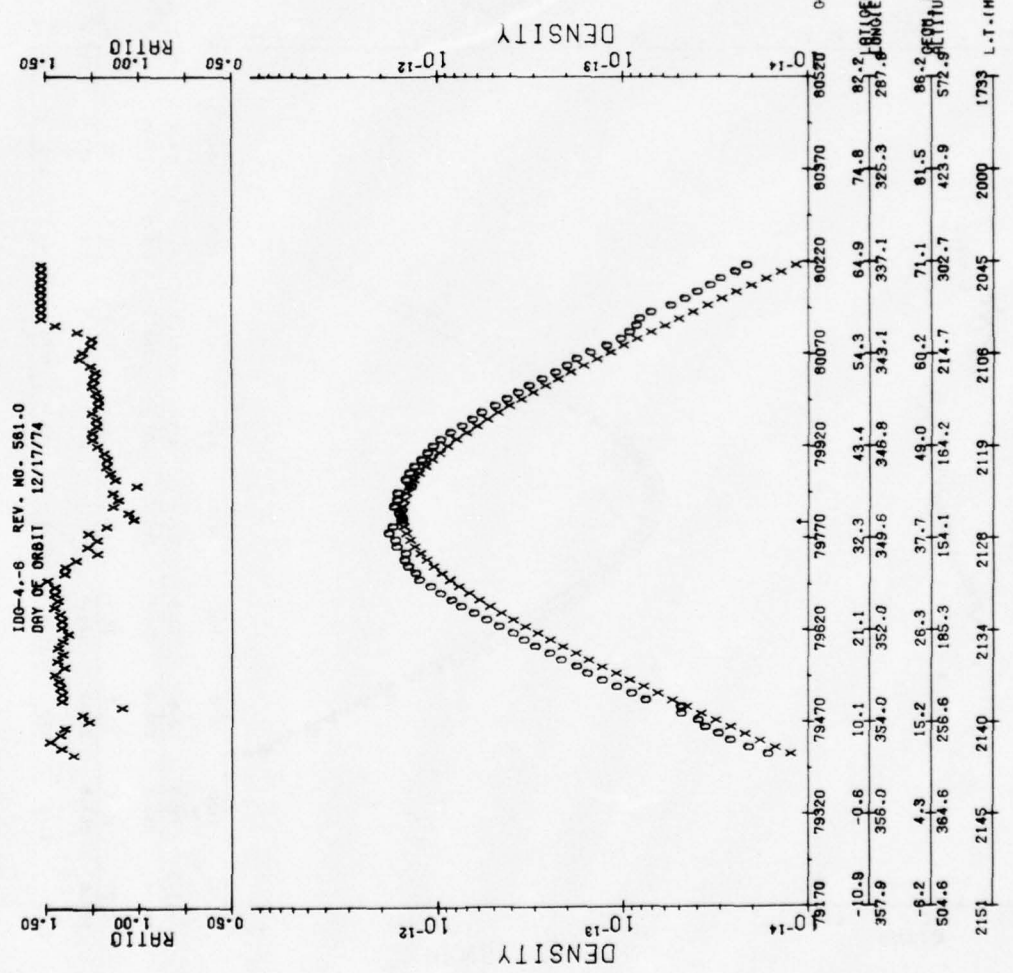
IN SHADE FROM 64820. TO 65970.

KF=2+
 F10.7=92.0

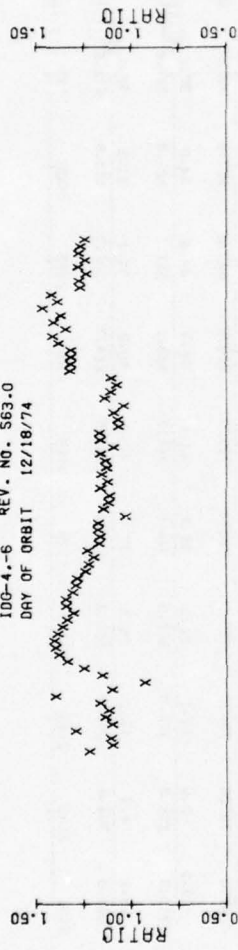
ORBIT (SEC.)	LONG (E)	LAT (DEC.)	HEIGHT (FT.)	L.T. (HRS.)
64820	-13.6	-3.5	7.1	2152
64770	58.9	57.0	55.1	2147
64920	-20.5	-10.2	0.6	2142
64970	553.9	405.1	286.5	2138
65020	18.0	29.2	40.3	2130
65070	53.1	50.8	50.8	2122
65120	11.7	23.0	34.4	2111
65170	203.3	159.4	156.7	2059
65220	23.0	34.4	45.6	2017
65270	156.7	194.8	194.8	2017
65320	156.7	194.8	271.6	2017
65370	45.6	56.7	383.0	2017
65420	56.7	67.4	524.8	2017
65470	56.7	67.4	524.8	2017
65520	56.7	67.4	524.8	2017
65570	56.7	67.4	524.8	2017
65620	56.7	67.4	524.8	2017
65670	56.7	67.4	524.8	2017
65720	56.7	67.4	524.8	2017
65770	56.7	67.4	524.8	2017
65820	56.7	67.4	524.8	2017
65870	56.7	67.4	524.8	2017
65920	56.7	67.4	524.8	2017
65970	56.7	67.4	524.8	2017

PERIOD = 152.77
 ALI(MN.) = 348.99
 LONG(E) = 35.12
 GMT(SEC.) = 79806.3 (2210H)
 LOCAL TIME 2128 (H)
 IN SUN FROM 79170. TO 81060.
 IN SHADE FROM 81060. TO 80520.

KP=2
 F10.7=92.0

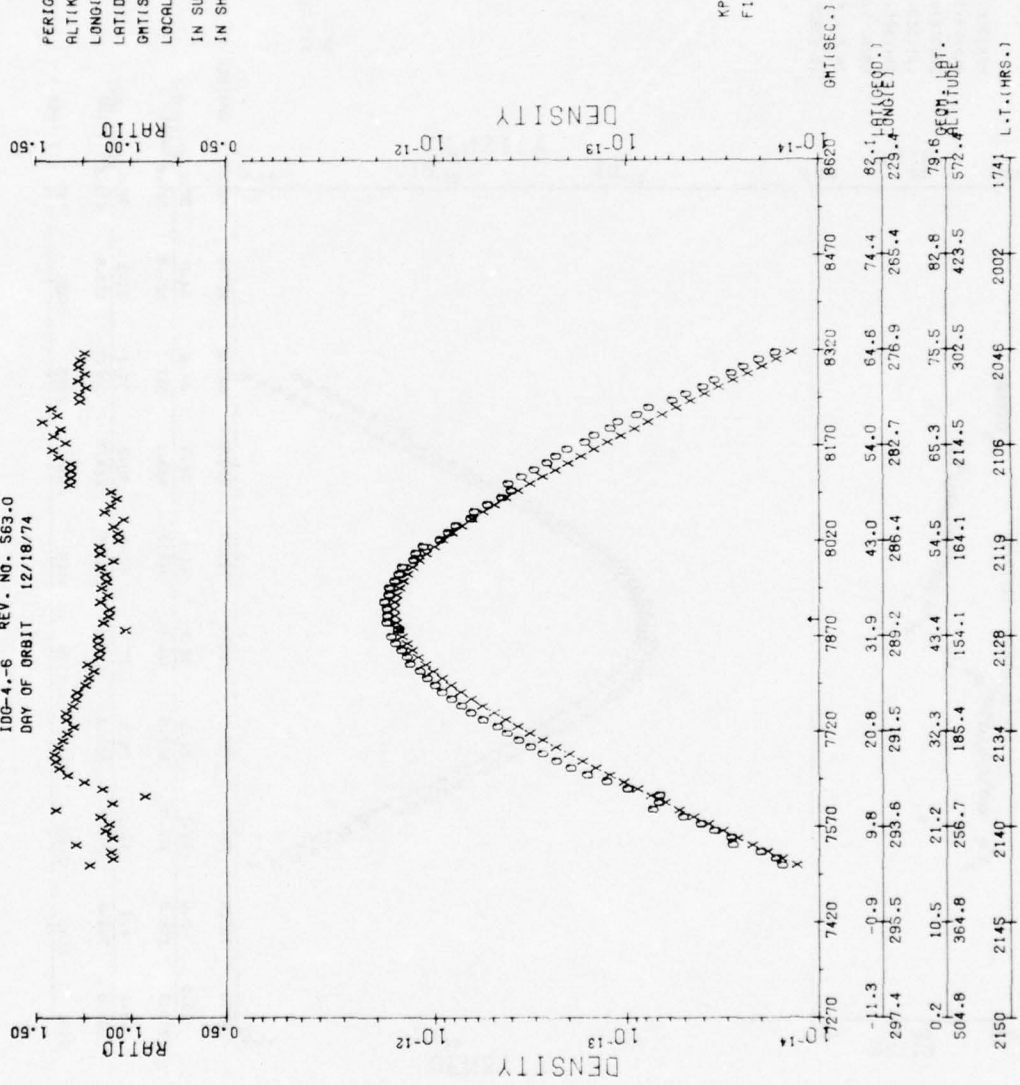


100-4-6 REV. NO. 563-0
 DRY OF ORBIT 12/18/74

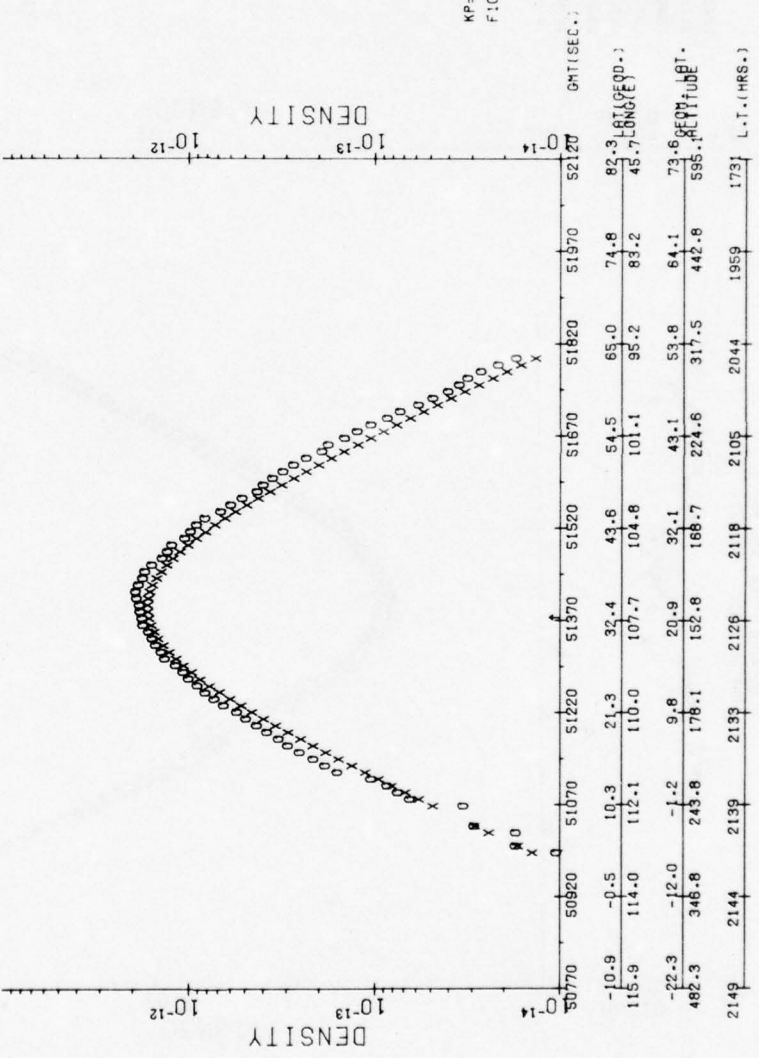
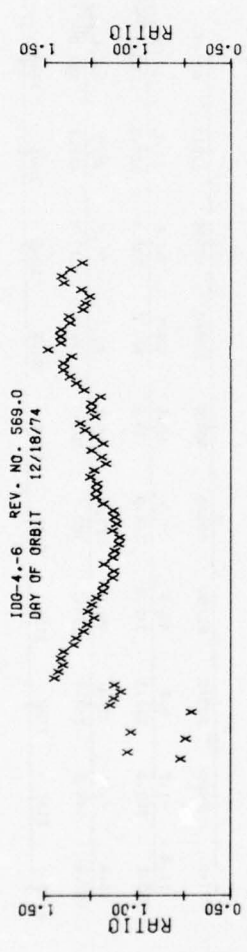


PERIGEE
 ALT(KM.)= 152.77
 LONG(E)= 288.56
 LAT(DEC.)= 34.77
 GMT(SEC.)= 7908.7 (0211H)
 LOCAL TIME 2126 (H)
 IN SUN FROM 7270. TO 9180.
 IN SHADE FROM 9180. TO 8620.

KP=4
 F10.7=91.0



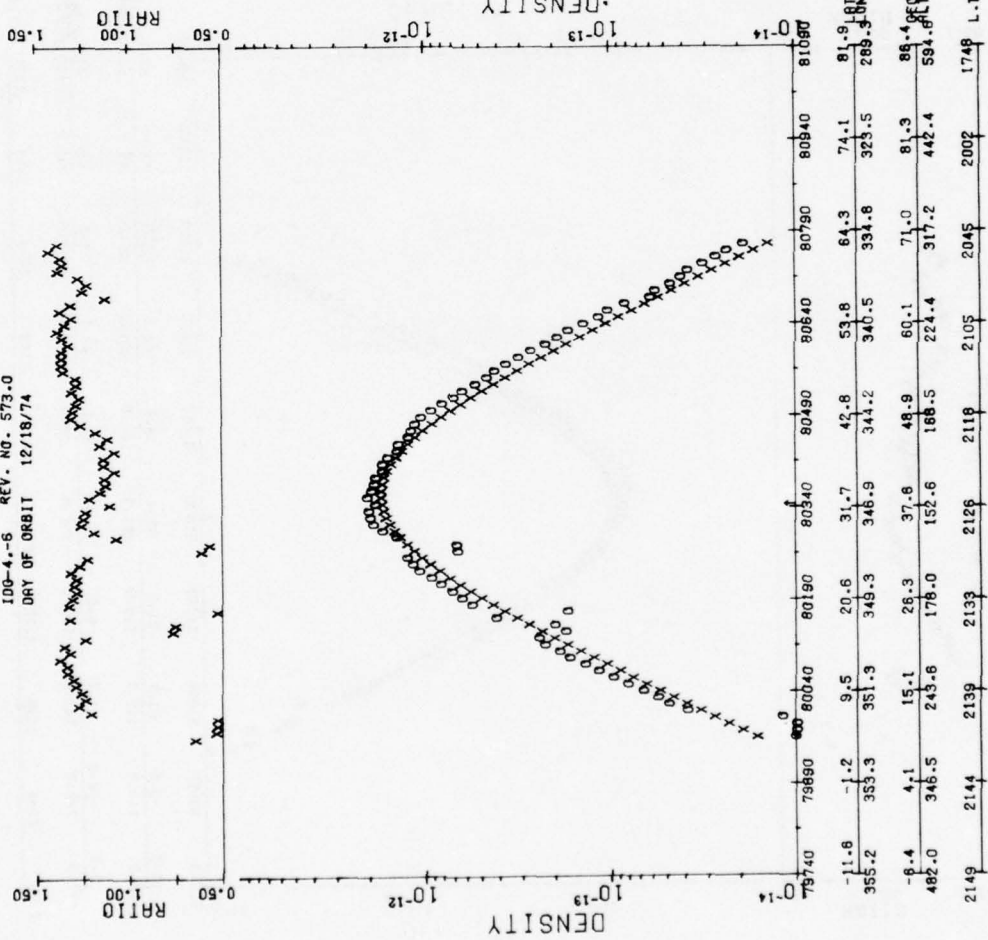
PERIGEE
 ALT(KM.)= 152.51
 LONG(E)= 107.38
 LAT(DEC.)= 33.70
 GMT(SEC.)= 51387.1 (1416H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 50770. TO 52680.
 IN SHADE FROM 52680. TO 52120.



KP=4
 F10.7=91.0

GMT(SEC.)	LONG(DEC.)	PERIGEE ALT(KM.)	DENSITY	RATIO
50770	-10.9	152.51	0.14	1.00
50820	-10.9	152.51	0.14	1.00
50870	-10.9	152.51	0.14	1.00
50920	-10.9	152.51	0.14	1.00
50970	-10.9	152.51	0.14	1.00
51020	-10.9	152.51	0.14	1.00
51070	-10.9	152.51	0.14	1.00
51120	-10.9	152.51	0.14	1.00
51170	-10.9	152.51	0.14	1.00
51220	-10.9	152.51	0.14	1.00
51270	-10.9	152.51	0.14	1.00
51320	-10.9	152.51	0.14	1.00
51370	-10.9	152.51	0.14	1.00
51387	-10.9	152.51	10^-11	1.4
51390	-10.9	152.51	0.14	1.00
51400	-10.9	152.51	0.14	1.00
51450	-10.9	152.51	0.14	1.00
51500	-10.9	152.51	0.14	1.00
51550	-10.9	152.51	0.14	1.00
51600	-10.9	152.51	0.14	1.00
51650	-10.9	152.51	0.14	1.00
51700	-10.9	152.51	0.14	1.00
51750	-10.9	152.51	0.14	1.00
51800	-10.9	152.51	0.14	1.00
51850	-10.9	152.51	0.14	1.00
51900	-10.9	152.51	0.14	1.00
51950	-10.9	152.51	0.14	1.00
52000	-10.9	152.51	0.14	1.00
52050	-10.9	152.51	0.14	1.00
52100	-10.9	152.51	0.14	1.00
52120	-10.9	152.51	0.14	1.00

100-4.-6 REV. NO. 573-0
 DRY OF ORBIT 12/18/74



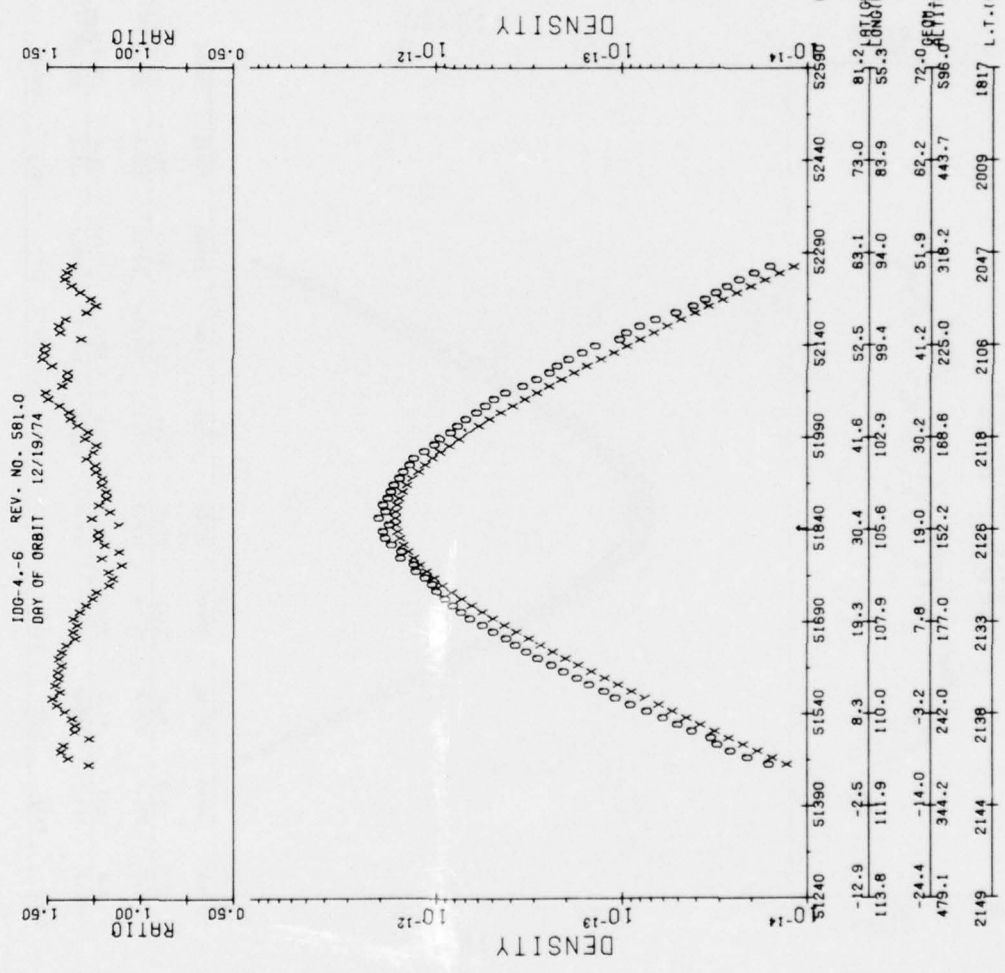
PERIODE
 ALT(KM.)= 152.33
 LONGIE)= 346-65
 LAT(DEG.)= 32.88
 GMT(SEC.)= 80357.2 (2219H)
 LOCAL TIME 2125 (H)
 IN SUN FROM 79740. TO 81660.
 IN SHADE FROM 81660. TO 81090.

MP-5-
 F10.7=91.0

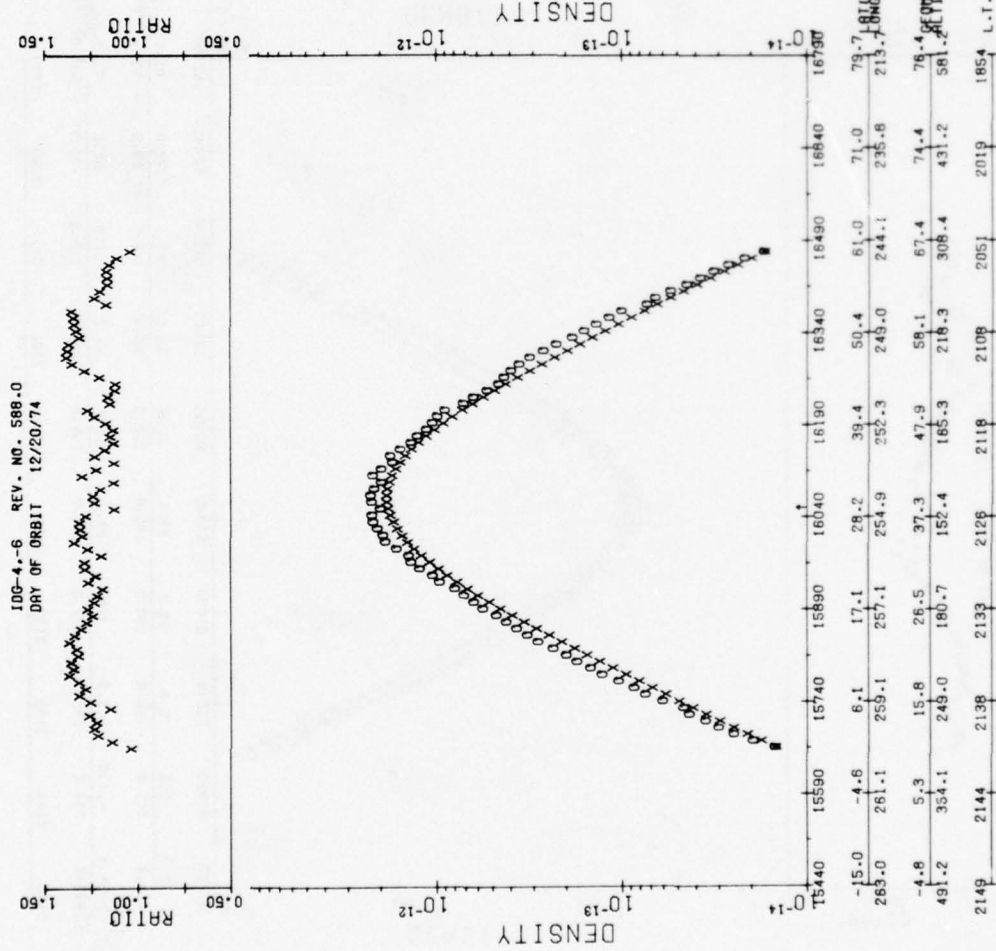
PERIOD= 151.98
 ALT(KM)= 105.37
 LONG(E)= 105.37
 LAT(DEG)= 31.57
 GMT(SEC)= 51855.1 (1424H)
 LOCAL TIME 2125 (H)

IN SHADE FROM S1240 TO S2590.

KP=3+
 F10.7=93.0



100-4-6 REV. NO. 588-0
 DRY OF ORBIT 12/20/74

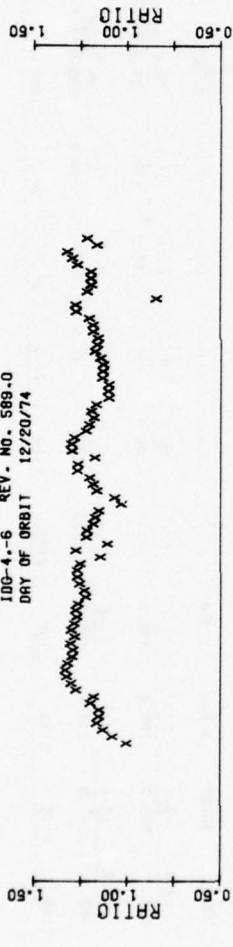


PERIGEE
 ALTITUDE = 151.70
 LONGITUDE = 254.45
 LATITUDE = 30.33
 GMT (SEC.) = 16068.0 (0427H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 15440. TO 16790.

KP=5-
 F10.7=95.0

100-4--6 REV. NO. 589.0
 DAY OF ORBIT 12/20/74



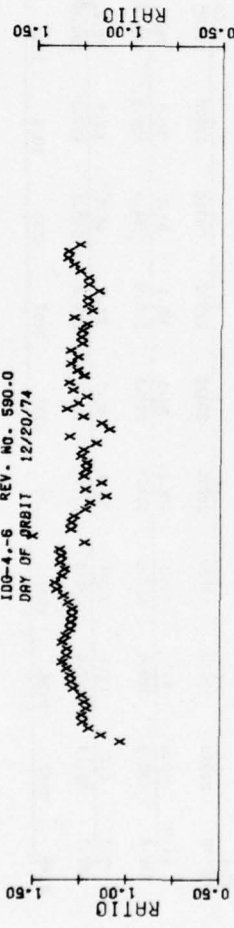
PERIGEE
 ALT(KM.)= 151.69
 LONG(°)= 224.33
 LAT(DEG.)= 30.15
 GMT(SEC.)= 23294.6 (0628H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 22870. TO 24020.

KP=5-
 F10.7=95.0

GMT (SEC.)	DENSITY	RATIO	LONG(°)	LAT(°)	ALT. (K.M.)	L.T. (HRS.)
22870	1.4	1.50				
22880	1.2	1.50				
22890	1.1	1.50				
22900	1.0	1.50				
22910	0.9	1.50				
22920	0.8	1.50				
22930	0.7	1.50				
22940	0.6	1.50				
22950	0.5	1.50				
22960	0.4	1.50				
22970	0.3	1.50				
22980	0.2	1.50				
22990	0.1	1.50				
23000	0.1	1.50				
23010	0.1	1.50				
23020	0.1	1.50				
23030	0.1	1.50				
23040	0.1	1.50				
23050	0.1	1.50				
23060	0.1	1.50				
23070	0.1	1.50				
23080	0.1	1.50				
23090	0.1	1.50				
23100	0.1	1.50				
23110	0.1	1.50				
23120	0.1	1.50				
23130	0.1	1.50				
23140	0.1	1.50				
23150	0.1	1.50				
23160	0.1	1.50				
23170	0.1	1.50				
23180	0.1	1.50				
23190	0.1	1.50				
23200	0.1	1.50				
23210	0.1	1.50				
23220	0.1	1.50				
23230	0.1	1.50				
23240	0.1	1.50				
23250	0.1	1.50				
23260	0.1	1.50				
23270	0.1	1.50				
23280	0.1	1.50				
23290	0.1	1.50				
23300	0.1	1.50				
23310	0.1	1.50				
23320	0.1	1.50				
23330	0.1	1.50				
23340	0.1	1.50				
23350	0.1	1.50				
23360	0.1	1.50				
23370	0.1	1.50				
23380	0.1	1.50				
23390	0.1	1.50				
23400	0.1	1.50				
23410	0.1	1.50				
23420	0.1	1.50				
23430	0.1	1.50				
23440	0.1	1.50				
23450	0.1	1.50				
23460	0.1	1.50				
23470	0.1	1.50				
23480	0.1	1.50				
23490	0.1	1.50				
23500	0.1	1.50				
23510	0.1	1.50				
23520	0.1	1.50				
23530	0.1	1.50				
23540	0.1	1.50				
23550	0.1	1.50				
23560	0.1	1.50				
23570	0.1	1.50				
23580	0.1	1.50				
23590	0.1	1.50				
23600	0.1	1.50				
23610	0.1	1.50				
23620	0.1	1.50				
23630	0.1	1.50				
23640	0.1	1.50				
23650	0.1	1.50				
23660	0.1	1.50				
23670	0.1	1.50				
23680	0.1	1.50				
23690	0.1	1.50				
23700	0.1	1.50				
23710	0.1	1.50				
23720	0.1	1.50				
23730	0.1	1.50				
23740	0.1	1.50				
23750	0.1	1.50				
23760	0.1	1.50				
23770	0.1	1.50				
23780	0.1	1.50				
23790	0.1	1.50				
23800	0.1	1.50				
23810	0.1	1.50				
23820	0.1	1.50				
23830	0.1	1.50				
23840	0.1	1.50				
23850	0.1	1.50				
23860	0.1	1.50				
23870	0.1	1.50				
23880	0.1	1.50				
23890	0.1	1.50				
23900	0.1	1.50				
23910	0.1	1.50				
23920	0.1	1.50				
23930	0.1	1.50				
23940	0.1	1.50				
23950	0.1	1.50				
23960	0.1	1.50				
23970	0.1	1.50				
23980	0.1	1.50				
23990	0.1	1.50				
24000	0.1	1.50				
24010	0.1	1.50				
24020	0.1	1.50				

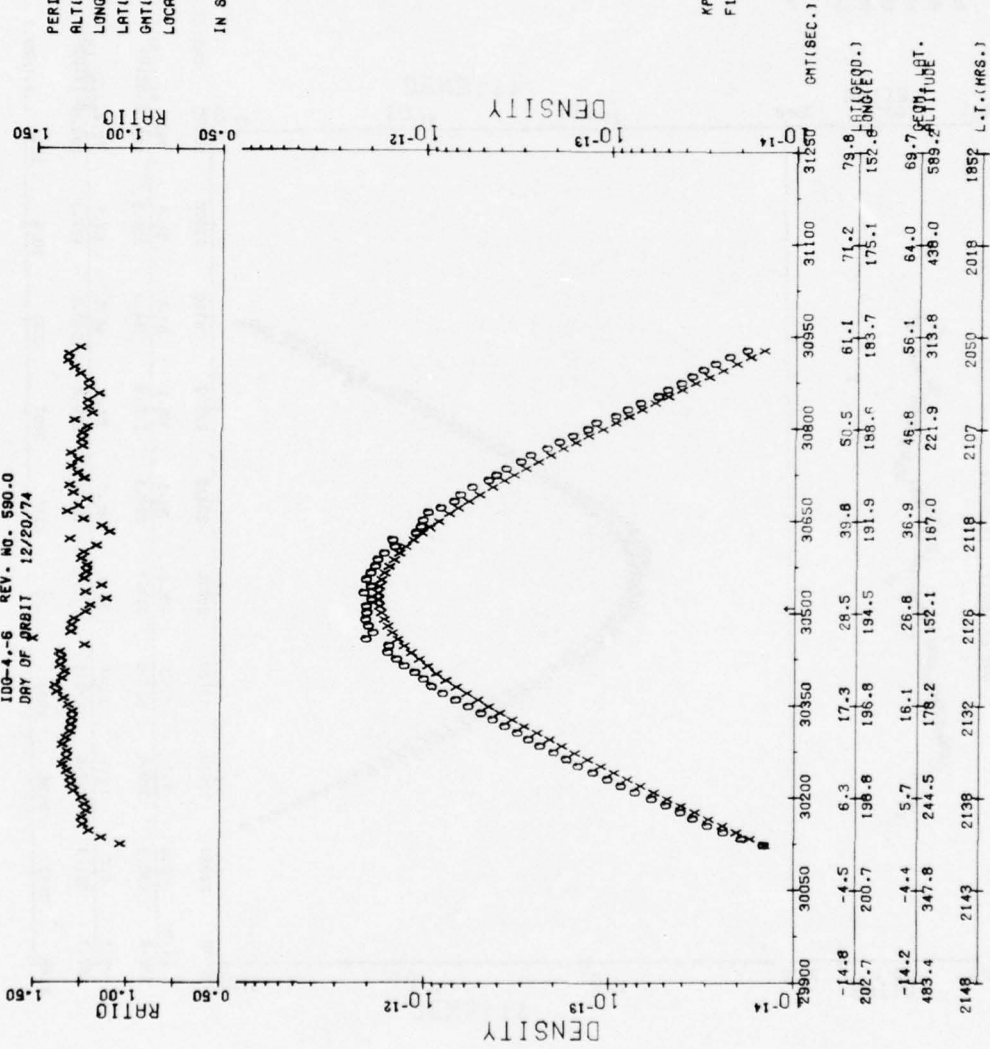
100-4-6 REV. NO. 590.0
 DRY OF ORBIT 12/20/74



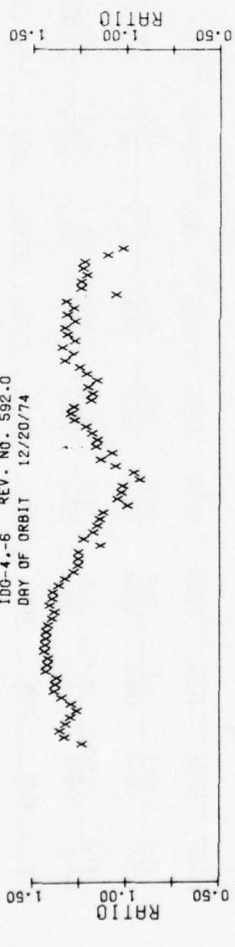
PERIGEE
 ALT(KM.)= 151.67
 LONG(E)= 194.22
 LAT(DEG.)= 29.98
 GMT(SEC.)= 30520.4 (0828H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 29900. TO 31250.

KP=4
 F10.7=96.0



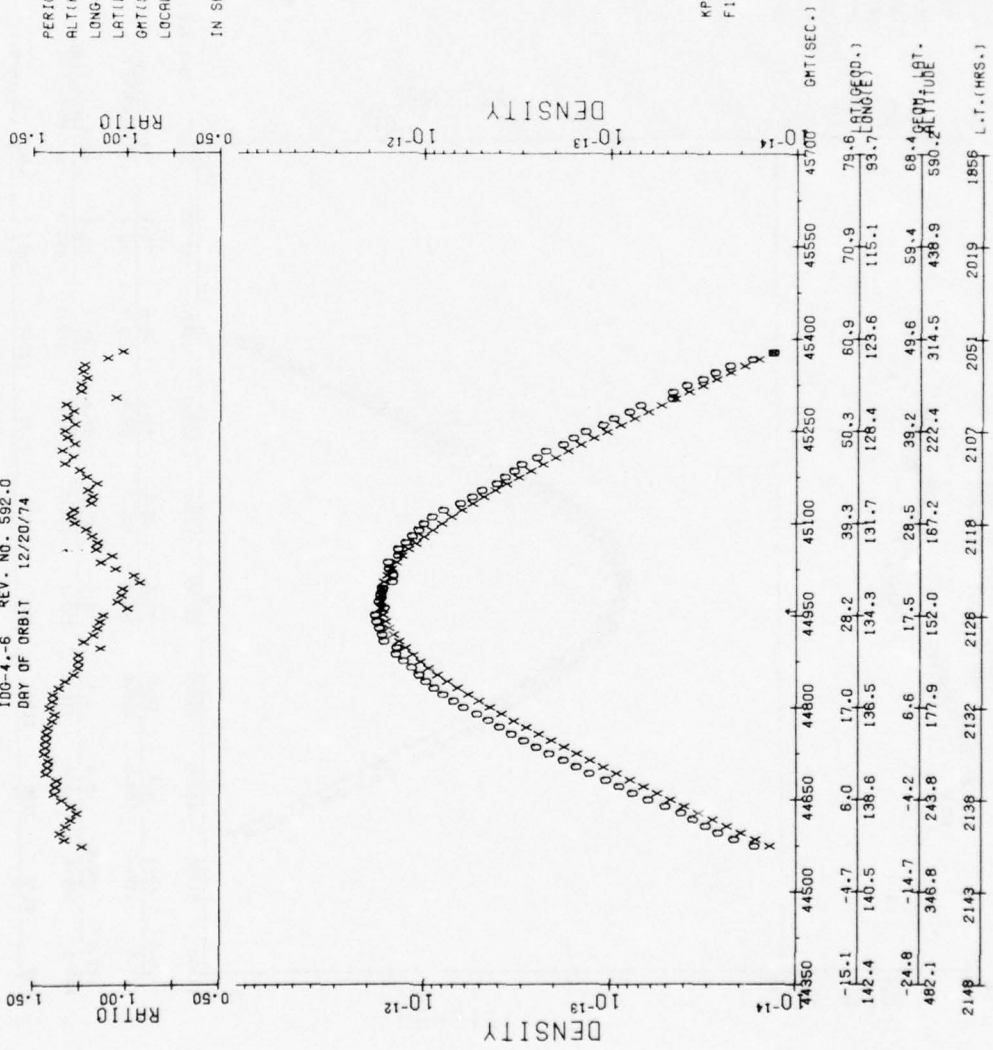
100-4.-6 REV. NO. 592.0
 DRY OF ORBIT 12/20/74



PERIGEE
 ALT(KM.)= 151.64
 LONG(E)= 134.00
 LAT(DEC.)= 29.62
 GMT(SEC.)= 44969.3 (11229H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 44350. TO 45700.

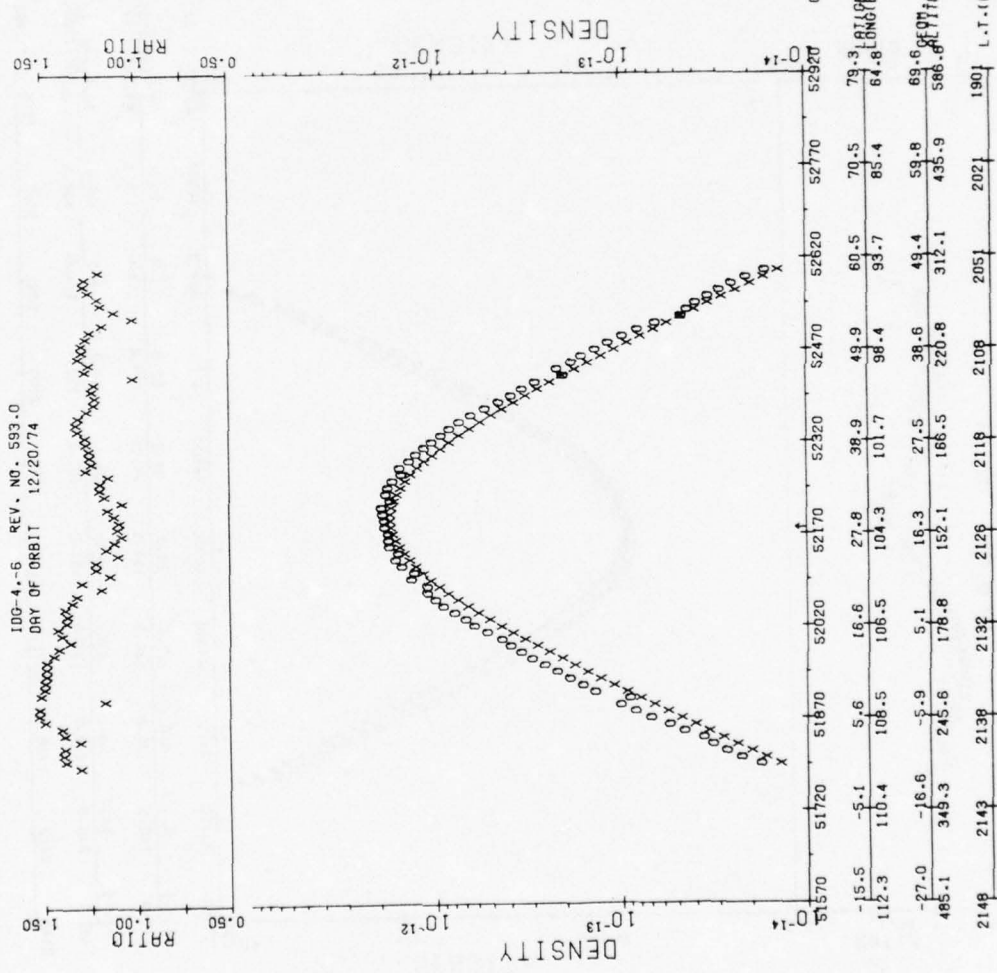
KP=3+
 F10.7=95.0



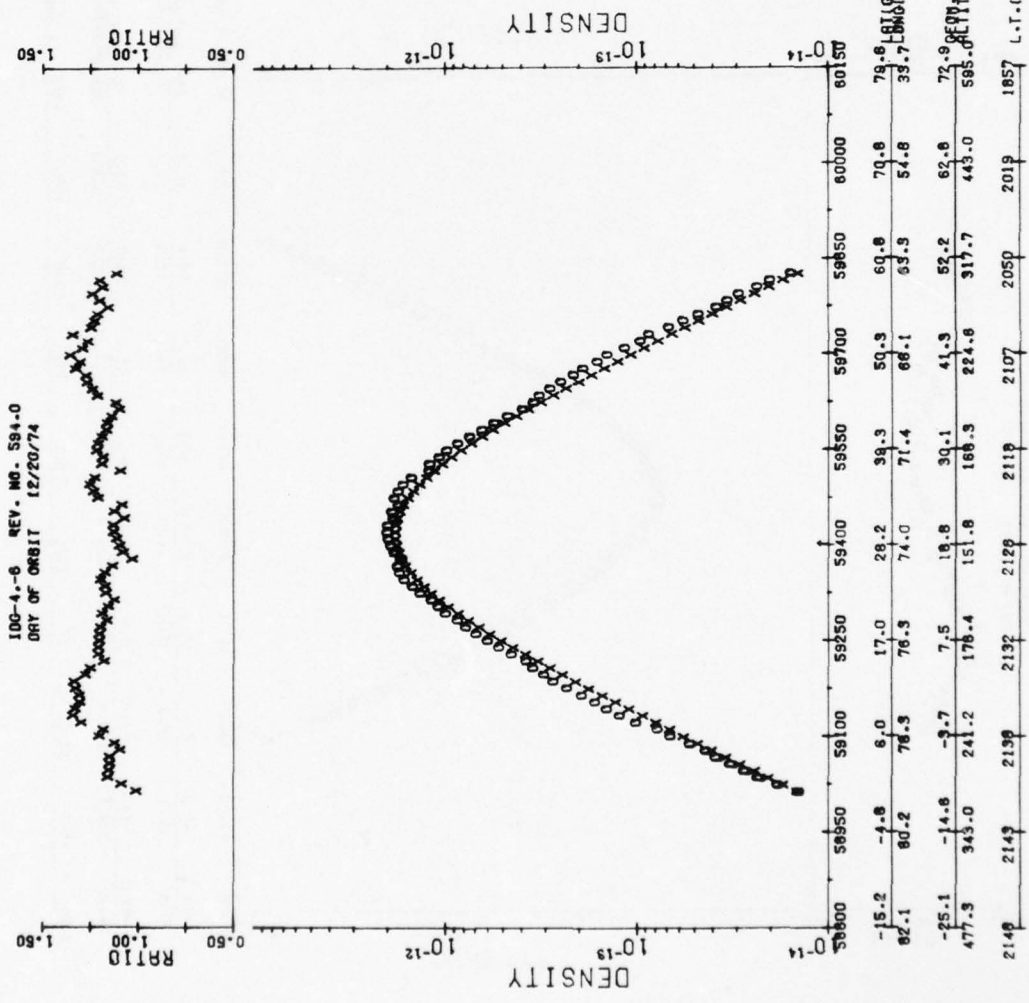
GMT(SEC.)	ALTITUDE (KM)	DENSITY	LONG(E)	L.T.(HRS.)
44350		0.14		
44400	15.1			
44450	-4.7			
44500	140.5			
44550	6.0			
44600	138.6			
44650	-4.2			
44700	177.9			
44750	243.8			
44800	17.0			
44850	136.5			
44900	6.6			
44950	17.5			
45000	28.5			
45050	131.7			
45100	134.3			
45150	28.2			
45200	39.3			
45250	128.4			
45300	50.3			
45350	123.6			
45400	69.9			
45450	123.6			
45500	115.1			
45550	70.9			
45600	79.6			
45650	93.7			
45700				

PERIGEE
 ALT(KM.)= 151.62
 LONG(E)= 103.90
 LAT(DEC.)= 29.44
 GMT(SEC.)= 52192.5 (1429H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 51570. TO 52920.

KP=3+
 F10.7=95.0



100-4-6 REV. NO. 594-0
 DAY OF ORBIT 12/20/74



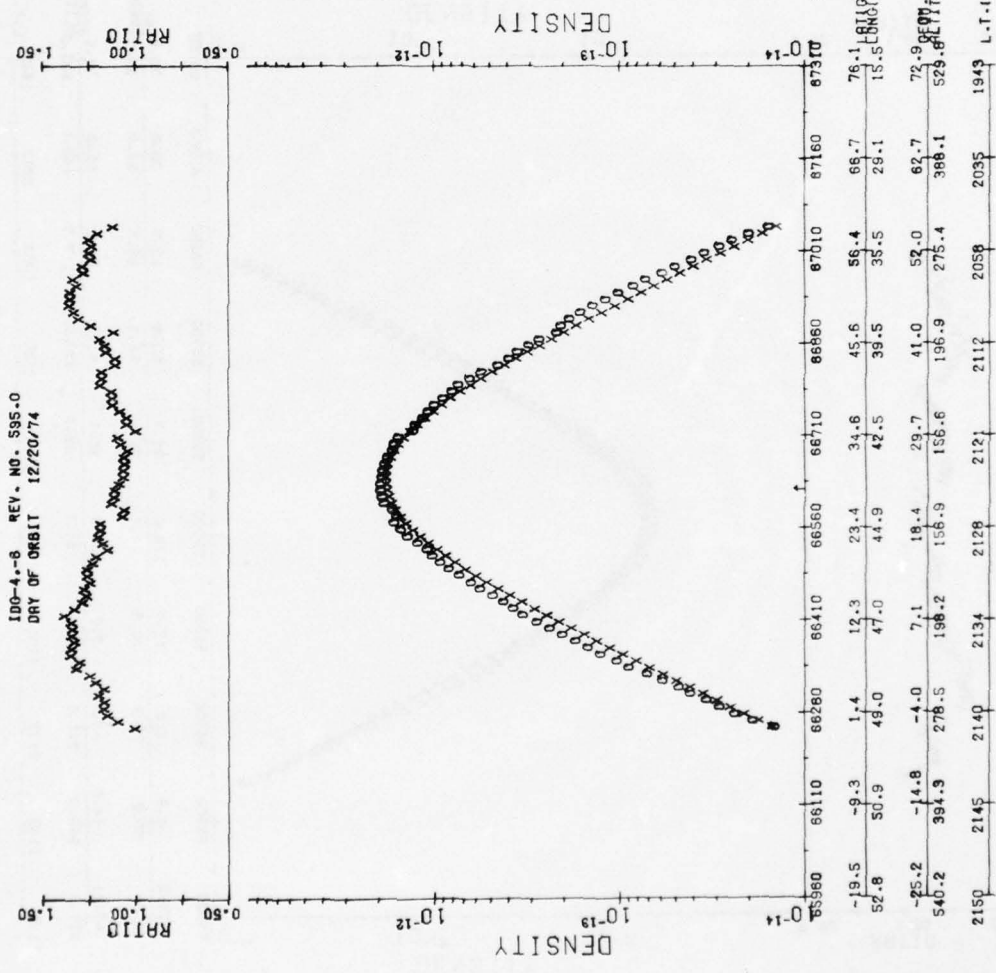
PERIGEE
 ALT(KM.)= 151.81
 LONG(LONG.)= 79.80
 LAT(DEC.)= 29.27
 GMT(SEC.)= 59414.7 (1630H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 58800. TO 60150.

KF=4+
 F10.7=95.0

100-4-8 REV. NO. 595-0
 DRY OF ORBIT 12/20/74

PERIOD = 151.60
 ALT(KM.) = 49.70
 LONGITUDE = 29.09
 LATITUDE = 86636.1 (1890H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 65960. TO 67310.

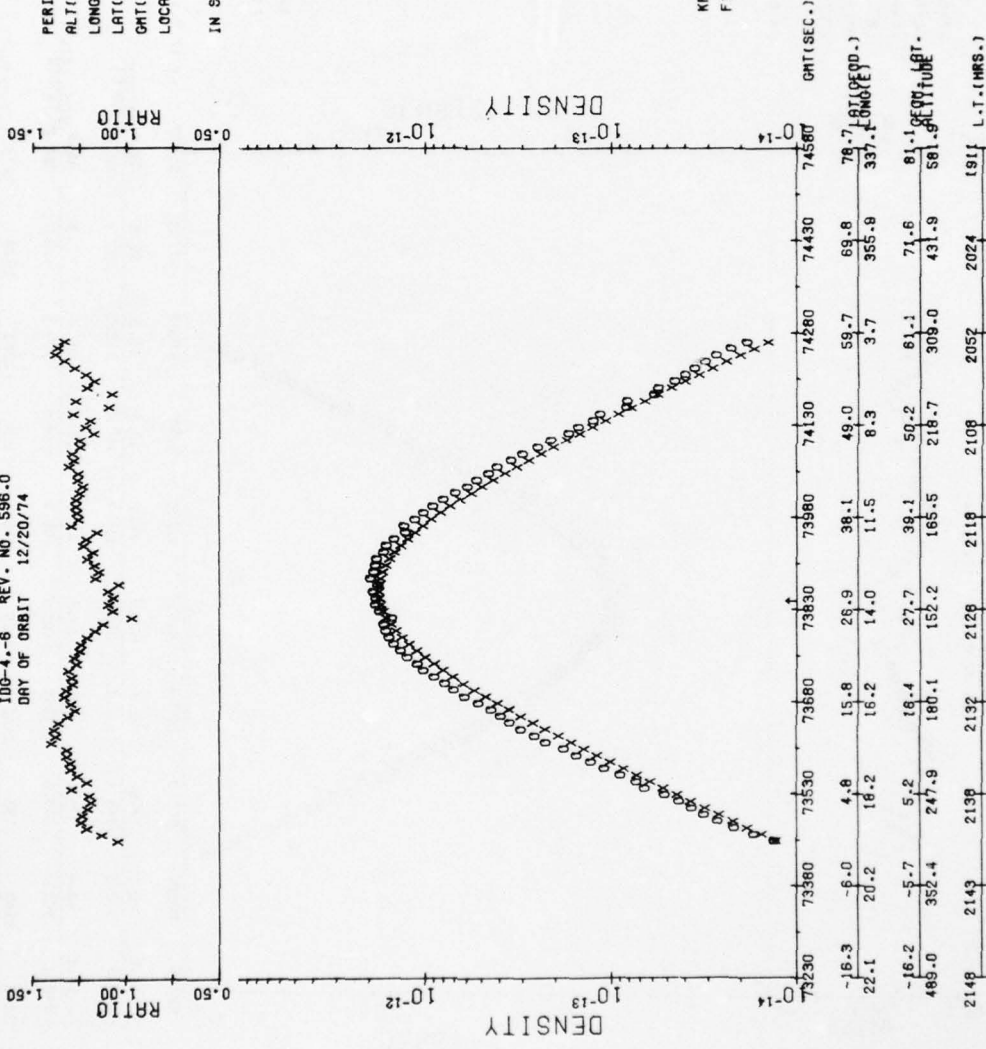
KP=4+
 F10.7=95.0



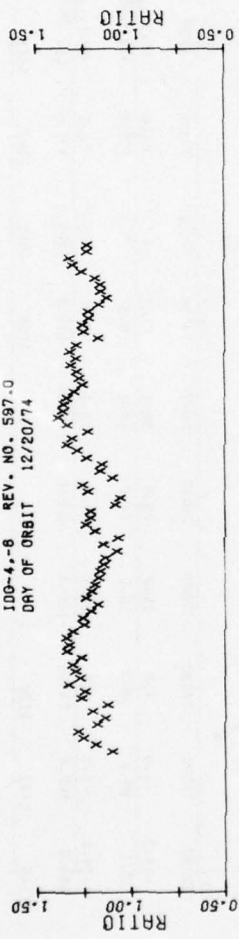
100-4.-6 REV. NO. 596.0
 DRY OF ORBIT 12/20/74

PERIOEE
 ALT(MM.)= 151.58
 LONG(E)= 13.61
 LAT(DEG.)= 28.91
 GMT(SEC.)= 73856.6 (2030H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 73230. TO 74580.

KF=4-
 F10.7=95.0



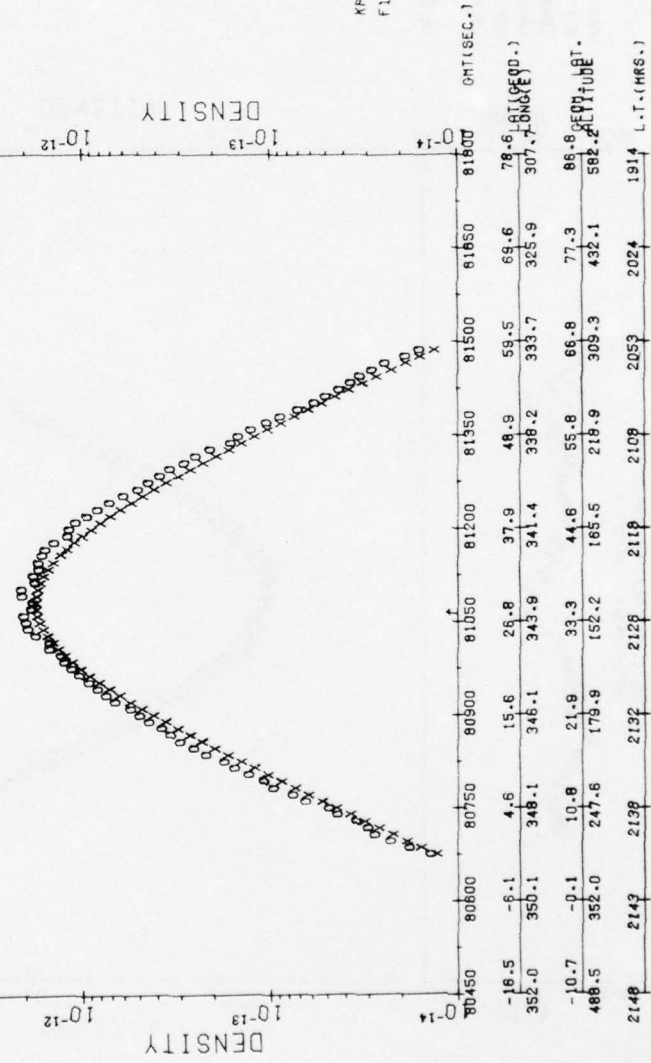
100-4-B REV. NO. 597.0
 DRY OF ORBIT 12/20/74



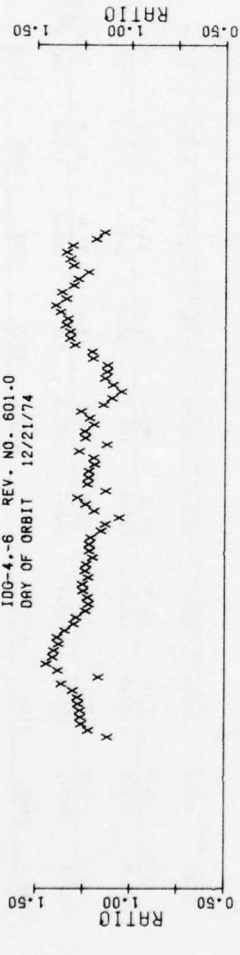
PERIOEE
 ALT(KM.)= 151.57
 LONG(E)= 343.52
 LAT(DEC.)= 28.73
 GMT(SEC.)= 81076.2 (2231M)
 LOCAL TIME 2125 (H)

IN SHADE FROM 80450. TO 81800.

KP=3+
 F10.7=85.0



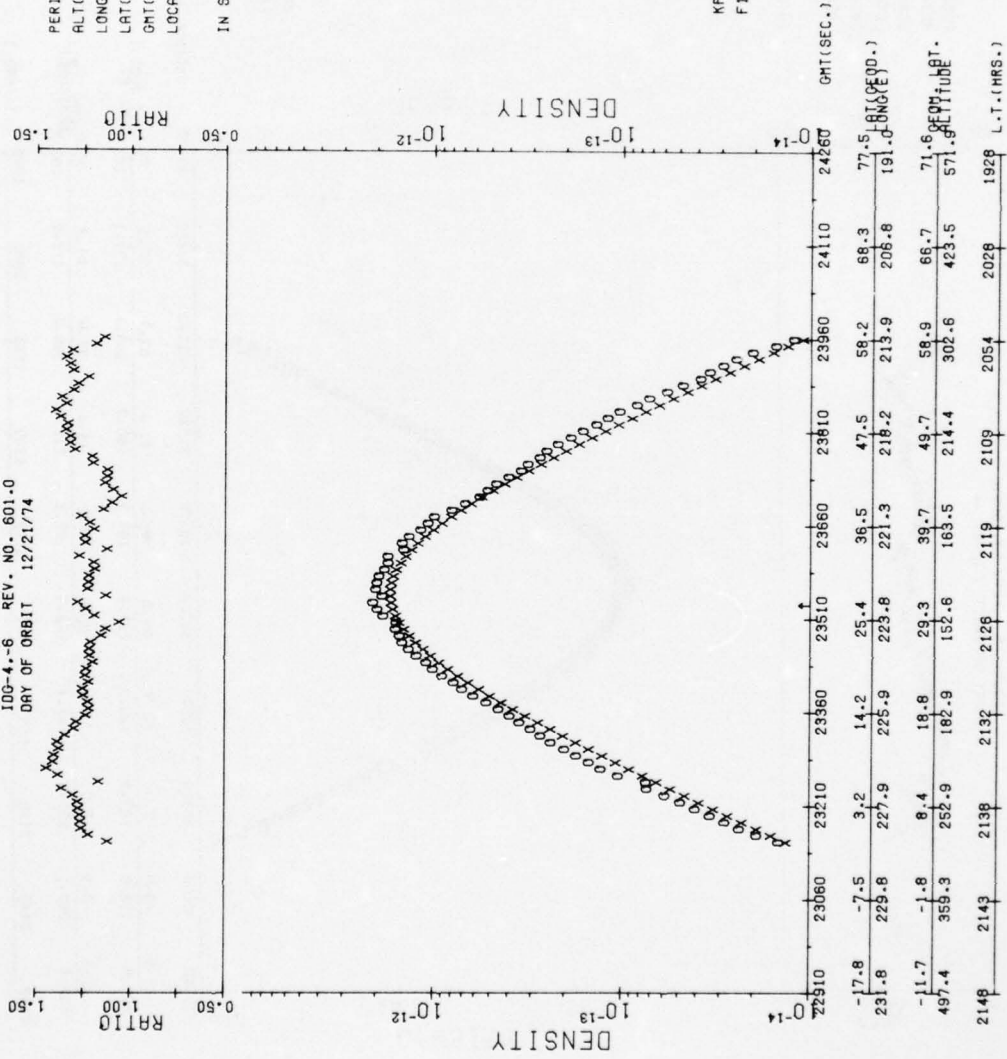
100-4--6 REV. NO. 601.0
 DRY OF ORBIT 12/21/74



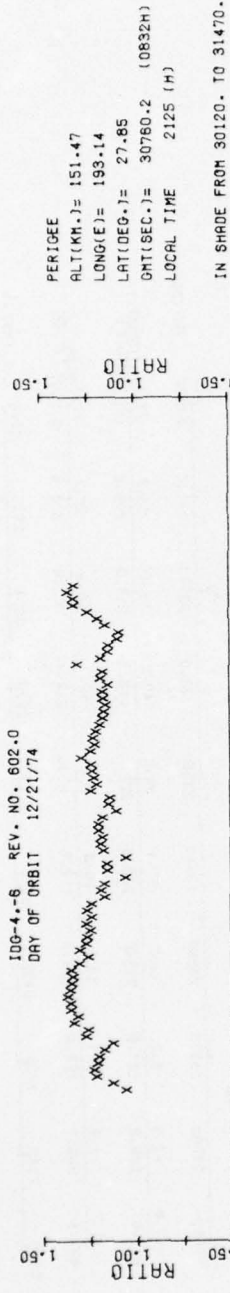
PERIGEE
 ALT(KM.)= 151.50
 LONG(E)= 223.21
 LAT(DEC.)= 28.02
 GMT(SEC.)= 23545.4 (0632H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 22910. TO 24260.

KF=3-
 F10.7=90.0



100-4-6 REV. NO. 602-0
 DRY OF ORBIT 12/21/74



PERIGEE
 ALT(KM.)= 151.47
 LONG(E)= 193.14
 LAT(DEG.)= 27.85
 GMT(SEC.)= 30760.2 (0832H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 30120. TO 31470.

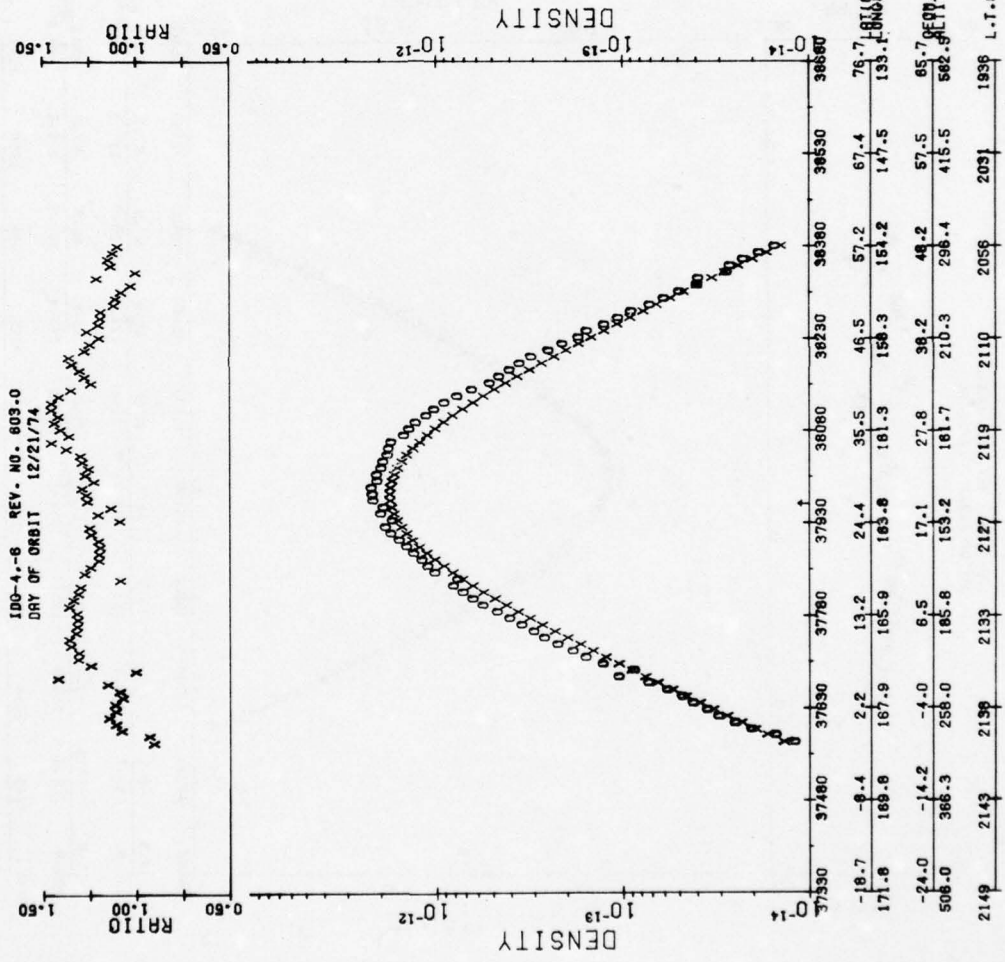
KP=3
 F10.7=90.0

GMT(SEC.)	LONG(E)	LAT(SEC.)	ALTITUDE
30120	-18.3	-8.0	2.7
30270	198.8	197.9	195.9
30420	-17.8	-8.1	2.0
30570	201.8	198.8	197.9
30720	193.6	193.6	193.6
30870	191.3	191.3	191.3
31020	188.3	188.3	188.3
31170	184.1	184.1	184.1
31320	177.1	177.1	177.1
31470	67.9	67.9	67.9
2149	214.9	213.8	213.8
2199	212.7	211.9	211.9
2055	205.5	205.5	205.5
2090	202.1	202.1	202.1
1953	195.8	195.8	195.8

PERIGEE
 ALT(KM.)= 151.44
 LONGIT.= 163.07
 LAT(DEC.)= 27.67
 OMT(SEC.)= 37974.2 (1032H)
 LOCAL TIME 2125 (H)

IN SHADE FROM 37330. TO 38660.

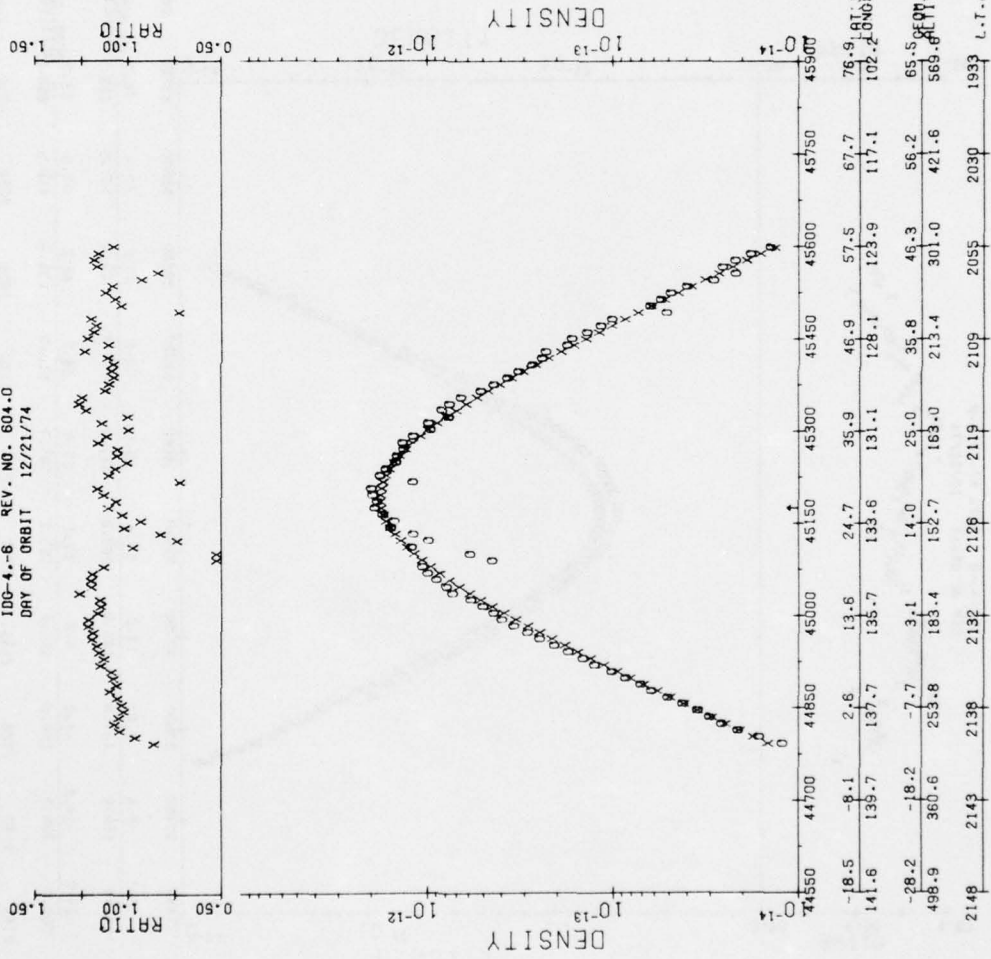
MF=4-
 F10.7=80.0



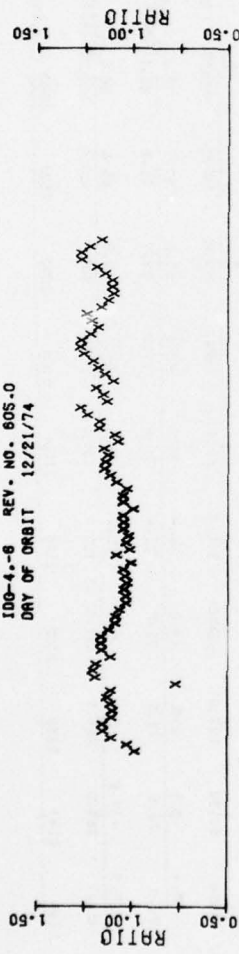
IDG-4-8 REV. NO. 604.0
 DRY OF ORBIT 12/21/74

PERIGEE
 ALT(KM.)= 151.42
 LONG(LN.)= 133.01
 LAT(DEC.)= 27.49
 GMT(SEC.)= 45187.4 (1233H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 44550. TO 45900.

KP=4-
 F10.7=90.0



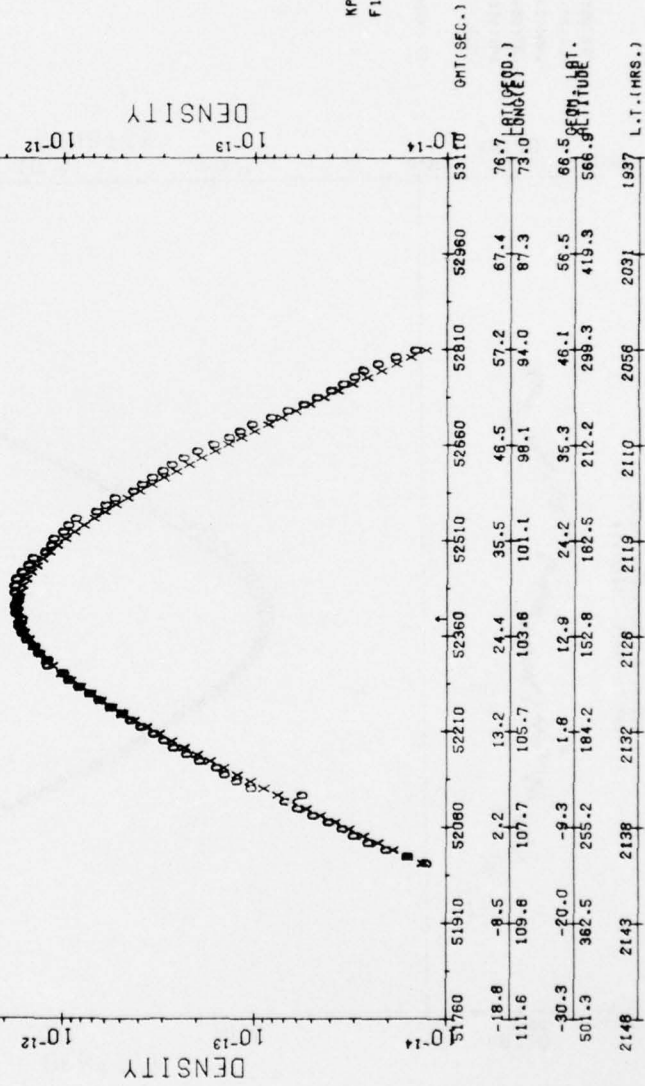
100-4-8 REV. NO. 605.0
DAY OF ORBIT 12/21/74



PERIODE
ALT(KM.)= 151.39
LONG(E)= 102.95
LAT(DEC.)= 27.32
OPT(SEC.)= 52399.7 (143SH)
LOCAL TIME 2125 (H)

IN SHADE FROM 51780. TO 53110.

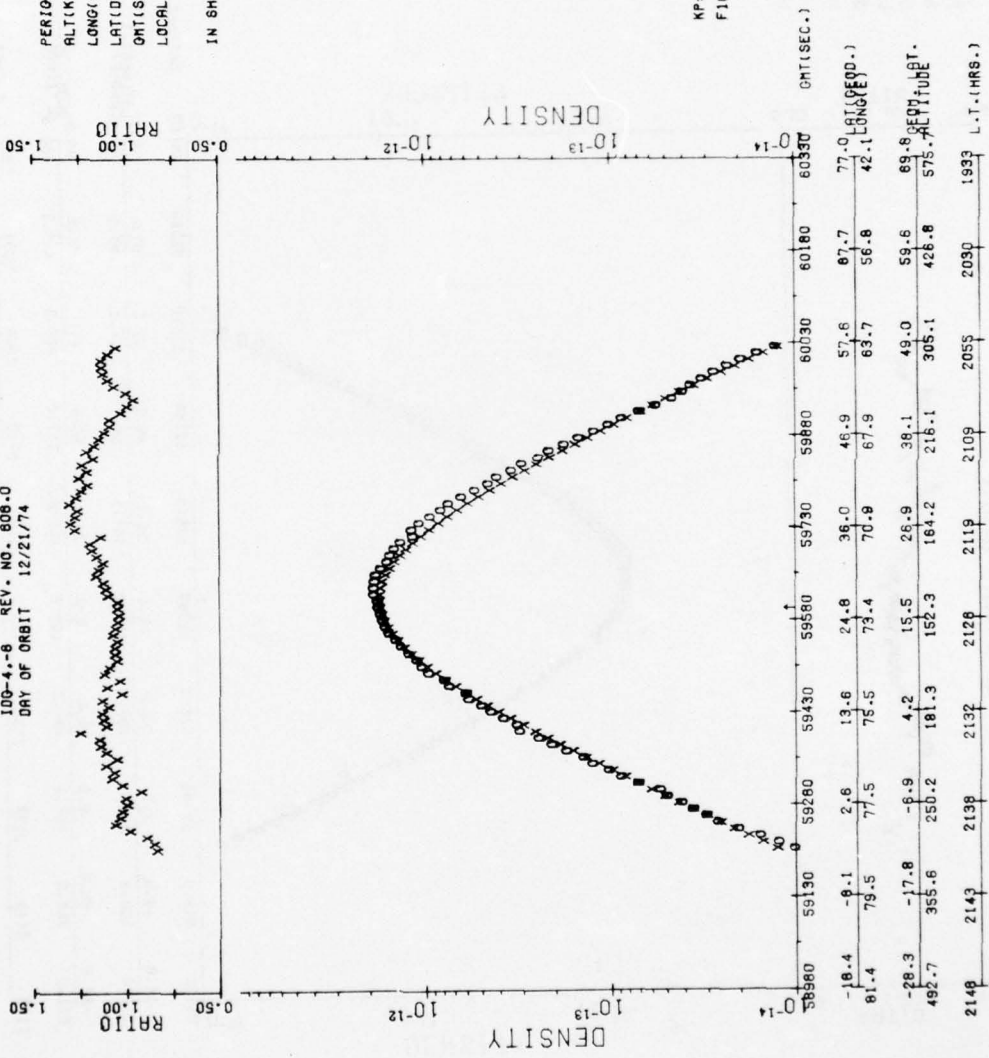
NP=3
F10.7=90.0



ALTITUDE	DENSITY	LONG(E)	OPT(SEC.)
51780	11.6	109.6	107.7
51910	-8.5	2.2	13.2
52080	-20.0	107.7	105.7
52110	30.3	-20.0	1.8
52132	501.3	382.5	255.2
52138	-30.3	-9.3	1.8
52126	184.2	184.2	182.5
52119	152.8	152.8	152.8
52110	212.2	212.2	212.2
52056	298.3	298.3	298.3
52056	419.3	419.3	419.3
52660	35.3	95.3	95.3
52660	46.5	46.5	46.5
52810	101.1	101.1	101.1
52810	98.1	98.1	98.1
52810	94.0	94.0	94.0
52960	67.4	67.4	67.4
52960	87.3	87.3	87.3
53110	76.7	76.7	76.7
53110	73.0	73.0	73.0

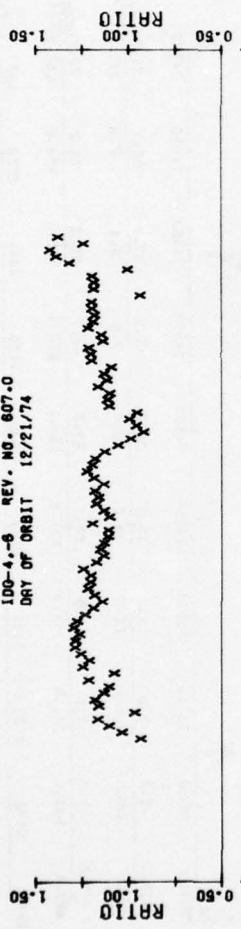
100-4-6 REV. NO. 808.0
 DRY OF ORBIT 12/21/74

PERIGEE
 ALT(MN.)= 151.36
 LONG(E)= 72.89
 LAT(DEG.)= 27.14
 OMT(SEC.)= 59611.4 (1639H)
 LOCAL TIME 2125 (H)
 IN SHADE FROM 58980. TO 60330.



KF=3+
 F10.7=80.0

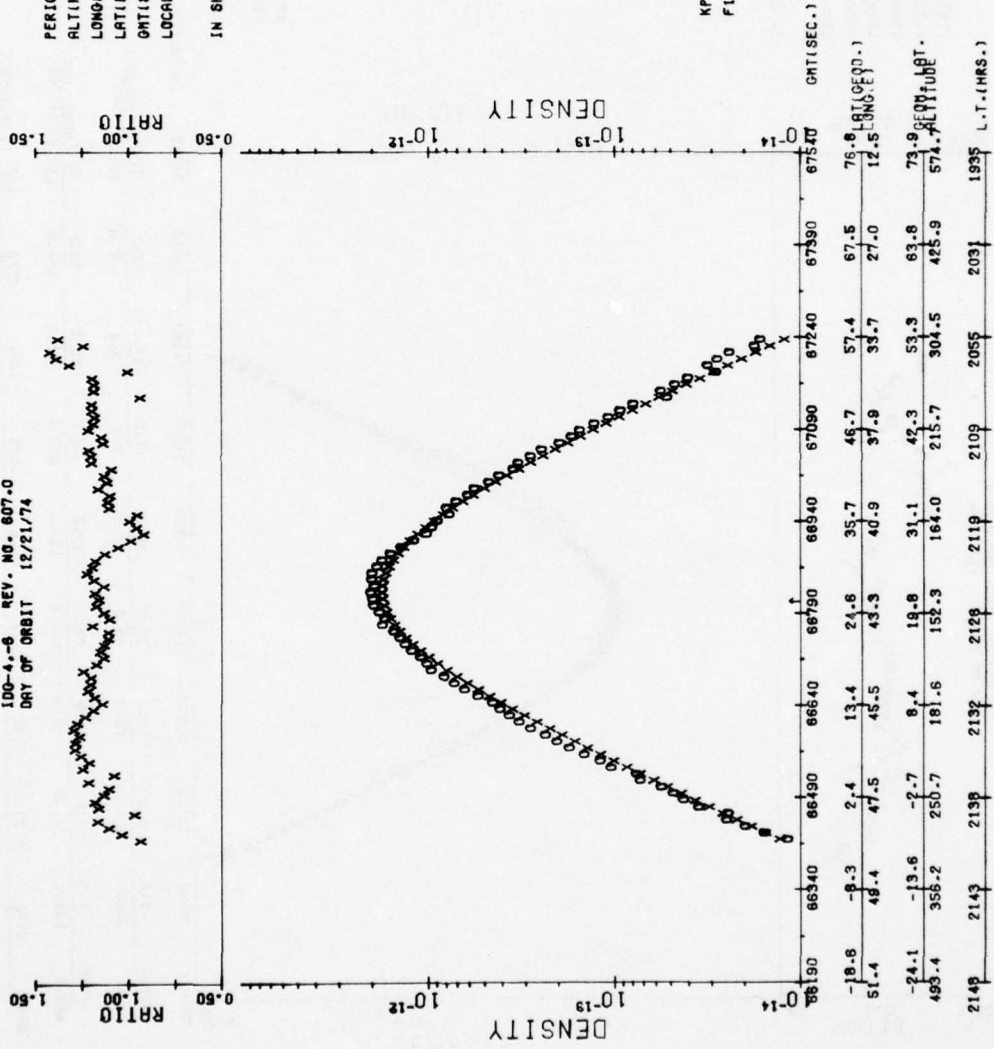
100-4-8 REV. NO. 607-0
 DRY OF ORBIT 12/21/74



PERIGEE
 ALT(KM.)= 151.34
 LONG(L°)= 42.84
 LAT(DEC.)= 28.98
 GMT(SEC.)= 68622.9 (1893H)
 LOCAL TIME 2125 (H)

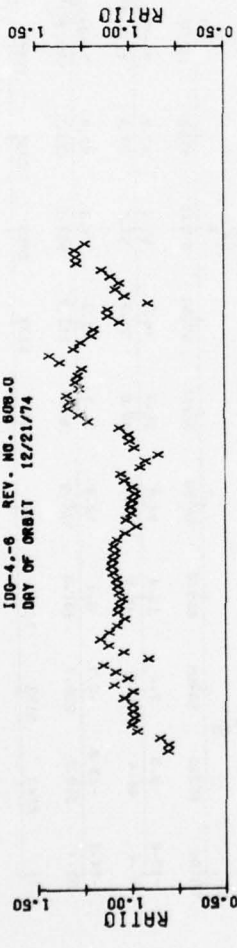
IN SHADE FROM 66190. TO 67540.

KP=3+
 F10.7=90.0



GMT (SEC.)	ALTITUDE	DENSITY	LONG (E)	LAT (N)
66190	2143	10 ^{-13.8}	48.4	-8.3
66340	2198	10 ^{-13.4}	47.5	2.4
66490	2132	10 ^{-13.5}	45.5	13.4
66640	2128	10 ^{-13.3}	43.3	24.6
66790	2119	10 ^{-13.3}	40.9	35.7
66940	2109	10 ^{-13.3}	37.9	46.7
67090	2055	10 ^{-13.3}	33.7	57.4
67240	2031	10 ^{-13.3}	27.0	67.5
67390	1955	10 ^{-13.3}	12.5	76.8
67540		10 ^{-13.3}		

100-4-6 REV. NO. 608-0
 DRY OF ORBIT 12/21/74



PERIGEE
 ALT(MM.)= 151.31
 LONGIT.= 12.79
 LAT(DEC.)= 26.79
 GMT(SEC.)= 74032.4 (2033M)
 LOCAL TIME 2125 (H)

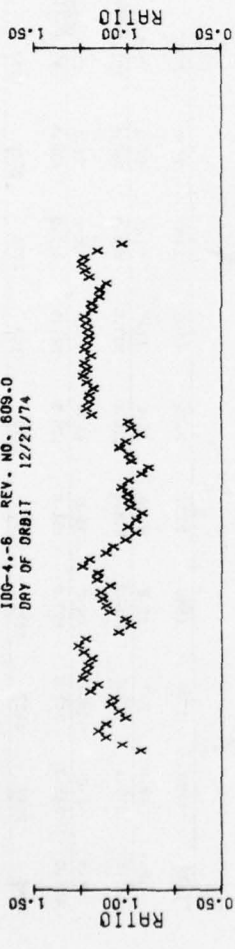
IN SHADE FROM 73410. TO 74760.

KF-4-
 F10.7=90.0



73410	73560	73710	73860	74010	74160	74310	74460	74610	74760	GMT(SEC.)
-19.1	-7.8	2.9	14.0	25.1	36.3	47.2	57.9	69.0	77.2	77.2
21.2	18.2	17.3	15.3	13.1	10.7	7.6	3.4	355.5	341.1	LONGIT.
-17.8	-7.3	3.6	14.8	26.1	37.5	49.7	59.5	70.0	79.7	PERIGEE
483.4	346.1	244.9	178.4	115.8	66.1	220.4	311.5	434.9	585.2	ALTITUDE
2149	2142	2137	2132	2126	2119	2109	2054	2029	1930	L.T.(HRS.)

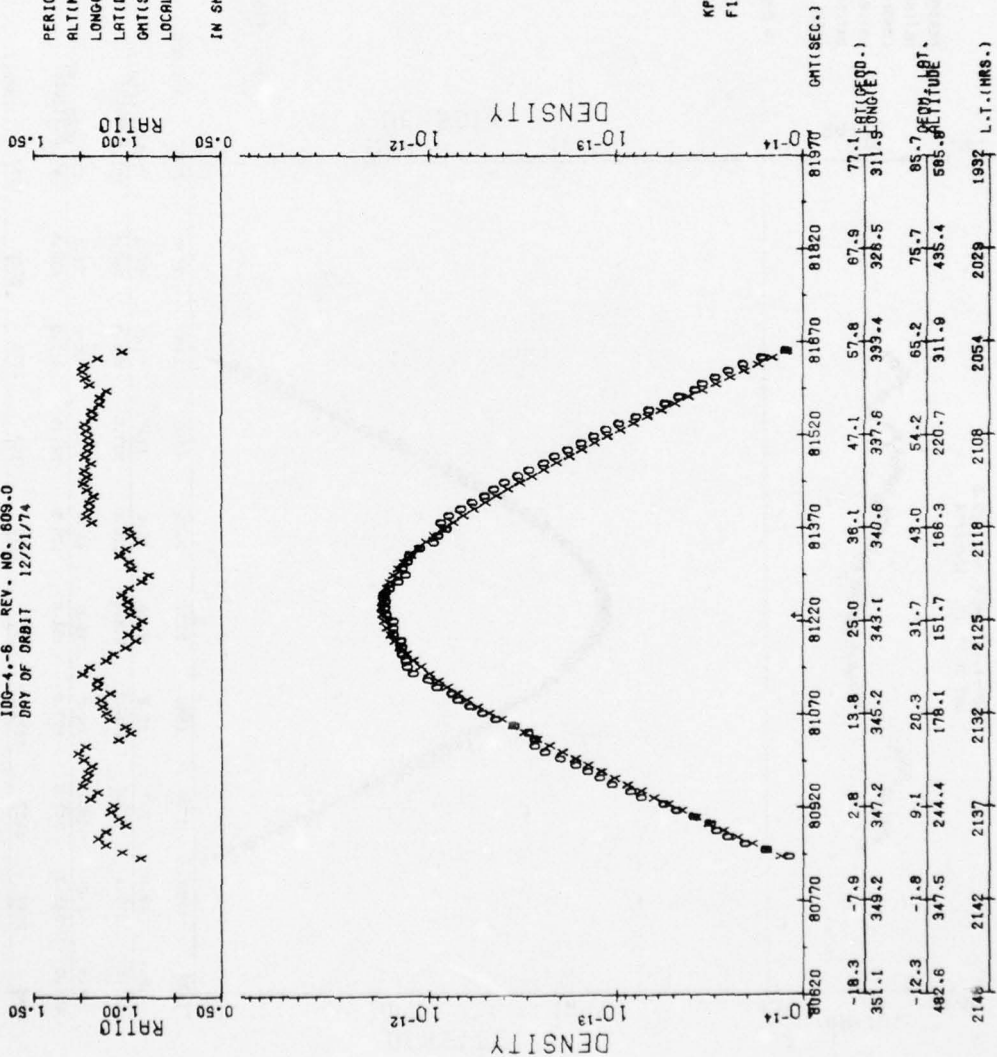
100-4-6 REV. NO. 809-0
 DAY OF ORBIT 12/21/74



PERIODE
 ALT(KM.)= 151.28
 LONG(E)= 342.74
 LAT(DEC.)= 26.61
 GMT(SEC.)= 81241.7 (2234H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 80820. TO 81970.

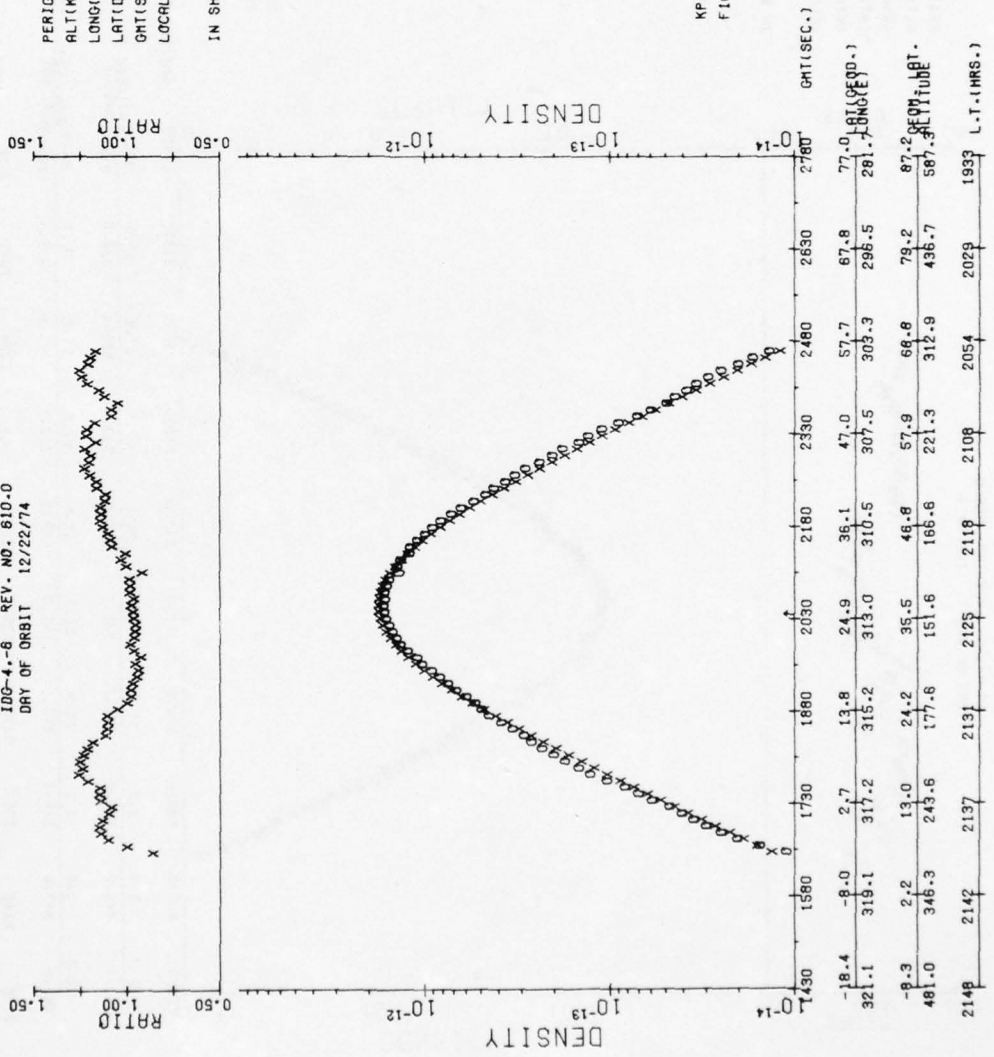
KP=3+
 F10.7=80.0



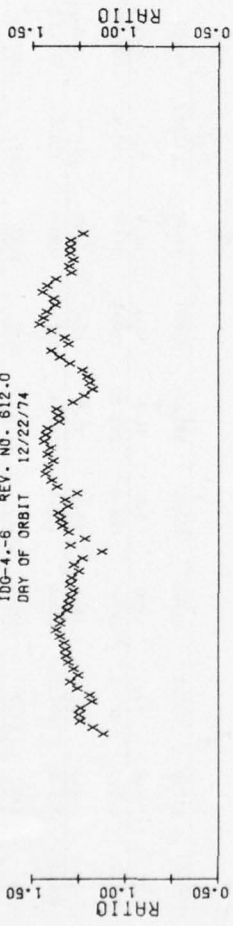
IDG-4-6 REV. NO. 610-0
 DRY OF ORBIT 12/22/74

PERIODE
 ALT(KM.)= 151.26
 LONG(E)= 312.70
 LAT(DEG.)= 26.43
 GMT(SEC.)= 2050.2 (0034H)
 LOCAL TIME 2124 (H)
 IN SHADE FROM 1430. TO 2780.

KP-3+
 F10-7=69.0



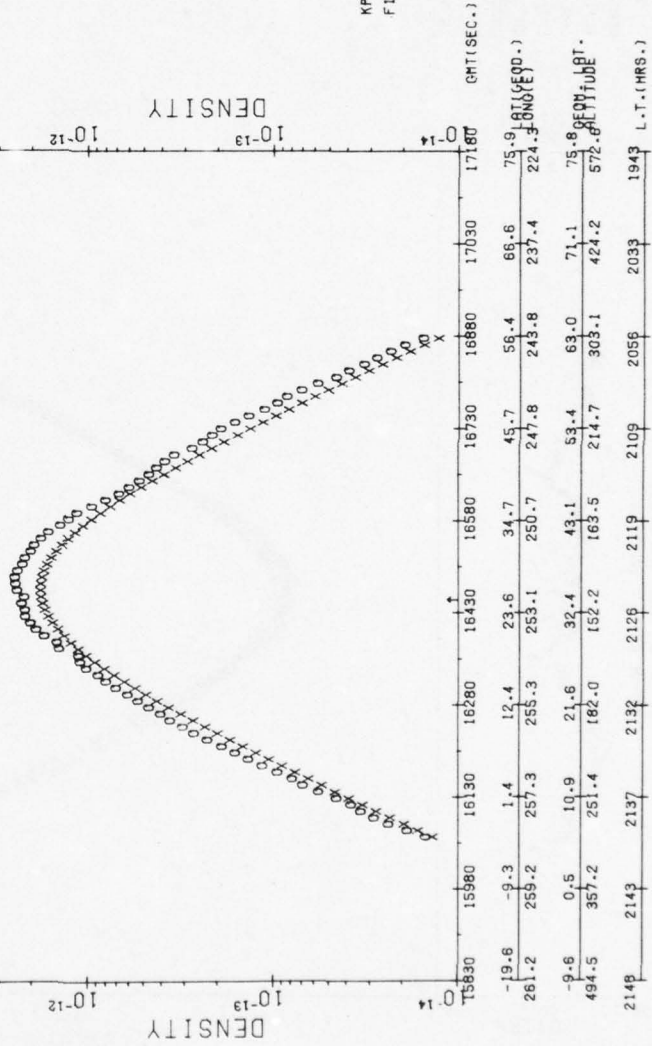
100-4-6 REV. NO. 612-0
 DRY OF ORBIT 12/22/74



PERIGEE
 ALT(KM.)= 151.20
 LONG(E)= 252.63
 LAT(DEG.)= 26.08
 GMT(SEC.)= 16463.8 (10434H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 15830. TO 17180.

KP=4-
 F10.7=89.0



AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

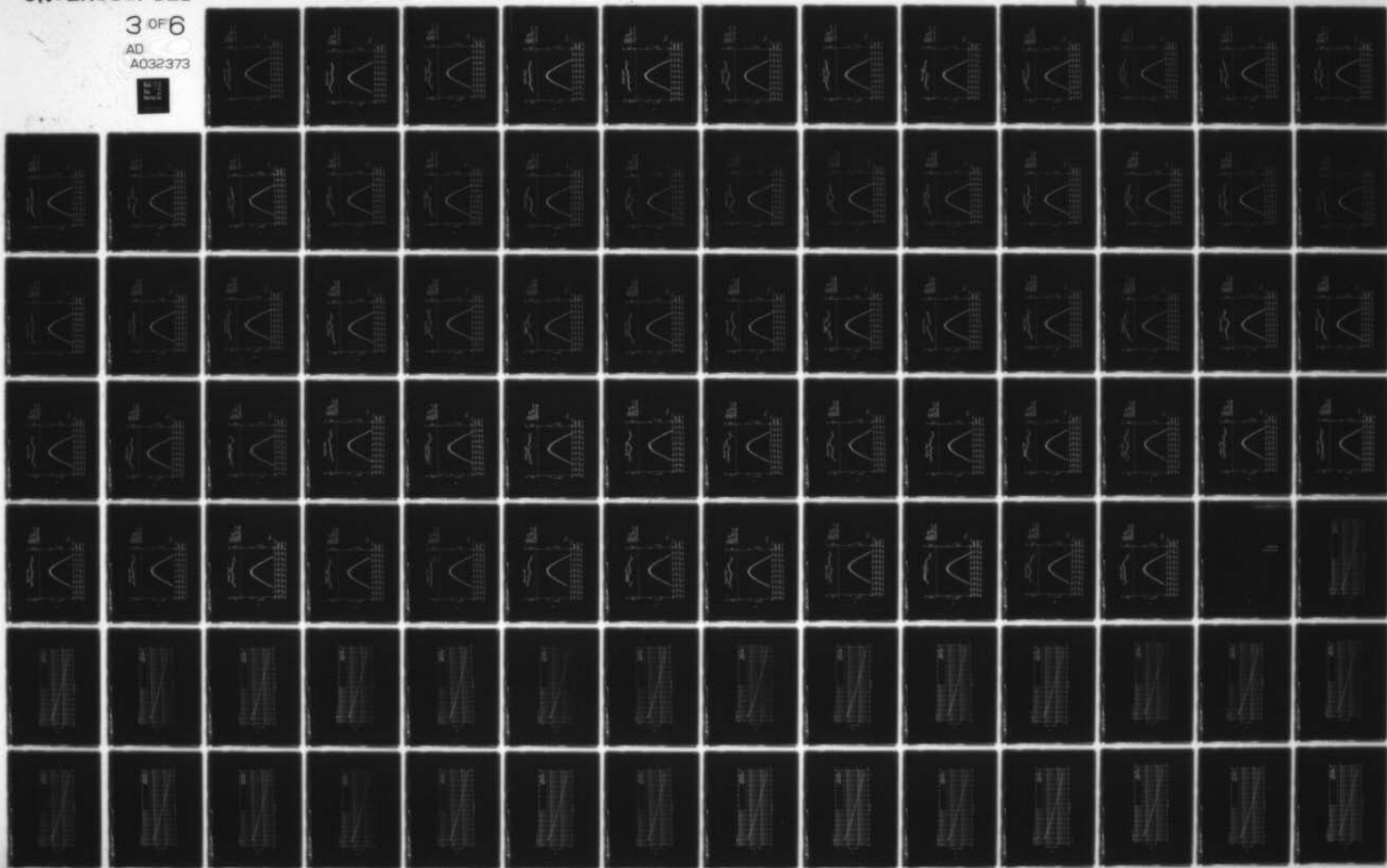
F/G 4/1

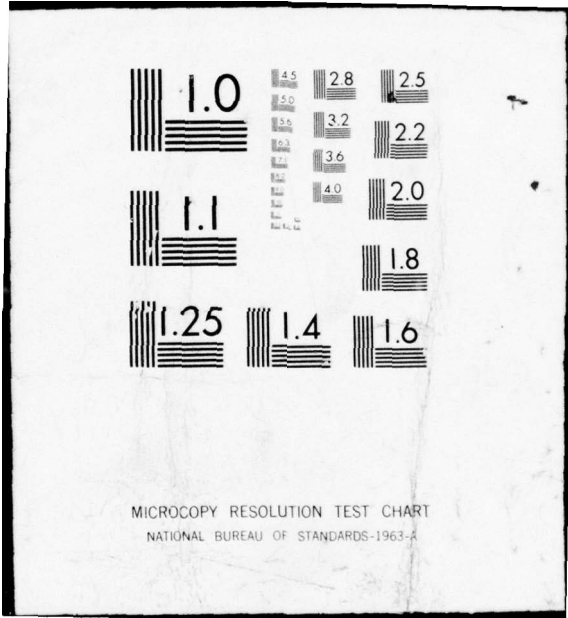
UNCLASSIFIED

NL

3 OF 6

AD
A032373



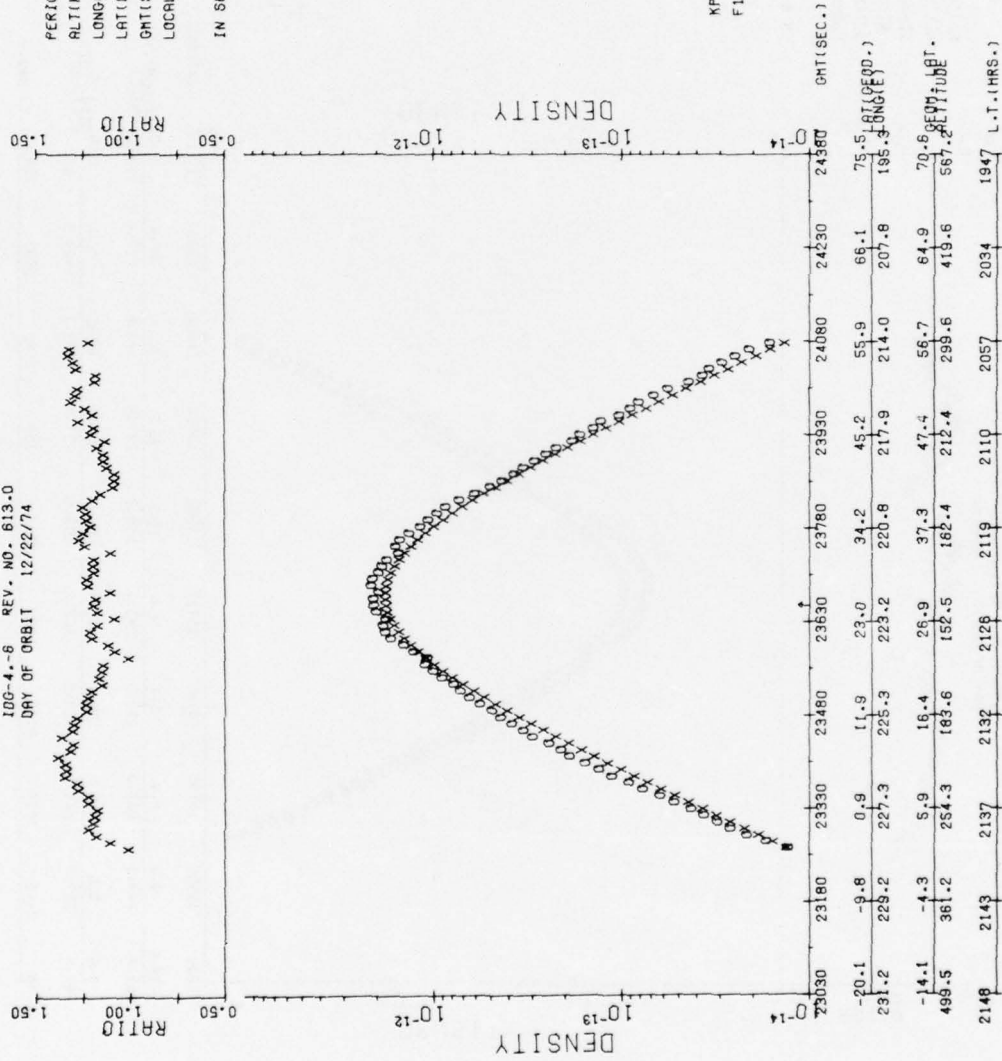


LOG-4-6 REV. NO. 613-0
 DAY OF ORBIT 12/22/74

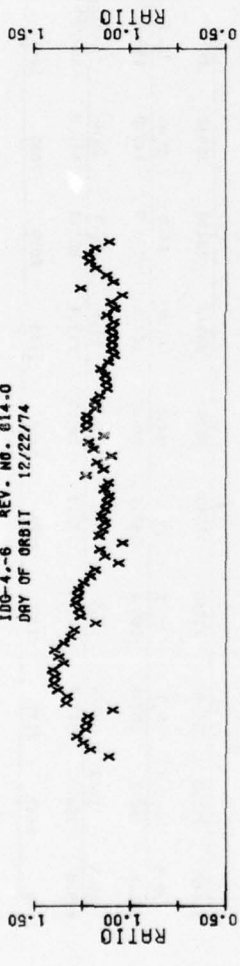
PERIGEE
 ALT(KM.)= 151.17
 LONG(E)= 222.60
 LAT(DEG.)= 25.90
 GHT(SEC.)= 23568.8 (0634H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 23030. TO 24380.

MP=4-
 F10.7=89.0



100-4-6 REV. NO. 614-0
 DAY OF ORBIT 12/22/74



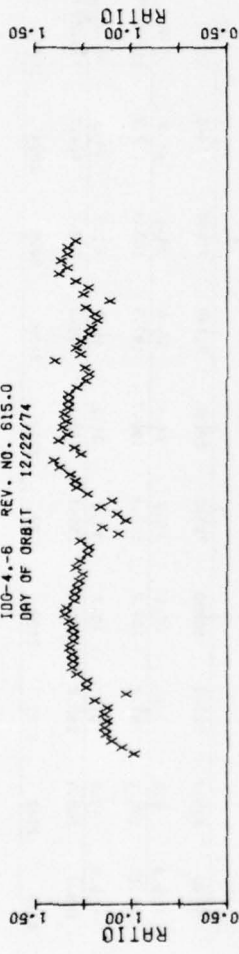
PERIODE
 ALI(KM.)= 151.14
 LONG(E)= 192.57
 LAT(DEC.)= 25.72
 GMT(SEC.)= 30873.1 (0834H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 30240. TO 31590.

KP=4
 F10.7=89.0

TIME (SEC.)	LONG (E)	ALT (KM)	PERIODE	LOCAL TIME (H)
30240	-19.8	9.6	1.1	12.1
30390	201.1	198.1	197.2	195.2
30540	-19.5	9.8	0.3	10.7
30690	493.5	358.3	250.8	181.6
30840				
30990				
31140				
31290				
31440				
31590				

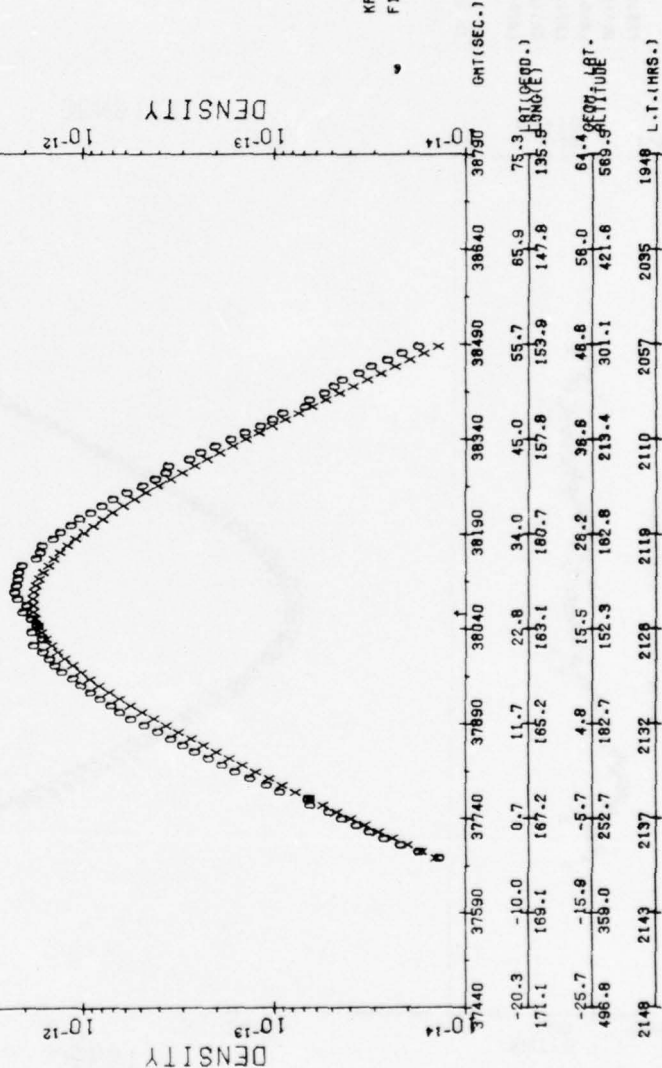
100-4,-6 REV. NO. 615-0
 DRY OF ORBIT 12/22/74



PERIGEE
 ALT(KM.)= 151.10
 LONG(E)= 162.55
 LAT(DEC.)= 25.55
 GMT(SEC.)= 38076.4 (1034H)
 LOCAL TIME 2124 (H)

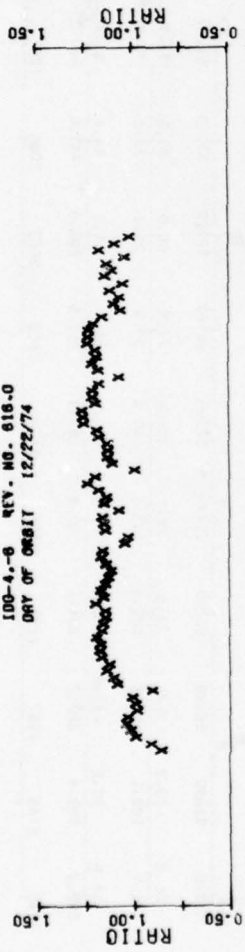
IN SHADE FROM 37440. TO 38790.

KP=4
 F10.7=89.0



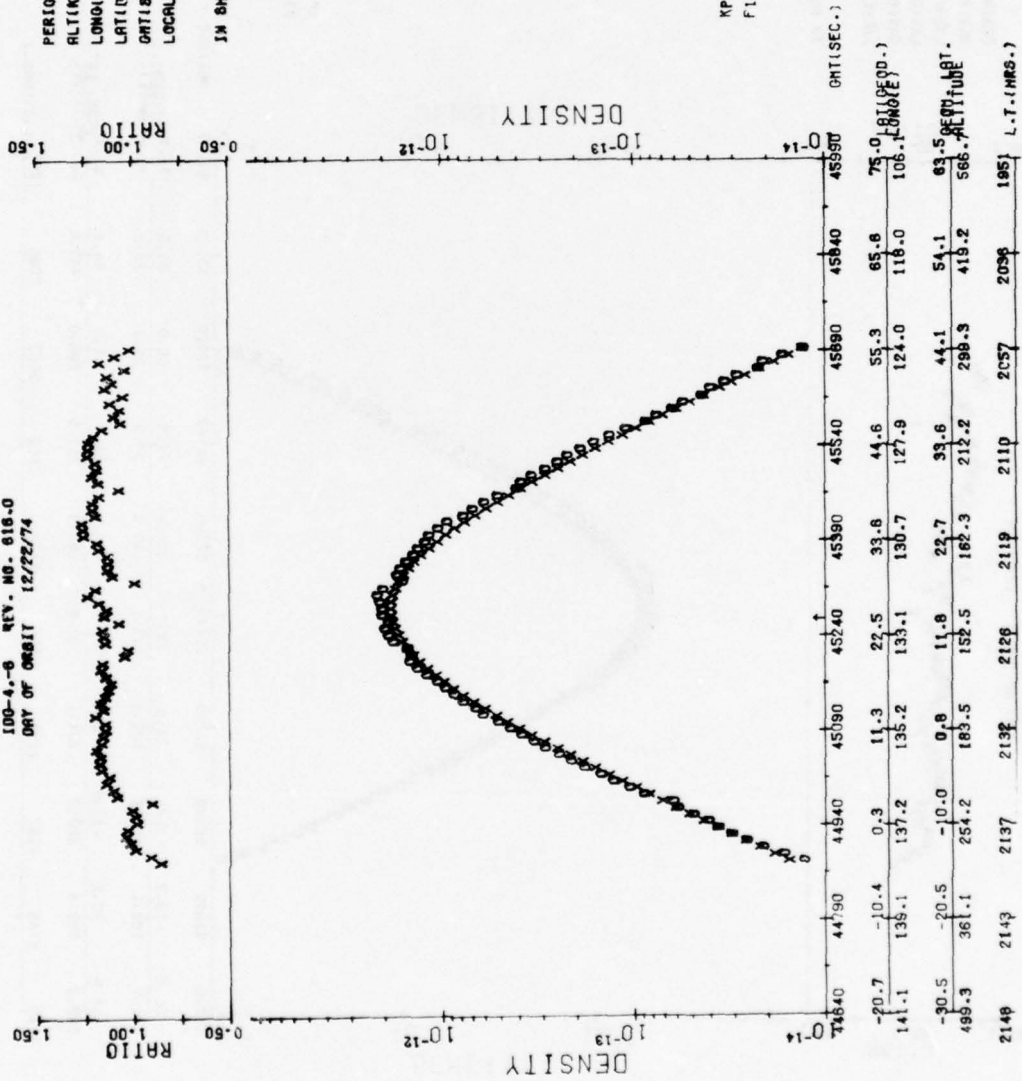
GMT (SEC.)	Altitude (FT.)
37440	2148
37590	2143
37740	2137
37890	2132
38040	2128
38190	2119
38340	2110
38490	2057
38640	2055
38790	1949

100-4-6 REV. NO. 618-0
 DRY OF ORBIT 12/22/74



PERIOEE
 ALT(KM.)= 151.07
 LONGIE)= 132.53
 LAT(REQ.)= 25.37
 ORT(SEC.)= 45279.0 (1234H)
 LOCAL TIME 2124 (H)
 IN SHADE FROM 44840. TO 45980.

KP=4
 F10.7=89.0

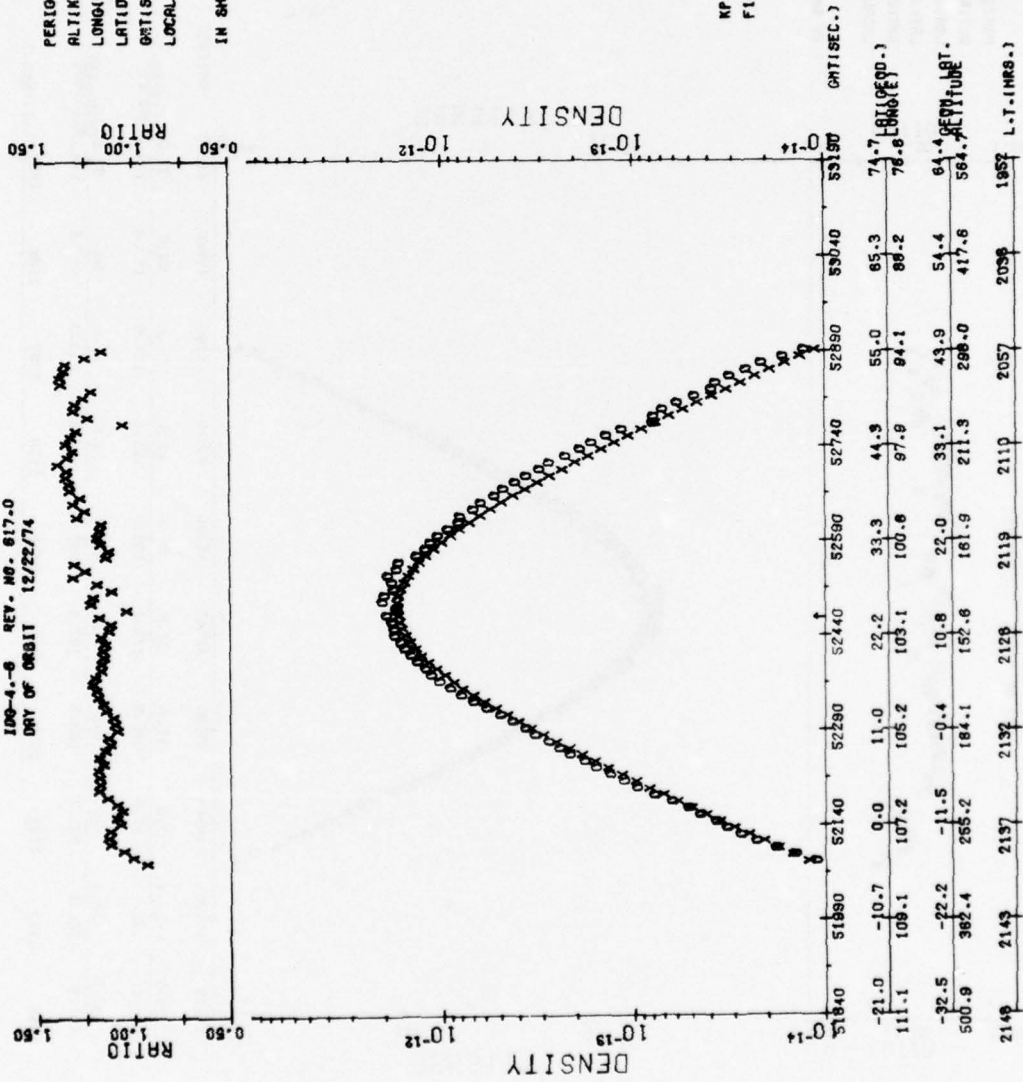


100-4-6 REV. NO. 617-0
 DRY OF ORBIT 12/22/74

PERIGEE
 ALTITUDE)= 151.04
 LONGITUDE)= 102.52
 LATITUDE)= 25.19
 DISTANCE)= 52400.8 (1434M)
 LOCAL TIME 2124 (H)

IN SHADE FROM 51840. TO 53190.

KF=2+
 F(0.7=89-0

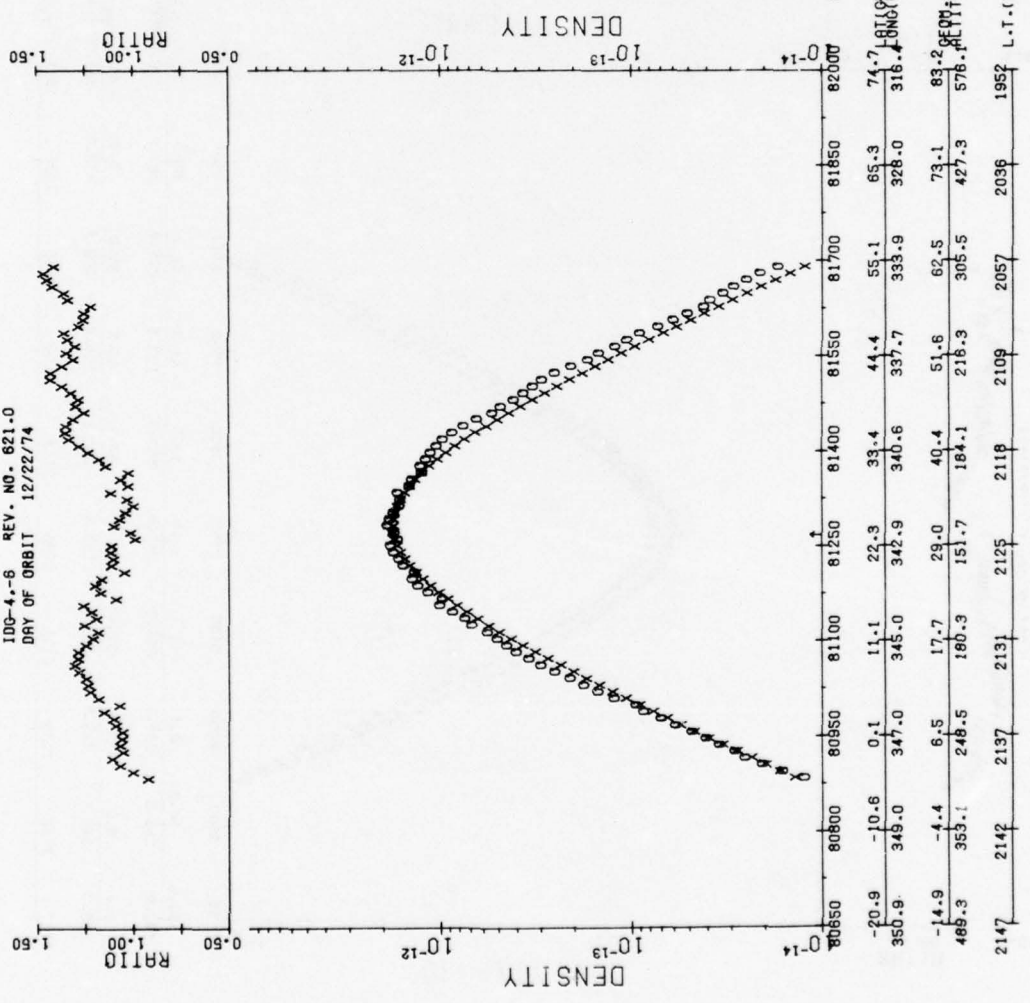


100-4-S REV. NO. 621-0
 DRY OF ORBIT 12/22/74

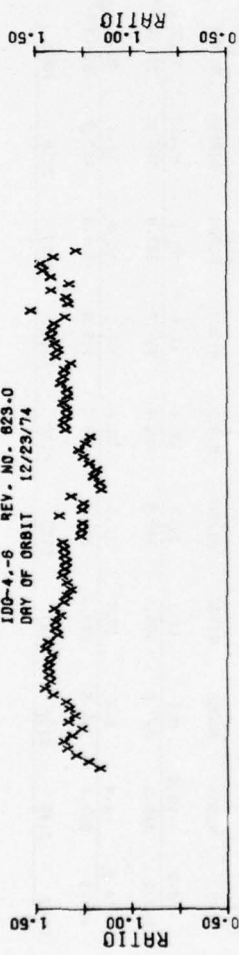
PERIGEE
 ALT(KM-) = 150.92
 LONG(E) = 342.49
 LAT(DEG-) = 24.49
 GMT(SEC-) = 81279.7 (2234H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 80650. TO 82000.

KP=9
 F10.7=89.0



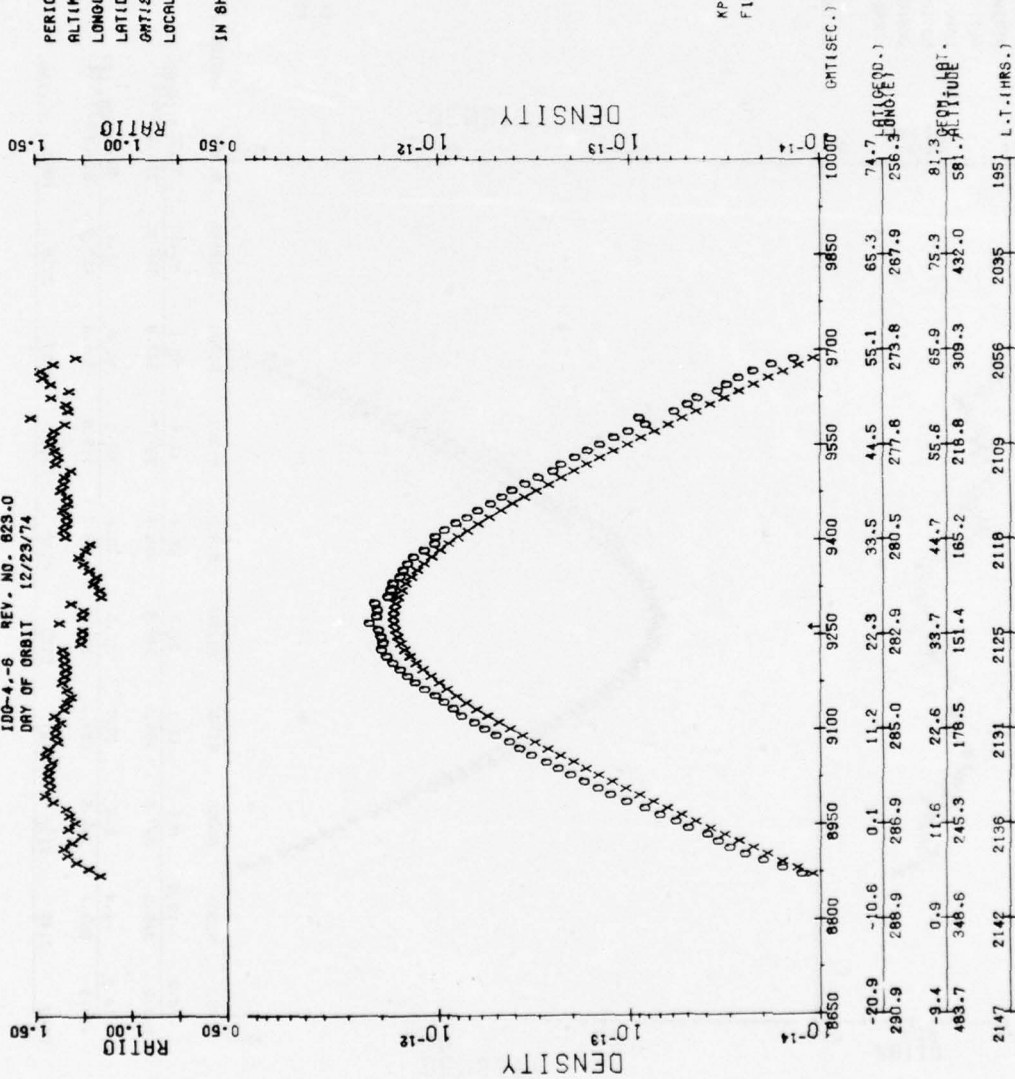
100-4.-6 REV. NO. 823-0
 DRY OF ORBIT 12/23/74



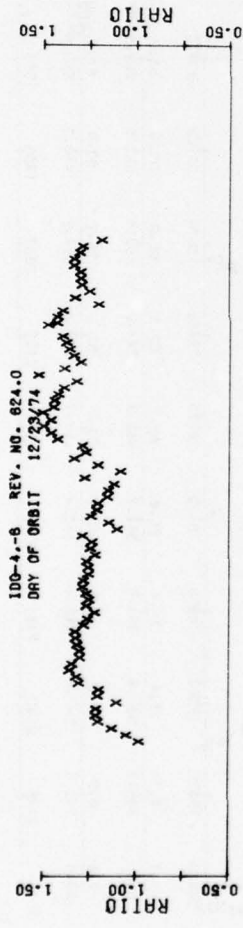
PERIOD= 150.87
 ALT(KM.)= 282.49
 LONG(LT)= 24.13
 LAT(DEC.)= 9274.3 (0234H)
 LOCAL TIME 2124 (H)

IN SHADE FROM 8650. TO 10000.

AP=2
 F10.7=93.0



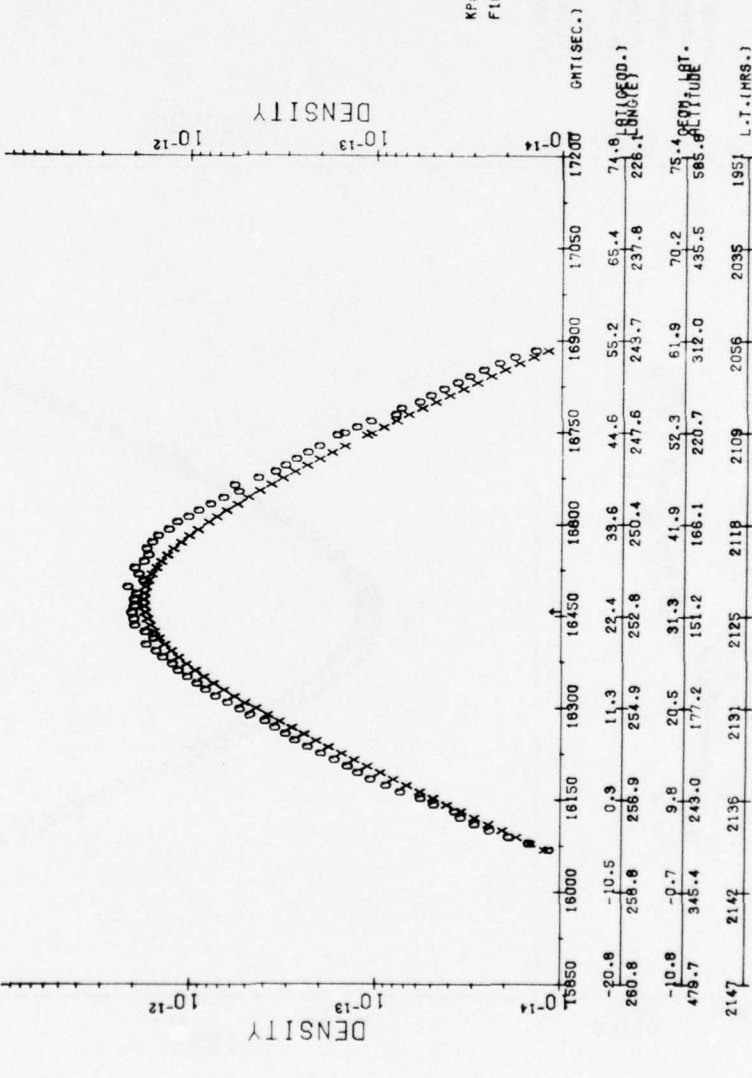
100-4.-8 REV. NO. 624.0
 DRY OF ORBIT 12/23/74 X



PERIGEE
 ALTI(KM.)= 150.84
 LONG(L)= 252.50
 LAT(DEC.)= 23.98
 GMT(SEC.)= 18470.4 (0434H)
 LOCAL TIME 2124 (H)

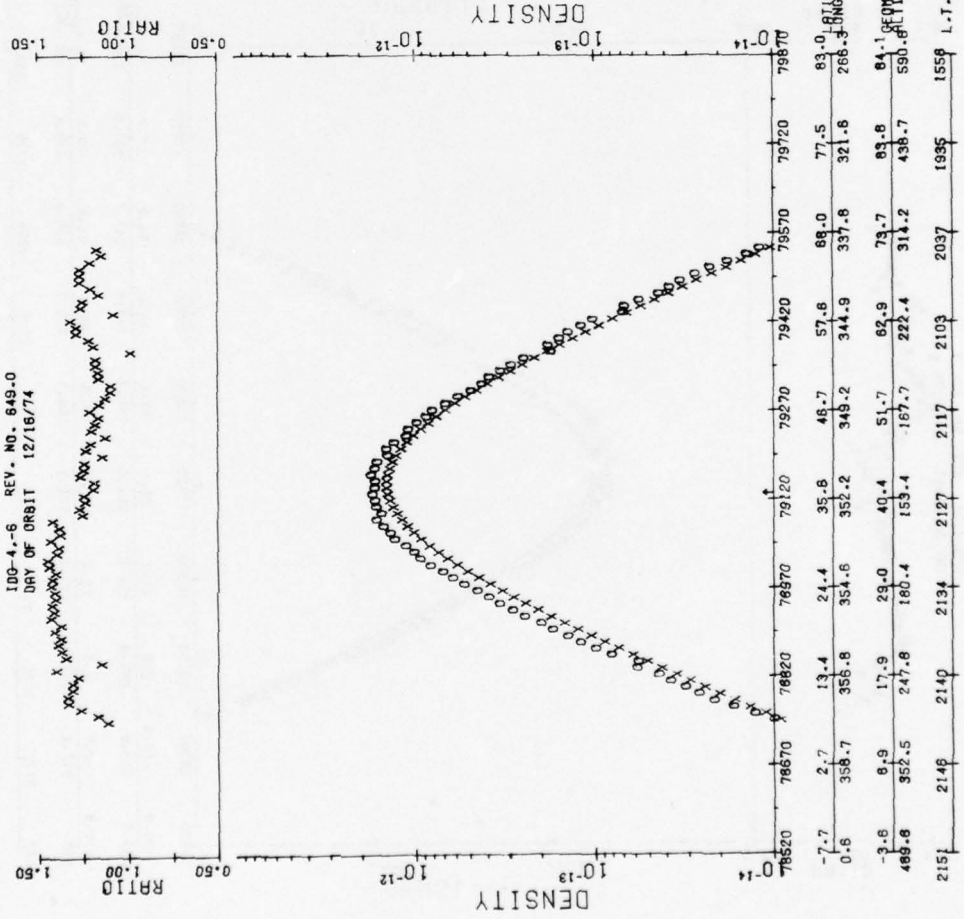
IN SHADE FROM 15850. TO 17200.

KF=3-
 F10.7=83.0



GMT(SEC.)	ALTITUDE	LONG(E)	LAT(DEC.)
15850	214.7	213.1	212.5
16000	214.2	213.6	213.1
16150	213.6	213.0	212.5
16300	213.0	212.4	211.9
16450	212.4	211.8	211.3
16600	211.8	211.2	210.7
16750	211.2	210.6	210.1
16900	210.6	210.0	209.5
17050	210.0	209.4	208.9
17200	209.4	208.8	208.3

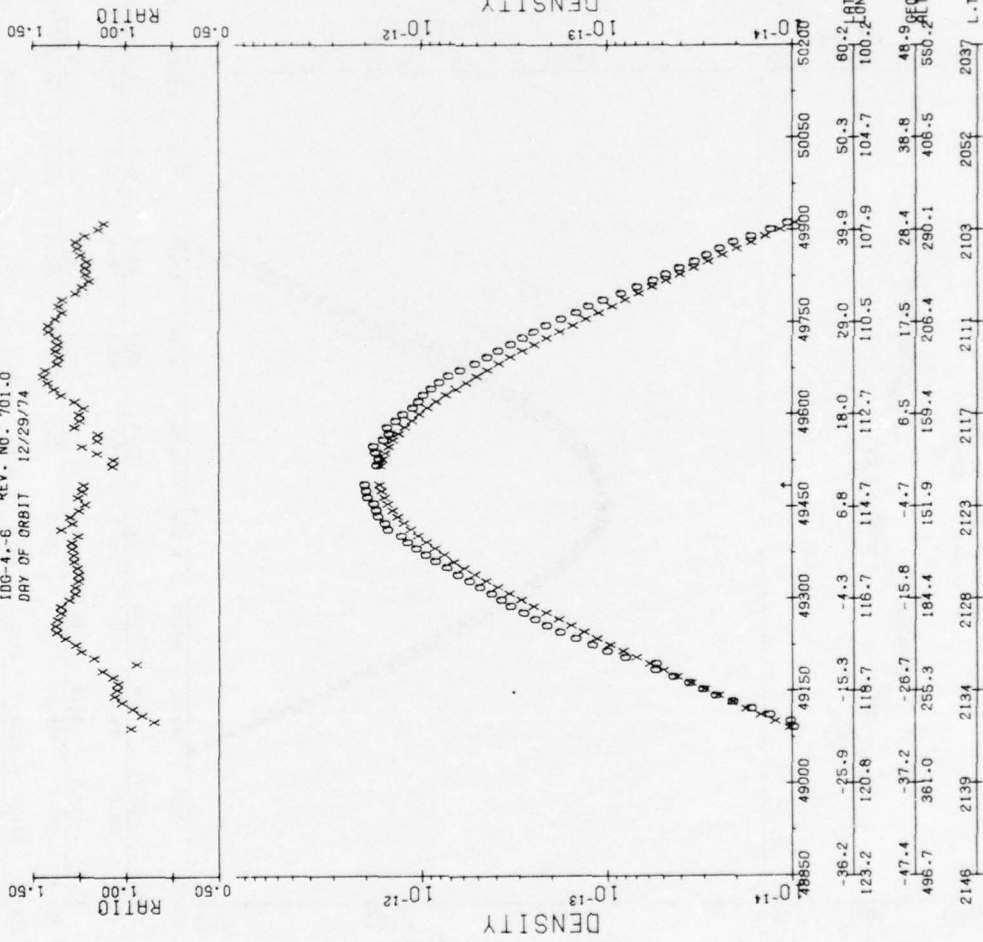
100-4--6 REV. NO. 649.0
 DRY OF ORBIT 12/18/74



PERIGEE
 ALT (KM) = 152.90
 L (ANGLE) = 351.79
 LAT (DEG) = 37.25
 GMT (SEC) = 79142.8 (2159H)
 LOCAL TIME 2126 (LH)
 IN SUN FROM 78520. TO 80400.
 IN SHADE FROM 80400. TO 79870.

KP=1
 F10.7=86.0

100-4-6 REV. NO. 701.0
 DRY OF ORBIT 12/29/74

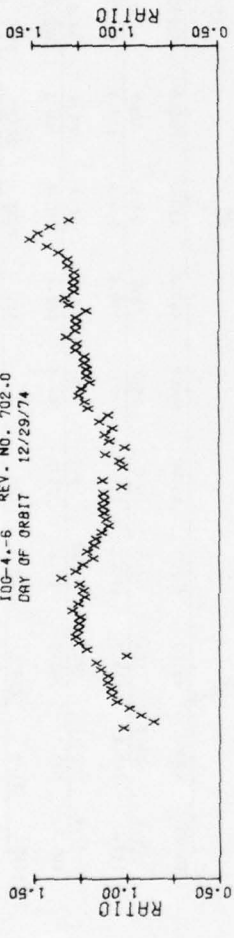


PERIGEE
 ALT(KM.)= 149.97
 LONG(E.)= 114.11
 LAT(DEC.)= 10.32
 GMT(SEC.)= 49497.0 (1344H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 48850. TO 50200.

KP=2
 F10.7=76.0

100-4-6 REV. NO. 702.0
 CHY OF ORBIT 12/29/74



PERIGEE
 ALT(KM.)= 149.96
 LONG(E)= 84.41
 LAT(DEG.)= 10.14
 GMT(SEC.)= 56623.4 (1543H)
 LOCAL TIME 2121 (H)

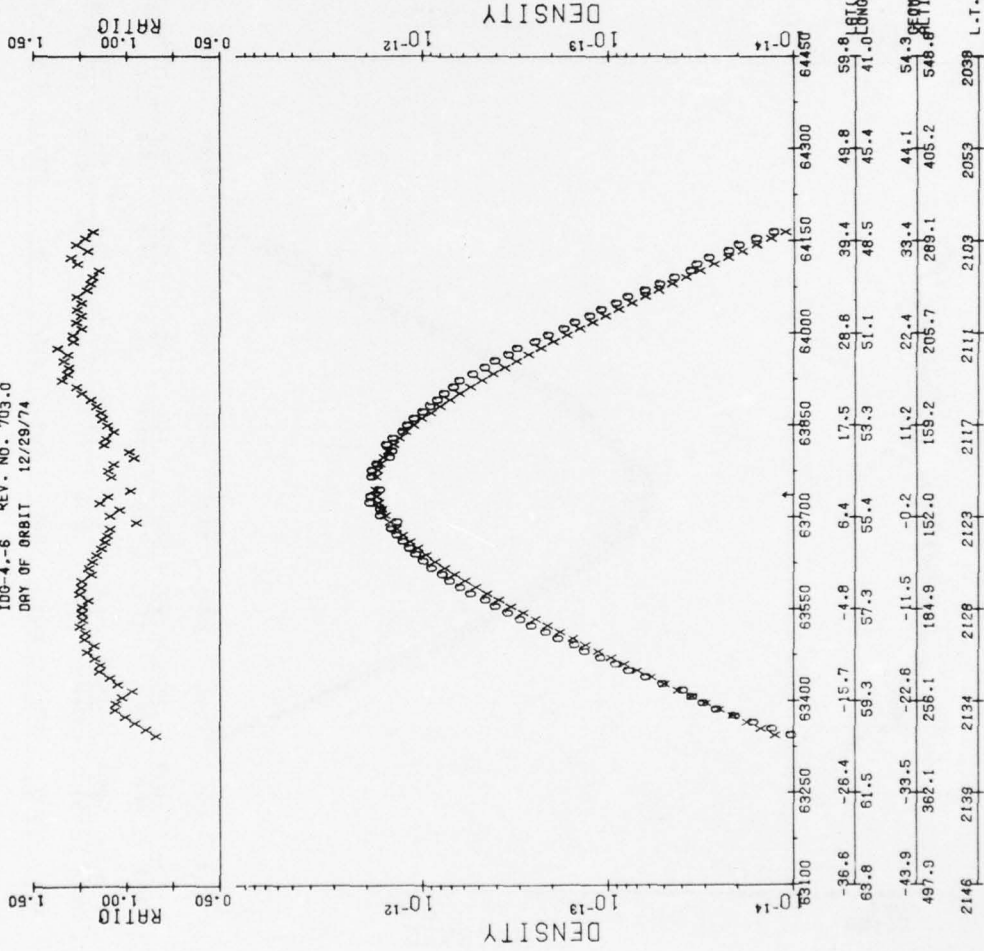
IN SHADE FROM 55970. TO 57320.

KP=2
 F10.7=76.0



GMT (SEC.)	LONG (DEG.)	LAT (DEG.)	ALTITUDE	L.T. (HRS.)
55970				
56120	-36.8	-26.6	366.1	2140
56270	-15.9	-5.0	255.1	2134
56420	87.1	87.1	166.7	2128
56570	67.2	67.2	152.5	2123
56720	17.3	17.3	138.3	2117
56870	28.4	28.4	124.1	2111
57020	39.2	39.2	110.0	2103
57170	49.7	49.7	95.8	2053
57320	59.6	59.6	81.6	2038

100-4-6 REV. NO. 703.0
 DRY OF ORBIT 12/29/74



PERIODEE
 ALT (KM.) = 149.95
 LONG (E) = 54.71
 LAT (DEG.) = 9.96
 OPT (SEC.) = 63748.4 (1742H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 63100. TO 64450.

KF=3*
 F10.7=76.0

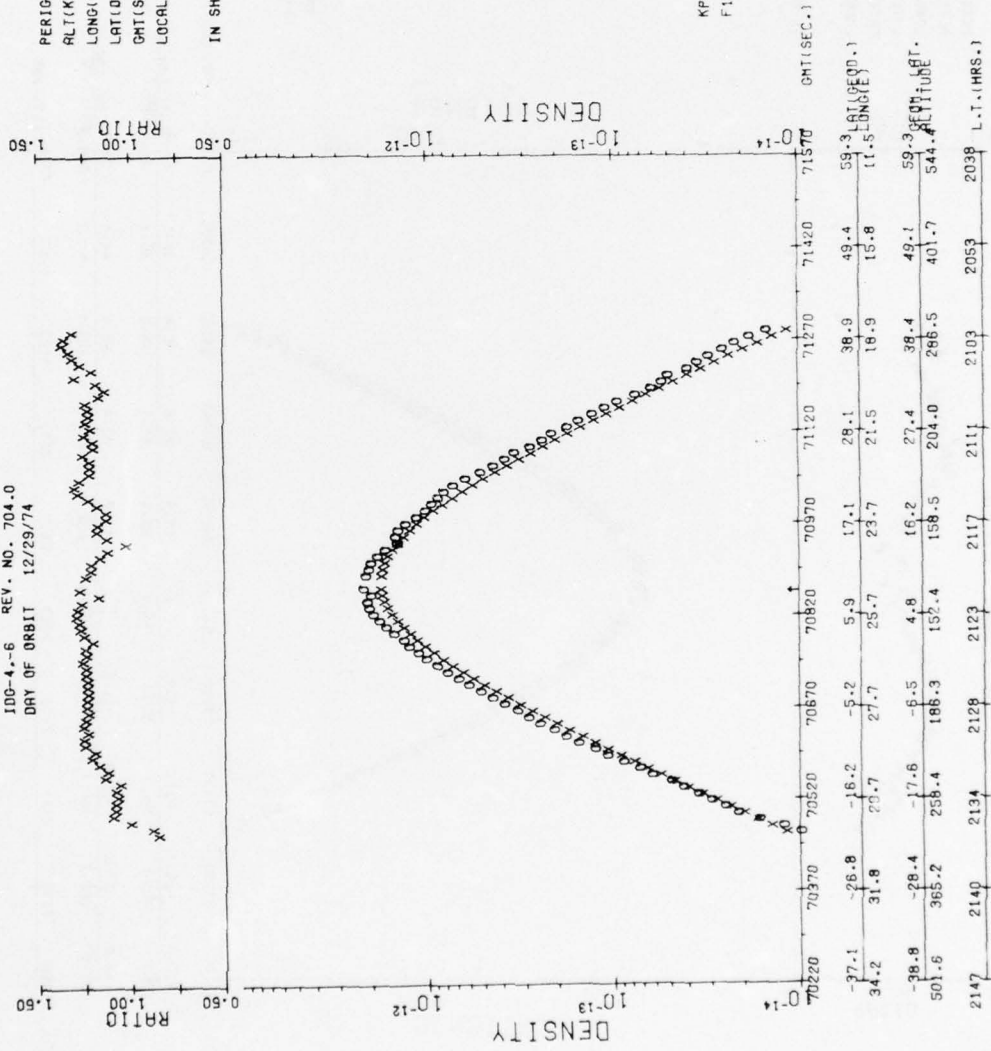
OPT (SEC.)	LONG (E)	ALT (KM)	DENSITY	RATIO
63100	-36.6	26.4	10 ⁻¹²	1.00
63250	-26.4	61.5	10 ⁻¹²	1.00
63400	-15.7	59.3	10 ⁻¹²	1.00
63550	-4.8	57.3	10 ⁻¹²	1.00
63700	6.4	55.4	10 ⁻¹²	1.00
63850	17.5	53.3	10 ⁻¹²	1.00
64000	28.8	51.1	10 ⁻¹²	1.00
64150	39.4	48.5	10 ⁻¹²	1.00
64300	49.8	45.4	10 ⁻¹²	1.00
64450	59.8	41.0	10 ⁻¹²	1.00

100-4-6 REV. NO. 704.0
 DRY OF ORBIT 12/29/74

PERIGEE
 RL(KM.)= 149.95
 LONG(E)= 25-02
 LAT(DEC.)= 9.78
 GMT(SEC.)= 70872.3 (1941H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 70220. TO 71570.

KP=3
 F10.7=76.0

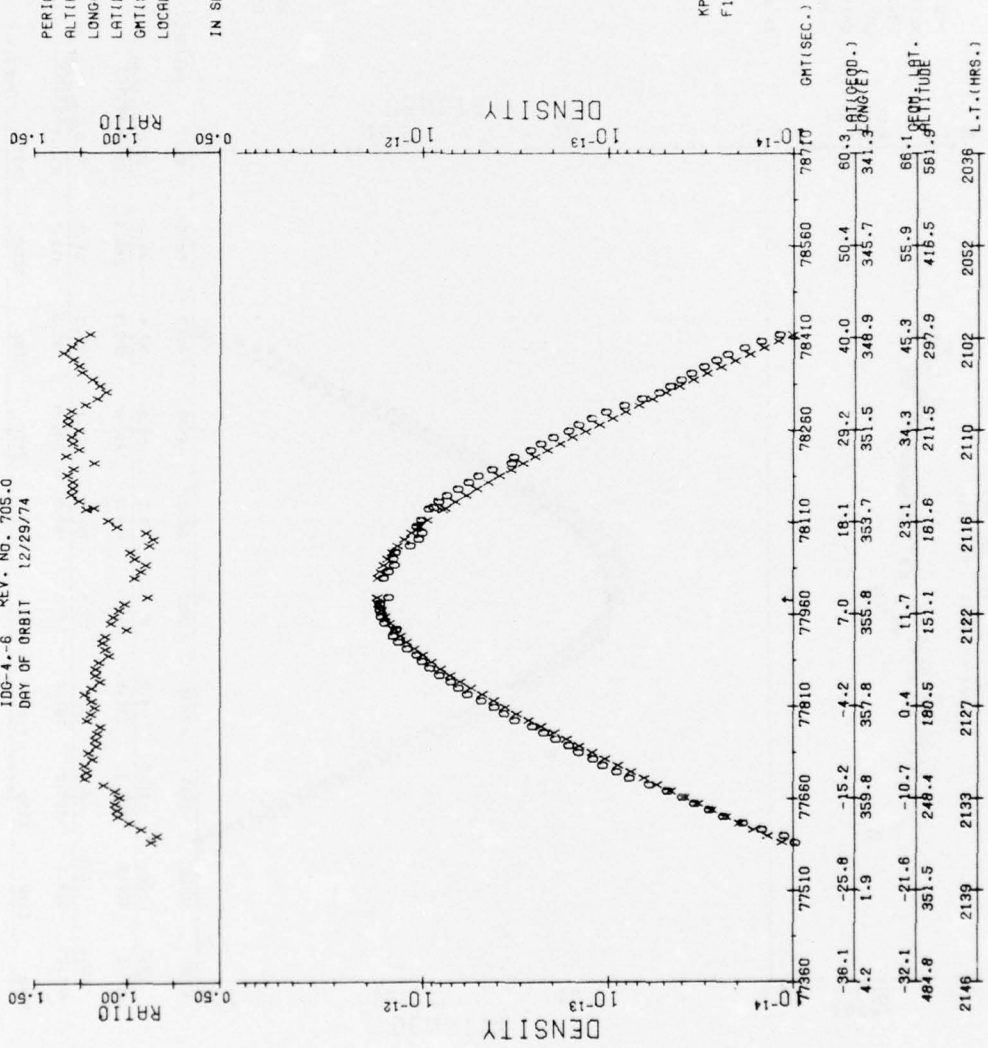


IDC-4.-6 REV. NO. 705-0
 DRY OF ORBIT 12/29/74

PERIGEE
 ALT(KM.)= 149.95
 LONG(L) = 355.32
 LAT(DEC.)= 9.61
 GMT(SEC.)= 77995.4 (21:39H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 77360. TO 78710.

KP=3
 F10.7=76.0

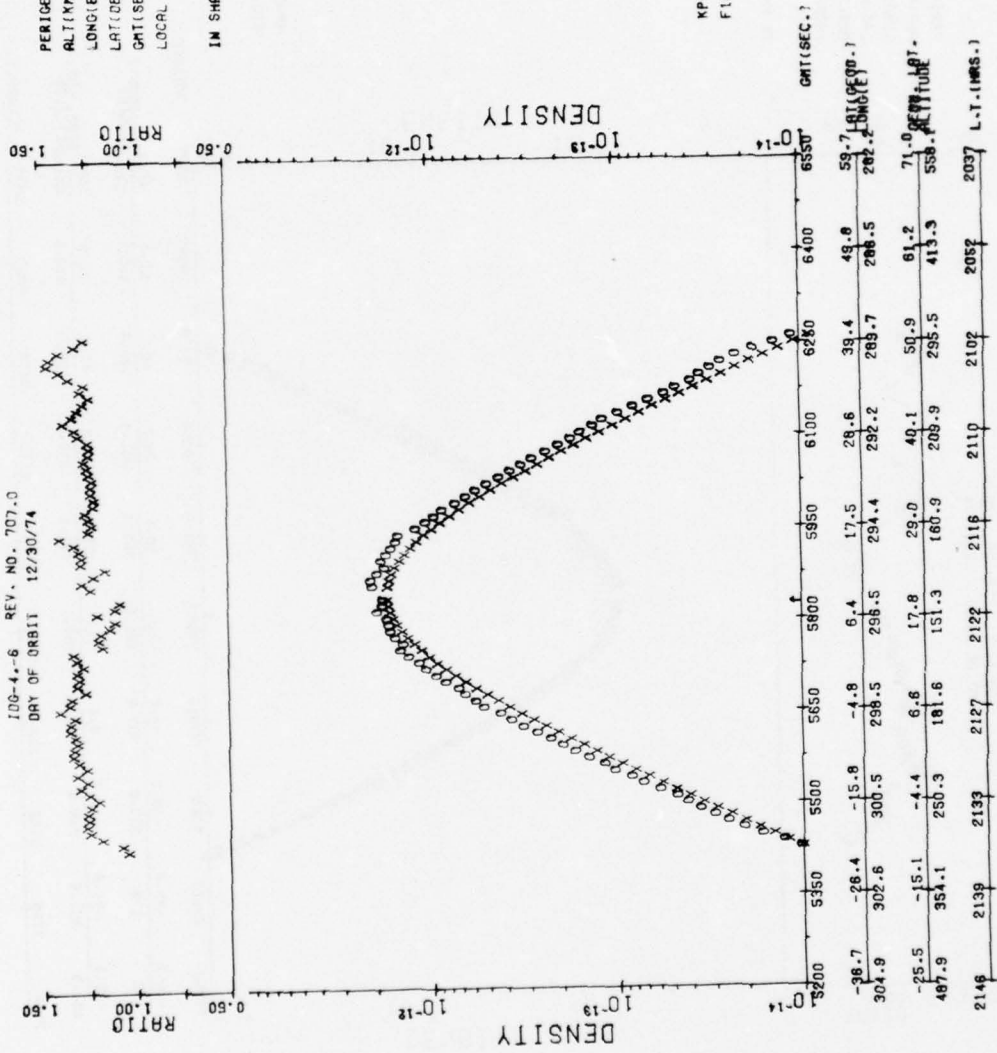


100-4--6 REV. NO. 707.0
 DRY OF ORBIT 12/30/74

PERIODE
 ALT(MR.)= 149.95
 LONG(E)= 295.96
 LAT(DEG.)= 9.25
 GMT(SEC.)= 5838.8 (0137H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 5200. TO 6550.

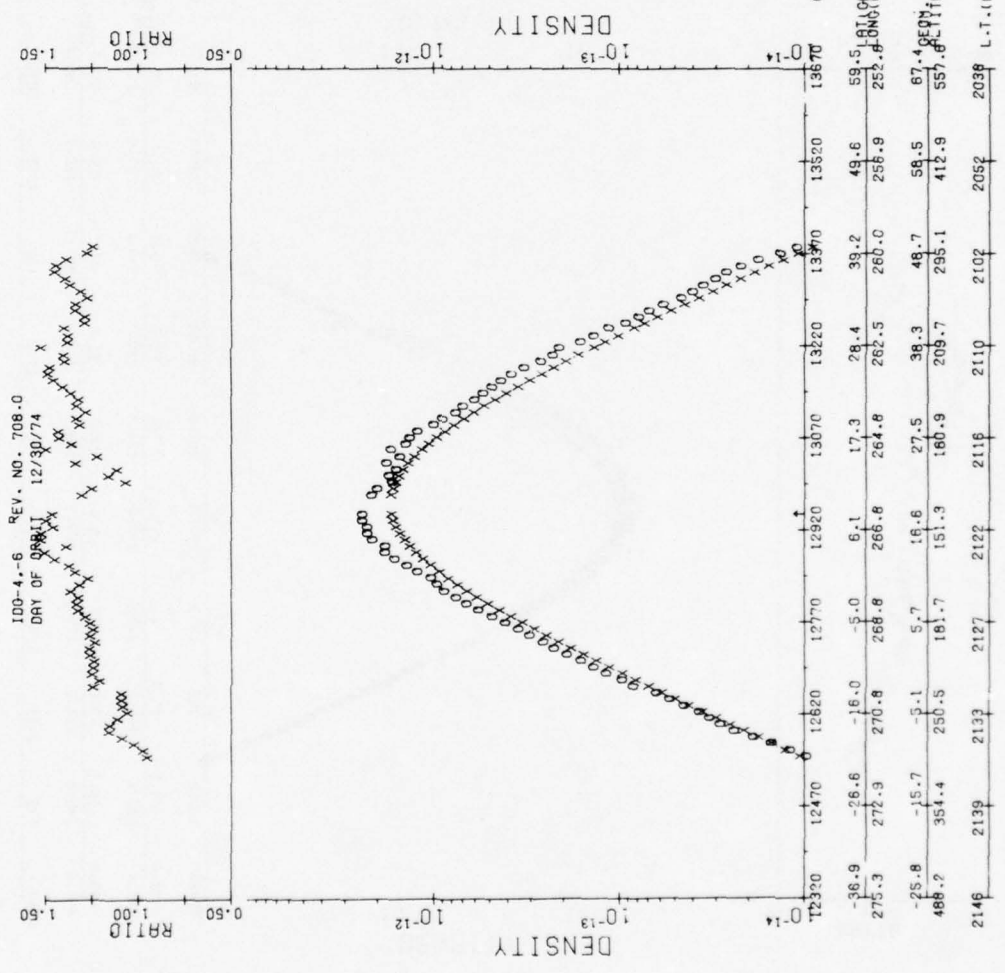
KP=2+
 F10.7=77.0



PERIOD
 ALT(KM.)= 149.94
 LONG(E)= 266.28
 LAT(DEG.)= 9.07
 GMT(SEC.)= 12959.3 (0335H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 12320. TO 13670.

KP=2*
 F10.7=77.0

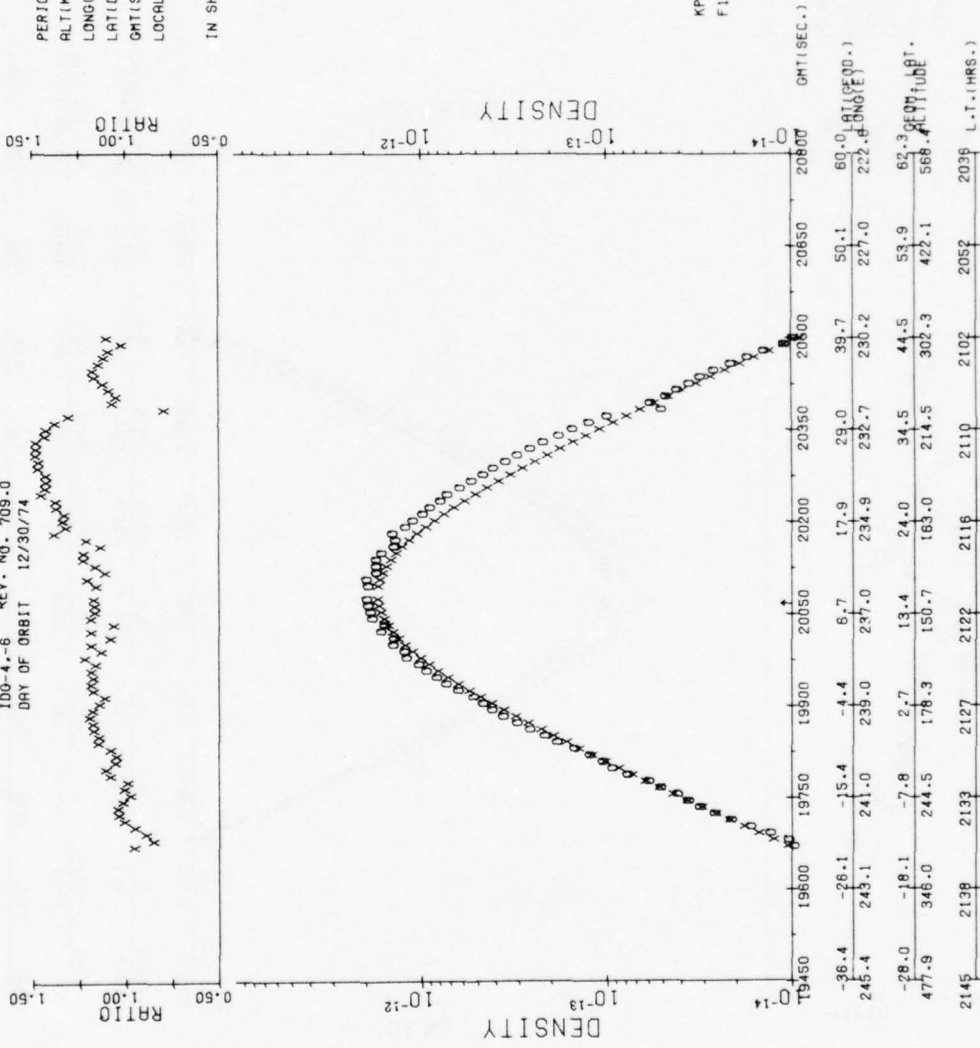


100-4-6 REV. NO. 709.0
 DRY OF ORBIT 12/30/74

PERIGEE
 ALT(KM.)= 149.94
 LONG(E)= 236.60
 LAT(DEG.)= 8.90
 GMT(SEC.)= 20078.9 (0534H)
 LOCAL TIME 2121 (H)

IN SHADE FROM 19450. TO 20800.

KP=2*
 F10.7=77.0

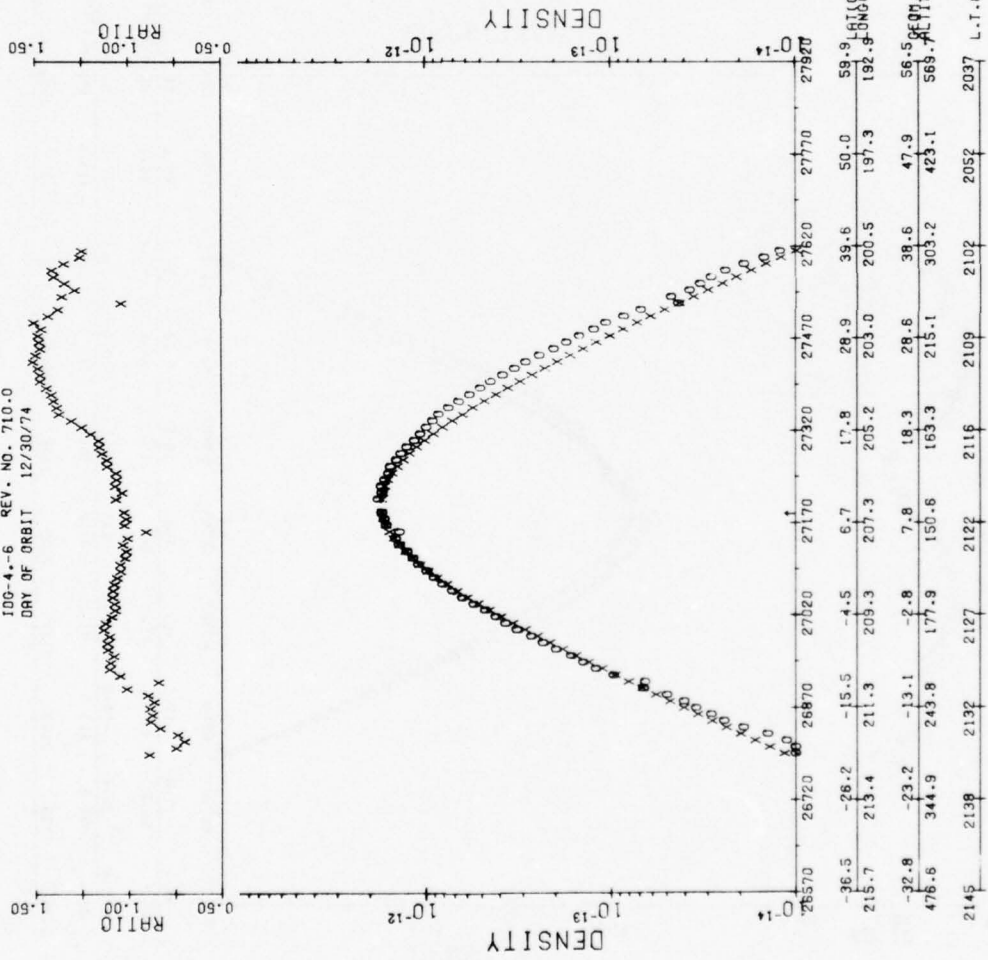


100-4-6 REV. NO. 710-0
 DAY OF ORBIT 12/30/74

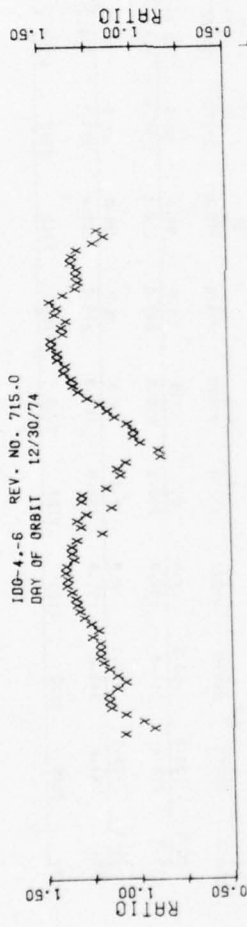
PERIGEE
 ALT(KM.)= 149.95
 LONG(E)= 206.93
 LAT(DEG.)= 8.72
 GMT(SEC.)= 27197.5 (0733H)
 LOCAL TIME 2120 (H)

IN SHADE FROM 26570. TO 27920.

KP=2
 F10.7=77.0

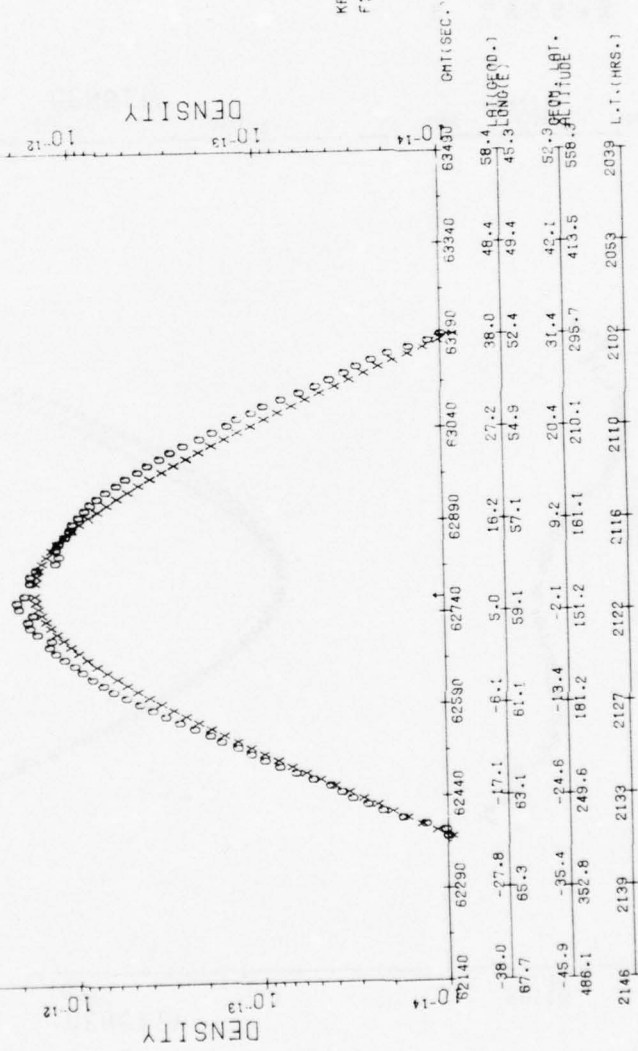


100-4-6 REV. NO. 715.0
 DAY OF ORBIT 12/30/74

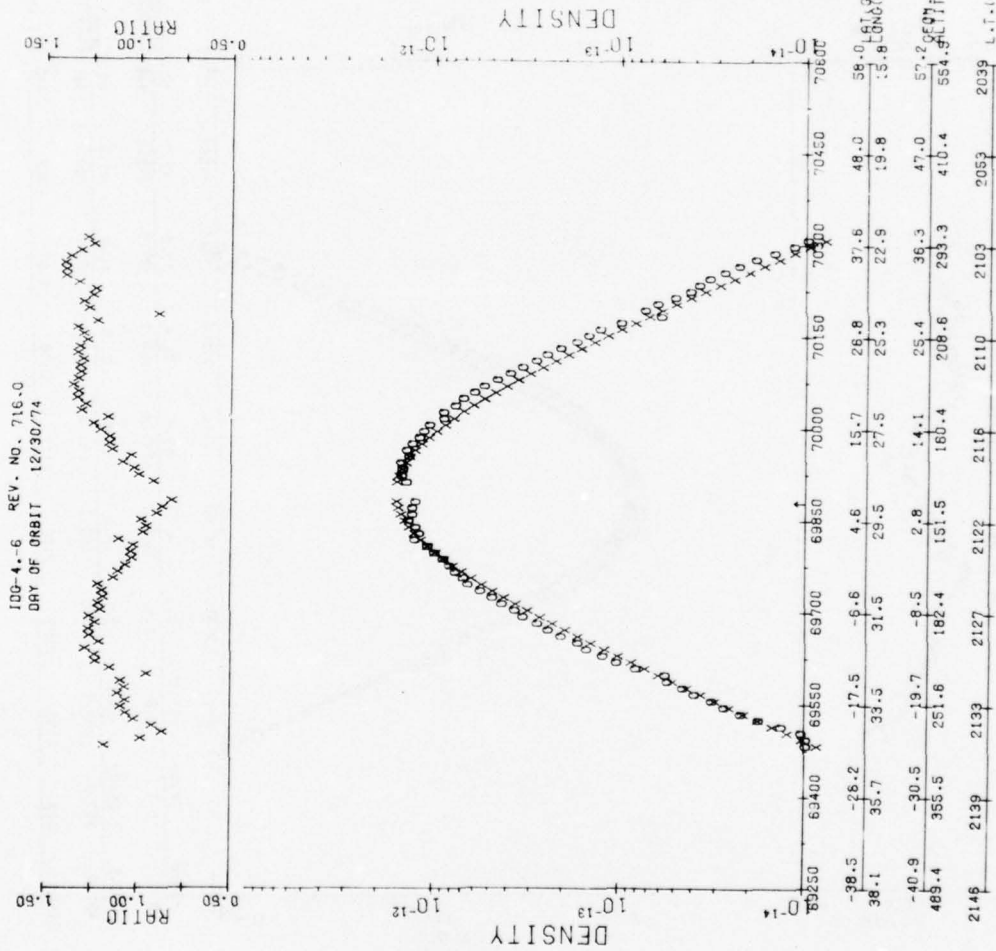


PERIODEE
 ALT.(KM.)= 149.95
 LONGE.)= 58.62
 LAT.(DEG.)= 7.83
 GMT.(SEC.)= 62778.0 (1726H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 62140. TO 62142.
 IN SHADE FROM 62142. TO 63490.

KP=1-
 F10.7=77.0



100-4--6 REV. NO. 716.0
 DRY OF ORBIT 12/30/74

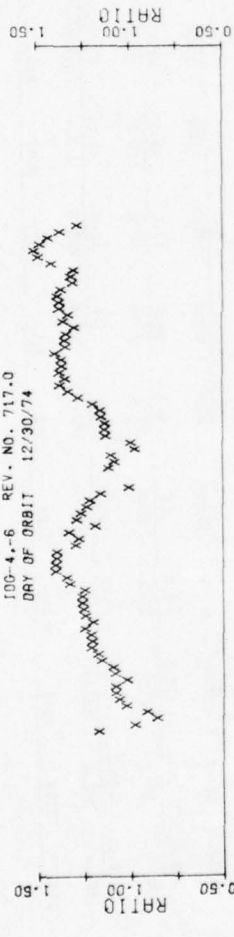


PERIGEE
 ALTITUDE = 143.95
 LONGITUDE = 28.57
 LATITUDE = 7.65
 ORBIT SEC. = 69891.5 (1924H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 69250 TO 69257.
 IN SHADE FROM 69257 TO 70600.

KP-1-
 FIG. 7a77-0

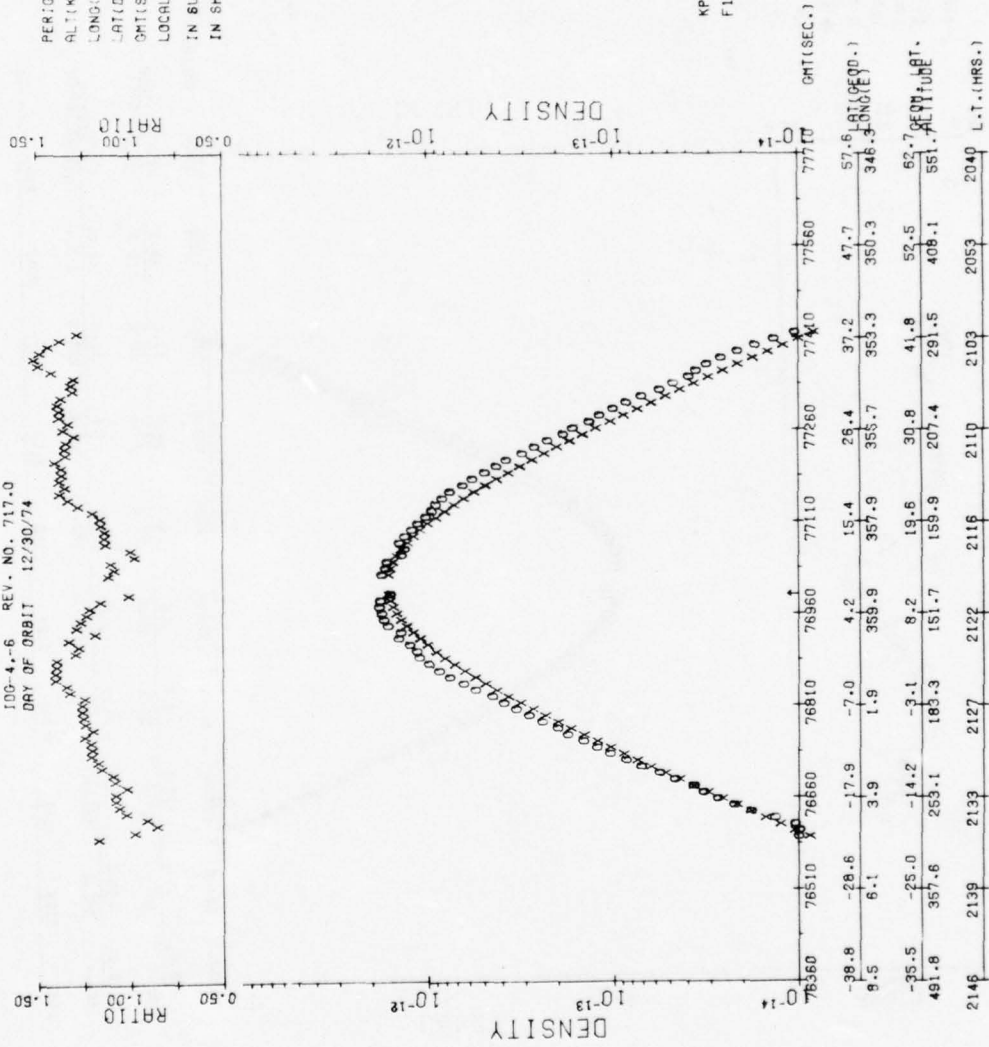
69250	63400	63400	63400	69700	69850	70000	70150	70300	70450	70600
-38.5	-28.2	-17.5	-6.6	4.6	15.7	26.8	37.6	48.0	58.0	58.0
38.1	35.7	33.5	31.5	29.5	27.5	25.3	22.9	19.8	15.8	15.8
-40.9	-30.5	-19.7	-8.5	2.8	14.1	25.4	36.3	47.0	57.2	57.2
485.4	355.5	251.6	182.4	151.5	180.4	208.6	293.3	410.4	554.9	554.9
2148	2139	2133	2127	2122	2118	2110	2103	2053	2039	2039
										L.T. (HRS.)

100-4-6 REV. NO. 717.0
 DRY OF ORBIT 12/30/74



PERIGEE
 ALT.(KM.)= 145.86
 LONG.(E.)= 359.32
 LAT.(DEG.)= 7.47
 OMT(SEC.)= 77004.1 (2123H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 76360. TO 76371.
 IN SHADE FROM 76371. TO 77710.

KP-1-
 F10.7=77.0

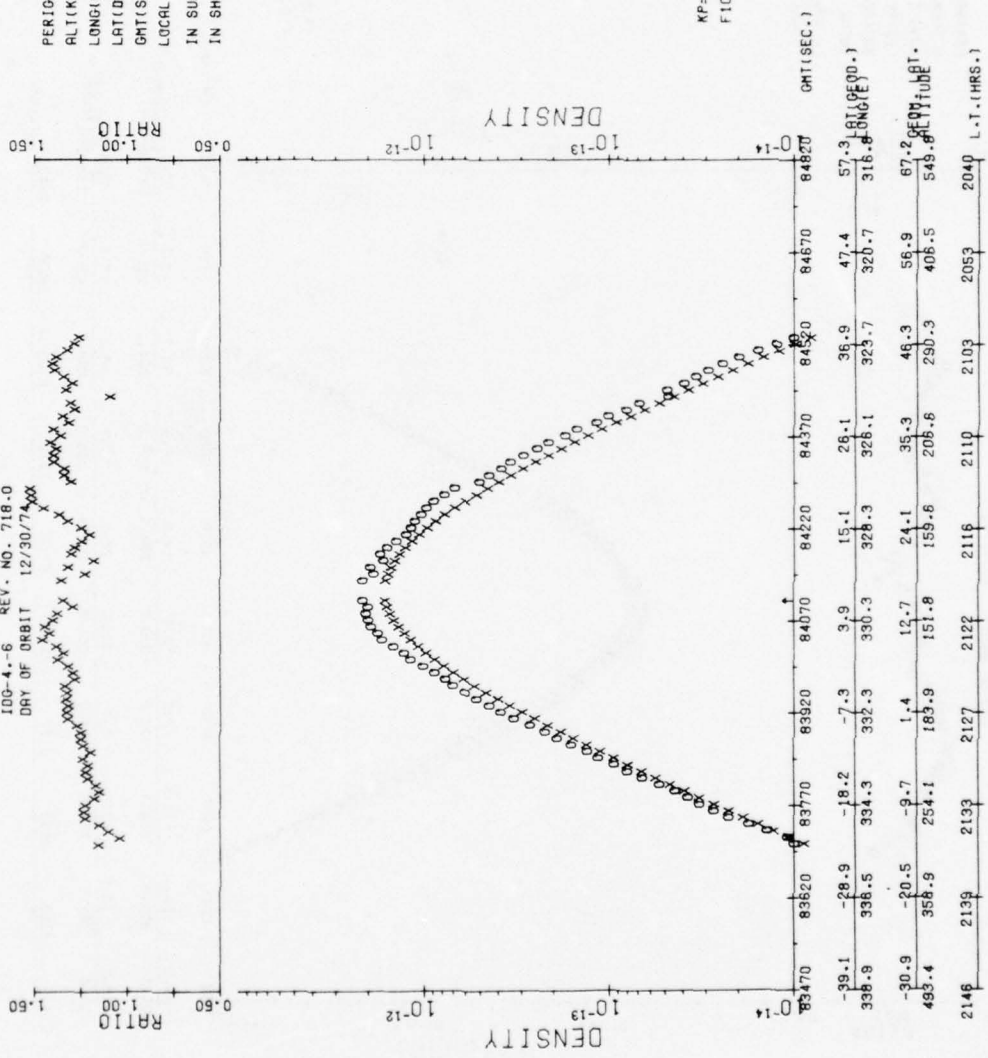


OMT(SEC.)	LONG.(DEG.)	ALT.(KM.)	PERIGEE	LOCAL TIME	IN SUN FROM	IN SHADE FROM
76360	-38.8	28.6	-17.9	2139	76360	76371
76510	9.5	6.1	3.9	2139	76360	76371
76660	-35.5	25.0	-14.2	2139	76360	76371
76810	491.8	357.6	253.1	2139	76360	76371
76880	-7.0	1.9	1.9	2127	76360	76371
76960	4.2	359.9	359.9	2122	76360	76371
77110	15.4	357.9	357.9	2116	76360	76371
77260	26.4	355.7	355.7	2110	76360	76371
77410	37.2	353.3	353.3	2103	76360	76371
77560	47.7	350.3	350.3	2053	76360	76371
77710	57.6	346.3	346.3	2040	76360	76371

100-4-S REV. NO. 718-0
 DRY OF ORBIT 12/30/74

PERIGEE
 ALT(KM.) = 149.96
 LONG(E) = 329.68
 LAT(DEG.) = 7.30
 GMT(SEC.) = 84115.9 (2321H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 83470. TO 83484.
 IN SHADE FROM 83484. TO 84820.

KP=1-
 F10.7=77.0



100-4-S REV. NO. 718-0
 DRY OF ORBIT 12/30/74

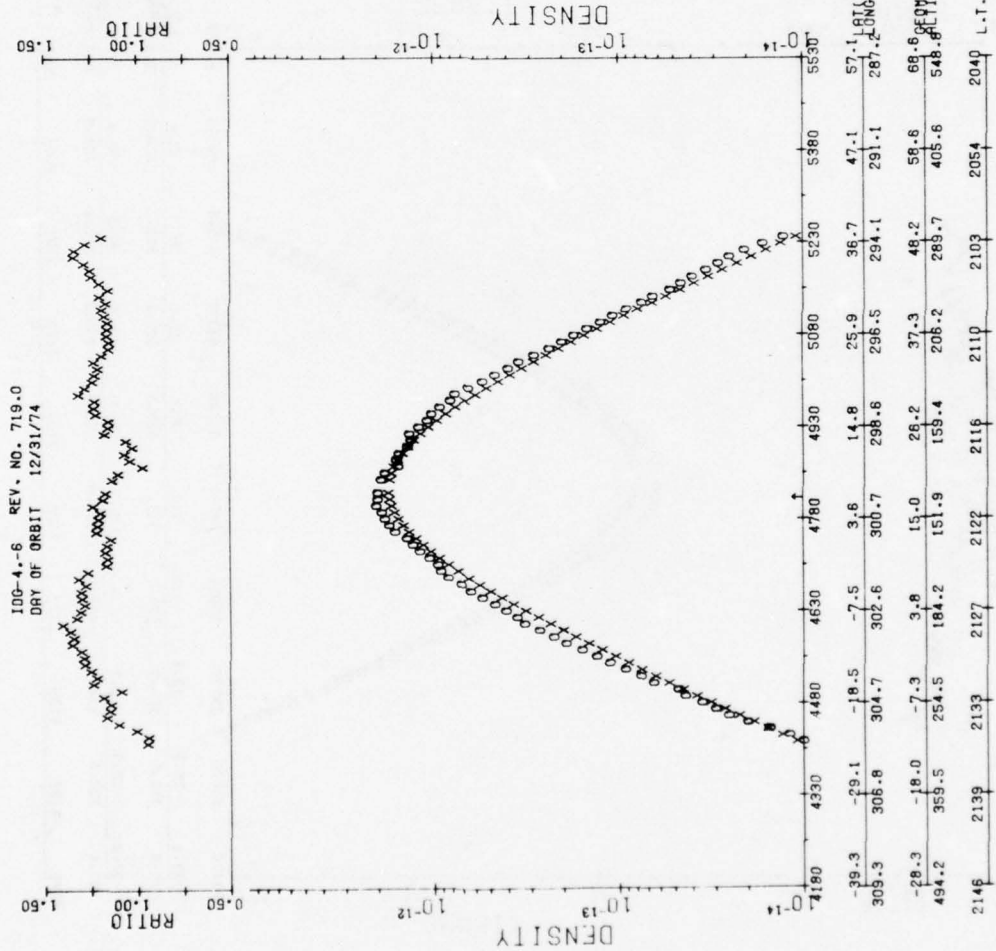
DENSITY
 10⁻¹³
 10⁻¹²
 0.1

GMT(SEC.)
 83470 83620 83770 83920 84070 84220 84370 84520 84670 84820

LONG(E)
 -39.1 -28.9 -18.2 -7.3 26.1 36.9 47.4 57.3
 338.9 338.5 334.3 332.3 328.3 326.1 323.7 320.7 316.8
 -30.9 -20.5 -9.7 1.4 12.7 24.1 35.3 46.3 56.9 67.2
 485.4 358.9 254.1 185.9 151.8 159.6 208.6 290.3 408.5 549.8

L.T. (HRS.)
 2146 2139 2133 2127 2122 2116 2110 2103 2053 2040

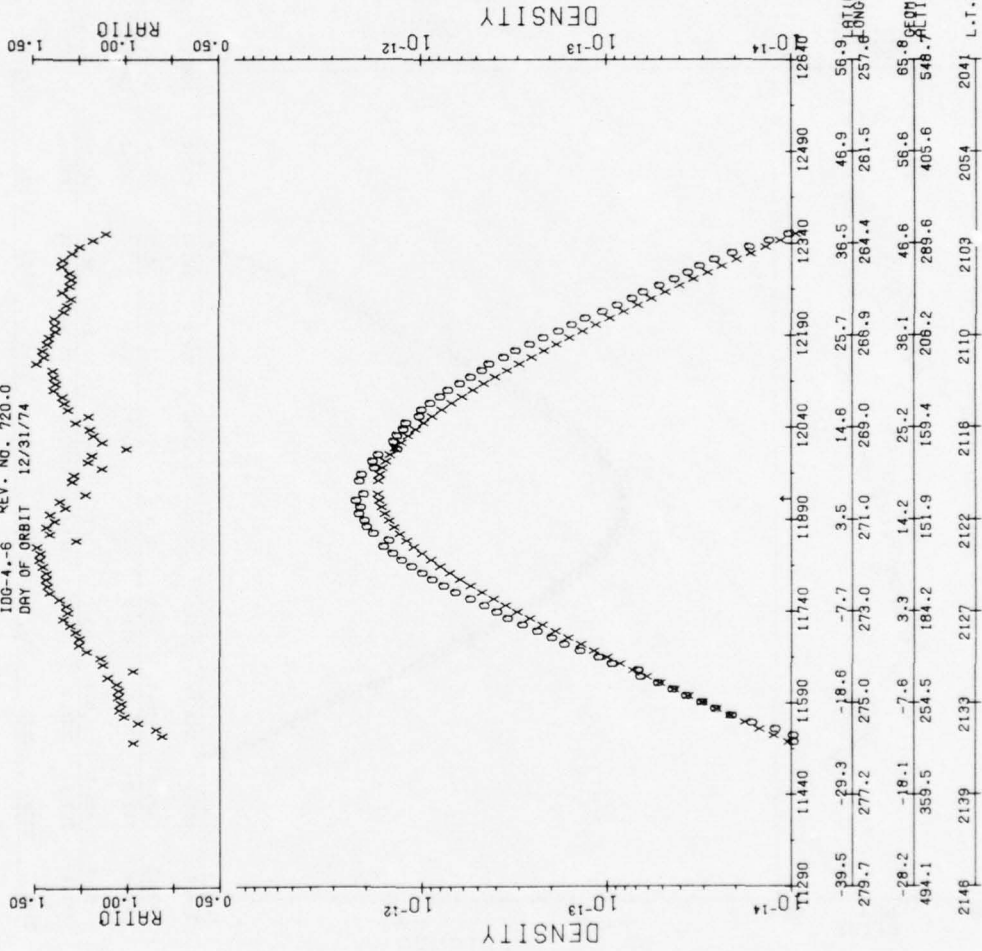
100-4-6 REV. NO. 719.0
 DRY OF ORBIT 12/31/74



PERIGEE
 ALT (KM.) = 149.97
 LONG (E) = 300.04
 LAT (DEG.) = 7.12
 GMT (SEC.) = 4826.7 (0120H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 4180 TO 4203.
 IN SHADE FROM 4203 TO 5530.

KP=2+
 F10.7=77.0

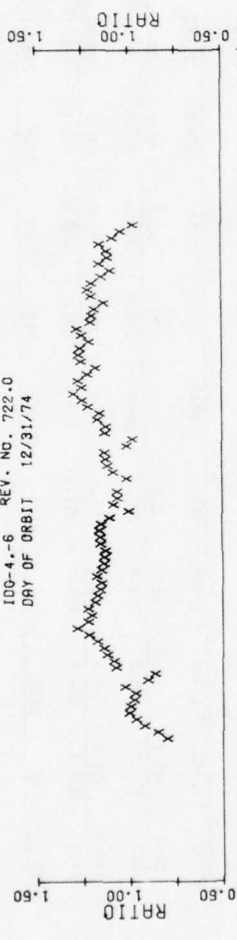
100-4-6 REV. NO. 720.0
 DRY OF ORBIT 12/31/74



PERIOD = 149.97
 ALT (KM.) = 270.40
 LONG (E) = 270.40
 LAT (DEG.) = 6.94
 GMT (SEC.) = 11936.8 (0318H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 11290. TO 11314.
 IN SHADE FROM 11314. TO 12640.

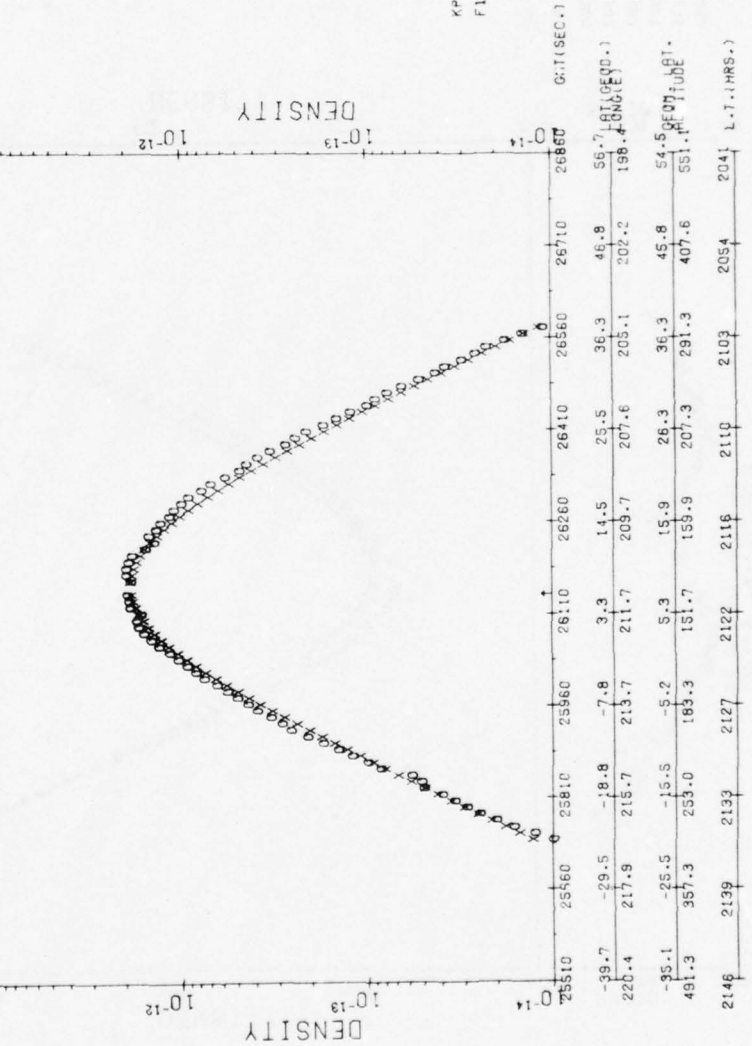
KP=2+
 F10.7=77.0

100-4.-6 REV. NO. 722.0
 DAY OF ORBIT 12/31/74



PERIODE
 ALT(KM.)= 149.98
 LONG(°)= 211.14
 LAT(°)= 6.59
 GMT(SEC.)= 26154.3 (0715H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 25510. TO 25535.
 IN SHADE FROM 25535. TO 26860.

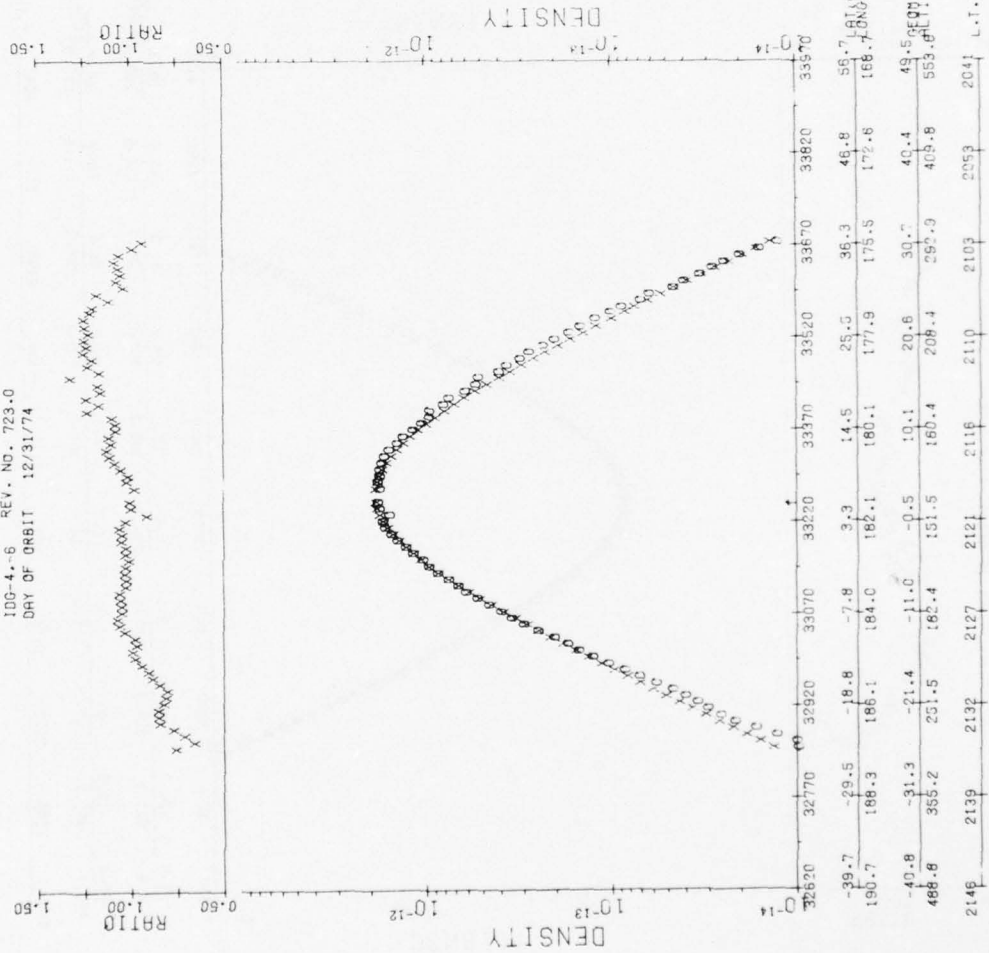
KP=4+
 F10.7=77.0



100-4.-6 REV. NO. 723-0
 DRY OF ORBIT 12/31/74

PERIODEE
 ALT(KM.)= 149.98
 LONG(°E)= 161.52
 LAT(°DEC.)= 6.40
 GMT(SEC.)= 33261.7 (0914H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 32620. TO 32644.
 IN SHADE FROM 32644. TO 33970.

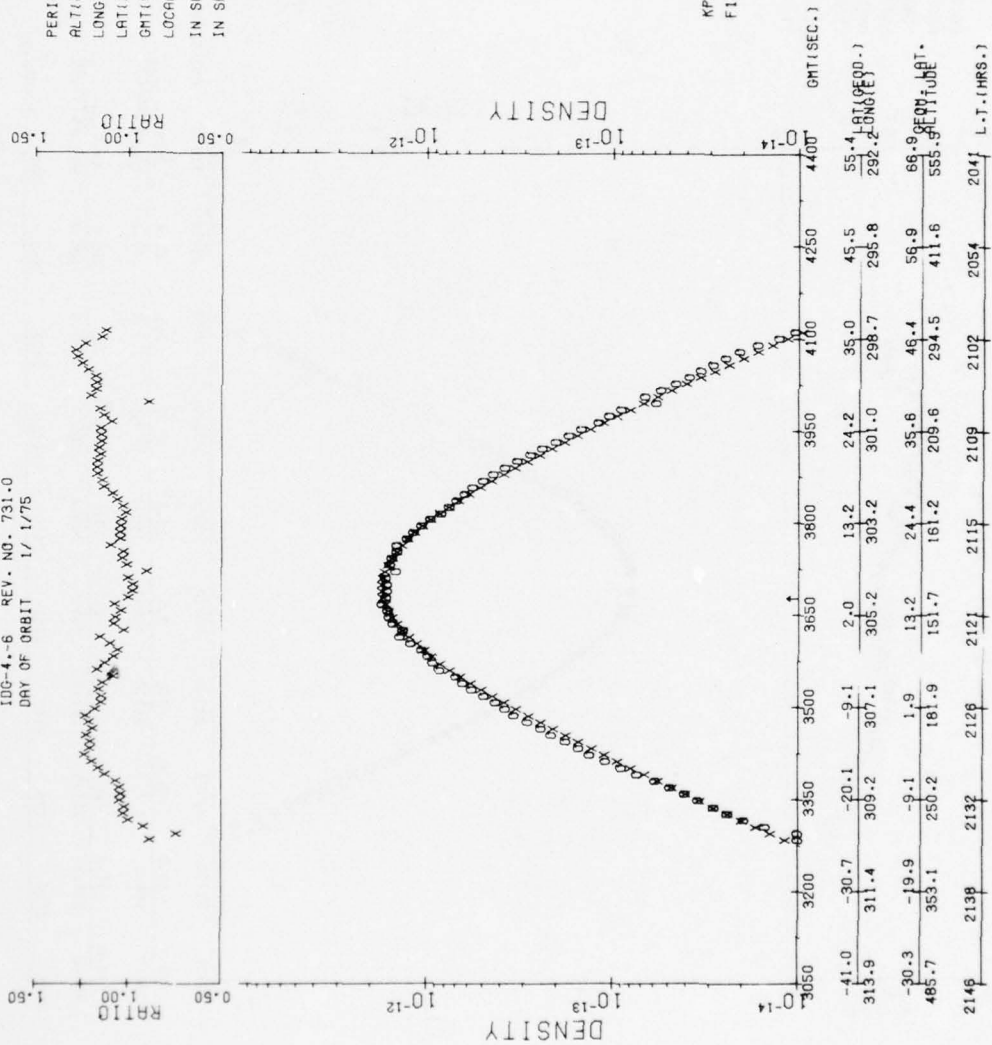
KP=4.
 F1C.=77.0



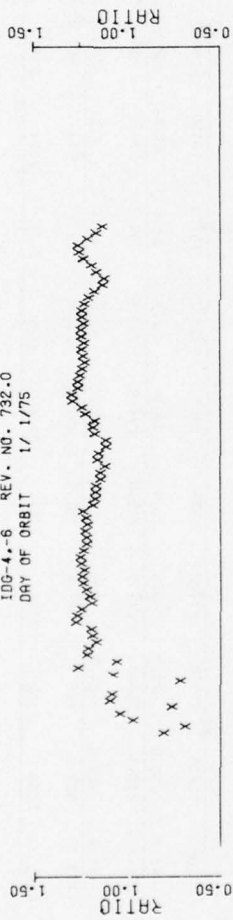
IDG-4-6 REV. NO. 731.0
 DRY OF ORBIT 1/ 1/75

PERIGEE
 ALT.(M.)= 150.37
 LONG(E)= 304.65
 LAT.(DEG.)= 4.96
 GMT.(SEC.)= 3689.4 (0101H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 3050. TO 4920.
 IN SHADE FROM 4920. TO 4400.

KF=2+
 F10.7=78.0

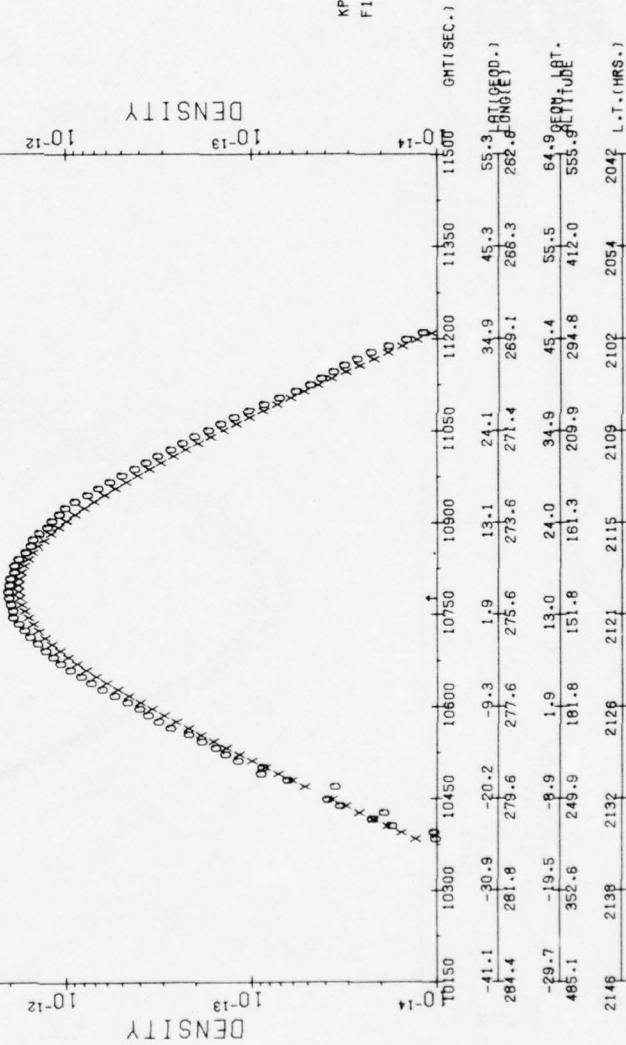


IDG-4,-6 REV. NO. 732-0
 DRY OF ORBIT 1/ 1/75



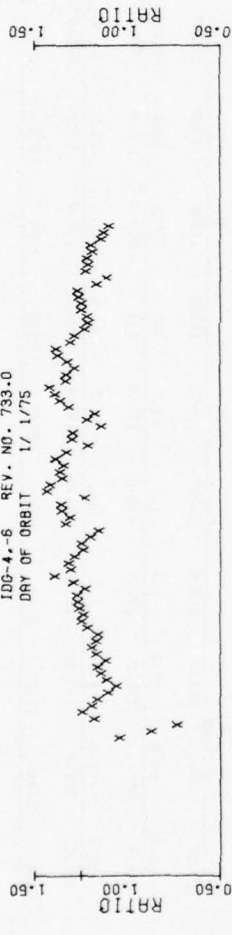
PERIGEE
 ALT(KM.)= 150.41
 LONG(°E)= 275.05
 LAT(°EG.)= 4.79
 GMT(SEC.)= 10788.9 (0259H)
 LOCAL TIME 2120 (H)
 IN SUN FROM 10150. TO 12060.
 IN SHADE FROM 12060. TO 11500.

KP=3
 F10.7=76.0



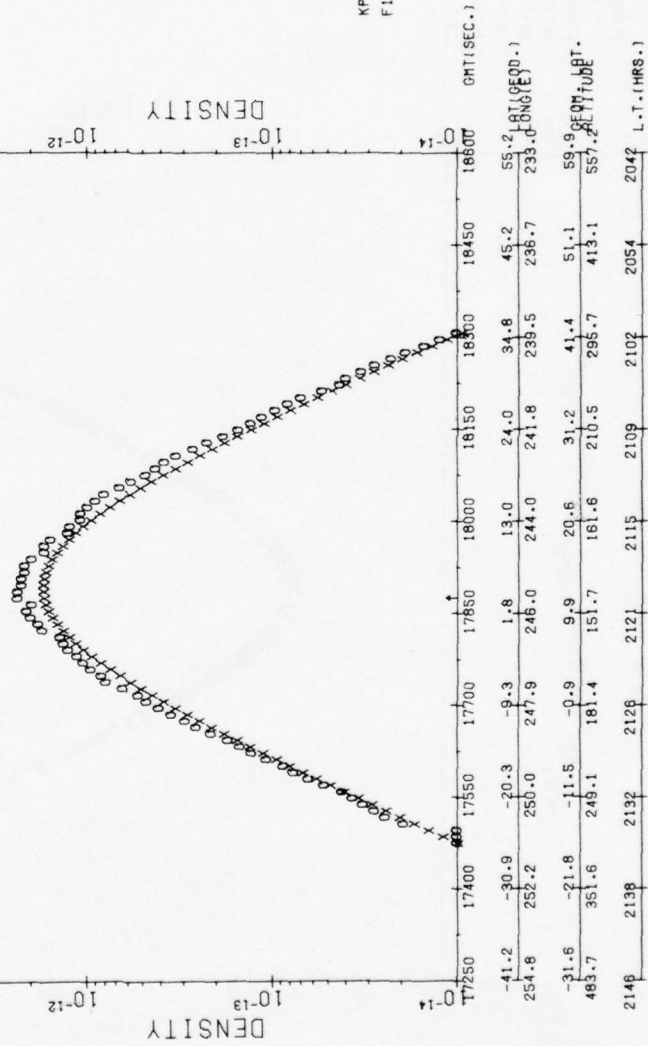
GMT(SEC.)	LONG(°E)	ALT(KM.)	RATIO	DENSITY	LOCAL TIME (H)	IN SUN	IN SHADE
10150	-41.1	284.4	1.00	10 ⁻¹⁴	2146	10150	11500
10300	-30.9	281.8	1.00	10 ⁻¹⁴	2138	10300	11500
10450	-20.2	279.6	1.00	10 ⁻¹⁴	2132	10450	11500
10600	-9.3	277.6	1.00	10 ⁻¹⁴	2126	10600	11500
10750	1.9	275.6	1.00	10 ⁻¹⁴	2121	10750	11500
10900	13.1	273.6	1.00	10 ⁻¹⁴	2115	10900	11500
11050	24.1	271.4	1.00	10 ⁻¹⁴	2109	11050	11500
11200	34.9	269.1	1.00	10 ⁻¹⁴	2102	11200	11500
11350	45.3	266.3	1.00	10 ⁻¹⁴	2054	11350	11500
11500	55.3	262.6	1.00	10 ⁻¹⁴	2042	11500	11500

IDD-4-6 REV. NO. 733-0
 DRY OF ORBIT 1/ 1/75

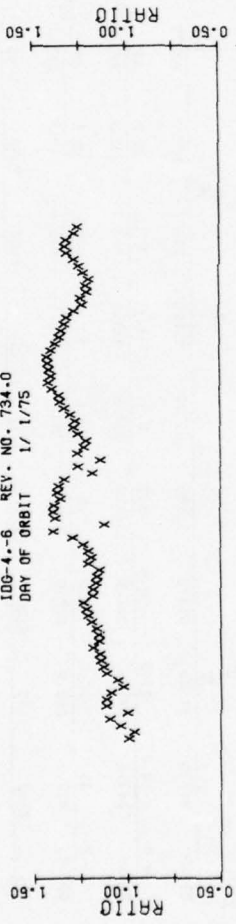


PERIGEE
 ALT(KM.)= 150.45
 LONG(L.)= 245.46
 LAT(DEG.)= 4.50
 GMT(SEC.)= 17887.6 (0458H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 17250. TO 19140.
 IN SHADE FROM 19140. TO 18600.

KP=2
 F10.7=78.0

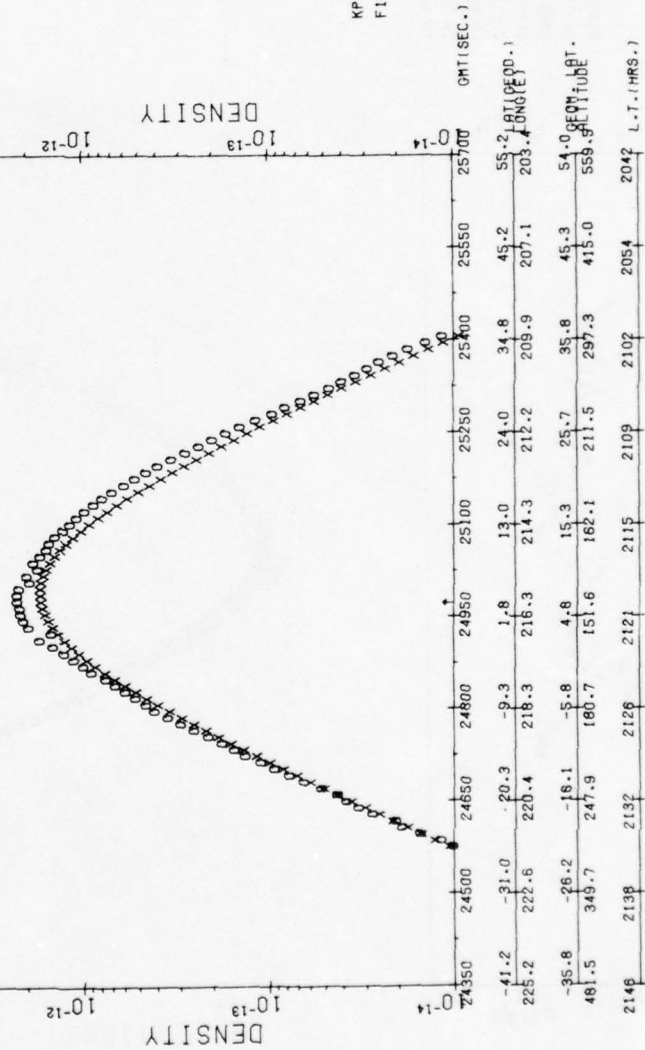


100-4-6 REV. NO. 734.0
 DRY OF ORBIT 1/ 1/75

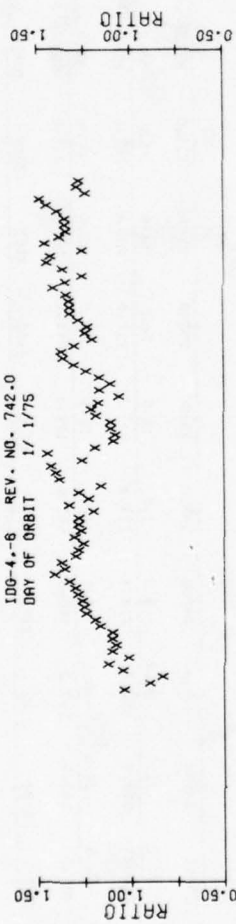


PERIGEE
 ALT(KM.)= 150.50
 LONG(°E)= 215.86
 LAT(°E)= 4.42
 GMT(SEC.)= 24985.4 (0856H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 24350. TO 26220.
 IN SHADE FROM 26220. TO 25700.

KF=2
 F10.7=78.0

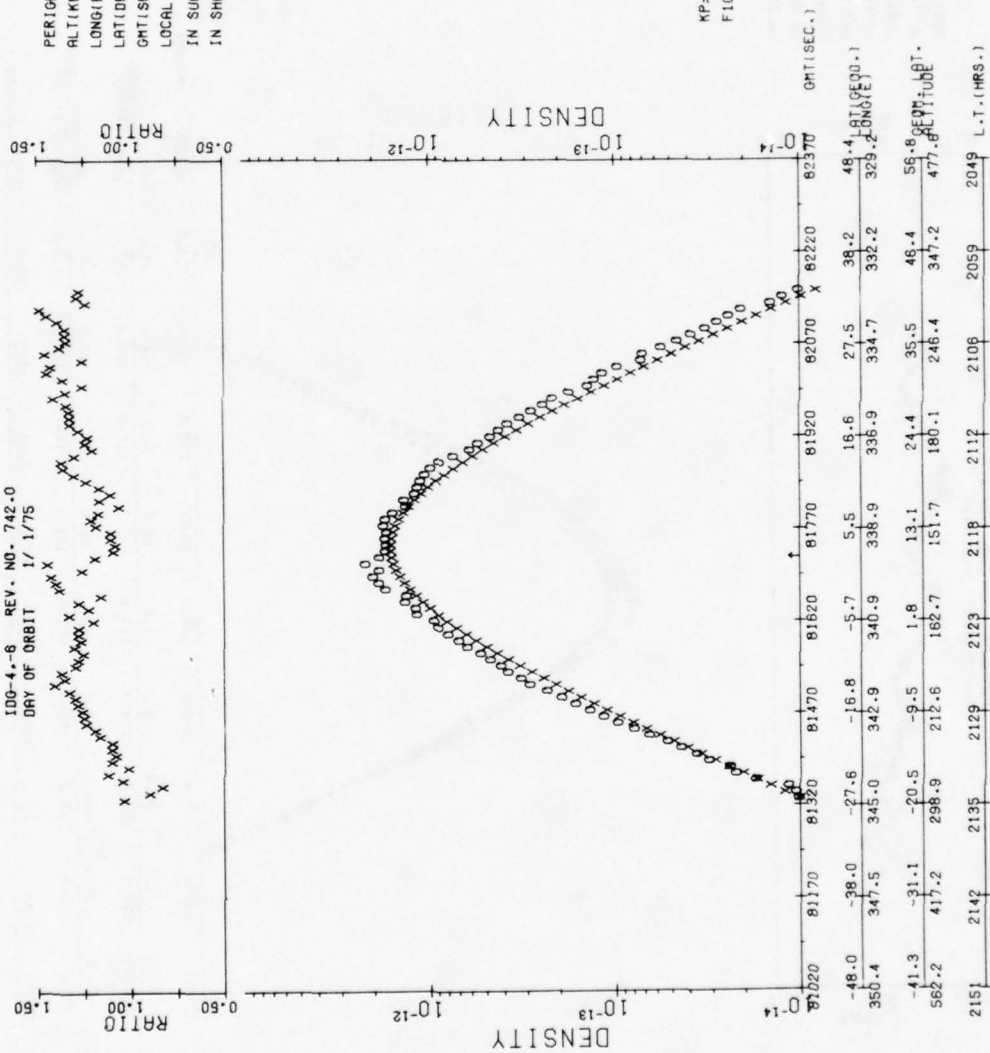


100-4-8 REV. NO. 742-0
 DRY OF ORBIT 1/1/75



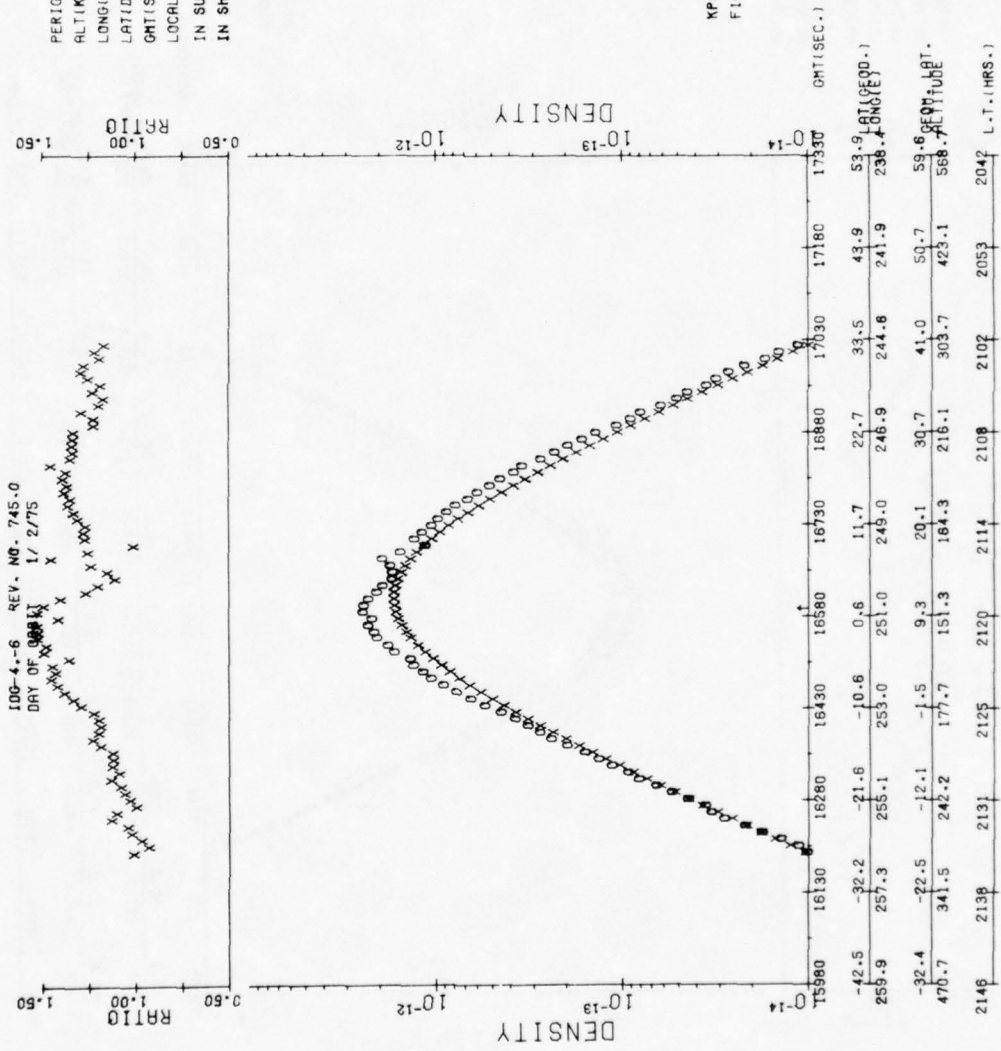
PERIGEE
 ALT(KM.)= 150.71
 LONG(E)= 339.33
 LAT(DEC.)= 2.99
 GMT(SEC.)= 81736.7 (2242H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 81020. TO 84720.
 IN SHADE FROM 84720. TO 82370.

KP=1
 F10.7=78.0



PERIGEE
 ALTIM.(.)= 150.70
 LONG(E.)= 250.67
 LAT(DEC.)= 2.46
 GMT(SEC.)= 16605.6 (0436H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 15980. TO 17880.
 IN SHADE FROM 17880. TO 17330.

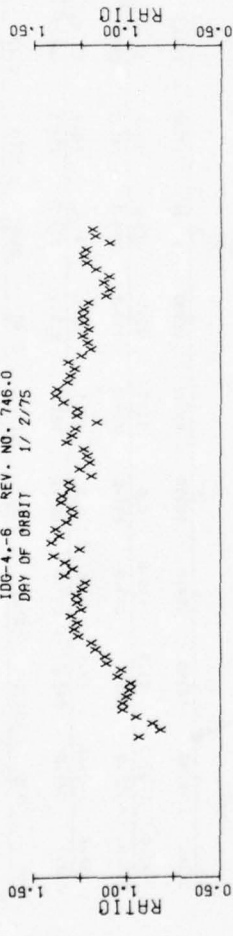
MP=2-
 F10.7=80.0



100-4--6 REV. NO. 745.0
 DRY OF 0.000 1/ 2775

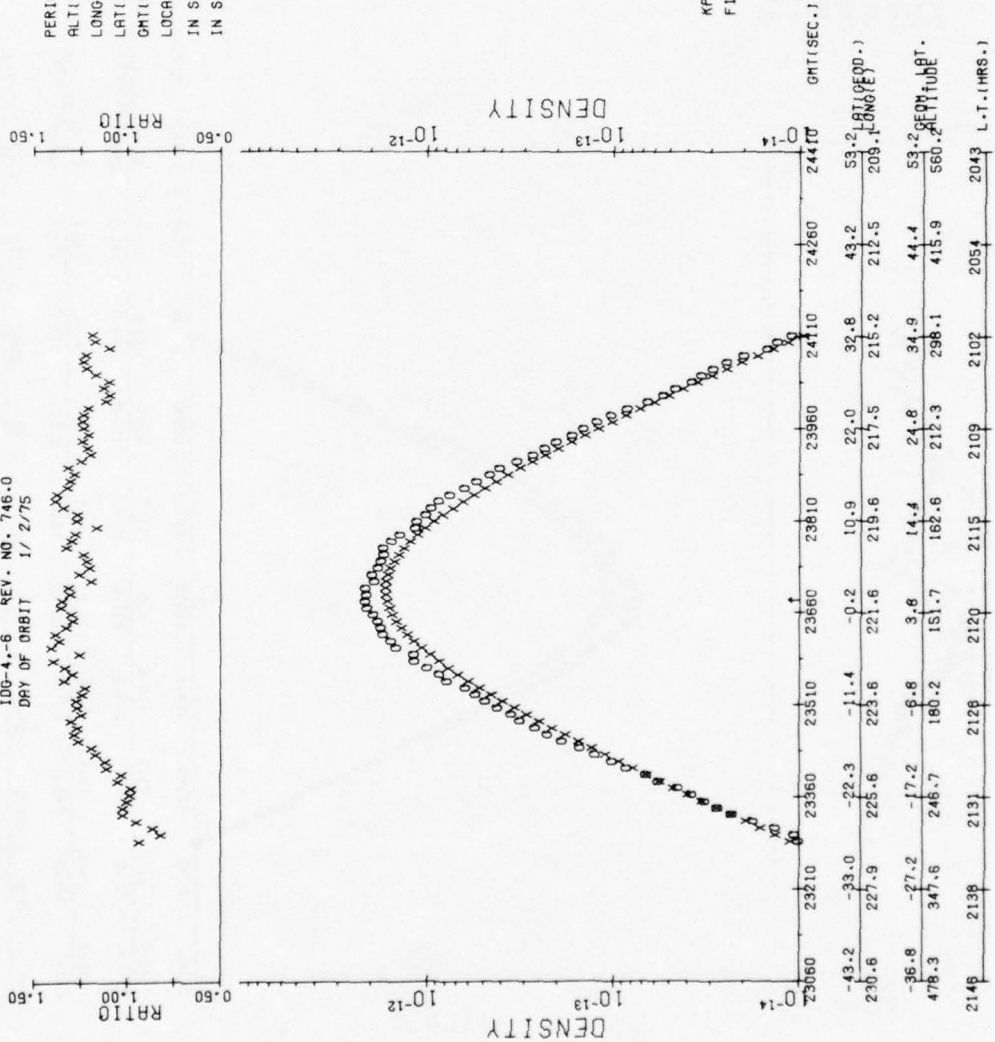
GMT(SEC.)	Ratio (x)	Density (o)
15980		0.14
16130		0.18
16280		0.25
16430		0.35
16580		0.50
16605.6	1.00	0.70
16630		0.60
16730		0.45
16880		0.30
17030		0.20
17180		0.15
17330		0.14

IDG-4-6 REV. NO. 746.0
 DRY OF ORBIT 1/ 2/75

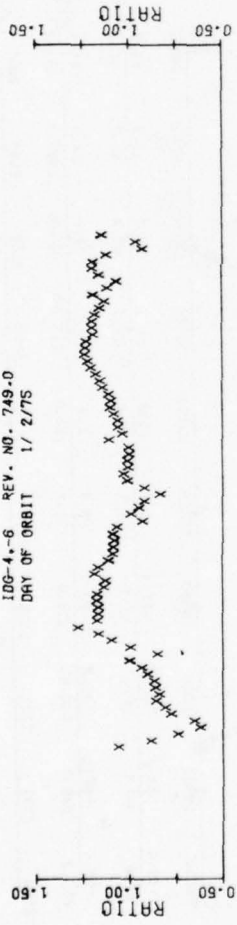


PERIGEE
 ALT(KM.)= 150.70
 LONG(°E)= 221.13
 LAT(°E)= 2.28
 GMT(SEC.)= 23663.7 (0834H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 23060. TO 24960.
 IN SHADE FROM 24960. TO 24410.

KF=2-
 F10.7=80.0

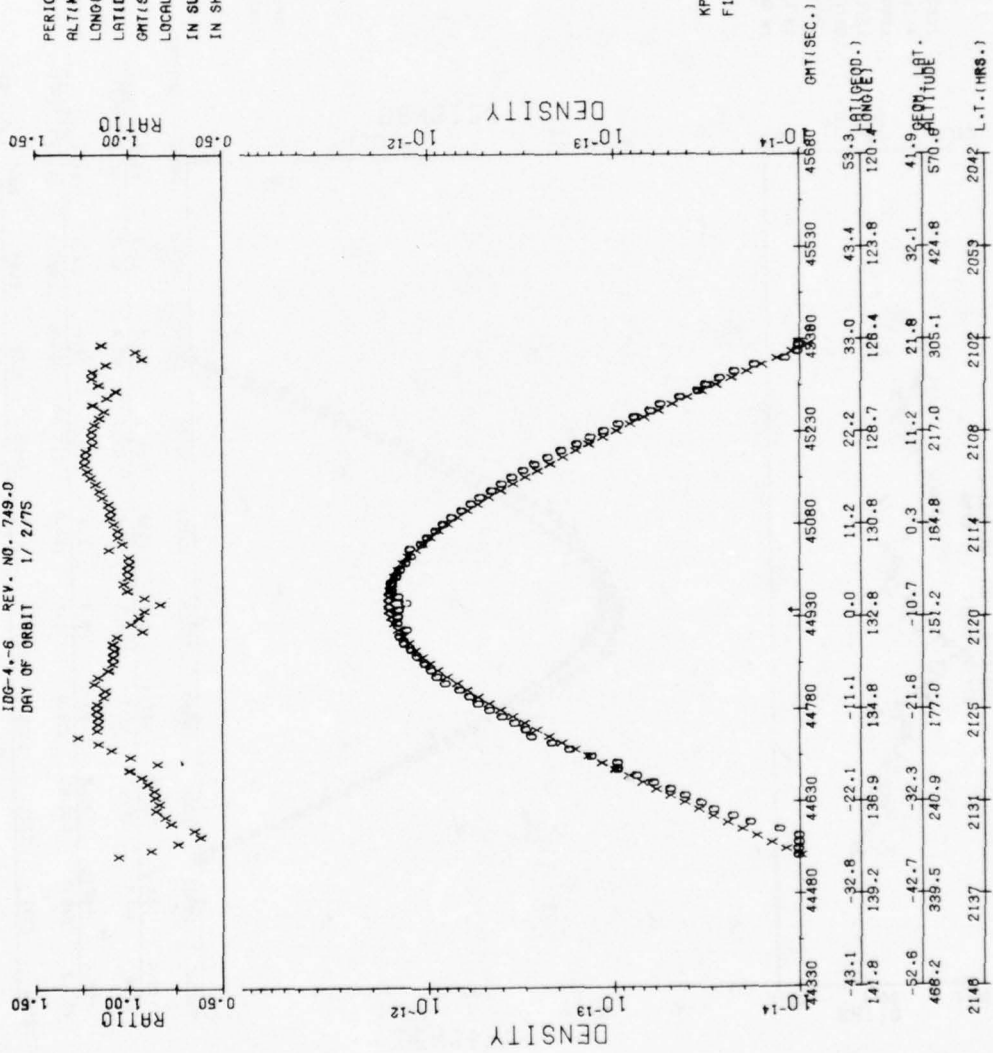


IDG-4,6 REV. NO. 749.0
 DRY OF ORBIT 1/ 2/75

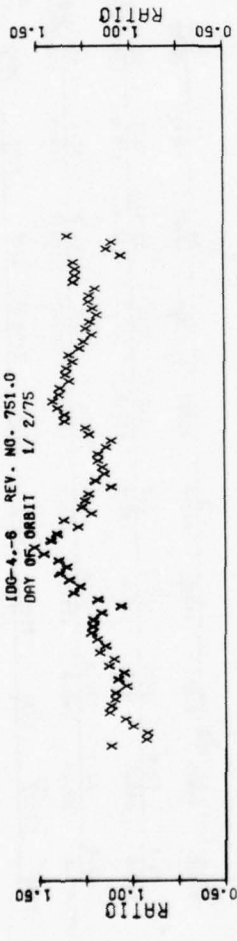


PERIGEE
 ALT(KM.)= 150.70
 LONG(°)= 132.51
 LAT(°E)= 1.74
 GMT(SEC.)= 44953.3 (1229H)
 LOCAL TIME 2119 (H)
 IN SUN FROM 44330. TO 46200.
 IN SHADE FROM 46200. TO 45680.

KP=1+
 F10.7=80.0

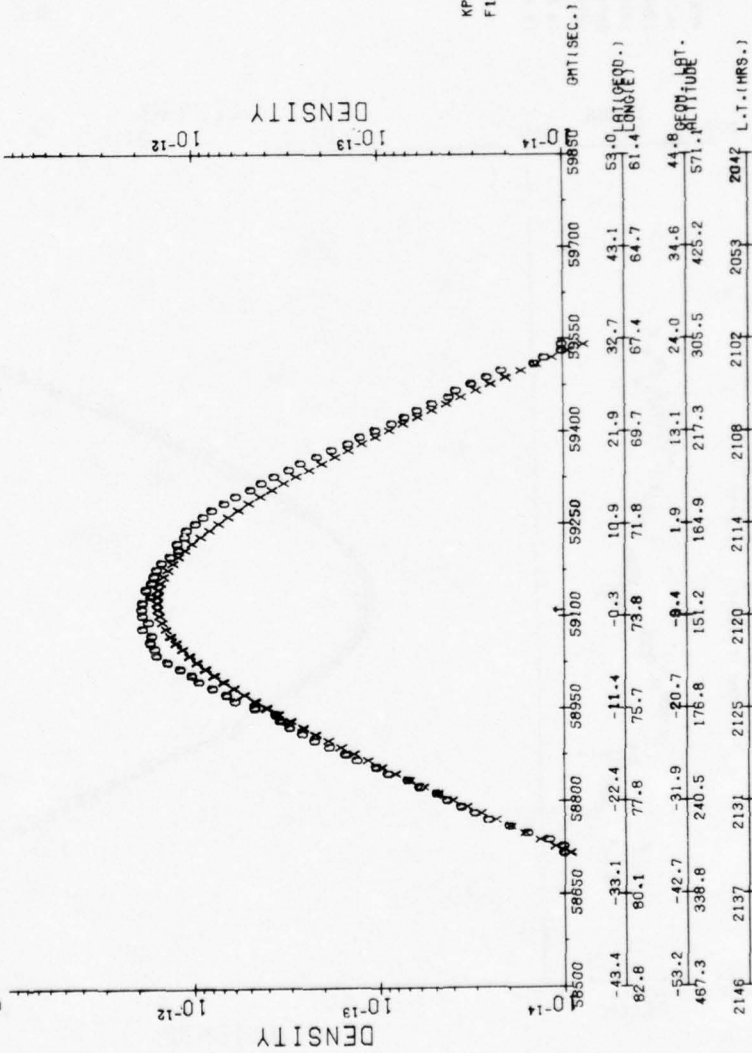


100-4--6 REV. NO. 751-0
 DRY ORBIT 1/ 2/75

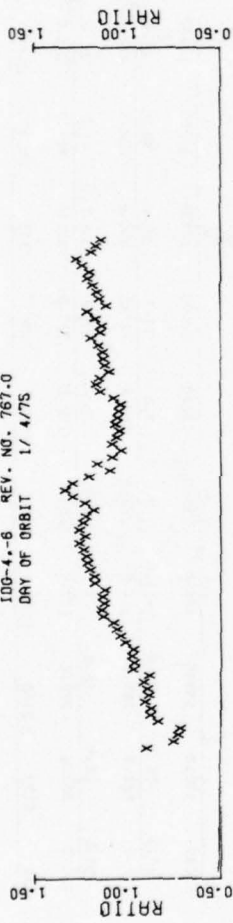


PERIGEE
 ALT(M.)= 150.70
 LONG(E)= 73.45
 LAT(DEG.)= 1.36
 GMT(SEC.)= 59122.7 (1625H)
 LOCAL TIME 2119 (M)
 IN SUN FROM 58500. TO 60360.
 IN SHADE FROM 60360. TO 59850.

KP=0+
 F10.7=80.0

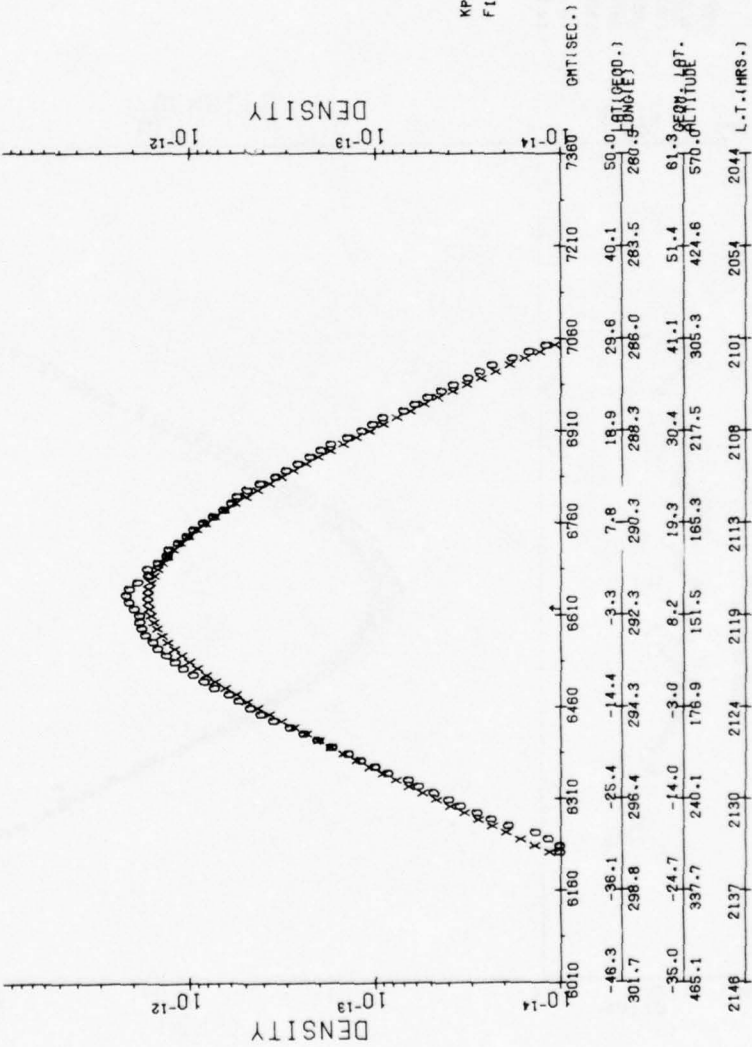


100-4-6 REV. NO. 767.0
 DRY OF ORBIT 1/ 4/75



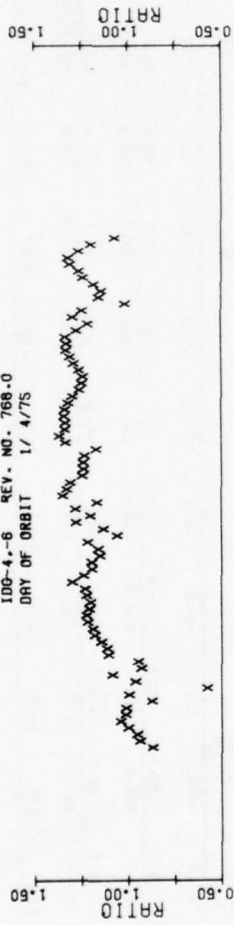
PERIODE
 ALT(KM.)= 151.08
 LONG(E)= 291.98
 LAT(DEG.)= -1.65
 QRT(SEC.)= 8632.4 (0150M)
 LOCAL TIME 2118 (H)
 IN SUN FROM 6010. TO 7860.
 IN SHADE FROM 7860. TO 7360.

KP=2+
 F10.7=80.0



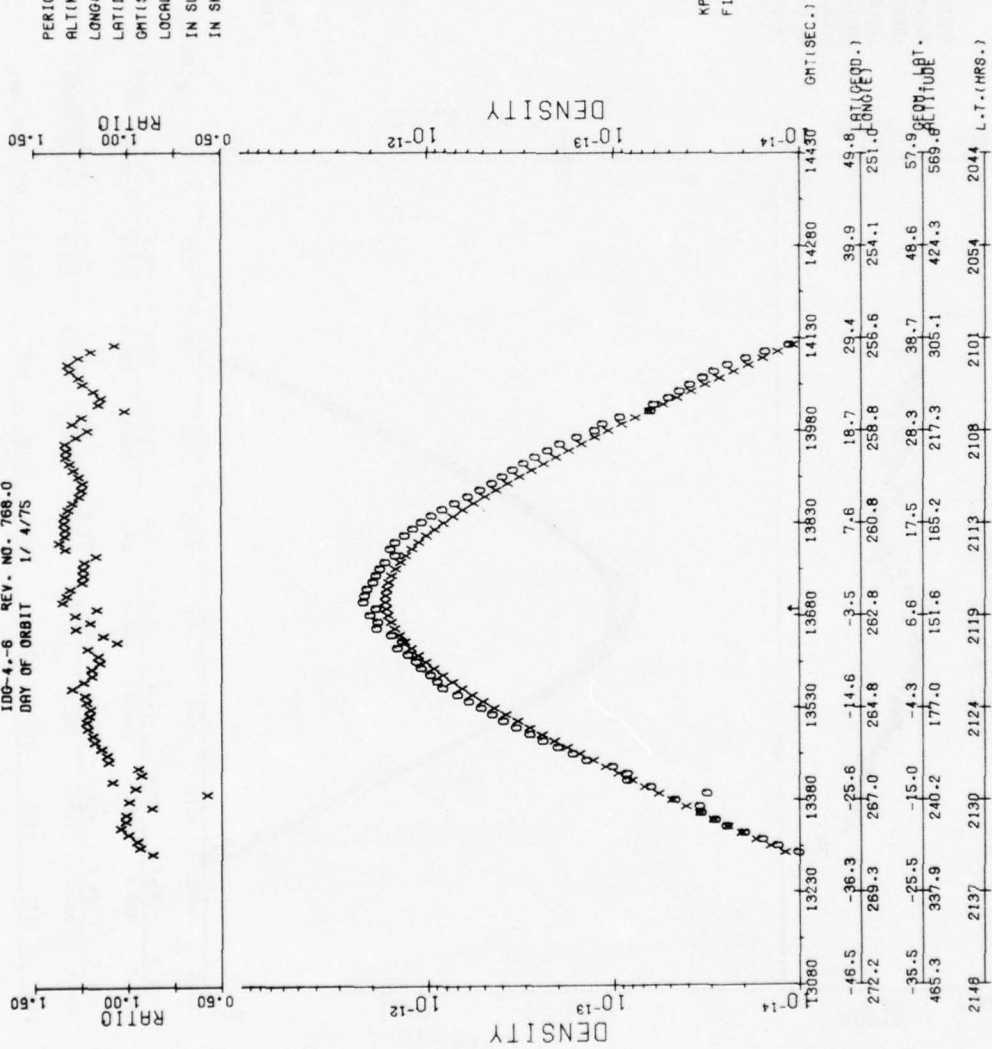
QRT(SEC.)	L.T.(MRS.)	DENSITY
7800	2148	10 ^{-14.3}
7700	2137	10 ^{-14.3}
7600	2130	10 ^{-14.3}
7500	2124	10 ^{-14.3}
7400	2119	10 ^{-14.3}
7360	2119	10 ^{-14.3}
7300	2113	10 ^{-14.3}
7200	2108	10 ^{-14.3}
7100	2101	10 ^{-14.3}
7060	2101	10 ^{-14.3}
7000	2096	10 ^{-14.3}
6900	2089	10 ^{-14.3}
6800	2083	10 ^{-14.3}
6700	2078	10 ^{-14.3}
6600	2073	10 ^{-14.3}
6500	2068	10 ^{-14.3}
6460	2063	10 ^{-14.3}
6400	2058	10 ^{-14.3}
6310	2054	10 ^{-14.3}
6200	2048	10 ^{-14.3}
6100	2041	10 ^{-14.3}
6000	2034	10 ^{-14.3}
5900	2027	10 ^{-14.3}
5800	2020	10 ^{-14.3}
5700	2013	10 ^{-14.3}
5600	2006	10 ^{-14.3}
5500	1999	10 ^{-14.3}
5400	1992	10 ^{-14.3}
5300	1985	10 ^{-14.3}
5200	1978	10 ^{-14.3}
5100	1971	10 ^{-14.3}
5000	1964	10 ^{-14.3}
4900	1957	10 ^{-14.3}
4800	1950	10 ^{-14.3}
4700	1943	10 ^{-14.3}
4600	1936	10 ^{-14.3}
4500	1929	10 ^{-14.3}
4400	1922	10 ^{-14.3}
4300	1915	10 ^{-14.3}
4200	1908	10 ^{-14.3}
4100	1901	10 ^{-14.3}
4000	1894	10 ^{-14.3}
3900	1887	10 ^{-14.3}
3800	1880	10 ^{-14.3}
3700	1873	10 ^{-14.3}
3600	1866	10 ^{-14.3}
3500	1859	10 ^{-14.3}
3400	1852	10 ^{-14.3}
3300	1845	10 ^{-14.3}
3200	1838	10 ^{-14.3}
3100	1831	10 ^{-14.3}
3000	1824	10 ^{-14.3}
2900	1817	10 ^{-14.3}
2800	1810	10 ^{-14.3}
2700	1803	10 ^{-14.3}
2600	1796	10 ^{-14.3}
2500	1789	10 ^{-14.3}
2400	1782	10 ^{-14.3}
2300	1775	10 ^{-14.3}
2200	1768	10 ^{-14.3}
2100	1761	10 ^{-14.3}
2000	1754	10 ^{-14.3}
1900	1747	10 ^{-14.3}
1800	1740	10 ^{-14.3}
1700	1733	10 ^{-14.3}
1600	1726	10 ^{-14.3}
1500	1719	10 ^{-14.3}
1400	1712	10 ^{-14.3}
1300	1705	10 ^{-14.3}
1200	1698	10 ^{-14.3}
1100	1691	10 ^{-14.3}
1000	1684	10 ^{-14.3}
900	1677	10 ^{-14.3}
800	1670	10 ^{-14.3}
700	1663	10 ^{-14.3}
600	1656	10 ^{-14.3}
500	1649	10 ^{-14.3}
400	1642	10 ^{-14.3}
300	1635	10 ^{-14.3}
200	1628	10 ^{-14.3}
100	1621	10 ^{-14.3}
0	1614	10 ^{-14.3}

100-4.-6 REV. NO. 768-0
 DRY OF ORBIT 1/ 4/75

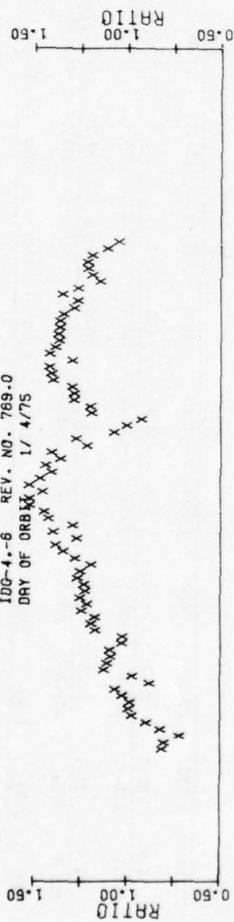


PERIODE
 ALI(KM.)= 151.11
 LONG(E)= 282.51
 LAT(DEG.)= -1.83
 GMT(SEC.)= 13702.7 (0348H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 19080. TO 14940.
 IN SHADE FROM 14940. TO 14430.

KP=2+
 F10.7=80.C

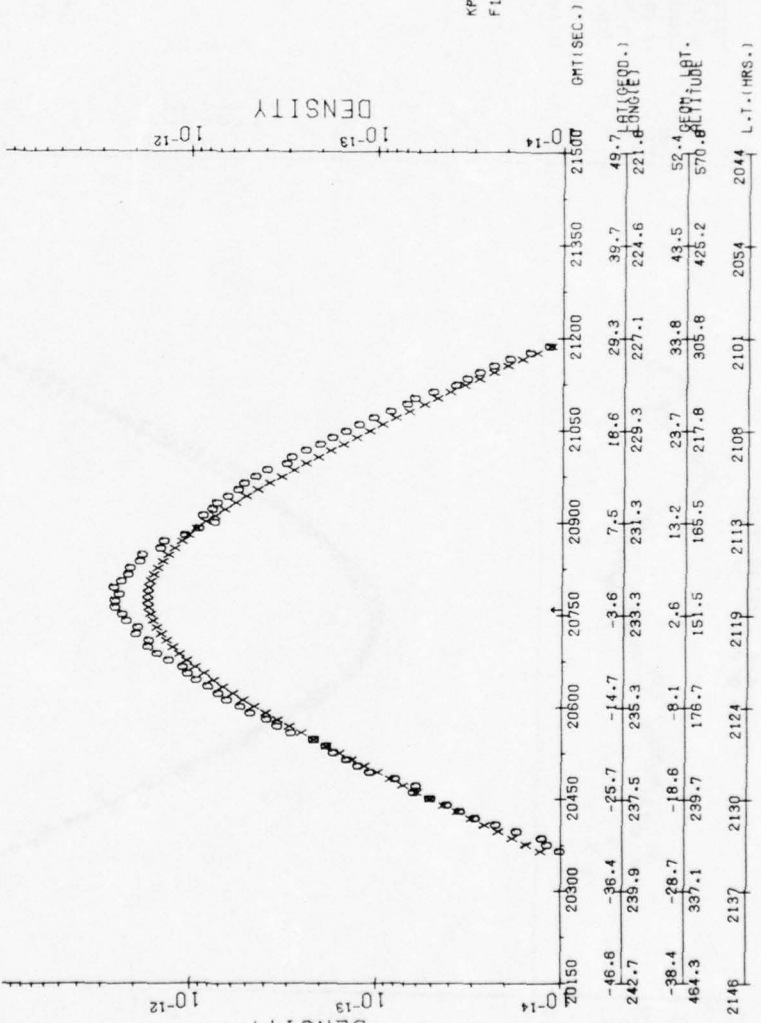


100-4.-6 REV. NO. 769-0
 DRY OF ORB XX 1/ 4/75

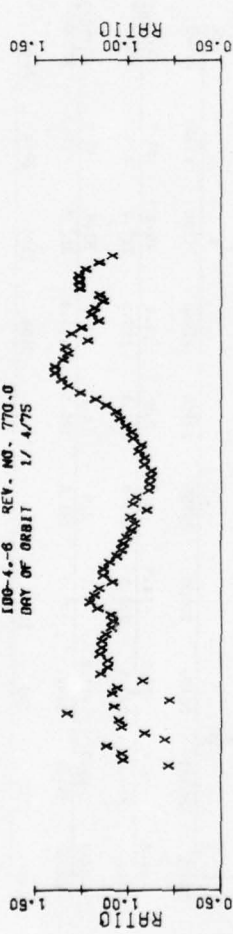


PERIGEE
 ALT (KM.) = 151.13
 LONG (E) = 233.04
 LAT (DEG.) = -2.01
 GMT (SEC.) = 20771.7 (0546H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 20150. TO 22020.
 IN SHADE FROM 22020. TO 21500.

KP=3-
 F10.7=80.0

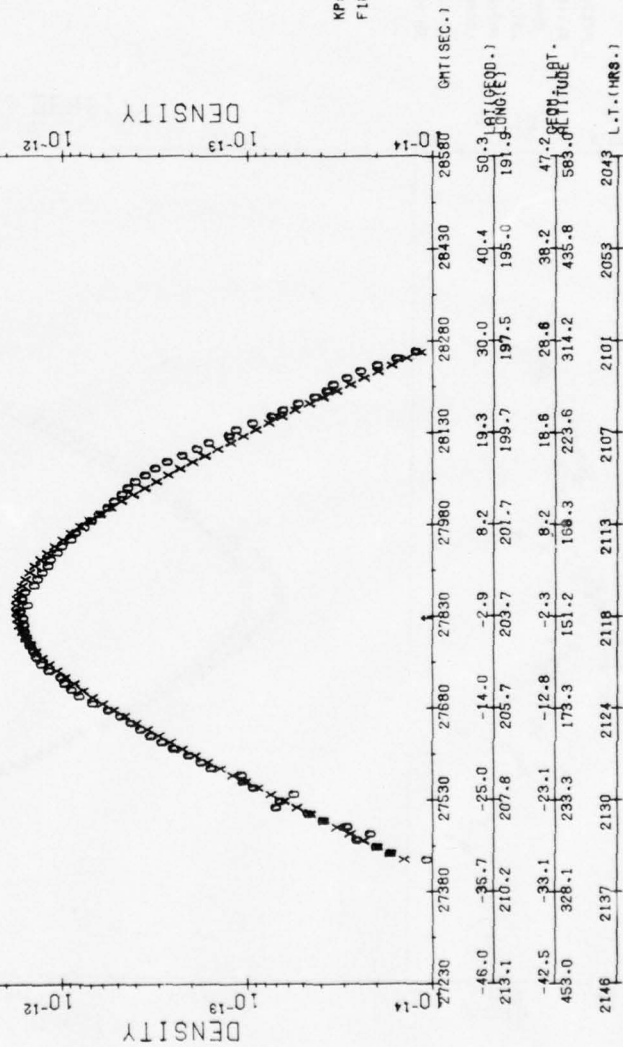


100-4-6 REV. NO. 770.0
 DRY OF ORBIT 1/ 4/75



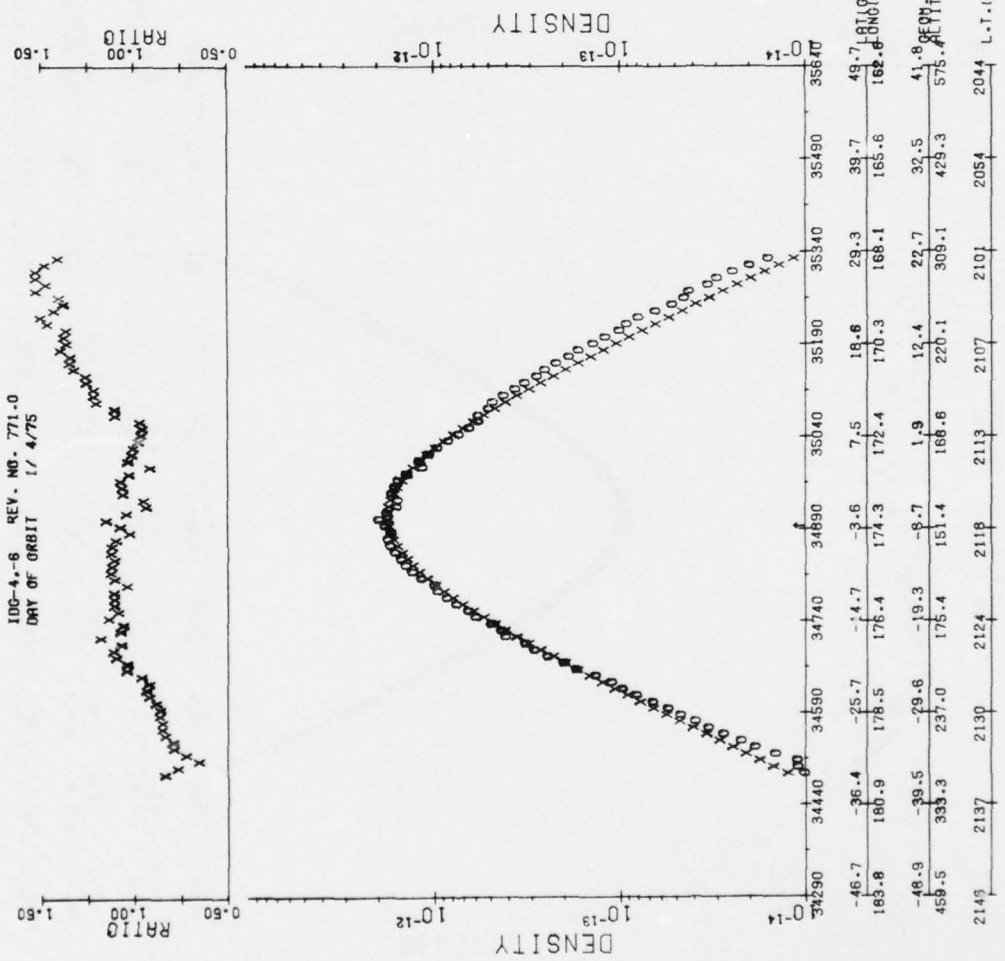
PERIGEE
 ALT(KM.)= 151.16
 LONG(L)= 203.58
 LAT(DEG.)= -2.19
 GMT(SEC.)= 27839.7 (0743H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 27230. TO 29100.
 IN SHADE FROM 29100. TO 28580.

KP=4-
 F10.7=80.0



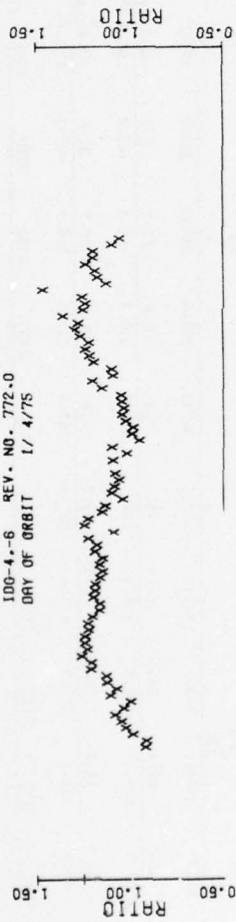
100-4-6 REV. NO. 771.0
 DRY OF ORBIT 1/4/75

PERIODE
 ALT(MN.)= 151.16
 LONG(E)= 174.12
 LAT(DEC.)= -2.36
 OPT(SEC.)= 34906.9 (0941H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 34290. TO 36180.
 IN SHADE FROM 36180. TO 35640.



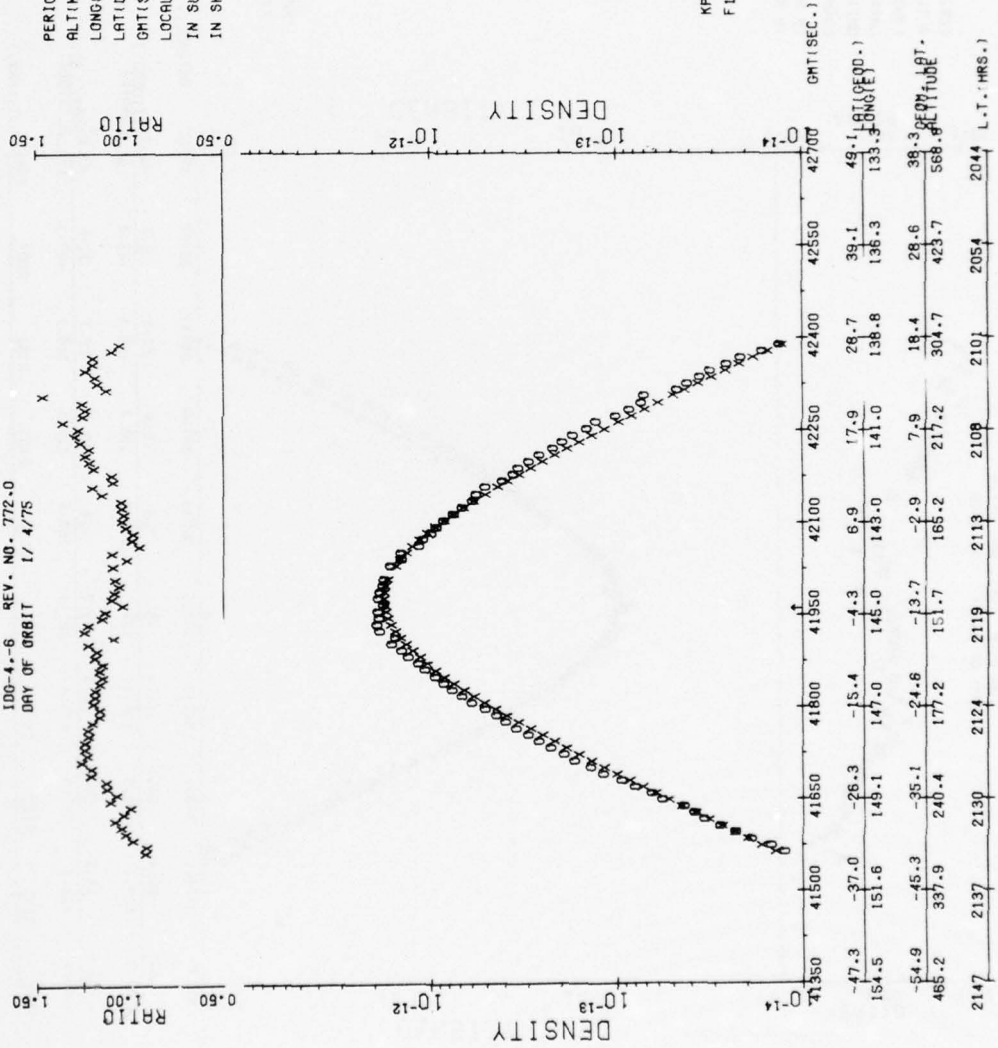
KP=4-
 F10.7=80.0

100-4--6 REV. NO. 772-0
 DAY OF ORBIT 1/ 4/75



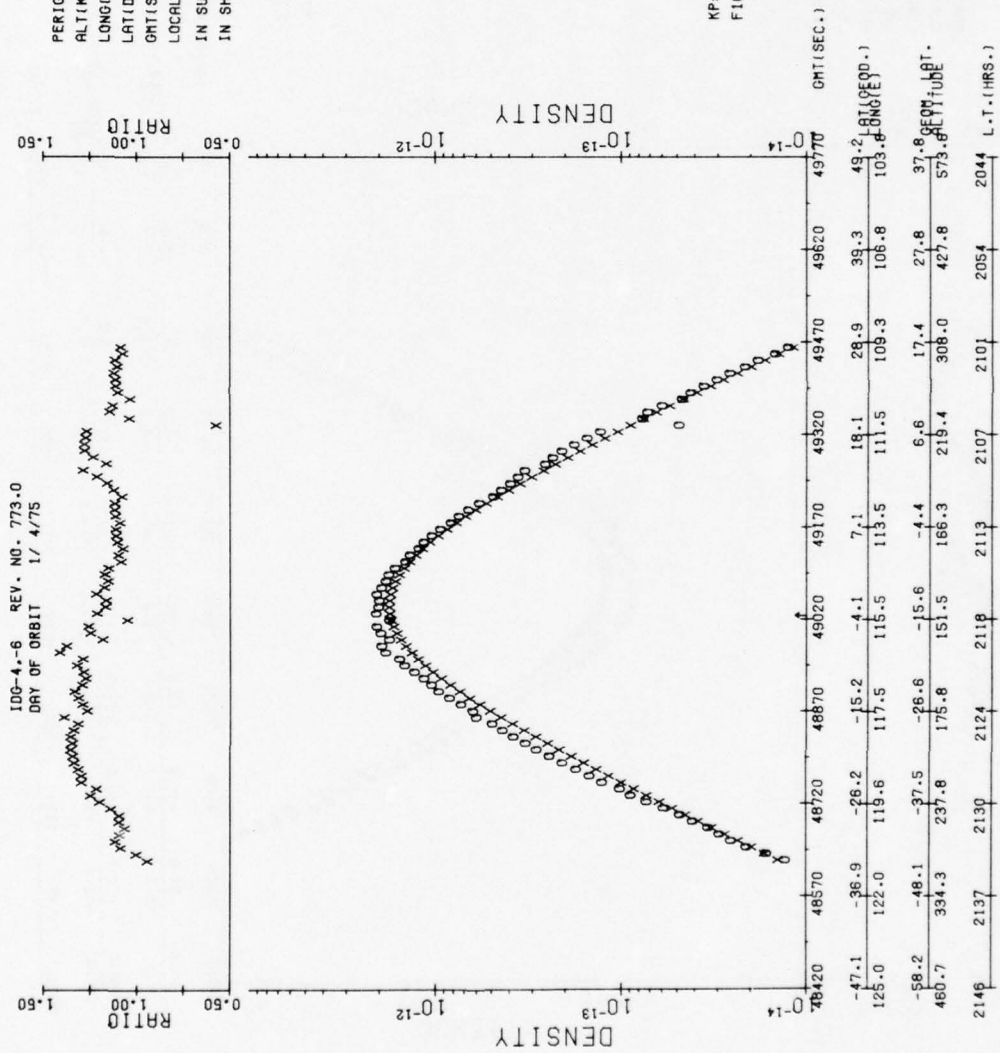
PERIOEE
 ALT(KM.)= 151.21
 LONG(E)= 144.67
 LAT(DEG.)= -2.54
 GMT(SEC.)= 41973.1 (1139H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 41350. TO 43260.
 IN SHADE FROM 43260. TO 42700.

KP=4-
 F10.7=80.0



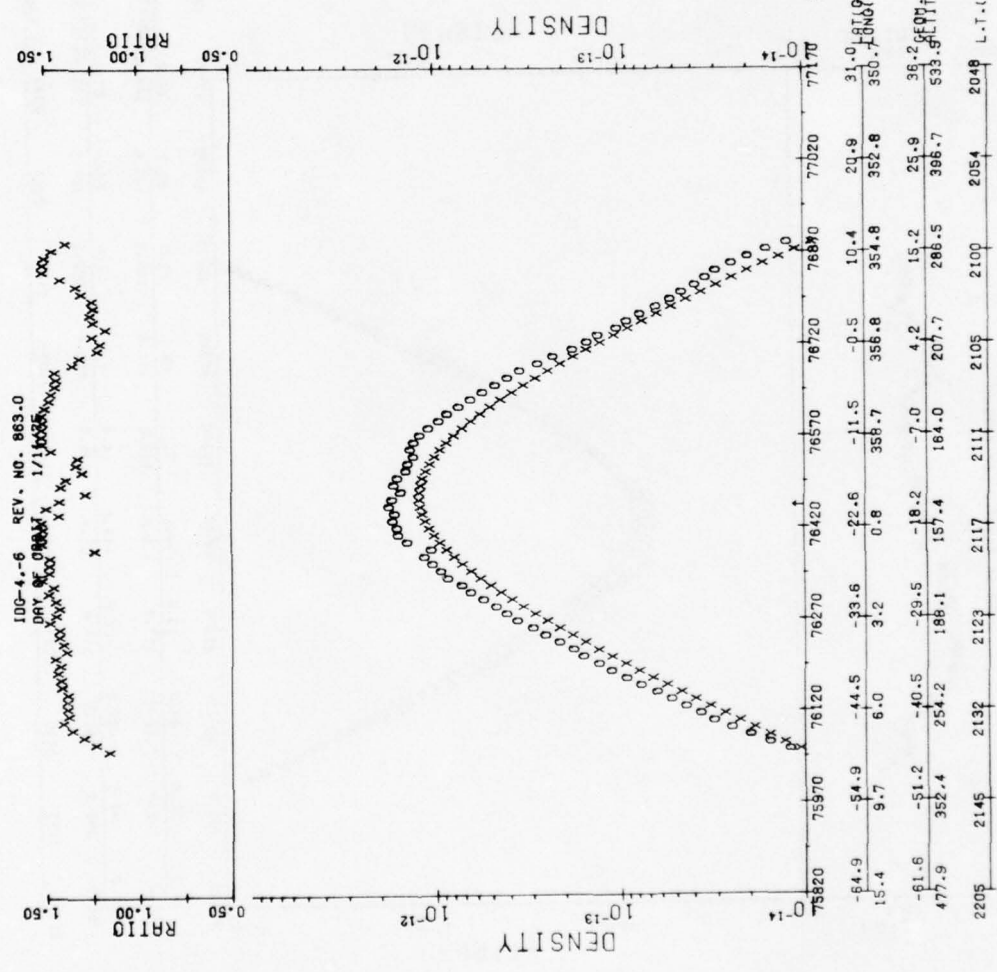
PERIODEE
 ALT(KM.)= 151.24
 LONG(E)= 115.22
 LAT(DEG.)= -2.72
 OMT(SEC.)= 49038.4 (1337H)
 LOCAL TIME 2118 (H)
 IN SUN FROM 48420. TO 50280.
 IN SHADE FROM 50280. TO 49770.

KP=4
 F10.7=80.0



PERIOEE
 ALT(KM.)= 155.41
 LONG(IE)= 0.14
 LAT(DEC.)= -18.98
 GMT(SEC.)= 70468.8 (2114H)
 LOCAL TIME 2115 (H)
 IN SUN FROM 77700. TO 77170.
 IN SHADE FROM 75820. TO 77700.

KP=1-
 FIG.7=83.0

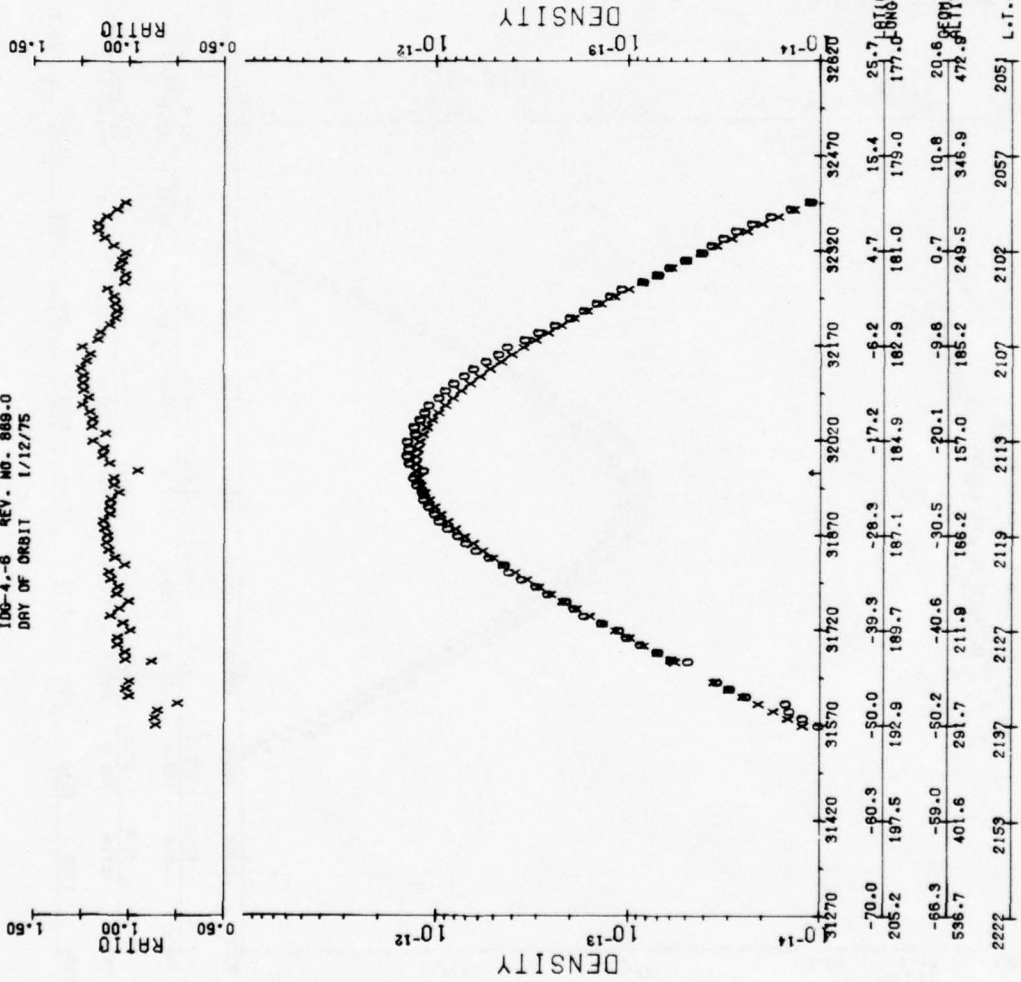


100-4-6 REV. NO. 863.0
 DRY OF 1/1000000

100-4--6 REV. NO. 889-0
 DRY OF ORBIT 1/12/75

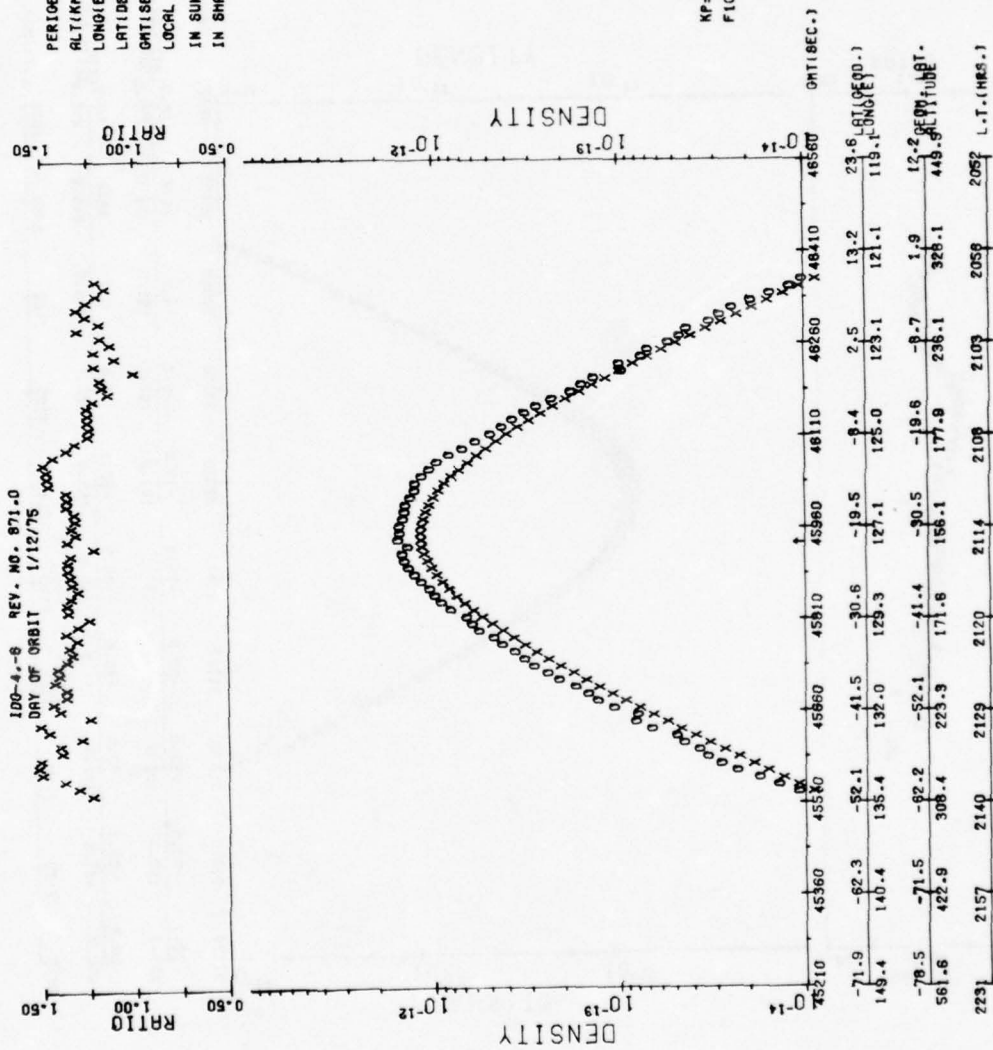
PERIOEE
 ALT(KM.)= 155.60
 LONG(E)= 185.46
 LAT(DEG.)= -20.08
 GMT(SEC.)= 31981.7 (0853H)
 LOCAL TIME 2114 (H)
 IN SHM FROM 31270. TO 33540.
 IN SHADE FROM 33540. TO 32620.

KP=2
 F10.7=84.0

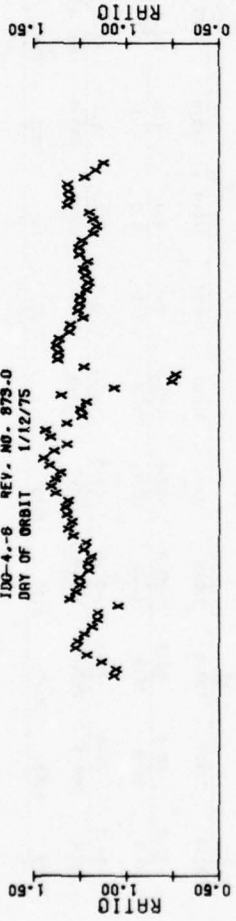


PERIOE
 ALT(KM.)= 156.86
 LONG(E)= 127.28
 LAT(DEG.)= -20.44
 OMT(SEC.)= 45947.3 (1246H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 45210. TO 47520.
 IN SHADE FROM 47520. TO 48560.

KP=0+
 F10.7=84.0

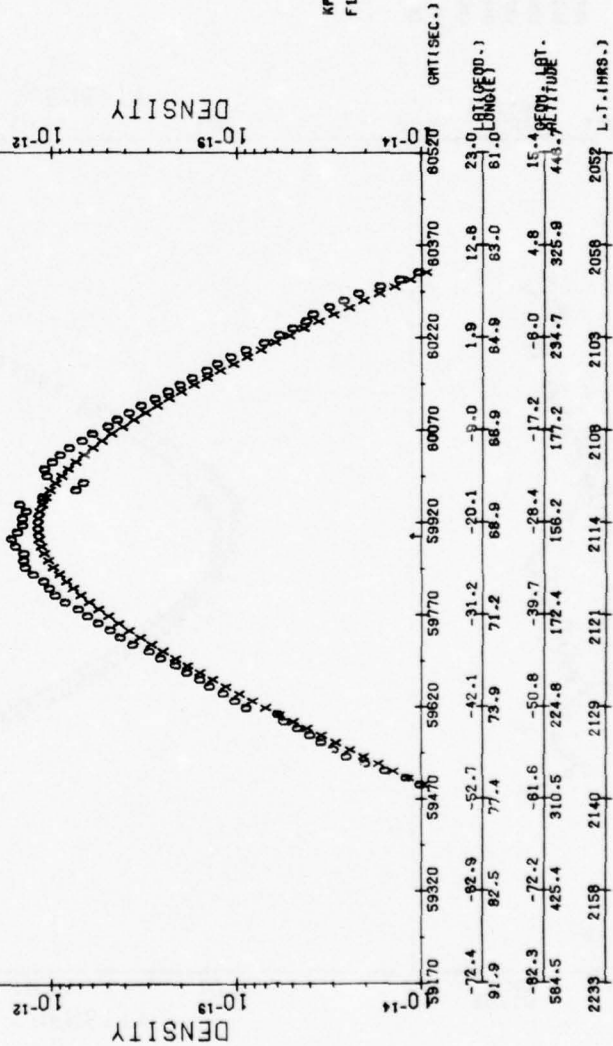


100-4-8 REV. NO. 873-0
 DRY OF ORBIT 1/12/75



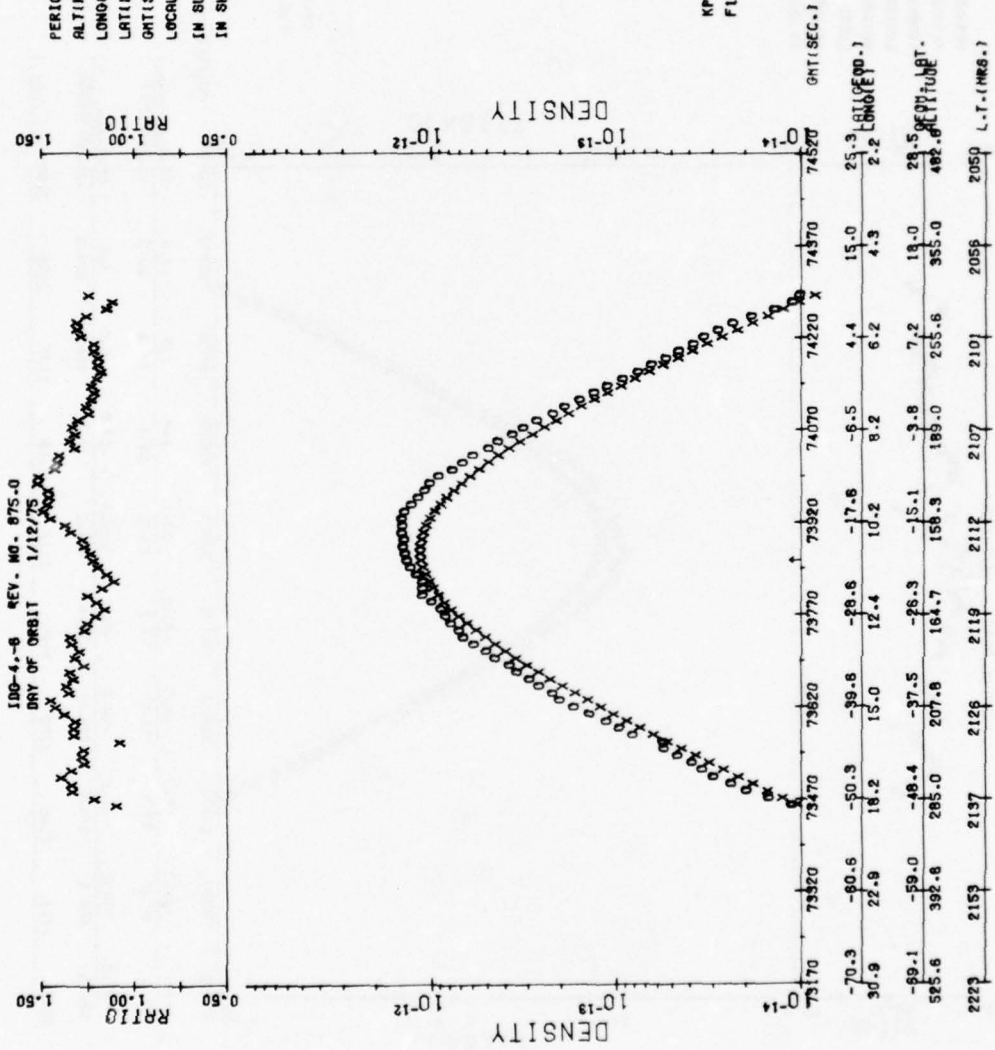
PERIGEE
 ALTITUDE)= 158.12
 LONGITUDE)= 89-07
 LATITUDE)= -20-81
 GMT(SEC.)= 59610.4 (1636H)
 LOCAL TIME 2114 (H)
 IN SHAD FROM 59170. TO 61500.
 IN SHADE FROM 61500. TO 60570.

KF=1-
 F10.7=84.0

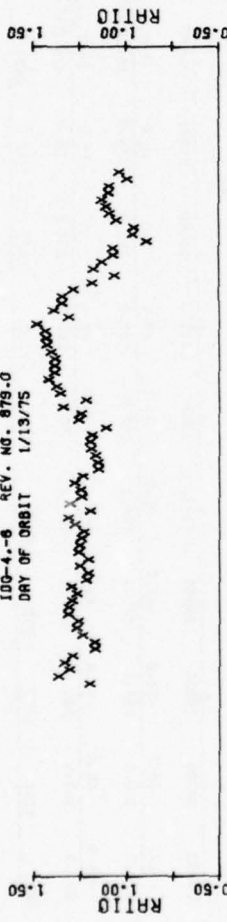


PERIGEE
 ALTITUDE = 156.28
 LONGITUDE = 10.69
 LATITUDE = -21.18
 GMT(SEC.) = 73971.0 (2051M)
 LOCAL TIME 2114 (H)
 IN SUN FROM 73170. TO 75420.
 IN SHADE FROM 75420. TO 74520.

KF=0+
 F10.7=84.0

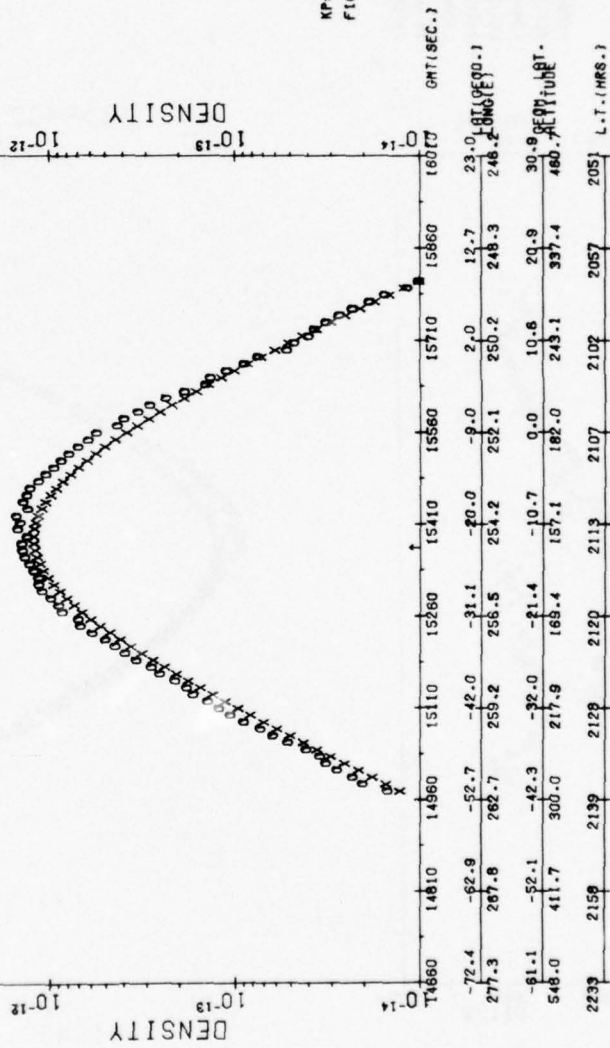


100-4.-6 REV. NO. 879-0
 DRY OF ORBIT 1/13/75



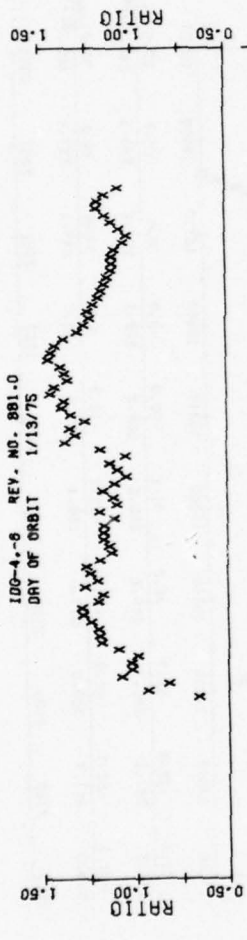
PERIOEE
 ALT(KM.)= 158.81
 LONG(E)= 254.57
 LAT(DEC.)= -21.91
 GMT(SEC.)= 15384.6 (0416H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 14660. TO 16990.
 IN SHADE FROM 16990. TO 16010.

KP=2
 F10.7=85.0



GMT(SEC.)	LONG(DEC.)	ALT(SEC.)	PERIOD	REMARKS
14660				
14810	-62.9	267.8		
14960	-52.7	262.7		
15110	-42.0	259.2		
15260	-31.1	256.5		
15410	-20.0	254.2		
15560	-9.0	252.1		
15710	2.0	250.2		
15860	12.7	248.3		
16010	23.0	246.2		
16077				
2159	-52.1	411.7		
2129	-42.3	300.0		
2102	-32.0	217.9		
2077	-21.4	163.4		
2057	-10.7	157.1		
2037	0.0	182.0		
2017	10.6	243.1		
2001	20.9	337.4		
1985	30.9	460.0		
1970	46.0	660.0		
1955	66.0	1000.0		
1940	90.0	1500.0		
1925	114.0	2100.0		
1910	138.0	2800.0		
1895	162.0	3600.0		
1880	186.0	4500.0		
1865	210.0	5500.0		
1850	234.0	6600.0		
1835	258.0	7800.0		
1820	282.0	9100.0		
1805	306.0	10500.0		
1790	330.0	12000.0		
1775	354.0	13600.0		
1760	378.0	15300.0		
1745	402.0	17100.0		
1730	426.0	19000.0		
1715	450.0	21000.0		
1700	474.0	23100.0		
1685	498.0	25300.0		
1670	522.0	27600.0		
1655	546.0	30000.0		
1640	570.0	32500.0		
1625	594.0	35100.0		
1610	618.0	37800.0		
16010	642.0	40600.0		

LOG-4-6 REV. NO. 981.0
 DRY OF ORBIT 1/13/75



PERIGEE
 ALT (KM.) = 156.77
 LONG (E) = 196.42
 LAT (DEG.) = -22.28
 GMT (SEC.) = 29337.6 (0806H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 28630. TO 30900.
 IN SHADE FROM 30900. TO 29960.

KP=4+
 F10.7=85.0

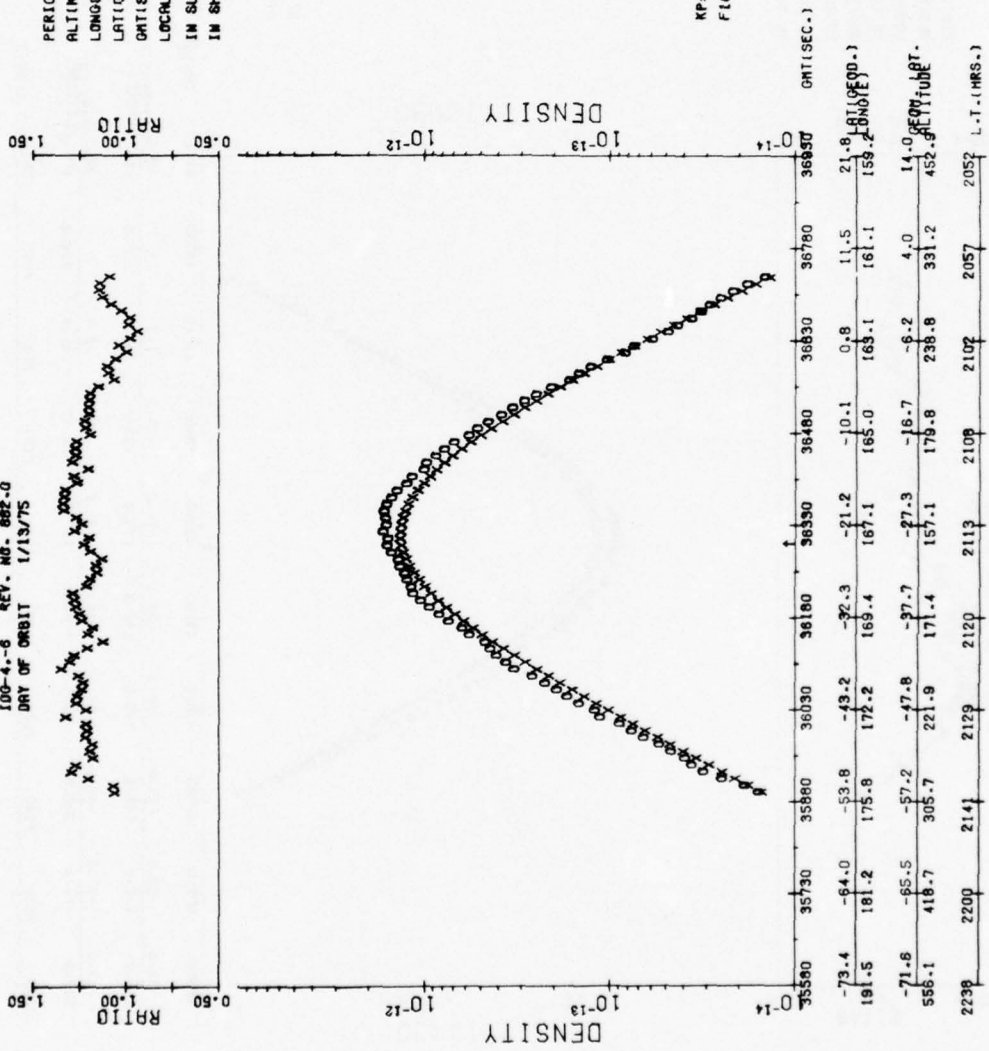


GMT (SEC.)	LOG (RATIO)	LOG (DENSITY)	LOCAL TIME (H)	PERIGEE ALT (KM.)
29830	-71.7	218.0	209.1	156.77
28780	-62.1	204.1	200.7	156.77
28630	-51.8	204.1	200.7	156.77
29080	-41.2	200.7	196.1	156.77
29230	-30.2	196.1	195.8	156.77
29380	-19.1	195.8	193.8	156.77
29530	-8.1	193.8	191.8	156.77
29680	2.8	191.8	189.9	156.77
29830	13.5	189.9	187.9	156.77
29960	23.8	187.9	187.9	156.77
29830	-65.8	531.3	209.1	156.77
28780	-58.5	397.6	209.1	156.77
28630	-49.8	285.2	210.8	156.77
29080	-40.2	210.8	166.3	156.77
29230	-30.1	166.3	158.3	156.77
29380	-19.8	158.3	158.3	156.77
29530	-9.4	187.3	187.3	156.77
29680	1.0	252.2	252.2	156.77
29830	11.0	350.0	350.0	156.77
29960	20.7	476.2	476.2	156.77
29830	-85.8	2282	2156	2198
28780	-71.7	2180	2127	2107
28630	-62.1	2041	2119	2107
29080	-41.2	2007	2112	2107
29230	-30.2	1961	2107	2107
29380	-19.1	1958	2101	2107
29530	-8.1	1938	2056	2107
29680	2.8	1918	2056	2107
29830	13.5	1899	2056	2107
29960	23.8	1879	2056	2107

100-4-6 REV. NO. 882-0
 DRY OF ORBIT 1/13/75

PERIGEE
 ALTITUDE = 156.85
 LONGITUDE = 167.35
 LATITUDE = -22.48
 ORBIT (SEC.) = 36313.1 (1005H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 35580. TO 37920.
 IN SHADE FROM 37920. TO 38930.

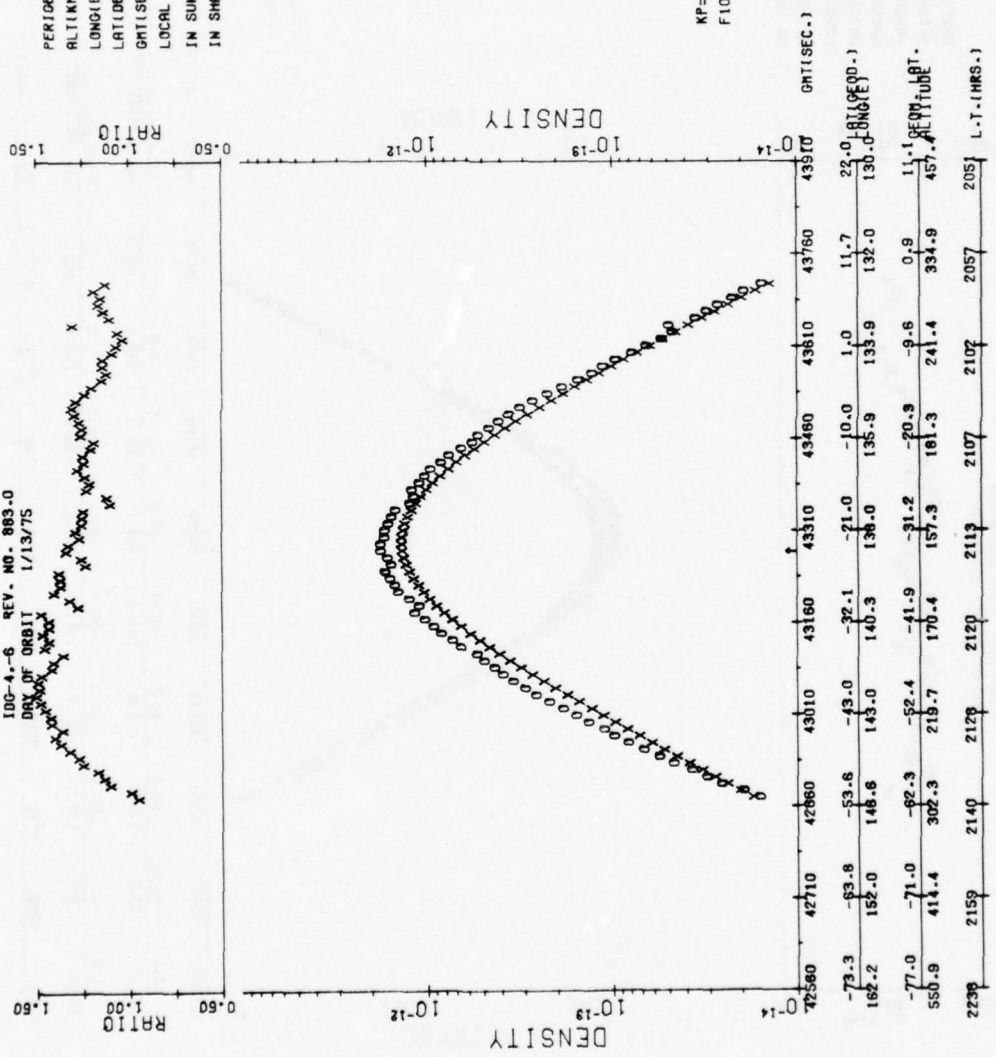
KP=4+
 F10.7=85.0



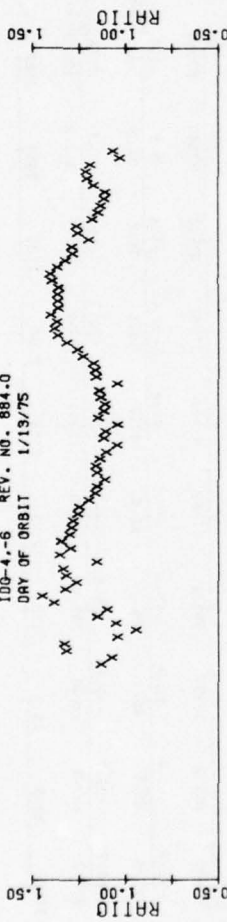
100-4-6 REV. NO. 883-0
 DAY OF ORBIT 1/13/75

PERIGEE
 ALT(M.)= 156.94
 LONG(E)= 138-28
 LAT(DEG.)= -22.64
 GMT(SEC.)= 43288.0 (1201H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 42560. TO 44880.
 IN SHADE FROM 44880. TO 43910.

KP=5
 F10.7=85.0

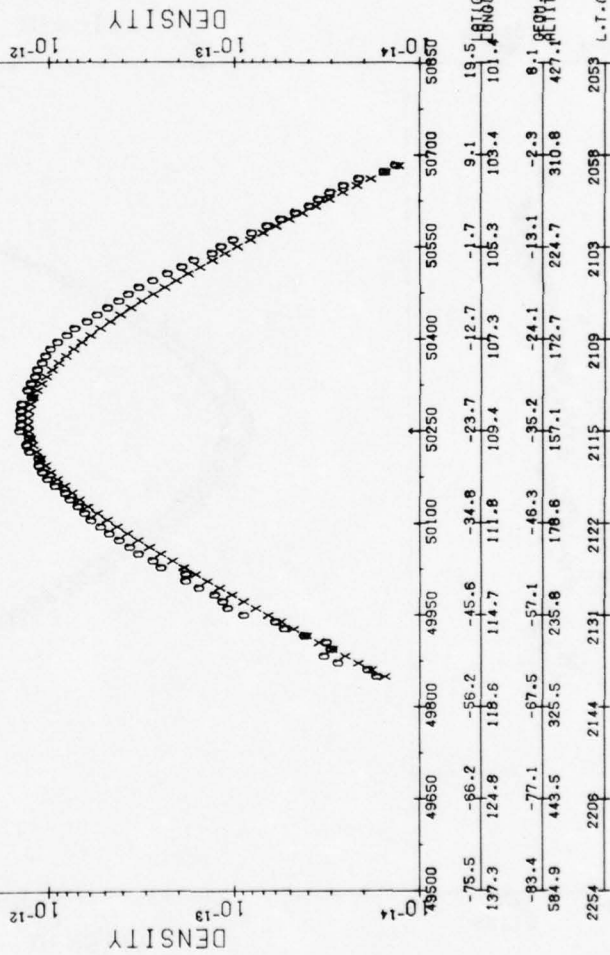


100-4--6 REV. NO. 884-0
 DRY OF ORBIT 1/13/75



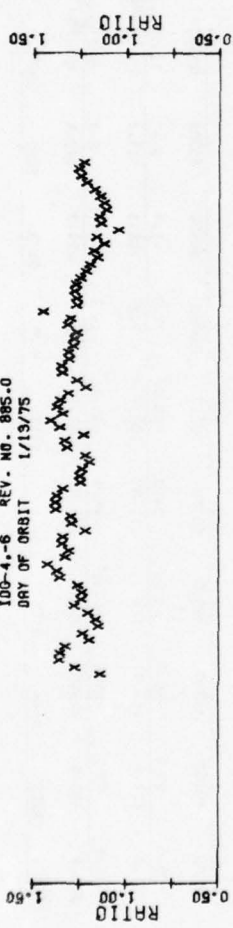
PERIGEE
 ALT(KM.)= 157.02
 LONG(L) = 109.22
 LAT(DEC.) = -22.83
 GMT(SEC.) = 50262.3 (1357H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 49500. TO 51840.
 IN SHADE FROM 51840. TO 50850.

MP=4
 F10.7=85.0



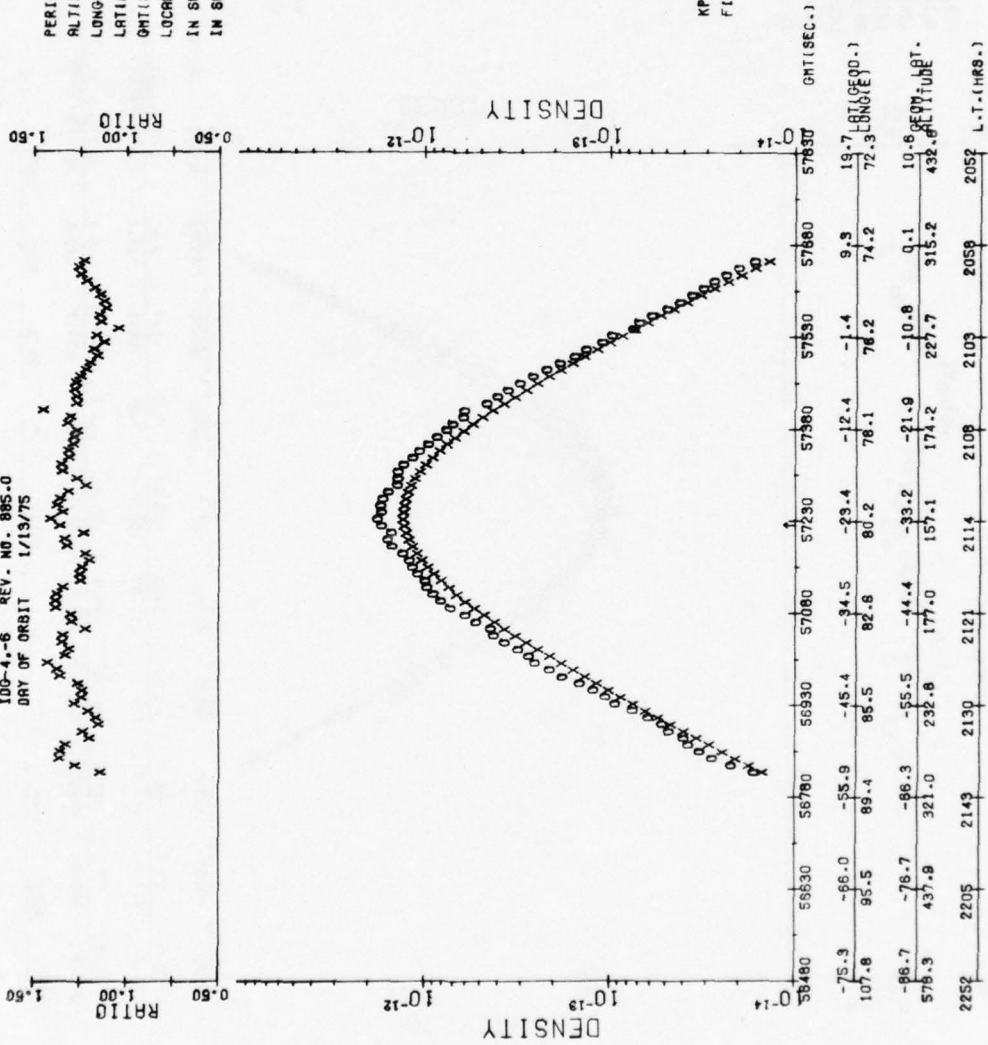
GMT(SEC.)	LONG(DEC.)	ALT(KM.)	PERIGEE ALT(KM.)	LOCAL TIME (H)	IN SUN	IN SHADE
49500	-75.5	137.3	157.02	1357		
49650	-86.2	124.8	157.02	1357		
49800	-56.2	118.6	157.02	1357		
49850	-45.6	114.7	157.02	1357		
50000	-34.8	111.8	157.02	1357		
50050	-23.7	109.4	157.02	1357		
50100	-12.7	107.3	157.02	1357		
50150	-1.7	105.3	157.02	1357		
50200	9.1	103.4	157.02	1357		
50250	19.5	101.4	157.02	1357		
50300	29.1	99.4	157.02	1357		
50350	38.1	97.4	157.02	1357		
50400	46.1	95.4	157.02	1357		
50450	54.1	93.4	157.02	1357		
50500	62.1	91.4	157.02	1357		
50550	70.1	89.4	157.02	1357		
50600	78.1	87.4	157.02	1357		
50650	86.1	85.4	157.02	1357		
50700	94.1	83.4	157.02	1357		
50750	102.1	81.4	157.02	1357		
50800	110.1	79.4	157.02	1357		
50850	118.1	77.4	157.02	1357		

100-4--6 REV. NO. 885-0
 DRY OF ORBIT 1/13/75

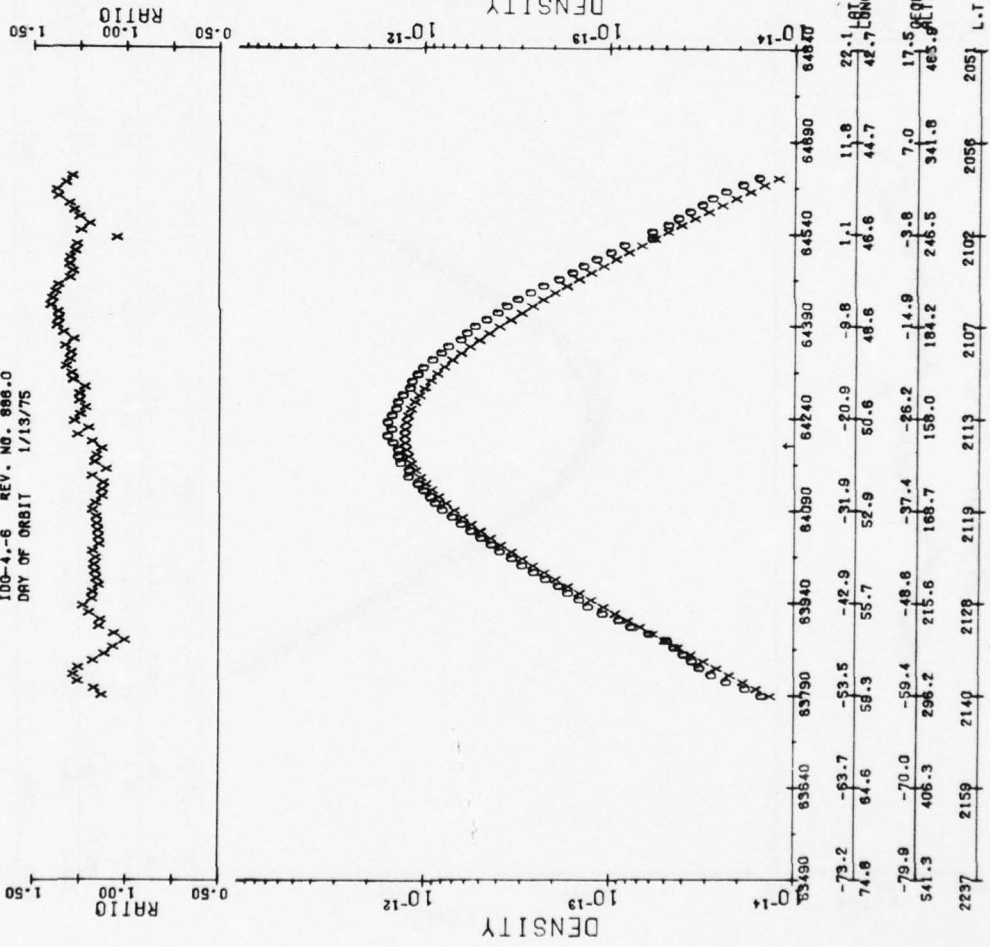


PERIODEE
 ALT(KM.)= 157.09
 LONG(E)= 80.16
 LAT(DEC.)= -29.01
 OMT(SEC.)= 57235.8 (11553M)
 LOCAL TIME 2114 (H)
 IN SUN FROM 56480. TO 58800.
 IN SHADE FROM 58800. TO 57830.

KP=4
 F10.7=85.0



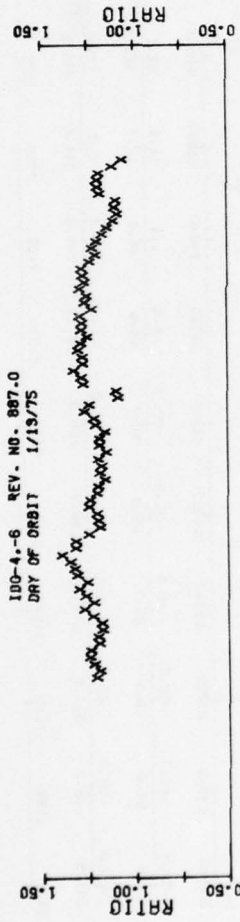
100-4--6 REV. NO. 898.0
 DAY OF ORBIT 1/13/75



PERIGEE
 ALT (KM.) = 157.14
 LONGITUDE = 51.10
 LAT (DEG.) = -23.20
 GMT (SEC.) = 64208.5 (1750H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 63490. TO 65780.
 IN SHADE FROM 65780. TO 64840.

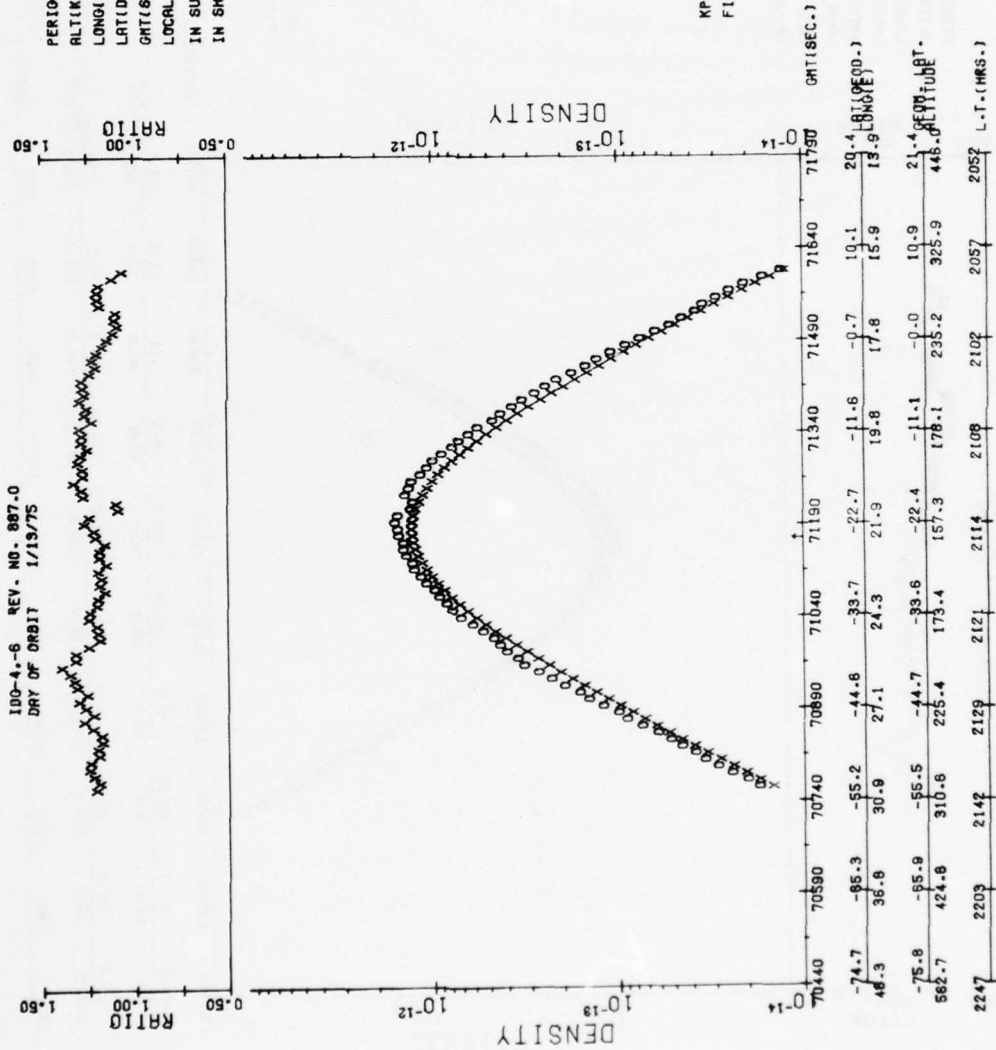
KP=4-
 F10.7=85.0

100-4-6 REV. NO. 887-0
 DRY OF ORBIT 1/13/75



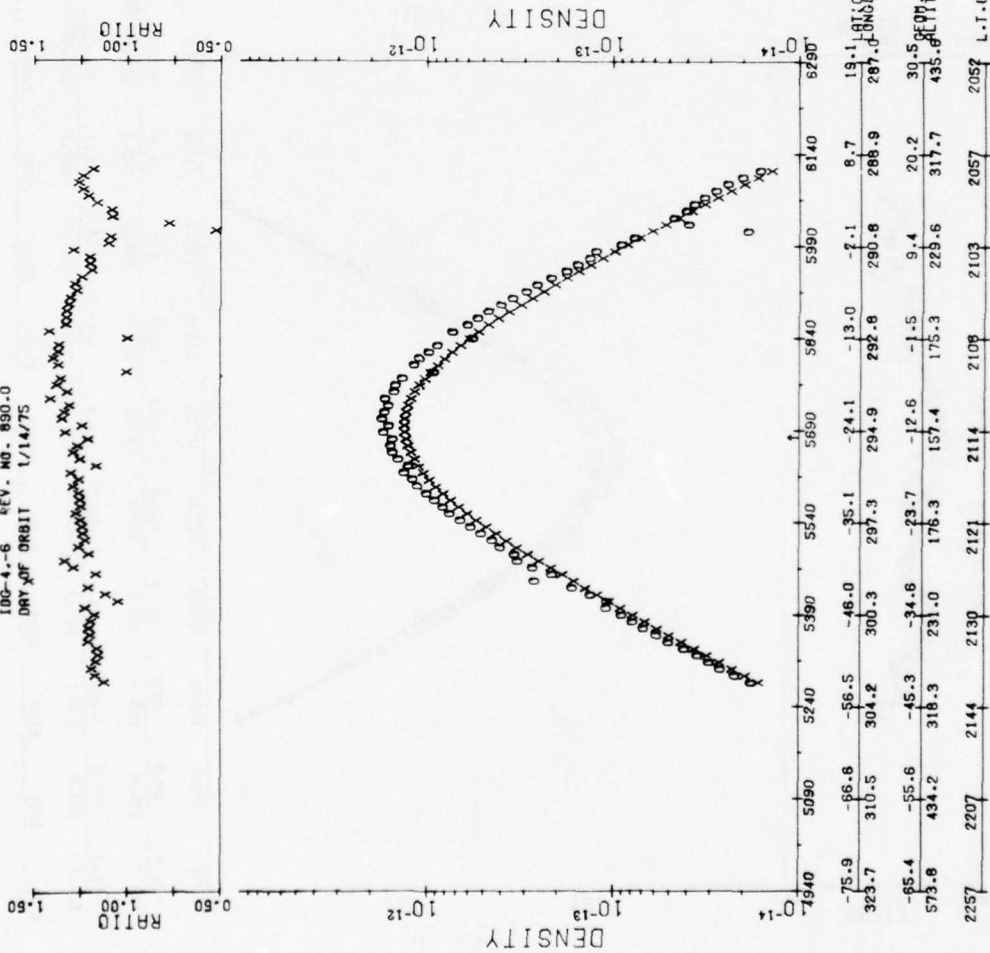
PERIOEE
 ALT(KM.)= 157.20
 LONGIE)= 22.05
 LAT(DEC.)= -23.38
 GMT(SEC.)= 71180.5 (1946H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 70440. TO 72780.
 IN SHADE FROM 72780. TO 71790.

KP=4
 F10.7=85.0



ORBIT (SEC.)	LONGIE (D.)	LAT (DEC.)	PERIOD (SEC.)	L.T. (HRS.)
70440	-74.7	-85.3	55.2	2142
70590	48.3	36.8	30.9	2203
70740	-55.2	-44.6	33.7	2129
70890	27.1	24.3	27.1	2142
71040	-33.7	-22.7	21.9	2114
71190	-22.7	-11.6	19.8	2108
71340	-0.7	-0.7	17.8	2102
71490	10.1	15.9	15.9	2057
71640	20.4	13.9	13.9	2052
71790	21.4	10.9	10.9	2052

100-4-6 REV. NO. 890.0
 DRY OF ORBIT 1/14/75



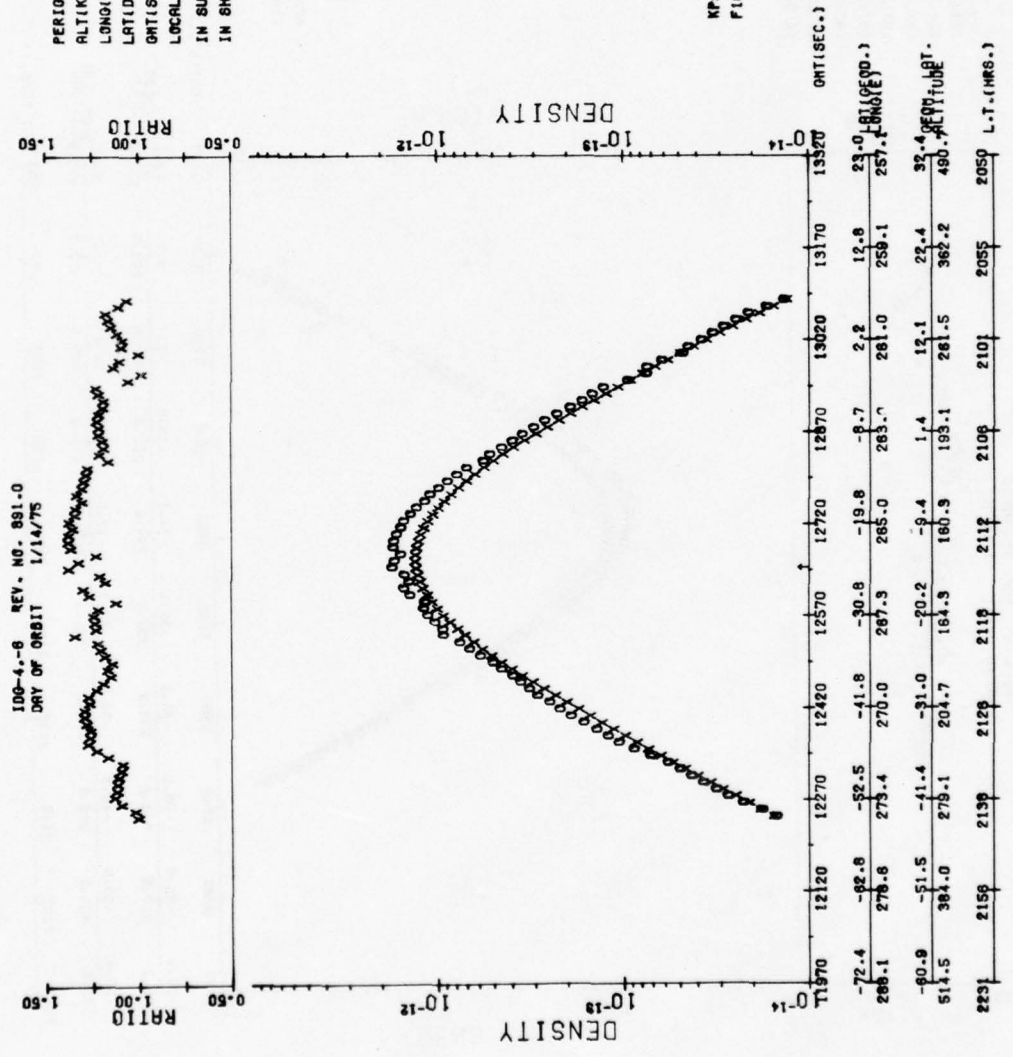
PERIGEE
 ALT(KM.)= 157.36
 LONG(L) = 294.90
 LAT(DEC.) = -23.93
 GMT(SEC.) = 5692.2 (0134H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 4940. TO 7260.
 IN SHADE FROM 7260. TO 8290.

MF=S-
 F10.7=83.0

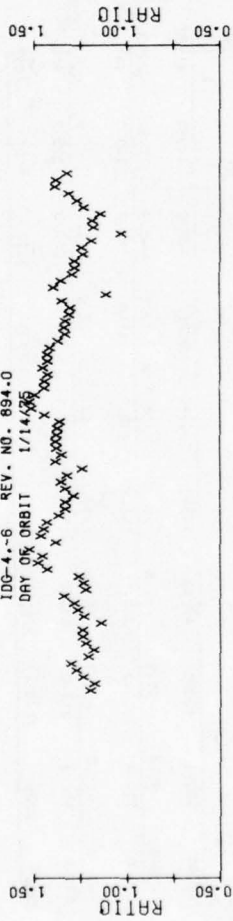
100-4-8 REV. NO. 891-0
 DRY OF ORBIT 1/14/75

PERIOD = 157.42
 ALT(KM.) = 286.96
 LONG(L) = -24.11
 LAT(DEC.) = 12861.3 (0931H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 11970. TO 14220.
 IN SHADE FROM 14220. TO 13320.

MF=5-
 F10.7=83.0

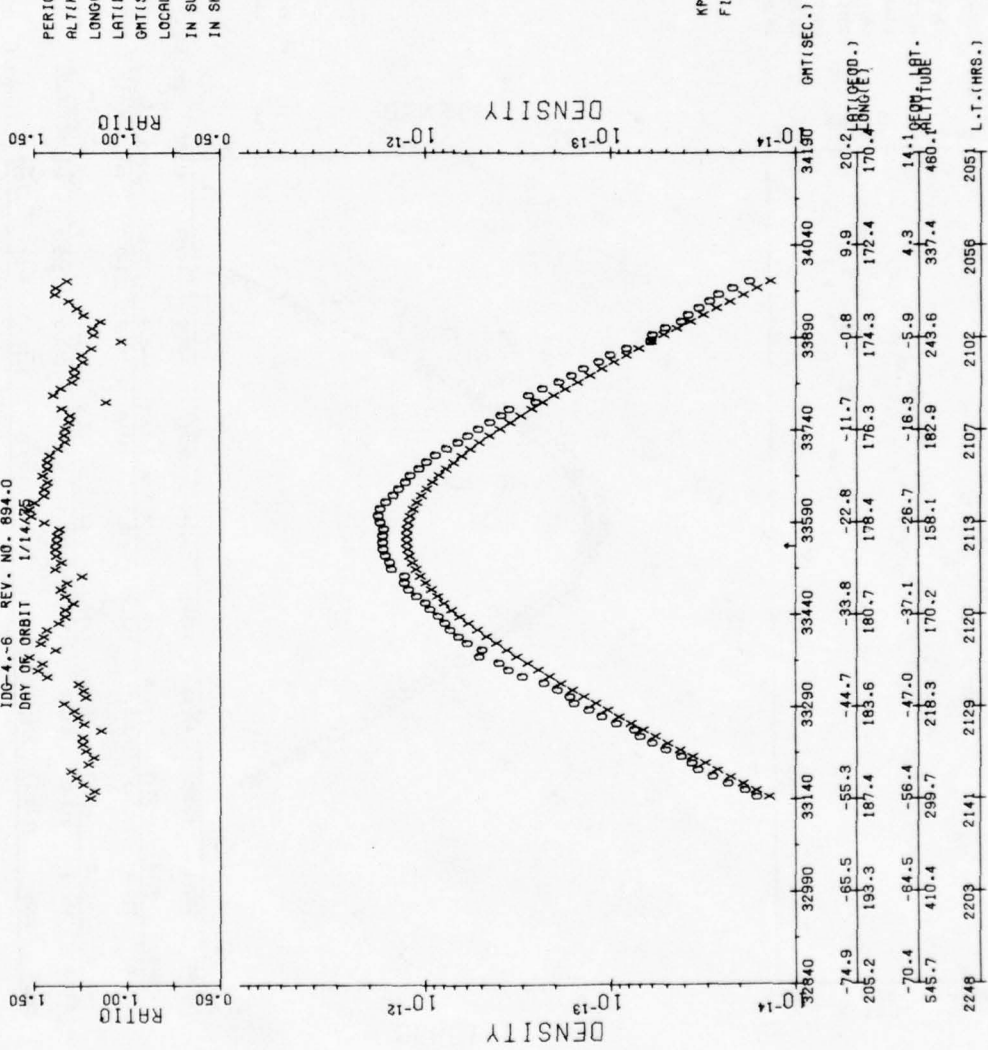


IDG-4.-6 REV. NO. 894.0
 DRY ORBIT 1/14/65



PERIOEE
 ALT(KM.)= 157.59
 LONG(E)= 178.75
 LAT(DEC.)= -24.86
 GMT(SEC.)= 33564.3 (0919H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 32840. TO 35160.
 IN SHADE FROM 35160. TO 34190.

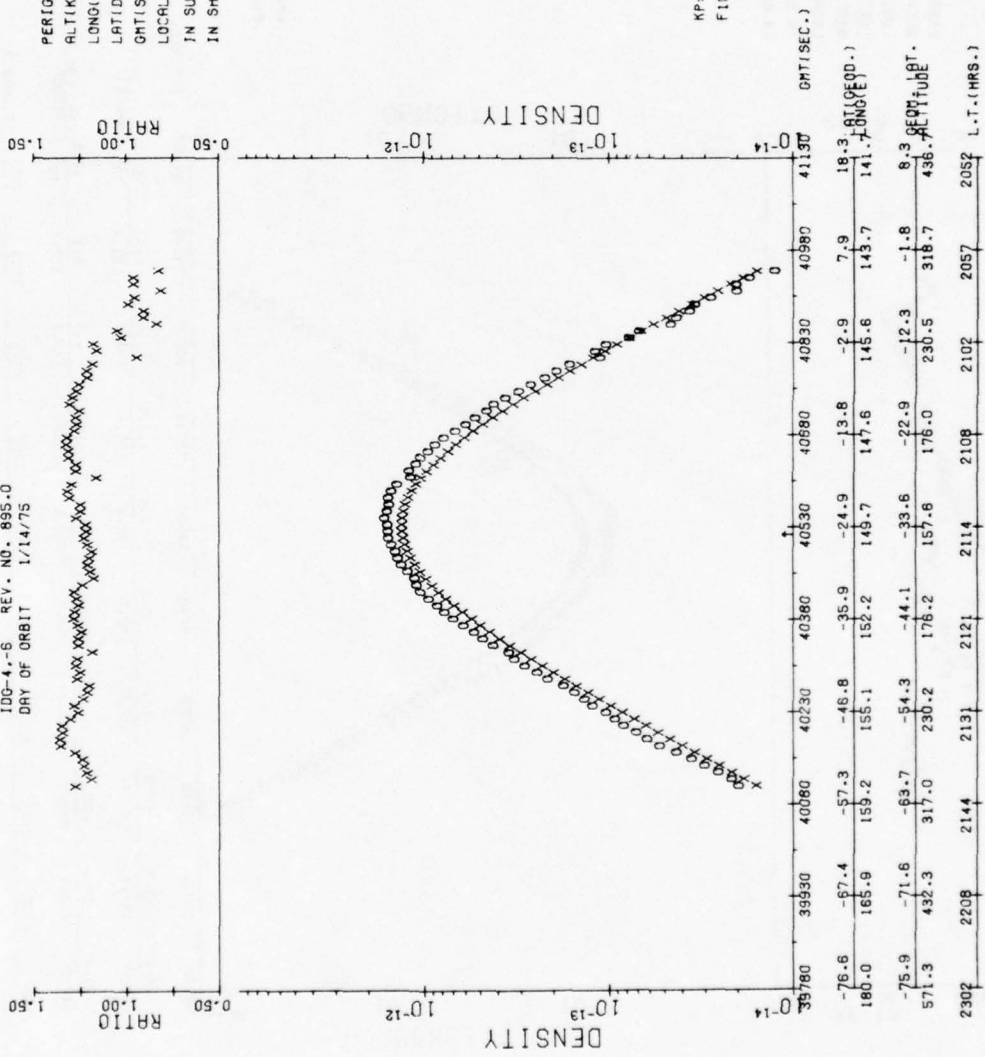
KP=4
 F10.7=89.0



IDG-4-S REV. NO. 895-0
 DRY OF ORBIT 1/14/75

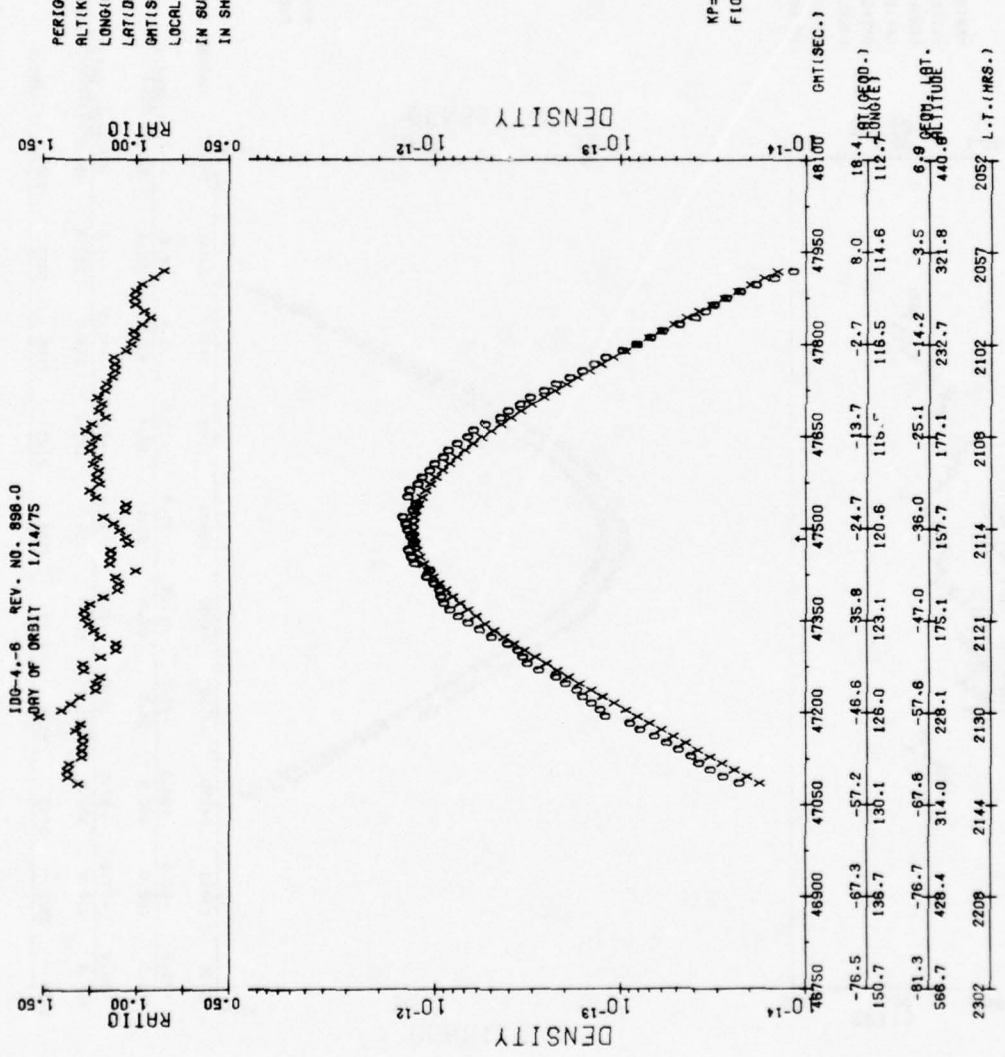
PERIGEE
 ALT(KM.)= 157.84
 LONG(E)= 149.72
 LAT(DEC.)= -24.84
 GMT(SEC.)= 40530.5 (1115H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 39780. TO 42120.
 IN SHADE FROM 42120. TO 41130.

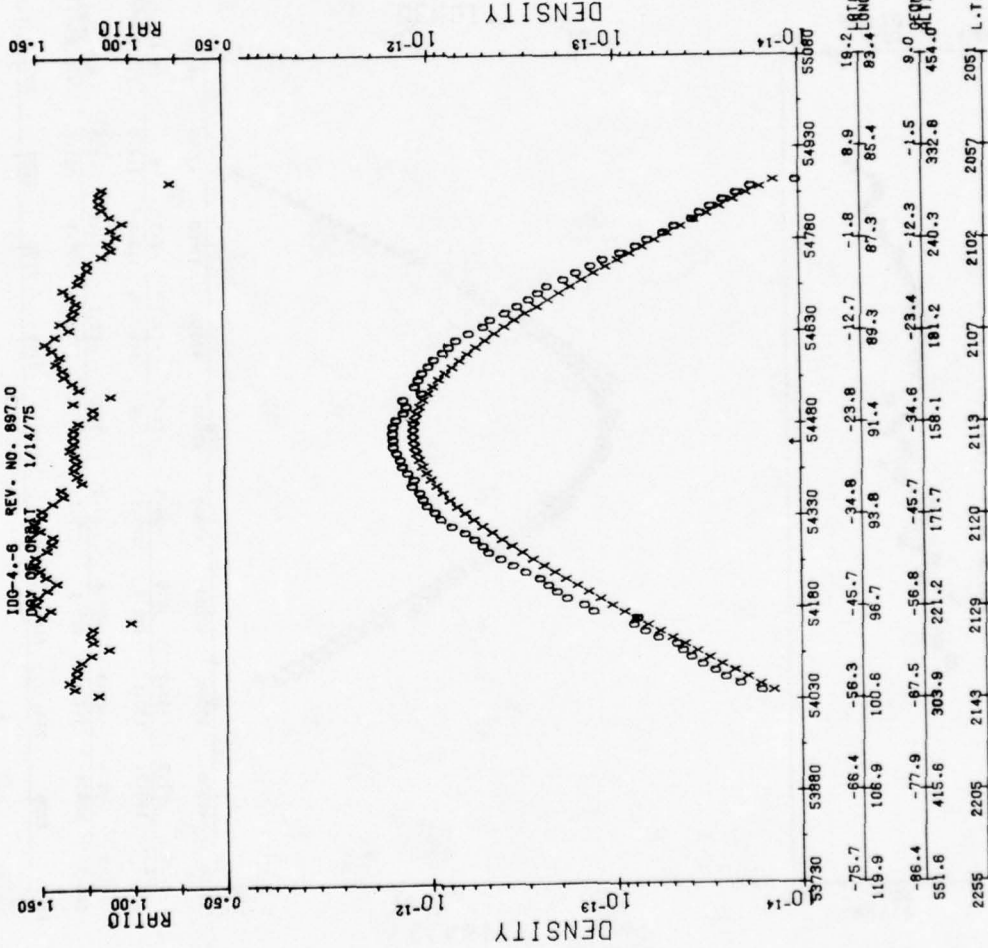
KP=5
 F10.7=83.0



PERIGEE
 ALT.(KM.)= 157.70
 LONGIE)= 120.70
 LAT.(DEG.)= -25.02
 GMT(SEC.)= 47496.0 (1311H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 46750. TO 48060.
 IN SHADE FROM 48080. TO 48100.

KP=5
 F10.7=83.0

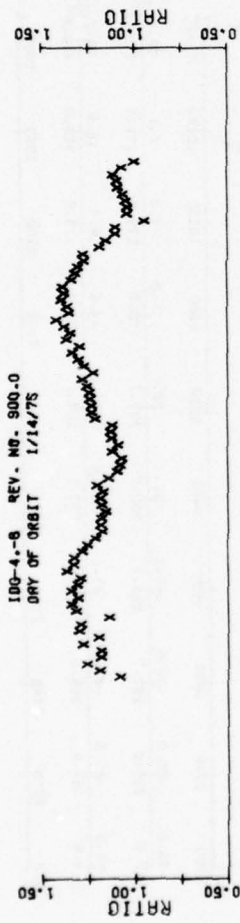




100-4-B REV. NO. 897-0
 OBS. ONSET 1/14/75
 PERIOD = 157.76
 ALT (KM) = 91.67
 LONG (E) = -25.21
 LAT (DEG.) = 54480.8 (1507M)
 LOCAL TIME 2114 (H)
 IN SUN FROM 53730. TO 56040.
 IN SHAD. FROM 56040. TO 55060.

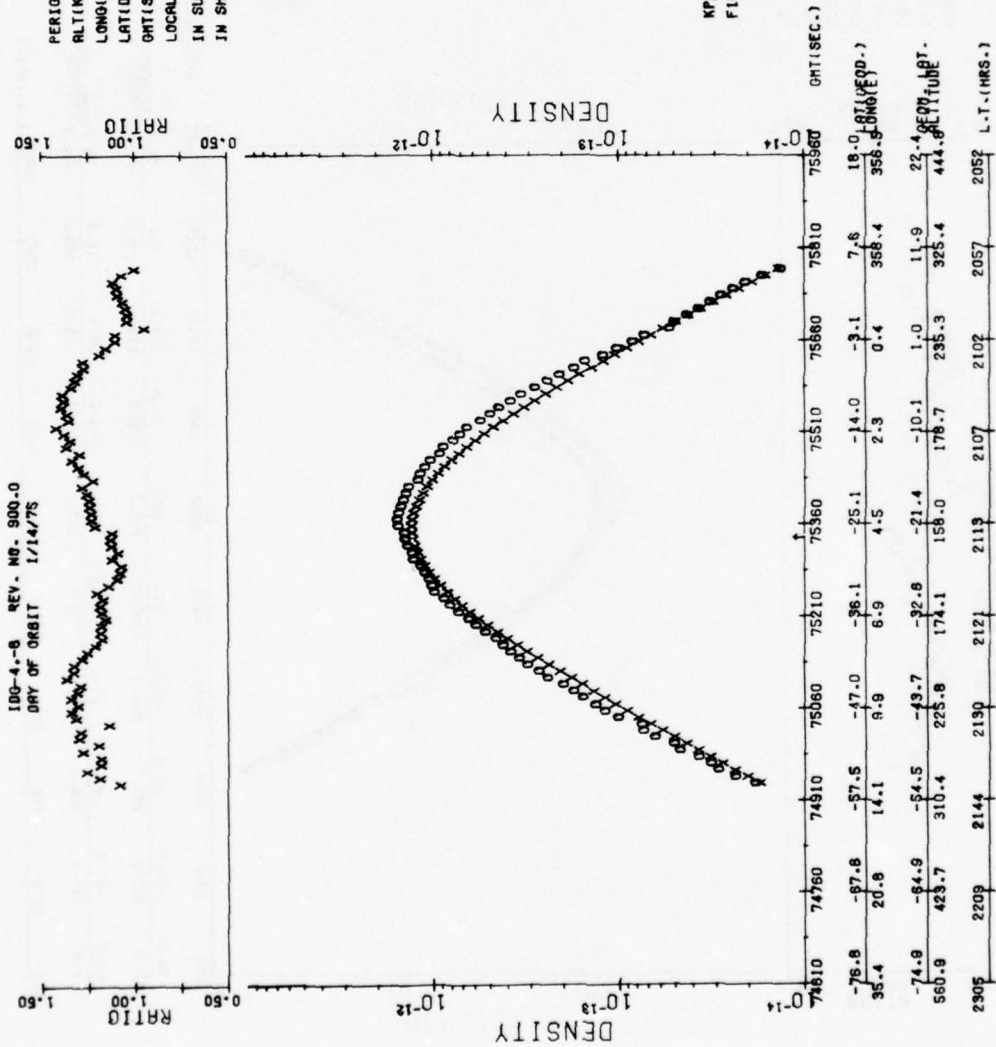
KP=4-
 F10.7=89.0

IDO-4.-8 REV. NO. 900-0
 DRY OF ORBIT 1/14/75



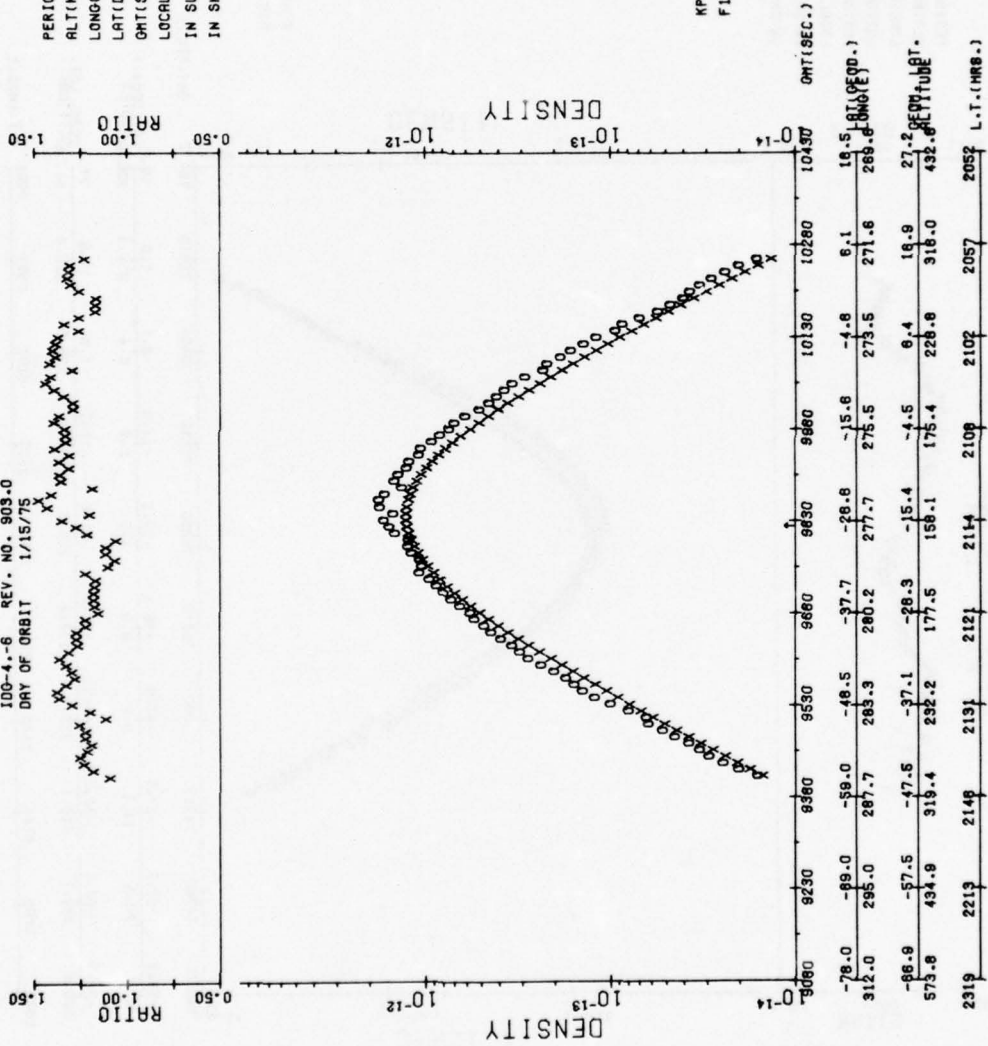
PERIOEE
 ALT(KM.)= 157.83
 LONG(E)= 4.82
 LAT(DEC.)= -25.76
 GMT(SEC.)= 75350.8 (2055H)
 LOCAL TIME 2114 (M)
 IN SUN FROM 74610. TO 76920.
 IN SHADE FROM 76920. TO 75960.

KP=5
 F10.7=83.0



GMT(SEC.)	DENSITY	ALTITUDE	L.T. (MRS.)
74610	10^-14	74.9	2305
74780	10^-14	87.8	2209
74910	10^-14	87.5	2144
75060	10^-14	17.0	2190
75210	10^-14	14.1	2121
75360	10^-14	9.8	2119
75510	10^-14	6.9	2107
75660	10^-14	25.1	2102
75810	10^-14	4.5	2057
75960	10^-14	2.3	2052
76110	10^-14	-14.0	2107
76260	10^-14	-9.1	2102
76410	10^-14	0.4	2057
76560	10^-14	7.8	2052
76710	10^-14	368.4	2057
76860	10^-14	18.0	2052
76920	10^-14	356.9	2057

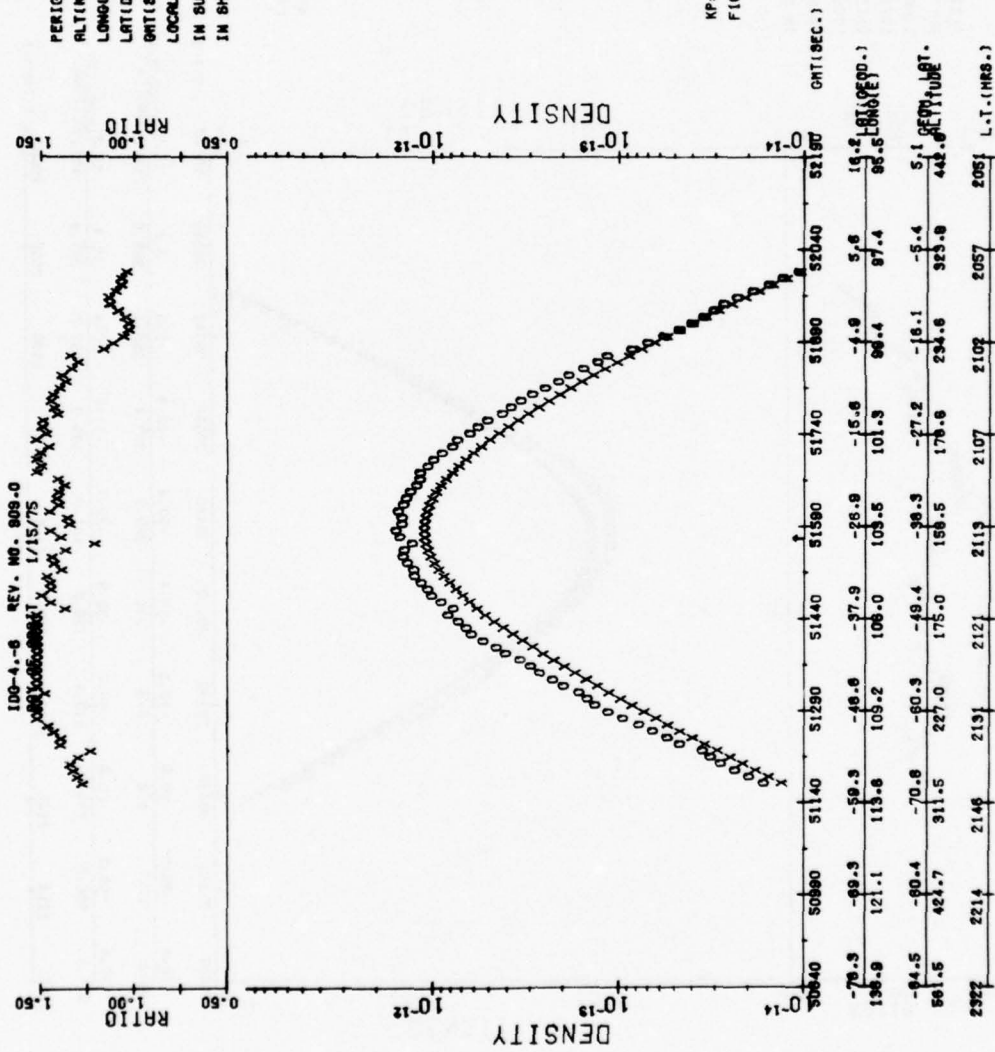
IDO-4,-6 REV. NO. 903-0
 DRY OF ORBIT 1/15/75
 PERIOD = 156.10
 ALT(MM.) = 277.60
 LONG(°) = -26.31
 LAT(°) = 9834.4 (0243H)
 OMT(SEC.) = 2114 (H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 9080. TO 11400.
 IN SHADE FROM 11400. TO 10430.



KP=5-
F10.7=80.0

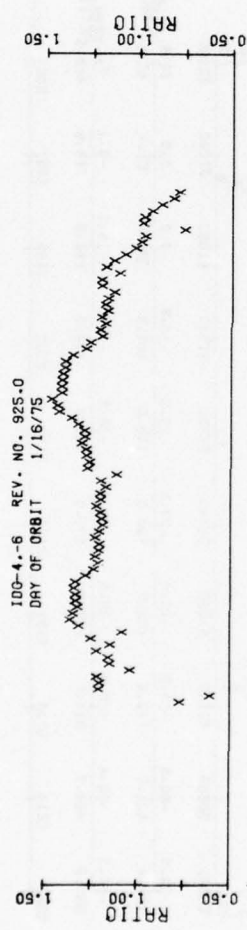
PERIGEE
 ALTITUDE = 100-50
 LONGITUDE = 103-63
 LATITUDE = -27-41
 GMT (SEC.) = 51562.8 (1418M)
 LOCAL TIME 2114 (M)
 IN SUN FROM 50840. TO 53160.
 IN SHADE FROM 53160. TO 52190.

KP=2+
 F10.7=80.0



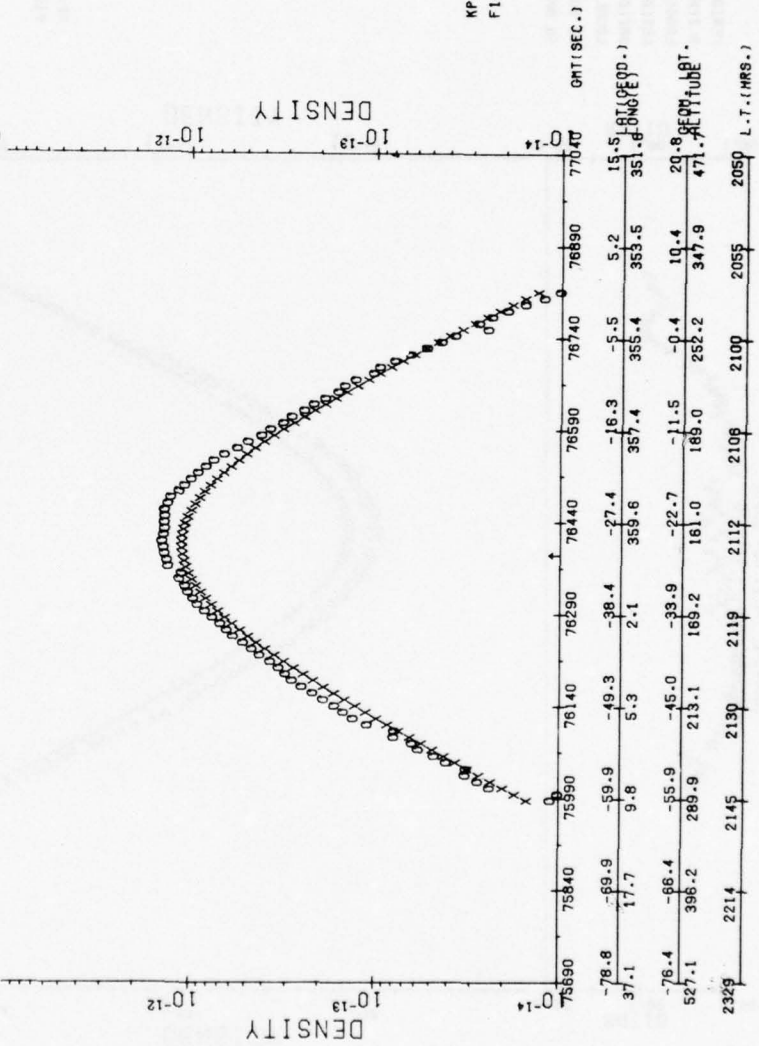
100-4-8 REV. NO. 808-0
 1/15/75

100-4.-6 REV. NO. 925-0
 DRY OF ORBIT 1/16/75

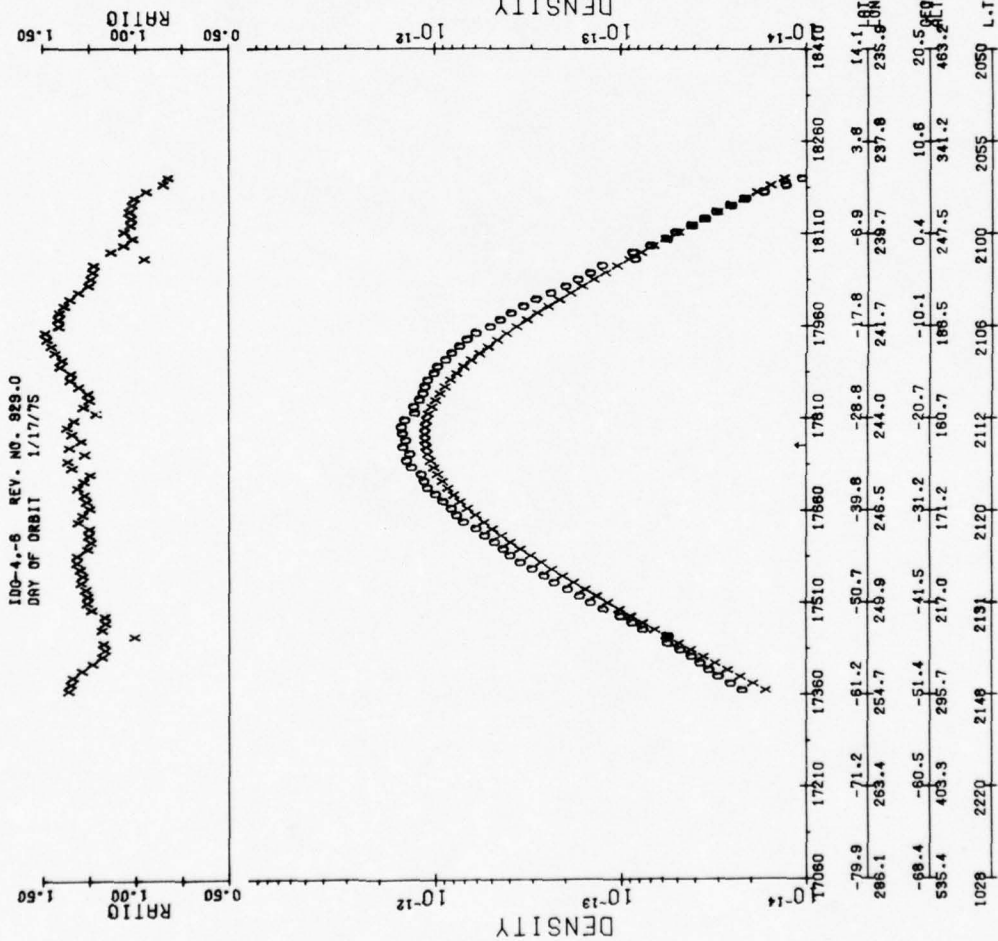


PERIGEE
 ALT(KM.)= 159.64
 LONG(L) = 0.21
 LAT(DEC.) = -30.38
 GMT(SEC.) = 76399.2 (2113M)
 LOCAL TIME 2114 (H)
 IN SUN FROM 75630. TO 77940.
 IN SHADE FROM 77940. TO 77040.

KP=4-
 F10.7=80.0



PERIODE
 ALT(KM.)= 159.94
 LONG(°E)= 244.46
 LAT(DEC.)= -31.11
 OMT(SEC.)= 17776.3 (0456H)
 LOCAL TIME 2114 (H)
 IN SUN FROM 17060. TO 19320.
 IN SHADE FROM 19320. TO 18410.

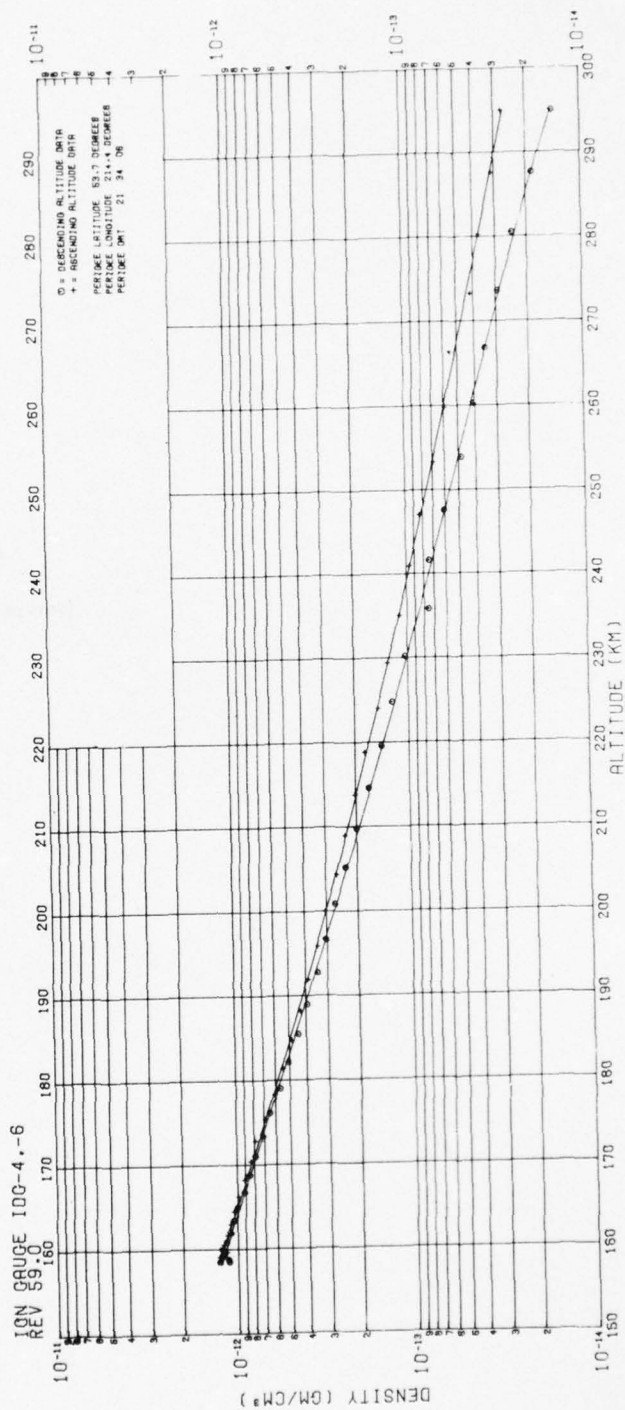


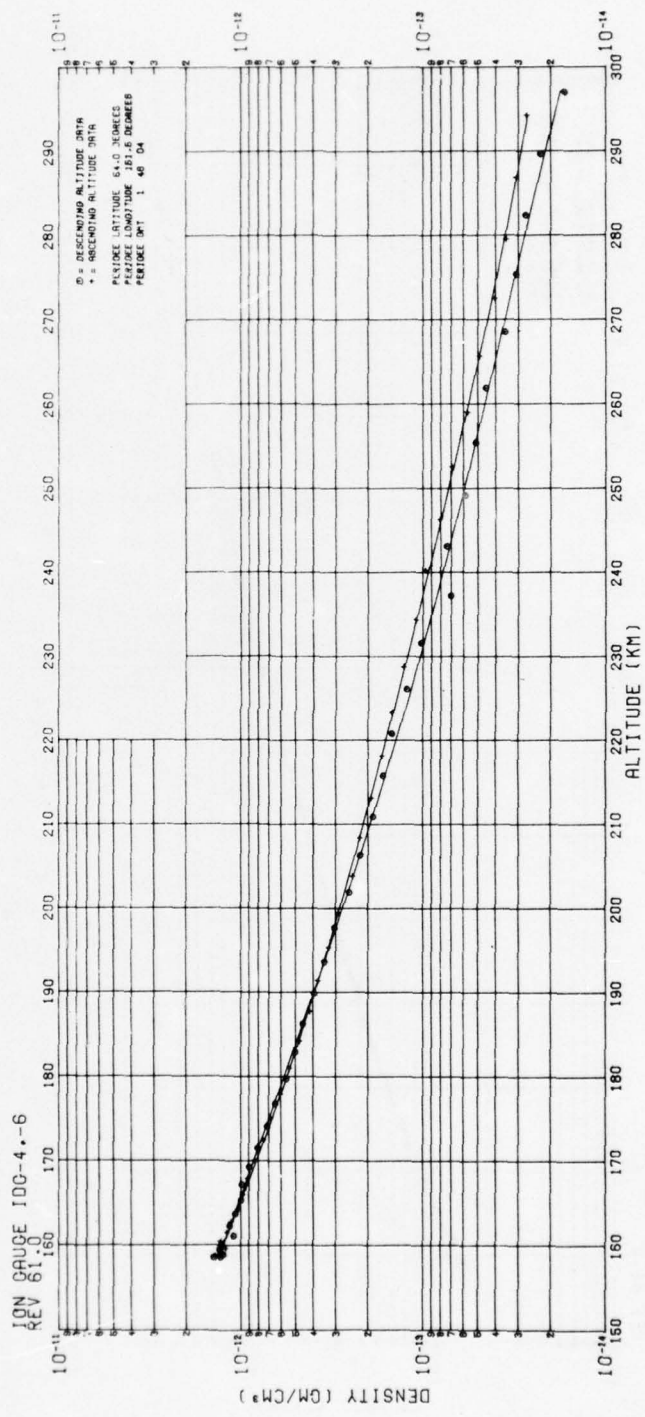
KP=4+
 F10.7=79.0

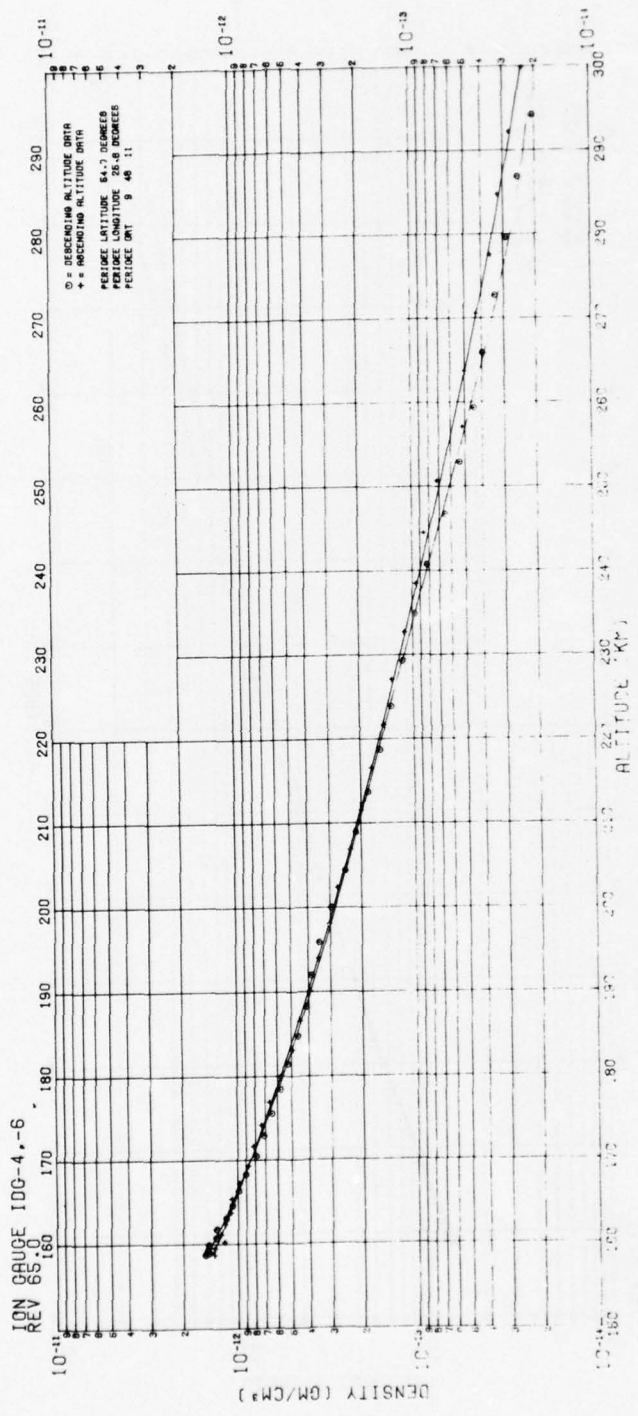
PRECEDING PAGE, BLANK, NOT FILMED

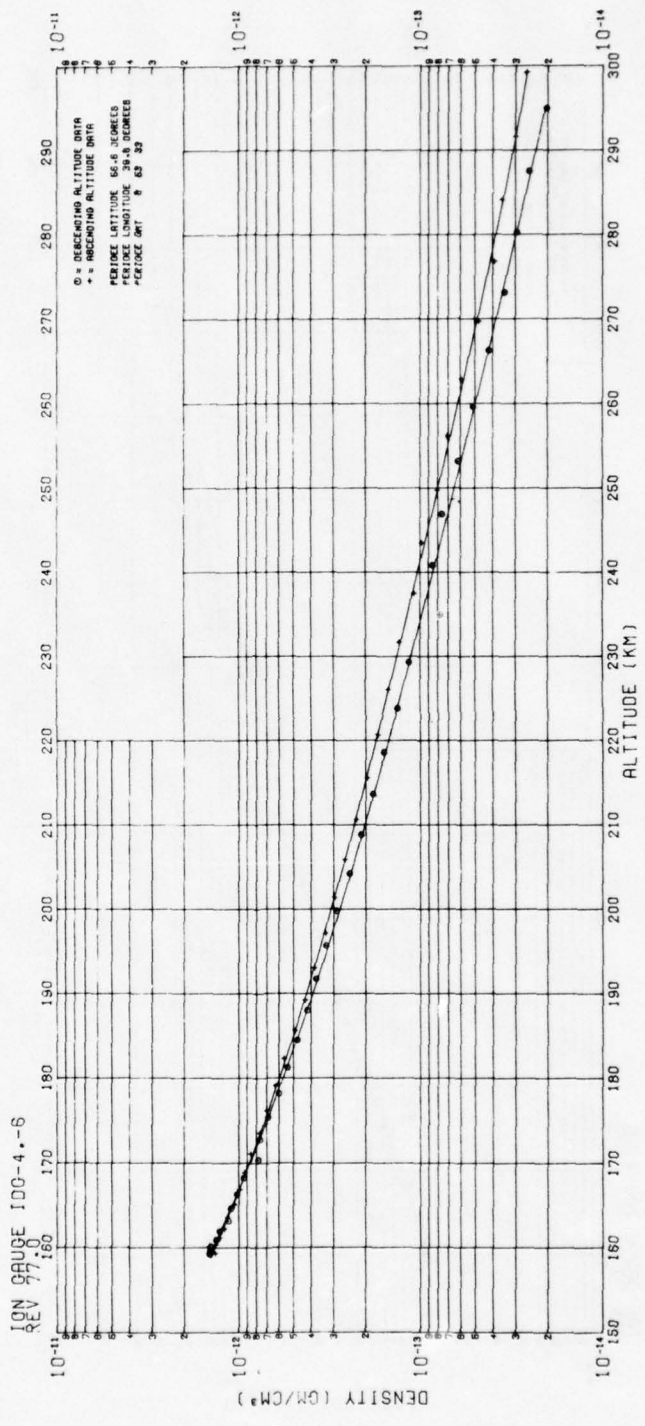
Appendix B

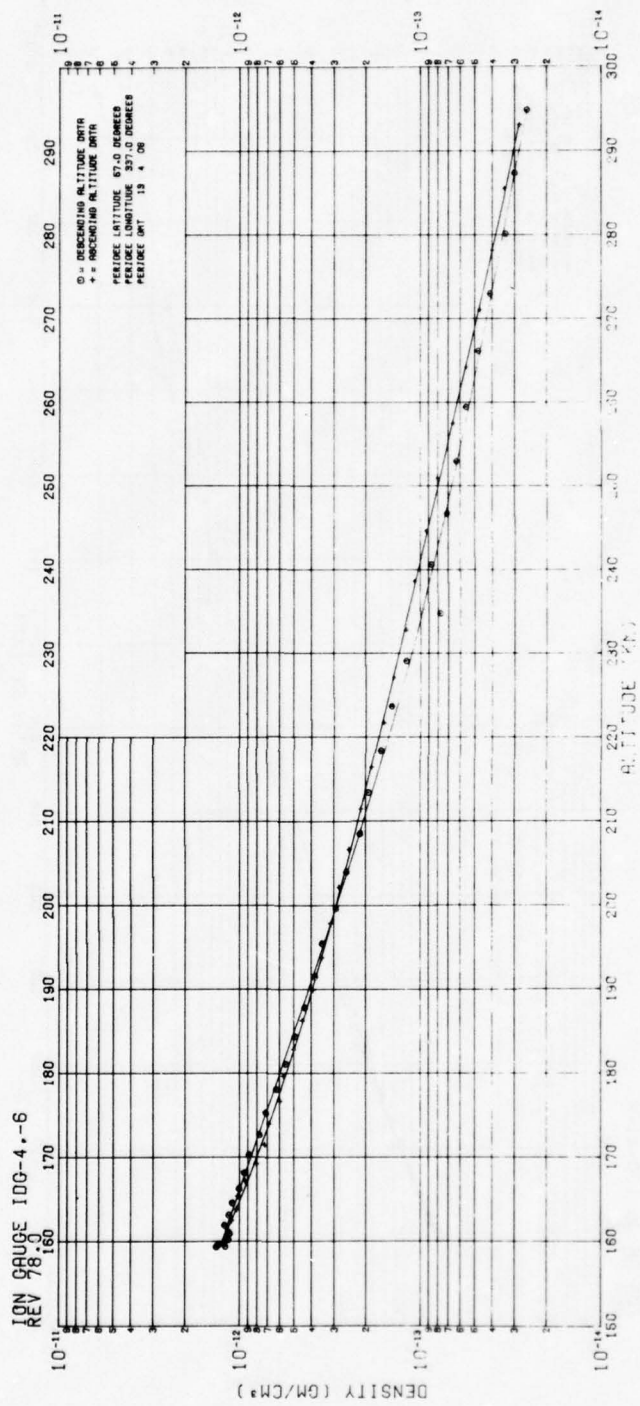
Plots of Density vs Altitude

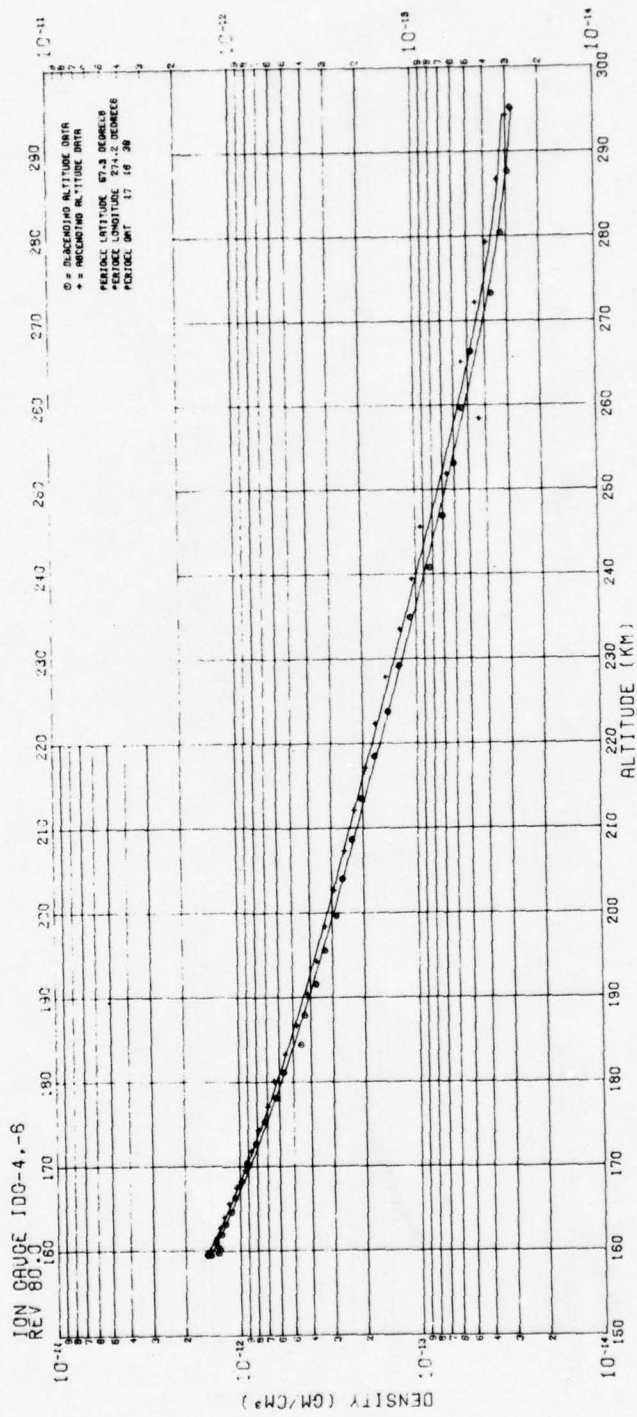


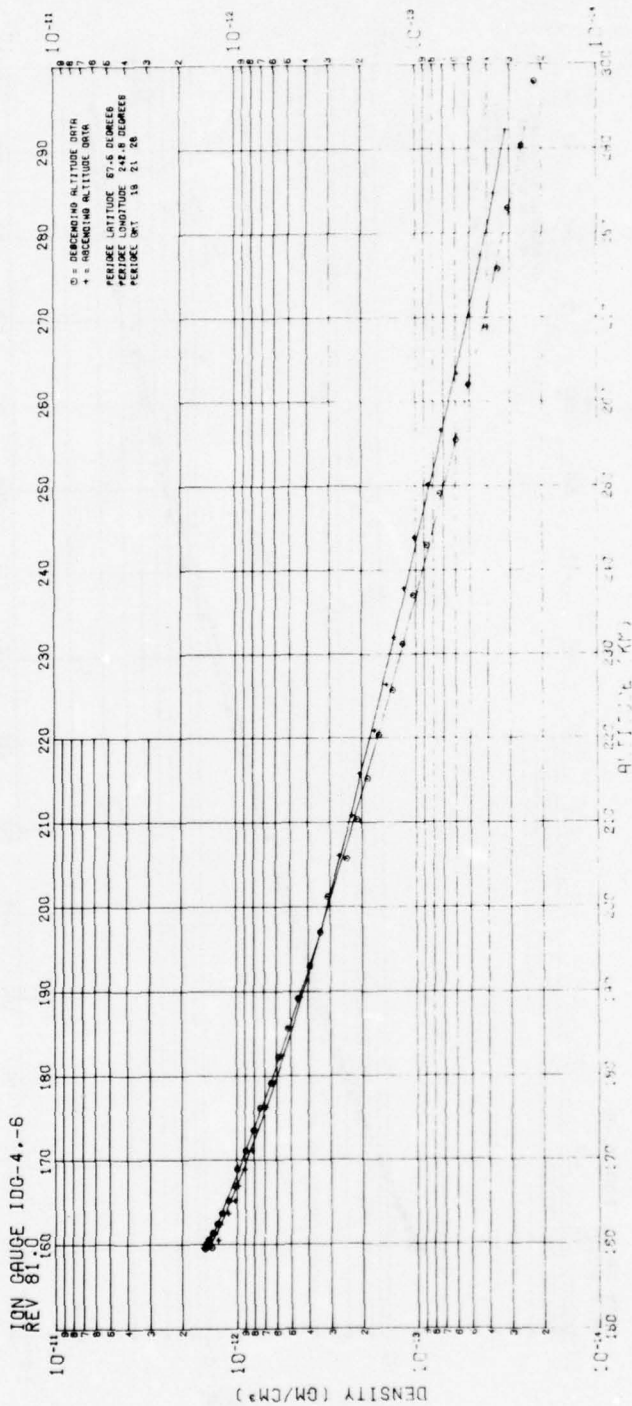


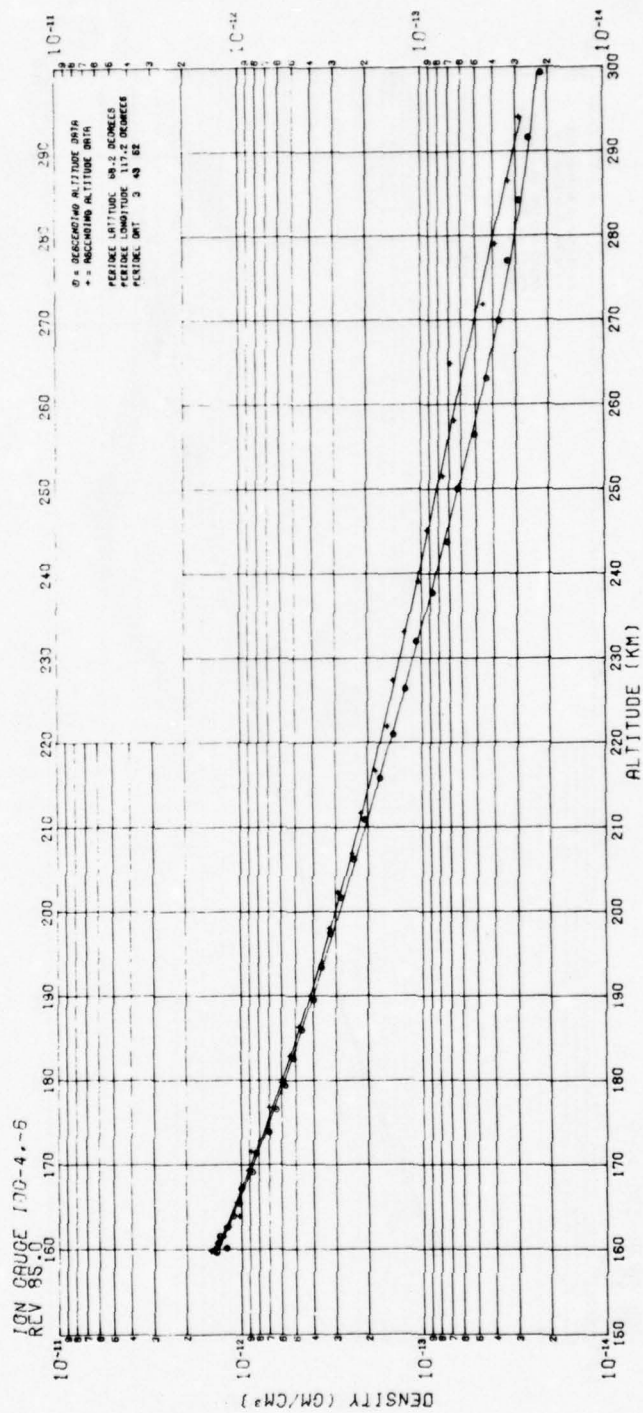


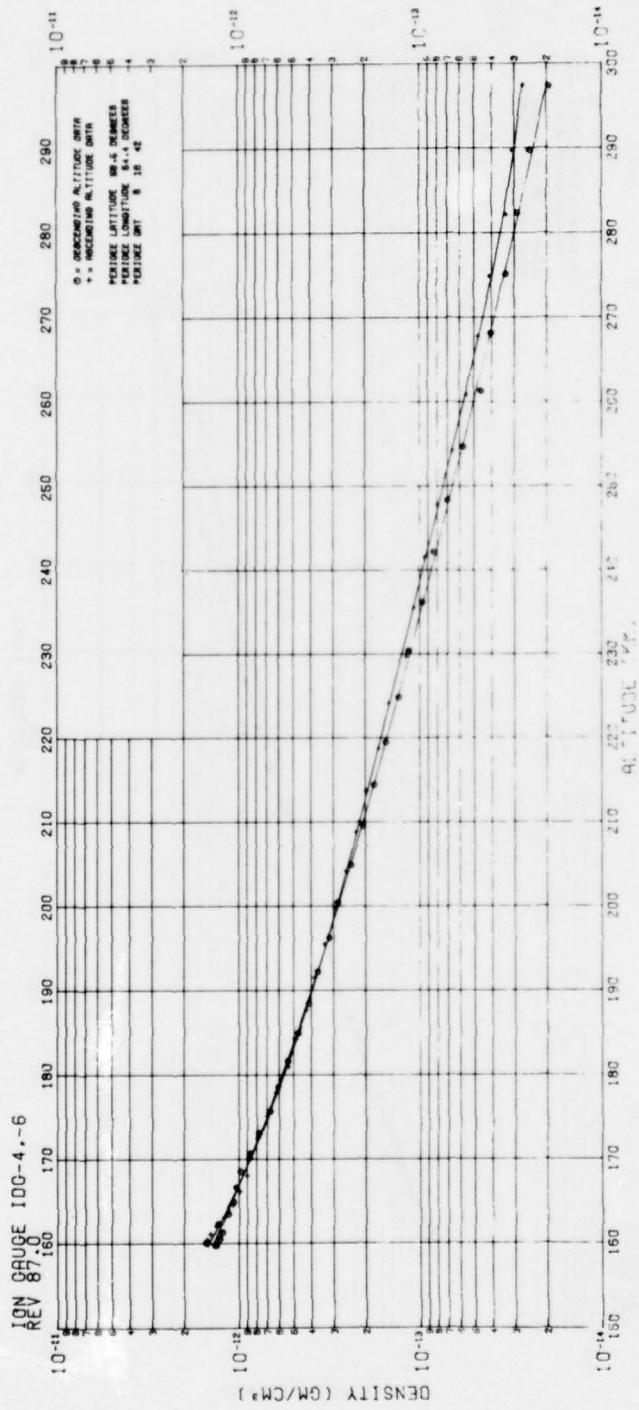


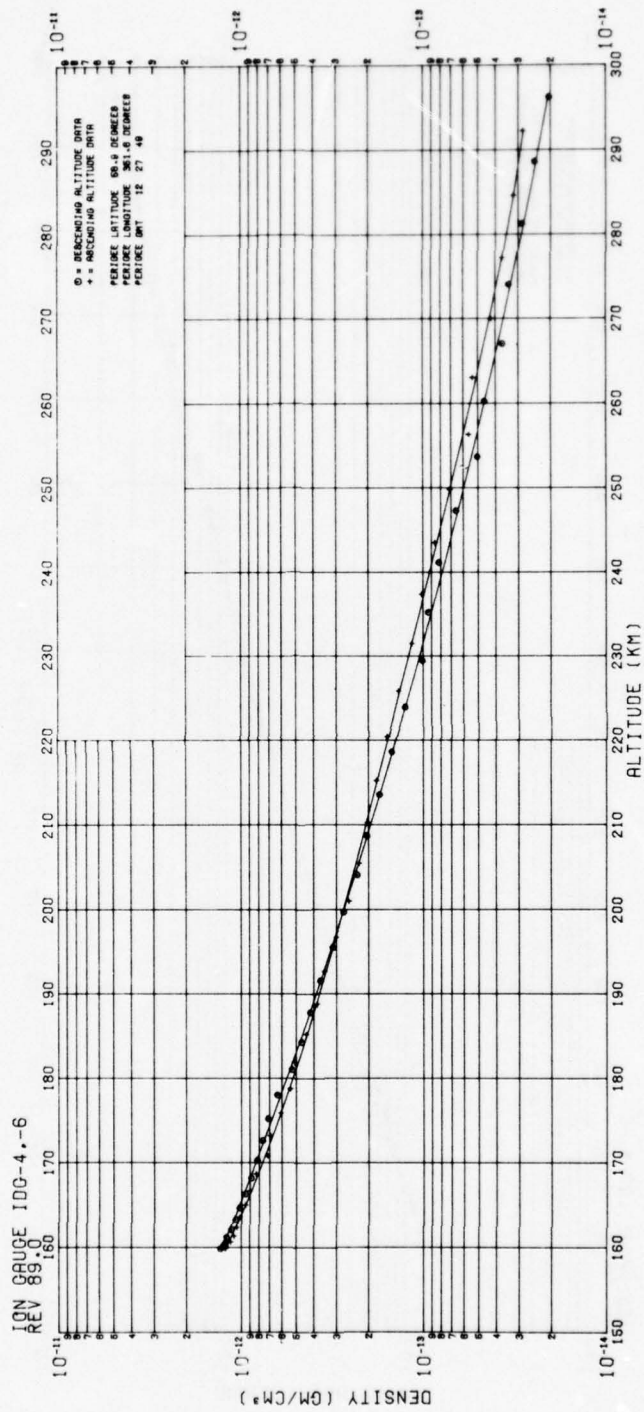


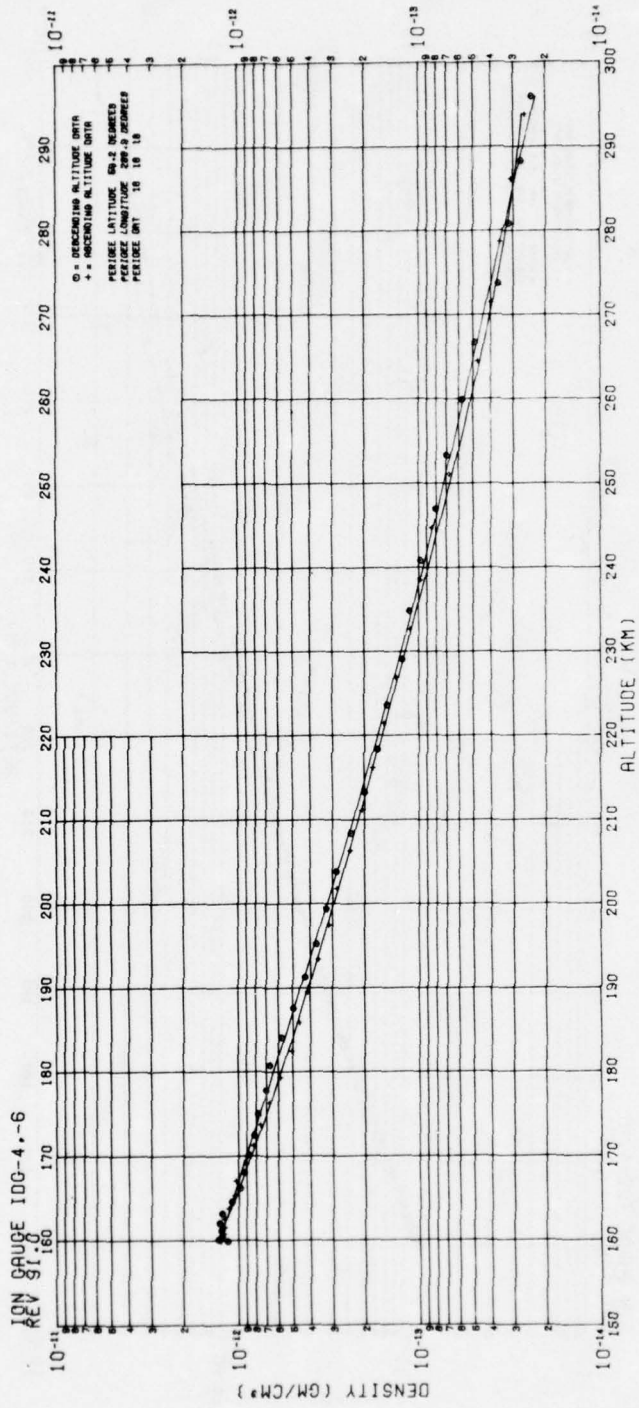


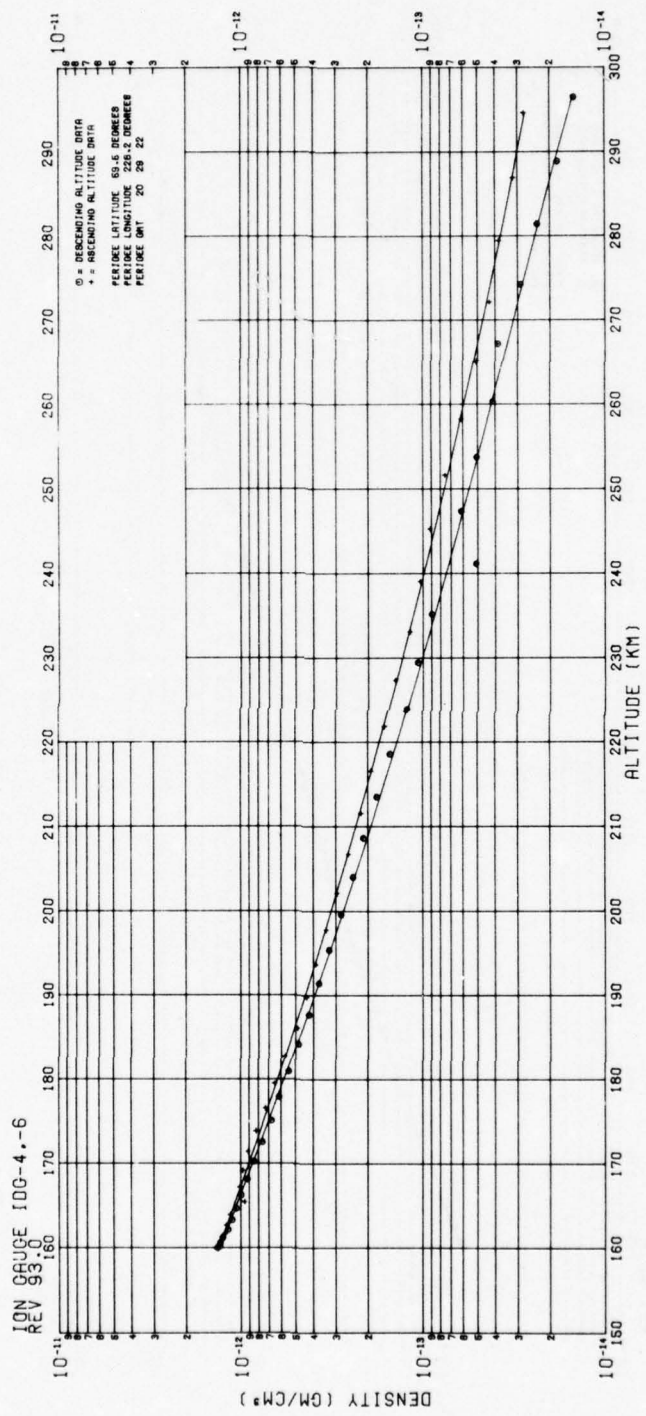


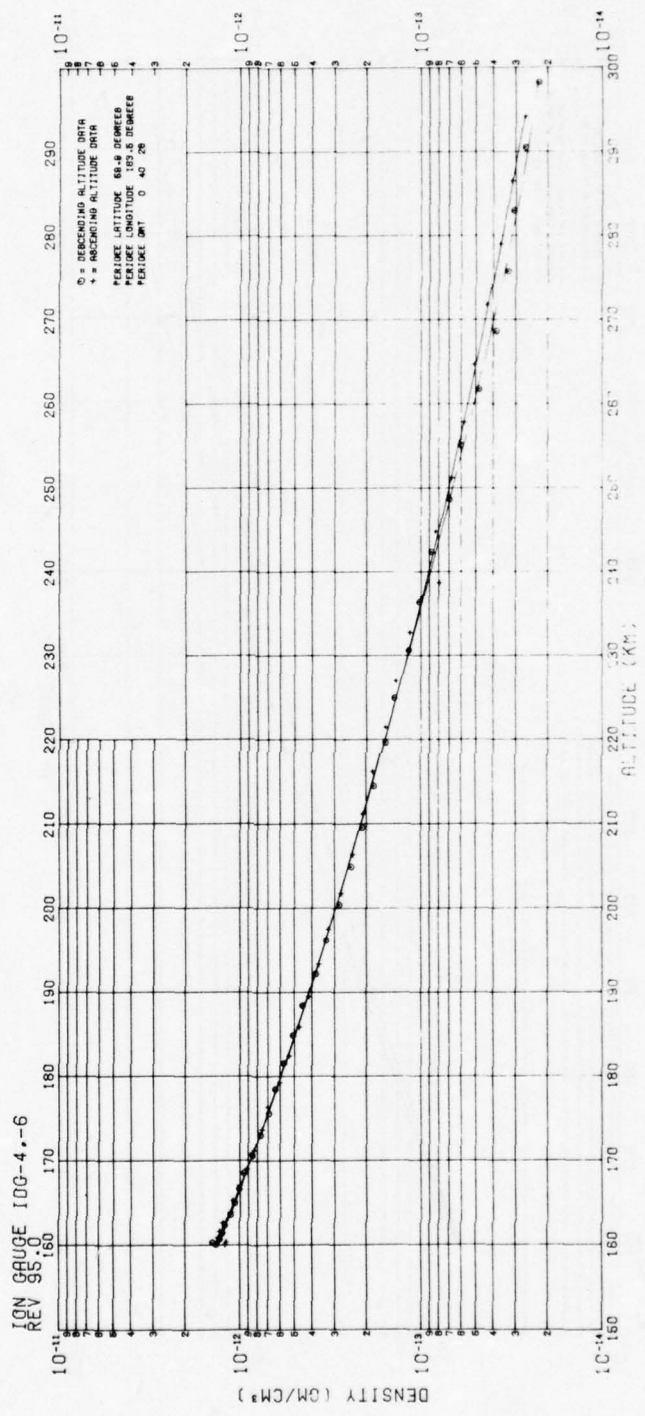


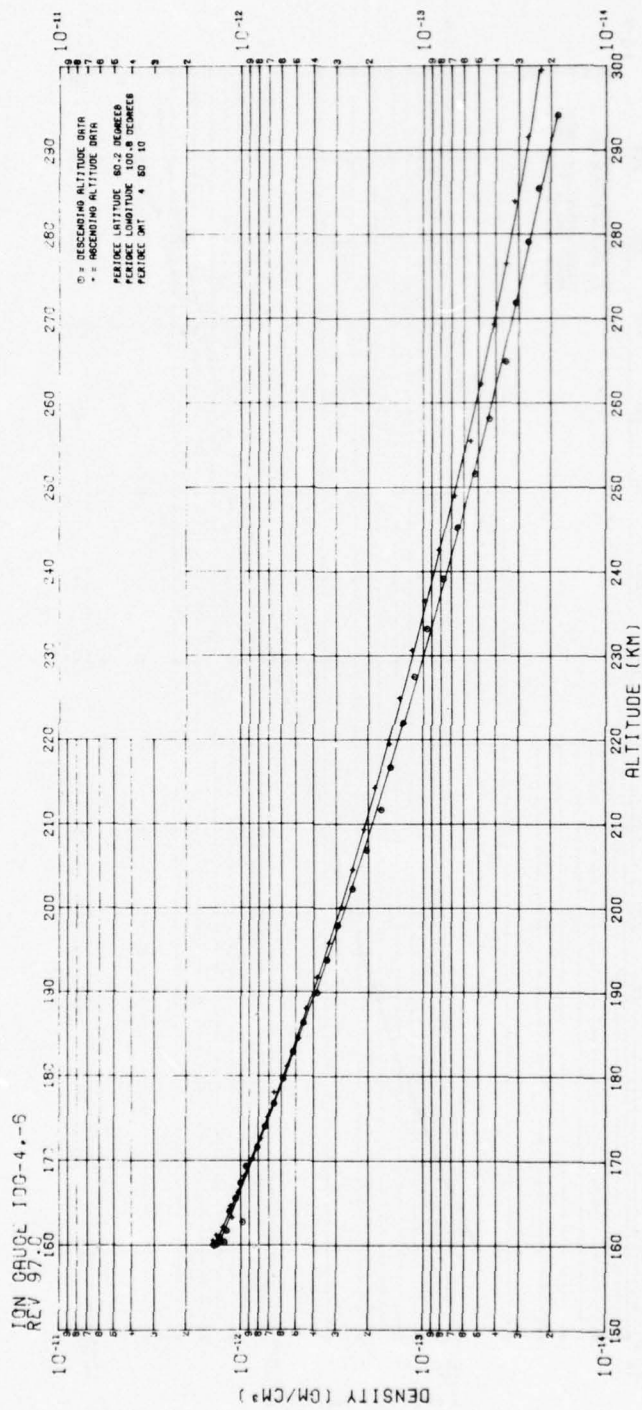


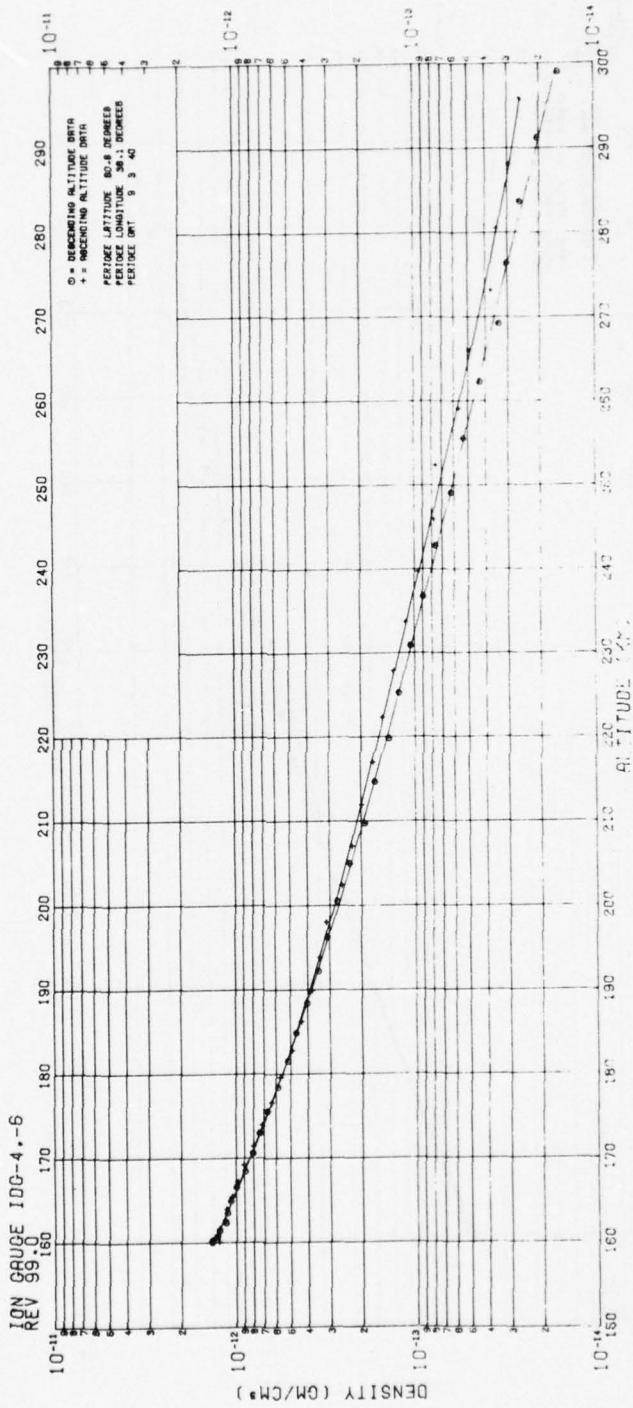


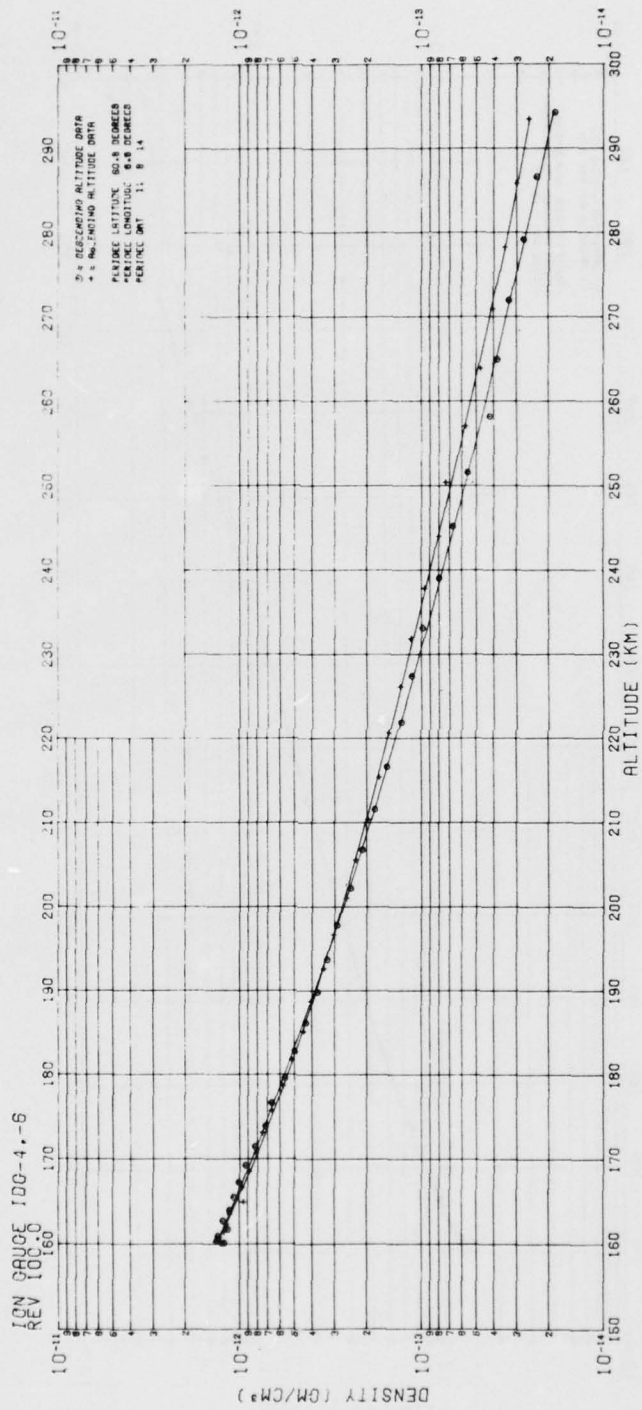


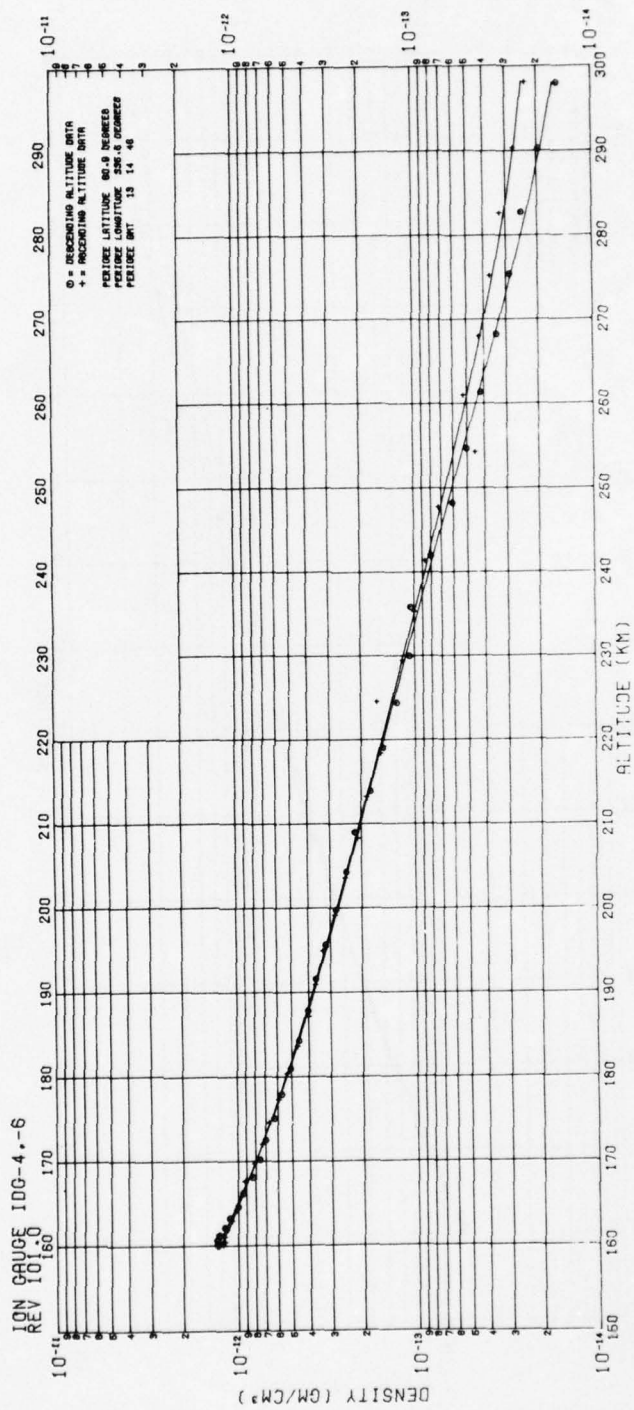


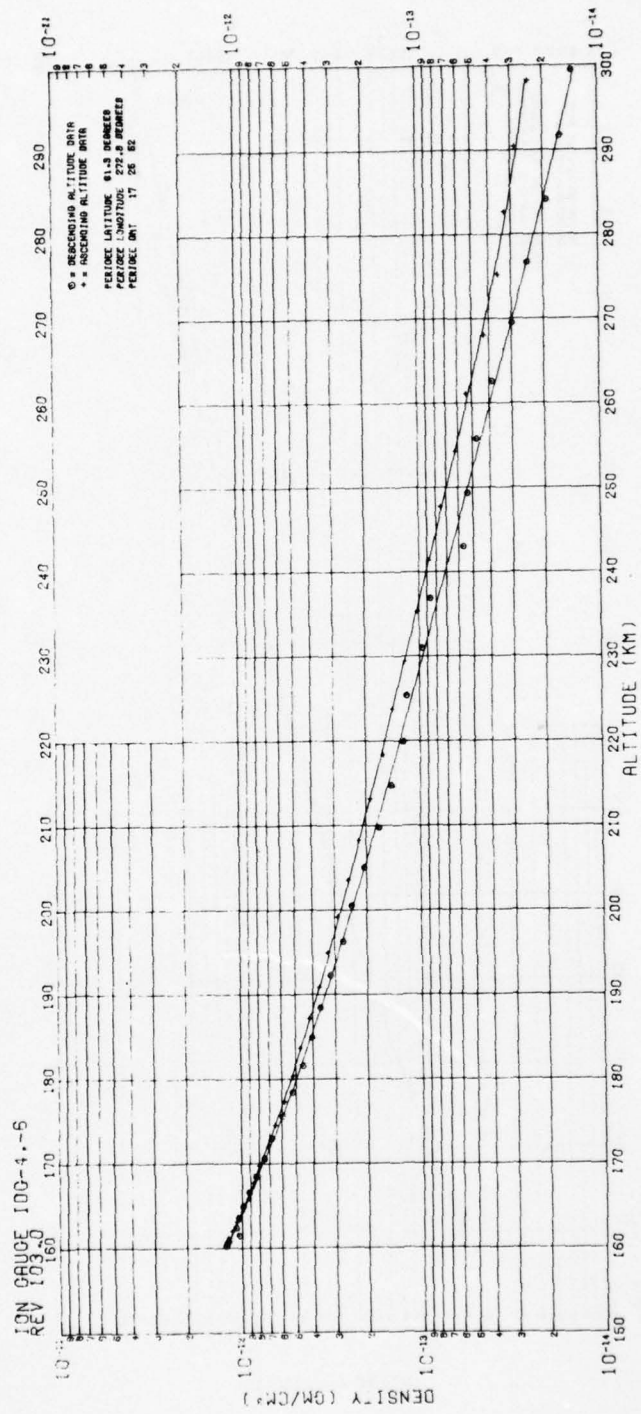


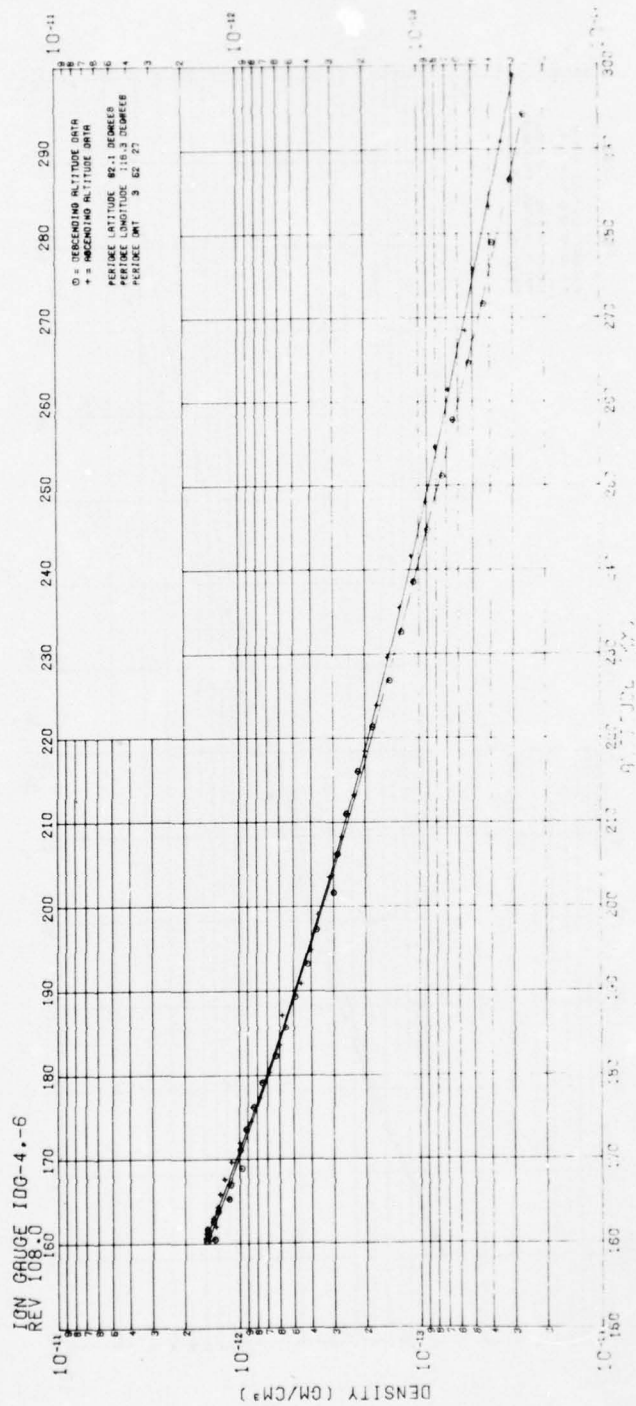


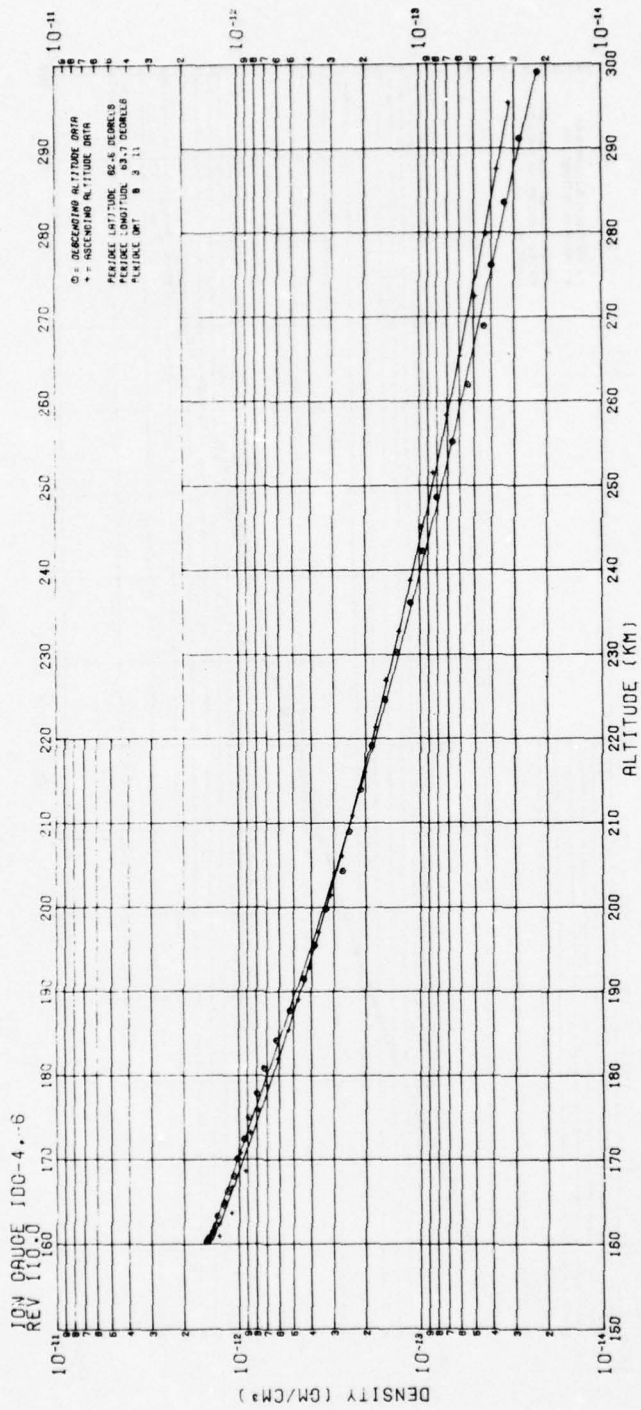


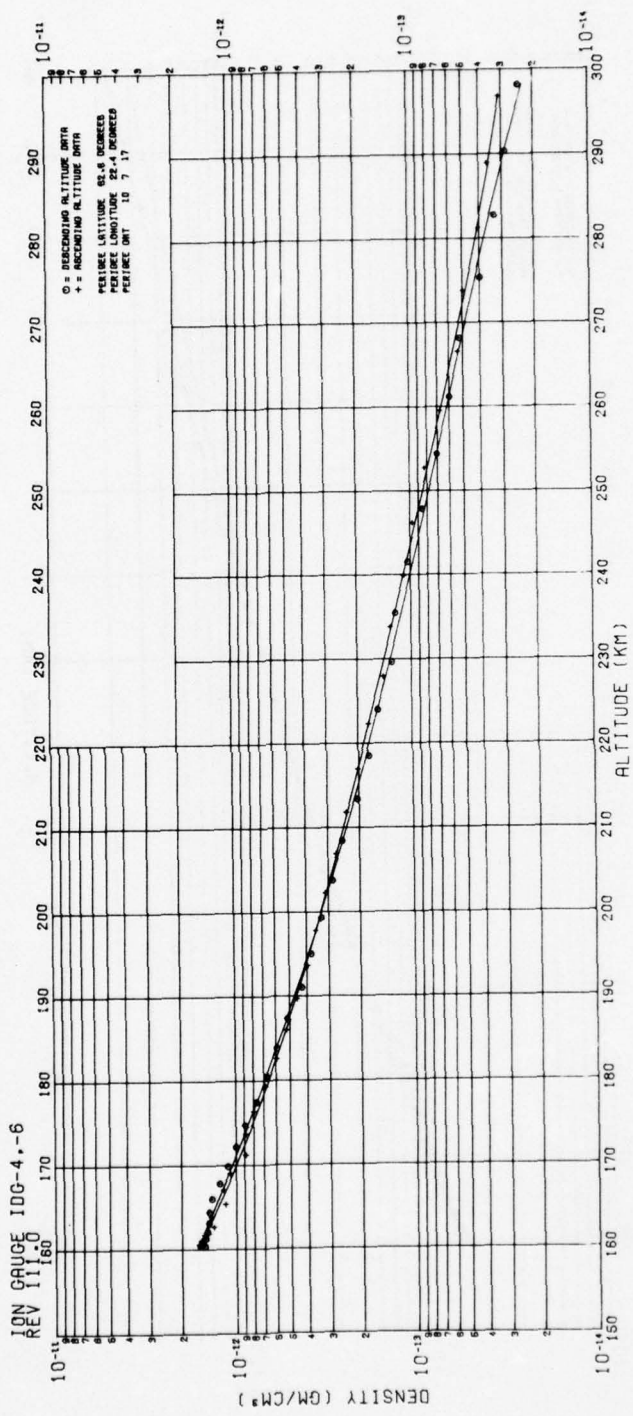


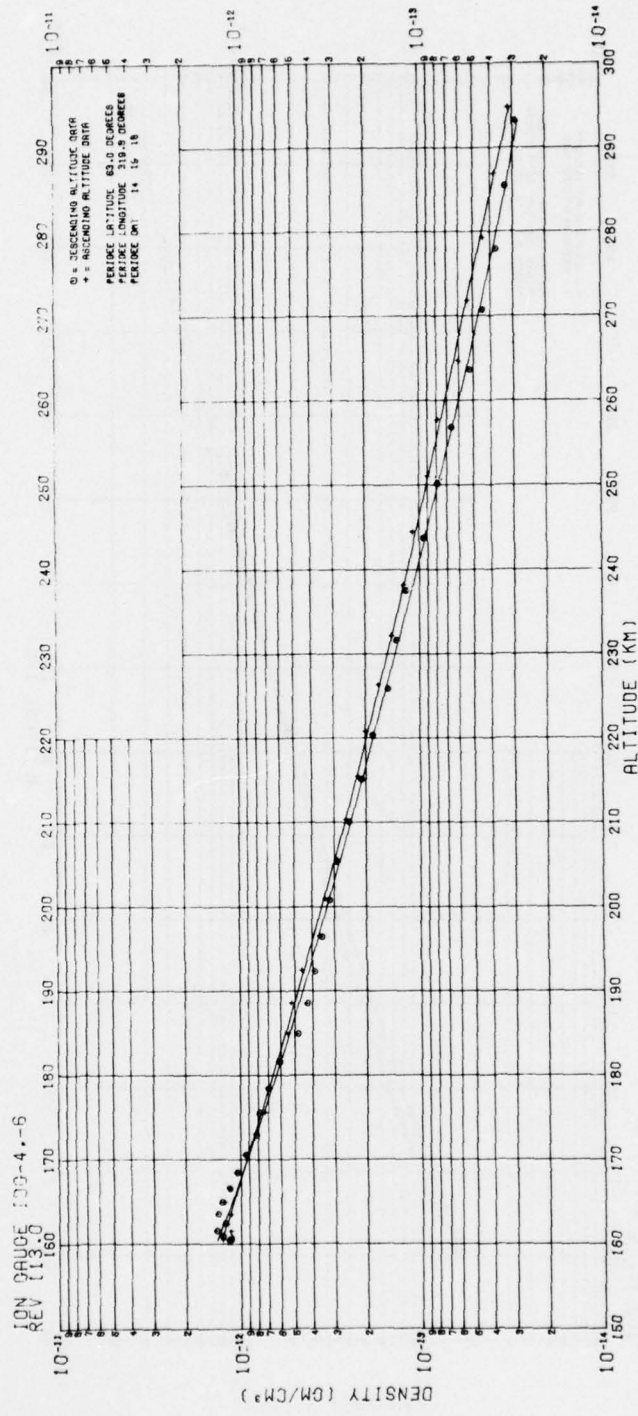


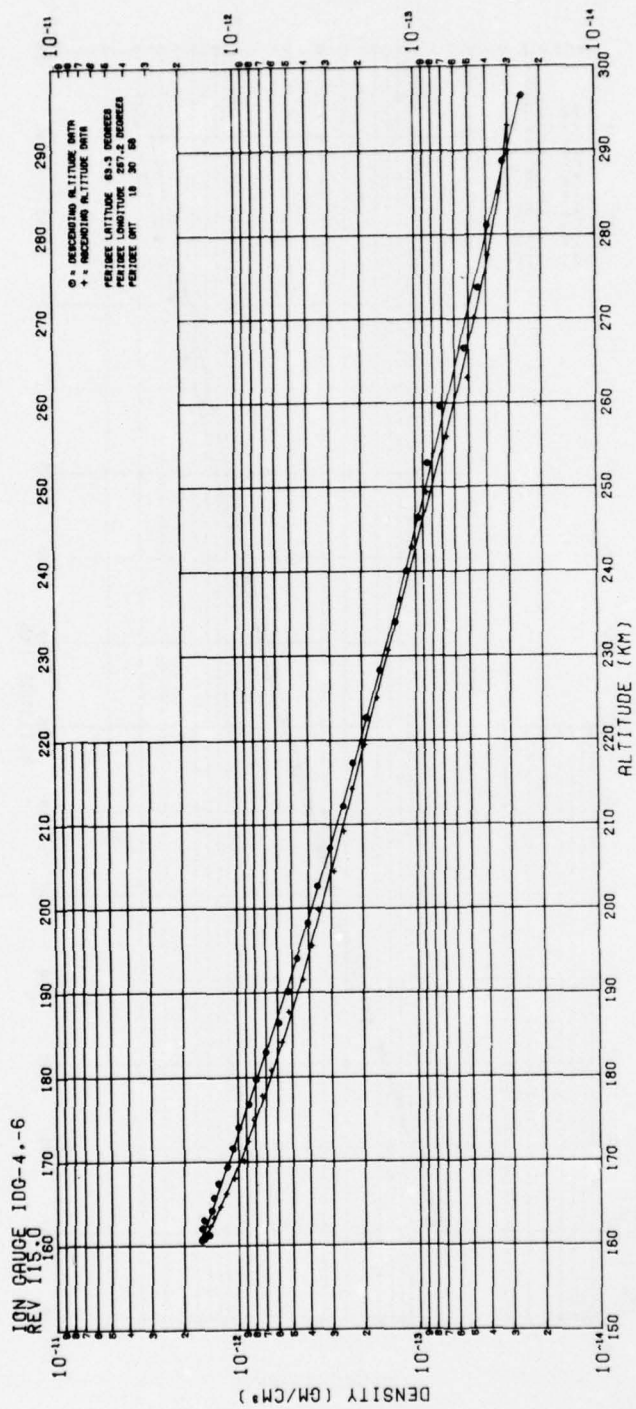


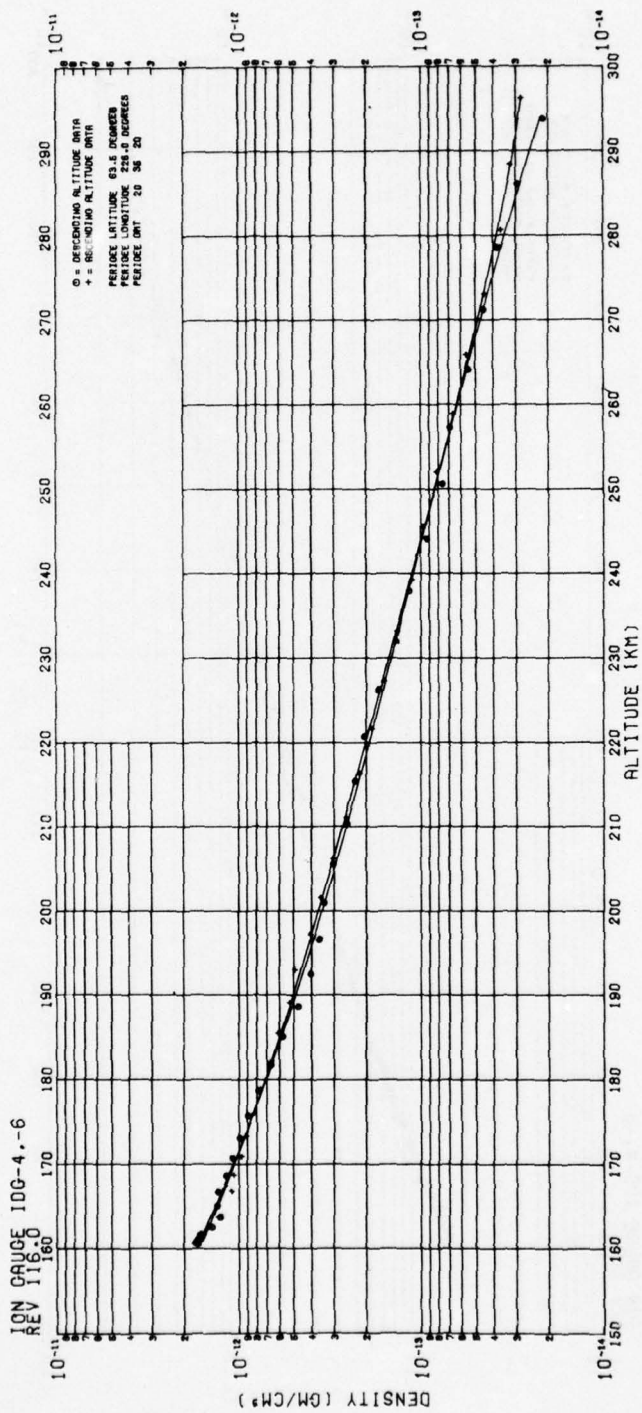


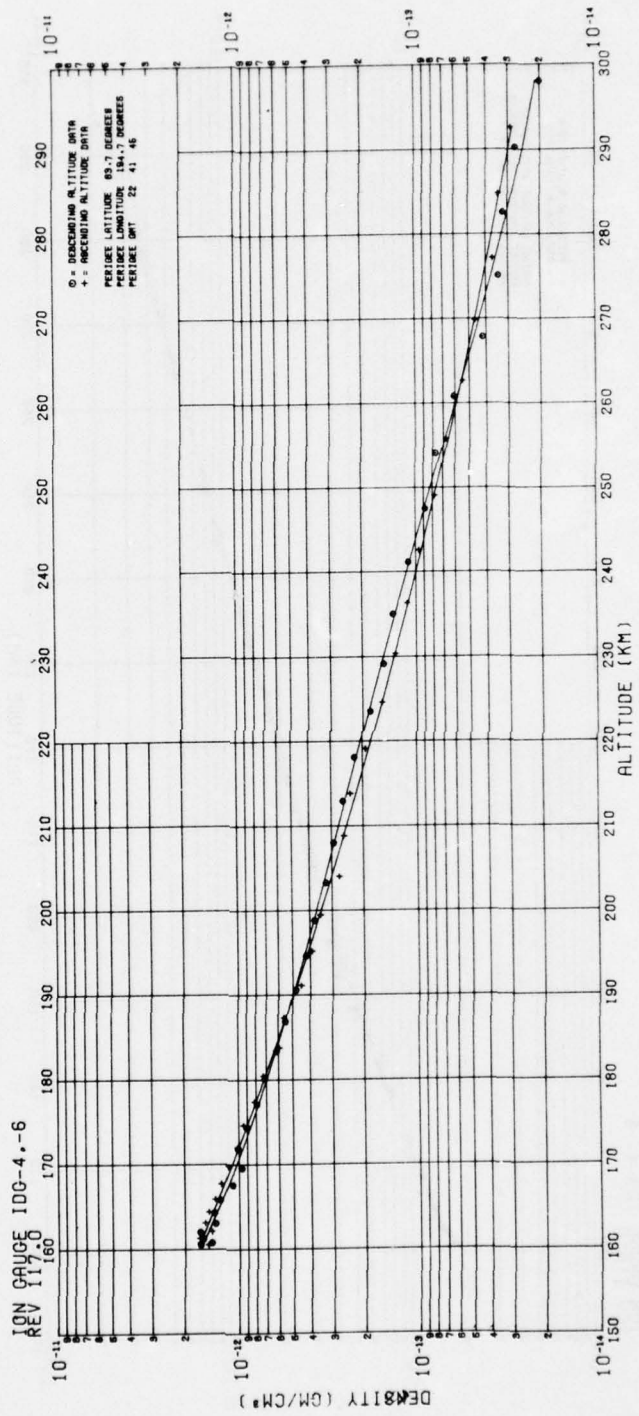


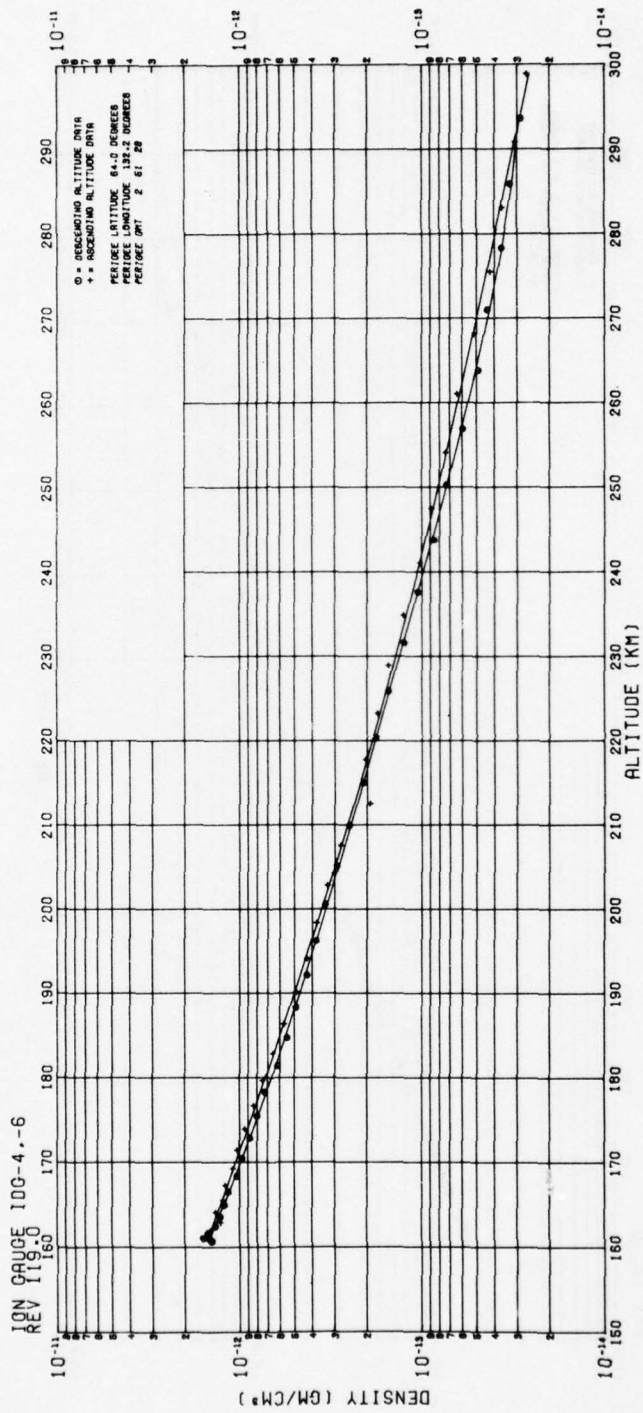




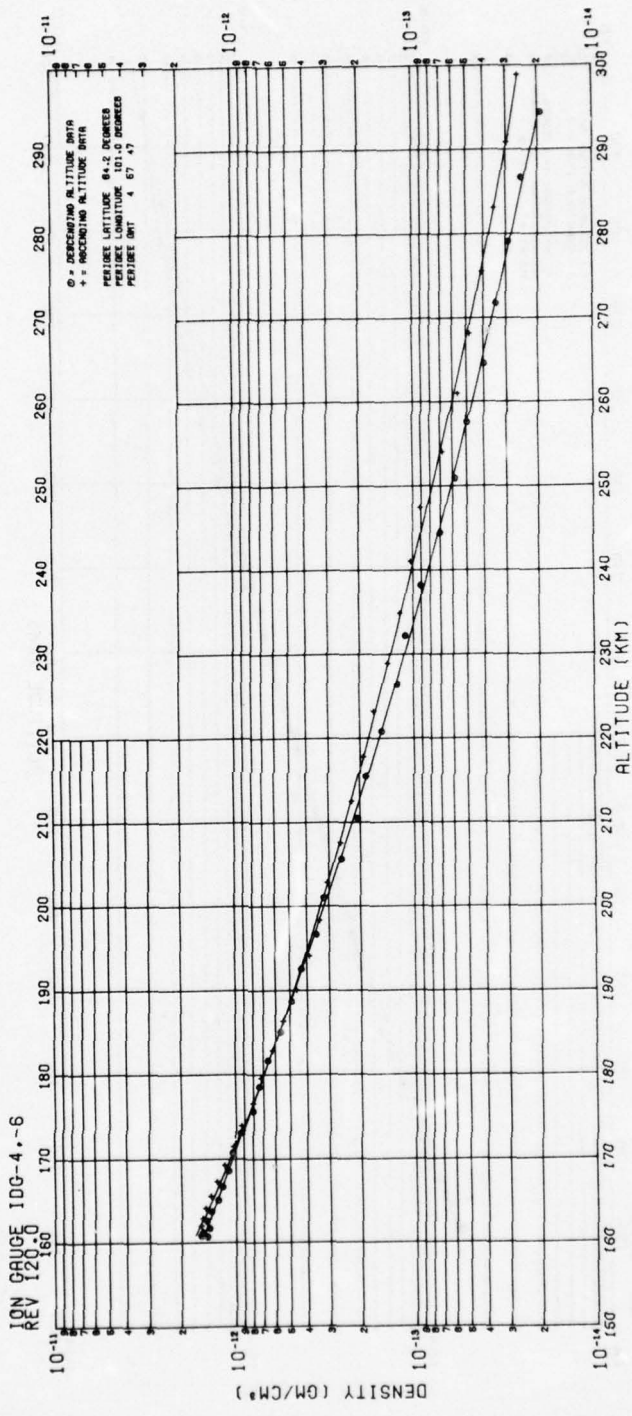


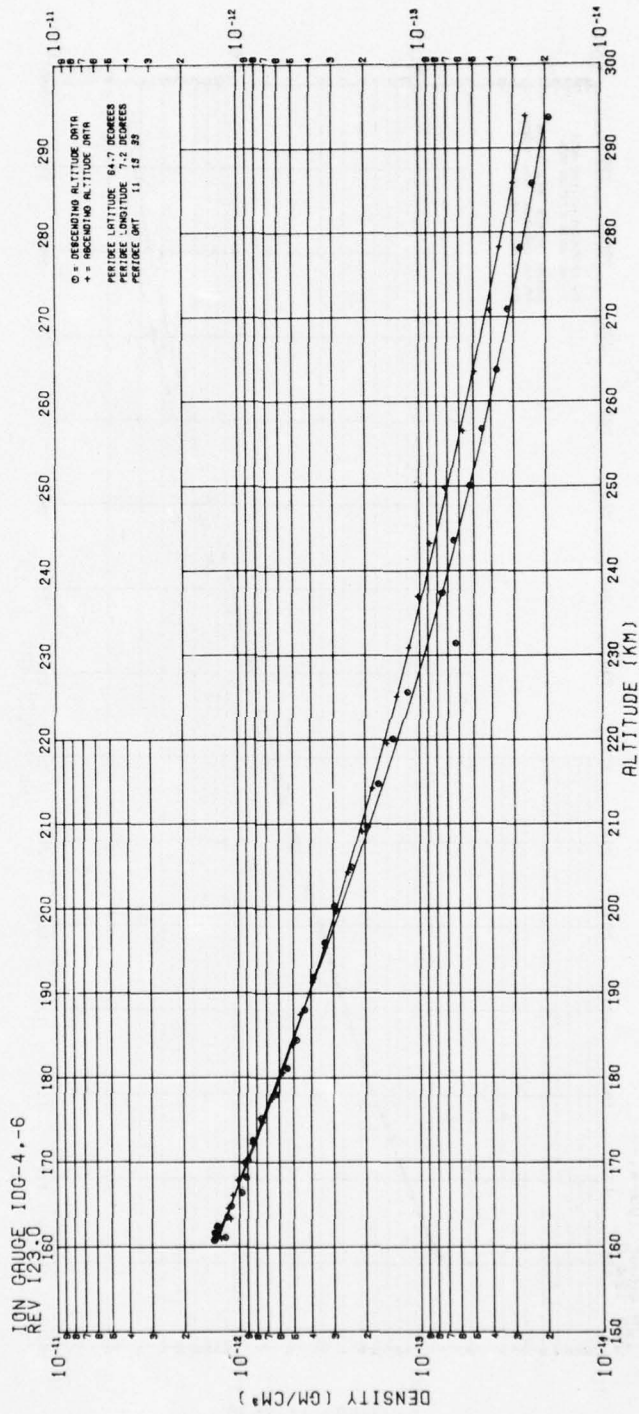


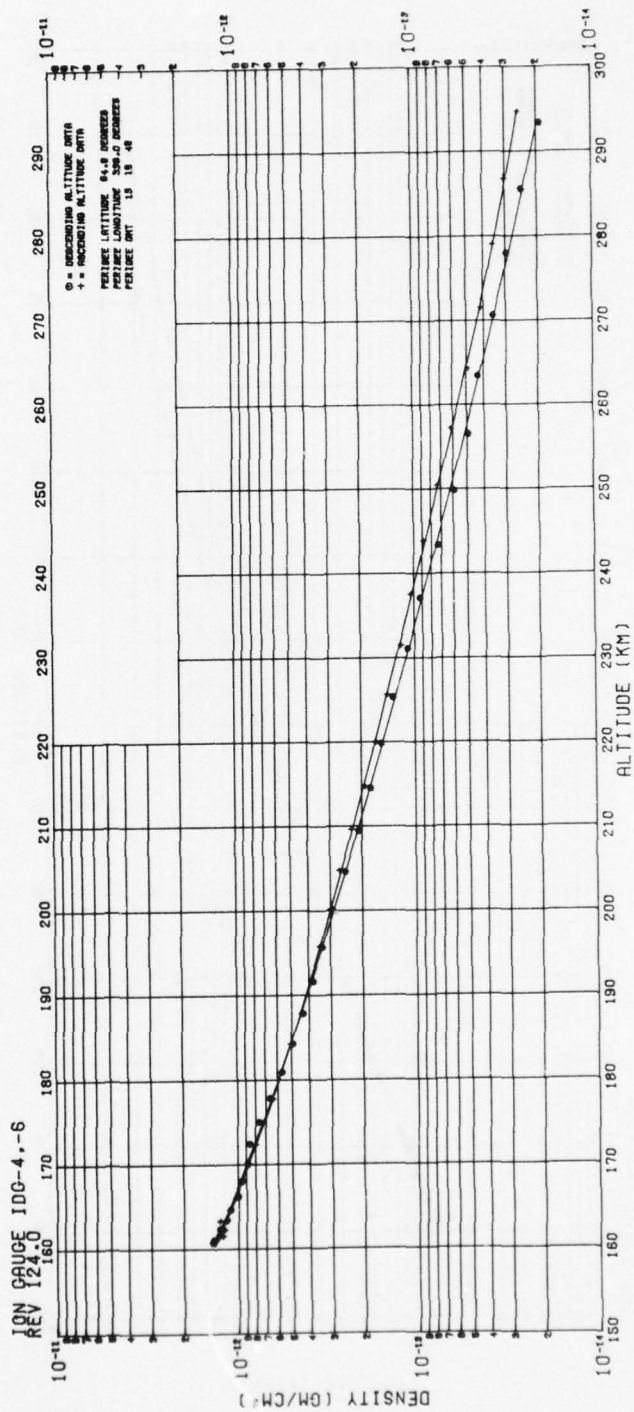




16-219







AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

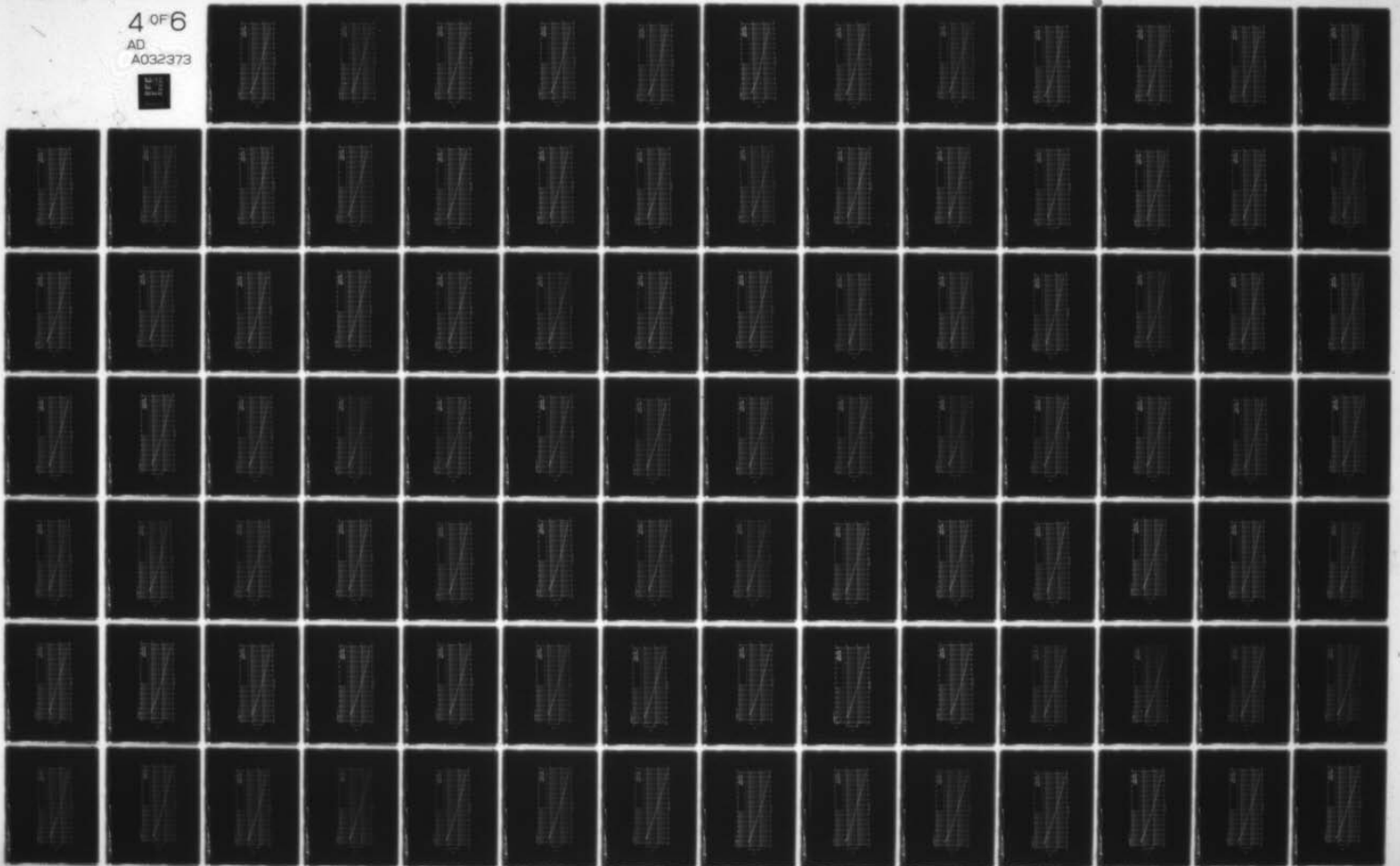
F/G 4/1

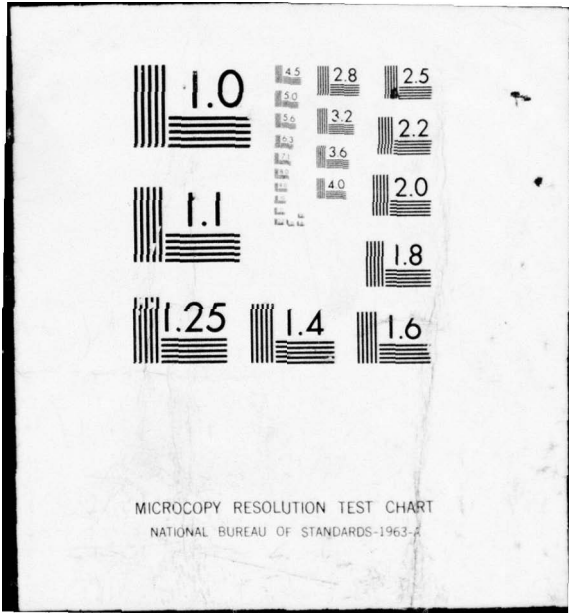
NL

UNCLASSIFIED

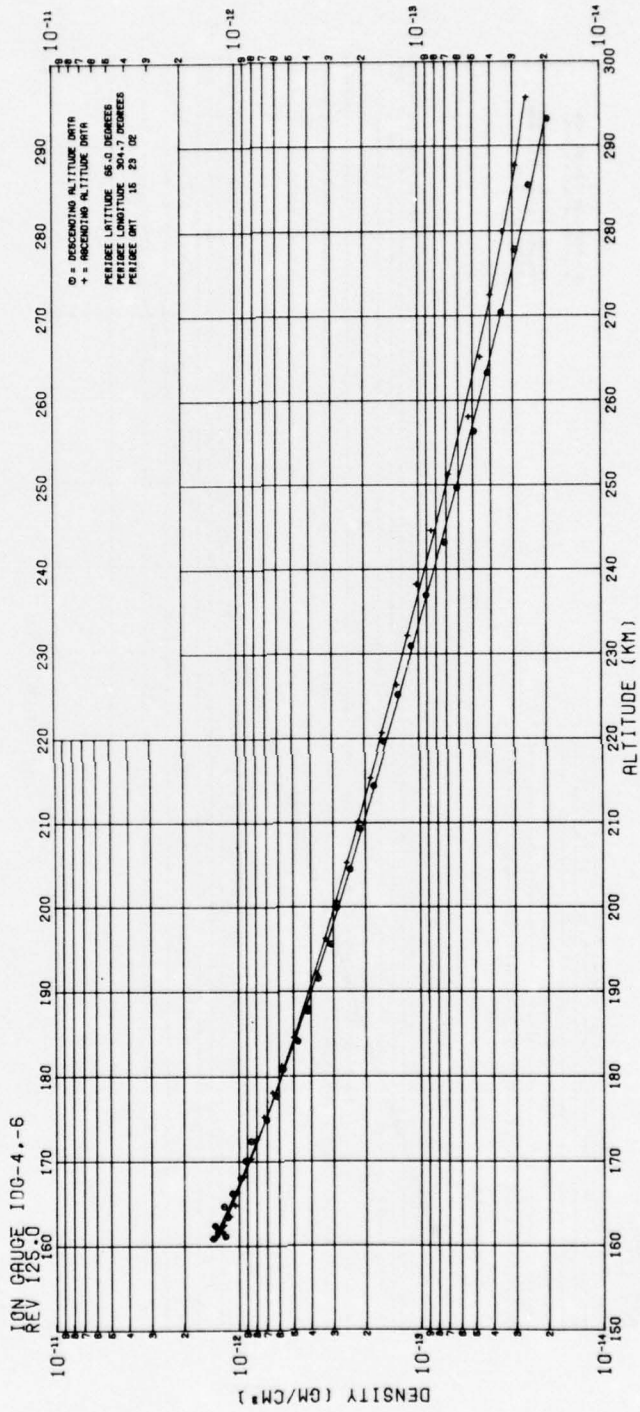
4 OF 6

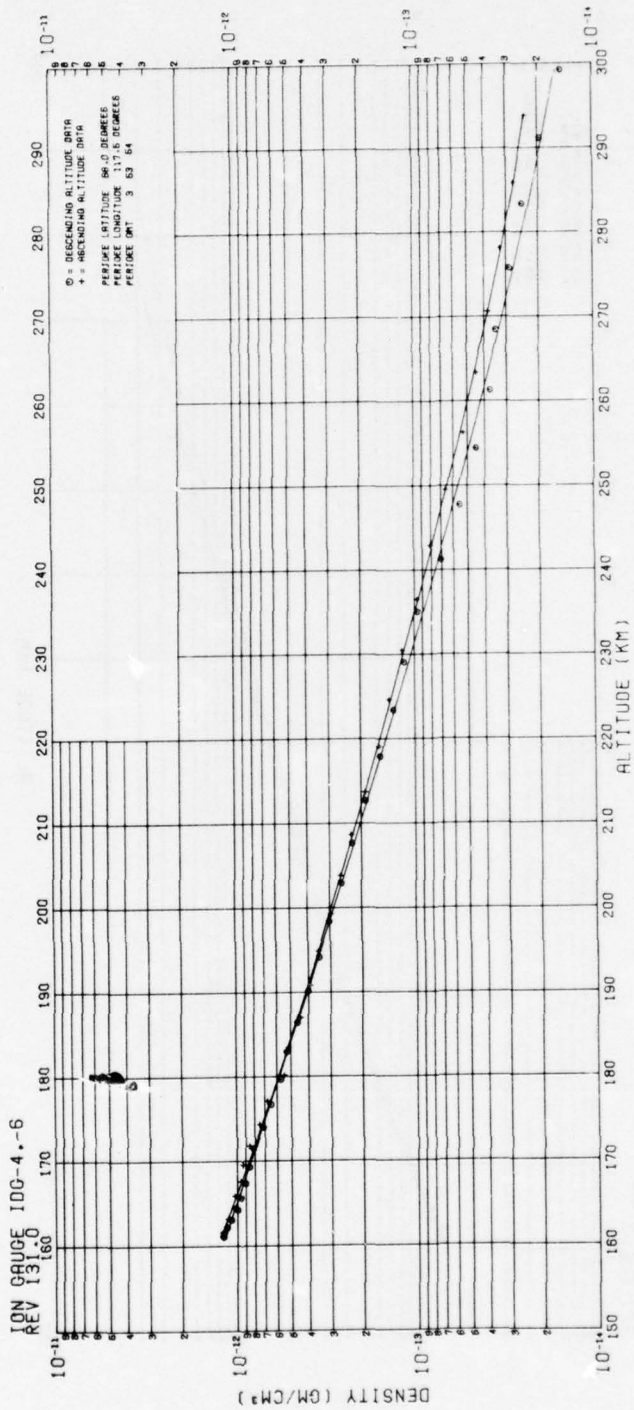
AD
A032373

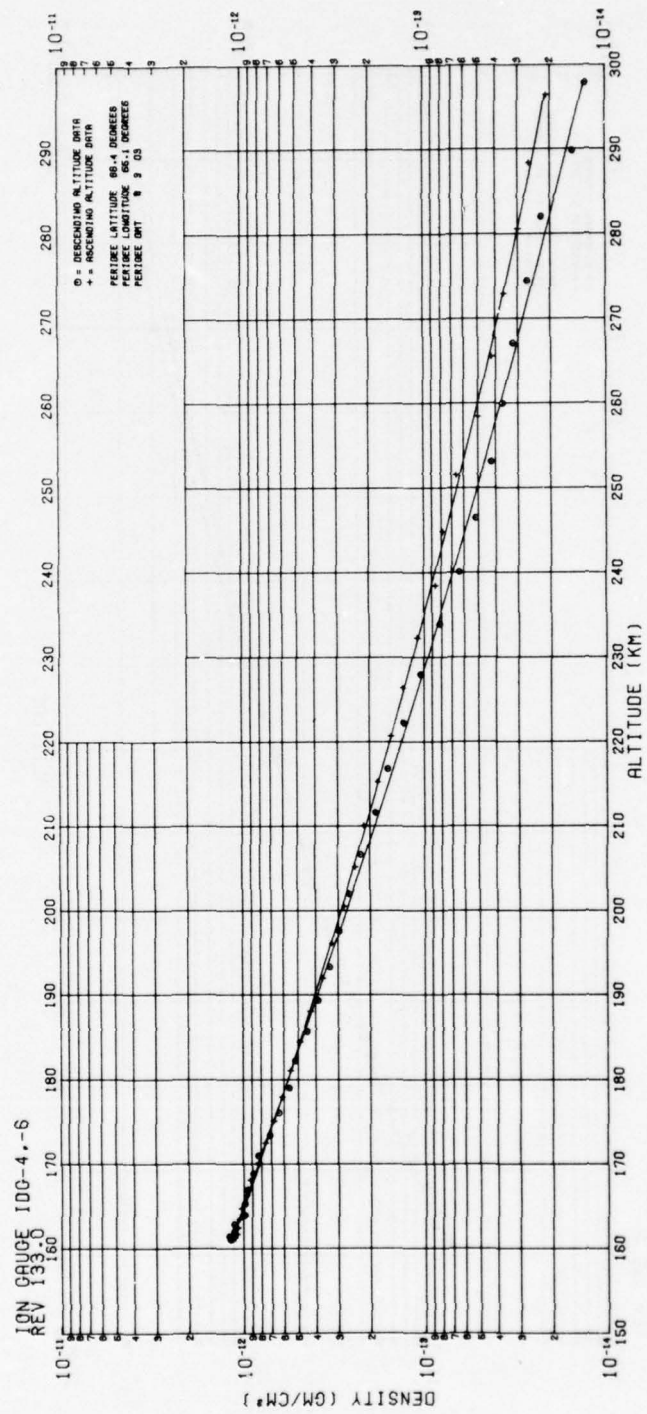


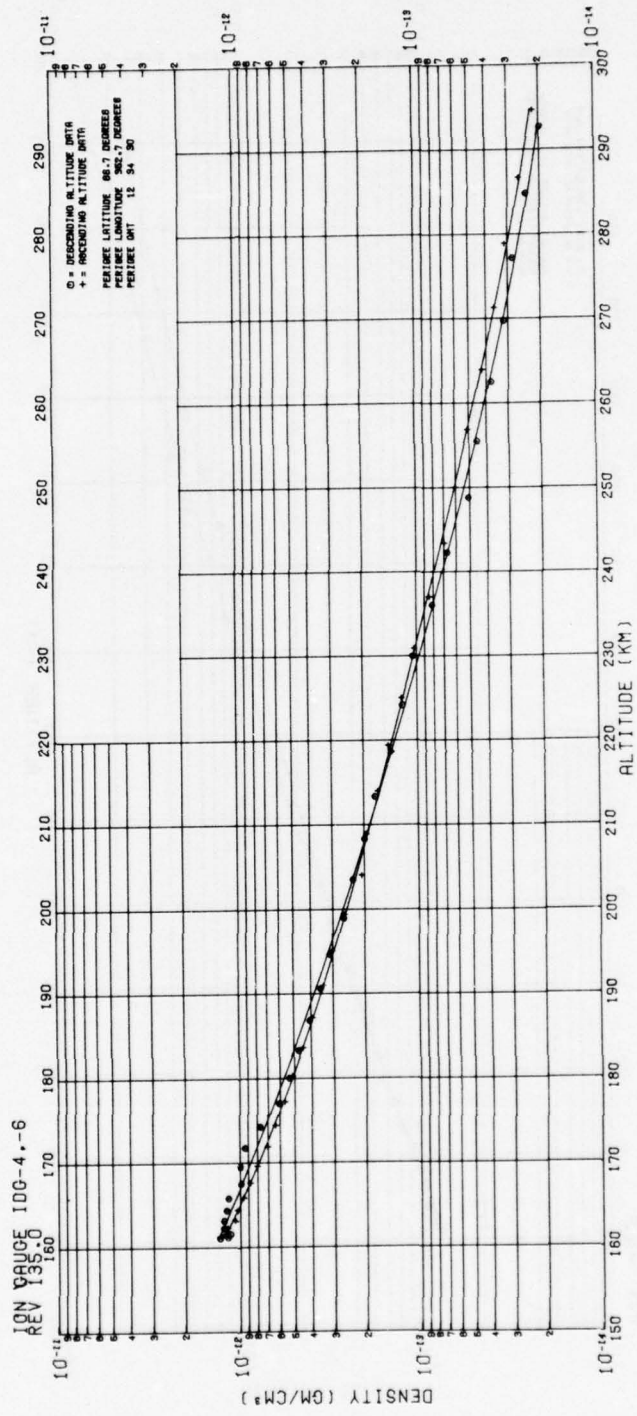


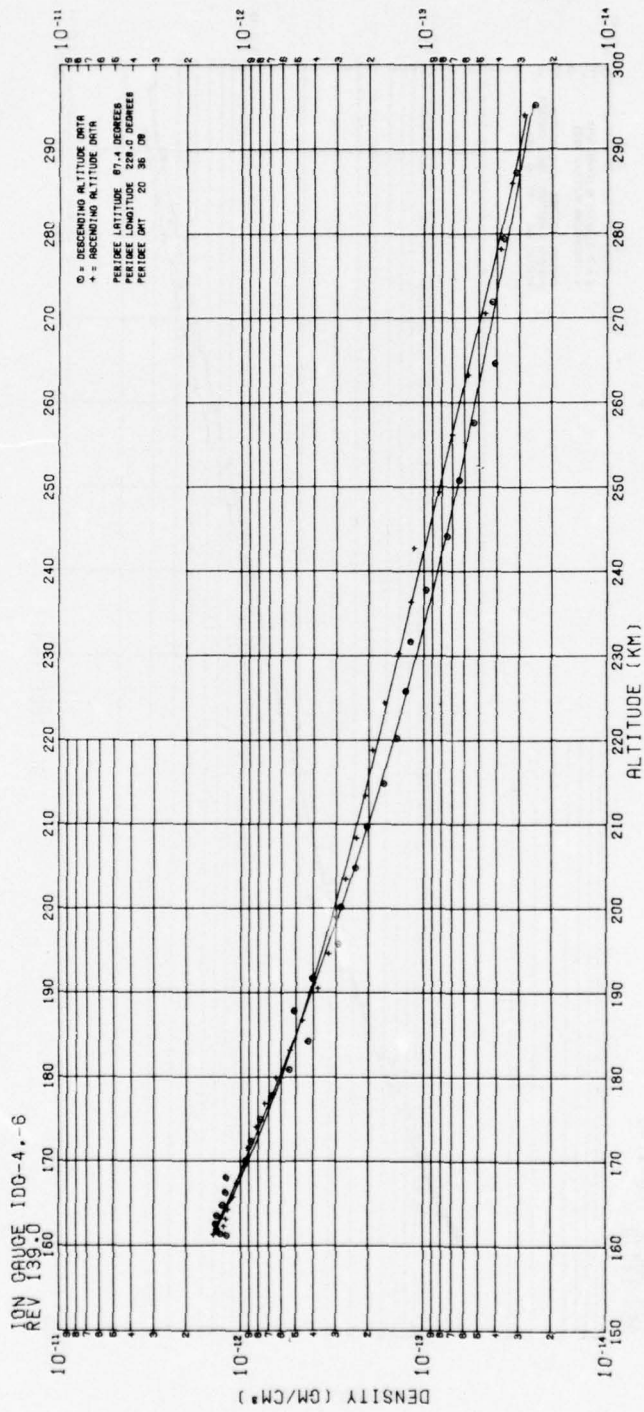
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

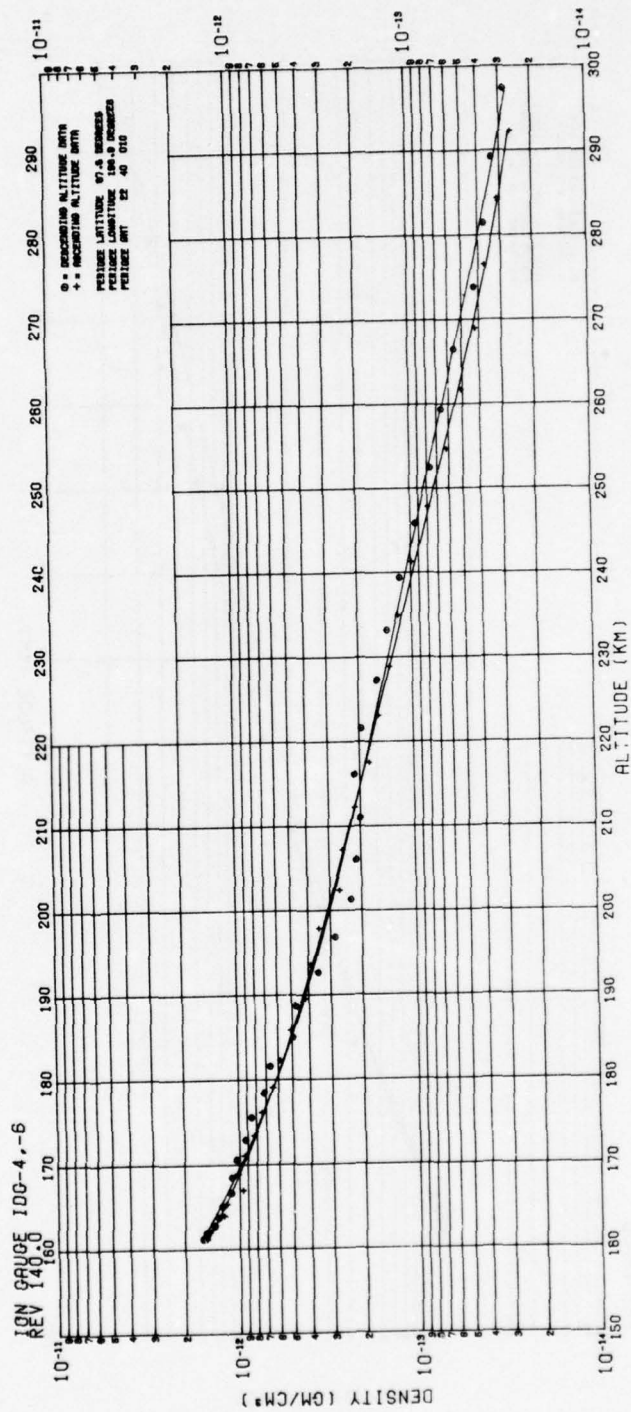


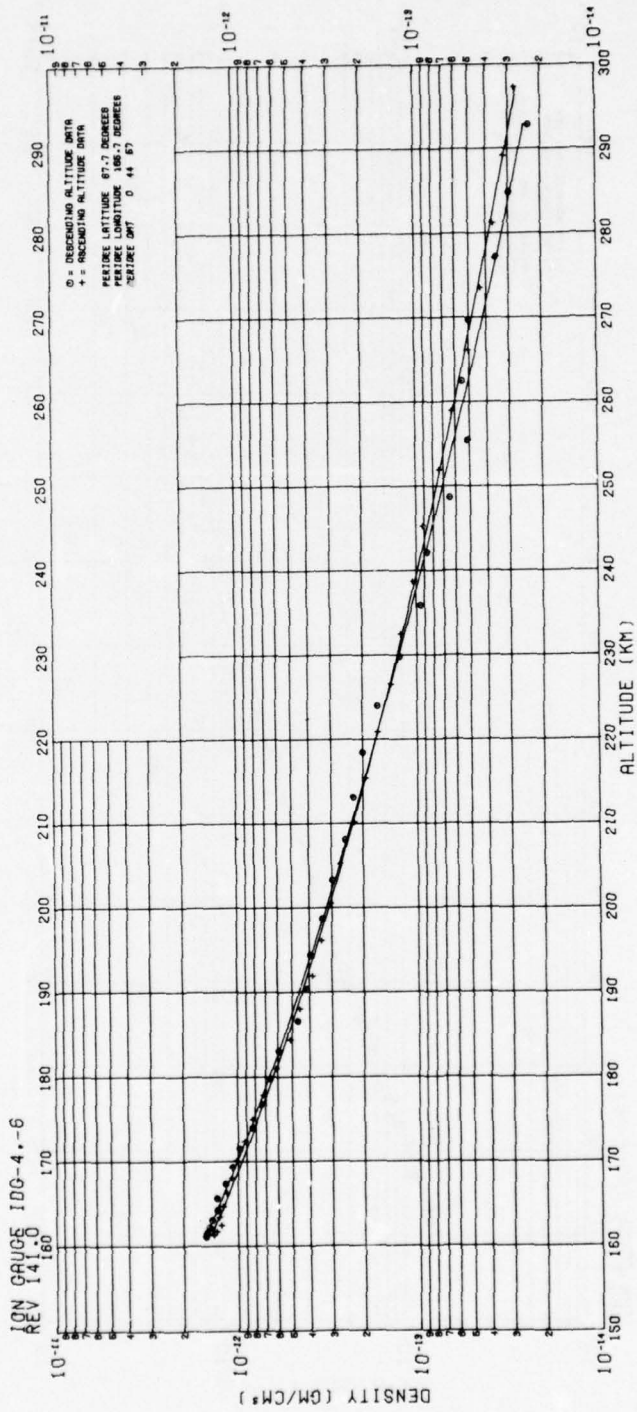


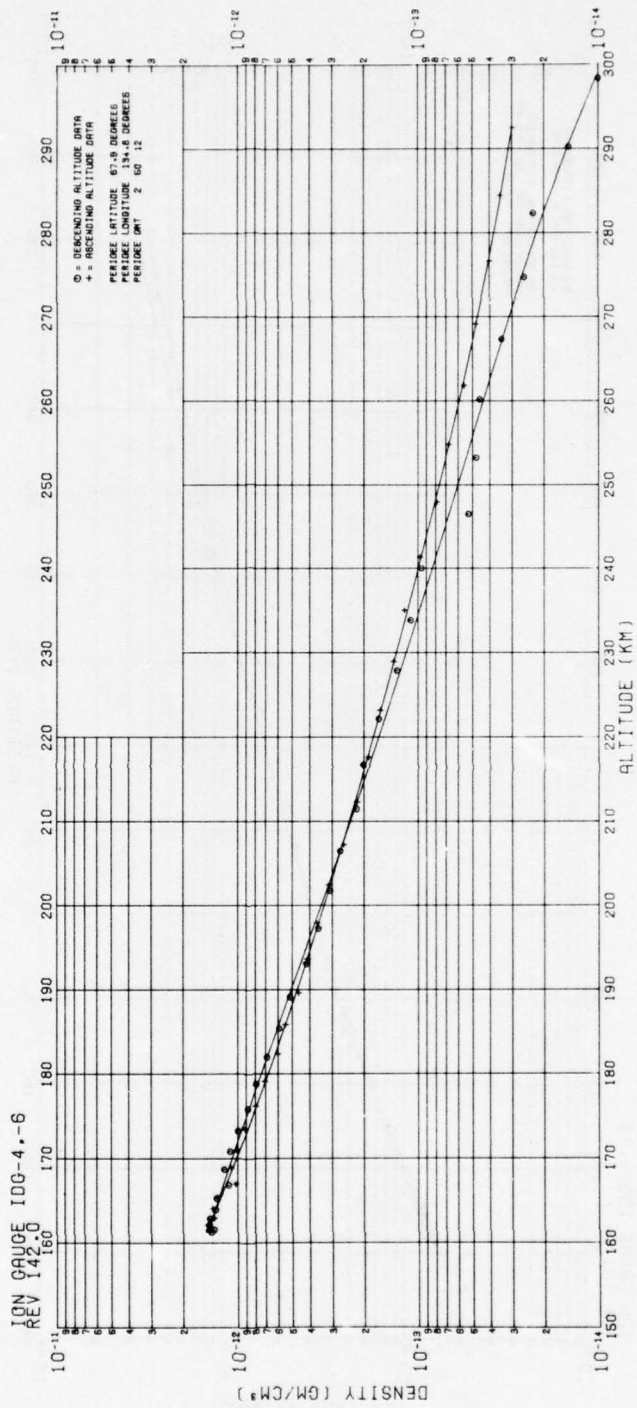


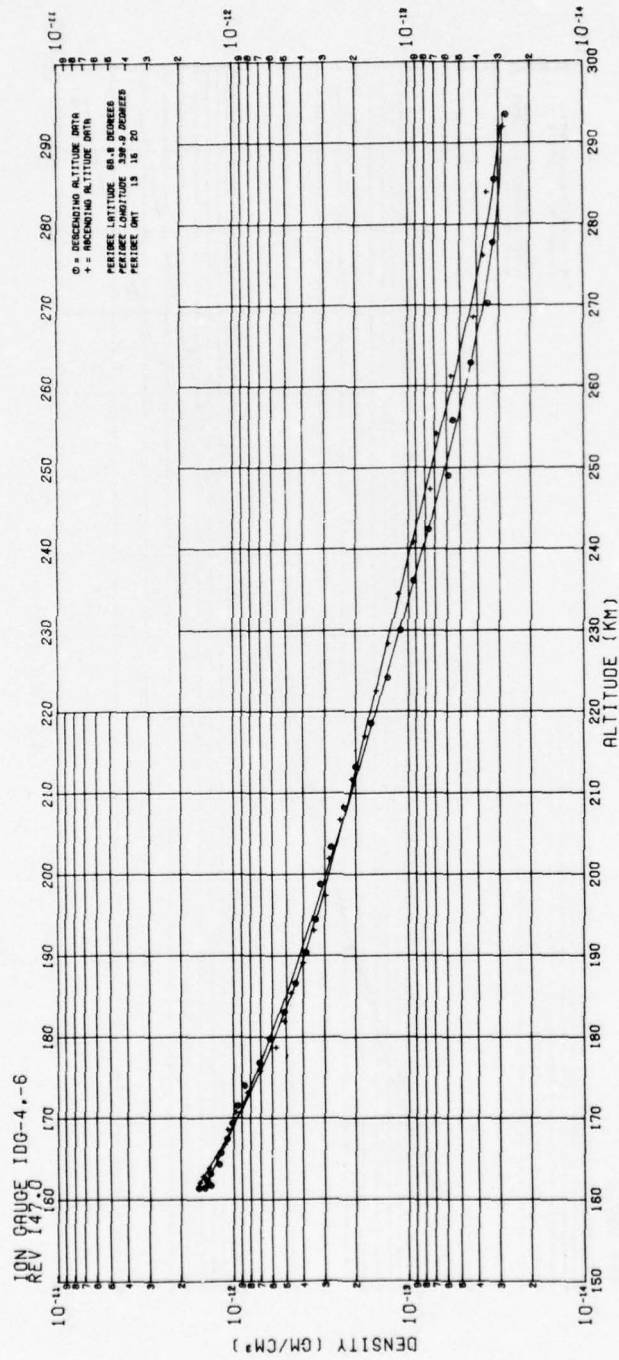


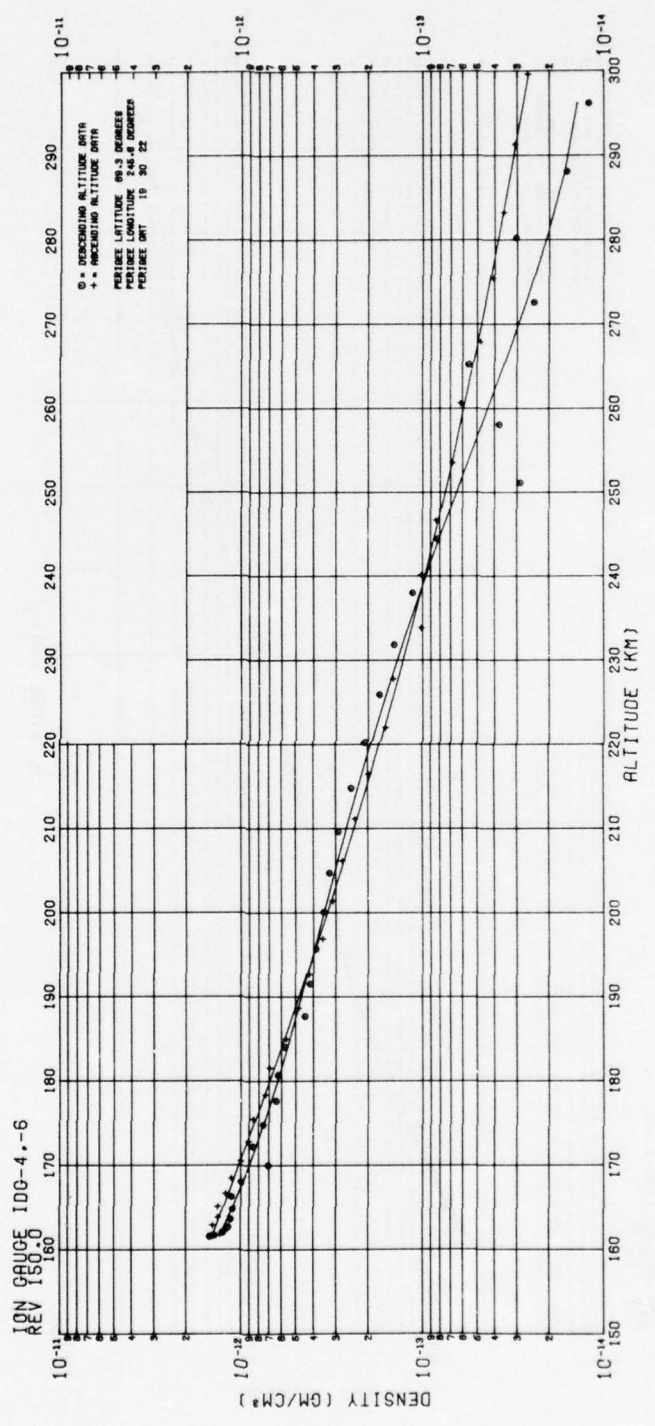


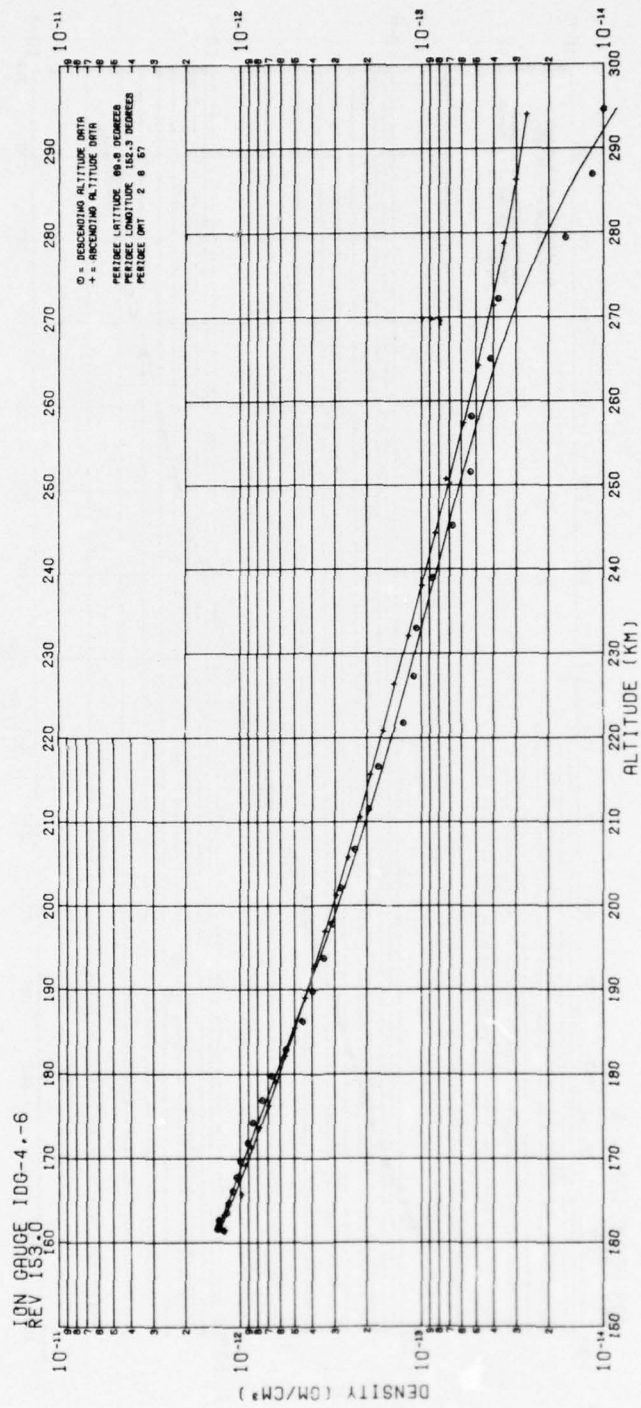


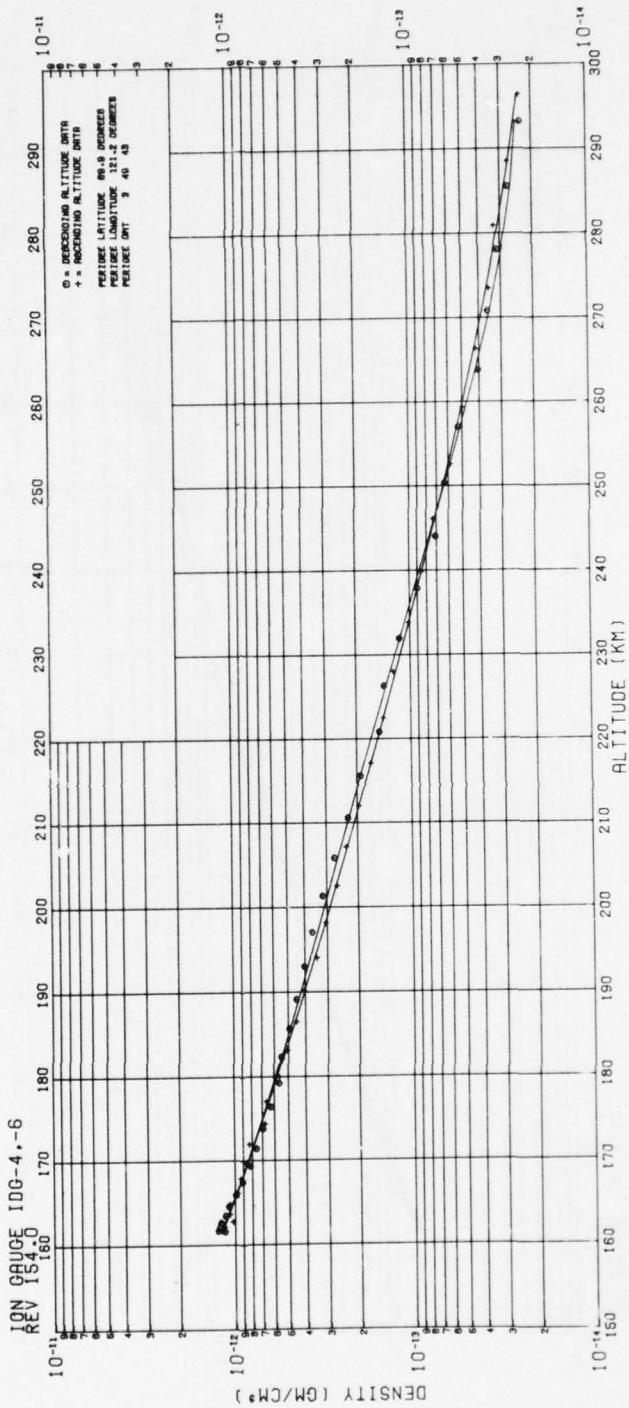


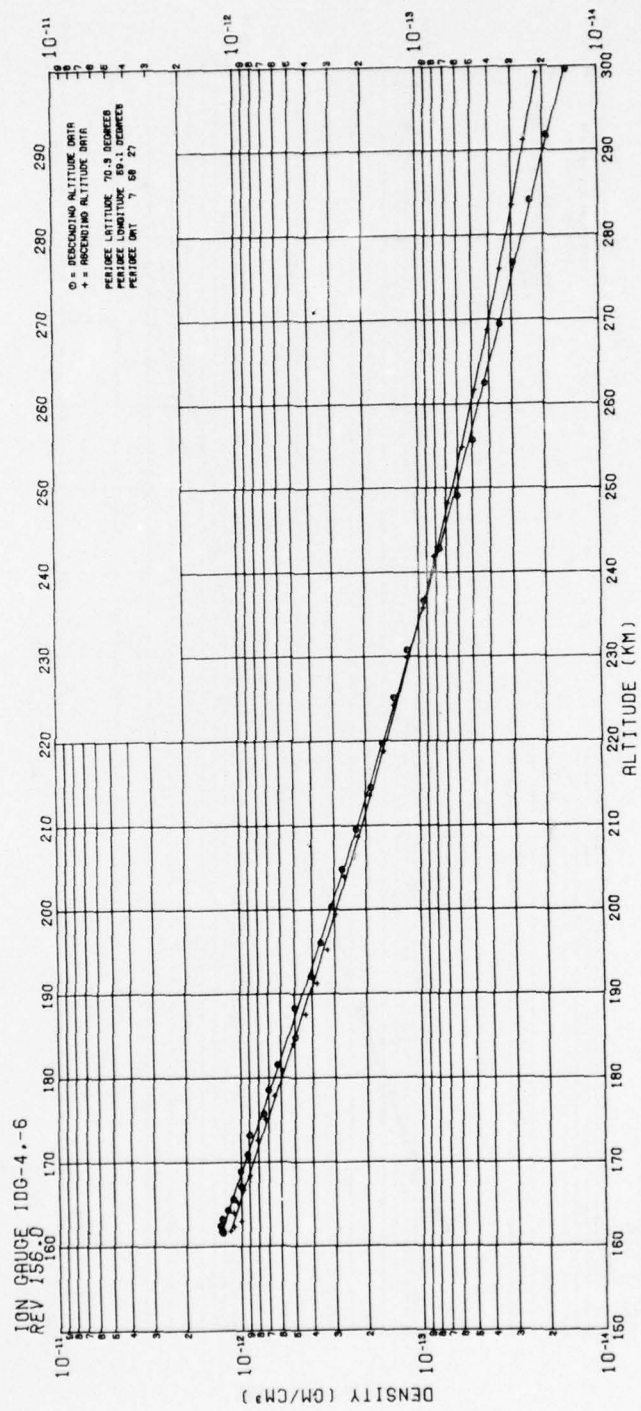


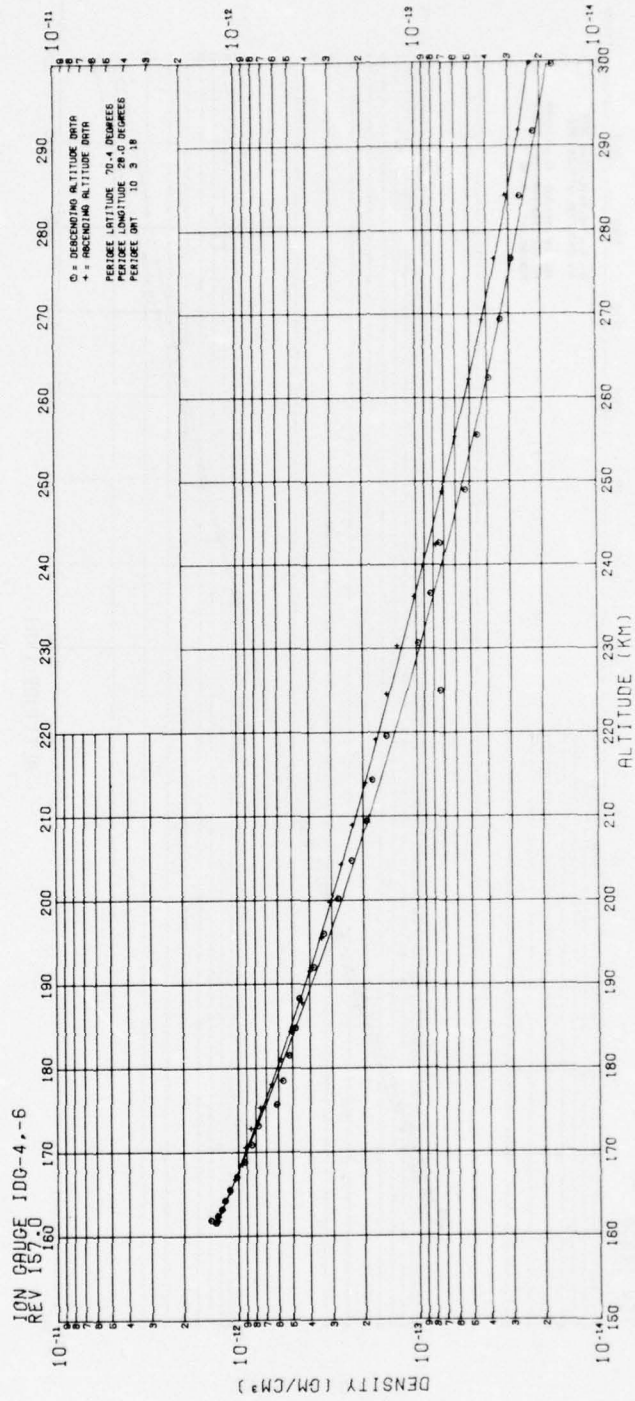


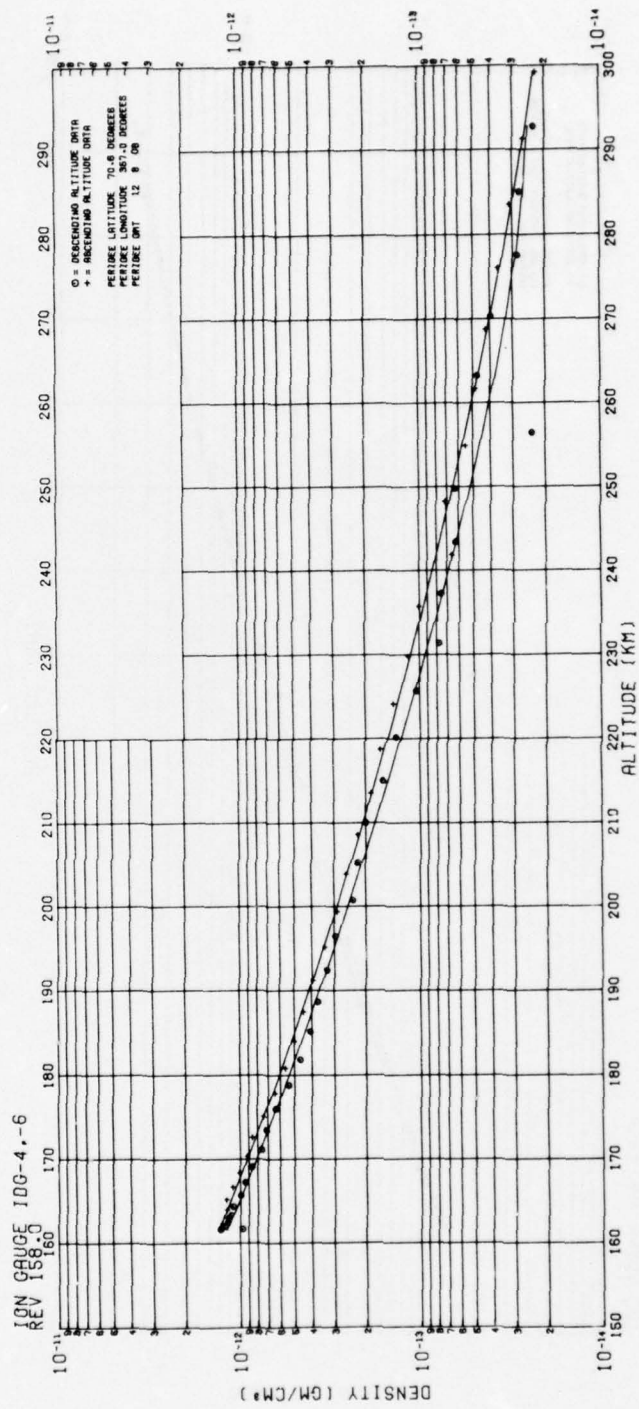


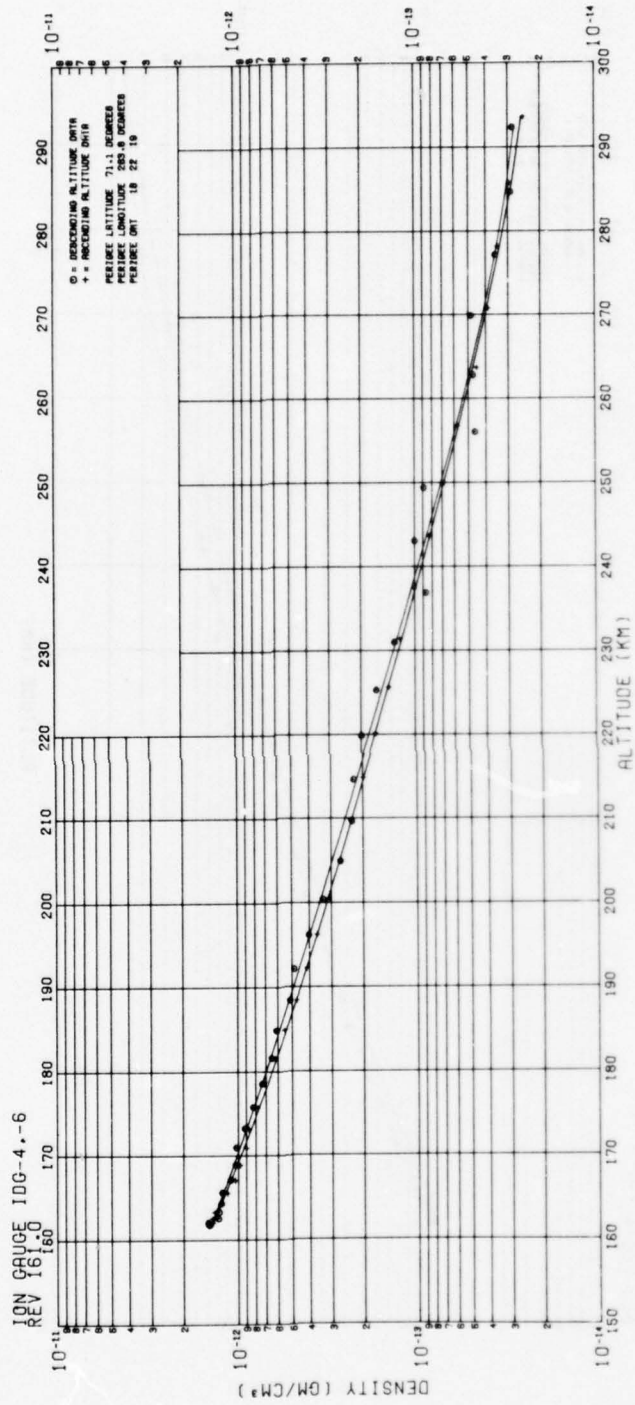


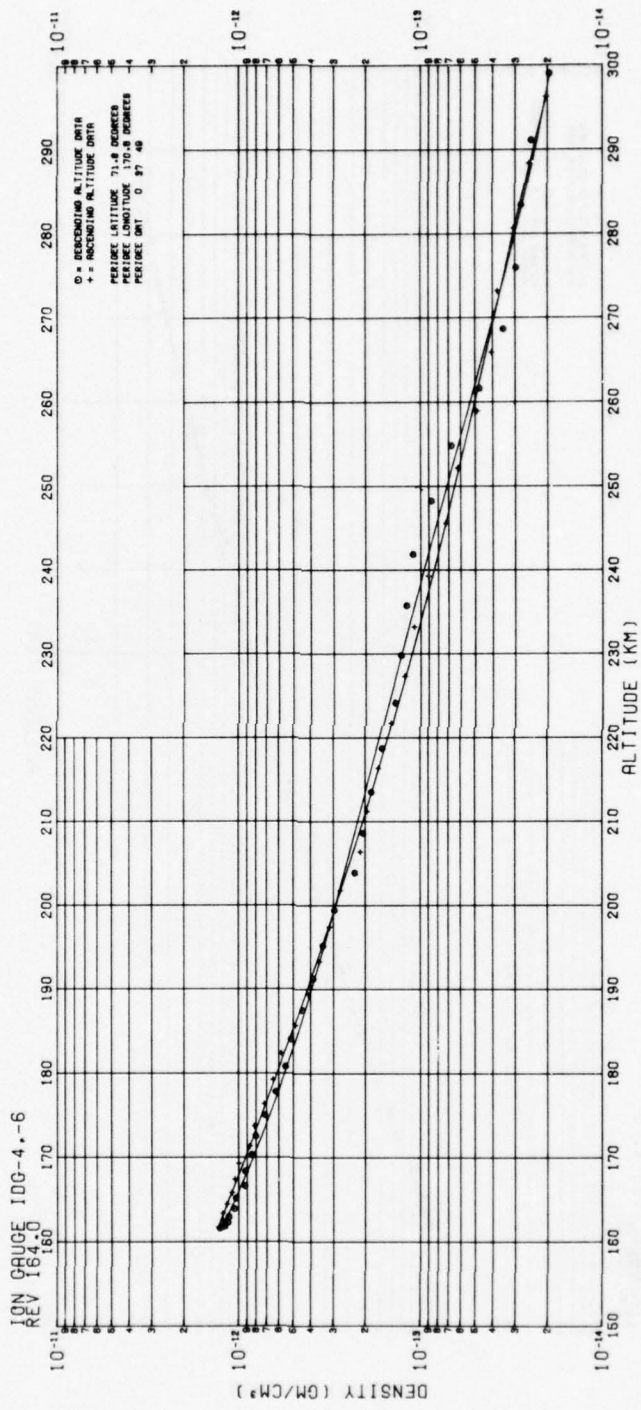


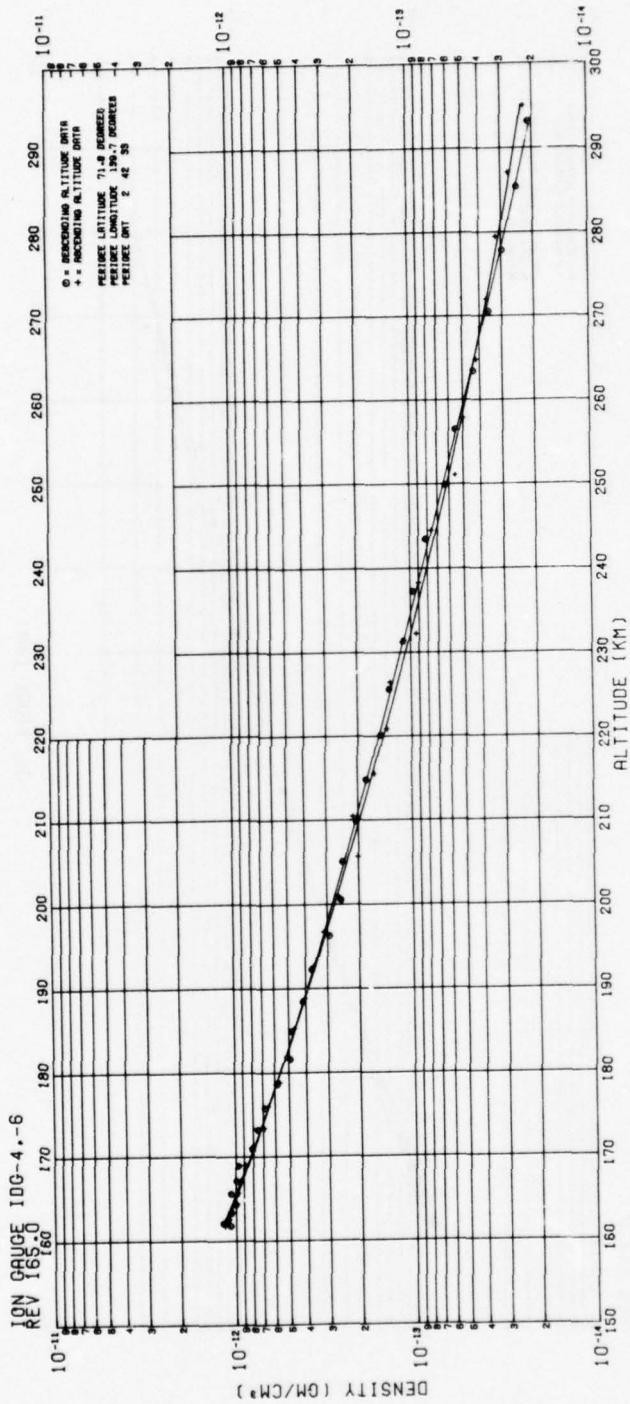


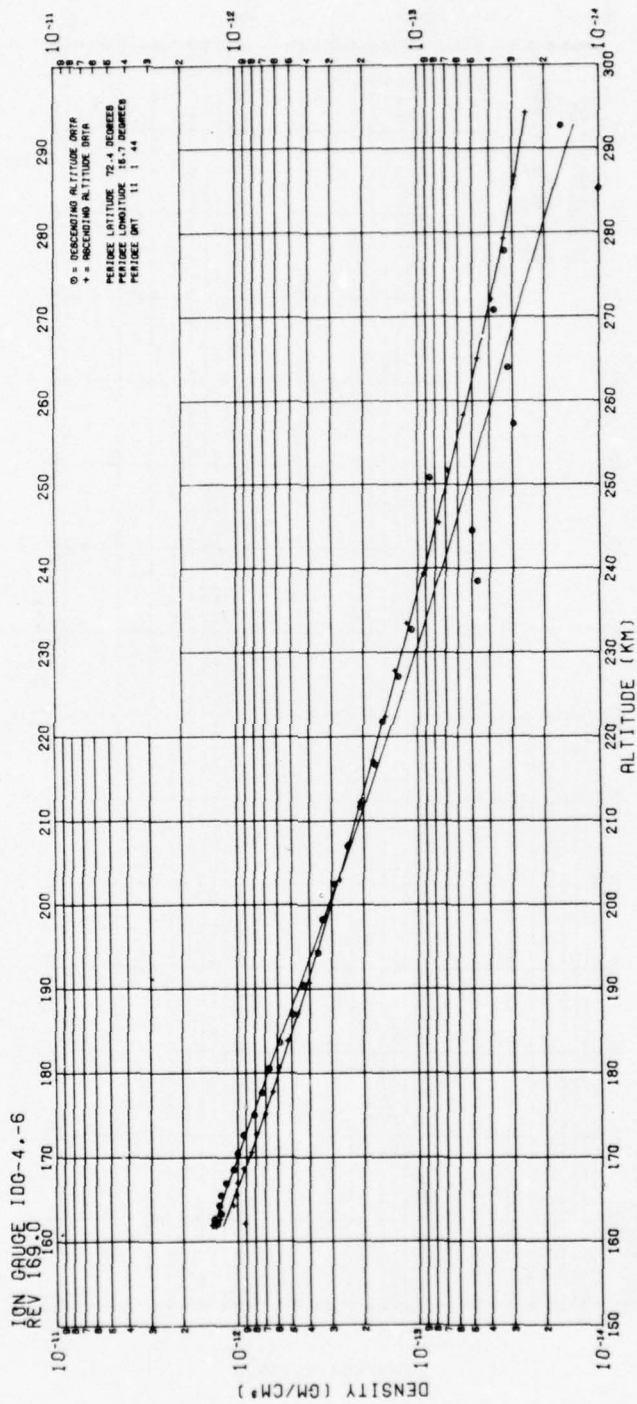


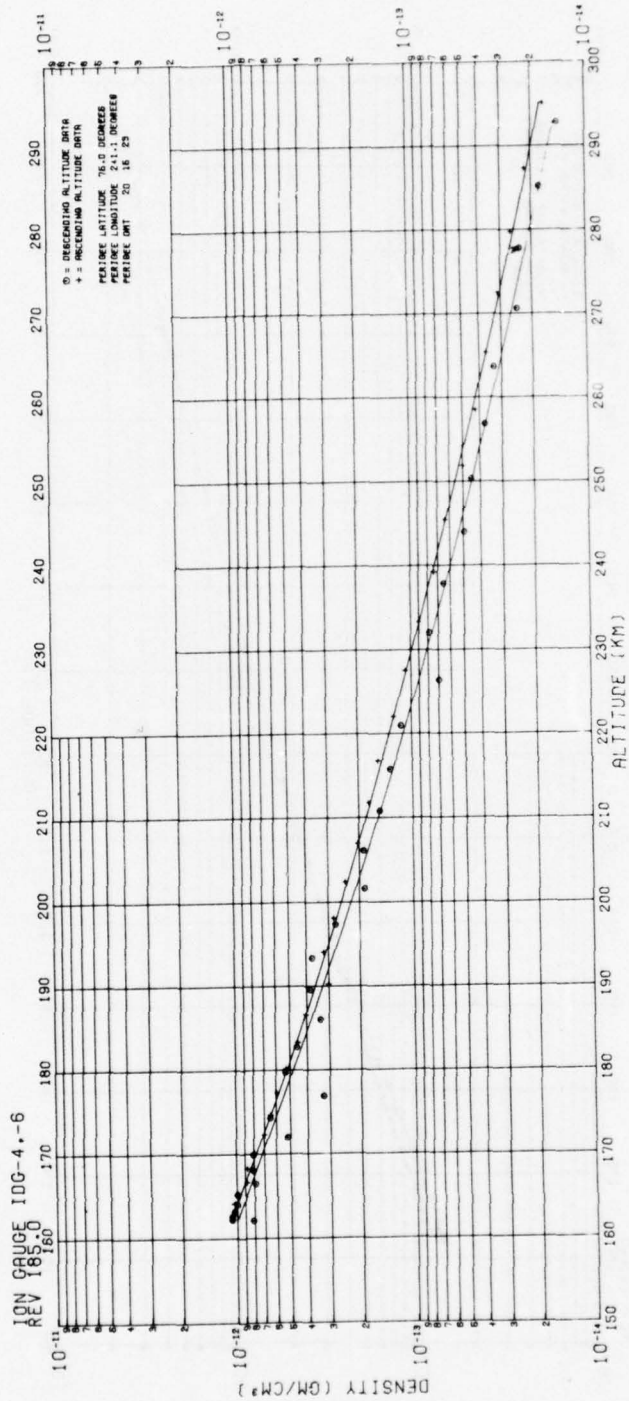


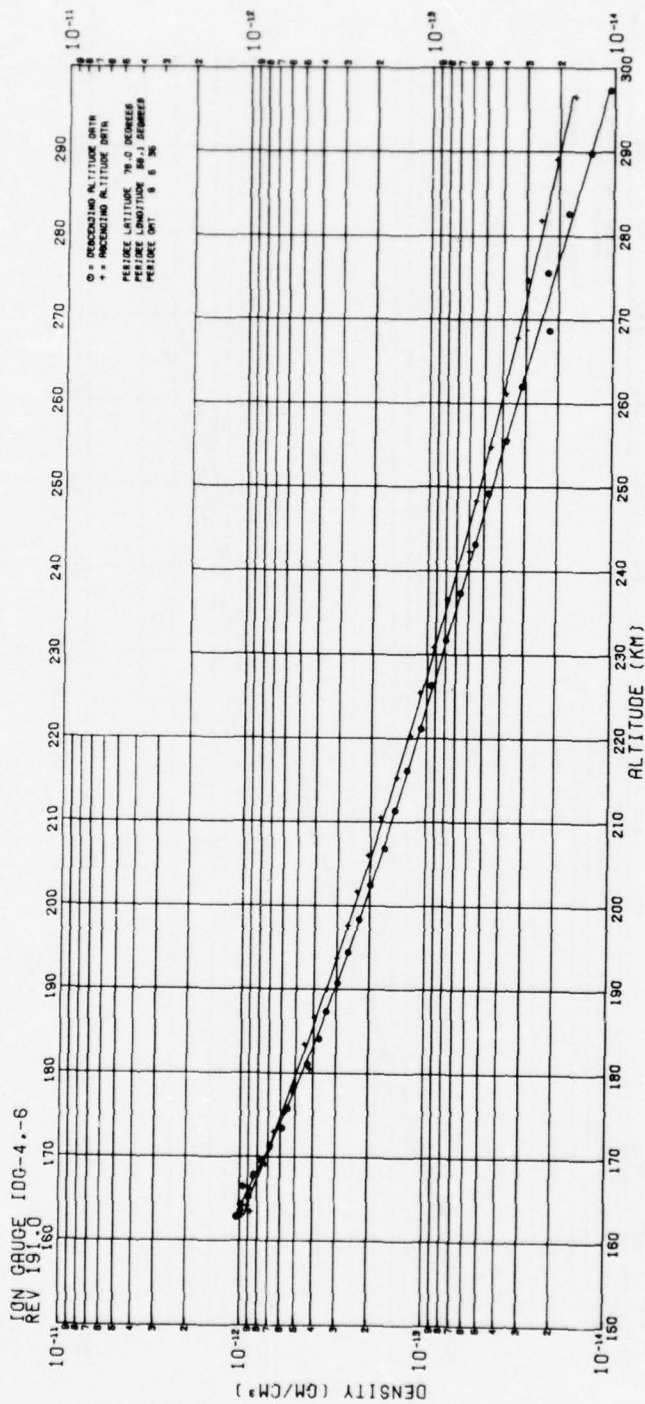


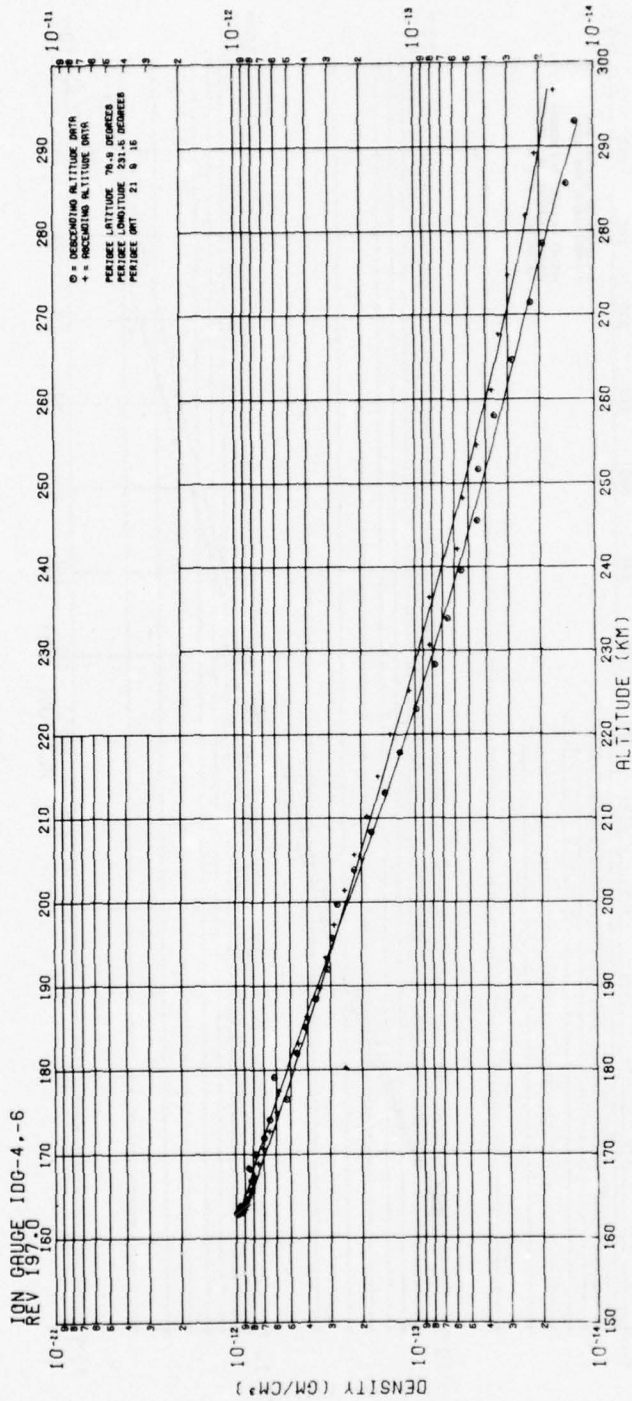


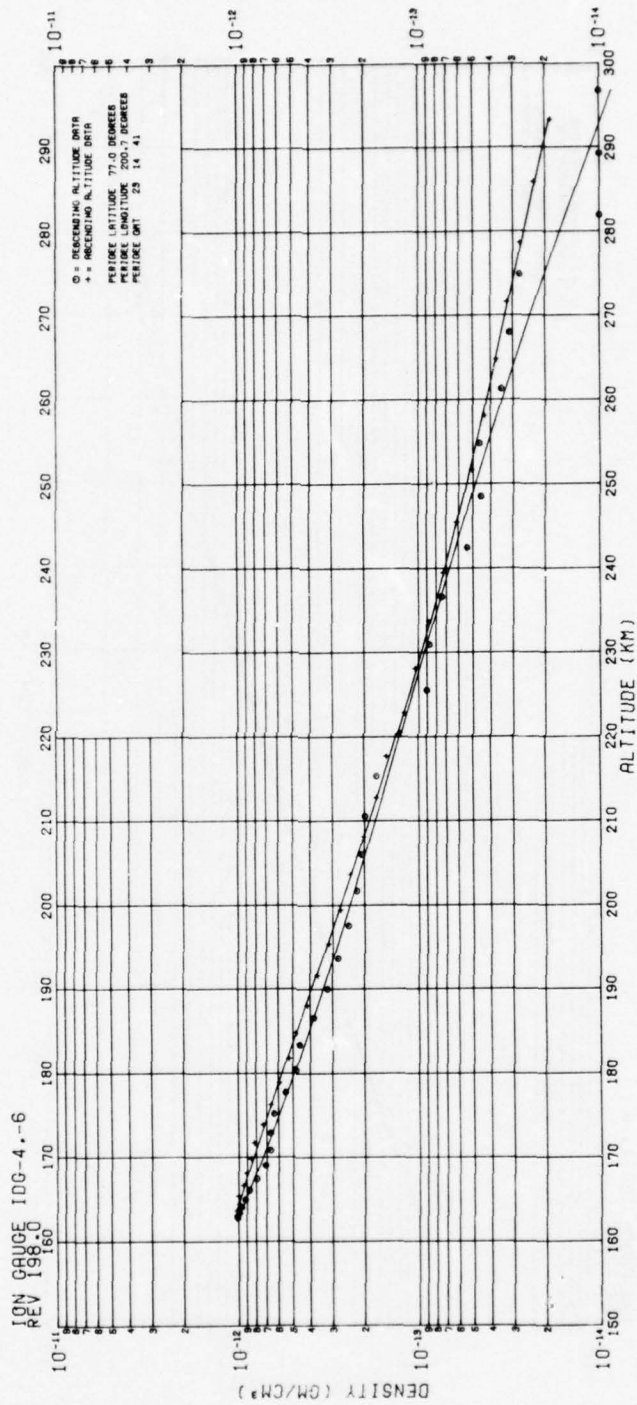


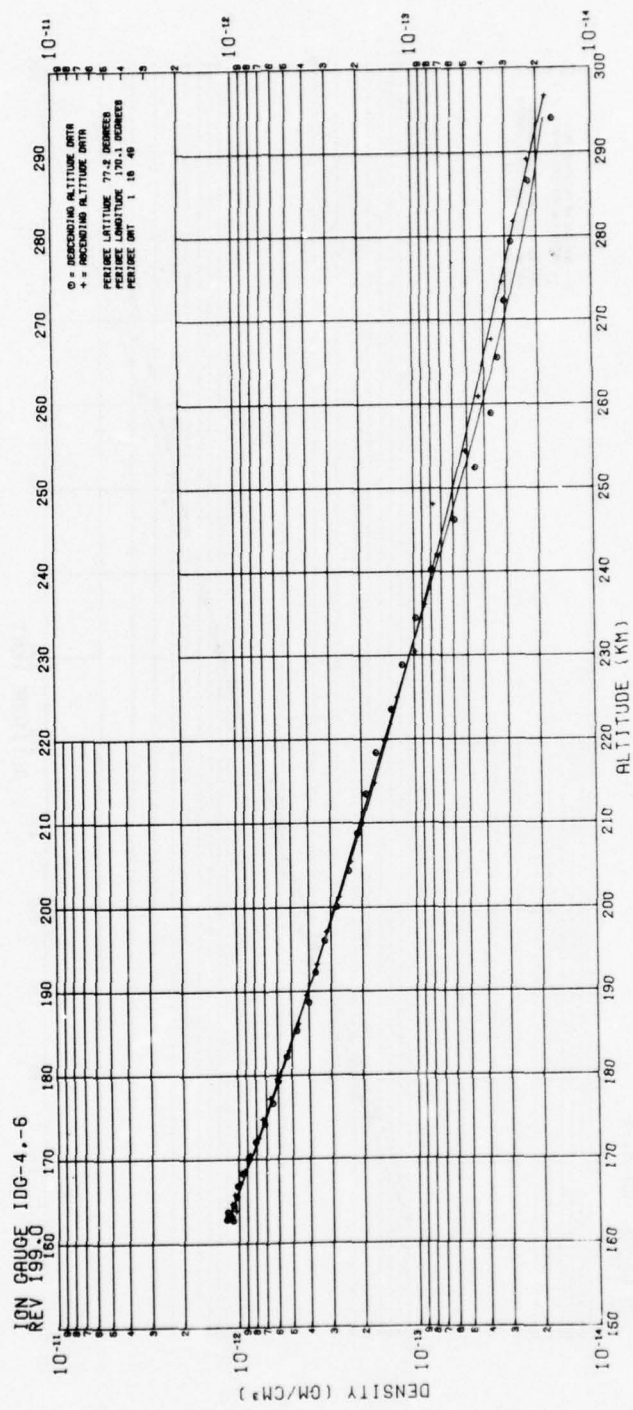


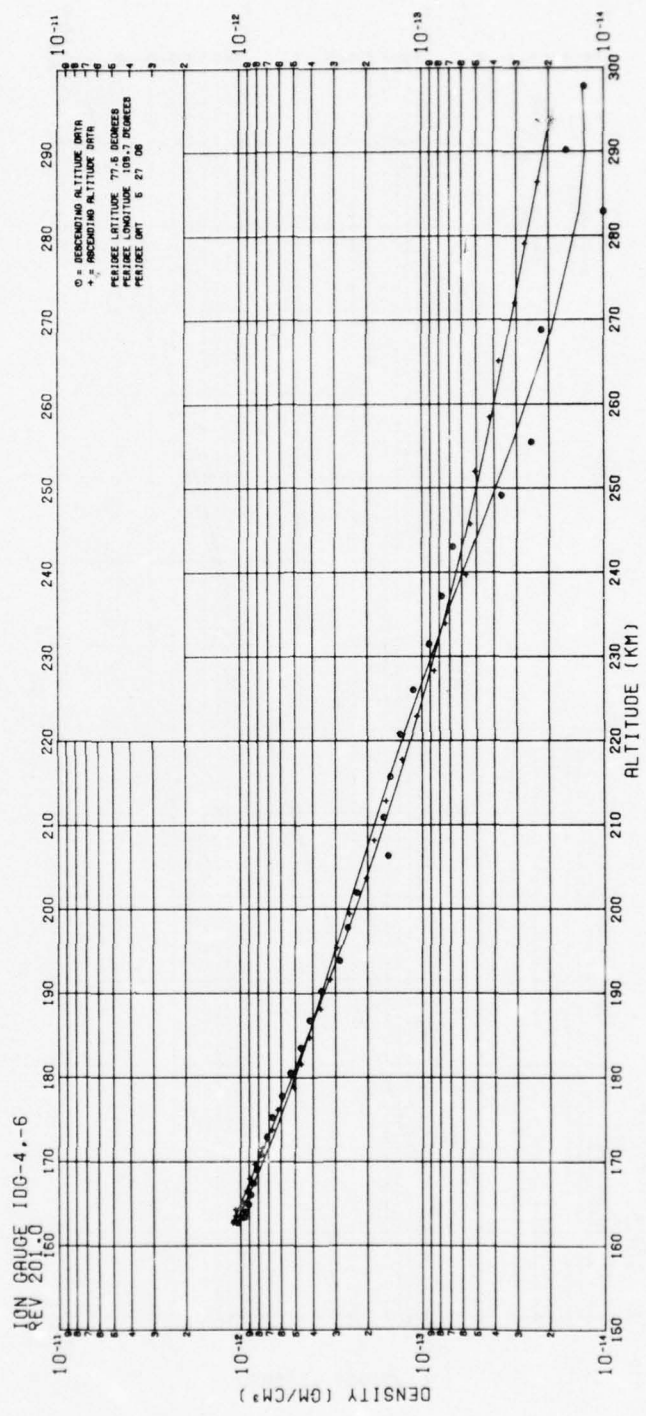


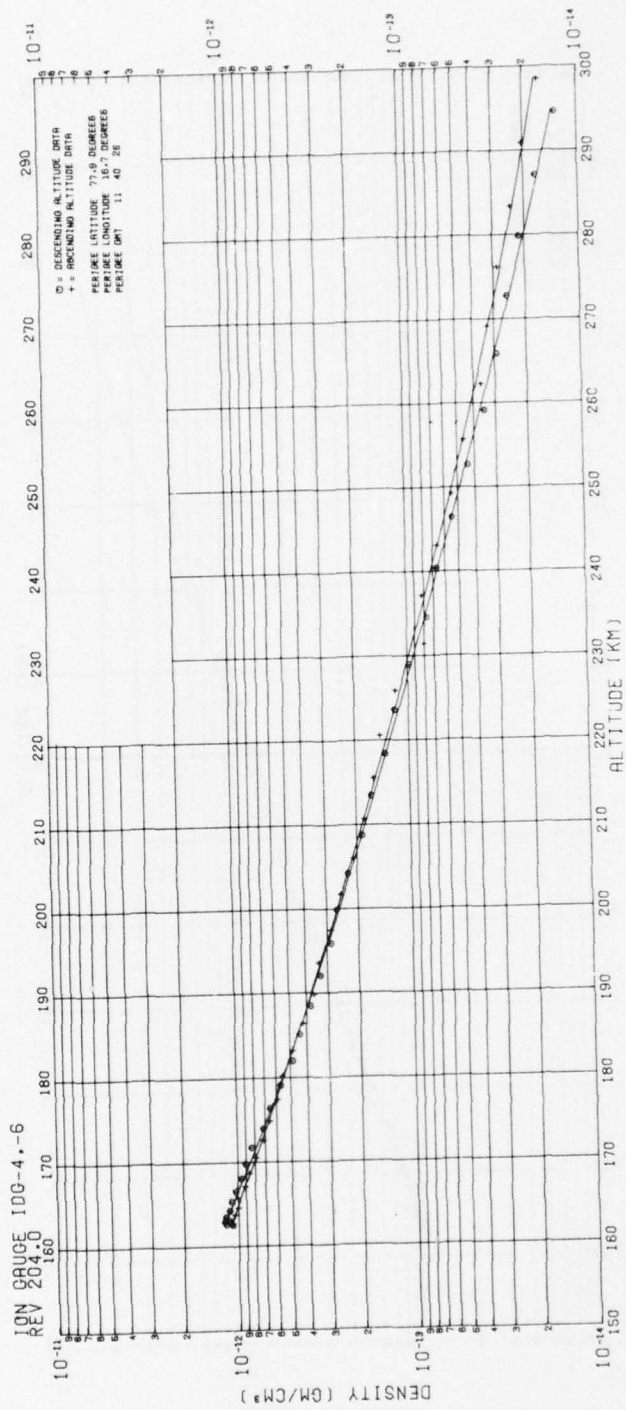


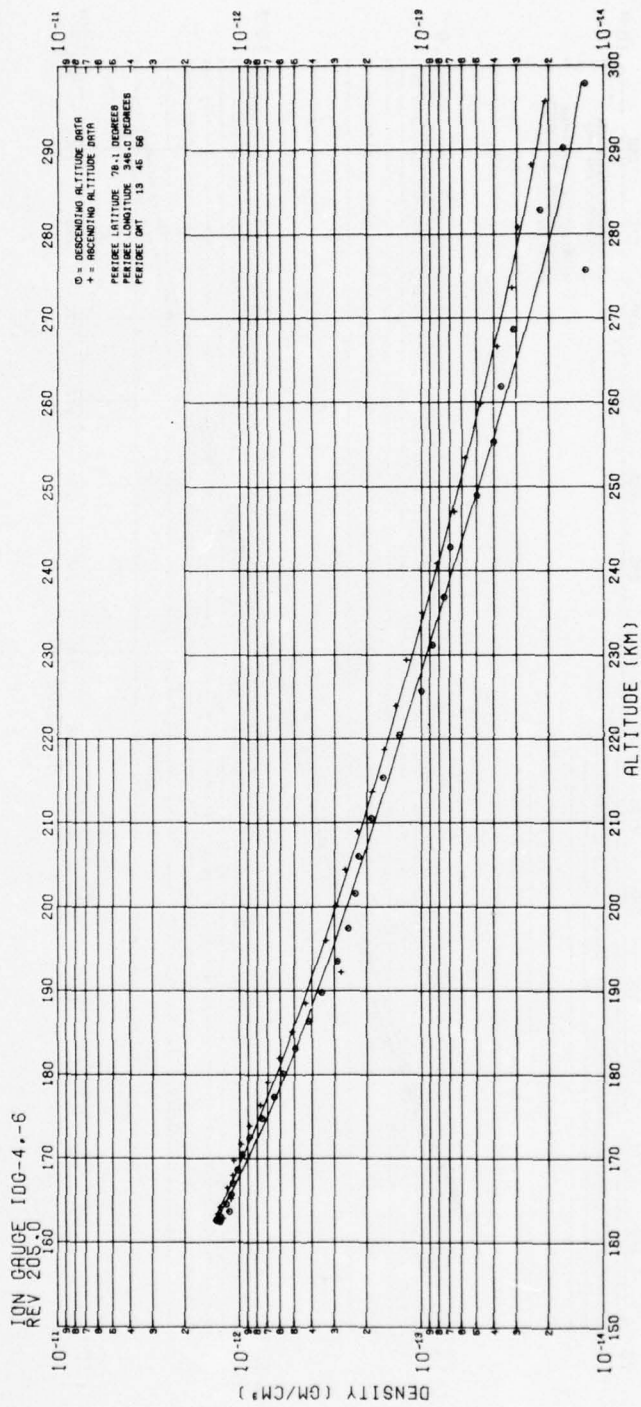


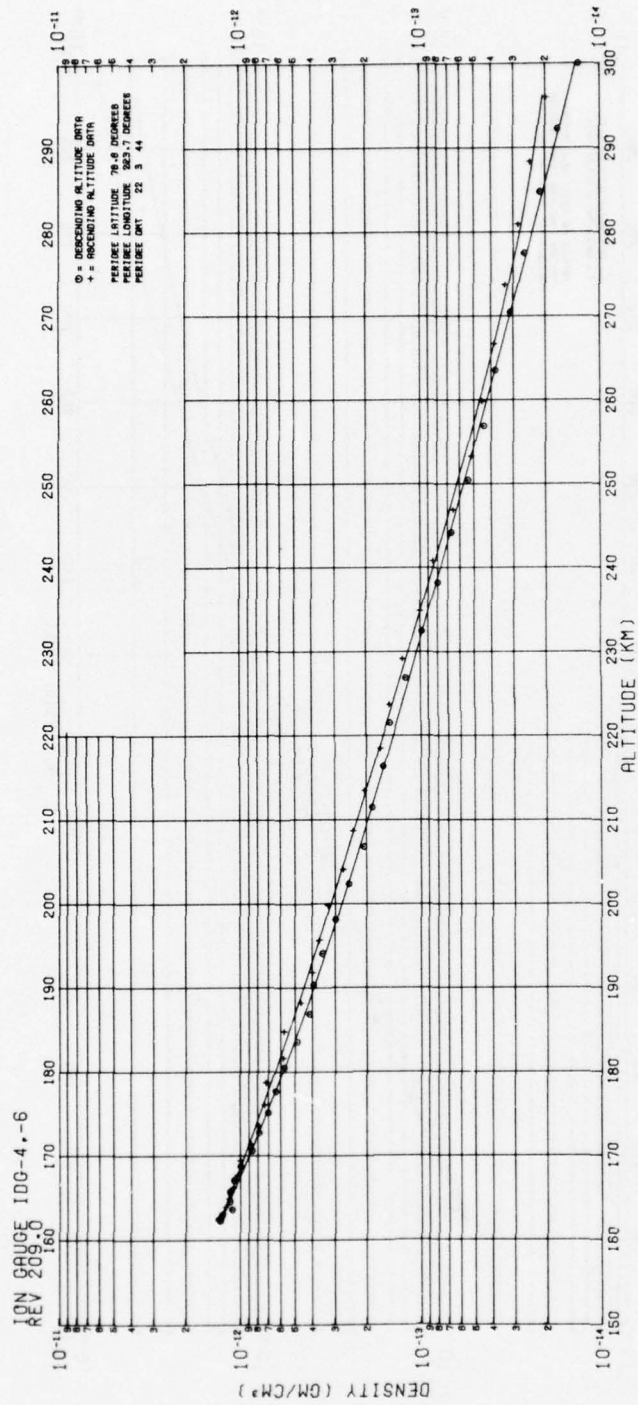


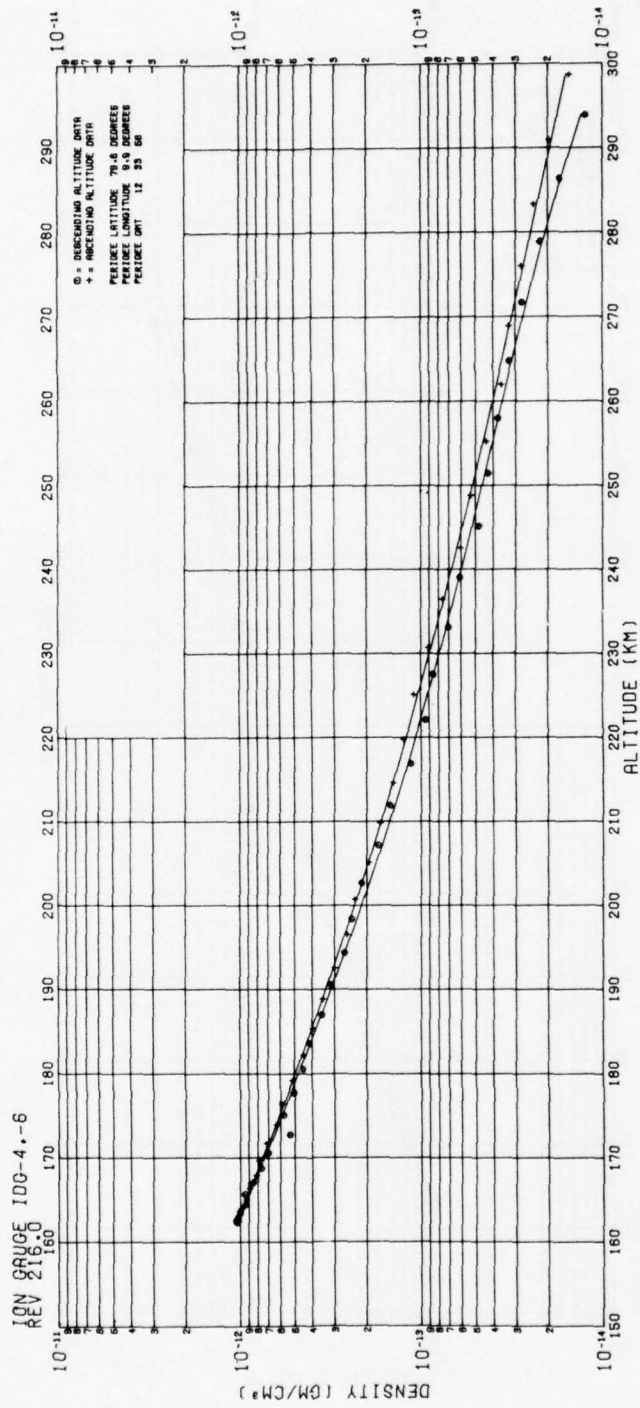


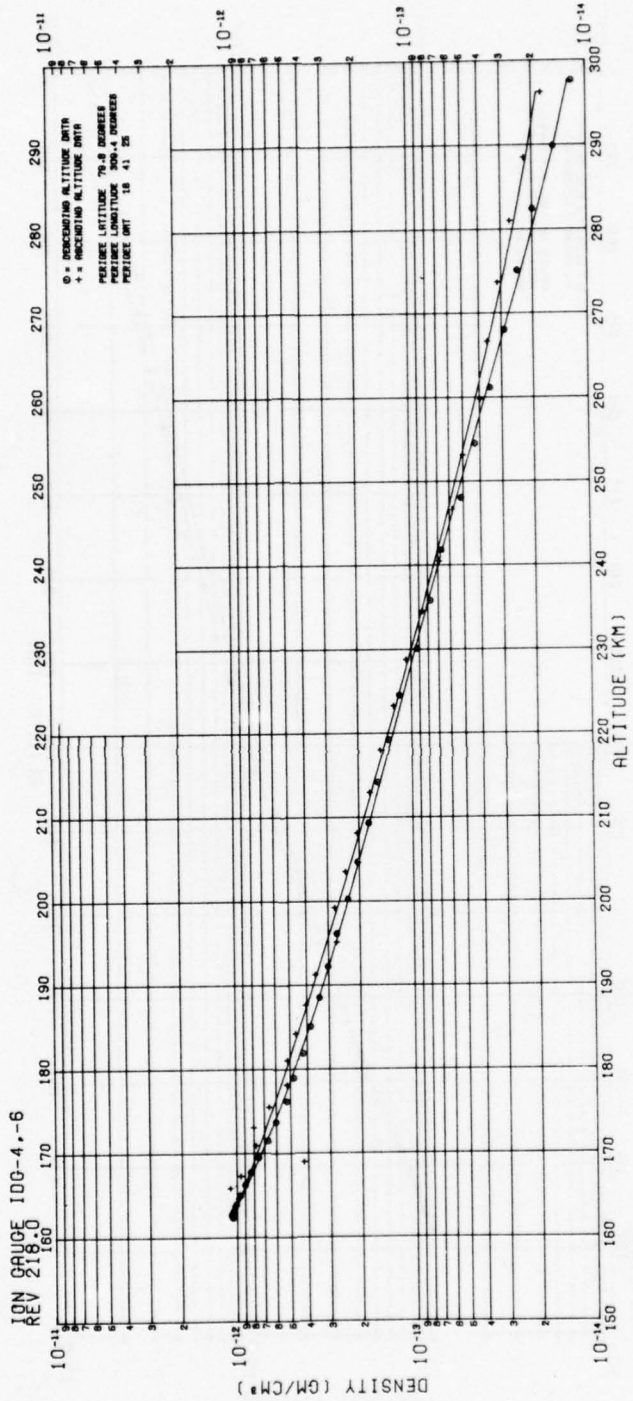


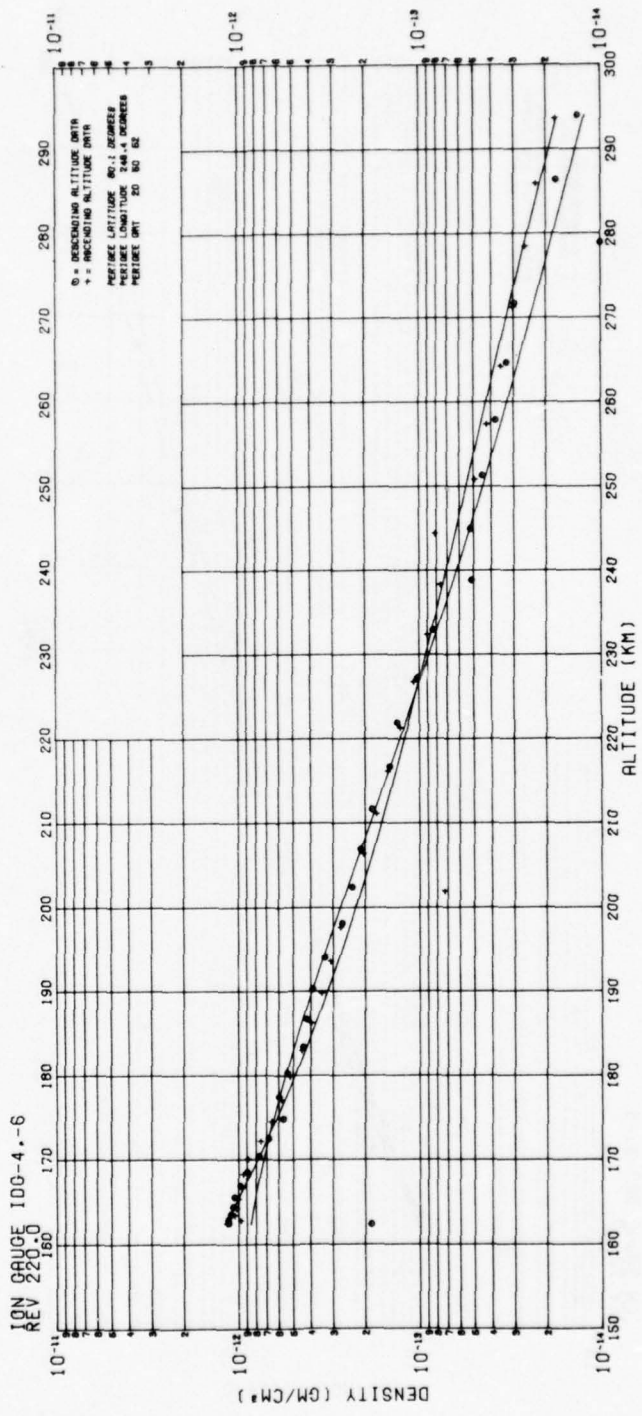


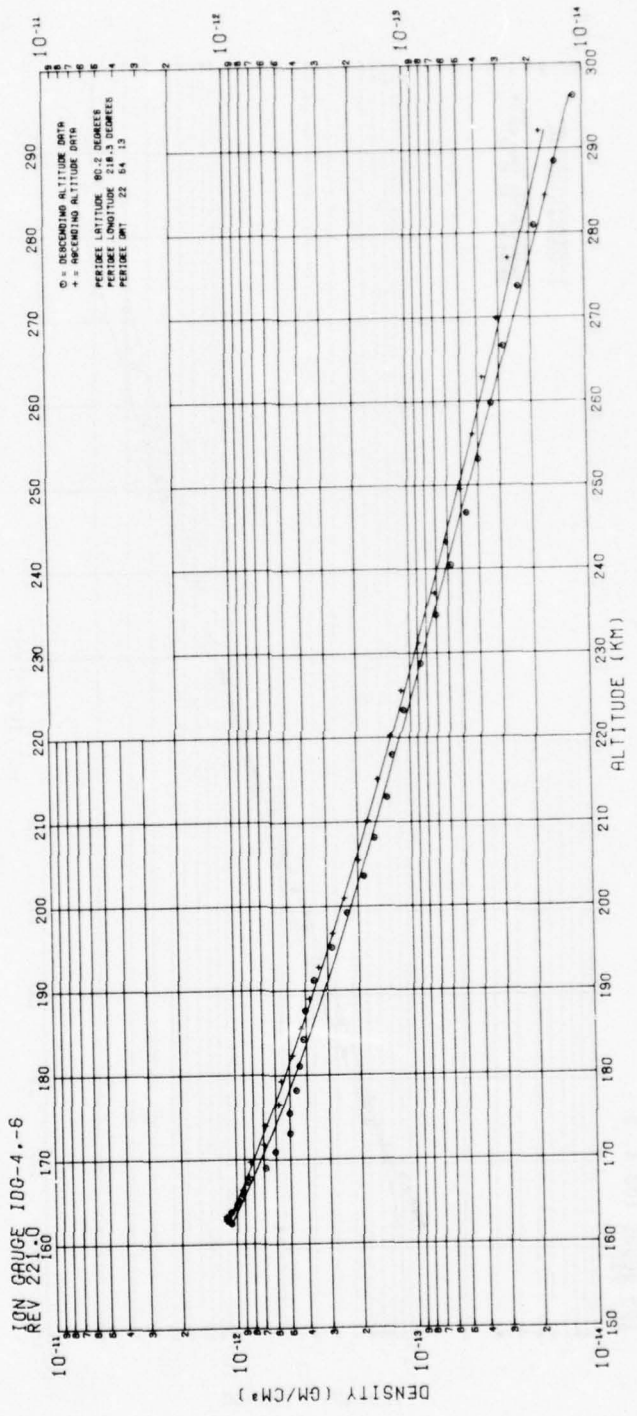


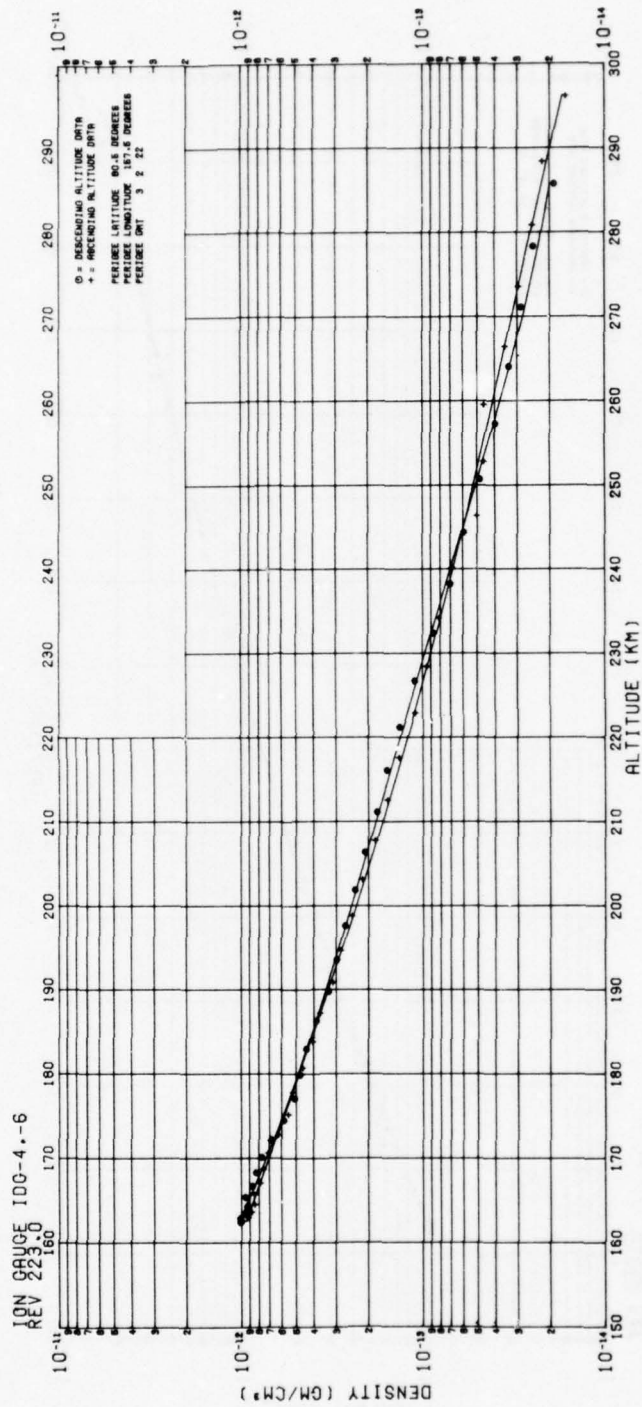


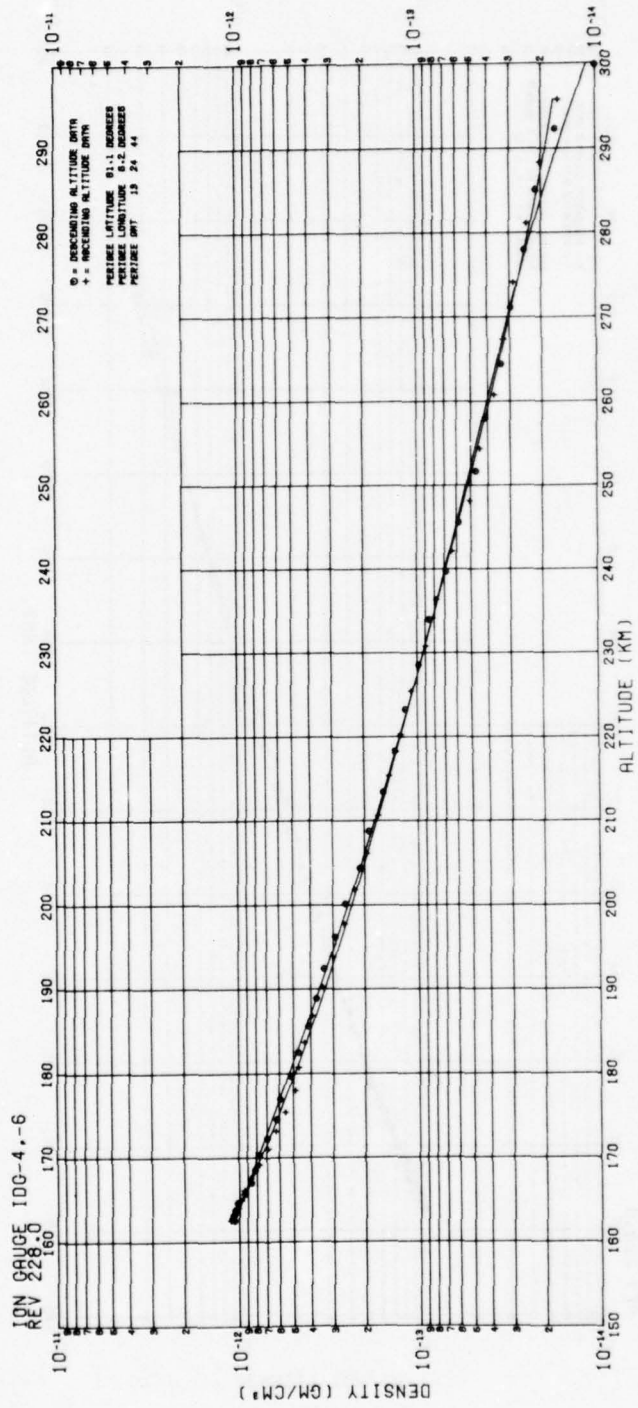


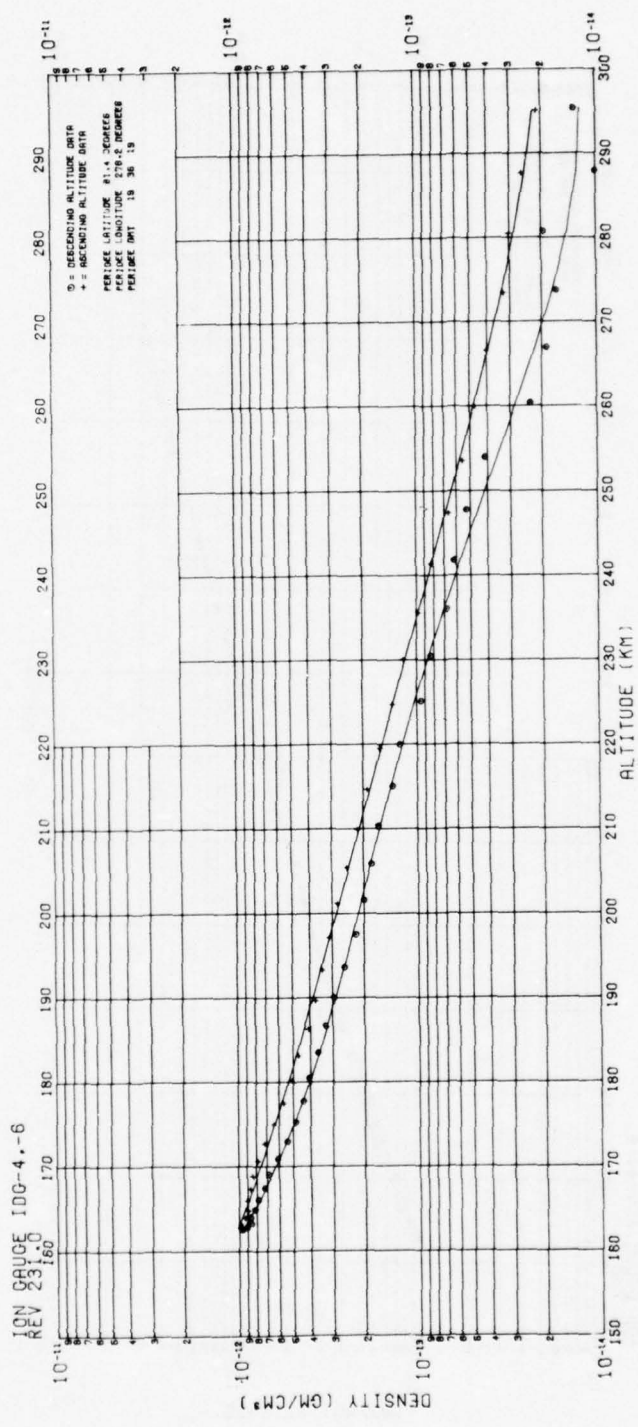


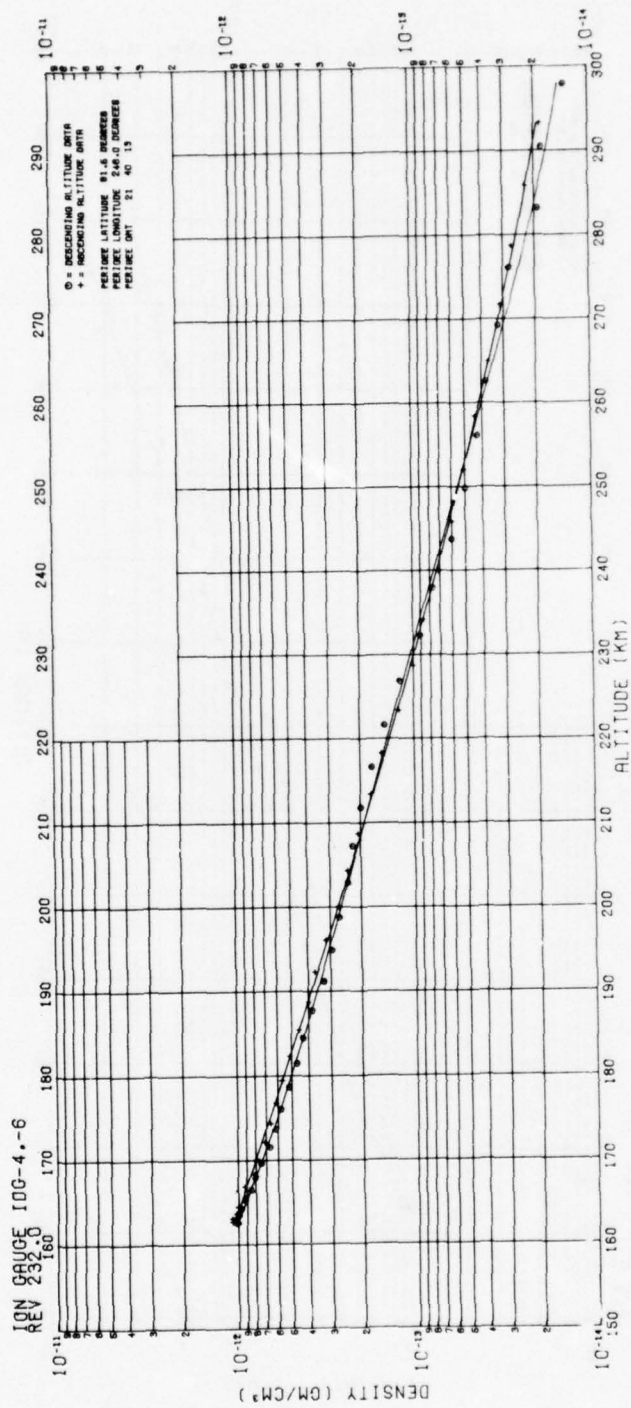


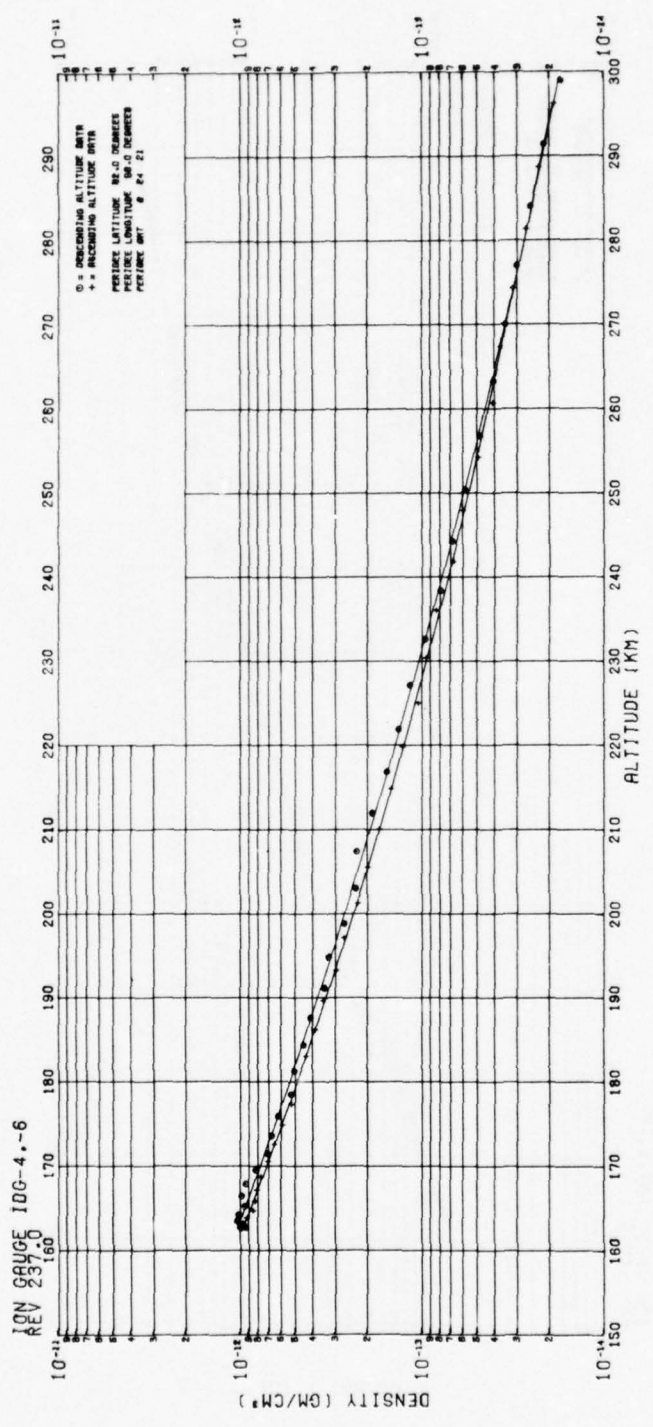


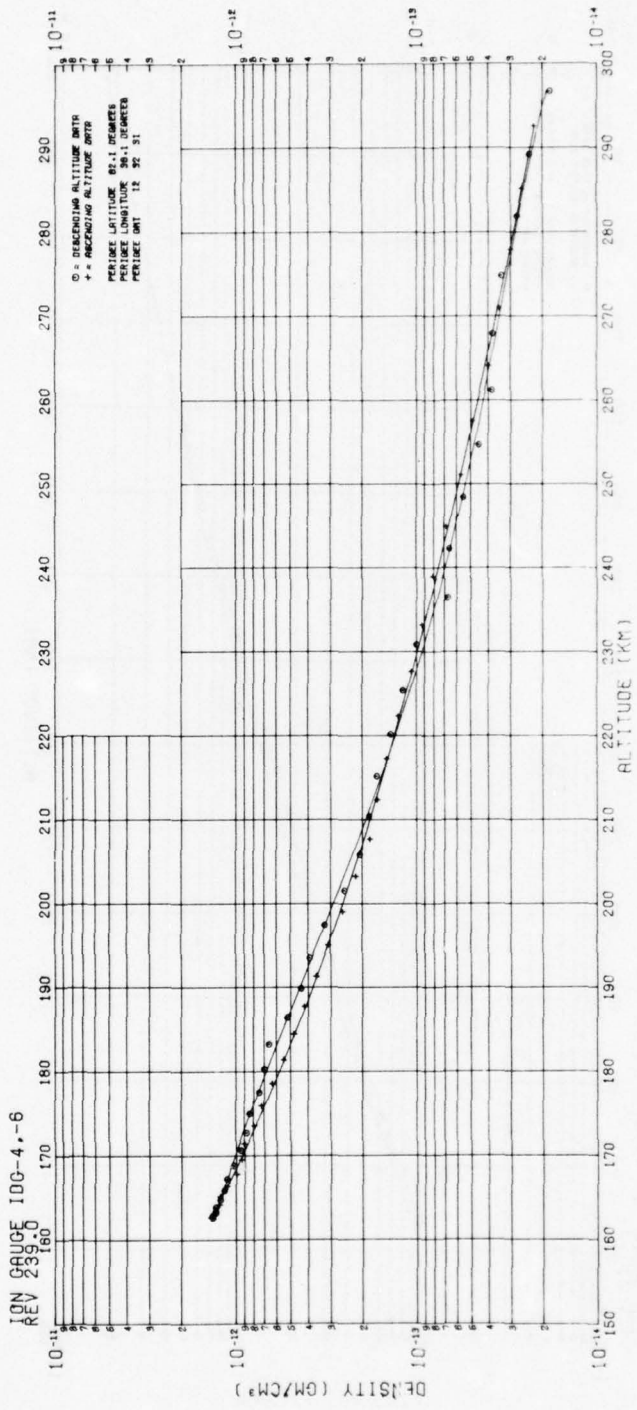


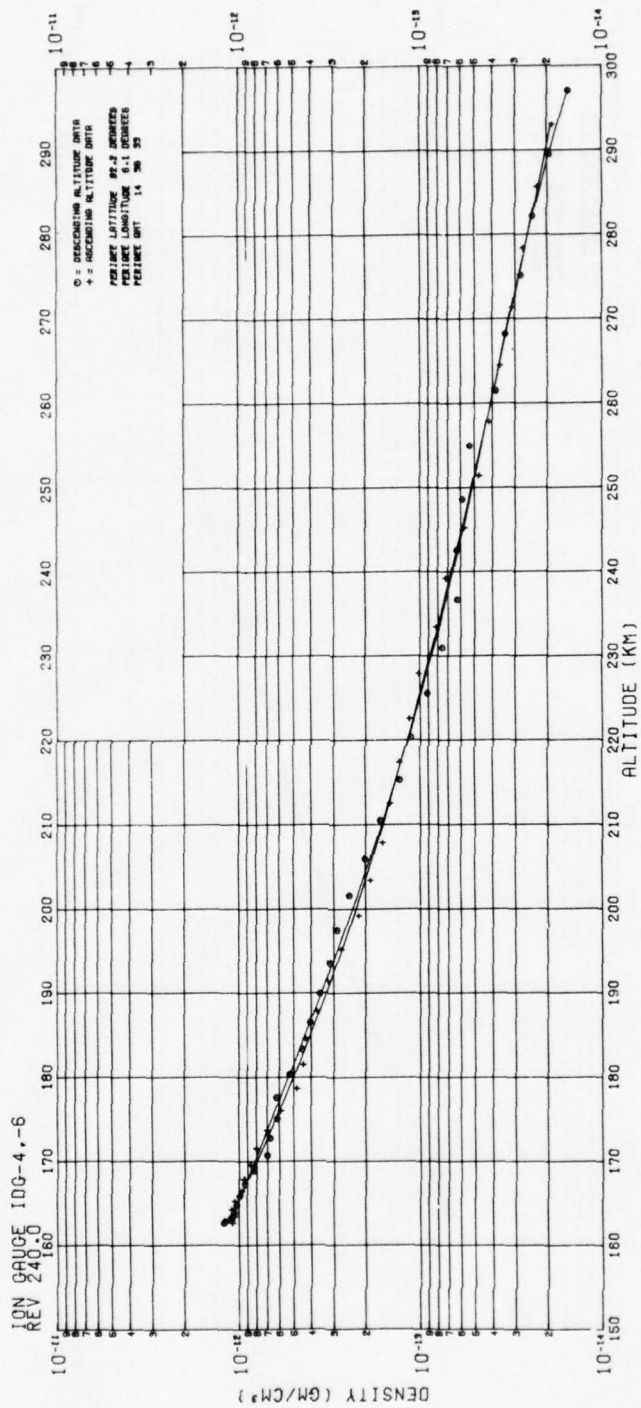


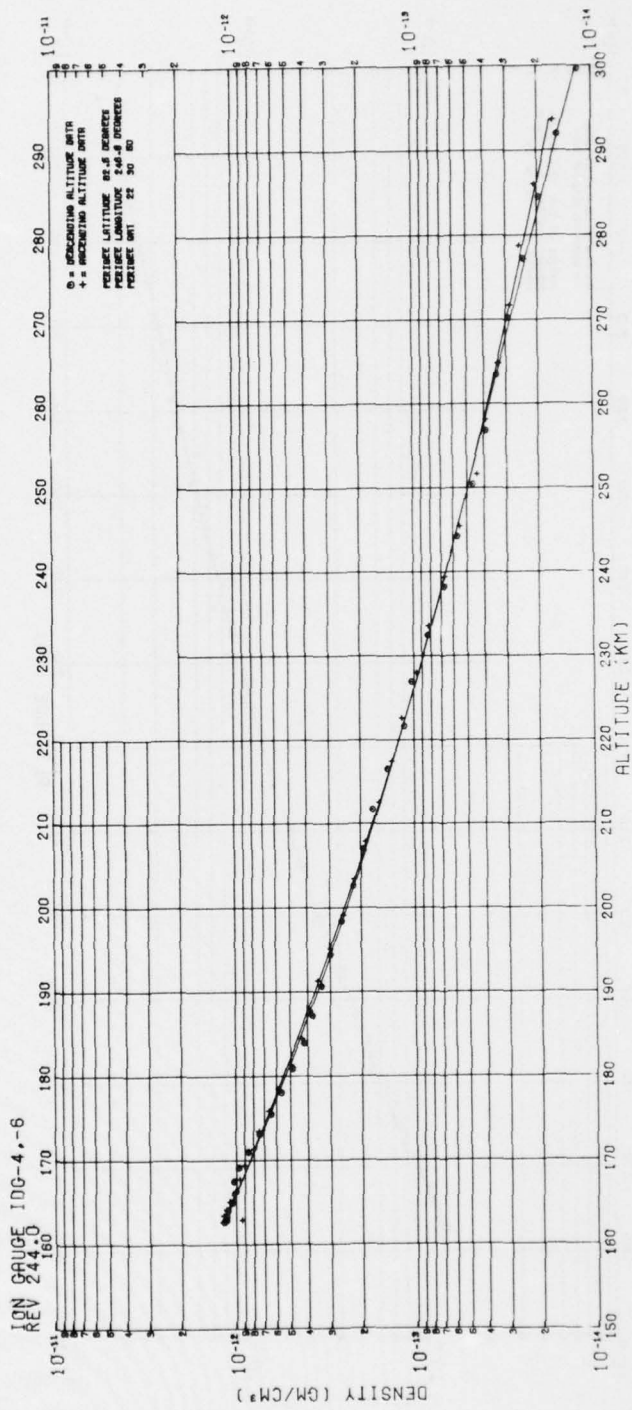


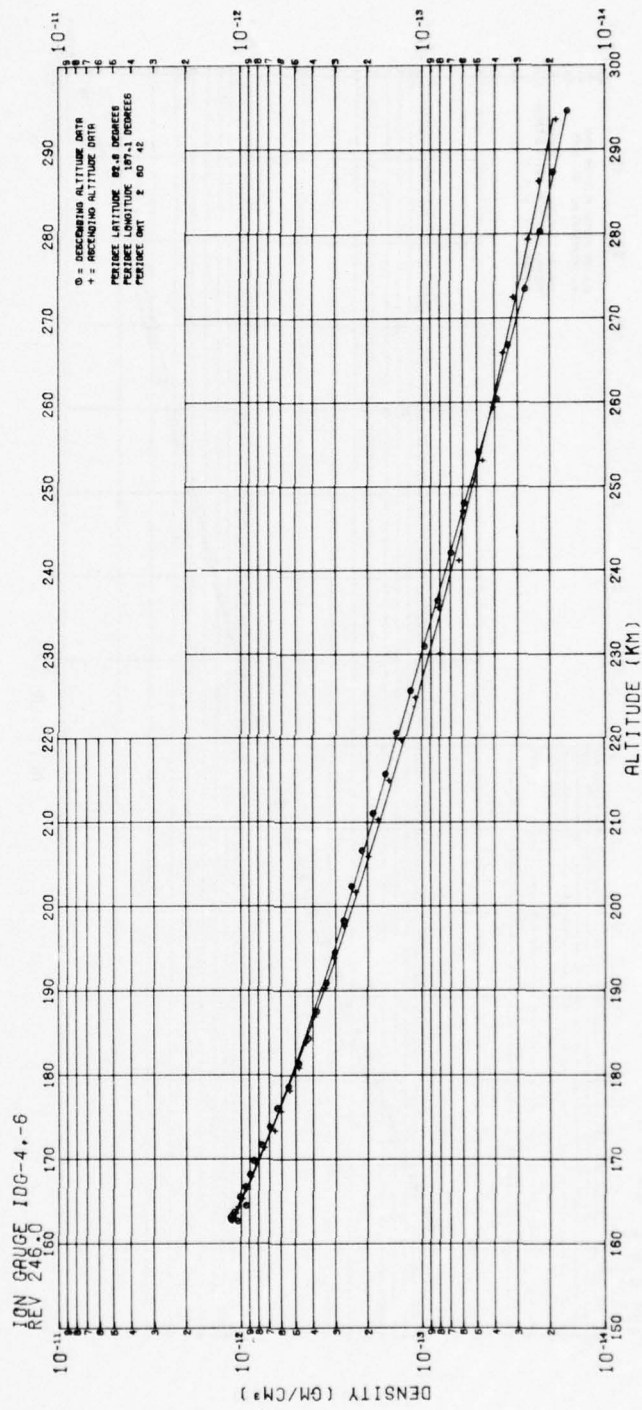


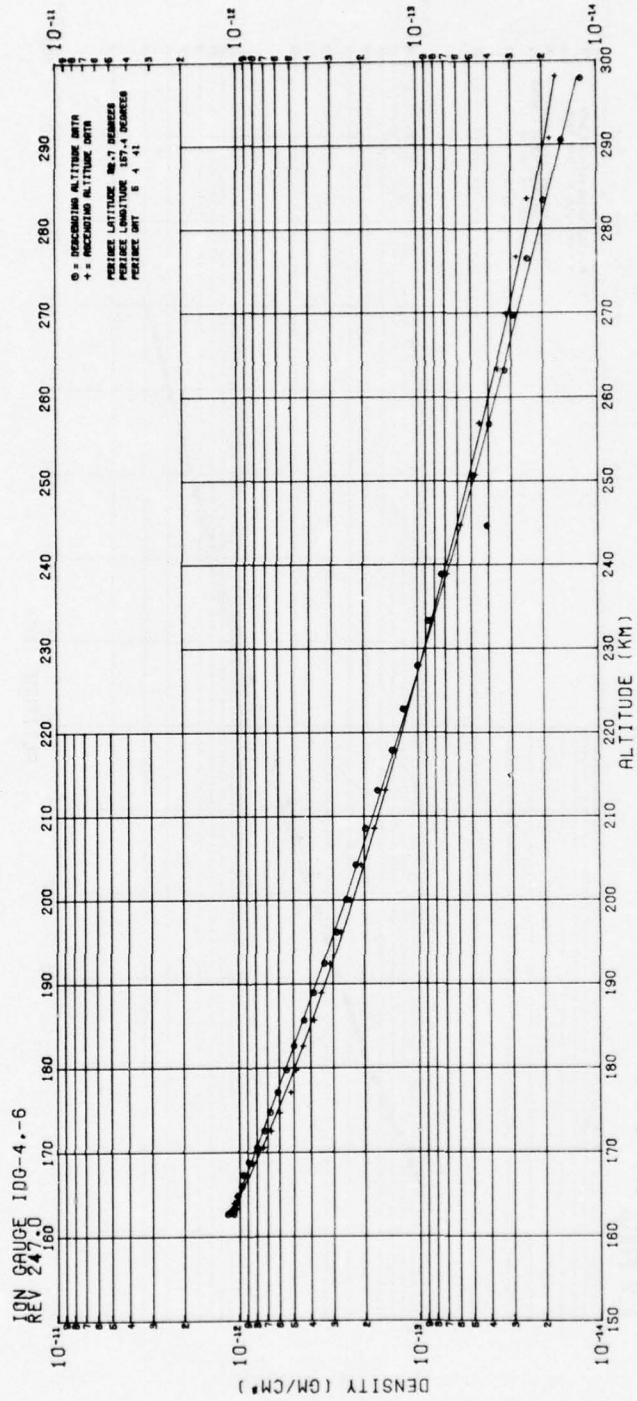


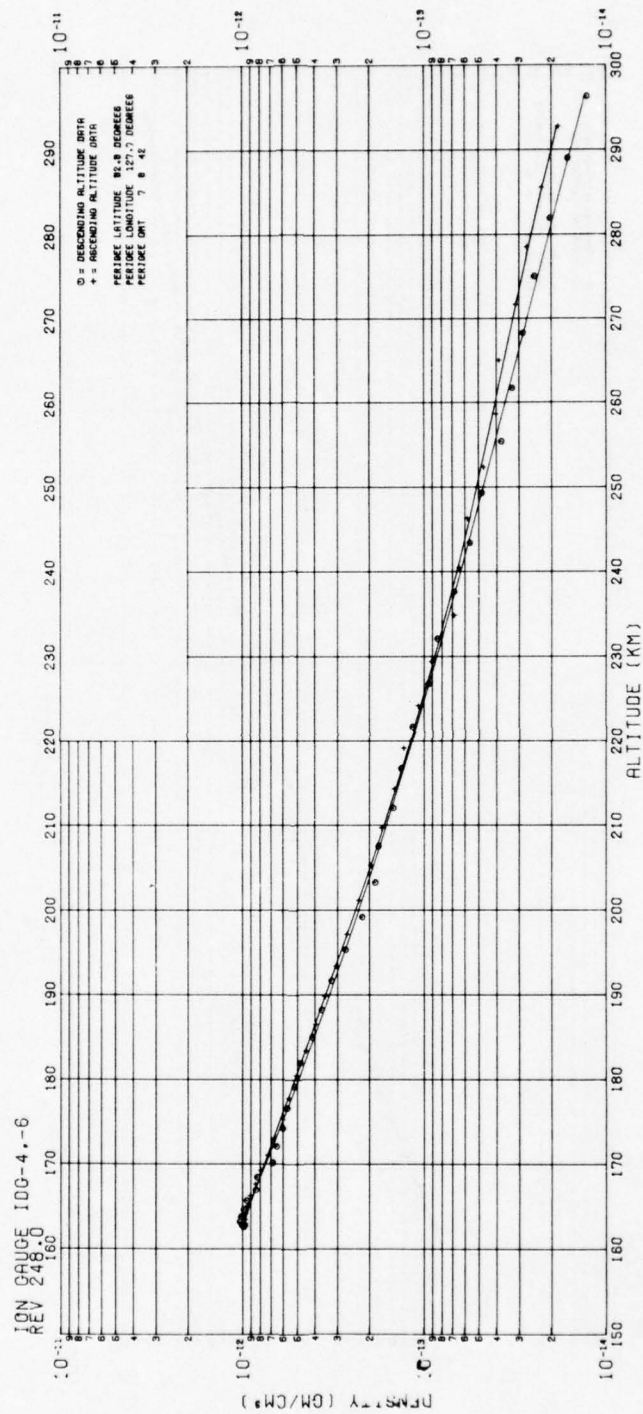


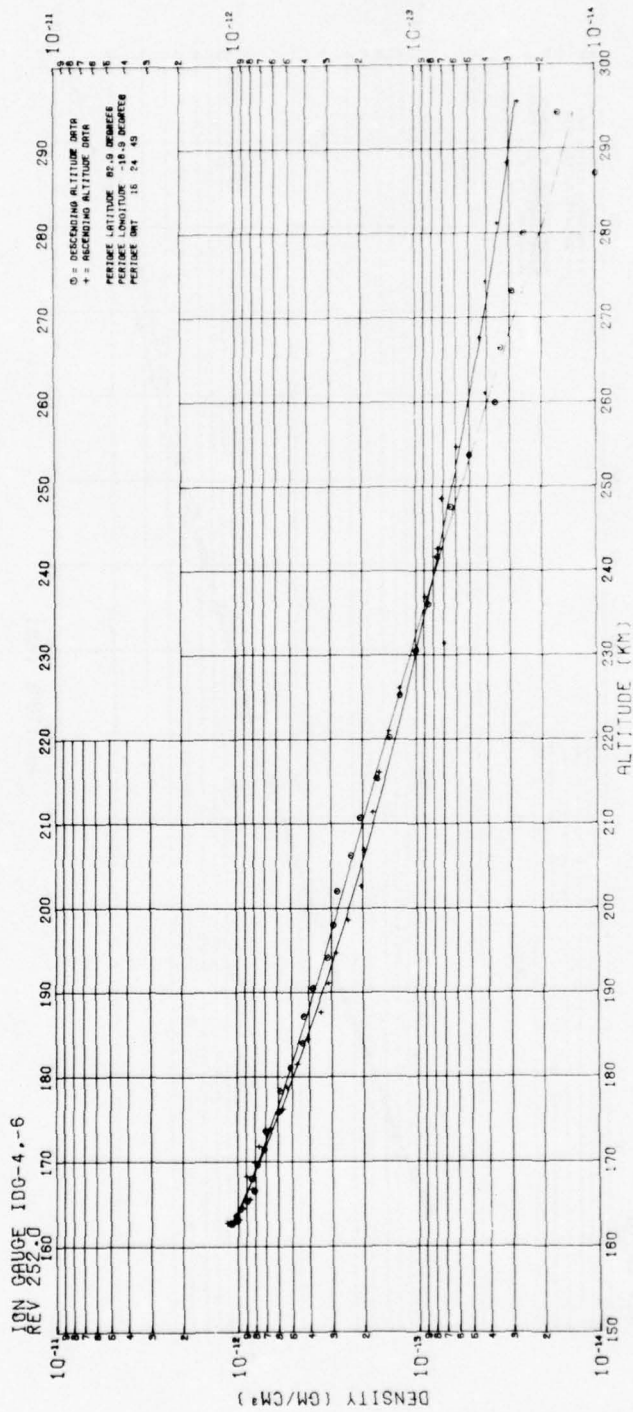


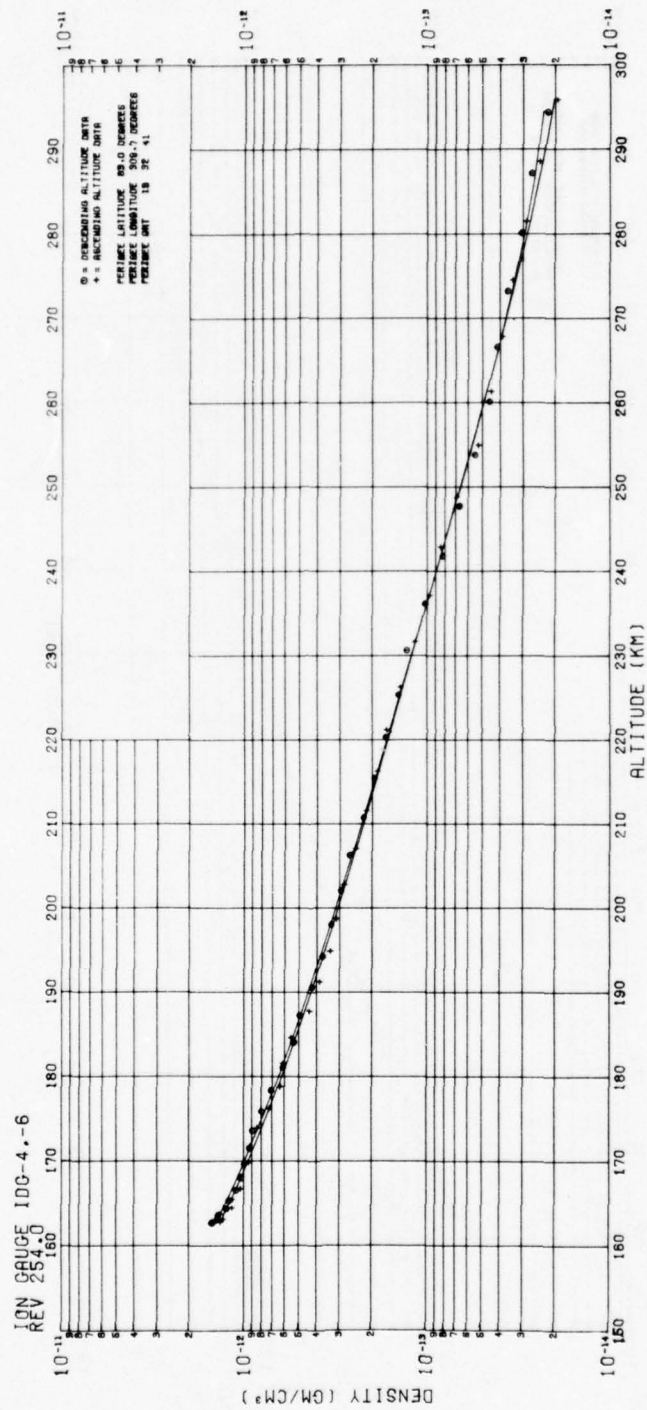


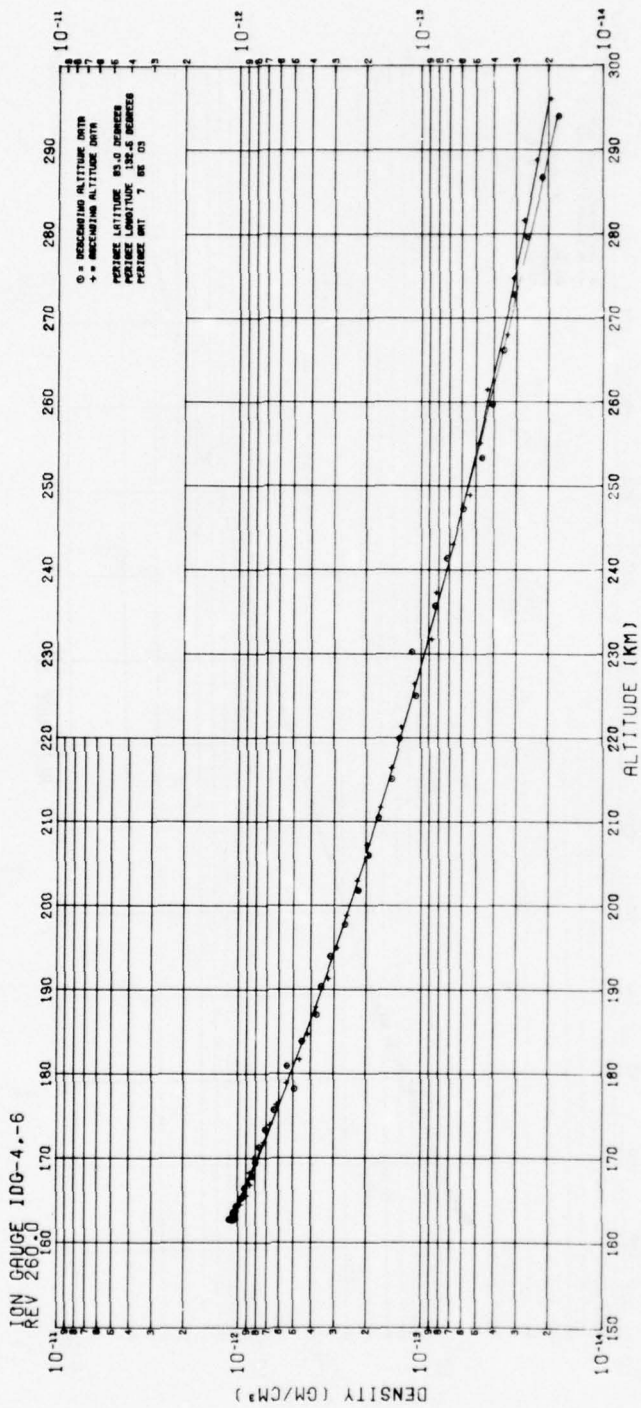


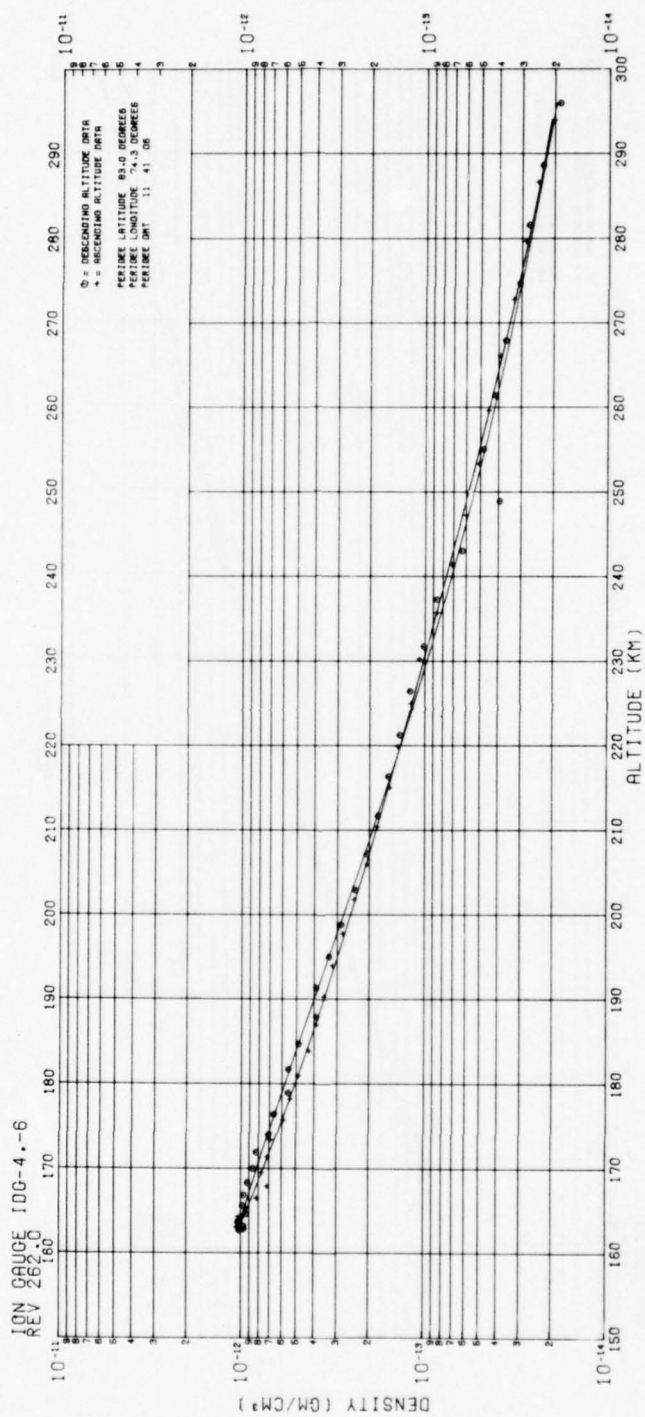


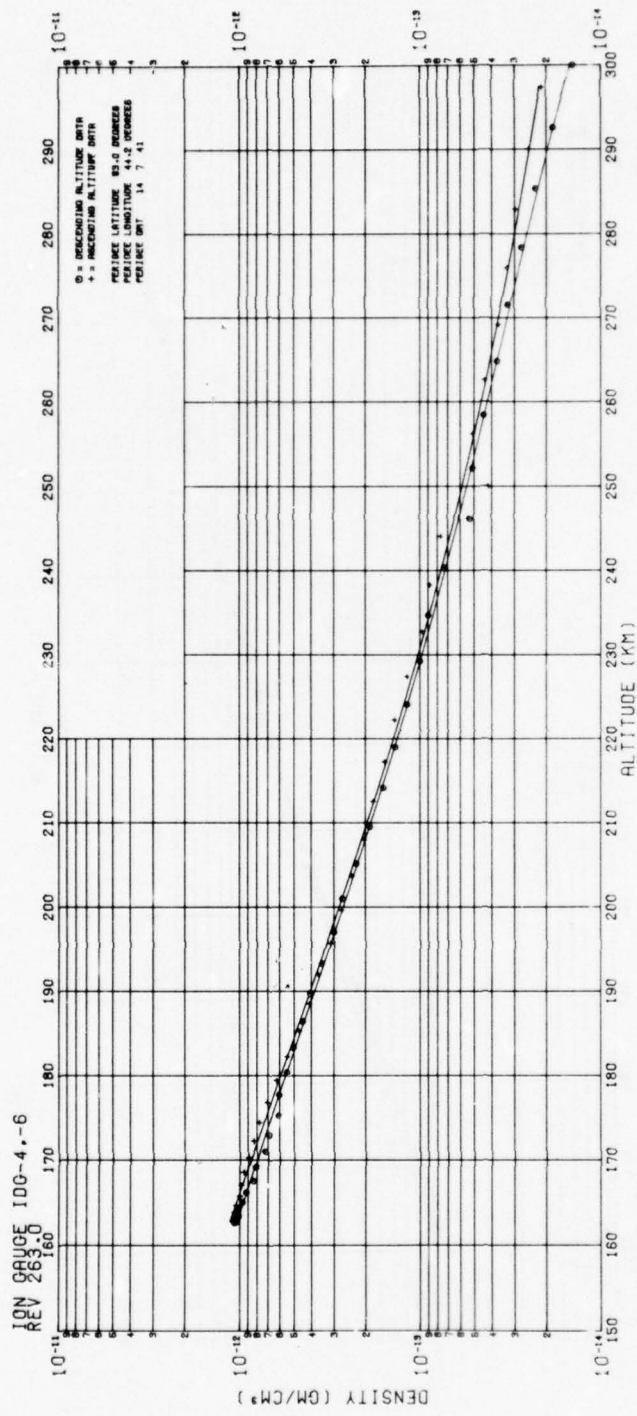


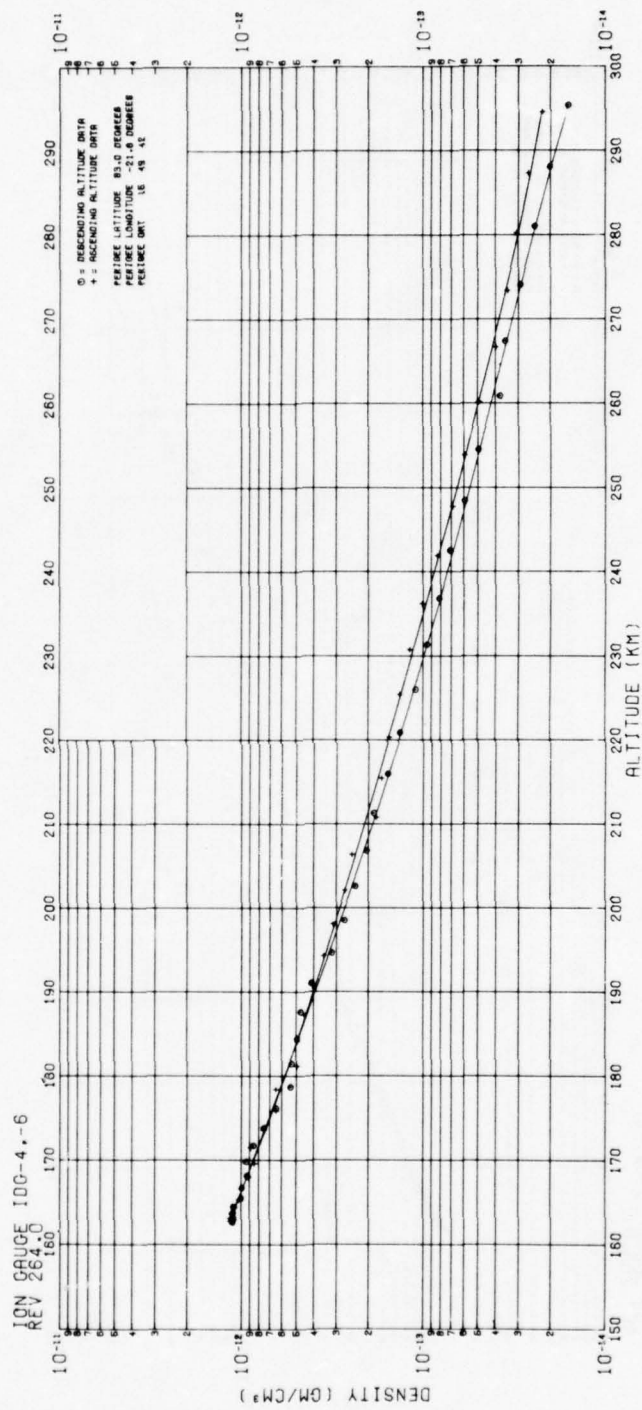


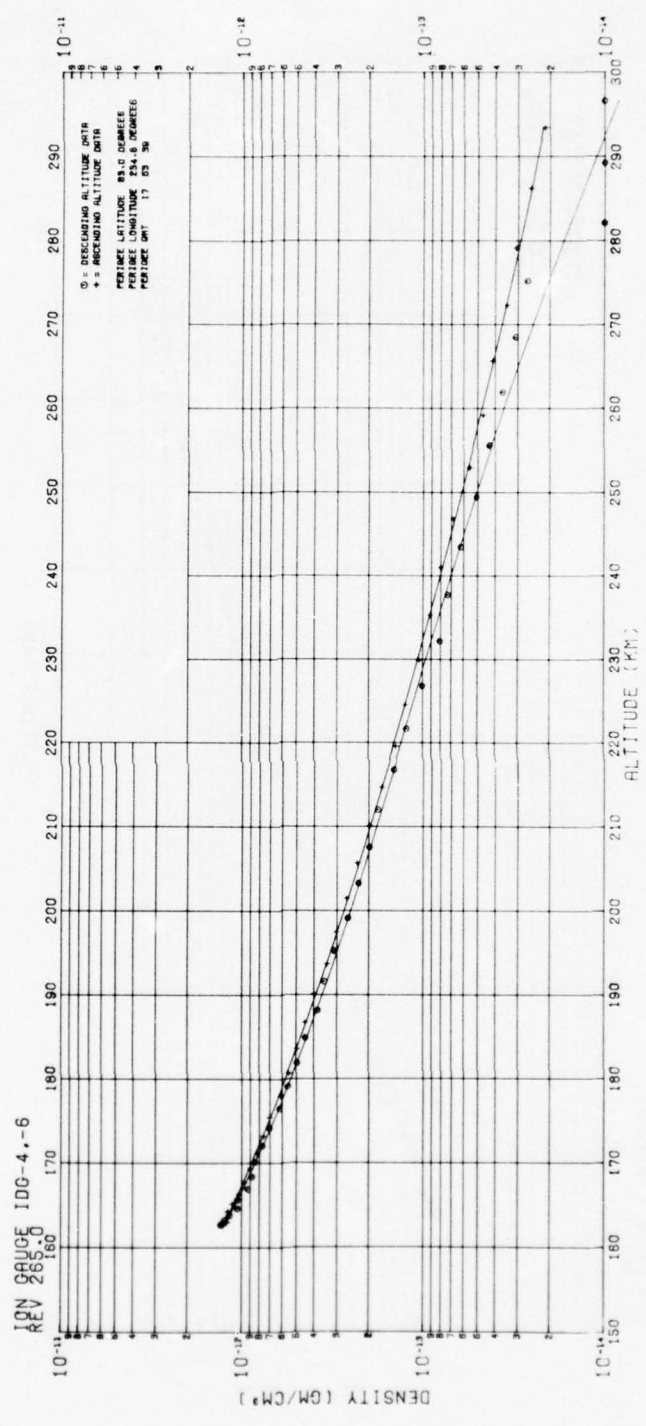


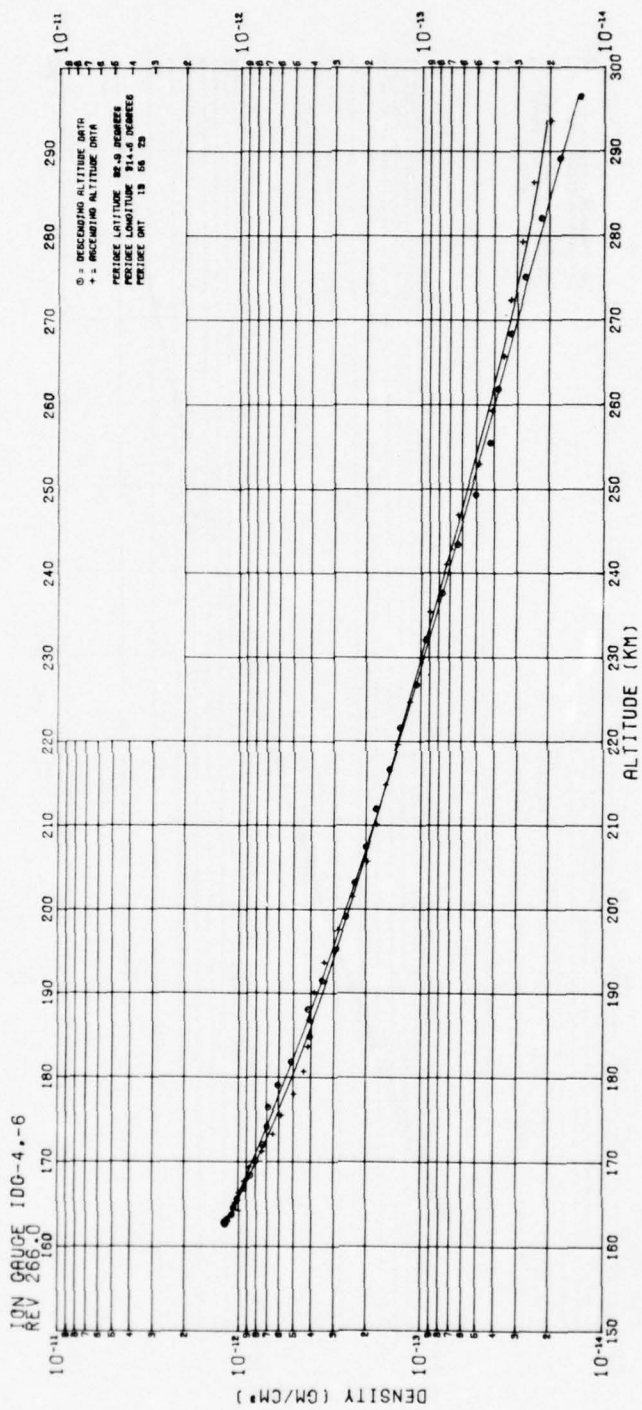


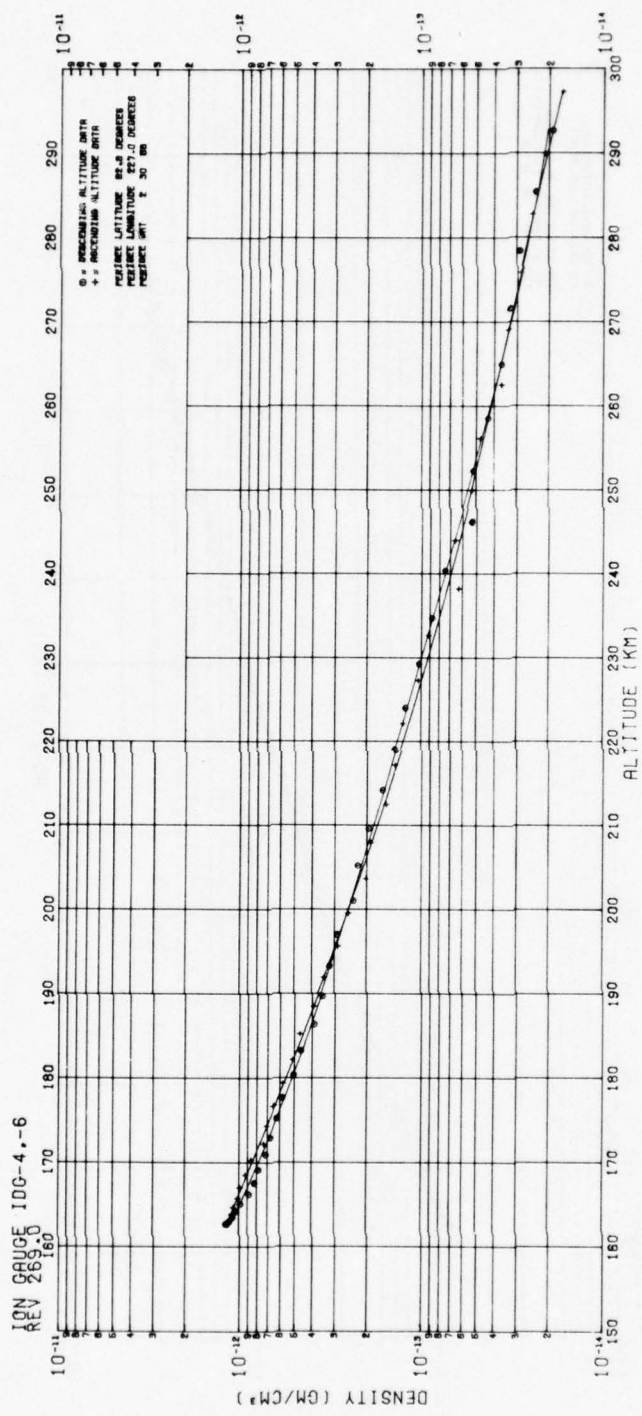


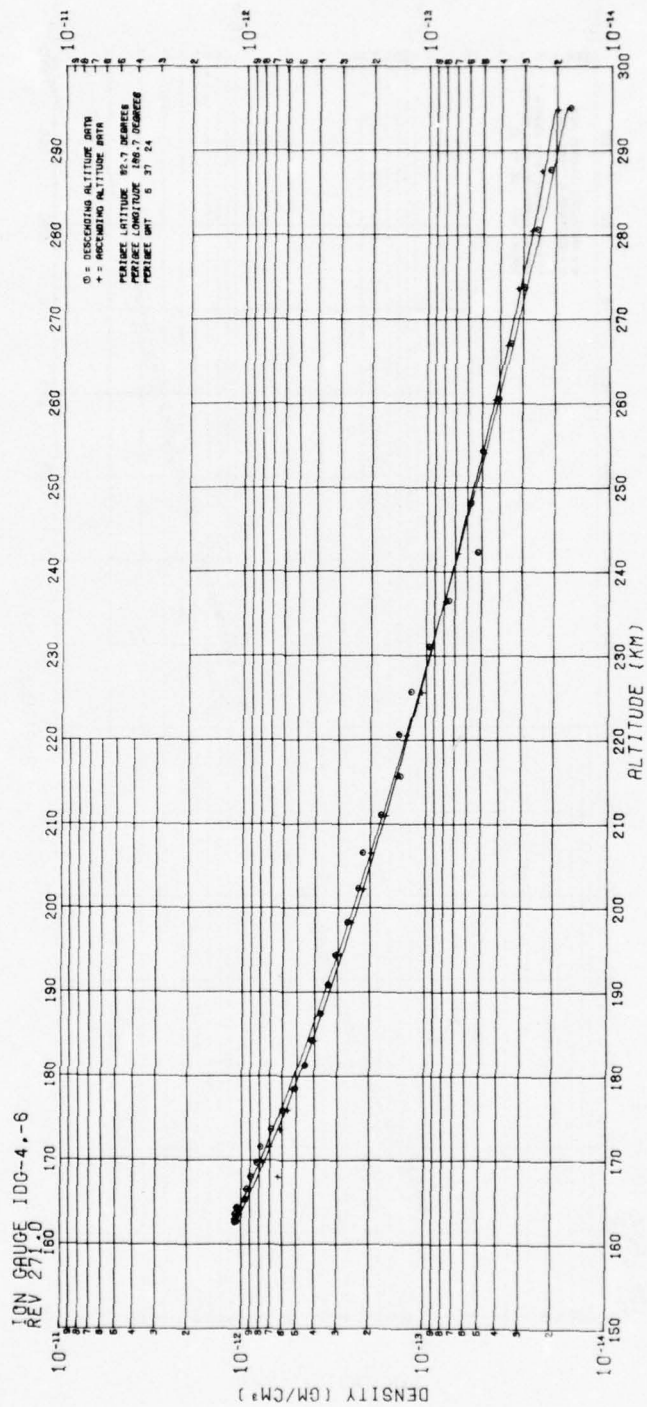


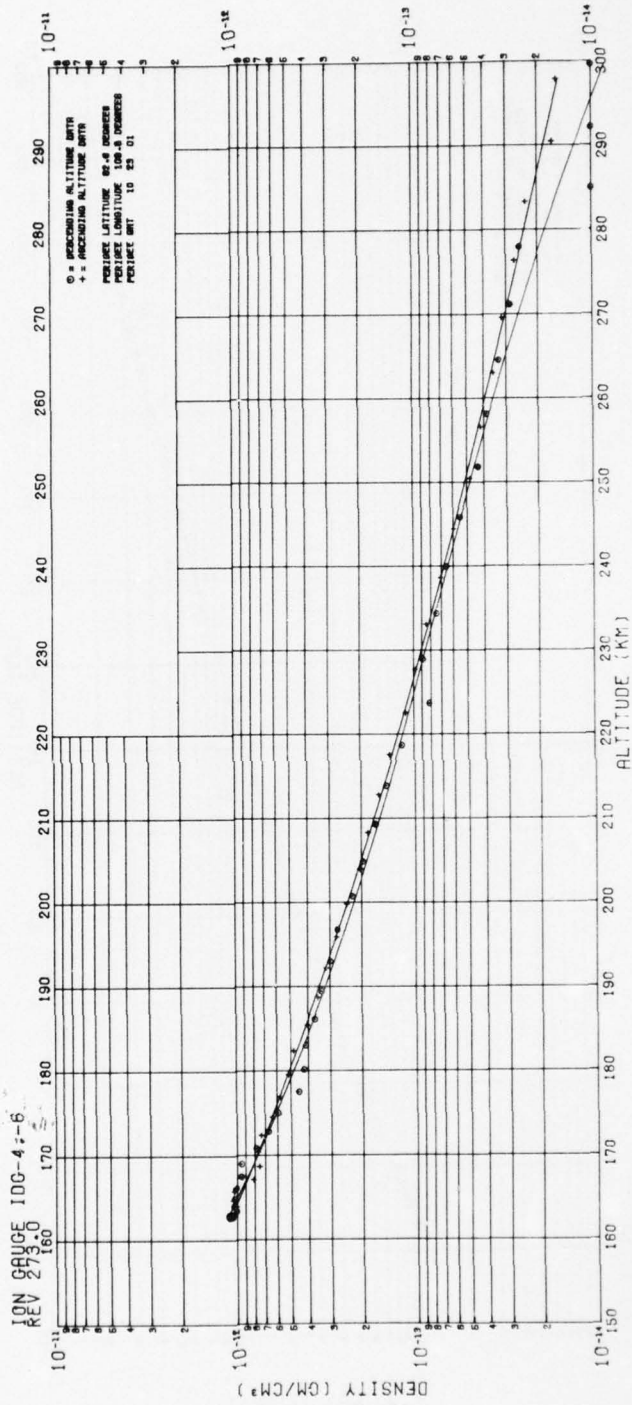


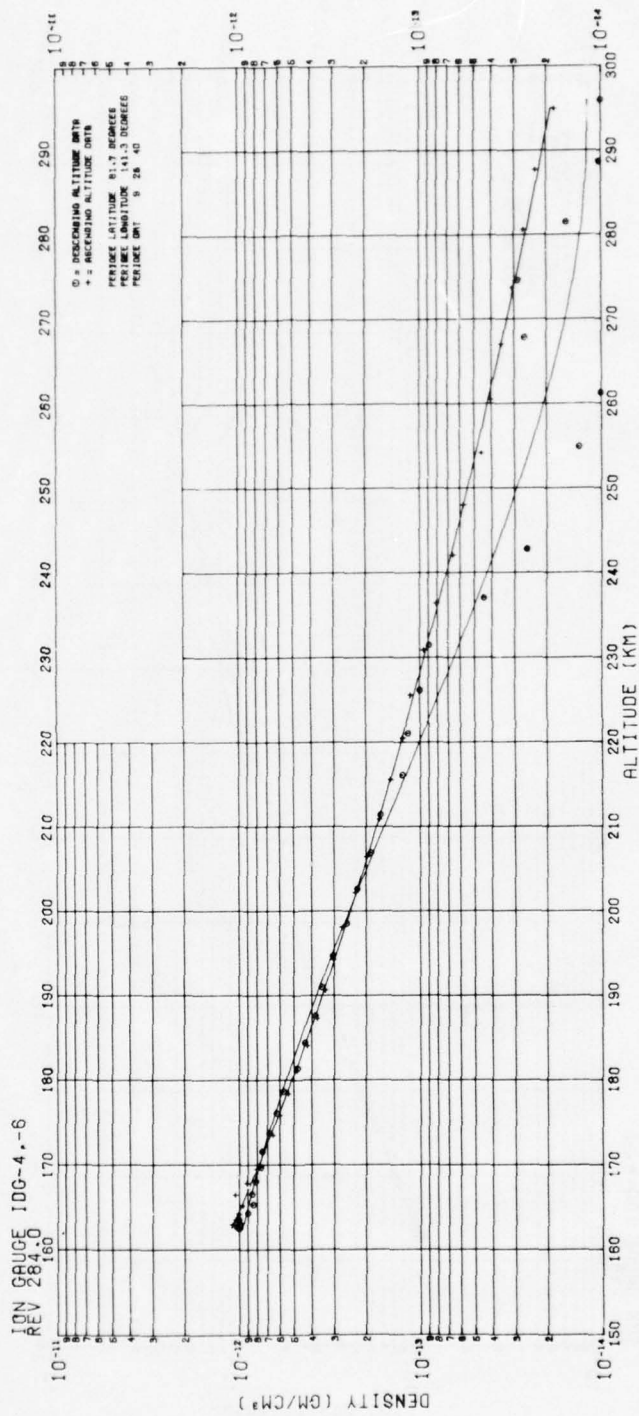


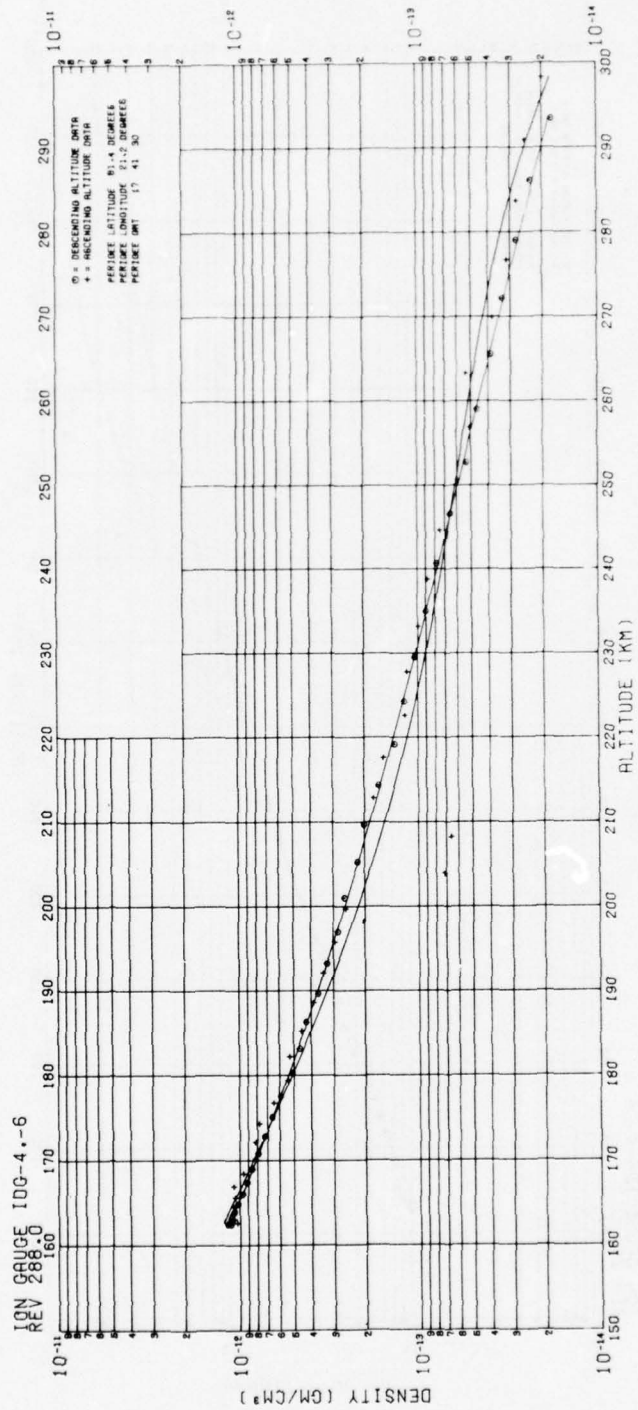


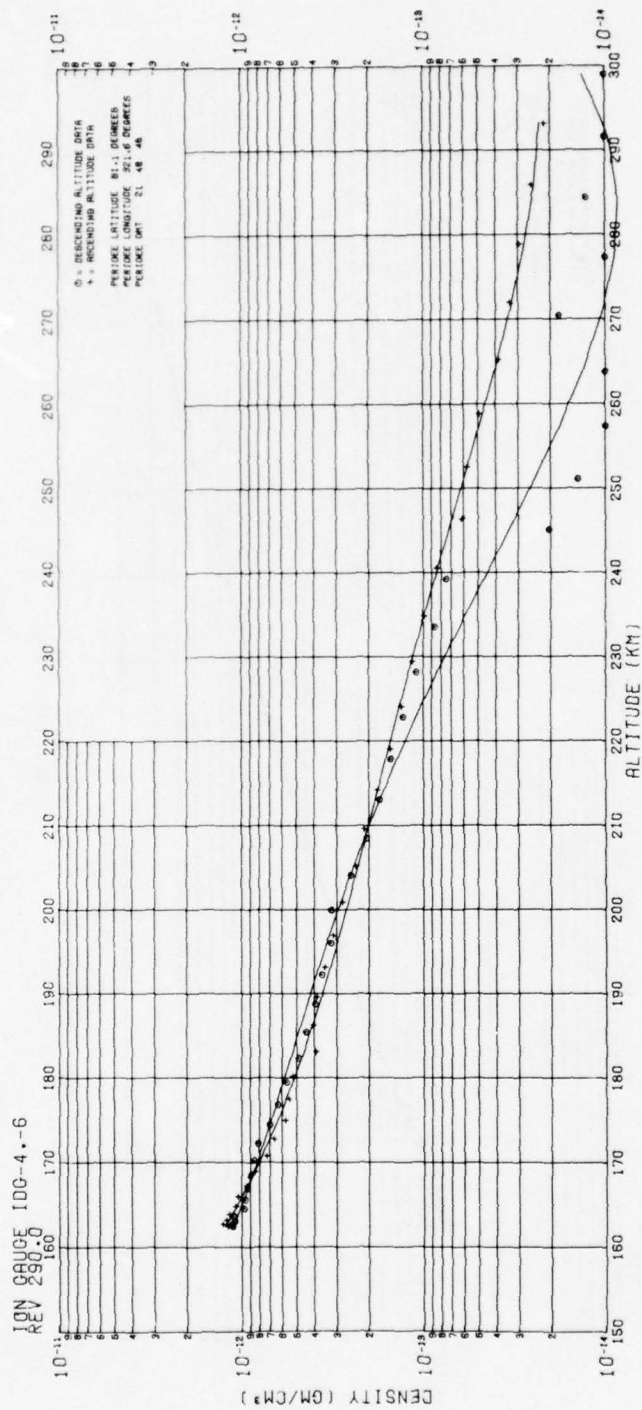


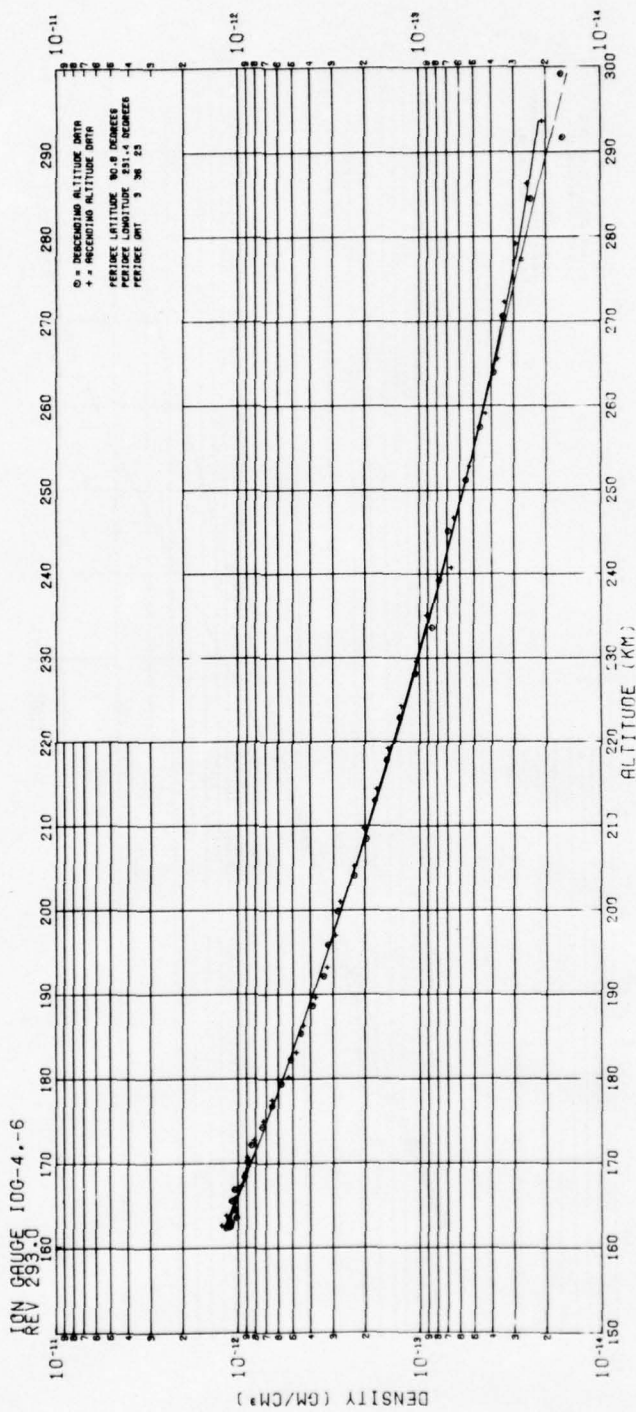


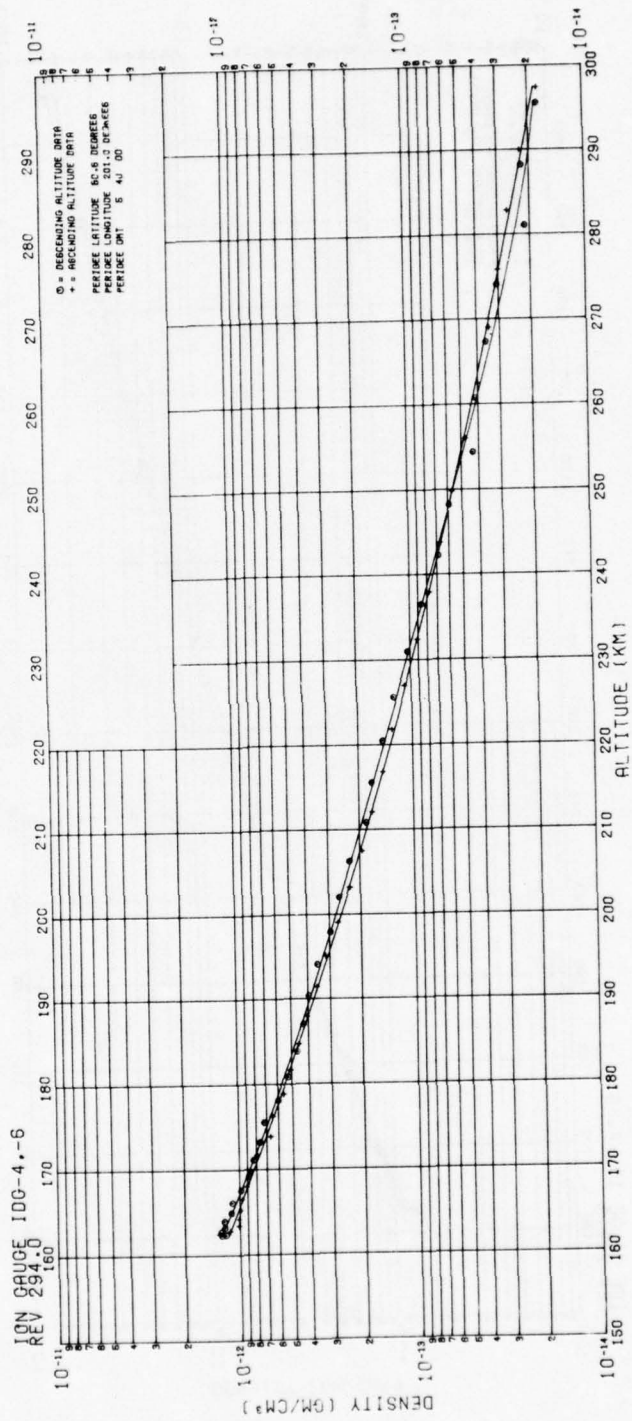


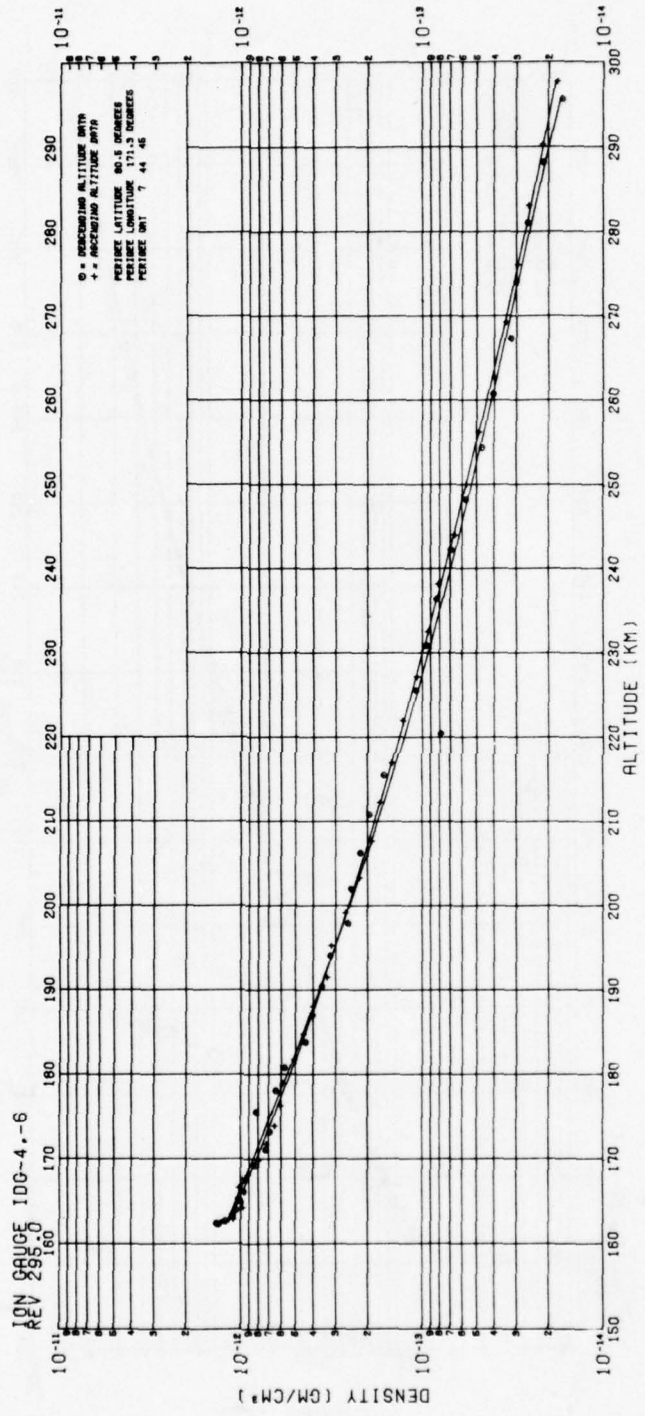


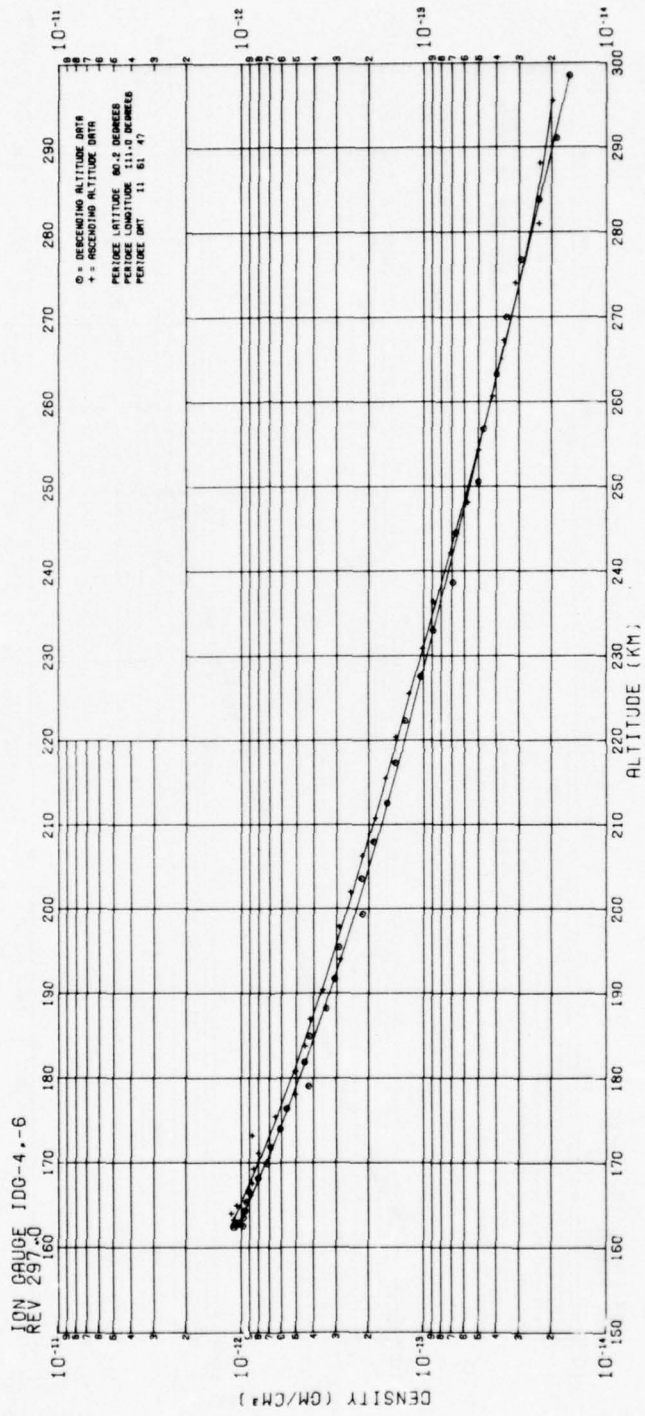


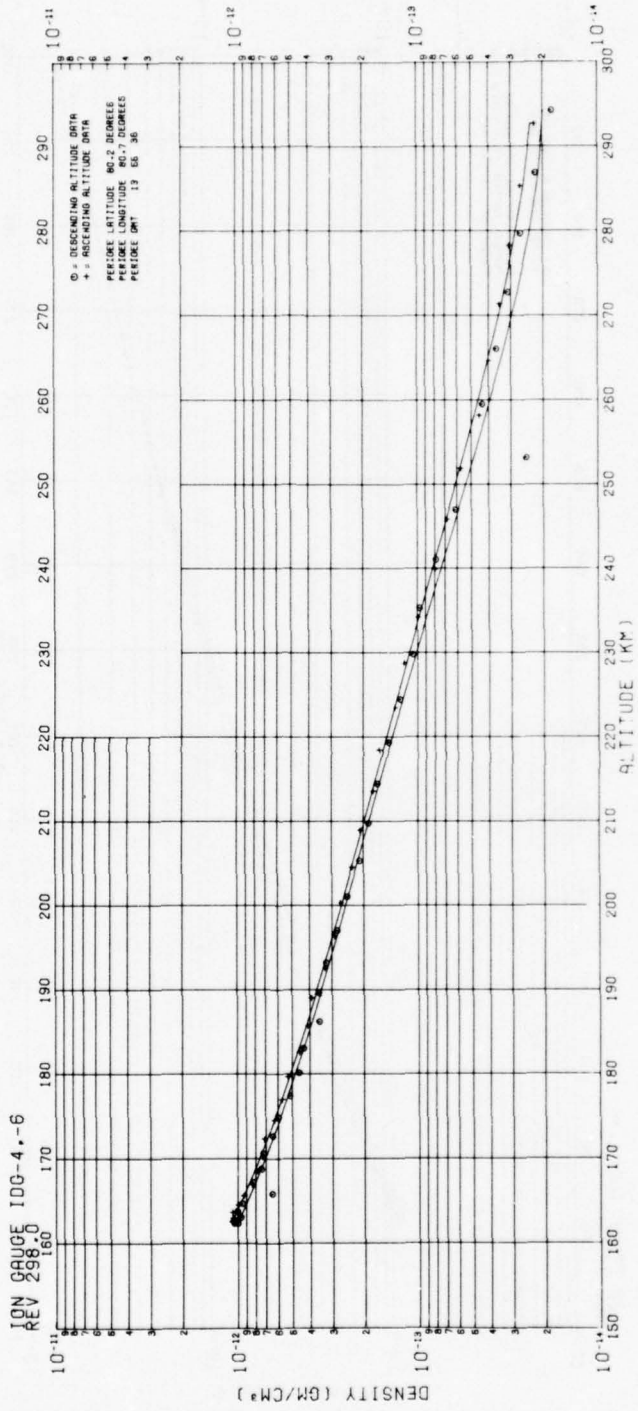


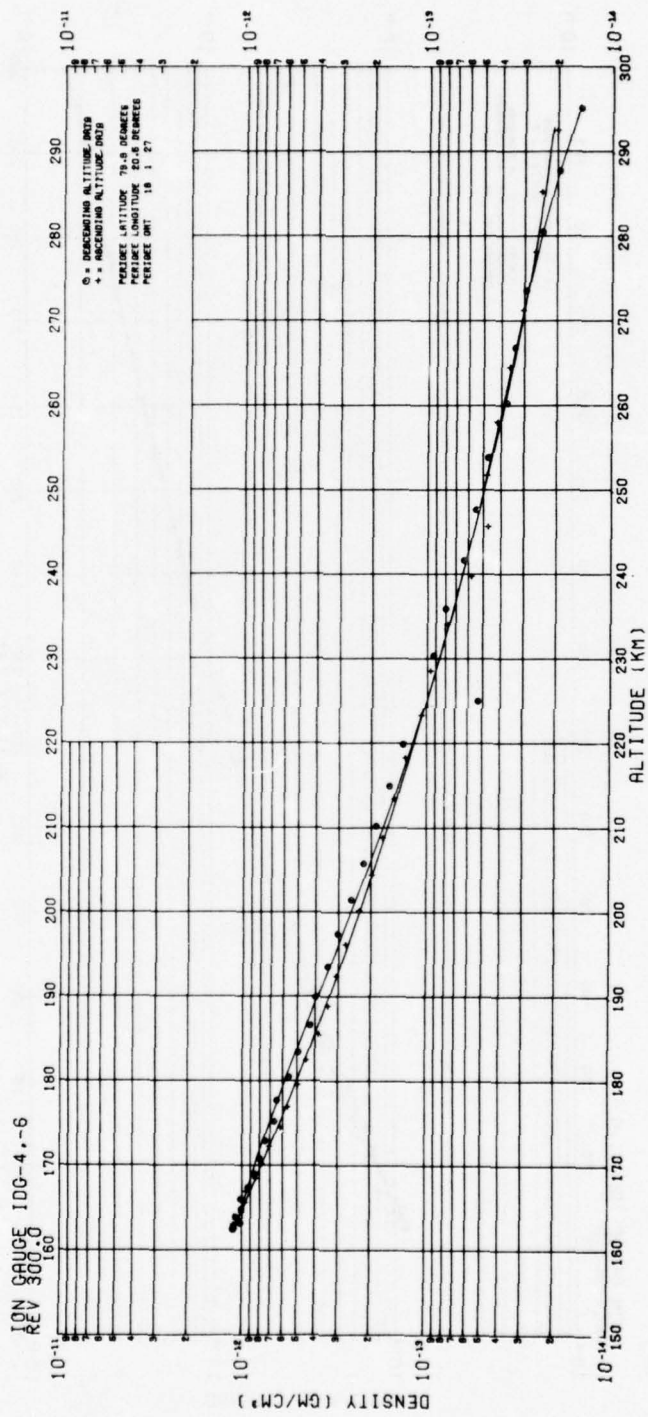


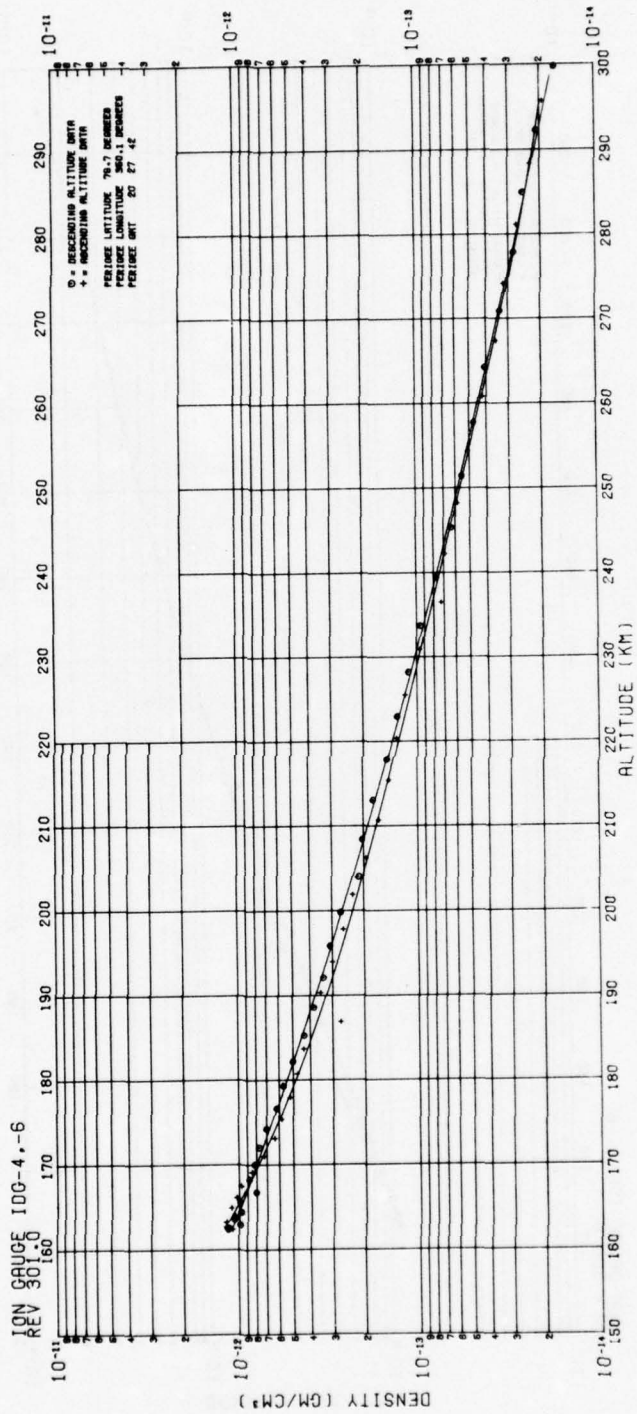


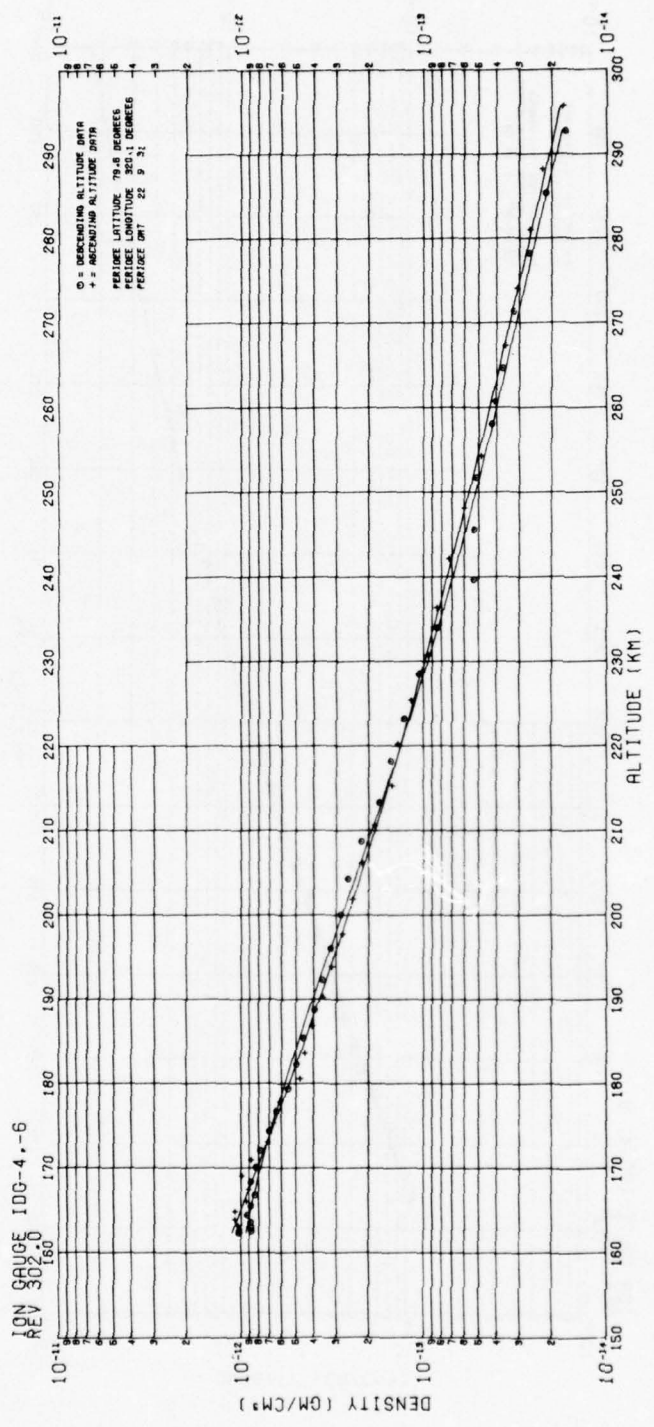


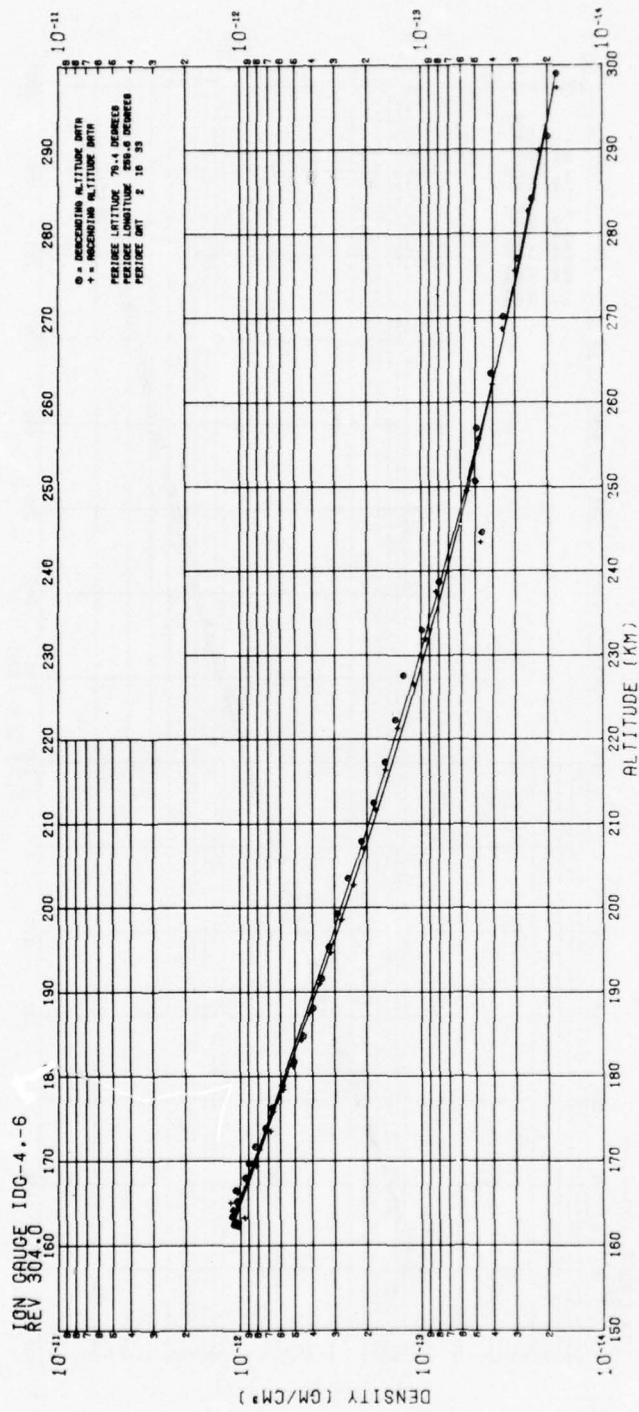


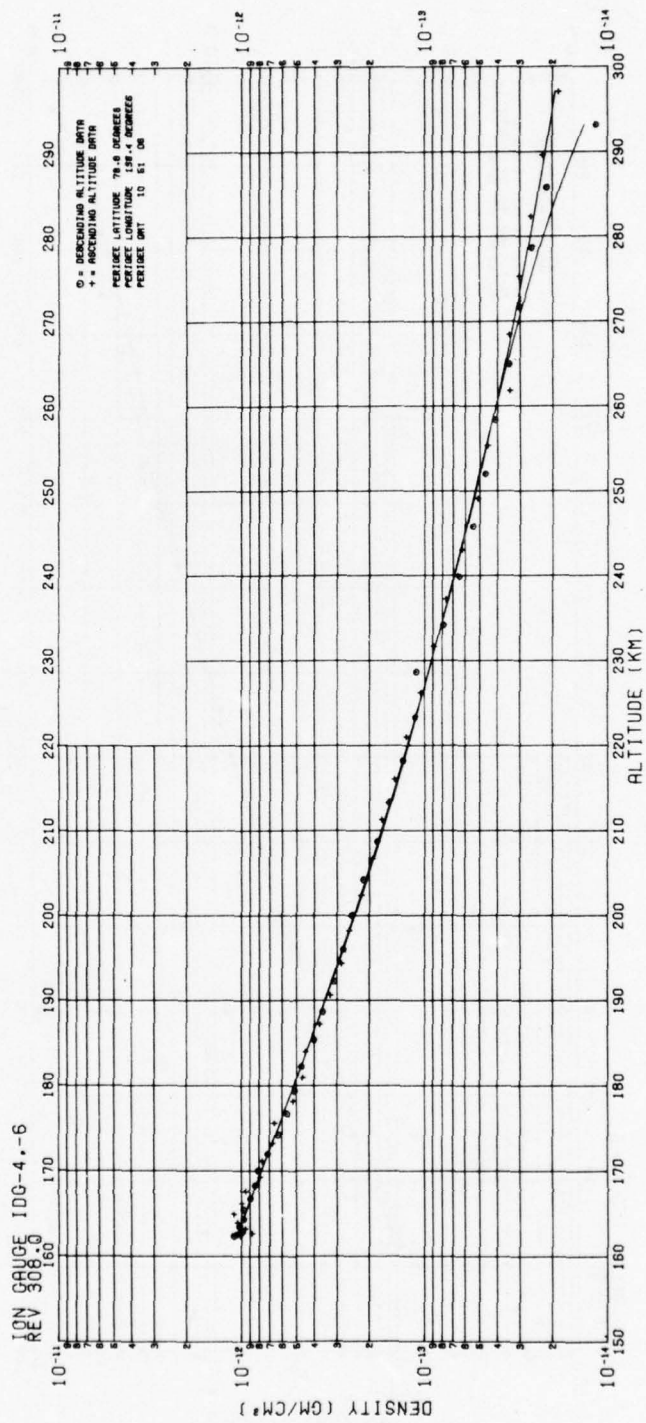


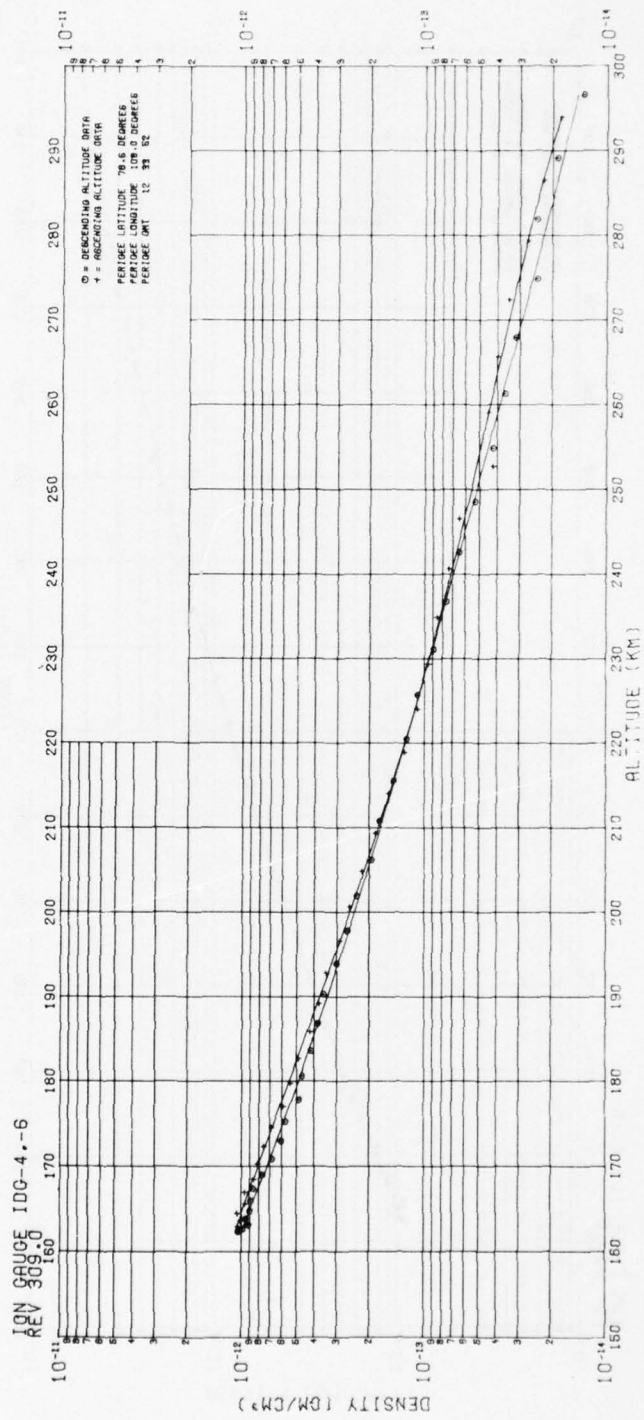


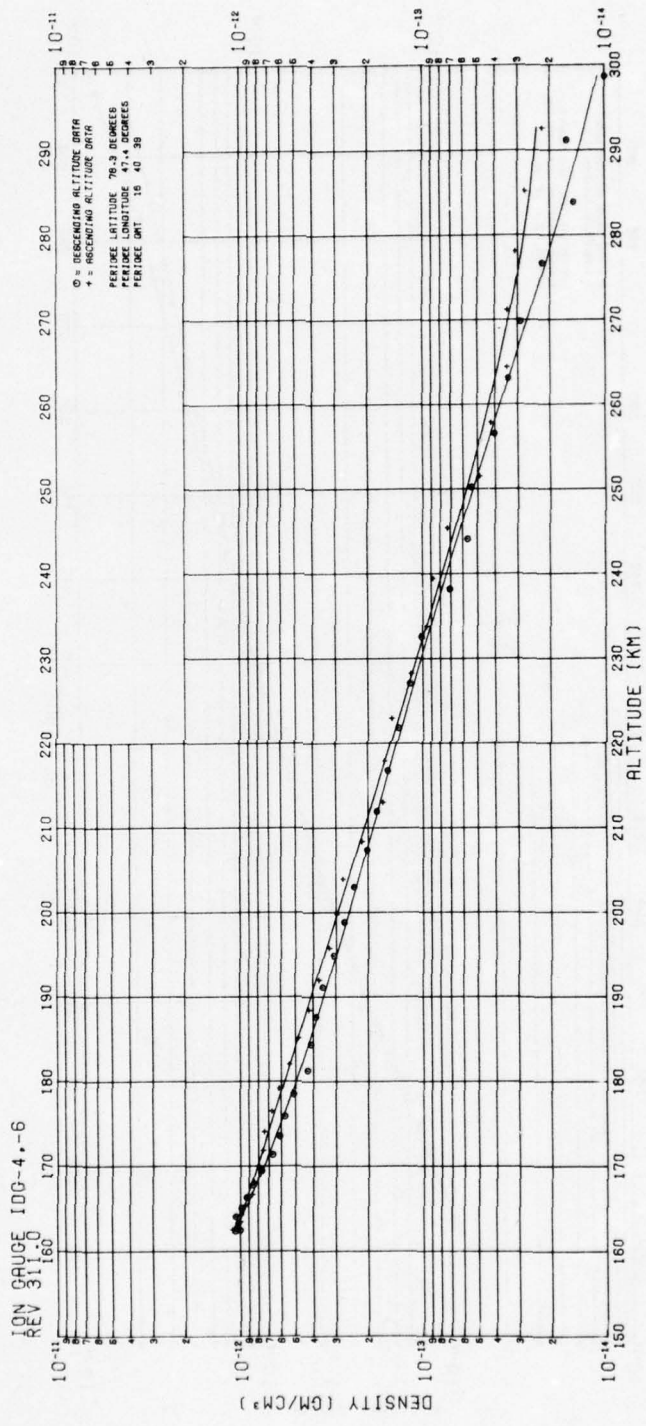


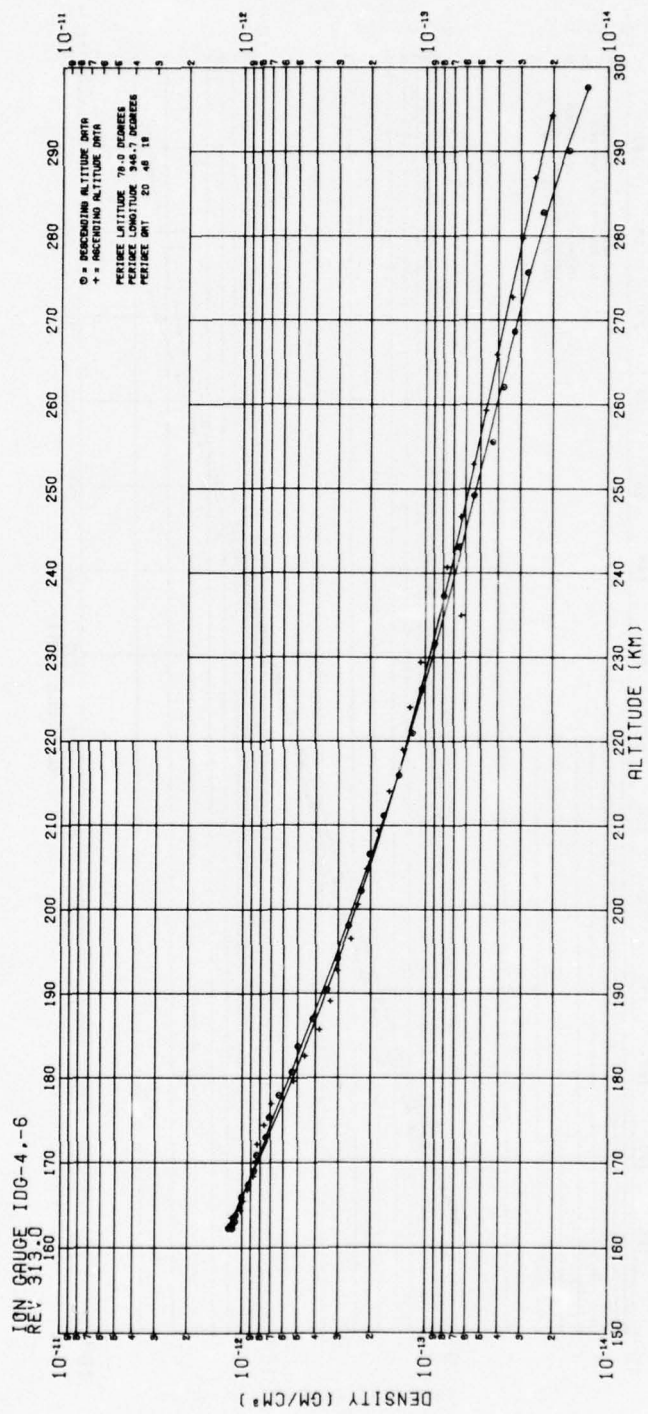


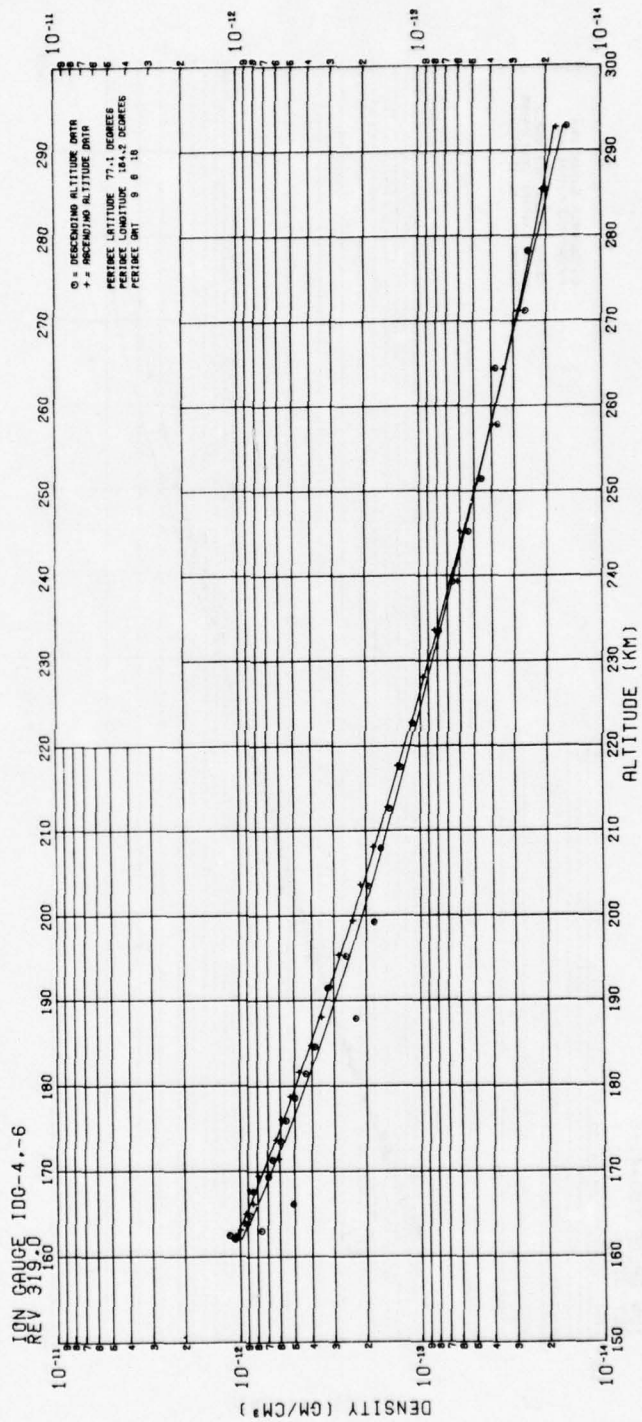


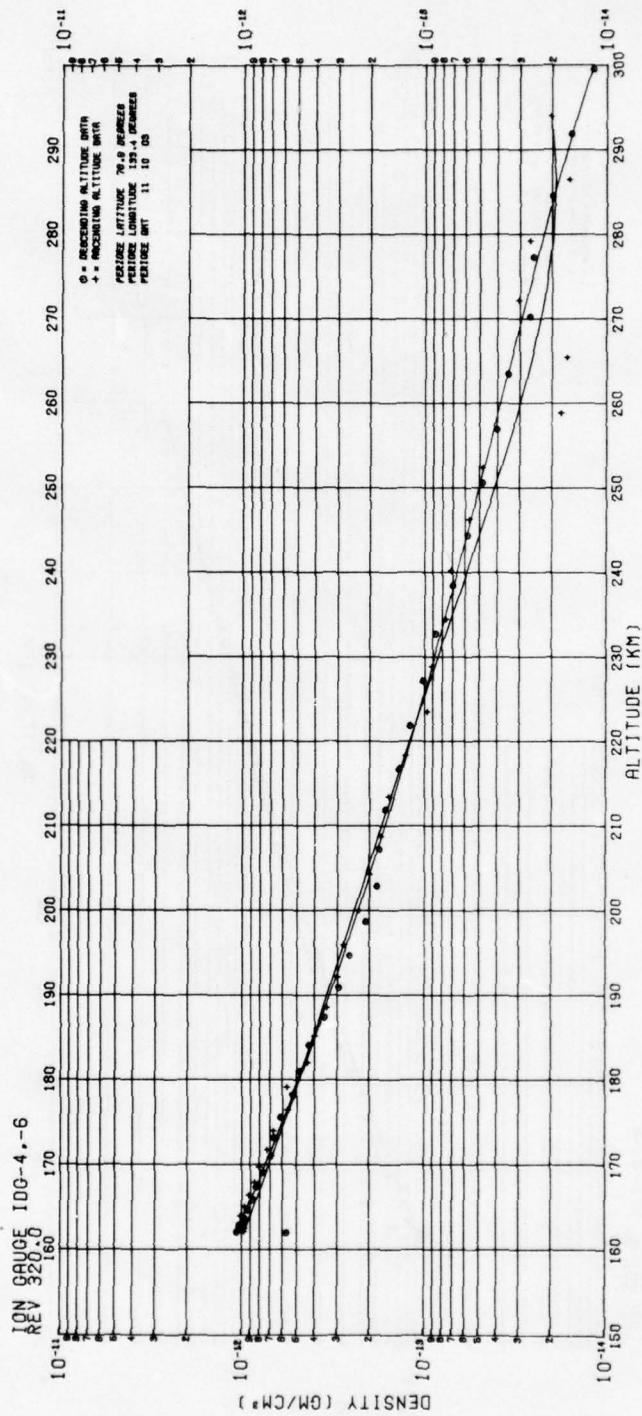


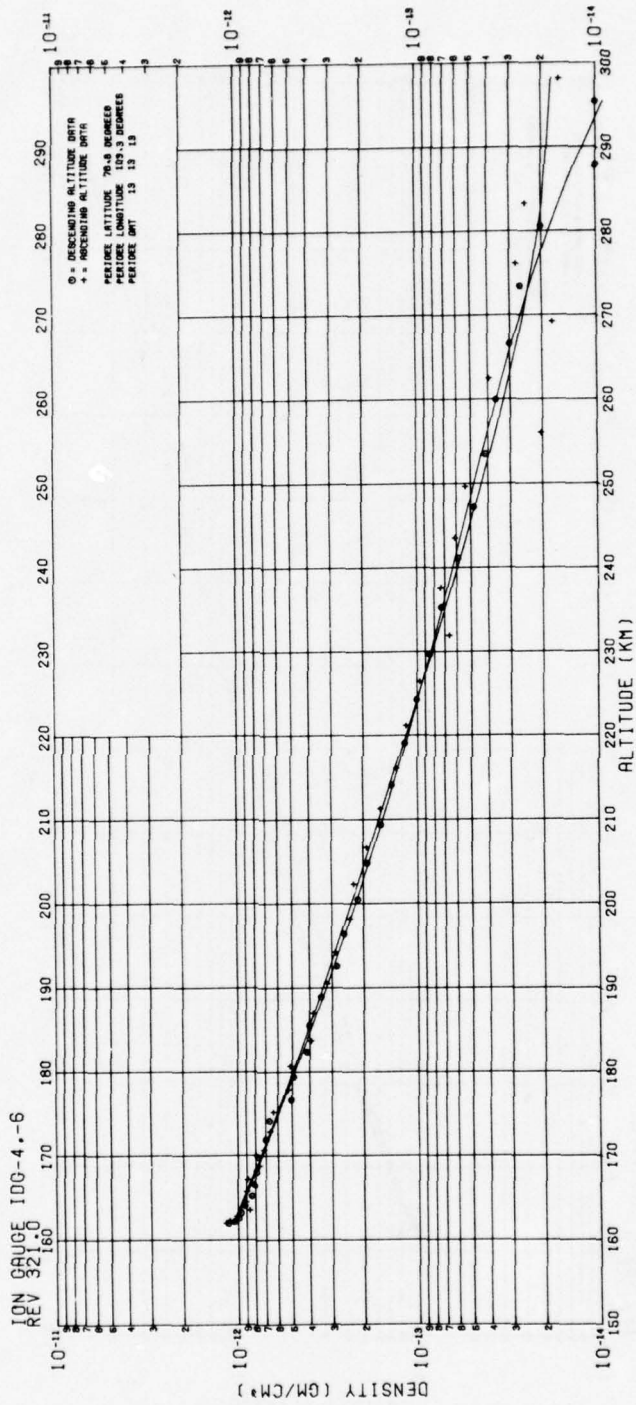


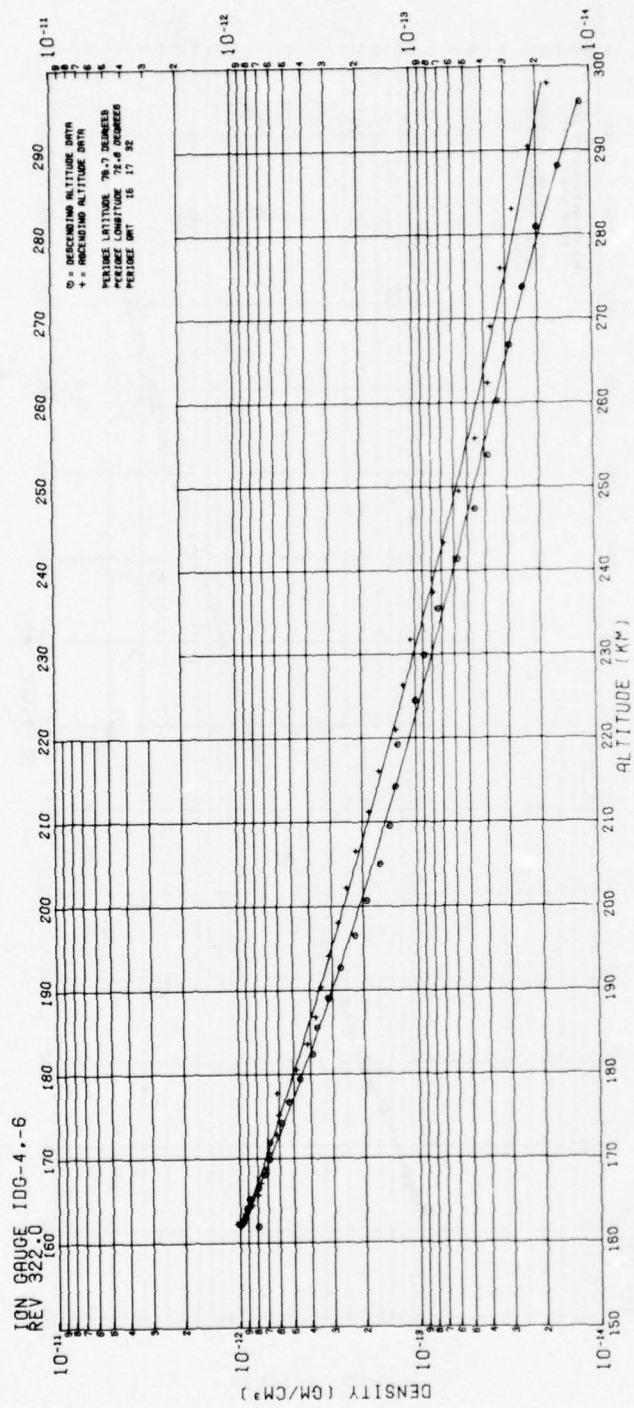


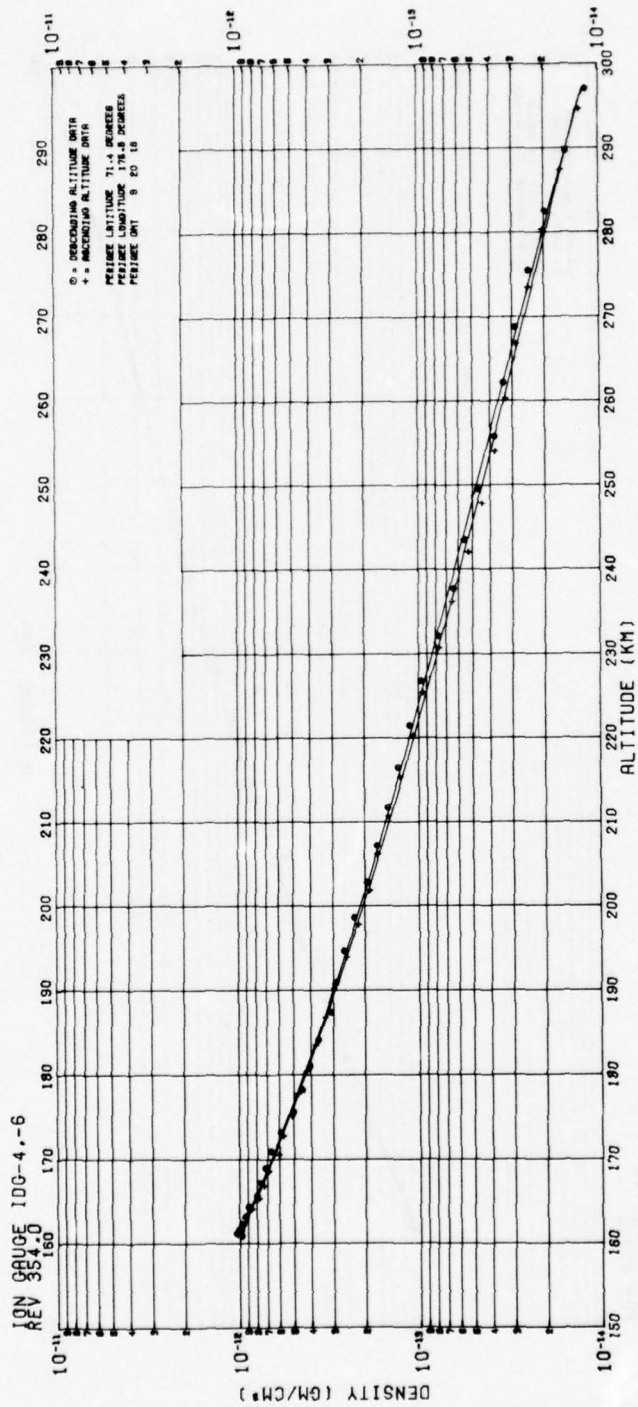


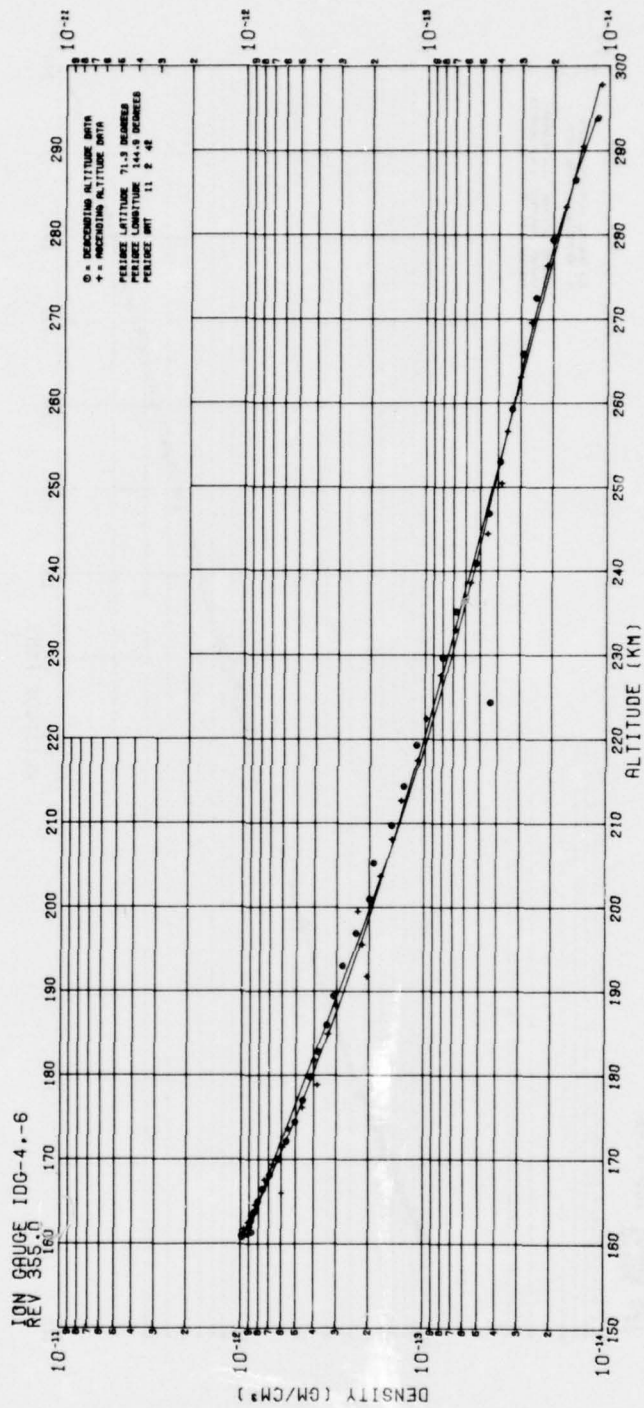


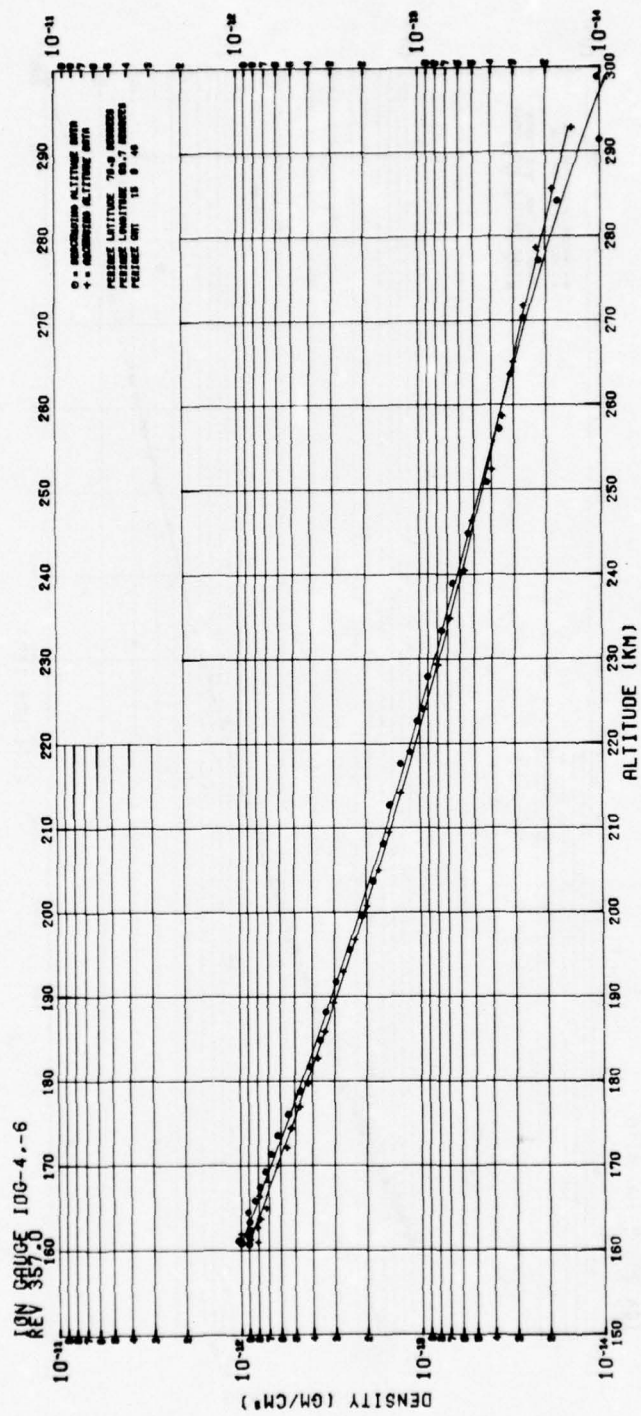


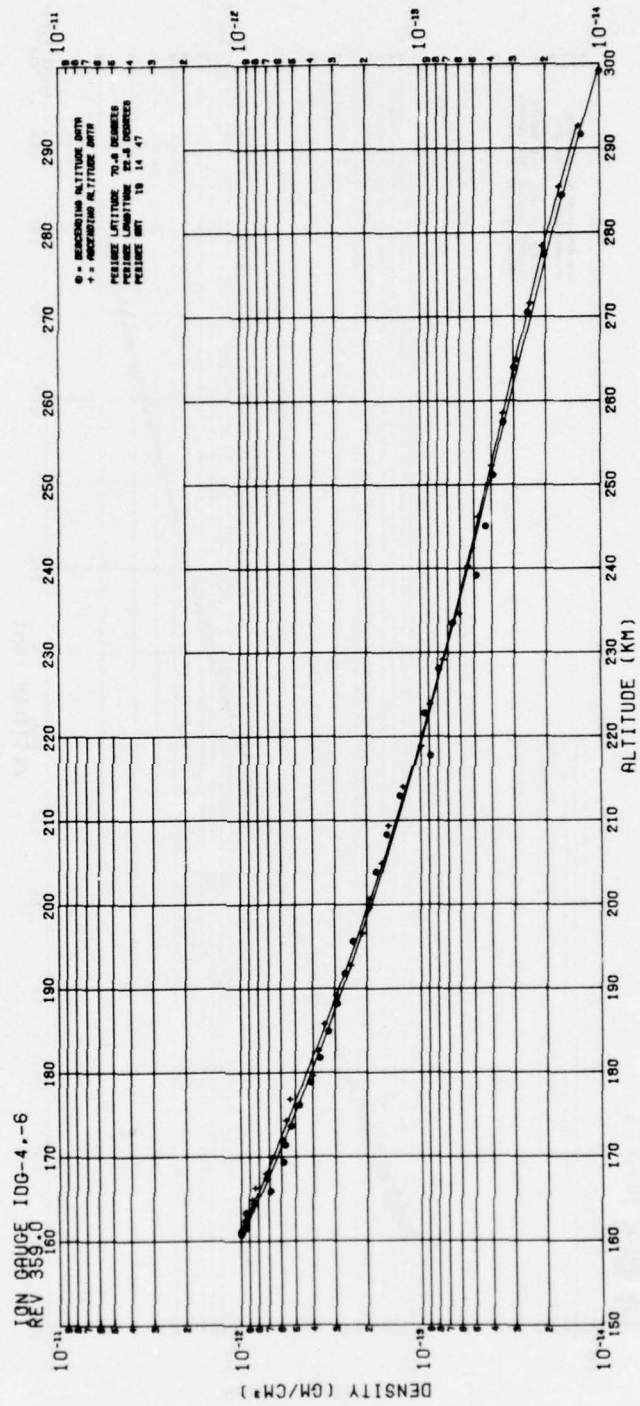


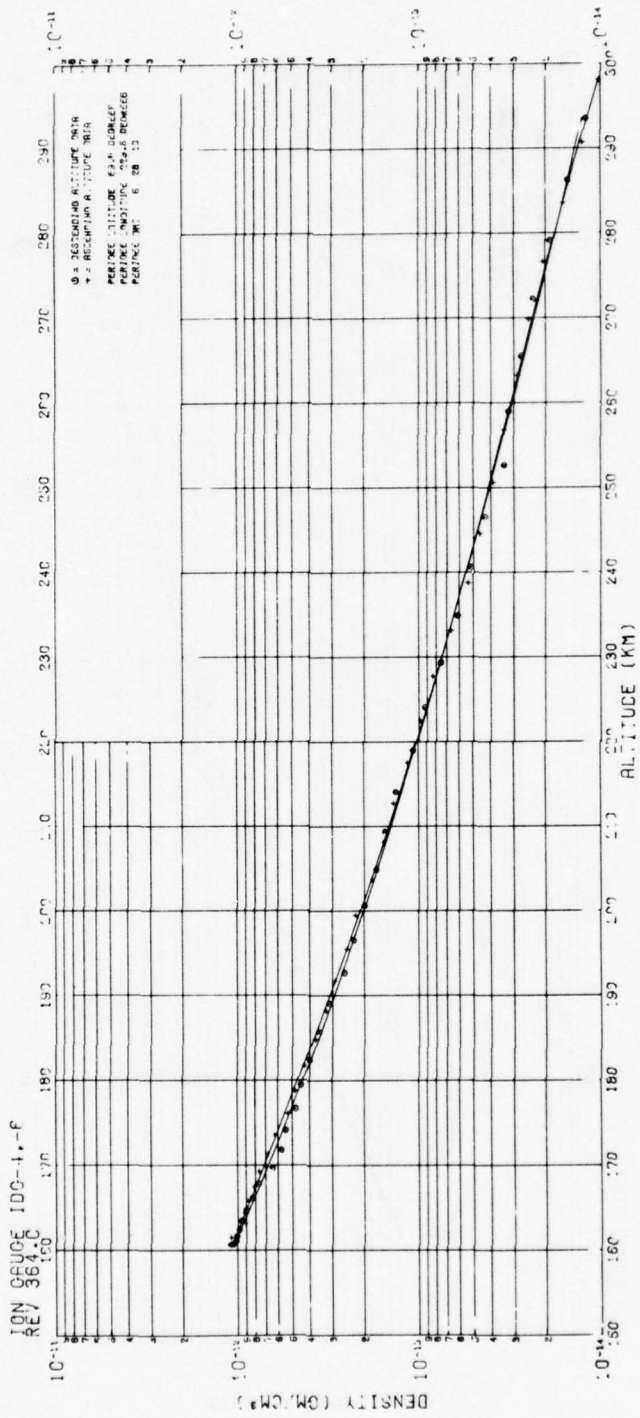


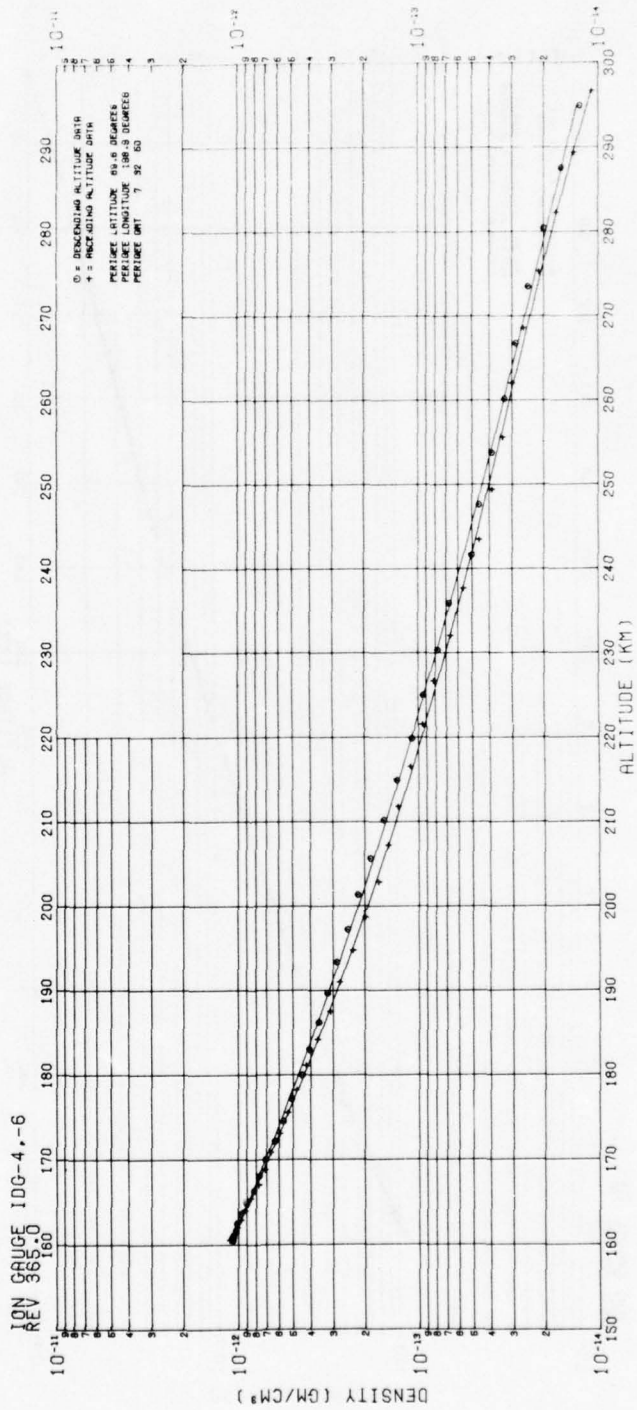


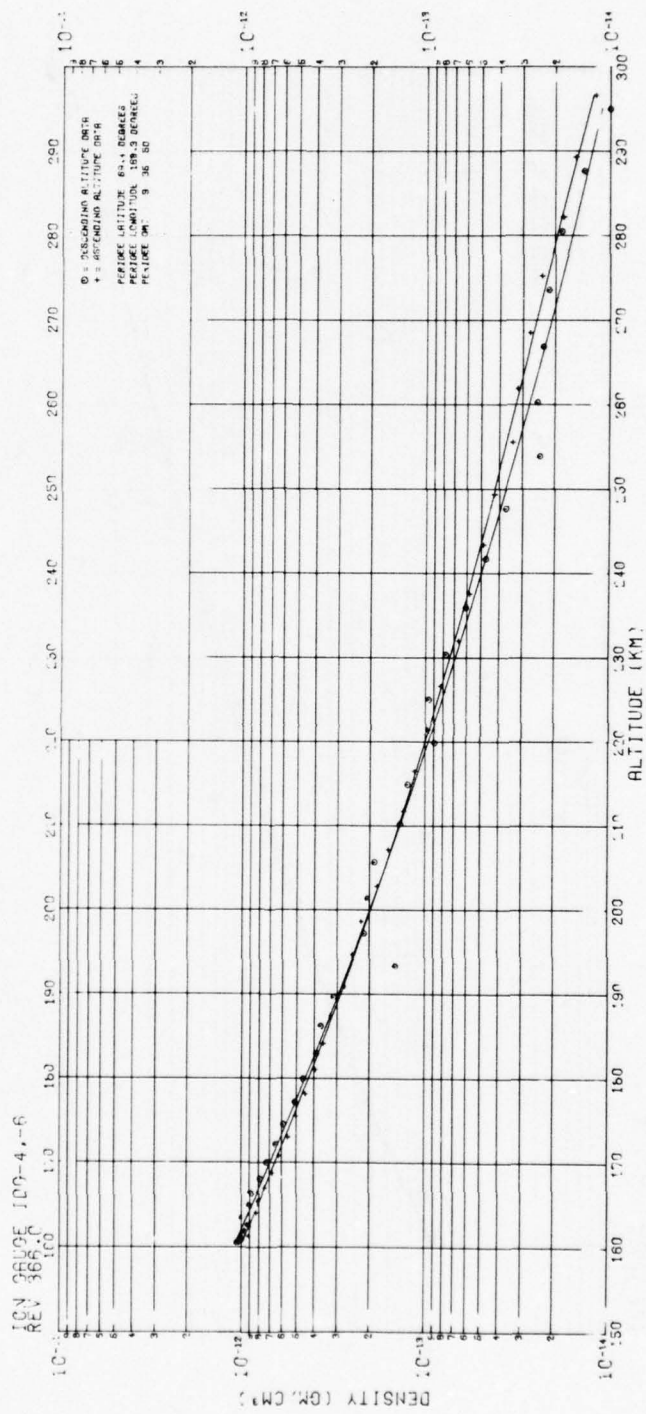


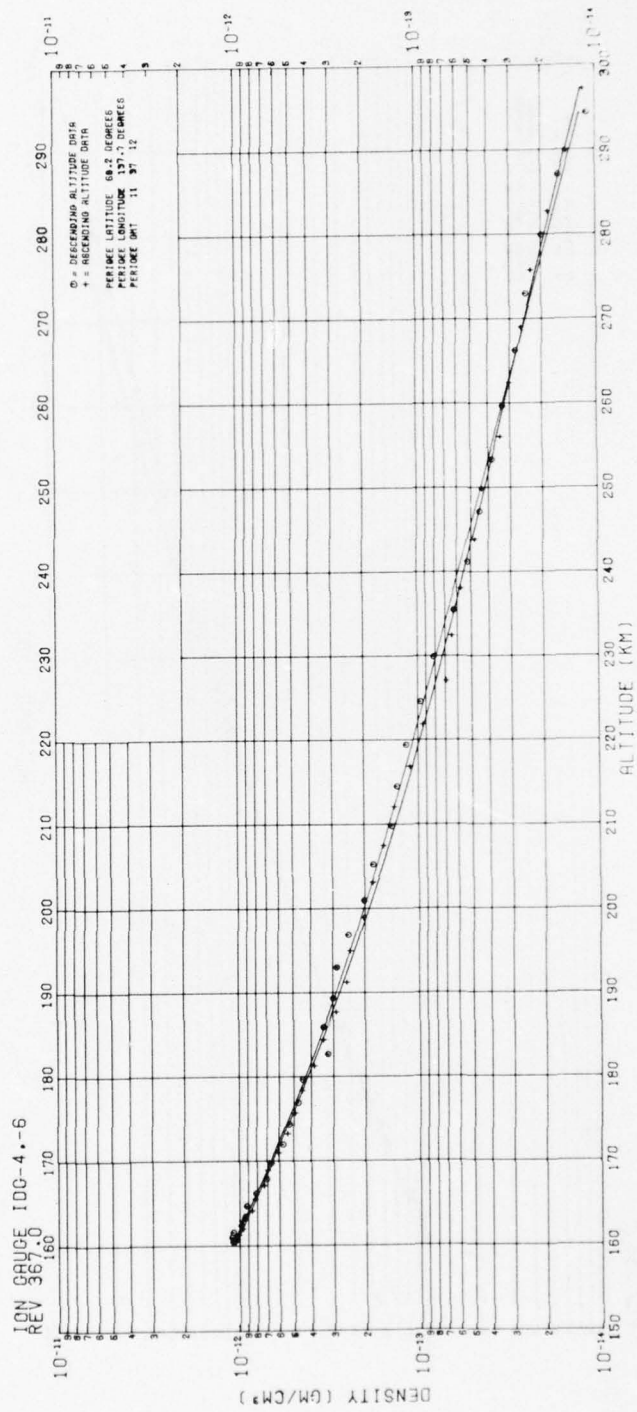


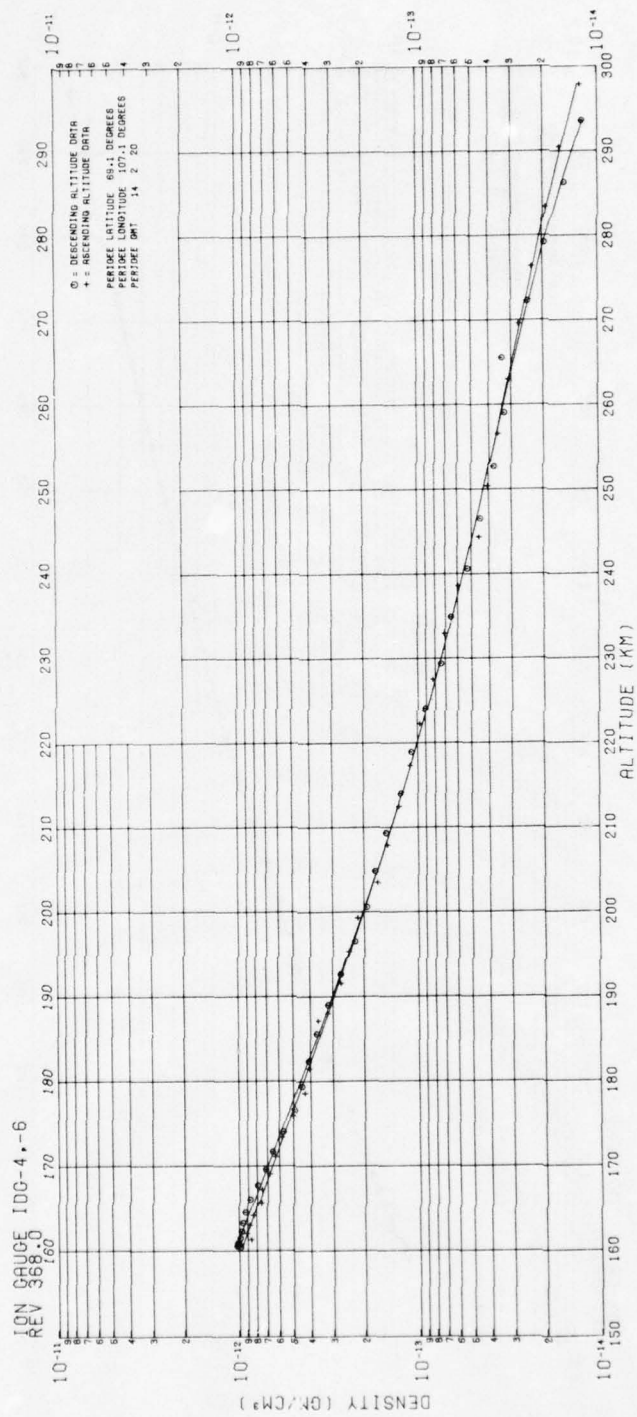


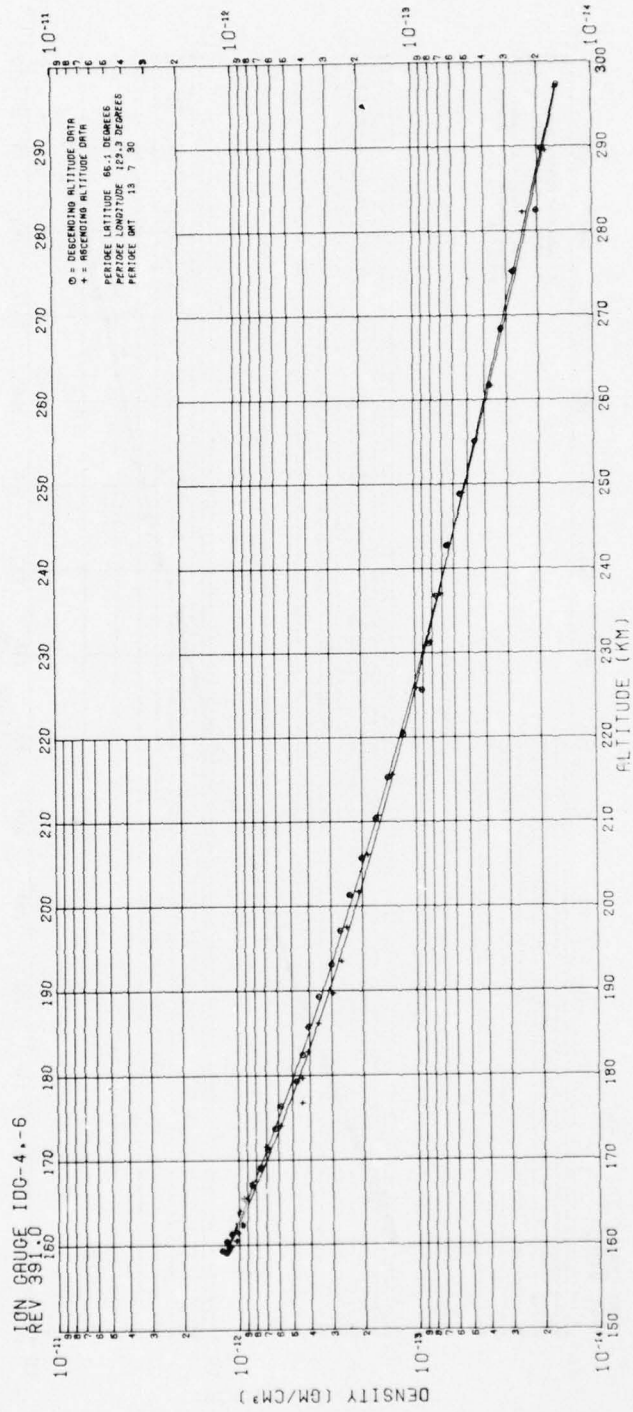


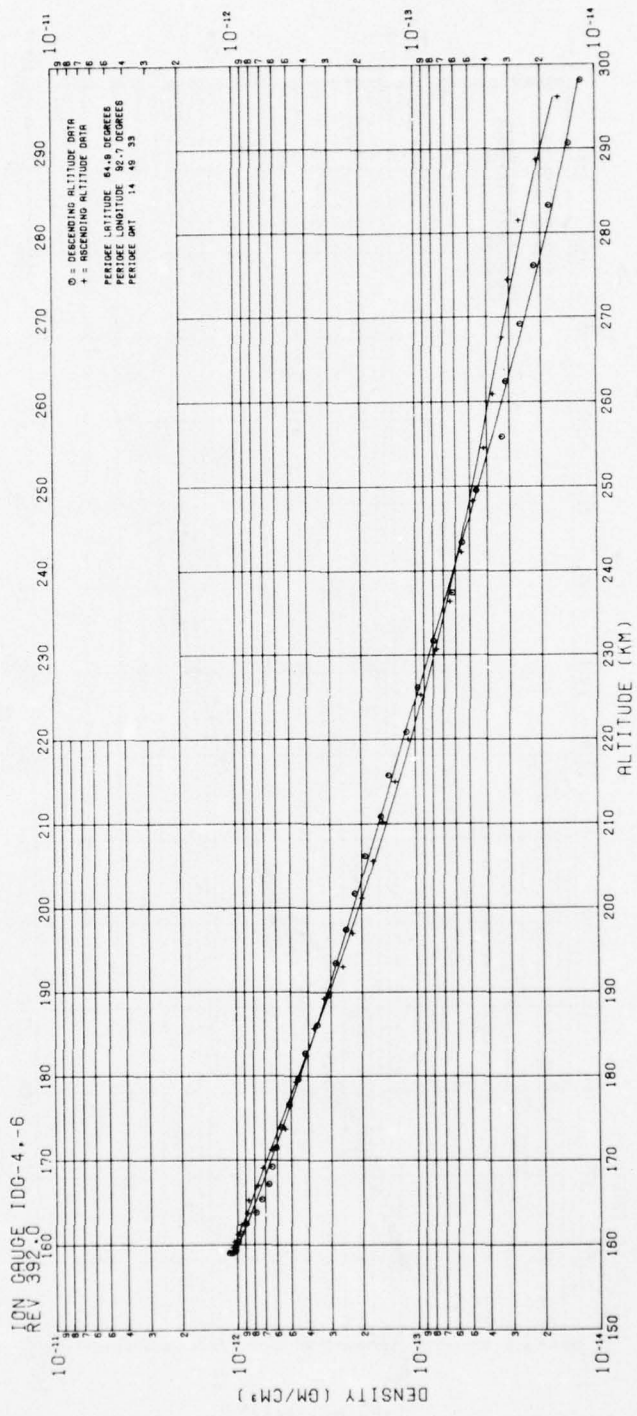






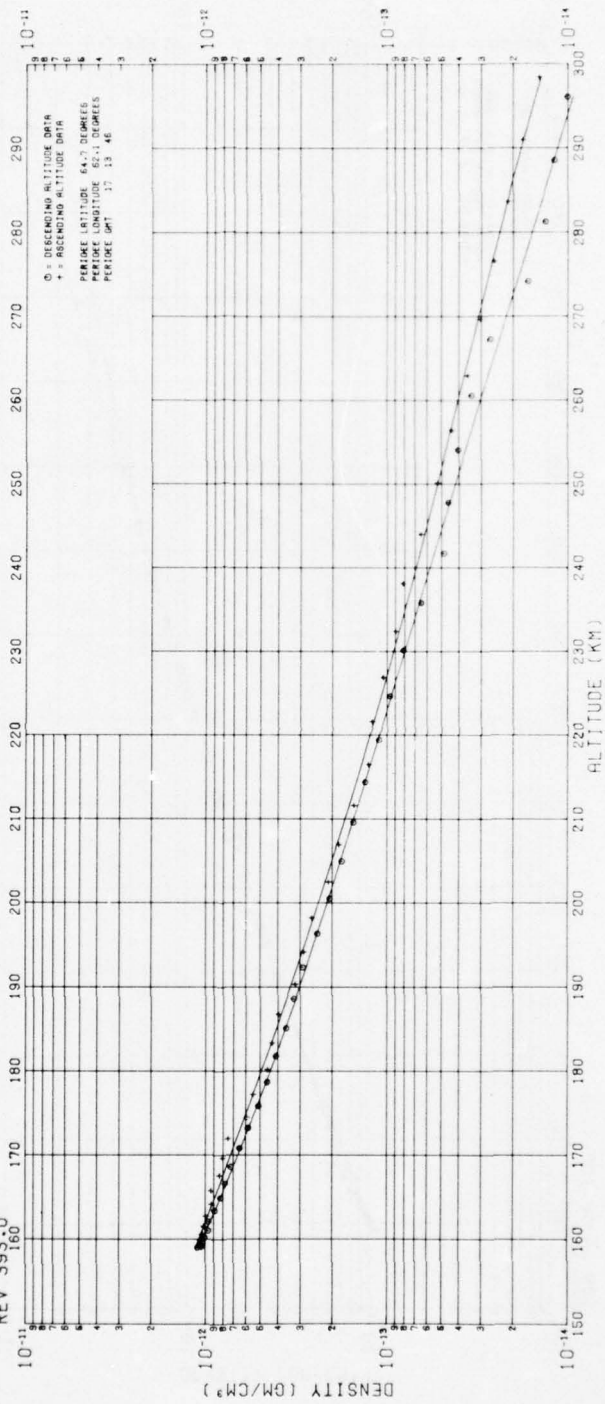




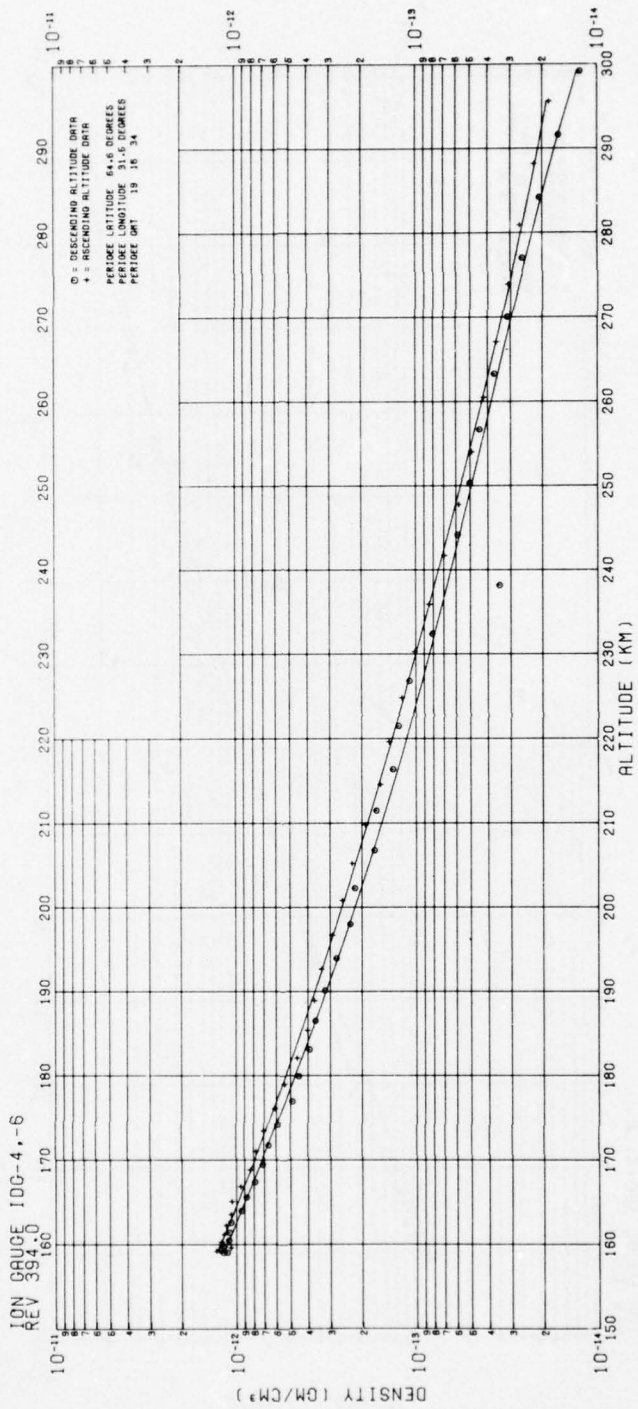


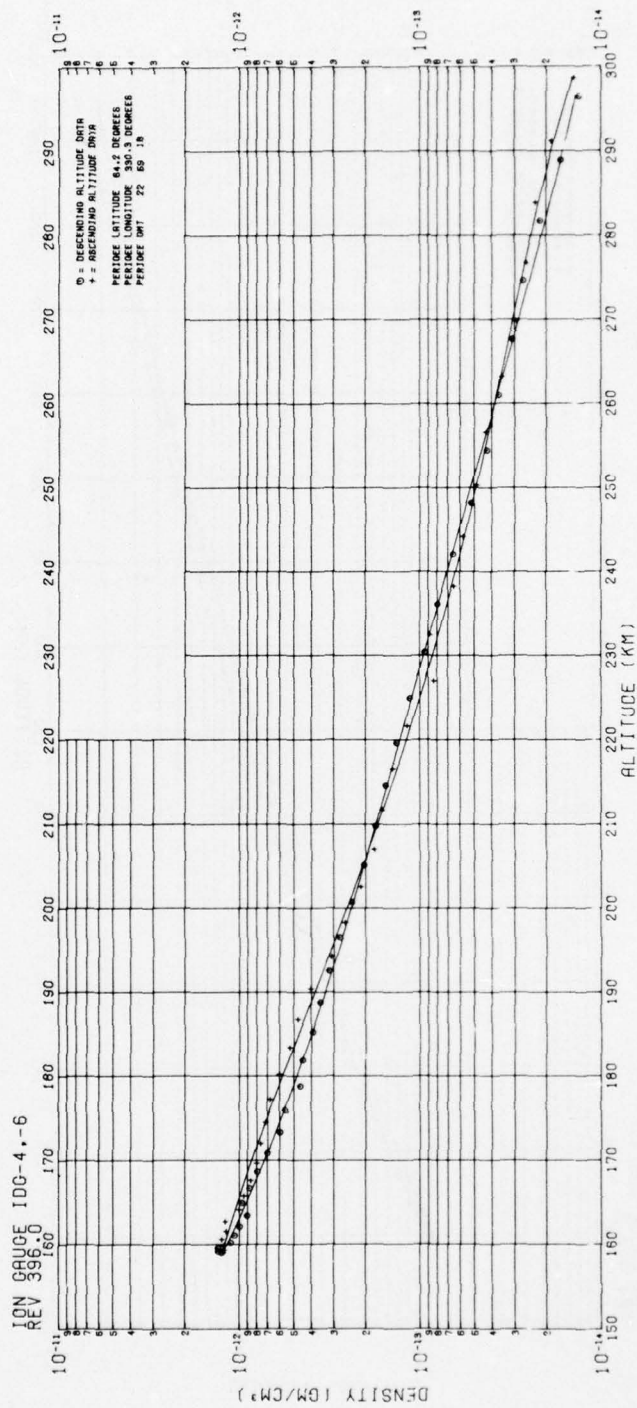
ION GAUGE IDC-4.-6

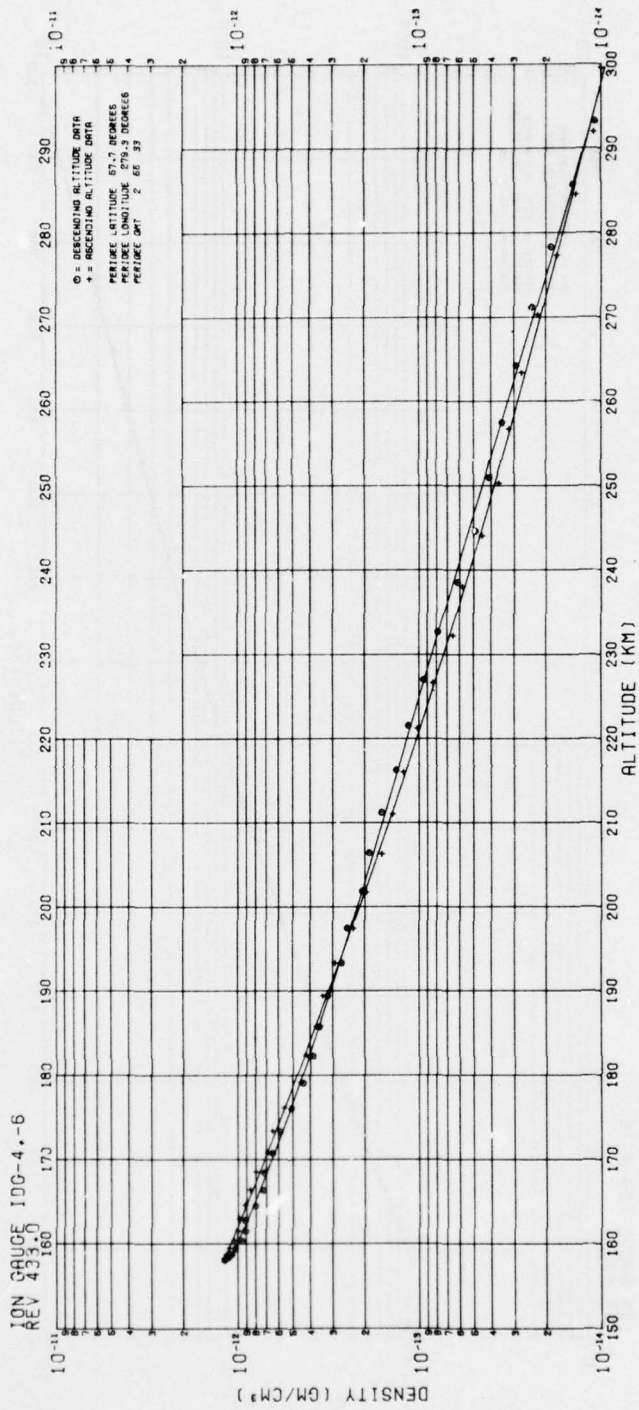
REV 393.0

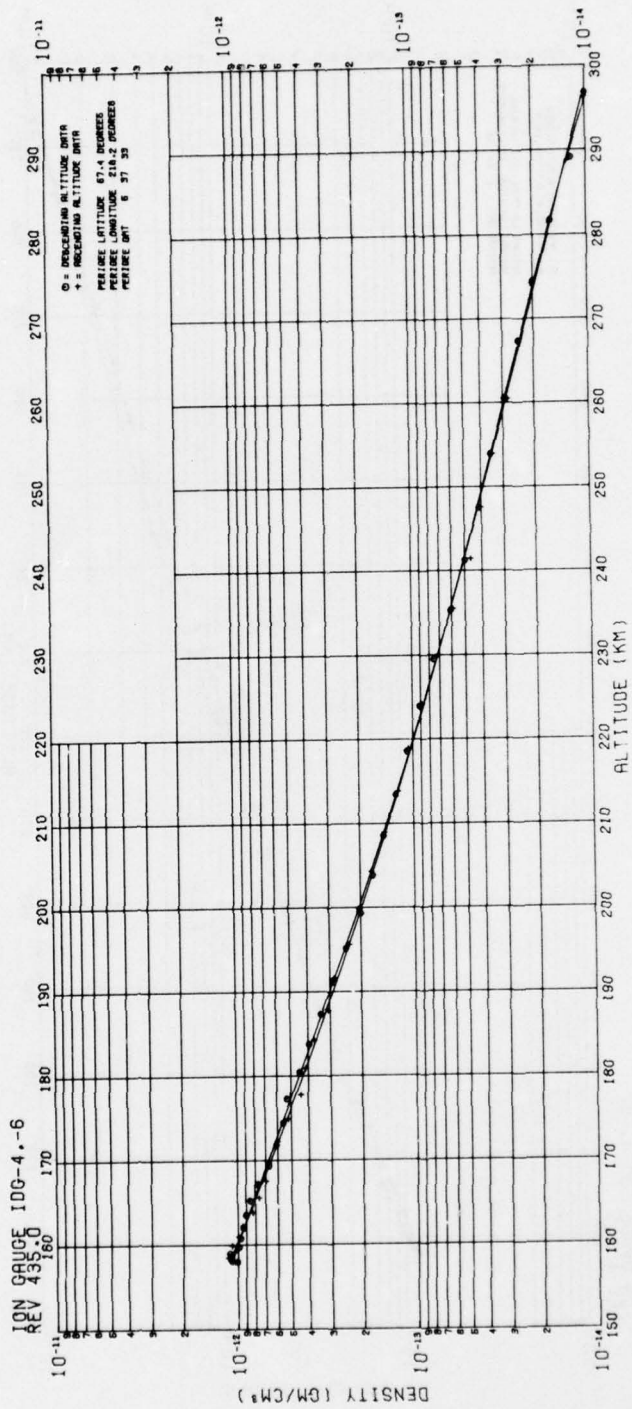


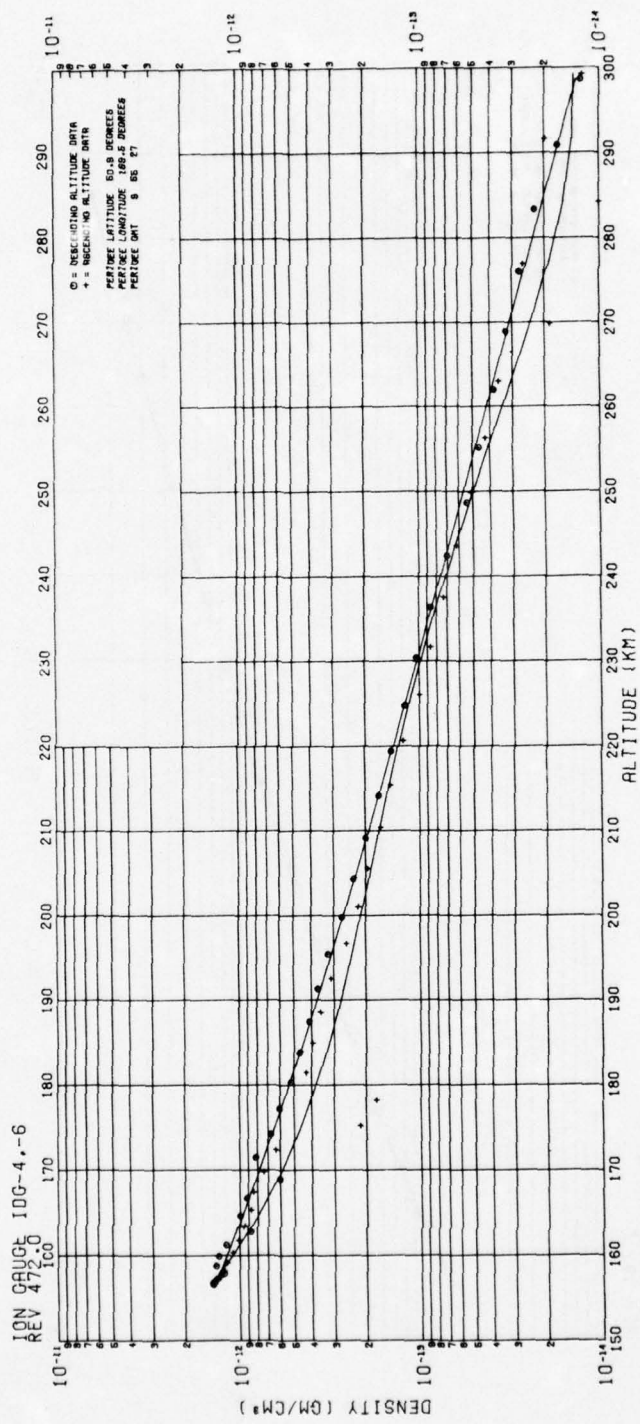
○ - DESCENDING ALTITUDE DATA
△ - ASCENDING ALTITUDE DATA
PERIODIC ALTITUDE 64.7 DEGREES
PERIODIC ALTITUDE 65.7 DEGREES
PERIODIC DATA 37 38 40

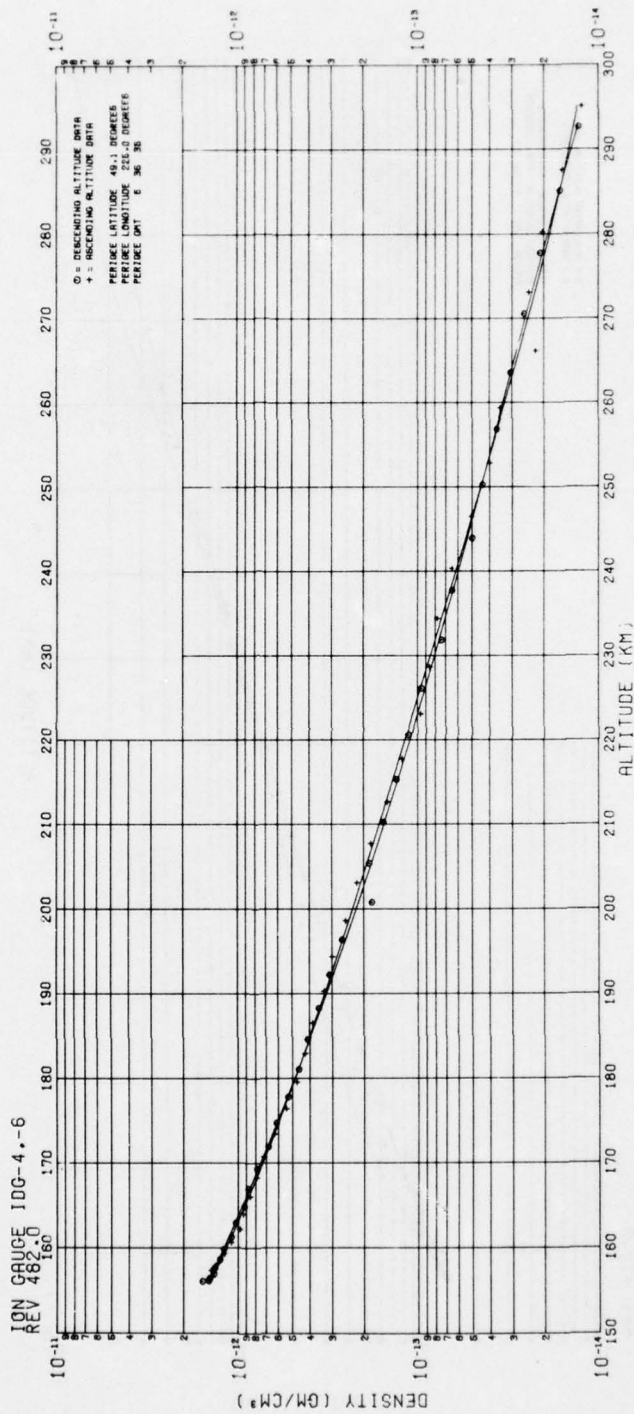


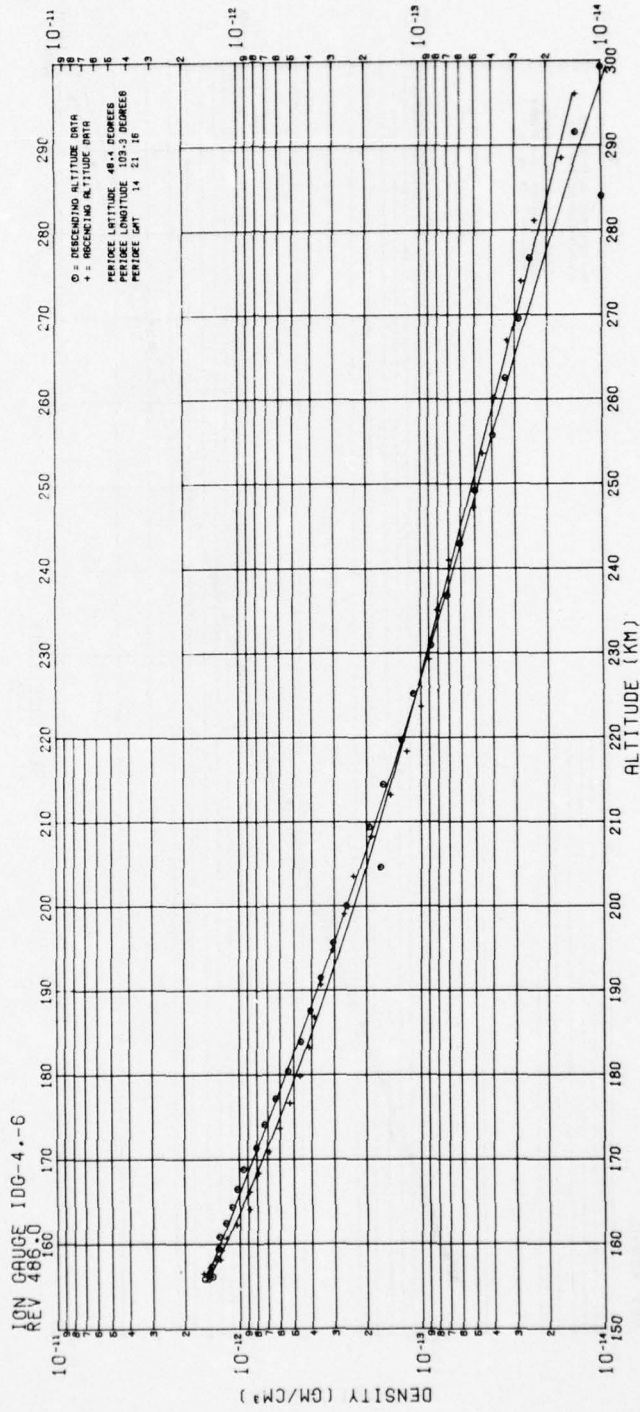


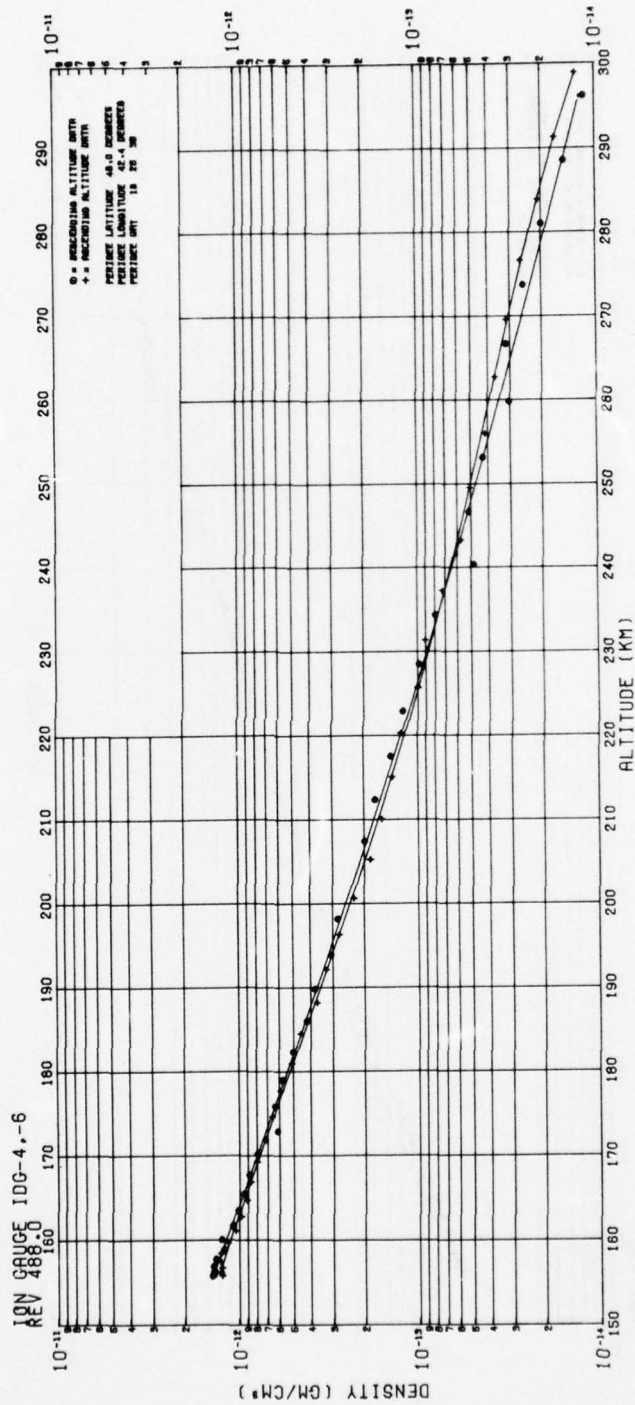


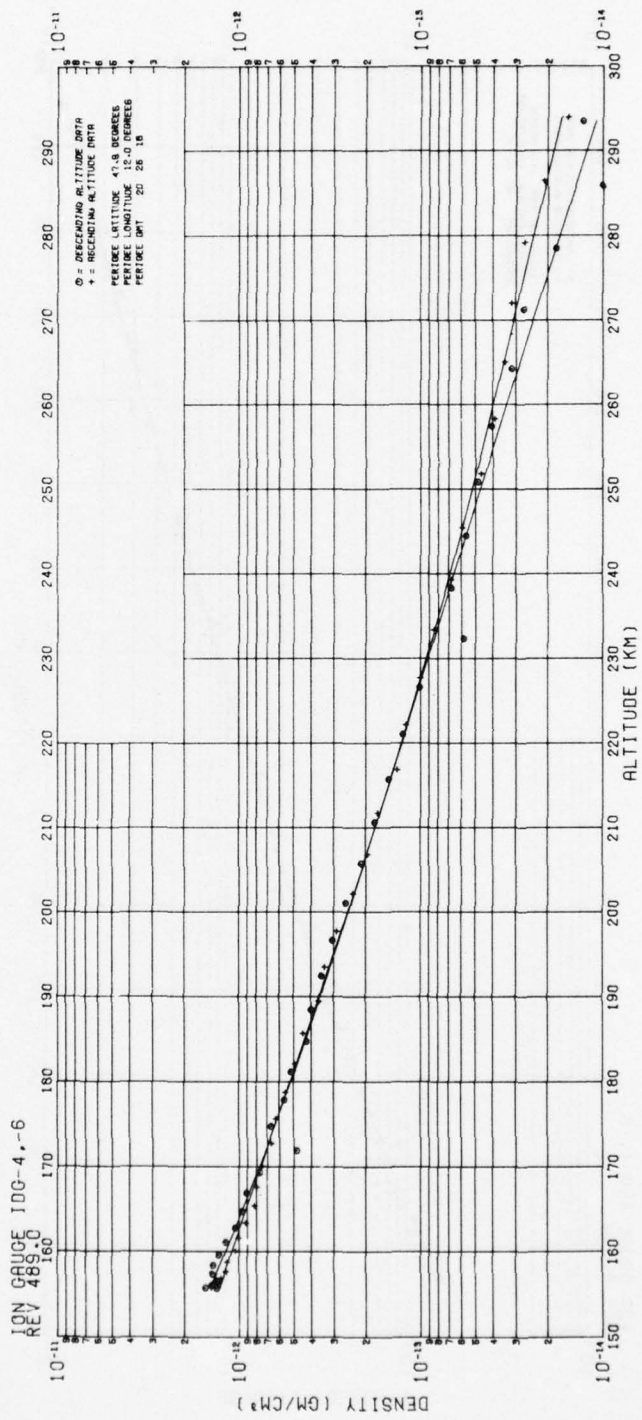


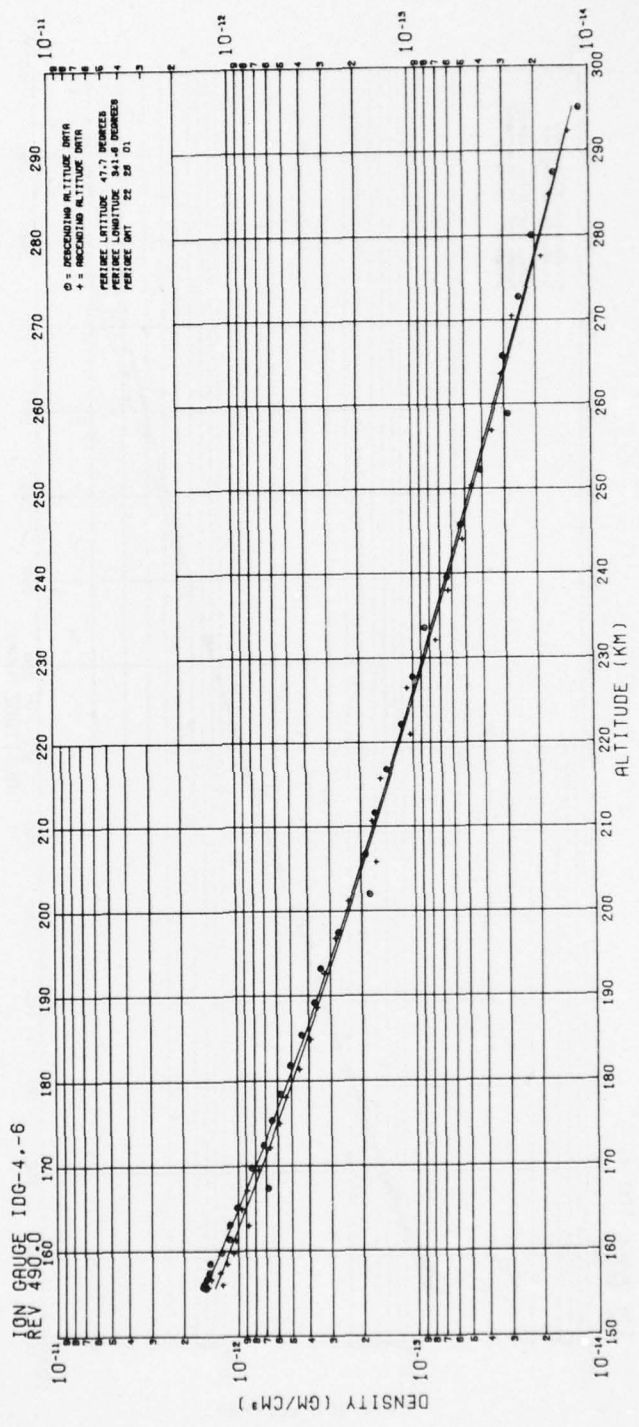












AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

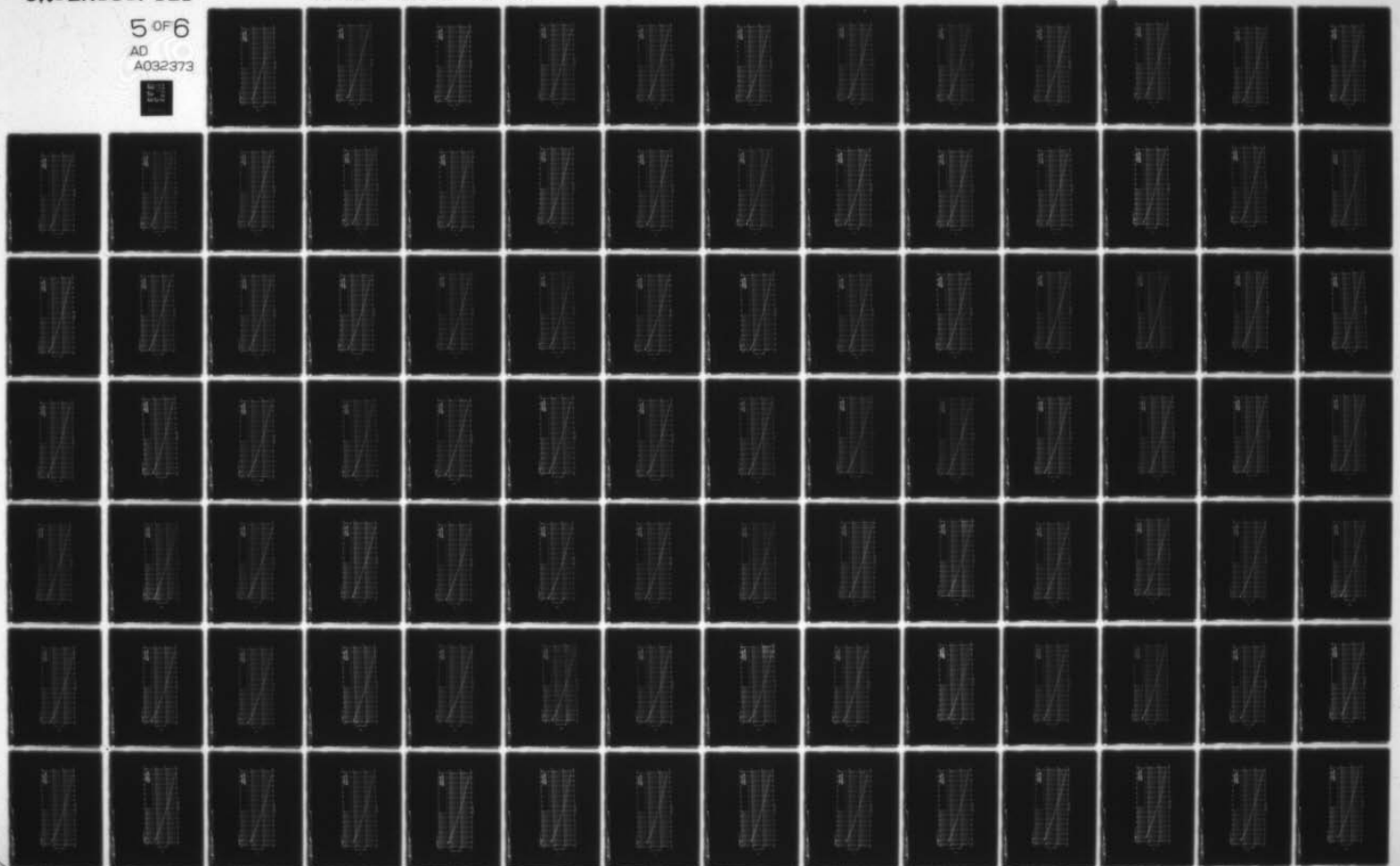
F/G 4/1

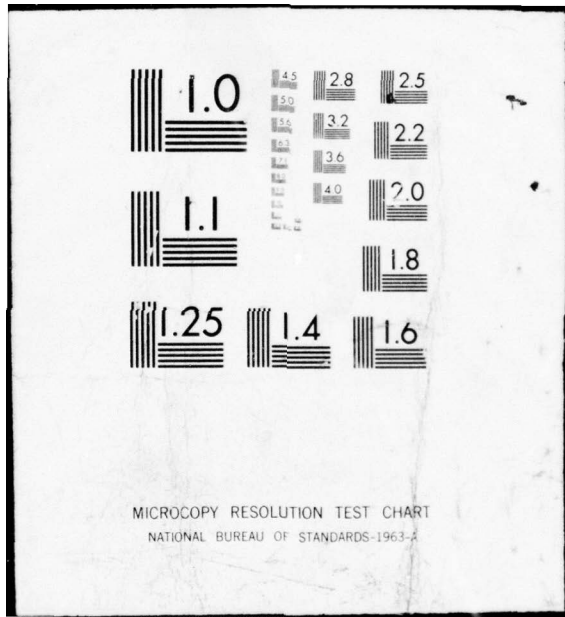
UNCLASSIFIED

NL

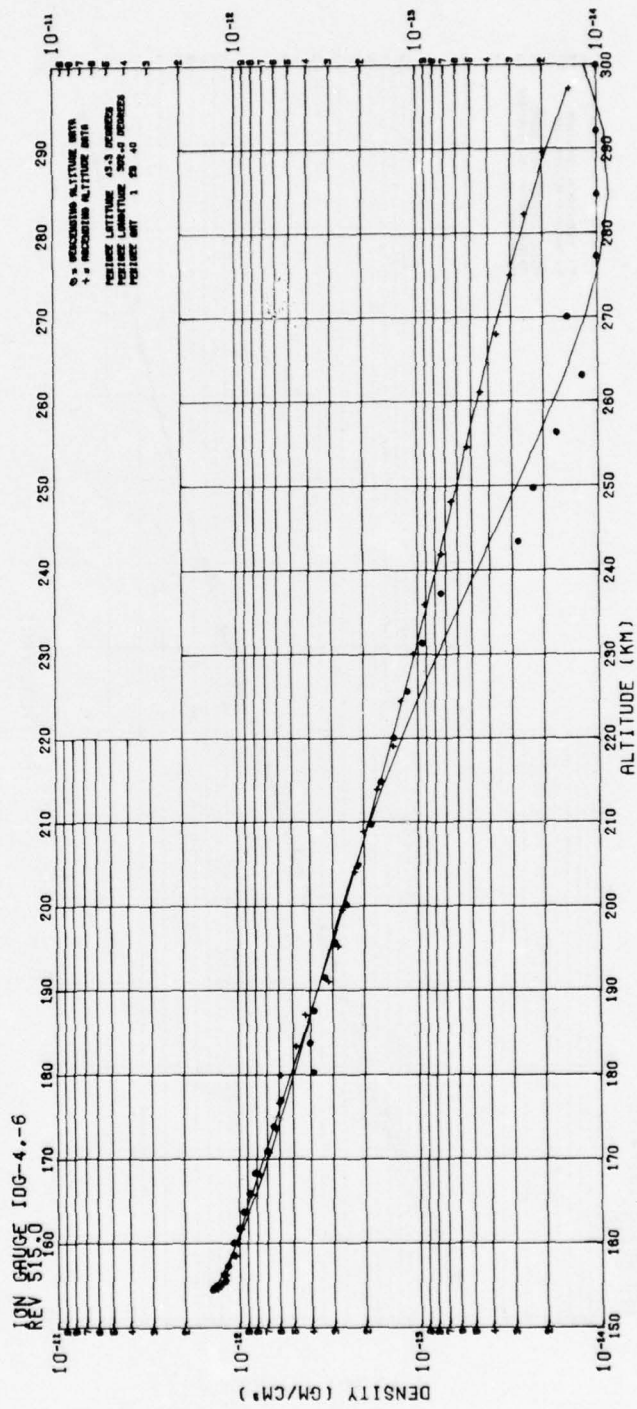
5 OF 6

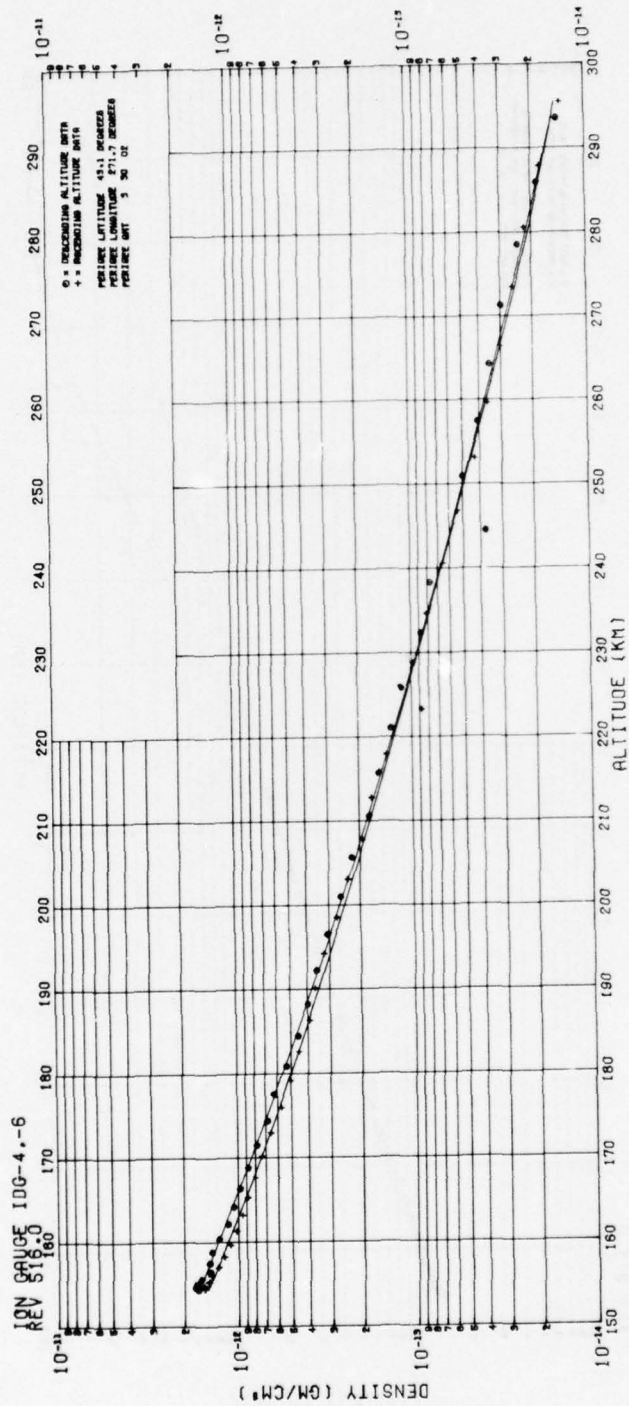
AD
A032373

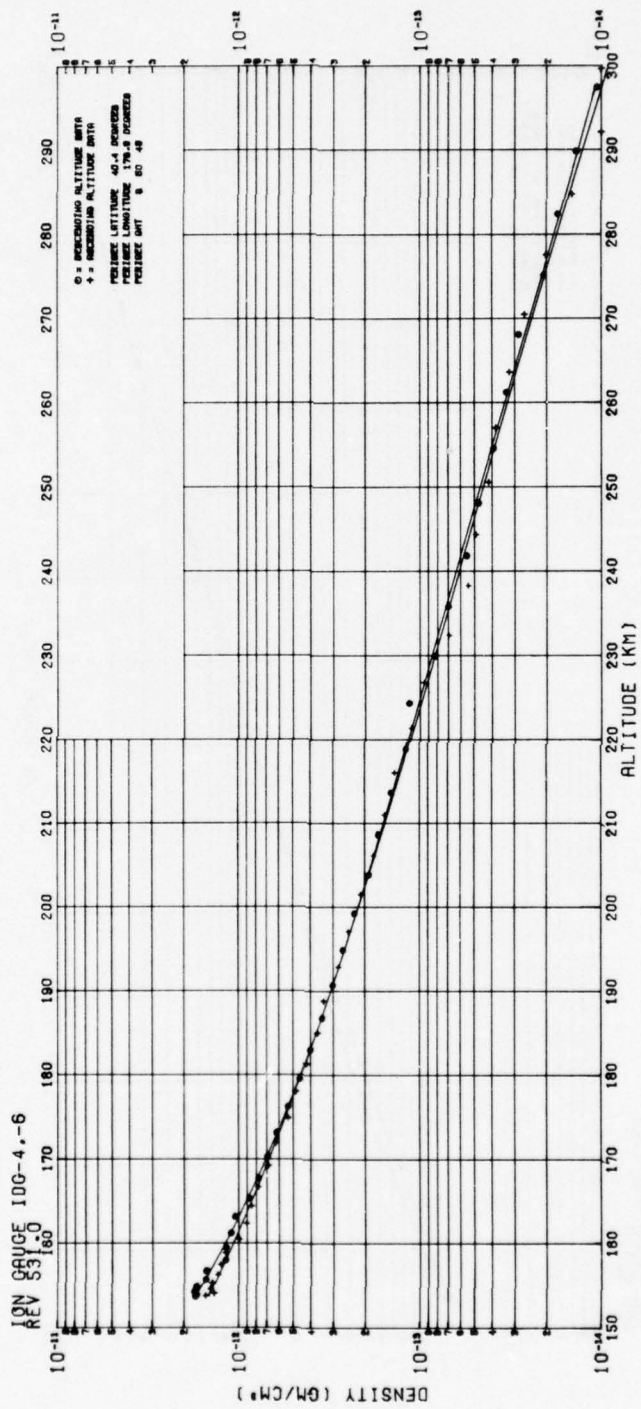


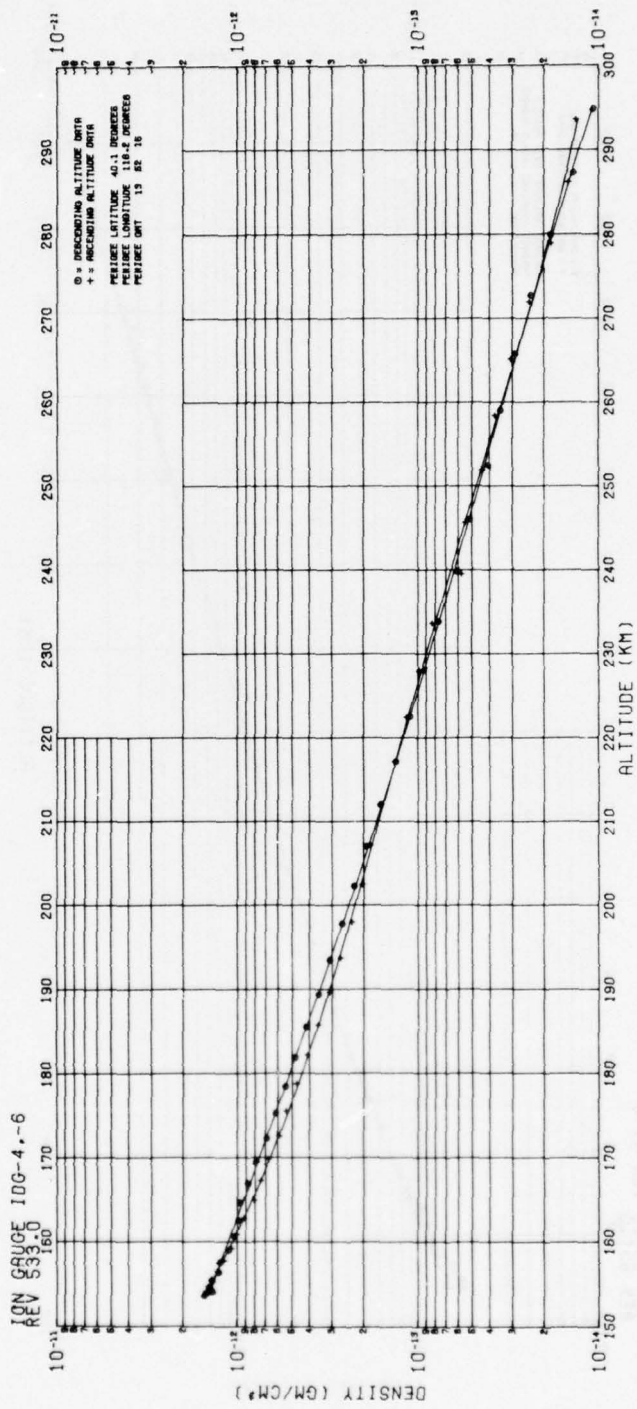


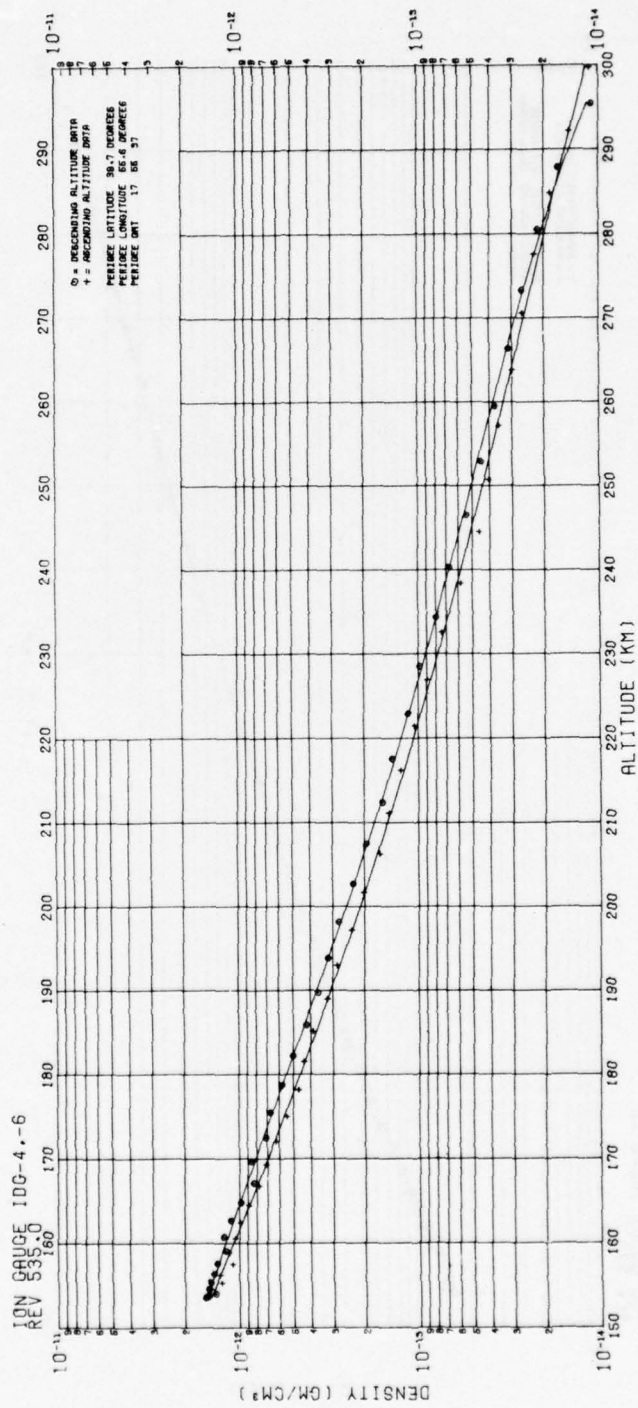
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

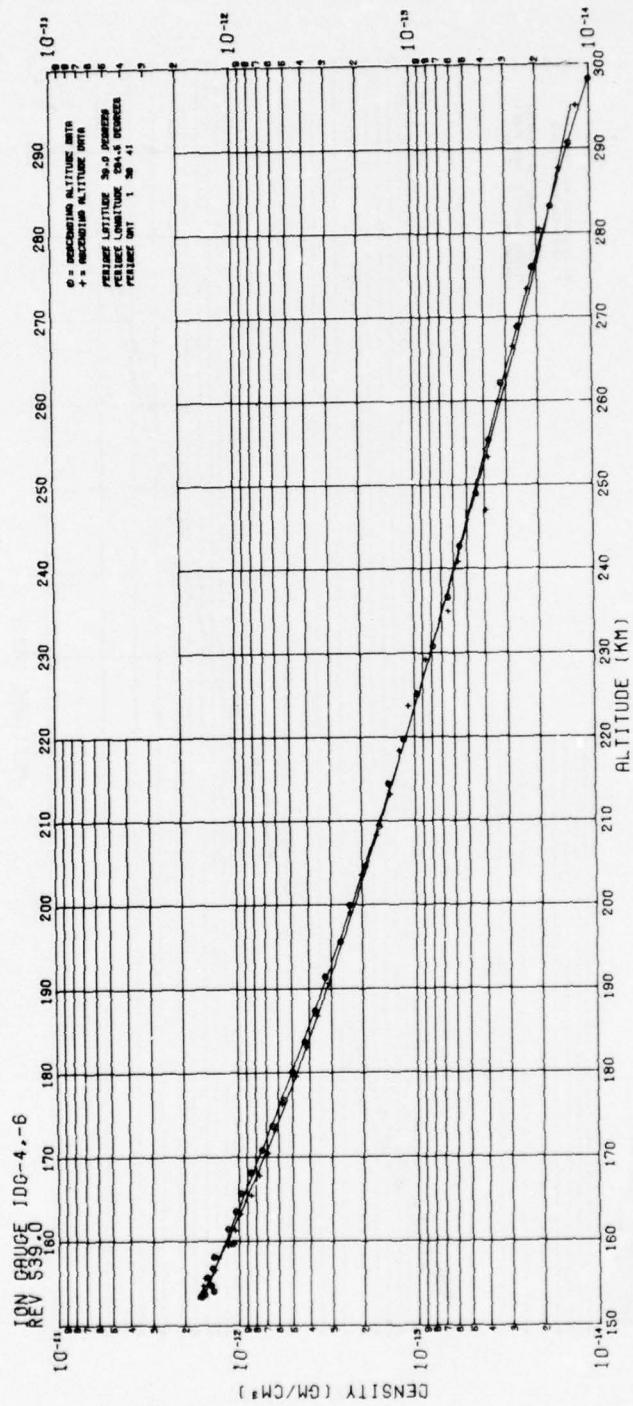


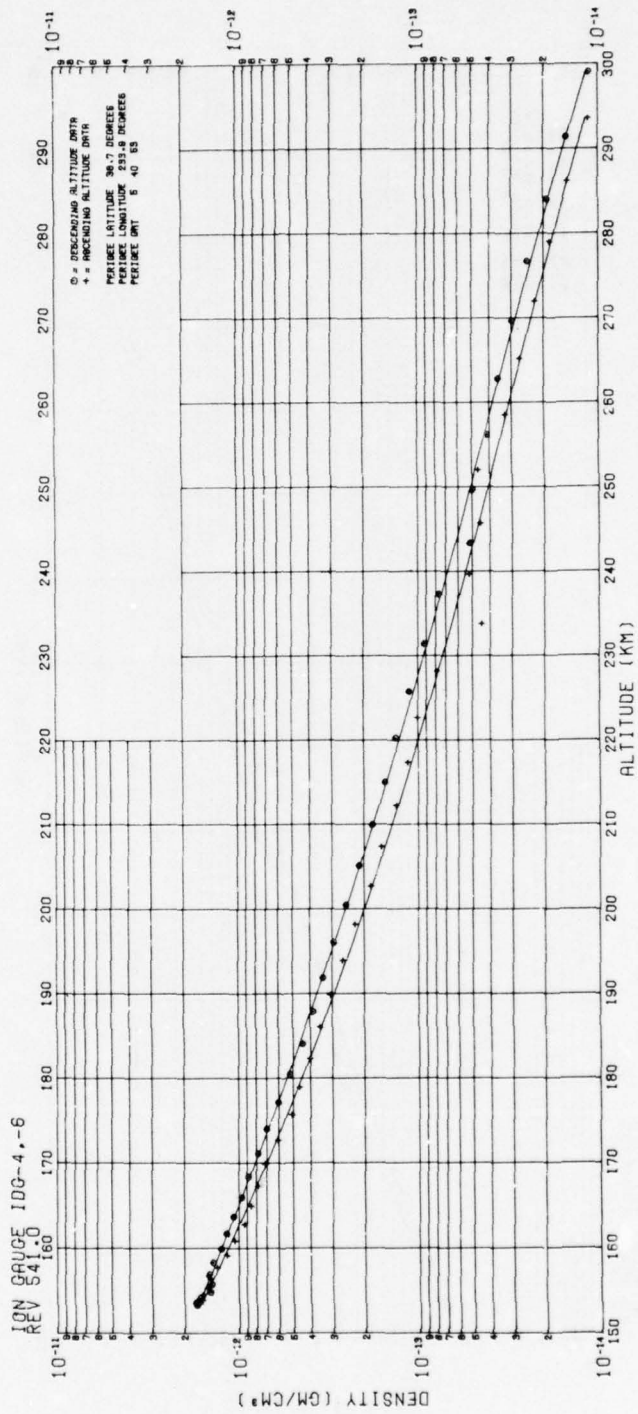


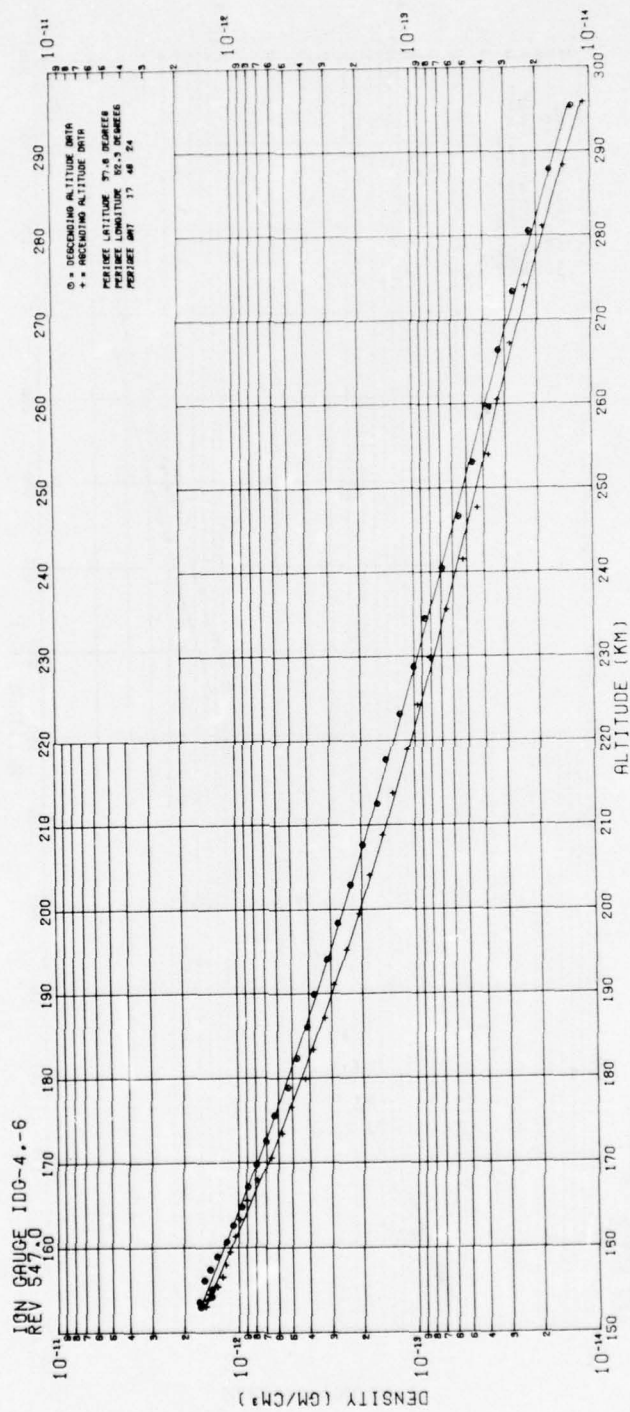


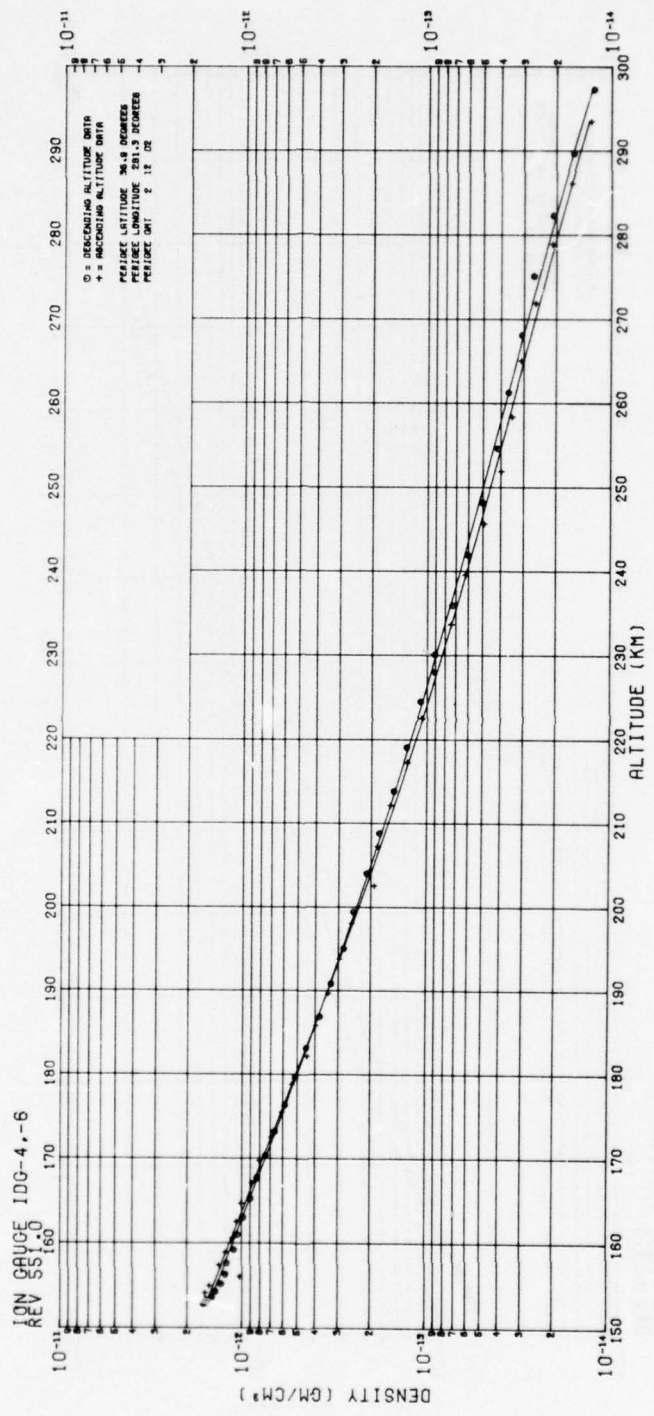


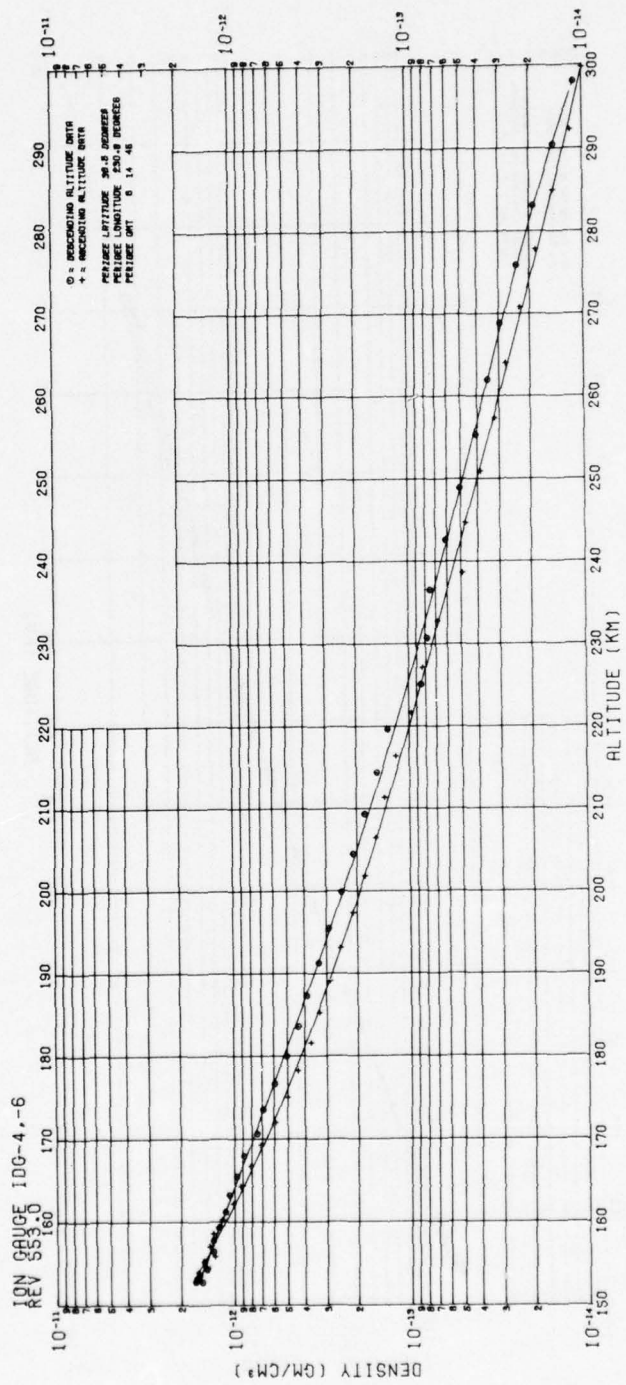


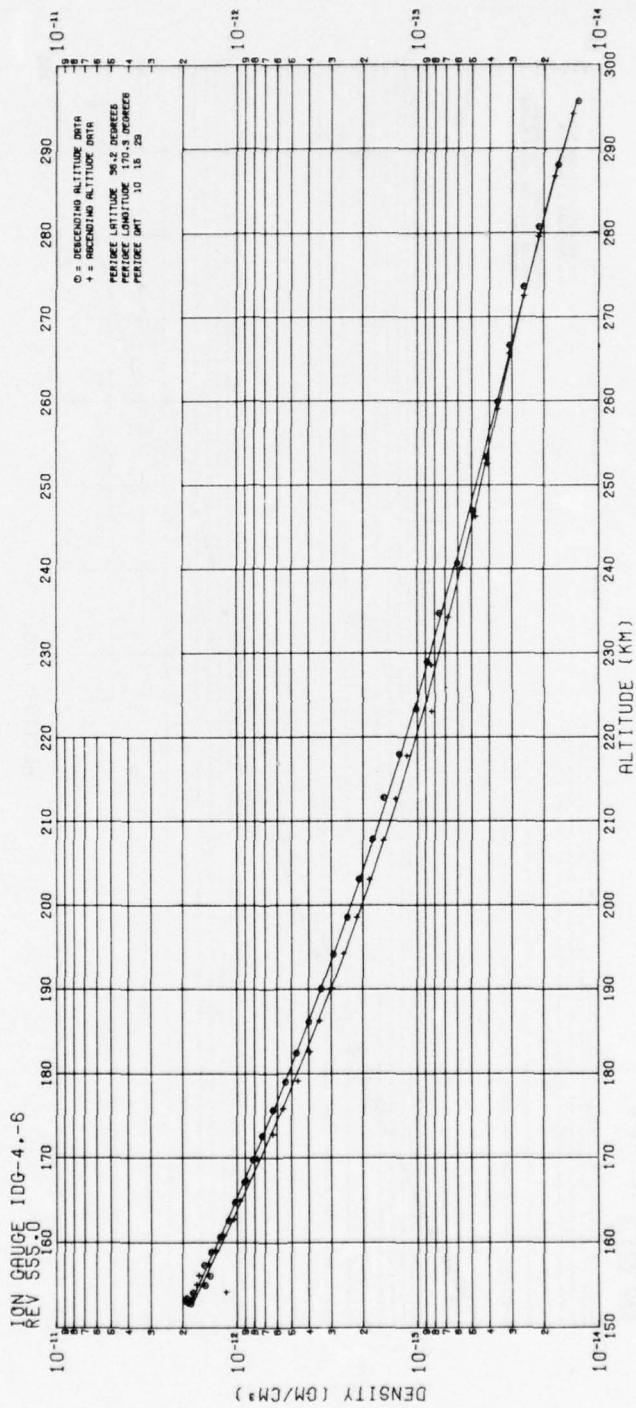


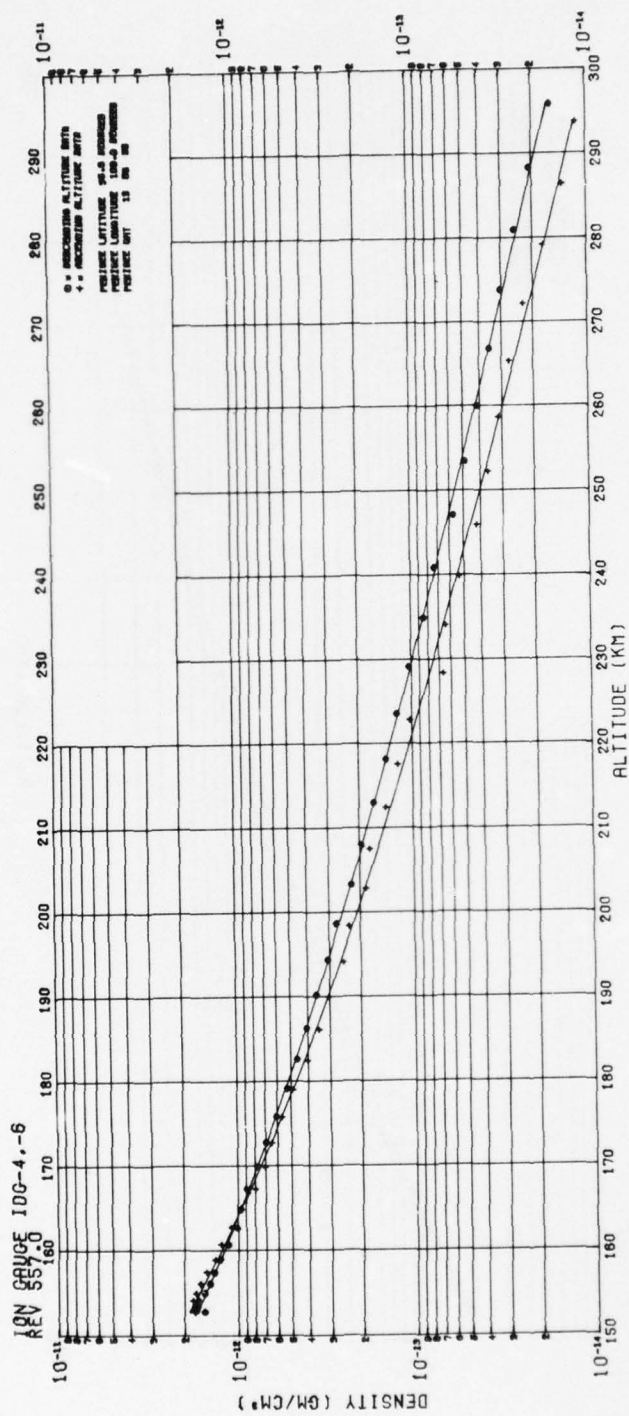


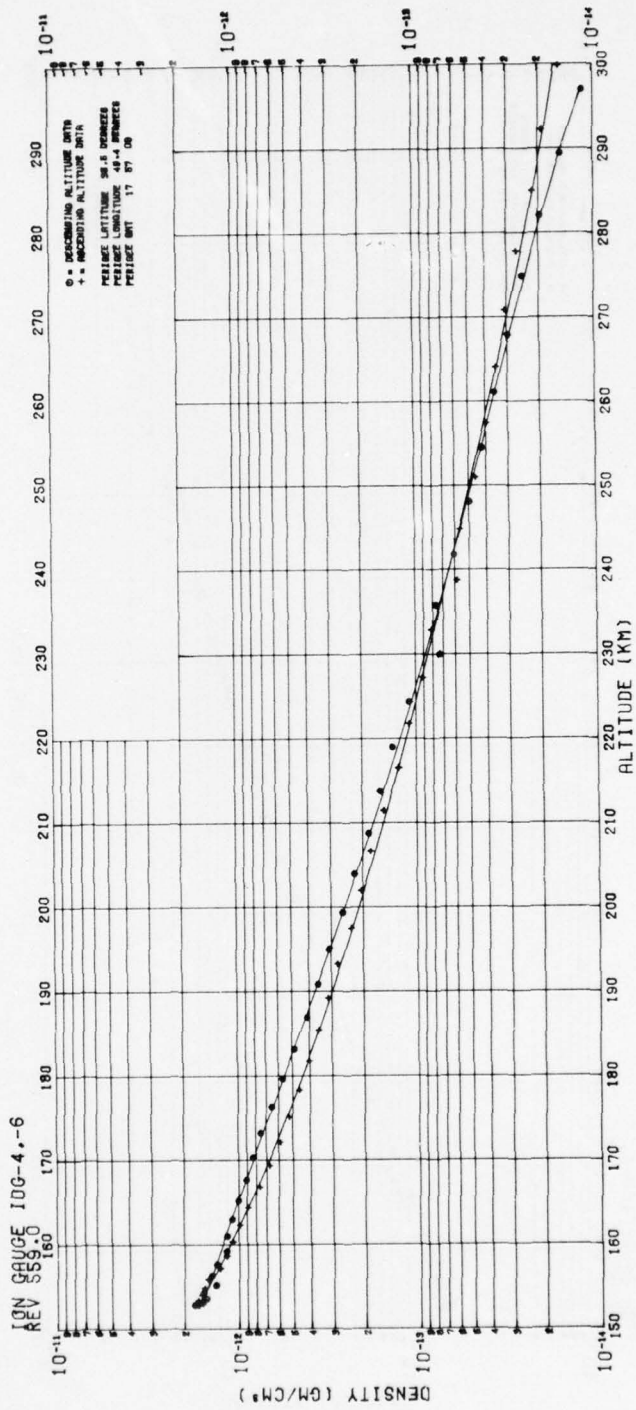


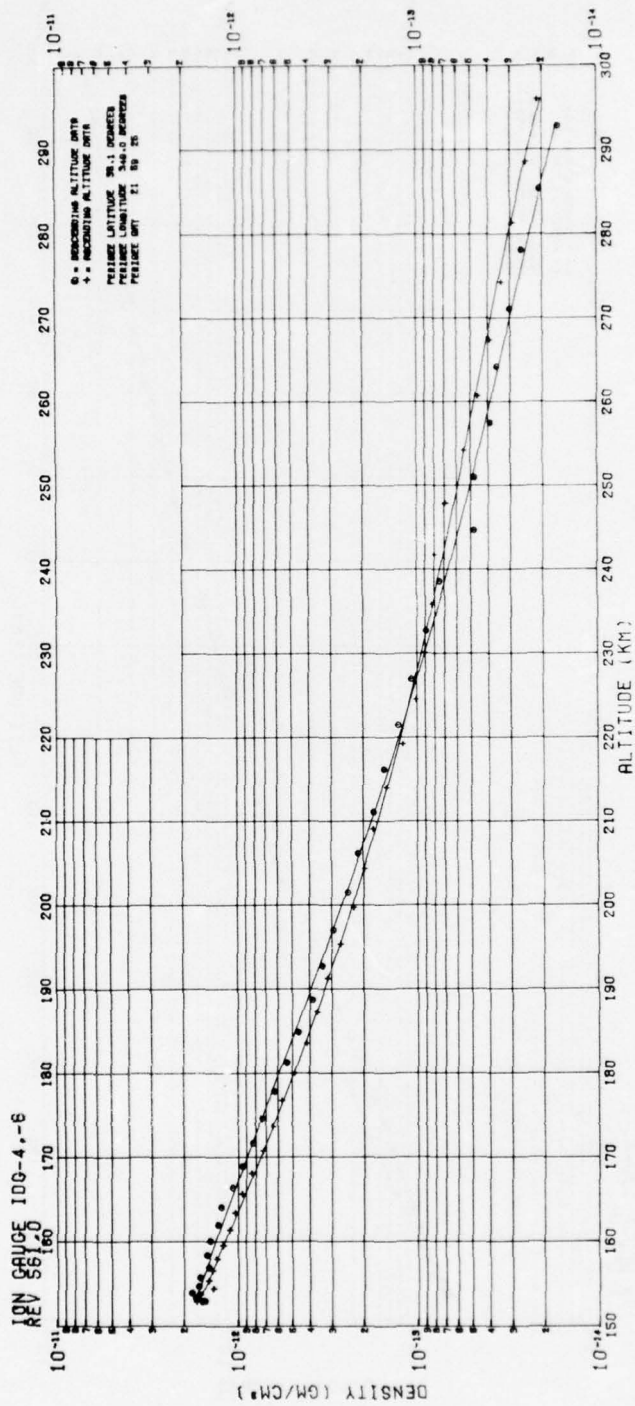


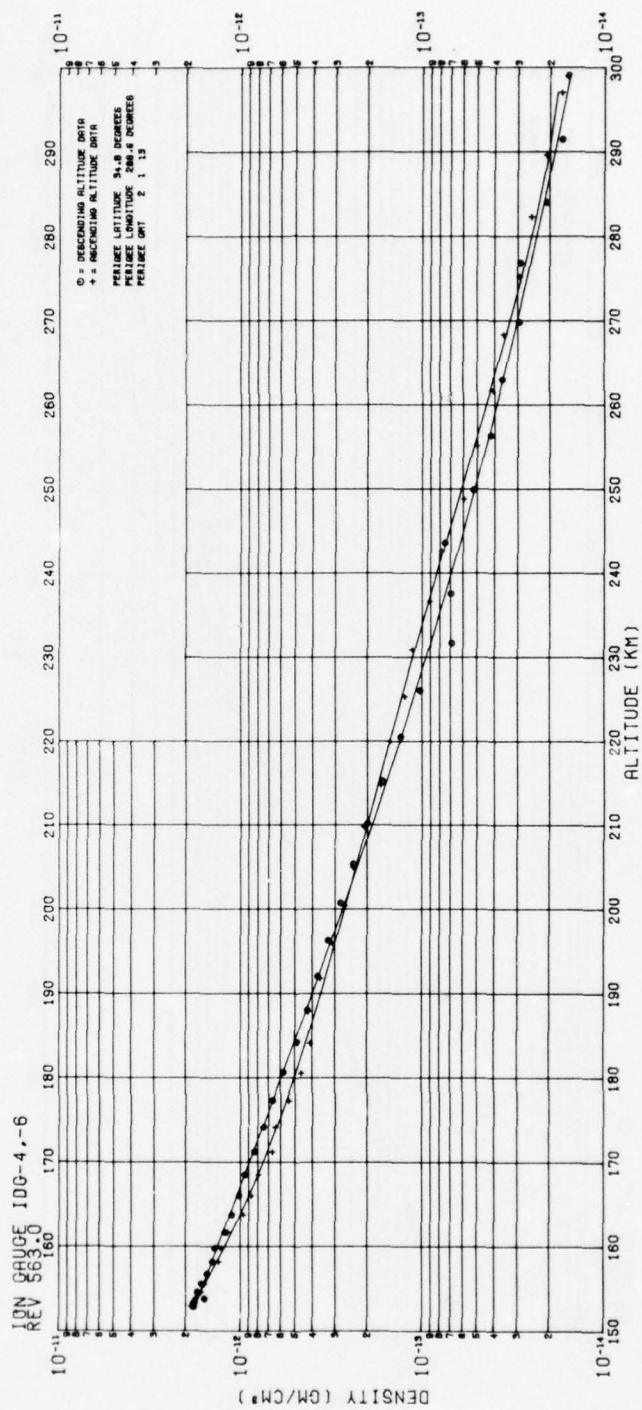


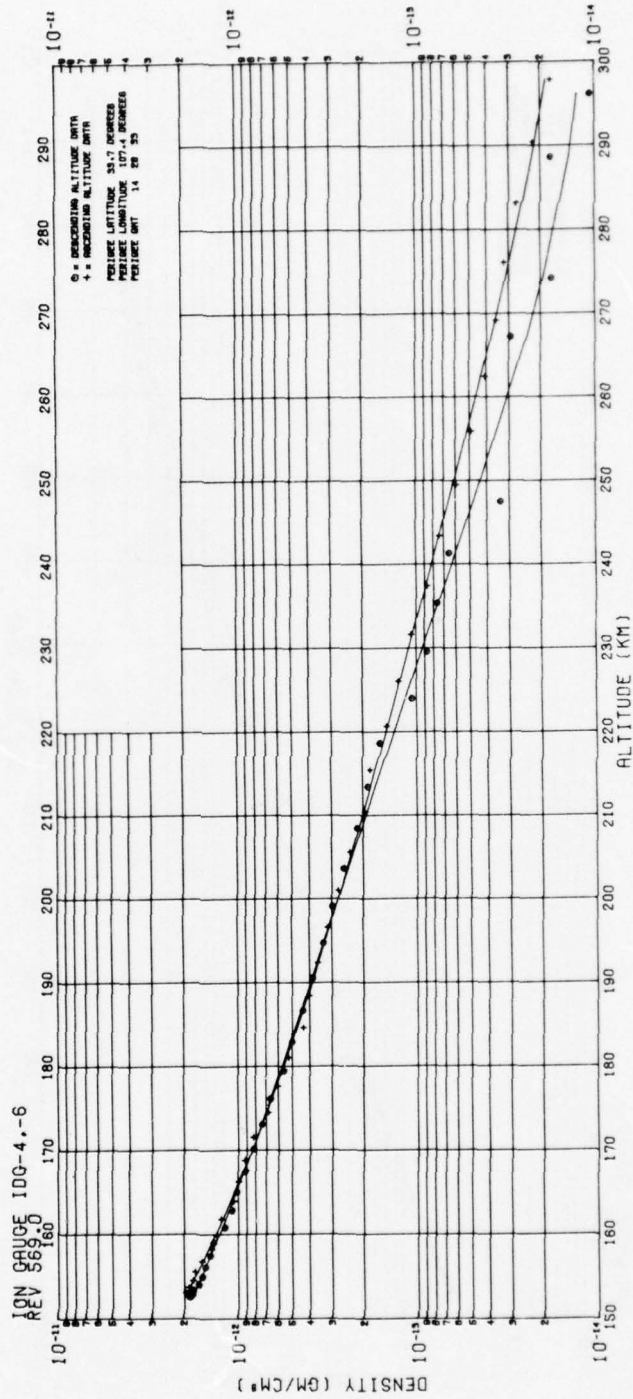


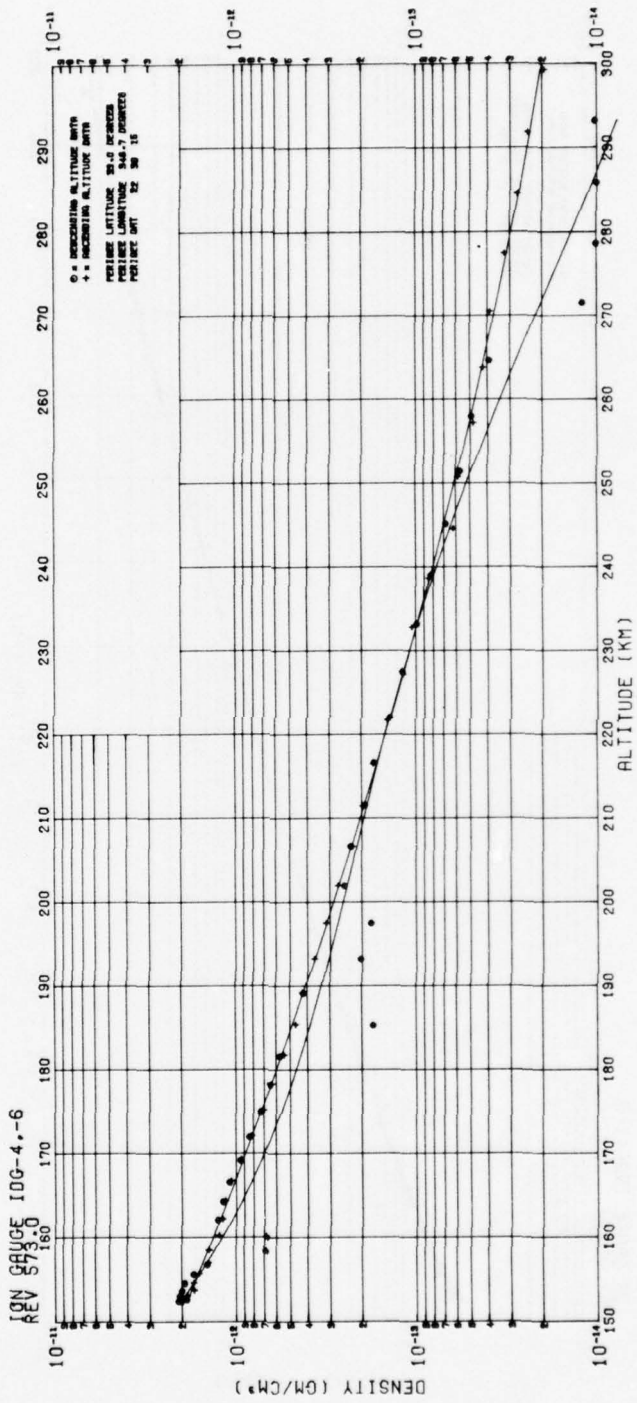


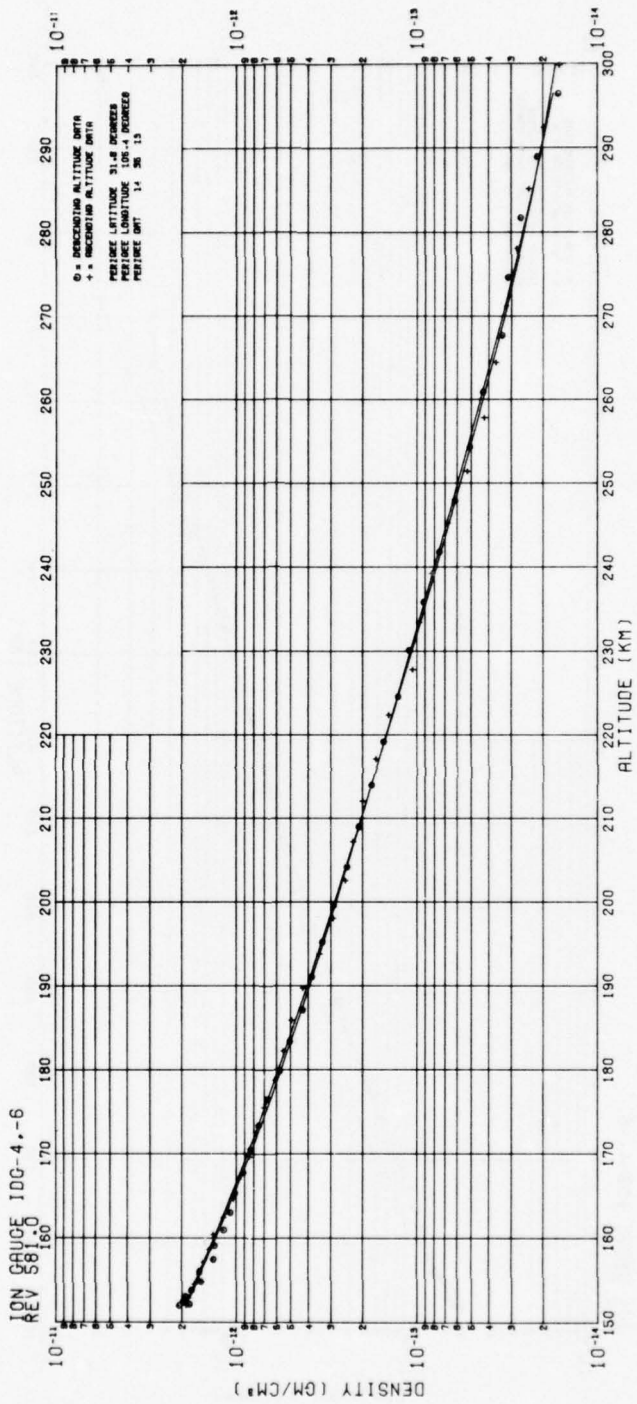


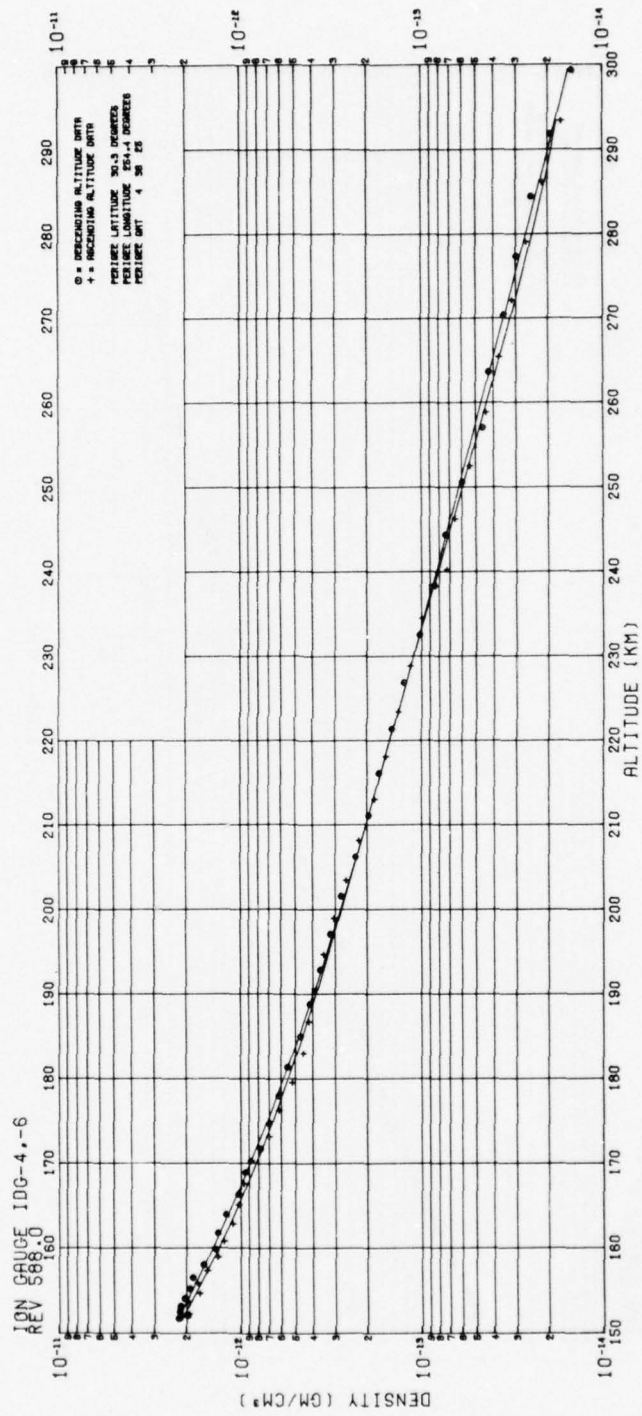


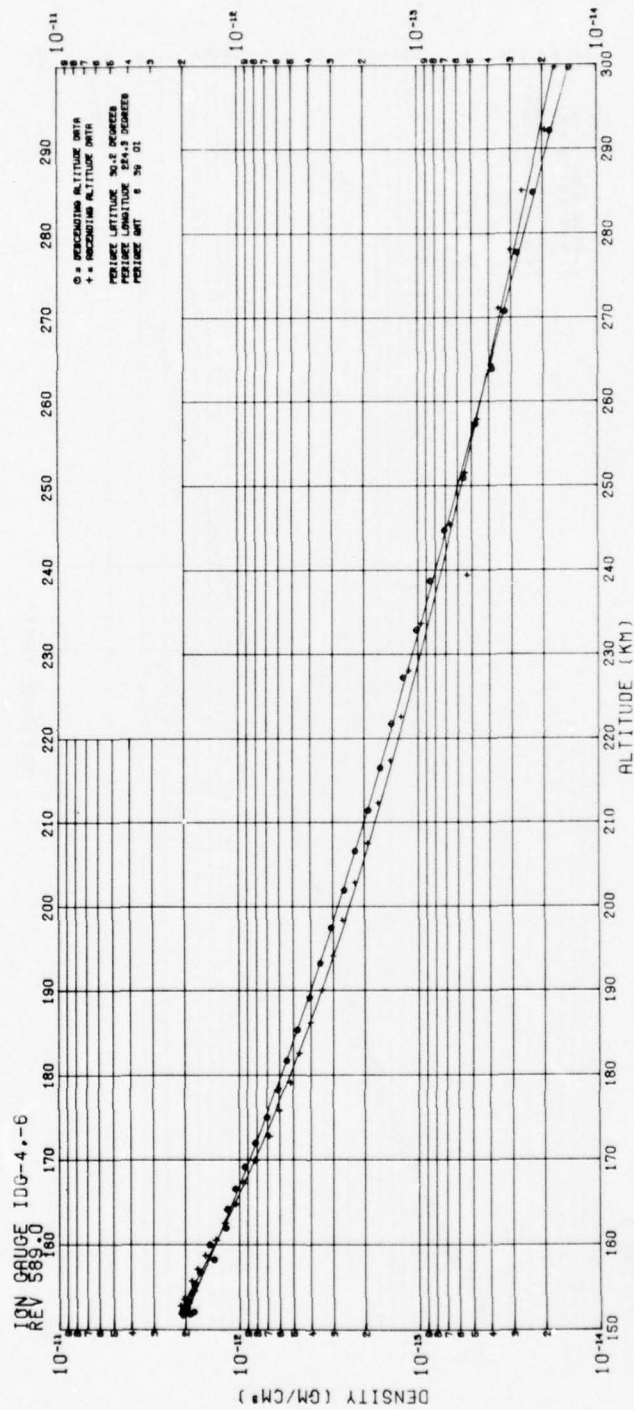


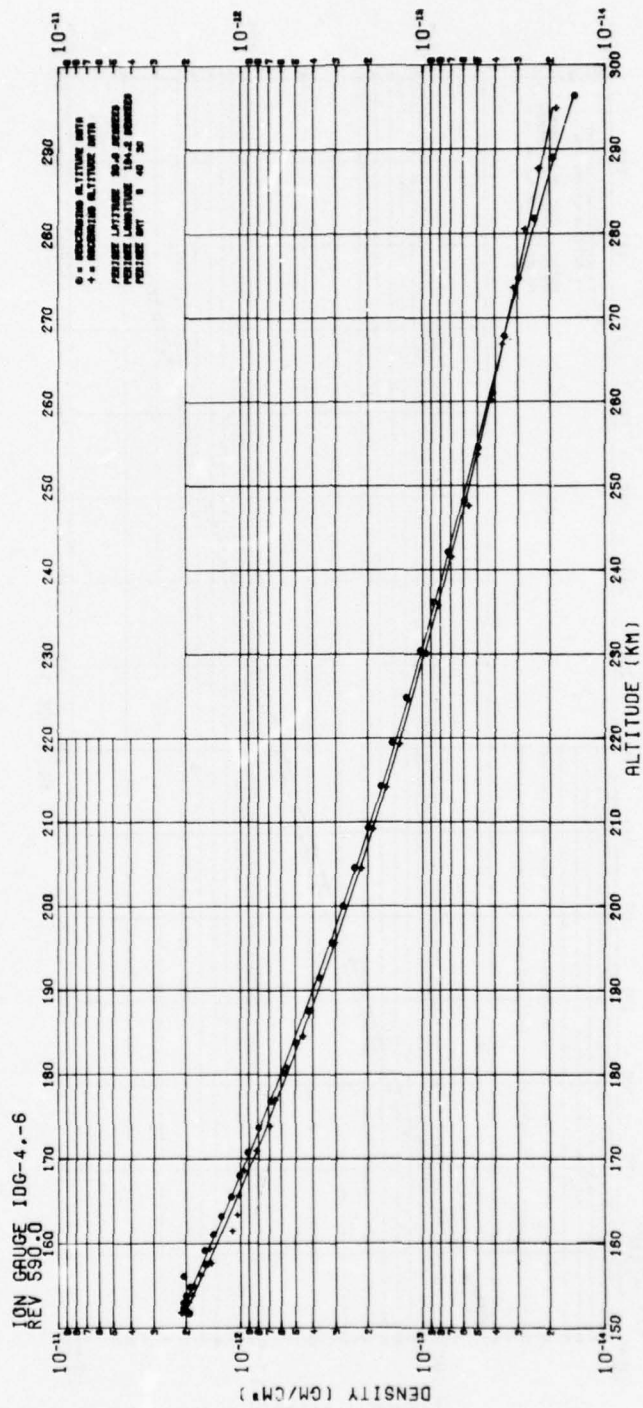


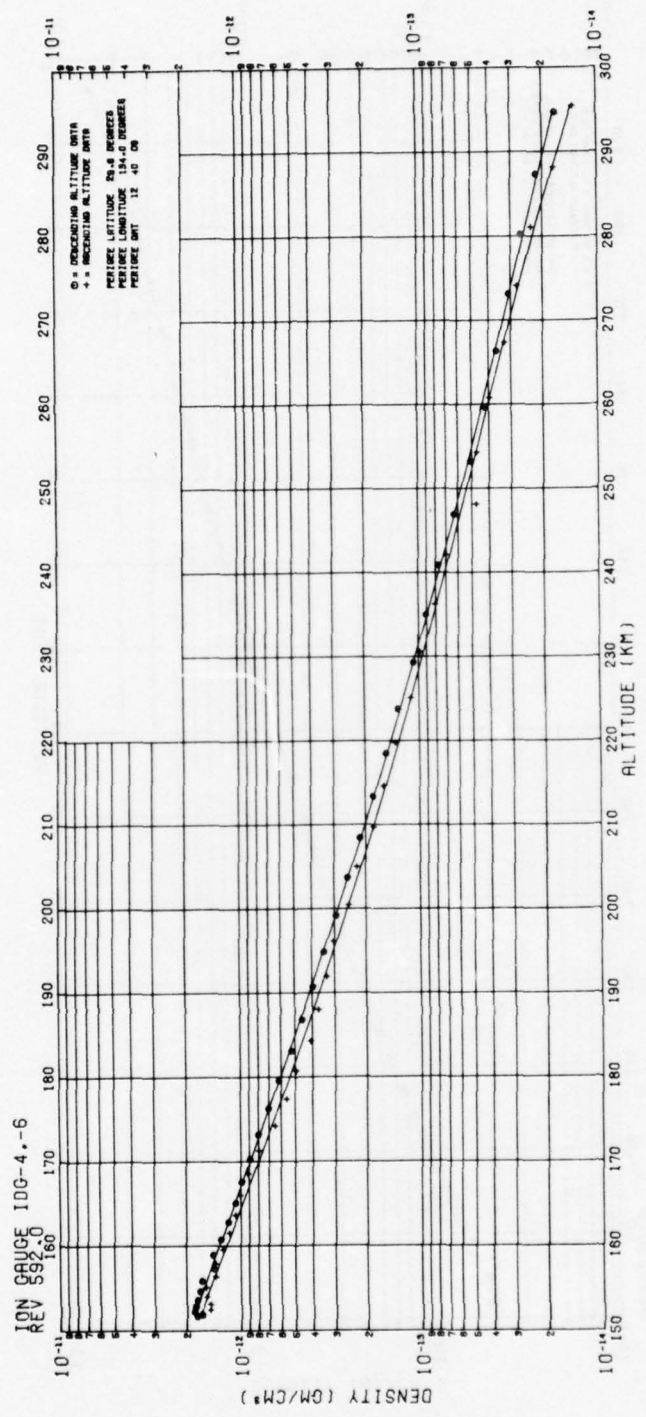


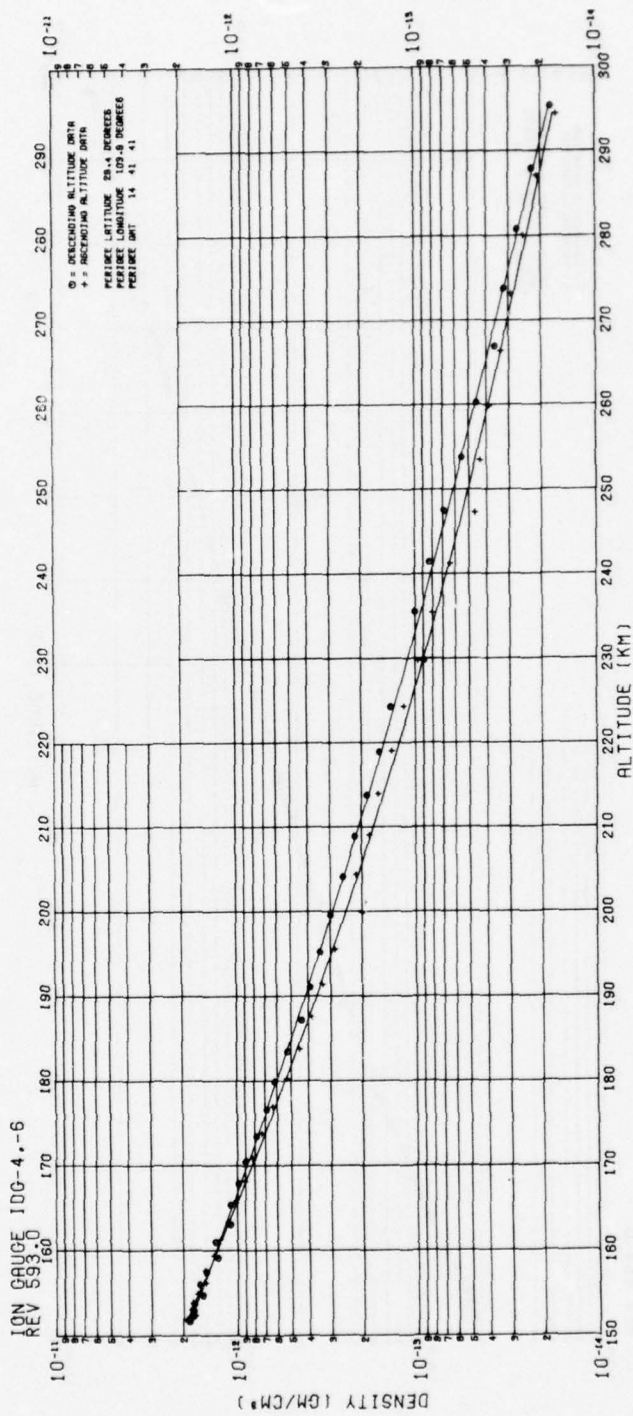


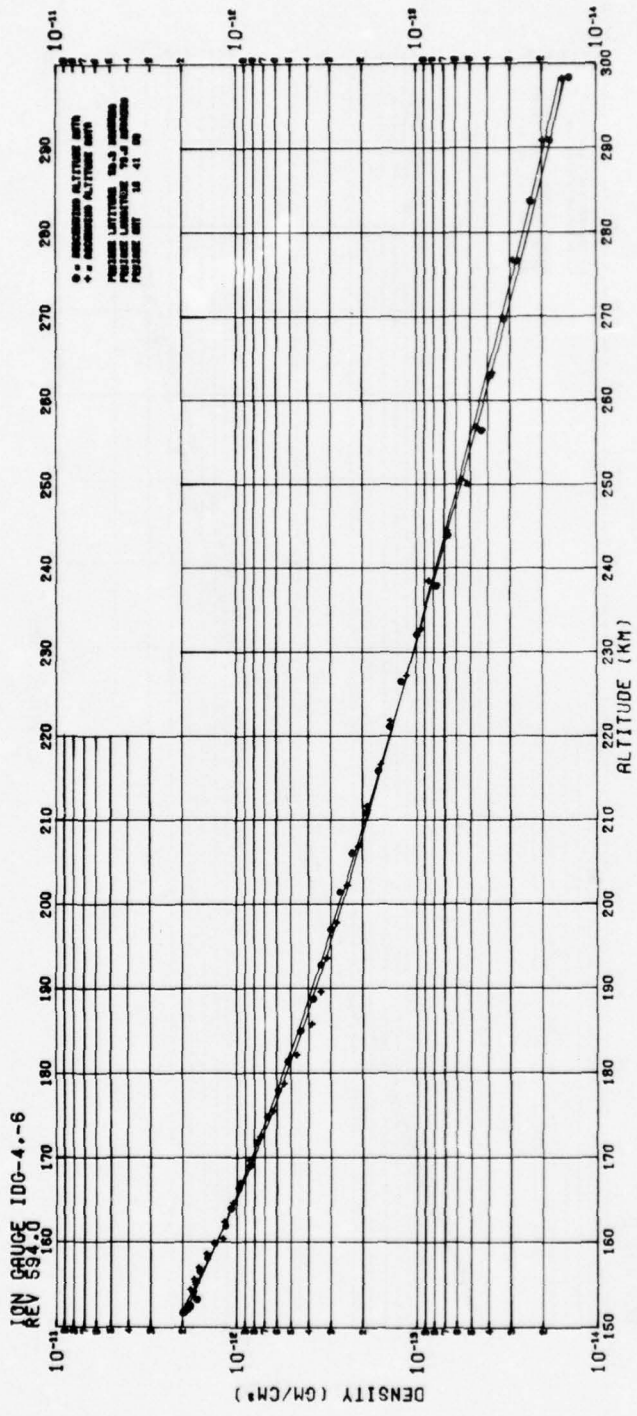


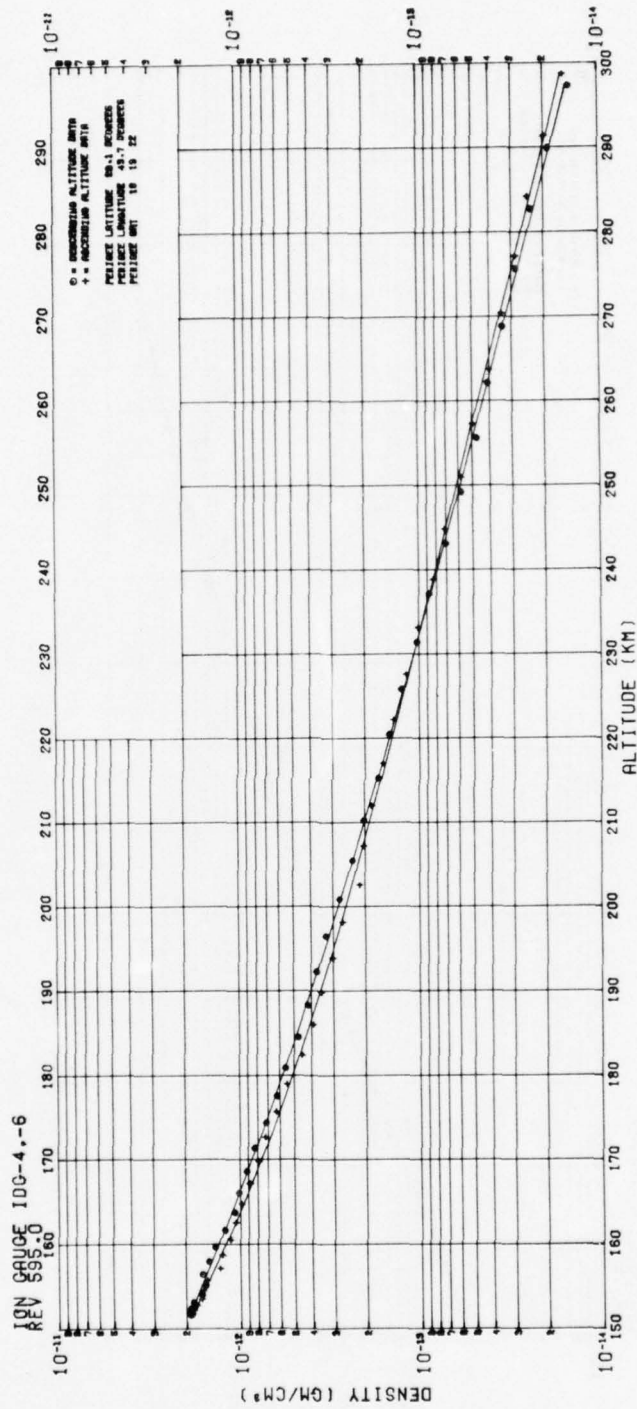


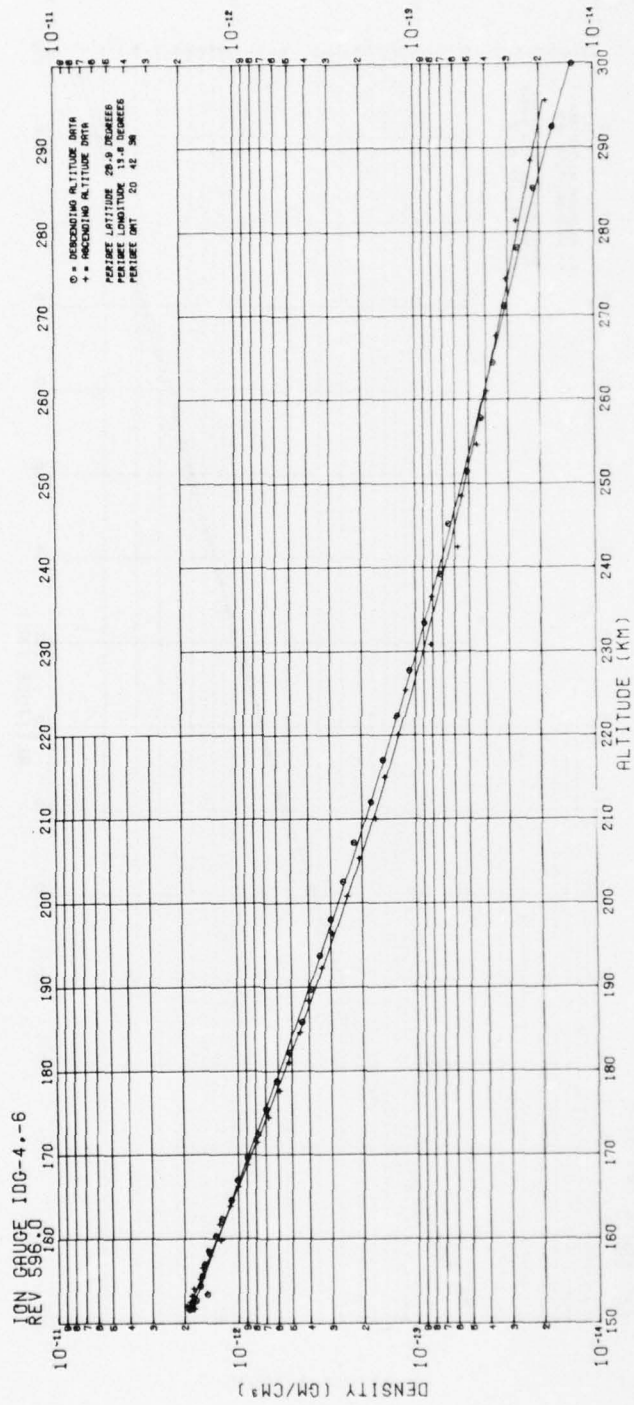


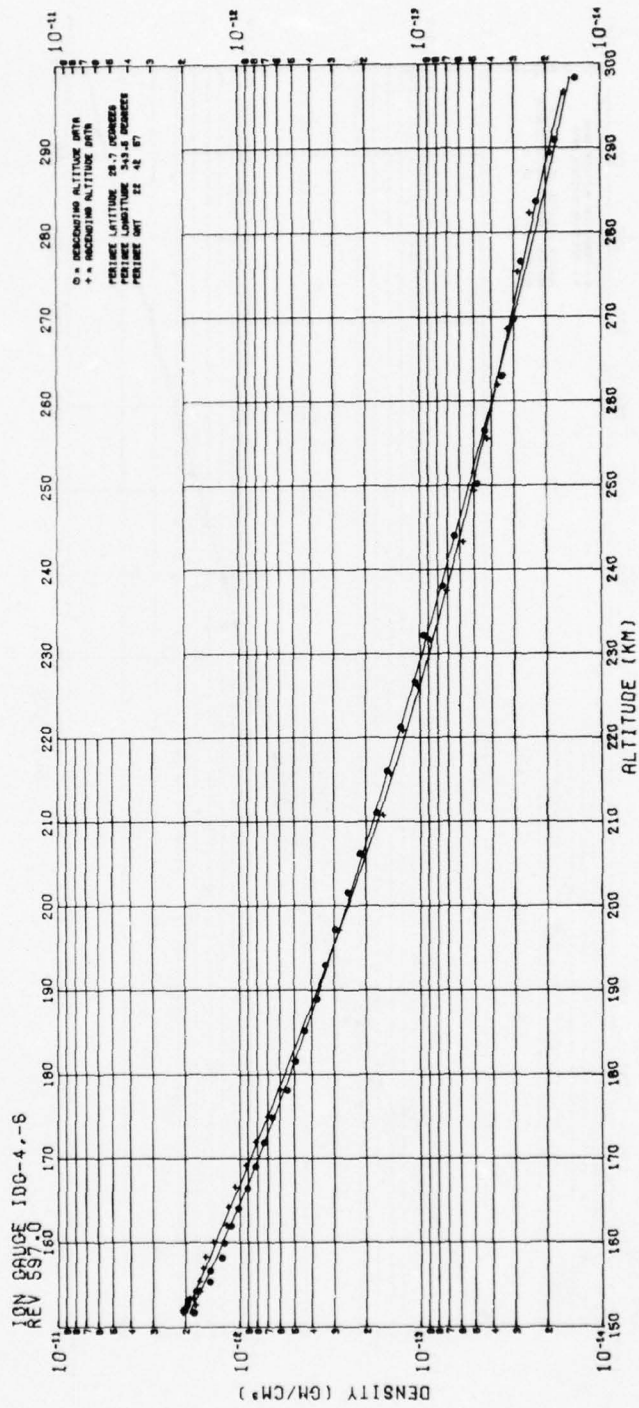


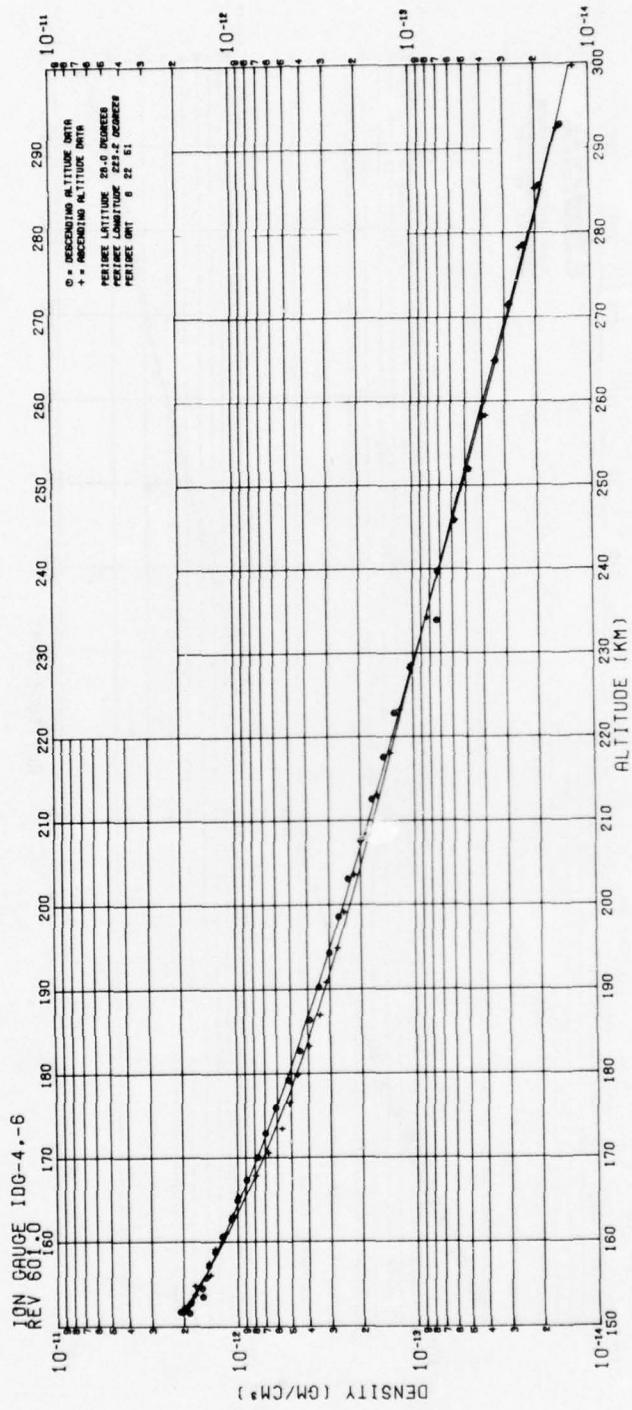


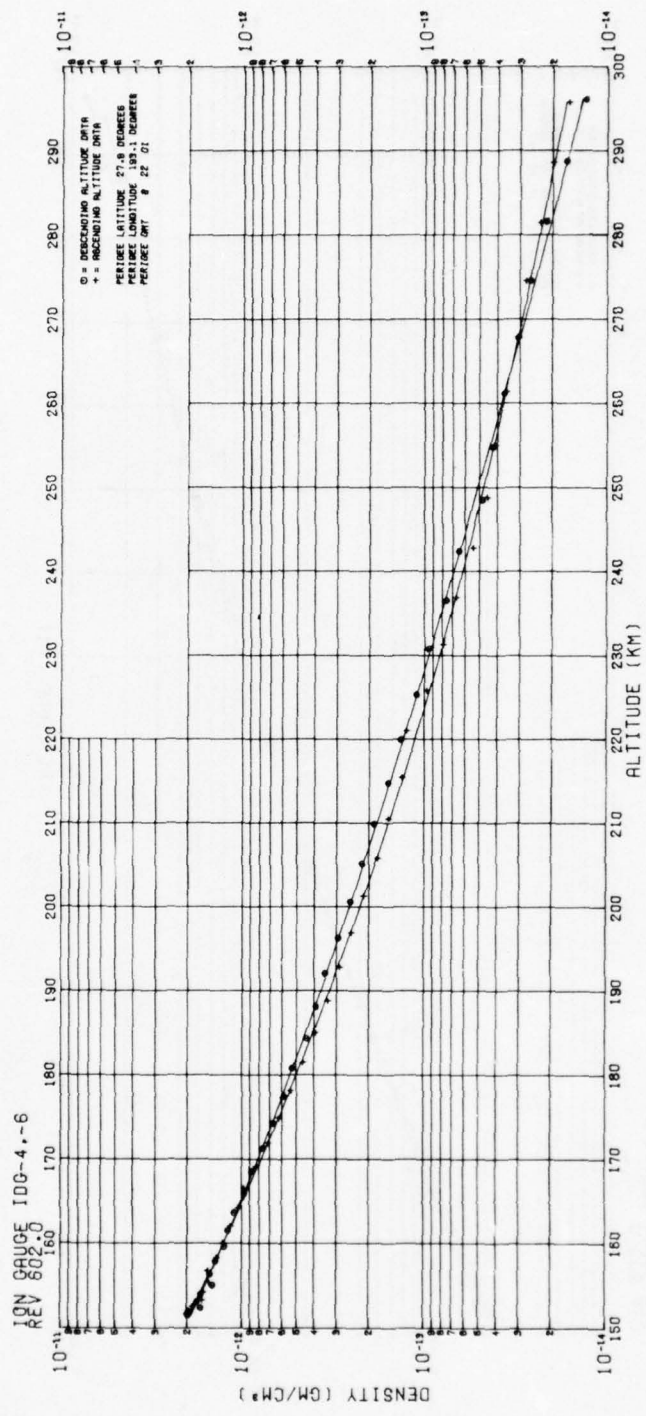


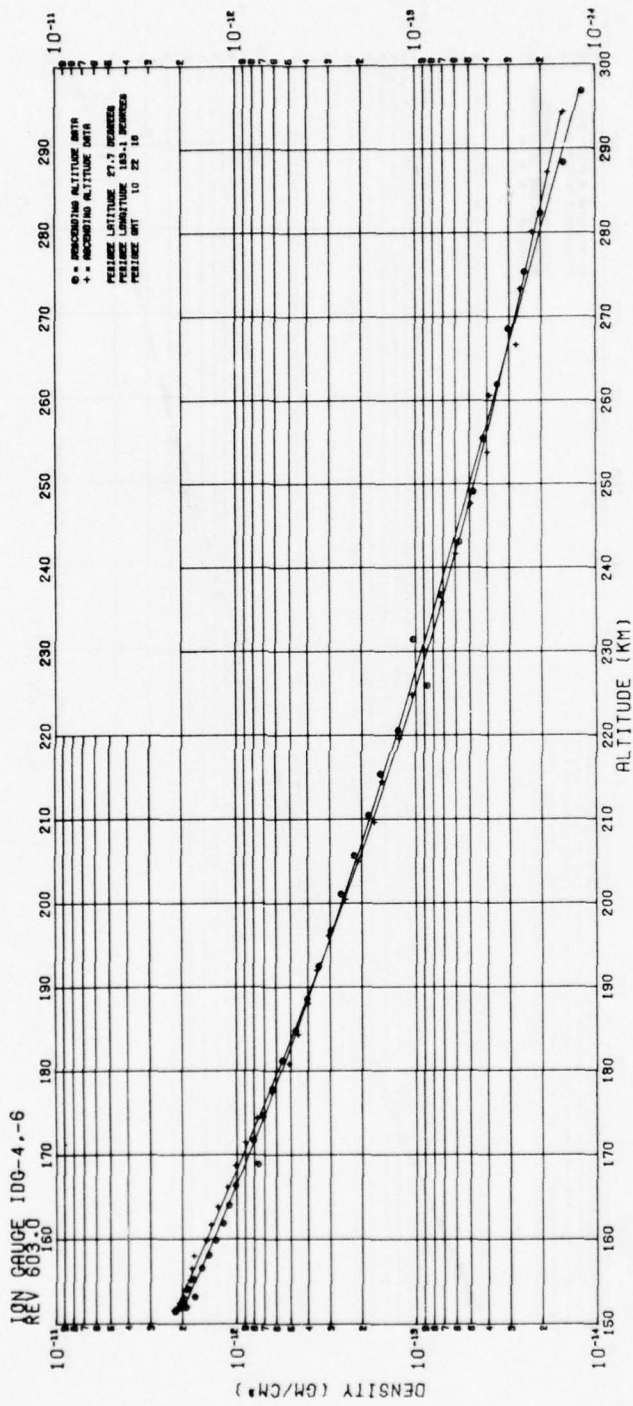


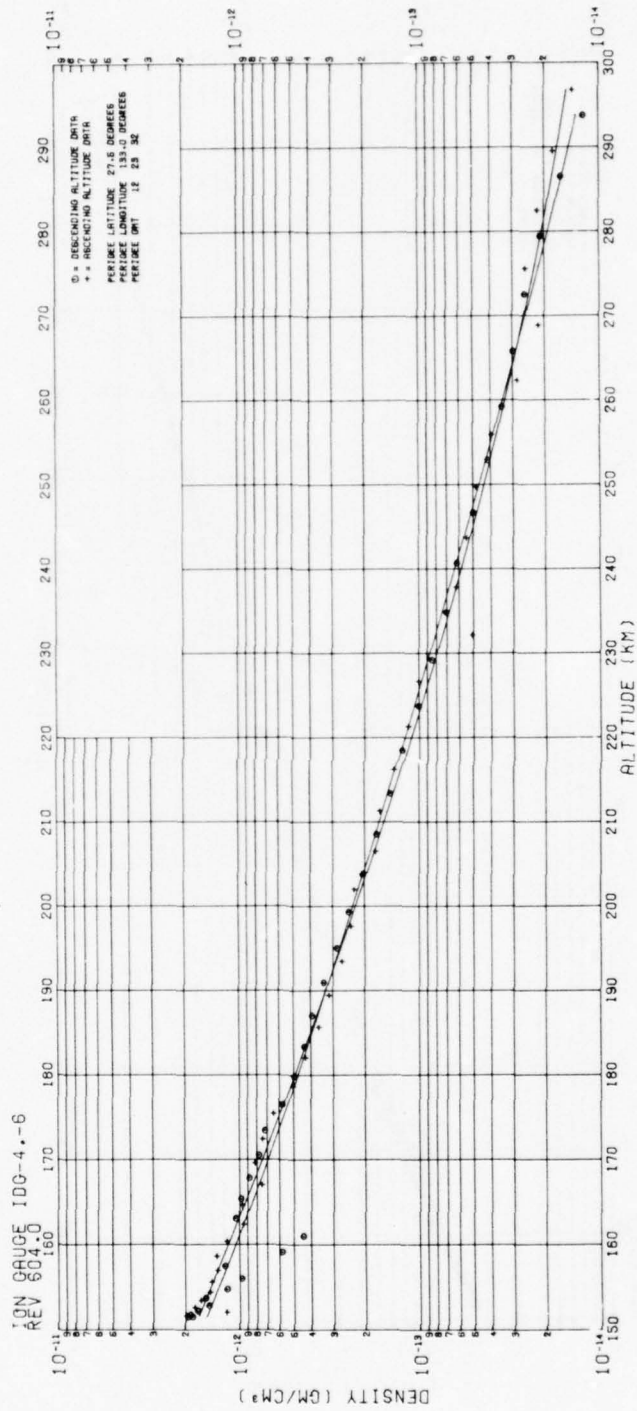


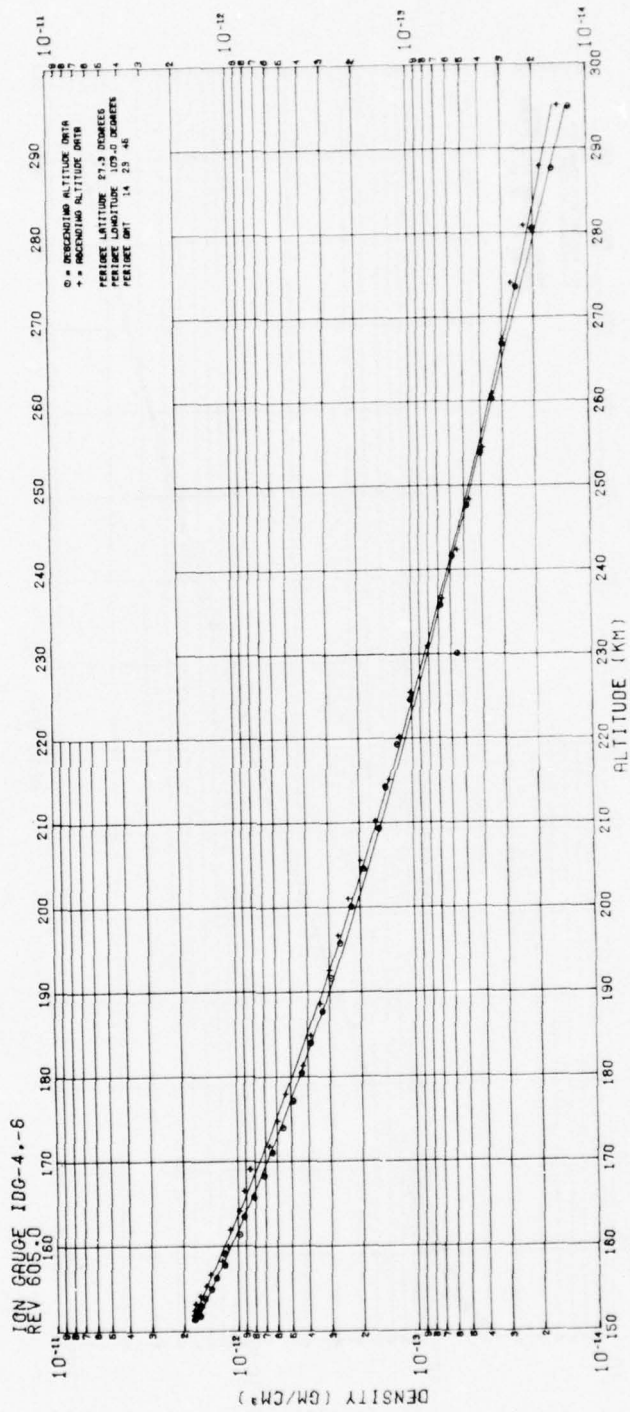


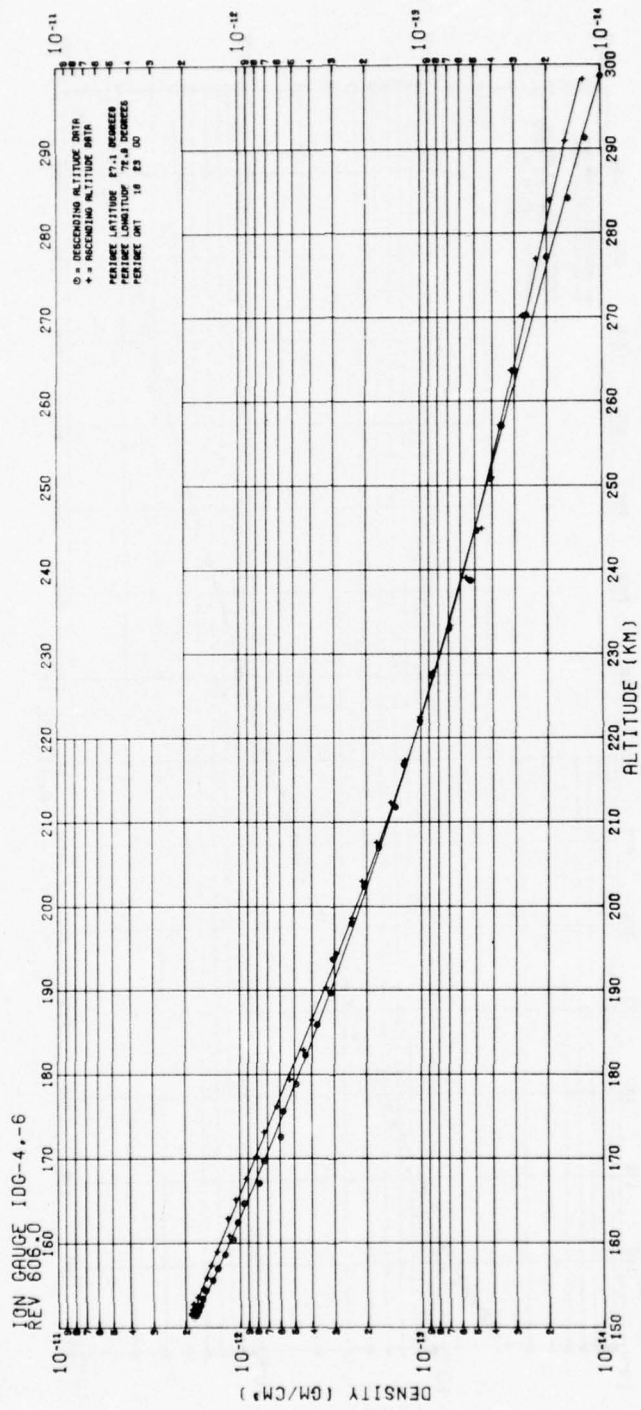


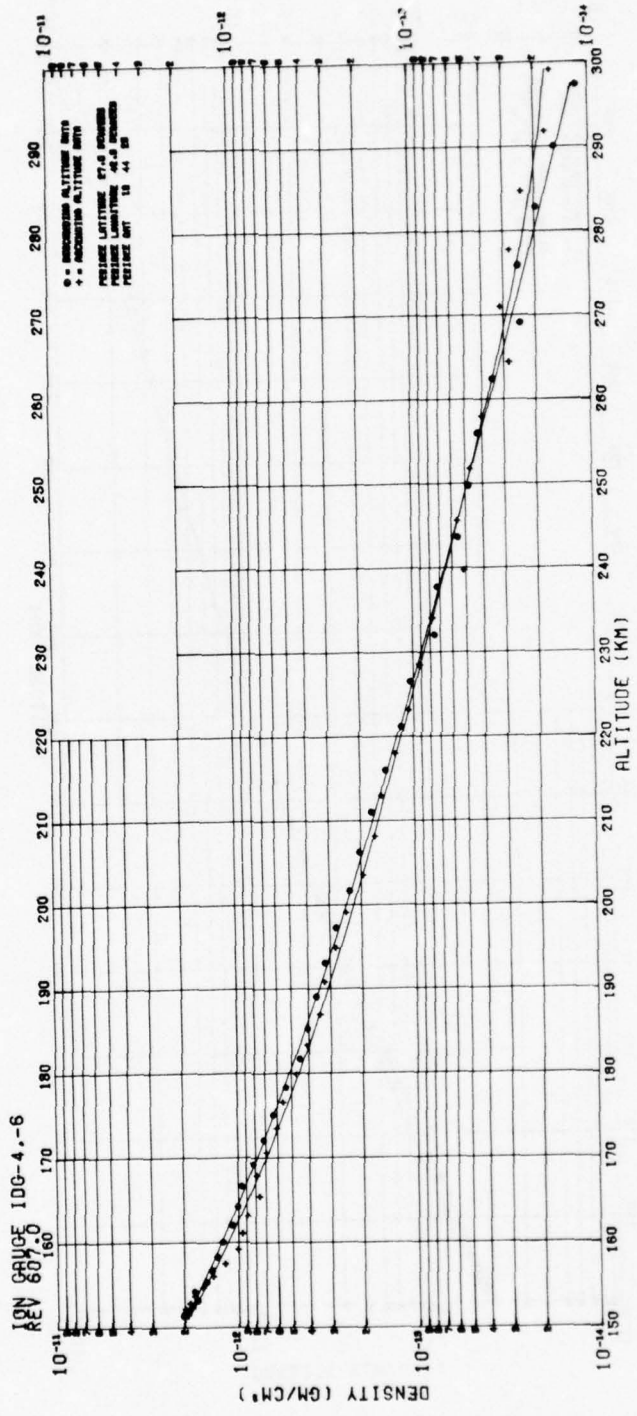


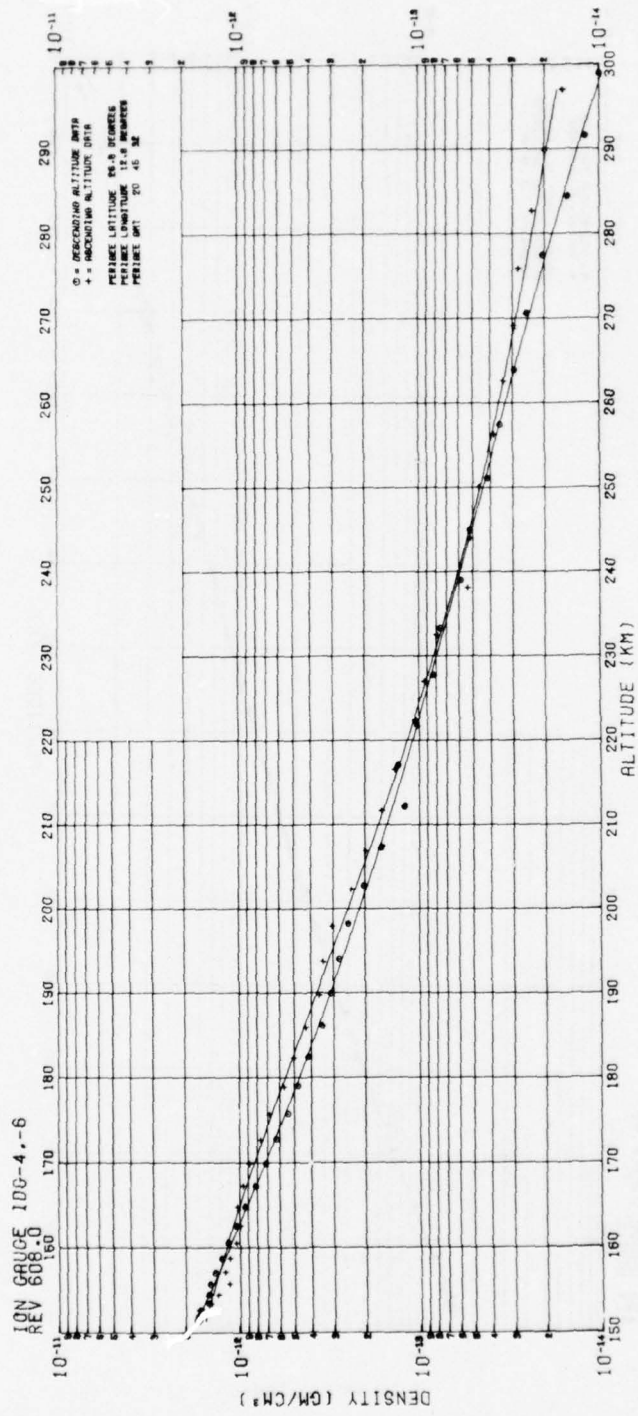


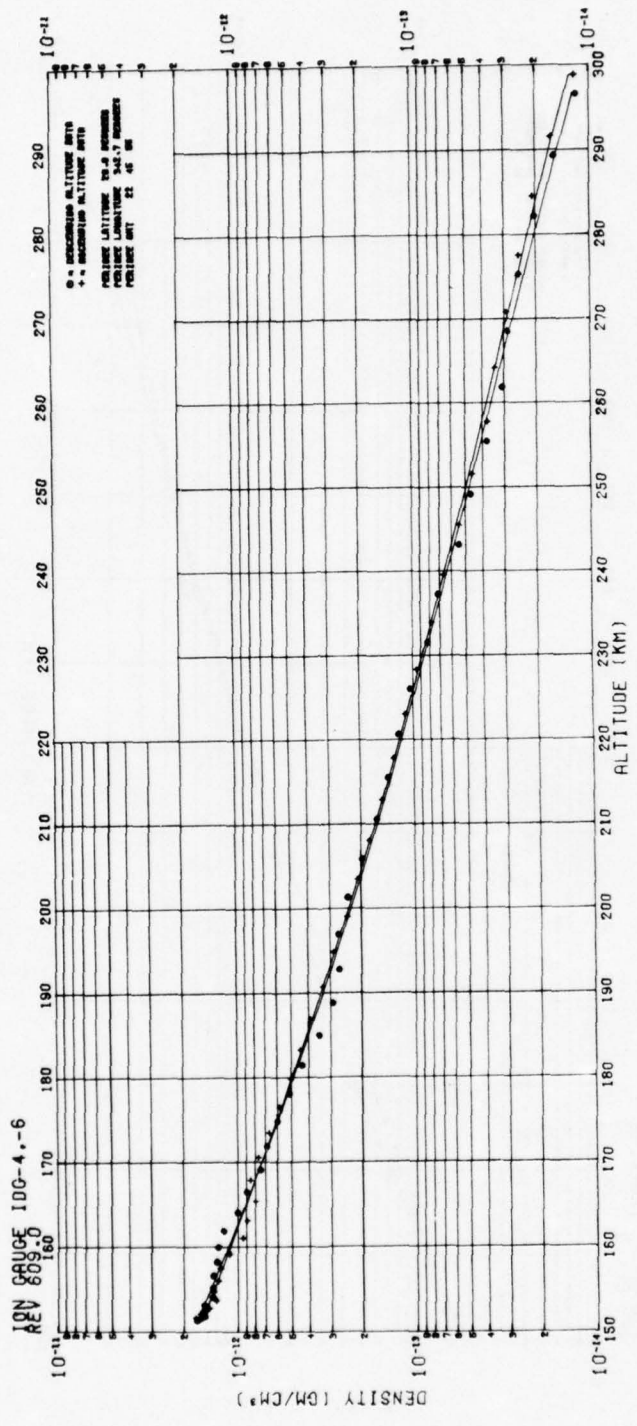


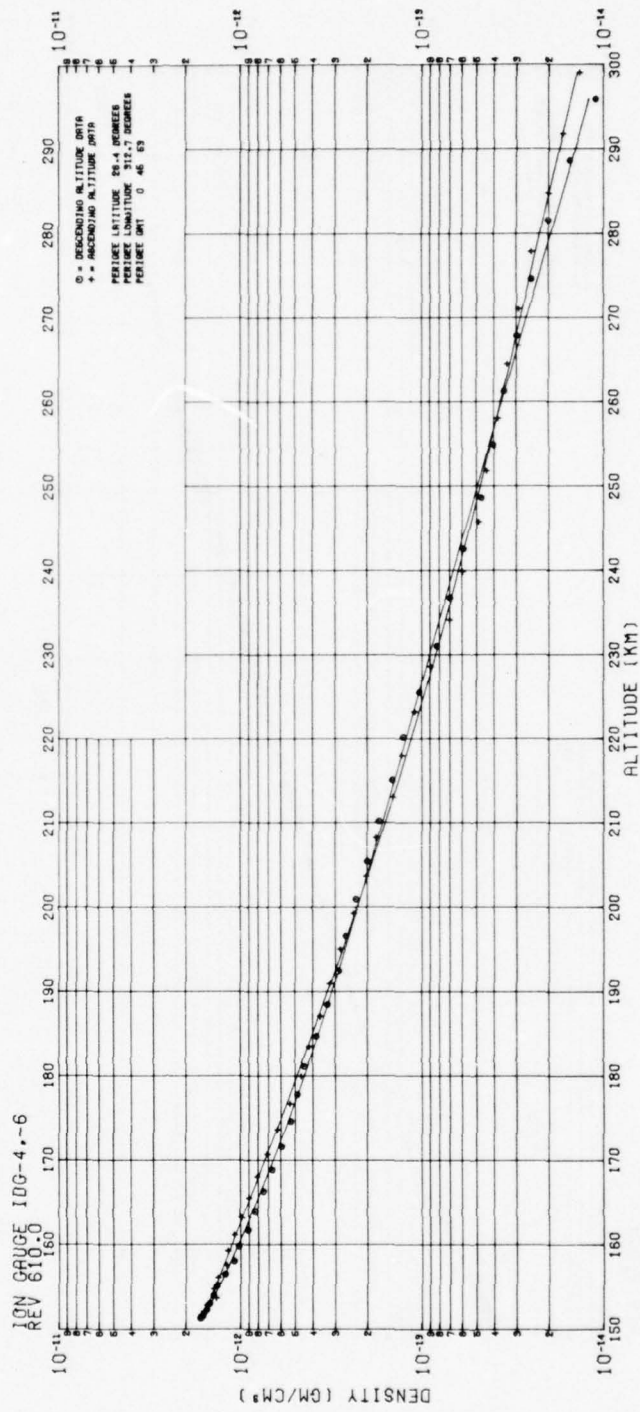


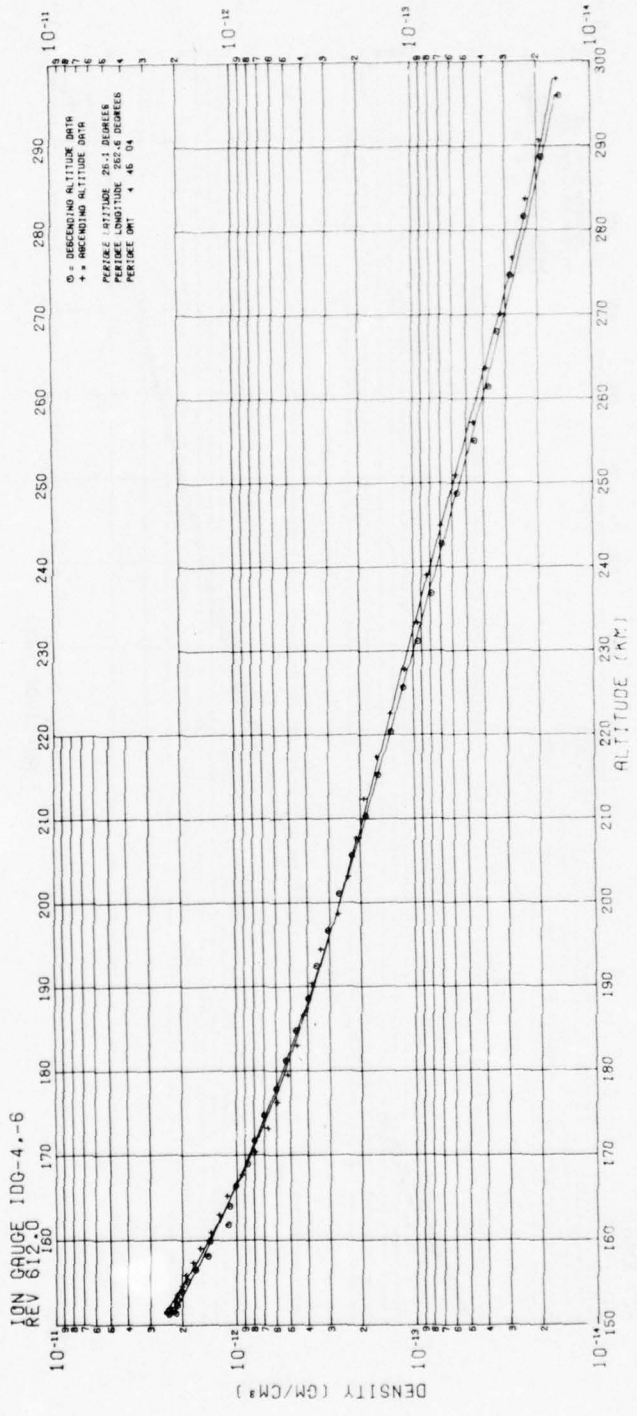


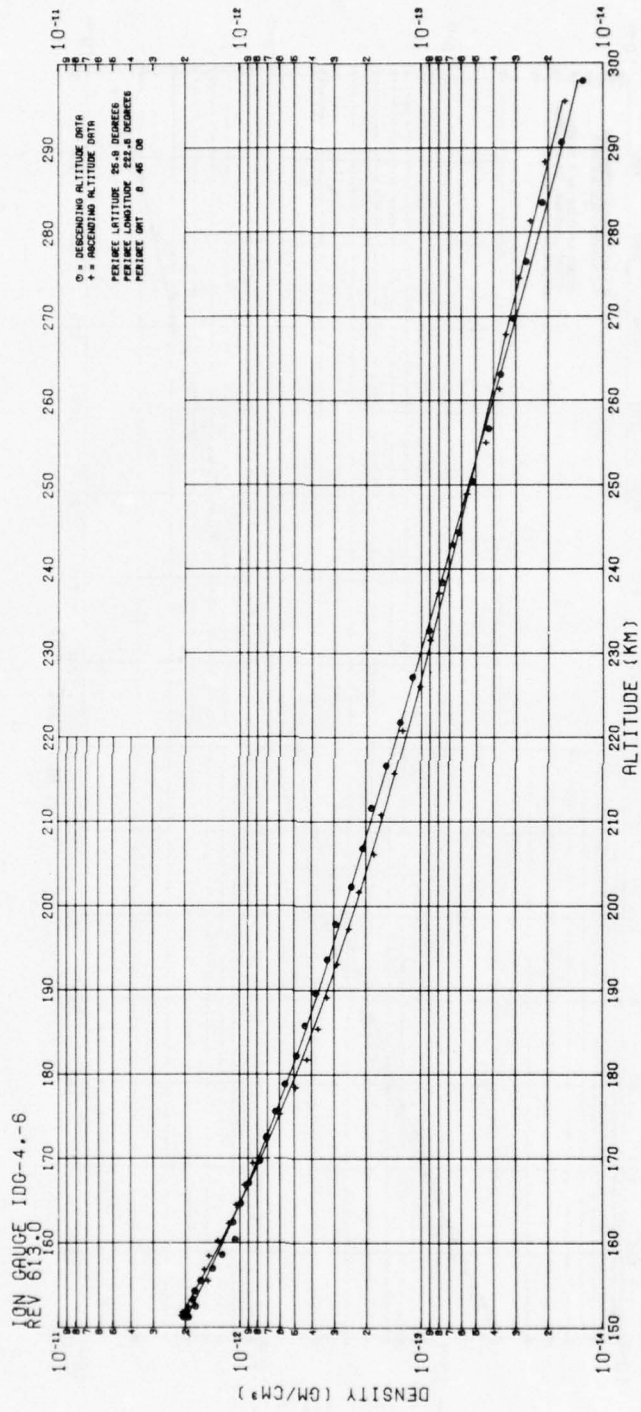


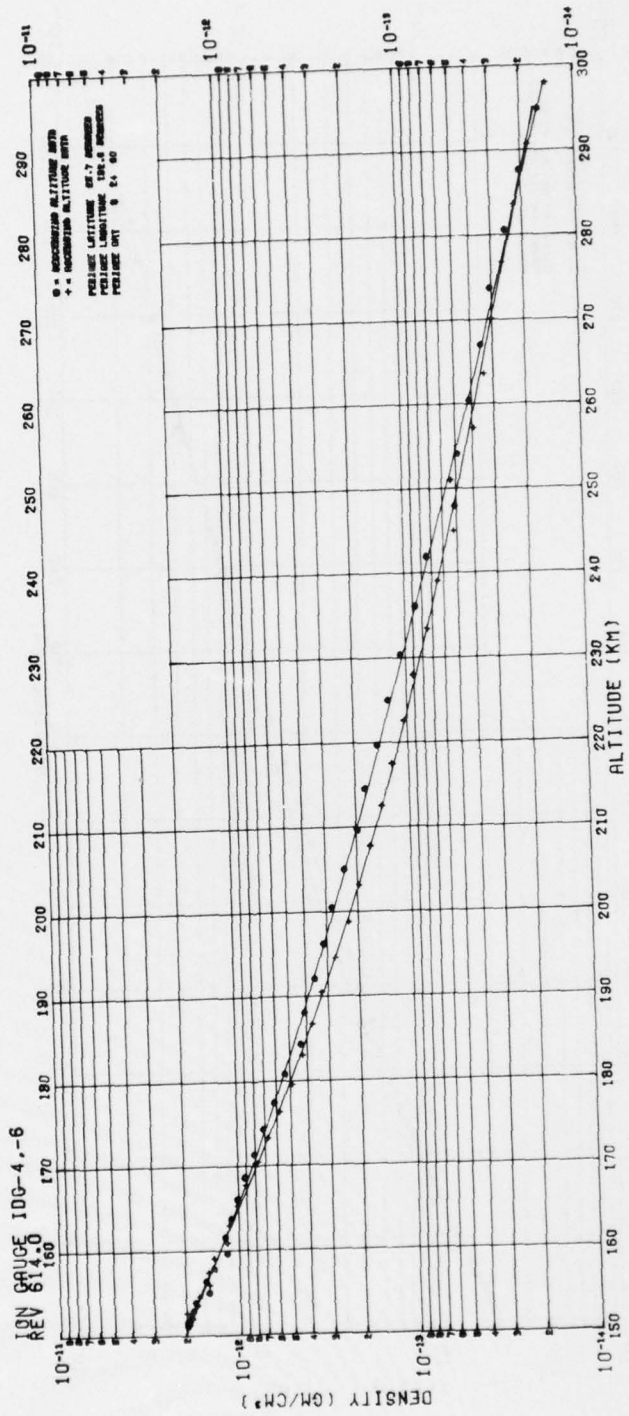


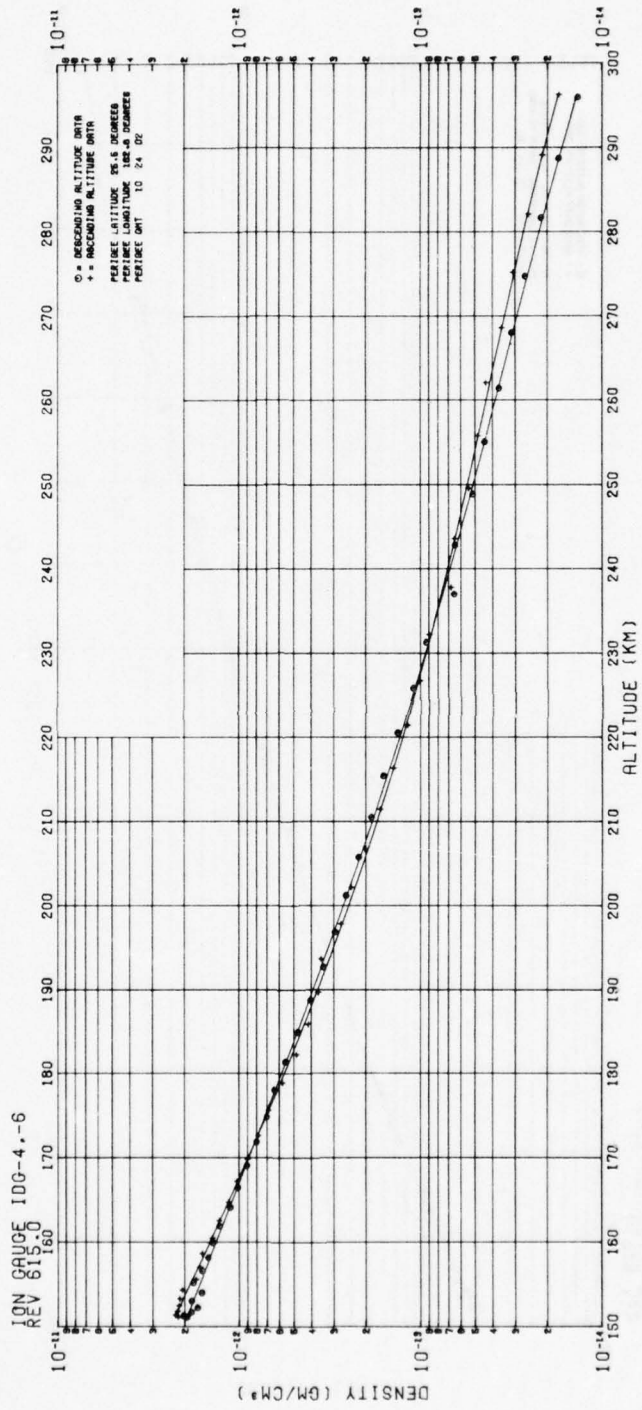


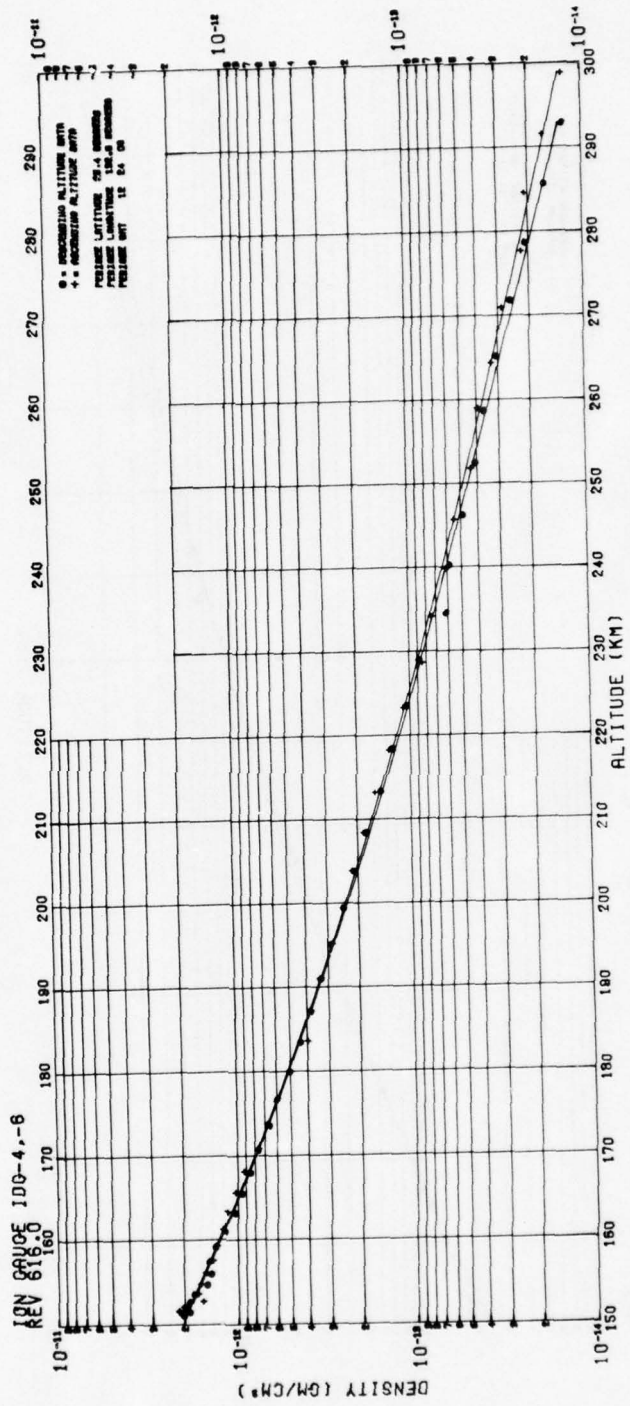


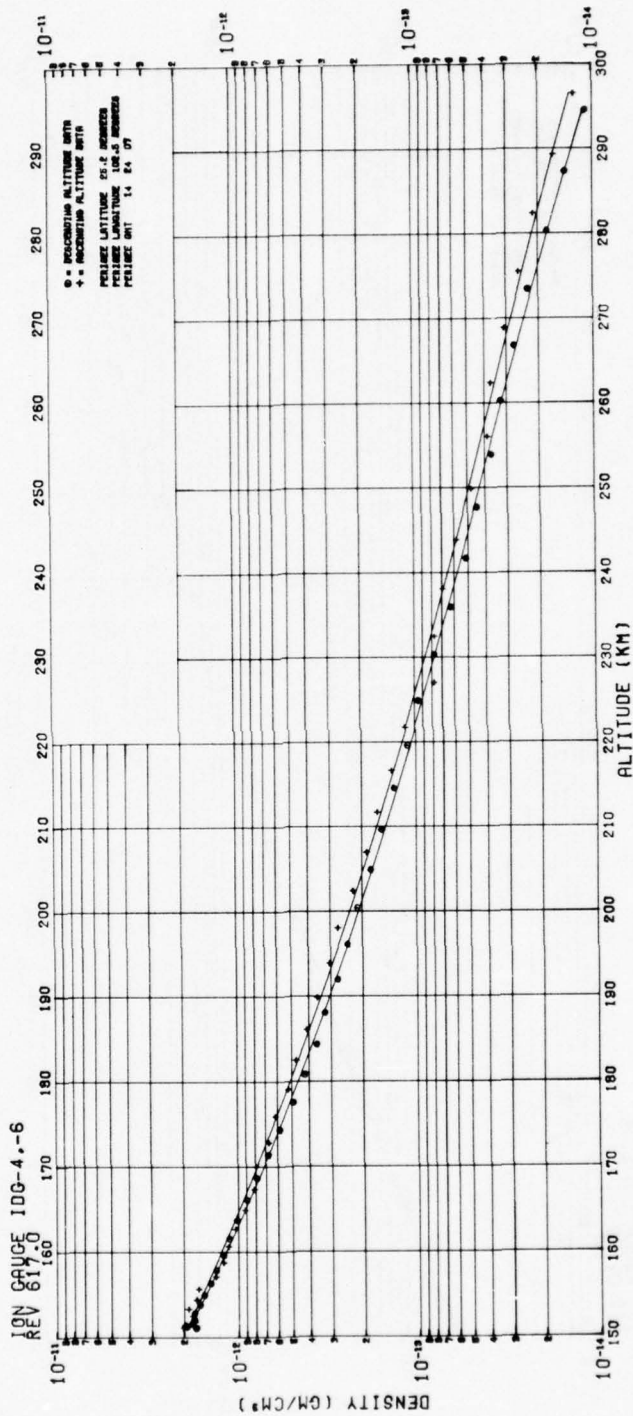


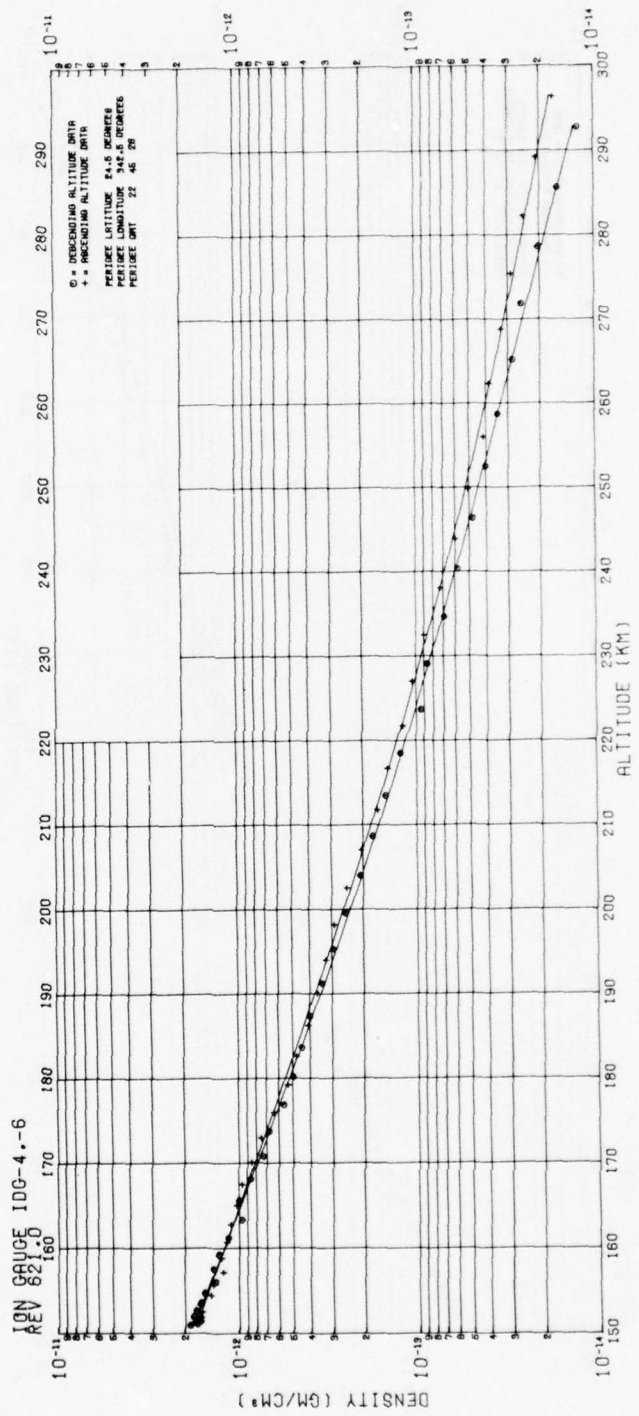


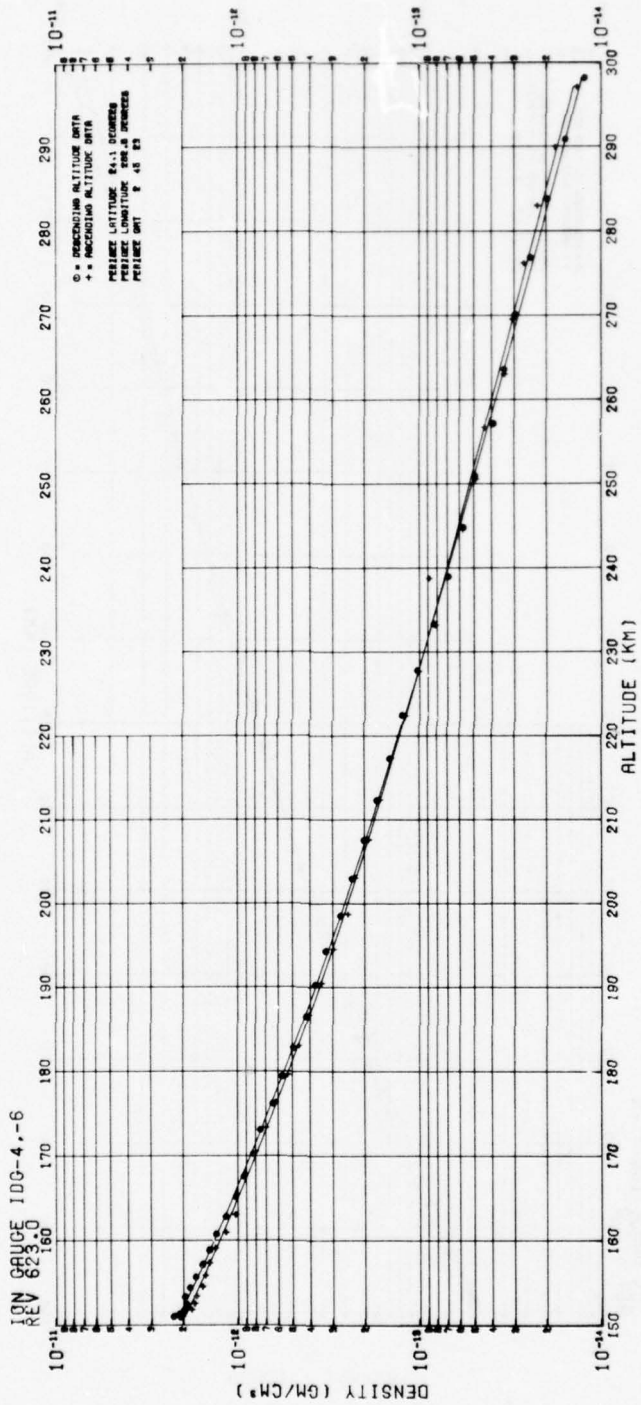


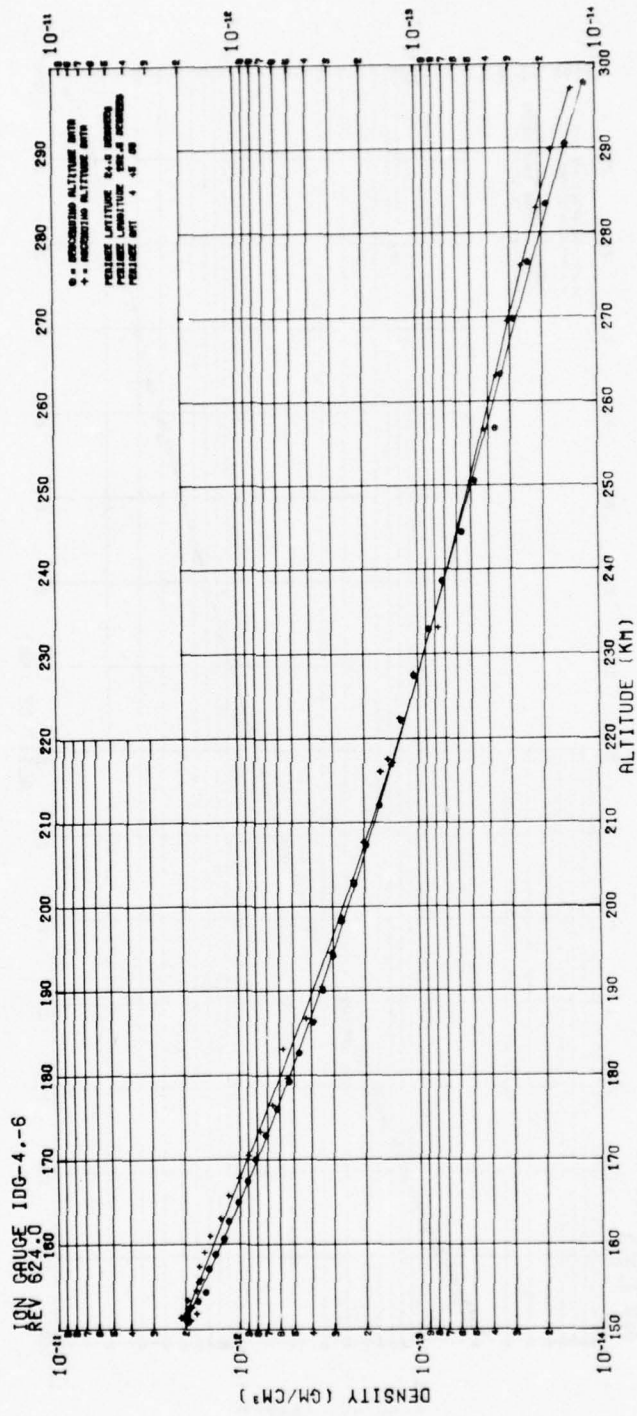


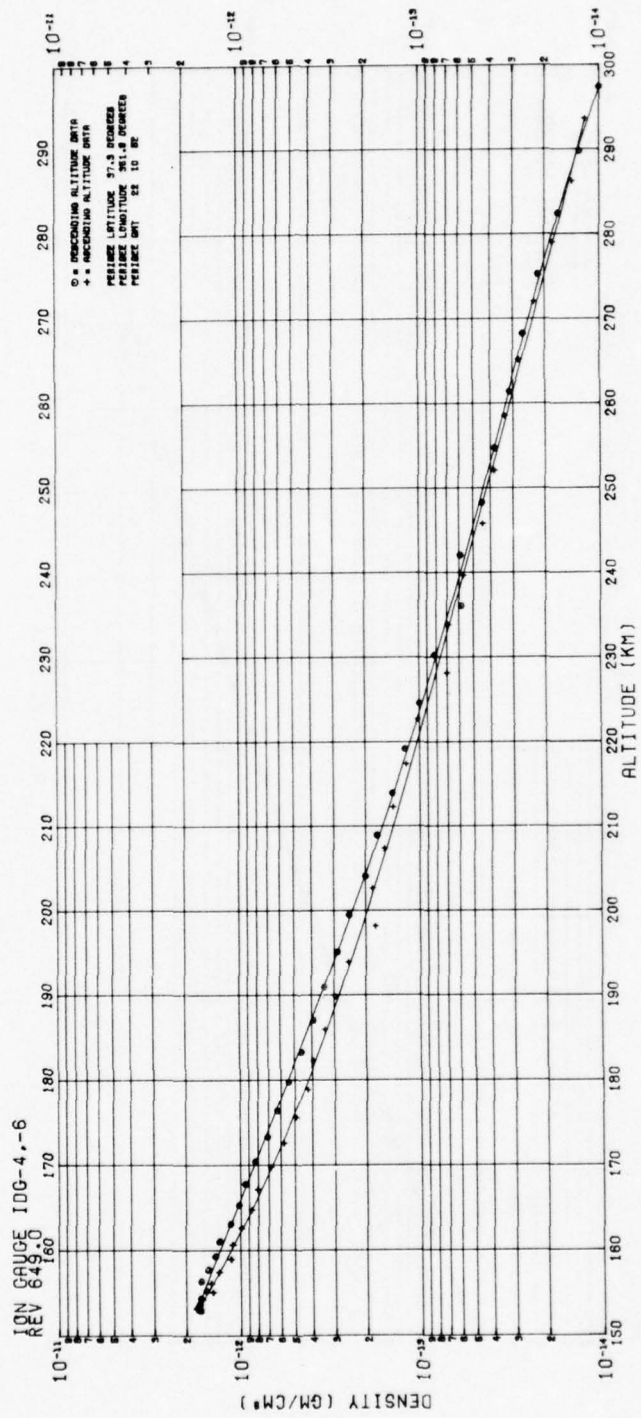


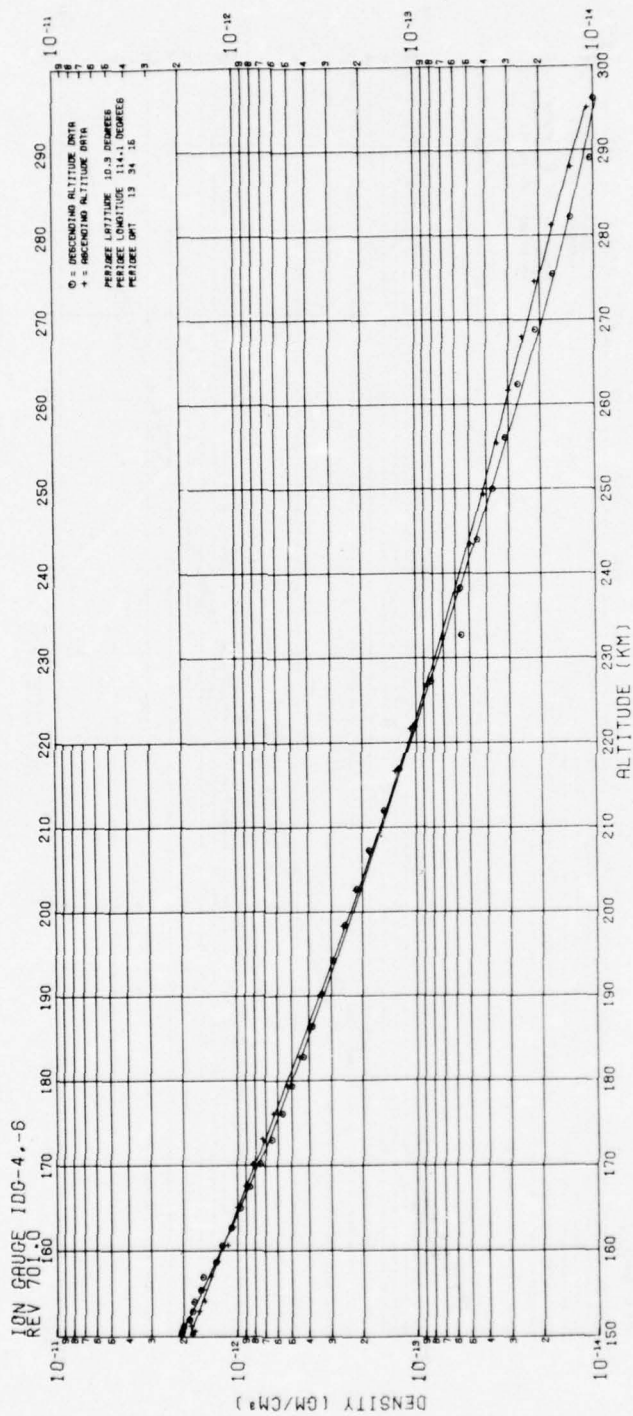


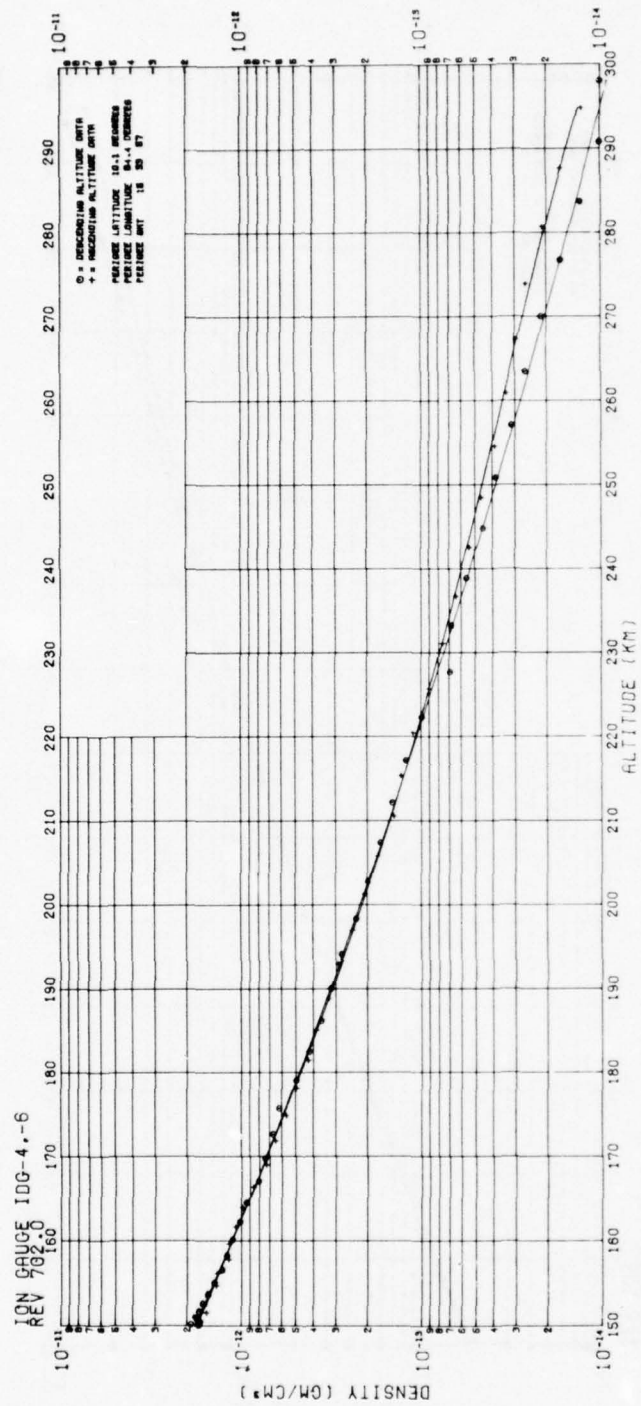


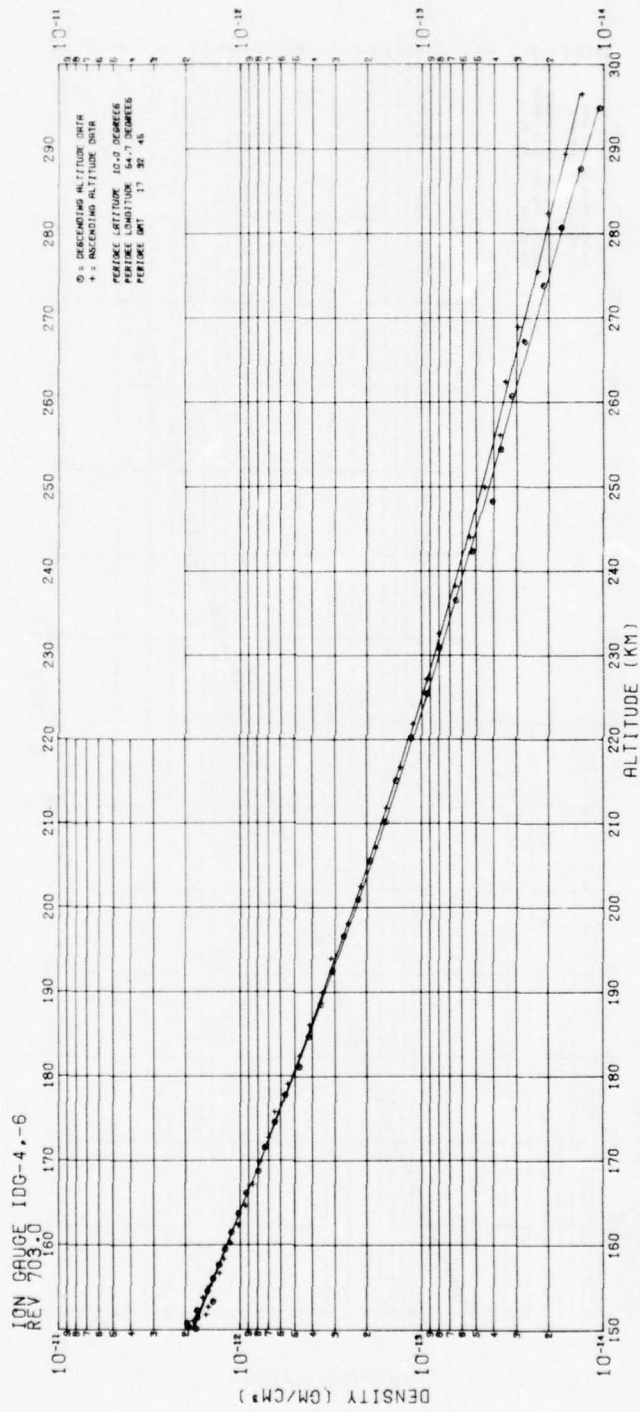




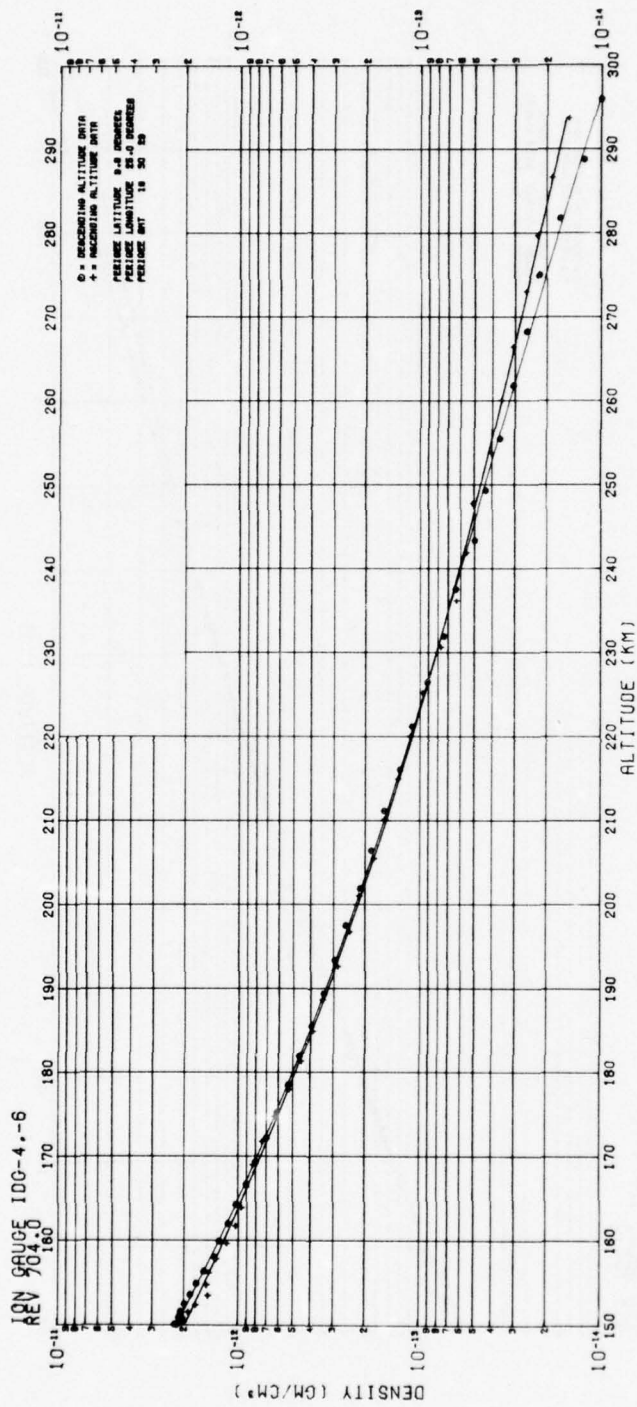


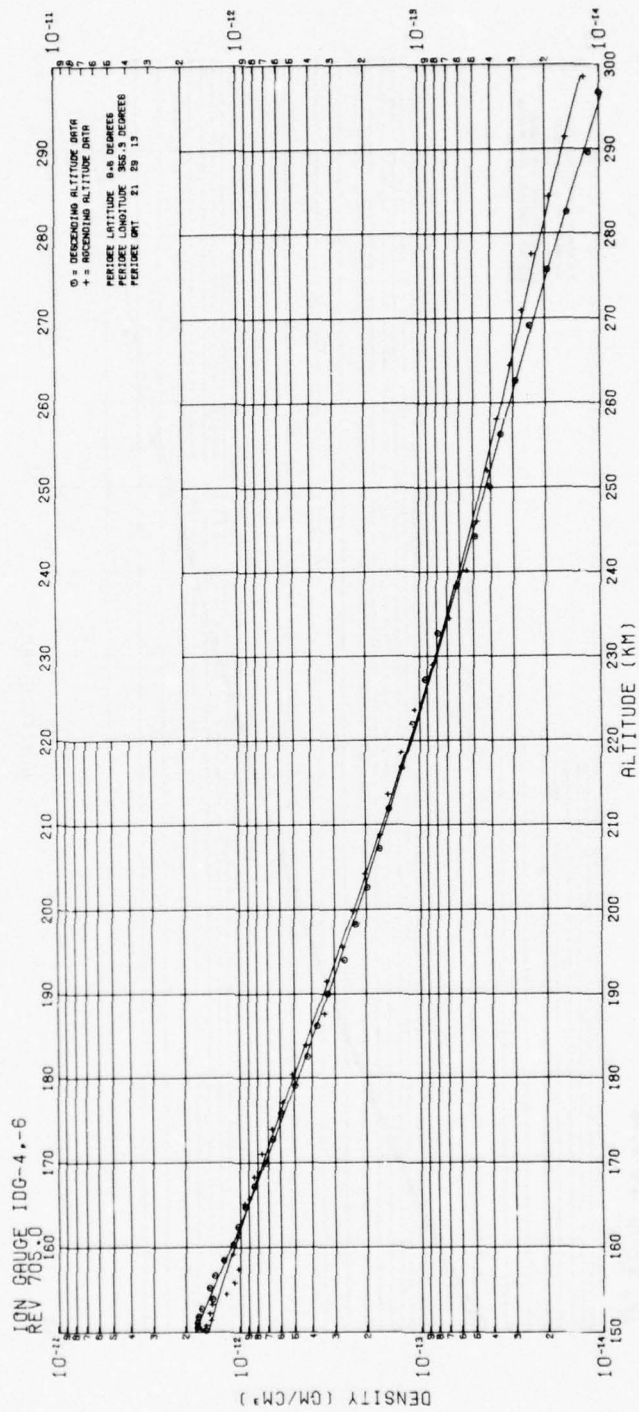


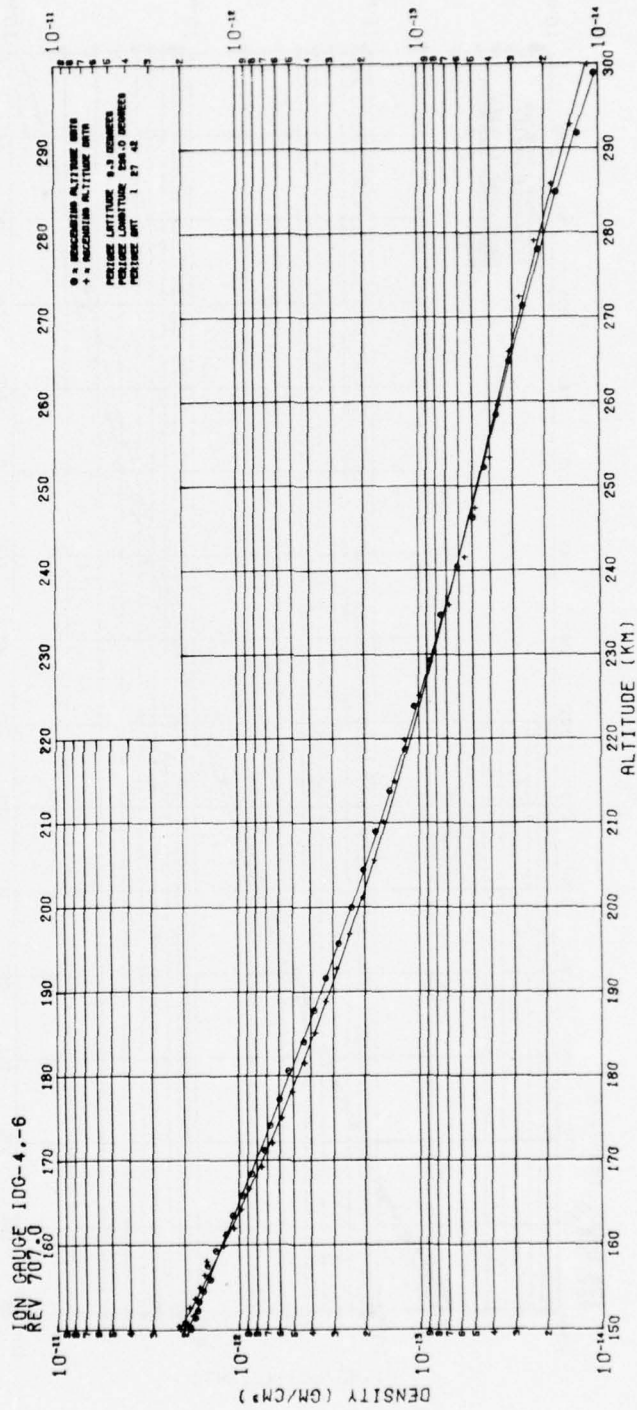


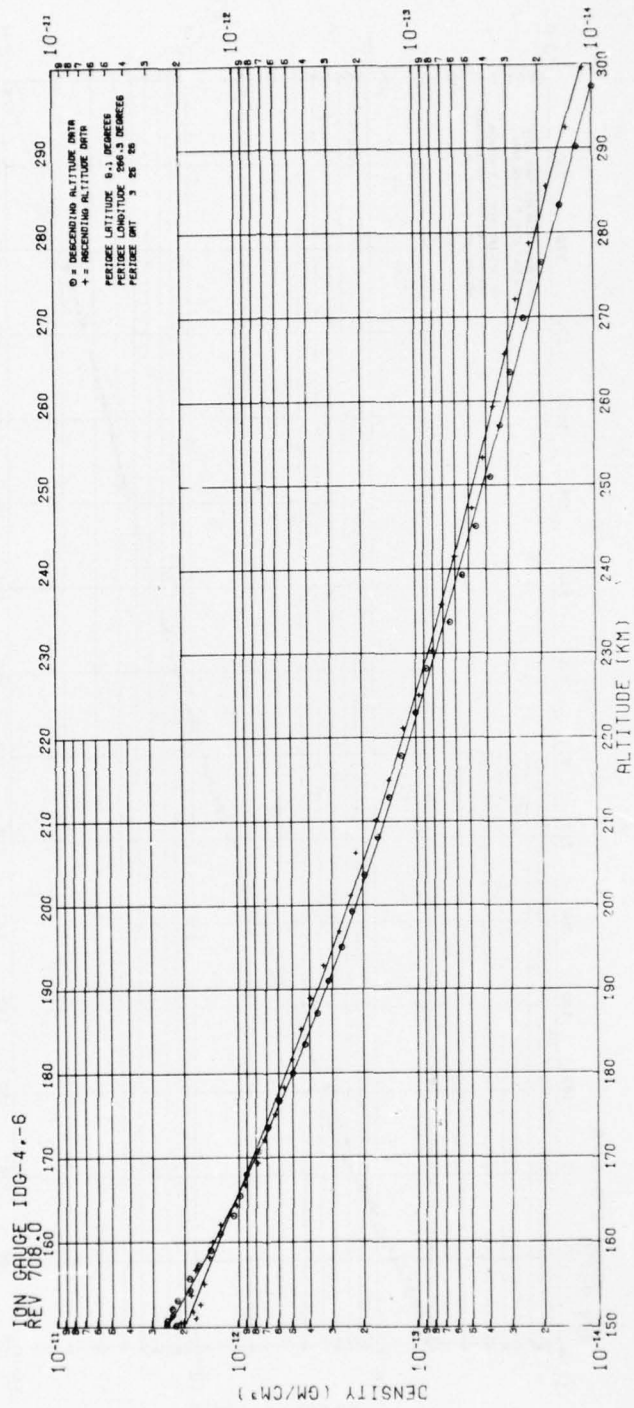


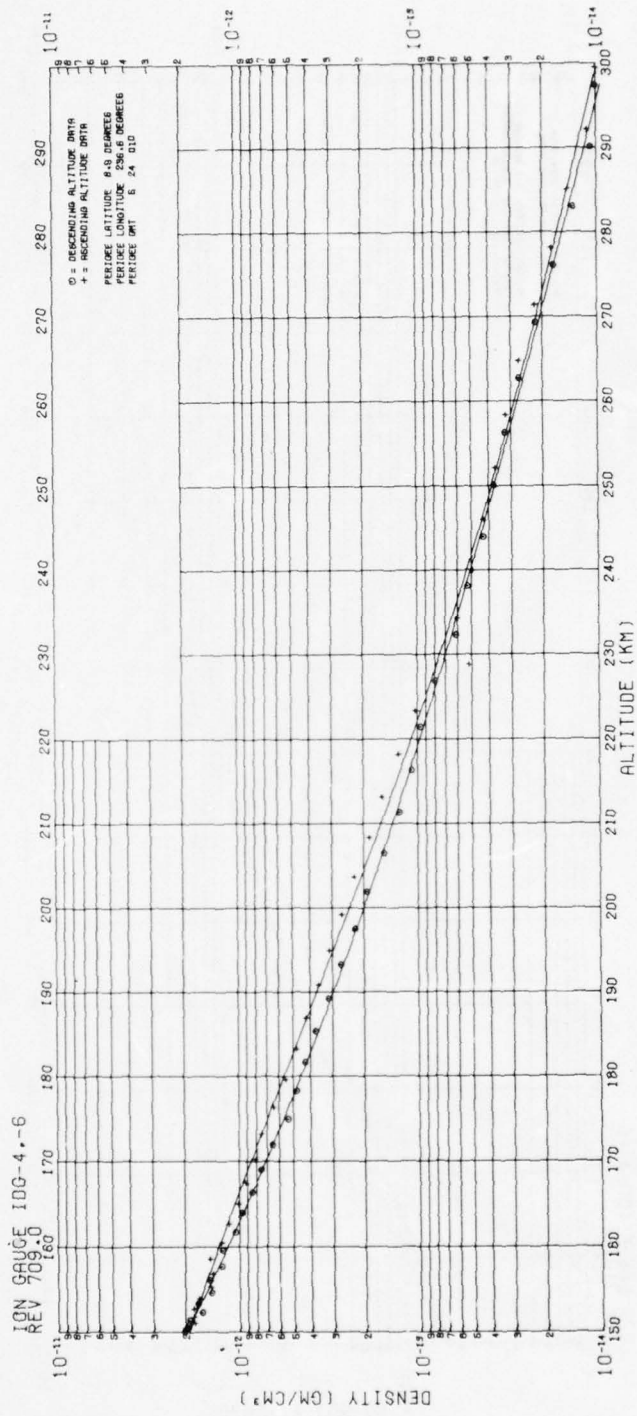
175

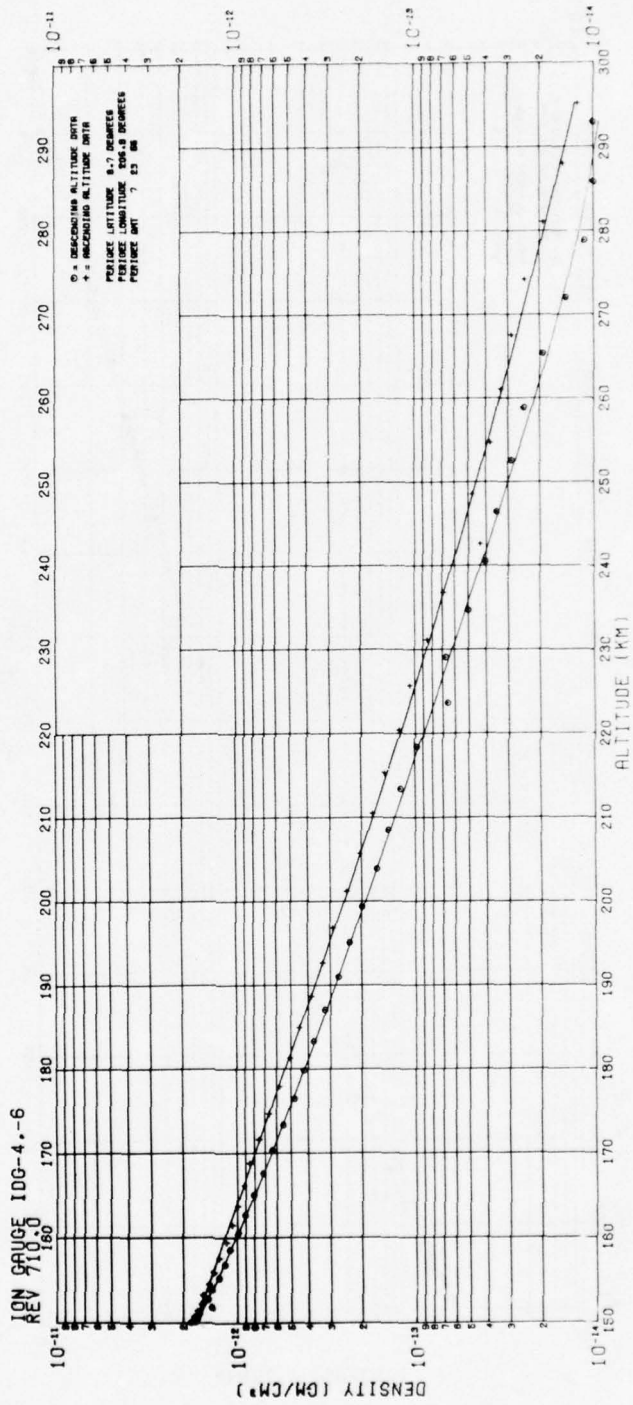


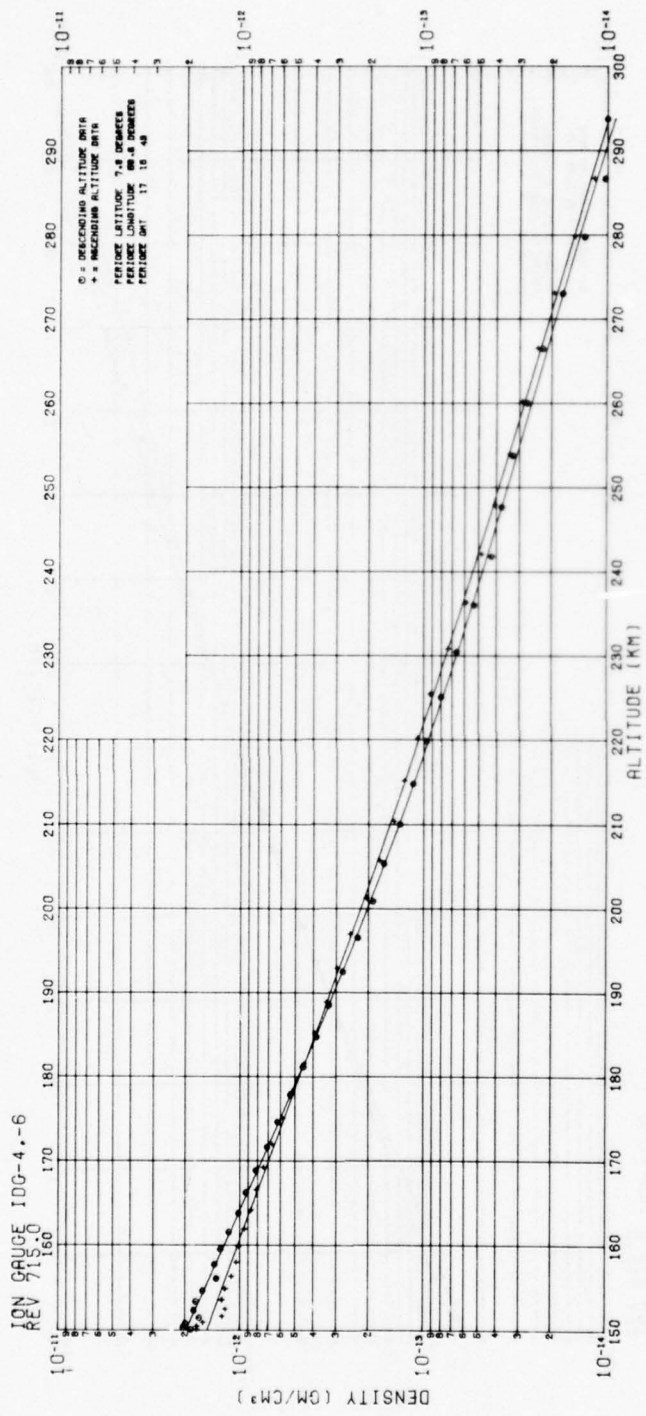


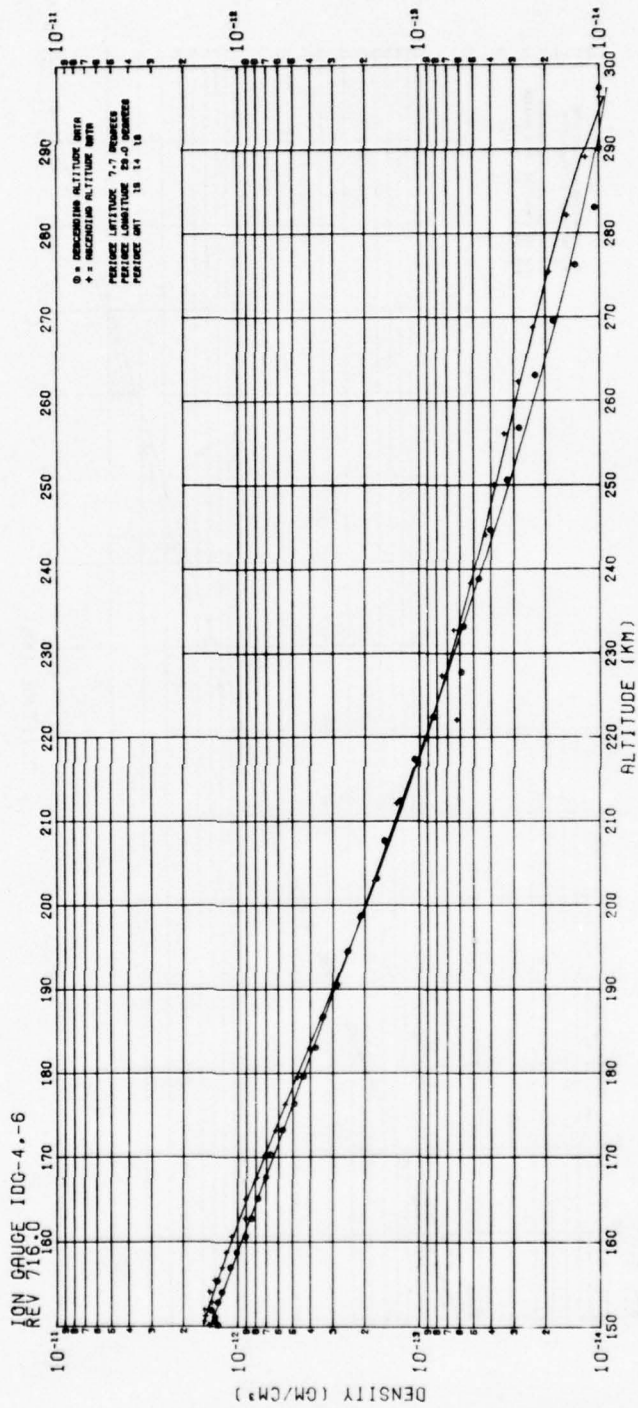


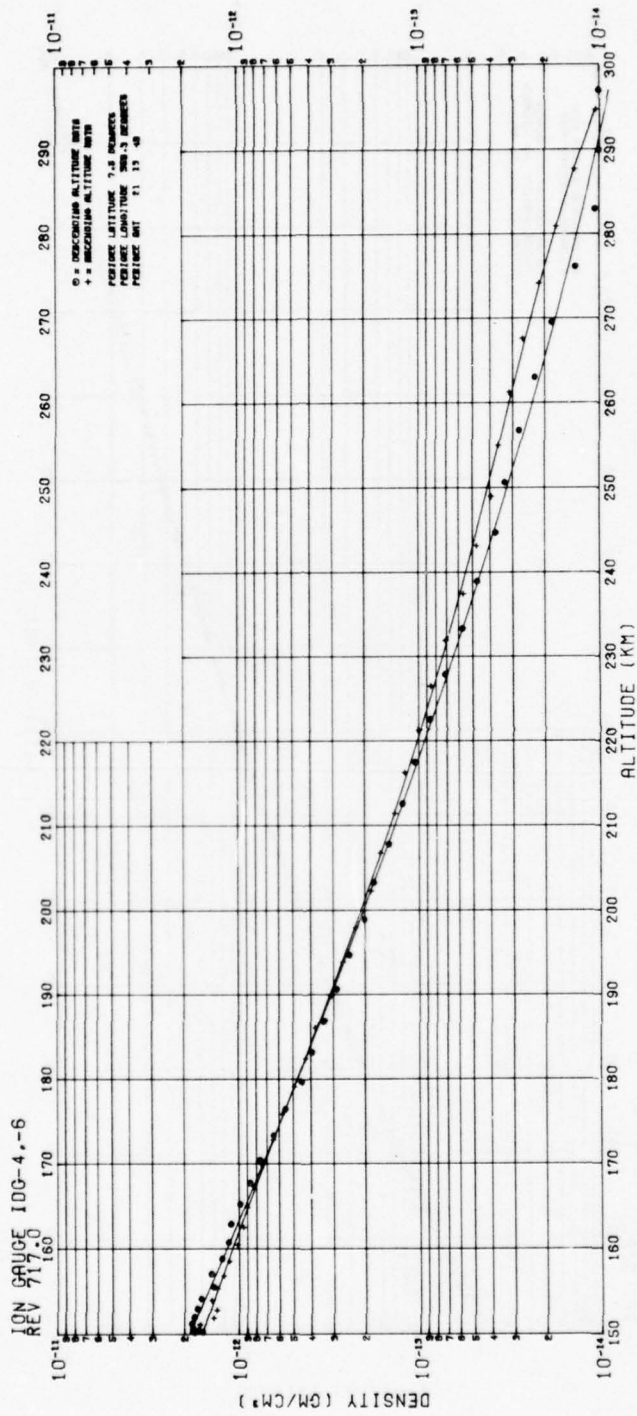


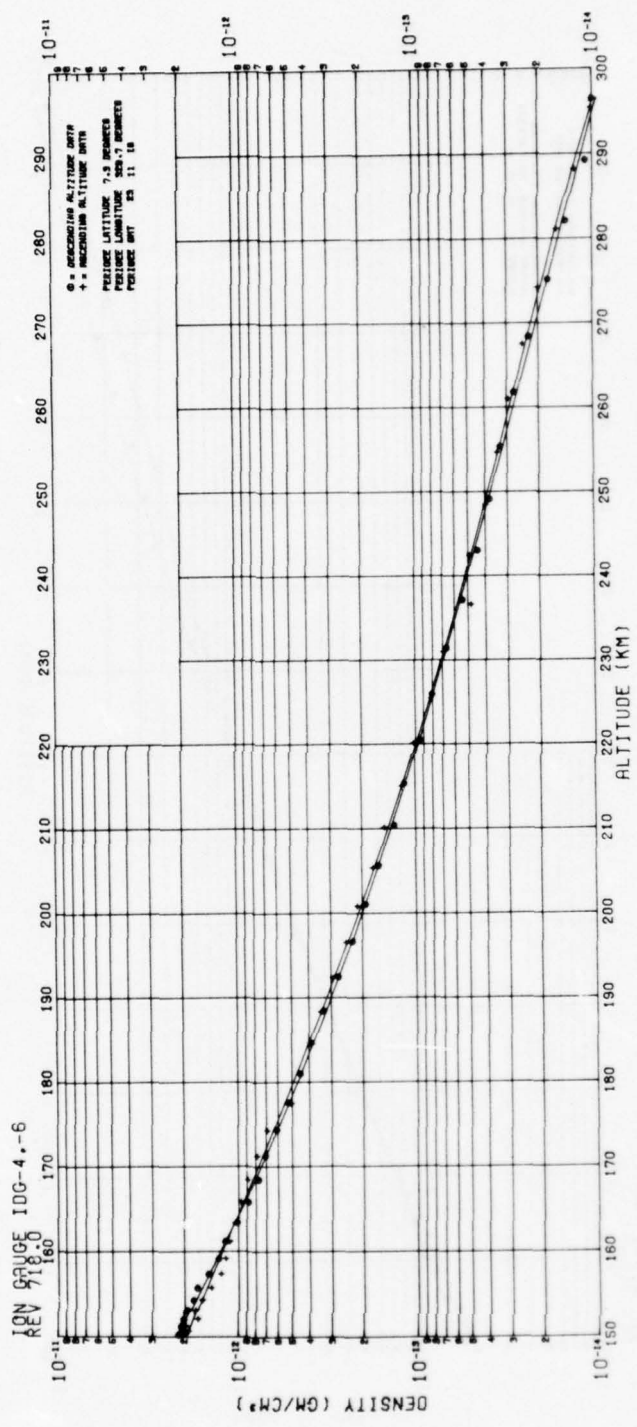


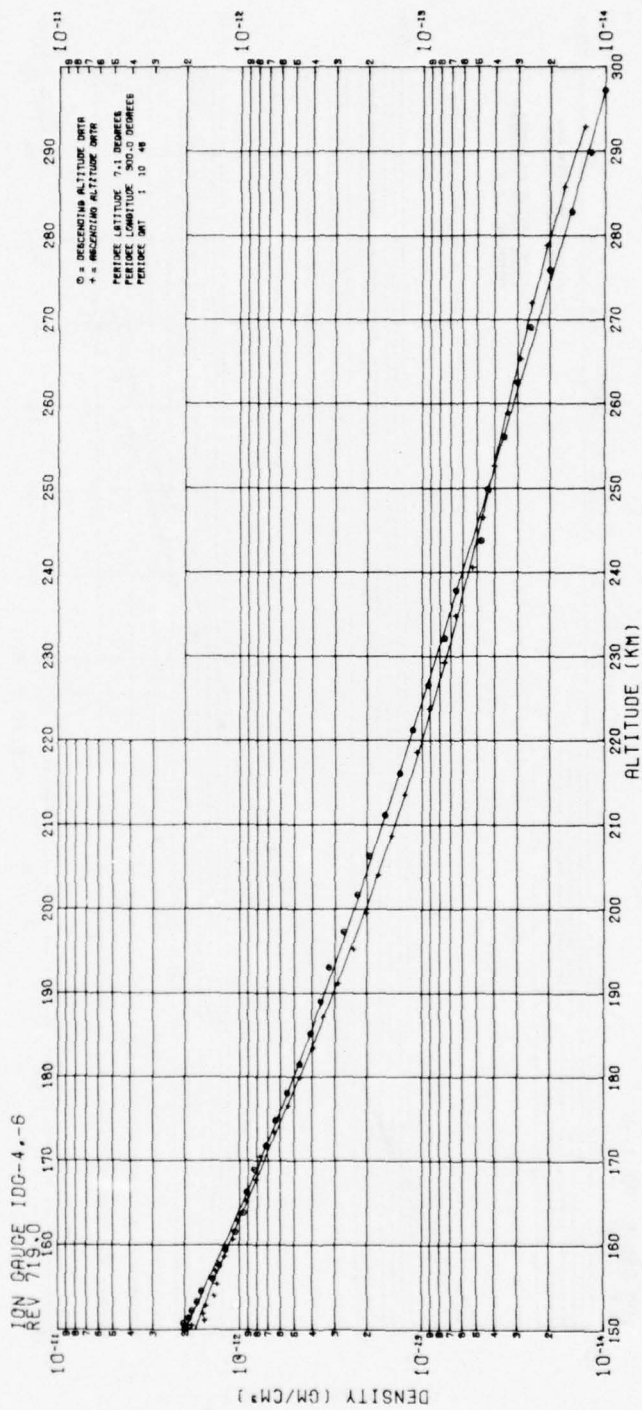


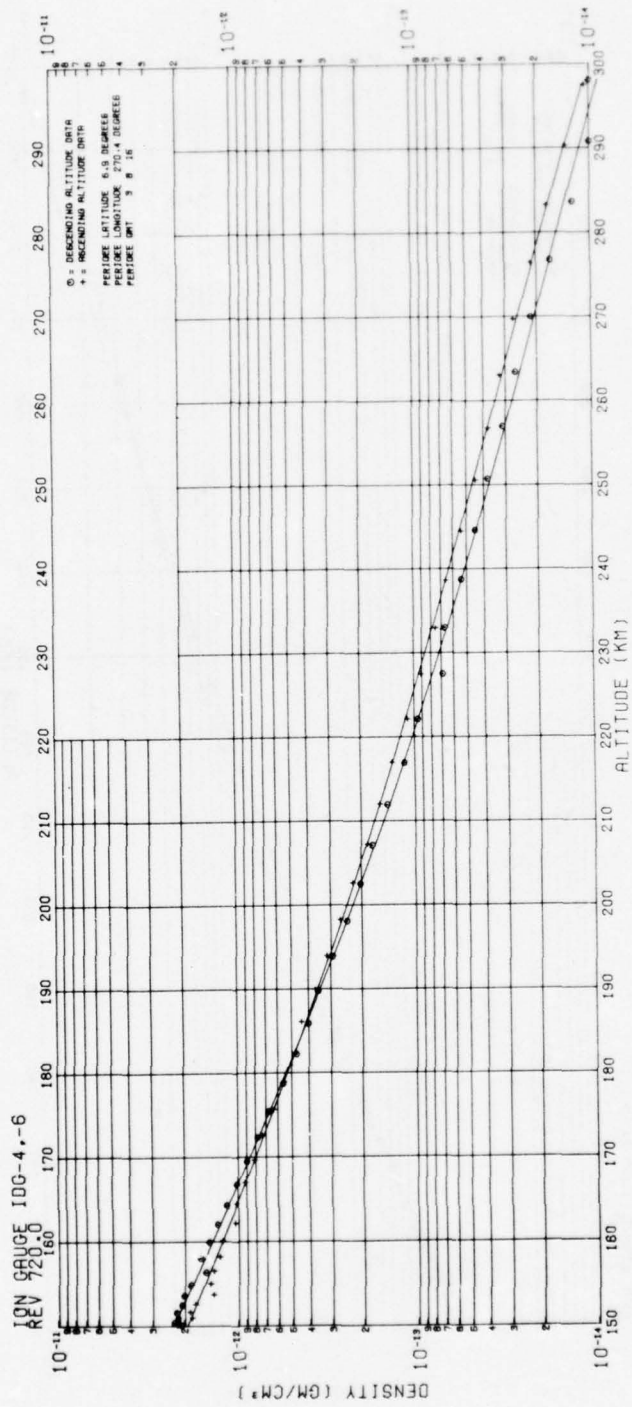


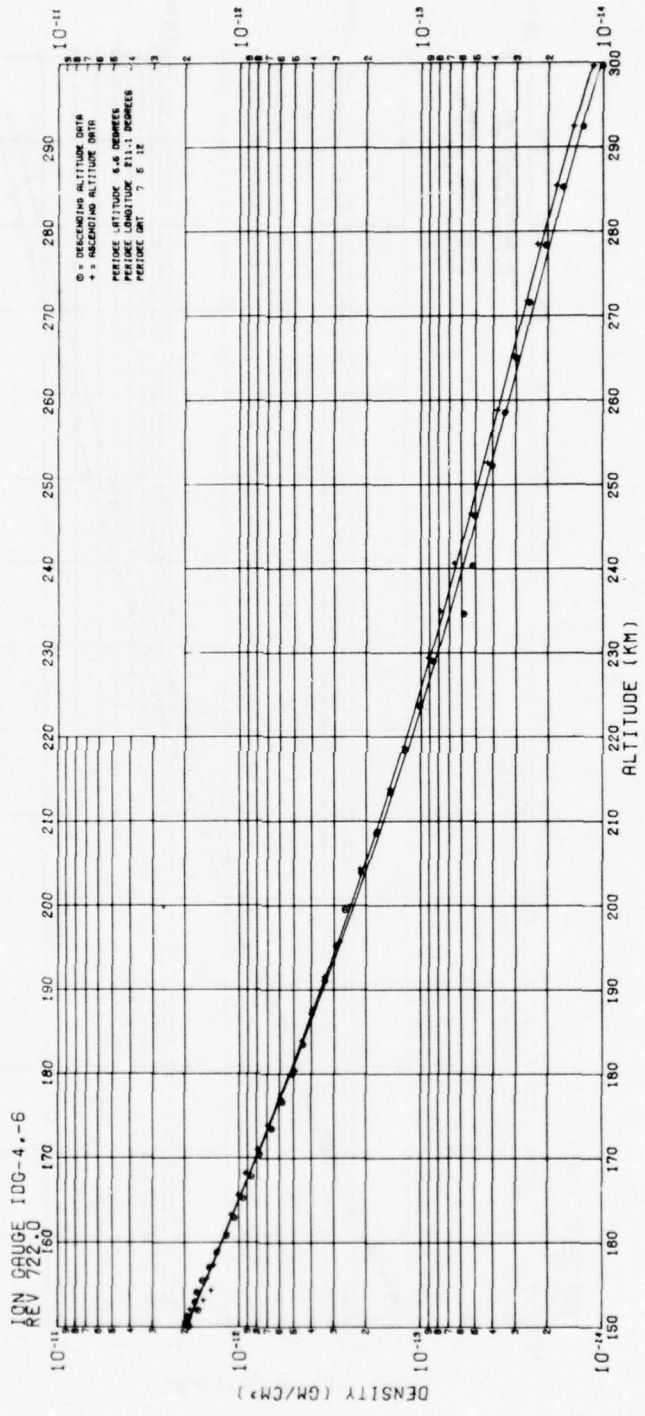


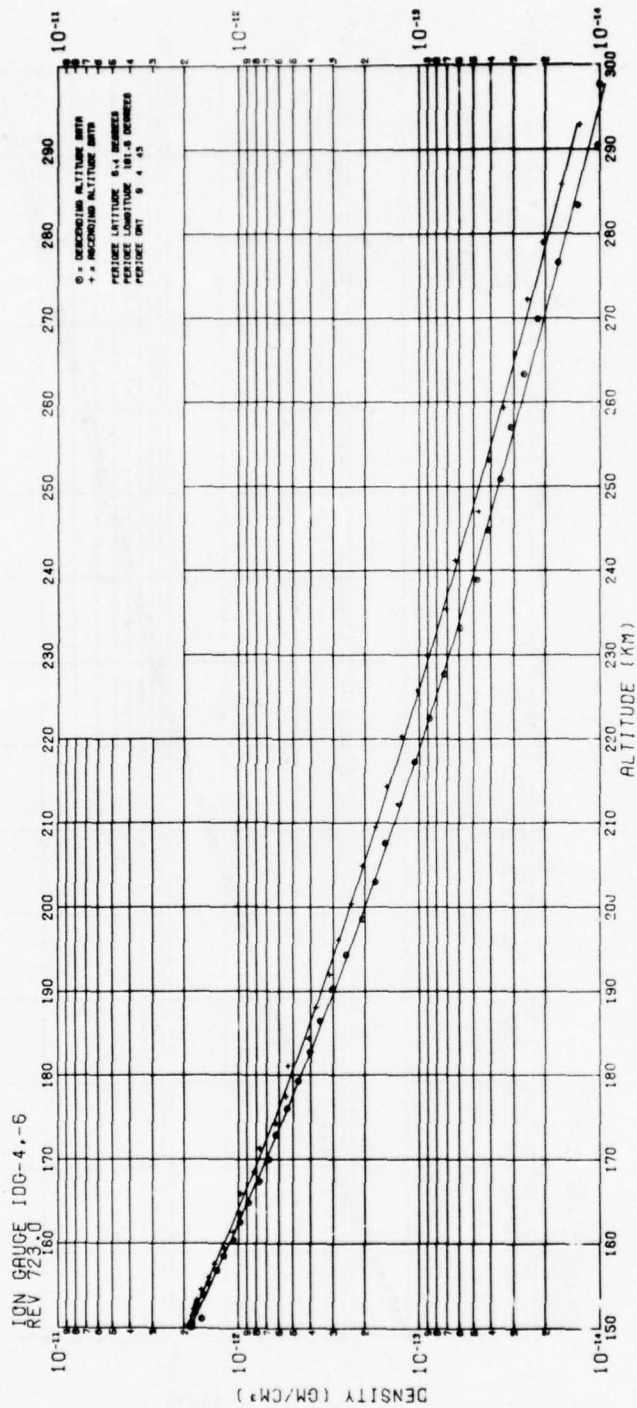


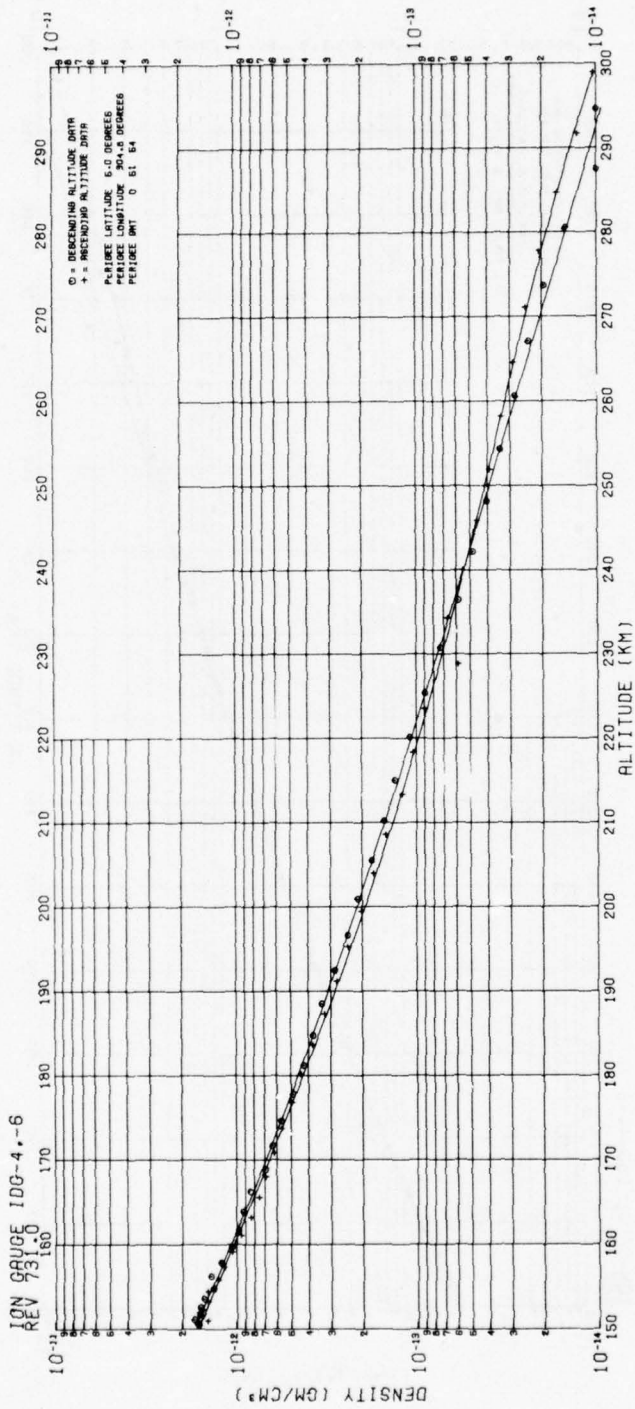


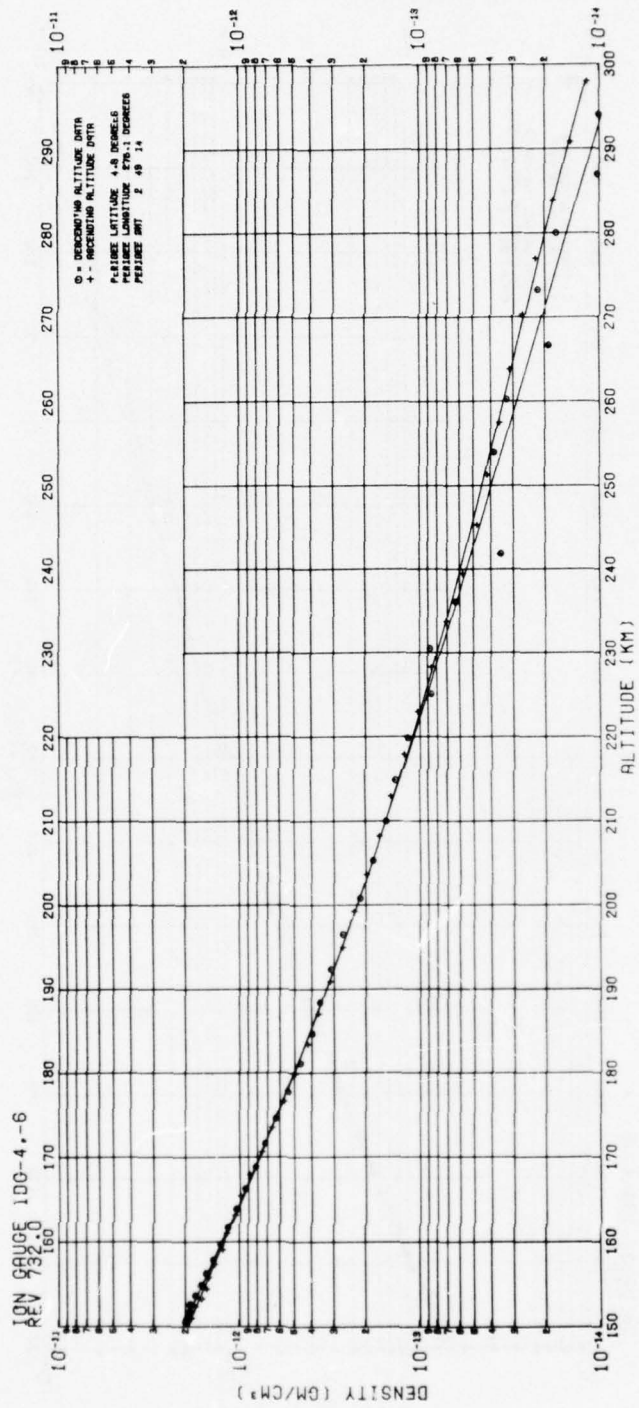


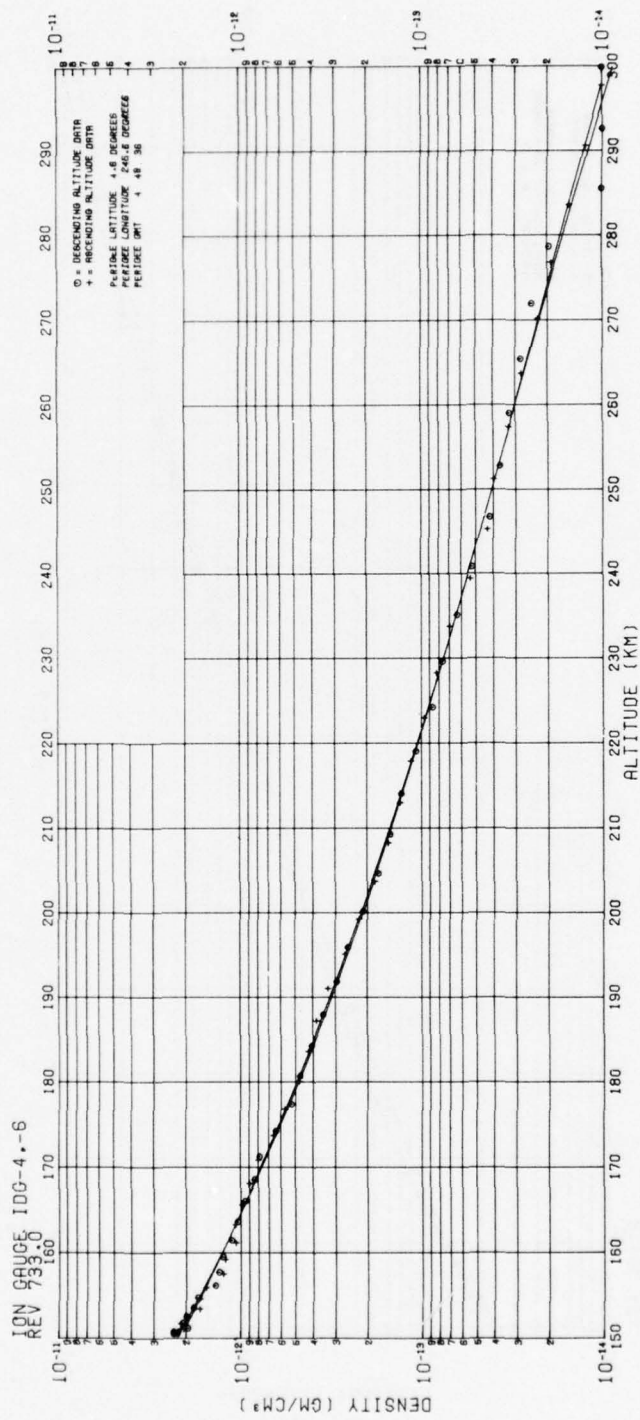


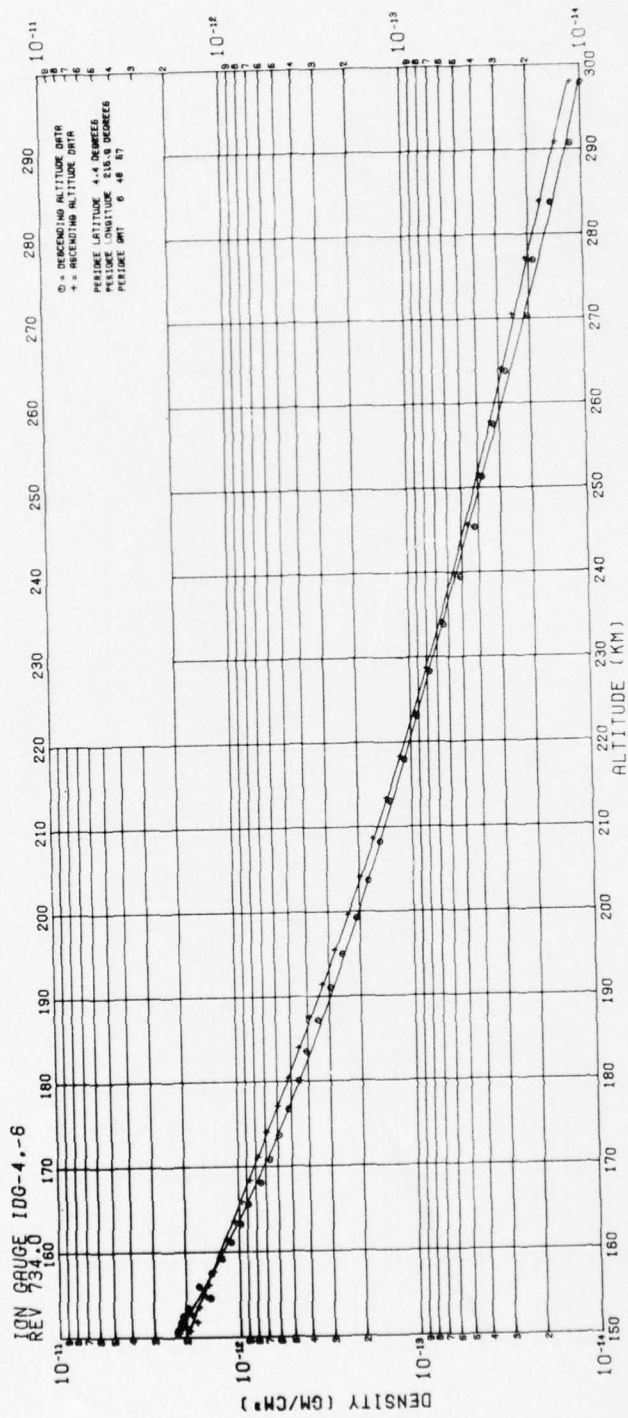


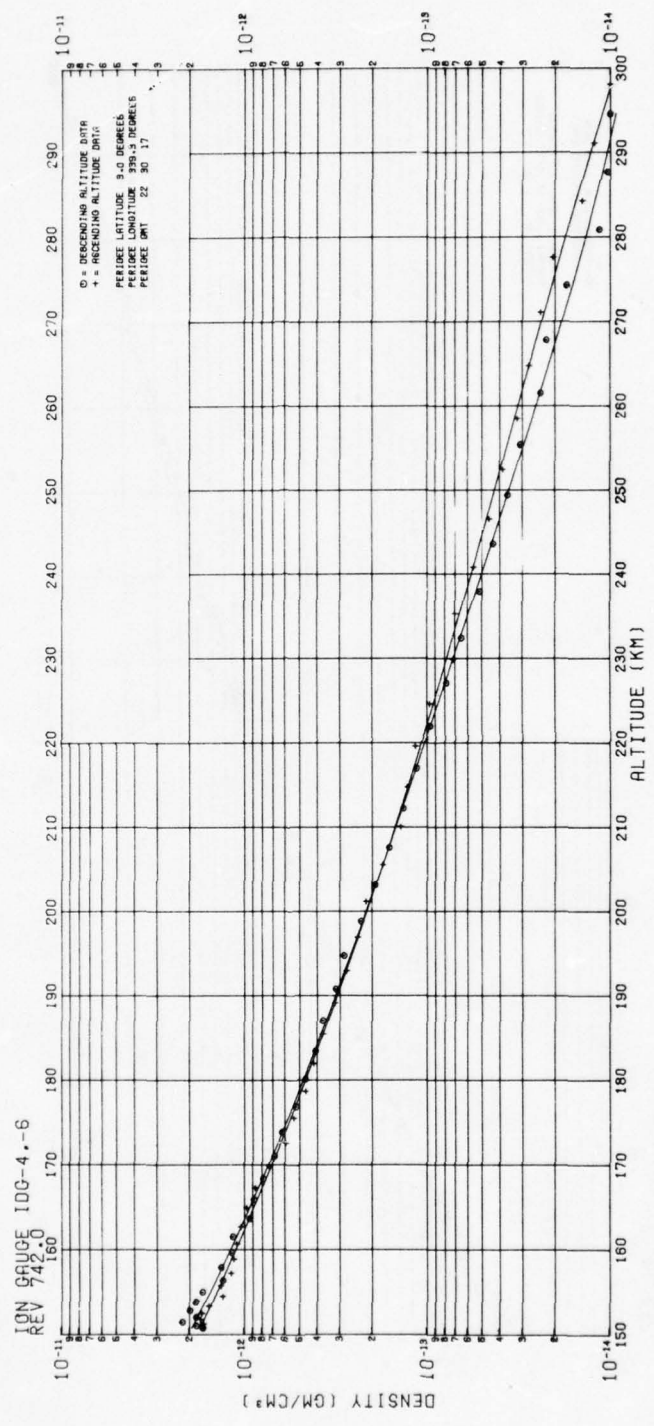


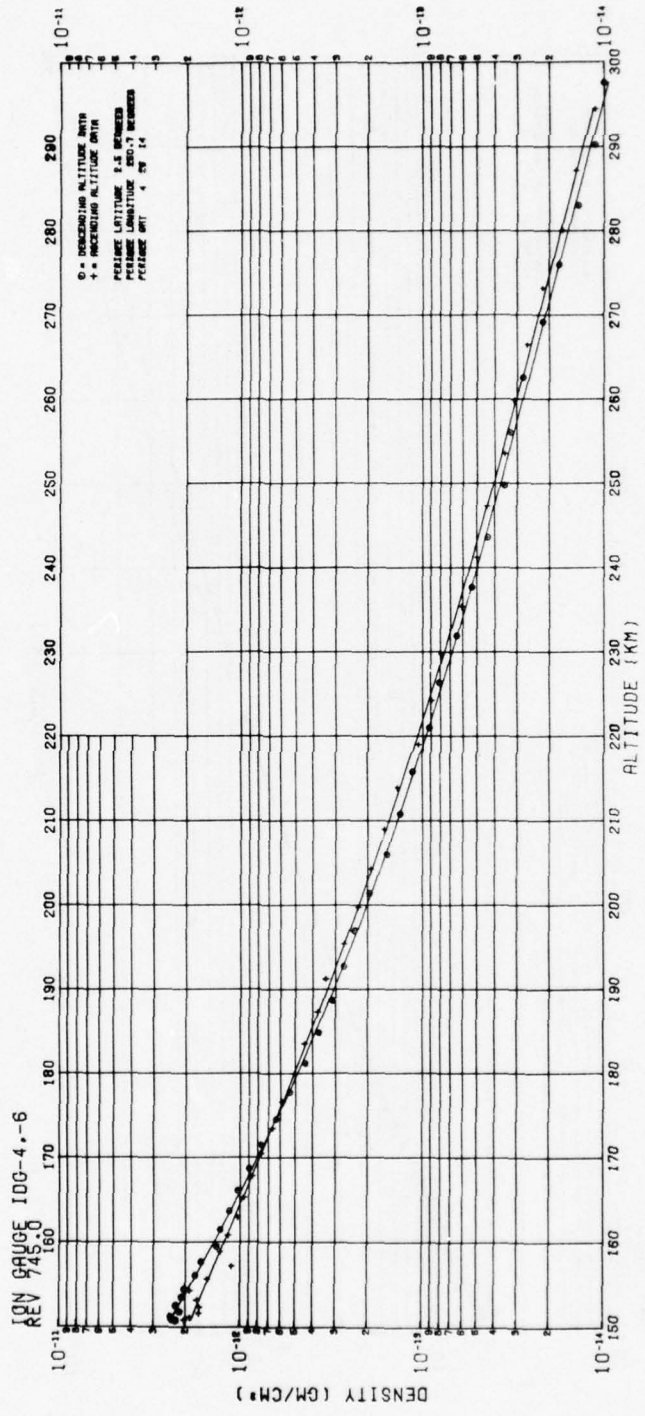


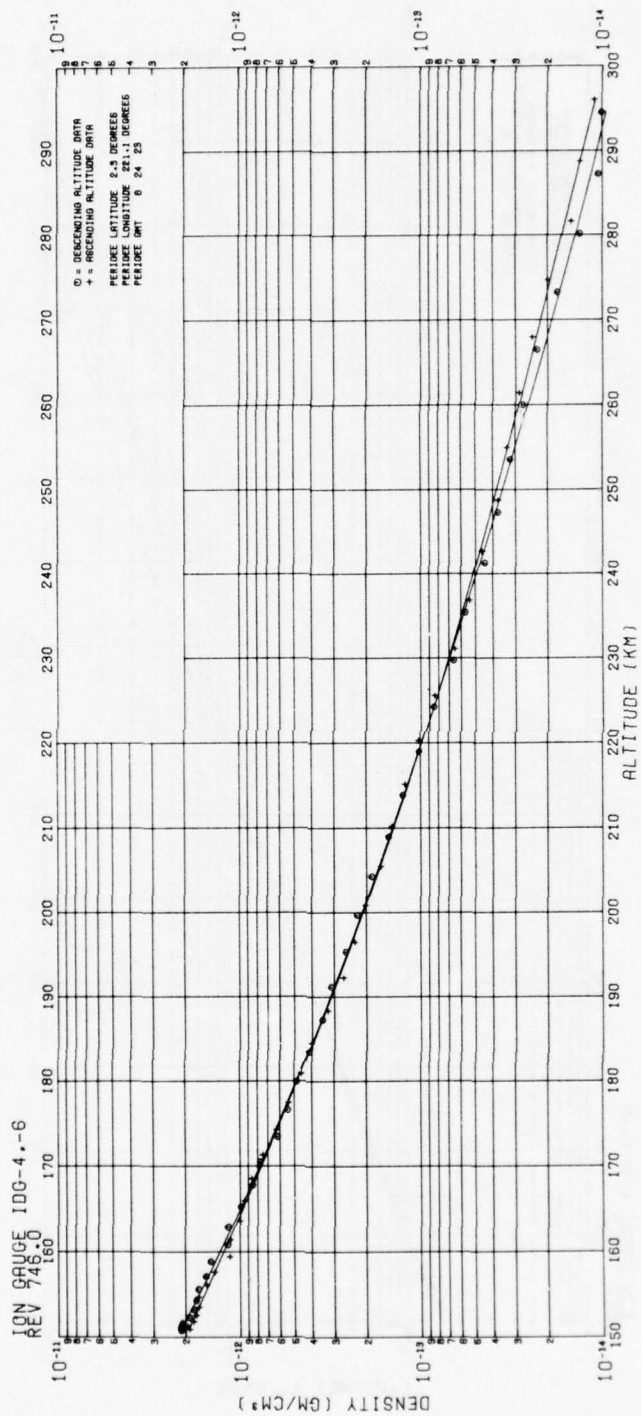


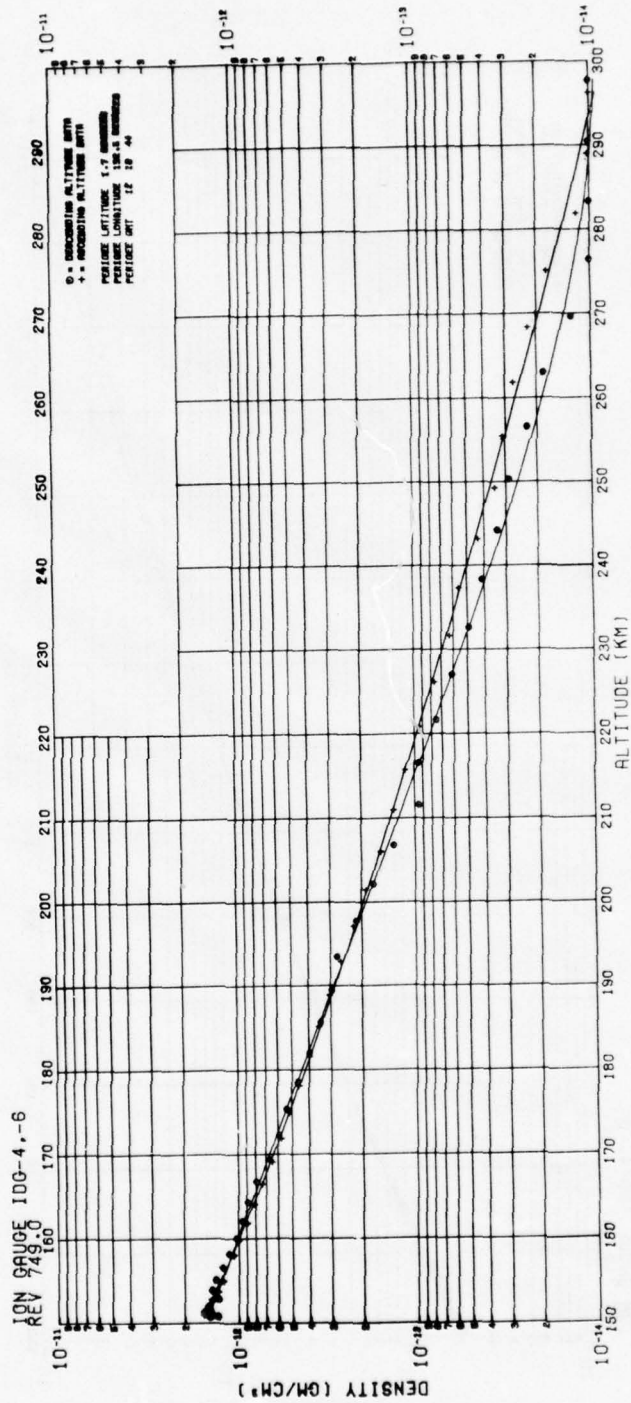


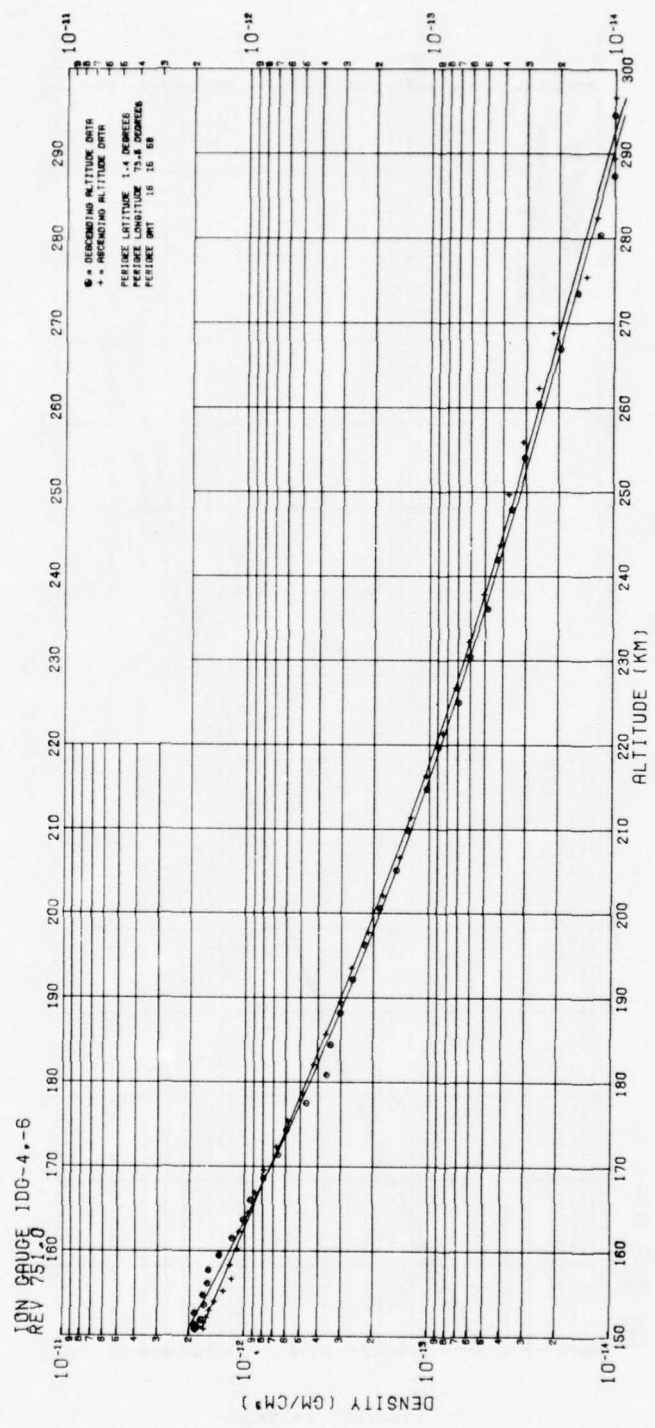


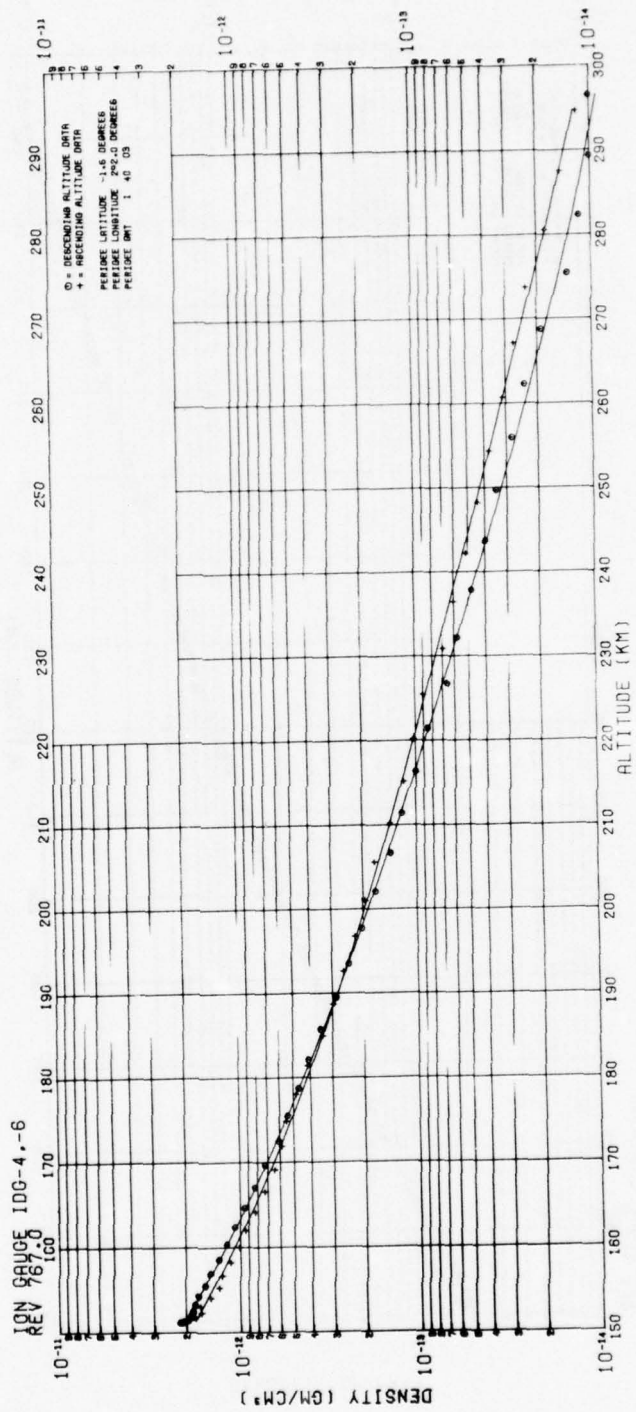


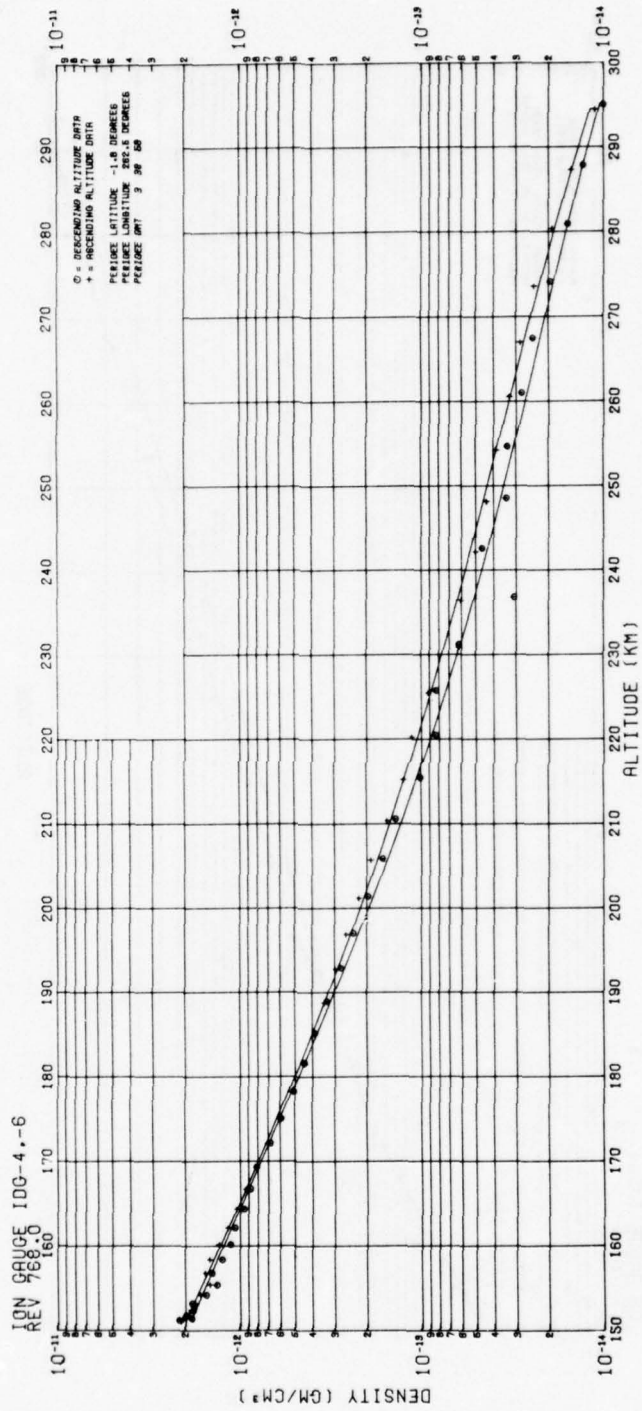


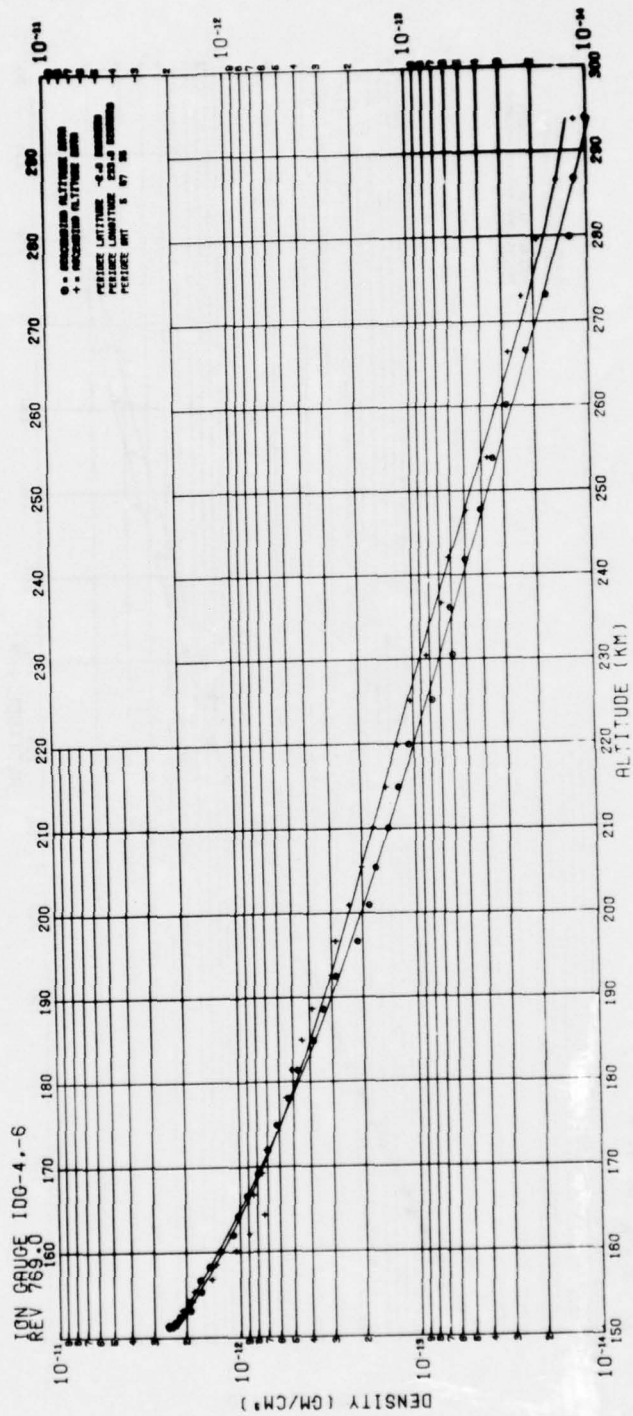


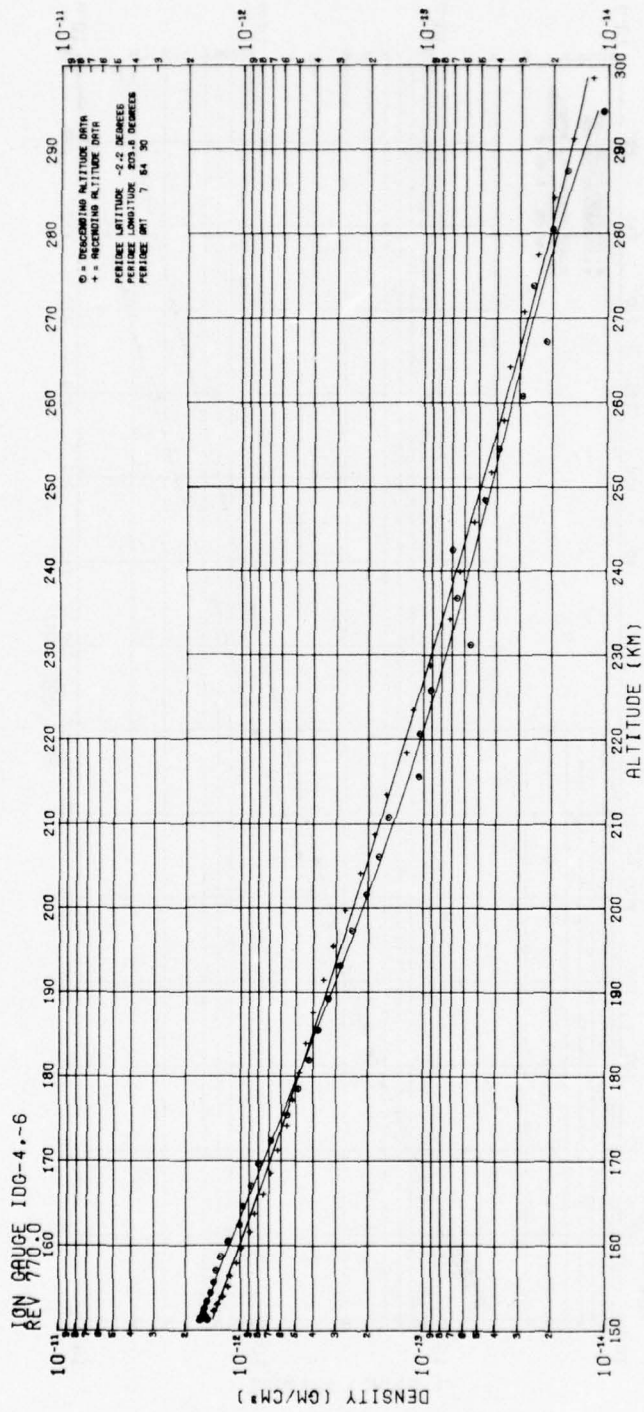


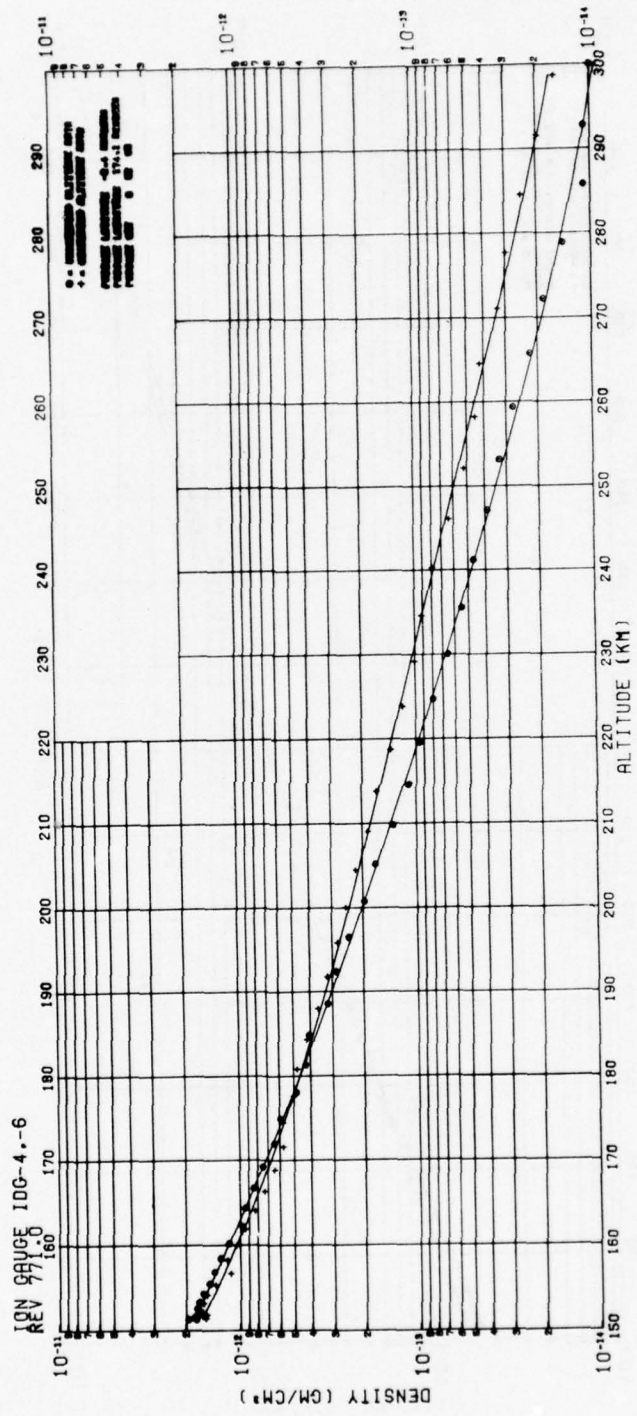


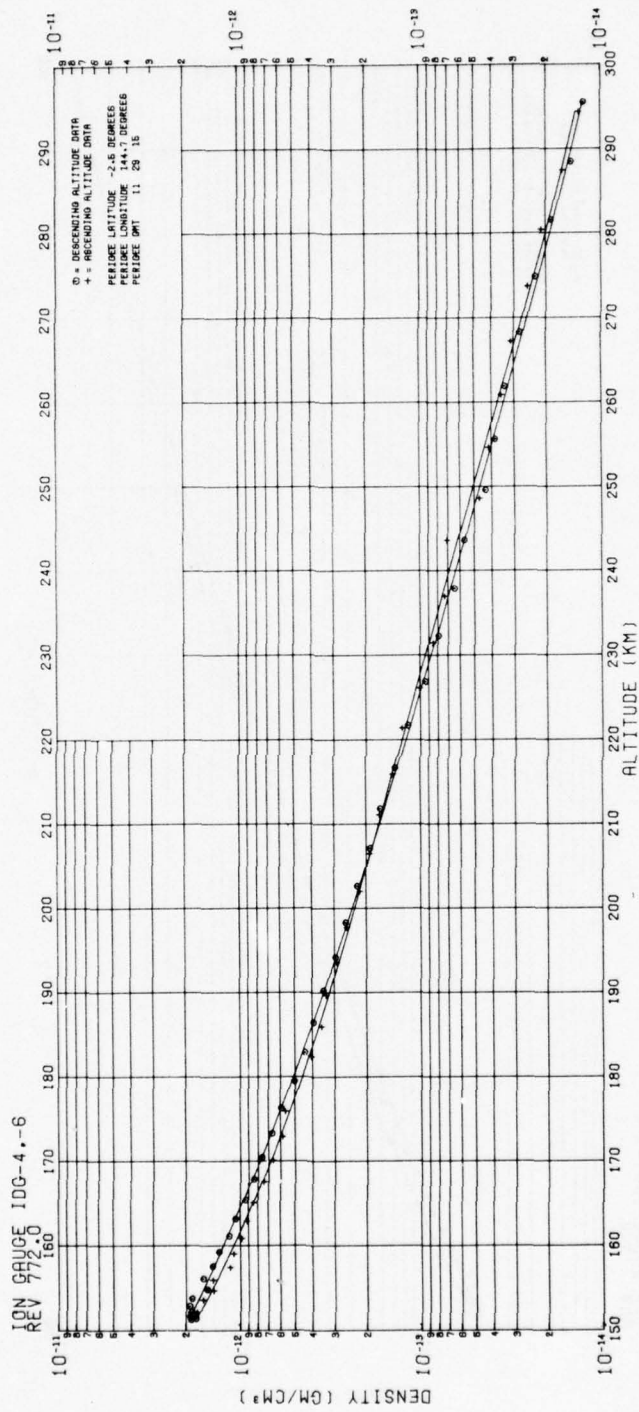


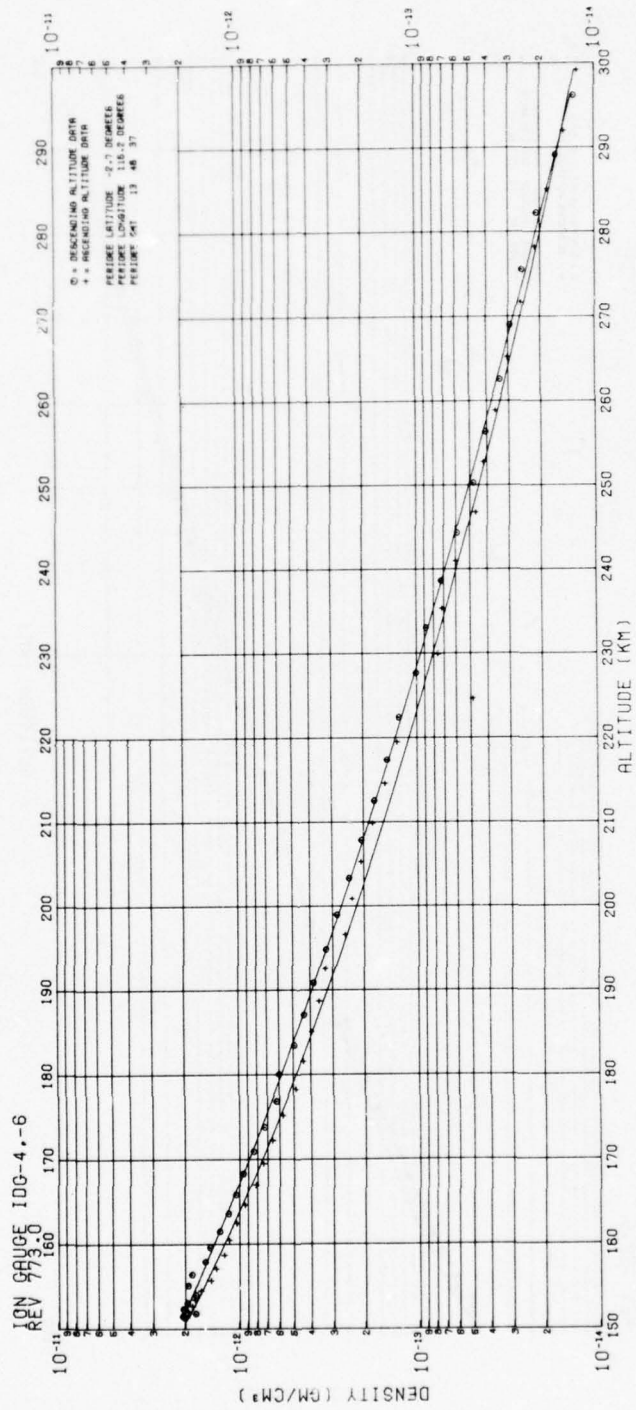


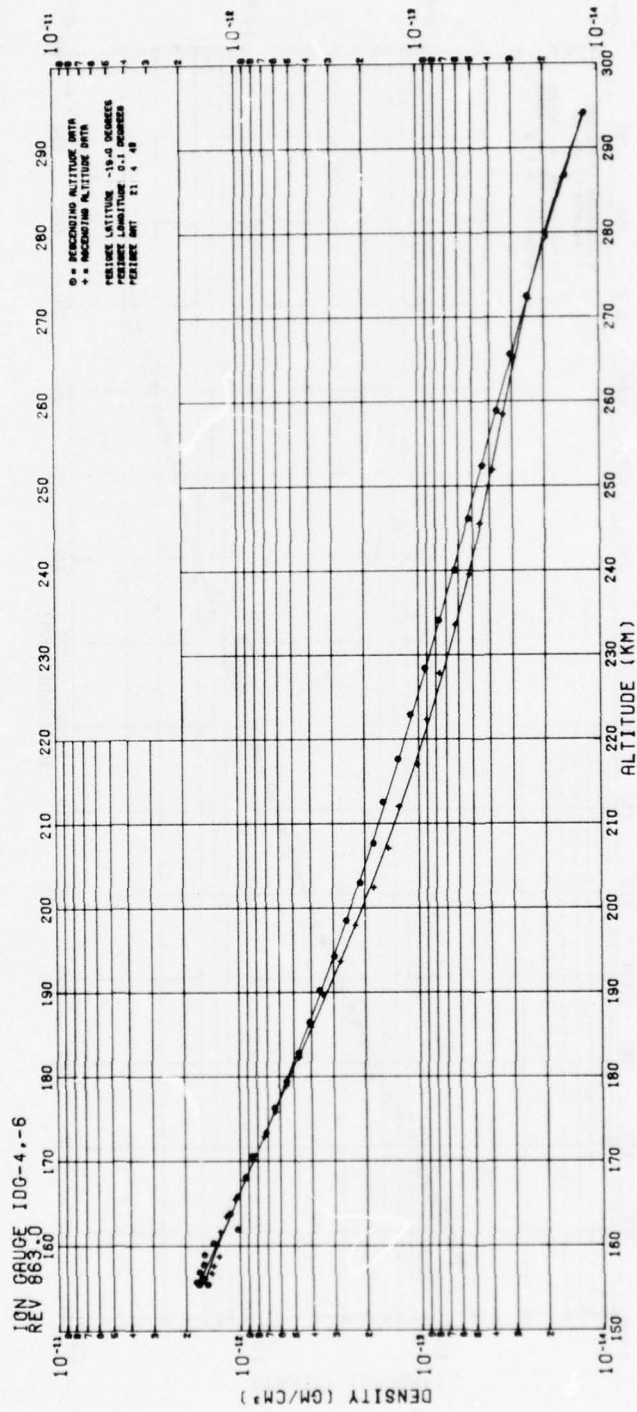


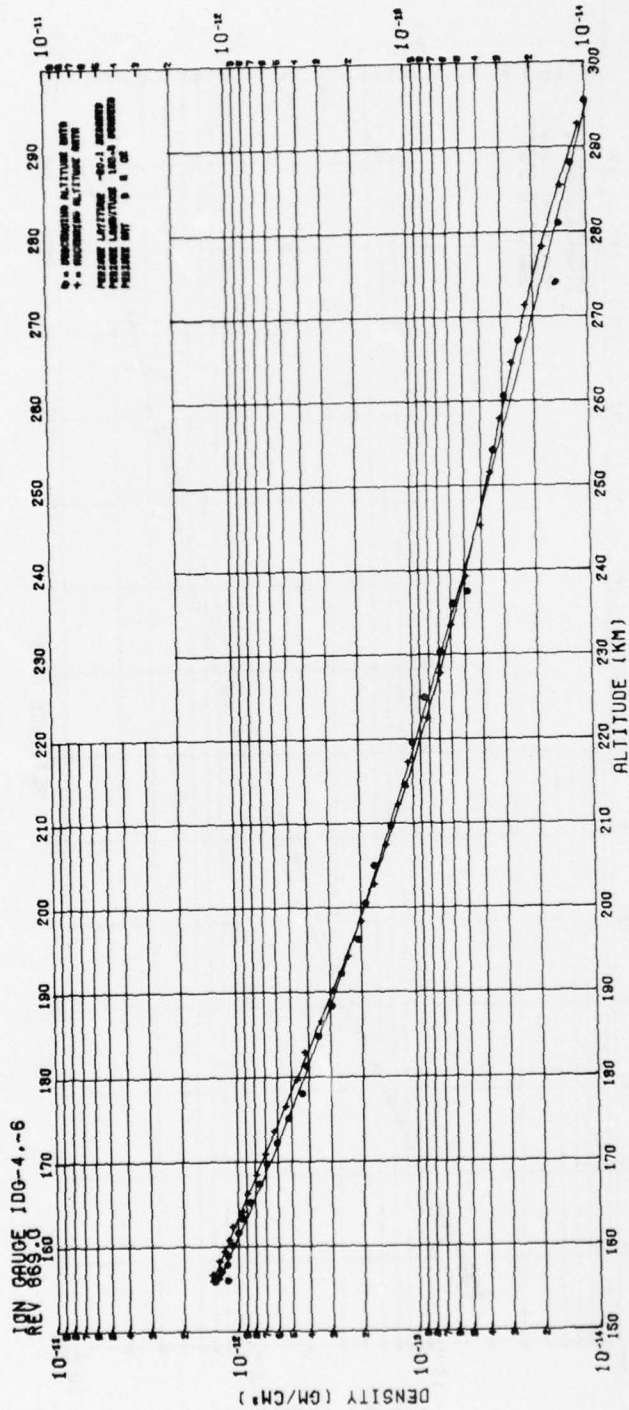


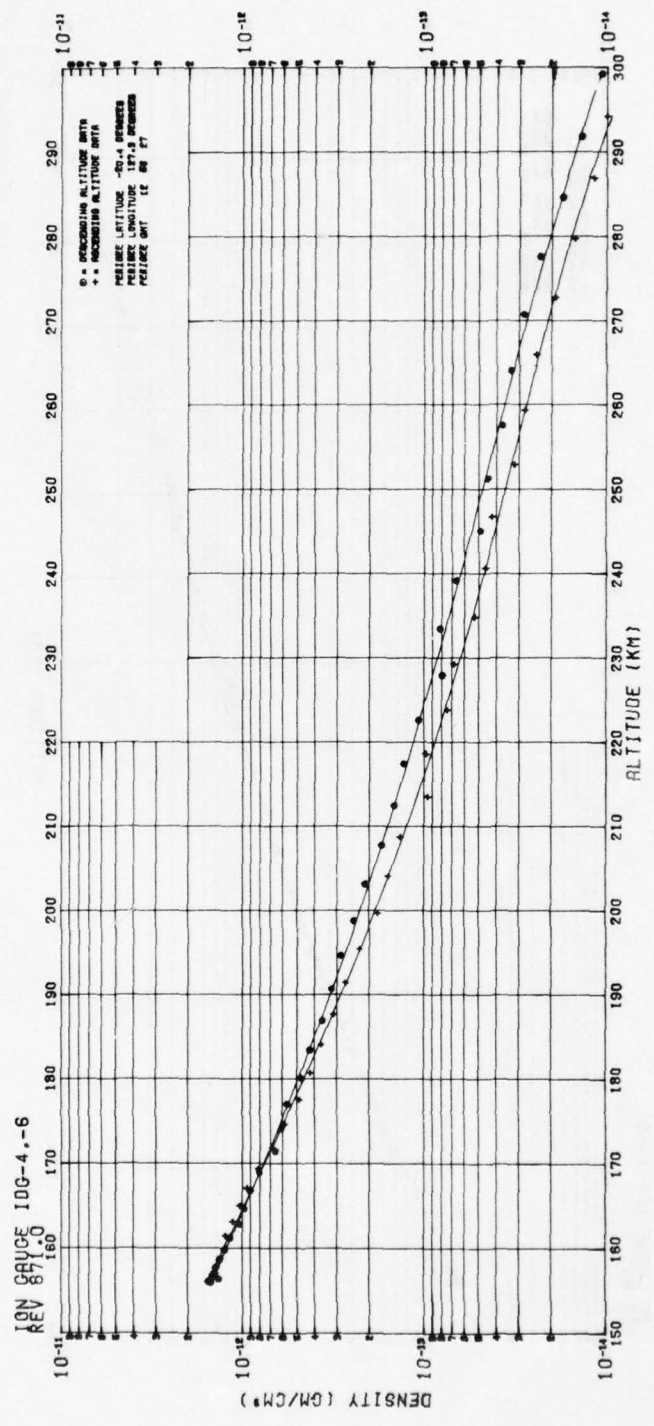


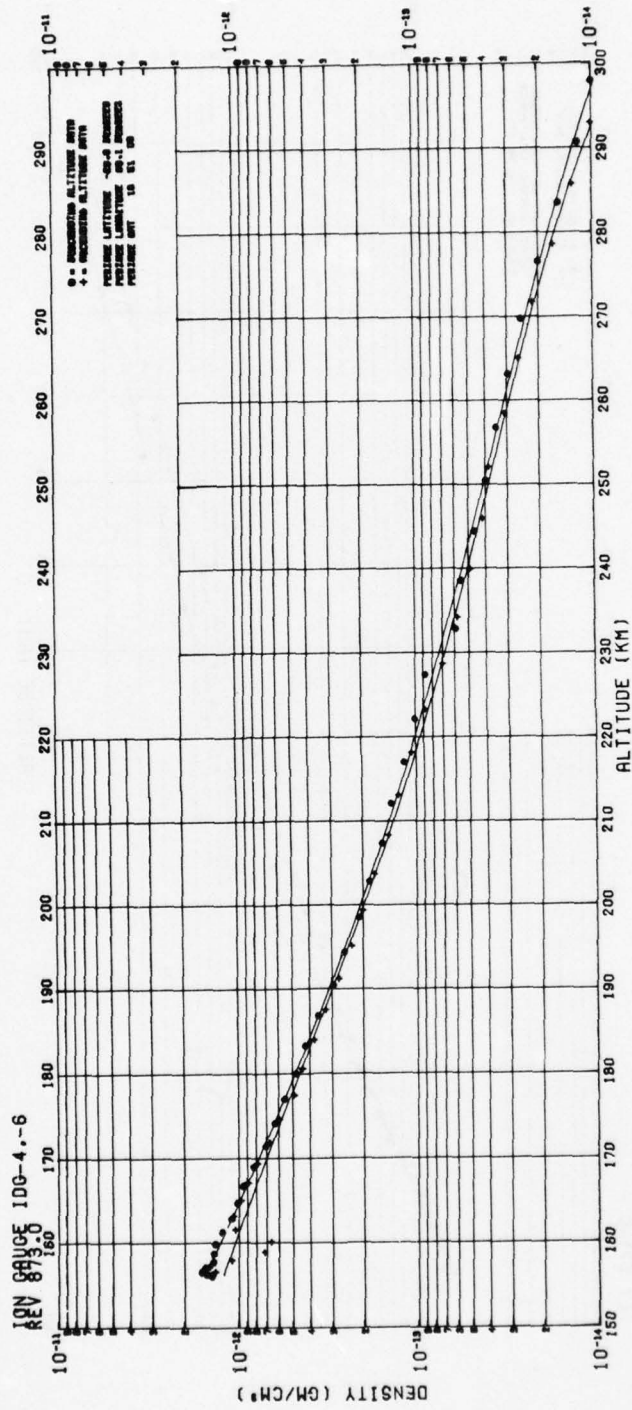


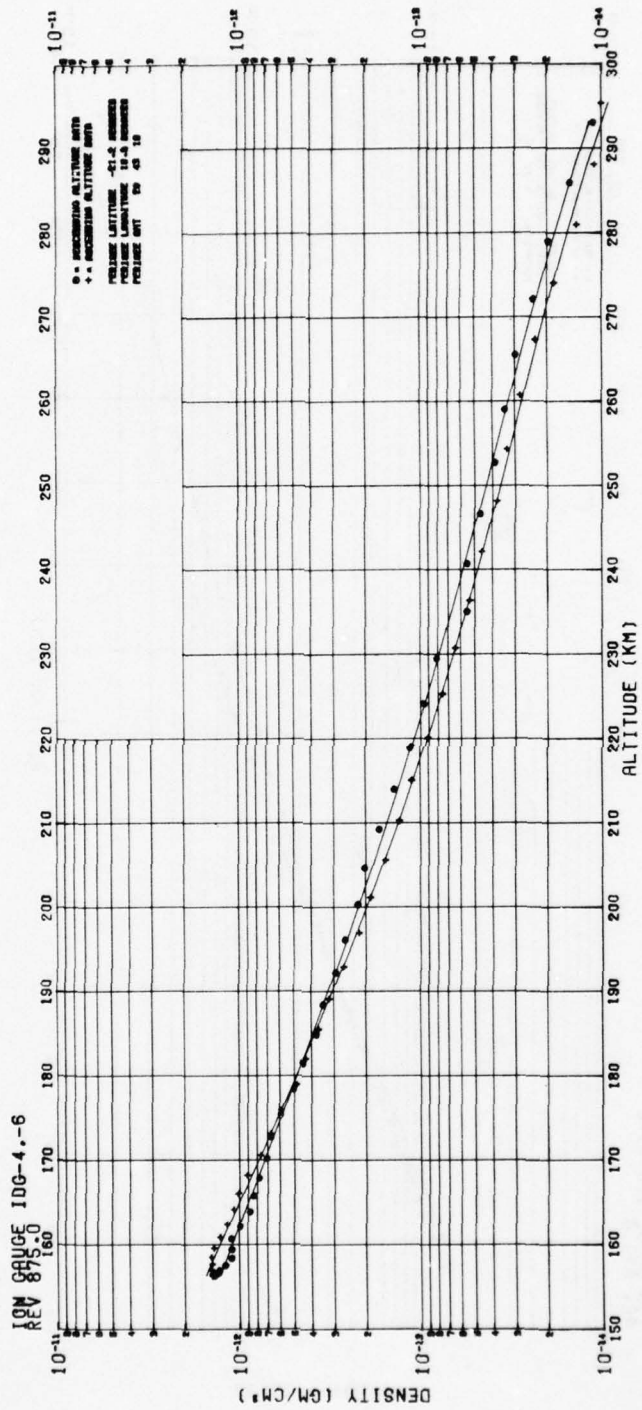


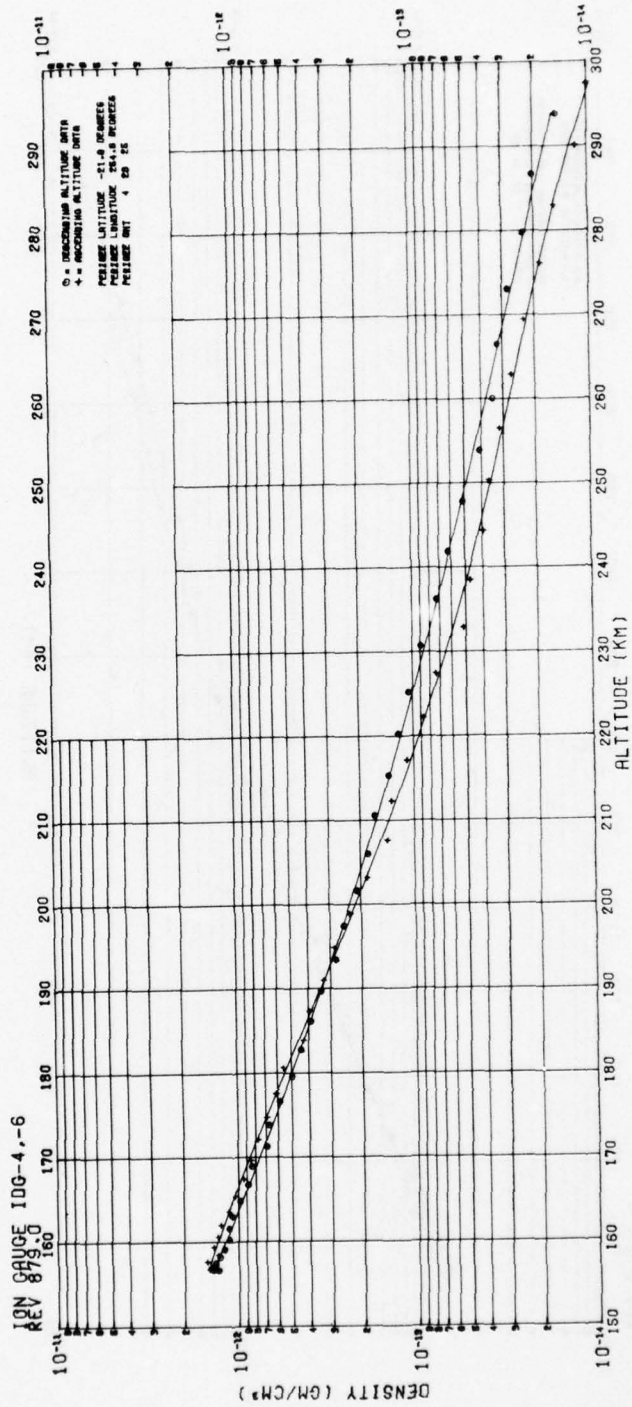


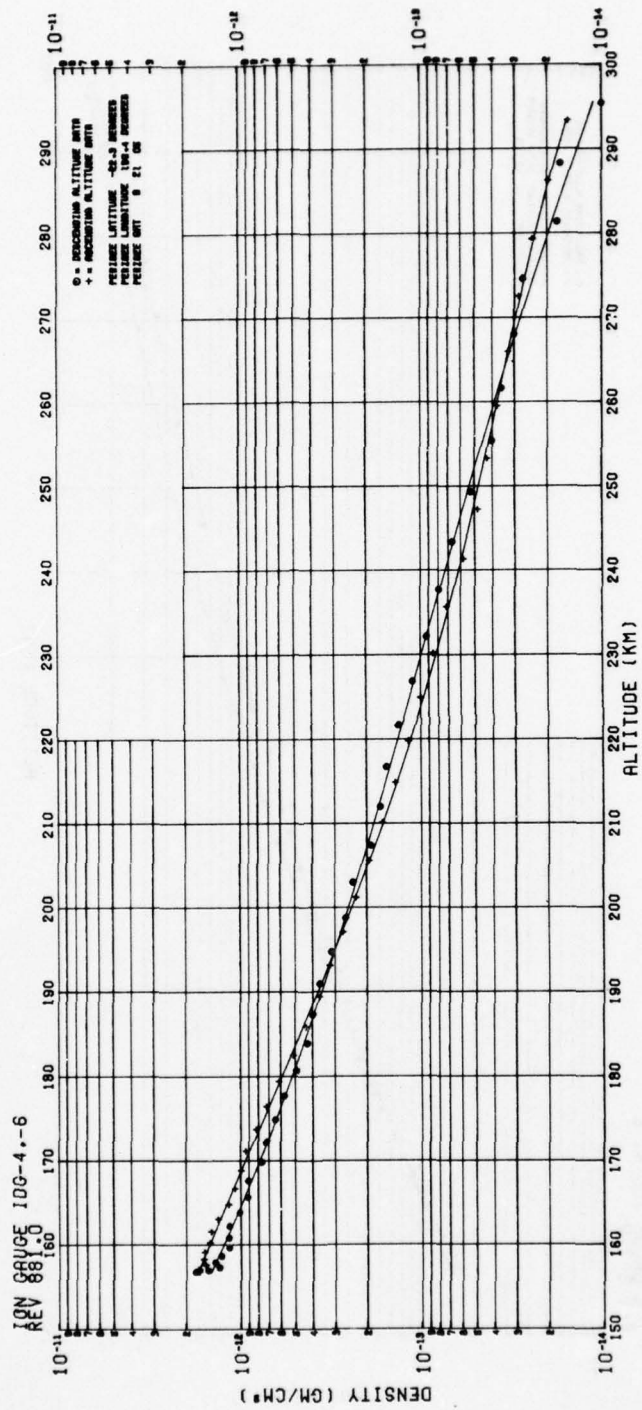


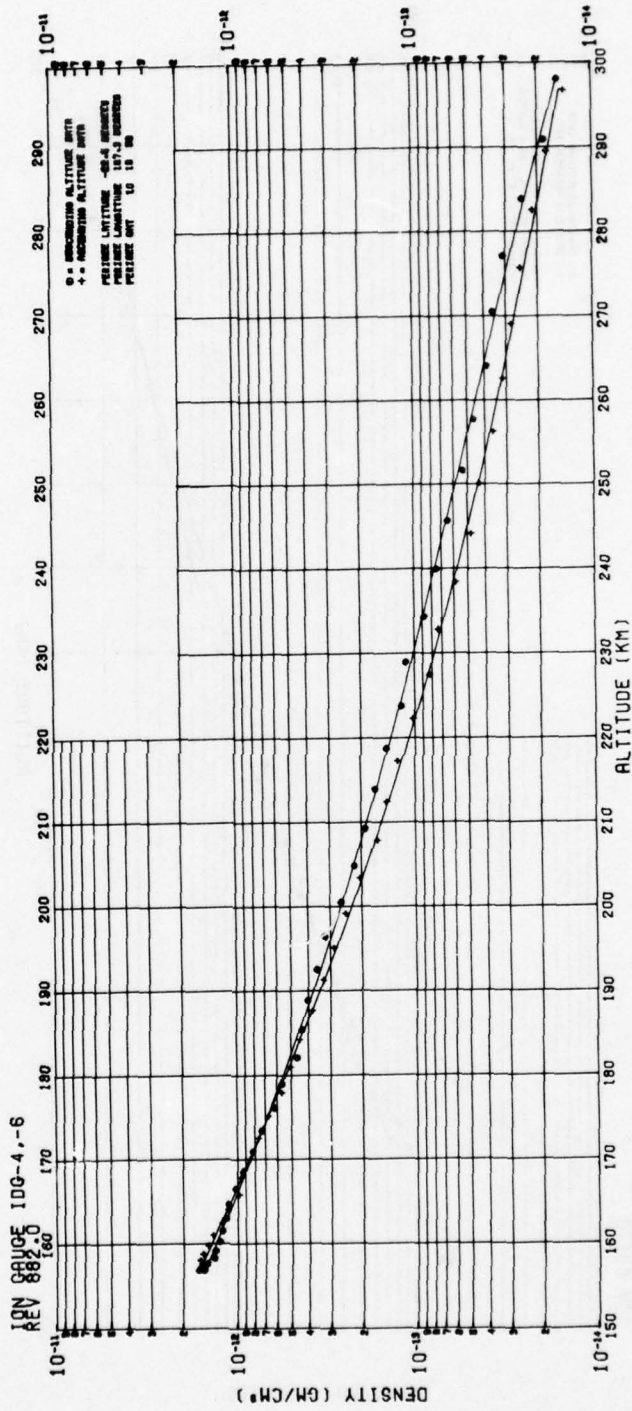


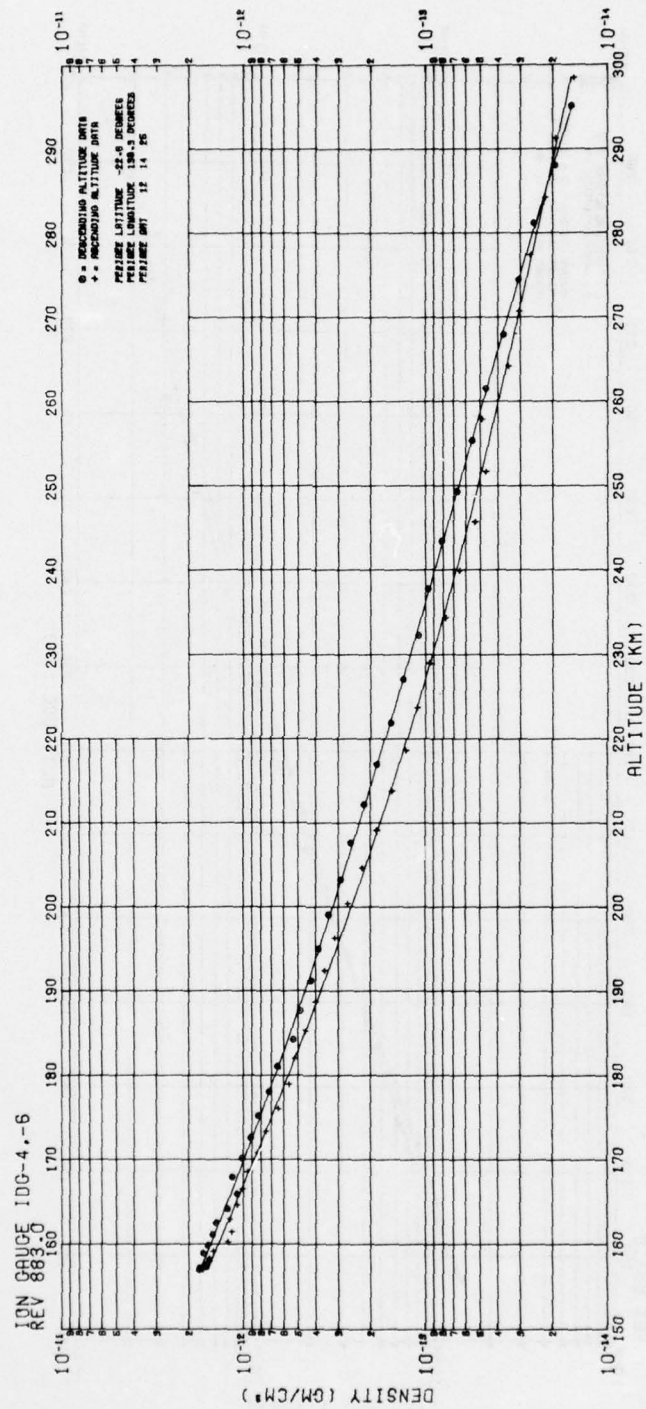


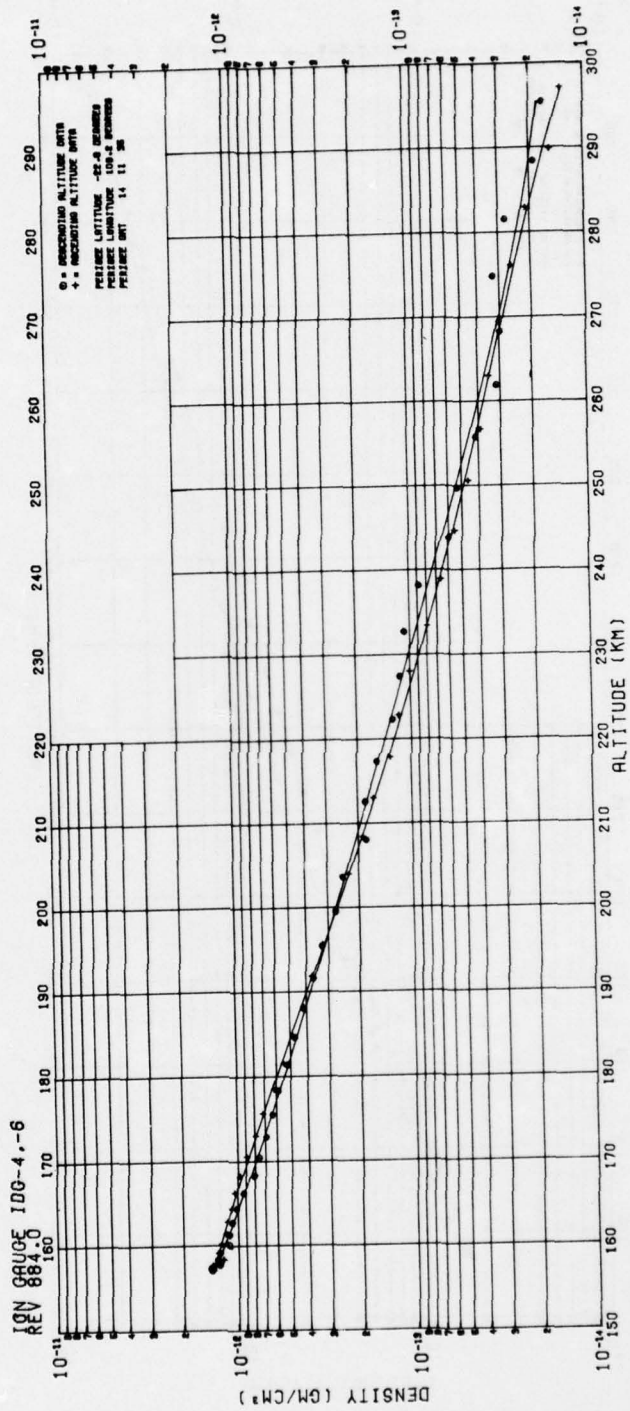


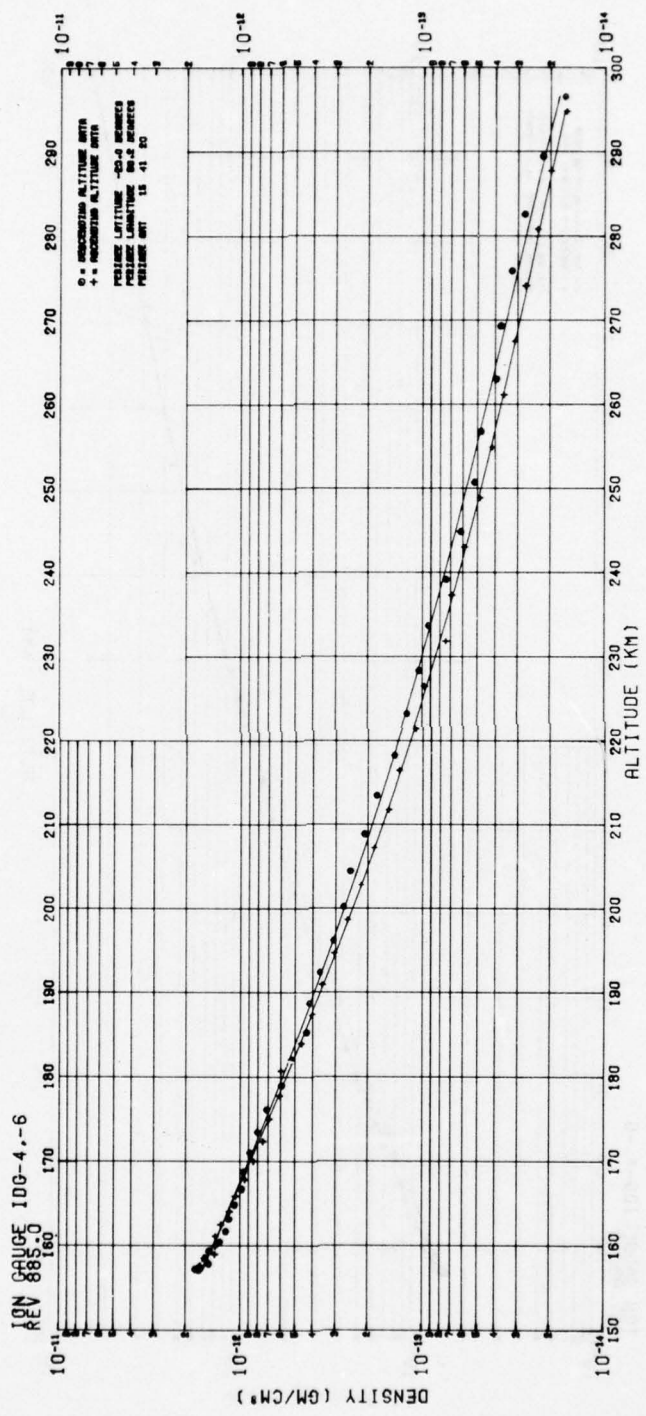


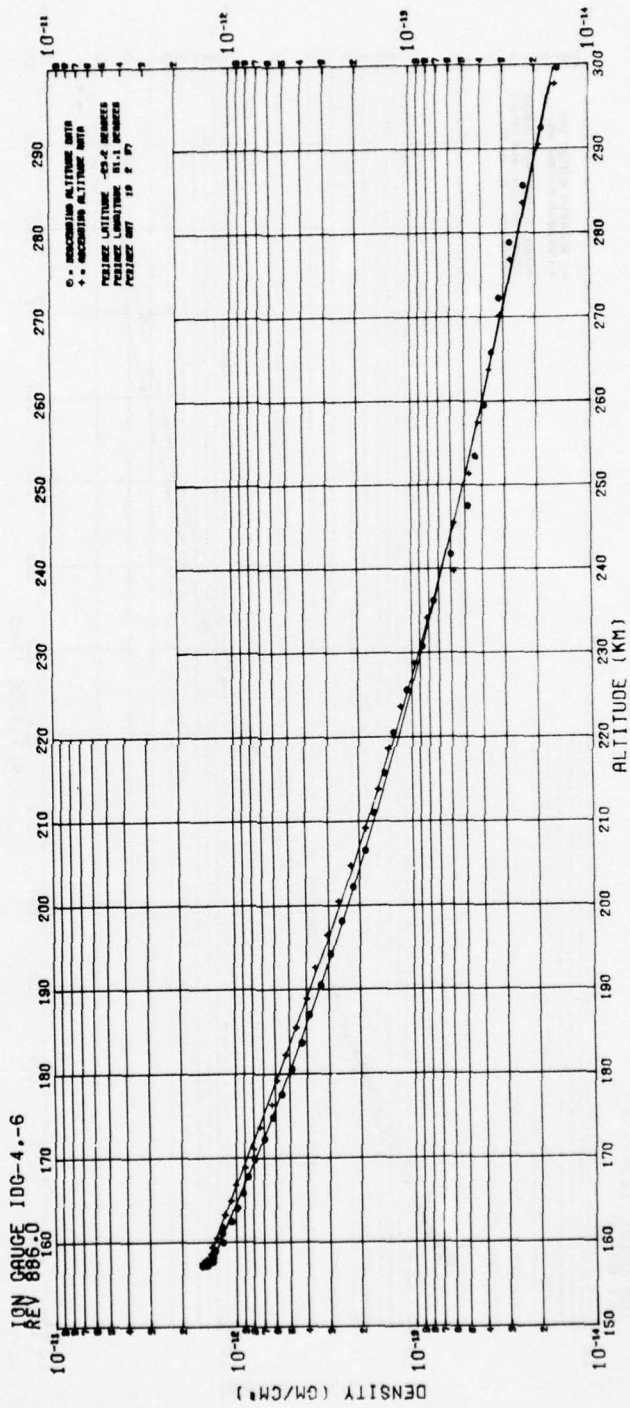


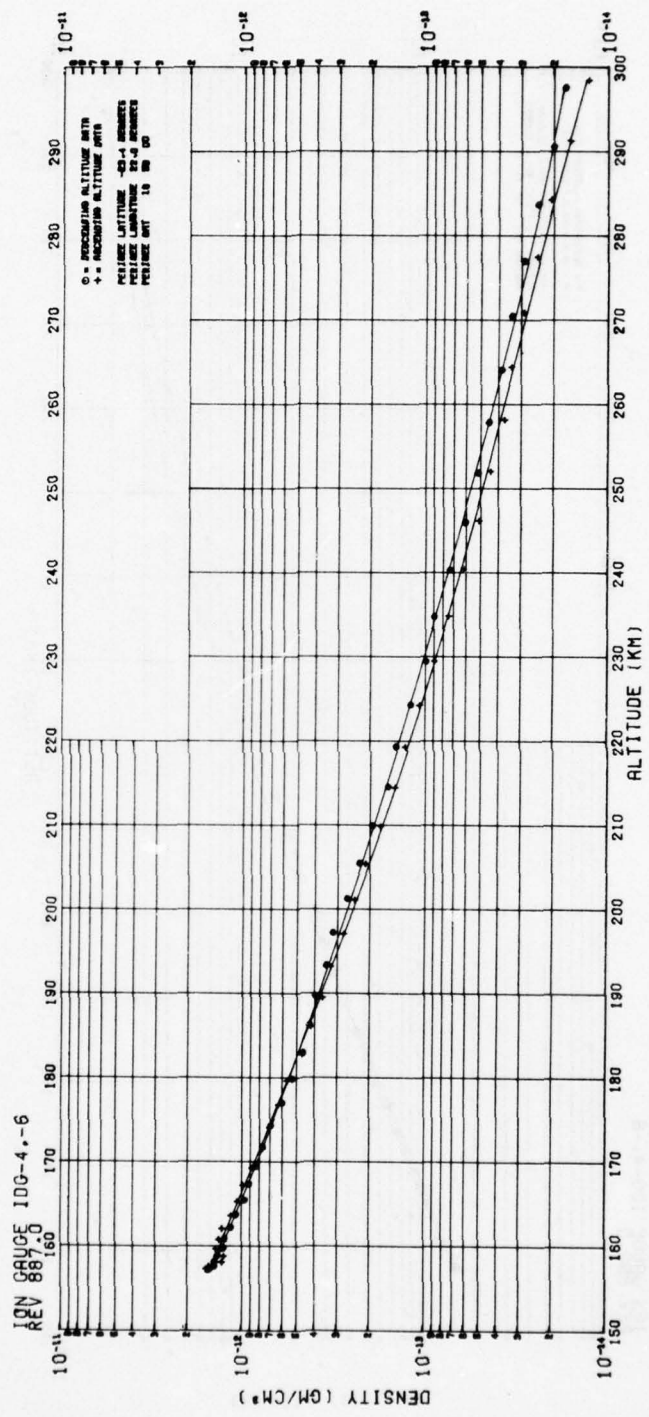


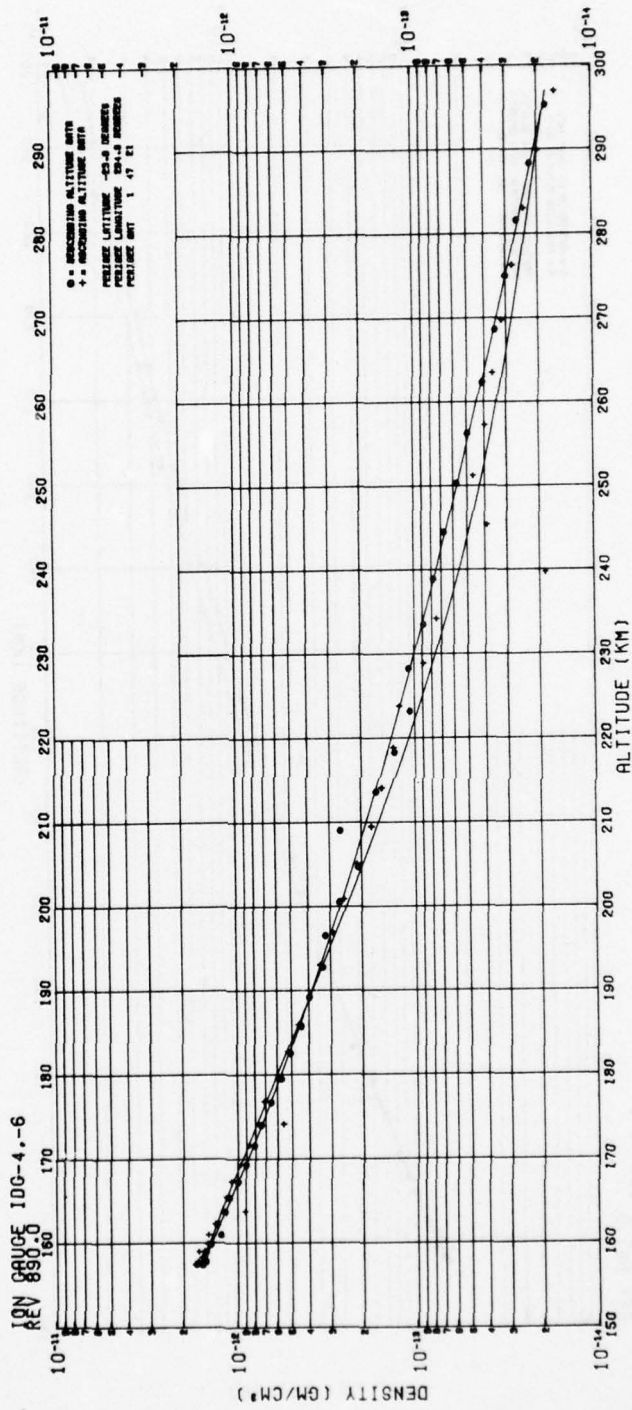


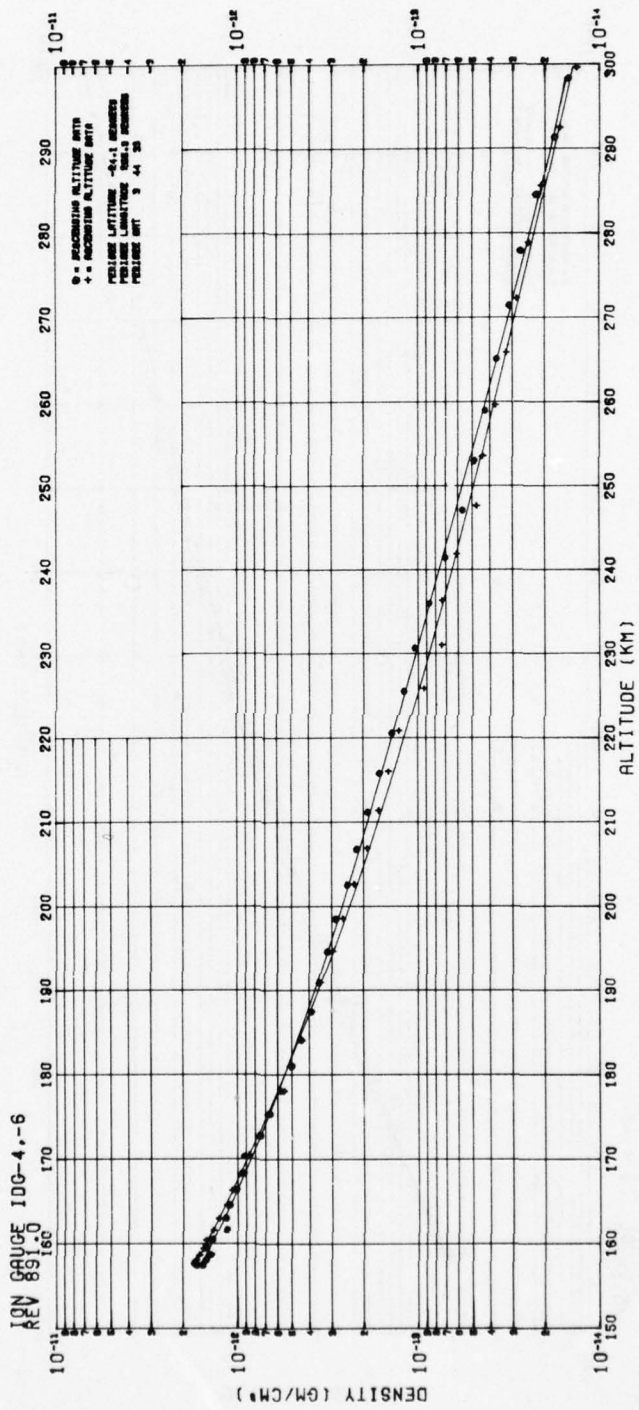


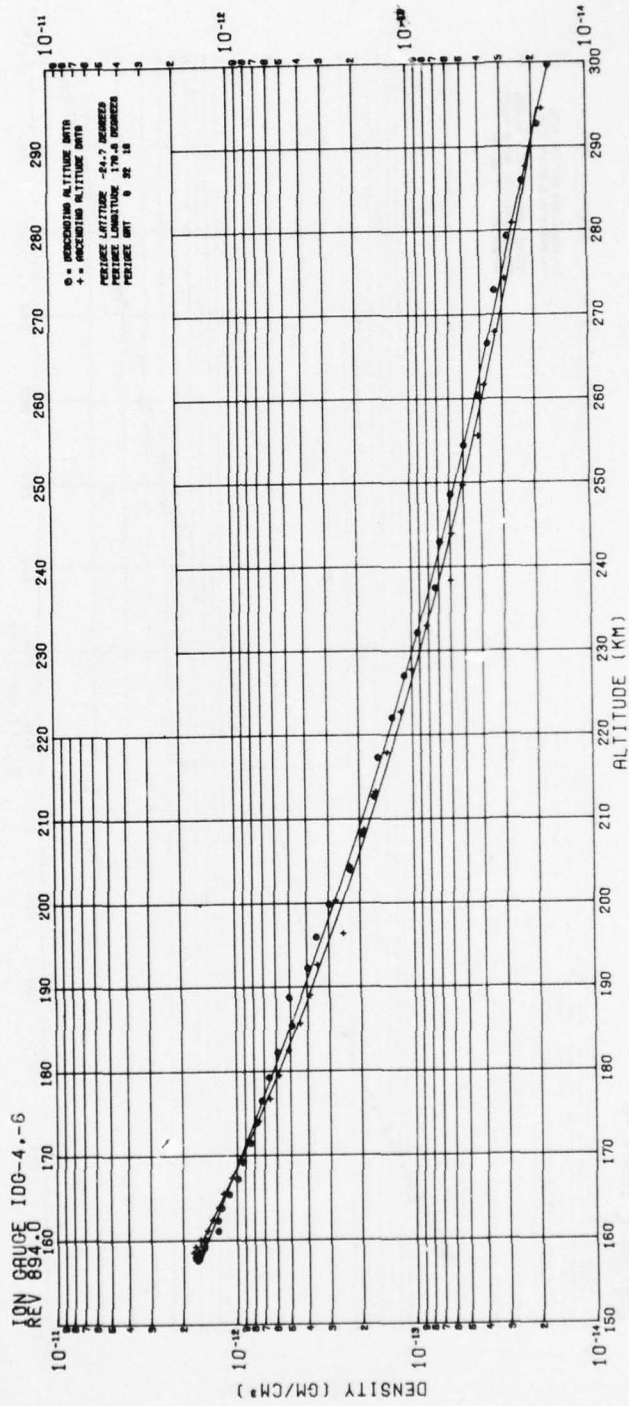












AD-A032 373

AIR FORCE GEOPHYSICS LAB HANSCOM AFB MASS
IONIZATION GAUGE MEASUREMENTS OF ATMOSPHERIC DENSITY FROM A LOW--ETC(U)
MAY 76 J P MCISAAC, K S CHAMPION
AFGL-TR-76-0113

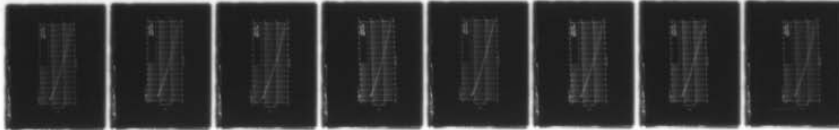
F/G 4/1

UNCLASSIFIED

NL

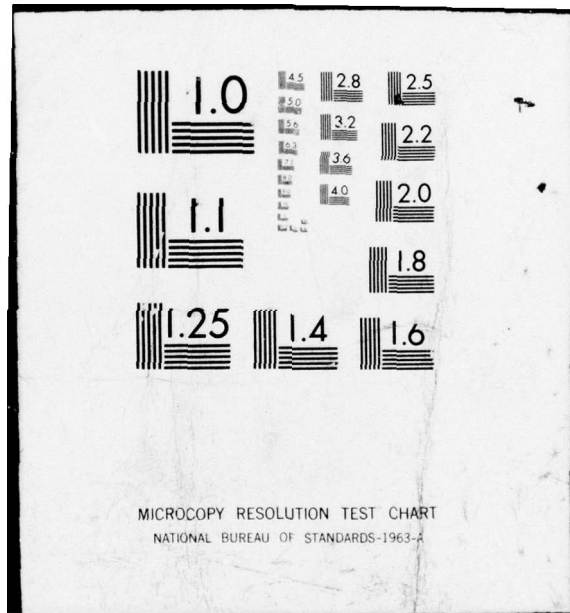
6 OF 6

AD
A032373



END

DATE
FILMED
- 77



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

