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THE RADIATION ENVIRONMENT OF OSO MISSIONS FROM 1974 TO 1978

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GODDARD SPACE FLIGHT CENTER

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Foreword

Trapped particle radiation levels on several OSO missions were calculated for nominal trajectories using improved computational methods and new electron environment models. Temporal variations of the electron fluxes were considered and partially accounted for. Magnetic field calculations were performed with a current field model, extrapolated to a later epoch with linear time terms. Orbital flux integration results are presented in graphical and tabular form; they are analyzed, explained, and discussed.

Estimates of energetic solar proton fluxes are given for one year missions at selected integral energies from 10 to 100 Mev. This report supersedes all past issuances or releases regarding Van Allen belt radiation on OSO satellites. The information contained in the present report replaces all previously distributed data, especially the data released in the last OSO-I and OSO-H report of July 1971 (Stassinopoulos, 1971).

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Contents

Appendices

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LIST OF TABLES

LIST OF FIGURES

Introduction

Several circular flight paths were considered for the future OSO missions, all located at the same altitude but at different inclinations, ranging from 33 to 90 degrees prograde, and for three nomunal launch dates spaced two years apart, starting in 1974.

As stated in the previous OSO study (Stassinopoulos, 1971), a combination of small inclination ($i < 50^{o}$) and low altitude ($h < 5000$ km) produces trajectories that lie almost completely within the region of magnetic dipole space called the "inner zone" ($1.0 < L < 2.8$), in contrast to high inclination ($i > 55^{o}$) circular or elliptical flight paths at any altitude, that traverses the entire terrestrial radiation belt twice during each revolution, moving back and forth through regions of low L values (i.e. the inner zone) and regions of high L values (i.e. the outer zone : $L > 2.8$) respectively.

Therefore, of the specified trajectories, the polar cases warrant special consideration because they pass through regions of space, within the magnetosphere, that are accessible to subrelativistic cosmic ray fluxes of solar origin. A detailed discussion of this matter is given in a subsequent section on "Energetic Solar Proton Fluxes".

Two new environment models were used in the OSO calculations : the AE5 by Teague and Vette (1972) for the inner zone electrons, and the AE4 by Singley and Vette (1971) for the outer zone electrons. Some observations on both models are in order.

In constructing these models it was possible to infer a change of the average quiet-time electron flux levels as a function of the solar cycle. However, a complete temporal description of the solar cycle dependence is not available at this time. In their present form, both models are static, describing the environment as it existed in October 1967, at about solar maximum conditions. An additional version of each, corresponding to a solar minimum epoch, will be issued later. In the meantime, calculations performed with the current versions for the years 1973-1975 (next expexted period of decreased solar activity) will inevitably overestimate the predicted fluxes. To partially compensate for this error, the uncertainty factor attached to the electron results will be adjusted correspondingly (see Appendix A, last paragraph).

It should also be noted that the inner zone environment in 1967 still contained substantial amounts of artificial electrons, injected into the magnetosphereby the Starfish nuclear explosion of 1962 (Teague and Stassinopoulos, 1972). Since the residual artificial components, contained in the AE5 model, are still significantly predominant at some L values and for some energies, it was necessary to update the model in this regard and to remove the remaining artificials.

Approximate dates at which the Starfish fluxes had decayed down to natural background levels (Teague and Stassinopoulos, 1972) and apparent decay lifetimes for the artificials (Stassinopoulos and Verzariu, 1971) were available as functions of energy and L. Using these cutoff times and lifetimes, the artificial component was removed from the model data by an exponential decay function.

No special considerations are required for the proton results, obtained from standard models long in use. Although they describe a static environment, this is a valid representation for these particles because experimental measurements have shown that no significant changes with time have occurred in the proton population. With the exception of the fringe areas of the proton belt, that is, at very low altitudes and at the outer edges of the trapping region, the possible error introduced by the static approximation lies well within the uncertainty factor attached to the models. Consequently, the proton data may be applied to any epoch without the need for an updating process.

Appendix A contains pertinent information on units, field models, trajectory generation and conversion, etc.

Two new sections, Appendixes B and C, have been added to this report, relating to the enclosed tables and plots, explaining their format and describing their data.

A further addition to the output data and the reference material usually included in our reports is:

a) a projection of the satellite trajectory on a world map grid drawn in Miller cylindrical coordinates, where the start of each successive orbit (revolution) is sequentially numbered,
b) a trace of the flight path in magnetic B-L space after conversion from geocentric geographic (geodetic system) to geocentric geomagnetic (B-L system) coordinates,
c) computer produced exposure analysis table,
d) computer produced time account table.

Novel features in our old tables, besides improved headlines and labels, are:

a) new constant L-band intervals on the first output table, extending now to L=8.2,

b) L-band tables also generated for protons,

c) complete description of low energy protons included as a standard procedure in all studies,

d) spectral distribution given also in average orbit-integrated instantaneous fluxes.

At this point we should emphasize that our calculations are only approximations due to the large uncertainties in future flux levels; as always, we strongly recommend that all persons receiving parts of this report be advised about this uncertainty (see last paragraph of Appendix A).

Finally, an explanation regarding the attribute "standard", frequently used in the reformatted OFI (Orbital Flux Integration) Study Reports. The term is applied as a modifier to parameters, constants, or variables in order to indicate or refer to some specific value of these quantities that had been used without change over extended periods of time. Although override possibilities do exist in the OFI system, a routinely submitted production run will, by default option, always use these "standard" values. The term is also used in reference to established forms, style, processes, or procedures, as for example, "standard tables", "standard plots", "standard production runs", etc. A list of some quantities, values, or expressions modified by "standard" is given in Table 1.

Results: Analysis and Discussion

The outcome of our calculations is summarized in Tables 3 to 52, which are all computer produced. The tables are arranged in four sets, where every set pertains to one specific type of table: the first set contains the "L-band" tables, the second the "Spectral Distribution and Exposure Index" tables, the third the tables of "Peaks", and the fourth the "Exposure Analysis" summary and the "Time Account"breakdown. All sets except the last contain three similar members: one for low energy protons, one for high energy protons, and one for electrons, in that order. Further explanations on the tables and a more detailed description of their contents is given in Appendix B. Figure 1 is a guide to table arrangement, as produced by a standard production run of the Orbital Flux Integration (OFI) program UNIFLUX.

Some of the tabulated data is also computer plotted in Figures 3 to 52, with additional Figures 53-57 containing plots of flight path data. Finally, Figure 58 shows the orbit integrated solar proton spectrum of the polar trajectories considered in this study. As with the tables, the plots are arranged in four sets, where each set pertains to one specific type of plot: the first set contains "Time and Flux Histograms", the second "Spectral Profiles", the third "Peaks per Orbit", and the fourth trajectory "World Map Projections" and "B-L Space Tracings". Again, all sets except the last contain three similar members: one for each type of particle considered. The last set contains two independent members. Appendix C describes and explains the plots. Figure 2 is a guide to plot arrangement, as produced by a standard production run. The final, single, concluding plot (Figure 58) is explained in the section on "Energetic Solar Proton Fluxes".

I. Trajectory Data

See Figures 48-52 for World Map projections.

See Figures 53-57 for B-L Space Tracings.

High inclination circular and elliptical trajectories ($i > 55$) or low inclination elliptical orbits of large eccentricity traverse the entire terrestrial radiation belt twice during each revolution. The vehicle thus executes a transverse motion in L-space, passing successively through a region of low L values ($1.0 < L < 2.8$) and of high L values ($L > 2.8$), commonly referred to as the inner zone and the outer zone. The specified polar trajectory falls into that category (Figure 57).

Under unperturbed conditions, the relative orbit period determines the nodal precession of the trajectory. For circular flight paths the period is a simple function of the geocentric distance. At the altitude proposed for the OSO missions, the period is about 1.594 hours with a corresponding precession of 23.9 degrees approximately. This amounts to about 15 orbits for a twentyfour hour flight-time duration. Now in the case of circular trajectories with large inclinations, the possibility exists that, when successive orbits lie more than 20 degrees apart, the simulated flight path may be "skipping" some high intensity regions of the radiation belts. Normally, this condition can be remedied by extending the flight time to 48 or 96 hours, whereby a denser sampling of the environment is insured. A 24-hour flight duration was considered adequate for the study at hand.

For reasons of clarity,the world map projections of the trajectories considered are plotted for ten revolutions only. The orbit numbers appear at the starting points of each revolution.

On the respective B-L graphs, only five orbits are plotted for the same reasons, forming the depicted patterns. Each orbit crosses the magnetic equator twice at the positions where the curves touch the equatorial line. The transverse motion is strikingly displayed in the polar case. The spreading (displacement) of the traces is the effect of the nodal precession.

II. Spectral Profiles

For tabulated data consult Tables 18-32.

For plotted data consult Figures 18-32.

The integral spectra presented in this report are orbit integrated, statistically averaged, trapped particle spectra, characteristic of the specific trajectories that produced them.

Noteworthy are the electron spectra obtained from the new environment models AE5 and AE4, especially in regards to the steep fall-off to zero flux for $E > 5.0$ Mev. The apparent cutoff at about 5. Mev is probably due to the complete decay of the high energy Starfish artificials by 1967, assuming no significant numbers of naturals exist with energies $E > 5.0$ Mev.

With regards to the protons, it is advisable to ignore the extrapolation from 4 Mev down to 3 Mev for the high energy model (AP6). These values may be too much in error and should best be replaced with the corresponding fluxes from the low energy model(AP5).

The high energy protons display a very hard spectrum for energies above 30 Mev at the intermediate inclinations of the OSO trajectories. When the plane of the orbit is further tilted towards a polar inclination, the extend of this very hard segment of the spectrum increases: it spreads down to lower energies, commencing at about 20 Mev for $i = 90^\circ$.

In the regions of space considered in this study, the level of orbit integrated fluxes obtained from circular trajectories at a constant altitude increases when inclination is raised. This holds for all species and applies to most energies.

Similarly, the spectral distributions change when inclination is varied. The electron spectra harden gradually towards higher inclinations, while the low energy proton spectra seem to soften, apparently due to a substantial increase in the number of .1 -.3 kev particles. The high energy proton spectra between the inclinations $33^\circ < i < 90^\circ$ tend to soften first and then harden again towards a polar tilt.

III. Peaks per Orbit

Tabulated data is contained in Tables 33-47.

Plotted data is shown in Figures 33-47.

The absolute peaks presented in this report have been obtained for standard OFI (Orbital Flux Integration) energies: $E > .1$ Mev for low evergy protons, $E > 5.$ Mev for high energy protons, and $E > .5$ Mev for electrons.

Obviously the peak contours follow a periodic pattern based on the daily cycle of revolutions (See: "I. Trajectory Data" for more detail) which would repeat itself if plotted for several consecutive days. Since the trajectories investigated are circular, no major changes with time are expected, assuming stable orbits and no atmospheric drag effects.

The amplitude of the cyclic daily peak variation and the peaks themselves, vary with inclination and with altitude. At the constant height of the OSO trajectories and for the range of inclinations considered, the maxima of the high energy proton and of the electron peak-flux contours remain about constant; the maxima of the low energy proton contours rise by almost two orders of magnitude in the interval from $i = 33$ to $i = 90$.

The minima are tied in with a striking feature of the peak contours: the sharp drops in the encountered flux values, which during certain orbits may go to zero, at intermediate inclinations. As far as can be determined, these dips or "flux free" intervals are valid. Apparently they arise because those particular orbits miss some or all of the higher intensity regions of space, populated by the particles in question. As inclination approaches 90 degrees, the amplitude of the dayly oscillations shrinks for the low energy protons and the electrons, the minima rise rapidly, and the "flux free" intervals disappear. Not so for the extrema of the high energy proton peaks, which maintain a constant amplitude and only suffer a slightly reduced "flux free" time interval.

The number of zero flux orbits for each of the selected OSO trajectories is indicated below:

Incl.	Pr. L	Pr. H	El.
33°	5	5	5
40°	4	4	3
45°	4	4	1
50°	3.5	4	0
90°	0	3	0

Energetic Solar Proton Fluxes

Good measurements of solar cycle 20 interplanetary cosmic ray fluxes at about 1 A.U. are now available. These interplanetary particles are also observed over the high latitude polar cap regions. However, at other latitudes the geomagnetic field effectively shields the earth from some of these cosmic rays by deflecting the lower energy particles, while only particles with increasingly higher energy penetrate to lower latitudes.

In order to consider the effect of geomagnetic shielding from cosmic rays on an orbiting spacecraft, the total time spent by the vehicle in regions of space accessible to these particles has to be calculated, as a function of particle energy, for the entire lifetime of the satellite. In other words, the exposure of a spacecraft to these particles is in essence a function of trajectory altitude and inclination, and mission duration.Of course, this applies only to the years of increased solar activity and whether a satellite will "see" energetic solar protons or not, even in accessible regions of the magnetosphere, depends on the epoch within the solar cycle, at which the mission is to be flown. If it coincides with the period of low solar activity (years of solar minimum), it most likely will not encounter any energetic solar protons, and vice versa.

Having calculated a mission related exposure time for a specific trajectory, one can use experimentally determined low energy cosmic ray fluxes of solar origin from which the galactic background has been subtracted, to obtain vehicle encountered energetic solar proton intensities. In the present study, the annual mean of event and cycle integrated proton fluxes of cycle 20, given by Stassinopoulos and King (1973) for energies ranging from E - 10 Mev to E - 100 Mev, were used to estimate cycle 21 intensities on the 1978 (and maybe also the 1976) OSO missions at 90° and 50° inclination. The other inclinations are not affected at all.

However, no thorough statistical treatment has yet been worked out in regards to the probability of actual cycle 21 fluxes exceeding the predicted intensities. Crude model confidence levels only are available at this time. The importance of such statistics must be emphasized; it is best demonstrated by the occurrence of the August 4-7, 1972, event, which was the largest recorded in solar cycles 19 and 20, exceeding its fluxes exceeding the accumulative total of all other cycle 20 events by about a factor of 2 for the E - 10 Mev protons and by a factor of 4 for the the E - 30 and E - 60 Mev particles. Therefore, caution is advisable when using the data presented in this report.

The probability that the estimated fluxes for the 1978 (1976 ?) OSO mission will be exceeded by an actual event , is about 33% for a one year mission duration.

Figure 58 shows the annual, omnidirectional, integral spectral profile of the energetic solar proton fluxes in units of particles per square centimeter.

Note : these fluxes apply only to the mission planned for 1978. It is not expected that the 1974 and the 1976 (maybe) missions will encounter energetic solar protons of any significance; at least, it is very unlikely (but not impossible) to have a major event occurring during the years of minimum solar activity. The 1976 mission is a borderline case and, depending on the length of cycle 20, may or may not be within solar-min range.

Application of Predicted Radiation Levels to future OSO Missions

The planning for the OSO project includes several missions with proposed tentative launch dates in the years 1974, 1976, and 1978. Tha present radiation study was conducted for the first of these missions, the OSO-I, scheduled for launch sometime in 1974. Since subsequent missions will have similar orbital configurations, the results of this investigation may be applied to these later missions also, provided the effects of time on the fluxes are taken into account, if and where necessary, and corresponding adjustments are made to either the intensity levels or the uncertainty factors. We will discuss these adjustments in the following paragraphs.

I. Trapped Protons : for the time being and until newer or better proton models become available, the fluxes contained in this report may be used without change or adjustment for any later epoch since the proton environment does not display significant temporal variations.

II. Trapped Electrons: The use of the given electron results for a 1976 or 1978 mission (at about solar maximum) is quite appropriate, considering that the calculated fluxes pertain to a solar maximum epoch anyway (hence the restricted use of the uncertainty factor discussed on pages 2 and A-3). The only adjustment necessary would be to restore the multiplicative action of the uncertainty factor in order to obtain a suitable upper limit for the fluxes. Eventualy, a solar minimum version of the electron models will be available, which may make new calculations for that epoch desirable.

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APPENDIX A

General Background Information

For the specified OSO flight paths, orbit tapes were generated with the standard integration stepsize of one minute, and for a 24 hour flight-time, in order to insure sufficient sampling coverage. (For more details see: Results, I. Trajectory Data.) The following circular trajectories were thus produced:

Alt(km)	Inclination				
550	33°	40°	45°	50°	90°

The orbits were subsequently converted from geocentric polar into magnetic B-L coordinates with McIlwain's INVAR Program of 1965 (Hassit and McIlwain, 1967) and with the field routine ALLMAG by Stassinopoulos and Mead (1972), utilizing the IGRF (1965) geomagnetic field model by Cain and Cain (1971), calculated for the epoch 1974.6.

Orbital flux integrations were performed with Vette's current models of the environment, the new AE5-AE4 for the inner and outer zone electrons, the AP6-AP7 for high energy protons, and the AP5 for low energy protons. All are static models which do not consider temporal variations; this includes the new electron models, at least as far as the present calculations are concerned. See text for further details on this matter.

The documents that describe these models are listed below:

Model	Reference
AE4	Singley and Vette, 1972
AE5	Teague and Vette, 1972
AP5	King, 1967
AP6	Lavine and Vette, 1969
AP7	Lavine and Vette, 1970

The results, relating to the omnidirectional, vehicle encountered, integral, trapped particle fluxes, are presented in graphical and tabular form with the following unit conventions:

1. Daily averages : total trajectory integrated flux averaged into particles/$cm^2\cdot$ day,

2. Average Instantaneous : time integrated average, characteristic of the orbit, in particles/$cm^2\cdot$ sec,

3. Totals per orbit non-averaged, single-orbit integrated flux in particles/$cm^2\cdot$ orbit, and

4. Peaks per orbit highest orbit-encountered instantaneous flux in particles/$cm^2\cdot$ sec,

where one orbit = one revolution.

Please note: we wish to emphasize the fact that the data presented in this report are only approximations. We do not believe the results to be any better than a factor of 2 for the protons and a factor of 3 for the electrons. It is advisable to inform all potential users about this uncertainty in the data.

Please, also note that the electrons have been calculated with a model describing the environment at solar maximum. The obtained fluxes may, therefore, be an overestimate for those OSO missions, which are scheduled to fly around solar minimum (1974; possibly 1976: depending on the duration of the present solar cycle). Consequently, it is suggested that the electron results be taken as an upper limit and the uncertainty factor be applied only in its reducing capacity (divisor).

APPENDIX B

Description of Tables

a) The L-band Table:

The table contains 36 L-bands $\mathcal{L}_i$ of equal size, covering the range from L = 1.0 to L = 8.2 earth radii in constant increments of .2 earth radii. For the L-intervals determined in this way, orbital spectral functions

$$N(>E,E_N;\mathcal{L}_i) = \left[\sum_k J_k(>E;B)\right]_{\mathcal{L}_i} \Big/ \left[\sum_k J_k(>E_N;B)\right]_{\mathcal{L}_i} \qquad \begin{matrix} i=1,36 \\ \mathcal{L}_i:\ L_i < L \leq L_{i+1} \end{matrix} \tag{1}$$

are obtained at nine arbitrary energy levels such that the integral spectrum is equal to 1 for $E = E_N$, where E_N was taken to be .1, 5., and .5 Mev for low energy protons, the high energy protons, and the electrons, respectively. The notation $\mathcal{L}_i$ is used to indicate the L-band from L_i to L_{i+1}, while $J(>E;B)$ is the integral, omnidirectional flux yielded by the environment model used in the calculation. The spectral functions N are evaluated for the total flight time simulated in the study, where the summing index k selects all trajectory points lying in each $\mathcal{L}_i$.

The corresponding orbital distribution functions, representing fluxes above energy E_N, are given by

$$F(E;\mathcal{L}_i) = \Delta t\left[\sum_k J_k(>E;B)\right]_{\mathcal{L}_i} \tag{2}$$

where Δt is the constant time increment of orbit integration, whose standard value is 60 seconds. The distribution functions are fluxes accumulated in their respective L_i bands over the total flight period considered.

The orbital distribution functions are listed on the table at the bottom of each L-interval and are labeled "NORMFLUX". The nine integral energy levels selected for the low and high energy protons and for electrons are given below in units of "Mev" for all particles:

Protons Low	Protons High	Electrons
.1*	3.	.0
.5	5.	.5*
.9	10.	1.0
1.1	15.	1.5
1.5	20.	2.0
2.0	25.	2.5
2.5	30.	3.0
3.0	50.	4.0
3.5	100.	5.0

where the normalization energy is indicated by a star (*).

b) The Spectral Distribution and Exposure Index Table:

This table has three parts:

I. The spectrum $\Psi_j(\Delta E)$ given in % for energy intervals that correspond to the energy levels of the previously discussed table (L-bands), with two special columns showing the total orbit integrated flux for these energy intervals averaged into instantaneous I_j^s and daily I_j^D intensities

$$\Psi_j(\Delta E) = 100 \frac{I_j^D(\Delta E)}{F(>E_1)} \qquad j=1,9 \tag{3}$$

where

$$F(>E_1) = C \sum_{k=1}^{k_0} J_k(>E_1;B,L)\Delta t \tag{4}$$

$$I_j^D(\Delta E) = C \sum_{k=1}^{k_0} \Delta t \left\{ J_k(>E_j;B,L) - J_k(>E_{j+1};B,L) \right\} \tag{5}$$

$$I_j^S(\Delta E) = I_j^D(\Delta E)/86400 \tag{6}$$

$$C = \frac{24}{T} \qquad T = k_0 \Delta t \qquad i=1,36$$

and where k_0 is the upper limit of k. It is equal to the total number of time increments considered in the study.

II. The composite orbit spectrum for integral energies, giving the total vehicle encountered fluxes averaged into daily $S^D(>E_j)$ and instantaneous $S^S(>E_j)$ intensities for 15 discrete energy levels:

$$S^D(>E_j) = c\Delta t \sum_{m=0}^{T} J_m(>E_j) \qquad j=1,15 \tag{7}$$

$$S^S(>E_j) = S^D(>E_j)/86400 \tag{8}$$

where the summation is performed for the entire simulated mission duration T and includes all fluxes with energies greater than E_j.

III. The exposure index, given (for the normalization energy used in the L-band table) at nine successive intensity ranges R_n one order of magnitude apart, in terms of exposure duration $\tau(R_n)$, converted to hours, and total number of particles $\phi(>E_N;R_n)$ accumulated while in that intensity range. The notation R_n is used to indicate the intensity range from r_n to r_{n+1}:

$$\phi(>E_N;R_n) = \tau(R_n)\ \theta(>E_N;R_n) \qquad \begin{matrix} n=1,9 \\ R_n \equiv r_n < r \leq r_{n+1} \end{matrix} \tag{9}$$

$$\theta(>E_N;R_n) = \left[\sum_{\ell} J(>E_N;r)\right]_{R_n} \Big/ \zeta_n \tag{10}$$

$$\tau(R_n) = \Delta t\ \zeta_n \tag{11}$$

where ζ_n is the upper limit of ℓ in each R_n.

c) The Table of Peaks:

In this table, the absolute instantaneous peak flux encountered during each successive orbit (revolution) is listed for the indicated energy range. There are nine columns on this table. Column 1 is an orbit counting device, based on the period of the orbit when the trajectory lies in the equatorial plane and is circular, on the physical perigee in all elliptical cases, and on the equatorial crossing for circular inclined trajectories. Column 2 gives the peak flux. Columns 3, 4, and 5 indicate the spacecraft position in geocentric coordinates at which the peak was encountered, while columns 6, 7, and 8 determine respectively the time and the magnetic B-L coordinates for this event. It should be noted that all simulated flight paths for the purpose of orbital radiation studies start at $t_0 = 0$ hours. Finally, the last column indicates the total flux encountered during that particular orbit. It is advisable to disregard the last line on this table because many times that orbit is incomplete and the fluxes or positions shown do not correspond to true peaks.

d) The Exposure Analysis Summary:

The summary is contained in the left half of this last table of each set as a semi-independent and separate table. It indicates what percent of its total lifetime T the satellite spends in "flux free" regions of space, what percent of T in "high intensity" regions, and while in the latter, what percent of its total daily flux it accumulates.

In the context of this study, the term "flux free" applies to all regions of space where trapped particle fluxes are less than one proton or electron per square centimeter per second, having energies E > .1, E > 5., and E > .5 Mev for the low energy protons, the high energy protons, and the electrons, respectively; by definition, this includes all regions outside the radiation belts. The concept of "trapped particle fluxes" is meant to include stably trapped, pseudo-trapped, and transient fluxes, as long as they are part of or contained in the environment models used and, in the case of transients or pseudos, their sources are considered powerful enough to supply them in a substantial and ever present way.

Similarly, we define as "high intensity" those regions of space where the instantaneous, integral, omnidirectional, trapped-particle flux is greater than 10^3 protons with energies $E > .1$ or $E > 5.$ Mev, and greater than 10^5 electrons with energies $E > .5$ Mev.

The values given in this table are statistical averages, obtained over extended intervals of mission time. However, they may vary significantly from one orbit to the next, when individual orbits are considered.

e) The Time Account Breakdown:

The breakdown of orbit time is given in the right half of the last table of every set, in the same semi-independent form as the summary. The table shows the total lifetime spent by the vehicle in the inner zone T^i ($1.0 < L \leq 2.5$) and the outer zone T^o ($2.5 < L \leq 7.0$) of the trapped particle radiation belt, and also the percent duration spent outside that region ($L > 7.0$), which is denoted by T^e (T-external), such that for any mission

$$T = T^i + T^o + T^e = 100\%.$$

The confinement of the outer zone within the boundary of the $L = 7.0$ volume is arbitrary and has no physical meaning. It is intended only as a simplification to facilitate our calculations. The region considered "external" ($L = 7.0$) in this study is still partially a domain of the outer zone, at least as far out as $L = 11.0$ earth radii, according to the latest electron models (Singley and Vette, 1972).

A last item on this table: the inner zone time T^i may be subdivided into two parts: the percentage of time spent outside the region $(1.0 < L \leq 1.1)$ and inside the region $(1.1 < L \leq 2.5)$.

APPENDIX C

Description of Plots

a) The Time and Flux Histogram:

This plot shows two curves superimposed on the same graph, namely, one each for the variables "time" and "flux". Both are given as functions of the parameter L (earth radii) within the range 1 - L - 7, on a semi-log scale. The plot depicts: (1) by a plain curve the characteristic trajectory intensities as obtained from the orbital integration process in terms of averaged, instantaneous, integral particle fluxes above a given energy, over constant L-bands of .1 earth radius width, and (2) by a contour marked with symbols the percent of total lifetime (%T) spent in each L-interval. The logarithmic ordinate relates to the time-flux variables. The printed numbers are powers of 10 and pertain to the fluxes; the scale values for the time curve are given in the upper part of the ordinate label: from 10^{-3} to 10^{2} percent of T. The type of particles, their integral energy, and the units, are all given in the lower part of the label. The label on top of the graph lists some useful information about the trajectory.

b) The Spectral Profile:

A graphical presentation of the final spectral distribution, obtained from the orbital integration process, The plot is a semi-log graph, where the abscissa is a linear energy scale for integral particle energies

E_0 in Mev, and the ordinate is a logarithmic scale for the orbit integrated fluxes, given in daily averages for energies greater than E_0; the printed scale values are powers of 10.

c) Peaks per Orbit:

Here the absolute peak intensities, encountered per period, are plotted for the duration of the total flight time considered (1 period = 1 revolution = 1 orbit). The logarithmic ordinate relates to instantaneous particle fluxes of the environment at the indicated energy threshold, while the abscissa is a linear orbit enumeration.

d) World Map Grid Projection of Orbits:

The trajectory is plotted for several revolutions on a global map produced by a Miller Cylindrical Projection. The contours of the continents have been omitted for clarity. The positions of either equatorial crossing, of physical perigee, or of period commencement are indicated by numbers identifying the orbits shown in this graph. For all trajectories, the distance between successive sequential numbers is a measure of the orbit precession.

e) B-L Trace of Orbits:

This plot shows a trace of the trajectory in B-L space on a semi-log scale. Several orbits are usually depicted, each identified by its sequential number. The magnetic equator is entered on all plots. The logarithmic ordinate relates to the field strength B in gauss; the printed values are exponents of 10. L is given in earth radii on the linear abscissa.

TABLE 1

B and L Extrema of OSO Trajectories

Circular Orbits

Altitude 550 km

Model #5

TM = 1974.6

Incl.	Min-L	Max-L	Min-B
33	1.00	2.24	0.19154
40	1.00	2.95	0.19265
45	1.00	3.95	0.19310
50	1.00	5.66	0.19194
90	1.00	>20.00	0.19270

TABLE 2

Partial Listing of
Parameters, Constants, Variables, or Expressions
designated as "standard" in the text

1. Standard Tables: set of tables as listed in Figure 2, in the regular format described in Appendix B.

2. Standard Plots: set of plots as listed in Figure 2A, in the regular format described in Appendix C.

3. Standard Production Run: a production run processed on default options.

4. Standard Integration Stepsize: constant time increment of orbit integration: 1'(60").

5. Standard Energies: low energy protons E > .1 Mev, high energy protons E > 5. Mev, and electrons E > .5 Mev.

6. Standard Procedure: established procedure normally followed vs. procedure followed in special cases.

Table 3

```
*****************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:               **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 1          ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*****************************************************************************************************************************
                    ***************************   LOW  ENERGY PROTONS   ****************************
                    ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .100 MEV **
                    ********************************************************************************
```

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
	L - B A N D S	(M A G N E T I C	S H E L L	P A R A M E T E R	I N	E A R T H	R A D I I)	L - B A N D S				
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	8.61E-01	8.35E-01	8.35E-01	8.35E-01	8.38E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	7.48E-01	7.12E-01	7.15E-01	7.12E-01	7.14E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	7.05E-01	6.73E-01	6.83E-01	6.75E-01	6.71E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	6.31E-01	6.04E-01	6.23E-01	6.06E-01	5.95E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	5.52E-01	5.28E-01	5.56E-01	5.31E-01	5.12E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	4.85E-01	4.63E-01	4.97E-01	4.66E-01	4.42E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	4.28E-01	4.06E-01	4.44E-01	4.10E-01	3.82E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	3.78E-01	3.57E-01	3.98E-01	3.60E-01	3.30E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	2.45E 06	3.03E 07	1.62E 07	1.65E 07	1.18E 07	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
	L - B A N D S	(M A G N E T I C	S H E L L	P A R A M E T E R	I N	E A R T H	R A D I I)	L - B A N D S				
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
	L - B A N D S	(M A G N E T I C	S H E L L	P A R A M E T E R	I N	E A R T H	R A D I I)	L - B A N D S				
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4

```
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                  **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5:     IGRF 1965.0 80-TERM 10/68      * TIME= 1974.6 **
** VEHICLE :  OSO 1        ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.590 **
                          ***************************   HIGH ENERGY PROTONS   *****************************
                          ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN 5.00 MEV **
```

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	1.0-1.2	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
3.00	1.39E 00	1.43E 00	1.43E 00	1.62E 00	1.85E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	7.46E-01	6.94E-01	6.03E-01	4.12E-01	2.66E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	6.20E-01	5.50E-01	4.38E-01	2.36E-01	1.14E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	5.85E-01	5.04E-01	3.89E-01	1.85E-01	7.90E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	5.71E-01	4.79E-01	3.65E-01	1.57E-01	6.17E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	5.56E-01	4.55E-01	3.42E-01	1.33E-01	4.82E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	5.02E-01	3.73E-01	2.66E-01	6.91E-02	1.81E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	3.67E-01	2.28E-01	1.42E-01	2.48E-02	4.21E-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	7.53E 05	8.59E 06	5.05E 06	4.17E 06	2.44E 06	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	3.4-3.6	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	5.8-6.0	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG. MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 1 ** INCLINATION= 33DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

ELECTRONS

** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .500 MEV **

ENERGY LEVELS >(MEV)	L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS *1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.0	4.62E 00	1.21E 01	2.61E 01	1.22E 02	1.93E 02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	5.73E-01	7.47E-02	2.00E-01	2.10E-01	6.81E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	3.94E-01	2.67E-02	1.06E-01	8.92E-02	1.67E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	2.13E-01	1.34E-02	6.35E-02	3.70E-02	4.78E-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	8.15E-02	5.75E-03	2.60E-02	1.30E-02	1.25E-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	2.98E-02	2.14E-03	7.88E-03	3.94E-03	2.66E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	5.65E-04	2.21E-05	7.59E-05	7.95E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	4.32E 06	3.65E 09	4.49E 08	7.54E 07	2.01E 07	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS *3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS *5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 6

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*******************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972.0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 2       ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*******************************************************************************************************************
                    ***************************   LOW  ENERGY PROTONS   ****************************
                    ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .100 MEV **
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ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C			S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
	1.0-1.2	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0
.500	8.63E-01	8.36E-01	8.35E-01	8.35E-01	8.44E-01	7.63E-01	4.26E-01	3.60E-01	0.0	0.0	0.0	0.0
.900	7.51E-01	7.10E-01	7.17E-01	7.15E-01	7.26E-01	6.12E-01	2.25E-01	1.47E-01	0.0	0.0	0.0	0.0
1.10	7.08E-01	6.68E-01	6.86E-01	6.83E-01	6.89E-01	5.66E-01	2.10E-01	1.10E-01	0.0	0.0	0.0	0.0
1.50	6.32E-01	5.92E-01	6.30E-01	6.24E-01	6.20E-01	4.83E-01	1.84E-01	6.53E-02	0.0	0.0	0.0	0.0
2.00	5.51E-01	5.10E-01	5.66E-01	5.58E-01	5.45E-01	3.97E-01	1.57E-01	3.61E-02	0.0	0.0	0.0	0.0
2.50	4.84E-01	4.41E-01	5.09E-01	4.99E-01	4.79E-01	3.26E-01	1.34E-01	2.06E-02	0.0	0.0	0.0	0.0
3.00	4.26E-01	3.82E-01	4.58E-01	4.46E-01	4.21E-01	2.68E-01	1.14E-01	1.19E-02	0.0	0.0	0.0	0.0
3.50	3.77E-01	3.31E-01	4.12E-01	3.99E-01	3.70E-01	2.21E-01	9.79E-02	6.93E-03	0.0	0.0	0.0	0.0
NORMFLUX=	1.92E 06	2.02E 07	2.32E 07	1.94E 07	2.49E 07	2.22E 07	1.45E 07	1.11E 06	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C			S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
	3.4-3.6	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C			S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
	5.8-6.0	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 7

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********************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:           **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:    IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 2      ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
********************************************************************************************************************
                    **************************   HIGH ENERGY PROTONS   **************************
                    ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN 5.00 MEV **
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ENERGY LEVELS >(MEV)	L - B A N D S *1.0-1.2*	(M A G N E T I C *1.2-1.4*	*1.4-1.6*	S H E L L *1.6-1.8*	*1.8-2.0*	P A R A M E T E R *2.0-2.2*	*2.2-2.4*	I N *2.4-2.6*	E A R T H *2.6-2.8*	R A D I I) *2.8-3.0*	*3.0-3.2*	L - B A N D S *3.2-3.4*
3.00	1.40E 00	1.47E 00	1.41E 00	1.57E 00	1.81E 00	2.25E 00	2.14E 00	5.61E 00	0.0	0.0	0.0	0.0
5.00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0
10.0	7.46E-01	7.09E-01	6.01E-01	4.04E-01	2.45E-01	1.84E-01	1.52E-01	1.06E-01	0.0	0.0	0.0	0.0
15.0	6.21E-01	5.71E-01	4.41E-01	2.31E-01	9.81E-02	6.33E-02	4.62E-02	3.54E-02	0.0	0.0	0.0	0.0
20.0	5.87E-01	5.22E-01	3.96E-01	1.81E-01	6.60E-02	3.67E-02	1.87E-02	0.0	0.0	0.0	0.0	0.0
25.0	5.73E-01	4.93E-01	3.74E-01	1.54E-01	5.06E-02	2.44E-02	8.78E-03	0.0	0.0	0.0	0.0	0.0
30.0	5.59E-01	4.66E-01	3.53E-01	1.31E-01	3.88E-02	1.62E-02	4.35E-03	0.0	0.0	0.0	0.0	0.0
50.0	5.07E-01	3.76E-01	2.83E-01	6.87E-02	1.36E-02	3.24E-03	4.00E-04	0.0	0.0	0.0	0.0	0.0
100.	3.71E-01	2.21E-01	1.57E-01	2.69E-02	3.43E-03	2.31E-04	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	5.85E 05	5.23E 06	7.50E 06	5.53E 06	5.80E 06	2.65E 06	7.71E 05	2.35E 03	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S *3.4-3.6*	(M A G N E T I C *3.6-3.8*	*3.8-4.0*	S H E L L *4.0-4.2*	*4.2-4.4*	P A R A M E T E R *4.4-4.6*	*4.6-4.8*	I N *4.8-5.0*	E A R T H *5.0-5.2*	R A D I I) *5.2-5.4*	*5.4-5.6*	L - B A N D S *5.6-5.8*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S *5.8-6.0*	(M A G N E T I C *6.0-6.2*	*6.2-6.4*	S H E L L *6.4-6.6*	*6.6-6.8*	P A R A M E T E R *6.8-7.0*	*7.0-7.2*	I N *7.2-7.4*	E A R T H *7.4-7.6*	R A D I I) *7.6-7.8*	*7.8-8.0*	L - B A N D S *8.0-8.2*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.0 **
** VEHICLE : OSO 2 ** INCLINATION= 40DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.590 **

ELECTRONS

** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .500 MEV **

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.0	4.33E 00	1.27E 01	2.33E 01	1.13E 02	1.98E 02	3.92E 02	6.55E 02	4.24E 02	0.0	1.39E 01	0.0	0.0
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	1.00E 00	0.0	0.0
1.00	5.82E-01	8.01E-02	1.77E-01	2.21E-01	6.43E-02	4.18E-02	4.43E-02	6.42E-02	0.0	3.73E-01	0.0	0.0
1.50	4.04E-01	3.03E-02	9.02E-02	9.62E-02	1.54E-02	6.43E-03	6.21E-03	9.46E-03	0.0	1.99E-01	0.0	0.0
2.00	2.22E-01	1.56E-02	5.04E-02	4.02E-02	4.35E-03	1.58E-03	1.22E-03	0.0	0.0	1.06E-01	0.0	0.0
2.50	8.61E-02	6.93E-03	2.19E-02	1.41E-02	1.14E-03	3.17E-04	7.13E-05	0.0	0.0	4.96E-02	0.0	0.0
3.00	3.16E-02	2.65E-03	7.65E-03	4.23E-03	2.49E-04	0.0	0.0	0.0	0.0	1.49E-02	0.0	0.0
4.00	5.76E-04	2.68E-05	7.09E-05	8.58E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	3.66E 06	2.13E 08	6.63E 08	1.05E 08	4.40E 07	8.07E 06	1.90E 06	2.49E 04	0.0	1.34E 05	0.0	0.0

L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 9

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************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972.0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:          **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE : OSO 3        ** INCLINATION= 45DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
************************************************************************************************************************
                         ***************************  LOW  ENERGY PROTONS  ***************************
                         ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .100 MEV **
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ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0
.500	8.57E-01	8.35E-01	8.35E-01	8.34E-01	8.46E-01	8.00E-01	4.64E-01	4.15E-01	4.28E-01	4.08E-01	4.12E-01	0.0
.900	7.41E-01	7.11E-01	7.15E-01	7.14E-01	7.28E-01	5.63E-01	2.57E-01	2.04E-01	1.99E-01	1.63E-01	1.70E-01	0.0
1.10	6.97E-01	6.72E-01	6.82E-01	6.82E-01	6.91E-01	6.15E-01	2.35E-01	1.74E-01	1.51E-01	1.00E-01	1.09E-01	0.0
1.50	6.19E-01	6.00E-01	6.21E-01	6.21E-01	6.23E-01	5.28E-01	1.97E-01	1.27E-01	8.90E-02	3.82E-02	4.48E-02	0.0
2.00	5.37E-01	5.22E-01	5.52E-01	5.53E-01	5.47E-01	4.37E-01	1.58E-01	8.72E-02	4.74E-02	1.14E-02	1.48E-02	0.0
2.50	4.69E-01	4.56E-01	4.92E-01	4.93E-01	4.81E-01	3.62E-01	1.27E-01	6.04E-02	2.59E-02	3.40E-03	0.0	0.0
3.00	4.10E-01	3.99E-01	4.39E-01	4.40E-01	4.23E-01	3.00E-01	1.03E-01	4.21E-02	1.45E-02	1.02E-03	0.0	0.0
3.50	3.61E-01	3.49E-01	3.92E-01	3.93E-01	3.73E-01	2.48E-01	8.37E-02	2.95E-02	8.18E-03	3.05E-04	0.0	0.0
NORMFLUX=	2.09E 06	1.83E 07	2.00E 07	2.48E 07	1.68E 07	2.79E 07	3.43E 07	3.62E 07	2.52E 07	4.66E 06	1.02E 04	0.0

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 10

****

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **

** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **

** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **

** VEHICLE : OSO-3 ** INCLINATION= 45DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

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************************** HIGH ENERGY PROTONS ****************************

** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN 5.00 MEV **

****

ENERGY L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
3.00	1.42E 00	1.44E 00	1.45E 00	1.61E 00	1.82E 00	2.20E 00	2.41E 00	3.59E 00	6.17E 00	7.90E 01	0.0	0.0
5.00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0
10.0	7.34E-01	6.99E-01	5.84E-01	3.64E-01	2.43E-01	1.89E-01	1.51E-01	1.08E-01	7.06E-02	0.0	0.0	0.0
15.0	6.05E-01	5.54E-01	4.15E-01	1.93E-01	9.80E-02	6.64E-02	4.58E-02	2.68E-02	1.29E-02	0.0	0.0	0.0
20.0	5.70E-01	5.07E-01	3.64E-01	1.47E-01	6.60E-02	3.93E-02	1.92E-02	6.62E-03	1.56E-03	0.0	0.0	0.0
25.0	5.56E-01	4.81E-01	3.36E-01	1.23E-01	5.05E-02	2.66E-02	9.47E-03	1.55E-03	0.0	0.0	0.0	0.0
30.0	5.40E-01	4.57E-01	3.11E-01	1.03E-01	3.87E-02	1.81E-02	4.95E-03	3.12E-04	0.0	0.0	0.0	0.0
50.0	4.85E-01	3.74E-01	2.29E-01	5.04E-02	1.35E-02	3.91E-03	4.85E-04	0.0	0.0	0.0	0.0	0.0
100.	3.51E-01	2.25E-01	1.16E-01	1.86E-02	3.61E-03	4.81E-04	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	6.04E 05	5.04E 06	6.09E 06	6.76E 06	3.91E 06	3.80E 06	1.47E 06	4.24E 05	5.91E 04	0.0	0.0	0.0

ENERGY L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 11

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************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:          **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:    IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 3        ** INCLINATION= 45DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
************************************************************************************************************************
                         ***************************         ELECTRONS        *****************************
                         ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .500 MEV **
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ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.0	4.75E 00	1.23E 01	3.35E 01	1.34E 02	2.00E 02	3.50E 02	6.89E 02	4.93E 02	6.14E 01	1.82E 01	1.22E 01	1.37E 01
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	5.64E-01	8.14E-02	2.34E-01	1.82E-01	6.70E-02	4.20E-02	4.52E-02	6.89E-02	1.46E-01	3.51E-01	3.68E-01	3.94E-01
1.50	3.84E-01	3.06E-02	1.32E-01	7.22E-02	1.64E-02	5.71E-03	6.28E-03	1.28E-02	4.52E-02	1.81E-01	1.81E-01	1.95E-01
2.00	2.04E-01	1.57E-02	7.55E-02	2.88E-02	4.71E-03	1.64E-03	1.15E-03	2.63E-03	1.52E-02	9.32E-02	8.86E-02	9.70E-02
2.50	7.58E-02	6.92E-03	2.84E-02	1.00E-02	1.29E-03	3.33E-04	6.91E-05	1.44E-04	2.71E-03	4.32E-02	3.83E-02	4.25E-02
3.00	2.68E-02	2.64E-03	7.94E-03	3.02E-03	3.04E-04	1.40E-05	0.0	0.0	0.0	1.47E-02	1.42E-02	1.56E-02
4.00	4.93E-04	2.64E-05	8.89E-05	5.81E-05	0.0	0.0	0.0	0.0	0.0	4.61E-04	3.87E-04	4.32E-04
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	4.24E 06	2.46E 08	4.29E 08	1.04E 08	2.99E 07	1.37E 07	3.66E 06	1.02E 06	1.67E 05	1.69E 06	2.12E 07	5.11E 07

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.0	1.48E 01	1.20E 01	8.96E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	3.97E-01	3.84E-01	3.67E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	1.99E-01	1.92E-01	1.73E-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	9.95E-02	9.62E-02	8.18E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	4.54E-02	4.80E-02	4.09E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	1.77E-02	2.04E-02	1.84E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	5.35E-04	6.85E-04	6.27E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	4.78E 07	4.00E 07	2.57E 07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*5.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12

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************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:              **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE : OSO 4          ** INCLINATION= 50DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
************************************************************************************************************************
                    ***************************   LOW  ENERGY PROTONS   *****************************
                    ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .100 MEV **
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ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
.500	8.55E-01	8.36E-01	8.35E-01	8.35E-01	8.50E-01	7.63E-01	4.68E-01	4.07E-01	4.21E-01	3.78E-01	3.53E-01	3.25E-01
.900	7.40E-01	7.12E-01	7.14E-01	7.13E-01	7.35E-01	6.17E-01	2.61E-01	1.97E-01	1.92E-01	1.44E-01	1.25E-01	1.08E-01
1.10	6.99E-01	6.72E-01	6.79E-01	6.78E-01	6.96E-01	5.71E-01	2.39E-01	1.69E-01	1.43E-01	8.90E-02	7.44E-02	6.31E-02
1.50	6.25E-01	6.00E-01	6.14E-01	6.14E-01	6.25E-01	4.88E-01	2.03E-01	1.24E-01	7.99E-02	3.42E-02	2.64E-02	2.17E-02
2.00	5.46E-01	5.23E-01	5.42E-01	5.42E-01	5.46E-01	4.02E-01	1.65E-01	8.48E-02	3.91E-02	1.04E-02	7.22E-03	5.69E-03
2.50	4.79E-01	4.57E-01	4.79E-01	4.80E-01	4.78E-01	3.31E-01	1.35E-01	5.82E-02	1.94E-02	3.14E-03	1.98E-03	1.50E-03
3.00	4.21E-01	4.00E-01	4.25E-01	4.25E-01	4.18E-01	2.73E-01	1.10E-01	4.01E-02	9.70E-03	9.58E-04	5.41E-04	3.94E-04
3.50	3.71E-01	3.51E-01	3.76E-01	3.77E-01	3.66E-01	2.25E-01	9.05E-02	2.77E-02	4.92E-03	2.92E-04	1.48E-04	1.03E-04
NORMFLUX=	2.22E 06	1.60E 07	1.13E 07	2.07E 07	2.81E 07	1.58E 07	4.31E 07	3.76E 07	7.29E 07	3.08E 07	3.71E 07	4.06E 06

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	2.96E-01	2.29E-01	1.00E-01	1.87E-02	3.80E-02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	8.78E-02	5.23E-02	1.01E-02	3.50E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	4.79E-02	2.50E-02	3.18E-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	1.43E-02	5.72E-03	3.19E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	3.18E-03	9.07E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	7.09E-04	1.44E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	1.59E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	3.18E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	6.82E 06	3.33E 06	1.62E 06	8.37E 05	1.58E 04	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 13

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*******************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 4        ** INCLINATION= 50DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*******************************************************************************************************************
                     ***************************   HIGH ENERGY PROTONS   *****************************
                     ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN 5.00 MEV **
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ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	1.0-1.2	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
3.00	1.41E 00	1.44E 00	1.46E 00	1.58E 00	1.84E 00	2.24E 00	2.33E 00	3.79E 00	7.95E 00	1.49E 02	3.35E 02	2.66E 01
5.00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0
10.0	7.24E-01	6.96E-01	6.00E-01	4.21E-01	2.40E-01	1.83E-01	1.56E-01	9.91E-02	6.60E-02	0.0	0.0	0.0
15.0	5.92E-01	5.50E-01	4.35E-01	2.45E-01	9.56E-02	5.39E-02	4.86E-02	2.33E-02	1.16E-02	0.0	0.0	0.0
20.0	5.56E-01	5.03E-01	3.83E-01	1.94E-01	6.35E-02	3.74E-02	2.23E-02	5.36E-03	7.66E-04	0.0	0.0	0.0
25.0	5.40E-01	4.76E-01	3.54E-01	1.66E-01	4.80E-02	2.50E-02	1.18E-02	9.39E-04	0.0	0.0	0.0	0.0
30.0	5.25E-01	4.51E-01	3.28E-01	1.42E-01	3.63E-02	1.58E-02	6.43E-03	0.0	0.0	0.0	0.0	0.0
50.0	4.69E-01	3.67E-01	2.43E-01	7.62E-02	1.20E-02	3.46E-03	6.48E-04	0.0	0.0	0.0	0.0	0.0
100.	3.41E-01	2.20E-01	1.22E-01	2.92E-02	2.88E-03	3.10E-04	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	6.62E 05	4.44E 06	3.29E 06	5.57E 06	6.38E 06	1.92E 06	2.04E 05	3.98E 05	8.90E 04	1.97E 02	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	3.4-3.6	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
3.00	1.30E 01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	L - B A N D S (M A G N E T I C S H E L L P A R A M E T E R I N E A R T H R A D I I) L - B A N D S											
	5.8-6.0	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 14

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****************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE : OSO-4        ** INCLINATION= 50DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
****************************************************************************************************************************
                          ***************************         ELECTRONS       ***************************
                          ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .500 MEV **
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ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.0	5.06E 00	1.21E 01	2.88E 01	1.11E 02	2.06E 02	3.90E 02	5.69E 02	3.87E 02	5.94E 01	1.93E 01	1.31E 01	1.33E 01
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	5.50E-01	8.64E-02	2.10E-01	2.28E-01	5.98E-02	4.16E-02	4.40E-02	7.75E-02	1.97E-01	3.40E-01	3.63E-01	3.93E-01
1.50	3.57E-01	3.35E-02	1.13E-01	1.02E-01	1.37E-02	5.42E-03	6.09E-03	1.54E-02	7.46E-02	1.71E-01	1.78E-01	1.94E-01
2.00	1.89E-01	1.74E-02	6.35E-02	4.33E-02	3.78E-03	1.57E-03	1.14E-03	3.33E-03	3.07E-02	8.60E-02	8.74E-02	9.63E-02
2.50	6.70E-02	7.74E-03	2.68E-02	1.51E-02	9.56E-04	3.17E-04	7.29E-05	2.73E-04	7.85E-03	3.94E-02	3.81E-02	4.21E-02
3.00	2.26E-02	2.97E-03	8.21E-03	4.49E-03	1.97E-04	0.0	0.0	0.0	2.41E-04	1.39E-02	1.42E-02	1.54E-02
4.00	3.48E-04	3.23E-05	8.27E-05	8.88E-05	0.0	0.0	0.0	0.0	0.0	3.77E-04	3.93E-04	4.28E-04
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	5.16E 06	2.47E 08	2.57E 08	1.11E 08	4.57E 07	5.03E 06	5.06E 05	8.73E 05	3.99E 05	4.98E 06	3.84E 07	7.28E 07

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.0	1.50E 01	1.25E 01	8.59E 00	6.85E 00	6.67E 00	5.56E 00	6.92E 00	7.16E 00	7.39E 00	7.50E 00	7.68E 00	7.55E 00
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	3.97E-01	3.87E-01	3.65E-01	3.57E-01	3.58E-01	3.55E-01	3.46E-01	3.38E-01	3.30E-01	3.24E-01	3.06E-01	2.84E-01
1.50	1.98E-01	1.94E-01	1.69E-01	1.50E-01	1.41E-01	1.34E-01	1.27E-01	1.22E-01	1.15E-01	1.06E-01	9.59E-02	8.75E-02
2.00	9.93E-02	9.68E-02	7.88E-02	6.27E-02	5.55E-02	5.03E-02	4.68E-02	4.42E-02	3.98E-02	3.50E-02	3.01E-02	2.70E-02
2.50	4.52E-02	4.69E-02	3.89E-02	2.77E-02	2.32E-02	2.01E-02	1.74E-02	1.55E-02	1.30E-02	1.04E-02	8.38E-03	7.46E-03
3.00	1.76E-02	1.96E-02	1.75E-02	1.20E-02	9.06E-03	7.25E-03	5.52E-03	4.49E-03	3.50E-03	2.63E-03	2.05E-03	1.88E-03
4.00	5.23E-04	6.47E-04	5.93E-04	3.69E-04	2.52E-04	1.84E-04	1.38E-04	1.11E-04	8.12E-05	5.89E-05	3.96E-05	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	5.36E 07	8.93E 07	8.55E 07	8.23E 07	5.55E 07	5.48E 07	3.28E 07	2.37E 07	1.36E 07	1.04E 07	3.97E 06	1.62E 06

ENERGY LEVELS >(MEV) — L-BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L-BANDS

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 25

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************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:             **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 5        ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=   1.594 **
************************************************************************************************************************
                    ************************** LOW ENERGY PROTONS **************************
                    ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .100 MEV **
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ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H	R A D I I)		L - B A N D S
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
.500	8.57E-01	8.36E-01	8.35E-01	8.35E-01	8.47E-01	7.38E-01	4.55E-01	4.07E-01	4.24E-01	3.97E-01	3.49E-01	3.28E-01
.900	7.43E-01	7.11E-01	7.15E-01	7.12E-01	7.28E-01	5.83E-01	2.49E-01	1.97E-01	1.91E-01	1.61E-01	1.22E-01	1.09E-01
1.10	7.01E-01	6.71E-01	6.83E-01	6.76E-01	6.88E-01	5.40E-01	2.28E-01	1.69E-01	1.38E-01	1.05E-01	7.19E-02	6.39E-02
1.50	6.27E-01	5.98E-01	6.23E-01	6.10E-01	6.14E-01	4.63E-01	1.93E-01	1.24E-01	7.27E-02	4.51E-02	2.51E-02	2.20E-02
2.00	5.49E-01	5.20E-01	5.56E-01	5.38E-01	5.34E-01	3.83E-01	1.56E-01	8.46E-02	3.32E-02	1.57E-02	6.75E-03	5.79E-03
2.50	4.82E-01	4.53E-01	4.97E-01	4.74E-01	4.65E-01	3.17E-01	1.27E-01	5.81E-02	1.54E-02	5.51E-03	1.81E-03	1.52E-03
3.00	4.25E-01	3.96E-01	4.44E-01	4.19E-01	4.05E-01	2.62E-01	1.04E-01	4.00E-02	7.29E-03	1.94E-03	4.88E-04	4.01E-04
3.50	3.76E-01	3.47E-01	3.97E-01	3.70E-01	3.53E-01	2.17E-01	8.51E-02	2.77E-02	3.49E-03	6.87E-04	1.32E-04	1.06E-04
NORMFLUX=	1.53E 06	1.06E 07	9.63E 06	8.55E 06	1.18E 07	1.32E 07	1.61E 07	2.91E 07	2.04E 07	3.15E 07	4.44E 07	4.58E 06

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H	R A D I I)		L - B A N D S
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
.500	2.84E-01	1.87E-01	1.27E-01	3.70E-02	9.13E-03	6.24E-03	4.94E-03	4.06E-03	3.45E-03	3.54E-03	3.49E-03	3.67E-03
.900	8.15E-02	3.49E-02	1.70E-02	1.73E-03	8.71E-05	3.89E-05	2.45E-05	1.36E-05	1.14E-05	1.21E-05	1.22E-05	9.20E-06
1.10	4.39E-02	1.51E-02	6.32E-03	4.00E-04	6.21E-06	3.02E-06	1.28E-06	0.0	0.0	0.0	0.0	0.0
1.50	1.28E-02	2.82E-03	8.98E-04	2.29E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	2.75E-03	3.46E-04	8.14E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	5.97E-04	4.25E-05	6.50E-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	1.30E-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	2.71E-05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	5.05E 07	5.57E 06	3.28E 07	5.92E 07	4.15E 07	1.69E 08	1.18E 08	4.11E 07	8.44E 07	6.45E 07	9.11E 07	1.99E 07

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H	R A D I I)		L - B A N D S
.100	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.500	3.61E-03	3.37E-03	3.70E-03	3.88E-03	3.55E-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0
.900	0.0	9.67E-06	9.33E-06	1.39E-05	4.59E-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	4.40E 06	2.28E 07	1.18E 07	7.98E 06	1.82E 07	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 16

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*************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 5        ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*************************************************************************************************************************
                         *************************** HIGH ENERGY PROTONS *****************************
                         ** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN 5.00 MEV **
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ENERGY LEVELS >(MEV)	*1.0-1.2*	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
3.00	1.40E 00	1.44E 00	1.45E 00	1.62E 00	1.84E 00	2.21E 00	2.36E 00	3.76E 00	9.06E 00	2.17E 01	3.62E 02	3.06E 01
5.00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	0.0	0.0
10.0	7.27E-01	7.01E-01	5.71E-01	3.87E-01	2.49E-01	1.87E-01	1.52E-01	9.95E-02	5.58E-02	0.0	0.0	0.0
15.0	5.96E-01	5.55E-01	4.07E-01	2.13E-01	1.02E-01	6.47E-02	4.67E-02	2.34E-02	8.36E-03	0.0	0.0	0.0
20.0	5.60E-01	5.08E-01	3.57E-01	1.64E-01	6.91E-02	3.75E-02	1.89E-02	5.55E-03	0.0	0.0	0.0	0.0
25.0	5.45E-01	4.82E-01	3.30E-01	1.37E-01	5.29E-02	2.50E-02	9.02E-03	8.18E-04	0.0	0.0	0.0	0.0
30.0	5.29E-01	4.59E-01	3.05E-01	1.15E-01	4.06E-02	1.67E-02	4.60E-03	0.0	0.0	0.0	0.0	0.0
50.0	4.73E-01	3.77E-01	2.26E-01	5.62E-02	1.43E-02	3.46E-03	4.57E-04	0.0	0.0	0.0	0.0	0.0
100.	3.47E-01	2.26E-01	1.15E-01	2.04E-02	3.60E-03	3.45E-04	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	4.62E 05	2.90E 06	2.95E 06	2.21E 06	2.59E 06	1.57E 06	7.10E 05	3.09E 05	1.64E 04	2.82E 03	0.0	0.0

ENERGY LEVELS >(MEV)	*3.4-3.6*	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
3.00	1.09E 02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENERGY LEVELS >(MEV)	*5.8-6.0*	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
	L - B A N D S	(M A G N E T I C		S H E L L		P A R A M E T E R		I N	E A R T H		R A D I I)	L - B A N D S
3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 17

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **

** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **

** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **

** VEHICLE : OSO 5 ** INCLINATION= 90DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: T06276 ** PERIOD= 1.694 **

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************************** ELECTRONS **************************

** SPECTRAL DISTRIBUTION - NORMALIZED BY FLUX OF ENERGY GREATER THAN .500 MEV **

****

ENERGY LEVELS >(MEV)	L - BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L - BANDS											
	1.0-1.2	*1.2-1.4*	*1.4-1.6*	*1.6-1.8*	*1.8-2.0*	*2.0-2.2*	*2.2-2.4*	*2.4-2.6*	*2.6-2.8*	*2.8-3.0*	*3.0-3.2*	*3.2-3.4*
.0	4.96E 00	1.25E 01	3.36E 01	1.36E 02	1.98E 02	3.67E 02	6.76E 02	4.35E 02	5.86E 01	1.95E 01	1.24E 01	1.31E 01
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	5.54E-01	8.73E-02	2.18E-01	1.90E-01	6.60E-02	4.21E-02	4.50E-02	7.62E-02	1.87E-01	3.44E-01	3.67E-01	3.92E-01
1.50	3.72E-01	3.41E-02	1.17E-01	7.36E-02	1.59E-02	6.67E-03	6.23E-03	1.52E-02	6.74E-02	1.75E-01	1.80E-01	1.94E-01
2.00	1.94E-01	1.78E-02	6.81E-02	2.92E-02	4.51E-03	1.64E-03	1.16E-03	3.34E-03	2.61E-02	8.86E-02	8.81E-02	9.61E-02
2.50	6.97E-02	7.98E-03	2.68E-02	1.04E-02	1.20E-03	3.24E-04	8.79E-05	2.88E-04	5.30E-03	4.06E-02	3.82E-02	4.19E-02
3.00	2.39E-02	3.08E-03	8.07E-03	3.26E-03	2.62E-04	1.60E-05	0.0	0.0	0.0	1.41E-02	1.41E-02	1.53E-02
4.00	4.26E-04	2.98E-05	8.59E-05	6.61E-05	0.0	0.0	0.0	0.0	0.0	3.85E-04	3.92E-04	4.25E-04
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	3.39E 06	1.51E 08	2.01E 08	3.52E 07	1.99E 07	5.37E 06	1.78E 06	6.98E 05	1.00E 05	3.17E 06	5.03E 07	5.38E 07

ENERGY LEVELS >(MEV)	L - BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L - BANDS											
	3.4-3.6	*3.6-3.8*	*3.8-4.0*	*4.0-4.2*	*4.2-4.4*	*4.4-4.6*	*4.6-4.8*	*4.8-5.0*	*5.0-5.2*	*5.2-5.4*	*5.4-5.6*	*5.6-5.8*
.0	1.48E 01	1.20E 01	8.87E 00	6.94E 00	6.70E 00	6.67E 00	6.92E 00	7.18E 00	7.43E 00	7.54E 00	7.69E 00	7.60E 00
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	3.96E-01	3.83E-01	3.66E-01	3.56E-01	3.57E-01	3.55E-01	3.46E-01	3.38E-01	3.29E-01	3.24E-01	3.12E-01	2.78E-01
1.50	1.98E-01	1.92E-01	1.72E-01	1.52E-01	1.42E-01	1.35E-01	1.27E-01	1.22E-01	1.14E-01	1.07E-01	9.88E-02	8.48E-02
2.00	9.91E-02	9.58E-02	8.07E-02	6.46E-02	5.66E-02	5.11E-02	4.68E-02	4.39E-02	3.95E-02	3.57E-02	3.13E-02	2.59E-02
2.50	4.52E-02	4.79E-02	4.02E-02	2.90E-02	2.38E-02	2.05E-02	1.75E-02	1.55E-02	1.29E-02	1.08E-02	8.80E-03	7.08E-03
3.00	1.77E-02	2.03E-02	1.81E-02	1.30E-02	9.47E-03	7.54E-03	5.64E-03	4.49E-03	3.46E-03	2.77E-03	2.15E-03	1.77E-03
4.00	5.32E-04	6.79E-04	6.11E-04	4.10E-04	2.67E-04	1.93E-04	1.38E-04	1.09E-04	7.87E-05	6.01E-05	4.34E-05	2.74E-05
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	1.65E 08	5.75E 07	1.93E 08	1.59E 08	9.37E 07	1.44E 08	8.36E 07	7.11E 07	5.86E 07	4.12E 07	4.99E 07	3.46E 07

ENERGY LEVELS >(MEV)	L - BANDS (MAGNETIC SHELL PARAMETER IN EARTH RADII) L - BANDS											
	5.8-6.0	*6.0-6.2*	*6.2-6.4*	*6.4-6.6*	*6.6-6.8*	*6.8-7.0*	*7.0-7.2*	*7.2-7.4*	*7.4-7.6*	*7.6-7.8*	*7.8-8.0*	*8.0-8.2*
.0	7.52E 00	8.19E 00	9.47E 00	1.13E 01	1.29E 01	1.61E 01	2.29E 01	3.04E 01	3.66E 01	7.22E 01	1.42E 02	2.81E 03
.500	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00	1.00E 00
1.00	2.53E-01	2.39E-01	2.36E-01	2.33E-01	2.17E-01	1.71E-01	1.40E-01	1.26E-01	1.19E-01	9.88E-02	8.59E-02	4.72E-02
1.50	7.54E-02	6.85E-02	6.48E-02	6.11E-02	5.44E-02	3.86E-02	2.92E-02	2.55E-02	2.37E-02	1.83E-02	1.56E-02	4.42E-03
2.00	2.24E-02	1.96E-02	1.78E-02	1.60E-02	1.36E-02	8.72E-03	6.11E-03	5.18E-03	4.75E-03	3.40E-03	2.83E-03	6.95E-04
2.50	6.04E-03	5.07E-03	4.39E-03	3.77E-03	3.10E-03	1.88E-03	1.25E-03	1.04E-03	9.42E-04	4.53E-04	0.0	0.0
3.00	1.54E-03	1.22E-03	9.52E-04	7.45E-04	5.96E-04	3.78E-04	2.41E-04	1.80E-04	8.30E-05	0.0	0.0	0.0
4.00	8.27E-06	3.78E-06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMFLUX=	9.53E 06	1.60E 07	1.79E 07	6.96E 06	1.44E 07	1.55E 06	1.60E 06	1.81E 06	2.24E 06	1.04E 06	7.37E 04	3.60E 05

Table 18

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 1 ** INCLINATION= 33DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **
****

************ LOW ENERGY PROTONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.100-.500	1.464E 02	1.265E 07	16.363
.500-.900	1.094E 02	9.448E 06	12.226
.900-1.10	3.372E 01	2.913E 06	3.770
1.10-1.50	6.145E 01	5.309E 06	6.870
1.50-2.00	6.706E 01	5.794E 06	7.497
2.00-2.50	5.792E 01	5.004E 06	6.476
2.50-3.00	5.023E 01	4.340E 06	5.616
3.00-3.50	4.371E 01	3.776E 06	4.886
3.50-OVER	3.247E 02	2.805E 07	36.296
TOTAL	8.945E 02	7.728E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.100	8.945E 02	7.728E 07
.300	8.180E 02	7.068E 07
.500	7.481E 02	6.464E 07
.700	6.842E 02	5.911E 07
.900	6.387E 02	5.519E 07
1.10	6.050E 02	5.227E 07
1.30	5.733E 02	4.954E 07
1.50	5.436E 02	4.696E 07
1.75	5.088E 02	4.396E 07
2.00	4.765E 02	4.117E 07
2.25	4.465E 02	3.858E 07
2.50	4.186E 02	3.617E 07
2.75	3.926E 02	3.392E 07
3.00	3.684E 02	3.183E 07
3.50	3.247E 02	2.805E 07

* EXPOSURE INDEX-ENERGY >.100MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.217	0.0
1.E0-1.E1	0.500	5.516E 03
1.E1-1.E2	0.667	1.015E 05
1.E2-1.E3	1.000	1.394E 06
1.E3-1.E4	1.683	3.144E 07
1.E4-1.E5	0.933	4.434E 07
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	7.728E 07

Table 19

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*************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 1         ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*************************************************************************************************************************
                                   ************   HIGH ENERGY PROTONS   ************
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****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
3.00-5.00	1.253E 02	1.083E 07	34.025
5.00-10.0	1.049E 02	9.065E 06	28.484
10.0-15.0	3.790E 01	3.274E 06	10.288
15.0-20.0	1.115E 01	9.635E 05	3.028
20.0-25.0	5.907E 00	5.104E 05	1.604
25.0-30.0	5.330E 00	4.605E 05	1.447
30.0-50.0	1.699E 01	1.468E 06	4.611
50.0-100.	2.533E 01	2.188E 06	6.876
100.-OVER	3.550E 01	3.067E 06	9.638
TOTAL	3.684E 02	3.183E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
3.00	3.684E 02	3.183E 07
4.00	2.865E 02	2.476E 07
5.00	2.430E 02	2.100E 07
7.00	1.815E 02	1.568E 07
10.0	1.381E 02	1.193E 07
12.0	1.211E 02	1.046E 07
15.0	1.002E 02	8.658E 06
18.0	9.160E 01	7.914E 06
20.0	8.906E 01	7.694E 06
25.0	8.315E 01	7.184E 06
30.0	7.782E 01	6.724E 06
50.0	6.083E 01	5.256E 06
60.0	5.446E 01	4.705E 06
70.0	4.885E 01	4.220E 06
100.	3.550E 01	3.067E 06

* EXPOSURE INDEX-ENERGY >5.00MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.633	0.0
1.E0-1.E1	0.700	9.829E 03
1.E1-1.E2	0.800	1.152E 05
1.E2-1.E3	1.067	1.406E 06
1.E3-1.E4	1.800	1.947E 07
1.E4-1.E5	0.0	0.0
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	2.100E 07

Table 20

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************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:              **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:    IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 1        ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.591 **
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                                  ************        ELECTRONS       ************
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****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.0 -.500	3.277E 05	2.831E 10	96.872
.500-1.00	8.999E 03	7.775E 08	2.660
1.00-1.50	8.154E 02	7.045E 07	0.241
1.50-2.00	3.347E 02	2.892E 07	0.099
2.00-2.50	2.556E 02	2.208E 07	0.076
2.50-3.00	1.202E 02	1.038E 07	0.036
3.00-4.00	5.442E 01	4.702E 06	0.016
4.00-5.00	5.856E-01	5.060E 04	0.000
5.00-OVER	0.0	0.0	0.0
TOTAL	3.383E 05	2.923E 10	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.0	3.383E 05	2.923E 10
.250	4.661E 04	4.027E 09
.500	1.058E 04	9.141E 08
.750	3.231E 03	2.791E 08
1.00	1.581E 03	1.366E 08
1.25	1.114E 03	9.627E 07
1.50	7.654E 02	6.613E 07
1.75	5.967E 02	5.156E 07
2.00	4.308E 02	3.722E 07
2.50	1.752E 02	1.513E 07
3.00	5.500E 01	4.752E 06
3.50	5.848E 00	5.053E 05
4.00	5.856E-01	5.060E 04
4.50	1.464E-03	1.265E 02
5.00	0.0	0.0

* EXPOSURE INDEX-ENERGY >.500MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	20.367	0.0
1.E0-1.E1	0.317	5.714E 03
1.E1-1.E2	0.400	6.603E 04
1.E2-1.E3	0.450	7.181E 05
1.E3-1.E4	0.800	1.211E 07
1.E4-1.E5	0.950	1.339E 08
1.E5-1.E6	0.717	7.673E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	9.141E 08

Table 21

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*************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972.0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 2      ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
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************ LOW ENERGY PROTONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.100-.500	3.333E 02	2.879E 07	22.598
.500-.900	1.993E 02	1.722E 07	13.517
.900-1.10	5.167E 01	4.465E 06	3.504
1.10-1.50	9.384E 01	8.108E 06	6.363
1.50-2.00	1.019E 02	8.808E 06	6.912
2.00-2.50	8.760E 01	7.569E 06	5.940
2.50-3.00	7.554E 01	6.527E 06	5.122
3.00-3.50	6.534E 01	5.645E 06	4.430
3.50-OVER	4.662E 02	4.028E 07	31.614
TOTAL	1.475E 03	1.274E 08	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.100	1.475E 03	1.274E 08
.300	1.290E 03	1.115E 08
.500	1.142E 03	9.863E 07
.700	1.019E 03	8.801E 07
.900	9.422E 02	8.140E 07
1.10	8.905E 02	7.694E 07
1.30	8.421E 02	7.276E 07
1.50	7.967E 02	6.883E 07
1.75	7.437E 02	6.426E 07
2.00	6.947E 02	6.002E 07
2.25	6.493E 02	5.610E 07
2.50	6.071E 02	5.245E 07
2.75	5.680E 02	4.907E 07
3.00	5.316E 02	4.593E 07
3.50	4.662E 02	4.028E 07

* EXPOSURE INDEX-ENERGY >.100MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.133	0.0
1.E0-1.E1	0.500	6.005E 03
1.E1-1.E2	0.667	1.191E 05
1.E2-1.E3	0.750	1.096E 06
1.E3-1.E4	1.467	2.712E 07
1.E4-1.E5	1.483	9.909E 07
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.274E 08

Tabb 22

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:             **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 2       ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
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                                   ***********   HIGH ENERGY PROTONS   ************
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****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
3.00-5.00	2.067E 02	1.786E 07	38.893
5.00-10.0	1.755E 02	1.516E 07	33.007
10.0-15.0	4.859E 01	4.198E 06	9.140
15.0-20.0	1.353E 01	1.169E 06	2.546
20.0-25.0	7.054E 00	6.094E 05	1.327
25.0-30.0	6.085E 00	5.258E 05	1.145
30.0-50.0	1.800E 01	1.555E 06	3.385
50.0-100.	2.468E 01	2.132E 06	4.642
100.-OVER	3.144E 01	2.716E 06	5.915
TOTAL	5.316E 02	4.593E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
3.00	5.316E 02	4.593E 07
4.00	4.096E 02	3.539E 07
5.00	3.248E 02	2.807E 07
7.00	2.147E 02	1.855E 07
10.0	1.494E 02	1.291E 07
12.0	1.267E 02	1.094E 07
15.0	1.008E 02	8.708E 06
18.0	9.041E 01	7.812E 06
20.0	8.725E 01	7.539E 06
25.0	8.020E 01	6.929E 06
30.0	7.411E 01	6.403E 06
50.0	5.612E 01	4.848E 06
60.0	4.981E 01	4.304E 06
70.0	4.430E 01	3.828E 06
100.	3.144E 01	2.716E 06

* EXPOSURE INDEX-ENERGY >5.00MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.500	0.0
1.E0-1.E1	0.600	7.660E 03
1.E1-1.E2	0.850	1.124E 05
1.E2-1.E3	0.967	1.523E 06
1.E3-1.E4	2.083	2.642E 07
1.E4-1.E5	0.0	0.0
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	2.807E 07

Table 23

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****************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:            **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 2       ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
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************ ELECTRONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.0 -.500	4.877E 05	4.214E 10	97.596
.500-1.00	1.013E 04	8.753E 08	2.027
1.00-1.50	9.740E 02	8.416E 07	0.195
1.50-2.00	4.232E 02	3.656E 07	0.085
2.00-2.50	2.795E 02	2.415E 07	0.056
2.50-3.00	1.346E 02	1.163E 07	0.027
3.00-4.00	7.105E 01	6.139E 06	0.014
4.00-5.00	7.380E-01	6.376E 04	0.000
5.00-OVER	0.0	0.0	0.0
TOTAL	4.997E 05	4.318E 10	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.0	4.997E 05	4.318E 10
.250	5.734E 04	4.954E 09
.500	1.201E 04	1.038E 09
.750	3.765E 03	3.253E 08
1.00	1.883E 03	1.627E 08
1.25	1.324E 03	1.144E 08
1.50	9.091E 02	7.854E 07
1.75	6.934E 02	5.991E 07
2.00	4.859E 02	4.198E 07
2.50	2.064E 02	1.783E 07
3.00	7.179E 01	6.202E 06
3.50	7.618E 00	6.582E 05
4.00	7.380E-01	6.376E 04
4.50	3.687E-03	3.186E 02
5.00	0.0	0.0

* EXPOSURE INDEX-ENERGY >.500MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	20.033	0.0
1.E0-1.E1	0.267	4.073E 03
1.E1-1.E2	0.433	6.978E 04
1.E2-1.E3	0.567	7.652E 05
1.E3-1.E4	0.833	1.416E 07
1.E4-1.E5	1.133	1.855E 08
1.E5-1.E6	0.733	8.375E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.038E 09

Table 24

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO-3 ** INCLINATION= 45DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

************ LOW ENERGY PROTONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.100-.500	8.753E 02	7.563E 07	35.969
.500-.900	4.090E 02	3.534E 07	16.808
.900-1.10	8.821E 01	7.622E 06	3.625
1.10-1.50	1.462E 02	1.263E 07	6.006
1.50-2.00	1.435E 02	1.240E 07	5.898
2.00-2.50	1.141E 02	9.860E 06	4.690
2.50-3.00	9.315E 01	8.048E 06	3.828
3.00-3.50	7.732E 01	6.680E 06	3.177
3.50-OVER	4.867E 02	4.205E 07	19.998
TOTAL	2.433E 03	2.103E 08	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.100	2.433E 03	2.103E 08
.300	1.922E 03	1.660E 08
.500	1.558E 03	1.346E 08
.700	1.294E 03	1.118E 08
.900	1.149E 03	9.929E 07
1.10	1.061E 03	9.166E 07
1.30	9.835E 02	8.498E 07
1.50	9.148E 02	7.904E 07
1.75	8.386E 02	7.245E 07
2.00	7.712E 02	6.664E 07
2.25	7.111E 02	6.144E 07
2.50	6.571E 02	5.678E 07
2.75	6.083E 02	5.256E 07
3.00	5.640E 02	4.873E 07
3.50	4.867E 02	4.205E 07

* EXPOSURE INDEX-ENERGY >.100MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.133	0.0
1.E0-1.E1	0.417	4.430E 03
1.E1-1.E2	0.550	8.230E 04
1.E2-1.E3	0.783	1.051E 06
1.E3-1.E4	1.350	2.359E 07
1.E4-1.E5	1.733	1.730E 08
1.E5-1.E6	0.033	1.248E 07
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	2.103E 08

Table 25

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 3 ** INCLINATION= 45DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

************ HIGH-ENERGY PROTONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
3.00-5.00	2.381E 02	2.057E 07	42.217
5.00-10.0	1.878E 02	1.623E 07	33.308
10.0-15.0	4.886E 01	4.222E 06	8.664
15.0-20.0	1.339E 01	1.157E 06	2.374
20.0-25.0	6.915E 00	5.975E 05	1.226
25.0-30.0	5.859E 00	5.062E 05	1.039
30.0-50.0	1.686E 01	1.457E 06	2.990
50.0-100.	2.072E 01	1.790E 06	3.674
100.-OVER	2.543E 01	2.197E 06	4.508
TOTAL	5.640E 02	4.873E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
3.00	5.640E 02	4.873E 07
4.00	4.217E 02	3.644E 07
5.00	3.259E 02	2.816E 07
7.00	2.062E 02	1.781E 07
10.0	1.380E 02	1.193E 07
12.0	1.149E 02	9.925E 06
15.0	8.917E 01	7.704E 06
18.0	7.893E 01	6.820E 06
20.0	7.578E 01	6.547E 06
25.0	6.886E 01	5.950E 06
30.0	6.300E 01	5.444E 06
50.0	4.614E 01	3.987E 06
60.0	4.079E 01	3.524E 06
70.0	3.614E 01	3.123E 06
100.	2.543E 01	2.197E 06

* EXPOSURE INDEX-ENERGY >5.00MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.600	0.0
1.E0-1.E1	0.600	9.401E 03
1.E1-1.E2	0.733	1.096E 05
1.E2-1.E3	0.950	1.364E 06
1.E3-1.E4	2.117	2.667E 07
1.E4-1.E5	0.0	0.0
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	2.816E 07

Table 26

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 3 ** INCLINATION= 45DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

************ ELECTRONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.0 -.500	5.393E 05	4.659E 10	97.860
.500-1.00	9.280E 03	8.018E 08	1.684
1.00-1.50	1.242E 03	1.073E 08	0.225
1.50-2.00	5.982E 02	5.168E 07	0.109
2.00-2.50	3.990E 02	3.448E 07	0.072
2.50-3.00	1.824E 02	1.576E 07	0.033
3.00-4.00	8.788E 01	7.593E 06	0.016
4.00-5.00	1.770E 00	1.529E 05	0.000
5.00-OVER	0.0	0.0	0.0
TOTAL	5.511E 05	4.761E 10	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.0	5.511E 05	4.761E 10
.250	5.812E 04	5.021E 09
.500	1.179E 04	1.019E 09
.750	4.623E 03	3.994E 08
1.00	2.511E 03	2.170E 08
1.25	1.794E 03	1.550E 08
1.50	1.269E 03	1.097E 08
1.75	9.721E 02	8.399E 07
2.00	6.711E 02	5.798E 07
2.50	2.720E 02	2.350E 07
3.00	8.965E 01	7.746E 06
3.50	1.596E 01	1.379E 06
4.00	1.770E 00	1.529E 05
4.50	2.814E-02	2.431E 03
5.00	0.0	0.0

* EXPOSURE INDEX-ENERGY >.500MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	18.700	0.0
1.E0-1.E1	0.350	5.153E 03
1.E1-1.E2	0.317	5.223E 04
1.E2-1.E3	0.633	7.686E 05
1.E3-1.E4	1.083	1.559E 07
1.E4-1.E5	2.250	3.725E 08
1.E5-1.E6	0.667	6.298E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.019E 09

Table 27

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS-SP.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 4 ** INCLINATION= 50DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

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************ LOW ENERGY PROTONS ************

****

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.100-.500	1.842E 03	1.592E 08	47.900
.500-.900	7.396E 02	6.390E 07	19.229
.900-1.10	1.544E 02	1.334E 07	4.014
1.10-1.50	2.141E 02	1.850E 07	5.566
1.50-2.00	1.731E 02	1.496E 07	4.501
2.00-2.50	1.210E 02	1.045E 07	3.145
2.50-3.00	9.210E 01	7.957E 06	2.395
3.00-3.50	7.360E 01	6.359E 06	1.914
3.50-OVER	4.360E 02	3.767E 07	11.336
TOTAL	3.846E 03	3.323E 08	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.100	3.846E 03	3.323E 08
.300	2.726E 03	2.355E 08
.500	2.004E 03	1.731E 08
.700	1.526E 03	1.318E 08
.900	1.264E 03	1.092E 08
1.10	1.110E 03	9.589E 07
1.30	9.907E 02	8.560E 07
1.50	8.957E 02	7.739E 07
1.75	8.003E 02	6.914E 07
2.00	7.226E 02	5.244E 07
2.25	6.575E 02	5.681E 07
2.50	6.017E 02	5.198E 07
2.75	5.528E 02	4.776E 07
3.00	5.096E 02	4.403E 07
3.50	4.360E 02	3.767E 07

* EXPOSURE INDEX-ENERGY >.100MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.067	0.0
1.E0-1.E1	0.400	4.583E 03
1.E1-1.E2	0.533	8.577E 04
1.E2-1.E3	0.683	9.986E 05
1.E3-1.E4	1.333	2.295E 07
1.E4-1.E5	1.700	1.759E 08
1.E5-1.E6	0.283	1.324E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	3.323E 08

Table 28

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 4 ** INCLINATION= 50DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

************ HIGH ENERGY PROTONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
3.00-5.00	2.227E 02	1.924E 07	43.699
5.00-10.0	1.596E 02	1.465E 07	33.282
10.0-15.0	4.235E 01	3.659E 06	8.311
15.0-20.0	1.167E 01	1.008E 06	2.290
20.0-25.0	6.092E 00	5.263E 05	1.195
25.0-30.0	5.114E 00	4.418E 05	1.004
30.0-50.0	1.445E 01	1.248E 06	2.836
50.0-100.	1.697E 01	1.466E 06	3.330
100.-OVER	2.065E 01	1.785E 06	4.053
TOTAL	5.096E 02	4.403E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
3.00	5.096E 02	4.403E 07
4.00	3.755E 02	3.244E 07
5.00	2.869E 02	2.479E 07
7.00	1.779E 02	1.537E 07
10.0	1.173E 02	1.013E 07
12.0	9.711E 01	8.391E 06
15.0	7.495E 01	6.475E 06
18.0	6.607E 01	5.708E 06
20.0	6.328E 01	5.467E 06
25.0	5.718E 01	4.941E 06
30.0	5.207E 01	4.499E 06
50.0	3.762E 01	3.250E 06
60.0	3.319E 01	2.868E 06
70.0	2.938E 01	2.538E 06
100.	2.065E 01	1.785E 06

* EXPOSURE INDEX-ENERGY >5.00MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.733	0.0
1.E0-1.E1	0.617	9.088E 03
1.E1-1.E2	0.700	1.025E 05
1.E2-1.E3	0.967	1.350E 06
1.E3-1.E4	1.983	2.333E 07
1.E4-1.E5	0.0	0.0
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	2.479E 07

Table 29

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 4 ** INCLINATION= 50DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

************ ELECTRONS ************

****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.0 -.500	4.985E 05	4.307E 10	97.068
.500-1.00	1.118E 04	9.656E 08	2.176
1.00-1.50	2.110E 03	1.823E 08	0.411
1.50-2.00	9.318E 02	8.051E 07	0.181
2.00-2.50	4.780E 02	4.130E 07	0.093
2.50-3.00	2.290E 02	1.978E 07	0.045
3.00-4.00	1.315E 02	1.136E 07	0.026
4.00-5.00	3.343E 00	2.889E 05	0.001
5.00-OVER	0.0	0.0	0.0
TOTAL	5.136E 05	4.437E 10	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.0	5.136E 05	4.437E 10
.250	5.901E 04	5.099E 09
.500	1.506E 04	1.301E 09
.750	6.814E 03	5.887E 08
1.00	3.884E 03	3.355E 08
1.25	2.627E 03	2.270E 08
1.50	1.774E 03	1.532E 08
1.75	1.242E 03	1.073E 08
2.00	8.418E 02	7.273E 07
2.50	3.638E 02	3.143E 07
3.00	1.348E 02	1.165E 07
3.50	3.043E 01	2.629E 06
4.00	3.343E 00	2.889E 05
4.50	5.652E-02	4.884E 03
5.00	0.0	0.0

* EXPOSURE INDEX-ENERGY >.500MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	17.583	0.0
1.E0-1.E1	0.333	5.325E 03
1.E1-1.E2	0.267	4.576E 04
1.E2-1.E3	0.733	1.219E 06
1.E3-1.E4	1.133	2.059E 07
1.E4-1.E5	2.833	4.923E 08
1.E5-1.E6	1.117	7.870E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.301E 09

Table 30

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********************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 5        ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: T06276 ** PERIOD=  1.590 **
********************************************************************************************************************
                                   ************   LOW ENERGY PROTONS   ************
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****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.100-.500	1.060E 04	9.163E 08	87.794
.500-.900	6.933E 02	5.990E 07	5.740
.900-1.10	1.275E 02	1.102E 07	1.056
1.10-1.50	1.518E 02	1.311E 07	1.257
1.50-2.00	1.055E 02	9.116E 06	0.873
2.00-2.50	6.808E 01	5.882E 06	0.564
2.50-3.00	5.047E 01	4.360E 06	0.418
3.00-3.50	4.006E 01	3.461E 06	0.332
3.50-OVER	2.376E 02	2.053E 07	1.967
TOTAL	1.208E 04	1.044E 09	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.100	1.208E 04	1.044E 09
.300	2.784E 03	2.405E 08
.500	1.474E 03	1.274E 08
.700	1.009E 03	8.716E 07
.900	7.811E 02	6.748E 07
1.10	6.535E 02	5.647E 07
1.30	5.658E 02	4.888E 07
1.50	5.017E 02	4.335E 07
1.75	4.420E 02	3.819E 07
2.00	3.962E 02	3.423E 07
2.25	3.592E 02	3.104E 07
2.50	3.282E 02	2.835E 07
2.75	3.013E 02	2.603E 07
3.00	2.777E 02	2.399E 07
3.50	2.376E 02	2.053E 07

* EXPOSURE INDEX-ENERGY >.100MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	19.117	0.0
1.E0-1.E1	0.383	5.012E 03
1.E1-1.E2	0.483	6.717E 04
1.E2-1.E3	0.750	1.272E 06
1.E3-1.E4	0.933	1.690E 07
1.E4-1.E5	1.433	1.780E 08
1.E5-1.E6	0.900	8.474E 08
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.044E 09

Table 31

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************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:           **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:    IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 5      ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
************************************************************************************************************
                              ************   HIGH ENERGY PROTONS   ************
                              ***********************************************
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****** SPECTRUM IN PERCENT DELTA ENERGY ******

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
3.00-5.00	1.190E 02	1.028E 07	42.850
5.00-10.0	8.944E 01	7.728E 06	32.209
10.0-15.0	2.342E 01	2.023E 06	8.433
15.0-20.0	6.513E 00	5.628E 05	2.346
20.0-25.0	3.364E 00	2.906E 05	1.211
25.0-30.0	2.853E 00	2.465E 05	1.027
30.0-50.0	8.298E 00	7.170E 05	2.988
50.0-100.	1.082E 01	9.350E 05	3.897
100.-OVER	1.399E 01	1.209E 06	5.037
TOTAL	2.777E 02	2.399E 07	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
3.00	2.777E 02	2.399E 07
4.00	2.047E 02	1.769E 07
5.00	1.587E 02	1.371E 07
7.00	1.017E 02	8.786E 06
10.0	6.926E 01	5.984E 06
12.0	5.821E 01	5.029E 06
15.0	4.584E 01	3.961E 06
18.0	4.086E 01	3.530E 06
20.0	3.933E 01	3.398E 06
25.0	3.596E 01	3.107E 06
30.0	3.311E 01	2.861E 06
50.0	2.481E 01	2.144E 06
60.0	2.203E 01	1.903E 06
70.0	1.961E 01	1.694E 06
100.	1.399E 01	1.209E 06

* EXPOSURE INDEX-ENERGY >5.00MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	21.283	0.0
1.E0-1.E1	0.333	5.211E 03
1.E1-1.E2	0.667	8.360E 04
1.E2-1.E3	0.600	9.872E 05
1.E3-1.E4	1.117	1.264E 07
1.E4-1.E5	0.0	0.0
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.371E 07

Table 32

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*******************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:            **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:    IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 5      ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.590 **
*******************************************************************************************************************
                                   ************        ELECTRONS        ************
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SPECTRUM IN PERCENT DELTA ENERGY

ENERGY RANGES (MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PER CENT
.0 -.500	3.721E 05	3.215E 10	94.948
.500-1.00	1.379E 04	1.191E 09	3.517
1.00-1.50	3.441E 03	2.973E 08	0.878
1.50-2.00	1.421E 03	1.228E 08	0.363
2.00-2.50	6.628E 02	5.727E 07	0.169
2.50-3.00	3.049E 02	2.634E 07	0.078
3.00-4.00	1.813E 02	1.566E 07	0.046
4.00-5.00	5.062E 00	4.374E 05	0.001
5.00-OVER	0.0	0.0	0.0
TOTAL	3.919E 05	3.386E 10	100.000

*** COMPOSITE ORBIT SPECTRUM ***

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY
.0	3.919E 05	3.386E 10
.250	5.867E 04	5.069E 09
.500	1.980E 04	1.711E 09
.750	1.037E 04	8.964E 08
1.00	6.016E 03	5.197E 08
1.25	3.928E 03	3.394E 08
1.50	2.575E 03	2.225E 08
1.75	1.728E 03	1.493E 08
2.00	1.154E 03	9.971E 07
2.50	4.912E 02	4.244E 07
3.00	1.863E 02	1.610E 07
3.50	4.652E 01	4.020E 06
4.00	5.062E 00	4.374E 05
4.50	1.012E-01	8.743E 03
5.00	0.0	0.0

* EXPOSURE INDEX-ENERGY >.500MEV *

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	16.600	0.0
1.E0-1.E1	0.217	4.309E 03
1.E1-1.E2	0.533	7.163E 04
1.E2-1.E3	0.683	1.132E 06
1.E3-1.E4	1.200	1.966E 07
1.E4-1.E5	3.033	5.475E 08
1.E5-1.E6	1.733	1.143E 09
1.E6-1.E7	0.0	0.0
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.711E 09

Table 33

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 1 ** INCLINATION= 33DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **
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******************** LOW ENERGY PROTONS ********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.100 MEV **
****

PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	1.618E 04	4.877	-32.94	547.93	1.20000	0.23141	1.79	1.573E 07
2	1.523E 04	-16.700	-32.85	548.14	2.80000	0.21505	1.58	1.479E 07
3	1.476E 04	-34.086	-32.33	548.72	4.41667	0.20201	1.41	1.150E 07
4	1.439E 04	-43.557	-29.71	549.63	6.06667	0.19539	1.31	9.246E 06
5	9.358E 03	-47.025	-22.35	550.03	7.75000	0.19154	1.21	5.328E 06
6	7.935E 02	-79.686	-25.83	549.85	9.30000	0.21737	1.19	4.269E 05
7	2.300E 02	-63.598	-3.00	549.66	11.10000	0.23059	1.19	5.879E 04
8	2.194E 00	-51.948	5.18	549.84	11.16667	0.24870	1.24	0.0
9	0.0	-74.364	6.49	549.86	12.76667	0.27581	1.27	0.0
10	0.0	-99.721	5.77	549.80	14.35000	0.27152	1.16	0.0
11	0.0	-122.132	7.08	549.83	15.95000	0.26677	1.13	0.0
12	1.463E 00	36.675	-16.72	537.31	18.41664	0.26008	1.36	3.525E 02
13	2.699E 03	35.387	-27.17	541.45	20.11664	0.25612	1.69	1.155E 06
14	9.281E 03	29.411	-31.64	544.44	21.78331	0.24943	1.87	6.182E 06
15	1.468E 04	20.402	-32.95	546.36	23.43330	0.24190	1.90	1.286E 07

Table 34

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:              **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 1          ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*******************************************************************************************************************************
                    *********************    HIGH ENERGY PROTONS    *********************
                    ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >5.00 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	4.568E 03	-35.608	-26.18	541.39	1.03333	0.19719	1.30	4.365E 06
2	5.118E 03	-33.616	-32.32	546.00	2.73333	0.20246	1.41	4.380E 06
3	5.303E 03	-34.086	-32.33	548.72	4.41667	0.20201	1.41	3.542E 06
4	5.146E 03	-43.557	-29.71	549.63	6.06667	0.19539	1.31	2.786E 06
5	2.599E 03	-47.025	-22.35	550.03	7.75000	0.19154	1.21	1.296E 06
6	2.291E 02	-65.785	-19.62	549.92	9.36666	0.19984	1.16	1.366E 05
7	2.087E 01	-72.433	-9.06	549.67	11.05000	0.21956	1.15	6.821E 03
8	0.0	-51.948	5.18	549.84	11.16667	0.24870	1.24	0.0
9	0.0	-74.364	6.49	549.86	12.76667	0.27581	1.27	0.0
10	0.0	-99.721	5.77	549.80	14.35000	0.27152	1.16	0.0
11	0.0	-122.132	7.08	549.83	15.95000	0.26677	1.13	0.0
12	1.452E 00	36.675	-16.72	537.31	18.41664	0.26008	1.36	2.175E 02
13	2.761E 02	31.679	-25.86	540.77	20.09999	0.25283	1.64	1.025E 05
14	1.962E 03	25.323	-30.93	543.82	21.76666	0.24598	1.83	1.187E 06
15	3.589E 03	7.767	-32.03	544.77	23.38332	0.23365	1.79	3.195E 06

Table 35

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 1           ** INCLINATION= 33DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
**********************************************************************************************************************************
                              ********************          ELECTRONS          **********************
                              ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.500 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	4.816E 05	-24.158	-29.68	543.60	1.08333	0.20741	1.44	1.558E 08
2	6.388E 05	-33.616	-32.32	546.00	2.73333	0.20246	1.41	2.208E 08
3	6.602E 05	-34.086	-32.33	548.72	4.41667	0.20201	1.41	3.064E 08
4	2.367E 05	-39.658	-28.67	549.79	6.08333	0.19587	1.31	1.089E 08
5	9.946E 03	-50.511	-23.89	550.01	7.73333	0.19168	1.22	4.529E 06
6	1.471E 03	-62.513	-17.88	549.90	9.38333	0.19857	1.16	6.820E 05
7	3.620E 01	-75.439	-11.04	549.70	11.03333	0.21763	1.14	1.110E 04
8	0.0	-51.948	5.18	549.84	11.16667	0.24870	1.24	0.0
9	0.0	-74.364	6.49	549.86	12.76667	0.27581	1.27	0.0
10	0.0	-99.721	5.77	549.80	14.35000	0.27152	1.16	0.0
11	0.0	-122.132	7.08	549.83	15.95000	0.26677	1.13	0.0
12	0.0	-144.532	8.38	549.87	17.54999	0.26206	1.11	0.0
13	3.667E 03	35.387	-27.17	541.45	20.11664	0.25612	1.69	6.164E 05
14	6.982E 04	-1.012	-22.37	539.21	21.64999	0.22930	1.46	2.359E 07
15	3.113E 05	-15.881	-26.26	540.91	23.28331	0.21404	1.44	9.290E 07

Table 36

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.0 **
** VEHICLE : OSO 2 ** INCLINATION= 40DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **
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******************** LOW ENERGY PROTONS ********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.100 MEV **
****

PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	3.234E 04	13.719	-39.32	551.48	1.23333	0.23923	2.12	2.731E 07
2	2.574E 04	-3.320	-38.25	551.80	2.85000	0.22804	1.89	2.166E 07
3	1.822E 04	-24.936	-37.71	551.83	4.45000	0.21380	1.61	1.372E 07
4	1.434E 04	-38.277	-34.70	551.94	6.08333	0.20265	1.42	9.639E 06
5	1.074E 04	-48.983	-28.90	551.57	7.73333	0.19396	1.27	6.505E 06
6	4.500E 03	-67.787	-25.85	551.24	9.35000	0.20207	1.20	1.259E 06
7	2.885E 02	-61.594	-1.78	549.72	11.11667	0.23308	1.20	7.740E 04
8	1.666E 00	-100.479	-14.59	550.15	12.61667	0.23541	1.11	2.400E 02
9	0.0	-76.344	6.93	549.93	12.76667	0.27866	1.26	0.0
10	0.0	-101.681	5.99	549.85	14.35000	0.27159	1.16	0.0
11	0.0	-124.347	7.45	549.90	15.95000	0.26690	1.13	0.0
12	4.686E 02	42.443	-25.23	541.15	18.46666	0.26543	1.62	8.910E 04
13	1.043E 04	34.661	-33.40	544.71	20.13332	0.25582	1.96	4.684E 06
14	2.600E 04	25.342	-37.81	547.31	21.78331	0.24752	2.14	1.650E 07
15	3.608E 04	17.449	-39.86	549.35	23.43330	0.24244	2.19	2.598E 07

Table 37

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*********************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:        **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 2       ** INCLINATION= 40DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*********************************************************************************************************************
                         *******************   HIGH ENERGY PROTONS   ********************
                         ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >5.00 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	6.322E 03	-9.471	-39.31	549.23	1.15000	0.22553	1.85	5.766E 06
2	6.491E 03	-12.371	-39.51	551.30	2.81667	0.22386	1.81	5.841E 06
3	5.839E 03	-24.936	-37.71	551.83	4.45000	0.21380	1.61	4.073E 06
4	5.078E 03	-38.277	-34.70	551.94	6.08333	0.20265	1.42	3.125E 06
5	3.033E 03	-52.565	-30.67	551.70	7.71667	0.19618	1.28	1.635E 06
6	9.161E 02	-64.533	-23.83	551.05	9.36666	0.19821	1.19	3.103E 05
7	3.156E 01	-69.582	-8.99	549.88	11.06667	0.21773	1.15	1.119E 04
8	1.307E 00	-97.680	-12.27	550.00	12.63333	0.23292	1.10	2.100E 02
9	0.0	-76.344	6.93	549.93	12.76667	0.27866	1.26	0.0
10	0.0	-101.681	5.99	549.85	14.35000	0.27159	1.16	0.0
11	0.0	-124.347	7.45	549.90	15.95000	0.26690	1.13	0.0
12	1.946E 01	39.214	-23.18	540.43	18.45000	0.26108	1.55	4.883E 03
13	1.808E 03	30.832	-31.84	543.93	20.11664	0.25090	1.88	6.143E 05
14	4.423E 03	12.767	-34.29	545.16	21.73331	0.23692	1.90	2.287E 06
15	6.146E 03	-0.658	-37.43	547.01	23.36664	0.22944	1.89	4.397E 06

Table 38

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972.0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF,1965.0 80-TERM 10/68 * TIME= 1974.0 **
** VEHICLE : OSO 2 ** INCLINATION= 40DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **

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******************** ELECTRONS **********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.500 MEV **
****

PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	6.333E 05	-34.991	-32.94	544.79	1.05000	0.20245	1.41	1.608E 08
2	4.826E 05	-44.458	-37.52	547.58	2.70000	0.20629	1.43	1.656E 08
3	3.816E 05	-47.782	-39.95	550.31	4.36666	0.21159	1.46	1.758E 08
4	6.112E 05	-38.277	-34.70	551.94	6.08333	0.20265	1.42	3.394E 08
5	8.506E 04	-52.565	-30.67	551.70	7.71667	0.19618	1.28	3.362E 07
6	6.354E 03	-61.389	-21.73	550.86	9.38333	0.19586	1.18	1.798E 06
7	6.970E 01	-72.308	-11.35	550.00	11.05000	0.21470	1.14	2.286E 04
8	1.323E 00	-94.936	-9.91	549.87	12.65000	0.23249	1.10	1.200E 02
9	0.0	-76.344	6.93	549.93	12.76667	0.27866	1.26	0.0
10	0.0	-101.681	5.99	549.85	14.35000	0.27159	1.16	0.0
11	3.994E 02	117.259	-39.94	549.82	17.08331	0.48057	2.95	3.834E 04
12	7.075E 02	-73.746	39.96	551.33	17.88332	0.42937	2.93	9.570E 04
13	1.934E 04	27.144	-30.15	543.15	20.09999	0.24763	1.80	5.928E 06
14	1.636E 05	-8.681	-23.63	540.58	21.63332	0.22126	1.44	4.305E 07
15	4.460E 05	-24.235	-28.74	542.51	23.26666	0.20695	1.42	1.119E 08

Table 39

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*****************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:            **
** MAGNETIC COORDINATES E AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 3      ** INCLINATION= 45DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*****************************************************************************************************************************
                    *******************   LOW  ENERGY PROTONS   ********************
                    ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.100 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	7.028E 04	19.473	-43.50	553.68	1.25000	0.24835	2.40	4.288E 07
2	3.464E 04	2.621	-41.92	553.76	2.86666	0.23511	2.11	2.637E 07
3	2.405E 04	-14.668	-39.83	553.66	4.48333	0.22274	1.79	1.619E 07
4	1.567E 04	-28.571	-35.52	553.22	6.11666	0.20860	1.52	1.001E 07
5	1.501E 04	-40.460	-28.10	552.18	7.76667	0.19498	1.30	7.449E 06
6	7.864E 03	-59.889	-24.45	551.63	9.38333	0.19498	1.20	2.164E 06
7	3.099E 02	-85.415	-25.44	551.71	10.96667	0.22556	1.19	1.135E 05
8	3.224E 00	-99.598	-16.67	550.59	12.61667	0.23571	1.12	5.400E 02
9	0.0	-77.363	7.02	549.98	12.76667	0.27943	1.26	0.0
10	0.0	-102.660	5.91	549.89	14.35000	0.27090	1.16	0.0
11	0.0	-125.511	7.44	549.95	15.95000	0.26642	1.13	0.0
12	2.399E 03	42.753	-29.46	543.45	18.48331	0.26694	1.79	5.316E 05
13	3.109E 04	43.828	-41.26	548.97	20.18330	0.28239	2.48	1.236E 07
14	8.644E 04	31.659	-43.86	550.70	21.81667	0.26340	2.56	3.751E 07
15	1.052E 05	25.367	-44.92	552.37	23.46666	0.25696	2.56	5.466E 07

Table 40

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****** ******************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:             **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 3       ** INCLINATION= 45DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: T06276 ** PERIOD=  1.594 **
****** ******************************************************************************************************************
                            *******************   HIGH ENERGY PROTONS   ********************
                            ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >5.00 MEV **
                            *****************************************************************
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	6.597E 03	-15.433	-43.44	550.77	1.13333	0.22831	1.90	5.018E 06
2	5.824E 03	-21.851	-44.96	552.69	2.78333	0.22845	1.86	5.183E 06
3	6.608E 03	-14.668	-39.83	553.66	4.48333	0.22274	1.79	4.357E 06
4	5.365E 03	-28.571	-35.52	553.22	6.11666	0.20860	1.52	3.121E 06
5	5.419E 03	-40.460	-28.10	552.18	7.76667	0.19498	1.30	2.155E 06
6	2.076E 03	-59.889	-24.45	551.63	9.38333	0.19498	1.20	5.264E 05
7	4.849E 01	-79.620	-20.62	551.08	11.00000	0.21380	1.15	1.735E 04
8	1.686E 00	-96.984	-14.11	550.34	12.63333	0.23214	1.11	2.850E 02
9	0.0	-77.363	7.02	549.98	12.76667	0.27943	1.26	0.0
10	0.0	-102.660	5.91	549.89	14.35000	0.27090	1.16	0.0
11	0.0	-125.511	7.44	549.95	15.95000	0.26642	1.13	0.0
12	1.337E 02	42.753	-29.46	543.45	18.48331	0.26694	1.79	3.105E 04
13	3.033E 03	23.850	-32.81	544.80	20.09999	0.24460	1.90	9.975E 05
14	5.467E 03	5.378	-35.88	546.16	21.71666	0.23249	1.90	2.536E 06
15	6.725E 03	-8.406	-40.12	548.28	23.34999	0.22719	1.89	4.212E 06

Table 41

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                  **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68    * TIME= 1974.6 **
** VEHICLE :  OSO 3          ** INCLINATION= 45DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.894 **
*****************************************************************************************************************************************
                              ********************          ELECTRONS        *********************
                              ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.500 MEV **
                              ******************************************************************
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	6.567E 05	-41.128	-34.87	545.86	1.03333	0.20240	1.40	1.480E 08
2	3.069E 05	-50.874	-40.76	548.94	2.68333	0.21458	1.46	9.461E 07
3	8.622E 04	-43.179	-44.91	552.87	4.38333	0.22407	1.62	7.317E 07
4	3.854E 05	-21.390	-31.54	552.71	6.15000	0.21009	1.50	2.237E 08
5	2.649E 05	-50.686	-34.41	553.03	7.71667	0.20082	1.34	1.053E 08
6	1.292E 04	-56.984	-22.05	551.31	9.40000	0.19335	1.19	2.690E 06
7	1.297E 02	-76.878	-18.13	550.79	11.01667	0.21096	1.14	4.158E 04
8	1.875E 00	-94.435	-11.52	550.13	12.65000	0.23086	1.11	1.800E 02
9	1.102E 04	153.504	-43.93	550.92	13.86667	0.48190	3.12	2.065E 06
10	4.452E 04	137.093	-44.75	551.76	15.48333	0.49617	3.65	1.794E 07
11	7.453E 04	115.753	-44.89	552.00	17.08331	0.49207	3.95	4.886E 07
12	8.610E 04	-75.191	-44.93	553.39	17.88332	0.44460	3.72	6.713E 07
13	7.575E 04	78.153	-44.71	552.71	20.29999	0.40618	3.39	5.942E 07
14	2.337E 05	-11.566	-25.26	541.94	21.63332	0.21813	1.46	5.455E 07
15	5.267E 05	-27.598	-31.06	544.07	23.26666	0.20554	1.44	1.212E 08

Table 42

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 4      ** INCLINATION= 50DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
**********************************************************************************************************************************
                              ********************   LOW  ENERGY PROTONS   *********************
                              ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.100 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	1.412E 05	15.728	-49.09	555.51	1.23333	0.25685	2.69	7.653E 07
2	6.313E 04	4.614	-46.44	555.58	2.86556	0.24345	2.35	3.668E 07
3	2.723E 04	-8.104	-42.32	555.12	4.50000	0.22982	1.97	1.830E 07
4	1.811E 04	-22.503	-37.08	554.26	6.13333	0.21430	1.62	1.103E 07
5	1.365E 04	-41.493	-33.49	553.50	7.75000	0.19983	1.37	7.855E 06
6	8.763E 03	-55.334	-24.45	552.00	9.40000	0.19275	1.21	3.057E 06
7	6.240E 02	-80.791	-25.64	552.16	10.98333	0.21861	1.19	1.818E 05
8	5.876E 00	-98.458	-18.74	551.08	12.61667	0.23623	1.13	9.000E 02
9	0.0	-78.309	6.95	550.03	12.76667	0.27938	1.26	0.0
10	0.0	-103.541	5.66	549.94	14.35000	0.26965	1.15	0.0
11	0.0	-126.573	7.24	550.01	15.95000	0.26548	1.12	0.0
12	8.786E 03	53.443	-40.46	548.69	18.54999	0.30819	2.50	2.424E 06
13	7.337E 04	40.097	-45.05	550.93	20.18330	0.28177	2.75	3.054E 07
14	1.368E 05	28.436	-48.30	552.80	21.81667	0.26891	2.85	6.392E 07
15	1.554E 05	23.668	-49.96	554.55	23.46666	0.26721	2.90	8.179E 07

Table 43

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*************************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 4         ** INCLINATION= 50DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
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*******************    HIGH ENERGY PROTONS    ********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >5.00 MEV **
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	5.219E 03	-27.163	-45.63	551.42	1.10000	0.22825	1.81	3.399E 06
2	3.752E 03	-33.201	-49.37	553.89	2.75000	0.23786	1.87	3.376E 06
3	5.919E 03	-0.252	-38.29	554.51	4.53333	0.22973	1.93	4.102E 06
4	5.699E 03	-19.058	-34.79	553.87	6.15000	0.21427	1.60	3.156E 06
5	4.772E 03	-44.823	-35.83	554.01	7.73333	0.20276	1.40	2.373E 06
6	2.390E 03	-55.334	-24.45	552.00	9.40000	0.19275	1.21	7.803E 05
7	9.173E 01	-78.126	-22.97	551.73	11.00000	0.21271	1.17	2.790E 04
8	2.155E 00	-93.719	-13.14	550.43	12.65000	0.22947	1.11	4.463E 02
9	0.0	-78.309	6.95	550.03	12.76667	0.27938	1.26	0.0
10	0.0	-103.541	5.66	549.94	14.35000	0.26965	1.15	0.0
11	0.0	-126.573	7.24	550.01	15.95000	0.26548	1.12	0.0
12	6.381E 02	39.506	-31.38	544.90	18.48331	0.26208	1.87	1.412E 05
13	3.472E 03	20.261	-35.11	545.37	20.09999	0.24203	1.99	1.179E 06
14	5.590E 03	-2.092	-36.38	545.89	21.70000	0.22788	1.84	2.556E 06
15	6.261E 03	-15.663	-41.75	549.27	23.33331	0.22482	1.83	3.697E 06

Table 44

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1970.6 **
** VEHICLE : OSO 4 ** INCLINATION= 50DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **
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******************** ELECTRONS ********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.500 MEV **
****

PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	5.129E 05	-43.907	-38.23	547.76	1.03333	0.20772	1.45	1.108E 08
2	1.231E 05	-57.955	-43.27	550.16	2.66667	0.22615	1.49	3.718E 07
3	4.055E 04	3.314	-36.07	554.13	4.55000	0.23063	1.89	3.362E 07
4	1.892E 05	-9.867	-27.36	552.55	6.20000	0.21890	1.52	9.700E 07
5	5.933E 05	-44.823	-35.83	554.01	7.73333	0.20276	1.40	1.958E 08
6	2.180E 04	-52.723	-21.76	551.58	9.41667	0.19194	1.20	6.671E 06
7	2.615E 02	-75.576	-20.25	551.33	11.01667	0.20902	1.15	7.218E 04
8	3.107E 04	177.576	-48.90	553.35	12.28333	0.46759	3.21	7.466E 06
9	8.374E 04	161.823	-49.77	554.17	13.90000	0.48953	4.01	3.457E 07
10	7.578E 04	157.314	-49.12	555.24	15.55000	0.49231	4.05	6.339E 07
11	1.564E 05	-50.210	49.94	555.29	16.29999	0.41887	3.98	1.116E 08
12	1.745E 05	76.392	-48.20	552.77	18.63332	0.40666	3.99	1.284E 08
13	1.997E 05	65.984	-49.83	554.16	20.25555	0.37296	3.93	1.661E 08
14	2.920E 05	-14.534	-26.52	543.20	21.63332	0.21518	1.46	1.722E 08
15	5.817E 05	-31.180	-32.98	545.51	23.26666	0.20465	1.44	1.362E 08

Table 45

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*****************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972.0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                  **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:      IGRF 1965.0 80-TERM 10/68      * TIME= 1974.6 **
** VEHICLE :  OSO 5        ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*****************************************************************************************************************************
                                        ******************** LOW ENERGY PROTONS ********************
                                        ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.100 MEV **
                                        ******************************************************************
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.P.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	9.472E 04	-86.648	-76.16	563.23	1.13333	0.40939	4.79	6.238E 06
2	3.024E 05	66.028	-53.33	560.50	2.95000	0.38040	4.68	3.138E 07
3	7.018E 05	42.463	-59.29	561.99	4.51667	0.33272	4.68	1.025E 08
4	8.658E 05	18.899	-65.25	563.27	6.08333	0.32258	4.55	1.561E 08
5	6.302E 05	-4.665	-71.22	564.28	7.65000	0.33955	4.55	1.145E 08
6	3.325E 05	-28.230	-77.18	564.95	9.21667	0.37426	5.20	7.162E 07
7	2.281E 05	-52.295	-75.62	564.84	10.81667	0.37570	4.39	3.727E 07
8	1.748E 05	-76.110	-77.82	565.04	12.40000	0.40505	5.11	1.290E 07
9	8.236E 04	-100.176	-76.25	564.94	14.00000	0.42417	5.21	7.153E 06
10	3.792E 05	59.017	-56.36	557.65	15.38333	0.36650	4.99	4.677E 07
11	7.425E 05	34.700	-61.69	559.43	17.00000	0.32780	4.72	1.274E 08
12	7.519E 05	10.384	-67.02	561.04	18.61664	0.32448	4.44	1.522E 08
13	5.110E 05	-13.933	-72.36	562.46	20.23331	0.34475	4.43	9.940E 07
14	3.018E 05	-38.249	-77.69	563.63	21.84999	0.38033	5.14	5.491E 07
15	1.548E 05	-62.315	-79.26	563.93	23.45000	0.40113	5.50	2.335E 07

Table 46

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*******************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1; AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES:                **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  5:     IGRF 1965.0 80-TERM 10/68     * TIME= 1974.6 **
** VEHICLE :  OSO 5        ** INCLINATION= 90DEG ** PERIGEE=  550KM ** APOGEE=   550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD=  1.594 **
*******************************************************************************************************************
                              ********************  HIGH ENERGY PROTONS  *********************
                              ** TABLE OF PEAK AND TOTAL FLUXES PER PERICD - ENERGY >5.00 MEV **
                              *****************************************************************
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PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	3.062E 01	-83.890	-34.72	550.12	0.95000	0.24115	1.30	8.306E 03
2	0.0	86.333	1.56	550.04	1.60000	0.31104	1.03	0.0
3	8.618E 02	40.959	-36.71	555.99	4.61666	0.26815	2.16	1.516E 05
4	3.849E 03	16.893	-35.14	555.60	6.21667	0.23892	1.97	9.223E 05
5	6.262E 03	-6.922	-37.34	556.22	7.80000	0.22468	1.82	2.073E 06
6	5.781E 03	-30.987	-35.78	555.83	9.40000	0.20734	1.50	2.655E 06
7	3.195E 03	-55.053	-34.21	555.45	11.00000	0.20179	1.32	1.168E 06
8	1.045E 02	-78.868	-36.41	556.07	12.58333	0.23533	1.33	2.853E 04
9	0.0	-81.626	4.99	550.35	12.76667	0.27116	1.22	0.0
10	0.0	-105.441	2.79	550.30	14.35000	0.25949	1.12	0.0
11	1.446E 03	36.455	-35.31	550.17	16.88332	0.25918	2.07	2.672E 05
12	4.410E 03	12.389	-36.88	550.69	18.48331	0.23692	2.01	1.076E 06
13	6.609E 03	-11.927	-42.22	552.56	20.09999	0.22784	1.91	2.226E 06
14	5.477E 03	-35.241	-32.47	549.18	21.64999	0.20149	1.40	2.374E 06
15	2.695E 03	-59.307	-34.04	549.68	23.25000	0.20444	1.31	7.612E 05

Table 47

****
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS : VETTES AE4, AE5, AP1, AP5, AP6, AP7 **** PROCEDURE : UNIFLUX OF 1972 **
** ELECTRON FLUXES EXPONENTIALLY DECAYED TO 1972. 0 WITH LIFETIMES: E.G.STASSINOPOULOS&P.VERZARIU ** CUTOFF TIMES: **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 5: IGRF 1965.0 80-TERM 10/68 * TIME= 1974.6 **
** VEHICLE : OSO 5 ** INCLINATION= 90DEG ** PERIGEE= 550KM ** APOGEE= 550KM ** B/L ORBIT TAPE: TD6276 ** PERIOD= 1.594 **
****

******************* ELECTRONS ********************
** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD - ENERGY >.500 MEV **
****

PERIOD NUMBER	PEAK FLUX ENCOUNTERED #/CM**2/SEC	POSITION AT WHICH ENCOUNTERED LONGITUDE (DEG)	LATITUDE (DEG)	ALTITUDE (KM)	ORBIT TIME (HOURS)	FIELD(B) (GAUSS)	LINE(L) (E.R.)	TOTAL FLUX PER ORBIT #/CM**2/ORBIT
1	1.535E 05	-86.397	-72.40	562.41	1.11666	0.39532	3.86	6.428E 07
2	1.868E 05	65.777	-49.56	559.51	2.96667	0.37083	3.88	7.829E 07
3	3.172E 05	42.213	-55.53	561.09	4.53333	0.31804	4.01	1.043E 08
4	3.233E 05	18.648	-61.49	562.51	6.10000	0.30446	3.96	1.226E 08
5	2.718E 05	-4.916	-67.45	563.69	7.66667	0.31865	3.90	1.391E 08
6	6.028E 05	-31.238	-32.01	554.84	9.41667	0.20300	1.42	1.982E 08
7	2.732E 05	-54.802	-37.98	556.46	10.98333	0.20906	1.39	1.167E 08
8	1.951E 05	-76.361	-74.05	564.70	12.41667	0.38953	4.07	6.410E 07
9	1.522E 05	-100.427	-72.49	564.53	14.01667	0.41429	4.20	6.734E 07
10	2.369E 05	59.267	-52.59	556.33	15.36667	0.35685	4.18	8.829E 07
11	3.216E 05	34.951	-57.92	558.18	16.98331	0.31258	4.09	1.132E 08
12	2.973E 05	10.384	-67.02	561.04	18.61664	0.32448	4.44	1.216E 08
13	2.594E 05	-13.933	-72.36	562.46	20.23331	0.34475	4.43	1.437E 08
14	7.077E 05	-35.241	-32.47	549.18	21.64999	0.20149	1.40	1.986E 08
15	1.944E 05	-62.064	-75.49	563.19	23.43330	0.38264	4.33	9.033E 07

TABLE _

OSO 1

CIRCULAR

INCLINATION: 33 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

**** EXPOSURE ANALYSIS ****

	PROTONS-LOW (E>.100MEV)	PROTONS-HIGH (E>5.00MEV)	ELECTRONS (E>.500MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS* OF SPACE :	80.07 %	81.81 %	84.86 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS+ OF VAN ALLEN BELTS :	10.90 %	7.50 %	2.99 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	98.06 %	92.71 %	83.94 %

****

* <1 PARTICLE/CM**2/SEC

+ >1.E5 EL/CM**2/SEC OR 1.E3 PR/CM**2/SEC

TABLE 48

OSO 1

CIRCULAR

INCLINATION: 33 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

* PERCENT OF TOTAL LIFETIME SPENT INSIDE AND *
* OUTSIDE THE TRAPPED-PARTICLE RADIATION BELT *

INNER ZONE (1.0 < L < 2.5)	-TI-*	:	100.00 %
OUTER ZONE (2.5 < L < 7.0)	-TO-	:	0.0 %
EXTERNAL (L > 7.0)	-TE-	:	0.0 %
TOTAL		:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION : 18.19 %
(1.0 < L < 1.1)

INSIDE TRAPPING REGION : 81.81 %
(1.1 < L < 2.5)

TABLE _

OSO 2

CIRCULAR

INCLINATION: 40 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

**** EXPOSURE ANALYSIS ****

	PROTONS-LOW (E>.100MEV)	PROTONS-HIGH (E>5.00MEV)	ELECTRONS (E>.500MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS* OF SPACE :	79.72 %	81.25 %	83.47 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS+ OF VAN ALLEN BELTS :	12.29 %	8.68 %	3.06 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	99.04 %	94.15 %	80.68 %

****

* <1 PARTICLE/CM**2/SEC

+ >1.E5 EL/CM**2/SEC OR 1.E3 PR/CM**2/SEC

TABLE 49

OSO 2

CIRCULAR

INCLINATION: 40 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

* PERCENT OF TOTAL LIFETIME SPENT INSIDE AND *
* OUTSIDE THE TRAPPED-PARTICLE RADIATION BELT *

INNER ZONE (1.0 < L < 2.5)	-TI-* :	95.97 %
OUTER ZONE (2.5 < L < 7.0)	-TO- :	4.03 %
EXTERNAL (L > 7.0)	-TE- :	0.0 %
TOTAL	:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION : 15.35 %
(1.0 < L < 1.1)

INSIDE TRAPPING REGION : 80.62 %
(1.1 < L < 2.5)

OSO 3

CIRCULAR

INCLINATION: 45 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

**** EXPOSURE ANALYSIS ****

	PROTONS-LOW (E>.100MEV)	PROTONS-HIGH (E>5.00MEV)	ELECTRONS (E>.500MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS* OF SPACE :	79.72 %	81.67 %	77.92 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS+ OF VAN ALLEN BELTS :	12.99 %	8.82 %	2.78 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	99.46 %	94.73 %	61.82 %

****

* <1 PARTICLE/CM**2/SEC

\+ >1.E5 EL/CM**2/SEC OR 1.E3 PR/CM**2/SEC

OSO 3

CIRCULAR

INCLINATION: 45 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

* PERCENT OF TOTAL LIFETIME SPENT INSIDE AND *
* OUTSIDE THE TRAPPED-PARTICLE RADIATION BELT *

INNER ZONE (1.0 < L < 2.5)	-TI-*	:	89.93 %
OUTER ZONE (2.5 < L < 7.0)	-TO-	:	10.07 %
EXTERNAL (L > 7.0)	-TE-	:	0.0 %
TOTAL		:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION : 14.03 %
(1.0 < L < 1.1)

INSIDE TRAPPING REGION : 75.90 %
(1.1 < L < 2.5)

TABLE _.

OSO 4

CIRCULAR

INCLINATION: 50 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

**** EXPOSURE ANALYSIS ****

	PROTONS-LOW (E>.100MEV)	PROTONS-HIGH (E>5.00MEV)	ELECTRONS (E>.500MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS* OF SPACE :	79.44 %	82.22 %	73.26 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS+ OF VAN ALLEN BELTS :	13.82 %	8.26 %	4.65 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	99.67 %	94.11 %	60.49 %

****

* <1 PARTICLE/CM**2/SEC

+ >1.E5 EL/CM**2/SEC OR 1.E3 PR/CM**2/SEC

TABLE 51

OSO 4

CIRCULAR

INCLINATION: 50 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

* PERCENT OF TOTAL LIFETIME SPENT INSIDE AND *
* OUTSIDE THE TRAPPED-PARTICLE RADIATION BELT *

INNER ZONE (1.0 < L < 2.5)	-TI-* :	84.17 %
OUTER ZONE (2.5 < L < 7.0)	-TO- :	15.83 %
EXTERNAL (L > 7.0)	-TE- :	0.0 %
TOTAL	:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION (1.0 < L < 1.1)	:	12.64 %
INSIDE TRAPPING REGION (1.1 < L < 2.5)	:	71.53 %

TABLE 52

OSO 5

CIRCULAR

INCLINATION: 90 DEG

PERIGEE: 550 KM

APOGEE: 550 KM

DECAY DATE: 1972. 0.

**** EXPOSURE ANALYSIS ****

	PROTONS-LOW (E>.100MEV)	PROTONS-HIGH (E>5.00MEV)	ELECTRONS (E>.500MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS* OF SPACE :	79.65 %	88.68 %	69.17 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS+ OF VAN ALLEN BELTS :	13.61 %	4.65 %	7.22 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	99.87 %	92.15 %	66.79 %

****

* <1 PARTICLE/CM**2/SEC

\+ >1.E5 EL/CM**2/SEC OR 1.E3 PR/CM**2/SEC

* PERCENT OF TOTAL LIFETIME SPENT INSIDE AND *
* OUTSIDE THE TRAPPED-PARTICLE RADIATION BELT *

INNER ZONE (1.0 < L < 2.5)	-TI-* :	54.51 %
OUTER ZONE (2.5 < L < 7.0)	-TO- :	21.39 %
EXTERNAL (L > 7.0)	-TE- :	24.10 %
TOTAL	:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION : 9.51 %
(1.0 < L < 1.1)

INSIDE TRAPPING REGION : 45.00 %
(1.1 < L < 2.5)

TABLE ARRANGEMENT

Computer Produced Output Tables for Orbital Flux Integrations.

Standard Production Runs with UNIFLUX Program.

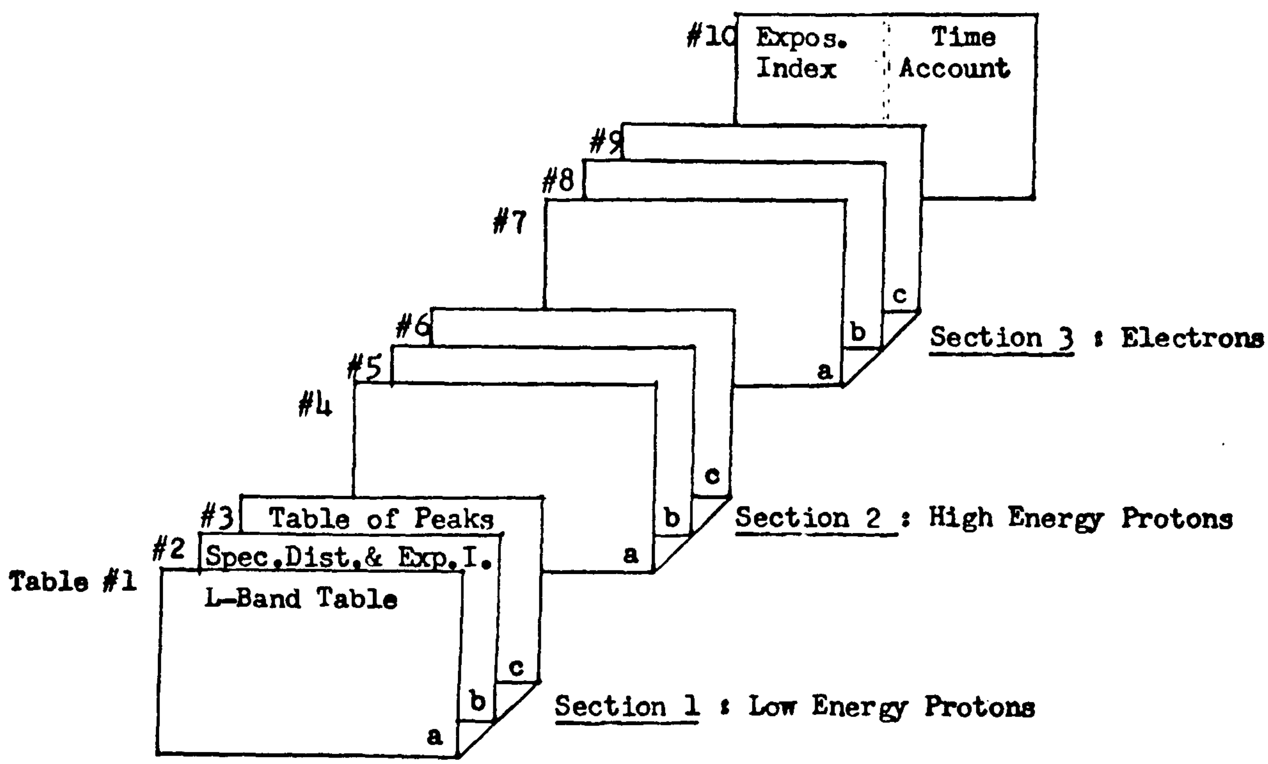


Figure 1 : Set of tables produced for every trajectory considered in a trapped particle radiation study.

PLOT ARRANGEMENT

Computer Produced Plots for Orbital Flux Integrations.

Standard Production Runs with UNIFLUX Program.

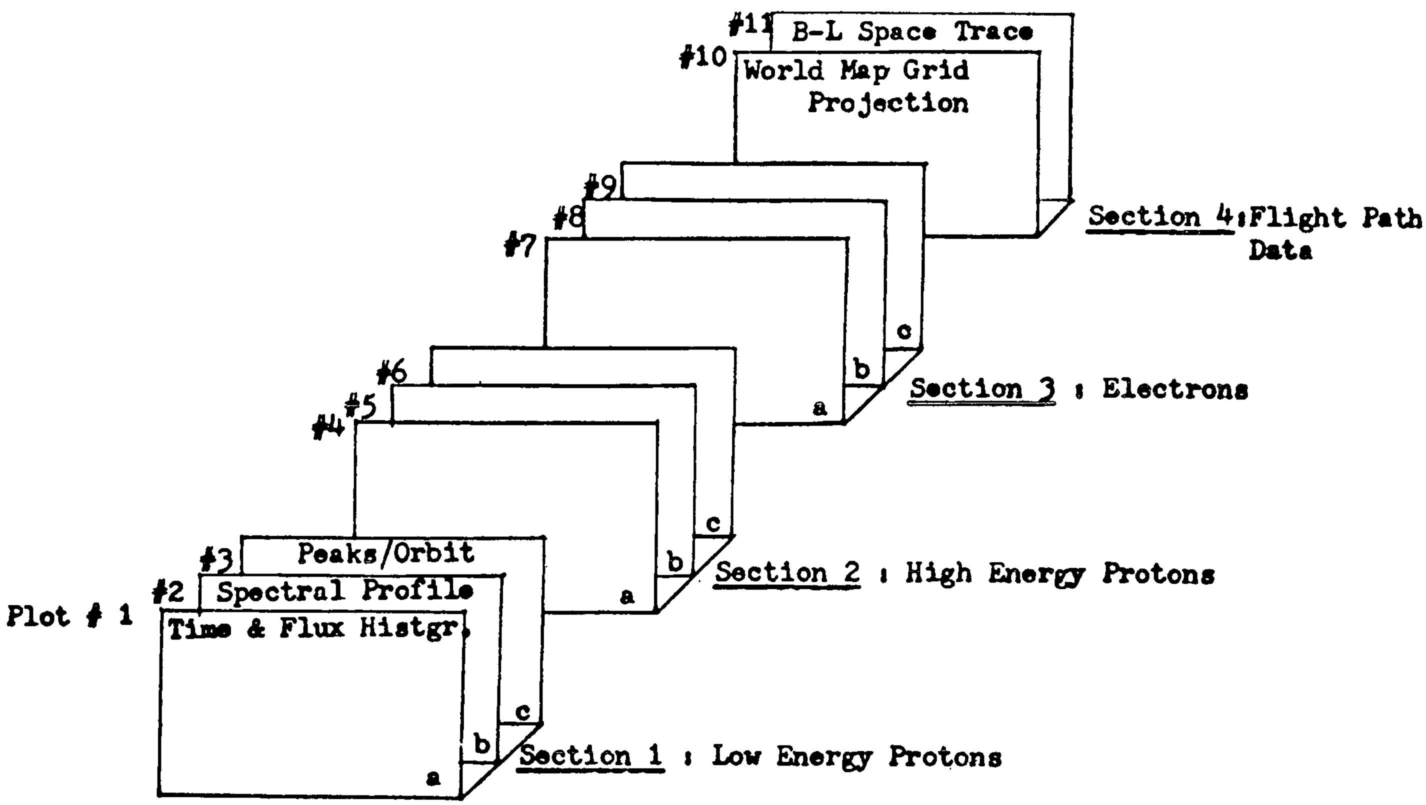
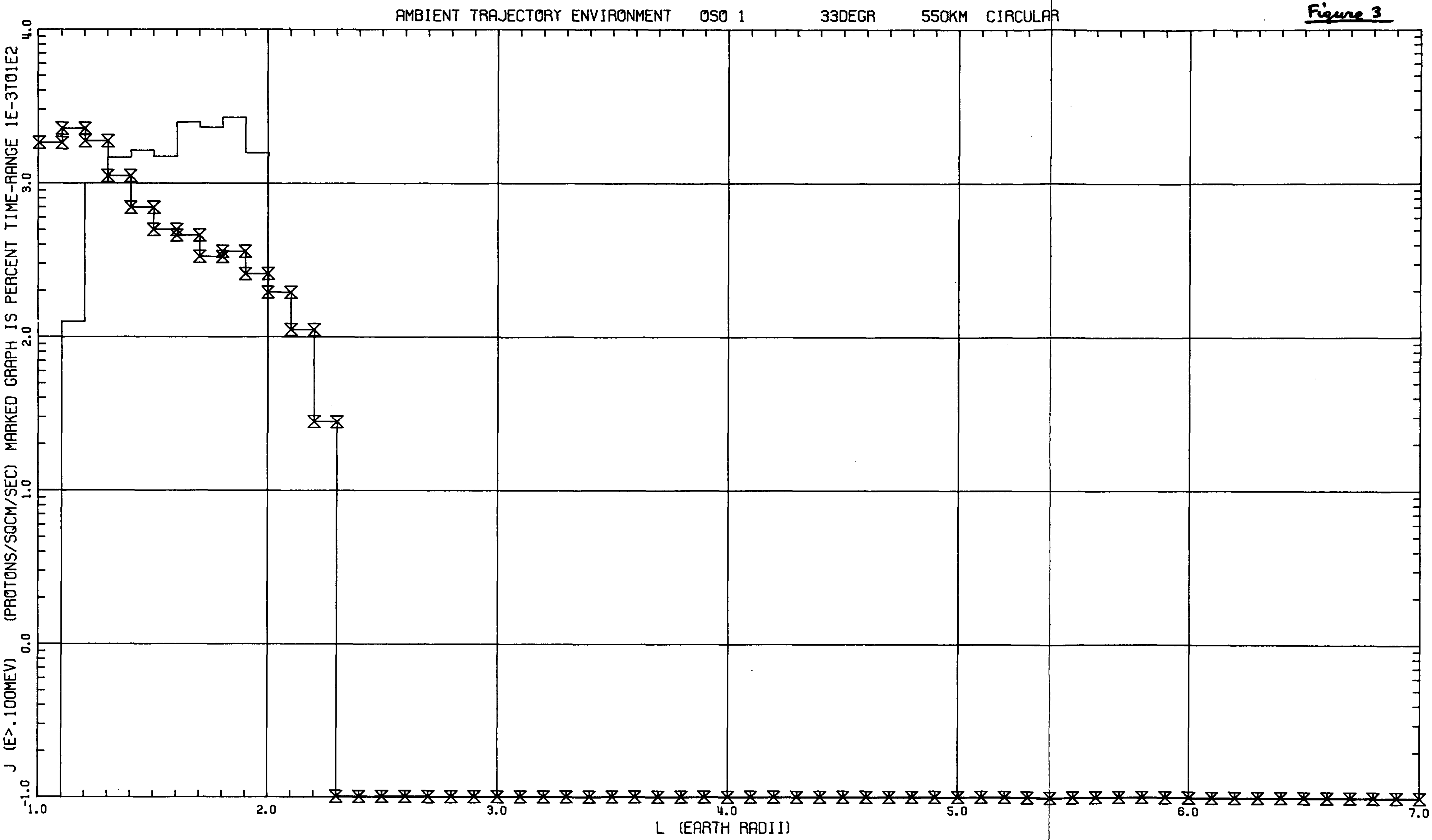


Figure 1 : Set of plots produced for every trajectory considered in a trapped particle radiation study.

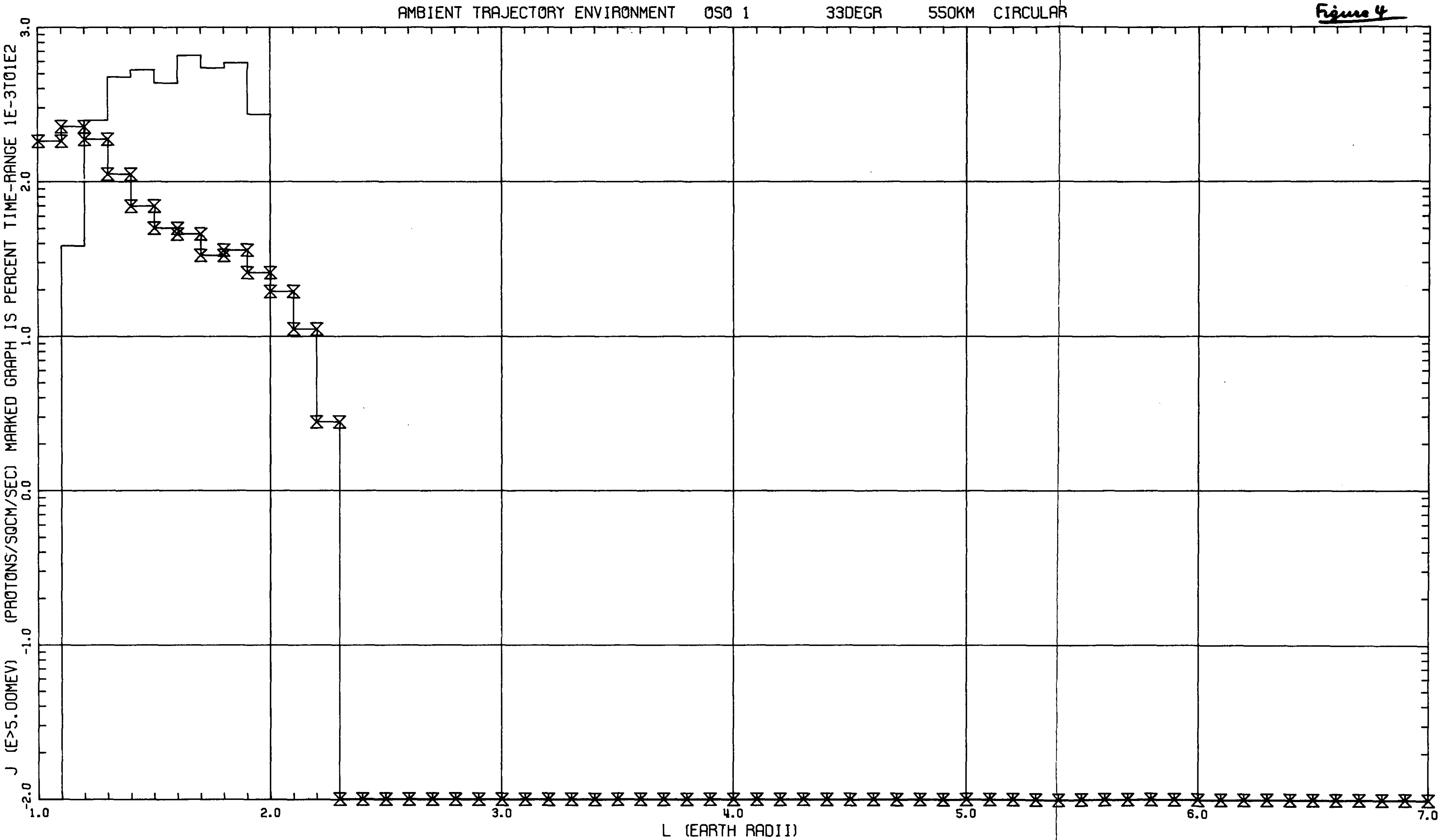
Figure 3



FOLDOUT FRAME 1

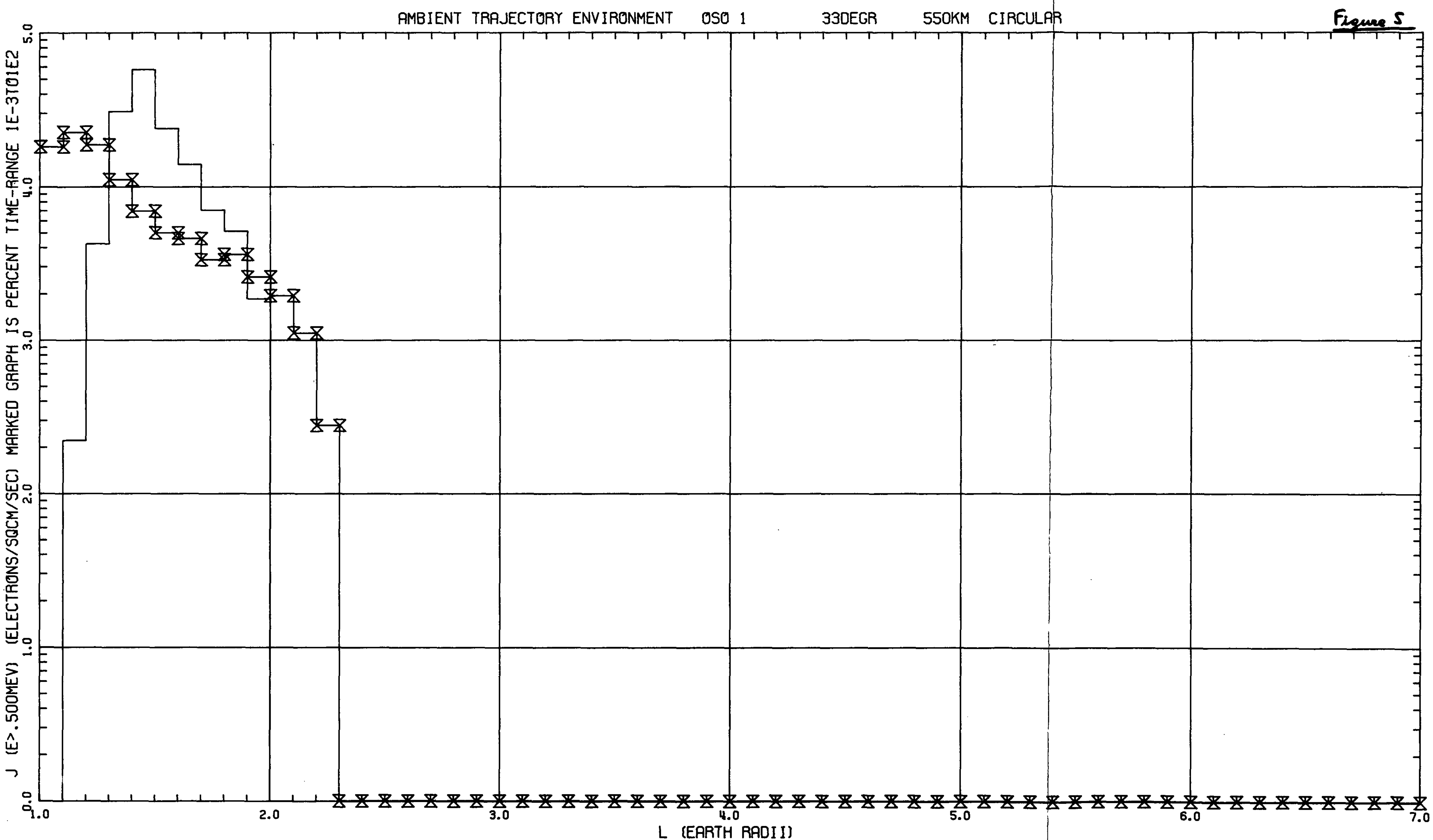
FOLDOUT FRAME 2

Figure 4



FOLDOUT FRAME 1

FOLDOUT FRAME 2



FOLDOUT FRAME 1

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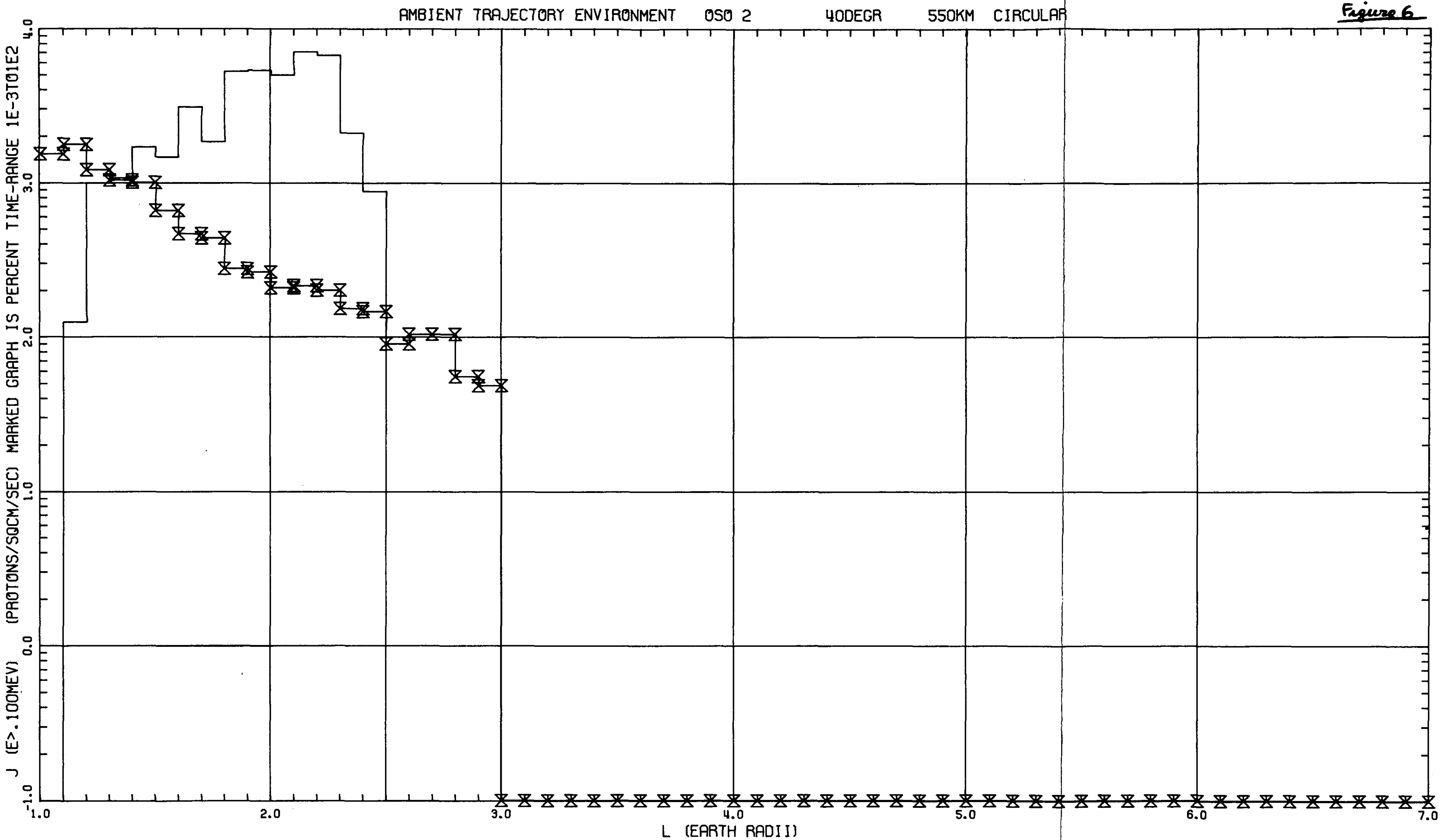


Figure 6

FOLDOUT FRAME 1

FOLDOUT FRAME 2

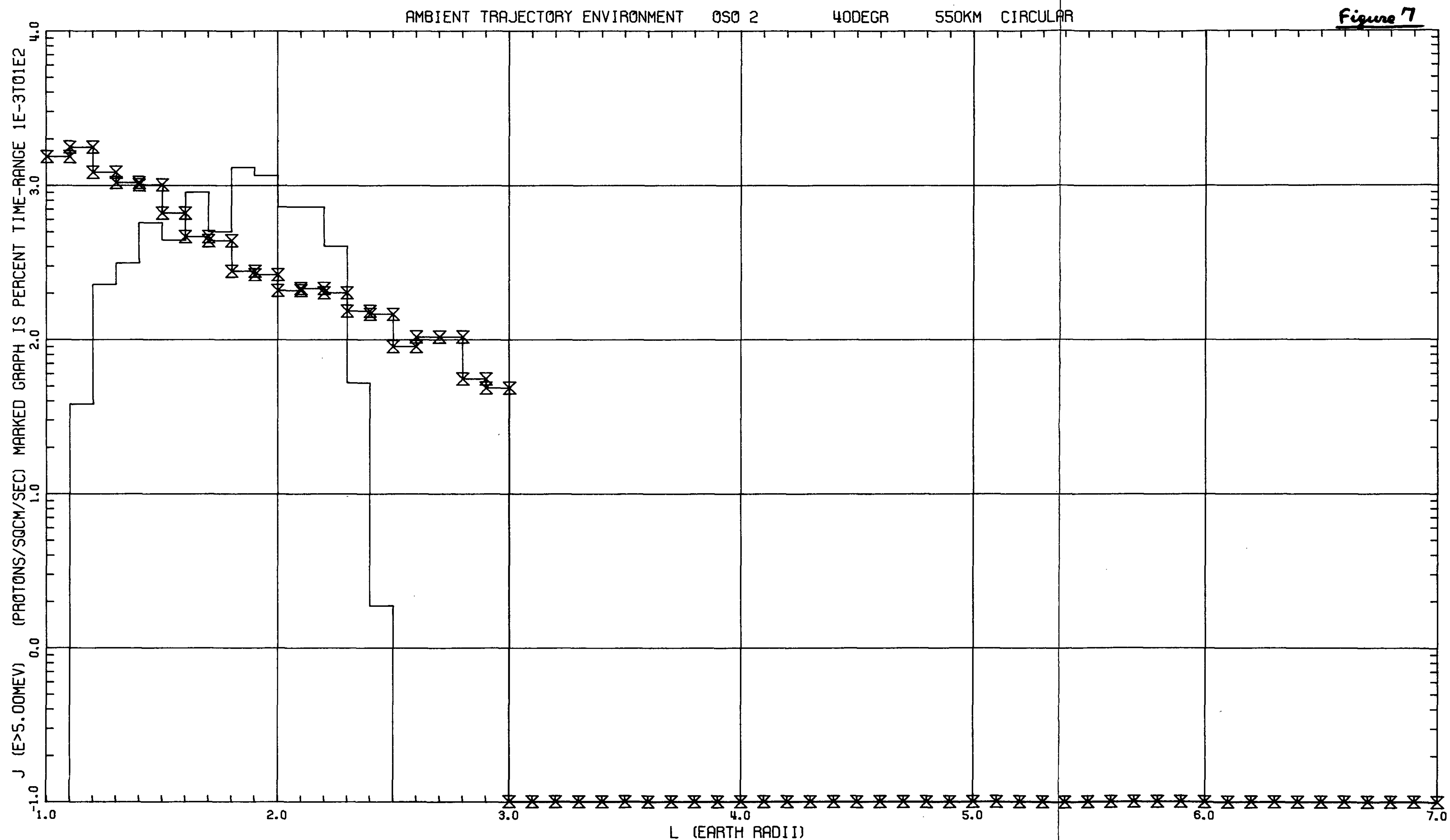
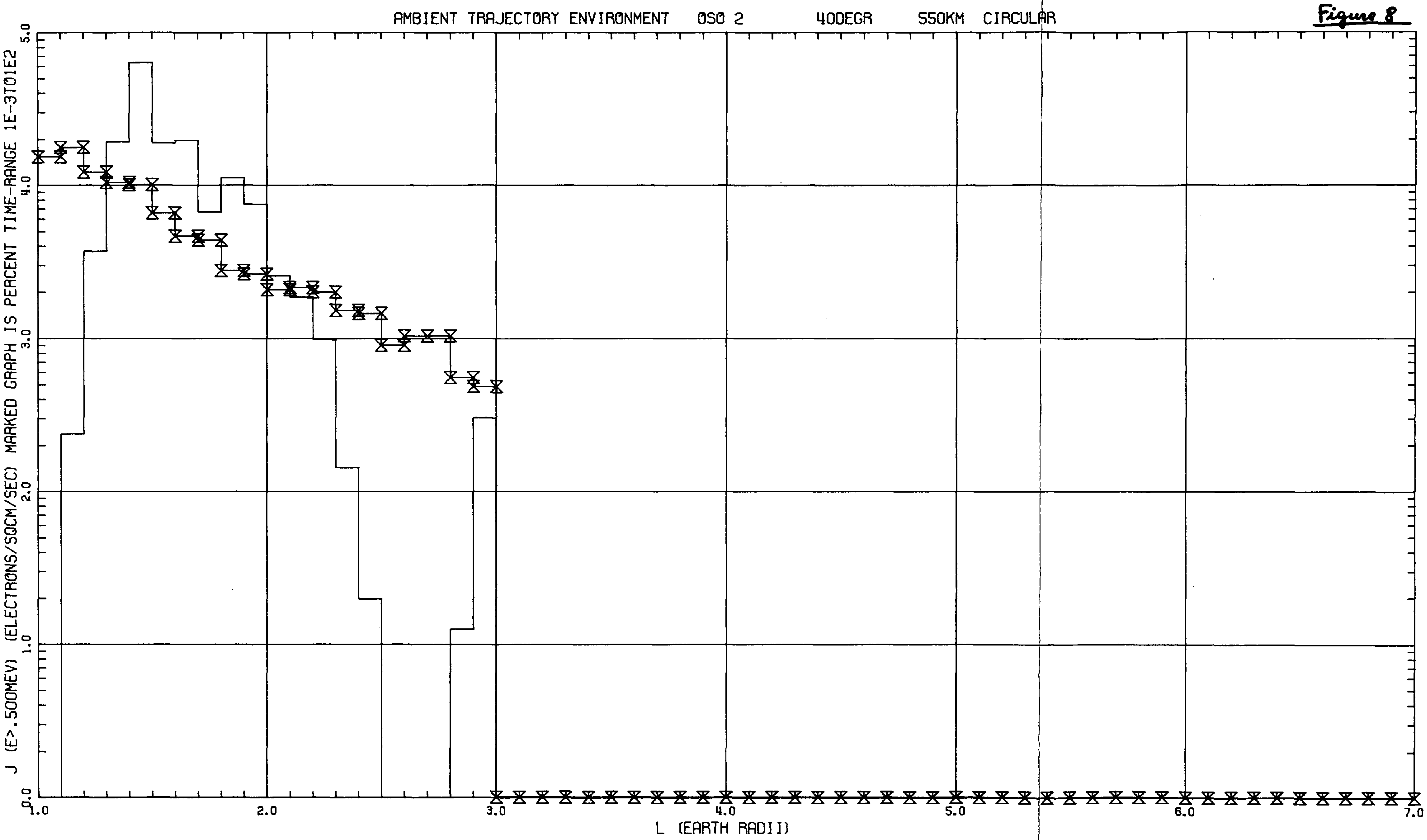


Figure 7

FOLDOUT FRAME 1

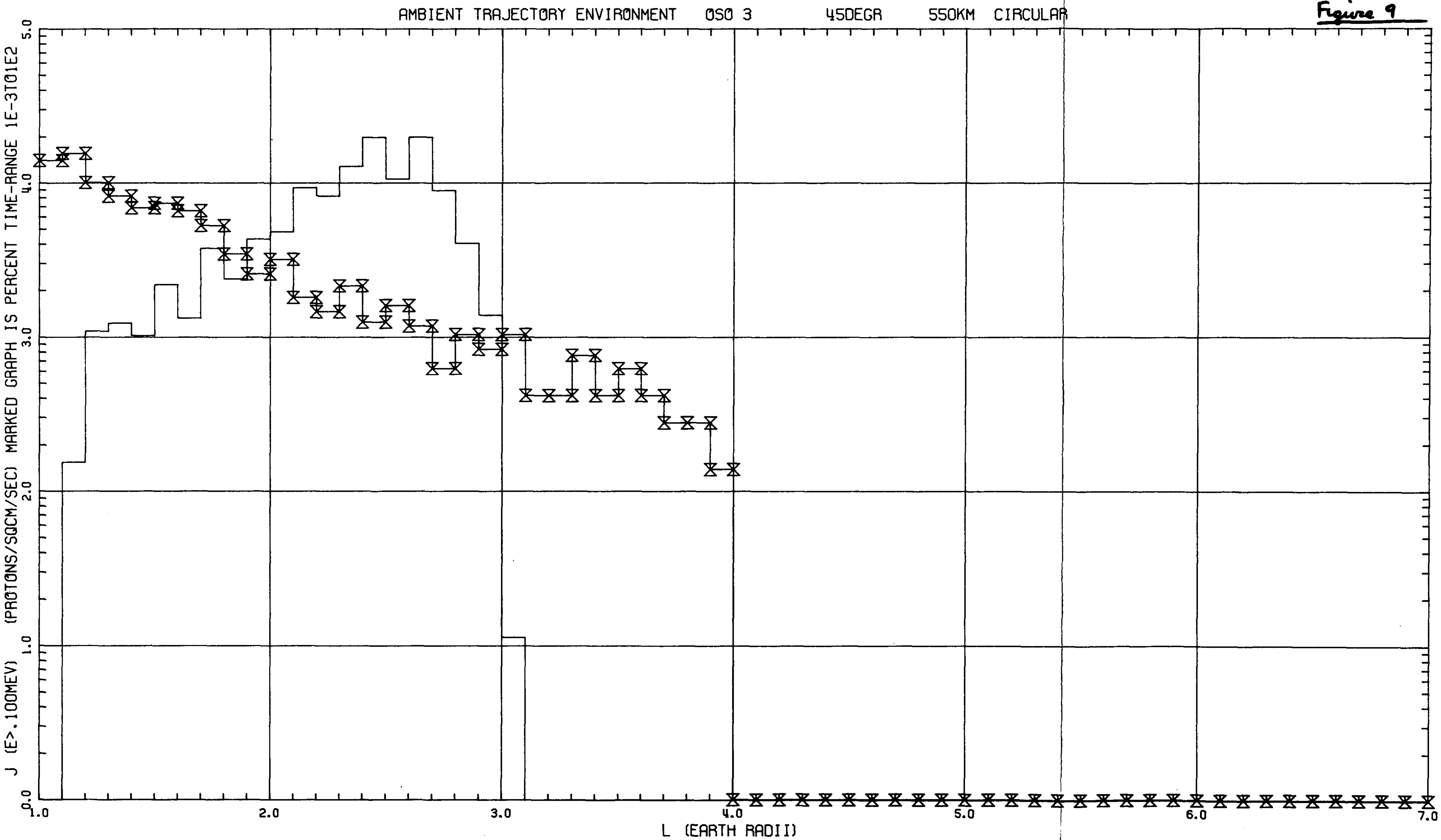
FOLDOUT FRAME 2



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 9



FOLDOUT FRAME 1

FOLDOUT FRAME 2

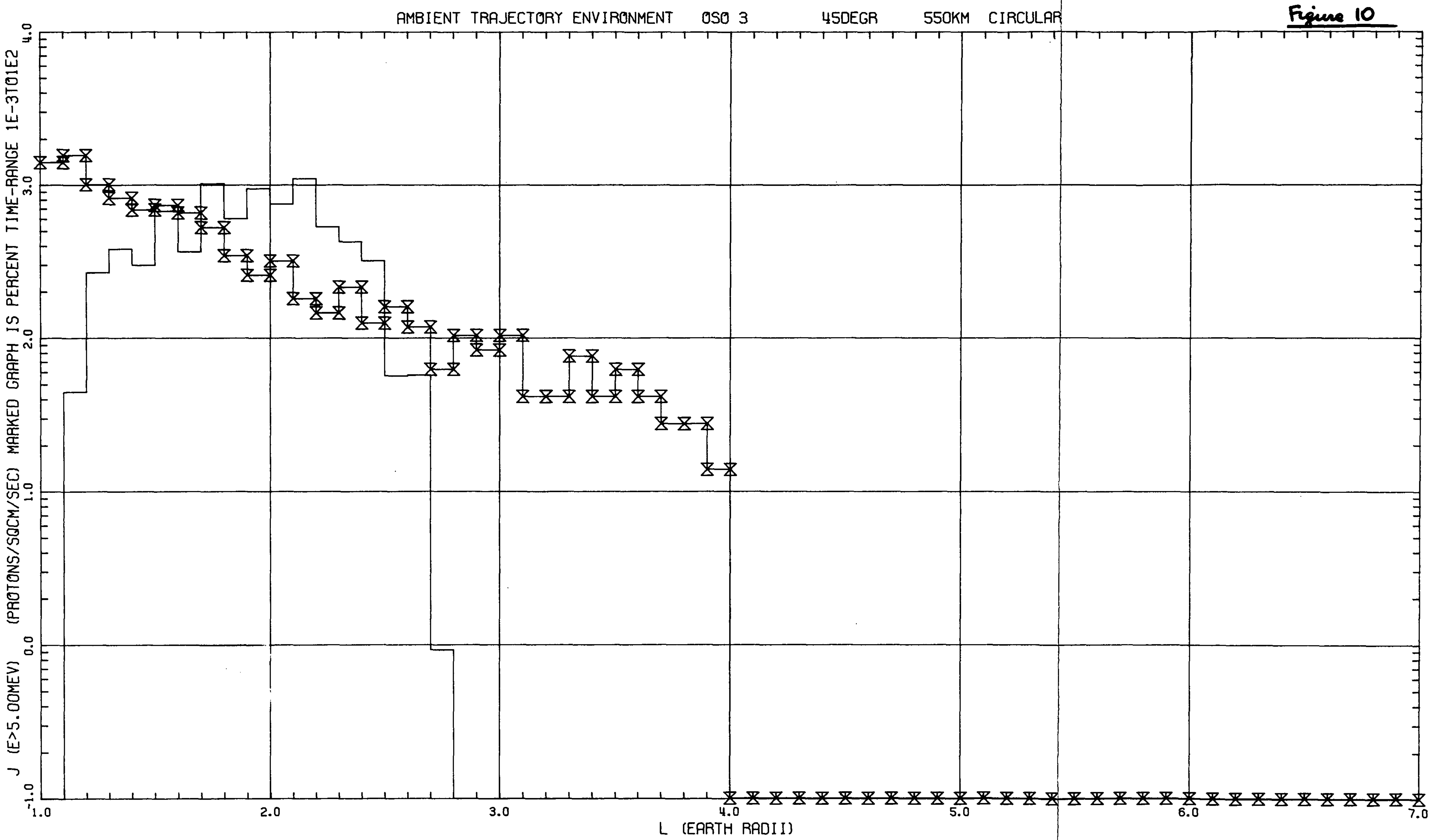


Figure 10

FOLDOUT FRAME 1

FOLDOUT FRAME 2

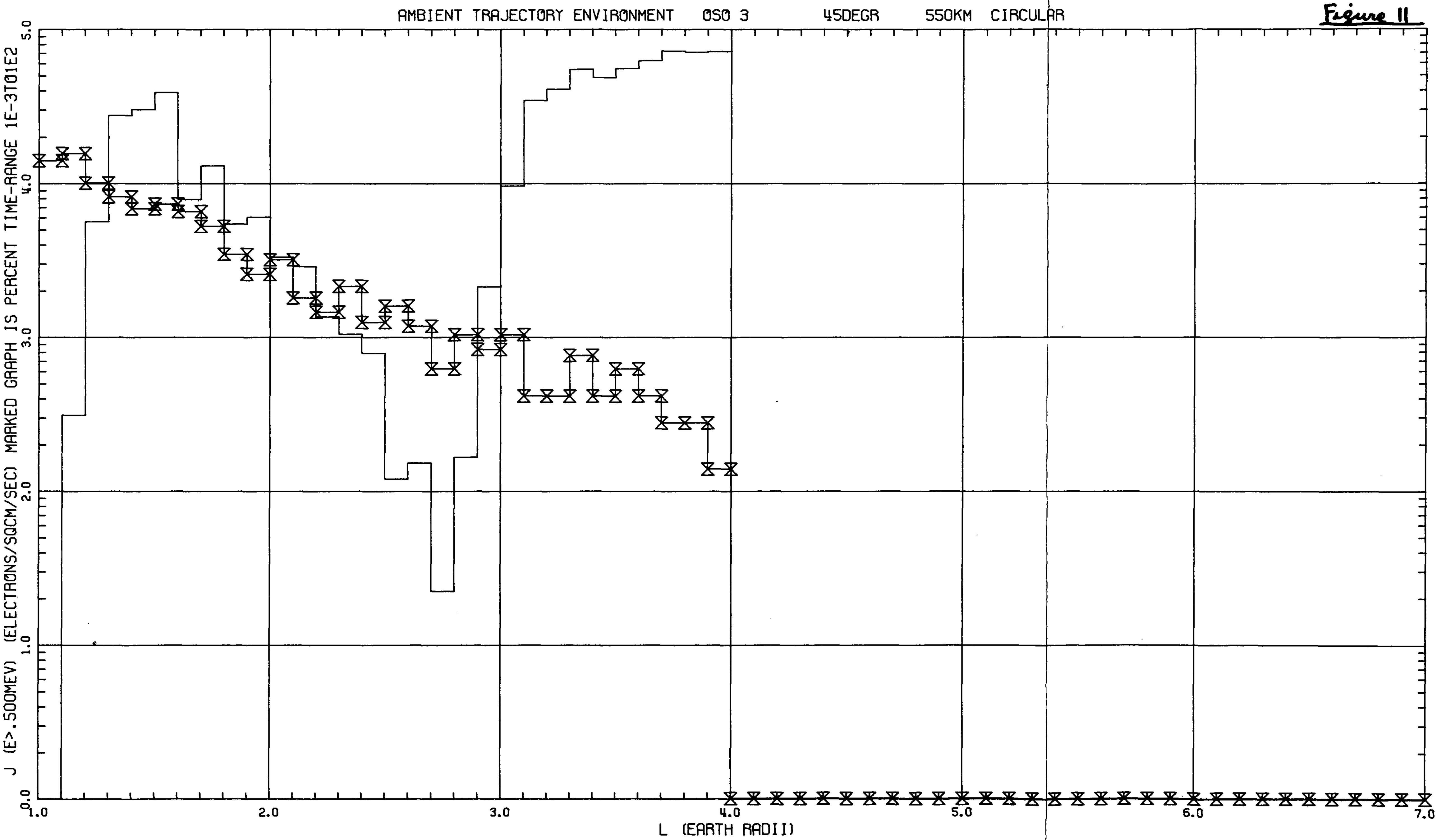
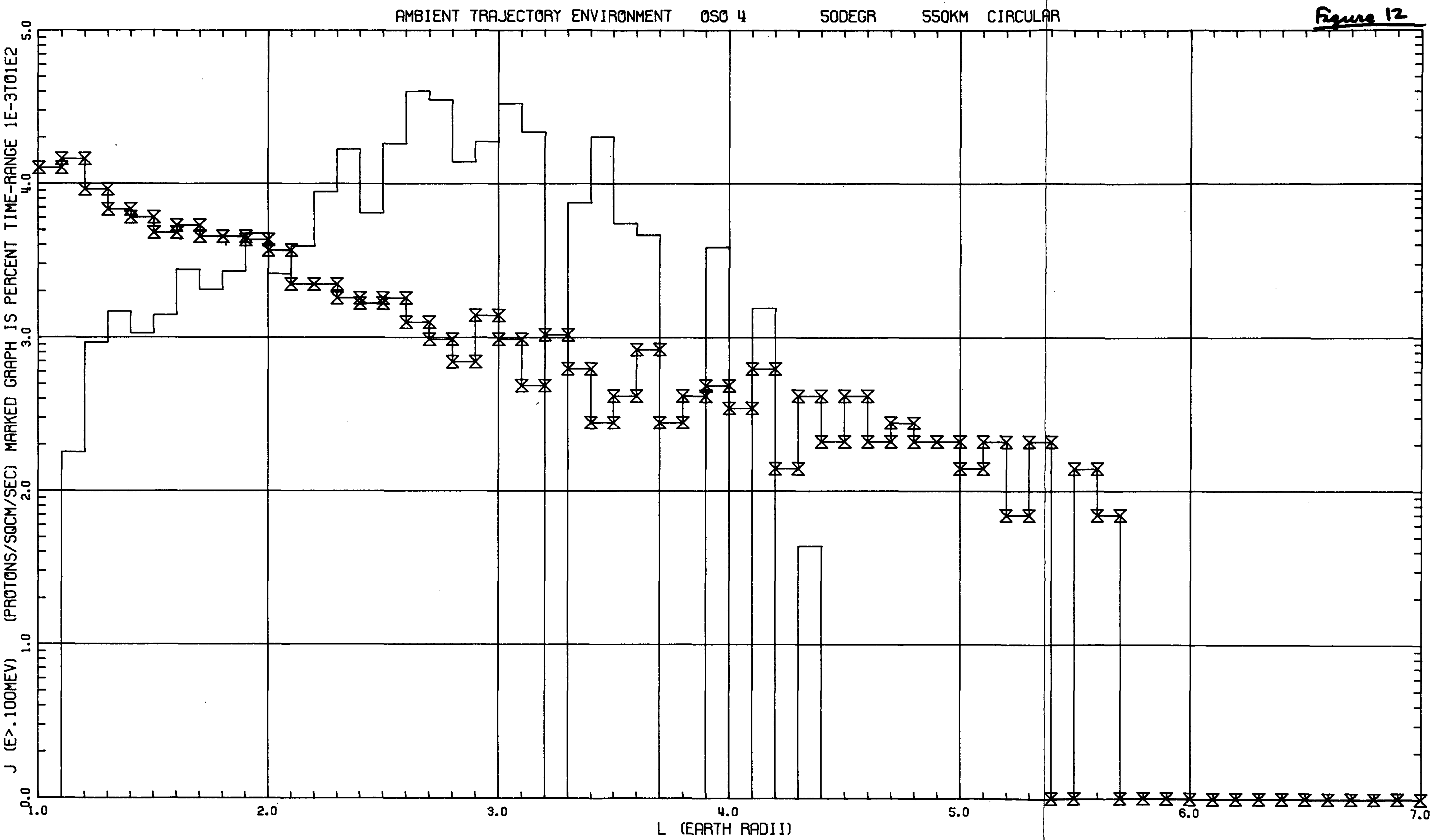


Figure 11

FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 12



FOLDOUT FRAME 1

FOLDOUT FRAME 2

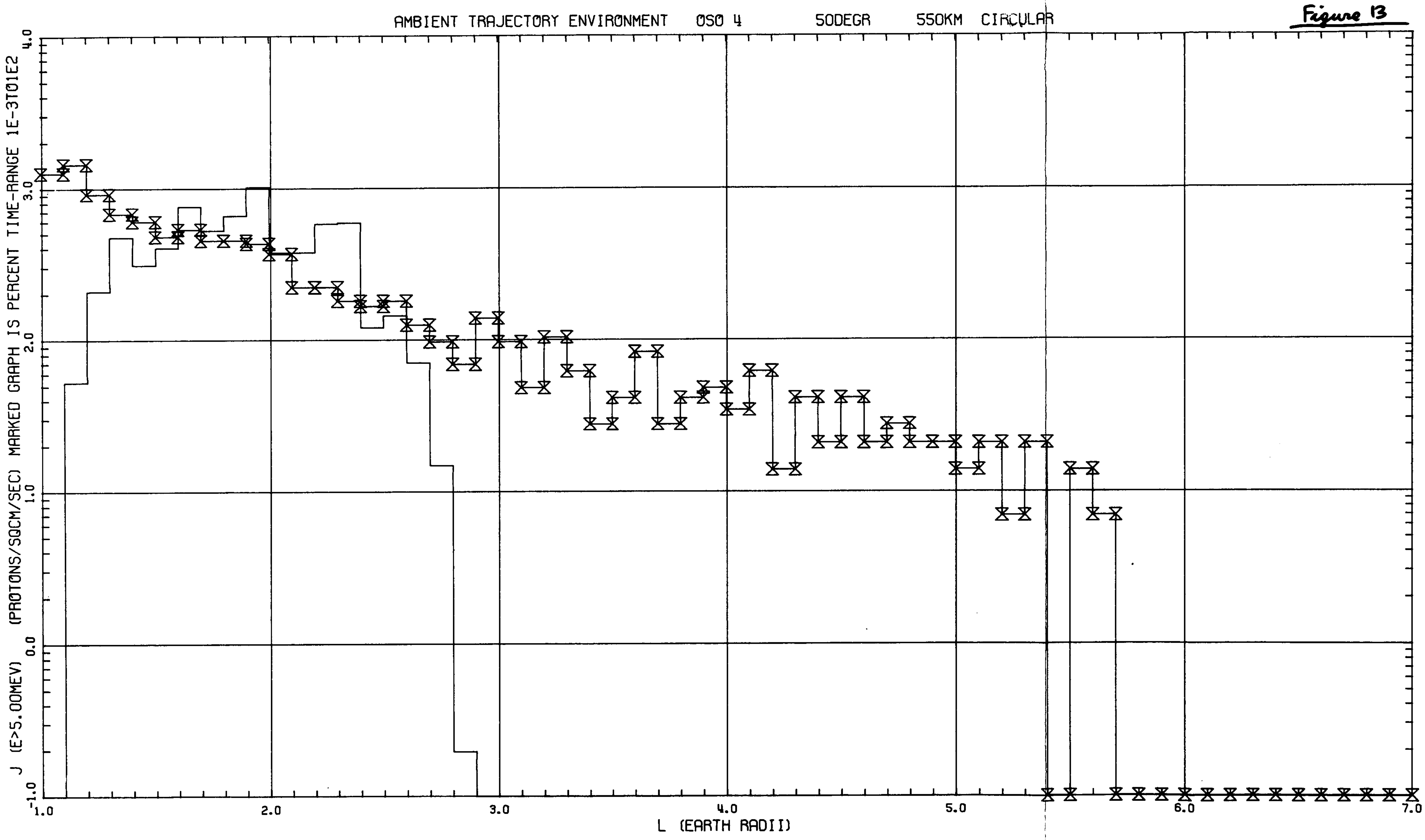
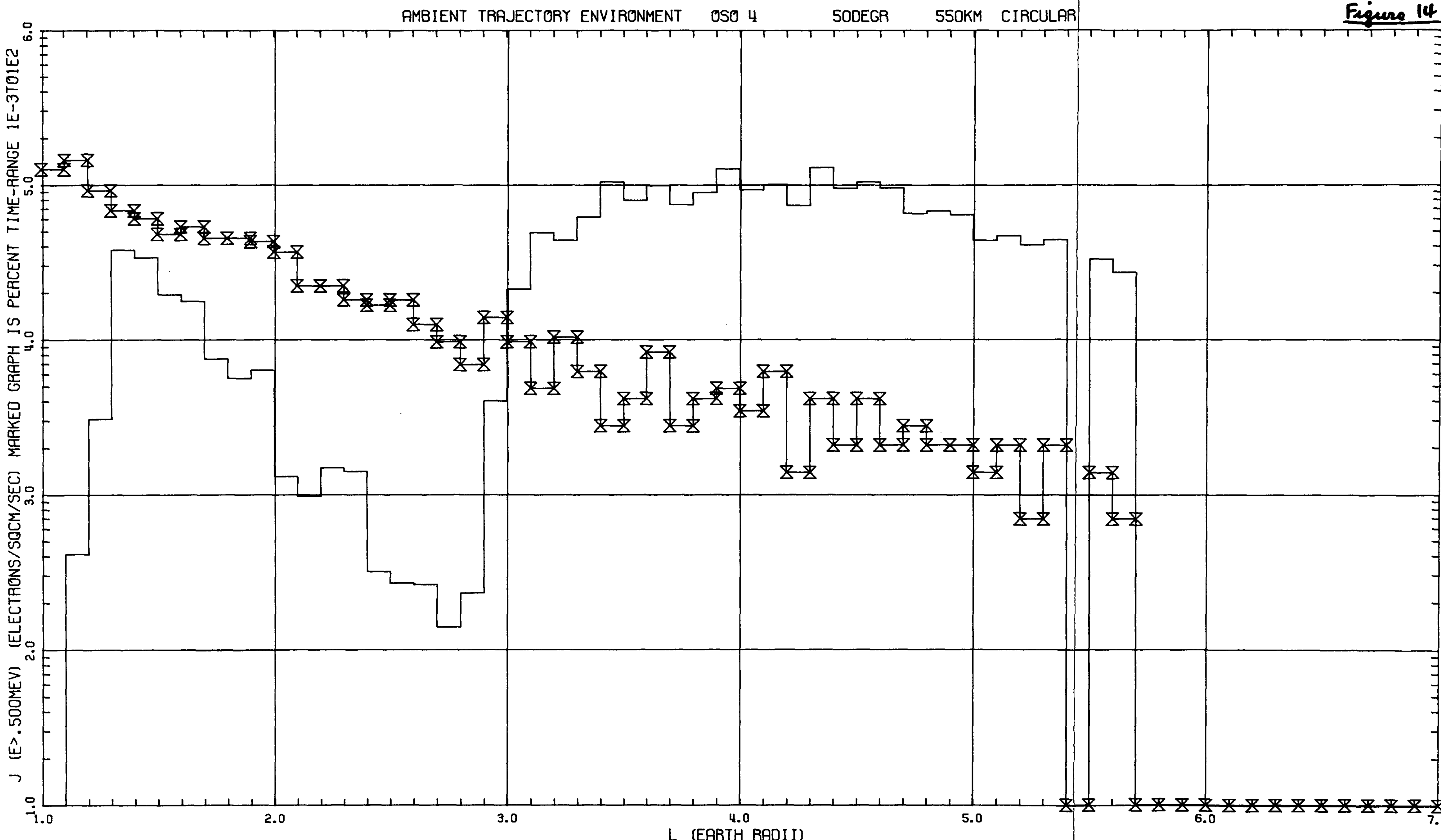


Figure 13

FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 14



FOLDOUT FRAME 1

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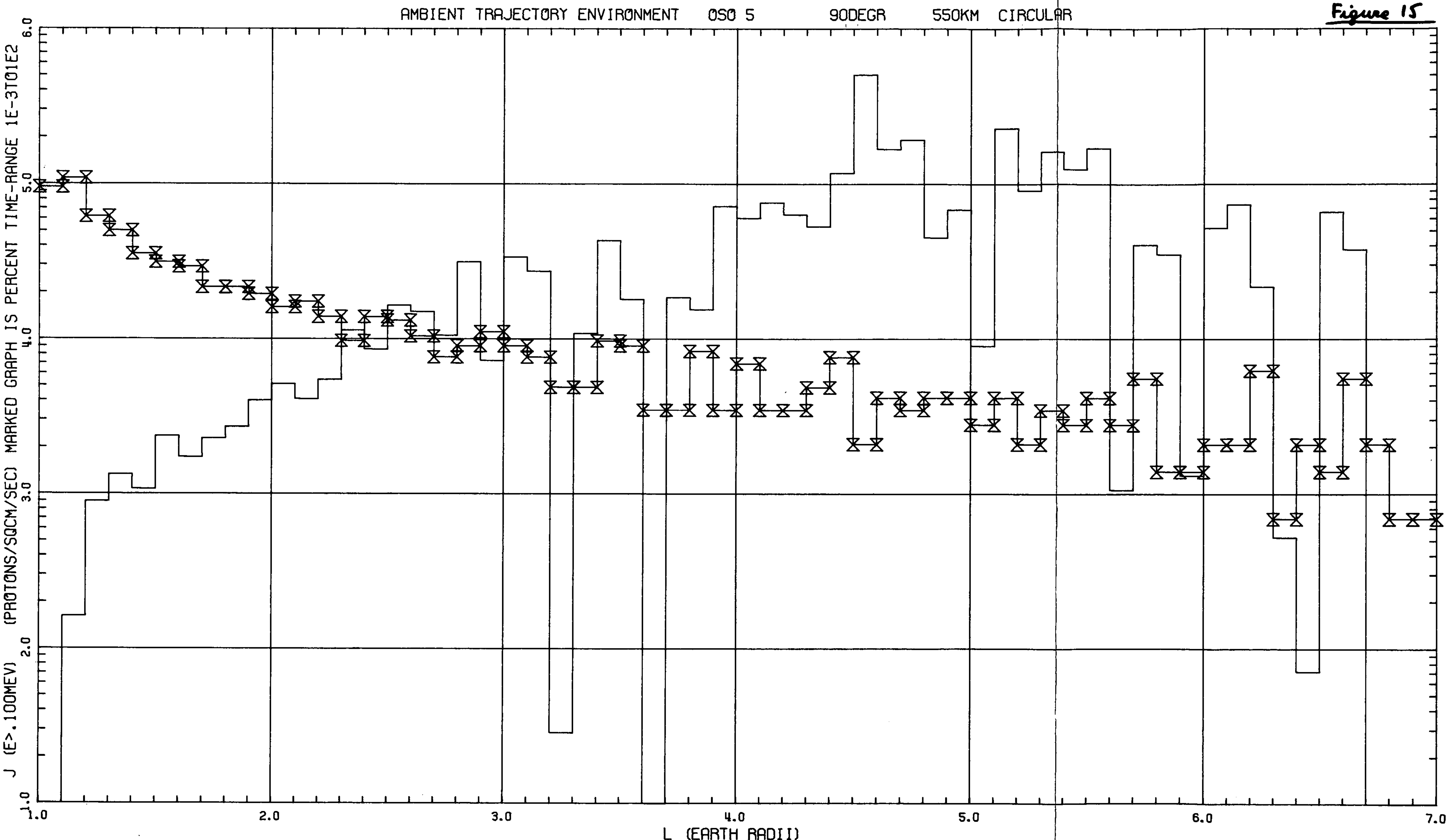
Figure 15



FOLDOUT FRAME 1

FOLDOUT FRAME 2

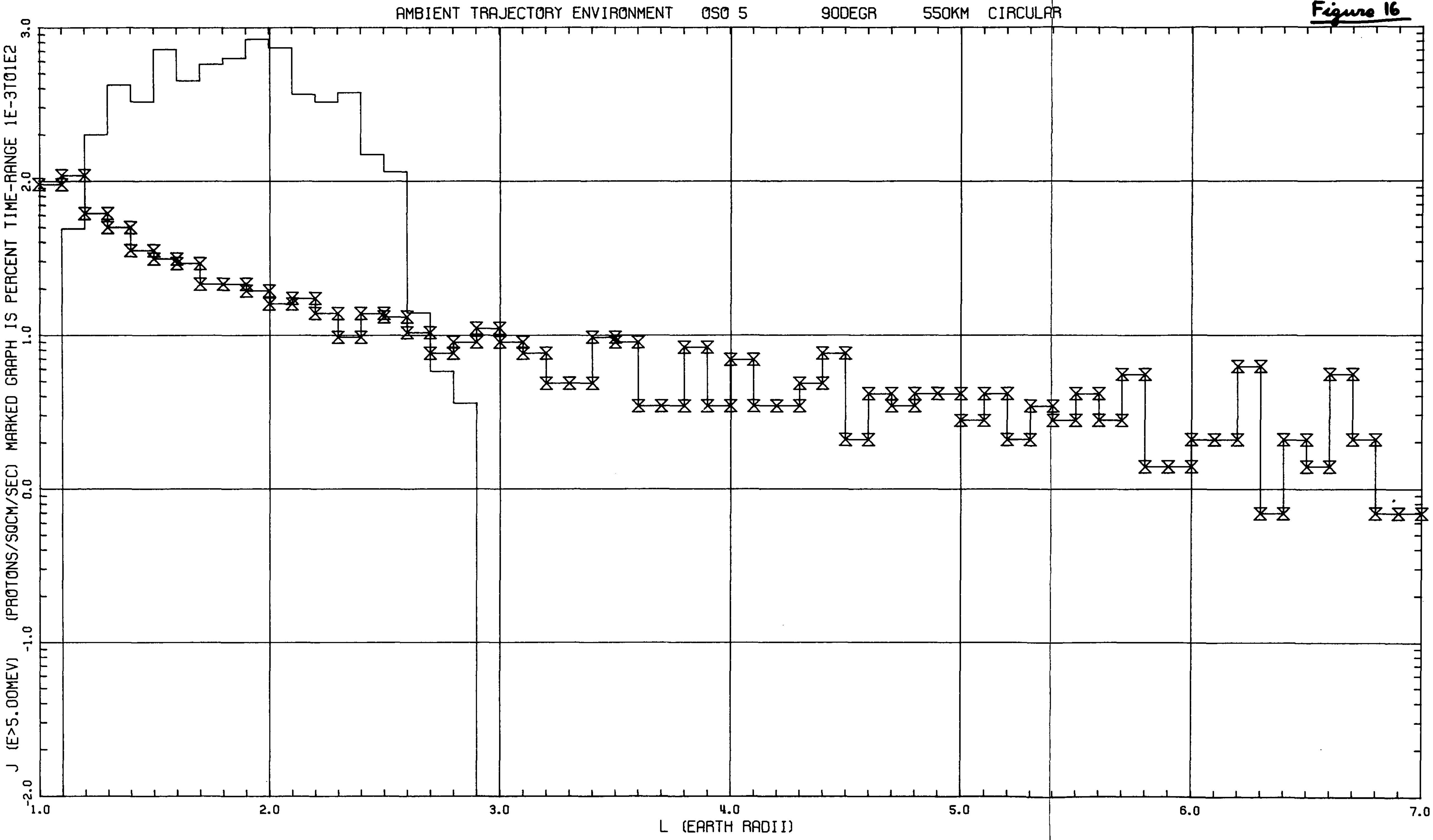
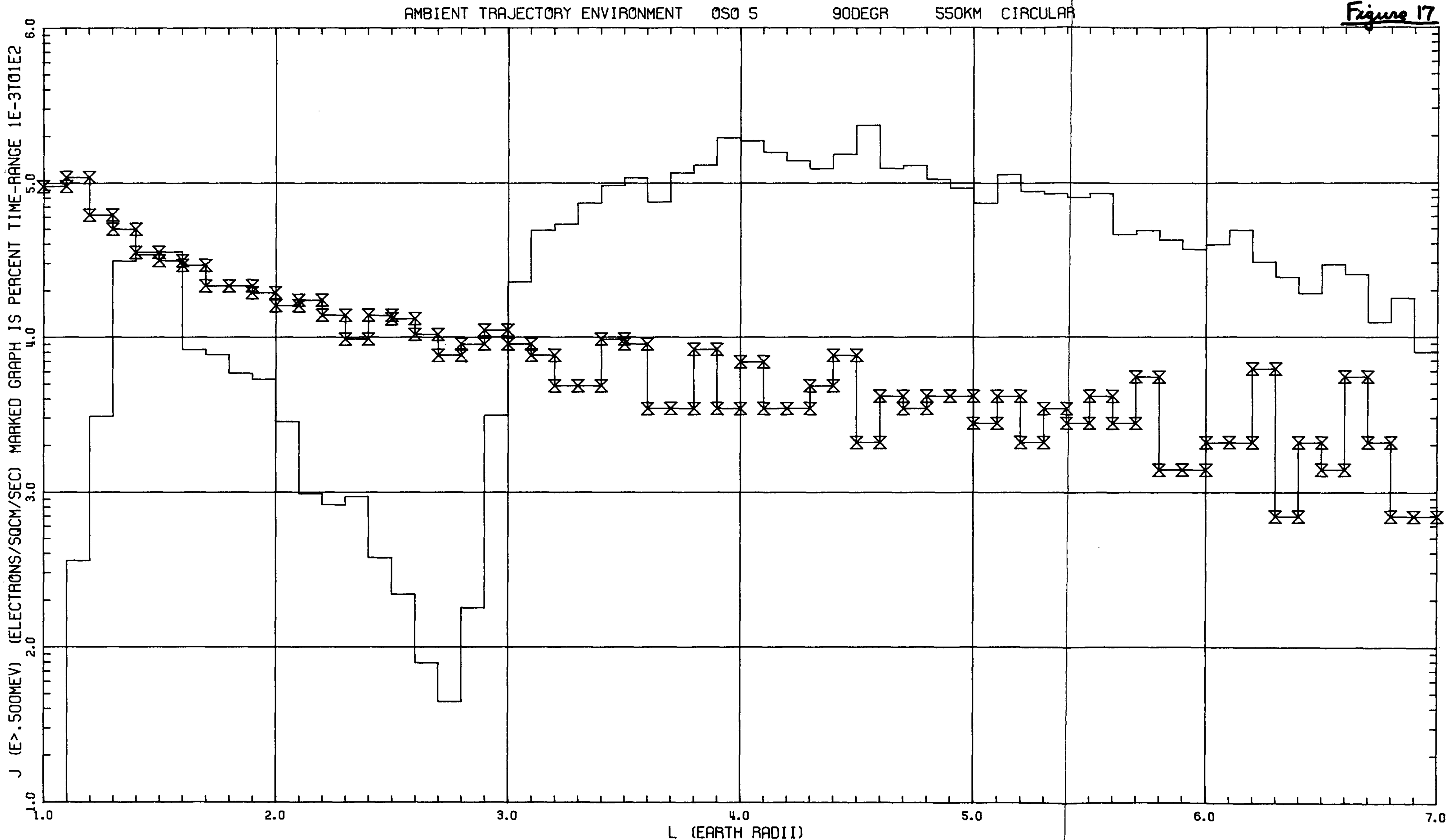


Figure 16

FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 17



FOLDOUT FRAME 1

FOLDOUT FRAME 2

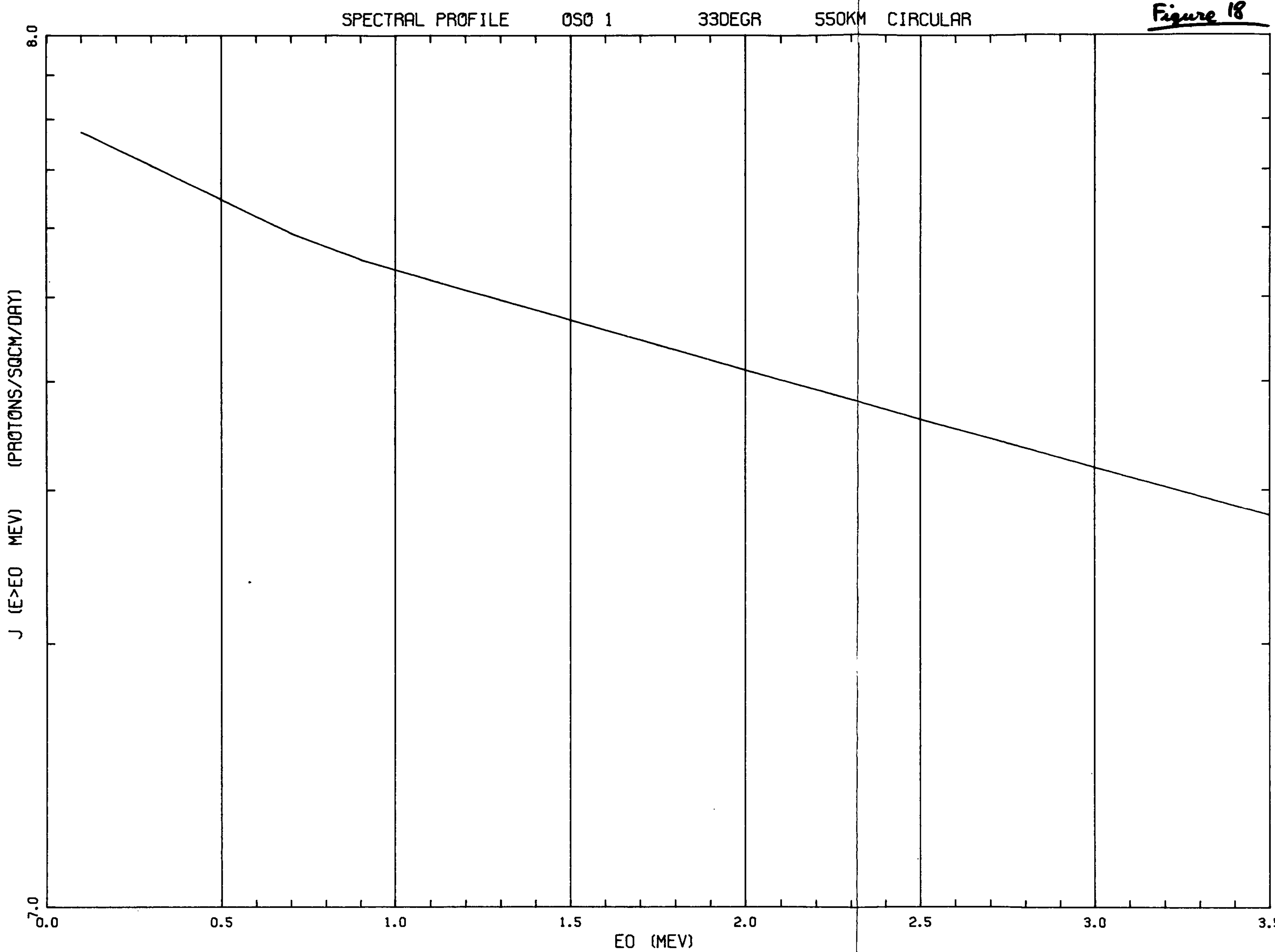
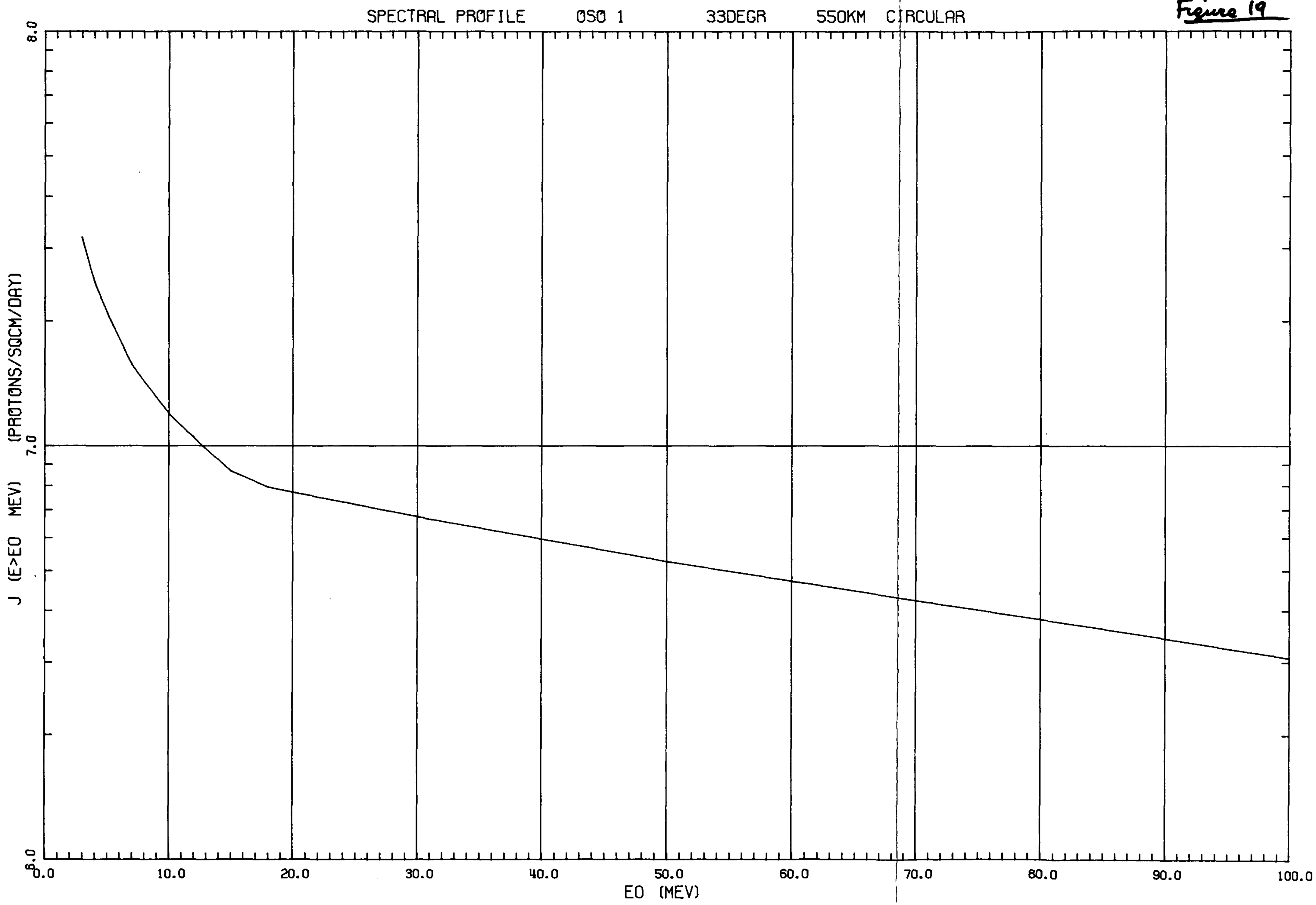


Figure 18

FOLDOUT FRAME 1

FOLDOUT FRAME 2

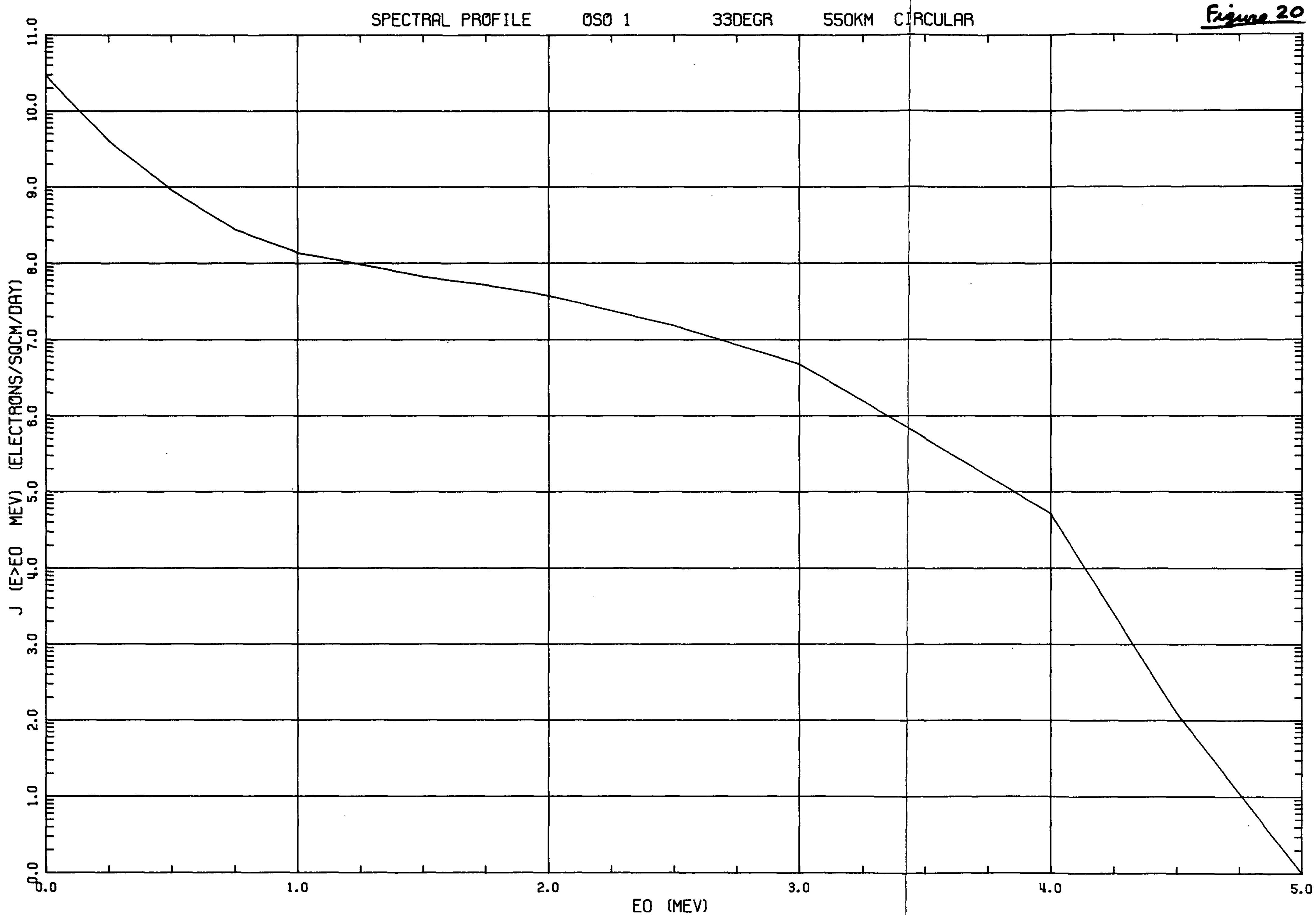
Figure 19



FOLDOUT FRAME 1

FOLDOUT FRAME 2

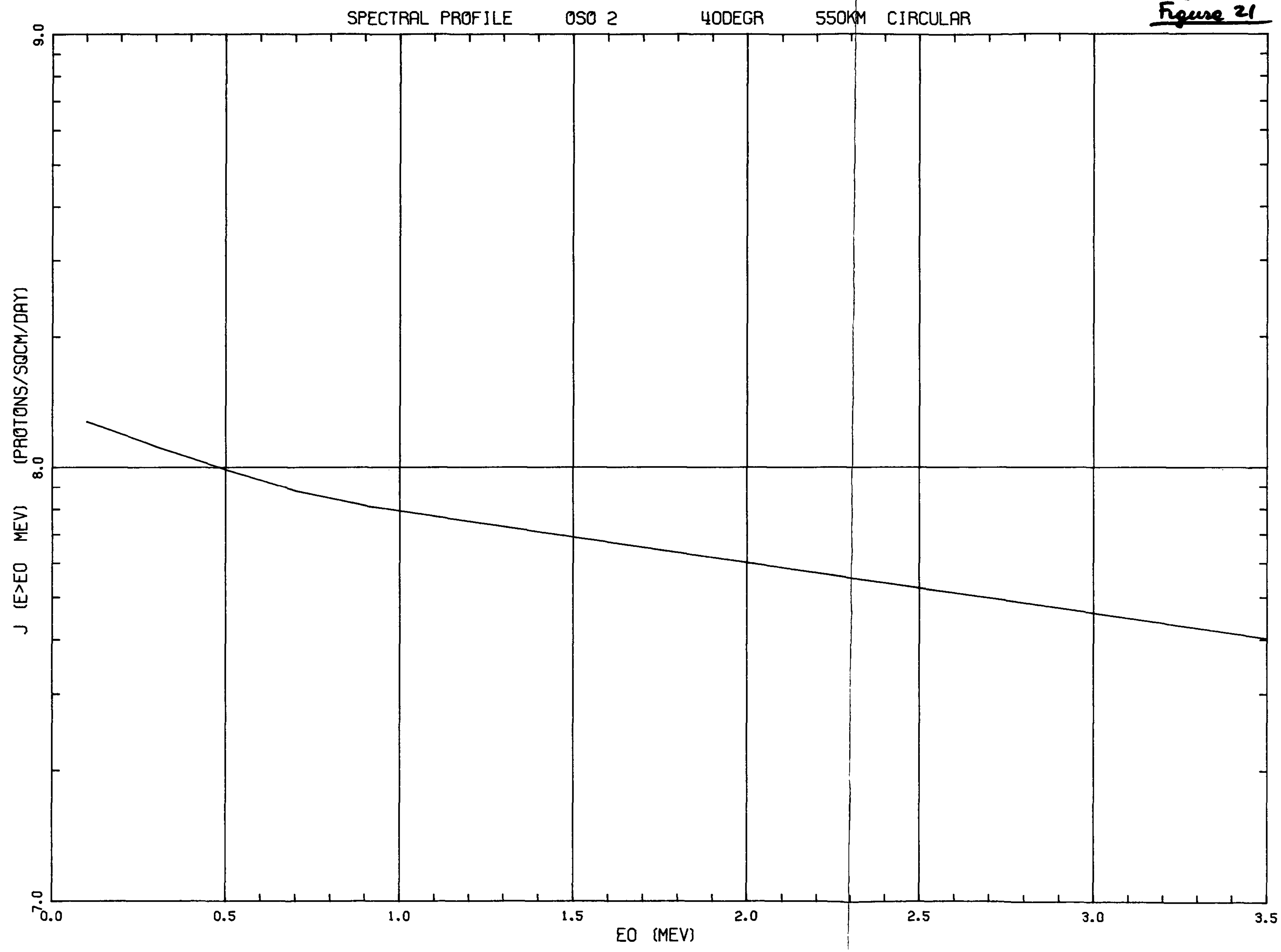
Figure 20



FOLDOUT FRAME 1

FOLDOUT FRAME 2

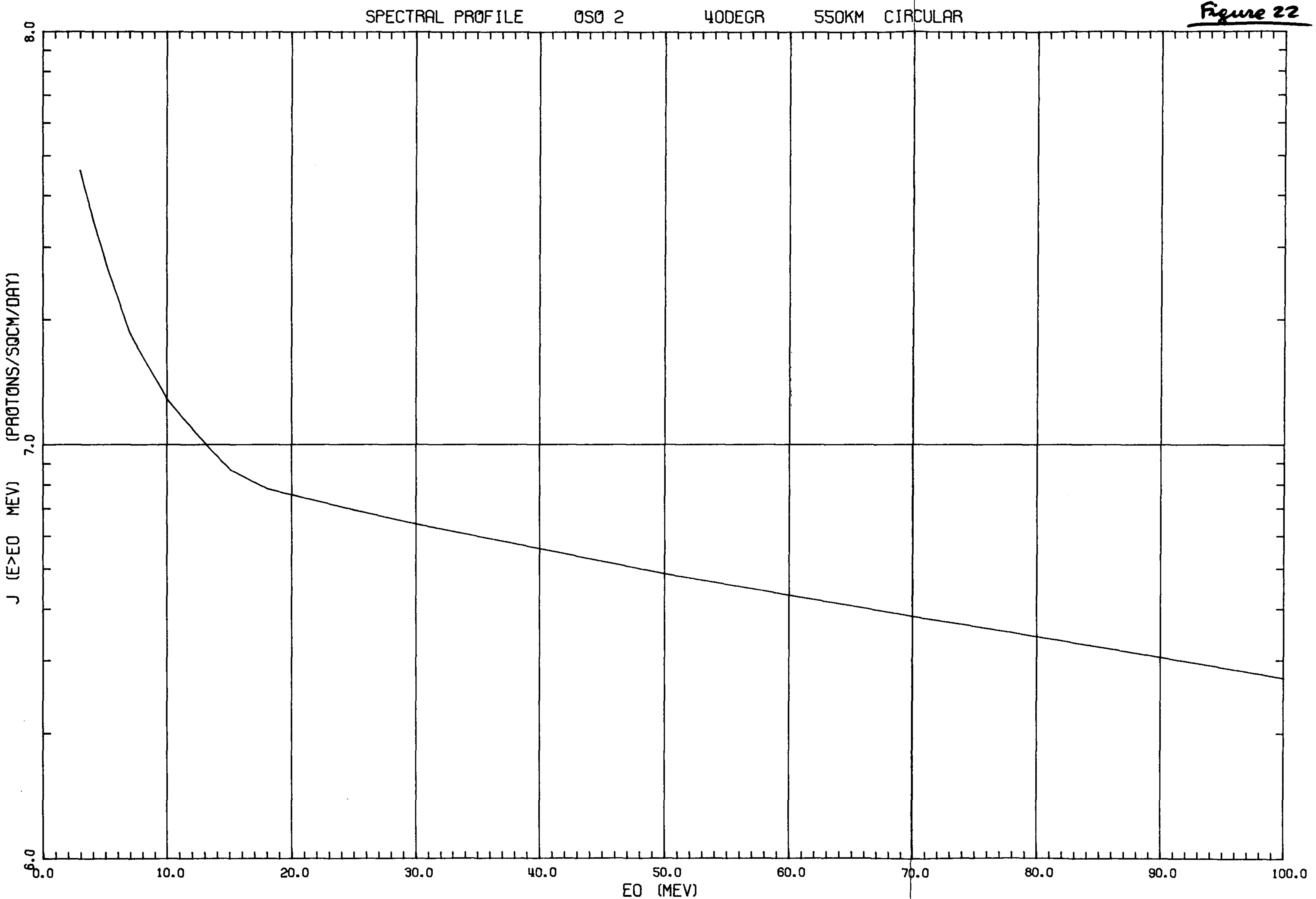
Figure 21



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 22



FOLDOUT FRAME 1

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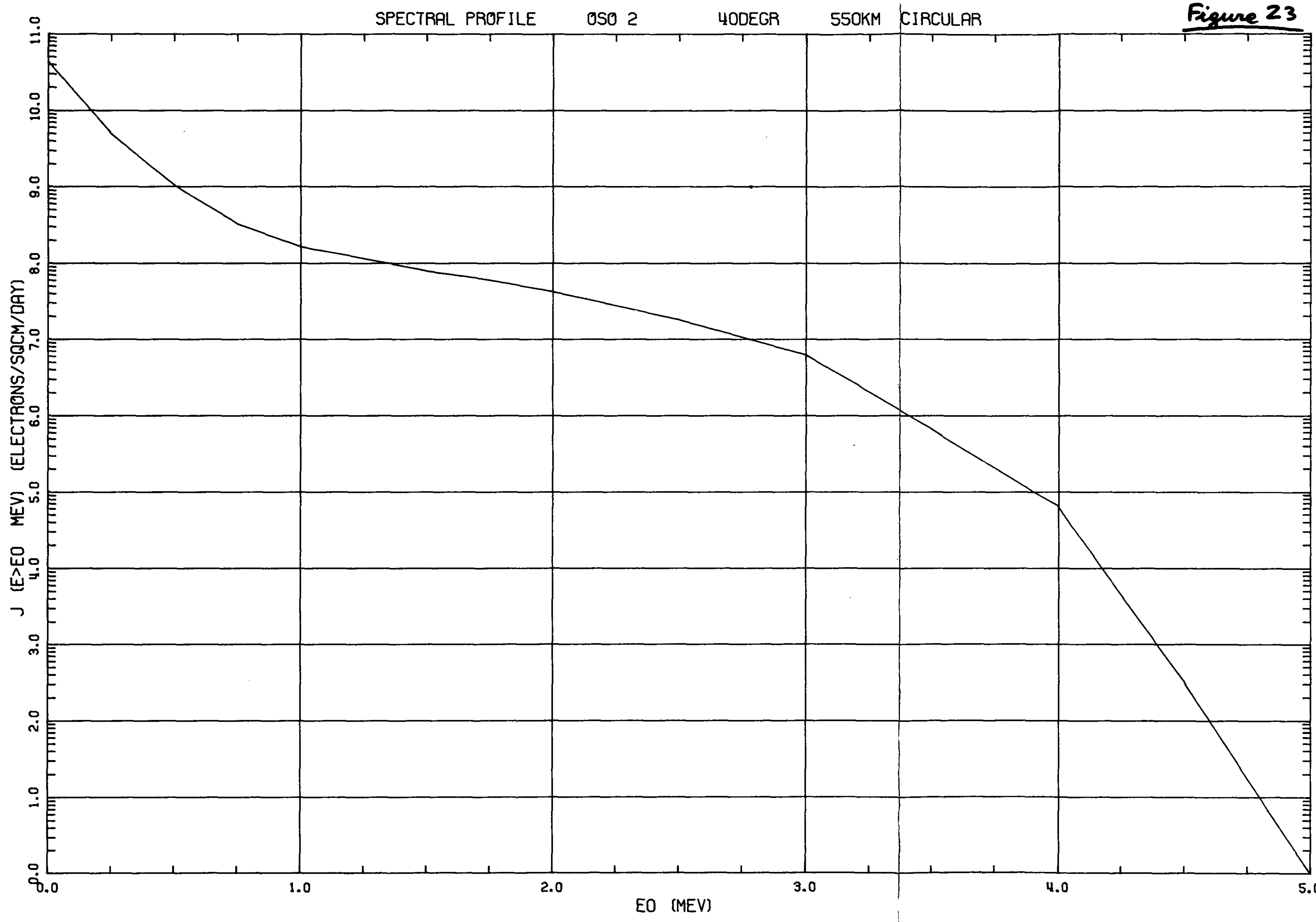
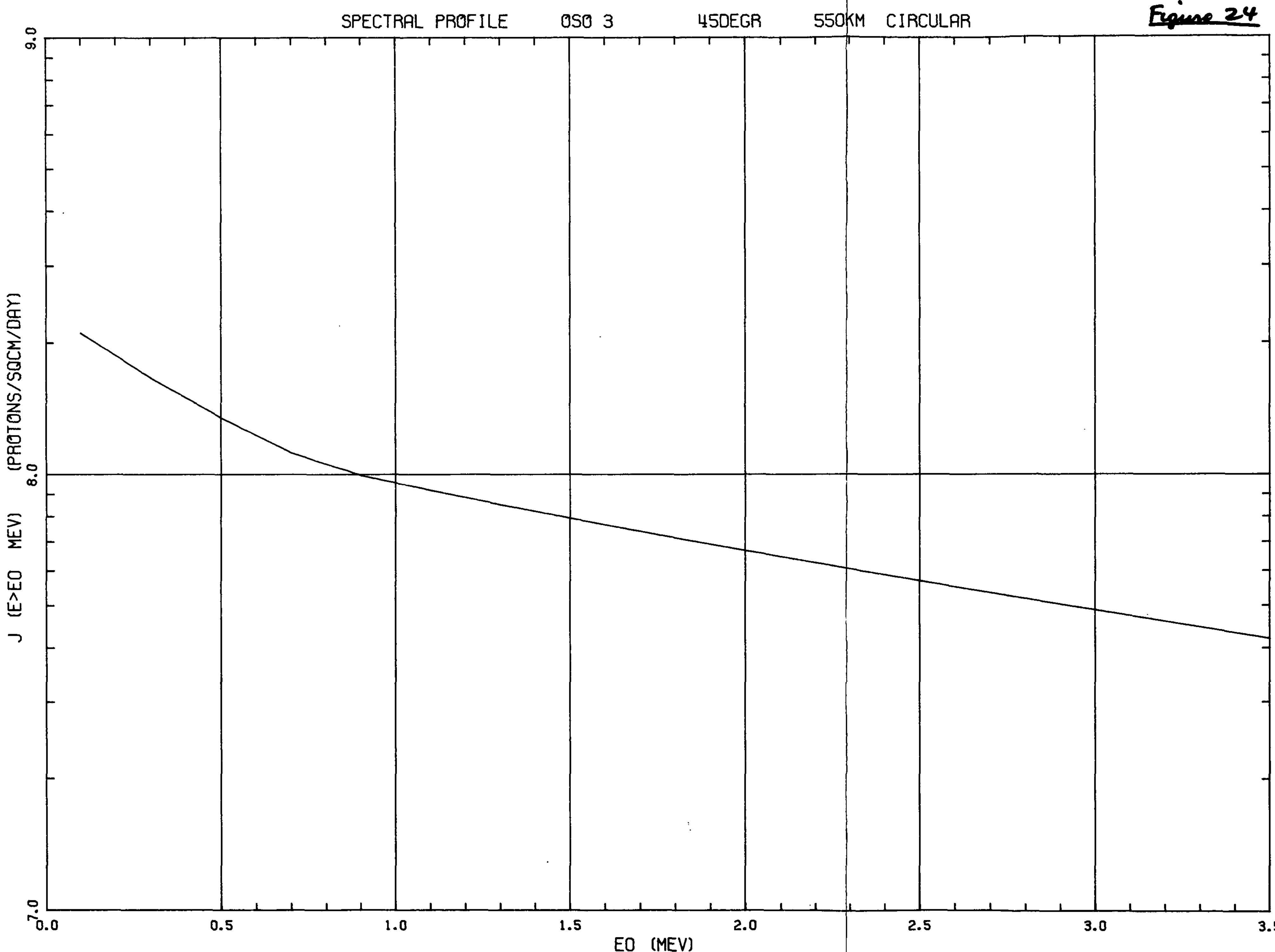


Figure 23

FOLDOUT FRAME 1

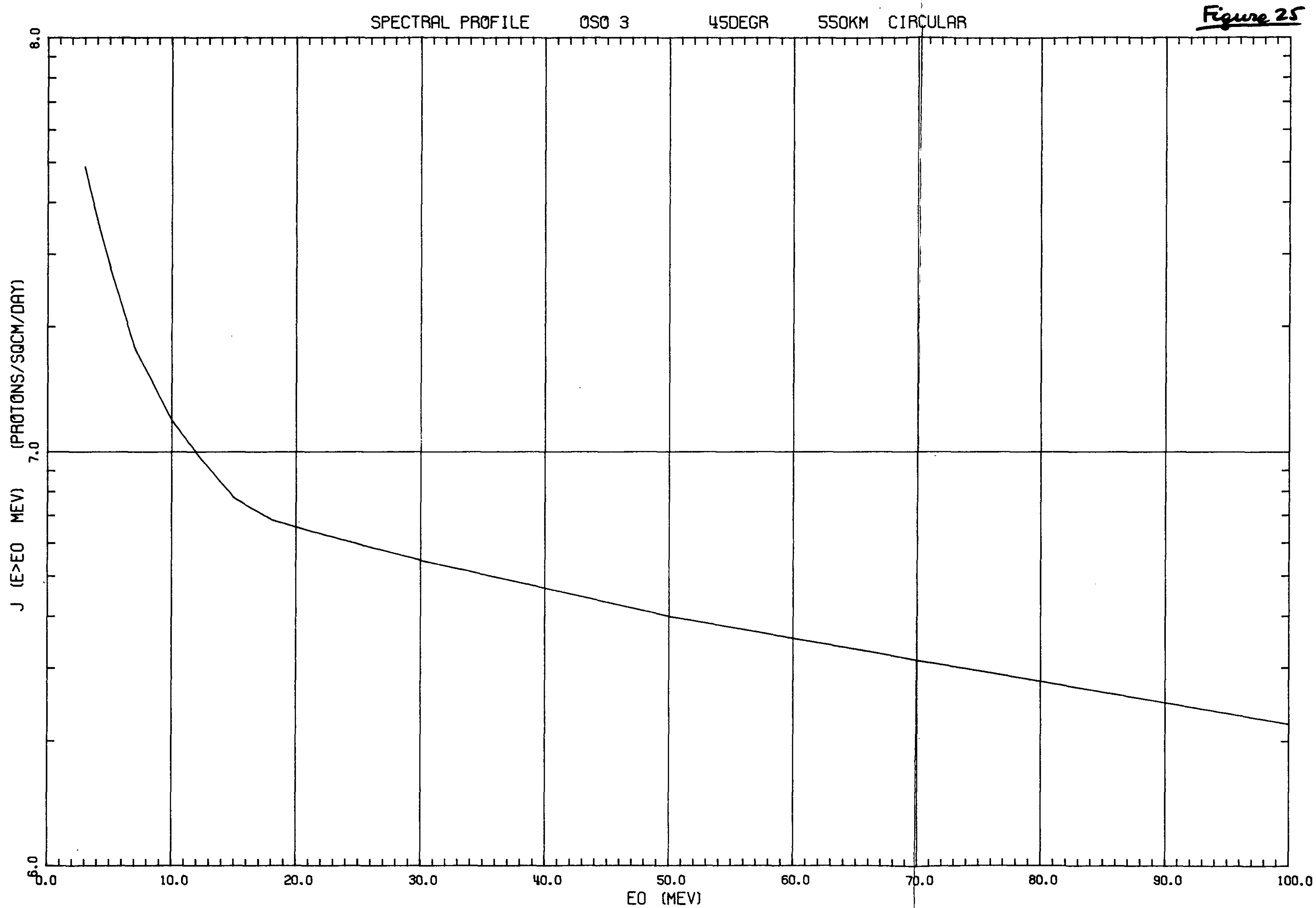
FOLDOUT FRAME 2



FOLDOUT FRAME 1

FOLDOUT FRAME 2

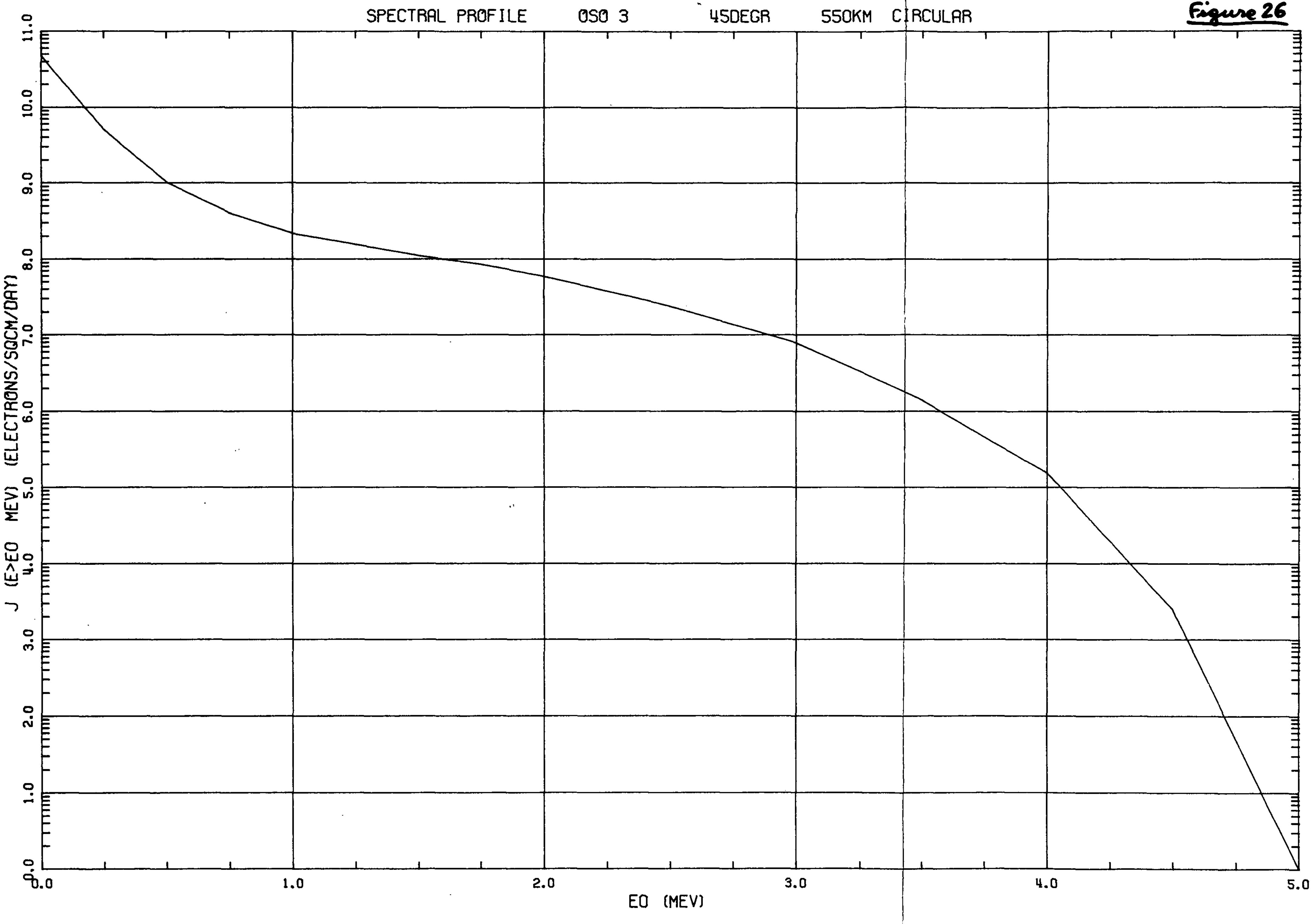
Figure 25



FOLDOUT FRAME 1

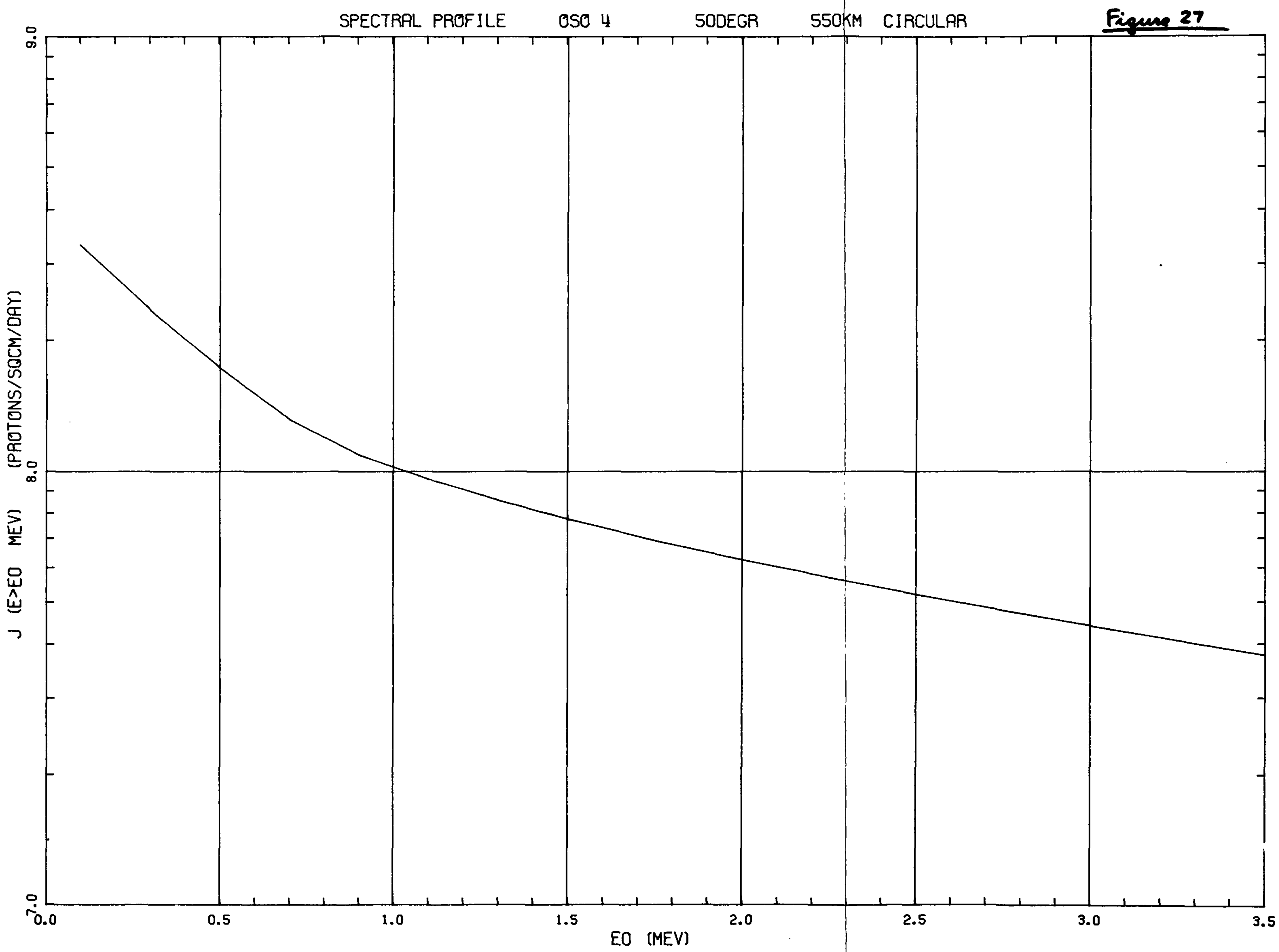
FOLDOUT FRAME 2

Figure 26



FOLDOUT FRAME 1

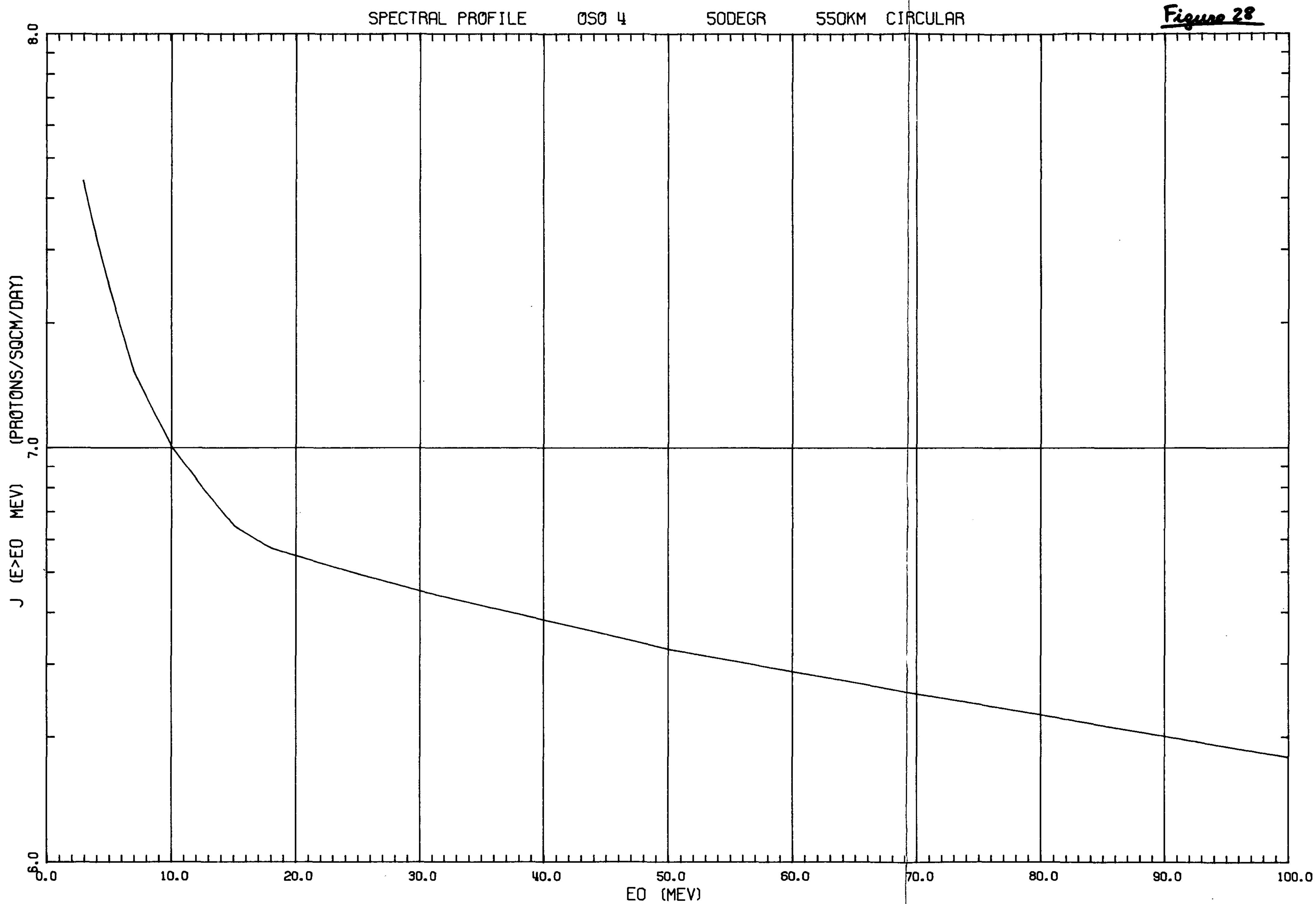
FOLDOUT FRAME 2



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 28



FOLDOUT FRAME 1

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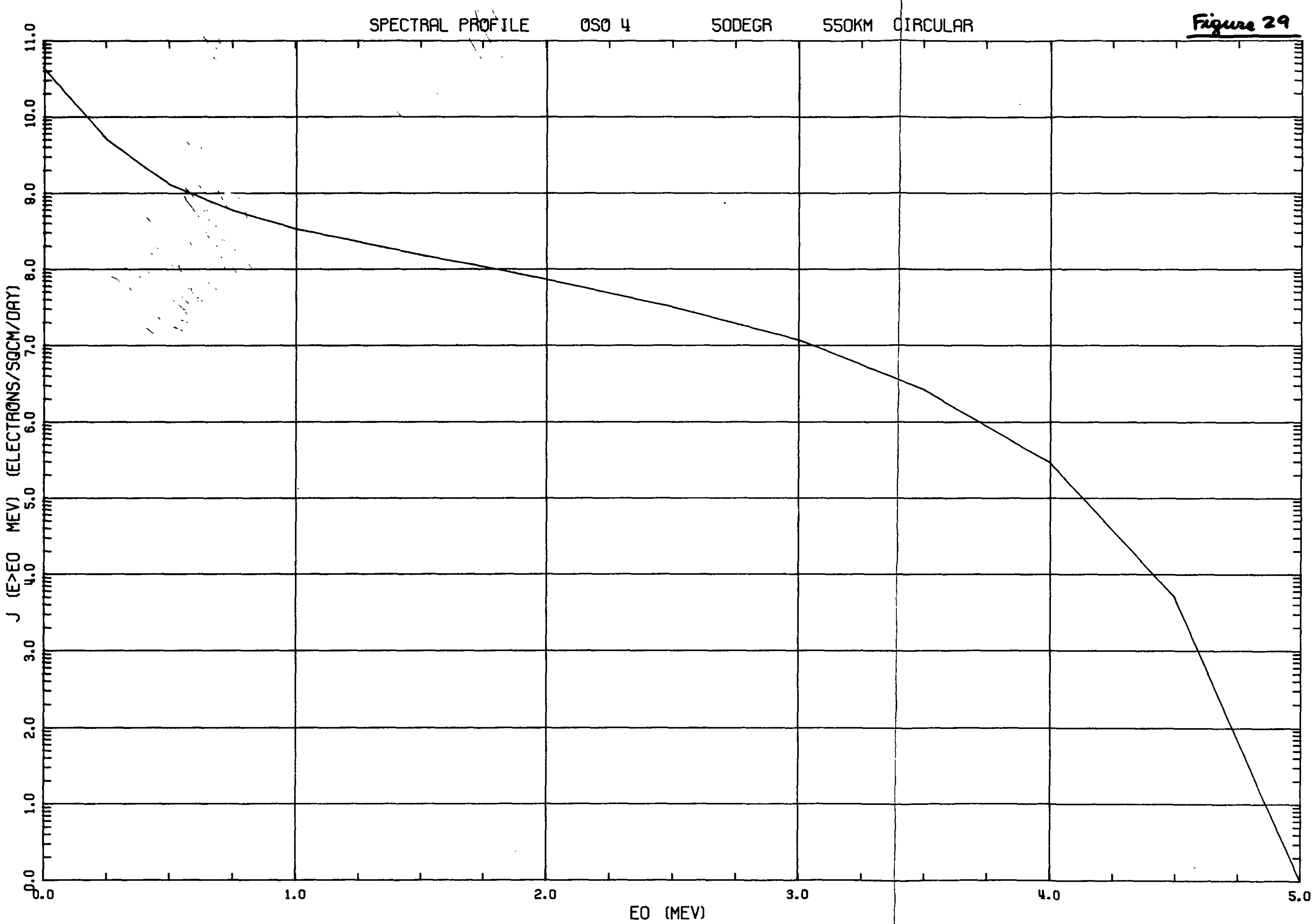
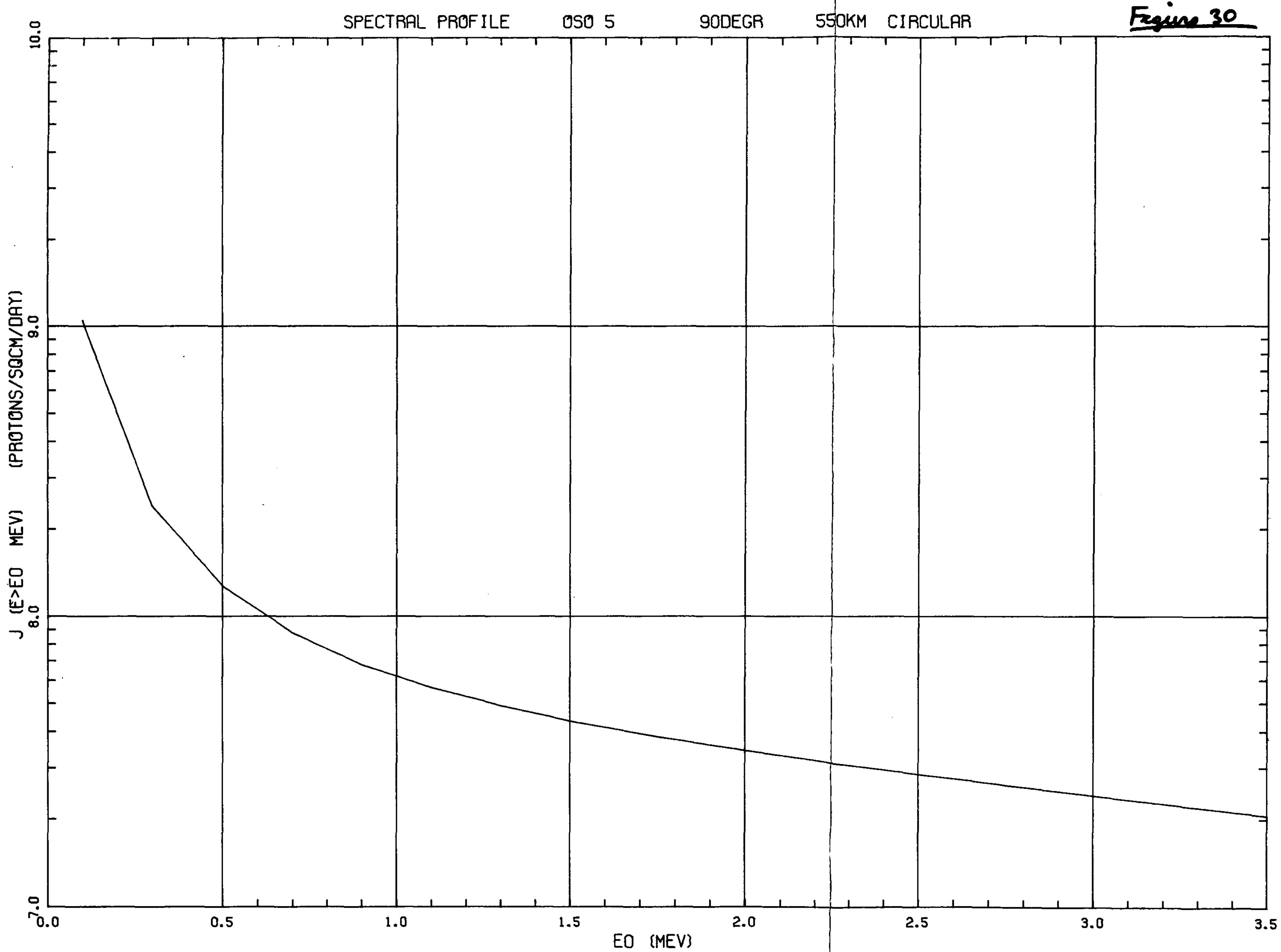


Figure 29

FOLDOUT FRAME

FOLDOUT FRAME /

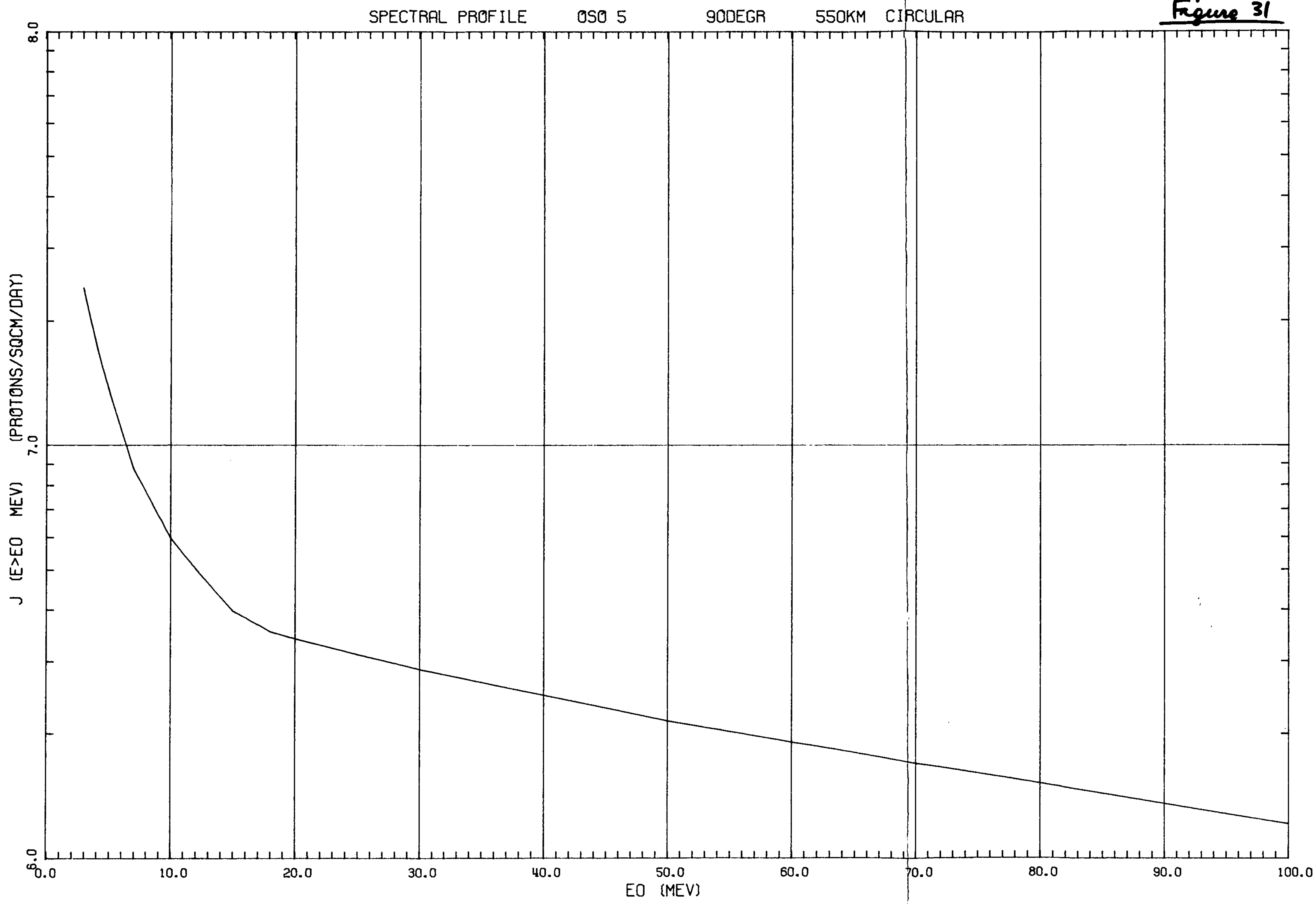
FOLDOUT FRAME 2



FOLDOUT FRAME 1

FOLDOUT FRAME 2

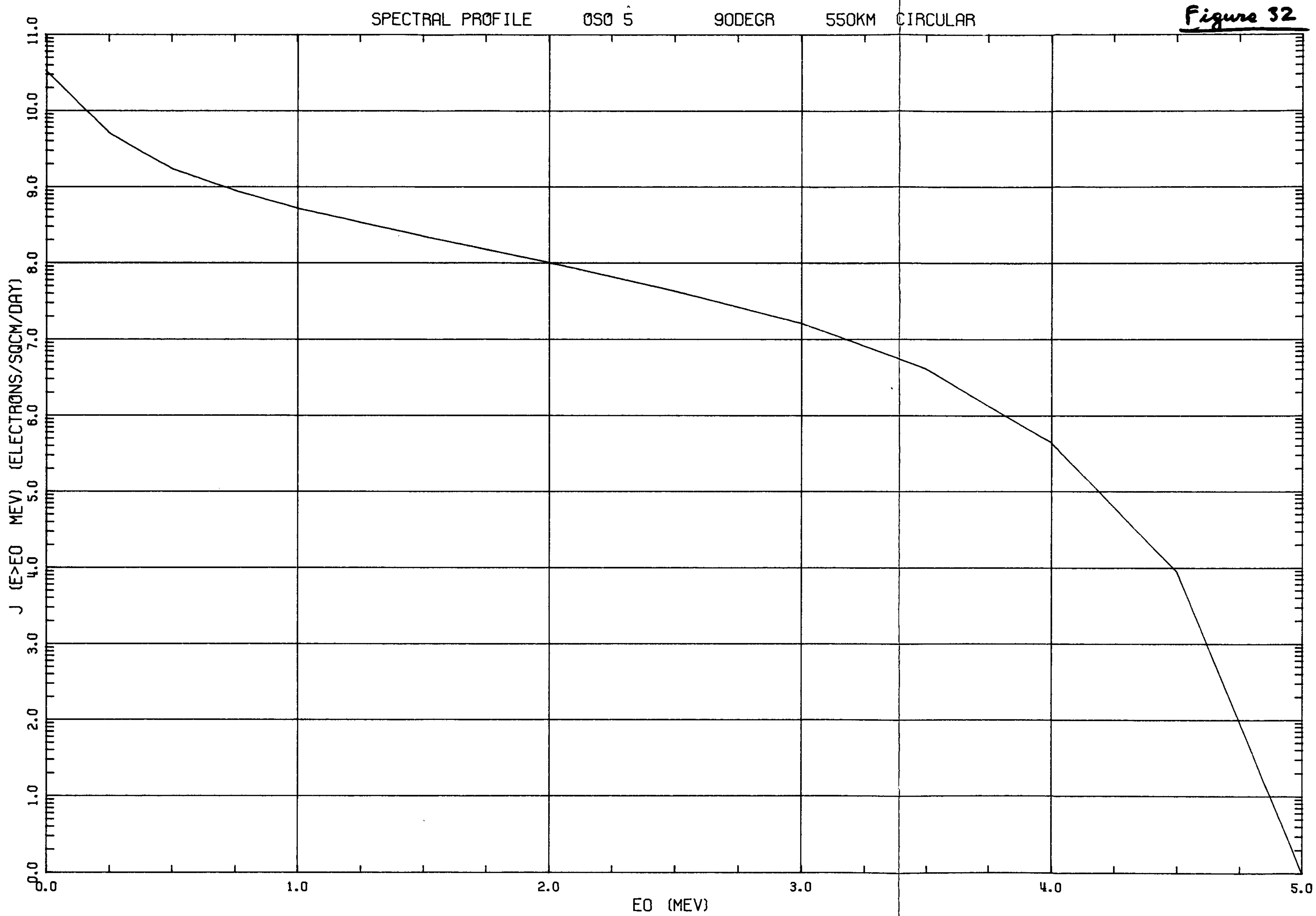
Figure 31



FOLDOUT FRAME /

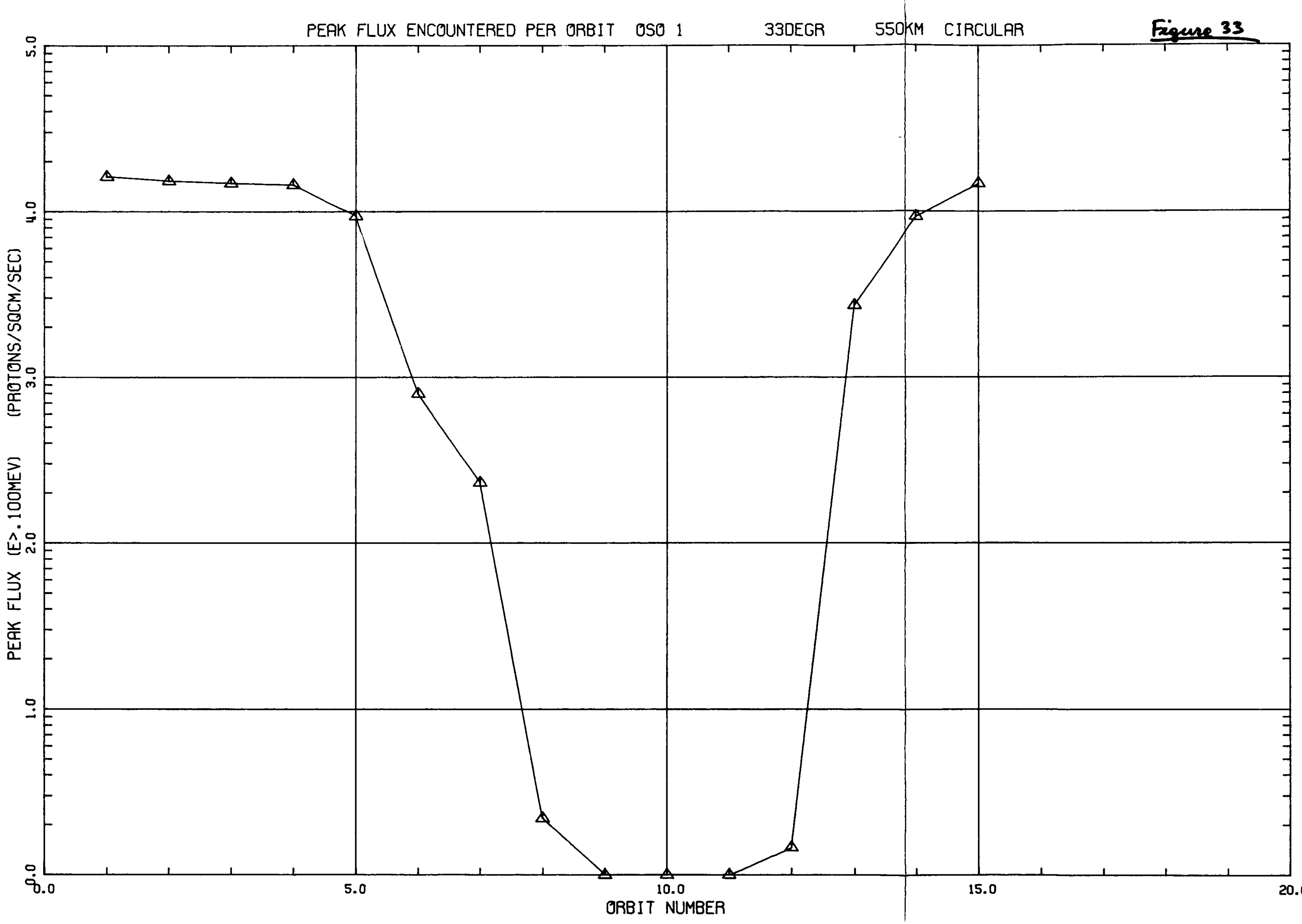
FOLDOUT FRAME 2

Figure 32



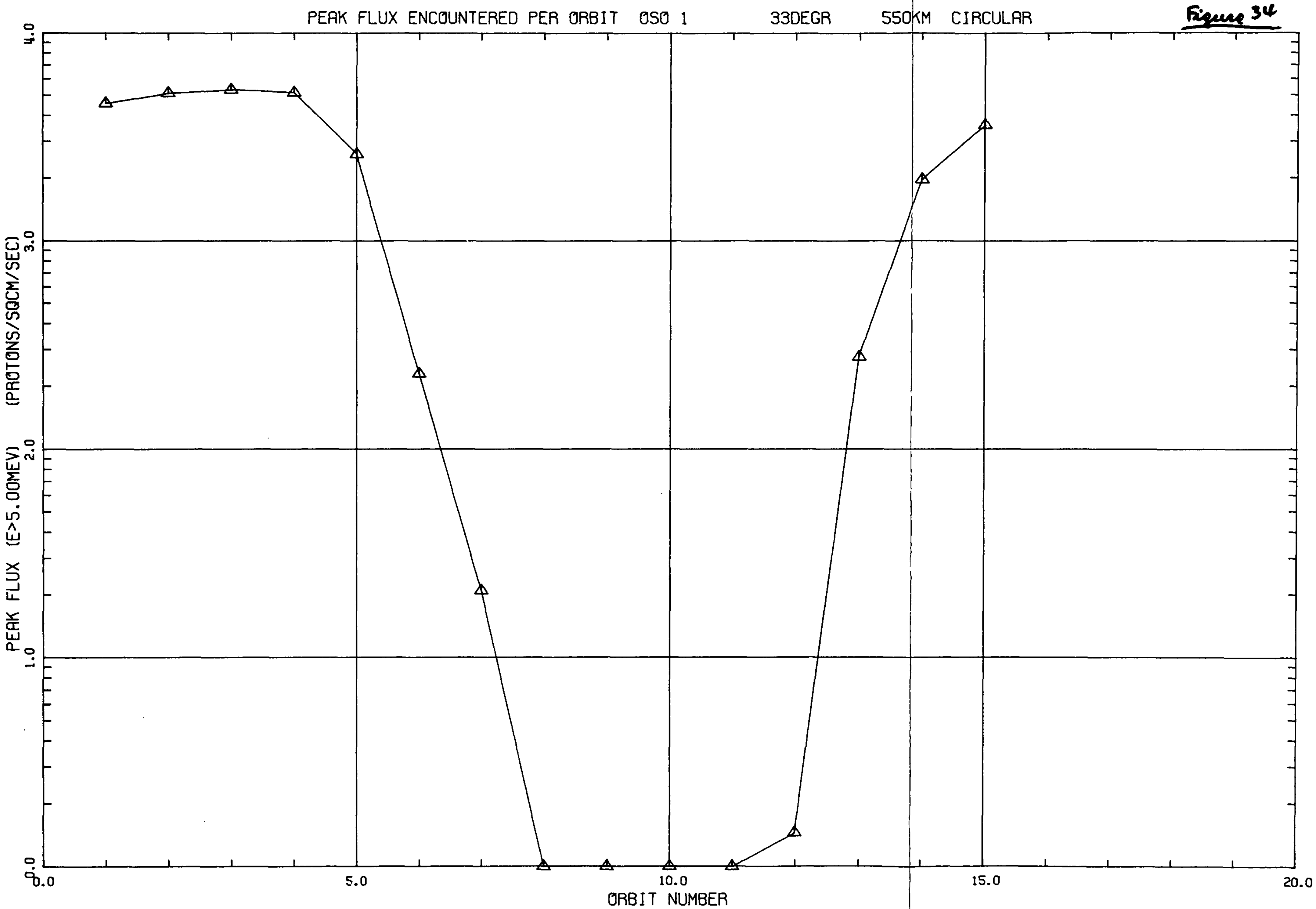
FOLDOUT FRAME /

FOLDOUT FRAME 2



FOLDOUT FRAME 1

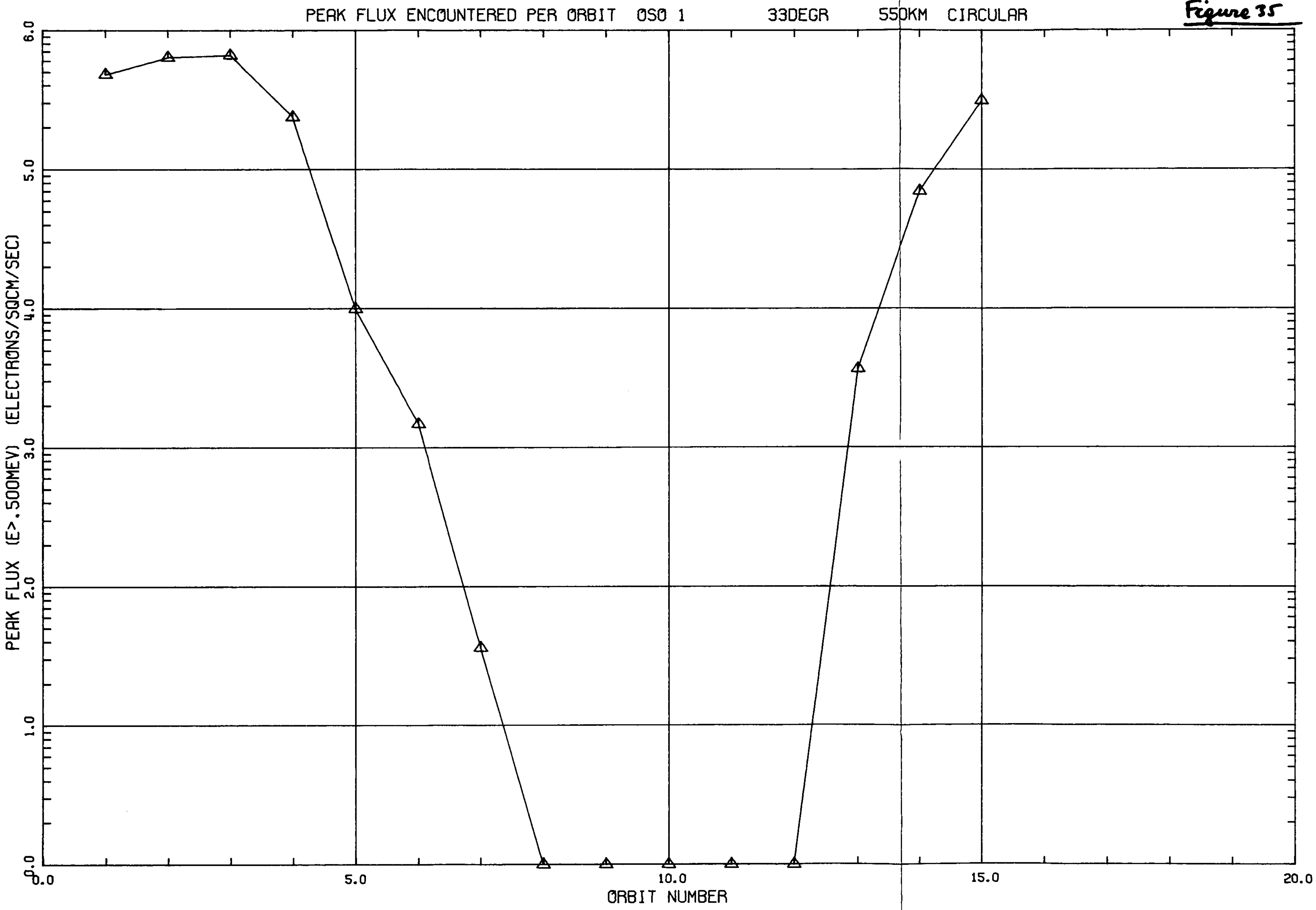
FOLDOUT FRAME 2



FOLDOUT FRAME /

FOLDOUT FRAME 2

Figure 35



FOLDOUT FRAME 1

FOLDOUT FRAME 2

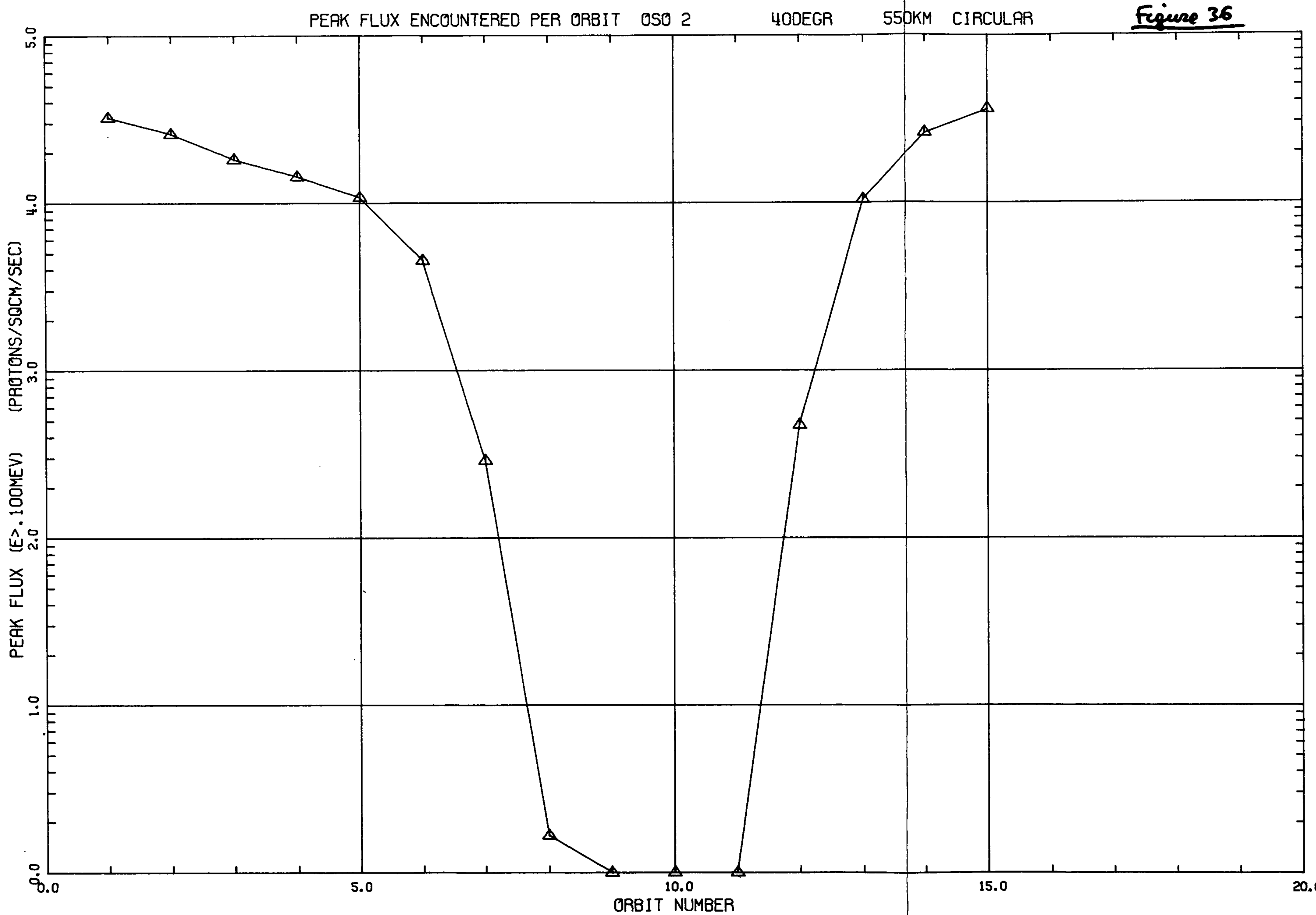


Figure 36

FOLDOUT FRAME 1

FOLDOUT FRAME 2

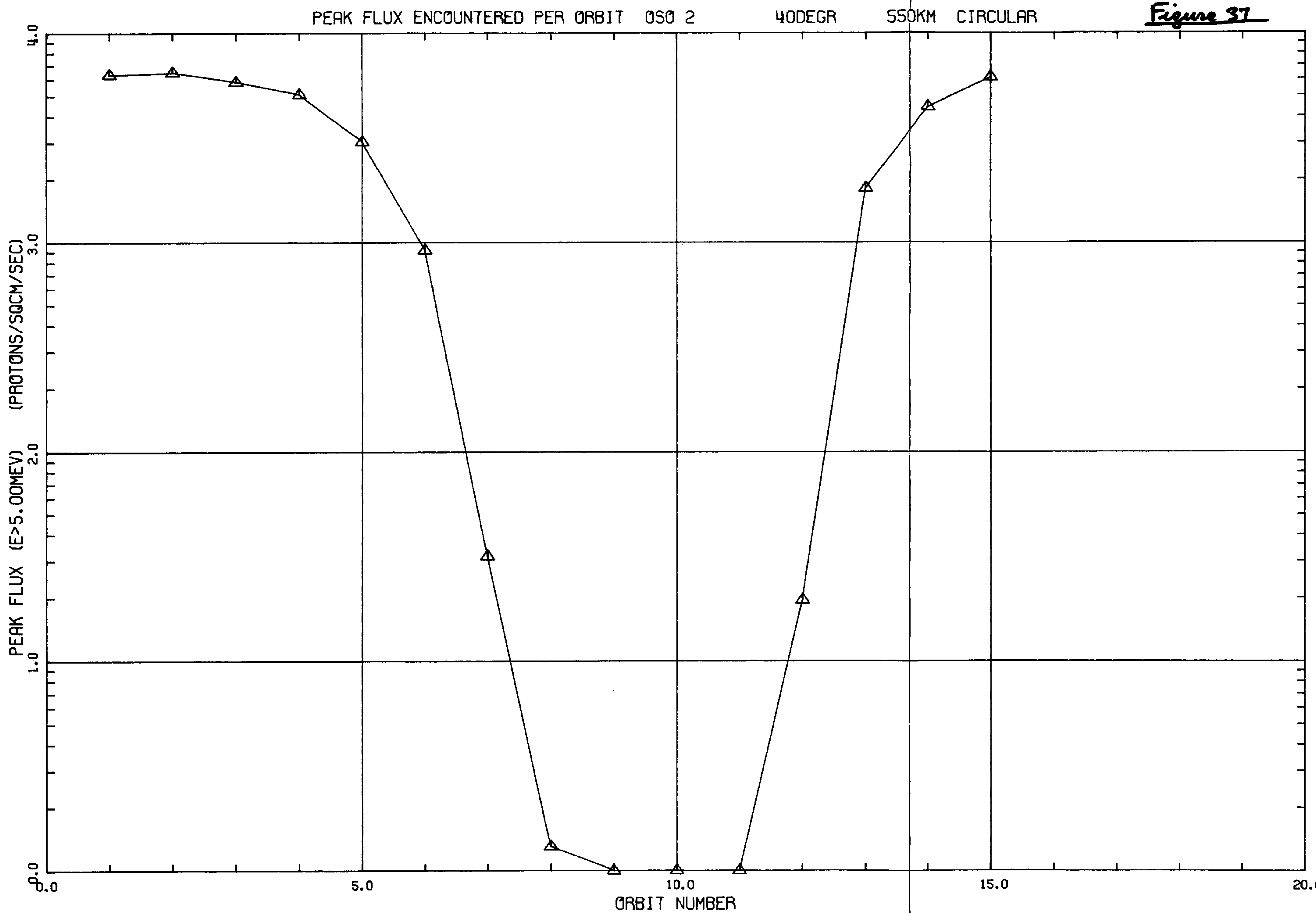
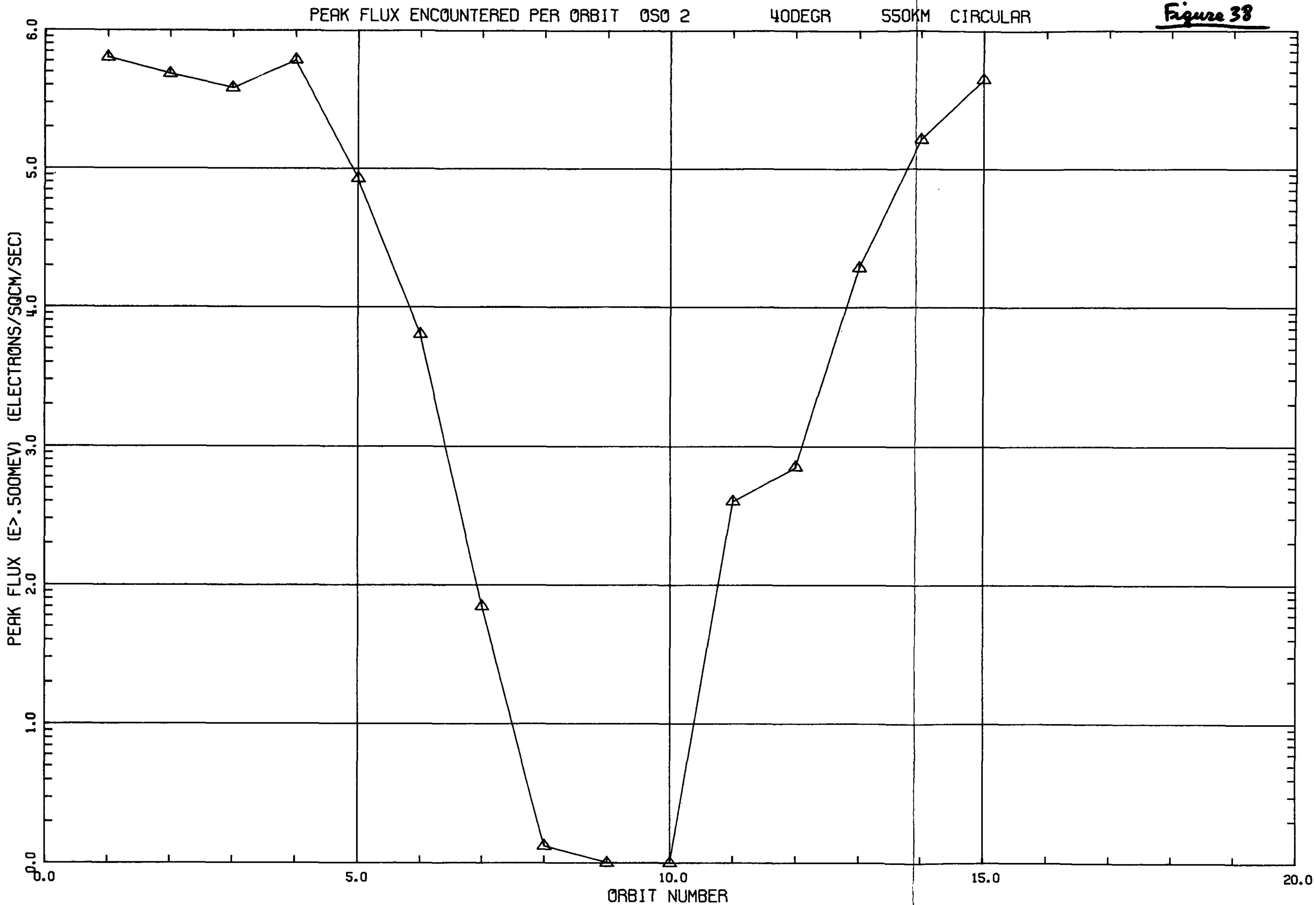


Figure 37

FOLDOUT FRAME 1

FOLDOUT FRAME 2

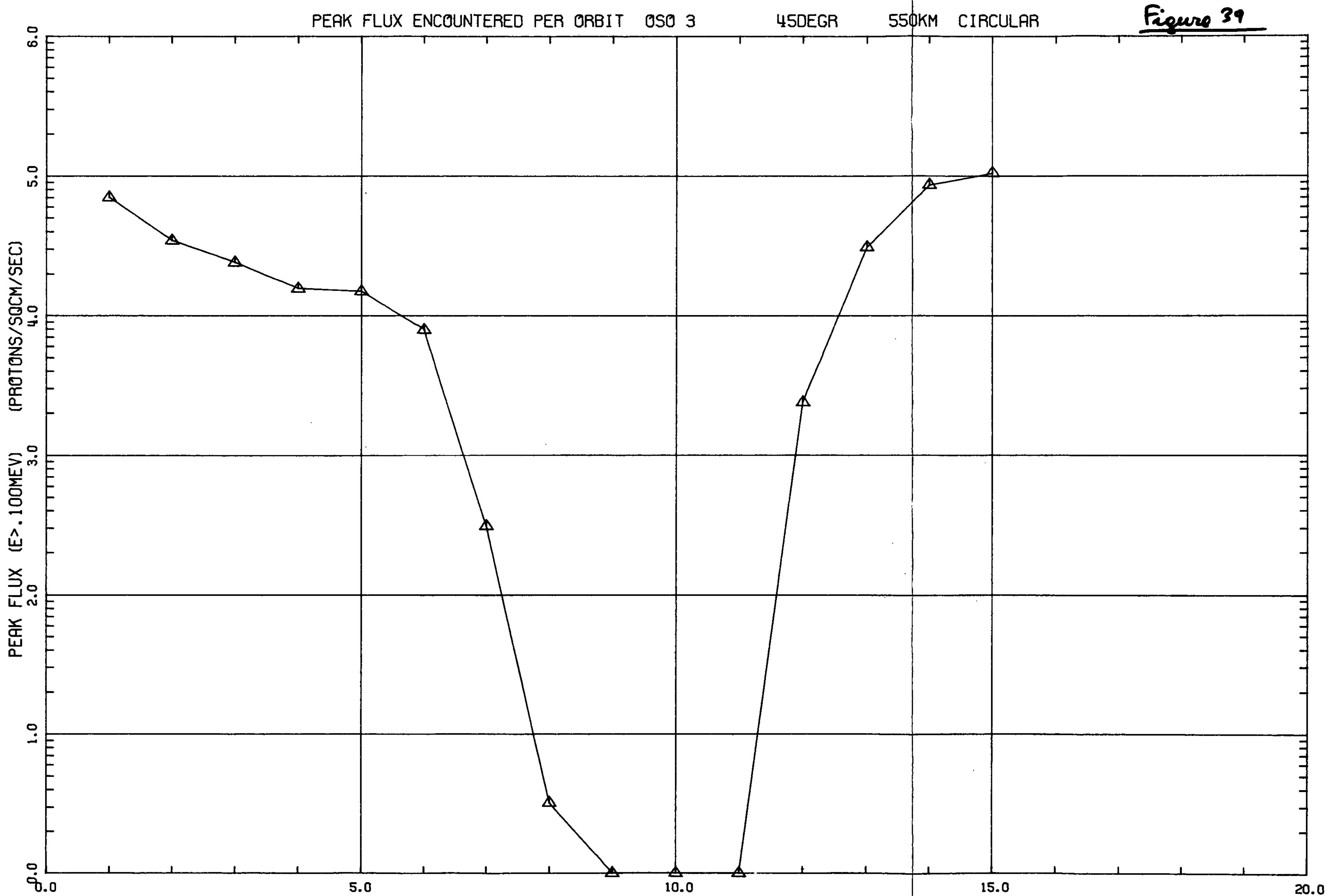
Figure 38



FOLDOUT FRAME 1

FOLDOUT FRAME 2

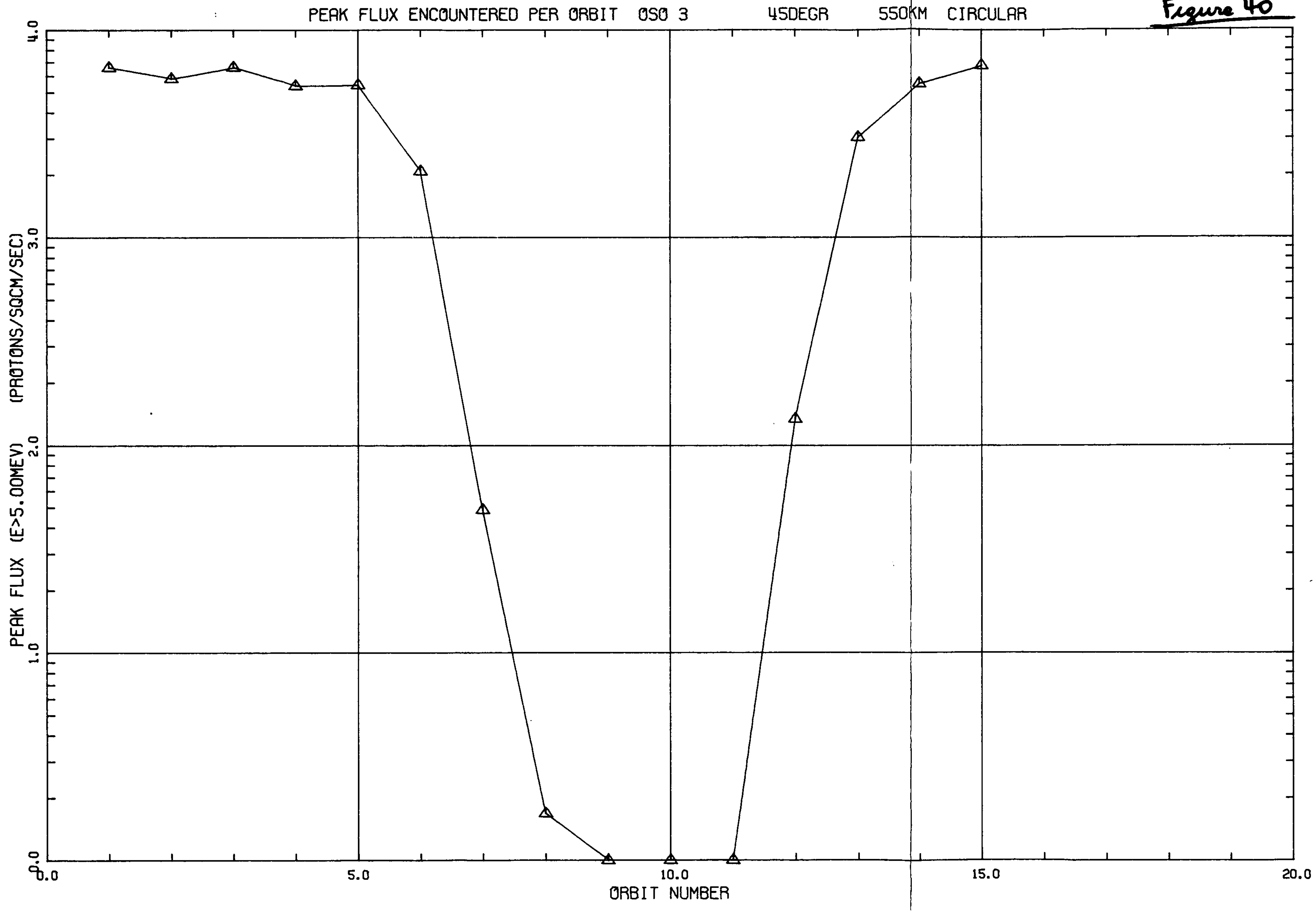
Figure 39



FOLDOUT FRAME 1

FOLDOUT FRAME 2

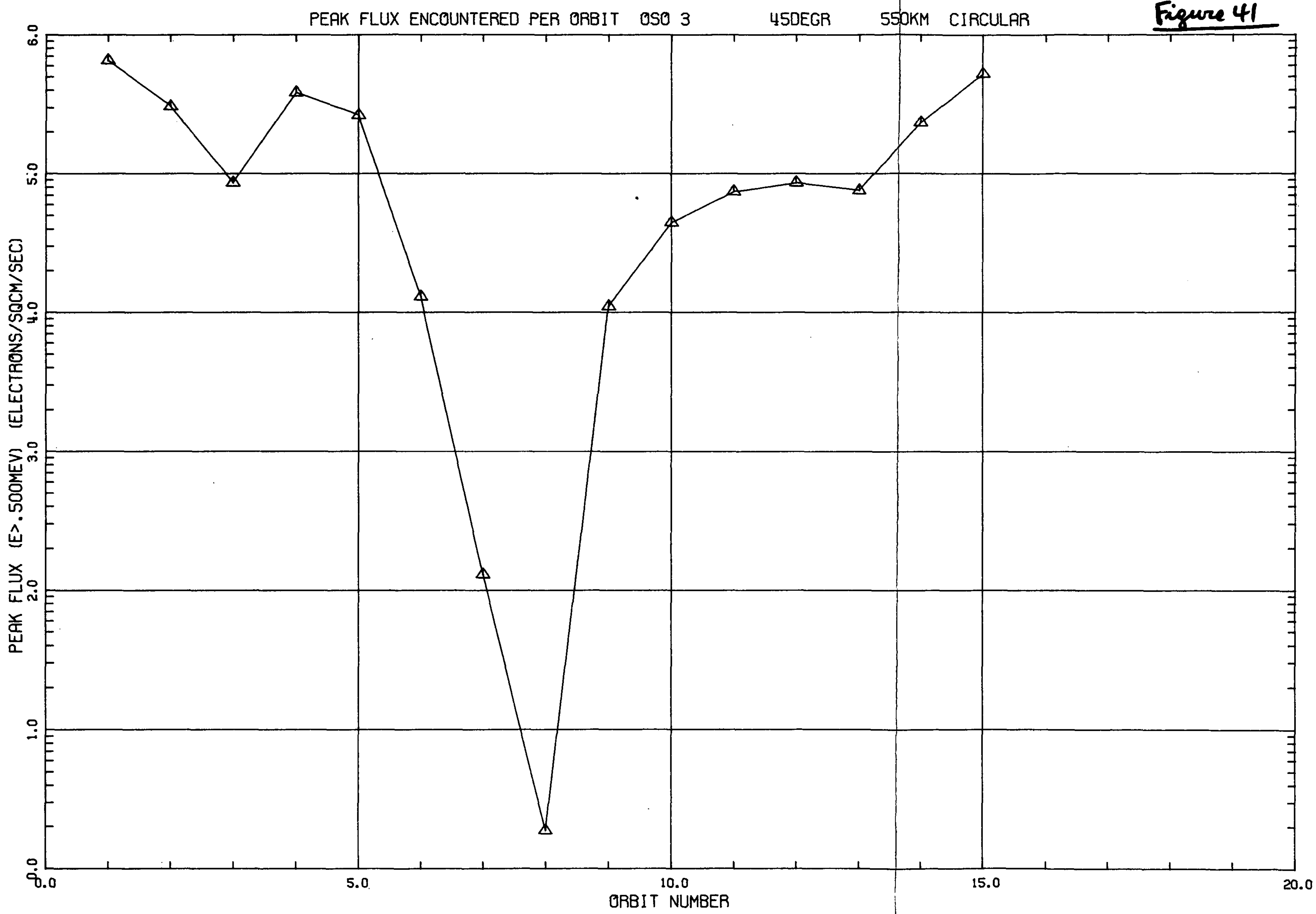
Figure 40



FOLDOUT FRAME 1

FOLDOUT FRAME 2

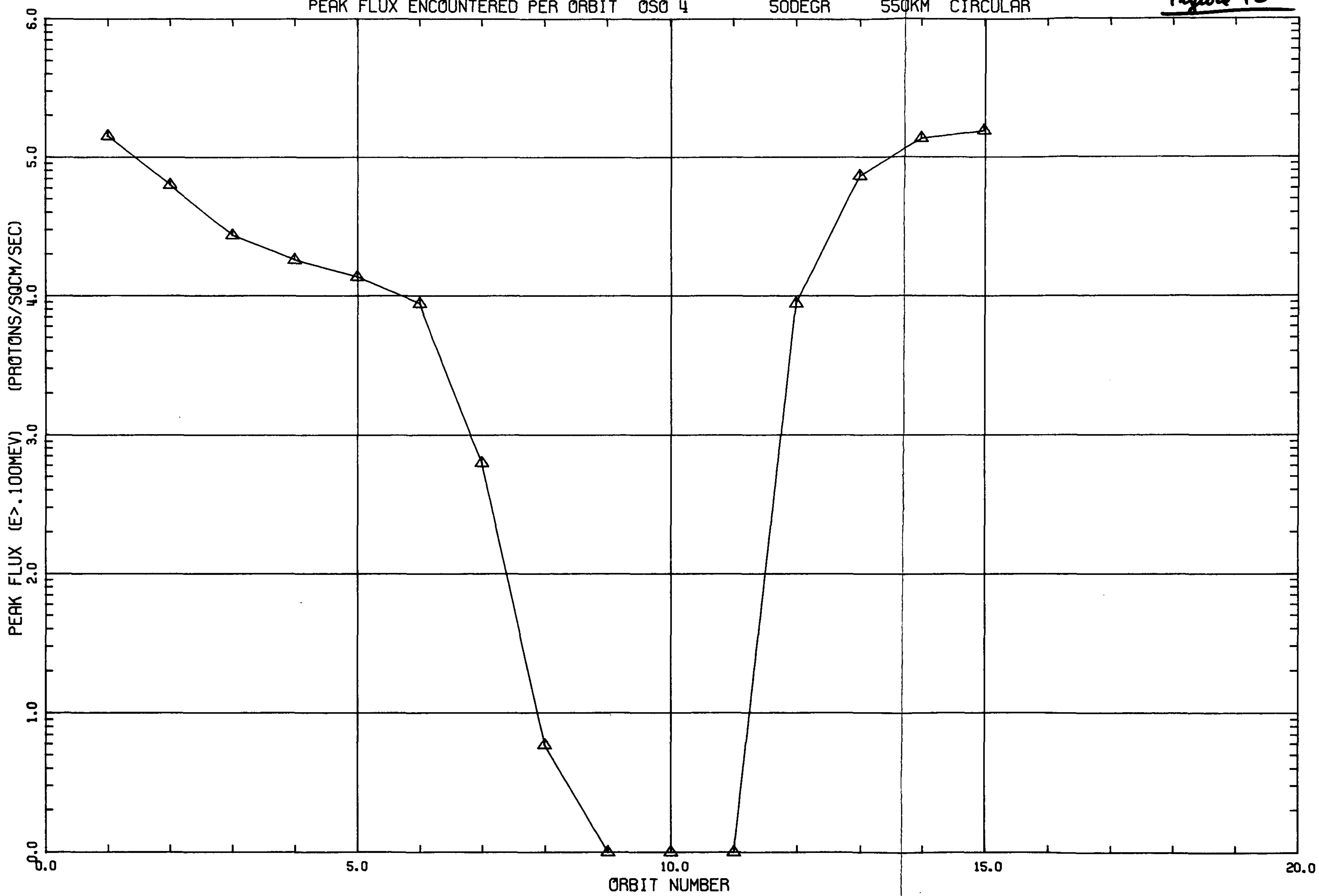
Figure 41



FOLDOUT FRAME 1

FOLDOUT FRAME 2

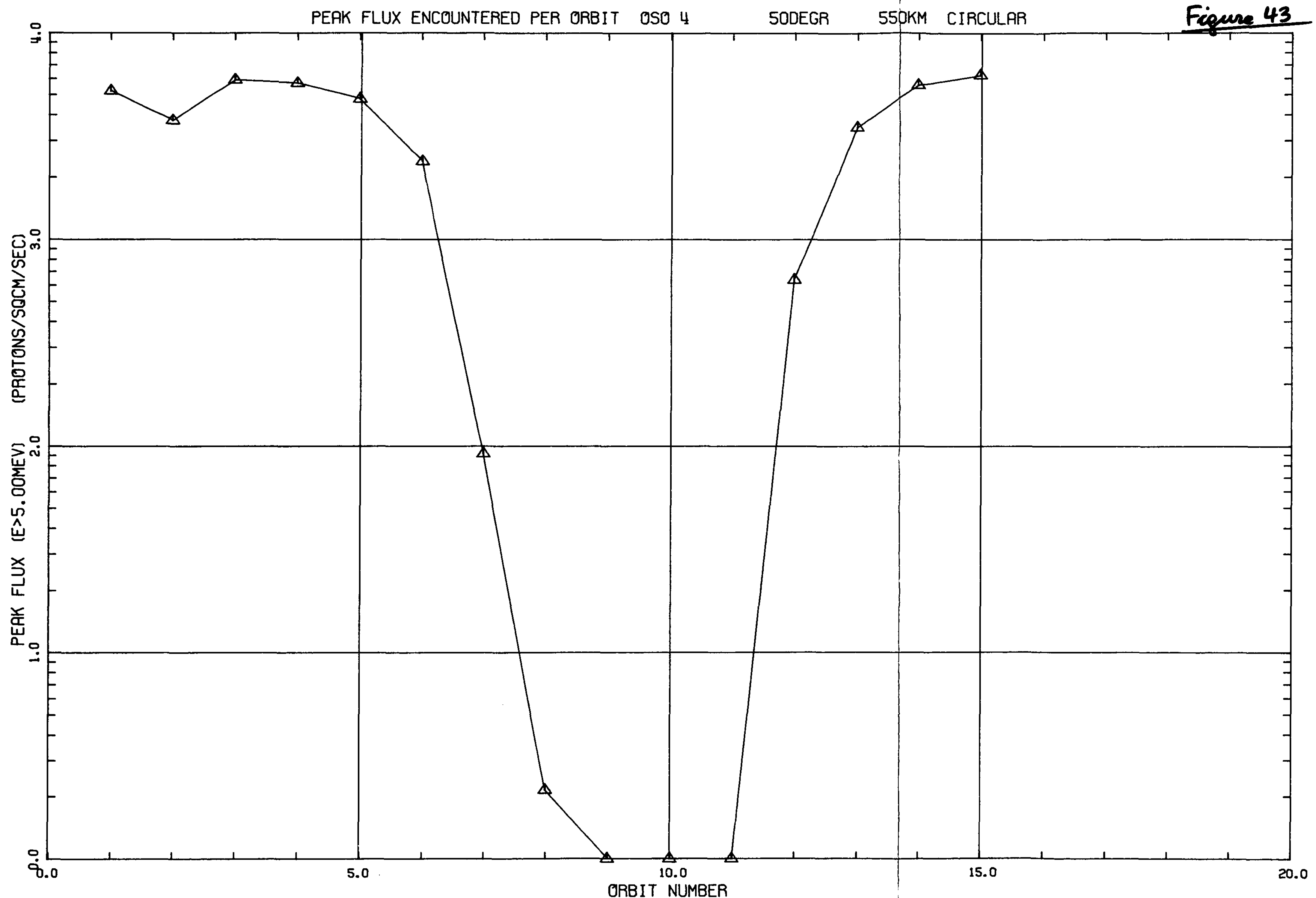
Figure 42



FOLDOUT FRAME 1

FOLDOUT FRAME 2

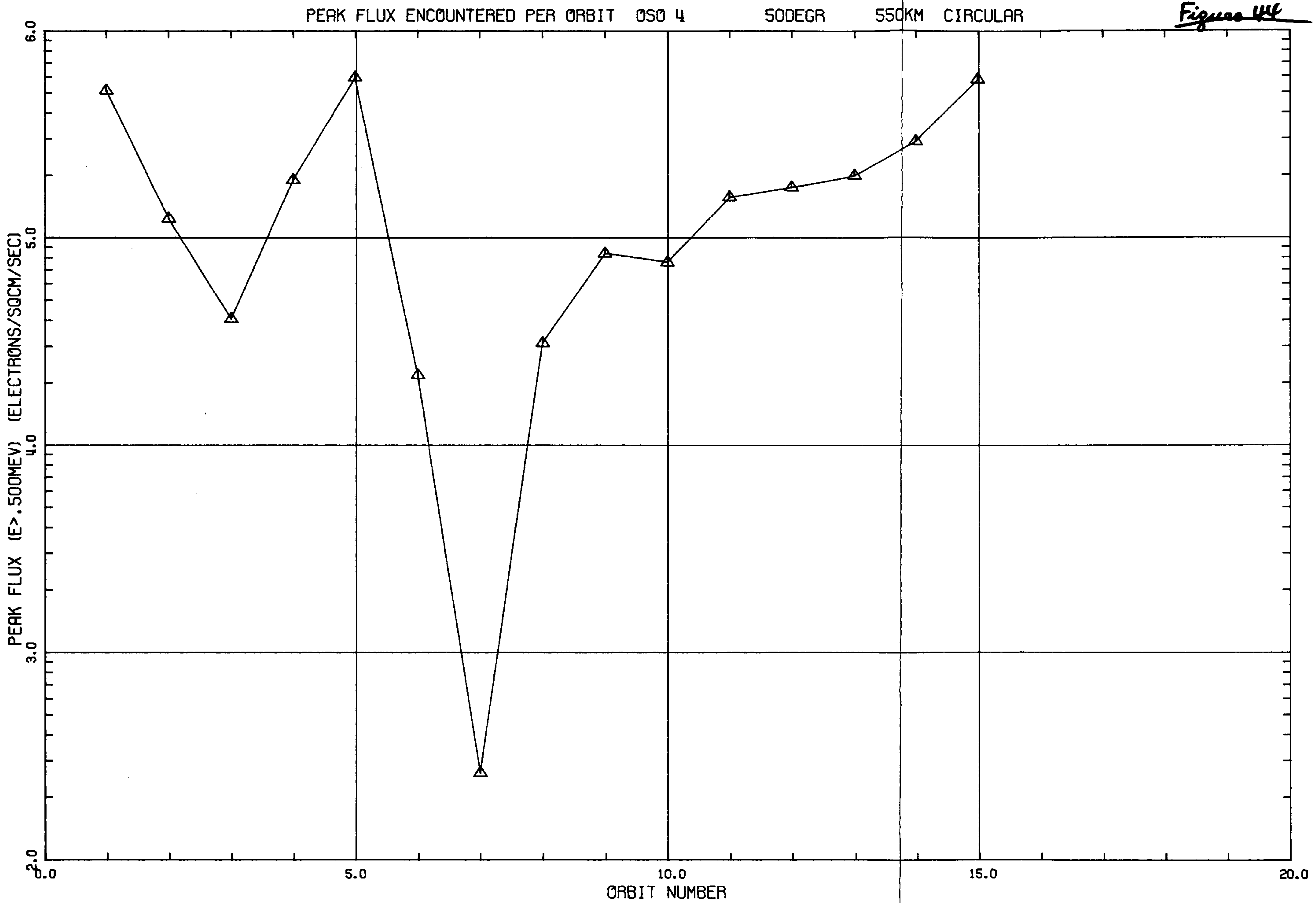
Figure 43



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 44



FOLDOUT FRAME 1

FOLDOUT FRAME 2

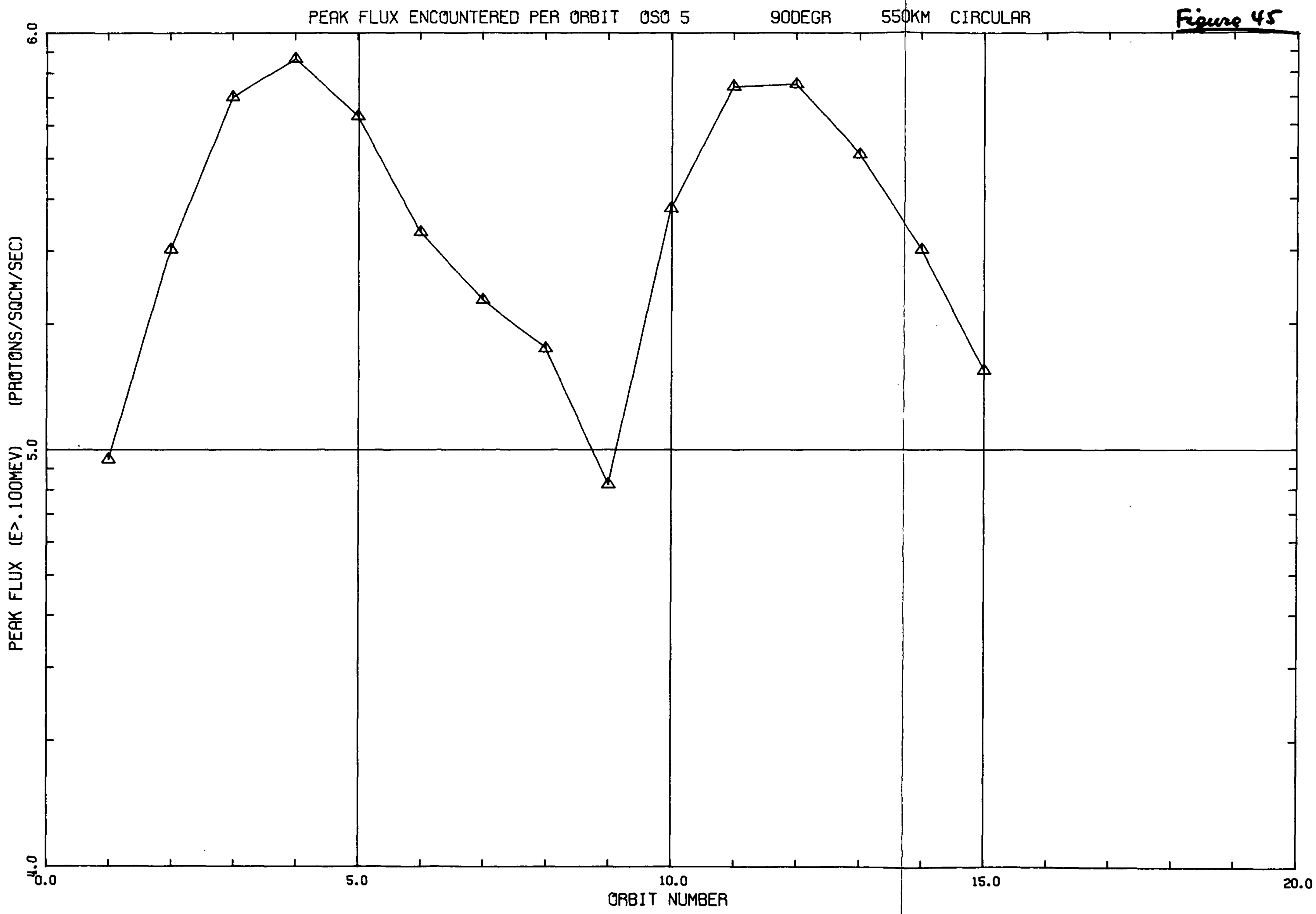


Figure 45

FOLDOUT FRAME 1

FOLDOUT FRAME 2

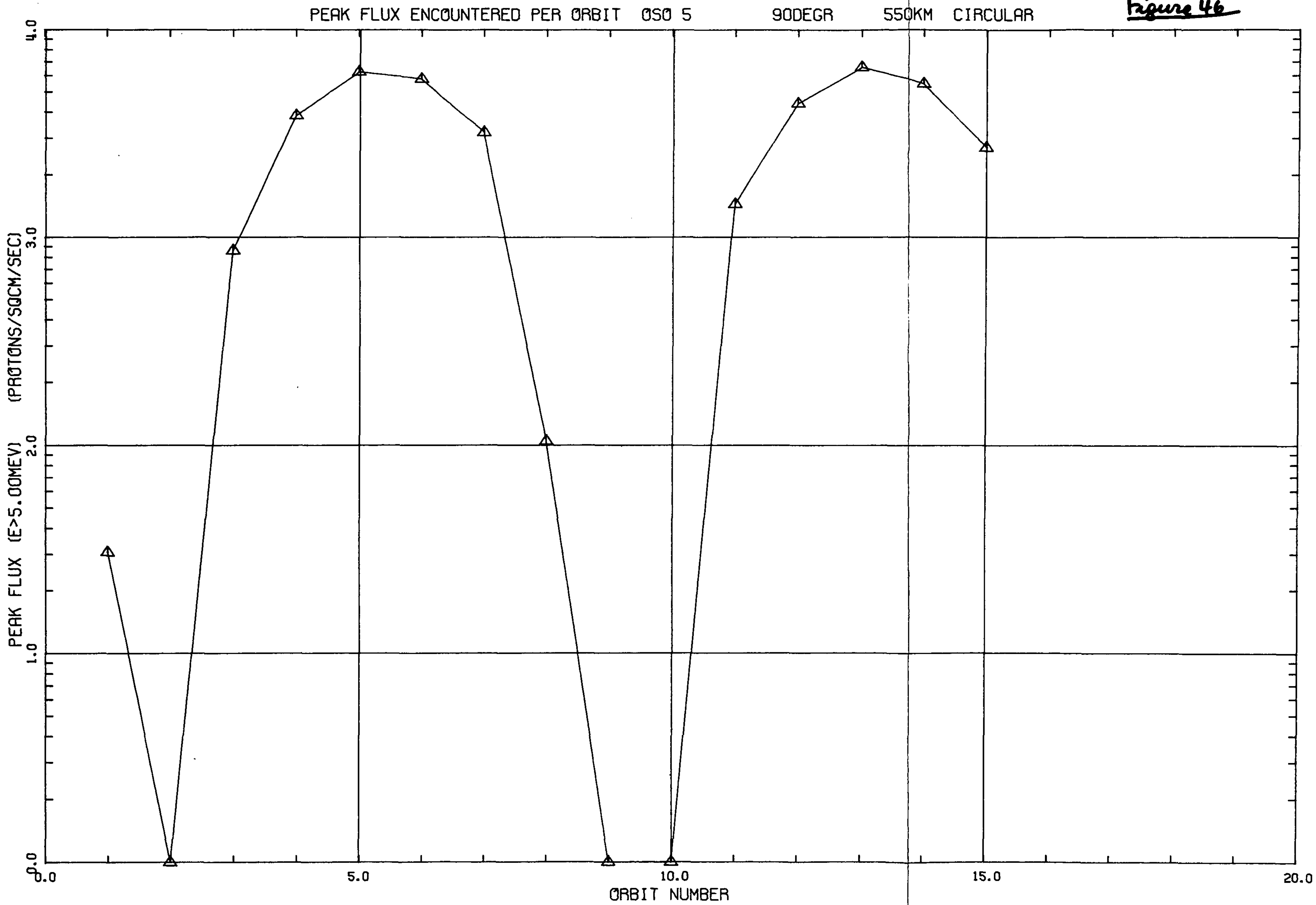
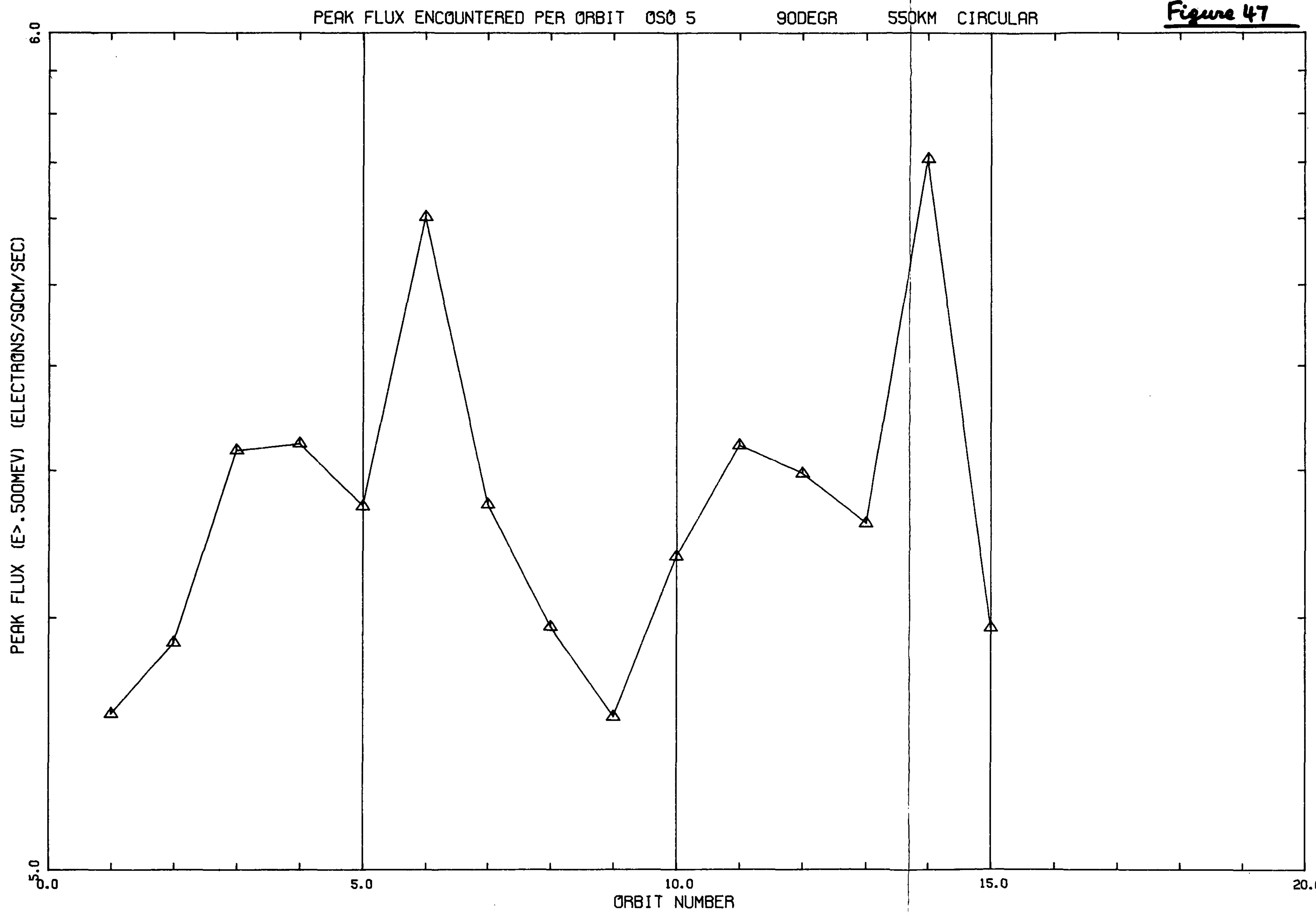


Figure 46

FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 47



FOLDOUT FRAME 1

FOLDOUT FRAME 2

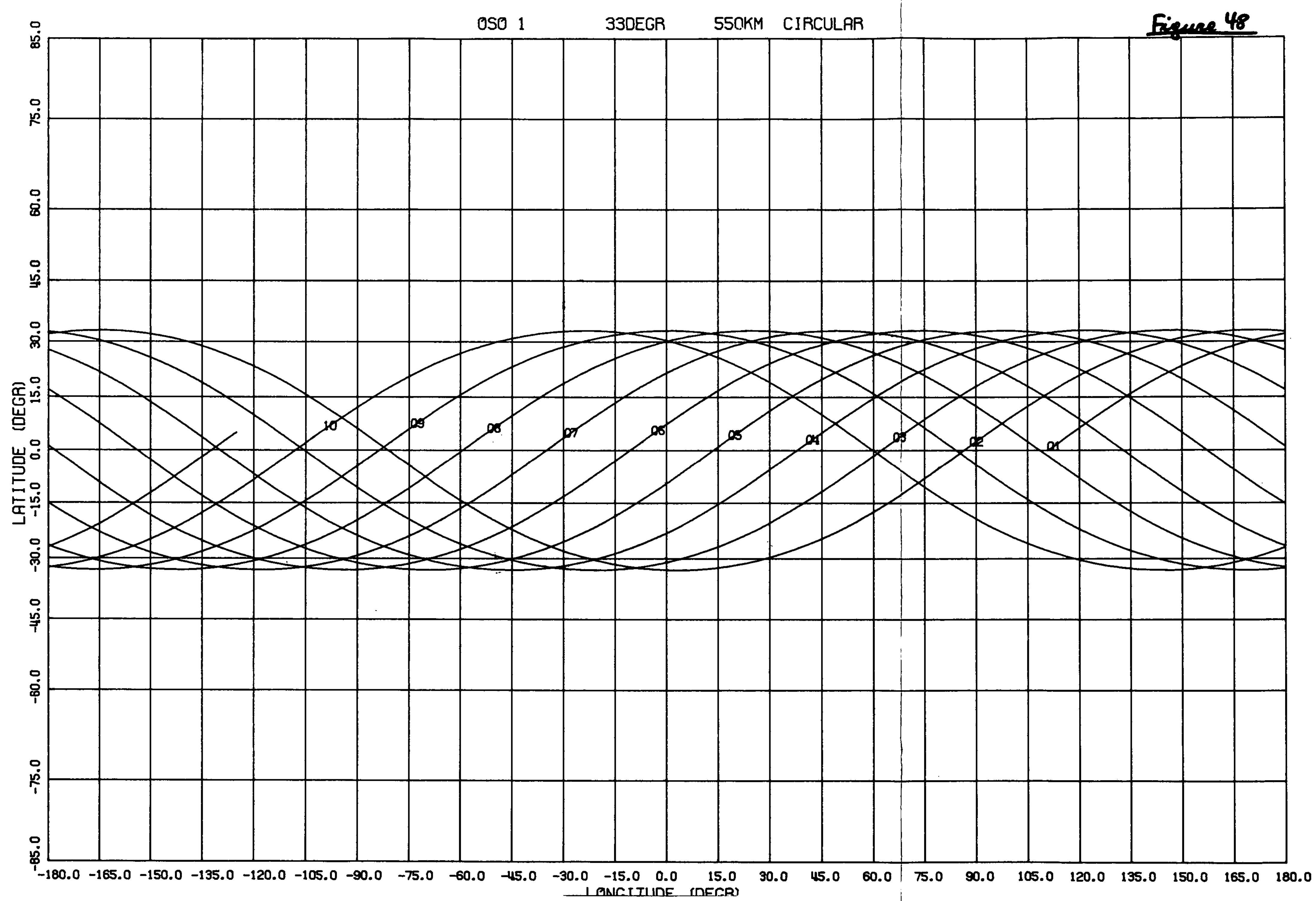
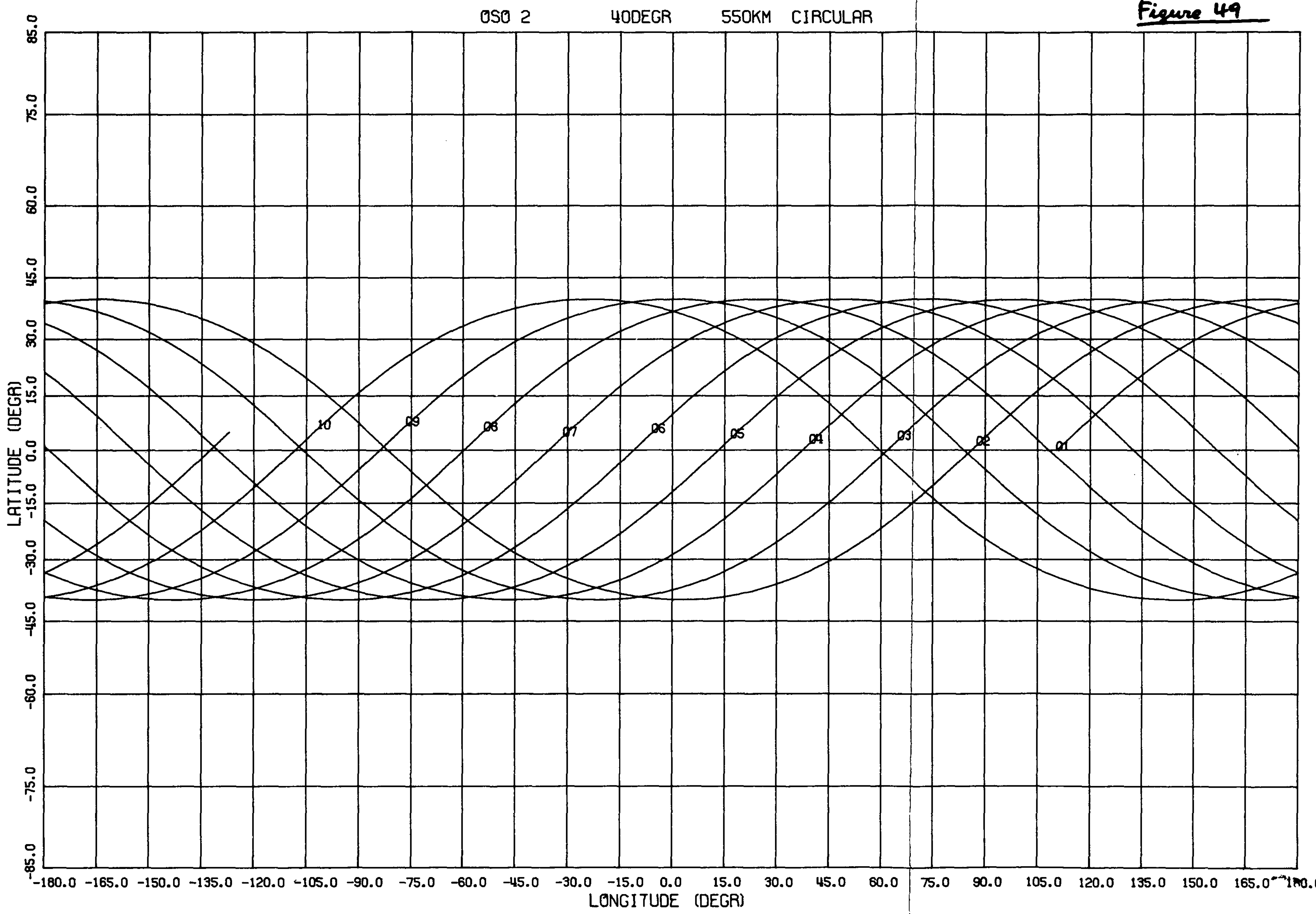


Figure 48

FOLDOUT FRAME 1

FOLDOUT FRAME 2

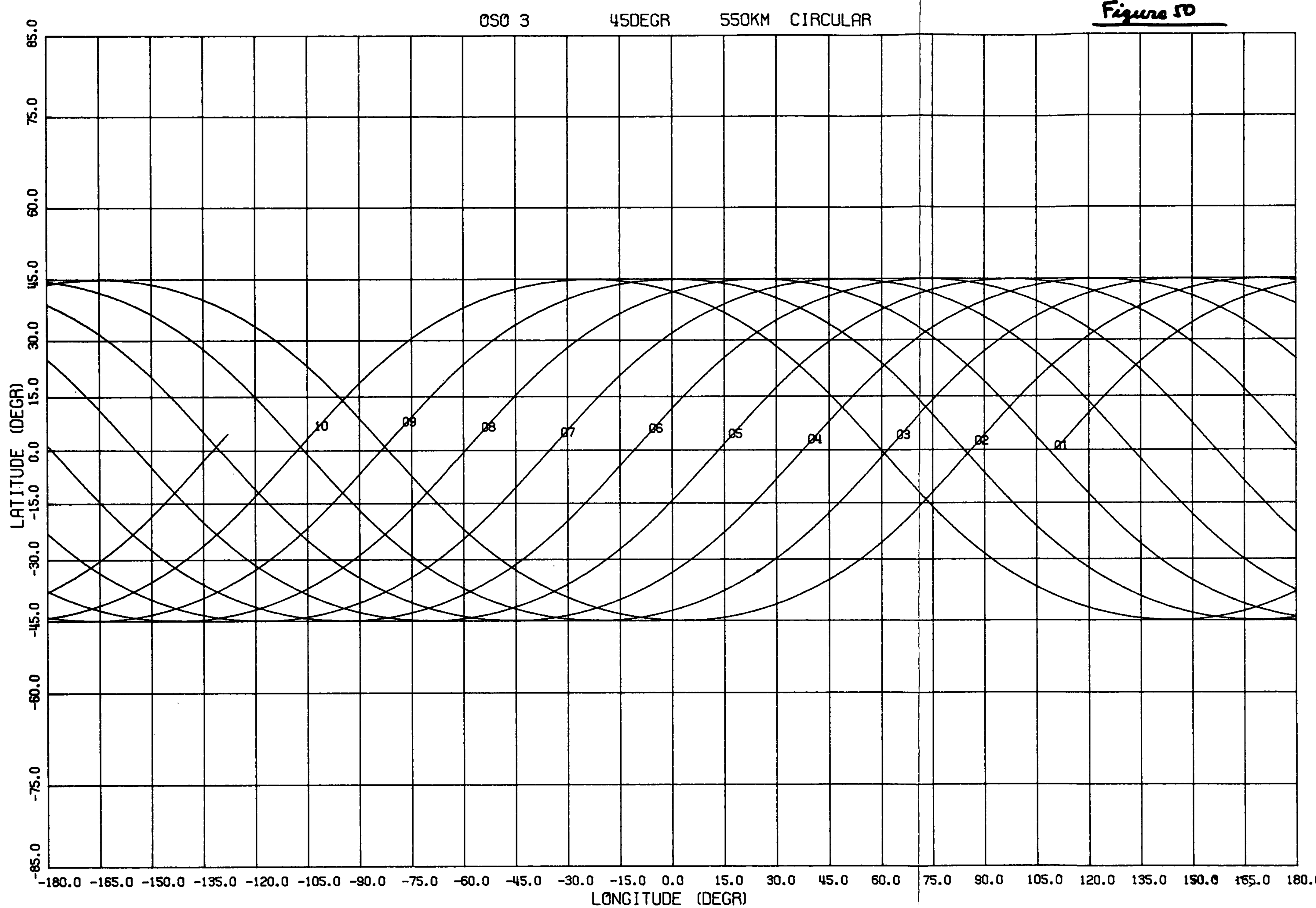
Figure 49



FOLDOUT FRAME 1

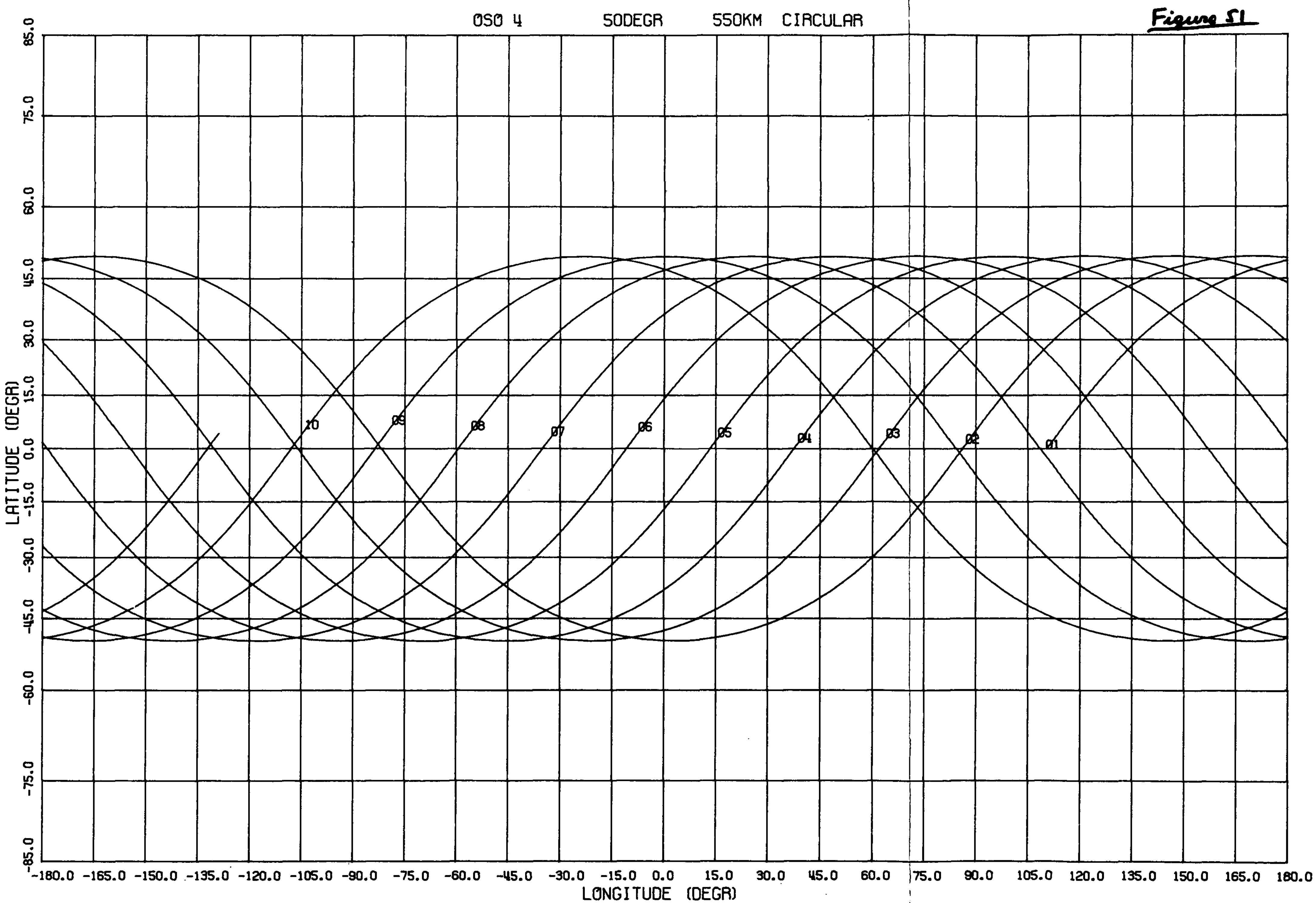
FOLDOUT FRAME 2

Figure 50



FOLDOUT FRAME 1

FOLDOUT FRAME 2



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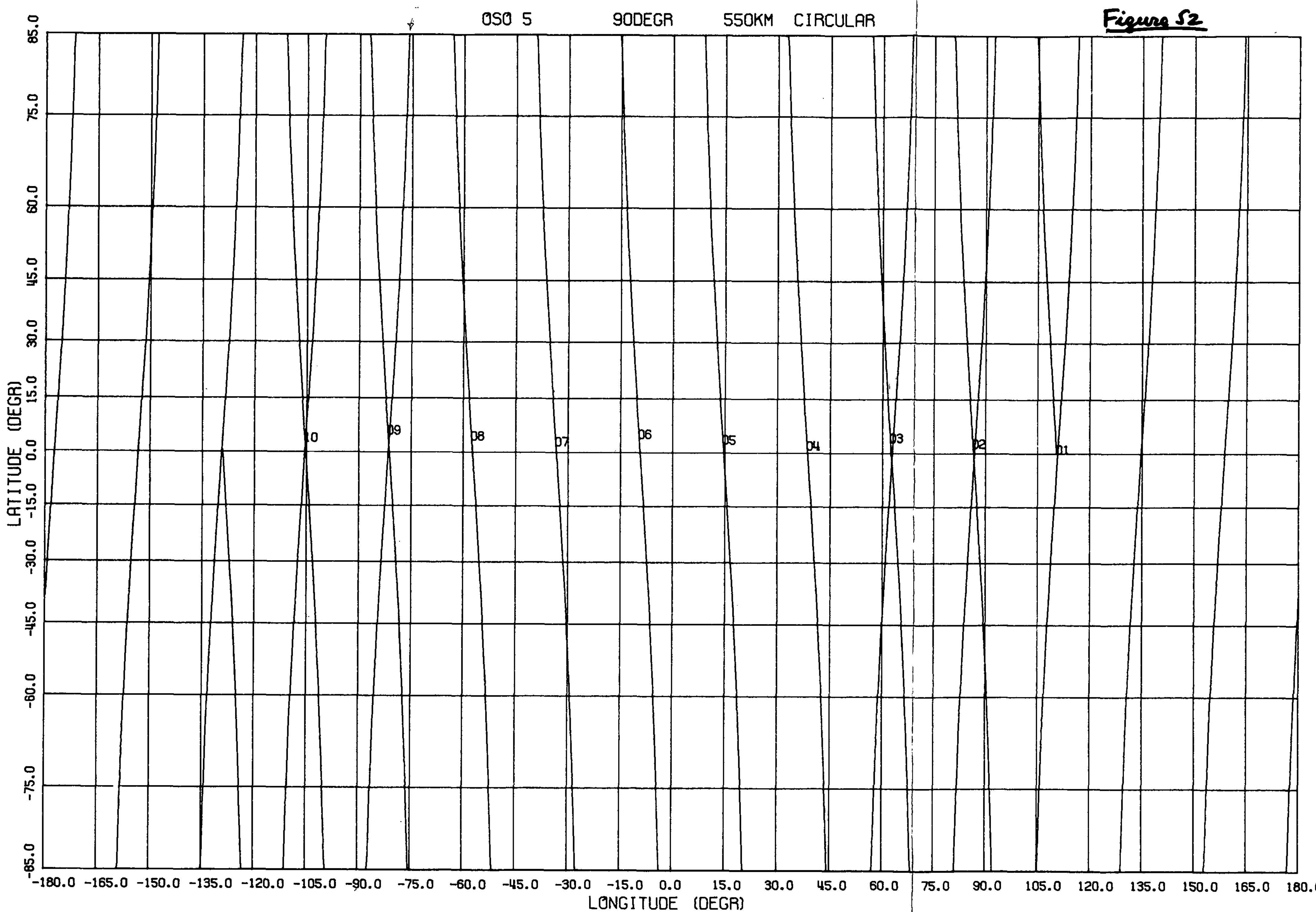
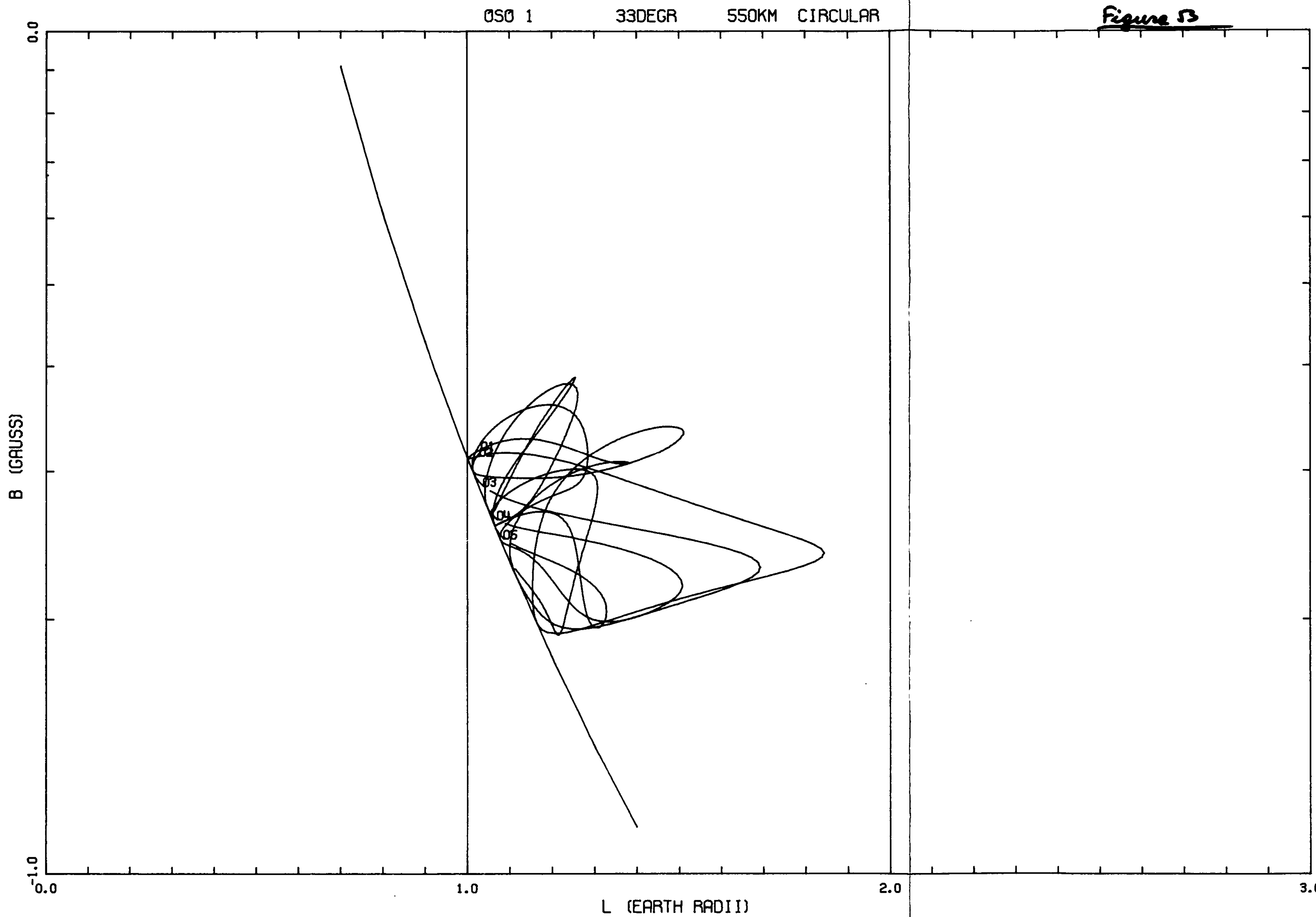
FOLDOUT FRAME 2



FOLDOUT FRAME 1

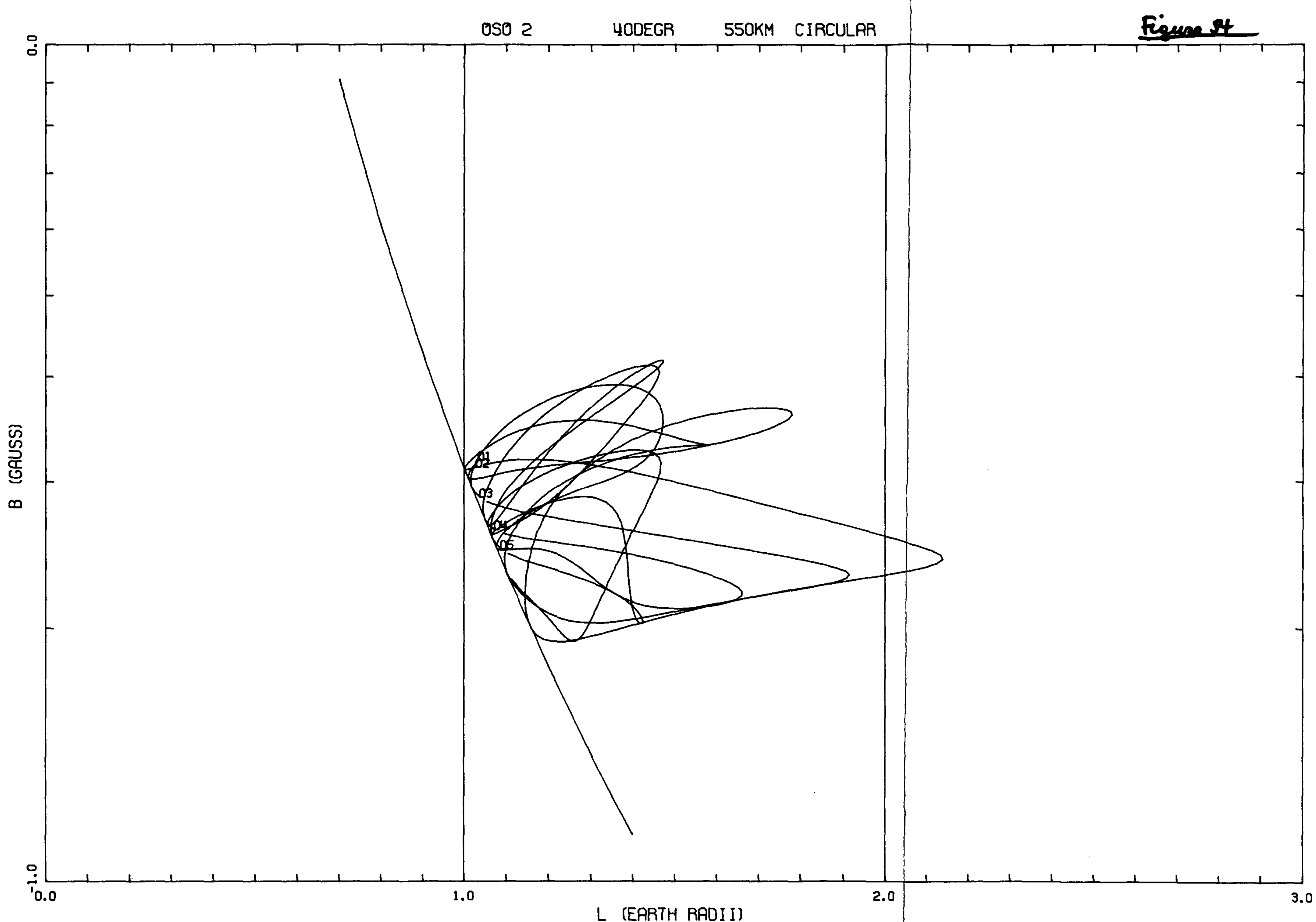
FOLDOUT FRAME 2

Figure 53



FOLDOUT FRAME 1

FOLDOUT FRAME 2

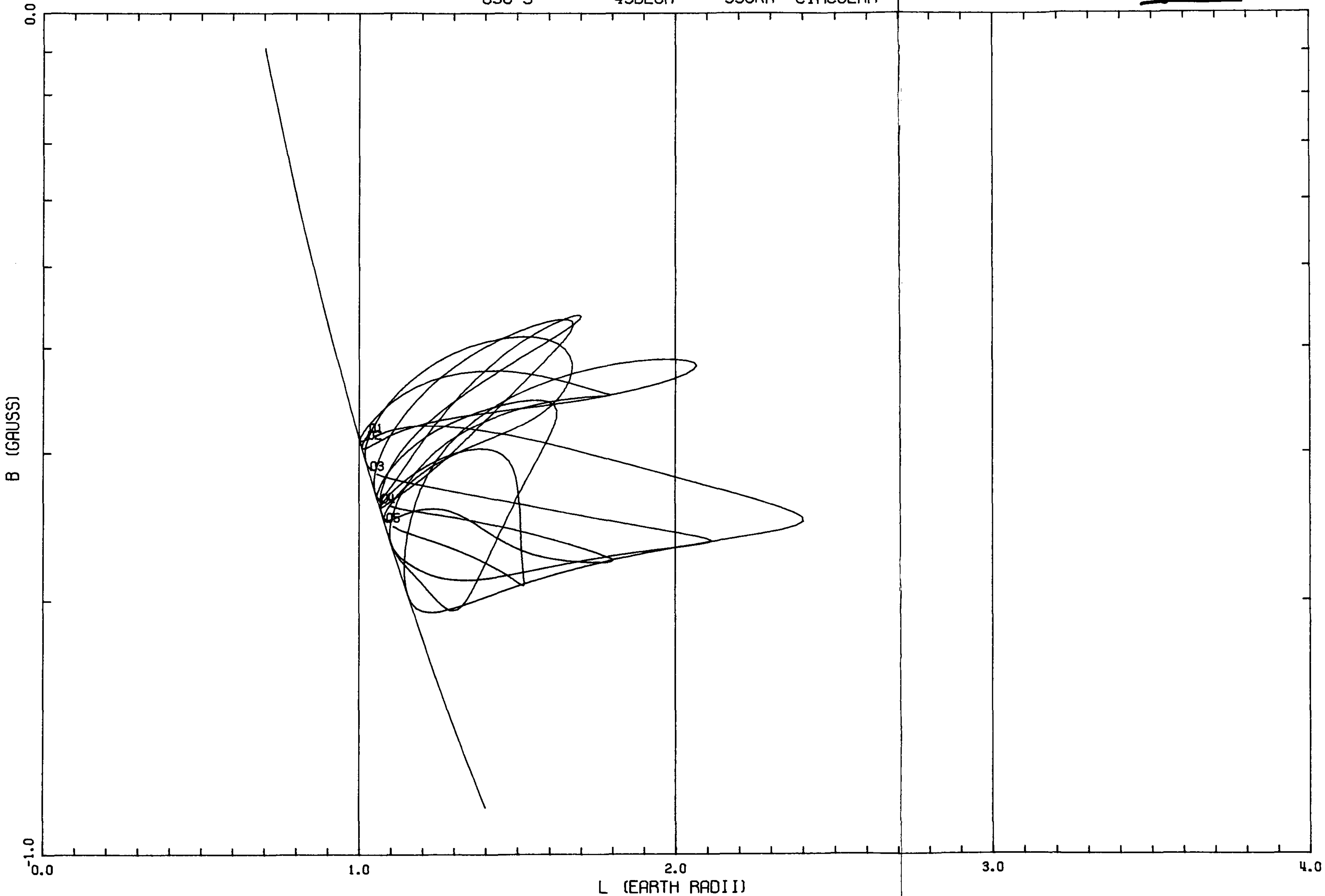


FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 55

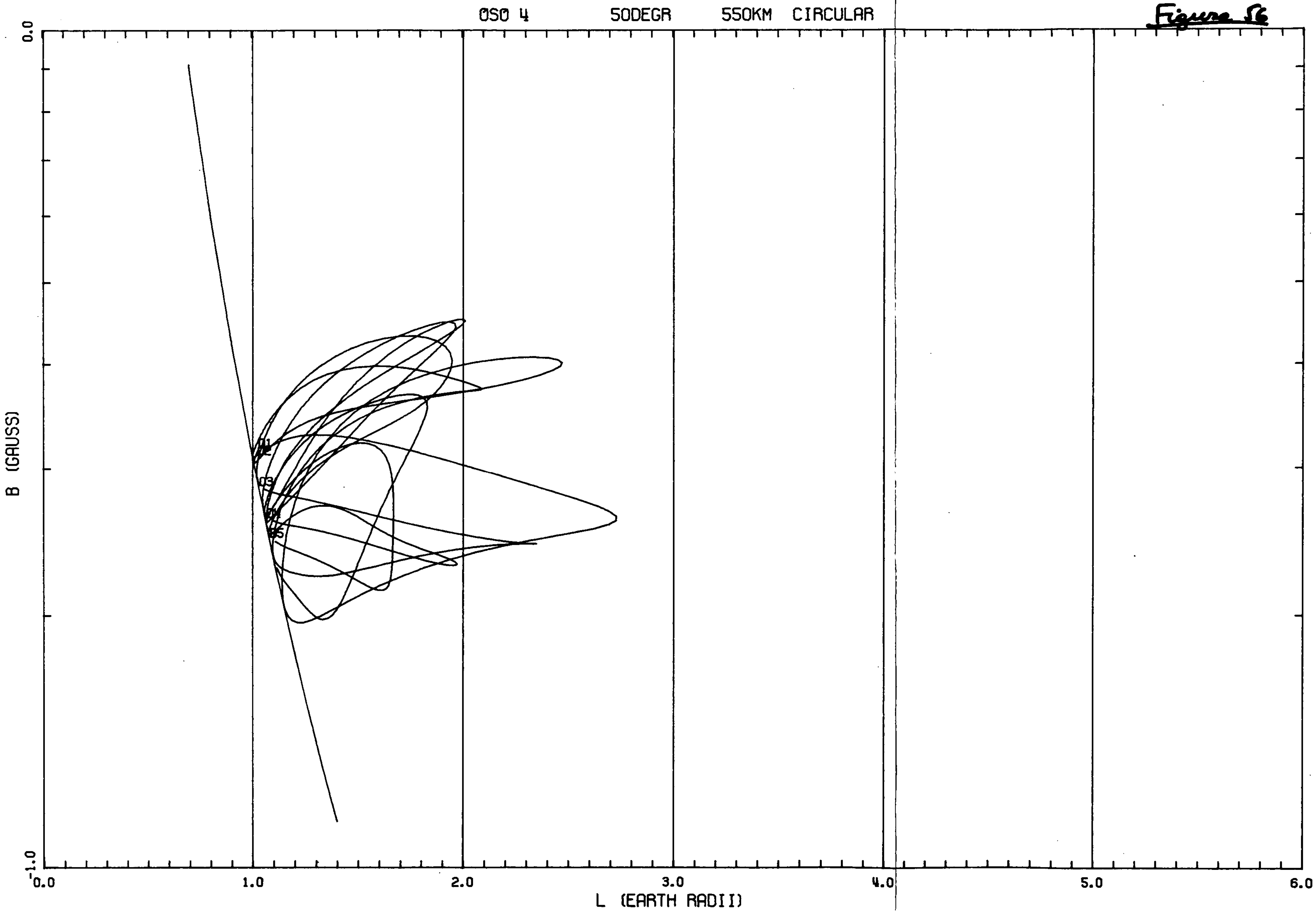
OSO 3 45DEGR 550KM CIRCULAR



FOLDOUT FRAME 1

FOLDOUT FRAME 2

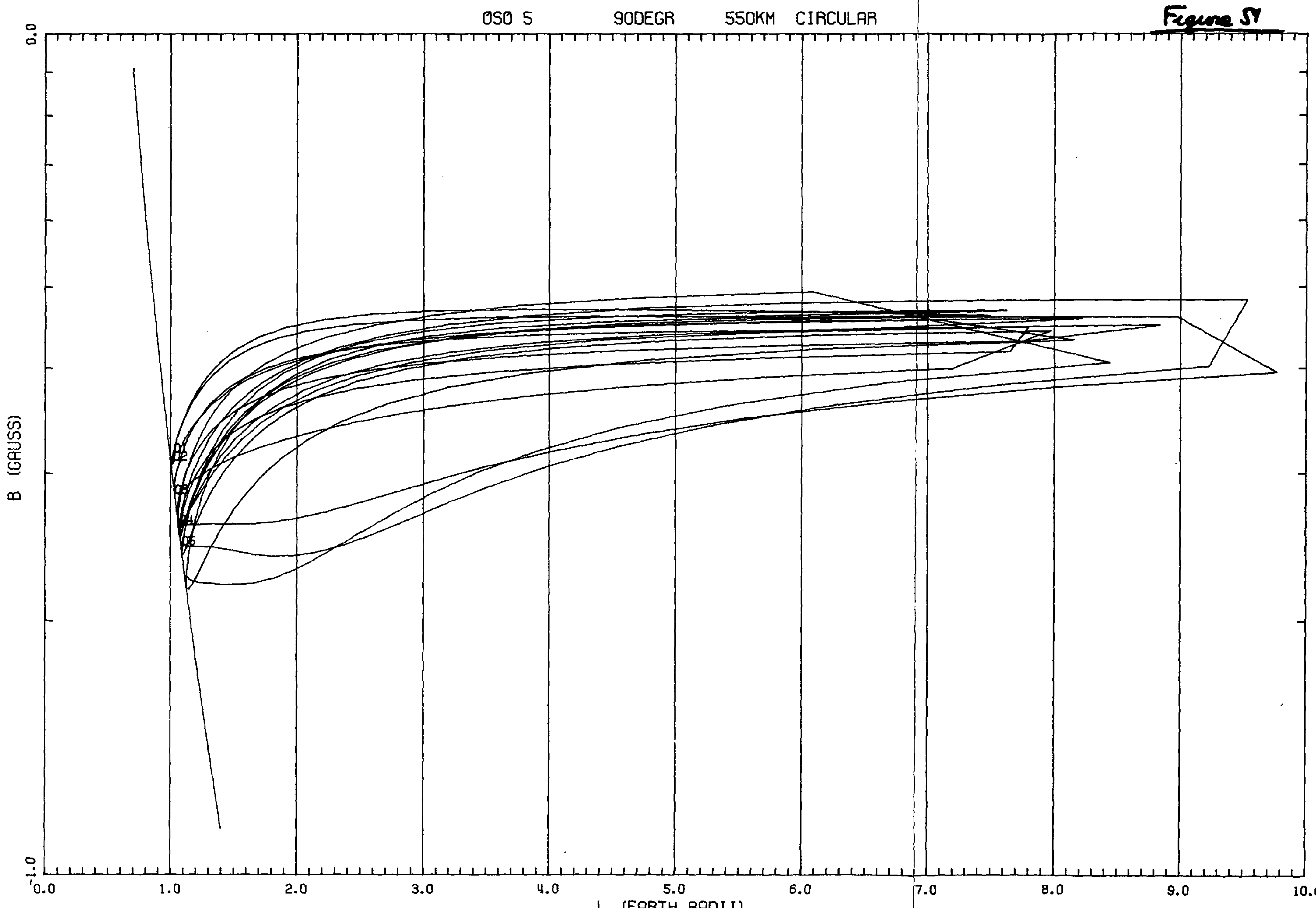
Figure 56



FOLDOUT FRAME 1

FOLDOUT FRAME 2

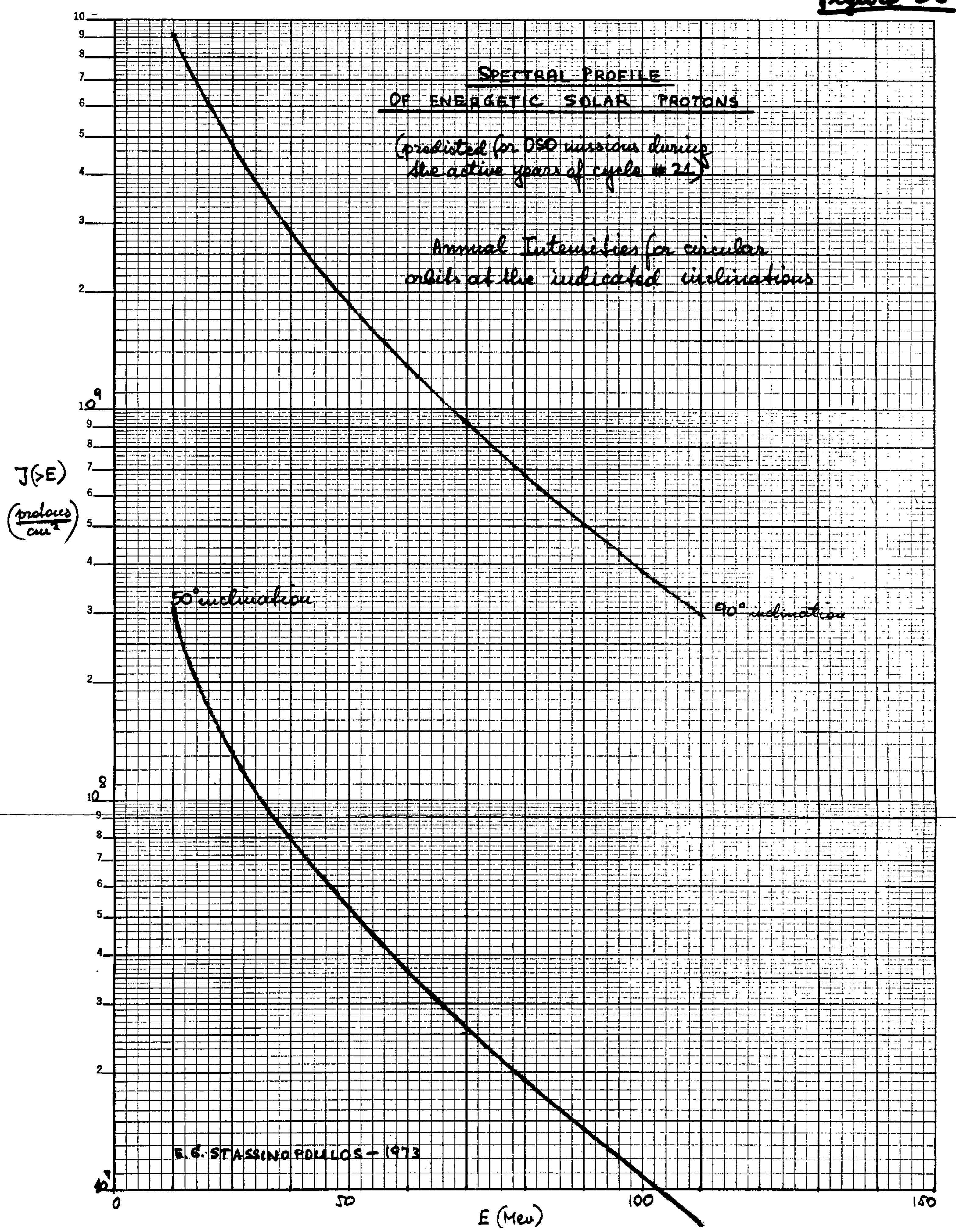
Figure 57



FOLDOUT FRAME 1

FOLDOUT FRAME 2

Figure 58



SPECTRAL PROFILE
OF ENERGETIC SOLAR PROTONS
(predicted for OSO missions during the active years of cycle #21)
Annual Intensities for circular orbits at the indicated inclinations
50° inclination
90° inclination
J(>E)
(protons/cm²)
E (Mev)
0
50
100
150
E.G. STASSINOPOULOS - 1973