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TOPEX ORBITAL RADIATION STUDY

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1. Introduction

At the request of the TOPEX Project Office, a comprehensive study was conducted to define the space radiation environment of the TOPEX spacecraft for a mission duration of 3 years and a tentative launch at 1989.2. For practical and economy reasons, a single trajectory was considered.

Following the precedent established with previous studies, the external (surface incident) charged particle radiation, predicted for the satellite, was determined by orbital flux integration for the specified trajectory (see section 3). The latest standard models of the environment were used in the calculations (see section 5). Because the launch epoch falls into the active phase of the solar cycle, the evaluation was performed for solar maximum conditions.

Magnetic field definitions for the nominal circular trajectory were obtained from a current field model.

Spatial and temporal variations or conditions affecting the static environment models were considered and accounted for, wherever possible.

The spacecraft exposure to cosmic rays of galactic origin is evaluated over its flight-path through the magnetosphere in terms of geomagnetic shielding effects, both for surface incident heavy ions and for particles emerging behind different material thicknesses.

Limited shielding and dose evaluations were performed for simple infinite slab and spherical geometries.

Results, given in graphical and tabular form, are analyzed, explained, and discussed. Conclusions are presented and commented on.

2. SPECIFICATION OF ORBITS

The analysis was based on nominal circular orbit with an altitude of 1334 kilometers and with an inclination if about 63 degrees.

3. GENERATION OF TRAJECTORIES

A flight path emphemeris was generated for the selected orbit with the GEODYN-BLCONV System[1] for a trajectory of 24-hour duration defined at 1-minute intervals. The length of the simulated orbit time and the integration stepsize were especially selected so as to provide sufficient point density to insure an adequate sampling of the ambient radiation environment when flying the trajectory through the models. The trajectory was subsequently converted from geodetic polar to magnetic B-L coordinates with McIlwain's INVAR program of 1965[2] and the field routine ALLMAG[3], which now utilizes the BARRACLOUGH 1975 field model[4]. The field computations were extrapolated to the tentative mission epoch of 1989.2 with linear time terms representing secular variations of the field.

4. FLIGHT PATH EXPOSURE TO TRAPPING DOMAINS

The investigated flight-path configuration displays a significant characteristic of high inclination orbits in magnetic L-space: they traverse the entire terrestrial radiation belt twice during each revolution, moving back and forth through regions of low L values (the inner zone: $1.0 < L < 2.8$), regions of high L values (the outer zone: $2.8 < L > 12$), and regions outside the trapping domain (external). Occasionally, some revolutions will also enter regions of space where no particle trapping can occur because of atmospheric cut-off conditions; that is, trajectory segments may have a combination of magnetic B and L values that place them outside the atmospheric cut-off limits of the models.

These excursions and the "external" visitations afford the satellite an amount of flux-free time, which may be of substantial duration (see section <u>12, C</u>).

5. TRAPPED PARTICLE ENVIRONMENT MODELS

The fluxes in this study were obtained from current NSSDC models: the solar maximum AE6 for the inner zone electrons[5], and the interim model AEI7 for the outer zone electrons[6], and the solar maximum version of the new AP8 model[7] for energetic trapped protons. It should be noted that the interim AEI7 does not reflect solar cycle variations in its present state. However, this model was issued in two versions, the AEI7-HI and the AEI7-LO, in order to account for differences in the data sets used in their construction. The AEI7-LO was used for this effort. All models describe an <u>average</u> <u>static</u> environment at a given epoch.

6. ORBITAL FLUX INTEGRATIONS

Orbital flux integrations were performed with the UNIFLUX[8] and the SOFIP[9] systems. UNIFLUX provided exposure times with B-L breakdown, while SOFIP provided the dose and shield data.

7. GEOMAGNETIC SHIELDING AND SOLAR FLARE PROTONS

Low inclination orbits experience a significant amount of geomagnetic shielding from cosmic rays of solar or galactic origin in the energy range $E > 10$ MeV. However, at 63 degree inclination, the TOPEX spacecraft will only intermittently be shielded from the unattenuated interplanetary cosmic environment, including solar flare proton intensities of all energies above 10 MeV.

Usually, geomagnetic shielding effects on geocentric missions are being evaluated with simple rigidity considerations because of substantial diurnal variations in the cutoff latitude associated with geomagnetic tail effects (2-4 degrees) and storm-induced changes (> 4 degrees). The simple analysis used here assumed that energetic solar protons of all energies above 10 MeV have free access to all magnetospheric regions external to a dipole shell of L=5 earth radii, which is equivalent to a cut-off latitude of about 63 degrees.

Predictions of solar flare proton fluxes at 1 AU are obtained as a function of mission duration τ and confidence level Q^* on the basis of a probabilistic analysis[10] using a modified type of Poisson statistics by a computerized model SOLPRO[11] that includes the distinction between "ordinary" (OR) and "anomalously large" (AL) events and the probability of occurence of the latter. Both AL-and OR-event fluences are non-linear functions of Q and τ.

For these predictions, only high quality comprehensive satellite measurements (not ground observations) were used, covering almost the entire 20th solar cycle. There have been indications that descriptions of the solar flare environment in interplanetary space (at 1 AU), derived from interpretations and extrapolations of ground-based measurements, have not been very accurate.

It should be noted that the statistics cannot predict when an AL event will occur; only the probability that one will occur in a given length of time. And it must be remembered that a single AL event will impart its total fluence within two to four days.

This implies that for unmanned satellites with mission durations of $\tau > 1$ year, OR-event fluence are not singnificant because probablistic theory predicts the possible occurrence of at least one AL event, even for the lowest allowable confidence level (Q=80%).

Incidentally, to a first approximation, the solar flare proton fluxes may be considered omnidirectional and isotropic, probably to with 10-15%.

8. FLUX DATA: TYPE, QUALITY, AND VARIATIONS

The trapped particle flux data available from the models represent omnidirectional, integral intensities that one would expect to obtain as average values over periods of time in excess of six months. But over most regions of magnetospheric space (L>2 earth radii), short term excursions can vary from these values by factors of 10^2 to 10^3, depending on the particle energies and on the type and intensity of the causative event. These variations, however, do affect the TOPEX mission because its trajectory enters regions of space where L is greater than 2 earth radii. Also, trapped particle populations experience changes due to: (a) local time (LT) dependence, and (b) solar cycle dependence. Both are of some consequence to TOPEX. The former is significant for spacecraft that sample regions where L > 5, which are visited by TOPEX. To compensate for these variations, the model provides LT-averaged values, which should yield an adequate approximation for missions of long duration ($\tau > 1$ year). The latter has been taken into account by selecting the appropriate solar cycle models.

Generally, solar cycle variations have opposite effects on each particle specie:

	Solar Min	Solar Max
Electron Intensities	lower	higher
Proton Intensities	higher	lower

*Q denotes the degree of confidence one wishes to assign to the results; namely that for the specified mission duration the calculated fluences are the smallest values which will not be exceeded by actually encountered intensities.

The solar cycle changes, as derived from a comparison of the corresponding models, are functions of energy E and magnetic parapmeter L. For the inner zone electrons, they may range from a factor of 1 to a factor of 5.

Protons are only affected in the vicinity of the atmospheric cutoff regions. No changes of consequence have been observed in the heart of the proton trapping domain. Proton changes have about the same range as those of the electrons.

It is necessary to emphasize that the calculations, although based on the best data available for the past epochs, can only serve as approximations for the future.

It also should be noted that a basic uncertainty factor of 2 is defined for the flux values of the AP8, while the AE6 is characterized by a weighted average uncertainty factor of 5 (minimum 2, maximum 10) . No uncertainty factor has been defined for the interim AEI7.

9. DOSE AND SHIELDING EVALUATION

Doses were calculated from the total orbit integrated, surface incident, omnidirectional, integral fluences by existing shielding codes[12], as functions of various aluminum shield thicknesses and geometries.

A simple procedure was followed, not involving solid angle sectoring or three-dimensional ray tracing considerations. Instead, a simple two-dimensional geometry with 2π steradian omnidirectional incidence and a cosine law for the incident spectra, and a three-dimensional spherical geometry with omnidirectional incidence were considered. (See comment in section 12D).

Bremsstrahlung calculations were performed with the same codes.

10. COSMIC RAYS

The interplanetary galactic cosmic ray background was attenuated by the degree of geomagnetic shielding experienced by TOPEX along its trajectory through the magnetosphere.

The exposure of TOPEX to the magnetospherically attenuated cosmic rays and the interaction of the heavy ions with the spacecraft materials, in terms of equivalent aluminum thicknesses, were then evaluated for simple structural configurations; that is, a three-dimensional spherical geometry with omnidirectional incidence was considered. The shielded cosmic ray fluxes emerging behind the selected material thicknesses were calculated with state-of-the-art transport codes[13].

11. RESULTS: PRESENTATION DESCRIPTION

This section describes the form and format in which the results, derived from the Orbital Flux Integration (OFI) process, are presented for practical use. Except where otherwise specified, all particle data in this report relate to integral, omnidirectional fluxes or fluences.

A. Tabular Presentations

The outcome of all calculations is summarized in Tables 1 to 36. The tables are arranged in seven sets, where every set pertains to one specific type of data. The first set has two similar members: one for trapped protons and one for electrons, in that order. The next three sets contain only one member. The fifth set contains three similar members. The sixth set contains one member. The seventh set contains twenty-seven similar members: one for each ion species considered in the study. A more detailed description of the tables is provided in the following paragraphs.

I. Spectral Profiles: Tables 1-2

Tabulation of average orbit-integrated spectral distributions. Composite spectra are given in units of: fluxes per square centimeter per second, fluxes per square centimeter per day, and total fluences per specified mission duration (3 years). For the electrons, the latter is also given in terms of inner and outer zone contributions. Functionally derived differential fluxes are listed in the last columns for both species of particles.

Total orbit-integrated spectra in percent, for energy intervals ΔE corresponding to selected energy levels are also given in terms of average instantaneous and daily intensities.

An exposure index (for energies $E_p > 5$ MeV for protons and $E_e > .5$ MeV for electrons) is listed for nine successive intensity ranges varying by one order of magnitude, in terms of processed exposure duration (in hours) and total number of particles accumulated while in that intensity range for the indicated number of hours.

II. Peaks and Totals Per Orbit: Table 3

These tables contain the absolute instantaneous peak fluxes and the total fluences accumulated during each successive revolution, as obtained from the nominal trajectory for the investigated flight duration (24 hours of mission time).

Specifically, there are nine columns on these tables. Column 1 is an orbit counting device, based on:

a) the orbit period when the trajectory is circular and lies in the equatorial plane;
b) the physical perigee in all elliptical flight-path cases; and,
c) 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 predicted peak flux was encountered. Columns 6, 7 and 8 determine respectively the relative orbit time and the magnetic B-L coordinates for this event. For the purpose of orbital radiation studies, all simulated trajectories start at t_o = hours. Finally, the last column indicates the total predicted flux to be 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.

III. Time-Accounting and Exposure-Analysis: Table 4

The "EXPOSURE-ANALYSIS" summary indicates what percent of its total lifetime T the satellite spends in "flux-free" regions of space, what percent of its total lifetime it spends in high intensity proton and electron domains, and while so exposed, what percent of its total 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 $E_p > 5$ MeV, and $E_e > .5$ MeV, respectively. By definition, this includes all regions external to the Van Allen 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 continuously in substantial numbers.

Similarly, as "high intensity" are defined those regions of space where the instantaneous, integral, omnidirectional, trapped-particle flux is greater than 10^3 protons with energies $E_p > 5.$ MeV, and greater than 10^5 electrons with energies $E_e > .5$ MeV.

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

The "TIME-ACCOUNT" breakdown shows what percent of its total time the satellite spends in the "inner zone" ($1.0 \leq L < 2.8$) and in the "outer zone" ($2.8 \leq L \leq 11.0$) electron trapping domains, and also the percent of time spent in regions external to the latter ($L > 11.0$).

It should be noted that the confinement of the outer zone within the boundary of the L=11.0 earth radii volume is arbitrary and has no physical meaning. It is intended only as a simplification to facilitate the calculations. The region considered "external" in this study ($L > 11.0$) is still partially a domain of the outer zone, at least as far out as L=12.0 earth radii, according to the current environment models.

A last item on this table: the inner zone time is further subdivided into two parts: the percentage of time spent outside ($L < 1.1$) and inside ($1.1 \leq L < 2.8$) the trapping domain.

IV. Solar Flare Proton Fluences and Exposure Factor: Table 5

For the specified mission duration τ (printed in the sub-title), and dipole cut-off shell (L=5 earth radii, shown in the header), this table lists the solar proton fluence-spectra (in units of particles per square centimeter) at five discrete confidence levels Q (given at the top of each column).

The exposure factors (in percent of total mission duration) obtained from the geomagnetic shielding analysis are also listed for four dipole cut-off shell values (in earth radii).

Caution: the AL-event solar flare protons are not contributed gradually over the investigated mission duration ($\tau = 3$ years) but are imparted in toto in a relatively short burst, that is, within approximately 2-4 days per AL event.

V. Total Dose and Components: Tables 6-8

These tables list doses in units of rads as a function of aluminum shield thickness, given in three ways: range s in grams per square centimeter, depth t in millimeters, and depth $\bar{t}$ in mils.

Electron, bremsstrahlung, and proton contributions to the overall sumtotal dose are given separately. Electron and proton doses are further broken down into their respective constituents; namely, inner zone and outer zone (if applicable) for the former, trapped and solar flare (if applicable) for the latter.

The specific mission duration for which the doses have been calculated is indicated in the table headline.

VI. Spacecraft Exposure to Heavy Ions: Table 9

For the specified total exposure time (printed in the subtitle) and for the indicated L-Bins (listed in columns 1 and 2), this table gives the rigidity in column 3 (in units of GV), the ion cut-off energy in column 4 (in units of MeV/nucleon), and the corresponding spacecraft exposure profile and accessibility profile in columns 5, 6, 7 and 8. The exposure profile is evaluated in terms of actual time spent in each L-Bin (column 5, in units of hours) and, normalized by the total exposure time, in terms of percent exposure (column 6). The accessibility profile is given for an inverse summation of the actual time spent in the L-Bins (column 7, in units of hours) and, normalized by the total exposure time, in percent (column 8).

VII. Cosmic Ray Spectra: Tables 10-36

Tabulation of average orbit-integrated spectral distribution. One table is printed for each ion specie considered in the study. The ion identification is given in the title. Ion energy is listed in column 1 in units of MeV/nucleon. Column 2 gives the unattenuated, interplanetary differential cosmic ray flux for the given ion. Column 3 gives the magnetospherically attenuated differential flux.

Columns 4 through 15 give the results of passing the attenuated cosmic ray flux through spherical aluminum shields of various radii, where column 4 contains the emerging energy (in units of MeV/nucleon) and columns 5 through 15 contain the emerging fluxes for these energies for 11 shield thicknesses (in gm/cm^2) which are indicated in the column heading. These shielded spectra are continued on the next page. All intensities are differential fluxes in units of particles/cm^2·day·MeV/nucleon.

B. Graphical Presentation

Some of the tabulated data are also plotted in Figures 1 to 4, and 7 to 15 with additional Figures 5 and 6 containing plots of flight path data. Positional flux and dose data are plotted in Figures 16-26. Cosmic ray data are plotted in Figures 27-55. As with the tables, the computer plots are arranged in ten sets, where again each set pertains to one specific type of data. The first set has two similar members: one for each particle species. The next three sets (second, third and fourth) contain one member. The fifth set contains nine similar members, providing three graphs (for respective depth ranges) for each of three geometries. The sixth set contains two similar members for each trajectory: one for each particle specie. The seventh set has nine members, providing proton, electron, and total dose graphs for each of three geometries. The eighth and and ninth sets contain one member. Finally the tenth set contains 27 members: one for each ion specie considered in this study.

I. Spectral Profiles: Figures 1-2

A graphical presentation of the final composite spectral distribution, obtained from the orbital integration process. The plots are semi-log graphs, where the abscissa is a linear energy scale for integral particle energies E, in MeV, and the ordinate is a logarithmic scale for the fluxes, given in daily averages for energies greater than E; the printed scale values are powers of 10.

II. Peaks Per Orbit: Figures 3-4

Here the absolute peak intensities, encountered per period (1 period = 1 revolution = 1 orbit), are plotted for the duration of the flight-time processed in the analysis. The logarithmic ordinate, with scale values in powers of 10, relates to instantaneous particle fluxes of the environment at the indicated energy thresholds, while the abscissa is a linear orbit enumeration.

III. Trajectory World Map Projections: Figure 5

This graph depicts the surface trace of the geocentrically projected subsatellite positions. The trajectory is plotted for several revolutions on a global map produced by a Miller Cylindrical Projection method. The contours of the continents have been omitted for clarity. The positions of equatorial crossing, of physical perigee, or of period commencement are indicated by numbers identifying the orbits shown in the graphs. For this trajectory, the distance between successive sequential numbers is a measure of the orbit precession. The highlighted portion of the flight path represents the "worst-case" pass through the South Atlantic Anomaly (SAA) selected for instantaneous Positional Flux and Dose calculations (see subsequent sections 11.B.VI and 11.B.VII).

IV. Flight Path Tracing in B-L Space: Figure 6

Plot showing trajectory traces in B-L space on a semi-log scale. Several orbits are depicted, each identified by its sequential number. The magnetic equator is entered on the plot. 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.

V. Dose-Depth Curves by Geometry: Figures 7-15

Plots of final depth-dose values for the indicated mission duration. These plots show contours of inner and outer zone electrons, trapped and solar flare protons, bremsstrahlung, and the sumtotal of all contributions.

For ease of use and in order to provide a greater resolution at the more sensitive range of depths (namely the thinner shields) three plots have been generated for each of the three geometries considered, for shield-ranges and subdivisions increasing by one order of magnitude.

The logarithmic ordinate, with scale values in powers of 10, relates aluminum dose in units of rads. The linear abscissa is the shield thickness, given in three different units: range s in grams per square centimeter, depth t in millimeters, depth t in mils.

VI. Positional Flux Plots: Figures 16-17

Plots of instantaneous omnidirectional trapped particle fluxes (electrons and protons) at (up to 10) specified threshold energy levels (>MeV), for a selected orbit (usually worst case revolution through heart of SAA).

The logarithmic ordinate, with scale values in powers of 10, relates to the number of particles per square centimeter per second. The linear abscissa is the relative time, in minutes or hours, from the beginning of the selected orbital pass.

VII. Positional Dose Plots by Geometry: Figures 18-26

Plots of instantaneous omnidirectional trapped particle dose values 10) specified shield thicknesses (omnidirectional isotropic incidence, cosine-theta distribution) for a selected orbit (usually worst case revolution through heart of SAA). Separate plots are generated (if present) for: electron dose (including bremsstrahlung), proton dose, and total dose (no solar proton contributions are included) for dose at transmission surface of aluminum slab shields, dose in semi-infinite aluminum medium, and dose at center of aluminum spheres.

The logarithmic ordinate, with scale values in powers of 10, relates to the respective dose in units of rads-aluminum. The linear abscissa is the relative time, in minutes or hours, from the beginning of the selected orbital pass.

VIII. Cosmic Ray Exposure Profile: Figure 27

This graph shows the relative exposure time to cosmic rays, plotted as a function of mean L-Bin values. The ordinate relates to the actual time spent in each L-Bin normalized by total exposure time and given in percent. The abscissa relates to the mean L-Bin values in units of L.

IX. Accessibility Profile: Figure 28

This graph shows the normalized L-Bin summation plotted versus energy. The ordinate relates to the L-Bin summation values given in percent of the total exposure time for the orbit. The abscissa relates to the ion cut-off energy in units of MeV/nucleon.

X. Cosmic Ray Spectra: Figures 29-55

For each cosmic ray ion specie, a plot of the differential cosmic ray flux data is given. Each plot shows the unattenuated, interplanetary cosmic ray flux, the magnetospherically attenuated flux for the TOPEX spacecraft, and the shielded attenuated cosmic ray fluxes for various spherical aluminum shields of indicated thicknesses.

The logarithmic ordinate, with scale values given in powers of 10, relates to the number of particles per square centimeter per day per MeV/nucleon. The linear abscissa is the ion energy in MeV/nucleon.

12. RESULTS: ANALYSIS AND DISCUSSION

In this section, some of the presented tabular or graphical study-results are discussed, with occasional comments as to their use, limits, and applications.

A. Spectral Profiles

Characteristic features of the near earth radiation environment are strong altitude and inclination dependencies. However, as only one inclination and one altitude was considered in this study, the data do not reflect the important effect of these variables. It should be noted that at high inclination values ($60° < i < 90°$) small changes in either direction, up or down, will not produce significant changes in flux levels and spectral distributions. The greatest inclination dependent variations occur in the range $0° < i < 35°$.

I. Protons:

In the altitude domain of TOPEX, average orbit integrated intensities rise significatly with increasing height. For the investigated trajectory the protons exhibit a relatively hard spectrum. Over the energy range from E > 30 MeV to E > 500 MeV, the proton distribution is shown as a nearly straight line in the log-linear plot of Figure 1. It should be noted, however, that the spectrum will not continue in this manner to much higher energies because the conditions for stable trapping break down. Therefore, it is not advisable to extrapolate the spectral curves to still higher energies.

II. Electrons:

The electrons show a complex spectrum. Inner zone and outer zone average, orbit-integrated, composite intensities rise non-uniformly with altitude, particularly at energies above 2 MeV with differences reaching up to several orders of magnitude at $E_e > 5$ MeV. Spectra also extend to higher energies as height increases.

These composite electron distributions cannot be represented by either exponential or power law forms. The inner zone spectra fall rapidly off to zero flux in the energy range from 4 to 5 MeV and they are therefore more benign then their harder out-zone counterparts, which extend to energies of about 7 MeV.

B. Peaks and Totals Per Orbit

The absolute peaks per revolution have been obtained for standard processing energies: $E_p > 5$ MeV for protons and $E_e > .5$ MeV for electrons. Other energy selections produce different peak curves in an inverse relationship: lower energies yield higher intensities and more expanded contours, and vice versa.

Peak value contours of inclined circular trajectories display amplitude variations and sometimes discontinuities (flux-free time) that follow periodic patterns based on the daily cycle of revolutions. For fixed energies, peak magnitudes and discontinuities are functions of: (a) inclination i, and (b) altitude h.

Variations in either i or h may produce significant changes in the amplitude of the peak curves and in the duration of the discontinuities: up to several orders of magnitude for the former, and completely eliminating the latter.

C. Flux-Free Time

Some comments on this topic have been provided in the previous section and in section 11/A/III. Here a more detailed discussion will be given.

Flux-free time (FFT) intervals are an important feature of certain orbital configurations. They may occur over short orbit segments (partial FFT per period) or over the entire length of a revolution (total FFT per period). In terms of geomagnetic geometry, the FFTs establish the duration for which the trajectory lies outside the trapping domain of the corresponding particle specie, evaluated at the given energies. Or conversely, they are a measure of the degree to which the trajectory is exposed to the charged particle trapping domains.

One manifestation of extended FFT occurrence is the sharp drop-off of the proton peak contours to almost the zero-flux level. For some trajectory configurations, this may happen for several orbits in the investigated study-duration of 24 hours. That is, for the entire length of the respective revolutions, no Van Allen belt radiation at all is to be encountered by the satellite, according to model predictions.

The number of consecutive flux-free orbits of circular trajectories is primarily a function of altitude and inclination and to a lesser degree a function of particle energy. For the TOPEX mission, the total FFT in percent of total mission duration, which includes the contributions from partially exposed revolutions (see "Exposure Analysis," Table #5), can be summarized as follows:

	Protons (E > 5 MeV)	Electrons (E > .5 MeV)
Solar Maximum	46%	15%

Generally, higher energies will yield longer FFT's because the more energetic particles occupy a smaller volume of space.

D. Dose and Shielding

At medium-to-high shield thicknesses, the calculated doses display features characteristic of the near earth radiation environment: small contributions from relatively benign and low intensity electron spectra combined with major contributions from comparatively harder proton spectra.

The trapped proton-dose dominance prevails for all shield thicknesses greater than about 120 mils of aluminum for the spherical geometry.

Significant is the fact that, for aluminum, the proton dose is only a weak function of shield thickness, as it shows very little attenuation over a large depth range. Thus, in order to get an appreciable reduction in the dose, say by a factor of 2, a nearly 7-fold increase in shield thickness is necessary. The same is true for the bremsstrahlung dose.

I. Decay and Degradation

The total doses obtained for the 3 year mission duration are severe. In terms of electronics damage or materials degradation, the doses to be experienced inside the satellite, that is, behind an overall (hypothetical) spherical aluminum shield thickness of about 150 mils, are approximately 32 krads, which may be catastrophic for sensitive components or equipment. Electronic parts and circuits that are not radiation hardened, may suffer serious damage. This can result in failures very early in the mission. Parts screening and testing is advisable. Selection of less sensitive parts or substantial shielding may be necessary.

II. Contamination and Interference

It should be remembered, that the direct or indirect effects of the radiation environment may also be a nuisance in terms of instrument interference or measurement contamination. If such is the case, some remedies may be available (see next section).

III. Possible Improvements

In conclusion, in the event that the magnitude of total dose or the degree of radiation penetration behind the skin of the satellite is of importance to the mission, four possibilities exist to reduce the radiation effects on instruments and components:

a) build or design an instrument less sensitive to radiation and construct the on-board and/or on-ground data processing software to remove or suppress radiation-induced noise,

b) select radiation resistant parts,

c) change the orbit by any combination of the elements eccentricity, altitude, and inclination so as to achieve a more benign environment,

d) change the mission epoch: solar max for reduced proton intensities, solar min for reduced electron intensities,

e) provide increased shielding either by geometry or by weight by a combination of both;

   by geometry: perform a 3-D analysis (solid angle sectoring) and rearrange other equipment on board the satellite in order to provide maximum protection to sensitive part over greatest possible fraction of solid angle.*

   by weight: place additional shields around sensitive part as needed (spot shielding).

Clearly options (a) and (d) are good choices because they can be addressed during the early spacecraft design stages.

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* Complex radiation shielding and transport calculations can now be performed at GSFC. It is now possible to address such topics as: (a) material mixtures, cross sections for protons, electrons, heavy charge particles, and neutrons, including source spectra and response functions; (b) source geometry, detector geometry, surfaces, rays, bodies, regions, body intersections, body unions, simple meshes, design bodies, spacecraft rays, with diverse features such as combinatorial options, translate-rotate-replicate capabilities, etc.; (c) heavy charged particle applications-1D transport by numerical integration, small volume pulse height (soft errors), 3D ray trace sectoring, 3D adjoint Monte Carlo; (d) electron bremsstrahlung-1D transport by numerical integration and by adjoint Monte Carlo, small volume pulse height, 3D ray trace sectoring, 3D forward and adjoint Monte Carlo, energy deposition, charging distributions. (For information and cost estimates contact: E. G. Stassinopoulos, NASA-GSFC-NSSDC, Code 601, Greenbelt, Maryland 20771, telephone 301-344-8067).

E. Galactic Cosmic Rays

For the elements from He to Ni, the plots show the unattenuated interplanetary cosmic ray spectra, the magnetospherically attenuated orbit-integrated spectra (incident on the surface of the spacecraft), and, derived from this latter, the shielded spectra of emerging particles behind selected thicknesses of spherical Aluminum geometries. Although not scientifically correct, the cosmic ray incidence may be assumed omnidirectional, for practical application purposes. The error introduced by this simplification lies, for most cases, well within the large intrinsic uncertainties associated with these types of estimates and calculations.

The most important (but predictable and expected) features of the data in Figures 29-55, are:

1. the substantial attenuation by the earth's magnetic field of all particles in the investigated energy domain (10-3000 MeV/n);

2. the insignificant effect of material shielding in the energy range from about 90 to 3000 MeV/n: no substantial decrease in fluxes even for 10 gm/cm^2 Al (approximately 1.5 inches);

3. the unavoidable shielding side-effect of a significant increase in the low energy (.2-50 MeV/n) fluxes for shield thicknesses > .1 gm/cm^2 Al.

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*******************************************************************************************************************
** CFEITAL FLUX STLCY WITH COMPOSITE PARTICLE ENVIRCNMENTS: VETTES AP8; AE6, AE17 FCR SCLAR MAXIMUM  ***  LNIFLLX OF 1SF4  **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RLN ARE:  FCR FRCTCNS (AP8) - UF= 1.0;  FCF INNER ZONE ELECTRUNS (AE6) - UF= 1.0  **
** MAGNETIC CCCRCINATES E ANC L COMPUTED BY INVARA CF 1S72 WITH ALLMAG, MCDEL 4:  BAFFACLGUGH ET.AL. IGE-TRM 1S75 * TIME= 1S8S.2 **
** VEHICLE 1 TCPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1271KM ** APOGEE= 1334KM ** E/L CREIT TAPE: TC5276 ** PERICD= 1.872 **
** FCR INFCRMATICN OR EXPLANATION CONTACT E.G. STASSINCFCULCS AT NASA-GSFC,CCDE 601, CREENBELT, MARYLAND 20771,TEL.(301)-344-8067 **
*******************************************************************************************************************
                              ****************     FFCTCNS     ****************
                              **************************************************
```

***** SPECTRUM IN FERCENT CELTA ENERGY *****

ENERGY RANGES >(MEV)	AVERAGED TCTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PERCENT
.1000-2.000	9.341E 04	8.C70E 0S	61.202
2.000-5.000	1.340E 03	1.16SE 06	C.883
5.00C-8.000	4.723E 02	4.C81E C7	C.30S
8.000-10.00	2.069E C2	1.788E C7	C.136
10.00-25.00	5.767E 02	4.983E 07	C.378
25.00-50.00	2.920E 02	2.523E C7	C.191
50.00-100.0	3.284E 02	2.837E 07	C.215
100.0-500.0	4.947E C2	4.274E C7	C.324
500.0-CVER	1.126E 01	9.727E 05	C.CC7
TCTAL	9.714E 04	8.393E CS	63.646

***** EXPCSURE INCEX: ENERGY>5.000 MEV *****

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERC FLUX	11.083	0.C
1.E0-1.E1	1.517	2.766E C4
1.E1-1.E2	1.967	2.821E C5
1.E2-1.E3	2.983	4.754E C6
1.E3-1.E4	4.300	5.873E C7
1.E4-1.E5	2.150	1.420E C8
1.E5-1.E6	0.0	0.0
1.E6-1.E7	0.0	0.C
1.E7-CVER	C.0	0.C
TCTAL	24.000	2.C58E C8

**** CCMFCSITE CRBIT SPECTRUM ****   TAU= 2.0C0C0 YEAR(S)

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX #/CM**2/SEC	AVERAGED INTEG.FLUX #/CM**2/DAY	AVERAGED INTEG.FLUX #/CM**2/TAU	AVERAGED DIFFER.FLUX #/CM**2/SEC/KEV
.4CCCE-01	1.526E 05	1.319E 10	1.444E 13	1.171E 02
.7CCCE-01	1.210E 05	1.046E 10	1.145E 13	8.578E 02
.1CC0E C0	9.714E 04	8.393E 09	9.190E 12	6.885E C2
.5CCC	1.581E 04	1.366E 09	1.496E 12	6.5C3E C1
1.CCC	6.529E 03	5.641E 08	6.177E 11	1.084E 01
2.CC0	3.730E 03	3.223E 08	3.529E 11	2.154E 0C
3.C0C	3.069E 03	2.651E 08	2.903E 11	6.108E-01
4.CCC	2.658E 03	2.297E 08	2.515E 11	3.726E-01
5.C0C	2.382E 03	2.058E 08	2.254E 11	2.365E-01
6.CC0	2.164E 03	1.887E 08	2.066E 11	1.756E-01
8.CCC	1.910E 03	1.650E 08	1.807E 11	1.183E-01
1C.CC	1.7C3E 03	1.471E 08	1.611E 11	8.476E-02
15.CC	1.432E 03	1.237E 08	1.354E 11	4.758E-C2
2C.00	1.223E 03	1.057E 08	1.157E 11	2.972E-02
25.0C	1.126E 03	9.731E 07	1.066E 11	2.013E-02
3C.00	1.039E 03	8.977E 07	9.830E 10	1.434E-02
35.00	9.829E 02	8.492E 07	9.299E 10	1.157E-02
4C.00	9.3C2E 02	8.037E 07	8.801E 10	1.025E-02
45.CC	8.8C8E 02	7.610E 07	8.333E 10	9.512E-03
5C.CC	8.343E 02	7.208E 07	7.893E 10	8.758E-03
6C.CC	7.538E 02	6.513E 07	7.132E 10	7.615E-03
8C.00	6.167E 02	5.329E 07	5.835E 10	6.164E-03
1CC.0	5.059E 02	4.371E 07	4.786E 10	5.043E-03
15C.C	3.060E 02	2.644E 07	2.895E 10	3.033E-03
2CC.C	1.868E 02	1.614E 07	1.767E 10	1.821E-03
25C.0	1.161E 02	1.003E 07	1.098E 10	1.168E-03
3C0.C	7.241E 01	6.256E 06	6.850E 09	6.820E-04
35C.0	4.531E 01	3.915E 06	4.287E 09	4.240E-04
4CC.C	2.843E 01	2.456E 06	2.689E 09	2.646E-C4
5CC.C	1.126E 01	9.727E 05	1.065E 09	1.042E-04

TABLE 1

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*****************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AE17 FOR SOLAR MAXIMUM    ***     UNIFLUX OF 1984   **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE:   FOR PROTONS (AP8) - UF= 1.0;  FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0   **
** MAGNETIC COORDINATES B AND L COMPUTED BY INWARA OF 1972 WITH ALLMAG, MODEL  4:  BARRACLOUGH ET.AL. IGE-TRM 1975 * TIME= 1989.2 **
** VEHICLE 1 TOPEX 3 YEAR ** INCLINATION= 630EG ** PERIGEE= 1334KM ** APOGEE=  1334KM ** B/L ORBIT TAPE: TOP376 ** PERIOD=  1.0272 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-6067 **
*****************************************************************************************************************************
                                            ****************   ELECTRONS LC   ****************
                                            **************************************************
```

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

ENERGY RANGES >(MEV)	AVERAGED TOTAL FLUX #/CM**2/SEC	AVERAGED TOTAL FLUX #/CM**2/DAY	SPECTRUM PERCENT
.1000-.5000	4.104E 06	3.546E 11	97.028
.5000-1.000	1.154E 05	9.975E 09	1.666
1.000-1.500	2.085E 04	1.802E 09	0.341
1.500-2.000	7.935E 03	6.855E 08	0.130
2.000-3.000	4.474E 03	3.865E 08	0.073
3.000-4.000	1.365E 03	1.179E 08	0.022
4.000-5.000	2.649E 02	2.289E 07	0.004
5.000-6.000	1.565E 01	1.352E 06	0.000
6.000-OVER	1.101E-02	9.511E 02	0.000
TOTAL	4.254E 06	3.676E 11	99.464

***** EXPOSURE INDEX: ENERGY>.5000 MEV *****

INTENSITY RANGES #/CM**2/SEC	EXPOSURE DURATION (HOURS)	TOTAL # OF ACCUMULATED PARTICLES
ZERO FLUX	3.483	0.0
1.E0-1.E1	0.300	5.632E 03
1.E1-1.E2	0.883	1.440E 05
1.E2-1.E3	1.667	3.025E 06
1.E3-1.E4	3.417	4.581E 07
1.E4-1.E5	5.733	8.120E 08
1.E5-1.E6	7.700	8.845E 09
1.E6-1.E7	0.617	3.260E 09
1.E7-OVER	0.0	0.0
TOTAL	24.000	1.255E 10

****** COMPOSITE ORBIT SPECTRUM ****** TAU= 3.00000 YR(S)

ENERGY LEVELS >(MEV)	AVERAGED INTEG.FLUX **TOTAL** #/CM**2/SEC	AVERAGED INTEG.FLUX **TOTAL** #/CM**2/DAY	**** AVERAGED INTEGRAL FLUENCE **** * TOTAL = #/CM**2/TAU	INNER ZONE + #/CM**2/TAU	OUTER ZONE * #/CM**2/TAU	AVERAGED DIFFER.FLUX **TOTAL** #/CM**2/SEC/KEV
.4000E-01	6.122E 06	5.290E 11	5.792E 14	5.451E 14	3.415E 13	3.739E 04
.7000E-01	5.094E 06	4.402E 11	4.820E 14	4.546E 14	2.740E 13	3.180E 04
.1000E 00	4.254E 06	3.676E 11	4.025E 14	3.804E 14	2.212E 13	2.824E 04
.2000	1.969E 06	1.701E 11	1.863E 14	1.726E 14	1.371E 13	1.549E 04
.3000	8.421E 05	7.276E 10	7.967E 13	7.310E 13	6.570E 12	7.062E 03
.4000	3.414E 05	2.950E 10	3.230E 13	2.595E 13	6.354E 12	2.729E 03
.5000	1.504E 05	1.299E 10	1.422E 13	9.495E 12	4.726E 12	1.016E 03
.6000	1.013E 05	8.748E 09	9.579E 12	5.540E 12	4.039E 12	4.344E 02
.7000	7.136E 04	6.165E 09	6.751E 12	3.294E 12	3.456E 12	2.204E 02
.8000	5.418E 04	4.681E 09	5.125E 12	2.162E 12	2.963E 12	1.419E 02
.9000	4.329E 04	3.740E 09	4.095E 12	1.553E 12	2.542E 12	5.740E 01
1.000	3.451E 04	3.016E 09	3.302E 12	1.119E 12	2.184E 12	7.118E 01
1.250	2.208E 04	1.908E 09	2.089E 12	6.695E 11	1.420E 12	4.047E 01
1.500	1.405E 04	1.214E 09	1.330E 12	4.018E 11	9.279E 11	2.452E 01
1.750	9.257E 03	7.998E 08	8.758E 11	2.663E 11	6.095E 11	1.493E 01
2.000	6.119E 03	5.287E 08	5.789E 11	1.767E 11	4.022E 11	9.024E 00
2.250	4.516E 03	3.902E 08	4.273E 11	1.194E 11	3.079E 11	5.966E 00
2.500	3.354E 03	2.898E 08	3.173E 11	8.077E 10	2.365E 11	4.410E 00
2.750	2.250E 03	1.979E 08	2.167E 11	3.440E 10	1.822E 11	3.351E 00
3.000	1.645E 03	1.422E 08	1.557E 11	1.495E 10	1.407E 11	2.574E 00
3.250	1.026E 03	8.864E 07	9.706E 10	4.563E 09	9.251E 10	1.797E 00
3.500	6.581E 02	5.686E 07	6.226E 10	1.400E 09	6.086E 10	1.161E 00
3.750	4.282E 02	3.700E 07	4.051E 10	4.317E 08	4.008E 10	6.011E-01
4.000	2.806E 02	2.424E 07	2.655E 10	1.255E 08	2.642E 10	5.539E-01
4.500	6.616E 01	5.716E 06	6.259E 09	4.077E 06	6.254E 09	2.033E-01
5.000	1.566E 01	1.353E 06	1.482E 09	0.0	1.482E 09	5.561E-02
5.500	1.718E 00	1.485E 05	1.626E 08	0.0	1.626E 08	5.534E-03
6.000	1.101E-02	9.511E 02	1.041E 06	0.0	1.041E 06	1.029E-04
6.500	0.0	0.0	0.0	0.0	0.0	0.0
7.000	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 2

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** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AE17 FOR SOLAR MAXIMUM   ***   UNIFLUX OF 1984  **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE:   FOR PROTONS (AP8) - UF= 1.0;   FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0   **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  4:  BARRACLOUGH ET.AL. IGE-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE=  1334KM ** B/L ORBIT TAPE: TD537E ** PERIOD=  1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-6067 **
****************************************************************************************************************
                         ************************     PROTONS     ************************
                         ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD : ENERGY >5.000MEV **
                         ******************************************************************
```

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	1.739E 04	-2.677	-15.62	1328.23	1.05000	0.16299	1.55	1.675E 07
2	2.829E 04	-31.478	-19.63	1328.19	2.91667	0.14567	1.46	2.629E 07
3	3.081E 04	-58.660	-21.25	1328.79	4.80000	0.14167	1.33	2.688E 07
4	1.503E 04	-65.842	-23.46	1325.43	6.68333	0.15890	1.31	1.462E 07
5	1.114E 04	25.860	-31.08	1338.07	9.16667	0.17988	2.02	1.158E 07
6	1.579E 04	3.445	-20.61	1335.74	11.10000	0.16648	1.60	1.666E 07
7	2.788E 04	-26.615	-23.55	1336.37	12.95000	0.14969	1.50	2.704E 07
8	3.293E 04	-52.366	-18.58	1335.43	14.85000	0.14017	1.33	2.688E 07
9	1.757E 04	-62.387	-22.37	1336.14	16.70000	0.15482	1.30	1.455E 07
10	5.588E 03	-65.706	6.63	1334.02	16.86664	0.18444	1.41	4.468E 06
11	3.069E 03	130.467	-3.74	1334.07	20.54999	0.17750	1.21	1.556E 06
12	6.028E 03	42.613	-13.09	1327.00	21.58331	0.18446	1.41	5.158E 06

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****************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AE17 FOR SOLAR MAXIMUM   ***   UNIFLUX OF 1984  **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE:   FOR PROTONS (AP8) - UF= 1.0;   FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0   **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  4:  BARRACLOUGH ET.AL. IGE-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE=  1334KM ** B/L ORBIT TAPE: TD537E ** PERIOD=  1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-6067 **
****************************************************************************************************************
                         ************************   ELECTRONS LO   ************************
                         ** TABLE OF PEAK AND TOTAL FLUXES PER PERIOD : ENERGY >.5000MEV **
                         ******************************************************************
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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	1.357E 06	-6.641	-11.13	1326.63	1.00000	0.15909	1.38	5.885E 08
2	4.152E 06	-31.478	-19.63	1328.19	2.91667	0.14567	1.40	1.503E 09
3	2.230E 06	-54.053	-29.58	1331.21	4.85000	0.14616	1.43	1.777E 09
4	1.250E 06	-61.006	-31.73	1331.98	6.73333	0.16427	1.41	1.260E 09
5	5.503E 05	24.742	-14.38	1334.80	9.26667	0.17988	1.45	6.235E 08
6	5.842E 05	7.447	-12.14	1334.45	11.15000	0.16760	1.42	6.133E 08
7	2.025E 06	-23.769	-16.35	1335.32	12.98333	0.14922	1.43	1.254E 09
8	2.183E 06	-56.435	-30.07	1337.73	14.78333	0.14716	1.42	1.715E 09
9	1.073E 06	-65.442	-27.51	1337.32	16.66664	0.16284	1.36	1.213E 09
10	4.287E 05	-65.706	6.63	1334.02	16.86664	0.18444	1.41	5.708E 08
11	3.430E 05	6.580	60.50	1342.14	19.23331	0.25782	4.34	3.455E 08
12	4.356E 05	42.613	-13.09	1327.00	21.58331	0.18446	1.41	4.335E 08

TABLE 3

TABLE _

TOPEX 3 YEAR
CIRCULAR
INCLINATION: 63 DEG
PERIGEE: 1334 KM
APOGEE: 1334 KM

**** EXPOSURE ANALYSIS ****

	PROTONS (E>5.00(MEV)	ELECTRONS LC (E>.500(MEV)
PERCENT OF TOTAL LIFE-TIME SPENT IN FLUX-FREE REGIONS OF SPACE †	46.10 %	14.51 %
PERCENT OF TOTAL LIFE-TIME SPENT IN HIGH-INTENSITY REGIONS OF VAN ALLEN BELTS ‡	26.88 %	34.65 %
PERCENT OF TOTAL DAILY FLUX ACCUMULATED IN HIGH-INTENSITY REGIONS:	57.54 %	93.34 %

****

† <1 PARTICLE/CM**2/SEC

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

TABLE _

TOPEX 3 YEAR
CIRCULAR
INCLINATION: 63 DEG
PERIGEE: 1334 KM
APOGEE: 1334 KM

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

INNER ZONE -TI-* (1.0 < L < 2.8)	:	65.35 %
OUTER ZONE -TO- (2.8 < L < 11.0)	:	30.90 %
EXTERNAL -TE- (L > 11.0)	:	3.75 %
TOTAL	:	100.00 %

*TIME IN INNER ZONE MAY BE SUBDIVIDED AS FOLLOWS:

OUTSIDE TRAPPING REGION (1.0 < L < 1.1)	:	0.0 %
INSIDE TRAPPING REGION (1.1 < L < 2.8)	:	65.35 %

TABLE 4

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*********************************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AEI7 FOR SOLAR MAXIMUM      ***    UNIFLUX OF 1984   **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE:    FOR PROTONS (AP8) - UF= 1.0;   FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  4:  BARRACLOUGH ET.AL. 1EE-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE= 1334KM ** B/L ORBIT TAPE: TOP37E ** PERIOD= 1.872 **
** FOR INFORMATION OF EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-6067 **
*********************************************************************************************************************************
                              ****** ENERGETIC SOLAR PROTON FLUENCE ******
                              *****  FOR CUTOFF DIPOLE SHELL L=5 ER  *****
                              ************* (PARTICLES/CM**2) ************
                              *******************************************
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******************MISSION DURATION T=36. MONTHS ******************

ENERGY LEVELS >(MEV)	CONFIDENCE LEVEL C(%) 80	85	90	95	99
10.0	4.528E 09	4.528E 09	4.528E 09	6.791E 09	1.132E 10
20.0	3.104E 09	3.104E 09	3.104E 09	4.657E 09	7.761E 09
30.0	2.129E 09	2.129E 09	2.129E 09	3.193E 09	5.321E 09
40.0	1.460E 09	1.460E 09	1.460E 09	2.189E 09	3.649E 09
50.0	1.001E 09	1.001E 09	1.001E 09	1.501E 09	2.502E 09
60.0	6.862E 08	6.862E 08	6.862E 08	1.029E 09	1.715E 09
70.0	4.705E 08	4.705E 08	4.705E 08	7.057E 08	1.176E 09
80.0	3.226E 08	3.226E 08	3.226E 08	4.839E 08	8.065E 08
90.0	2.212E 08	2.212E 08	2.212E 08	3.318E 08	5.530E 08
100.0	1.517E 08	1.517E 08	1.517E 08	2.275E 08	3.792E 08
110.0	1.040E 08	1.040E 08	1.040E 08	1.560E 08	2.600E 08
120.0	7.131E 07	7.131E 07	7.131E 07	1.070E 08	1.783E 08
130.0	4.889E 07	4.889E 07	4.889E 07	7.334E 07	1.223E 08
140.0	3.352E 07	3.352E 07	3.352E 07	5.029E 07	8.381E 07
150.0	2.299E 07	2.299E 07	2.299E 07	3.448E 07	5.747E 07
160.0	1.576E 07	1.576E 07	1.576E 07	2.364E 07	3.940E 07
170.0	1.081E 07	1.081E 07	1.081E 07	1.621E 07	2.702E 07
180.0	7.410E 06	7.410E 06	7.410E 06	1.112E 07	1.853E 07
190.0	5.081E 06	5.081E 06	5.081E 06	7.621E 06	1.270E 07
200.0	3.484E 06	3.484E 06	3.484E 06	5.226E 06	8.710E 06

GEOMAGNETIC DIPOLE CUTOFF SHELL	SHIELDING PERCENT EXPOSURE TIME
L>4	19.44
L>5	13.47
L>6	10.21
L>7	7.85

TABLE 5

ORIGINAL PAGE IS
OF POOR QUALITY

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***********************************************************************************************************************
** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AE17 FOR SOLAR MAXIMUM    ***    UNIFLUX OF 1984    **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE:   FOR PROTONS (AP8) - UF= 1.0;   FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0   **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL  4:  BARRACLOUGH ET.AL. 1GE-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE= 1334KM ** B/L ORBIT TAPE: TD5376 ** PERIOD= 1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-2067 **
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*************************************************************
*** DOSE AT TRANSMISSION SURFACE OF FINITE ALUMINUM SLAB SHIELDS ***
*************************************************************
*** MISSION DURATION: 3.0000 YEAR(S) ***
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SHIELD THICKNESS (ALUMINUM)			ELECTRONS*			BREMSSTRAHLUNG	PROTONS			TOTAL DOSE
S (GM/CM**2)	T (MM)	T (MILS)	INNER ZN. (RADS-AL)	OUTER ZN. (RADS-AL)	TOTAL (RADS-AL)	TOTAL (RADS-AL)	TRAPPED** (RADS-AL)	SOLAR+ (RADS-AL)	TOTAL (RADS-AL)	ALL SOURCES (RADS-AL)
0.01	0.04	1.	5.278E 06	3.178E 05	5.556E 06	2.383E 03	1.625E 05	6.018E 02	1.631E 05	5.762E 06
0.02	0.07	3.	2.518E 06	1.552E 05	3.117E 06	1.883E 03	7.861E 04	6.112E 02	7.922E 04	3.198E 06
0.03	0.11	4.	1.757E 06	1.450E 05	1.942E 06	1.514E 03	5.653E 04	6.177E 02	5.715E 04	2.001E 06
0.04	0.15	6.	1.146E 06	1.134E 05	1.281E 06	1.249E 03	4.511E 04	6.623E 02	4.573E 04	1.328E 06
0.05	0.19	7.	7.855E 05	5.272E 04	8.786E 05	1.051E 03	3.848E 04	6.254E 02	3.910E 04	9.188E 05
0.06	0.22	9.	5.431E 05	7.817E 04	6.212E 05	8.987E 02	3.401E 04	6.271E 02	3.464E 04	6.568E 05
0.07	0.26	10.	3.825E 05	6.740E 04	4.513E 05	7.803E 02	3.057E 04	6.277E 02	3.120E 04	4.833E 05
0.08	0.30	12.	2.772E 05	5.515E 04	3.364E 05	6.872E 02	2.793E 04	6.271E 02	2.856E 04	3.656E 05
0.09	0.33	13.	2.043E 05	5.263E 04	2.570E 05	6.132E 02	2.576E 04	6.255E 02	2.638E 04	2.840E 05
0.10	0.37	15.	1.537E 05	4.738E 04	2.011E 05	5.535E 02	2.397E 04	6.228E 02	2.459E 04	2.262E 05
0.20	0.74	29.	2.267E 04	2.308E 04	4.575E 04	2.923E 02	1.486E 04	5.281E 02	1.539E 04	6.143E 04
0.30	1.11	44.	8.271E 03	1.371E 04	2.198E 04	2.054E 02	1.126E 04	4.220E 02	1.168E 04	3.388E 04
0.40	1.48	58.	4.207E 03	8.522E 03	1.273E 04	1.602E 02	9.283E 03	3.531E 02	9.636E 03	2.253E 04
0.50	1.85	73.	2.464E 03	5.470E 03	7.934E 03	1.322E 02	8.060E 03	3.027E 02	8.363E 03	1.643E 04
0.60	2.22	87.	1.528E 03	3.632E 03	5.167E 03	1.130E 02	7.241E 03	2.641E 02	7.505E 03	1.275E 04
0.80	2.96	117.	6.368E 02	1.773E 03	2.410E 03	8.828E 01	6.146E 03	2.090E 02	6.355E 03	8.853E 03
1.00	3.70	146.	2.530E 02	9.543E 02	1.207E 03	7.288E 01	5.467E 03	1.707E 02	5.638E 03	6.518E 03
1.25	4.63	182.	6.210E 01	4.467E 02	5.088E 02	6.019E 01	4.894E 03	1.367E 02	5.031E 03	5.600E 03
1.50	5.56	219.	1.059E 01	1.520E 02	2.026E 02	5.152E 01	4.471E 03	1.120E 02	4.583E 03	4.837E 03
1.75	6.48	255.	1.315E 00	7.340E 01	7.476E 01	4.523E 01	4.146E 03	9.274E 01	4.229E 03	4.359E 03
2.00	7.41	292.	1.437E-01	2.449E 01	2.463E 01	4.045E 01	3.868E 03	7.870E 01	3.946E 03	4.011E 03
2.50	9.26	365.	3.154E-04	1.567E 00	1.567E 00	3.365E 01	3.429E 03	5.830E 01	3.487E 03	3.522E 03
3.00	11.11	437.	0.0	2.584E-02	2.584E-02	2.901E 01	3.089E 03	4.507E 01	3.134E 03	3.163E 03
3.50	12.96	510.	0.0	6.021E-06	6.021E-06	2.558E 01	2.818E 03	3.492E 01	2.853E 03	2.879E 03
4.00	14.81	583.	0.0	0.0	0.0	2.291E 01	2.596E 03	2.811E 01	2.624E 03	2.647E 03
4.50	16.67	656.	0.0	0.0	0.0	2.074E 01	2.404E 03	2.281E 01	2.426E 03	2.447E 03
5.00	18.52	729.	0.0	0.0	0.0	1.893E 01	2.236E 03	1.666E 01	2.255E 03	2.274E 03
6.00	22.22	875.	0.0	0.0	0.0	1.605E 01	1.958E 03	1.297E 01	1.971E 03	1.987E 03
8.00	29.63	1167.	0.0	0.0	0.0	1.206E 01	1.552E 03	6.735E 00	1.559E 03	1.571E 03
10.00	37.04	1458.	0.0	0.0	0.0	9.392E 00	1.270E 03	3.775E 00	1.274E 03	1.283E 03

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* ELECTRON MODELS:

AE6:  INNER ZONE-SOLAR MAX
      NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

AE17: OUTER ZONE-INTERIM MODEL WITHOUT SOLAR CYCLE DEPENDENCE.
      FOR ENERGIES ABOVE 1.5 MEV, THIS MODEL CONTAINS UPPER &
      LOWER LIMIT VALUES TO ACCOUNT FOR DISCREPANCY BETWEEN
      EXISTING DATA SETS.  THE AE17-HI FAVORS VAMPOLA'S FIT
      TO OV1-19 DATA WHILE AE17-LO IS MORE REPRESENTATIVE OF
      ALL THE DATA SETS PRESENTLY AVAILABLE TO NSSDC.

      >> THE AE17-LO VERSION WAS USED FOR THESE CALCULATIONS <<

** PROTON MODEL:

AP8-MAC: TRAPPED PROTONS-SOLAR MAX
         NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

+ SOLAR PROTON MODEL:

SOLPRO: SOLAR FLARE PROTONS AT 1 AU
        (UNATTENUATED, INTERPLANETARY)
        FOR CUTOFF DIPOLE SHELL OF 5 E.R.

        FOR TAU= 36.MO.,Q=90%: # OF AL EVENTS=2
        86.53% GEOMAGNETIC SHIELDING APPLIED

NOTE: Q DENOTES THE DEGREE OF CONFIDENCE ONE WISHES
      TO ASSIGN TO RESULTS, NAMELY THAT FOR THE
      SPECIFIC MISSION DURATION THE CALCULATED
      FLUENCES ARE THE SMALLEST VALUES WHICH WILL
      NOT BE EXCEEDED BY ACTUALLY ENCOUNTERED
      INTENSITIES.

      IT IS NOT ADVISABLE TO EXTRAPOLATE THE SOLAR
      PROTON SPECTRA NEITHER TOWARDS LOWER NOR
      TOWARDS HIGHER ENERGIES BECAUSE THE DATA SETS
      USED IN THE CONSTRUCTION OF THE MODEL (SATEL-
      LITE MEASUREMENTS MADE DURING THE 20TH SOLAR
      CYCLE: 1964-1975) DO NOT CONTAIN INFORMATION
      FOR E<10 AND E>200 MEV.
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TABLE 6

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AEI7 FOR SOLAR MAXIMUM *** UNIFLUX OF 1984 **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE: FOR PROTONS (AP8) - UF= 1.0; FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 4: BARRACLOUGH ET.AL. IGE-TRM 1975 * TIME= 1989.2 **
** VEHICLE 1 TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE= 1334KM ** B/L ORBIT TAPE: TD9376 ** PERIOD= 1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-8067 **

************* DOSE IN SEMI-INFINITE ALUMINUM MEDIUM *************

*** MISSION DURATION: 3.0000 YEAR(S) ***

SHIELD THICKNESS (ALUMINUM) S (GM/CM**2)	T (MM)	T (MILS)	ELECTRONS* INNER ZN. (RADS-AL)	ELECTRONS* OUTER ZN. (RADS-AL)	ELECTRONS* TOTAL (RADS-AL)	BREMSSTRAHLUNG TOTAL (RADS-AL)	PROTONS TRAPPED** (RADS-AL)	PROTONS SOLAR+ (RADS-AL)	PROTONS TOTAL (RADS-AL)	TOTAL DOSE ALL SOURCES (RADS-AL)
0.01	0.04	1.	8.112E 06	4.637E 05	8.557E 06	3.981E 03	1.625E 05	6.018E 02	1.631E 05	8.764E 06
0.02	0.07	3.	4.467E 06	3.005E 05	4.767E 06	2.792E 03	7.861E 04	6.112E 02	7.922E 04	4.849E 06
0.03	0.11	4.	2.744E 06	2.173E 05	2.961E 06	2.107E 03	5.653E 04	6.177E 02	5.715E 04	3.020E 06
0.04	0.15	6.	1.780E 06	1.651E 05	1.949E 06	1.667E 03	4.511E 04	6.223E 02	4.573E 04	1.550E 06
0.05	0.19	7.	1.155E 06	1.276E 05	1.333E 06	1.357E 03	3.848E 04	6.254E 02	3.910E 04	1.372E 06
0.06	0.22	9.	8.243E 05	1.155E 05	5.398E 05	1.130E 03	3.401E 04	6.271E 02	3.464E 04	5.756E 05
0.07	0.26	10.	5.614E 05	9.526E 04	6.808E 05	9.601E 02	3.057E 04	6.277E 02	3.120E 04	7.130E 05
0.08	0.30	12.	4.191E 05	8.684E 04	5.059E 05	8.310E 02	2.793E 04	6.271E 02	2.856E 04	5.353E 05
0.09	0.33	13.	3.082E 05	7.706E 04	3.853E 05	7.314E 02	2.576E 04	6.255E 02	2.638E 04	4.124E 05
0.10	0.37	15.	2.312E 05	6.920E 04	3.005E 05	6.533E 02	2.397E 04	6.228E 02	2.459E 04	3.257E 05
0.20	0.74	29.	3.336E 04	3.324E 04	6.660E 04	3.355E 02	1.486E 04	5.281E 02	1.539E 04	8.232E 04
0.30	1.11	44.	1.155E 04	1.561E 04	3.160E 04	2.364E 02	1.126E 04	4.220E 02	1.168E 04	4.352E 04
0.40	1.48	58.	6.045E 03	1.213E 04	1.818E 04	1.849E 02	9.283E 03	3.531E 02	9.636E 03	2.800E 04
0.50	1.85	73.	3.525E 03	7.754E 03	1.128E 04	1.531E 02	8.060E 03	3.027E 02	8.362E 03	1.575E 04
0.60	2.22	87.	2.156E 03	5.126E 03	7.310E 03	1.314E 02	7.241E 03	2.641E 02	7.505E 03	1.495E 04
0.80	2.96	117.	9.084E 02	2.486E 03	3.395E 03	1.034E 02	6.146E 03	2.090E 02	6.355E 03	9.853E 03
1.00	3.70	146.	3.618E 02	1.334E 03	1.696E 03	8.611E 01	5.467E 03	1.707E 02	5.638E 03	7.420E 03
1.25	4.63	182.	8.521E 01	6.257E 02	7.150E 02	7.183E 01	4.894E 03	1.367E 02	5.031E 03	5.818E 03
1.50	5.56	219.	1.918E 01	2.657E 02	2.848E 02	6.207E 01	4.471E 03	1.120E 02	4.583E 03	4.930E 03
1.75	6.48	255.	1.547E 00	1.034E 02	1.053E 02	5.495E 01	4.146E 03	9.374E 01	4.239E 03	4.400E 03
2.00	7.41	292.	2.085E-01	3.466E 01	3.487E 01	4.952E 01	3.868E 03	7.870E 01	3.946E 03	4.031E 03
2.50	9.26	365.	5.021E-04	2.279E 00	2.279E 00	4.173E 01	3.429E 03	5.830E 01	3.487E 03	3.531E 03
3.00	11.11	437.	0.0	3.918E-02	3.918E-02	3.631E 01	3.089E 03	4.507E 01	3.134E 03	3.170E 03
3.50	12.96	510.	0.0	5.257E-06	5.257E-06	3.222E 01	2.818E 03	3.492E 01	2.853E 03	2.885E 03
4.00	14.81	583.	0.0	0.0	0.0	2.898E 01	2.596E 03	2.811E 01	2.624E 03	2.653E 03
4.50	16.67	656.	0.0	0.0	0.0	2.631E 01	2.404E 03	2.281E 01	2.426E 03	2.453E 03
5.00	18.52	729.	0.0	0.0	0.0	2.407E 01	2.236E 03	1.666E 01	2.253E 03	2.279E 03
6.00	22.22	875.	0.0	0.0	0.0	2.049E 01	1.958E 03	1.297E 01	1.971E 03	1.991E 03
8.00	29.63	1167.	0.0	0.0	0.0	1.552E 01	1.552E 03	6.735E 00	1.559E 03	1.574E 03
10.00	37.04	1458.	0.0	0.0	0.0	1.216E 01	1.270E 03	3.775E 00	1.274E 03	1.286E 03

* ELECTRON MODELS:

AE6: INNER ZONE-SOLAR MAX
NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

AEI7: OUTER ZONE-INTERIM MODEL WITHOUT SOLAR CYCLE DEPENDENCE. FOR ENERGIES ABOVE 1.5 MEV. THIS MODEL CONTAINS UPPER & LOWER LIMIT VALUES TO ACCOUNT FOR DISCREPANCY BETWEEN EXISTING DATA SETS. THE AEI7-HI FAVORS VAMPOLA'S FIT TO OV1-19 DATA WHILE AEI7-LO IS MORE REPRESENTATIVE OF ALL THE DATA SETS PRESENTLY AVAILABLE TO NSSDC.

>> THE AEI7-LO VERSION WAS USED FOR THESE CALCULATIONS <<

** PROTON MODEL:

AP8 MAC: TRAPPED PROTONS-SOLAR MAX
NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

+ SOLAR PROTON MODEL:

SOLPRO: SOLAR FLARE PROTONS AT 1 AU
(UNATTENUATED, INTERPLANETARY)
FOR CUTOFF DIPOLE SHELL OF 5 E.R.

FOR TAU= 36.MO., Q=50%: # OF AL EVENTS=2
86.53% GEOMAGNETIC SHIELDING APPLIED

NOTE: Q DENOTES THE DEGREE OF CONFIDENCE ONE WISHES TO ASSIGN TO RESULTS, NAMELY THAT FOR THE SPECIFIC MISSION DURATION THE CALCULATED FLUENCES ARE THE SMALLEST VALUES WHICH WILL NOT BE EXCEEDED BY ACTUALLY ENCOUNTERED INTENSITIES.

IT IS NOT ADVISABLE TO EXTRAPOLATE THE SOLAR PROTON SPECTRA NEITHER TOWARDS LOWER NOR TOWARDS HIGHER ENERGIES BECAUSE THE DATA SETS USED IN THE CONSTRUCTION OF THE MODEL (SATELLITE MEASUREMENTS MADE DURING THE 20TH SOLAR CYCLE: 1964-1975) DO NOT CONTAIN INFORMATION FOR E<10 AND E>200 MEV.

TABLE 7

ORIGINAL PAGE IS
OF POOR QUALITY

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AE17 FOR SOLAR MAXIMUM * UNIFLUX OF 1984 **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE: FOR PROTONS (AP8) - UF= 1.0; FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 4: BARRACLOUGH ET.AL. IGS-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE= 1334KM ** B/L ORBIT TAPE: 105376 ** PERIOD= 1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-8067 **

DOSE AT CENTER OF ALUMINUM SPHERES

*** MISSION DURATION: 3.0000 YEAR(S) ***

SHIELD THICKNESS (ALUMINUM) S (GM/CM**2)	T (MM)	T (MILS)	ELECTRONS* INNER ZN. (RADS-AL)	ELECTRONS* OUTER ZN. (RADS-AL)	ELECTRONS* TOTAL (RADS-AL)	BREMSSTRAHLUNG TOTAL (RADS-AL)	PROTONS TRAPPED** (RADS-AL)	PROTONS SOLAR+ (RADS-AL)	PROTONS TOTAL (RADS-AL)	TOTAL DOSE ALL SOURCES (RADS-AL)
0.01	0.04	1.	2.654E 07	1.663E 06	2.850E 07	1.112E 04	7.219E 05	1.180E 03	7.231E 05	2.923E 07
0.02	0.07	3.	1.842E 07	1.056E 06	1.948E 07	9.081E 03	2.946E 05	1.192E 03	2.958E 05	1.978E 07
0.03	0.11	4.	1.297E 07	8.009E 05	1.377E 07	7.426E 03	2.028E 05	1.203E 03	2.040E 05	1.399E 07
0.04	0.15	6.	9.446E 06	6.431E 05	1.009E 07	6.245E 03	1.579E 05	1.214E 03	1.591E 05	1.024E 07
0.05	0.19	7.	6.991E 06	5.249E 05	7.516E 06	5.342E 03	1.294E 05	1.227E 03	1.306E 05	7.652E 06
0.06	0.22	9.	5.208E 06	4.560E 05	5.664E 06	4.600E 03	1.146E 05	1.241E 03	1.159E 05	5.785E 06
0.07	0.26	10.	3.916E 06	3.960E 05	4.312E 06	3.981E 03	1.029E 05	1.255E 03	1.042E 05	4.420E 06
0.08	0.30	12.	2.965E 06	3.490E 05	3.314E 06	3.466E 03	9.399E 04	1.273E 03	9.526E 04	3.413E 06
0.09	0.33	13.	2.266E 06	3.113E 05	2.578E 06	3.044E 03	8.693E 04	1.288E 03	8.822E 04	2.669E 06
0.10	0.37	15.	1.741E 06	2.795E 05	2.021E 06	2.690E 03	8.057E 04	1.317E 03	8.189E 04	2.106E 06
0.20	0.74	29.	2.445E 05	1.435E 05	3.880E 05	1.264E 03	5.019E 04	1.537E 03	5.173E 04	4.410E 05
0.30	1.11	44.	8.182E 04	9.772E 04	1.795E 05	8.768E 02	3.783E 04	1.383E 03	3.918E 04	2.194E 05
0.40	1.48	58.	4.074E 04	6.931E 04	1.101E 05	6.847E 02	3.074E 04	1.167E 03	3.191E 04	1.427E 05
0.50	1.85	73.	2.465E 04	4.895E 04	7.360E 04	5.643E 02	2.587E 04	1.044E 03	2.692E 04	1.011E 05
0.60	2.22	87.	1.636E 04	3.460E 04	5.095E 04	4.824E 02	2.288E 04	9.358E 02	2.381E 04	7.525E 04
0.80	2.96	117.	8.183E 03	1.812E 04	2.630E 04	3.777E 02	1.902E 04	7.795E 02	1.980E 04	4.648E 04
1.00	3.70	146.	4.300E 03	1.065E 04	1.495E 04	3.130E 02	1.645E 04	6.647E 02	1.711E 04	3.238E 04
1.25	4.63	182.	1.592E 03	6.181E 03	7.773E 03	2.596E 02	1.465E 04	5.617E 02	1.521E 04	2.324E 04
1.50	5.56	219.	3.861E 02	3.456E 03	3.842E 03	2.229E 02	1.331E 04	4.729E 02	1.379E 04	1.785E 04
1.75	6.48	255.	6.103E 01	1.670E 03	1.731E 03	1.961E 02	1.247E 04	4.193E 02	1.289E 04	1.482E 04
2.00	7.41	292.	8.711E 00	7.364E 02	7.452E 02	1.757E 02	1.183E 04	3.693E 02	1.220E 04	1.312E 04
2.50	9.26	365.	3.529E-02	7.014E 01	7.018E 01	1.471E 02	1.068E 04	2.729E 02	1.095E 04	1.117E 04
3.00	11.11	437.	0.0	2.943E 00	2.943E 00	1.283E 02	9.801E 03	2.209E 02	1.002E 04	1.016E 04
3.50	12.96	510.	0.0	1.246E-03	1.346E-03	1.149E 02	9.029E 03	1.848E 02	9.214E 03	9.329E 03
4.00	14.81	583.	0.0	0.0	0.0	1.047E 02	8.483E 03	1.505E 02	8.633E 03	8.738E 03
4.50	16.67	656.	0.0	0.0	0.0	9.642E 01	8.037E 03	1.304E 02	8.167E 03	8.264E 03
5.00	18.52	729.	0.0	0.0	0.0	8.948E 01	7.606E 03	1.055E 02	7.711E 03	7.805E 03
6.00	22.22	875.	0.0	0.0	0.0	7.827E 01	6.884E 03	8.005E 01	6.964E 03	7.042E 03
8.00	29.63	1167.	0.0	0.0	0.0	6.310E 01	5.767E 03	4.662E 01	5.814E 03	5.877E 03
10.00	37.04	1458.	0.0	0.0	0.0	5.242E 01	4.922E 03	2.813E 01	4.951E 03	5.003E 03

* ELECTRON MODELS:

AE6: INNER ZONE-SOLAR MAX
NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

AE17: OUTER ZONE-INTERIM MODEL WITHOUT SOLAR CYCLE DEPENDENCE.
FOR ENERGIES ABOVE 1.5 MEV, THIS MODEL CONTAINS UPPER & LOWER LIMIT VALUES TO ACCOUNT FOR DISCREPANCY BETWEEN EXISTING DATA SETS. THE AE17-HI FAVORS VAMPOLA'S FIT TO OV1-19 DATA WHILE AE17-LO IS MORE REPRESENTATIVE OF ALL THE DATA SETS PRESENTLY AVAILABLE TO NSSDC.

>> THE AE17-LO VERSION WAS USED FOR THESE CALCULATIONS <<

** PROTON MODEL:

AP8-MAX: TRAPPED PROTONS-SOLAR MAX
NO UNCERTAINTY FACTOR WAS APPLIED TO THE MODEL DATA.

\+ SOLAR PROTON MODEL:

SOLPRO: SOLAR FLARE PROTONS AT 1 AU
(UNATTENUATED, INTERPLANETARY)
FOR CUTOFF DIPOLE SHELL OF 5 E.R.

FOR TAU=36.MO.,Q=90%: # OF AL EVENTS=2
86.53% GEOMAGNETIC SHIELDING APPLIED

NOTE: Q DENOTES THE DEGREE OF CONFIDENCE ONE WISHES TO ASSIGN TO RESULTS, NAMELY THAT FOR THE SPECIFIC MISSION DURATION THE CALCULATED FLUENCES ARE THE SMALLEST VALUES WHICH WILL NOT BE EXCEEDED BY ACTUALLY ENCOUNTERED INTENSITIES.

IT IS NOT ADVISABLE TO EXTRAPOLATE THE SOLAR PROTON SPECTRA NEITHER TOWARDS LOWER NOR TOWARDS HIGHER ENERGIES BECAUSE THE DATA SETS USED IN THE CONSTRUCTION OF THE MODEL (SATELLITE MEASUREMENTS MADE DURING THE 20TH SOLAR CYCLE: 1964-1975) DO NOT CONTAIN INFORMATION FOR E<10 AND E>200 MEV.

TABLE 8

** ORBITAL FLUX STUDY WITH COMPOSITE PARTICLE ENVIRONMENTS: VETTES AP8; AE6, AEI7 FOR SOLAR MAXIMUM *** UNIFLUX OF 1984 **
** UNCERTAINTY FACTORS (UF) APPLIED FOR THIS RUN ARE: FOR PROTONS (AP8) - UF= 1.0; FOR INNER ZONE ELECTRONS (AE6) - UF= 1.0 **
** MAGNETIC COORDINATES B AND L COMPUTED BY INVARA OF 1972 WITH ALLMAG, MODEL 4: BARRACLOUGH ET.AL. IGE-TRM 1975 * TIME= 1989.2 **
** VEHICLE : TOPEX 3 YEAR ** INCLINATION= 63DEG ** PERIGEE= 1334KM ** APOGEE= 1334KM ** B/L ORBIT TAPE: TD5276 ** PERIOD= 1.872 **
** FOR INFORMATION OR EXPLANATION CONTACT E.G. STASSINOPOULOS AT NASA-GSFC,CODE 601, GREENBELT, MARYLAND 20771,TEL.(301)-344-8067 **

[illegible] RAY ANALYSIS

AVERAGE SPACECRAFT EXPOSURE TO IONS WITH GIVEN ENERGIES

TOTAL EXPOSURE TIME: 24.0 HRS

** L-BIN DEFINITION ** L-RANGE	MEAN L-VALUE	RIGIDITY (GV)	ION CUT-OFF ENERGY * (MEV/N)	*** EXPOSURE PROFILE *** TIME IN L-BINS (HOURS)	NORMALIZED L-BIN EXPOSURE ** (%)	***** ACCESSIBILITY PROFILE ***** INVERSE SUMMATION OF TIME IN L-BINS (HOURS)	NORMALIZED L-BIN SUMMATION ** (%)
0.9-1.1	1.0	14.500	6571.	0.0	0.0	24.000	100.00
1.1-1.3	1.2	10.347	4320.	4.383	18.26	24.000	100.00
1.3-1.5	1.4	7.602	2577.	3.467	14.44	19.617	81.74
1.5-1.7	1.6	5.826	2120.	1.900	7.92	16.150	67.29
1.7-1.9	1.8	4.555	1545.	1.533	6.39	14.250	59.37
1.9-2.1	2.0	3.725	1147.	1.200	5.00	12.717	52.99
2.1-2.3	2.2	3.079	865.	1.050	4.37	11.517	47.99
2.3-2.5	2.4	2.587	660.	0.900	3.75	10.467	43.61
2.5-2.7	2.6	2.204	505.	0.867	3.61	9.567	39.86
2.7-2.9	2.8	1.901	357.	0.850	3.54	8.700	36.25
2.9-3.1	3.0	1.656	313.	0.633	2.64	7.850	32.71
3.1-3.3	3.2	1.455	245.	0.817	3.40	7.217	30.07
3.3-3.5	3.4	1.289	200.	0.417	1.74	6.400	26.67
3.5-3.7	3.6	1.150	162.	0.533	2.22	5.983	24.93
3.7-3.9	3.8	1.032	133.	0.650	2.71	5.450	22.71
3.9-4.1	4.0	0.931	105.	0.333	1.39	4.800	20.00
4.1-4.3	4.2	0.845	91.	0.400	1.67	4.467	18.61
4.3-4.5	4.4	0.770	76.	0.367	1.53	4.067	16.94
4.5-4.7	4.6	0.704	64.	0.200	0.83	3.700	15.42
4.7-4.9	4.8	0.647	54.	0.167	0.69	3.500	14.58
4.9-5.1	5.0	0.596	46.	0.200	0.83	3.333	13.89
5.1-5.3	5.2	0.551	40.	0.233	0.97	3.133	13.06
5.3-5.5	5.4	0.511	34.	0.150	0.63	2.900	12.08
5.5-5.7	5.6	0.475	30.	0.067	0.28	2.750	11.46
5.7-5.9	5.8	0.443	26.	0.167	0.69	2.683	11.18
5.9-6.1	6.0	0.414	23.	0.083	0.35	2.517	10.49
6.1-6.3	6.2	0.388	20.	0.150	0.63	2.433	10.14
6.3-6.5	6.4	0.364	17.	0.083	0.35	2.283	9.51
6.5-6.7	6.6	0.342	15.	0.117	0.49	2.200	9.17
6.7-6.9	6.8	0.322	14.	0.133	0.56	2.083	8.68
6.9-[illegible]	7.0	0.304	12.	1.950	8.12	1.950	8.12

* ENERGY AT MEAN L-VALUE
** NORMALIZATION BY TOTAL EXPOSURE TIME CONSIDERED IN THIS ANALYSIS (RELATIVE TIME)

TABLE 9

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: HE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 2; ATOMIC-W= 4.00)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY — DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	8.60E+00	6.98E-01	0.20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.61E-02	7.38E-02	9.23E-02	1.17E-01	1.37E-01	1.59E-01
14	8.00E+00	6.94E-01	0.23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.37E-02	7.14E-02	8.94E-02	1.13E-01	1.33E-01	1.54E-01
16	8.00E+00	7.34E-01	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.22E-02	7.00E-02	8.76E-02	1.11E-01	1.30E-01	1.51E-01
18	8.20E+00	7.80E-01	0.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.17E-02	6.95E-02	8.70E-02	1.10E-01	1.29E-01	1.50E-01
20	9.01E+00	9.14E-01	0.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.18E-02	6.96E-02	8.71E-02	1.10E-01	1.29E-01	1.50E-01
23	1.02E+01	1.07E+00	0.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.26E-02	7.03E-02	8.80E-02	1.11E-01	1.31E-01	1.52E-01
26	1.14E+01	1.28E+00	0.41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.46E-02	7.23E-02	9.05E-02	1.15E-01	1.34E-01	1.56E-01
30	1.30E+01	1.49E+00	0.46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.60E-02	7.36E-02	9.22E-02	1.17E-01	1.37E-01	1.59E-01
34	1.48E+01	1.78E+00	0.52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.87E-02	7.63E-02	9.55E-02	1.21E-01	1.42E-01	1.65E-01
40	1.74E+01	2.27E+00	0.59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.18E-02	7.93E-02	9.92E-02	1.26E-01	1.47E-01	1.71E-01
46	1.96E+01	2.72E+00	0.67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.65E-02	8.38E-02	1.05E-01	1.33E-01	1.56E-01	1.81E-01
50	2.10E+01	2.99E+00	0.75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.06E-02	8.74E-02	1.09E-01	1.39E-01	1.62E-01	1.89E-01
54	2.24E+01	3.26E+00	0.85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.60E-02	9.26E-02	1.16E-01	1.47E-01	1.72E-01	2.00E-01
60	2.43E+01	3.68E+00	0.95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-01	9.74E-02	1.22E-01	1.54E-01	1.81E-01	2.10E-01
64	2.57E+01	3.96E+00	1.08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-01	1.05E-01	1.32E-01	1.67E-01	1.95E-01	2.27E-01
70	2.77E+01	4.46E+00	1.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-01	1.14E-01	1.41E-01	1.79E-01	2.10E-01	2.44E-01
76	2.93E+01	4.97E+00	1.37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-01	1.24E-01	1.53E-01	1.94E-01	2.27E-01	2.64E-01
80	3.04E+01	5.24E+00	1.54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-01	1.34E-01	1.65E-01	2.09E-01	2.44E-01	2.84E-01
90	3.20E+01	5.92E+00	1.74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-01	1.41E-01	1.63E-01	2.28E-01	2.58E-01	3.00E-01
91	3.22E+01	5.99E+00	1.96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.57E-01	1.53E-01	1.73E-01	2.39E-01	2.80E-01	3.26E-01
100	3.37E+01	6.47E+00	2.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.71E-01	1.69E-01	1.88E-01	2.62E-01	3.04E-01	3.54E-01
109	3.47E+01	6.95E+00	2.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-01	1.85E-01	2.06E-01	2.87E-01	3.33E-01	3.87E-01
133	3.74E+01	8.49E+00	2.81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-01	2.02E-01	2.23E-01	3.12E-01	3.61E-01	4.20E-01
162	4.02E+01	1.00E+01	3.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-01	2.21E-01	2.42E-01	3.37E-01	3.91E-01	4.54E-01
200	4.34E+01	1.16E+01	3.58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-01	2.30E-01	2.66E-01	3.69E-01	4.27E-01	4.97E-01
249	4.22E+01	1.27E+01	4.04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-01	2.49E-01	2.95E-01	4.08E-01	4.73E-01	5.50E-01
300	4.13E+01	1.30E+01	4.55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-01	2.75E-01	3.24E-01	4.47E-01	5.18E-01	[illegible]
313	3.98E+01	1.30E+01	5.13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.97E-01	3.06E-01	3.57E-01	4.89E-01	5.66E-01	6.58E-01
397	3.28E+01	1.19E+01	5.79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.29E-01	3.42E-01	3.96E-01	5.40E-01	6.26E-01	7.24E-01
400	3.26E+01	1.18E+01	6.53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-01	3.78E-01	4.35E-01	5.91E-01	6.86E-01	7.88E-01
500	2.66E+01	1.05E+01	7.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-01	4.43E-01	5.00E-01	6.68E-01	7.75E-01	8.90E-01
509	2.61E+01	1.04E+01	8.30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-01	4.33E-01	4.80E-01	5.36E-01	7.14E-01	8.25E-01	9.50E-01
600	2.20E+01	9.33E+00	9.36	0.00E+00	0.00E+00	1.27E-01	3.88E-01	5.21E-01	4.67E-01	5.12E-01	6.10E-01	7.97E-01	9.22E-01	1.06E+00
660	2.01E+01	8.76E+00	10.56	1.39E-01	3.49E-01	5.63E-01	5.66E-01	5.44E-01	5.29E-01	5.59E-01	6.74E-01	8.70E-01	1.00E+00	1.15E+00
700	1.90E+01	8.37E+00	11.91	6.20E-01	6.20E-01	6.10E-01	6.06E-01	5.94E-01	5.86E-01	6.50E-01	7.38E-01	9.75E-01	1.12E+00	1.27E+00
800	1.63E+01	7.55E+00	13.43	6.67E-01	6.51E-01	6.43E-01	6.37E-01	6.37E-01	6.89E-01	7.29E-01	8.00E-01	1.09E+00	1.24E+00	1.41E+00
865	1.48E+01	7.11E+00	15.15	7.05E-01	6.98E-01	6.93E-01	6.88E-01	7.04E-01	7.46E-01	8.24E-01	9.20E-01	1.21E+00	1.39E+00	1.56E+00
900	1.41E+01	6.75E+00	17.08	7.69E-01	7.83E-01	7.78E-01	7.90E-01	8.05E-01	8.88E-01	9.52E-01	1.07E+00	1.37E+00	1.54E+00	1.72E+00
1000	1.19E+01	5.89E+00	19.26	9.44E-01	9.15E-01	9.22E-01	9.37E-01	9.55E-01	1.05E+00	1.07E+00	1.18E+00	1.58E+00	1.66E+00	1.91E+00
1147	9.30E+00	4.93E+00	21.72	1.04E+00	1.04E+00	1.05E+00	1.07E+00	1.07E+00	1.13E+00	1.19E+00	1.33E+00	1.56E+00	1.76E+00	1.92E+00
1545	5.39E+00	3.20E+00	24.49	1.20E+00	1.21E+00	1.20E+00	1.21E+00	1.22E+00	1.27E+00	1.35E+00	1.52E+00	1.76E+00	1.97E+00	2.12E+00
2000	3.37E+00	2.21E+00	27.62	1.43E+00	1.43E+00	1.45E+00	1.43E+00	1.40E+00	1.54E+00	1.59E+00	1.76E+00	2.04E+00	2.25E+00	2.37E+00
2120	3.02E+00	2.04E+00	31.15	1.57E+00	1.62E+00	1.63E+00	1.65E+00	1.66E+00	1.70E+00	1.82E+00	1.93E+00	2.29E+00	2.48E+00	2.59E+00
2977	1.62E+00	1.33E+00	35.13	2.00E+00	2.03E+00	2.02E+00	2.02E+00	2.00E+00	2.08E+00	2.18E+00	2.30E+00	2.49E+00	2.89E+00	2.95E+00

TABLE 10 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: HE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 2; ATOMIC-W= 4.00)
63.0 DEG/1334-1334 KM

****

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	2.28E+00	2.34E+00	2.36E+00	2.38E+00	2.37E+00	2.42E+00	2.47E+00	2.51E+00	2.88E+00	3.02E+00	3.30E+00
44.68	2.55E+00	2.64E+00	2.66E+00	2.67E+00	2.69E+00	2.75E+00	2.67E+00	2.88E+00	3.17E+00	3.36E+00	3.65E+00
50.38	2.96E+00	3.04E+00	3.07E+00	3.05E+00	3.06E+00	3.19E+00	3.11E+00	3.25E+00	3.61E+00	3.84E+00	3.86E+00
56.82	3.52E+00	3.63E+00	3.65E+00	3.67E+00	3.60E+00	3.59E+00	3.69E+00	3.85E+00	4.13E+00	4.17E+00	4.41E+00
64.07	3.96E+00	4.07E+00	4.14E+00	4.18E+00	4.15E+00	4.21E+00	4.28E+00	4.30E+00	4.65E+00	4.77E+00	4.96E+00
72.26	4.61E+00	4.79E+00	4.84E+00	4.86E+00	4.88E+00	4.91E+00	4.79E+00	4.94E+00	5.03E+00	5.05E+00	5.41E+00
81.49	5.21E+00	5.37E+00	5.44E+00	5.46E+00	5.49E+00	5.50E+00	5.38E+00	5.55E+00	5.61E+00	5.64E+00	5.97E+00
91.89	5.85E+00	5.93E+00	6.00E+00	5.97E+00	5.99E+00	6.05E+00	6.05E+00	6.12E+00	6.20E+00	6.33E+00	6.67E+00
103.63	5.83E+00	6.99E+00	6.97E+00	7.00E+00	6.88E+00	6.86E+00	6.85E+00	6.99E+00	7.34E+00	7.27E+00	7.51E+00
116.86	7.25E+00	7.38E+00	7.46E+00	7.54E+00	7.61E+00	7.59E+00	7.64E+00	7.78E+00	7.71E+00	7.91E+00	8.02E+00
131.79	8.11E+00	8.19E+00	8.26E+00	8.34E+00	8.41E+00	8.47E+00	8.52E+00	8.64E+00	8.54E+00	8.71E+00	8.83E+00
148.62	9.04E+00	9.18E+00	9.29E+00	9.37E+00	9.44E+00	9.49E+00	9.43E+00	9.43E+00	9.38E+00	9.49E+00	9.40E+00
167.60	9.73E+00	9.80E+00	9.86E+00	9.92E+00	9.98E+00	1.00E+01	1.00E+01	1.01E+01	1.04E+01	1.00E+01	1.03E+01
189.01	1.08E+01	1.09E+01	1.09E+01	1.10E+01	1.10E+01	1.11E+01	1.10E+01	1.11E+01	1.11E+01	1.10E+01	1.09E+01
213.15	1.16E+01	1.17E+01	1.18E+01	1.18E+01	1.19E+01	1.19E+01	1.19E+01	1.17E+01	1.18E+01	1.17E+01	1.15E+01
240.38	1.20E+01	1.21E+01	1.21E+01	1.21E+01	1.21E+01	1.21E+01	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.16E+01
271.08	1.23E+01	1.24E+01	1.24E+01	1.24E+01	1.24E+01	1.24E+01	1.23E+01	1.23E+01	1.22E+01	1.21E+01	1.20E+01
305.70	1.25E+01	1.25E+01	1.25E+01	1.25E+01	1.25E+01	1.24E+01	1.23E+01	1.23E+01	1.21E+01	1.20E+01	1.16E+01
344.74	1.21E+01	1.21E+01	1.20E+01	1.20E+01	1.20E+01	1.19E+01	1.19E+01	1.19E+01	1.18E+01	1.16E+01	1.12E+01
388.77	1.15E+01	1.15E+01	1.15E+01	1.14E+01	1.14E+01	1.14E+01	1.13E+01	1.13E+01	1.12E+01	1.12E+01	1.07E+01
438.43	1.09E+01	1.09E+01	1.08E+01	1.08E+01	1.07E+01	1.07E+01	1.07E+01	1.06E+01	1.05E+01	1.04E+01	1.02E+01
494.42	1.03E+01	1.02E+01	1.02E+01	1.01E+01	1.01E+01	1.00E+01	9.96E+00	9.90E+00	9.85E+00	9.75E+00	9.41E+00
557.57	9.54E+00	9.49E+00	9.43E+00	9.38E+00	9.33E+00	9.29E+00	9.26E+00	9.21E+00	9.12E+00	9.08E+00	8.94E+00
628.79	8.85E+00	8.79E+00	8.72E+00	8.66E+00	8.60E+00	8.55E+00	8.52E+00	8.47E+00	8.39E+00	8.32E+00	8.20E+00
709.09	8.14E+00	8.07E+00	8.00E+00	7.93E+00	7.86E+00	7.80E+00	7.77E+00	7.71E+00	7.61E+00	7.57E+00	7.48E+00
799.66	7.40E+00	7.36E+00	7.32E+00	7.28E+00	7.23E+00	7.18E+00	7.13E+00	7.05E+00	7.00E+00	6.97E+00	6.86E+00
901.79	6.57E+00	6.50E+00	6.43E+00	6.37E+00	6.30E+00	6.23E+00	6.17E+00	6.07E+00	6.03E+00	5.97E+00	5.88E+00
1017.00	5.67E+00	5.59E+00	5.51E+00	5.43E+00	5.35E+00	5.29E+00	5.24E+00	5.17E+00	5.10E+00	5.06E+00	5.01E+00
1146.90	4.83E+00	4.78E+00	4.74E+00	4.70E+00	4.65E+00	4.61E+00	4.57E+00	4.49E+00	4.45E+00	4.42E+00	4.36E+00
1293.30	4.07E+00	4.03E+00	3.98E+00	3.94E+00	3.90E+00	3.87E+00	3.85E+00	3.82E+00	3.78E+00	3.75E+00	3.72E+00
1458.50	3.43E+00	3.40E+00	3.36E+00	3.33E+00	3.29E+00	3.27E+00	3.25E+00	3.22E+00	3.20E+00	3.17E+00	3.14E+00
1644.80	2.90E+00	2.88E+00	2.85E+00	2.83E+00	2.81E+00	2.79E+00	2.77E+00	2.73E+00	2.69E+00	2.67E+00	2.65E+00
1854.90	2.44E+00	2.41E+00	2.39E+00	2.36E+00	2.34E+00	2.31E+00	2.29E+00	2.25E+00	2.22E+00	2.20E+00	2.18E+00
2091.80	2.07E+00	2.06E+00	2.05E+00	2.04E+00	2.03E+00	2.02E+00	2.01E+00	1.99E+00	1.98E+00	1.96E+00	1.95E+00
2358.90	1.77E+00	1.76E+00	1.75E+00	1.75E+00	1.74E+00	1.73E+00	1.72E+00	1.70E+00	1.68E+00	1.67E+00	1.66E+00
2660.20	1.47E+00	1.46E+00	1.45E+00	1.44E+00	1.43E+00	1.42E+00	1.41E+00	1.37E+00	1.33E+00	1.30E+00	1.29E+00

TABLE 10 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: LI
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 3; ATOMIC-W= 6.94)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	SHIELD THICKNESS (GM/CM**2) 0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	3.53E-02	2.86E-03	0.20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.81E-04	4.28E-04	4.70E-04	6.56E-04	7.77E-04	8.68E-04
14	3.28E-02	2.85E-03	0.23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-04	4.10E-04	4.50E-04	6.27E-04	7.43E-04	8.30E-04
16	3.28E-02	3.01E-03	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.52E-04	3.96E-04	4.35E-04	6.06E-04	7.18E-04	8.03E-04
18	3.36E-02	3.20E-03	0.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.44E-04	3.88E-04	4.26E-04	5.93E-04	7.03E-04	7.86E-04
20	3.69E-02	3.75E-03	0.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.41E-04	3.84E-04	4.22E-04	5.88E-04	6.96E-04	7.79E-04
23	4.20E-02	4.40E-03	0.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-04	3.83E-04	4.21E-04	5.86E-04	6.94E-04	7.76E-04
26	4.69E-02	5.24E-03	0.41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.44E-04	3.87E-04	4.24E-04	5.92E-04	7.01E-04	7.84E-04
30	5.34E-02	6.12E-03	0.46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-04	3.91E-04	4.29E-04	5.98E-04	7.08E-04	7.92E-04
34	6.05E-02	7.31E-03	0.52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-04	3.99E-04	4.38E-04	6.11E-04	7.24E-04	8.09E-04
40	7.12E-02	9.30E-03	0.59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-04	4.10E-04	4.50E-04	6.27E-04	7.43E-04	8.31E-04
46	8.02E-02	1.11E-02	0.67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.79E-04	4.27E-04	4.69E-04	6.53E-04	7.73E-04	8.65E-04
50	8.61E-02	1.22E-02	0.75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.92E-04	4.41E-04	4.84E-04	6.75E-04	7.99E-04	8.94E-04
54	9.16E-02	1.34E-02	0.85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.10E-04	4.62E-04	5.07E-04	7.07E-04	8.37E-04	9.36E-04
60	9.98E-02	1.51E-02	0.95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.28E-04	4.82E-04	5.29E-04	7.37E-04	8.73E-04	9.76E-04
64	1.05E-01	1.62E-02	1.08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.57E-04	5.14E-04	5.71E-04	7.86E-04	9.31E-04	1.04E-03
70	1.14E-01	1.83E-02	1.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-04	5.47E-04	6.08E-04	8.36E-04	9.91E-04	1.11E-03
76	1.20E-01	2.04E-02	1.37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.24E-04	5.87E-04	6.52E-04	8.97E-04	1.06E-03	1.19E-03
80	1.25E-01	2.15E-02	1.54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.60E-04	6.27E-04	6.97E-04	9.59E-04	1.14E-03	1.27E-03
90	1.31E-01	2.43E-02	1.74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.89E-04	6.18E-04	7.32E-04	1.01E-03	1.19E-03	1.33E-03
91	1.32E-01	2.46E-02	1.96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.36E-04	6.52E-04	7.90E-04	1.09E-03	1.29E-03	1.44E-03
100	1.38E-01	2.65E-02	2.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.91E-04	7.05E-04	8.54E-04	1.18E-03	1.39E-03	1.56E-03
109	1.42E-01	2.85E-02	2.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.52E-04	7.66E-04	9.29E-04	1.28E-03	1.51E-03	1.69E-03
133	1.53E-01	3.48E-02	2.81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.19E-04	8.32E-04	1.00E-03	1.38E-03	1.64E-03	1.83E-03
162	1.65E-01	4.11E-02	3.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.87E-04	9.03E-04	1.08E-03	1.49E-03	1.79E-03	1.98E-03
200	1.78E-01	4.75E-02	3.58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.72E-04	9.85E-04	1.20E-03	1.63E-03	1.95E-03	2.15E-03
249	1.73E-01	5.21E-02	4.04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-03	1.10E-03	1.32E-03	1.80E-03	2.15E-03	2.38E-03
300	1.69E-01	5.32E-02	4.55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.08E-03	1.21E-03	1.45E-03	1.96E-03	2.35E-03	2.60E-03
313	1.63E-01	5.34E-02	5.13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-03	1.34E-03	1.60E-03	2.16E-03	2.57E-03	2.84E-03
357	1.34E-01	4.87E-02	5.79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-03	1.49E-03	1.77E-03	2.39E-03	2.82E-03	3.12E-03
400	1.34E-01	4.85E-02	6.53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-03	1.64E-03	1.94E-03	2.59E-03	3.07E-03	3.39E-03
500	1.09E-01	4.31E-02	7.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-03	1.70E-03	1.91E-03	2.23E-03	2.93E-03	3.46E-03	3.83E-03
509	1.07E-01	4.27E-02	8.30	0.00E+00	0.00E+00	0.00E+00	7.37E-04	1.96E-03	1.81E-03	2.07E-03	2.39E-03	3.13E-03	3.70E-03	4.08E-03
600	9.02E-02	3.83E-02	9.36	0.00E+00	0.00E+00	1.34E-03	2.16E-03	2.05E-03	1.99E-03	2.25E-03	2.72E-03	3.49E-03	4.13E-03	4.31E-03
660	8.24E-02	3.59E-02	10.56	5.87E-04	1.99E-03	2.31E-03	2.26E-03	2.23E-03	2.25E-03	2.43E-03	2.99E-03	3.80E-03	4.47E-03	4.55E-03
700	7.79E-02	3.43E-02	11.91	2.56E-03	2.50E-03	2.50E-03	2.42E-03	2.37E-03	2.58E-03	2.79E-03	3.26E-03	4.25E-03	4.98E-03	5.03E-03
800	6.68E-02	3.10E-02	13.43	2.74E-03	2.65E-03	2.60E-03	2.63E-03	2.58E-03	2.80E-03	3.22E-03	3.53E-03	4.74E-03	5.51E-03	5.55E-03
865	6.07E-02	2.91E-02	15.15	2.90E-03	2.85E-03	2.80E-03	2.84E-03	2.91E-03	3.34E-03	3.41E-03	4.04E-03	5.29E-03	6.14E-03	6.13E-03
900	5.79E-02	2.77E-02	17.08	3.17E-03	3.14E-03	3.22E-03	3.30E-03	3.38E-03	3.65E-03	3.90E-03	4.63E-03	5.91E-03	6.37E-03	6.79E-03
1000	4.90E-02	2.41E-02	19.26	3.88E-03	3.78E-03	3.83E-03	3.93E-03	4.05E-03	4.21E-03	4.44E-03	5.19E-03	6.66E-03	7.10E-03	7.65E-03
1147	3.81E-02	2.02E-02	21.72	4.29E-03	4.29E-03	4.36E-03	4.41E-03	4.41E-03	4.69E-03	4.99E-03	5.65E-03	6.77E-03	7.65E-03	8.26E-03
1545	2.21E-02	1.31E-02	24.49	4.57E-03	4.95E-03	4.97E-03	5.04E-03	5.10E-03	5.38E-03	5.72E-03	6.58E-03	7.56E-03	8.48E-03	9.10E-03
2000	1.38E-02	9.07E-03	27.62	5.87E-03	5.91E-03	5.86E-03	5.80E-03	5.85E-03	6.28E-03	6.87E-03	7.34E-03	8.74E-03	9.66E-03	1.02E-02
2120	1.24E-02	8.35E-03	31.15	6.48E-03	6.65E-03	6.75E-03	6.77E-03	6.84E-03	7.27E-03	7.47E-03	8.21E-03	9.73E-03	1.06E-02	1.11E-02
2977	6.65E-03	5.44E-03	35.13	8.21E-03	8.28E-03	8.26E-03	8.25E-03	8.17E-03	8.73E-03	8.92E-03	9.35E-03	1.09E-02	1.21E-02	1.27E-02

TABLE 11 A

ORIGINAL PAGE IS OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: LI
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 3; ATOMIC-W= 6.94)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	9.46E-03	9.65E-0[illegible]	9.72E-03	9.80E-03	9.56E-03	1.01E-02	1.04E-02	1.08E-02	1.22E-02	1.29E-02	1.41E-02
44.68	1.06E-02	1.09E-02	1.09E-02	1.10E-02	1.10E-02	1.11E-02	1.13E-02	1.15E-02	1.37E-02	1.39E-02	1.55E-02
50.38	1.22E-02	1.25E-02	1.26E-02	1.26E-02	1.26E-02	1.29E-02	1.27E-02	1.36E-02	1.47E-02	1.58E-02	1.68E-02
56.82	1.45E-02	1.49E-02	1.50E-02	1.49E-02	1.49E-02	1.49E-02	1.53E-02	1.59E-02	1.75E-02	1.74E-02	1.85E-02
64.07	1.63E-02	1.68E-02	1.71E-02	1.70E-02	1.71E-02	1.75E-02	1.75E-02	1.82E-02	1.84E-02	1.91E-02	2.07E-02
72.26	1.90E-02	1.97E-02	1.99E-02	2.00E-02	2.01E-02	1.99E-02	1.99E-02	2.02E-02	2.16E-02	2.19E-02	2.34E-02
81.49	2.16E-02	2.22E-02	2.23E-02	2.24E-02	2.25E-02	2.27E-02	2.23E-02	2.24E-02	2.29E-02	2.36E-02	2.44E-02
91.89	2.40E-02	2.44E-02	2.44E-02	2.45E-02	2.46E-02	2.49E-02	2.49E-02	2.48E-02	2.56E-02	2.65E-02	2.76E-02
103.63	2.83E-02	2.85E-02	2.86E-02	2.85E-02	2.83E-02	2.83E-02	2.83E-02	2.87E-02	2.94E-02	3.07E-02	3.06E-02
116.86	2.97E-02	3.03E-02	3.06E-02	3.10E-02	3.12E-02	3.12E-02	3.15E-02	3.15E-02	3.24E-02	3.20E-02	3.30E-02
131.79	3.33E-02	3.36E-02	3.40E-02	3.43E-02	3.46E-02	3.49E-02	3.51E-02	3.67E-02	3.63E-02	3.59E-02	3.56E-02
148.62	3.72E-02	3.78E-02	3.82E-02	3.85E-02	3.88E-02	3.90E-02	3.88E-02	3.85E-02	3.87E-02	3.94E-02	3.93E-02
167.60	3.99E-02	4.02E-02	4.04E-02	4.07E-02	4.09E-02	4.11E-02	4.13E-02	4.17E-02	4.12E-02	4.14E-02	4.04E-02
189.01	4.42E-02	4.47E-02	4.49E-02	4.51E-02	4.53E-02	4.51E-02	4.52E-02	4.54E-02	4.47E-02	4.42E-02	4.39E-02
213.15	4.75E-02	4.80E-02	4.83E-02	4.85E-02	4.87E-02	4.88E-02	4.84E-02	4.78E-02	4.80E-02	4.76E-02	4.63E-02
240.38	4.94E-02	4.96E-02	4.97E-02	4.97E-02	4.98E-02	4.94E-02	4.95E-02	4.96E-02	4.90E-02	4.91E-02	4.71E-02
271.08	5.06E-02	5.07E-02	5.07E-02	5.08E-02	5.08E-02	5.04E-02	5.04E-02	5.04E-02	4.97E-02	4.97E-02	4.75E-02
305.70	5.12E-02	5.12E-02	5.11E-02	5.11E-02	5.11E-02	5.10E-02	5.05E-02	5.00E-02	4.94E-02	4.92E-02	4.67E-02
344.74	4.97E-02	4.95E-02	4.93E-02	4.92E-02	4.90E-02	4.88E-02	4.87E-02	4.86E-02	4.82E-02	4.69E-02	4.52E-02
388.77	4.72E-02	4.71E-02	4.69E-02	4.68E-02	4.67E-02	4.65E-02	4.64E-02	4.62E-02	4.59E-02	4.56E-02	4.36E-02
438.43	4.48E-02	4.46E-02	4.44E-02	4.42E-02	4.40E-02	4.38E-02	4.36E-02	4.34E-02	4.29E-02	4.26E-02	4.12E-02
494.42	4.22E-02	4.20E-02	4.17E-02	4.14E-02	4.11E-02	4.09E-02	4.07E-02	4.06E-02	4.01E-02	3.98E-02	3.81E-02
557.57	3.91E-02	3.89E-02	3.87E-02	3.85E-02	3.83E-02	3.81E-02	3.79E-02	3.77E-02	3.73E-02	3.71E-02	3.64E-02
628.79	3.63E-02	3.60E-02	3.57E-02	3.54E-02	3.52E-02	3.50E-02	3.49E-02	3.47E-02	3.42E-02	3.40E-02	3.33E-02
709.09	3.34E-02	3.31E-02	3.28E-02	3.24E-02	3.21E-02	3.19E-02	3.18E-02	3.15E-02	3.11E-02	3.10E-02	3.03E-02
799.66	3.03E-02	3.02E-02	3.00E-02	2.98E-02	2.96E-02	2.94E-02	2.92E-02	2.89E-02	2.86E-02	2.85E-02	2.78E-02
901.79	2.69E-02	2.66E-02	2.63E-02	2.60E-02	2.57E-02	2.54E-02	2.52E-02	2.49E-02	2.47E-02	2.44E-02	2.40E-02
1017.00	2.32E-02	2.28E-02	2.25E-02	2.21E-02	2.18E-02	2.16E-02	2.14E-02	2.11E-02	2.08E-02	2.07E-02	2.03E-02
1146.90	1.98E-02	1.96E-02	1.94E-02	1.92E-02	1.90E-02	1.88E-02	1.86E-02	1.84E-02	1.82E-02	1.81E-02	1.78E-02
1293.30	1.67E-02	1.65E-02	1.63E-02	1.61E-02	1.59E-02	1.58E-02	1.57E-02	1.56E-02	1.55E-02	1.53E-02	1.52E-02
1458.50	1.41E-02	1.39E-02	1.38E-02	1.36E-02	1.35E-02	1.33E-02	1.33E-02	1.32E-02	1.31E-02	1.30E-02	1.28E-02
1644.80	1.19E-02	1.18E-02	1.17E-02	1.16E-02	1.16E-02	1.14E-02	1.13E-02	1.11E-02	1.10E-02	1.09E-02	1.08E-02
1854.90	1.00E-02	9.88E-03	9.76E-03	9.65E-03	9.53E-03	9.42E-03	9.33E-03	9.17E-03	9.05E-03	9.00E-03	8.92E-03
2091.80	8.48E-03	8.43E-03	8.39E-03	8.35E-03	8.30E-03	8.26E-03	8.22E-03	8.14E-03	8.08E-03	8.03E-03	7.97E-03
2358.90	7.26E-03	7.22E-03	7.19E-03	7.15E-03	7.11E-03	7.08E-03	7.04E-03	6.96E-03	6.88E-03	6.84E-03	6.79E-03
2660.20	6.04E-03	6.00E-03	5.95E-03	5.91E-03	5.85E-03	5.80E-03	5.73E-03	5.56E-03	5.40E-03	5.32E-03	5.23E-03

TABLE 11 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: BE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 4; ATOMIC-W= 9.01)
63.0 DEG/1334-1334 KM

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MAGNETOSPHERICALLY			DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)											
			SHIELD THICKNESS (GM/CM**2)											
ENERGY	UNATTENUATED	ATTENUATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.89E-02	1.54E-03	0.20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.65E-04	2.91E-04	3.65E-04	4.86E-04	5.10E-04	5.68E-04
14	1.76E-02	1.53E-03	0.23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-04	2.76E-04	3.47E-04	4.61E-04	4.84E-04	5.39E-04
16	1.76E-02	1.61E-03	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-04	2.64E-04	3.32E-04	4.41E-04	4.64E-04	5.16E-04
18	1.80E-02	1.72E-03	0.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.33E-04	2.56E-04	3.22E-04	4.28E-04	4.50E-04	5.01E-04
20	1.98E-02	2.01E-03	0.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.29E-04	2.52E-04	3.17E-04	4.21E-04	4.42E-04	4.93E-04
23	2.25E-02	2.36E-03	0.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-04	2.49E-04	3.13E-04	4.16E-04	4.37E-04	4.87E-04
26	2.52E-02	2.81E-03	0.41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-04	2.48E-04	3.12E-04	4.15E-04	4.36E-04	4.85E-04
30	2.87E-02	3.28E-03	0.46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.14E-04	2.49E-04	3.13E-04	4.16E-04	4.37E-04	4.87E-04
34	3.25E-02	3.92E-03	0.52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-04	2.52E-04	3.17E-04	4.21E-04	4.43E-04	4.93E-04
40	3.82E-02	4.99E-03	0.59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.16E-04	2.56E-04	3.22E-04	4.28E-04	4.50E-04	5.01E-04
46	4.30E-02	5.98E-03	0.67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.22E-04	2.64E-04	3.32E-04	4.41E-04	4.64E-04	5.16E-04
50	4.62E-02	6.57E-03	0.75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-04	2.71E-04	3.40E-04	4.52E-04	4.75E-04	5.29E-04
54	4.92E-02	7.17E-03	0.85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.36E-04	2.81E-04	3.53E-04	4.69E-04	4.93E-04	5.49E-04
60	5.36E-02	8.09E-03	0.95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-04	2.91E-04	3.65E-04	4.86E-04	5.10E-04	5.68E-04
64	5.65E-02	8.72E-03	1.08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.58E-04	3.07E-04	3.86E-04	5.13E-04	5.39E-04	6.00E-04
70	6.09E-02	9.81E-03	1.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.72E-04	3.24E-04	4.07E-04	5.41E-04	5.68E-04	6.33E-04
76	6.45E-02	1.09E-02	1.37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-04	3.44E-04	4.33E-04	5.75E-04	6.05E-04	6.73E-04
80	6.69E-02	1.15E-02	1.54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-04	3.65E-04	4.59E-04	6.10E-04	6.41E-04	7.14E-04
90	7.05E-02	1.30E-02	1.74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-04	3.86E-04	4.80E-04	6.38E-04	6.71E-04	7.47E-04
91	7.08E-02	1.32E-02	1.96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-04	4.15E-04	5.15E-04	6.84E-04	7.19E-04	8.00E-04
100	7.40E-02	1.42E-02	2.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.75E-04	4.45E-04	5.53E-04	7.35E-04	7.72E-04	8.60E-04
109	7.64E-02	1.53E-02	2.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.06E-04	4.81E-04	5.97E-04	7.95E-04	8.35E-04	9.29E-04
133	8.22E-02	1.87E-02	2.81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.42E-04	5.19E-04	6.43E-04	8.63E-04	8.99E-04	1.00E-03
162	8.84E-02	2.20E-02	3.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.76E-04	5.62E-04	7.02E-04	9.32E-04	9.67E-04	1.08E-03
200	9.55E-02	2.55E-02	3.58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-04	6.13E-04	7.62E-04	1.01E-03	1.05E-03	1.18E-03
249	9.29E-02	2.79E-02	4.04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.79E-04	6.76E-04	8.39E-04	1.11E-03	1.16E-03	1.30E-03
300	9.08E-02	2.85E-02	4.55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.38E-04	6.40E-04	7.44E-04	9.14E-04	1.21E-03	1.26E-03	1.41E-03
313	8.77E-02	2.87E-02	5.13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.99E-04	7.06E-04	8.17E-04	1.01E-03	1.32E-03	1.37E-03	1.54E-03
357	7.21E-02	2.61E-02	5.79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.98E-04	7.87E-04	9.04E-04	1.11E-03	1.45E-03	1.52E-03	1.69E-03
400	7.17E-02	2.60E-02	6.53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.82E-04	8.70E-04	9.95E-04	1.22E-03	1.58E-03	1.65E-03	1.84E-03
500	5.85E-02	2.31E-02	7.36	0.00E+00	0.00E+00	0.00E+00	9.56E-04	9.33E-04	1.01E-03	1.14E-03	1.39E-03	1.80E-03	1.86E-03	2.07E-03
509	5.74E-02	2.29E-02	8.30	0.00E+00	0.00E+00	3.91E-04	1.05E-03	1.01E-03	1.03E-03	1.11E-03	1.47E-03	1.92E-03	1.98E-03	2.20E-03
600	4.84E-02	2.05E-02	9.36	0.00E+00	2.85E-04	1.16E-03	1.12E-03	1.09E-03	1.13E-03	1.25E-03	1.52E-03	2.12E-03	2.19E-03	2.44E-03
660	4.42E-02	1.93E-02	10.56	3.20E-04	1.25E-03	1.23E-03	1.21E-03	1.14E-03	1.27E-03	1.38E-03	1.67E-03	2.31E-03	2.38E-03	2.64E-03
700	4.18E-02	1.84E-02	11.91	1.38E-03	1.33E-03	1.30E-03	1.27E-03	1.26E-03	1.48E-03	1.58E-03	1.88E-03	2.58E-03	2.65E-03	2.93E-03
800	3.58E-02	1.66E-02	13.43	1.46E-03	1.42E-03	1.41E-03	1.38E-03	1.40E-03	1.58E-03	1.82E-03	2.12E-03	2.68E-03	2.92E-03	3.23E-03
865	3.26E-02	1.56E-02	15.15	1.52E-03	1.53E-03	1.52E-03	1.55E-03	1.58E-03	1.86E-03	1.93E-03	2.40E-03	2.92E-03	3.24E-03	3.59E-03
900	3.11E-02	1.49E-02	17.08	1.71E-03	1.72E-03	1.79E-03	1.82E-03	1.81E-03	2.03E-03	2.21E-03	2.72E-03	3.24E-03	3.58E-03	3.94E-03
1000	2.63E-02	1.30E-02	19.26	2.09E-03	2.03E-03	2.11E-03	2.16E-03	2.18E-03	2.40E-03	2.70E-03	2.95E-03	3.73E-03	4.06E-03	4.44E-03
1147	2.05E-02	1.08E-02	21.72	2.31E-03	2.31E-03	2.36E-03	2.35E-03	2.43E-03	2.62E-03	2.79E-03	3.21E-03	4.03E-03	4.36E-03	4.79E-03
1545	1.19E-02	7.05E-03	24.49	2.65E-03	2.64E-03	2.70E-03	2.73E-03	2.76E-03	3.02E-03	3.31E-03	3.68E-03	4.50E-03	4.83E-03	5.26E-03
2000	7.41E-03	4.87E-03	27.62	3.17E-03	3.20E-03	3.11E-03	3.13E-03	3.23E-03	3.48E-03	3.75E-03	4.18E-03	5.12E-03	5.43E-03	5.89E-03
2120	6.65E-03	4.48E-03	31.15	3.52E-03	3.60E-03	3.63E-03	3.66E-03	3.68E-03	4.01E-03	4.30E-03	4.44E-03	5.64E-03	5.95E-03	6.40E-03
2977	3.57E-03	2.92E-03	35.13	4.41E-03	4.46E-03	4.42E-03	4.39E-03	4.48E-03	4.80E-03	4.94E-03	5.40E-03	6.07E-03	6.42E-03	7.25E-03

TABLE 12 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: BE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 4; ATOMIC-W= 9.01)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	5.12E-03	5.20E-03	5.26E-03	5.19E-03	5.15E-03	5.48E-03	5.57E-03	5.78E-03	6.80E-03	6.92E-03	7.67E-03
44.68	5.67E-03	5.85E-03	5.91E-03	5.96E-03	5.95E-03	5.91E-03	6.26E-03	6.62E-03	7.58E-03	7.63E-03	8.12E-03
50.38	6.57E-03	6.68E-03	6.73E-03	6.78E-03	6.84E-03	6.79E-03	7.12E-03	7.45E-03	8.43E-03	8.65E-03	9.08E-03
56.82	7.84E-03	8.04E-03	8.01E-03	7.96E-03	7.93E-03	8.17E-03	8.30E-03	8.63E-03	9.32E-03	9.66E-03	1.03E-02
64.07	8.80E-03	9.12E-03	9.10E-03	9.16E-03	9.22E-03	9.46E-03	9.35E-03	9.97E-03	1.04E-02	1.05E-02	1.14E-02
72.26	1.02E-02	1.07E-02	1.07E-02	1.08E-02	1.08E-02	1.05E-02	1.09E-02	1.12E-02	1.13E-02	1.20E-02	1.28E-02
81.49	1.16E-02	1.19E-02	1.20E-02	1.21E-02	1.21E-02	1.19E-02	1.21E-02	1.22E-02	1.26E-02	1.28E-02	1.33E-02
91.89	1.29E-02	1.30E-02	1.31E-02	1.32E-02	1.32E-02	1.33E-02	1.34E-02	1.35E-02	1.41E-02	1.46E-02	1.48E-02
103.63	1.52E-02	1.53E-02	1.52E-02	1.51E-02	1.52E-02	1.51E-02	1.53E-02	1.55E-02	1.60E-02	1.62E-02	1.65E-02
116.86	1.60E-02	1.63E-02	1.65E-02	1.67E-02	1.68E-02	1.68E-02	1.70E-02	1.70E-02	1.74E-02	1.78E-02	1.75E-02
131.79	1.79E-02	1.81E-02	1.83E-02	1.85E-02	1.86E-02	1.88E-02	1.89E-02	1.89E-02	1.93E-02	1.91E-02	1.94E-02
148.62	2.00E-02	2.04E-02	2.06E-02	2.07E-02	2.08E-02	2.08E-02	2.09E-02	2.08E-02	2.10E-02	2.08E-02	2.04E-02
167.60	2.14E-02	2.16E-02	2.17E-02	2.18E-02	2.20E-02	2.21E-02	2.22E-02	2.25E-02	2.19E-02	2.26E-02	2.22E-02
189.01	2.37E-02	2.40E-02	2.41E-02	2.42E-02	2.43E-02	2.42E-02	2.43E-02	2.45E-02	2.42E-02	2.39E-02	2.33E-02
213.15	2.56E-02	2.58E-02	2.60E-02	2.61E-02	2.61E-02	2.62E-02	2.60E-02	2.57E-02	2.55E-02	2.53E-02	2.40E-02
240.38	2.65E-02	2.66E-02	2.67E-02	2.67E-02	2.65E-02	2.65E-02	2.66E-02	2.66E-02	2.63E-02	2.62E-02	2.48E-02
271.08	2.72E-02	2.72E-02	2.72E-02	2.73E-02	2.73E-02	2.71E-02	2.71E-02	2.71E-02	2.67E-02	2.64E-02	2.49E-02
305.70	2.75E-02	2.74E-02	2.74E-02	2.74E-02	2.74E-02	2.71E-02	2.71E-02	2.68E-02	2.65E-02	2.61E-02	2.45E-02
344.74	2.67E-02	2.65E-02	2.64E-02	2.63E-02	2.62E-02	2.61E-02	2.61E-02	2.60E-02	2.54E-02	2.48E-02	2.36E-02
388.77	2.53E-02	2.52E-02	2.52E-02	2.51E-02	2.50E-02	2.49E-02	2.48E-02	2.48E-02	2.45E-02	2.41E-02	2.28E-02
438.43	2.40E-02	2.39E-02	2.38E-02	2.36E-02	2.35E-02	2.34E-02	2.34E-02	2.31E-02	2.30E-02	2.27E-02	2.17E-02
494.42	2.26E-02	2.25E-02	2.23E-02	2.22E-02	2.20E-02	2.19E-02	2.18E-02	2.17E-02	2.14E-02	2.10E-02	2.03E-02
557.57	2.10E-02	2.09E-02	2.07E-02	2.06E-02	2.05E-02	2.04E-02	2.03E-02	2.02E-02	2.00E-02	1.97E-02	1.92E-02
628.79	1.95E-02	1.93E-02	1.91E-02	1.90E-02	1.88E-02	1.87E-02	1.87E-02	1.85E-02	1.83E-02	1.81E-02	1.77E-02
709.09	1.79E-02	1.77E-02	1.75E-02	1.74E-02	1.72E-02	1.71E-02	1.70E-02	1.69E-02	1.67E-02	1.65E-02	1.61E-02
799.66	1.63E-02	1.62E-02	1.61E-02	1.60E-02	1.58E-02	1.57E-02	1.56E-02	1.55E-02	1.53E-02	1.51E-02	1.47E-02
901.79	1.44E-02	1.43E-02	1.41E-02	1.39E-02	1.38E-02	1.36E-02	1.35E-02	1.33E-02	1.32E-02	1.30E-02	1.27E-02
1017.00	1.24E-02	1.22E-02	1.20E-02	1.18E-02	1.17E-02	1.16E-02	1.15E-02	1.13E-02	1.11E-02	1.11E-02	1.09E-02
1146.90	1.06E-02	1.05E-02	1.04E-02	1.03E-02	1.01E-02	1.00E-02	9.93E-03	9.80E-03	9.71E-03	9.62E-03	9.45E-03
1293.30	8.95E-03	8.83E-03	8.72E-03	8.60E-03	8.52E-03	8.47E-03	8.43E-03	8.35E-03	8.26E-03	8.20E-03	8.10E-03
1438.50	7.55E-03	7.46E-03	7.38E-03	7.29E-03	7.21E-03	7.15E-03	7.11E-03	7.05E-03	6.99E-03	6.93E-03	6.84E-03
1644.80	6.37E-03	6.32E-03	6.26E-03	6.21E-03	6.16E-03	6.11E-03	6.05E-03	5.95E-03	5.87E-03	5.84E-03	5.77E-03
1854.90	5.37E-03	5.30E-03	5.23E-03	5.16E-03	5.10E-03	5.03E-03	4.98E-03	4.89E-03	4.84E-03	4.81E-03	4.77E-03
2091.80	4.55E-03	4.52E-03	4.50E-03	4.47E-03	4.45E-03	4.43E-03	4.40E-03	4.36E-03	4.32E-03	4.30E-03	4.26E-03
2358.90	3.89E-03	3.87E-03	3.85E-03	3.83E-03	3.81E-03	3.79E-03	3.76E-03	3.72E-03	3.68E-03	3.66E-03	3.63E-03
2660.20	3.24E-03	3.22E-03	3.19E-03	3.16E-03	3.13E-03	3.10E-03	3.06E-03	2.96E-03	2.87E-03	2.84E-03	2.77E-03

TABLE 12 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: B
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 5; ATOMIC-W= 10.82)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	5.93E-02	4.82E-03	0.20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.81E-04	1.15E-03	1.50E-03	1.98E-03	1.98E-03	2.23E-03
14	5.52E-02	4.79E-03	0.23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.28E-04	1.09E-03	1.42E-03	1.87E-03	1.87E-03	2.11E-03
16	5.58E-02	5.06E-03	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.84E-04	1.04E-03	1.35E-03	1.78E-03	1.78E-03	2.01E-03
18	5.66E-02	5.38E-03	0.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-04	9.98E-04	1.30E-03	1.72E-03	1.72E-03	1.93E-03
20	6.22E-02	6.30E-03	0.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.33E-04	9.77E-04	1.27E-03	1.68E-03	1.68E-03	1.89E-03
23	7.06E-02	7.41E-03	0.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.17E-04	9.68E-04	1.25E-03	1.65E-03	1.65E-03	1.85E-03
26	7.89E-02	8.82E-03	0.41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.07E-04	9.59E-04	1.25E-03	1.63E-03	1.63E-03	1.83E-03
30	8.95E-02	1.03E-02	0.46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.50E-05	8.06E-04	9.58E-04	1.25E-03	1.62E-03	1.62E-03	1.83E-03
34	1.02E-01	1.23E-02	0.52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.63E-04	8.09E-04	9.62E-04	1.25E-03	1.63E-03	1.63E-03	1.84E-03
40	1.20E-01	1.57E-02	0.59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.70E-04	8.17E-04	9.72E-04	1.26E-03	1.65E-03	1.65E-03	1.85E-03
46	1.35E-01	1.87E-02	0.67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.86E-04	8.34E-04	9.92E-04	1.29E-03	1.68E-03	1.68E-03	1.89E-03
50	1.45E-01	2.06E-02	0.75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.02E-04	8.51E-04	1.01E-03	1.31E-03	1.71E-03	1.71E-03	1.93E-03
54	1.54E-01	2.25E-02	0.85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.26E-04	8.76E-04	1.04E-03	1.35E-03	1.77E-03	1.76E-03	1.99E-03
60	1.68E-01	2.54E-02	0.95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.49E-04	9.01E-04	1.07E-03	1.39E-03	1.82E-03	1.81E-03	2.04E-03
64	1.77E-01	2.73E-02	1.08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.11E-04	9.43E-04	1.12E-03	1.46E-03	1.90E-03	1.90E-03	2.14E-03
70	1.91E-01	3.08E-02	1.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.67E-04	9.87E-04	1.17E-03	1.53E-03	1.99E-03	1.99E-03	2.24E-03
76	2.02E-01	3.43E-02	1.37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-03	1.04E-03	1.24E-03	1.61E-03	2.10E-03	2.10E-03	2.36E-03
80	2.10E-01	3.62E-02	1.54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-03	1.11E-03	1.31E-03	1.70E-03	2.21E-03	2.21E-03	2.49E-03
90	2.21E-01	4.09E-02	1.74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03	1.16E-03	1.36E-03	1.77E-03	2.30E-03	2.30E-03	2.59E-03
91	2.22E-01	4.13E-02	1.96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-03	1.23E-03	1.45E-03	1.88E-03	2.46E-03	2.45E-03	2.76E-03
100	2.32E-01	4.47E-02	2.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-03	1.32E-03	1.55E-03	2.01E-03	2.62E-03	2.62E-03	2.95E-03
109	2.40E-01	4.79E-02	2.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-03	1.42E-03	1.67E-03	2.16E-03	2.82E-03	2.82E-03	3.17E-03
133	2.58E-01	5.86E-02	2.81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-03	1.54E-03	1.81E-03	2.32E-03	2.96E-03	3.02E-03	3.40E-03
162	2.77E-01	6.91E-02	3.17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-03	1.64E-03	1.93E-03	2.48E-03	2.99E-03	3.23E-03	3.64E-03
200	3.00E-01	7.99E-02	3.58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-03	1.79E-03	2.09E-03	2.68E-03	3.24E-03	3.50E-03	3.94E-03
249	2.91E-01	8.76E-02	4.04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-03	1.98E-03	2.32E-03	2.98E-03	3.55E-03	3.83E-03	4.32E-03
300	2.85E-01	8.95E-02	4.55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-03	2.17E-03	2.53E-03	3.23E-03	3.85E-03	4.16E-03	4.69E-03
313	2.75E-01	8.99E-02	5.13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-03	2.39E-03	2.78E-03	3.52E-03	4.19E-03	4.53E-03	5.10E-03
397	2.26E-01	8.20E-02	5.79	0.00E+00	0.00E+00	0.00E+00	2.40E-03	2.43E-03	2.66E-03	3.07E-03	3.73E-03	4.59E-03	4.96E-03	5.58E-03
400	2.25E-01	8.16E-02	6.53	0.00E+00	0.00E+00	0.00E+00	2.73E-03	2.67E-03	2.92E-03	3.36E-03	3.85E-03	4.97E-03	5.37E-03	6.05E-03
500	1.84E-01	7.25E-02	7.36	0.00E+00	0.00E+00	2.87E-03	3.09E-03	2.95E-03	3.39E-03	3.48E-03	4.34E-03	5.60E-03	6.05E-03	6.81E-03
509	1.80E-01	7.18E-02	8.30	0.00E+00	0.00E+00	3.25E-03	3.12E-03	2.97E-03	3.35E-03	3.74E-03	4.66E-03	5.95E-03	6.49E-03	7.24E-03
600	1.52E-01	6.44E-02	9.36	0.00E+00	2.68E-03	3.53E-03	3.55E-03	3.37E-03	3.81E-03	4.22E-03	5.20E-03	6.63E-03	7.18E-03	8.00E-03
660	1.39E-01	6.05E-02	10.56	1.01E-03	3.91E-03	3.81E-03	3.60E-03	3.54E-03	4.24E-03	4.66E-03	5.67E-03	7.21E-03	7.77E-03	8.67E-03
700	1.31E-01	5.78E-02	11.91	4.25E-03	4.18E-03	4.00E-03	3.99E-03	3.95E-03	4.86E-03	5.29E-03	6.35E-03	7.97E-03	8.59E-03	9.59E-03
800	1.12E-01	5.21E-02	13.43	4.53E-03	4.39E-03	4.35E-03	4.31E-03	4.52E-03	5.31E-03	6.05E-03	7.11E-03	8.86E-03	9.49E-03	1.06E-02
865	1.02E-01	4.90E-02	15.15	4.79E-03	4.75E-03	4.90E-03	4.98E-03	5.29E-03	5.81E-03	6.66E-03	8.01E-03	9.79E-03	1.05E-02	1.17E-02
900	9.74E-02	4.65E-02	17.08	5.42E-03	5.45E-03	5.66E-03	5.81E-03	5.79E-03	6.77E-03	7.32E-03	8.97E-03	1.09E-02	1.16E-02	1.29E-02
1000	8.24E-02	4.06E-02	19.26	6.36E-03	6.47E-03	6.72E-03	6.95E-03	6.92E-03	7.59E-03	8.80E-03	1.02E-02	1.23E-02	1.32E-02	1.45E-02
1147	6.41E-02	3.40E-02	21.72	7.12E-03	7.25E-03	7.43E-03	7.54E-03	7.72E-03	8.63E-03	9.55E-03	1.04E-02	1.33E-02	1.42E-02	1.56E-02
1545	3.72E-02	2.21E-02	24.49	8.32E-03	8.36E-03	8.53E-03	8.57E-03	8.72E-03	9.76E-03	1.05E-02	1.18E-02	1.48E-02	1.57E-02	1.71E-02
2000	2.32E-02	1.53E-02	27.62	9.85E-03	9.89E-03	9.78E-03	1.00E-02	1.02E-02	1.17E-02	1.26E-02	1.38E-02	1.67E-02	1.77E-02	1.92E-02
2120	2.09E-02	1.40E-02	31.15	1.11E-02	1.14E-02	1.14E-02	1.16E-02	1.17E-02	1.26E-02	1.33E-02	1.47E-02	1.83E-02	1.92E-02	2.07E-02
2977	1.12E-02	9.15E-03	35.13	1.39E-02	1.39E-02	1.37E-02	1.40E-02	1.42E-02	1.50E-02	1.55E-02	1.69E-02	1.97E-02	2.04E-02	2.17E-02

TABLE 13 A

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: B
MODEL= BARR: TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 5; ATOMIC-W= 10.82)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.61E-02	1.64E-02	1.64E-02	1.60E-02	1.64E-02	1.72E-02	1.78E-02	1.87E-02	2.16E-02	2.25E-02	2.39E-02
44.68	1.78E-02	1.84E-02	1.86E-02	1.86E-02	1.89E-02	1.91E-02	1.94E-02	2.07E-02	2.39E-02	2.48E-02	2.61E-02
50.38	2.06E-02	2.10E-02	2.12E-02	2.14E-02	2.16E-02	2.16E-02	2.30E-02	2.46E-02	2.72E-02	2.80E-02	2.90E-02
56.82	2.48E-02	2.53E-02	2.49E-02	2.51E-02	2.50E-02	2.56E-02	2.71E-02	2.84E-02	2.89E-02	3.22E-02	3.28E-02
64.07	2.80E-02	2.88E-02	2.86E-02	2.89E-02	2.91E-02	2.96E-02	3.01E-02	3.06E-02	3.27E-02	3.33E-02	3.62E-02
72.26	3.23E-02	3.35E-02	3.37E-02	3.39E-02	3.37E-02	3.35E-02	3.44E-02	3.44E-02	3.61E-02	3.79E-02	4.03E-02
81.49	3.64E-02	3.76E-02	3.79E-02	3.80E-02	3.82E-02	3.76E-02	3.86E-02	3.93E-02	4.04E-02	4.29E-02	4.20E-02
91.89	4.07E-02	4.11E-02	4.13E-02	4.15E-02	4.16E-02	4.20E-02	4.21E-02	4.23E-02	4.44E-02	4.50E-02	4.63E-02
103.63	4.80E-02	4.82E-02	4.74E-02	4.76E-02	4.78E-02	4.77E-02	4.81E-02	4.93E-02	5.13E-02	5.23E-02	5.30E-02
116.96	5.06E-02	5.15E-02	5.23E-02	5.26E-02	5.23E-02	5.31E-02	5.29E-02	5.32E-02	5.43E-02	5.45E-02	5.48E-02
131.79	5.61E-02	5.68E-02	5.75E-02	5.81E-02	5.84E-02	5.91E-02	5.97E-02	5.86E-02	5.92E-02	6.16E-02	5.93E-02
148.62	6.28E-02	6.41E-02	6.48E-02	6.51E-02	6.54E-02	6.53E-02	6.52E-02	6.53E-02	6.55E-02	6.59E-02	6.38E-02
167.60	6.72E-02	6.76E-02	6.81E-02	6.85E-02	6.90E-02	6.96E-02	6.99E-02	7.11E-02	6.99E-02	6.86E-02	6.67E-02
189.01	7.44E-02	7.52E-02	7.57E-02	7.61E-02	7.64E-02	7.61E-02	7.64E-02	7.64E-02	7.46E-02	7.46E-02	7.06E-02
213.15	8.02E-02	8.11E-02	8.15E-02	8.18E-02	8.20E-02	8.16E-02	8.04E-02	8.09E-02	7.91E-02	7.77E-02	7.48E-02
240.38	8.32E-02	8.35E-02	8.36E-02	8.31E-02	8.32E-02	8.33E-02	8.34E-02	8.29E-02	8.28E-02	7.98E-02	7.46E-02
271.08	8.52E-02	8.53E-02	8.54E-02	8.55E-02	8.55E-02	8.48E-02	8.49E-02	8.49E-02	8.35E-02	8.13E-02	7.61E-02
305.70	8.62E-02	8.61E-02	8.60E-02	8.59E-02	8.59E-02	8.51E-02	8.42E-02	8.41E-02	8.28E-02	7.97E-02	7.43E-02
344.74	8.36E-02	8.32E-02	8.29E-02	8.25E-02	8.22E-02	8.19E-02	8.18E-02	8.15E-02	7.88E-02	7.69E-02	7.29E-02
388.77	7.94E-02	7.92E-02	7.89E-02	7.86E-02	7.83E-02	7.80E-02	7.78E-02	7.76E-02	7.66E-02	7.37E-02	6.95E 02
438.43	7.53E-02	7.48E-02	7.44E-02	7.40E-02	7.37E-02	7.34E-02	7.32E-02	7.25E-02	7.17E-02	6.96E-02	6.69E-02
494.42	7.10E-02	7.05E-02	7.00E-02	6.94E-02	6.89E-02	6.85E-02	6.83E-02	6.81E-02	6.66E-02	6.44E-02	6.27E-02
557.57	6.58E-02	6.53E-02	6.49E-02	6.44E-02	6.41E-02	6.38E-02	6.36E-02	6.33E-02	6.24E-02	6.14E-02	5.90E-02
628.79	6.10E-02	6.04E-02	5.99E-02	5.94E-02	5.90E-02	5.87E-02	5.85E-02	5.80E-02	5.72E-02	5.62E-02	5.49E-02
709.09	5.61E-02	5.54E-02	5.47E-02	5.41E-02	5.37E-02	5.34E-02	5.32E-02	5.25E-02	5.21E-02	5.14E-02	5.00E-02
799.66	5.10E-02	5.07E-02	5.03E-02	4.99E-02	4.95E-02	4.91E-02	4.88E-02	4.84E-02	4.79E-02	4.70E-02	4.56E-02
901.79	4.53E-02	4.47E-02	4.42E-02	4.36E-02	4.30E-02	4.25E-02	4.21E-02	4.16E-02	4.11E-02	4.06E-02	3.92E-02
1017.00	3.90E-02	3.83E-02	3.76E-02	3.70E-02	3.65E-02	3.61E-02	3.58E-02	3.53E-02	3.48E-02	3.45E-02	3.37E-02
1146.90	3.33E-02	3.29E-02	3.25E-02	3.21E-02	3.17E-02	3.14E-02	3.11E-02	3.07E-02	3.04E-02	3.00E-02	2.93E-02
1293.30	2.80E-02	2.76E-02	2.72E-02	2.69E-02	2.67E-02	2.65E-02	2.64E-02	2.61E-02	2.58E-02	2.56E-02	2.52E-02
1458.50	2.36E-02	2.33E-02	2.30E-02	2.27E-02	2.25E-02	2.23E-02	2.22E-02	2.20E-02	2.18E-02	2.16E-02	2.13E-02
1644.80	2.00E-02	1.98E-02	1.96E-02	1.94E-02	1.93E-02	1.91E-02	1.89E-02	1.86E-02	1.84E-02	1.82E-02	1.80E-02
1854.90	1.68E-02	1.66E-02	1.64E-02	1.61E-02	1.59E-02	1.57E-02	1.56E-02	1.53E-02	1.51E-02	1.50E-02	1.48E-02
2091.80	1.43E-02	1.42E-02	1.41E-02	1.40E-02	1.39E-02	1.39E-02	1.38E-02	1.36E-02	1.35E-02	1.35E-02	1.33E-02
2358.90	1.22E-02	1.21E-02	1.21E-02	1.20E-02	1.19E-02	1.19E-02	1.18E-02	1.16E-02	1.15E-02	1.15E-02	1.13E-02
2660.20	1.02E-02	1.01E-02	9.99E-03	9.90E-03	9.79E-03	9.67E-03	9.53E-03	9.16E-03	8.96E-03	8.83E-03	8.51E-03

TABLE 13 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: C
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 6; ATOMIC-W= 12.01)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY			DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)											
			SHIELD THICKNESS (G/CM**2)											
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	2.15E-01	1.75E-02	0.20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.02E-03	4.56E-03	5.44E-03	6.26E-03	8.08E-03	8.89E-03	9.62E-03
14	2.00E-01	1.74E-02	0.23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.79E-03	4.30E-03	5.13E-03	5.91E-03	7.63E-03	8.40E-03	9.09E-03
16	2.00E-01	1.83E-02	0.25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-03	4.08E-03	4.86E-03	5.59E-03	7.23E-03	7.95E-03	8.61E-03
18	2.05E-01	1.95E-02	0.29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.44E-03	3.91E-03	4.66E-03	5.36E-03	6.92E-03	7.62E-03	8.25E-03
20	2.25E-01	2.28E-02	0.32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.36E-03	3.81E-03	4.54E-03	5.22E-03	6.75E-03	7.43E-03	8.04E-03
23	2.56E-01	2.68E-02	0.36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.27E-03	3.71E-03	4.43E-03	5.10E-03	6.58E-03	7.24E-03	7.84E-03
26	2.86E-01	3.20E-02	0.41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.23E-03	3.64E-03	4.34E-03	5.00E-03	6.45E-03	7.10E-03	7.68E-03
30	3.26E-01	3.73E-02	0.46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.21E-03	3.62E-03	4.32E-03	4.97E-03	6.42E-03	7.07E-03	7.65E-03
34	3.69E-01	4.46E-02	0.52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.21E-03	3.62E-03	4.31E-03	4.96E-03	6.41E-03	7.06E-03	7.63E-03
40	4.34E-01	5.67E-02	0.59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-03	3.63E-03	4.33E-03	4.99E-03	6.44E-03	7.09E-03	7.67E-03
46	4.89E-01	6.79E-02	0.67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.27E-03	3.68E-03	4.39E-03	5.05E-03	6.53E-03	7.19E-03	7.77E-03
50	5.25E-01	7.47E-02	0.75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-03	3.74E-03	4.45E-03	5.13E-03	6.62E-03	7.29E-03	7.89E-03
54	5.59E-01	8.15E-02	0.85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.39E-03	3.82E-03	4.56E-03	5.25E-03	6.78E-03	7.46E-03	8.07E-03
60	6.09E-01	9.20E-02	0.95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-03	3.91E-03	4.66E-03	5.37E-03	6.93E-03	7.63E-03	8.26E-03
64	6.42E-01	9.90E-02	1.08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.62E-03	4.12E-03	4.85E-03	5.58E-03	7.21E-03	7.93E-03	8.58E-03
70	6.92E-01	1.11E-01	1.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-03	4.28E-03	5.04E-03	5.81E-03	7.50E-03	8.25E-03	8.93E-03
76	7.33E-01	1.24E-01	1.37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.96E-03	4.49E-03	5.29E-03	6.09E-03	7.86E-03	8.66E-03	9.37E-03
80	7.60E-01	1.31E-01	1.54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.15E-03	4.71E-03	5.59E-03	6.38E-03	8.24E-03	9.07E-03	9.81E-03
90	8.01E-01	1.48E-01	1.74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.32E-03	4.88E-03	5.84E-03	6.62E-03	8.55E-03	9.41E-03	1.02E-02
91	8.05E-01	1.50E-01	1.96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.57E-03	5.17E-03	6.18E-03	7.01E-03	9.05E-03	9.96E-03	1.08E-02
100	8.41E-01	1.62E-01	2.21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-03	5.49E-03	6.57E-03	7.44E-03	9.61E-03	1.06E-02	1.14E-02
109	8.69E-01	1.74E-01	2.50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.22E-03	5.89E-03	7.02E-03	7.96E-03	1.03E-02	1.13E-02	1.22E-02
133	9.34E-01	2.12E-01	2.81	0.00E+00	0.00E+00	0.00E+00	2.69E-03	5.59E-03	6.34E-03	7.49E-03	8.56E-03	1.10E-02	1.21E-02	1.31E-02
162	1.00E+00	2.50E-01	3.17	0.00E+00	0.00E+00	0.00E+00	5.77E-03	5.99E-03	6.76E-03	7.99E-03	9.15E-03	1.17E-02	1.29E-02	1.39E-02
200	1.09E+00	2.90E-01	3.58	0.00E+00	0.00E+00	0.00E+00	6.41E-03	6.47E-03	7.28E-03	8.69E-03	9.86E-03	1.26E-02	1.39E-02	1.50E-02
249	1.06E+00	3.18E-01	4.04	0.00E+00	0.00E+00	0.00E+00	7.14E-03	7.11E-03	8.04E-03	9.54E-03	1.08E-02	1.37E-02	1.51E-02	1.64E-02
300	1.03E+00	3.24E-01	4.55	0.00E+00	0.00E+00	0.00E+00	7.84E-03	7.47E-03	8.76E-03	1.03E-02	1.16E-02	1.49E-02	1.64E-02	1.77E-02
313	9.96E-01	3.26E-01	5.13	0.00E+00	0.00E+00	0.00E+00	8.61E-03	7.66E-03	9.57E-03	1.05E-02	1.26E-02	1.61E-02	1.78E-02	1.92E-02
397	8.19E-01	2.97E-01	5.79	0.00E+00	0.00E+00	2.19E-03	9.10E-03	8.42E-03	1.05E-02	1.13E-02	1.39E-02	1.76E-02	1.94E-02	2.10E-02
400	8.14E-01	2.96E-01	6.53	0.00E+00	0.00E+00	9.61E-03	9.56E-03	9.20E-03	1.15E-02	1.23E-02	1.51E-02	1.91E-02	2.10E-02	2.27E-02
500	6.65E-01	2.63E-01	7.36	0.00E+00	0.00E+00	1.14E-02	1.10E-02	1.06E-02	1.20E-02	1.40E-02	1.69E-02	2.14E-02	2.36E-02	2.55E-02
509	6.53E-01	2.60E-01	8.30	0.00E+00	4.47E-03	1.19E-02	1.14E-02	1.10E-02	1.29E-02	1.50E-02	1.81E-02	2.29E-02	2.50E-02	2.71E-02
600	5.50E-01	2.33E-01	9.36	0.00E+00	1.32E-02	1.28E-02	1.20E-02	1.17E-02	1.44E-02	1.68E-02	2.01E-02	2.53E-02	2.76E-02	2.99E-02
660	5.02E-01	2.19E-01	10.56	8.68E-03	1.40E-02	1.33E-02	1.31E-02	1.33E-02	1.59E-02	1.85E-02	2.19E-02	2.74E-02	3.01E-02	3.23E-02
700	4.75E-01	2.09E-01	11.91	1.55E-02	1.48E-02	1.45E-02	1.40E-02	1.47E-02	1.82E-02	2.10E-02	2.44E-02	3.03E-02	3.33E-02	3.45E-02
800	4.07E-01	1.89E-01	13.43	1.63E-02	1.60E-02	1.55E-02	1.60E-02	1.73E-02	2.08E-02	2.37E-02	2.72E-02	3.36E-02	3.67E-02	3.68E-02
865	3.70E-01	1.78E-01	15.15	1.75E-02	1.73E-02	1.79E-02	1.87E-02	1.87E-02	2.18E-02	2.71E-02	3.04E-02	3.70E-02	4.04E-02	4.06E-02
900	3.53E-01	1.69E-01	17.08	1.96E-02	2.03E-02	2.10E-02	2.10E-02	2.22E-02	2.52E-02	2.81E-02	3.42E-02	4.10E-02	4.47E-02	4.46E-02
1000	2.99E-01	1.47E-01	19.26	2.29E-02	2.40E-02	2.51E-02	2.46E-02	2.61E-02	3.06E-02	3.33E-02	3.95E-02	4.65E-02	5.04E-02	5.01E-02
1147	2.32E-01	1.23E-01	21.72	2.60E-02	2.69E-02	2.73E-02	2.83E-02	2.82E-02	3.18E-02	3.70E-02	3.91E-02	4.99E-02	5.43E-02	5.37E-02
1545	1.35E-01	8.01E-02	24.49	3.03E-02	3.07E-02	3.11E-02	3.11E-02	3.18E-02	3.77E-02	4.06E-02	4.40E-02	5.52E-02	5.98E-02	5.92E-02
2000	8.42E-02	5.53E-02	27.62	3.58E-02	3.54E-02	3.61E-02	3.74E-02	3.85E-02	4.27E-02	4.62E-02	5.09E-02	6.23E-02	6.64E-02	6.60E-02
2120	7.56E-02	5.09E-02	31.15	4.04E-02	4.13E-02	[illegible]	4.26E-02	4.25E-02	4.91E-02	5.18E-02	5.72E-02	6.77E-02	6.73E-02	7.14E-02
2977	4.06E-02	3.32E-02	35.13	5.08E-02	5.02E-02	[illegible]	5.15E-02	5.21E-02	5.61E-02	5.82E-02	6.22E-02	7.17E-02	7.64E-02	8.04E-02

TABLE 14A

ORIGINAL PAGE IS OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: C
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 6; ATOMIC-W= 12.01)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	5.85E-02	5.97E-02	5.88E-02	5.91E-02	6.04E-02	6.34E-02	6.48E-02	7.21E-02	7.89E-02	8.49E-02	8.87E-02
44.68	6.57E-02	6.71E-02	6.72E-02	6.81E-02	6.87E-02	7.12E-02	7.27E-02	7.93E-02	8.69E-02	9.29E-02	9.62E-02
50.38	7.55E-02	7.65E-02	7.74E-02	7.83E-02	7.97E-02	8.10E-02	8.12E-02	9.02E-02	9.89E-02	1.04E-01	1.07E-01
56.82	9.06E-02	9.10E-02	9.07E-02	9.06E-02	8.97E-02	9.48E-02	9.71E-02	1.03E-01	1.09E-01	1.19E-01	1.20E-01
64.07	1.01E-01	1.03E-01	1.04E-01	1.05E-01	1.05E-01	1.06E-01	1.12E-01	1.16E-01	1.19E-01	1.29E-01	1.31E-01
72.26	1.19E-01	1.22E-01	1.22E-01	1.23E-01	1.23E-01	1.24E-01	1.25E-01	1.26E-01	1.37E-01	1.38E-01	1.45E-01
81.49	1.33E-01	1.37E-01	1.38E-01	1.38E-01	1.38E-01	1.38E-01	1.38E-01	1.40E-01	1.47E-01	1.55E-01	1.50E-01
91.89	1.48E-01	1.49E-01	1.50E-01	1.51E-01	1.51E-01	1.52E-01	1.53E-01	1.55E-01	1.66E-01	1.69E-01	1.64E-01
103.63	1.74E-01	1.73E-01	1.72E-01	1.73E-01	1.72E-01	1.74E-01	1.77E-01	1.83E-01	1.84E-01	1.89E-01	1.87E-01
116.86	1.83E-01	1.87E-01	1.90E-01	1.91E-01	1.90E-01	1.94E-01	1.94E-01	1.93E-01	2.02E-01	2.06E-01	1.99E-01
131.79	2.04E-01	2.07E-01	2.10E-01	2.11E-01	2.12E-01	2.15E-01	2.14E-01	2.13E-01	2.18E-01	2.18E-01	2.08E-01
148.62	2.28E-01	2.33E-01	2.35E-01	2.36E-01	2.37E-01	2.38E-01	2.36E-01	2.35E-01	2.37E-01	2.36E-01	2.28E-01
167.60	2.44E-01	2.45E-01	2.47E-01	2.49E-01	2.51E-01	2.53E-01	2.55E-01	2.60E-01	2.57E-01	2.49E-01	2.32E-01
189.01	2.70E-01	2.73E-01	2.75E-01	2.76E-01	2.77E-01	2.76E-01	2.77E-01	2.78E-01	2.71E-01	2.63E-01	2.51E-01
213.15	2.91E-01	2.94E-01	2.96E-01	2.96E-01	2.97E-01	2.96E-01	2.92E-01	2.94E-01	2.88E-01	2.79E-01	2.55E-01
240.38	3.02E-01	3.03E-01	3.01E-01	3.01E-01	3.02E-01	3.02E-01	3.02E-01	3.00E-01	2.96E-01	2.85E-01	2.64E-01
271.08	3.05E-01	3.09E-01	3.10E-01	3.10E-01	3.10E-01	3.07E-01	3.08E-01	3.05E-01	3.00E-01	2.89E-01	2.61E-01
305.70	3.12E-01	3.12E-01	3.11E-01	3.11E-01	3.11E-01	3.08E-01	3.05E-01	3.02E-01	2.96E-01	2.81E-01	2.57E-01
344.74	3.03E-01	3.01E-01	3.00E-01	2.99E-01	2.98E-01	2.96E-01	2.96E-01	2.95E-01	2.82E-01	2.74E-01	2.52E-01
388.77	2.88E-01	2.87E-01	2.85E-01	2.84E-01	2.83E-01	2.82E-01	2.82E-01	2.81E-01	2.74E-01	2.63E-01	2.48E-01
438.43	2.73E-01	2.70E-01	2.69E-01	2.68E-01	2.66E-01	2.65E-01	2.65E-01	2.62E-01	2.58E-01	2.49E-01	2.35E-01
494.42	2.57E-01	2.55E-01	2.53E-01	2.51E-01	2.49E-01	2.48E-01	2.47E-01	2.46E-01	2.39E-01	2.32E-01	2.21E-01
557.57	2.38E-01	2.36E-01	2.34E-01	2.33E-01	2.32E-01	2.31E-01	2.30E-01	2.28E-01	2.24E-01	2.21E-01	2.09E-01
628.79	2.21E-01	2.18E-01	2.16E-01	2.14E-01	2.13E-01	2.12E-01	2.12E-01	2.10E-01	2.06E-01	2.02E-01	1.94E-01
709.09	2.03E-01	2.00E-01	1.98E-01	1.96E-01	1.95E-01	1.93E-01	1.93E-01	1.90E-01	1.87E-01	1.85E-01	1.78E-01
799.66	1.85E-01	1.84E-01	1.82E-01	1.81E-01	1.79E-01	1.77E-01	1.76E-01	1.75E-01	1.72E-01	1.69E-01	1.61E-01
901.79	1.64E-01	1.62E-01	1.59E-01	1.57E-01	1.56E-01	1.53E-01	1.52E-01	1.51E-01	1.48E-01	1.46E-01	1.39E-01
1017.00	1.41E-01	1.38E-01	1.36E-01	1.34E-01	1.32E-01	1.30E-01	1.29E-01	1.27E-01	1.26E-01	1.24E-01	1.20E-01
1146.90	1.21E-01	1.19E-01	1.17E-01	1.16E-01	1.14E-01	1.13E-01	1.12E-01	1.11E-01	1.09E-01	1.08E-01	1.05E-01
1293.30	1.01E-01	9.96E-02	9.82E-02	9.74E-02	9.66E-02	9.60E-02	9.56E-02	9.45E-02	9.34E-02	9.22E-02	9.02E-02
1458.50	8.56E-02	8.43E-02	8.30E-02	8.21E-02	8.14E-02	8.09E-02	8.05E-02	7.96E-02	7.88E-02	7.80E-02	7.64E-02
1644.80	7.24E-02	7.17E-02	7.10E-02	7.03E-02	6.96E-02	6.90E-02	6.83E-02	6.71E-02	6.64E-02	6.57E-02	6.45E-02
1854.90	6.09E-02	6.00E-02	5.92E-02	5.83E-02	5.75E-02	5.68E-02	5.62E-02	5.52E-02	5.47E-02	5.43E-02	5.35E-02
2091.80	5.17E-02	5.13E-02	5.10E-02	5.07E-02	5.04E-02	5.01E-02	4.98E-02	4.93E-02	4.89E-02	4.86E-02	4.79E-02
2358.90	4.42E-02	4.39E-02	4.37E-02	4.34E-02	4.31E-02	4.28E-02	4.25E-02	4.20E-02	4.16E-02	4.13E-02	4.08E-02
2660.20	3.68E-02	3.65E-02	3.62E-02	3.58E-02	3.54E-02	3.50E-02	3.45E-02	3.31E-02	3.23E-02	3.17E-02	2.75E-02

TABLE 14B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: N
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 7; ATOMIC-W= 14.01)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUN SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	5.33E-02	4.33E-03	0.20	0.00E+00	0.00E+00	0.00E+00	1.10E-03	1.18E-03	1.29E-03	1.58E-03	1.94E-03	2.48E-03	2.52E-03	2.67E-03
14	4.96E-02	4.31E-03	0.23	0.00E+00	0.00E+00	0.00E+00	1.04E-03	1.11E-03	1.22E-03	1.49E-03	1.83E-03	2.33E-03	2.38E-03	2.52E-03
16	4.96E-02	4.55E-03	0.25	0.00E+00	0.00E+00	0.00E+00	1.01E-03	1.05E-03	1.15E-03	1.40E-03	1.73E-03	2.21E-03	2.25E-03	2.38E-03
18	5.08E-02	4.83E-03	0.29	0.00E+00	0.00E+00	0.00E+00	9.71E-04	1.01E-03	1.10E-03	1.34E-03	1.66E-03	2.10E-03	2.15E-03	2.27E-03
20	5.59E-02	5.67E-03	0.32	0.00E+00	0.00E+00	0.00E+00	9.43E-04	9.76E-04	1.07E-03	1.30E-03	1.62E-03	2.04E-03	2.08E-03	2.20E-03
23	6.34E-02	6.65E-03	0.36	0.00E+00	0.00E+00	0.00E+00	9.16E-04	9.48E-04	1.04E-03	1.26E-03	1.58E-03	1.99E-03	2.02E-03	2.14E-03
26	7.09E-02	7.93E-03	0.41	0.00E+00	0.00E+00	0.00E+00	8.93E-04	9.24E-04	1.01E-03	1.23E-03	1.54E-03	1.93E-03	1.97E-03	2.09E-03
30	8.08E-02	9.26E-03	0.46	0.00E+00	0.00E+00	0.00E+00	8.86E-04	9.17E-04	1.00E-03	1.22E-03	1.52E-03	1.92E-03	1.96E-03	2.07E-03
34	9.15E-02	1.11E-02	0.52	0.00E+00	0.00E+00	0.00E+00	8.80E-04	9.11E-04	9.97E-04	1.23E-03	1.51E-03	1.91E-03	1.95E-03	2.06E-03
40	1.08E-01	1.41E-02	0.59	0.00E+00	0.00E+00	0.00E+00	8.80E-04	9.11E-04	9.97E-04	1.23E-03	1.51E-03	1.91E-03	1.95E-03	2.06E-03
46	1.21E-01	1.68E-02	0.67	0.00E+00	0.00E+00	0.00E+00	8.87E-04	9.18E-04	1.00E-03	1.24E-03	1.53E-03	1.92E-03	1.96E-03	2.07E-03
50	1.30E-01	1.85E-02	0.75	0.00E+00	0.00E+00	0.00E+00	9.04E-04	9.28E-04	1.01E-03	1.26E-03	1.54E-03	1.94E-03	1.98E-03	2.09E-03
54	1.39E-01	2.02E-02	0.85	0.00E+00	0.00E+00	0.00E+00	9.29E-04	9.47E-04	1.03E-03	1.28E-03	1.57E-03	1.98E-03	2.02E-03	2.13E-03
60	1.51E-01	2.28E-02	0.95	0.00E+00	0.00E+00	0.00E+00	9.47E-04	9.66E-04	1.05E-03	1.30E-03	1.60E-03	2.02E-03	2.06E-03	2.17E-03
64	1.59E-01	2.46E-02	1.08	0.00E+00	0.00E+00	0.00E+00	9.78E-04	9.98E-04	1.09E-03	1.35E-03	1.65E-03	2.08E-03	2.12E-03	2.25E-03
70	1.72E-01	2.76E-02	1.21	0.00E+00	0.00E+00	0.00E+00	1.02E-03	1.03E-03	1.13E-03	1.39E-03	1.71E-03	2.15E-03	2.20E-03	2.32E-03
76	1.82E-01	3.08E-02	1.37	0.00E+00	0.00E+00	0.00E+00	1.07E-03	1.04E-03	1.17E-03	1.45E-03	1.78E-03	2.25E-03	2.29E-03	2.42E-03
80	1.88E-01	3.25E-02	1.54	0.00E+00	0.00E+00	0.00E+00	1.12E-03	1.02E-03	1.22E-03	1.51E-03	1.86E-03	2.34E-03	2.39E-03	2.53E-03
90	1.99E-01	3.67E-02	1.74	0.00E+00	0.00E+00	0.00E+00	1.16E-03	1.06E-03	1.27E-03	1.56E-03	1.92E-03	2.42E-03	2.47E-03	2.61E-03
91	2.00E-01	3.71E-02	1.96	0.00E+00	0.00E+00	0.00E+00	1.22E-03	1.12E-03	1.35E-03	1.65E-03	2.03E-03	2.55E-03	2.60E-03	2.75E-03
100	2.09E-01	4.01E-02	2.21	0.00E+00	0.00E+00	0.00E+00	1.30E-03	1.18E-03	1.42E-03	1.74E-03	2.14E-03	2.70E-03	2.75E-03	2.91E-03
109	2.15E-01	4.31E-02	2.50	0.00E+00	0.00E+00	0.00E+00	1.39E-03	1.26E-03	1.51E-03	1.85E-03	2.28E-03	2.87E-03	2.93E-03	3.09E-03
133	2.32E-01	5.26E-02	2.81	0.00E+00	0.00E+00	0.00E+00	1.49E-03	1.34E-03	1.61E-03	1.97E-03	2.42E-03	3.05E-03	3.11E-03	3.29E-03
162	2.49E-01	6.21E-02	3.17	0.00E+00	0.00E+00	0.00E+00	1.59E-03	1.43E-03	1.71E-03	2.10E-03	2.57E-03	3.24E-03	3.30E-03	3.49E-03
200	2.69E-01	7.18E-02	3.58	0.00E+00	0.00E+00	0.00E+00	1.71E-03	1.54E-03	1.85E-03	2.28E-03	2.76E-03	3.47E-03	3.54E-03	3.75E-03
249	2.62E-01	7.88E-02	4.04	0.00E+00	0.00E+00	0.00E+00	1.81E-03	1.68E-03	2.02E-03	2.47E-03	3.00E-03	3.77E-03	3.85E-03	4.07E-03
300	2.56E-01	8.04E-02	4.55	0.00E+00	0.00E+00	0.00E+00	1.87E-03	1.83E-03	2.19E-03	2.67E-03	3.25E-03	4.07E-03	4.15E-03	4.39E-03
313	2.47E-01	8.08E-02	5.13	0.00E+00	0.00E+00	1.54E-03	2.04E-03	1.99E-03	2.38E-03	2.92E-03	3.54E-03	4.40E-03	4.49E-03	4.75E-03
397	2.03E-01	7.37E-02	5.79	0.00E+00	0.00E+00	2.29E-03	2.25E-03	2.21E-03	2.62E-03	3.19E-03	3.85E-03	4.79E-03	4.89E-03	5.17E-03
400	2.02E-01	7.34E-02	6.53	0.00E+00	0.00E+00	2.53E-03	2.46E-03	2.25E-03	2.86E-03	3.48E-03	4.16E-03	5.17E-03	5.28E-03	5.58E-03
500	1.65E-01	6.51E-02	7.36	0.00E+00	0.00E+00	2.66E-03	2.54E-03	2.49E-03	3.26E-03	3.95E-03	4.71E-03	5.79E-03	5.91E-03	6.24E-03
509	1.62E-01	6.45E-02	8.30	0.00E+00	2.50E-03	2.86E-03	2.72E-03	2.69E-03	3.51E-03	4.22E-03	4.99E-03	5.96E-03	6.26E-03	6.62E-03
600	1.36E-01	5.79E-02	9.36	0.00E+00	3.27E-03	3.12E-03	3.09E-03	3.13E-03	3.95E-03	4.60E-03	5.22E-03	6.25E-03	6.90E-03	7.30E-03
660	1.25E-01	5.43E-02	10.56	2.21E-03	3.41E-03	3.24E-03	3.16E-03	3.26E-03	4.22E-03	4.70E-03	5.47E-03	6.75E-03	7.46E-03	7.89E-03
700	1.18E-01	5.19E-02	11.91	3.87E-03	3.66E-03	3.56E-03	3.63E-03	3.84E-03	4.51E-03	5.29E-03	6.08E-03	7.45E-03	8.23E-03	8.70E-03
800	1.01E-01	4.68E-02	13.43	4.06E-03	3.93E-03	3.94E-03	4.05E-03	4.24E-03	5.13E-03	5.95E-03	6.75E-03	8.19E-03	9.12E-03	9.57E-03
865	9.18E-02	4.41E-02	15.15	4.30E-03	4.39E-03	4.45E-03	4.67E-03	4.86E-03	5.90E-03	6.72E-03	7.52E-03	9.08E-03	1.01E-02	1.06E-02
900	8.75E-02	4.19E-02	17.08	4.90E-03	5.03E-03	5.10E-03	5.27E-03	5.45E-03	6.75E-03	7.61E-03	8.38E-03	9.97E-03	1.10E-02	1.16E-02
1000	7.40E-02	3.65E-02	19.26	5.70E-03	5.96E-03	6.27E-03	6.29E-03	6.71E-03	7.52E-03	8.39E-03	9.66E-03	1.13E-02	1.25E-02	1.31E-02
1147	5.76E-02	3.35E-02	21.72	6.46E-03	6.69E-03	6.84E-03	6.93E-03	6.93E-03	8.47E-03	9.00E-03	1.05E-02	1.21E-02	1.34E-02	1.40E-02
1545	3.34E-02	1.99E-02	24.49	7.45E-03	7.59E-03	7.75E-03	7.90E-03	8.02E-03	9.53E-03	1.03E-02	1.19E-02	1.34E-02	1.47E-02	1.53E-02
2000	2.09E-02	1.37E-02	27.62	8.90E-03	8.72E-03	9.09E-03	9.29E-03	9.73E-03	1.10E-02	1.20E-02	1.27E-02	1.51E-02	1.65E-02	1.71E-02
2120	1.88E-02	1.26E-02	31.15	1.00E-02	1.03E-02	1.03E-02	1.06E-02	1.09E-02	1.20E-02	1.25E-02	1.39E-02	1.64E-02	1.79E-02	1.85E-02
2977	1.01E-02	8.22E-03	35.13	1.26E-02	1.24E-02	1.26E-02	1.28E-02	1.31E-02	1.44E-02	1.51E-02	1.65E-02	1.88E-02	2.03E-02	2.08E-02

TABLE 15 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: N
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 7; ATOMIC-W= 14.01)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.46E-02	1.47E-02	1.45E-02	1.48E-02	1.51E-02	1.57E-02	1.62E-02	1.82E-02	2.10E-02	2.25E-02	2.19E-02
44.69	1.63E-02	1.67E-02	1.68E-02	1.70E-02	1.67E-02	1.74E-02	1.86E-02	2.00E-02	2.27E-02	2.30E-02	2.31E-02
50.38	1.88E-02	1.90E-02	1.93E-02	1.95E-02	1.97E-02	2.03E-02	2.09E-02	2.32E-02	2.41E-02	2.54E-02	2.56E-02
56.82	2.25E-02	2.24E-02	2.23E-02	2.26E-02	2.22E-02	2.39E-02	2.43E-02	2.58E-02	2.79E-02	2.89E-02	2.87E-02
64.07	2.52E-02	2.57E-02	2.59E-02	2.63E-02	2.63E-02	2.68E-02	2.81E-02	2.88E-02	3.13E-02	3.20E-02	3.14E-02
72.26	2.98E-02	3.03E-02	3.05E-02	3.03E-02	2.99E-02	3.07E-02	3.16E-02	3.20E-02	3.30E-02	3.60E-02	3.47E-02
81.49	3.31E-02	3.40E-02	3.42E-02	3.43E-02	3.42E-02	3.44E-02	3.42E-02	3.45E-02	3.75E-02	3.75E-02	3.80E-02
91.89	3.68E-02	3.71E-02	3.73E-02	3.74E-02	3.76E-02	3.79E-02	3.79E-02	3.89E-02	4.10E-02	4.16E-02	4.14E-02
103.63	4.32E-02	4.26E-02	4.28E-02	4.29E-02	4.27E-02	4.34E-02	4.38E-02	4.44E-02	4.70E-02	4.66E-02	4.44E-02
116.86	4.58E-02	4.68E-02	4.72E-02	4.70E-02	4.71E-02	4.83E-02	4.80E-02	4.85E-02	4.96E-02	4.93E-02	4.76E-02
131.79	5.06E-02	5.16E-02	5.23E-02	5.25E-02	5.26E-02	5.36E-02	5.34E-02	5.35E-02	5.46E-02	5.47E-02	5.20E-02
148.62	5.65E-02	5.79E-02	5.85E-02	5.88E-02	5.89E-02	5.85E-02	5.85E-02	5.86E-02	5.86E-02	5.75E-02	5.37E-02
167.60	6.04E-02	6.09E-02	6.14E-02	6.19E-02	6.22E-02	6.28E-02	6.35E-02	6.33E-02	6.23E-02	6.26E-02	5.71E-02
189.01	6.72E-02	6.77E-02	6.82E-02	6.86E-02	6.88E-02	6.85E-02	6.89E-02	6.86E-02	6.77E-02	6.56E-02	5.97E-02
213.15	7.23E-02	7.31E-02	7.33E-02	7.35E-02	7.37E-02	7.28E-02	7.25E-02	7.25E-02	7.15E-02	6.76E-02	6.31E-02
240.38	7.48E-02	7.51E-02	7.46E-02	7.47E-02	7.48E-02	7.49E-02	7.50E-02	7.40E-02	7.16E-02	7.00E-02	6.37E-02
271.08	7.65E-02	7.67E-02	7.68E-02	7.68E-02	7.62E-02	7.63E-02	7.63E-02	7.57E-02	7.31E-02	7.02E-02	6.30E-02
305.70	7.74E-02	7.73E-02	7.72E-02	7.72E-02	7.71E-02	7.57E-02	7.56E-02	7.48E-02	7.19E-02	6.92E-02	6.24E-02
344.74	7.51E-02	7.48E-02	7.44E-02	7.41E-02	7.38E-02	7.35E-02	7.34E-02	7.30E-02	6.92E-02	6.70E-02	6.09E-02
388.77	7.14E-02	7.11E-02	7.08E-02	7.05E-02	7.02E-02	6.99E-02	6.98E-02	6.95E-02	6.64E-02	6.43E-02	5.92E-02
438.43	6.76E-02	6.70E-02	6.66E-02	6.63E-02	6.60E-02	6.58E-02	6.53E-02	6.50E-02	6.31E-02	6.13E-02	5.74E-02
494.42	6.38E-02	6.33E-02	6.27E-02	6.22E-02	6.17E-02	6.14E-02	6.13E-02	6.07E-02	5.83E-02	5.72E-02	5.43E-02
557.57	5.90E-02	5.86E-02	5.81E-02	5.77E-02	5.74E-02	5.72E-02	5.70E-02	5.65E-02	5.54E-02	5.43E-02	5.11E-02
628.79	5.47E-02	5.41E-02	5.35E-02	5.31E-02	5.28E-02	5.25E-02	5.22E-02	5.17E-02	5.08E-02	4.99E-02	4.75E-02
709.09	5.03E-02	4.95E-02	4.89E-02	4.84E-02	4.81E-02	4.78E-02	4.77E-02	4.71E-02	4.64E-02	4.55E-02	4.36E-02
799.66	4.58E-02	4.55E-02	4.51E-02	4.47E-02	4.42E-02	4.39E-02	4.36E-02	4.33E-02	4.25E-02	4.14E-02	3.90E-02
901.76	4.37E-02	4.31E-02	3.95E-02	3.89E-02	3.83E-02	3.79E-02	3.76E-02	3.73E-02	3.66E-02	3.59E-02	3.41E-02
1017.00	3.49E-02	3.41E-02	3.34E-02	3.29E-02	3.25E-02	3.22E-02	3.19E-02	3.16E-02	3.11E-02	3.06E-02	2.93E-02
1146.90	2.99E-02	2.95E-02	2.91E-02	2.87E-02	2.83E-02	2.80E-02	2.78E-02	2.75E-02	2.70E-02	2.66E-02	2.57E-02
1293.30	2.51E-02	2.46E-02	2.43E-02	2.41E-02	2.39E-02	2.38E-02	2.36E-02	2.34E-02	2.31E-02	2.28E-02	2.21E-02
1458.50	2.12E-02	2.09E-02	2.06E-02	2.03E-02	2.02E-02	2.00E-02	1.99E-02	1.97E-02	1.95E-02	1.93E-02	1.88E-02
1644.80	1.79E-02	1.78E-02	1.76E-02	1.74E-02	1.73E-02	1.71E-02	1.69E-02	1.66E-02	1.64E-02	1.63E-02	1.59E-02
1854.90	1.51E-02	1.49E-02	1.47E-02	1.44E-02	1.42E-02	1.41E-02	1.39E-02	1.37E-02	1.35E-02	1.34E-02	1.32E-02
2091.80	1.28E-02	1.27E-02	1.26E-02	1.26E-02	1.25E-02	1.24E-02	1.23E-02	1.22E-02	1.21E-02	1.20E-02	1.18E-02
2358.90	1.10E-02	1.09E-02	1.08E-02	1.08E-02	1.07E-02	1.06E-02	1.06E-02	1.04E-02	1.03E-02	1.02E-02	1.01E-02
2660.20	9.12E-03	9.05E-03	8.96E-03	8.87E-03	8.76E-03	8.63E-03	8.48E-03	8.17E-03	7.99E-03	7.82E-03	6.70E-03

TABLE 15 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: O
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 8; ATOMIC-W= 16.00)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	2.02E-01	1.64E-02	0.20	0.00E+00	0.00E+00	0.00E+00	5.14E-03	4.66E-03	6.02E-03	6.86E-03	8.26E-03	1.03E-02	1.06E-02	1.10E-02
14	1.88E-01	1.63E-02	0.23	0.00E+00	0.00E+00	0.00E+00	4.85E-03	4.40E-03	5.68E-03	6.48E-03	7.79E-03	9.68E-03	1.00E-02	1.04E-02
16	1.80E-01	1.72E-02	0.25	0.00E+00	0.00E+00	0.00E+00	4.57E-03	4.15E-03	5.36E-03	6.11E-03	7.35E-03	9.13E-03	9.46E-03	9.77E-03
18	1.93E-01	1.83E-02	0.29	0.00E+00	0.00E+00	0.00E+00	4.35E-03	3.96E-03	5.10E-03	5.81E-03	6.99E-03	8.69E-03	9.00E-03	9.29E-03
20	2.12E-01	2.15E-02	0.32	0.00E+00	0.00E+00	0.00E+00	4.21E-03	3.84E-03	4.94E-03	5.63E-03	6.77E-03	8.41E-03	8.72E-03	9.00E-03
23	2.40E-01	2.52E-02	0.36	0.00E+00	0.00E+00	0.00E+00	4.09E-03	3.72E-03	4.78E-03	5.45E-03	6.55E-03	8.14E-03	8.44E-03	8.71E-03
26	2.69E-01	3.01E-02	0.41	0.00E+00	0.00E+00	0.00E+00	3.97E-03	3.61E-03	4.63E-03	5.28E-03	6.35E-03	7.90E-03	8.18E-03	8.45E-03
30	3.06E-01	3.51E-02	0.46	0.00E+00	0.00E+00	0.00E+00	3.93E-03	3.57E-03	4.59E-03	5.23E-03	6.29E-03	7.82E-03	8.10E-03	8.36E-03
34	3.47E-01	4.19E-02	0.52	0.00E+00	0.00E+00	0.00E+00	3.89E-03	3.53E-03	4.54E-03	5.17E-03	6.22E-03	7.74E-03	8.02E-03	8.28E-03
40	4.08E-01	5.33E-02	0.59	0.00E+00	0.00E+00	0.00E+00	3.88E-03	3.52E-03	4.52E-03	5.16E-03	6.20E-03	7.71E-03	7.99E-03	8.25E-03
46	4.60E-01	6.39E-02	0.67	0.00E+00	0.00E+00	0.00E+00	3.89E-03	3.53E-03	4.54E-03	5.17E-03	6.22E-03	7.73E-03	8.01E-03	8.27E-03
50	4.93E-01	7.02E-02	0.75	0.00E+00	0.00E+00	0.00E+00	3.92E-03	3.55E-03	4.57E-03	5.21E-03	6.26E-03	7.78E-03	8.07E-03	8.33E-03
54	5.25E-01	7.66E-02	0.85	0.00E+00	0.00E+00	0.00E+00	3.96E-03	3.60E-03	4.63E-03	5.28E-03	6.35E-03	7.89E-03	8.18E-03	8.44E-03
60	5.72E-01	8.64E-02	0.95	0.00E+00	0.00E+00	0.00E+00	4.04E-03	3.66E-03	4.70E-03	5.36E-03	6.45E-03	8.01E-03	8.30E-03	8.57E-03
64	6.04E-01	9.31E-02	1.08	0.00E+00	0.00E+00	0.00E+00	4.16E-03	3.78E-03	4.83E-03	5.51E-03	6.63E-03	8.24E-03	8.53E-03	8.81E-03
70	6.51E-01	1.05E-01	1.21	0.00E+00	0.00E+00	0.00E+00	4.29E-03	3.89E-03	4.98E-03	5.67E-03	6.82E-03	8.48E-03	8.79E-03	9.07E-03
76	6.89E-01	1.17E-01	1.37	0.00E+00	0.00E+00	0.00E+00	4.46E-03	4.04E-03	5.22E-03	5.89E-03	7.08E-03	8.80E-03	9.12E-03	9.42E-03
80	7.14E-01	1.23E-01	1.54	0.00E+00	0.00E+00	0.00E+00	4.63E-03	4.21E-03	5.44E-03	6.11E-03	7.35E-03	9.14E-03	9.47E-03	9.78E-03
90	7.53E-01	1.39E-01	1.74	0.00E+00	0.00E+00	0.00E+00	4.79E-03	4.35E-03	5.60E-03	6.30E-03	7.58E-03	9.42E-03	9.76E-03	1.01E-02
91	7.57E-01	1.41E-01	1.96	0.00E+00	0.00E+00	0.00E+00	4.92E-03	4.56E-03	5.89E-03	6.61E-03	7.95E-03	9.88E-03	1.02E-02	1.06E-02
100	7.91E-01	1.52E-01	2.21	0.00E+00	0.00E+00	0.00E+00	4.86E-03	4.82E-03	6.18E-03	7.03E-03	8.36E-03	1.04E-02	1.08E-02	1.11E-02
109	8.16E-01	1.63E-01	2.50	0.00E+00	0.00E+00	0.00E+00	5.17E-03	5.12E-03	6.55E-03	7.47E-03	8.86E-03	1.10E-02	1.14E-02	1.18E-02
133	8.78E-01	1.99E-01	2.81	0.00E+00	0.00E+00	0.00E+00	5.50E-03	5.46E-03	6.96E-03	7.90E-03	9.38E-03	1.17E-02	1.21E-02	1.25E-02
162	9.44E-01	2.35E-01	3.17	0.00E+00	0.00E+00	0.00E+00	5.85E-03	5.81E-03	7.45E-03	8.37E-03	9.92E-03	1.23E-02	1.28E-02	1.32E-02
200	1.02E+00	2.72E-01	3.58	0.00E+00	0.00E+00	0.00E+00	6.29E-03	6.26E-03	7.96E-03	8.94E-03	1.06E-02	1.32E-02	1.37E-02	1.41E-02
249	9.93E-01	2.98E-01	4.04	0.00E+00	0.00E+00	6.65E-03	6.86E-03	6.36E-03	8.64E-03	9.68E-03	1.16E-02	1.43E-02	1.48E-02	1.53E-02
300	9.70E-01	3.05E-01	4.55	0.00E+00	0.00E+00	7.46E-03	7.43E-03	6.70E-03	9.40E-03	1.05E-02	1.25E-02	1.53E-02	1.59E-02	1.64E-02
313	9.36E-01	3.06E-01	5.13	0.00E+00	0.00E+00	8.21E-03	8.07E-03	7.26E-03	9.62E-03	1.14E-02	1.35E-02	1.65E-02	1.71E-02	1.77E-02
397	7.70E-01	2.79E-01	5.79	0.00E+00	0.00E+00	9.05E-03	8.43E-03	7.96E-03	1.01E-02	1.23E-02	1.46E-02	1.79E-02	1.86E-02	1.92E-02
400	7.65E-01	2.78E-01	6.53	0.00E+00	0.00E+00	9.35E-03	8.71E-03	8.70E-03	1.10E-02	1.34E-02	1.57E-02	1.93E-02	2.00E-02	2.07E-02
500	6.25E-01	2.47E-01	7.36	0.00E+00	1.01E-02	1.04E-02	9.91E-03	1.02E-02	1.25E-02	1.51E-02	1.78E-02	2.18E-02	2.23E-02	2.31E-02
509	6.14E-01	2.45E-01	8.30	0.00E+00	1.13E-02	1.11E-02	1.07E-02	1.08E-02	1.33E-02	1.61E-02	1.88E-02	2.31E-02	2.37E-02	2.44E-02
600	5.17E-01	2.19E-01	9.36	0.00E+00	1.22E-02	1.13E-02	1.10E-02	1.17E-02	1.49E-02	1.79E-02	2.08E-02	2.54E-02	2.60E-02	2.69E-02
660	4.72E-01	2.06E-01	10.56	1.15E-02	1.31E-02	1.26E-02	1.22E-02	1.32E-02	1.64E-02	1.96E-02	2.26E-02	2.74E-02	2.81E-02	2.90E-02
700	4.47E-01	1.97E-01	11.91	1.44E-02	1.36E-02	1.33E-02	1.39E-02	1.49E-02	1.87E-02	2.20E-02	2.51E-02	3.02E-02	3.10E-02	3.20E-02
800	3.83E-01	1.77E-01	13.43	1.53E-02	1.47E-02	1.53E-02	1.59E-02	1.63E-02	2.13E-02	2.46E-02	2.79E-02	3.34E-02	3.40E-02	3.51E-02
865	3.48E-01	1.57E-01	15.15	1.63E-02	1.65E-02	1.74E-02	1.79E-02	1.92E-02	2.22E-02	2.64E-02	3.11E-02	3.68E-02	3.77E-02	3.86E-02
900	3.32E-01	1.59E-01	17.08	1.80E-02	1.94E-02	1.96E-02	2.07E-02	2.11E-02	2.54E-02	2.84E-02	3.47E-02	4.05E-02	4.14E-02	4.24E-02
1000	2.61E-01	1.38E-01	19.26	2.17E-02	2.29E-02	2.30E-02	2.42E-02	2.41E-02	3.07E-02	3.31E-02	3.64E-02	4.59E-02	4.66E-02	4.78E-02
1147	2.18E-01	1.16E-01	21.72	2.47E-02	2.51E-02	2.64E-02	2.65E-02	2.72E-02	3.28E-02	3.63E-02	3.94E-02	4.94E-02	5.00E-02	5.11E-02
1545	1.27E-01	7.53E-02	24.49	2.84E-02	2.91E-02	2.92E-02	2.99E-02	3.07E-02	3.64E-02	4.00E-02	4.42E-02	5.46E-02	5.50E-02	5.60E-02
2000	7.91E-02	5.20E-02	27.62	3.39E-02	3.34E-02	3.50E-02	3.58E-02	3.57E-02	4.25E-02	4.41E-02	5.10E-02	5.78E-02	6.16E-02	6.23E-02
2120	7.11E-02	4.78E-02	31.15	3.81E-02	3.90E-02	3.97E-02	4.00E-02	4.19E-02	4.57E-02	4.96E-02	5.67E-02	6.14E-02	6.66E-02	6.75E-02
2977	3.81E-02	3.12E-02	35.13	4.75E-02	4.68E-02	4.83E-02	4.92E-02	5.02E-02	5.32E-02	5.59E-02	6.21E-02	6.99E-02	7.53E-02	7.57E-02

TABLE 16 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: O
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 8; ATOMIC-W= 16.00)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	5.54E-02	5.54E-02	5.53E-02	5.66E-02	5.78E-02	6.12E-02	6.41E-02	7.05E-02	7.80E-02	8.33E-02	8.32E-02
44.68	6.22E-02	6.36E-02	6.40E-02	6.50E-02	6.37E-02	6.59E-02	7.00E-02	7.95E-02	8.56E-02	9.08E-02	9.01E-02
50.38	7.19E-02	7.23E-02	7.34E-02	7.45E-02	7.44E-02	7.91E-02	8.18E-02	8.49E-02	9.69E-02	1.02E-01	9.97E-02
56.82	8.52E-02	8.50E-02	8.50E-02	8.51E-02	8.54E-02	9.09E-02	9.36E-02	1.01E-01	1.06E-01	1.15E-01	1.11E-01
64.07	9.60E-02	9.78E-02	9.88E-02	9.87E-02	1.00E-01	1.03E-01	1.05E-01	1.06E-01	1.15E-01	1.17E-01	1.21E-01
72.26	1.14E-01	1.15E-01	1.16E-01	1.15E-01	1.14E-01	1.16E-01	1.18E-01	1.20E-01	1.31E-01	1.31E-01	1.26E-01
81.49	1.28E-01	1.29E-01	1.30E-01	1.30E-01	1.30E-01	1.29E-01	1.32E-01	1.32E-01	1.42E-01	1.46E-01	1.38E-01
91.89	1.39E-01	1.41E-01	1.41E-01	1.42E-01	1.43E-01	1.43E-01	1.42E-01	1.48E-01	1.55E-01	1.62E-01	1.51E-01
103.63	1.63E-01	1.61E-01	1.62E-01	1.61E-01	1.62E-01	1.64E-01	1.66E-01	1.69E-01	1.74E-01	1.76E-01	1.70E-01
116.86	1.74E-01	1.78E-01	1.80E-01	1.78E-01	1.79E-01	1.81E-01	1.81E-01	1.85E-01	1.87E-01	1.91E-01	1.80E-01
131.79	1.93E-01	1.97E-01	1.99E-01	1.99E-01	2.00E-01	2.04E-01	2.02E-01	2.03E-01	2.07E-01	2.02E-01	1.86E-01
148.62	2.16E-01	2.20E-01	2.22E-01	2.23E-01	2.21E-01	2.22E-01	2.23E-01	2.22E-01	2.25E-01	2.21E-01	2.03E-01
167.60	2.29E-01	2.31E-01	2.33E-01	2.35E-01	2.36E-01	2.38E-01	2.41E-01	2.36E-01	2.32E-01	2.29E-01	2.16E-01
189.01	2.55E-01	2.57E-01	2.59E-01	2.60E-01	2.58E-01	2.60E-01	2.62E-01	2.56E-01	2.52E-01	2.48E-01	2.20E-01
213.15	2.74E-01	2.77E-01	2.78E-01	2.79E-01	2.80E-01	2.74E-01	2.75E-01	2.75E-01	2.65E-01	2.57E-01	2.31E-01
240.38	2.84E-01	2.85E-01	2.83E-01	2.83E-01	2.84E-01	2.84E-01	2.84E-01	2.81E-01	2.72E-01	2.63E-01	2.30E-01
271.08	2.90E-01	2.91E-01	2.91E-01	2.91E-01	2.89E-01	2.89E-01	2.89E-01	2.85E-01	2.72E-01	2.63E-01	2.34E-01
305.70	2.93E-01	2.93E-01	2.93E-01	2.93E-01	2.92E-01	2.87E-01	2.87E-01	2.83E-01	2.69E-01	2.57E-01	2.30E-01
344.74	2.85E-01	2.83E-01	2.82E-01	2.81E-01	2.79E-01	2.79E-01	2.78E-01	2.76E-01	2.59E-01	2.50E-01	2.25E-01
388.77	2.70E-01	2.69E-01	2.68E-01	2.67E-01	2.66E-01	2.65E-01	2.64E-01	2.63E-01	2.51E-01	2.39E-01	2.20E-01
438.43	2.56E-01	2.54E-01	2.52E-01	2.51E-01	2.50E-01	2.49E-01	2.47E-01	2.46E-01	2.37E-01	2.29E-01	2.12E-01
494.42	2.42E-01	2.40E-01	2.37E-01	2.35E-01	2.34E-01	2.33E-01	2.32E-01	2.30E-01	2.19E-01	2.15E-01	2.02E-01
557.57	2.24E-01	2.21E-01	2.20E-01	2.19E-01	2.18E-01	2.17E-01	2.16E-01	2.14E-01	2.09E-01	2.03E-01	1.91E-01
628.79	2.07E-01	2.05E-01	2.02E-01	2.01E-01	2.00E-01	1.99E-01	1.98E-01	1.96E-01	1.91E-01	1.88E-01	1.78E-01
709.09	1.91E-01	1.87E-01	1.85E-01	1.84E-01	1.82E-01	1.81E-01	1.80E-01	1.78E-01	1.75E-01	1.71E-01	1.64E-01
799.66	1.74E-01	1.72E-01	1.71E-01	1.69E-01	1.68E-01	1.66E-01	1.65E-01	1.64E-01	1.60E-01	1.56E-01	1.46E-01
901.79	1.54E-01	1.52E-01	1.49E-01	1.47E-01	1.45E-01	1.43E-01	1.42E-01	1.41E-01	1.38E-01	1.36E-01	1.28E-01
1017.00	1.32E-01	1.29E-01	1.27E-01	1.25E-01	1.23E-01	1.22E-01	1.21E-01	1.19E-01	1.17E-01	1.15E-01	1.09E-01
1146.90	1.13E-01	1.12E-01	1.10E-01	1.09E-01	1.07E-01	1.06E-01	1.05E-01	1.04E-01	1.02E-01	1.00E-01	9.64E-02
1293.30	9.53E-02	9.34E-02	9.20E-02	9.11E-02	9.04E-02	9.00E-02	8.94E-02	8.84E-02	8.74E-02	8.60E-02	8.32E-02
1458.50	8.03E-02	7.88E-02	7.77E-02	7.71E-02	7.64E-02	7.59E-02	7.55E-02	7.47E-02	7.38E-02	7.28E-02	7.07E-02
1644.80	6.80E-02	6.73E-02	6.66E-02	6.59E-02	6.52E-02	6.45E-02	6.38E-02	6.28E-02	6.21E-02	6.15E-02	5.99E-02
1854.90	5.72E-02	5.64E-02	5.55E-02	5.46E-02	5.38E-02	5.31E-02	5.25E-02	5.18E-02	5.13E-02	5.08E-02	4.96E-02
2091.80	4.85E-02	4.82E-02	4.79E-02	4.76E-02	4.72E-02	4.69E-02	4.66E-02	4.61E-02	4.58E-02	4.54E-02	4.45E-02
2358.90	4.15E-02	4.13E-02	4.10E-02	4.07E-02	4.04E-02	4.01E-02	3.98E-02	3.93E-02	3.90E-02	3.87E-02	3.80E-02
2660.20	3.46E-02	3.43E-02	3.39E-02	3.35E-02	3.31E-02	3.26E-02	3.19E-02	3.07E-02	3.01E-02	2.93E-02	2.20E-02

TABLE 16 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: F
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 9; ATOMIC-W= 19.00)
63.0 DEG/1334-1334 KM

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MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	4.30E-03	3.49E-04	0.20	0.00E+00	0.00E+00	0.00E+00	1.23E-04	1.12E-04	1.49E-04	1.70E-04	2.03E-04	2.54E-04	2.59E-04	2.63E-04
14	4.00E-03	3.47E-04	0.23	0.00E+00	0.00E+00	0.00E+00	1.16E-04	1.06E-04	1.41E-04	1.60E-04	1.92E-04	2.39E-04	2.44E-04	2.48E-04
16	4.00E-03	3.67E-04	0.25	0.00E+00	0.00E+00	0.00E+00	1.09E-04	9.96E-05	1.29E-04	1.51E-04	1.81E-04	2.25E-04	2.30E-04	2.34E-04
18	4.10E-03	3.90E-04	0.29	0.00E+00	0.00E+00	0.00E+00	1.03E-04	9.48E-05	1.16E-04	1.43E-04	1.71E-04	2.14E-04	2.18E-04	2.22E-04
20	4.51E-03	4.57E-04	0.32	0.00E+00	0.00E+00	0.00E+00	9.99E-05	9.19E-05	1.12E-04	1.38E-04	1.66E-04	2.07E-04	2.11E-04	2.14E-04
23	5.12E-03	5.37E-04	0.36	0.00E+00	0.00E+00	0.00E+00	9.66E-05	8.87E-05	1.08E-04	1.33E-04	1.60E-04	1.99E-04	2.03E-04	2.07E-04
26	5.72E-03	6.39E-04	0.41	0.00E+00	0.00E+00	0.00E+00	9.34E-05	8.57E-05	1.04E-04	1.29E-04	1.54E-04	1.93E-04	1.97E-04	2.00E-04
30	6.51E-03	7.46E-04	0.46	0.00E+00	0.00E+00	0.00E+00	9.23E-05	8.47E-05	1.03E-04	1.27E-04	1.52E-04	1.90E-04	1.94E-04	1.97E-04
34	7.38E-03	8.92E-04	0.52	0.00E+00	0.00E+00	0.00E+00	9.10E-05	8.35E-05	1.01E-04	1.25E-04	1.50E-04	1.88E-04	1.91E-04	1.95E-04
40	8.69E-03	1.13E-03	0.59	0.00E+00	0.00E+00	0.00E+00	9.04E-05	8.29E-05	1.01E-04	1.25E-04	1.49E-04	1.86E-04	1.90E-04	1.93E-04
46	9.78E-03	1.36E-03	0.67	0.00E+00	0.00E+00	0.00E+00	9.03E-05	8.28E-05	1.01E-04	1.25E-04	1.49E-04	1.86E-04	1.90E-04	1.93E-04
50	1.05E-02	1.49E-03	0.75	0.00E+00	0.00E+00	0.00E+00	8.98E-05	8.32E-05	1.01E-04	1.25E-04	1.50E-04	1.87E-04	1.91E-04	1.94E-04
54	1.12E-02	1.63E-03	0.85	0.00E+00	0.00E+00	0.00E+00	8.43E-05	8.40E-05	1.02E-04	1.26E-04	1.51E-04	1.89E-04	1.93E-04	1.96E-04
60	1.22E-02	1.84E-03	0.95	0.00E+00	0.00E+00	0.00E+00	8.53E-05	8.53E-05	1.03E-04	1.28E-04	1.53E-04	1.91E-04	1.95E-04	1.98E-04
64	1.28E-02	1.98E-03	1.08	0.00E+00	0.00E+00	0.00E+00	8.73E-05	8.77E-05	1.06E-04	1.31E-04	1.57E-04	1.95E-04	2.00E-04	2.03E-04
70	1.38E-02	2.23E-03	1.21	0.00E+00	0.00E+00	0.00E+00	8.95E-05	8.99E-05	1.08E-04	1.35E-04	1.63E-04	2.00E-04	2.05E-04	2.08E-04
76	1.47E-02	2.48E-03	1.37	0.00E+00	0.00E+00	0.00E+00	9.32E-05	9.29E-05	1.12E-04	1.40E-04	1.68E-04	2.07E-04	2.12E-04	2.15E-04
80	1.52E-02	2.62E-03	1.54	0.00E+00	0.00E+00	0.00E+00	9.64E-05	9.67E-05	1.16E-04	1.45E-04	1.74E-04	2.14E-04	2.19E-04	2.22E-04
90	1.60E-02	2.96E-03	1.74	0.00E+00	0.00E+00	0.00E+00	9.91E-05	9.96E-05	1.19E-04	1.49E-04	1.79E-04	2.20E-04	2.25E-04	2.29E-04
91	1.61E-02	3.00E-03	1.96	0.00E+00	0.00E+00	0.00E+00	1.04E-04	1.04E-04	1.24E-04	1.56E-04	1.87E-04	2.30E-04	2.35E-04	2.39E-04
100	1.68E-02	3.24E-03	2.21	0.00E+00	0.00E+00	0.00E+00	1.09E-04	1.10E-04	1.30E-04	1.63E-04	1.96E-04	2.41E-04	2.46E-04	2.50E-04
109	1.74E-02	3.47E-03	2.50	0.00E+00	0.00E+00	0.00E+00	1.16E-04	1.14E-04	1.39E-04	1.73E-04	2.07E-04	2.54E-04	2.60E-04	2.64E-04
133	1.87E-02	4.24E-03	2.81	0.00E+00	0.00E+00	0.00E+00	1.23E-04	1.12E-04	1.47E-04	1.82E-04	2.18E-04	2.68E-04	2.74E-04	2.78E-04
162	2.01E-02	5.01E-03	3.17	0.00E+00	0.00E+00	7.74E-05	1.30E-04	1.18E-04	1.55E-04	1.92E-04	2.30E-04	2.83E-04	2.89E-04	2.94E-04
200	2.17E-02	5.79E-03	3.58	0.00E+00	0.00E+00	1.36E-04	1.39E-04	1.26E-04	1.65E-04	2.04E-04	2.45E-04	3.01E-04	3.08E-04	3.14E-04
249	2.11E-02	6.35E-03	4.04	0.00E+00	0.00E+00	1.51E-04	1.51E-04	1.37E-04	1.79E-04	2.22E-04	2.64E-04	3.25E-04	3.32E-04	3.38E-04
300	2.06E-02	6.49E-03	4.55	0.00E+00	0.00E+00	1.65E-04	1.63E-04	1.47E-04	1.93E-04	2.39E-04	2.83E-04	3.48E-04	3.56E-04	3.63E-04
313	1.99E-02	6.52E-03	5.13	0.00E+00	0.00E+00	1.80E-04	1.66E-04	1.60E-04	2.09E-04	2.57E-04	3.04E-04	3.74E-04	3.82E-04	3.90E-04
397	1.64E-02	5.94E-03	5.79	0.00E+00	0.00E+00	1.90E-04	1.75E-04	1.77E-04	2.27E-04	2.80E-04	3.33E-04	4.05E-04	4.13E-04	4.22E-04
400	1.63E-02	5.92E-03	6.53	0.00E+00	0.00E+00	1.97E-04	1.89E-04	1.95E-04	2.47E-04	3.03E-04	3.58E-04	4.35E-04	4.44E-04	4.53E-04
500	1.33E-02	5.25E-03	7.36	0.00E+00	2.23E-04	2.24E-04	2.16E-04	2.09E-04	2.80E-04	3.41E-04	3.98E-04	4.84E-04	4.94E-04	5.04E-04
509	1.31E-02	5.20E-03	8.30	0.00E+00	2.43E-04	2.32E-04	2.25E-04	2.26E-04	2.98E-04	3.62E-04	4.23E-04	5.14E-04	5.22E-04	5.33E-04
600	1.10E-02	4.67E-03	9.36	0.00E+00	2.59E-04	2.44E-04	2.38E-04	2.59E-04	3.35E-04	4.01E-04	4.68E-04	5.68E-04	5.73E-04	5.85E-04
660	1.00E-02	4.38E-03	10.56	2.47E-04	2.75E-04	2.65E-04	2.67E-04	2.91E-04	3.68E-04	4.38E-04	5.06E-04	6.12E-04	6.20E-04	6.30E-04
700	9.50E-03	4.19E-03	11.91	3.08E-04	2.90E-04	2.83E-04	2.99E-04	3.13E-04	4.14E-04	4.67E-04	5.56E-04	6.73E-04	6.85E-04	6.94E-04
800	8.14E-03	3.78E-03	13.43	3.25E-04	3.16E-04	3.24E-04	3.46E-04	3.56E-04	4.32E-04	4.96E-04	5.69E-04	7.38E-04	7.52E-04	7.61E-04
865	7.41E-03	3.55E-03	15.15	3.49E-04	3.54E-04	3.77E-04	3.78E-04	4.06E-04	4.91E-04	5.59E-04	6.31E-04	7.54E-04	8.26E-04	8.36E-04
900	7.06E-03	3.38E-03	17.03	3.96E-04	4.16E-04	4.22E-04	4.45E-04	4.60E-04	5.66E-04	6.27E-04	7.00E-04	8.26E-04	9.06E-04	9.17E-04
1000	5.97E-03	2.94E-03	19.26	4.58E-04	4.93E-04	4.94E-04	5.24E-04	5.19E-04	6.61E-04	7.31E-04	8.04E-04	9.36E-04	1.02E-03	1.03E-03
1147	4.65E-03	2.46E-03	21.72	5.27E-04	5.38E-04	5.68E-04	5.63E-04	5.88E-04	6.86E-04	8.00E-04	8.70E-04	1.00E-03	1.10E-03	1.10E-03
1545	2.70E-03	1.60E-03	24.49	6.04E-04	6.22E-04	6.25E-04	6.36E-04	6.63E-04	7.98E-04	8.43E-04	9.77E-04	1.10E-03	1.20E-03	1.21E-03
2000	1.68E-03	1.11E-03	27.62	7.22E-04	7.12E-04	7.50E-04	7.72E-04	7.70E-04	8.91E-04	9.62E-04	1.12E-03	1.24E-03	1.34E-03	1.34E-03
2120	1.51E-03	1.02E-03	31.15	8.14E-04	8.34E-04	8.43E-04	8.49E-04	9.01E-04	9.95E-04	1.08E-03	1.20E-03	1.35E-03	1.46E-03	1.45E-03
2977	8.11E-04	6.63E-04	35.13	1.01E-03	9.97E-04	1.03E-03	1.04E-03	1.08E-03	1.14E-03	1.19E-03	1.35E-03	1.54E-03	1.65E-03	1.63E-03

TABLE 17 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: F
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 9; ATOMIC-W= 19.00)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.18E-03	1.17E-03	1.18E-03	1.21E-03	1.21E-03	1.33E-03	1.40E-03	1.54E-03	1.71E-03	1.82E-03	1.79E-03
44.68	1.33E-03	1.34E-03	1.36E-03	1.37E-03	1.36E-03	1.40E-03	1.47E-03	1.71E-03	1.88E-03	1.98E-03	1.93E-03
50.38	1.53E-03	1.54E-03	1.57E-03	1.69E-03	1.57E-03	1.67E-03	1.76E-03	1.85E-03	2.10E-03	2.15E-03	2.02E-03
56.82	1.81E-03	1.81E-03	1.81E-03	1.79E-03	1.82E-03	1.93E-03	2.02E-03	2.12E-03	2.24E-03	2.32E-03	2.25E-03
64.07	2.04E-03	2.08E-03	2.11E-03	2.10E-03	2.15E-03	2.21E-03	2.19E-03	2.29E-03	2.50E-03	2.55E-03	2.46E-03
72.26	2.42E-03	2.45E-03	2.47E-03	2.46E-03	2.40E-03	2.47E-03	2.47E-03	2.53E-03	2.84E-03	2.85E-03	2.71E-03
81.49	2.71E-03	2.75E-03	2.77E-03	2.75E-03	2.71E-03	2.73E-03	2.82E-03	2.84E-03	2.99E-03	3.17E-03	2.96E-03
91.89	2.98E-03	3.00E-03	3.01E-03	3.02E-03	3.04E-03	3.02E-03	3.04E-03	3.14E-03	3.35E-03	3.35E-03	3.23E-03
103.63	3.47E-03	3.44E-03	3.46E-03	3.43E-03	3.45E-03	3.50E-03	3.55E-03	3.59E-03	3.72E-03	3.79E-03	3.54E-03
116.86	3.70E-03	3.80E-03	3.83E-03	3.80E-03	3.81E-03	3.85E-03	3.88E-03	3.96E-03	4.03E-03	4.07E-03	3.64E-03
131.79	4.10E-03	4.19E-03	4.22E-03	4.24E-03	4.25E-03	4.35E-03	4.26E-03	4.34E-03	4.33E-03	4.26E-03	3.97E-03
148.62	4.51E-03	4.69E-03	4.72E-03	4.74E-03	4.71E-03	4.73E-03	4.71E-03	4.70E-03	4.82E-03	4.69E-03	4.32E-03
167.60	4.98E-03	4.92E-03	4.97E-03	5.00E-03	5.02E-03	5.08E-03	5.14E-03	5.02E-03	4.93E-03	4.81E-03	4.33E-03
189.01	5.42E-03	5.47E-03	5.51E-03	5.53E-03	5.50E-03	5.54E-03	5.57E-03	5.46E-03	5.35E-03	5.23E-03	4.68E-03
213.15	5.83E-03	5.90E-03	5.92E-03	5.94E-03	5.95E-03	5.83E-03	5.85E-03	5.86E-03	5.65E-03	5.47E-03	4.75E-03
240.38	6.03E-03	6.06E-03	6.02E-03	6.03E-03	6.03E-03	6.04E-03	6.05E-03	5.97E-03	5.74E-03	5.45E-03	4.85E-03
271.08	6.17E-03	6.19E-03	6.19E-03	6.19E-03	6.15E-03	6.15E-03	6.15E-03	6.06E-03	5.79E-03	5.58E-03	4.84E-03
305.70	6.24E-03	6.23E-03	6.23E-03	6.22E-03	6.22E-03	6.10E-03	6.10E-03	6.02E-03	5.70E-03	5.41E-03	4.83E-03
344.74	6.05E-03	6.03E-03	6.00E-03	5.97E-03	5.94E-03	5.92E-03	5.91E-03	5.88E-03	5.51E-03	5.31E-03	4.75E-03
388.77	5.75E-03	5.73E-03	5.71E-03	5.68E-03	5.66E-03	5.64E-03	5.63E-03	5.59E-03	5.32E-03	5.06E-03	4.63E-03
438.43	5.45E-03	5.41E-03	5.37E-03	5.34E-03	5.32E-03	5.30E-03	5.26E-03	5.23E-03	5.03E-03	4.87E-03	4.47E-03
494.42	5.14E-03	5.10E-03	5.05E-03	5.01E-03	4.97E-03	4.95E-03	4.94E-03	4.89E-03	4.65E-03	4.56E-03	4.23E-03
557.57	4.76E-03	4.71E-03	4.68E-03	4.65E-03	4.63E-03	4.61E-03	4.59E-03	4.55E-03	4.44E-03	4.30E-03	4.06E-03
628.79	4.41E-03	4.35E-03	4.31E-03	4.28E-03	4.25E-03	4.24E-03	4.21E-03	4.17E-03	4.06E-03	4.00E-03	3.76E-03
709.09	4.05E-03	3.98E-03	3.93E-03	3.90E-03	3.88E-03	3.85E-03	3.83E-03	3.79E-03	3.70E-03	3.63E-03	3.47E-03
799.66	3.70E-03	3.67E-03	3.63E-03	3.60E-03	3.56E-03	3.53E-03	3.51E-03	3.49E-03	3.40E-03	3.32E-03	3.10E-03
901.79	3.28E-03	3.23E-03	3.17E-03	3.12E-03	3.08E-03	3.04E-03	3.02E-03	3.00E-03	2.93E-03	2.86E-03	2.70E-03
1017.00	2.82E-03	2.75E-03	2.69E-03	2.65E-03	2.61E-03	2.59E-03	2.56E-03	2.53E-03	2.49E-03	2.44E-03	2.32E-03
1146.90	2.41E-03	2.38E-03	2.34E-03	2.31E-03	2.28E-03	2.25E-03	2.24E-03	2.21E-03	2.17E-03	2.13E-03	2.04E-03
1293.30	2.03E-03	1.99E-03	1.96E-03	1.94E-03	1.92E-03	1.91E-03	1.90E-03	1.88E-03	1.85E-03	1.83E-03	1.76E-03
1458.50	1.71E-03	1.68E-03	1.65E-03	1.64E-03	1.63E-03	1.61E-03	1.61E-03	1.59E-03	1.57E-03	1.55E-03	1.50E-03
1644.80	1.45E-03	1.43E-03	1.42E-03	1.40E-03	1.39E-03	1.37E-03	1.36E-03	1.33E-03	1.32E-03	1.31E-03	1.27E-03
1854.90	1.22E-03	1.20E-03	1.18E-03	1.16E-03	1.15E-03	1.13E-03	1.12E-03	1.10E-03	1.09E-03	1.08E-03	1.06E-03
2091.80	1.03E-03	1.03E-03	1.02E-03	1.01E-03	1.00E-03	9.98E-04	9.91E-04	9.81E-04	9.74E-04	9.66E-04	9.47E-04
2358.90	8.84E-04	8.78E-04	8.72E-04	8.66E-04	8.60E-04	8.53E-04	8.47E-04	8.36E-04	8.29E-04	8.22E-04	8.05E-04
2660.20	7.36E-04	7.29E-04	7.21E-04	7.12E-04	7.02E-04	6.89E-04	6.75E-04	6.53E-04	6.39E-04	6.18E-04	4.07E-04

TABLE 17B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 10; ATOMIC-W= 20.18)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	3.18E-02	2.58E-03	0.20	0.00E+00	0.00E+00	0.00E+00	9.51E-04	8.71E-04	1.23E-03	1.41E-03	1.69E-03	2.06E-03	2.09E-03	2.08E-03
14	2.96E-02	2.57E-03	0.23	0.00E+00	0.00E+00	0.00E+00	8.98E-04	8.22E-04	1.16E-03	1.33E-03	1.60E-03	1.95E-03	1.97E-03	1.96E-03
16	2.96E-02	2.71E-03	0.25	0.00E+00	0.00E+00	0.00E+00	8.44E-04	7.78E-04	1.09E-03	1.26E-03	1.50E-03	1.83E-03	1.86E-03	1.84E-03
18	3.03E-02	2.89E-03	0.29	0.00E+00	0.00E+00	0.00E+00	7.99E-04	7.36E-04	1.04E-03	1.19E-03	1.42E-03	1.73E-03	1.76E-03	1.74E-03
20	3.33E-02	3.38E-03	0.32	0.00E+00	0.00E+00	0.00E+00	7.71E-04	7.10E-04	1.01E-03	1.15E-03	1.37E-03	1.67E-03	1.69E-03	1.68E-03
23	3.79E-02	3.97E-03	0.36	0.00E+00	0.00E+00	0.00E+00	7.42E-04	6.84E-04	9.77E-04	1.10E-03	1.32E-03	1.61E-03	1.63E-03	1.62E-03
26	4.25E-02	4.73E-03	0.41	0.00E+00	0.00E+00	0.00E+00	7.14E-04	6.58E-04	9.40E-04	1.06E-03	1.27E-03	1.55E-03	1.57E-03	1.56E-03
30	4.82E-02	5.52E-03	0.46	0.00E+00	0.00E+00	0.00E+00	7.06E-04	6.49E-04	9.27E-04	1.05E-03	1.25E-03	1.53E-03	1.55E-03	1.54E-03
34	5.46E-02	6.60E-03	0.52	0.00E+00	0.00E+00	0.00E+00	6.95E-04	6.38E-04	9.12E-04	1.03E-03	1.23E-03	1.50E-03	1.52E-03	1.51E-03
40	6.43E-02	8.39E-03	0.59	0.00E+00	0.00E+00	0.00E+00	6.89E-04	6.32E-04	9.03E-04	1.02E-03	1.22E-03	1.49E-03	1.51E-03	1.50E-03
46	7.24E-02	1.01E-02	0.67	0.00E+00	0.00E+00	0.00E+00	6.86E-04	6.29E-04	8.99E-04	1.02E-03	1.22E-03	1.48E-03	1.50E-03	1.49E-03
50	7.77E-02	1.11E-02	0.75	0.00E+00	0.00E+00	0.00E+00	6.87E-04	6.30E-04	9.00E-04	1.02E-03	1.22E-03	1.48E-03	1.50E-03	1.49E-03
54	8.27E-02	1.21E-02	0.85	0.00E+00	0.00E+00	8.12E-05	6.91E-04	6.35E-04	9.06E-04	1.02E-03	1.23E-03	1.49E-03	1.51E-03	1.50E-03
60	9.01E-02	1.36E-02	0.95	0.00E+00	0.00E+00	6.53E-04	6.99E-04	6.42E-04	9.15E-04	1.03E-03	1.24E-03	1.51E-03	1.53E-03	1.52E-03
64	9.51E-02	1.47E-02	1.08	0.00E+00	0.00E+00	6.66E-04	7.14E-04	6.58E-04	9.32E-04	1.05E-03	1.26E-03	1.54E-03	1.56E-03	1.55E-03
70	1.02E-01	1.65E-02	1.21	0.00E+00	0.00E+00	6.91E-04	7.30E-04	6.73E-04	9.53E-04	1.08E-03	1.29E-03	1.57E-03	1.59E-03	1.58E-03
76	1.09E-01	1.84E-02	1.37	0.00E+00	0.00E+00	7.29E-04	7.53E-04	6.93E-04	9.82E-04	1.11E-03	1.33E-03	1.62E-03	1.64E-03	1.63E-03
80	1.12E-01	1.94E-02	1.54	0.00E+00	0.00E+00	7.55E-04	7.78E-04	7.14E-04	1.01E-03	1.14E-03	1.37E-03	1.67E-03	1.69E-03	1.68E-03
90	1.18E-01	2.19E-02	1.74	0.00E+00	0.03E+00	7.84E-04	7.97E-04	7.40E-04	1.04E-03	1.17E-03	1.40E-03	1.71E-03	1.73E-03	1.72E-03
91	1.19E-01	2.22E-02	1.96	0.00E+00	0.00E+00	8.21E-04	8.33E-04	7.70E-04	1.08E-03	1.22E-03	1.46E-03	1.78E-03	1.80E-03	1.79E-03
100	1.25E-01	2.40E-02	2.21	0.00E+00	0.00E+00	8.65E-04	8.71E-04	8.08E-04	1.13E-03	1.27E-03	1.53E-03	1.86E-03	1.88E-03	1.87E-03
109	1.29E-01	2.57E-02	2.50	0.00E+00	0.00E+00	9.17E-04	9.08E-04	8.56E-04	1.20E-03	1.34E-03	1.60E-03	1.95E-03	1.98E-03	1.96E-03
133	1.38E-01	3.14E-02	2.81	0.00E+00	0.00E+00	9.71E-04	8.82E-04	9.04E-04	1.26E-03	1.41E-03	1.69E-03	2.05E-03	2.08E-03	2.06E-03
162	1.49E-01	3.71E-02	3.17	0.00E+00	0.00E+00	1.03E-03	9.29E-04	9.59E-04	1.33E-03	1.49E-03	1.77E-03	2.16E-03	2.19E-03	2.17E-03
200	1.61E-01	4.29E-02	3.58	0.00E+00	0.00E+00	1.10E-03	9.88E-04	1.03E-03	1.41E-03	1.59E-03	1.88E-03	2.29E-03	2.32E-03	2.30E-03
249	1.56E-01	4.70E-02	4.04	0.00E+00	0.00E+00	1.19E-03	1.07E-03	1.13E-03	1.54E-03	1.71E-03	2.02E-03	2.46E-03	2.49E-03	2.47E-03
300	1.53E-01	4.80E-02	4.55	0.00E+00	0.00E+00	1.19E-03	1.15E-03	1.19E-03	1.65E-03	1.83E-03	2.17E-03	2.63E-03	2.67E-03	2.64E-03
313	1.47E-01	4.92E-02	5.13	0.00E+00	0.00E+00	1.28E-03	1.24E-03	1.23E-03	1.78E-03	1.96E-03	2.34E-03	2.82E-03	2.86E-03	2.83E-03
397	1.21E-01	4.40E-02	5.79	0.00E+00	0.00E+00	1.40E-03	1.36E-03	1.35E-03	1.93E-03	2.14E-03	2.53E-03	3.04E-03	3.08E-03	3.06E-03
400	1.21E-01	4.38E-02	6.53	0.00E+00	9.36E-04	1.51E-03	1.43E-03	1.48E-03	1.91E-03	2.29E-03	2.71E-03	3.29E-03	3.30E-03	3.28E-03
500	9.84E-02	3.89E-02	7.36	0.00E+00	1.72E-03	1.56E-03	1.52E-03	1.70E-03	2.15E-03	2.57E-03	3.01E-03	3.65E-03	3.66E-03	3.64E-03
509	9.66E-02	3.85E-02	8.30	0.00E+00	1.79E-03	1.66E-03	1.63E-03	1.83E-03	2.28E-03	2.71E-03	3.19E-03	3.85E-03	3.87E-03	3.84E-03
600	8.14E-02	3.45E-02	9.36	4.68E-04	1.92E-03	1.89E-03	1.89E-03	1.99E-03	2.55E-03	3.01E-03	3.52E-03	4.22E-03	4.24E-03	4.21E-03
660	7.43E-02	3.24E-02	10.56	2.11E-03	2.02E-03	1.91E-03	2.01E-03	2.11E-03	2.78E-03	3.26E-03	3.80E-03	4.54E-03	4.56E-03	4.53E-03
700	7.03E-02	3.10E-02	11.91	2.27E-03	2.19E-03	2.19E-03	2.31E-03	2.43E-03	3.14E-03	3.62E-03	4.22E-03	4.99E-03	5.01E-03	4.98E-03
800	6.03E-02	2.79E-02	13.43	2.42E-03	2.30E-03	2.44E-03	2.58E-03	2.76E-03	3.54E-03	4.03E-03	4.66E-03	5.48E-03	5.52E-03	5.45E-03
865	5.48E-02	2.63E-02	15.15	2.57E-03	2.67E-03	2.80E-03	2.90E-03	3.06E-03	4.03E-03	4.51E-03	5.16E-03	6.06E-03	6.07E-03	5.98E-03
900	5.22E-02	2.50E-02	17.08	2.89E-03	3.12E-03	3.17E-03	3.26E-03	3.53E-03	4.22E-03	4.77E-03	5.75E-03	6.63E-03	6.65E-03	6.55E-03
1000	4.42E-02	2.18E-02	19.26	3.42E-03	3.72E-03	3.77E-03	4.02E-03	3.96E-03	4.95E-03	5.29E-03	6.55E-03	7.50E-03	7.46E-03	7.35E-03
1147	3.44E-02	1.82E-02	21.72	3.87E-03	4.05E-03	4.14E-03	4.19E-03	4.38E-03	5.46E-03	5.79E-03	6.59E-03	8.03E-03	7.99E-03	7.86E-03
1545	2.00E-02	1.18E-02	24.49	4.50E-03	4.61E-03	4.73E-03	4.78E-03	4.99E-03	6.01E-03	6.54E-03	7.27E-03	8.84E-03	8.79E-03	8.60E-03
2000	1.25E-02	8.19E-03	27.62	5.37E-03	5.24E-03	5.55E-03	5.80E-03	5.90E-03	6.82E-03	7.38E-03	8.32E-03	9.52E-03	9.78E-03	9.57E-03
2120	1.12E-02	7.53E-03	31.15	6.05E-03	6.17E-03	6.34E-03	6.42E-03	6.72E-03	7.75E-03	7.76E-03	9.18E-03	1.03E-02	1.06E-02	1.03E-02
2977	6.00E-03	4.91E-03	35.13	7.50E-03	7.44E-03	7.66E-03	7.85E-03	8.16E-03	8.58E-03	9.32E-03	1.07E-02	1.13E-02	1.20E-02	1.16E-02

TABLE 18 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 10; ATOMIC-W= 20.18)
63.0 DEG/1334-1334 KM

****

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	8.74E-03	8.70E-03	8.84E-03	8.98E-03	9.12E-03	9.57E-03	1.03E-02	1.13E-02	1.25E-02	1.32E-02	1.27E-02
44.68	9.83E-03	9.95E-03	1.02E-02	9.94E-03	9.97E-03	1.07E-02	1.14E-02	1.24E-02	1.37E-02	1.43E-02	1.37E-02
50.38	1.14E-02	1.14E-02	1.16E-02	1.19E-02	1.15E-02	1.20E-02	1.28E-02	1.43E-02	1.54E-02	1.60E-02	1.52E-02
56.82	1.34E-02	1.34E-02	1.35E-02	1.33E-02	1.37E-02	1.44E-02	1.54E-02	1.54E-02	1.76E-02	1.80E-02	1.69E-02
64.07	1.51E-02	1.54E-02	1.55E-02	1.57E-02	1.58E-02	1.65E-02	1.66E-02	1.76E-02	1.90E-02	1.96E-02	1.84E-02
72.26	1.79E-02	1.81E-02	1.81E-02	1.79E-02	1.77E-02	1.85E-02	1.87E-02	1.86E-02	2.04E-02	2.05E-02	1.92E-02
81.49	2.01E-02	2.04E-02	2.05E-02	2.04E-02	1.99E-02	2.04E-02	2.03E-02	2.13E-02	2.29E-02	2.28E-02	2.07E-02
91.89	2.21E-02	2.22E-02	2.23E-02	2.24E-02	2.24E-02	2.26E-02	2.29E-02	2.34E-02	2.50E-02	2.52E-02	2.26E-02
103.63	2.57E-02	2.55E-02	2.56E-02	2.54E-02	2.53E-02	2.61E-02	2.66E-02	2.69E-02	2.79E-02	2.75E-02	2.54E-02
116.36	2.74E-02	2.81E-02	2.80E-02	2.81E-02	2.83E-02	2.87E-02	2.82E-02	2.92E-02	3.03E-02	2.90E-02	2.70E-02
131.79	3.04E-02	3.11E-02	3.13E-02	3.14E-02	3.15E-02	3.17E-02	3.15E-02	3.22E-02	3.22E-02	3.21E-02	2.86E-02
148.62	3.41E-02	3.48E-02	3.51E-02	3.51E-02	3.49E-02	3.49E-02	3.51E-02	3.51E-02	3.50E-02	3.36E-02	2.98E-02
167.60	3.61E-02	3.65E-02	3.69E-02	3.71E-02	3.72E-02	3.77E-02	3.82E-02	3.71E-02	3.69E-02	3.59E-02	3.17E-02
189.01	4.01E-02	4.06E-02	4.09E-02	4.10E-02	4.07E-02	4.10E-02	4.10E-02	4.06E-02	3.89E-02	3.74E-02	3.28E-02
213.15	4.32E-02	4.37E-02	4.38E-02	4.39E-02	4.40E-02	4.32E-02	4.34E-02	4.31E-02	4.12E-02	3.94E-02	3.39E-02
240.38	4.47E-02	4.44E-02	4.45E-02	4.46E-02	4.46E-02	4.47E-02	4.44E-02	4.43E-02	4.21E-02	4.00E-02	3.45E-02
271.08	4.57E-02	4.58E-02	4.58E-02	4.58E-02	4.55E-02	4.55E-02	4.55E-02	4.48E-02	4.28E-02	4.03E-02	3.47E-02
305.70	4.62E-02	4.61E-02	4.61E-02	4.60E-02	4.56E-02	4.52E-02	4.47E-02	4.45E-02	4.16E-02	3.94E-02	3.44E-02
344.74	4.48E-02	4.46E-02	4.44E-02	4.41E-02	4.40E-02	4.38E-02	4.37E-02	4.31E-02	4.05E-02	3.89E-02	3.46E-02
388.77	4.26E-02	4.24E-02	4.22E-02	4.20E-02	4.18E-02	4.17E-02	4.16E-02	4.13E-02	3.89E-02	3.71E-02	3.33E-02
438.43	4.03E-02	3.99E-02	3.97E-02	3.95E-02	3.94E-02	3.92E-02	3.89E-02	3.86E-02	3.68E-02	3.53E-02	3.21E-02
494.42	3.80E-02	3.77E-02	3.74E-02	3.71E-02	3.68E-02	3.66E-02	3.65E-02	3.61E-02	3.43E-02	3.35E-02	3.05E-02
557.57	3.52E-02	3.49E-02	3.46E-02	3.44E-02	3.42E-02	3.41E-02	3.38E-02	3.36E-02	3.27E-02	3.16E-02	2.93E-02
628.79	3.26E-02	3.21E-02	3.18E-02	3.16E-02	3.14E-02	3.13E-02	3.11E-02	3.08E-02	3.00E-02	2.93E-02	2.73E-02
709.09	3.00E-02	2.95E-02	2.91E-02	2.89E-02	2.87E-02	2.85E-02	2.82E-02	2.80E-02	2.74E-02	2.68E-02	2.52E-02
799.66	2.73E-02	2.71E-02	2.69E-02	2.66E-02	2.63E-02	2.61E-02	2.60E-02	2.58E-02	2.50E-02	2.43E-02	2.24E-02
901.79	2.42E-02	2.39E-02	2.35E-02	2.31E-02	2.27E-02	2.26E-02	2.23E-02	2.21E-02	2.16E-02	2.09E-02	1.97E-02
1017.00	2.07E-02	2.02E-02	1.98E-02	1.95E-02	1.93E-02	1.91E-02	1.89E-02	1.87E-02	1.83E-02	1.80E-02	1.69E-02
1146.90	1.78E-02	1.76E-02	1.73E-02	1.71E-02	1.68E-02	1.66E-02	1.65E-02	1.63E-02	1.60E-02	1.57E-02	1.49E-02
1293.30	1.49E-02	1.46E-02	1.44E-02	1.43E-02	1.42E-02	1.42E-02	1.41E-02	1.39E-02	1.37E-02	1.34E-02	1.29E-02
1458.50	1.26E-02	1.24E-02	1.22E-02	1.21E-02	1.20E-02	1.19E-02	1.19E-02	1.17E-02	1.16E-02	1.14E-02	1.10E-02
1644.80	1.07E-02	1.06E-02	1.05E-02	1.03E-02	1.02E-02	1.01E-02	1.00E-02	9.86E-03	9.74E-03	9.61E-03	9.29E-03
1854.90	9.01E-03	8.87E-03	8.72E-03	8.59E-03	8.45E-03	8.34E-03	8.24E-03	8.14E-03	8.05E-03	7.96E-03	7.73E-03
2091.80	7.64E-03	7.59E-03	7.54E-03	7.48E-03	7.43E-03	7.38E-03	7.33E-03	7.26E-03	7.20E-03	7.12E-03	6.95E-03
2358.90	6.54E-03	6.50E-03	6.45E-03	6.41E-03	6.34E-03	6.31E-03	6.26E-03	6.18E-03	6.12E-03	6.07E-03	5.93E-03
2660.20	5.44E-03	5.39E-03	5.33E-03	5.27E-03	5.19E-03	5.09E-03	4.99E-03	4.83E-03	4.70E-03	4.12E-03	2.97E-03

TABLE 18 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NA
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 11; ATOMIC-W= 22.99)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	6.02E-03	4.89E-04	0.20	0.00E+00	0.00E+00	1.84E-04	1.99E-04	1.85E-04	2.72E-04	3.05E-04	3.65E-04	4.44E-04	4.44E-04	4.33E-04
14	5.60E-03	4.86E-04	0.23	0.00E+00	0.00E+00	1.74E-04	1.87E-04	1.74E-04	2.56E-04	2.87E-04	3.45E-04	4.19E-04	4.19E-04	4.08E-04
16	5.60E-03	5.14E-04	0.25	0.00E+00	0.00E+00	1.63E-04	1.76E-04	1.64E-04	2.41E-04	2.70E-04	3.24E-04	3.94E-04	3.93E-04	3.84E-04
18	5.74E-03	5.46E-04	0.29	0.00E+00	0.00E+00	1.54E-04	1.66E-04	1.55E-04	2.28E-04	2.55E-04	3.06E-04	3.72E-04	3.72E-04	3.62E-04
20	6.31E-03	6.40E-04	0.32	0.00E+00	0.00E+00	1.49E-04	1.60E-04	1.49E-04	2.19E-04	2.46E-04	2.95E-04	3.59E-04	3.58E-04	3.49E-04
23	7.16E-03	7.51E-04	0.36	0.00E+00	0.00E+00	1.43E-04	1.54E-04	1.43E-04	2.11E-04	2.36E-04	2.83E-04	3.44E-04	3.44E-04	3.35E-04
26	8.01E-03	8.95E-04	0.41	0.00E+00	0.00E+00	1.42E-04	1.48E-04	1.39E-04	2.02E-04	2.26E-04	2.72E-04	3.30E-04	3.30E-04	3.22E-04
30	9.12E-03	1.05E-03	0.46	0.00E+00	0.00E+00	1.40E-04	1.45E-04	1.37E-04	1.99E-04	2.23E-04	2.67E-04	3.25E-04	3.25E-04	3.17E-04
34	1.03E-02	1.25E-03	0.52	0.00E+00	0.00E+00	1.38E-04	1.43E-04	1.34E-04	1.95E-04	2.19E-04	2.62E-04	3.19E-04	3.19E-04	3.11E-04
40	1.22E-02	1.59E-03	0.59	0.00E+00	0.00E+00	1.36E-04	1.41E-04	1.33E-04	1.93E-04	2.16E-04	2.59E-04	3.15E-04	3.15E-04	3.07E-04
46	1.37E-02	1.90E-03	0.67	0.00E+00	0.00E+00	1.35E-04	1.40E-04	1.32E-04	1.91E-04	2.14E-04	2.57E-04	3.13E-04	3.12E-04	3.05E-04
50	1.47E-02	2.09E-03	0.75	0.00E+00	0.00E+00	1.35E-04	1.40E-04	1.31E-04	1.91E-04	2.14E-04	2.57E-04	3.13E-04	3.12E-04	3.04E-04
54	1.56E-02	2.28E-03	0.85	0.00E+00	0.00E+00	1.38E-04	1.41E-04	1.32E-04	1.92E-04	2.15E-04	2.58E-04	3.14E-04	3.13E-04	3.06E-04
60	1.70E-02	2.57E-03	0.95	0.00E+00	0.00E+00	1.39E-04	1.42E-04	1.33E-04	1.93E-04	2.17E-04	2.60E-04	3.16E-04	3.16E-04	3.08E-04
64	1.80E-02	2.77E-03	1.08	0.00E+00	0.00E+00	1.41E-04	1.44E-04	1.36E-04	1.96E-04	2.20E-04	2.64E-04	3.21E-04	3.21E-04	3.13E-04
70	1.94E-02	3.12E-03	1.21	0.00E+00	0.00E+00	1.45E-04	1.47E-04	1.40E-04	2.00E-04	2.24E-04	2.69E-04	3.27E-04	3.27E-04	3.19E-04
76	2.05E-02	3.48E-03	1.37	0.00E+00	0.00E+00	1.49E-04	1.51E-04	1.43E-04	2.05E-04	2.30E-04	2.76E-04	3.36E-04	3.35E-04	3.27E-04
80	2.13E-02	3.67E-03	1.54	0.00E+00	0.00E+00	1.54E-04	1.42E-04	1.47E-04	2.05E-04	2.37E-04	2.84E-04	3.45E-04	3.45E-04	3.36E-04
90	2.24E-02	4.15E-03	1.74	0.00E+00	0.00E+00	1.58E-04	1.45E-04	1.51E-04	1.99E-04	2.42E-04	2.90E-04	3.53E-04	3.52E-04	3.44E-04
91	2.25E-02	4.19E-03	1.96	0.00E+00	0.00E+00	1.65E-04	1.51E-04	1.59E-04	2.07E-04	2.51E-04	3.01E-04	3.66E-04	3.66E-04	3.57E-04
100	2.36E-02	4.53E-03	2.21	0.00E+00	0.00E+00	1.73E-04	1.57E-04	1.65E-04	2.15E-04	2.61E-04	3.14E-04	3.81E-04	3.81E-04	3.71E-04
109	2.43E-02	4.86E-03	2.50	0.00E+00	0.00E+00	1.82E-04	1.65E-04	1.76E-04	2.26E-04	2.74E-04	3.29E-04	4.00E-04	3.99E-04	3.89E-04
133	2.62E-02	5.94E-03	2.81	0.00E+00	0.00E+00	1.92E-04	1.73E-04	1.86E-04	2.36E-04	2.88E-04	3.44E-04	4.19E-04	4.18E-04	4.08E-04
162	2.81E-02	7.01E-03	3.17	0.00E+00	0.00E+00	2.02E-04	1.82E-04	1.97E-04	2.48E-04	3.04E-04	3.64E-04	4.39E-04	4.38E-04	4.27E-04
200	3.04E-02	8.11E-03	3.58	0.00E+00	0.00E+00	2.15E-04	1.94E-04	1.93E-04	2.64E-04	3.22E-04	3.87E-04	4.65E-04	4.64E-04	4.52E-04
249	2.96E-02	8.89E-03	4.04	0.00E+00	0.00E+00	2.14E-04	2.09E-04	2.09E-04	2.85E-04	3.45E-04	4.14E-04	4.97E-04	4.96E-04	4.84E-04
300	2.85E-02	9.08E-03	4.55	0.00E+00	0.00E+00	2.30E-04	2.25E-04	2.25E-04	3.04E-04	3.67E-04	4.41E-04	5.30E-04	5.29E-04	5.16E-04
313	2.79E-02	9.12E-03	5.13	0.00E+00	0.00E+00	2.48E-04	2.44E-04	2.44E-04	3.29E-04	3.94E-04	4.72E-04	5.66E-04	5.65E-04	5.51E-04
357	2.29E-02	8.32E-03	5.79	0.00E+00	9.73E-05	2.70E-04	2.58E-04	2.69E-04	3.54E-04	4.28E-04	5.08E-04	6.09E-04	6.08E-04	5.93E-04
400	2.28E-02	8.28E-03	6.53	0.00E+00	2.83E-04	2.92E-04	2.62E-04	2.93E-04	3.82E-04	4.57E-04	5.43E-04	6.51E-04	6.50E-04	6.34E-04
500	1.86E-02	7.35E-03	7.36	0.00E+00	3.31E-04	2.99E-04	2.96E-04	3.35E-04	4.30E-04	5.11E-04	6.08E-04	7.20E-04	7.19E-04	7.01E-04
509	1.83E-02	7.29E-03	8.30	0.00E+00	3.40E-04	3.19E-04	3.19E-04	3.49E-04	4.57E-04	5.39E-04	6.41E-04	7.60E-04	7.58E-04	7.39E-04
600	1.54E-02	6.53E-03	9.36	5.24E-05	3.67E-04	3.50E-04	3.59E-04	3.72E-04	5.07E-04	5.96E-04	7.01E-04	8.32E-04	8.33E-04	8.08E-04
660	1.41E-02	6.13E-03	10.56	4.01E-04	3.81E-04	3.62E-04	3.83E-04	4.12E-04	5.53E-04	6.45E-04	7.60E-04	9.00E-04	8.97E-04	8.69E-04
700	1.33E-02	5.86E-03	11.91	4.31E-04	4.14E-04	4.16E-04	4.48E-04	4.78E-04	6.22E-04	7.17E-04	8.38E-04	9.87E-04	9.83E-04	9.52E-04
800	1.14E-02	5.29E-03	13.43	4.54E-04	4.39E-04	4.66E-04	4.87E-04	5.21E-04	7.00E-04	7.86E-04	9.26E-04	1.08E-03	1.08E-03	1.04E-03
865	1.04E-02	4.98E-03	15.15	4.68E-04	5.09E-04	5.38E-04	5.62E-04	5.92E-04	7.23E-04	8.07E-04	9.51E-04	1.18E-03	1.18E-03	1.14E-03
900	9.88E-03	4.73E-03	17.08	5.48E-04	5.97E-04	6.09E-04	6.29E-04	6.51E-04	8.18E-04	8.96E-04	1.04E-03	1.20E-03	1.29E-03	1.25E-03
1000	8.36E-03	4.12E-03	19.26	6.48E-04	7.13E-04	7.15E-04	7.51E-04	7.67E-04	9.64E-04	1.04E-03	1.18E-03	1.35E-03	1.45E-03	1.40E-03
1147	6.51E-03	3.45E-03	21.72	7.35E-04	7.63E-04	7.93E-04	7.94E-04	8.35E-04	1.07E-03	1.13E-03	1.28E-03	1.45E-03	1.56E-03	1.50E-03
1545	3.78E-03	2.24E-03	24.49	8.42E-04	8.63E-04	8.94E-04	9.17E-04	9.60E-04	1.12E-03	1.28E-03	1.43E-03	1.59E-03	1.70E-03	1.64E-03
2000	2.36E-03	1.55E-03	27.62	1.02E-03	1.02E-03	1.06E-03	1.09E-03	1.12E-03	1.32E-03	1.36E-03	1.63E-03	1.78E-03	1.90E-03	1.82E-03
2120	2.12E-03	1.42E-03	31.15	1.15E-03	1.17E-03	1.20E-03	1.23E-03	1.27E-03	1.43E-03	1.50E-03	1.79E-03	1.94E-03	2.05E-03	1.96E-03
2977	1.14E-03	9.28E-04	35.13	1.42E-03	1.41E-03	1.46E-03	1.49E-03	1.52E-03	1.66E-03	1.81E-03	1.95E-03	2.19E-03	2.31E-03	2.20E-03

TABLE 19A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NA
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 11; ATOMIC-W= 22.99)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.20	0.50	1.0	3.0	5.0	10.0
39.62	1.66E-03	1.65E-03	1.68E-03	1.71E-03	1.74E-03	1.84E-03	1.92E-03	2.16E-03	2.43E-03	2.55E-03	2.41E-03
44.68	1.86E-03	1.89E-03	1.93E-03	1.89E-03	1.88E-03	2.07E-03	2.20E-03	2.40E-03	2.66E-03	2.77E-03	2.61E-03
50.38	2.13E-03	2.17E-03	2.21E-03	2.20E-03	2.16E-03	2.30E-03	2.43E-03	2.73E-03	2.99E-03	3.08E-03	2.70E-03
56.82	2.55E-03	2.54E-02	2.53E-03	2.54E-03	2.59E-03	2.74E-03	2.87E-03	2.96E-03	3.24E-03	3.28E-03	3.01E-03
64.07	2.85E-03	2.93E-03	2.94E-03	2.98E-03	3.01E-03	3.11E-03	3.18E-03	3.31E-03	3.49E-03	3.56E-03	3.28E-03
72.26	3.38E-03	3.43E-03	3.43E-03	3.38E-03	3.36E-03	3.53E-03	3.52E-03	3.57E-03	3.93E-03	3.95E-03	3.61E-03
81.49	3.80E-03	3.85E-03	3.88E-03	3.86E-03	3.77E-03	3.87E-03	3.86E-03	3.99E-03	4.41E-03	4.37E-03	3.94E-03
91.89	4.13E-03	4.20E-03	4.23E-03	4.25E-03	4.24E-03	4.30E-03	4.31E-03	4.48E-03	4.62E-03	4.81E-03	4.29E-03
103.63	4.87E-03	4.92E-03	4.80E-03	4.82E-03	4.80E-03	4.91E-03	5.06E-03	5.08E-03	5.35E-03	5.12E-03	4.79E-03
116.86	5.19E-03	5.33E-03	5.30E-03	5.32E-03	5.35E-03	5.39E-03	5.34E-03	5.57E-03	5.65E-03	5.53E-03	4.98E-03
131.79	5.74E-03	5.88E-03	5.93E-03	5.95E-03	5.97E-03	6.01E-03	5.98E-03	6.14E-03	6.15E-03	6.07E-03	5.19E-03
148.62	6.46E-03	6.59E-03	6.64E-03	6.65E-03	6.61E-03	6.60E-03	6.65E-03	6.67E-03	6.53E-03	6.34E-03	5.63E-03
167.60	6.83E-03	6.91E-03	6.98E-03	7.02E-03	7.04E-03	7.14E-03	7.25E-03	6.98E-03	7.00E-03	6.80E-03	5.99E-03
189.01	7.60E-03	7.68E-03	7.74E-03	7.69E-03	7.71E-03	7.77E-03	7.76E-03	7.70E-03	7.38E-03	7.03E-03	5.99E-03
213.15	8.17E-03	8.26E-03	8.29E-03	8.31E-03	8.33E-03	8.17E-03	8.22E-03	8.10E-03	7.75E-03	7.39E-03	6.36E-03
240.38	8.45E-03	8.41E-03	8.43E-03	8.44E-03	8.45E-03	8.47E-03	8.41E-03	8.38E-03	7.91E-03	7.55E-03	6.42E-03
271.08	8.64E-03	8.66E-03	8.67E-03	8.60E-03	8.61E-03	8.61E-03	8.55E-03	8.48E-03	8.02E-03	7.45E-03	6.51E-03
305.70	8.73E-03	8.72E-03	8.72E-03	8.71E-03	8.63E-03	8.54E-03	8.45E-03	8.43E-03	7.84E-03	7.42E-03	6.37E-03
344.74	8.48E-03	8.44E-03	8.39E-03	8.35E-03	8.32E-03	8.29E-03	8.26E-03	8.09E-03	7.59E-03	7.23E-03	6.37E-03
388.77	8.06E-03	8.02E-03	7.99E-03	7.95E-03	7.91E-03	7.88E-03	7.86E-03	7.81E-03	7.34E-03	6.99E-03	6.25E-03
438.43	7.62E-03	7.55E-03	7.52E-03	7.48E-03	7.44E-03	7.41E-03	7.35E-03	7.31E-03	6.95E-03	6.65E-03	6.03E-03
494.42	7.20E-03	7.13E-03	7.07E-03	7.01E-03	6.96E-03	6.92E-03	6.90E-03	6.82E-03	6.47E-03	6.32E-03	5.73E-03
557.57	6.66E-03	6.59E-03	6.54E-03	6.51E-03	6.47E-03	6.44E-03	6.39E-03	6.35E-03	6.15E-03	5.95E-03	5.51E-03
628.79	6.15E-03	6.06E-03	6.01E-03	5.98E-03	5.95E-03	5.90E-03	5.88E-03	5.82E-03	5.66E-03	5.50E-03	5.12E-03
709.09	5.67E-03	5.57E-03	5.50E-03	5.46E-03	5.42E-03	5.38E-03	5.33E-03	5.30E-03	5.16E-03	5.02E-03	4.75E-03
799.66	5.17E-03	5.13E-03	5.08E-03	5.03E-03	4.97E-03	4.93E-03	4.91E-03	4.88E-03	4.72E-03	4.56E-03	4.22E-03
901.79	4.59E-03	4.51E-03	4.44E-03	4.37E-03	4.30E-03	4.26E-03	4.22E-03	4.18E-03	4.07E-03	3.92E-03	3.72E-03
1017.00	3.92E-03	3.82E-03	3.75E-03	3.70E-03	3.65E-03	3.60E-03	3.58E-03	3.55E-03	3.46E-03	3.36E-03	3.18E-03
1146.90	3.37E-03	3.32E-03	3.28E-03	3.23E-03	3.18E-03	3.15E-03	3.12E-03	3.09E-03	3.02E-03	2.95E-03	2.80E-03
1293.30	2.82E-03	2.76E-03	2.73E-03	2.71E-03	2.69E-03	2.68E-03	2.66E-03	2.63E-03	2.58E-03	2.53E-03	2.42E-03
1458.50	2.39E-03	2.35E-03	2.31E-03	2.29E-03	2.27E-03	2.26E-03	2.24E-03	2.22E-03	2.18E-03	2.15E-03	2.07E-03
1644.80	2.02E-03	2.00E-03	1.98E-03	1.95E-03	1.93E-03	1.91E-03	1.89E-03	1.86E-03	1.84E-03	1.81E-03	1.75E-03
1854.90	1.70E-03	1.68E-03	1.65E-03	1.62E-03	1.60E-03	1.57E-03	1.56E-03	1.54E-03	1.52E-03	1.50E-03	1.46E-03
2091.80	1.45E-03	1.43E-03	1.42E-03	1.41E-03	1.40E-03	1.39E-03	1.39E-03	1.37E-03	1.36E-03	1.34E-03	1.31E-03
2358.90	1.24E-03	1.23E-03	1.22E-03	1.21E-03	1.20E-03	1.19E-03	1.18E-03	1.17E-03	1.16E-03	1.15E-03	1.12E-03
2660.20	1.03E-03	1.02E-03	1.01E-03	9.96E-04	9.80E-04	9.61E-04	9.40E-04	9.13E-04	8.87E-04	7.79E-04	5.59E-04

TABLE 19 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: MG
MODFL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 12; ATOMIC-W= 24.32)
63.0 DEG/1334-1334 KM

MAGNETCSPHERICALLY

EN-ERGY	UNATTEN-UATED	ATTEN-UATED
12	4.13E-02	3.35E-03
14	3.84E-02	3.33E-03
16	3.84E-02	3.52E-03
18	3.94E-02	3.74E-03
20	4.33E-02	4.39E-03
23	4.91E-02	5.15E-03
26	5.49E-02	6.14E-03
30	6.25E-02	7.17E-03
34	7.09E-02	8.56E-03
40	8.34E-02	1.09E-02
46	9.39E-02	1.30E-02
50	1.01E-01	1.43E-02
54	1.07E-01	1.56E-02
60	1.17E-01	1.77E-02
64	1.23E-01	1.90E-02
70	1.33E-01	2.14E-02
76	1.41E-01	2.38E-02
80	1.46E-01	2.52E-02
90	1.54E-01	2.84E-02
91	1.55E-01	2.88E-02
100	1.62E-01	3.11E-02
109	1.67E-01	3.34E-02
133	1.79E-01	4.07E-02
162	1.93E-01	4.81E-02
200	2.08E-01	5.56E-02
249	2.03E-01	6.10E-02
300	1.98E-01	6.23E-02
313	1.91E-01	6.26E-02
397	1.57E-01	5.70E-02
400	1.56E-01	5.68E-02
500	1.28E-01	5.04E-02
509	1.25E-01	5.00E-02
600	1.06E-01	4.48E-02
660	9.64E-02	4.21E-02
700	9.12E-02	4.02E-02
800	7.82E-02	3.62E-02
865	7.11E-02	3.41E-02
900	6.77E-02	3.24E-02
1000	5.73E-02	2.83E-02
1147	4.46E-02	2.36E-02
1545	2.55E-02	1.54E-02
2000	1.62E-02	1.06E-02
2120	1.45E-02	9.77E-03
2977	7.79E-03	6.37E-03

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
0.20	0.00E+00	0.00E+00	1.49E-03	1.37E-03	1.39E-03	2.01E-03	2.43E-03	2.74E-03	3.23E-03	3.47E-03	3.05E-03
0.23	0.00E+00	0.00E+00	1.41E-03	1.29E-03	1.31E-03	1.90E-03	2.30E-03	2.58E-03	3.05E-03	3.27E-03	2.88E-03
0.25	0.00E+00	0.00E+00	1.32E-03	1.21E-03	1.24E-03	1.78E-03	2.16E-03	2.43E-03	2.86E-03	3.07E-03	2.71E-03
0.29	0.00E+00	0.00E+00	1.25E-03	1.15E-03	1.17E-03	1.68E-03	2.04E-03	2.29E-03	2.70E-03	2.90E-03	2.56E-03
0.32	0.00E+00	0.00E+00	1.20E-03	1.10E-03	1.12E-03	1.62E-03	1.96E-03	2.20E-03	2.60E-03	2.79E-03	2.46E-03
0.36	0.00E+00	0.00E+00	1.15E-03	1.06E-03	1.07E-03	1.55E-03	1.88E-03	2.11E-03	2.49E-03	2.67E-03	2.36E-03
0.41	0.00E+00	0.00E+00	1.10E-03	1.01E-03	1.03E-03	1.49E-03	1.80E-03	2.02E-03	2.39E-03	2.56E-03	2.26E-03
0.46	0.00E+00	0.00E+00	1.09E-03	9.94E-04	1.01E-03	1.46E-03	1.77E-03	1.99E-03	2.35E-03	2.52E-03	2.22E-03
0.52	0.00E+00	0.00E+00	1.07E-03	9.73E-04	9.90E-04	1.43E-03	1.74E-03	1.94E-03	2.30E-03	2.46E-03	2.17E-03
0.59	0.00E+00	0.00E+00	1.05E-03	9.62E-04	9.76E-04	1.41E-03	1.73E-03	1.92E-03	2.26E-03	2.43E-03	2.14E-03
0.67	0.00E+00	0.00E+00	1.04E-03	9.54E-04	9.66E-04	1.40E-03	1.71E-03	1.90E-03	2.24E-03	2.40E-03	2.12E-03
0.75	0.00E+00	0.00E+00	1.04E-03	9.51E-04	9.63E-04	1.39E-03	1.70E-03	1.89E-03	2.23E-03	2.40E-03	2.11E-03
0.85	0.00E+00	0.00E+00	1.04E-03	9.52E-04	9.66E-04	1.39E-03	1.70E-03	1.89E-03	2.24E-03	2.40E-03	2.11E-03
0.95	0.00E+00	0.00E+00	1.05E-03	9.57E-04	9.83E-04	1.40E-03	1.71E-03	1.90E-03	2.25E-03	2.41E-03	2.13E-03
1.08	0.00E+00	0.00E+00	1.06E-03	9.70E-04	9.95E-04	1.42E-03	1.74E-03	1.93E-03	2.28E-03	2.44E-03	2.15E-03
1.21	0.00E+00	0.00E+00	1.08E-03	9.90E-04	1.01E-03	1.44E-03	1.76E-03	1.96E-03	2.31E-03	2.48E-03	2.19E-03
1.37	0.00E+00	0.00E+00	1.11E-03	1.01E-03	1.04E-03	1.48E-03	1.80E-03	2.01E-03	2.37E-03	2.54E-03	2.24E-03
1.54	0.00E+00	0.00E+00	1.14E-03	1.04E-03	1.06E-03	1.53E-03	1.85E-03	2.06E-03	2.43E-03	2.60E-03	2.29E-03
1.74	0.00E+00	0.00E+00	1.17E-03	1.07E-03	1.10E-03	1.57E-03	1.89E-03	2.10E-03	2.48E-03	2.66E-03	2.34E-03
1.96	0.00E+00	0.00E+00	1.21E-03	1.10E-03	1.14E-03	1.62E-03	1.95E-03	2.17E-03	2.56E-03	2.75E-03	2.42E-03
2.21	0.00E+00	0.00E+00	1.18E-03	1.15E-03	1.18E-03	1.68E-03	2.03E-03	2.25E-03	2.66E-03	2.85E-03	2.52E-03
2.50	0.00E+00	0.00E+00	1.22E-03	1.21E-03	1.25E-03	1.76E-03	2.12E-03	2.35E-03	2.78E-03	2.98E-03	2.63E-03
2.81	0.00E+00	0.00E+00	1.28E-03	1.27E-03	1.30E-03	1.84E-03	2.21E-03	2.46E-03	2.90E-03	3.12E-03	2.75E-03
3.17	0.00E+00	0.00E+00	1.34E-03	1.33E-03	1.38E-03	1.92E-03	2.31E-03	2.57E-03	3.04E-03	3.26E-03	2.87E-03
3.58	0.00E+00	0.00E+00	1.43E-03	1.42E-03	1.47E-03	2.06E-03	2.34E-03	2.71E-03	3.21E-03	3.44E-03	3.03E-03
4.04	0.00E+00	0.00E+00	1.54E-03	1.45E-03	1.58E-03	2.19E-03	2.40E-03	2.90E-03	3.42E-03	3.67E-03	3.23E-03
4.55	0.00E+00	0.00E+00	1.65E-03	1.49E-03	1.70E-03	2.33E-03	2.55E-03	3.08E-03	3.65E-03	3.90E-03	3.44E-03
5.13	0.00E+00	2.10E-04	1.77E-03	1.60E-03	1.84E-03	2.52E-03	2.72E-03	3.29E-03	3.91E-03	4.16E-03	3.66E-03
5.75	0.00E+00	1.85E-03	1.77E-03	1.74E-03	2.02E-03	2.70E-03	2.92E-03	3.56E-03	4.19E-03	4.46E-03	3.93E-03
6.53	0.00E+00	2.05E-03	1.88E-03	1.89E-03	2.06E-03	2.92E-03	3.14E-03	3.80E-03	4.47E-03	4.76E-03	4.19E-03
7.36	0.00E+00	2.16E-03	2.12E-03	2.19E-03	2.25E-03	3.27E-03	3.47E-03	4.19E-03	4.93E-03	5.25E-03	4.62E-03
8.30	0.00E+00	2.29E-03	2.20E-03	2.30E-03	2.41E-03	3.46E-03	3.67E-03	4.41E-03	5.19E-03	5.52E-03	4.87E-03
9.36	1.25E-03	2.51E-03	2.32E-03	2.50E-03	2.72E-03	3.63E-03	4.03E-03	4.85E-03	5.66E-03	6.04E-03	5.31E-03
10.56	2.78E-03	2.55E-03	2.58E-03	2.79E-03	3.04E-03	3.80E-03	4.35E-03	5.23E-03	6.08E-03	6.50E-03	5.69E-03
11.91	2.95E-03	2.79E-03	2.90E-03	3.09E-03	3.27E-03	4.25E-03	4.81E-03	5.74E-03	6.65E-03	7.12E-03	6.23E-03
13.43	3.10E-03	3.08E-03	3.33E-03	3.42E-03	3.69E-03	4.75E-03	5.32E-03	6.32E-03	7.27E-03	7.77E-03	6.81E-03
15.15	3.33E-03	3.48E-03	3.69E-03	3.92E-03	4.27E-03	5.34E-03	5.92E-03	6.97E-03	8.02E-03	8.51E-03	7.46E-03
17.08	3.75E-03	3.99E-03	4.27E-03	4.39E-03	4.47E-03	6.01E-03	6.60E-03	7.70E-03	8.77E-03	9.30E-03	8.16E-03
19.26	4.47E-03	4.87E-03	5.03E-03	4.96E-03	5.50E-03	6.50E-03	7.59E-03	8.73E-03	9.82E-03	9.91E-03	9.13E-03
21.72	5.08E-03	5.32E-03	5.41E-03	5.60E-03	5.76E-03	7.06E-03	7.81E-03	9.40E-03	1.06E-02	1.04E-02	9.75E-03
24.49	5.79E-03	6.03E-03	6.10E-03	6.34E-03	6.69E-03	8.08E-03	8.44E-03	1.05E-02	1.16E-02	1.14E-02	1.07E-02
27.62	6.93E-03	7.05E-03	7.42E-03	7.36E-03	7.84E-03	9.16E-03	9.77E-03	1.10E-02	1.29E-02	1.26E-02	1.18E-02
31.15	7.69E-03	8.05E-03	8.16E-03	8.62E-03	8.76E-03	9.73E-03	1.09E-02	1.19E-02	1.40E-02	1.37E-02	1.28E-02
35.13	9.76E-03	9.76E-03	9.99E-03	1.03E-02	1.03E-02	1.18E-02	1.20E-02	1.37E-02	1.59E-02	1.54E-02	1.43E-02

TABLE 20 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: MG
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 12; ATOMIC-W= 24.32)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.14E-02	1.13E-02	1.16E-02	1.16E-02	1.20E-02	1.26E-02	1.38E-02	1.55E-02	1.68E-02	1.70E-02	1.57E-02
44.68	1.28E-02	1.30E-02	1.32E-02	1.31E-02	1.31E-02	1.45E-02	1.55E-02	1.70E-02	1.77E-02	1.84E-02	1.69E-02
50.38	1.46E-02	1.49E-02	1.52E-02	1.51E-02	1.50E-02	1.63E-02	1.72E-02	1.80E-02	1.98E-02	2.05E-02	1.87E-02
56.82	1.76E-02	1.73E-02	1.72E-02	1.75E-02	1.79E-02	1.88E-02	1.98E-02	2.10E-02	2.25E-02	2.29E-02	2.08E-02
64.07	1.99E-02	2.01E-02	2.02E-02	2.05E-02	2.08E-02	2.18E-02	2.23E-02	2.18E-02	2.49E-02	2.52E-02	2.26E-02
72.26	2.32E-02	2.36E-02	2.36E-02	2.33E-02	2.32E-02	2.45E-02	2.40E-02	2.53E-02	2.80E-02	2.78E-02	2.47E-02
81.49	2.61E-02	2.65E-02	2.64E-02	2.66E-02	2.60E-02	2.66E-02	2.69E-02	2.73E-02	2.89E-02	2.96E-02	2.69E-02
91.89	2.83E-02	2.89E-02	2.90E-02	2.92E-02	2.91E-02	2.94E-02	3.00E-02	3.11E-02	3.24E-02	3.15E-02	2.75E-02
103.63	3.34E-02	3.31E-02	3.30E-02	3.31E-02	3.30E-02	3.39E-02	3.52E-02	3.54E-02	3.60E-02	3.57E-02	3.07E-02
116.86	3.56E-02	3.65E-02	3.64E-02	3.66E-02	3.68E-02	3.72E-02	3.70E-02	3.80E-02	3.83E-02	3.82E-02	3.27E-02
131.79	3.95E-02	4.05E-02	4.07E-02	4.08E-02	4.10E-02	4.13E-02	4.09E-02	4.25E-02	4.24E-02	3.99E-02	3.55E-02
148.62	4.43E-02	4.53E-02	4.55E-02	4.52E-02	4.54E-02	4.54E-02	4.50E-02	4.61E-02	4.46E-02	4.37E-02	3.73E-02
167.60	4.69E-02	4.75E-02	4.80E-02	4.82E-02	4.83E-02	4.91E-02	4.99E-02	4.82E-02	4.85E-02	4.46E-02	3.76E-02
189.01	5.21E-02	5.27E-02	5.31E-02	5.28E-02	5.29E-02	5.34E-02	5.34E-02	5.21E-02	5.08E-02	4.83E-02	4.03E-02
213.15	5.62E-02	5.67E-02	5.69E-02	5.71E-02	5.72E-02	5.62E-02	5.64E-02	5.57E-02	5.24E-02	4.90E-02	4.13E-02
240.38	5.79E-02	5.77E-02	5.78E-02	5.79E-02	5.79E-02	5.81E-02	5.77E-02	5.75E-02	5.42E-02	5.07E-02	4.21E-02
271.08	5.93E-02	5.94E-02	5.94E-02	5.90E-02	5.90E-02	5.91E-02	5.86E-02	5.82E-02	5.44E-02	5.02E-02	4.30E-02
305.70	5.99E-02	5.98E-02	5.98E-02	5.97E-02	5.92E-02	5.86E-02	5.79E-02	5.77E-02	5.35E-02	4.93E-02	4.29E-02
344.74	5.81E-02	5.78E-02	5.74E-02	5.72E-02	5.70E-02	5.68E-02	5.66E-02	5.53E-02	5.14E-02	4.85E-02	4.22E-02
388.77	5.52E-02	5.50E-02	5.48E-02	5.45E-02	5.43E-02	5.40E-02	5.39E-02	5.34E-02	4.97E-02	4.76E-02	4.21E-02
438.43	5.22E-02	5.19E-02	5.15E-02	5.13E-02	5.10E-02	5.05E-02	5.04E-02	5.00E-02	4.74E-02	4.52E-02	4.03E-02
494.42	4.93E-02	4.88E-02	4.83E-02	4.79E-02	4.76E-02	4.74E-02	4.73E-02	4.67E-02	4.42E-02	4.25E-02	3.87E-02
557.57	4.57E-02	4.52E-02	4.48E-02	4.46E-02	4.43E-02	4.41E-02	4.38E-02	4.35E-02	4.20E-02	4.04E-02	3.71E-02
628.79	4.22E-02	4.16E-02	4.12E-02	4.10E-02	4.08E-02	4.04E-02	4.03E-02	3.99E-02	3.86E-02	3.73E-02	3.45E-02
709.09	3.88E-02	3.81E-02	3.77E-02	3.74E-02	3.71E-02	3.69E-02	3.65E-02	3.63E-02	3.52E-02	3.42E-02	3.17E-02
799.64	3.55E-02	3.52E-02	3.48E-02	3.45E-02	3.41E-02	3.38E-02	3.36E-02	3.34E-02	3.21E-02	3.09E-02	2.85E-02
901.79	3.14E-02	3.09E-02	3.03E-02	2.98E-02	2.94E-02	2.91E-02	2.90E-02	2.86E-02	2.78E-02	2.67E-02	2.49E-02
1017.00	2.69E-02	2.62E-02	2.57E-02	2.53E-02	2.51E-02	2.47E-02	2.45E-02	2.43E-02	2.37E-02	2.30E-02	2.16E-02
1146.90	2.31E-02	2.28E-02	2.24E-02	2.21E-02	2.18E-02	2.15E-02	2.14E-02	2.11E-02	2.06E-02	2.01E-02	1.89E-02
1293.30	1.93E-02	1.89E-02	1.87E-02	1.85E-02	1.85E-02	1.83E-02	1.82E-02	1.80E-02	1.77E-02	1.73E-02	1.64E-02
1458.50	1.64E-02	1.61E-02	1.58E-02	1.57E-02	1.56E-02	1.55E-02	1.54E-02	1.52E-02	1.49E-02	1.47E-02	1.40E-02
1644.80	1.39E-02	1.37E-02	1.36E-02	1.34E-02	1.32E-02	1.31E-02	1.29E-02	1.28E-02	1.26E-02	1.24E-02	1.19E-02
1854.90	1.17E-02	1.15E-02	1.13E-02	1.11E-02	1.09E-02	1.08E-02	1.06E-02	1.05E-02	1.04E-02	1.03E-02	9.93E-03
2091.80	9.91E-03	9.84E-03	9.77E-03	9.69E-03	9.62E-03	9.56E-03	9.50E-03	9.41E-03	9.32E-03	9.20E-03	8.96E-03
2358.90	8.48E-03	8.42E-03	8.36E-03	8.29E-03	8.23E-03	8.16E-03	8.10E-03	8.01E-03	7.92E-03	7.82E-03	7.62E-03
2660.20	7.06E-03	6.99E-03	6.91E-03	6.82E-03	6.71E-03	6.57E-03	6.41E-03	6.25E-03	6.05E-03	5.29E-03	3.75E-03

TABLE 20 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: AL
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 13; ATOMIC-W= 26.98)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	7.74E-03	6.28E-04	0.20	0.00E+00	0.00E+00	3.03E-04	2.79E-04	2.89E-04	4.26E-04	4.65E-04	5.75E-04	6.73E-04	6.68E-04	6.21E-04
14	7.20E-03	6.25E-04	0.23	0.00E+00	0.00E+00	2.86E-04	2.63E-04	2.73E-04	4.02E-04	4.39E-04	5.43E-04	6.35E-04	6.30E-04	5.86E-04
16	7.20E-03	6.60E-04	0.25	0.00E+00	0.00E+00	2.69E-04	2.47E-04	2.56E-04	3.78E-04	4.12E-04	5.10E-04	5.96E-04	5.92E-04	5.51E-04
18	7.38E-03	7.02E-04	0.29	0.00E+00	0.00E+00	2.54E-04	2.33E-04	2.42E-04	3.56E-04	3.88E-04	4.81E-04	5.62E-04	5.59E-04	5.19E-04
20	8.11E-03	8.22E-04	0.32	0.00E+00	0.00E+00	2.44E-04	2.24E-04	2.32E-04	3.42E-04	3.73E-04	4.62E-04	5.40E-04	5.37E-04	4.99E-04
23	9.21E-03	9.66E-04	0.36	0.00E+00	0.00E+00	2.33E-04	2.14E-04	2.22E-04	3.27E-04	3.57E-04	4.42E-04	5.17E-04	5.13E-04	4.77E-04
26	1.03E-02	1.15E-03	0.41	0.00E+00	0.00E+00	2.24E-04	2.06E-04	2.12E-04	3.13E-04	3.41E-04	4.22E-04	4.94E-04	4.90E-04	4.56E-04
30	1.17E-02	1.34E-03	0.46	0.00E+00	0.00E+00	2.19E-04	2.02E-04	2.08E-04	3.07E-04	3.35E-04	4.15E-04	4.85E-04	4.82E-04	4.48E-04
34	1.33E-02	1.61E-03	0.52	0.00E+00	0.00E+00	2.14E-04	1.97E-04	2.04E-04	3.00E-04	3.27E-04	4.05E-04	4.74E-04	4.70E-04	4.37E-04
40	1.56E-02	2.04E-03	0.59	0.00E+00	0.00E+00	2.11E-04	1.94E-04	2.03E-04	2.95E-04	3.22E-04	3.99E-04	4.66E-04	4.63E-04	4.30E-04
46	1.76E-02	2.45E-03	0.67	0.00E+00	0.00E+00	2.08E-04	1.92E-04	2.00E-04	2.91E-04	3.18E-04	3.94E-04	4.60E-04	4.57E-04	4.25E-04
50	1.89E-02	2.69E-03	0.75	0.00E+00	0.00E+00	2.08E-04	1.91E-04	2.00E-04	2.90E-04	3.16E-04	3.92E-04	4.58E-04	4.55E-04	4.23E-04
54	2.01E-02	2.93E-03	0.85	0.00E+00	0.00E+00	2.08E-04	1.91E-04	1.99E-04	2.90E-04	3.16E-04	3.91E-04	4.58E-04	4.55E-04	4.23E-04
60	2.19E-02	3.31E-03	0.95	0.00E+00	0.00E+00	2.09E-04	1.93E-04	2.00E-04	2.91E-04	3.17E-04	3.93E-04	4.59E-04	4.56E-04	4.24E-04
64	2.31E-02	3.57E-03	1.08	0.00E+00	0.00E+00	2.11E-04	1.95E-04	2.02E-04	2.94E-04	3.21E-04	3.97E-04	4.64E-04	4.61E-04	4.28E-04
70	2.49E-02	4.01E-03	1.21	0.00E+00	0.00E+00	2.14E-04	1.97E-04	2.05E-04	2.98E-04	3.28E-04	4.02E-04	4.70E-04	4.67E-04	4.34E-04
76	2.64E-02	4.47E-03	1.37	0.00E+00	0.00E+00	2.04E-04	2.02E-04	2.12E-04	3.04E-04	3.35E-04	4.10E-04	4.84E-04	4.77E-04	4.43E-04
80	2.74E-02	4.72E-03	1.54	0.00E+00	0.00E+00	2.07E-04	2.07E-04	2.16E-04	3.13E-04	3.43E-04	4.20E-04	4.95E-04	4.87E-04	4.53E-04
90	2.88E-02	5.33E-03	1.74	0.00E+00	0.00E+00	2.11E-04	2.11E-04	2.21E-04	3.21E-04	3.49E-04	4.27E-04	5.04E-04	4.97E-04	4.62E-04
91	2.90E-02	5.39E-03	1.96	0.00E+00	0.00E+00	2.19E-04	2.19E-04	2.28E-04	3.31E-04	3.60E-04	4.41E-04	5.20E-04	5.12E-04	4.76E-04
100	3.03E-02	5.83E-03	2.21	0.00E+00	0.00E+00	2.29E-04	2.28E-04	2.39E-04	3.43E-04	3.73E-04	4.57E-04	5.39E-04	5.30E-04	4.93E-04
109	3.13E-02	6.25E-03	2.50	0.00E+00	0.00E+00	2.39E-04	2.39E-04	2.49E-04	3.57E-04	3.89E-04	4.76E-04	5.61E-04	5.53E-04	5.14E-04
133	3.36E-02	7.64E-03	2.81	0.00E+00	0.00E+00	2.50E-04	2.50E-04	2.62E-04	3.72E-04	4.05E-04	4.96E-04	5.85E-04	5.76E-04	5.35E-04
162	3.62E-02	9.02E-03	3.17	0.00E+00	0.00E+00	2.62E-04	2.48E-04	2.74E-04	3.89E-04	4.23E-04	5.17E-04	6.10E-04	6.01E-04	5.59E-04
200	3.91E-02	1.04E-02	3.58	0.00E+00	0.00E+00	2.77E-04	2.53E-04	2.91E-04	4.14E-04	4.45E-04	5.44E-04	6.42E-04	6.32E-04	5.88E-04
249	3.80E-02	1.14E-02	4.04	0.00E+00	0.00E+00	2.97E-04	2.70E-04	3.14E-04	4.41E-04	4.73E-04	5.79E-04	6.83E-04	6.73E-04	6.25E-04
300	3.71E-02	1.17E-02	4.55	0.00E+00	0.00E+00	3.17E-04	2.88E-04	3.37E-04	4.68E-04	5.06E-04	6.14E-04	7.24E-04	7.13E-04	6.63E-04
313	3.59E-02	1.17E-02	5.13	0.00E+00	2.02E-04	3.21E-04	3.10E-04	3.55E-04	5.03E-04	5.39E-04	6.53E-04	7.70E-04	7.58E-04	7.05E-04
397	2.95E-02	1.07E-02	5.79	0.00E+00	3.58E-04	3.35E-04	3.38E-04	3.59E-04	5.40E-04	5.77E-04	7.06E-04	8.24E-04	8.12E-04	7.55E-04
400	2.93E-02	1.07E-02	6.53	0.00E+00	3.91E-04	3.60E-04	3.70E-04	3.87E-04	5.31E-04	6.15E-04	7.52E-04	8.77E-04	8.64E-04	8.03E-04
500	2.39E-02	9.46E-03	7.36	0.00E+00	4.07E-04	4.08E-04	3.98E-04	4.39E-04	5.90E-04	6.84E-04	8.27E-04	9.64E-04	9.56E-04	8.83E-04
509	2.35E-02	9.37E-03	8.30	0.00E+00	4.36E-04	4.20E-04	4.25E-04	4.71E-04	6.23E-04	7.19E-04	8.69E-04	1.01E-03	1.01E-03	9.28E-04
600	1.98E-02	8.40E-03	9.36	2.93E-04	4.60E-04	4.43E-04	4.84E-04	5.34E-04	6.88E-04	7.91E-04	9.53E-04	1.10E-03	1.09E-03	1.01E-03
660	1.81E-02	7.89E-03	10.56	5.14E-04	4.85E-04	4.99E-04	5.39E-04	5.79E-04	7.48E-04	8.50E-04	1.02E-03	1.18E-03	1.17E-03	1.08E-03
700	1.71E-02	7.54E-03	11.91	5.56E-04	5.30E-04	5.44E-04	5.74E-04	6.21E-04	8.33E-04	9.41E-04	1.12E-03	1.29E-03	1.28E-03	1.18E-03
800	1.47E-02	6.80E-03	13.43	5.83E-04	5.83E-04	6.39E-04	6.57E-04	7.10E-04	9.26E-04	1.04E-03	1.23E-03	1.42E-03	1.40E-03	1.29E-03
865	1.33E-02	6.40E-03	15.15	6.27E-04	6.62E-04	6.87E-04	7.43E-04	7.81E-04	1.04E-03	1.15E-03	1.36E-03	1.55E-03	1.53E-03	1.41E-03
900	1.27E-02	6.08E-03	17.08	7.07E-04	7.46E-04	8.15E-04	8.40E-04	8.59E-04	1.16E-03	1.29E-03	1.50E-03	1.70E-03	1.67E-03	1.54E-03
1000	1.07E-02	5.30E-03	19.26	8.41E-04	8.82E-04	9.56E-04	9.46E-04	9.86E-04	1.24E-03	1.34E-03	1.70E-03	1.91E-03	1.86E-03	1.72E-03
1147	8.37E-03	4.43E-03	21.72	9.54E-04	1.01E-03	1.01E-03	1.07E-03	1.09E-03	1.36E-03	1.45E-03	1.73E-03	2.04E-03	2.00E-03	1.84E-03
1545	4.85E-03	2.88E-03	24.49	1.09E-03	1.13E-03	1.16E-03	1.18E-03	1.26E-03	1.55E-03	1.63E-03	1.85E-03	2.24E-03	2.18E-03	2.00E-03
2000	3.03E-03	1.99E-03	27.62	1.30E-03	1.33E-03	1.40E-03	1.39E-03	1.49E-03	1.69E-03	1.88E-03	2.09E-03	2.47E-03	2.43E-03	2.22E-03
2120	2.72E-03	1.83E-03	31.15	1.48E-03	1.51E-03	1.54E-03	1.63E-03	1.65E-03	1.86E-03	2.04E-03	2.29E-03	2.50E-03	2.63E-03	2.40E-03
2977	1.46E-03	1.19E-03	35.13	1.82E-03	1.84E-03	1.89E-03	1.95E-03	1.94E-03	2.13E-03	2.28E-03	2.64E-03	2.82E-03	2.95E-03	2.68E-03

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 21 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: AL
MODEL= PARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 13; ATOMIC-W= 26.98)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	2.13E-03	2.11E-03	2.19E-03	2.19E-03	2.26E-03	2.41E-03	2.66E-03	2.94E-03	3.12E-03	3.24E-03	2.94E-03
44.68	2.40E-03	2.44E-03	2.49E-03	2.43E-03	2.46E-03	2.73E-03	2.82E-03	3.01E-03	3.40E-03	3.51E-03	3.17E-03
50.38	2.74E-03	2.83E-03	2.87E-03	2.84E-03	2.79E-03	3.09E-03	3.30E-03	3.44E-03	3.80E-03	3.89E-03	3.49E-03
56.82	3.30E-03	3.25E-03	3.23E-03	3.29E-03	3.36E-03	3.54E-03	3.68E-03	3.92E-03	4.31E-03	4.36E-03	3.88E-03
64.07	3.76E-03	3.77E-03	3.80E-03	3.87E-03	3.91E-03	4.08E-03	4.18E-03	4.14E-03	4.76E-03	4.78E-03	4.12E-03
72.26	4.35E-03	4.42E-03	4.33E-03	4.33E-03	4.36E-03	4.58E-03	4.55E-03	4.81E-03	5.03E-03	5.01E-03	4.34E-03
81.49	4.89E-03	4.96E-03	4.95E-03	4.88E-03	4.89E-03	5.01E-03	5.09E-03	5.15E-03	5.52E-03	5.42E-03	4.73E-03
91.89	5.34E-03	5.42E-03	5.45E-03	5.48E-03	5.47E-03	5.47E-03	5.61E-03	5.84E-03	6.15E-03	5.96E-03	5.15E-03
103.63	6.27E-03	6.22E-03	6.18E-03	6.15E-03	6.20E-03	6.39E-03	6.56E-03	6.71E-03	6.71E-03	6.76E-03	5.74E-03
116.86	6.68E-03	6.86E-03	6.83E-03	6.87E-03	6.91E-03	6.92E-03	6.98E-03	6.97E-03	7.25E-03	7.00E-03	6.12E-03
131.79	7.43E-03	7.60E-03	7.63E-03	7.66E-03	7.70E-03	7.79E-03	7.70E-03	7.87E-03	7.87E-03	7.51E-03	6.57E-03
148.62	8.32E-03	8.49E-03	8.53E-03	8.48E-03	8.50E-03	8.53E-03	8.45E-03	8.62E-03	8.41E-03	8.21E-03	6.63E-03
167.60	8.80E-03	8.94E-03	9.02E-03	9.04E-03	9.07E-03	9.23E-03	9.30E-03	9.05E-03	8.92E-03	8.25E-03	7.00E-03
189.01	9.78E-03	9.90E-03	9.96E-03	9.90E-03	9.92E-03	1.00E-02	9.93E-03	9.78E-03	9.54E-03	8.97E-03	7.49E-03
213.15	1.05E-02	1.06E-02	1.07E-02	1.07E-02	1.07E-02	1.05E-02	1.06E-02	1.05E-02	9.83E-03	9.18E-03	7.53E-03
240.38	1.09E-02	1.08E-02	1.08E-02	1.09E-02	1.09E-02	1.09E-02	1.08E-02	1.08E-02	1.02E-02	9.39E-03	7.81E-03
271.08	1.11E-02	1.11E-02	1.11E-02	1.11E-02	1.11E-02	1.11E-02	1.10E-02	1.09E-02	1.01E-02	9.37E-03	7.92E-03
305.70	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.11E-02	1.10E-02	1.09E-02	1.08E-02	9.86E-03	9.15E-03	7.97E-03
344.74	1.09E-02	1.08E-02	1.08E-02	1.07E-02	1.07E-02	1.06E-02	1.06E-02	1.04E-02	9.62E-03	9.00E-03	7.81E-03
388.77	1.04E-02	1.03E-02	1.03E-02	1.02E-02	1.02E-02	1.01E-02	1.01E-02	1.00E-02	9.23E-03	8.87E-03	7.79E-03
438.43	9.79E-03	9.71E-03	9.66E-03	9.62E-03	9.57E-03	9.47E-03	9.44E-03	9.36E-03	8.82E-03	8.40E-03	7.50E-03
494.42	9.25E-03	9.14E-03	9.06E-03	8.99E-03	8.93E-03	8.89E-03	8.86E-03	8.74E-03	8.26E-03	7.94E-03	7.16E-03
557.57	8.56E-03	8.47E-03	8.40E-03	8.36E-03	8.31E-03	8.27E-03	8.21E-03	8.15E-03	7.86E-03	7.50E-03	6.85E-03
628.79	7.91E-03	7.79E-03	7.73E-03	7.69E-03	7.65E-03	7.58E-03	7.52E-03	7.47E-03	7.24E-03	6.98E-03	6.41E-03
709.09	7.25E-03	7.12E-03	7.07E-03	7.01E-03	6.96E-03	6.92E-03	6.85E-03	6.81E-03	6.60E-03	6.37E-03	5.92E-03
799.66	6.65E-03	6.59E-03	6.53E-03	6.46E-03	6.39E-03	6.33E-03	6.30E-03	6.25E-03	6.00E-03	5.79E-03	5.29E-03
901.79	5.86E-03	5.78E-03	5.68E-03	5.58E-03	5.51E-03	5.45E-03	5.43E-03	5.36E-03	5.20E-03	5.00E-03	4.64E-03
1017.00	5.03E-03	4.88E-03	4.80E-03	4.74E-03	4.68E-03	4.62E-03	4.59E-03	4.54E-03	4.42E-03	4.29E-03	4.01E-03
1146.90	4.33E-03	4.27E-03	4.21E-03	4.15E-03	4.09E-03	4.04E-03	4.01E-03	3.96E-03	3.86E-03	3.77E-03	3.51E-03
1293.30	3.63E-03	3.55E-03	3.51E-03	3.48E-03	3.46E-03	3.43E-03	3.41E-03	3.37E-03	3.31E-03	3.24E-03	3.06E-03
1458.50	3.07E-03	3.01E-03	2.97E-03	2.94E-03	2.92E-03	2.90E-03	2.88E-03	2.85E-03	2.79E-03	2.74E-03	2.61E-03
1644.80	2.60E-03	2.57E-03	2.54E-03	2.51E-03	2.48E-03	2.45E-03	2.43E-03	2.40E-03	2.36E-03	2.31E-03	2.22E-03
1854.90	2.19E-03	2.15E-03	2.11E-03	2.07E-03	2.04E-03	2.01E-03	1.99E-03	1.97E-03	1.95E-03	1.92E-03	1.86E-03
2091.80	1.86E-03	1.84E-03	1.83E-03	1.82E-03	1.80E-03	1.79E-03	1.78E-03	1.76E-03	1.74E-03	1.72E-03	1.67E-03
2358.90	1.59E-03	1.58E-03	1.57E-03	1.56E-03	1.54E-03	1.53E-03	1.52E-03	1.50E-03	1.48E-03	1.46E-03	1.42E-03
2660.20	1.32E-03	1.31E-03	1.29E-03	1.28E-03	1.26E-03	1.23E-03	1.20E-03	1.17E-03	1.13E-03	9.85E-04	6.92E-04

TABLE 21 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: SI
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 14; ATOMIC-W= 28.09)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY — DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (6M/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	3.01E-02	2.44E-03	0.20	0.00E+00	0.00E+00	1.19E-03	1.21E-03	1.30E-03	1.77E-03	2.09E-03	2.57E-03	2.76E-03	2.90E-03	2.43E-03
14	2.80E-02	2.43E-03	0.23	0.00E+00	0.00E+00	1.13E-03	1.14E-03	1.23E-03	1.67E-03	1.97E-03	2.42E-03	2.60E-03	2.74E-03	2.29E-03
16	2.80E-02	2.57E-03	0.25	0.00E+00	0.00E+00	1.06E-03	1.07E-03	1.15E-03	1.57E-03	1.85E-03	2.28E-03	2.45E-03	2.57E-03	2.15E-03
18	2.87E-02	2.73E-03	0.29	0.00E+00	0.00E+00	9.98E-04	1.01E-03	1.09E-03	1.48E-03	1.74E-03	2.14E-03	2.31E-03	2.42E-03	2.03E-03
20	3.15E-02	3.20E-03	0.32	0.00E+00	0.00E+00	9.58E-04	9.71E-04	1.04E-03	1.42E-03	1.67E-03	2.06E-03	2.21E-03	2.33E-03	1.95E-03
23	3.58E-02	3.76E-03	0.36	0.00E+00	0.00E+00	9.15E-04	9.28E-04	9.96E-04	1.36E-03	1.60E-03	1.97E-03	2.11E-03	2.22E-03	1.86E-03
26	4.00E-02	4.48E-03	0.41	0.00E+00	0.00E+00	8.72E-04	8.22E-04	9.49E-04	1.29E-03	1.52E-03	1.87E-03	2.01E-03	2.12E-03	1.77E-03
30	4.56E-02	5.23E-03	0.46	0.00E+00	0.00E+00	8.55E-04	7.98E-04	9.31E-04	1.27E-03	1.49E-03	1.84E-03	1.98E-03	2.08E-03	1.74E-03
34	5.17E-02	6.24E-03	0.52	0.00E+00	0.00E+00	8.35E-04	7.78E-04	9.08E-04	1.24E-03	1.46E-03	1.79E-03	1.93E-03	2.03E-03	1.69E-03
40	6.08E-02	7.94E-03	0.59	0.00E+00	0.00E+00	8.24E-04	7.65E-04	8.92E-04	1.21E-03	1.43E-03	1.76E-03	1.89E-03	1.99E-03	1.67E-03
46	6.85E-02	9.51E-03	0.67	0.00E+00	0.00E+00	8.12E-04	7.53E-04	8.87E-04	1.20E-03	1.41E-03	1.73E-03	1.87E-03	1.96E-03	1.64E-03
50	7.35E-02	1.05E-02	0.75	0.00E+00	0.00E+00	8.07E-04	7.49E-04	8.84E-04	1.19E-03	1.40E-03	1.72E-03	1.85E-03	1.95E-03	1.63E-03
54	7.82E-02	1.14E-02	0.85	0.00E+00	0.00E+00	8.05E-04	7.47E-04	8.82E-04	1.19E-03	1.40E-03	1.72E-03	1.85E-03	1.95E-03	1.63E-03
60	8.52E-02	1.29E-02	0.95	0.00E+00	0.00E+00	8.09E-04	7.48E-04	8.83E-04	1.19E-03	1.40E-03	1.72E-03	1.85E-03	1.95E-03	1.63E-03
64	8.99E-02	1.39E-02	1.08	0.00E+00	0.00E+00	8.16E-04	7.54E-04	8.89E-04	1.20E-03	1.41E-03	1.73E-03	1.87E-03	1.96E-03	1.64E-03
70	9.69E-02	1.56E-02	1.21	0.00E+00	0.00E+00	8.25E-04	7.63E-04	9.00E-04	1.21E-03	1.43E-03	1.75E-03	1.89E-03	1.99E-03	1.66E-03
76	1.03E-01	1.74E-02	1.37	0.00E+00	0.00E+00	8.44E-04	7.77E-04	9.24E-04	1.23E-03	1.45E-03	1.79E-03	1.92E-03	2.02E-03	1.69E-03
80	1.06E-01	1.83E-02	1.54	0.00E+00	0.00E+00	8.61E-04	7.95E-04	9.45E-04	1.26E-03	1.49E-03	1.82E-03	1.96E-03	2.06E-03	1.72E-03
90	1.12E-01	2.07E-02	1.74	0.00E+00	0.00E+00	8.79E-04	8.09E-04	9.62E-04	1.28E-03	1.52E-03	1.85E-03	1.99E-03	2.10E-03	1.75E-03
91	1.13E-01	2.10E-02	1.96	0.00E+00	0.00E+00	9.05E-04	8.32E-04	9.90E-04	1.33E-03	1.57E-03	1.91E-03	2.05E-03	2.16E-03	1.80E-03
100	1.19E-01	2.27E-02	2.21	0.00E+00	0.00E+00	9.39E-04	8.63E-04	9.43E-04	1.38E-03	1.62E-03	1.97E-03	2.12E-03	2.23E-03	1.86E-03
109	1.22E-01	2.43E-02	2.50	0.00E+00	0.00E+00	9.79E-04	8.99E-04	9.80E-04	1.43E-03	1.68E-03	2.05E-03	2.20E-03	2.32E-03	1.94E-03
133	1.31E-01	2.97E-02	2.81	0.00E+00	0.00E+00	1.02E-03	9.40E-04	1.02E-03	1.49E-03	1.75E-03	2.13E-03	2.29E-03	2.41E-03	2.01E-03
162	1.41E-01	3.51E-02	3.17	0.00E+00	0.00E+00	1.07E-03	9.84E-04	1.07E-03	1.55E-03	1.82E-03	2.22E-03	2.38E-03	2.51E-03	2.10E-03
200	1.52E-01	4.05E-02	3.58	0.00E+00	0.00E+00	1.08E-03	1.04E-03	1.13E-03	1.63E-03	1.91E-03	2.33E-03	2.50E-03	2.63E-03	2.20E-03
249	1.48E-01	[illegible]	4.04	0.00E+00	2.79E-04	1.10E-03	1.12E-03	1.21E-03	1.74E-03	2.03E-03	2.33E-03	2.66E-03	2.79E-03	2.33E-03
300	1.44E-01	4.54E-02	4.55	0.00E+00	1.20E-03	1.17E-03	1.21E-03	1.30E-03	1.85E-03	2.16E-03	2.42E-03	2.81E-03	2.95E-03	2.47E-03
313	1.39E-01	4.56E-02	5.13	0.00E+00	1.33E-03	1.25E-03	1.31E-03	1.39E-03	1.96E-03	2.30E-03	2.56E-03	2.98E-03	3.13E-03	2.62E-03
397	1.15E-01	4.16E-02	5.79	0.00E+00	1.45E-03	1.35E-03	1.40E-03	1.51E-03	2.12E-03	2.46E-03	2.74E-03	3.18E-03	3.35E-03	2.80E-03
400	1.14E-01	4.14E-02	6.53	0.00E+00	1.48E-03	1.46E-03	1.44E-03	1.63E-03	2.26E-03	2.61E-03	2.91E-03	3.38E-03	3.55E-03	2.97E-03
500	9.31E-02	3.68E-02	7.36	0.00E+00	1.63E-03	1.50E-03	1.65E-03	1.85E-03	2.51E-03	2.90E-03	3.19E-03	3.70E-03	3.90E-03	3.26E-03
509	9.14E-02	3.64E-02	8.30	0.00E+00	1.73E-03	1.59E-03	1.77E-03	1.92E-03	2.64E-03	3.04E-03	3.35E-03	3.89E-03	4.09E-03	3.42E-03
600	7.70E-02	3.27E-02	9.36	1.18E-03	1.76E-03	1.82E-03	2.00E-03	2.04E-03	2.91E-03	3.34E-03	3.68E-03	4.22E-03	4.44E-03	3.71E-03
660	7.03E-02	3.07E-02	10.56	2.02E-03	1.93E-03	1.95E-03	2.07E-03	2.26E-03	3.15E-03	3.50E-03	3.93E-03	4.52E-03	4.75E-03	3.97E-03
700	6.65E-02	2.93E-02	11.91	2.18E-03	2.03E-03	2.21E-03	2.32E-03	2.56E-03	3.50E-03	3.60E-03	4.29E-03	4.96E-03	5.18E-03	4.33E-03
800	5.70E-02	2.64E-02	13.43	2.26E-03	2.29E-03	2.46E-03	2.67E-03	2.81E-03	3.71E-03	3.95E-03	4.72E-03	5.41E-03	5.64E-03	4.72E-03
865	5.18E-02	2.49E-02	15.15	2.43E-03	2.65E-03	2.78E-03	2.90E-03	3.02E-03	3.95E-03	4.37E-03	5.17E-03	5.91E-03	6.16E-03	5.15E-03
900	4.94E-02	2.36E-02	17.08	2.78E-03	2.96E-03	3.12E-03	3.35E-03	3.50E-03	4.41E-03	4.85E-03	5.68E-03	6.44E-03	6.72E-03	5.61E-03
1000	4.18E-02	2.06E-02	19.26	3.30E-03	3.46E-03	3.81E-03	3.76E-03	3.93E-03	5.11E-03	5.55E-03	6.41E-03	7.24E-03	7.53E-03	6.27E-03
1147	3.25E-02	1.72E-02	21.72	3.74E-03	3.97E-03	3.98E-03	4.19E-03	4.43E-03	5.61E-03	6.02E-03	6.89E-03	7.73E-03	8.03E-03	6.68E-03
1545	1.89E-02	1.12E-02	24.49	4.25E-03	4.38E-03	4.54E-03	4.71E-03	4.99E-03	6.04E-03	6.77E-03	7.63E-03	8.44E-03	8.76E-03	7.29E-03
2000	1.18E-02	7.74E-03	27.62	5.03E-03	5.24E-03	5.50E-03	5.57E-03	5.95E-03	6.73E-03	7.27E-03	8.57E-03	9.42E-03	9.75E-03	8.09E-03
2120	1.06E-02	7.12E-03	31.15	5.79E-03	5.96E-03	6.10E-03	6.34E-03	6.44E-03	7.57E-03	7.90E-03	9.37E-03	1.02E-02	1.05E-02	8.71E-03
2977	5.68E-03	4.64E-03	35.13	7.07E-03	7.22E-03	7.44E-03	7.71E-03	7.63E-03	8.36E-03	9.35E-03	9.97E-03	1.15E-02	1.18E-02	9.74E-03

TABLE 22 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: SI
MODEL= PARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 14; ATOMIC-W= 28.09)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	8.33E-03	8.28E-03	8.51E-03	8.62E-03	8.75E-03	9.70E-03	1.03E-02	1.10E-02	1.27E-02	1.24E-02	1.07E-02
44.68	9.33E-03	9.54E-03	9.41E-03	9.44E-03	9.74E-03	1.02E-02	1.13E-02	1.22E-02	1.38E-02	1.31E-02	1.15E-02
50.38	1.37E-02	1.10E-02	1.11E-02	1.09E-02	1.10E-02	1.22E-02	1.31E-02	1.39E-02	1.54E-02	1.45E-02	1.27E-02
56.82	1.29E-02	1.27E-02	1.26E-02	1.29E-02	1.30E-02	1.41E-02	1.46E-02	1.47E-02	1.61E-02	1.62E-02	1.41E-02
64.07	1.46E-02	1.47E-02	1.48E-02	1.50E-02	1.50E-02	1.53E-02	1.63E-02	1.67E-02	1.78E-02	1.77E-02	1.54E-02
72.26	1.69E-02	1.73E-02	1.69E-02	1.67E-02	1.70E-02	1.74E-02	1.81E-02	1.83E-02	1.98E-02	1.96E-02	1.68E-02
81.49	1.90E-02	1.93E-02	1.93E-02	1.88E-02	1.91E-02	1.97E-02	1.94E-02	2.05E-02	2.21E-02	2.15E-02	1.83E-02
91.89	2.08E-02	2.11E-02	2.12E-02	2.14E-02	2.13E-02	2.12E-02	2.19E-02	2.26E-02	2.35E-02	2.34E-02	1.99E-02
103.63	2.44E-02	2.42E-02	2.41E-02	2.40E-02	2.42E-02	2.48E-02	2.51E-02	2.58E-02	2.64E-02	2.51E-02	2.11E-02
116.86	2.61E-02	2.68E-02	2.66E-02	2.67E-02	2.69E-02	2.71E-02	2.74E-02	2.75E-02	2.87E-02	2.69E-02	2.18E-02
131.79	2.89E-02	2.96E-02	2.97E-02	2.98E-02	3.00E-02	2.98E-02	3.02E-02	3.01E-02	2.97E-02	2.94E-02	2.35E-02
148.62	3.22E-02	3.30E-02	3.32E-02	3.30E-02	3.31E-02	3.33E-02	3.31E-02	3.32E-02	3.31E-02	3.03E-02	2.53E-02
167.60	3.42E-02	3.48E-02	3.51E-02	3.52E-02	3.53E-02	3.60E-02	3.57E-02	3.55E-02	3.36E-02	3.22E-02	2.67E-02
189.01	3.81E-02	3.86E-02	3.88E-02	3.85E-02	3.86E-02	3.90E-02	3.87E-02	3.79E-02	3.66E-02	3.37E-02	2.70E-02
213.15	4.10E-02	4.14E-02	4.16E-02	4.16E-02	4.14E-02	4.10E-02	4.09E-02	4.01E-02	3.83E-02	3.56E-02	2.87E-02
240.38	4.23E-02	4.21E-02	4.22E-02	4.22E-02	4.22E-02	4.24E-02	4.18E-02	4.20E-02	3.91E-02	3.59E-02	2.92E-02
271.08	4.32E-02	4.33E-02	4.30E-02	4.30E-02	4.30E-02	4.31E-02	4.27E-02	4.24E-02	3.91E-02	3.56E-02	2.94E-02
305.70	4.37E-02	4.36E-02	4.36E-02	4.32E-02	4.31E-02	4.27E-02	4.22E-02	4.16E-02	3.79E-02	3.52E-02	2.99E-02
344.74	4.24E-02	4.21E-02	4.19E-02	4.16E-02	4.15E-02	4.14E-02	4.12E-02	4.00E-02	3.72E-02	3.44E-02	2.97E-02
388.77	4.03E-02	4.01E-02	3.99E-02	3.97E-02	3.95E-02	3.94E-02	3.92E-02	3.88E-02	3.54E-02	3.34E-02	2.91E-02
438.43	3.81E-02	3.78E-02	3.76E-02	3.74E-02	3.72E-02	3.68E-02	3.67E-02	3.64E-02	3.41E-02	3.24E-02	2.85E-02
494.42	3.60E-02	3.56E-02	3.52E-02	3.50E-02	3.47E-02	3.46E-02	3.43E-02	3.38E-02	3.20E-02	3.06E-02	2.73E-02
557.57	3.32E-02	3.29E-02	3.26E-02	3.24E-02	3.23E-02	3.21E-02	3.19E-02	3.16E-02	3.01E-02	2.88E-02	2.61E-02
628.79	3.08E-02	3.03E-02	3.01E-02	2.99E-02	2.97E-02	2.95E-02	2.92E-02	2.90E-02	2.80E-02	2.69E-02	2.46E-02
709.09	2.82E-02	2.77E-02	2.75E-02	2.72E-02	2.70E-02	2.68E-02	2.66E-02	2.64E-02	2.55E-02	2.46E-02	2.23E-02
799.66	2.59E-02	2.56E-02	2.53E-02	2.51E-02	2.48E-02	2.46E-02	2.45E-02	2.43E-02	2.33E-02	2.20E-02	2.03E-02
901.79	2.29E-02	2.25E-02	2.20E-02	2.17E-02	2.14E-02	2.12E-02	2.11E-02	2.08E-02	2.01E-02	1.93E-02	1.78E-02
1017.00	1.96E-02	1.90E-02	1.87E-02	1.84E-02	1.82E-02	1.80E-02	1.78E-02	1.76E-02	1.71E-02	1.66E-02	1.54E-02
1146.90	1.68E-02	1.66E-02	1.63E-02	1.61E-02	1.58E-02	1.56E-02	1.55E-02	1.54E-02	1.49E-02	1.45E-02	1.35E-02
1293.30	1.41E-02	1.37E-02	1.36E-02	1.35E-02	1.34E-02	1.33E-02	1.32E-02	1.31E-02	1.28E-02	1.25E-02	1.18E-02
1458.50	1.19E-02	1.17E-02	1.15E-02	1.14E-02	1.13E-02	[illegible]	1.12E-02	1.10E-02	1.08E-02	1.06E-02	1.01E-02
1644.80	1.01E-02	1.00E-02	9.87E-03	9.76E-03	9.64E-03	[illegible]	9.42E-03	9.31E-03	9.14E-03	8.96E-03	8.55E-03
1854.90	8.51E-03	8.35E-03	8.20E-03	8.05E-03	7.92E-03	[illegible]	7.74E-03	7.68E-03	7.57E-03	7.43E-03	7.15E-03
2091.80	7.23E-03	7.17E-03	7.11E-03	7.06E-03	7.01E-03	[illegible]	6.91E-03	6.85E-03	6.76E-03	6.68E-03	6.47E-03
2358.93	6.18E-03	6.14E-03	6.09E-03	6.04E-03	5.99E-03	[illegible]	6.89E-03	5.82E-03	5.75E-03	5.68E-03	5.49E-03
2660.20	5.15E-03	5.09E-03	5.03E-03	4.96E-03	4.88E-03	4.78E-03	4.66E-03	4.53E-03	4.37E-03	3.78E-03	2.20E-03

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 22 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: P
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 15; ATOMIC-W= 30.98)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07
12	1.72E-03	1.40E-04	0.20	0.00E+00	0.00E+00	7.30E-05	6.79E-05
14	1.60E-03	1.39E-04	0.23	0.00E+00	0.00E+00	6.89E-05	6.41E-05
16	1.60E-03	1.47E-04	0.25	0.00E+00	0.00E+00	6.47E-05	6.02E-05
18	1.64E-03	1.56E-04	[illegible]	0.00E+00	0.00E+00	6.09E-05	5.68E-05
20	1.80E-03	1.83E-04	[illegible]	0.00E+00	0.00E+00	5.84E-05	5.44E-05
23	2.05E-03	2.15E-04	0.36	0.00E+00	0.00E+00	5.57E-05	5.19E-05
26	2.29E-03	2.56E-04	0.41	0.00E+00	0.00E+00	5.30E-05	4.94E-05
30	2.61E-03	2.99E-04	0.46	0.00E+00	0.00E+00	5.22E-05	4.84E-05
34	2.95E-03	3.57E-04	0.52	0.00E+00	0.00E+00	5.08E-05	4.71E-05
40	3.47E-03	4.54E-04	0.59	0.00E+00	0.00E+00	4.99E-05	4.63E-05
46	3.91E-03	5.43E-04	0.67	0.00E+00	0.00E+00	4.91E-05	4.56E-05
50	4.20E-03	5.97E-04	0.75	0.00E+00	0.00E+00	4.87E-05	4.52E-05
54	4.47E-03	6.52E-04	0.85	0.00E+00	0.00E+00	4.87E-05	4.51E-05
60	4.87E-03	7.36E-04	0.95	0.00E+00	0.00E+00	4.87E-05	4.51E-05
64	5.14E-03	7.92E-04	1.08	0.00E+00	0.00E+00	4.89E-05	4.53E-05
70	5.54E-03	8.92E-04	1.21	0.00E+00	0.00E+00	4.96E-05	4.57E-05
76	5.87E-03	9.94E-04	1.37	0.00E+00	0.00E+00	5.04E-05	4.67E-05
80	6.08E-03	1.05E-03	1.54	0.00E+00	0.00E+00	5.15E-05	4.75E-05
90	6.41E-03	1.18E-03	1.74	0.00E+00	0.00E+00	5.23E-05	4.83E-05
91	6.44E-03	1.20E-03	1.96	0.00E+00	0.00E+00	5.39E-05	4.99E-05
100	6.73E-03	1.29E-03	2.21	0.00E+00	0.00E+00	5.57E-05	5.14E-05
109	6.95E-03	1.39E-03	2.50	0.00E+00	0.00E+00	5.79E-05	5.38E-05
133	7.48E-03	1.70E-03	2.81	0.00E+00	0.00E+00	6.03E-05	5.60E-05
162	8.04E-03	2.00E-03	3.17	0.00E+00	0.00E+00	6.09E-05	5.85E-05
200	8.69E-03	2.32E-03	3.58	0.00E+00	0.00E+00	6.06E-05	6.20E-05
249	8.45E-03	2.54E-03	4.04	0.00E+00	4.07E-05	6.44E-05	6.71E-05
300	8.25E-03	2.59E-03	4.55	0.00E+00	7.13E-05	6.83E-05	7.19E-05
313	7.97E-03	2.61E-03	5.13	0.00E+00	7.76E-05	7.31E-05	7.60E-05
397	6.55E-03	2.38E-03	5.79	0.00E+00	8.41E-05	7.91E-05	7.87E-05
400	6.51E-03	2.37E-03	6.53	0.00E+00	8.55E-05	8.37E-05	8.53E-05
500	5.32E-03	2.10E-03	7.36	0.00E+00	9.42E-05	8.70E-05	9.69E-05
509	5.22E-03	2.08E-03	8.30	0.00E+00	9.68E-05	9.28E-05	1.04E-04
600	4.40E-03	1.87E-03	9.36	6.76E-05	1.01E-04	1.07E-04	1.13E-04
660	4.02E-03	1.75E-03	10.56	1.16E-04	1.10E-04	1.12E-04	1.18E-04
700	3.80E-03	1.67E-03	11.91	1.24E-04	1.16E-04	1.29E-04	1.36E-04
800	3.26E-03	1.51E-03	13.43	1.29E-04	1.33E-04	1.41E-04	1.53E-04
865	2.96E-03	1.42E-03	15.15	1.39E-04	1.53E-04	1.61E-04	1.69E-04
900	2.82E-03	1.35E-03	17.08	1.60E-04	1.71E-04	1.80E-04	1.94E-04
1000	2.39E-03	1.18E-03	19.26	1.89E-04	2.03E-04	2.18E-04	2.18E-04
1147	1.86E-03	[illegible]	21.72	2.14E-04	2.29E-04	2.27E-04	2.40E-04
1545	1.08E-03	[illegible]	24.49	2.44E-04	2.62E-04	2.63E-04	2.72E-04
2000	6.73E-04	4.43E-04	27.62	2.88E-04	2.99E-04	3.14E-04	3.22E-04
2120	6.05E-04	4.07E-04	31.15	3.32E-04	3.39E-04	3.51E-04	3.62E-04
2977	3.25E-04	2.65E-04	35.13	4.05E-04	4.15E-04	4.27E-04	4.38E-04

EN-ERGY	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	8.11E-05	1.11E-04	1.31E-04	1.47E-04	1.72E-04	1.79E-04	1.49E-04
14	7.66E-05	1.05E-04	1.23E-04	1.39E-04	1.62E-04	1.69E-04	1.40E-04
16	7.20E-05	9.87E-05	1.16E-04	1.31E-04	1.52E-04	1.59E-04	1.32E-04
18	6.78E-05	9.29E-05	1.09E-04	1.23E-04	1.43E-04	1.50E-04	1.24E-04
20	6.50E-05	8.91E-05	1.05E-04	1.18E-04	1.38E-04	1.44E-04	1.19E-04
23	6.20E-05	8.50E-05	9.98E-05	1.12E-04	1.31E-04	1.37E-04	1.13E-04
26	5.90E-05	8.09E-05	9.50E-05	1.07E-04	1.25E-04	1.30E-04	1.08E-04
30	5.78E-05	7.93E-05	9.31E-05	1.05E-04	1.22E-04	1.28E-04	1.06E-04
34	5.63E-05	7.72E-05	9.06E-05	1.02E-04	1.19E-04	1.24E-04	1.03E-04
40	5.52E-05	7.57E-05	8.89E-05	1.00E-04	1.17E-04	1.22E-04	1.01E-04
46	5.43E-05	7.45E-05	8.74E-05	9.85E-05	1.15E-04	1.20E-04	9.94E-05
50	5.39E-05	7.39E-05	8.68E-05	9.78E-05	1.14E-04	1.19E-04	9.87E-05
54	5.00E-05	7.36E-05	8.67E-05	9.73E-05	1.14E-04	1.19E-04	9.82E-05
60	4.95E-05	7.35E-05	8.74E-05	9.73E-05	1.14E-04	1.18E-04	9.82E-05
64	4.98E-05	7.39E-05	8.78E-05	9.78E-05	1.14E-04	1.19E-04	9.87E-05
70	5.02E-05	7.46E-05	8.87E-05	9.87E-05	1.15E-04	1.20E-04	9.96E-05
76	5.10E-05	7.58E-05	9.01E-05	1.00E-04	1.17E-04	1.22E-04	1.01E-04
80	5.20E-05	7.72E-05	9.17E-05	1.02E-04	1.19E-04	1.24E-04	1.03E-04
90	5.33E-05	7.84E-05	9.31E-05	1.04E-04	1.21E-04	1.26E-04	1.05E-04
91	5.47E-05	8.05E-05	9.56E-05	1.06E-04	1.24E-04	1.30E-04	1.07E-04
100	5.64E-05	8.41E-05	9.86E-05	1.10E-04	1.29E-04	1.34E-04	1.11E-04
109	5.91E-05	8.72E-05	1.02E-04	1.14E-04	1.33E-04	1.39E-04	1.15E-04
133	6.14E-05	9.04E-05	1.06E-04	1.18E-04	1.38E-04	1.44E-04	1.19E-04
162	6.42E-05	9.40E-05	1.10E-04	1.23E-04	1.43E-04	1.49E-04	1.24E-04
200	6.76E-05	9.84E-05	1.15E-04	1.28E-04	1.50E-04	1.56E-04	1.30E-04
249	7.24E-05	1.05E-04	1.23E-04	1.37E-04	1.59E-04	1.66E-04	1.37E-04
300	7.73E-05	1.11E-04	1.30E-04	1.45E-04	1.67E-04	1.75E-04	1.45E-04
313	8.28E-05	1.18E-04	1.38E-04	1.53E-04	1.77E-04	1.85E-04	1.53E-04
397	9.02E-05	1.27E-04	1.47E-04	1.64E-04	1.89E-04	1.97E-04	1.63E-04
400	9.74E-05	1.35E-04	1.48E-04	1.73E-04	2.00E-04	2.09E-04	1.73E-04
500	1.10E-04	1.49E-04	1.57E-04	1.90E-04	2.19E-04	2.28E-04	1.89E-04
509	1.08E-04	1.57E-04	1.65E-04	1.99E-04	2.30E-04	2.39E-04	1.98E-04
600	1.21E-04	1.73E-04	1.80E-04	2.18E-04	2.50E-04	2.60E-04	2.15E-04
660	1.23E-04	1.86E-04	1.93E-04	2.32E-04	2.68E-04	2.77E-04	2.30E-04
700	1.51E-04	1.93E-04	2.12E-04	2.53E-04	2.91E-04	3.03E-04	2.50E-04
800	1.60E-04	2.09E-04	2.33E-04	2.78E-04	3.17E-04	3.29E-04	2.72E-04
865	1.76E-04	2.32E-04	2.57E-04	3.04E-04	3.45E-04	3.59E-04	2.96E-04
900	2.04E-04	2.59E-04	2.85E-04	3.33E-04	3.77E-04	3.91E-04	3.23E-04
1000	2.26E-04	3.00E-04	3.26E-04	3.75E-04	4.23E-04	4.36E-04	3.60E-04
1147	2.58E-04	3.20E-04	3.54E-04	4.03E-04	4.50E-04	4.57E-04	3.83E-04
1545	2.86E-04	3.37E-04	3.83E-04	4.45E-04	4.93E-04	4.74E-04	4.18E-04
2000	3.44E-04	3.91E-04	4.15E-04	5.00E-04	5.48E-04	5.25E-04	4.63E-04
2120	3.71E-04	4.41E-04	4.60E-04	5.22E-04	5.93E-04	5.65E-04	4.98E-04
2977	4.40E-04	4.80E-04	5.47E-04	5.72E-04	6.68E-04	6.35E-04	5.57E-04

TABLE 23 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: P
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 15; ATOMIC-W= 30.98)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	4.77E-04	4.74E-04	4.88E-04	4.96E-04	4.96E-04	5.56E-04	5.91E-04	6.40E-04	7.36E-04	6.97E-04	6.10E-04
44.68	5.34E-04	5.46E-04	5.38E-04	5.35E-04	5.58E-04	5.91E-04	6.55E-04	7.05E-04	7.95E-04	7.54E-04	6.58E-04
50.38	6.10E-04	6.27E-04	6.30E-04	6.24E-04	6.30E-04	7.07E-04	7.68E-04	7.96E-04	8.26E-04	8.35E-04	7.25E-04
56.82	7.35E-04	7.25E-04	7.25E-04	7.39E-04	7.40E-04	8.13E-04	8.41E-04	8.51E-04	9.34E-04	9.35E-04	8.06E-04
64.07	8.36E-04	8.43E-04	8.51E-04	8.56E-04	8.35E-04	8.77E-04	9.19E-04	9.65E-04	1.03E-03	1.02E-03	8.76E-04
72.26	9.68E-04	9.77E-04	9.67E-04	9.58E-04	9.77E-04	9.90E-04	1.04E-03	1.05E-03	1.15E-03	1.13E-03	9.60E-04
81.49	1.09E-03	1.11E-03	1.10E-03	1.08E-03	1.09E-03	1.13E-03	1.11E-03	1.19E-03	1.28E-03	1.24E-03	1.05E-03
91.89	1.19E-03	1.21E-03	1.21E-03	1.21E-03	1.21E-03	1.22E-03	1.25E-03	1.29E-03	1.32E-03	1.30E-03	1.10E-03
103.63	1.39E-03	1.38E-03	1.38E-03	1.37E-03	1.38E-03	1.42E-03	1.42E-03	1.47E-03	1.52E-03	1.44E-03	1.17E-03
116.86	1.49E-03	1.53E-03	1.52E-03	1.53E-03	1.54E-03	1.56E-03	1.57E-03	1.58E-03	1.63E-03	1.54E-03	1.24E-03
131.79	1.65E-03	1.69E-03	1.70E-03	1.71E-03	1.71E-03	1.71E-03	1.73E-03	1.73E-03	1.71E-03	1.67E-03	1.33E-03
148.62	1.85E-03	1.89E-03	1.90E-03	1.89E-03	1.90E-03	1.89E-03	1.90E-03	1.91E-03	1.87E-03	1.72E-03	1.43E-03
167.60	1.96E-03	1.99E-03	2.01E-03	2.01E-03	2.02E-03	2.06E-03	2.02E-03	2.03E-03	1.93E-03	1.84E-03	1.51E-03
189.01	2.18E-03	2.20E-03	2.22E-03	2.20E-03	2.21E-03	2.23E-03	2.19E-03	2.17E-03	2.08E-03	1.91E-03	1.53E-03
213.15	2.34E-03	2.37E-03	2.37E-03	2.38E-03	2.36E-03	2.34E-03	2.34E-03	2.29E-03	2.19E-03	2.03E-03	1.63E-03
240.38	2.42E-03	2.40E-03	2.41E-03	2.41E-03	2.41E-03	2.42E-03	2.39E-03	2.40E-03	2.18E-03	1.99E-03	1.66E-03
271.08	2.47E-03	2.47E-03	2.46E-03	2.46E-03	2.46E-03	2.46E-03	2.42E-03	2.42E-03	2.23E-03	2.01E-03	1.67E-03
305.70	2.50E-03	2.49E-03	2.49E-03	2.47E-03	2.46E-03	2.44E-03	2.41E-03	2.38E-03	2.16E-03	2.01E-03	1.69E-03
344.74	2.42E-03	2.41E-03	2.39E-03	2.38E-03	2.37E-03	2.36E-03	2.36E-03	2.28E-03	2.12E-03	1.96E-03	1.68E-03
388.77	2.30E-03	2.29E-03	2.28E-03	2.27E-03	2.26E-03	2.25E-03	2.24E-03	2.22E-03	2.02E-03	1.90E-03	1.64E-03
438.43	2.18E-03	2.16E-03	2.15E-03	2.14E-03	2.13E-03	2.10E-03	2.10E-03	2.08E-03	1.94E-03	1.84E-03	1.62E-03
494.42	2.05E-03	2.03E-03	2.01E-03	2.00E-03	1.98E-03	1.98E-03	1.96E-03	1.92E-03	1.82E-03	1.74E-03	1.55E-03
557.57	1.90E-03	1.88E-03	1.87E-03	1.85E-03	1.84E-03	1.84E-03	1.82E-03	1.81E-03	1.72E-03	1.64E-03	1.48E-03
628.79	1.76E-03	1.73E-03	1.72E-03	1.70E-03	1.70E-03	1.68E-03	1.67E-03	1.66E-03	1.59E-03	1.53E-03	1.40E-03
709.09	1.61E-03	1.58E-03	1.57E-03	1.55E-03	1.54E-03	1.53E-03	1.52E-03	1.51E-03	1.45E-03	1.40E-03	1.27E-03
799.66	1.48E-03	1.46E-03	1.45E-03	1.43E-03	1.42E-03	1.40E-03	1.40E-03	1.39E-03	1.33E-03	1.26E-03	1.14E-03
901.79	1.31E-03	1.28E-03	1.26E-03	1.24E-03	1.22E-03	1.21E-03	1.20E-03	1.19E-03	1.14E-03	1.10E-03	1.01E-03
1017.00	1.12E-03	1.08E-03	1.06E-03	1.05E-03	1.04E-03	1.02E-03	1.02E-03	1.01E-03	9.77E-04	9.38E-04	8.73E-04
1146.90	9.62E-04	9.47E-04	9.31E-04	9.16E-04	9.03E-04	8.93E-04	8.87E-04	8.78E-04	8.51E-04	8.27E-04	7.66E-04
1293.30	8.04E-04	7.84E-04	7.76E-04	7.72E-04	7.67E-04	7.62E-04	7.57E-04	7.46E-04	7.30E-04	7.13E-04	6.68E-04
1458.50	6.79E-04	6.66E-04	6.59E-04	6.52E-04	6.47E-04	6.44E-04	6.39E-04	6.31E-04	6.19E-04	6.05E-04	5.73E-04
1644.80	5.78E-04	5.71E-04	5.63E-04	5.56E-04	5.49E-04	5.42E-04	5.37E-04	5.32E-04	5.22E-04	5.12E-04	4.87E-04
1854.90	4.86E-04	4.77E-04	4.68E-04	4.60E-04	4.53E-04	4.47E-04	4.42E-04	4.38E-04	4.31E-04	4.23E-04	4.08E-04
2091.80	4.13E-04	4.10E-04	4.07E-04	4.03E-04	4.00E-04	3.97E-04	3.95E-04	3.91E-04	3.87E-04	3.81E-04	3.68E-04
2368.90	3.53E-04	3.51E-04	3.48E-04	3.46E-04	3.42E-04	3.39E-04	3.37E-04	3.33E-04	3.29E-04	3.24E-04	3.13E-04
2660.20	2.94E-04	2.91E-04	2.87E-04	2.82E-04	2.76E-04	2.70E-04	2.65E-04	2.59E-04	2.47E-04	2.14E-04	1.25E-04

TABLE 23B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: S
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 16; ATOMIC-W= 32.07)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY — DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	6.45E-03	5.24E-04	0.20	0.00E+00	0.00E+00	2.96E-04	2.77E-04	3.09E-04	4.75E-04	5.04E-04	6.21E-04	7.20E-04	6.85E-04	5.93E-04
14	6.00E-03	5.21E-04	0.23	C.00E+00	0.00E+00	2.80E-04	2.61E-04	2.92E-04	4.48E-04	4.75E-04	5.86E-04	6.79E-04	6.46E-04	5.60E-04
16	6.00E-03	5.50E-04	0.25	0.00E+00	0.00E+00	2.63E-04	2.46E-04	2.74E-04	4.21E-04	4.47E-04	5.50E-04	6.38E-04	6.07E-04	5.26E-04
18	6.15E-03	5.85E-04	0.29	C.00E+00	0.00E+00	2.47E-04	2.31E-04	2.58E-04	3.96E-04	4.20E-04	5.18E-04	6.01E-04	5.71E-04	4.95E-04
20	6.76E-03	6.85E-04	0.32	C.00E+00	0.00E+00	2.37E-04	2.21E-04	2.48E-04	3.80E-04	4.03E-04	4.96E-04	5.75E-04	5.47E-04	4.74E-04
23	7.67E-03	8.05E-04	0.36	0.00E+00	0.00E+00	2.26E-04	2.11E-04	2.38E-04	3.62E-04	3.84E-04	4.73E-04	5.48E-04	5.21E-04	4.52E-04
26	8.58E-03	9.59E-04	0.41	C.00E+00	0.00E+00	2.14E-04	2.02E-04	2.26E-04	3.44E-04	3.65E-04	4.49E-04	5.21E-04	4.95E-04	4.29E-04
30	9.77E-03	1.12E-03	0.46	C.00E+00	0.00E+00	2.10E-04	1.98E-04	2.22E-04	3.36E-04	3.61E-04	4.40E-04	5.10E-04	4.85E-04	4.20E-04
34	1.11E-02	1.34E-03	0.52	0.00E+00	0.00E+00	2.05E-04	1.93E-04	2.16E-04	3.27E-04	3.51E-04	4.27E-04	4.95E-04	4.71E-04	4.08E-04
40	1.30E-02	1.70E-03	0.59	C.00E+00	0.00E+00	2.01E-04	1.89E-04	2.11E-04	3.21E-04	3.44E-04	4.19E-04	4.86E-04	4.62E-04	4.00E-04
46	1.47E-02	2.04E-03	0.67	0.00E+00	0.00E+00	1.97E-04	1.65E-04	2.07E-04	3.15E-04	3.38E-04	4.11E-04	4.77E-04	4.53E-04	3.93E-04
50	1.57E-02	2.24E-03	0.75	0.00E+00	0.00E+00	1.95E-04	1.84E-04	2.06E-04	3.12E-04	3.35E-04	4.07E-04	4.73E-04	4.49E-04	3.89E-04
54	1.68E-02	2.44E-03	0.85	0.00E+00	0.00E+00	1.94E-04	1.83E-04	2.04E-04	3.10E-04	3.33E-04	4.05E-04	4.70E-04	4.47E-04	3.87E-04
60	1.83E-02	2.76E-03	0.95	0.00E+00	0.00E+00	1.94E-04	1.84E-04	2.04E-04	3.09E-04	3.32E-04	4.04E-04	4.69E-04	4.46E-04	3.86E-04
64	1.93E-02	2.97E-03	1.08	0.00E+00	0.00E+00	1.95E-04	1.85E-04	2.05E-04	3.10E-04	3.33E-04	4.06E-04	4.70E-04	4.47E-04	3.88E-04
70	2.08E-02	3.34E-03	1.21	0.00E+00	0.00E+00	1.97E-04	1.87E-04	2.09E-04	3.13E-04	3.36E-04	4.09E-04	4.74E-04	4.51E-04	3.91E-04
76	2.20E-02	3.73E-03	1.37	0.00E+00	0.00E+00	2.00E-04	1.89E-04	2.12E-04	3.17E-04	3.40E-04	4.14E-04	4.80E-04	4.57E-04	3.96E-04
80	2.28E-02	3.93E-03	1.54	0.00E+00	0.00E+00	1.91E-04	1.95E-04	2.15E-04	3.26E-04	3.46E-04	4.21E-04	4.88E-04	4.64E-04	4.02E-04
90	2.40E-02	4.44E-03	1.74	0.00E+00	0.00E+00	1.90E-04	1.98E-04	2.18E-04	3.31E-04	3.51E-04	4.27E-04	4.95E-04	4.71E-04	4.08E-04
91	2.41E-02	4.49E-03	1.96	0.00E+00	0.00E+00	1.95E-04	2.04E-04	2.26E-04	3.39E-04	3.59E-04	4.38E-04	5.07E-04	4.83E-04	4.18E-04
100	2.52E-02	4.86E-03	2.21	0.00E+00	0.00E+00	2.00E-04	2.11E-04	2.33E-04	3.49E-04	3.70E-04	4.50E-04	5.22E-04	4.96E-04	4.30E-04
109	2.61E-02	5.21E-03	2.50	0.00E+00	0.00E+00	2.08E-04	2.22E-04	2.42E-04	3.61E-04	3.82E-04	4.66E-04	5.40E-04	5.14E-04	4.45E-04
133	2.80E-02	6.37E-03	2.81	0.00E+00	0.00E+00	2.16E-04	2.31E-04	2.53E-04	3.73E-04	3.96E-04	4.82E-04	5.59E-04	5.32E-04	4.61E-04
162	3.01E-02	7.51E-03	3.17	C.00E+00	5.57E-05	2.25E-04	2.43E-04	2.63E-04	3.87E-04	4.11E-04	5.03E-04	5.80E-04	5.51E-04	4.78E-04
200	3.26E-02	8.69E-03	3.58	C.00E+00	2.39E-04	2.36E-04	2.37E-04	2.78E-04	4.08E-04	4.29E-04	5.27E-04	6.06E-04	5.76E-04	4.99E-04
249	3.17E-02	9.53E-03	4.04	C.00E+00	2.62E-04	2.52E-04	2.54E-04	2.97E-04	4.32E-04	4.53E-04	5.57E-04	6.39E-04	6.10E-04	5.27E-04
300	3.09E-02	9.73E-03	4.55	0.00E+00	2.81E-04	2.68E-04	2.71E-04	3.16E-04	4.55E-04	4.83E-04	5.86E-04	6.73E-04	6.43E-04	5.55E-04
313	2.99E-02	9.77E-03	5.13	0.00E+00	3.00E-04	2.87E-04	2.92E-04	3.39E-04	4.58E-04	5.10E-04	6.19E-04	7.11E-04	6.79E-04	5.86E-04
397	2.46E-02	8.91E-03	5.79	0.00E+00	3.06E-04	2.87E-04	3.17E-04	3.40E-04	4.72E-04	5.42E-04	6.58E-04	7.56E-04	7.22E-04	6.23E-04
400	2.44E-02	8.87E-03	6.53	0.00E+00	3.23E-04	3.03E-04	3.42E-04	3.61E-04	5.00E-04	5.74E-04	6.97E-04	8.00E-04	7.64E-04	6.60E-04
500	1.99E-02	7.88E-03	7.36	0.00E+00	3.61E-04	3.41E-04	3.87E-04	4.06E-04	5.52E-04	6.33E-04	7.60E-04	8.73E-04	8.34E-04	7.19E-04
509	1.56E-02	7.81E-03	8.30	0.00E+00	3.66E-04	3.67E-04	4.00E-04	4.32E-04	5.81E-04	6.63E-04	7.98E-04	9.14E-04	8.73E-04	7.53E-04
600	1.65E-02	7.00E-03	9.36	3.51E-04	3.88E-04	4.02E-04	4.23E-04	4.82E-04	6.35E-04	7.23E-04	8.69E-04	9.89E-04	9.44E-04	8.14E-04
660	1.51E-02	6.57E-03	10.56	4.39E-04	4.18E-04	4.35E-04	4.66E-04	5.26E-04	6.84E-04	7.75E-04	9.26E-04	1.05E-03	1.01E-03	8.68E-04
700	1.42E-02	6.28E-03	11.91	4.61E-04	4.45E-04	4.98E-04	5.33E-04	5.52E-04	7.55E-04	8.51E-04	1.01E-03	1.15E-03	1.09E-03	9.43E-04
800	1.22E-02	5.66E-03	13.43	4.88E-04	5.03E-04	5.32E-04	5.69E-04	6.04E-04	8.31E-04	9.35E-04	1.10E-03	1.25E-03	1.19E-03	1.02E-03
865	1.11E-02	5.33E-03	15.15	5.22E-04	5.88E-04	6.27E-04	6.59E-04	6.94E-04	9.25E-04	1.03E-03	1.21E-03	1.36E-03	1.29E-03	1.11E-03
900	1.06E-02	5.06E-03	17.08	6.05E-04	6.41E-04	6.84E-04	7.10E-04	7.49E-04	1.03E-03	1.14E-03	1.32E-03	1.48E-03	1.41E-03	1.21E-03
1000	8.96E-03	4.42E-03	19.26	7.15E-04	7.65E-04	7.84E-04	8.44E-04	8.83E-04	1.09E-03	1.20E-03	1.46E-03	1.65E-03	1.57E-03	1.35E-03
1147	6.57E-03	3.69E-03	21.72	8.02E-04	8.50E-04	8.70E-04	8.97E-04	9.70E-04	1.17E-03	1.28E-03	1.46E-03	1.65E-03	1.67E-03	1.44E-03
1545	4.05E-03	2.40E-03	24.49	9.20E-04	9.57E-04	9.97E-04	1.05E-03	1.09E-03	1.32E-03	1.43E-03	1.60E-03	1.78E-03	1.82E-03	1.57E-03
2000	2.52E-03	1.66E-03	27.62	1.09E-03	1.12E-03	1.15E-03	1.21E-03	1.25E-03	1.54E-03	1.64E-03	1.80E-03	1.99E-03	2.02E-03	1.73E-03
2120	2.27E-03	1.53E-03	31.15	1.25E-03	1.28E-03	1.34E-03	1.37E-03	1.43E-03	1.60E-03	1.82E-03	1.95E-03	2.14E-03	2.18E-03	1.86E-03
2977	1.22E-03	9.95E-04	35.13	1.52E-03	1.55E-03	1.60E-03	1.61E-03	1.67E-03	1.87E-03	2.00E-03	2.23E-03	2.41E-03	2.44E-03	2.08E-03

TABLE 24 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: S
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 16; ATOMIC-W= 32.07)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.79E-03	1.79E-03	1.85E-03	1.89E-03	1.87E-03	2.06E-03	2.26E-03	2.49E-03	2.65E-03	2.67E-03	2.27E-03
44.68	2.01E-03	2.06E-03	2.03E-03	2.03E-03	2.13E-03	2.29E-03	2.54E-03	2.69E-03	2.88E-03	2.89E-03	2.34E-03
50.38	2.29E-03	2.36E-03	2.37E-03	2.33E-03	2.39E-03	2.65E-03	2.72E-03	2.84E-03	3.21E-03	3.19E-03	2.50E-03
56.82	2.76E-03	2.72E-03	2.73E-03	2.80E-03	2.80E-03	3.11E-03	3.23E-03	3.30E-03	3.61E-03	3.57E-03	2.77E-03
64.07	3.11E-03	3.14E-03	3.20E-03	3.23E-03	3.15E-03	3.35E-03	3.40E-03	3.67E-03	3.99E-03	3.87E-03	3.01E-03
72.26	3.63E-03	3.67E-03	3.63E-03	3.60E-03	3.68E-03	3.76E-03	3.84E-03	3.97E-03	4.23E-03	4.03E-03	3.29E-03
81.49	4.08E-03	4.15E-03	4.15E-03	4.05E-03	4.12E-03	4.24E-03	4.21E-03	4.51E-03	4.58E-03	4.42E-03	3.58E-03
91.89	4.45E-03	4.52E-03	4.56E-03	4.54E-03	4.54E-03	4.63E-03	4.71E-03	4.84E-03	5.07E-03	4.93E-03	3.87E-03
103.63	5.17E-03	5.12E-03	5.17E-03	5.15E-03	5.20E-03	5.37E-03	5.40E-03	5.49E-03	5.79E-03	5.42E-03	4.29E-03
116.86	5.58E-03	5.68E-03	5.72E-03	5.74E-03	5.80E-03	5.69E-03	5.89E-03	6.02E-03	5.85E-03	5.75E-03	4.56E-03
131.79	6.19E-03	6.34E-03	6.38E-03	6.40E-03	6.44E-03	6.38E-03	6.47E-03	6.49E-03	6.47E-03	5.94E-03	4.91E-03
148.62	6.98E-03	7.10E-03	7.06E-03	7.09E-03	7.11E-03	7.10E-03	7.08E-03	7.14E-03	6.85E-03	6.48E-03	4.98E-03
167.60	7.34E-03	7.45E-03	7.52E-03	7.54E-03	7.57E-03	7.73E-03	7.55E-03	7.66E-03	7.26E-03	6.89E-03	5.26E-03
189.01	8.17E-03	8.27E-03	8.24E-03	8.26E-03	8.28E-03	8.30E-03	8.18E-03	8.17E-03	7.63E-03	7.03E-03	5.64E-03
213.15	8.81E-03	8.88E-03	8.92E-03	8.93E-03	8.87E-03	8.80E-03	8.78E-03	8.61E-03	7.99E-03	7.38E-03	5.83E-03
240.38	9.06E-03	9.02E-03	9.04E-03	9.05E-03	9.06E-03	9.01E-03	8.96E-03	8.93E-03	8.10E-03	7.33E-03	5.90E-03
271.08	9.27E-03	9.28E-03	9.21E-03	9.22E-03	9.22E-03	9.23E-03	9.09E-03	9.07E-03	8.26E-03	7.46E-03	6.11E-03
305.70	9.36E-03	9.34E-03	9.33E-03	9.25E-03	9.24E-03	9.14E-03	9.04E-03	8.90E-03	8.05E-03	7.35E-03	6.08E-03
344.74	9.07E-03	9.01E-03	8.95E-03	8.91E-03	8.90E-03	8.86E-03	8.82E-03	8.48E-03	7.91E-03	7.19E-03	6.20E-03
388.77	8.63E-03	8.58E-03	8.54E-03	8.49E-03	8.46E-03	8.43E-03	8.39E-03	8.24E-03	7.55E-03	7.02E-03	6.00E-03
438.43	8.16E-03	8.09E-03	8.05E-03	8.00E-03	7.97E-03	7.88E-03	7.85E-03	7.77E-03	7.16E-03	6.78E-03	5.87E-03
494.42	7.70E-03	7.61E-03	7.52E-03	7.46E-03	7.43E-03	7.40E-03	7.33E-03	7.18E-03	6.80E-03	6.45E-03	5.70E-03
557.57	7.12E-03	7.04E-03	6.99E-03	6.95E-03	6.91E-03	6.85E-03	6.83E-03	6.74E-03	6.41E-03	6.11E-03	5.44E-03
628.79	6.59E-03	6.49E-03	6.43E-03	6.39E-03	6.36E-03	6.30E-03	6.26E-03	6.20E-03	5.95E-03	5.67E-03	5.13E-03
709.09	6.04E-03	5.93E-03	5.88E-03	5.83E-03	5.78E-03	5.71E-03	5.69E-03	5.62E-03	5.42E-03	5.23E-03	4.65E-03
799.66	5.54E-03	5.48E-03	5.43E-03	5.36E-03	5.30E-03	5.26E-03	5.24E-03	5.17E-03	4.93E-03	4.67E-03	4.22E-03
901.79	4.90E-03	4.79E-03	4.70E-03	4.63E-03	4.56E-03	4.53E-03	4.51E-03	4.46E-03	4.24E-03	4.09E-03	3.71E-03
1017.00	4.19E-03	4.06E-03	3.99E-03	3.94E-03	3.89E-03	3.84E-03	3.81E-03	3.78E-03	3.65E-03	3.51E-03	3.22E-03
1146.90	3.61E-03	3.55E-03	3.49E-03	3.43E-03	3.39E-03	3.35E-03	3.32E-03	3.29E-03	3.19E-03	3.08E-03	2.84E-03
1293.30	3.02E-03	2.94E-03	2.91E-03	2.89E-03	2.87E-03	2.85E-03	2.84E-03	2.80E-03	2.73E-03	2.66E-03	2.47E-03
1458.50	2.55E-03	2.50E-03	2.47E-03	2.44E-03	2.43E-03	2.41E-03	2.39E-03	2.36E-03	2.31E-03	2.26E-03	2.12E-03
1644.80	2.17E-03	2.14E-03	2.11E-03	2.08E-03	2.06E-03	2.03E-03	2.01E-03	1.99E-03	1.95E-03	1.91E-03	1.81E-03
1854.90	1.82E-03	1.79E-03	1.75E-03	1.72E-03	1.70E-03	1.67E-03	1.66E-03	1.64E-03	1.61E-03	1.58E-03	1.51E-03
2091.80	1.55E-03	1.54E-03	1.52E-03	1.51E-03	1.50E-03	1.49E-03	1.48E-03	1.47E-03	1.45E-03	1.42E-03	1.37E-03
2358.90	1.33E-03	1.31E-03	1.30E-03	1.29E-03	1.28E-03	1.27E-03	1.26E-03	1.25E-03	1.23E-03	1.21E-03	1.17E-03
2660.20	1.10E-03	1.09E-03	1.07E-03	1.06E-03	1.03E-03	1.01E-03	9.89E-04	[illegible].68E-04	8.40E-04	7.03E-04	3.68E-04

TABLE 24 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CL
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 17; ATOMIC-W= 35.46)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

				SHIELD THICKNESS (GM/CM**2)										
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.28E-05	1.04E-06	0.20	0.00E+00	0.00E+00	5.20E-07	3.53E-07	2.65E-07	1.77E-07	1.56E-07	1.72E-07	2.27E-07	2.36E-07	2.48E-07
14	1.04E-05	9.06E-07	0.23	0.00E+00	0.00E+00	4.89E-07	3.33E-07	2.50E-07	1.67E-07	1.47E-07	1.63E-07	2.14E-07	2.23E-07	2.34E-07
16	8.75E-06	8.02E-07	0.25	0.00E+00	0.00E+00	4.60E-07	3.13E-07	2.35E-07	1.57E-07	1.38E-07	1.53E-07	2.01E-07	2.09E-07	2.20E-07
18	7.49E-06	7.12E-07	0.29	0.00E+00	0.00E+00	4.32E-07	2.93E-07	2.21E-07	1.47E-07	1.30E-07	1.44E-07	1.89E-07	1.97E-07	2.07E-07
20	6.51E-06	6.61E-07	0.32	0.00E+00	0.00E+00	4.14E-07	2.79E-07	2.12E-07	1.41E-07	1.25E-07	1.37E-07	1.81E-07	1.88E-07	1.98E-07
23	6.03E-06	6.33E-07	0.36	0.00E+00	0.00E+00	3.94E-07	2.66E-07	2.01E-07	1.34E-07	1.19E-07	1.31E-07	1.72E-07	1.79E-07	1.88E-07
26	5.64E-06	6.30E-07	0.41	0.00E+00	0.00E+00	3.73E-07	2.52E-07	1.91E-07	1.27E-07	1.13E-07	1.24E-07	1.63E-07	1.70E-07	1.79E-07
30	5.21E-06	5.97E-07	0.46	0.00E+00	0.00E+00	3.65E-07	2.46E-07	1.87E-07	1.24E-07	1.10E-07	1.21E-07	1.60E-07	1.66E-07	1.75E-07
34	5.07E-06	6.12E-07	0.52	0.00E+00	0.00E+00	3.53E-07	2.39E-07	1.81E-07	1.21E-07	1.07E-07	1.18E-07	1.55E-07	1.62E-07	1.70E-07
40	4.89E-06	6.38E-07	0.59	0.00E+00	0.00E+00	3.45E-07	2.34E-07	1.78E-07	1.19E-07	1.05E-07	1.15E-07	1.52E-07	1.58E-07	1.66E-07
46	4.89E-06	6.79E-07	0.67	0.00E+00	0.00E+00	3.38E-07	2.30E-07	1.74E-07	1.16E-07	1.03E-07	1.13E-07	1.49E-07	1.55E-07	1.63E-07
50	4.89E-06	7.06E-07	0.75	0.00E+00	0.00E+00	3.35E-07	2.26E-07	1.72E-07	1.15E-07	1.02E-07	1.12E-07	1.47E-07	1.54E-07	1.61E-07
54	5.02E-06	7.32E-07	0.85	0.00E+00	0.00E+00	3.30E-07	2.24E-07	1.71E-07	1.14E-07	1.01E-07	1.11E-07	1.46E-07	1.52E-07	1.60E-07
60	5.21E-06	7.88E-07	0.95	0.00E+00	0.00E+00	3.29E-07	2.23E-07	1.70E-07	1.14E-07	1.01E-07	1.11E-07	1.46E-07	1.52E-07	1.59E-07
64	5.34E-06	8.24E-07	1.08	0.00E+00	0.00E+00	3.29E-07	2.23E-07	1.70E-07	1.14E-07	1.01E-07	1.11E-07	1.46E-07	1.52E-07	1.60E-07
70	5.54E-06	8.98E-07	1.21	0.00E+00	0.00E+00	3.27E-07	2.24E-07	1.71E-07	1.14E-07	1.02E-07	1.12E-07	1.47E-07	1.53E-07	1.61E-07
76	5.74E-06	9.72E-07	1.37	0.00E+00	0.00E+00	3.31E-07	2.26E-07	1.73E-07	1.16E-07	1.03E-07	1.13E-07	1.49E-07	1.55E-07	1.63E-07
80	5.86E-06	1.02E-06	1.54	0.00E+00	0.00E+00	3.01E-07	2.29E-07	1.76E-07	1.17E-07	1.05E-07	1.15E-07	1.51E-07	1.57E-07	1.65E-07
90	6.19E-06	1.15E-06	1.74	0.00E+00	0.00E+00	3.05E-07	2.32E-07	1.78E-07	1.20E-07	1.06E-07	1.16E-07	1.53E-07	1.59E-07	1.67E-07
91	6.22E-06	1.16E-06	1.96	0.00E+00	0.00E+00	3.10E-07	2.36E-07	1.82E-07	1.22E-07	1.08E-07	1.19E-07	1.56E-07	1.63E-07	1.71E-07
100	6.51E-06	1.27E-06	2.21	0.00E+00	0.00E+00	3.16E-07	2.42E-07	1.87E-07	1.26E-07	1.11E-07	1.22E-07	1.60E-07	1.67E-07	1.75E-07
109	6.87E-06	1.37E-06	2.50	0.00E+00	0.00E+00	3.25E-07	2.49E-07	1.93E-07	1.30E-07	1.15E-07	1.26E-07	1.66E-07	1.72E-07	1.81E-07
133	7.78E-06	1.77E-06	2.81	0.00E+00	0.00E+00	3.32E-07	2.57E-07	1.99E-07	1.34E-07	1.19E-07	1.31E-07	1.71E-07	1.78E-07	1.87E-07
162	8.79E-05	2.19E-06	3.17	0.00E+00	2.84E-08	3.41E-07	2.51E-07	2.06E-07	1.39E-07	1.23E-07	1.36E-07	1.77E-07	1.84E-07	1.94E-07
200	1.00E-05	2.67E-06	3.58	0.00E+00	2.66E-07	3.52E-07	2.52E-07	2.15E-07	1.38E-07	1.28E-07	1.42E-07	1.85E-07	1.92E-07	2.02E-07
249	1.06E-05	3.18E-06	4.04	0.00E+00	5.18E-07	3.65E-07	2.62E-07	2.26E-07	1.39E-07	1.35E-07	1.49E-07	1.95E-07	2.03E-07	2.13E-07
300	1.11E-05	3.54E-06	4.55	0.00E+00	6.84E-07	3.77E-07	2.73E-07	2.38E-07	1.47E-07	1.43E-07	1.57E-07	2.04E-07	2.13E-07	2.24E-07
313	1.11E-05	3.62E-06	5.13	0.00E+00	7.02E-07	3.90E-07	2.86E-07	2.40E-07	1.55E-07	1.51E-07	1.65E-07	2.16E-07	2.24E-07	2.36E-07
397	1.11E-05	4.01E-06	5.79	0.00E+00	5.59E-07	3.72E-07	3.01E-07	2.43E-07	1.65E-07	1.60E-07	1.75E-07	2.29E-07	2.38E-07	2.50E-07
400	1.11E-05	4.02E-06	6.53	0.00E+00	5.62E-07	3.84E-07	3.15E-07	2.56E-07	1.74E-07	1.69E-07	1.85E-07	2.42E-07	2.52E-07	2.64E-07
500	1.06E-05	4.17E-06	7.36	0.00E+00	5.96E-07	4.04E-07	3.41E-07	2.78E-07	1.90E-07	1.85E-07	2.02E-07	2.63E-07	2.74E-07	2.88E-07
509	1.05E-05	4.18E-06	8.30	0.00E+00	5.67E-07	4.16E-07	3.37E-07	2.91E-07	1.99E-07	1.94E-07	2.13E-07	2.75E-07	2.86E-07	3.01E-07
600	9.65E-06	4.05E-06	9.36	5.71E-07	5.61E-07	4.07E-07	3.48E-07	3.13E-07	2.16E-07	2.10E-07	2.30E-07	2.97E-07	3.09E-07	3.25E-07
660	9.13E-06	3.98E-06	10.56	5.41E-07	5.50E-07	4.18E-07	3.68E-07	3.32E-07	2.30E-07	2.25E-07	2.45E-07	3.11E-07	3.29E-07	3.46E-07
700	8.82E-06	3.87E-06	11.91	7.61E-07	5.31E-07	4.36E-07	3.90E-07	3.27E-07	2.51E-07	2.45E-07	2.67E-07	3.20E-07	3.57E-07	3.75E-07
800	7.90E-06	3.63E-06	13.43	7.04E-07	5.20E-07	4.36E-07	3.94E-07	3.45E-07	2.75E-07	2.68E-07	2.91E-07	3.47E-07	3.87E-07	4.07E-07
865	7.29E-06	3.50E-06	15.15	6.35E-07	5.27E-07	4.70E-07	4.26E-07	3.74E-07	3.01E-07	2.94E-07	3.18E-07	3.77E-07	4.21E-07	4.42E-07
900	7.00E-06	3.38E-06	17.08	6.01E-07	5.14E-07	4.65E-07	4.23E-07	3.82E-07	3.30E-07	3.20E-07	3.40E-07	4.10E-07	4.57E-07	4.80E-07
1000	6.27E-06	3.10E-06	19.26	5.78E-07	5.23E-07	4.65E-07	4.52E-07	4.17E-07	3.38E-07	3.32E-07	3.56E-07	4.56E-07	5.12E-07	5.34E-07
1147	5.20E-06	2.76E-06	21.72	5.77E-07	5.31E-07	4.81E-07	4.48E-07	4.34E-07	3.63E-07	3.58E-07	3.82E-07	4.90E-07	5.45E-07	5.68E-07
1545	3.47E-06	2.06E-06	24.49	5.69E-07	5.25E-07	4.92E-07	4.80E-07	4.53E-07	4.02E-07	3.96E-07	4.19E-07	5.33E-07	5.93E-07	6.06E-07
2000	2.44E-06	1.59E-06	27.62	5.56E-07	5.34E-07	5.05E-07	5.01E-07	4.79E-07	4.58E-07	4.48E-07	4.72E-07	5.94E-07	6.57E-07	6.48E-07
2120	2.23E-06	1.50E-06	31.15	5.77E-07	5.52E-07	5.42E-07	5.26E-07	5.13E-07	4.58E-07	4.94E-07	5.12E-07	6.40E-07	7.11E-07	6.97E-07
2977	1.30E-06	1.06E-06	35.13	5.97E-07	5.78E-07	5.74E-07	5.58E-07	5.53E-07	5.34E-07	5.30E-07	5.88E-07	7.21E-07	7.94E-07	7.78E-07

TABLE 25 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CL
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 17; ATOMIC-W= 35.46)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	6.27E-07	6.09E-07	6.12E-07	6.08E-07	5.87E-07	5.76E-07	5.95E-07	6.58E-07	7.95E-07	8.74E-07	8.52E-07
44.68	6.52E-07	6.55E-07	6.35E-07	6.22E-07	6.37E-07	6.25E-07	6.68E-07	6.80E-07	8.67E-07	9.48E-07	9.23E-07
50.38	6.88E-07	7.30E-07	6.96E-07	6.76E-07	6.84E-07	6.91E-07	7.08E-07	7.54E-07	9.67E-07	1.05E-06	1.02E-06
56.82	7.69E-07	7.63E-07	7.57E-07	7.71E-07	7.64E-07	8.13E-07	8.40E-07	8.83E-07	1.09E-06	1.18E-06	1.13E-06
64.07	8.38E-07	8.42E-07	8.54E-07	8.59E-07	8.31E-07	8.68E-07	8.84E-07	9.83E-07	1.21E-06	1.21E-06	1.24E-06
72.26	9.52E-07	9.56E-07	9.46E-07	9.35E-07	9.53E-07	9.75E-07	1.01E-06	1.09E-06	1.27E-06	1.34E-06	1.36E-06
81.49	1.05E-06	1.07E-06	1.07E-06	1.05E-06	1.07E-06	1.11E-06	1.12E-06	1.22E-06	1.41E-06	1.48E-06	1.49E-06
91.89	1.16E-06	1.18E-06	1.19E-06	1.19E-06	1.19E-06	1.23E-06	1.27E-06	1.36E-06	1.57E-06	1.63E-06	1.63E-06
103.63	1.28E-06	1.39E-06	1.38E-06	1.38E-06	1.40E-06	1.47E-06	1.50E-06	1.58E-06	1.75E-06	1.86E-06	1.83E-06
116.86	1.51E-06	1.55E-06	1.57E-06	1.58E-06	1.59E-06	1.59E-06	1.67E-06	1.76E-06	1.86E-06	1.96E-06	1.96E-06
131.79	1.73E-06	1.79E-06	1.80E-06	1.81E-06	1.82E-06	1.82E-06	1.87E-06	1.93E-06	2.11E-06	2.09E-06	2.11E-06
148.62	2.02E-06	2.06E-06	2.05E-06	2.06E-06	2.07E-06	2.09E-06	2.10E-06	2.17E-06	2.27E-06	2.33E-06	2.24E-06
167.60	2.16E-06	2.21E-06	2.24E-06	2.24E-06	2.26E-06	2.33E-06	2.29E-06	2.38E-06	2.46E-06	2.51E-06	2.40E-06
189.01	2.49E-06	2.54E-06	2.54E-06	2.55E-06	2.58E-06	2.59E-06	2.58E-06	2.64E-06	2.65E-06	2.68E-06	2.64E-06
213.15	2.82E-06	2.87E-06	2.89E-06	2.90E-06	2.88E-06	2.88E-06	2.90E-06	2.90E-06	2.92E-06	2.91E-06	2.79E-06
240.38	3.02E-06	3.02E-06	3.04E-06	3.05E-06	3.06E-06	3.06E-06	3.07E-06	3.12E-06	3.08E-06	3.07E-06	2.94E-06
271.08	3.26E-06	3.29E-06	3.27E-06	3.28E-06	3.29E-06	3.32E-06	3.30E-06	3.33E-06	3.34E-06	3.29E-06	3.12E-06
305.70	3.53E-06	3.56E-06	3.57E-06	3.56E-06	3.57E-06	3.56E-06	3.56E-06	3.58E-06	3.55E-06	3.48E-06	3.27E-06
344.74	3.68E-06	3.71E-06	3.73E-06	3.75E-06	3.76E-06	3.77E-06	3.78E-06	3.72E-06	3.72E-06	3.58E-06	3.39E-06
388.77	3.85E-06	3.87E-06	3.88E-06	3.89E-06	3.90E-06	3.90E-06	3.91E-06	3.90E-06	3.78E-06	3.70E-06	3.42E-06
438.43	3.99E-06	4.00E-06	4.00E-06	4.00E-06	4.01E-06	3.99E-06	3.99E-06	3.99E-06	3.85E-06	3.74E-06	3.47E-06
494.42	4.06E-06	4.07E-06	4.07E-06	4.07E-06	4.06E-06	4.06E-06	4.03E-06	3.98E-06	3.87E-06	3.77E-06	3.51E-06
557.57	4.00E-06	3.99E-06	3.98E-06	3.98E-06	3.97E-06	3.95E-06	3.94E-06	3.91E-06	3.81E-06	3.71E-06	3.41E-06
628.79	3.92E-06	3.90E-06	3.88E-06	3.87E-06	3.87E-06	3.84E-06	3.82E-06	3.80E-06	3.70E-06	3.56E-06	3.30E-06
709.09	3.76E-06	3.71E-06	3.70E-06	3.68E-06	3.66E-06	3.62E-06	3.61E-06	3.58E-06	3.49E-06	3.40E-06	3.13E-06
799.66	3.56E-06	3.54E-06	3.52E-06	3.49E-06	3.47E-06	3.45E-06	3.44E-06	3.41E-06	3.30E-06	3.16E-06	2.95E-06
901.79	3.30E-06	3.25E-06	3.21E-06	3.18E-06	3.15E-06	3.13E-06	3.12E-06	3.09E-06	2.98E-06	2.91E-06	2.72E-06
1017.00	2.98E-06	2.92E-06	2.89E-06	2.86E-06	2.84E-06	2.81E-06	2.80E-06	2.78E-06	2.71E-06	2.63E-06	2.48E-06
1146.90	2.70E-06	2.67E-06	2.64E-06	2.61E-06	2.59E-06	2.57E-06	2.56E-06	2.54E-06	2.48E-06	2.42E-06	2.28E-06
1293.30	2.39E-06	2.35E-06	2.34E-06	2.33E-06	2.32E-06	2.30E-06	2.29E-06	2.27E-06	2.23E-06	2.19E-06	2.08E-06
1458.50	2.14E-06	2.11E-06	2.09E-06	2.08E-06	2.06E-06	2.05E-06	2.04E-06	2.02E-06	1.99E-06	1.96E-06	1.88E-06
1644.80	1.91E-06	1.89E-06	1.88E-06	1.86E-06	1.84E-06	1.83E-06	1.81E-06	1.80E-06	1.78E-06	1.75E-06	1.68E-06
1854.90	1.69E-06	1.67E-06	1.65E-06	1.63E-06	1.61E-06	1.59E-06	1.58E-06	1.57E-06	1.55E-06	1.53E-06	1.48E-06
2091.80	1.51E-06	1.50E-06	1.49E-06	1.48E-06	1.47E-06	1.46E-06	1.46E-06	1.45E-06	1.43E-06	1.41E-06	1.37E-06
2358.90	1.34E-06	1.33E-06	1.32E-06	1.31E-06	1.30E-06	1.29E-06	1.28E-06	1.27E-06	1.26E-06	1.24E-06	1.20E-06
2660.20	1.14E-06	1.13E-06	1.12E-06	1.10E-06	1.08E-06	1.06E-06	1.04E-06	1.02E-06	8.86E-07	7.44E-07	3.87E-07

TABLE 25 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: AR
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 18; ATOMIC-W= 39.94)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

EN-ERGY	UNATTEN-UATED	ATTEN-UATED
12	2.39E-05	1.94E-06
14	1.95E-05	1.69E-06
16	1.63E-05	1.50E-06
18	1.40E-05	1.33E-06
20	1.22E-05	1.23E-06
23	1.13E-05	1.18E-06
26	1.05E-05	1.18E-06
30	9.73E-06	1.11E-06
34	9.46E-06	1.14E-06
40	9.12E-06	1.19E-06
46	9.12E-06	1.27E-06
50	9.12E-06	1.32E-06
54	9.37E-06	1.37E-06
60	9.73E-06	1.47E-06
64	9.98E-06	1.54E-06
70	1.03E-05	1.68E-06
76	1.07E-05	1.81E-06
80	1.09E-05	1.91E-06
90	1.16E-05	2.14E-06
91	1.16E-05	2.16E-06
100	1.22E-05	2.36E-06
109	1.28E-05	2.57E-06
133	1.45E-05	3.30E-06
162	1.64E-05	4.09E-06
200	1.87E-05	4.99E-06
249	1.97E-05	5.94E-06
300	2.07E-05	6.60E-06
313	2.07E-05	6.76E-06
397	2.07E-05	7.49E-06
400	2.07E-05	7.50E-06
500	1.98E-05	7.78E-06
509	1.96E-05	7.80E-06
600	1.80E-05	7.57E-06
660	1.70E-05	7.43E-06
700	1.65E-05	7.22E-06
800	1.47E-05	6.78E-06
865	1.36E-05	6.53E-06
900	1.31E-05	6.32E-06
1000	1.17E-05	5.78E-06
1147	9.71E-06	5.15E-06
1545	6.48E-06	3.85E-06
2000	4.56E-06	2.97E-06
2120	4.16E-06	2.80E-06
2977	2.42E-06	1.98E-06

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
0.20	0.00E+00	0.00E+00	1.03E-06	7.01E-07	5.25E-07	3.48E-07	3.09E-07	3.42E-07	4.45E-07	4.65E-07	4.90E-07
0.23	0.00E+00	0.00E+00	9.69E-07	6.61E-07	4.95E-07	3.28E-07	2.92E-07	3.22E-07	4.20E-07	4.38E-07	4.62E-07
0.25	0.00E+00	0.00E+00	9.11E-07	6.21E-07	4.65E-07	3.08E-07	2.74E-07	3.03E-07	3.95E-07	4.12E-07	4.34E-07
0.29	0.00E+00	0.00E+00	8.56E-07	5.84E-07	4.37E-07	2.90E-07	2.58E-07	2.85E-07	3.71E-07	3.87E-07	4.08E-07
0.32	0.00E+00	0.00E+00	8.18E-07	5.58E-07	4.18E-07	2.77E-07	2.47E-07	2.72E-07	3.55E-07	3.70E-07	3.90E-07
0.36	0.00E+00	0.00E+00	7.78E-07	5.31E-07	3.98E-07	2.64E-07	2.34E-07	2.59E-07	3.38E-07	3.52E-07	3.71E-07
0.41	0.00E+00	0.00E+00	7.34E-07	5.03E-07	3.76E-07	2.50E-07	2.22E-07	2.45E-07	3.20E-07	3.33E-07	3.51E-07
0.46	0.00E+00	0.00E+00	7.18E-07	4.87E-07	3.68E-07	2.44E-07	2.17E-07	2.40E-07	3.12E-07	3.26E-07	3.44E-07
0.52	0.00E+00	0.00E+00	6.96E-07	4.72E-07	3.57E-07	2.37E-07	2.10E-07	2.32E-07	3.03E-07	3.16E-07	3.33E-07
0.59	0.00E+00	0.00E+00	6.80E-07	4.62E-07	3.49E-07	2.31E-07	2.06E-07	2.27E-07	2.96E-07	3.09E-07	3.26E-07
0.67	0.00E+00	0.00E+00	6.64E-07	4.52E-07	3.41E-07	2.26E-07	2.01E-07	2.22E-07	2.90E-07	3.02E-07	3.19E-07
0.75	0.00E+00	0.00E+00	6.55E-07	4.47E-07	3.38E-07	2.24E-07	1.99E-07	2.20E-07	2.87E-07	2.99E-07	3.15E-07
0.85	0.00E+00	0.00E+00	6.49E-07	4.43E-07	3.34E-07	2.22E-07	1.97E-07	2.18E-07	2.84E-07	2.96E-07	3.12E-07
0.95	0.00E+00	0.00E+00	6.47E-07	4.38E-07	3.32E-07	2.21E-07	1.97E-07	2.17E-07	2.83E-07	2.95E-07	3.11E-07
1.08	0.00E+00	0.00E+00	6.43E-07	4.37E-07	3.32E-07	2.22E-07	1.96E-07	2.17E-07	2.83E-07	2.95E-07	3.11E-07
1.21	0.00E+00	0.00E+00	6.46E-07	4.39E-07	3.34E-07	2.23E-07	1.97E-07	2.18E-07	2.84E-07	2.96E-07	3.12E-07
1.37	0.00E+00	0.00E+00	6.47E-07	4.42E-07	3.37E-07	2.25E-07	1.99E-07	2.20E-07	2.87E-07	2.99E-07	3.16E-07
1.54	0.00E+00	0.00E+00	6.55E-07	4.46E-07	3.41E-07	2.28E-07	2.02E-07	2.23E-07	2.91E-07	3.03E-07	3.20E-07
1.74	0.00E+00	0.00E+00	6.55E-07	4.51E-07	3.45E-07	2.31E-07	2.04E-07	2.25E-07	2.94E-07	3.07E-07	3.23E-07
1.96	0.00E+00	0.00E+00	6.43E-07	4.58E-07	3.52E-07	2.36E-07	2.09E-07	2.30E-07	3.00E-07	3.13E-07	3.30E-07
2.21	0.00E+00	0.00E+00	6.16E-07	4.69E-07	3.60E-07	2.41E-07	2.14E-07	2.36E-07	3.09E-07	3.21E-07	3.38E-07
2.50	0.00E+00	0.00E+00	6.29E-07	4.80E-07	3.71E-07	2.49E-07	2.20E-07	2.43E-07	3.20E-07	3.31E-07	3.49E-07
2.81	0.00E+00	0.00E+00	6.44E-07	4.94E-07	3.83E-07	2.57E-07	2.28E-07	2.51E-07	3.30E-07	3.41E-07	3.60E-07
3.17	0.00E+00	0.00E+00	6.58E-07	5.09E-07	3.95E-07	2.67E-07	2.36E-07	2.59E-07	3.41E-07	3.53E-07	3.72E-07
3.58	0.00E+00	1.31E-07	6.78E-07	5.05E-07	4.11E-07	2.78E-07	2.46E-07	2.70E-07	3.55E-07	3.67E-07	3.87E-07
4.04	0.00E+00	7.79E-07	7.02E-07	5.04E-07	4.32E-07	2.92E-07	2.59E-07	2.84E-07	3.73E-07	3.86E-07	4.07E-07
4.55	0.00E+00	1.20E-06	7.24E-07	5.25E-07	4.53E-07	2.96E-07	2.71E-07	2.97E-07	3.92E-07	4.05E-07	4.27E-07
5.13	0.00E+00	1.38E-06	7.48E-07	5.46E-07	4.76E-07	2.95E-07	2.86E-07	3.15E-07	4.12E-07	4.26E-07	4.49E-07
5.79	0.00E+00	1.14E-06	7.32E-07	5.72E-07	4.72E-07	3.12E-07	3.04E-07	3.35E-07	4.36E-07	4.51E-07	4.75E-07
6.53	0.00E+00	1.06E-06	7.32E-07	5.98E-07	4.87E-07	3.30E-07	3.21E-07	3.53E-07	4.60E-07	4.76E-07	5.01E-07
7.36	0.00E+00	1.13E-06	7.66E-07	6.45E-07	5.27E-07	3.59E-07	3.49E-07	3.83E-07	5.00E-07	5.20E-07	5.44E-07
8.30	0.00E+00	1.09E-06	7.87E-07	6.51E-07	5.50E-07	3.76E-07	3.66E-07	4.00E-07	5.22E-07	5.44E-07	5.68E-07
9.36	1.03E-06	1.06E-06	7.84E-07	6.57E-07	5.91E-07	4.07E-07	3.96E-07	4.34E-07	5.62E-07	5.86E-07	6.15E-07
10.56	1.78E-06	1.05E-06	7.88E-07	6.94E-07	6.26E-07	4.34E-07	4.23E-07	4.63E-07	5.98E-07	6.23E-07	6.54E-07
11.91	1.42E-06	1.00E-06	8.29E-07	7.41E-07	6.23E-07	4.73E-07	4.62E-07	5.02E-07	6.49E-07	6.75E-07	7.08E-07
13.43	1.32E-06	9.78E-07	8.20E-07	7.40E-07	6.49E-07	5.15E-07	5.04E-07	5.47E-07	6.89E-07	7.30E-07	7.67E-07
15.15	1.19E-06	9.87E-07	8.80E-07	8.00E-07	7.02E-07	5.65E-07	5.52E-07	5.96E-07	7.11E-07	7.93E-07	8.32E-07
17.08	1.12E-06	9.62E-07	8.71E-07	7.94E-07	7.17E-07	6.19E-07	6.06E-07	6.52E-07	7.71E-07	8.60E-07	9.03E-07
19.26	1.08E-06	9.78E-07	8.83E-07	8.45E-07	7.81E-07	6.35E-07	6.23E-07	6.68E-07	8.56E-07	9.55E-07	1.00E-06
21.72	1.08E-06	9.95E-07	9.00E-07	8.47E-07	8.12E-07	6.81E-07	6.69E-07	7.15E-07	9.13E-07	1.02E-06	1.07E-06
24.49	1.06E-06	9.81E-07	9.21E-07	9.07E-07	8.47E-07	7.52E-07	7.39E-07	7.83E-07	1.00E-06	1.11E-06	1.16E-06
27.62	1.05E-06	9.98E-07	9.44E-07	9.36E-07	8.94E-07	8.56E-07	8.39E-07	8.78E-07	1.10E-06	1.23E-06	1.28E-06
31.15	1.08E-06	1.03E-06	1.01E-06	9.82E-07	9.60E-07	8.57E-07	9.23E-07	9.58E-07	1.20E-06	1.32E-06	1.33E-06
35.13	1.11E-06	1.08E-06	1.07E-06	1.04E-06	1.03E-06	9.95E-07	9.92E-07	1.09E-06	1.35E-06	1.49E-06	1.46E-06

TABLE 26A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: AR
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 18; ATOMIC-W= 39.94)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.17E-06	1.14E-06	1.14E-06	1.14E-06	1.09E-06	1.07E-06	1.11E-06	1.23E-06	1.49E-06	1.63E-06	1.59E-06
44.68	1.22E-06	1.22E-06	1.19E-06	1.16E-06	1.19E-06	1.17E-06	1.24E-06	1.28E-06	1.61E-06	1.77E-06	1.72E-06
50.38	1.28E-06	1.31E-06	1.30E-06	1.26E-06	1.28E-06	1.30E-06	1.32E-06	1.41E-06	1.80E-06	1.96E-06	1.90E-06
56.82	1.45E-06	1.42E-06	1.41E-06	1.44E-06	1.43E-06	1.52E-06	1.57E-06	1.65E-06	2.04E-06	2.20E-06	2.12E-06
64.07	1.56E-06	1.57E-06	1.59E-06	1.60E-06	1.55E-06	1.62E-06	1.65E-06	1.83E-06	2.26E-06	2.26E-06	2.31E-06
72.26	1.78E-06	1.79E-06	1.77E-06	1.75E-06	1.78E-06	1.82E-06	1.88E-06	2.02E-06	2.40E-06	2.50E-06	2.54E-06
81.49	1.97E-06	2.00E-06	2.01E-06	1.95E-06	1.99E-06	2.07E-06	2.09E-06	2.27E-06	2.62E-06	2.76E-06	2.78E-06
91.89	2.16E-06	2.20E-06	2.22E-06	2.21E-06	2.22E-06	2.29E-06	2.38E-06	2.54E-06	2.94E-06	3.04E-06	3.04E-06
103.63	2.57E-06	2.59E-06	2.58E-06	2.58E-06	2.61E-06	2.75E-06	2.80E-06	2.95E-06	3.29E-06	3.47E-06	3.42E-06
116.86	2.83E-06	2.90E-06	2.92E-06	2.94E-06	2.97E-06	2.97E-06	3.12E-06	3.28E-06	3.48E-06	3.66E-06	3.66E-06
131.79	3.23E-06	3.33E-06	3.36E-06	3.37E-06	3.40E-06	3.41E-06	3.49E-06	3.60E-06	3.93E-06	3.90E-06	3.98E-06
148.62	3.76E-06	3.85E-06	3.83E-06	3.85E-06	3.87E-06	3.90E-06	3.93E-06	4.05E-06	4.23E-06	4.34E-06	4.18E-06
167.60	4.04E-06	4.12E-06	4.17E-06	4.19E-06	4.21E-06	4.35E-06	4.27E-06	4.44E-06	4.59E-06	4.72E-06	4.48E-06
189.01	4.66E-06	4.75E-06	4.75E-06	4.76E-06	4.78E-06	4.84E-06	4.81E-06	4.92E-06	4.95E-06	5.00E-06	4.93E-06
213.15	5.26E-06	5.35E-06	5.39E-06	5.41E-06	5.38E-06	5.37E-06	5.41E-06	5.42E-06	5.45E-06	5.44E-06	5.21E-06
240.38	5.63E-06	5.64E-06	5.67E-06	5.68E-06	5.71E-06	5.72E-06	5.73E-06	5.82E-06	5.75E-06	5.73E-06	5.48E-06
271.08	6.08E-06	6.14E-06	6.11E-06	6.13E-06	6.14E-06	6.19E-06	6.15E-06	6.27E-06	6.23E-06	6.13E-06	5.83E-06
305.70	6.58E-06	6.65E-06	6.67E-06	6.64E-06	6.66E-06	6.65E-06	6.64E-06	6.68E-06	6.63E-06	6.49E-06	6.10E-06
344.74	6.87E-06	6.93E-06	6.97E-06	7.00E-06	7.01E-06	7.03E-06	7.06E-06	6.95E-06	6.94E-06	6.69E-06	6.33E-06
388.77	7.18E-06	7.22E-06	7.24E-06	7.26E-06	7.28E-06	7.29E-06	7.30E-06	7.28E-06	7.06E-06	6.90E-06	6.38E-06
438.43	7.44E-06	7.46E-06	7.47E-06	7.47E-06	7.48E-06	7.44E-06	7.44E-06	7.45E-06	7.20E-06	6.99E-06	6.48E-06
494.42	7.59E-06	7.60E-06	7.60E-06	7.59E-06	7.58E-06	7.57E-06	7.52E-06	7.42E-06	7.23E-06	7.03E-06	6.55E-06
557.57	7.47E-06	7.45E-06	7.44E-06	7.42E-06	7.41E-06	7.37E-06	7.36E-06	7.30E-06	7.12E-06	6.92E-06	6.36E-06
628.79	7.32E-06	7.28E-06	7.25E-06	7.23E-06	7.22E-06	7.17E-06	7.13E-06	7.09E-06	6.91E-06	6.64E-06	6.16E-06
709.09	7.02E-06	6.93E-06	6.90E-06	6.87E-06	6.83E-06	6.76E-06	6.75E-06	6.69E-06	6.52E-06	6.34E-06	5.84E-06
799.66	6.65E-06	6.61E-06	6.56E-06	6.52E-06	6.47E-06	6.44E-06	6.42E-06	6.36E-06	6.15E-06	5.89E-06	5.51E-06
901.79	6.15E-06	6.06E-06	5.99E-06	5.93E-06	5.88E-06	5.85E-06	5.83E-06	5.78E-06	5.56E-06	5.43E-06	5.08E-06
1017.00	5.57E-06	5.46E-06	5.39E-06	5.35E-06	5.30E-06	5.25E-06	5.22E-06	5.19E-06	5.07E-06	4.90E-06	4.64E-06
1146.90	5.04E-06	4.99E-06	4.93E-06	4.88E-06	4.83E-06	4.80E-06	4.77E-06	4.74E-06	4.63E-06	4.52E-06	4.26E-06
1293.30	4.47E-06	4.39E-06	4.36E-06	4.34E-06	4.33E-06	4.30E-06	4.27E-06	4.24E-06	4.17E-06	4.09E-06	3.88E-06
1458.50	3.99E-06	3.93E-06	3.90E-06	3.87E-06	3.85E-06	3.83E-06	3.82E-06	3.78E-06	3.72E-06	3.66E-06	3.51E-06
1644.80	3.57E-06	3.53E-06	3.50E-06	3.47E-06	3.44E-06	3.41E-06	3.39E-06	3.36E-06	3.31E-06	3.27E-06	3.14E-06
1854.90	3.16E-06	3.12E-06	3.08E-06	3.04E-06	3.01E-06	2.98E-06	2.96E-06	2.94E-06	2.90E-06	2.86E-06	2.76E-06
2091.80	2.81E-06	2.80E-06	2.78E-06	2.76E-06	2.75E-06	2.73E-06	2.72E-06	2.70E-06	2.67E-06	2.64E-05	2.56E-06
2358.90	2.49E-06	2.48E-06	2.46E-06	2.45E-06	2.43E-06	2.41E-06	2.39E-06	2.37E-06	2.35E-06	2.32E-06	2.24E-06
2660.20	2.13E-06	2.11E-06	2.09E-06	2.06E-06	2.02E-06	1.97E-06	1.94E-06	1.91E-06	1.65E-06	1.39E-06	7.23E-07

TABLE 26 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: K
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 19; ATOMIC-W= 39.10)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	SHIELD THICKNESS (GM/CM**2) 0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.54E-05	1.25E-06	0.20	0.00E+00	0.00E+00	5.96E-07	4.52E-07	3.52E-07	2.23E-07	2.23E-07	2.27E-07	3.03E-07	3.14E-07	3.25E-07
14	1.25E-05	1.09E-06	0.23	0.00E+00	0.00E+00	5.62E-07	3.94E-07	3.32E-07	2.10E-07	2.10E-07	2.14E-07	2.86E-07	2.96E-07	3.07E-07
16	1.05E-05	9.63E-07	0.25	0.00E+00	0.00E+00	5.26E-07	3.66E-07	3.12E-07	1.97E-07	1.98E-07	2.01E-07	2.69E-07	2.78E-07	2.88E-07
18	8.99E-06	8.55E-07	0.29	0.00E+00	0.00E+00	4.92E-07	3.44E-07	2.93E-07	1.85E-07	1.86E-07	1.89E-07	2.52E-07	2.61E-07	2.71E-07
20	7.82E-06	7.93E-07	0.32	0.00E+00	0.00E+00	4.70E-07	3.29E-07	2.80E-07	1.77E-07	1.77E-07	1.81E-07	2.41E-07	2.50E-07	2.59E-07
23	7.24E-06	7.59E-07	0.36	0.00E+00	0.00E+00	4.46E-07	3.12E-07	2.66E-07	1.68E-07	1.69E-07	1.72E-07	2.29E-07	2.37E-07	2.46E-07
26	6.77E-06	7.56E-07	0.41	0.00E+00	0.00E+00	4.22E-07	2.95E-07	2.52E-07	1.59E-07	1.59E-07	1.63E-07	2.17E-07	2.24E-07	2.33E-07
30	6.25E-06	7.17E-07	0.46	0.00E+00	0.00E+00	4.13E-07	2.89E-07	2.46E-07	1.56E-07	1.56E-07	1.59E-07	2.12E-07	2.19E-07	2.27E-07
34	6.08E-06	7.34E-07	0.52	0.00E+00	0.00E+00	4.00E-07	2.80E-07	2.38E-07	1.51E-07	1.51E-07	1.54E-07	2.05E-07	2.12E-07	2.20E-07
40	5.86E-06	7.66E-07	0.59	0.00E+00	0.00E+00	3.89E-07	2.73E-07	2.33E-07	1.47E-07	1.47E-07	1.50E-07	2.00E-07	2.07E-07	2.15E-07
46	5.86E-06	8.14E-07	0.67	0.00E+00	0.00E+00	3.78E-07	2.67E-07	2.27E-07	1.44E-07	1.44E-07	1.47E-07	1.96E-07	2.03E-07	2.10E-07
50	5.86E-06	8.47E-07	0.75	0.00E+00	0.00E+00	3.73E-07	2.62E-07	2.25E-07	1.42E-07	1.42E-07	1.45E-07	1.93E-07	2.00E-07	2.08E-07
54	6.02E-06	8.78E-07	0.85	0.00E+00	0.00E+00	3.69E-07	2.58E-07	2.22E-07	1.41E-07	1.41E-07	1.44E-07	1.91E-07	1.98E-07	2.06E-07
60	6.25E-06	9.45E-07	0.95	0.00E+00	0.00E+00	3.67E-07	2.57E-07	2.21E-07	1.41E-07	1.40E-07	1.43E-07	1.90E-07	1.97E-07	2.04E-07
64	6.41E-06	9.89E-07	1.08	0.00E+00	0.00E+00	3.63E-07	2.57E-07	2.21E-07	1.40E-07	1.40E-07	1.43E-07	1.90E-07	1.97E-07	2.04E-07
70	6.64E-06	1.08E-06	1.21	0.00E+00	0.00E+00	3.65E-07	2.57E-07	2.10E-07	1.41E-07	1.41E-07	1.43E-07	1.91E-07	1.97E-07	2.05E-07
76	6.88E-06	1.17E-06	1.37	0.00E+00	0.00E+00	3.65E-07	2.57E-07	2.04E-07	1.42E-07	1.43E-07	1.44E-07	1.92E-07	1.99E-07	2.06E-07
80	7.04E-06	1.23E-06	1.54	0.00E+00	0.00E+00	3.68E-07	2.60E-07	2.07E-07	1.44E-07	1.44E-07	1.46E-07	1.94E-07	2.01E-07	2.09E-07
90	7.43E-06	1.37E-06	1.74	0.00E+00	0.00E+00	3.72E-07	2.63E-07	2.09E-07	1.45E-07	1.46E-07	1.47E-07	1.96E-07	2.03E-07	2.11E-07
91	7.47E-06	1.39E-06	1.96	0.00E+00	0.00E+00	3.76E-07	2.67E-07	2.13E-07	1.48E-07	1.49E-07	1.50E-07	2.00E-07	2.07E-07	2.15E-07
100	7.82E-06	1.52E-06	2.21	0.00E+00	8.59E-08	3.82E-07	2.72E-07	2.18E-07	1.51E-07	1.52E-07	1.54E-07	2.05E-07	2.12E-07	2.20E-07
109	8.25E-06	1.65E-06	2.50	0.00E+00	2.82E-07	3.90E-07	2.79E-07	2.24E-07	1.56E-07	1.57E-07	1.58E-07	2.11E-07	2.18E-07	2.26E-07
133	9.33E-06	2.12E-06	2.81	0.00E+00	4.55E-07	3.98E-07	2.87E-07	2.31E-07	1.60E-07	1.61E-07	1.63E-07	2.17E-07	2.25E-07	2.33E-07
162	1.05E-05	2.63E-06	3.17	0.00E+00	6.25E-07	4.07E-07	2.94E-07	2.38E-07	1.66E-07	1.66E-07	1.68E-07	2.24E-07	2.32E-07	2.41E-07
200	1.20E-05	3.21E-06	3.58	0.00E+00	7.60E-07	4.17E-07	3.05E-07	2.47E-07	1.73E-07	1.73E-07	1.76E-07	2.33E-07	2.41E-07	2.50E-07
249	1.27E-05	3.82E-06	4.04	0.00E+00	8.15E-07	3.97E-07	3.18E-07	2.59E-07	1.81E-07	1.81E-07	1.85E-07	2.44E-07	2.53E-07	2.62E-07
300	1.33E-05	4.24E-06	4.55	0.00E+00	7.00E-07	4.10E-07	3.32E-07	2.71E-07	1.90E-07	1.82E-07	1.94E-07	2.56E-07	2.65E-07	2.74E-07
313	1.33E-05	4.35E-06	5.13	0.00E+00	6.22E-07	4.22E-07	3.48E-07	2.84E-07	2.00E-07	1.83E-07	2.03E-07	2.68E-07	2.78E-07	2.88E-07
397	1.33E-05	4.32E-06	5.79	0.00E+00	6.51E-07	4.38E-07	3.56E-07	3.00E-07	2.12E-07	1.94E-07	2.15E-07	2.84E-07	2.94E-07	3.05E-07
400	1.33E-05	4.82E-06	6.53	0.00E+00	6.77E-07	4.54E-07	3.54E-07	3.16E-07	2.23E-07	2.04E-07	2.26E-07	2.99E-07	3.09E-07	3.21E-07
500	1.27E-05	5.00E-06	7.36	0.00E+00	6.35E-07	4.67E-07	3.79E-07	3.41E-07	2.43E-07	2.22E-07	2.45E-07	3.24E-07	3.35E-07	3.48E-07
509	1.26E-05	5.02E-06	8.30	1.83E-08	6.44E-07	4.55E-07	3.94E-07	3.50E-07	2.54E-07	2.32E-07	2.56E-07	3.38E-07	3.50E-07	3.63E-07
600	1.16E-05	4.86E-06	9.36	5.39E-07	6.45E-07	4.77E-07	4.22E-07	3.43E-07	2.74E-07	2.50E-07	2.78E-07	3.63E-07	3.76E-07	3.90E-07
660	1.10E-05	4.78E-06	10.56	1.06E-06	6.13E-07	5.01E-07	4.38E-07	3.60E-07	2.93E-07	2.67E-07	2.95E-07	3.86E-07	4.00E-07	4.14E-07
700	1.06E-05	4.64E-06	11.91	9.08E-07	6.23E-07	4.97E-07	4.43E-07	3.87E-07	3.07E-07	2.90E-07	3.19E-07	4.18E-07	4.36E-07	4.48E-07
800	9.48E-06	4.36E-06	13.43	8.38E-07	5.99E-07	5.25E-07	4.77E-07	4.19E-07	3.15E-07	3.15E-07	3.47E-07	4.55E-07	4.71E-07	4.84E-07
865	8.75E-06	4.20E-06	15.15	7.58E-07	6.06E-07	5.37E-07	4.87E-07	4.28E-07	3.43E-07	3.45E-07	3.78E-07	4.93E-07	5.11E-07	5.26E-07
900	8.40E-06	4.06E-06	17.08	7.21E-07	6.17E-07	5.60E-07	4.93E-07	4.54E-07	3.75E-07	3.77E-07	4.12E-07	5.35E-07	5.53E-07	5.71E-07
1000	7.52E-06	3.72E-06	19.26	6.94E-07	6.22E-07	5.56E-07	5.13E-07	5.04E-07	4.22E-07	4.25E-07	4.62E-07	5.93E-07	6.13E-07	6.33E-07
1147	6.24E-06	3.31E-06	21.72	6.93E-07	6.29E-07	5.80E-07	5.35E-07	5.00E-07	4.55E-07	4.58E-07	4.93E-07	6.34E-07	6.52E-07	6.72E-07
1545	4.16E-06	2.47E-06	24.49	6.84E-07	6.24E-07	5.81E-07	5.68E-07	5.52E-07	4.86E-07	5.06E-07	5.42E-07	6.90E-07	7.08E-07	7.30E-07
2000	2.93E-06	1.91E-06	27.62	6.61E-07	6.43E-07	6.10E-07	6.07E-07	5.69E-07	5.19E-07	5.35E-07	6.07E-07	7.67E-07	7.87E-07	8.06E-07
2120	2.67E-06	1.90E-06	31.15	6.86E-07	6.58E-07	6.55E-07	6.23E-07	6.26E-07	5.69E-07	5.73E-07	6.47E-07	8.26E-07	8.46E-07	8.66E-07
2977	1.56E-06	1.27E-06	35.13	7.09E-07	6.96E-07	6.94E-07	6.68E-07	6.64E-07	6.28E-07	6.63E-07	6.86E-07	9.29E-07	9.46E-07	9.67E-07

TABLE 27 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: K
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 19; ATOMIC-W= 39.10)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	7.54E-07	7.33E-07	7.23E-07	7.28E-07	7.03E-07	6.90E-07	7.44E-07	7.63E-07	1.02E-06	1.04E-06	1.06E-06
44.68	7.85E-07	7.89E-07	7.57E-07	7.52E-07	7.65E-07	7.79E-07	7.66E-07	8.41E-07	1.06E-06	1.12E-06	1.14E-06
50.38	8.27E-07	8.44E-07	8.22E-07	8.08E-07	8.30E-07	8.33E-07	8.84E-07	9.66E-07	1.15E-06	1.24E-06	1.26E-06
56.82	9.23E-07	9.10E-07	9.15E-07	9.22E-07	9.27E-07	9.48E-07	9.87E-07	1.06E-06	1.30E-06	1.39E-06	1.40E-06
64.07	1.01E-06	1.01E-06	1.03E-06	1.02E-06	1.01E-06	1.07E-06	1.10E-06	1.18E-06	1.43E-06	1.52E-06	1.53E-06
72.26	1.14E-06	1.15E-06	1.13E-06	1.13E-06	1.16E-06	1.18E-06	1.21E-06	1.38E-06	1.59E-06	1.68E-06	1.68E-06
81.49	1.27E-06	1.29E-06	1.25E-06	1.26E-06	1.28E-06	1.31E-06	1.39E-06	1.47E-06	1.77E-06	1.85E-06	1.78E-06
91.89	1.40E-06	1.42E-06	1.43E-06	1.43E-06	1.44E-06	1.48E-06	1.53E-06	1.70E-06	1.89E-06	1.95E-06	1.90E-06
103.63	1.65E-06	1.65E-06	1.65E-06	1.67E-06	1.69E-06	1.79E-06	1.82E-06	1.92E-06	2.13E-06	2.16E-06	2.14E-06
116.86	1.83E-06	1.87E-06	1.88E-06	1.90E-06	1.92E-06	1.93E-06	2.04E-06	2.15E-06	2.32E-06	2.33E-06	2.29E-06
131.79	2.08E-06	2.15E-06	2.16E-06	2.17E-06	2.19E-06	2.21E-06	2.28E-06	2.34E-06	2.48E-06	2.59E-06	2.50E-06
148.62	2.42E-06	2.49E-06	2.47E-06	2.48E-06	2.49E-06	2.51E-06	2.53E-06	2.61E-06	2.76E-06	2.74E-06	2.72E-06
167.60	2.60E-06	2.66E-06	2.69E-06	2.70E-06	2.72E-06	2.82E-06	2.75E-06	2.90E-06	3.02E-06	2.93E-06	2.91E-06
189.01	3.00E-06	3.06E-06	3.05E-06	3.07E-06	3.08E-06	3.13E-06	3.12E-06	3.17E-06	3.21E-06	3.25E-06	3.05E-06
213.15	3.40E-06	3.44E-06	3.47E-06	3.45E-06	3.46E-06	3.46E-06	3.47E-06	3.51E-06	3.48E-06	3.45E-06	3.33E-06
240.38	3.62E-06	3.63E-06	3.65E-06	3.66E-06	3.67E-06	3.68E-06	3.70E-06	3.68E-06	3.72E-06	3.70E-06	3.51E-06
271.08	3.91E-06	3.95E-06	3.93E-06	3.94E-06	3.95E-06	3.96E-06	3.96E-06	4.02E-06	3.93E-06	3.89E-06	3.64E-06
305.70	4.24E-06	4.28E-06	4.26E-06	4.28E-06	4.29E-06	4.25E-06	4.28E-06	4.28E-06	4.21E-06	4.14E-06	3.90E-06
344.74	4.42E-06	4.46E-06	4.49E-06	4.50E-06	4.51E-06	4.53E-06	4.55E-06	4.48E-06	4.39E-06	4.31E-06	3.93E-06
388.77	4.62E-06	4.64E-06	4.66E-06	4.67E-06	4.68E-06	4.69E-06	4.69E-06	4.66E-06	4.54E-06	4.37E-06	4.07E-06
438.43	4.78E-06	4.80E-06	4.80E-06	4.80E-06	4.81E-06	4.78E-06	4.79E-06	4.79E-06	4.63E-06	4.45E-06	4.07E-06
494.42	4.88E-06	4.88E-06	4.88E-06	4.88E-06	4.87E-06	4.87E-06	4.84E-06	4.77E-06	4.61E-06	4.42E-06	4.05E-06
557.57	4.80E-06	4.79E-06	4.78E-06	4.77E-06	4.76E-06	4.73E-06	4.73E-06	4.69E-06	4.54E-06	4.41E-06	4.02E-06
628.79	4.70E-06	4.67E-06	4.66E-06	4.65E-06	4.64E-06	4.61E-06	4.58E-06	4.54E-06	4.40E-06	4.24E-06	3.90E-06
709.09	4.51E-06	4.45E-06	4.43E-06	4.41E-06	4.39E-06	4.34E-06	4.33E-06	4.29E-06	4.14E-06	4.06E-06	3.67E-06
799.66	4.27E-06	4.24E-06	4.21E-06	4.18E-06	4.16E-06	4.14E-06	4.13E-06	4.08E-06	3.92E-06	3.74E-06	3.45E-06
901.79	3.96E-06	3.90E-06	3.85E-06	3.81E-06	3.78E-06	3.76E-06	3.73E-06	3.70E-06	3.56E-06	3.46E-06	3.20E-06
1017.00	3.58E-06	3.51E-06	3.47E-06	3.44E-06	3.41E-06	3.37E-06	3.35E-06	3.33E-06	3.22E-06	3.13E-06	2.92E-06
1146.90	3.24E-06	3.20E-06	3.17E-06	3.13E-06	3.10E-06	3.08E-06	3.07E-06	3.04E-06	2.96E-06	2.88E-06	2.69E-06
1293.30	2.87E-06	2.82E-06	2.80E-06	2.79E-06	2.78E-06	2.76E-06	2.74E-06	2.72E-06	2.67E-06	2.61E-06	2.46E-06
1458.50	2.56E-06	2.52E-06	2.50E-06	2.48E-06	2.47E-06	2.46E-06	2.45E-06	2.43E-06	2.39E-06	2.34E-06	2.23E-06
1644.80	2.29E-06	2.27E-06	2.25E-06	2.23E-06	2.20E-06	2.19E-06	2.17E-06	2.16E-06	2.12E-06	2.08E-06	2.00E-06
1854.90	2.03E-06	2.00E-06	1.97E-06	1.94E-06	1.92E-06	1.91E-06	1.90E-06	1.89E-06	1.86E-06	1.83E-06	1.76E-06
2091.80	1.81E-06	1.80E-06	1.78E-06	1.77E-06	1.76E-06	1.75E-06	1.75E-06	1.74E-06	1.71E-06	1.69E-06	1.64E-06
2358.90	1.60E-06	1.59E-06	1.58E-06	1.67E-06	1.56E-06	1.55E-06	1.54E-06	1.53E-06	1.50E-06	1.48E-06	1.43E-06
2660.20	1.37E-06	1.36E-06	1.34E-06	1.32E-06	1.29E-06	1.26E-06	1.24E-06	1.22E-06	1.05E-06	7.66E-07	4.56E-07

TABLE 27 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CA
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 20; ATOMIC-W= 40.08)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

				SHIELD THICKNESS (GM/CM**2)										
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	3.93E-05	3.19E-06	0.20	0.00E+00	0.00E+00	1.53E-06	1.08E-06	8.64E-07	6.12E-07	5.66E-07	6.38E-07	8.48E-07	8.77E-07	8.92E-07
14	3.20E-05	2.78E-06	0.23	0.00E+00	0.00E+00	1.45E-06	1.02E-06	8.15E-07	5.77E-07	5.34E-07	6.01E-07	8.00E-07	8.28E-07	8.41E-07
16	2.60E-05	2.46E-06	0.25	0.00E+00	0.00E+00	1.36E-06	9.57E-07	7.66E-07	5.45E-07	5.02E-07	5.65E-07	7.52E-07	7.78E-07	7.91E-07
18	2.30E-05	2.18E-06	0.29	0.00E+00	0.00E+00	1.28E-06	8.99E-07	7.20E-07	5.12E-07	4.71E-07	5.31E-07	7.06E-07	7.31E-07	7.43E-07
20	2.00E-05	2.03E-06	0.32	0.00E+00	0.00E+00	1.22E-06	8.58E-07	6.88E-07	4.89E-07	4.50E-07	5.07E-07	6.75E-07	6.98E-07	7.10E-07
23	1.85E-05	1.94E-06	0.36	0.00E+00	0.00E+00	1.15E-06	8.10E-07	6.53E-07	4.64E-07	4.28E-07	4.82E-07	6.41E-07	6.63E-07	6.74E-07
26	1.73E-05	1.93E-06	0.41	0.00E+00	0.00E+00	1.08E-06	7.65E-07	6.17E-07	4.39E-07	4.04E-07	4.55E-07	6.05E-07	6.26E-07	6.36E-07
30	1.60E-05	1.93E-06	0.46	0.00E+00	0.00E+00	1.06E-06	7.47E-07	6.02E-07	4.28E-07	3.94E-07	4.44E-07	5.91E-07	6.11E-07	6.21E-07
34	1.55E-05	1.88E-06	0.52	0.00E+00	0.00E+00	1.02E-06	7.23E-07	5.83E-07	4.14E-07	3.82E-07	4.30E-07	5.72E-07	5.92E-07	6.01E-07
40	1.50E-05	1.96E-06	0.59	0.00E+00	0.00E+00	1.00E-06	7.06E-07	5.68E-07	4.04E-07	3.72E-07	4.19E-07	5.58E-07	5.77E-07	5.87E-07
46	1.50E-05	2.08E-06	0.67	0.00E+00	0.00E+00	9.70E-07	6.89E-07	5.54E-07	3.95E-07	3.63E-07	4.09E-07	5.44E-07	5.63E-07	5.73E-07
50	1.50E-05	2.16E-06	0.75	0.00E+00	0.00E+00	9.54E-07	6.80E-07	5.47E-07	3.90E-07	3.60E-07	4.04E-07	5.37E-07	5.56E-07	5.65E-07
54	1.54E-05	2.24E-06	0.85	0.00E+00	0.00E+00	9.43E-07	6.70E-07	5.41E-07	3.85E-07	3.58E-07	3.99E-07	5.31E-07	5.50E-07	5.59E-07
60	1.60E-05	2.42E-06	0.95	0.00E+00	0.00E+00	9.37E-07	6.64E-07	5.38E-07	3.93E-07	3.55E-07	3.98E-07	5.28E-07	5.46E-07	5.55E-07
64	1.64E-05	2.53E-06	1.08	0.00E+00	0.00E+00	9.25E-07	6.62E-07	5.36E-07	3.81E-07	3.54E-07	4.00E-07	5.26E-07	5.44E-07	5.53E-07
70	1.70E-05	2.75E-06	1.21	0.00E+00	7.90E-08	9.27E-07	6.63E-07	5.37E-07	3.82E-07	3.55E-07	4.00E-07	5.27E-07	5.45E-07	5.54E-07
76	1.76E-05	2.98E-06	1.37	0.00E+00	2.12E-07	9.30E-07	6.66E-07	5.40E-07	3.85E-07	3.57E-07	4.03E-07	5.31E-07	5.49E-07	5.58E-07
80	1.80E-05	3.13E-06	1.54	0.00E+00	5.04E-07	9.34E-07	6.71E-07	5.45E-07	3.89E-07	3.61E-07	4.07E-07	5.36E-07	5.55E-07	5.64E-07
90	1.90E-05	3.51E-06	1.74	0.00E+00	6.40E-07	9.42E-07	6.78E-07	5.50E-07	3.92E-07	3.64E-07	4.11E-07	5.42E-07	5.60E-07	5.69E-07
91	1.91E-05	3.55E-06	1.96	0.00E+00	9.92E-07	9.50E-07	6.89E-07	5.60E-07	3.99E-07	3.71E-07	4.18E-07	5.56E-07	5.70E-07	5.79E-07
100	2.00E-05	3.88E-06	2.21	0.00E+00	1.35E-06	9.64E-07	7.02E-07	5.72E-07	4.08E-07	3.79E-07	4.27E-07	5.68E-07	5.82E-07	5.92E-07
109	2.11E-05	4.22E-06	2.50	0.00E+00	1.62E-06	9.44E-07	7.20E-07	5.87E-07	4.19E-07	3.89E-07	4.39E-07	5.83E-07	5.98E-07	6.08E-07
133	2.38E-05	5.42E-06	2.81	0.00E+00	1.86E-06	9.24E-07	7.40E-07	6.04E-07	4.33E-07	4.00E-07	4.51E-07	6.00E-07	6.15E-07	6.25E-07
162	2.70E-05	6.72E-06	3.17	0.00E+00	1.99E-06	9.44E-07	7.61E-07	6.21E-07	4.46E-07	4.12E-07	4.65E-07	6.18E-07	6.33E-07	6.44E-07
200	3.07E-05	8.19E-06	3.58	0.00E+00	1.92E-06	9.69E-07	7.88E-07	6.45E-07	4.63E-07	4.28E-07	4.82E-07	6.41E-07	6.57E-07	6.68E-07
249	3.24E-05	9.75E-06	4.04	0.00E+00	1.57E-06	9.97E-07	8.25E-07	6.74E-07	4.84E-07	4.48E-07	5.05E-07	6.71E-07	6.88E-07	6.99E-07
300	3.40E-05	1.08E-05	4.55	0.00E+00	1.54E-06	1.03E-06	7.99E-07	7.04E-07	5.08E-07	4.69E-07	5.28E-07	7.01E-07	7.19E-07	7.31E-07
313	3.40E-05	1.11E-05	5.13	0.00E+00	1.60E-06	1.06E-06	8.25E-07	7.37E-07	5.34E-07	4.95E-07	5.54E-07	7.35E-07	7.54E-07	7.67E-07
397	3.40E-05	1.23E-05	5.79	0.00E+00	1.66E-06	1.11E-06	8.66E-07	7.76E-07	5.63E-07	5.22E-07	5.84E-07	7.76E-07	7.96E-07	8.09E-07
400	3.40E-05	1.23E-05	6.53	0.00E+00	1.65E-06	1.12E-06	9.06E-07	8.03E-07	5.55E-07	5.49E-07	6.14E-07	8.16E-07	8.37E-07	8.51E-07
500	3.25E-05	1.28E-05	7.36	0.00E+00	1.60E-06	1.12E-06	9.75E-07	7.90E-07	5.86E-07	5.95E-07	6.69E-07	8.82E-07	9.04E-07	9.19E-07
509	3.22E-05	1.28E-05	8.30	2.25E-07	1.62E-06	1.15E-06	1.01E-06	8.20E-07	6.12E-07	6.24E-07	6.99E-07	9.19E-07	9.43E-07	9.58E-07
600	2.96E-05	1.24E-05	9.36	2.71E-06	1.57E-06	1.22E-06	1.05E-06	8.74E-07	6.59E-07	6.71E-07	7.51E-07	9.87E-07	1.01E-06	1.03E-06
660	2.80E-05	1.22E-05	10.56	2.55E-06	1.55E-06	1.23E-06	1.06E-06	9.24E-07	7.01E-07	7.15E-07	7.96E-07	1.05E-06	1.07E-06	1.09E-06
700	2.70E-05	1.19E-05	11.91	2.26E-06	1.53E-06	1.26E-06	1.14E-06	9.99E-07	7.61E-07	7.76E-07	8.64E-07	1.13E-06	1.16E-06	1.18E-06
800	2.42E-05	1.11E-05	13.43	2.10E-06	1.52E-06	1.35E-06	1.22E-06	1.03E-06	8.26E-07	8.44E-07	9.37E-07	1.22E-06	1.25E-06	1.23E-06
865	2.24E-05	1.07E-05	15.15	1.92E-06	1.53E-06	1.33E-06	1.18E-06	1.08E-06	9.02E-07	9.23E-07	1.02E-06	1.28E-06	1.35E-06	1.31E-06
900	2.15E-05	1.04E-05	17.08	1.82E-06	1.58E-06	1.43E-06	1.26E-06	1.17E-06	9.85E-07	1.01E-06	[illegible]	1.34E-06	1.47E-06	1.42E-06
1000	1.92E-05	9.49E-06	19.26	1.77E-06	1.59E-06	1.40E-06	1.30E-06	1.22E-06	1.11E-06	1.14E-06	1.24E-06	1.48E-06	1.62E-06	1.57E-06
1147	1.60E-05	8.46E-06	21.72	1.77E-06	1.59E-06	1.46E-06	1.37E-06	1.29E-06	1.14E-06	1.13E-06	1.27E-06	1.57E-06	1.73E-06	1.67E-06
1545	1.06E-05	6.32E-06	24.49	1.73E-06	1.58E-06	1.49E-06	1.45E-06	1.37E-06	1.20E-06	1.23E-06	1.33E-06	1.71E-06	1.88E-06	1.81E-06
2000	7.49E-06	4.87E-06	27.62	1.67E-06	1.65E-06	1.57E-06	1.56E-06	1.47E-06	1.36E-06	1.39E-06	1.48E-06	1.90E-06	2.07E-06	2.00E-06
2120	6.83E-06	4.59E-06	31.15	1.75E-06	1.65E-06	1.64E-06	1.56E-06	1.56E-06	1.50E-06	1.52E-06	1.60E-06	2.04E-06	2.23E-06	2.14E-06
2977	3.97E-06	3.25E-06	35.13	1.79E-06	1.76E-06	1.78E-06	1.70E-06	1.71E-06	1.60E-06	1.75E-06	1.82E-06	2.30E-06	2.50E-06	2.39E-06

TABLE 28 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CA
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 20; ATOMIC-W= 40.08)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.91E-06	1.88E-06	1.85E-06	1.83E-06	1.77E-06	1.81E-06	1.85E-06	2.04E-06	2.52E-06	2.73E-06	2.62E-06
44.68	2.01E-06	2.00E-06	1.92E-06	1.93E-06	1.97E-06	1.99E-06	2.01E-06	2.26E-06	2.74E-06	2.95E-06	2.83E-06
50.38	2.11E-06	2.16E-06	2.09E-06	2.07E-06	2.11E-06	2.17E-06	2.32E-06	2.43E-06	3.05E-06	3.26E-06	3.11E-06
56.82	2.33E-06	2.30E-06	2.35E-06	2.34E-06	2.39E-06	2.47E-06	2.49E-06	2.76E-06	3.43E-06	3.64E-06	3.46E-06
64.07	2.57E-06	2.59E-06	2.62E-06	2.61E-06	2.59E-06	2.77E-06	2.87E-06	3.13E-06	3.78E-06	3.99E-06	3.77E-06
72.26	2.93E-06	2.94E-06	2.86E-06	2.90E-06	2.94E-06	3.01E-06	3.06E-06	3.45E-06	4.20E-06	4.11E-06	4.13E-06
81.49	3.26E-06	3.27E-06	3.20E-06	3.24E-06	3.31E-06	3.39E-06	3.47E-06	3.85E-06	4.38E-06	4.52E-06	4.51E-06
91.89	3.57E-06	3.62E-06	3.63E-06	3.66E-06	3.68E-06	3.80E-06	3.97E-06	4.37E-06	4.82E-06	4.97E-06	4.92E-06
103.63	4.21E-06	4.22E-06	4.22E-06	4.27E-06	4.33E-06	4.64E-06	4.67E-06	5.01E-06	5.57E-06	5.64E-06	5.51E-06
116.86	4.71E-06	4.77E-06	4.81E-06	4.86E-06	4.93E-06	4.97E-06	5.17E-06	5.42E-06	6.02E-06	6.09E-06	5.89E-06
131.79	5.31E-06	5.49E-06	5.53E-06	5.57E-06	5.63E-06	5.64E-06	5.83E-06	6.09E-06	6.36E-06	6.47E-06	6.42E-06
148.62	6.19E-06	6.33E-06	6.31E-06	6.34E-06	6.33E-06	6.37E-06	6.51E-06	6.61E-06	7.16E-06	7.01E-06	6.76E-06
167.60	6.67E-06	6.82E-06	6.88E-06	6.91E-06	6.95E-06	7.22E-06	7.02E-06	7.49E-06	7.45E-06	7.58E-06	7.14E-06
189.01	7.69E-06	7.84E-06	7.81E-06	7.84E-06	7.87E-06	8.02E-06	8.00E-06	8.17E-06	8.31E-06	8.17E-06	7.82E-06
213.15	8.71E-06	8.82E-06	8.87E-06	8.82E-06	8.78E-06	8.88E-06	8.89E-06	9.02E-06	8.85E-06	8.92E-06	8.52E-06
240.38	9.27E-06	9.29E-06	9.32E-06	9.35E-06	9.38E-06	9.42E-06	9.47E-06	9.45E-06	9.51E-06	9.42E-06	8.70E-06
271.08	1.00E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.02E-05	1.03E-05	1.01E-05	9.98E-06	9.31E-06
305.70	1.08E-05	1.09E-05	1.09E-05	1.09E-05	1.10E-05	1.09E-05	1.09E-05	1.09E-05	1.07E-05	1.05E-05	9.76E-06
344.74	1.13E-05	1.14E-05	1.15E-05	1.15E-05	1.15E-05	1.16E-05	1.15E-05	1.14E-05	1.12E-05	1.10E-05	9.93E-06
388.77	1.18E-05	1.19E-05	1.19E-05	1.19E-05	1.20E-05	1.20E-05	1.20E-05	1.18E-05	1.16E-05	1.12E-05	1.01E-05
438.43	1.22E-05	1.23E-05	1.23E-05	1.23E-05	1.23E-05	1.22E-05	1.22E-05	1.21E-05	1.18E-05	1.13E-05	1.04E-05
494.42	1.25E-05	1.25E-05	1.25E-05	1.25E-05	1.25E-05	1.24E-05	1.24E-05	1.20E-05	1.17E-05	1.12E-05	1.03E-05
557.57	1.23E-05	1.22E-05	1.22E-05	1.22E-05	1.22E-05	1.21E-05	1.21E-05	1.20E-05	1.15E-05	1.12E-05	1.02E-05
628.79	1.20E-05	1.19E-05	1.19E-05	1.19E-05	1.18E-05	1.18E-05	1.17E-05	1.16E-05	1.12E-05	1.07E-05	9.87E-06
709.09	1.15E-05	1.14E-05	1.13E-05	1.13E-05	1.12E-05	1.11E-05	1.11E-05	1.10E-05	1.06E-05	1.03E-05	9.27E-06
799.66	1.09E-05	1.08E-05	1.08E-05	1.07E-05	1.06E-05	1.06E-05	1.05E-05	1.04E-05	9.94E-06	9.53E-06	8.65E-06
901.79	1.01E-05	9.96E-06	9.83E-06	9.74E-06	9.65E-06	9.60E-06	9.53E-06	9.43E-06	9.05E-06	8.80E-06	8.04E-06
1017.00	9.15E-06	8.95E-06	8.84E-06	8.75E-06	8.68E-06	8.61E-06	8.57E-06	8.51E-06	8.22E-06	7.97E-06	7.38E-06
1146.90	8.28E-06	8.18E-06	8.08E-06	7.98E-06	7.91E-06	7.86E-06	7.83E-06	7.75E-06	7.54E-06	7.33E-06	6.82E-06
1293.30	7.34E-06	7.21E-06	7.16E-06	7.13E-06	7.10E-06	7.05E-06	7.01E-06	6.96E-06	6.82E-06	6.64E-06	6.23E-06
1458.50	6.55E-06	6.44E-06	6.39E-06	6.35E-06	6.32E-06	6.28E-06	6.26E-06	6.20E-06	6.08E-06	5.96E-06	5.63E-06
1644.80	5.86E-06	5.80E-06	5.74E-06	5.69E-06	5.63E-06	5.58E-06	5.55E-06	5.51E-06	5.41E-06	5.31E-06	5.06E-06
1854.90	5.19E-06	5.11E-06	5.03E-06	4.97E-06	4.91E-06	4.87E-06	4.85E-06	4.82E-06	4.75E-06	4.66E-06	4.49E-06
2091.80	4.62E-06	4.59E-06	4.56E-06	4.53E-06	4.50E-06	4.48E-06	4.46E-06	4.43E-06	4.37E-06	4.30E-06	4.15E-06
2358.90	4.09E-06	4.07E-06	4.04E-06	4.01E-06	3.98E-06	3.95E-06	3.93E-06	3.90E-06	3.84E-06	3.78E-06	3.63E-06
2660.20	3.50E-06	3.47E-06	3.42E-06	3.37E-06	3.30E-06	3.23E-06	3.17E-06	3.12E-06	2.68E-06	1.94E-06	1.14E-06

TABLE 28 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: SC
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 21; ATOMIC-W= 44.96)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY | DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	9.39E-06	7.62E-07	0.20	0.00E+00	0.00E+00	3.90E-07	2.74E-07	2.17E-07	1.53E-07	1.41E-07	1.59E-07	2.12E-07	2.20E-07	2.24E-07
14	7.66E-06	6.65E-07	0.23	0.00E+00	0.00E+00	3.68E-07	2.59E-07	2.05E-07	1.44E-07	1.33E-07	1.50E-07	2.00E-07	2.07E-07	2.11E-07
16	6.42E-06	5.98E-07	0.25	0.00E+00	0.00E+00	3.46E-07	2.43E-07	1.92E-07	1.36E-07	1.25E-07	1.41E-07	1.88E-07	1.95E-07	1.99E-07
18	5.49E-06	5.22E-07	0.29	0.00E+00	0.00E+00	3.25E-07	2.28E-07	1.81E-07	1.27E-07	1.18E-07	1.32E-07	1.76E-07	1.83E-07	1.86E-07
20	4.78E-06	4.84E-07	0.32	0.00E+00	0.00E+00	3.10E-07	2.18E-07	1.73E-07	1.22E-07	1.12E-07	1.26E-07	1.68E-07	1.75E-07	1.78E-07
23	4.42E-06	4.64E-07	0.36	0.00E+00	0.00E+00	2.94E-07	2.06E-07	1.64E-07	1.15E-07	1.07E-07	1.20E-07	1.60E-07	1.66E-07	1.69E-07
26	4.13E-06	4.62E-07	0.41	0.00E+00	0.00E+00	2.77E-07	1.94E-07	1.54E-07	1.09E-07	1.01E-07	1.13E-07	1.51E-07	1.56E-07	1.59E-07
30	3.82E-06	4.38E-07	0.46	0.00E+00	0.00E+00	2.68E-07	1.89E-07	1.51E-07	1.06E-07	9.82E-08	1.10E-07	1.47E-07	1.53E-07	1.56E-07
34	3.72E-06	4.49E-07	0.52	0.00E+00	0.00E+00	2.60E-07	1.83E-07	1.46E-07	1.03E-07	9.49E-08	1.07E-07	1.42E-07	1.47E-07	1.50E-07
40	3.58E-06	4.68E-07	0.59	0.00E+00	0.00E+00	2.53E-07	1.78E-07	1.42E-07	1.00E-07	9.26E-08	1.04E-07	1.39E-07	1.44E-07	1.47E-07
46	3.58E-06	4.98E-07	0.67	0.00E+00	0.00E+00	2.47E-07	1.74E-07	1.38E-07	9.77E-08	9.02E-08	1.01E-07	1.35E-07	1.40E-07	1.43E-07
50	3.58E-06	5.18E-07	0.75	0.00E+00	0.00E+00	2.43E-07	1.71E-07	1.36E-07	9.63E-08	8.90E-08	1.00E-07	1.33E-07	1.38E-07	1.41E-07
54	3.68E-06	5.37E-07	0.85	0.00E+00	0.00E+00	2.38E-07	1.68E-07	1.35E-07	9.51E-08	8.79E-08	9.88E-08	1.32E-07	1.36E-07	1.39E-07
60	3.82E-06	5.78E-07	0.95	0.00E+00	0.00E+00	2.36E-07	1.67E-07	1.34E-07	9.44E-08	8.72E-08	9.81E-08	1.31E-07	1.36E-07	1.38E-07
64	3.92E-06	6.04E-07	1.08	0.00E+00	0.00E+00	2.35E-07	1.66E-07	1.33E-07	9.40E-08	8.68E-08	9.76E-08	1.30E-07	1.35E-07	1.38E-07
70	4.06E-06	6.59E-07	1.21	0.00E+00	0.00E+00	2.33E-07	1.66E-07	1.33E-07	9.43E-08	8.69E-08	9.77E-08	1.30E-07	1.35E-07	1.38E-07
76	4.21E-06	7.13E-07	1.37	0.00E+00	0.00E+00	2.34E-07	1.66E-07	1.34E-07	9.50E-08	8.73E-08	9.82E-08	1.31E-07	1.36E-07	1.38E-07
80	4.30E-06	7.49E-07	1.54	0.00E+00	0.00E+00	2.35E-07	1.67E-07	1.35E-07	9.58E-08	8.86E-08	9.90E-08	1.32E-07	1.37E-07	1.40E-07
90	4.54E-06	8.40E-07	1.74	0.00E+00	6.68E-09	2.36E-07	1.69E-07	1.36E-07	9.67E-08	8.96E-08	9.99E-08	1.33E-07	1.38E-07	1.41E-07
91	4.56E-06	8.49E-07	1.96	0.00E+00	5.29E-08	2.38E-07	1.71E-07	1.38E-07	9.83E-08	9.10E-08	1.02E-07	1.35E-07	1.40E-07	1.43E-07
100	4.78E-06	9.29E-07	2.21	0.00E+00	1.76E-07	2.42E-07	1.74E-07	1.41E-07	1.00E-07	9.29E-08	1.04E-07	1.38E-07	1.43E-07	1.46E-07
109	5.04E-06	1.01E-06	2.50	0.00E+00	2.63E-07	2.46E-07	1.78E-07	1.45E-07	1.03E-07	9.52E-08	1.07E-07	1.41E-07	1.47E-07	1.50E-07
133	5.70E-06	1.29E-06	2.81	0.00E+00	3.76E-07	2.50E-07	1.82E-07	1.48E-07	1.06E-07	9.78E-08	1.10E-07	1.45E-07	1.51E-07	1.54E-07
162	6.44E-06	1.61E-06	3.17	0.00E+00	4.53E-07	2.50E-07	1.87E-07	1.53E-07	1.09E-07	1.01E-07	1.13E-07	1.49E-07	1.55E-07	1.58E-07
200	7.34E-06	1.96E-06	3.58	0.00E+00	5.02E-07	2.40E-07	1.93E-07	1.58E-07	1.13E-07	1.04E-07	1.17E-07	1.55E-07	1.61E-07	1.64E-07
247	7.75E-06	2.33E-06	4.04	0.00E+00	4.71E-07	2.48E-07	2.01E-07	1.65E-07	1.18E-07	1.09E-07	1.23E-07	1.62E-07	1.68E-07	1.71E-07
300	8.12E-06	2.59E-06	4.55	0.00E+00	3.82E-07	2.54E-07	2.10E-07	1.72E-07	1.23E-07	1.14E-07	1.28E-07	1.69E-07	1.75E-07	1.79E-07
313	8.12E-06	2.66E-06	5.13	0.00E+00	3.89E-07	2.62E-07	2.08E-07	1.80E-07	1.29E-07	1.19E-07	1.34E-07	1.78E-07	1.83E-07	1.87E-07
397	8.12E-06	2.94E-06	5.79	0.00E+00	4.05E-07	2.71E-07	2.11E-07	1.89E-07	1.37E-07	1.26E-07	1.41E-07	1.88E-07	1.93E-07	1.97E-07
400	8.12E-06	2.95E-06	6.53	0.00E+00	4.17E-07	2.81E-07	2.21E-07	1.98E-07	1.44E-07	1.33E-07	1.48E-07	1.97E-07	2.03E-07	2.07E-07
500	7.76E-06	3.06E-06	7.36	0.00E+00	3.90E-07	2.73E-07	2.36E-07	1.98E-07	1.56E-07	1.43E-07	1.60E-07	2.13E-07	2.19E-07	2.23E-07
509	7.65E-06	3.07E-06	8.30	3.37E-08	3.96E-07	2.80E-07	2.46E-07	2.00E-07	1.57E-07	1.50E-07	1.67E-07	2.22E-07	2.28E-07	2.32E-07
600	7.07E-06	2.97E-06	9.36	6.34E-07	3.86E-07	2.95E-07	2.63E-07	2.12E-07	1.59E-07	1.61E-07	1.80E-07	2.38E-07	2.44E-07	2.49E-07
660	6.69E-06	2.92E-06	10.56	6.21E-07	3.75E-07	3.04E-07	2.58E-07	2.23E-07	1.69E-07	1.71E-07	1.91E-07	2.52E-07	2.59E-07	2.64E-07
700	6.47E-06	2.84E-06	11.91	5.49E-07	3.78E-07	3.03E-07	2.74E-07	2.41E-07	1.83E-07	1.86E-07	2.06E-07	2.71E-07	2.79E-07	2.84E-07
800	5.79E-06	2.66E-06	13.43	5.06E-07	3.67E-07	3.24E-07	2.94E-07	2.52E-07	1.98E-07	2.02E-07	2.24E-07	2.92E-07	3.00E-07	3.06E-07
865	5.35E-06	2.57E-06	15.15	4.63E-07	3.72E-07	3.24E-07	2.88E-07	2.59E-07	2.16E-07	2.20E-07	2.42E-07	3.16E-07	3.25E-07	3.31E-07
900	5.13E-06	2.48E-06	17.08	4.36E-07	3.79E-07	3.44E-07	3.03E-07	2.81E-07	2.36E-07	2.41E-07	2.65E-07	3.44E-07	3.51E-07	3.58E-07
1000	4.60E-06	2.27E-06	19.26	4.25E-07	3.82E-07	3.36E-07	3.13E-07	2.92E-07	2.66E-07	2.71E-07	2.95E-07	3.81E-07	3.88E-07	3.97E-07
1147	3.82E-06	2.02E-06	21.72	4.24E-07	3.80E-07	3.49E-07	3.29E-07	3.09E-07	2.79E-07	2.85E-07	3.15E-07	4.04E-07	4.14E-07	4.21E-07
1545	2.55E-06	1.51E-06	24.49	4.18E-07	3.78E-07	3.57E-07	3.46E-07	3.33E-07	2.87E-07	2.93E-07	3.30E-07	4.24E-07	4.49E-07	4.57E-07
2000	1.79E-06	1.17E-06	27.62	4.00E-07	3.94E-07	3.75E-07	.74E-07	3.51E-07	3.24E-07	3.30E-07	3.52E-07	4.52E-07	4.95E-07	5.03E-07
2120	1.63E-06	1.10E-06	31.15	4.19E-07	3.99E-07	3.93E-07	3.74E-07	3.77E-07	3.56E-07	3.61E-07	3.80E-07	4.86E-07	5.31E-07	5.40E-07
2977	9.50E-07	7.77E-07	35.13	4.29E-07	4.22E-07	4.26E-07	4.11E-07	4.09E-07	3.83E-07	4.17E-07	4.32E-07	5.45E-07	5.95E-07	6.01E-07

ORIGINAL PAGE IS OF POOR QUALITY

TABLE 29 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: SC
MODEL= PARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 21; ATOMIC-W= 44.96)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	4.56E-07	4.49E-07	4.44E-07	4.42E-07	4.33E-07	4.30E-07	4.46E-07	4.83E-07	5.99E-07	6.50E-07	6.25E-07
44.68	4.80E-07	4.78E-07	4.59E-07	4.61E-07	4.71E-07	4.81E-07	4.78E-07	5.34E-07	6.51E-07	7.04E-07	6.74E-07
50.38	5.06E-07	5.16E-07	4.98E-07	4.95E-07	5.08E-07	5.19E-07	5.52E-07	6.05E-07	7.24E-07	7.77E-07	7.41E-07
56.82	5.58E-07	5.50E-07	5.61E-07	5.59E-07	5.69E-07	5.88E-07	5.94E-07	6.55E-07	8.15E-07	8.67E-07	8.26E-07
64.07	6.15E-07	6.19E-07	6.27E-07	6.24E-07	6.20E-07	6.62E-07	6.82E-07	7.45E-07	8.98E-07	9.49E-07	8.98E-07
72.26	7.00E-07	7.04E-07	6.83E-07	6.93E-07	7.02E-07	7.15E-07	7.37E-07	8.19E-07	1.00E-06	1.01E-06	9.86E-07
81.49	7.79E-07	7.83E-07	7.66E-07	7.75E-07	7.91E-07	8.07E-07	8.53E-07	9.15E-07	1.07E-06	1.07E-06	1.08E-06
91.89	8.53E-07	8.66E-07	8.68E-07	8.76E-07	8.79E-07	9.15E-07	9.45E-07	1.05E-06	1.15E-06	1.18E-06	1.17E-06
103.63	1.02E-06	1.01E-06	1.01E-06	1.02E-06	1.04E-06	1.11E-06	1.11E-06	1.19E-06	1.32E-06	1.34E-06	1.32E-06
116.86	1.13E-06	1.14E-06	1.15E-06	1.16E-06	1.18E-06	1.18E-06	1.23E-06	1.30E-06	1.44E-06	1.45E-06	1.41E-06
131.79	1.27E-06	1.31E-06	1.32E-06	1.33E-06	1.34E-06	1.36E-06	1.39E-06	1.45E-06	1.52E-06	1.59E-06	1.53E-06
148.62	1.48E-06	1.51E-06	1.51E-06	1.52E-06	1.51E-06	1.52E-06	1.56E-06	1.59E-06	1.71E-06	1.67E-06	1.64E-06
167.60	1.60E-06	1.63E-06	1.64E-06	1.65E-06	1.66E-06	1.73E-06	1.68E-06	1.78E-06	1.77E-06	1.81E-06	1.71E-06
189.01	1.83E-06	1.87E-06	1.87E-06	1.87E-06	1.88E-06	1.91E-06	1.91E-06	1.95E-06	1.98E-06	1.95E-06	1.87E-06
213.15	2.08E-06	2.11E-06	2.12E-06	2.11E-06	2.10E-06	2.12E-06	2.12E-06	2.15E-06	2.11E-06	2.13E-06	2.04E-06
240.38	2.22E-06	2.22E-06	2.23E-06	2.24E-06	2.24E-06	2.25E-06	2.26E-06	2.26E-06	2.27E-06	2.25E-06	2.12E-06
271.08	2.39E-06	2.41E-06	2.40E-06	2.41E-06	2.42E-06	2.42E-06	2.42E-06	2.46E-06	2.41E-06	2.38E-06	2.23E-06
305.70	2.59E-06	2.61E-06	2.60E-06	2.61E-06	2.62E-06	2.60E-06	2.62E-06	2.60E-06	2.58E-06	2.51E-06	2.33E-06
344.74	2.70E-06	2.73E-06	2.74E-06	2.75E-06	2.76E-06	2.77E-06	2.76E-06	2.72E-06	2.67E-06	2.64E-06	2.38E-06
388.77	2.82E-06	2.84E-06	2.85E-06	2.85E-06	2.86E-06	2.86E-06	2.87E-06	2.82E-06	2.78E-06	2.67E-06	2.46E-06
438.43	2.92E-06	2.93E-06	2.93E-06	2.94E-06	2.94E-06	2.92E-06	2.93E-06	2.90E-06	2.83E-06	2.70E-06	2.48E-06
494.42	2.98E-06	2.98E-06	2.98E-06	2.98E-06	2.98E-06	2.97E-06	2.95E-06	2.88E-06	2.82E-06	2.68E-06	2.46E-06
557.57	2.93E-06	2.92E-06	2.92E-06	2.91E-06	2.91E-06	2.89E-06	2.89E-06	2.87E-06	2.77E-06	2.67E-06	2.43E-06
628.79	2.87E-06	2.85E-06	2.85E-06	2.84E-06	2.83E-06	2.81E-06	2.80E-06	2.77E-06	2.67E-06	2.58E-06	2.36E-06
709.09	2.76E-06	2.72E-06	2.71E-06	2.69E-06	2.68E-06	2.65E-06	2.65E-06	2.62E-06	2.53E-06	2.46E-06	2.22E-06
799.66	2.61E-06	2.59E-06	2.57E-06	2.55E-06	2.54E-06	2.53E-06	2.52E-06	2.49E-06	2.38E-06	2.28E-06	2.09E-06
901.76	2.42E-06	2.38E-06	2.36E-06	2.33E-06	2.31E-06	2.30E-06	2.28E-06	2.26E-06	2.17E-06	2.11E-06	1.93E-06
1017.00	2.19E-06	2.14E-06	2.12E-06	2.10E-06	2.08E-06	2.06E-06	2.05E-06	2.03E-06	1.97E-06	1.91E-06	1.77E-06
1146.90	1.98E-06	1.96E-06	1.94E-06	1.91E-06	1.89E-06	1.88E-06	1.87E-06	1.85E-06	1.80E-06	1.75E-06	1.64E-06
1293.30	1.76E-06	1.72E-06	1.71E-06	1.70E-06	1.70E-06	1.69E-06	1.68E-06	1.66E-06	1.63E-06	1.59E-06	1.49E-06
1458.50	1.57E-06	1.54E-06	1.53E-06	1.52E-06	1.51E-06	1.50E-06	1.50E-06	1.48E-06	1.46E-06	1.43E-06	1.35E-06
1644.80	1.40E-06	1.39E-06	1.37E-06	1.36E-06	1.35E-06	1.34E-06	1.33E-06	1.32E-06	1.30E-06	1.27E-06	1.21E-06
1854.90	1.24E-06	1.22E-06	1.20E-06	1.19E-06	1.18E-06	1.17E-06	1.16E-06	1.15E-06	1.14E-06	1.12E-06	1.07E-06
2091.80	1.10E-06	1.10E-06	1.09E-06	1.08E-06	1.08E-06	1.07E-06	1.07E-06	1.06E-06	1.05E-06	1.03E-06	9.95E-07
2358.90	9.79E-07	9.73E-07	9.66E-07	9.59E-07	9.52E-07	9.45E-07	9.40E-07	9.32E-07	9.18E-07	9.04E-07	8.70E-07
2660.20	8.38E-07	8.29E-07	8.19E-07	8.06E-07	7.90E-07	7.71E-07	7.58E-07	7.47E-07	6.41E-07	4.66E-07	2.74E-07

TABLE 29 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: II
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.9723
(ATOMIC-NUM= 22; ATOMIC-W= 47.90)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	2.65E-05	2.15E-06	0.20	0.00E+00	0.00E+00	1.14E-06	8.00E-07	6.39E-07	4.55E-07	4.25E-07	4.80E-07	6.38E-07	6.54E-07	6.34E-07
14	2.16E-05	1.87E-06	0.23	0.00E+00	0.00E+00	1.08E-06	7.54E-07	6.02E-07	4.29E-07	4.01E-07	4.53E-07	6.02E-07	6.17E-07	5.98E-07
16	1.81E-05	1.66E-06	0.25	0.00E+00	0.00E+00	1.01E-06	7.09E-07	5.66E-07	4.03E-07	3.77E-07	4.26E-07	5.66E-07	5.80E-07	5.62E-07
18	1.55E-05	1.47E-06	0.29	0.00E+00	0.00E+00	9.45E-07	6.66E-07	5.32E-07	3.79E-07	3.54E-07	4.00E-07	5.31E-07	5.45E-07	5.28E-07
20	1.35E-05	1.37E-06	0.32	0.00E+00	0.00E+00	9.02E-07	6.36E-07	5.08E-07	3.62E-07	3.38E-07	3.82E-07	5.08E-07	5.20E-07	5.04E-07
23	1.25E-05	1.31E-06	0.36	0.00E+00	0.00E+00	8.55E-07	6.03E-07	4.81E-07	3.44E-07	3.20E-07	3.62E-07	4.81E-07	4.93E-07	4.78E-07
26	1.17E-05	1.30E-06	0.41	0.00E+00	0.00E+00	8.06E-07	5.65E-07	4.54E-07	3.25E-07	3.02E-07	3.41E-07	4.53E-07	4.65E-07	4.51E-07
30	1.08E-05	1.23E-06	0.46	0.00E+00	0.00E+00	7.86E-07	5.50E-07	4.42E-07	3.17E-07	2.95E-07	3.33E-07	4.42E-07	4.54E-07	4.40E-07
34	1.05E-05	1.26E-06	0.52	0.00E+00	0.00E+00	7.54E-07	5.31E-07	4.27E-07	3.06E-07	2.85E-07	3.21E-07	4.27E-07	4.38E-07	4.25E-07
40	1.01E-05	1.32E-06	0.59	0.00E+00	0.00E+00	7.33E-07	5.18E-07	4.16E-07	2.98E-07	2.77E-07	3.13E-07	4.16E-07	4.27E-07	4.14E-07
46	1.01E-05	1.40E-06	0.67	0.00E+00	0.00E+00	7.13E-07	5.04E-07	4.05E-07	2.90E-07	2.70E-07	3.05E-07	4.05E-07	4.16E-07	4.03E-07
50	1.01E-05	1.46E-06	0.75	0.00E+00	0.00E+00	7.03E-07	4.97E-07	3.99E-07	2.86E-07	2.66E-07	3.01E-07	3.99E-07	4.10E-07	3.97E-07
54	1.04E-05	1.51E-06	0.85	0.00E+00	0.00E+00	6.90E-07	4.90E-07	3.94E-07	2.82E-07	2.62E-07	2.96E-07	3.94E-07	4.04E-07	3.92E-07
60	1.08E-05	1.63E-06	0.95	0.00E+00	0.00E+00	6.81E-07	4.84E-07	3.91E-07	2.80E-07	2.60E-07	2.94E-07	3.91E-07	4.01E-07	3.88E-07
64	1.10E-05	1.70E-06	1.08	0.00E+00	0.00E+00	6.77E-07	4.80E-07	3.88E-07	2.78E-07	2.59E-07	2.92E-07	3.88E-07	3.98E-07	3.86E-07
70	1.14E-05	1.86E-06	1.21	0.00E+00	0.00E+00	6.73E-07	4.80E-07	3.88E-07	2.78E-07	2.59E-07	2.92E-07	3.88E-07	3.98E-07	3.86E-07
76	1.19E-05	2.01E-06	1.37	0.00E+00	0.00E+00	6.73E-07	4.81E-07	3.89E-07	2.79E-07	2.60E-07	2.93E-07	3.90E-07	4.00E-07	3.87E-07
80	1.21E-05	2.11E-06	1.54	0.00E+00	0.00E+00	6.73E-07	4.83E-07	3.92E-07	2.81E-07	2.62E-07	2.95E-07	3.93E-07	4.03E-07	3.90E-07
90	1.28E-05	2.37E-06	1.74	0.00E+00	1.15E-07	6.77E-07	4.87E-07	3.95E-07	2.83E-07	2.64E-07	2.98E-07	3.96E-07	4.06E-07	3.93E-07
91	1.29E-05	2.39E-06	1.96	0.00E+00	3.66E-07	6.82E-07	4.93E-07	4.01E-07	2.88E-07	2.68E-07	3.02E-07	4.02E-07	4.12E-07	3.99E-07
100	1.35E-05	2.62E-06	2.21	0.00E+00	6.27E-07	6.91E-07	5.01E-07	4.08E-07	2.93E-07	2.73E-07	3.08E-07	4.09E-07	4.20E-07	4.07E-07
109	1.42E-05	2.84E-06	2.50	0.00E+00	9.54E-07	7.02E-07	5.11E-07	4.18E-07	3.01E-07	2.79E-07	3.15E-07	4.19E-07	4.30E-07	4.16E-07
133	1.61E-05	3.65E-06	2.81	0.00E+00	1.17E-06	6.99E-07	5.24E-07	4.28E-07	3.09E-07	2.86E-07	3.23E-07	4.30E-07	4.41E-07	4.27E-07
162	1.82E-05	4.53E-06	3.17	0.00E+00	1.34E-06	6.72E-07	5.37E-07	4.40E-07	3.18E-07	2.94E-07	3.32E-07	4.41E-07	4.53E-07	4.39E-07
200	2.07E-05	5.52E-06	3.58	0.00E+00	1.44E-06	6.87E-07	5.54E-07	4.55E-07	3.29E-07	3.04E-07	3.44E-07	4.57E-07	4.68E-07	4.54E-07
249	2.19E-05	6.57E-06	4.04	0.00E+00	1.26E-06	7.04E-07	5.78E-07	4.74E-07	3.43E-07	3.19E-07	3.58E-07	4.76E-07	4.89E-07	4.73E-07
300	2.29E-05	7.31E-06	4.55	0.00E+00	1.07E-06	7.22E-07	5.83E-07	4.93E-07	3.59E-07	3.34E-07	3.73E-07	4.96E-07	5.09E-07	4.93E-07
313	2.29E-05	7.49E-06	5.13	0.00E+00	1.11E-06	7.44E-07	5.76E-07	5.15E-07	3.75E-07	3.49E-07	3.94E-07	5.19E-07	5.32E-07	5.16E-07
397	2.29E-05	8.30E-06	5.79	0.00E+00	1.15E-06	7.70E-07	6.03E-07	5.41E-07	3.82E-07	3.67E-07	4.15E-07	5.46E-07	5.60E-07	5.43E-07
400	2.29E-05	8.31E-06	6.53	0.00E+00	1.18E-06	7.98E-07	6.29E-07	5.65E-07	3.80E-07	3.85E-07	4.35E-07	5.72E-07	5.87E-07	5.69E-07
500	2.19E-05	8.62E-06	7.36	0.00E+00	1.10E-06	7.73E-07	6.73E-07	5.48E-07	4.09E-07	4.18E-07	4.69E-07	5.77E-07	6.32E-07	6.12E-07
509	2.17E-05	8.64E-06	8.30	1.53E-07	1.11E-06	7.93E-07	6.99E-07	5.68E-07	4.26E-07	4.35E-07	4.87E-07	6.00E-07	6.59E-07	6.37E-07
600	1.99E-05	8.38E-06	9.36	1.81E-06	1.03E-06	8.36E-07	7.32E-07	6.02E-07	4.58E-07	4.67E-07	5.21E-07	6.42E-07	7.08E-07	6.82E-07
660	1.89E-05	8.23E-06	10.56	1.75E-06	1.06E-06	8.60E-07	7.26E-07	6.35E-07	4.85E-07	4.97E-07	5.57E-07	6.79E-07	7.49E-07	7.21E-07
700	1.82E-05	8.30E-06	11.91	1.55E-06	1.05E-06	8.58E-07	7.79E-07	6.84E-07	5.25E-07	5.37E-07	6.00E-07	7.31E-07	8.06E-07	7.76E-07
800	1.63E-05	7.51E-06	13.43	1.43E-06	1.03E-06	9.17E-07	8.32E-07	7.02E-07	5.69E-07	5.83E-07	6.48E-07	7.87E-07	8.67E-07	8.35E-07
865	1.51E-05	7.23E-06	15.15	1.30E-06	1.04E-06	9.07E-07	8.04E-07	7.35E-07	6.18E-07	6.36E-07	7.04E-07	8.50E-07	9.36E-07	9.02E-07
900	1.45E-05	6.99E-06	17.08	1.23E-06	1.07E-06	9.72E-07	8.58E-07	7.97E-07	6.76E-07	6.95E-07	7.65E-07	9.17E-07	1.01E-06	9.74E-07
1000	1.30E-05	6.40E-06	19.26	1.20E-06	1.08E-06	9.49E-07	8.85E-07	8.26E-07	7.60E-07	7.70E-07	8.15E-07	1.02E-06	1.12E-06	1.07E-06
1147	1.08E-05	5.70E-06	21.72	1.20E-06	1.07E-06	9.86E-07	9.31E-07	8.75E-07	7.62E-07	7.65E-07	8.31E-07	1.08E-06	1.18E-06	1.14E-06
1545	7.17E-06	4.26E-06	24.49	1.17E-06	1.07E-06	1.01E-06	9.80E-07	9.32E-07	8.18E-07	8.39E-07	9.05E-07	1.17E-06	1.29E-06	1.24E-06
2000	5.05E-06	3.28E-06	27.62	1.13E-06	1.11E-06	1.06E-06	1.06E-06	9.94E-07	9.23E-07	9.45E-07	1.01E-06	1.30E-06	1.42E-06	1.37E-06
2120	4.60E-06	3.10E-06	31.15	1.16E-06	1.11E-06	1.11E-06	1.06E-06	1.06E-06	1.02E-06	1.03E-06	1.09E-06	1.40E-06	1.52E-06	1.46E-06
2977	2.68E-06	2.19E-06	35.13	1.21E-06	1.12E-06	1.20E-06	1.15E-06	1.16E-06	1.08E-06	1.19E-06	1.24E-06	1.57E-06	1.70E-06	1.63E-06

TABLE 30 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: TI
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 22; ATOMIC-W= 47.90)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.29E-06	1.27E-06	1.25E-06	1.23E-06	1.20E-06	1.23E-06	1.23E-06	1.39E-06	1.72E-06	1.86E-06	1.78E-06
44.68	1.35E-06	1.35E-06	1.28E-06	1.31E-06	1.32E-06	1.31E-06	1.37E-06	1.54E-06	1.86E-06	2.01E-06	1.92E-06
50.38	1.43E-06	1.46E-06	1.41E-06	1.40E-06	1.43E-06	1.47E-06	1.56E-06	1.63E-06	2.07E-06	2.21E-05	2.11E-06
56.82	1.57E-06	1.55E-06	1.58E-06	1.58E-06	1.61E-06	1.67E-06	1.69E-06	1.87E-06	2.32E-06	2.47E-05	2.34E-06
64.07	1.73E-06	1.75E-06	1.77E-06	1.76E-06	1.75E-06	1.87E-06	1.94E-06	2.13E-06	2.56E-06	2.63E-06	2.55E-06
72.26	1.97E-06	1.98E-06	1.93E-06	1.95E-06	1.98E-06	2.03E-06	2.07E-06	2.33E-06	2.85E-06	2.78E-06	2.79E-06
81.49	2.19E-06	2.21E-06	2.16E-06	2.19E-06	2.22E-06	2.29E-06	2.34E-06	2.61E-06	2.94E-06	3.07E-06	3.05E-06
91.89	2.41E-06	2.44E-06	2.45E-06	2.47E-06	2.48E-06	2.57E-06	2.68E-06	2.93E-06	3.26E-06	3.36E-06	3.32E-06
103.63	2.84E-06	2.85E-06	2.84E-06	2.88E-06	2.92E-06	3.13E-06	3.13E-06	3.39E-06	3.77E-06	3.81E-06	3.72E-06
116.86	3.17E-06	3.22E-06	3.24E-06	3.27E-06	3.32E-06	3.36E-06	3.49E-06	3.66E-06	4.08E-06	4.11E-06	3.97E-06
131.79	3.58E-06	3.70E-06	3.73E-06	3.75E-06	3.80E-06	3.80E-06	3.93E-06	4.11E-06	4.32E-06	4.34E-06	4.31E-06
148.62	4.17E-06	4.27E-06	4.25E-06	4.28E-06	4.27E-06	4.29E-06	4.40E-05	4.48E-06	4.83E-06	4.73E-06	4.51E-06
167.60	4.50E-06	4.60E-06	4.64E-06	4.66E-06	4.68E-06	4.87E-06	4.73E-06	5.01E-06	4.99E-06	5.12E-06	4.82E-06
189.01	5.18E-06	5.28E-06	5.26E-06	5.28E-06	5.31E-06	5.40E-06	5.40E-06	5.52E-06	5.62E-06	5.53E-06	5.27E-06
213.15	5.87E-06	5.94E-06	5.98E-06	5.95E-06	5.92E-06	5.98E-06	5.99E-06	6.09E-06	5.98E-06	6.01E-06	5.75E-06
240.38	6.24E-06	6.26E-06	6.28E-06	6.30E-06	6.32E-06	6.35E-06	6.39E-06	6.32E-06	6.37E-06	6.36E-06	5.84E-06
271.08	6.75E-06	6.81E-06	6.78E-06	6.80E-06	6.82E-06	6.83E-06	6.85E-06	6.90E-06	6.81E-06	6.73E-06	6.27E-06
305.70	7.31E-06	7.37E-06	7.34E-06	7.37E-06	7.38E-06	7.32E-06	7.38E-06	7.34E-06	7.24E-06	7.07E-06	6.53E-06
344.74	7.61E-06	7.68E-06	7.73E-06	7.75E-06	7.77E-06	7.80E-06	7.74E-06	7.67E-06	7.54E-06	7.43E-06	6.69E-06
388.77	7.96E-06	8.00E-06	8.02E-06	8.04E-06	8.06E-06	8.07E-06	8.09E-06	7.94E-06	7.83E-06	7.53E-06	6.83E-06
438.43	8.24E-06	8.26E-06	8.27E-06	8.28E-06	8.28E-06	8.24E-06	8.25E-06	8.16E-06	7.96E-06	7.60E-06	6.97E-06
494.42	8.40E-06	8.41E-06	8.41E-06	8.40E-06	8.39E-06	8.38E-06	8.32E-06	8.12E-06	7.88E-06	7.55E-06	6.92E-06
557.57	8.27E-06	8.24E-06	8.23E-06	8.21E-06	8.20E-06	8.15E-06	8.14E-06	8.07E-06	7.76E-06	7.52E-06	6.83E-06
628.79	8.10E-06	8.04E-06	8.02E-06	8.00E-06	7.98E-06	7.90E-06	7.88E-06	7.80E-06	7.52E-06	7.24E-06	6.64E-06
709.09	7.77E-06	7.67E-06	7.62E-06	7.59E-06	7.56E-06	7.48E-06	7.46E-06	7.39E-06	7.11E-06	6.91E-06	6.24E-06
799.66	7.36E-06	7.30E-06	7.25E-06	7.19E-06	7.15E-06	7.12E-06	7.10E-06	7.02E-06	6.70E-06	6.42E-06	5.82E-06
901.79	6.81E-06	6.71E-06	6.63E-06	6.56E-06	6.50E-06	6.47E-06	6.43E-06	6.35E-06	6.09E-06	5.93E-06	5.42E-06
1017.00	6.16E-06	6.03E-06	5.95E-06	5.90E-06	5.85E-06	5.80E-06	5.77E-06	5.73E-06	5.54E-06	5.35E-06	4.96E-06
1146.90	5.58E-06	5.51E-06	5.45E-06	5.38E-06	5.32E-06	5.29E-06	5.27E-06	5.22E-06	5.08E-06	4.93E-06	4.59E-06
1293.30	4.95E-06	4.86E-06	4.82E-06	4.80E-06	4.78E-06	4.75E-06	4.72E-06	4.69E-06	4.59E-06	4.47E-06	4.20E-06
1458.50	4.41E-06	4.34E-06	4.30E-06	4.28E-06	4.26E-06	4.23E-06	4.22E-06	4.18E-06	4.10E-06	4.02E-06	3.79E-06
1644.80	3.95E-06	3.91E-06	3.87E-06	3.83E-06	3.79E-06	3.76E-06	3.74E-06	3.72E-06	3.65E-06	3.57E-06	3.41E-06
1854.90	3.50E-06	3.44E-06	3.39E-06	3.34E-06	3.31E-06	3.28E-06	3.27E-06	3.25E-06	3.19E-06	3.14E-06	3.02E-06
2091.80	3.11E-06	3.09E-06	3.07E-06	3.05E-06	3.04E-06	3.02E-06	3.01E-06	2.99E-06	[illegible]	2.90E-06	2.80E-06
2358.90	2.76E-06	2.74E-06	2.72E-06	2.70E-06	2.68E-06	2.66E-06	2.65E-06	2.63E-06	[illegible]	2.54E-06	2.44E-06
2660.20	2.36E-06	2.34E-06	2.31E-06	2.27E-06	2.23E-06	2.17E-06	2.14E-06	2.11E-06	1.81E-06	1.31E-06	7.72E-07

TABLE 30 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: V
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 23; ATOMIC-W= 50.95)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY			DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)											
				SHIELD THICKNESS (G#/CM**2)										
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.28E-05	1.04E-06	0.20	0.00E+00	0.00E+00	5.70E-07	4.00E-07	3.22E-07	2.33E-07	2.17E-07	2.46E-07	3.06E-07	3.36E-07	3.24E-07
14	1.04E-05	9.06E-07	0.23	C.00E+00	0.00E+00	5.38E-07	3.77E-07	3.04E-07	2.19E-07	2.05E-07	2.32E-07	2.89E-07	3.17E-07	3.06E-07
16	8.75E-06	8.02E-07	0.25	0.00E+00	0.00E+00	5.05E-07	3.55E-07	2.86E-07	2.06E-07	1.93E-07	2.18E-07	2.72E-07	2.98E-07	2.88E-07
18	7.49E-06	7.12E-07	0.29	0.00E+00	0.00E+00	4.75E-07	3.33E-07	2.68E-07	1.94E-07	1.81E-07	2.05E-07	2.55E-07	2.80E-07	2.70E-07
20	6.51E-06	6.61E-07	0.32	C.00E+00	0.00E+00	4.53E-07	3.18E-07	2.56E-07	1.85E-07	1.73E-07	1.96E-07	2.44E-07	2.67E-07	2.58E-07
23	6.03E-06	6.33E-07	0.36	C.00E+00	0.00E+00	4.25E-07	3.01E-07	2.43E-07	1.75E-07	1.64E-07	1.85E-07	2.31E-07	2.53E-07	2.44E-07
26	5.64E-06	6.30E-07	0.41	0.00E+00	0.00E+00	4.01E-07	2.84E-07	2.28E-07	1.65E-07	1.54E-07	1.75E-07	2.17E-07	2.38E-07	2.30E-07
30	5.21E-06	5.97E-07	0.46	C.00E+00	0.00E+00	3.90E-07	2.77E-07	2.23E-07	1.61E-07	1.50E-07	1.70E-07	2.12E-07	2.32E-07	2.24E-07
34	5.07E-06	6.12E-07	0.52	0.00E+00	0.00E+00	3.77E-07	2.67E-07	2.15E-07	1.55E-07	1.45E-07	1.64E-07	2.04E-07	2.24E-07	2.17E-07
40	4.89E-06	6.38E-07	0.59	C.00E+00	0.00E+00	3.67E-07	2.58E-07	2.09E-07	1.51E-07	1.41E-07	1.60E-07	1.99E-07	2.18E-07	2.11E-07
46	4.89E-06	6.79E-07	0.67	0.00E+00	0.00E+00	3.54E-07	2.51E-07	2.03E-07	1.47E-07	1.37E-07	1.56E-07	1.94E-07	2.12E-07	2.05E-07
50	4.89E-06	7.06E-07	0.75	0.00E+00	0.00E+00	3.48E-07	2.47E-07	2.00E-07	1.45E-07	1.35E-07	1.53E-07	1.91E-07	2.09E-07	2.02E-07
54	5.02E-06	7.32E-07	0.85	C.00E+00	0.00E+00	3.43E-07	2.44E-07	1.97E-07	1.43E-07	1.33E-07	1.51E-07	1.88E-07	2.06E-07	1.99E-07
60	5.21E-06	7.88E-07	0.95	0.00E+00	0.00E+00	3.40E-07	2.42E-07	1.96E-07	1.41E-07	1.32E-07	1.50E-07	1.86E-07	2.04E-07	1.97E-07
64	5.34E-06	8.24E-07	1.08	0.00E+00	0.00E+00	3.34E-07	2.39E-07	1.94E-07	1.40E-07	1.31E-07	1.49E-07	1.85E-07	2.03E-07	1.96E-07
70	5.54E-06	8.98E-07	1.21	0.00E+00	0.00E+00	3.34E-07	2.38E-07	1.94E-07	1.40E-07	1.31E-07	1.48E-07	1.85E-07	2.03E-07	1.95E-07
76	5.74E-06	9.72E-07	1.37	C.00E+00	0.00E+00	3.31E-07	2.39E-07	1.94E-07	1.40E-07	1.31E-07	1.49E-07	1.85E-07	2.03E-07	1.96E-07
80	5.86E-06	1.02E-06	1.54	0.00E+00	3.77E-08	3.34E-07	2.40E-07	1.95E-07	1.41E-07	1.32E-07	1.50E-07	1.86E-07	2.04E-07	1.97E-07
90	6.19E-06	1.15E-06	1.74	0.00E+00	9.30E-08	3.34E-07	2.41E-07	1.97E-07	1.42E-07	1.33E-07	1.52E-07	1.88E-07	2.06E-07	1.99E-07
91	6.22E-06	1.16E-06	1.96	0.00E+00	2.15E-07	3.37E-07	2.44E-07	2.00E-07	1.45E-07	1.35E-07	1.54E-07	1.90E-07	2.09E-07	2.01E-07
100	6.51E-06	1.27E-06	2.21	0.00E+00	3.78E-07	3.40E-07	2.48E-07	2.03E-07	1.48E-07	1.37E-07	1.57E-07	1.93E-07	2.12E-07	2.05E-07
109	6.87E-06	1.37E-06	2.50	C.00E+00	4.91E-07	3.44E-07	2.53E-07	2.07E-07	1.51E-07	1.40E-07	1.61E-07	1.98E-07	2.17E-07	2.09E-07
133	7.78E-06	1.77E-06	2.81	C.00E+00	6.01E-07	3.23E-07	2.59E-07	2.12E-07	1.55E-07	1.44E-07	1.64E-07	2.03E-07	2.22E-07	2.15E-07
162	8.79E-06	2.19E-06	3.17	0.00E+00	6.77E-07	3.28E-07	2.65E-07	2.18E-07	1.59E-07	1.49E-07	1.69E-07	2.08E-07	2.28E-07	2.20E-07
200	1.00E-05	2.67E-06	3.58	0.00E+00	6.90E-07	3.35E-07	2.73E-07	2.25E-07	1.64E-07	1.54E-07	1.74E-07	2.15E-07	2.36E-07	2.27E-07
249	1.06E-05	3.18E-06	4.04	C.00E+00	5.74E-07	3.43E-07	2.85E-07	2.34E-07	1.57E-07	1.60E-07	1.82E-07	2.24E-07	2.45E-07	2.37E-07
300	1.11E-05	3.54E-06	4.55	0.00E+00	5.22E-07	3.53E-07	2.72E-07	2.43E-07	1.63E-07	1.67E-07	1.89E-07	2.33E-07	2.55E-07	2.46E-07
313	1.11E-05	3.62E-06	5.13	0.00E+00	5.41E-07	3.63E-07	2.82E-07	2.53E-07	1.70E-07	1.74E-07	1.97E-07	2.43E-07	2.67E-07	2.57E-07
397	1.11E-05	4.01E-06	5.79	C.00E+00	5.60E-07	3.75E-07	2.95E-07	2.65E-07	1.79E-07	1.83E-07	2.07E-07	2.55E-07	2.80E-07	2.70E-07
400	1.11E-05	4.02E-06	6.53	0.00E+00	5.54E-07	3.70E-07	3.08E-07	2.61E-07	1.88E-07	1.93E-07	2.17E-07	2.67E-07	2.93E-07	2.83E-07
500	1.06E-05	4.17E-06	7.36	C.00E+00	5.35E-07	3.76E-07	3.29E-07	2.68E-07	2.02E-07	2.07E-07	2.35E-07	2.87E-07	3.15E-07	3.04E-07
509	1.05E-05	4.18E-06	8.30	7.44E-08	5.40E-07	3.86E-07	3.42E-07	2.77E-07	2.10E-07	2.16E-07	2.45E-07	2.98E-07	3.27E-07	3.16E-07
600	9.65E-06	4.05E-06	9.36	8.73E-07	5.22E-07	4.07E-07	3.46E-07	2.94E-07	2.25E-07	2.33E-07	2.61E-07	3.19E-07	3.50E-07	3.38E-07
660	9.13E-06	3.98E-06	10.56	8.37E-07	5.13E-07	4.06E-07	3.54E-07	3.10E-07	2.39E-07	2.47E-07	2.76E-07	3.37E-07	3.70E-07	3.57E-07
700	8.82E-06	3.87E-06	11.91	7.42E-07	5.06E-07	4.17E-07	3.79E-07	3.35E-07	2.58E-07	2.67E-07	2.98E-07	3.62E-07	3.97E-07	3.83E-07
800	7.90E-06	3.63E-06	13.43	6.90E-07	5.02E-07	4.41E-07	4.00E-07	3.35E-07	2.80E-07	2.89E-07	3.22E-07	3.89E-07	4.27E-07	4.12E-07
865	7.29E-06	3.50E-06	15.15	6.31E-07	5.04E-07	4.41E-07	3.90E-07	3.58E-07	3.04E-07	3.14E-07	3.38E-07	4.22E-07	4.61E-07	4.44E-07
900	7.00E-06	3.38E-06	17.08	5.55E-07	5.13E-07	4.66E-07	4.17E-07	3.88E-07	3.33E-07	3.43E-07	3.47E-07	4.57E-07	4.99E-07	4.79E-07
1000	6.27E-06	3.10E-06	19.26	5.81E-07	5.22E-07	4.60E-07	4.30E-07	4.02E-07	3.49E-07	3.51E-07	3.84E-07	5.03E-07	5.50E-07	5.28E-07
1147	5.20E-06	2.76E-06	21.72	5.80E-07	5.13E-07	4.73E-07	4.52E-07	4.26E-07	3.65E-07	3.76E-07	4.09E-07	5.33E-07	5.83E-07	5.60E-07
1545	3.47E-06	2.06E-06	24.49	5.64E-07	5.12E-07	4.89E-07	4.66E-07	4.54E-07	4.01E-07	4.13E-07	4.46E-07	5.80E-07	6.31E-07	6.06E-07
2000	2.44E-06	1.59E-06	27.62	5.47E-07	5.40E-07	5.14E-07	5.08E-07	4.84E-07	4.52E-07	4.65E-07	4.96E-07	6.41E-07	6.94E-07	6.66E-07
2120	2.23E-06	1.50E-06	31.15	5.73E-07	5.40E-07	5.33E-07	5.14E-07	5.08E-07	4.98E-07	5.07E-07	5.39E-07	6.87E-07	7.48E-07	7.13E-07
2977	1.30E-06	1.06E-06	35.13	5.86E-07	5.77E-07	5.77E-07	5.57E-07	5.62E-07	5.26E-07	5.60E-07	6.13E-07	7.69E-07	8.31E-07	7.95E-07

TABLE 31 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: V
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 23; ATOMIC-W= 50.95)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	6.23E-07	6.14E-07	6.08E-07	5.92E-07	5.81E-07	5.98E-07	6.03E-07	6.84E-07	8.44E-07	9.09E-07	8.66E-07
44.68	6.55E-07	6.54E-07	6.21E-07	6.33E-07	6.39E-07	6.38E-07	6.68E-07	7.52E-07	9.15E-07	9.80E-07	9.33E-07
50.38	6.91E-07	7.07E-07	6.75E-07	6.79E-07	6.94E-07	7.18E-07	7.60E-07	7.93E-07	1.02E-06	1.08E-06	1.03E-06
56.82	7.62E-07	7.52E-07	7.66E-07	7.59E-07	7.83E-07	7.96E-07	8.25E-07	9.21E-07	1.14E-06	1.13E-06	1.14E-06
64.07	8.39E-07	8.48E-07	8.55E-07	8.36E-07	8.48E-07	9.03E-07	9.37E-07	1.04E-06	1.26E-06	1.24E-06	1.24E-06
72.26	9.56E-07	9.41E-07	9.34E-07	9.50E-07	9.62E-07	9.85E-07	1.01E-06	1.13E-06	1.32E-06	1.36E-06	1.36E-06
81.49	1.06E-06	1.07E-06	1.04E-06	1.06E-06	1.08E-06	1.11E-06	1.14E-06	1.28E-06	1.44E-06	1.49E-06	1.48E-06
91.89	1.17E-06	1.18E-06	1.18E-06	1.19E-06	1.20E-06	1.25E-06	1.31E-06	1.43E-06	1.60E-06	1.64E-06	1.61E-06
103.63	1.37E-06	1.38E-06	1.38E-06	1.39E-06	1.42E-06	1.50E-06	1.52E-06	1.65E-06	1.84E-06	1.86E-06	1.81E-06
116.86	1.54E-06	1.56E-06	1.57E-06	1.58E-06	1.61E-06	1.63E-06	1.70E-06	1.76E-06	1.92E-06	1.99E-06	1.93E-06
131.79	1.73E-06	1.79E-06	1.80E-06	1.82E-06	1.84E-06	1.85E-06	1.91E-06	1.98E-06	2.10E-06	2.08E-06	2.03E-06
148.62	2.02E-06	2.07E-06	2.06E-06	2.07E-06	2.06E-06	2.08E-06	2.14E-06	2.17E-06	2.35E-06	2.30E-06	2.19E-06
167.60	2.18E-06	2.23E-06	2.24E-06	2.25E-06	2.27E-06	2.36E-06	2.29E-06	2.39E-06	2.41E-06	2.49E-06	2.33E-06
189.01	2.51E-06	2.56E-06	2.55E-06	2.56E-06	2.57E-06	2.59E-06	2.61E-06	2.67E-06	2.71E-06	2.63E-06	2.55E-06
213.15	2.84E-06	2.88E-06	2.89E-06	2.88E-06	2.86E-06	2.90E-06	2.88E-06	2.95E-06	2.90E-06	2.92E-06	2.73E-06
240.38	3.02E-06	3.03E-06	3.04E-06	3.05E-06	3.06E-06	3.08E-06	3.09E-06	3.06E-06	3.09E-06	3.07E-06	2.83E-06
271.08	3.27E-06	3.30E-06	3.28E-06	3.29E-06	3.30E-06	3.31E-06	3.31E-06	3.32E-06	3.30E-06	3.26E-06	3.03E-06
305.70	3.54E-06	3.56E-06	3.55E-06	3.56E-06	3.58E-06	3.55E-06	3.57E-06	3.55E-06	3.48E-06	3.38E-06	3.12E-06
344.74	3.68E-06	3.72E-06	3.74E-06	3.75E-06	3.76E-06	3.78E-06	3.75E-06	3.72E-06	3.63E-06	3.56E-06	3.23E-06
388.77	3.85E-06	3.87E-06	3.88E-06	3.89E-06	3.90E-06	3.91E-06	3.92E-06	3.84E-06	3.79E-06	3.64E-06	3.28E-06
438.43	3.99E-06	4.00E-06	4.00E-06	4.00E-06	4.01E-06	3.99E-06	3.99E-06	3.95E-06	3.85E-06	3.67E-06	3.36E-06
494.42	4.07E-06	4.07E-06	4.07E-06	4.06E-06	4.06E-06	4.05E-06	4.03E-06	3.93E-06	3.81E-06	3.65E-06	3.31E-06
557.57	4.00E-06	3.99E-06	3.98E-06	3.97E-06	3.97E-06	3.94E-06	3.94E-06	3.91E-06	3.75E-06	3.63E-06	3.30E-06
628.79	3.92E-06	3.89E-06	3.88E-06	3.87E-06	3.86E-06	3.82E-06	3.81E-06	3.77E-06	3.64E-06	3.48E-06	3.20E-06
709.09	3.76E-06	3.71E-06	3.69E-06	3.67E-06	3.66E-06	3.62E-06	3.61E-06	3.58E-06	3.43E-06	3.34E-06	2.99E-06
799.66	3.56E-06	3.53E-06	3.51E-06	3.48E-06	3.46E-06	3.44E-06	3.43E-06	3.40E-06	3.24E-06	3.10E-06	2.81E-06
901.79	3.30E-06	3.25E-06	3.21E-06	3.18E-06	3.15E-06	3.13E-06	3.11E-06	3.07E-06	2.95E-06	2.86E-06	2.60E-06
1017.00	2.98E-06	2.92E-06	2.88E-06	2.85E-06	2.83E-06	2.81E-06	2.79E-06	2.77E-06	2.68E-06	2.59E-06	2.40E-06
1146.90	2.70E-06	2.66E-06	2.63E-06	2.60E-06	2.58E-06	2.56E-06	2.55E-06	2.53E-06	2.46E-06	2.38E-06	2.22E-06
1293.30	2.39E-06	2.35E-06	2.33E-06	2.32E-06	2.31E-06	2.30E-06	2.29E-06	2.27E-06	2.22E-06	2.16E-06	2.02E-06
1458.50	2.13E-06	2.10E-06	2.08E-06	2.07E-06	2.06E-06	2.05E-06	2.04E-06	2.02E-06	1.98E-06	1.94E-06	1.83E-06
1644.80	1.91E-06	1.89E-06	1.87E-06	1.85E-06	1.84E-06	1.82E-06	1.81E-06	1.80E-06	1.76E-06	1.73E-06	1.65E-06
1854.90	1.69E-06	1.67E-06	1.64E-06	1.62E-06	1.60E-06	1.59E-06	1.58E-06	1.57E-06	1.54E-06	1.52E-06	1.46E-06
2091.80	1.51E-06	1.50E-06	1.49E-06	1.48E-06	1.47E-06	1.46E-06	1.46E-06	1.45E-06	1.42E-06	1.40E-06	1.35E-06
2358.90	1.33E-06	1.33E-06	1.32E-06	1.31E-06	1.29E-06	1.29E-06	1.28E-06	1.27E-06	1.25E-06	1.23E-06	1.18E-06
2660.20	1.14E-06	1.13E-06	1.12E-06	1.10E-06	1.08E-06	1.05E-06	1.03E-06	1.02E-06	8.70E-07	6.33E-07	3.71E-07

TABLE 31 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CR
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 24; ATOMIC-W= 52.01)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

				SHIELD THICKNESS (GM/CM**2)										
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	2.47E-05	2.01E-06	0.20	0.00E+00	0.00E+00	1.11E-06	7.91E-07	6.47E-07	4.35E-07	4.52E-07	4.75E-07	6.37E-07	6.96E-07	6.61E-07
14	2.02E-05	1.75E-06	0.23	0.00E+00	0.00E+00	1.05E-06	7.46E-07	6.10E-07	4.10E-07	4.27E-07	4.48E-07	6.01E-07	6.56E-07	6.24E-07
16	1.69E-05	1.55E-06	0.25	0.00E+00	0.00E+00	9.84E-07	7.01E-07	5.73E-07	3.85E-07	4.01E-07	4.21E-07	5.65E-07	6.17E-07	5.86E-07
18	1.45E-05	1.38E-06	0.29	0.00E+00	0.00E+00	9.22E-07	6.59E-07	5.39E-07	3.62E-07	3.77E-07	3.96E-07	5.31E-07	5.79E-07	5.51E-07
20	1.26E-05	1.28E-06	0.32	0.00E+00	0.00E+00	8.74E-07	6.29E-07	5.14E-07	3.46E-07	3.60E-07	3.78E-07	5.07E-07	5.53E-07	5.26E-07
23	1.17E-05	1.22E-06	0.36	0.00E+00	0.00E+00	8.28E-07	5.95E-07	4.87E-07	3.27E-07	3.40E-07	3.57E-07	4.80E-07	5.24E-07	4.98E-07
26	1.09E-05	1.22E-06	0.41	0.00E+00	0.00E+00	7.79E-07	5.60E-07	4.57E-07	3.08E-07	3.20E-07	3.36E-07	4.51E-07	4.93E-07	4.68E-07
30	1.01E-05	1.15E-06	0.46	0.00E+00	0.00E+00	7.59E-07	5.44E-07	4.46E-07	3.00E-07	3.12E-07	3.28E-07	4.40E-07	4.80E-07	4.56E-07
34	9.80E-06	1.18E-06	0.52	0.00E+00	0.00E+00	7.32E-07	5.24E-07	4.30E-07	2.89E-07	3.01E-07	3.16E-07	4.24E-07	4.63E-07	4.40E-07
40	9.45E-06	1.23E-06	0.59	0.00E+00	0.00E+00	7.08E-07	5.10E-07	4.18E-07	2.81E-07	2.93E-07	3.07E-07	4.13E-07	4.50E-07	4.28E-07
46	9.45E-06	1.31E-06	0.67	0.00E+00	0.00E+00	6.85E-07	4.96E-07	4.06E-07	2.74E-07	2.85E-07	2.99E-07	4.01E-07	4.38E-07	4.16E-07
50	9.45E-06	1.36E-06	0.75	0.00E+00	0.00E+00	6.74E-07	4.88E-07	4.00E-07	2.69E-07	2.81E-07	2.94E-07	3.95E-07	4.31E-07	4.09E-07
54	9.71E-06	1.42E-06	0.85	0.00E+00	0.00E+00	6.63E-07	4.80E-07	3.94E-07	2.65E-07	2.78E-07	2.89E-07	3.88E-07	4.24E-07	4.03E-07
60	1.01E-05	1.52E-06	0.95	0.00E+00	3.72E-08	6.51E-07	4.75E-07	3.90E-07	2.63E-07	2.76E-07	2.87E-07	3.85E-07	4.20E-07	3.99E-07
64	1.03E-05	1.59E-06	1.08	0.00E+00	1.48E-07	6.46E-07	4.70E-07	3.87E-07	2.61E-07	2.73E-07	2.84E-07	3.82E-07	4.16E-07	3.96E-07
70	1.07E-05	1.74E-06	1.21	0.00E+00	3.48E-07	6.41E-07	4.69E-07	3.85E-07	2.61E-07	2.73E-07	2.83E-07	3.80E-07	4.15E-07	3.95E-07
76	1.11E-05	1.88E-06	1.37	0.00E+00	4.72E-07	6.39E-07	4.70E-07	3.86E-07	2.61E-07	2.73E-07	2.84E-07	3.81E-07	4.16E-07	3.95E-07
80	1.13E-05	1.97E-06	1.54	0.00E+00	6.47E-07	6.03E-07	4.72E-07	3.88E-07	2.62E-07	2.75E-07	2.85E-07	3.83E-07	4.18E-07	3.97E-07
90	1.20E-05	2.21E-06	1.74	0.00E+00	8.43E-07	5.93E-07	4.75E-07	3.90E-07	2.64E-07	2.76E-07	2.87E-07	3.86E-07	4.21E-07	4.00E-07
91	1.20E-05	2.24E-06	1.96	0.00E+00	9.70E-07	5.97E-07	4.80E-07	3.95E-07	2.67E-07	2.80E-07	2.91E-07	3.90E-07	4.26E-07	4.05E-07
100	1.26E-05	2.45E-06	2.21	0.00E+00	1.12E-06	6.04E-07	4.88E-07	4.01E-07	2.72E-07	2.84E-07	2.96E-07	3.97E-07	4.33E-07	4.12E-07
109	1.33E-05	2.66E-06	2.50	0.00E+00	1.25E-06	6.10E-07	4.98E-07	4.09E-07	2.77E-07	2.90E-07	3.02E-07	4.05E-07	4.42E-07	4.20E-07
133	1.50E-05	3.41E-06	2.81	0.00E+00	1.30E-06	6.19E-07	4.94[illegible]	4.18E-07	2.84E-07	2.97E-07	3.09E-07	4.14E-07	4.52E-07	4.30E-07
162	1.70E-05	4.24E-06	3.17	0.00E+00	1.26E-06	6.29E-07	4.80[illegible]	4.28E-07	2.91E-07	3.04E-07	3.16E-07	4.25E-07	4.64E-07	4.41E-07
200	1.94E-05	5.16E-06	3.58	0.00E+00	1.03E-06	6.42E-07	4.9[illegible]-07	4.41E-07	3.01E-07	3.14E-07	3.26E-07	4.38E-07	4.78E-07	4.54E-07
249	2.04E-05	6.15E-06	4.04	0.00E+00	9.84E-07	6.59E-07	5.1[illegible]-07	4.57E-07	3.14E-07	3.27E-07	3.42E-07	4.56E-07	4.97E-07	4.73E-07
300	2.14E-05	6.84E-06	4.55	0.00E+00	1.02E-06	6.78E-07	5.2[illegible]-07	4.53E-07	3.26E-07	3.42E-07	3.55E-07	4.73E-07	5.17E-07	4.92E-07
313	2.14E-05	7.00E-06	5.13	0.00E+00	1.05E-06	6.98E-07	5.[illegible]E-07	4.48E-07	3.40E-07	3.57E-07	3.70E-07	4.94E-07	5.39E-07	5.13E-07
397	2.14E-05	7.76E-06	5.79	0.00E+00	1.08E-06	6.90E-07	5.75E-07	4.68E-07	3.58E-07	3.75E-07	3.88E-07	5.18E-07	5.65E-07	5.38E-07
400	2.14E-05	7.77E-06	6.53	0.00E+00	1.01E-06	6.90E-07	6.00E-07	4.87E-07	3.75E-07	3.92E-07	4.06E-07	5.41E-07	5.91E-07	5.63E-07
500	2.05E-05	8.06E-06	7.36	0.00E+00	1.02E-06	7.23E-07	6.43E-07	5.19E-07	4.04E-07	4.24E-07	4.36E-07	5.85E-07	6.33E-07	6.03E-07
509	2.03E-05	8.08E-06	8.30	2.99E-07	1.03E-06	7.45E-07	6.47E-07	5.38E-07	4.19E-07	4.41E-07	4.52E-07	6.08E-07	6.58E-07	6.26E-07
600	1.86E-05	7.84E-06	9.36	1.81E-06	9.68E-07	7.75E-07	6.54E-07	5.74E-07	4.50E-07	4.72E-07	4.83E-07	6.49E-07	7.02E-07	6.68E-07
660	1.76E-05	7.69E-06	10.56	1.55E-06	9.81E-07	7.61E-07	6.89E-07	6.07E-07	4.77E-07	5.01E-07	5.14E-07	6.85E-07	7.41E-07	7.05E-07
700	1.71E-05	7.48E-06	11.91	1.43E-06	9.53E-07	8.09E-07	7.36E-07	6.15E-07	5.15E-07	5.17E-07	5.52E-07	7.35E-07	7.95E-07	7.57E-07
800	1.53E-05	7.02E-06	13.43	1.33E-06	9.68E-07	8.30E-07	7.36E-07	6.46E-07	5.57E-07	5.34E-07	5.92E-07	7.89E-07	8.53E-07	8.12E-07
865	1.41E-05	6.77E-06	15.15	1.22E-06	9.54E-07	8.55E-07	7.53E-07	6.98E-07	6.08E-07	5.80E-07	6.43E-07	8.49E-07	8.65E-07	8.75E-07
900	1.35E-05	6.54E-06	17.08	1.14E-06	9.95E-07	8.90E-07	8.03E-07	7.52E-07	6.18E-07	6.29E-07	6.94E-07	9.15E-07	9.32E-07	9.43E-07
1000	1.21E-05	5.99E-06	19.26	1.11E-06	1.01E-06	8.91E-07	8.26E-07	7.77E-07	6.73E-07	7.03E-07	7.72E-07	1.01E-06	1.03E-06	1.04E-06
1147	1.01E-05	5.33E-06	21.72	1.11E-06	9.80E-07	9.10E-07	8.81E-07	8.31E-07	7.20E-07	7.52E-07	8.22E-07	1.08E-06	1.09E-06	1.10E-06
1545	6.71E-06	3.98E-06	24.49	1.09E-06	9.91E-07	9.49E-07	8.87E-07	8.66E-07	7.94E-07	8.28E-07	8.98E-07	1.16E-06	1.17E-06	1.19E-06
2000	4.72E-06	3.07E-06	27.62	1.06E-06	1.04E-06	9.87E-07	9.66E-07	9.43E-07	9.00E-07	9.29E-07	1.00E-06	1.29E-06	1.29E-06	1.31E-06
2120	4.31E-06	2.90E-06	31.15	1.11E-06	1.05E-06	1.03E-06	9.99E-07	9.79E-07	9.21E-07	1.01E-06	1.09E-06	1.38E-06	1.39E-06	1.40E-06
2977	2.51E-06	2.05E-06	35.13	1.12E-06	1.12E-06	1.11E-06	1.07E-06	1.09E-06	1.04E-06	1.06E-06	1.24E-06	1.54E-06	1.54E-06	1.55E-06

TABLE 32 A

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CR
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 24; ATOMIC-W= 52.01)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	1.21E-06	1.19E-06	1.18E-06	1.14E-06	1.13E-06	1.17E-06	1.19E-06	1.31E-06	1.69E-06	1.68E-06	1.69E-06
44.68	1.27E-06	1.27E-06	1.20E-06	1.23E-06	1.21E-06	1.22E-06	1.33E-06	1.40E-06	1.83E-06	1.82E-06	1.82E-06
50.38	1.34E-06	1.37E-06	1.31E-06	1.32E-06	1.36E-06	1.41E-06	1.41E-06	1.59E-06	2.02E-06	2.00E-06	2.00E-06
56.82	1.48E-06	1.46E-06	1.49E-06	1.47E-06	1.52E-06	1.54E-06	1.63E-06	1.84E-06	2.15E-06	2.23E-06	2.22E-06
64.07	1.62E-06	1.64E-06	1.66E-06	1.61E-06	1.68E-06	1.75E-06	1.81E-06	2.04E-06	2.32E-06	2.44E-06	2.41E-06
72.26	1.85E-06	1.82E-06	1.81E-06	1.84E-06	1.87E-06	1.93E-06	1.99E-06	2.20E-06	2.57E-06	2.69E-06	2.64E-06
81.49	2.06E-06	2.07E-06	2.02E-06	2.05E-06	2.10E-06	2.11E-06	2.26E-06	2.53E-06	2.85E-06	2.95E-06	2.88E-06
91.89	2.26E-06	2.29E-06	2.29E-06	2.29E-06	2.31E-06	2.42E-06	2.57E-06	2.74E-06	3.16E-06	3.23E-06	3.12E-06
103.63	2.66E-06	2.67E-06	2.67E-06	2.70E-06	2.75E-06	2.87E-06	2.98E-06	3.24E-06	3.48E-06	3.52E-06	3.35E-06
116.86	2.97E-06	3.01E-06	3.04E-06	3.08E-06	3.09E-06	3.18E-06	3.29E-06	3.36E-06	3.69E-06	3.71E-06	3.58E-06
131.79	3.35E-06	3.46E-06	3.49E-06	3.52E-06	3.56E-06	3.58E-06	3.72E-06	3.88E-06	4.12E-06	4.09E-06	3.89E-06
148.62	3.93E-06	4.00E-06	3.98E-06	4.01E-06	4.08E-06	4.05E-06	4.16E-06	4.25E-06	4.46E-06	4.51E-06	4.24E-06
167.60	4.22E-06	4.32E-06	4.34E-06	4.36E-06	4.39E-06	4.54E-06	4.42E-06	4.53E-06	4.70E-06	4.84E-06	4.52E-06
189.01	4.85E-06	4.96E-06	4.93E-06	4.95E-06	4.97E-06	5.03E-06	5.03E-06	5.16E-06	5.25E-06	5.13E-06	4.92E-06
213.15	5.49E-06	5.56E-06	5.60E-06	5.57E-06	5.49E-06	5.61E-06	5.59E-06	5.64E-06	5.66E-06	5.66E-06	5.16E-06
240.38	5.84E-06	5.86E-06	5.88E-06	5.90E-06	5.92E-06	5.96E-06	6.00E-06	5.95E-06	6.01E-06	5.82E-06	5.47E-06
271.08	6.31E-06	6.37E-06	6.34E-06	6.36E-06	6.38E-06	6.39E-06	6.41E-06	6.43E-06	6.38E-06	6.28E-06	5.77E-06
305.70	6.84E-06	6.89E-06	6.87E-06	6.90E-06	6.86E-06	6.86E-06	6.91E-06	6.88E-06	6.76E-06	6.55E-06	5.94E-06
344.74	7.12E-06	7.19E-06	7.24E-06	7.25E-06	7.27E-06	7.31E-06	7.25E-06	7.19E-06	6.98E-06	6.80E-06	6.22E-06
388.77	7.44E-06	7.48E-06	7.51E-06	7.53E-06	7.54E-06	7.56E-06	7.57E-06	7.43E-06	7.29E-06	7.04E-06	6.22E-06
438.43	7.71E-06	7.73E-06	7.73E-06	7.74E-06	7.75E-06	7.71E-06	7.71E-06	7.60E-06	7.40E-06	7.01E-06	6.43E-06
494.42	7.86E-06	7.87E-06	7.86E-06	7.85E-06	7.85E-06	7.80E-06	7.78E-06	7.59E-06	7.36E-06	7.04E-06	6.33E-06
557.57	7.74E-06	7.71E-06	7.70E-06	7.68E-06	7.67E-06	7.62E-06	7.61E-06	7.55E-06	7.25E-06	7.00E-06	6.24E-06
628.79	7.58E-06	7.52E-06	7.50E-06	7.48E-06	7.47E-06	7.38E-06	7.37E-06	7.29E-06	6.98E-06	6.71E-06	6.07E-06
709.09	7.26E-06	7.17E-06	7.13E-06	7.10E-06	7.07E-06	6.99E-06	6.98E-06	6.91E-06	6.63E-06	6.42E-06	5.73E-06
799.66	6.88E-06	6.83E-06	6.78E-06	6.73E-06	6.69E-06	6.66E-06	6.64E-06	6.56E-06	6.23E-06	5.96E-06	5.35E-06
901.79	6.37E-06	6.27E-06	6.19E-06	6.13E-06	6.08E-06	6.06E-06	6.01E-06	5.94E-06	5.68E-06	5.48E-06	4.98E-06
1017.00	5.75E-06	5.62E-06	5.57E-06	5.52E-06	5.47E-06	5.43E-06	5.40E-06	5.35E-06	5.15E-06	4.99E-06	4.59E-06
1146.90	5.22E-06	5.15E-06	5.08E-06	5.02E-06	4.98E-06	4.95E-06	4.93E-06	4.88E-06	4.73E-06	4.57E-06	4.24E-06
1293.30	4.63E-06	4.55E-06	4.51E-06	4.49E-06	4.47E-06	4.44E-06	4.42E-06	4.38E-06	4.27E-06	4.16E-06	3.88E-06
1458.50	4.13E-06	4.06E-06	4.03E-06	4.00E-06	3.98E-06	3.96E-06	3.94E-06	3.90E-06	3.82E-06	3.73E-06	3.51E-06
1644.80	3.69E-06	3.66E-06	3.62E-06	3.58E-06	3.55E-06	3.52E-06	3.50E-06	3.47E-06	3.40E-06	3.32E-06	3.16E-06
1854.90	3.27E-06	3.22E-06	3.17E-06	3.13E-06	3.09E-06	3.06E-06	3.05E-06	3.03E-06	2.98E-06	2.93E-06	2.80E-06
2091.80	2.91E-06	2.89E-06	2.88E-06	2.86E-06	2.84E-06	2.82E-06	2.81E-06	2.80E-06	2.75E-06	2.71E-06	2.60E-06
2358.90	2.58E-06	2.56E-06	2.54E-06	2.52E-06	2.50E-06	2.49E-06	2.47E-06	2.46E-06	2.42E-06	2.37E-06	2.27E-06
2660.20	2.21E-06	2.19E-06	2.16E-06	2.13E-06	2.08E-06	2.03E-06	2.00E-06	1.96E-06	1.67E-06	1.21E-06	7.06E-07

TABLE 32 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: MN
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 25; ATOMIC-W= 54.94)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

				SHIELD THICKNESS (GM/CM**2)										
EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.88E-05	1.52E-06	0.20	0.00E+00	0.00E+00	8.64E-07	6.20E-07	5.09E-07	3.46E-07	3.66E-07	3.79E-07	5.14E-07	5.19E-07	5.26E-07
14	1.53E-05	1.33E-06	0.23	0.00E+00	0.00E+00	8.15E-07	5.85E-07	4.80E-07	3.26E-07	3.45E-07	3.58E-07	4.85E-07	4.90E-07	4.96E-07
16	1.28E-05	1.18E-06	0.25	0.00E+00	0.00E+00	7.66E-07	5.50E-07	4.52E-07	3.06E-07	3.24E-07	3.36E-07	4.56E-07	4.60E-07	4.67E-07
18	1.10E-05	1.04E-06	0.29	0.00E+00	0.00E+00	7.20E-07	5.17E-07	4.24E-07	2.88E-07	3.04E-07	3.16E-07	4.28E-07	4.33E-07	4.38E-07
20	9.55E-06	9.69E-07	0.32	0.00E+00	0.00E+00	6.87E-07	4.93E-07	4.05E-07	2.75E-07	2.91E-07	3.01E-07	4.09E-07	4.13E-07	4.18E-07
23	8.85E-06	9.28E-07	0.36	0.00E+00	0.00E+00	6.50E-07	4.66E-07	3.83E-07	2.60E-07	2.75E-07	2.85E-07	3.87E-07	3.91E-07	3.96E-07
26	8.27E-06	9.25E-07	0.41	0.00E+00	0.00E+00	6.05E-07	4.39E-07	3.60E-07	2.44E-07	2.58E-07	2.68E-07	3.64E-07	3.67E-07	3.72E-07
30	7.64E-06	8.76E-07	0.46	0.00E+00	0.00E+00	5.89E-07	4.27E-07	3.51E-07	2.38E-07	2.52E-07	2.61E-07	3.54E-07	3.58E-07	3.62E-07
34	7.43E-06	8.98E-07	0.52	0.00E+00	0.00E+00	5.68E-07	4.11E-07	3.37E-07	2.29E-07	2.43E-07	2.52E-07	3.41E-07	3.45E-07	3.49E-07
40	7.17E-06	9.36E-07	0.59	0.00E+00	0.00E+00	5.52E-07	3.99E-07	3.28E-07	2.23E-07	2.36E-07	2.45E-07	3.32E-07	3.35E-07	3.39E-07
46	7.17E-06	9.95E-07	0.67	0.00E+00	0.00E+00	5.34E-07	3.87E-07	3.19E-07	2.18E-07	2.29E-07	2.37E-07	3.22E-07	3.25E-07	3.30E-07
50	7.17E-06	1.04E-06	0.75	0.00E+00	0.00E+00	5.22E-07	3.81E-07	3.13E-07	2.14E-07	2.25E-07	2.34E-07	3.17E-07	3.20E-07	3.24E-07
54	7.36E-06	1.07E-06	0.85	0.00E+00	1.46E-08	5.14E-07	3.75E-07	3.08E-07	2.10E-07	2.21E-07	2.30E-07	3.11E-07	3.15E-07	3.19E-07
60	7.64E-06	1.16E-06	0.95	0.00E+00	1.16E-07	5.08E-07	3.71E-07	3.05E-07	2.08E-07	2.19E-07	2.27E-07	3.08E-07	3.11E-07	3.16E-07
64	7.84E-06	1.21E-06	1.08	0.00E+00	1.67E-07	4.99E-07	3.67E-07	3.02E-07	2.06E-07	2.17E-07	2.25E-07	3.05E-07	3.08E-07	3.13E-07
70	8.12E-06	1.32E-06	1.21	0.00E+00	3.22E-07	4.97E-07	3.65E-07	3.01E-07	2.06E-07	2.16E-07	2.24E-07	3.04E-07	3.07E-07	3.11E-07
76	8.41E-06	1.42E-06	1.37	0.00E+00	4.99E-07	4.57E-07	3.66E-07	3.01E-07	2.06E-07	2.16E-07	2.27E-07	3.04E-07	3.08E-07	3.12E-07
80	8.60E-06	1.50E-06	1.54	0.00E+00	6.12E-07	4.59E-07	3.67E-07	3.02E-07	2.07E-07	2.17E-07	2.28E-07	3.06E-07	3.09E-07	3.13E-07
90	9.08E-06	1.68E-06	1.74	0.00E+00	6.68E-07	4.58E-07	3.69E-07	3.04E-07	2.08E-07	2.19E-07	2.29E-07	3.07E-07	3.11E-07	3.15E-07
91	9.13E-06	1.70E-06	1.96	0.00E+00	8.02E-07	4.61E-07	3.73E-07	3.07E-07	2.10E-07	2.21E-07	2.31E-07	3.11E-07	3.14E-07	3.18E-07
100	9.55E-06	1.86E-06	2.21	0.00E+00	9.05E-07	4.64E-07	3.79E-07	3.11E-07	2.13E-07	2.24E-07	2.35E-07	3.16E-07	3.21E-07	3.23E-07
109	1.01E-05	2.02E-06	2.50	0.00E+00	9.83E-07	4.70E-07	3.63E-07	3.17E-07	2.17E-07	2.29E-07	2.40E-07	3.22E-07	3.27E-07	3.30E-07
133	1.14E-05	2.59E-06	2.81	0.00E+00	9.95E-07	4.75E-07	3.63E-07	3.24E-07	2.22E-07	2.34E-07	2.45E-07	3.29E-07	3.34E-07	3.37E-07
162	1.29E-05	3.21E-06	3.17	0.00E+00	9.36E-07	4.83E-07	3.70E-07	3.31E-07	2.29E-07	2.42E-07	2.51E-07	3.37E-07	3.42E-07	3.45E-07
200	1.47E-05	3.92E-06	3.58	0.00E+00	7.61E-07	4.92E-07	3.80E-07	3.40E-07	2.36E-07	2.49E-07	2.58E-07	3.47E-07	3.53E-07	3.55E-07
249	1.55E-05	4.66E-06	4.04	0.00E+00	7.56E-07	5.05E-07	3.94E-07	3.25E-07	2.45E-07	2.59E-07	2.68E-07	3.60E-07	3.66E-07	3.69E-07
300	1.62E-05	5.19E-06	4.55	0.00E+00	7.79E-07	5.18E-07	4.08E-07	3.32E-07	2.54E-07	2.69E-07	2.78E-07	3.74E-07	3.80E-07	3.83E-07
313	1.62E-05	5.31E-06	5.13	0.00E+00	8.02E-07	5.35E-07	4.23E-07	3.44E-07	2.65E-07	2.80E-07	2.90E-07	3.89E-07	3.96E-07	3.98E-07
397	1.62E-05	5.89E-06	5.79	0.00E+00	7.94E-07	5.13E-07	4.42E-07	3.59E-07	2.78E-07	2.93E-07	3.03E-07	4.08E-07	4.14E-07	4.17E-07
400	1.62E-05	5.90E-06	6.53	0.00E+00	7.61E-07	5.27E-07	4.61E-07	3.73E-07	2.91E-07	3.09E-07	3.17E-07	4.26E-07	4.33E-07	4.36E-07
500	1.55E-05	6.11E-06	7.36	0.00E+00	7.78E-07	5.52E-07	4.93E-07	3.98E-07	3.13E-07	3.31E-07	3.39E-07	4.56E-07	4.63E-07	4.67E-07
509	1.54E-05	6.13E-06	8.30	2.28E-07	7.77E-07	5.69E-07	4.81E-07	4.12E-07	3.26E-07	3.33E-07	3.53E-07	4.73E-07	4.81E-07	4.84E-07
600	1.41E-05	5.94E-06	9.36	1.38E-06	7.35E-07	5.74E-07	5.01E-07	4.40E-07	3.49E-07	3.38E-07	3.79E-07	5.04E-07	5.12E-07	5.16E-07
660	1.34E-05	5.84E-06	10.56	1.13E-06	7.45E-07	5.81E-07	5.27E-07	4.56E-07	3.69E-07	3.56E-07	3.99E-07	5.31E-07	5.40E-07	5.44E-07
700	1.29E-05	5.68E-06	11.91	1.08E-06	7.25E-07	6.17E-07	5.61E-07	4.61E-07	3.99E-07	3.85E-07	4.28E-07	5.69E-07	5.79E-07	5.83E-07
800	1.16E-05	5.33E-06	13.43	9.97E-07	7.36E-07	6.27E-07	5.54E-07	4.94E-07	4.32E-07	4.14E-07	4.62E-07	6.12E-07	6.20E-07	6.25E-07
865	1.07E-05	5.13E-06	15.15	9.22E-07	7.19E-07	6.51E-07	5.74E-07	5.34E-07	4.48E-07	4.48E-07	4.99E-07	6.62E-07	6.67E-07	6.72E-07
900	1.03E-05	4.96E-06	17.08	8.63E-07	7.56E-07	6.53E-07	6.13E-07	5.50E-07	4.65E-07	4.88E-07	5.41E-07	7.12E-07	7.18E-07	7.24E-07
1000	9.20E-06	4.54E-06	19.26	8.44E-07	7.67E-07	6.78E-07	6.29E-07	5.93E-07	5.17E-07	5.45E-07	5.97E-07	7.83E-07	7.89E-07	7.96E-07
1147	7.63E-06	4.04E-06	21.72	8.43E-07	7.35E-07	6.92E-07	6.71E-07	6.35E-07	5.54E-07	5.81E-07	6.38E-07	8.28E-07	8.35E-07	8.42E-07
1545	5.09E-06	3.02E-06	24.49	8.29E-07	7.53E-07	7.22E-07	6.75E-07	6.53E-07	6.11E-07	6.38E-07	6.96E-07	9.00E-07	9.06E-07	9.10E-07
2000	3.58E-06	2.32E-06	27.62	8.03E-07	7.87E-07	7.44E-07	7.20E-07	7.19E-07	6.84E-07	7.16E-07	7.75E-07	9.90E-07	9.96E-07	9.98E-07
2120	3.25E-06	2.19E-06	31.15	8.33E-07	7.96E-07	7.78E-07	7.60E-07	7.38E-07	6.91E-07	7.48E-07	8.44E-07	1.06E-06	1.07E-06	1.07E-06
2977	1.84E-06	1.50E-06	35.13	8.51E-07	8.50E-07	8.34E-07	8.15E-07	8.16E-07	7.99E-07	8.17E-07	9.40E-07	1.18E-06	1.19E-06	1.19E-06

TABLE 33 A

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: MN
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 25; ATOMIC-W= 54.94)
63.0 DEG/1334-1334 KM

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	9.15E-07	8.95E-07	8.96E-07	8.54E-07	8.63E-07	8.70E-07	9.16E-07	9.82E-07	1.30E-06	1.29E-06	1.29E-06
44.68	9.62E-07	9.41E-07	9.15E-07	9.36E-07	9.18E-07	9.32E-07	1.02E-06	1.08E-06	1.41E-06	1.39E-06	1.39E-06
50.38	1.01E-06	1.04E-06	9.94E-07	1.00E-06	1.03E-06	1.07E-06	1.07E-06	1.22E-06	1.45E-06	1.64E-06	1.62E-06
56.82	1.12E-06	1.10E-06	1.13E-06	1.12E-06	1.16E-06	1.18E-06	1.25E-06	1.42E-06	1.62E-06	1.71E-06	1.69E-06
64.07	1.23E-06	1.25E-06	1.26E-06	1.22E-06	1.26E-06	1.34E-06	1.35E-06	1.48E-06	1.78E-06	1.87E-06	1.84E-06
72.26	1.40E-06	1.38E-06	1.37E-06	1.40E-06	1.42E-06	1.47E-06	1.52E-06	1.69E-06	1.98E-06	2.05E-06	2.01E-06
81.49	1.56E-06	1.57E-06	1.54E-06	1.56E-06	1.60E-06	1.60E-06	1.72E-06	1.94E-06	2.19E-06	2.25E-06	2.10E-06
91.89	1.71E-06	1.74E-06	1.74E-06	1.74E-06	1.76E-06	1.84E-06	1.94E-06	2.06E-06	2.42E-06	2.47E-06	2.28E-06
103.63	2.01E-06	2.03E-06	2.03E-06	2.05E-06	2.07E-06	2.16E-06	2.27E-06	2.48E-06	2.62E-06	2.63E-06	2.55E-06
116.86	2.25E-06	2.29E-06	2.31E-06	2.34E-06	2.32E-06	2.42E-06	2.48E-06	2.57E-06	2.83E-06	2.83E-06	2.72E-06
131.79	2.54E-06	2.63E-06	2.65E-06	2.67E-06	2.70E-06	2.73E-06	2.85E-06	2.96E-06	3.15E-06	3.12E-06	2.96E-06
148.62	2.98E-06	3.03E-06	3.02E-06	3.04E-06	3.04E-06	3.08E-06	3.16E-06	3.24E-06	3.35E-06	3.44E-06	3.22E-06
167.60	3.20E-06	3.27E-06	3.29E-06	3.31E-06	3.33E-06	3.45E-06	3.36E-06	3.45E-06	3.59E-06	3.56E-06	3.43E-06
189.01	3.68E-06	3.76E-06	3.74E-06	3.76E-06	3.77E-06	3.82E-06	3.82E-06	3.93E-06	3.97E-06	3.91E-06	3.65E-06
213.15	4.17E-06	4.22E-06	4.25E-06	4.22E-06	4.17E-06	4.26E-06	4.24E-06	4.25E-06	4.30E-06	4.25E-06	3.92E-06
240.38	4.43E-06	4.44E-06	4.46E-06	4.48E-06	4.49E-06	4.53E-06	4.55E-06	4.52E-06	4.57E-06	4.43E-06	4.15E-06
271.08	4.79E-06	4.84E-06	4.81E-06	4.82E-06	4.84E-06	4.85E-06	4.87E-06	4.89E-06	4.85E-06	4.72E-06	4.34E-06
305.70	5.19E-06	5.23E-06	5.22E-06	5.23E-06	5.21E-06	5.21E-06	5.25E-06	5.23E-06	5.13E-06	4.98E-06	4.50E-06
344.74	5.40E-06	5.46E-06	5.49E-06	5.51E-06	5.51E-06	5.54E-06	5.50E-06	5.46E-06	5.30E-06	5.14E-06	4.70E-06
388.77	5.65E-06	5.68E-06	5.70E-06	5.71E-06	5.72E-06	5.73E-06	5.75E-06	5.64E-06	5.50E-06	5.33E-06	4.71E-06
438.43	5.85E-06	5.86E-06	5.87E-06	5.87E-06	5.88E-06	5.85E-06	5.85E-06	5.76E-06	5.61E-06	5.31E-06	4.86E-06
494.42	5.96E-06	5.97E-06	5.96E-06	5.96E-06	5.95E-06	5.91E-06	5.90E-06	5.73E-06	5.58E-06	5.33E-06	4.78E-06
557.57	5.87E-06	5.85E-06	5.84E-06	5.83E-06	5.82E-06	5.78E-06	5.77E-06	5.72E-06	5.47E-06	5.27E-06	4.72E-06
628.79	5.75E-06	5.70E-06	5.69E-06	5.67E-06	5.67E-06	5.60E-06	5.59E-06	5.53E-06	5.29E-06	5.06E-06	4.56E-06
709.09	5.51E-06	5.44E-06	5.41E-06	5.38E-06	5.37E-06	5.31E-06	5.29E-06	5.24E-06	5.03E-06	4.86E-06	4.32E-06
799.66	5.22E-06	5.18E-06	5.14E-06	5.10E-06	5.07E-06	5.05E-06	5.03E-06	4.95E-06	4.72E-06	4.50E-06	4.04E-06
901.79	4.83E-06	4.76E-06	4.69E-06	4.65E-06	4.62E-06	4.59E-06	4.56E-06	4.60E-06	4.31E-06	4.16E-06	3.77E-06
1017.00	4.36E-06	4.27E-06	4.23E-06	4.18E-06	4.15E-06	4.12E-06	4.10E-06	4.06E-06	3.90E-06	3.77E-06	3.45E-06
1146.90	3.96E-06	3.90E-06	3.85E-06	3.81E-06	3.78E-06	3.75E-06	3.74E-06	3.70E-06	3.58E-06	3.46E-06	3.20E-06
1293.30	3.50E-06	3.44E-06	3.42E-06	3.41E-06	3.39E-06	3.37E-06	3.35E-06	3.32E-06	3.24E-06	3.15E-06	2.94E-06
1458.50	3.13E-06	3.08E-06	3.06E-06	3.04E-06	3.02E-06	3.00E-06	2.99E-06	2.96E-06	2.90E-06	2.83E-06	2.66E-06
1644.80	2.80E-06	2.77E-06	2.74E-06	2.72E-06	2.69E-06	2.66E-06	2.65E-06	2.63E-06	2.57E-06	2.51E-06	2.39E-06
1854.90	2.48E-06	2.44E-06	2.40E-06	2.36E-06	2.34E-06	2.32E-06	2.31E-06	2.29E-06	2.25E-06	2.21E-06	2.11E-06
2091.80	2.20E-06	2.18E-06	2.17E-06	2.15E-06	2.14E-06	2.13E-06	2.12E-06	2.10E-06	2.07E-06	2.03E-06	1.94E-06
2358.90	1.93E-06	1.92E-06	1.90E-06	1.89E-06	1.87E-06	1.85E-06	1.84E-06	1.83E-06	1.80E-06	1.76E-06	1.68E-06
2660.20	1.64E-06	1.62E-06	1.60E-06	1.57E-06	1.54E-06	1.50E-06	1.47E-06	1.44E-06	1.22E-06	8.86E-07	5.14E-07

TABLE 33 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: FE
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 26; ATOMIC-W= 55.85)
63.0 DEG/1334-1334 KM

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MAGNETOSPHERICALLY — DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.71E-04	1.39E-05	0.20	0.00E+00	0.00E+00	7.89E-06	5.81E-06	4.78E-06	3.35E-06	3.27E-06	3.75E-06	5.00E-06	5.05E-06	5.02E-06
14	1.39E-04	1.21E-05	0.23	0.00E+00	0.00E+00	7.45E-06	5.48E-06	4.51E-06	3.16E-06	3.08E-06	3.54E-06	4.72E-06	4.76E-06	4.74E-06
16	1.17E-04	1.07E-05	0.25	0.00E+00	0.00E+00	7.00E-06	5.15E-06	4.24E-06	2.97E-06	2.90E-06	3.32E-06	4.43E-06	4.47E-06	4.45E-06
18	9.98E-05	9.50E-06	0.29	0.00E+00	0.00E+00	6.58E-06	4.84E-06	3.98E-06	2.79E-06	2.72E-06	3.12E-06	4.16E-06	4.20E-06	4.18E-06
20	8.69E-05	8.81E-06	0.32	0.00E+00	0.00E+00	5.89E-06	4.62E-06	3.79E-06	2.66E-06	2.60E-06	2.98E-06	3.97E-06	4.01E-06	3.99E-06
23	8.04E-05	8.44E-06	0.36	0.00E+00	1.02E-06	5.45E-06	4.36E-06	3.59E-06	2.51E-06	2.46E-06	2.82E-06	3.76E-06	3.79E-06	3.77E-06
26	7.52E-05	8.40E-06	0.41	0.00E+00	1.28E-06	5.12E-06	4.10E-06	3.37E-06	2.36E-06	2.31E-06	2.65E-06	3.53E-06	3.56E-06	3.55E-06
30	6.95E-05	7.96E-06	0.46	0.00E+00	1.25E-06	4.98E-06	3.99E-06	3.28E-06	2.30E-06	2.25E-06	2.58E-06	3.44E-06	3.47E-06	3.45E-06
34	6.76E-05	8.16E-06	0.52	0.00E+00	1.74E-05	4.80E-06	3.84E-06	3.16E-06	2.21E-06	2.16E-06	2.48E-06	3.31E-06	3.34E-06	3.32E-06
40	6.51E-05	8.51E-06	0.59	0.00E+00	3.28E-06	4.66E-06	3.73E-06	3.07E-06	2.15E-06	2.10E-06	2.41E-06	3.21E-06	3.24E-06	3.23E-06
46	6.51E-05	9.05E-06	0.67	0.00E+00	3.19E-06	4.48E-06	3.62E-06	2.98E-06	2.09E-06	2.04E-06	2.34E-06	3.12E-06	3.15E-06	3.13E-06
50	6.51E-05	9.41E-06	0.75	0.00E+00	3.98E-06	4.40E-06	3.56E-06	2.93E-06	2.05E-06	2.00E-06	2.30E-06	3.07E-06	3.09E-06	3.08E-06
54	6.69E-05	9.76E-06	0.85	0.00E+00	4.76E-06	4.32E-06	3.36E-06	2.87E-06	2.02E-06	1.97E-06	2.26E-06	3.01E-06	3.04E-06	3.03E-06
60	6.95E-05	1.05E-05	0.95	0.00E+00	5.05E-06	4.27E-06	3.19E-06	2.83E-06	1.99E-06	1.95E-06	2.23E-06	2.98E-06	3.01E-06	2.99E-06
64	7.13E-05	1.10E-05	1.08	0.00E+00	6.03E-06	4.18E-06	3.16E-06	2.80E-06	1.97E-06	1.93E-06	2.21E-06	2.95E-06	2.98E-06	2.96E-06
70	7.38E-05	1.20E-05	1.21	0.00E+00	6.82E-06	4.16E-06	3.14E-06	2.79E-06	1.96E-06	1.92E-06	2.20E-06	2.93E-06	2.96E-06	2.95E-06
76	7.65E-05	1.30E-05	1.37	0.00E+00	7.60E-06	4.13E-06	3.14E-06	2.79E-06	1.96E-06	1.93E-06	2.20E-06	2.93E-06	2.96E-06	2.95E-06
80	7.82E-05	1.36E-05	1.54	0.00E+00	8.13E-06	4.13E-06	3.14E-06	2.70E-06	1.97E-06	1.94E-06	2.21E-06	2.94E-06	2.97E-06	2.96E-06
90	8.25E-05	1.53E-05	1.74	0.00E+00	8.54E-06	4.15E-06	3.15E-06	2.56E-06	1.98E-06	1.95E-06	2.22E-06	2.96E-06	2.99E-06	2.97E-06
91	8.30E-05	1.54E-05	1.96	0.00E+00	8.86E-06	4.15E-06	3.18E-06	2.59E-06	2.00E-06	1.97E-06	2.24E-06	2.99E-06	3.02E-06	3.00E-06
100	8.69E-05	1.69E-05	2.21	0.00E+00	8.84E-06	4.19E-06	3.22E-06	2.62E-06	2.03E-06	2.00E-06	2.27E-06	3.04E-06	3.06E-06	3.04E-06
109	9.16E-05	1.83E-05	2.50	0.00E+00	8.43E-06	4.24E-06	3.27E-06	2.66E-06	2.08E-06	2.04E-06	2.31E-06	3.11E-06	3.12E-06	3.10E-06
133	1.04E-04	2.35E-05	2.81	0.00E+00	7.06E-06	4.29E-06	3.33E-06	2.71E-06	2.12E-06	2.08E-06	2.36E-06	3.18E-06	3.18E-06	3.16E-06
162	1.17E-04	2.92E-05	3.17	0.00E+00	6.55E-06	4.36E-06	3.40E-06	2.77E-06	2.17E-06	2.13E-06	2.42E-06	3.25E-06	3.25E-06	3.24E-06
200	1.34E-04	3.56E-05	3.58	0.00E+00	6.71E-06	4.44E-06	3.49E-06	2.84E-06	2.23E-06	2.19E-06	2.49E-06	3.34E-06	3.35E-06	3.33E-06
249	1.41E-04	4.24E-05	4.04	0.00E+00	6.91E-06	4.58E-06	3.62E-06	2.94E-06	2.32E-06	2.27E-06	2.58E-06	3.47E-06	3.47E-06	3.45E-06
300	1.48E-04	4.71E-05	4.55	0.00E+00	7.10E-06	4.54E-06	3.74E-06	3.03E-06	2.41E-06	2.35E-06	2.67E-06	3.59E-06	3.60E-06	3.58E-06
313	1.48E-04	4.83E-05	5.13	0.00E+00	7.25E-06	4.49E-06	3.89E-06	3.15E-06	2.51E-06	2.45E-06	2.78E-06	3.73E-06	3.74E-06	3.72E-06
397	1.48E-04	5.35E-05	5.79	0.00E+00	6.73E-06	4.62E-06	4.06E-06	3.29E-06	2.63E-06	2.58E-06	2.91E-06	3.91E-06	3.91E-06	3.89E-06
400	1.48E-04	5.36E-05	6.53	0.00E+00	6.85E-06	4.77E-06	4.20E-06	3.42E-06	2.76E-06	2.69E-06	3.07E-06	4.08E-06	4.08E-06	4.06E-06
500	1.41E-04	5.56E-05	7.36	0.00E+00	6.98E-06	5.03E-06	4.17E-06	3.66E-06	2.95E-06	2.88E-06	3.28E-06	4.35E-06	4.36E-06	4.34E-06
509	1.40E-04	5.57E-05	8.30	2.99E-06	6.94E-06	5.05E-06	4.32E-06	3.80E-06	3.07E-06	2.99E-06	3.40E-06	4.51E-06	4.52E-06	4.50E-06
600	1.29E-04	5.40E-05	9.36	1.26E-05	6.60E-06	5.07E-06	4.58E-06	3.91E-06	3.29E-06	3.20E-06	3.62E-06	4.80E-06	4.81E-06	4.79E-06
660	1.22E-04	5.31E-05	10.56	1.01E-05	6.67E-06	5.29E-06	4.81E-06	3.95E-06	3.41E-06	3.37E-06	3.81E-06	5.06E-06	5.07E-06	5.04E-06
700	1.18E-04	5.16E-05	11.91	9.81E-06	6.42E-06	5.58E-06	4.87E-06	4.23E-06	3.43E-06	3.65E-06	4.11E-06	5.41E-06	5.42E-06	5.27E-06
800	1.05E-04	4.84E-05	13.43	8.55E-06	6.63E-06	5.55E-06	4.91E-06	4.54E-06	3.69E-06	3.92E-06	4.42E-06	5.80E-06	5.80E-06	5.52E-06
865	9.72E-05	4.67E-05	15.15	8.37E-06	6.53E-06	5.93E-06	5.24E-06	4.92E-06	3.99E-06	4.24E-06	4.77E-06	6.23E-06	6.27E-06	5.93E-06
900	9.33E-05	4.51E-05	17.08	7.84E-06	6.62E-06	5.86E-06	5.33E-06	4.90E-06	4.33E-06	4.61E-06	5.17E-06	6.73E-06	6.74E-06	6.37E-06
1000	8.36E-05	4.13E-05	19.26	7.68E-06	6.98E-06	6.19E-06	5.75E-06	5.45E-06	4.84E-06	5.14E-06	5.74E-06	7.41E-06	7.40E-06	6.99E-06
1147	6.94E-05	3.68E-05	21.72	7.59E-06	6.67E-06	6.12E-06	5.95E-06	5.71E-06	5.18E-06	5.48E-06	6.10E-06	7.83E-06	7.82E-06	7.40E-06
1545	4.63E-05	2.75E-05	24.49	7.53E-06	6.79E-06	6.53E-06	6.18E-06	5.86E-06	5.72E-06	6.02E-06	6.66E-06	8.32E-06	8.44E-06	7.98E-06
2000	3.26E-05	2.13E-05	27.62	7.31E-06	7.18E-06	6.79E-06	6.51E-06	6.54E-06	5.88E-06	6.24E-06	7.19E-06	8.69E-06	9.26E-06	8.75E-06
2120	2.98E-05	2.01E-05	31.15	7.58E-06	7.26E-06	7.11E-06	6.96E-06	6.62E-06	6.42E-06	6.70E-06	7.39E-06	9.29E-06	9.95E-06	9.36E-06
2977	1.79E-05	1.46E-05	35.13	7.75E-06	7.76E-06	7.44E-06	7.46E-06	7.23E-06	7.44E-06	7.66E-06	8.33E-06	1.04E-05	1.10E-05	1.04E-05

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 34 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: FE
MODEL= BARR: TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 26; ATOMIC-W= 55.85)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	8.24E-06	8.16E-06	8.09E-06	7.90E-06	7.90E-06	7.91E-06	8.59E-06	9.28E-06	1.13E-05	1.20E-05	1.13E-05
44.68	8.76E-06	8.47E-06	9.35E-06	8.56E-06	8.22E-06	8.65E-06	9.11E-06	1.02E-05	1.23E-05	1.30E-05	1.22E-05
50.38	9.23E-06	9.38E-06	9.07E-06	9.17E-06	9.46E-06	9.93E-06	9.91E-06	1.15E-05	1.35E-05	1.43E-05	1.33E-05
56.82	1.02E-05	1.01E-05	1.03E-05	1.02E-05	1.04E-05	1.09E-05	1.16E-05	1.26E-05	1.52E-05	1.59E-05	1.48E-05
64.07	1.12E-05	1.14E-05	1.15E-05	1.11E-05	1.15E-05	1.22E-05	1.21E-05	1.38E-05	1.66E-05	1.73E-05	1.60E-05
72.26	1.28E-05	1.26E-05	1.25E-05	1.28E-05	1.29E-05	1.36E-05	1.41E-05	1.58E-05	1.84E-05	1.90E-05	1.76E-05
81.49	1.42E-05	1.43E-05	1.40E-05	1.42E-05	1.43E-05	1.47E-05	1.55E-05	1.74E-05	2.03E-05	1.98E-05	1.91E-05
91.89	1.56E-05	1.58E-05	1.59E-05	1.59E-05	1.58E-05	1.68E-05	1.79E-05	1.91E-05	2.16E-05	2.15E-05	2.08E-05
103.63	1.83E-05	1.84E-05	1.85E-05	1.87E-05	1.89E-05	1.97E-05	2.10E-05	2.19E-05	2.41E-05	2.43E-05	2.32E-05
116.86	2.05E-05	2.08E-05	2.11E-05	2.13E-05	2.12E-05	2.21E-05	2.26E-05	2.37E-05	2.61E-05	2.61E-05	2.48E-05
131.79	2.34E-05	2.39E-05	2.41E-05	2.44E-05	2.46E-05	2.49E-05	2.56E-05	2.68E-05	2.88E-05	2.87E-05	2.69E-05
148.62	2.71E-05	2.76E-05	2.75E-05	2.76E-05	2.76E-05	2.81E-05	2.87E-05	2.97E-05	3.03E-05	3.05E-05	2.93E-05
167.60	2.91E-05	2.98E-05	3.00E-05	3.01E-05	3.03E-05	3.06E-05	3.08E-05	3.11E-05	3.30E-05	3.23E-05	2.99E-05
189.01	3.35E-05	3.42E-05	3.40E-05	3.41E-05	3.43E-05	3.45E-05	3.46E-05	3.51E-05	3.56E-05	3.58E-05	3.28E-05
213.15	3.79E-05	3.84E-05	3.87E-05	3.84E-05	3.79E-05	3.85E-05	3.87E-05	3.88E-05	3.94E-05	3.82E-05	3.56E-05
240.38	4.03E-05	4.34E-05	4.06E-05	4.07E-05	4.09E-05	4.08E-05	4.15E-05	4.12E-05	4.07E-05	4.04E-05	3.73E-05
271.08	4.35E-05	4.36E-05	4.38E-05	4.39E-05	4.40E-05	4.38E-05	4.44E-05	4.39E-05	4.37E-05	4.30E-05	3.82E-05
305.70	4.72E-05	4.76E-05	4.75E-05	4.76E-05	4.73E-05	4.73E-05	4.77E-05	4.72E-05	4.68E-05	4.53E-05	4.07E-05
344.74	4.91E-05	4.96E-05	4.99E-05	5.01E-05	5.01E-05	5.04E-05	5.00E-05	4.94E-05	4.82E-05	4.65E-05	4.15E-05
388.77	5.14E-05	5.16E-05	5.18E-05	5.19E-05	5.20E-05	5.21E-05	5.22E-05	5.13E-05	4.95E-05	4.84E-05	4.26E-05
438.43	5.32E-05	5.33E-05	5.34E-05	5.34E-05	5.34E-05	5.32E-05	5.32E-05	5.24E-05	5.09E-05	4.82E-05	4.29E-05
494.42	5.42E-05	5.43E-05	5.42E-05	5.41E-05	5.41E-05	5.38E-05	5.37E-05	5.21E-05	5.06E-05	4.84E-05	4.32E-05
557.57	5.34E-05	5.32E-05	5.31E-05	5.30E-05	5.29E-05	5.26E-05	5.25E-05	5.20E-05	4.96E-05	4.75E-05	4.22E-05
628.79	5.22E-05	5.19E-05	5.17E-05	5.16E-05	5.15E-05	5.09E-05	5.08E-05	5.00E-05	4.80E-05	4.56E-05	4.09E-05
709.09	5.01E-05	4.95E-05	4.92E-05	4.89E-05	4.88E-05	4.82E-05	4.81E-05	4.73E-05	4.56E-05	4.36E-05	3.89E-05
799.66	4.75E-05	4.71E-05	4.67E-05	4.64E-05	4.61E-05	4.59E-05	4.57E-05	4.50E-05	4.24E-05	4.08E-05	3.64E-05
901.79	4.39E-05	4.32E-05	4.27E-05	4.23E-05	4.20E-05	4.17E-05	4.14E-05	4.09E-05	3.90E-05	3.74E-05	3.39E-05
1017.00	3.96E-05	3.88E-05	3.84E-05	3.80E-05	3.77E-05	3.74E-05	3.72E-05	3.68E-05	3.52E-05	3.42E-05	3.12E-05
1146.90	3.60E-05	3.55E-05	3.50E-05	3.46E-05	3.43E-05	3.41E-05	3.40E-05	3.36E-05	3.25E-05	3.12E-05	2.89E-05
1293.30	3.18E-05	3.13E-05	3.11E-05	3.10E-05	3.08E-05	3.06E-05	3.05E-05	3.02E-05	2.94E-05	2.86E-05	2.65E-05
1458.50	2.85E-05	2.80E-05	2.77E-05	2.76E-05	2.75E-05	2.73E-05	2.72E-05	2.70E-05	2.63E-05	2.57E-05	2.41E-05
1644.80	2.55E-05	2.53E-05	2.50E-05	2.47E-05	2.45E-05	2.43E-05	2.42E-05	2.40E-05	2.35E-05	2.29E-05	2.17E-05
1854.90	2.26E-05	2.22E-05	2.19E-05	2.16E-05	2.14E-05	2.12E-05	2.11E-05	2.10E-05	2.06E-05	2.02E-05	1.93E-05
2091.80	2.02E-05	2.01E-05	2.00E-05	1.98E-05	1.97E-05	1.96E-05	1.95E-05	1.94E-05	1.91E-05	1.88E-05	1.81E-05
2358.90	1.81E-05	1.79E-05	1.78E-05	1.77E-05	1.76E-05	1.74E-05	1.74E-05	1.72E-05	1.69E-05	1.66E-05	1.59E-05
2660.20	1.56E-05	1.54E-05	1.53E-05	1.50E-05	1.47E-05	1.44E-05	1.42E-05	1.39E-05	1.18E-05	8.50E-06	3.41E-06

TABLE 34 B

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CO
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 27; ATOMIC-W= 58.94)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY — DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

EN-ERGY	UNATTEN-UATED	ATTEN-UATED	ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
12	1.02E-06	8.31E-08	0.20	0.00E+00	0.00E+00	4.89E-08	3.60E-08	2.97E-08	2.09E-08	2.06E-08	2.37E-08	3.18E-08	3.17E-08	3.01E-08
14	8.35E-07	7.25E-08	0.23	0.00E+00	0.00E+00	4.61E-08	3.40E-08	2.80E-08	1.97E-08	1.94E-08	2.24E-08	3.00E-08	2.99E-08	2.84E-08
16	7.00E-07	6.42E-08	0.25	0.00E+00	0.00E+00	3.99E-08	3.19E-08	2.63E-08	1.85E-08	1.93E-08	2.10E-08	2.82E-08	2.81E-08	2.67E-08
18	5.99E-07	5.70E-08	0.29	0.00E+00	0.00E+00	3.74E-08	3.00E-08	2.47E-08	1.74E-08	1.72E-08	1.98E-08	2.65E-08	2.64E-08	2.50E-08
20	5.21E-07	5.28E-08	0.32	0.00E+00	0.00E+00	3.57E-08	2.86E-08	2.36E-08	1.67E-08	1.64E-08	1.88E-09	2.52E-08	2.52E-08	2.39E-08
23	4.83E-07	5.06E-08	0.36	0.00E+00	8.43E-09	3.38E-08	2.71E-08	2.23E-08	1.58E-08	1.55E-08	1.78E-08	2.38E-08	2.38E-08	2.26E-08
26	4.51E-07	5.04E-08	0.41	0.00E+00	7.91E-09	3.17E-08	2.54E-08	2.09E-08	1.48E-08	1.45E-08	1.67E-08	2.24E-08	2.24E-08	2.12E-08
30	4.17E-07	4.78E-08	0.46	0.00E+00	7.70E-09	3.08E-08	2.47E-08	2.03E-08	1.44E-08	1.41E-08	1.63E-08	2.18E-08	2.18E-08	2.06E-08
34	4.05E-07	4.90E-08	0.52	0.00E+00	1.57E-08	2.96E-08	2.38E-08	1.95E-08	1.39E-08	1.36E-08	1.57E-08	2.10E-08	2.09E-08	1.98E-08
40	3.91E-07	5.10E-08	0.59	0.00E+00	2.02E-08	2.85E-08	2.29E-08	1.89E-08	1.35E-08	1.32E-08	1.52E-08	2.04E-08	2.03E-08	1.93E-08
46	3.91E-07	5.43E-08	0.67	0.00E+00	1.96E-08	2.76E-08	2.07E-08	1.84E-08	1.31E-08	1.28E-08	1.47E-08	1.97E-08	1.97E-08	1.87E-08
50	3.91E-07	5.65E-08	0.75	0.00E+00	2.71E-08	2.71E-08	2.03E-08	1.80E-08	1.28E-08	1.26E-08	1.45E-08	1.94E-08	1.94E-08	1.84E-08
54	4.02E-07	5.86E-08	0.85	0.00E+00	2.93E-08	2.66E-08	1.99E-08	1.77E-08	1.26E-08	1.23E-08	1.42E-08	1.90E-08	1.90E-08	1.80E-08
60	4.17E-07	6.30E-08	0.95	0.00E+00	3.32E-08	2.60E-08	1.97E-08	1.75E-08	1.25E-08	1.22E-08	1.41E-08	1.88E-08	1.88E-08	1.78E-08
64	4.28E-07	6.59E-08	1.08	0.00E+00	3.70E-08	2.57E-08	1.95E-08	1.71E-08	1.23E-08	1.21E-08	1.39E-08	1.86E-08	1.86E-08	1.76E-08
70	4.43E-07	7.18E-08	1.21	0.00E+00	4.35E-08	2.55E-08	1.93E-08	1.57E-08	1.22E-08	1.20E-08	1.38E-08	1.85E-08	1.85E-08	1.75E-08
76	4.59E-07	7.77E-08	1.37	0.00E+00	4.84E-08	2.53E-08	1.92E-08	1.57E-08	1.22E-08	1.20E-08	1.38E-08	1.85E-08	1.85E-08	1.75E-08
80	4.69E-07	8.17E-08	1.54	0.00E+00	5.10E-08	2.54E-08	1.93E-08	1.57E-08	1.23E-08	1.20E-08	1.38E-08	1.85E-08	1.85E-08	1.75E-08
90	4.95E-07	9.16E-08	1.74	0.00E+00	5.22E-08	2.52E-08	1.93E-08	1.58E-08	1.23E-08	1.22E-08	1.39E-08	1.86E-08	1.86E-08	1.76E-08
91	4.98E-07	9.26E-08	1.96	0.00E+00	5.41E-08	2.54E-08	1.95E-08	1.59E-08	1.24E-08	1.23E-08	1.40E-08	1.88E-08	1.88E-08	1.78E-08
100	5.21E-07	1.01E-07	2.21	0.00E+00	5.39E-08	2.55E-08	1.97E-08	1.60E-08	1.26E-08	1.25E-08	1.42E-08	1.90E-08	1.90E-08	1.80E-08
109	5.50E-07	1.10E-07	2.50	0.00E+00	4.86E-08	2.58E-08	2.00E-08	1.63E-08	1.28E-08	1.27E-08	1.44E-08	1.93E-08	1.93E-08	1.83E-08
133	6.22E-07	1.41E-07	2.81	0.00E+00	4.22E-08	2.62E-08	2.04E-08	1.66E-08	1.31E-08	1.29E-08	1.47E-08	1.97E-08	1.97E-08	1.87E-08
162	7.03E-07	1.75E-07	3.17	0.00E+00	3.99E-08	2.65E-08	2.08E-08	1.69E-08	1.34E-08	1.32E-08	1.51E-08	2.02E-08	2.01E-08	1.91E-08
200	8.01E-07	2.14E-07	3.58	0.00E+00	4.08E-08	2.71E-08	2.13E-08	1.73E-08	1.38E-08	1.36E-08	1.55E-08	2.07E-08	2.07E-08	1.96E-08
249	8.46E-07	2.54E-07	4.04	0.00E+00	4.19E-08	2.78E-08	2.21E-08	1.79E-08	1.43E-08	1.41E-08	1.60E-08	2.15E-08	2.14E-08	2.03E-08
300	8.86E-07	2.83E-07	4.55	0.00E+00	4.30E-08	2.70E-08	2.28E-08	1.85E-08	1.49E-08	1.45E-08	1.66E-08	2.22E-08	2.22E-08	2.10E-08
313	8.86E-07	2.90E-07	5.13	0.00E+00	4.38E-08	2.71E-08	2.37E-08	1.92E-08	1.55E-08	1.51E-08	1.72E-08	2.31E-08	2.31E-08	2.18E-08
397	8.86E-07	3.21E-07	5.79	0.00E+00	4.07E-08	2.80E-08	2.47E-08	2.00E-08	1.62E-08	1.59E-08	1.82E-08	2.41E-08	2.41E-08	2.28E-08
400	8.86E-07	3.22E-07	6.53	0.00E+00	4.14E-08	2.88E-08	2.45E-08	2.08E-08	1.69E-08	1.66E-08	1.90E-08	2.51E-08	2.51E-08	2.38E-08
500	8.47E-07	3.34E-07	7.36	0.00E+00	4.20E-08	3.05E-08	2.53E-08	2.23E-08	1.81E-08	1.77E-08	2.03E-08	2.68E-08	2.68E-08	2.54E-08
509	8.39E-07	3.34E-07	8.30	2.12E-08	4.09E-08	3.06E-08	2.62E-08	2.31E-08	1.89E-08	1.84E-08	2.10E-08	2.77E-08	2.78E-08	2.63E-08
600	7.72E-07	3.24E-07	9.36	7.76E-08	3.97E-08	3.06E-08	2.77E-08	2.32E-08	1.95E-08	1.97E-08	2.23E-08	2.95E-08	2.96E-08	2.79E-08
660	7.30E-07	3.18E-07	10.56	6.09E-08	3.97E-08	3.19E-08	2.91E-08	2.39E-08	1.95E-08	2.07E-08	2.35E-08	3.10E-08	3.12E-08	2.94E-08
700	7.06E-07	3.10E-07	11.91	5.90E-08	3.86E-08	3.37E-08	2.91E-08	2.56E-08	2.09E-08	2.24E-08	2.54E-08	3.32E-08	3.33E-08	3.14E-08
800	6.32E-07	2.91E-07	13.43	5.37E-08	3.99E-08	3.35E-08	2.96E-08	2.74E-08	2.25E-08	2.40E-08	2.72E-08	3.33E-08	3.56E-08	3.36E-08
865	5.83E-07	2.80E-07	15.15	5.03E-08	3.53E-08	3.57E-08	3.16E-08	2.91E-08	2.43E-08	2.60E-08	2.93E-08	3.57E-08	3.82E-08	3.60E-09
900	5.60E-07	2.71E-07	17.08	4.71E-08	3.93E-08	3.52E-08	3.21E-08	2.96E-08	2.64E-08	2.81E-08	3.17E-08	3.83E-08	4.10E-08	3.87E-08
1000	5.02E-07	2.48E-07	19.26	4.61E-08	4.19E-08	3.73E-08	3.47E-08	3.29E-08	2.94E-08	3.14E-08	3.52E-08	4.20E-08	4.50E-08	4.24E-08
1147	4.16E-07	2.21E-07	21.72	4.56E-08	4.01E-08	3.69E-08	3.59E-08	3.41E-08	3.15E-08	3.34E-08	3.74E-08	4.44E-08	4.76E-08	4.48E-08
1545	2.78E-07	1.65E-07	24.49	4.52E-08	4.08E-08	3.89E-08	3.72E-08	3.53E-08	3.36E-08	3.55E-08	3.96E-08	4.81E-08	5.13E-08	4.83E-08
2000	1.95E-07	1.27E-07	27.62	4.39E-08	4.31E-08	4.09E-08	3.92E-08	3.94E-08	3.56E-08	3.74E-08	4.17E-08	5.29E-08	5.65E-08	5.29E-08
2120	1.78E-07	1.20E-07	31.15	4.55E-08	4.36E-08	4.23E-08	4.19E-08	3.99E-08	3.89E-08	4.07E-08	4.50E-08	5.65E-08	6.03E-08	5.66E-08
2977	1.04E-07	8.47E-08	35.13	4.65E-08	4.66E-08	4.48E-08	4.44E-08	4.35E-08	4.52E-08	4.64E-08	5.08E-08	6.31E-08	6.68E-08	6.27E-08

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE 35A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: CO
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 27; ATOMIC-W= 58.94)
63.0 DEG/1334-1334 KM

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DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	4.95E-08	4.90E-08	4.86E-08	4.75E-08	4.76E-08	4.78E-08	5.21E-08	5.65E-08	6.89E-08	7.29E-08	6.82E-08
44.68	5.26E-08	5.09E-08	5.02E-08	5.09E-08	4.89E-08	5.21E-08	5.38E-08	6.20E-08	7.43E-08	7.85E-08	7.33E-08
50.38	5.54E-08	5.57E-08	5.39E-08	5.52E-08	5.69E-08	5.88E-08	5.99E-08	7.01E-08	8.22E-08	8.64E-08	8.03E-08
56.82	6.12E-08	6.36E-08	6.14E-08	6.16E-08	6.26E-08	6.59E-08	7.02E-08	7.61E-08	9.19E-08	9.60E-08	8.90E-08
64.07	6.74E-08	6.83E-08	6.93E-08	6.71E-08	6.92E-08	7.19E-08	7.30E-08	8.38E-08	1.01E-07	1.05E-07	9.65E-08
72.26	7.66E-08	7.56E-08	7.53E-08	7.68E-08	7.64E-08	8.19E-08	8.56E-08	9.58E-08	1.12E-07	1.10E-07	1.06E-07
81.49	8.53E-08	8.57E-08	8.43E-08	8.55E-08	8.56E-08	8.78E-08	9.27E-08	1.05E-07	1.23E-07	1.19E-07	1.15E-07
91.89	9.35E-08	9.51E-08	9.52E-08	9.53E-08	9.52E-08	1.01E-07	1.07E-07	1.15E-07	1.27E-07	1.30E-07	1.25E-07
103.63	1.10E-07	1.11E-07	1.11E-07	1.12E-07	1.13E-07	1.18E-07	1.26E-07	1.32E-07	1.46E-07	1.46E-07	1.40E-07
116.86	1.23E-07	1.25E-07	1.27E-07	1.28E-07	1.27E-07	1.33E-07	1.34E-07	1.43E-07	1.58E-07	1.58E-07	1.49E-07
131.79	1.40E-07	1.44E-07	1.45E-07	1.46E-07	1.48E-07	1.50E-07	1.54E-07	1.59E-07	1.71E-07	1.73E-07	1.62E-07
148.62	1.63E-07	1.66E-07	1.65E-07	1.66E-07	1.66E-07	1.69E-07	1.73E-07	1.79E-07	1.83E-07	1.81E-07	1.72E-07
167.60	1.75E-07	1.79E-07	1.80E-07	1.81E-07	1.82E-07	1.83E-07	1.85E-07	1.87E-07	1.99E-07	1.94E-07	1.80E-07
189.01	2.01E-07	2.03E-07	2.04E-07	2.05E-07	2.06E-07	2.07E-07	2.08E-07	2.11E-07	2.13E-07	2.16E-07	1.97E-07
213.15	2.27E-07	2.31E-07	2.32E-07	2.31E-07	2.28E-07	2.31E-07	2.33E-07	2.33E-07	2.37E-07	2.27E-07	2.13E-07
240.38	2.42E-07	2.43E-07	2.44E-07	2.45E-07	2.45E-07	2.45E-07	2.49E-07	2.46E-07	2.43E-07	2.43E-07	2.21E-07
271.08	2.61E-07	2.62E-07	2.63E-07	2.63E-07	2.64E-07	2.63E-07	2.67E-07	2.63E-07	2.63E-07	2.57E-07	2.29E-07
305.70	2.83E-07	2.86E-07	2.85E-07	2.86E-07	2.84E-07	2.84E-07	2.87E-07	2.84E-07	2.81E-07	2.72E-07	2.44E-07
344.74	2.95E-07	2.98E-07	3.00E-07	3.00E-07	3.01E-07	3.02E-07	3.00E-07	2.96E-07	2.88E-07	2.78E-07	2.47E-07
388.77	3.09E-07	3.10E-07	3.11E-07	3.12E-07	3.12E-07	3.13E-07	3.13E-07	3.08E-07	2.97E-07	2.90E-07	2.55E-07
438.43	3.19E-07	3.20E-07	3.20E-07	3.20E-07	3.21E-07	3.19E-07	3.19E-07	3.15E-07	3.05E-07	2.89E-07	2.57E-07
494.42	3.25E-07	3.26E-07	3.25E-07	3.25E-07	3.28E-07	3.23E-07	3.22E-07	3.12E-07	3.04E-07	2.90E-07	2.58E-07
557.57	3.20E-07	3.19E-07	3.18E-07	3.18E-07	3.18E-07	3.15E-07	3.15E-07	3.12E-07	2.98E-07	2.83E-07	2.51E-07
628.79	3.13E-07	3.11E-07	3.10E-07	3.10E-07	3.09E-07	3.05E-07	3.05E-07	3.00E-07	2.87E-07	2.73E-07	2.44E-07
709.09	3.01E-07	2.97E-07	2.95E-07	2.94E-07	2.93E-07	2.89E-07	2.89E-07	2.84E-07	2.73E-07	2.61E-07	2.30E-07
799.66	2.85E-07	2.83E-07	2.80E-07	2.78E-07	2.77E-07	2.75E-07	2.74E-07	2.70E-07	2.54E-07	2.44E-07	2.18E-07
901.79	2.64E-07	2.59E-07	2.56E-07	2.54E-07	2.52E-07	2.50E-07	2.48E-07	2.46E-07	2.34E-07	2.24E-07	2.03E-07
1017.00	2.38E-07	2.33E-07	2.30E-07	2.28E-07	2.26E-07	2.25E-07	2.23E-07	2.21E-07	2.11E-07	2.05E-07	1.85E-07
1146.90	2.16E-07	2.13E-07	2.10E-07	2.08E-07	2.06E-07	2.05E-07	2.04E-07	2.01E-07	1.94E-07	1.87E-07	1.73E-07
1293.30	1.91E-07	1.87E-07	1.86E-07	1.86E-07	1.85E-07	1.84E-07	1.83E-07	1.81E-07	1.76E-07	1.71E-07	1.58E-07
1458.50	1.71E-07	1.67E-07	1.66E-07	1.65E-07	1.65E-07	1.64E-07	1.63E-07	1.61E-07	1.58E-07	1.53E-07	1.44E-07
1644.80	1.53E-07	1.51E-07	1.49E-07	1.48E-07	1.46E-07	1.45E-07	1.45E-07	1.43E-07	1.40E-07	1.37E-07	1.30E-07
1854.90	1.35E-07	1.33E-07	1.31E-07	1.29E-07	1.28E-07	1.27E-07	1.26E-07	1.25E-07	1.23E-07	1.20E-07	1.15E-07
2091.80	1.20E-07	1.20E-07	1.19E-07	1.18E-07	1.17E-07	1.17E-07	1.16E-07	1.15E-07	1.13E-07	1.11E-0[illegible]	1.07E-07
2358.90	1.07E-07	1.06E-07	1.05E-07	1.04E-07	1.04E-07	1.03E-07	1.02E-07	1.01E-07	9.95E-08	9.77E-08	9.29E-08
2660.20	9.14E-08	9.04E-08	8.92E-08	8.77E-08	8.58E-08	8.38E-08	8.26E-08	8.11E-08	6.83E-08	4.94E-08	1.98E-08

TABLE 35 B

ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NI
MODEL= BARR; TIME= 1989.2.0; PERIOD= 1.8723
(ATOMIC-NUM= 28; ATOMIC-W= 58.71)
63.0 DEG/1334-1334 KM

MAGNETOSPHERICALLY

EN-ERGY	UNATTEN-UATED	ATTEN-UATED
12	8.19E-06	6.65E-07
14	6.68E-06	5.80E-07
16	5.60E-06	5.14E-07
18	4.79E-06	4.56E-07
20	4.17E-06	4.23E-07
23	3.86E-06	4.05E-07
26	3.61E-06	4.03E-07
30	3.33E-06	3.82E-07
34	3.24E-06	3.92E-07
40	3.13E-06	4.08E-07
46	3.13E-06	4.34E-07
50	3.13E-06	4.52E-07
54	3.21E-06	4.68E-07
60	3.33E-06	5.04E-07
64	3.42E-06	5.27E-07
70	3.54E-06	5.75E-07
76	3.67E-06	6.22E-07
80	3.75E-06	6.54E-07
90	3.96E-06	7.33E-07
91	3.98E-06	7.41E-07
100	4.17E-06	8.11E-07
109	4.40E-06	8.80E-07
133	4.98E-06	1.13E-06
162	5.62E-06	1.40E-06
200	6.41E-06	1.71E-06
249	6.77E-06	2.04E-06
300	7.09E-06	2.26E-06
313	7.09E-06	2.32E-06
397	7.09E-06	2.57E-06
400	7.09E-06	2.57E-06
500	6.77E-06	2.67E-06
509	6.71E-06	2.68E-06
600	6.17E-06	2.59E-06
660	5.84E-06	2.55E-06
700	5.64E-06	2.48E-06
800	5.06E-06	2.32E-06
865	4.67E-06	2.24E-06
900	4.48E-06	2.17E-06
1000	4.01E-06	1.98E-06
1147	3.33E-06	1.76E-06
1545	2.22E-06	1.32E-06
2000	1.56E-06	1.02E-06
2120	1.43E-06	9.59E-07
2977	8.29E-07	6.78E-07

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
0.20	0.00E+00	4.02E-07	3.59E-07	2.73E-07	2.21E-07	1.80E-07	1.78E-07	2.08E-07	2.54E-07	2.71E-07	2.51E-07
0.23	0.00E+00	4.76E-07	3.39E-07	2.57E-07	2.08E-07	1.70E-07	1.68E-07	1.96E-07	2.40E-07	2.56E-07	2.37E-07
0.25	0.00E+00	4.61E-07	3.18E-07	2.41E-07	1.96E-07	1.59E-07	1.58E-07	1.84E-07	2.25E-07	2.41E-07	2.23E-07
0.29	0.00E+00	4.33E-07	2.96E-07	2.26E-07	1.84E-07	1.50E-07	1.48E-07	1.73E-07	2.12E-07	2.26E-07	2.09E-07
0.32	0.00E+00	4.13E-07	2.82E-07	2.16E-07	1.75E-07	1.43E-07	1.42E-07	1.65E-07	2.02E-07	2.16E-07	2.00E-07
0.36	0.00E+00	4.25E-07	2.67E-07	2.04E-07	1.65E-07	1.35E-07	1.34E-07	1.56E-07	1.91E-07	2.04E-07	1.89E-07
0.41	0.00E+00	4.32E-07	2.50E-07	1.91E-07	1.55E-07	1.27E-07	1.25E-07	1.46E-07	1.79E-07	1.91E-07	1.77E-07
0.46	0.00E+00	4.21E-07	2.43E-07	1.86E-07	1.51E-07	1.23E-07	1.22E-07	1.42E-07	1.74E-07	1.86E-07	1.72E-07
0.52	0.00E+00	4.10E-07	2.34E-07	1.79E-07	1.45E-07	1.18E-07	1.17E-07	1.37E-07	1.67E-07	1.79E-07	1.66E-07
0.59	0.00E+00	4.38E-07	2.25E-07	1.74E-07	1.40E-07	1.15E-07	1.14E-07	1.33E-07	1.63E-07	1.73E-07	1.61E-07
0.67	0.00E+00	4.24E-07	2.18E-07	1.68E-07	1.36E-07	1.11E-07	1.10E-07	1.29E-07	1.57E-07	1.68E-07	1.56E-07
0.75	0.00E+00	4.30E-07	2.14E-07	1.65E-07	1.34E-07	1.09E-07	1.08E-07	1.26E-07	1.55E-07	1.65E-07	1.53E-07
0.85	0.00E+00	4.36E-07	2.10E-07	1.62E-07	1.31E-07	1.07E-07	1.06E-07	1.24E-07	1.52E-07	1.62E-07	1.50E-07
0.95	0.00E+00	4.37E-07	2.06E-07	1.60E-07	1.29E-07	1.06E-07	1.05E-07	1.22E-07	1.50E-07	1.60E-07	1.48E-07
1.08	0.00E+00	4.38E-07	2.03E-07	1.58E-07	1.28E-07	1.05E-07	1.04E-07	1.21E-07	1.48E-07	1.58E-07	1.46E-07
1.21	0.00E+00	4.34E-07	2.01E-07	1.57E-07	1.27E-07	1.04E-07	1.04E-07	1.20E-07	1.47E-07	1.57E-07	1.45E-07
1.37	0.00E+00	4.18E-07	2.00E-07	1.56E-07	1.26E-07	9.86E-08	1.04E-07	1.20E-07	1.47E-07	1.57E-07	1.45E-07
1.54	0.00E+00	3.97E-07	2.00E-07	1.56E-07	1.27E-07	9.57E-08	1.04E-07	1.21E-07	1.47E-07	1.57E-07	1.45E-07
1.74	0.00E+00	3.86E-07	2.00E-07	1.57E-07	1.27E-07	9.60E-08	1.04E-07	1.22E-07	1.47E-07	1.57E-07	1.46E-07
1.96	0.00E+00	3.33E-07	2.01E-07	1.58E-07	1.28E-07	9.69E-08	1.05E-07	1.23E-07	1.49E-07	1.59E-07	1.47E-07
2.21	0.00E+00	3.07E-07	2.02E-07	1.60E-07	1.29E-07	9.80E-08	1.07E-07	1.25E-07	1.51E-07	1.61E-07	1.49E-07
2.50	0.00E+00	3.11E-07	2.05E-07	1.62E-07	1.31E-07	9.96E-08	1.08E-07	1.27E-07	1.53E-07	1.63E-07	1.51E-07
2.81	0.00E+00	3.15E-07	2.08E-07	1.65E-07	1.34E-07	1.01E-07	1.10E-07	1.29E-07	1.56E-07	1.66E-07	1.54E-07
3.17	0.00E+00	3.20E-07	2.02E-07	1.68E-07	1.37E-07	1.04E-07	1.13E-07	1.32E-07	1.59E-07	1.70E-07	1.57E-07
3.58	0.00E+00	3.27E-07	2.00E-07	1.73E-07	1.40E-07	1.06E-07	1.16E-07	1.35E-07	1.63E-07	1.74E-07	1.61E-07
4.04	0.00E+00	3.34E-07	2.05E-07	1.79E-07	1.45E-07	1.10E-07	1.20E-07	1.40E-07	1.69E-07	1.80E-07	1.67E-07
4.55	0.00E+00	3.28E-07	2.09E-07	1.80E-07	1.50E-07	1.14E-07	1.24E-07	1.45E-07	1.75E-07	1.86E-07	1.73E-07
5.13	0.00E+00	3.15E-07	2.15E-07	1.77E-07	1.56E-07	1.19E-07	1.29E-07	1.50E-07	1.81E-07	1.93E-07	1.79E-07
5.79	0.00E+00	3.20E-07	2.23E-07	1.85E-07	1.63E-07	1.24E-07	1.35E-07	1.57E-07	1.89E-07	2.02E-07	1.87E-07
6.53	0.00E+00	3.24E-07	2.31E-07	1.92E-07	1.70E-07	1.29E-07	1.41E-07	1.63E-07	1.97E-07	2.10E-07	1.95E-07
7.36	0.00E+00	3.12E-07	2.26E-07	2.04E-07	1.67E-07	1.38E-07	1.50E-07	1.74E-07	2.10E-07	2.24E-07	2.07E-07
9.30	2.29E-07	3.09E-07	2.33E-07	2.11E-07	1.73E-07	1.43E-07	1.56E-07	1.72E-07	2.17E-07	2.31E-07	2.14E-07
9.36	5.88E-07	3.13E-07	2.45E-07	2.23E-07	1.84E-07	1.53E-07	1.66E-07	1.78E-07	2.31E-07	2.46E-07	2.28E-07
10.56	4.87E-07	3.09E-07	2.56E-07	2.19E-07	1.93E-07	1.61E-07	1.75E-07	1.87E-07	2.44E-07	2.58E-07	2.39E-07
11.91	4.58E-07	3.07E-07	2.58E-07	2.24E-07	2.07E-07	1.73E-07	1.88E-07	1.99E-07	2.60E-07	2.76E-07	2.55E-07
13.43	4.22E-07	3.10E-07	2.69E-07	2.37E-07	2.21E-07	1.86E-07	2.02E-07	2.14E-07	2.78E-07	2.96E-07	2.73E-07
15.15	3.97E-07	3.14E-07	2.79E-07	2.48E-07	2.22E-07	2.02E-07	2.19E-07	2.31E-07	2.98E-07	3.17E-07	2.93E-07
17.08	3.76E-07	3.16E-07	2.74E-07	2.53E-07	2.40E-07	2.20E-07	2.27E-07	2.48E-07	3.20E-07	3.40E-07	3.14E-07
19.26	3.69E-07	3.27E-07	2.94E-07	2.80E-07	2.67E-07	2.45E-07	2.41E-07	2.75E-07	3.50E-07	3.73E-07	3.44E-07
21.72	3.61E-07	3.17E-07	2.93E-07	2.78E-07	2.64E-07	2.43E-07	2.56E-07	2.91E-07	3.71E-07	3.93E-07	3.63E-07
24.49	3.62E-07	3.28E-07	3.09E-07	3.01E-07	2.86E-07	2.62E-07	2.79E-07	3.17E-07	4.01E-07	4.24E-07	3.91E-07
27.62	3.51E-07	3.39E-07	3.29E-07	3.16E-07	3.02E-07	2.94E-07	3.12E-07	3.51E-07	4.39E-07	4.54E-07	4.28E-07
31.15	3.65E-07	3.50E-07	3.37E-07	3.38E-07	3.23E-07	3.22E-07	3.39E-07	3.79E-07	4.70E-07	4.68E-07	4.57E-07
35.13	3.73E-07	3.70E-07	3.60E-07	3.58E-07	3.48E-07	3.53E-07	3.86E-07	4.28E-07	5.23E-07	5.18E-07	5.05E-07

TABLE 36 A

TOPEX COSMIC RAY ANALYSIS (SOLAR MINIMUM) FOR: NI
MODEL= BARR: TIME= 1989.2.0; PERIOD= 1.9723
(ATOMIC-NUM= 28; ATOMIC-W= 58.71)
63.0 DEG/1334-1334 KM

****

DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL ALUMINUM SHIELDS (PARTICLES/CM**2*DAY*MEV/N)

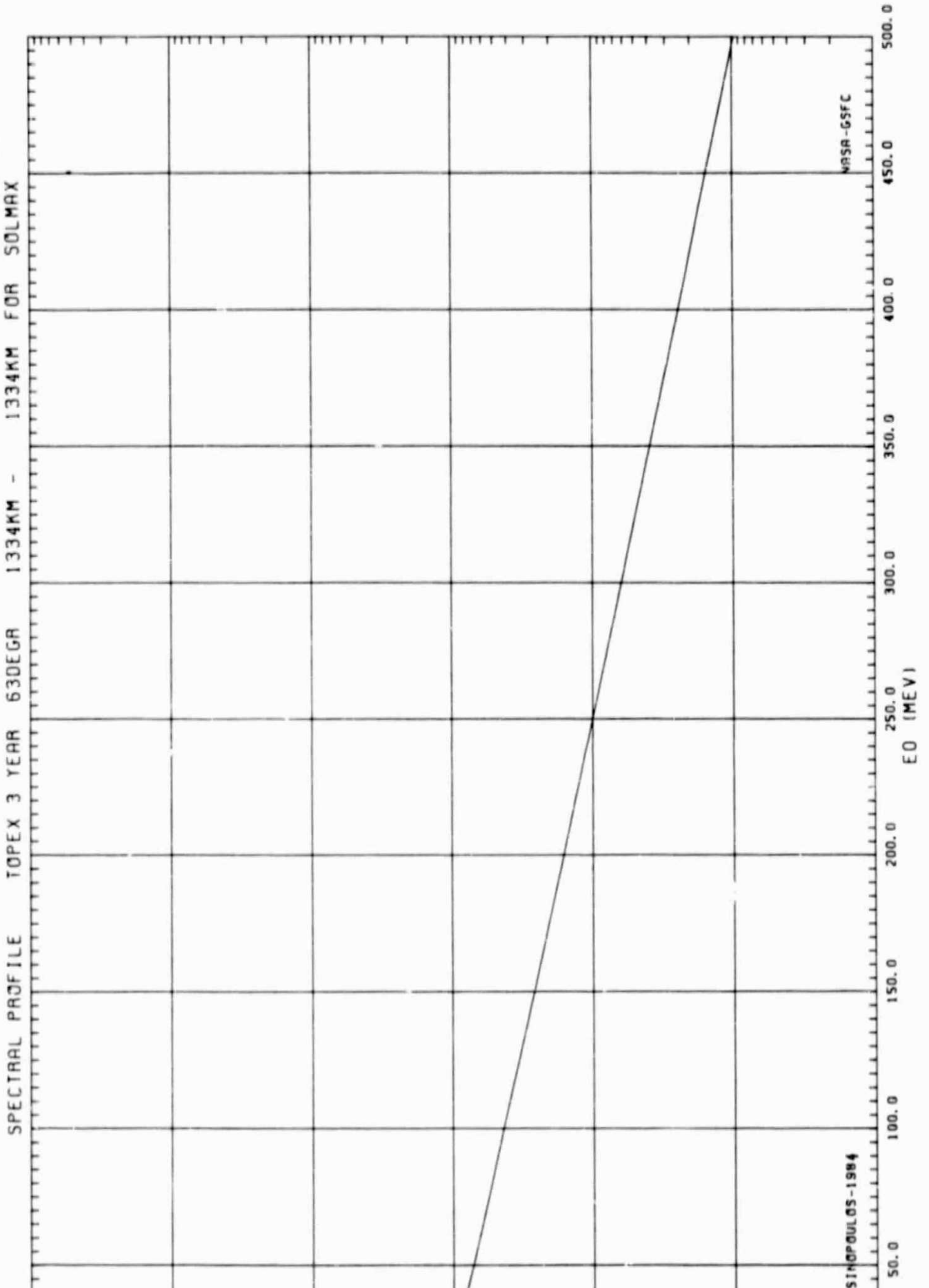
SHIELD THICKNESS (GM/CM**2)

ENERGY	0.01	0.03	0.05	0.07	0.10	0.30	0.50	1.0	3.0	5.0	10.0
39.62	3.92E-07	3.94E-07	3.91E-07	3.79E-07	3.81E-07	3.85E-07	4.03E-07	4.76E-07	5.71E-07	5.63E-07	5.49E-07
44.68	4.17E-07	4.09E-07	4.04E-07	4.11E-07	3.95E-07	4.29E-07	4.33E-07	5.20E-07	6.15E-07	6.08E-07	5.90E-07
50.38	4.44E-07	4.47E-07	4.33E-07	4.45E-07	4.48E-07	4.56E-07	4.95E-07	5.41E-07	6.79E-07	6.66E-07	6.46E-07
56.82	4.90E-07	4.86E-07	4.94E-07	4.97E-07	5.00E-07	5.38E-07	5.47E-07	6.19E-07	7.60E-07	7.41E-07	7.15E-07
64.07	5.40E-07	5.48E-07	5.45E-07	5.39E-07	5.39E-07	5.68E-07	6.00E-07	6.96E-07	8.26E-07	8.07E-07	7.76E-07
72.26	6.14E-07	6.06E-07	6.05E-07	6.18E-07	6.17E-07	6.58E-07	6.76E-07	7.84E-07	8.61E-07	8.85E-07	8.48E-07
81.49	6.83E-07	6.87E-07	6.76E-07	6.85E-07	6.82E-07	7.16E-07	7.61E-07	8.29E-07	9.49E-07	9.68E-07	9.23E-07
91.89	7.48E-07	7.61E-07	7.64E-07	7.67E-07	7.66E-07	8.15E-07	8.68E-07	9.49E-07	1.05E-06	1.06E-06	1.00E-06
103.63	8.82E-07	8.88E-07	8.90E-07	9.02E-07	9.11E-07	9.60E-07	1.03E-06	1.06E-06	1.19E-06	1.19E-06	1.09E-06
116.86	9.89E-07	1.00E-06	1.01E-06	1.03E-06	1.02E-06	1.07E-06	1.08E-06	1.17E-06	1.28E-06	1.27E-06	1.14E-06
131.79	1.12E-06	1.15E-06	1.16E-06	1.17E-06	1.19E-06	1.20E-06	1.22E-06	1.26E-06	1.34E-06	1.33E-06	1.24E-06
148.62	1.30E-06	1.31E-06	1.32E-06	1.33E-06	1.32E-06	1.35E-06	1.38E-06	1.44E-06	1.49E-06	1.46E-06	1.35E-06
167.60	1.40E-06	1.43E-06	1.44E-06	1.45E-06	1.46E-06	1.46E-06	1.49E-06	1.52E-06	1.62E-06	1.57E-06	1.44E-06
189.01	1.61E-06	1.63E-06	1.64E-06	1.64E-06	1.65E-06	1.65E-06	1.66E-06	1.70E-06	1.71E-06	1.69E-06	1.57E-06
213.15	1.82E-06	1.85E-06	1.84E-06	1.85E-06	1.82E-06	1.86E-06	1.84E-06	1.88E-06	1.88E-06	1.83E-06	1.66E-06
240.38	1.92E-06	1.94E-06	1.95E-06	1.96E-06	1.96E-06	1.96E-06	2.00E-06	1.98E-06	1.96E-06	1.94E-06	1.71E-06
271.08	2.09E-06	2.09E-06	2.10E-06	2.11E-06	2.11E-06	2.11E-06	2.13E-06	2.12E-06	2.12E-06	2.01E-06	1.82E-06
305.70	2.27E-06	2.29E-06	2.28E-06	2.28E-06	2.27E-06	2.28E-06	2.30E-06	2.26E-06	2.22E-06	2.14E-06	1.91E-06
344.74	2.36E-06	2.39E-06	2.40E-06	2.40E-06	2.41E-06	2.42E-06	2.39E-06	2.38E-06	2.29E-06	2.21E-06	1.94E-06
388.77	2.47E-06	2.48E-06	2.49E-06	2.49E-06	2.50E-06	2.50E-06	2.51E-06	2.46E-06	2.37E-06	2.26E-06	2.02E-06
438.43	2.55E-06	2.56E-06	2.56E-06	2.56E-06	2.56E-06	2.55E-06	2.55E-06	2.52E-06	2.41E-06	2.29E-06	2.00E-06
494.42	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.60E-06	2.58E-06	2.56E-06	2.50E-06	2.41E-06	2.29E-06	2.00E-06
557.57	2.56E-06	2.55E-06	2.55E-06	2.54E-06	2.54E-06	2.52E-06	2.52E-06	2.49E-06	2.37E-06	2.25E-06	1.99E-06
628.79	2.50E-06	2.49E-06	2.48E-06	2.48E-06	2.47E-06	2.44E-06	2.44E-06	2.40E-06	2.28E-06	2.17E-06	1.91E-06
709.09	2.40E-06	2.37E-06	2.36E-06	2.35E-06	2.34E-06	2.31E-06	2.31E-06	2.27E-06	2.18E-06	2.07E-06	1.81E-06
799.66	2.23E-06	2.26E-06	2.24E-06	2.22E-06	2.21E-06	2.20E-06	2.19E-06	2.15E-06	2.02E-06	1.94E-06	1.72E-06
901.76	2.10E-06	2.07E-06	2.05E-06	2.03E-06	2.01E-06	2.00E-06	1.99E-06	1.96E-06	1.86E-06	1.78E-06	1.59E-06
1017.00	1.89E-06	1.86E-06	1.84E-06	1.83E-06	1.81E-06	1.79E-06	1.78E-06	1.76E-06	1.68E-06	1.63E-06	1.46E-06
1146.90	1.73E-06	1.70E-06	1.68E-06	1.66E-06	1.65E-06	1.64E-06	1.63E-06	1.61E-06	1.55E-06	1.49E-06	1.36E-06
1293.30	1.53E-06	1.50E-06	1.49E-06	1.48E-06	1.48E-06	1.47E-06	1.46E-06	1.45E-06	1.40E-06	1.36E-06	1.25E-06
1458.50	1.36E-06	1.34E-06	1.33E-06	1.32E-06	1.32E-06	1.31E-06	1.30E-06	1.29E-06	1.26E-06	1.22E-06	1.14E-06
1644.80	1.22E-06	1.21E-06	1.20E-06	1.18E-06	1.17E-06	1.16E-06	1.16E-06	1.15E-06	1.12E-06	1.09E-06	1.03E-06
1854.90	1.08E-06	1.06E-06	1.05E-06	1.03E-06	1.02E-06	1.01E-06	1.01E-06	1.00E-06	9.80E-07	9.59E-07	9.13E-07
2091.80	9.63E-07	9.57E-07	9.50E-07	9.44E-07	9.37E-07	9.32E-07	9.28E-07	9.22E-07	9.05E-07	8.89E-07	8.48E-07
2358.90	8.54E-07	8.48E-07	8.42E-07	8.35E-07	8.28E-07	8.22E-07	8.18E-07	8.11E-07	7.95E-07	7.79E-07	7.37E-07
2660.20	7.31E-07	7.22E-07	7.11E-07	6.98E-07	6.81E-07	6.64E-07	6.57E-07	6.46E-07	4.77E-07	3.87E-07	1.54E-07

TABLE 36 B

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 1



ORIGINAL PAGE IS OF POOR QUALITY

FIGURE 2

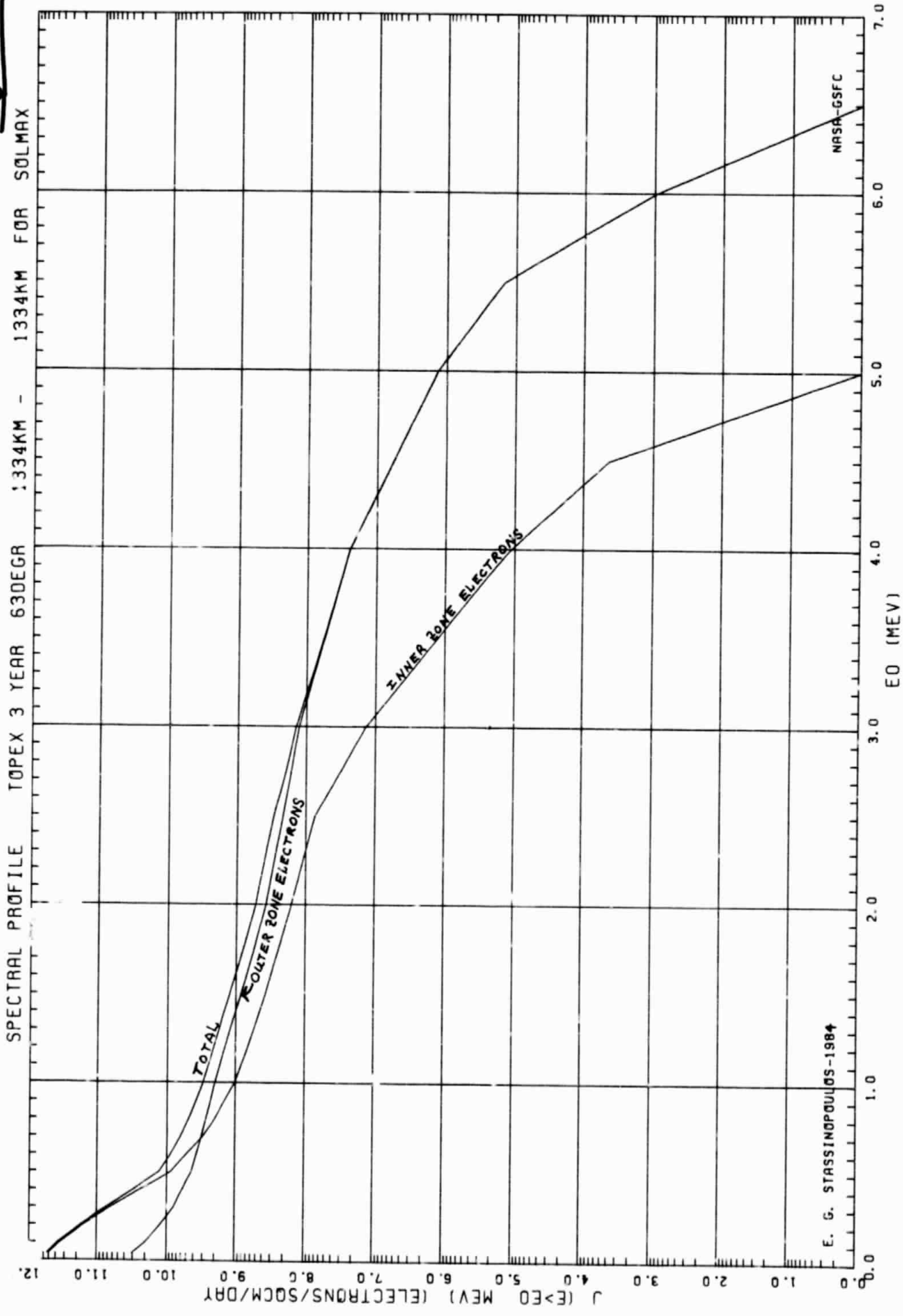


FIGURE 3

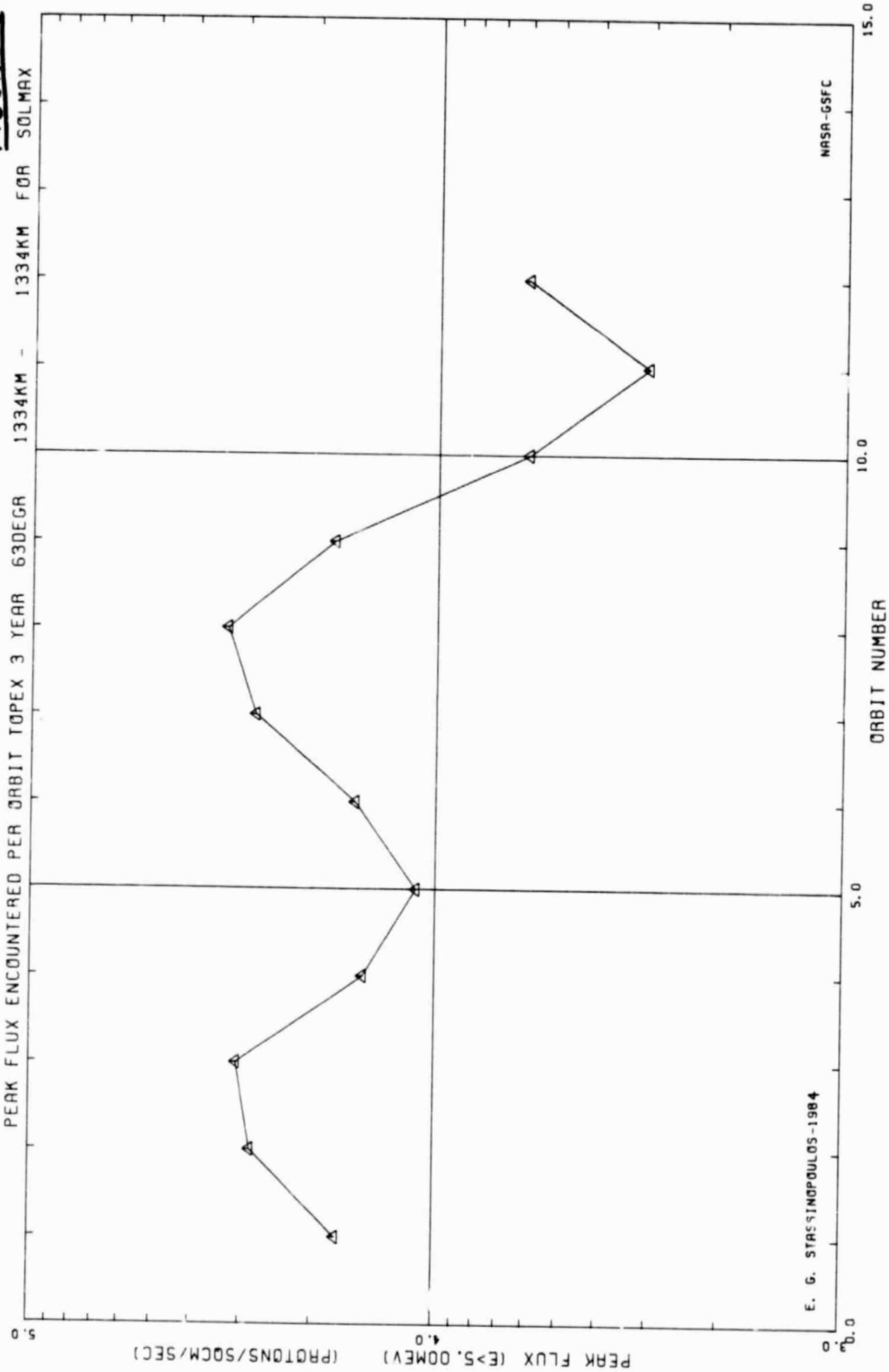

PEAK FLUX ENCOUNTERED PER ORBIT TOPEX 3 YEAR 63DEGR 1334KM - 1334KM FOR SOLMAX
NASA-GSFC
E. G. STASSINOPOULOS-1984
ORBIT NUMBER
0.0
5.0
10.0
15.0
PEAK FLUX (E>5.00MEV) (PROTONS/SQCM/SEC)
3.0
4.0
5.0

FIGURE 4

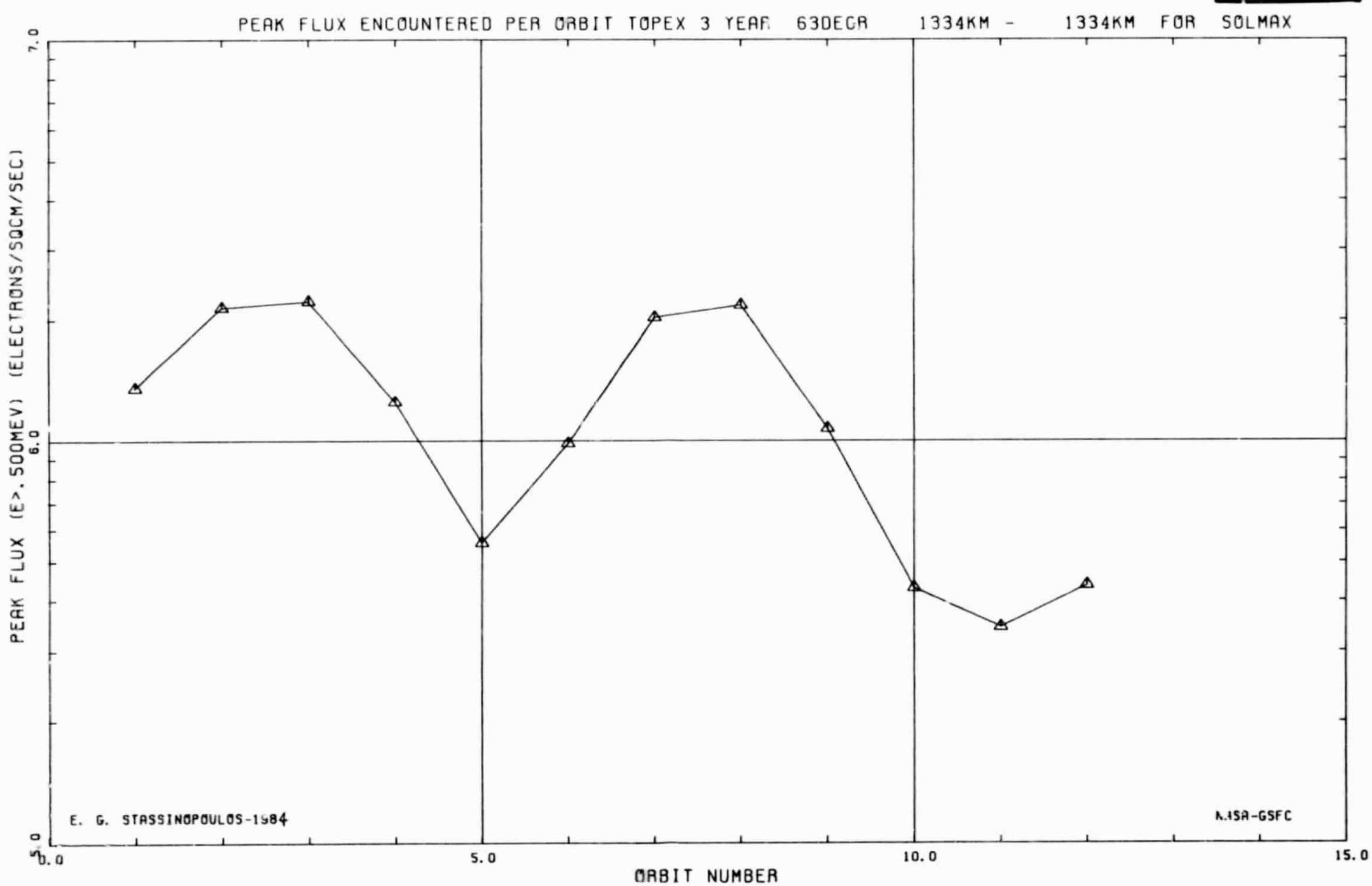
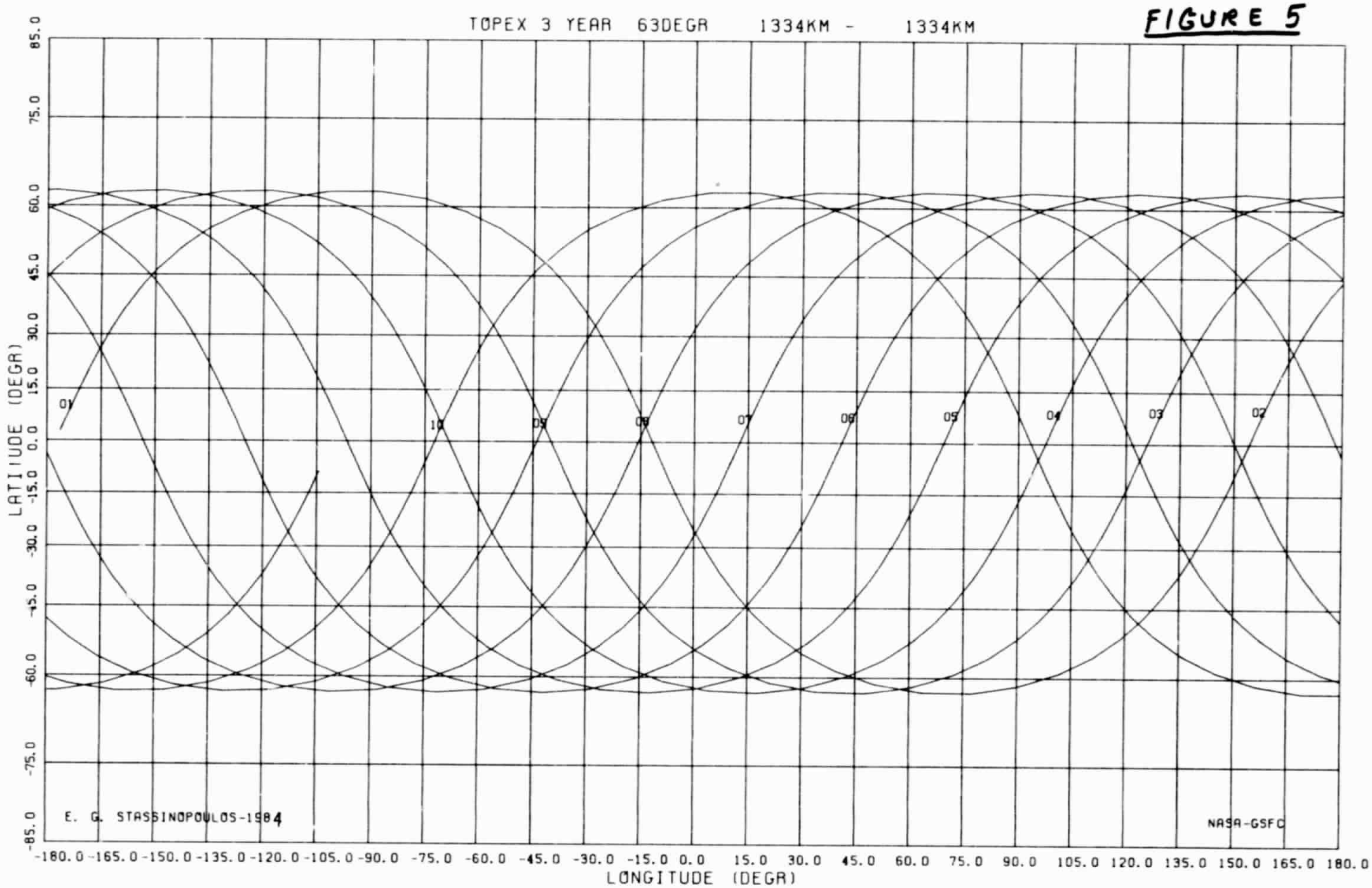

PEAK FLUX ENCOUNTERED PER ORBIT TOPEX 3 YEAR 63DEGR 1334KM - 1334KM FOR SOLMAX
PEAK FLUX (E>.500MEV) (ELECTRONS/SQCM/SEC)
7.0
6.0
5.0
0.0
5.0
10.0
15.0
ORBIT NUMBER
E. G. STASSINOPOULOS-1984
NASA-GSFC

FIGURE 5



TOPEX 3 YEAR 63DEGR 1334KM - 1334KM
LATITUDE (DEGR)
85.0
75.0
60.0
45.0
30.0
15.0
0.0
-15.0
-30.0
-45.0
-60.0
-75.0
-85.0
01
10
09
08
07
06
05
04
03
02
E. G. STASSINOPOULOS-1984
NASA-GSFC
-180.0 -165.0 -150.0 -135.0 -120.0 -105.0 -90.0 -75.0 -60.0 -45.0 -30.0 -15.0 0.0 15.0 30.0 45.0 60.0 75.0 90.0 105.0 120.0 135.0 150.0 165.0 180.0
LONGITUDE (DEGR)

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OF POOR QUALITY

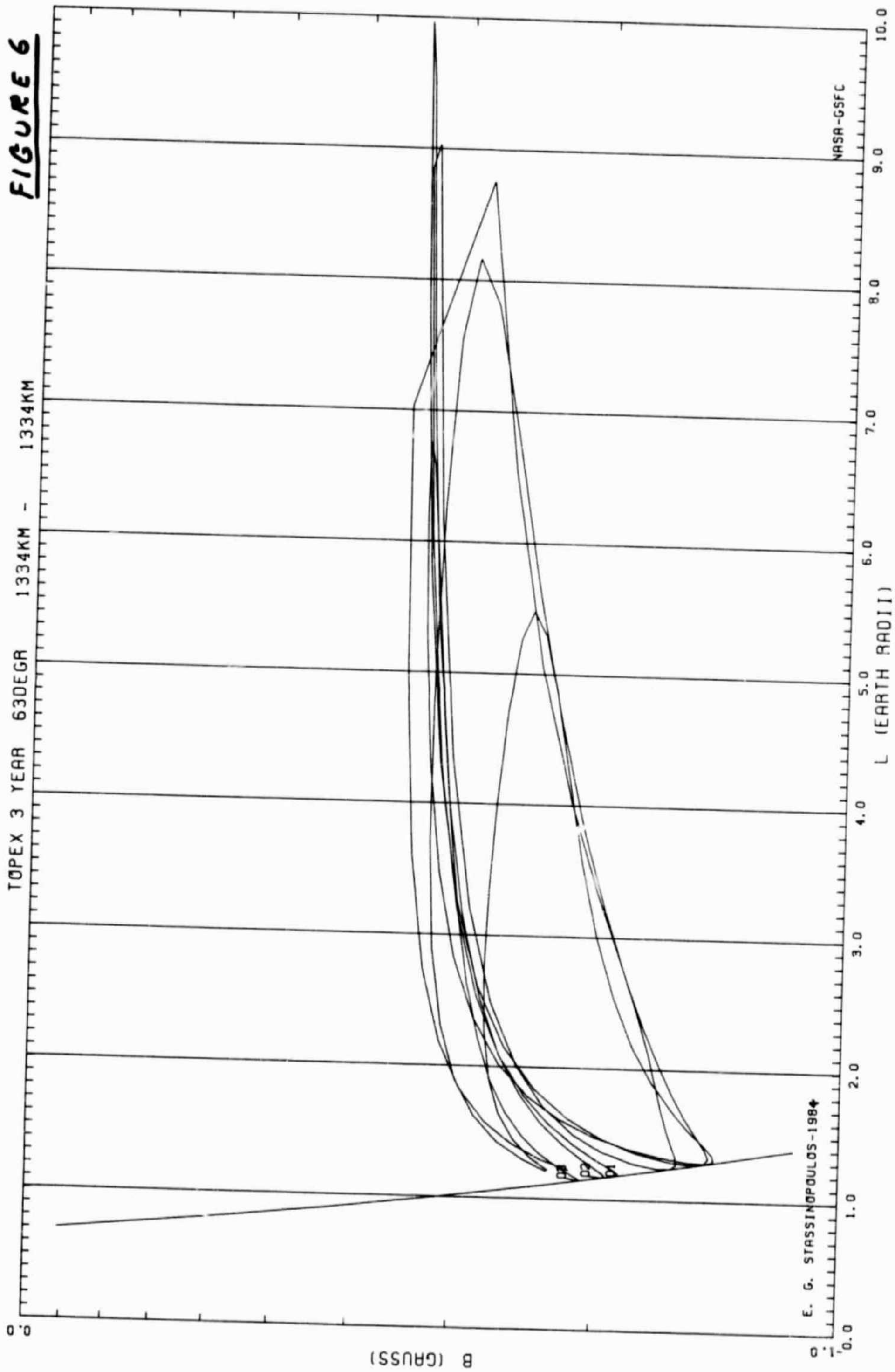
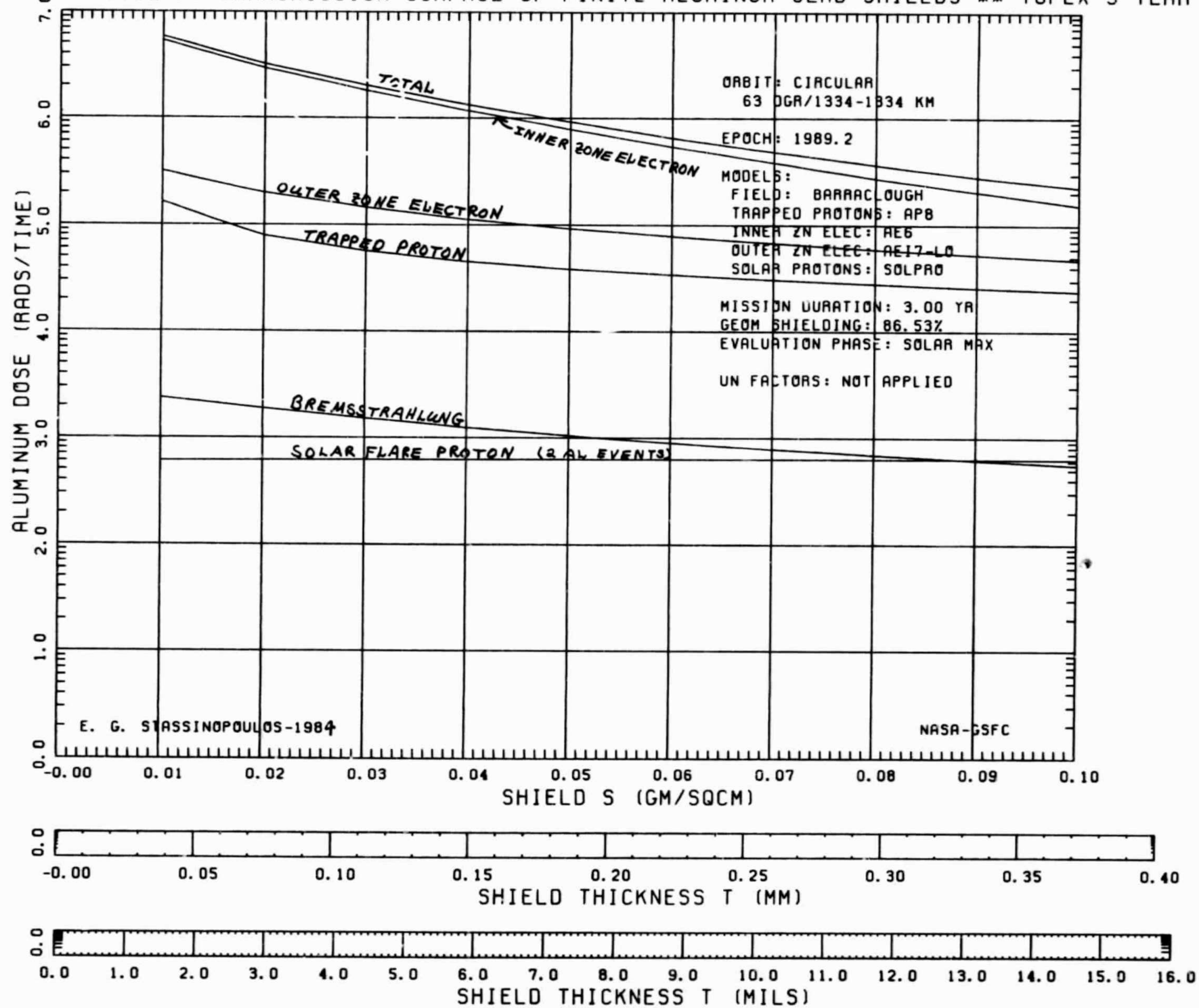


FIGURE 6

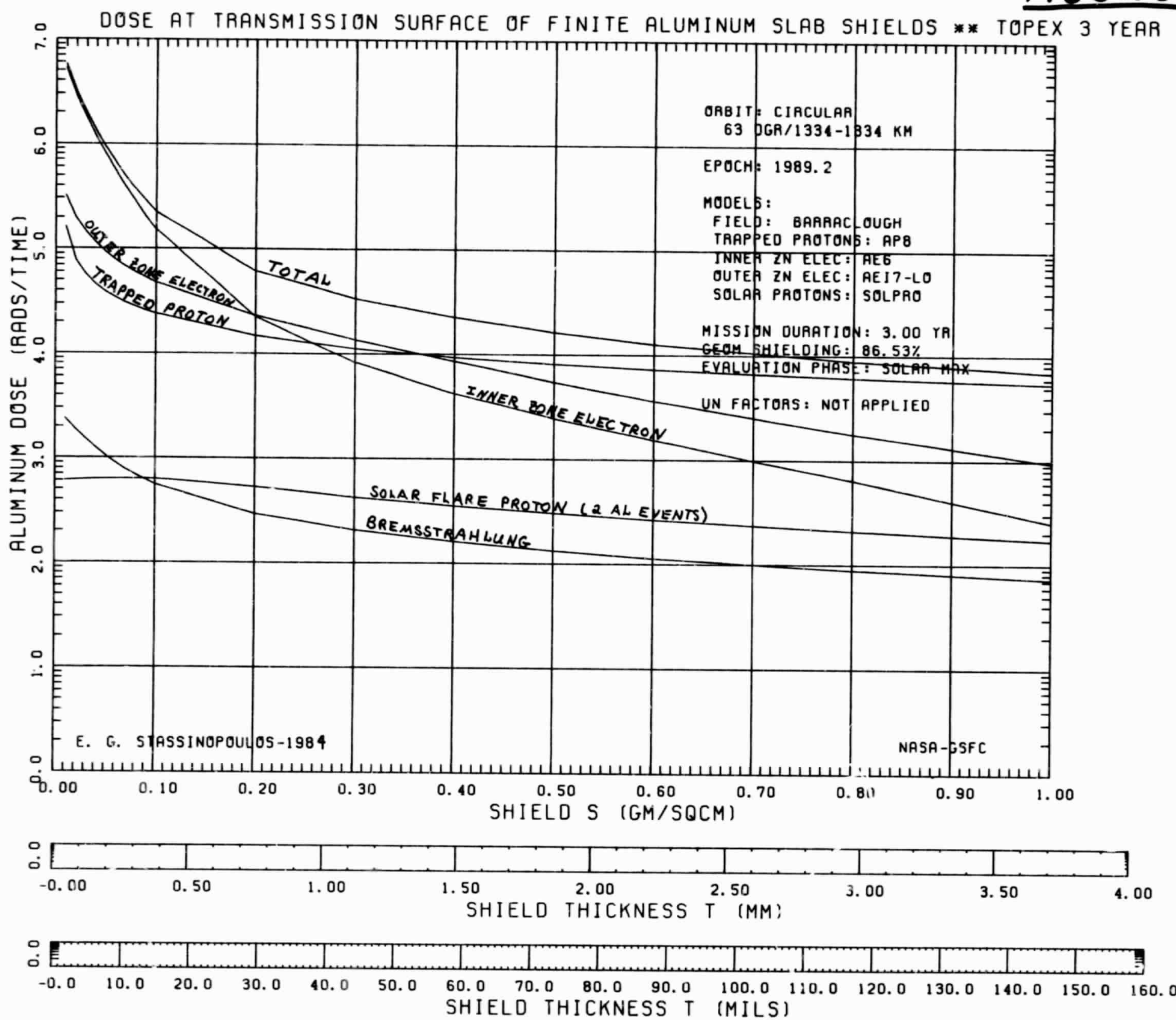
FIGURE 7

DOSE AT TRANSMISSION SURFACE OF FINITE ALUMINUM SLAB SHIELDS ** TOPEX 3 YEAR



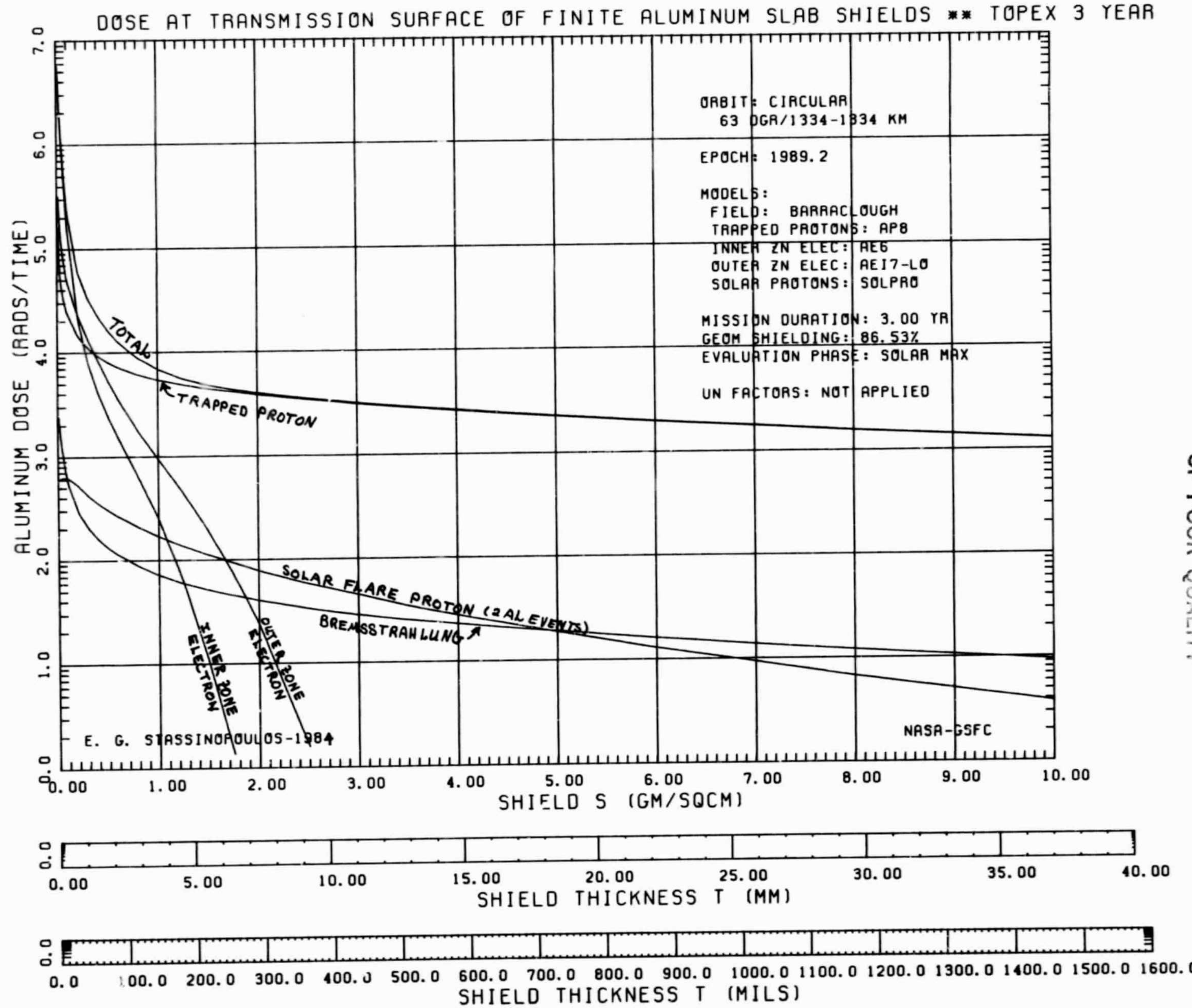
ORIGINAL PAGE IS OF POOR QUALITY

FIGURE 8



DOSE AT TRANSMISSION SURFACE OF FINITE ALUMINUM SLAB SHIELDS ** TOPEX 3 YEAR
ORBIT: CIRCULAR
63 DGR/1334-1334 KM
EPOCH: 1989.2
MODELS:
FIELD: BARRACLOUGH
TRAPPED PROTONS: AP8
INNER ZN ELEC: AE6
OUTER ZN ELEC: AEI7-LO
SOLAR PROTONS: SOLPRO
MISSION DURATION: 3.00 YR
GEOM SHIELDING: 86.53%
EVALUATION PHASE: SOLAR MAX
UN FACTORS: NOT APPLIED
TOTAL
OUTER ZONE ELECTRON
TRAPPED PROTON
INNER ZONE ELECTRON
SOLAR FLARE PROTON (2 AL EVENTS)
BREMSSTRAHLUNG
E. G. STASSINOPOULOS-1984
NASA-GSFC
ALUMINUM DOSE (RADS/TIME)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00
SHIELD S (GM/SQCM)
-0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00
SHIELD THICKNESS T (MM)
-0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0 110.0 120.0 130.0 140.0 150.0 160.0
SHIELD THICKNESS T (MILS)

FIGURE 9



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OF POOR QUALITY

FIGURE 10

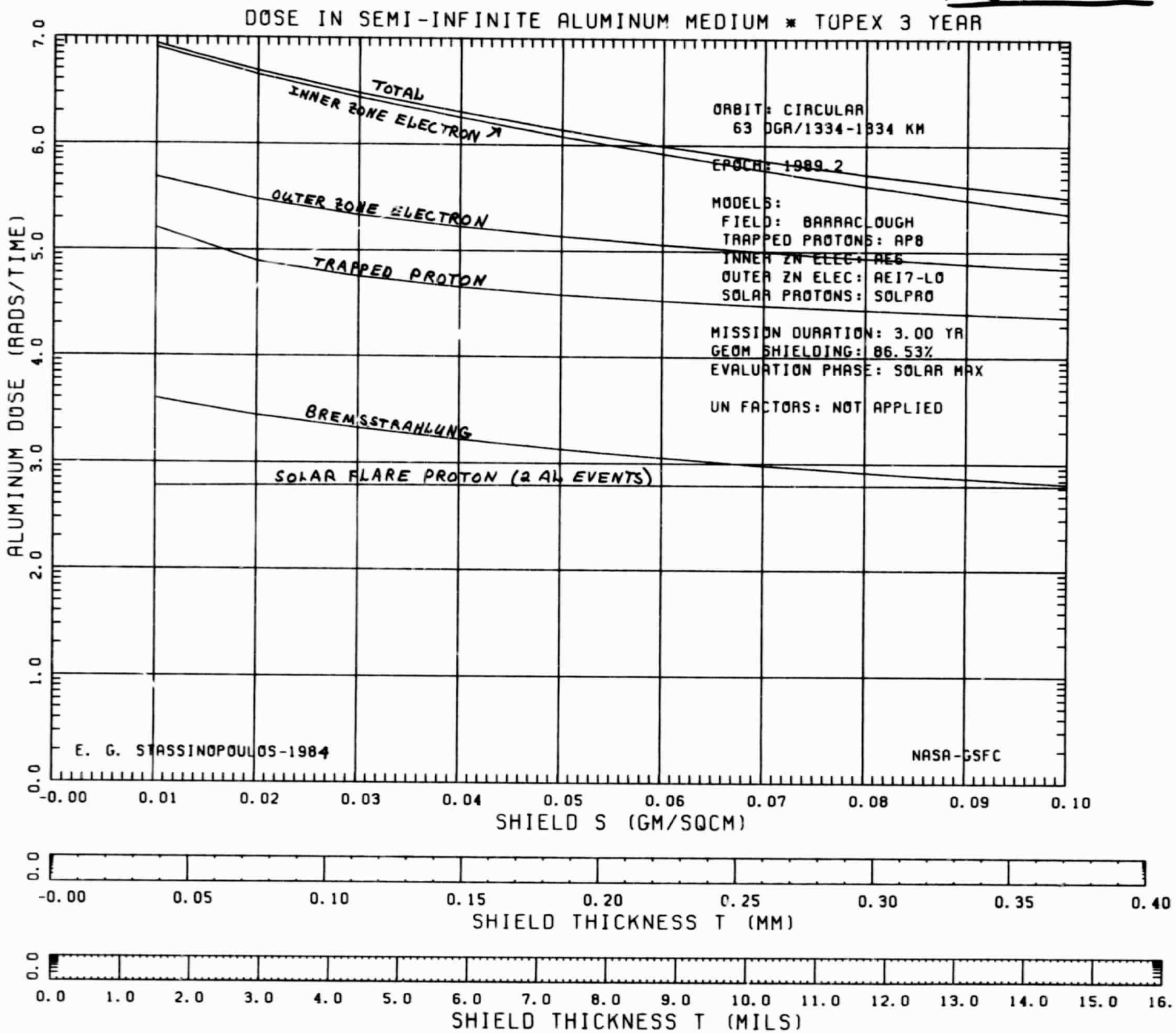
DOSE IN SEMI-INFINITE ALUMINUM MEDIUM * TOPEX 3 YEAR
TOTAL
INNER ZONE ELECTRON
OUTER ZONE ELECTRON
TRAPPED PROTON
BREMSSTRAHLUNG
SOLAR FLARE PROTON (2 AL EVENTS)
ORBIT: CIRCULAR
63 DGR/1334-1334 KM
EPOCH: 1989.2
MODELS:
FIELD: BARRACLOUGH
TRAPPED PROTONS: AP8
INNER ZN ELEC: AE6
OUTER ZN ELEC: AEI7-LO
SOLAR PROTONS: SOLPRO
MISSION DURATION: 3.00 YR
GEOM SHIELDING: 86.53%
EVALUATION PHASE: SOLAR MAX
UN FACTORS: NOT APPLIED
E. G. STASSINOPOULOS-1984
NASA-GSFC
ALUMINUM DOSE (RADS/TIME)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
-0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
SHIELD S (GM/SQCM)
-0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
SHIELD THICKNESS T (MM)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
16.0
SHIELD THICKNESS T (MILS)

FIGURE 11

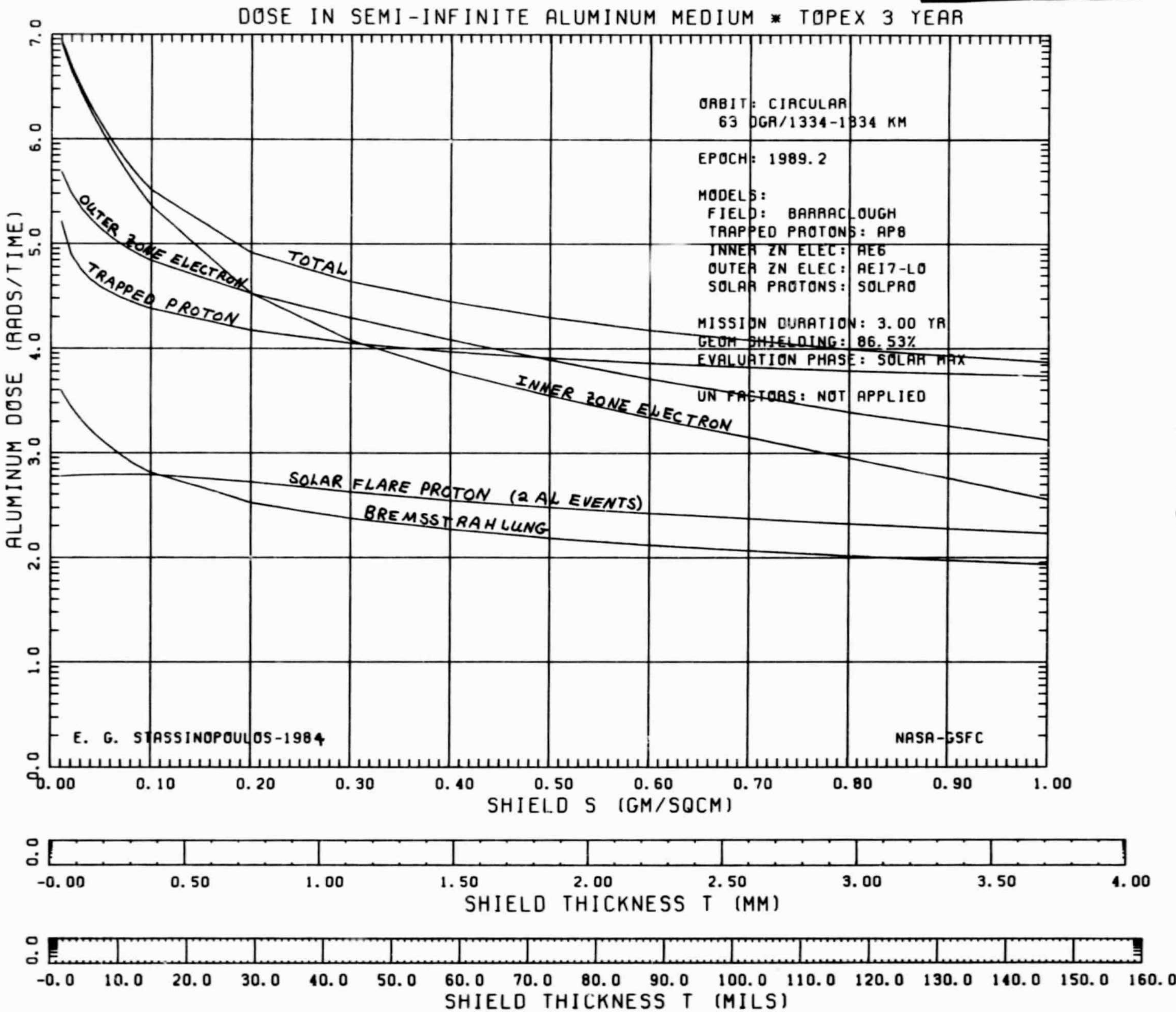

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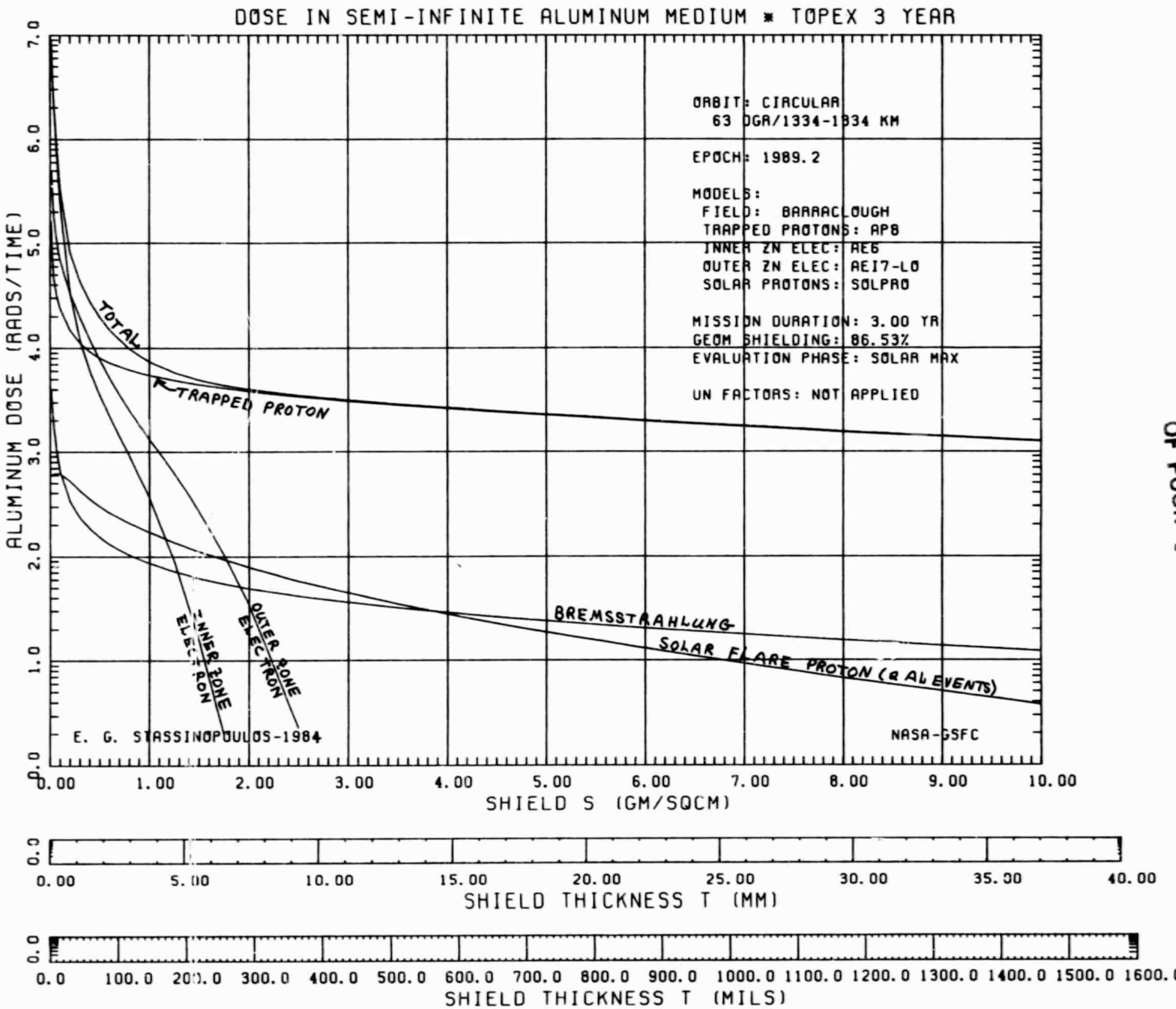
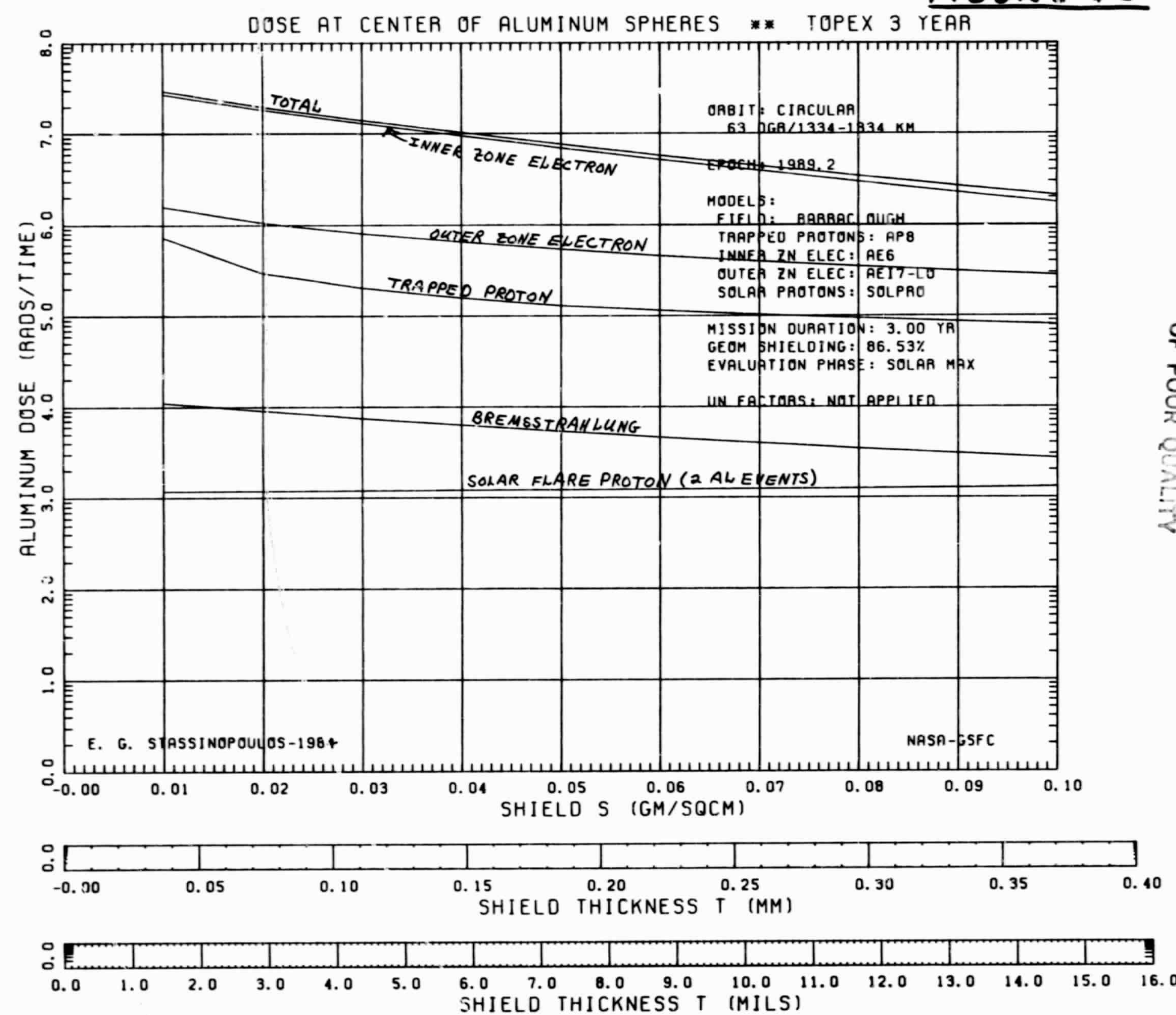
FIGURE 12



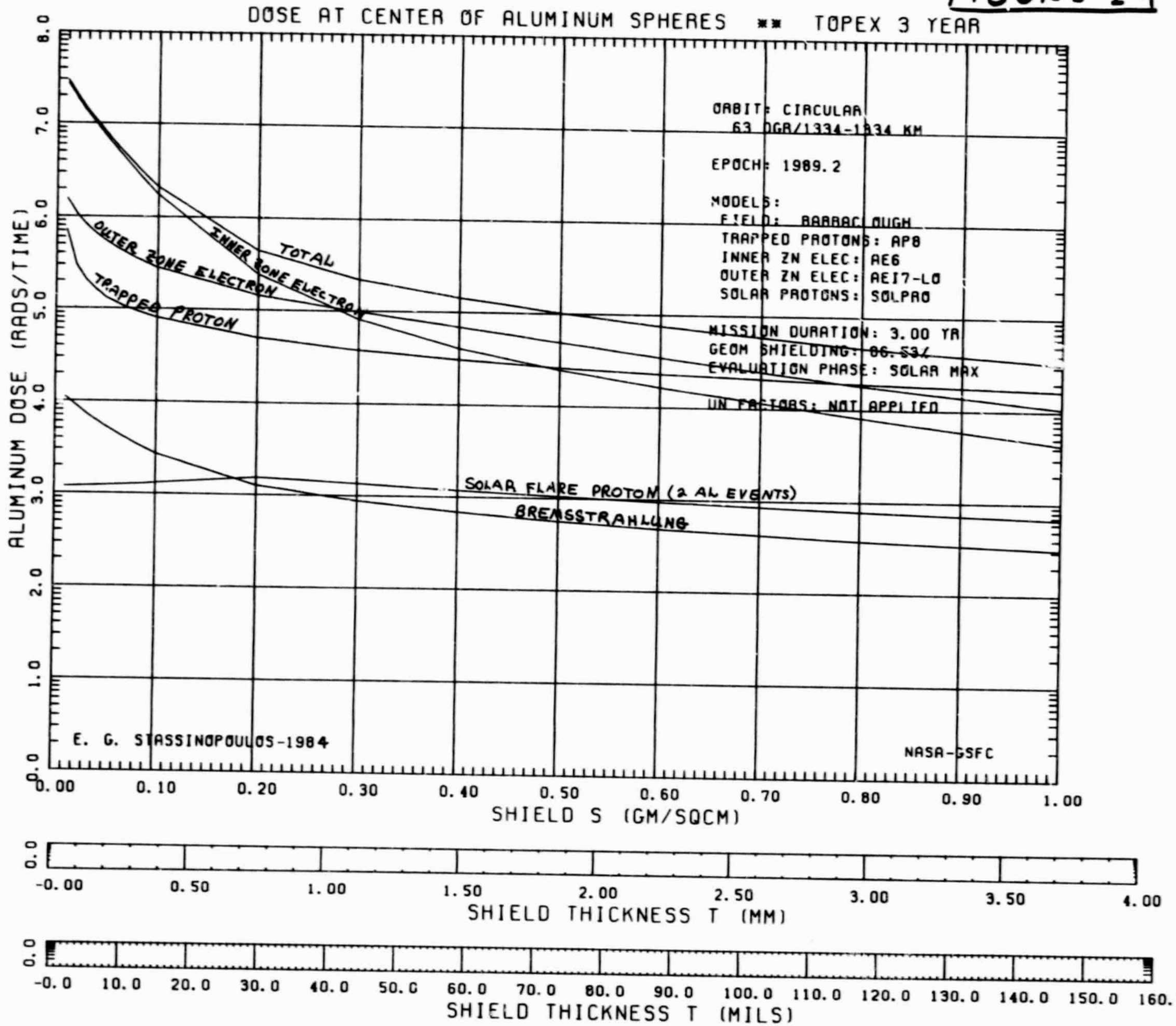
DOSE IN SEMI-INFINITE ALUMINUM MEDIUM * TOPEX 3 YEAR
ORBIT: CIRCULAR
63 DGR/1334-1334 KM
EPOCH: 1989.2
MODELS:
FIELD: BARRACLOUGH
TRAPPED PROTONS: AP8
INNER ZN ELEC: AE6
OUTER ZN ELEC: AEI7-LO
SOLAR PROTONS: SOLPRO
MISSION DURATION: 3.00 YR
GEOM SHIELDING: 86.53%
EVALUATION PHASE: SOLAR MAX
UN FACTORS: NOT APPLIED
TOTAL
TRAPPED PROTON
INNER ZONE ELECTRON
OUTER ZONE ELECTRON
BREMSSTRAHLUNG
SOLAR FLARE PROTON (a AL EVENTS)
E. G. STASSINOPOULOS-1984
NASA-GSFC
ALUMINUM DOSE (RADS/TIME)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
SHIELD S (GM/SQCM)
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
40.00
SHIELD THICKNESS T (MM)
0.0
100.0
200.0
300.0
400.0
500.0
600.0
700.0
800.0
900.0
1000.0
1100.0
1200.0
1300.0
1400.0
1500.0
1600.0
SHIELD THICKNESS T (MILS)

FIGURE 13



DOSE AT CENTER OF ALUMINUM SPHERES ** TOPEX 3 YEAR
ALUMINUM DOSE (RADS/TIME)
TOTAL
INNER ZONE ELECTRON
OUTER ZONE ELECTRON
TRAPPED PROTON
BREMSSTRAHLUNG
SOLAR FLARE PROTON (2 AL EVENTS)
ORBIT: CIRCULAR
63 DGR/1334-1834 KM
EPOCH: 1989.2
MODELS:
FIELD: BARRACLOUGH
TRAPPED PROTONS: AP8
INNER ZN ELEC: AE6
OUTER ZN ELEC: AEI7-LO
SOLAR PROTONS: SOLPRO
MISSION DURATION: 3.00 YR
GEOM SHIELDING: 86.53%
EVALUATION PHASE: SOLAR MAX
UN FACTORS: NOT APPLIED
E. G. STASSINOPOULOS-1984
NASA-GSFC
SHIELD S (GM/SQCM)
SHIELD THICKNESS T (MM)
SHIELD THICKNESS T (MILS)

FIGURE 14



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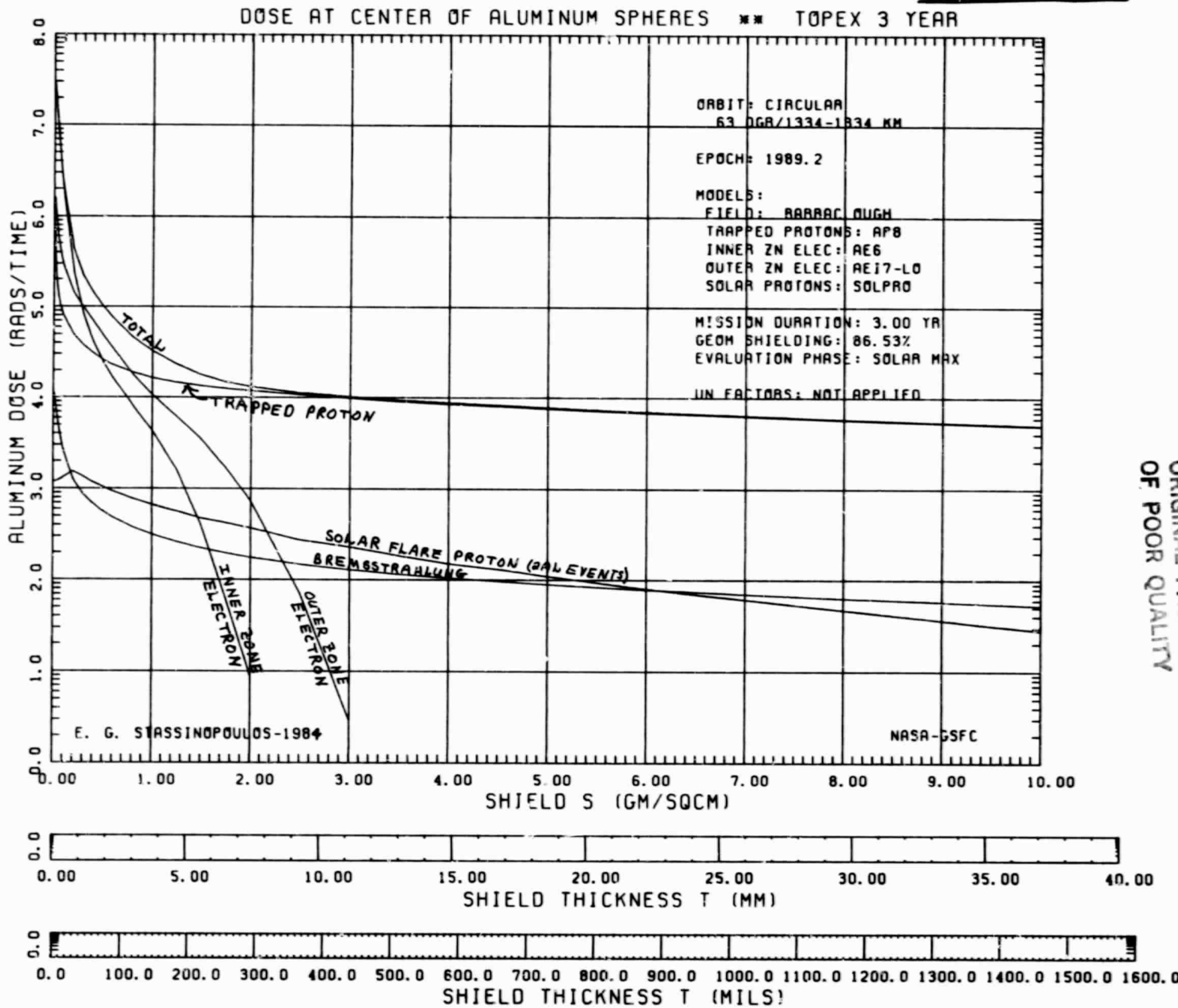
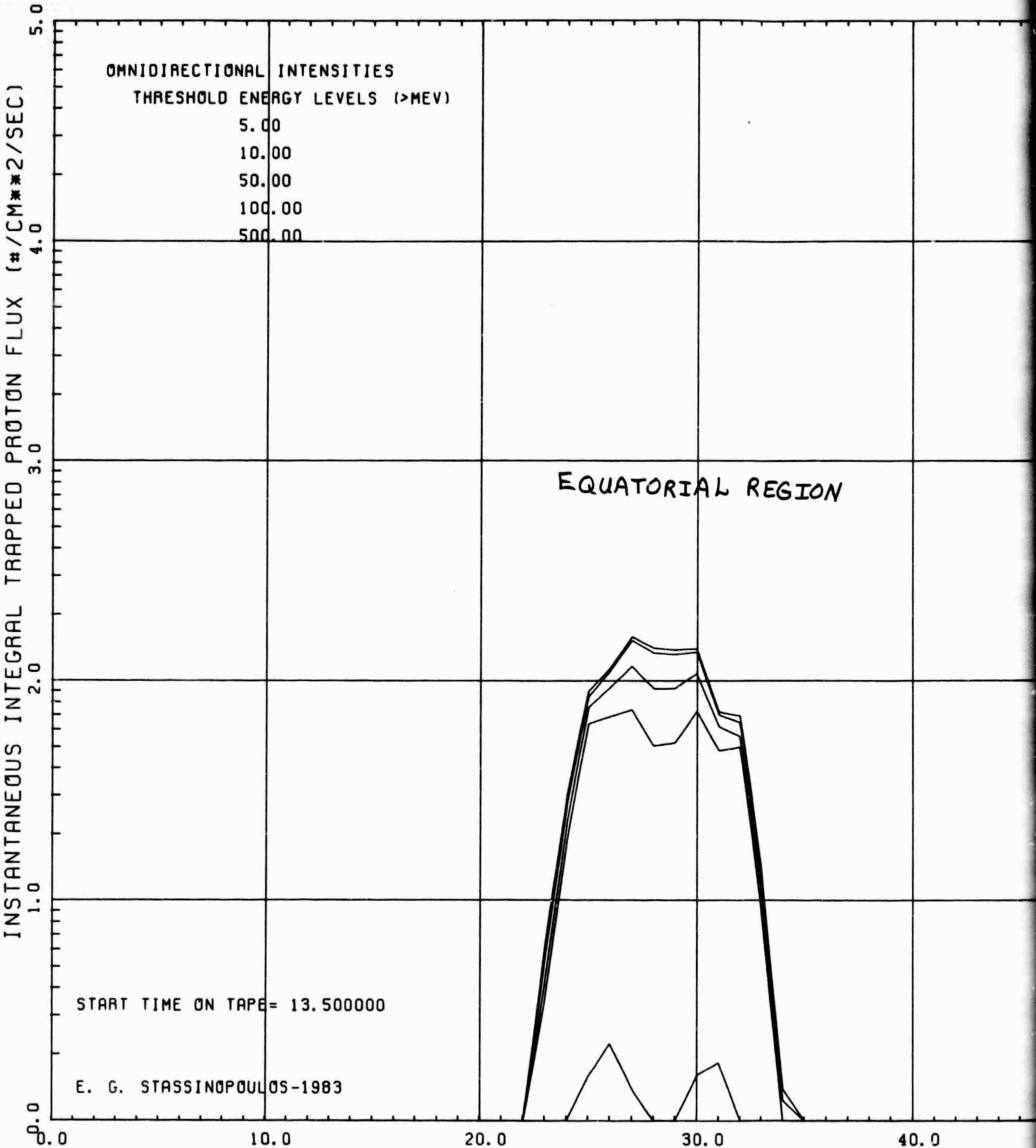
OF POOR QUALITY

FIGURE 15



DOSE AT CENTER OF ALUMINUM SPHERES ** TOPEX 3 YEAR
ORBIT: CIRCULAR
63 DGR/1334-1334 KM
EPOCH: 1989.2
MODELS:
FIELD: BARRACLOUGH
TRAPPED PROTONS: AP8
INNER ZN ELEC: AE6
OUTER ZN ELEC: AEI7-LO
SOLAR PROTONS: SOLPRO
MISSION DURATION: 3.00 YR
GEOM SHIELDING: 86.53%
EVALUATION PHASE: SOLAR MAX
UN FACTORS: NOT APPLIED
TOTAL
TRAPPED PROTON
SOLAR FLARE PROTON (8AL EVENTS)
BREMSSTRAHLUNG
INNER ZONE ELECTRON
OUTER ZONE ELECTRON
E. G. STASSINOPOULOS-1984
NASA-GSFC
ALUMINUM DOSE (RADS/TIME)
SHIELD S (GM/SQCM)
SHIELD THICKNESS T (MM)
SHIELD THICKNESS T (MILS)

ORIGINAL PAGE IS
OF POOR QUALITY



FOLDOUT FRAME

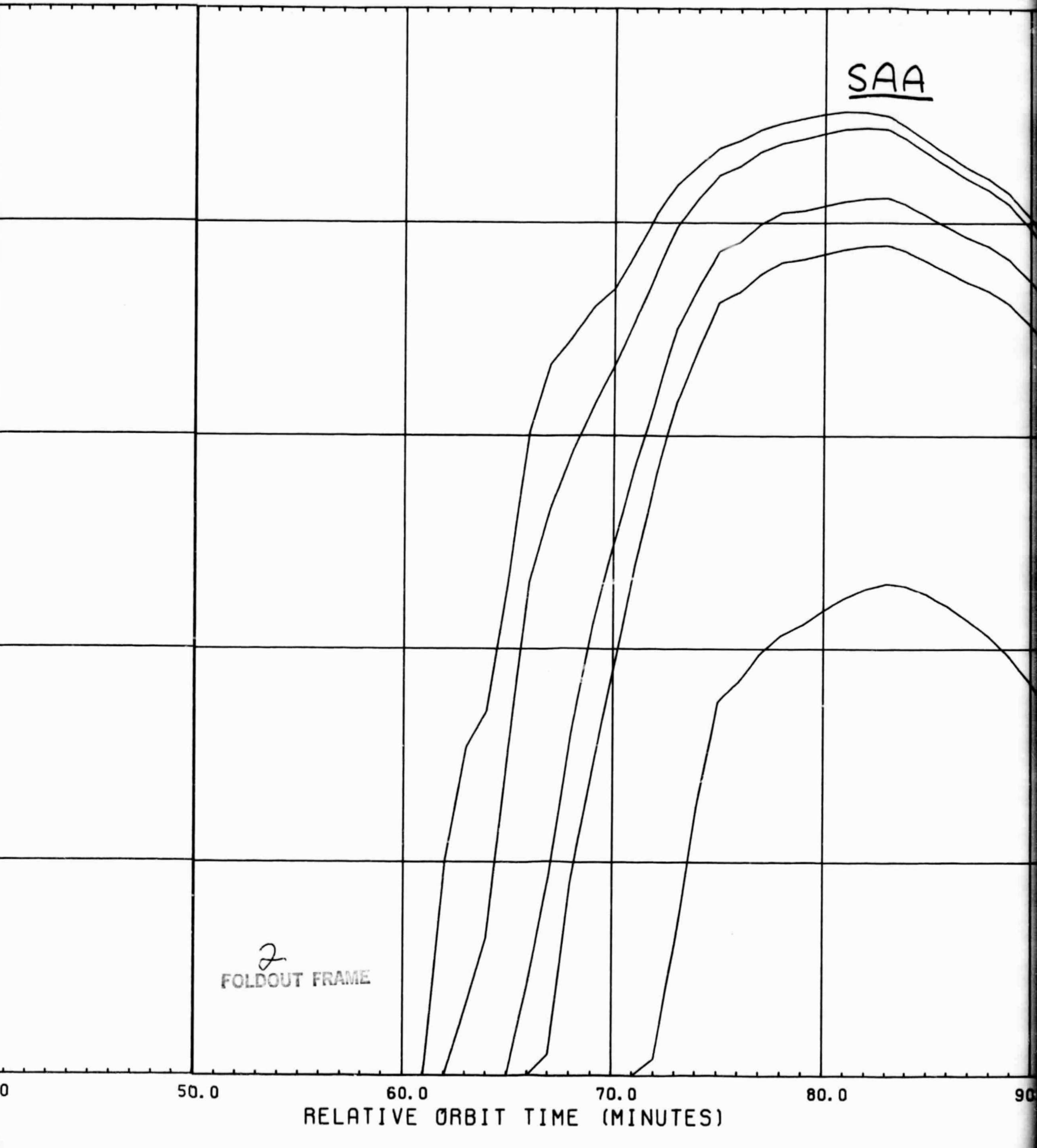
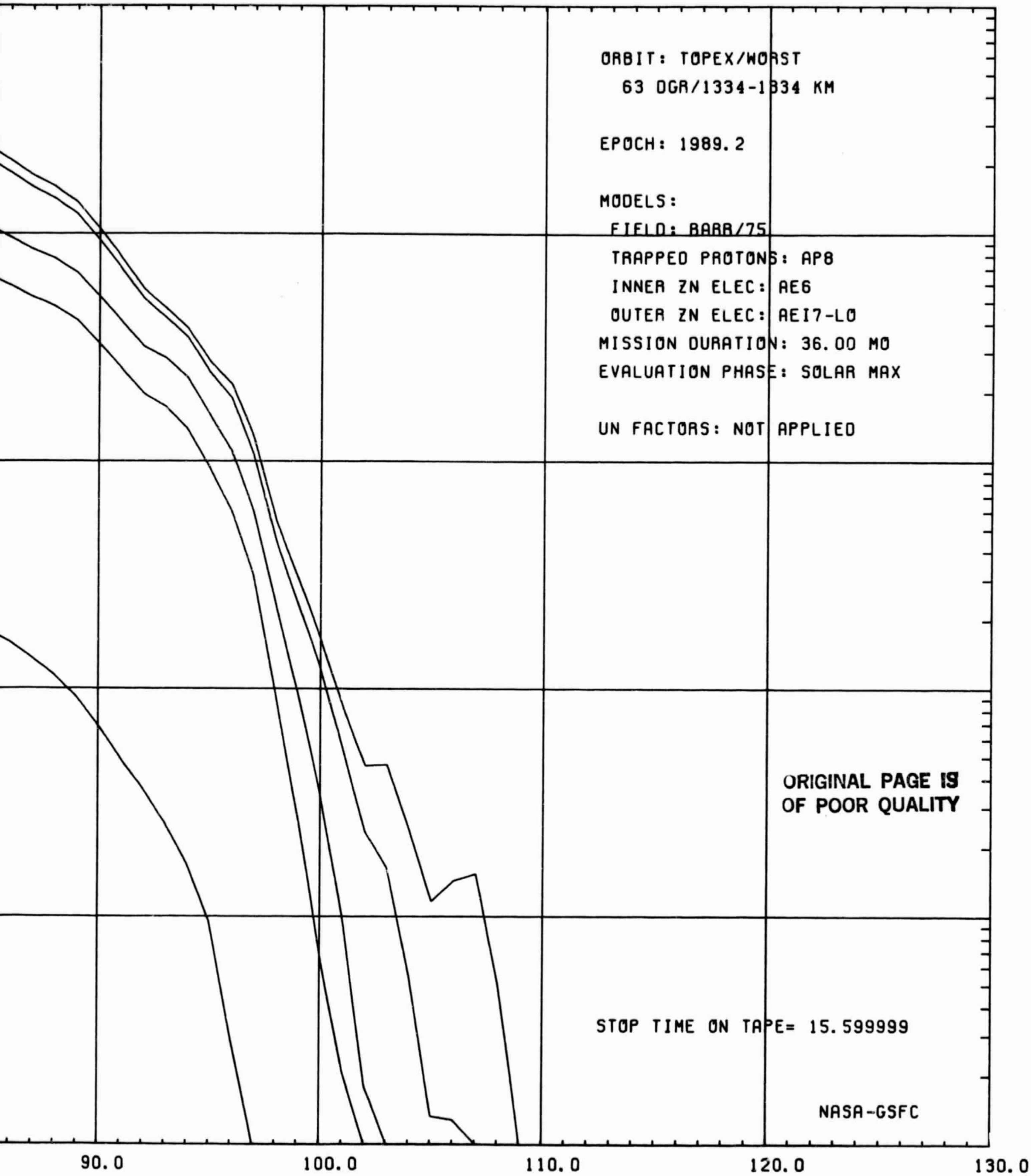

SAA
2
FOLDOUT FRAME
0
50.0
60.0
70.0
80.0
90
RELATIVE ØRBIT TIME (MINUTES)

FIGURE 16



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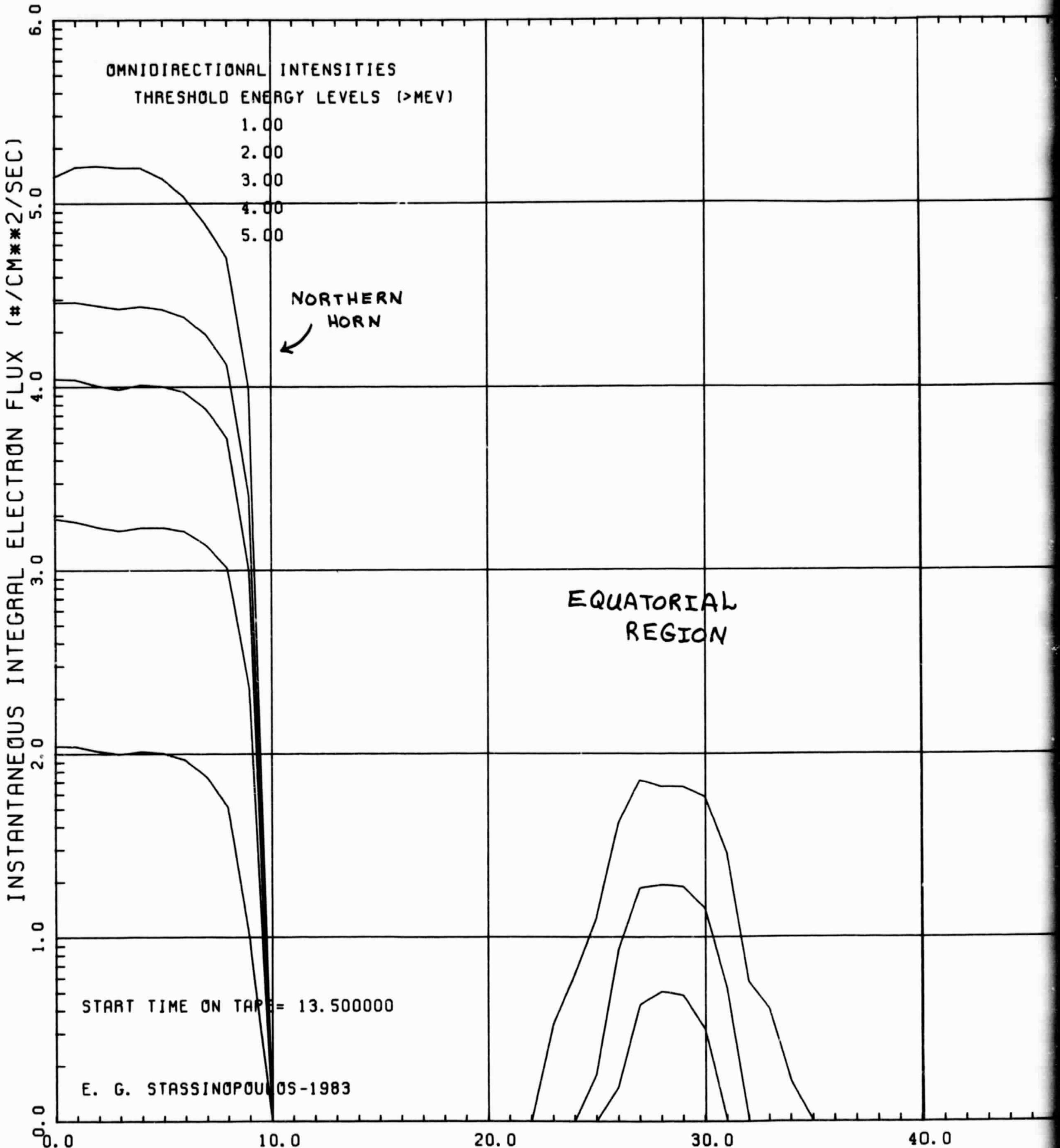
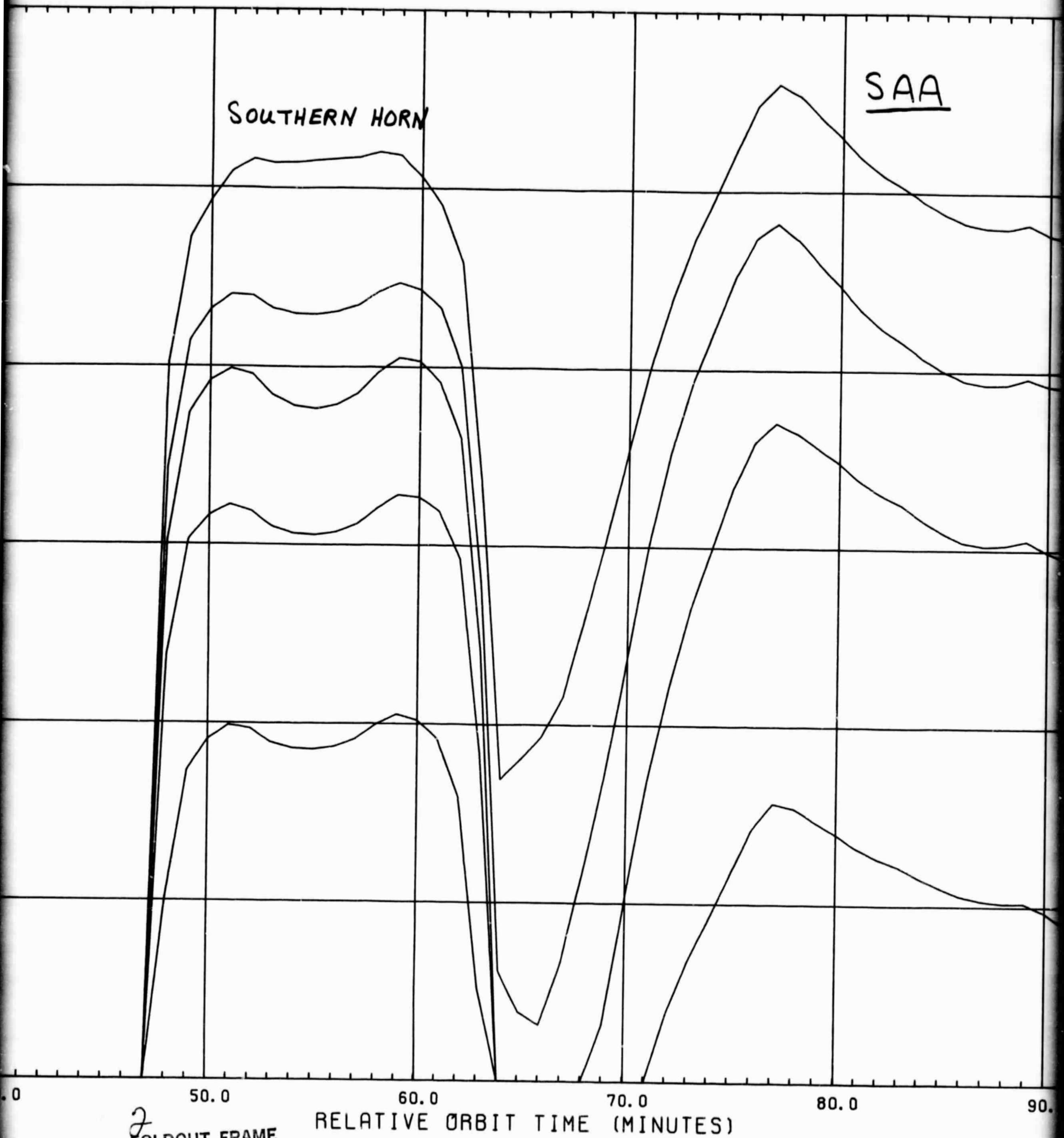
OF POOR QUALITY

3 FOLDOUT FRAME



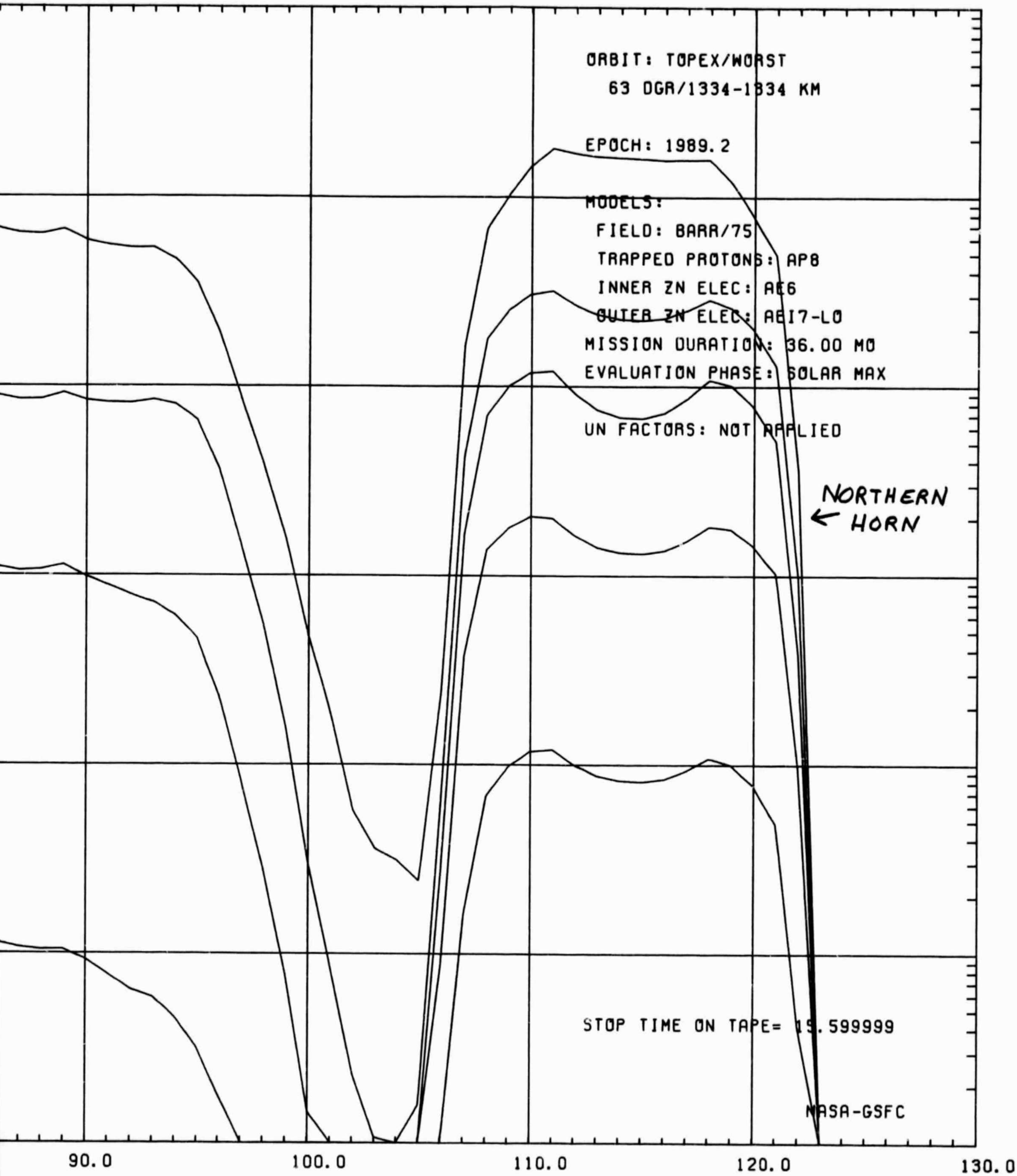
ORIGINAL PAGE IS OF POOR QUALITY

FOLDOUT FRAME



FOLDOUT FRAME

FIGURE 17



3 FOLDOUT FRAME

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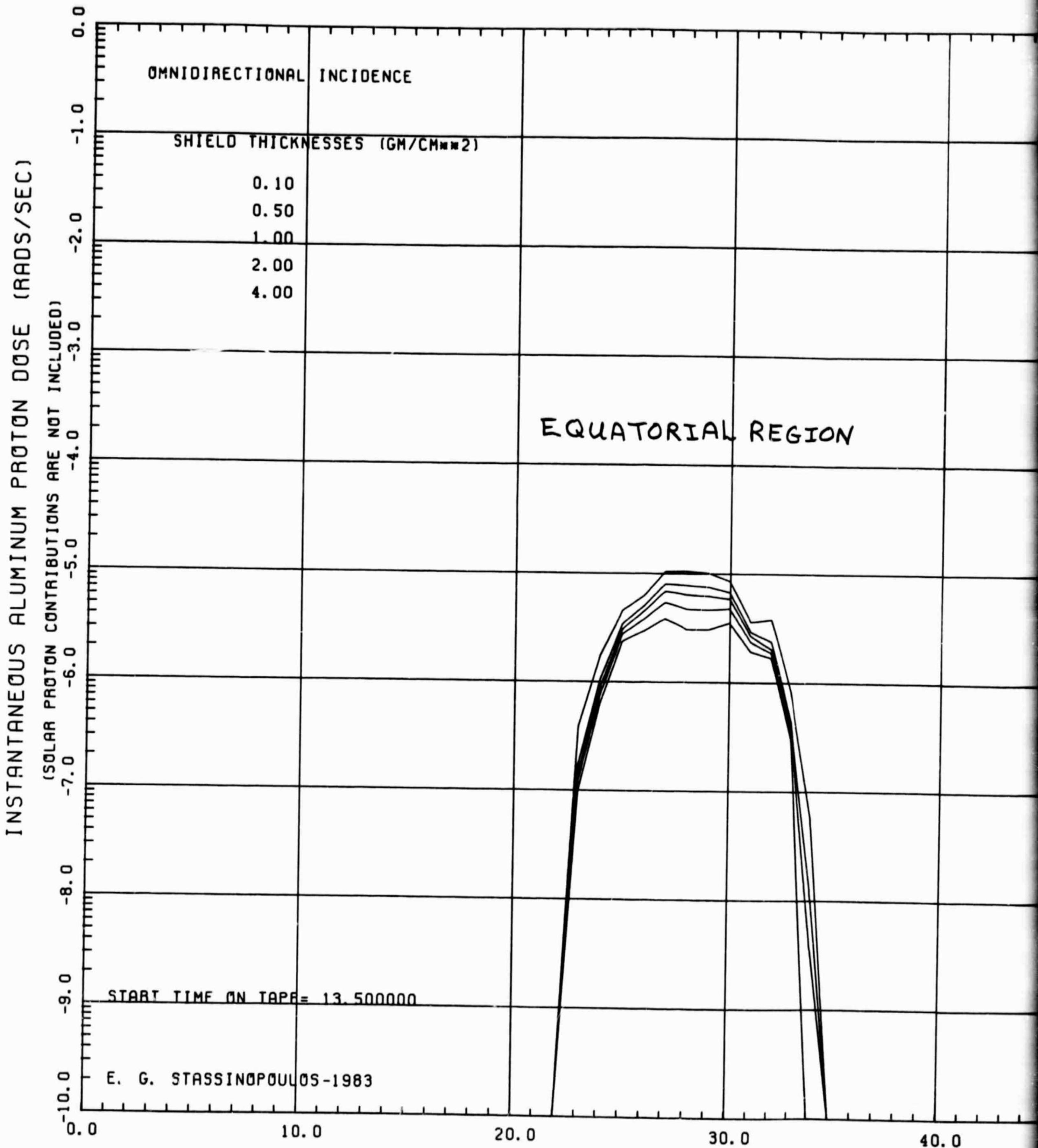
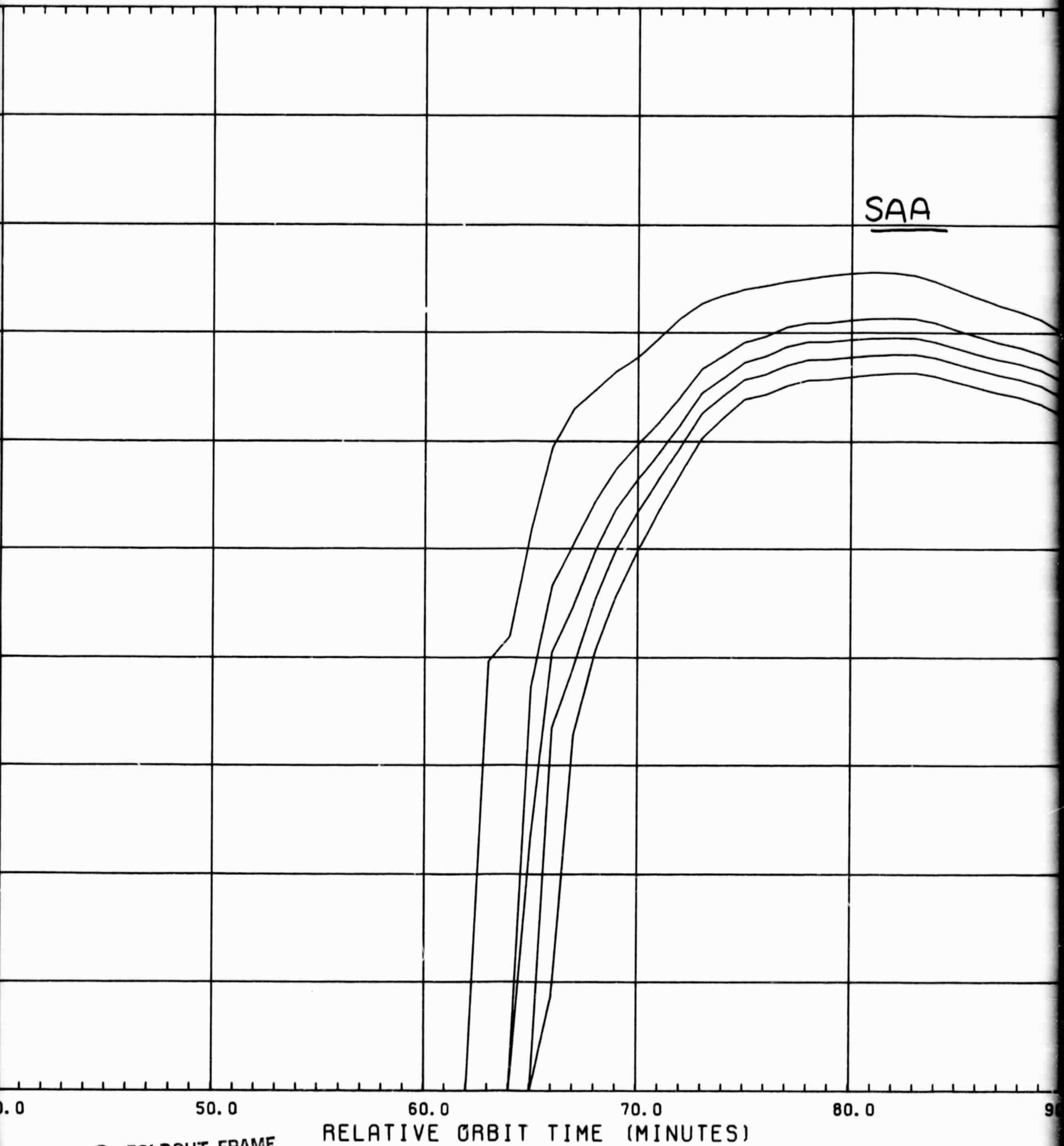
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY



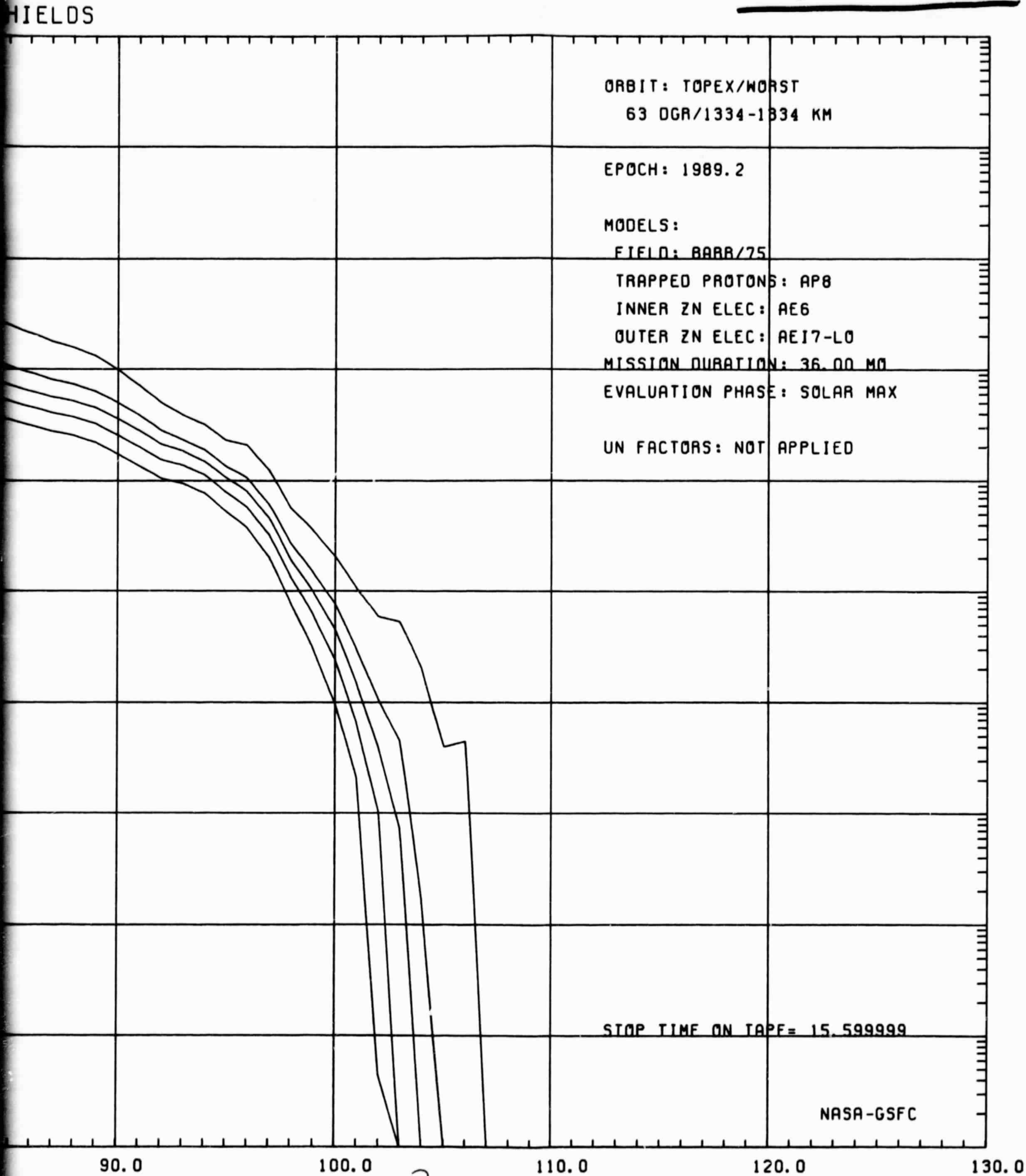
FOLDOUT FRAME

DOSE AT TRANSMISSION SURFACE OF FINITE ALUMINUM SLAB SHIELDS



2 FOLDOUT FRAME

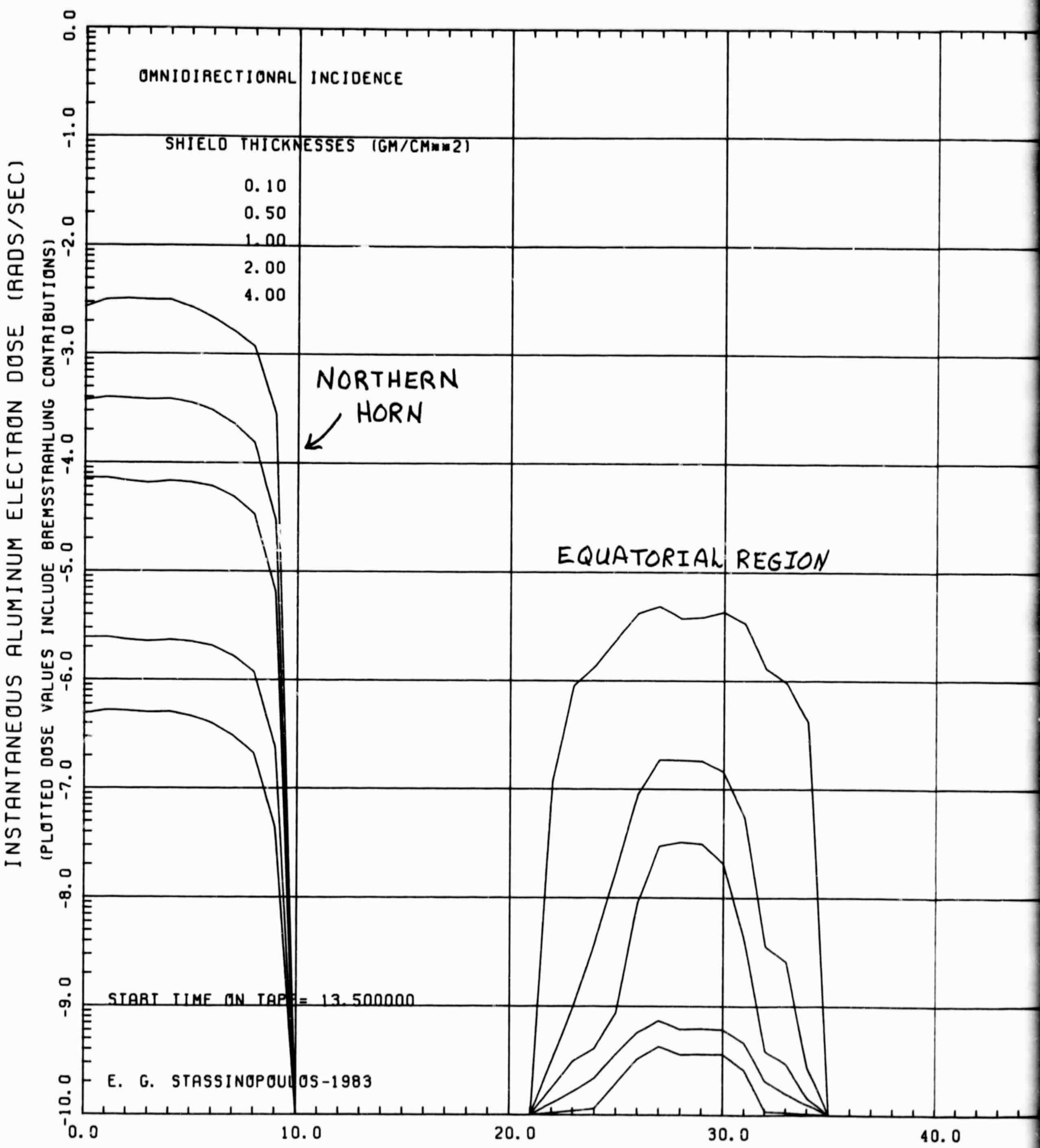
FIGURE-18



3

FOLDOUT FRAME

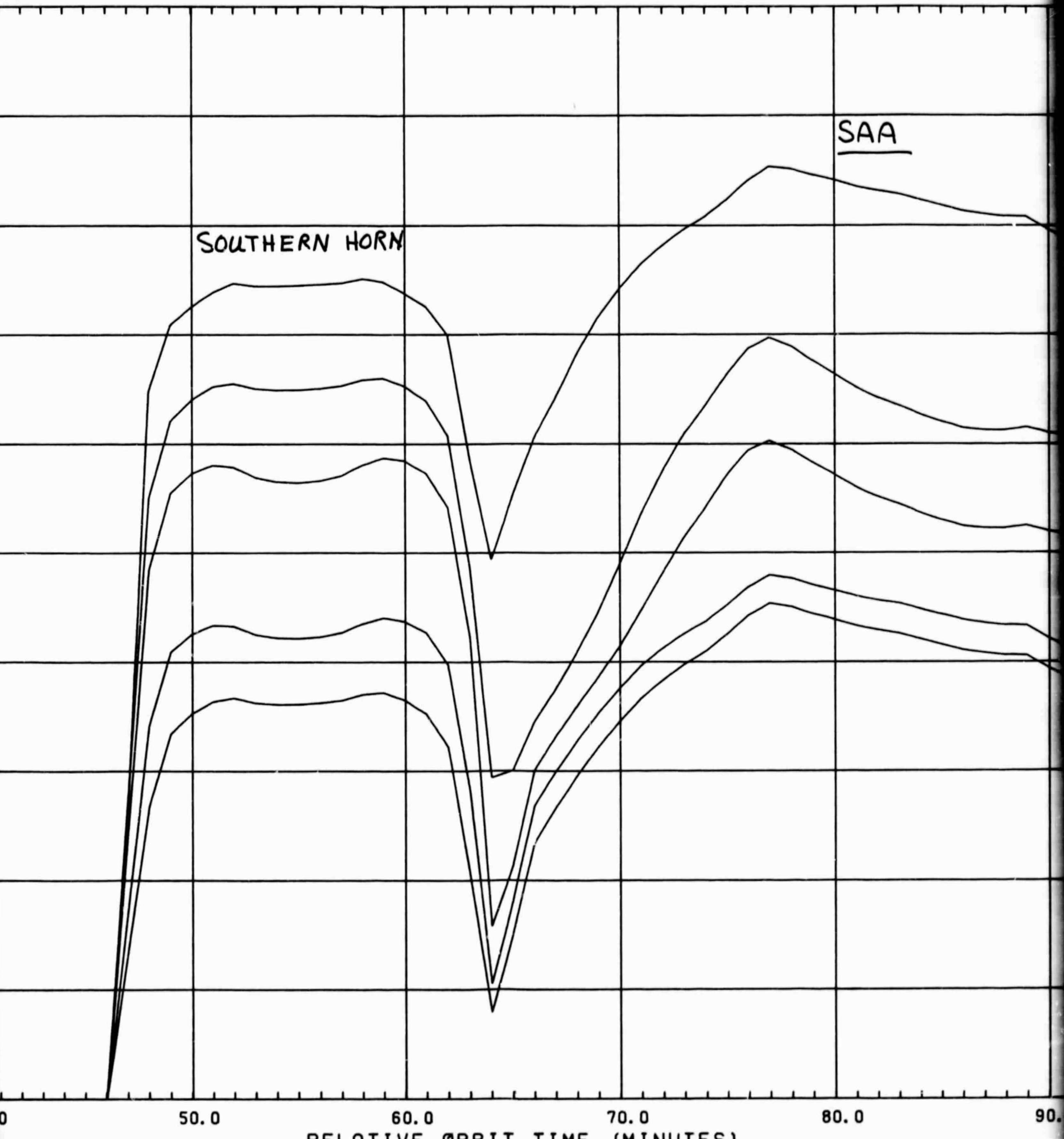
ORIGINAL PAGE IS
OF POOR QUALITY



FOLDOUT FRAME

ORIGINAL PAGE IS OF POOR QUALITY

DOSE AT TRANSMISSION SURFACE OF FINITE ALUMINUM SLAB SHIELDS

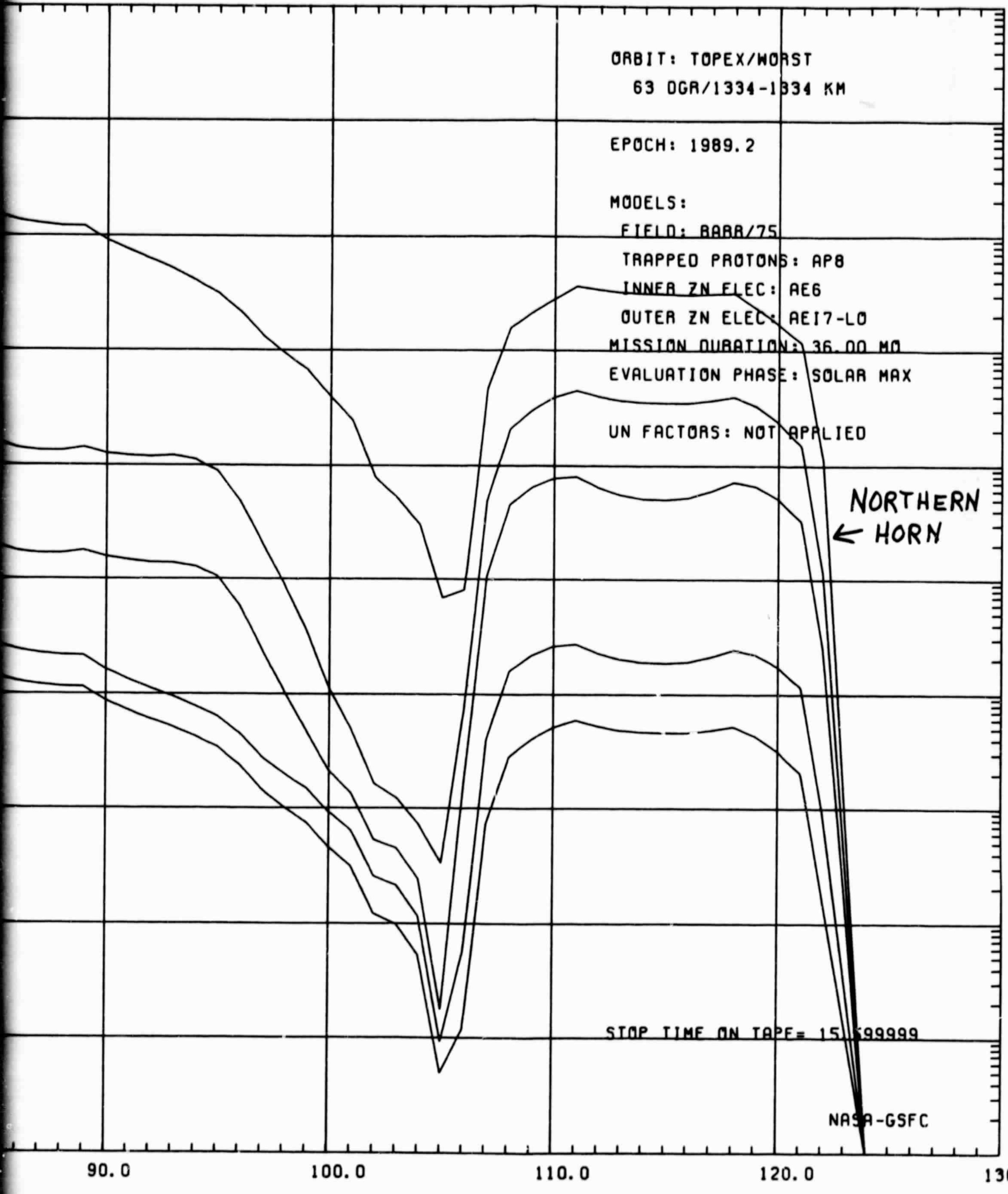


2 FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 19

IELDS



FOLDOUT FRAME

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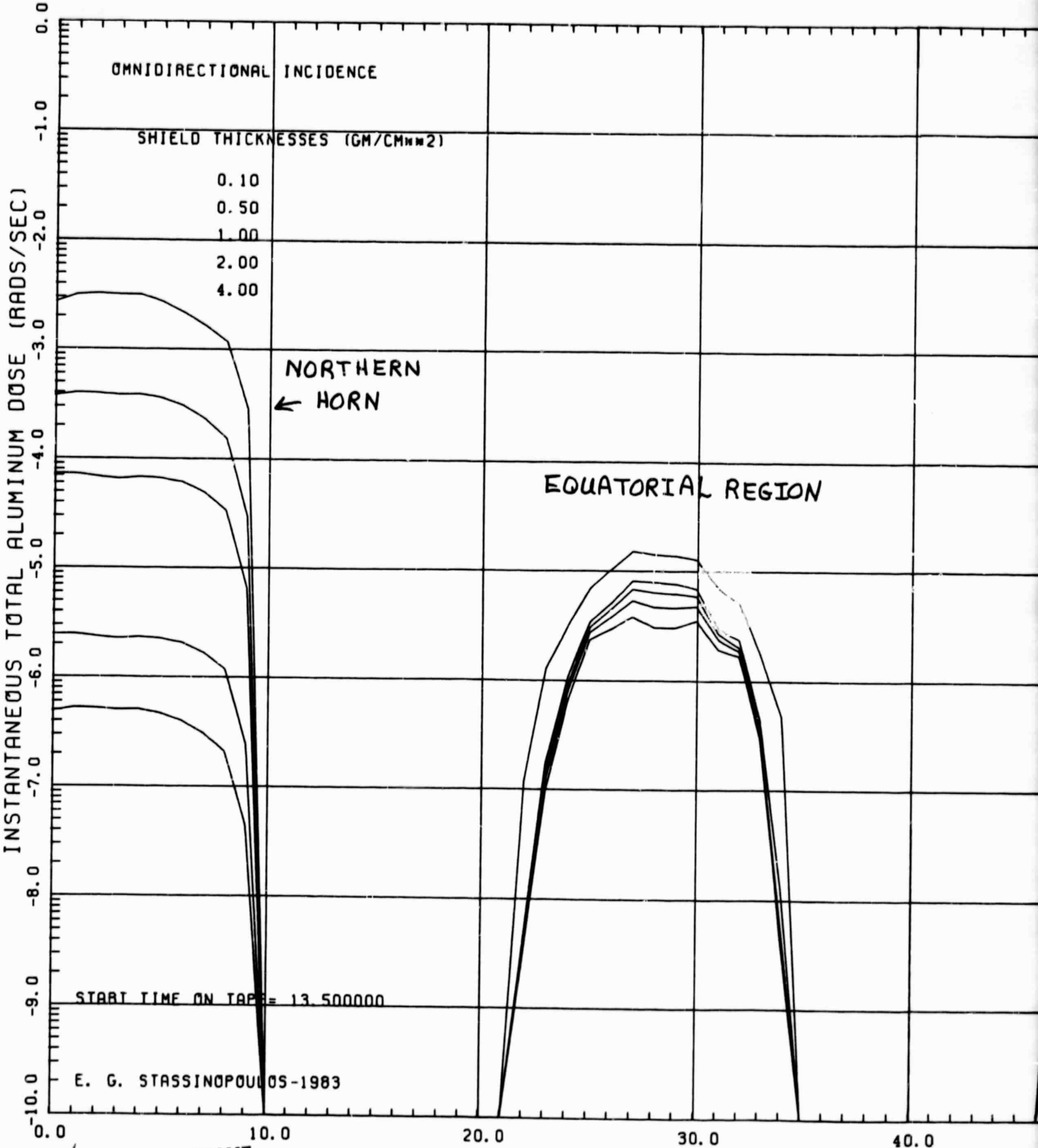
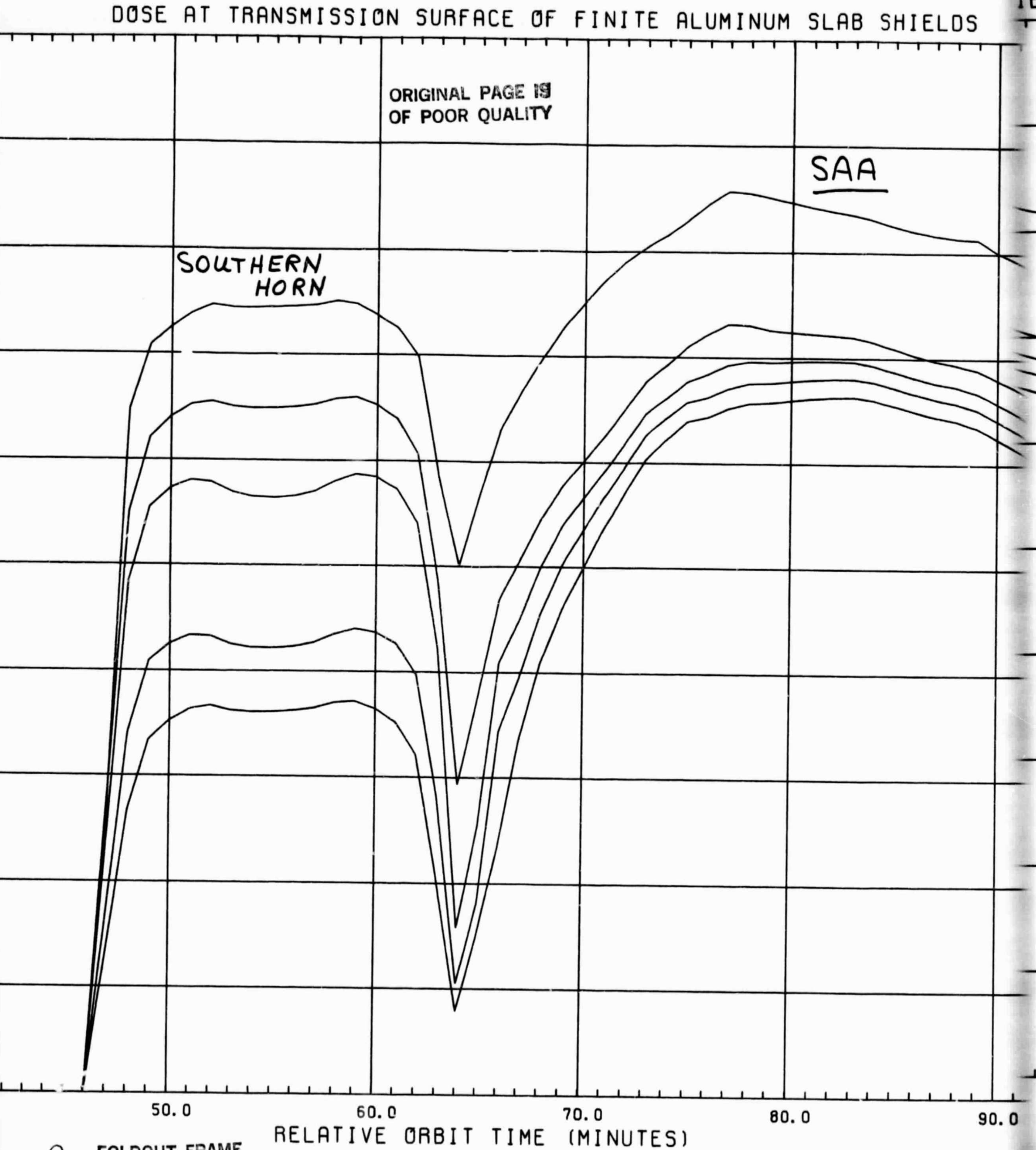
OF POOR QUALITY



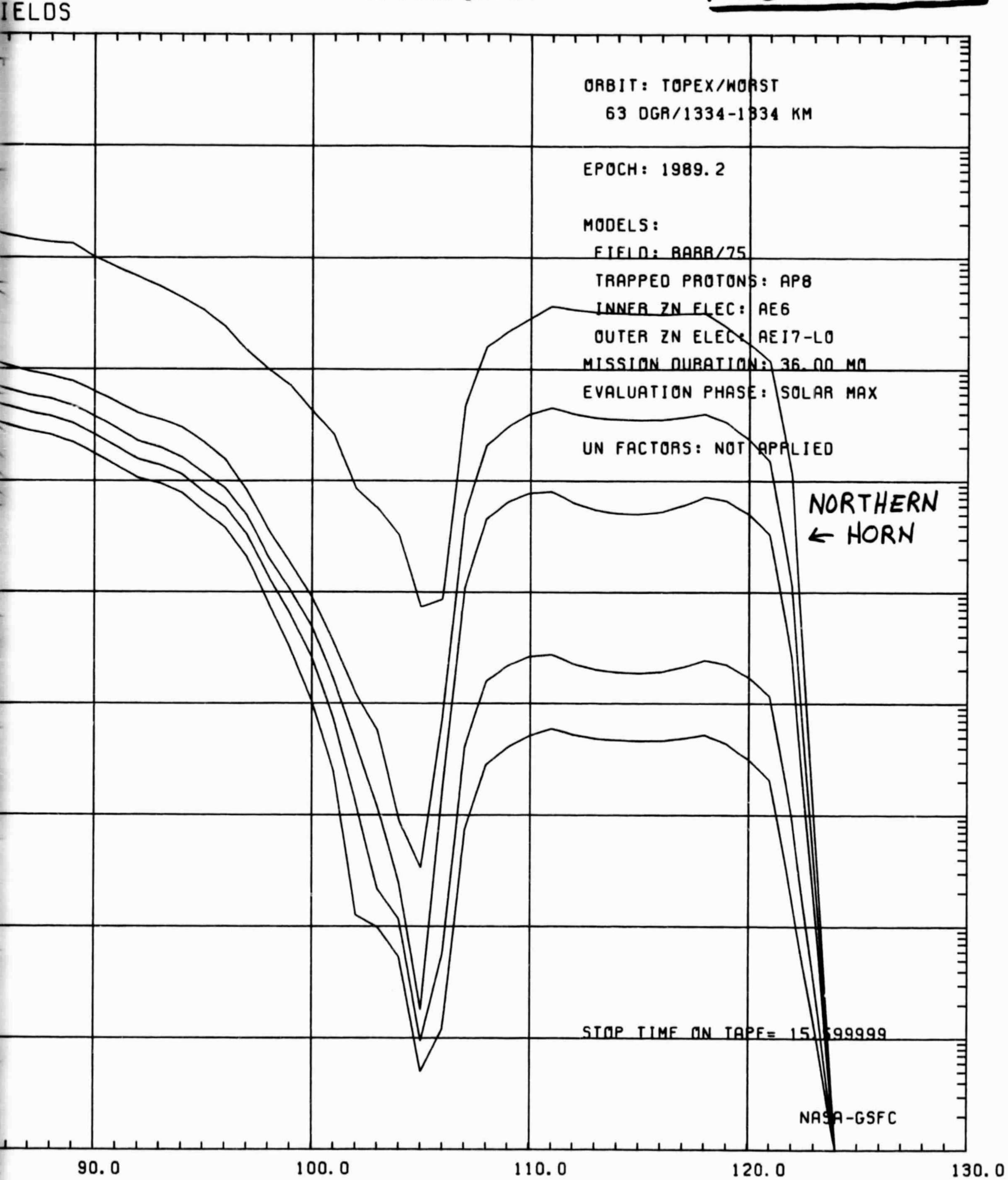
FOLDOUT FRAME



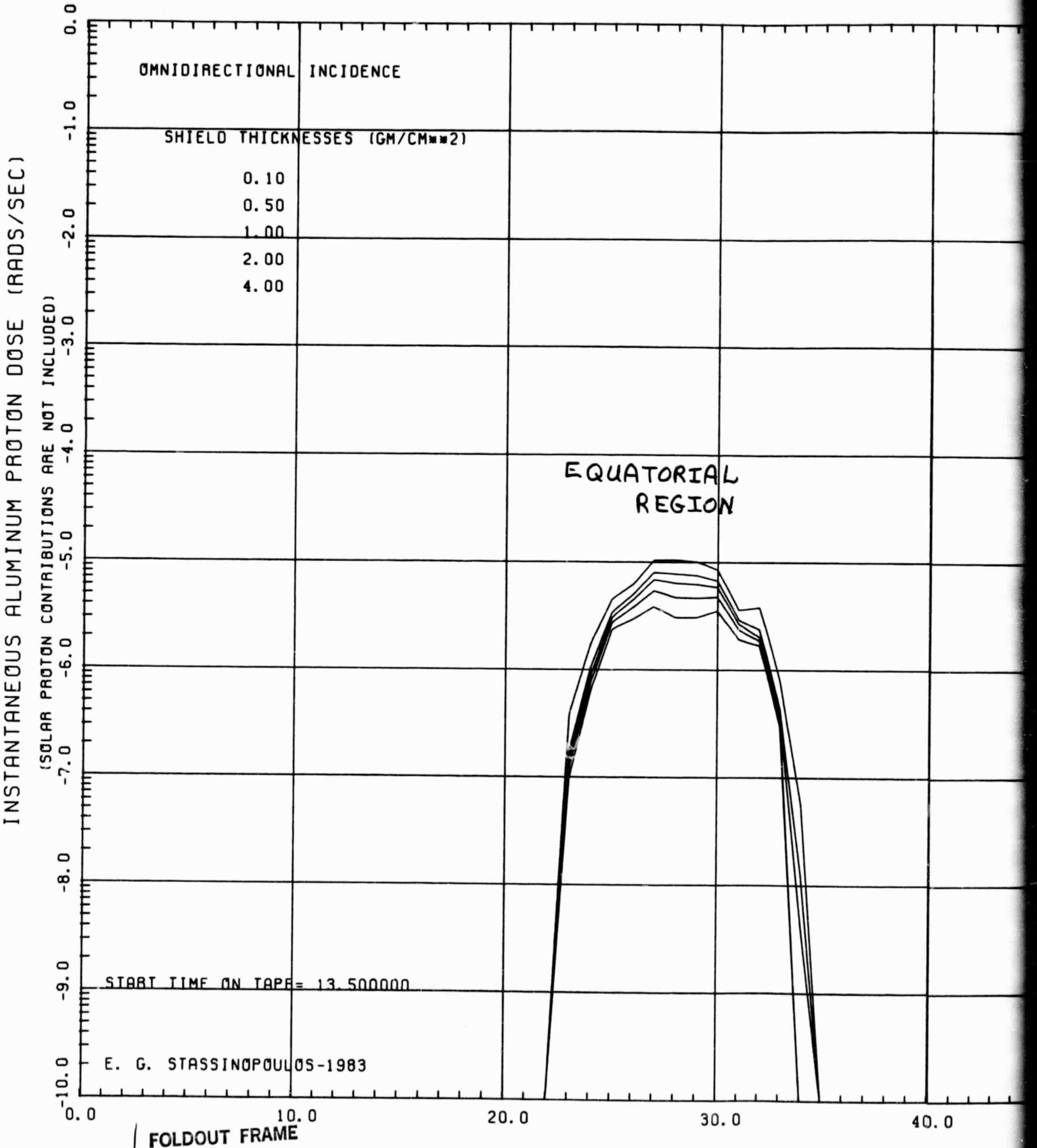
2 FOLDOUT FRAME

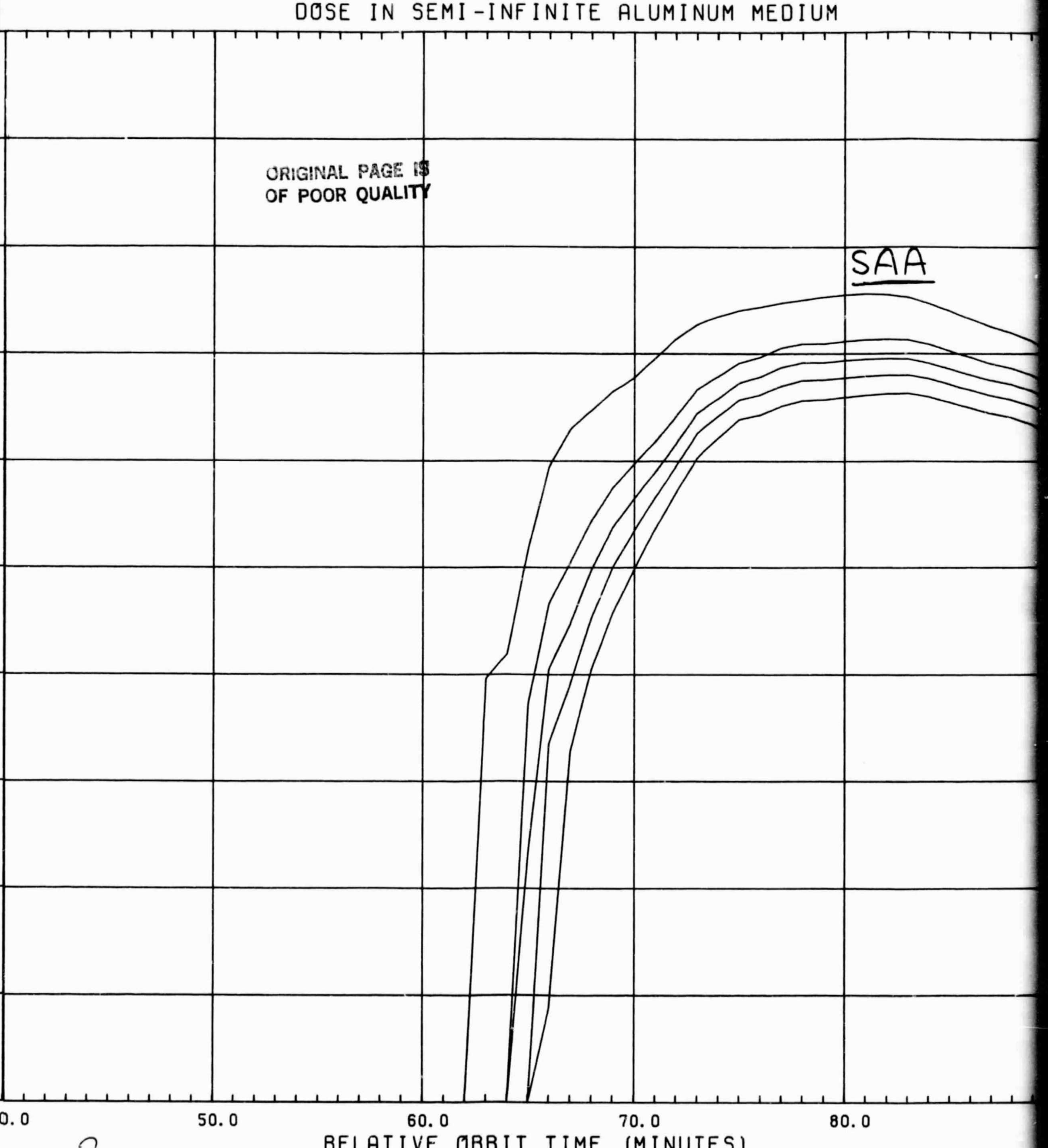
ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 20



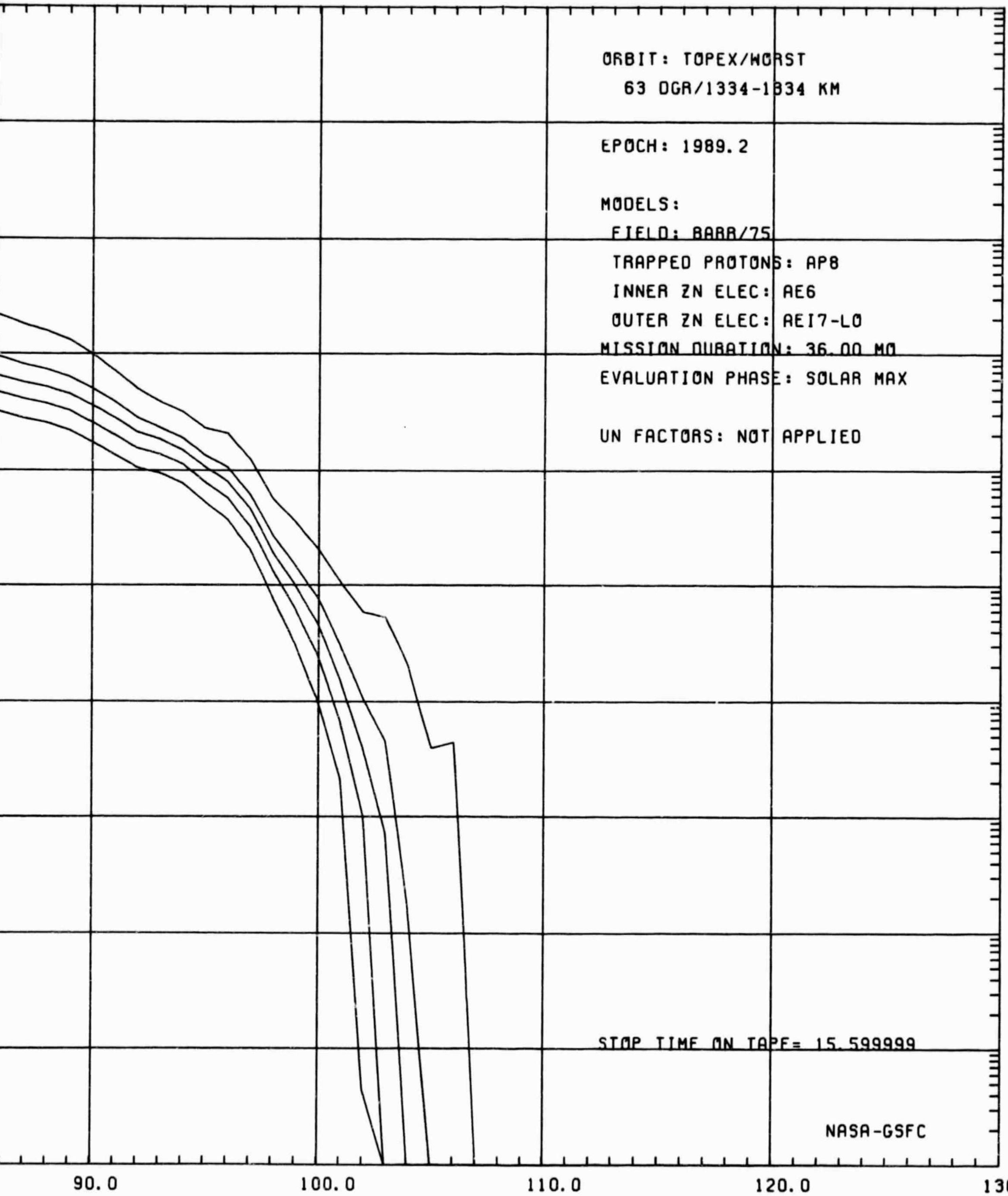
3 FOLDOUT FRAME


OMNIDIRECTIONAL INCIDENCE
SHIELD THICKNESSES (GM/CM**2)
0.10
0.50
1.00
2.00
4.00
EQUATORIAL REGION
START TIME ON TAPE= 13.500000
E. G. STASSINOPOULOS-1983
INSTANTANEOUS ALUMINUM PROTON DOSE (RADS/SEC)
(SOLAR PROTON CONTRIBUTIONS ARE NOT INCLUDED)
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
-9.0
-10.0
0.0
10.0
20.0
30.0
40.0



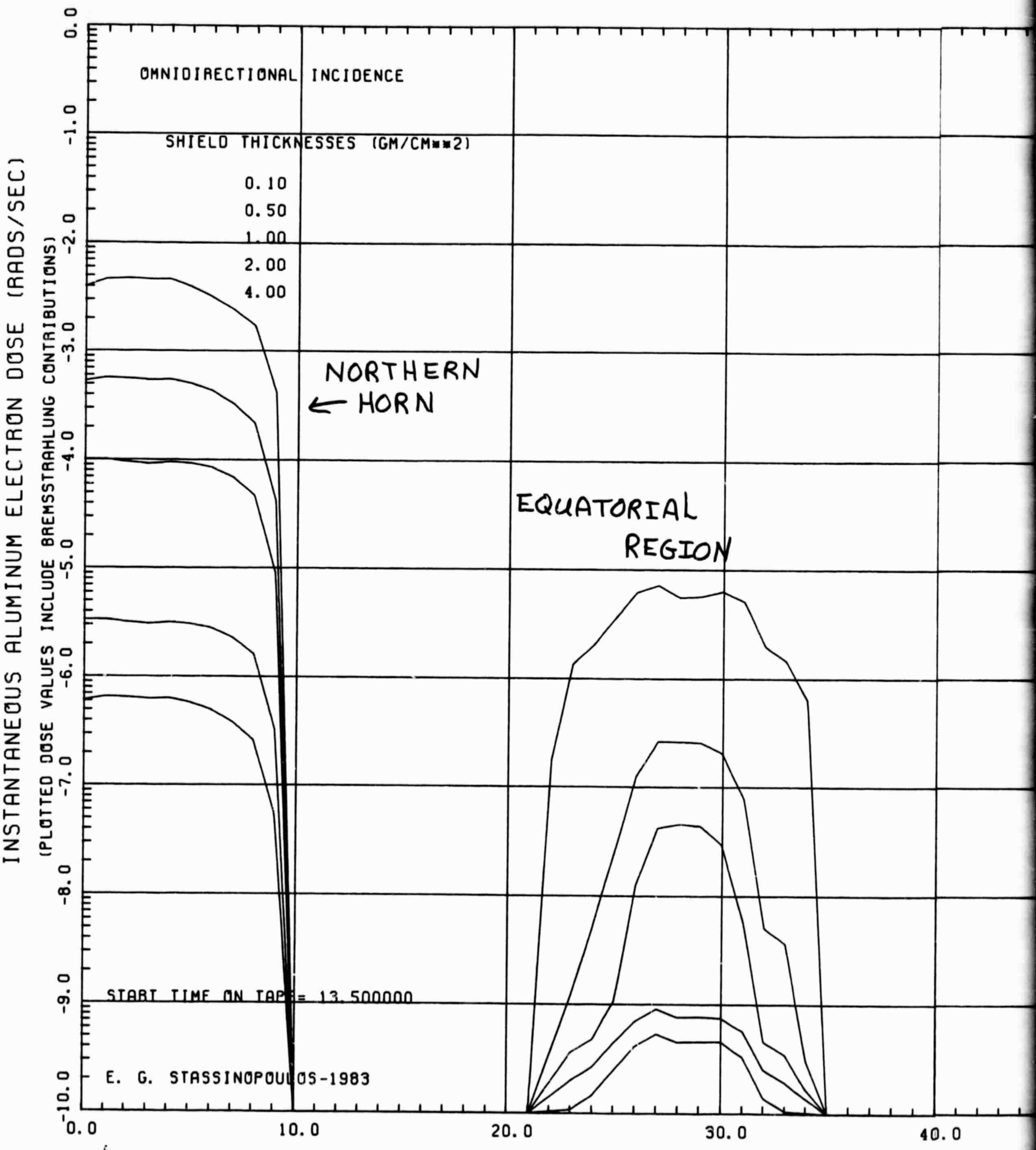
2 FOLDOUT FRAME

FIGURE 21

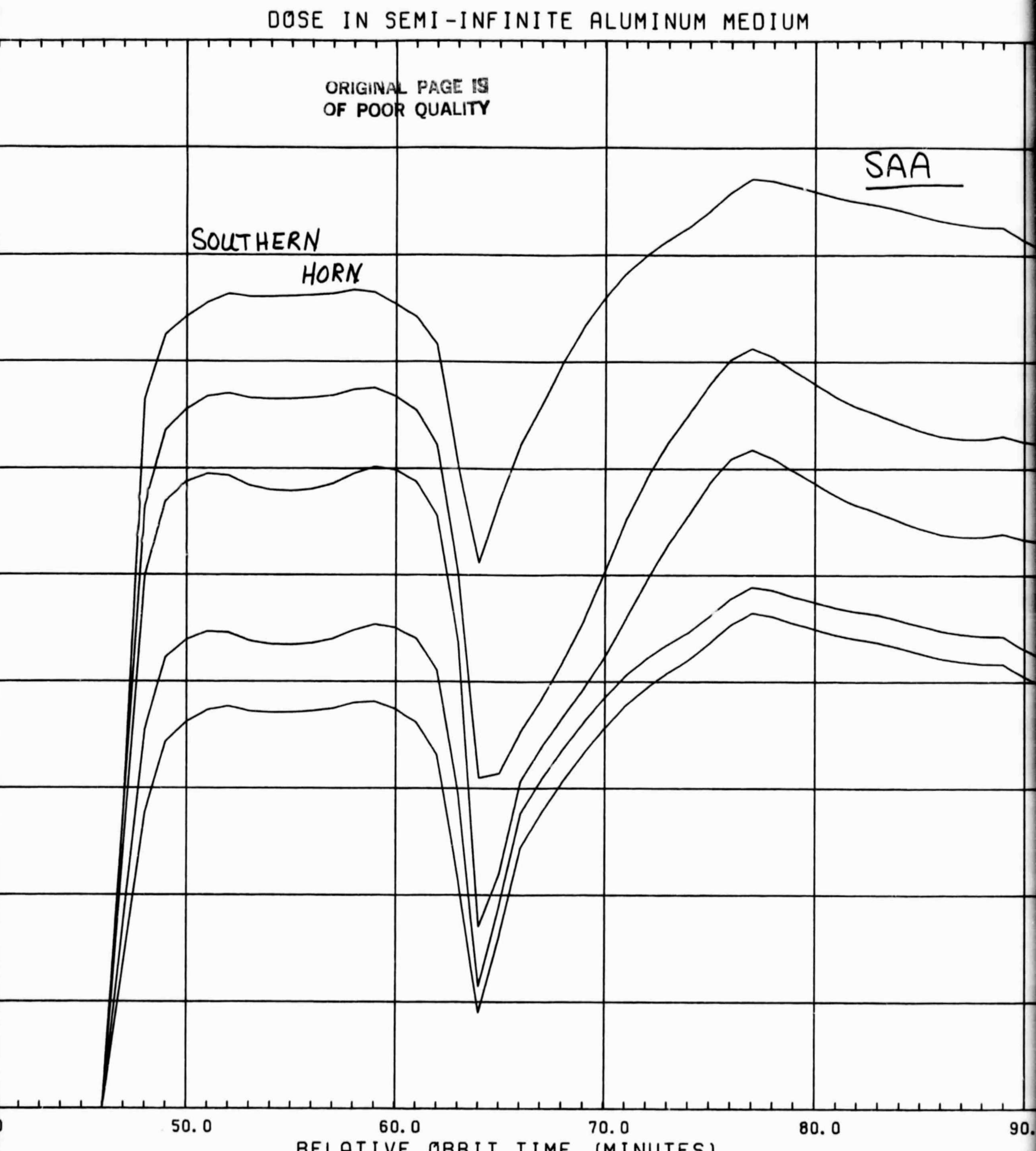


3 FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY



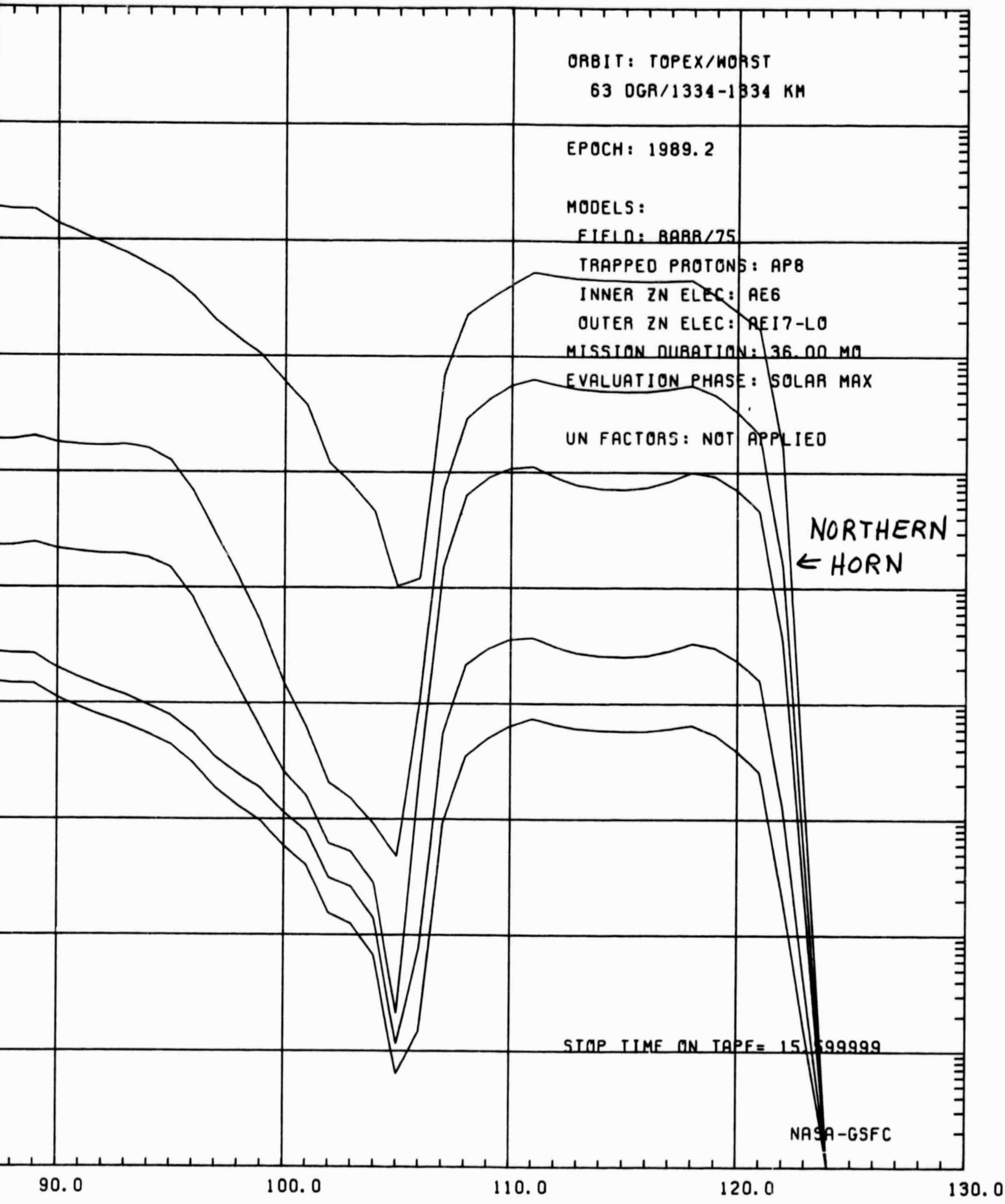
FOLDOUT FRAME



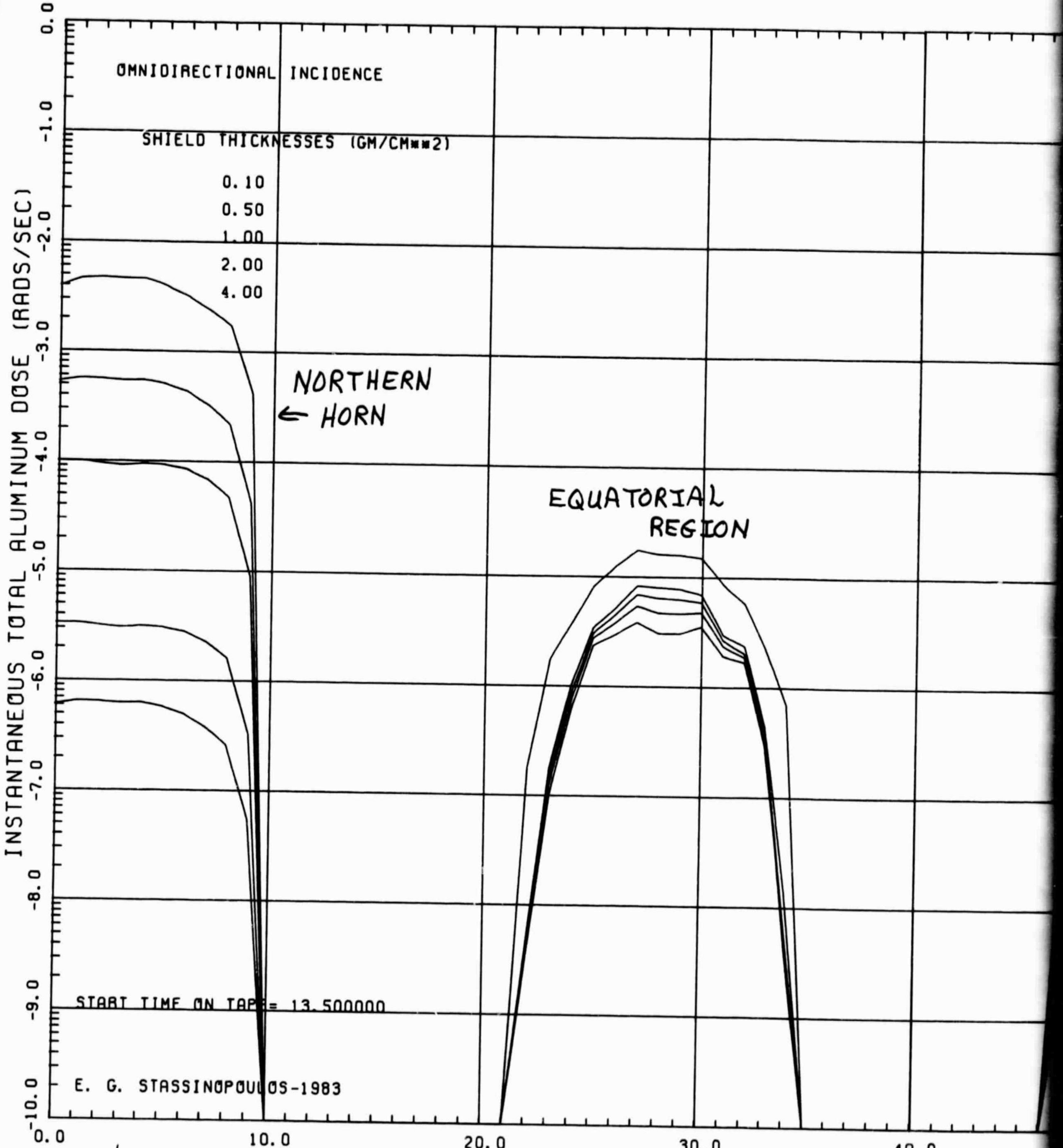
2 FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY

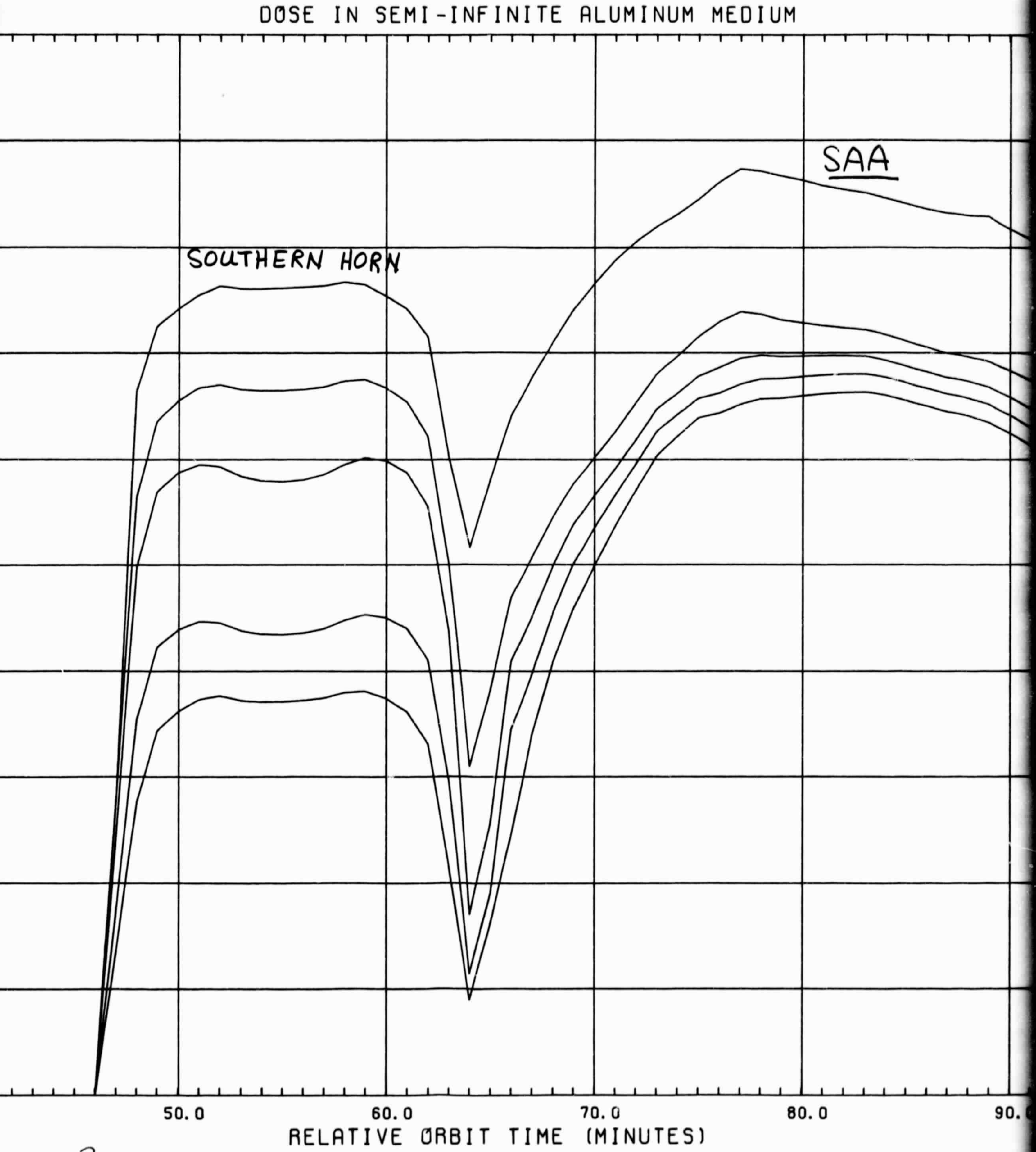
FIGURE 22



3 FOLDOUT FRAME



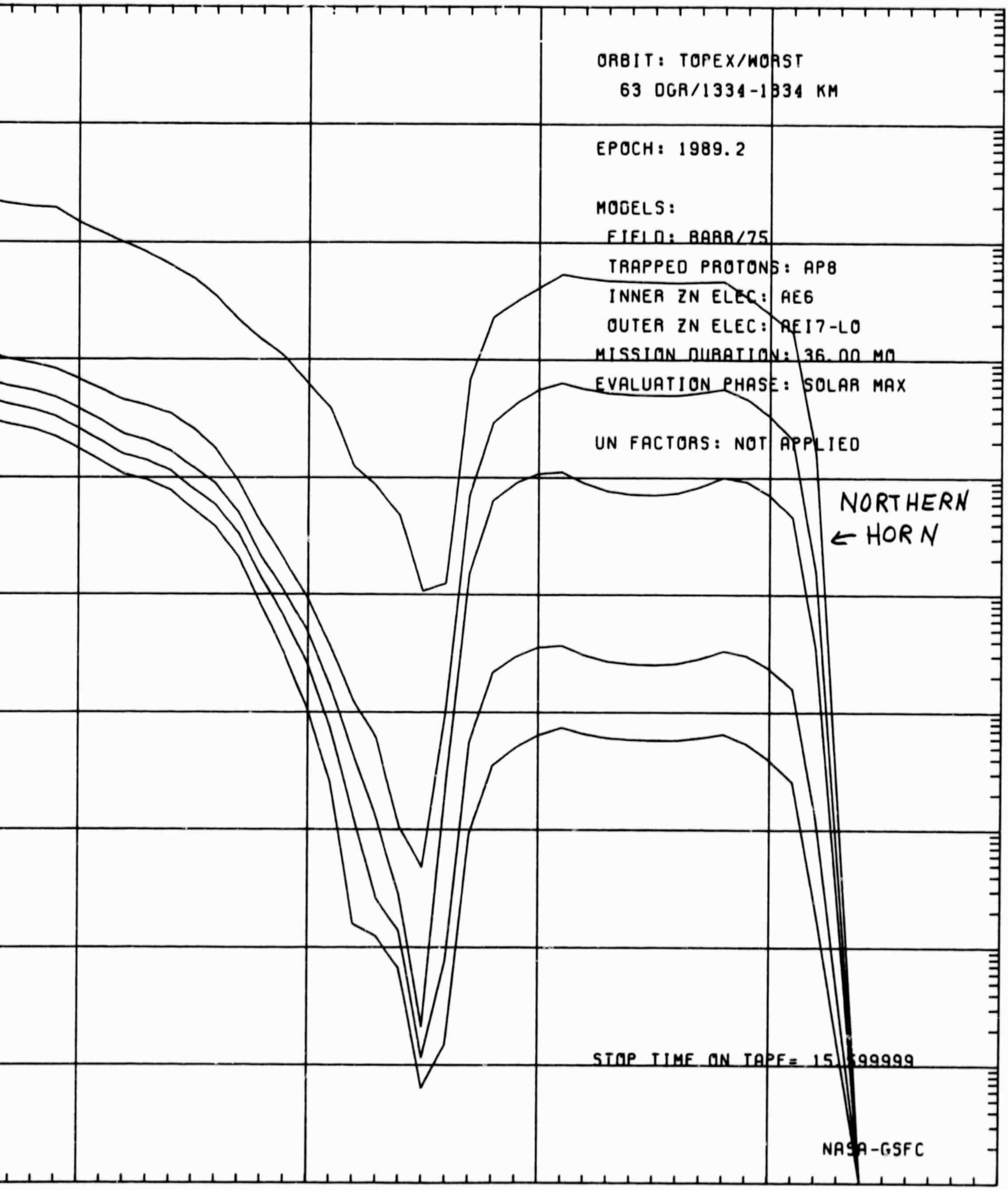
FOLDOUT FRAME



2 FOLDOUT FRAME

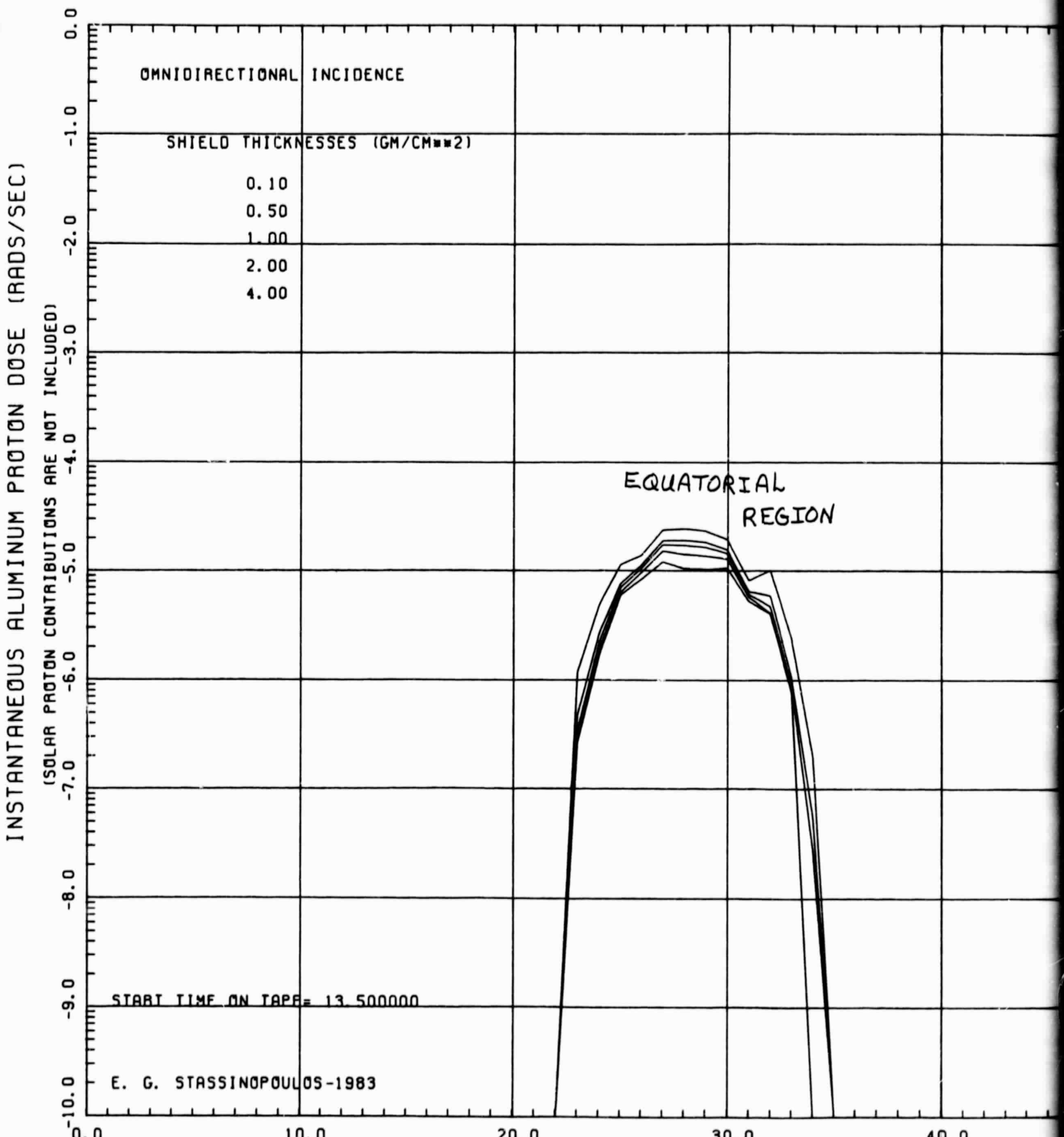
ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 23

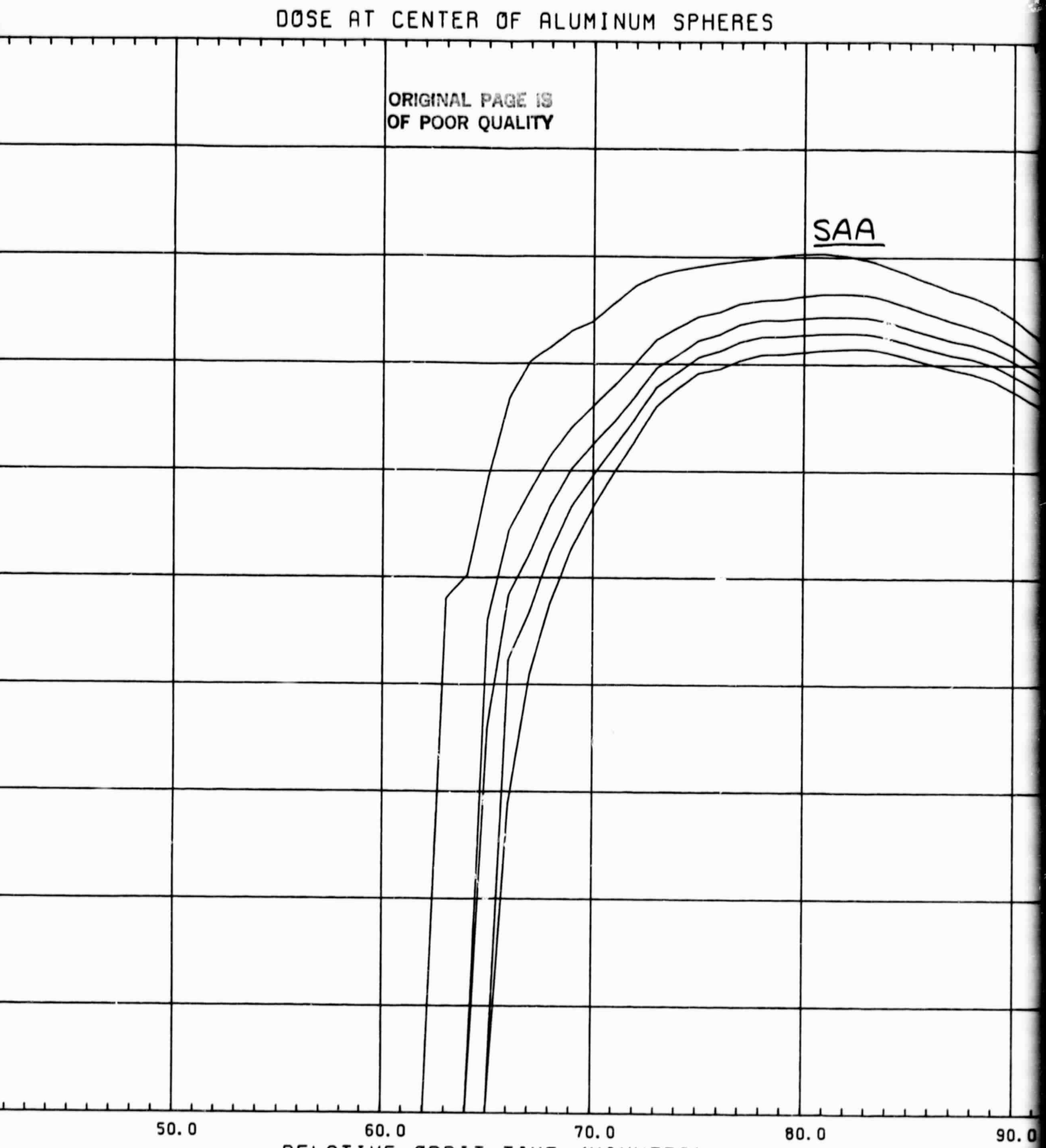


3 FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY

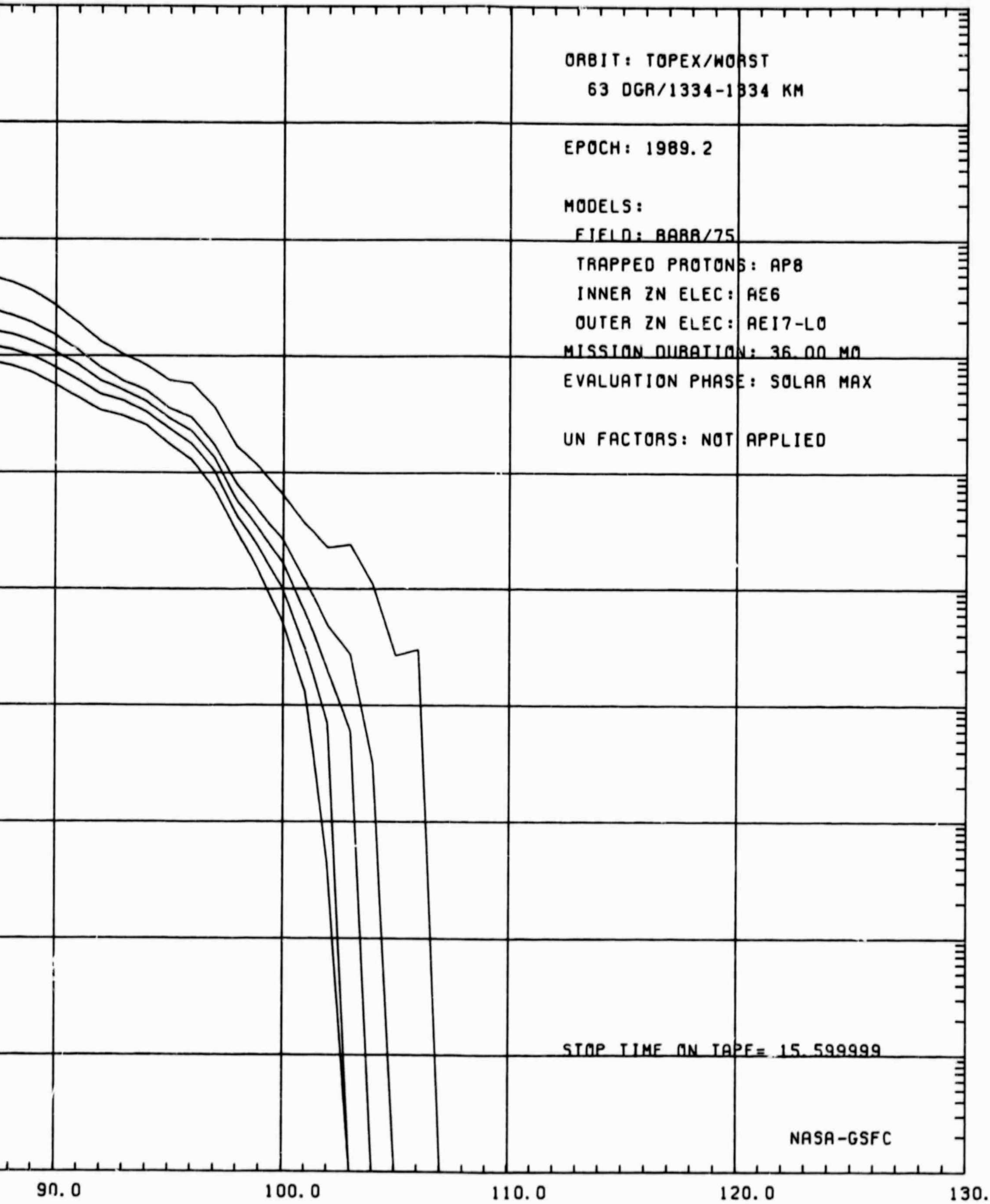


FOLDOUT FRAME



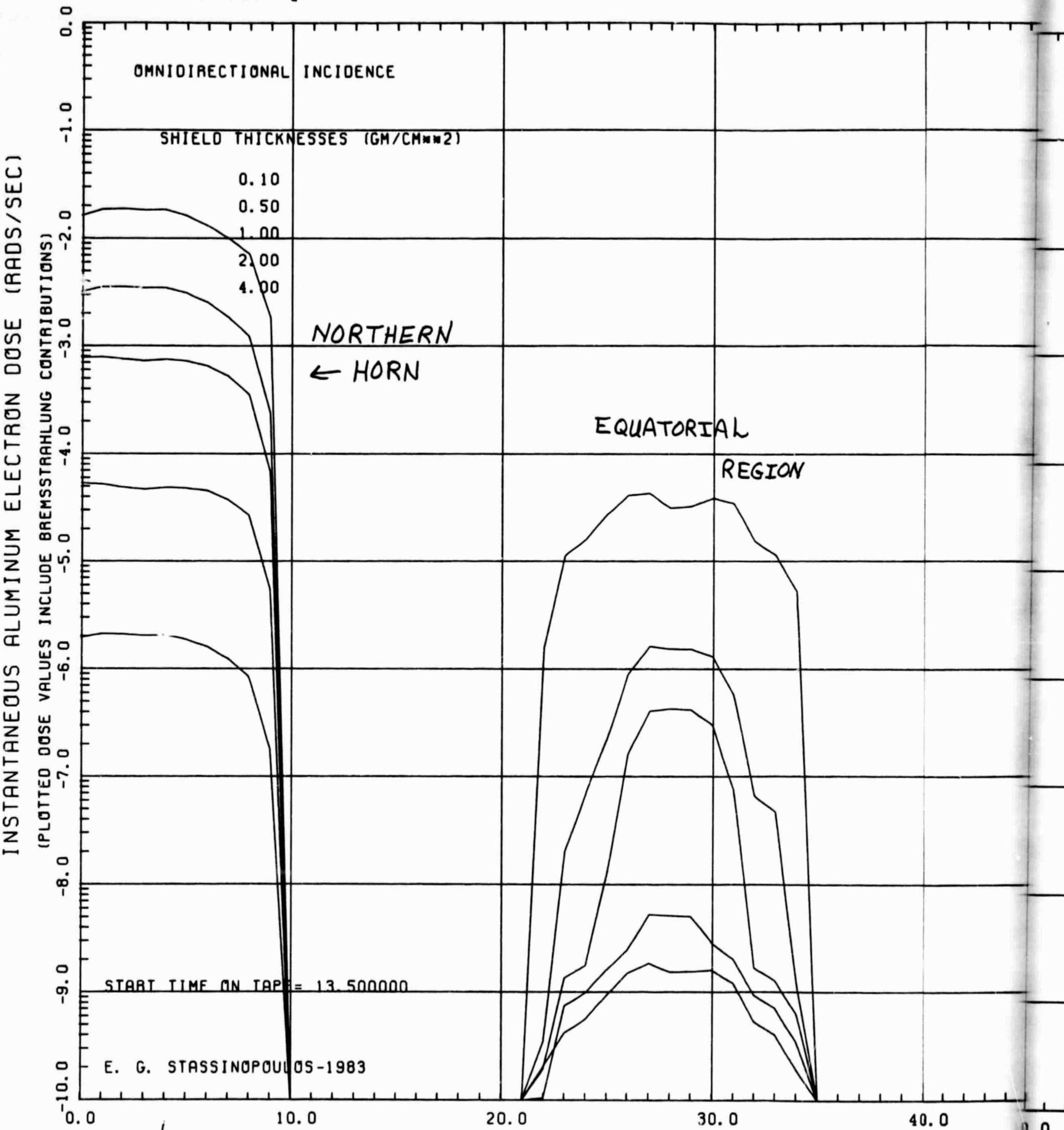
2 FOLDOUT FRAME

FIGURE 24



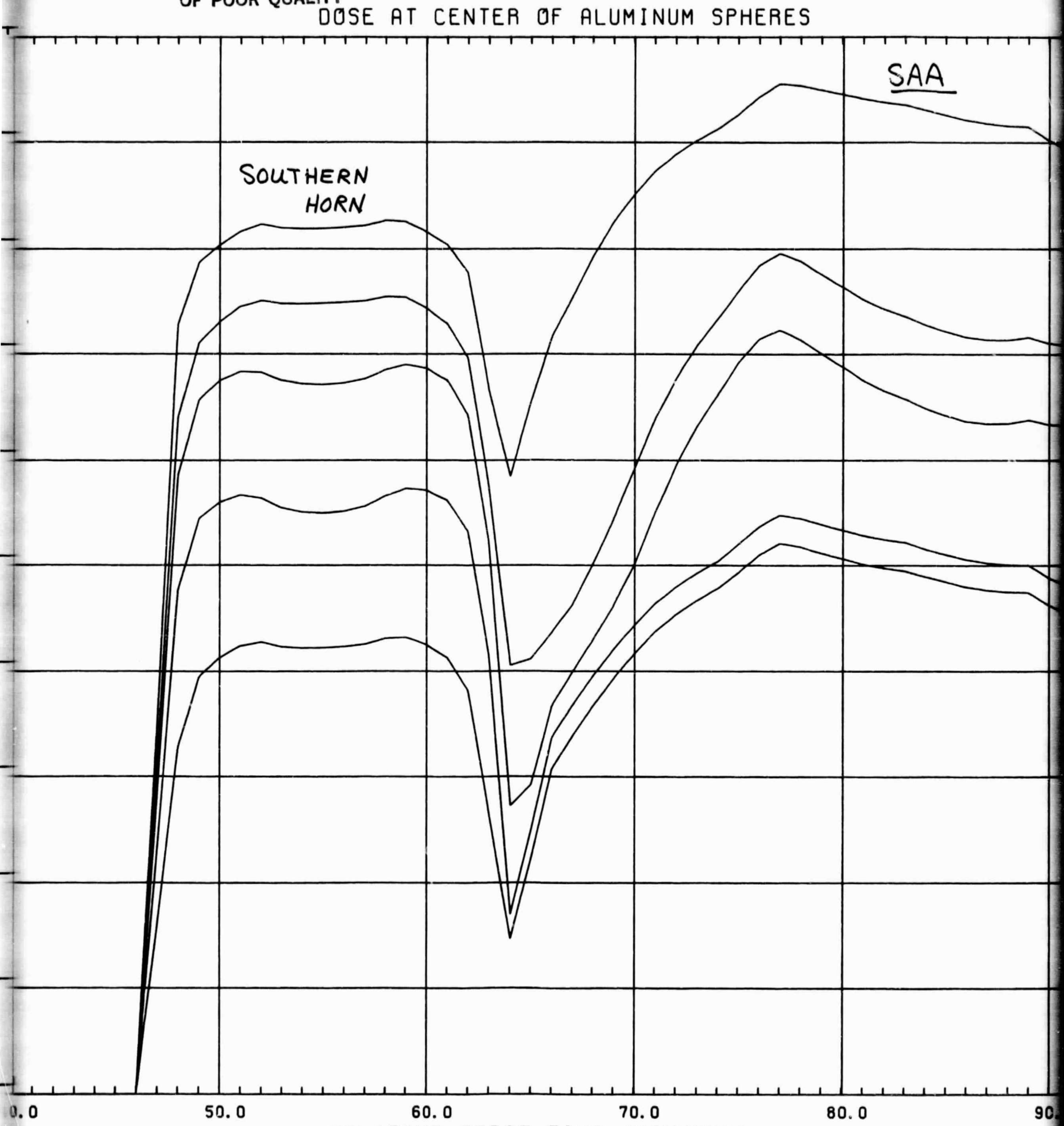
3 FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY



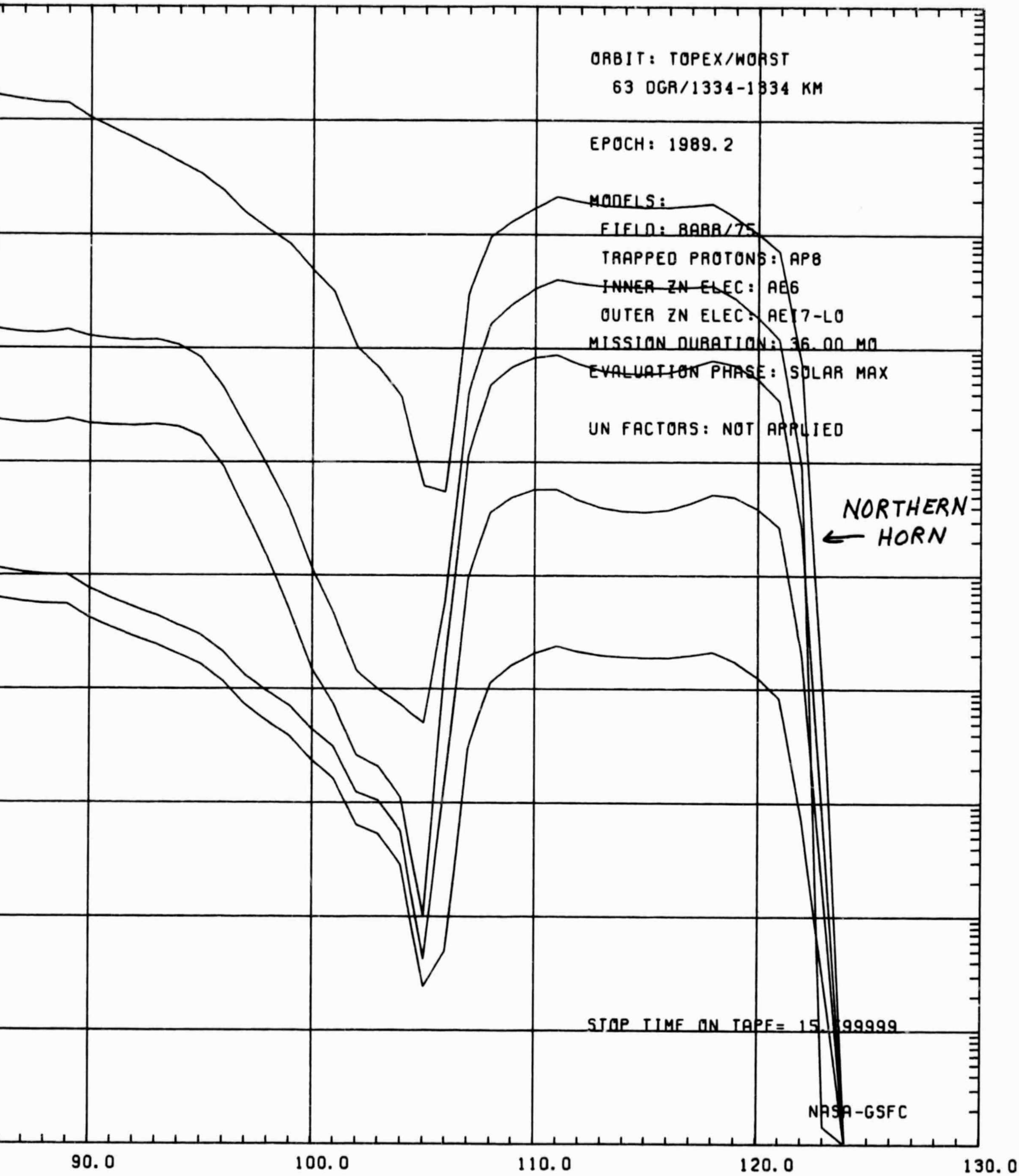
FOLDOUT FRAME

ORIGINAL PAGE IS
OF POOR QUALITY



2 FOLDOUT FRAME

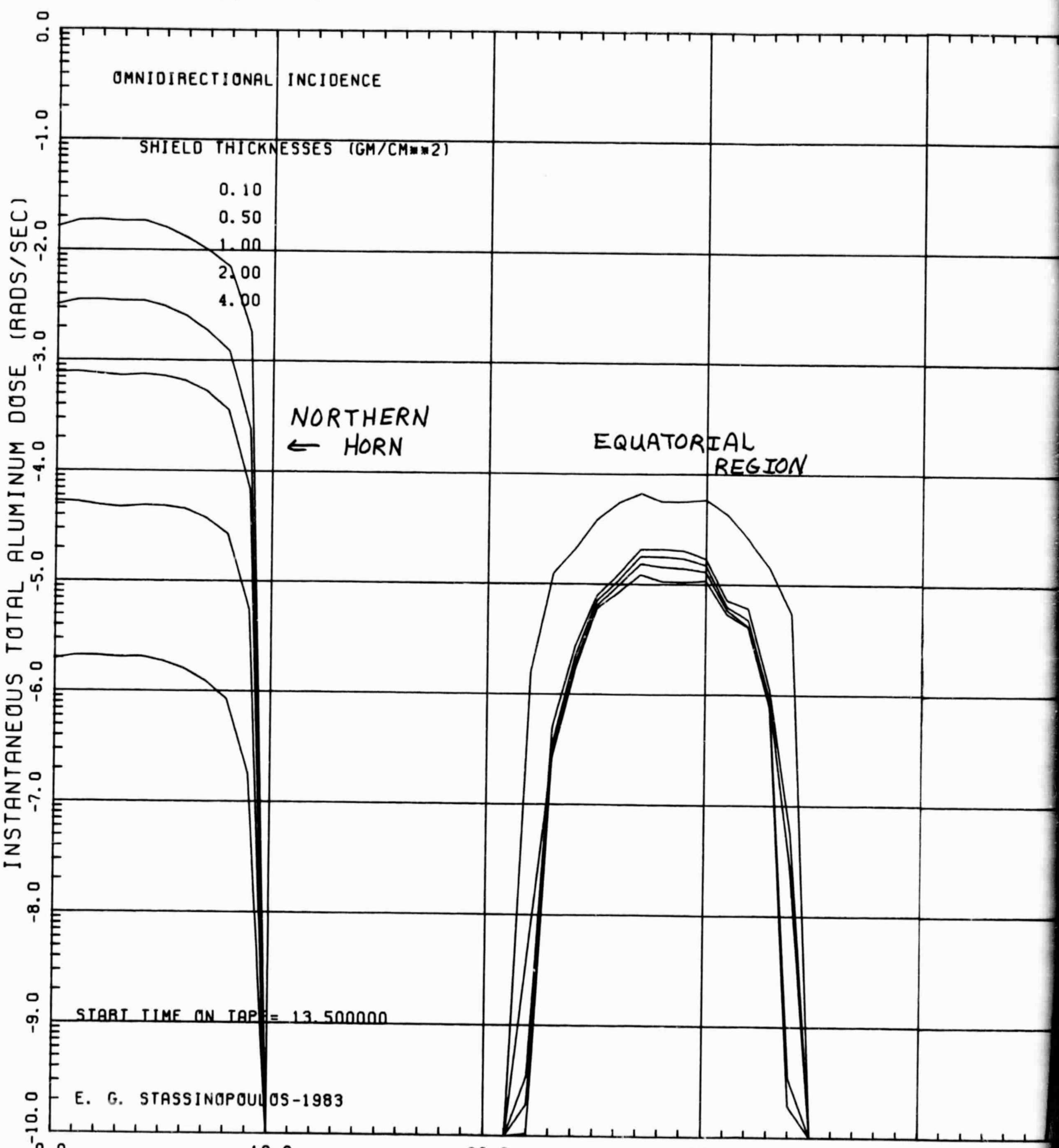
FIGURE 25



3 FOLDOUT FRAME

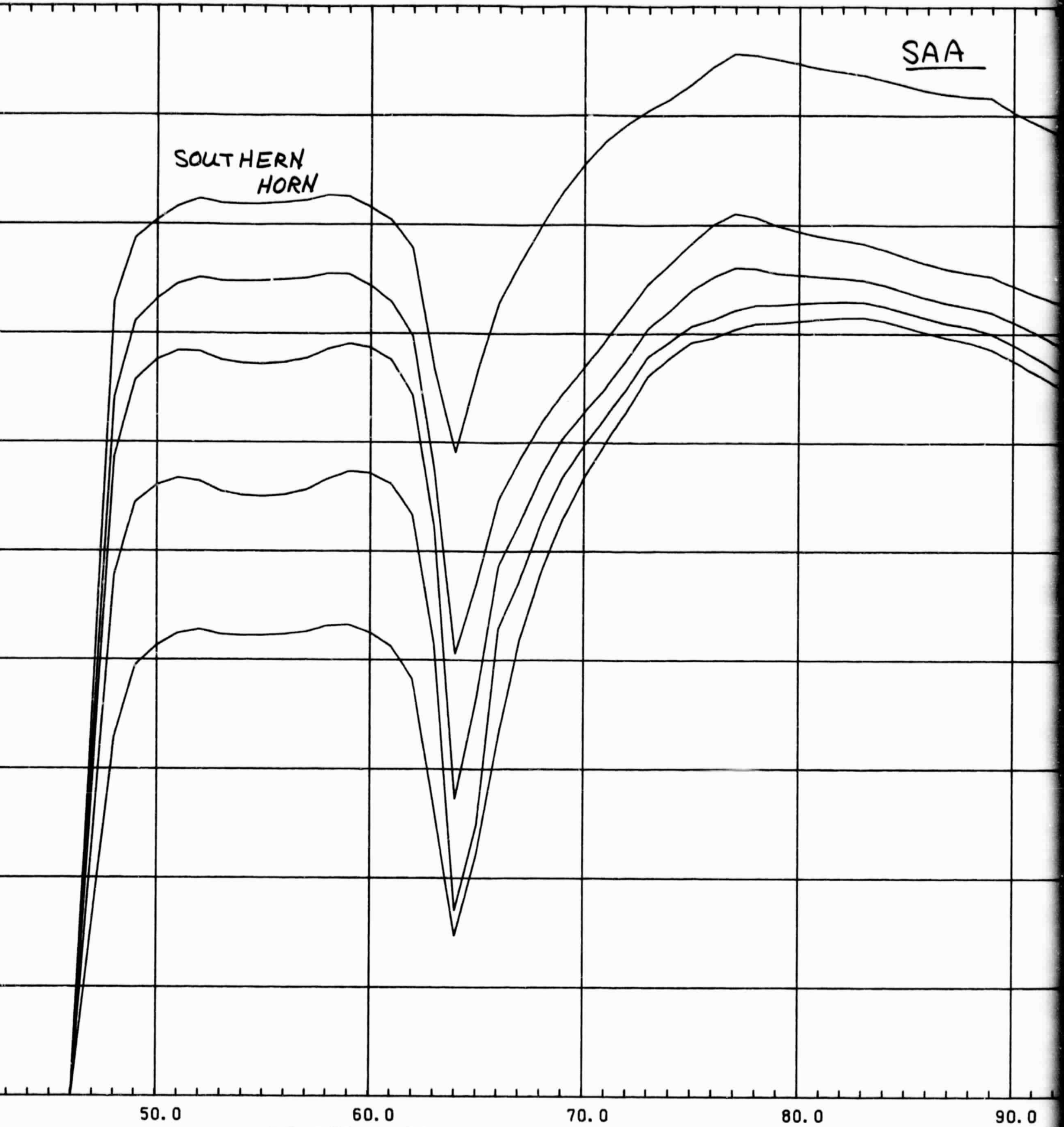
ORIGINAL PAGE IS OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY



FOLDOUT FRAME

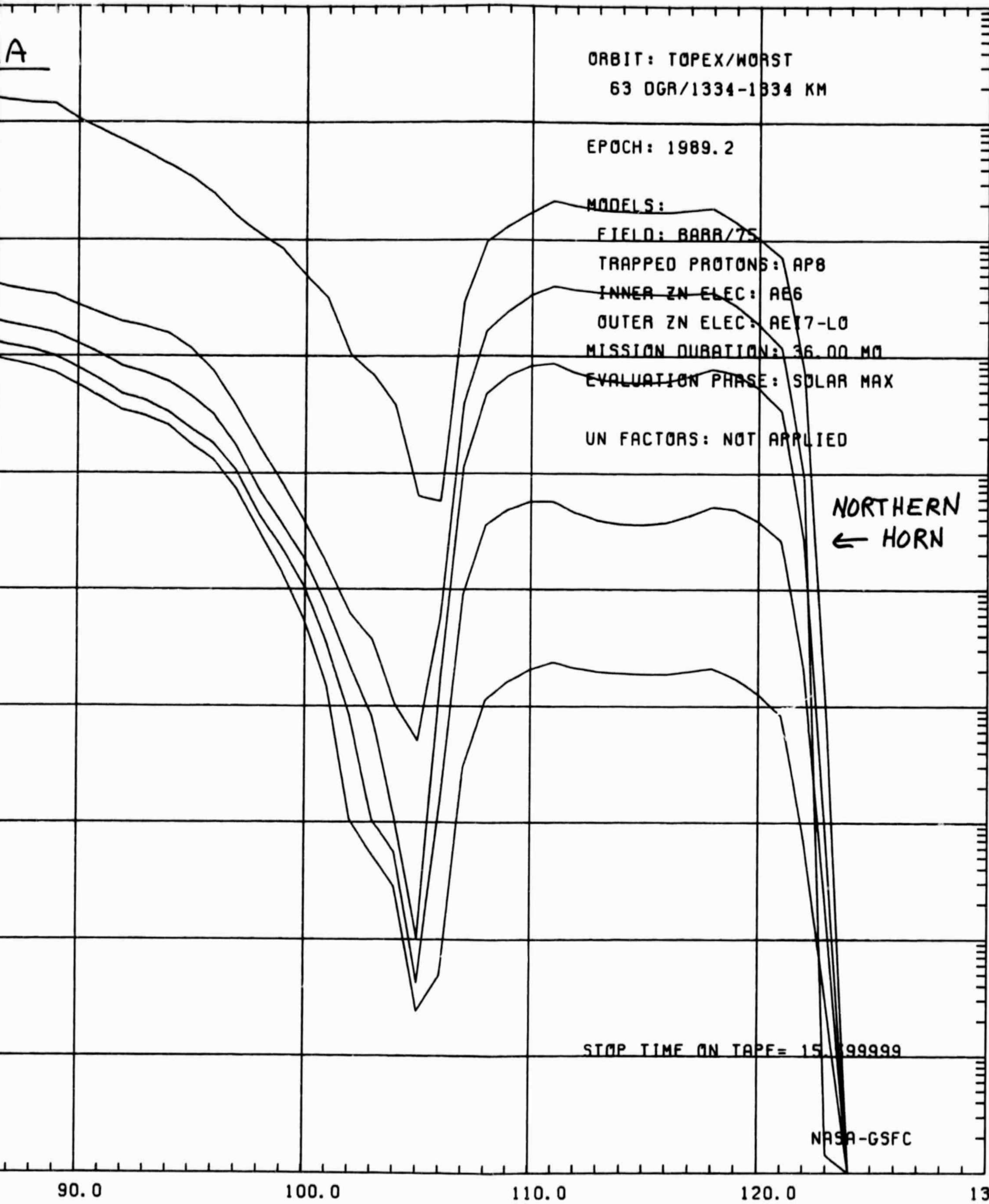
DOSE AT CENTER OF ALUMINUM SPHERES



RELATIVE ORBIT TIME (MINUTES)

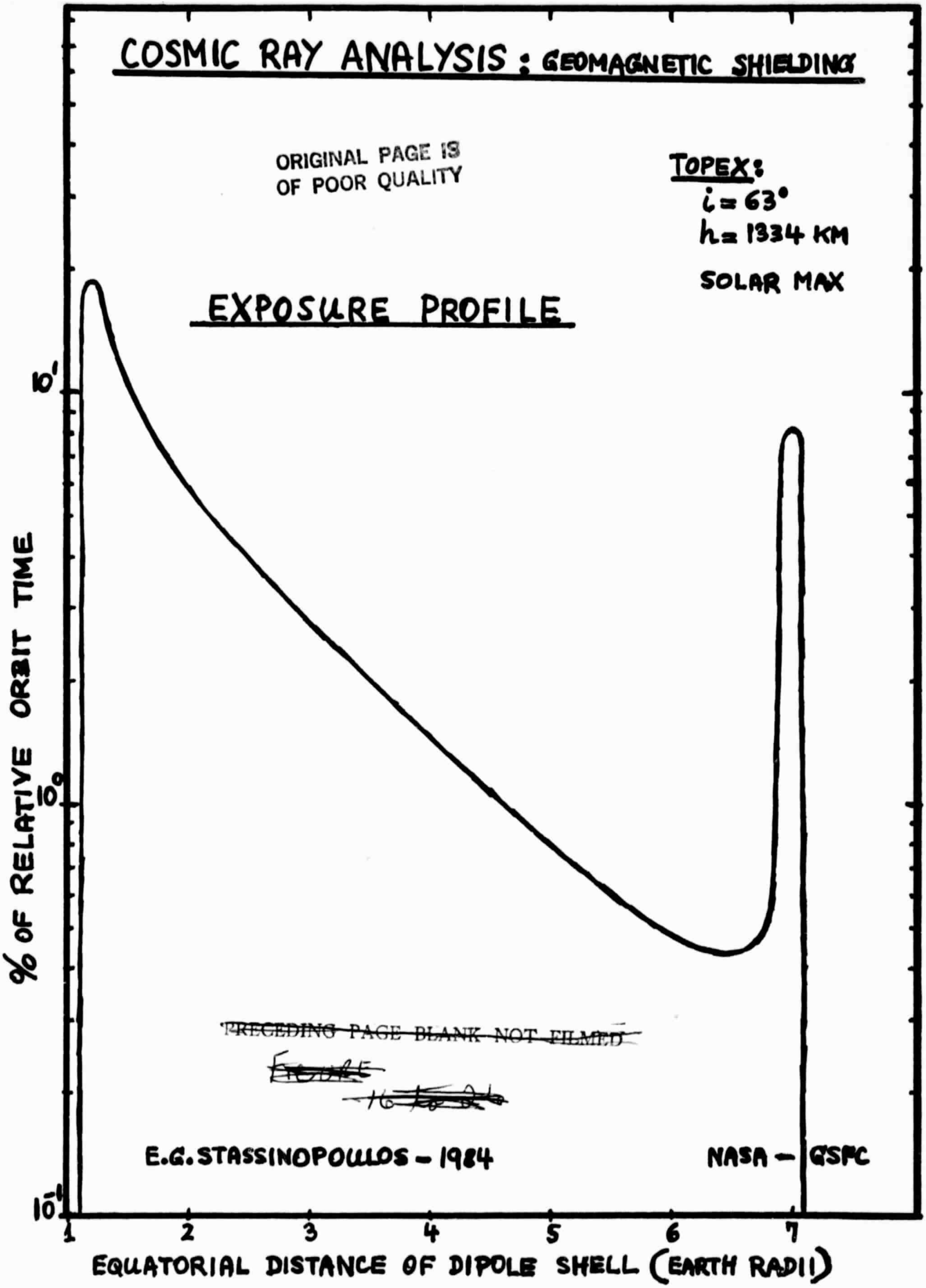
2 FOLDOUT FRAME

FIGURE 26



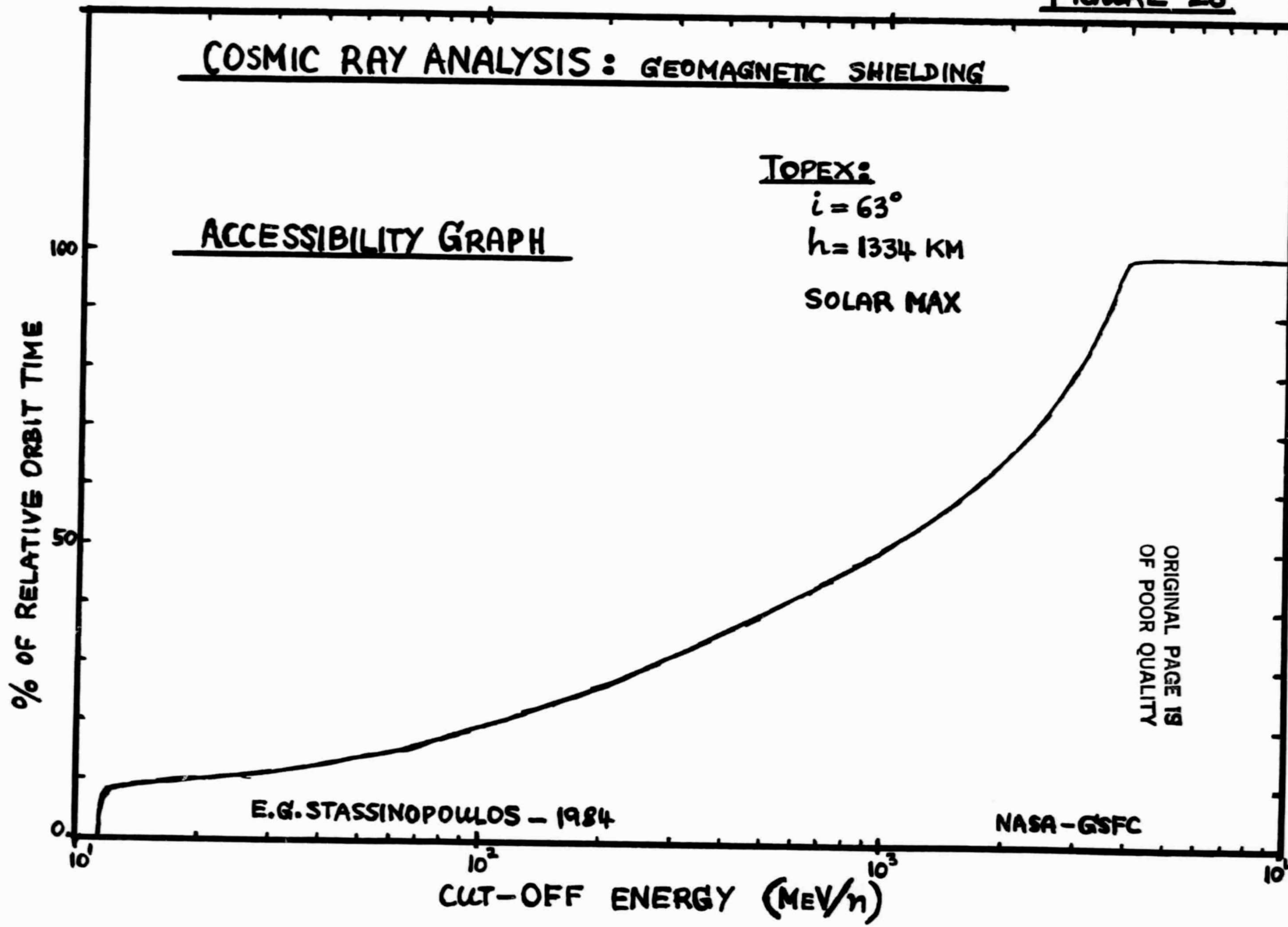
3 FOLDOUT FRAME

FIGURE 27



COSMIC RAY ANALYSIS : GEOMAGNETIC SHIELDING
ORIGINAL PAGE IS
OF POOR QUALITY
TOPEX:
i = 63°
h = 1334 KM
SOLAR MAX
EXPOSURE PROFILE
10'
10^0
10^-1
% OF RELATIVE ORBIT TIME
PRECEDING PAGE BLANK NOT FILMED
E.G. STASSINOPOULOS - 1984
NASA - GSFC
1
2
3
4
5
6
7
EQUATORIAL DISTANCE OF DIPOLE SHELL (EARTH RADII)

FIGURE 28



COSMIC RAY ANALYSIS: GEOMAGNETIC SHIELDING
ACCESSIBILITY GRAPH
TOPEX:
i = 63°
h = 1334 KM
SOLAR MAX
100
50
0
% OF RELATIVE ORBIT TIME
10¹
10²
10³
10⁴
CUT-OFF ENERGY (MeV/n)
E.G. STASSINOPOULOS – 1984
NASA-GSFC

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: HE
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-2 A-4.00

FIGURE 29

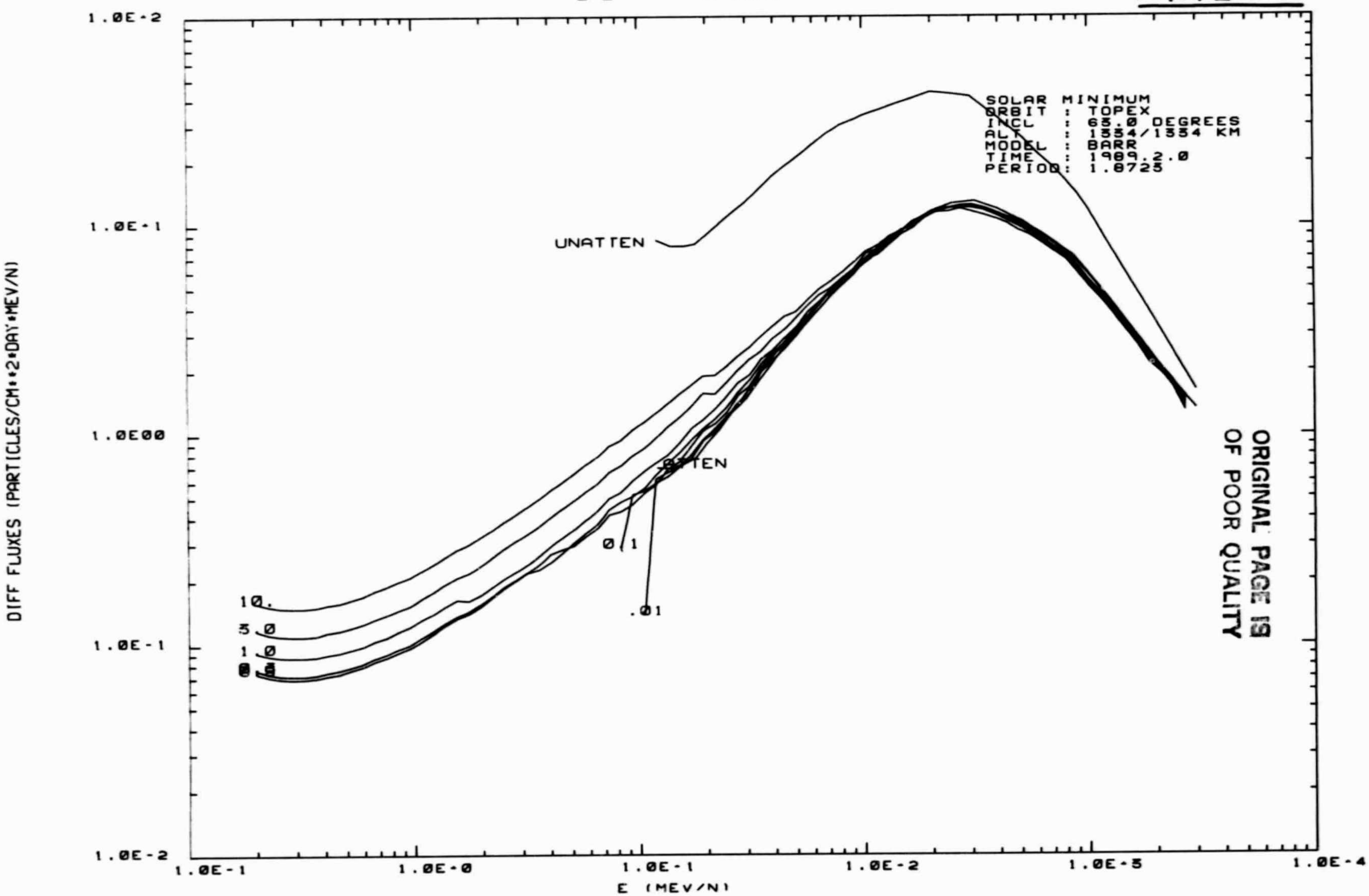


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FIGURE 30

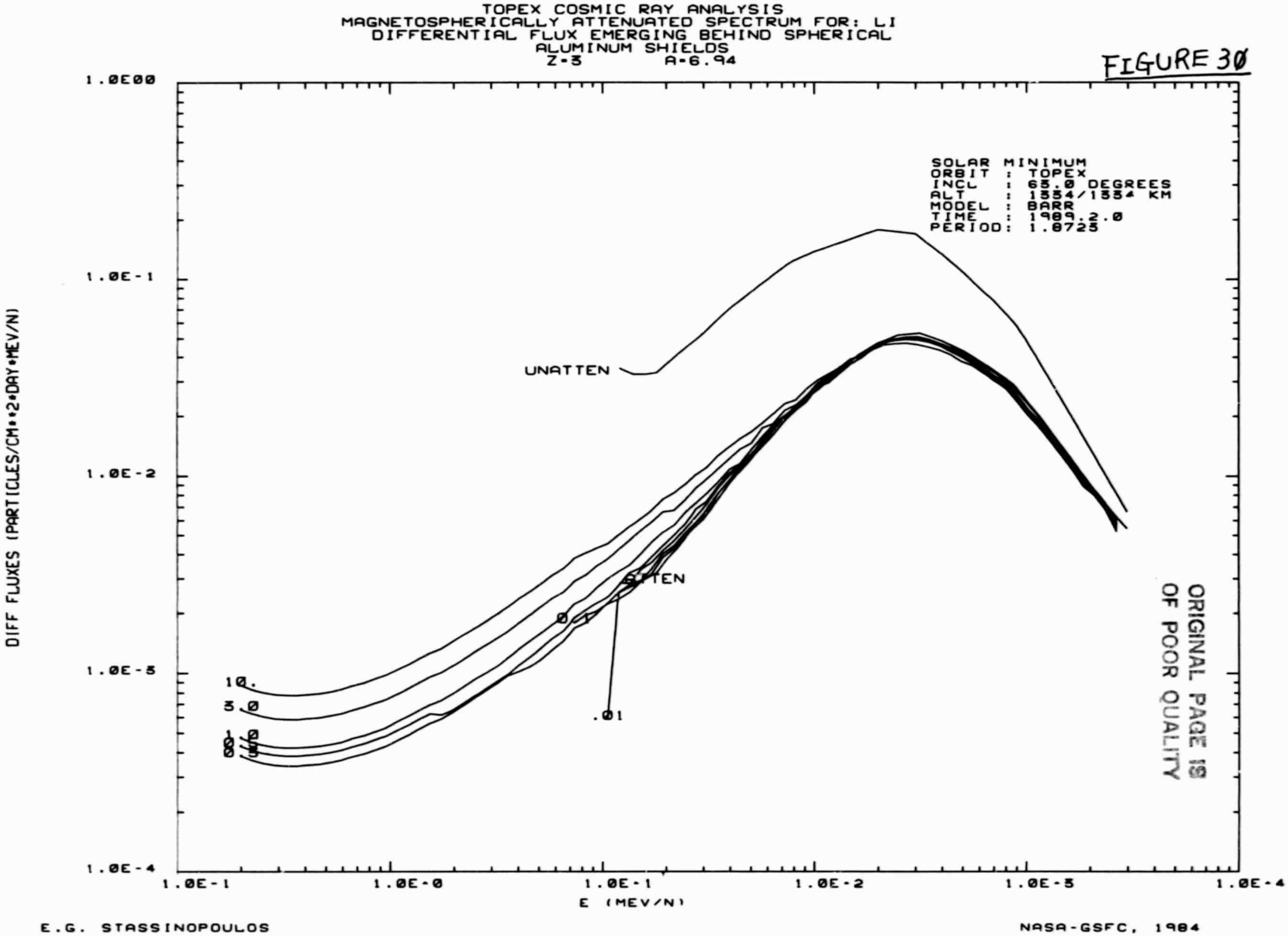
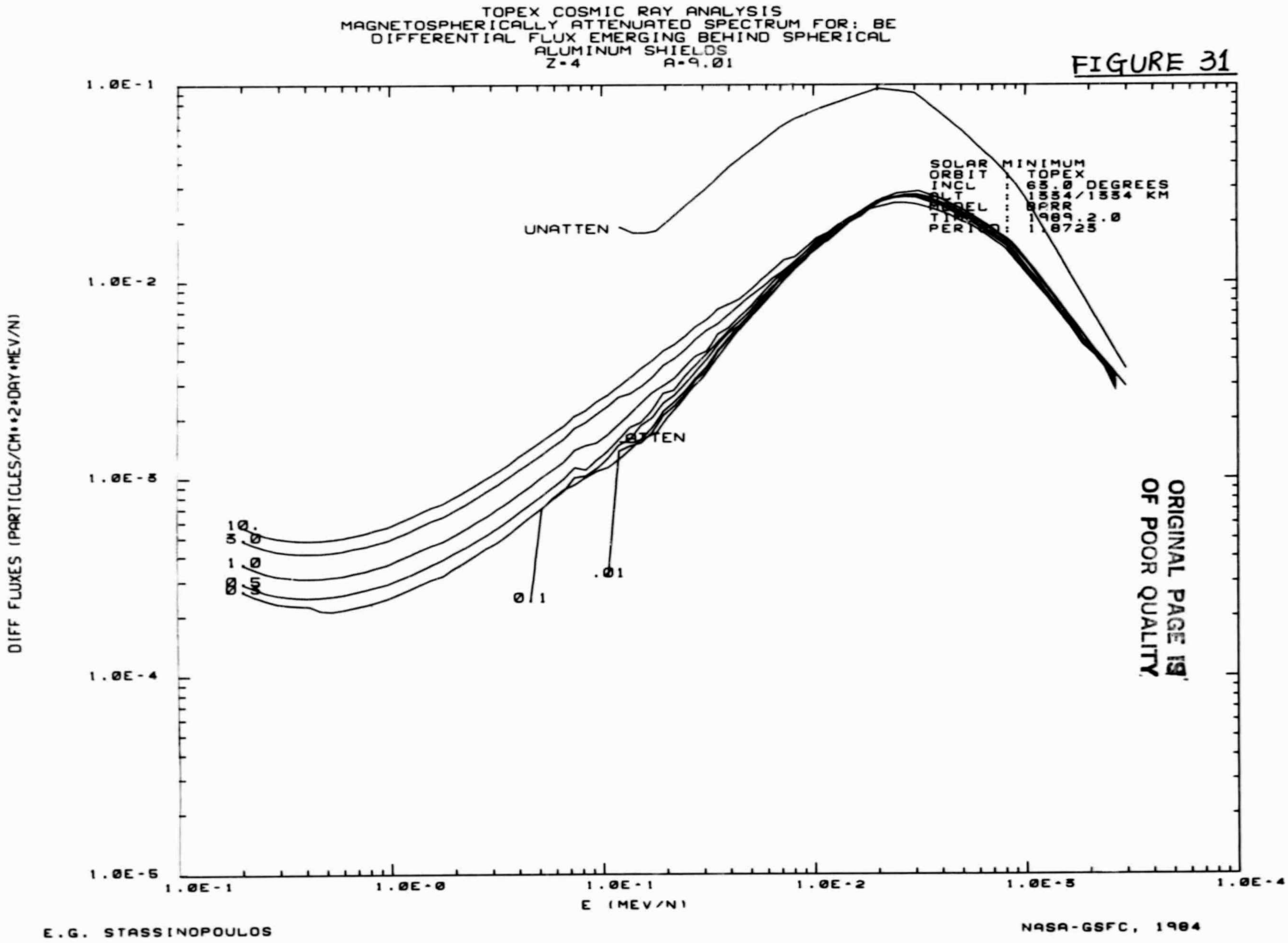
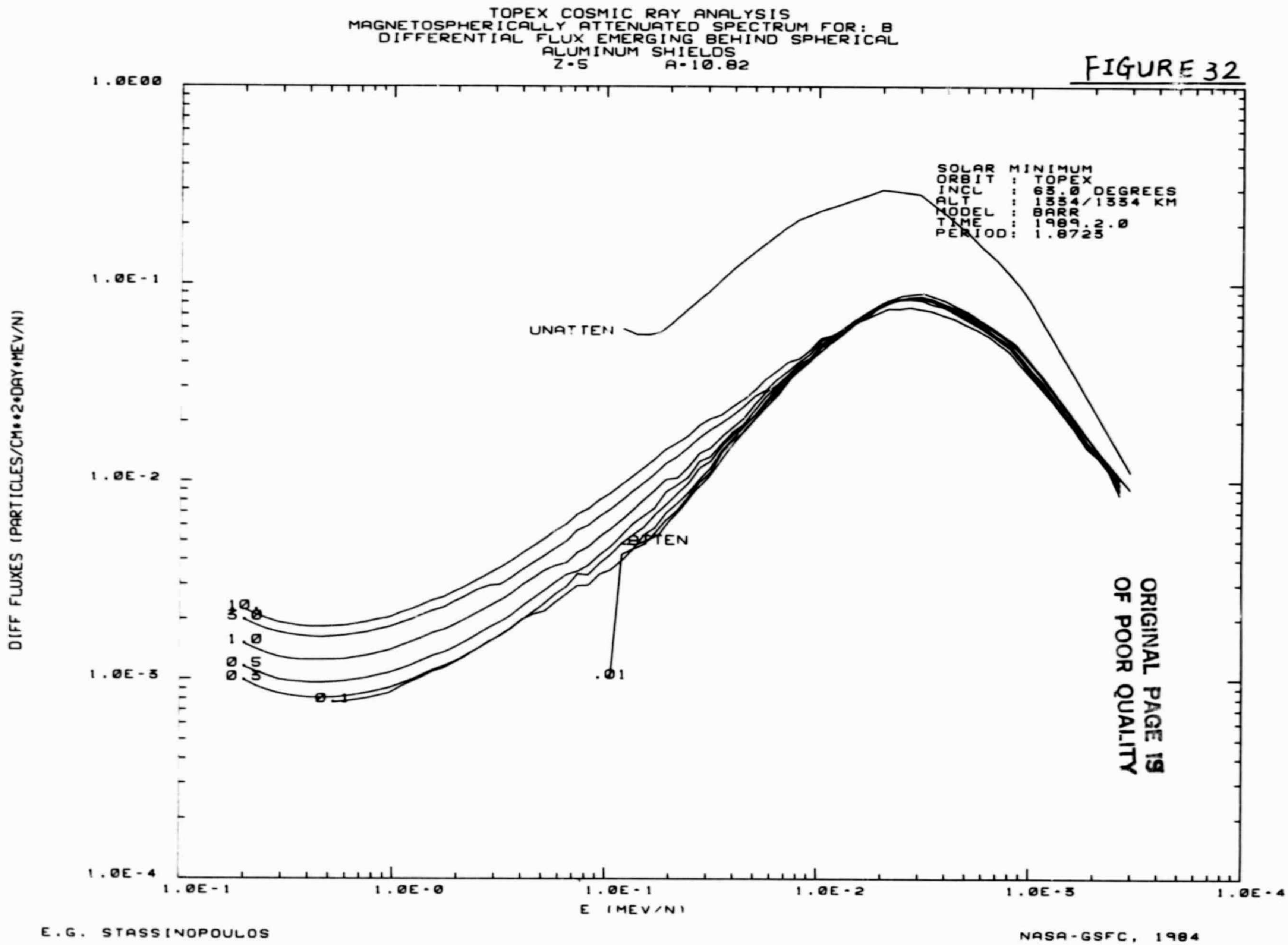

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: LI
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=3 A=6.94
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8723
UNATTEN
ATTEN
.01
0.1
10.
3.0
1.0
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
E (MEV/N)
1.0E00
1.0E-1
1.0E-2
1.0E-3
1.0E-4
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E.G. STASSINOPOULOS
NASA-GSFC, 1984

FIGURE 31

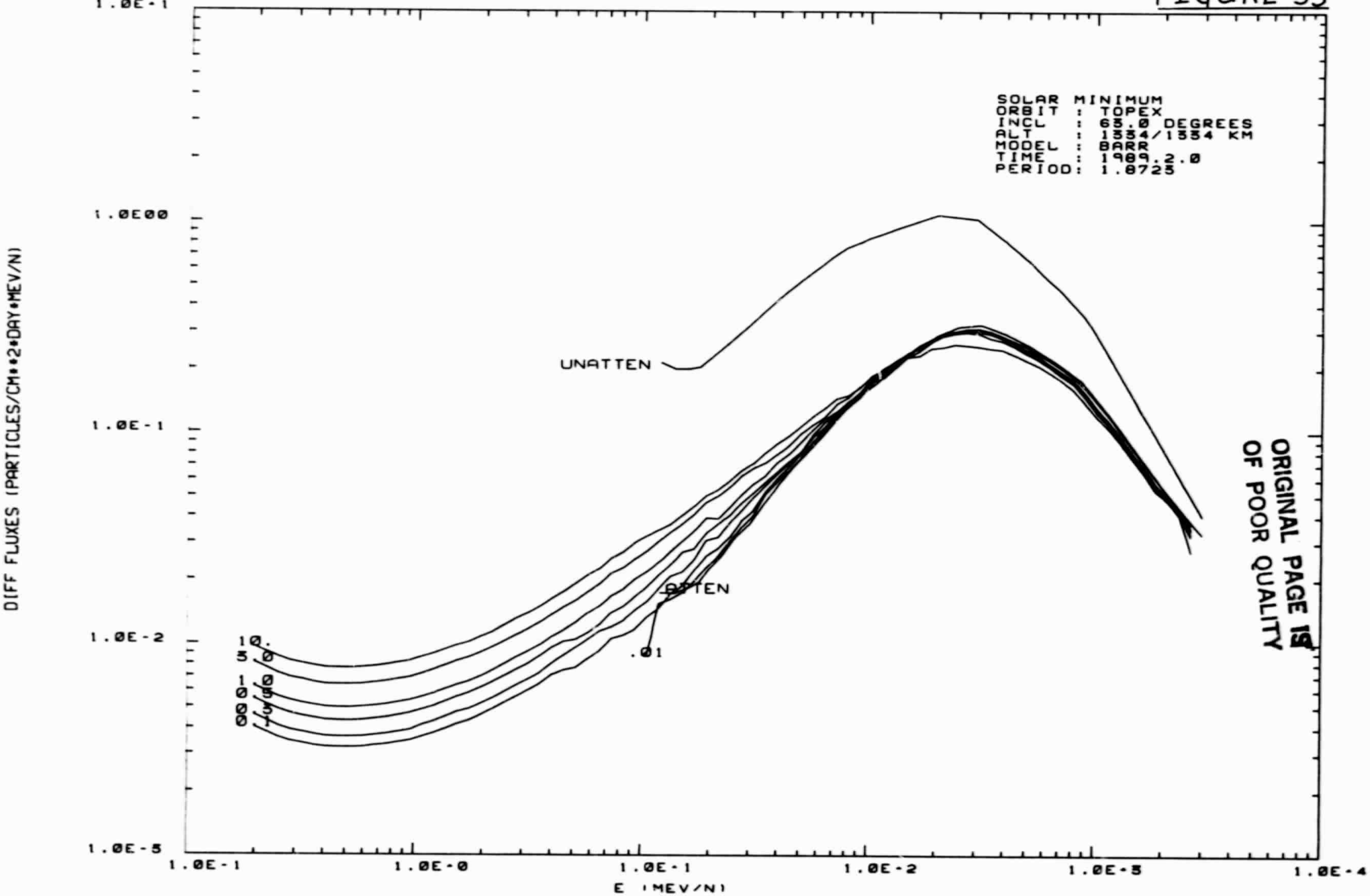

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: BE
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=4 A=9.01
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BPRR
TIME : 1989.2.0
PERIOD: 1.8725
UNATTEN
ATTEN
10.
3.0
1.0
0.5
0.3
0.1
.01
1.0E-1
1.0E-2
1.0E-3
1.0E-4
1.0E-5
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
ORIGINAL PAGE IS
OF POOR QUALITY
E.G. STASSINOPOULOS
NASA-GSFC, 1984



TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: B
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=5 A=10.82
FIGURE 32
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8723
UNATTEN
ATTEN
10.0
5.0
1.0
0.5
0.3
0.1
.01
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
1.0E00
1.0E-1
1.0E-2
1.0E-3
1.0E-4
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
E.G. STASSINOPOULOS
NASA-GSFC, 1984
ORIGINAL PAGE IS
OF POOR QUALITY

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: C
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-6 A-12.01

FIGURE 33



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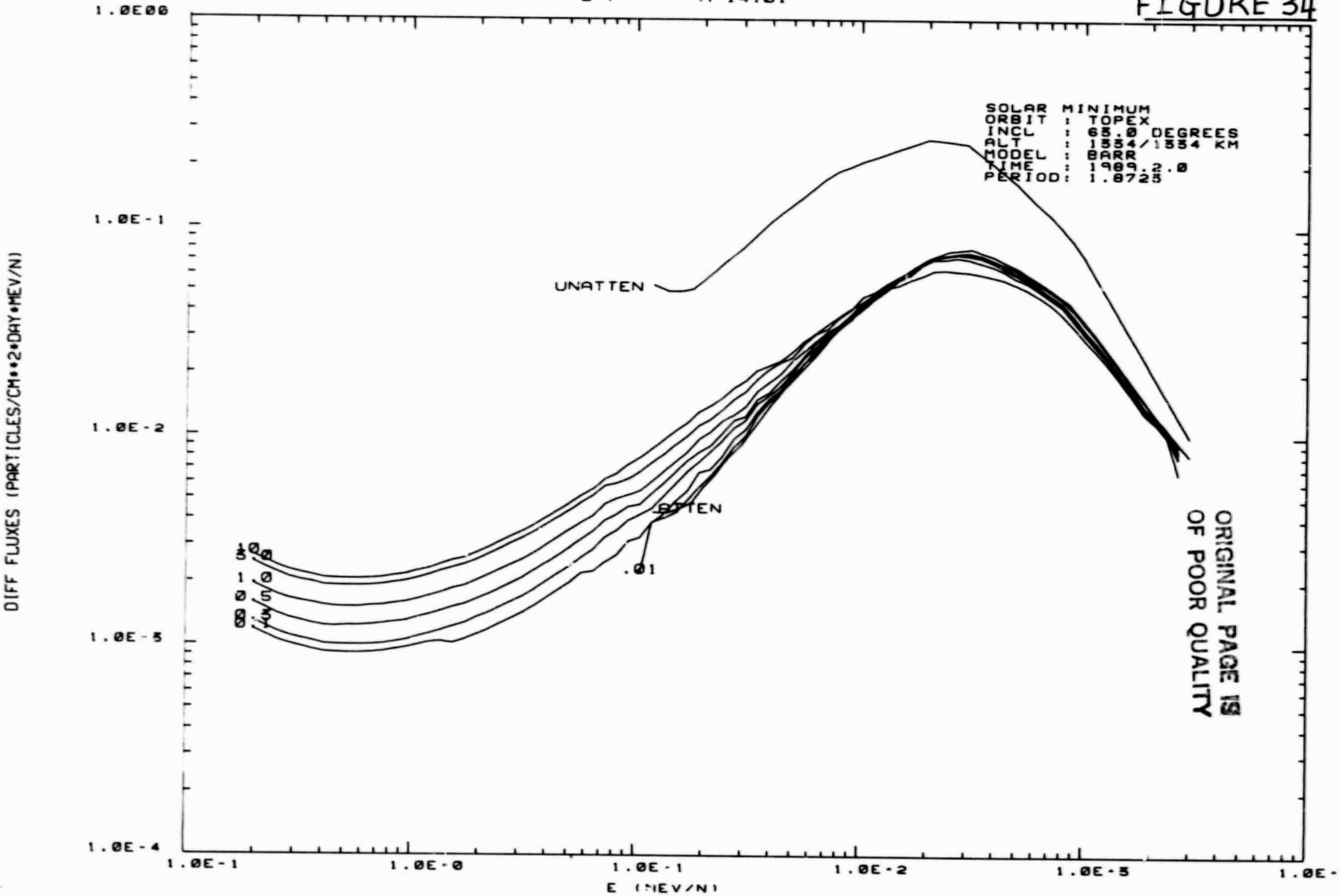
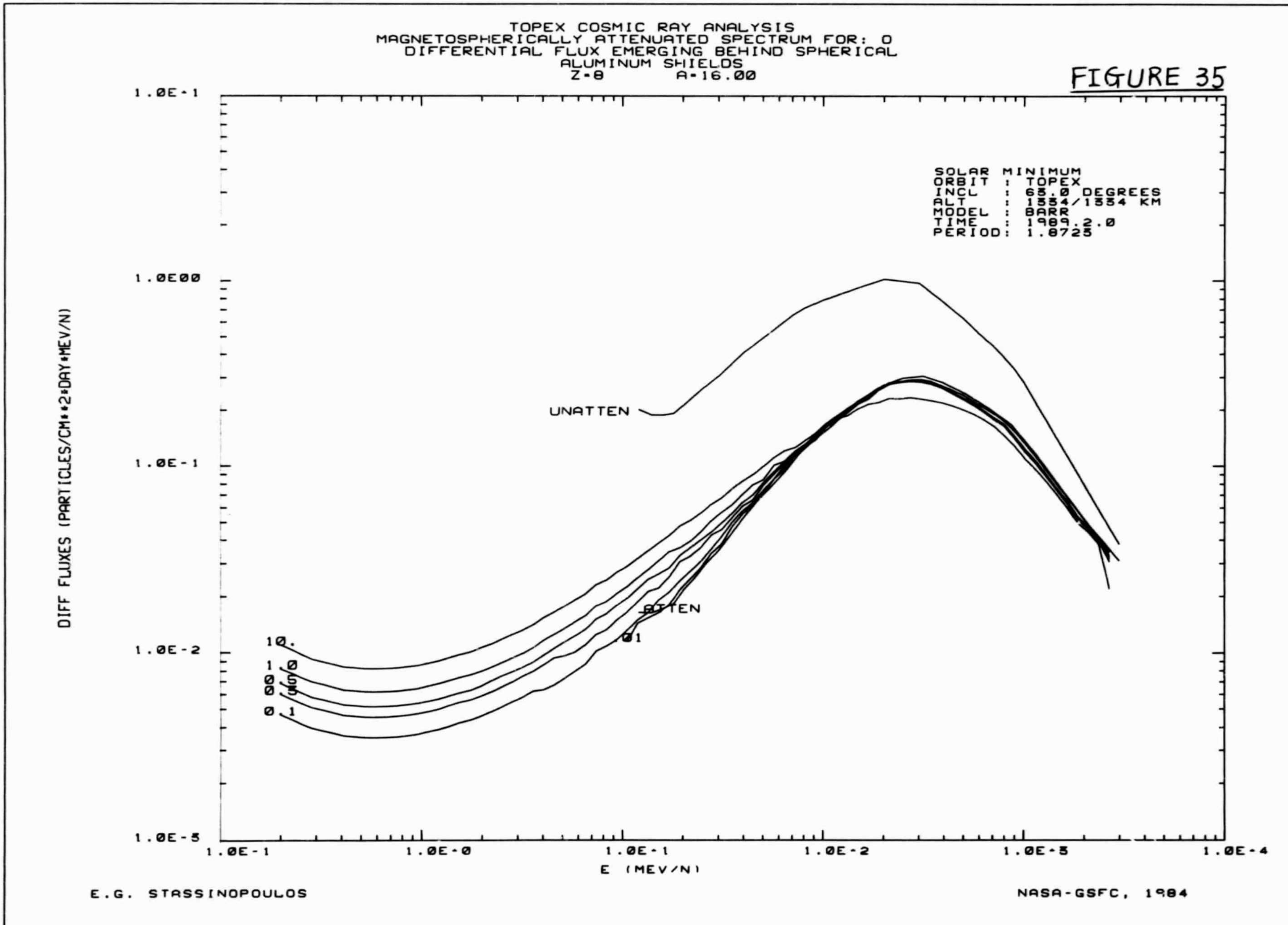
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: N
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-7 A-14.01

FIGURE 34



E.G. STASSINOPOULOS

NASA-GSFC, 1984


TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: O
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=8 A=16.00
FIGURE 35
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8723
UNATTEN
ATTEN
0.1
10.
1.0
0.5
0.3
0.1
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
1.0E+1
1.0E00
1.0E-1
1.0E-2
1.0E-3
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
E.G. STASSINOPOULOS
NASA-GSFC, 1984

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 36

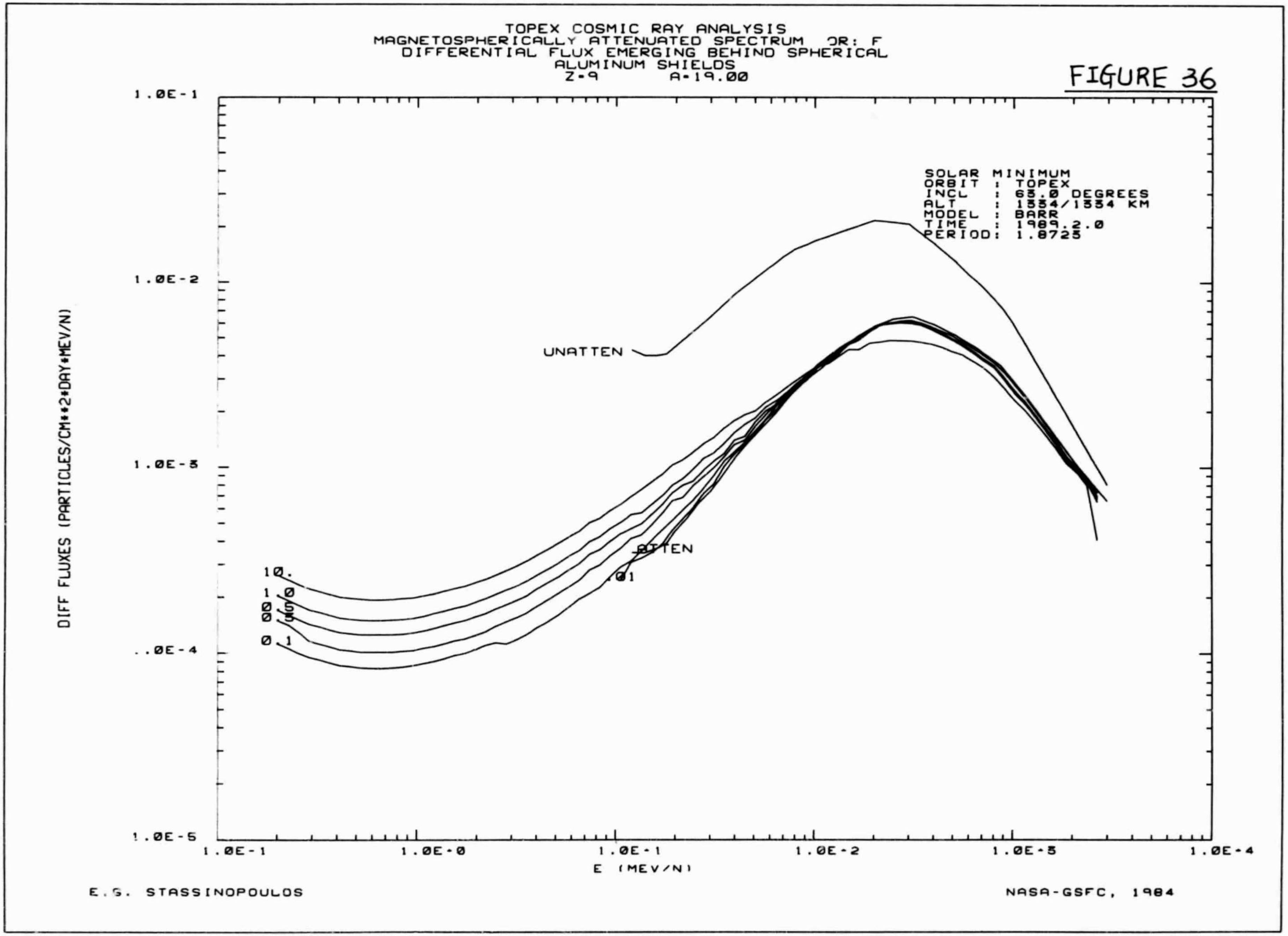
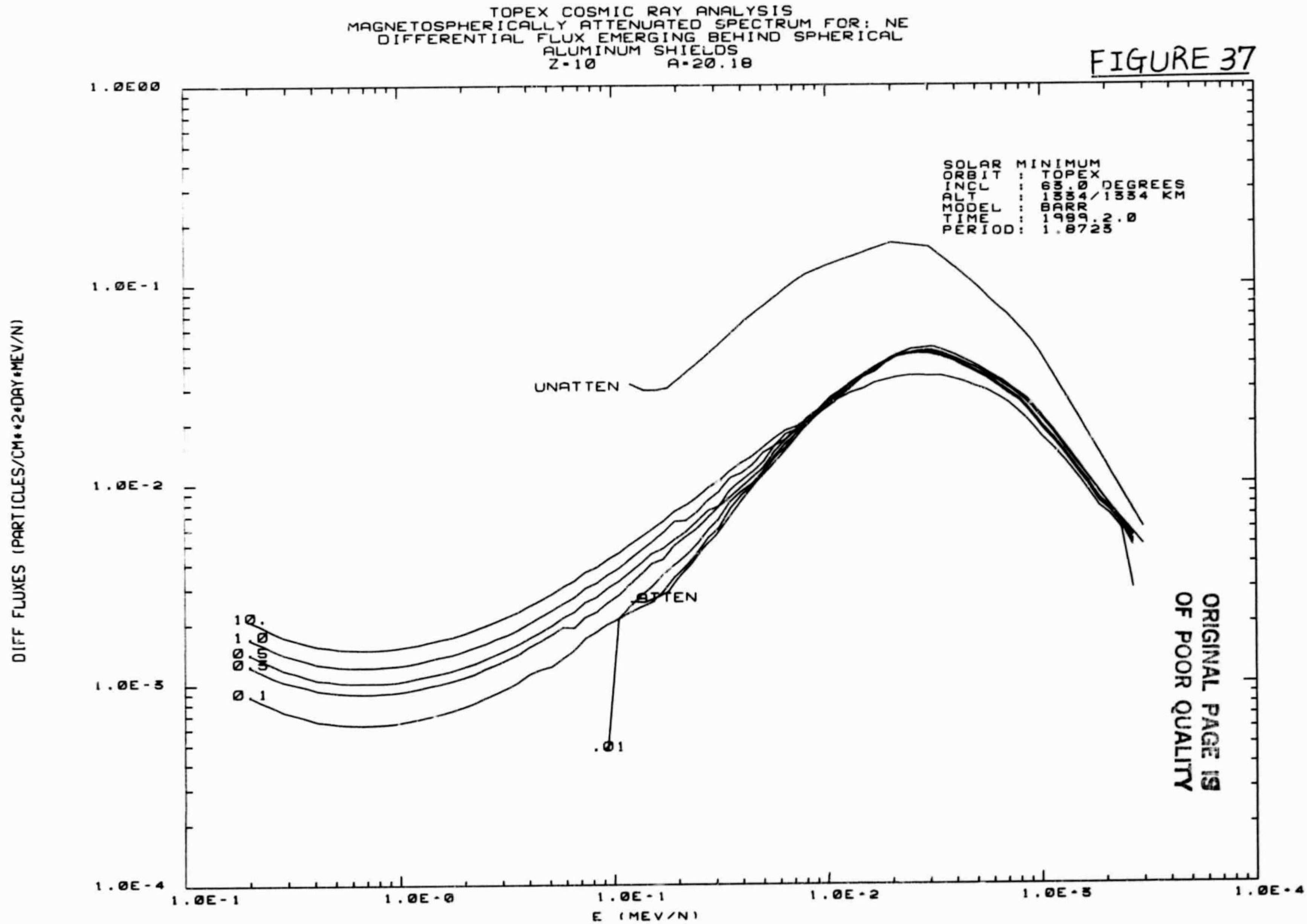


FIGURE 37



E.G. STASSINOPOULOS

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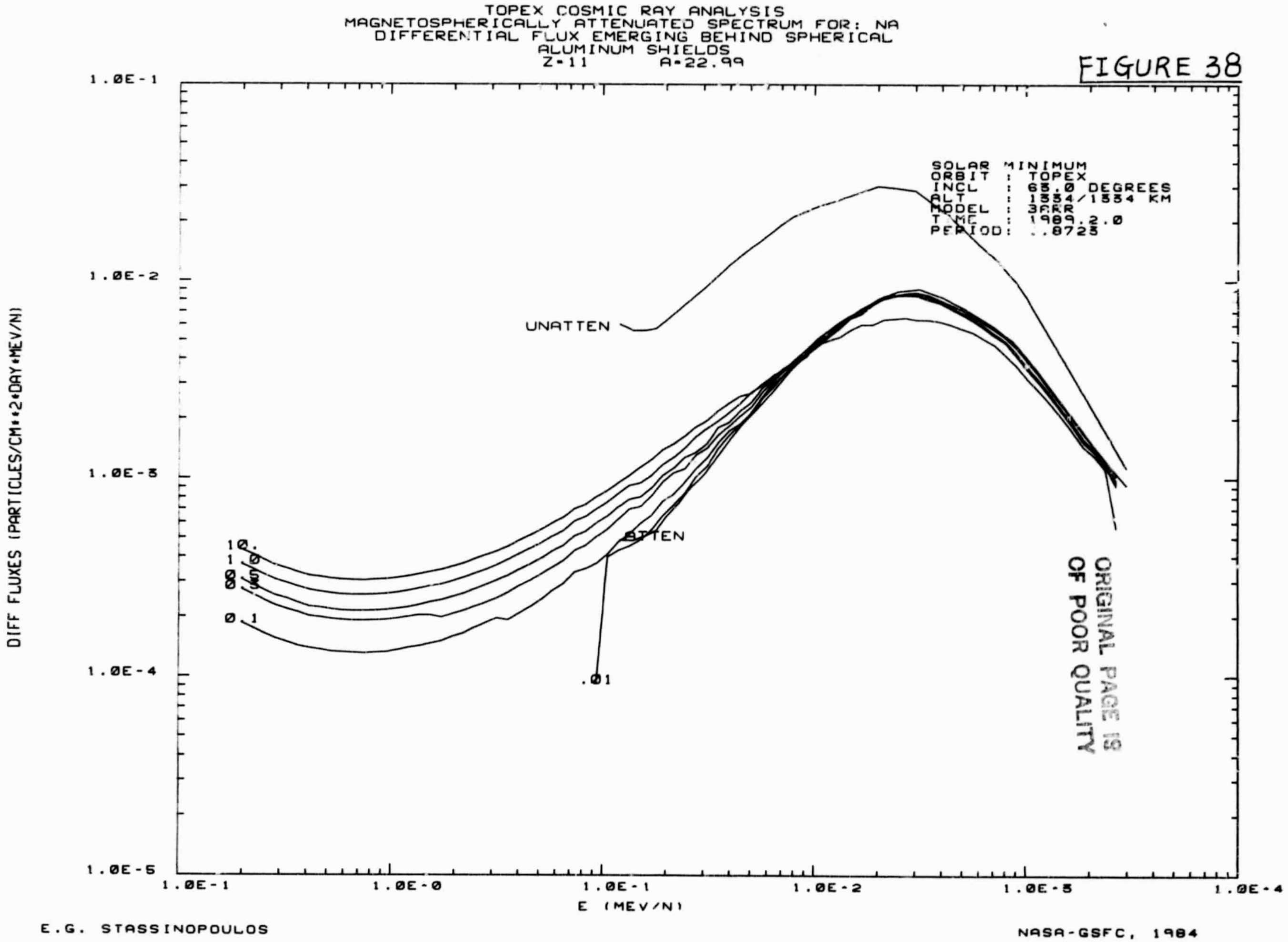
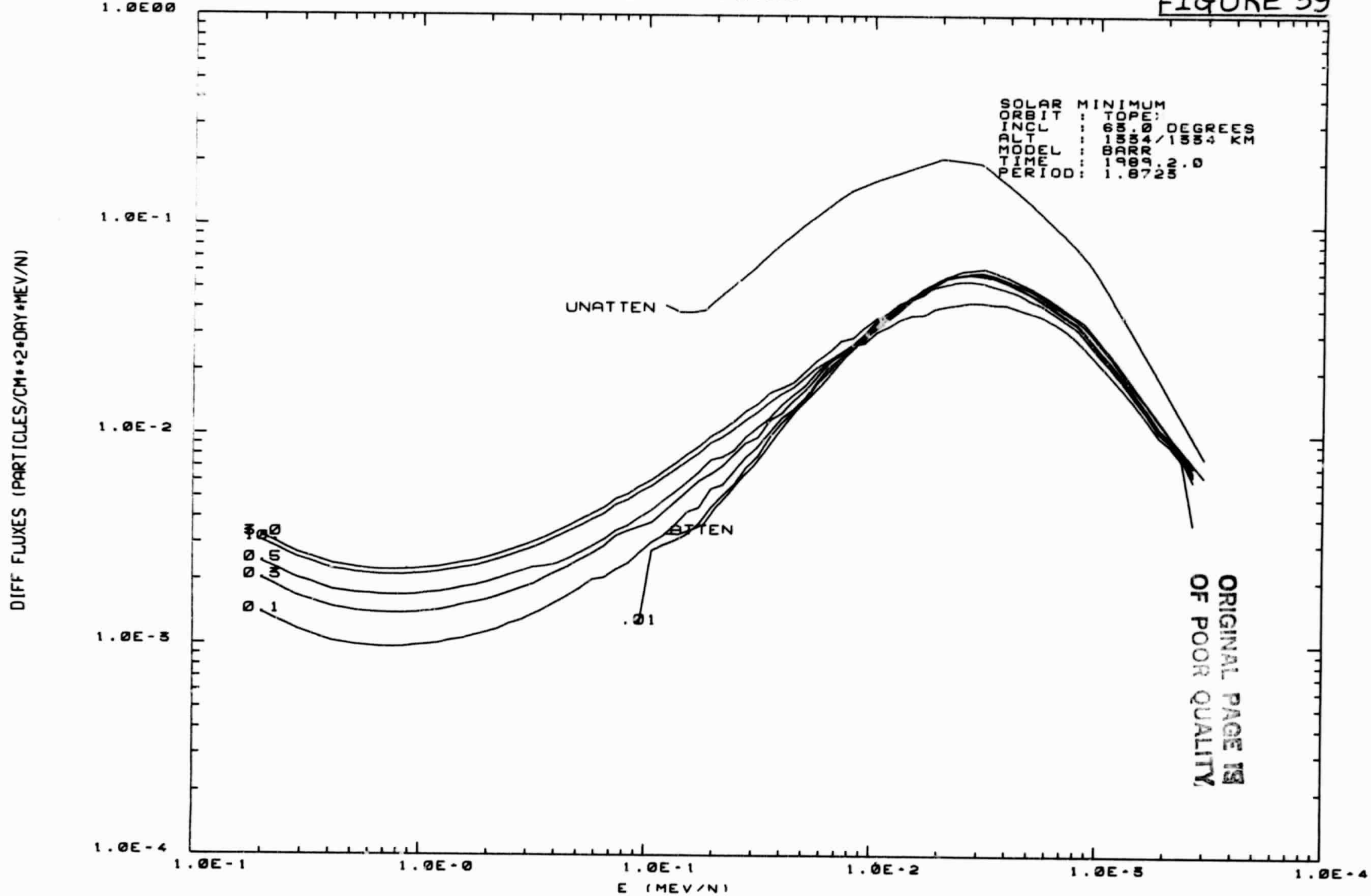
FIGURE 38



TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: NA
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=11 A=22.99
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : 3RRR
TIME : 1989.2.0
PERIOD: .8723
UNATTEN
ATTEN
10.
1.0
0.5
0.3
0.1
.01
1.0E-1
1.0E-2
1.0E-3
1.0E-4
1.0E-5
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
E.G. STASSINOPOULOS
NASA-GSFC, 1984

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: MG
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=12 A=24.32

FIGURE 39

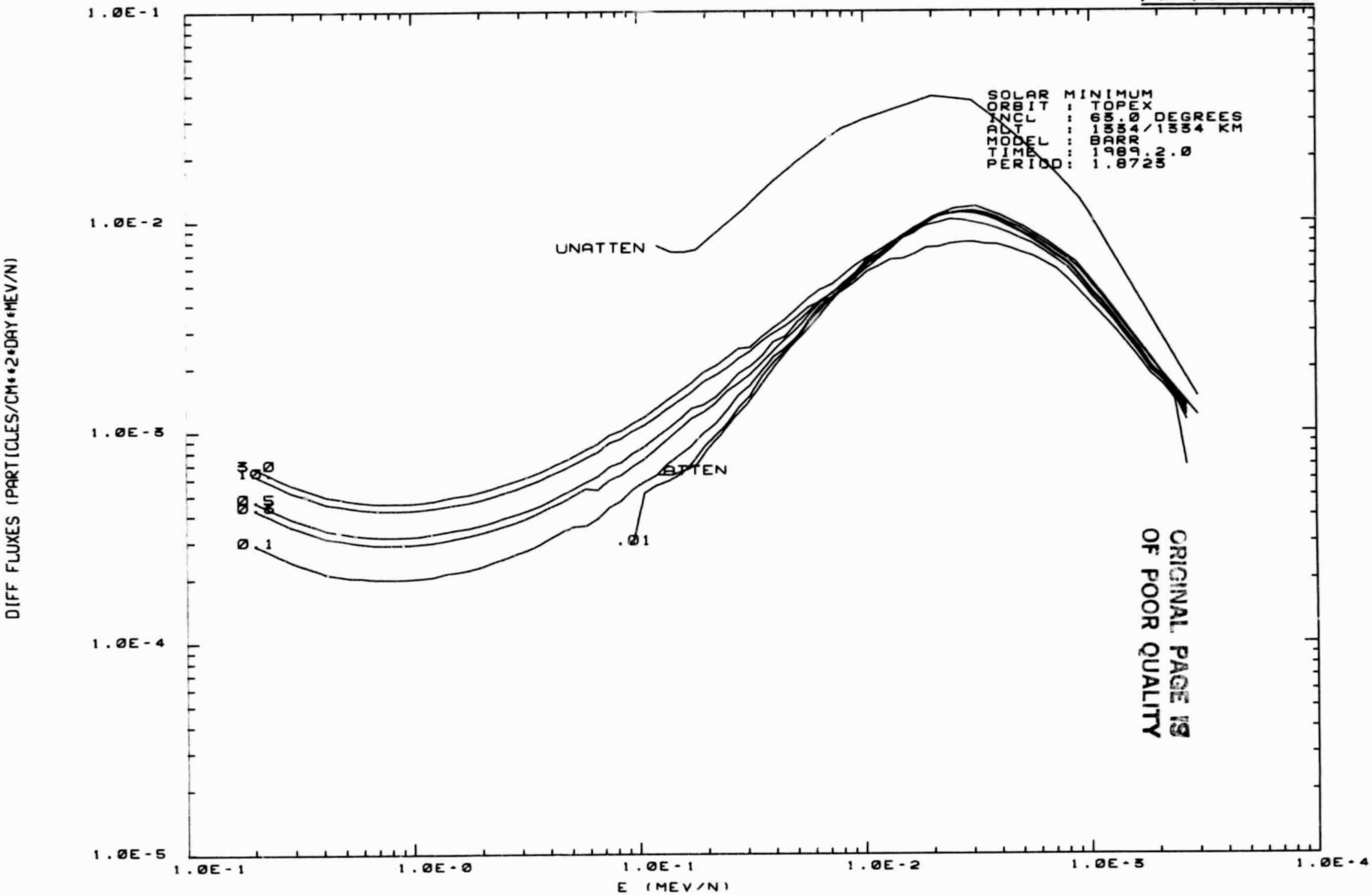


E.G. STASSINOPOULOS

NASA-GSFC, 1984

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: AL
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=13 A=26.98

FIGURE 40



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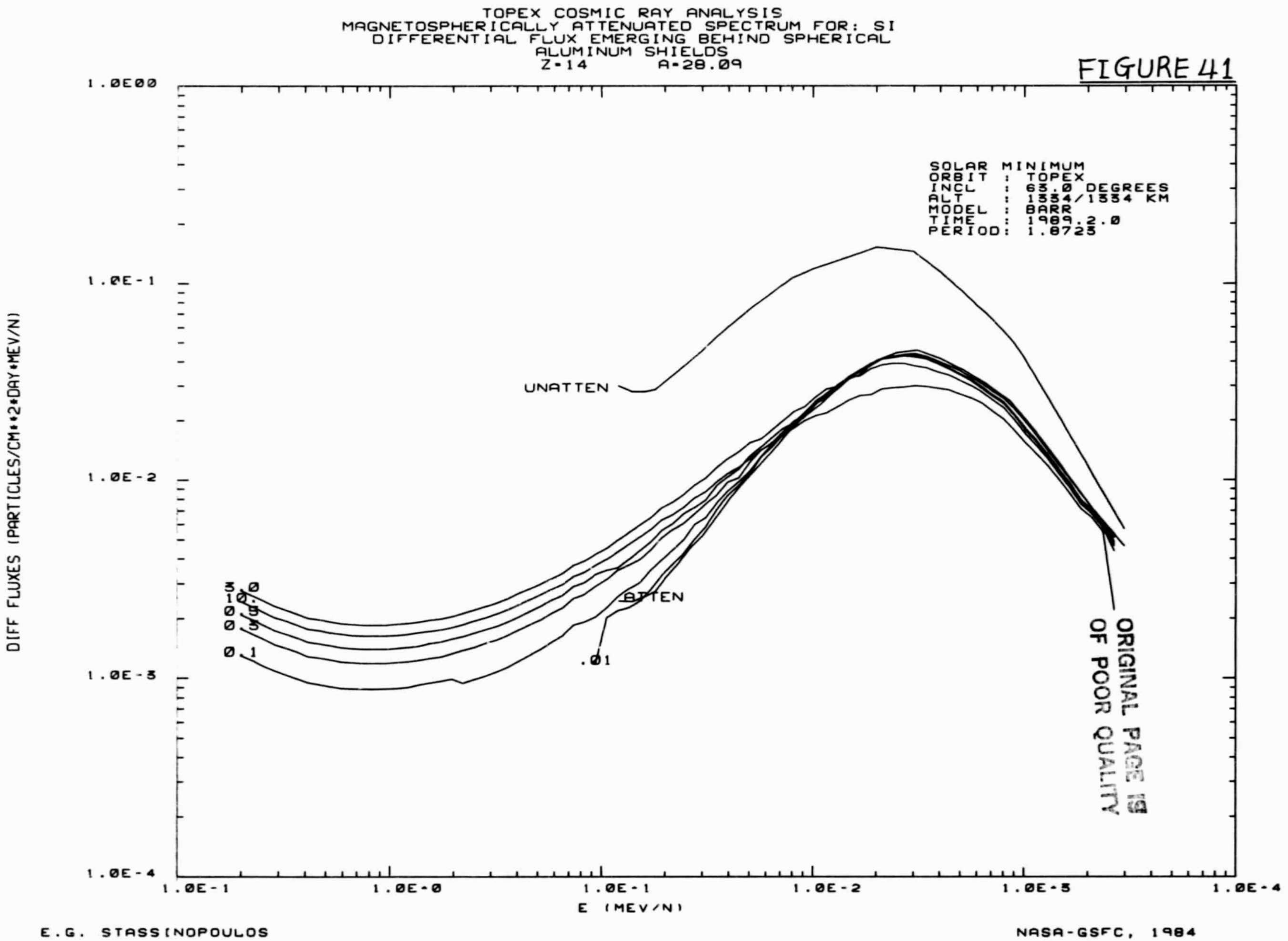
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: SI
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=14 A=28.09
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8725
1.0E00
1.0E-1
1.0E-2
1.0E-3
1.0E-4
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
UNATTEN
ATTEN
3.0
10.
0.5
0.3
0.1
.01
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
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FIGURE 41

FIGURE 42

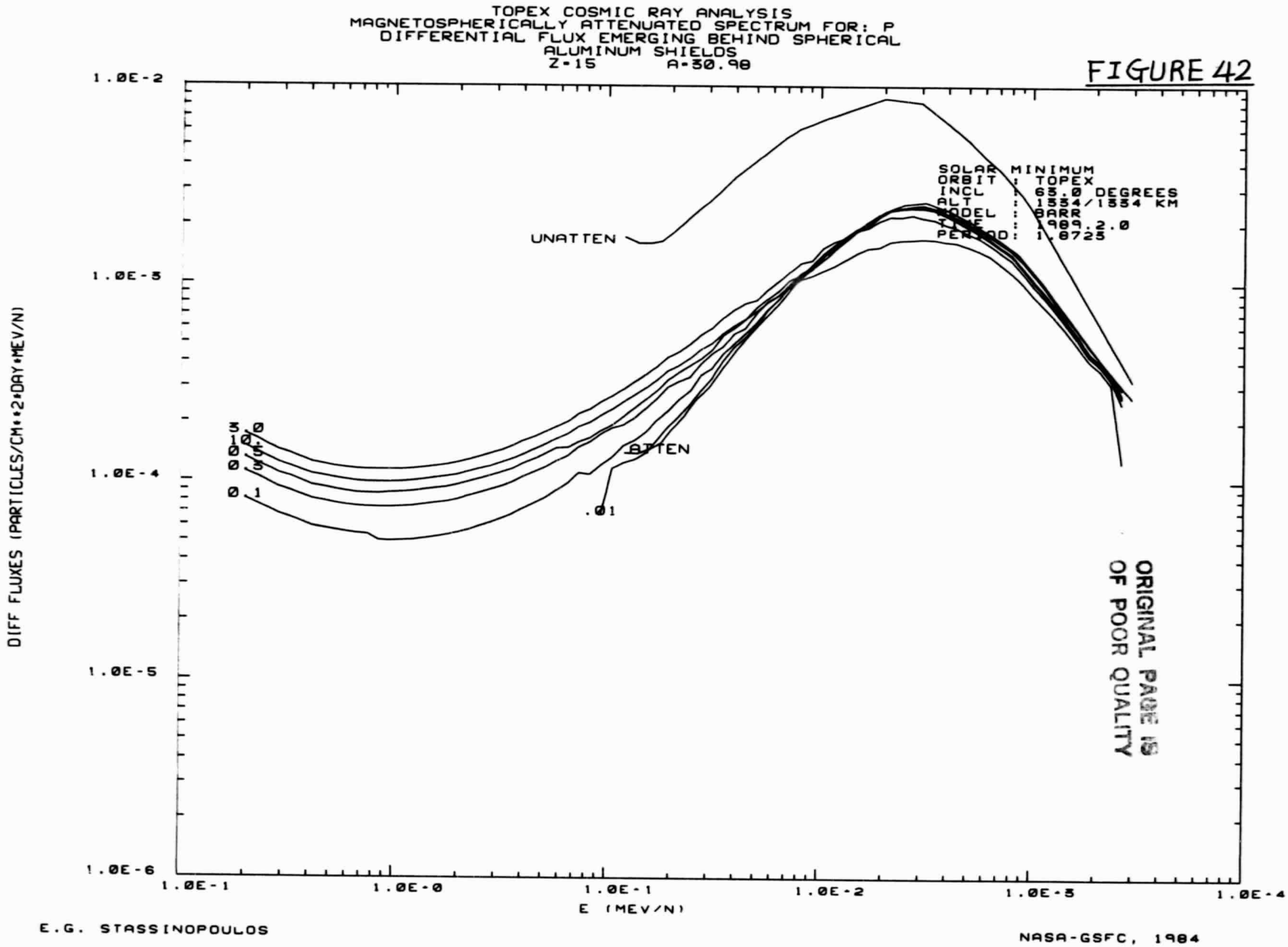

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FIGURE 43

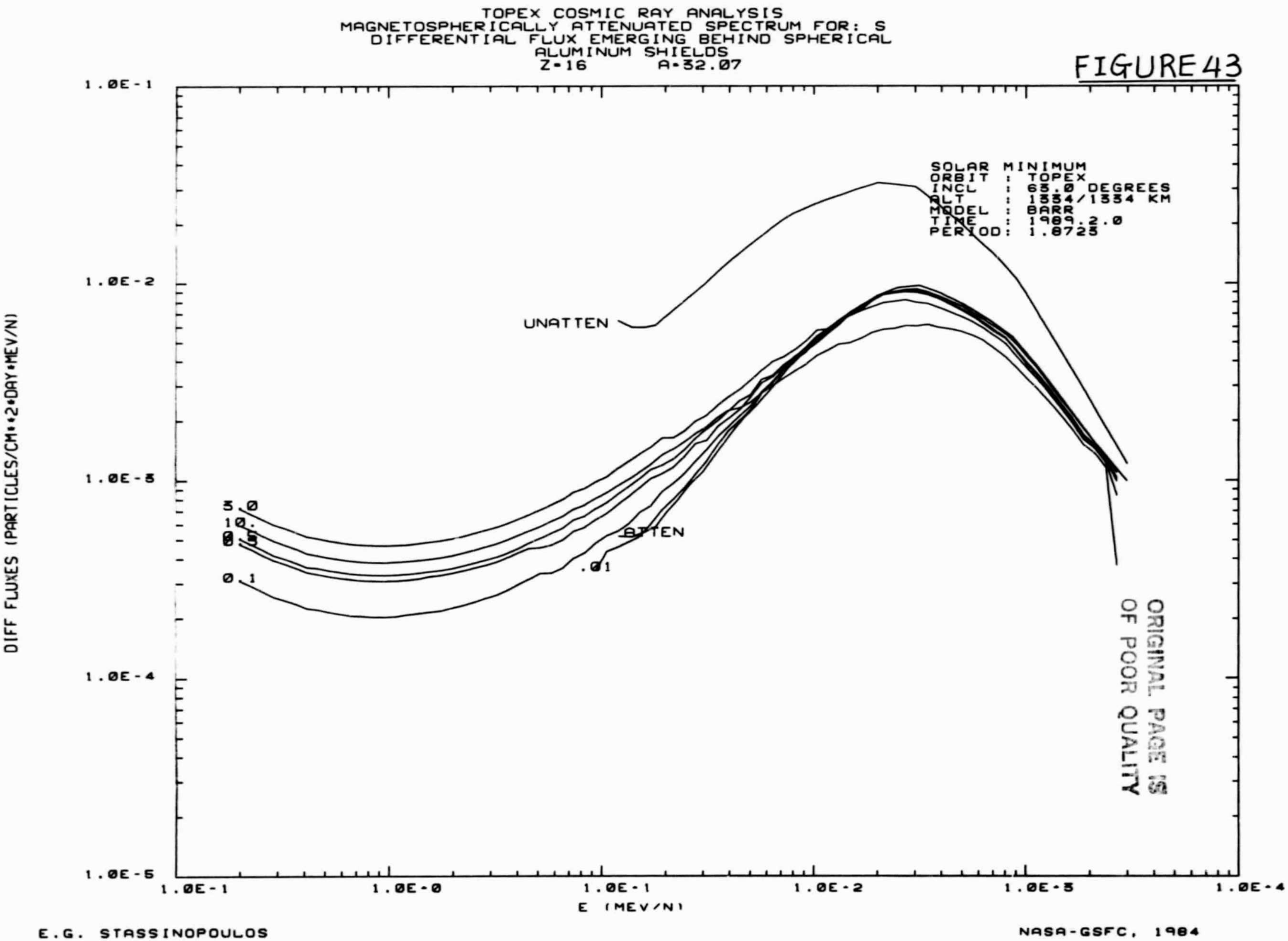

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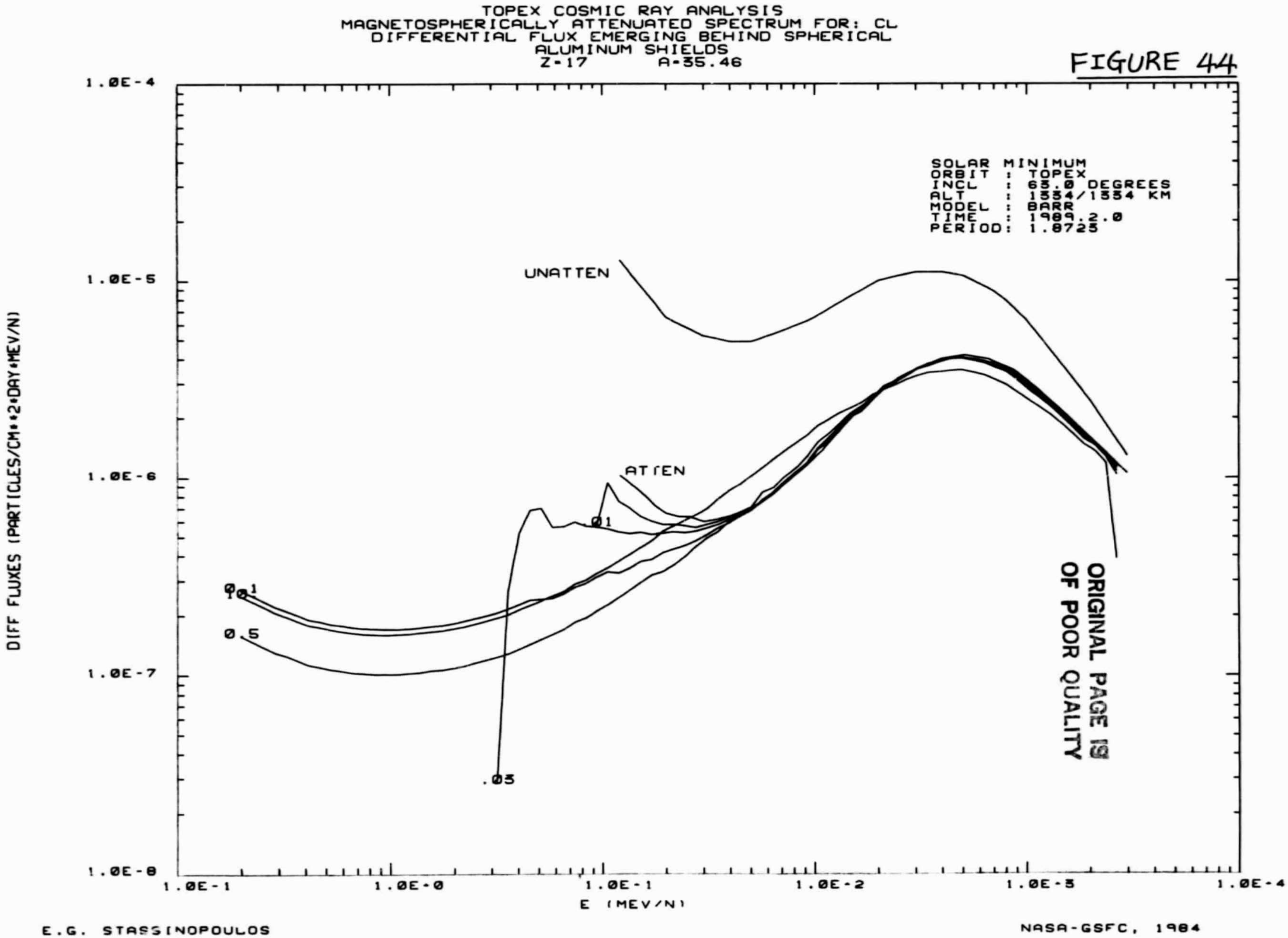
FIGURE 44



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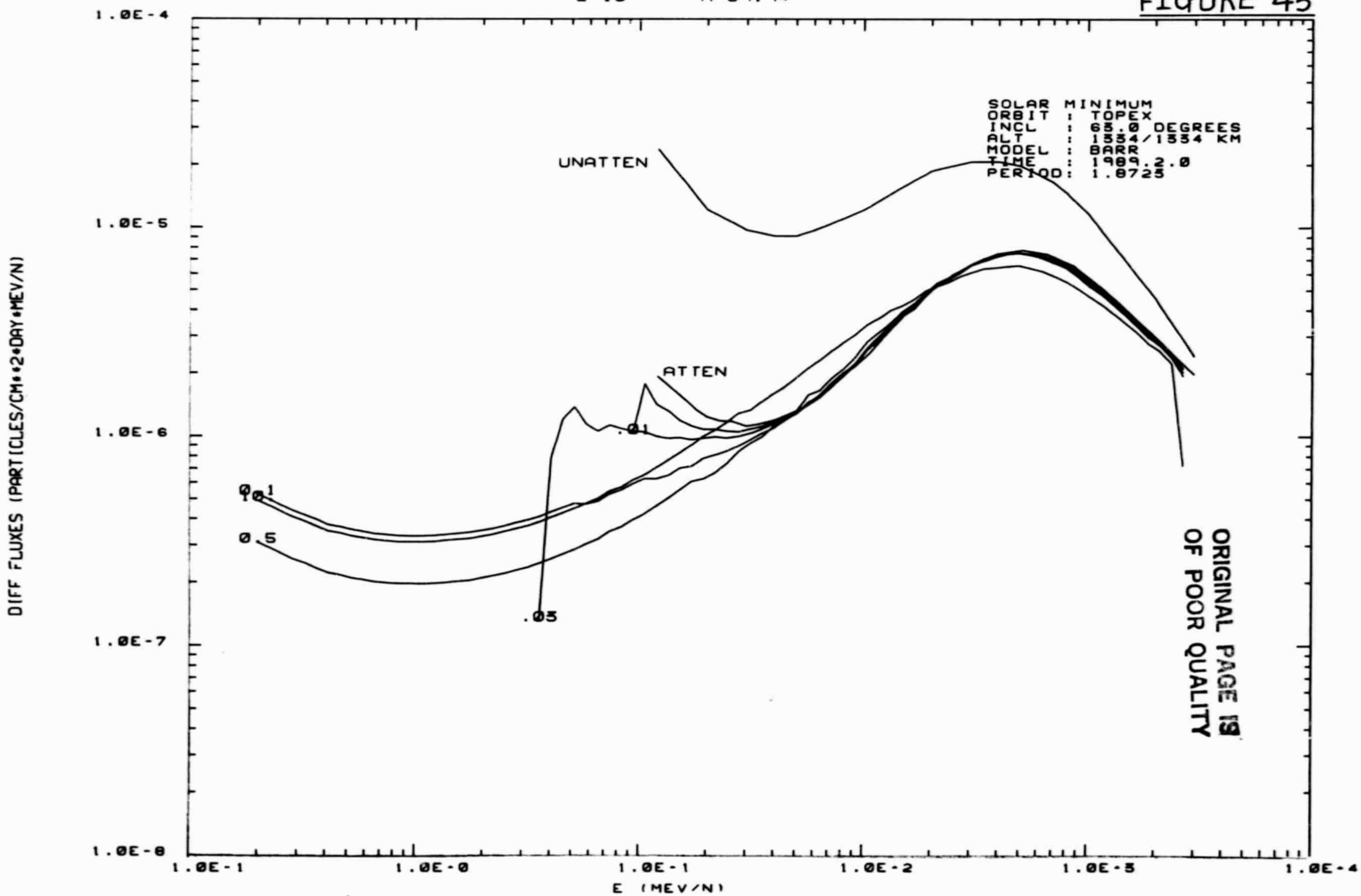
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: AR
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=18 A=39.94

FIGURE 45



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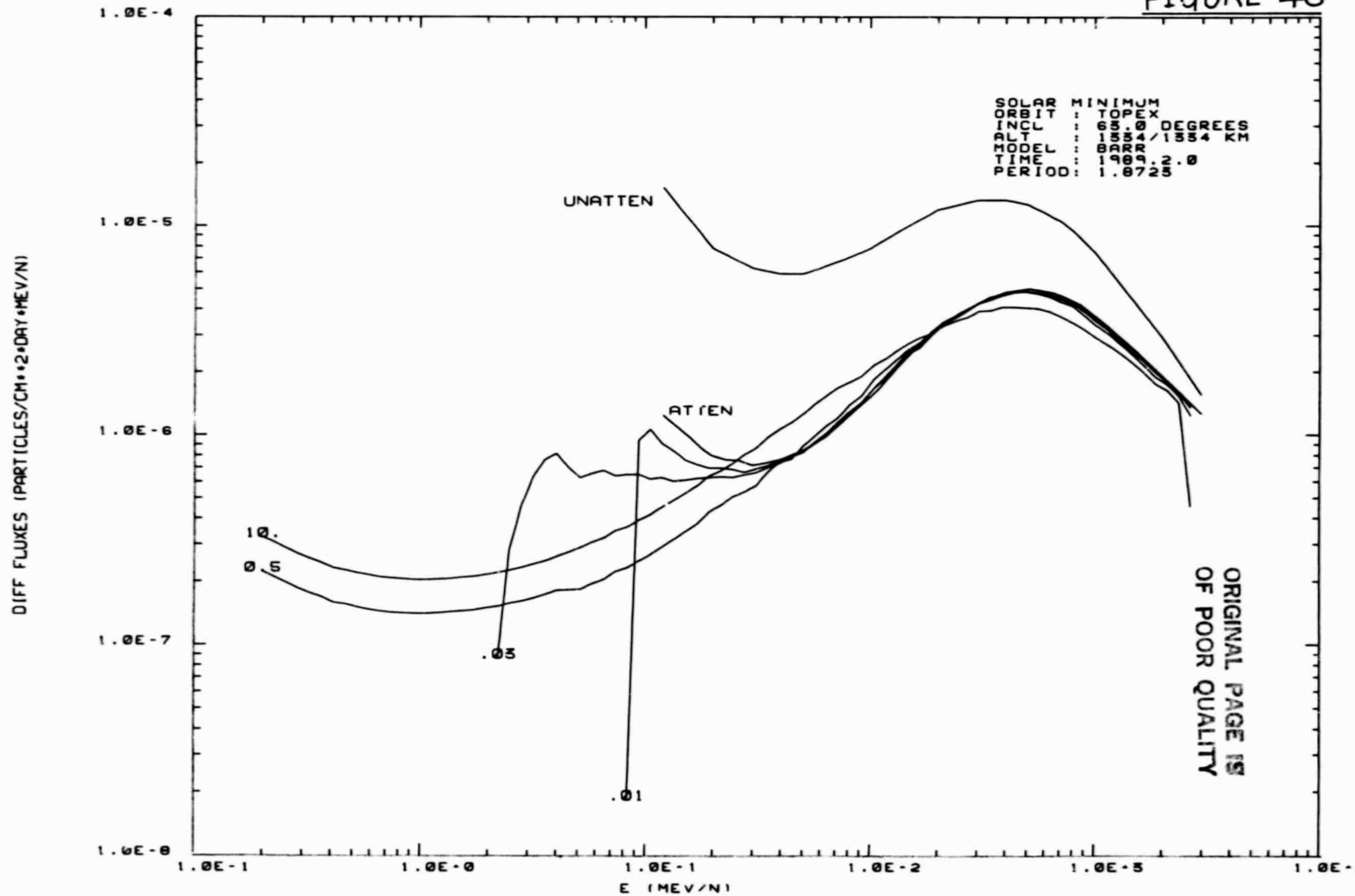
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: K
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-19 A-39.10

FIGURE 46



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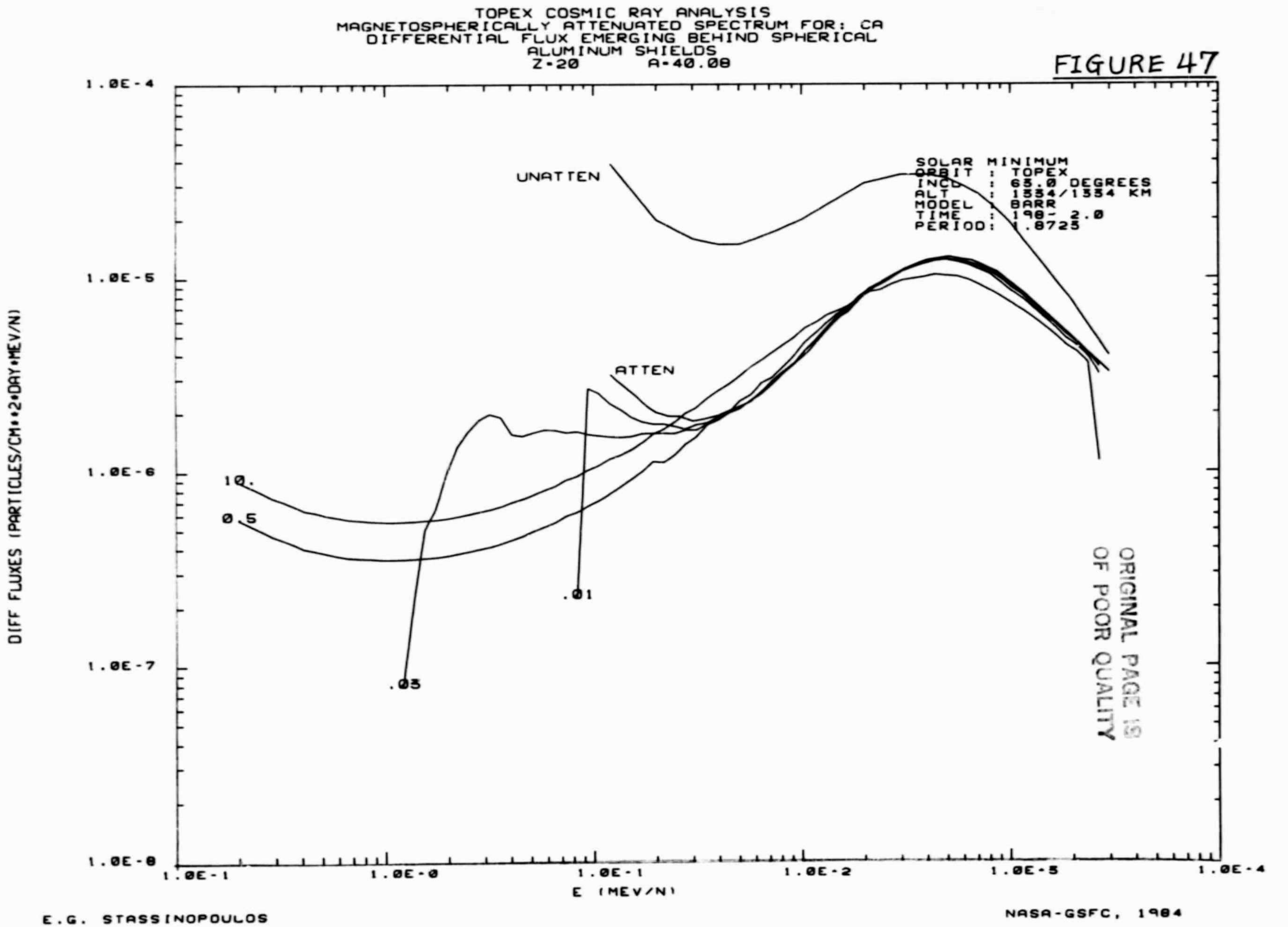
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: CA
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-20 A-40.08
SOLAR MINIMUM
ORBIT : TOPEX
INCD : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 198- 2.0
PERIOD: 1.8725
UNATTEN
ATTEN
10.
0.5
.01
.03
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
1.0E-4
1.0E-5
1.0E-6
1.0E-7
1.0E-8
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
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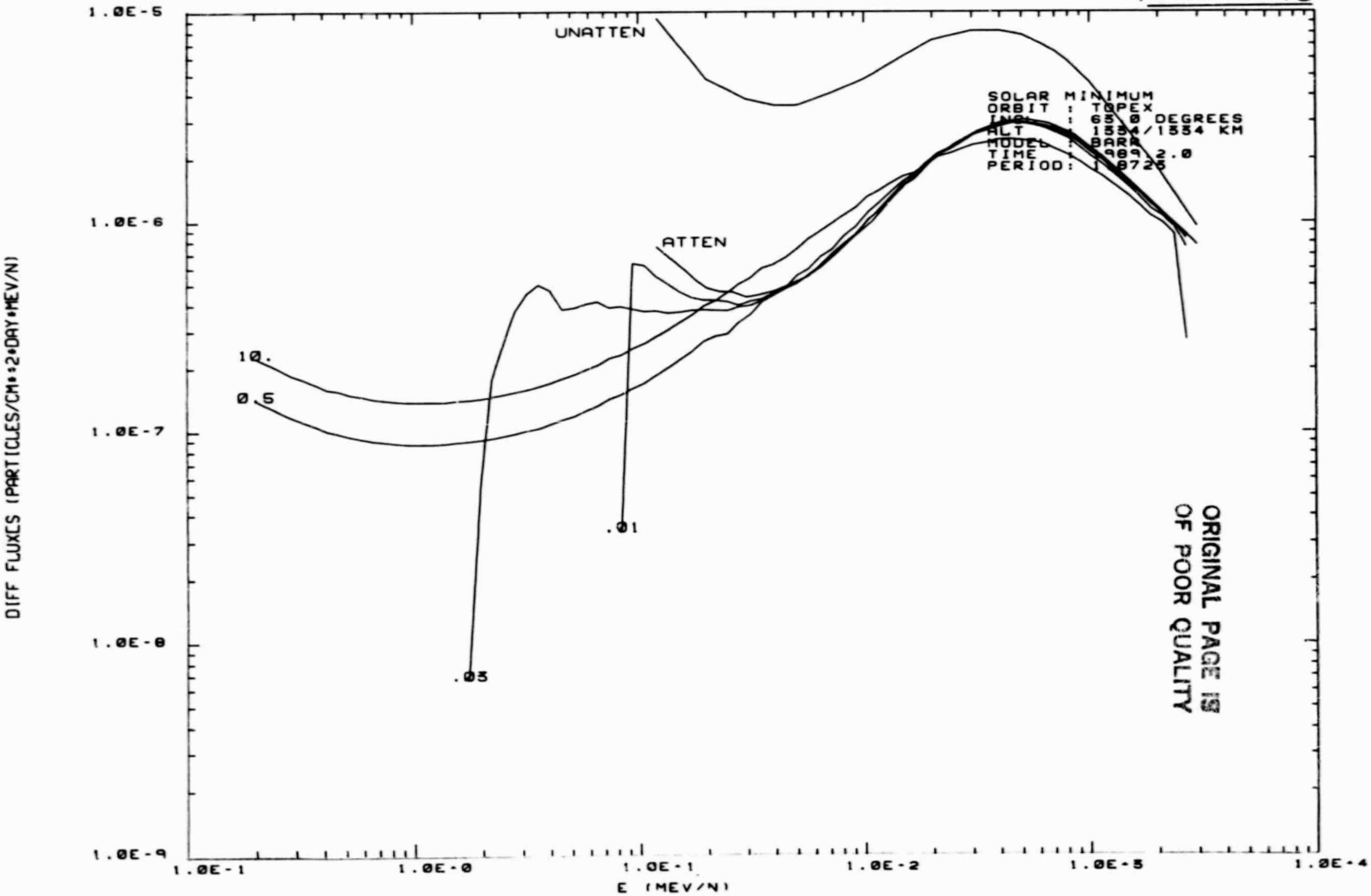
FIGURE 47

TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: SC
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=21 A=44.96

FIGURE 48



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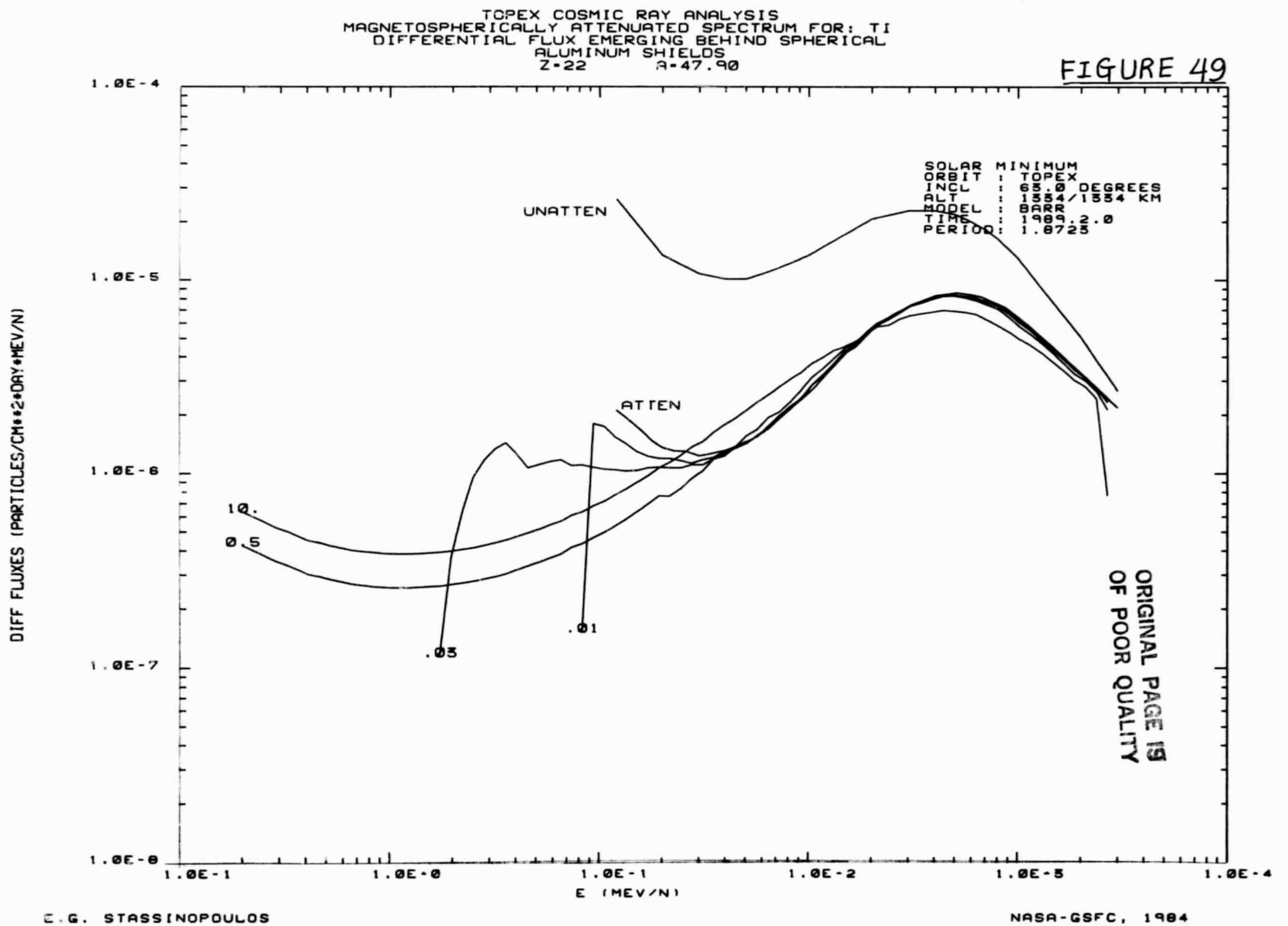
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: TI
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=22 A=47.90
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8723
UNATTEN
ATTEN
10.
0.5
.03
.01
1.0E-4
1.0E-5
1.0E-6
1.0E-7
1.0E-8
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
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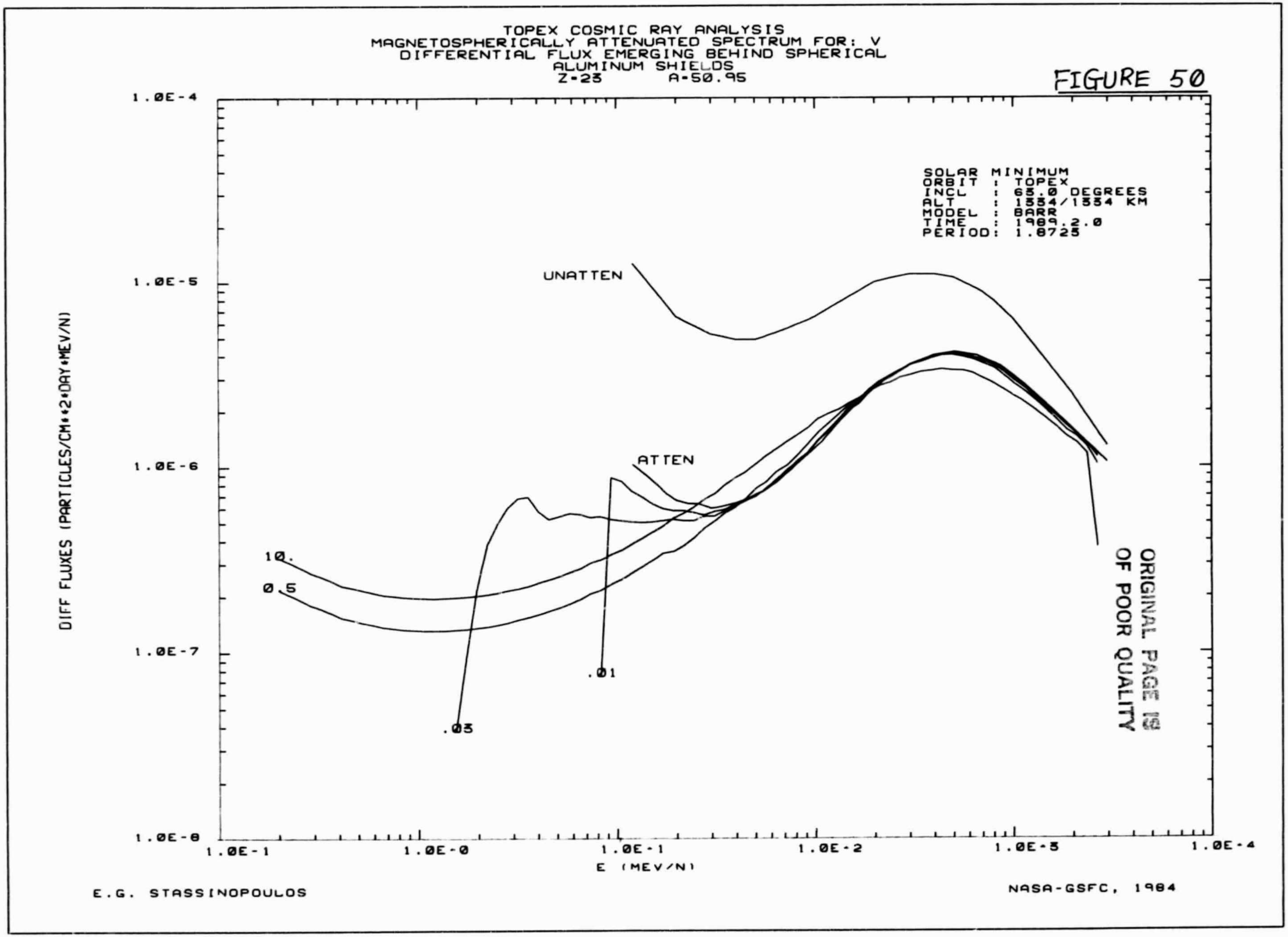
FIGURE 49


TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: V
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-23 A-50.95
FIGURE 50
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 65.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8725
UNATTEN
ATTEN
10.
0.5
.01
.03
1.0E-4
1.0E-5
1.0E-6
1.0E-7
1.0E-8
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
E (MEV/N)
E.G. STASSINOPOULOS
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TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: CR
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-24 A-52.01

FIGURE 51

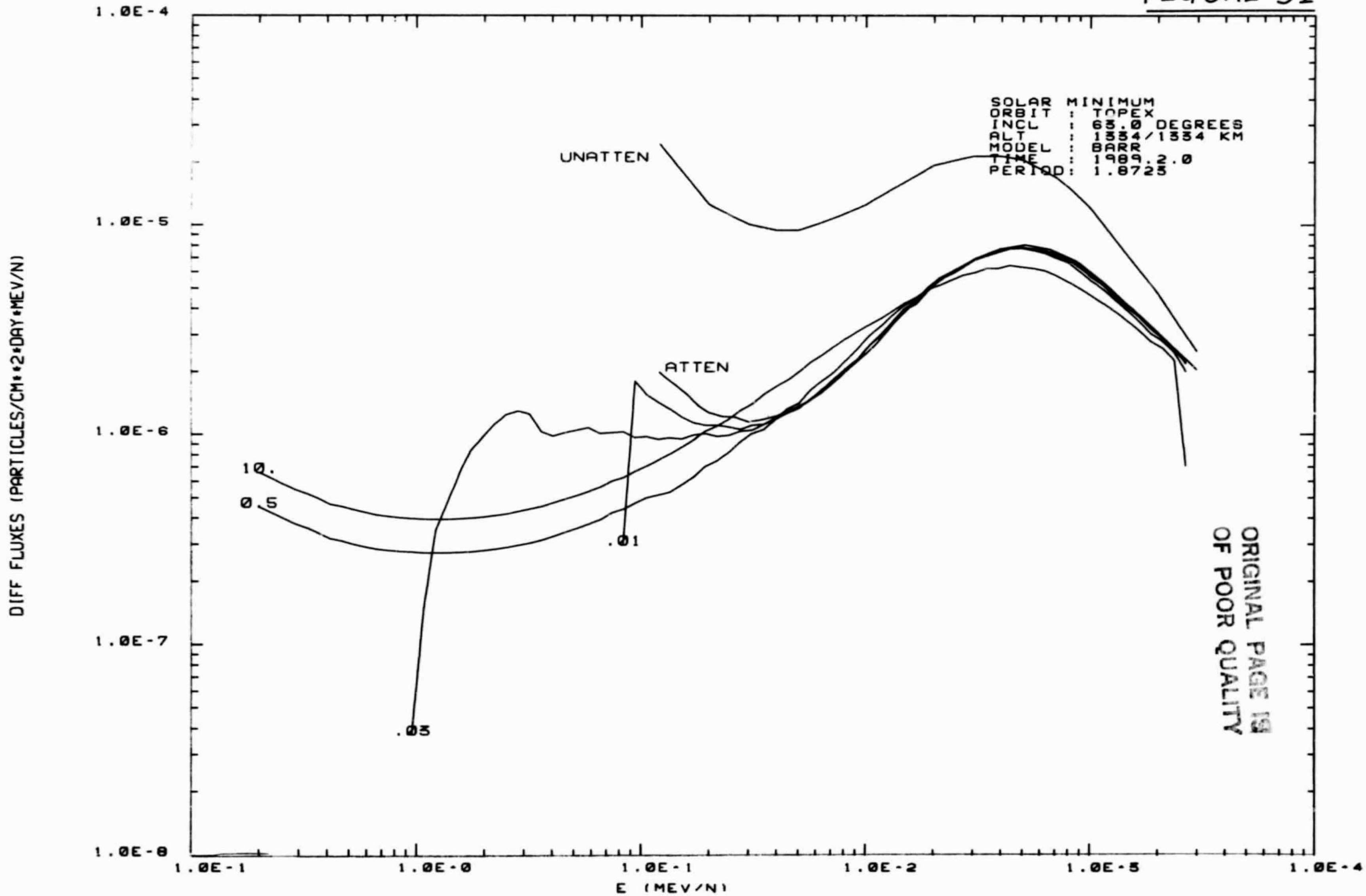

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FIGURE 52

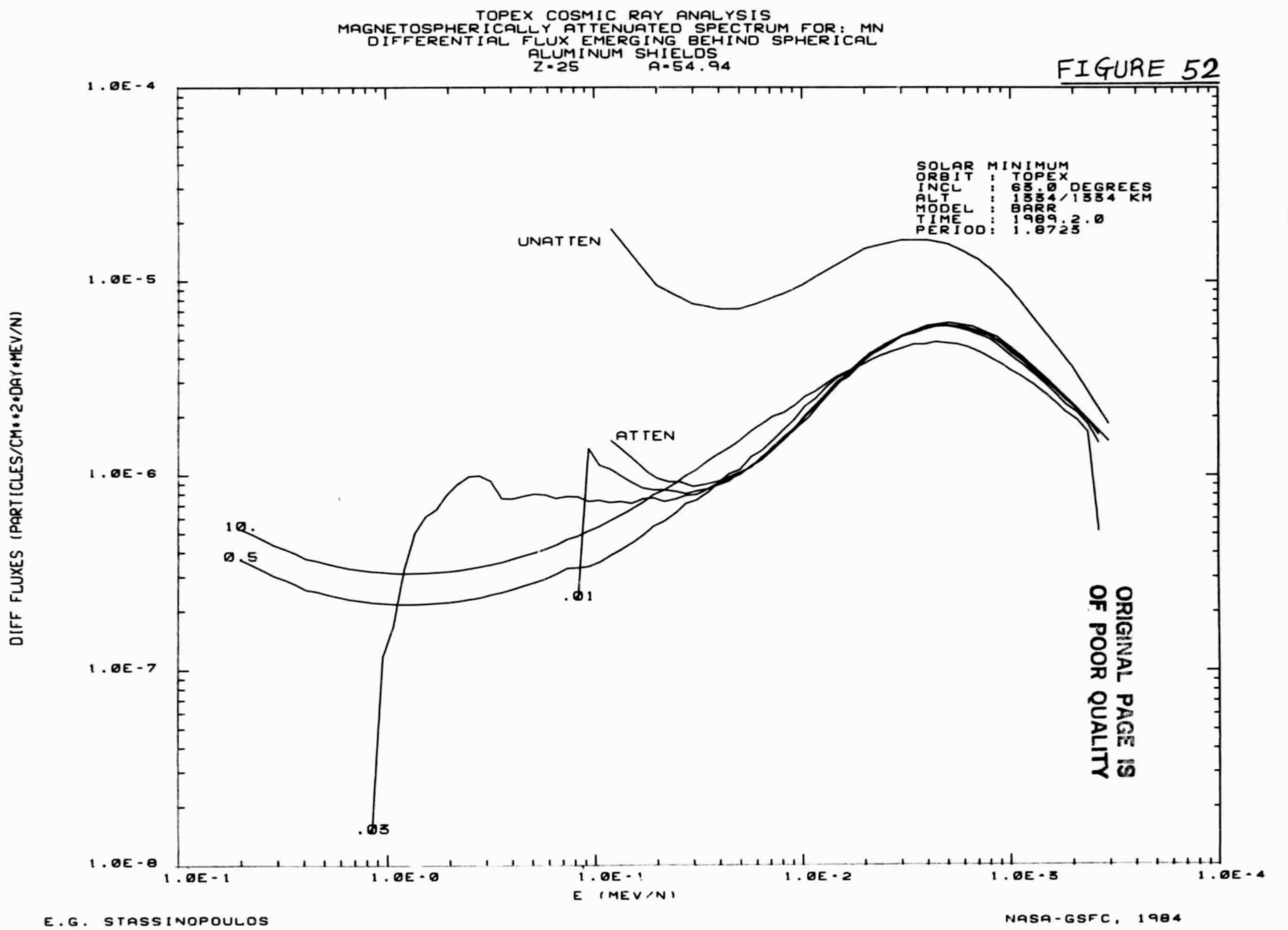

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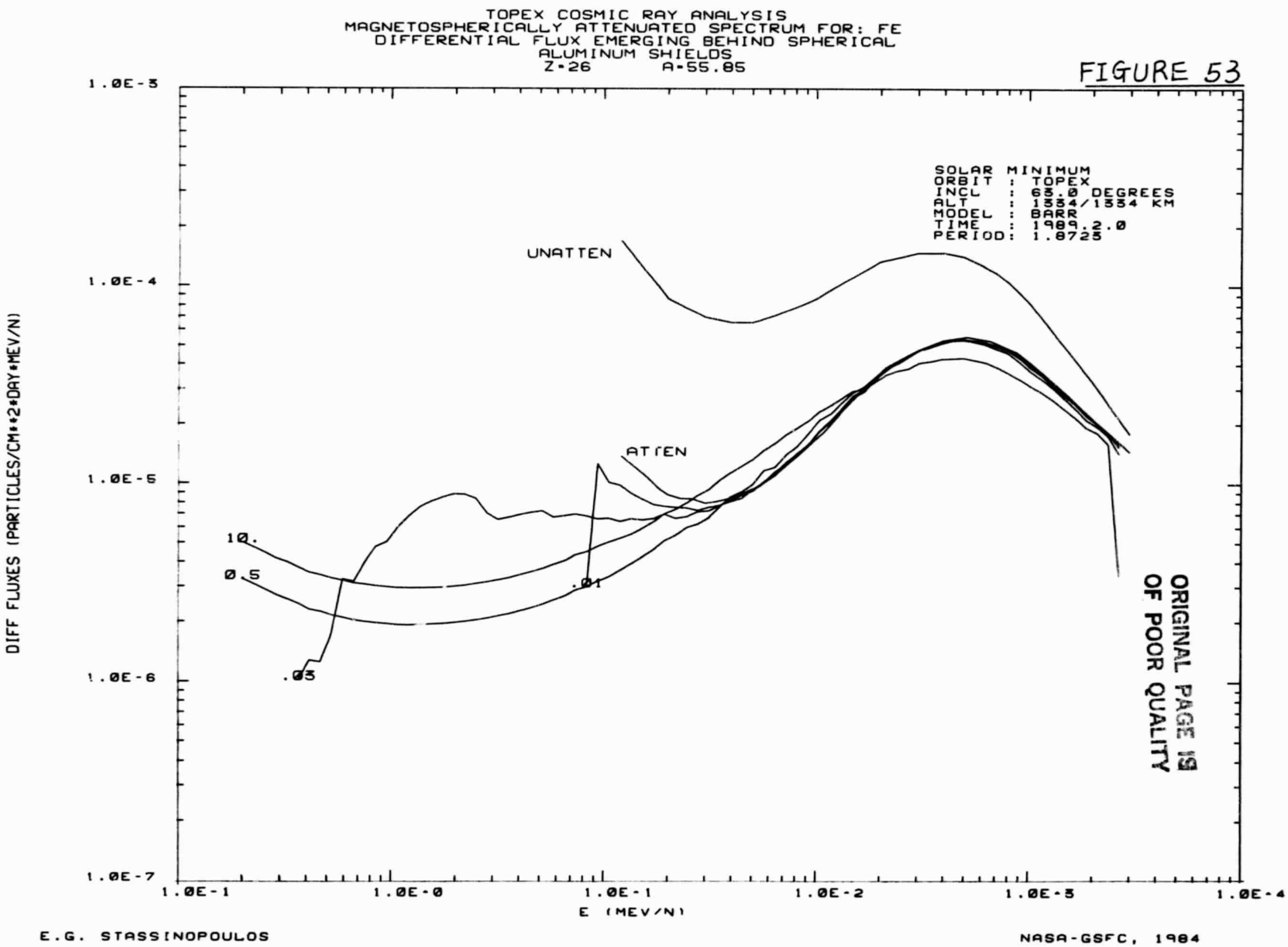
FIGURE 53



TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: FE
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z=26 A=55.85
SOLAR MINIMUM
ORBIT : TOPEX
INCL : 63.0 DEGREES
ALT : 1334/1334 KM
MODEL : BARR
TIME : 1989.2.0
PERIOD: 1.8725
UNATTEN
ATTEN
10.
0.5
.01
.03
1.0E-3
1.0E-4
1.0E-5
1.0E-6
1.0E-7
1.0E-1
1.0E-0
1.0E-1
1.0E-2
1.0E-3
1.0E-4
E (MEV/N)
DIFF FLUXES (PARTICLES/CM**2*DAY*MEV/N)
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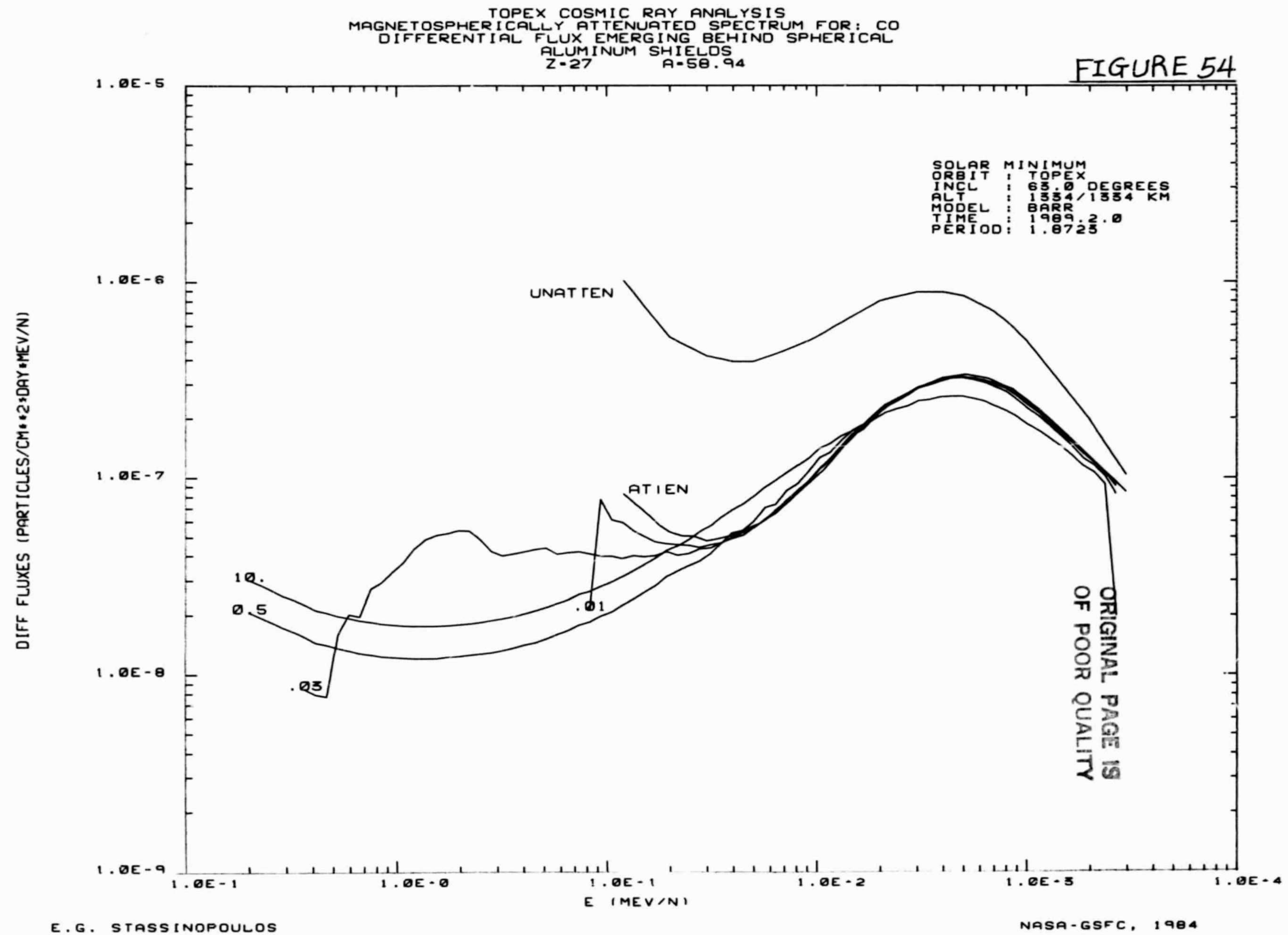
FIGURE 54



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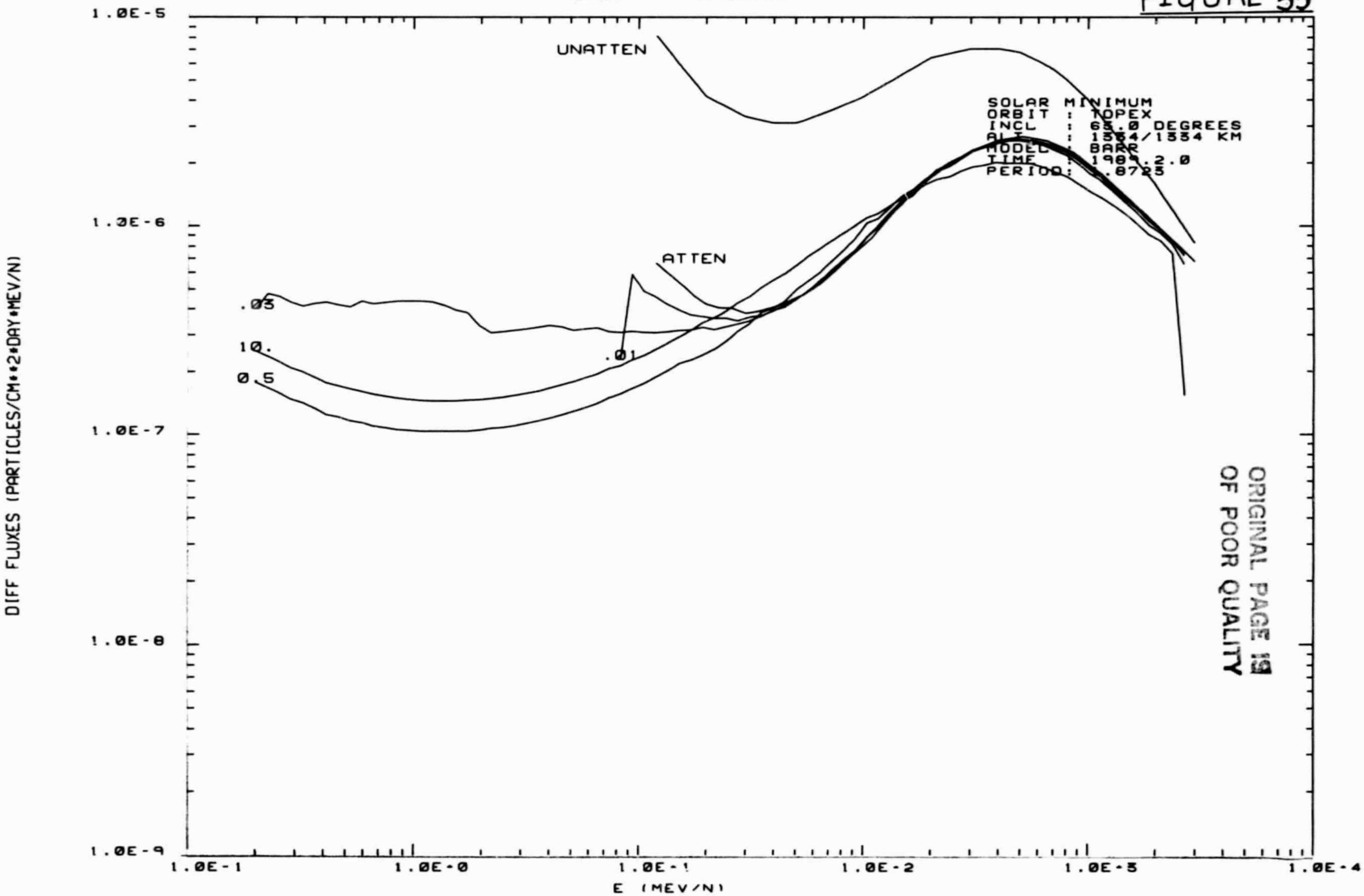
TOPEX COSMIC RAY ANALYSIS
MAGNETOSPHERICALLY ATTENUATED SPECTRUM FOR: NI
DIFFERENTIAL FLUX EMERGING BEHIND SPHERICAL
ALUMINUM SHIELDS
Z-28 A-58.71

FIGURE 55



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