

#261

EXPLORER 43  
DC ELECTRIC FIELD  
71-019A-02A

3 TAPES

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## **1. INTRODUCTION:**

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

## 2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

***When printing, special settings may be required to make the text box appear on the printed output.***

| Version | Date | Person | Page | Description of Change |
|---------|------|--------|------|-----------------------|
| 01      |      |        |      |                       |
| 02      |      |        |      |                       |

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC  
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents      To find associated documents you will need to know the document ID number and then click here.  
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

IMP-I

DC ELECTRIC FIELD

71-019A-02A

SPHE-00015

This data set has been restored. The original tapes were 1600 BPI, binary, 9-track. The DR and DS tape is 9-track, binary and is multi-filed. The DR tape is a 3480 cartridge and the DS tape is 6250 BPI.

The DR, DS, and DD numbers along with the time spans are given as follows:

| DR#     | DS#     | DD#     | FILES   | TIME SPAN           |
|---------|---------|---------|---------|---------------------|
| DR02922 | DS02922 | D-13799 | 1-50    | 03/14/71 - 10/07/71 |
|         |         | D-13800 | 51-100  | 10/07/71 - 05/01/72 |
|         |         | D-13801 | 101-150 | 05/01/72 - 11/25/72 |

EXPLORER 43

DC ELECTRIC FIELD DATA

71-019A-02A

This data set consists of (3) tapes with 50 files each.  
The tapes were generated on the IBM 360/91 computer and  
have the following characteristics:

9 track, binary, 1600 BPI, variable length, blocked,  
and spanned records, maximum record size of 1592 bytes,  
physical record size of 31844 bytes.

| <u>D#</u> | <u>C#</u> | <u>TIME SPAN</u>   |
|-----------|-----------|--------------------|
| D-13799   | C-11113   | 3/14/71 - 10/07/71 |
| D-13800   | C-11114   | 10/07/71 - 5/01/72 |
| D-13801   | C-11115   | 5/01/72 - 11/25/72 |

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## 1. Introduction

The IMP-I Electric Field Experiment is designed to monitor the electric field vector by utilizing the orthogonal pairs of extendible antennas mounted on the IMP-I spacecraft. A high resolution analog-to-digital converter and a spectrometer process the induced signals to obtain DC and low frequency AC electric field information. Data from the experiment is processed and reduced at GSFC onto morphological tapes. This document describes the morphological tapes. A description of the satellite is given in reference 1, a description of the Electric Field Experiment is given in reference 2, and a description of the experiment data processing and reduction system is given in reference 3.

## 2. Tape Format

Each morphological tape contains data from the first and last 12 hours of approximately 50 orbits. Each orbit is stored on the tape as a separate file and each contains in the order of 400 words. The records are of variable length and each contains at most 200 seconds worth of data. The tapes were generated on the IBM 360/91 computer at GSFC and have the following characteristics:

9 track; binary; 1600 BPI; variable length, blocked, and spanned records; maximum record size of 1592 bytes; physical record size of 31844 bytes.

(In IBM 360 terminology:  
DCB=(RECFM=VBS,LRECL=1592,BLKSIZE=31844,DEN=3))

## 4. Sample Printout from Utility Programs

Sample printout from two utility programs is presented. The first is from the tape index program and the second is from the record print program. For a description of these two programs, see reference 3.

## 5. References

1. "Data Processing Plan for Interplanetary Monitoring Platform-I (Eye) (IMP-I)" September, 1970, GSFC Document X-563-70-337
2. "IMP-I Satellite Electric Field Experiment Report", December 1972, Washington Technological Ass. Inc.
3. "IMP-I GSFC Electric Field Experiment Data System" (to be written)

### 3. Morphological tape record format

| Words      | Items                                                                 | Format | Units             | Range              | Time/item         | Comments                                                                                        |
|------------|-----------------------------------------------------------------------|--------|-------------------|--------------------|-------------------|-------------------------------------------------------------------------------------------------|
| 1          | IORBIT: $\pm$ Orbit Number                                            | I*4    |                   |                    |                   | IObit= Orbit Number<br>IObit< 0 if first 12 hours of Orbit<br>IObit>0 if last 12 hours of Orbit |
| 2-73       | Ephemeris Data                                                        |        |                   |                    |                   | See section 3.3                                                                                 |
| 74-95      | Spectrometer Data Group 1                                             |        |                   |                    |                   | See section 3.1                                                                                 |
| 96-117     | Spectrometer Data Group 2                                             |        |                   |                    |                   | See section 3.1                                                                                 |
| 118-139    | Spectrometer Data Group 3                                             |        |                   |                    |                   | See section 3.1                                                                                 |
| 140-161    | Spectrometer Data Group 4                                             |        |                   |                    |                   | See section 3.1                                                                                 |
| 162        | APP40: Temperature of Exp.                                            | R*4    | C                 | -40 to 84          | Same as Ephemeris |                                                                                                 |
| 163        | ALP2: Sun Angle                                                       | R*4    | Degrees           |                    | Ed                |                                                                                                 |
| 164        | RA: Right ascension of spin axis                                      | R*4    | Degrees           | ?R                 | Ed                | Space (X axis point to vernal equinox,<br>Z axis point to the north pole)                       |
| 165        | DEC: Declination                                                      | R*4    | Degrees           | -90 to p90         | Ed                | Space (X axis point to vernal equinox,<br>Z axis point to the north pole)                       |
| 166        | SUNT: Launch Time                                                     | R*4    | Milliseconds      |                    | Ed                | Optical aspect data                                                                             |
| 167        | SPIN: Spin Period                                                     | R*4    | Milliseconds      |                    | Ed                | Optical aspect data                                                                             |
| 168        | EI: Earth Interval                                                    | R*4    | Milliseconds      |                    | Ed                | Optical aspect data                                                                             |
| 169        | EW: Earth Width                                                       | R*4    | Milliseconds      |                    | Ed                | Optical aspect data                                                                             |
| 170        | VXB: Magnitude/VXB vector                                             | R*4    | Volts/meter(mtrs) | $\geq 0$           | Ed                | Solar Ecliptic Coordinates                                                                      |
| 171        | VXBX: X component of VXB Vector                                       | R*4    | Volts/meter(mtrs) |                    | Ed                | Solar Ecliptic Coordinates                                                                      |
| 172        | VXBY: Y component of VXB vector                                       | R*4    | Volts/meter(mtrs) |                    | Ed                | Solar Ecliptic Coordinates                                                                      |
| 173        | VXBZ: Z component of VXB vector                                       | R*4    | Volts/meter(mtrs) |                    | Ed                | Solar Ecliptic Coordinates                                                                      |
| 174        | VXBX: Magnitude of projection<br>of VXB in X, Y plane                 | R*4    | Volts/meter(mtrs) | $\geq 0$           | Ed                | Solar Ecliptic Coordinates                                                                      |
| 175        | PHI: Phase of VXB Electron in equatorial<br>plane (ref to Sun Vector) |        | Degrees           | 0 to 360           | Ed                | PHI 0 when vector points at Sun                                                                 |
| 176        | GMT: Geomagnetic time                                                 | R*4    | Hour              |                    | Ed                | May be <0 or >24                                                                                |
| 177        | N: Number of fitted data groups for                                   | I*4    |                   | $1 \leq n \leq 20$ |                   | See Section 3.2                                                                                 |
| 178-188    | Fitted data group 1                                                   |        |                   |                    |                   | See Section 3.2                                                                                 |
| 189-199    | Fitted data group 2                                                   |        |                   |                    |                   | See Section 3.2                                                                                 |
|            |                                                                       |        |                   |                    |                   | See Section 3.2                                                                                 |
| $\leq 177$ | Fitted Data group N                                                   |        |                   |                    |                   | See Section 3.2                                                                                 |

### 3.1 Spectrometer Data Group

| Relative Word | Item                                                                           | Format | Units        | Range         | Comments                                                     |
|---------------|--------------------------------------------------------------------------------|--------|--------------|---------------|--------------------------------------------------------------|
| 1             | Probe Detector                                                                 | R*4    | Volts        | -.65 to 5.625 | x/1.5 Log Gain, x/15 hi gain Unreliable                      |
| 2             | Spectrometer Channel 1<br>(.1-.18 HZ)                                          | R*4    | Volts        | -.65 to 5.625 | These Values are Log compressed                              |
| 3             | Channel 2 (.18-.31)                                                            | R*4    | Volts        | -.65 to 5.625 | To get the actual voltage values<br>one must make use of the |
| 4             | Channel 3 (.31-.54)                                                            | R*4    | Volts        | -.65 to 5.625 | Log amplifier reference graphs                               |
| 5             | Channel 4 (.54-1.0)                                                            | R*4    | Volts        | -.65 to 5.625 | of reference 2 and then divide by                            |
| 6             | Channel 5 (1.0-1.8)                                                            | R*4    | Volts        | -.65 to 5.625 | 30 if in high gains                                          |
| 7             | Channel 6 (1.8-3.1)                                                            | R*4    | Volts        | -.65 to 5.625 | bad values are set to IE20                                   |
| 8             | Channel 7 (3.1-5.4)                                                            | R*4    | Volts        | -.65 to 5.625 | Channels 1-6 "low" frequencies                               |
| 9             | Channel 8 (5.4-10)                                                             | R*4    | Volts        | -.65 to 5.625 | Channels 7-12 "high" frequencies                             |
| 10            | Channel 9 (10-18)                                                              | R*4    | Volts        | -.65 to 5.625 |                                                              |
| 11            | Channel 10 (18-31)                                                             | R*4    | Volts        | -.65 to 5.625 |                                                              |
| 12            | Channel 11 (31-54)                                                             | R*4    | Volts        | -.65 to 5.625 |                                                              |
| 13            | Channel 12 (54-100)                                                            | R*4    | Volts        | -.65 to 5.625 |                                                              |
| 14            | ACZ: Ac Signal on Z-axis probe                                                 | R*4    | Volts        | -.65 to 5.625 | (x-2.5) /1.5 if low gains                                    |
| 15            | ACXY: AC Signal on X or Y Antenna                                              | R*4    | Volts        | -.65 to 5.625 | (x-2.5)/15 if high gains                                     |
| 16            | Subcommutation                                                                 | R*4    | Volts        | -.65 to 5.625 | See section 3.4                                              |
| 17            | Sub-commutator Protein                                                         | I*4    |              | 0-15          | See section 3.4                                              |
| 18-20         | Sub-commutator Description                                                     | 12A1   |              |               | EBCDIC characters                                            |
| 21            | Spectrometer Mode                                                              | I*4    |              | 0-1           | 0-average, 1 probe                                           |
| 22            | Milliseconds of Day                                                            | I*4    | Milliseconds |               | time of data in this group                                   |
|               |                                                                                |        |              |               |                                                              |
|               | * note: the 4 spectrometer data<br>groups per record appear<br>chronologically |        |              |               |                                                              |
|               |                                                                                |        |              |               |                                                              |
|               |                                                                                |        |              |               |                                                              |
|               |                                                                                |        |              |               |                                                              |

### 3.2 Fitted Data Group

| Relative word | Item                                                                                                             | format | units             | range          | comments                   |
|---------------|------------------------------------------------------------------------------------------------------------------|--------|-------------------|----------------|----------------------------|
| 1             | YYMMDD                                                                                                           | I*4    |                   |                | Time of data in this group |
| 2             | Milliseconds of day                                                                                              | I*4    |                   |                | Time of data in this group |
| 3             | EX: amplitude of electric field vector in equatorial plane (measured with x-axis antenna)                        | R*4    | Millivolts/meters |                | Time of data in this group |
| 4             | PHIX: Phase of electric field vector in equatorial plane referenced to Sun vector (measured with x-axis antenna) | R*4    | Degree            |                | if<0, add 360              |
| 5             | SDX: Standard deviation of EX                                                                                    | R*4    | Millivolts/meters |                |                            |
| 6             | EY: Amplitude of electric field vector in equatorial plane (measured with y axis antenna)                        | R*4    | Millivolts/meters |                |                            |
| 7             | PHIY: phase of electric field vector in equatorial plane referenced to Sun Vector (measured with y axis antenna) | R*4    | Degree            |                |                            |
| 8             | SDY: Standard deviation of EY                                                                                    | R*4    |                   |                |                            |
| 9             | NPP35: Common mode voltage in xy antenna                                                                         | R*4    | Volts             | .65 thru 5.625 | bit value set to 1.00E+20  |
| 10            | CH12^v                                                                                                           | R*4    | volts             | .65 thru 5.625 |                            |
| 11            | Bit Rate Indicator                                                                                               | I*4    |                   | 0~1            | 0=low 1=high               |
|               |                                                                                                                  |        |                   |                |                            |
|               | *note: Fitted data group appears chronologically within a data record                                            |        |                   |                |                            |
|               | **note EX, PHIX,SDX, EY, PHIY and SDY were obtained by using a least squares ** fit to raw experiment data       |        |                   |                |                            |
|               | y(x-2.5) x 6 to get volts                                                                                        |        |                   |                |                            |

### 3.4 Sub-Commutator Data

| Sub-Commutator Position | Sub-Commutator Description | Nominal Voltage | Description                         |                                     |                |         |         |
|-------------------------|----------------------------|-----------------|-------------------------------------|-------------------------------------|----------------|---------|---------|
| 0                       | Ground                     | 0.00            |                                     |                                     |                |         |         |
| 1                       | Calibration Axis           | 0.00            | 0.00=l cal<br>1.14=x cal<br>0.06=DC | 2.36=y cal<br>3.63=z cal<br>3.75=AC |                |         |         |
| 2                       | AC-DC mode                 | 0.06            |                                     |                                     |                |         |         |
| 3                       | Calibration Position       | 0.00            |                                     |                                     |                |         |         |
|                         |                            |                 | 0.00                                | Noise 1                             | Ground         | +Preamp | +Preamp |
|                         |                            |                 | 0.63                                | Noise 2                             | Ground         | 3.33    | Ground  |
|                         |                            |                 | 1.27                                | Ground                              | -2.5           | +10     | +10     |
|                         |                            |                 | 1.94                                | 2.50                                | Ground         | -10     | -10     |
|                         |                            |                 |                                     |                                     | 4.64           | Ground  | Ground  |
| 4                       | -20 volt monitor           | 2.51            | at temperature<br>=25c              |                                     |                |         |         |
| 5                       | +20 volt monitor           | 2.48            | at temperature<br>=25c              |                                     |                |         |         |
| 6                       | AC gain                    | 0.00            |                                     | Z antenna                           | Y or X antenna |         |         |
|                         |                            |                 | 0.00                                | 3                                   | 3              |         |         |
|                         |                            |                 | 1.14                                | 30                                  | 3              |         |         |
|                         |                            |                 | 2.36                                | 3                                   | 30             |         |         |
|                         |                            |                 | 3.63                                | 30                                  | 30             |         |         |
| 7                       | Spectrometer gain          | 0.00            |                                     | channel 1-6                         | channel 1-12   |         |         |
|                         |                            |                 | 0.00                                | 40                                  | 40             |         |         |
|                         |                            |                 | 1.15                                | 1200                                | 40             |         |         |
|                         |                            |                 | 2.40                                | 40                                  | 1200           |         |         |
|                         |                            |                 | 3.65                                | 1200                                | 1200           |         |         |
| 8                       | Antenna X Y or Z           | 0.00            |                                     | channel 1-6                         | Channel 7-12   |         |         |
|                         |                            |                 | 0.00                                | Z                                   | X or Y         |         |         |
|                         |                            |                 | 1.17                                | X or Y                              | X or Y         |         |         |
|                         |                            |                 | 2.40                                | Z                                   | Z              |         |         |
|                         |                            |                 | 3.71                                | X or Y                              | Z              |         |         |

### 3.4 Sub-Commutator Data

| Sub-Commutator Position | Sub-Commutator Description | Nominal Voltage | Description                                                        |  |  |  |  |
|-------------------------|----------------------------|-----------------|--------------------------------------------------------------------|--|--|--|--|
| 9                       | Antenna X or Y             | 0.08            | 0.03=X<br>3.86=Y                                                   |  |  |  |  |
| 10                      | Filter                     | 0.00            | 0.10=wide band<br>5.00=narrow band                                 |  |  |  |  |
| 11                      | -15 volt monitor           | 2.40            | at temp =25C                                                       |  |  |  |  |
| 12                      | +15 volt monitor           | 2.75            | at temp =25cC                                                      |  |  |  |  |
| 13                      | Common mode of -Z antenna  | 2.52            | (x-2.5)x6=<br>Voltage on antenna with respect to spacecraft ground |  |  |  |  |
| 14                      | Common mode of +Z antenna  | 2.48            | (x-2.5)x6=<br>Voltage on antenna with respect to spacecraft ground |  |  |  |  |
| 15                      | Common mode of -Y antenna  | 2.51            | (x-2.5)x6=<br>Voltage on antenna with respect to spacecraft ground |  |  |  |  |

### 3.2 Fitted Data Group

| Relative word                                                                                                       | Item                                                                                                                      | format | units             | range          | comments                     |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------|-------------------|----------------|------------------------------|
| 1                                                                                                                   | YMMDD                                                                                                                     | I*4    |                   |                | Time of data in this group   |
| 2                                                                                                                   | Milliseconds of day                                                                                                       | I*4    |                   |                | Time of data in this group   |
| 3                                                                                                                   | EX: amplitude of electric field<br>vector in equatorial plane<br>(measured with x-axis antenna)                           | R*4    | Millivolts/meters |                | Time of data in this group   |
| 4                                                                                                                   | PHIX: Phase of electric field<br>vector in equatorial plane<br>referenced to Sun vector<br>(measured with x-axis antenna) | R*4    | Degree            |                | if<0, add 360                |
| 5                                                                                                                   | SDX: Standard deviation of EX                                                                                             | R*4    | Millivolts/meters |                |                              |
| 6                                                                                                                   | EY: Amplitude of electric field<br>vector in equatorial plane<br>(measured with y axis antenna)                           | R*4    | Millivolts/meters |                |                              |
| 7                                                                                                                   | PHIY: phase of electric field<br>vector in equatorial plane<br>referenced to Sun Vector<br>(measured with y axis antenna) | R*4    | Degree            |                |                              |
| 8                                                                                                                   | SDY: Standard deviation of EY                                                                                             | R*4    |                   |                |                              |
| 9                                                                                                                   | NPP35: Common mode voltage<br>in xy antenna                                                                               | R*4    | Volts             | .65 thru 5.625 | bit value set to<br>1.00E+20 |
| 10                                                                                                                  | CH12~v                                                                                                                    | R*4    | volts             | .65 thru 5.625 |                              |
| 11                                                                                                                  | Bit Rate Indicator                                                                                                        | I*4    |                   | 0~1            | 0=low 1=high                 |
| *note: Fitted data group appears<br>chronologically within a data<br>record                                         |                                                                                                                           |        |                   |                |                              |
| **note EX, PHIX,SDX, EY,<br>PHIY and SDY were obtained<br>by using a least squares **<br>fit to raw experiment data |                                                                                                                           |        |                   |                |                              |
| y(x-2.5) x 6 to get volts                                                                                           |                                                                                                                           |        |                   |                |                              |

*Handwritten signature/initials*

Table 9-13

IMP-I MCE Tape Data Record

| Word No | Form        | Data                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------|
| 0       | Fixed Pt    | Fortran record size indicator (=000113010001 <sub>8</sub> )<br>This indicates a total data word count of 75 <sub>10</sub> |
| 1       | Floating Pt | Day of year                                                                                                               |
| 2       | Floating Pt | Milliseconds of day                                                                                                       |
| 3       | Floating Pt | Longitude (deg) satellite position in geocentric coordinates                                                              |
| 4       | Floating Pt | Latitude (deg)                                                                                                            |
| 5       | Floating Pt | Longitude (deg) satellite position in                                                                                     |
| 6       | Floating Pt | Latitude (deg) geomagnetic coordinates                                                                                    |
| 7       | Floating Pt | R <sub>0</sub> (earth radii) a geomagnetic coordinate of the satellite position, CUL                                      |
| 8       | Floating Pt | r, radial distance of the satellite from the center of the earth (km)                                                     |
| 9       | Floating Pt | GSE <sub>X</sub>                                                                                                          |
| 10      | Floating Pt | GSE <sub>Y</sub>                                                                                                          |
| 11      | Floating Pt | GSE <sub>Z</sub>                                                                                                          |
| 12      | Floating Pt | GSM <sub>X</sub>                                                                                                          |
| 13      | Floating Pt | GSM <sub>Y</sub>                                                                                                          |
| 14      | Floating Pt | GSM <sub>Z</sub>                                                                                                          |
| 15      | Floating Pt | GSE <sub>X</sub>                                                                                                          |
| 16      | Floating Pt | GSE <sub>Y</sub>                                                                                                          |
| 17      | Floating Pt | GSE <sub>Z</sub>                                                                                                          |
| 18      | Floating Pt | GSM <sub>X</sub>                                                                                                          |
| 19      | Floating Pt | GSM <sub>Y</sub>                                                                                                          |
| 20      | Floating Pt | GSM <sub>Z</sub>                                                                                                          |



Table 9-13 (Continued)

| Word No | Form        | Data                                                                |                                                                                     |
|---------|-------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 21      | Floating Pt | $GEI_X$                                                             | Satellite position Geocentric Equatorial Inertial (km)                              |
| 22      | Floating Pt | $GEI_Y$                                                             |                                                                                     |
| 23      | Floating Pt | $GEI_Z$                                                             |                                                                                     |
| 24      | Floating Pt | $GEI_X$                                                             | Sun position in Geocentric Equatorial Inertial (UA)                                 |
| 25      | Floating Pt | $GEI_Y$                                                             |                                                                                     |
| 26      | Floating Pt | $GEI_Z$                                                             |                                                                                     |
| 27      | Floating Pt | Longitude                                                           | Sub-solar point in geomagnetic coordinates (deg)                                    |
| 28      | Floating Pt | Latitude                                                            |                                                                                     |
| 29      | Floating Pt | Distance from the satellite to the Moon (km)                        |                                                                                     |
| 30      | Floating Pt | Distance parallel to the x-axis from the satellite to the moon (km) |                                                                                     |
| 31      | Floating Pt | 1st row, 1st column                                                 | Geocentric Solar Ecliptic-to-Geocentric Solar Magnetospheric transformation matrix. |
| 32      | Floating Pt | 1st row, 2nd column                                                 |                                                                                     |
| 33      | Floating Pt | 1st row, 3rd column                                                 |                                                                                     |
| 34      | Floating Pt | 2nd row, 1st column                                                 |                                                                                     |
| 35      | Floating Pt | 2nd row, 2nd column                                                 |                                                                                     |
| 36      | Floating Pt | 2nd row, 3rd column                                                 |                                                                                     |
| 37      | Floating Pt | 3rd row, 1st column                                                 |                                                                                     |
| 38      | Floating Pt | 3rd row, 2nd column                                                 |                                                                                     |
| 39      | Floating Pt | 3rd row, 3rd column                                                 |                                                                                     |

Table 9-13 (Continued)

| Word No | Form        | Data                                                                                                  |
|---------|-------------|-------------------------------------------------------------------------------------------------------|
| 40      | Floating Pt | 1st row, 1st column                                                                                   |
| 41      | Floating Pt | 1st row, 2nd column                                                                                   |
| 42      | Floating Pt | 1st row, 3rd column                                                                                   |
| 43      | Floating Pt | 2nd row, 1st column                                                                                   |
| 44      | Floating Pt | 2nd row, 2nd column                                                                                   |
| 45      | Floating Pt | 2nd row, 3rd column                                                                                   |
| 46      | Floating Pt | 3rd row, 1st column                                                                                   |
| 47      | Floating Pt | 3rd row, 2nd column                                                                                   |
| 48      | Floating Pt | 3rd row, 3rd column                                                                                   |
| 49      | Floating Pt | Right Ascension                                                                                       |
| 50      | Floating Pt | Declination                                                                                           |
| 51      | Floating Pt | Right Ascension                                                                                       |
| 52      | Floating Pt | Declination                                                                                           |
| 53      | Floating Pt | Magnitude of the velocity (km/sec)                                                                    |
| 54      | Floating Pt | L McIlwain parameter (earth radii)                                                                    |
| 55      | Floating Pt | B Magnetic field strength (Gamma)                                                                     |
| 56      | Floating Pt | $B/B_0$ Ratio of the magnetic field strength at the satellite-to-the-field strength at the satellite. |
| 57      | Floating Pt | Satellite-earth-sun angle, $L_{sep}$ (deg)                                                            |

Geocentric Equatorial  
Inertial-to-Geocentric  
Solar Ecliptic transform-  
tion matrix.

Satellite position in  
celestial inertial (deg)

Velocity vector in  
celestial inertial (deg)

Table 9-13 (Continued)

| Word No | Form        | Data                                  |
|---------|-------------|---------------------------------------|
| 58      | Floating Pt | Satellite-earth-moon angle (deg)      |
| 59      | Floating Pt | Right ascension                       |
| 60      | Floating Pt | Declination                           |
| 61      | Floating Pt | Longitude                             |
| 62      | Floating Pt | Latitude                              |
| 63      | Floating Pt | GSE <sub>x</sub>                      |
| 64      | Floating Pt | GSE <sub>y</sub>                      |
| 65      | Floating Pt | GSE <sub>z</sub>                      |
| 66      | Floating Pt | Type of data item indicator           |
|         |             | 1 = regular satellite data item       |
|         |             | 2 = ascending node crossing data item |
|         |             | 3 = North point data item             |
|         |             | 4 = descending node data item         |
|         |             | 5 = south point data item             |
|         |             | 6 = sunlight entrance data item       |
|         |             | 7 = sunlight exit data item           |
| 67      | Floating Pt | Date of data (YR MO DA)               |
| 68      | Floating Pt | Longitude                             |
| 69      | Floating Pt | Latitude                              |
| 70      | Floating Pt | Height above spheroid (km)            |

Table 9-13 (Continued)

| Word No | Form        | Data                                                                                                                             |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| 71      | Floating Pt | Ascending node crossing number (pass number)                                                                                     |
| 72      | Floating Pt | Year of data (YR)                                                                                                                |
| 73-75   | Floating Pt | Zero fill for spares                                                                                                             |
| 76      | Fixed Point | Check sum of data words in words number 1 - 75                                                                                   |
| 77      | Fixed Point | FORTRAN record size indicator (=000113010001 <sub>8</sub> )<br>This indicates a total data word count of 75 <sub>10</sub> words. |

Table 9-14  
IMP-I MCE Tape Sentinel Record

| Word No | Form        | Data                                                                                                              |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------|
| 0       | Fixed Pt    | FORTRAN RECORD SIZE INDICATOR (=000113010001 <sub>8</sub> ). This indicates a total data word count of 253 words. |
| 1       | Floating Pt | 99999999 <sub>10</sub>                                                                                            |
| 2 - 75  | Floating Pt | irrelevant                                                                                                        |
| 76      | Fixed Pt    | Check sum of data words in words number 1 - 75.                                                                   |
| 77      | Fixed Pt    | FORTRAN RECORD SIZE INDICATOR (=000113010001 <sub>8</sub> )                                                       |

9.5.3.2 Orbit/Attitude Tape—The format and physical characteristics of the orbit/attitude tape are the same as those of the MCE tape described in Section 9.5.1.2. The tape contains the MCE data augmented by attitude information supplied by the housekeeping tape.



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|    |          |          |          |          |          |          |          |          |          |          |          |
|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1  | 70840000 | 05380000 | PPPPPPCD | 42110700 | 467AC2E  | C2839784 | 41049700 | C2708069 | 418C86C0 | 41294C89 | 41294C89 |
| 2  | ( 4 )    | 443EC2D1 | 442F694C | 441A6142 | 441F89F1 | 44222F54 | 4416D8E6 | C5468D78 | C5349A48 | 447C2800 | 447C2800 |
| 3  | ( 8 )    | C5468D78 | C5349A48 | 441F89F1 | 44222F54 | 4416D8E6 | C5468D78 | C5349A48 | 447C2800 | 447C2800 | 447C2800 |
| 4  | ( 12 )   | C1F13681 | 4558B33E | 45498410 | 4110934C | 40E03030 | 04F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 |
| 5  | ( 16 )   | C147F218 | 40F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 | 40F00000 |
| 6  | ( 20 )   | 41EAD6E6 | 42E4E10E | 41D48FDD | 43128549 | 42259C65 | 416C79EC | 412858B1 | 4382FDAA | 411167C  | 428EDF5  |
| 7  | ( 24 )   | 429174B8 | 421E7734 | 423A8334 | 428F4F58 | C1D317E0 | 43279A93 | C5580000 | 433875F0 | 41100000 | 45AD93F0 |
| 8  | ( 28 )   | C2839420 | 41D5102F | 4425D9C8 | 42330300 | 42600000 | 411F3333 | C013F7CE | 00000000 | 00000000 | 40733332 |
| 9  | ( 32 )   | 41126666 | 40033332 | 40799999 | 40133333 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 |
| 10 | ( 36 )   | 41115999 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 |
| 11 | ( 40 )   | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 |
| 12 | ( 44 )   | 4129FFFF | 4118CCCC | C013F7CE | 00000007 | E2D7C5C3 | 40C7C1C9 | D5A04040 | 00000000 | 00000000 | 41183333 |
| 13 | ( 48 )   | C013F7CE | 4118CCCC | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 |
| 14 | ( 52 )   | 8FD4FDF2 | C013F7CE | 41279999 | 41359999 | C013F7CE | 403FFFFF | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 |
| 15 | ( 56 )   | C07A6920 | 411ECCCC | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 |
| 16 | ( 60 )   | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 |
| 17 | ( 64 )   | 40444444 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 | 41000000 |
| 18 | ( 68 )   | 426E0030 | 3F28F8E7 | 3F238E66 | BF149984 | 3EFAF2CF | 3F2917AD | 43149E9F | 43149E9F | 43149E9F | 43149E9F |
| 19 | ( 72 )   | 007A0DA9 | 41A40501 | C2201E46 | 40131C60 | 419D9314 | 431484BE | 4018D4CE | 412C00CC | 412C00CC | 412C00CC |
| 20 | ( 76 )   | 00AD95F  | 007A7598 | 41A16463 | C2210434 | 4026A4B5 | 41980CF6 | 43147EA7 | 3FF10E33 | 4142CCCC | C013F7CE |
| 21 | ( 80 )   | 00AD95F  | 007A7598 | 41A16463 | C2210434 | 4026A4B5 | 41980CF6 | 43147EA7 | 3FF10E33 | 4142CCCC | C013F7CE |
| 22 | ( 84 )   | C013F7CE | 00000001 | 00AD95F  | 007A05F  | 007A05F  | 007A05F  | 007A05F  | 007A05F  | 007A05F  | 007A05F  |
| 23 | ( 88 )   | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC |
| 24 | ( 92 )   | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC |
| 25 | ( 96 )   | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC | 4140CCCC |
| 26 | ( 100 )  | 4195C194 | 43146A40 | 40235AF9 | 4140CCCC | C013F7CE | 00AD95F  | 00788D30 | 419E409A | C2213148 | 419E409A |
| 27 | ( 104 )  | 41F0F0F0 | 4194CAB4 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 |
| 28 | ( 108 )  | C2218614 | 431156DF | 41974363 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 |
| 29 | ( 112 )  | 41974363 | C222327F | 41986564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 | 43146564 |
| 30 | ( 116 )  | 00750D22 | 419B2BCC | C22A6A2A | 40221496 | 4194A808 | 43145474 | 3FEBD830 | 41453332 | C013F7CE | 00000001 |
| 31 | ( 120 )  | 00AD95F  | 007C0915 | 4198C037 | C2236C87 | 007C0915 | 4198C037 | C2236C87 | 007C0915 | 4198C037 | C2236C87 |
| 32 | ( 124 )  | 00AD95F  | 007C0915 | 4198C037 | C2236C87 | 007C0915 | 4198C037 | C2236C87 | 007C0915 | 4198C037 | C2236C87 |
| 33 | ( 128 )  | C013F7CE | 00000001 | 00AD95F  | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 |
| 34 | ( 132 )  | 41439999 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 |
| 35 | ( 136 )  | 41439999 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 |
| 36 | ( 140 )  | 43144708 | 4140A581 | 41426666 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 | 007C0915 | 007C0915 |
| 37 | ( 144 )  | 418525C0 | 43143E08 | 40252D1A | 41439999 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 | 007C0915 |
| 38 | ( 148 )  | 429D034F | 4191CFB7 | 4143F1E1 | 401C4178 | 41439999 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 |
| 39 | ( 152 )  | C23C229A | 41434558 | 41919851 | 43144708 | 41439999 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 | 007C0915 |
| 40 | ( 156 )  | 4198A3A4 | C238469  | 4018C48  | 418FF5C6 | 431444C1 | 41453332 | C013F7CE | 00AD95F  | 007C0915 | 007C0915 |
| 41 | ( 160 )  | 41CEA4B  | 4424J9ED | 442DF920 | 4425F3D0 | 441A578  | C5469F7C | C534C6E5 | 42932AD7 | 441225C  | 442DF920 |
| 42 | ( 164 )  | 41CEA4B  | 4424J9ED | 442DF920 | 4425F3D0 | 441A578  | C5469F7C | C534C6E5 | 42932AD7 | 441225C  | 442DF920 |
| 43 | ( 168 )  | 41CEA4B  | 4424J9ED | 442DF920 | 4425F3D0 | 441A578  | C5469F7C | C534C6E5 | 42932AD7 | 441225C  | 442DF920 |
| 44 | ( 172 )  | 45497F0F | 41100000 | 00000030 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 45 | ( 176 )  | C0F9487F | C0357373 | C017203C | 40344210 | C0E484C8 | C0532C82 | 00000000 | 00000000 | 00000000 | 00000000 |
| 46 | ( 180 )  | 41FC1B39 | 43128415 | 42258168 | 416A475A | 412AFD30 | 43774465 | 4113005E | 422D2473 | 428D2878 | 428D2878 |
| 47 | ( 184 )  | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 |
| 48 | ( 188 )  | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 |
| 49 | ( 192 )  | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 | 4282C1A8 |
| 50 | ( 196 )  | C7D0D6E4 | D5C44341 | 40434341 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 51 | ( 200 )  | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 | 40666666 |
| 52 | ( 204 )  | 4143CCCC | 0000000F | 0000000F | 0000000F | 0000000F | 0000000F | 0000000F | 0000000F | 0000000F | 0000000F |
| 53 | ( 208 )  | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 | 41199999 |
| 54 | ( 212 )  | 41299999 | 411F3333 | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC |
| 55 | ( 216 )  | C013F7CE | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 | 8FD4FDF2 |
| 56 | ( 220 )  | 8FD4FDF2 | C013F7CE | 41299999 | 41299999 | 41299999 | 41299999 | 41299999 | 41299999 | 41299999 | 41299999 |
| 57 | ( 224 )  | 3F14CC86 | BF1526E8 | 3F14126B | 3F2636F3 | 431465E7 | 41E38E25 | 00000014 | 00AD95F  | 007D6C9C | 41950860 |
| 58 | ( 228 )  | C2248411 | 4018317E | 418C0081 | 43144229 | 4014D633 | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC |
| 59 | ( 232 )  | 41967646 | C2256533 | 4024FA23 | 4198D008 | 43143587 | 4010635E | 4144CCCC | 4144CCCC | 4144CCCC | 4144CCCC |
| 60 | ( 236 )  | 00AD95F  | 007DE473 | 419317E5 | C2251769 | 40175C71 | 418C88C0 | 431436A6 | 3FF81E87 | 4144CCCC | C013F7CE |
| 61 | ( 240 )  | 00AD95F  | 007DE473 | 419317E5 | C2251769 | 40175C71 | 418C88C0 | 431436A6 | 3FF81E87 | 4144CCCC | C013F7CE |
| 62 | ( 244 )  | C013F7CE | 00000001 | 00AD95F  | 007E0C66 | 41800185 | C2261855 | 401F79AC | 41800185 | 401F79AC | 41800185 |
| 63 | ( 248 )  | 4143FFFF | C013F7CE | 00AD95F  | 007E0C66 | 41800185 | C2261855 | 401F79AC | 41800185 | 401F79AC | 41800185 |
| 64 | ( 252 )  | 4143FFFF | C013F7CE | 00AD95F  | 007E0C66 | 41800185 | C2261855 | 401F79AC | 41800185 | 401F79AC | 41800185 |
| 65 | ( 256 )  | 4143FFFF | C013F7CE | 00AD95F  | 007E0C66 | 41800185 | C2261855 | 401F79AC | 41800185 | 401F79AC | 41800185 |

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|         |          |          |           |          |          |          |          |          |          |          |
|---------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|
| ( 56 )  | 430FF0AF | 411A6666 | 41239999  | 4118FFFF | 41185999 | 4 F59998 | 40800000 | 40733332 | 403FFFFF | 40233333 |
| ( 60 )  | 401FFFFF | 40133333 | 3FC00000  | 3FC00000 | 411F3333 | 411D3333 | 41440000 | 00000000 | C348D448 | 4060E940 |
| ( 64 )  | 40474041 | 00000011 | 73300000  | 41760000 | 425D0000 | 42600000 | C24370A3 | 442621E0 | 44312F40 | 449FFF60 |
| ( 68 )  | 445EFF66 | 3ED0C85A | B52CE6C0  | 3ED0E6D1 | 3E4DE6D1 | 3ECF2B55 | 42718F41 | 40900014 | 000AFE75 | 00000001 |
| ( 72 )  | 430FD538 | 4130A931 | C206C63C  | 41119F3E | 41161339 | 42648750 | 411E3D53 | 41466666 | 3FD4F0F2 | 00000001 |
| ( 76 )  | 000AFE75 | 032FFD28 | 4135933C  | C2E37680 | 4030C25C | 412CCA0A | 426CA1C1 | 40166666 | 41466666 | BF4EDF2  |
| ( 80 )  | 43000011 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 84 )  | 41453332 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 88 )  | 41453332 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 92 )  | 41453332 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 96 )  | 426E25B8 | 3F8188D5 | 41440000  | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 100 ) | 412A90FD | 426BFF3E | 401849FF  | 41440000 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 104 ) | 401D2299 | 412C9F65 | 426FD295  | 4011B042 | 41440000 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 108 ) | 426E5D01 | 40349F29 | 412B8843  | 426D2A81 | 401805D0 | 426D2A81 | 401805D0 | 426D2A81 | 401805D0 | 426D2A81 |
| ( 112 ) | 412C06C0 | 42E539B0 | 424D12C0  | 412B67C8 | 426D85CA | 3FC84D04 | 41455959 | BF6A7EF9 | 00000000 | 00000000 |
| ( 116 ) | 00316482 | 41347F66 | C20B86F0  | 40426864 | 426F3E98 | 426F3E98 | 426F3E98 | 426F3E98 | 426F3E98 | 426F3E98 |
| ( 120 ) | 000AFE75 | 00318CA4 | 41385ADC  | C20F4A40 | 40320C70 | 412B3F10 | 426E37CE | 3FE8B1F0 | 41460000 | 00000001 |
| ( 124 ) | 40000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 128 ) | BF6A7EF9 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 132 ) | 41420000 | BF6A7EF9 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 136 ) | 3F085C7C | 41453332 | BF6A7EF9  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 140 ) | 426E91C7 | 4021D748 | 41453332  | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 144 ) | 4128EC57 | 426C2CE8 | 401ED366  | 41466666 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 148 ) | 404F0802 | 4129FFD7 | 426C8C8E  | 40250DAE | 41466666 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 152 ) | C2E16C10 | 4010029E | 4129B328  | 427056A5 | 40115F10 | 41439999 | BF6A7EF9 | 00000000 | 00000000 | 00000000 |
| ( 156 ) | 412F244C | C2DC1840 | 4035BE20  | 412A5948 | 426E0CE7 | 3ED23E45 | 41435959 | BF6A7EF9 | 00000000 | 00000000 |
| ( 160 ) | FFFFF9B8 | 427A0000 | 47332E28  | 429746FF | 42172CCA | C28E3ADE | 41D0E231 | 41304DCE | 4459E68C | C4437848 |
| ( 164 ) | C3420E11 | 443B37C8 | C4347848  | C410E2BE | 4438E401 | C5518A72 | C536851E | C54FC5BE | C5518A72 | C534157D |
| ( 168 ) | C511C6C3 | C42FF4E9 | C43478C0  | 44235EFB | 40C1C754 | 409C4947 | 4043C4EF | 421A907F | 4219E087 | 455F19C8 |
| ( 172 ) | 454D52BD | 411A0000 | 411A0000  | 411A0000 | 411A0000 | 411A0000 | 411A0000 | 411A0000 | 411A0000 | 411A0000 |
| ( 176 ) | 40C04537 | 409B11C4 | 40433E23  | C0A90561 | 40806650 | 404C7DFF | 00000000 | C065D89D | 40EAD6E6 | 42EA84C4 |
| ( 180 ) | 42120CCA | 4133452E | 4228297C  | 415511A8 | 4130D127 | 4321C154 | 4115405D | 428AA9E6 | 423451CE | 422F8941 |
| ( 184 ) | 422E4210 | C22C5ABC | 41F3A67F  | 425E2D56 | 432E5504 | 43102FCA | 41100000 | 45AFE750 | 429746FF | 42173680 |
| ( 188 ) | 444 F9B2 | 42650000 | 42480000  | 40599999 | 3FC00000 | C013F7CF | C013F7CF | 3F666666 | 40C66666 | 40733332 |
| ( 192 ) | 413FFFFF | 40333333 | 40199999  | 3FC00000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 196 ) | C1D5E341 | E7E861F9 | 404A4340  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 200 ) | 40333332 | 407FFFFF | 40466666  | 40333333 | 40199999 | 3FC00000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 204 ) | C013F7CE | 00000000 | E207C5C3  | 40C7C1C9 | D5404040 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 208 ) | C013F7CE | 3F666666 | 40E66666  | 40E66666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 |
| ( 212 ) | 41266666 | 41246666 | C013F7CE  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 216 ) | C013F7CE | BF6A7EF9 | C013F7CE  | 3F666666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 | 40E66666 |
| ( 220 ) | 3F666666 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 224 ) | 4033239B | 4168F5C0 | 425D0000  | 426C0000 | C24370A3 | 44258960 | 44312EA0 | 449FFF60 | 449FFF60 | 3ED391AB |
| ( 228 ) | B4B87253 | 3EB715CE | 3E4A68DE  | 3EC60058 | 42746AE6 | 44B31CB0 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 232 ) | C20AA110 | 405700D5 | 412B9F25  | 42712136 | 3FC4A257 | 41426666 | BF6A7EF9 | 00000000 | 00000000 | 00000000 |
| ( 236 ) | 413A2146 | C2D39020 | 4032B12A  | 41284959 | 42744B53 | 4310A429 | 41426666 | BF6A7EF9 | 00000000 | 00000000 |
| ( 240 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 244 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 248 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 252 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 256 ) | 41439999 | 41439999 | 41439999  | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 |
| ( 260 ) | 412A0A69 | 41439999 | 41439999  | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 |
| ( 264 ) | 4274C26F | 40131E94 | 41439999  | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 |
| ( 268 ) | 412BA7FA | 427396C7 | 41439999  | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 | 41439999 |
| ( 272 ) | 41439095 | 41238E8B | 42745D01  | 3FE50B55 | 41466666 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 276 ) | C2D3D610 | 40538E9B | 412B2800  | 42718E2C | 3FE8E8A8 | 41426666 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 280 ) | 413B4C18 | C2D84850 | 405AA0F5C | 41284E52 | 42744713 | 3FACB141 | 41426666 | 00000000 | 00000000 | 00000000 |
| ( 284 ) | 4134D38A | 4135C4F3 | C2D8B811  | 405EC509 | 412E5EA2 | 4273F4E6 | 40128753 | 41439999 | 41439999 | 41439999 |
| ( 288 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 292 ) | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 296 ) | 3F666666 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 300 ) | 4141FFFF | 3F666666 | 4141FFFF  | 4141FFFF | 4141FFFF | 4141FFFF | 4141FFFF | 4141FFFF | 4141FFFF | 4141FFFF |
| ( 304 ) | 3FCA2182 | 41419999 | BF6A7EF9  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 308 ) | 42720E2B | 4013EE26 | 41419999  | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 312 ) | 4128F194 | 42742AF4 | 4011A547  | 41426666 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| ( 316 ) | 4143AEAC | 412B5AF6 | 4272053B  | 401FE130 | 41426666 | BF6A7EF9 | 00000000 | 00000000 | 00000000 | 00000000 |



| #   | ORBIT | FILE | RECORDS | POINTS | FIRST TWELVE HOURS |        |        |        | LAST TWELVE HOURS |        |        |        |
|-----|-------|------|---------|--------|--------------------|--------|--------|--------|-------------------|--------|--------|--------|
|     |       |      |         |        | APPROX. START      | STOP   | YMMDD  | HMMSS  | APPROX. START     | STOP   | YMMDD  | HMMSS  |
| 1)  | 1     | 1    | 240     | 3919   | 710314             | 12055  | 710314 | 50838  | 710317            | 84010  | 710317 | 191149 |
| 2)  | 2     | 2    | 347     | 6553   | 710317             | 223044 | 710318 | 90528  | 710321            | 115607 | 710321 | 212352 |
| 3)  | 3     | 3    | 353     | 6694   | 710322             | 32455  | 710322 | 121254 | 710325            | 152138 | 710326 | 32135  |
| 4)  | 4     | 4    | 422     | 8216   | 710326             | 33858  | 710326 | 154047 | 710329            | 190958 | 710330 | 70945  |
| 5)  | 5     | 5    | 420     | 6980   | 710330             | 72637  | 710330 | 192746 | 710402            | 224602 | 710403 | 104549 |
| 6)  | 6     | 6    | 402     | 6559   | 710403             | 120810 | 710403 | 231527 | 710407            | 24447  | 710407 | 144151 |
| 7)  | 7     | 7    | 418     | 8101   | 710407             | 150704 | 710408 | 30935  | 710411            | 62548  | 710411 | 182545 |
| 8)  | 8     | 8    | 392     | 7608   | 710411             | 190741 | 710412 | 71031  | 710415            | 104104 | 710415 | 222551 |
| 9)  | 9     | 9    | 405     | 7818   | 710415             | 222135 | 710416 | 101149 | 710419            | 132641 | 710420 | 12628  |
| 10) | 10    | 10   | 416     | 8158   | 710420             | 20631  | 710420 | 140638 | 710423            | 171116 | 710424 | 51103  |
| 11) | 11    | 11   | 420     | 8336   | 710424             | 60647  | 710424 | 180735 | 710427            | 205308 | 710428 | 85255  |
| 12) | 12    | 12   | 421     | 8332   | 710428             | 91251  | 710428 | 211603 | 710502            | 1310   | 710502 | 120244 |
| 13) | 13    | 13   | 421     | 8292   | 710502             | 125240 | 710503 | 5247   | 710506            | 32259  | 710506 | 152246 |
| 14) | 14    | 14   | 413     | 8172   | 710506             | 161243 | 710507 | 41513  | 710510            | 73613  | 710510 | 193559 |
| 15) | 15    | 15   | 404     | 7994   | 710510             | 194745 | 710511 | 74854  | 710514            | 104257 | 710514 | 224254 |
| 16) | 16    | 16   | 417     | 8078   | 710514             | 231822 | 710515 | 111930 | 710518            | 132449 | 710519 | 12456  |
| 17) | 17    | 17   | 421     | 8289   | 710519             | 20925  | 710519 | 141135 | 710522            | 180458 | 710523 | 60445  |
| 18) | 18    | 18   | 417     | 8206   | 710523             | 62259  | 710523 | 182205 | 710526            | 213656 | 710527 | 93643  |
| 19) | 19    | 19   | 423     | 8389   | 710527             | 100248 | 710527 | 220235 | 710531            | 3449   | 710531 | 123446 |
| 20) | 20    | 20   | 422     | 8371   | 710531             | 131845 | 710601 | 12115  | 710604            | 43201  | 710604 | 163148 |
| 21) | 21    | 21   | 406     | 8082   | 710604             | 163016 | 710605 | 43104  | 710608            | 75042  | 710608 | 195038 |
| 22) | 22    | 22   | 420     | 8348   | 710608             | 195322 | 710609 | 75431  | 710612            | 111956 | 710612 | 231943 |
| 23) | 23    | 23   | 421     | 8336   | 710612             | 231527 | 710613 | 111514 | 710616            | 142945 | 710617 | 22942  |
| 24) | 24    | 24   | 422     | 8304   | 710617             | 24522  | 710617 | 144610 | 710620            | 181744 | 710621 | 61741  |
| 25) | 25    | 25   | 422     | 8377   | 710621             | 64052  | 710621 | 184018 | 710624            | 220239 | 710625 | 100246 |
| 26) | 26    | 26   | 416     | 8034   | 710625             | 100540 | 710625 | 220649 | 710629            | 5951   | 710629 | 125948 |
| 27) | 27    | 27   | 423     | 8378   | 710629             | 132441 | 710630 | 12509  | 710703            | 50838  | 710703 | 170845 |
| 28) | 28    | 28   | 423     | 8417   | 710703             | 170450 | 710704 | 50437  | 710707            | 80246  | 710707 | 200243 |
| 29) | 29    | 29   | 419     | 8314   | 710707             | 200810 | 710708 | 80817  | 710711            | 122004 | 710712 | 1951   |
| 30) | 30    | 30   | 422     | 8245   | 710712             | 1515   | 710712 | 121704 | 710715            | 151858 | 710716 | 31845  |
| 31) | 31    | 31   | 422     | 8383   | 710716             | 33821  | 710716 | 153849 | 710719            | 185340 | 710720 | 65337  |
| 32) | 32    | 32   | 419     | 8333   | 710720             | 70756  | 710720 | 191026 | 710723            | 214951 | 710724 | 94948  |
| 33) | 33    | 33   | 424     | 8418   | 710724             | 95536  | 710724 | 215826 | 710728            | 13811  | 710728 | 133758 |
| 34) | 34    | 34   | 408     | 8062   | 710728             | 133342 | 710729 | 13531  | 710801            | 54658  | 710801 | 174705 |
| 35) | 35    | 35   | 422     | 8304   | 710801             | 181107 | 710802 | 61135  | 710805            | 82850  | 710805 | 202847 |
| 36) | 36    | 36   | 423     | 8338   | 710805             | 202421 | 710806 | 82651  | 710809            | 111102 | 710809 | 231049 |
| 37) | 37    | 37   | 400     | 7775   | 710809             | 232640 | 710810 | 112951 | 710813            | 152557 | 710814 | 32544  |
| 38) | 38    | 38   | 422     | 8381   | 710814             | 34844  | 710814 | 155115 | 710817            | 191944 | 710818 | 71931  |
| 39) | 39    | 39   | 422     | 8361   | 710818             | 71738  | 710818 | 191746 | 710821            | 223744 | 710822 | 103751 |
| 40) | 40    | 40   | 420     | 8110   | 710822             | 112352 | 710822 | 232349 | 710826            | 25847  | 710826 | 145854 |
| 41) | 41    | 41   | 422     | 8369   | 710826             | 145945 | 710827 | 25932  | 710830            | 55741  | 710830 | 175738 |
| 42) | 42    | 42   | 416     | 8120   | 710830             | 175920 | 710831 | 60029  | 710903            | 100405 | 710903 | 220412 |
| 43) | 43    | 43   | 423     | 8372   | 710903             | 220544 | 710904 | 100652 | 710907            | 131900 | 710908 | 11847  |
| 44) | 44    | 44   | 422     | 8406   | 710908             | 14106  | 710908 | 134053 | 710911            | 165950 | 710912 | 45936  |
| 45) | 45    | 45   | 422     | 8374   | 710912             | 50048  | 710912 | 170318 | 710915            | 195742 | 710916 | 75739  |
| 46) | 46    | 46   | 422     | 8382   | 710916             | 83854  | 710916 | 204043 | 710919            | 235149 | 710920 | 115146 |
| 47) | 47    | 47   | 419     | 8052   | 710920             | 114741 | 710920 | 234849 | 710924            | 25144  | 710924 | 145141 |
| 48) | 48    | 48   | 416     | 8178   | 710924             | 145638 | 710925 | 25837  | 710928            | 64653  | 710928 | 184649 |
| 49) | 49    | 49   | 423     | 8409   | 710928             | 184203 | 710929 | 64210  | 711002            | 91344  | 711002 | 211351 |
| 50) | 50    | 50   | 423     | 8412   | 711002             | 213651 | 711003 | 93922  | 711006            | 141257 | 711007 | 21254  |

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## IMP-I TAPE REPORT FOR TAPE ID5764

| #   | ORBIT | FILE | RECORDS | POINTS | FIRST TWELVE HOURS      |        |                |        | LAST TWELVE HOURS       |        |                |        |
|-----|-------|------|---------|--------|-------------------------|--------|----------------|--------|-------------------------|--------|----------------|--------|
|     |       |      |         |        | APPROX. START<br>YYMMDD | HHMMSS | STOP<br>YYMMDD | HHMMSS | APPROX. START<br>YYMMDD | HHMMSS | STOP<br>YYMMDD | HHMMSS |
| 1)  | 51    | 1    | 422     | 8384   | 711007                  | 21335  | 711007         | 141301 | 711010                  | 171353 | 711011         | 51340  |
| 2)  | 52    | 2    | 402     | 7973   | 711011                  | 51350  | 711011         | 171439 | 711014                  | 222706 | 711015         | 91843  |
| 3)  | 55    | 3    | 423     | 8366   | 711023                  | 1648C1 | 711024         | 44951  | 711027                  | 74049  | 711027         | 194036 |
| 4)  | 56    | 4    | 423     | 8415   | 711027                  | 200256 | 711028         | 80526  | 711031                  | 115442 | 711031         | 235348 |
| 5)  | 57    | 5    | 423     | 8393   | 711031                  | 2358C3 | 711101         | 120034 | 711104                  | 151443 | 711105         | 31430  |
| 6)  | 58    | 6    | 421     | 8208   | 711105                  | 31055  | 711105         | 151143 | 711108                  | 191944 | 711109         | 71941  |
| 7)  | 59    | 7    | 421     | 8336   | 711109                  | 82458  | 711109         | 202556 | 711113                  | 2100   | 711113         | 122046 |
| 8)  | 60    | 8    | 419     | 8229   | 711113                  | 121610 | 711114         | 1658   | 711117                  | 25804  | 711117         | 145750 |
| 9)  | 61    | 9    | 424     | 8411   | 711117                  | 145254 | 711118         | 25544  | 711121                  | 53751  | 711121         | 173748 |
| 10) | 62    | 10   | 415     | 8057   | 711121                  | 175815 | 711122         | 55802  | 711125                  | 93806  | 711125         | 213753 |
| 11) | 63    | 11   | 420     | 8176   | 711125                  | 214533 | 711126         | 94641  | 711129                  | 133942 | 711130         | 13929  |
| 12) | 64    | 12   | 419     | 8116   | 711130                  | 13554  | 711130         | 133754 | 711203                  | 172254 | 711204         | 52251  |
| 13) | 65    | 13   | 390     | 7072   | 711204                  | 51846  | 711204         | 171031 | 711207                  | 220059 | 711208         | 100056 |
| 14) | 66    | 14   | 419     | 8128   | 711208                  | 55022  | 711208         | 215049 | 711211                  | 234148 | 711212         | 114145 |
| 15) | 67    | 15   | 390     | 7736   | 711212                  | 113638 | 711212         | 233908 | 711216                  | 41345  | 711216         | 161341 |
| 16) | 68    | 16   | 422     | 8359   | 711216                  | 160916 | 711217         | 40923  | 711220                  | 64258  | 711220         | 184245 |
| 17) | 69    | 17   | 387     | 7120   | 711220                  | 150322 | 711221         | 70248  | 711224                  | 105245 | 711224         | 224147 |
| 18) | 70    | 18   | 415     | 8040   | 711224                  | 237322 | 711225         | 104033 | 711228                  | 142543 | 711229         | 22540  |
| 19) | 71    | 19   | 401     | 7388   | 711229                  | 30858  | 711229         | 150834 | 720101                  | 184017 | 720102         | 62453  |
| 20) | 72    | 20   | 418     | 8036   | 720102                  | 64024  | 720102         | 183210 | 720105                  | 211052 | 720106         | 91038  |
| 21) | 73    | 21   | 422     | 9323   | 720106                  | 50542  | 720106         | 210630 | 720109                  | 210459 | 720110         | 90446  |
| 22) | 74    | 22   | 422     | 8337   | 720110                  | 90132  | 720110         | 210139 | 720114                  | 35642  | 720114         | 155638 |
| 23) | 75    | 23   | 422     | 8360   | 720114                  | 161848 | 720115         | 42037  | 720118                  | 80548  | 720118         | 200545 |
| 24) | 76    | 24   | 422     | 8340   | 720118                  | 200115 | 720119         | 80146  | 720122                  | 112245 | 720122         | 232242 |
| 25) | 77    | 25   | 404     | 7722   | 720122                  | 231857 | 720123         | 111823 | 720126                  | 154448 | 720127         | 34445  |
| 26) | 78    | 26   | 415     | 7913   | 720127                  | 34040  | 720127         | 154026 | 720130                  | 180348 | 720131         | 60345  |
| 27) | 79    | 27   | 402     | 7978   | 720131                  | 55940  | 720131         | 165116 | 720203                  | 231538 | 720204         | 111545 |
| 28) | 80    | 28   | 422     | 8407   | 720204                  | 110947 | 720204         | 230934 | 720203                  | 4654   | 720208         | 124641 |
| 29) | 81    | 29   | 403     | 7925   | 720208                  | 130840 | 720209         | 10847  | 720212                  | 44952  | 720212         | 164939 |
| 30) | 82    | 30   | 423     | 8373   | 720212                  | 164442 | 720213         | 44713  | 720216                  | 71643  | 720216         | 191640 |
| 31) | 83    | 31   | 407     | 7823   | 720216                  | 191255 | 720217         | 71423  | 720220                  | 120602 | 720221         | 549    |
| 32) | 84    | 32   | 422     | 8206   | 720220                  | 235647 | 720221         | 115857 | 720224                  | 142057 | 720225         | 22044  |
| 33) | 85    | 33   | 422     | 8321   | 720225                  | 25358  | 720225         | 145425 | 720228                  | 205942 | 720229         | 85939  |
| 34) | 86    | 34   | 421     | 8303   | 720229                  | 85513  | 720229         | 205642 | 720303                  | 223748 | 720304         | 103734 |
| 35) | 87    | 35   | 424     | 8438   | 720304                  | 105021 | 720304         | 225252 | 720308                  | 21958  | 720308         | 141945 |
| 36) | 88    | 36   | 423     | 8356   | 720308                  | 141550 | 720309         | 21719  | 720312                  | 55155  | 720312         | 175142 |
| 37) | 89    | 37   | 393     | 7605   | 720312                  | 174747 | 720313         | 54652  | 720316                  | 104156 | 720316         | 224153 |
| 38) | 90    | 38   | 421     | 8171   | 720316                  | 223747 | 720317         | 103916 | 720320                  | 125306 | 720321         | 5252   |
| 39) | 91    | 39   | 407     | 8084   | 720321                  | 22211  | 720321         | 133323 | 720324                  | 161510 | 720325         | 41202  |
| 40) | 92    | 40   | 345     | 6496   | 720325                  | 54314  | 720325         | 172405 | 720328                  | 214017 | 720329         | 93943  |
| 41) | 93    | 41   | 394     | 7449   | 720329                  | 93507  | 720329         | 213738 | 720402                  | 5938   | 720402         | 113857 |
| 42) | 94    | 42   | 416     | 8259   | 720402                  | 132508 | 720403         | 10103  | 720406                  | 30946  | 720406         | 150953 |
| 43) | 95    | 43   | 393     | 7826   | 720406                  | 165716 | 720407         | 43544  | 720410                  | 80028  | 720410         | 184049 |
| 44) | 96    | 44   | 417     | 8180   | 720410                  | 201707 | 720411         | 80235  | 720414                  | 111502 | 720414         | 231449 |
| 45) | 97    | 45   | 415     | 8000   | 720415                  | 4914   | 720415         | 123715 | 720418                  | 143545 | 720419         | 23541  |
| 46) | 98    | 46   | 394     | 7815   | 720419                  | 41615  | 720419         | 155514 | 720422                  | 212910 | 720423         | 92856  |
| 47) | 99    | 47   | 403     | 8020   | 720423                  | 52315  | 720423         | 212326 | 720426                  | 214953 | 720427         | 94940  |
| 48) | 100   | 48   | 417     | 8285   | 720427                  | 112608 | 720427         | 231814 | 720501                  | 14441  | 720501         | 134053 |

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## IMP-I TAPE REPORT FOR TAPE T05781

| #   | CRBIT | FILE | RECORDS | PCINTS | FIRST TWELVE HOURS |        |        |        | LAST TWELVE HOURS |        |        |        |
|-----|-------|------|---------|--------|--------------------|--------|--------|--------|-------------------|--------|--------|--------|
|     |       |      |         |        | APPROX. START      | STOP   | YMMDD  | HMMSS  | APPROX. START     | STOP   | YMMDD  | HMMSS  |
| 1)  | 101   | 1    | 415     | 8247   | 720501             | 145106 | 720502 | 22336  | 720505            | 61638  | 720505 | 181635 |
| 2)  | 102   | 2    | 419     | 8325   | 720505             | 184837 | 720506 | 63932  | 720509            | 92950  | 720509 | 212947 |
| 3)  | 103   | 3    | 423     | 8322   | 720509             | 212542 | 720510 | 92812  | 720513            | 125955 | 720514 | 5952   |
| 4)  | 104   | 4    | 422     | 8414   | 720514             | 5111   | 720514 | 125037 | 720517            | 170548 | 720518 | 50545  |
| 5)  | 105   | 5    | 422     | 8286   | 720518             | 50129  | 720518 | 170308 | 720521            | 201658 | 720522 | 81645  |
| 6)  | 106   | 6    | 419     | 8310   | 720522             | 83337  | 720522 | 203303 | 720526            | 4450   | 720526 | 124447 |
| 7)  | 107   | 7    | 405     | 7972   | 720526             | 124041 | 720527 | 4352   | 720530            | 34952  | 720530 | 154938 |
| 8)  | 108   | 8    | 413     | 8133   | 720530             | 154604 | 720531 | 34611  | 720533            | 74946  | 720533 | 194943 |
| 9)  | 109   | 9    | 419     | 8156   | 720603             | 194213 | 720604 | 74200  | 720607            | 120502 | 720608 | 448    |
| 10) | 110   | 10   | 421     | 8335   | 720608             | 155    | 720608 | 120425 | 720611            | 132950 | 720612 | 12937  |
| 11) | 111   | 11   | 423     | 8369   | 720612             | 12501  | 720612 | 126330 | 720615            | 173939 | 720616 | 53936  |
| 12) | 112   | 12   | 422     | 8378   | 720616             | 55922  | 720616 | 175848 | 720619            | 220508 | 720620 | 100454 |
| 13) | 113   | 13   | 424     | 8398   | 720620             | 95958  | 720620 | 220228 | 720624            | 3402   | 720624 | 123348 |
| 14) | 114   | 14   | 418     | 8054   | 720624             | 123642 | 720625 | 3913   | 720628            | 50539  | 720628 | 170526 |
| 15) | 115   | 15   | 422     | 8294   | 720628             | 170045 | 720629 | 50559  | 720702            | 71506  | 720702 | 191453 |
| 16) | 116   | 16   | 394     | 7782   | 720702             | 151037 | 720703 | 71125  | 720706            | 124359 | 720707 | 4356   |
| 17) | 117   | 17   | 409     | 7643   | 720707             | 3951   | 720707 | 124039 | 720710            | 142855 | 720711 | 22852  |
| 18) | 118   | 18   | 419     | 8081   | 720711             | 23825  | 720711 | 144014 | 720714            | 185748 | 720715 | 65735  |
| 19) | 119   | 19   | 421     | 8348   | 720715             | 65502  | 720715 | 185306 | 720718            | 221507 | 720719 | 101504 |
| 20) | 120   | 20   | 423     | 8429   | 720719             | 101332 | 720719 | 221633 | 720723            | 21745  | 720723 | 141732 |
| 21) | 121   | 21   | 379     | 7013   | 720723             | 142512 | 720724 | 22919  | 720727            | 52450  | 720727 | 172447 |
| 22) | 122   | 22   | 421     | 8321   | 720727             | 121555 | 720728 | 51825  | 720731            | 91005  | 720731 | 210952 |
| 23) | 123   | 23   | 415     | 8033   | 720731             | 210557 | 720801 | 90726  | 720804            | 133150 | 720805 | 13146  |
| 24) | 124   | 24   | 421     | 7964   | 720805             | 12051  | 720805 | 132038 | 720808            | 154745 | 720809 | 34753  |
| 25) | 125   | 25   | 399     | 7334   | 720809             | 35655  | 720809 | 155540 | 720812            | 200503 | 720813 | 80450  |
| 26) | 126   | 26   | 421     | 8258   | 720813             | 80034  | 720813 | 200021 | 720816            | 230255 | 720817 | 110242 |
| 27) | 127   | 27   | 416     | 7951   | 720817             | 120738 | 720818 | 826    | 720821            | 31142  | 720821 | 151149 |
| 28) | 128   | 28   | 423     | 8273   | 720821             | 150247 | 720822 | 30517  | 720825            | 70954  | 720825 | 190930 |
| 29) | 129   | 29   | 374     | 6952   | 720825             | 190525 | 720826 | 70431  | 720829            | 105955 | 720829 | 225942 |
| 30) | 130   | 30   | 407     | 7678   | 720829             | 225040 | 720830 | 105148 | 720902            | 133052 | 720903 | 13048  |
| 31) | 131   | 31   | 422     | 8327   | 720903             | 14507  | 720903 | 134738 | 720906            | 174201 | 720907 | 54147  |
| 32) | 132   | 32   | 394     | 7703   | 720907             | 53722  | 720907 | 173739 | 720910            | 222128 | 720911 | 84750  |
| 33) | 133   | 33   | 409     | 7715   | 720911             | 84355  | 720911 | 204342 | 720915            | 4940   | 720915 | 124947 |
| 34) | 134   | 34   | 419     | 7990   | 720915             | 124045 | 720916 | 4133   | 720919            | 35056  | 720919 | 155043 |
| 35) | 135   | 35   | 422     | 8318   | 720919             | 154546 | 720920 | 34655  | 720923            | 90003  | 720923 | 205949 |
| 36) | 136   | 36   | 421     | 8191   | 720923             | 205635 | 720924 | 85845  | 720927            | 112146 | 720927 | 232133 |
| 37) | 137   | 37   | 422     | 8233   | 720927             | 234048 | 720928 | 114319 | 720933            | 152505 | 720934 | 32441  |
| 38) | 138   | 38   | 416     | 7981   | 720934             | 32255  | 721002 | 152448 | 721005            | 191344 | 721006 | 71331  |
| 39) | 141   | 39   | 416     | 8247   | 721014             | 141720 | 721015 | 21920  | 721018            | 54951  | 721018 | 174948 |
| 40) | 142   | 40   | 397     | 7788   | 721018             | 174644 | 721019 | 54914  | 721022            | 101844 | 721022 | 221841 |
| 41) | 143   | 41   | 416     | 7893   | 721022             | 223016 | 721023 | 102942 | 721026            | 140054 | 721027 | 20051  |
| 42) | 144   | 42   | 419     | 7955   | 721027             | 15646  | 721027 | 135635 | 721030            | 172238 | 721031 | 52245  |
| 43) | 145   | 43   | 421     | 8283   | 721031             | 55721  | 721031 | 175728 | 721103            | 203955 | 721104 | 83942  |
| 44) | 146   | 44   | 422     | 8333   | 721104             | 83019  | 721104 | 203107 | 721108            | 1456   | 721108 | 121453 |
| 45) | 147   | 45   | 424     | 8413   | 721108             | 121048 | 721109 | 1318   | 721112            | 40457  | 721112 | 160444 |
| 46) | 148   | 46   | 420     | 8357   | 721112             | 160048 | 721113 | 40319  | 721116            | 62357  | 721116 | 182343 |
| 47) | 149   | 47   | 417     | 8003   | 721116             | 184441 | 721117 | 64509  | 721120            | 111945 | 721120 | 231942 |
| 48) | 150   | 48   | 422     | 8352   | 721120             | 231516 | 721121 | 111543 | 721124            | 150844 | 721125 | 30841  |

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EPHEMERIS DATA=

|           |              |          |              |               |               |           |           |          |              |
|-----------|--------------|----------|--------------|---------------|---------------|-----------|-----------|----------|--------------|
| 288.000   | 0.487872E 08 | 88.6473  | 37.0946      | 160.262       | 26.0739       | 12.4286   | 63957.5   | 18795.6  | 35664.7      |
| 49651.9   | 18795.6      | 44691.5  | 41712.7      | -147509.      | -375427.      | -16914.7  | -147509.  | -371478. | 56880.0      |
| 36298.0   | -35846.8     | 38574.9  | 0.172184E 07 | -0.677249E 07 | -0.489144E 08 | -43.4342  | -80.4888  | 448424.  | 166304.      |
| 1.00000   | 0.0          | 0.0      | 0.0          | 0.980666      | 0.195691      | 0.0       | -0.195691 | 0.980666 | 0.348472E-01 |
| -0.916899 | -0.397595    | 0.999393 | 0.319708E-01 | 0.138635E-01  | 0.0           | -0.397837 | 0.917456  | 315.358  | 37.0946      |
| 350.471   | 26.7960      | 2.96752  | 12.5761      | 39.2264       | 2.50349       | 120.031   | 131.182   | 7.40482  | 57.5536      |
| 57.5536   | -81.8697     | -26.8443 | -28.0287     | -5.69960      | 1.00000       | 711015.   | 88.6473   | 37.1131  | 57587.1      |
| 53.0000   | 71.0000      |          |              |               |               |           |           |          |              |

\*\*\*\*\* BAND-PASS FILTERS \*\*\*\*\*

| PEAK | DET  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | AC   | Z     | X/Y  | COMM | SUB  | POS  | SUB      | DESCRPTOR | SPEC | MSEC |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|----------|-----------|------|------|
| 4.17 | 0.15 | 0.18 | 0.31 | 0.54 | 1.0  | 1.8  | 3.1  | 5.4  | 10   | 18   | 31   | 54   | 100  | 2.52 | 1.90  | 1.10 | 8    | ANT  | XY/Z | 1        | 48788454  |      |      |
| 4.17 | 0.05 | 1.72 | 2.87 | 2.90 | 2.37 | 2.87 | 2.32 | 2.55 | 1.80 | 1.52 | 0.97 | 0.85 | 2.52 | 1.90 | 1.10  | 8    | ANT  | XY/Z | 1    | 48788454 |           |      |      |
| 1.32 | 0.05 | 1.85 | 2.82 | 3.55 | 2.95 | 2.82 | 2.55 | 3.20 | 3.27 | 3.60 | 3.55 | 3.17 | 2.57 | 1.87 | -0.08 | 6    | AC   | GAIN | 1    | 48793567 |           |      |      |
| 4.17 | 0.07 | 1.92 | 2.37 | 2.85 | 2.42 | 2.20 | 1.75 | 1.60 | 1.15 | 0.87 | 0.55 | 0.30 | 2.17 | 3.07 | 2.62  | 5    | +20V | MON  | 0    | 48803794 |           |      |      |

APP40 (TEMP.) ALP RA DEC SUN TIME SPIN EARTH INT EARTH WIDTH  
 6.08 87.750 96.300 -67.400 19.778 12.601 40.989 48.959

VXBM MSEC EX PHIX SDX EY PH1Y SDY APP35 CH12 AVG BIT RATE  
 1.0931E-04 6.9150E-05 -5.2766E-05 -6.6202E-05 8.6982E-05 3.2265E-02 19.69

| YYMMDD | MSEC     | EX      | PHIX    | SDX    | EY     | PH1Y    | SDY    | APP35  | CH12   | AVG | BIT | RATE |
|--------|----------|---------|---------|--------|--------|---------|--------|--------|--------|-----|-----|------|
| 711015 | 48791650 | 19.5143 | 23.9698 | 2.3691 | 7.2311 | 28.7693 | 1.1051 | 3.2250 | 0.3250 | 1   |     |      |
| 711015 | 48801876 | 17.6351 | 25.2630 | 4.0935 | 8.3383 | 23.0500 | 1.5124 | 3.2250 | 0.3250 | 1   |     |      |
| 711015 | 48812103 | 17.5955 | 25.7406 | 3.9741 | 9.4323 | 22.7751 | 1.6984 | 3.4750 | 0.3000 | 1   |     |      |
| 711015 | 48822329 | 22.8734 | 23.3670 | 1.9271 | 8.2235 | 26.1841 | 1.5180 | 3.4750 | 0.3000 | 1   |     |      |
| 711015 | 48832556 | 18.9478 | 22.7761 | 2.9866 | 8.4999 | 23.9045 | 1.4409 | 3.6250 | 0.2500 | 1   |     |      |
| 711015 | 48842783 | 16.4562 | 26.2135 | 3.9903 | 6.5024 | 31.7253 | 1.0774 | 3.6250 | 0.2500 | 1   |     |      |
| 711015 | 48853009 | 9.3669  | 21.4985 | 3.2850 | 5.8655 | 34.6228 | 1.0414 | 3.6250 | 0.3000 | 1   |     |      |
| 711015 | 48873462 | 21.6864 | 22.6519 | 2.2446 | 7.7729 | 28.8816 | 1.5248 | 3.1750 | 0.3250 | 1   |     |      |
| 711015 | 48883689 | 18.5408 | 8.8527  | 2.7650 | 7.8377 | 23.8687 | 1.2056 | 3.1750 | 0.3250 | 1   |     |      |
| 711015 | 48893915 | 17.9052 | 21.8860 | 2.8136 | 7.3558 | 8.8892  | 0.9268 | 3.5500 | 0.2750 | 1   |     |      |
| 711015 | 48914368 | 11.8831 | 50.4350 | 2.7207 | 8.9718 | 28.1973 | 1.1045 | 3.6250 | 0.2750 | 1   |     |      |
| 711015 | 48924595 | 16.8314 | 27.1196 | 2.1168 | 5.8656 | 24.1101 | 1.5444 | 3.6250 | 0.2750 | 1   |     |      |
| 711015 | 48934821 | 16.8655 | 5.3930  | 2.9798 | 6.8053 | 28.6680 | 1.3948 | 3.6250 | 0.3500 | 1   |     |      |
| 711015 | 48945048 | 14.9861 | 26.9422 | 3.0695 | 6.0153 | 25.9666 | 1.2193 | 3.6250 | 0.3500 | 1   |     |      |
| 711015 | 48955274 | 15.7874 | 28.5965 | 2.2043 | 5.1867 | 35.2603 | 0.9752 | *****  | 0.3000 | 1   |     |      |
| 711015 | 48965501 | 14.2474 | 23.3959 | 2.9323 | 5.9820 | 25.9983 | 1.1954 | *****  | 0.3000 | 1   |     |      |
| 711015 | 48975727 | 13.8814 | 32.4272 | 3.5062 | 6.9569 | 24.4373 | 1.4408 | 3.4500 | 0.2750 | 1   |     |      |
| 711015 | 48985954 | 20.9436 | 23.1929 | 2.5255 | 6.2474 | 29.1907 | 1.4345 | 3.4500 | 0.2750 | 1   |     |      |

[illegible]

## EPHEMERIS DATA=

\*\*\*\*\*

APP40 (TEMP.) A

VXBM  
1.0791E-04 6

11/16/73

| #   | ORBIT | FILE | RECORDS | POINTS | FIRST TWELVE HOURS |        |        |        | LAST TWELVE HOURS |        |        |        |
|-----|-------|------|---------|--------|--------------------|--------|--------|--------|-------------------|--------|--------|--------|
|     |       |      |         |        | APPROX. START      | STOP   | YMMDD  | HMMSS  | APPROX. START     | STOP   | YMMDD  | HMMSS  |
| 11  | 1     | 1    | 240     | 3919   | 710314             | 12055  | 710314 | 50838  | 710317            | 84010  | 710317 | 191149 |
| 21  | 2     | 2    | 347     | 6553   | 710317             | 223044 | 710318 | 90528  | 710321            | 115607 | 710321 | 212352 |
| 31  | 3     | 3    | 353     | 6694   | 710322             | 32455  | 710322 | 121254 | 710325            | 152138 | 710326 | 32135  |
| 41  | 4     | 4    | 422     | 8216   | 710326             | 33858  | 710326 | 154047 | 710329            | 190959 | 710330 | 70945  |
| 51  | 5     | 5    | 420     | 6980   | 710330             | 72637  | 710330 | 192746 | 710402            | 224602 | 710403 | 104549 |
| 61  | 6     | 6    | 402     | 6559   | 710403             | 120810 | 710403 | 231527 | 710407            | 24447  | 710407 | 144151 |
| 71  | 7     | 7    | 418     | 8101   | 710407             | 150704 | 710408 | 30935  | 710411            | 62548  | 710411 | 182545 |
| 81  | 8     | 8    | 392     | 7608   | 710411             | 190741 | 710412 | 71031  | 710415            | 104104 | 710415 | 222551 |
| 91  | 9     | 9    | 405     | 7818   | 710415             | 222135 | 710416 | 101149 | 710419            | 132641 | 710420 | 12628  |
| 101 | 10    | 10   | 416     | 8153   | 710420             | 20631  | 710420 | 140638 | 710423            | 171116 | 710424 | 51103  |
| 111 | 11    | 11   | 420     | 8336   | 710424             | 60647  | 710424 | 180735 | 710427            | 205308 | 710428 | 85255  |
| 121 | 12    | 12   | 421     | 8332   | 710428             | 91251  | 710428 | 211603 | 710502            | 1310   | 710502 | 120244 |
| 131 | 13    | 13   | 421     | 8292   | 710502             | 125240 | 710507 | 5247   | 710506            | 32259  | 710506 | 152246 |
| 141 | 14    | 14   | 413     | 8172   | 710506             | 161243 | 710510 | 41513  | 710510            | 73613  | 710510 | 193559 |
| 151 | 15    | 15   | 404     | 7994   | 710510             | 194745 | 710511 | 74854  | 710514            | 104257 | 710514 | 224254 |
| 161 | 16    | 16   | 417     | 8073   | 710514             | 231822 | 710515 | 111930 | 710518            | 132449 | 710519 | 12456  |
| 171 | 17    | 17   | 421     | 8299   | 710519             | 20925  | 710519 | 141135 | 710522            | 180458 | 710523 | 60445  |
| 181 | 18    | 18   | 417     | 8206   | 710523             | 62259  | 710523 | 182205 | 710526            | 213656 | 710527 | 93643  |
| 191 | 19    | 19   | 423     | 8389   | 710527             | 100248 | 710527 | 220235 | 710531            | 3449   | 710531 | 123446 |
| 201 | 20    | 20   | 422     | 8371   | 710531             | 131845 | 710601 | 12115  | 710604            | 43201  | 710604 | 163148 |
| 211 | 21    | 21   | 406     | 8082   | 710604             | 163016 | 710605 | 43104  | 710608            | 75042  | 710608 | 195038 |
| 221 | 22    | 22   | 420     | 8348   | 710608             | 195322 | 710609 | 75431  | 710612            | 111956 | 710612 | 231943 |
| 231 | 23    | 23   | 421     | 8336   | 710612             | 231527 | 710613 | 111514 | 710616            | 142945 | 710617 | 22942  |
| 241 | 24    | 24   | 422     | 8304   | 710617             | 24522  | 710621 | 144610 | 710620            | 161744 | 710621 | 61741  |
| 251 | 25    | 25   | 422     | 8377   | 710621             | 64052  | 710625 | 184018 | 710625            | 220239 | 710625 | 100246 |
| 261 | 26    | 26   | 416     | 8034   | 710625             | 100540 | 710629 | 5951   | 710629            | 5951   | 710629 | 125948 |
| 271 | 27    | 27   | 423     | 8378   | 710629             | 132441 | 710630 | 12509  | 710703            | 50838  | 710703 | 170845 |
| 281 | 28    | 28   | 423     | 8417   | 710703             | 170450 | 710704 | 50437  | 710707            | 80246  | 710707 | 209243 |
| 291 | 29    | 29   | 419     | 8314   | 710707             | 200810 | 710708 | 80817  | 710711            | 122004 | 710712 | 1951   |
| 301 | 30    | 30   | 422     | 8245   | 710712             | 1515   | 710712 | 121704 | 710715            | 151958 | 710716 | 31445  |
| 311 | 31    | 31   | 422     | 8383   | 710716             | 33821  | 710716 | 153849 | 710719            | 185340 | 710720 | 65337  |
| 321 | 32    | 32   | 419     | 8333   | 710720             | 70756  | 710720 | 191026 | 710723            | 214951 | 710724 | 94948  |
| 331 | 33    | 33   | 424     | 8418   | 710724             | 95536  | 710724 | 215826 | 710728            | 13811  | 710728 | 133758 |
| 341 | 34    | 34   | 408     | 8062   | 710728             | 133342 | 710729 | 13531  | 710801            | 54558  | 710801 | 174705 |
| 351 | 35    | 35   | 422     | 8304   | 710801             | 181107 | 710802 | 61135  | 710805            | 82850  | 710805 | 202847 |
| 361 | 36    | 36   | 423     | 8338   | 710805             | 202421 | 710806 | 82651  | 710809            | 111102 | 710809 | 231049 |
| 371 | 37    | 37   | 400     | 7775   | 710809             | 232640 | 710810 | 112951 | 710813            | 152557 | 710814 | 32544  |
| 381 | 38    | 38   | 422     | 8381   | 710814             | 34844  | 710814 | 155115 | 710817            | 191944 | 710818 | 71931  |
| 391 | 39    | 39   | 422     | 8361   | 710818             | 71738  | 710818 | 191746 | 710821            | 223744 | 710822 | 103751 |
| 401 | 40    | 40   | 420     | 8110   | 710822             | 112362 | 710822 | 232349 | 710826            | 25647  | 710826 | 145854 |
| 411 | 41    | 41   | 422     | 8369   | 710826             | 145945 | 710827 | 25932  | 710830            | 55741  | 710830 | 175738 |
| 421 | 42    | 42   | 416     | 8120   | 710830             | 175920 | 710831 | 60929  | 710903            | 104405 | 710903 | 220412 |
| 431 | 43    | 43   | 423     | 8372   | 710903             | 220544 | 710904 | 100652 | 710907            | 131900 | 710908 | 11847  |
| 441 | 44    | 44   | 422     | 8406   | 710908             | 14106  | 710908 | 134053 | 710911            | 165950 | 710912 | 45936  |
| 451 | 45    | 45   | 422     | 8374   | 710912             | 50048  | 710912 | 170318 | 710915            | 195742 | 710916 | 75739  |
| 461 | 46    | 46   | 422     | 8382   | 710916             | 83854  | 710916 | 204043 | 710919            | 235149 | 710920 | 115146 |
| 471 | 47    | 47   | 419     | 8052   | 710920             | 114741 | 710920 | 234849 | 710924            | 25144  | 710924 | 145141 |
| 481 | 48    | 48   | 416     | 8178   | 710924             | 145638 | 710925 | 25837  | 710928            | 64653  | 710928 | 184649 |
| 491 | 49    | 49   | 423     | 8409   | 710928             | 184203 | 710929 | 64210  | 711002            | 91344  | 711002 | 211351 |
| 501 | 50    | 50   | 423     | 8412   | 711002             | 213651 | 711003 | 93922  | 711006            | 141257 | 711007 | 21254  |

ALL DONE.



IEF285I SYS73348.T092950.RV000.YZJRJWM2.R0000154 DELETED

IEF285I VOL SER NOS= Y1520

IEF285I SYS73348.T092950.SV000.YZJRJWM2.R0000155 SYSCUT

IEF285I VOL SER NOS= K35CR2

) IEF280E K 004.Y1520.YZJRJWM2.TEST1

IEF373I STEP /TEST1 / START 73348.1000

IEF374I STEP /TEST1 / STOP 73348.1009 CPU

- STEP 01 - RETURN CODE = 0000

OMIN 12.05SEC MAIN 92K LCS OK

STEP TIME = .43 MINS=(CPU= .20,IQ= .23)

.55,DRUM= 2.06,TAPE= 11.43,CELL= .00,OTHR= .08

IO IN SECS. DISK=

THIS STEP DOES NOT USE AT LEAST 50K BYTES OF CORE THAT IT REQUESTS -- PLEASE DECREASE THE REGION PARAMETER

IEF375I JOB /YZJRJWM2/ START 73348.1000

IEF376I JOB /YZJRJWM2/ STOP 73348.1009 CPU OMIN 12.05SEC

- SYSTEM=NVT-20 (07-11-72) K3

- JCE 002A-

TOTAL TIME =

.55,DRUM=

2.06,TAPE=

11.43,CELL=

.00,OTHR=

TIME=10.09,10.68 DATE=12-14-73

.43 MINS=(CPU=

.20,IQ=

.23)

.00,OTHR=

.08

IO IN SECS. DISK=

TAPE MOUNT CHARGE WAS 00.0 MINUTES.

THERE WERE 01 TAPES MOUNTED FOR THIS JOB.



D-13799

777

3/14/71 - 10/17/71

RECORD 1 OF FILE  
LENGTH = 31844 BYTES

31844 66W932 2000

233

PC

|           |          |          |          |          |          |          |           |          |          |
|-----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|
| 76640000  | 03A00000 | FFFFF    | 42000000 | 4640320C | 420F00E7 | 421C64E  | 429640E9  | 42122768 | 4210C190 |
| 45178F28  | 451308CF | C416CB2A | 440CF300 | 451308CF | C48A8F89 | 44ADCE24 | C55C0992  | C52977CB | C46F3701 |
| C56C0992  | C51A3811 | C6190ADB | 451284E0 | C48F9947 | 41B28F31 | 40CF7000 | C01D3438  | BECA2A98 | 427F89E4 |
| C1A2516F  | 4576AC60 | 456F1261 | 41100000 | 00000000 | 00000000 | 00000000 | 40D7904F  | C08A0237 | 00000000 |
| C18A0237  | 4007504F | 40F0D050 | C01D60AD | BFC80310 | 4020A050 | 40E90637 | 406508DA  | 00000000 | C065089D |
| ACEADE6A  | 4314E5EA | 421C464E | 43164A58 | 4218AAB9 | 41224EF1 | 4210D61A | 41A5207D  | 4119495C | 42241A55 |
| 428CF362  | 429A6662 | 42188428 | 42A26630 | C1A03A00 | 4146A913 | 41730F71 | 4173215C  | 41100000 | 45AD6A00 |
| 428F5DE7  | 421C4906 | 451600D2 | 41100000 | 42470000 | BF6A7EF9 | BF6A7EF9 | BF6A7EF9  | BF6A7EF9 | BF6A7EF9 |
| BF6A7EF9  | BF6A7EF9 | BF6A7EF9 | BF6A7EF9 | BF6A7EF9 | BF6A7EF9 | BF6A7EF9 | BF6A7EF9  | BF6A7EF9 | BF6A7EF9 |
| 00000000  | 00000000 | C105E340 | E7E861E9 | 40A04040 | 00000000 | 00A9A6D7 | 41246666  | 41133333 | 40CCCCCC |
| A1133333  | 40ECCCCC | 40CCCCC  | 00833332 | 40666666 | 40ACCC   | 40390999 | 40333333  | 402CCCCC | 40266666 |
| C0428F58  | 41179999 | BF6A7EF9 | 00000007 | E2D7C5C3 | 40C7C1C9 | D5A04040 | 00000001  | 004996BC | 4120CCCC |
| 41203333  | 41493333 | 40F33332 | 40033332 | 40733332 | 40690999 | 40ACCC   | 406CCCCC  | 403FFFFF | 40266666 |
| 4C133333  | 3FC0CCCC | 40ACCC   | 4118CCCC | BF6A7EF9 | 00000006 | C1C340C7 | C1C9D540  | 40404040 | 00000000 |
| 0C0A9E6A1 | 4120CCCC | 4112CCCC | 408CCCCC | 40533332 | 40866665 | 405FFFFF | 40ACCC    | 40ACCC   | 40733332 |
| 403FFFFF  | 40266666 | 3FC0CCCC | 3F666666 | 40CCCC   | 41219999 | 412ACCC  | 00000005  | 4EF2F0E5 | 40D4D6D5 |
| AC40A040  | 00000001 | 00A43686 | 412B8510 | 4259C000 | 42579999 | C23DACCC | AA252060  | AA287D20 | 4A19E060 |
| 429D8000  | 3D3C2136 | BD1D8C04 | BD1B56DF | BD2CAAB1 | 3D284144 | 42DEC713 | 41AA5EA4  | 00000005 | 00AD6AA  |
| 00AD6AA   | 00A8E85A | 41743138 | C2986434 | 413D5230 | 41376598 | 42B37CE3 | 411FFC3A  | 41286666 | 3F666666 |
| 3F666666  | 00000000 | 00AD6AA  | 00A8E85A | 41743138 | C2986434 | 413D5230 | 41376598  | 41286666 | 3F666666 |
| 4128CCCC  | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| 40AFDFE6  | 4128CCCC | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C00718A2  | 421200C7 | 4210028A | 4517A0F3 | 4513260A | C4165603 | 4513260A | C48F84C4  | C48F84C4 | 40FC7E51 |
| C5C0460   | C523A46D | C46F4482 | C55C0460 | C51A53E6 | C51902FE | 4512D284 | C48F84C4  | C48F84C4 | 4A836A3B |
| C41D31AE  | BFC4E5D0 | C2805038 | C1A4E597 | 45742B12 | 45652A38 | 41100000 | 00000000  | 00000000 | 00000000 |
| 4007E0E4  | C0898401 | 00000000 | 00000000 | 4007E0E4 | 4007E0E4 | C01050BA | BFC8B8E9A | 40200219 | 40E90696 |
| 4C650C03  | 00000000 | C065D89D | 40EAD6E6 | 4114E7DC | 421C4307 | 4218A43A | 412226C7  | 4210E763 | 4170E3D2 |
| 41A26057  | 41192C71 | 422409CB | 428C8A81 | 4294D500 | 421B7E73 | 42A16061 | C12D9F44  | 416E088A | 4170E3D2 |
| 4127210E  | 42630000 | 45AD6AA0 | 428E7682 | 421C468C | 45161F9D | 41100000 | 40F99998  | 40F99998 | BF6A7EF9 |
| 3F666666  | 40599999 | 40BFFFFF | 40D99998 | 40BFFFFF | 40C66665 | 40799999 | 40466666  | 40266666 | 3FC0CCCC |
| 3F666666  | 40ACCC   | 41286666 | 412E6666 | 0000000C | 4EF1F5E5 | 40AD6D5  | 40A04040  | 00000001 | 00400598 |
| 40F99998  | BF6A7EF9 | 40333333 | 40533332 | 408CCCCC | 40999999 | 40ACCC   | 40BFFFFF  | 40733332 | 403FFFFF |
| 40266666  | 3FC0CCCC | 3E666666 | 4121FFFF | 4121FFFF | 412ACCC  | 00000008 | 40F1F5E5  | 40AD6D5  | 40A04040 |
| 60000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
| 40799999  | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C240C6C9  | D3E34040 | 00000001 | 004DA565 | 40ECCCCB | BF6A7EF9 | 3F666666 | 40199999  | 40733332 | 40933332 |
| 406CCCCC  | 40CCCC   | 40769999 | 403FFFFF | 401FFFFF | 401FFFFF | 401FFFFF | 401CCCCC  | 41266666 | 40133333 |
| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
| 40799999  | 403FFFFF | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C240C6C9  | D3E34040 | 00000001 | 004DA565 | 40ECCCCB | BF6A7EF9 | 3F666666 | 40199999  | 40733332 | 40933332 |
| 406CCCCC  | 40CCCC   | 40769999 | 403FFFFF | 401FFFFF | 401FFFFF | 401FFFFF | 401CCCCC  | 41266666 | 40133333 |
| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
| 40799999  | 403FFFFF | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C240C6C9  | D3E34040 | 00000001 | 004DA565 | 40ECCCCB | BF6A7EF9 | 3F666666 | 40199999  | 40733332 | 40933332 |
| 406CCCCC  | 40CCCC   | 40769999 | 403FFFFF | 401FFFFF | 401FFFFF | 401FFFFF | 401CCCCC  | 41266666 | 40133333 |
| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
| 40799999  | 403FFFFF | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C240C6C9  | D3E34040 | 00000001 | 004DA565 | 40ECCCCB | BF6A7EF9 | 3F666666 | 40199999  | 40733332 | 40933332 |
| 406CCCCC  | 40CCCC   | 40769999 | 403FFFFF | 401FFFFF | 401FFFFF | 401FFFFF | 401CCCCC  | 41266666 | 40133333 |
| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
| 40799999  | 403FFFFF | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
| C240C6C9  | D3E34040 | 00000001 | 004DA565 | 40ECCCCB | BF6A7EF9 | 3F666666 | 40199999  | 40733332 | 40933332 |
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| 40799999  | 403FFFFF | 40199999 | 3F666666 | 00000000 | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 |
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| 406CCCCC  | 40CCCC   | 40769999 | 403FFFFF | 401FFFFF | 401FFFFF | 401FFFFF | 401CCCCC  | 41266666 | 40133333 |
| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
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| 00000000  | 00AD5580 | 40E66665 | BF6A7EF9 | 41213333 | 41213333 | 40266666 | 408CCCCC  | 408CCCCC | 40D33332 |
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| 00000000  | 00AD5580 | 40E66665 |          |          |          |          |           |          |          |



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4/17/73

D-13800

IMP-I TAPE REPORT FOR TAPE Z-718

| #   | ORBIT | FILE | RECORDS | POINTS | FIRST TWELVE HOURS |        |               |        | LAST TWELVE HOURS |        |               |        |
|-----|-------|------|---------|--------|--------------------|--------|---------------|--------|-------------------|--------|---------------|--------|
|     |       |      |         |        | APPROX. START      | STOP   | APPROX. START | STOP   | APPROX. START     | STOP   | APPROX. START | STOP   |
|     |       |      |         |        | YMMDD              | HMMSS  | YMMDD         | HMMSS  | YMMDD             | HMMSS  | YMMDD         | HMMSS  |
| 1)  | 51    | 1    | 422     | 8384   | 711007             | 21335  | 711007        | 141301 | 711010            | 171353 | 711011        | 51340  |
| 2)  | 52    | 2    | 402     | 7973   | 711011             | 51350  | 711011        | 171459 | 711014            | 222705 | 711015        | 91843  |
| 3)  | 53    | 3    | 406     | 7662   | 711015             | 91448  | 711015        | 211637 | 711019            | 3250   | 711019        | 123236 |
| 4)  | 54    | 4    | 423     | 8406   | 711019             | 122932 | 711020        | 3213   | 711023            | 45231  | 711023        | 165248 |
| 5)  | 55    | 5    | 423     | 8366   | 711023             | 164801 | 711024        | 44951  | 711027            | 74049  | 711027        | 194036 |
| 6)  | 56    | 6    | 423     | 8415   | 711027             | 200256 | 711028        | 80526  | 711031            | 115442 | 711031        | 235348 |
| 7)  | 57    | 7    | 423     | 8393   | 711031             | 235803 | 711101        | 120034 | 711104            | 151443 | 711105        | 31430  |
| 8)  | 58    | 8    | 421     | 8208   | 711105             | 31055  | 711109        | 151143 | 711108            | 191944 | 711108        | 71941  |
| 9)  | 59    | 9    | 421     | 8336   | 711109             | 82458  | 711109        | 202556 | 711113            | 2100   | 711113        | 122046 |
| 10) | 60    | 10   | 419     | 8229   | 711113             | 121610 | 711114        | 1658   | 711117            | 25804  | 711117        | 145750 |
| 11) | 61    | 11   | 424     | 8411   | 711117             | 145254 | 711118        | 25544  | 711121            | 53751  | 711121        | 173748 |
| 12) | 62    | 12   | 415     | 8057   | 711121             | 175815 | 711122        | 55802  | 711125            | 93806  | 711125        | 213753 |
| 13) | 63    | 13   | 420     | 8176   | 711125             | 214533 | 711126        | 94641  | 711129            | 133942 | 711130        | 13929  |
| 14) | 64    | 14   | 419     | 8116   | 711130             | 13554  | 711130        | 133754 | 711203            | 172284 | 711204        | 82231  |
| 15) | 65    | 15   | 390     | 7072   | 711204             | 51846  | 711204        | 171031 | 711207            | 220059 | 711208        | 100056 |
| 16) | 66    | 16   | 419     | 8128   | 711208             | 95022  | 711208        | 215049 | 711211            | 234148 | 711212        | 114145 |
| 17) | 67    | 17   | 390     | 7736   | 711212             | 113638 | 711212        | 233908 | 711216            | 41345  | 711216        | 161341 |
| 18) | 68    | 18   | 422     | 8359   | 711216             | 160916 | 711217        | 40923  | 711220            | 64258  | 711220        | 184245 |
| 19) | 69    | 19   | 387     | 7120   | 711220             | 190322 | 711221        | 70248  | 711224            | 105245 | 711224        | 224147 |
| 20) | 70    | 20   | 415     | 8040   | 711224             | 223722 | 711225        | 104033 | 711228            | 182945 | 711229        | 28940  |
| 21) | 71    | 21   | 401     | 7388   | 711229             | 30858  | 711229        | 150834 | 720101            | 184017 | 720102        | 62453  |
| 22) | 72    | 22   | 418     | 8036   | 720102             | 64024  | 720102        | 185210 | 720105            | 211052 | 720106        | 91038  |
| 23) | 73    | 23   | 422     | 8323   | 720106             | 90542  | 720106        | 210630 | 720109            | 210459 | 720110        | 90446  |
| 24) | 74    | 24   | 422     | 8337   | 720110             | 90132  | 720110        | 210139 | 720114            | 35642  | 720114        | 158638 |
| 25) | 75    | 25   | 422     | 8360   | 720114             | 161848 | 720115        | 42037  | 720118            | 80548  | 720118        | 200545 |
| 26) | 76    | 26   | 422     | 8340   | 720118             | 290119 | 720119        | 60146  | 720122            | 112245 | 720122        | 232242 |
| 27) | 77    | 27   | 404     | 7722   | 720122             | 231857 | 720123        | 111823 | 720126            | 154448 | 720127        | 34445  |
| 28) | 78    | 28   | 415     | 7913   | 720127             | 34040  | 720127        | 134026 | 720130            | 180348 | 720131        | 60343  |
| 29) | 79    | 29   | 402     | 7978   | 720131             | 55940  | 720131        | 165116 | 720203            | 231538 | 720204        | 111845 |
| 30) | 80    | 30   | 422     | 8407   | 720204             | 110947 | 720204        | 230934 | 720208            | 4654   | 720208        | 124641 |
| 31) | 81    | 31   | 403     | 7929   | 720208             | 130940 | 720209        | 10847  | 720212            | 44952  | 720212        | 164939 |
| 32) | 82    | 32   | 423     | 8373   | 720212             | 164442 | 720213        | 44713  | 720216            | 71643  | 720216        | 191640 |
| 33) | 83    | 33   | 407     | 7823   | 720216             | 191255 | 720217        | 71423  | 720220            | 120602 | 720221        | 549    |
| 34) | 84    | 34   | 422     | 8206   | 720220             | 235647 | 720221        | 115857 | 720224            | 142057 | 720225        | 22044  |
| 35) | 85    | 35   | 422     | 8321   | 720225             | 25358  | 720225        | 145425 | 720228            | 205942 | 720229        | 85939  |
| 36) | 86    | 36   | 421     | 8303   | 720229             | 85513  | 720230        | 205642 | 720303            | 223748 | 720304        | 103734 |
| 37) | 87    | 37   | 424     | 8438   | 720304             | 105021 | 720304        | 225252 | 720308            | 21958  | 720308        | 141945 |
| 38) | 88    | 38   | 423     | 8356   | 720308             | 141550 | 720309        | 21719  | 720312            | 55155  | 720312        | 175142 |
| 39) | 89    | 39   | 393     | 7605   | 720312             | 174747 | 720313        | 54652  | 720316            | 104156 | 720316        | 224153 |
| 40) | 90    | 40   | 421     | 8171   | 720316             | 223747 | 720317        | 163916 | 720320            | 125306 | 720321        | 5252   |
| 41) | 91    | 41   | 407     | 8084   | 720321             | 22211  | 720321        | 133323 | 720324            | 161510 | 720325        | 41202  |
| 42) | 92    | 42   | 345     | 6496   | 720325             | 54314  | 720325        | 172405 | 720328            | 214017 | 720329        | 93943  |
| 43) | 93    | 43   | 394     | 7449   | 720329             | 93507  | 720329        | 213738 | 720402            | 5938   | 720402        | 113857 |
| 44) | 94    | 44   | 416     | 8259   | 720402             | 132568 | 720403        | 18103  | 720406            | 30946  | 720406        | 158953 |
| 45) | 95    | 45   | 393     | 7826   | 720406             | 165716 | 720407        | 43544  | 720410            | 80028  | 720410        | 184049 |
| 46) | 96    | 46   | 417     | 8180   | 720410             | 201707 | 720411        | 80235  | 720414            | 111502 | 720414        | 231449 |
| 47) | 97    | 47   | 415     | 8000   | 720415             | 4914   | 720415        | 123715 | 720418            | 143545 | 720419        | 23541  |
| 48) | 98    | 48   | 394     | 7815   | 720419             | 41615  | 720419        | 155514 | 720422            | 212910 | 720423        | 92856  |
| 49) | 99    | 49   | 403     | 8020   | 720423             | 92319  | 720423        | 212326 | 720426            | 214953 | 720427        | 94940  |
| 50) | 100   | 50   | 417     | 8205   | 720427             | 112608 | 720427        | 231814 | 720501            | 14441  | 720501        | 134053 |

ALL DONE.

[illegible]



|          |           |          |          |          |          |          |          |          |          |
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| 442C5E32 | 44295597  | 441DBE34 | C546A009 | C534C628 | 447C2A07 | C546A009 | C5305806 | 45168AF0 | C424118D |
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| CC13F7CE | 00000001  | 000AD95F | 0081A330 | 41858E1C | C22894DE | 40126800 | 417D08A4 | 4313EF56 | 4018864A |
| 41433332 | C013F7CE  | 00000001 | 000AD95F | 0081C823 | 41830A0F | C227F2D4 | 401C4906 | 4178324A | 413F8F4  |
| 3FDDFABD | 41453332  | C013F7CE | 00000001 | 000AD95F | 0081F315 | 4180E7AE | C2292EB9 | 4010D0A4 | 417D1285 |
| 413E56C2 | 4016E688  | 41453332 | C013F7CE | 00000001 | 000AD95F | 00821B08 | 41852F10 | C2292CA3 | 402A3E5A |
| 41806875 | 40133F851 | 40133CFD | 41433CFD | C013F7CE | 00000001 | 000AD95F | 0082A2FA | 41823582 | C229132E |
| 401F77C7 | 417C6044  | 4313F80E | 4017E702 | 41433332 | C013F7CE | 00000001 | 000AD95F | 00826AED | 4185655A |
| C2283C88 | 40131FFB  | 417CF577 | 4313EE75 | 3FFAC3A8 | 4141FFFF | C013F7CE | 00000001 | 000AD95F | 008292DF |
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| 0C28BAD2 | 418E537   | C2285861 | 4028F832 | 417C53F9 | 4313F681 | 3FAD2A26 | 41446666 | C013F7CE | 00000001 |
| 000AD95F | 0082E26A  | 418328A7 | C228D855 | 402D3A3E | 417C18F2 | 4313FC38 | 401BE8EA | 41446666 | C013F7CE |
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| 6613F7CE | 00000001  | 000AD95F | 008322AA | 41806A99 | C229E5F8 | 40219EA9 | 417AE5E0 | 4313F132 | 4014FF6A |
| 41446666 | C013F7CE  | 00000001 | 000AD95F | 00835A9C | 417DE8E0 | C229D9CC | 4020901F | 4177FC70 | 4313EAB1 |
| 402A8895 | 41446666  | C013F7CE | 00000001 | 000AD95F | 0083828F | 4180761A | C2286001 | 4177FC70 | 4313EAB1 |
| 4313F50E | 401B1551  | 41446666 | C013F7CE | 00000001 | 06380000 | FFFFFCD  | 43118000 | 46839906 | C2ABD497 |
| 442101A9 | C26A9A9B  | 4210FDC2 | 41315FE9 | 444650C2 | 442AC5E6 | 442AC5E6 | 442AC5E6 | 442AC5E6 | 442AC5E6 |
| 44210A99 | C546A096  | 447C24D7 | C546A096 | C53047CC | 4516A8E6 | 4516A8E6 | C421D633 | C438BF53 | 44180ED9 |
| C0F0272D | C0357100  | C0172C1A | C29AD998 | C1F5C00A | 4588F170 | 4A6A6A6A | 41100000 | 00000000 | 00000000 |







## IMP-I TAPE REPORT FOR TAPE Z-719

D-13801

11/14/73

| #   | ORBIT | FILE | RECORDS | POINTS | FIRST TWELVE HOURS |        |        |        | LAST TWELVE HOURS |        |        |        |
|-----|-------|------|---------|--------|--------------------|--------|--------|--------|-------------------|--------|--------|--------|
|     |       |      |         |        | APPROX.            | START  | STOP   | HHMMSS | APPROX.           | START  | STOP   | HHMMSS |
|     |       |      |         |        | YYMMDD             | HHMMSS | YYMMDD | HHMMSS | YYMMDD            | HHMMSS | YYMMDD | HHMMSS |
| 1)  | 101   | 1    | 415     | 8247   | 720501             | 145106 | 720502 | 22336  | 720505            | 61638  | 720505 | 181635 |
| 2)  | 102   | 2    | 419     | 8325   | 720505             | 184837 | 720506 | 63932  | 720509            | 92950  | 720509 | 212947 |
| 3)  | 103   | 3    | 423     | 8322   | 720509             | 212542 | 720510 | 92812  | 720513            | 125955 | 720514 | 5952   |
| 4)  | 104   | 4    | 422     | 8414   | 720514             | 5111   | 720514 | 125037 | 720517            | 170548 | 720518 | 50545  |
| 5)  | 105   | 5    | 422     | 8286   | 720518             | 50129  | 720518 | 170308 | 720521            | 201658 | 720522 | 81645  |
| 6)  | 106   | 6    | 419     | 8310   | 720522             | 83337  | 720522 | 203303 | 720526            | 4450   | 720526 | 124447 |
| 7)  | 107   | 7    | 405     | 7572   | 720526             | 124041 | 720527 | 4352   | 720530            | 34952  | 720530 | 154938 |
| 8)  | 108   | 8    | 413     | 8133   | 720530             | 154604 | 720531 | 34611  | 720603            | 74946  | 720603 | 194943 |
| 9)  | 109   | 9    | 419     | 8156   | 720603             | 194213 | 720604 | 74200  | 720607            | 120502 | 720608 | 448    |
| 10) | 110   | 10   | 421     | 8335   | 720608             | 155    | 720608 | 120425 | 720611            | 132950 | 720612 | 12937  |
| 11) | 111   | 11   | 423     | 8369   | 720612             | 12501  | 720612 | 132630 | 720615            | 173939 | 720616 | 53936  |
| 12) | 112   | 12   | 422     | 8378   | 720616             | 55922  | 720616 | 175848 | 720619            | 220508 | 720620 | 100454 |
| 13) | 113   | 13   | 424     | 8398   | 720620             | 59558  | 720620 | 220228 | 720624            | 3402   | 720624 | 123348 |
| 14) | 114   | 14   | 418     | 8054   | 720624             | 123642 | 720625 | 3913   | 720628            | 50539  | 720628 | 176526 |
| 15) | 115   | 15   | 422     | 8294   | 720628             | 170049 | 720629 | 50259  | 720702            | 71506  | 720702 | 191453 |
| 16) | 116   | 16   | 394     | 7782   | 720702             | 191037 | 720703 | 71125  | 720706            | 124359 | 720707 | 4356   |
| 17) | 117   | 17   | 409     | 7643   | 720707             | 3951   | 720707 | 124039 | 720710            | 142855 | 720711 | 22852  |
| 18) | 118   | 18   | 419     | 8081   | 720711             | 23825  | 720711 | 144014 | 720714            | 185748 | 720715 | 65735  |
| 19) | 119   | 19   | 421     | 8348   | 720715             | 65502  | 720715 | 185306 | 720718            | 221507 | 720719 | 101504 |
| 20) | 120   | 20   | 423     | 8429   | 720719             | 101332 | 720719 | 221633 | 720723            | 21745  | 720723 | 141732 |
| 21) | 121   | 21   | 379     | 7013   | 720723             | 142512 | 720724 | 22519  | 720727            | 52450  | 720727 | 172447 |
| 22) | 122   | 22   | 421     | 8323   | 720727             | 171555 | 720728 | 51825  | 720731            | 91005  | 720731 | 210952 |
| 23) | 123   | 23   | 415     | 8033   | 720731             | 210557 | 720801 | 90726  | 720804            | 133150 | 720805 | 13146  |
| 24) | 124   | 24   | 421     | 7964   | 720805             | 12051  | 720805 | 132038 | 720808            | 154745 | 720809 | 34753  |
| 25) | 125   | 25   | 399     | 7334   | 720809             | 35655  | 720809 | 155540 | 720812            | 200503 | 720813 | 80450  |
| 26) | 126   | 26   | 421     | 8258   | 720813             | 80034  | 720813 | 200021 | 720816            | 230255 | 720817 | 110242 |
| 27) | 127   | 27   | 416     | 7951   | 720817             | 120738 | 720818 | 826    | 720821            | 31142  | 720821 | 151149 |
| 28) | 128   | 28   | 423     | 8273   | 720821             | 150247 | 720822 | 30517  | 720825            | 70954  | 720825 | 190930 |
| 29) | 129   | 29   | 374     | 6952   | 720825             | 190525 | 720826 | 70431  | 720829            | 105955 | 720829 | 225942 |
| 30) | 130   | 30   | 407     | 7678   | 720829             | 225040 | 720830 | 105148 | 720902            | 133052 | 720903 | 13048  |
| 31) | 131   | 31   | 422     | 8327   | 720903             | 14507  | 720903 | 134738 | 720906            | 174201 | 720907 | 54147  |
| 32) | 132   | 32   | 394     | 7703   | 720907             | 53722  | 720907 | 173739 | 720910            | 222128 | 720911 | 84750  |
| 33) | 133   | 33   | 409     | 7715   | 720911             | 84355  | 720911 | 204342 | 720915            | 4940   | 720915 | 124947 |
| 34) | 134   | 34   | 419     | 7990   | 720915             | 124045 | 720916 | 4133   | 720919            | 35056  | 720919 | 155043 |
| 35) | 135   | 35   | 422     | 8318   | 720919             | 154546 | 720920 | 34655  | 720923            | 90003  | 720923 | 205949 |
| 36) | 136   | 36   | 421     | 8191   | 720923             | 205635 | 720924 | 85845  | 720927            | 112146 | 720927 | 232133 |
| 37) | 137   | 37   | 422     | 8233   | 720927             | 234048 | 720928 | 114319 | 720933            | 152505 | 720934 | 32441  |
| 38) | 138   | 38   | 416     | 7981   | 720934             | 32259  | 721002 | 152448 | 721005            | 191344 | 721006 | 71331  |
| 39) | 139   | 39   | 414     | 8146   | 721006             | 74705  | 721006 | 194834 | 721009            | 235043 | 721010 | 115040 |
| 40) | 140   | 40   | 422     | 8344   | 721010             | 115141 | 721010 | 235107 | 721014            | 22200  | 721014 | 142146 |
| 41) | 141   | 41   | 416     | 8247   | 721014             | 141720 | 721015 | 21920  | 721018            | 54951  | 721018 | 174948 |
| 42) | 142   | 42   | 397     | 7788   | 721018             | 174644 | 721019 | 54914  | 721022            | 101844 | 721022 | 221841 |
| 43) | 143   | 43   | 416     | 7893   | 721022             | 223016 | 721023 | 102942 | 721026            | 140054 | 721027 | 20051  |
| 44) | 144   | 44   | 419     | 7955   | 721027             | 15646  | 721027 | 135835 | 721030            | 172238 | 721031 | 52245  |
| 45) | 145   | 45   | 421     | 8283   | 721031             | 55721  | 721031 | 175728 | 721103            | 203955 | 721104 | 83942  |
| 46) | 146   | 46   | 422     | 8333   | 721104             | 83019  | 721104 | 203107 | 721108            | 1456   | 721108 | 121453 |
| 47) | 147   | 47   | 424     | 8413   | 721108             | 121048 | 721109 | 1318   | 721112            | 40457  | 721112 | 160444 |
| 48) | 148   | 48   | 420     | 8357   | 721112             | 160048 | 721113 | 40319  | 721116            | 62357  | 721116 | 182343 |
| 49) | 149   | 49   | 417     | 8003   | 721116             | 184441 | 721117 | 64509  | 721120            | 111945 | 721120 | 231942 |
| 50) | 150   | 50   | 422     | 8352   | 721120             | 231516 | 721121 | 111543 | 721124            | 150844 | 721125 | 30841  |

ALL DONE.

5/1/72 - 11/25/72

|           |          |          |          |          |          |          |          |          |          |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 7C640000  | 06380000 | FFFFF9B  | 427A0000 | 4732FC3B | 4295D7BD | 4215AF04 | C28F5FE4 | 41C56617 | 413826C6 |
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| C55189E2  | C43207E4 | C5119EEC | C43207E4 | C444916F | 44207A98 | 40C1C90C | 409CA76E | 4043C421 | 4218794C |
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| 40F371931 | 40C046F2 | 40980FF4 | 40433D5A | C0490368 | C0490368 | 408067E7 | 404C7EAF | 00000000 | C065D89D |
| 40EADE6A  | 42E38ABF | 4215AF04 | 431272F2 | 42285DCE | 415A2E08 | 413A9DDC | 43319AE6 | 411408F8 | 428CD662 |
| 422AECA4  | 422AECA4 | 4228808D | 41F3A396 | 41F3A396 | 425152B8 | 432CBDF0 | 4314C986 | 41140000 | 45AFE750 |
| 443F0015  | 42650000 | 42650000 | 42480000 | 42480000 | BFD4DFD2 | BFD4DFD2 | BFD4DFD2 | BFD4DFD2 | BFD4DFD2 |
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| 405FFFFF  | 40666666 | 40533332 | 40533332 | 40399999 | 40399999 | 03266666 | 401FFFFF | 401FFFFF | 401FFFFF |
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| 40133333  | 3FC3CCC  | 411F3333 | 411F3333 | 411F3333 | 41100000 | 4144CCC  | 0000000D | C34BD44B | 4060E940 |
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| 3EDC85AA  | BE2CE6C  | 3EBDE6D1 | 3E4B9157 | 3ECF2B95 | 41203614 | C2E6A25E | 40437E9B | 4128595C | 426BA05F |
| 41385A91  | C2B6C630 | 41119F3E | 41161339 | 42648750 | 411E3D53 | 41466666 | BFD4DFD2 | 00000001 | 412B5AFE |
| 032FFD28  | 000AF675 | C2E376B0 | 403CC25C | 412CCA0A | 426CA1C1 | 40166ACA | 41466666 | BFD4DFD2 | 41453332 |
| 000AF675  | 0330251D | 4120BE27 | C2EC5B40 | 401FA484 | 412B50E8 | 426E8D8D | 40118CEB | 41453332 | 41453332 |
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| 4144CCC   | BF6A7EF9 | 00000001 | 000AF675 | 03309CF5 | 41318D38 | C2D66640 | 40372237 | 412B5AFE | 412B5AFE |
| 3F8168D5  | 4144CCC  | BF6A7EF9 | 000AF675 | 000AF675 | 0330CAE8 | 4138768C | C2D633E0 | 4031765A | 4031765A |
| 40349F29  | 41288843 | 426D2A81 | 4018050E | 41459999 | BFD4DFD2 | 00000001 | 000AF675 | 0330CEDA | 0330CEDA |
| C2E9F664  | 404D12C0 | 412867C8 | 426D9E9A | 43FC4DD4 | 41459999 | BFD4DFD2 | 00000001 | 000AF675 | 033114CD |
| 000AF675  | 03318A44 | 41365ADC | C2DF4440 | 4032DC70 | 412B3F10 | 426E37CE | 3FE8B1F0 | 4146CCC  | BFD4DFD2 |
| 000AF675  | 03318A44 | 03318A44 | 412C3E86 | C2EDC250 | 4021DF58 | 412AD9E5 | 426EA3AE | 3FFA4F18 | 4142CCCC |
| 00000001  | 000AF675 | 03318A44 | 03318A44 | 4128D800 | C2E06C90 | 40244178 | 4129F771 | 426D8A48 | 40172379 |
| BFD4DFD2  | 00000001 | 000AF675 | 03307503 | 41255F8B | C2EDB1A0 | 40386F07 | 412948D1 | 426E8856 | 426E8856 |
| 41453332  | BFD4DFD2 | 00000001 | 000AF675 | 03322C6E | 03322C6E | 41300CEA | C2E01670 | 404AD874 | 41299604 |
| 4021D748  | 41453332 | BFD4DFD2 | 00000001 | 000AF675 | 03325461 | 03325461 | 4137D100 | C2E302E0 | 402F914C |
| 426CC2E8  | 401ED366 | 41466666 | BFD4DFD2 | 00000001 | 000AF675 | 03327C54 | 41339F0E | C2E24390 | 42E24390 |
| 4129FFD7  | 426CBCE8 | 40250DAE | 41466666 | BFD4DFD2 | 00000001 | 000AF675 |          |          |          |

D-13801

|           |          |           |          |          |           |          |          |          |          |
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| BE488725  | 3E8715CE | 3E4A68DE  | 3EC60D58 | 42706AE6 | 40B30CB0  | 00000014 | 000AF675 | 0332F428 | 41391566 |
| C29AA110  | 405796D5 | 412B9F25  | 427121B6 | 3FC4A257 | 41426666  | BF6A7EF9 | 00000001 | 000AF675 | 03331C1E |
| 413A2146  | C2D39020 | 4032B12A  | 412B4959 | 42744B53 | 4010A429  | 41426666 | BF6A7EF9 | 00000001 | 000AF675 |
| 413F5295  | C2D88780 | 40357369  | 412C0CC7 | 4271EE63 | 42710937A | 41433332 | BF6A7EF9 | 00000001 | 00000001 |
| 0000AF675 | 03336C03 | 41282320  | C2F2D8E0 | 413ED1EC | 41263332  | 404676CE | 41433332 | BF6A7EF9 | 41433332 |
| 00000001  | 000AF675 | 033393F5  | 42156001 | C28FABD0 | 4135B223  | 42452670 | 427483CD | 4113CA82 | 41439999 |
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| 40120A69  | 4143FFFF | 00000000  | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 |
| 42743F6F  | 4143FFFF | 00000000  | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 |
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| 40439D95  | 41283C8E | 42745D01  | 3FE50855 | 41406666 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 |
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| 41384C18  | C2894850 | 405A4F5C  | 41284E52 | 42714713 | 3FACB141  | 41426666 | 00000000 | 00000000 | 00000000 |
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| 0000AF675 | 0334F87C | 413D7397  | C2D8D810 | 4042679F | 41283504  | 427202FE | 3F0A82E0 | 4143FFFF | 3F666666 |
| 00000001  | 000AF675 | 0335236F  | 41389F63 | C2E04610 | 40119951  | 412C0354 | 42736B71 | 401AEDA5 | 4141FFFF |
| 3F666666  | 00000001 | 000AF675  | 0335AB61 | 413A5C6D | C2D0A080  | 405DE772 | 412ACEE2 | 42705CCD | 3F761AE4 |
| 4141FFFF  | 3F666666 | 00000001  | 000AF675 | 03357354 | 413A88C8  | C2D0A830 | 40551D45 | 412AB25D | 4272343F |
| 3FCA7EF9  | 00000001 | 00000000  | 00000000 | 000AF675 | 03369846  | 413BA340 | C2D78510 | 40488794 | 41285397 |
| 42720E2B  | 4013FF26 | 41419999  | BF6A7EF9 | 00000001 | 00000001  | 000AF675 | 0335C339 | 413F2A11 | C2D8BEB0 |
| 42742AF4  | 4011A547 | 41426666  | BF6A7EF9 | 00000001 | 00000000  | 000AF675 | 0335E828 | 413E80A7 | C2DAD850 |
| 4043AEAC  | 41285AF6 | 4272053B  | 401FE130 | 41426666 | BF6A7EF9  | 00000001 | 06380000 | FFFFF9B  | 427A0000 |
| 4298A925  | 42189233 | C28D2268  | 413F8FE8 | 413F970A | 4A58E707  | C442B74D | C367E9F6 | 443EDE02 | 443EDE02 |
| C4143C34  | C428774D | C5518B01  | C5F6B448 | C43FC58E | C5518B01  | C53406D8 | C511EEF7 | C42D0149 | 41100000 |
| 44263727  | 40C1C59D | 409CA4B20 | 4043C58C | 4219A779 | 4219F489  | 455F0B18 | 45405F8D | 41100000 | 41100000 |
| 00000000  | 00000000 | 00000000  | 40F9A9EC | C0389A98 | 00000000  | C06D089D | 40EADE6A | 42EC1AE  | 409B1393 |
| 40806489  | 404C704E | 00000000  | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 |
| 40806489  | 404C704E | 00000000  | 00000000 | 00000000 | 00000000  | 00000000 | 00000000 | 00000000 | 00000000 |
| 413F7F65  | 413F2570 | 432CB819  | 411696AD | 42888C71 | 42352C22  | 42228073 | C2D234E8 | 42228073 | C2D234E8 |
| 41F3A969  | 426008A1 | 433AA180  | 42C26166 | 41100000 | 45AFE750  | 4298A925 | 42189C51 | 4443008F | 42650000 |
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LENGTH = 31236 BYTES

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| C28D988D | C21E379B | 45593430 | 45343846 | 41100000 | 00000000 | 00000000 | 00000000 | 40FF8597 | 3FF00C08 |
| 00000000 | BFF0DC0A | 40FF8E97 | C074A37B | C0D11302 | C05AA92E | 40E3E27B | C06802C5 | C02E6731 | 00000000 |
| C065D95B | 40EAD6E8 | 42B599EA | C184B73F | 4310FDF0 | 4226787E | 41605744 | 41396167 | 434DE599 | 411D6EAC |
| 42331DEE | 42481F97 | 42883D31 | 422786FA | 42920484 | C2148DA8 | 4205F864 | C33C7E78 | 432F44A7 | 42630000 |
| 45800E50 | 425D86A2 | C1851621 | 44351E48 | 42960000 | 42480000 | 40F33332 | C013F7CE | BFD4FDF2 | 3F666666 |
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| 412ECCCE | 412ECCCE | 00000000 | 4EF1F5E5 | 40466666 | 401FFFFF | 3F666666 | 00000000 | BF6A7EF9 | 4126CCCC |
| BFD4FDF2 | 3F666666 | 40B33332 | 4124CCCC | 00000008 | 60F1F5E5 | 40D4D6D5 | 403FFFFF | 3FC00000 | 00000000 |
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| BF6A7EF9 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 | BFD4FDF2 |
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