DATA SET CATALOG # 13

Explorer 18 Magnetometer & Ephemeris

63-046A-00G	1 tape
02A	2 tapes
B	1 tape
C	1 tape
D	1 tape
E	
F	1 tape
G	

Table of Contents

1. Introduction

2. Errata/Change Log

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

4. Catalog Materials

    a. Associated Documents

    b. Core Catalog Materials

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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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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-A

MULT-COORD SYS EPHEM & B-MODEL TAPE

63-046A-00G

THIS DATA SET HAS BEEN RESTORED. THERE WAS ORIGINALLY ONE 7-TRACK, 800 BPI TAPE WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE, WHICH WAS PACKED DURING THE RESTORATION PROCESS. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 7094 COMPUTER AND THE RESTORED TAPE WAS CREATED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR005675	DS005675	D001795	1	12/21/63 - 12/30/64

D001795 - READ ERROR OCCURRED IN RECORD 16 OF FILE 1.

IMP-A

5.46 MIN. AVERAGE OF MAGNETIC FIELD

63-046A-02A

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WERE 2 9-TRACK, 1600 BPI TAPES WRITTEN IN BINARY. THE DR TAPES ARE ON 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE TAPES WERE CREATED ON AN IBM 360 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS AND TIME SPANS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR03342	DS03342	D00079	1	11/27/63 - 02/24/64
		D00083	2	02/24/64 - 05/29/64

IMP-A

MERGED MAGNETOMETER + EPHEMERIS

63-046A-02B

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WAS ONE 7-TRACK, 800 BPI TAPE, WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE, WHICH WAS PACKED DURING THE RESTORATION PROCESS. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 7094 COMPUTER AND THE RESTORED TAPE WAS CREATED ON AN IBM 9021 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR005411	DS005411	D002891	1	11/27/63 - 05/30/64

IMP-A

5.46 MIN AVG BLOCKED BIN VERSION OF -02A

63-046A-02C

THIS DATA SET HAS BEEN RESTORED. THERE WAS ORIGINALLY ONE 7-TRACK, 800 BPI TAPE WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 7094 COMPUTER AND WAS RESTORED ON AN IBM 9021 COMPUTER. THE YEAR ON THE ENDING TIME SPAN COULD NOT BE VERIFIED. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR005401	DS005401	D002901	1	11/27/63 - 05/30/64

IMP-A

INTPLAN B-FIELD HOURLY AVGD. TAPE

63-046A-02D

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WAS ONE 7-TRACK, 800 BPI TAPE, WRITTEN IN BINARY. THERE IS ONE RESTORED TAPE, WHICH WAS PACKED DURING THE RESTORATION PROCESS. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON AN IBM 360 COMPUTER. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR002740	DS002740	D002902	1	11/27/63 - 02/15/64

IMP-A

INTPLAN B-FIELD HOURLY AVGD. DATA

63-046A-02F

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WAS ONE 7-TRACK, 800 BPI TAPE, WRITTEN IN BCD. THERE IS ONE RESTORED TAPE, WRITTEN IN EBCDIC. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPES WERE CREATED ON AN IBM 360 COMPUTER. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR002741	DS002741	D002903	1	02/28/64 - 05/26/64

63-046A-00G EXPLORER 18 EPHEMERIS SOLAR ECLIPTIC

MERGE DATA

D#	C#
D-01795	C-06728

12/21/63 - 12/30/64

TABLE OF CONTENTS

I. IDENTIFICATION

A. Spacecraft Description

B. Experiment Description

C. Data Set Identification

D. Tape Identification

II. DATA PROCESSING

A. 63-046A-00G

1. Format of Ephemeris Tape (Input for merging Magnetometer and Ephemeris)

2. Partial Octal Dump of Ephemeris Tape (D-01795)

3. Times Gaps of Ephemeris Data

B. 63-046A-02A

1. Data Set Description [1]

2. Format of Tape

3. Partial Octal Dump of Tape

4. Listing of Time Gaps

5. Labeled Printout of Tape

C. 63-046A-02B

1. Data Set Description

2. Format

3. Partial Dump of Tape (D-02891)

4. Labeled Printout of Tape

5. Octal Dump of Tape

D. 63-046A-02C

1. Data Set Description

2. Format of Tape

3. Partial Dump of Tape

E. 63-046A-02D

1. Data Set Description

2. Format of Tape

3. Partial Listing of Tape

4. Labeled Printout of Tape

F. 63-046A-02E

1. Data Set Description

2. Listing of Program used to Produce Microfilm

G. 63-046A-02F

1. Data Set Description

2. Format of Tape

3. Partial Listing of Tape

4. Labeled Printout of Tape

H. 63-046A-02G

1. Data Set Description

2. Listing of Program to Produce Microfilm

I. Program Listing of Program used to Merge Magnetometer and Ephemeris Data.

J. Example of Printout of 5.46 minute averages above 18 earth radii and within 3.5 hours of local noon.

1. Program Listing of Program used to make above Listing.

EXPLORER 18 (IMP A, IMP 1) (63-046A)

SPACECRAFT BRIEF DESCRIPTION

Explorer 18 (IMP 1) is a 137 lb spin-stabilized spacecraft instrumented for interplanetary studies of cosmic rays, magnetic fields, and plasmas. It was launched November 27, 1963 into a highly elliptical orbit (apogee 32 earth radii at 1000 hours local time). The spacecraft performed normally till May 30, 1964, then intermittently till May 10, 1965, when it was abandoned.

SPACECRAFT PERSONNEL

Program Scientist/Dr. Alois W. Schardt/NASA Hdq.
Program Engineer/Mr. Frank Gaetano/NASA Hdq.
Project Manager/Mr. Paul Butler/NASA-GSFC/Code 724
Assistant Project Manager/Mr. F. A. Carr/NASA-GSFC/Code 724
Project Scientist/Dr. Frank B. McDonald/NASA-GSFC/Code 611
Data Processing Engineer/Mr. C. J. Creveling/NASA-GSFC/Code 560
Orbital Computations Engineer/Mr. D. J. Stewart/NASA-GSFC/Code 552
Attitude Computations Engineer/Mr. E. J. Pyle/NASA-GSFC/Code 711

SPACECRAFT OBJECTIVES

Explorer 18 (IMP 1) was the first spacecraft in the interplanetary monitoring platform series. The series consists of IMP A, B, C, F, and G (IMP D and E are anchored IMP, see Explorer 33). The objectives of this series are: (1) to study in detail the radiation environment of cislunar space, and to monitor this region over a significant portion of a solar cycle; (2) to study the properties of the interplanetary magnetic field, its dynamical relationship with particle fluxes from the sun, and their interractions with the geomagnetic field; (3) to develop a solar-flare prediction capability for Apollo; (4) to extend knowledge of solar-terrestrial relationships; and (5) to further the development of relatively inexpensive spin-stabilized spacecraft for interplanetary investigations.

SPACECRAFT FULL DESCRIPTION

Configuration

The main body formed a prism 12 inches long with octagonal faces 28 inches across. The axis of symmetry (spin axis) passed through the center of the faces. The main appendages were: four solar cell paddles, each approximately 25 inches by 20 inches, mounted with their long axes perpendicular to the spin axis; four 16-inch-long antennas; a Rb-vapor magnetometer boom, 67 inches long, mounted on the top face parallel to the spin axis; and two fluxgate magnetometer booms, each 69 inches long, mounted perpendicular to the spin axis.

SPACECRAFT FULL DESCRIPTION

Power System

Power was supplied by solar cell arrays mounted in both sides of the four paddles and a silver cadmium battery pack for operation in shadow. The total cell shadow. The total cell area was 32.6 ft^2. The capacity of the battery was 5 ampere-hour at about 14 volts. The minimum expected power output from the solar array was 43 watts. The total spacecraft power drain was 38.0 watts average and 47.4 watts peak. A regulator limited the main power bus to 19.6 volts in sunlight. As the spacecraft entered the earth's shadow the voltage dropped to about 14 volts. After about one hour in shadow the voltage would fall to 12 volts and an undervoltage relay would turn the power off. A timer would turn the power back on after about 16 hours.

Onboard Propulsion

None

Communications

Data were telemetered to ground using pulse frequency modulation (PFM) of a 4 watt transmitter operating at 136.11 mc. A complete encoder sampling pattern was repeated every 327.7 seconds. A pattern consisted of three normal sequences followed by a Rb-vapor magnetometer sequence, each sequence being 81.9 seconds long. Each normal sequence consisted of 265 tone bursts in the frequency range 312.5 to 937.5 cps.

Information was conveyed by the frequency of the tone. Digital channels used eight discrete frequencies to telemeter three bits per burst. Analog channels used the full freq. range to represent the channel input voltage (0 to 5 volts). During each normal sequence a complete set of spacecraft performance parameters and data from all experiments except the Rb-mag, were telemetered. During the Rb-mag sequence the magnetometer output directly modulated the transmitter in the frequency range 20 to 1000 cps. A range and range-rate transponder, amplitude modulating the same transmitter, was included for tracking.

Attitude Control

The spacecraft was spin stabilized and had no active attitude control.

Attitude Sensors

A digital solar-aspect sensor measured the spin axis-sun angle and the time the sensor meridian spun past the sun.

SPACECRAFT FULL DESCRIPTION

Command System

None

Onboard Data Storage

Twelve accumulators were incorporated into the encoder to accommodate the experiments having digital outputs.

Onboard Data Processing

None

SPACECRAFT PERFORMANCE

The spacecraft performance was essentially normal from launch to May 30, 1964 (approx. 165 days). Then followed a period of intermittent or no operation. From November 12, 1964, to December 15, 1964, the spacecraft operated about 90 percent of the time. Subsequently only a few periods of intermittent operation were received. All attempts for further data acquisition were terminated May 10, 1965. The cause of the intermittent operation has been attributed to the battery. During the first 165 days the spin rate ranged from 22 to 26 rpm and the local time of apogee ranged from about 1000 to 0100 hours. The initial pointing direction of the spin axis was rt. asc. 116.6 degrees and declination -23.5 degrees. A complete history of the performance is given in NASA TN D-3352, "Flight Report Interplanetary Monitoring Platform IMP-1, Explorer 18," by Frank A. Carr (April 1966).

EXPLORER 18 MAGNETOMETERS (63-046A-02)

EXPERIMENT BRIEF DESCRIPTION

Two uniaxial fluxgate magnetometers with dynamic ranges of ±40γ were flown to measure magnetic field components parallel to their axes. These sensors functioned normally throughout the useful life of the satellite. Last useful data was acquired on May 30, 1964. A rubidium vapor magnetometer was also flown, but did not return data of high quality.

PERSONNEL

Principal Investigator/Dr. Norman F. Ness/NASA-GSFC/Code 616

EXPERIMENT OBJECTIVES

The fluxgate magnetometers were intended to delineate precisely the vector characteristics of the interplanetary magnetic field and of the outer regions of the magnetospheric magnetic field.

EXPERIMENT FULL DESCRIPTION

One fluxgate magnetometer (0.75" diameter, 3" long) was mounted on each of two booms extending 69" from the main spacecraft body. A rubidium vapor magnetometer was mounted on a 67" boom, but did not provide data as useful as that of the fluxgates. The vapor magnetometer is discusssed in Ness, Scearce, and Seek JGR 69, 3531-69, 1964, and will not be discussed further here. (NSSDC does not expect to receive this Rb vapor magnetometer data.)

The sensor of each fluxgate magnetometer was a saturable magnetic core which was driven at 10 kc/s from positive to negative saturation. Any second harmonic signal generated was due to the presence either of an ambient field component along the axis of the element or to permanent magnetization of the core material. The voltage output represents the discriminated second harmonic output which is calibrated to yield the field component parallel to the sensor axis, while the phase indicates the direction, parallel or anti-parallel.

Each magnetometer is calibrated in-flight, through a combined use of the Rb vapor magnetometer data, for 0.25 second each time it is turned on.

The dynamic range of the fluxgate was ±40γ, with a sensitivity of ±0.25γ. Subsequent digitization by the use of "comb filters" on the ground led to uncertainties of ±0.4γ. Analysis of the data indicates that, to within the uncertainties just mentioned, the fields measured are indeed the ambient magnetic fields and are not contaminated by the spacecraft magnetic field.

EXPERIMENT FULL DESCRIPTION

The telemetry data format on IMP 1 is based on a sampling cycle of 5.46 minutes duration. The fluxgate are alternately sampled for 4.8 seconds at 20.5 second intervals until 12 measurements have been obtained. Then the Rb vapor magnetometer is sampled continuously for 81.9 seconds before the fluxgate are sampled again.

More detailed discussions of the instrumentation, spacecraft structure and magnetic cleanliness, data sampling, and the analytic means whereby vector information is gained from uniaxial fluxgate measurements, is given in Ness, Scearce and Seek, JGR, 69, 3531-69, 1964.

EXPERIMENT PERFORMANCE

The two fluxgate magnetometers performed normally during the useful lifetime of the spacecraft. The vapor magnetometer yielded data of lower quality.

IMP-1, EXPLORER 18 63-046A

63-046A-00D	Ephemeris Tape 7 track 556
63-046A-00E	Merged Ephemeris Tapes 7 track 800
63-046A-00F	Solar Ecliptic Ephemeris Tapes 7 track 556
63-046A-00G	Merged Solar Ecliptic Tapes 7 track 800
63-046A-02A	Fluxgate Magnetometer Tapes (originals) 7 track 556
63-046A-02B	Merged magnetometer and S.E. Ephemeris Tapes 7 track 800
63-046A-02C	Blocked flux magnetometer tapes 7 track 800
63-046A-02D	Interplanetary 'B' Field - Hourly Averages 9 track 800
63-046A-02E	Interplanetary 'B' Field - Hourly Averages Microfilm
63-046A-02F	Magnetospheric 'B' Field - Hourly Averages 9 track 800
63-046A-02G	Magnetospheric 'B' Field - Hourly Averages Microfilm

Experimenter: Dr. Ness

Acquisition Agent: Dr. Joseph King

Programmers: Dick Lundstrom
Linda Woodland

IMP-1, EXPL 18

DESCRIPTION OF DATA	SATELLITE I.D.	D#	NO. OF TAPES	TRACK	DEN.	MODE
SOLAR ECLIPTIC EPHEMERIS	63-046A-00F	D-01516 THRU D-01522	6	7	556	BIN
BLOCKED EPHEMERIS	63-046A-00G	D-01795	1	7	800	BIN
FLUXGATE MAGNETOMETER	63-046A-02A	D-00079 & D-00083	2	7	556	BIN
BLOCKED FLUX MAGNETOMETER	63-046A-02C	D-02901	1	7	800	BIN
MERGED MAGNETOMETER AND EPHEMERIS	63-046A-02B	D-02891	1	7	800	BIN

Figure 4

Input Binary Tape Format

IMP 1, 2, and 3 Ephemeris

63-046A-006

Word	Symbol	Description
**1	IYR	Year
**2	IDCY	Day count of year
**3	IHR	Hour (UT)
**4	IMIN	Minute (UT)
*5	GLAT	Geodetic latitude in degrees
*6	GLONG	Geodetic longitude in degrees
*7	RLAT	Geomagnetic latitude of satellite in degrees
*8	RLONG	Geomagnetic longitude of satellite in degrees
9	RAD	Radial distance from earth in earth radii
10	GMLONG	Geomagnetic longitude of sub-solar point
11	GMLAT	Geomagnetic latitude of sub-solar point
12	SUNA	Angle in degrees between probe spin axis and satellite sun vector
13	XSE	X solar ecliptic coordinate of satellite
14	YSE	Y solar ecliptic coordinate of satellite
15	ZSE	Z solar ecliptic coordinate of satellite

16	B	Magnitude of magnetic field
17	BPER	Perpendicular component of field (calculated perpendicular to spin axis)
18	BPAR	Parallel component of field (calculated parallel to spin axis)
*19	BSE	Magnetic field in solar ecliptic coordinates
*20	PHI	Angle between X and Y component of field in solar ecliptic in degrees
*21	THETA	Angle between field and projection on X-Y plane in solar ecliptic coordinates in degrees
22	PSI	Angle between payload X-axis and BPER in degrees
*23	XSOLM	Solar magnetospheric X-coordinate
*24	YSOLM	Solar magnetospheric Y-coordinate
*25	ZSOLM	Solar magnetospheric Z-coordinate
26	FMAT (1,1)	Rotation matrix to go from payload coordinates to solar ecliptic
27	FMAT (1,2)	
28	FMAT (1,3)	
29	FMAT (2,1)	
30	FMAT (2,2)	
	FMAT (2,3)	
32	FMAT (3,1)	

33	FMAT (3,2)	
34	FMAT (3,3)	
35	SESM (1,1)	Rotation matrix to go from solar ecliptic to solar magnetospheric coordinates
36	SESM (1,2)	
37	SESM (1,3)	
38	SESM (2,1)	
39	SESM (2,2)	
40	SESM (2,3)	
41	SESM (3,1)	
42	SESM (3,2)	
43	SESM (3,3)	

* Written on output tape
** Used to determine if ephemeris data matches magnetometer data

Each physical record is 216 words long containing five 43-word logical records and a FORTRAN control word at the beginning.

DATA USERS' NOTE

NSSDC 67-34

EXPLORER 18 (1963 46A)

MAGNETIC FIELD EXPERIMENT

AUGUST 1967

NATIONAL SPACE SCIENCE DATA CENTER

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION · GODDARD SPACE FLIGHT CENTER, GREENBELT, MD.

DATA USERS' NOTE
NSSDC 67-34

EXPLORER 18 (1963 46A)
MAGNETIC FIELD EXPERIMENT

EXPERIMENTER
N. F. Ness

AUGUST 1967

FOREWORD

This Data Users' Note is specifically designed to help potential data users decide if they can make use of the data obtained in the Explorer 18 (1963 46A) magnetic field experiment. Once a data user decides that he requires the data, it will serve as the unifying element – the key – in the actual use of the data available at the National Space Science Data Center (NSSDC). To achieve these goals, the Note briefly describes the experiment, including the instrumentation and measurements, the telemetry, and the operational experience. All available details are then provided on the actual reduction techniques and format of recorded data. For those desiring more details, the name and address of the experimenter are provided to facilitate direct contact. As a further aid, detailed references (and bibliography) are also included. When available, NASA accession numbers* are given. The primary purpose of these references is to identify the sources containing complete information concerning the subject under discussion. Most of these references are physically available at NSSDC – those that are not are readily obtainable.

Inquiries concerning the availability of data should be directed to:

National Space Science Data Center
Goddard Space Flight Center
Greenbelt, Maryland 20771
Area Code 301 982-6695

*For example, N64-2243 is an accession number for an article reported in the *Scientific and Technical Aerospace Reports* (STAR), and A63-5921 refers to an entry in the *International Aerospace Abstracts* (IAA).

CONTENTS

	Page
BACKGROUND	1
EXPERIMENTER	1
EXPERIMENT	
Instrumentation and Measurements	1
Telemetry	4
Operational Experience	4
DATA	
Reduction Techniques	5
Timespan of Data	7
Format of Available Data	7
REFERENCES	13
BIBLIOGRAPHY	15

LIST OF FIGURES

Figure		
1	Explorer 18 Experiments	2
2	Payload Coordinate System	6
3	Solar Ecliptic Coordinate System	8
4	Format of Hourly Averages Deck	10
5	Format of Binary Summary Tape	11

EXPLORER 18 (1963 46A)
MAGNETIC FIELD EXPERIMENT

BACKGROUND

Scientists at the Goddard Space Flight Center designed the magnetic field experiment on board Explorer 1. The primary mission of the experiment was to investigate the interplanetary magnetic field and the transition region associated with the interaction of the solar wind with the geomagnetic field. The investigation of the transition region involved a study of the collisionless magnetohydrodynamic shock wave surface separating the undisturbed interplanetary medium from the transition region, and the magnetopause separating the transition region from the magnetosphere. Two flux-gate magnetometers and one rubidium 87 magnetometer were used for the study of magnetic field data.[1] This Note, however, deals primarily with information necessary for the interpretation of flux-gate data, which are the only data currently available at NSSDC. Other Explorer 18 experiments are listed in Figure 1.

The Explorer 18 satellite, also known as IMP 1, was launched from Cape Canaveral (Cape Kennedy), Florida on November 27, 1963 at 0230 UT. The satellite achieved an initial apogee of 197 616 km (geocentric), and a perigee of 192 km. IMP 1 had an initial period of ~93.5 hr, an inclination to the earth's equator of 33.3 deg and an eccentricity of 0.937. The spacecraft was spin stabilized at an initial rate of 22.3 rpm with an initial spin-axis satellite-sun angle of 111 deg, measured by the spacecraft optical aspect sensor.[1]

EXPERIMENTER

N. F. Ness – Goddard Space Flight Center

EXPERIMENT

Instrumentation and Measurements

Each flux-gate magnetometer measured the relative magnetic field intensity along the axis of its sensing element. The flux-gate sensor consisted of a saturable magnetic core which was driven at a rate of 10 kc/s from positive to negative saturation by a solenoidal drive coil. Any second harmonic signal generated was due to the presence either of an ambient field component along the axis of the element or to permanent magnetization of the core material.[1]

FIGURE 1
EXPLORER 18 EXPERIMENTS

No.	Experiment	Investigator(s)	Affiliation
01	Retarding Potential	G. P. Serbu E. Maier	GSFC* GSFC*
02	Magnetic Field	N. Ness	GSFC*
03	Solar and Galactic Protons (Cosmic-Ray)	J. A. Simpson C. Y. Fan G. Gloeckler	University of Chicago University of Chicago University of Chicago
04	Cosmic-Ray	F. B. McDonald G. Ludwig V. Baiasubrahmanyan T. L. Cline	GSFC* GSFC* GSFC* GSFC*
05	Energetic Particles	K. A. Anderson H. K. Harris	University of California University of California
06	Ames Plasma Probe	J. H. Wolfe R. W. Silva	ARC** ARC**
07	Plasma Probe	H. S. Bridge A. Egidi A. Lazarus	MIT*** MIT*** MIT***

*Goddard Space Flight Center
**Ames Research Center
***Massachusetts Institute of Technology

The voltage output (0 to +5) represented the discriminated second harmonic output which was calibrated to yield the magnitude of the field component parallel to the sensor axis, while the phase indicated the direction, parallel or antiparallel.[1]

The flux-gate magnetometers operated within specified limits over a wide range of temperatures. This obviated the necessity of providing temperature sensors in the flux-gate instrumentation. The dynamic range of the flux-gate magnetometers was ±40 gammas ($1\gamma = 10^{-5}$ gauss) with a sensitivity of $\pm 1/4\gamma$.

A rubidium 87 magnetometer with a dynamic range of 3–500γ measured the absolute scalar intensity of the magnetic field by utilizing the Zeeman splitting of the sublevels in the ground state of the Rb^{87} atom.[2] The magnetometer was operated as an atomic self-oscillator through an optical pumping technique in combination with a weak a-c magnetic field. The resonant frequency, the Larmor frequency, was that corresponding to the separation of the Zeeman sublevels. The scalar Rb^{87} magnetometer was converted to a vector instrument by using a set of McKeehan coils to apply a sequence of known bias magnetic fields.

The bias coil system used for the refinement of the Rb^{87} magnetometer also provided a means for inflight calibration of the flux-gate magnetometer zero field levels, since it was possible to measure the unknown vector field simultaneously with two vector instruments. The flux-gate magnetometers measured the magnetic field vector at an extended range even when the rubidium vapor magnetometer was in a null region. There were two of these null regions of magnetic field orientation, polar and equatorial relative to the spin axis, in which the magnetometer would not self-oscillate with sufficient signal-to-noise ratio for accurate data.[1]

The magnetometer sensors were placed as far as possible from the satellite. The rubidium vapor magnetometer was contained within the spherical enclosure mounted on top of a telescoping two-section boom. The Rb^{87} magnetometer resonance gas cell was thus placed 1.65 meters from the center of the spacecraft. The two mono-axial flux-gate magnetometers were mounted at the extremities of double-sectioned folding booms. These sensors were located 2.1 meters from the center of the spacecraft. Two booms were used to make the spacecraft both statically and dynamically stable. Both their axes were oriented to lie in the same meridian plane containing the spin axis of the satellite but at different angles to the spin axis. The purpose of the two angles was to allow the sampling of magnetic fields larger than 40γ by one of the two sensors, depending on the orientation of the unknown field to the spin axis. Because two angles whose sum equals 90 deg were used, the sensors complemented each other in their ability to measure accurately, and in an undistorted manner, fields of intensity greater than 40γ.

The necessary measures were taken to ensure that permanent or induced magnetic fields would be kept at a minimum. Preflight mapping of the actual spacecraft magnetic fields due to permanent, induced, and stray magnetic fields indicated contamination levels at the flux-gate sensors of less than 0.6γ. Further tests were performed on the effects of the vibration of ferromagnetic materials in the earth's magnetic field to evaluate any possible changes in magnetization which might result from the vibration of the satellite during the launch maneuver. These tests indicated that these effects would be beneath the range of the instrument sensitivity.[1]

Telemetry

The pulse-frequency modulation (PFM) telemetry system used on IMP 1 encoded the flux-gate data by applying them to a voltage-controlled oscillator whose frequency output, 333 to 938 cps, modulated the 136-Mc/s carrier. The flux-gate signals were digitized on the ground through the combined use of a contiguous set of narrow bandpass filters specifically designed for the PFM telemetry scheme and commonly referred to as a "comb filter." This led to a precision in the digitization of $\pm 0.4\gamma$, due to the precision of the comb filters, which was $\pm 1\%$ of full scale range.[1]

The magnetic field data were transmitted by the satellite sequentially in a format which time-multiplexed the magnetic field information with the other scientific sensors and spacecraft performance in a predetermined time-shared manner. Each normal telemetry sequence was 81.9144 sec in length and contained four samples of real-time flux-gate magnetometer data consisting of continuous transmission of 4.8 sec at intervals of 20.48 sec. Four such samples per sequence were shared between the two flux gates. The procedure was repeated for the next two sequences in identical fashion. Every fourth sequence contained only rubidium vapor magnetometer data, which were continuously transmitted for a period of 81.91 sec with gaps every 5.12 sec to allow for the synchronization time channels included in the PFM telemetry format.[1,3]

Operational Experience

The successful operation of the satellite continued from November 27, 1963, to May 30, 1964. Transmission of data ended as a result of insufficient power from the solar paddle system. However, data were again transmitted from November 12 to December 18, 1964.[3]

About 80% of the IMP 1 orbital period was beyond 10 R_e or ~64 000 km. The initial apogee of IMP 1 was 25 deg west of the sun, and, owing to the heliocentric motion of the earth, precessed approximately 4 deg per orbit west of

the sun during the first six months of operation. Despite this precession, the satellite moves in an inertial coordinate system so that the relative orientation of the satellite orbit to the ecliptic plane remained approximately the same. Measurements of the position of both the magnetospheric boundary and the shock wave ended early in the lifetime of the IMP 1 satellite due to the precession of the orbit in solar ecliptic coordinates.[1,3]

From orbit 22 on, the satellite was within the interaction region surrounding the magnetosphere, and from orbit 31 to 47 the satellite was entirely within the earth's magnetosphere. The tail region of the earth's magnetic field showed no indication of any termination at satellite apogee (31.4 R_e).[1,3]

During the period February 17 to May 30, 1964, the sun-earth-apogee angle decreased from 253 deg to 156 deg. The observations during this period showed a distortion of the earth's magnetic field by the flow of the solar wind which resulted in a draping back of the field into the anti-solar direction.[3] These measurements gave the first detailed evidence for the earth's geomagnetic tail. A possible detection of the lee wake of the magnetohydrodynamic interaction of the solar wind with the moon by this experiment has been discussed.[4]

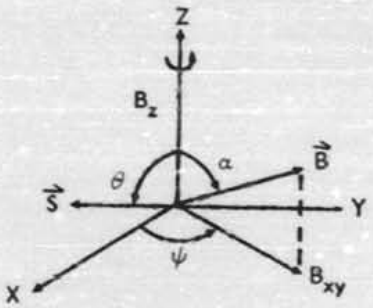
DATA

Reduction Techniques

A natural coordinate system which was used in the initial reduction of magnetic field data (on a spin-stabilized spacecraft) is one associated with the spin axis of the satellite and the satellite-sun direction. This system is defined in Figure 2; the Z axis is coincident with the spin axis of the spacecraft, the XZ plane contains the satellite-sun vector, and the Y axis is chosen to form a right-handed coordinate system. The analysis of the mono-axial flux-gate data was carried out through the use of numerical filters, which were designed to extract from the spin-modulated magnetometer signal the first harmonic and the first and second time derivatives of the magnetometer signal at a particular instant of time. As shown in Figure 2, it is possible to combine the first and second time derivatives to determine both the component of the magnetic field perpendicular to the spin axis $B_{xy} = B \sin \alpha = B_\perp$ and the azimuthal angle of the magnetic field ψ. These two quantities and the first harmonic then determine the component of the magnetic field parallel to the spin axis $B_\parallel = B \cos \alpha$. The three quantities, $B_\perp$, $B_\parallel$, and ψ completely specify the vector magnetic field B.[1]

A limited amount of processing of the flux-gate A magnetometer data was performed on board IMP 1. A signal peak detector was developed to provide a pulse in time coincidence with the maximum field value which occurred during each spin period. A 100-cps counter was gated on by an optical-aspect sun pulse

FIGURE 2
PAYLOAD COORDINATE SYSTEM



Z = Spin axis of spacecraft

$\vec{B}$ = Unknown vector field

$\vec{S}$ = Sensor axis $|\vec{S}| = 1$

ψ = Azimuthal angle of B_{xy}

ω = Angular spin frequency

X, Y, Z = nonrotating RH coordinate system

Detector Output = $D = \vec{B} \cdot \vec{S} = B \cos \alpha \cos \theta + B \sin \alpha \sin \theta \cos (\omega t - \psi)$

$$\frac{\delta D}{\delta t} = - \omega B_{xy} \sin \theta \sin (\omega t - \psi)$$

$$\frac{\delta^2 D}{\delta t^2} = - \omega^2 B_{xy} \sin \theta \cos (\omega t - \psi)$$

$$B_{xy}^2 = \left[\left(\frac{\delta D}{\delta t} \right)^2 \omega^2 + \left(\frac{\delta^2 D}{\delta t^2} \right)^2 \right] \Big/ \omega^4 \sin^2 \theta$$

$$\psi = \tan^{-1} \left[\omega \frac{\delta D}{\delta t} \Big/ \frac{\delta^2 D}{\delta t^2} \right]$$

The procedure given is the one used to obtain vector fields with monoaxial flux-gate magnetometers on a spin-stabilized spacecraft.

and was gated off by this peak pulse. In this manner, the azimuthal angle ψ was measured on board once during each telemetry sequence, and the numerical procedures that were used to demodulate the spin-modulated magnetometer data were thereby accurately checked. Angle measurements were more precise for azimuth because of this procedure and were accurate to ±2 deg. The angular error of the polar angle α was dependent upon direct measurements of $B_\perp$ and $B_\parallel$ and could therefore be large for certain ratios of $B_\perp$ and $B_\parallel$. This angular error was not significant when the data from the initial payload coordinate system were transformed to the XYZ coordinate system since $B_\perp \sin\psi$, $B_\perp \cos\psi$, and $B_\parallel$ were used directly. The uncertainties in the field values and azimuth angle combine so that an estimate of the general directional accuracy of ±5 deg was conservative.[1]

Each flux-gate magnetic field vector measurement was obtained from a sample of data 4.8 sec in length and containing 30 discrete samples of the magnetic field with a sensitivity of 0.4γ. The bandpass of the magnetometer sensors was flat with negligible phase shift from 0 to 5 cps and fell off at 6 db per decade for higher frequencies. The procedure used to obtain a vector measurement, from the sampling of the magnetic field, limited the final information bandwidth in the analysis to approximately 0 to 0.1 cps.[1]

Timespan of Data

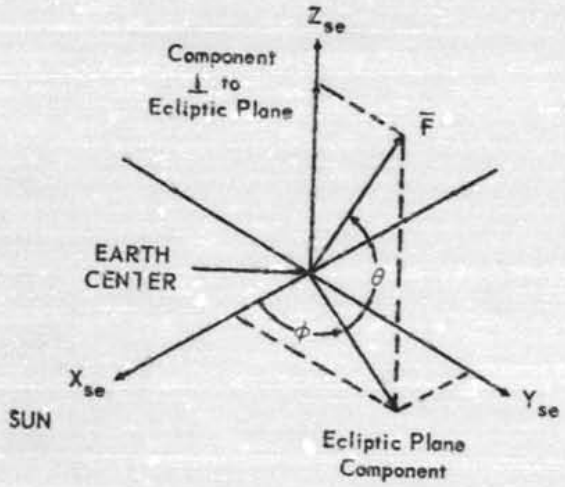
Data available at NSSDC are stored on magnetic tape and cover orbits 1 through 48. The actual timespan covered is from November 27, 1963, to May 23, 1964.

Format of Available Data

Figure 3 illustrates a set of coordinates which have proven successful in the analysis and interpretation of the magnetic field data. In this system, the origin is at the center of the earth, the X_{se} axis points to the sun, the Z_{se} axis is normal to the ecliptic plane, and Y_{se} is chosen to form a right-handed coordinate system.

The vector magnetic field will be presented as a magnitude F and two angles, θ and ϕ. The angle θ represents the latitude of the magnetic field, being positive above the plane of the ecliptic and negative below, and the angle ϕ represents the longitude, being 0 deg when it points to the sun and 180 deg when it points away from the sun. The coordinate system is not stationary in inertial coordinates, but rotates about two principal axes and maintains its orientation, as shown in Figure 3, at all times. Viewed from a nonrotating heliocentric position, the coordinate system moves around the sun once each year following the orbital motion of the earth.[1]

FIGURE 3
SOLAR ECLIPTIC COORDINATE SYSTEM



The coordinate system is also useful for studying the magnetic field phenomena associated with the interaction of the solar wind with the geomagnetic field. Since the interaction leads to the formation of a geomagnetic cavity which is strongly solar-oriented, the coordinate system chosen is particularly meaningful in presenting the magnetic field data in a frame of reference which illustrates the close relationship of the solar-terrestrial phenomena being studied.[1]

The magnetic field results presented in the format of data represent the time average of the 12 flux-gate measurements occurring in the telemetry transmission in sequences 1, 2, and 3. The average of these measurements yields a sampling interval of 5.46 min. The solar ecliptic components for these 12 measurements are averaged by simple addition, and no special filters are employed. For the X_{se} component, if X^i_{se} represents the i^{th} value of the magnetic field in the sample set possible,

$$\bar{X}_{se} = \frac{1}{N} \sum_{i=1}^{N} X^i_{se}$$

where N is less than or equal to 12, depending on the percentage of missing data points in the original 30-point data samples. If the number of missing points, owing to either digitization errors or transmission errors, is greater than 10%, the corresponding vector field sample is not used in the analysis to determine the 5.46-min average.

These average values for the three components are used to compute the magnitude F and the two angles θ and ϕ. In addition, the average value for the components is used in computing estimates of the variance of the magnetic field for the 12-sample data set. The variance is defined as

$$\delta X_{se} = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(X^{i}_{se} - \bar{X}_{se})^2}$$

for the X_{se} component and similarly for Y_{se} and Z_{se}.

The magnetic field data are represented by the following six parameters sampled at 5.46-min intervals.

$\bar{F}$ = the magnitude of the average components.

$= (\bar{X}_{se})^2 + (\bar{Y}_{se})^2 + (\bar{Z}_{se})^2$

θ = the latitude of the field direction.

$= \tan^{-1}\left\{\bar{Z}_{se}/[(\bar{X}_{se})^2 + (\bar{Y}_{se})^2]^{1/2}\right\}$

ϕ = the longitude of the field measured in the plane of the ecliptic.

$= \tan^{-1}[\bar{Y}_{se}/\bar{X}_{se}]$

δX_{se} = variance of the field in the X_{se} direction.

δY_{se} = variance of the field in the Y_{se} direction.

δZ_{se} = variance of the field in the Z_{se} direction.

The data available at NSSDC include an hourly average deck which was generated from the binary summary tape for November 27, 1963, to February 24, 1964. Only those 5.46-minute averages with ten or more good points and with a field magnitude of less than 40 γ were used in calculating these averages. The averages are punched on cards in the format given in Figure 4.

NSSDC also has available three 556-bpi binary summary tapes which include the 5.46-min averages taken from the flux-gate experimenter's tape. Two of the tapes were made on the IBM 7094 and cover orbits 1 – 48. A third tape, programmed for the IBM 7094-7044, using a direct couple system (DCS) covers orbits 1-23 (November 27, 1963, to February 24, 1964). The format of each of the two non-DCS binary summary tapes is given in Figure 5 and contains the word number and a description of each word. The DCS tape is in the same format except that the control words are fitted to a DCS system, and the physical records consist of 460 words. The last record of each tape is followed by an end-of-file.

FIGURE 4
FORMAT OF HOURLY AVERAGES DECK

IMP 1 1963 46A
MAGNETOMETERS (02)

Word	Description
1	Orbit Number
2	Radial Distance in earth radii
3	Solar Ecliptic X-Component in earth radii
4	Solar Ecliptic Y-Component in earth radii
5	Solar Ecliptic Z-Component in earth radii
6	Data Year
7	Data Day
8	Data Hour
9	Magnitude of Field
10	Angle between Field and Ecliptic Plane
11	Angle between Projection of Field onto Ecliptic Plane and Earth-Sun Axis
12	X Solar Ecliptic
13	Y Solar Ecliptic
14	Z Solar Ecliptic
15	X Solar Ecliptic Variance
16	Y Solar Ecliptic Variance
17	Z Solar Ecliptic Variance (truncated, so appears on the cards as I3)
Card Format	
I2, 4F5.1, I2, I3, I2, F5.1, 2F5.0, 6F5.1	

FIGURE 5
FORMAT OF BINARY SUMMARY TAPE

IMP 1 1963 46A
MAGNETOMETERS (02)

*Data Word	Description
1	Month ID (integer)
2	Day Count ID (integer)
3	Station Number (integer)
4	Tape Number (integer)
5	Year (integer)
6	Data Day (integer)
7	Data Hour (integer)
8	Data Minutes
9	Sequence Number
10	Spin Angle Average
11	Flux Angle Average
12	X Payload Average
13	Y Payload Average
14	Z Payload Average
15	X Solar Ecliptic
16	Y Solar Ecliptic
17	Z Solar Ecliptic
18	X Payload Variance
19	Y Payload Variance
20	Z Payload Variance
21	Magnitude of Field
22	Angle between Field and Ecliptic Plane
23	Angle between Projection of Field onto Ecliptic Plane and Earth-Sun Axis
24	X Solar Ecliptic Variance
25	Y Solar Ecliptic Variance
26	Z Solar Ecliptic Variance
27	Number of Good Points (integer)
28	Geodetic Latitude in degrees
29	Geodetic Longitude in degrees
30	Geomagnetic Latitude in degrees
31	Geomagnetic Longitude in degrees
32	Radial Distance in earth radii
33	Geomagnetic Longitude of Sub-Solar Point
34	Geomagnetic Latitude of Sub-Solar Point
35	Angle between Spin Axis and Satellite Vector

*Each physical record consists of 36 binary words, with the first word being a binary code word, which appears in octal as 06 00 43 00 00 01. The 43 is octal for 35 and indicates that 35 binary data words follow, while the 1 shows that the logical record is complete within the physical record. The 35 data words are given above and are floating point words unless otherwise indicated.

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EXPLORER 18
EPHEMERIS
12/21/63-
12/30/64

D-1795
C-6728

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0385	206520512102	207563463146	204775532565	605542272472
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0721	600564334366	201400000000	000000000000	000000000000
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1153	211430202524	206544504622	207563146314	205400351070
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FILE 0001 REC 0003 CH 1296

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FILE 0001 REC 0004 CH 1296

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0049	604454631463	205675230454	206564715744	604763624630	2077
0097	201631463146	201600000000	600400000000	201624613012	2111
0145	605545306526	602527464405	200651602634	000000000000	6000
0193	577761423056	177760146244	600564334366	201400000000	0000
0241	176530710621	000000000000	576530710621	200770540035	0000
0289	605641341217	607501314631	604723146314	604520000000	2055
0337	205406503567	605531301327	603631723654	201631463146	2011
0385	206545753106	207557146314	205406503567	605545440400	6025
0433	577423466123	600677703527	577634451660	577761443443	1777
0481	000000000000	000000000000	200770754353	176522321333	0000
0529	000000000543	000000000015	000000000031	605641076341	6077
0577	206542072522	604750173426	207756631463	205407075625	6055
0625	600400000000	201624613013	211432355562	206544736302	2077
0673	200651572062	000000000000	600434323334	577423463222	6006
0721	600564334366	201400000000	000000000000	000000000000	0000
0769	576513620734	200771171101	000000000077	000000000543	0000
0817	604726314631	604631463146	205676710150	206530557747	6047
0865	603631436712	201600000000	201600000000	600400000000	2011
0913	205407467652	605545712650	602561317326	200651565572	0006
0961	577634405675	577761504447	177760064541	600564334366	2011
1009	200771405500	176505015427	000000000000	576505015427	2011
1057	000000000043	605640507534	607517727024	604726314631	6046
1105	207756631463	205410134333	605532267070	603630425332	2011
1153	211433724712	206552476274	207555146314	205410134333	6055
1201	600434340357	577423455424	600677721324	577634363723	5777
1249	000000000000	000000000000	000000000000	200771621421	1766

FILE 0001 REC 0005 CH 1296

0001	000327000001	000000000077	000000000543	000000000015	0000
0049	604740000000	205677750266	206505745637	604727637161	2011
0097	201600000000	201546314631	600400000000	201574444417	2111
0145	605546127344	602601707001	200651555021	000000000000	6000
0193	577761545434	177760023463	600564334366	201400000000	0000
0241	176467110771	000000000000	576467110771	200772035022	0000
0289	605640121727	607531463146	604731463146	605401463146	2011
0337	205411120321	605533066177	603630140366	201600000000	2011
0385	206551034352	207554000000	205411120321	605546241542	6000
0433	577423447615	600677732452	577634317740	577761566035	1777
0481	000000000000	000000000000	200772247551	176460005407	0000
0529	000000000543	000000000015	000000000062	605640000000	6000

603471463146	205673132747	206632423005	605406077523	207756631463
201631463146	201600000000	600400000000	201624613014	211431521622
605544527154	602471524573	200651624165	000000000000	600434254236
577761321060	177760250364	600564334366	201400000000	000000000000
176561357524	000000000000	576561357524	200767462702	000000000077
605642314631	607456024365	604720000000	603600000000	205673552245
205404460545	605530044555	603633354557	201631463146	201600000000
206550425552	207561146314	205404460545	605544673735	602501202172
577423501477	600677661263	577634561563	577761341461	177760227737
000000000000	000000000000	200767675011	176553421672	000000000000
000000000543	000000000015	000000000005	605642050753	607462702436
206607557543	604777634351	207756631463	205405052666	605530314017
600400000000	201624613013	211431671300	206550013560	207560631463
200651613412	000000000000	600434271262	577423476607	600677665733
600564334366	201400000000	000000000000	000000000000	000000000000
576545357040	200770107717	000000000077	000000000543	000000000015
604720000000	604411463146	205674545213	206576235650	604771574005
603632413113	201631463146	201600000000	600400000000	201624613013
205405404307	605545160735	602817707665	200651607123	000000000000
577634515622	577761402453	177760166675	600564334366	201400000000
200770323565	176537177333	000000000000	576537177333	200770323565

000000000015	000000000017	605641463146	607474436560	604723146314
604763624630	207756631463	205406111504	605531032002	603632056235
201624613012	211432123753	206546365764	207557463146	205406111504
000000000000	600434306313	577423471017	600677677060	577634473632
201400000000	000000000000	000000000000	000000000000	200770540035
200770540035	000000000077	000000000543	000000000015	000000000024
604520000000	205675650276	206553406752	604755754344	207756631463
201631463146	201600000000	600400000000	201624613013	211432207254
605545440400	602537777527	200651576351	000000000000	600434314722
577761443443	177760125627	600564334366	201400000000	000000000000
176522321333	000000000000	576522321333	200770754353	000000000077
605641075341	607506172702	604723146314	604563146314	205676270175
205407075625	605531550700	603631571272	201631463146	201600000000
206544736302	207556314631	205407075625	605545567155	602550466203
577423463222	600677710202	577634427667	577761464043	177760105174
000000000000	000000000000	200771171101	176513620734	000000000000
000000000543	000000000015	000000000036	605640753412	607513050753
206530557747	604742507444	207756631463	205407467652	605532020272
600400000000	201624613013	211432440646	206544322706	207556000000
200651565572	000000000000	600434331750	577423460322	600677714656
600564334366	201400000000	000000000000	000000000000	000000000000
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604726314631	604674631463	205677330124	206517255561	604735125616
603630425332	201600000000	201546314631	600400000000	201574444417
205410134333	605546011704	602570557240	200651561310	000000000000
577634363723	577761525034	177760044122	600564334366	201400000000
200771621421	176476115645	000000000000	576476115645	200771621421

000000000015	000000000050	605640365605	607524605075	604731463146
604727637161	207756631463	205410526332	605532536522	603630272750
201574444417	211434007374	206552060010	207554631463	205410526332
000000000000	600434346770	577423452517	600677726000	577634341730
201400000000	000000000000	000000000000	000000000000	200772035022
200772035022	000000000077	000000000543	000000000015	000000000055
605401463146	205700370506	206474437073	604722451040	207757146314
201600000000	201546314631	600400000000	201574444416	211434154262
605546241542	602613173153	200651550533	000000000000	600434355403
577761566035	177760003027	600564334366	201400000000	000000000000
176460005407	000000000000	576460005407	200772247551	000000000077
605640000000	607536365605	604734631463	605424631463	205700710623

FILE 0001 REC 0025 CH 1296

0481	000000000000	000000000000	200755063271	577423516052	000
0529	000000000555	000000000025	000000000031	603464365605	210
0577	211444545062	605457707467	210406631463	205414310444	605
0625	601631463146	202430563520	211432305101	207520144406	210
0673	200600011432	000000000000	600522505067	576424164432	600
0721	600567745654	201400000000	000000000000	000000000000	000
0769	177425400513	200754656461	000000000100	000000000555	000
0817	604503146314	607720314631	205607575115	211443403144	605
0865	203607400720	202431463146	201600000000	601631463146	202
0913	205414055152	605434676433	201517544254	200600007272	000
0961	576471123666	600513415777	176641422360	600567745654	201
1009	200754457133	577427206570	000000000000	177427206570	200
1057	000000000043	603460000000	210530521727	604511463146	607
1105	210406631463	205413472435	605413512376	203607723042	202
1153	211462154242	207515523535	210461631463	205413472435	605
1201	600522512036	576424060126	600765201010	576471051027	600
1249	000000000000	000000000000	000000000000	200754265362	577

FILE 0001 REC 0026 CH 1296

0001	000327000001	000000000100	000000000555	000000000025	000
0049	607732000000	205606237264	211441076222	605473172066	210
0097	202446314631	201600000000	601663146314	202442144301	211
0145	605433533450	201512705134	200600002777	000000000000	600
0193	600513426473	176641244763	600567745654	201400000000	000
0241	577432412364	000000000000	177432412364	200754101242	000
0289	603452702436	210523670243	604523146314	607736631463	205
0337	205412654564	605412062233	203610771600	202446314631	201
0385	207513424320	210460146314	205412654564	605432720671	201
0433	576423753567	600765206560	576470723231	600513432731	176
0481	000000000000	000000000000	200753723041	577434010362	000
0529	000000000555	000000000025	000000000062	603450753412	210
0577	211436566371	605502743100	210406631463	205412404310	605
0625	601663146314	202452643243	211433022711	207512277036	210
0673	200577776505	000000000000	600522521371	576423711435	600
0721	600567745654	201400000000	000000000000	000000000000	000
0769	177435327070	200753553035	000000000100	000000000555	000
0817	604540000000	607750314631	205603726234	211435421003	605
0865	203612040335	202446314631	201631463146	601663146314	202
0913	205412037066	605431433304	201507745630	200577774347	000
0961	576470575472	600513443422	176641000531	600567745654	201
1009	200753411114	577436570074	000000000000	177436570074	200
1057	000000000000	603443656050	210514507534	604543146314	607
1105	210406631463	205411566664	605407674227	203612564753	202
1153	211433463700	207510131776	210455631463	205411566664	605
1201	600522526337	576423605062	600765217207	576470523574	600
1249	000000000000	000000000000	000000000000	200753255523	577

FILE 0001 REC 0027 CH 1296

0001	000327000001	000000000100	000000000555	000000000026	000
0049	607762314631	205602372612	211433104374	605516535300	210
0097	202463146314	201631463146	601663146314	202452643244	211
0145	605430260247	201507450150	200577770056	000000000000	600
0193	600513454112	176640623117	600567745654	201400000000	000
0241	577441053344	000000000000	177441053344	200753130676	000
0289	603436560007	210507656050	604554631463	607767146314	200
0337	205410637263	605406227566	203613431215	202463146314	200
0385	207505765032	210454146314	205410637263	605427441471	200
0433	576423500531	600765224751	576470375033	600513460344	177
0481	000000000000	000000000000	200753012534	577442075646	000
0529	000000000555	000000000026	000000000017	603434631463	210
0577	211430563471	605526471064	210406631463	205410367167	600
0625	601714631463	202464207447	211447074364	207505141744	211
0673	200577763566	000000000000	600522535664	576423436333	600
0721	600567745654	201400000000	000000000000	000000000000	000

77423516052	000000000000	177423516052	200755063271	000000000100
03464365605	210535365605	604474631463	607713463146	205610371166
05414310444	605415142470	203606654303	202431463146	201600000000
07520144406	210463463146	205414310444	605435462267	201521507054
76424164432	600765173242	576471176565	600513411536	176641511201
00000000000	000000000000	200754656461	577425400513	000000000000
00000000555	000000000025	000000000036	603462436560	210533036560
11443403144	605463611655	210406631463	205414055152	605414264140
01631463146	202430563521	211432615424	207516646754	210462463146
00600007272	000000000000	600522507454	576424122255	600765176130
00567745654	201400000000	000000000000	000000000000	000000000000
77427206570	200754457133	000000000100	000000000555	000000000025
04511463146	607725146314	205606754422	211442241417	605467331031
03607723042	202431463146	201600000000	601663146314	202442144300
05413472435	605434203132	201514507200	200600005136	000000000000
76471051027	600513422231	176641333605	600567745654	201400000000
00754265362	577430736524	000000000000	177430736524	200754265362
00000000025	000000000050	603455341217	210526205075	604514631463
05473172066	210406631463	205413222074	605412754705	203610447457
02442144301	211451714527	207514464324	210461000000	205413222074
00000000000	600522514424	576424015751	600765203675	576470776131
01400000000	000000000000	000000000000	000000000000	200754101242
00754101242	000000000100	000000000555	000000000025	000000000055
07736631463	205605340710	211437732227	605477051344	210406631463
02446314631	201600000000	601663146314	202442144300	211451476436
05432720671	201511313440	200600000641	000000000000	600522517010
00513432731	176641156135	600567745654	201400000000	000000000000
77434010362	000000000000	177434010362	200753723041	000000000100
03450753412	210521341217	604531463146	607743463146	205604624161
05412404310	605411324503	203611516214	202446314631	201631463146
07512277036	210457214631	205412404310	605432247527	201510423660
76423711435	600765211441	576470650373	600513437164	176641067361
00000000000	000000000000	200753553035	577435327070	000000000000
00000000555	000000000025	000000000067	603446314631	210517024365
11435421003	605506654121	210406631463	205412037066	605410431777
01663146314	202452643244	211433245702	207511214411	210456463146
00577774347	000000000000	600522523754	576423647247	600765214325
00567745654	201400000000	000000000000	000000000000	000000000000
77436570074	200753411114	000000000100	000000000555	000000000026
04543146314	607755146314	205603212120	211434252560	605512600670
03612564753	202446314631	201631463146	601663146314	202452643243
05411566664	605430760530	201507761534	200577772212	000000000000
76470522574	600513447657	176640711702	600567745654	201400000000
00753255523	577437751762	000000000000	177437751762	200753255523
00000000026	000000000005	603441217270	210512172702	604551463146
05516535300	210406631463	205411204366	605407122345	203613107074
02452643244	211433675306	207507047404	210455000000	205411204366
00000000000	600522530721	576423542723	600765222070	576470447732
01400000000	000000000000	000000000000	000000000000	200753130676
00753130676	000000000100	000000000555	000000000026	000000000012
07767146314	205601475503	211431734401	605522506552	210406631463
02463146314	201631463146	601663146314	202452643244	211434102661
05427441471	201510257030	200577765722	000000000000	600522533302
00513460344	176640534265	600567745654	201400000000	000000000000
77442075646	000000000000	177442075646	200753012534	000000000100
03434631463	210505327024	604563146314	607774000000	205600762163
05410367167	605405471753	203614155632	202463146314	201631463146
07505141744	210453314631	205410367167	605426764362	201511553674
76423436333	600765227632	576470322130	600513464600	176640445425
00000000000	000000000000	200752703267	577443037644	000000000000

FILE 0001 REC 0027 CH 1296

0769	177443037644	200752703267	000000000100	00000000
0817	604571463146	610400314631	205600065513	21142741
0865	203614477755	202463146314	201631463146	60171463
0913	205410022161	605426144045	201513305700	20057776
0961	576470247267	600513471027	176640356041	60056774
1009	200752604100	577443720350	000000000000	17744372
1057	000000000031	603427534121	210500475341	60457463
1105	210406631463	205407440015	605404025165	20361502
1153	211446773512	207503235543	210452000000	20540744
1201	600522542625	576423331771	600765235372	57647017
1249	000000000000	000000000000	000000000000	20075251

000000000555	000000000026	000000000024	603432172702	210503012172
211427412541	605532460500	210406631463	205410022161	605404577134
601714631463	202464207447	211447035645	207504303666	210452631463
200577761433	000000000000	600522540243	576423374170	600765232511
600567745654	201400000000	000000000000	000000000000	000000000000
177443720350	200752603100	000000000100	000000000555	000000000026
604574631463	610402631463	205577247064	211426237720	605536462276
203615022076	202463146314	201631463146	601714631463	202464207450
205407440015	605425440231	201514624124	200577757277	000000000000
576470174365	600513475262	176640270001	600567745654	201400000000
200752511727	577444520472	000000000000	177444520472	200752511727

LIST OF TIME GAPS OF EPHEMERIS DATA GREATER THAN 1 HOUR.

	YEAR	MONTH	DAY	HOUR	MIN
From:	1964	March	28	11	15
To:	1964	Sept.	21	10	0
From:	1964	Oct.	11	9	55
To:	1964	Dec.	12	12	0

DATA SET 63-046A-02A

BRIEF DESCRIPTION

This data set consists of two reels of 7-track, 556 bpi, IBM/7094 binary tapes. The analyzed fluxgate magnetometer data are as received from the experimenter: 5.46 minute averaged magnetic field data, in both Cartesian and spherical representations in a solar ecliptic coordinate system. Time of coverage extends from November 27, 1963 to May 30, 1964, with 90% coverage.

OBJECTIVE

The purpose of this data set is to present 5.46 minute average values of the magnetic field observed in the outer regions of the magnetosphere, including the earth's magnetic tail, and in interplanetary space.

FULL DESCRIPTION

The data set consists of 2 reels of 7-track, 556 bpi, IBM/7094 binary tapes. Each physical record consists of a code word followed by 35 data words. The data words include: time information; Cartesian and spherical components of the averaged vector magnetic field, in solar ecliptic coordinates; variances of the averaged Cartesian components; spacecraft position in geodetic and geomagnetic coordinates; geomagnetic longitude and latitude of the subsolar point; the angle between the spin axis and the satellite-sun vector; the number of good 20.5 seconds data points (maximum of 12) from which the averaged field vector was constructed.

QUANTITY AND QUALITY

The time period covered by these 2 tapes extends from November 27, 1963 to May 30, 1964. There is at least 90% coverage. However, because the fluxgates saturated at field values greater than 40γ, the data given for adial distances less than about 8 earth radii are meaningless. (The spacecraft spends 95% of its orbital period beyond 8 earth radii.)

These tapes have been used at NSSDC in generating further data sets, and have been found to contain data in the specified format and to be free of tape errors.

FORMAT

63-046A-02A Explorer 18, Magnetometer

7 Track, 556 BPI, IBM/7094 Binary tapes

There is one file per tape. Each physical record contains 36 words (216 characters). The first word of each record is a control word which shows that there are 35 data words to follow. Each data word is a IBM/7094 floating point word unless otherwise indicated in the description given below.

DATA WORD	DESCRIPTION
1	Data Month ID (integer) Jan.=1,...Dec.=12
2	Data Day Count ID (integer) 1,2,...31
3	Station Number (integer) NITU*
4	Tape Number (integer)
5	Year (integer) 19XX; XX given on tape
6	Data Day of year (integer) 1,2,...365
7	Data Hour (integer) 0,1,...23
8	Data Minutes 0.000...59.999
9	Sequence Number (integer in floating point format) NITU*
10	Spin Angle Average+
11	Flux Angle Average+
12	Field Payload X Component, in gammas
13	Field Payload Y Component, in gammas
14	Field Payload Z Component, in gammas
15	Field Solar Ecliptic X Component, in gammas
16	Field Solar Ecliptic Y Component, in gammas
17	Field Solar Ecliptic Z Component, in gammas
18	Field Payload X Component Variance, in gammas
19	Field Payload Y Component Variance, in gammas
20	Field Payload Z Component Variance, in gammas
21	Magnitude of Field, in gammas
22	Angle between Field and Ecliptic Plane, in degrees**
23	Angle between Projection of Field onto Ecliptic Plane and Earth-Sun Axis, in degrees**
24	Field Solar Ecliptic X Component Variance, in gammas
25	Field Solar Ecliptic Y Component Variance, in gammas
26	Field Solar Ecliptic Z Component Variance, in gammas
27	Number of Good Vector Field Measurements used in generating 5.46 minute averaged vector field
28	Spacecraft Geodetic Latitude, in degrees
29	Spacecraft Geodetic Longitude, in degrees
30	Spacecraft Geomagnetic Latitude, in degrees
31	Spacecraft Geomagnetic Longitude, in degrees
32	Radial Distance of Spacecraft in earth radii
33	Geomagnetic Longitude of Sub-Solar Point, in degrees
34	Geomagnetic Latitude of Sub-Solar Point, in degrees
35	Angle between Spin Axis and Satellite-Sun Vector, in degrees

* NITU - Not important to User

** This angle is measured from the ecliptic plane, positive north

*** This angle is 0 if ecliptic-plane field component is towards sun, 90° if towards dusk meridian.

\+ The significance of these variables is indeterminate and is presumably minor.

M 11 D 27 Stat 16

FILE 0001 REC 0001 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	206615252525	207504000000	202831727023	205627146314	60142
0097	606573435214	605443567372	202424365604	206550243654	20451
0145	203570054404	206473725310	205571650313	000000000005	60640
0193	203411625434	210375216306	606404026326	207673463146	

FILE 0001 REC 0002 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	206671042104	207524000000	202532350065	205633146314	00000
0097	605673135300	605740517540	400000000000	000000000000	15540
0145	153400000000	154400000000	153400000000	000000000006	60640
0193	203427672536	210572406472	606404314272	207673463146	

FILE 0001 REC 0003 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	200452525252	207544000000	202532350065	205657356734	20460
0097	605667154315	605562654400	205734353712	204536371253	20561
0145	206445415071	200464663731	205414777725	000000000007	60640
0193	203446447100	210564763345	606404756046	207673463146	

FILE 0001 REC 0004 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	203603146314	207564000000	202532015515	205710421041	00000
0097	605673106014	605740517540	000000000000	000000000000	15540
0145	153400000000	154600000000	153400000000	000000000006	60640
0193	203463242063	210562151264	606405131423	207673463146	

FILE 0001 REC 0005 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	204560421042	207604000000	202532015515	205762525251	00000
0097	605673076174	605740517540	000000000000	000000000000	15540
0145	153400000000	154400000000	153400000000	000000000006	60641
0193	203500723066	210557336576	606405254006	207673463146	

FILE 0001 REC 0006 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	205417356735	207624000000	202532015515	206407356735	20460
0097	605701307444	605672475675	205674074105	204437150070	20565
0145	206426351430	203513561612	205445611617	000000000010	60641
0193	203515751550	210564522565	606405345362	207673463146	

FILE 0001 REC 0007 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	205546735673	207644000000	202532172701	206446735673	20460
0097	605544532311	605563041276	205734353713	201645020416	20642
0145	206477354251	204647257607	205414341504	000000000007	60641
0193	203132244470	210551707405	606405405627	207673463146	

FILE 0001 REC 0008 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	205676314631	207664000000	202532172701	206733567355	20544
0097	606407757650	605552056707	205757024701	205542470222	20574
0145	206454672656	205524532351	205547516626	000000000011	60641
0193	203547201402	210547074143	606405415020	207673463146	

FILE 0001 REC 0009 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	206412631463	207704000000	202532172701	206755252524	20546
0097	606500115005	605411545540	206412727630	205765663113	20644
0145	206501062535	206451012345	205534410011	000000000012	60641
0193	203563710151	210544257675	606405373110	207673463146	

FILE 0001 REC 0010 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	206466421042	207724000000	202532350065	206754631461	20447
0097	605745127016	605717400560	205646635117	204570414073	20565
0145	206411525206	203574476416	205503137652	000000000010	60641
0193	203600137170	210541444605	606405320123	207673463146	

FILE 0001 REC 0011 CH 0216

0001	000043000001	000000000013	000000000033	000000000020	00000
0049	205542210421	207744000000	202532702435	207642104206	20450
0097	606406164276	604774345402	205500141270	205735212243	20545

X1	Stat 16	Tape 2	Y 43	D 33	M
0033	000000000020	000000000002	000000000077	000000000513	000000000003
7023	205627146314	601424365604	205550243655	206611075340	605446665537
5604	206550243654	204534121725	206660413343	605473261654	210761427176
0313	000000000005	606400702436	205722050753	606410000000	207552631463
6326	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000003
0065	205633146314	000000000000	000000000000	206535463144	604757574044
0000	000000000000	155400000000	206535463137	606533327133	210741440311
0000	000000000006	606403075341	205740000000	606413146314	207556463146
4272	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
0065	205657356734	204605016501	203436127612	206414072405	600410322715
3712	204536371253	205617144617	206437343067	606501271114	211414730063
7725	000000000007	606406314631	205763412172	606420631463	207562000000
6046	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
5515	205710421041	000000000000	000000000000	206535463144	604757717432
0000	000000000000	155400000000	206535463137	606533327133	210741425463
0000	000000000006	606407412172	205771463146	606422314631	207563146314
1423	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
5515	205762525251	000000000000	000000000000	206535463144	604757753300
0000	000000000000	155400000000	206535463140	606533327133	210741422001
0000	000000000006	606410365605	205775605075	606423146314	207564314631
4006	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
5515	206407356735	204603146314	201746314632	206454146312	601777152424
4105	204437150070	205656521407	206473622657	606543743275	211411735577
1617	000000000010	606411075341	206400050753	606424631463	207564631463
5362	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
2701	206446735673	204605016501	200527612761	205734444442	200631606355
3713	201645020416	206420523434	206401331656	606560723750	211420034441
1504	000000000007	606411534121	206400436560	606424631463	207564631463
5627	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
2701	206733567355	205443146313	204435405540	205426372235	203452472361
4701	205542470222	205746375102	206502204045	606421343726	211426020571
6626	000000000011	606412050753	206400243656	606425463146	207564631463
5020	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
2701	206755252524	205461217267	205442560506	206426507531	203536571271
7630	205765663113	206447613218	206535304213	605545446776	211425630176
0011	000000000012	606412314631	205776702436	606425463146	207564314631
3110	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
0065	206754631461	204474314630	202524631462	206510063144	603523636454
5117	204570414073	205652121151	206522127717	606532047210	211304042705
7652	000000000010	606412436560	205774121727	606425463146	207563463146
0123	207673463146				
0033	000000000020	000000000002	000000000077	000000000513	000000000004
2435	207642104206	204501042103	204652525251	206403463145	602421331520
1270	205735212243	205456142240	206443722770	605535011657	211412212671

LISTINGS OF TIME GAPS OF
INPUT MAGNETOMETER DATA
GREATER THAN 1 HOUR ON
FOLLOWING PAGES.

```
26.  SUBR 'UN45  '              22662
27.  SUBR 'FSLDD '              22663
28.  SUBR 'FSL80 '              22620
29.  SUBR 'FSLD  '              22656
30.  SUBR '.IOCS '  *           22712
31.  SUBR '.IOCSM'              31014
32.  SUBR '.IOCSB'              31014
```

(* - INSERTIONS OR DELETIONS MADE IN THIS DECK)

INPUT - OUTPUT BUFFERS 31023 THRU 77664

UNUSED CORE 77665 THRU 77777

```
      TIME GAP      1616
63        337         9     55.9
63        337        10     45.1
      TIME GAP      2991
63        342        17     59.5
63        342        18     10.5
      TIME GAP      4106
63        347         3     56.0
63        347         4     66.1
      TIME GAP      4129
63        347         7     29.0
63        347         8     29.1
      TIME GAP      4130
63        347         8     29.1
63        347         9     45.8
      TIME GAP      4868
63        350        10     34.3
63        350        13     23.6
      TIME GAP      5673
63        354         9     46.5
63        354        11      2.9
      TIME GAP      6858
63        358         6     47.6
63        358         7     47.6
      TIME GAP      7163
63        359        11     27.8
63        359        12     44.2
      TIME GAP      7368
63        360         7     23.7
63        360         8     23.8
      TIME GAP      8293
63        364         4     24.8
63        364         5     41.3
      TIME GAP      8306
63        364         7     46.9
63        364         9      4.7
      TIME GAP      8506
63        365         3     53.8
63        365         4     59.3
      TIME GAP      8669
63        365        19     44.0
64          1         1     55.3
      TIME GAP      8680
64          1         2     49.9
64          1         4      6.4
      TIME GAP      8750
            1        14      1.6
```

31023 THRU 77664

77665 THRU 77777

IMP-1 MAGNETOMETER 5.46 MINUTE AVERAGED DATA

JDA	STA	AC.	YR	MO	DA	HR	MIN	FIELD COMPONENTS SOLAR ECLIPTIC X	Y	Z	FIELD COMPONENT S.E. VARIANCES X	Y	Z
331	16	281	63	11	27	8	22.7	5.448	25.431	-14.170	4.319	9.155	4.6
331	16	285	63	11	27	8	23.2	-1.530	6.437	-15.895	3.190	5.130	2.4
331	16	289	63	11	27	8	33.6	5.919	16.877	-9.745	4.665	7.413	5.5
331	16	293	63	11	27	8	39.1	9.397	18.211	-0.615	3.653	5.033	11.4
331	16	297	63	11	27	8	44.6	11.108	18.536	1.363	1.889	3.261	2.1
331	16	301	63	11	27	8	50.0	8.063	18.625	-3.510	2.580	2.967	2.2
331	16	305	63	11	27	8	55.5	5.292	24.381	-1.711	6.440	8.740	4.1
331	16	309	63	11	27	9	0.9	-4.005	-6.425	7.383	6.232	11.077	9.3
331	16	313	63	11	27	9	6.4	-10.762	-0.129	7.876	12.691	11.407	9.0
331	16	317	63	11	27	9	11.9	1.176	-1.044	22.450	5.158	4.259	9.5
331	16	321	63	11	27	9	17.3	2.521	3.254	-2.992	9.229	7.999	8.3
331	16	325	63	11	27	9	22.8	4.494	12.316	0.870	6.225	5.821	8.1
331	16	329	63	11	27	9	28.2	-0.575	-24.378	14.710	6.562	10.156	6.0
331	8	333	63	11	27	9	33.7	-3.014	0.344	-7.293	6.028	10.147	9.3
331	16	337	63	11	27	9	39.2	3.423	8.764	8.223	2.903	4.797	12.0
331	8	341	63	11	27	9	44.6	8.906	10.944	8.895	2.185	4.903	2.5
331	16	345	63	11	27	9	50.1	3.149	16.476	-5.869	3.871	6.109	6.7
331	8	349	63	11	27	9	55.5	3.323	17.093	-10.418	7.320	3.604	7.2
331	16	353	63	11	27	10	1.0	0.354	6.383	-11.283	3.065	6.044	3.5
331	8	357	63	11	27	10	6.5	-2.550	5.878	-10.880	3.034	3.333	5.8
331	8	361	63	11	27	10	11.9	4.151	17.068	-13.854	6.779	5.627	4.9
331	16	365	63	11	27	10	17.4	-1.762	5.169	-12.747	5.314	7.078	4.1
331	16	369	63	11	27	10	22.8	-5.335	3.692	-11.067	3.440	4.949	5.3
331	99	373	63	11	27	10	28.3	-4.902	3.371	-10.786	2.624	4.273	3.9
331	8	377	63	11	27	10	33.8	-6.562	1.468	-7.726	7.361	8.240	5.9
331	8	381	63	11	27	10	39.2	-7.400	-2.415	-9.006	6.961	7.047	7.1
331	16	385	63	11	27	10	44.7	-7.555	-5.458	-7.736	8.959	7.436	4.2
331	99	389	63	11	27	10	50.2	-0.612	0.541	-5.137	7.042	5.878	6.5
331	16	393	63	11	27	10	55.6	-1.383	3.423	-4.379	7.097	4.070	7.4
331	99	397	63	11	27	11	1.1	3.370	6.507	-0.839	3.687	7.867	7.1
331	16	401	63	11	27	11	6.5	3.558	5.390	6.259	7.012	8.152	7.3
331	99	405	63	11	27	11	12.0	0.664	6.464	8.017	4.440	5.995	5.1
331	16	409	63	11	27	11	17.5	4.178	7.187	10.663	1.286	5.102	2.4
331	99	413	63	11	27	11	22.9	3.424	8.722	10.056	2.488	2.880	2.4
331	16	417	63	11	27	11	28.4	3.037	7.277	11.562	1.037	2.245	1.4
331	20	421	63	11	27	11	33.8	-1.023	1.118	6.475	9.059	9.053	6.1
331	1	425	63	11	27	11	[illegible]	3.412	6.491	11.459	2.623	6.463	4.4
331	99	429	63	11	27	11	44.8	1.105	9.230	9.428	5.475	5.464	5.1
331	1	433	63	11	27	11	50.2	4.894	6.877	9.774	4.922	4.394	2.4
331	20	437	63	11	27	11	55.7	8.642	9.017	4.073	8.705	8.305	8.1
331	1	441	63	11	27	12	1.1	2.322	11.932	-2.841	12.277	9.604	16.4
331	20	445	63	11	27	12	6.6	-4.225	1.036	0.425	12.572	12.308	7.1
331	1	449	63	11	27	12	12.1	-2.159	6.304	1.787	6.040	11.088	6.4
331	20	453	63	11	27	12	17.5	-3.961	1.445	1.647	6.438	4.437	8.1
331	1	457	63	11	27	12	23.0	-2.718	3.863	4.941	6.194	10.986	12.4
331	20	461	63	11	27	12	28.5	0.838	7.440	-0.241	6.280	5.158	6.1
331	1	465	63	11	27	12	33.9	-2.057	2.031	3.418	1.629	1.536	2.1
331	99	469	63	11	27	12	39.4	-3.389	2.931	0.505	1.961	1.315	2.1
331	1	473	63	11	27	12	44.8	-1.640	4.503	1.046	2.083	2.151	2.4
331	99	477	63	11	27	12	50.3	-0.805	3.945	2.397	1.172	0.958	0.9

E AVERAGED DATA PAGE 2 PART ONE 63-046A-02A

FIELD COMPONENTS S.E. VARIANCES X	Y	Z	FIELD MAGNITUDE	FIELD THETA	FIELD PHI	SPACECRAFT RADIAL DISTANCE	GOOD POINTS
4.319	9.155	4.639	29.618	-28.582	77.908	12.110	12
3.190	5.130	2.491	17.217	-67.401	103.368	12.228	8
4.665	7.413	5.693	20.581	-28.115	67.706	12.353	11
3.653	5.038	11.450	20.502	-1.718	62.705	12.478	12
1.889	3.261	2.136	21.652	3.609	59.066	12.591	12
2.580	2.967	2.252	20.596	-9.811	66.590	12.708	11
6.440	8.740	4.192	25.238	-3.887	75.529	12.823	11
6.232	11.077	9.358	10.575	44.278	238.066	12.942	11
2.691	11.407	9.076	13.337	36.194	180.686	13.059	11
5.158	4.259	9.528	22.515	85.996	318.417	13.172	12
9.229	7.999	8.353	9.134	-19.118	73.017	13.288	11
6.225	5.821	8.154	13.139	3.797	69.954	13.401	12
6.562	10.156	6.031	28.478	31.100	268.649	13.513	11
6.028	10.147	9.359	7.899	-67.412	173.488	13.624	11
2.903	4.797	12.071	12.306	39.951	63.223	13.730	12
2.185	4.903	2.526	16.680	32.227	50.862	13.849	12
3.871	6.109	6.733	17.772	-19.284	79.178	13.955	12
7.320	3.604	7.209	20.292	-30.890	79.000	14.065	12
3.065	6.044	3.872	12.959	-60.462	86.738	14.172	11
3.034	3.333	5.622	12.627	-59.506	113.455	14.278	12
6.779	5.627	4.972	22.372	-38.263	76.332	14.385	12
5.314	7.078	4.380	13.868	-66.809	108.819	14.487	12
3.440	4.949	5.379	12.829	-59.619	145.317	14.595	11
2.624	4.279	3.978	12.317	-61.121	145.483	14.697	11
7.361	8.240	5.952	10.243	-48.964	167.390	14.802	10
6.961	7.047	7.861	11.903	-49.164	198.072	14.908	11
8.959	7.436	4.248	12.181	-39.424	215.450	15.006	11
7.042	5.878	6.808	5.201	-80.962	138.534	15.103	12
7.097	4.070	7.525	5.727	-49.868	111.997	15.213	12
3.687	7.867	7.920	7.376	-6.530	62.623	15.312	12
7.012	8.162	7.253	9.041	43.905	55.837	15.412	12
4.440	5.995	5.301	10.320	50.974	84.136	15.515	12
1.286	5.102	2.527	13.520	52.060	59.829	15.610	12
2.488	2.880	2.938	13.745	47.021	68.568	15.705	12
1.037	2.243	1.292	13.995	55.706	67.345	15.802	12
9.059	9.053	6.953	6.650	76.825	132.449	15.902	12
2.623	6.463	4.067	13.604	57.383	62.269	16.000	12
5.475	5.464	5.112	13.240	45.402	83.175	16.097	12
4.922	4.394	2.535	12.914	49.185	54.561	16.190	12
8.705	8.305	8.930	13.136	18.061	46.217	16.287	12
2.277	9.604	16.718	12.484	-13.155	78.986	16.376	12
2.572	12.308	7.836	4.371	5.591	166.218	16.471	12
6.040	11.088	6.780	6.902	15.003	108.983	16.569	12
6.438	4.407	8.429	4.527	21.332	159.957	16.660	12
6.194	10.986	12.746	6.847	46.189	124.988	16.752	12
6.280	5.158	6.810	7.491	-1.846	83.572	16.841	12
1.629	1.596	2.007	3.482	49.706	135.494	16.935	12
1.961	1.315	2.053	4.509	6.435	139.144	17.022	12
2.083	2.151	2.051	4.906	12.316	110.013	17.119	12
1.172	0.958	0.821	4.685	30.769	101.535	17.203	12

IMP-1 MAGNETOMETER 5.46 MINUTE AVERAGED DATA PA

YR	MO	DA	HR	MIN	TAPE NO.	FIELD COMPONENTS PAYLOAD COORDINATES X	Y	Z	FIELD COMPONENTS PAYLOAD VARIANCES X	Y	Z	SPACECRAF GEODETIC LAT	LO
63	11	27	8	22.7	6	2.657	-23.308	-8.292	4.285	7.141	7.392	-31.870	-3.
63	11	27	8	28.2	6	1.137	-15.500	7.400	3.399	5.048	2.379	-31.830	-4.
63	11	27	8	33.6	6	4.945	-19.018	-6.445	4.356	3.853	8.677	-31.790	-5.
63	11	27	8	39.1	6	4.542	-13.817	-14.450	5.151	11.765	3.997	-31.760	-6.
63	11	27	8	44.6	6	5.542	-12.717	-16.625	1.568	2.866	2.845	-31.720	-7.
63	11	27	8	50.0	6	3.955	-16.082	-12.245	2.260	3.487	1.807	-31.680	-8.
63	11	27	8	55.5	6	0.436	-19.100	-16.491	7.994	6.126	5.832	-31.650	-9.
63	11	27	9	0.9	6	-4.127	9.727	0.418	5.334	6.849	13.182	-31.680	-11.
63	11	27	9	6.4	6	-12.091	5.427	-1.491	11.182	12.621	9.446	-31.540	-12.
63	11	27	9	11.9	6	-4.650	15.975	-15.200	5.991	7.182	6.932	-31.500	-13.
63	11	27	9	17.3	6	1.145	-8.100	-4.064	10.091	7.926	7.379	-31.470	-14.
63	11	27	9	22.8	6	0.992	-8.475	-9.992	4.602	6.966	9.059	-31.440	-15.
63	11	27	9	28.2	6	1.491	27.900	5.509	4.689	10.113	7.637	-31.400	-16.
63	11	27	9	33.7	1	-0.982	-6.191	5.873	5.707	13.086	4.804	-31.370	-17.
63	11	27	9	39.2	6	-0.150	-0.883	-12.775	3.242	11.192	6.432	-31.330	-18.
63	11	27	9	44.6	1	3.333	-2.033	-16.217	2.531	3.163	4.339	-31.300	-19.
63	11	27	9	50.1	6	0.500	-15.100	-7.508	2.794	7.053	6.331	-31.270	-20.
63	11	27	9	55.5	1	1.708	-19.633	-4.833	8.194	5.888	4.088	-31.230	-21.
63	11	27	10	1.0	6	1.764	-12.336	3.591	4.111	5.469	3.754	-31.170	-24.
63	11	27	10	6.5	1	-0.942	-11.692	4.675	2.488	4.842	4.720	-31.140	-25.
63	11	27	10	11.9	1	3.392	-21.942	-2.750	6.038	5.819	5.659	-31.100	-25.
63	11	27	10	17.4	6	0.453	-12.433	6.125	6.627	5.244	5.110	-31.070	-27.
63	11	27	10	22.8	6	-2.984	-10.209	7.182	4.045	6.399	2.819	-31.040	-28.
63	11	27	10	28.3	1	-2.555	-9.782	7.036	2.729	5.130	2.693	-31.010	-29.
63	11	27	10	33.8	1	-4.430	-5.310	6.730	5.997	8.696	6.776	-30.980	-30.
63	11	27	10	39.2	1	-3.955	-4.318	10.364	6.446	9.927	4.452	-30.950	-31.
63	11	27	10	44.7	6	-3.800	-1.218	11.509	10.221	5.178	4.725	-30.910	-32.
63	11	27	10	50.2	1	0.650	-3.875	3.408	5.321	6.073	8.081	-30.880	-33.
63	11	27	10	55.6	6	-0.957	-5.833	1.342	7.515	5.198	6.330	-30.850	-35.
63	11	27	11	1.1	1	1.792	-5.358	-4.742	3.458	9.768	5.555	-30.790	-37.
63	11	27	11	6.5	6	0.458	0.275	-9.025	6.645	9.744	5.425	-30.760	-38.
63	11	27	11	12.0	1	-3.058	0.667	-9.833	3.378	6.065	5.965	-30.730	-39.
63	11	27	11	17.5	6	-0.650	1.925	-13.367	1.496	3.847	4.126	-30.700	-40.
63	11	27	11	22.9	1	-1.557	0.383	-13.650	2.442	3.534	2.150	-30.670	-41.
63	11	27	11	28.4	6	-1.975	2.467	-13.633	0.774	2.135	1.620	-30.650	-42.
63	11	27	11	33.8	1	-2.933	3.558	-4.792	7.590	6.132	10.823	-30.620	-43.
63	11	27	11	39.3	1	-1.408	2.975	-13.200	4.031	4.523	5.337	-30.590	-45.
63	11	27	11	44.8	1	-3.692	-0.417	-12.708	4.316	3.003	7.636	-30.560	-46.
63	11	27	11	50.2	1	0.325	1.550	-12.817	5.146	3.332	3.519	-30.530	-47.
63	11	27	11	55.7	1	4.808	-3.883	-11.592	10.289	6.667	8.615	-30.500	-48.
63	11	27	12	1.1	1	0.025	-10.708	-6.417	11.144	17.289	9.968	-30.450	-50.
63	11	27	12	6.5	1	-4.308	-0.475	0.567	10.789	12.664	9.704	-30.420	-51.
63	11	27	12	12.1	1	-4.025	-3.433	-4.433	8.402	5.906	9.333	-30.390	-52.
63	11	27	12	17.5	1	-4.483	0.050	-0.625	5.221	8.173	6.153	-30.360	-54.
63	11	27	12	23.0	1	-4.733	0.433	-4.875	5.818	11.277	12.669	-30.340	-55.
63	11	27	12	28.5	1	-0.958	-5.642	-4.833	6.092	6.214	6.058	-30.310	-56.
63	11	27	12	33.9	1	-3.325	0.817	-2.852	1.400	2.093	1.794	-30.280	-57.
63	11	27	12	39.4	1	-4.008	-1.817	-0.983	1.799	2.059	1.969	-30.260	-58.
63	11	27	12	44.8	1	-2.900	-2.608	-2.975	1.911	2.144	2.217	-30.230	-59.
63	11	27	12	50.3	1	-2.342	-1.283	-3.850	0.946	0.898	1.124	-30.200	-60.

63-046A-02A

NUTE AVERAGED DATA PAGE 2 PART TWO

COMPONENTS VARIANCES Y	Z	SPACECRAFT GEODETIC LAT	LONG	SPACECRAFT GEOMAGNETIC LAT	LONG	SUB-SOLAR POINT GEOMAGNETIC LAT	LONG	SPIN ANGLE AVG	FLUX ANGLE AVG	SPIN-SUN ANGLE
7.141	7.392	-31.870	-3.110	-26.500	60.000	-26.639	116.310	2.71	277.47	111.0
5.048	2.379	-31.830	-4.120	-26.300	59.100	-26.412	115.032	2.71	253.85	111.0
3.853	8.677	-31.790	-5.140	-26.100	58.200	-26.181	113.755	2.71	275.73	111.0
1.765	3.997	-31.760	-6.170	-25.900	57.200	-25.949	112.483	2.71	259.93	111.0
2.866	2.845	-31.720	-7.200	-25.700	56.300	-25.715	111.214	2.71	267.07	111.0
3.487	1.807	-31.580	-8.230	-25.500	55.300	-25.478	109.947	2.71	247.83	111.0
6.126	5.832	-31.650	-9.270	-25.200	54.400	-25.239	108.683	2.71	255.70	111.0
6.849	13.182	-31.580	-11.350	-24.800	52.500	-24.757	106.165	2.71	227.70	111.0
12.621	9.446	-31.540	-12.400	-24.600	51.500	-24.514	104.910	2.71	240.03	111.0
7.182	6.932	-31.500	-13.450	-24.400	50.600	-24.269	103.658	2.71	113.03	111.0
7.925	7.379	-31.470	-14.500	-24.200	49.600	-24.022	102.408	2.72	231.90	111.0
6.966	9.059	-31.440	-15.560	-24.000	48.600	-23.775	101.161	2.72	270.97	111.0
10.113	7.637	-31.400	-16.620	-23.800	47.700	-23.526	99.917	2.71	155.87	111.0
13.086	4.804	-31.370	-17.690	-23.700	46.700	-23.277	98.675	2.71	194.30	111.0
11.192	6.432	-31.330	-18.750	-23.500	45.700	-23.027	97.436	2.71	247.33	111.0
3.163	4.339	-31.300	-19.820	-23.300	44.700	-22.775	96.200	2.71	227.90	111.0
7.053	6.331	-31.270	-20.900	-23.100	43.800	-22.524	94.965	2.71	240.73	111.0
5.888	4.088	-31.230	-21.970	-22.900	42.800	-22.272	93.734	2.72	274.73	111.0
5.459	3.754	-31.170	-24.130	-22.600	40.800	-21.767	91.276	2.71	241.83	111.0
4.842	4.720	-31.140	-25.210	-22.400	39.800	-21.514	90.052	2.71	235.87	111.0
5.819	5.659	-31.100	-25.300	-22.200	38.900	-21.261	88.829	2.71	257.03	111.0
5.244	5.110	-31.070	-27.390	-22.000	37.900	-21.009	87.608	2.71	227.90	111.0
6.399	2.819	-31.040	-28.480	-21.900	36.900	-20.756	86.389	2.71	268.90	111.0
5.130	2.693	-31.010	-29.570	-21.700	35.900	-20.504	85.173	2.71	254.20	111.0
8.696	6.776	-30.980	-30.670	-21.600	34.900	-20.252	83.957	2.71	238.53	111.0
9.927	4.452	-30.950	-31.760	-21.400	33.900	-20.001	82.744	2.71	236.30	111.1
5.178	4.725	-30.910	-32.860	-21.200	32.900	-19.751	81.533	2.72	237.87	111.1
6.073	8.081	-30.880	-33.960	-21.100	31.900	-19.501	80.323	2.71	185.70	111.1
5.198	6.330	-30.850	-35.060	-21.000	30.900	-19.253	79.115	2.72	250.90	111.1
9.768	5.555	-30.790	-37.280	-20.700	28.900	-18.758	75.704	2.71	232.33	111.1
9.744	5.425	-30.760	-38.380	-20.500	27.900	-18.513	75.501	2.72	214.07	111.1
6.065	5.965	-30.730	-39.500	-20.400	26.900	-18.269	74.299	2.71	154.77	111.1
3.847	4.126	-30.700	-40.610	-20.300	25.800	-18.026	73.098	2.71	227.70	111.1
3.534	2.150	-30.670	-41.720	-20.100	24.800	-17.785	71.899	2.71	227.70	111.1
2.136	1.620	-30.650	-42.840	-20.000	23.800	-17.546	70.701	2.71	227.70	111.1
6.132	10.823	-30.620	-43.950	-19.900	22.800	-17.308	69.504	2.71	227.70	111.1
4.523	5.337	-30.590	-45.070	-19.800	21.800	-17.072	68.308	2.71	227.70	111.1
3.003	7.636	-30.560	-46.190	-19.700	20.800	-16.839	67.114	2.71	227.70	111.1
3.332	3.519	-30.530	-47.310	-19.600	19.700	-16.607	65.920	2.72	196.53	111.1
6.667	8.615	-30.500	-48.440	-19.500	18.700	-16.377	64.727	2.72	301.73	111.1
7.289	9.968	-30.450	-50.690	-19.300	16.700	-15.925	62.345	2.72	245.93	111.1
2.664	9.704	-30.420	-51.820	-19.200	15.600	-15.702	61.155	2.72	99.23	111.1
5.906	9.333	-30.390	-52.950	-19.100	14.600	-15.482	59.966	2.71	215.97	111.1
8.173	6.153	-30.360	-54.080	-19.000	13.600	-15.264	58.777	2.71	124.23	111.1
1.277	12.669	-30.340	-55.210	-18.900	12.600	-15.050	57.590	2.72	147.03	111.1
6.214	6.058	-30.310	-56.340	-18.900	11.500	-14.838	55.403	2.71	248.90	111.1
2.093	1.794	-30.280	-57.480	-18.800	10.500	-14.629	55.216	2.71	227.70	111.1
2.059	1.969	-30.260	-58.610	-18.700	9.500	-14.423	54.031	2.72	228.17	111.1
2.144	2.217	-30.230	-59.750	-18.700	8.400	-14.220	52.846	2.72	227.93	111.1
0.898	1.124	-30.200	-60.890	-18.600	7.400	-14.020	51.660	2.72	228.17	111.1

DATA SET 63-046A-02B

BRIEF DESCRIPTION

This data set consists of a single 7-track, 800 bpi, IBM/7094 binary tape, on which the fluxgate data contained in data set 63-046A-02C is merged with ephemeris data given in solar ecliptic and solar magnetospheric coordinates. This tape was generated at NSSDC.

OBJECTIVE

The purpose of generating this data set is to present an ephemeris-merged set of fluxgate magnetometer data.

FULL DESCRIPTION

This data set consists of a merging of the data contained in data set 63-046A-02C with ephemeris information.

This data set consists of a single reel of 7-track, 800 bpi, IBM/7094 binary tape. Each physical record consists of a Fortran control word followed by 7 logical 33 word records. The tape was generated by NSSDC personnel.

The ephemeris information was (tkane) from tapes generated by the experimenter and provided by him to NSSDC. In addition to certain ephemeris information (geodetic and geomagnetic latitude and longitude, radial distance) contained on the data tapes constituting 63-046A-02C, the ephemeris tapes supplied by the experimenter also contain spacecraft position in solar ecliptic and solar magnetospheric coordinate systems as welll as a spherical representation of a model magnetic field in solar ecliptic coordinates. Ephemeris points are given for each five minutes of the spacecraft period. Time coverage of these tapes extends between December 21, 1963, and December 30, 1964.

Data from set 63-046A-02C (one point every 5.46 minutes) is merged with ephemeris data (one point every 5.0 minutes) for those cases (90%) when the times of the data and ephemeris points lie within 2.5 minutes of each other; in these cases, data appearing on both input tapes (eg., geomagnetic and geodetic latitude and longitude, radial distance) are taken from the ephemeris tapes. No time-interpolation is performed.

Those data points of data set 63-046A-02C which do not lie within 2.5 minutes of a point on the ephemeris tapes are written on the merged tapes with zeros inplace of the ephemeris words; common quantities such as radial distance are taken from data set -02C for inclusion in data set -02B. Such points arise due to differences in the start times of the tapes or due to infrequent time gaps in the ephemeris tapes.

QUANTITY AND QUALITY

This data set (-02B) has the same time coverage as data set (-02A). However, due to the difference in start times of the -02C tapes and of the ephemeris tapes (11/27/63 and 12/21/63, respectively), and due to infrequent time gaps on the ephemeris tapes, only about 90% of the data points from -02A are associated with ephemeris points in this data set.

Note also the "Quantity and Quality" section of the 63-046A-02A entry.

This tape was checked for parity errors at the time of its generation, and was found to be free of such errors.

FORMAT

63-046A-02B EXPLORER 18, MAGNETOMETER

7 Track, 800 BPI, IBM/7094 Binary Tape

There is one file per tape. Each physical record of 232 words has an initial FORTRAN control word and seven logical 33 word records. The words are described below and are IBM/7094 floating point words unless otherwise indicated.

There is a record of sevens at the end of the tape, with a FORTRAN control word and 231 words of sevens /6H777777/.

The formats vary according to the presence or absence of matching ephemeris data. In the following list MAG denotes data taken from the magnetometer data tapes, while EPH denotes data taken from the ephemeris tapes. SAME means the entry for no matching ephemeris is the same as that for matching ephemeris. One can use the first word of each logical record as a test. If the word is equal to 999999 there was no matching ephemeris for this time. If not equal to 999999 there is matching ephemeris data. The two record formats follow:

DATA WORD		MATCHING EPHEMERIS	NO MATCHING EPHEMERIS
3	1.	Time difference between magnetometer and ephemeris data	999999.
	~~2~~	Data year - integer (MAG)	SAME
1	3	Data day count - integer (MAG)	SAME
2	4	Data hour - integer (MAG)	SAME
	5	Data minutes (MAG)	SAME
	~~6~~	Sequence number - not important to user (MAG)*	SAME
4	7	Spacecraft geodetic latitude in degrees (EPH)	SAME (MAG)
5	8	Spacecraft geodetic longitude in degrees (EPH)	SAME (MAG)
6	9	Spacecraft geomagnetic latitude in degrees (EPH)	SAME (MAG)
7	10	Spacecraft geomagnetic longitude in degrees (EPH)	SAME (MAG)
8	11	Spacecraft radial distance in earth radii (EPH)	SAME (MAG)
16	12	Geomagnetic latitude of sub-solar point (EPH)	SAME (MAG)
17	13	Geomagnetic longitude of sub-solar point (EPH)	SAME (MAG)
15	14	Angle in degrees between probe spin axis and probe sun vector (EPH)	000000.

DATA WORD		MATCHING EPHEMERIS	NO MATCHING EPHEMERIS
17	15	Field solar ecliptic X component (MAG) in γ's	SAME
18	16	Field solar ecliptic Y component (MAG) in γ's	SAME
19	17	Field solar ecliptic Z component (MAG) in γ's	SAME
9	18	Spacecraft X position in solar ecliptic coordinates in earth radii (EPH)	000000.
10	19	Spacecraft Y position in solar ecliptic coordinates in earth radii (EPH)	000000.
11	20	Spacecraft Z position in solar ecliptic coordinates in earth radii (EPH)	000000.
21	21	Field magnitude in gammas (MAG)	SAME
22	22	Angle between field vector and ecliptic plane, in degrees (MAG)**	SAME
23	23	Angle between projection of field vector onto ecliptic plane and earth sun axis, in degrees (MAG)***	SAME
24	24	Field solar ecliptic X component variance in gammas (MAG)	SAME
25	25	Field solar ecliptic Y component variance in gammas (MAG)	SAME
26	26	Field solar ecliptic Z component variance in gammas (MAG)	SAME
27	27	Model magnetic field magnitude in gammas (EPH)	000000.
28	28	Angle between projection of model field vector onto ecliptic plane and earth-sun axis, in degrees (EPH)***	000000.
29	29	Angle between model field vector and ecliptic plane in degrees (EPH)**	000000.
12	30	Spacecraft X position in solar magnetospheric coordinates in earth radii (EPH)	000000.
13	31	Spacecraft Y position in solar magnetospheric coordinates in earth radii (EPH)	000000.
14	32	Spacecraft Z position in solar magnetospheric coordinates in earth radii (EPH)	000000.
30	33	Number of good vector field measurements used in generating 5.46 minute averaged vector field (MAG)	SAME

*Integer in floating point format

**This angle is measured from the ecliptic plane, positive north.

***This angle is 0° if ecliptic plane field component is towards sun, 90° if towards dusk meridian.

Oct

IMP 1

FILE 0001 REC 0001 CH 1392

0001	000347000001	224750217600	000000000077	00000000005
0049	205722050253	606410000000	207556314631	2034116254
0097	606573430214	605443567372	000000000000	0000000000
0145	203570054404	206473725310	205571660313	0000000000
0193	000000000000	000000000005	224750217600	0000000000
0241	606403075341	205740000000	606413146314	2075554631
0289	604757574044	605673135300	605740517540	0000000000
0337	210741440311	153400000000	154400000000	1534000000
0385	000000000000	000000000000	000000000006	2247502176
0433	207544000000	606406314631	205763412172	6064206314
0481	000000000000	600410322715	605667154315	6055626544
0529	606501271114	211414730063	206445415071	2004646637
0577	000000000000	000000000000	000000000000	0000000000
0625	203603146314	207564000000	606407412172	2057714631
0673	210562151264	000000000000	604757717432	6056731050
0721	206535463137	606533327133	210741425463	1534000000
0769	000000000000	000000000000	000000000000	0000000000
0817	000000000004	204560421042	207604000000	6064103650
0865	606405254006	210557336576	000000000000	6047577533
0913	000000000000	206535463140	606533327133	2107414220
0961	000000000000	000000000000	000000000000	0000000000
1009	000000000513	000000000004	205417356735	2076240000
1057	203515751550	606405345362	210554522565	0000000000
1105	000000000000	000000000000	206473622657	6065437430
1153	000000000000	000000000000	000000000000	0000000000
1201	000000000077	000000000513	000000000004	2055467350
1249	207564631463	203532544470	606405405627	2105517070
1297	000000000000	000000000000	000000000000	206401331
1345	205414341504	000000000000	000000000000	0000000000

FILE 0001 REC 0002 CH 1392

0001	000347000001	224750217600	000000000077	0000000000
0049	206400243656	606425463146	207564631453	2035472010
0097	605407757650	605552056107	000000000000	0000000000
0145	206454672656	205524532351	205547516626	0000000000
0193	000000000000	000000000011	224750217600	0000000000
0241	606412314631	205776702436	606425463146	2075643140
0289	203536571271	606500116065	605411545540	0000000000
0337	211425630176	206501062535	206451012345	2055344100
0385	000000000000	000000000000	000000000012	2247502170
0433	207724000000	606412436560	205774121727	6064254630
0481	000000000000	603523636454	605745127016	6057174000
0529	606532047210	211404042705	206411525206	2035744700
0577	000000000000	000000000000	000000000400	0000000000
0625	206542210421	207744000000	606412560507	2057702410
0673	210536631752	000000000000	602421331520	6064061640
0721	206443722770	605625011657	211412212671	2056270620
0769	000000000000	000000000000	000000000000	0000000000
0817	000000000004	206615673567	207764000000	6054126370
0865	606405056774	210534016433	000000000000	60353410
0913	000000000000	206631531661	605551246503	21140731
0961	000000000000	000000000000	000000000000	00000000
1009	000000000513	000000000004	206671463146	21040200
1057	203643332035	606404670766	210531204614	00000000
1105	000000000000	000000000000	206510512320	60540426
1153	000000000000	000000000000	000000000000	00000000
1201	000000000077	000000000513	000000000005	20052525
1249	207554631463	203656541101	606404202245	21052356
1297	000000000000	000000000000	000000000000	20646672
1345	205663045754	000000000000	000000000000	00000000

FILE 0001 REC 0003 CH 1392

0001	000347000001	224750217600	000000000077	00000000
		[illegible]	207553146314	20367213

Octal Dump first 6 records of Merged Mag Ephem Tape

00000077	000000000513	000000000003	206615252525	207504000000	606400702436
56631463	203411625434	606404026326	210575216306	000000000000	606446665537
00000000	000000000000	000000000000	206662413343	605473261654	210765427176
71660313	000000000000	000000000000	000000000000	000000000000	000000000000
50217600	000000000077	000000000513	000000000003	206671042104	207524000000
13146314	207556463146	203427672536	606404314272	210572406472	000000000000
40517540	000000000000	000000000000	000000000000	206535463137	606533327133
00000000	153400000000	000000000000	000000000000	000000000000	000000000000
00000006	224750217600	000000000077	000000000513	000000000004	200452525252
63412172	606420631463	207562000000	203445447100	606404756046	210564763345
67184315	605562654400	000000000000	000000000000	000000000000	206437343067
45415071	200464663731	205414777725	000000000000	000000000000	000000000000
00000000	000000000007	224750217600	000000000077	000000000513	000000000004
07412172	205771463146	606422314631	207563146314	203463242063	606405131423
57717432	605673106014	605740517540	000000000000	000000000000	000000000000
41425463	153400000000	154600000000	153400000000	000000000000	000000000513
00000000	000000000000	000000000006	224750217600	000000000077	203500723066
04000000	606410365605	205775605075	606423146314	207564314631	000000000000
00000000	604757763300	605673076174	605740517540	000000000000	000000000000
33327133	210741422001	153400000000	154400000000	153400000000	000000000077
00000000	000000000000	000000000000	000000000006	224750217600	207564631463
17356735	207624000000	606411075341	206400050753	606424631463	000000000000
84522565	000000000000	601777152424	605701307444	606672475675	200445611617
73622657	606543743275	211411735577	206426351430	203513561612	224750217600
00000000	000000000000	000000000000	000000000000	000000000010	606424631463
00000004	205546735673	207644000000	606411934121	206400436560	605563041276
40540527	210551707405	000000000000	200631606355	605544532311	204647257607
00000000	206401331656	606560723750	211420034441	206477354251	000000000007
00000000	000000000000	000000000000	000000000000	000000000000	
00000077	000000000513	000000000004	205676314631	207664000000	606412050753
64631463	203547201402	606405415020	210547074143	000000000000	203452472361
00000000	000000000000	000000000000	206502204045	606421343726	211426030571
47516626	000000000000	000000000000	000000000000	000000000000	000000000000
50217600	000000000077	000000000513	000000000004	206412631463	207704000000
25463146	207564314631	203563710151	606405373110	210544257675	000000000000
11545540	000000000000	000000000000	000000000000	206535304213	605545446776
51012345	205534410011	000000000000	000000000000	000000000000	000000000000
00000012	224750217600	000000000077	000000000513	000000000004	206466421042
74121727	606425463146	207563463146	203600137170	606405320123	210541444605
45127016	606717400560	000000000000	000000000000	000000000000	206522127717
11525206	203574476416	205503137652	000000000000	000000000513	000000000000
00000000	000000000010	224750217600	000000000077	000000000513	000000000004
12560507	205770243656	606425463146	207562631463	203613563635	606405214073
21331520	606406164276	604774345402	000000000000	000000000000	000000000000
12212671	205627062122	205534241651	205666356120	000000000000	000000000000
00000000	000000000000	000000000006	224750217600	000000000077	000000000513
764000000	606412631463	205763534121	606424631463	207564163146	203627504234
00000000	603534101176	606567601141	605472512666	000000000000	000000000000
51246503	211407311513	205637230751	206402071714	205607770332	000000000000
00000000	000000000000	000000000000	000000000013	224750217600	000000000077
71463146	210402000000	606412631463	205756050753	606424000000	207560000000
31204614	000000000000	202742456076	606472022024	604560260566	000000000000
10512320	605404265141	211423370621	206421321641	205776746153	205707472100
00000000	000000000000	000000000000	000000000000	000000000013	224750217600
00000005	200525252525	210412000000	606412507534	205740753412	606423146314
04202245	210523562342	000000000000	177464251472	606452661100	604510652626
00000000	206466723071	604752334131	211416353404	205734627671	206406545205
00000000	000000000000	000000000000	000000000000	000000000000	000000000013
00000077	000000000513	000000000005	203607256735	210422000000	606412656605
53146314	203672135043	606403702007	210520753144	000000000000	203522505645

FILE 0001 REC 0003 CH 1392

0097	606500260371	605664670166	000000000000	000000000000
0145	205644020304	205727171235	205416277700	000000000000
0193	000000000000	000000000007	224750217600	000000000077
0241	606412243656	205721075341	606420631463	207551146314
0289	602502650615	606423742502	605730126570	000000000000
0337	211411642567	205416102000	204504456200	204614427353
0385	000000000000	000000000000	000000000006	224750217600
0433	210442000000	606412121727	205710365605	606420000000
0481	000000000000	203457074516	605640217375	605520031104
0529	605463520216	211430242161	206417553460	204513470035
0577	000000000000	000000000000	000000000000	000000000010
0625	205550000000	210452000000	606411727024	205677270243
0673	210510533415	000000000000	574435643314	606444142330
0721	206475342735	605560073226	211413743714	205574651062
0769	000000000000	000000000000	000000000000	000000000000
0817	000000000005	205677356735	210452000000	606411534121
0865	606401714702	210505731337	000000000000	574676602721
0913	000000000000	206424210426	604615607710	211416720367
0961	000000000000	000000000000	000000000000	000000000000
1009	000000000513	000000000005	206413252525	210472000000
1057	203760361032	606401223265	210503127721	000000000000
1105	000000000000	000000000000	206416004614	600655357676
1153	000000000000	000000000000	000000000000	000000000000
1201	000000000077	000000000513	000000000005	206467042104
1249	207535463146	203773007222	606400502332	210500331076
1297	000000000000	000000000000	000000000000	205777260777
1345	205742610771	000000000000	000000000000	000000000000

FILE 0001 REC 0004 CH 1392

0001	000347000001	224750217600	000000000077	000000000513
0049	205626314631	606411463146	207532631463	204402571650
0097	605772343252	603433027226	000000000000	000000000000
0145	205677215534	204547673160	205676325231	000000000000
0193	000000000000	000000000013	224750217600	000000000077
0241	606410507534	205613146314	606410000000	207530314631
0289	204471721725	606477203773	203457035404	000000000000
0337	211433634525	205563715432	204526332373	205664000432
0385	000000000000	000000000000	000000000014	224750217600
0433	210552000000	606410314631	205577656050	606407146314
0481	000000000000	203627114141	606515523325	203724304041
0529	204472720036	211426530117	205463267006	204452476353
0577	000000000000	000000000000	000000000000	000000000011
0625	200567356735	210542000000	606407605075	205550000000
0673	210462872435	000000000000	203725335633	606503155617
0721	206514307156	204430653024	211430224215	205552203443
0769	000000000000	000000000000	000000000000	000000000000
0817	000000000006	203613567356	210552000000	606407341217
0865	605167363075	210460010201	000000000000	203412444136
0913	000000000000	206457203101	202547357577	211424241463
0961	000000000000	000000000000	000000000000	000000000000
1009	000000000513	000000000006	204564631453	210562000000
1057	204433314713	605765424453	210455230272	000000000000
1105	000000000000	000000000000	206510223565	202640101511
1153	000000000000	000000000000	000000000000	000000000000
1201	000000000077	000000000513	000000000006	205421673567
1249	207506631463	204440170743	605763412315	210452451752
1297	000000000000	000000000000	000000000000	206505670270
1345	204752552220	000000000000	000000000000	000000000000

FILE 0001 REC 0005 CH 1392

0001	000347000001	224750217600	000000000077	000000000513
0049	205465075341	605773146314	207503463146	204445043550
0097	606507056563	176747045016	000000000000	000000000000
0145	204611334556	203766062002	204565652756	000000000000
0193	000000000000	000000000011	224750217600	000000000077

00	000000000000	000000000000	206606110037	606420301024	211425547626
00	000000000000	000000000000	000000000000	000000000000	000000000000
00	000000000077	000000000513	000000000005	204562525252	210432000000
63	207551146314	203705244730	606403381130	210516145026	000000000000
70	000000000000	000000000000	000000000000	206633555201	606503623142
00	204614427353	000000000000	000000000000	000000000000	000000000000
06	224750217600	000000000077	000000000513	000000000005	205420421042
05	606420000000	207546631463	203720341312	606402767612	210513337056
75	605520031104	000000000000	000000000000	000000000000	206416125375
60	204513470035	205463600446	000000000000	000000000000	000000000000
00	000000000010	224750217600	000000000077	000000000513	000000000005
24	205677270243	606416314631	207546631463	203733113733	606402356262
14	606444142330	604760223133	000000000000	000000000000	000000000000
14	205574651062	204737502262	205612213062	000000000000	000000000000
00	000000000000	000000000012	224750217600	000000000077	000000000513
00	606411534121	205665605075	606415463146	207642314631	203745742620
00	574676602721	606415624533	603733565733	000000000000	000000000000
10	211415720367	205573043676	204602050340	205661743175	000000000000
00	000000000000	000000000000	000000000013	224750217600	000000000077
25	210472000000	606411341217	205663534121	606414000000	207540000000
21	000000000000	602642774150	606414552131	577771750770	000000000000
14	600655357676	211410336011	205507346212	203773424626	205633076077
00	000000000000	000000000000	000000000000	000000000011	224750217600
05	206467042104	210502000000	606411146314	205641217270	606413146314
32	210500331076	000000000000	576423662164	605761647075	603723106767
00	205777260777	604646357425	211415600735	205641435514	204503710333
00	000000000000	000000000000	000000000000	000000000000	000000000013
77	000000000513	000000000005	206542631463	210512000000	606410753412
463	204402571650	605777664130	210475534114	000000000000	200567635116
00	000000000000	000000000000	205777377354	603774745251	211417247767
231	000000000000	000000000000	000000000000	000000000000	000000000000
600	000000000077	000000000513	000000000005	206616314631	210522000000
00	207530314631	204407414464	605776264454	210472740053	000000000000
404	000000000000	000000000000	000000000000	206512737603	203644531010
373	205664000432	000000000000	000000000000	000000000000	000000000000
014	224750217600	000000000077	000000000513	000000000005	206672104210
050	606407146314	207525463146	204414604141	605774607606	210470147052
325	203724304041	000000000000	000000000000	000000000000	206526437725
006	204452476353	205531241325	000000000000	000000000030	000000000000
000	000000000011	224750217600	000000000077	000000000513	000000000006
075	205550000000	606404000000	207520000000	204421626660	605771246064
633	606503155517	203625552710	000000000000	000000000000	000000000000
215	205552203443	204500713107	205504556564	000000000000	000000000000
000	000000000000	000000000012	224750217600	000000000077	000000000513
000	606407341217	205533412172	606402314631	207614631463	204426451317
000	203412444136	606455033302	201733352222	000000000000	000000000000
577	211424241463	205434273006	204451663205	205560615025	000000000000
000	000000000000	000000000000	000000000013	224750217600	000000000077
453	210562000000	606407075341	205517024365	606400631463	207512000000
272	000000000000	203710522700	606502600463	202481701063	000000000000
565	202640101611	211430017057	205447575674	203623330325	205474014350
000	000000000000	000000000000	000000000000	000000000012	224750217600
006	205421673567	210572000000	606406631463	205502172702	606776314631
315	210452451752	000000000000	204502756326	606471741166	203412156142
000	206505670270	203567076211	211434330404	205461203614	203760133607
000	000000000000	000000000000	000000000000	000000000000	000000000013
077	000000000513	000000000006	205551042104	210602000000	606406365605
146	204445043550	605761326604	210447677114	000000000030	203754166012
000	000000000000	000000000000	206514644650	177617316122	211430516434
756	000000000000	000000000000	000000000000	000000000000	000000000000
600	000000000077	000000000513	000000000006	205700421042	210612000000

FILE 0001 REC 0007 CH 1352

0337	207506755262	201515505220	201475267475	202422372344
0385	000000000000	000000000000	000000000014	224750217600
0433	222575501000	604741727024	610430741217	604543146314
0481	000000000000	177715003370	201641762073	576550406344
0529	503573610005	207452254605	201416614321	201436651347
0577	000000000000	000000000000	000000000000	000000000012
0625	203436735673	222575505000	604740753412	610433302436
0673	210406445517	000000000000	177512764756	201417140326
0721	201441352402	604563530165	207444101540	200700373644
0769	000000000000	000000000000	000000000000	000000000000
0817	000000000010	204476314631	222575511000	604740243655
0865	204717174547	210404154147	000000000000	176702613660
0913	000000000000	201751010747	206455070032	207506421033
0961	000000000000	000000000000	000000000000	000000000000
1009	000000000227	000000000010	204754631463	222575515000
1057	205722164002	204725411130	210401661553	000000000000
1105	000000000000	000000000000	203703055051	204564005054
1153	000000000000	000000000000	000000000000	000000000000
1201	000000000100	000000000227	000000000010	205815673567
1249	607446314631	205721761312	204733713113	207776755847
1297	000000000000	000000000000	000000000000	203716505421
1345	201641242325	000000000000	000000000000	000000000000

FILE 0001 REC 0008 CH 1392

0001	000347000001	224750217600	000000000100	000000000227
0049	610447436560	604611463146	607450003000	205721124712
0097	176735713552	201674072111	000000000000	000000000000
0145	202500300645	201473123511	201641355246	000000000000
0193	000000000000	000000000014	224750217600	000000000100
0241	604734365605	610452000000	604623146314	607464631463
0289	602410546224	200643436444	201506372727	000000000000
0337	210474610467	201754520501	200710666760	202434536673
0385	000000000000	000000000000	000000000014	224750217600
0433	222575535000	604733656050	610454341217	604631463146
0481	000000000000	601515044457	201577226104	201710105721
0529	206517354165	210405765267	201536460714	201477373251
0577	000000000000	000000000000	000000000000	000000000011
0625	206525567356	222575541000	604732702436	610456702431
0673	207747221016	000000000000	576737625002	200761305301
0721	201571715315	206573115140	207636167170	200673113321
0769	000000000000	000000000000	000000000000	000000000000
0817	000000000010	206601252525	222575545000	604732172701
0865	205402070571	207742423557	000000000000	602404622161
0913	000000000000	202673620312	205737011352	210411312431
0961	000000000000	000000000000	000000000000	000000000000
1009	000000000227	000000000010	206655042104	222575551000
1057	205717051231	205405501703	207735625420	000000000000
1105	000000000000	000000000000	202760037063	205600027140
1153	000000000000	000000000000	000000000000	000000000000
1201	000000000100	000000000227	000000000010	206730525251
1249	607514314631	205716531024	205411140547	207731024751
1297	000000000000	000000000000	000000000000	203416160531
1345	201420262573	000000000000	000000000000	000000000000

FILE 0001 REC 0009 CH 1392

0001	000347000001	224750217600	000000000100	000000000227
0049	610470475341	604674631463	607521146314	205716213741
0097	201540664670	202426336467	000000000000	000000000000
0145	200717110317	200570577452	200673222021	000000000001
0193	000000000000	000000000014	224750217600	000000000100
0241	604727024365	610473036560	604703146314	607526000001
0289	601610674444	201570243204	202517533437	000000000000
0337	210420355765	201443562257	201545503364	201426675711
0385	000000000000	000000000000	000000000014	000000000000
0433	000000000000	000000000000	000000000000	000000000000

Octal Dump Last 3 Records of Merged Tape

475267475	202422372344	000000000000	000000000000	000000000000	000000000000
0000000014	224750217600	000000000100	000000000227	000000000007	206730104210
1430741217	604543146314	607423463146	205723342532	204703014334	210410737123
1641762073	576550406344	000000000000	000000000000	000000000000	201663720356
1416614321	201456651347	202453106070	000000000000	000000000000	000000000000
0000000000	000000000012	224750217600	000000000100	000000000227	000000000010
1740753412	610433302436	604551463146	607430314631	205723023577	204711050760
1512764756	201417140326	576722156145	000000000000	000000000000	000000000000
7444101540	200700373644	200734141410	201624340020	000000000000	000000000000
0000000000	000000000000	000000000014	224750217600	000000000100	000000000227
2575511000	604740243656	610435643656	604560000000	607435146314	205722573605
0000000000	176702613660	201577075572	201162506141	000000000000	000000000000
5455070032	207506421033	201542125217	177775640402	201730757365	000000000000
0000000000	000000000000	000000000000	000000000014	224750217600	000000000100
4754631463	222575515000	604737270243	610440205075	604556314631	607442000000
0401661553	000000000000	603634240475	202475453766	201553461164	000000000000
3703055051	204564005054	210475677240	202712574737	201562413743	201553554512
0000000000	000000000000	000000000000	000000000000	000000000014	224750217600
0000000010	205515673567	222575521000	604736560507	610442534121	604574631463
4733713113	207776755547	000000000000	603645345764	201642206572	202477172540
0000000000	203716505421	205502734440	210514103107	202666365030	202404177627
0000000000	000000000000	000000000000	000000000000	000000000000	000000000014
0000000100	000000000227	000000000010	205646252525	222575525000	604735075341
7450000000	205721124712	204750752114	207765377556	000000000000	602615410042
0000000000	000000000000	000000000000	202710237347	205721723613	210537317540
1641355246	000000000000	000000000000	000000000000	000000000000	000000000000
4750217600	000000000100	000000000227	000000000010	205774421042	222575531000
4623146314	607464631463	205720515464	204757505306	207700606456	000000000000
1506372727	000000000000	000000000000	000000000000	202510147501	205735173314
0710666760	202434536672	000000000000	000000000000	000000000000	000000000000
0000000014	224750217600	000000000100	000000000227	000000000010	206452000000
0454341217	604631463146	607471463146	205720266266	204766317623	207754014670
1577226104	201710105721	000000000000	000000000000	000000000000	202525223472
1536460714	201477373257	200762510054	000000000000	000000000000	000000000000
0000000000	000000000014	224750217600	000000000100	000000000227	000000000010
4732702436	610456702436	604640000000	607476314631	205717704205	204775211766
5737625002	200761305301	201426111761	000000000000	000000000000	000000000000
7636167170	200673113326	200756634141	200710077715	000000000000	000000000000
0000000000	000000000000	000000000014	224750217600	000000000100	000000000227
2575545000	604732172702	610461231463	604646314631	607502631463	205717366536
0000000000	602404622162	202432503014	201672752725	000000000000	000000000000
5737011352	210411312430	201574141460	201410557045	200774050326	000000000000
0000000000	000000000000	000000000000	000000000014	224750217600	000000000100
6655042104	222575551000	604731463146	610463572702	604554631463	607507463146
7735625420	000000000000	602574476515	201753675776	201623447315	000000000000
2760037063	205600027141	210446206673	200625260012	200700044332	200520221066
0000000000	000000000000	000000000000	000000000000	000000000014	224750217600
0000000010	206730625252	222575555000	604730507534	610466134121	604666314631
1411140547	207731024754	000000000000	602552273614	201770411171	202467321240
0000000000	203416160522	206431571136	210442240127	201511554651	200540700405
0000000000	000000000000	000000000000	000000000000	000000000000	000000000014
0000000100	000000000227	000000000011	203443146314	222575561000	604730000000
7521146314	205716213745	205414623713	207724222474	000000000000	601653624174
0000000000	000000000000	000000000000	202610742144	206550754725	210430756506
0673222021	000000000000	000000000000	000000000000	000000000000	000000000000
4750217600	000000000100	000000000227	000000000011	204600421042	222575565000
4703146314	607526000000	205715605344	205420332125	207717417070	000000000000
2517533437	000000000000	000000000000	000000000000	202660033501	206627662143
1545503364	201426675753	000000000000	000000000000	000000000000	000000000000
0000000014	000000000000	000000000000	000000000000	000000000000	000000000000
0000000000	000000000000	000000000000	000000000000	000000000000	000000000000

FILE 0001 REC 0009 CH 1392

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0481 000000000000 000000000000 000000000000 000000000000
0529 000000000000 000000000000 000000000000 000000000000
0577 000000000000 000000000000 000000000000 000000000000
0625 000000000000 000000000000 000000000000 000000000000
0673 000000000000 000000000000 000000000000 000000000000
0721 000000000000 000000000000 000000000000 000000000000
0769 000000000000 000000000000 000000000000 000000000000
0817 000000000000 000000000000 000000000000 000000000000
0865 000000000000 000000000000 000000000000 000000000000
0913 000000000000 000000000000 000000000000 000000000000
0961 000000000000 000000000000 000000000000 000000000000
1009 000000000000 000000000000 000000000000 000000000000
1057 000000000000 000000000000 000000000000 000000000000
1105 000000000000 000000000000 000000000000 000000000000
1153 000000000000 000000000000 000000000000 000000000000
1201 000000000000 000000000000 000000000000 000000000000
1249 000000000000 000000000000 000000000000 000000000000
1297 000000000000 000000000000 000000000000 000000000000
1345 000000000000 000000000000 000000000000 000000000000
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FILE 0001 REC 0010 CH 1392

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0001 000347000001 070707070707 070707070707 070707070707
0049 070707070707 070707070707 070707070707 070707070707
0097 070707070707 070707070707 070707070707 070707070707
0145 070707070707 070707070707 070707070707 070707070707
0193 070707070707 070707070707 070707070707 070707070707
0241 070707070707 070707070707 070707070707 070707070707
0289 070707070707 070707070707 070707070707 070707070707
0337 070707070707 070707070707 070707070707 070707070707
0385 070707070707 070707070707 070707070707 070707070707
0433 070707070707 070707070707 070707070707 070707070707
0481 070707070707 070707070707 070707070707 070707070707
0529 070707070707 070707070707 070707070707 070707070707
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0625 070707070707 070707070707 070707070707 070707070707
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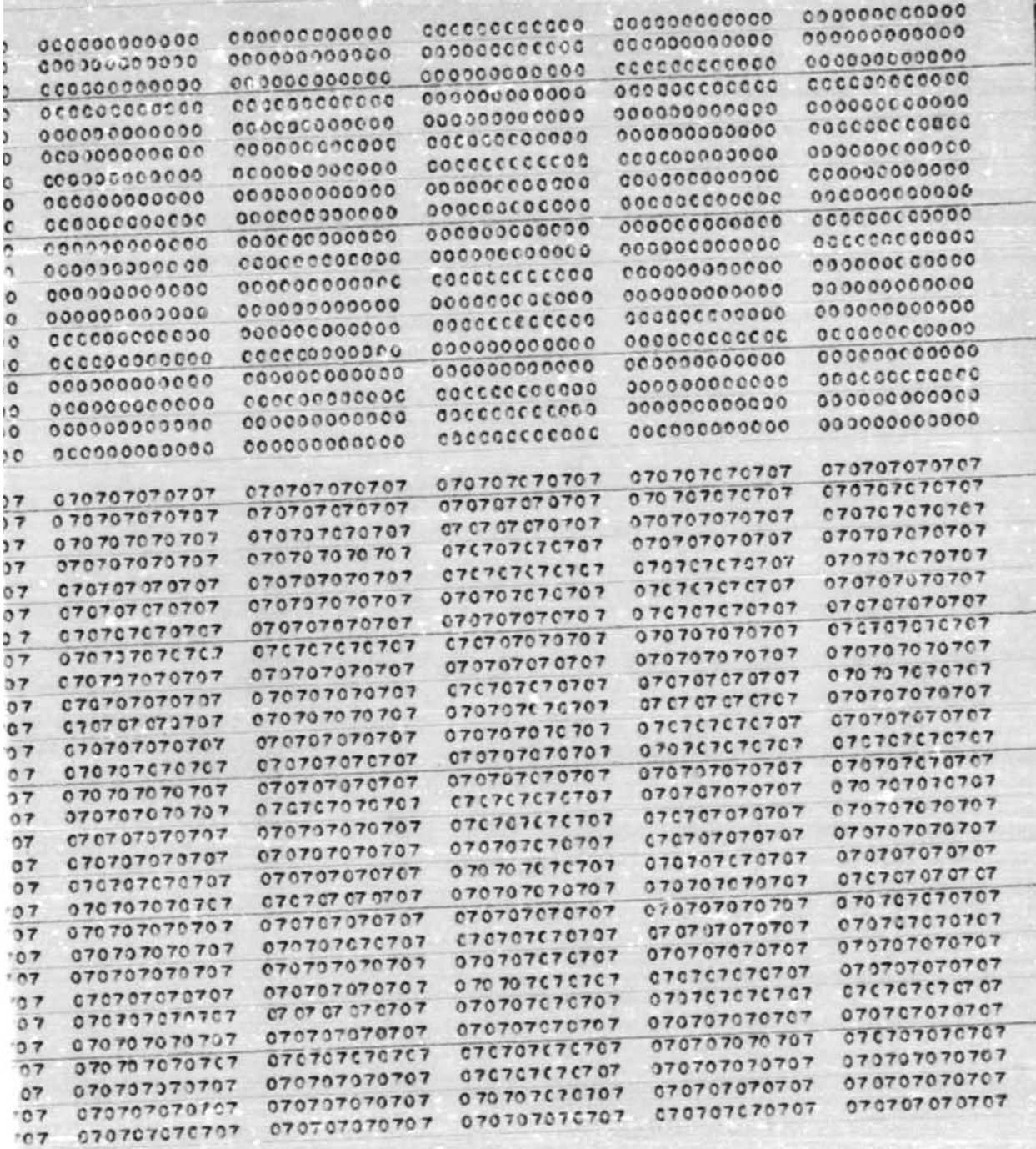

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IMP-1 MERGED MAGNETOMETER AND EPHEMERIS DATA

JDA	SEQ NO.	YR	HR	MIN	FIELD COMPONENTS SOLAR ECLIPTIC X	Y	Z	FIELD S.E. VARIANCES X	Y	Z	FIELD MAGNITUDE
355	25249	63	0	31.1	-5.796	7.942	-1.745	1.821	1.492	2.585	9.985
355	25277	63	1	9.4	-3.961	5.334	-4.240	1.324	1.049	2.184	7.882
355	25305	63	1	47.6	-4.144	3.467	-2.336	1.340	1.621	1.498	5.887
355	25333	63	2	25.8	-4.585	4.082	-4.411	-0.	0.	-0.	7.559
355	25361	63	3	4.1	-3.940	2.018	-0.896	3.535	2.164	2.579	4.517
355	25389	63	3	42.3	-5.408	-0.464	-0.985	4.623	4.300	1.313	5.516
355	25417	63	4	20.5	-3.079	0.524	-0.240	4.228	4.217	2.797	3.133
355	25445	63	4	58.7	4.656	-5.898	-1.986	2.350	1.906	2.303	7.772
355	25477	63	5	42.4	-23.728	-25.750	1.265	-0.	-0.	0.	35.038
355	25525	63	6	48.0	-4.771	-3.286	3.788	2.366	4.095	0.822	6.922
355	25553	63	7	26.2	-3.333	6.099	-5.245	1.103	0.512	1.715	8.708
355	25581	63	8	4.4	-5.312	3.665	-2.574	1.709	3.554	2.805	6.948
355	25609	63	8	42.6	-3.279	3.037	-1.794	2.017	5.824	3.646	4.816
355	25637	63	9	20.9	-6.715	-5.998	3.064	1.946	4.254	1.195	9.511
355	25665	63	9	59.1	-5.512	-8.277	2.156	1.009	1.514	0.965	10.175
355	25693	63	10	37.3	-10.400	-2.512	1.242	0.708	1.373	0.511	10.771
355	25721	63	11	15.5	-8.087	1.903	-0.534	0.692	1.484	1.618	8.325
355	25749	63	11	53.8	-7.188	3.176	-2.602	0.932	1.318	1.190	8.278
355	25777	63	12	32.0	1.155	-4.584	-8.023	1.339	1.037	0.471	9.312
355	25805	63	13	10.2	-5.050	8.243	-2.770	0.800	0.583	2.024	10.056
355	25833	63	13	48.4	-6.203	6.775	-0.618	1.283	1.280	1.891	9.206
355	25861	63	14	26.7	-4.340	3.944	3.429	1.727	2.273	2.207	6.793
355	25889	63	15	4.9	3.194	4.992	-8.457	1.196	0.961	0.777	10.326
355	25917	63	15	43.1	-0.162	4.955	-2.015	2.058	8.249	2.417	5.351
355	25945	63	16	21.4	-4.738	5.076	2.677	0.647	1.012	0.730	7.442
355	25973	63	16	59.6	-4.829	3.371	-0.493	2.748	4.983	3.736	5.910
355	26001	63	17	37.8	-0.509	7.416	-2.682	0.948	0.668	2.508	7.903
355	26029	63	18	16.0	1.165	7.444	-5.245	1.025	0.658	0.667	9.180
355	26061	63	18	59.7	-6.847	3.553	2.049	0.666	0.702	0.935	7.981
355	26089	63	19	38.0	-4.198	-4.976	4.292	0.996	1.233	0.701	7.798
355	26117	63	20	15.2	-5.300	1.324	2.594	0.463	0.377	0.937	7.053
355	26145	63	20	54.4	-2.314	8.013	-4.050	0.737	0.551	0.667	9.272
355	26173	63	21	32.6	-2.019	6.551	-3.936	0.785	0.347	0.755	7.904
355	26201	63	22	10.9	0.059	4.072	-2.791	2.258	1.399	1.866	4.937
355	26229	63	22	49.1	-3.519	-2.207	0.981	0.977	1.240	1.438	4.351
355	26257	63	23	27.3	-1.248	-6.240	2.190	1.508	1.195	1.036	6.730
356	26285	63	0	5.5	-4.288	-5.410	3.226	0.971	0.853	0.803	7.620
356	26313	63	0	43.8	-5.252	-0.731	5.359	0.931	0.803	0.496	7.539
356	26341	63	1	22.0	-4.995	3.353	4.768	0.792	0.721	0.864	7.677
356	26369	63	2	0.2	-7.451	1.937	1.491	1.220	1.271	1.120	7.842
356	26357	63	2	38.4	-6.458	5.003	0.124	0.813	0.915	2.029	8.170
356	26425	63	3	16.7	-3.939	4.086	-1.865	2.459	5.091	2.038	5.974
356	26453	63	3	54.9	-1.898	4.980	-4.675	1.358	0.820	0.887	7.089
356	26481	63	4	33.1	-4.440	6.051	-4.544	0.866	0.563	0.955	8.773
356	26509	63	5	11.4	1.391	4.189	-3.519	2.505	1.138	1.275	5.645
356	26537	63	5	49.6	-3.789	6.448	-2.836	0.517	0.448	0.710	7.998
356	26565	63	6	27.8	-2.115	3.937	-8.230	0.663	0.794	0.668	9.366
356	26593	63	7	5.0	-5.341	2.794	0.432	2.900	5.644	2.735	6.043
356	26621	63	7	44.3	-1.350	6.185	-3.527	2.775	1.426	1.299	7.247
356	26649	63	8	22.5	0.142	6.228	-1.896	1.989	0.668	1.636	6.512

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63-046A-02B

A PAGE 1 PART ONE

NENTS CES Z	FIELD MAGNITUDE	SOLAR ECLIPTIC FIELD THETA	FIELD PHI	SPACECRAFT RADIAL DISTANCE	GOOD POINTS	TIME DIFF	MODEL FIELD MAGNITUDE
2.585	9.985	-10.062	126.123	20.561	10	-0.	0.
2.184	7.882	-32.545	126.599	21.082	12	-0.	0.
1.498	5.887	-23.385	140.082	21.525	11	-0.	0.
-0.	7.559	-35.697	138.327	21.991	1	-0.	0.
2.579	4.517	-11.447	152.887	22.430	3	-0.	0.
1.313	5.516	-10.283	184.899	22.862	3	-0.	0.
2.797	3.133	-4.397	170.341	23.279	4	-0.	0.
2.303	7.772	-14.807	308.291	23.676	5	-0.	0.
0.	35.038	2.069	227.341	24.120	1	-0.	0.
0.822	6.922	33.181	214.557	24.757	2	-0.	0.
1.715	8.708	-37.040	118.657	25.107	3	-0.	0.
2.805	6.948	-21.740	145.396	25.451	6	-0.	0.
3.646	4.816	-21.877	137.197	25.763	4	-0.	0.
1.195	9.511	18.793	221.772	26.103	6	-0.	0.
0.965	10.175	12.234	236.340	26.414	4	-0.	0.
0.511	10.771	6.624	193.577	26.706	3	-0.	0.
1.618	8.325	-3.680	166.756	26.998	11	-0.	0.
1.190	8.278	-18.323	156.160	27.273	12	-0.	0.
0.471	9.312	-59.490	284.149	27.529	12	-2.000	1.581
2.024	10.056	-15.991	121.492	27.794	12	-0.233	1.581
1.891	9.206	-3.849	132.477	28.056	12	1.550	1.487
2.207	6.793	30.317	137.739	28.277	12	-1.683	1.523
0.777	10.326	-54.980	57.308	28.520	12	0.083	1.523
2.417	5.351	-22.123	91.878	28.751	12	1.867	1.432
0.730	7.442	21.085	133.030	28.942	11	-1.367	1.432
3.736	5.910	-4.781	145.080	29.150	12	0.417	1.432
2.508	7.903	-19.842	93.926	29.355	12	2.183	1.432
0.667	9.180	-34.842	81.106	29.519	12	-1.050	1.432
0.935	7.981	14.872	152.573	29.727	11	0.267	1.523
0.701	7.798	33.399	229.845	29.902	12	2.033	1.487
0.937	7.053	21.581	163.856	30.047	12	-1.183	1.487
0.667	9.272	-25.900	106.110	30.211	12	0.583	1.487
0.755	7.904	-29.863	107.130	30.359	12	2.367	1.581
1.866	4.937	-34.417	89.166	30.474	12	-0.867	1.552
1.438	4.351	13.029	211.376	30.611	12	0.900	1.552
1.036	6.730	18.993	258.690	30.714	12	-2.317	1.552
0.803	7.620	25.043	231.597	30.836	12	-0.550	1.530
0.496	7.539	45.301	137.921	30.938	12	1.233	1.530
0.864	7.677	38.401	146.124	31.026	12	-2.000	1.530
1.120	7.842	10.963	165.431	31.113	12	-0.233	1.432
2.029	8.170	0.867	142.233	31.201	12	1.550	1.414
2.038	5.974	-18.192	133.951	31.284	12	-1.683	1.414
0.887	7.089	-41.260	110.863	31.331	12	0.100	1.414
0.955	8.773	-31.191	126.269	31.384	12	1.867	1.315
1.275	5.645	-38.558	71.629	31.433	12	-0.	0.
0.710	7.998	-20.769	120.441	31.471	12	0.417	1.217
0.668	9.366	-61.493	118.257	31.504	12	2.183	1.217
2.735	6.043	4.103	152.384	31.528	12	-1.033	1.217
1.299	7.247	-29.123	102.308	31.550	12	0.733	1.118
1.636	6.512	-16.926	88.691	31.593	12	-2.500	1.140

JDA	YR	HR	MIN	GEODETIC LAT	GEODETIC LONG	GEOMAGNETIC LAT	GEOMAGNETIC LONG	SUB-SOLAR GEOMAGNETIC LAT	SUB-SOLAR GEOMAGNETIC LONG	SOLAR ECLIPTIC COORDINATES X	Y
355	63	0	31.1	-28.78	103.83	-40.40	171.70	-28.681	246.038	0.	0.
355	63	1	9.4	-28.63	95.62	-39.80	162.40	-30.239	236.996	0.	0.
355	63	1	47.6	-28.46	86.21	-38.90	151.70	-31.829	226.450	0.	0.
355	63	2	25.8	-28.32	77.95	-37.90	142.50	-33.009	217.046	0.	0.
355	63	3	4.1	-28.16	68.49	-36.40	132.20	-34.070	206.111	0.	0.
355	63	3	42.3	-28.01	59.00	-34.70	122.10	-34.781	195.023	0.	0.
355	63	4	20.5	-27.87	50.68	-33.10	113.50	-35.093	185.237	0.	0.
355	63	4	58.7	-27.73	41.15	-31.20	103.80	-35.081	174.026	0.	0.
355	63	5	42.4	-27.56	30.40	-28.80	93.10	-34.598	161.463	0.	0.
355	62	6	48.0	-27.34	14.85	-25.50	78.10	-33.083	143.597	0.	0.
355	63	7	26.2	-27.20	5.26	-23.50	69.00	-31.734	132.849	0.	0.
355	63	8	4.4	-27.08	-3.14	-21.80	61.10	-30.342	123.622	0.	0.
355	63	8	42.6	-26.95	-12.76	-20.10	52.10	-28.562	113.288	0.	0.
355	63	9	20.9	-26.84	-21.13	-18.70	44.30	-26.885	104.420	0.	0.
355	63	9	59.1	-26.71	-30.82	-17.30	35.30	-24.889	94.470	0.	0.
355	63	10	37.3	-26.59	-40.46	-16.20	26.40	-22.864	84.687	0.	0.
355	63	11	15.5	-26.48	-48.91	-15.40	18.60	-21.117	76.239	0.	0.
355	63	11	53.8	-26.36	-58.58	-14.80	9.70	-19.197	66.686	0.	0.
355	63	12	32.0	-26.24	-68.25	-14.50	0.70	-17.410	57.210	16.090	-21.3
355	63	13	10.2	-26.12	-77.95	-14.50	-8.30	-15.804	47.789	16.344	-21.5
355	63	13	48.4	-26.00	-87.62	-14.90	-17.30	-14.421	38.399	16.603	-21.6
355	63	14	26.7	-25.90	-96.10	-15.40	-25.20	-13.423	30.195	16.817	-21.8
355	63	15	4.9	-25.78	-105.80	-16.20	-34.20	-12.551	20.827	17.058	-21.9
355	63	15	43.1	-25.67	-115.50	-17.40	-43.20	-11.988	11.459	17.289	-22.1
355	63	16	21.4	-25.57	-124.00	-18.50	-51.20	-11.761	3.264	17.490	-22.2
355	63	16	59.6	-25.46	-133.72	-20.00	-60.30	-11.812	353.895	17.708	-22.3
355	63	17	37.8	-25.35	-143.44	-21.70	-69.60	-12.191	344.528	17.921	-22.4
355	63	18	16.0	-25.25	-151.95	-23.30	-77.70	-12.785	336.332	18.099	-22.5
355	63	18	59.7	-25.13	-162.89	-25.40	-88.40	-13.887	325.790	18.329	-22.6
355	63	19	38.0	-25.02	-172.62	-27.20	-98.00	-15.158	316.409	18.523	-22.7
355	63	20	16.2	-24.93	178.85	-28.80	-106.50	-16.470	308.181	18.684	-22.7
355	63	20	54.4	-24.82	169.11	-30.50	-116.50	-18.159	298.740	18.874	-22.8
355	63	21	32.6	-24.71	159.37	-32.10	-126.70	-20.005	289.235	19.051	-22.9
355	63	22	10.9	-24.62	150.84	-33.30	-135.80	-21.720	280.844	19.197	-22.9
355	63	22	49.1	-24.51	141.09	-34.50	-146.40	-23.734	271.143	19.365	-23.0
355	63	23	27.3	-24.42	132.56	-35.20	-155.60	-25.504	262.532	19.502	-23.0
356	63	0	5.5	-24.32	122.80	-35.70	-166.70	-27.481	252.525	19.661	-23.1
356	63	0	43.8	-24.21	113.05	-35.90	-177.70	-29.351	242.313	19.806	-23.1
356	63	1	22.0	-24.12	104.51	-35.70	172.70	-30.849	233.200	19.930	-23.1
356	63	2	0.2	-24.01	94.74	-35.20	161.60	-32.352	222.574	20.066	-23.2
356	63	2	38.4	-23.91	84.98	-34.30	151.00	-33.575	211.738	20.203	-23.2
356	63	3	16.7	-23.82	76.44	-33.20	141.60	-34.377	202.106	20.304	-23.2
356	63	3	54.9	-23.71	66.67	-31.80	131.20	-34.954	190.975	20.432	-23.2
356	63	4	33.1	-23.61	56.90	-30.10	120.90	-35.144	179.771	20.546	-23.2
356	63	5	11.4	-23.52	48.35	-28.40	112.20	-34.985	169.966	0.	0.
356	63	5	49.6	-23.41	38.58	-26.40	102.30	-34.441	158.825	20.744	-23.1
356	63	6	27.6	-23.31	28.81	-24.40	92.60	-33.531	147.815	20.835	-23.
356	63	7	6.0	-23.22	20.26	-22.60	84.30	-32.467	138.330	20.923	-23.
356	63	7	44.3	-23.11	10.49	-20.50	74.90	-30.986	127.685	21.011	-23.
356	63	8	22.5	-23.02	1.94	-18.80	66.80	-29.502	118.556	21.077	-23.

PAGE 1 PART TWO 63-046A-02B

SOLAR ECLIPTIC COORDINATES X	Y	Z	SOLAR MAGNETOSPHERIC COORDINATES X	Y	Z	SPIN-SUN ANGLE	MODEL FIELD THETA	MODEL FIELD PHI
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
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0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.
16.090	-21.382	-6.463	16.090	-22.229	-2.197	123.7	45.33	281.35
16.344	-21.545	-6.414	16.344	-22.326	-2.624	123.7	44.88	282.06
16.603	-21.699	-6.375	16.603	-22.394	-3.164	123.8	45.00	284.41
16.817	-21.832	-6.334	16.817	-22.429	-3.699	123.8	46.55	289.39
17.058	-21.976	-6.280	17.058	-22.434	-4.370	123.8	45.15	291.31
17.289	-22.111	-6.230	17.289	-22.400	-5.095	123.8	44.53	295.13
17.490	-22.215	-6.183	17.490	-22.331	-5.750	123.8	42.95	297.06
17.708	-22.330	-6.129	17.708	-22.224	-6.504	123.8	41.10	299.24
17.921	-22.445	-6.065	17.921	-22.096	-7.235	123.8	39.23	301.35
18.099	-22.530	-6.017	18.099	-21.957	-7.854	123.8	37.71	303.02
18.329	-22.637	-5.945	18.329	-21.775	-8.580	123.9	34.86	303.49
18.523	-22.723	-5.889	18.523	-21.614	-9.157	123.9	31.07	301.88
18.684	-22.799	-5.826	18.684	-21.494	-9.578	123.9	30.02	303.00
18.874	-22.876	-5.761	18.874	-21.380	-9.969	123.9	29.11	303.95
19.051	-22.943	-5.691	19.051	-21.304	-10.242	123.9	27.57	303.68
19.197	-22.989	-5.623	19.197	-21.273	-10.373	123.9	24.69	301.33
19.365	-23.047	-5.557	19.365	-21.299	-10.410	123.9	24.40	301.63
19.502	-23.084	-5.493	19.502	-21.367	-10.320	123.9	24.38	301.62
19.661	-23.131	-5.408	19.661	-21.516	-10.069	124.0	21.85	298.70
19.806	-23.160	-5.341	19.806	-21.707	-9.679	123.9	22.24	298.23
19.930	-23.187	-5.272	19.930	-21.925	-9.205	123.9	22.63	297.77
20.066	-23.206	-5.186	20.066	-22.202	-8.513	123.9	23.92	297.51
20.203	-23.224	-5.100	20.203	-22.501	-7.685	123.9	21.89	293.54
20.304	-23.222	-5.030	20.304	-22.747	-6.867	123.9	22.80	292.43
20.432	-23.231	-4.948	20.432	-23.021	-5.848	123.9	23.98	290.99
20.546	-23.220	-4.860	20.546	-23.239	-4.771	123.9	25.81	289.74
0.	0.	0.	0.	0.	0.	0.	0.	0.
20.744	-23.198	-4.689	20.744	-23.505	-2.762	124.0	29.25	286.51
20.835	-23.178	-4.600	20.835	-23.562	-1.784	124.0	30.97	284.17
20.923	-23.146	-4.525	20.923	-23.562	-1.024	124.0	32.53	281.95
21.011	-23.116	-4.428	21.011	-23.535	-0.270	124.0	34.97	279.93
21.077	-23.075	-4.351	21.077	-23.480	0.253	124.0	40.32	281.56

DATA SET 63-046A-02C

BRIEF DESCRIPTION

This data set consists of a single 7-track, 800 bpi, IBM/7094 binary tape, on which the data of set 63-046A-02A has been blocked 10 logical records per physical record. This tape was generated at NSSDC.

FORMAT

63-046A-02C Explorer 18, Magnetometer

7 Track, 556 BPI, IBM/7094 Binary tape

This is a one file tape. Each physical record contains 10 logical records plus a control word which is the first word. Each logical record consists of 35 data words. So there are 351 words or 2106 characters per physical record. Each data word of the logical record is an IBM/7094 floating point word unless otherwise indicated in the description given below.

DATA WORD	DESCRIPTION
1	Data Month ID (integer) Jan.=1,...Dec.-12
2	Data Day Count ID (integer) 1,2,...31
3	Station number (integer) NITU*
4	Tape Number (integer)
5	Year (integer) 19XX; XX given on tape
6	Data Day of year (integer) 1,2,...365
7	Data Hour (integer) 0,1,...23
8	Data Minutes 0.000...59.999
9	Sequence Number (integer in floating point format) NITU*
10	Spin Angle Average+
11	Flux Angle Average+
12	Field Payload X Component, in gammas
13	Field Payload Y Component, in gammas
14	Field Payload Z Component, in gammas
15	Field Solar Ecliptic X Component, in gammas
16	Field Solar Ecliptic Y Component, in gammas
17	Field Solar Ecliptic Z Component, in gammas
18	Field Payload X Component Variance, in gammas
19	Field Payload Y Component Variance, in gammas
20	Field Payload Z Component Variance, in gammas
21	Magnitude of Field, in gammas
22	Angle between Field and Ecliptic Plane, in degrees**
23	Angle between Projection of Field onto Ecliptic Plane and Earth-Sun Axis, in degrees***
24	Field Solar Ecliptic X Component Variance, in gammas
25	Field Solar Ecliptic Y Component Variance, in gammas
26	Field Solar Ecliptic Z Component Variance, in gammas
27	Number of Good Vector Field Measurements used in generating 5.46 minute averaged vector field
28	Spacecraft Geodetic Latitude, in degrees
29	Spacecraft Geodetic Longitude, in degrees
30	Spacecraft Geodetic Longitude, in degrees
31	Spacecraft Geomagnetic Longitude, in degrees
32	Radial Distance of Spacecraft in earth radii
33	Geomagnetic Longitude of Sub-Solar Point, in degrees
34	Geomagnetic Latitude of Sub-Solar Point, in degrees
35	Angle between Spin Axis and Satellite-Sun Vector, in degrees

* NITU- Not important to User

** This angle is measured from the ecliptic plane, positive north.

*** This angle is 0 if ecliptic-plane field component is towards sun, 90° if towards dusk meridian.

\+ The significance of these variables is indeterminate and is presumably minor.

Octal Dump 8 Records D-290

FILE 0001 REC 0001 CH 2106

0001	000536000001	000000000013	000000000033	000000000020
0049	206615252525	207504000000	202531727023	205627146314
0097	606573435214	605443567372	202424365604	206550243654
0145	203570054404	206473725310	205571560313	000000000005
0193	203411625434	210575216306	606404026326	207673463146
0241	000000000077	000000000513	000000000003	206671042104
0289	000000000000	206535463144	604757574044	605673135300
0337	206535463137	606533327133	210741440311	153400000000
0385	205740000000	606413146314	207555463146	203427672536
0433	000000000033	000000000020	000000000002	000000000077
0481	202532350065	205657356734	204605016501	203436127612
0529	205734353712	204536371253	205617144617	206437343067
0577	205414777725	000000000007	606406314631	205763412172
0625	606404756046	207673463146	000000000013	000000000033
0673	000000000004	203603146314	207564000000	202532015515
0721	604757717432	605673106014	605740517540	000000000000
0769	210741425463	153400000000	154600000000	153400000000
0817	207563146314	203463242063	210562151264	606405131423
0865	000000000002	000000000077	000000000513	000000000004
0913	000000000000	000000000000	206535463144	604757753300
0961	155400000000	206535463140	606533327133	210741422001
1009	606410365605	205775605075	606423146314	207564314631
1057	000000000013	000000000033	000000000020	000000000002
1105	207624000000	202532015515	206407356735	204603146314
1153	605672475675	205674074105	204437150070	205656521407
1201	203513561612	205445611617	000000000010	606411075341
1249	210554522565	606405345362	207673463146	000000000013
1297	000000000513	000000000004	205546735673	207644000000
1345	205734444442	200631606355	605544532311	605563041276
1393	606560723750	211420034441	206477354251	204647257607
1441	606424631463	207564631463	203532544470	210551707405
1489	000000000020	000000000002	000000000077	000000000513
1537	206733567355	205443146313	204435405540	206426372235
1585	205542470222	205746375102	206502204045	606421343726
1633	000000000011	606412050753	206400243656	606425463146
1681	207673463146	000000000013	000000000033	000000000020
1729	206412631463	207704000000	202532172701	206755252524
1777	606500116065	605411545540	206412727630	205765663113
1825	206501062535	206451012345	205534410011	000000000012
1873	203563710151	210544257675	606405373110	207673463146
1921	000000000077	000000000513	000000000004	206466421042
1969	202524631462	206510063144	603523636454	605745127016
2017	206522127717	606532047210	211404042705	206411525206
2065	205774121727	606425463146	207563463146	203600137170

FILE 0001 REC 0002 CH 2106

0001	000536000001	000000000013	000000000033	000000000020
0049	206542210421	207744000000	202532702435	207642104206
0097	606406164276	604774345402	205500141270	205735212243
0145	205627062122	205534241651	205565355120	000000000006
0193	203613563635	210536621752	606405214073	207673463146
0241	000000000077	000000000513	000000000004	206615673667
0289	205523260675	206551530334	603534101176	606567601141
0337	206631531661	605551246503	211407311513	205637230751
0385	205763534121	606424631463	207561463146	203627504234
0433	000000000033	000000000020	000000000002	000000000077
0481	202532525251	206554210420	204777101122	205521011232
0529	205735640101	205720432504	206433752626	206510512320
0577	205707472100	000000000013	606412631463	205756050753
0625	606404670766	207673463146	000000000013	000000000033
0673	000000000005	200525252525	210412000000	202532525251
0721	177464251472	606453661100	604510552626	205635162377
0769	211416353404	205734627671	206404545205	205663045754

cords D-2901 IMP-1 MAG'c' Blocked Mgg Tape of 'A'

0000033	000000000020	000000000002	000000000077	000000000513	000000000004
1727023	205627146314	601424365604	205550243655	206611075340	605446665537
4365604	206550243654	204534121725	206660413343	605473261654	210761427176
1660313	000000000005	606400702436	205722050753	606410000000	207552631463
4026326	207673463146	000000000013	000000000033	000000000020	000000000002
0000003	206671042104	207524000000	202532350065	205633146314	000000000000
7574044	605673135300	605740517540	400000000000	000000000000	155400000000
1440311	153400000000	154400000000	153400000000	000000000006	606403075341
5463146	203427672536	210572406472	606404314272	207673463146	000000000013
0000002	000000000077	000000000513	000000000004	200452525252	207544000000
5016501	203436127612	206414072405	600410322715	605667154315	605562654400
7144617	206437343067	606501271114	211414730063	206445415071	200464663731
6314631	205763412172	606420631463	207562000000	203445447100	210564763345
0000013	000000000033	000000000020	000000000002	000000000077	000000000513
4000000	202532015515	205710421041	000000000000	000000000000	206535463144
0517540	000000000000	000000000000	155400000000	206535463137	606533327133
0000000	153400000000	000000000006	606407412172	205771463146	606422314631
2151264	606405131423	207673463146	000000000013	000000000033	000000000020
0000513	000000000004	204560421042	207604000000	202532015515	205762525251
5463144	604757753300	605673076174	605740517540	000000000000	000000000000
3327133	210741422001	153400000000	154400000000	153400000000	000000000006
3146314	207564314631	203500723066	210557336576	606405254006	207673463146
0000020	000000000002	000000000077	000000000513	000000000004	205417356735
7356735	204603146314	201746314632	206454146312	601777152424	605701307444
7150070	205656521407	206473622657	606543743275	211411735577	206426351430
0000010	606411075341	206400050753	606424631463	207564631463	203515751550
3463146	000000000013	000000000033	000000000020	000000000002	000000000077
6735673	207644000000	202532172701	206446735673	204605016501	200527612761
4532311	605563041276	205734353713	201645020416	206420523434	206401331656
7354251	204647257607	205414341504	000000000007	606411534121	206400436560
2544470	210551707405	606405405627	207673463146	000000000013	000000000033
0000077	000000000513	000000000004	205676314631	207664000000	202532172701
5405540	206426372235	203452472361	606407757650	605552056707	205757024701
2204045	606421343726	211426030571	206454672656	205524532351	205547516626
0243656	606425463146	207564631463	203547201402	210547074143	606405415020
0000033	000000000020	000000000002	000000000077	000000000513	000000000004
2172701	206755252524	205461217267	205442560506	206426507531	203536571271
2727630	205765663113	206447613216	206535304213	605545446776	211425630176
4410011	000000000012	606412314631	205776702436	606425463146	207564314631
5373110	207673463146	000000000013	000000000033	000000000020	000000000002
0000004	206466421042	207724000000	202532350065	206754631461	204474314630
3636454	605745127016	605717400560	205646635117	204570414073	205652121151
042705	206411525206	203574476416	205503137652	000000000010	606412436560
463146	203600137170	210541444605	606405320123	207673463146	

0000033	000000000020	000000000002	000000000077	000000000513	000000000004
702435	207642104206	204501042103	204652525251	206403463145	602421331520
141270	205735212243	205466142240	206443722770	605635011657	211412212671
355120	000000000006	606412560507	205770243656	606425463146	207562631463
214073	207673463146	000000000013	000000000033	000000000020	000000000002
000004	206615673567	207764000000	202532172701	206542735672	204553033732
101176	606567601141	605472512666	205577415232	206416565050	205606241711
311513	205637230751	206402071714	205607770332	000000000013	606412631463
463146	203627504234	210534016433	606405056774	207673463146	000000000013
000002	000000000077	000000000513	000000000004	206671463146	210402000000
7101122	205521011232	205767101120	202742456076	606472022024	604560260566
752626	206510512320	605404265141	211423370621	206421321541	205775746153
631463	205756050753	606424000000	207560000000	203643320035	210531204614
000013	000000000033	000000000020	000000000002	000000000077	000000000513
000000	202532525251	206566525251	204577326067	205511463143	205753146312
552626	205635162377	205743071403	206412471032	206466723071	604752334131
545205	205663045754	000000000013	606412507534	205740753412	606423146314

FILE 0001 REC 0002 CH 2106

0817	207554631463	203656541101	210523562342	606404202245	2
0865	000000000002	000000000077	000000000513	000000000005	2
0913	205535203515	204536127610	206521555554	203532505645	6
0961	205611265611	206606110037	606420301024	211425547626	2
1009	606412355605	205731217270	606421463146	207553146314	2
1057	000000000013	000000000033	000000000020	000000000002	0
1105	210432000000	202532172702	206612314631	204664631460	2
1153	605730126570	204660412250	204646432547	204662452213	2
1201	204504456200	204614427353	000000000006	606412243656	2
1249	210516145026	606403351130	207673463146	000000000013	0
1297	000000000513	000000000005	205420421042	210442000000	2
1345	205723631462	203457074516	605640217375	605520031104	2
1393	606463520216	211430242161	206417553460	204513470035	2
1441	606420000000	207546631463	203720341312	210513337056	6
1489	000000000020	000000000002	000000000077	000000000513	0
1537	206626525251	204631727020	205405463144	206416365604	5
1585	205535524737	205500111711	206475342735	605560073226	2
1633	000000000012	606411727024	205677270243	606416314631	2
1681	207673463146	000000000013	000000000033	000000000020	0
1729	205677356735	210462000000	202532350065	206642104206	2
1777	606415624533	603733565733	205555734227	205514204260	2
1825	205573043676	204602050340	205661743175	000000000013	6
1873	203745742620	210505731337	606401714702	207673463146	0
1921	000000000077	000000000513	000000000005	206413252525	2
1969	205605673565	205554343432	602642774150	606414552131	5
2017	206416004614	600655357676	211410336011	205507346212	2
2065	205653534121	606414000000	207540000000	203760361032	2

FILE 0001 REC 0003 CH 2106

0001	000536000001	000000000013	000000000033	000000000020	0
0049	206467042104	210502000000	202533057621	206677567355	2
0097	605761647075	603723106767	205602052076	205575053343	2
0145	205641435514	204503710333	205742610771	000000000013	6
0193	203773007222	210500331076	606400502332	207673463146	6
0241	000000000077	000000000513	000000000005	206542631463	2
0289	205504404515	205555171007	200567635116	605772343252	6
0337	205777377354	603774745251	211417247767	205677215634	2
0385	205626314631	606411463146	207532631463	204402571650	2
0433	000000000033	000000000020	000000000002	000000000077	0
0481	202533235005	206733146314	205430525250	206404356734	2
0529	205547751046	205536360122	205504423637	206512737603	2
0577	205664000432	000000000014	606410507534	205613146314	0
0625	605776264454	207673463146	000000000013	000000000033	0
0673	000000000005	206672104210	210532000000	202533057621	2
0721	203627114141	606515523325	203724304041	205501233061	2
0769	211426530117	205463267006	204452476353	205631241325	2
0817	207525463146	204414604141	210470147052	605774607606	2
0865	000000000002	000000000077	000000000513	000000000006	2
0913	204735605070	206420050751	205451727022	203725335633	2
0961	205425431005	206514307156	204430653024	211430224215	2
1009	606407605075	205550000000	606404000000	207520000000	2
1057	000000000013	000000000033	000000000020	000000000002	0
1105	210552000000	202533057621	206755252524	204617101116	2
1153	201733353222	205427137344	205455502126	205410623126	2
1201	204451663205	205560615025	000000000013	606407341217	2
1249	210460010201	605767363075	207673463146	000000000013	0
1297	000000000513	000000000006	204564631463	210562000000	2
1345	205526436556	203710522700	606502600463	202451701063	2
1393	202640101511	211430017057	205447575674	203623330325	2
1441	606400631463	207512000000	204433314713	210455230272	2
1489	000000000020	000000000002	000000000077	000000000513	0
1537	207410314631	205434631460	205772721345	205446314630	2
1585	204646467605	204631377772	206505670270	203567076211	2

23562342	606404202245	207673463146	000000000013	000000000033	000000000020
00000513	000000000005	203607356735	210422000000	202532702436	206574631462
21555554	203532505645	606500260371	605664670166	205557401211	205652307050
20301024	211425547626	205644020304	205727171235	205416277700	000000000007
21463146	207553146314	203672135043	210520753144	606403702007	207673463146
00000020	000000000002	000000000077	000000000513	000000000005	204562525252
12314631	204664631460	203527356734	206530210420	602502650615	606423742502
46432547	204662452213	206553555201	606503623142	211411642567	205416102000
00000006	606412243656	205721075341	606420631463	207551146314	203705244730
73463146	000000000013	000000000033	000000000020	000000000002	000000000077
20421042	210442000000	202533057621	207663463145	205402631460	203471463145
40217375	605520031104	205655231567	204543062564	205701057734	206416125375
17553460	204513470035	205463600446	000000000010	606412121727	205710365605
20341312	210513337056	606402767612	207673463146	000000000013	000000000033
00000077	000000000513	000000000005	205550000000	210452000000	202532525251
05463144	206416365604	574435643314	606444142330	604760223133	205555006457
75342735	605560073226	211415743714	205574651062	204737502262	205612213062
77270243	606416314631	207544631463	203733113733	210810533415	606402356262
00000033	000000000020	000000000002	000000000077	000000000513	000000000005
32350065	206642104206	204500224736	205474157550	205647665412	574676602721
55734227	205514204260	205541401763	206424210426	604615607710	211415720367
61743175	000000000013	606411534121	205665605075	606415463146	207542314631
01714702	207673463146	000000000013	000000000033	000000000020	000000000002
00000005	206413252525	210472000000	202532525251	206657567355	203511751170
42774150	606414552131	577771750770	205512026513	205505461264	205426154312
10336011	205507346212	203773424626	205633076077	000000000011	606411341217
40000000	203760361032	210503127721	606401223265	207673463146	

00000033	000000000020	000000000002	000000000077	000000000513	000000000005
33057621	206677567355	204450564265	205436766540	205614272130	576423662164
02052076	205575053343	205565236572	205777260777	604646357425	211415600735
42610771	000000000013	606411146314	205641217270	606413146314	207535463146
00502332	207673463146	000000000013	000000000033	000000000020	000000000002
00000005	206542631463	210512000000	202532702435	206712735672	204456654152
67635116	605772343252	603433037226	205640772575	205550013014	205546053132
17247767	205677215634	204547673160	205676325231	000000000013	606410753412
32631463	204402571650	210475534114	605777664130	207673463146	000000000013
00000002	000000000077	000000000513	000000000005	206616314631	210522000000
30525250	206404356734	205450421037	204471721725	606477203773	203457035404
04423637	206512737603	203644531010	211433636525	205563715432	204526332373
10507534	205613146314	606410000000	207530314631	204407414464	210472740053
00000013	000000000033	000000000020	000000000002	000000000077	000000000513
32000000	202533057621	206755252524	204702372233	206435042103	205461751172
24304041	205501233061	205507375122	205417537120	206526437725	204472720036
52476353	205631241325	000000000011	606410314631	205577656050	606407146314
70147052	605774607606	207673463146	000000000013	000000000033	000000000020
00000513	000000000006	205567356735	210542000000	202532525251	206753356735
51727022	203725335633	606503155517	203625552710	205536603506	204763315613
30653024	211430224215	205552203443	204500713107	205504556564	000000000012
04000000	207520000000	204421626660	210462572435	605771246064	207673463146
00000020	000000000002	000000000077	000000000513	000000000006	203613567356
55252524	204617101116	205715766536	205521123615	203412444136	606455033302
55502126	205410623126	206457203101	202547357577	211424241463	205434273006
00000013	606407341217	205533412172	606402314631	207514631463	204426451317
73463146	000000000013	000000000033	000000000020	000000000002	000000000077
64631463	210562000000	202532525251	206771673566	204770753403	205763777774
02600463	202451701063	205455517176	204736645542	204673463143	206510223565
47575674	203623330325	205474014350	000000000012	606407075341	205517024365
33314713	210455230272	605765424453	207673463146	000000000013	000000000033
00000077	000000000513	000000000006	205421673567	210572000000	202533057621
72721345	205446314630	204502756326	606471741166	203412156142	205436545146
05670270	203567076211	211434330404	205461203614	203760133607	204752552220

FILE 0001 REC 0006 CH 2106

1105	211455000000	202533235005	210757525251	2027721350
1153	602701172270	202441224145	202676216435	201716414
1201	202573617267	202440142470	000000000013	605772702
1249	207667622752	605627512345	207674000000	000000000
1297	000000000513	000000000010	206673673567	211461000
1345	605407665413	203622546524	205606060670	601665776
1393	602761436054	207456073251	203634124427	204427535
1441	605623146314	206663146314	204632251615	207662567
1489	000000000020	000000000006	000000000077	000000000
1537	210707314630	603410112357	204467213504	177654157
1585	203666272124	204645644601	204522313464	206542161
1633	000000000013	605771217270	604553146314	605614631
1681	207674000000	000000000013	000000000033	000000000
1729	203631463146	211471000000	202533612171	210740042
1777	576410000602	203770026520	204545647207	204623702
1825	204626075763	204555005755	204442344665	000000000
1873	204641712536	207643507211	605610156760	207674000
1921	000000000077	000000000513	000000000011	204573567
1969	204777146310	604746314625	201455047623	601413111
2017	205550176074	207527767054	211476325535	203512102
2065	604656314631	605606314631	206624631463	204645406

FILE 0001 REC 0007 CH 2106

0001	000536000001	000000000013	000000000033	000000000
0049	205425042104	211501000000	202533567355	210717631
0097	204410104265	602576726405	204502727053	203773213
0145	204467256070	203777731344	204413473766	000000000
0193	204651153730	207631502765	605600266322	207674000
0241	000000000077	000000000513	000000000011	205554421
0289	604417146313	604477567354	203437473602	204612074
0337	204644353025	202746034645	207427641120	203616311
0385	604761727024	605600000000	206604631463	204654641
0433	000000000033	000000000020	000000000006	000000000
0481	202533235005	210467567356	201575530335	205676314
0529	203454074242	204503465353	203750626313	205707511
0577	203601754032	000000000013	605766314631	605411727
0625	605570330347	207674000000	000000000013	000000000
0673	000000000011	206415463146	211515000000	202533412
0721	602601565555	177540274256	603722614207	203555213
0769	210532763250	203601643310	204504555774	204453376
0817	206565463146	204663752554	207612546346	605564333
0865	000000000006	000000000077	000000000513	000000000
0913	576463146324	600704210411	604630631460	203433042
0961	203033527346	204631633567	206477470037	206771617
1009	605765217270	605454000000	605570000000	206555463
1057	000000000013	000000000033	000000000010	000000000
1105	211525000000	202533235005	210707631461	202652525
1153	204434507642	202503777741	202524704453	203425550
1201	203472060721	202503220676	000000000014	605764631
1249	207600631327	605554322215	207674000000	000000000
1297	000000000513	000000000011	206620525252	211531000
1345	603740421035	202623102425	205407475704	603567501
1393	605464430047	207474555327	202757377502	203606743
1441	605561463146	206536314631	204676432051	207573670
1489	000000000010	000000000001	000000000077	000000000
1537	211422567356	201665252524	605472104206	603465252
1585	203570664156	203405522666	205504524332	605756174
1633	000000000014	605763534121	605537412172	605556314
1681	207674000000	000000000013	000000000033	000000000
1729	201404210421	211541000000	202533057621	210743525
1777	203630414422	604551041732	203407104335	203536021
1825	202610224711	203602627134	202757470463	000000000
1873	204705400104	207555066171	605534211633	207674000

210757525251	202772135053	605401236200	604607665413	204402016766	205451775150
202676216435	201716414457	205511426177	604471752472	207412270470	202512162136
000000000013	605772702436	604407270243	605630000000	206672314631	204626521673
207674000000	000000000013	000000000033	000000000020	000000000006	000000000077
206673673567	211461000000	202533057621	210777314631	177676654155	605461463145
205606060670	601665776444	203777467666	203610025331	203565175463	205623634535
203634124427	204427535345	203414230110	000000000013	605772314631	604450507534
204632251615	207662567523	605623650735	207574000000	000000000013	000000000033
000000000077	000000000513	000000000011	200746314631	211465000000	202533412171
204467213504	177654157535	603400231632	603633165030	203730376210	203525277015
204522313464	206542161733	210734103777	203616701237	204542363277	204453356241
604553146314	605514631463	206644000000	204636110306	207650520757	605614071373
000000000033	000000000020	000000000006	000000000077	000000000513	000000000011
202533412171	210740042102	604602721347	203533260675	601575530332	604530307741
204545647207	204623702734	204456212553	204652614664	206441434203	210551276434
204442344665	000000000013	605770507534	604614631463	605611463146	206634000000
605610156760	207674000000	000000000013	000000000033	000000000020	000000000006
000000000011	204573567356	211475000000	202533057621	207704104210	603443146312
201455047623	601413111352	205547273656	203577314435	203713511536	203673525247
211476325535	203512102437	203420440654	204460707373	000000000014	605770000000
206624631463	204645406031	207636503210	605604230612	207674000000	

000000000033	000000000020	000000000006	000000000077	000000000513	000000000011
202533567355	210717631461	201445171002	604403146312	603404045166	202502523243
204502727053	203773213501	203730172676	204444230121	605461703331	207444043612
204413473766	000000000013	605767412172	604720000000	605603146314	206614631463
605600266322	207674000000	000000000013	000000000033	000000000020	000000000006
000000000011	205554421042	211505000000	202533567355	211416756734	200773567355
203437473602	204612074634	200675420631	203446420632	203675546003	204441713334
207427641120	203616311762	203664446166	204404740272	000000000014	605767024365
206604631463	204654641737	207624512042	605574313636	207674000000	000000000013
000000000006	000000000077	000000000513	000000000011	205704000000	211511000000
201575530335	205676314625	203540451707	600446210030	605606025776	204726556710
203750626313	205707511636	205761466540	211414514332	203643773161	204505002147
605766314631	605411727024	605574631463	206575463146	204660327330	207617526425
000000000013	000000000033	000000000010	000000000001	000000000077	000000000513
211515000000	202533412171	210604463145	600766541575	603514157550	203567665413
603722614207	203555213400	204642606173	203463357337	203771433137	607415514530
204504555774	204453376061	000000000013	605765727024	605433024365	605573146314
207612546346	605564333654	207674000000	000000000013	000000000033	000000000020
000000000513	000000000011	206471252525	211521000000	202532702435	210756525251
604630631460	203433042740	204430355325	204407114426	202636724570	204546114427
206477470037	206771617322	202563460611	203463020023	204602210301	000000000014
605570000000	206555463146	204667265461	207605575310	605560331761	207674000000
000000000010	000000000001	000000000077	000000000513	000000000011	206545042104
210707631461	202652525250	602404210416	605403356734	204435002142	204536161651
202524704453	203425550504	205412703307	206401640456	206626712447	202427566535
000000000014	605764631463	605475075341	605564631463	206545463146	204673122762
207674000000	000000000013	000000000033	000000000020	000000000006	000000000077
206620525252	211531000000	202533412171	210741356734	177777777775	605401463146
205407475704	603567501474	202545462572	203703271517	203625155310	205434262122
202757377502	203606743301	203656716733	000000000014	605764243656	605516314631
204676432051	207573670427	605550304171	207674000000	000000000013	000000000033
000000000077	000000000513	000000000011	206674314631	211535000000	202533567355.
605472104206	603465252522	202651220722	205421374463	604515271506	204406154750
205504524332	605756174557	207474000434	203724354531	202715223670	203715270127
605537412172	605556314631	206526314631	204702053071	207566736275	605544263656
000000000033	000000000020	000000000006	000000000077	000000000513	000000000012
202533057621	210743525251	201703373255	604612606764	202713505640	177564450510
203407104335	203536021754	202740417142	204637001414	606743546211	207532746521
202757470463	000000000013	605762560507	605602050753	605551463146	206506314631
605534211633	207674000000	000000000013	000000000033	000000000010	000000000001

FILE 0001 REC 0007 CH 2106

1921	000000000077	000000000513	000000000012	2036356
1969	604566104205	203453146312	602506346524	2035701
2017	204624036267	606734030737	207705644312	2026042
2065	605623270243	605546314631	206476314631	2047107

FILE 0001 REC 0008 CH 2106

0001	000536000001	000000000013	000000000033	0000000
0049	204575673567	211551000000	202533235005	2114010
0097	205421060367	604673256351	203602330476	2035643
0145	203661675551	203550106631	203476153571	0000000
0193	204714243550	207543242167	605524135224	2076740
0241	000000000077	000000000513	000000000012	2054263
0289	604615673565	203607777775	601702762602	2035126
0337	204673610464	607413171545	207663215322	2035240
0385	605666172702	605540000000	206457146314	2047174
0433	000000000033	000000000020	000000000006	0000000
0481	202533412171	210761631461	602573260673	6045065
0529	203402674271	203631436023	202550701160	2046324
0577	203530205473	000000000013	605760507534	6057075
0625	605514062677	207674000000	000000000013	0000000
0673	000000000012	205705042104	211565000000	2025334
0721	603471551657	202657363560	604531110342	2025352
0769	210442756721	202517674473	203421654217	2027751
0817	206437146314	204726237116	207524541402	6055100
0865	000000000001	000000000077	000000000513	0000000
0913	603434631462	603623656045	203656560506	6036433
0961	203661523617	204507607206	606607553755	2105160
1009	605757534121	605752560507	605531463146	2064271
1057	000000000013	000000000033	000000000010	0000003
1105	211575000000	202533412171	210730463145	6027721
1153	604440141156	203634441333	204475531627	2034347
1201	203703017464	203767077001	000000000013	6057577
1249	207512764035	605500013140	207674314631	0000001
1297	000000000513	000000000012	206545463146	2116011
1345	204560224741	603752447604	603535223332	6037570
1393	606473307072	210656715210	204436546460	2037337
1441	605523146314	206407146314	204740141303	2075067
1489	000000000143	000000000001	000000000077	0000000
1537	210563314630	200514631462	602757777775	2026647
1585	203604531417	204402456760	203514710320	6075037
1633	000000000014	605756050753	606417534121	6055217
1681	207674314631	000000000013	000000000033	0000000
1729	206674735673	211611000000	202533567355	2107657
1777	202666071201	603430176405	203740754167	2035147
1825	203706171162	203404374317	203741457547	0000000
1873	204746651252	207474353633	605464025275	2076747
1921	000000000077	000000000513	000000000013	2014257
1969	603526735672	603457356734	202657253405	2036407
2017	203730040303	603641724001	206764767362	2027277
2065	606452172702	605513146314	205716314631	2047517

FILE 0001 REC 0009 CH 2106

0001	000536000001	000000000013	000000000033	0000000
0049	203643146314	211621000000	202533567355	2106547
0097	203530745215	203621175712	203651206373	2044677
0145	203700624365	204405126541	203720654671	0000000
0193	204755142055	207456001022	605450151670	2076747
0241	000000000077	000000000513	000000000013	2046007
0289	200525252525	604472525250	200523707016	2036357
0337	204512162656	206627626537	207520427006	2034347
0385	606474000000	605506314631	205556314631	2047607
0433	000000000033	000000000020	000000000006	0000000
0481	202533412171	210707314630	600514631462	2017547
0529	201577046067	202754315463	203410047337	2046607

00000012	203635673567	211545000000	202533412171	210727567355	600742104205
06346524	203570142446	604534127452	202476337615	203465724505	203456065011
05644312	202604257675	202652534567	203547623534	000000000014	605762172702
76314631	204710721737	207550151711	605530163441	207674000000	
00000033	000000000010	000000000001	000000000077	000000000513	000000000012
33235005	211401021042	202662104204	605537042101	602537777775	203411506261
02330476	203564320233	203552150200	205545746565	606462066406	207461250720
76153571	000000000014	605761463146	605644631463	605543146314	206467146314
24135224	207674000000	000000000013	000000000033	000000000020	000000000006
00000012	205426314631	211555000000	202533235005	210707631461	177725252510
02762602	203512643054	604627722131	203650065724	203517510772	203507023601
63215322	203524064306	203705003646	203430255532	000000000014	605761075341
57146314	204717442712	207536330535	605520106315	207674000000	000000000013
00000006	000000000077	000000000513	000000000012	205555463146	211561000000
73260673	604506541573	203713505636	603525361205	202730460605	604542120462
50701160	204632420660	606734745404	210442504210	202670263554	203474564253
760507534	605707534121	605536314631	206447146314	204723021040	207531435056
00000013	000000000033	000000000143	000000000001	000000000077	000000000513
5650C0000	202533412171	210774314630	602506766540	604471011235	203702247436
531110342	202535217645	203510246677	202530564227	204612121332	606750756730
21654217	202775140147	000000000013	605760121727	605731075341	605533146314
524541402	605510042110	207674000000	000000000013	000000000033	000000000010
00000513	000000000012	206416210421	211571000000	202533412171	210735042102
556560506	603643776324	201567640215	603756354501	203577651754	204426213556
507553755	210516617603	203727067444	204407527160	203574730704	000000000012
531463146	206427146314	204731516352	207517647775	605504023464	207674000000
00000010	000000000001	000000000077	000000000513	000000000012	206471673567
730463145	602772135053	603424272131	204513505640	603731444012	602465040241
475531627	203434716351	204574720551	606611240631	210614111537	203675412720
00000013	605757146314	605774121727	605526314631	206417146314	204735030535
74314631	000000000013	000000000033	000000000020	000000000006	000000000077
45463146	211601000000	202533567355	210733567356	602746314625	601467665413
35223332	603757053230	204507046410	203513312750	203456325300	204605631614
36546460	203733726527	203417665214	000000000013	605756436560	606406702436
740141303	207506103606	605474010244	207674314631	000000000013	000000000033
00000077	000000000513	000000000012	206621252525	211605000000	202533412171
757777775	202664210415	600471367115	200425006642	603510604310	203524437075
14710320	607503662514	210425042630	203702554444	203570136614	203663574304
17534121	605521463146	205776314631	204743235733	207501225131	605470012317
00000033	000000000020	000000000006	000000000077	000000000513	000000000012
33567355	210765631462	600756735662	603536735670	201527356731	601541757525
40754167	203514524341	203625102204	203586426552	606616744545	207677772013
41457547	000000000014	605755463146	606430365605	605520000000	205756314631
64025275	207674314631	000000000013	000000000033	000000000143	000000000001
00000013	201425252525	211615000000	202533412171	210720525251	201712525250
57253405	203640361704	600655361165	202672474245	204470441427	203543410367
64767362	202727723116	203767410051	203772720410	000000000014	605754507534
16314631	204751775721	207462640742	605454163347	207674314631	
00000033	000000000020	000000000006	000000000077	000000000513	000000000013
33567355	210654104210	177725252525	177431463140	604440631460	202724152330
51206373	204467643013	203533152126	204441234536	206537172170	206676542706
720654671	000000000014	605754121727	606463024365	605510000000	205676314631
50151670	207674314631	000000000013	000000000033	000000000143	000000000001
00000013	204600000000	211625000000	202533412171	210465421041	602607356732
23707016	203635540234	204400424044	202660303340	203604121003	203575565426
20427006	203434132257	203577601560	203523206777	000000000014	605753534121
56314631	204750366575	207451144022	605444233120	207674314631	000000000013
00000006	000000000077	000000000513	000000000013	205427356735	211631000000
14621462	201754631460	604653567354	203413302526	203713742442	204525152536
10047337	204660512775	206640365267	206736504013	201511064213	203506400746

FORMAT

63-046A-02D Explorer 18, Magnetometer

9 track, 800 bpi, odd parity, IBM/360, BCD tape

Card images on tape; logical record length equals physical record length equals 79. In IBM/360 notation: RECFM = FB; LRECL = 79; BLKSIZE = 79; DEN = 2; 9 track; NO LABEL (LABEL = (,BLP).

The "duplicate" tapes are 7 track, 800 bpi, even parity, IBM/7094 BCD tapes.

The following apply to the 7 track and to the 9 track tapes.

WORD	FORMAT	DESCRIPTION
1	I2	Orbit number
2	F5.1	Spacecraft radial distance, in earth radii
3	F5.1	Spacecraft X position in solar ecliptic coordinates in earth radii
4	F5.1	Spacecraft Y position in solar ecliptic coordinates in earth radii
5	F5.1	Spacecraft Z position in solar ecliptic coordinates in earth radii
6	I2	Data year (65, 66, 67)
7	I3	Data day of year (1, . . . 365)
8	I2	Data hour (0, . . . 23)
9	F5.1	Field magnitude in gammas
10	F5.1	Field latitude angle in degrees ($\pm$ 90°), where + 90° north
11	F5.1	Field longitude angle, in degrees (0° - 360°), where 0° towards sun, 90° towards dusk meridian
12	F5.1	Field solar ecliptic X component, in gammas
13	F5.1	Field solar ecliptic Y component, in gammas
14	F5.1	Field solar ecliptic Z component, in gammas
15	F5.1	Field solar ecliptic X component standard deviation in gammas
16	F5.1	Field solar ecliptic Y component standard deviation in gammas
17	F5.1	Field solar ecliptic Z component standard deviation in gammas

DATA SET 63-046A-02D

BRIEF DESCRIPTION

This data set consists of a single 9-track, 800 bpi, BCD tape. The analyzed data are as received from the experimenter: hourly averaged data taken while the spacecraft was in interplanetary space. Data presented are from the time interval November 27, 1963 - February 15, 1964, with at least 80% coverage.

OBJECTIVE

This data set was generated to facilitate the study of the time-averaged interplanetary magnetic field and the long time scale (greater than an hour) variations of that field.

FULL DESCRIPTION

This data set consists of a single reel of 9-track, 800 bpi, BCD tape supplied by the experimenter. Data words include orbit and time information, spacecraft radial distance and position in solar ecliptic coordinates, Cartesian and spherical components of the magnetic field in solar ecliptic coordinates, and the standard deviations of the Cartesian components. The data is chronologically ordered.

NSSDC has generated a 7-track, 800 bpi, BCD tape containing the same information as that on the original 9-track tape.

QUANTITY AND QUALITY

This data set consists of a single tape covering the period November 27, 1963 to February 15, 1964 with at least 80% coverage. No errors were detected in the original tape in producing the 7-track tape.

```
1 18.8 14.2-10.4 -6.56333114  3.2-10.0151.0 -2.8  1.5 -0.6  1.2  1.9  1.7
1 19.6 15.1-10.7 -6.66333115  4.8 10.0180.0 -4.7  0.0  0.8  0.7  0.9  0.4
1 20.4 15.9-11.0 -6.76333116  4.5 44.0139.0 -2.4  2.1  3.1  0.8  2.1  1.5
1 21.2 16.7-11.3 -6.76333117  4.6 33.0169.0 -3.8  0.7  2.5  2.0  1.6  2.5
1 22.0 17.4-11.5 -6.86333118  5.6 28.0162.0 -4.7  1.5  2.6  0.6  1.4  1.5
1 22.7 18.1-11.8 -6.86333119  5.8-19.0209.0 -4.8 -2.7 -1.9  0.9  1.1  2.7
1 23.3 18.8-12.0 -6.86333120  6.9-41.0188.0 -5.2 -0.7 -4.5  0.7  1.5  0.9
1 23.9 19.4-12.2 -6.96333121  3.2  3.0134.0 -2.2  2.3  0.2  2.9  2.3  4.9
1 24.5 20.1-12.3 -6.96333122  6.7 50.0 74.0  1.2  4.1  5.1  1.6  0.8  0.8
1 25.1 20.7-12.5 -6.96333123  4.4 18.0148.0 -3.5  2.2  1.4  1.5  3.5  3.1
1 25.7 21.2-12.7 -6.863332 0  4.2 41.0 99.0 -0.5  3.1  2.8  2.3  3.2  2.5
1 26.2 21.8-12.8 -6.863332 1  3.4 65.0 94.0 -0.1  1.4  3.1  0.8  2.2  4.8
1 26.6 22.3-12.9 -6.863332 2  5.9-53.0112.0 -1.3  3.3 -4.7  1.3  1.3  1.0
1 27.1 22.8-13.0 -6.863332 3  4.0-57.0159.0 -2.0  0.8 -3.4  2.3  1.1  4.9
1 27.5 23.3-13.1 -6.763332 4  1.2 27.0288.0  0.3 -1.0  0.5  2.0  0.7  3.7
1 27.9 23.7-13.2 -6.763332 5  1.4 -9.0  5.0  1.4  0.1 -0.2  1.7  2.1  3.5
1 28.3 24.1-13.3 -6.663332 6  6.5  8.0 25.0  5.8  2.7  0.9  0.3  0.7  0.5
1 28.7 24.6-13.3 -6.563332 7  5.8 11.0 10.0  5.6  1.0  1.1  0.4  0.3  0.3
1 29.0 24.9-13.4 -6.563332 8  4.3  4.0  9.0  4.2  0.7  0.3  0.4  0.7  0.4
1 29.4 25.3-13.4 -6.463332 9  3.6 17.0  0.0  3.4  0.0  1.1  0.7  0.9  0.7
1 29.8 25.7-13.4 -6.36333210  4.1 -3.0314.0  2.8 -2.9 -0.2  1.0  0.8  1.0
1 29.9 26.0-13.4 -6.36333211  4.1  4.0330.0  3.5 -2.0  0.3  0.7  1.0  1.0
1 30.2 26.3-13.4 -6.26333212  3.9 12.0321.0  3.0 -2.4  0.8  1.2  2.8  0.6
1 30.4 26.6-13.4 -6.16333213  5.0 -3.0288.0  1.5 -4.7 -0.3  0.6  0.3  0.4
1 30.6 26.9-13.4 -6.06333214  4.5 -6.0278.0  0.6 -4.4 -0.5  1.4  1.3  2.1
1 30.8 27.1-13.4 -5.96333215  5.4 26.0323.0  3.9 -2.9  2.4  0.5  0.5  0.4
1 31.0 27.3-13.4 -5.86333216  5.7 30.0341.0  4.7 -1.6  2.8  0.5  1.1  0.5
1 31.1 27.6-13.4 -5.76333217  5.8 20.0329.0  4.7 -2.8  2.0  0.8  1.3  0.6
1 31.3 27.7-13.3 -5.66333218  5.8 21.0311.0  3.6 -4.1  2.1  0.9  1.1  1.3
1 31.4 27.9-13.3 -5.46333219  5.7 32.0316.0  3.5 -3.4  3.0  0.5  0.5  0.3
1 31.5 28.1-13.2 -5.36333220  5.6 25.0307.0  3.1 -4.1  2.4  0.8  0.5  0.4
1 31.6 28.2-13.1 -5.26333221  4.9 12.0337.0  4.4 -1.9  1.0  0.6  0.9  0.7
```

-0.6	1.2	1.9	1.7	0.0		REC	1. LENGTH	79
0.8	0.7	0.9	0.4	0.0	C-2096	REC	2. LENGTH	79
3.1	0.8	2.1	1.5	0.0		REC	3. LENGTH	79
2.5	2.0	1.6	2.5	0.0		REC	4. LENGTH	79
2.6	0.6	1.4	1.5	0.0		REC	5. LENGTH	79
-1.9	0.9	1.1	2.7	0.0		REC	6. LENGTH	79
-4.5	0.7	1.5	0.9	0.0		REC	7. LENGTH	79
0.2	2.9	2.3	4.9	0.0		REC	8. LENGTH	79
5.1	1.6	0.8	0.8	0.0		REC	9. LENGTH	79
1.4	1.5	3.5	3.1	0.0		REC	10. LENGTH	79
2.8	2.3	3.2	2.5	0.0		REC	11. LENGTH	79
3.1	0.8	2.2	4.8	0.0		REC	12. LENGTH	79
-4.7	1.3	1.3	1.0	0.0		REC	13. LENGTH	79
-3.4	2.3	1.1	4.9	0.0		REC	14. LENGTH	79
0.5	2.0	0.7	3.7	0.0		REC	15. LENGTH	79
-0.2	1.7	2.1	3.5	0.0		REC	16. LENGTH	79
0.9	0.3	0.7	0.5	0.0		REC	17. LENGTH	79
1.1	0.4	0.3	0.3	0.0		REC	18. LENGTH	79
0.3	0.4	0.7	0.4	0.0		REC	19. LENGTH	79
1.1	0.7	0.9	0.7	0.0		REC	20. LENGTH	79
0.2	1.0	0.8	1.0	0.0		REC	21. LENGTH	79
0.3	0.7	1.0	1.0	0.0		REC	22. LENGTH	79
0.8	1.2	2.8	0.6	0.0		REC	23. LENGTH	79
0.3	0.6	0.3	0.4	0.0		REC	24. LENGTH	79
0.5	1.4	1.3	2.1	0.0		REC	25. LENGTH	79
2.4	0.5	0.5	0.4	0.0		REC	26. LENGTH	79
1.8	0.5	1.1	0.5	0.0		REC	27. LENGTH	79
2.0	0.8	1.3	0.6	0.0		REC	28. LENGTH	79
2.1	0.9	1.1	1.3	0.0		REC	29. LENGTH	79
3.0	0.5	0.5	0.3	0.0		REC	30. LENGTH	79
1.4	0.8	0.5	0.4	0.0		REC	31. LENGTH	79
.0	0.6	0.9	0.7	0.0		REC	32. LENGTH	79

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1 31.6 28.4-13.1 -5.16333222  4.2 -2.0339.0  3.9 -1.3 -0.1  1.0  0.6  0.5
1 31.7 28.5-13.0 -5.06333223  4.8  8.0312.0  3.2 -3.5  0.7  0.6  0.8  0.4
1 31.7 28.6-12.9 -4.863333 0  4.5 -6.0310.0  3.3 -3.0 -0.5  0.8  1.1  1.7
1 31.7 28.6-12.8 -4.763333 1  4.7-24.0329.0  3.7 -2.2 -1.9  0.4  0.6  0.4
1 31.7 28.7-12.7 -4.663333 2  5.2-22.0329.0  4.1 -2.5 -1.9  0.3  0.5  0.4
1 31.7 28.7-12.5 -4.463333 3  5.5-14.0342.0  5.1 -1.6 -1.3  0.7  0.9  0.9
1 31.6 28.8-12.4 -4.363333 4  5.0-19.0353.0  4.7 -0.6 -1.6  0.7  1.2  0.3
1 31.5 28.8-12.3 -4.163333 5  4.7-13.0354.0  4.6 -0.5 -1.1  0.6  0.2  1.2
1 31.5 28.7-12.1 -4.063333 6  4.4-21.0350.0  4.0 -0.7 -1.6  0.8  0.9  0.7
1 31.4 28.7-12.0 -3.863333 7  2.9-22.0 13.0  2.6  0.6 -1.1  1.2  1.4  1.0
1 31.2 28.7-11.8 -3.763333 8  2.8 12.0125.0 -1.6  2.2  0.6  1.8  1.0  0.4
1 31.1 28.6-11.7 -3.563333 9  3.0 -0.0 97.0 -0.4  3.0 -0.0  0.5  0.5  0.5
1 30.9 28.5-11.5 -3.46333310  6.6  0.0 86.0  0.5  6.6  0.0  3.0  1.0  0.7
1 30.7 28.4-11.3 -3.26333311  7.0 -1.0105.0 -1.8  6.8 -0.1  1.2  1.1  0.9
1 30.5 28.3-11.1 -3.06333312  6.0 -8.0114.0 -2.4  5.4 -0.8  0.7  1.0  0.5
1 30.3 28.1-10.9 -2.96333313  5.1-29.0127.0 -2.7  3.6 -2.5  0.6  1.2  1.4
1 30.1 28.0-10.7 -2.76333314  6.2-23.0112.0 -2.1  5.3 -2.4  1.9  1.5  2.7
1 29.8 27.8-10.5 -2.56333315  9.1 37.0 50.0  4.7  5.6  5.5  0.2  0.8  0.3
1 29.5 27.6-10.3 -2.46333316  7.0 61.0 21.0  3.2  1.2  6.1  0.8  1.4  0.8
1 29.2 27.3-10.1 -2.26333317  7.4 63.0333.0  3.0 -1.5  6.6  1.9  3.2  1.0
1 28.9 27.1 -9.8 -2.06333318  8.3 28.0271.0  0.1 -7.3  3.9  1.6  0.9  2.1
1 28.5 26.8 -9.6 -1.86333319  4.4-14.0276.0  0.4 -4.2 -1.1  2.3  1.1  1.8
1 28.2 26.5 -9.3 -1.76333320  5.8-67.0 91.0 -0.0  2.3 -5.3  1.3  2.6  1.3
1 27.8 26.2 -9.1 -1.56333321  7.4 -2.0 95.0 -0.6  7.4 -0.3  2.6  1.2  3.7
1 27.4 25.9 -8.8 -1.36333322  2.8 35.0289.0  0.7 -2.2  1.6  1.3  5.6  5.3
1 26.9 25.5 -8.5 -1.16333323  7.1-77.0 52.0  1.0  1.3 -6.9  1.8  7.2  4.5
1 26.5 25.1 -8.2 -0.963334 0  5.7 39.0289.0  1.4 -4.2  3.6  2.6  2.3  2.0
1 26.0 24.7 -7.9 -0.063334 1  6.7 30.0279.0  0.9 -5.7  3.3  1.3  0.7  0.7
1 25.4 24.3 -7.6 -0.663334 2  3.7 60.0254.0 -0.5 -1.8  3.2  1.5  2.4  0.7
1 24.9 23.8 -7.3 -0.463334 3  6.5 16.0307.0  3.8 -5.0  1.8  1.0  1.6  1.0
1 24.3 23.3 -7.0 -0.263334 4  8.8  7.0306.0  5.1 -7.1  1.1  1.5  0.9  1.3
1 23.7 22.7 -6.7 -0.063334 5  8.9 38.0291.0  2.5 -6.5  5.5  1.4  1.2  1.4
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-0.1	1.0	0.6	0.5	0.0	REC	33.	LENGTH	79
0.7	0.6	0.8	0.4	0.0	REC	34.	LENGTH	79
-0.5	0.8	1.1	1.7	0.0	REC	35.	LENGTH	79
-1.9	0.4	0.6	0.4	0.0	REC	36.	LENGTH	79
-1.9	0.3	0.5	0.4	0.0	REC	37.	LENGTH	79
-1.3	0.7	0.9	0.9	0.0	REC	38.	LENGTH	79
-1.6	0.7	1.2	0.3	0.0	REC	39.	LENGTH	79
-1.1	0.6	0.2	1.2	0.0	REC	40.	LENGTH	79
-1.6	0.8	0.9	0.7	0.0	REC	41.	LENGTH	79
-1.1	1.2	1.4	1.0	0.0	REC	42.	LENGTH	79
0.6	1.8	1.0	0.4	0.0	REC	43.	LENGTH	79
-0.0	0.5	0.5	0.5	0.0	REC	44.	LENGTH	79
0.0	3.0	1.0	0.7	0.0	REC	45.	LENGTH	79
-0.1	1.2	1.1	0.9	0.0	REC	46.	LENGTH	79
0.8	0.7	1.0	0.5	0.0	REC	47.	LENGTH	79
2.5	0.6	1.2	1.4	0.0	REC	48.	LENGTH	79
2.4	1.9	1.5	2.7	0.0	REC	49.	LENGTH	79
5.5	0.2	0.8	0.3	0.0	REC	50.	LENGTH	79
6.1	0.8	1.4	0.8	0.0	REC	51.	LENGTH	79
6.6	1.9	3.2	1.0	0.0	REC	52.	LENGTH	79
3.9	1.6	0.9	2.1	0.0	REC	53.	LENGTH	79
.1	2.3	1.1	1.8	0.0	REC	54.	LENGTH	79
5.3	1.3	2.6	1.3	0.0	REC	55.	LENGTH	79
.3	2.6	1.2	3.7	0.0	REC	56.	LENGTH	79
.6	1.3	5.6	5.3	0.0	REC	57.	LENGTH	79
.9	1.8	7.2	4.5	0.0	REC	58.	LENGTH	79
.6	2.6	2.3	2.0	0.0	REC	59.	LENGTH	79
3.3	1.3	0.7	0.7	0.0	REC	60.	LENGTH	79
.2	1.5	2.4	0.7	0.0	REC	61.	LENGTH	79
.8	1.0	1.6	1.0	0.0	REC	62.	LENGTH	79
.1	1.5	0.9	1.5	0.0	REC	63.	LENGTH	79
.5	1.4	1.2	1.4	0.0	REC	64.	LENGTH	79

```
20 26.2 -0.9-26.2  0.464 4219  2.2 15.0 26.0  1.9  0.9  0.6  0.4  0.5  0.5  0.0
20 25.7 -0.6-25.7  0.664 4220  2.3 -5.0328.0  1.9 -1.2 -0.2  0.4  0.7  0.7  0.0
20 25.2 -0.4-25.2  0.864 4221  3.0-33.0297.0  1.1 -2.2 -1.6  0.7  1.0  0.9  0.0
20 24.6 -0.3-24.6  1.064 4222  2.8-37.0329.0  1.9 -1.2 -1.7  0.4  0.9  0.8  0.0
20 24.1 -0.0-24.0  1.164 4223  3.7-16.0  1.0  3.6  0.1 -1.0  1.2  0.5  2.0  0.0
21 30.4 -7.9-28.9 -5.064 45 7  5.4-11.0130.0 -3.4  4.1 -1.0  3.7  1.4  1.4  0.0
21 30.6 -7.8-29.2 -4.964 45 8  6.5 -9.0182.0 -6.4 -0.2 -1.0  2.1  1.8  1.7  0.0
21 30.8 -7.7-29.4 -4.864 45 9  6.5-15.0144.0 -5.1  3.7 -1.7  1.7  2.0  1.8  0.0
21 30.9 -7.6-29.6 -4.664 4510  7.1-31.0168.0 -6.0  1.3 -3.7  1.9  0.7  0.0  0.0
21 31.0 -7.5-29.8 -4.564 4511  8.4-23.0170.0 -7.6  1.3 -3.3  0.6  0.6  0.5  0.0
21 31.1 -7.4-29.9 -4.364 4512  6.5 -8.0169.0 -6.3  1.2 -0.9  0.8  1.1  1.3  0.0
21 31.2 -7.3-30.1 -4.264 4513  6.3  6.0191.0 -6.2 -1.2  0.7  1.1  0.9  1.3  0.0
21 31.3 -7.2-30.2 -4.164 4514  7.8-16.0185.0 -7.5 -0.7 -2.1  0.7  2.0  1.4  0.0
21 31.3 -7.1-30.3 -3.964 4515  7.8-22.0157.0 -6.7  2.8 -2.9  0.7  1.0  1.3  0.0
21 31.4 -7.0-30.4 -3.764 4516  8.7-33.0138.0 -5.4  4.9 -4.7  0.6  1.7  1.7  0.0
21 31.4 -6.8-30.4 -3.664 4517  8.3-39.0160.0 -6.1  2.2 -5.2  1.0  0.8  2.1  0.0
21 31.4 -6.7-30.5 -3.464 4518  6.4-23.0127.0 -3.5  4.7 -2.5  3.5  1.0  1.8  0.0
21 31.4 -6.5-30.5 -3.364 4519  6.5-20.0125.0 -3.5  5.0 -2.2  2.1  2.0  1.0  0.0
21 31.3 -6.4-30.5 -3.164 4520  6.4-19.0 83.0  0.7  6.0 -2.1  1.4  0.6  1.0  0.0
21 31.3 -6.3-30.5 -3.064 4521  4.8 -5.0193.0 -4.7 -1.1 -0.4  2.8  3.3  1.3  0.0
21 31.2 -6.1-30.4 -2.864 4522  6.5  3.0210.0 -5.6 -3.2  0.3  0.4  0.7  0.7  0.0
21 30.9 -5.9-30.3 -2.464 46 0  6.0-15.0180.0 -5.8  0.0 -1.6  0.5  2.3  1.0  0.0
21 30.8 -5.6-30.2 -2.364 46 1  4.2  2.0190.0 -4.1 -0.7  0.1  1.9  3.2  1.2  0.0
21 30.7 -5.5-30.1 -2.164 46 2  4.0  6.0159.0 -3.7  1.4  0.4  3.1  5.4  0.8  0.0
21 30.5 -5.3-30.0 -1.964 46 3  7.7-24.0 87.0  0.4  7.0 -3.1  2.1  1.8  1.8  0.0
21 28.7 -4.0-28.4 -0.764 4610  5.5-16.0 82.0  0.7  5.2 -1.5  1.7  0.7  2.3  0.0
21 28.3 -3.8-28.1 -0.564 4611  7.0-26.0131.0 -4.1  4.7 -3.1  1.8  1.1  2.3  0.0
21 28.0 -3.6-27.7 -0.364 4612  6.0-21.0128.0 -3.4  4.4 -2.2  2.0  1.5  3.4  0.0
21 27.6 -3.4-27.4 -0.164 4613  7.7-38.0109.0 -2.0  5.7 -4.7  1.8  0.8  0.9  0.0
21 27.2 -3.2-27.0  0.164 4614  6.3-17.0143.0 -4.8  3.6 -1.8  1.2  0.8  2.1  0.0
21 26.7 -3.0-26.6  0.264 4615  7.1-23.0149.0 -5.6  3.4 -2.8  1.1  1.3  1.0  0.0
21 26.3 -2.7-26.1  0.464 4616  6.3-11.0141.0 -4.8  3.9 -1.2  1.0  0.7  1.8  0.0
                                                  1.3 -3.1  2.0  1.8  2.4  0.0
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0	0.6	0.4	0.5	0.5	0.0	REC 1257, LENGTH 79
2	-0.2	0.4	0.7	0.7	0.0	REC 1258, LENGTH 79
2	-1.6	0.7	1.0	0.9	0.0	REC 1259, LENGTH 79
2	-1.7	0.4	0.9	0.8	0.0	REC 1260, LENGTH 79
	-1.0	1.2	0.5	2.0	0.0	REC 1261, LENGTH 79
1	-1.0	3.7	1.4	1.4	0.0	REC 1262, LENGTH 79
2	-1.0	2.1	1.8	1.7	0.0	REC 1263, LENGTH 79
7	-1.7	1.7	2.0	1.6	0.0	REC 1264, LENGTH 79
3	-3.7	1.9	0.7	0.8	0.0	REC 1265, LENGTH 79
3	-3.3	0.6	0.6	0.5	0.0	REC 1266, LENGTH 79
2	-0.9	0.8	1.1	1.3	0.0	REC 1267, LENGTH 79
2	0.7	1.1	0.9	1.3	0.0	REC 1268, LENGTH 79
7	-2.1	0.7	2.0	1.4	0.0	REC 1269, LENGTH 79
8	-2.9	0.7	1.0	1.3	0.0	REC 1270, LENGTH 79
9	-4.7	0.6	1.7	1.7	0.0	REC 1271, LENGTH 79
2	-5.2	1.0	0.8	2.1	0.0	REC 1272, LENGTH 79
7	-2.5	3.5	1.0	1.8	0.0	REC 1273, LENGTH 79
0	-2.2	2.1	2.0	1.0	0.0	REC 1274, LENGTH 79
0	-2.1	1.4	0.6	1.0	0.0	REC 1275, LENGTH 79
1	-0.4	2.8	3.3	1.3	0.0	REC 1276, LENGTH 79
2	0.3	0.4	0.7	0.7	0.0	REC 1277, LENGTH 79
0	-1.6	0.5	2.3	1.0	0.0	REC 1278, LENGTH 79
7	0.1	1.9	3.2	1.2	0.0	REC 1279, LENGTH 79
4	0.4	3.1	5.4	0.8	0.0	REC 1280, LENGTH 79
0	-3.1	2.1	1.8	1.8	0.0	REC 1281, LENGTH 79
2	-1.5	1.7	0.7	2.3	0.0	REC 1282, LENGTH 79
7	-3.1	1.8	1.1	2.3	0.0	REC 1283, LENGTH 79
	-2.2	2.0	1.5	3.4	0.0	REC 1284, LENGTH 79
7	-4.7	1.8	0.8	0.9	0.0	REC 1285, LENGTH 79
5	-1.8	1.2	0.8	2.1	0.0	REC 1286, LENGTH 79
4	-2.8	1.1	1.3	1.0	0.0	REC 1287, LENGTH 79
0	-1.2	1.0	0.7	1.8	0.0	REC 1288, LENGTH 79
3	-3.1	2.0	1.8	2.4	0.0	REC 1289, LENGTH 79

21	25.3	-2.3	-25.2	0.864	4618	5.9	-53.0	63.0	1.6	3.2	-4.7	1.0	1.6	1.4
21	24.7	-2.0	-24.6	1.064	4619	5.5	-39.0	124.0	-2.4	3.5	-3.5	3.9	1.0	1.5
21	24.2	-1.8	-24.1	1.164	4620	7.0	-11.0	154.0	-6.2	3.0	-1.3	1.5	2.0	1.1
21	23.6	-1.6	-23.5	1.364	4621	6.9	-19.0	154.0	-5.9	2.9	-2.2	1.2	0.8	2.0
21	22.9	-1.3	-22.8	1.564	4622	6.5	-1.0	131.0	-4.3	4.9	-0.1	3.1	2.9	1.2

```
.2 -4.7  1.0  1.6  1.4  0.0                    REC  1290. LENGTH    79
.5 -3.5  3.9  1.0  1.5  0.0                    REC  1291. LENGTH    79
.0 -1.3  1.5  2.0  1.1  0.0                    REC  1292. LENGTH    79
 9 -2.2  1.2  0.8  2.0  0.0                    REC  1293. LENGTH    79
.9 -0.1  3.1  2.9  1.2  0.0                    REC  1294. LENGTH    79
```

IMP-A HOURLY AVERAGES

INTERPLANETARY B FIELD

NOV 27,1963 TO FEB 15,1964

ORBITS 1-21

D-02902 - 9 TRACK

C-02096 - 7 TRACK

63-0454-02E

SOLAR ECLIPTIC COORDINATE SYSTEM.

EARTH CENTERED.

X AXIS POINTS TOWARDS SUN.

Z AXIS IS NORMAL TO ECLIPTIC PLANE.

Y AXIS COMPLETES RIGHT-HANDED, ORTHOGONAL SYSTEM.

LATITUDE MEASURED FROM XY PLANE, POSITIVE ANGLES

LONGITUDE 0 DEGREES TOWARDS SUN.
90 DEGREES TOWARDS DUSK MERIDIAN.

4

SYSTEM.

.

TIC PLANE.

NDED, ORTHOGONAL SYSTEM.

Y PLANE, POSITIVE ANGLES NORTH.

RDS SUN.
RDS DUSK MERIDIAN.

IMP-A HOURLY AVERAGES
INTERPLANETARY B FIELD
PREPARED BY THE NATIONAL SPACE SCIENCE DATA CENTER

YR	DAY	HR	ORBIT	RADIAL DISTANCE	COORDINATES X	Y	Z	FIELD MAGNITUDE	FIELD LAT ANGLE	FIELD LONG ANGLE
63	331	14	1	18.3	14.2	-10.4	-6.5	3.2	-10.0	151.0
63	331	15	1	19.3	15.1	-10.7	-6.6	4.8	10.0	180.0
63	331	16	1	20.4	15.9	-11.0	-6.7	4.5	44.0	139.0
63	331	17	1	21.2	16.7	-11.3	-6.7	4.6	33.0	169.0
63	331	18	1	22.0	17.4	-11.5	-6.8	5.6	28.0	152.0
63	331	19	1	22.7	18.1	-11.8	-6.8	5.8	-19.0	209.0
63	331	20	1	23.3	18.8	-12.0	-6.8	6.9	-41.0	138.0
63	331	21	1	23.9	19.4	-12.2	-6.9	3.2	3.0	134.0
63	331	22	1	24.3	20.1	-12.3	-6.9	6.7	50.0	74.0
63	331	23	1	25.1	20.7	-12.5	-6.9	4.4	18.0	148.0
63	332	0	1	25.7	21.2	-12.7	-6.8	4.2	41.0	99.0
63	332	1	1	26.2	21.8	-12.8	-6.8	3.4	55.0	74.0
63	332	2	1	25.3	22.3	-12.9	-6.8	5.9	-53.0	112.0
63	332	3	1	27.1	22.8	-13.0	-6.8	4.0	-37.0	159.0
63	332	4	1	27.3	23.3	-13.1	-6.7	1.2	27.0	238.0
63	332	5	1	27.9	23.7	-13.2	-6.7	1.4	-9.0	5.0
63	332	6	1	28.3	24.1	-13.3	-6.6	6.5	8.0	25.0
63	332	7	1	28.7	24.6	-13.3	-6.5	5.8	11.0	10.0
63	332	8	1	29.0	24.9	-13.4	-6.5	4.3	4.0	9.0
63	332	9	1	29.4	25.3	-13.4	-6.4	3.6	17.0	0.
63	332	10	1	29.3	25.7	-13.4	-6.3	4.1	-3.0	314.0
63	332	11	1	29.9	26.0	-13.4	-6.3	4.1	4.0	330.0
63	332	12	1	30.2	26.3	-13.4	-6.2	3.9	12.0	321.0
63	332	13	1	30.4	26.6	-13.4	-6.1	5.0	-3.0	288.0
63	332	14	1	30.3	26.9	-13.4	-6.0	4.5	-6.0	278.0
63	332	15	1	30.3	27.1	-13.4	-5.9	5.4	25.0	323.0
63	332	16	1	31.0	27.3	-13.4	-5.8	5.7	30.0	311.0
63	332	17	1	31.1	27.6	-13.4	-5.7	5.8	20.0	329.0
63	332	18	1	31.3	27.7	-13.3	-5.6	5.8	21.0	311.0
63	332	19	1	31.4	27.9	-13.3	-5.4	5.7	32.0	316.0
63	332	20	1	31.3	28.1	-13.2	-5.3	5.6	25.0	307.0
63	332	21	1	31.3	28.2	-13.1	-5.2	4.9	12.0	337.0
63	332	22	1	31.3	28.4	-13.1	-5.1	4.2	-2.0	339.0
63	332	23	1	31.7	28.5	-13.0	-5.0	4.8	8.0	312.0
63	333	0	1	31.7	28.6	-12.9	-4.8	4.5	-6.0	313.0
63	333	1	1	31.7	28.6	-12.8	-4.7	4.7	-24.0	329.0

ENCE DATA CENTER

LD TUDE	FIELD LAT ANGLE	FIELD LONG ANGLE	FIELD COMPONENTS X	Y	Z	STANDARD DEVIATION X	Y	Z
3.2	-10.0	151.0	-2.3	1.5	-0.6	1.2	1.9	1.7
4.8	10.0	180.0	-4.7	0.	0.8	0.7	0.9	0.4
4.5	44.0	139.0	-2.4	2.1	3.1	0.8	2.1	1.5
4.6	33.0	169.0	-3.8	0.7	2.5	2.0	1.6	2.5
5.6	28.0	152.0	-4.7	1.5	2.6	0.6	1.4	1.5
5.8	-19.0	209.0	-4.8	-2.7	-1.9	0.9	1.1	2.7
6.9	-41.0	138.0	-5.2	-0.7	-4.5	0.7	1.5	0.9
3.2	3.0	134.0	-2.2	2.3	0.2	2.9	2.3	4.9
6.7	50.0	74.0	1.2	4.1	5.1	1.6	0.8	0.8
4.4	18.0	148.0	-3.5	2.2	1.4	1.5	3.5	3.1
4.2	41.0	99.0	-0.5	3.1	2.8	2.3	3.2	2.5
3.4	55.0	94.0	-0.1	1.4	3.1	0.8	2.2	4.8
5.9	-53.0	112.0	-1.3	3.3	-4.7	1.3	1.3	1.0
4.0	-57.0	159.0	-2.0	0.8	-3.4	2.3	1.1	4.9
1.2	27.0	238.0	0.3	-1.0	0.5	2.0	0.7	3.7
1.4	-9.0	5.0	1.4	0.1	-0.2	1.7	2.1	3.5
6.5	8.0	25.0	5.8	2.7	0.9	0.3	0.7	0.5
5.8	11.0	10.0	5.5	1.0	1.1	0.4	0.3	0.3
4.3	4.0	9.0	4.2	0.7	0.3	0.4	0.7	0.4
3.6	17.0	0.	3.4	0.	1.1	0.7	0.9	0.7
4.1	-3.0	314.0	2.8	-2.9	-0.2	1.0	0.8	1.0
4.1	4.0	330.0	3.5	-2.0	0.3	0.7	1.0	1.0
3.9	12.0	321.0	3.0	-2.4	0.8	1.2	2.8	0.5
1.0	-3.0	288.0	1.5	-4.7	-0.3	0.6	0.3	0.4
2.5	-6.0	278.0	0.6	-4.4	-0.5	1.4	1.3	2.1
2.4	26.0	323.0	3.9	-2.9	2.4	0.5	0.5	0.4
2.7	30.0	341.0	4.7	-1.6	2.8	0.5	1.1	0.5
2.8	20.0	329.0	4.7	-2.8	2.0	0.8	1.3	0.6
2.8	21.0	311.0	3.6	-4.1	2.1	0.9	1.1	1.3
2.7	32.0	316.0	3.5	-3.4	3.0	0.5	0.5	0.3
2.6	25.0	307.0	3.1	-4.1	2.4	0.8	0.5	0.4
2.9	12.0	337.0	4.4	-1.9	1.0	0.6	0.9	0.7
2.2	-2.0	339.0	3.9	-1.5	-0.1	1.0	0.6	0.5
2.8	9.0	312.0	3.2	-3.5	0.7	0.6	0.8	0.4
2.5	-6.0	313.0	3.3	-3.0	-0.5	0.8	1.1	1.7
2.7	-24.0	329.0	3.7	-2.2	-1.9	0.4	0.6	0.4

YR	DAY	HR	ORBIT	RADIAL DISTANCE	COORDINATES X	Y	Z	FIELD MAGNITUDE	FIELD LAT ANGLE	FIELD LONG ANGLE
63	333	2	1	31.7	28.7	-12.7	-4.5	5.2	-22.0	329.0
63	333	3	1	31.7	28.7	-12.5	-4.4	5.5	-14.0	342.0
63	333	4	1	31.5	28.8	-12.4	-4.3	5.0	-19.0	353.0
63	333	5	1	31.5	28.8	-12.3	-4.1	4.7	-13.0	354.0
63	333	6	1	31.5	28.7	-12.1	-4.0	4.4	-21.0	350.0
63	333	7	1	31.4	28.7	-12.0	-3.8	2.9	-22.0	11.0
63	333	8	1	31.2	28.7	-11.8	-3.7	2.8	12.0	125.0
63	333	9	1	31.1	28.6	-11.7	-3.5	3.0	-0.	97.0
63	333	10	1	30.9	28.5	-11.5	-3.4	6.6	0.	86.0
63	333	11	1	30.7	28.4	-11.3	-3.2	7.0	-1.0	105.0
63	333	12	1	30.5	28.3	-11.1	-3.0	6.0	-8.0	114.0
63	333	13	1	30.3	28.1	-10.9	-2.9	5.1	-29.0	127.0
63	333	14	1	30.1	28.0	-10.7	-2.7	6.2	-23.0	112.0
63	333	15	1	29.9	27.8	-10.5	-2.5	9.1	37.0	30.0
63	333	16	1	29.9	27.6	-10.3	-2.4	7.0	51.0	21.0
63	333	17	1	29.2	27.3	-10.1	-2.2	7.4	63.0	333.0
63	333	18	1	28.9	27.1	-9.8	-2.0	8.3	28.0	271.0
63	333	19	1	28.3	26.8	-9.6	-1.8	4.4	-14.0	275.0
63	333	20	1	28.2	26.5	-9.3	-1.7	5.8	-57.0	91.0
63	333	21	1	27.9	25.2	-9.1	-1.5	7.4	-2.0	95.0
63	333	22	1	27.4	25.9	-8.8	-1.3	2.8	35.0	289.0
63	333	23	1	27.2	25.5	-8.5	-1.1	7.1	-77.0	52.0
63	334	0	1	26.9	25.1	-8.2	-0.9	5.7	39.0	289.0
63	334	1	1	25.0	24.7	-7.9	-0.8	6.7	30.0	279.0
63	334	2	1	25.4	24.3	-7.6	-0.6	3.7	60.0	254.0
63	334	3	1	24.2	23.8	-7.3	-0.4	6.5	16.0	307.0
63	334	4	1	24.3	23.3	-7.0	-0.2	8.8	7.0	30.0
63	334	5	1	23.7	22.7	-6.7	-0.	8.9	38.0	291.0
63	334	6	1	23.1	22.2	-6.3	0.2	4.1	50.0	304.0
63	334	7	1	22.4	21.5	-5.9	0.4	8.1	5.0	297.0
63	334	8	1	21.7	20.9	-5.6	0.5	9.5	25.0	287.0
63	334	9	1	20.9	20.2	-5.2	0.7	10.8	-27.0	303.0
63	334	10	1	20.1	19.5	-4.8	0.9	10.0	-21.0	306.0
63	334	11	1	19.3	18.7	-4.4	1.1	11.7	-61.0	335.0
63	334	12	1	18.4	17.9	-4.0	1.3	7.6	-55.0	337.0
63	334	13	1	17.5	17.0	-3.5	1.4	9.8	25.0	304.0

DATA CENTER

FIELD LAT ANGLE	FIELD LNG ANGLE	FIELD COMPONENTS X	Y	Z	STANDARD DEVIATION X	Y	Z
-22.0	329.0	4.1	-2.5	-1.9	0.3	0.5	0.4
-14.0	342.0	5.1	-1.6	-1.3	0.7	0.9	0.9
-19.0	353.0	4.7	-0.6	-1.6	0.7	1.2	0.3
-13.0	354.0	4.6	-0.5	-1.1	0.6	0.2	1.2
-21.0	350.0	4.0	-0.7	-1.6	0.8	0.9	0.7
-22.0	13.0	2.6	0.6	-1.1	1.2	1.4	1.0
12.0	125.0	-1.6	2.2	0.6	1.8	1.0	0.4
-0.	97.0	-0.4	3.0	-0.	0.5	0.5	0.5
0.	86.0	0.5	6.6	0.	3.0	1.0	0.7
-1.0	105.0	-1.8	5.8	-0.1	1.2	1.1	0.9
-8.0	114.0	-2.4	5.4	-0.8	0.7	1.0	0.5
-29.0	127.0	-2.7	3.6	-2.5	0.6	1.2	1.4
-23.0	112.0	-2.1	5.3	-2.4	1.9	1.5	2.7
37.0	50.0	4.7	5.6	5.5	0.2	0.8	0.3
51.0	21.0	3.2	1.2	6.1	0.8	1.4	0.8
63.0	333.0	3.0	-1.5	6.6	1.9	3.2	1.0
28.0	271.0	0.1	-7.3	3.9	1.5	0.9	2.1
-14.0	275.0	0.4	-4.2	-1.1	2.3	1.1	1.5
-57.0	91.0	-0.	2.3	-5.3	1.3	2.5	1.3
-2.0	95.0	-0.6	7.4	-0.3	2.6	1.2	3.7
35.0	289.0	0.7	-2.2	1.6	1.3	5.6	5.3
-77.0	52.0	1.0	1.3	-6.9	1.8	7.2	4.5
39.0	289.0	1.4	-4.2	3.6	2.6	2.3	2.0
30.0	279.0	0.9	-5.7	3.3	1.3	0.7	0.7
60.0	254.0	-0.5	-1.8	3.2	1.5	2.4	0.7
16.0	307.0	3.8	-5.0	1.8	1.0	1.6	1.0
7.0	316.0	5.1	-7.1	1.1	1.5	0.9	1.5
38.0	291.0	2.5	-6.5	5.5	1.4	1.2	1.4
50.0	314.0	1.1	-1.7	3.6	2.4	3.3	2.3
5.0	297.0	3.7	-7.2	0.7	1.2	1.1	3.1
25.0	287.0	2.5	-8.2	4.0	2.1	2.8	3.9
-27.0	309.0	5.1	-7.5	-4.9	1.8	3.6	2.5
-21.0	316.0	5.5	-7.6	-3.6	1.1	2.0	3.3
-81.0	335.0	5.1	-2.4	-10.2	1.0	1.0	2.2
-55.0	337.0	4.0	-1.7	-6.2	2.8	3.1	8.0
28.0	304.0	5.0	-7.4	4.1	1.7	1.3	2.7

DATA SET 63-046A-02E

BRIEF DESCRIPTION

This data set consists of a reel of 35-mm microfilm on which a listing of the contents of data set 63-046A-02D appear.

```
IMPLOT      - F4N  SOURCE STATEMENT  -  IFN(S)  -

C***    THIS PROGRAM READS THE IMP-A INTERPLANETARY DATA ON TAPE UNIT A-5
C***    AND CREATES AN OUTPUT TAPE ON UNIT A-7 FOR INPUT TO THE
C***    SC-4020 PLOTTER. MICROFILM IS GENERATED BY THE SC-4020.
C***
C***    THE SUBROUTINES REQUIRED TO RUN THIS PROGRAM ARE ON THE
C***    IBSYS SYSTEM TAPE.
C***
      DIMENSION ID1(2)
      DATA(ID1(I),I=1,2)/6H   NSS,6HDC     /
      DATA  ID2,ID3,ID4/64601    ,6H26     ,6H2133  /
      JORBIT = 0
      IPAGE = 0
      IREC  = 0
      CALL IDFRMV(ID1,ID2,ID3,ID4)
      CALL CAMRAV(35)
      CALL FRAMEV(3)
      CALL SCOUTV
      WRITE (61,100)
  100 FORMAT(1H1///32X,23HIMP-A  HOURLY  AVERAGES//
     1       1HO,  31X,23HINTERPLANETARY B FIELD //
     2       1HO,  31X,26HNOV 27,1963 TO FEB 15,1964//
     3       1HO,  31X,23H       ORBITS  1-21     //
     4       1HO,  31X,23H   C-02902 - 9 TRACK    //
     5       1HO,  31X,23H   C-02096 - 7 TRACK    //
     6       1HO,  31X,23H     63-0464-02E        ////)
      WRITE(61,125)                                                  ///
  125 FORMAT( 1HO,31X,44HSOLAR ECLIPTIC COORDINATE SYSTEM.          //
     1 32X,48HEARTH CENTERED.                                       //
     2 32X,48HX AXIS POINTS TOWARDS SUN.                            //
     3 32X,48HZ  AXIS IS NORMAL TO ECLIPTIC PLANE.                  //
     4 32X,48HY  AXIS COMPLETES RIGHT-HANDED,ORTHOGONAL SYSTEM.///
     4 32X,55HLATITUDE  MEASURED FROM XY PLANE,POSITIVE ANGLES NORTH.//
     5 32X,48HLONGITUDE  0 DEGREES TOWARDS SUN.                     /
     6 32X,43H           90 DEGREES TOWARDS DUSK MERIDIAN.          //)
    1  LINES = 0
C     WRITE PAGE HEADING
      IPAGE = IPAGE +1
      WRITE (61,105) IPAGE
  105 FORMAT(1H1, 31X,23HIMP-A  HOURLY  AVERAGES,9X,5HPAGE ,I4//
     1           32X,23HINTERPLANETARY B FIELD /
     2        20X,53HPREPARED BY THE NATIONAL SPACE SCIENCE DATA CENTER//
     322X,6HRADIAL,7X,11HCOORDINATES,5X,6HFIELD ,7X,5HFIELD,3X,5HFIELD,
     35X,16HFIELD COMPONENTS,3X,18HSTANDARD DEVIATION/
     4                          ,1X,2HYR,2X,3HDAY,2X,2HHR,2X,5HORBIT,2X,
     58HDISTANCE,5X,1HX,5X,1HY,5X,1HZ ,2X,9HMAGNITUDE ,6X,5HLAT   ,
     63X,5HLONG  ,7X,1HX,5X,1HY,5X,1HZ,6X,1HX,5X,1HY,5X,1HZ//
     7 64X,5HANGLE,3X,5HANGLE/)
C
C     READ IN A RECORD
    2 READ(5,110) IDRB,RADIST,X,Y,Z,IYR,IDAY,IHOUR,FLDMAG,ALAT,
     1ALONG,XC,YC,ZC,XVAR,YVAR,ZVAR
      IREC = IREC + 1
      IF(IDRB.EQ.0) JORBIT = 100
      IDRB = IDRB + JORBIT
  110 FORMAT(I2,4F5.1,I2,I3,I2,9F5.1)
```

09/12/69 PAGE 1

IEN(S) -

DATA ON TAPE UNIT A-5
NPUT TO THE
HE SC-4020.

ARE ON THE

5
7
9
11
12

//

//)
13

SYSTEM. ///
//
//
//
AL SYSTEM.///
IVE ANGLES NORTH.//
/
DIAN. /)

16

HEAGE ,I4/

SCIENCE DATA CENTER//
5HFIELD,3X,5HFIELD,
N/
HR,2X,5HORBIT,2X,
,6X,5HLAT ,
5X,1HZ//

MAG,ALAT,
17

IMPLOT - EEN SOURCE STATEMENT - IFN(S) -

```
      WRITE(61,115)IYR,IDAY,IHOUR,IORB,RADIST,X,Y,Z,FLDMAG,ALAT,
     1ALONG,XC,YC,ZC,XVAR,YVAR,ZVAR
  115 FORMAT(1X,I2,2X,I3,2X,I2,3X,I3,4X, F5.1,3X,3(1X,F5.1),
     14X,F5.1,7X,2(F5.1,3X), 3(1X,F5.1),1X,3(1X,F5.1))
      LINES = LINES + 1
C     TEST FOR END OF PAGE
      IF(LINES.EQ.35) GO TO 1
C
C     TEST FOR END OF DATA
      IF(IREC.EQ.1294) GO TO 99
      GO TO 2
   99 WRITE(3,120) IREC
  120 FORMAT(10X,10HEND OF JOB,4X,I5,2X,17HRECORDS PROCESSED)
      REWIND 5
      CALL PLTND
      END FILE 61
      STOP
      END
```

EN(S) -

LDMAG, AL AT,

25

,F5.1),

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34

ROCESSED)

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37

DATA SET 63-406A-02F

BRIEF DESCRIPTION

This data set consists of a single 9-track, 800 bpi, BCD tape provided by the experimenter. Hourly averaged field data, taken while the spacecraft was within the magnetosphere, are presented. Time coverage extends from February 28, 1964 through May 26, 1964.

OBJECTIVE

This data set was generated to facilitate the study of the time averaged distant geomagnetic field, particularly the geomagnetic tail field, and the long time scale (greater than an hour) variations of that field.

FULL DESCRIPTION

This data set consists of a single reel of 9-track, 800 bpi, BCD tape supplied by the experimenter. Data words include orbit and time information, spacecraft radial distance and position in solar magnetospheric coordinates, Cartesian and spherical components of the magnetic field in solar magnetospheric coordinates, and the standard deviations of the Cartesian components. The data is chronologically ordered.

NSSDC personnel have generated a 7-track, 800 bpi, BCD tape containing the same information as that on the original 9-track tape.

QUANTITY AND QUALITY

This data set consists of a single tape covering the period February 28, 1964 to May 26, 1964, during which time the spacecraft spent most of its time in the geomagnetic tail. There is between 50% and 75% coverage. No errors were detected in the original tape in producing the 7-track tape.

FORMAT

63-046A-02F Explorer 18, Magnetometer

9 Track BPI, IBM/360 BCD tape

Card images on tape; logical record length equals physical record length equals 79. In IBM/360 notation: RECFM = FB; LRECL = 79; BLKSIZE = 79; DEN = 2; 9 track; NO LABEL, LABEL = (, BLP).

The "duplicate" (C) tape is 7 track, 800 BPI, Even Parity, IBM/7094 tape.

The following applies to both 7 and 9 track tapes.

WORD	FORMAT	DESCRIPTION
1	I2	Orbit number
2	F5.1	Spacecraft radial distance, in earth radii
3	F5.1	Spacecraft X position in solar magnetospheric coordinates, in earth radii
4	F5.1	Spacecraft Y position in solar magnetospheric coordinates, in earth radii
5	F5.1	Spacecraft Z position in solar magnetospheric coordinates, in earth radii
6	I2	Data year (65,66,67)
7	I3	Data day of year (1, . . . 365)
8	I2	Data hour (0, . . . 23)
9	F5.1	Field magnitude in gammas
10	F5.1	Field latitude angle in degrees ($\pm$ 90°), where + 90° north
11	F5.1	Field longitude angle in degrees (0° - 360°), where 0° towards sun, 90° towards dusk
12	F5.1	Field solar magnetospheric X component, in gammas
13	F5.1	Field solar magnetospheric Y component, in gammas
14	F5.1	Field solar magnetospheric Z component, in gammas
15	F5.1	Field solar magnetospheric X component standard deviation, in gammas
16	F5.1	Field solar magnetospheric Y component standard deviation, in gammas
17	F5.1	Field solar magnetospheric Z component standard deviation, in gammas

25 13.4-11.3 -3.2-12.164 >919 34.3-15.0190.0-31.3 -6.6 -5.1 1.2 1.0 1.3 0.0

25 19.2-12.2 -8.3-12.464 >920 34.9 -7.0190.0-33.1 -5.8 -4.2 1.3 1.5 0.9 0.0

25 20.0-13.2 -8.6-12.564 >921 31.2 -7.0192.0-30.3 -6.3 -3.9 1.8 1.9 1.9 0.0

25 20.8-14.2 -8.1-13.364 >922 29.8 -1.0189.0-29.4 -4.6 -0.7 3.3 4.0 1.7 0.0

25 21.6-15.2 -9.7-11.964 >923 27.4 -1.0191.0-26.8 -5.5 -3.7 1.6 1.1 1.4 0.0

25 22.3-16.1-10.5-11.264 >9 0 27.2 2.0191.0-26.7 -5.1 1.0 0.8 0.7 1.3 0.0

25 22.9-16.0-11.5-10.564 >9 1 24.5 8.0188.0-24.0 -3.2 3.5 3.6 3.0 0.5 0.0

25 24.2-17.7-13.9 -8.764 >9 3 25.8 10.0190.0-25.1 -4.6 4.5 1.4 1.9 1.0 0.0

25 24.8-17.8-15.2 -7.964 >9 4 26.0 12.0190.0-25.1 -4.4 5.3 1.3 1.5 1.4 0.0

25 25.3-17.7-16.6 -7.264 >9 5 22.6 14.0190.0-21.7 -3.8 5.3 2.1 1.1 1.2 0.0

26 18.1-11.2 -8.7-11.364 >916 35.3 5.0143.0-28.9 21.7 3.4 6.0 7.5 7.6 0.0

26 19.0-11.5 -9.0-12.264 >917 29.9 9.0147.0-24.7 16.2 9.5 5.0 7.9 7.8 0.0

26 19.8-12.1 -9.0-12.964 >918 30.0 13.0147.0-24.5 15.0 5.7 4.9 8.3 11.1 0.0

26 20.6-12.9 -9.1-13.364 >919 35.5 12.0145.0-28.3 20.2 7.7 6.6 7.3 9.5 0.0

26 21.4-13.7 -9.2-13.564 >920 38.4 13.0142.0-29.6 22.8 8.7 5.7 8.1 9.5 0.0

26 22.1-14.7 -9.5-13.564 >921 33.7 15.0143.0-25.9 19.7 8.5 10.5 9.5 9.4 0.0

27 18.6-12.4 -9.1-13.464 >714 28.7 9.0141.0-19.3 15.3 3.9 3.5 5.3 6.5 0.0

27 19.4-12.6 -9.4-13.464 >715 22.4 10.0143.0-17.9 13.4 4.1 3.1 4.3 5.1 0.0

27 20.2-12.8 -9.5-13.564 >716 25.3 9.0143.0-20.4 15.4 3.9 2.5 4.7 7.5 0.0

27 21.0-13.2 -9.5-13.364 >717 27.8 10.0145.0-22.3 15.8 5.0 3.2 4.3 6.9 0.0

27 21.7-13.7 -9.7-13.964 >718 25.4 11.0147.0-20.9 13.7 4.9 2.9 5.9 6.1 0.0

27 22.4-14.4 -9.6-13.264 >719 23.6 9.0143.0-21.1 15.7 4.1 3.1 4.4 5.6 0.0

27 23.1-15.3 -9.8-14.364 >720 25.5 17.0145.0-20.1 14.1 7.4 3.5 3.9 4.9 0.0

27 23.7-16.3 -9.4-14.164 >721 21.7 17.0142.0-18.0 14.0 6.8 2.5 4.1 5.3 0.0

27 24.3-17.3-13.3-13.764 >722 20.4 24.0145.0-15.4 10.5 3.4 3.2 2.5 3.9 0.0

27 24.9-18.3-13.8-13.964 >723 21.6 22.0139.0-15.2 13.3 8.2 1.1 3.4 3.2 0.0

27 25.4-19.2-11.5-13.164 >4 0 18.7 30.0138.0-13.1 10.8 9.4 2.2 3.5 2.7 0.0

27 25.9-20.0-13.4-11.964 >4 1 13.3 30.0139.0-11.9 10.3 9.4 3.5 4.1 4.0 0.0

27 25.4-20.4-13.5 -9.964 >4 2 20.7 29.0137.0-13.3 12.3 3.9 1.8 4.3 4.6 0.0

27 26.9-20.7-14.7 -8.864 >4 3 21.4 33.0133.0-12.7 13.6 10.4 3.0 2.5 4.5 0.0

27 27.3-20.8-15.8 -7.964 >4 4 20.2 37.0137.0-11.8 11.0 12.2 1.8 3.9 3.7 0.0

27 27.7-20.7-15.9 -7.264 >4 5 20.0 31.0139.0-13.0 11.4 10.2 1.8 4.3 3.9 0.0

27 28.1-20.5-18.2 -6.764 >4 6 19.9 16.0132.0-12.7 13.3 5.3 2.3 2.5 4.0 0.0

1	1.2	1.0	1.3	0.0	REC	1. LENGTH	79
2	1.3	1.5	0.9	0.0	REC	2. LENGTH	79
3	1.8	1.9	1.9	0.0	REC	3. LENGTH	79
4	3.3	4.0	1.7	0.0	REC	4. LENGTH	79
5	1.6	1.1	1.4	0.0	REC	5. LENGTH	79
6	0.8	0.7	1.3	0.0	REC	6. LENGTH	79
7	3.0	3.0	0.5	0.0	REC	7. LENGTH	79
8	1.4	1.3	1.0	0.0	REC	8. LENGTH	79
9	1.3	1.5	1.4	0.0	REC	9. LENGTH	79
10	2.1	1.1	1.2	0.0	REC	10. LENGTH	79
11	8.0	7.5	7.6	0.0	REC	11. LENGTH	79
12	8.0	7.9	7.8	0.0	REC	12. LENGTH	79
13	4.9	8.3	11.1	0.0	REC	13. LENGTH	79
14	6.6	7.3	9.5	0.0	REC	14. LENGTH	79
15	5.7	8.1	9.5	0.0	REC	15. LENGTH	79
16	10.5	9.5	9.4	0.0	REC	16. LENGTH	79
17	3.5	5.3	6.5	0.0	REC	17. LENGTH	79
18	3.1	4.5	5.1	0.0	REC	18. LENGTH	79
19	2.5	4.7	7.5	0.0	REC	19. LENGTH	79
20	3.2	4.3	6.9	0.0	REC	20. LENGTH	79
21	2.9	5.9	6.1	0.0	REC	21. LENGTH	79
22	3.1	4.4	5.6	0.0	REC	22. LENGTH	79
23	3.5	3.9	4.9	0.0	REC	23. LENGTH	79
24	2.5	4.1	5.3	0.0	REC	24. LENGTH	79
25	3.2	2.5	3.9	0.0	REC	25. LENGTH	79
26	1.1	3.4	3.2	0.0	REC	26. LENGTH	79
27	2.2	3.6	2.7	0.0	REC	27. LENGTH	79
28	3.5	4.1	4.0	0.0	REC	28. LENGTH	79
29	1.9	4.1	4.6	0.0	REC	29. LENGTH	79
30	3.0	2.5	4.5	0.0	REC	30. LENGTH	79
31	1.8	3.9	3.7	0.0	REC	31. LENGTH	79
32	1.8	4.3	3.9	0.0	REC	32. LENGTH	79
33	2.0	2.8	4.0	0.0	REC	33. LENGTH	79

SAFET

IMP-A HOURLY AVERAGES

MAGNETOSPHERIC B FIELD

FEB 28,1964 TO MAY 26,1964

ORBITS 25-47

D-02503 - 9 TRACK

C-02097 - 7 TRACK

63-046A-02F

SOLAR MAGNETOSPHERIC COORDINATE SYSTEM USED.

Z AXIS IS PARALLEL TO EARTH'S MAGNETIC AXIS.

X AXIS IN THE Z,EARTH-SUN-LINE PLANE.

Y AXIS COMPLETES RIGHT-HANDED ORTHOGONAL SYSTEM.

LATITUDE MEASURED FROM XY PLANE, POSITIVE ANGLES NORTH.

LONGITUDE 0 DEGREES TOWARDS SUN.
90 DEGREES TOWARDS DUSK MERIDIAN.

IMP-A HOURLY AVERAGES PAGE 1
MAGNETOSPHERIC B FIELD
PREPARED BY THE NATIONAL SPACE SCIENCE DATA CENTER

YR	DAY	HR	ORBIT	RADIAL DISTANCE	COORDINATES X	Y	Z	FIELD MAGNITUDE	FIELD LAT ANGLE	FIELD LONG ANGLE
64	59	19	25	18.4	-11.3	-8.0	-12.1	34.9	-13.0	190.0
64	59	20	25	19.2	-12.2	-8.3	-12.4	33.9	-7.0	190.0
64	59	21	25	20.0	-13.2	-8.6	-12.5	31.2	-7.0	192.0
64	59	22	25	20.8	-14.2	-9.1	-12.3	29.8	-1.0	139.0
64	59	23	25	21.6	-15.2	-9.7	-11.9	27.4	-1.0	191.0
64	60	0	25	22.3	-16.1	-10.5	-11.2	27.2	2.0	191.0
64	60	1	25	22.9	-16.9	-11.5	-10.5	24.5	8.0	188.0
64	60	3	25	24.2	-17.7	-13.9	-8.7	25.9	10.0	190.0
64	60	4	25	24.8	-17.8	-15.2	-7.9	26.0	12.0	190.0
64	60	5	25	25.3	-17.7	-16.6	-7.2	22.6	14.0	190.0
64	63	16	25	18.1	-11.2	-8.7	-11.3	36.3	5.0	143.0
64	63	17	26	19.0	-11.5	-9.0	-12.2	29.9	5.0	147.0
64	63	18	25	19.8	-12.1	-9.0	-12.9	30.0	13.0	147.0
64	63	19	26	20.5	-12.9	-9.1	-13.3	35.6	12.0	145.0
64	63	20	25	21.4	-13.7	-9.2	-13.5	38.4	13.0	142.0
64	63	21	26	22.1	-14.7	-9.5	-13.5	33.7	15.0	143.0
64	67	14	27	18.5	-12.4	-9.1	-10.4	24.7	9.0	141.0
64	67	15	27	19.4	-13.6	-9.4	-11.4	22.8	10.0	143.0
64	67	16	27	20.2	-12.8	-9.6	-12.5	25.8	9.0	143.0
64	67	17	27	21.0	-13.2	-9.6	-13.3	27.8	10.0	145.0
64	67	18	27	21.7	-13.7	-9.7	-13.9	25.4	11.0	147.0
64	67	19	27	22.4	-14.4	-9.6	-14.2	26.6	9.0	143.0
64	67	20	27	23.1	-15.3	-9.8	-14.2	25.6	17.0	145.0
64	67	21	27	23.7	-16.3	-9.9	-14.1	23.7	17.0	142.0
64	67	22	27	24.3	-17.3	-10.3	-13.7	20.4	24.0	146.0
64	67	23	27	24.9	-18.3	-10.8	-12.9	21.8	22.0	139.0
64	68	0	27	25.4	-19.2	-11.5	-12.1	18.7	30.0	138.0
64	68	1	27	25.9	-20.0	-12.4	-11.0	18.3	30.0	139.0
64	68	2	27	26.4	-20.4	-13.5	-9.9	20.7	29.0	137.0
64	68	3	27	26.9	-20.7	-14.7	-8.8	21.4	29.0	133.0
64	68	4	27	27.3	-20.8	-15.8	-7.9	20.2	37.0	137.0
64	68	5	27	27.7	-20.7	-16.9	-7.2	20.0	31.0	139.0
64	68	6	27	28.1	-20.5	-18.0	-6.7	19.9	16.0	132.0
64	68	7	27	28.4	-20.2	-19.0	-6.5	20.4	14.0	133.0
64	68	8	27	28.8	-19.5	-19.7	-6.6	19.4	6.0	141.0
64	68	9	27	29.1	-19.5	-20.3	-6.9	10.8	-8.0	132.0

DATA CENTER

FIELD LAT ANGLE	FIELD LONG ANGLE	FIELD COMPONENTS X	Y	Z	STANDARD DEVIATION X	Y	Z
-13.0	190.0	-33.3	-6.0	-8.1	1.2	1.0	1.3
-7.0	190.0	-33.1	-5.8	-4.2	1.3	1.5	0.9
-7.0	192.0	-30.3	-6.3	-3.9	1.8	1.9	1.9
-1.0	189.0	-29.4	-4.6	-0.7	3.3	4.0	1.7
-1.0	191.0	-26.8	-5.5	-0.7	1.6	1.1	1.4
2.0	191.0	-26.7	-5.1	1.0	0.8	0.7	1.3
8.0	188.0	-24.0	-3.2	3.5	3.6	3.0	0.5
10.0	190.0	-25.1	-4.6	4.6	1.4	1.9	1.0
12.0	190.0	-25.1	-4.4	5.3	1.3	1.9	1.4
14.0	190.0	-21.7	-3.8	5.3	2.1	1.1	1.2
5.0	143.0	-28.9	21.7	3.4	6.0	7.6	7.6
5.0	147.0	-24.7	16.2	4.8	5.0	7.9	7.8
13.0	147.0	-24.5	16.0	6.7	4.9	8.3	11.1
12.0	146.0	-28.3	20.2	7.7	6.6	7.3	9.5
13.0	142.0	-29.6	22.8	8.7	5.7	8.1	9.5
15.0	143.0	-25.9	19.7	8.6	10.5	9.5	9.4
9.0	141.0	-19.0	15.3	3.9	3.6	5.3	6.5
10.0	143.0	-17.9	13.4	4.1	3.1	4.5	5.1
9.0	143.0	-20.4	15.4	3.9	2.5	4.7	7.5
10.0	145.0	-22.3	15.8	5.0	3.2	4.3	6.9
11.0	147.0	-20.9	13.7	4.9	2.9	5.9	6.1
5.0	143.0	-21.1	15.7	4.1	3.1	4.4	5.6
17.0	145.0	-20.1	14.1	7.4	3.5	3.9	4.9
17.0	142.0	-18.0	14.0	6.8	2.6	4.1	5.3
24.0	146.0	-15.4	10.5	8.4	3.2	2.5	3.9
22.0	139.0	-15.2	13.3	8.2	1.1	3.4	3.2
30.0	138.0	-12.1	10.8	9.4	2.2	3.6	2.7
30.0	139.0	-11.9	10.3	9.3	3.6	4.1	3.0
29.0	137.0	-13.3	12.3	9.9	1.4	4.3	4.6
29.0	133.0	-12.7	13.6	10.4	3.0	2.6	4.6
37.0	137.0	-11.8	11.0	12.2	1.8	3.9	3.7
31.0	139.0	-13.0	11.4	10.2	1.8	4.3	3.8
16.0	132.0	-12.7	14.3	5.6	2.0	2.8	4.0
14.0	133.0	-13.5	14.4	5.0	3.2	2.4	3.9
6.0	141.0	-14.9	12.2	2.0	5.2	4.8	5.3
-8.0	132.0	-7.2	7.9	-1.6	4.3	3.0	9.3

DATA SET 63-046A-02G

BRIEF DESCRIPTION

This data set consists of a reel of 35-mm microfilm on which a listing of the contents of the data set 63-46A-02F appear.

```
C***    THIS PROGRAM READS THE IMP-A MAGNETOSPHERIC DATA ON TAPE UNIT A-5
C***    AND CREATES AN OUTPUT TAPE ON UNIT A-7 FOR INPUT TO THE
C***    SC-4020 PLOTTER. MICROFILM IS GENERATED BY THE SC-4020.
C***
C***    THE SUBROUTINES REQUIRED TO RUN THIS PROGRAM ARE ON THE
C***    IBSYS SYSTEM TAPE.
C***
      DIMENSION ID1(2)
      DATA(ID1(I),I=1,2)/6H   NSS,6HDC     /
      DATA  ID2,ID3,ID4/6H601    ,6H26     ,6H2133  /
      JORBIT = 0
      IPAGE = 0
      IREC  = 0
      CALL IDFRMV(ID1,ID2,ID3,ID4)
      CALL CAMRAV(35)
      CALL FRAMEV(3)
      CALL SCOUTV
      WRITE (61,100)
  100 FORMAT(1H1///32X,23HIMP-A  HOURLY  AVERAGES//
     1       1H0,  31X,23HMAGNETOSPHERIC B FIELD //
     2       1H0,  31X,26HFEB 28,1964 TO MAY 26,1964//
     3       1H0,  31X,23H       ORBITS 25-47     //
     4       1H0,  31X,23H   D-02903 - 9 TRACK    //
     5       1H0,  31X,23H   C-02097 - 7 TRACK    //
     6       1H0,  31X,23H     63-046A-02G        ////)
      WRITE(61,125)
  125 FORMAT( 1H0,31X,44HSOLAR MAGNETOSPHERIC COORDINATE SYSTEM USED.///
     1 32X,48HZ AXIS IS PARALLEL TO EARTH'S MAGNETIC AXIS.     //
     2 32X,48HX AXIS IN THE Z,EARTH-SUN-LINE PLANE.            //
     3 32X,48HY AXIS COMPLETES RIGHT-HANDED ORTHOGONAL SYSTEM.///
     4 32X,55HLATITUDE  MEASURED FROM XY PLANE,POSITIVE ANGLES NORTH.//
     5 32X,48HLONGITUDE  0 DEGREES TOWARDS SUN,                /
     6 32X,48H           90 DEGREES TOWARDS DUSK MERIDIAN.     /)
    1 LINES = 0
C     WRITE PAGE HEADING
      IPAGE = IPAGE +1
      WRITE (61,105) IPAGE
  105 FORMAT(1H1,31X,23HIMP-A  HOURLY  AVERAGES,9X,5HPAGE ,I4/
     1           32X,23HMAGNETOSPHERIC B FIELD /
     2       20X,50HPREPARED BY THE NATIONAL SPACE SCIENCE DATA CENTER//
     322X,6HRADIAL,7X,11HCOORDINATES,5X,6HFIELD ,7X,5HFIELD,3X,5HFIELD,
     35X,16HFIELD COMPONENTS,3X,18HSTANDARD DEVIATION/
     4                      ,1X,2HYR,2X,3HDAY,2X,2HHR,2X,5HORBIT,2X,
     56HDISTANCE,5X,1HX,5X,1HY,5X,1HZ,2X,9HMAGNITUDE,6X,5HLAT  ,
     63X,5HLONG ,7X,1HX,5X,1HY,5X,1HZ,6X,1HX,5X,1HY,5X,1HZ/
     7 64X,5HANGLE,3X,5HANGLE/)
C
C     READ IN A RECORD
    2 READ(5,110)IDR3,RADIST,X,Y,Z,IYR,IDAY,IHOUR,FLDMAG,A_LAT,
     1ALONG,XC,YC,ZC,XVAR,YVAR,ZVAR
      IREC = IREC + 1
      IF(IDR8.EQ.0) JORBIT = 100
      IDR8 = IDR3 + JORBIT
  110 FORMAT(I2,4F5.1,I2,I3,I2,9F5.1)
      WRITE(61,115)IYR,IDAY,IHOUR,IDRB,RADIST,X,Y,Z,FLDMAG,A_LAT,
```

```
ENT - IFN(S) -

SPHERIC DATA ON TAPE UNIT A-5
-7 FOR INPUT TO THE
TED BY THE SC-4020.

 PROGRAM ARE ON THE



2133 /

                                                    5
                                                    7
                                                    9
                                                    11
                                                    12
RAGES//
IELD //
 26.1964//
'     //
ACK   //
CK    //
      ////)
                                                    13
C COORDINATE SYSTEM USED.///
MAGNETIC AXIS.     //
 PLANE.            //
ORTHOGONAL SYSTEM.///
NE.POSITIVE ANGLES NORTH.//
UN.                /
USK MERIDIAN.      /)


                                                    16
GES,9X,5HPAGE ,I4/
LD /
 SPACE SCIENCE DATA CENTER//
ELD ,7X,5HFIELD,3X,5HFIELD,
DEVIATION/
AY,2X,2HHR,2X,5HORBIT,2X,
AGNITUDE,6X,5H_AT  ,
,5X,1HY,5X,1HZ/


IFOUR,FLDMAG,A_AT,
                                                    17


T,X,Y,Z,FLDMAG,A_AT,
```

```
      1ALONG,XC,YC,ZC,XVAR,YVAR,ZVAR
  115 FORMAT(1X,I2,2X,I3,2X,I2,3X,I3,4X,F5.1,3X,3(1X,F5.1),
     14X,F5.1,7X,2(F5.1,3X),3(1X,F5.1),1X,3(1X,F5.1))
      LINES = LINES + 1
C     TEST FOR END OF PAGE
      IF(LINES.EQ.36) GO TO 1
C
C     TEST FOR END OF DATA
      IF(IREC.EQ.1374) GO TO 99
      GO TO 2
   99 WRITE(3,120) IREC
  120 FORMAT(10X,10HEND OF JOB,4X,I5,2X,17HRECORDS PROCESSED)
      REWIND 5
      CALL PLTND
      END FILE 61
      STOP
      END
```

```
                                                                      25
E.1,3X,3(1X,F5.1),
,3(1X,F5.1))
```

```
                                                                      34
HRECORDS PROCESSED)
                                                                      35
                                                                      36
                                                                      37
```

Problems Encountered on Merging the IMP 1, 2, and 3

Magnetometer and Ephemeris Data

The tape listing was in error. Binary 7 track magnetometer tapes existed for just some of the data, and not for all of it as stated in the listing. Also one of the formats for the existing 7 track binary tapes did not match what was actually on the tapes. As a result, 7 track binary tapes were made on the 360-75 from the original 9 track binary tapes and pifted for compatibility with the 7094.

The ephemeris tapes were in 7094-7044 DCS packed form, and so they had to be unpacked for use. They were edited by removing any overlapping data in order to simplify the merge. While the unpacked tapes were being edited, some bad data were encountered. Upon trying to remake them from the originals, it was discovered that some of the original tapes were no good and that data had to be emitted from the merge.

YR	IDA	HR	MIN	SPACECRAFT GEODETIC LAT	SPACECRAFT GEODETIC LONG	SPACECRAFT GEOMAGNETIC LAT	SPACECRAFT GEOMAGNETIC LONG	SPACECRAFT POSITION SOLAR ECLIPTIC X	Y	Z	SPACE SOLAR X
63	355	12	0	-26.33	-60.99	-14.70	7.40	15.90	-21.25	-6.48	15.90
63	355	12	5	-26.31	-62.20	-14.70	6.30	15.93	-21.27	-6.48	15.93
63	355	12	10	-26.30	-63.41	-14.60	5.20	15.96	-21.29	-6.48	15.96
63	355	12	15	-26.28	-64.62	-14.60	4.10	16.00	-21.32	-6.47	16.00
63	355	12	20	-26.27	-65.83	-14.60	2.90	16.03	-21.34	-6.47	16.03
63	355	12	25	-26.25	-67.04	-14.60	1.80	16.06	-21.36	-6.47	16.06
63	355	12	30	-26.24	-68.25	-14.50	0.70	16.09	-21.38	-6.46	16.09
63	355	12	35	-26.22	-69.46	-14.50	-0.40	16.13	-21.40	-6.46	16.13
63	355	12	40	-26.21	-70.67	-14.50	-1.50	16.16	-21.42	-6.44	16.16
63	355	12	45	-26.19	-71.88	-14.50	-2.70	16.19	-21.44	-6.44	16.19
63	355	12	50	-26.18	-73.09	-14.50	-3.80	16.23	-21.46	-6.43	16.23
63	355	12	55	-26.16	-74.30	-14.50	-4.90	16.26	-21.48	-6.43	16.26
63	355	13	0	-26.15	-75.51	-14.50	-6.00	16.29	-21.50	-6.43	16.29
63	355	13	5	-26.13	-76.72	-14.50	-7.20	16.32	-21.52	-6.43	16.32
63	355	13	10	-26.12	-77.93	-14.50	-8.30	16.34	-21.55	-6.41	16.34
63	355	13	15	-26.10	-79.14	-14.60	-9.40	16.38	-21.57	-6.41	16.38
63	355	13	20	-26.09	-80.35	-14.60	-10.50	16.41	-21.59	-6.40	16.41
63	355	13	25	-26.07	-81.55	-14.60	-11.60	16.45	-21.61	-6.40	16.45
63	355	13	30	-26.06	-82.77	-14.70	-12.80	16.48	-21.63	-6.40	16.48
63	355	13	35	-26.04	-83.98	-14.70	-13.90	16.51	-21.65	-6.38	16.51
63	355	13	40	-26.03	-85.19	-14.80	-15.00	16.54	-21.67	-6.38	16.54
63	355	13	45	-26.01	-86.40	-14.80	-16.10	16.57	-21.69	-6.38	16.57
63	355	13	50	-25.00	-87.52	-14.90	-17.30	16.60	-21.70	-6.38	15.60
63	355	13	55	-25.98	-88.83	-14.90	-18.40	16.63	-21.72	-6.36	16.63
63	355	14	0	-25.97	-90.04	-15.00	-19.50	16.66	-21.74	-6.36	16.66
63	355	14	5	-25.96	-91.25	-15.10	-20.60	16.70	-21.76	-6.35	16.70
63	355	14	10	-25.94	-92.45	-15.10	-21.80	16.73	-21.78	-6.35	16.73
63	355	14	15	-25.93	-93.67	-15.20	-22.90	16.76	-21.80	-6.34	16.76
63	355	14	20	-25.91	-94.89	-15.30	-24.00	16.79	-21.81	-6.34	16.79
63	355	14	25	-25.90	-96.10	-15.40	-25.20	16.82	-21.83	-6.33	16.82
63	355	14	30	-25.88	-97.31	-15.50	-26.30	16.84	-21.85	-6.32	16.84
63	355	14	35	-25.87	-98.52	-15.60	-27.40	16.87	-21.87	-6.32	16.87
63	355	14	40	-25.85	-99.73	-15.70	-28.50	16.90	-21.88	-6.32	16.90
63	355	14	45	-25.84	-100.95	-15.80	-29.70	16.94	-21.90	-6.31	16.94
63	355	14	50	-25.83	-102.16	-15.90	-30.80	16.97	-21.92	-6.30	16.97
63	355	14	55	-25.81	-103.37	-16.00	-31.90	17.00	-21.94	-6.29	17.00
63	355	15	0	-25.80	-104.58	-16.10	-33.00	17.03	-21.96	-6.29	17.03
63	355	15	5	-25.78	-105.80	-15.20	-34.20	17.06	-21.98	-6.28	17.06
63	355	15	10	-25.77	-107.01	-16.40	-35.30	17.09	-21.99	-6.28	17.09
63	355	15	15	-25.75	-108.22	-16.50	-36.40	17.11	-22.01	-6.27	17.11
63	355	15	20	-25.74	-109.44	-16.60	-37.60	17.15	-22.03	-6.26	17.15
63	355	15	25	-25.73	-110.65	-15.80	-38.70	17.18	-22.04	-6.26	17.18
63	355	15	30	-25.71	-111.86	-16.90	-39.80	17.20	-22.05	-6.25	17.20
63	355	15	35	-25.70	-113.08	-17.10	-41.00	17.23	-22.07	-6.25	17.23
63	355	15	40	-25.68	-114.29	-17.20	-42.10	17.26	-22.09	-6.23	17.26
63	355	15	45	-25.67	-115.50	-17.40	-43.20	17.29	-22.11	-6.23	17.29
63	355	15	50	-25.66	-116.72	-17.50	-44.40	17.32	-22.12	-6.23	17.32
63	355	15	55	-25.64	-117.93	-17.70	-45.50	17.35	-22.14	-6.22	17.35
63	355	16	0	-25.63	-119.14	-17.80	-46.60	17.38	-22.15	-6.21	17.38
63	355	16	5	-25.61	-120.35	-18.00	-47.80	17.40	-22.17	-6.20	17.40

DATA PAGE 1 PART ONE

SPACECRAFT POSITION SOLAR ECLIPTIC			SPACECRAFT POSITION SOLAR MAGNETOSPHERIC			SUB-SOLAR POINT GEOMAGNETIC		SPIN-SUN ANGLE	FIELD COMPONENTS IN RT SPIN AXIS PERP	PARAL	PHASE
X	Y	Z	X	Y	Z	LAT	LONG				
15.90	-21.25	-6.48	15.90	-22.13	-1.94	-18.74	64.31	123.70	1.60	-0.00	92.90
15.93	-21.27	-6.48	15.93	-22.15	-1.98	-18.51	63.13	123.70	1.60	-0.00	92.90
15.96	-21.29	-6.48	15.96	-22.16	-2.02	-18.28	61.94	123.70	1.60	-0.00	92.80
16.00	-21.32	-6.47	16.00	-22.19	-2.06	-18.06	60.76	123.70	1.60	-0.00	92.80
16.03	-21.34	-6.47	16.03	-22.20	-2.10	-17.84	59.57	123.70	1.60	-0.00	92.80
16.06	-21.36	-6.47	16.06	-22.22	-2.15	-17.62	58.39	123.70	1.50	-0.00	92.80
16.09	-21.38	-6.46	16.09	-22.23	-2.20	-17.41	57.21	123.70	1.50	-0.00	92.70
16.13	-21.40	-6.46	16.13	-22.24	-2.24	-17.20	56.03	123.70	1.50	-0.00	92.70
16.16	-21.42	-6.44	16.16	-22.25	-2.29	-16.99	54.85	123.70	1.50	-0.00	92.60
16.19	-21.44	-6.44	16.19	-22.27	-2.34	-16.78	53.67	123.70	1.50	-0.00	92.50
16.23	-21.46	-6.43	16.23	-22.28	-2.39	-16.58	52.50	123.70	1.50	-0.00	92.50
16.26	-21.48	-6.43	16.26	-22.29	-2.45	-16.38	51.32	123.70	1.50	-0.00	92.40
16.29	-21.50	-6.43	16.29	-22.30	-2.51	-16.19	50.14	123.70	1.50	-0.00	92.30
16.32	-21.52	-6.43	16.32	-22.32	-2.57	-15.99	48.96	123.70	1.50	-0.00	92.20
16.34	-21.55	-6.41	16.34	-22.33	-2.62	-15.80	47.79	123.70	1.50	-0.00	92.00
16.38	-21.57	-6.41	16.38	-22.34	-2.68	-15.62	46.61	123.70	1.50	-0.00	91.90
16.41	-21.59	-6.40	16.41	-22.35	-2.75	-15.44	45.44	123.70	1.50	-0.00	91.80
16.45	-21.61	-6.40	16.45	-22.36	-2.82	-15.26	44.26	123.70	1.50	-0.00	91.60
16.48	-21.63	-6.40	16.48	-22.37	-2.89	-15.08	43.09	123.70	1.50	-0.00	91.50
16.51	-21.65	-6.38	16.51	-22.38	-2.94	-14.91	41.92	123.70	1.40	-0.00	91.30
16.54	-21.67	-6.38	16.54	-22.39	-3.01	-14.74	40.74	123.70	1.40	-0.00	91.20
16.57	-21.69	-6.38	16.57	-22.39	-3.09	-14.58	39.57	123.80	1.40	-0.00	91.00
16.60	-21.70	-6.38	16.60	-22.39	-3.16	-14.42	38.40	123.80	1.40	-0.00	90.80
16.63	-21.72	-6.36	16.63	-22.40	-3.23	-14.27	37.23	123.80	1.40	-0.00	90.60
16.66	-21.74	-6.36	16.66	-22.41	-3.31	-14.11	36.05	123.80	1.40	-0.00	90.40
16.70	-21.76	-6.35	16.70	-22.42	-3.39	-13.97	34.88	123.80	1.40	-0.00	90.20
16.73	-21.78	-6.35	16.73	-22.42	-3.46	-13.83	33.71	123.80	1.40	-0.00	90.00
16.76	-21.80	-6.34	16.76	-22.43	-3.53	-13.69	32.54	123.80	1.40	-0.00	89.80
16.79	-21.81	-6.34	16.79	-22.42	-3.62	-13.55	31.37	123.80	1.40	-0.00	89.60
16.82	-21.83	-6.33	16.82	-22.43	-3.70	-13.42	30.19	123.80	1.40	-0.00	89.30
16.84	-21.85	-6.32	16.84	-22.43	-3.77	-13.30	29.02	123.80	1.40	-0.00	89.10
16.87	-21.87	-6.32	16.87	-22.44	-3.86	-13.18	27.85	123.80	1.40	-0.00	88.80
16.90	-21.88	-6.32	16.90	-22.43	-3.95	-13.06	26.68	123.80	1.40	-0.00	88.60
16.94	-21.90	-6.31	16.94	-22.44	-4.03	-12.95	25.51	123.80	1.40	-0.00	88.30
16.97	-21.92	-6.30	16.97	-22.44	-4.11	-12.84	24.34	123.80	1.40	-0.00	88.00
17.00	-21.94	-6.29	17.00	-22.43	-4.20	-12.74	23.17	123.80	1.40	-0.00	87.80
17.03	-21.96	-6.29	17.03	-22.43	-4.29	-12.64	22.00	123.80	1.40	-0.00	87.50
17.06	-21.98	-6.28	17.06	-22.43	-4.37	-12.55	20.83	123.80	1.40	-0.00	87.20
17.09	-21.99	-6.28	17.09	-22.43	-4.46	-12.46	19.66	123.80	1.40	-0.00	86.90
17.11	-22.01	-6.27	17.11	-22.43	-4.55	-12.38	18.48	123.80	1.40	-0.00	86.60
17.15	-22.03	-6.26	17.15	-22.43	-4.64	-12.30	17.31	123.80	1.40	-0.00	86.30
17.18	-22.04	-6.26	17.18	-22.42	-4.73	-12.23	16.14	123.80	1.40	-0.00	86.00
17.20	-22.06	-6.25	17.20	-22.41	-4.82	-12.16	14.97	123.80	1.30	-0.00	85.70
17.23	-22.07	-6.25	17.23	-22.40	-4.91	-12.10	13.80	123.80	1.30	-0.00	85.40
17.26	-22.09	-6.23	17.26	-22.40	-5.00	-12.04	12.63	123.80	1.30	-0.00	85.10
17.29	-22.11	-6.23	17.29	-22.40	-5.09	-11.99	11.46	123.80	1.30	-0.00	84.70
17.32	-22.12	-6.23	17.32	-22.39	-5.19	-11.94	10.29	123.80	1.30	-0.00	84.40
17.35	-22.14	-6.22	17.35	-22.38	-5.28	-11.90	9.12	123.80	1.30	-0.00	84.10
17.38	-22.15	-6.21	17.38	-22.37	-5.38	-11.86	7.95	123.80	1.30	-0.00	83.80
17.40	-22.17	-6.20	17.40	-22.37	-5.45	-11.83	6.78	123.80	1.30	-0.00	83.40