DATA SET CATALOG # 74

MARINER 4

64-077A-02B

3 tapes

MARINER 4
50.4 Sec. Avg. Vector Magnetic Field

64-077A-02B

556 BPI, Binary, 7-track and 1 file. IBM 7094
Data Set processing on the following tapes.

D∅	C∅	START	STOP
D-00039	C-03456	11/28/64	03/07/65
D-00040	C-03457	03/07/65	06/12/65
D-00041	C-03458	06/12/65	10/01/65

NOTE: These tapes were run against the program Mariner IV, it determines the number of 10 point data gaps (time greater than 504 secs.), and indicates start and stop times that 100 point data gaps occurred.

BIBLIOGRAPHY

Mariner 4 Magnetometer 64-077A-02

Instrument description Space Research 6 (p907)

Operational Characteristics JGR 72, 1, (p. 1) 1967

See Also B2189

STOP

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/12/65
/01/65

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April 21, 1970

EXTFP-Mariner 4 Interplanetary
Magnetic Field Tape

Spacecraft Mariner 4 was launched November 27, 1964. The data on the tapes are for the period from November 28, 1964, to ~~September~~ OCTOBER 1 1965. During this time, Mariner 4 traveled from earth to the vicinity of Mars. This tape, EXTFP, consists of 3 reels and is a nonpacked binary tape generated on the 7094 machine. The blocksize of each record is 253 words (6 bytes/word) which includes the Fortran control word. The time increment between each data point given is 50.4 seconds. On each logical record 21 data points are returned by the following READ statement:

```
DIMENSION KALTIM(21), BIN(21,9), NCYC(21),NFRAME(21)
READ(20) (KALTIM(L), NCYC(L), NFRAME(L), (BIN(L,J), J=1, 9),
L = 1, 21)
```

A good format to write the Lth data point is FORMAT (1X, 3I8, 9F9.3). For the Lth data point in a record:

KALTIM(L): The Greenwich Mean Time at which the data were taken in seconds = day of year * 86,400 + hour * 3600 + minute * 60 + seconds. As an example, the first data point on tape is day 333 of 1964, 15 hours, 7 minutes, 6 seconds =

28825626 seconds. January 1, 1964, would have been day 1, not day 0 in our scheme. January 1, 1965, is taken to be day 1 again. Check your tape to see if this is so.

NCYC(L): The cycle number.

NFRAME(L): The frame number. It starts over again at the next cycle. Several frame readings were averaged to give 1 data point.

BIN: 9 interplanetary magnetic field varibles. If a number in BIN is greater than or equal to 1.0E31, then that number is dummy data, i.e., don't use it. For the Lth data point in the record the 9 variables (BIN (L,J), J = 1, 9)) are: BR, BT, BN, BP = SQRT ($BN^2 + BT^2$), BL = SQRT ($BR^2 + BT^2$), B, |BR|, |BT|, and |BN|where the last 3 quantities are absolute values. Some of these quantities are averages from points at higher data rates so sometimes |BIN(L, 1)| ≠ BIN(L,7), etc. B is the magnitude of the magnetic field. The B_R component is in the radial direction from the sun. BT = B_ϕ is the east-west component. B_θ = -BN is the "north-south" component. (B_r, B_θ, B_ϕ form the right-handed spherical polar coordinate system with θ measured from the sun's axis of rotation and where the r-φ plane is the sun's equatorial plane. For much additional information including the r, θ,φ position of spacecraft Mariner 5 as a function of time see:)