DATA SET CATALOG # 117

OGO-3, Condensed Orbit Tape
66-049A-00G 1 tape

OGO-3, Prot & Elect Reduc. 1k Bit 'A'
66-049A-10A 14 tapes

OGO-3, Prot & Elect, Hi-Rate 'B'
66-049A-10B 9 tapes

66-049A-00C
OGO-3, CONDENSED ORBIT TAPE FOR EXP 10

1600 BPI, 9 TRACK, BINARY, IBM 360

D#	C#	FILES	START	STOP
D-05843	C-04951	2	06/07/66	01/29/67

66-049A-10A
OGO-3, PROT & ELECT REDUC. 1 K BIT 'A'

800 BPI, 9 TRACK, BINARY, IBM 360

D#	C#	FILES	START	STOP
D-05862	C-04909	1	06/09/66	06/25/66
D-05863	C-04910	1	06/25/66	07/10/66
D-05864	C-04911	1	07/10/66	07/12/66
D-05866	C-04913	1	07/12/66	08/08/66
D-05867	C-04914	1	08/08/66	09/06/66
D-05860	C-04907	1	09/06/66	09/24/66
D-05861	C-04908	1	09/24/66	10/14/66
D-05865	C-04912	1	10/14/66	10/29/66
D-05868	C-04915	1	10/29/66	10/30/66
D-05855	C-04902	1	10/30/66	11/12/66
D-05856	C-04903	1	11/12/66	11/28/66
D-05857	C-04904	1	11/28/66	12/13/66
D-05858	C-04905	1	12/13/66	01/01/67
D-05859	C-04906	1	01/01/67	01/26/67

66-049A-10B
OGO-3, PROT & ELECT, HI-RATE 'B'

800 BPI, 7 TRACK, BINARY, IBM 360

D#	C#	FILES	START	STOP
D-05869	C-04893	1	06/09/66	06/11/66
D-05870	C-04894	1	06/11/66	06/12/66
D-05871	C-04895	1	06/12/66	06/12/66
D-05872	C-04896	1	06/12/66	06/14/66
D-05873	C-04897	1	06/14/66	06/15/66
D-05874	C-04898	1	06/15/66	06/16/66
D-05875	C-04899	1	06/16/66	06/19/66
D-05876	C-04900	1	06/19/66	06/20/66
D-05877	C-04901	1	06/20/66	01/16/67

from "Description of Data Proc. System and Tape Formats for OGO-1 & 2 Experiment #905

Final Condensed and Noncondensed Tape Format

General Information

All Final tapes are odd parity written in binary at a density of 800 bytes per inch and contain IBM System/360 standard labels. The Final Condensed tapes are nine track tapes with a data set name of EGFINALC and contain fixed blocked records with a block size of 3184 bytes and a logical record size of 648 bytes. The Final Non-condensed tapes are seven track tapes with a data set name of EGFINALN and contain fixed blocked records with a block size of 5664 bytes and a logical record size of 1416 bytes. (4 logical records per block)

All items (i.e., spacecraft clock, temperature, etc.) in the records are referenced from the first main frame of data in the record. Also all references to a frame sequence number use zero as a base. In other words, the frame sequence number of the first main frame of data in the record is zero, the second is one, etc. Most important, -999 or -999. are used for all pad. Pad may exist in any of the data items of the record except for fields 1, 2, 6, 7, 8, 12, and 15 described in the tape format given below. The user should check for pad to avoid using a negative number in any calculations or accumulations. Finally, no calibration was performed on any of the data items in the record.

Detail Descriptions

The absolute file number given below (Field 8) may be used to relate the data of the record to a file on the Decom tape. By searching the file catalog, produced in Phase I processing, for the entry with this unique absolute file number, one can obtain all the necessary identification and previous processing information desired.

The wheel position sequence number (Field 12) will always be set to "1" if the record belongs to a Final Condensed tape. If, however, it belongs to a Final Non-condensed tape, then the value of this field will be in the range 1 to 16 inclusively. If the record belongs to a Final Non-condensed tape and the data was transmitted at

eight kilobits per seconds (Field 7 equals "2"), then Field 12 will always be either a "1" or a "9".

Since most of the orbital parameters (fields 23-85 and 96-97) change slowly over the time period covered by one record of data, it is possible to express these that do as a quadratic function of the sequential number of the frame pertaining to the data item in question. This way instead of storing on tape all the required parameters for each data item, one can save a huge amount of tape by storing only a set of two or three coefficients per item. Then using the coefficients and the frame sequence number, one can reconstitute the value of any of the data items as needed. The coefficients of the independent variable (frame sequence number) are stored in ascending order with respect to the power of the independent variable.

To determine the angle of the scanning orbital plane experiment package (OPEP) relative to the spacecraft velocity vector for any frame of data within the record, the following algorithm written in FORTRAN should be used:

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A=C + F*S1
IF(ABS(A).GT.110.)A=SIGN(110.,A)-S2*(F-(SIGN(110.,A)-C)/S1)
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where:

- A is the desired angle in degrees of the OPEP at frame F
- C is the angle in degrees of the OPEP at the first frame of the record (field 104)
- F is the frame sequence number
- S1 is the slope of the first line defined by the OPEP (field 105)
- S2 is the slope of the second line defined by the OPEP (field 106). This item is used only when the OPEP changes its direction within the record.

The above algorithm assumes that the OPEP makes a complete scan of ±110 degrees. If the range of the scan is different, then the user must adjust C proportionally and replace 110. with the new limit.