

SIP-757-71
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TO: Distribution

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SUBJECT: Required Items for the IMP-H CPME Experimenter's Tape

The IMP-H CPME experimenter's tape should contain only one end of file for the entire tape, with an ID record preceding each "file" of data rather than an end of file mark following it. Here, a "file" is equated to the contents of an analog tape. Each ID record should contain the following information:

1. orbit number
2. recording station number
3. analog tape number
4. analog to digital converter ID
5. start time for this station
6. stop time for this station
7. quick look flag
8. experimenter ID
9. satellite ID
10. edit tape number
11. edit reel number
12. date of generation of experimenter tape

A data record should consist of two albums of telemetry data, starting with an even album and should also contain orbit and attitude data as listed below. In the event that only a part of a logical record is available, fill characters should be generated and the corresponding quality flags set accordingly.

1. U. T. (year, day, milliseconds)
2. album number (spacecraft clock with least significant bit incrementing at album rate)
3. quality flags for U. T. and spacecraft clock

0.1 procedure / SASS 4
see 5.1
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4. orbital data
 - a. geocentric latitude, longitude (degrees), and radial distance (kilometers) of the spacecraft
 - b. solar ecliptic $X_{SE}^7, Y_{SE}^{10}, Z_{SE}^{11}$ coordinates of the spacecraft in earth radii km
 - c. solar magnetospheric X^{12}, Y^{13}, Z^{14} coordinates of the spacecraft in earth radii km
 - d. sun-earth-spacecraft angle in degrees $L_{sep} 37$
 - e. spacecraft velocity in geocentric solar ecliptic coordinates X_{SE}, Y_{SE}, Z_{SE} , in earth radii/hour
 - f. right ascension and declination of spacecraft in celestial coordinates
 - g. orbit, no orbit data flag
5. attitude data
 - a. spin period in milliseconds ✓ KEEP.
 - b. U. T. of last spin period determination \leftarrow out
 - c. spin axis θ_{SE} (solar ecliptic) in degrees } using
 - d. spin axis ϕ_{SE} (solar ecliptic) in degrees } using
 - e. spin axis right ascension in degrees } using
 - f. spin axis declination in degrees } using
 - g. U. T. of last spin axis determination \leftarrow out
 - h. optical aspect flag (1 - normal, 0 - failed) DFF
 - i. optical aspect eclipse flag (1 - eclipse, 0 - no eclipse) \leftarrow
 - j. sun time in milliseconds from beginning of snapshot to centered sun pulse
 - k. attitude, no attitude data flag
6. APL-CPME Data: Table I gives a list of the CPME data outputs. All CPME data is to appear in "expanded" form on the experiment tape. Column 3 specifies the readout positions of the various items in the telemetry in terms of Snapshot, Sequence, Frame, Channel (with fractional channels denoted as: e.g., 4B/6 and 7 = last 4 bits of

NO, but #153 is mag of vel

TPA do.

not given, but can be calculated from 40-48 transf. notes

TPA find out - check

channel 6 and all 8 bits of channel 7, or 6B/12 and 4B/13 = last 6 bits of channel 12 and first four bits of channel 13. The number of times each of the various outputs appear in a logical record is:

APL-R1 through R-7	32
APL-R8 through R-25	16
APL-Se1 through Se-4	32
APL-DP	16
APL-AP	<u>8</u>

TOTAL 104

7. Data Quality Flags: One flag, to be defined by GSFC, indicating the probable reliability of the data should be included for each output of APL data each time it appears.

TABLE 1
 DATA LABELS AND POSITIONS

APL-Name	S/C Accum #	Position in TM Readout				Descriptive Name
		SS	SEQ	FR	CHANNEL	
APL-R1	LR12 a ₂ - 6	All	1	2	4B/6 & 7	M
APL-R2	LR12 a ₂ - 10	All	1	10	4B/6 & 7	S
APL-R3	LR12 a ₂ - 14	All	2	2	4B/6 & 7	P9
APL-R4	LR12 a ₂ - 18	All	2	10	4B/6 & 7	P7
APL-R5	LR12 a ₂ - 20	All	2	10	4B/9 & 10	Z1
APL-R6	LR12 a ₂ - 22	All	3	2	4B/6 & 7	A7
APL-R7	LR12 a ₂ - 26	All	3	10	4B/6 & 7	A6
APL-R8	LR12 a ₃ - 6	Even	1	4	4B/6 & 7	A5
APL-R9	LR12 a ₃ - 10	Odd	0	8	4B/6 & 7	A4
APL-R10	LR12 a ₃ - 14	Even	0	8	4B/6 & 7	A3
APL-R11	LR12 a ₃ - 18	Odd	1	4	4B/6 & 7	A2
APL-R12	LR10 a ₃ - 1	Even	0	4	11 & 2 B/12	P11
APL-R13	LR10 a ₃ - 2	Even	0	4	6B/12 & 4B/13	P10
APL-R14	LR10 a ₃ - 5	Even	1	4	11 & 2B/12	E4
APL-R15	LR10 a ₃ - 6	Even	1	4	6B/12 & 4B/13	E5
APL-R16	LR10 a ₃ - 9	Odd	0	8	11 & 2B/12	E6
APL-R17	LR10 a ₃ - 10	Odd	0	8	6B/12 & 4B/13	E2B
APL-R18	LR10 a ₃ - 13	Even	0	8	11 & 2B/12	E2C
APL-R19	LR10 a ₃ - 14	Even	0	8	6B/12 & 4B/13	P2
APL-R20	LR10 a ₃ - 17	Odd	1	4	11 & 2B/12	P3
APL-R21	LR10 a ₃ - 18	Odd	1	4	6B/12 & 4B/13	P4
APL-R22	LR10 a ₃ - 21	Even	0	12	11 & 2B/12	P5
APL-R23	LR10 a ₃ - 22	Even	0	12	6B/12 & 4B/13	P6
APL-R24	LR10 a ₃ - 25	Odd	0	12	11 & 2B/12	P8
APL-R25	LR10 a ₃ - 26	Odd	0	12	6B/12 & 4B/13	Z2

TABLE 1 (Cont'd)

APL-Name	S/C Accum #	Position in TM Readout				Descriptive Name			
		SS	SEQ	FR	CHANNEL	SS0	SS1	SS2	SS3
APL-Se1	APL Se-1 ① ₈ - ⑧ ₈	✓All	2	2	0 - 4 & 11 - 15	E1	E1	E1	E1
APL-Se2	APL Se-2 ① ₈ - ⑧ ₈	✓All	2	10	0 - 4 & 11 - 15	E3*	E2A	E3*	E2A
APL-Se3	APL Se-3 ① ₈ - ⑧ ₈	✓All	3	2	0 - 4 & 11 - 15	P1	E4	P1	E4
APL-Se4	APL Se-4 ① ₈ - ⑧ ₈	✓All	3	10	0 - 4 & 11 - 15	NAI	P1	P1	A6
APL-DP	APL DP 3 - 21	Even	0	12	1st Bit of Ch4				
APL-AP	AP #1	SS0	1	0	4	**APP	X	X	X

*E3 is divided into 32 subsectors and repeats with a 2 page period.

**APP has 8 subcommutated signals: Starting from PG 0 of even albums they are
 CD, PM, GA, HV, TP, D1, D2, D3.

per Tubes { E1
 E2A
 E3 - "BIG"

} When making R vs R cross, check raw counts against a threshold value and use 1 of 2 Power Series. Initial runs - only 1 Power series (CW: 6/24/71)

R L McCutcheon
 R. L. McCutcheon

RLM:cy
 Distribution
 AKossiakoff (2)
 RWLarson
 COBostrom
 SMKrimigis
 JWKohl
 RLMcCutcheon (2)
 SDO Central File
 Archives (2)
 File