To: Voyager Internal

From: G. S. Gordon Jr.

Subject: Voyager Mission Tape

Date: April 2, 1996

A compact summary of the entire Voyager mission is proposed below. The summary should contain all currents in all modes for some selection of the spectra. In addition it will contain the proton density, velocity and thermal width, as well as the B field for L and M modes. RTN coordinates will be used. Moment estimate will be used for the proton parameters, except for one thermal speed.

Tape Format

word	format	meaning	definition
1	I1	JTB(6)	time year, day, hour, min, sec, millisec/4, year = year-1900
			if day > 255 then day=day-256 ; hour=hour+100
			if tape was made on SUN and SC is Voyager 1 50 is added to hour
			if tape was made on SUN and SC is Voyager 2 25 is added to hour
	I1	MINDEX	first channel used (M mode only)
	I1	MODTLM	Telemetry mode from GSFC header
3	I1	LSTAT	Status word. zero if word is missing.
	I1	NCUR	Number of words of current. (number of current/4)
	I1	JTLMOD	Mode type. (1->L, 2->M, 3->E1, 4->E2)
	I1	JCLK	Cup integration time index. (1->30, 2->210, 3->930)
4	I1	JDATA	Digital currents. note only one byte per a measurement.
			for L & M modes
4+ncur	R4	DEN	ANS(38), Proton Density in number/cc
5+ncur	R4	VR	ANS(99), Proton Velocity in Km/sec
		VT	ANS(100)
		VN	ANS(101)
8+ncur	R4	Wm	(ANS(34)+ANS(35)+ANS(36))/3 Thermal width, moment.
9+ncur	R4	Wf	* Thermal width, fit.
10+ncur	R4	Dalpham	ANS(117), Alpha density in num/cc, moment.
11+ncur	R4	Dalphaf	ANS(59), Alpha density in num/cc, fit.
12+ncur	R4	BR	ANS(96), Magnetic Field in gamma
		BT	ANS(97)
		BN	ANS(98)
15+ncur	R4	R	Radial distance from sun in AU.

One spectra will be taken every 12 mins, for each mode, before Neptune. After Neptune every spectra is taken. For mission tapes generated at GSFC, the environmental variable SC must be set to identify

*

Wf = (Wa + Wb + Wc)/3
Wa = sqrt((WPERˆ2*(1-B.Naˆ2)) + (WPARˆ2*(B.Na))ˆ2)
WPER = ANS(69)
WPAR = ANS(68)
B.Na = ANS(130) (actually computed in program)

spacecraft. Only Plasma measurements will be recorded. L, M, E1, E2 will be recorded on separate files. Fortran unformatted records will be used.

Size of data

Mode	bytes ------ record	Kilobytes --------- year	Megabytes ---------- 10 years
l	132	56217	56
m	576	25298	253
e1	36	1581	16
e2	36	1581	16
all	780	34258	343