

**FAST FIELDS INSTRUMENT
MODE : 19**

3/21/97
REE

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SUMMARY

SLOW SURVEY: 14,366 bit/s
FAST SURVEY: 557,056 bit/s
BURST: 4,482,664 bit/s
SLOT: 08

**General Science 4
CAMPAIGN
3-Wire (Rev: 6)**

A. SPHERE CONFIGURATION: Spheres in Current Mode: 6,7; Ne range 1 to $4 \times 10^4 \text{ cm}^{-3}$

B. SLOW SURVEY

APID SUMMARY	DATA	SMPL/s	BITS/s
SVY0	V1-V4_S	32	512
APID 1032	V5-V8_S	32	512
2,048 bit/s (1/128 max rate)	V9-V10_S Mag1dc Mag2dc Mag3dc Therm	32 8 8 8 8	512 128 128 128 128
SVY1	V1-V2_S	32	512
APID 1033	V3-V4_S	32	512
2,048 bit/s (1/128 max rate)	Ne6_S Ne7_S	32 32	512 512
SVY2	Maglac_S	32	512
APID 1034	Mag2ac_S	32	512
2,048 bit/s (1/128 max rate)	Mag3ac_S V10_S V4_S V8_S LFF1 LFF2	32 8 8 8 8 8	512 128 128 128 64 64
LFF1 set to V1-V2_HG. LFF2 set to V5-V8_HG.			
BBF	V1-V4_BBF	0	0
APID 1035	V5-V8_BBF	0	0
0 bit/s (OFF)	Mag3ac_BBF V9-V10_BBF	0 0	0 0
SFA_AVE	V1-V2_SFA	64	512
APID 1036	V5-V8_SFA	64	512
2,048 bit/s (Ave 64 sweeps)	Mag3ac_SFA V1-V4_TRK	64 64	512 512
Each Ch.: 1 swp/4s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V1-V4HG_DSP	<128	<1,024
APID 1037	V5-V8HG_DSP	<128	<1,024
6,144 bit/s (Ave 128 sweeps)	V9-V10_DSP V1-V4TRK_DSP V1-V2HG_DSP Mag3ac_DSP	<128 128 128 128	<1,024 1,024 1,024 1,024
Each Ch.: 1 swp/4s, 512 pts/sweep, Swp: 0 - 16 kHz.			
HFQ	PD12	0	0
APID 1038	PD13	0	0
0 bit/s (OFF)	PD14 PD23 PD24 PD34 TRK_FRQ FRQ1 FRQ2 FRQ3 FRQ4	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0

* LFF, BBF, SFA, DSP, and PD are 8-bit words.

C. FAST SURVEY

APID SUMMARY	DATA	SMPL/s	BITS/s
SVY0	V1-V4_S	2,048	32,768
APID 1032	V5-V8_S	2,048	32,768
131,072 bit/s (Max rate)	V9-V10_S Mag1dc Mag2dc Mag3dc Therm	2,048 512 512 512 512	32,768 8,196 8,196 8,196 8,196
SVY1	V1-V2_S	2,048	32,768
APID 1033	V2-V4_S	2,048	32,768
131,072 bit/s (Max rate)	Ne6_S Ne7_S	2,048 2,048	32,768 32,768
SVY2	Maglac_S	2,048	32,768
APID 1034	Mag2ac_S	2,048	32,768
131,072 bit/s (Max rate)	Mag3ac_S V10_S V4_S V8_S LFF1 LFF2	2,048 512 512 512 512 512	32,768 8,196 8,196 8,196 4,092 4,092
LFF1 set to V1-V2_HG. LFF2 set to V5-V8_HG.			
BBF	V1-V4_BBF	512	4,096
APID 1035	V5-V8_BBF	512	4,096
16,384 bit/s (1/8 max rate)	Mag3ac_BBF V9-V10_BBF	512 512	4,096 4,096
SFA_AVE	V1-V2_SFA	1,024	8,192
APID 1036	V5-V8_SFA	1,024	8,192
32,32 bit/s (Ave 4 sweeps)	Mag3ac_SFA V1-V4_TRK	1,024 1,024	8,192 8,192
Each Ch.: 4 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V1-V4HG_DSP	2,048	16,384
APID 1037	V5-V8HG_DSP	2,048	16,384
98,304 bit/s (Ave 8 sweeps)	V9-V10_DSP V1-V4TRK_DSP V1-V2HG_DSP Mag3ac_DSP	2,048 2,048 2,048 2,048	16,384 16,384 16,384 16,384
Each Ch.: 4 swp/s, 512 pts/sweep, Swp: 0 - 16 kHz.			
HFQ	PD12	128	1,024
APID 1038	PD13	128	1,024
16,384 bit/s (Only rate)	PD14 PD23 PD24 PD34 TRK_FRQ FRQ1 FRQ2 FRQ3 FRQ4	128 128 128 128 128 128 128 128 128	1,024 1,024 1,024 1,024 2,048 2,048 2,048 2,048 2,048

* LFF, BBF, SFA, DSP, and PD are 8-bit words.

D. BURST

APID SUMMARY	DATA	SMPL/s	BITS/s
ADC1	V1-V4HG_ADC1	32,768	524,288
APID 1048			
524,288 bit/s (Max rate)			
ADC2	V5-V8HG_ADC2	32,768	524,288
APID 1049			
524,288 bit/s (Max rate)			
ADC3	V9-V10_ADC3	32,768	524,288
APID 1050			
524,288 bit/s (Max rate)			
ADC4	V1-V4TRK_ADC4	32,768	524,288
APID 1051			
524,288 bit/s (Max rate)			
ADC5	V1-V2HG_ADC5	32,768	524,288
APID 1052			
524,288 bit/s (Max rate)			
ADC6	Mag3ac_ADC6	32,768	524,288
APID 1053			
524,288 bit/s (Max rate)			
ADC7	Maglac_ADC7a	8,192	131,072
APID 1054	Mag2ac_ADC7b	8,192	131,072
524,288 bit/s (Max rate)	Mag3ac_ADC7c D8_ADC7d	8,192 8,192	131,072 131,072
ADC8	V5-V8_ADC8a	8,192	131,072
APID 1055	V2-V4_ADC8b	8,192	131,072
524,288 bit/s (Max rate)	V10_ADC8c V1-V4_ADC8d	8,192 8,192	131,072 131,072
WPC	All Quantities	307	157,288
APID 1056			
157,288 bit/s (Max rate)			
Field input:	V1-V4_LF (1-16 kHz)		
	V5-V8_LF (1-16 kHz)		
BCOR OFF			
SFA	V1-V2_SFA	4,096	32,768
APID 1057	V5-V8_SFA	4,096	32,768
131,072 bit/s (1/2 rate)	Mag3ac_SFA V1-V4_TRK	4,096 4,096	32,768 32,768
Each Ch.: 16 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz. Track Frequency - V1-V4 Zero Crossing.			
HSBM	V1-V2_HSBM		
APID 1058	V5-V8_HSBM		
Memory allocation: Mag3ac_HSBM			
20,971,520 bytes	V9-V10_HSBM		
Sample rate: 0.5 us. Buffer size: 2,621,440 bytes. Triga=BBF1. TrigB=LFF2. PROC MODE =15, OL = 7, 4 second latency. (Capture during fast survey or burst.)			

E. MODE SET UP

POWER
Command sequence (setbit):
F9 0 : System 7 Fields survey ON
F8 14 : System 4 Fluxgate ON
F8 6 : System 6 BEB1,2: Spheres 1,2,3,4. ON
F8 7 : System 23 BEB3,4: Spheres 5,6,7,8. ON
F8 8 : System 24 AXBEB; Spheres 9,10. ON
F9 1 : System 8 Fields LF analog ON
F8 15 : System 3 Search Coil ON
F9 2 : System 9 Fields HF analog, Osc. ON
F9 3 : System 10 SFA ON
F9 4 : System 11 WPC, BFF, HFQ ON
** : System 12 HSBM ON
** : System 13 DSP ON
** : System 14 DSP ROM ON
** - Driver turn on. HSBM:.61000001. DSP:.60000001.

BEB1
400078 IBIAS2 -6.25 nA 480080 IBIAS3 0 nA
410090 STUB2 +300 mV 490080 STUB3 0.0 V
420078 IBIAS1 -6.25 nA 4A0080 IBIAS4 0 nA
430090 STUB1 +300 mV 480080 STUB4 0.0 V
440080 GUARD -5.0 V 4C0000 GUARD 0 V
450001 SPH2 V_Mode 4D0001 SPH3 V_Mode

BEB2
5000C0 VBIAS6 +15 V 55800C0 VBIAS7 +15 V
510090 STUB6 +300 mV 590090 STUB7 +300 mV
520078 IBIAS5 -6.25 nA 5A0078 IBIAS8 -6.25 nA
530090 STUB5 +300 mV 5B0090 STUB8 +300 mV
540080 GUARD -5.0 V 5C0080 GUARD -5.0 V
55000A SPH6 GL/I_Mode 5D000A SPH7 GL/I_Mode

BEB3
600080 APID ON/OFF 600080 IBIAS9 0 nA
D90067 Rate SFA,ADC,BBF 610080 IBIAS10 0 nA
CLRBIT D5 8 620005 V9, V10 V_Mode

AXBEB
800006 SVY 1/128 SPEED A00004 ANC, BCOR TRIG
823142 ADC1 to ADC 4 A16EA2 ESA HEAD POS
830A9D ADC5 to ADC 8 A20000 BCOR OFF
8405AC ADC7 MUX A40000 FREQ-T
8500E1 ADC8 MUX
860009 TRIGGERS
880C00 ANB, SFATRK

ANALOG A/B
98BB03 MSZ=7, 2MS/s
99B898 LFF2/BBF1 Levels
9A8803 Sel BBF1,LFF2

ANALOG C
980000 D82800
D90063 D90067
800006 800006
9080FC 9080FC
948007 948007

DSP
908000 ADC1 to ADC6
948007 AVERAGE 2^7

SFA
A8052A SWP to 2MHz
A973FB HFDIST
AA2600 SFA TRACK

SLOW -> FAST
D80000 D82800
D90063 D90067
800006 800006
9080FC 9080FC
948007 948007

FAST -> SLOW
disks/plasma1/home/ree/fast/modes/frm3/mode019.frm
Note:
1) 3-Wire set up.
2) Ne 6 only in shadow. Bias Tbl1=SUN, 3 = SHADOW
3) HSBM 2MS/s transfer rate compatible with TEAMS.
Rev. 6: Change SFA track to track wave, WPC full speed, HSBM trig lvl.