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NO. 511 MARCH 1987

Part II (Comprehensive Reports)

DATA FOR
SEPTEMBER 1986

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Editor: Helen E. Coffey

Chief: Joe H. Allen
Solar-Terrestrial Physics Division

Staff: John A. McKinnon
Daniel C. Wilkinson
Viola W. Miller
Carol Weathers
Charles T. Shanks

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Published with partial support from ONR (N00014-86-F-0049).

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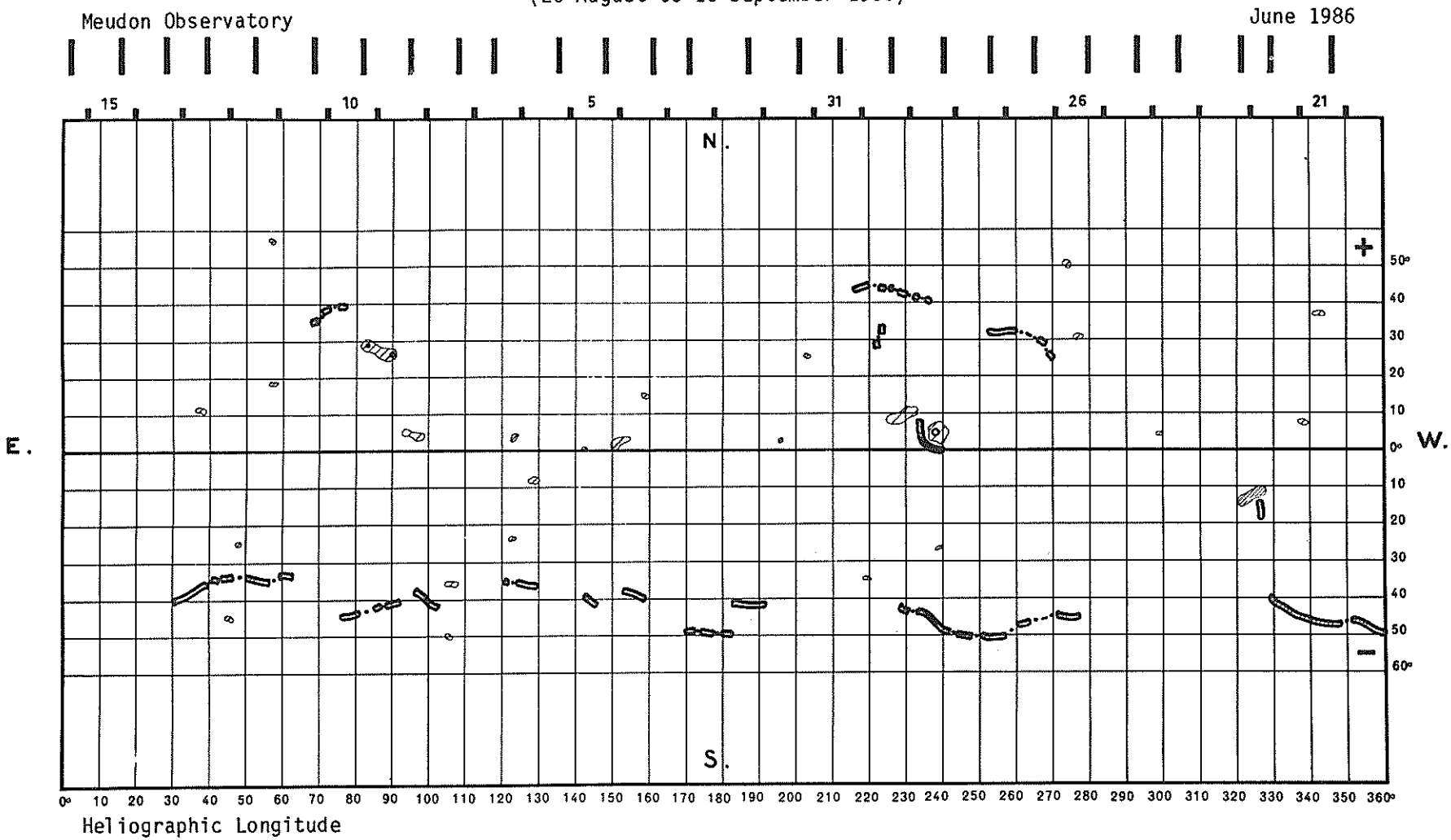
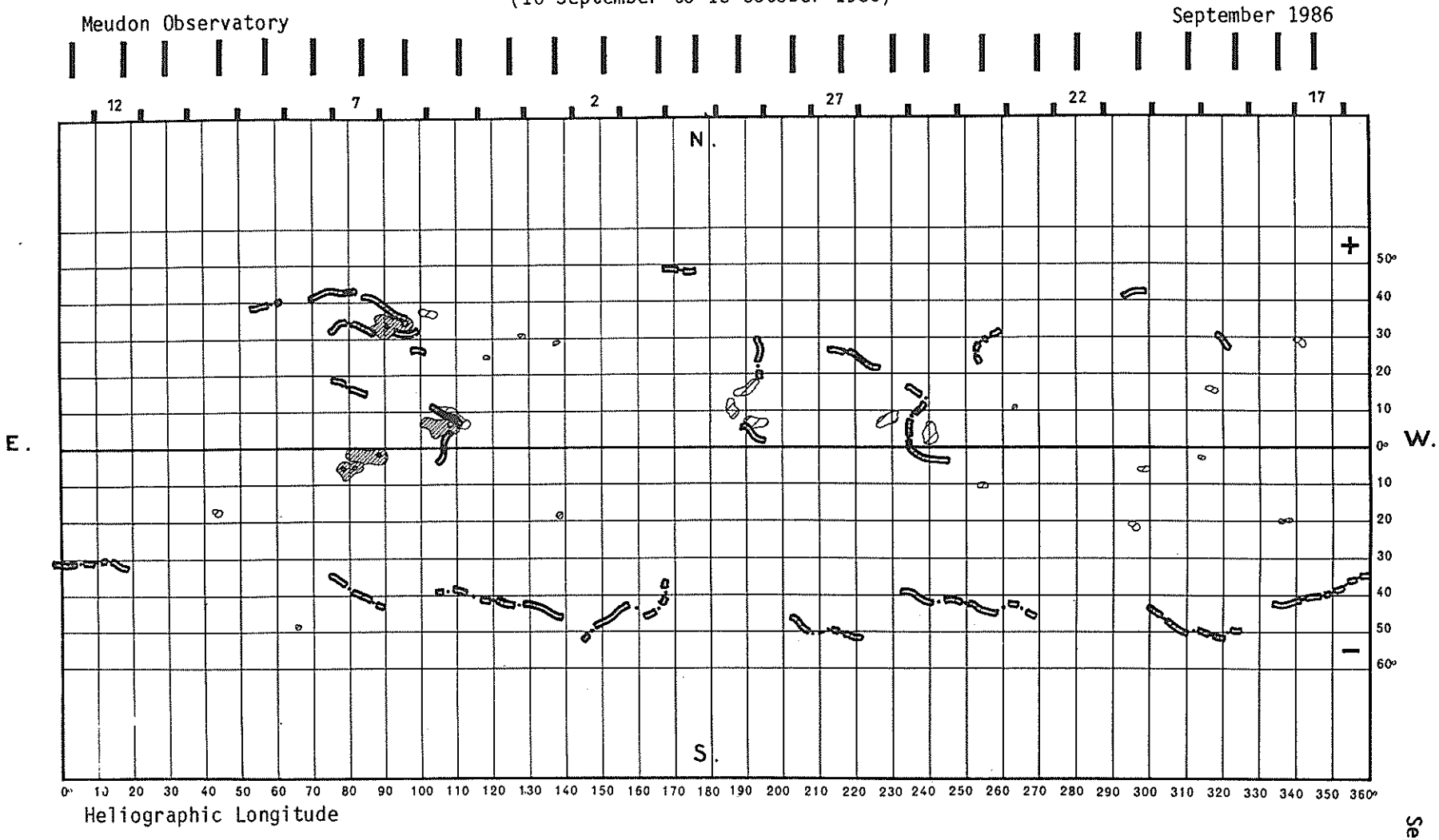
CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1779
(20 August to 16 September 1986)



CARTE SYNOPTIQUE

CARRINGTON ROTATION NUMBER 1780
(16 September to 13 October 1986)



5
Sep 86

CARTE SYNOPTIQUE
ACTIVE REGIONS
CARRINGTON ROTATION 1779

(20 August to 16 September 1986)

Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1778	Activity at West Limb
1	12°S	324	1	+4	x		dispersed
2	5°N	238	3	>6			decreasing
3	10°N	229	1	>6	x		dispersed
4	35°N	219	1	0	x		disappeared
5	15°N	158	1	-3	x		disappeared
6	3°N	151	1	+1	x		disappeared
7	4°N	123	1	+1	x		disappeared
8	50°S	105	1	0	x		disappeared
9	5°N	95	1	0	x		dispersed
10	27°N	86	3	+3			decreasing

CARRINGTON ROTATION 1780

(16 September to 13 October 1986)

Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1779	Activity at West Limb
1	16°N	317	1	+3	x		disappeared
2	7°N	186	1	>6	x		disappeared
3	10°N	186	1	>6	x		disappeared
4	6°N	106	3	>6			decreasing
5	37°N	102	1	>6	x		disappeared
6	34°N	92	3	+6			decreasing
7	3°S	85	2	+2			stable
8	6°S	80	2	-1			decreasing

H - ALPHA S O L A R F L A R E S

SEPTEMBER 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
		01	0923		1045	No Flare Patrol													
		01	1939		1942	No Flare Patrol													
		01	1946		1956	No Flare Patrol													
		01	2053		2119	No Flare Patrol													
		02	0931		0939	No Flare Patrol													
		02	2010		2100	No Flare Patrol													
		02	2236		2241	No Flare Patrol													
		02	2322		2331	No Flare Patrol													
		02	2357		2400	No Flare Patrol													
		03	0000		0000	No Flare Patrol													
		03	0601		0602	No Flare Patrol													
		03	0606		0614	No Flare Patrol													
		03	2202		2237	No Flare Patrol													
0001	RAMY	06	1235	1236	1247	N27	E32	4745	09	9.0	12	SF		3	C		22		
0002		06	13391	13401	1349	N28	E44	4745	09	10.0	10	SF					45		
	HOLL	06	1339	1341	1350	N29	E44	4745	09	10.0	11	SF		3	C		45		
	KANZ	06	1340	1340	1348	N28	E43	4745	09	9.9	8	SF		2					
0003		06	14512	14592	1512	N28	E44	4745	09	10.0	21	SF					18		
	HOLL	06	1451	1459	1513	N29	E44	4745	09	10.1	22	SF		3	C		18		
	KANZ	06	1453	1501	1512	N28	E43	4745	09	10.0	19	SF		2					
0004		06	16361	1646	1651	N28	E43	4745	09	10.0	15	SN					20		
	KANZ	06	1636		1636D	N28	E43	4745	09	10.0	15D	SF		2					
	HOLL	06	1637	1646	1651	N29	E43	4745	09	10.1	14	SN		3	C		20		
		06	2232		2257	No Flare Patrol													
0005	BUCA	07	0720	0728	0742	N28	E33	4745	09	9.9	22	SN			C	0728	64	.8	E
		07	0946		0959	No Flare Patrol													
0006	KANZ	07	1235	1235	1246	N28	E33	4745	09	10.1	11	SF		2					
		07	2338		2355	No Flare Patrol													
0007	TACH	08	0324E		0333D	N27	E37		09	11.0	9D	SF			C	0324	85	1.2	E
0008	ABST	08	0506	0512	0525U	N30	E22	4745	09	9.9	19U	SF			P	0512	87	1.0	D
0009		08	06213	06235	0712	N30	E24	4745	09	10.1	51	SF					56	.6	D
	ABST	08	0621	0623	0647	N31	E25	4745	09	10.2	26	SF			C	0623	70	.8	D
	BUCA	08	0624	0628	0738	N28	E23	4745	09	10.1	74	SF			C	0628	43	.5	D
0010	KHAR	08	0835	0838	0843	N24	E23	4745	09	10.1	8	SF			V	0838			DH
0011	KHAR	08	1032E	1033U	1040	N28	E24	4745	09	10.3	8D	SN			V	1034			DH
0012		08	1643	16441	1655	N30	E20	4745	09	10.3	12	SB	C 2.6				68		
	HOLL	08	1643	1644	1655	N30	E20	4745	09	10.3	12	SB	C 2.6	3	C		69		
	RAMY	08	1643	1645	1655	N30	E20	4745	09	10.3	12	SB	C 2.6	3	C		67		
0013		08	18064	18101	1817	N30	E20	4745	09	10.3	11	SF					53		
	RAMY	08	1806	1811	1818	N30	E20	4745	09	10.3	12	SF		3	C		49		
	HOLL	08	1810	1810	1816	N30	E20	4745	09	10.3	6	SF		3	C		57		
		09	1056		1115	No Flare Patrol													
		09	1947		2006	No Flare Patrol													
		09	2014		2045	No Flare Patrol													
		09	2108		2116	No Flare Patrol													
		09	2202		2357	No Flare Patrol													
		10	0613		0619	No Flare Patrol													
		10	1144		1150	No Flare Patrol													
		10	1437		1444	No Flare Patrol													
		10	2108		2113	No Flare Patrol													
		10	2120		2132	No Flare Patrol													

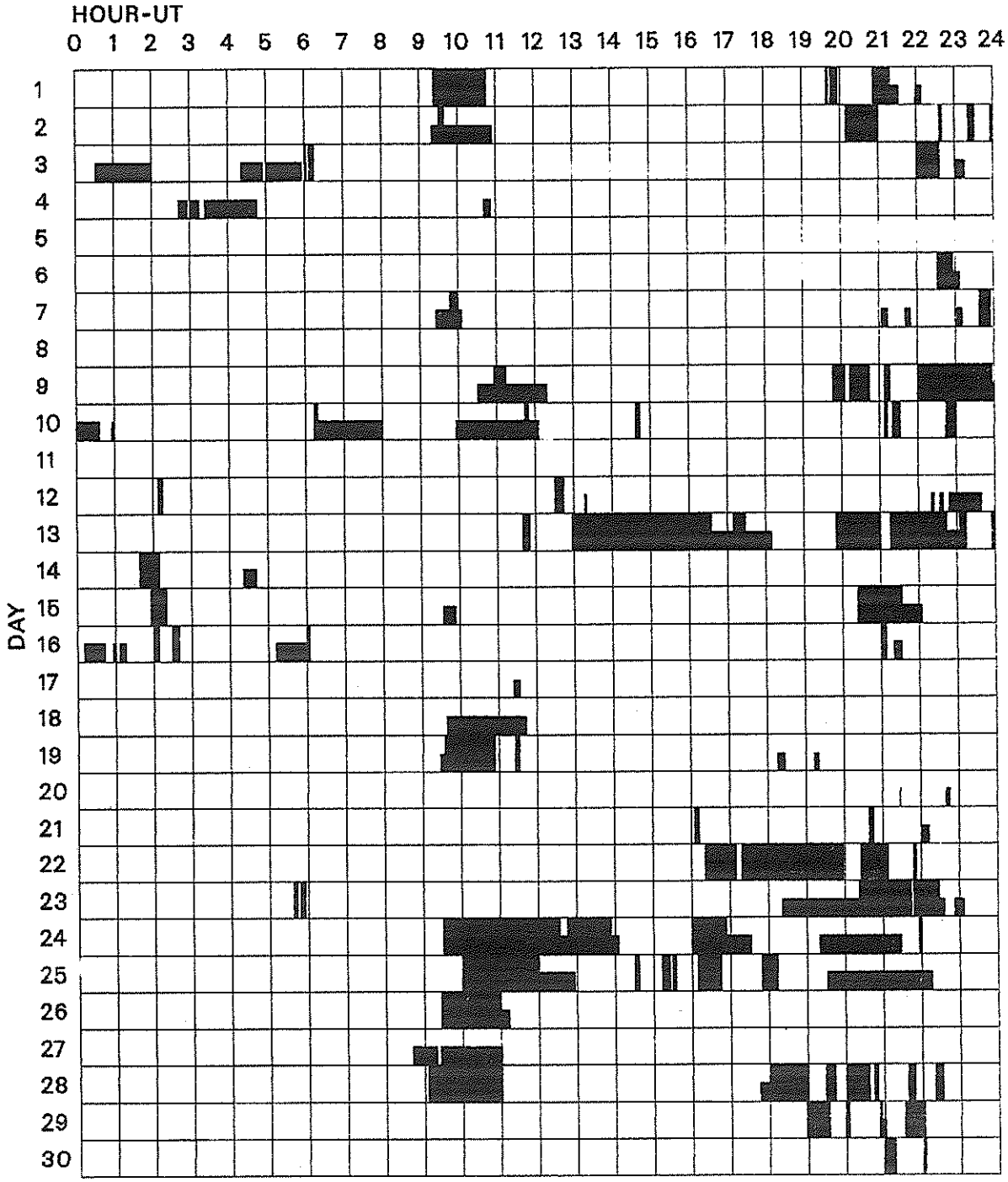
H - ALPHA S O L A R F L A R E S

SEPTEMBER 1986

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
		10	2245		2259	No Flare Patrol													
		12	0207		0214	No Flare Patrol													
		12	1231		1244	No Flare Patrol													
		13	1140		1151	No Flare Patrol													
		13	1257		1635	No Flare Patrol													
		13	1709		1728	No Flare Patrol													
		13	1951		2059	No Flare Patrol													
		13	2116		2244	No Flare Patrol													
		13	2304		2315	No Flare Patrol													
		13	2355		2400	No Flare Patrol													
		14	0000		0000	No Flare Patrol													
		14	0138		0209	No Flare Patrol													
0014	KANZ	14	1211	1215	1221	N02	W76	4744B	09	8.8	10	SF		2					G
		15	0155		0219	No Flare Patrol													
		15	2025		2134	No Flare Patrol													
		16	0200		0208	No Flare Patrol													
		16	0229		0239	No Flare Patrol													
		16	0601		0604	No Flare Patrol													
		16	2101		2108	No Flare Patrol													
		19	0935		1053	No Flare Patrol													
		19	1126		1132	No Flare Patrol													
		21	1606		1612	No Flare Patrol													
		21	2039		2046	No Flare Patrol													
		22	1621		1709	No Flare Patrol													
		22	1719		1958	No Flare Patrol													
		22	2026		2108	No Flare Patrol													
		22	2149		2153	No Flare Patrol													
		23	0537		0543	No Flare Patrol													
		23	0548		0555	No Flare Patrol													
		23	2023		2145	No Flare Patrol													
		23	2149		2229	No Flare Patrol													
		24	0931		1234	No Flare Patrol													
		24	1245		1354	No Flare Patrol													
		24	1601		1654	No Flare Patrol													
		24	2157		2159	No Flare Patrol													
		25	1001		1157	No Flare Patrol													
		25	1431		1437	No Flare Patrol													
		25	1514		1526	No Flare Patrol													
		25	1530		1535	No Flare Patrol													
		25	1609		1646	No Flare Patrol													
		25	1749		1813	No Flare Patrol													
		26	0927		1059	No Flare Patrol													
		28	0905		1102	No Flare Patrol													
		28	1802		1859	No Flare Patrol													
		28	1929		1943	No Flare Patrol													
		28	2000		2036	No Flare Patrol													
		28	2044		2050	No Flare Patrol													
		28	2138		2149	No Flare Patrol													
		28	2221		2233	No Flare Patrol													
		29	1858		1934	No Flare Patrol													
		29	1959		2004	No Flare Patrol													
		29	2053		2055	No Flare Patrol													
		29	2133		2203	No Flare Patrol													
		30	2059		2116	No Flare Patrol													
		30	2201		2205	No Flare Patrol													

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

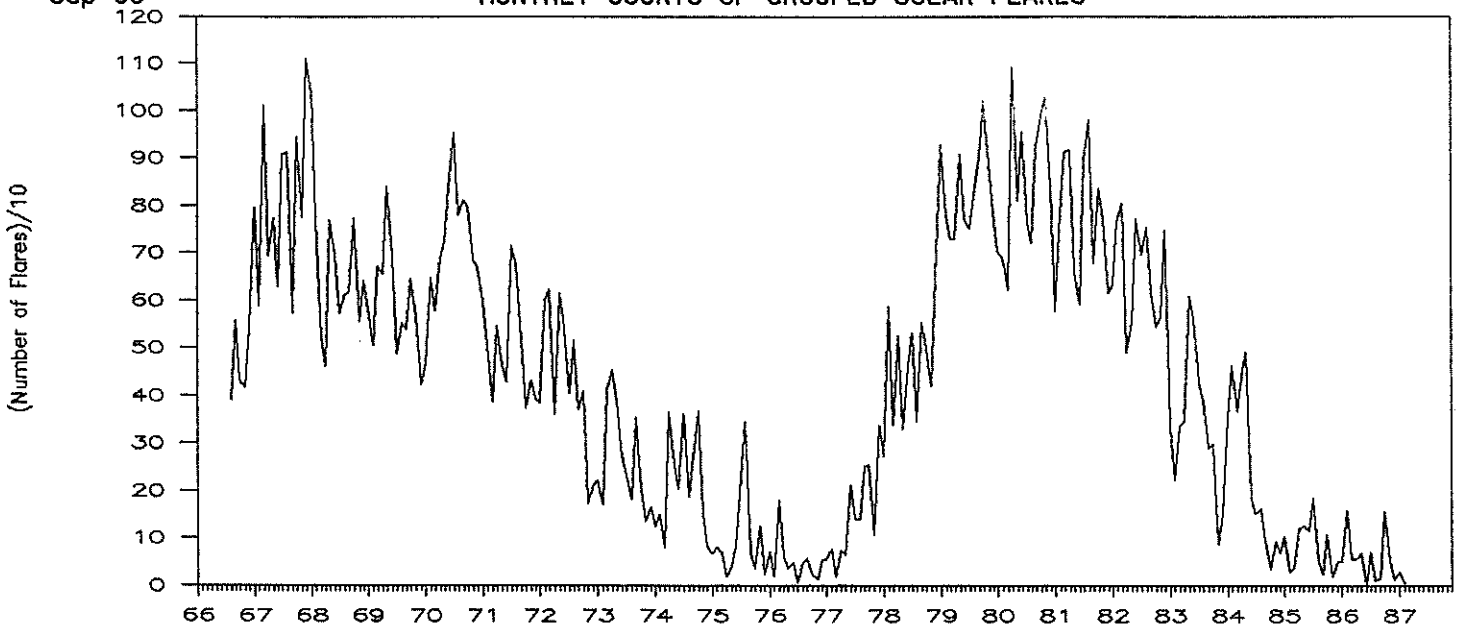
SEPTEMBER 1986



Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Abastumani	Istanbul	Learmonth	Palehua	Tashkent
Bucharest	Kanzelhoehe	Lvov	Peking	Urumqi
Holloman	Kharkov	Manila	Purple Mt.	Voroshilov
Hurbanovo	Kodaikanal	Mitaka	Ramey	Wendelstein
				Yunnan

MONTHLY COUNTS OF GROUPED SOLAR FLARES*



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966								391	558	432	417	543	2341
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	56	68	3	70	10	14	156	52	12	704
1987	28	5											33

*Flare counts are preliminary from July 1982 to present. In particular, the monthly totals for the last 6 months may change significantly, as more sites submit their reports. The term "grouped" means that observations of the same event by different stations have been lumped together and counted as one.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

SEPTEMBER 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	260	ONDR	43	NS	1008.5		234.5D	7.0			
	810	KRAK	8	S	0823.4	0823.4	.1	4.0			
	430	KRAK	8	S	0823.6	0823.7	.2	12.0			
	204	IZMI	3	S	1053.6	1053.7	4.0	82.0	4.0		
04	260	ONDR	43	NS	0847.0	1156.0	203.0	6.0			
	810	KRAK	8	S	1035.5	1035.7	.5	5.0			
05	260	ONDR	43	NS	1356.0		27.0	5.0			
	260	ONDR	8	S	1037.7	1037.7	.3	3.0			
	930	BORD	8	S	1653.0	1653.2	.4	14.0	2.0		
06	245	LEAR	43	NS	2245.0	0038.0	674.0D	25.0			QL=5 ST=2 TYP=1
	29	UPIC	2	S/F	0715.2	0715.4	.6				
	33	UPIC	2	S/F	0715.6	0715.6	.4				
	810	KRAK	8	S	1018.3	1018.5	.3	8.0			
	430	KRAK	8	S	1018.5	1018.6	.3	15.0			
07	260	ONDR	44	NS	0605.0E		487.0D	4.0			
	245	SVTO	43	NS	1337.0	1352.0U	32.0D	17.0			QL=1 ST=2 TYP=1
	430	KRAK	8	S	1207.5	1207.6	.2	4.0			
	245	SVTO	20	GRF	1329.0	1352.0U	40.0D	25.0			QL=1 ST=2 TYP=2
08	410	SVTO	44	NS	0530.0E	0656.0	150.0D	28.0			QL=5 ST=2 TYP=1
	245	LEAR	47	GB	0322.0E	0322.0	75.0D	96.0			QL=5 ST=2 TYP=5
	204	IZMI	4	S/F	0620.0	0621.0	2.0	90.0	5.0		
	500	HIRA	8	S	0620.5	0620.5	.8	3.0			
	260	ONDR	46	C	0849.0	0849.5	1.0	33.0			
	30	POTS	41	F	1030.7	1032.4	2.1	1000.0	100.0		
	260	ONDR	46	C	1030.8	1031.0	2.0	53.0			
	204	IZMI	41	F	1030.8	1032.1	2.2	80.0	4.0		
	234	POTS	41	F	1031.0	1032.2	1.9	83.0	1.0		
	29	UPIC	8	S	1032.3	1032.5	.5				
	33	UPIC	45	C	1120.3	1120.3	.5				
	29	UPIC	45	C	1120.5	1120.8	.6				
	245	SVTO	20	GRF	1257.0E	1347.0	78.0D	26.0			QL=5 ST=2 TYP=2
	33	UPIC	2	S/F	1346.7	1347.0	.7				
	29	UPIC	2	S/F	1347.1	1347.2	.5				
	245	PALE	49	GB	1642.0E	1643.0	4.0D	250.0			QL=3 ST=2 TYP=6
	410	PALE	47	GB	1642.0E	1644.0	2.0D	46.0			QL=3 ST=2 TYP=5
	245	SGMR	47	GB	1643.0E	1643.0	1.0D	270.0			QL=1 ST=2 TYP=5
	2800	OTTA	3	S	1643.4	1643.4	1.0	13.0	2.6		
	245	SVTO	47	GB	1644.0E	1644.0	78.0D	180.0			QL=5 ST=3 TYP=5
	245	SGMR	47	GB	1645.0E	1646.0	1.0D	110.0			QL=1 ST=2 TYP=5
	245	PALE	47	GB	1738.0E	1738.0	1.0D	190.0			QL=1 ST=2 TYP=5
	245	SGMR	47	GB	1738.0E	1738.0	1.0D	140.0			QL=1 ST=2 TYP=5
	2800	OTTA	8	S	1738.3	1738.5	.8	1.4	.8		
	930	BORD	46	C	1743.0	1743.6	2.0	25.0	4.0		
	245	SGMR	47	GB	1808.0E	1810.0	2.0D	340.0			QL=1 ST=2 TYP=5
09	33	UPIC	2	S/F	1638.5	1638.6	.5				
	29	UPIC	2	S/F	1638.6	1638.7	.3				
10	430	KRAK	8	S	1110.5	1111.5	3.7	5.0	2.0		
	430	KRAK	42	SER	1117.3	1126.0	10.0	5.0			
	930	BORD	8	S	1630.6	1630.6	.4	81.0	2.0		
	8800	PALE	20	GRF	2309.0E	2323.0	51.0D	22.0			QL=5 ST=1 TYP=2
13	430	KRAK	4	S/F	0924.3	0925.2	1.5	29.0	8.0		
14	536	ONDR	46	C	1210.0	1211.5	2.3	33.0			
	410	SGMR	47	GB	1211.0E	1215.0	7.0D	82.0			QL=5 ST=3 TYP=5
	260	ONDR	46	C	1212.5		7.0	94.0			
	245	SGMR	47	GB	1213.0E	1215.0	6.0D	79.0			QL=5 ST=3 TYP=5
	536	ONDR	46	C	1213.8	1215.5	2.5	22.0			
	245	SGMR	47	GB	1214.0E	1215.0	4.0D	79.0			QL=5 ST=3 TYP=5
	245	SVTO	47	GB	1214.0E	1215.0	2.0D	100.0			QL=5 ST=2 TYP=5
	410	SVTO	47	GB	1214.0E	1215.0	3.0D	130.0			QL=5 ST=2 TYP=5
	410	SGMR	47	GB	1214.0E	1215.0	3.0D	82.0			QL=5 ST=3 TYP=5
	2800	OTTA	1	S	1215.0	1216.5	3.5	1.7	.8		
	2800	OTTA	1	S	1711.5	1712.0	1.0	1.8	.9		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

SEPTEMBER 1986

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
14	2800	OTTA	4	S/F	1713.4	1713.7	1.6	42.0	10.5		
	2800	OTTA	4	S/F	1723.0	1723.6	2.0	26.1	5.2		
15	930	BORD	41	F	1546.0	1546.1	.4	17.0	2.0		
	1000	TYKW	45	C	2343.9	2344.2	0.5	50.0	5.0		
16	3750	TYKW	20	GRF	0150.0	0230.0	140.0	1.0	.5		
	2000	TYKW	20	GRF	0150.0	0230.0	140.0	1.0	.5		
	9400	TYKW	20	GRF	0150.0	0250.0	140.0	2.0	1.0		
	8800	SGMR	47	GB	1508.0E	1509.0	2.0D	92.0			QL=1 ST=2 TYP=5
18	29	UPIC	2	S/F	0842.8	0843.0	.4				
	33	UPIC	2	S/F	0842.9	0842.9	.5				
19	410	LEAR	4	S/F	0438.0E	0438.0	1162.0D	38.0			QL=5 ST=2 TYP=3
	245	LEAR	4	S/F	0438.0E	0438.0	75.0D	47.0			QL=5 ST=2 TYP=3
20	260	ONDR	43	NS	1210.0		8.0	3.0			
22	930	BORD	8	S	1014.6	1014.8	.4	19.0	2.0		
23	33	UPIC	4	S/F	0644.6	0645.0	.8				
	29	UPIC	4	S/F	0644.8	0645.2	.6				
24	810	KRAK	2	S/F	1052.8	1053.3	1.5	6.0	2.0		
	810	KRAK	8	S	1054.6	1055.0	.6	51.0			
	810	KRAK	8	S	1208.5	1208.7	.5	11.0			
	930	BORD	8	S	1359.7	1359.8	.3	61.0	2.0		
	930	BORD	41	F	1546.4	1546.6	.6	14.0	2.0		
25	430	KRAK	8	S	0722.7	0723.0	.8	12.0	1.0		
	260	ONDR	46	C	1156.0	1158.0	2.5	5.0			
26	9400	TYKW	45	C	0713.5	0715.9	4.0	8.0	3.0		
	810	KRAK	27	RF	0746.7	0749.3	6.5	8.0	4.0		
27	810	KRAK	1	S	1052.0	1052.3	.5	4.0	2.0		
29	810	KRAK	7	C	0942.0	0942.1	.1	30.0	5.0		
	810	KRAK	7	C	1144.6	1145.0	1.0	11.0	5.0		
	810	KRAK	8	S	1151.3	1151.5	.5	7.0			
	810	KRAK	8	S	1201.5	1201.5	.4	5.0			
	810	KRAK	1	S	1210.8	1211.0	.8	5.0	2.0		

Reports are received routinely from the following observatories:

ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PEKG = Peking
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
SVTO = San Vito
SYDN = Sydney
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORO = Voroshilov

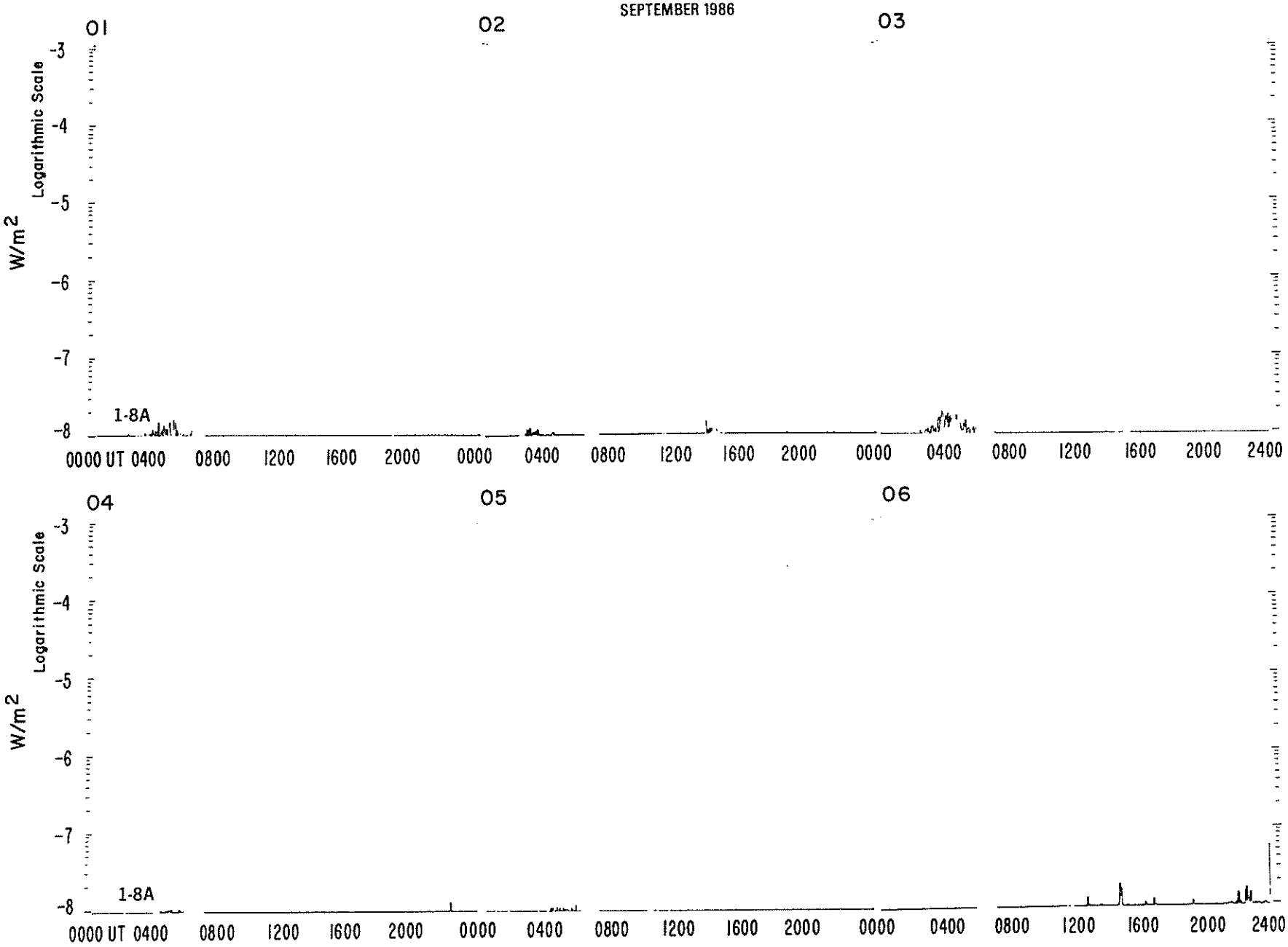
Explanation of Type Code:

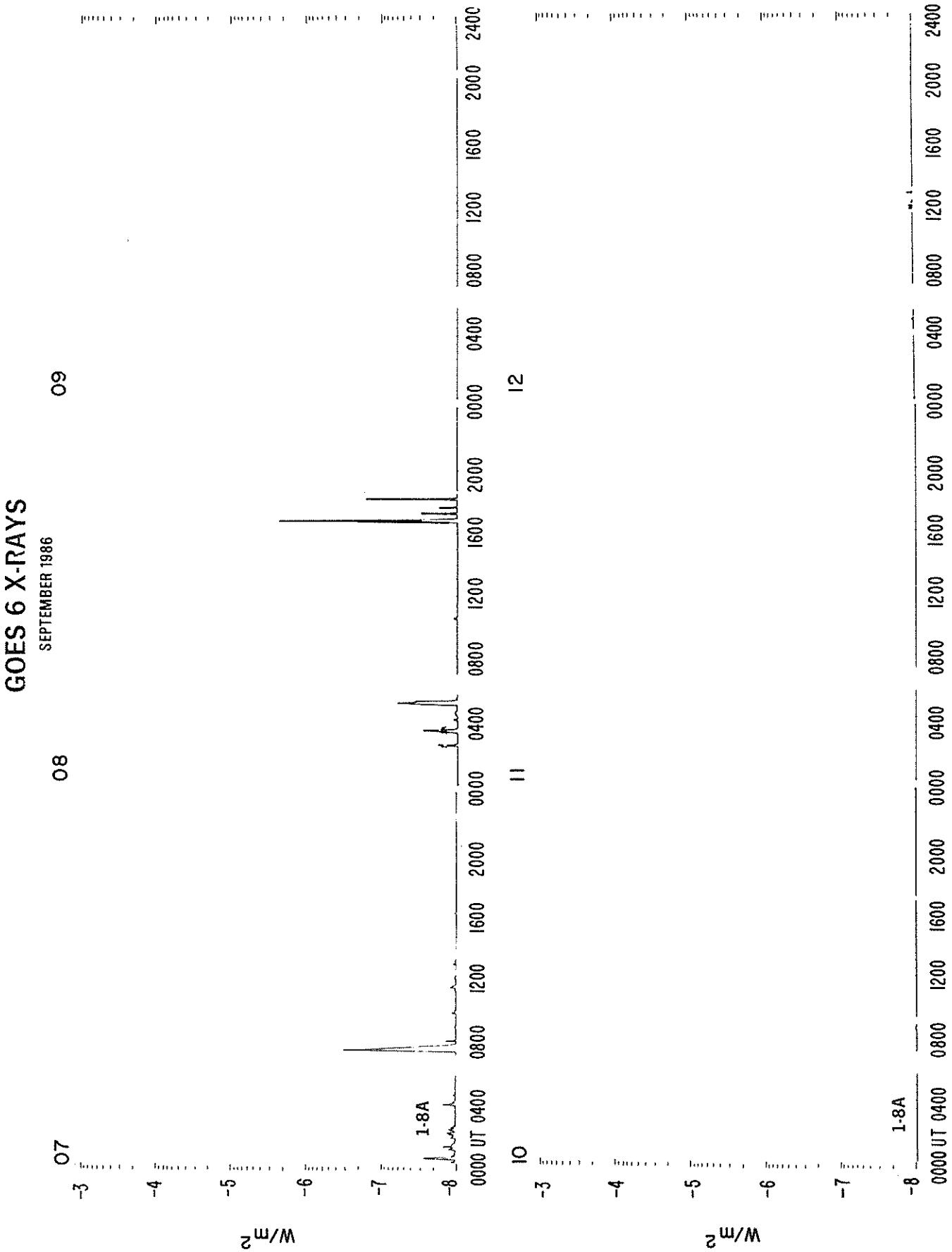
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm In Progress
45 Complex
46 Complex F
47 Great Burst
48 Major

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F

GOES 6 X-RAYS

SEPTEMBER 1986




GOES 6 X-RAYS
SEPTEMBER 1986
07
08
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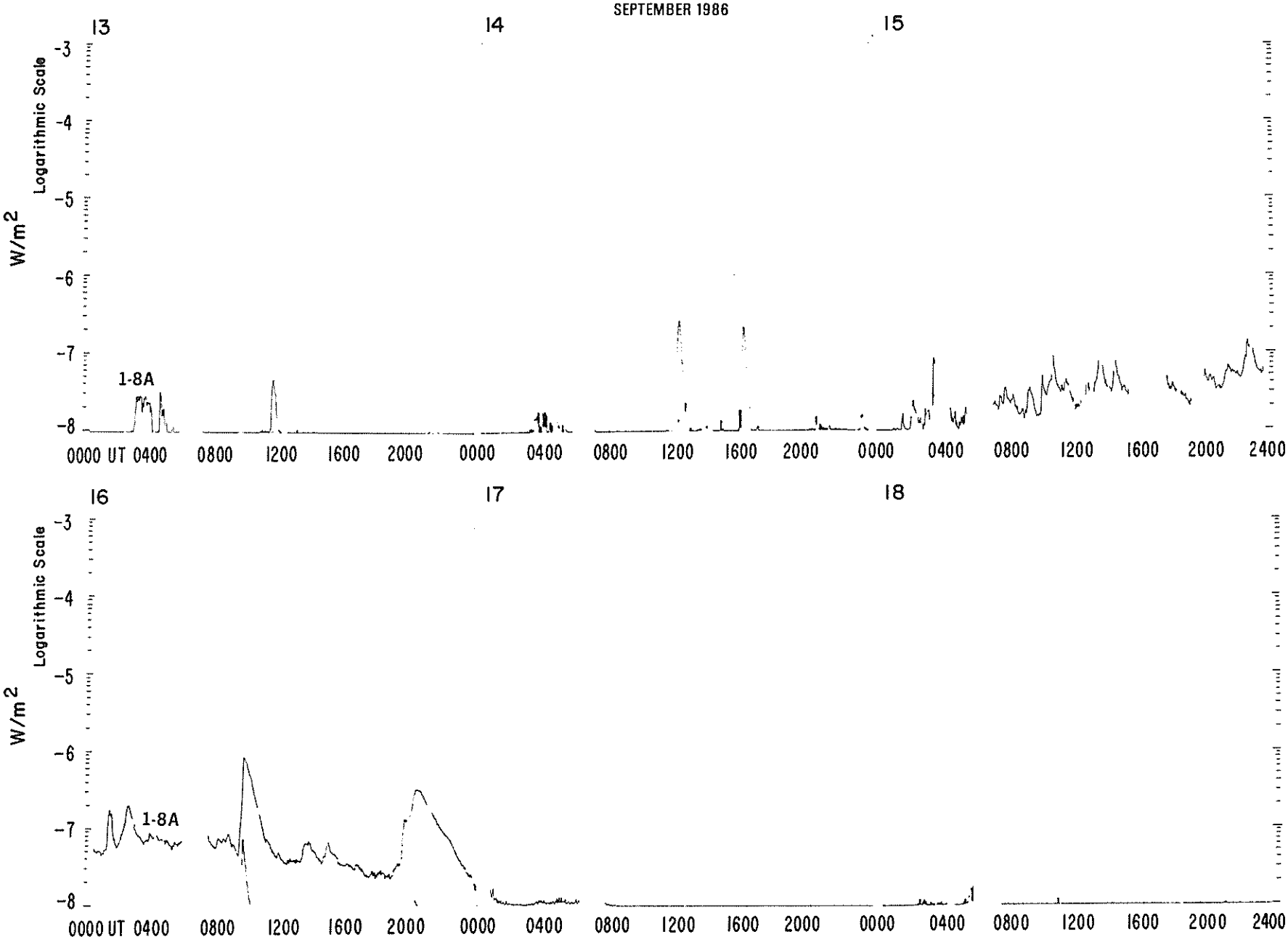
10
11
12
1-8A
W/m2
-3
-4
-5
-6
-7
-8
0000 UT 0400
0800
1200
1600
2000
0000
0400
0800
1200
1600
2000
2400

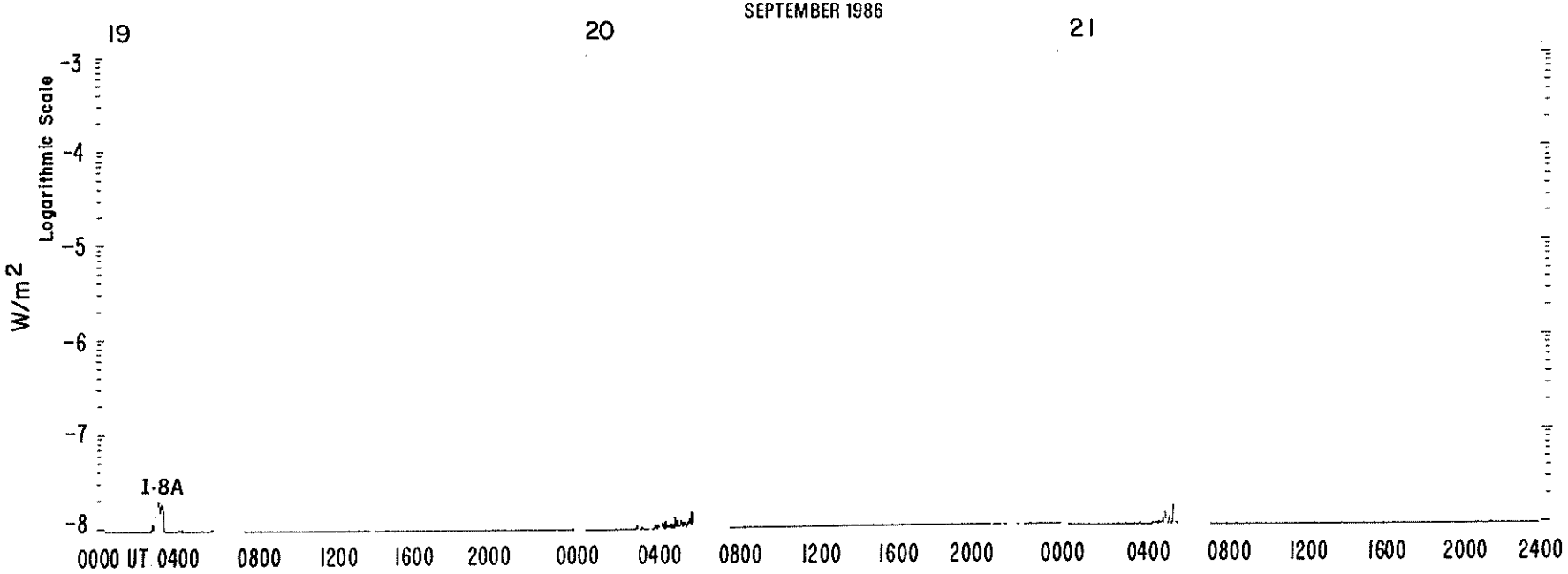
GOES 6 X-RAYS

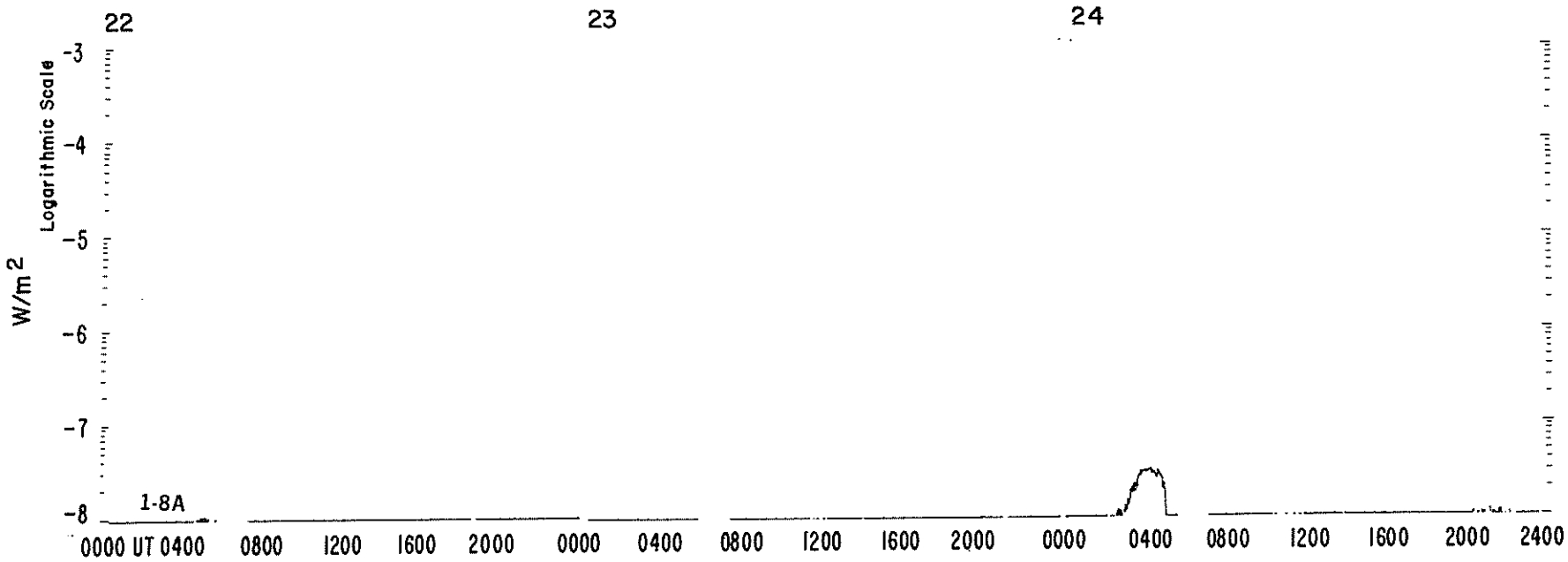
SEPTEMBER 1986



GOES 6 X-RAYS

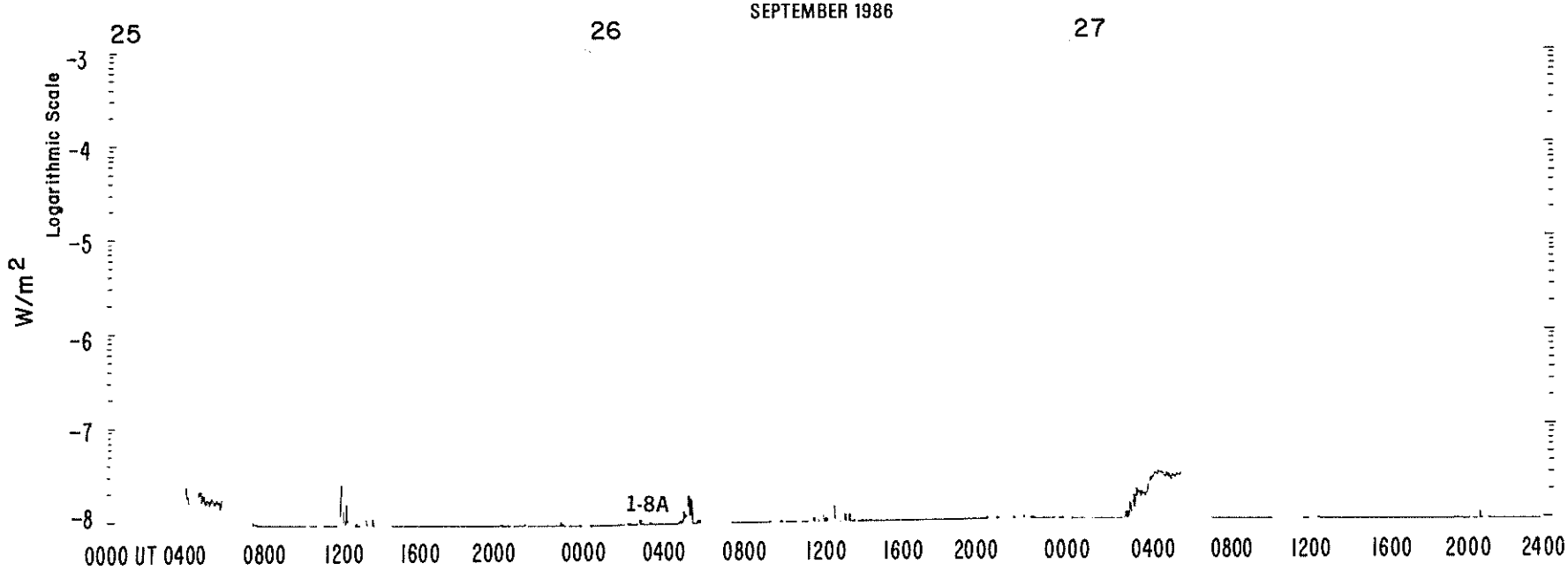
SEPTEMBER 1986

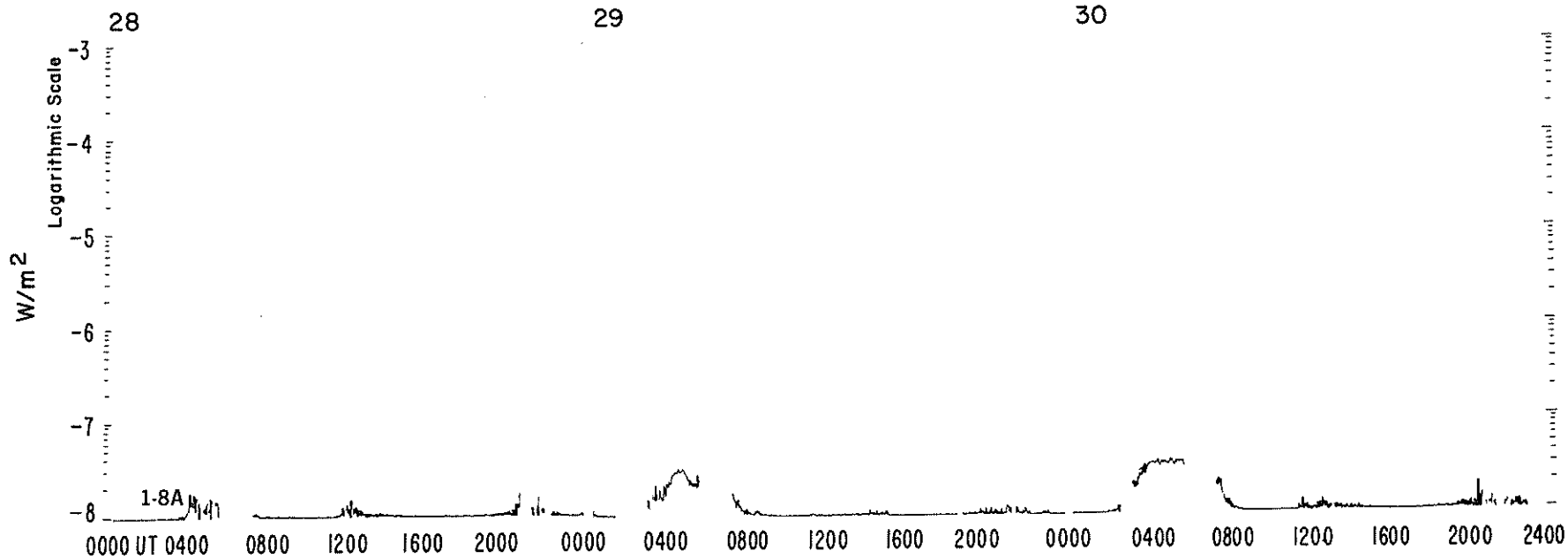




GOES 6 X-RAYS

SEPTEMBER 1986





Preliminary GOES Satellite Data
Daily Average X-ray Background

October 1985 - September 1986

Day	1985 Oct	Nov	Dec	1986 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	B0.0	B0.0	B0.1	B0.0	B0.2	B2.0	<B0.1	B0.5	B0.2	<B0.1	<B0.1	<B0.1
2	B0.0	B0.0	B0.1	B0.0	B0.3	B1.5	<B0.1	B1.0	<B0.1	<B0.1	<B0.1	<B0.1
3	B0.0	B0.1	B0.0	B0.0	**	B1.9	<B0.1	B1.4	<B0.1	<B0.1	B0.3	<B0.1
4	B0.0	B0.1	B0.0	B0.0	**	B1.4	<B0.1	B0.5	<B0.1	<B0.1	B0.2	<B0.1
5	B0.0	B0.0	B0.0	B0.0	**	B1.6	<B0.1	B0.2	<B0.1	B0.2	<B0.1	<B0.1
6	B0.0	B0.1	B0.1	B0.0	**	B1.5	<B0.1	<B0.1	<B0.1	B0.4	<B0.1	<B0.1
7	B0.1	B0.2	B0.2	B0.0	B7.2	B1.0	B0.2	<B0.1	<B0.1	B0.6	<B0.1	<B0.1
8	B0.0	B0.6	B0.5	B0.0	B2.5	B0.8	<B0.1	<B0.1	<B0.1	<B0.1	B0.4	<B0.1
9	B0.0	B0.5	B0.2	B0.0	B2.0	B0.9	<B0.1	<B0.1	<B0.1	B0.2	B0.4	<B0.1
10	B0.0	B0.4	B0.5	B0.0	B2.5	B0.9	<B0.1	<B0.1	<B0.1	B0.9	<B0.1	<B0.1
11	B0.0	B0.5	B1.0	B0.0	B9.8	B0.8	<B0.1	<B0.1	<B0.1	B0.5	<B0.1	<B0.1
12	B0.0	B0.4	B1.0	B0.0	B5.7	B0.7	B0.2	<B0.1	<B0.1	B0.4	<B0.1	<B0.1
13	B0.0	B0.5	B0.6	B0.3	B6.1	B0.5	<B0.1	<B0.1	<B0.1	B0.7	<B0.1	<B0.1
14	B0.3	B0.6	B0.4	B0.4	B0.1	B0.3	<B0.1	<B0.1	<B0.1	B1.0	<B0.1	<B0.1
15	B1.2	B1.3	B0.5	B0.4	B5.7	B0.0	B0.4	<B0.1	<B0.1	B0.5	<B0.1	B0.3
16	B0.9	B0.7	B0.6	B0.5	B2.1	B0.0	B0.3	B0.2	<B0.1	B0.3	<B0.1	B0.5
17	B1.0	B0.5	B0.5	B1.0	B2.3	B0.0	B0.3	B0.3	<B0.1	B0.3	<B0.1	<B0.1
18	B0.5	B0.4	B0.5	B0.7	B0.0	B0.0	B0.2	B0.8	<B0.1	B0.3	<B0.1	<B0.1
19	B0.6	B0.4	B0.3	B0.6	B0.0	B0.0	B0.2	B0.6	<B0.1	B0.2	<B0.1	<B0.1
20	B0.7	B0.3	B0.3	B4.7	B0.0	B0.0	B0.2	B0.6	<B0.1	B0.2	<B0.1	<B0.1
21	B0.9	B0.3	B0.2	B9.5	B0.0	B1.9	B0.2	B0.6	<B0.1	B0.1	<B0.1	<B0.1
22	B2.4	B0.2	B0.3	B2.9	B0.0	B0.0	B0.2	B0.5	<B0.1	B0.1	<B0.1	<A1.0
23	B1.8	B0.2	B0.2	B2.7	B0.0	B0.1	B1.2	B0.4	<B0.1	B0.1	<B0.1	<A1.0
24	B3.5	B0.2	B0.2	B1.3	B0.0	B0.1	B2.8	B0.5	<B0.1	B0.1	<B0.1	<A1.0
25	B3.4	B0.2	B0.2	B0.8	B0.1	B0.0	B0.9	B0.8	<B0.1	B0.2	<B0.1	<A1.0
26	B2.3	B0.1	B0.2	B0.6	B0.8	B0.1	B1.1	B0.5	<B0.1	B0.2	<B0.1	<A1.0
27	B1.4	B0.1	B0.2	B0.2	B1.0	B0.1	B1.5	B0.3	<B0.1	B0.1	<B0.1	<A1.0
28	B0.8	B0.0	B0.2	B0.0	B1.3	B0.1	B1.0	B0.3	<B0.1	B0.2	<B0.1	<A1.0
29	B0.7	B0.0	B0.2	B0.0		B0.1	B0.5	B0.2	<B0.1	B0.3	<B0.1	<A1.0
30	B0.1	B0.0	B0.1	B0.0		B0.1	B0.6	B0.2	B0.7	<B0.1	<B0.1	<A1.0
31	B0.0		B0.2	B0.0		<B0.1		B0.2		<B0.1	<B0.1	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

September 1986

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Opt	Imp Xray
07	0722	0723	0745	N27	E35	4745	SF	B3.1
08	0617	0624	0628					B1.1
08	1643	1644	1655	N30	E20	4745	SB	C2.6
08	1806	1811	1818	N30	E20	4745	SF	B1.6
14	1207	1217	1226					B2.6
14	1609	1616	1625					B2.1
15	2248	2252	2301					B1.3
16	0059	0108	0120					B1.8
16	0910	0928	0955					B8.5
16	1917	2013	2100					B3.1

Please note that this table and the Grouped H-alpha Solar Flare table have not been totally integrated. All of these X-ray flares do not appear in the Grouped H-alpha Solar Flare table. And all matches of these X-ray flares with the H-alpha flares are not indicated here.

MASS EJECTIONS FROM THE SUN

SEPTEMBER 1986

Sta	Day	Observed UT Start	Max	End	Location RA°	R/R$_0$	Freq or Wavelength	Kind of Event
KHAR	Sep 02	0814 E		0900	267-272	0.78-0.81	H-alpha	S
KHAR	Sep 02	0910		0930 D	267-272	0.78-0.81	H-alpha	S
KHAR	Sep 02	0940 E	0942 U	1015 D	274-276	0.80	H-alpha	S
KHAR	Sep 02	1005 E		1025	255	1.0	H-alpha	S
KHAR	Sep 02	1025 E	1026 U	1035	274-276	0.80	H-alpha	S
KHAR	Sep 02	1030 E		1040 D	263	1.0	H-alpha	S
KHAR	Sep 04	0830 E		1000 D	227	1.0	H-alpha	S
KHAR	Sep 08	0820	0831 U	0905 D	044-050	0.50	H-alpha	S
KHAR	Sep 08	0920 E	0925 U	0935	035-038	0.53	H-alpha	S
KHAR	Sep 08	0935 E		0950	044-050	0.50	H-alpha	S
KHAR	Sep 08	1032 E	1035 U	1055 D	044-048	0.54	H-alpha	S
KHAR	Sep 09	0920 E		0956 D	260	1.0	H-alpha	S
KHAR	Sep 11	0846 E		0903 D	306-311	0.52-0.56	H-alpha	S
KHAR	Sep 18	0806	0816 U	0829	271	1.0	H-alpha	S

QUALIFIERS ON START, MAX AND END TIMES
D = event ended after tabulated time
E = event began before the tabulated time
U = uncertain time

REPORTING STATIONS
KHAR = Kharkov

TYPE OF EVENT
A = eruptive active region prominence
CB = coronal cloud bubble
D = coronal depletions
E = coronal enhancement
EL = coronal expanding loop
II = Type II radio burst
IVm = moving Type IV radio burst
Q = eruptive quiescent prominence
R = coronal ray or streamer
S = flare-surge if there is a known flare association
SP = flare-spray if there is a known flare association
* = movement may be caused by ionospheric refraction

ACTIVE PROMINENCES AND FILAMENTS

SEPTEMBER 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMP	Mo	Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
01	ADF	0620E	0922D	S36	W35	08	29.5	2	16	6	6	E	LEAR		
01	AFS	1123E	1123D	S33	W19	08	31.0		02	5	5	E	RAMY		
02	DSD	0814	0900	N05	W51	08	29.6	1	V				KHAR		
02	SDF	0834E	0919D	N05	W49	08	29.8		02	9	9	E	LEAR	4744	
02	DSD	0910	0930D	N05	W51	08	29.7	1	V				KHAR		
02	DSD	0940E	1015D	N10	W53	08	29.5	1	V				KHAR		
02	BSL	1005E	1025	S15	W90	08	26.7	1	V				KHAR		
02	DSD	1025E	1035	N10	W53	08	29.5	1	V				KHAR		
02	BSL	1030E	1040D	S07	W90	08	26.8	1	V				KHAR		
02	DSD	1042E	1056	N05	W50	08	29.8		01	9	9	E	SVI	4744	
02	DSD	1130E	2139D	N03	W52	08	29.7	2	02	6	9	E	RAMY	4744	
02	DSD	1343E	1617D	N04	W52	08	29.8		04	9	9	E	SVI	4744	
03	AFS	0205E	0413D	N06	W58	08	29.8		01	9	9	E	PALE	4744	
03	AFS	0809E	0935D	N01	E22	09	5.0		02	9	9	E	LEAR		
03	AFS	0945E	1301D	N02	E20	09	4.9		02	6	6	E	SVI		
03	ADF	1145E	1852D	N04	W63	08	29.9	1	04	7	7	E	RAMY	4744	
03	SSB	1954		335	W68	08	31.7			0	0	E	HOLL		
03	ADF	1958E	2356D	N03	W67	08	29.9	1	06	5	5	E	HOLL	4744	
04	ASR	0741E	0914D	S06	W90	08	28.7			8	8	E	LEAR		
04	ADF	0800E	0914D	S12	W31	09	2.0	1	05	9	9	E	LEAR		
04	BSL	0830E	1000D	S43	W90	08	28.0	1	V				KHAR		
04	SDF	0900E	2335D	S12	W31	09	2.0		05	9	9	E	LEAR		
04	SSB	1405		335	W78	09	1.3			0	0	E	HOLL		
04	ADF	1446E	1750D	N02	E05	09	5.0	1	03	7	6	E	HOLL		
04	ADF	1450E	1654D	N04	E06	09	5.1	1	03	8	7	E	SVI		
04	ASR	1520	1546D	N02	W82	08	29.6			9	9	E	HOLL	4744	
04	ADF	1625E	2050D	N04	E03	09	4.9	2	02	6	5	E	RAMY		
04	SDF	1750E	1750D	N02	E05	09	5.1		03	0	0	E	HOLL		
05	ASR	0327E	0426D	N06	W90	08	29.5			9	9	E	LEAR	4744	
05	ADF	0820E	1012D	S09	W33	09	2.9	1	04	7	9	E	SVI		
05	ADF	1427E	2125D	N02	W09	09	4.9	2	05	4	5	E	RAMY		
05	AFS	1805E	0015D	S20	W09	09	5.1		01	9	9	E	PALE		
06	AFS	0525E	0735D	N28	E49	09	10.0		02	9	9	E	LEAR		
06	DSD	1116E	1334D	N28	E47	09	10.1		02	9	9	E	SVI		
06	ADF	1226E	1321D	N28	E44	09	9.9		03	9	9	E	SVI		
06	ADF	1330E	1411D	N31	E45	09	10.1		02	9	7	E	SVI		
06	AFS	1402E	0115D	N28	E43	09	9.9		02	9	9	E	HOLL		
06	DSD	1511E	1629D	N28	E44	09	10.1		02	9	9	E	SVI		
06	ADF	1724E	2208D	N28	E44	09	10.2	2	02	9	9	E	PALE	4745	
06	AFS	1724E	2208D	N29	E43	09	10.1		01	9	9	E	PALE	4745	
06	AFS	1800E	2135D	N28	E44	09	10.2		02	9	9	E	RAMY	4745	
06	ADF	1800E	2135D	N29	E44	09	10.2	2	02	9	9	E	RAMY	4745	
06	DSD	1958E	0055D	N29	E43	09	10.2		02	9	8	E	HOLL	4745	
06	DSD	2020E	2020D	N29	E43	09	10.2		02	7	8	E	RAMY	4745	
07	AFS	0020E	0924D	N26	E38	09	10.0		02	9	9	E	LEAR	4745	
07	AFS	0238E	0924D	N28	E38	09	10.1		02	9	9	E	LEAR	4745	
07	DSD	0406E	0725D	N27	E39	09	10.2		03	9	9	E	LEAR	4745	
07	DSD	0610E	0800D	N28	E36	09	10.1		04	9	9	E	SVI	4745	
07	ADF	1010E	1035D	N30	E42	09	10.7	1	V				KHAR		
07	DSD	1146E	1951D	N29	E30	09	9.8	2	03	9	9	E	RAMY	4745	
07	DSD	1423E	1432D	N30	E33	09	10.2		02	9	9	E	SVI	4745	
07	ADF	1427E	2047D	N28	E27	09	9.7	2	03	7	8	E	RAMY	4745	
07	DSD	1614E	1639D	N28	E33	09	10.2		02	9	9	E	SVI	4745	
08	DSD	0820	0905D	N26	E24	09	10.2	1	V				KHAR		
08	DSD	0920E	0935	N30	E22	09	10.1	1	V				KHAR		
08	DSD	0935E	0950	N26	E24	09	10.3	1	V				KHAR		
08	DSD	1032E	1055D	N27	E26	09	10.5	1	V				KHAR		
08	DSD	1044E	1145D	N29	E23	09	10.2		05	9	9	E	SVI	4745	
08	AFS	1226E	1310D	N28	E19	09	10.0		02	7	8	E	RAMY	4745	
08	AFS	1532E	2140D	N06	E10	09	9.4		02	9	9	E	RAMY		
08	AFS	1553E	1740D	N06	E09	09	9.3		01	9	9	E	HOLL		
08	AFS	1628E	2140D	N28	E17	09	10.0		02	7	7	E	RAMY	4745	
08	AFS	1756E	0332D	N31	E20	09	10.3		02	9	9	E	PALE	4745	
08	DSD	1904E	1949D	N30	E19	09	10.3	2	02	9	9	E	RAMY	4745	

ACTIVE PROMINENCES AND FILAMENTS

SEPTEMBER 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
08	AFS	1905E	0332D	N06	E08	09	9.4		03	9	9	E	PALE		
08	AFS	2214E	0113D	N05	E05	09	9.3		01	9	9	E	HOLL		
08	AFS	2340E	0929D	N05	E04	09	9.3		01	8	9	E	LEAR		
09	AFS	0554E	0852D	N05	E00	09	9.2	1	02	9	8	E	XXX		
09	AFS	0700E	0929D	N28	E08	09	9.9		03	7	5	E	LEAR	4745	
09	BSL	0920E	0956D	S10	W90	09	2.6	1	V				KHAR		
09	AFS	1330E	1535D	N29	E03	09	9.8		01	8	7	E	HOLL	4745	
09	AFS	1330E	2201D	N29	E04	09	9.9		02	5	7	E	RAMY	4745	
09	AFS	1340E	1550D	N29	E03	09	9.8		02	6	8	E	SVI	4745	
09	ADF	2030E	2048D	N04	E04	09	10.1	2	08	9	9	E	HOLL	4444	
09	ADF	2036E	2044	S16	W16	09	8.6	1	09	9	8	E	HOLL	4444	
10	ADF	1420E	1545D	N27	W17	09	9.3	2	04	6	5	E	RAMY	4745	
10	AFS	1450E	2107D	N29	W09	09	9.9		03	4	5	E	RAMY	4745	
10	SDF	1545E	1700D	N25	W17	09	9.3	2	04	0	0	E	RAMY	4745	
10	AFS	2200E	2200D	N02	E05	09	11.3	1	03	9	9	E	HOLL		
10	SDF	2205	2205	N20	E10	09	11.7	2	10	3	3	E	HOLL		
10	SDF	2205	2205	N20	E10	09	11.7	2	10	3	3	E	HOLL		
11	DSD	0846E	0903D	N27	W27	09	9.3	1	V				KHAR		
13	ASR	0545E	0625D	S02	W90	09	6.5			9	9	E	LEAR		
14	BSL	0556E	0705D	S35	W90	09	7.0	1	C				ABST		
14	BSL	0556E	0705D	S44	E90	09	21.7	1	C				ABST		
14	AFS	1358E	1631D	N02	W75	09	9.0		02	9	9	E	SVI		
14	DSD	1921E	2008D	N03	W77	09	9.0	1	02	8	8	E	HOLL		
14	ASR	2008E	2038D	N03	W75	09	9.2	1		8	7	E	HOLL		
15	ASR	0401E	0845D	N07	W90	09	8.4			9	9	E	LEAR		
15	BSL	0610E	0648D	S30	W90	09	8.2	1	C				ABST		
15	BSL	0610E	0648D	S40	E90	09	22.6	1	C				ABST		
15	SDF	0933E	2334D	N39	W56	09	10.8		06	0	0	E	LEAR		
15	ASR	1255E	2024D	N05	W90	09	8.8			9	9	E	RAMY		
15	ASR	1324E	2356D	N06	W90	09	8.8			9	9	E	HOLL		
15	SDF	1430E	1403D	N29	W56	09	11.2		06	0	0	E	HOLL		
15	SDF	1430E	1430D	S42	E45	09	19.3		07	0	0	E	HOLL		
15	ASR	1915E	0313D	N06	W90	09	9.1			9	9	E	PALE		
15	BSL	2205E	2220	N07	W90	09	9.2	1	C				VORO		
15	BSL	2213	2236	N06	W90	09	9.2	1	C				VORO		
15	BSL	2232	2253	N25	W90	09	9.0	1	C				VORO		
15	BSL	2256	2332	N05	W90	09	9.2	1	C				VORO		
15	ASR	2330E	0525D	N07	W90	09	9.2			9	9	E	LEAR		
15	BSL	2338	2352	N07	W90	09	9.2	1	C				VORO		
15	BSL	2359	0010	N08	W90	09	9.2	1	C				VORO		
16	ADF	0644E	0930D	N02	W18	09	14.9	2	04	9	8	E	LEAR		
16	SDF	1206E	1206D	N03	W20	09	15.0		04	0	0	E	SVI		
17	APR	0516E	0702D	N29	W90	09	10.2	1	C				ABST		
17	ADF	1024E	1340D	N16	E30	09	19.7	1	04	5	5	E	SVI		
17	AFS	1132E	1625D	S21	W17	09	16.2		02	8	8	E	SVI		
17	ADF	1453E	2058D	N18	E26	09	19.6		14	4	6	E	HOLL		
17	ADF	1500E	1500D	N18	E25	09	19.5	1	04	3	3	E	RAMY		
18	BSL	0507E	0703D	N23	E90	09	25.1	1	C				ABST		
18	BSL	0806E	0829D	N01	W90	09	11.6	1	V				KHAR		
18	ADF	1209E	1955D	N29	E07	09	19.0	2	01	7	9	E	RAMY		
21	AFS	1912E	1934D	N08	W23	09	20.1		01	7	8	E	HOLL		
21	ADF	2340E	0924D	N07	E53	09	25.9	2	11	9	6	E	LEAR		
22	ADF	0012E	0049D	N09	E53	09	26.0	1	11	4	5	E	HOLL		
22	ADF	1348E	1718D	N10	E46	09	26.0	2	11	9	6	E	RAMY		
22	SDF	2001E	2302D	N06	E40	09	25.8		05	0	0	E	HOLL		
22	ADF	2340E	0929D	N08	E40	09	26.0	2	13	8	4	E	LEAR		
23	ADF	0120E	0351D	N01	E39	09	26.0	1	03	7	7	E	PALE		
23	ADF	1136E	1855D	N09	E33	09	25.9	2	02	7	8	E	RAMY		
24	ADF	1430E	1847D	N10	E18	09	25.9	2	11	8	5	E	RAMY		

ACTIVE PROMINENCES AND FILAMENTS

SEPTEMBER 1986

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
24	ADF	1747E	2142D	S02	E15	09	25.9	2	04	9	7	E	HOLL		
24	SDF	1750E	1340D	N10	E04	09	25.0		10	0	0	E	HOLL		
24	ADF	1824E	0401D	S02	E15	09	25.9	2	02	9	9	E	PALE		
24	AFS	2321E	0051D	N11	E66	09	29.9	1	03	8	9	E	HOLL		
24	AFS	2330E	0035D	N08	E66	09	29.9		02	9	9	E	LEAR		
25	SDF	0401E	1804D	S08	E12	09	26.1		03	0	0	E	PALE		
25	SDF	0800E	0830D	N06	E08	09	25.9		05	0	0	E	SVI		
25	SDF	0933E	2330D	N08	E00	09	25.4		06	0	0	E	LEAR		
26	AFS	0710E	1513D	N16	E58	09	30.7		01	9	9	E	SVI		
26	SDF	0913E	0926D	N01	W06	09	25.9	2	11	6	4	E	LEAR		
26	ADF	1330E	1554D	N10	W11	09	25.7	1	10	7	7	E	RAMY		
26	ADF	1335E	1450D	S03	W11	09	25.7	1	09	7	8	E	HOLL		
26	SDF	1435E	1450D	S04	W17	09	25.3		04	0	0	E	HOLL		
26	SSB	1600		326	W10	09	24.7			0	0	E	HOLL		
26	SDF	1610E	2039D	N05	W14	09	25.6		07	0	0	E	RAMY		
26	SDF	1715E	1740D	N07	W11	09	25.9		08	0	0	E	HOLL		
27	SDF	0048E	1435D	S05	W25	09	25.2		08	0	0	E	HOLL		
27	SDF	0557E	0557D	N01	W06	09	26.8		14	0	0	E	SVI		
28	ADF	1210E	2200D	N10	W35	09	25.9	2	05	7	6	E	RAMY		
28	APR	2229E	0114	S46	W90	09	21.4	1	C				VORO		
29	ASR	2257E	2331D	N32	E90	10	7.1			9	9	E	HOLL		
30	ADF	1240E	2058D	N06	W15	09	29.4	2	06	6	6	E	RAMY		
30	SDF	2058E	1600D	N07	W31	09	28.5		06	0	0	E	RAMY		

ADF = Active Dark Filament
AFS = Arch Filament System
APR = Active Prominence
ASR = Active Surge Region
BSD = Bright Surge on Disk
BSL = Bright Surge on Limb
CAP = CAP Prominence (Tandberg-Hanssen)
CRN = Coronal Rain
DSD = Dark Surge on Disk
EPL = Eruptive Prominence on Limb
LPS = Loops
MDP = Mound Prominence
SDF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

For SOLAR SECTOR BOUNDARY REPORTS, the latitude field contains the Carrington longitude of the point where a neutral line crosses the solar equator. The comments field may contain the Carrington longitude and central meridian distance of two more intersection points.

The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

The remark "Bright Emission 1/3" indicates that bright emission was observed 1/3 of time.
The remark "Normal Emission 1/3" indicates that normal emission was observed 1/3 of time.

Observation Type: C= Cinematographic, E= Electronic, P= Photographic, V= Visual.

C O N T E N T S

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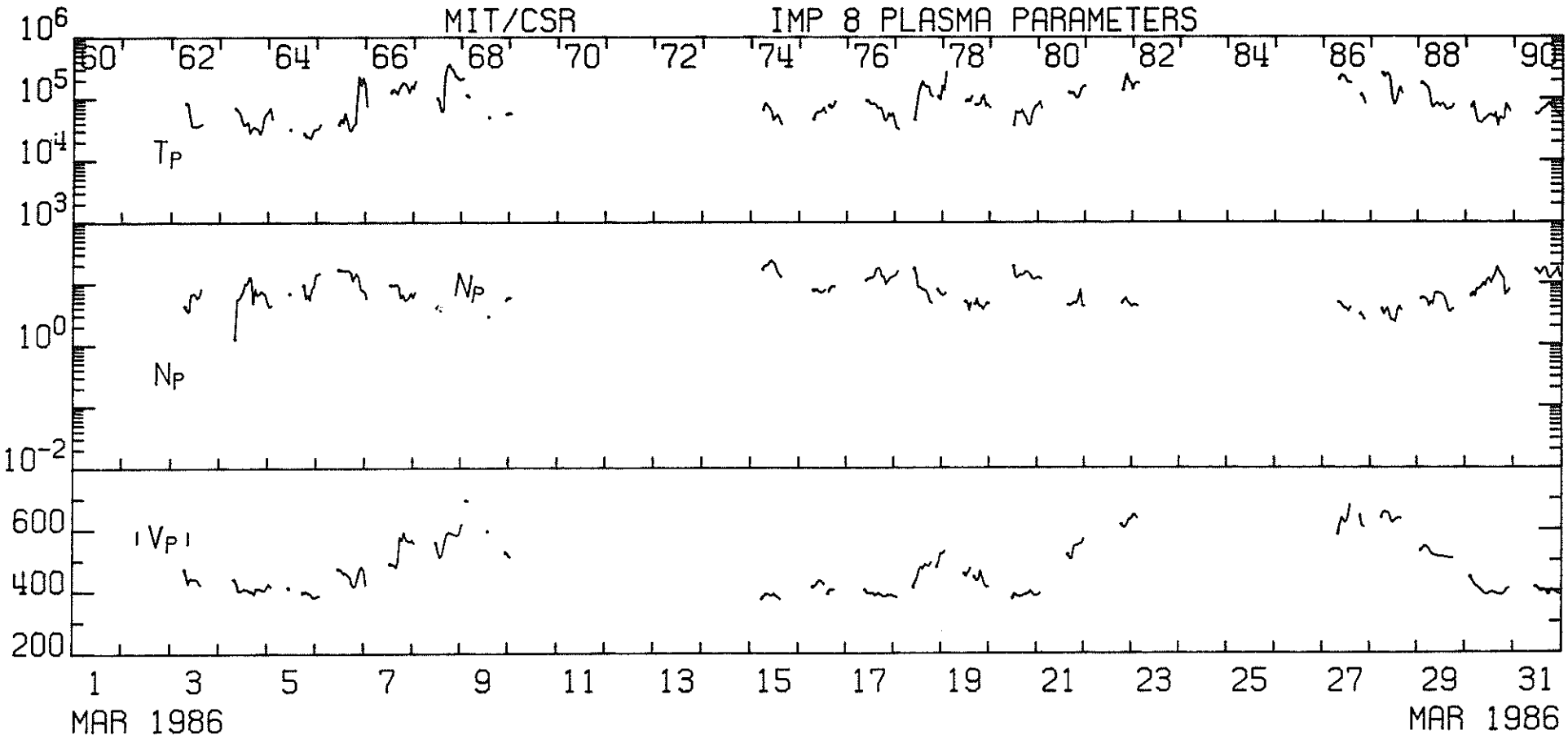
INTERPLANETARY SOLAR PLASMA
IMP 8 Solar Wind March-October 1986. 26-33

IMP 8 Interplanetary Magnetic Field Data (GSFC) 15 March-16 June 1986. . 34-82
(PROMIS SERIES Volume 5, NSSDC)

IMP 8 SOLAR WIND PLASMA

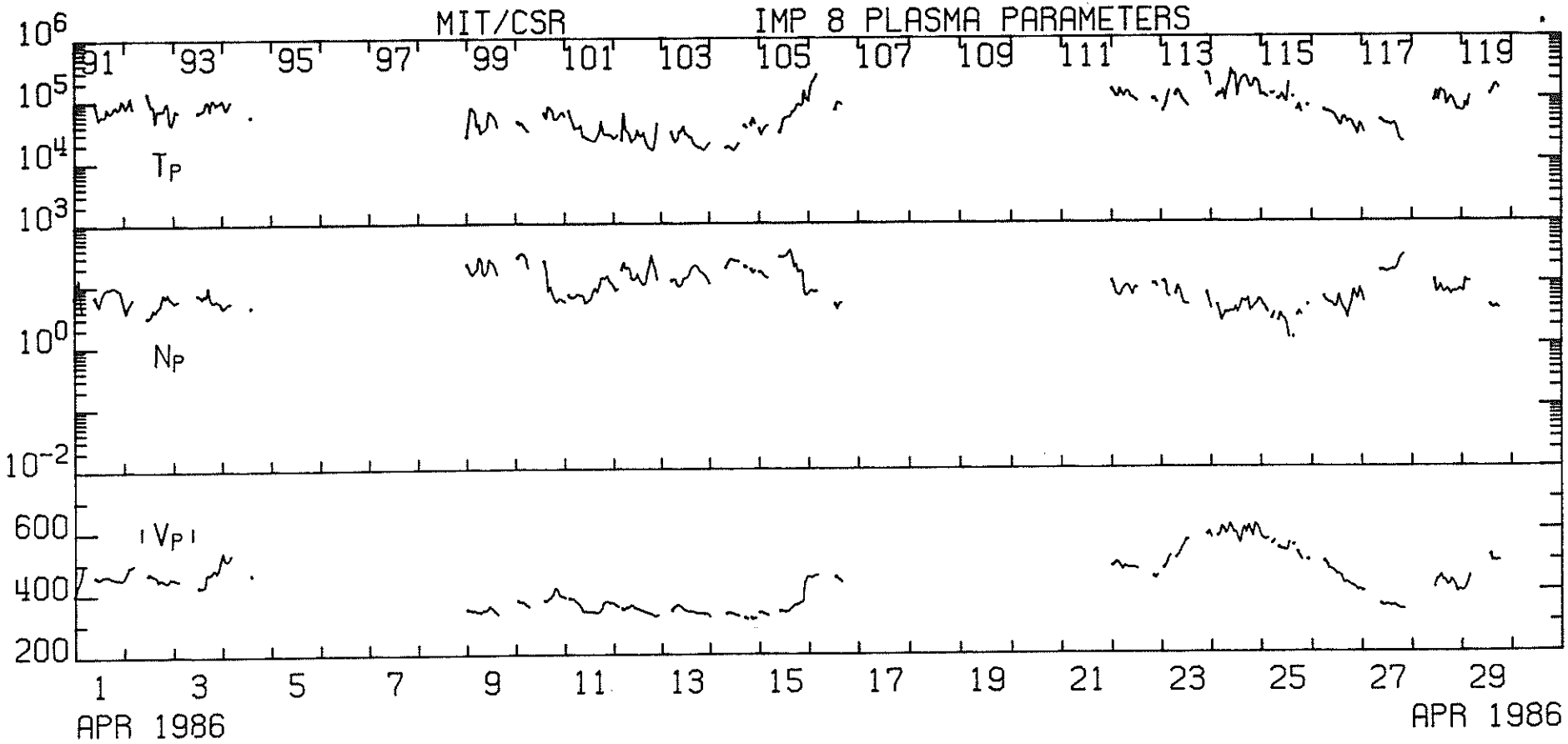
MARCH 1986



MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

IMP 8 SOLAR WIND PLASMA

APRIL 1986

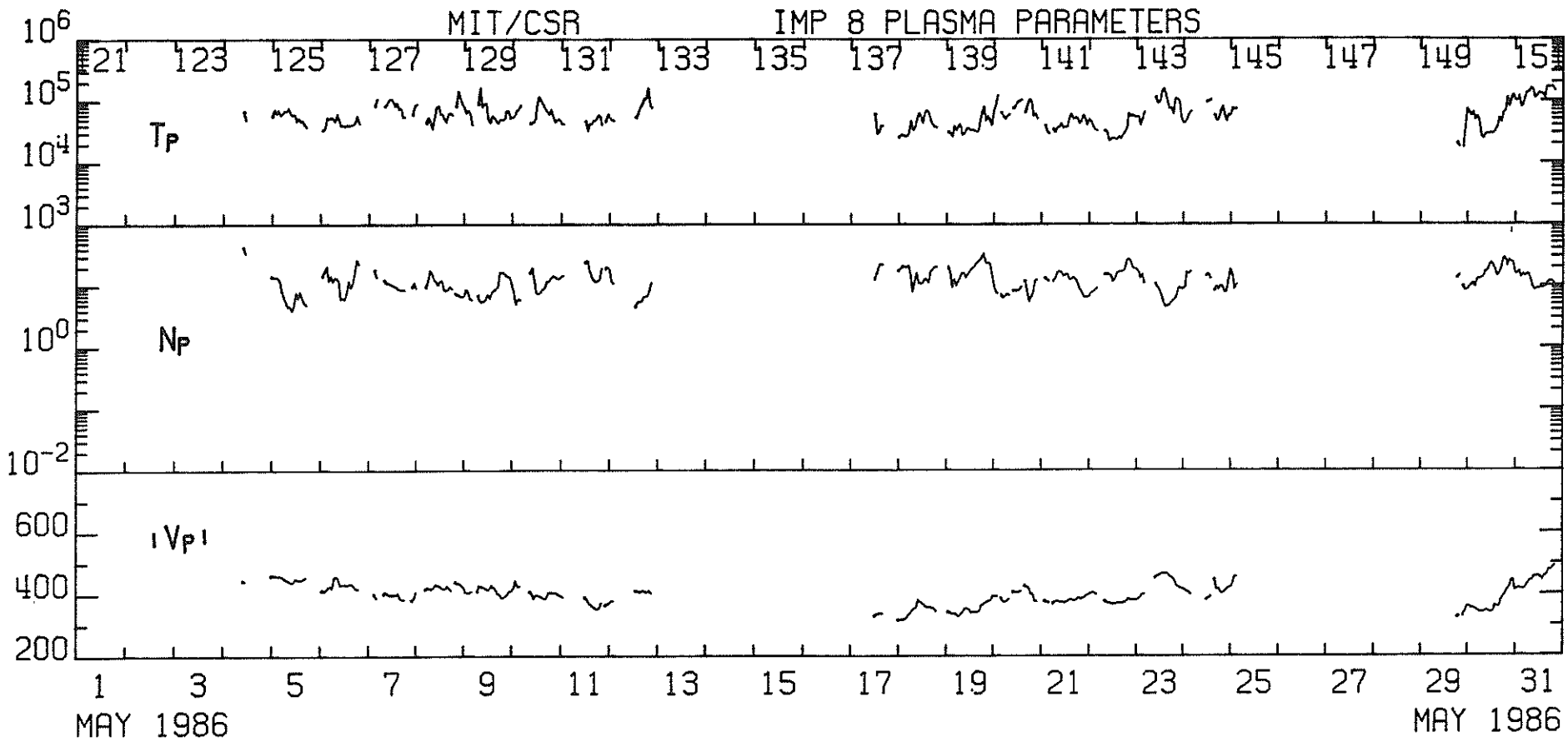


MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

27
Late
Apr 86

IMP 8 SOLAR WIND PLASMA

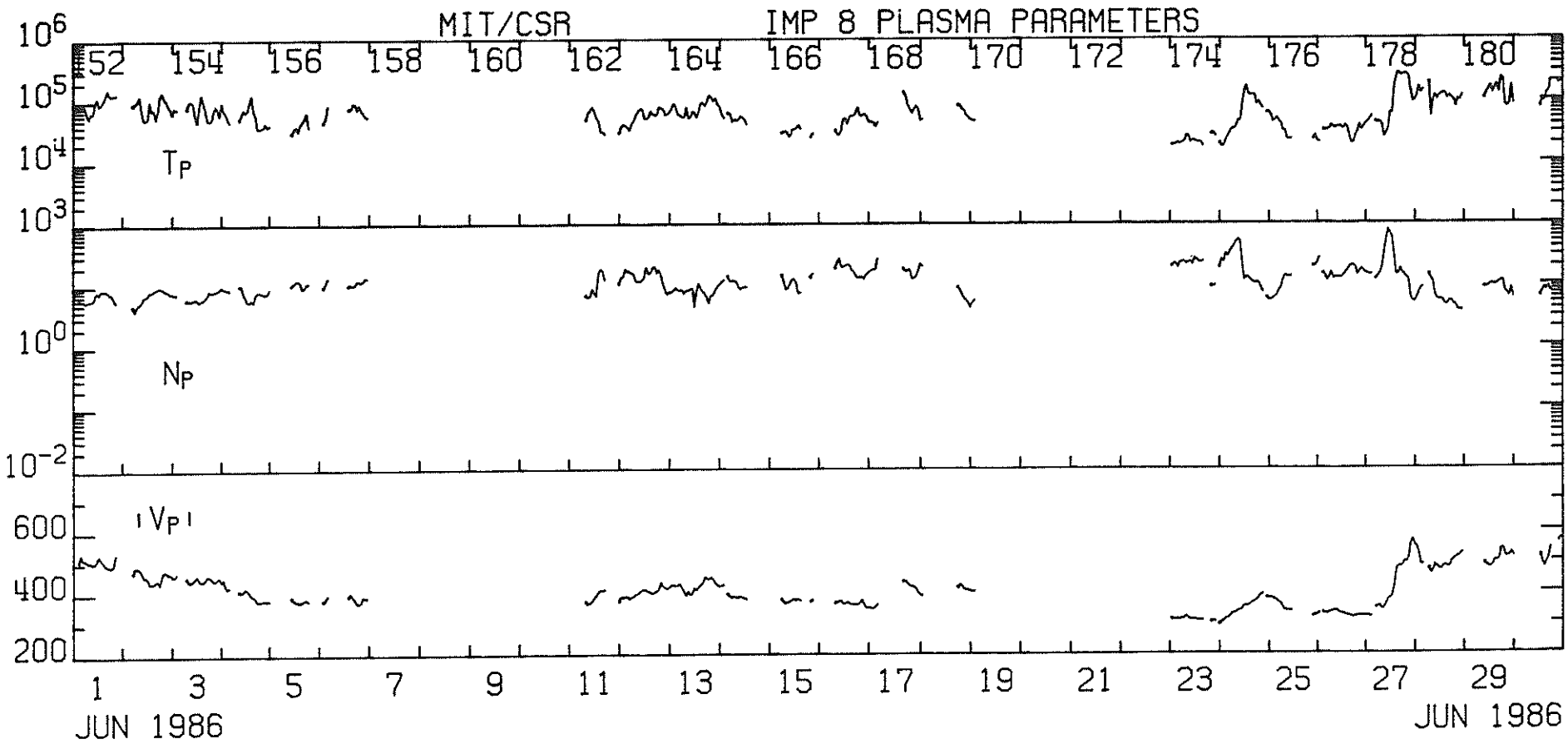
MAY 1986



MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

IMP 8 SOLAR WIND PLASMA

JUNE 1986

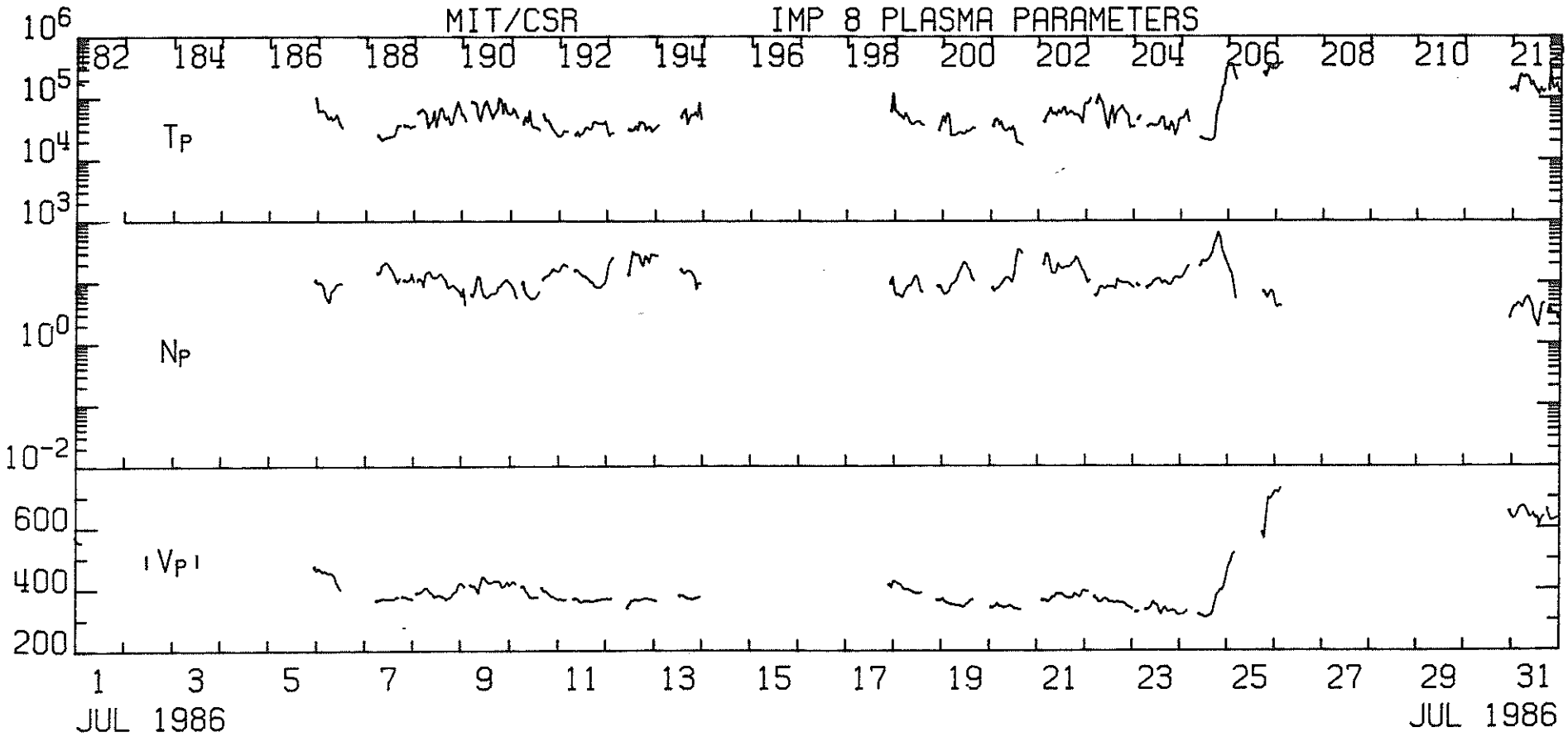


MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

29
Late
Jun 86

IMP 8 SOLAR WIND PLASMA

JULY 1986



MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

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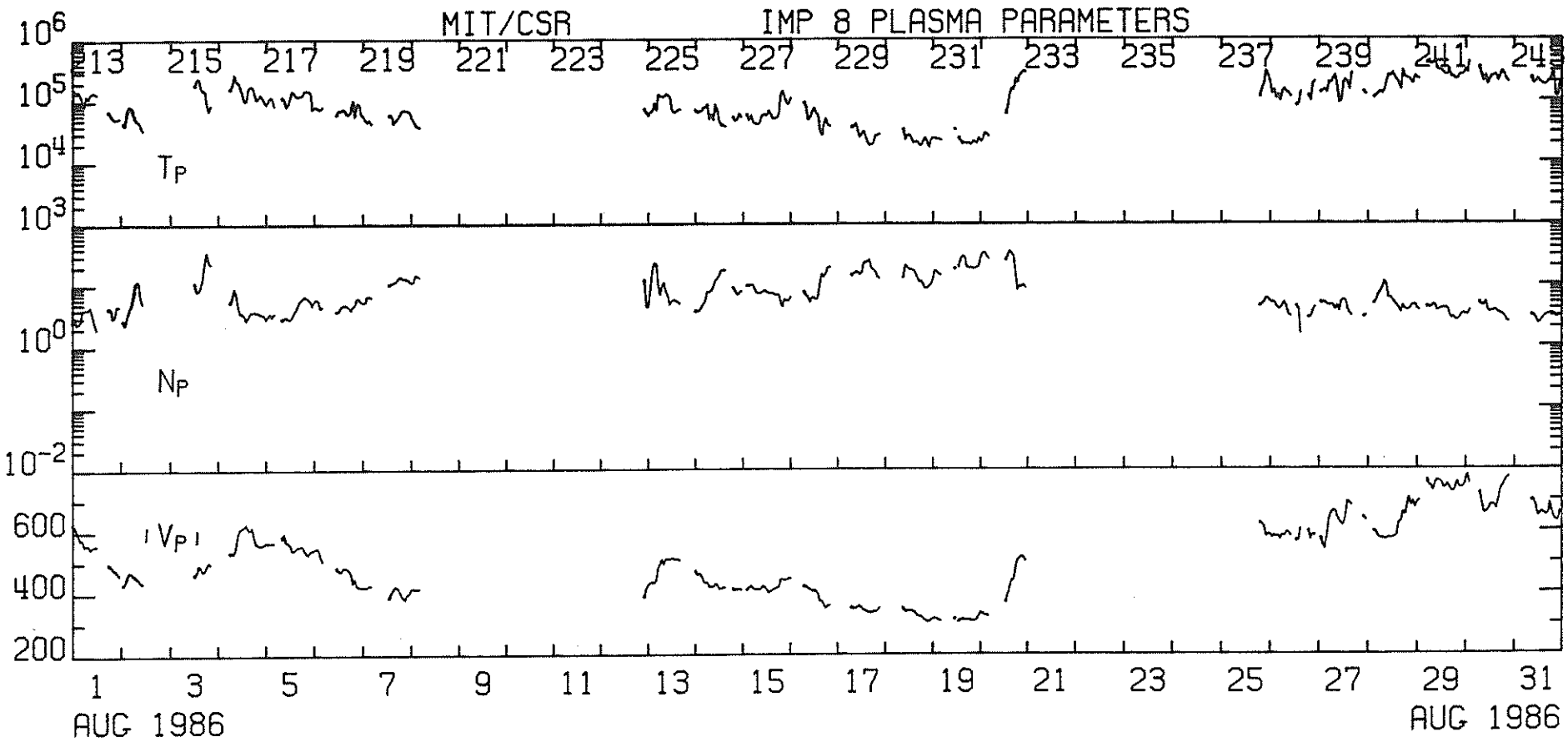
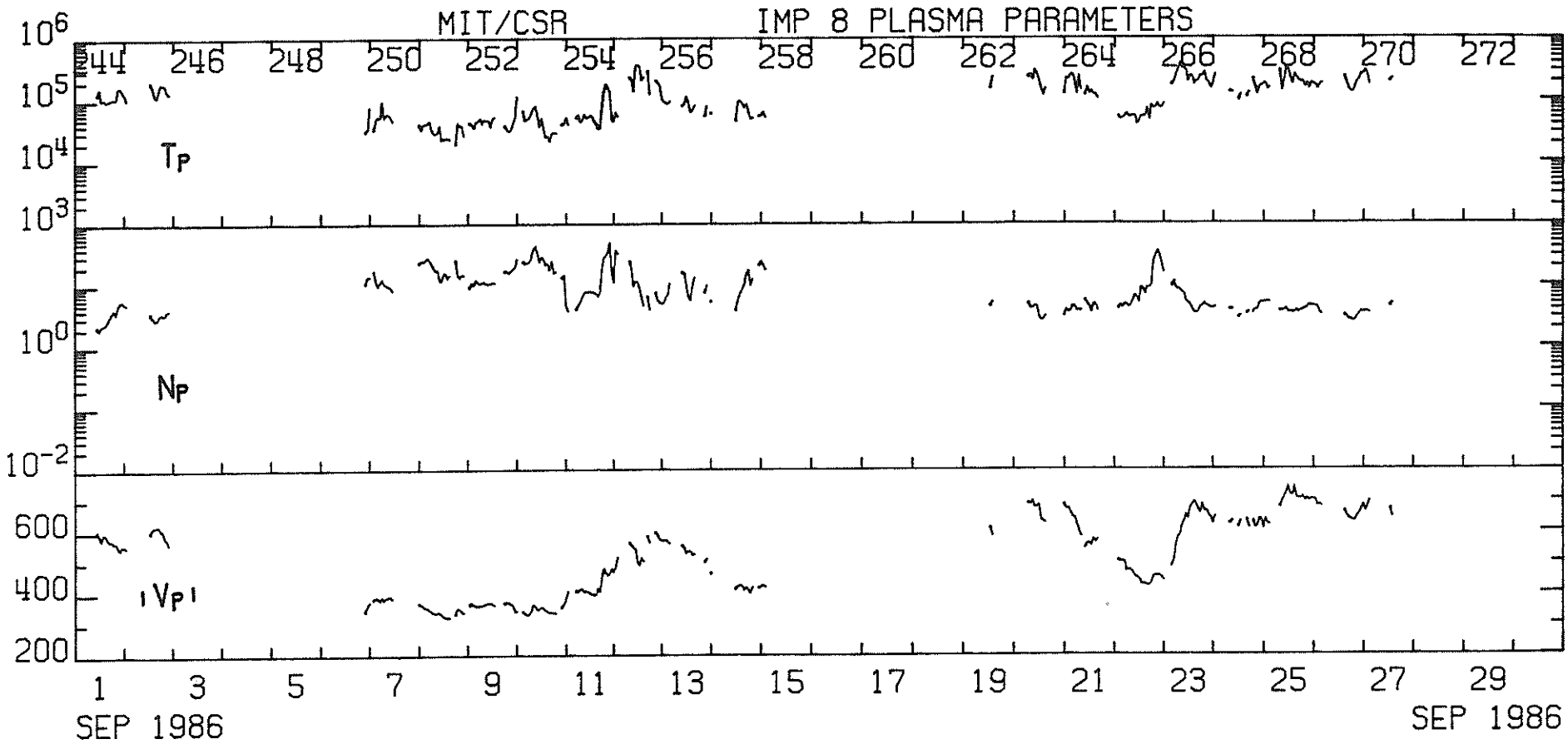


MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

31
Late
Aug 86

IMP 8 SOLAR WIND PLASMA

SEPTEMBER 1986



MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

IMP 8 SOLAR WIND PLASMA

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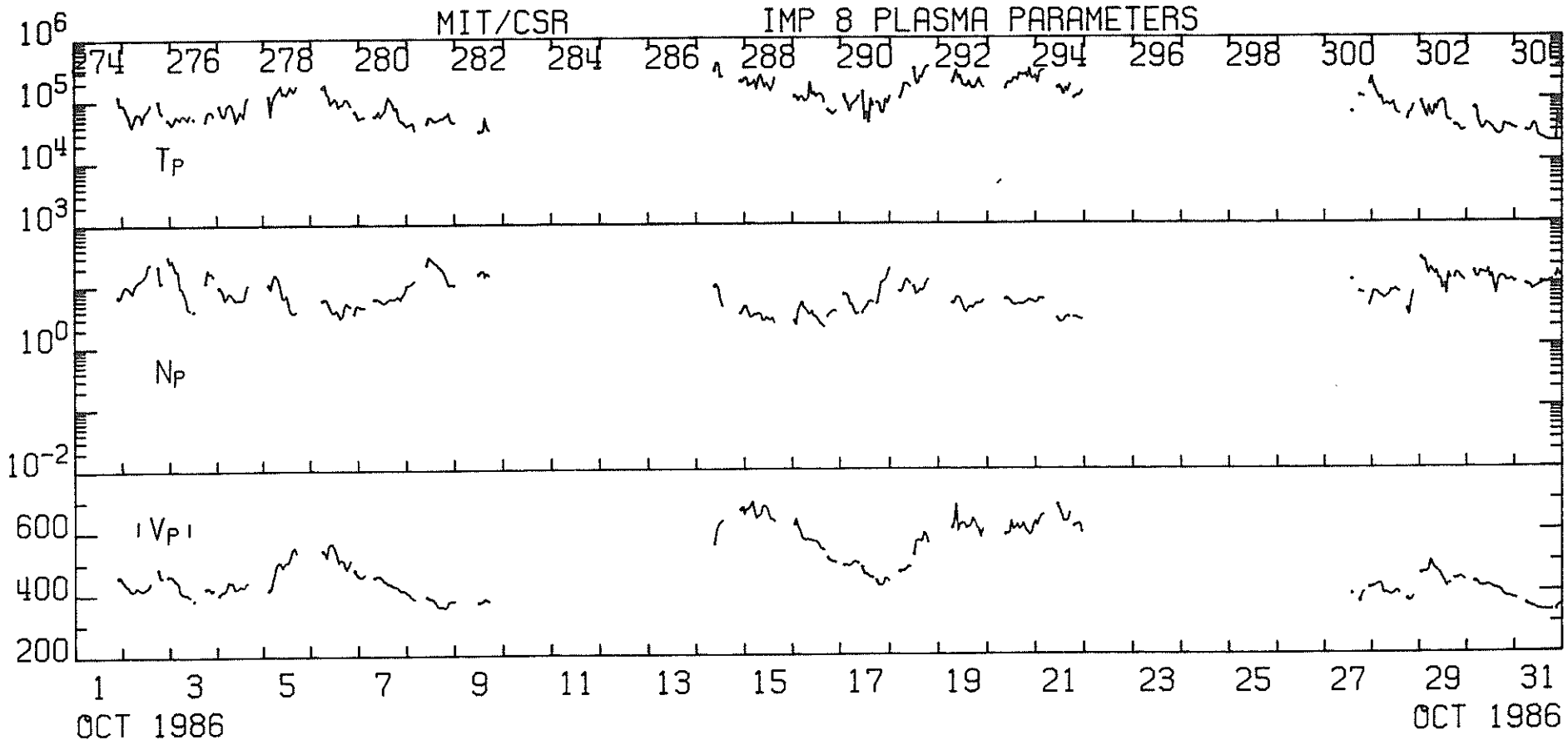


MIT 03/09/87 PRELIMINARY ONE-HOUR AVERAGES

34

NSSDC NATIONAL SPACE SCIENCE DATA CENTER

WORLD DATA CENTER A for ROCKETS AND SATELLITES 87-02

EDITOR'S NOTE: Permission to reprint these data was kindly granted by J.H. King, NSSDC. Please note that the figures printed here are reduced. The original report has one day's graph per page. Please contact J.H. King, NSSDC, NASA GSFC, Code 633, Greenbelt, MD 20771 USA if you need the original report.

PROMIS SERIES

VOLUME 5

IMP 8 Interplanetary Magnetic Field Data (GSFC)

R.P. Lepping, C.M. Wong, and J.H. King

January 1987

FOREWORD

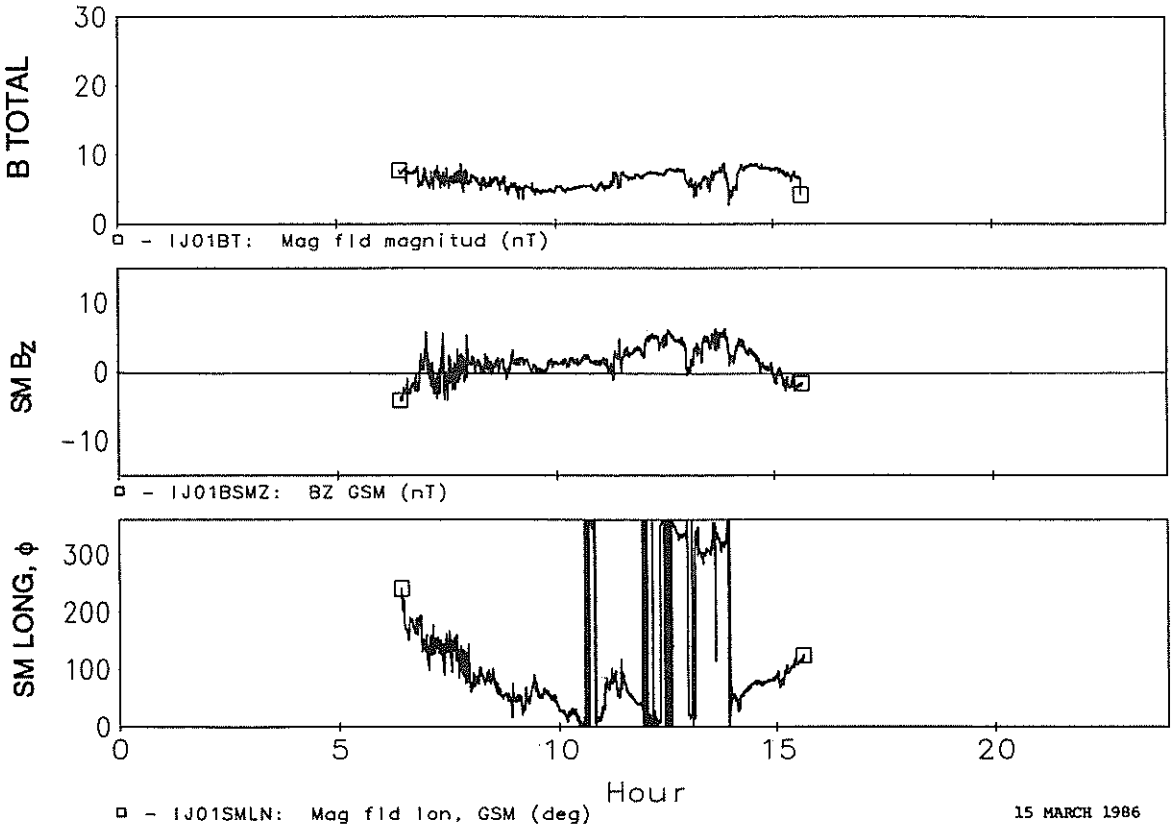
This is the fifth of the series of volumes published by the NSSDC/WDC-A pertaining to the Polar Region Outer Magnetosphere International Study (PROMIS) period, March 29-June 16, 1986. The plots in this volume begin on March 15.

The magnetometer on board IMP 8, launched on October 26, 1973, consists of two fundamental units: (1) the basic magnetic field sensing head (at the end of an 11-foot boom), which is a three-axis saturable core fluxgate, and (2) a processor which controls the instrument, converts analog to digital signals, and encodes the data efficiently. The instrument is now operating in a fixed range of ± 36 nT full scale, and analog signals are quantized to 8-bit/axis digital data words, so that the quantization step size is ± 0.14 nT per axis. The magnetic field data is presented here in the form of 15.36-averages for the period March 15 to June 16, 1986, in spacecraft centered solar magnetospheric (SM) coordinates. They are displayed as B TOTAL, SM LONG, Φ, and SM B_Z, where B TOTAL is the magnitude, Φ is the longitude, measured in the SM X-Y plane such that $\Phi=0°$ is sunward, and B_Z is the Z-component of the field. The data processing system, and other characteristics of this experiment, are described by Mish and Lepping, NASA-GSFC X 695-76-158, August 1976.

Dates and hours of bow shock crossings were identified with the help of the plasma data (MIT) and were published in Volume 4 of this series, which contains plots of plasma parameters. The observed crossing times agree satisfactorily with predictions based on a model magnetosphere; the predicted times are listed in Volume 1 of this series. The bow shock crossing times that were identified in the plasma data are well corroborated by the magnetic field data in this volume. (The solar wind side of the bow shock is marked by the lower field intensity.) The crossing times are reproduced here, for convenience.

	Day/Hour of Crossings Observed in Plasma Data	Day/Hour of Predicted Crossing
1)	Between Mar. 14/12 and Mar. 15/06*	N/A
2)	Mar. 23/04	N/A
3)	Mar. 27/07 (10?)	Mar. 27/11
4)	Apr. 04/15	Apr. 04/11
5)	Between Apr. 08/19 and Apr. 09/00*	Apr. 09/00
6)	Multiple Apr. 16/19, Apr. 17/04	Apr. 17/01
7)	Between Apr. 21/12 and Apr. 22/00*	Apr. 21/18
8)	Apr. 29/19	Apr. 29/20
9)	May 04/10	May 04/14
10)	Between May 12/22 and May 13/18*	May 12/18
11)	May 17/08	May 17/07
12)	May 25/16	May 25/11
13)	Between May 29/15 and May 29/18*	May 29/17
14)	Multiple June. 07/00, June. 07/04	Jun. 06/21
15)	Between Jun. 10/14 and Jun. 11/08*	Jun. 10/21

(*Crossing occurred during data gap)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- IJ01BT: Mag fld magnitud (nT)
SM Bz
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- IJ01BSMZ: BZ GSM (nT)
SM LONG, φ
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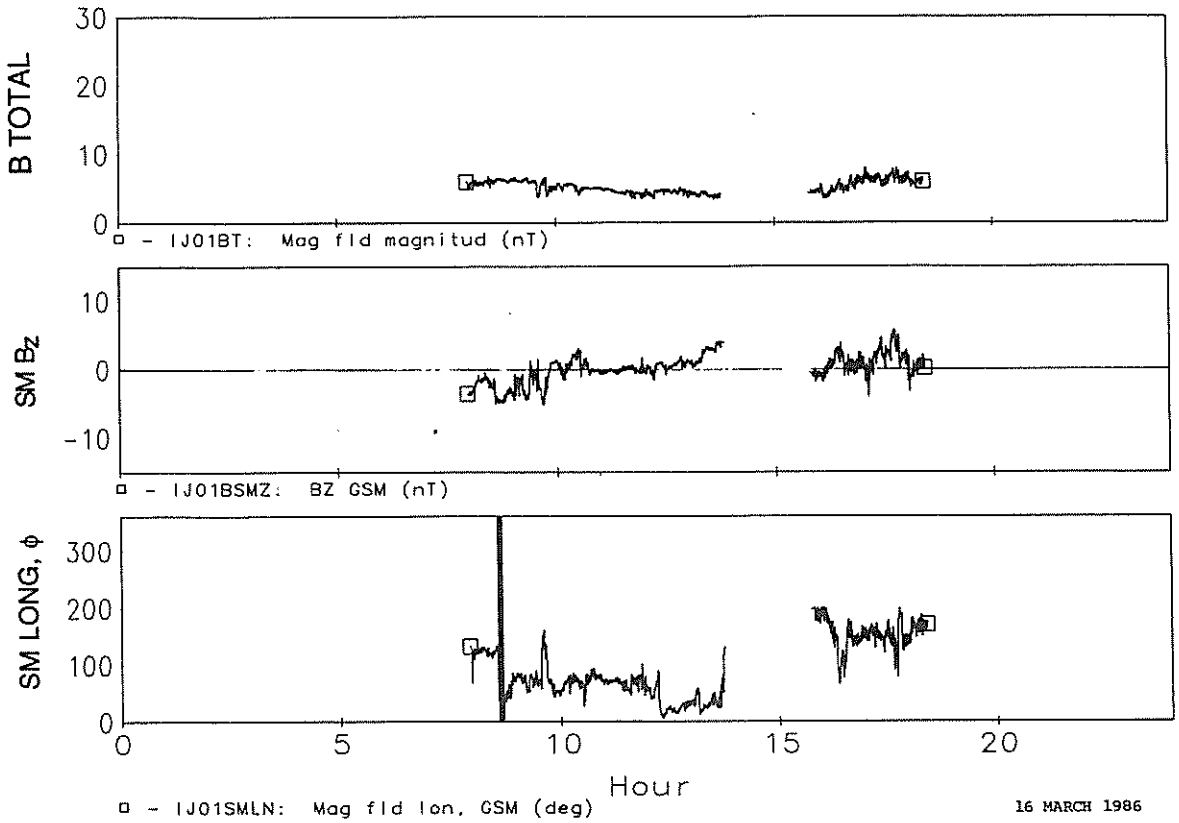
Hour
- IJ01SMLN: Mag fld lon, GSM (deg)
15 MARCH 1986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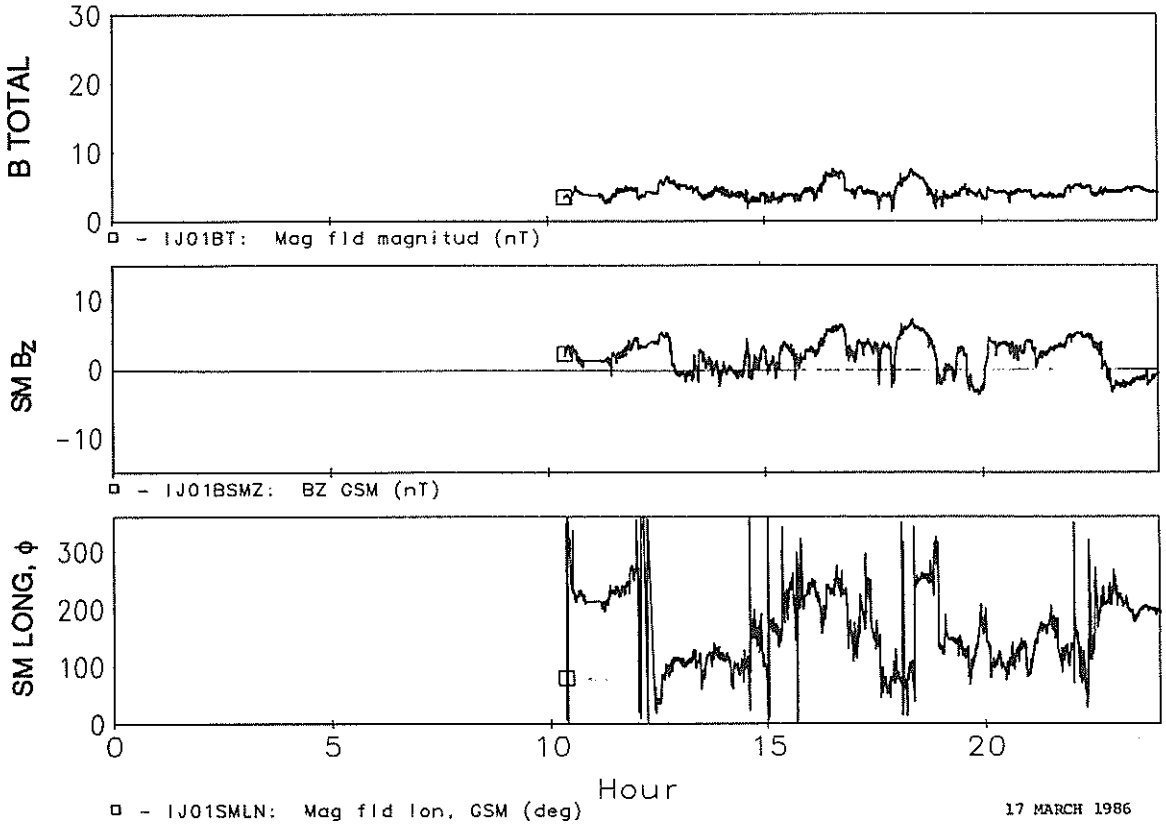
- IJ01SMLN: Mag fld lon, GSM (deg)
16 MARCH 1986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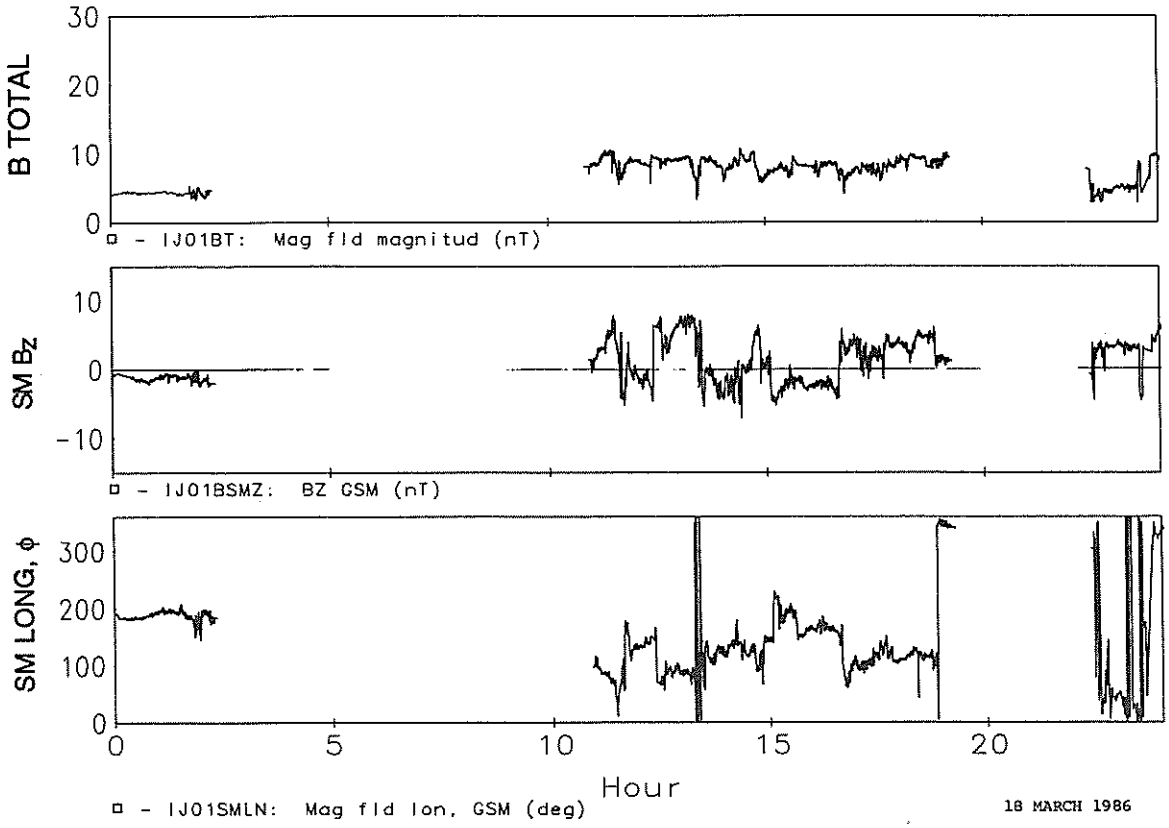
- IJ01SMLN: Mag fld lon, GSM (deg)
17 MARCH 1986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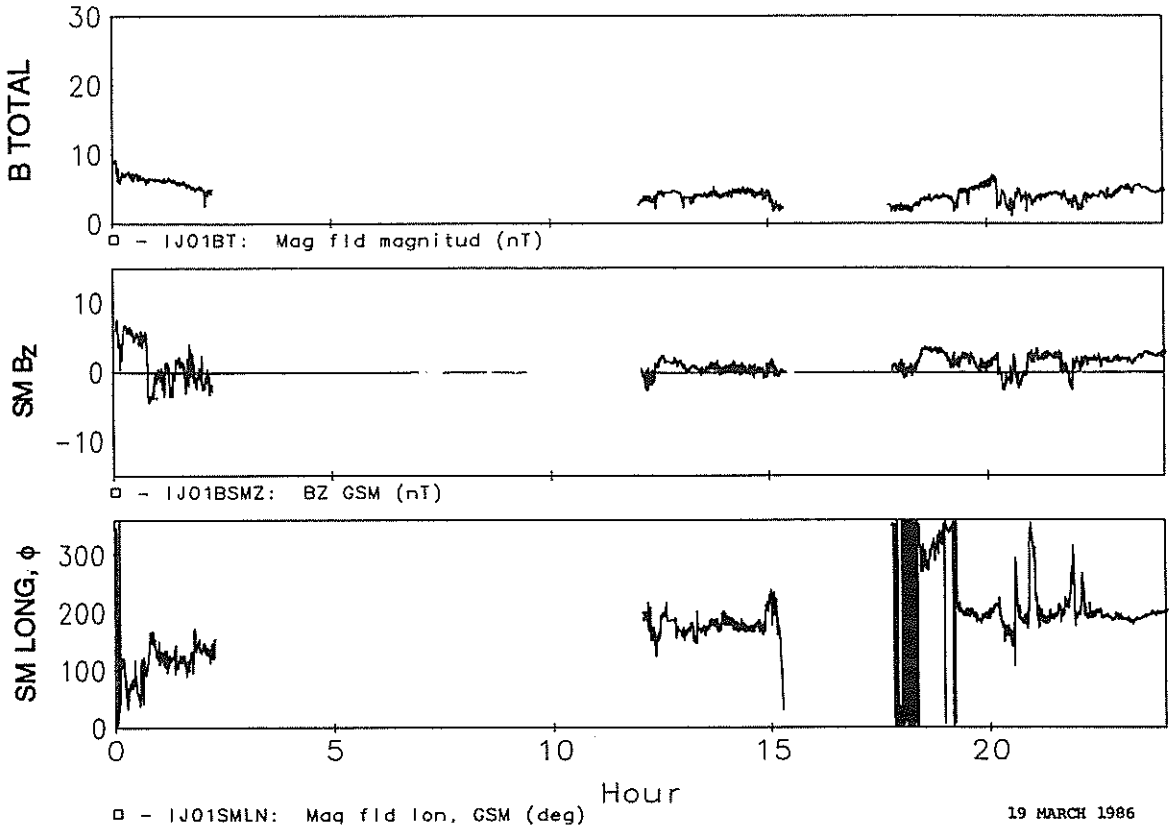
- IJ01SMLN: Mag fld lon, GSM (deg)
18 MARCH 1986

38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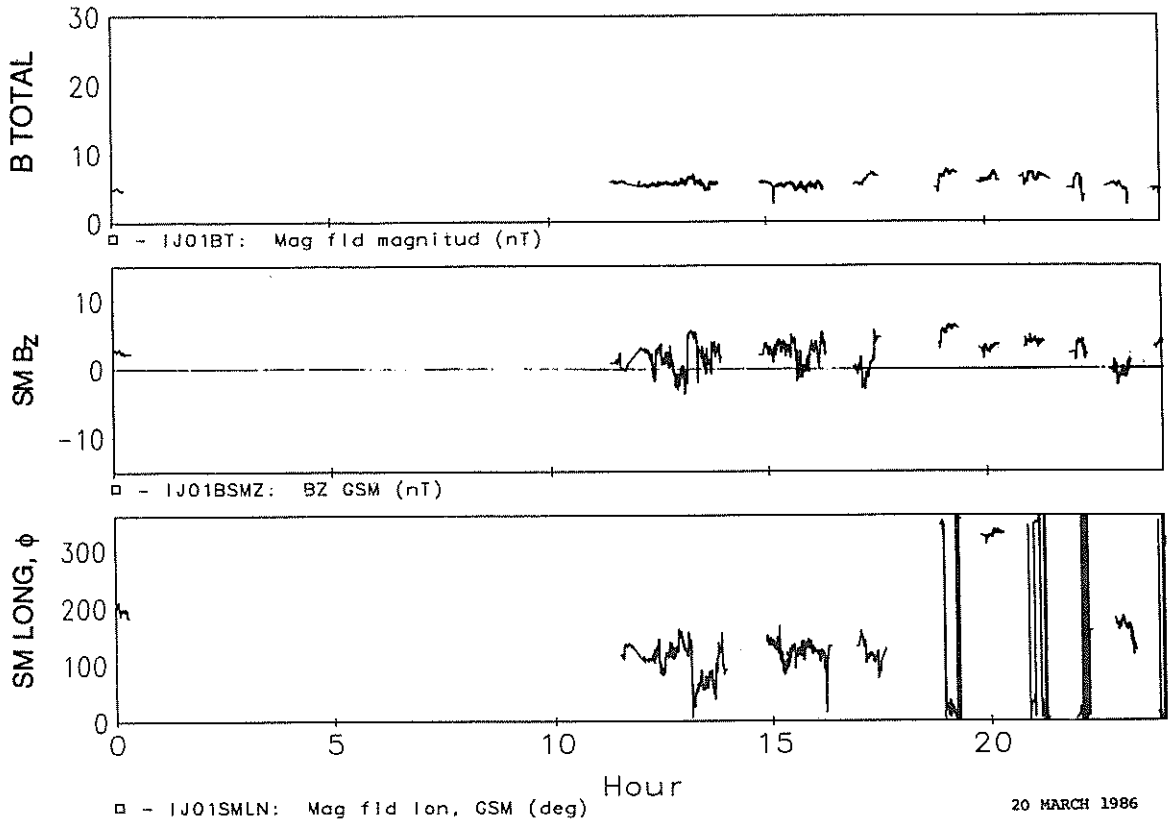
19 MARCH 1986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□ - IJ01SMLN: Mag fld lon, GSM (deg)
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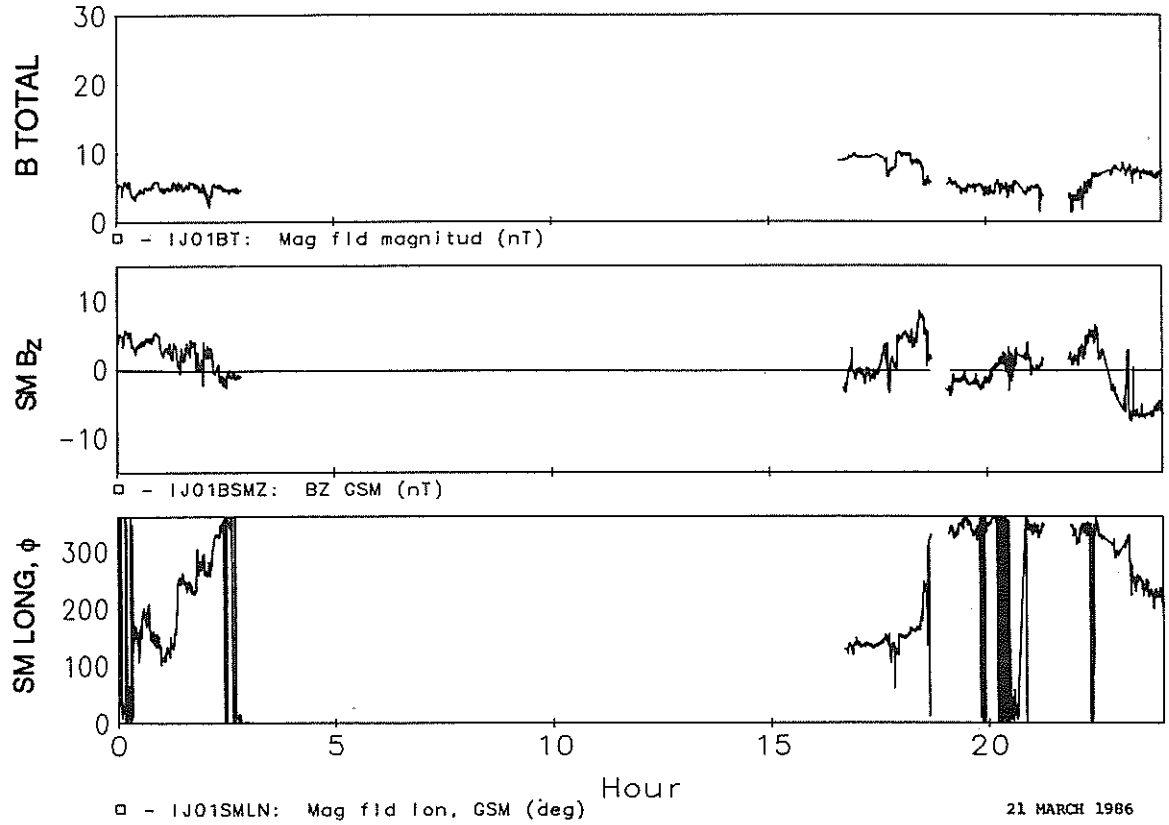
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- IJ01SMLN: Mag fld lon, GSM (deg)
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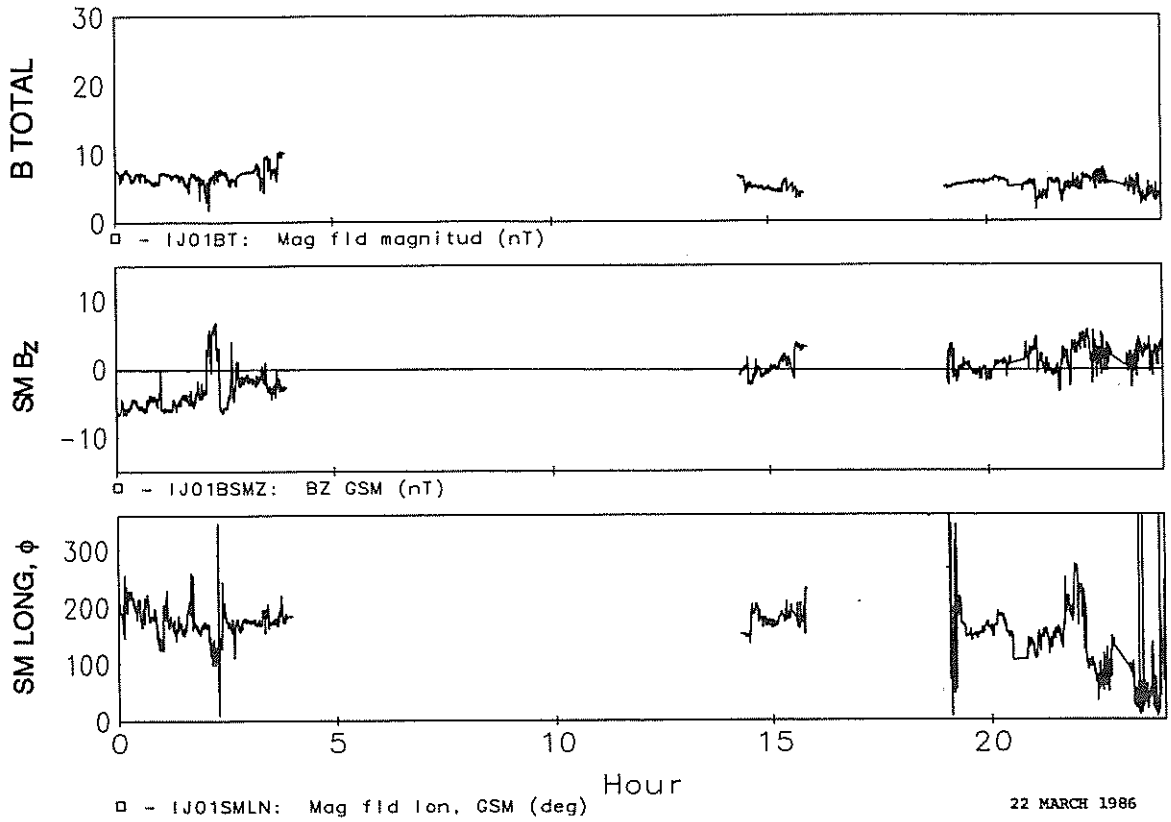
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- IJ01SMLN: Mag fld lon, GSM (deg)
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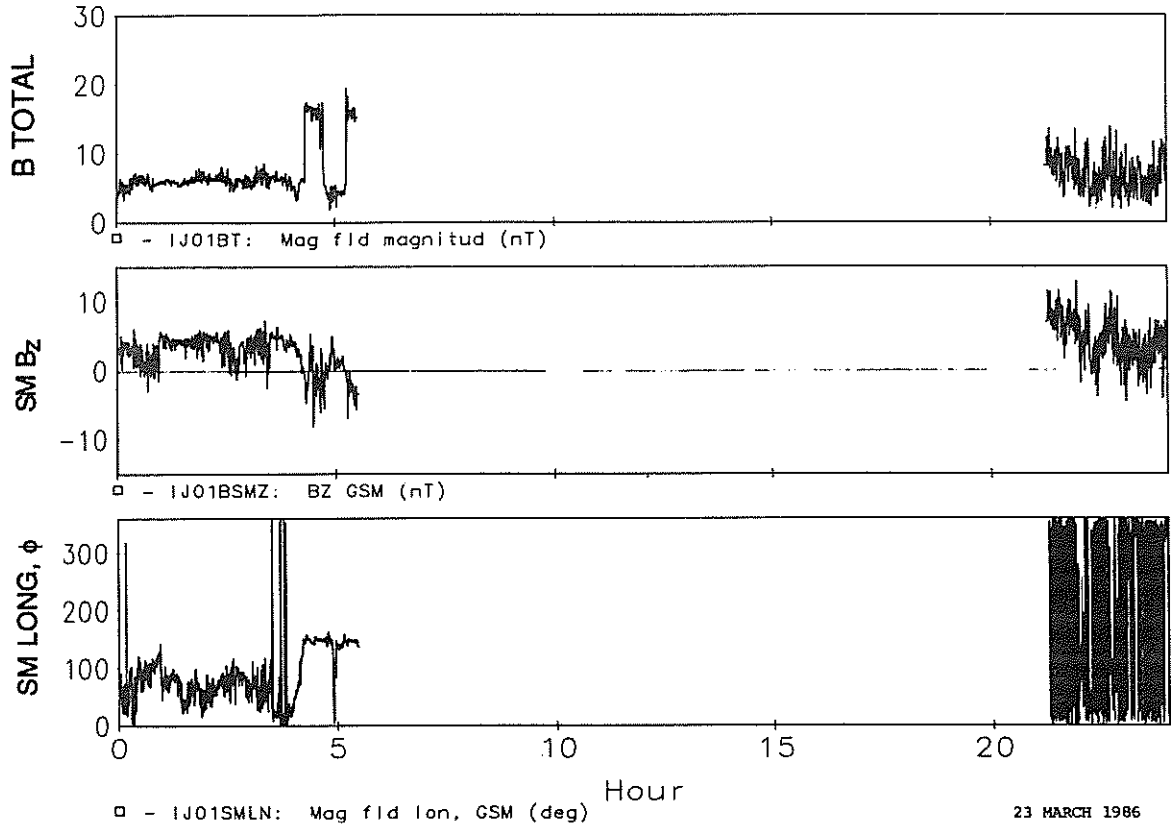
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- IJ01BSMZ: BZ GSM (nT)
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- IJ01SMLN: Mag fld lon, GSM (deg)
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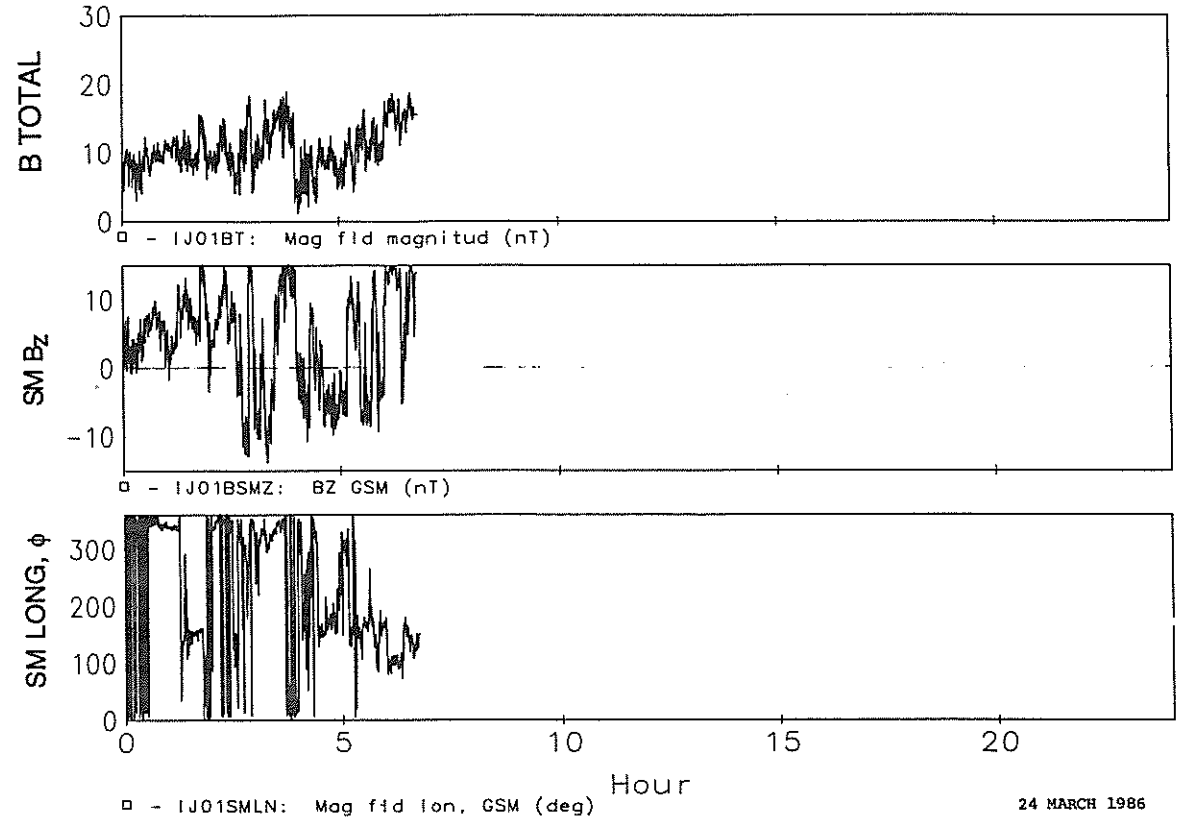
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- IJ01BSMZ: BZ GSM (nT)
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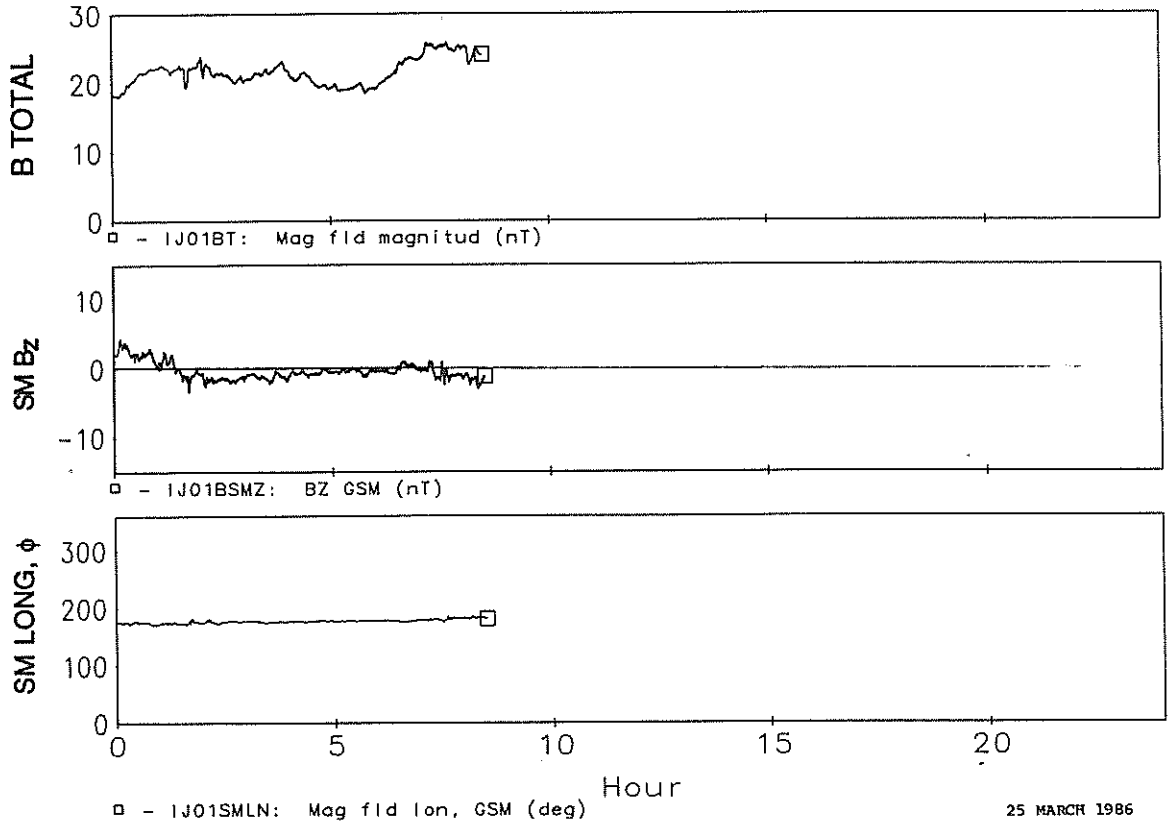
- IJ01SMLN: Mag fld lon, GSM (deg)
24 MARCH 1986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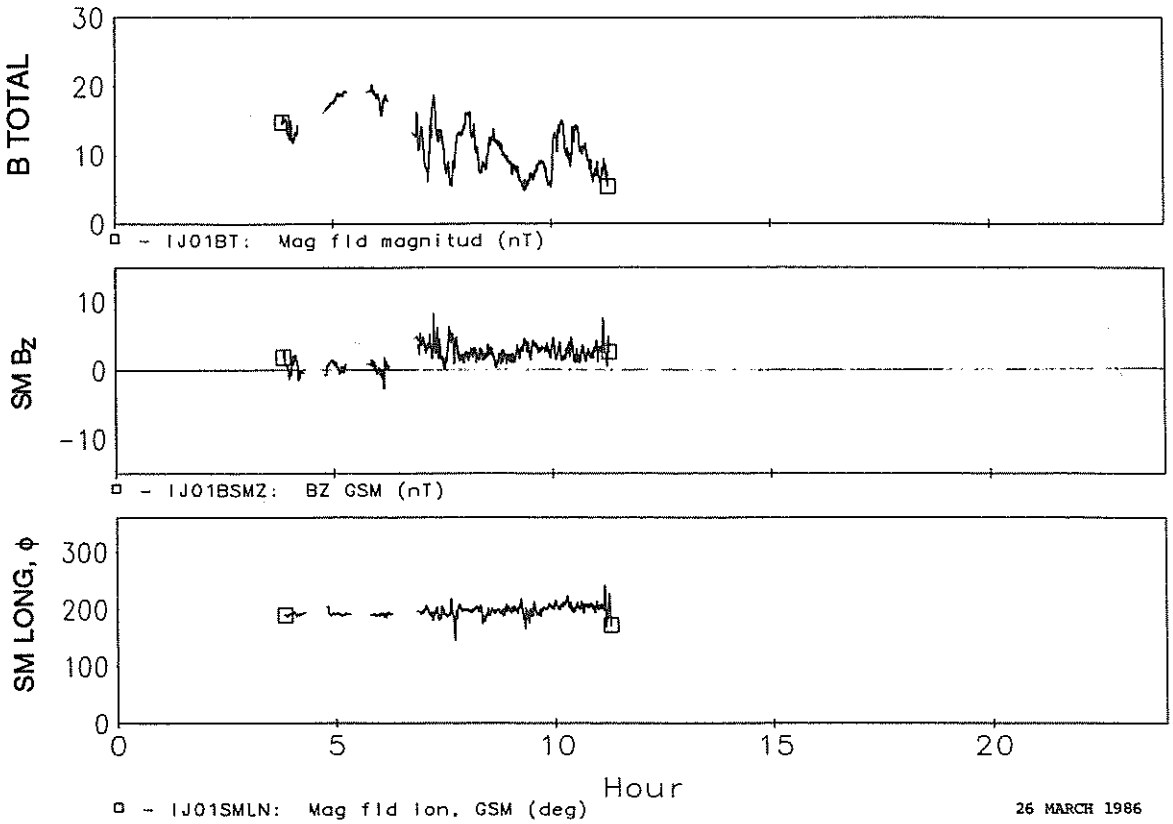
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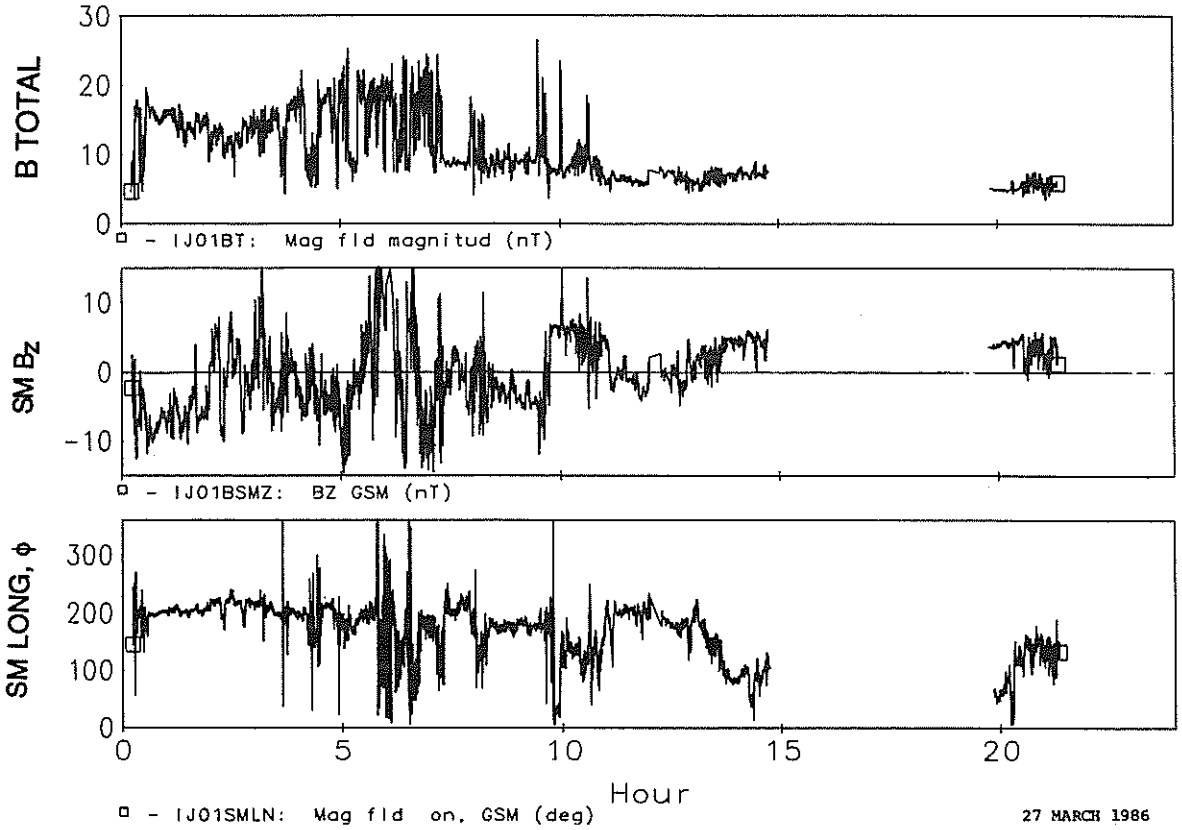
26 MARCH 1986

42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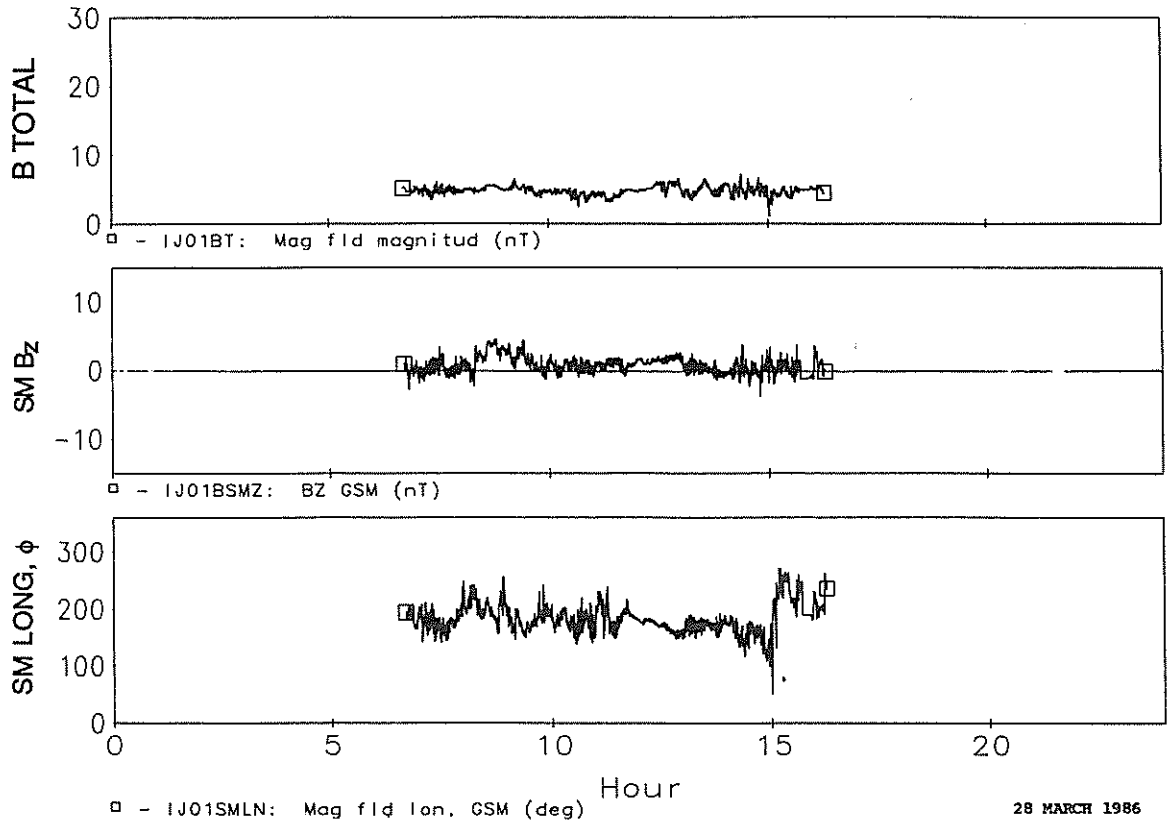
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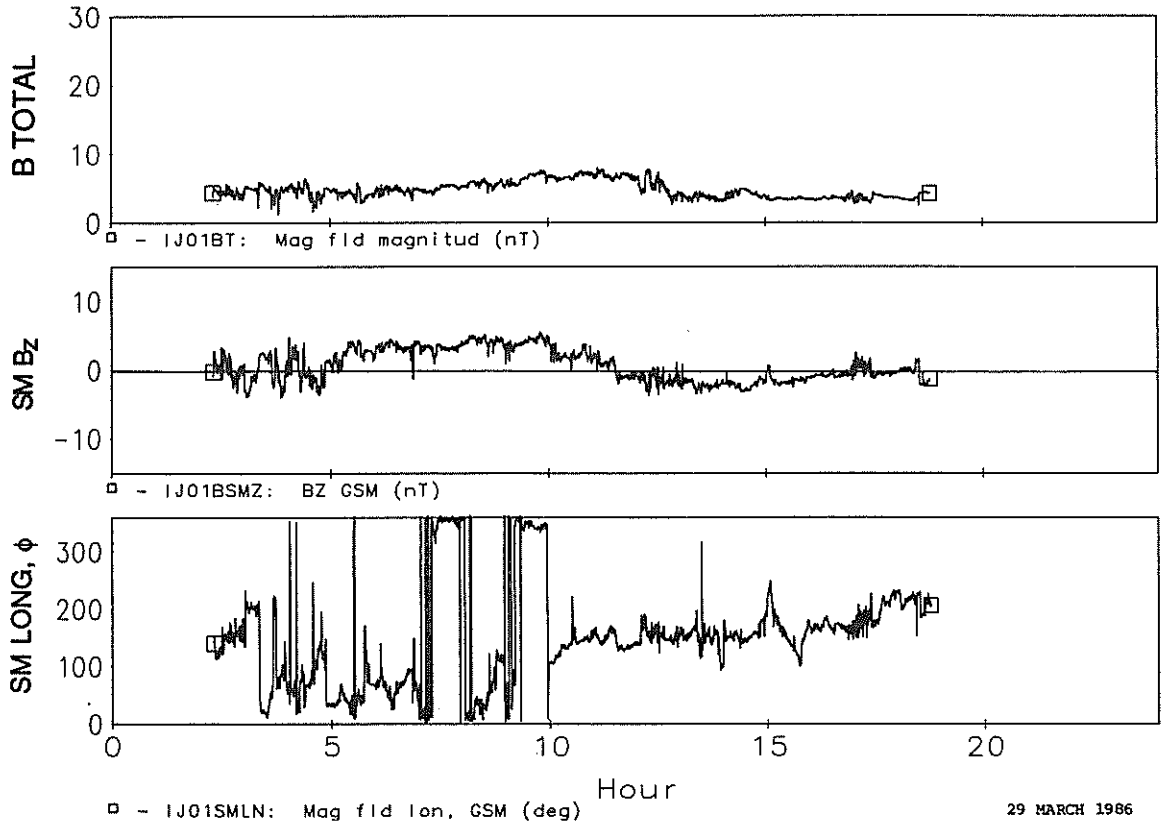
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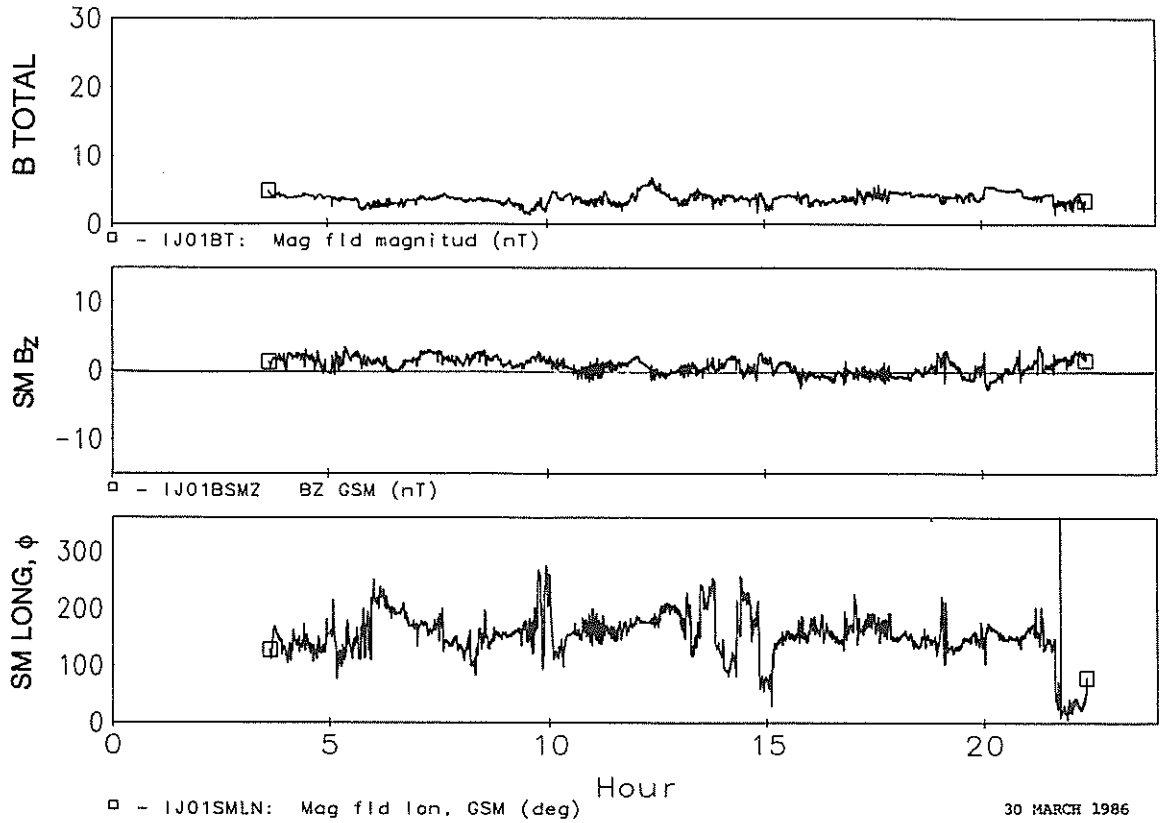
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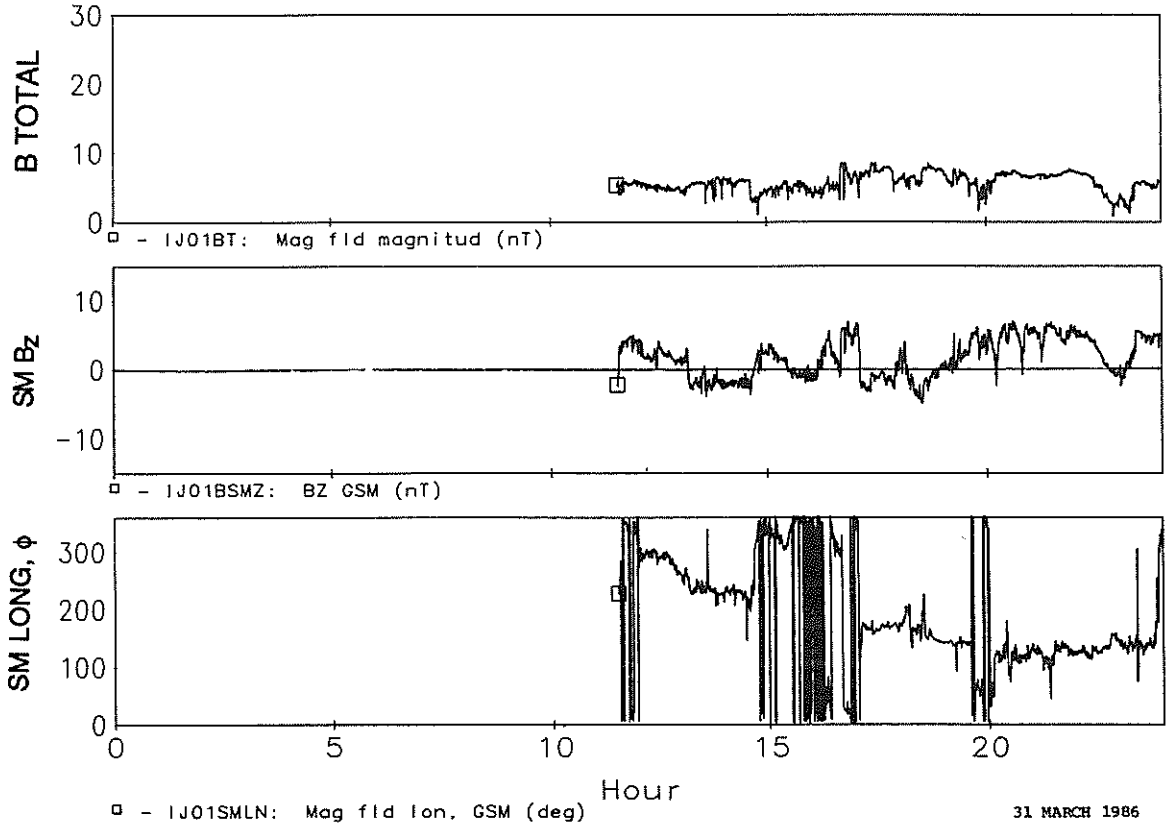
30 MARCH 1986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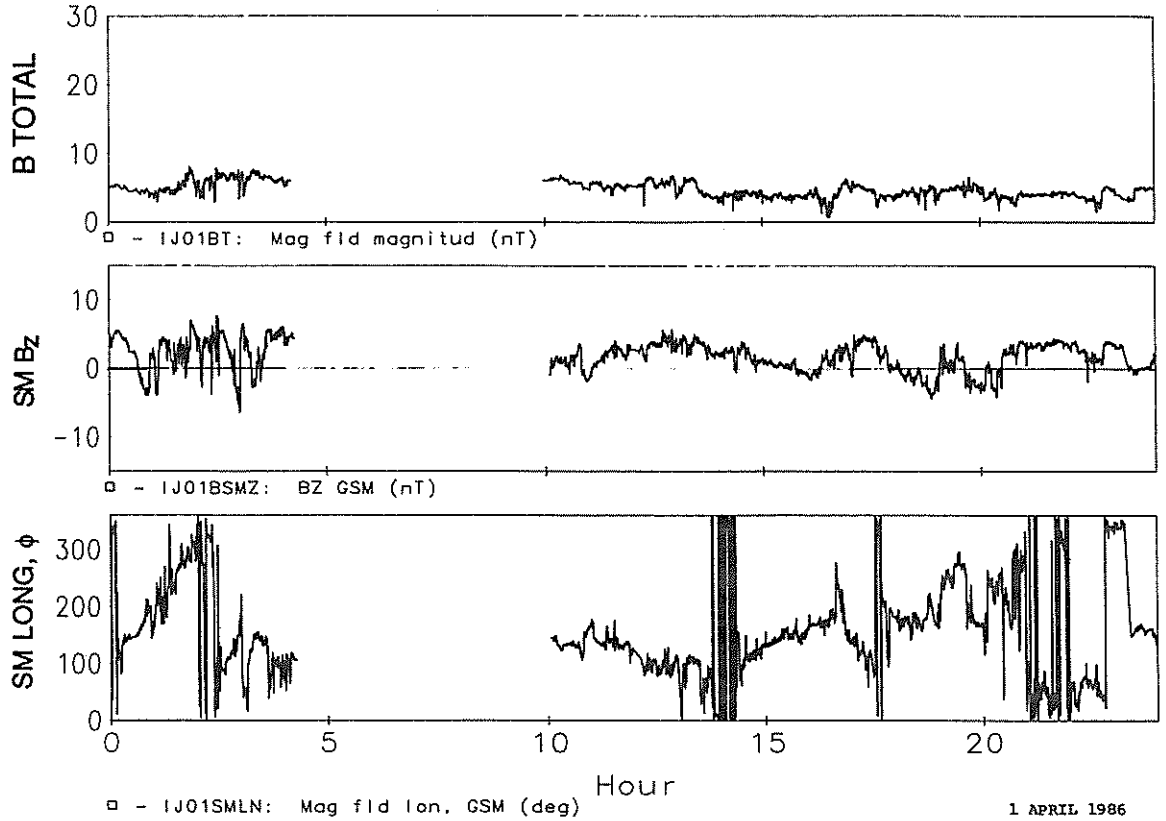
31 MARCH 1986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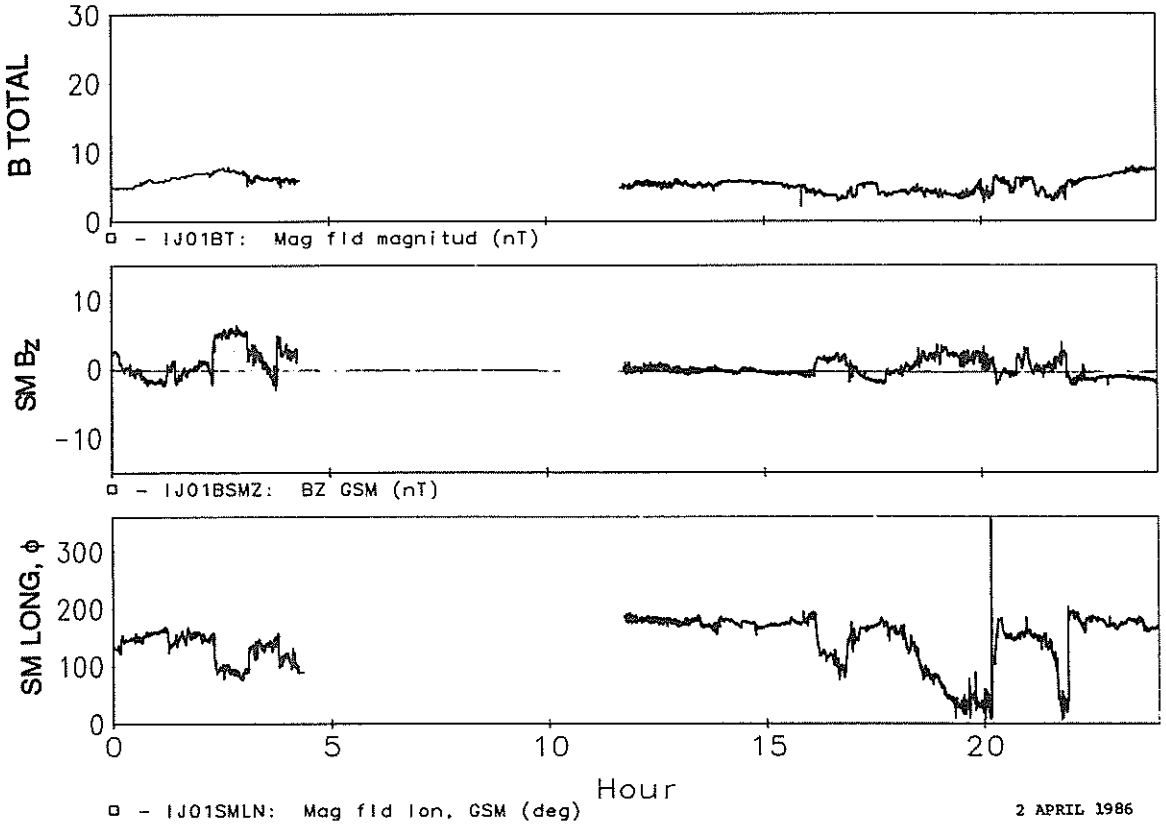
- IJ01SMLN: Mag fld lon, GSM (deg)
1 APRIL 1986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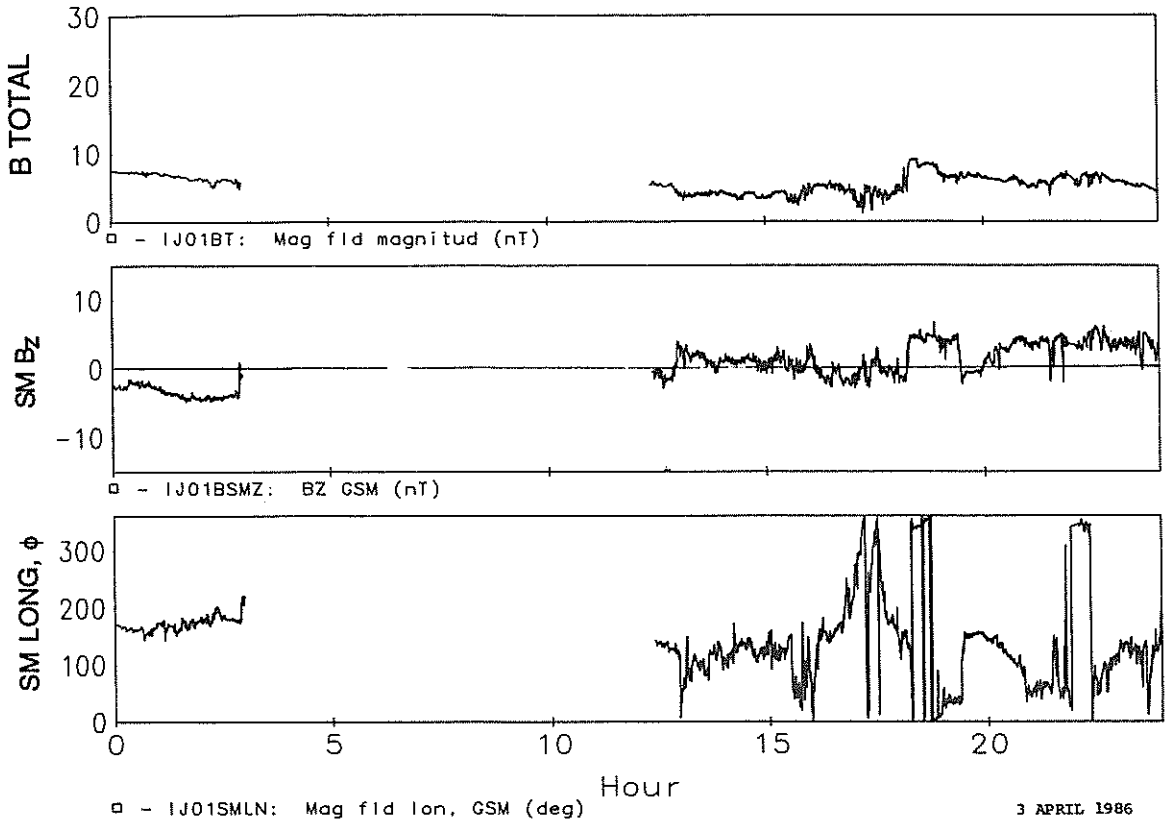
2 APRIL 1986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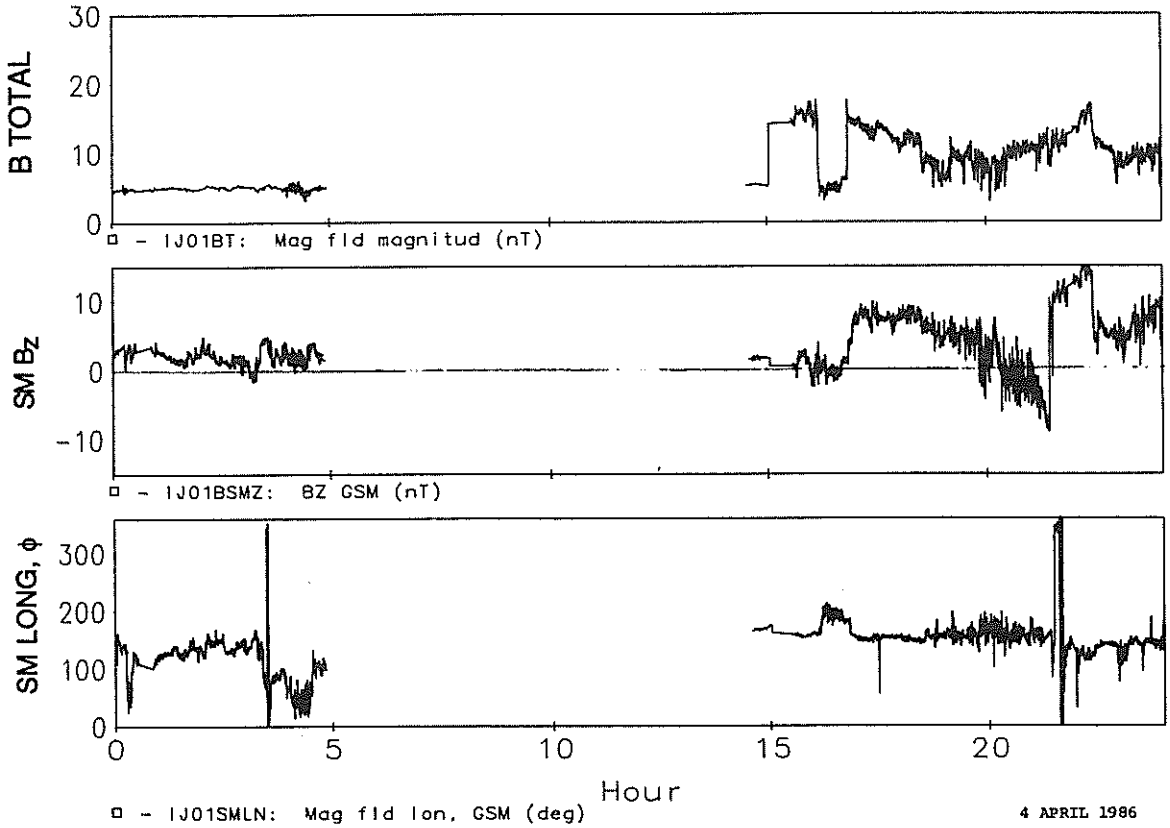
3 APRIL 1986



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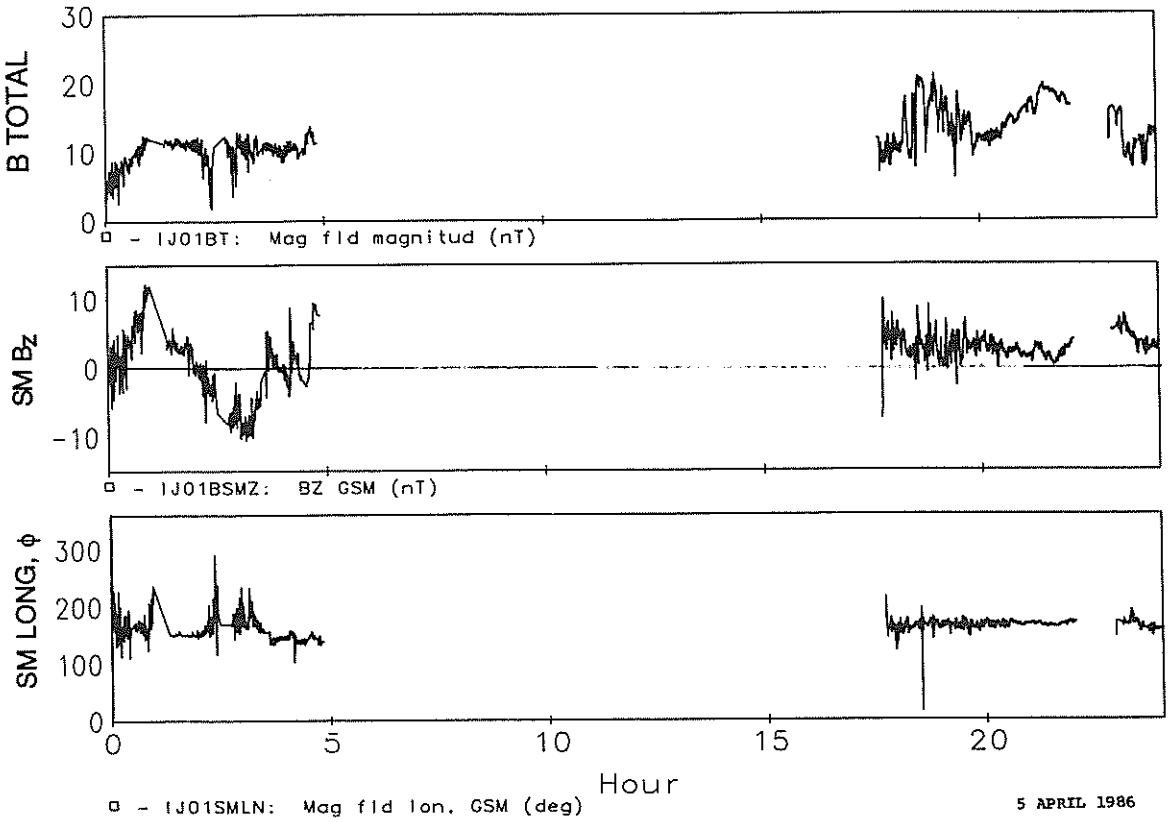

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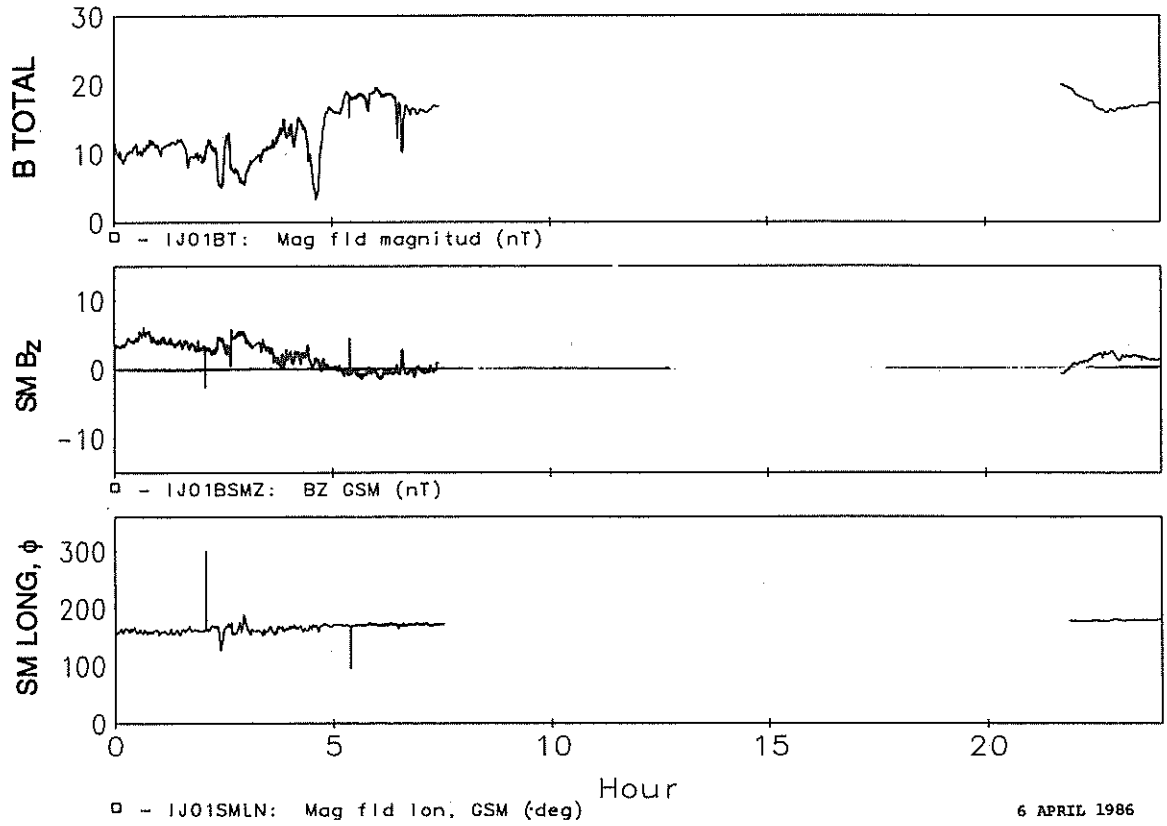

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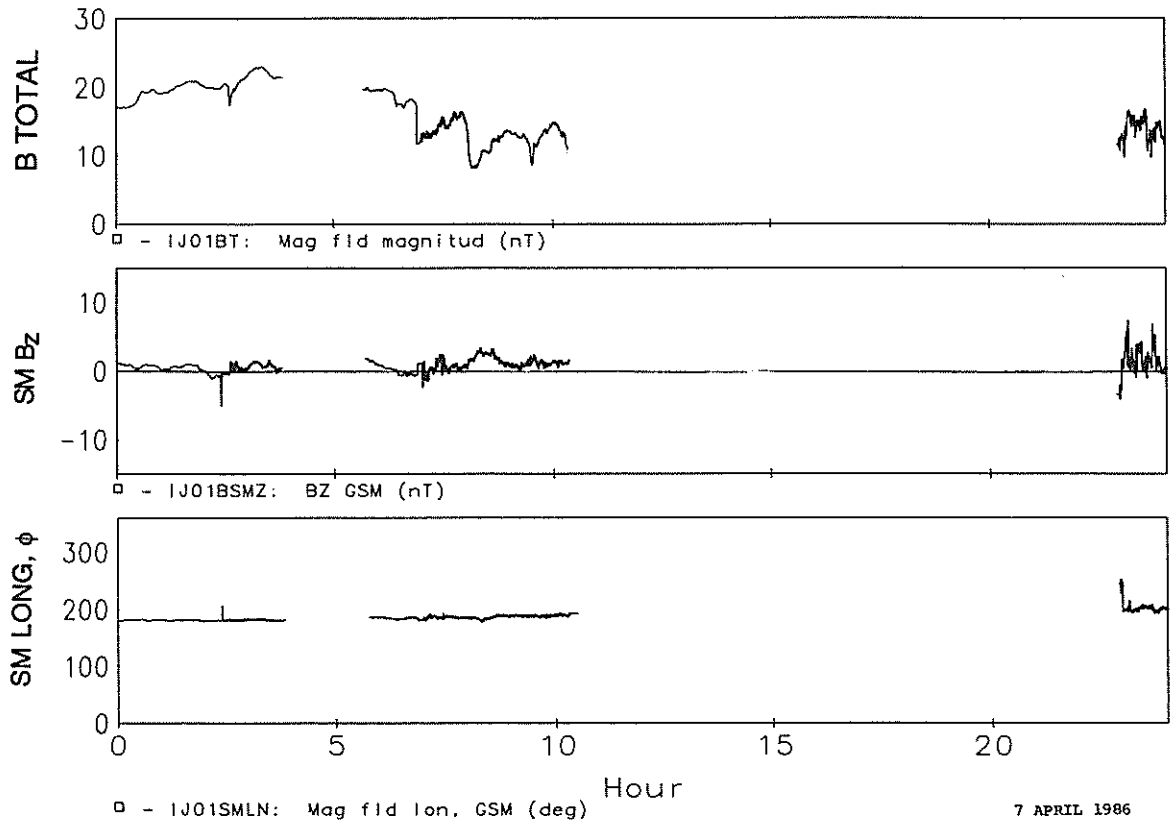

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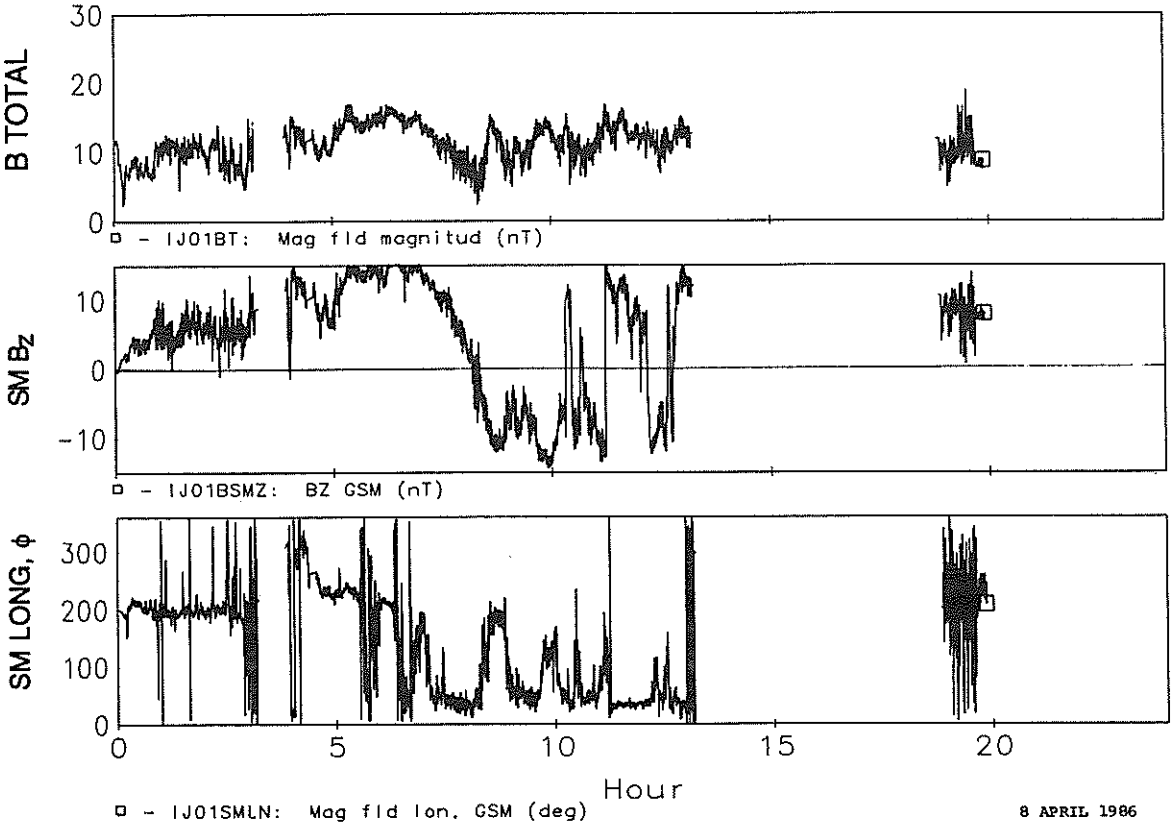
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- IJ01BSMZ: BZ GSM (nT)
SM LONG, φ
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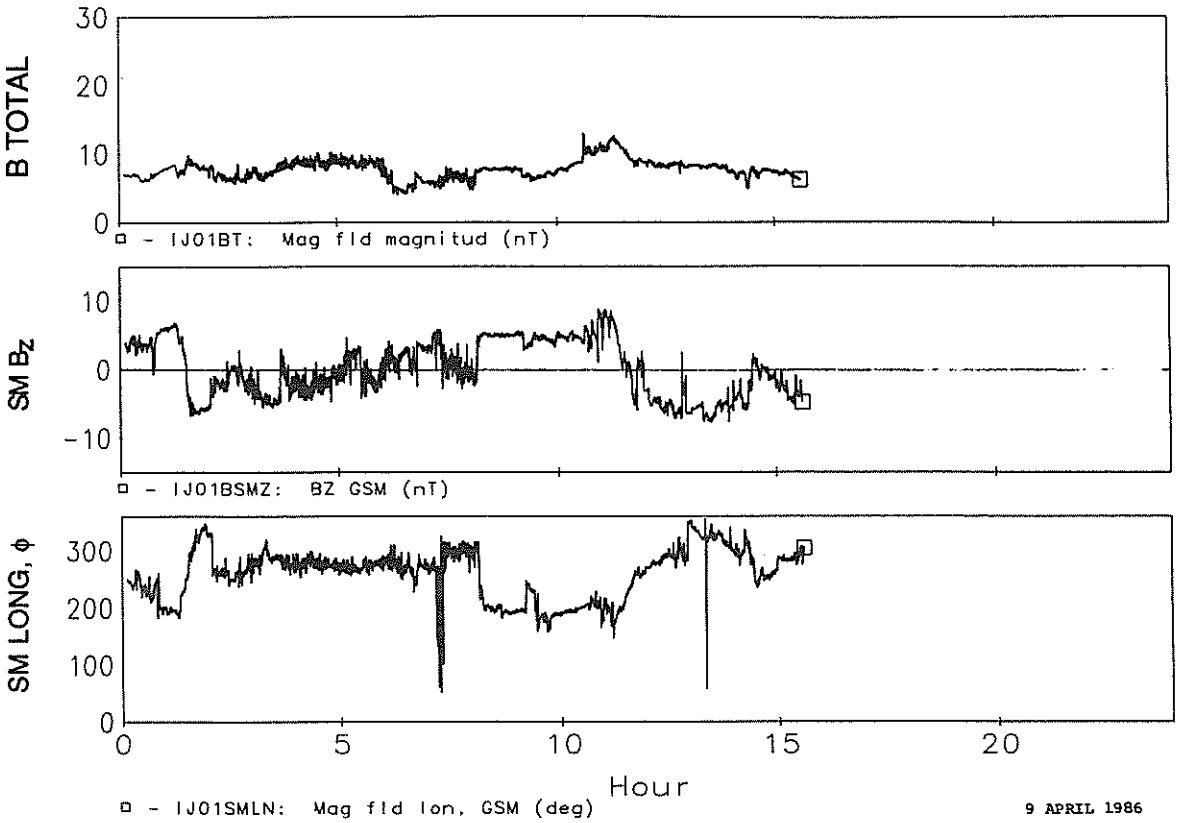
Hour
- IJ01SMLN: Mag fld lon, GSM (deg)
8 APRIL 1986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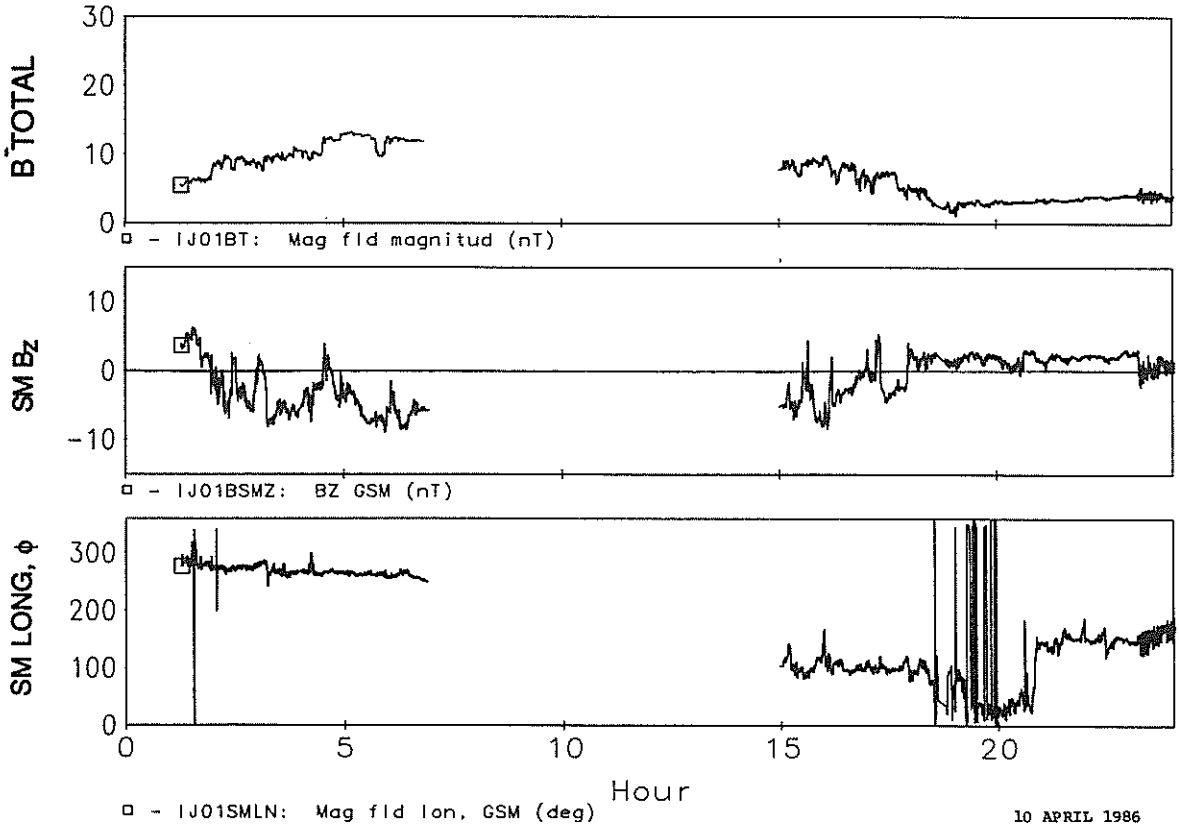
- IJ01SMLN: Mag fld lon, GSM (deg)
9 APRIL 1986



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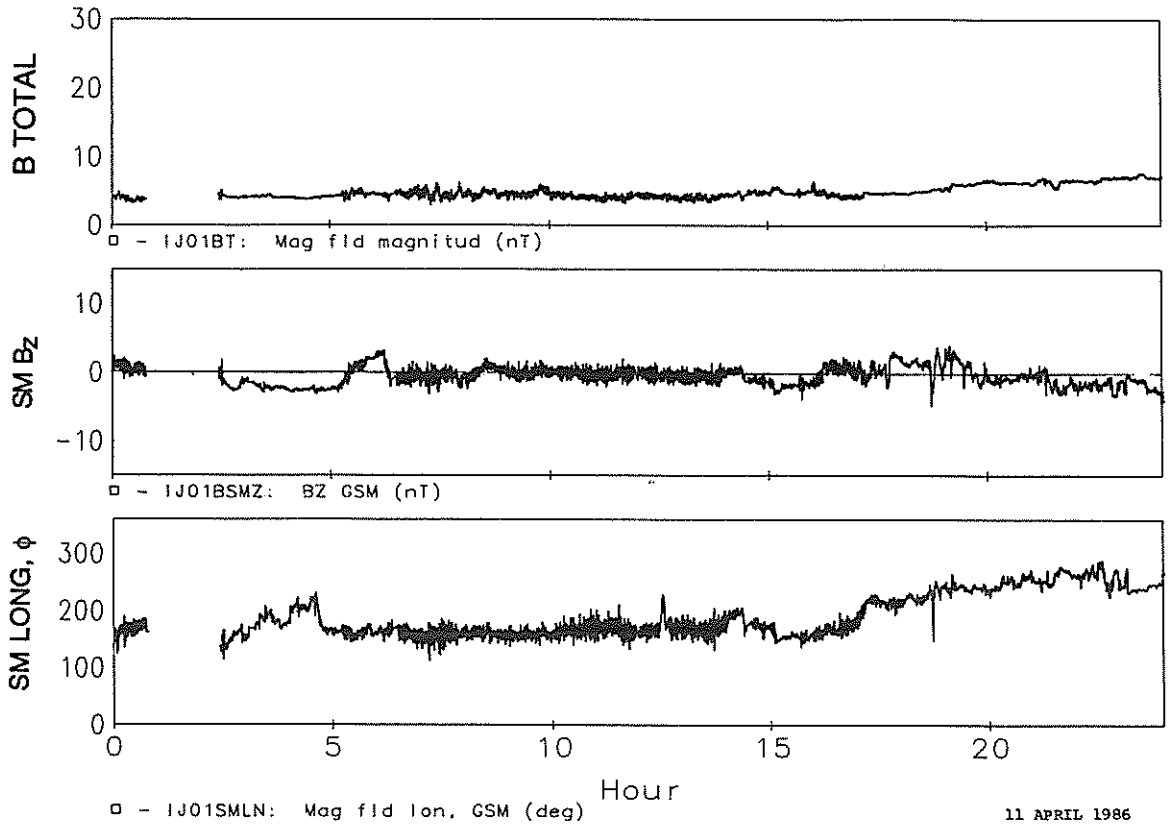

11 APRIL 1986

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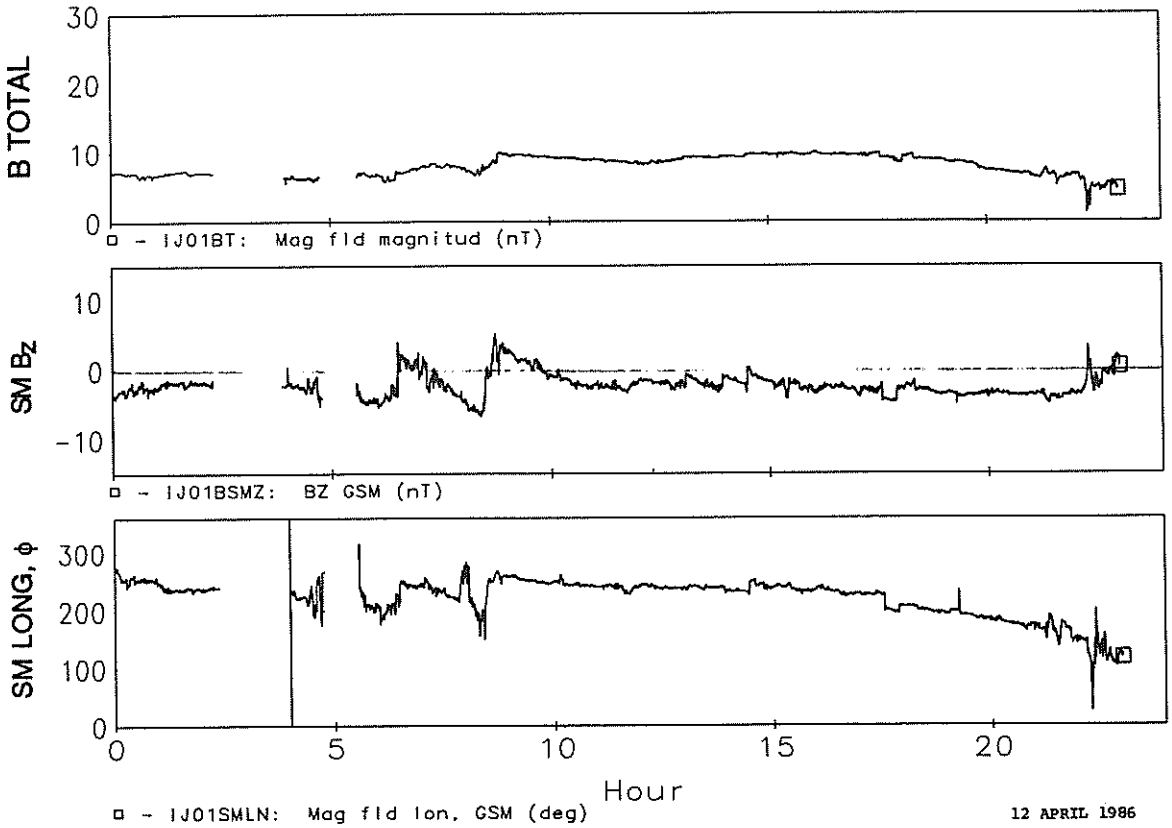
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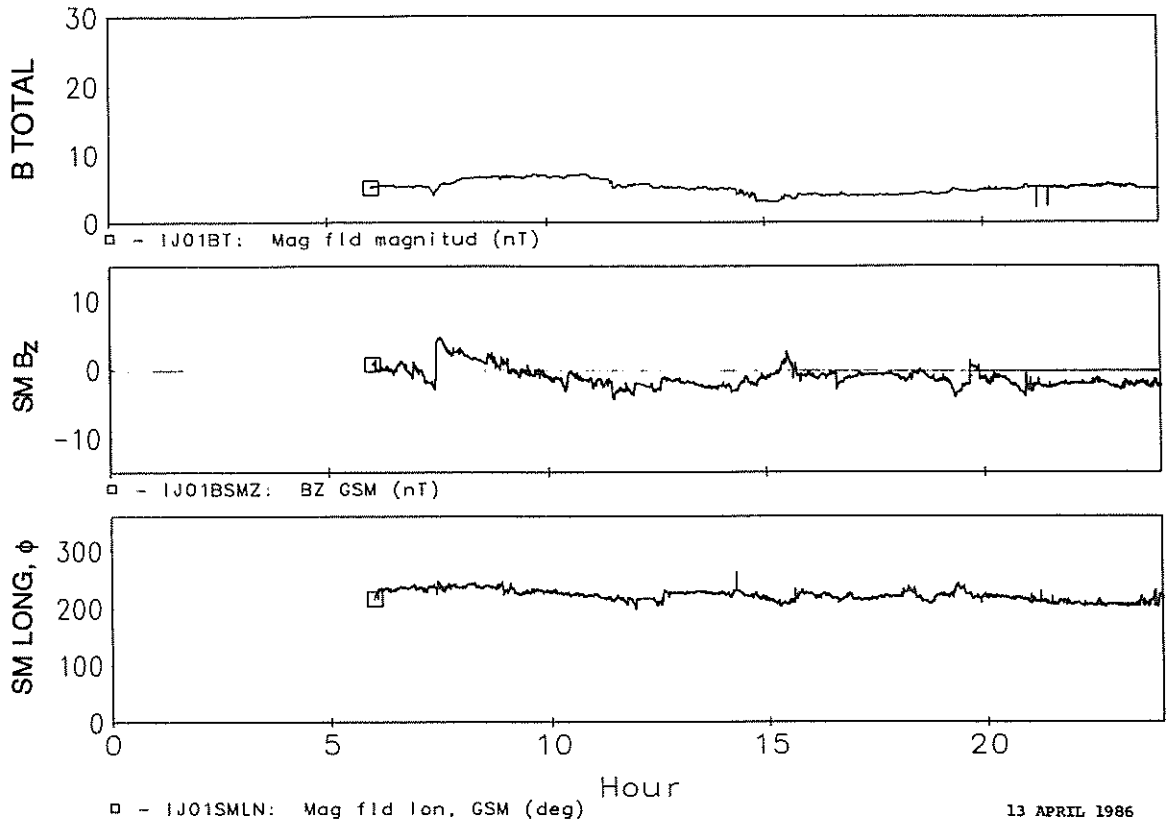
12 APRIL 1986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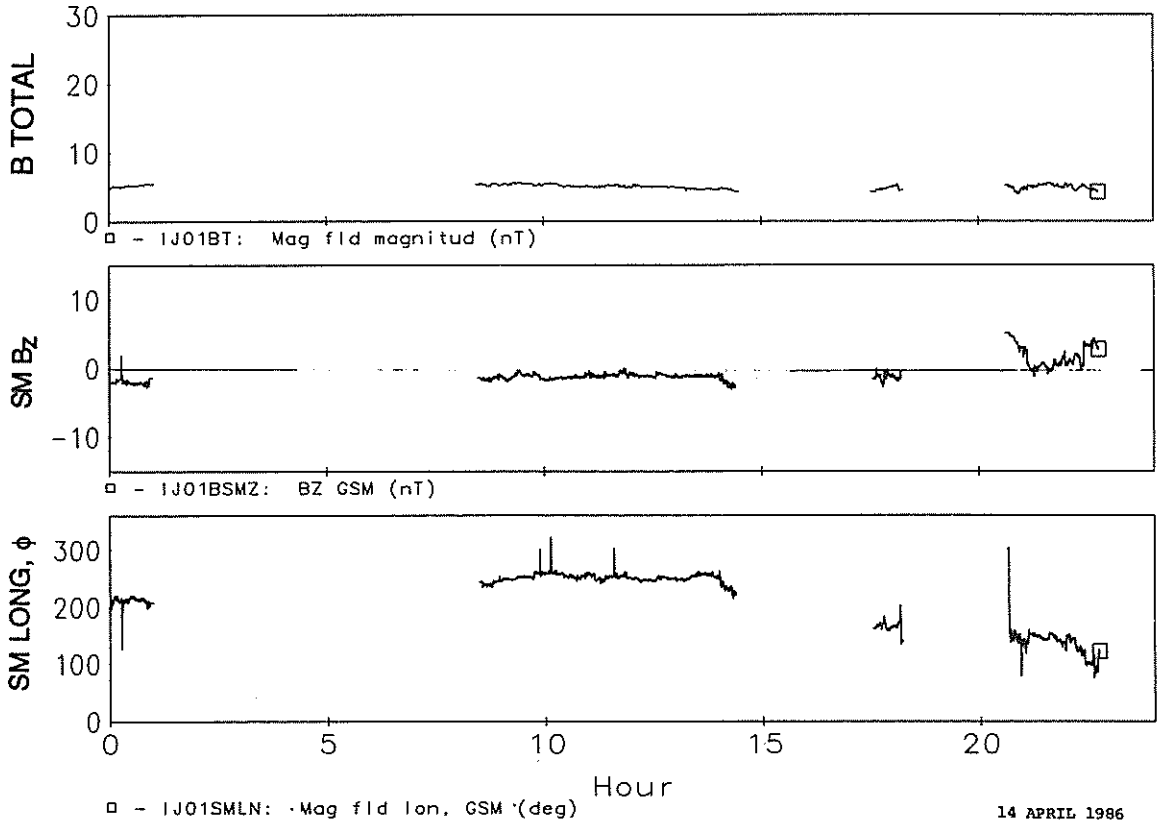
13 APRIL 1986



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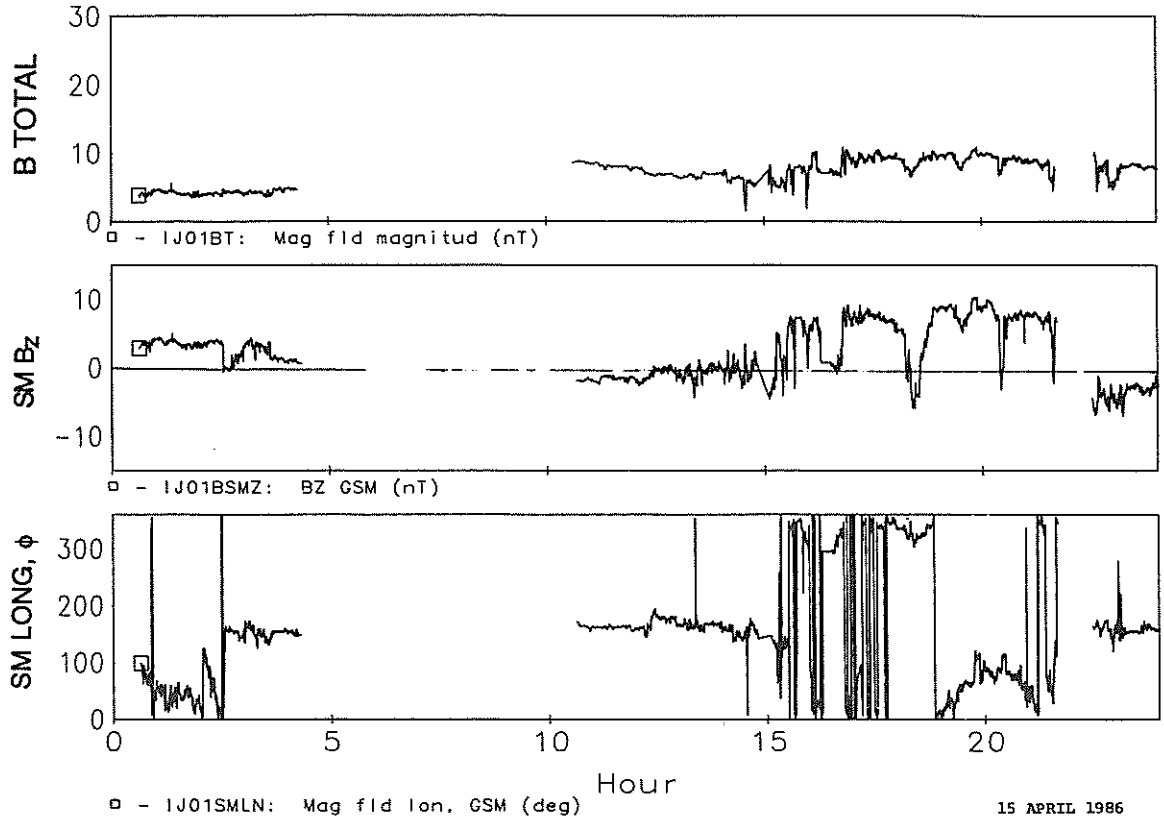

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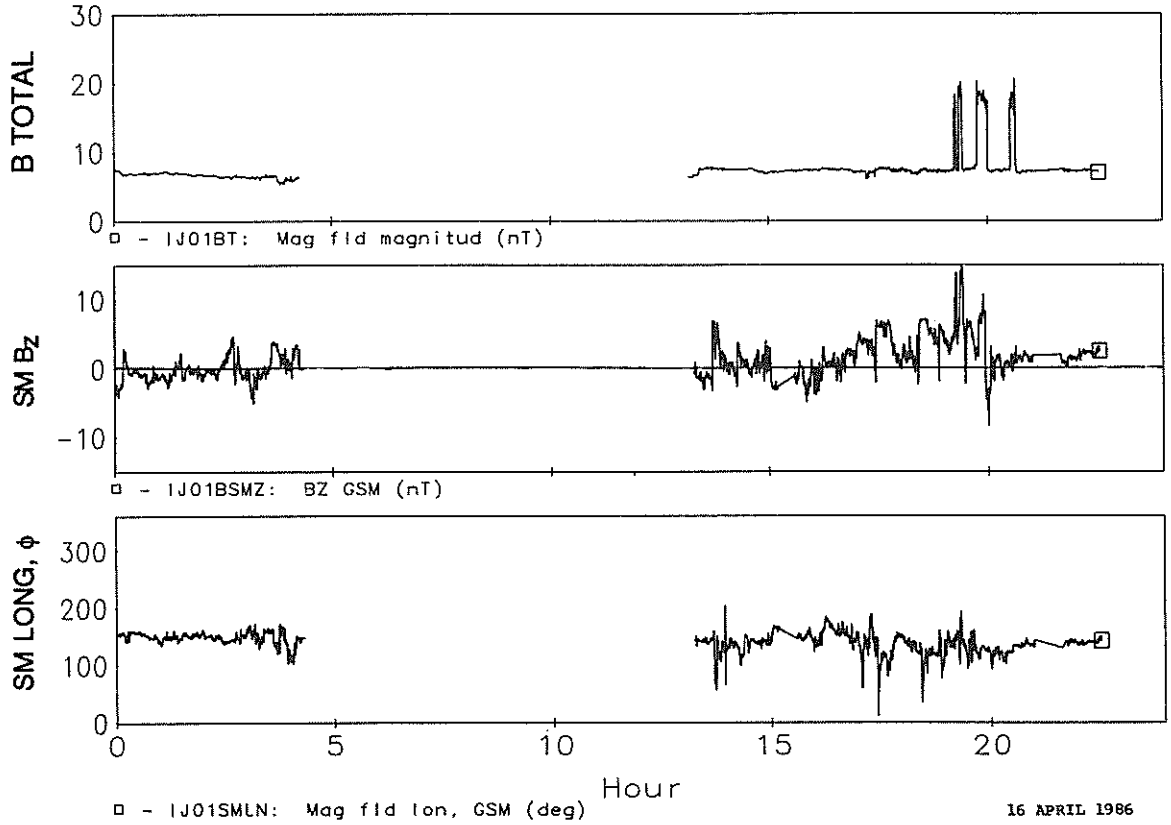
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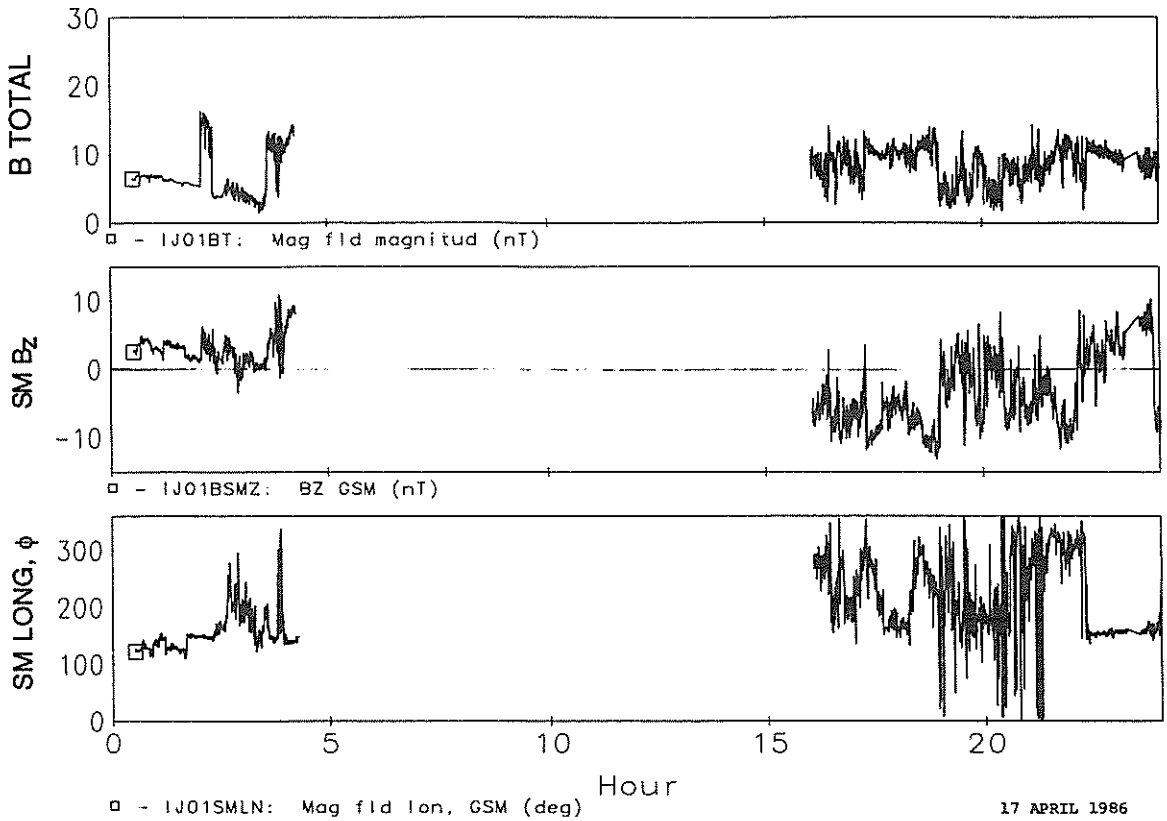
16 APRIL 1986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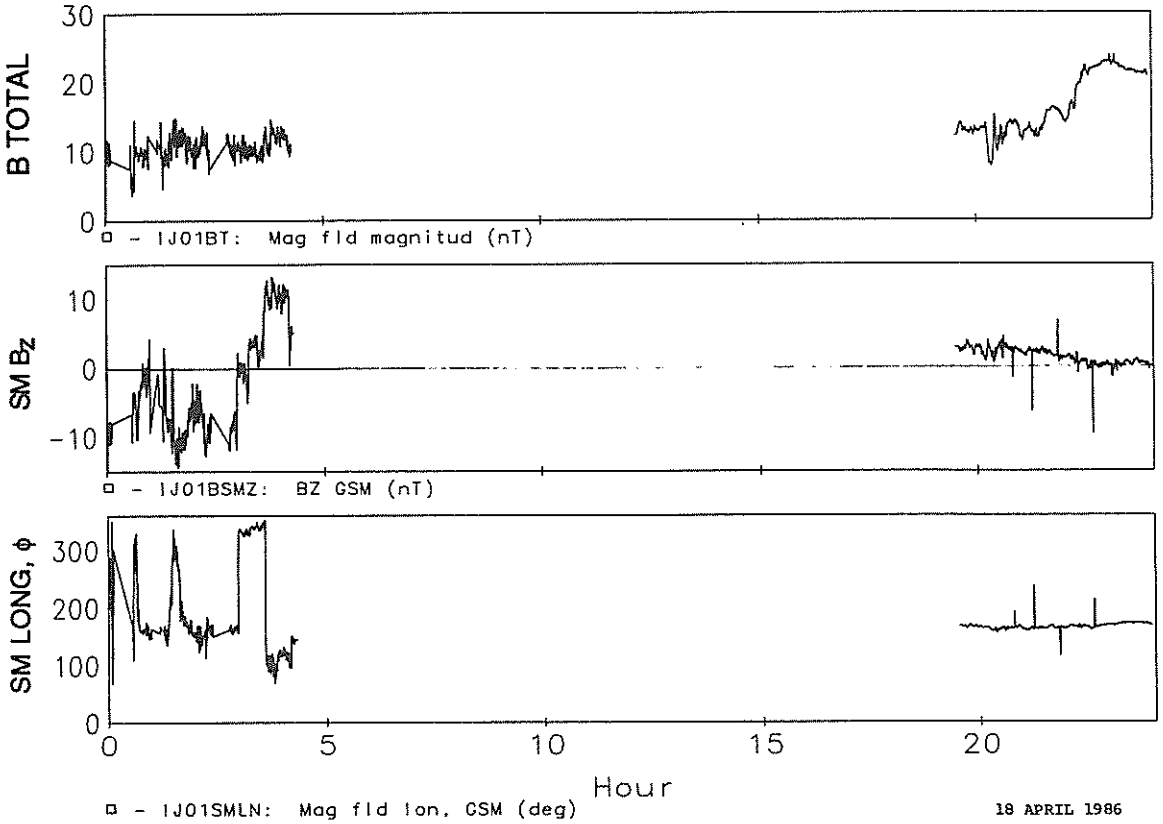

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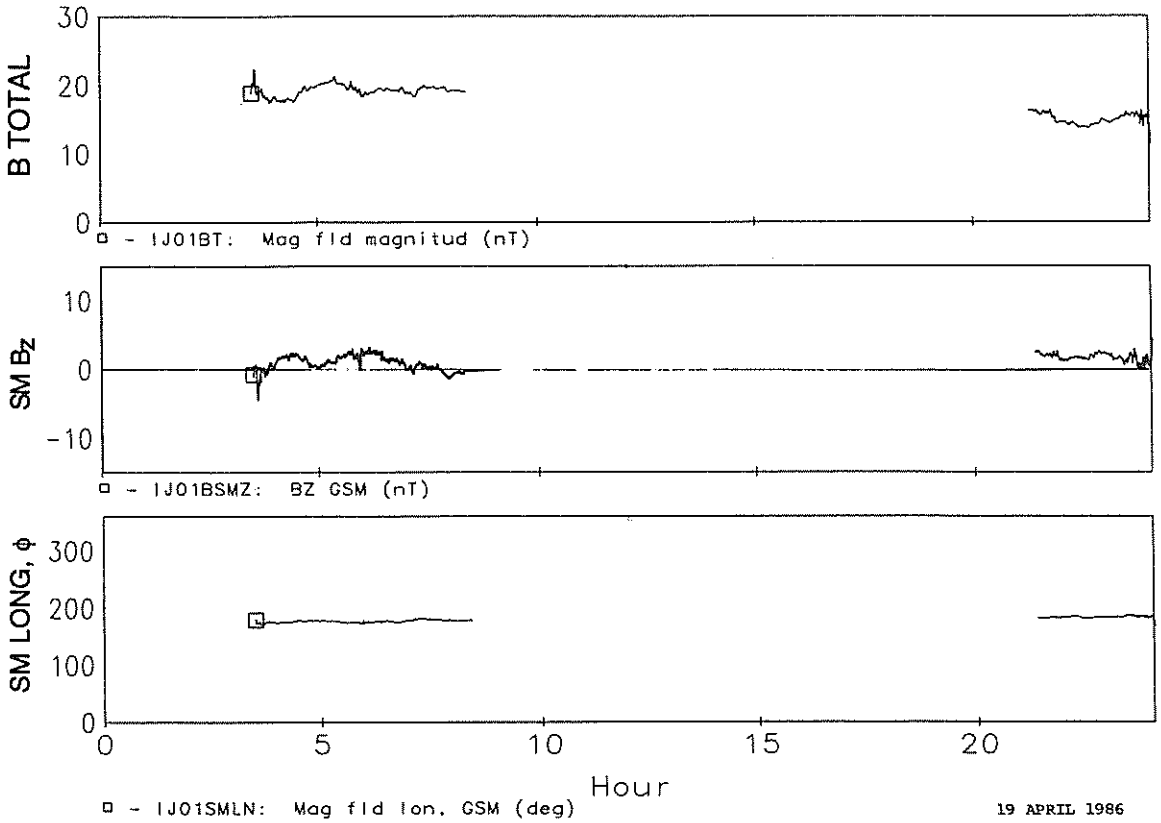

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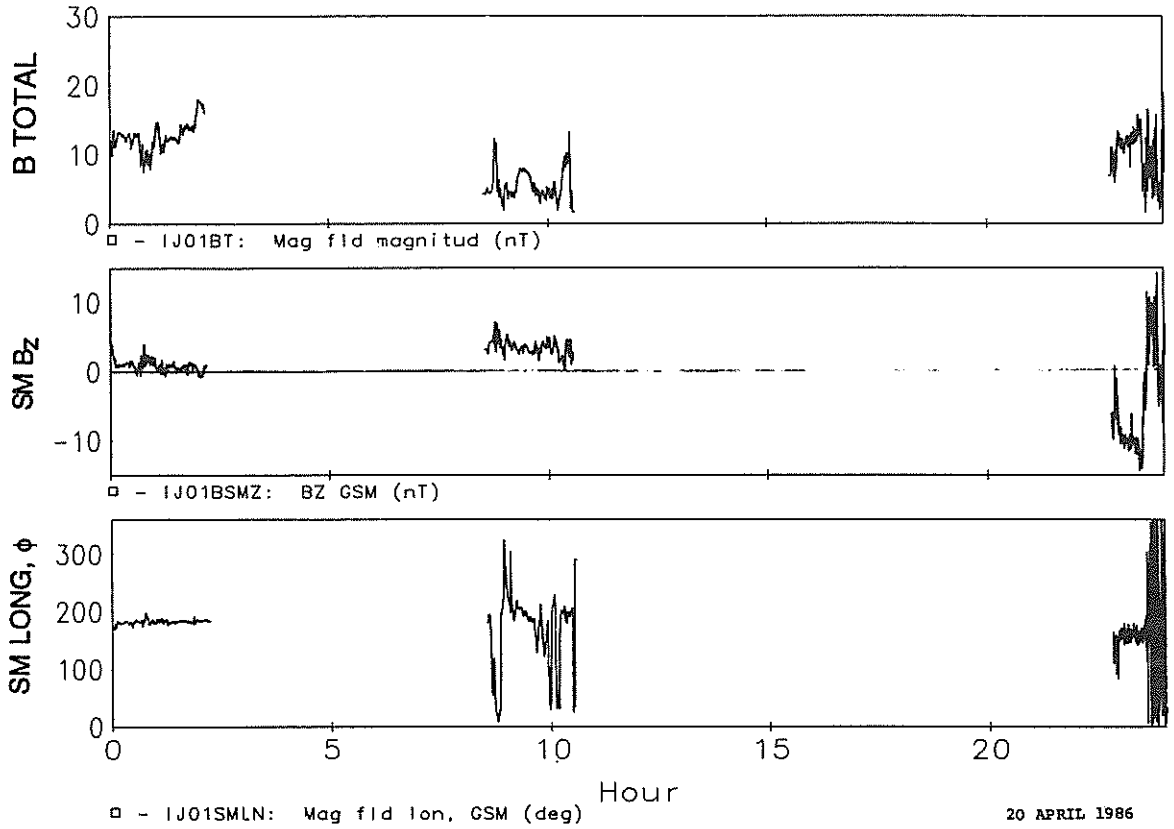
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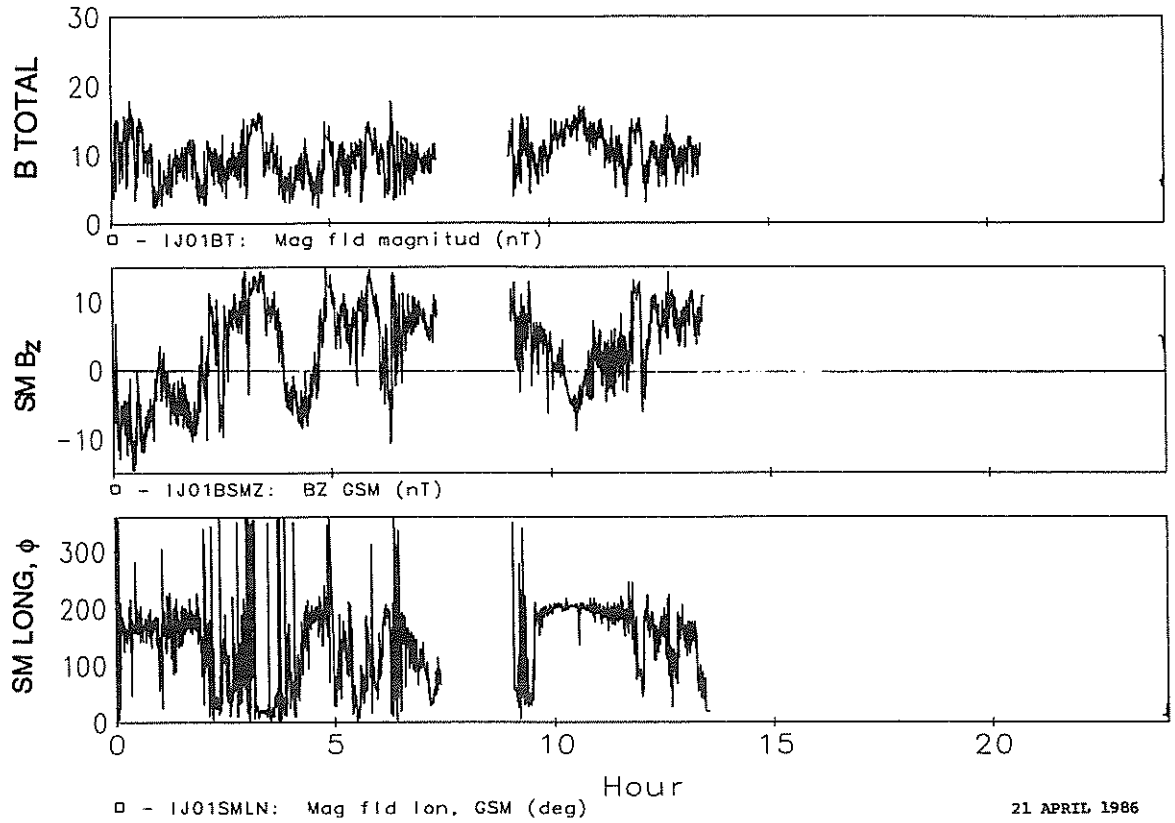
20 APRIL 1986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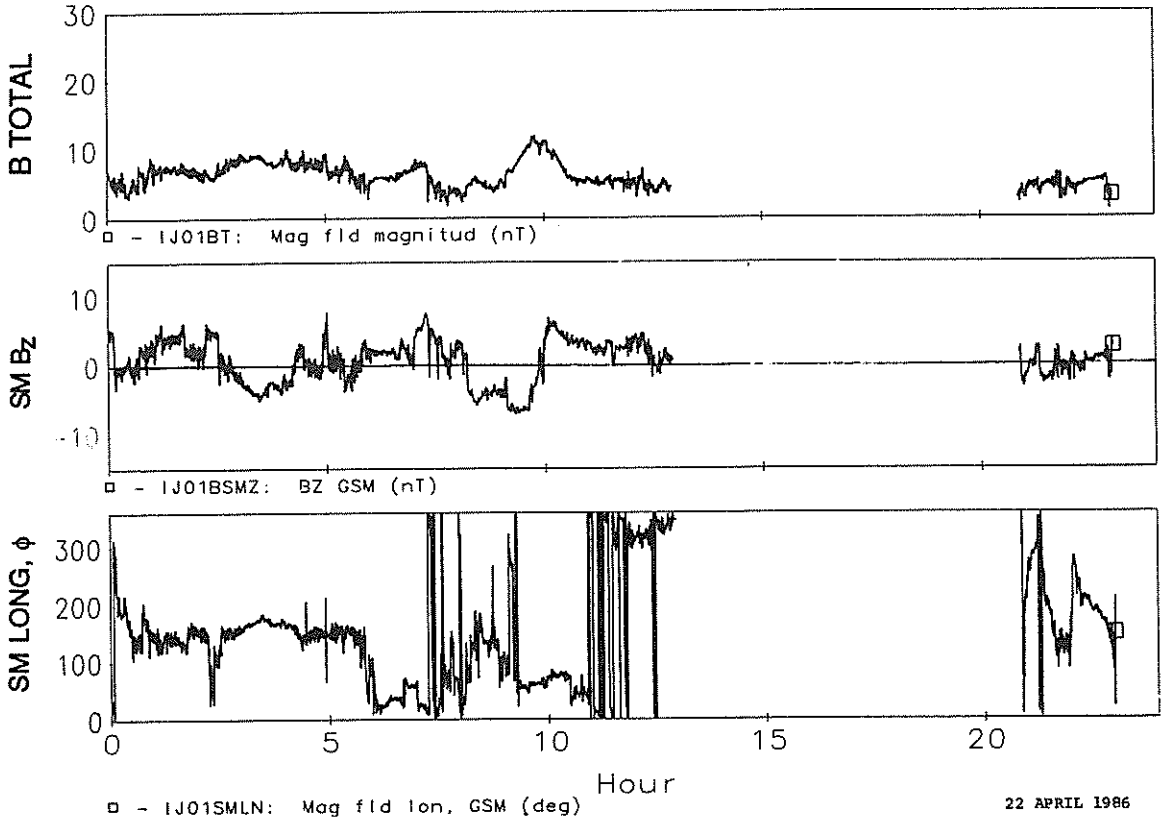
21 APRIL 1986



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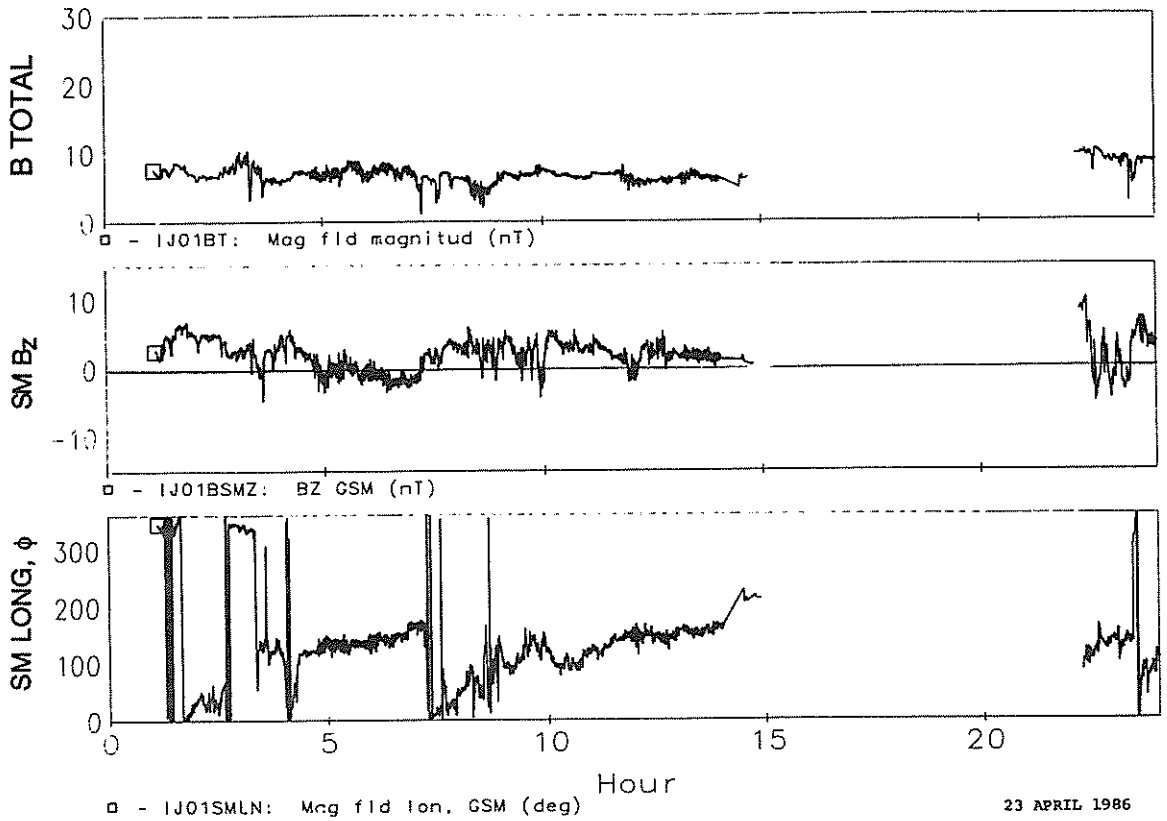

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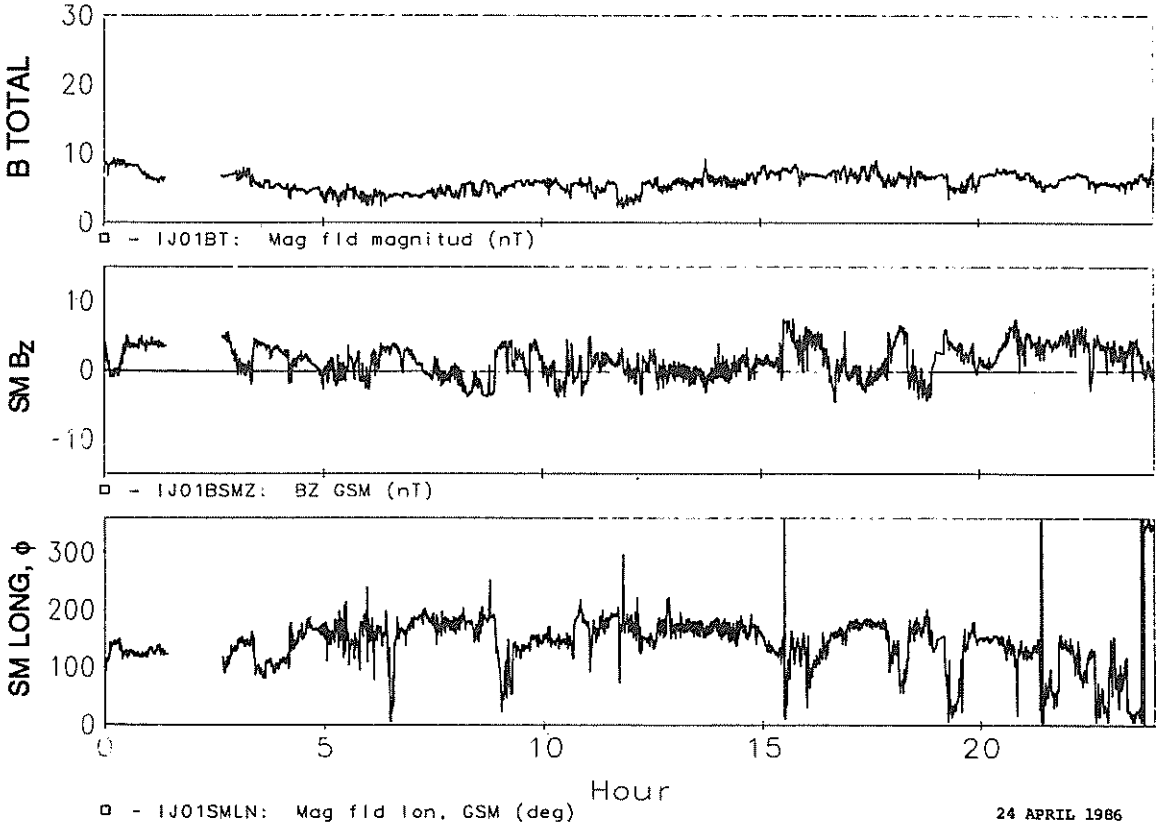
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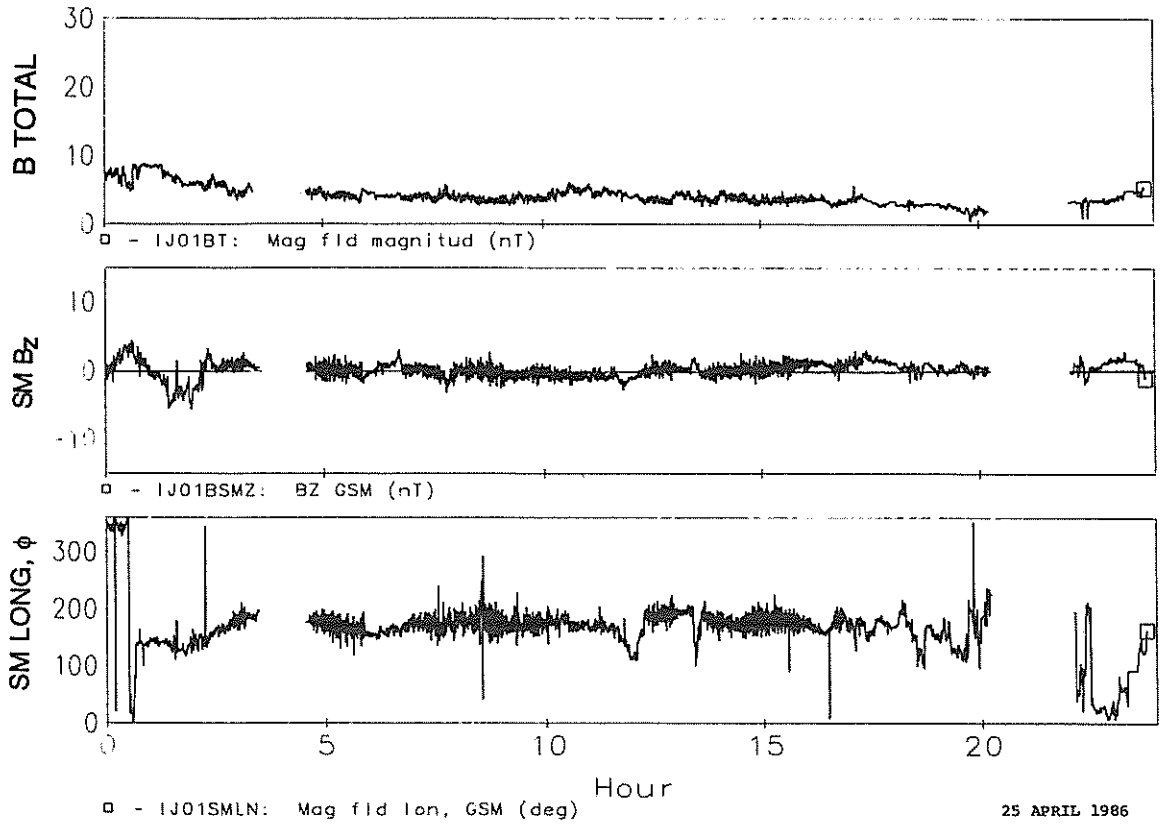
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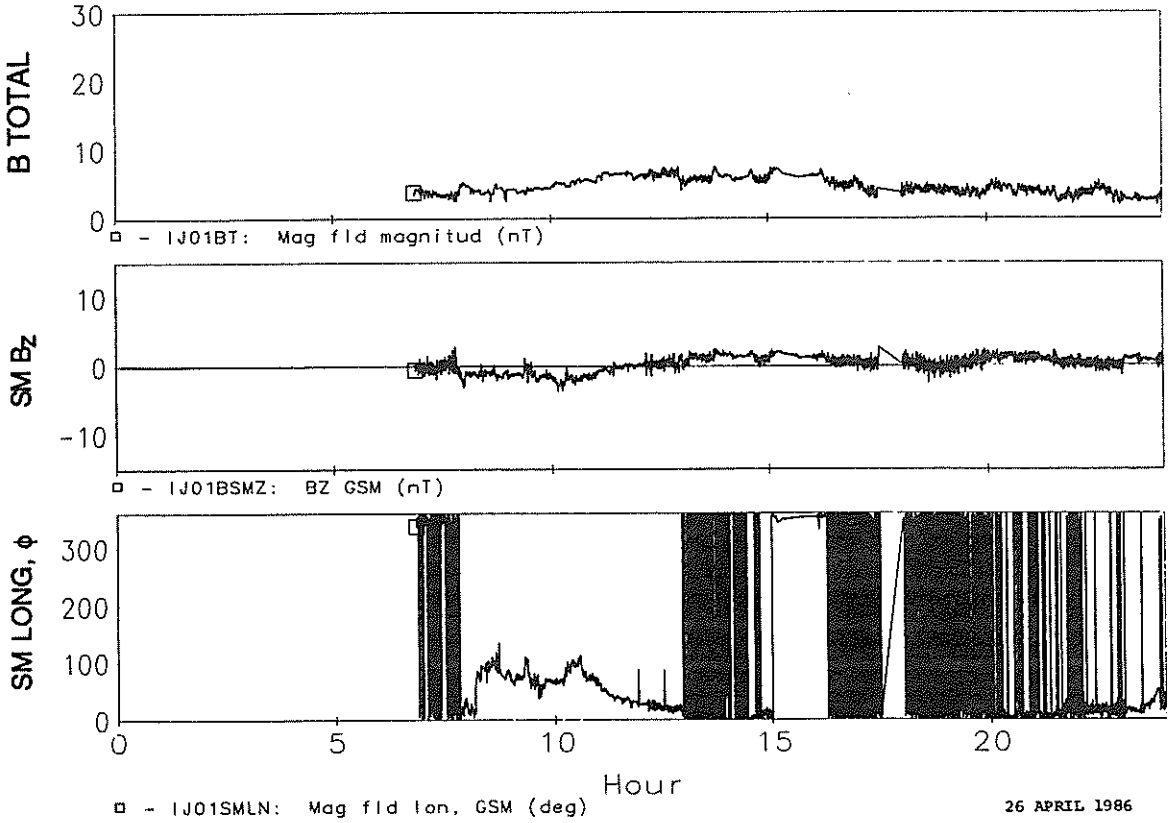
25 APRIL 1986



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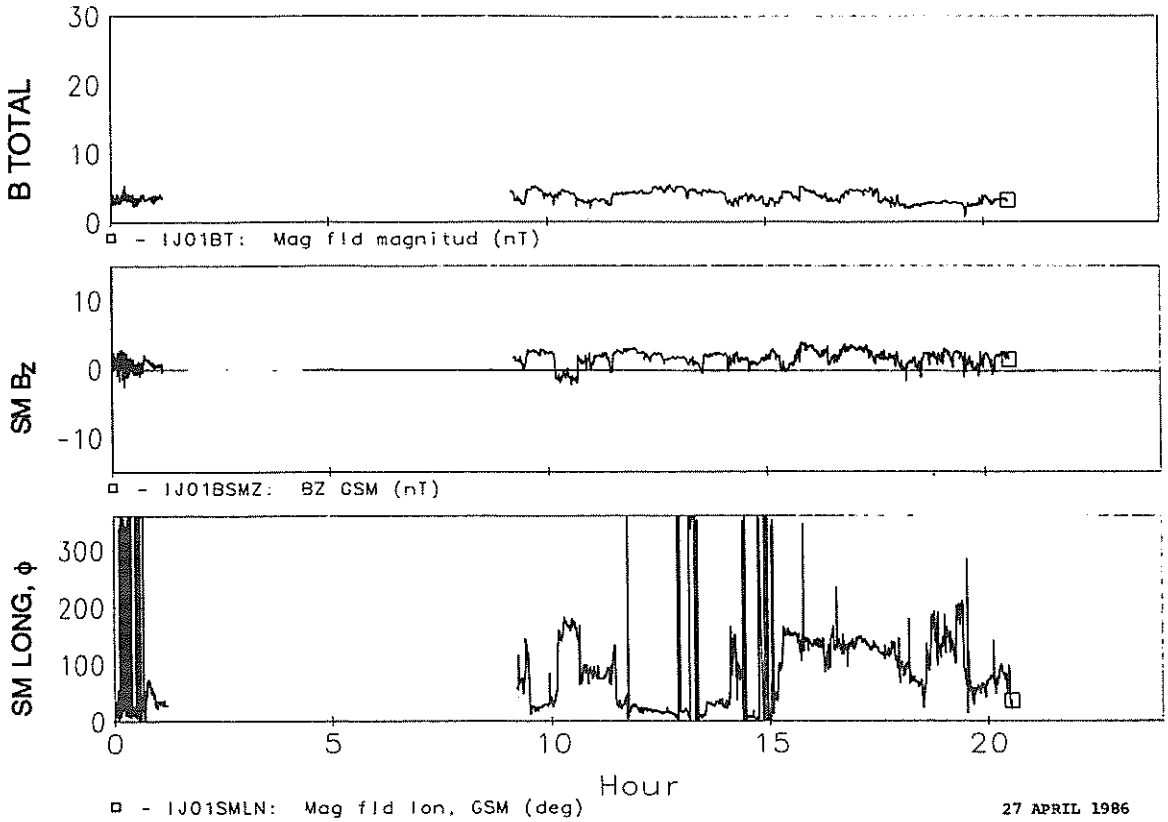

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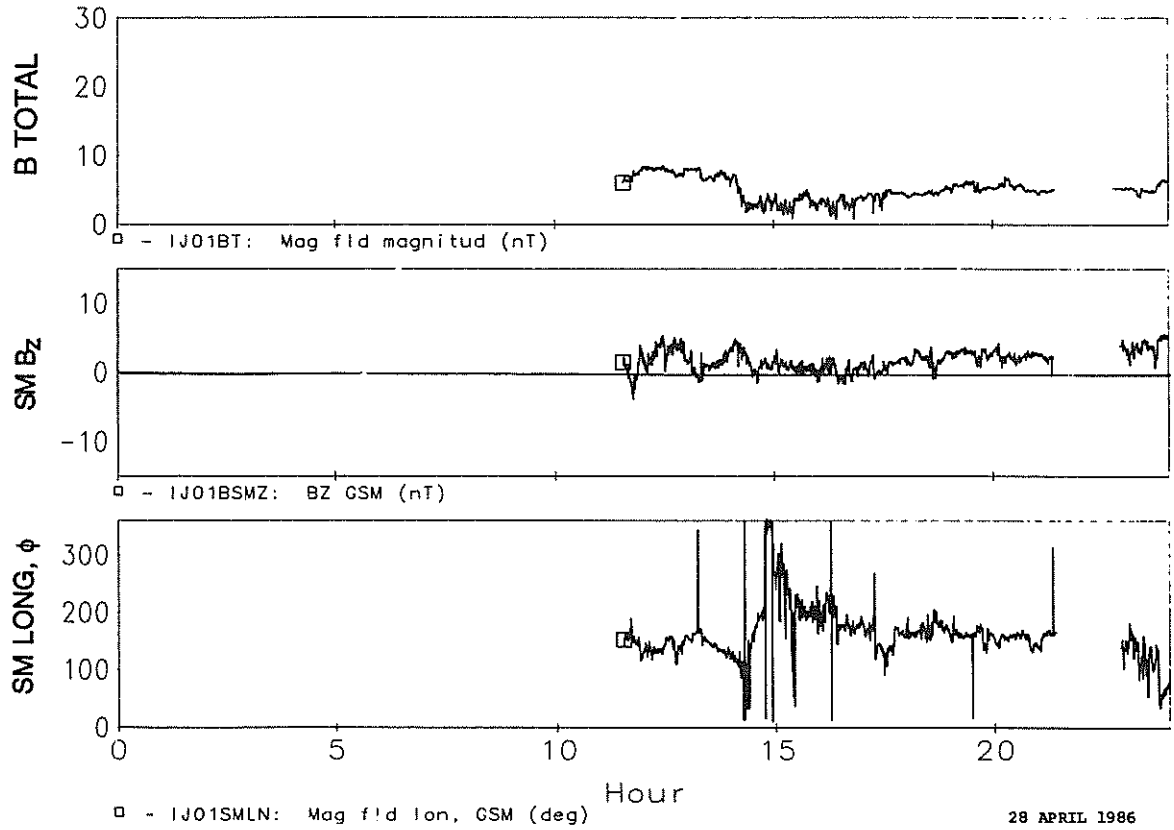

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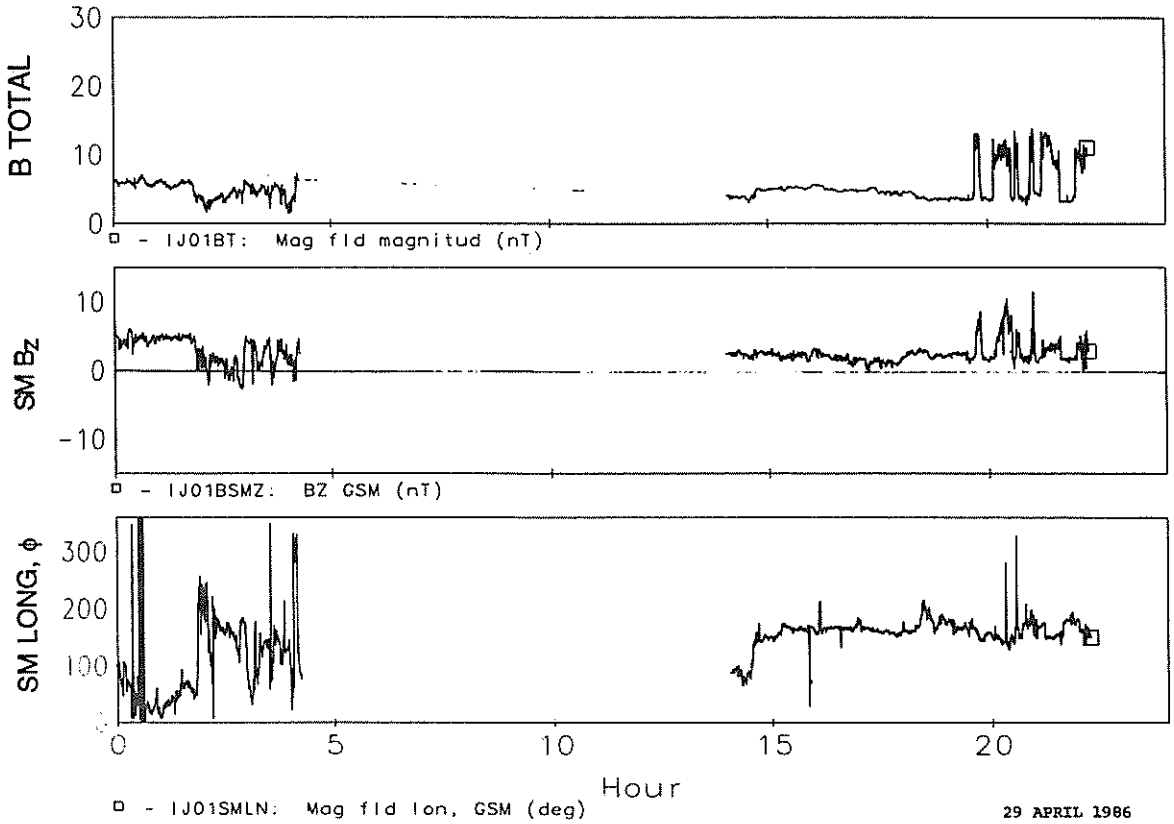

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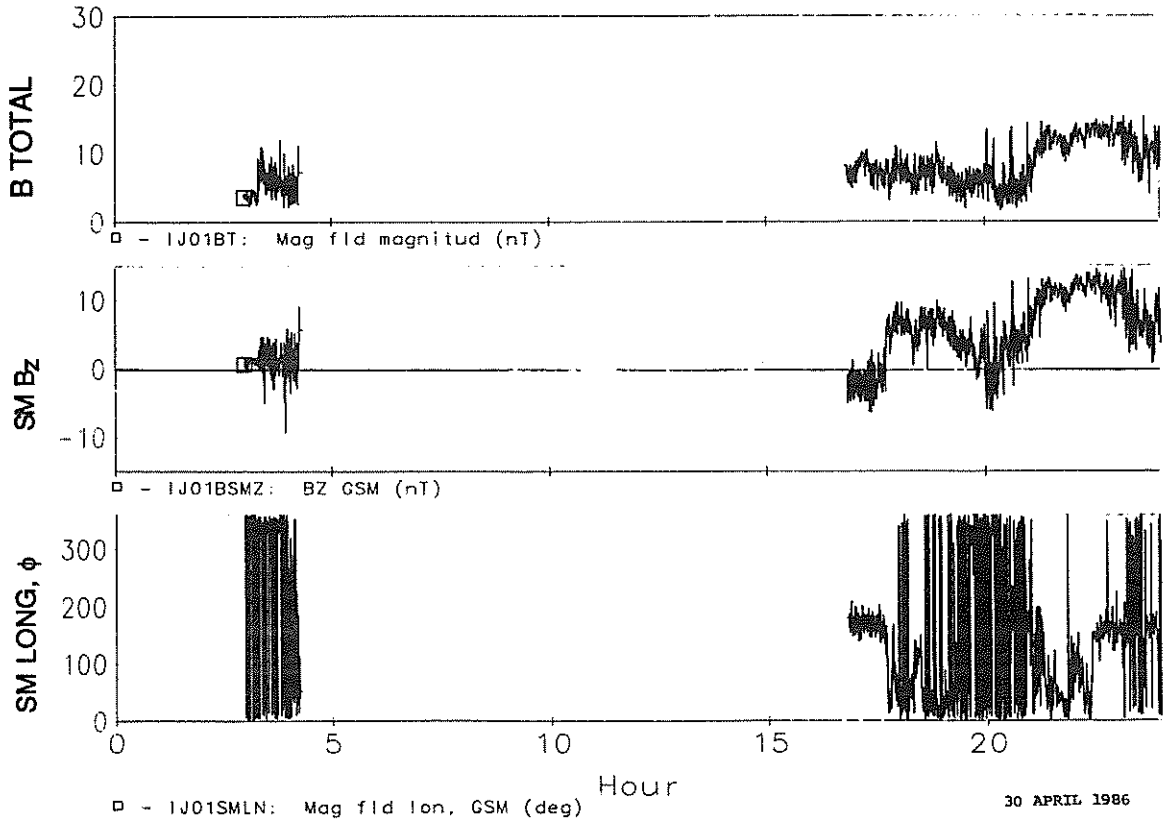
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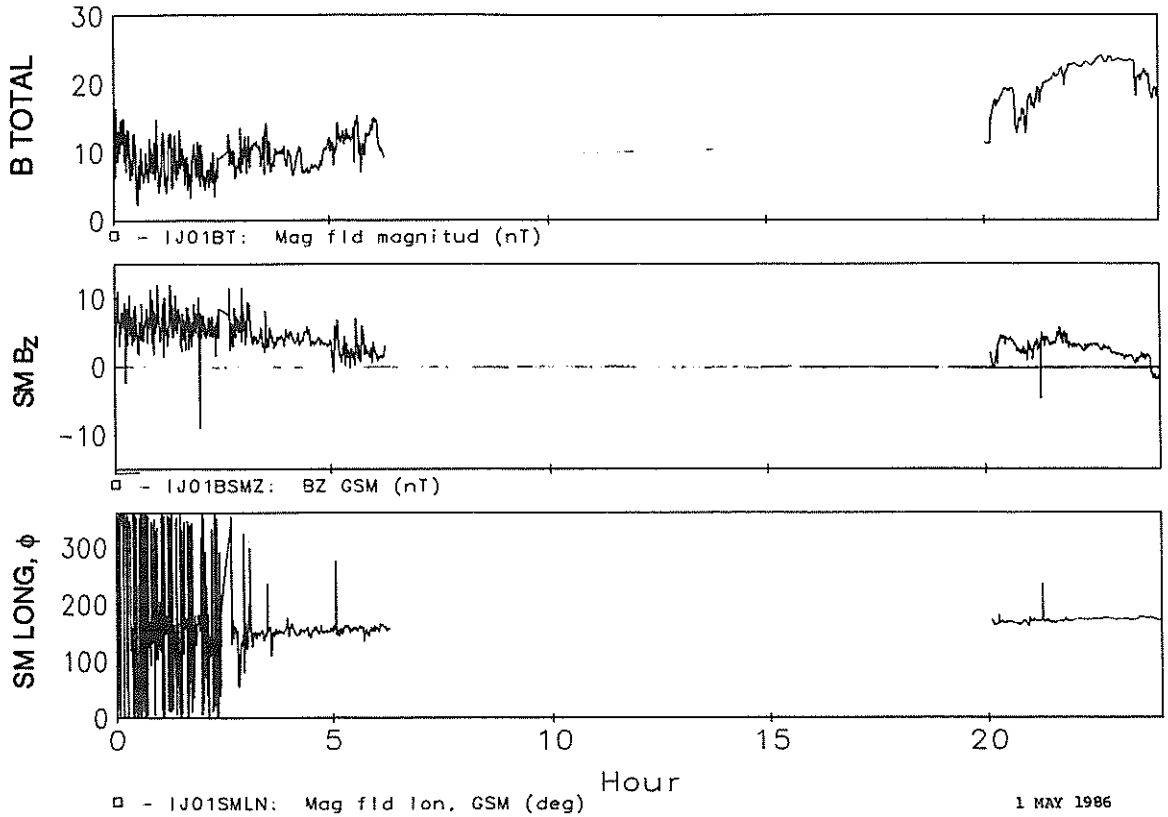
30 APRIL 1986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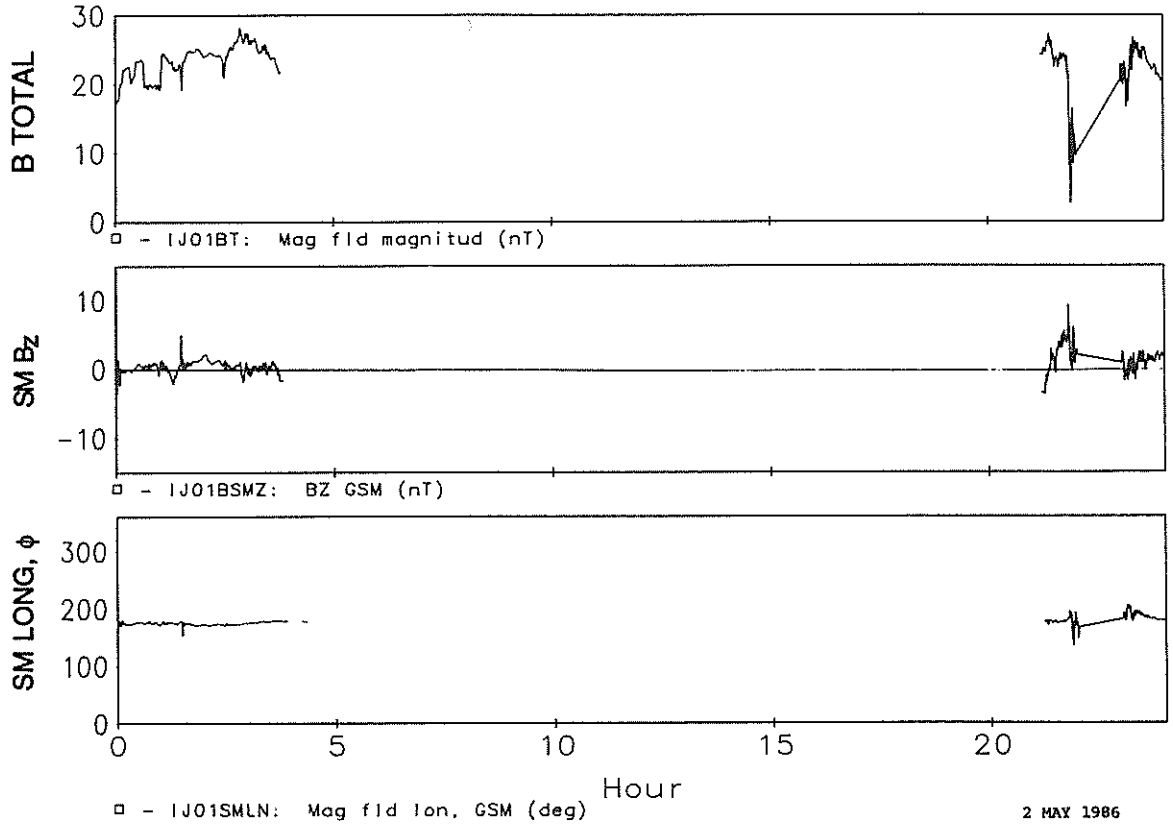
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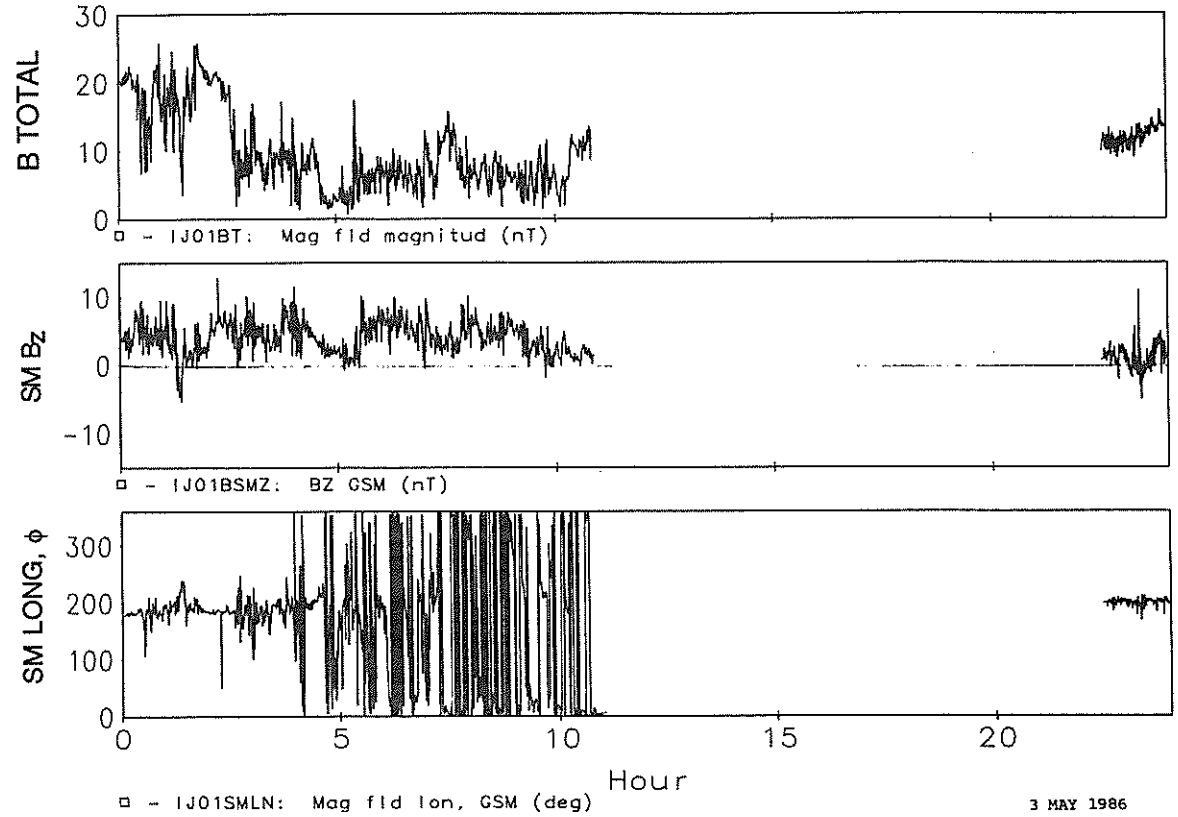
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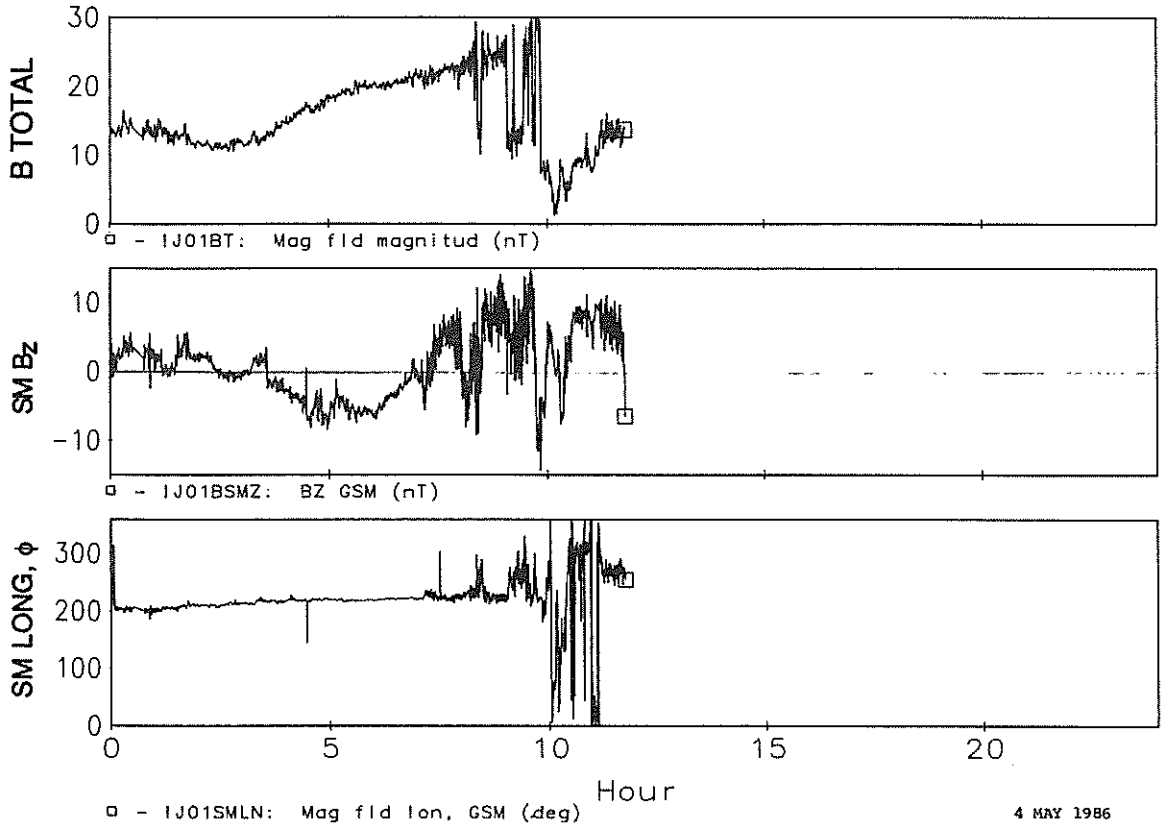
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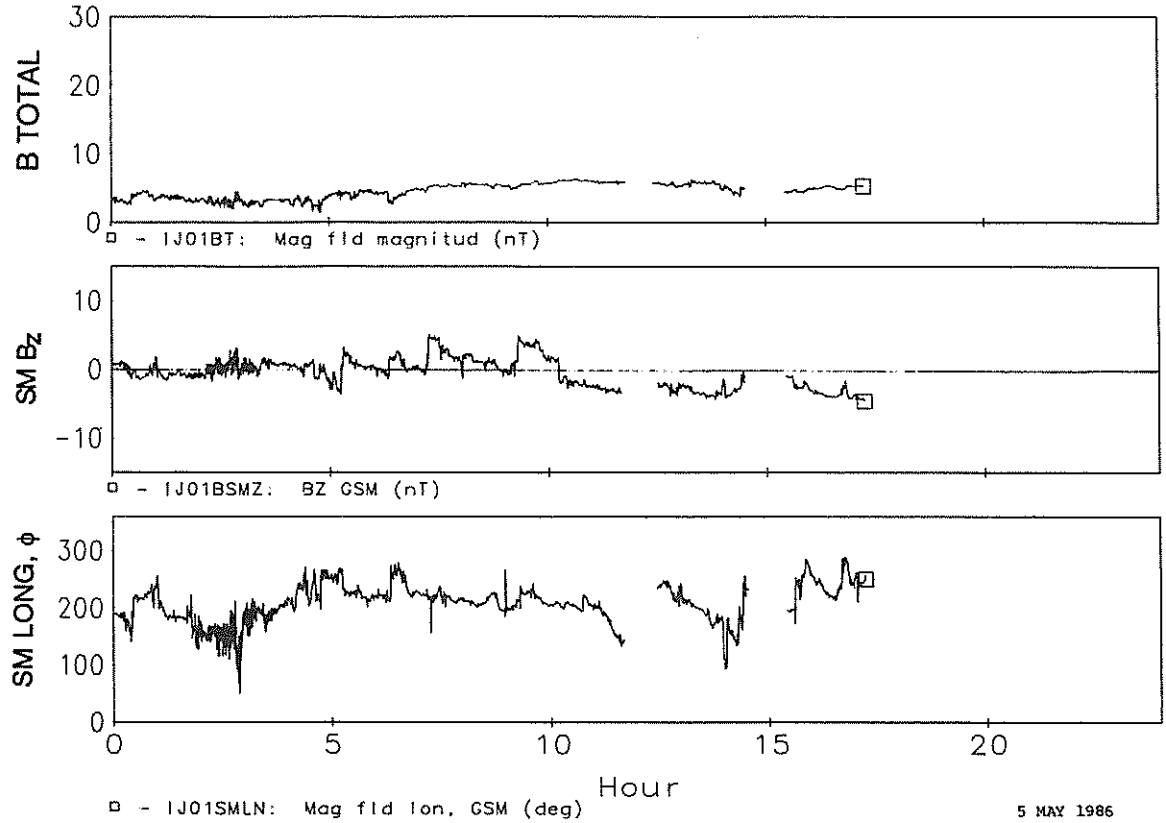
4 MAY 1986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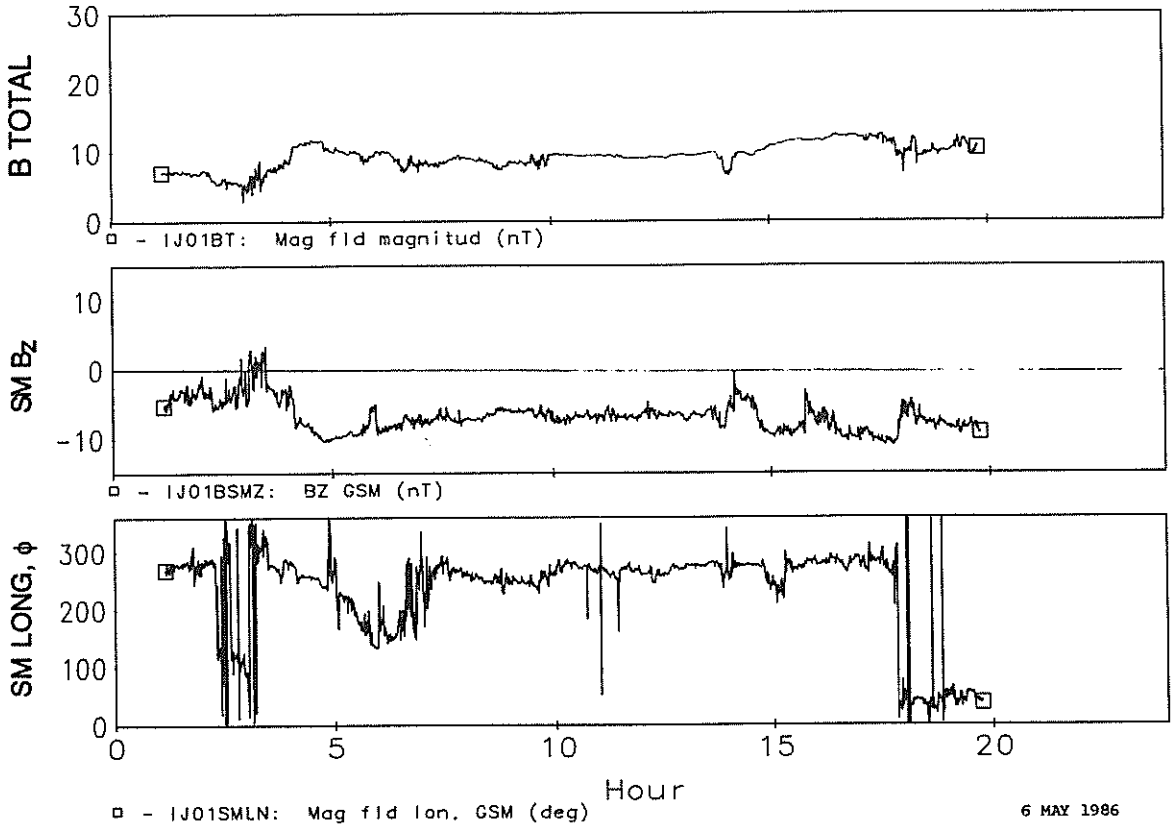
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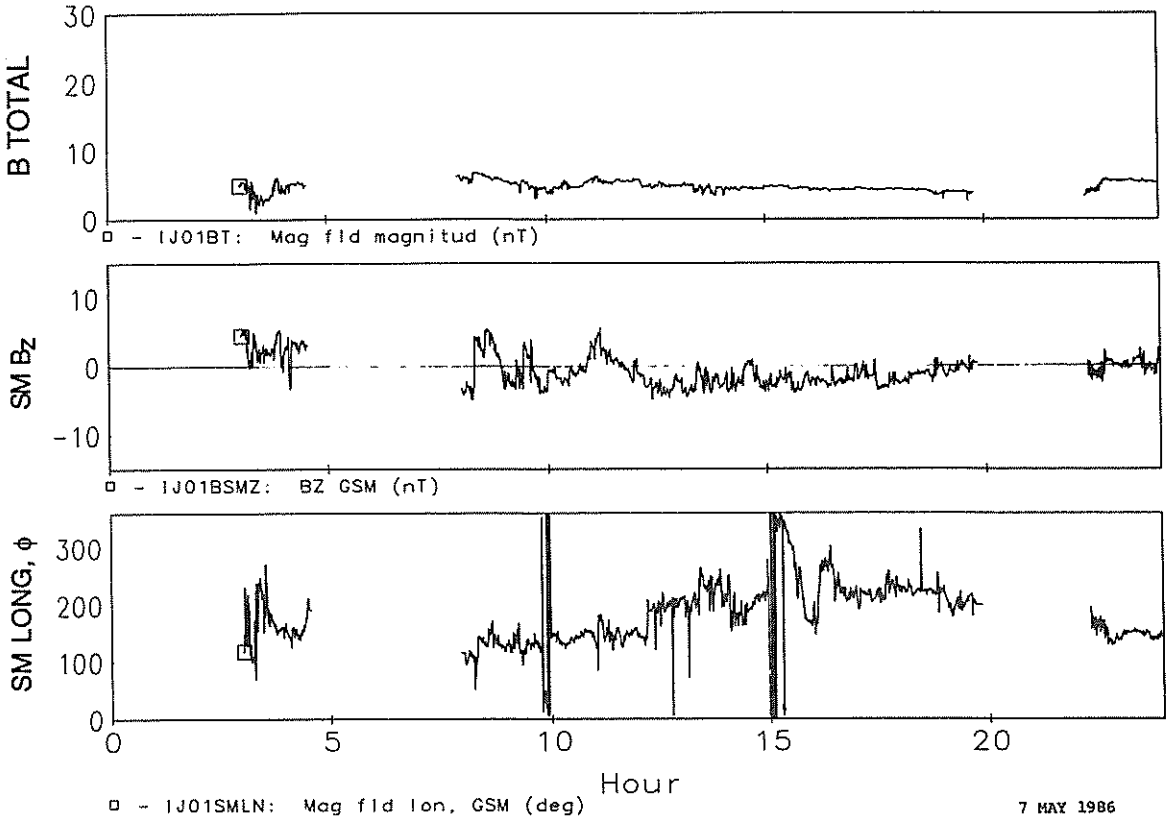
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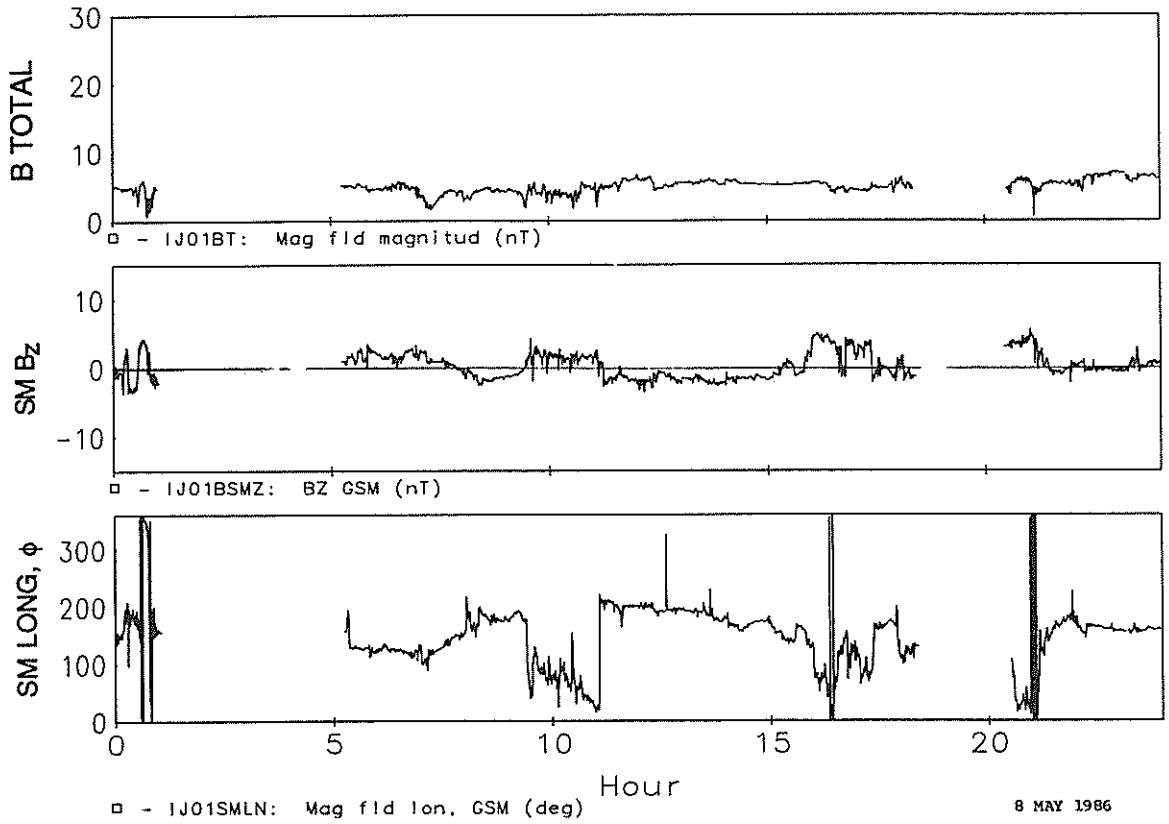
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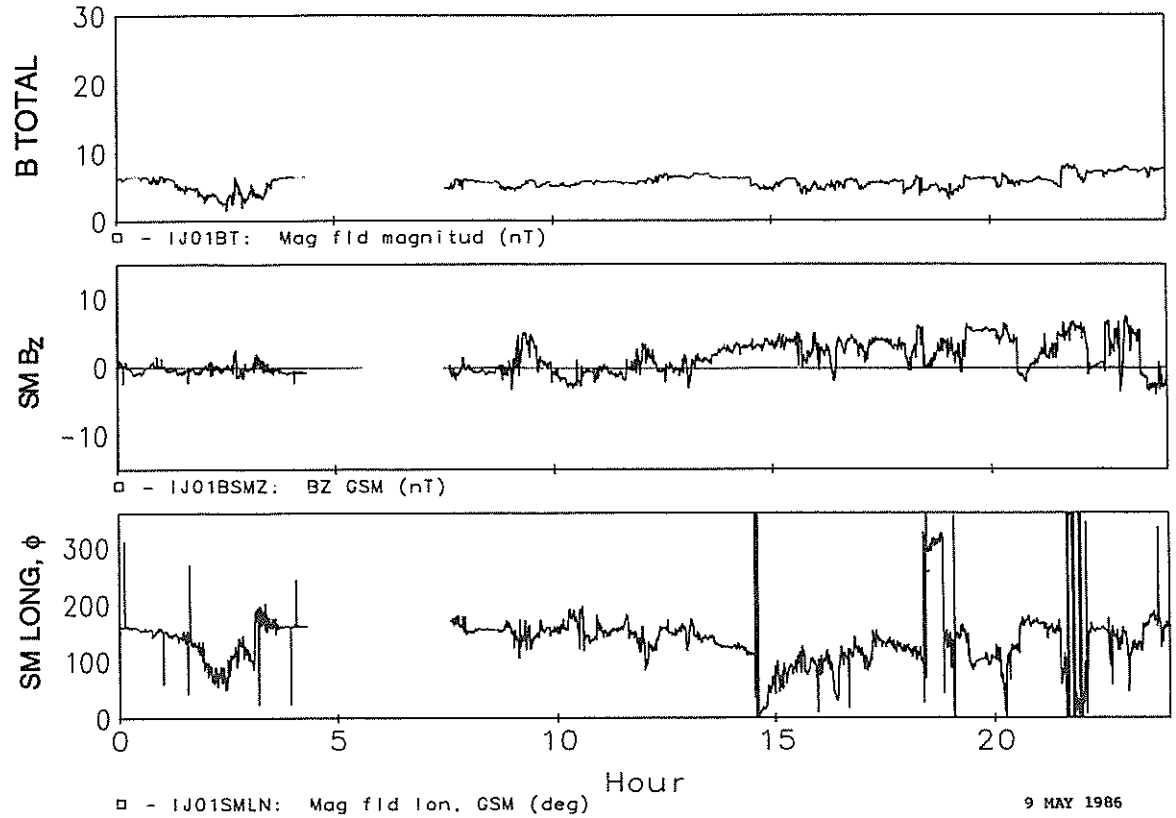
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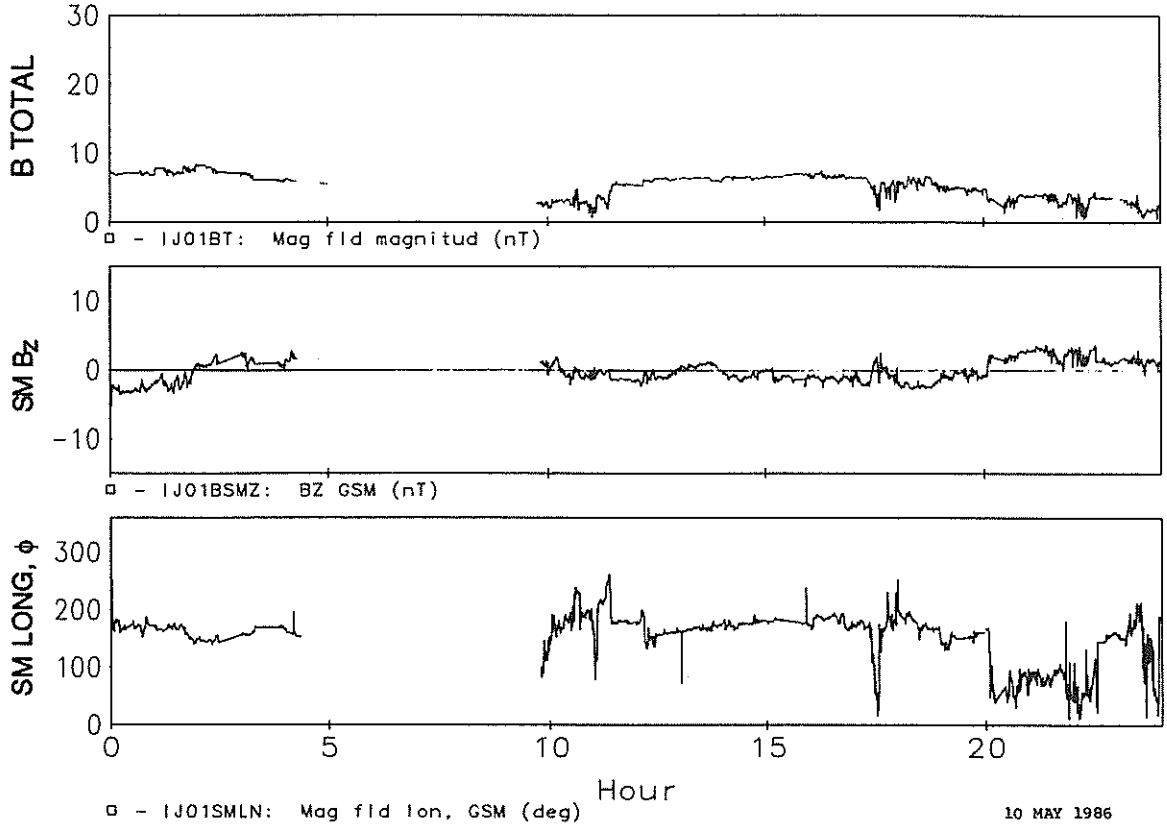
9 MAY 1986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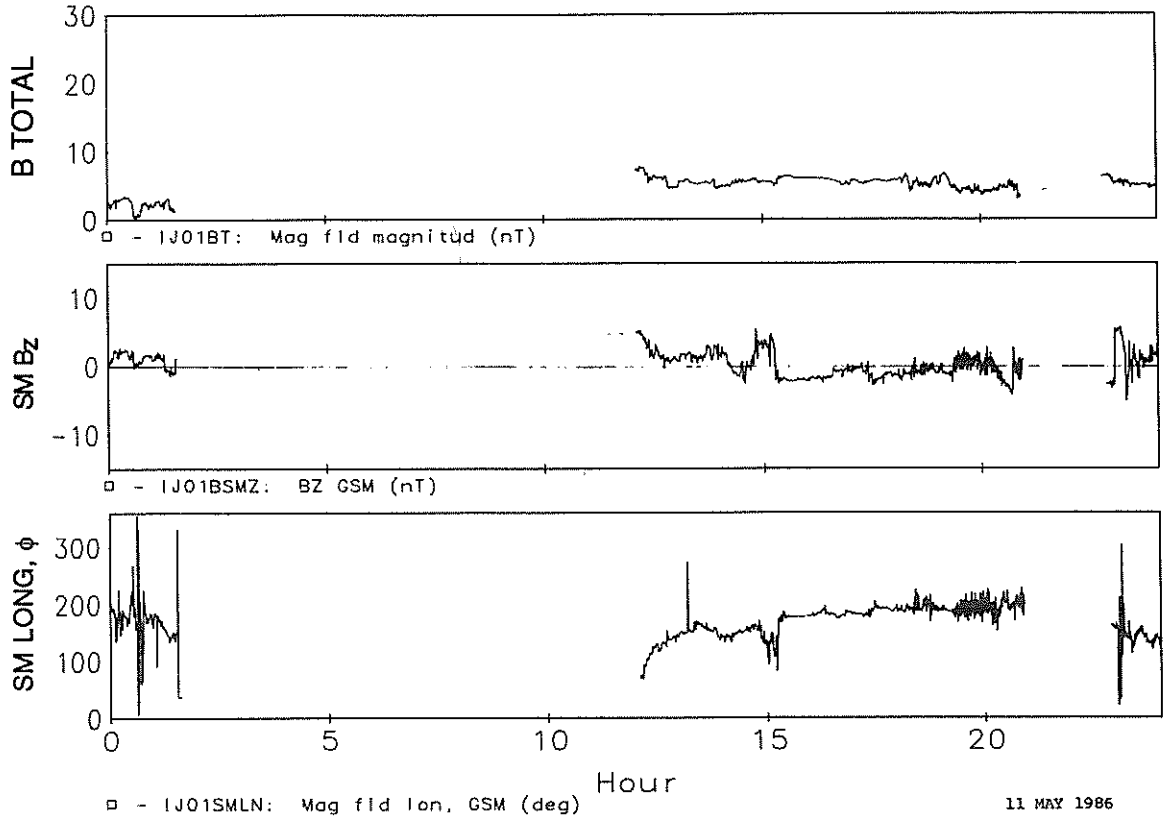
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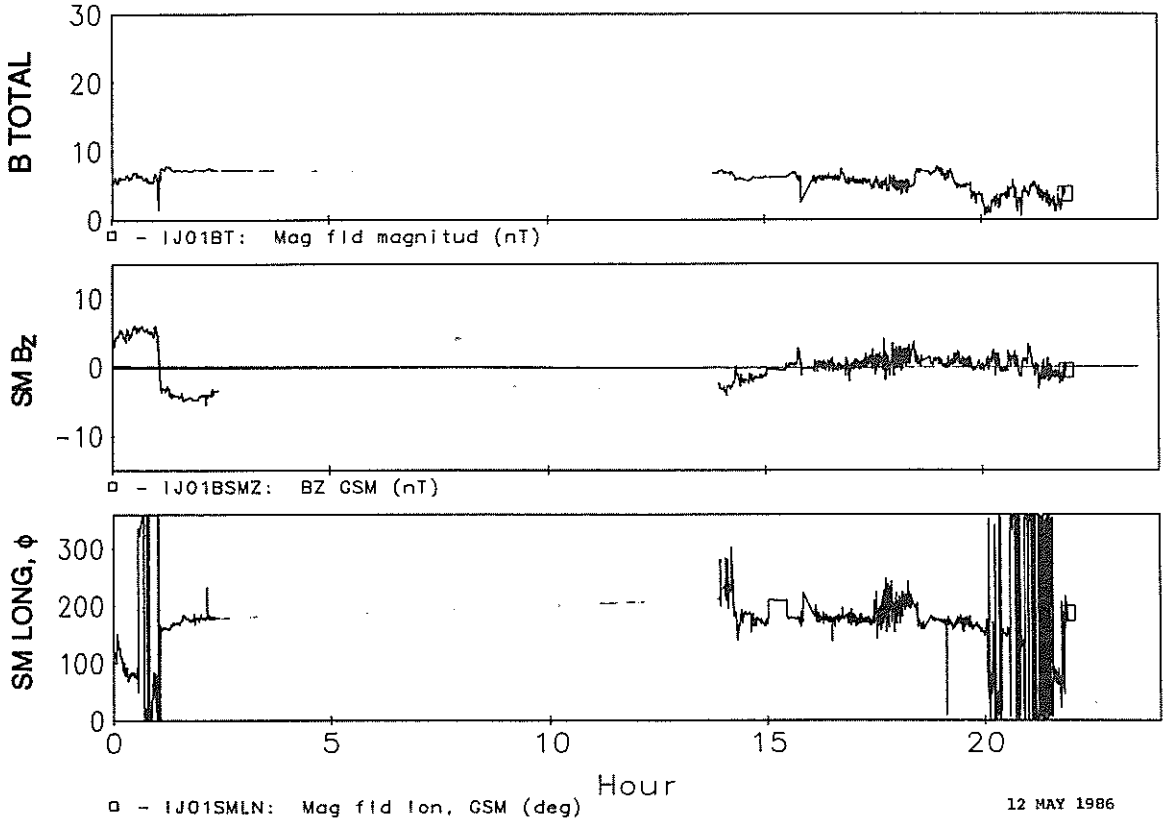
11 MAY 1986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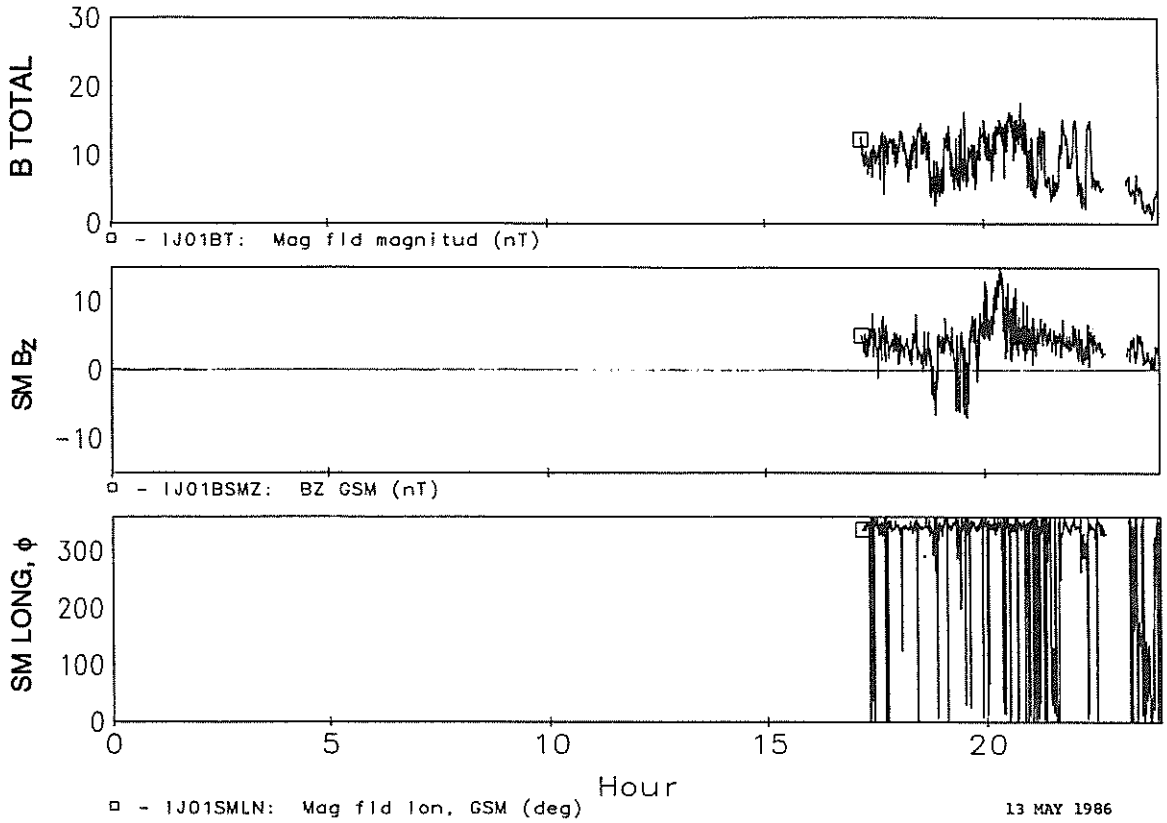
12 MAY 1986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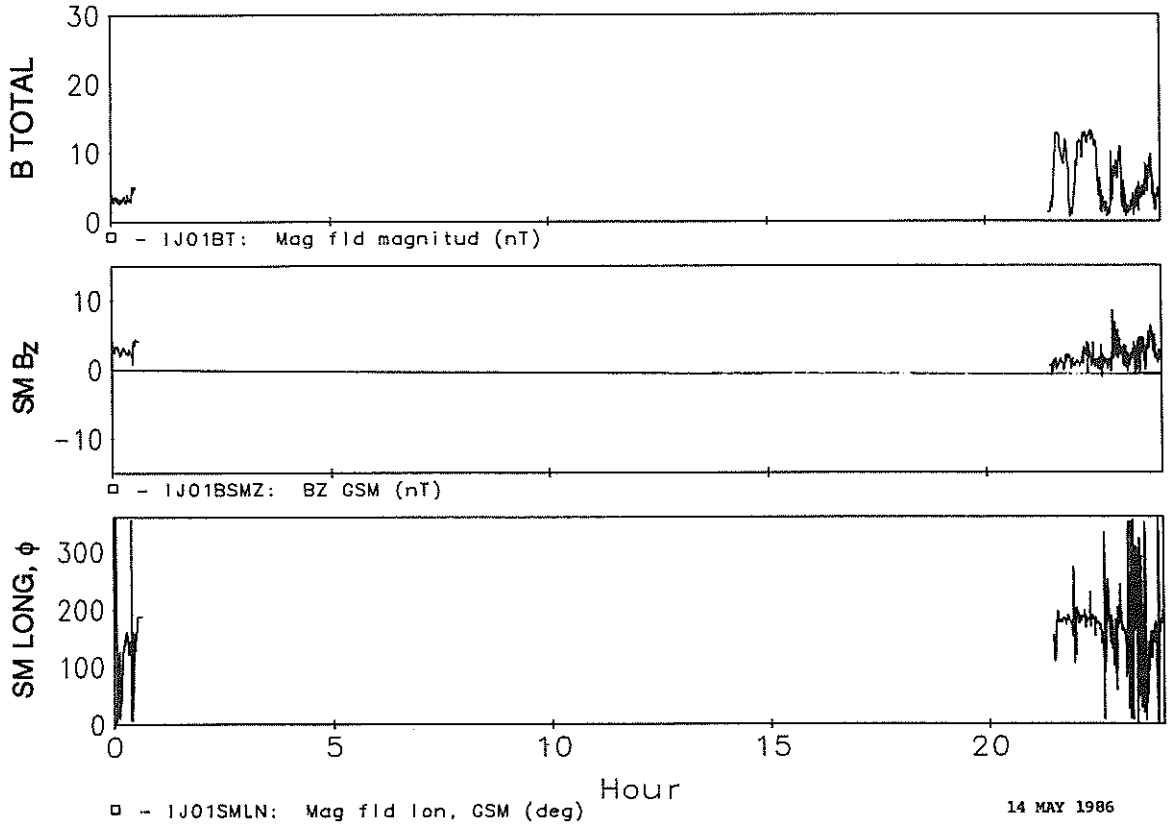
13 MAY 1986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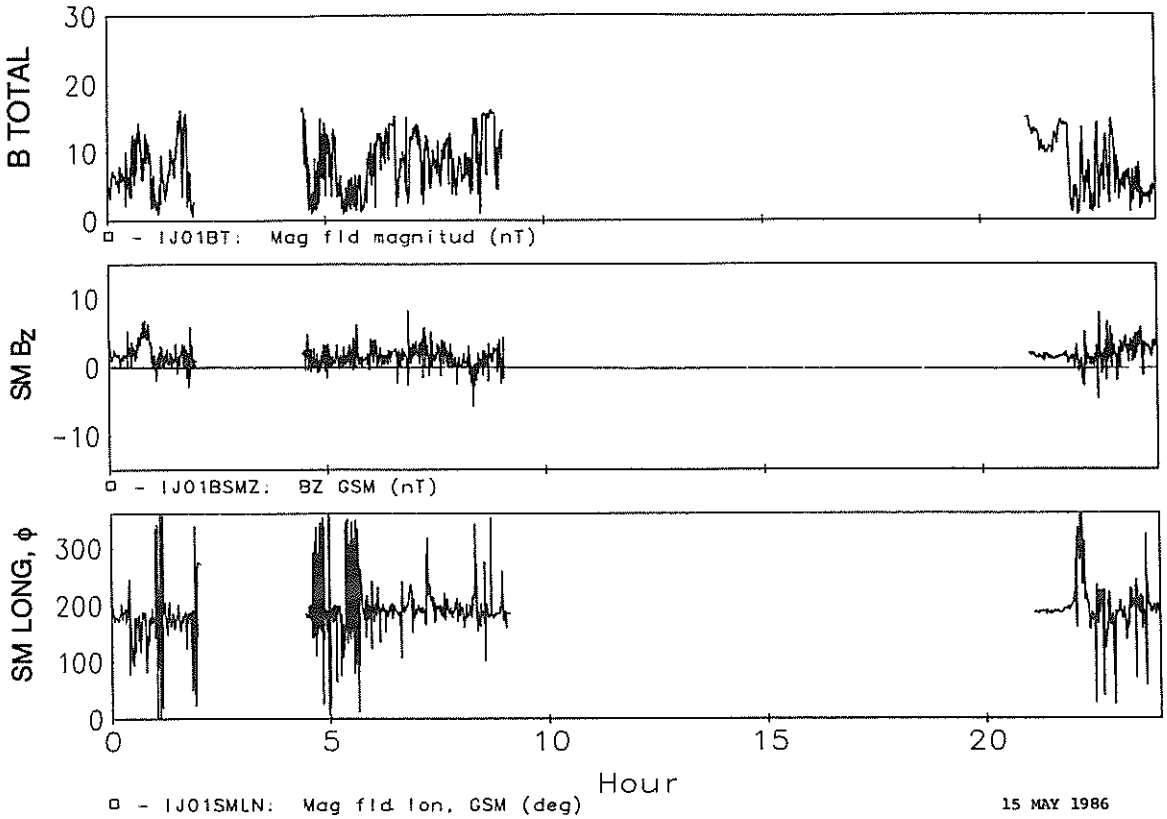
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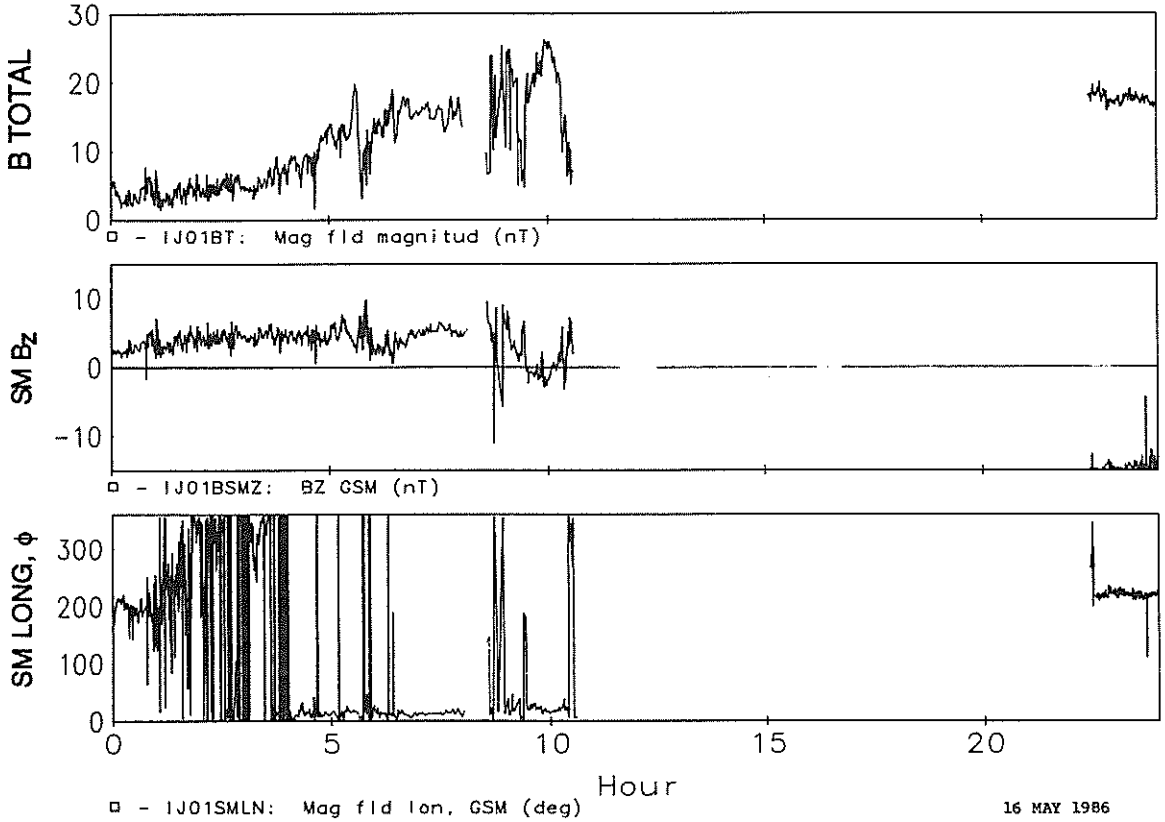
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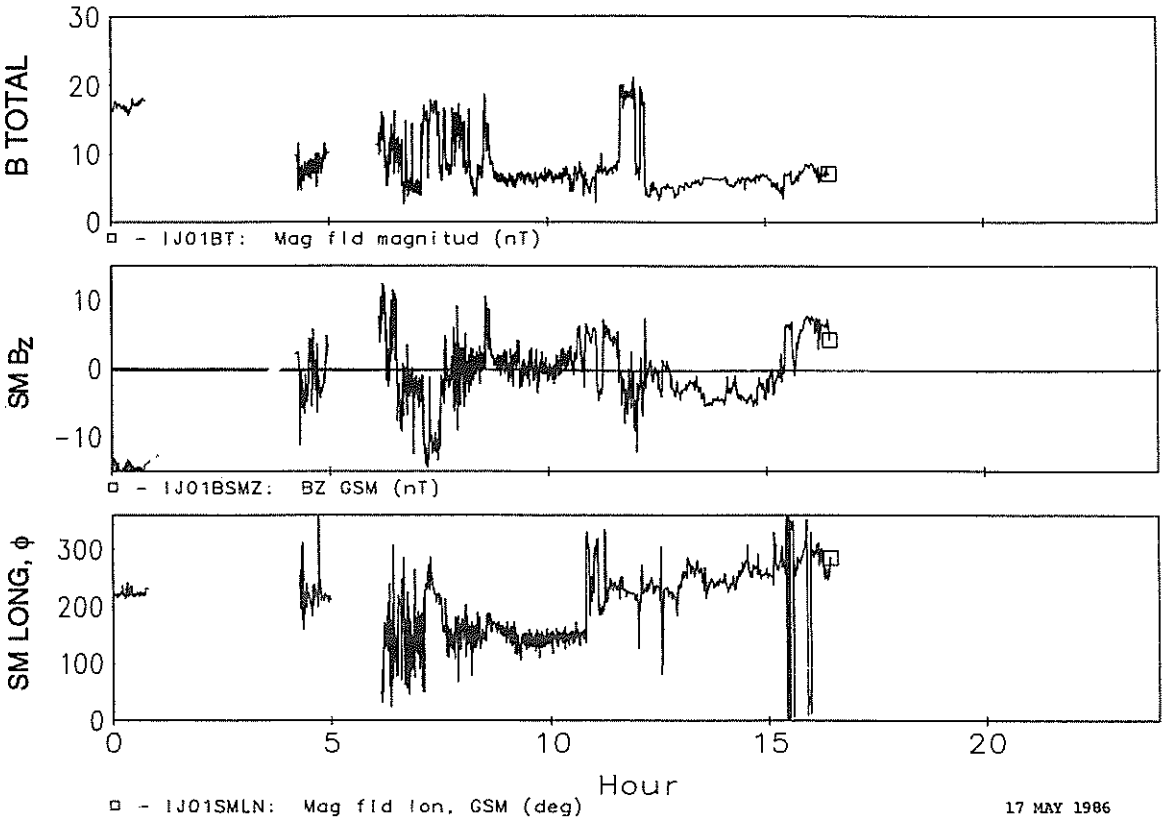
16 MAY 1986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SM Bz
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- IJ01BSMZ: BZ GSM (nT)
SM LONG, ϕ
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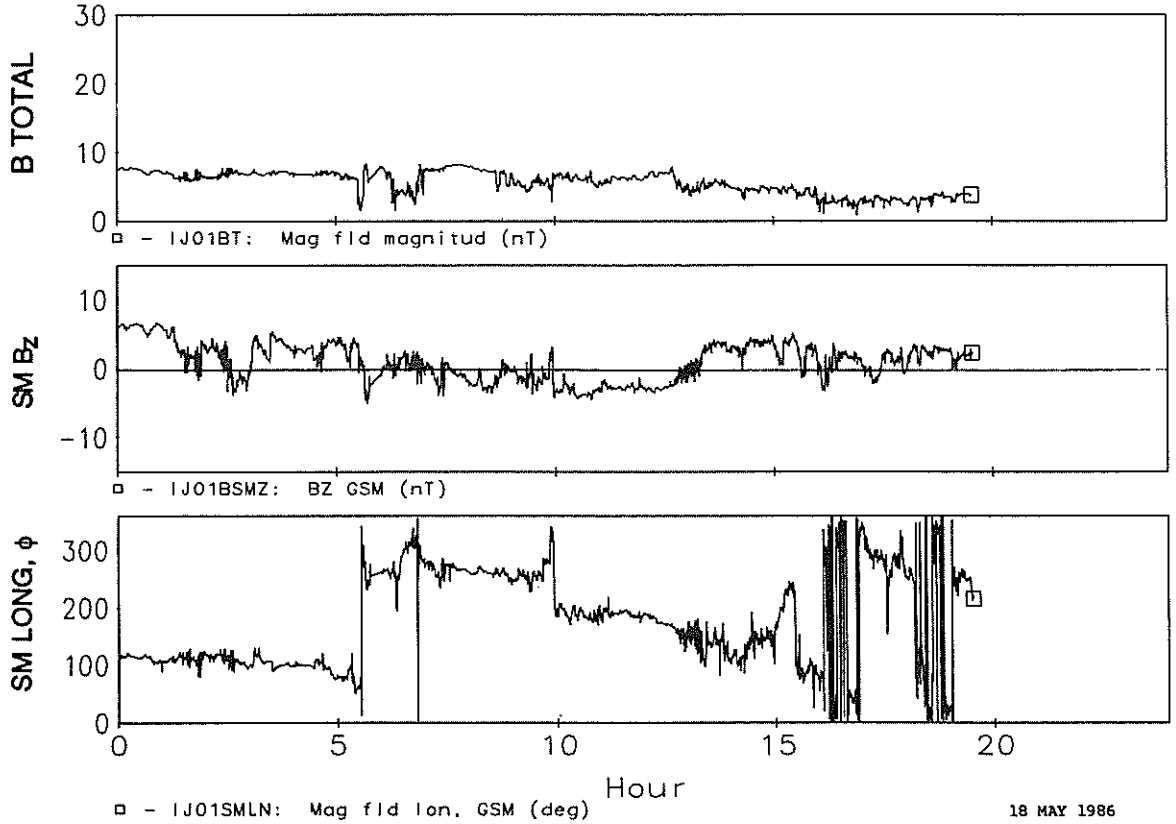
Hour
- IJ01SMLN: Mag fld lon, GSM (deg)
17 MAY 1986

68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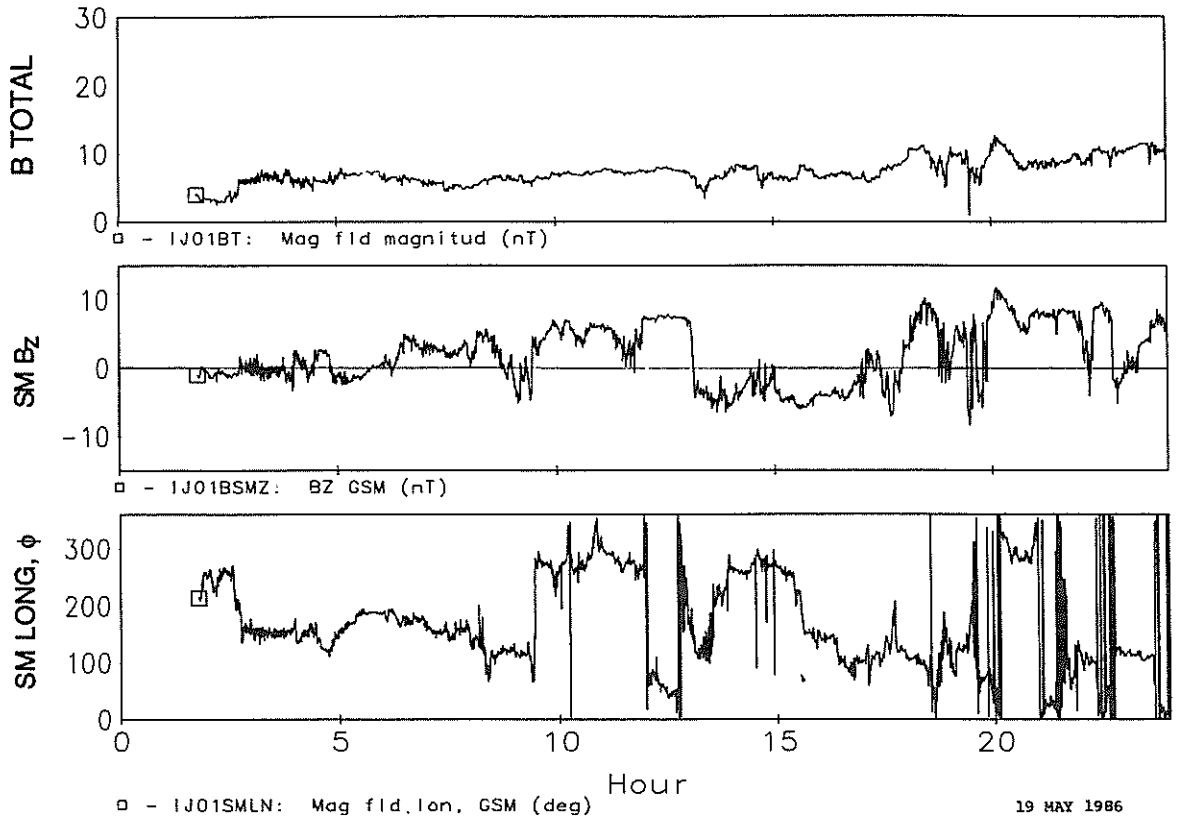
18 MAY 1986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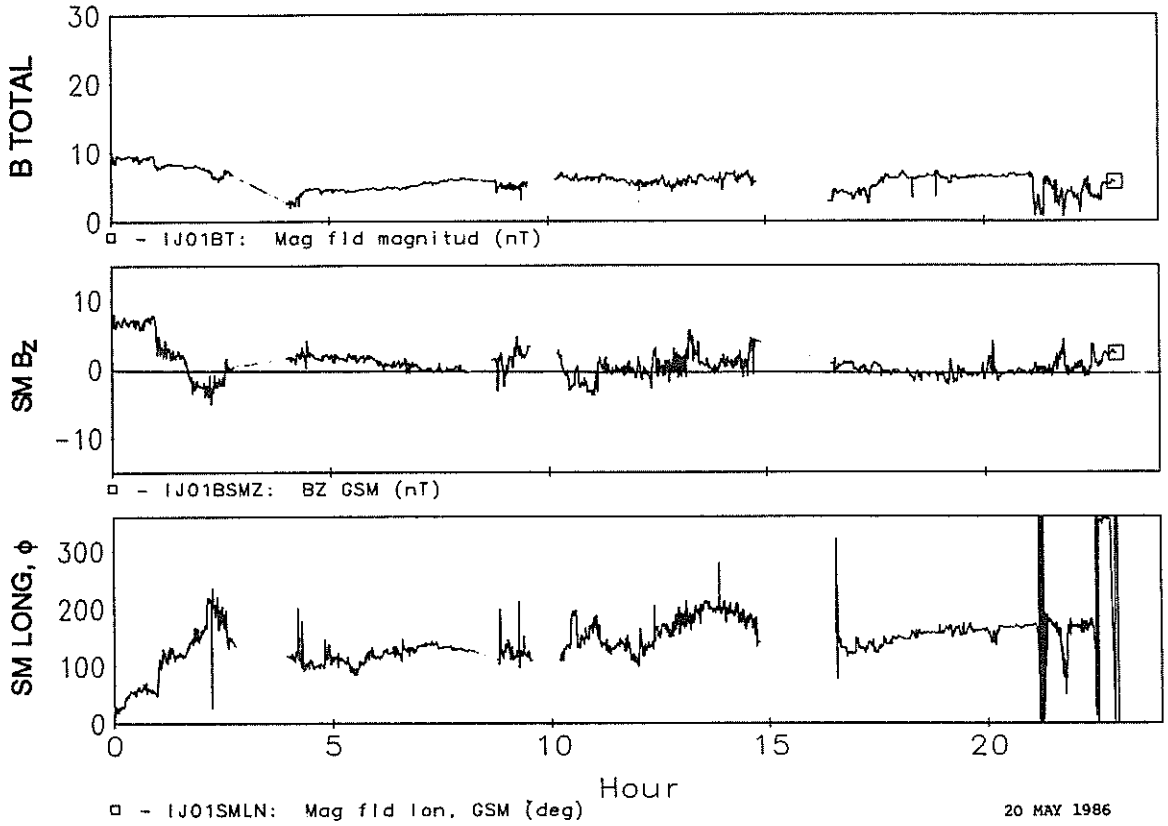
Hour
- IJ01SMLN: Mag fld.lon, GSM (deg)
19 MAY 1986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Hour
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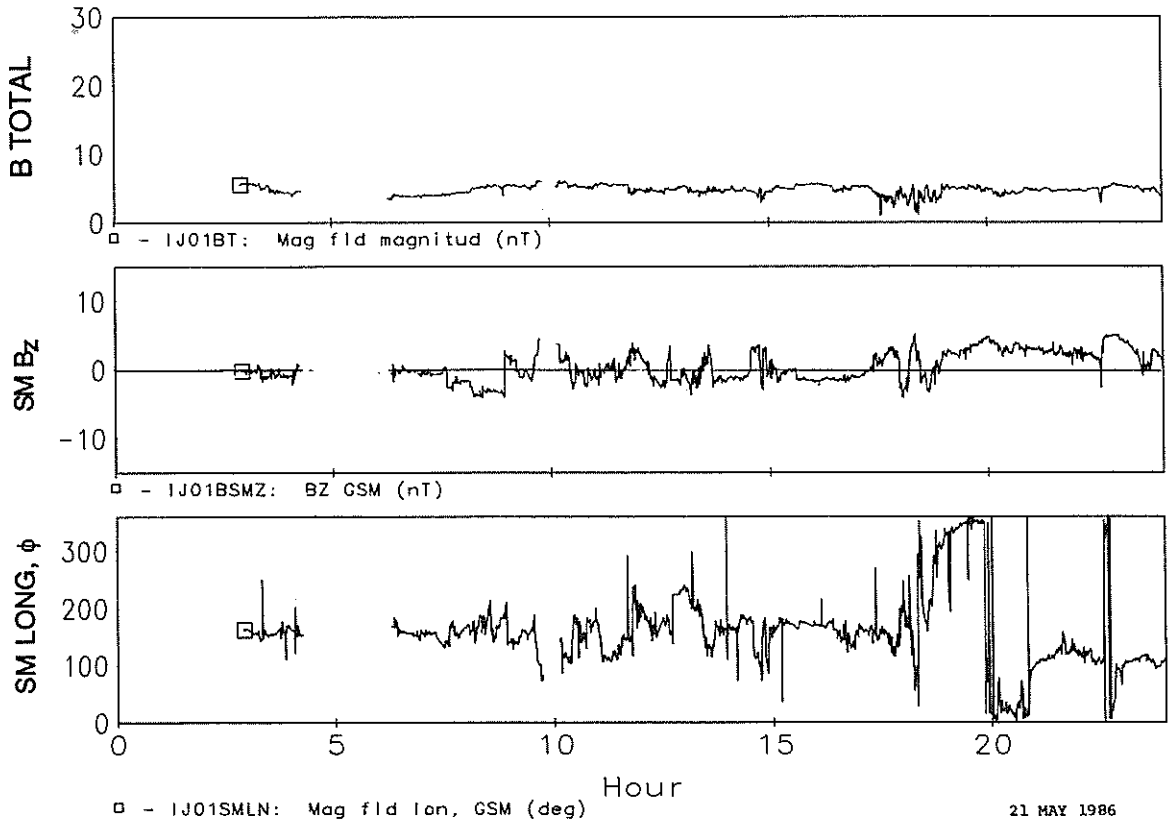
20 MAY 1986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Hour
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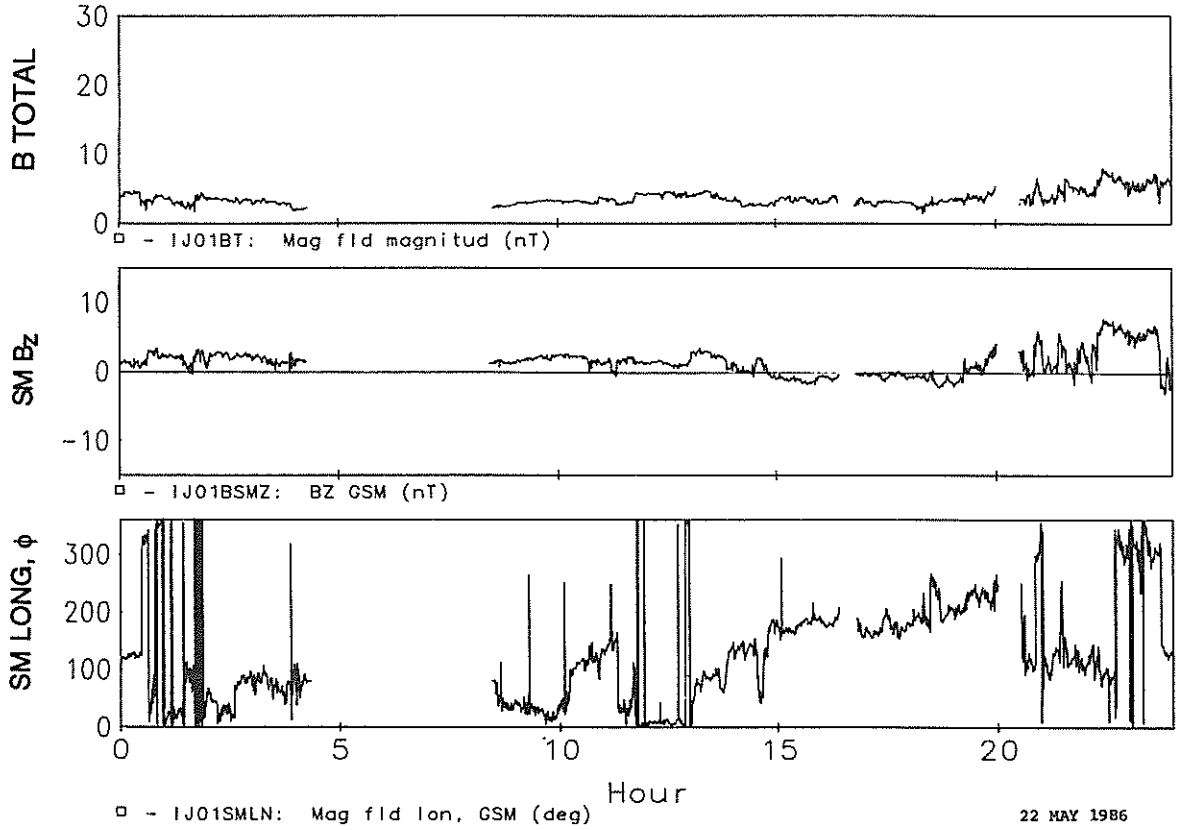
21 MAY 1986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Hour
- IJ01SMLN: Mag fld lon, GSM (deg)
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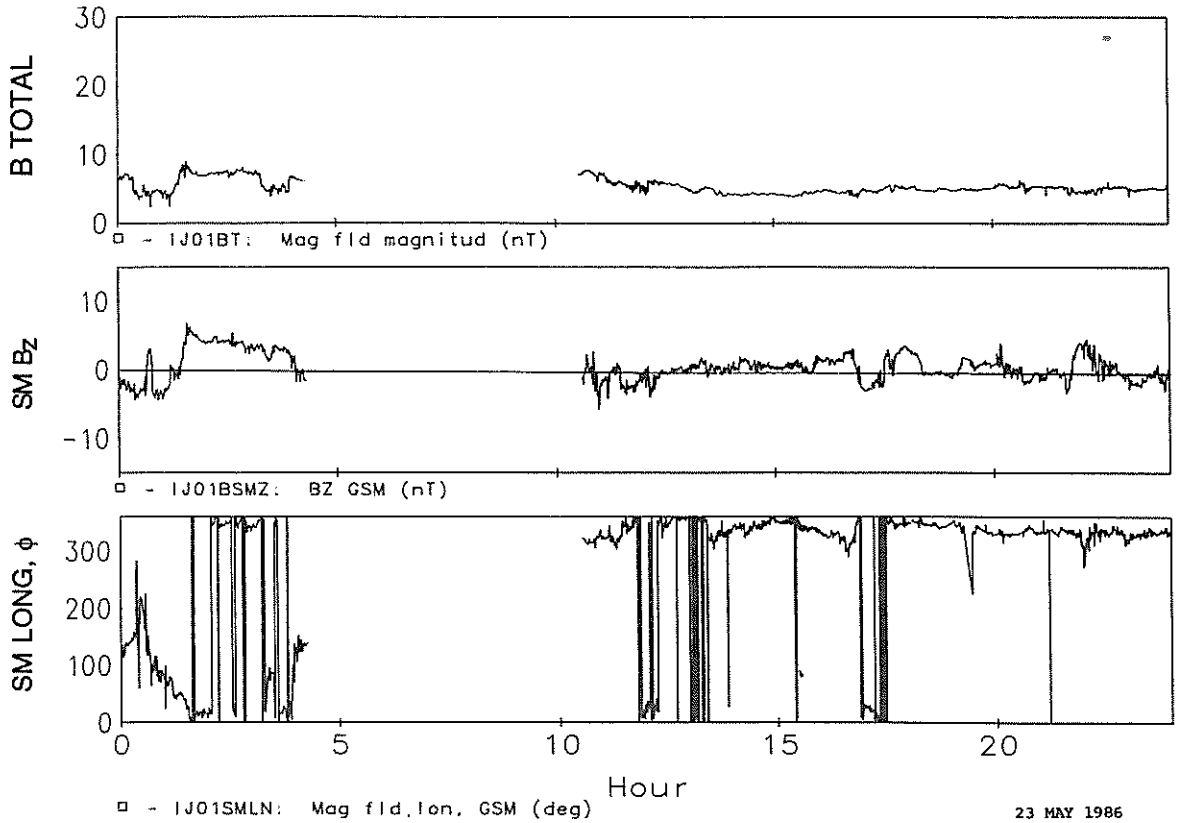
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Hour
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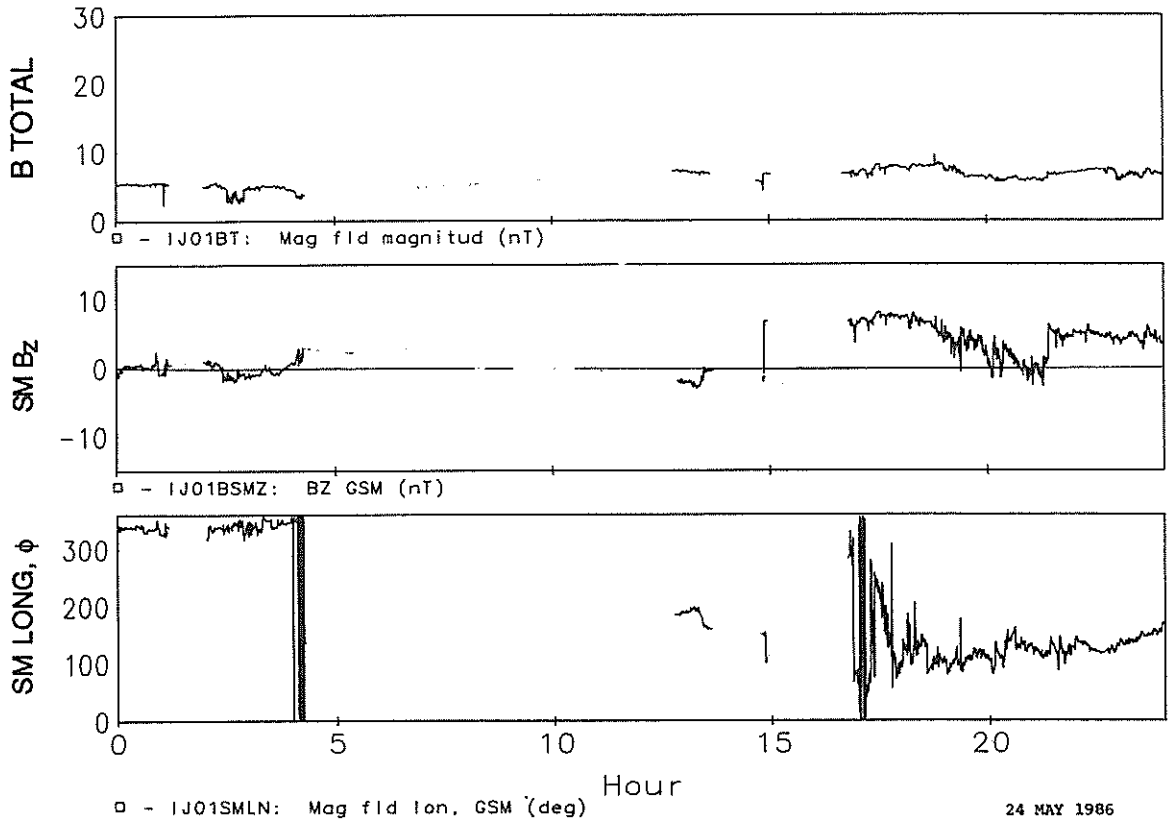
23 MAY 1986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Hour
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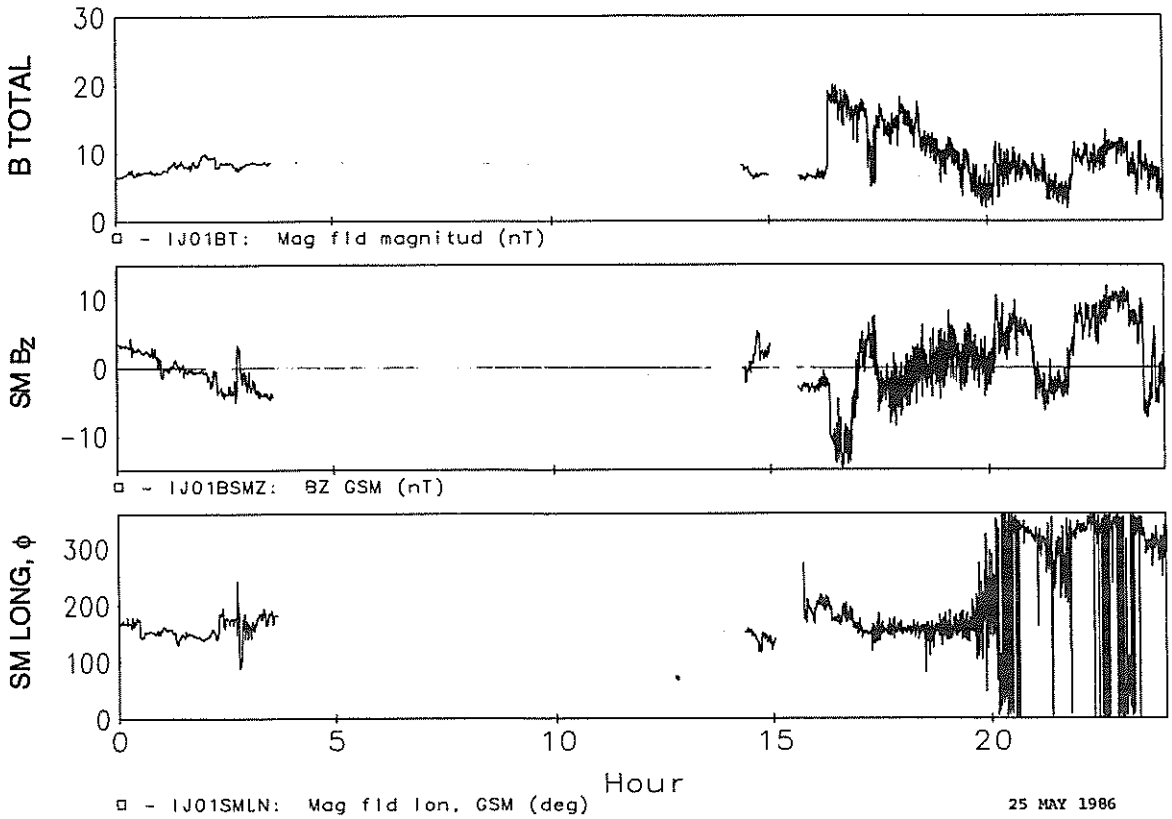
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SM LONG, ϕ
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Hour
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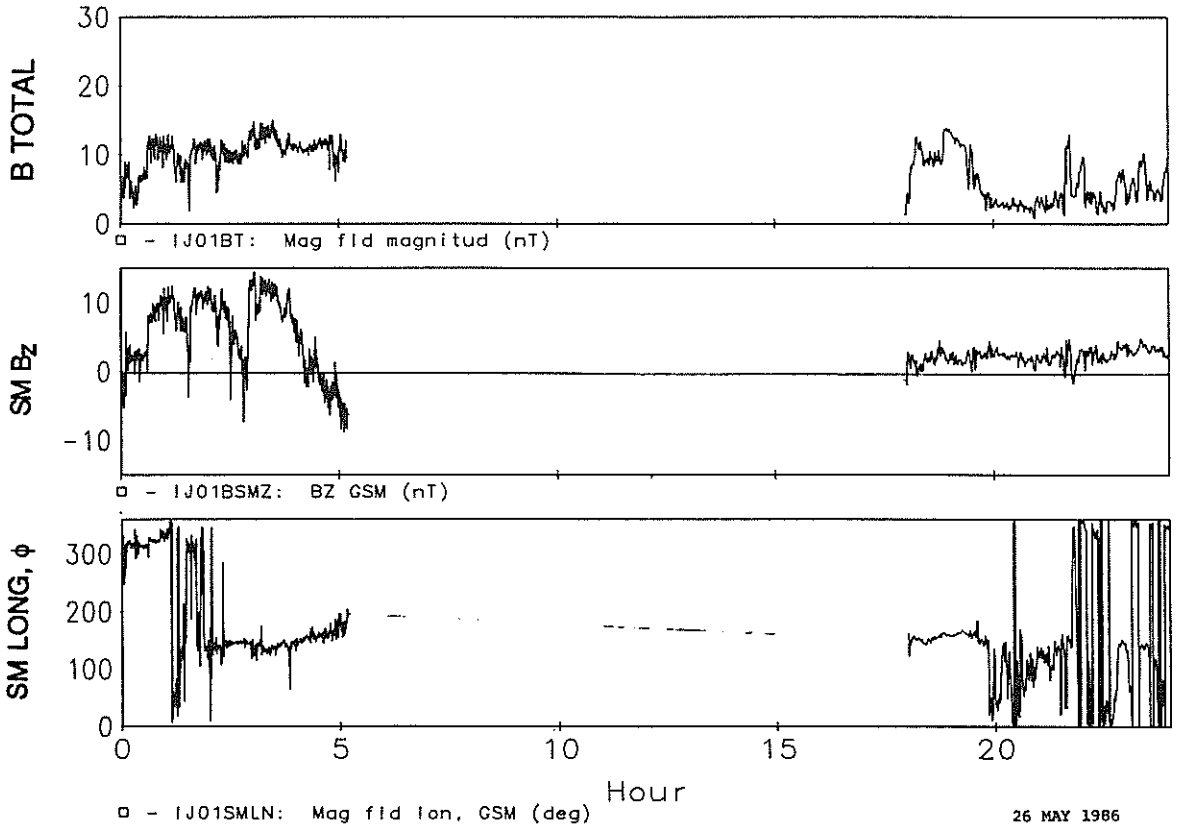
25 MAY 1986

72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Hour
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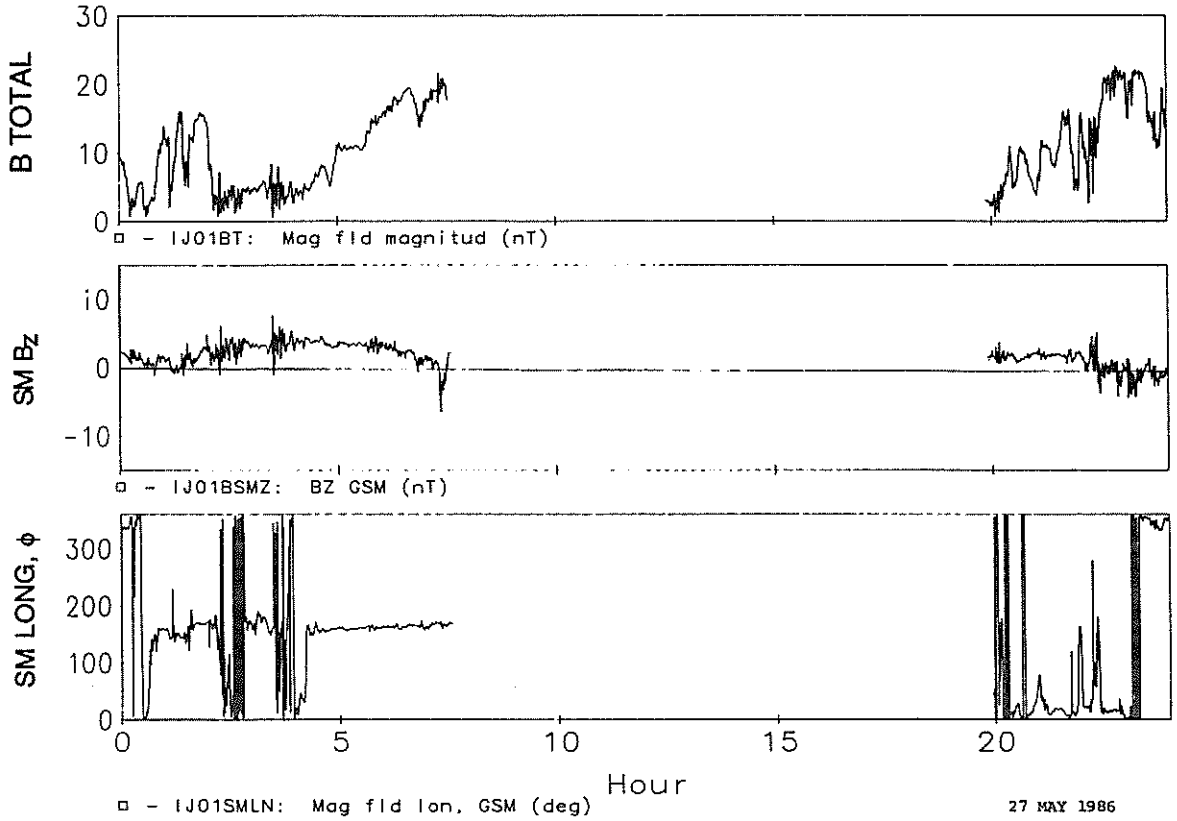
26 MAY 1986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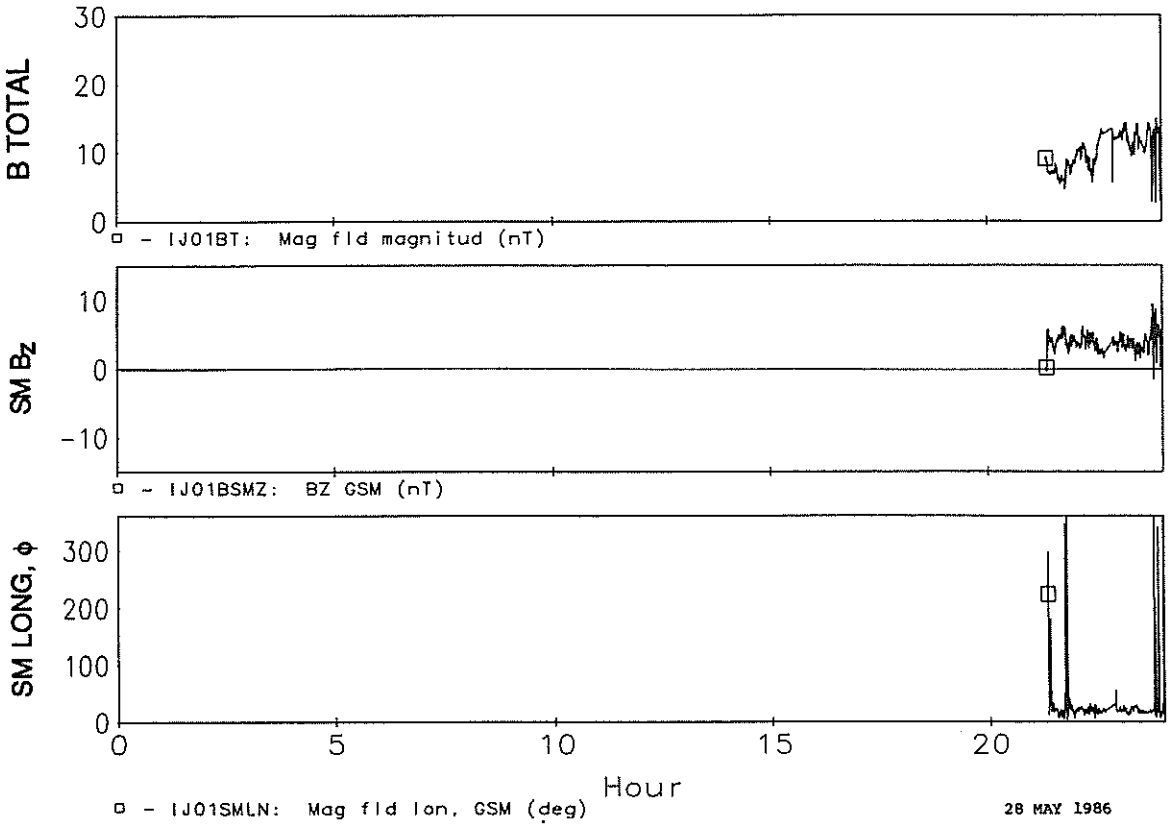
27 MAY 1986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Hour
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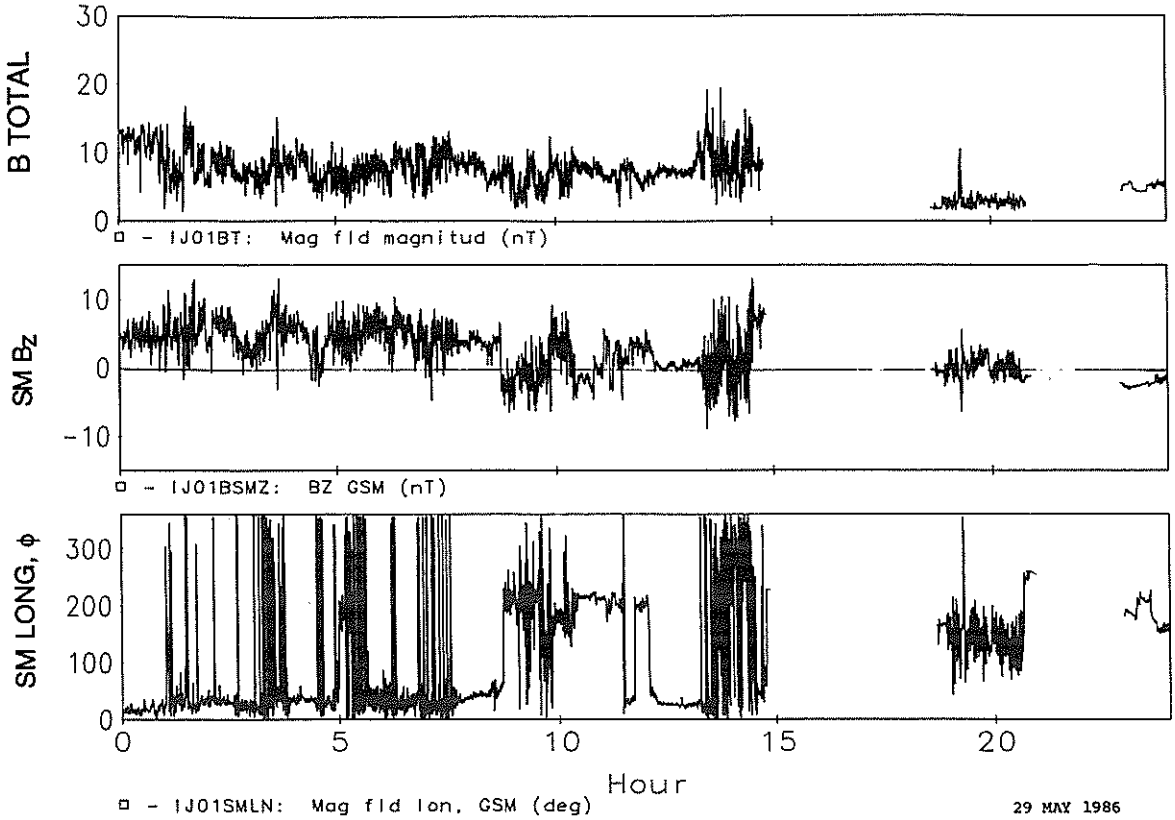
28 MAY 1986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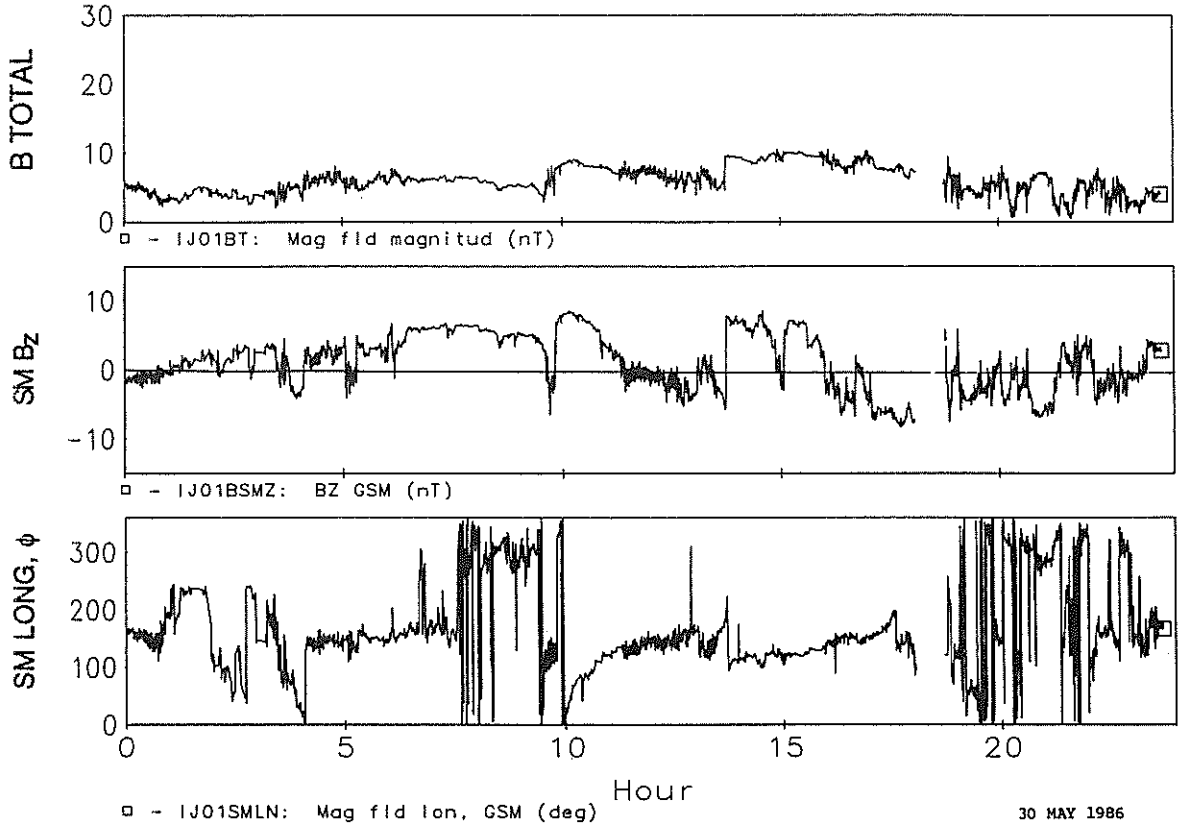
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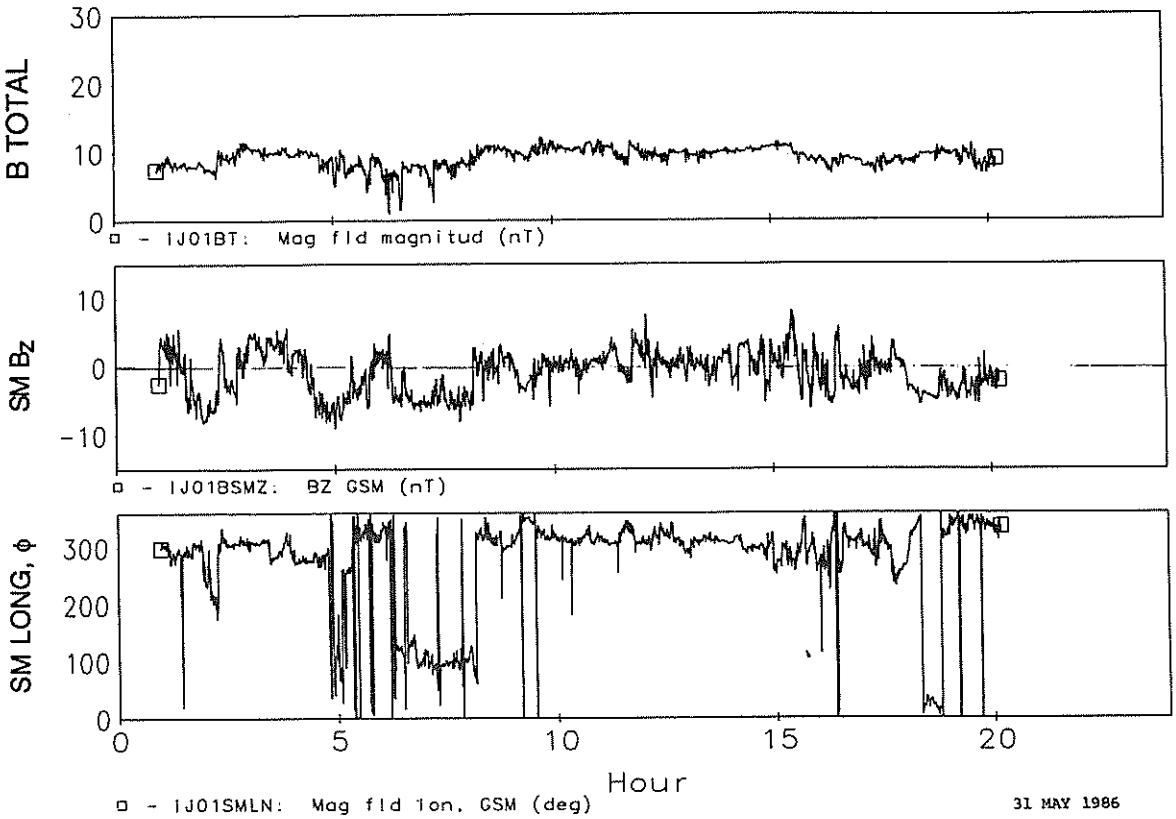
30 MAY 1986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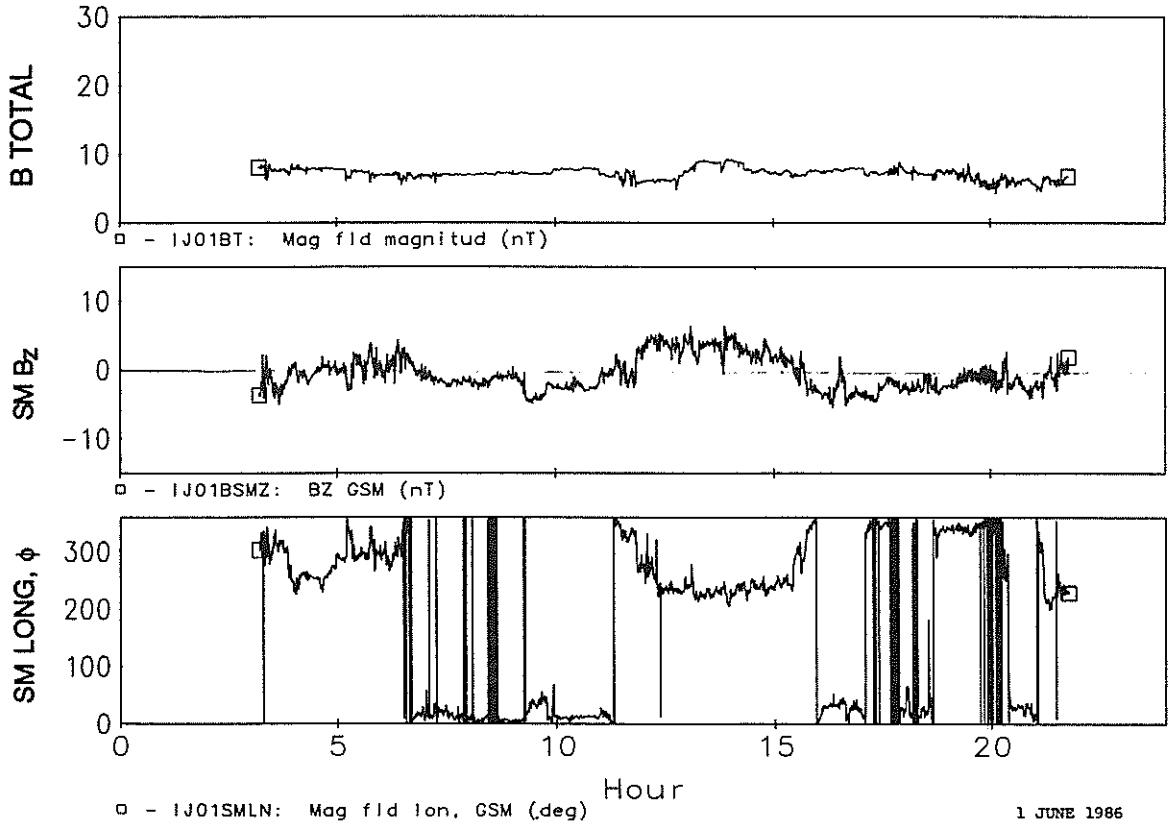
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SM LONG, ϕ
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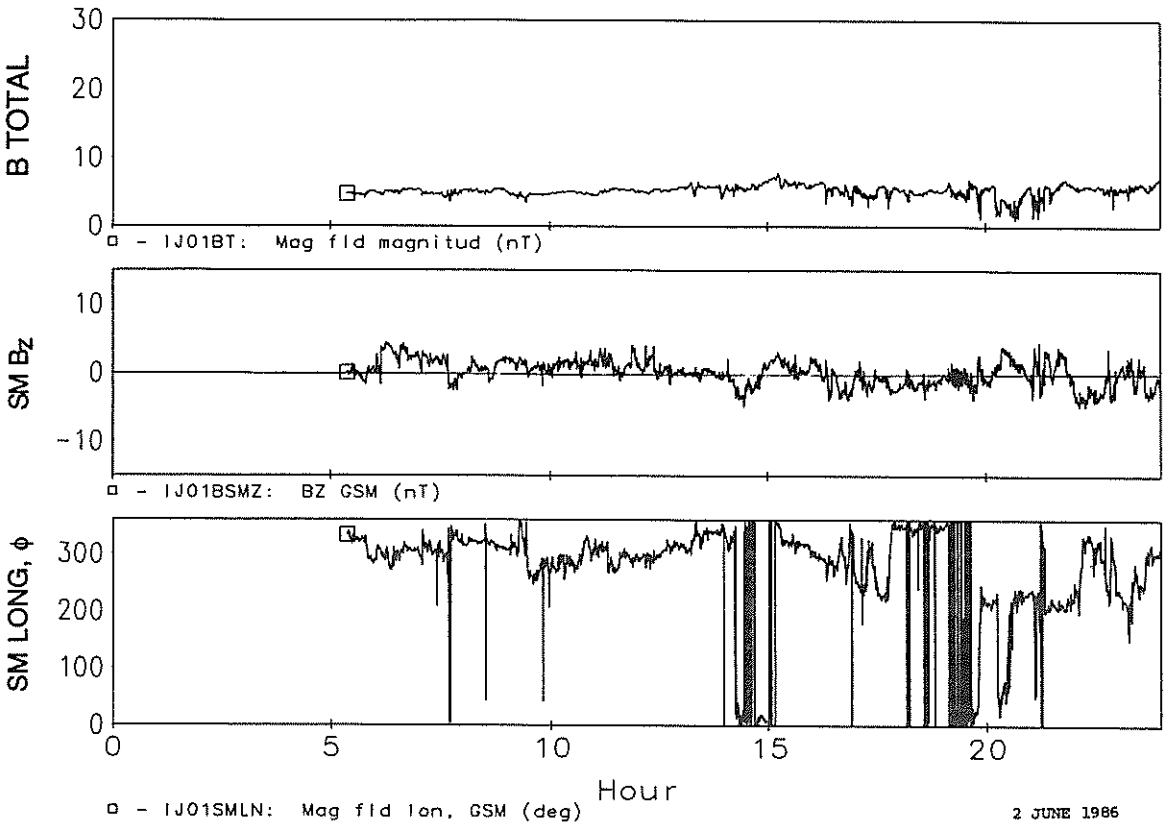
1 JUNE 1986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SM LONG, ϕ
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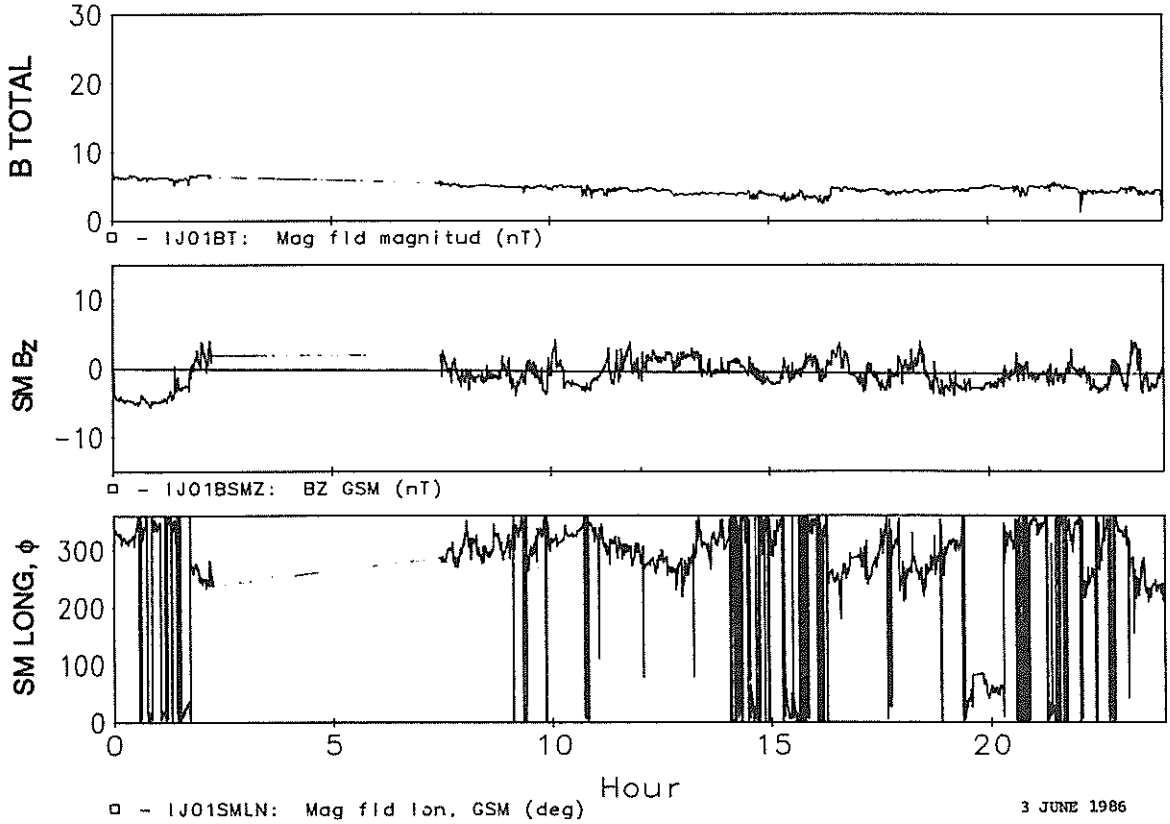
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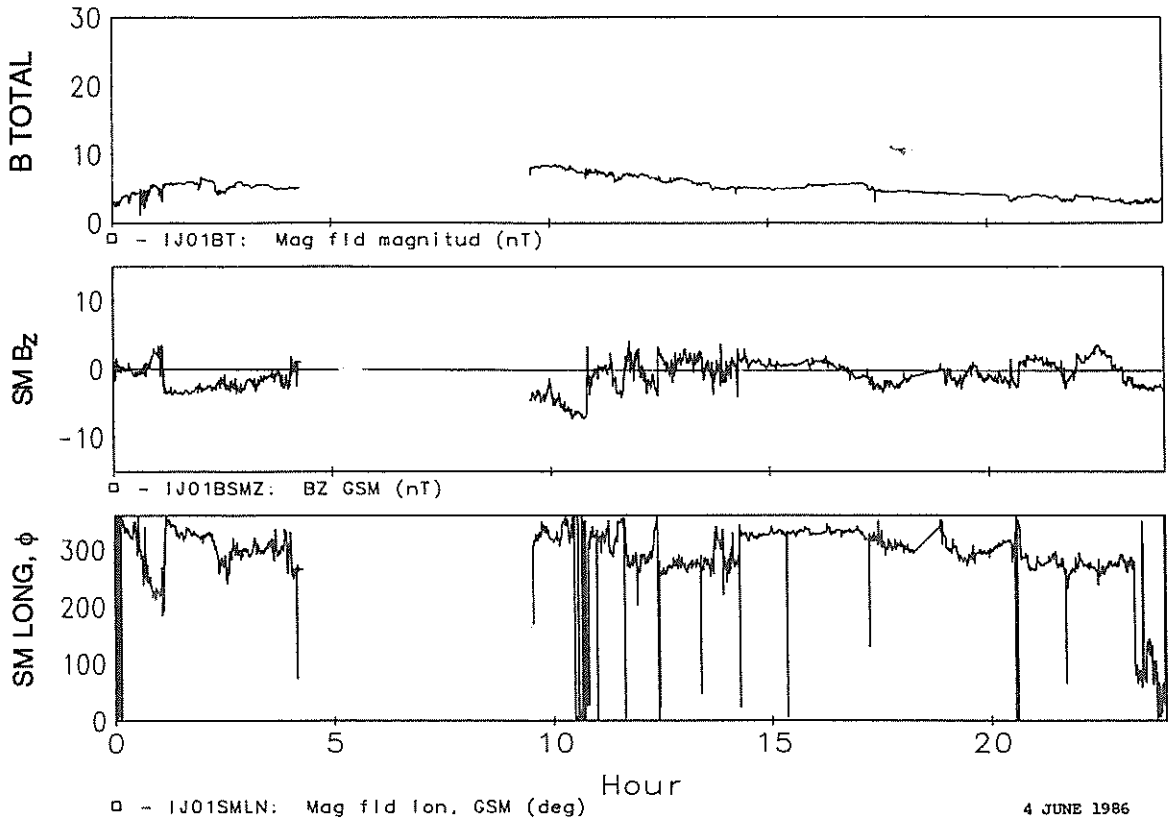
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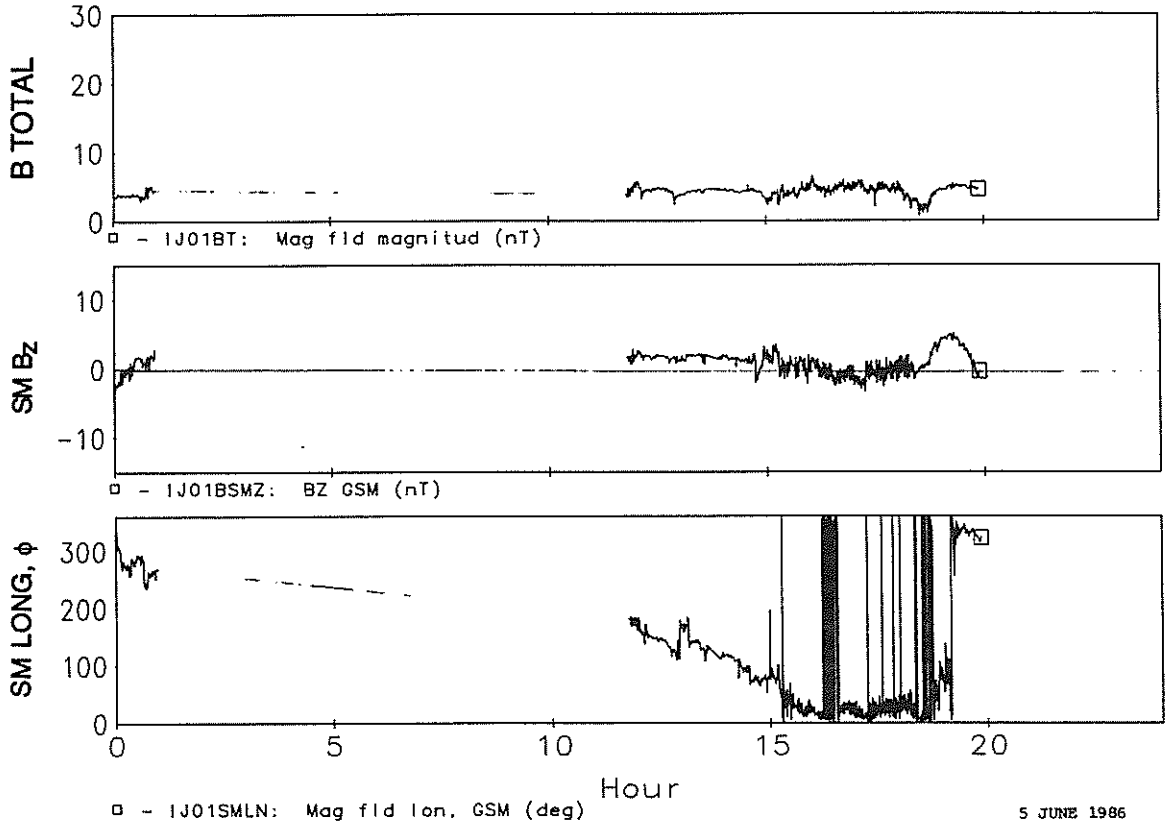
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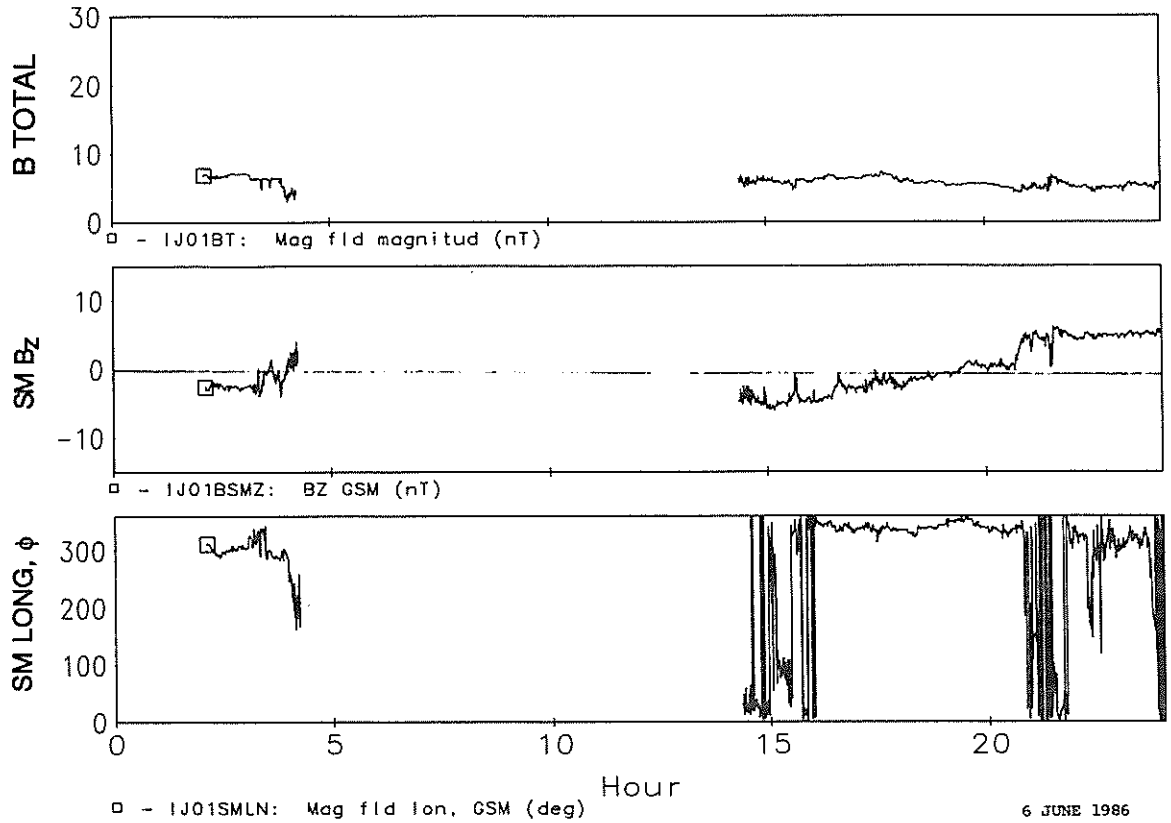
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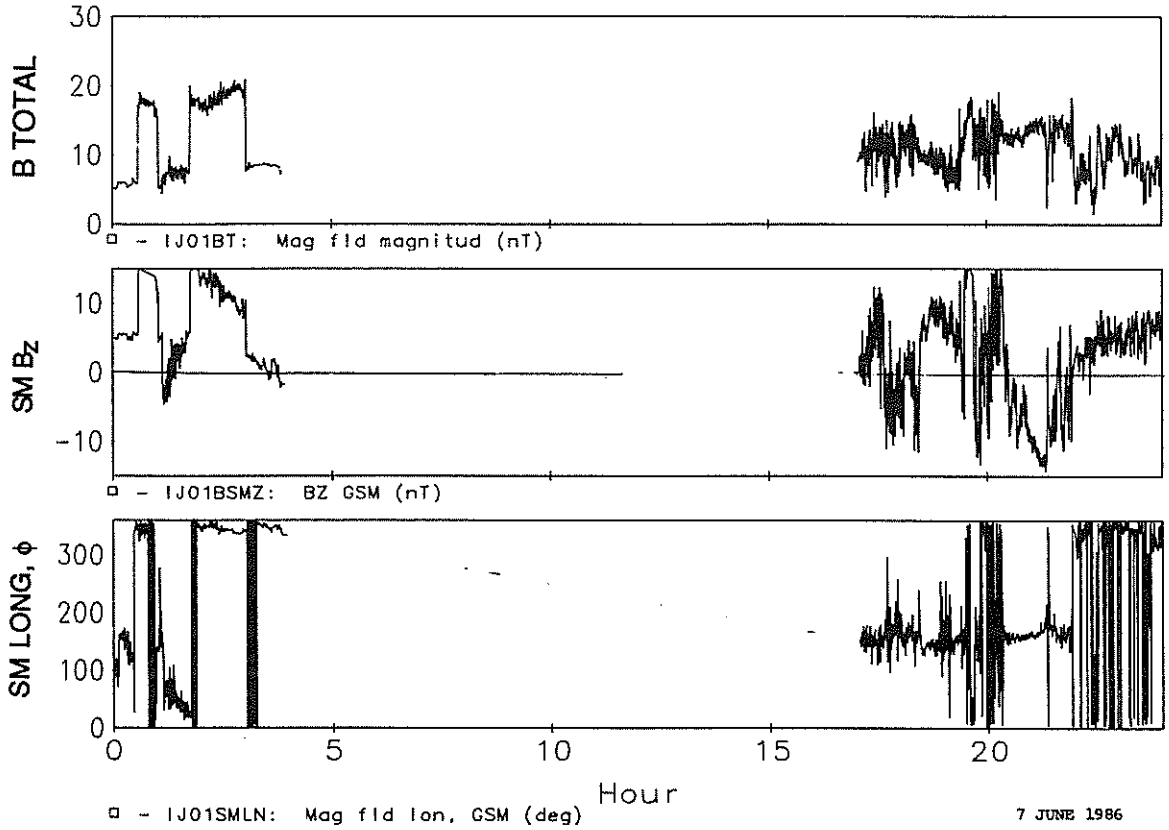
6 JUNE 1986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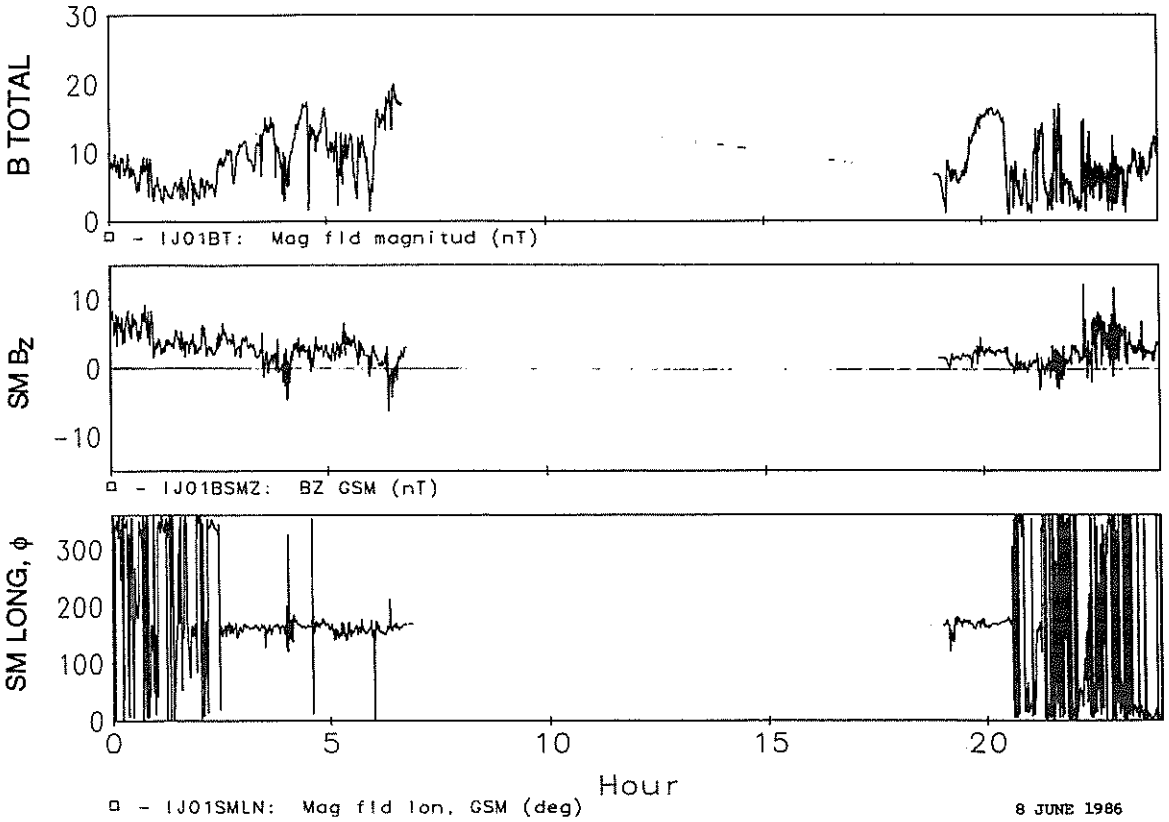
7 JUNE 1986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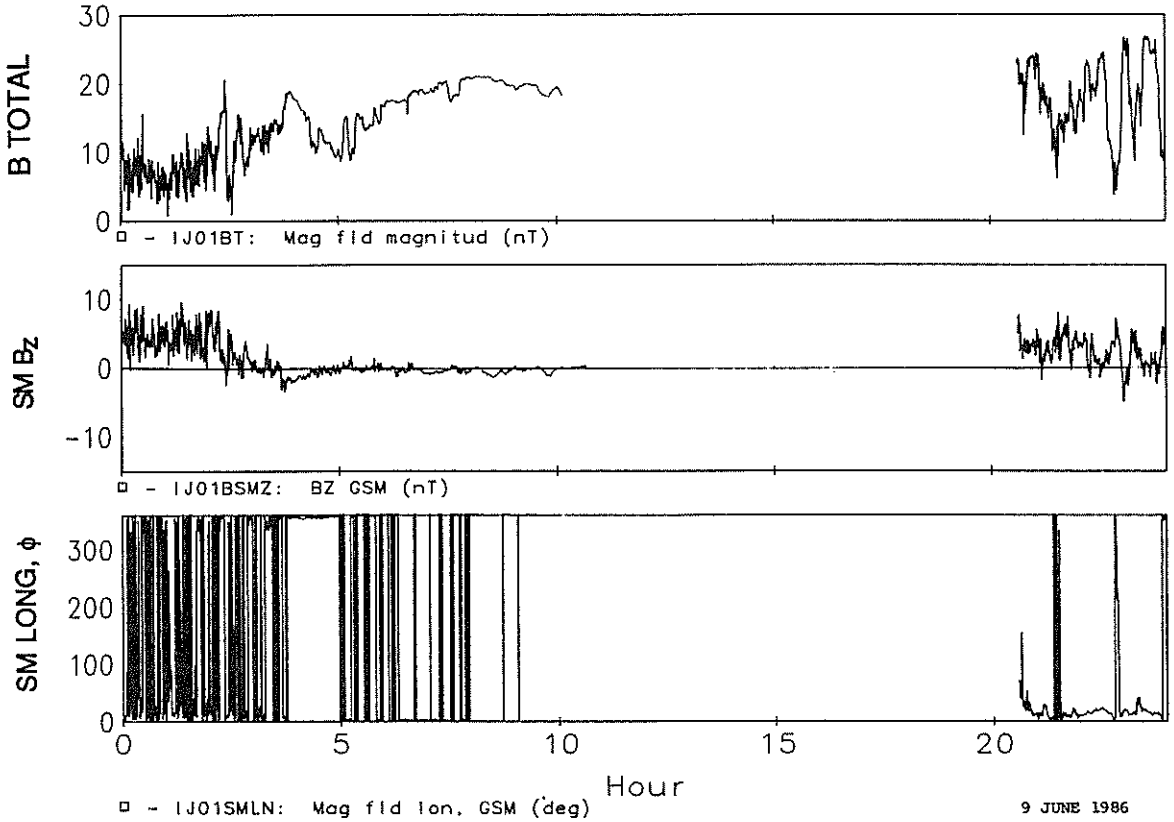
8 JUNE 1986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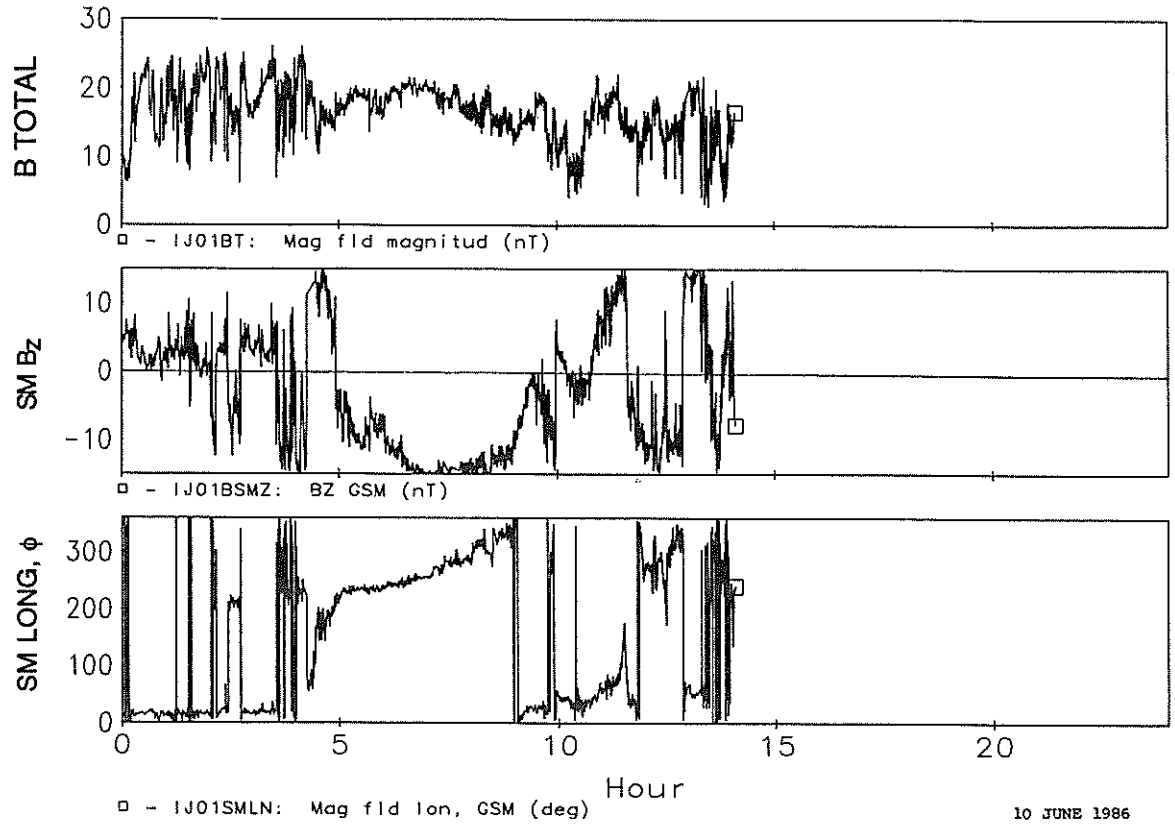
9 JUNE 1986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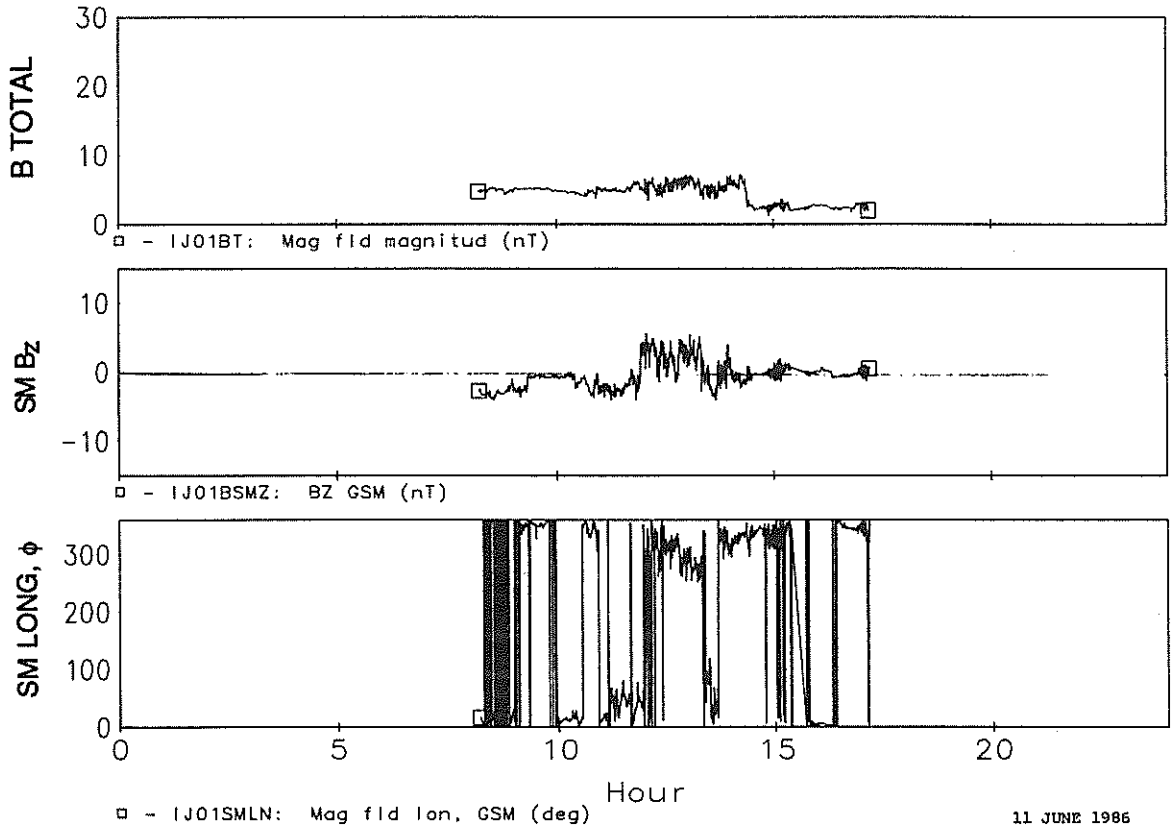
10 JUNE 1986

80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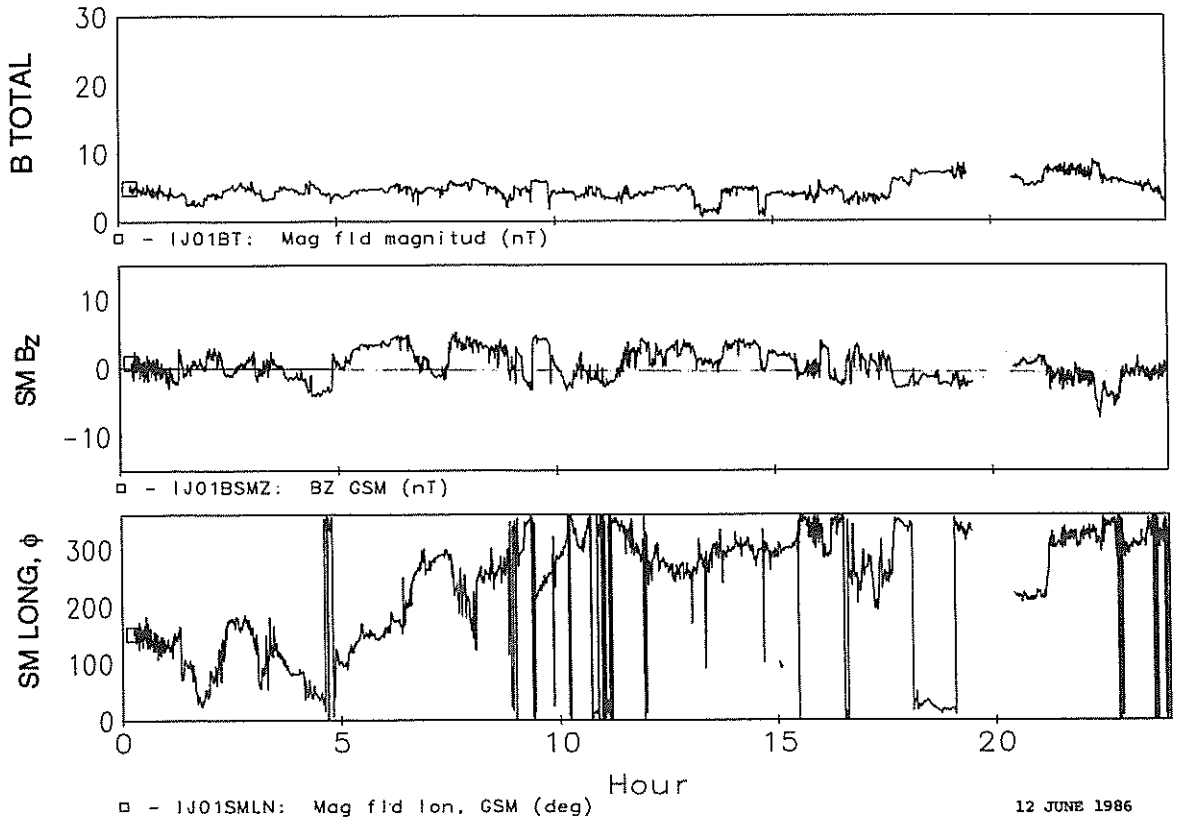
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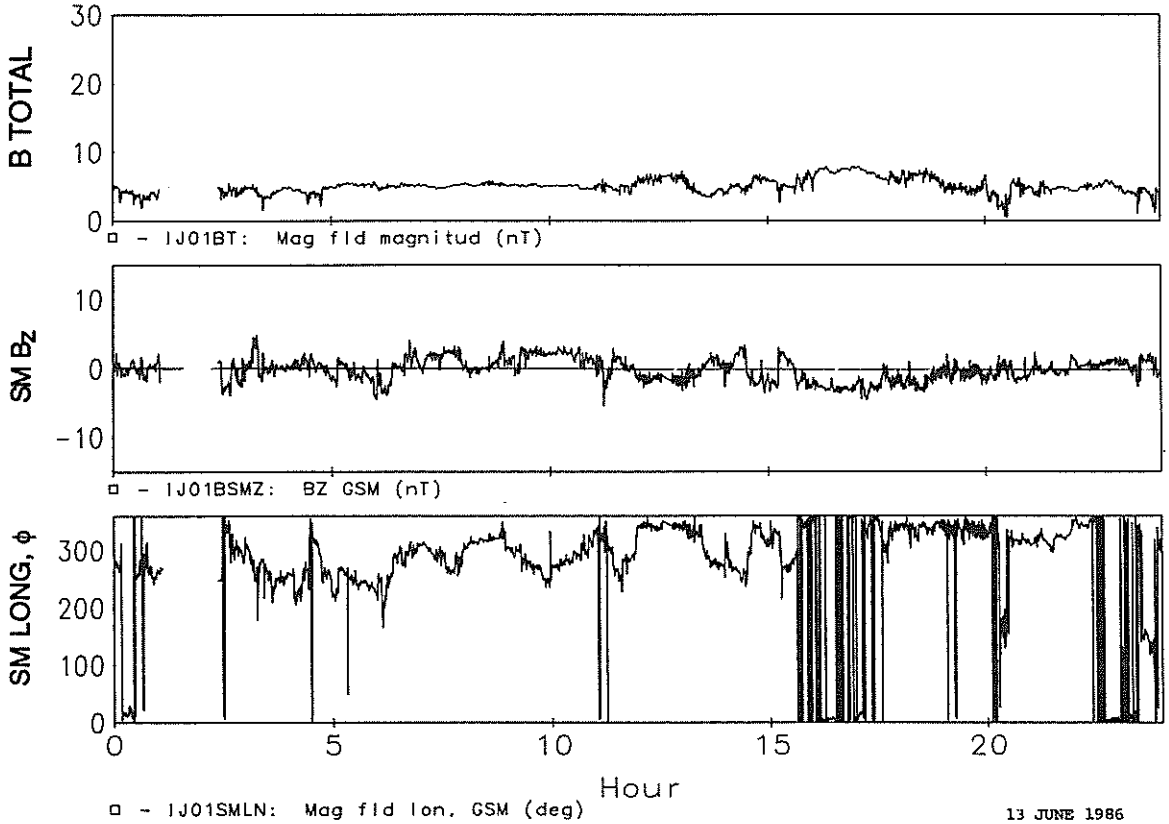
12 JUNE 1986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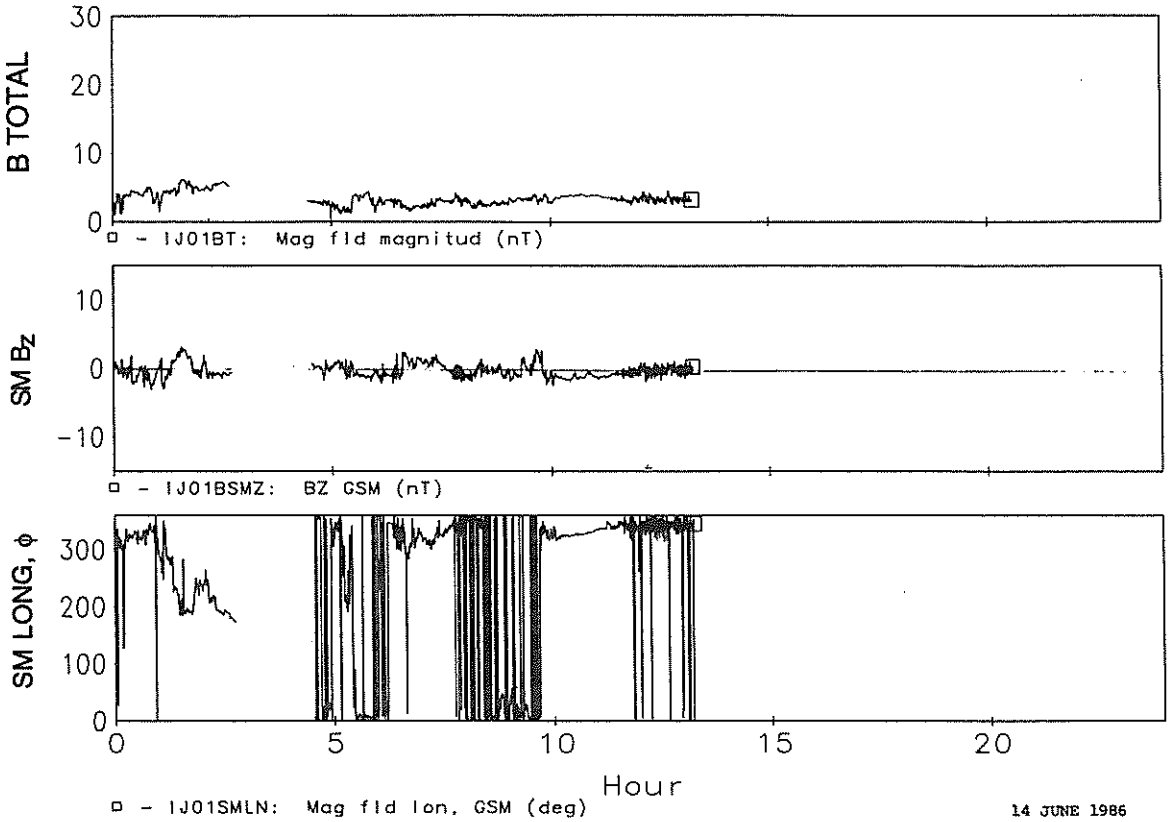
13 JUNE 1986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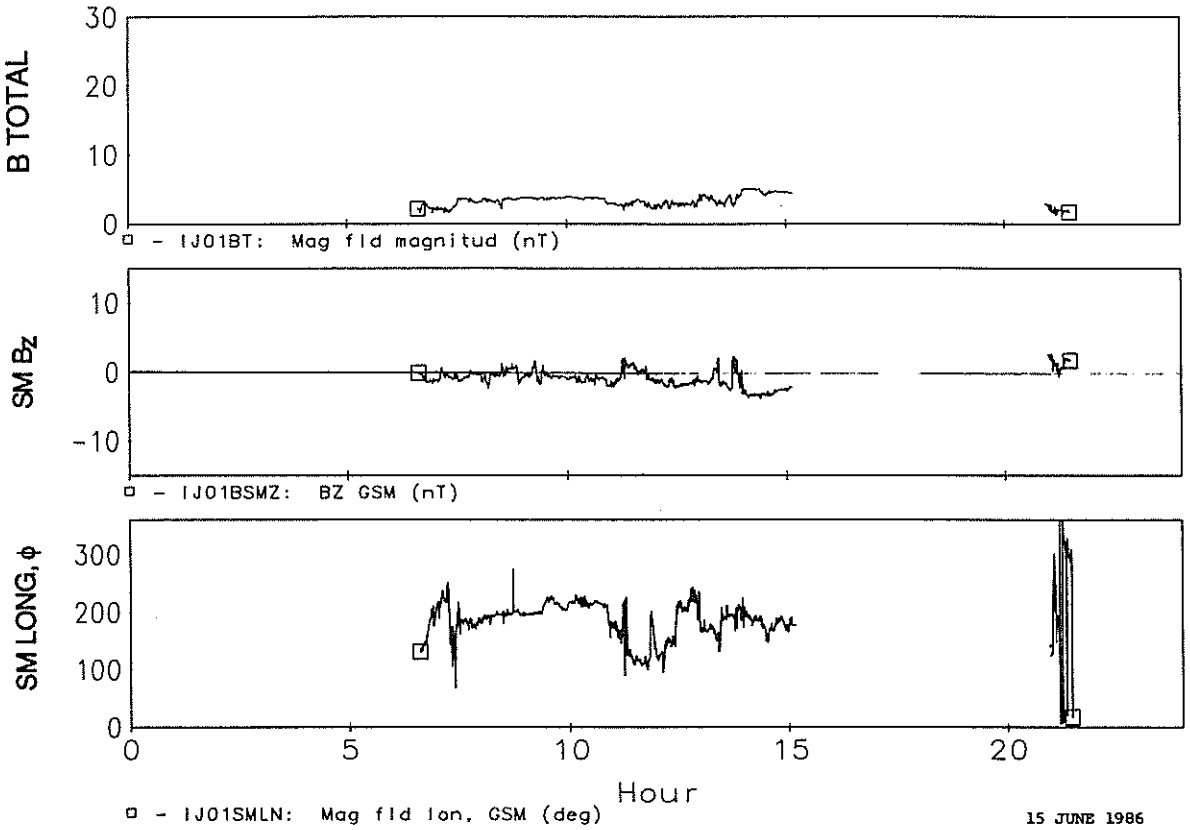
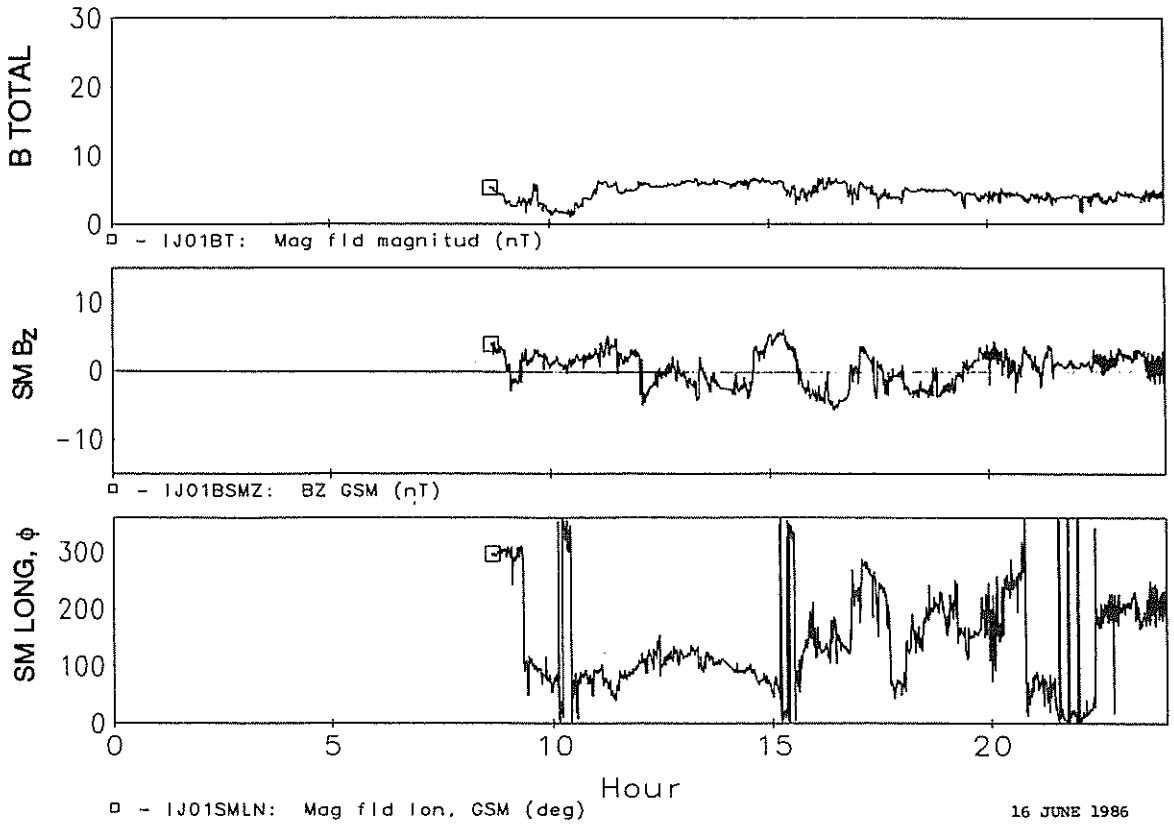
14 JUNE 1986

82





*U.S. GOVERNMENT PRINTING OFFICE: 1987-0-773-027/40009

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

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"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."