

RIOMETER RECORDS OF 30 MHz COSMIC NOISE

AT SYOWA STATION, ANTARCTICA IN 1991

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1. Introduction

At Syowa Station, Antarctica, absorption of cosmic radio noise has been observed with a standard riometer (relative ionospheric opacity meter) at 30 MHz, since February 1966. This report presents data observed from January 1 to December 31, 1991, in the format of hourly values and combined data plots. Besides riometer data, other observation data are also presented in the combined data plots for reference. These plots include geomagnetic field, HF, VLF and radar observations. In case of lack of the combined data recording, riometer and geomagnetic field observation data are presented. The combined data plots before January 30 are not shown because of some analyzing troubles. The data will be shown on the next data report, that is "RIOMETER RECORDS OF 30 MHz COSMIC NOISE AT SYOWA STATION, ANTARCTICA IN 1992".

Copies of digital MT are available to users on request. The request should be addressed to:

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2. Location

Syowa Station			
Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
69° 00' S	39° 35' E	-70.0°	80.2°

3. Observer

Kenro NOZAKI (Communications Research Laboratory)

4. Instrumentation

The receiver of the riometer which has a center frequency of 30 MHz and a band width of 7.5 kHz is connected to a vertically directed five-element Yagi antenna whose elements are oriented in the east-west direction. The antenna is designed to match with a 50 ohm coaxial transmission line (8D-2V) of 80 m in length. Noise from a reference noise diode with power levels of 0, 1, 2, 3 and 4 dB is added once a day at 8h in 45° EMT (Eastern Meridian Time: UT + 3 hours). The data are recorded on MT by a digital recorder.

5. Remarks

The cosmic noise power level shows a remarkable sidereal diurnal variation caused by the passage of the cosmic radio source across the zenith. According to the revolution of the earth, the time (local time) when the same cosmic radio source passes the zenith becomes earlier about 4 minutes a day and returns to its initial value after a year. If the ionosphere is in a quiet condition, the diurnal variation of the cosmic noise power is easily extracted from the record.

The hourly values of the ionospheric absorption in the CNA (Cosmic Noise Absorption) tables are given in dB after subtraction of the reference cosmic noise intensity depending on the sidereal time. The reference sidereal diurnal variation is determined from the diurnal variations on several selected quiet days in each month.

The combined data plots show, not only the cosmic noise intensity but also variation of the geomagnetic H-component field, intensity of HF waves, phase variation of VLF waves, and VHF radar echo intensity at Syowa Station. In the panels about geomagnetic variations, the H-component increases upward and the calibration signals are added at each hour as a depression by 200 nT.

Inquiries about details of the data should be addressed to CRL.

Bibliography relevant to
RECORDS OF RADIO AURORA AT SYOWA STATION, ANTARCTICA (1)

Observing Period	Observers	Literature		
		JARE Data Reports		
		Volume	Pages	Year
Mar. 1966 - Jan. 1968	Ose, M Hasegawa, S. Takeuchi, T. Nishimuta, I. Isobe, T.	5 (Ionosphere 2)	64	1969
Apr. 1970 - Feb. 1971	Shiro, I. Sakamoto, T.	15 (Ionosphere 6)	34	1972
Feb. 1972 - Dec. 1972	Isozaki, S. Miyazaki, S.	23 (Ionosphere 10)	22	1974
Feb. 1973 - Jan. 1974	Nishimuta, I. Yabuuma, H.	26 (Ionosphere 12)	23	1975
Mar. 1974 - Dec. 1974	Shiro, I. Yamazaki, I.	33 (Ionosphere 14)	89	1976
1975	Shiro, I. Sugiuchi, H. Komiya, N.	37 (Ionosphere 16)	105	1977
1976	Shiro, I. Yamakoshi, A. Sasaki, T.	42 (Ionosphere 18)	105	1978
Apr. 1978 - Dec. 1978	Igarashi, K. Tsuzurahara, S.	53 (Ionosphere 21)	23	1980
Jan. 1979 - Dec. 1979	Igarashi, K. Ojima, S. Komiya, N.	58 (Ionosphere 23)	28	1980
1980	Igarashi, K. Nozaki, K.	68 (Ionosphere 24)	28	1982
1981	Ose, M. Kurihara, N.	81 (Ionosphere 28)	28	1983
(cont.)				

Bibliography relevant to
RECORDS OF RADIO AURORA AT SYOWA STATION, ANTARCTICA (2)

Observing Period	Observers	Literature		
		JARE Data Reports		
		Volume	Pages	Year
1982	Igarashi, K. Kuratani, Y.	88 (Ionosphere 30)	28	1984
1983	Igarashi, K. Tanaka, T. Yamazaki, I.	100 (Ionosphere 32)	64	1985
1984	Igarashi, K. Tanaka, T. Yamamoto, S.	113 (Ionosphere 34)	33	1986
1985	Igarashi, K. Maeno, H. Ogawa, T.	123 (Ionosphere 36)	56	1987
1986	Igarashi, K. Maeno, H. Suzuki, A.	134 (Ionosphere 38)	59	1988
1987	Maeno, H. Inamori, K.	146 (Ionosphere 40)	33	1989
1988	Maeno, H. Ohtsuka, A.	154 (Ionosphere 41)	34	1990
1989	Maeno, H. Yamamoto, S.	167 (Ionosphere 43)	42	1991
1990	Ohtaka, K. Igarashi, K.	175 (Ionosphere 46)	34	1992

Table 1. 30 MHz cosmic noise absorption (in dB) at the first minute of each hour

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

January 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0.2	0.1				0.3	0.2	0.1	0.2	0.2		0.2		0.1	0.1		0.3		0.2	0.1	0.1	0.1	0.2	
2		0.1			0.1		0.5	0.3	0.2			0.3		0.1	0.1	0.4	0.3	0.3	0.3	0.2		0.2	0.1	0.1
3		0.1	0.1		0.3	0.1		0.1	0.2	0.1	0.4	0.3	0.4	0.2	0.3	0.1	0.4	0.2	0.1	0.2	0.2	0.1	0.1	0.1
4	0.1					0.1		0.2	0.1	0.1			0.1	0.2			0.1	0.1						0.2
5	0.2		0.2		0.2						0.1	0.1	0.2			0.1	0.1	0.1		0.1				
6													0.1	0.1										0.1
7		0.1	0.1	0.1	0.1		0.2		0.2	0.1	0.2								0.1					0.1
8		0.1	0.2		0.3	0.2	0.2	0.4	0.2	0.1														0.1
9	0.2	0.1		0.1																				
10			0.1	0.1						0.1			0.1			0.1					0.1			0.2
11									0.1	0.2			0.3	0.1				0.1	0.1				0.1	0.1
12	0.2	0.2			0.1	0.1	0.1	0.2	0.2	0.5	0.1	0.4	0.1			0.1					0.1			0.1
13	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.5	0.1	0.4	0.1		0.2	0.2								0.1
14																								
15						0.2																		0.2
16	0.1	0.1		0.1	0.2		0.1				0.1	0.1									0.1			0.2
17			0.1	0.2	0.2			0.1										0.2	0.1					0.1
18																								0.1
19		0.1	0.5																					
20				0.2																				
21								0.1	0.3															
22																								
23																								
24													0.2											
25			0.2		0.1	0.1																	0.1	
26																								
27									0.1										0.1	0.1				
28		0.1			0.1																			
29			0.2	0.1																				
30																								
31													0.6											
Mean	0.03	0.03	0.06	0.03	0.04	0.03	0.04	0.04	0.05	0.04	0.02	0.04	0.07	0.02	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	0.04	0.02

Open spaces without figures correspond to quiet level * : Quiet day

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. +3 hours)

February 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1														0.6	0.4	0.1									
2	0.2																								
3									0.1	0.2			0.1										C	C	C
4	C														0.3										
5							0.1																		
6				0.1																					
7						0.1	0.1																0.1		
8			0.1				0.1	0.1				0.1							0.1						
9				0.1		0.1																0.2			
10		0.2	0.2	0.1	0.1											0.1	0.1								
11				0.1	0.1			0.2	0.2		0.2	0.1													
12			0.2				0.3	0.1					0.4	0.2	0.1			0.1	0.2	0.2	0.1				
13				0.1	0.1		0.1		0.2																
14				0.2	0.1	0.1																			
15				0.3	0.2																				
16	0.1						0.1																		
17																									
18																									
19			0.1		0.1	0.1																			
20																									
21			0.1		0.1			0.1																C	
22	C	C	C	C	C	C	C	C	C	C				0.2											
23										0.2	0.2	0.2								0.5					
24									0.2																
25																									
26					0.2	0.3		0.4	0.4	0.4	0.1	0.1	0.1	0.2	0.2	0.1									
27																									
28		0.1					0.1	0.1	0.2	0.5	0.3	0.2	0.8	0.5	0.4	0.1									
Mean	0.01	0.01	0.02	0.03	0.03	0.02	0.03	0.03	0.04	0.04	0.02	0.02	0.05	0.08	0.05	0.01	0.01		0.01	0.02	0.01	0.01			

Open spaces without figures correspond to quiet level

* : Quiet day

C : Failure of equipment 3 2048 - 4 0009 21 2250 - 22 0900

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

March 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	18	17	18	19	20	21	22	23
1				0.2	0.1	0.1	0.1				0.3	0.2		0.1				0.2		0.1				0.1
2					0.1		0.1		0.2													0.2		
3					0.1													0.3				0.2		
4																								
5					0.2								0.5	0.8	0.5				0.1					
8		0.1				0.1				0.1	0.5	0.1	0.1	0.2		0.1			0.1	0.1				
7	0.5									0.4	0.2	0.4	0.1	0.2	0.1	0.1							0.1	
8		0.3				0.2			0.1						0.1	0.1								
9		0.5	0.1	0.5		0.1	0.2		0.1	0.1	0.1	0.1		0.1	0.1									
10		0.1	0.2	0.3			0.8	0.1																
11																								
12					0.2									0.1										
13	0.4				0.2	0.5						0.1												
14						0.1		0.1	0.1															
15																								
18										0.1														
17				0.1						0.1														
18			0.1	0.1	0.1	0.7				0.1					0.2	0.2								
19								0.1		0.1			0.1	0.2										
20	0.1			0.1								0.1	0.2											
21																								
22		0.1	0.3		0.3	0.1			0.3								0.2							
23		0.1	0.3	0.2		0.2	0.2										0.1	0.2						
24									S	S	S		0.1	0.1		0.2					0.1			
25	0.5	1.5	0.3	0.2	0.1	0.3		0.3	0.5	0.5	0.2	0.5			0.2	0.3	0.1	0.3	0.2			0.2		0.2
28	0.2	0.2	0.5		0.2	0.2	0.5	0.7		0.4	S	S	S	S	S	S			0.2					
27	0.3	0.4	0.3		0.2	0.5	0.1	0.1	0.5	0.2	S	S	S	S	S	S						0.1		0.1
28	0.2	0.5	0.1	0.3	0.7		0.7	0.5	0.2	0.2	0.4	0.1	0.2	0.2	0.2	0.2		0.5	0.2	0.2				
29						0.1	0.2																	
30									0.6	0.3		0.1	0.1				0.2						0.1	
31			0.2	0.3	0.1		0.2																	
Mean	0.07	0.12	0.07	0.07	0.08	0.10	0.10	0.06	0.08	0.08	0.05	0.05	0.04	0.05	0.04	0.04	0.01	0.04	0.04	0.01	0.01	0.01	0.01	0.01

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*
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Open spaces without figures correspond to quiet level

* : Quiet day
S : Interference

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. +3 hours)

April 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				0.5	0.3	0.2	0.6		0.2	0.5	0.7	1.2	0.4		0.4	0.3	0.2							0.2
2			0.7	0.7	0.1			0.2	0.1		0.5	0.3	0.1	0.1		0.3							0.1	0.2
3	0.1	0.2	0.1				0.1	0.2	0.2	0.5	0.3	0.5	C	0.1										
4			0.1	0.2	0.2				0.2															0.1
5			0.1			0.4				0.1	0.1													
6	0.2	0.2			0.1	0.7	0.7		0.1	0.2		0.2	0.2											
7		0.1	0.2	0.2	0.5			0.5	0.2	0.1	0.5	0.5												
8			0.2						0.2															
9		0.1			0.1	0.5	0.2		0.1	0.2														
10	0.1	0.2		0.2		0.1																		
11																								
12		0.1																						
13																								
14				0.1																				
15																								
18																								
17						0.2																		
18																								
19			0.2	0.5	0.1				0.4	0.7														
20																								
21																								
22			0.1			0.2				0.1														
23																								
24					0.4	0.5					0.2													
25	0.1	0.2	0.3				1.5	1.5	0.5	0.3	0.2	0.1	0.1	0.1										
26									0.3	0.5	0.2													
27		0.1		0.2	0.9	1.3	1.1	0.5	0.2	0.2			0.1											
28	0.2	0.6	0.1				0.9	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.3								
29	0.1		0.1		1.1	0.2	0.2	0.1	0.3	0.8	0.2		0.1	0.2							0.2		0.2	0.2
30	0.1		0.2	0.6	0.1	0.1	0.6	0.5	0.1	0.1	0.3	0.3	0.4		0.1	0.1							0.1	
Mean	0.03	0.06	0.08	0.10	0.13	0.14	0.19	0.13	0.11	0.14	0.11	0.11	0.05	0.02	0.02	0.03	0.01				0.01	0.01	0.01	0.02

Open spaces without figures correspond to quiet level

* : Quiet day

C : Failure of equipment 3 1142 - 1223

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

May 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	18	17	18	19	20	21	22	23
1				0.4	1.0	1.0			0.5	0.5	0.4	0.1	0.1											
2	0.2	0.2	0.1	0.2	0.9		0.3	0.1	0.2		0.5	0.2	1.0	0.7		0.2	0.1					0.5		
3		0.2	0.1	0.2	0.2			0.5	0.9	0.8	0.5			0.4	0.3			0.4						
4		1.9	0.3	0.5		0.1					0.3										0.2			
5		0.2	0.2	0.2	0.4		0.2		0.1	0.1	0.1			0.1										
8				0.2						0.3														
7		0.3	0.2	0.5							0.4													
8																								
9																								
10	0.2	0.1	0.1				0.1																	
11			0.2																					
12			0.1					0.2														0.3	0.1	
13											0.1	0.2		0.1										
14	0.1																							
15																								
18	0.2			0.1		0.1				0.1	0.6	0.3	0.2	0.1	0.1	0.4	0.2	0.1						
17	0.2	0.1		0.1		0.1				0.1	0.6	0.3	0.2	0.1	0.1	0.4	0.2	0.1						
18																								
19																								
20																								
21																								
22																								
23							0.1		0.2	0.3	0.1	0.1	0.2		0.1	0.1						0.2	0.5	
24	0.1	0.5	0.1	0.1		0.2		0.1	0.3	0.1	0.5	0.2				0.1	0.1					0.2	0.5	
25		0.2	0.5	0.1	0.7	0.9	0.2	0.1	0.3	0.1	0.8	0.9	0.2	0.1	1.1	1.0	1.0	0.2	0.2	0.2	0.1	0.2	0.2	0.3
28	0.2	0.5	0.5	0.5	0.1	1.0	0.2		0.4	0.4	0.2		0.4	0.2	0.1	0.2	0.2							0.1
27	0.2		0.3	0.1			0.4	0.3	0.2	0.2	0.1	0.1	0.1		0.2	0.7	0.2	0.2						
28			0.1		0.3	0.5	0.8			0.1	0.3	0.1			0.1							0.1	0.2	
28			0.1		0.1	1.0			0.2	0.3	0.5	0.2	0.6	0.2	0.2	0.2	0.4		0.2	0.1			0.2	
29	0.1	0.1	0.1		0.1	1.0			0.2	0.3	0.5	0.2	0.6	0.2	0.2	0.2	0.4		0.2	0.1			0.2	
30		0.5	0.4	0.1	0.3		0.2			0.4	0.3			0.5	0.6				0.1					0.2
31	0.2	0.2	0.3	0.3		0.5	0.1	0.2	0.1		0.2	0.2		0.5	0.5			0.1	0.2					
Mean	0.05	0.18	0.11	0.10	0.12	0.17	0.07	0.04	0.10	0.11	0.18	0.08	0.08	0.09	0.10	0.03	0.07	0.03	0.02	0.01	0.01	0.03	0.01	0.04

Open spaces without figures correspond to quiet level * : Quiet day

*
**

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

June 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					0.4					0.8	0.5	0.2	0.2	0.7	0.6	0.2	0.1							0.1
2				0.1	1.3	0.6	0.1	0.4	0.7		0.7	0.4	0.4	0.1	0.3	0.2	0.2	0.2						0.1
3		1.2										0.5	0.2	0.1		0.4	0.5		0.2	0.1	0.2		0.1	0.2
4	0.3		0.2														C	0.2	0.2	0.5				
5					0.2	0.1				0.8			0.1		0.2	0.2		0.3	0.3				0.1	0.5
6	0.3		0.1		0.1	0.2	0.1				C	0.3		0.3	0.2		0.1	0.2	0.2					
7		0.1	0.2	0.2	0.1	0.1	0.2	0.3		0.3	0.2	0.1	0.3		0.1									
8						0.2			0.1				0.2		0.2									0.2
9		0.1		0.2	0.3	0.7	0.2		0.2	0.2	0.1	0.2	0.1		0.1	0.1				0.2		0.2		0.2
10	0.3				0.1		0.7	0.2	0.2		0.1	0.1								0.3	0.2	0.2	0.1	0.2
11	0.1				0.5	0.5		0.2					0.2	0.5	0.5			0.2	0.1			0.2	0.2	0.3
12		0.2	0.1		0.2	0.1		0.3	0.6		0.1	0.2		0.1	1.0	1.0	0.5	0.3			0.1	0.2	0.2	0.2
13	0.1		0.2	0.1	0.1					0.1	0.1		0.2	0.4	0.2		0.2							1.9
14			0.3	0.1					0.2				0.2	0.3	0.4	S				0.2	0.2	0.1		
15						0.2				0.5					0.5	0.4	0.4	0.2	0.2	0.2	0.1			
16															0.1									
17									0.5				0.1	0.1				0.2						0.1
18	0.3	0.1											0.2	0.2	0.1	0.1								0.3
19		0.1			0.4	0.3	0.2	0.1	0.2	0.3	0.3	0.5	0.6	0.2				0.2						
20		0.1	0.1	0.4	0.1		0.3		0.2	0.2	0.1	0.3	0.2	0.1	0.1			0.1	0.3	0.1				
21			0.2	0.2	0.5	0.2	0.1	0.2		0.1	0.6	0.3					0.2	0.1						
22					1.5		0.1	0.2	0.2	0.4	0.2		0.2					0.2	0.2	0.2				0.1
23	0.1					0.2	0.1	0.2		0.4	0.6	0.3	0.5	0.1	0.5	0.7								0.5
24		1.5	0.1	0.2	0.4		0.7	0.3	0.3	0.1	0.7	0.3	1.2	S	S	S	S	S	S	S	S			
25					0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.2	0.5	0.3	0.2	0.2	0.1	0.2						
26		0.2	0.3	0.5	0.7	0.5	0.4	0.3	0.3	0.4	0.5	0.7	0.5	0.3	0.5	0.4	0.3	0.3						
27		0.2	0.2		0.4	0.2								0.5	0.3			0.2						
28			1.5	0.5	0.2	0.4	0.1	0.3	0.2		0.2	0.4			0.4	0.1			0.1					
29																								
30		0.2	0.2			0.2	0.2			0.2	0.2		0.1	0.1										
Mean	0.05	0.13	0.12	0.08	0.25	0.16	0.12	0.08	0.13	0.17	0.16	0.18	0.17	0.19	0.21	0.13	0.08	0.10	0.05	0.06	0.03	0.03	0.01	0.15

Open spaces without figures correspond to quiet level

* : Quiet day
 C : Failure of equipment 4 1553 - 1608 6 0941 - 1012
 S : Interference

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

July 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1					0.2					0.3	0.2	0.1					0.1		0.2						
2												0.4	0.3				0.2	0.2							
3													0.3	0.3											
4	0.1												0.1	0.2	0.2	0.1									
5																									
6																							S	C	C
7	C	C	C	C	C	C	C	C	C	C	C	S	S	0.2									0.2		
8		0.1		0.1	0.1				0.1	0.1	C	0.2	0.1	0.3			0.2	0.2			0.3	0.7	0.2		
9		0.3	0.2								0.6	0.4					0.1			0.2	0.2	0.2	0.3	0.1	1.0
10			0.2	0.2			0.8	0.3		0.3	0.3		0.2			0.2	0.5	0.3	0.3		0.2				
11											0.1	0.6	0.3	0.2			0.6	0.5	0.2	0.2	0.1				
12						0.1			0.1	0.2	0.2	0.6	0.4			0.3	0.3	0.2			0.1	0.2		0.2	
13										0.3	0.5	0.5	0.5	0.3		0.2					0.1	0.2			0.2
14	0.5	0.5				0.3	0.2			0.1	0.4	0.2	0.7	0.1		0.3	0.1								
15			0.1	0.3		0.4			0.2				0.2	0.2	0.2	0.4	0.2	0.1	0.2	0.2	0.1	0.1			
16																						1.2	0.1		1.6
17		0.3	0.1	0.1			0.2	0.7	0.2	0.1			0.7	0.4		0.5	0.1	0.3							
18	0.1		0.3	0.1	0.1												0.2	0.2	0.2						
19	0.4	0.2		0.1	0.2			0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.2		0.2	0.2					0.2	0.4	
20			0.2	0.3						0.1	0.1	0.5	0.4	0.4	0.3	0.2	0.3			0.1					
21	0.1		0.5	0.3	0.3	0.2	0.5			0.2	0.5	0.4	0.4	0.3		0.3	0.1	0.2	0.2		0.1				
22	0.2	0.2		0.1		0.1				0.5	0.5	0.4	0.1	0.2	0.5		0.3	0.3	0.4	0.2					
23			0.5	0.8			0.2	0.2		0.1	0.2	0.3	0.2				0.2	0.2							
24											0.2	0.3	0.2												
25											0.2	0.3	0.2												
26													0.5		0.2										
27			0.2																						
28																									
29																									
30		0.1							0.2	0.1			0.2	0.1											
31			0.1																						
Mean	0.04	0.05	0.08	0.08	0.03	0.03	0.06	0.05	0.03	0.09	0.14	0.16	0.20	0.11	0.07	0.11	0.09	0.07	0.08	0.03	0.05	0.05	0.01	0.10	

Open spaces without figures correspond to quiet level

* : Quiet day
 C : Failure of equipment 6 2130 - 7 1000
 S : Interference

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

August 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					0.5					0.2									0.1			0.2	0.2	
2											0.2	0.4	0.2	0.2		0.2			0.1					
3			0.2	0.3						0.3			0.2	0.2	0.6	0.3		0.2	0.1					
4	0.1			0.4		1.0	0.1		0.2	0.1	0.1	0.7	0.5	0.2	0.2	0.4	0.1		0.2	0.4			0.1	0.1
5				0.3		0.1		0.8	0.4	0.2	0.7	0.3	0.3	0.1	0.5	0.1	0.2	0.3		0.3				
6			0.6	0.4	0.1					0.2	0.3	0.4	0.5		0.4	0.7								
7										0.3	0.1	0.1	0.3											
8							0.2		0.3	0.2			0.1	0.1	0.2			0.4	0.2	0.2				
9									0.2	0.2			0.4	0.2	0.5	0.5	0.2	0.2	0.3					
10											0.2	0.2		0.4	0.7	0.2								
11															0.1	0.2								
12									0.5	0.7	0.3	0.2	0.8	0.3	0.2	0.2		0.1		0.3	0.2			
13				0.2																				
14	0.1	0.1																					0.1	0.1
15		0.2	0.3	0.2	0.1	0.1			0.2	1.0	0.5	0.3	0.7	0.5	0.2	0.3	0.1	0.1						
16	0.3	0.2	0.3				0.2	0.4	0.3	0.4	0.1	0.5	0.5	0.2	0.1	0.2	0.1	0.1						
17		0.2							0.2	0.2	0.6	0.1	0.1	0.5	1.3	0.6	0.5	0.3			0.2			0.2
18			0.5	0.1	0.5		0.2	0.2	0.2	0.2	0.2	0.6	0.3											
19	0.2	0.1				0.2		0.2	0.2	0.1	0.2			0.3		0.1								
20											0.2	0.1			0.3									
21		0.5	0.1	0.2		0.2	0.2			0.2		0.2	0.5		0.1	0.6	0.1		0.2					
22							0.2		0.2	0.3	1.3	0.7		0.1	0.2			0.2	0.1					
23			0.2	0.2	0.5	0.5	0.7	0.1		0.4	0.4	0.7	0.6		0.8	0.8	0.5	0.4	0.5	0.1		0.1		0.1
24		0.1			0.1	0.2					0.1													
25			0.1						0.1		0.1													
26		0.2																						
27							0.4														0.1	0.2	0.2	0.1
28																								
29			0.4									0.1												
30				0.2						0.2	0.2					0.2						0.1		
31										0.1		0.3	0.2		0.2	0.1								
Mean	0.02	0.05	0.08	0.08	0.05	0.07	0.07	0.08	0.10	0.16	0.18	0.20	0.18	0.12	0.20	0.14	0.05	0.07	0.05	0.04	0.06	0.01	0.01	0.01

Open spaces without figures correspond to quiet level * : Quiet day

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

September 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			0.7	0.2		0.4	0.2		0.2		0.5	0.5	0.5	0.7		0.9	0.2	0.1						
2	0.3	0.2	0.1	0.3		0.1			0.5		0.6	0.4	0.4	0.2	0.2	0.4	0.5	0.7						
3									0.2	0.3	0.2	0.2	0.2	0.9	0.3									
4			0.2		0.1		0.1	0.5	0.2		0.4	0.1	0.4	0.2			0.4	0.2						
5				0.6	0.2		0.4	0.3	0.2	0.1	0.1	0.2	0.3		0.3	0.5	0.4	0.2						
6	0.1							0.5	0.2			0.2				0.5								
7							0.1	0.2	0.2				0.6	0.2	0.5			0.1						
8							0.1	0.2	0.2			0.1		0.1	0.2	0.3	0.2						0.2	
9										0.2	0.2	0.1	0.2	0.2	0.2	0.2			0.1					
10	0.7	0.1	0.2				0.1	0.1		0.1				0.1		0.1								
11																		0.1						
12														0.2										
13															0.2									
14		0.4	0.2	0.2	0.2		0.2	0.2	0.4		0.7	0.5		0.2	0.3	0.3			0.1				0.2	
15	0.2	0.4		0.2		0.2	0.1																	
16						0.1	0.1																	
17			0.1																					
18																								
19																								
20			0.1					0.1		0.3	0.2													
21																								
22				0.2																				
23												0.2												
24																								
25										0.1			0.2	0.1										0.1
26									0.1	0.1		1.2	0.5	0.2	0.1									
27							0.1	0.2	0.2		0.4	0.7	0.2	0.3	0.1		0.2							
28					0.3	0.1	0.8	0.2	0.5	0.2	0.3	0.8	0.7	1.2		0.2							0.3	
29	0.1			0.7								0.1	0.2	0.1	0.2			0.1	0.1					
30			0.4	0.1			0.3	0.1		0.3	0.4	0.2	0.5	0.7	0.5	0.2	0.1							0.2
Mean	0.04	0.03	0.06	0.08	0.02	0.03	0.08	0.08	0.10	0.06	0.13	0.17	0.15	0.18	0.09	0.10	0.06	0.04	0.03				0.02	0.01

Open spaces without figures correspond to quiet level

* : Quiet day

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

October 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						0.1				0.5	1.1		0.3	0.9	0.5								0.1	
2				0.1			0.1			0.2	1.0	0.1		0.2			0.1	0.1						
3										0.2	0.3	0.2	0.1	0.1	0.7	0.3	0.1	0.1						
4		0.1		0.2		0.2	0.2			0.1	0.2	0.7	0.1	0.9	0.3	0.2	0.2		0.3	0.2				
5	0.3				0.2						0.1	0.5	0.3		0.1									
6																								
7				0.2	0.3	0.2	0.2	0.3	0.1	0.1		0.2	0.8	0.2	0.3	0.1	0.1	0.1		0.2		0.1		
8			0.2	0.3	0.1	0.1	0.3	0.1	0.1	0.3	0.2	0.7	0.2	0.8	0.4	0.7	0.2	0.3						0.2
9	0.1		0.1		0.3	0.5		0.1	0.4	0.1	0.3	0.3	0.3	0.1	0.2									
10							0.3	0.7	0.5	0.6		1.4	0.8	0.4										
11														0.1		0.1		0.1						
12			0.1		0.1	0.2	0.1																	
13						0.1																		
14				0.1																				
15																								
16																								
17																								
18						0.1																		
19													0.1											
20											0.1		0.9	0.7		0.3								
21									0.2		0.1						0.1							
22												0.5	0.4		0.1		0.3							
23														0.1				0.1						
24		0.2				0.2							0.3	0.2										0.1
25						0.1						0.2	0.2		0.2	0.2								
26				0.2			0.2		0.2	0.1	0.1	0.4		0.5			0.1							
27					0.5		0.8	0.2		0.5		0.2	0.9	0.5	0.2	0.2	0.2							
28			0.1		0.1	0.1	0.1	0.1		0.5	0.1	0.3	0.3	0.1	0.7	0.3	0.2	0.2	0.2	0.5	0.5			
29				0.2				0.7			0.2		0.2	0.2										
30											0.3	0.2					0.2		0.1		0.1	0.2		
31			0.5	0.1		0.3	0.1			0.2		0.1		0.2	0.4	0.2				0.2	0.2	0.1		
Mean	0.01	0.01	0.02	0.03	0.05	0.07	0.08	0.04	0.08	0.10	0.15	0.18	0.21	0.20	0.10	0.08	0.05	0.03	0.02	0.02	0.01	0.01	0.01	0.01

*

Open spaces without figures correspond to quiet level * : Quiet day

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

November 1991

Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				0.2							0.2	0.1	0.1	0.4	0.1	0.1		0.1						
2	0.1										0.3					0.1		0.1						
3		0.1																						
4			0.1					0.1	0.3	0.4	0.1			0.8	0.3		0.1	0.1						0.3
5			0.3	0.2		0.1			0.2	0.2	0.2	0.2		0.2	0.2									
6		0.2				0.2				0.1	0.4	0.1		0.2										
7			0.1	0.2								0.2			0.2	0.2								
8						0.2	0.1			0.1		0.3	0.2				0.1	0.2					0.2	
9	0.3	0.2					0.1			1.0	0.1	0.3		1.0				0.1	0.2					
10						0.1	0.1				0.2					0.1		0.2						
11	0.2	0.3	0.2	0.3	0.2			0.1		0.1				0.2			0.3						0.2	0.3
12				0.2							0.2	0.1												
13			0.1	0.1																				
14						0.1			0.4	0.1	0.1													
15											0.5	0.5	0.1	0.1	0.7	0.2								
16					0.3					0.1	0.5	0.3					0.2							
17												0.2	0.1											
18													0.2	0.1	0.1									
19							0.2		0.2	0.3	0.2	0.2				0.1								
20														0.1	0.1									
21	0.2	0.1						0.1	0.1	0.4	0.3	0.5	0.5	0.1	0.2									
22								1.0	0.2		0.3		0.6	0.2		0.2								
23							0.2	0.2		0.2	0.5	0.4	0.1	0.3	0.1									
24					0.1	0.2					0.2	0.2									0.1	0.2		
25	0.2	0.1	0.1			0.2			0.2	0.2		0.1			0.1									
26			0.1				0.1	0.1	0.2								0.1							
27						0.2	0.2																	
28				0.2	0.2	0.1												0.1	0.2					
29																								
30																								
Mean	0.01	0.03	0.08	0.04	0.02	0.04	0.03	0.05	0.08	0.11	0.15	0.12	0.08	0.11	0.07	0.03	0.02	0.01	0.01	0.01	0.01		0.01	0.02

Open spaces without figures correspond to quiet level

* : Quiet day

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

December 1981

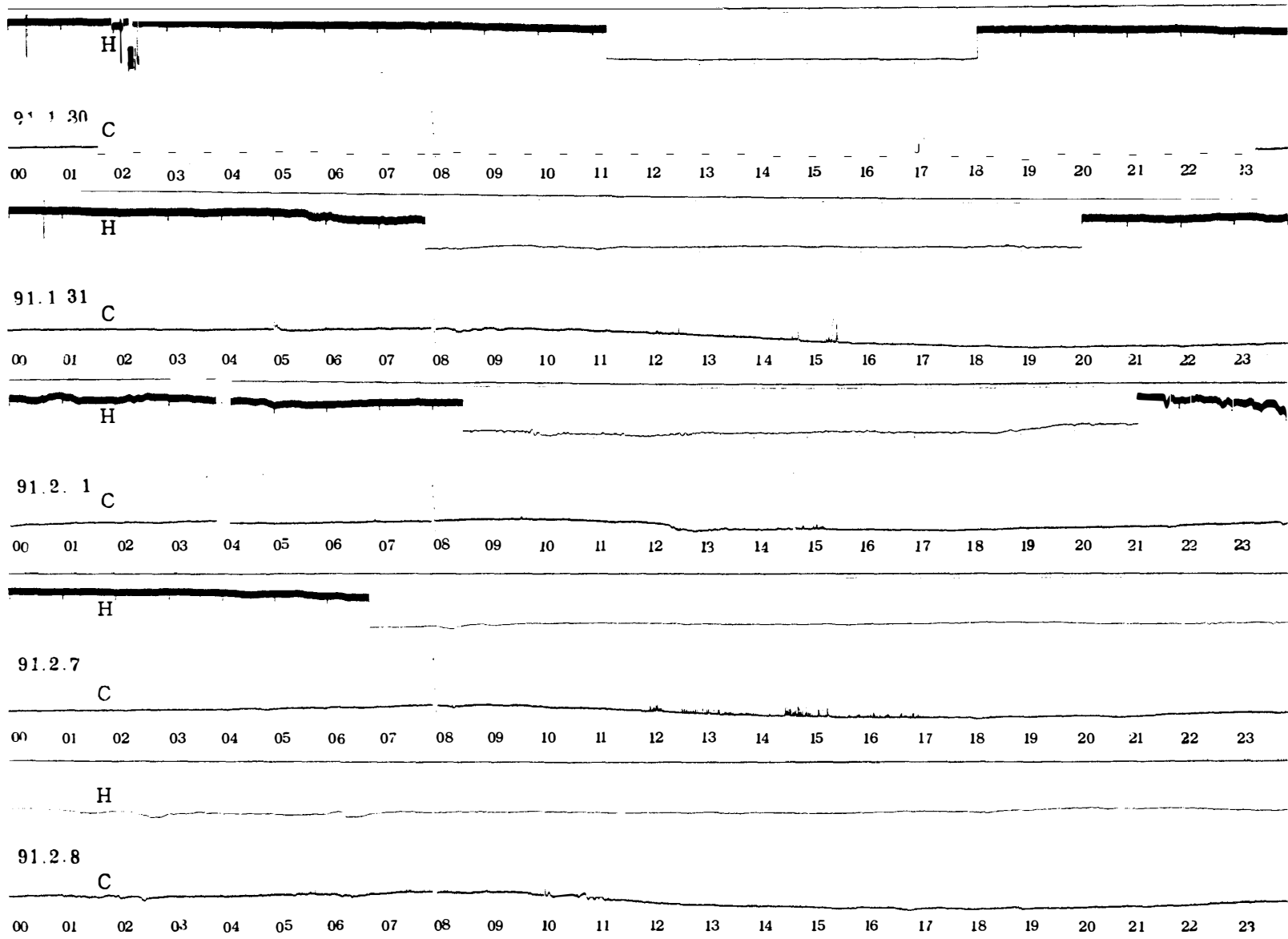
Time Date	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			0.3	0.3								0.1				0.1			0.1					
2				0.4			0.1		0.2					0.2	0.2			0.1	0.1					
3	0.2		0.1	0.1	0.1											0.1								
4	0.1			0.2	0.2	0.3			0.1	0.2														0.2
5	0.2		0.2						0.2	0.2							0.2							
6							0.1																	0.1
7	0.1		0.1									0.1												
8												0.1												
9																		0.1						
10		0.1										0.2												
11		0.2	0.1																					
12	0.2	0.1		0.2				0.1																
13	0.2	0.1	0.2		0.2	0.1	0.1	0.2												0.1				0.1
14				0.3							0.5	0.1	0.2			0.3			0.1			0.2		
15					0.1	0.1	0.5					0.2							0.1					
16				0.1	0.1				0.2	0.1														
17	0.2			0.6	0.3				0.2	0.2	0.2	0.1	0.1	0.2									0.1	0.1
18		0.2	0.2	0.3	0.2			0.2				0.2	0.1	0.1	0.1									
19										0.1	0.3	0.4	0.2	0.3		0.3		0.1						
20										0.1														
21		0.1					0.4	0.1	0.3		0.3	0.1	0.4	0.4	0.1	0.1								0.1
22	0.2			0.2			0.2	0.2	0.2	0.2				0.2										
23					0.1			0.1	0.1	0.5							0.1							
24									0.4					0.2	0.1									
25																								
26																								
27		0.1			0.1						0.2					0.1	0.1							
28		0.1	0.1																					
29										0.2			0.1											
30		0.1	0.5			0.3							0.2											
31																								
Mean	0.04	0.03	0.08	0.08	0.05	0.03	0.05	0.02	0.08	0.08	0.04	0.05	0.03	0.05	0.01	0.03	0.01	0.01	0.01	0.01		0.01	0.01	0.02

Open spaces without figures correspond to quiet level

* : Quiet day

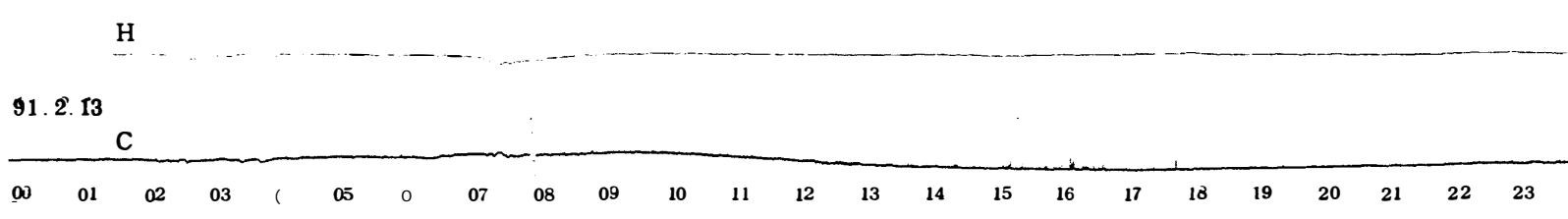
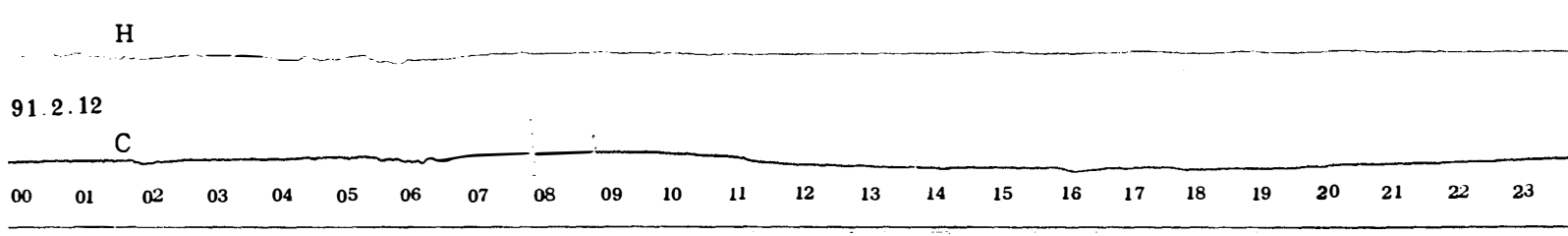
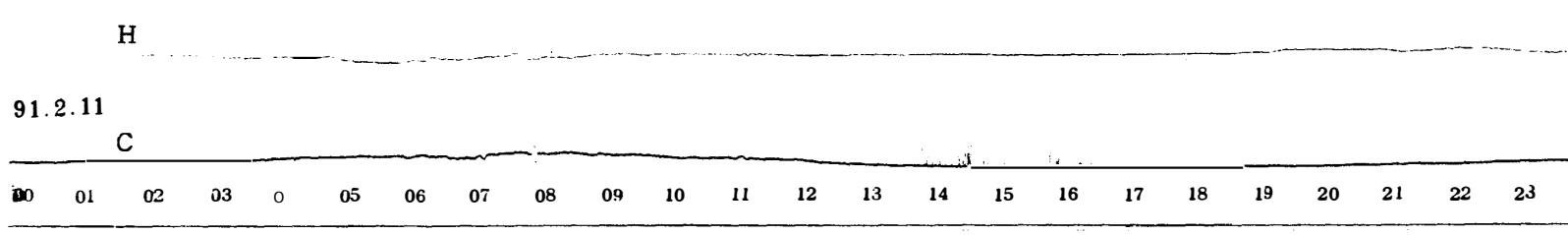
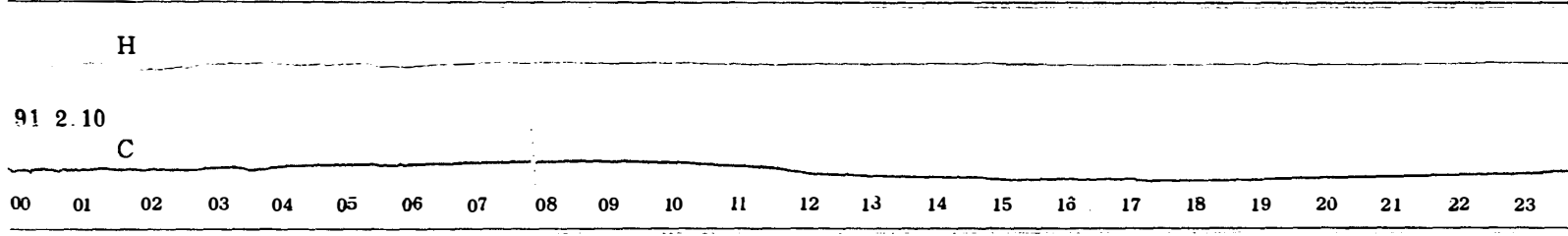
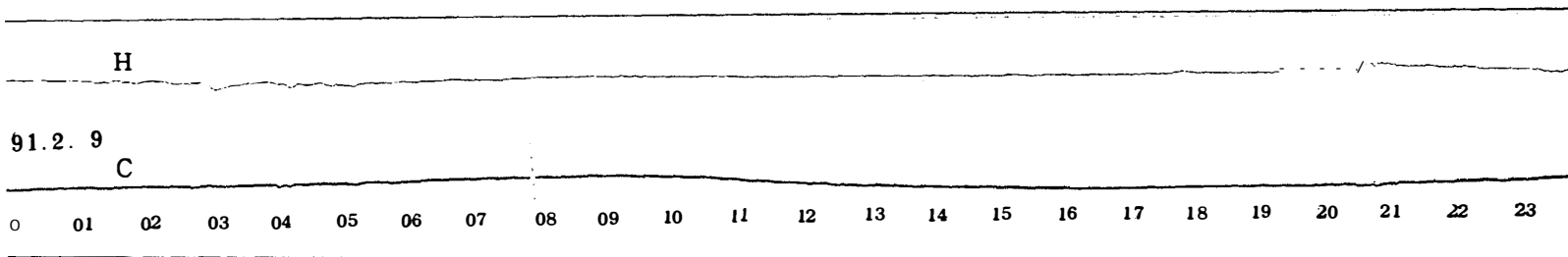
Period of lack of combined data plots

January	30	0000 - 0800
	31	0700 - 2400
February	1	0000 - 0500
	3	1650 - 2130
	6	1030 - 2400
	7	0000 -
	15	- 2400
	16	0000 - 1000
	26	0840 - 0900
March	2	1400 - 1420
	8	1200 - 1230
	18	1240 - 1300
April	4	1820 - 2400
	5	0000 - 2400
	15	1410 - 2400
	16	0000 - 2400
May	15	2020 - 2100
June	4	1250 - 1400
	6	0640 - 0740
	27	0000 - 2400
July	7	0000 - 2400
August	8	0340 - 0800
October	25	2000 - 2400
	26	0000 - 2400
November	16	1550 - 2400
	17	0000 - 2400
	20	1420 - 1620
		1740 - 1750
	22	1000 - 1320
		1400 - 1900
December	1	2100 - 2110



45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE



45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

H

91.2.14

C

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

H

91.2.15

C

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

H

91.2.16

C

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

H

91.2.26

C

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

H

91.3.2

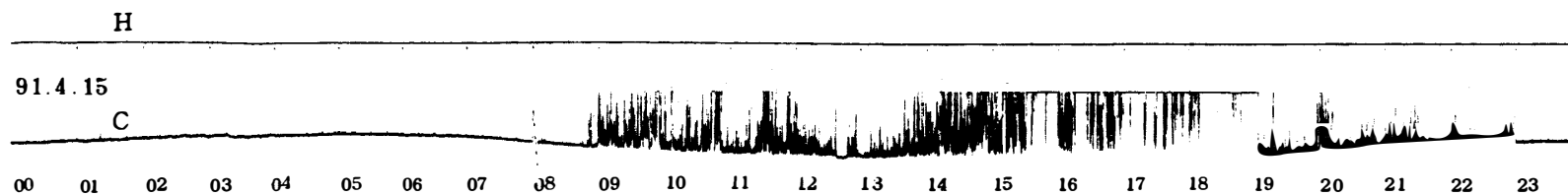
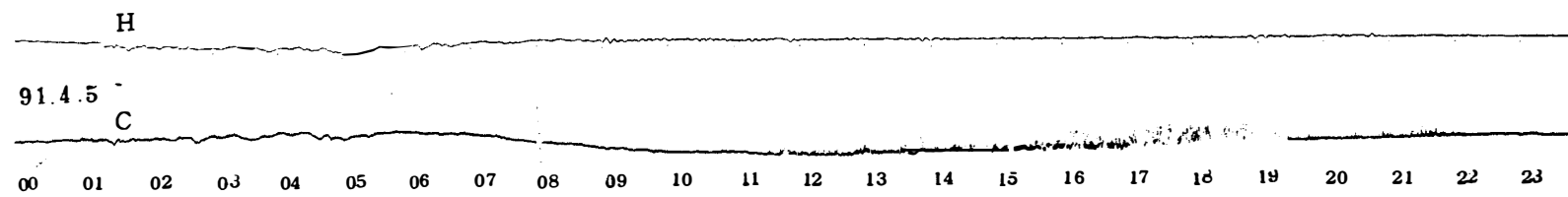
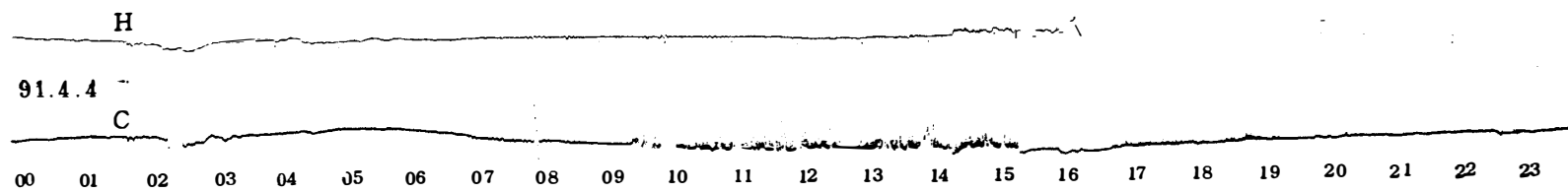
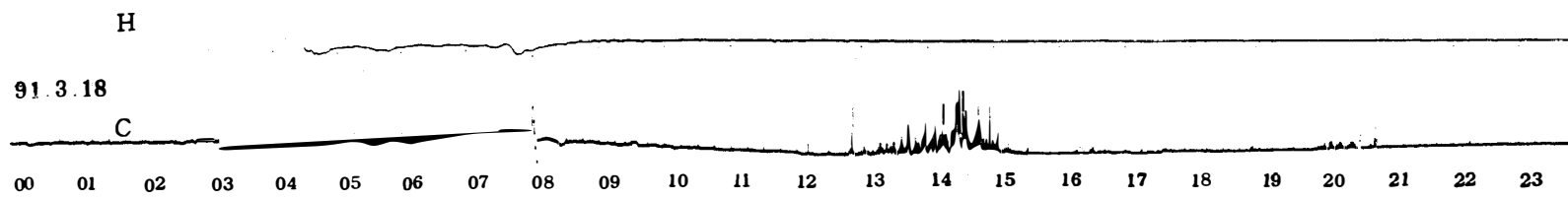
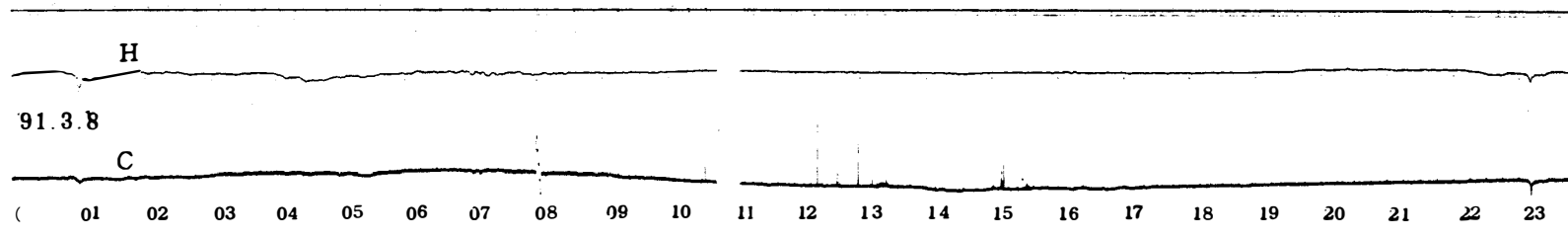
C

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23

45° EAST MERIDIAN TIME IN HOURS

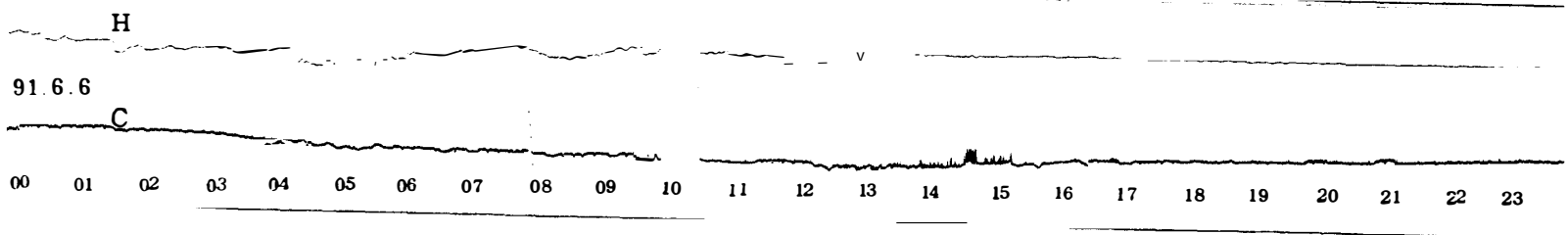
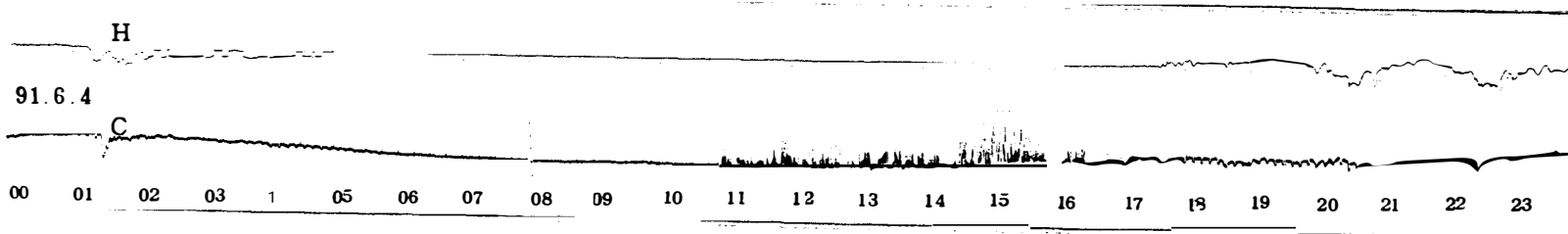
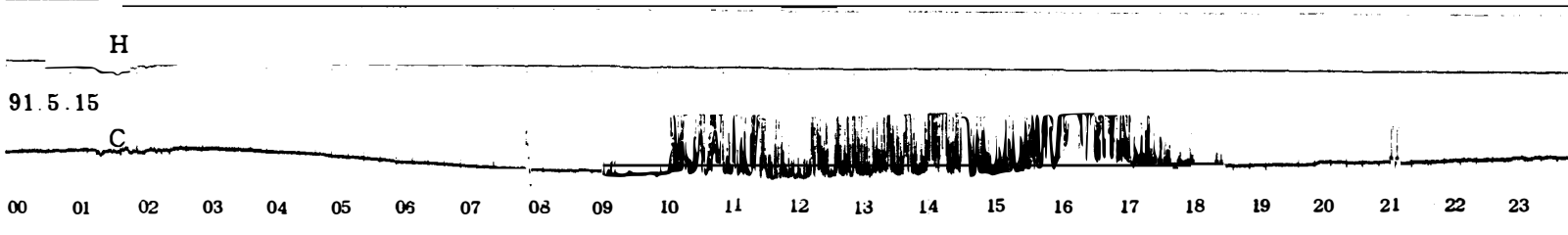
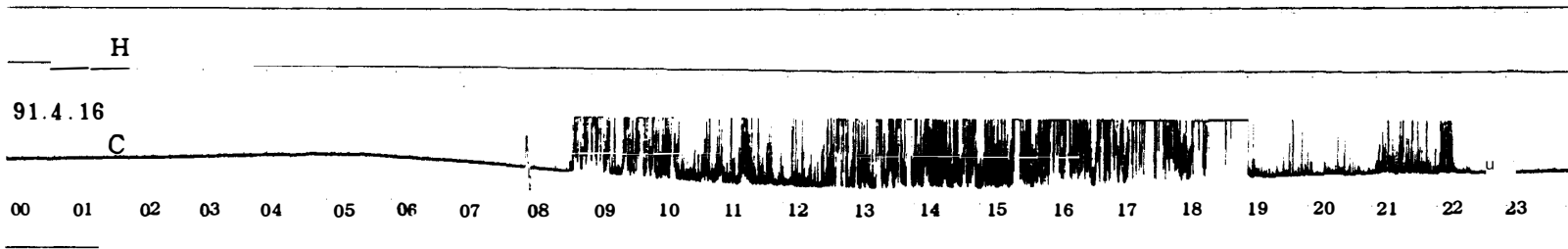
30 MHz COSMIC NOISE

— 0 —

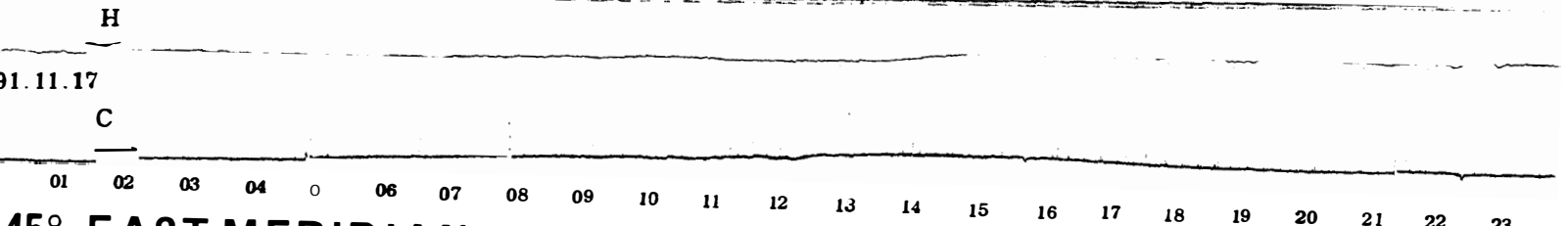
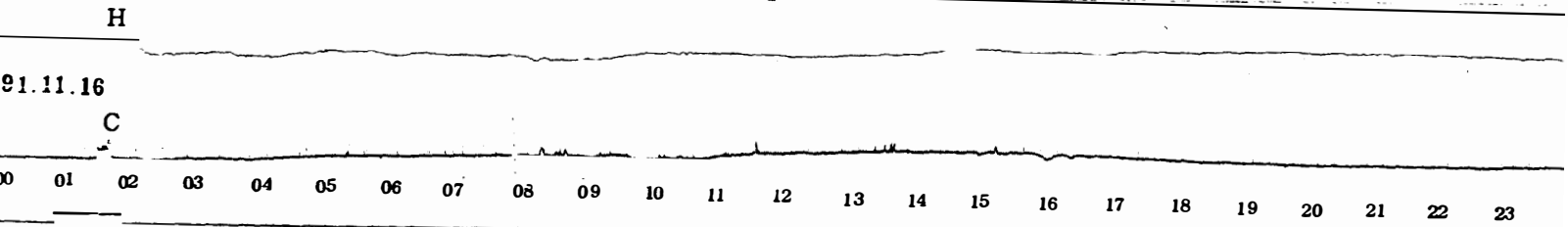
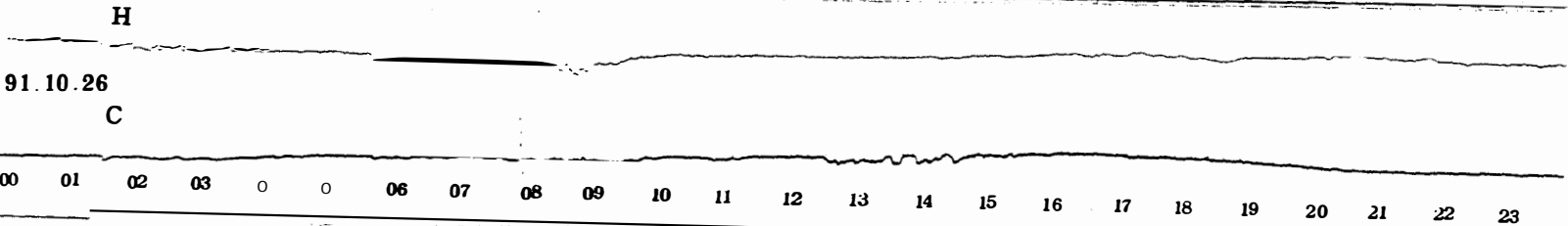
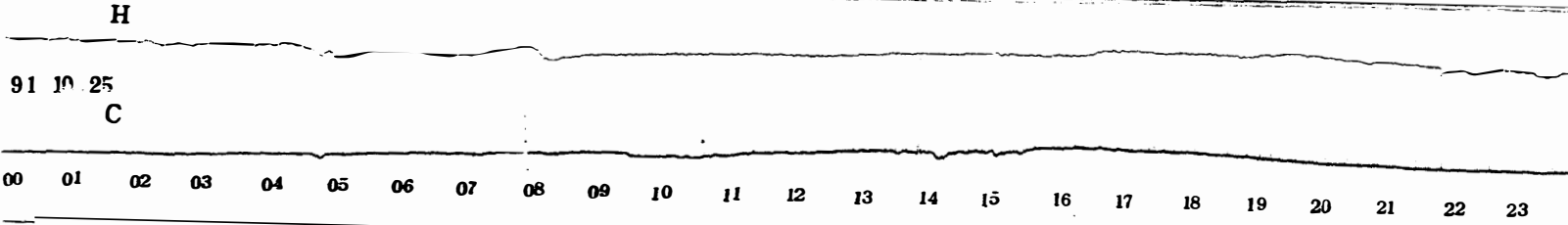
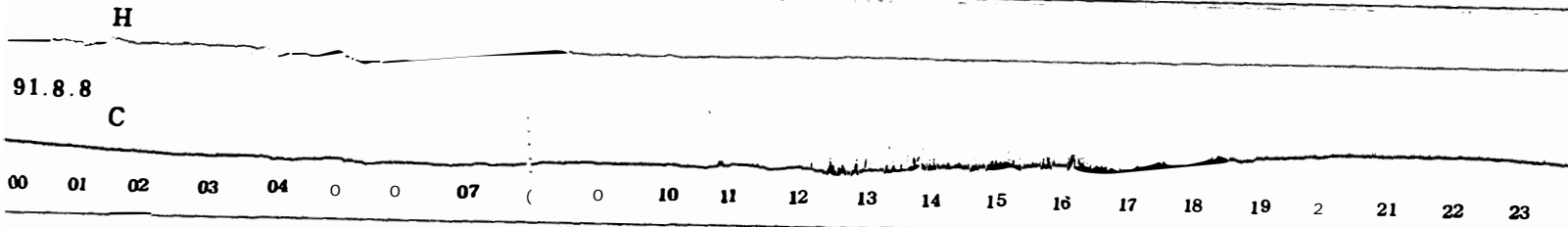


45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

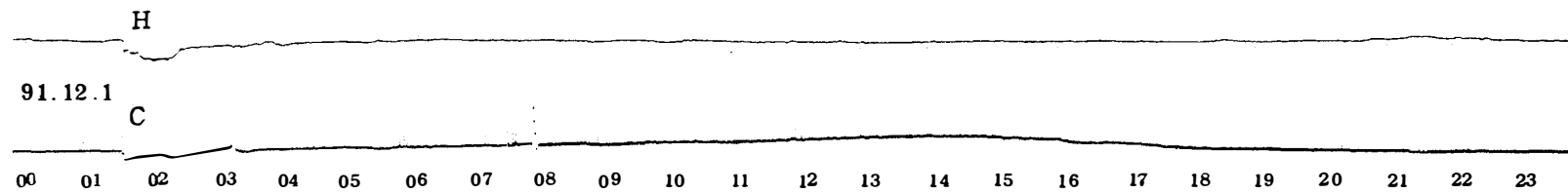
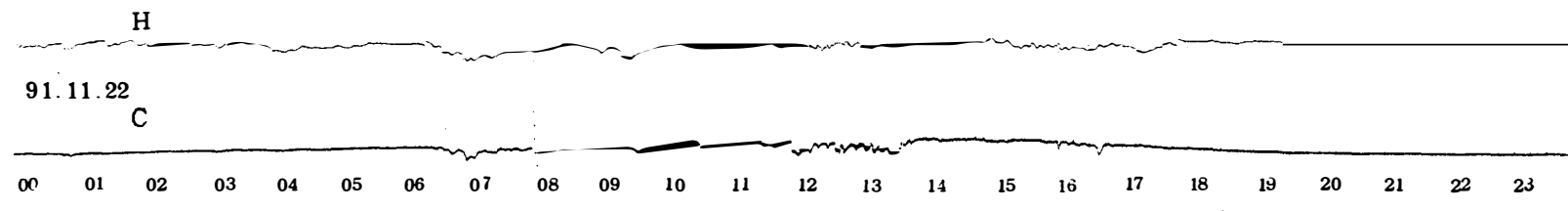
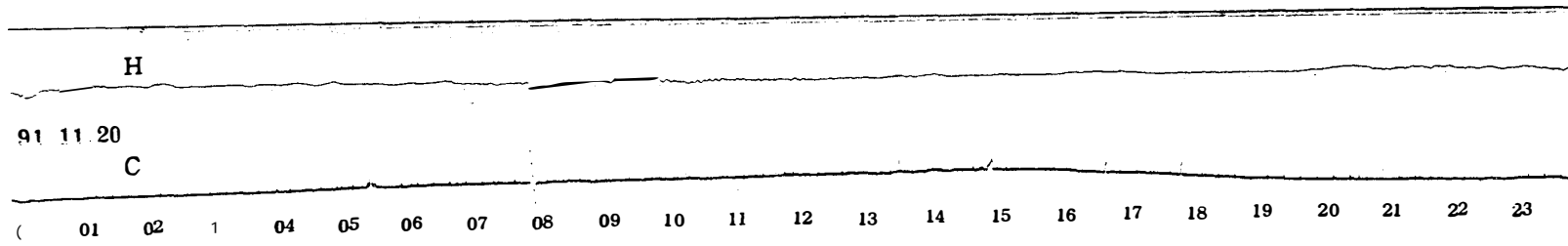


45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE



45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

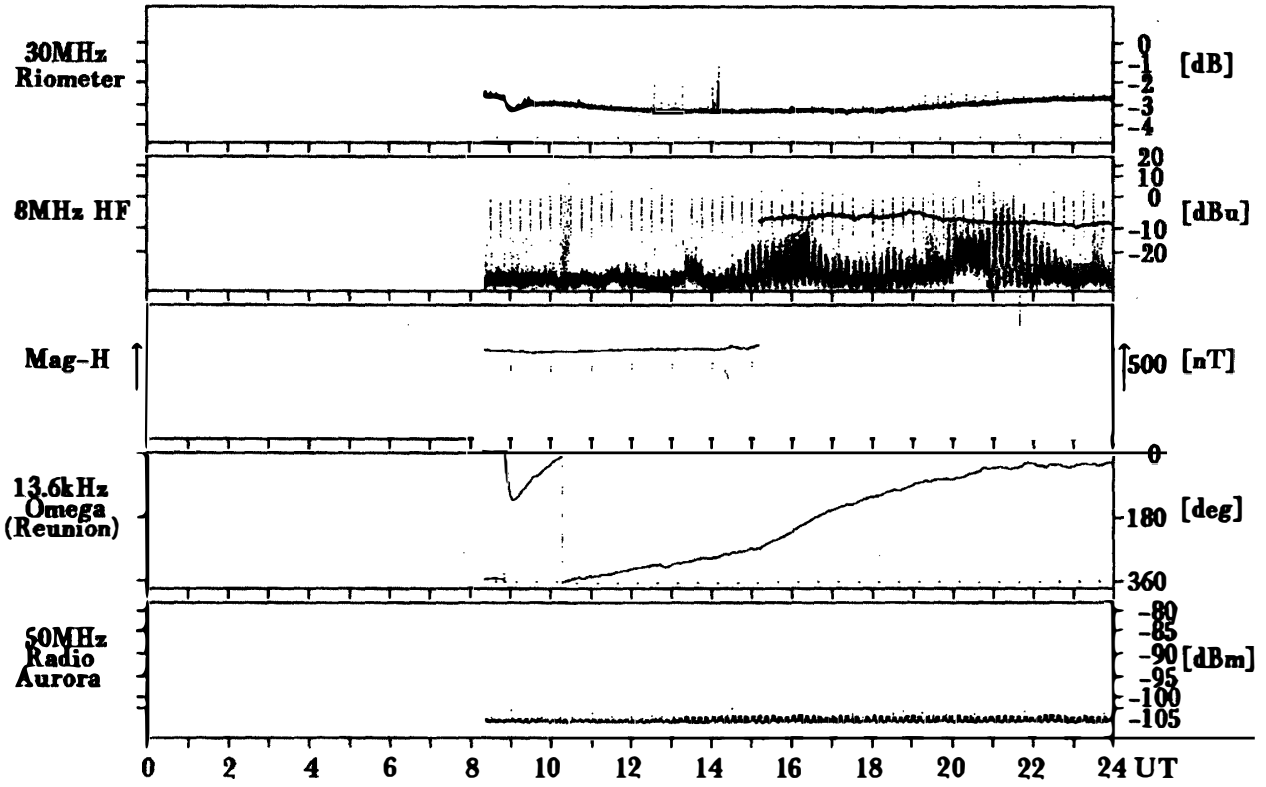
83



45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

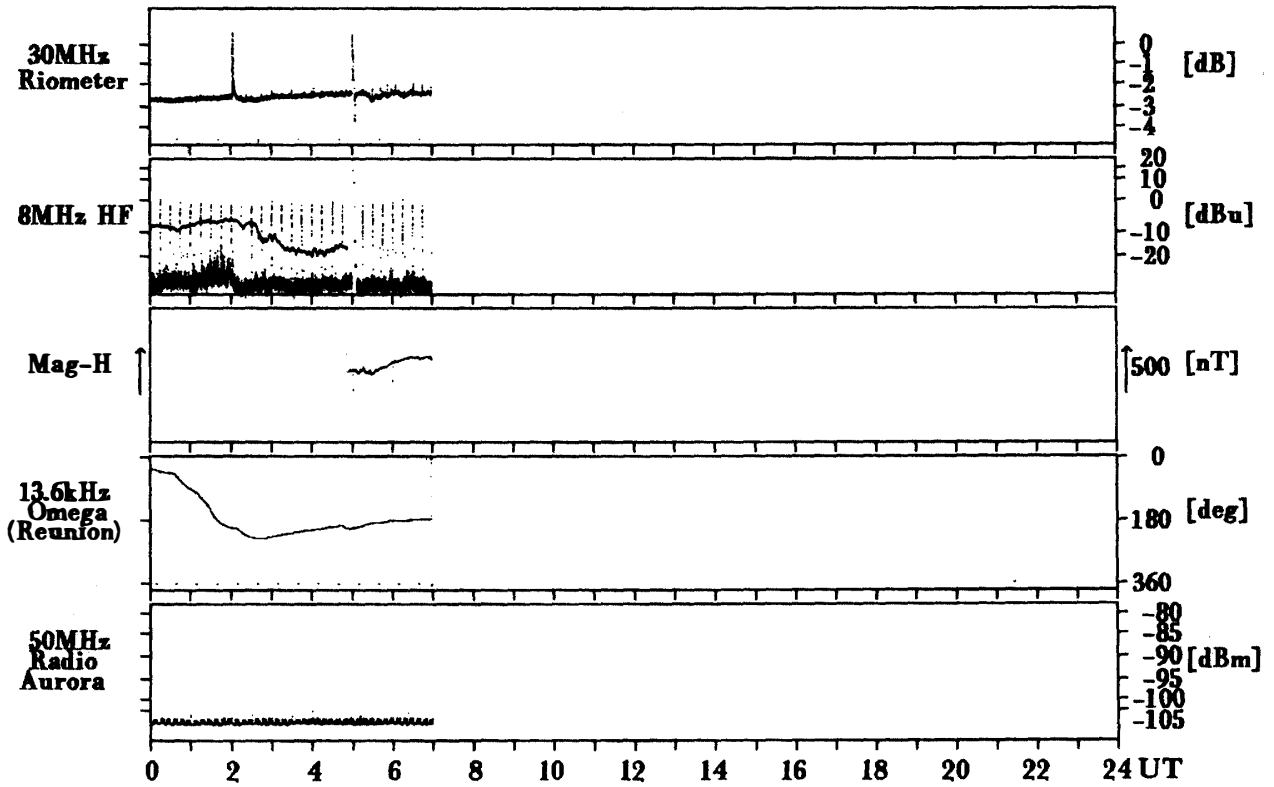
Syowa Station

Total Day / 30 1991/ 1/30



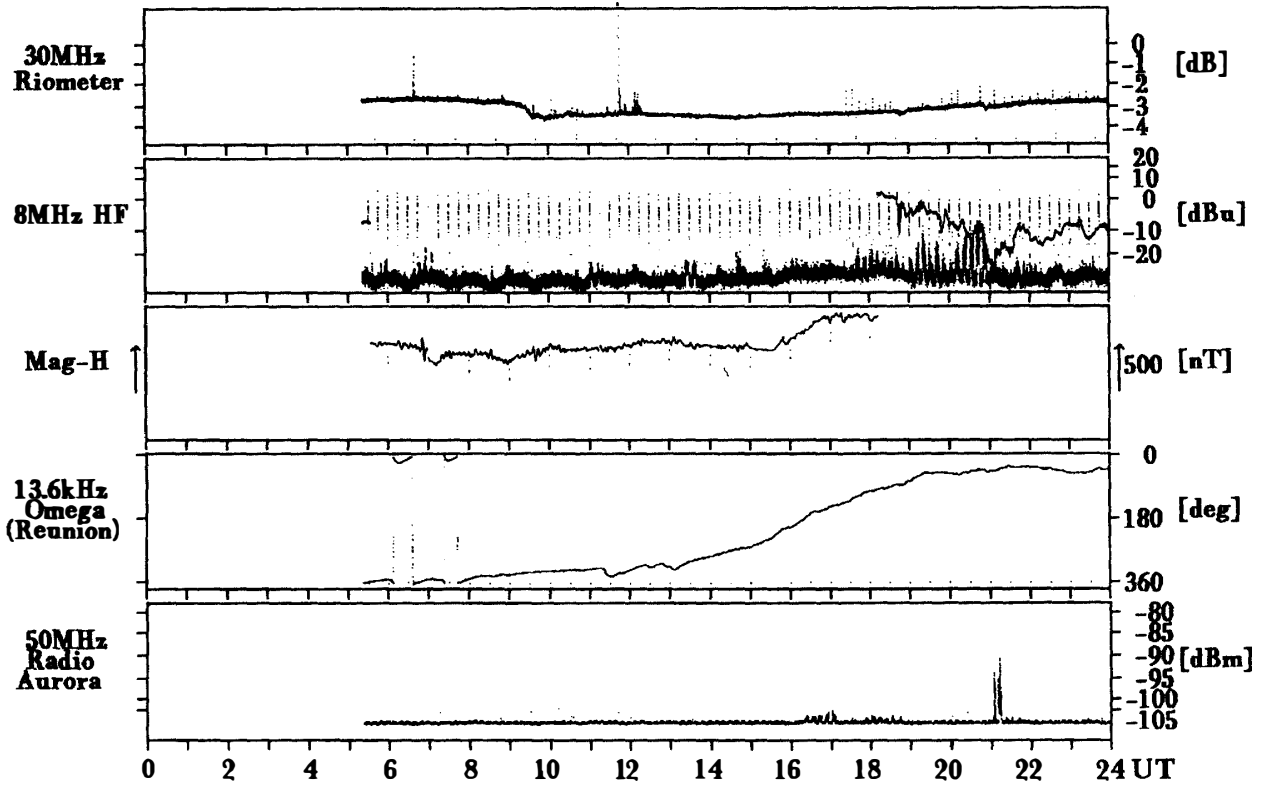
Syowa Station

Total Day / 31 1991/ 1/31



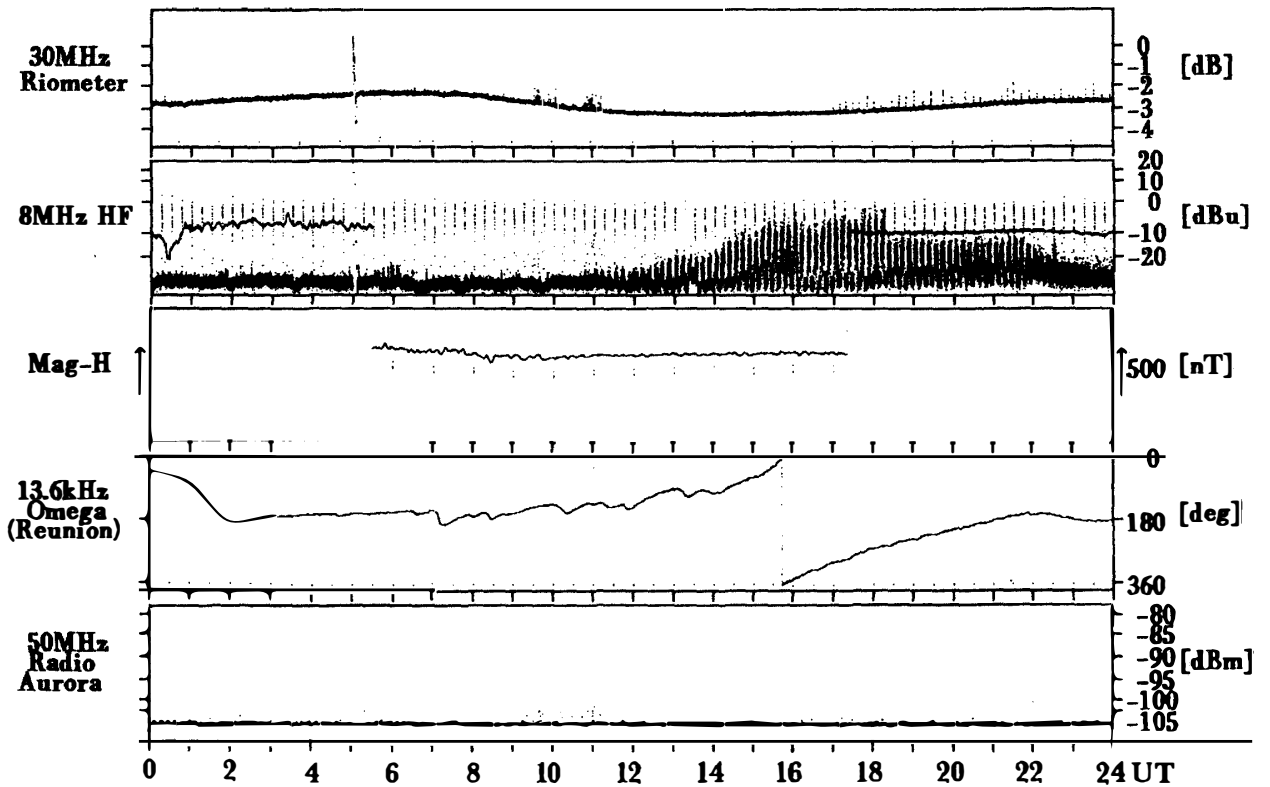
Syowa Station

Total Day / 32 1991/ 2/ 1



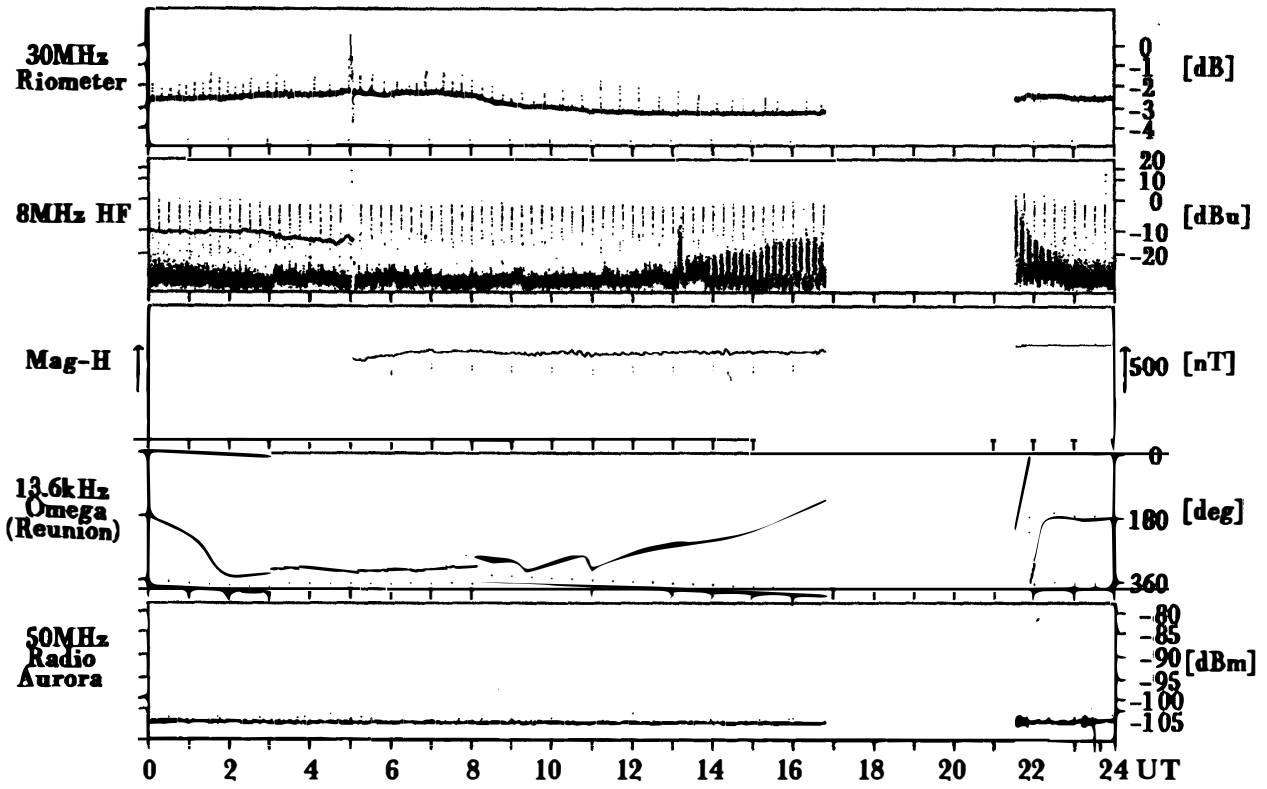
Syowa Station

Total Day / 33 1991/ 2/ 2



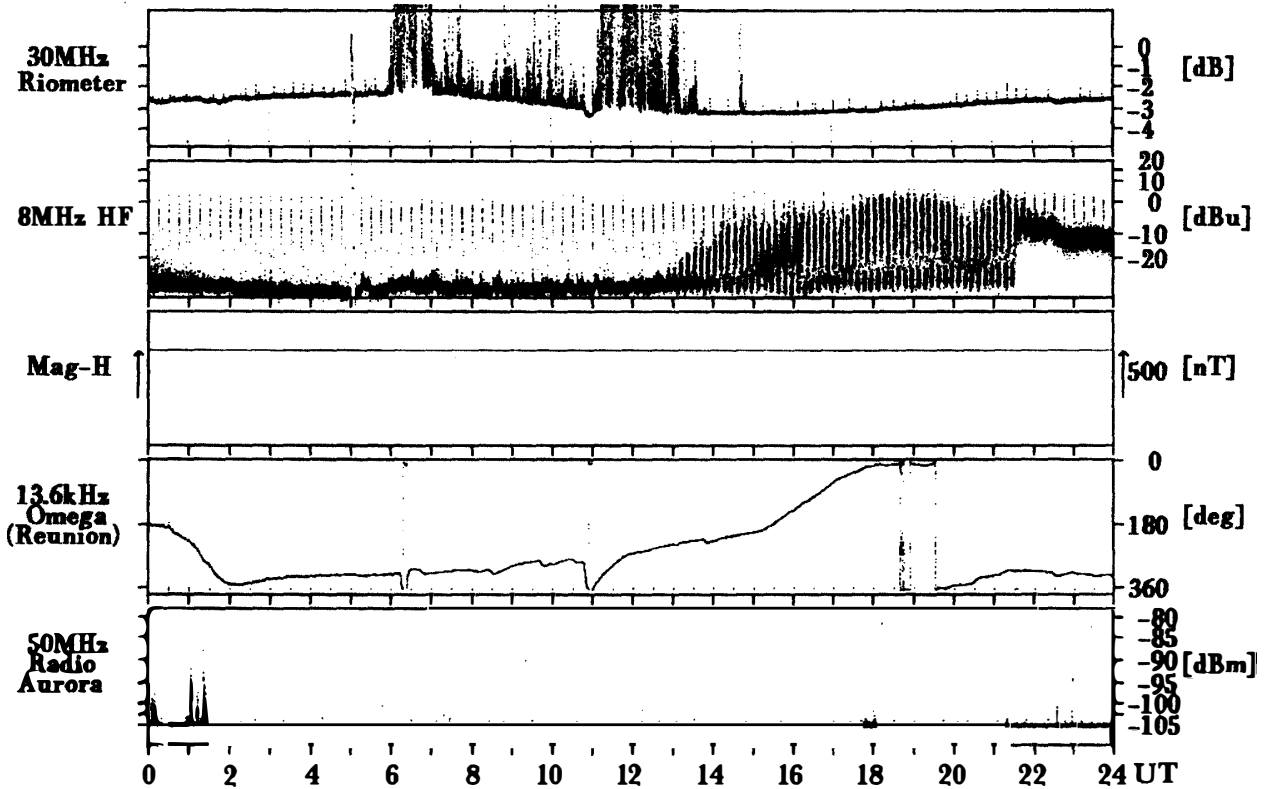
Syowa Station

Total Day / 34 1991/ 2/ 3



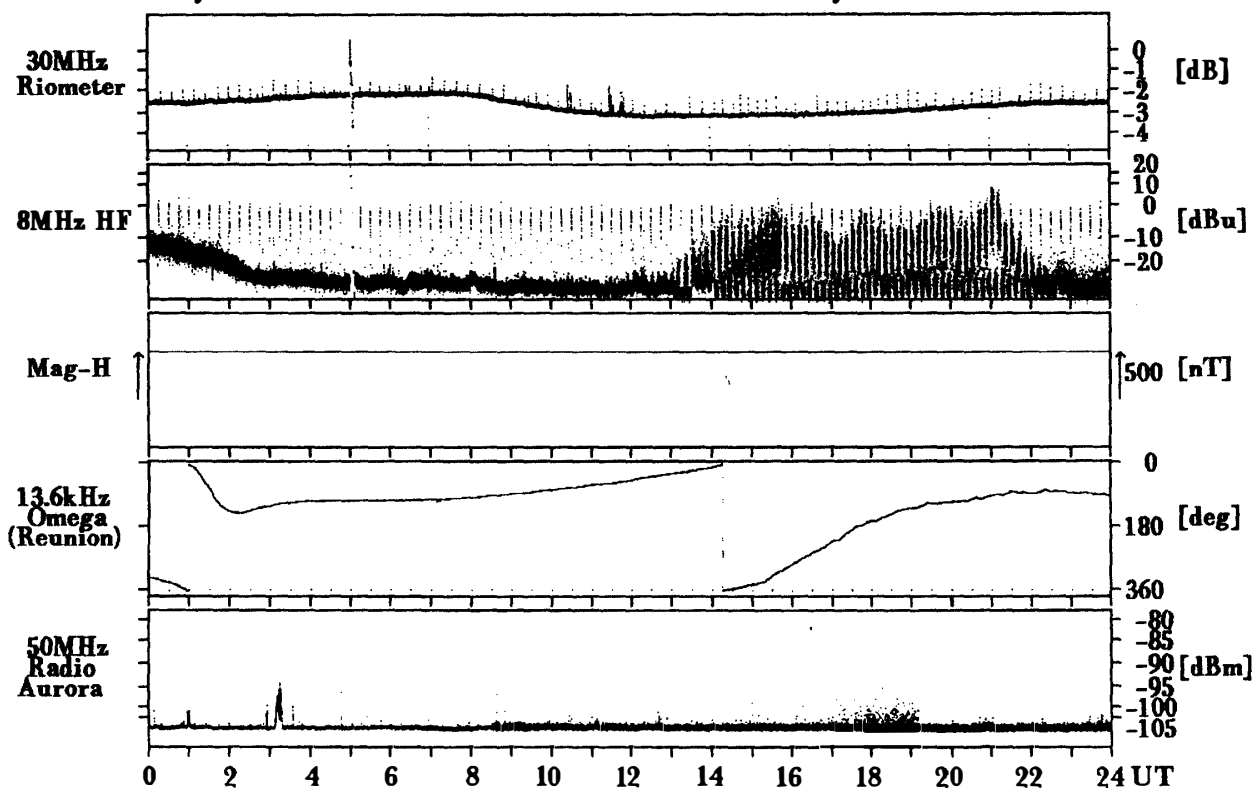
Syowa Station

Total Day / 35 1991/ 2/ 4



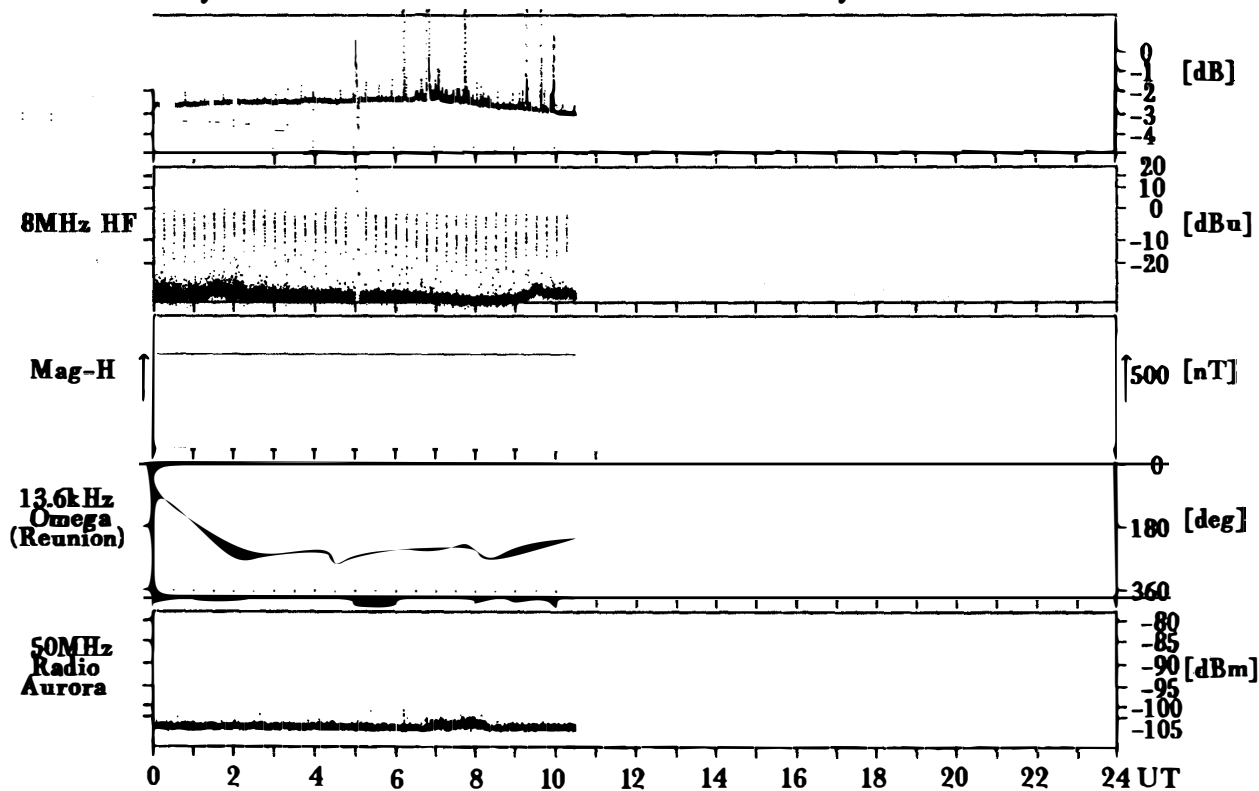
Syowa Station

Total Day / 36 1991/ 2/ 5



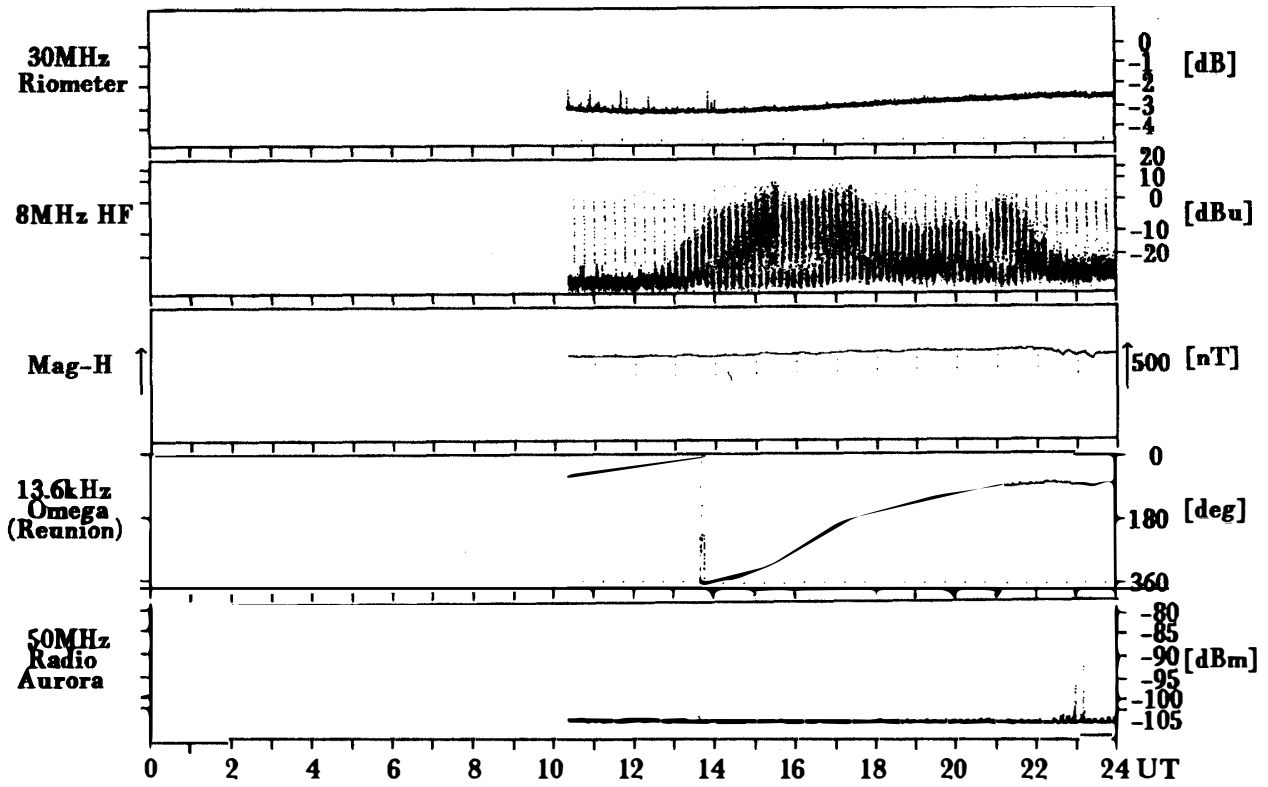
Syowa Station

Total Day / 37 1991/ 2/ 6



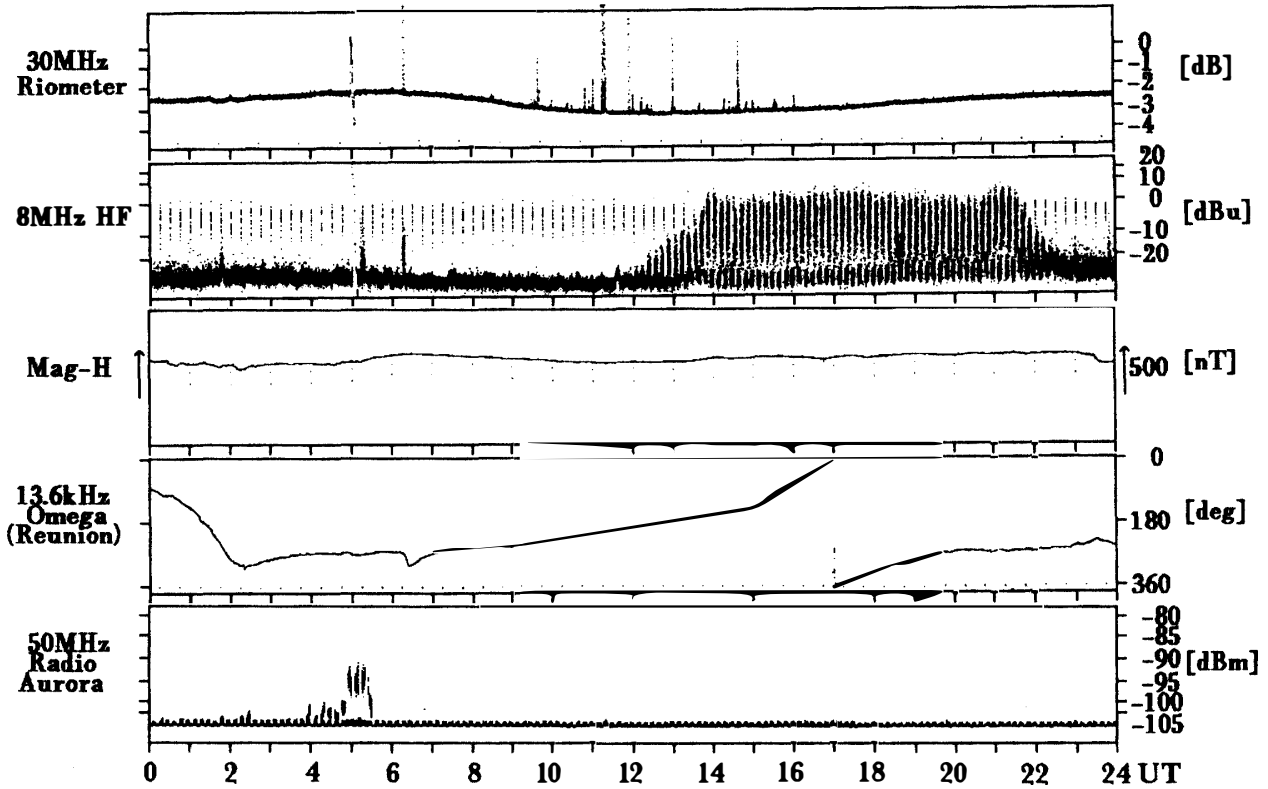
Syowa Station

Total Day / 47 1991/ 2/16



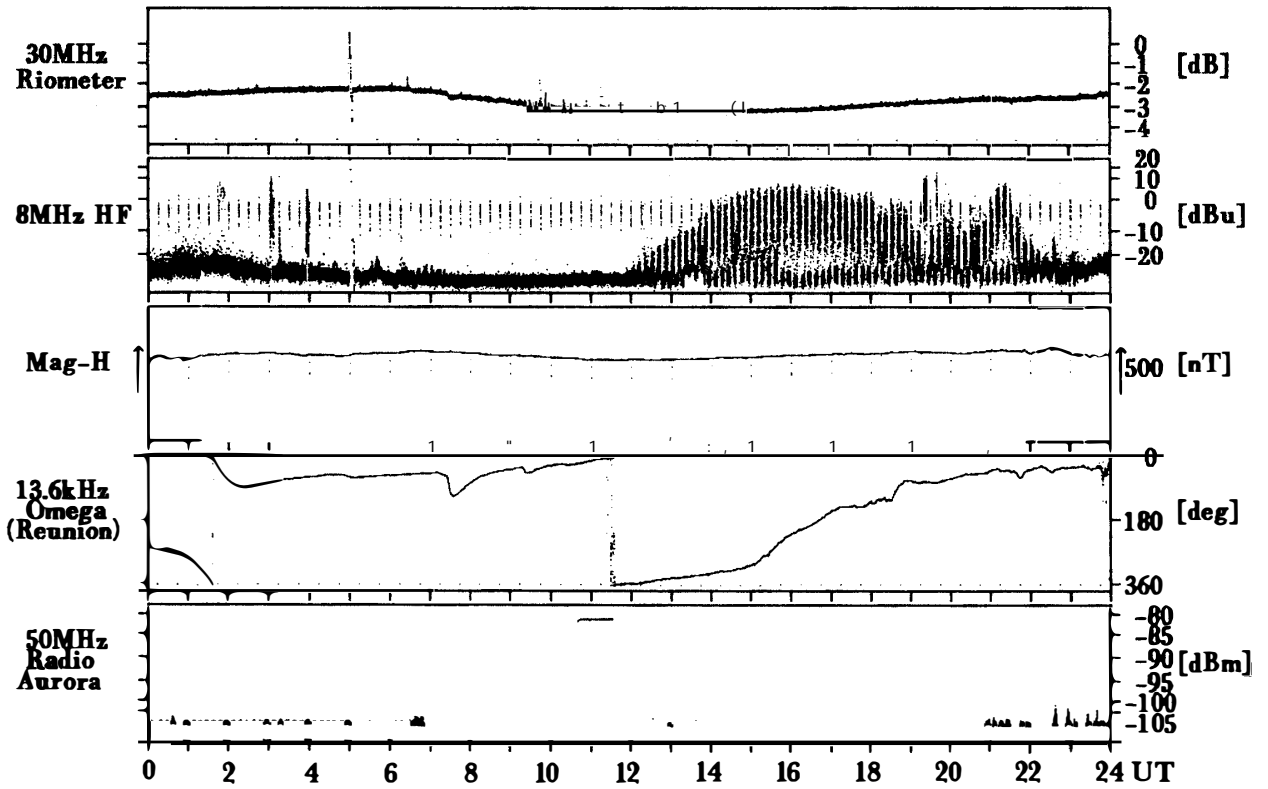
Syowa Station

Total Day / 48 1991/ 2/17



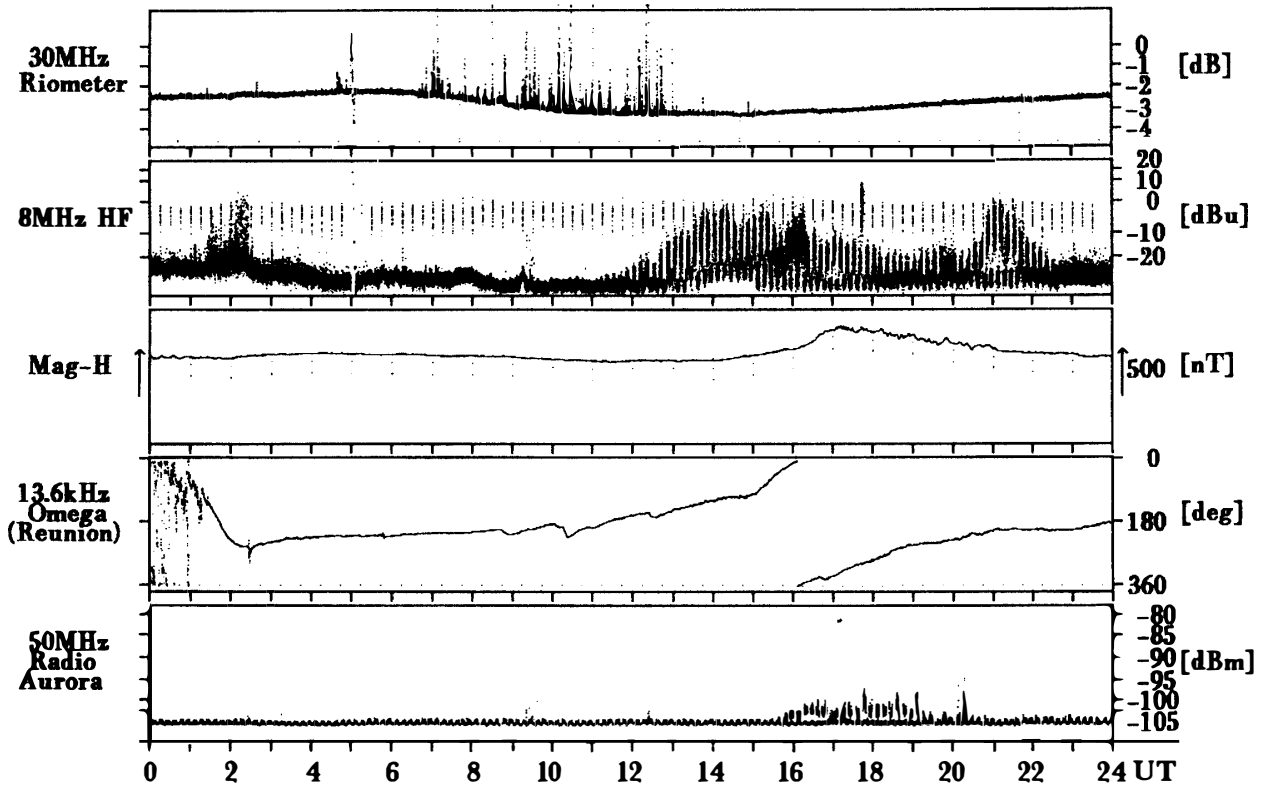
Syowa Station

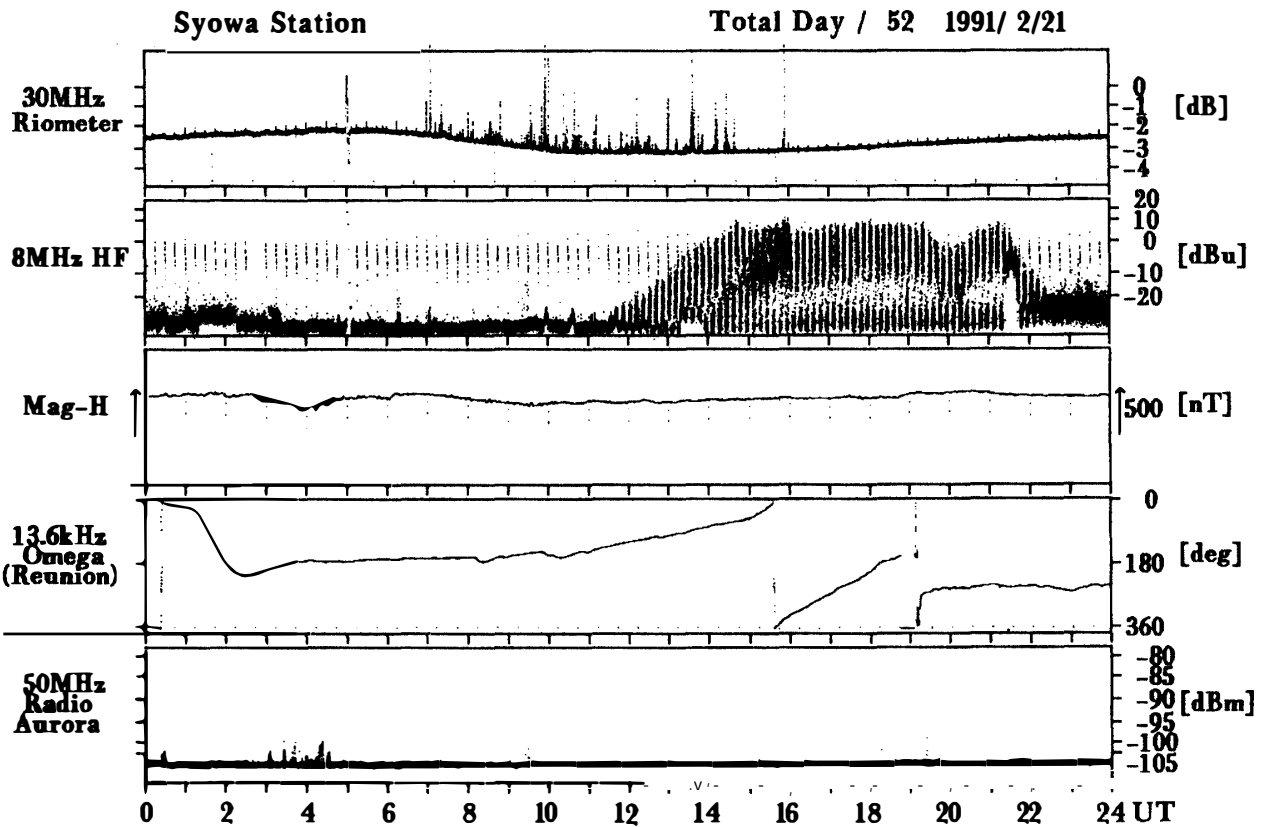
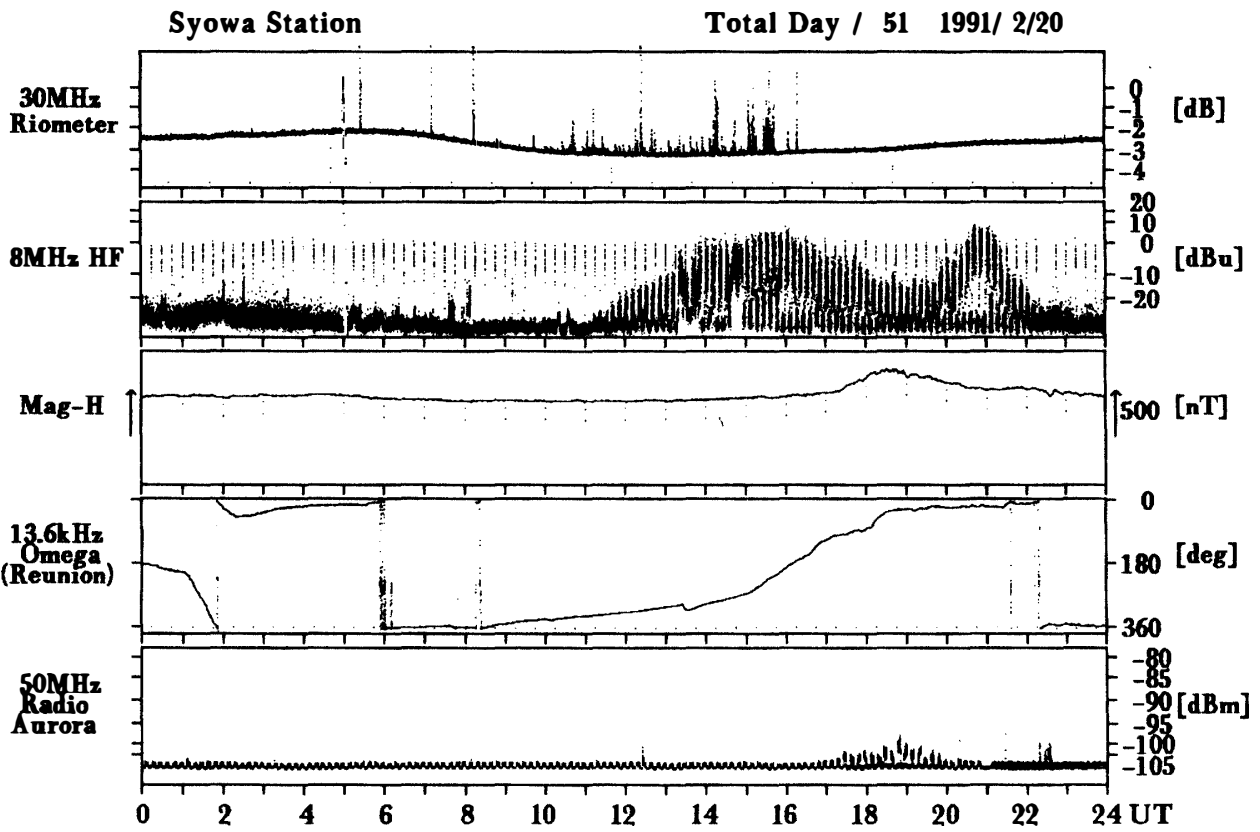
Total Day / 49 1991/ 2/18

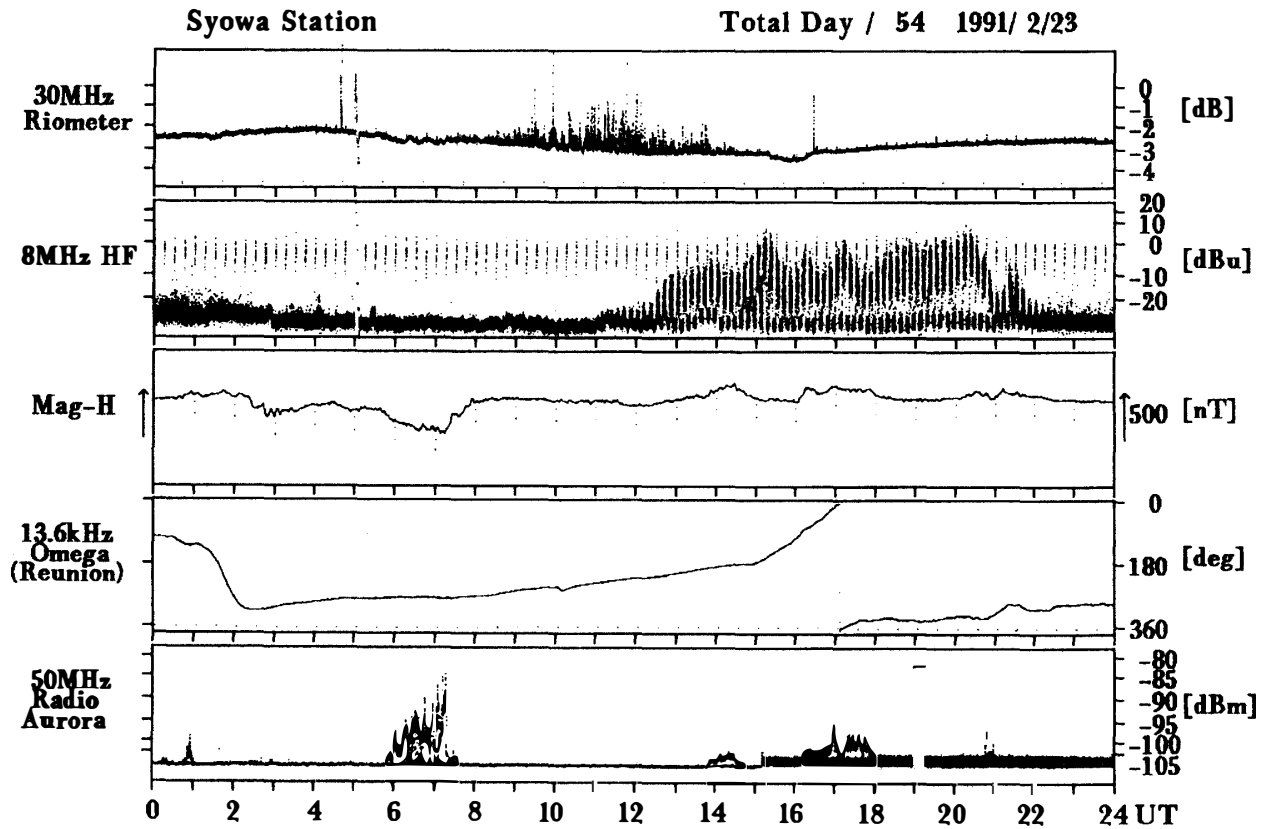
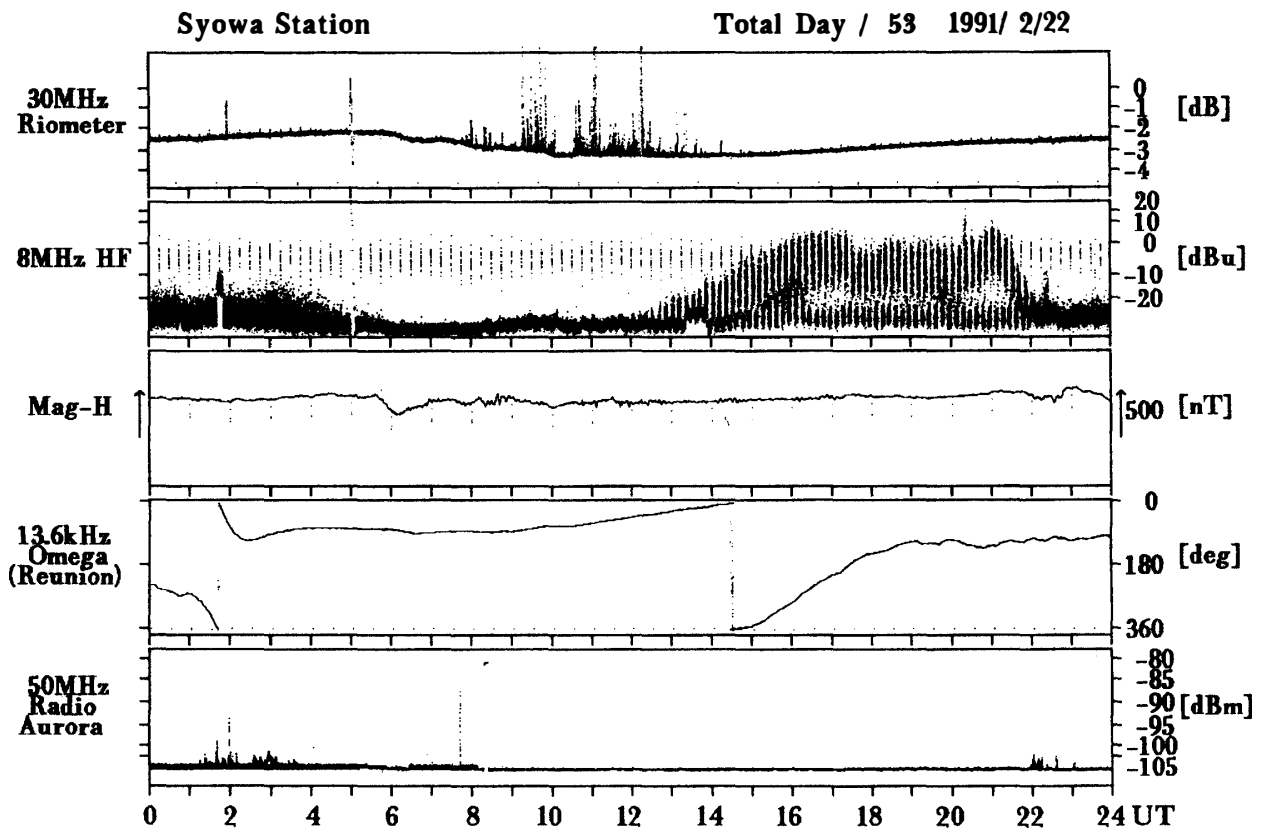


Syowa Station

Total Day / 50 1991/ 2/19

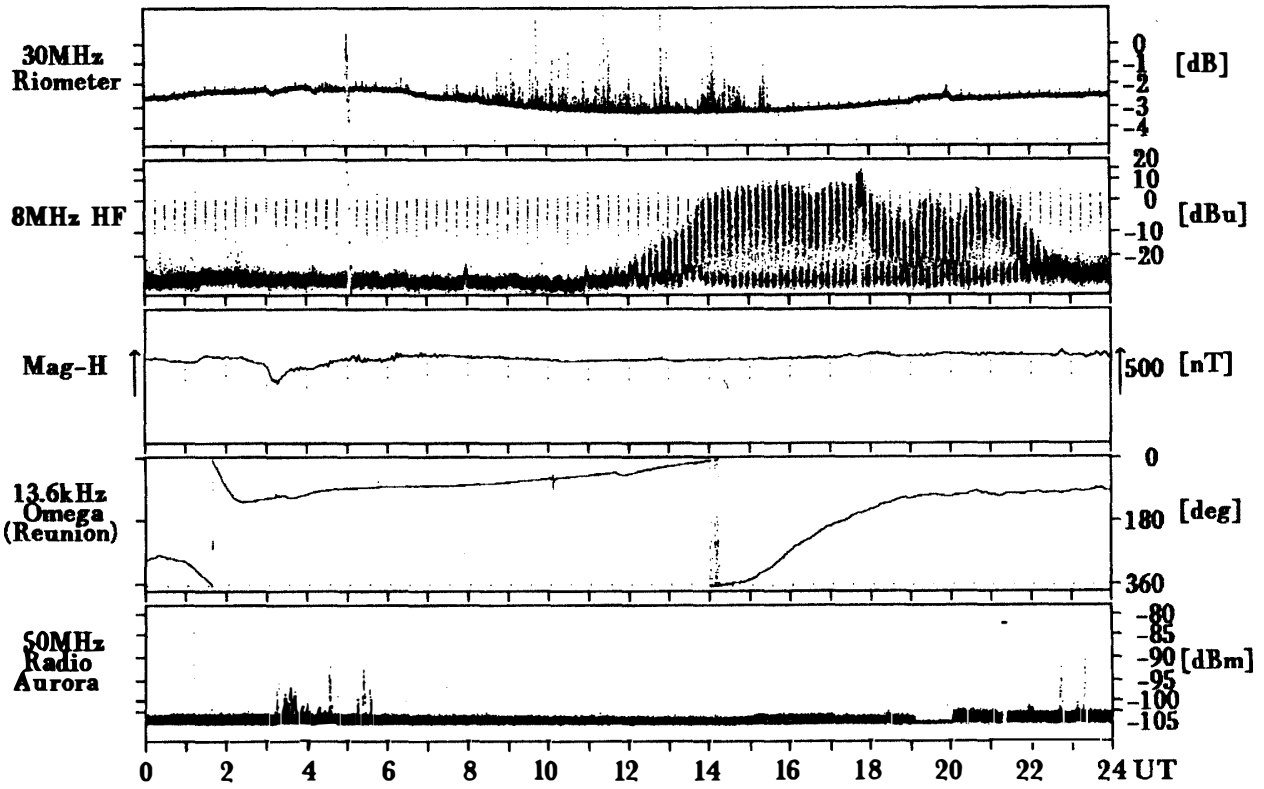






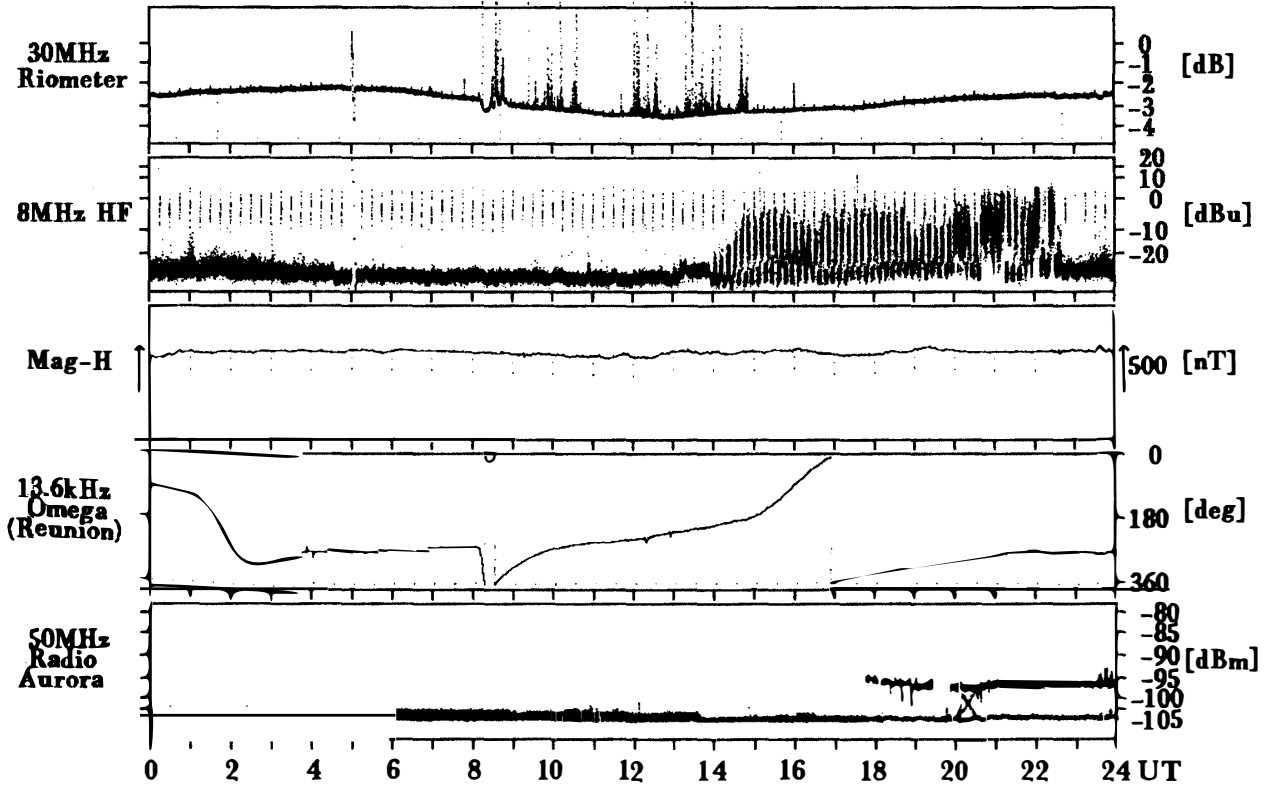
Syowa Station

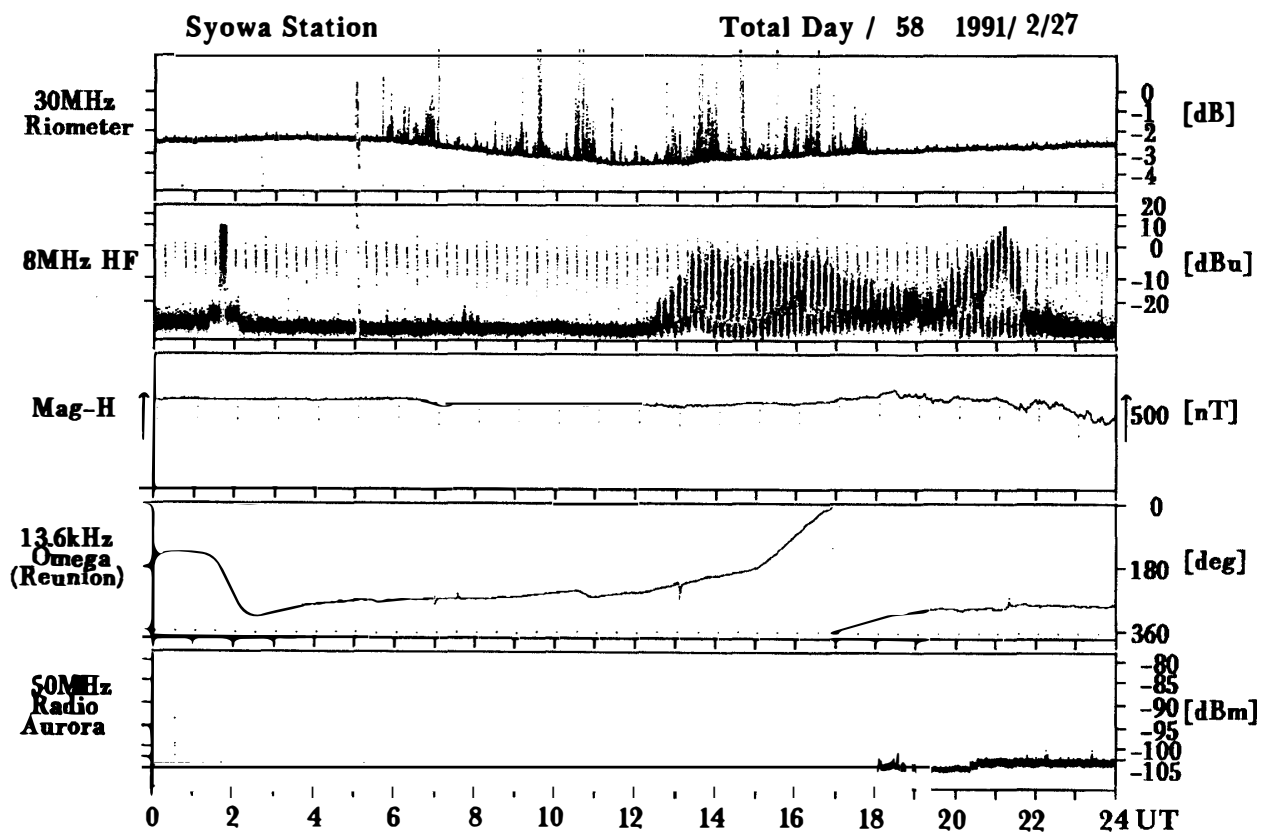
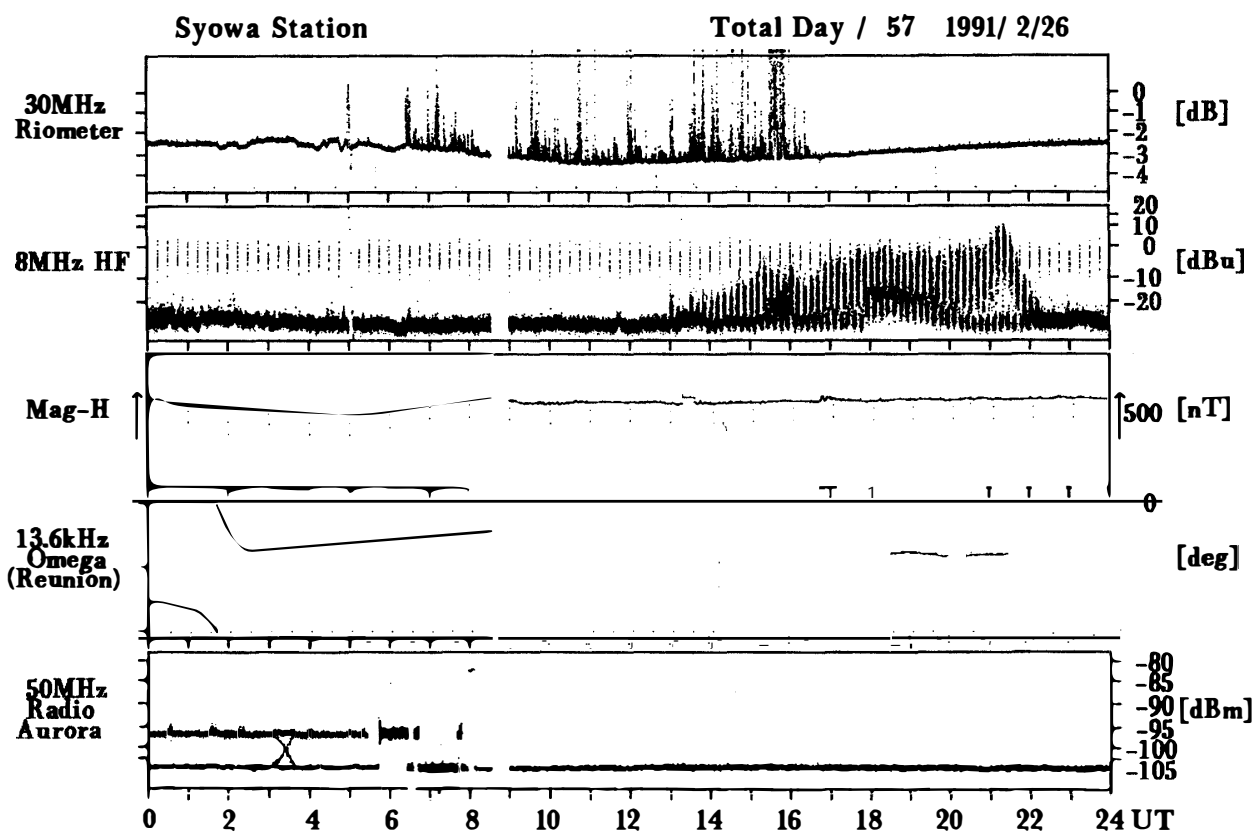
Total Day / 55 1991/ 2/24



Syowa Station

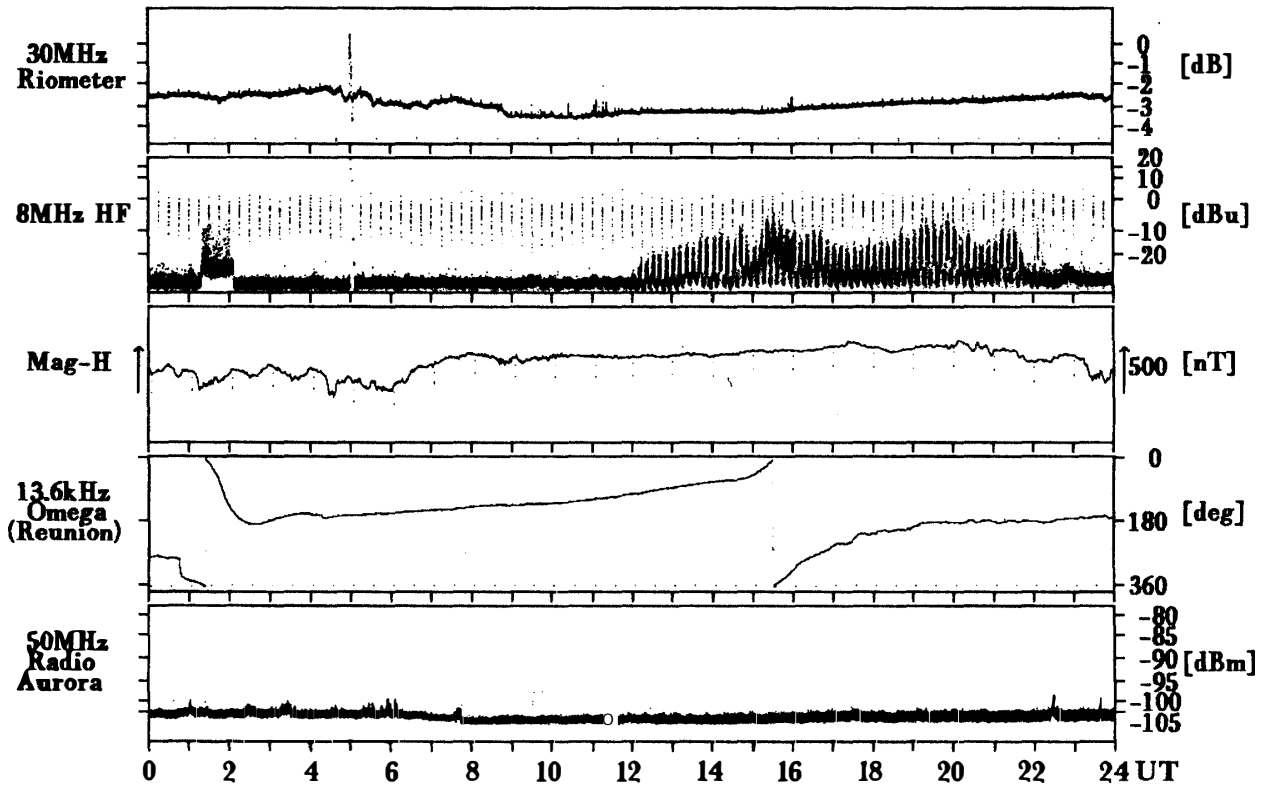
Total Day / 56 1991/ 2/25





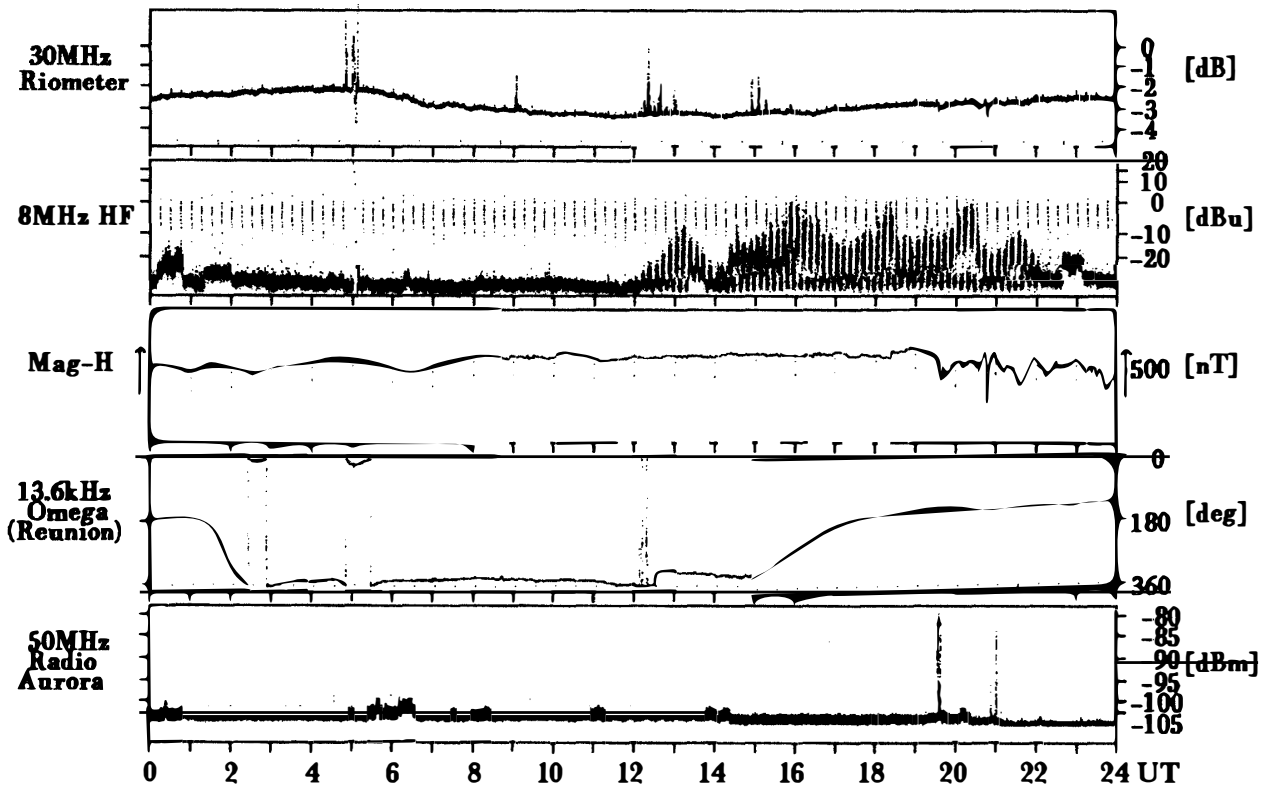
Syowa Station

Total Day / 59 1991/ 2/28



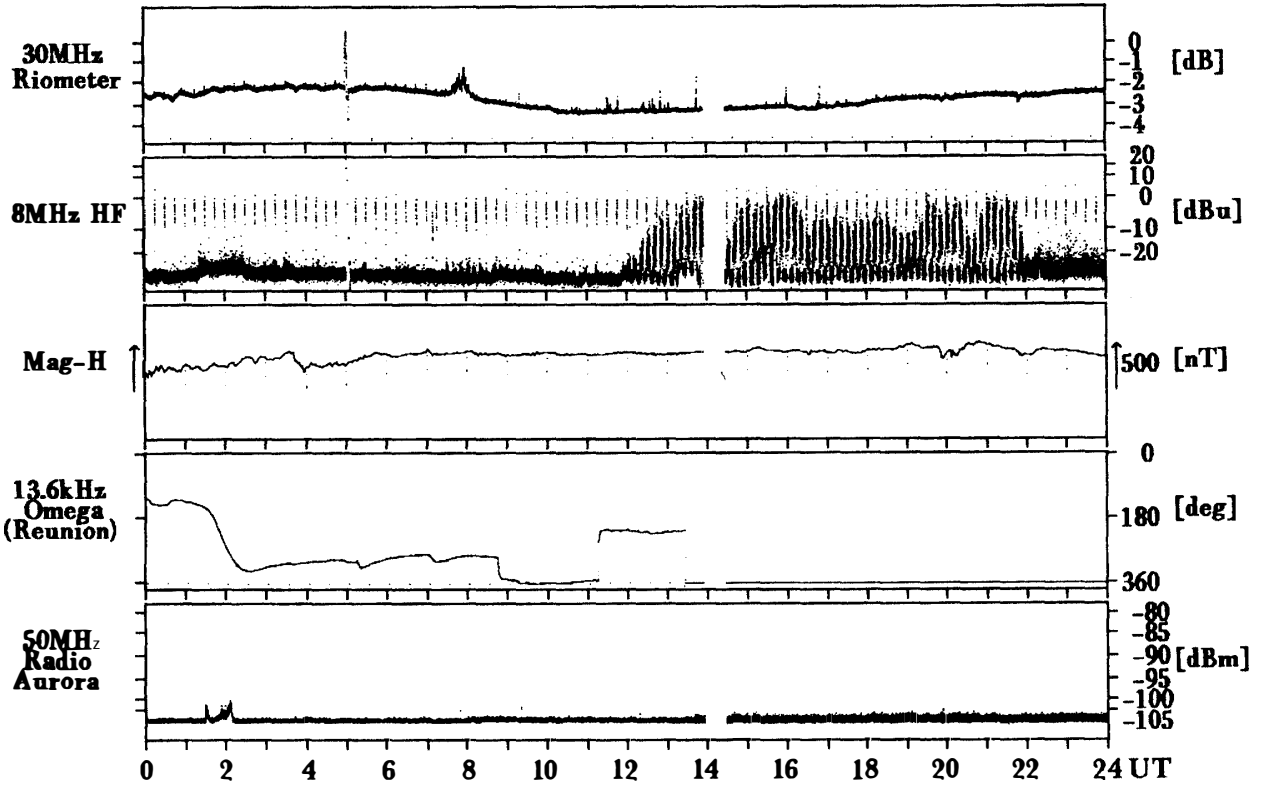
Syowa Station

Total Day / 60 1991/ 3/ 1



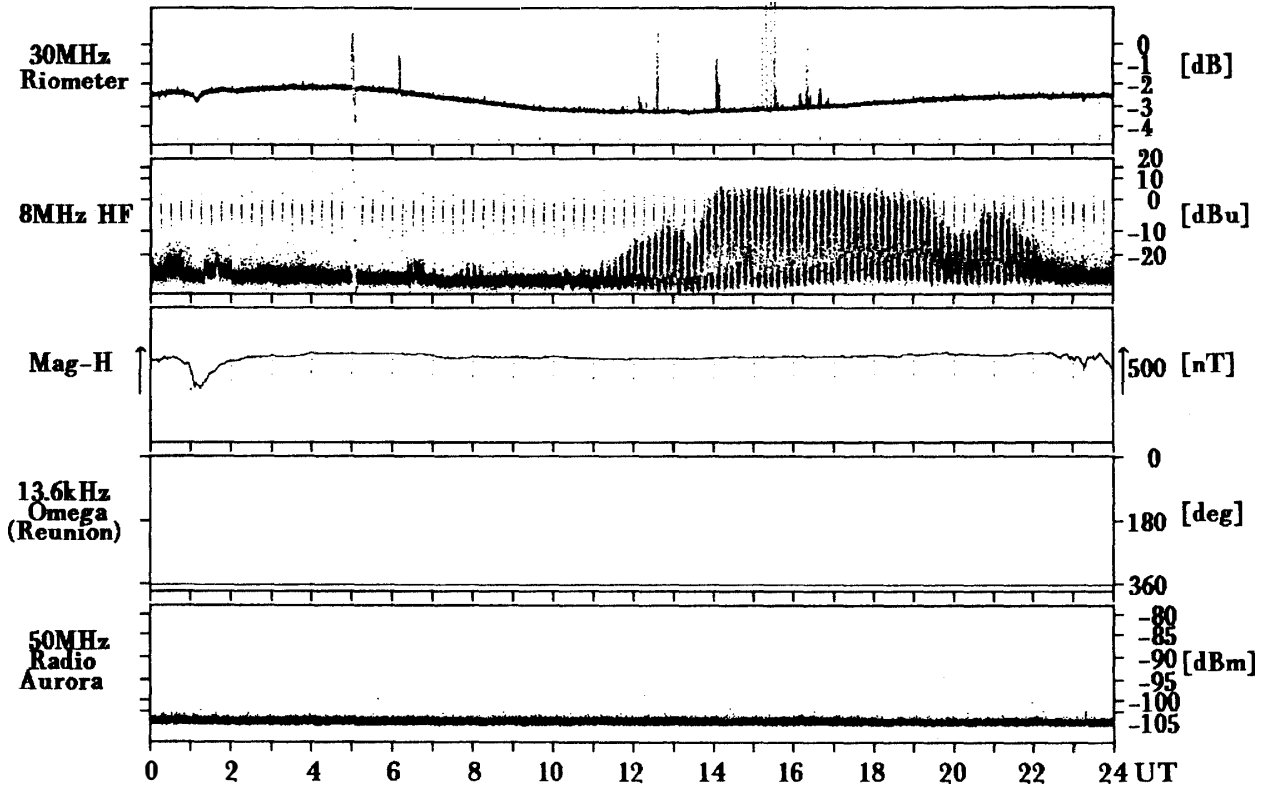
Syowa Station

Total Day / 61 1991/ 3/ 2



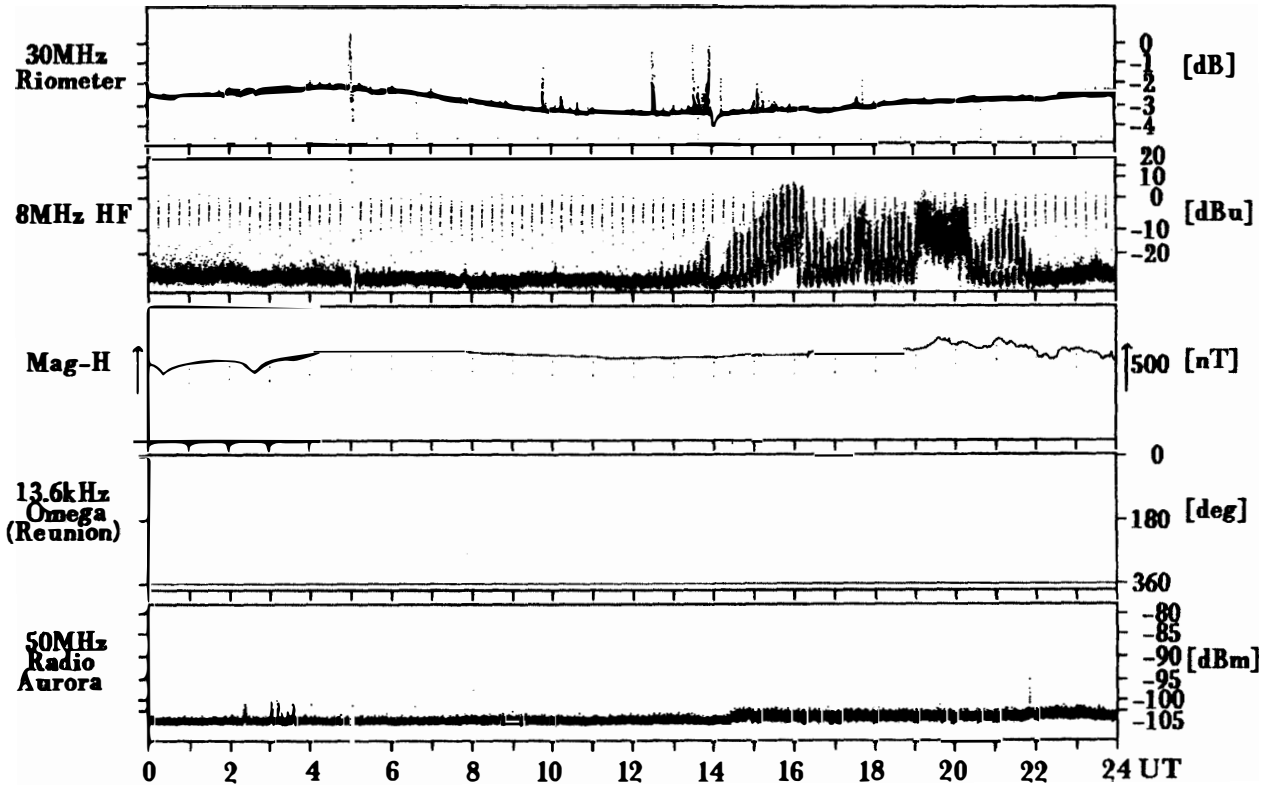
Syowa Station

Total Day / 62 1991/ 3/ 3



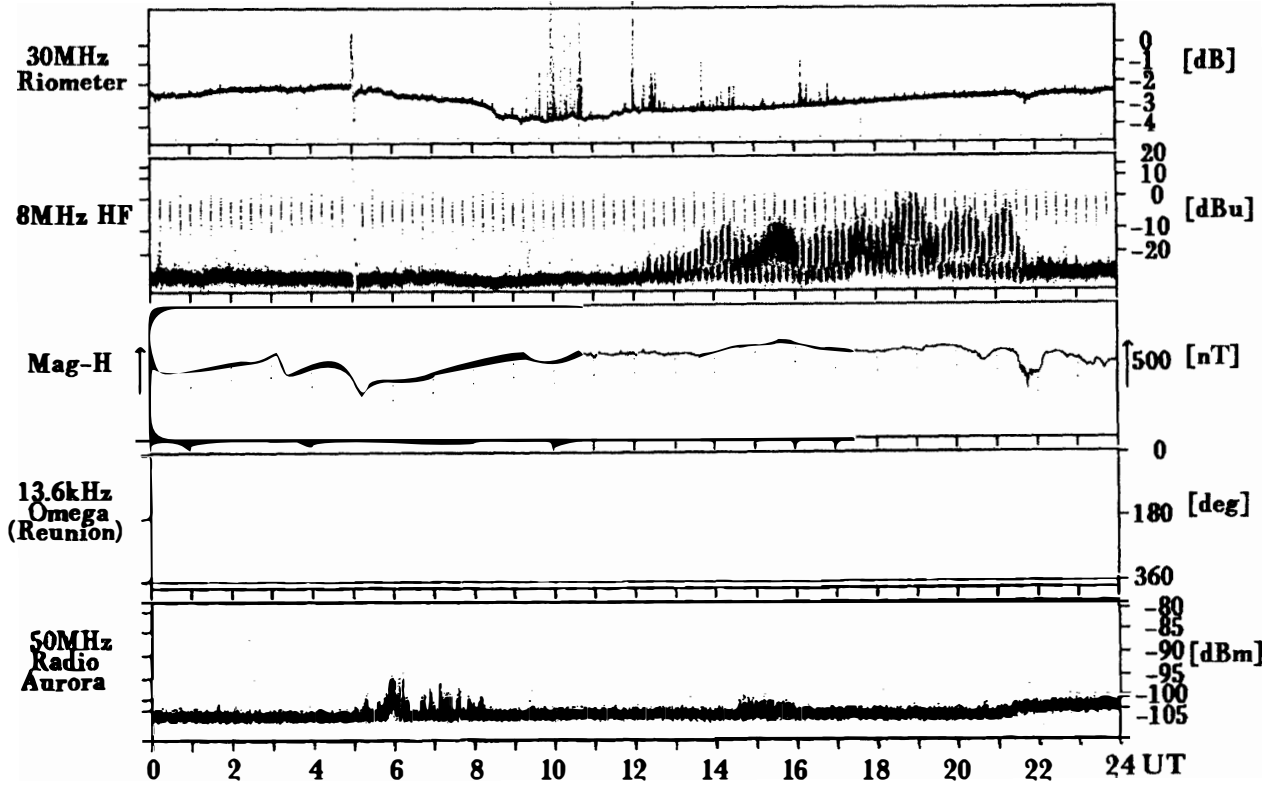
Syowa Station

Total Day / 63 1991/ 3/ 4



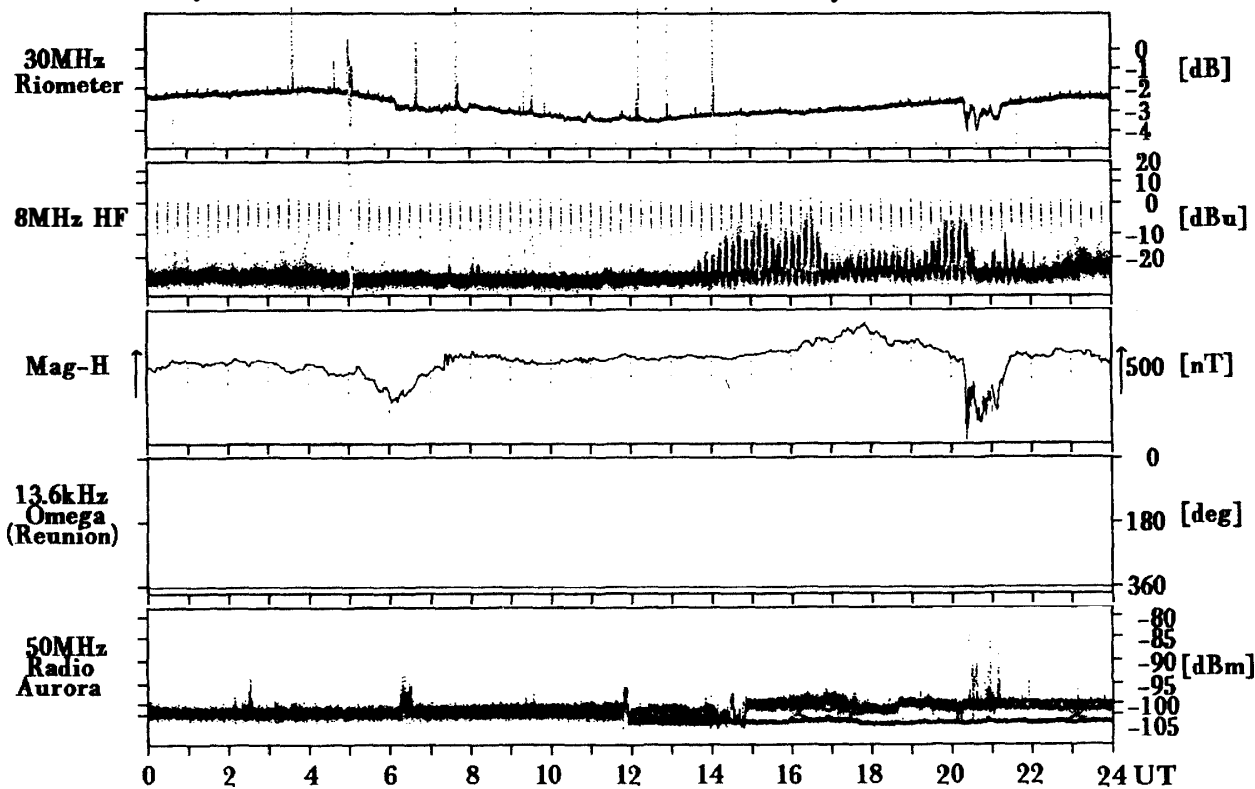
Syowa Station

Total Day / 64 1991/ 3/ 5



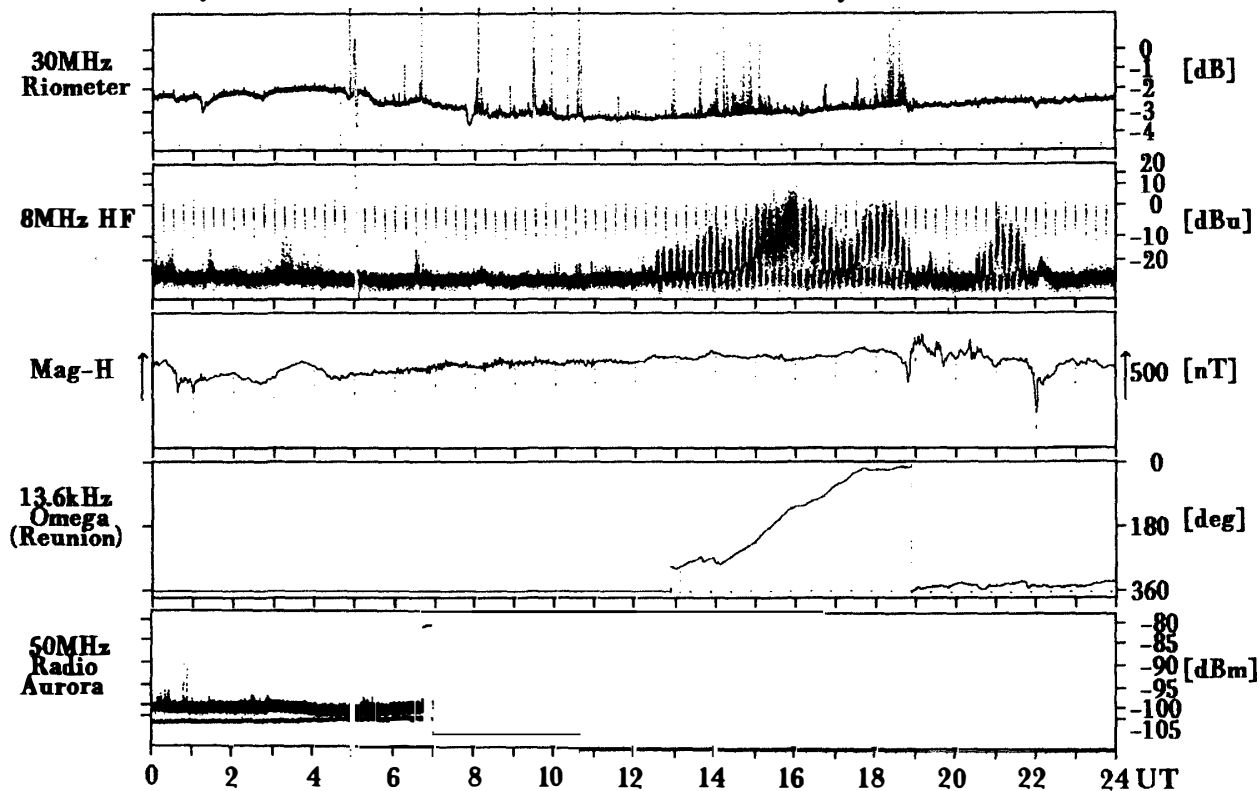
Syowa Station

Total Day / 65 1991/ 3/ 6



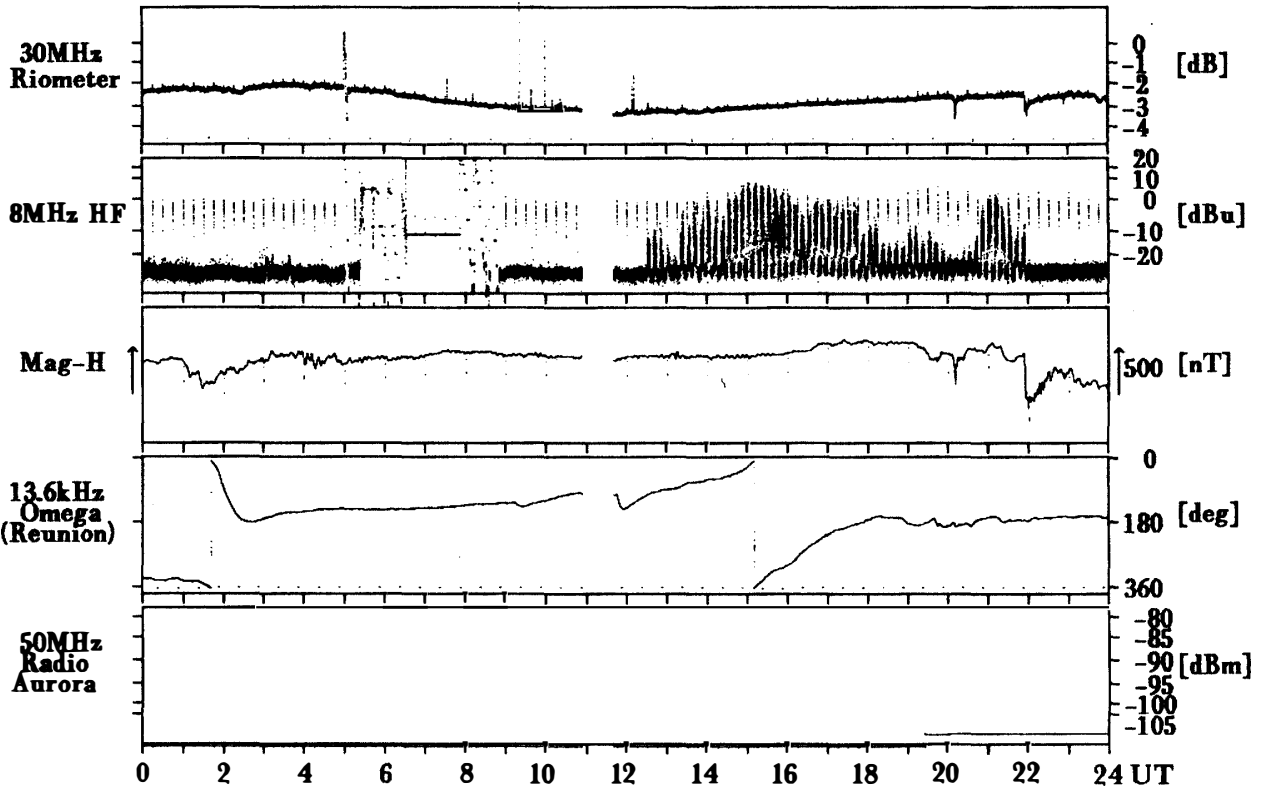
Syowa Station

Total Day / 66 1991/ 3/ 7



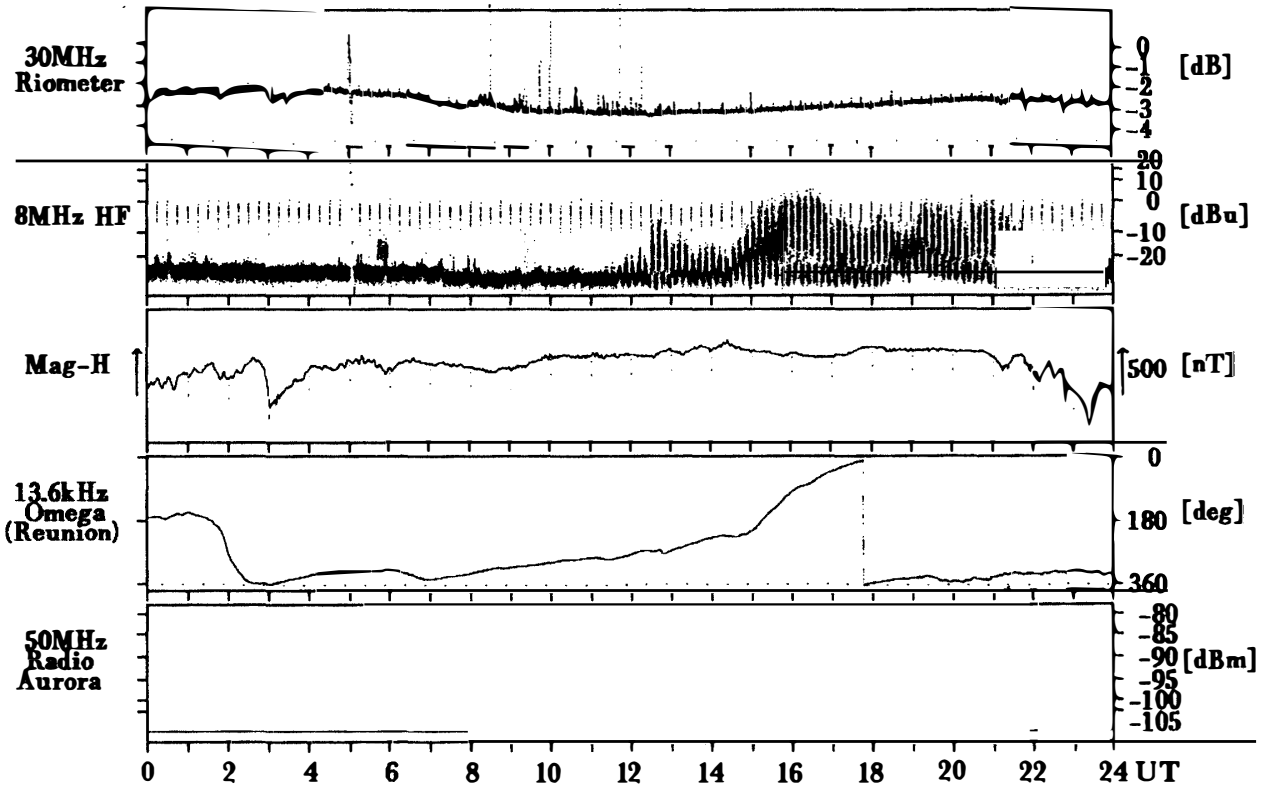
Syowa Station

Total Day / 67 1991/ 3/ 8



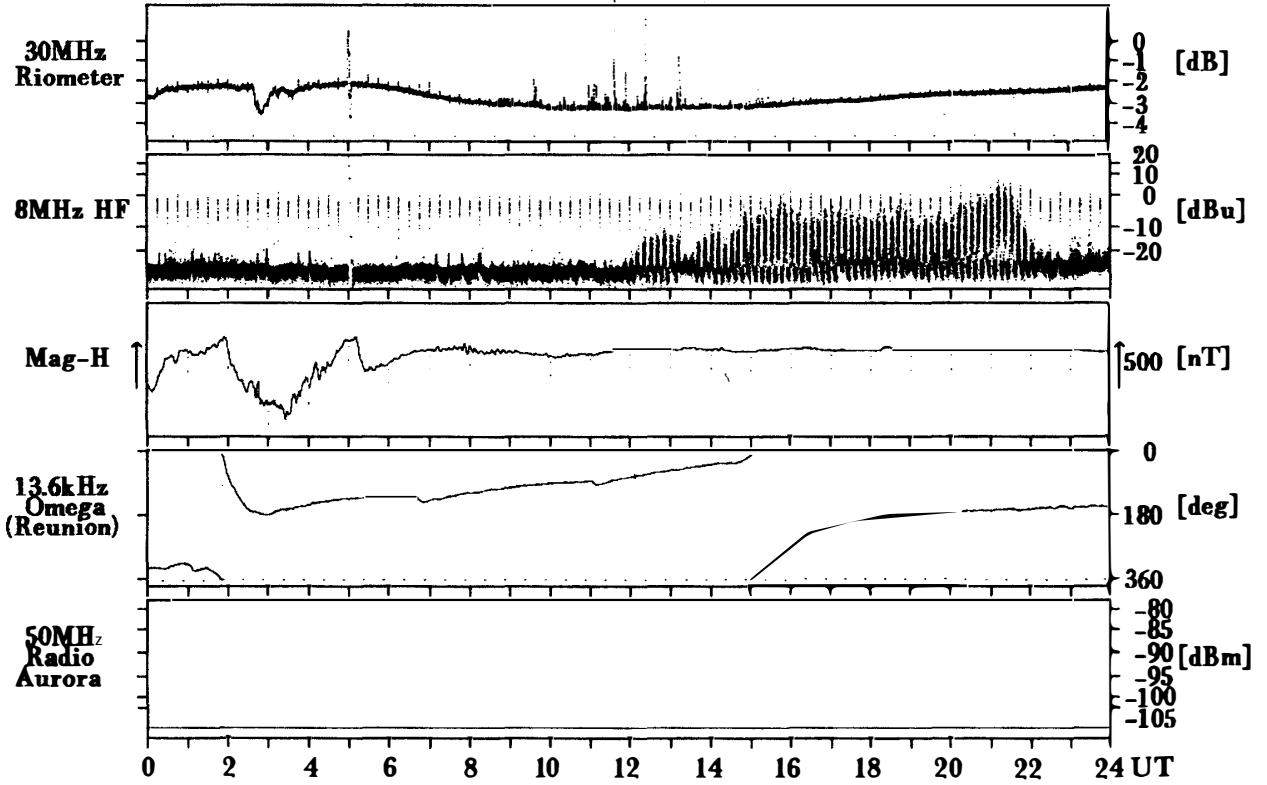
Syowa Station

Total Day / 68 1991/ 3/ 9



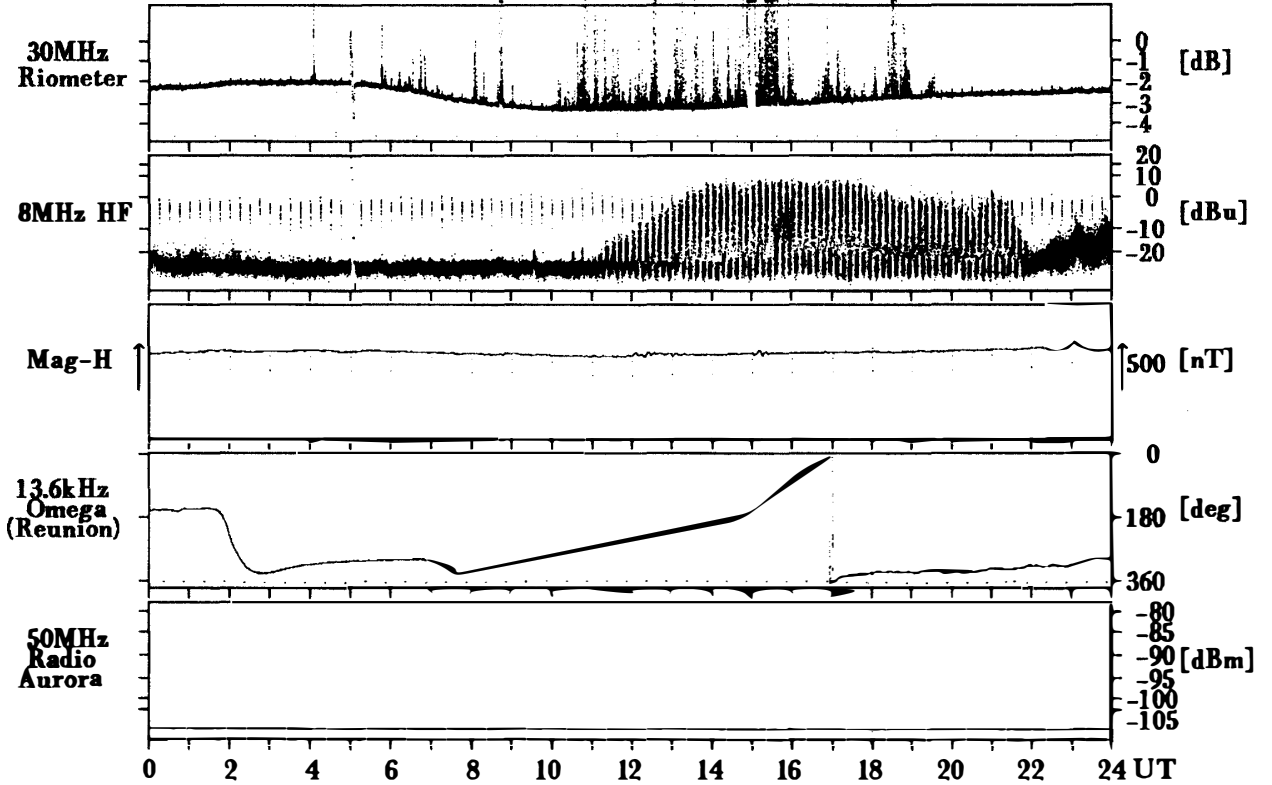
Syowa Station

Total Day / 69 1991/ 3/10



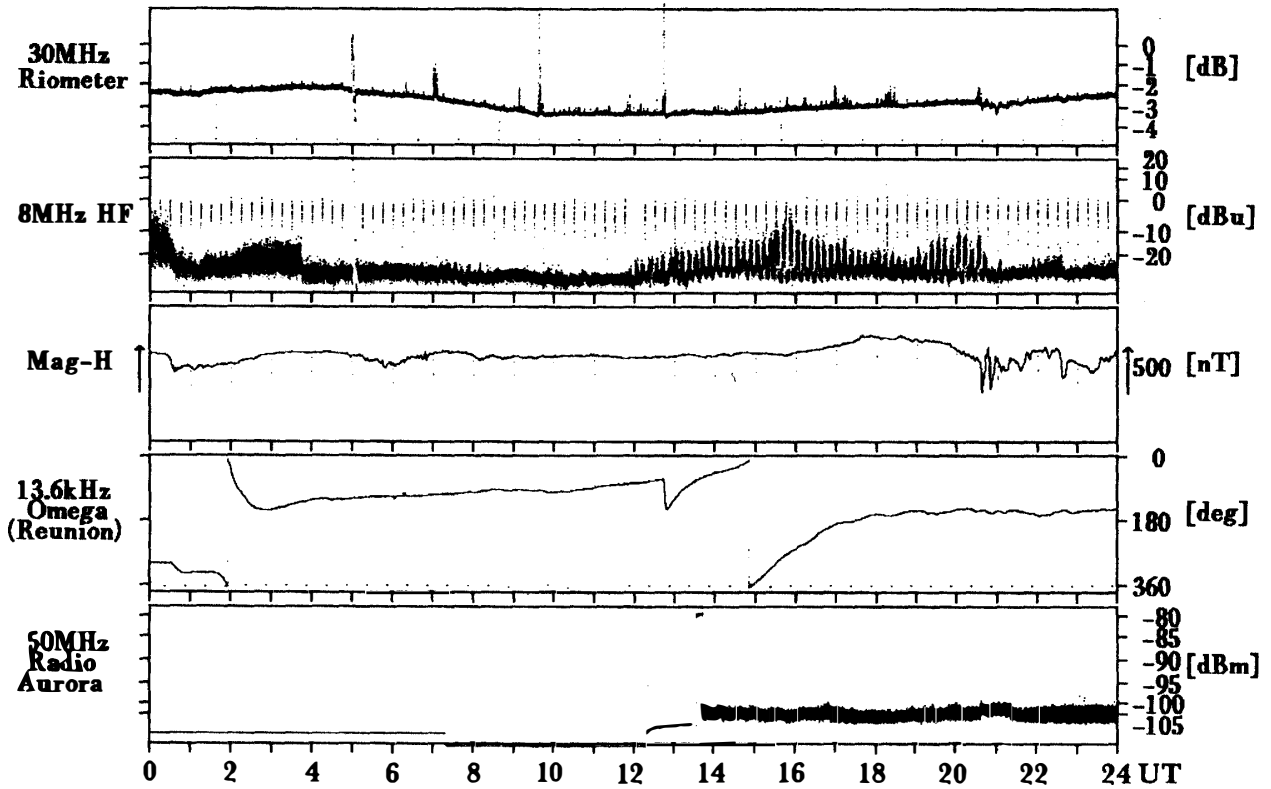
Syowa Station

Total Day / 70 1991/ 3/11



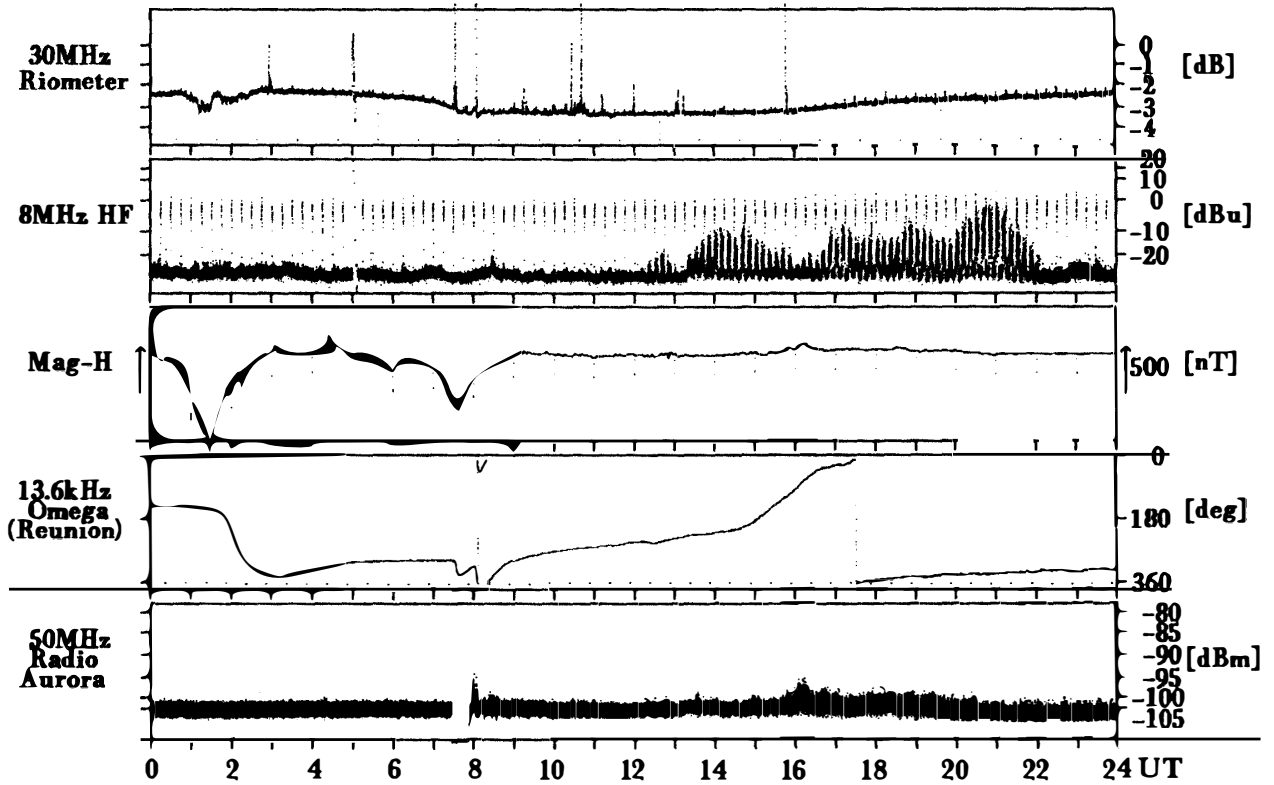
Syowa Station

Total Day / 71 1991/ 3/12



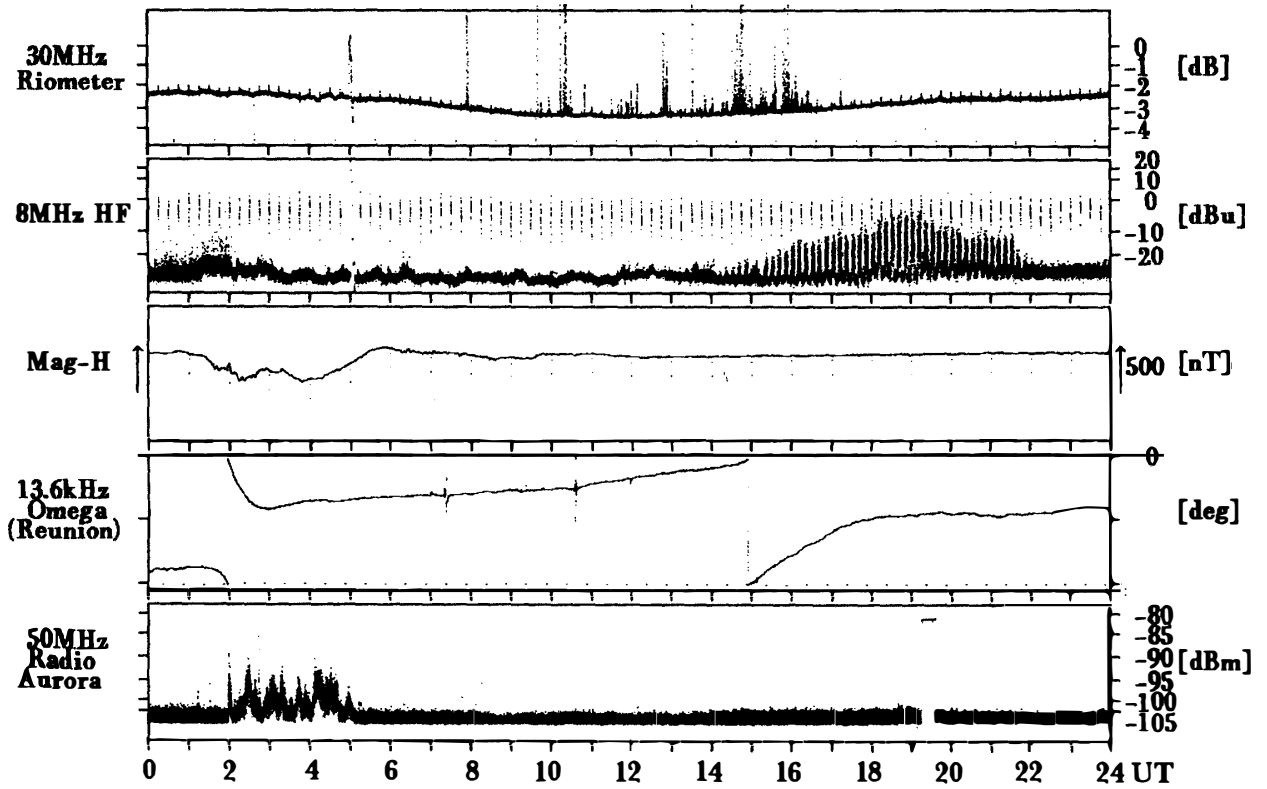
Syowa Station

Total Day / 72 1991/ 3/13



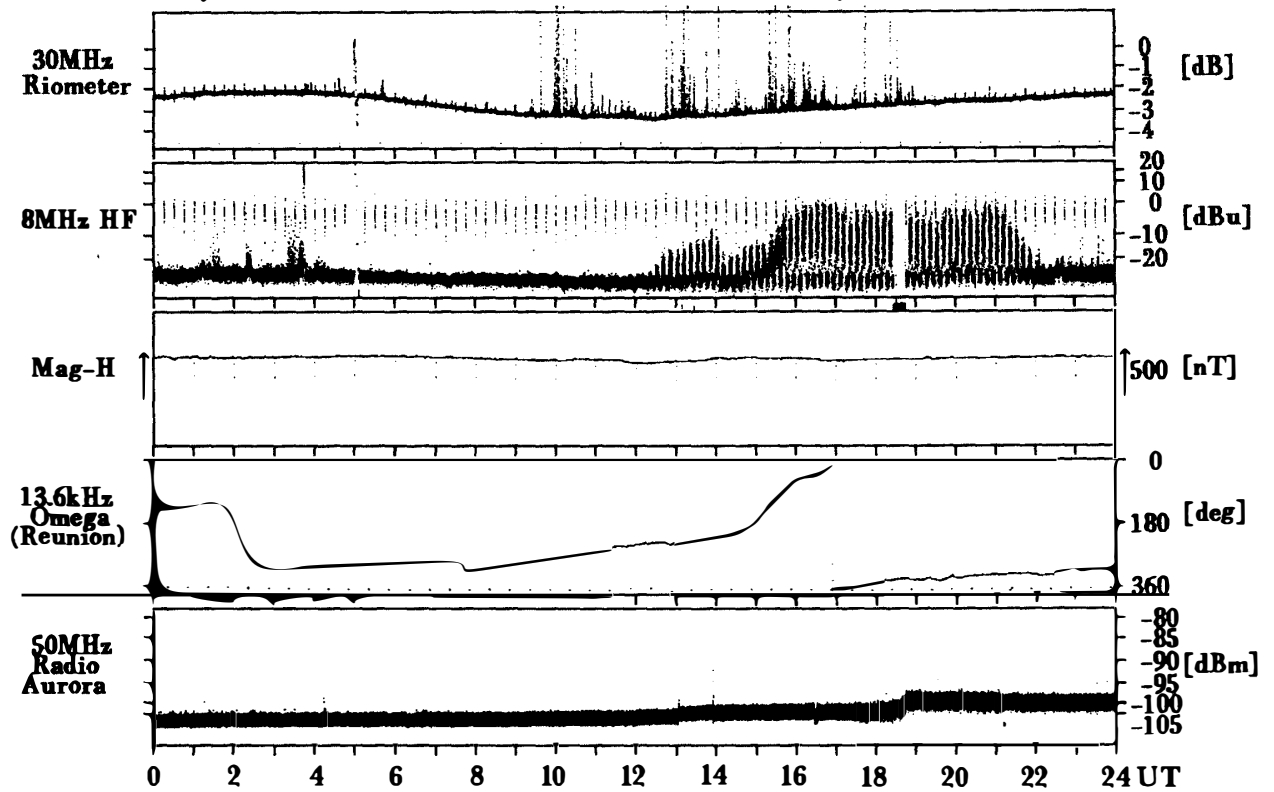
Syowa Station

Total Day / 73 1991/ 3/14



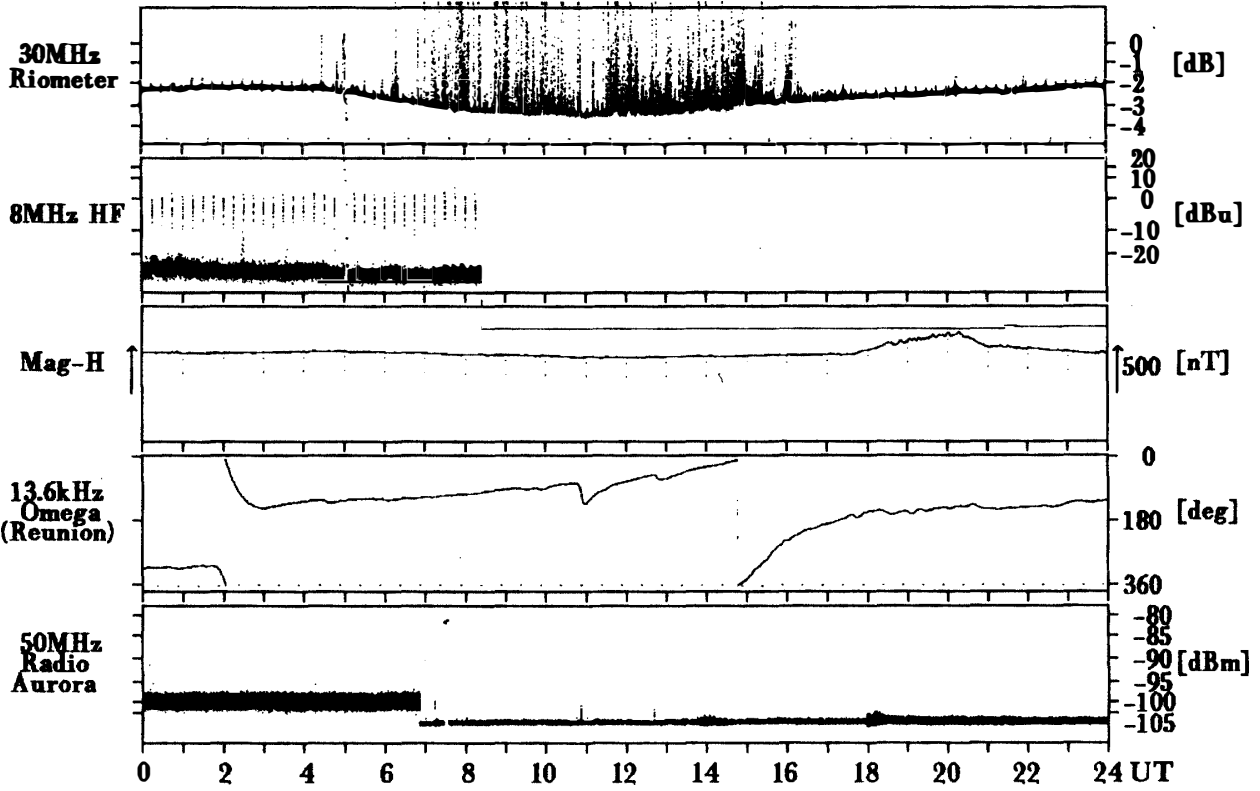
Syowa Station

Total Day / 74 1991/ 3/15



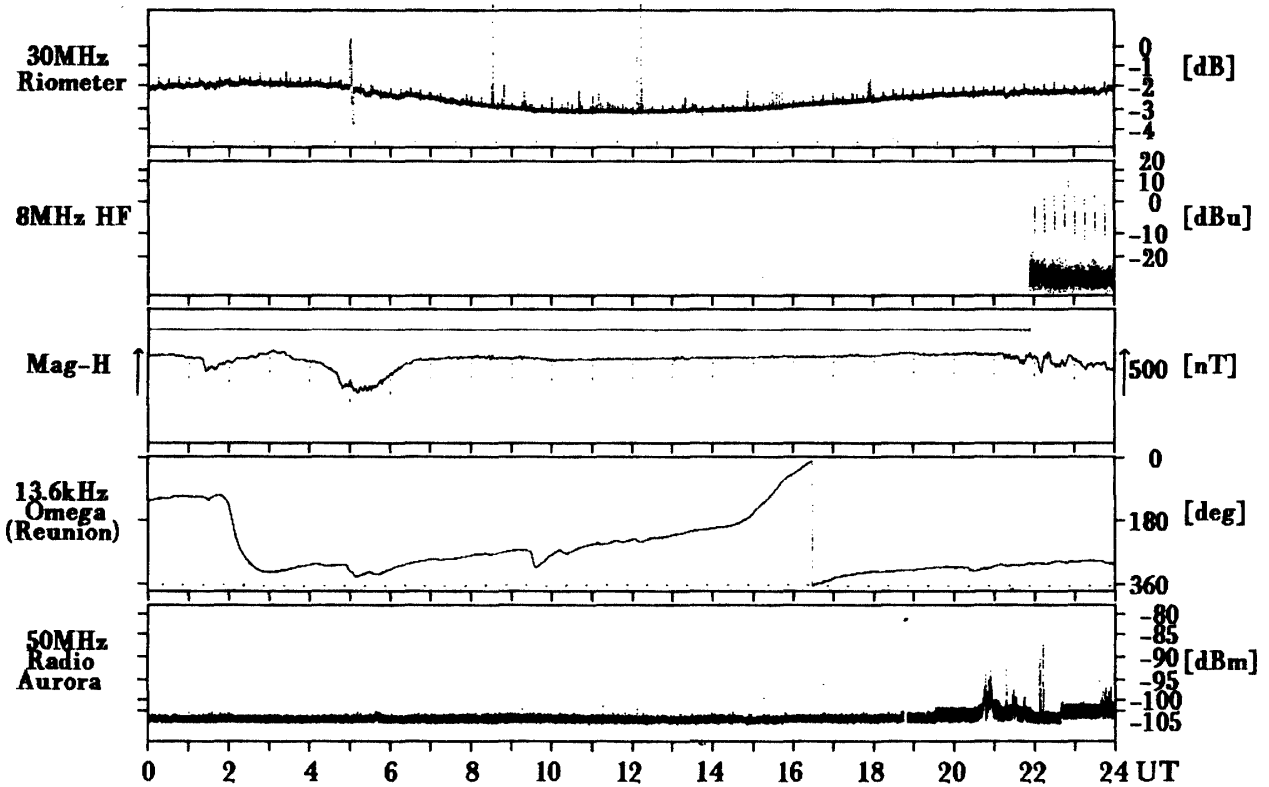
Syowa Station

Total Day / 75 1991/ 3/16



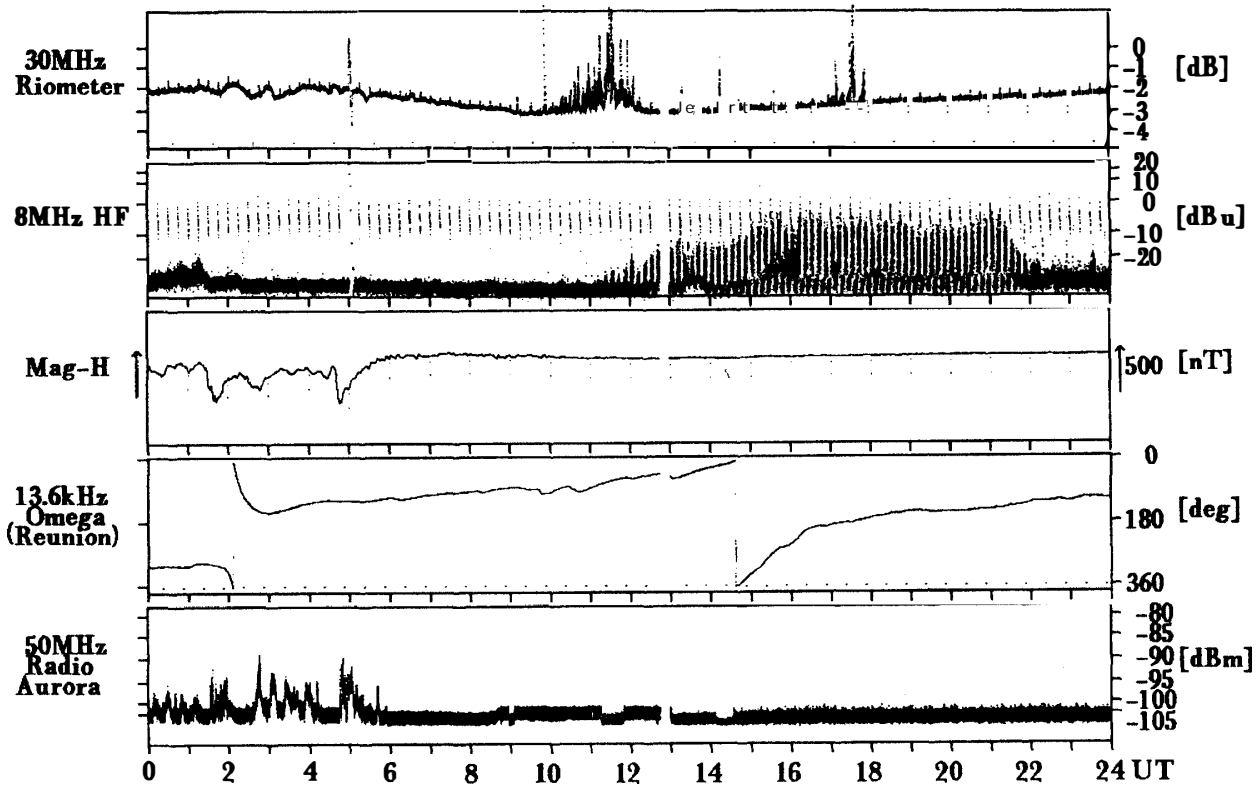
Syowa Station

Total Day / 76 1991/ 3/17



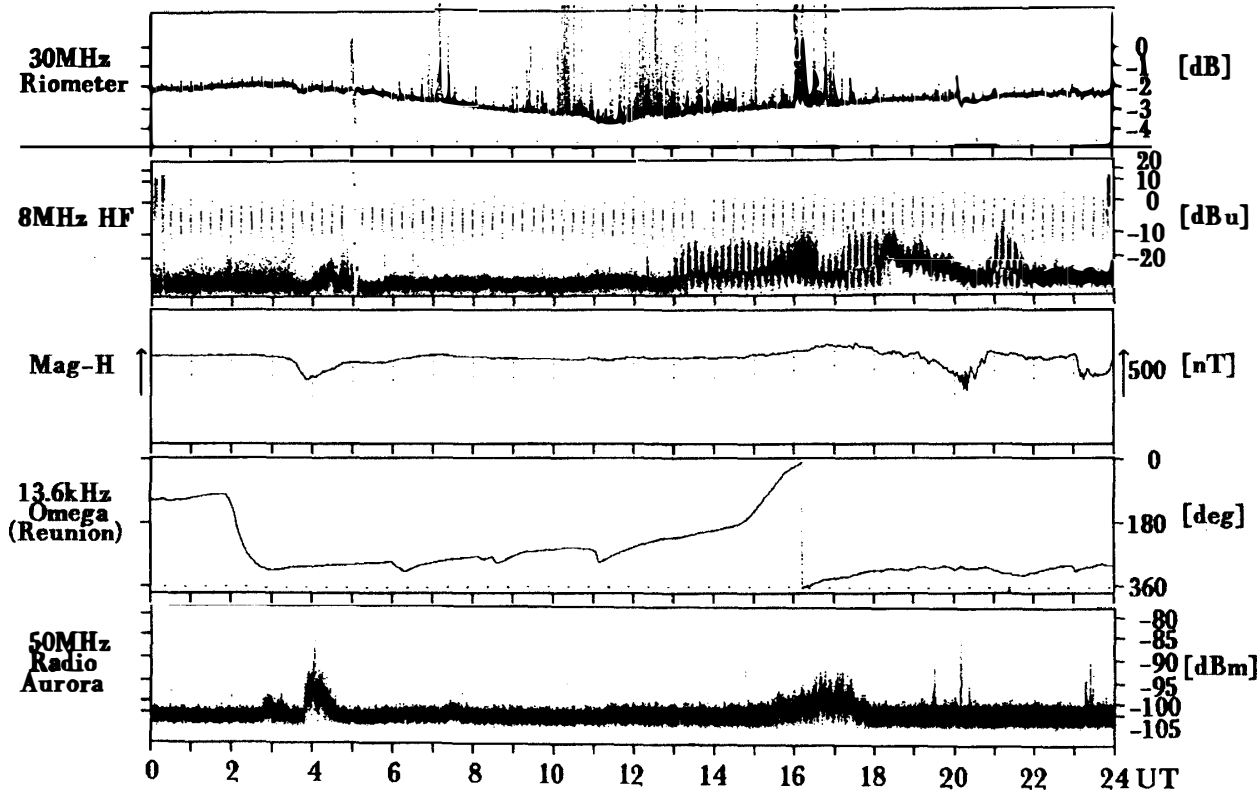
Syowa Station

Total Day / 77 1991/ 3/18



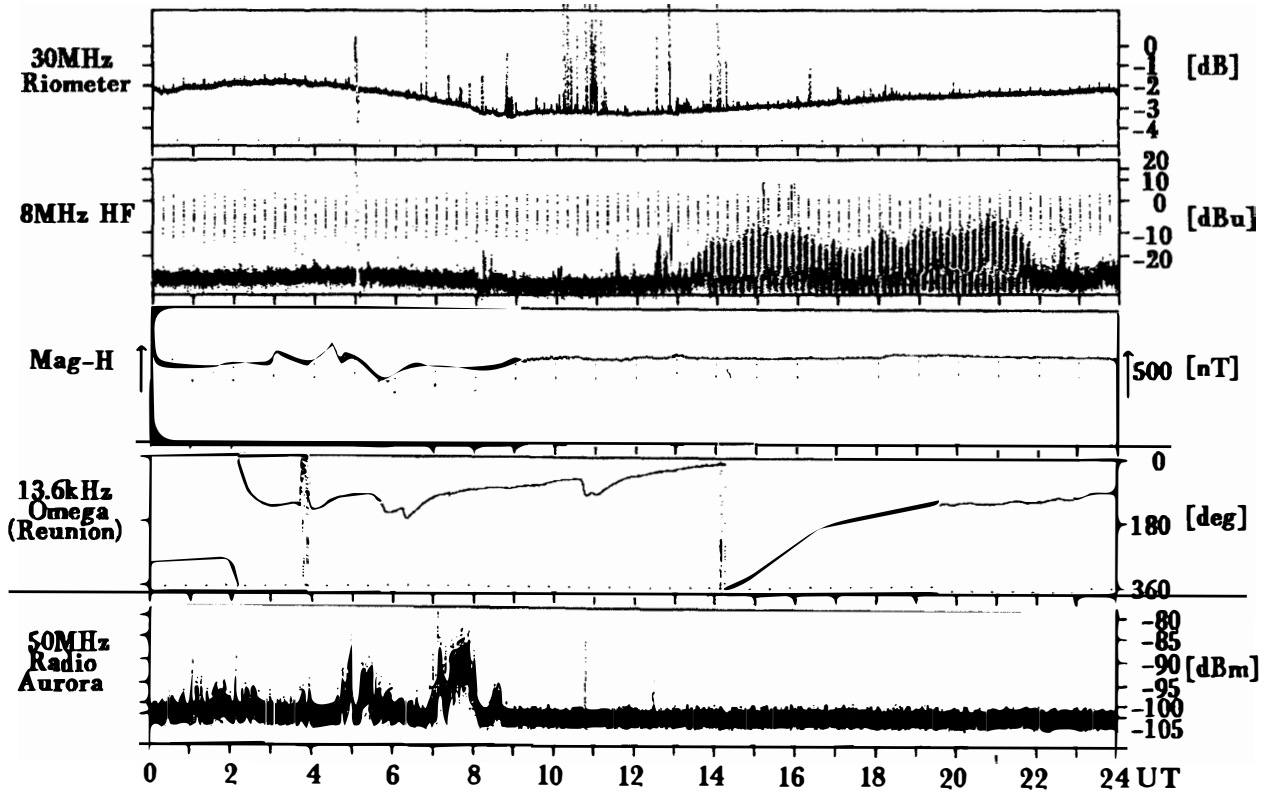
Syowa Station

Total Day / 78 1991/ 3/19



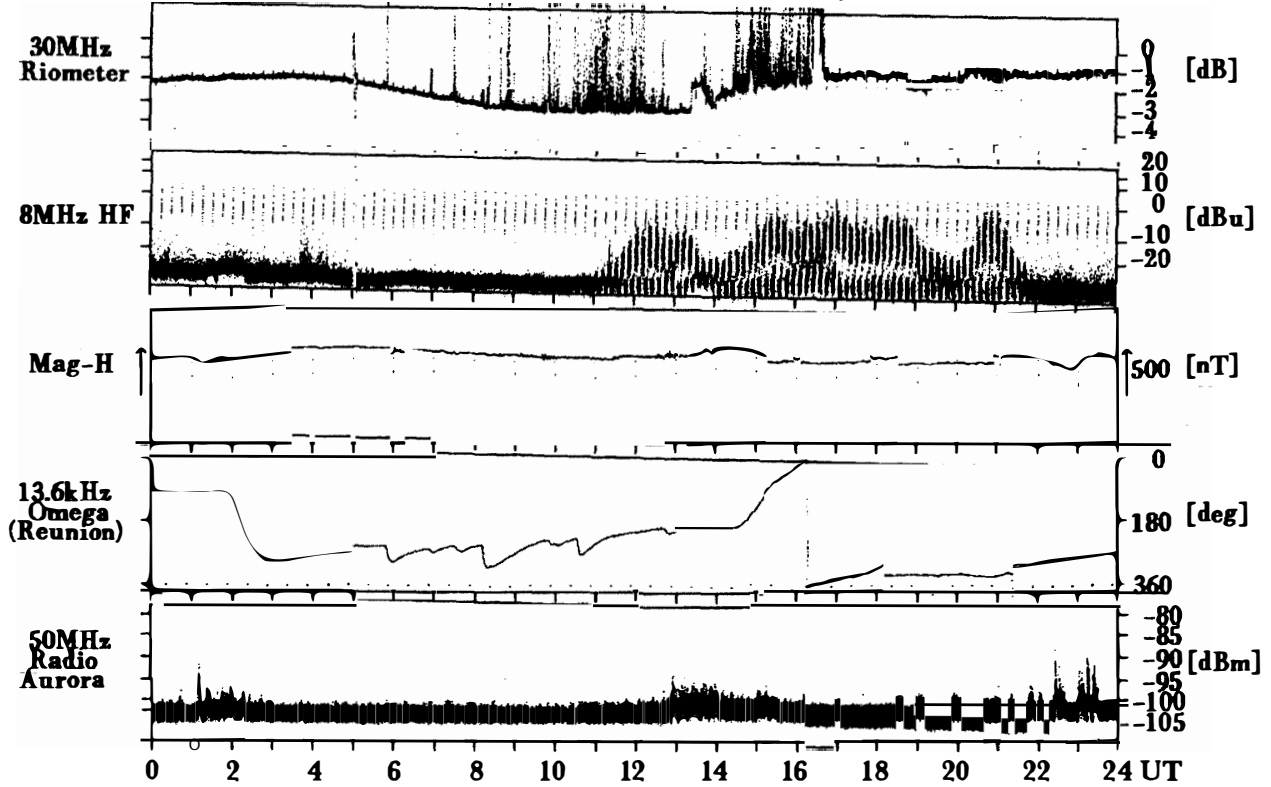
Syowa Station

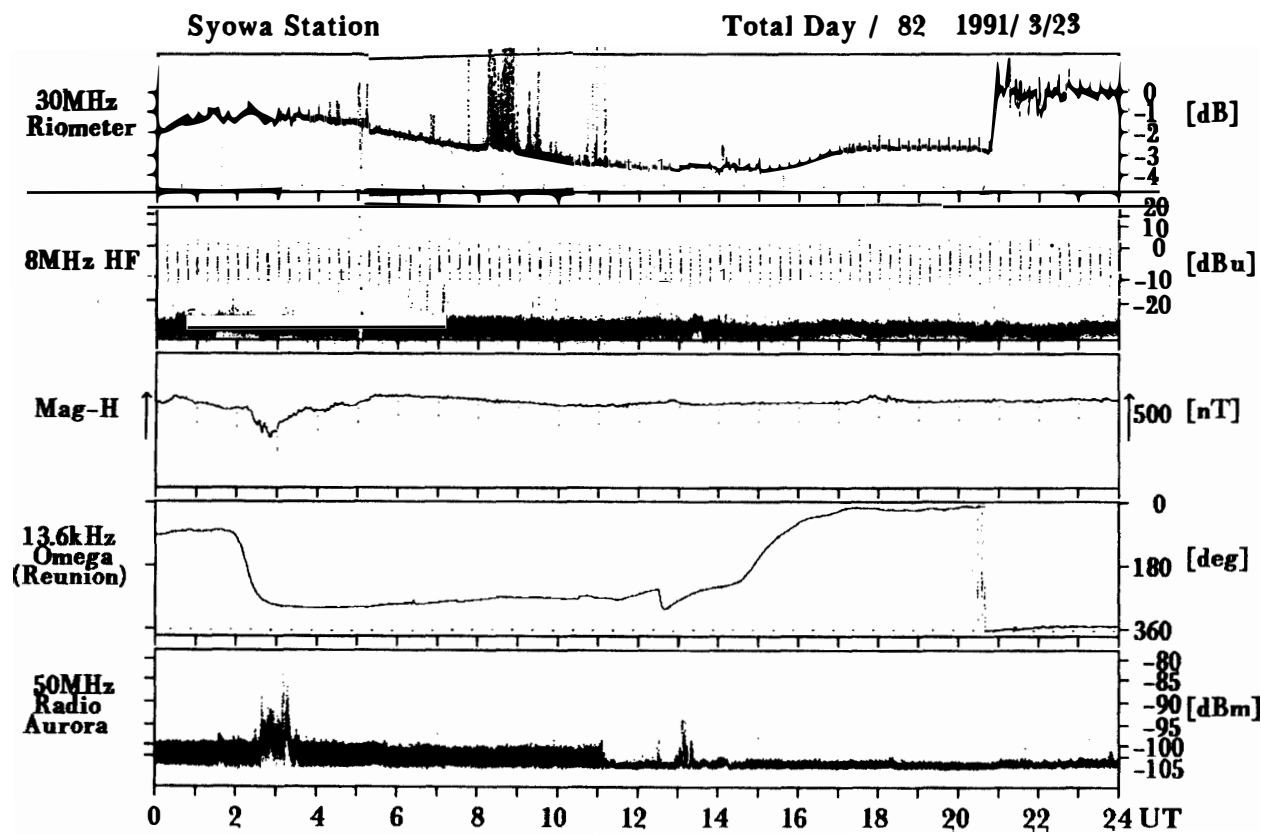
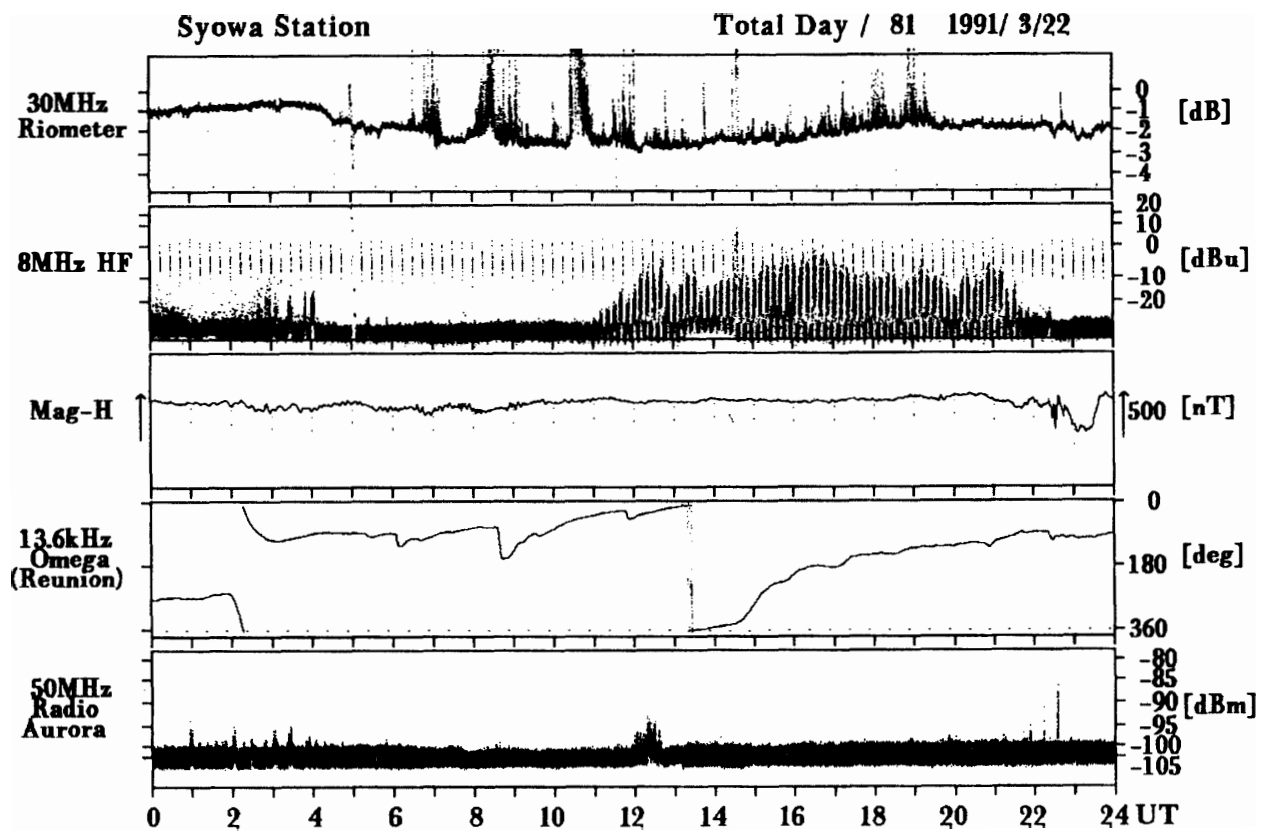
Total Day / 79 1991/ 3/20

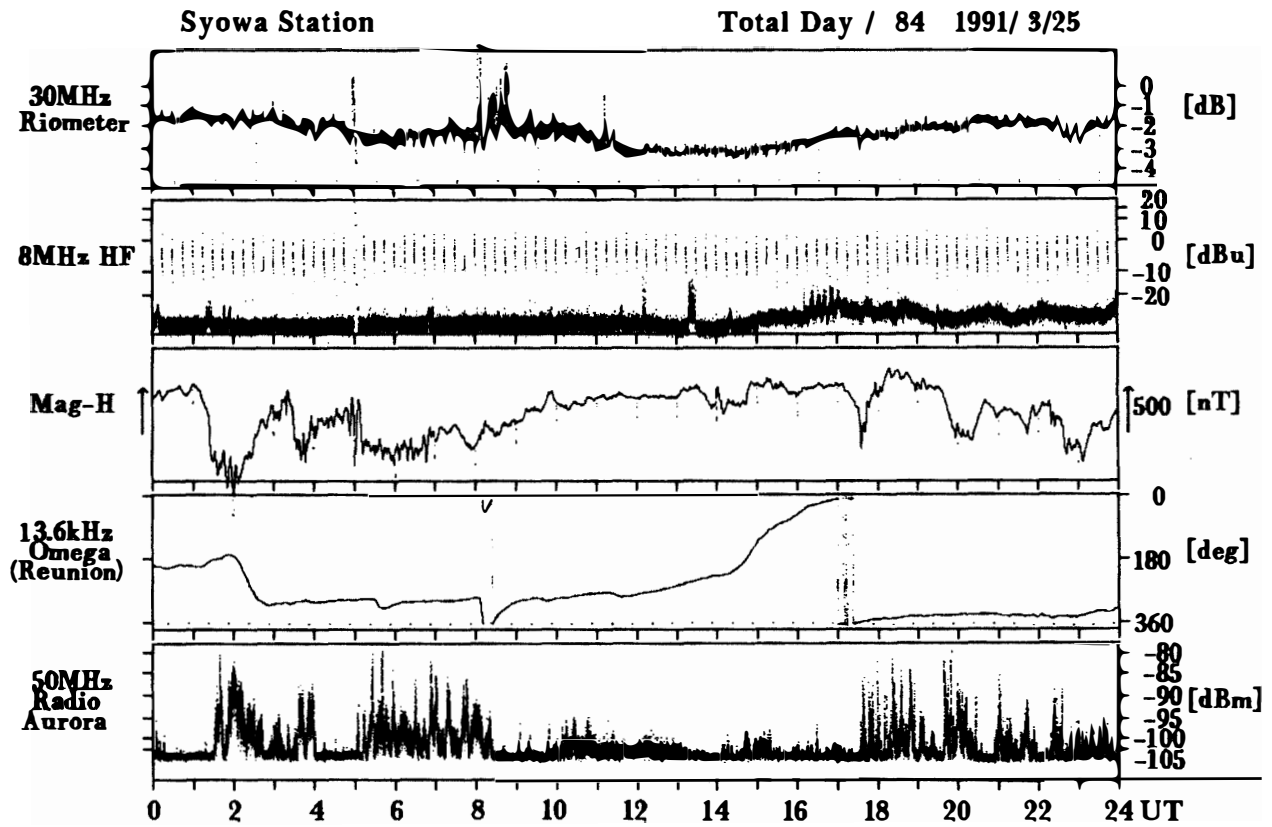
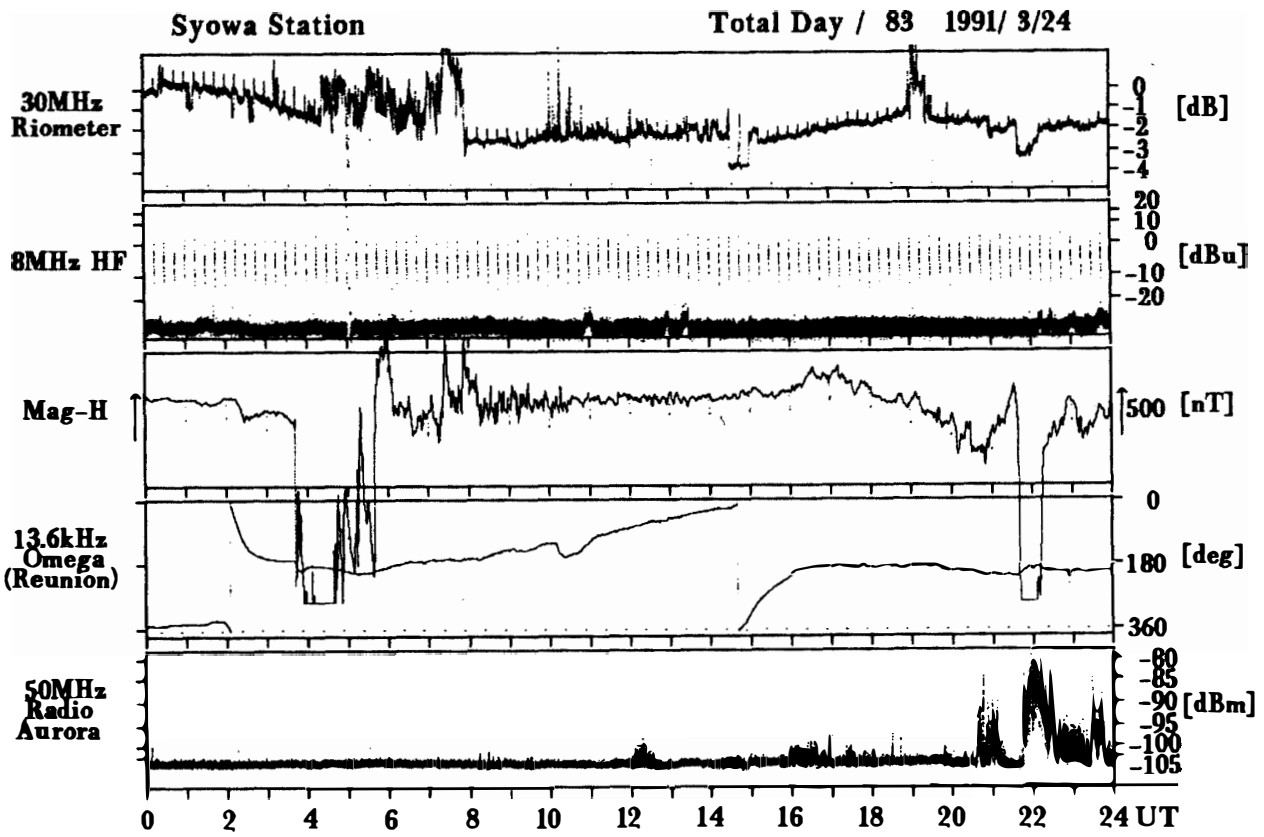


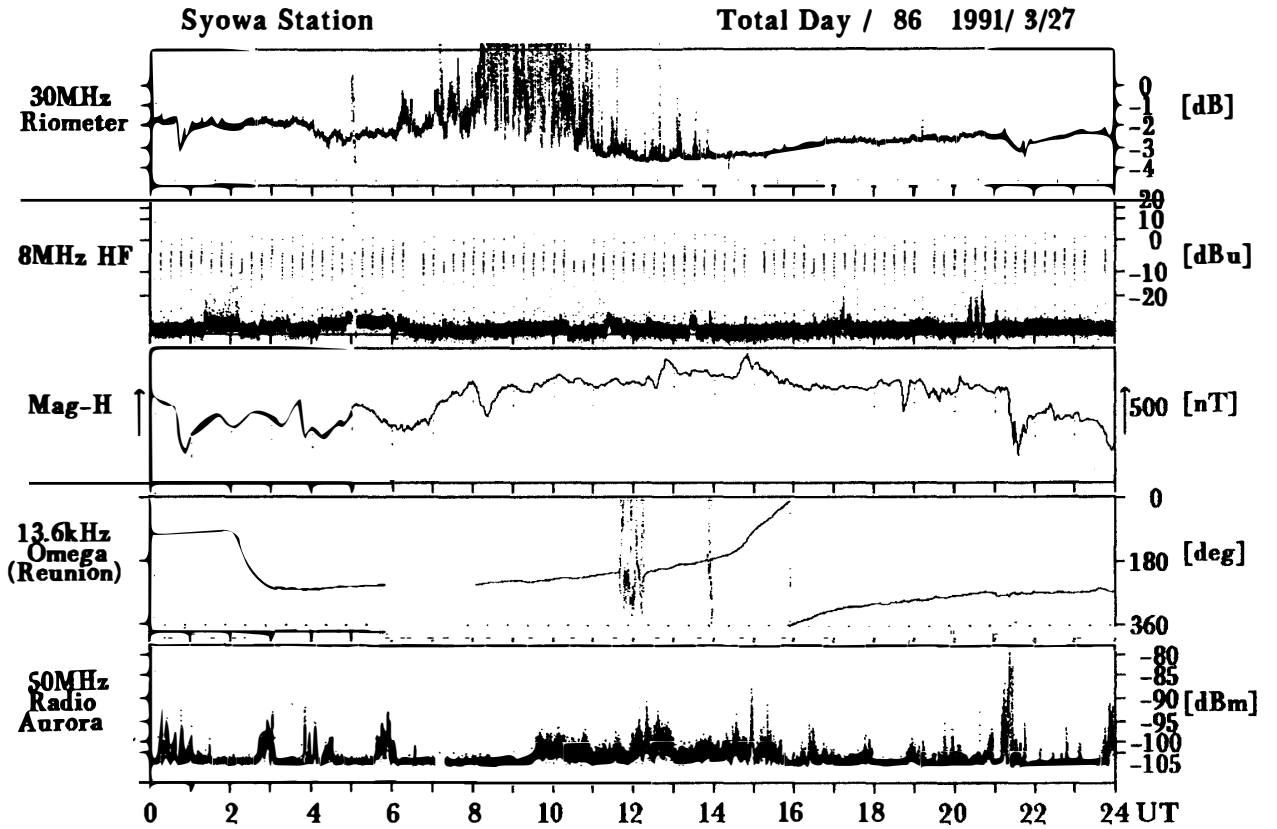
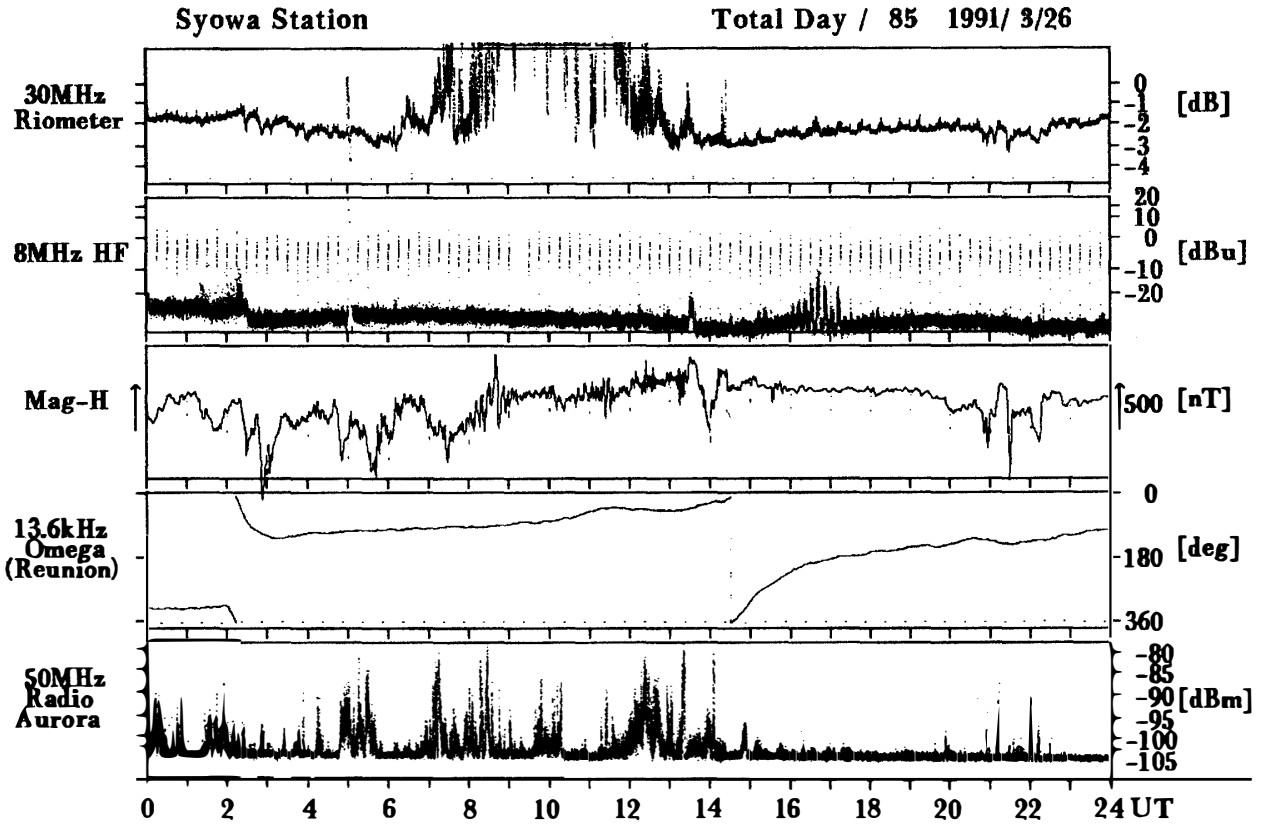
Syowa Station

Total Day / 80 1991/ 3/21



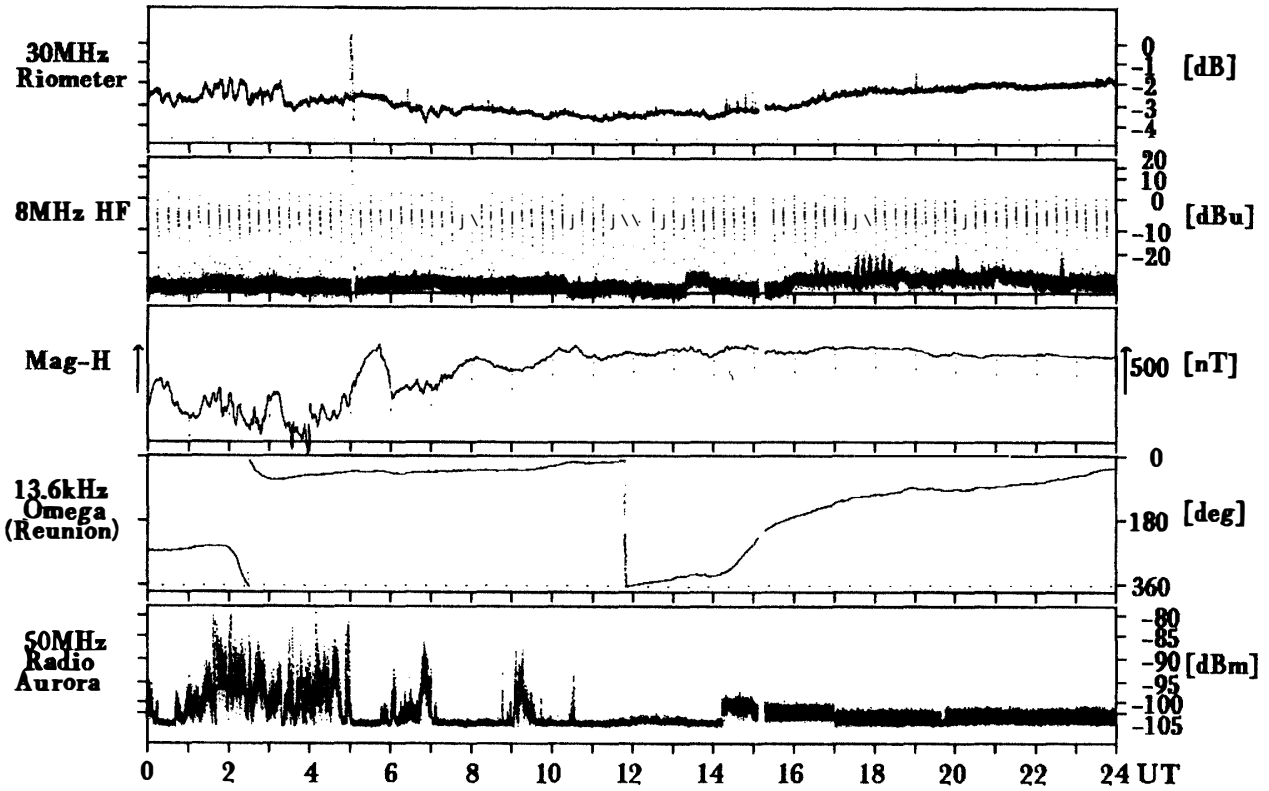






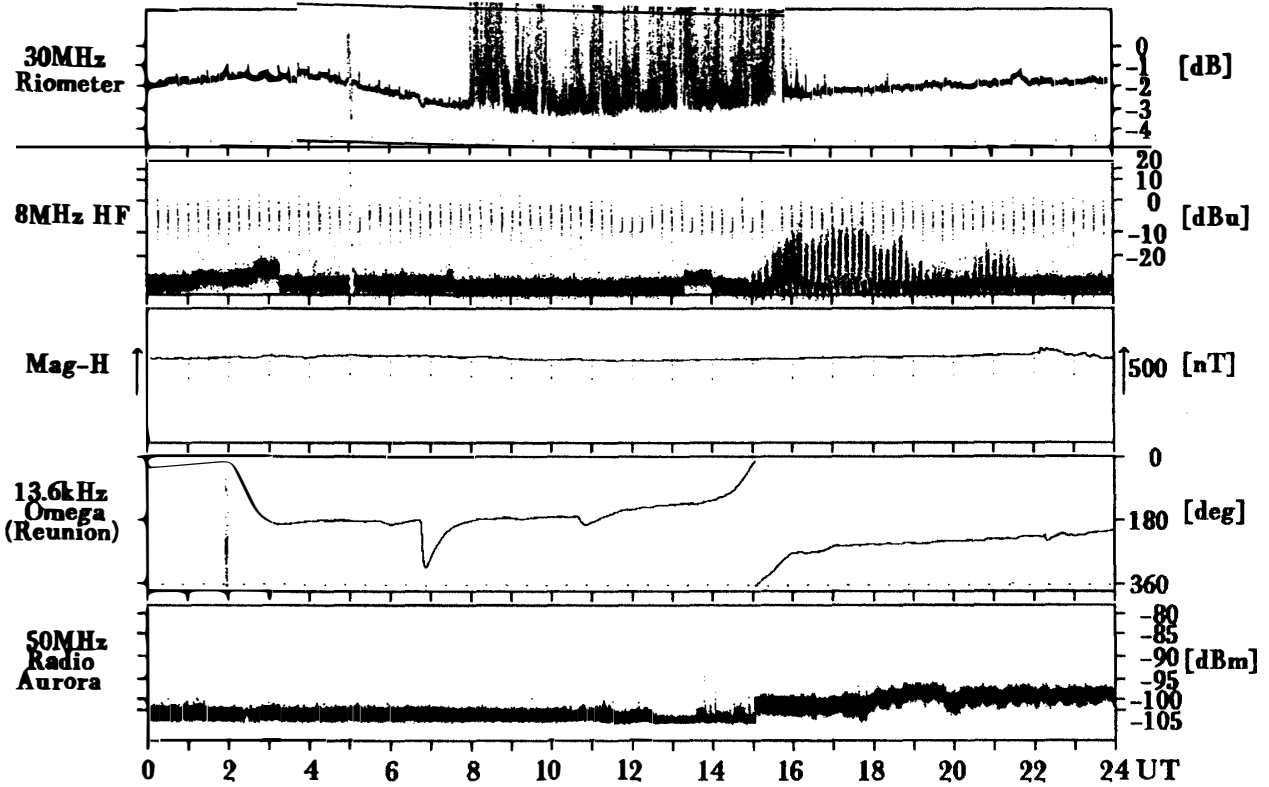
Syowa Station

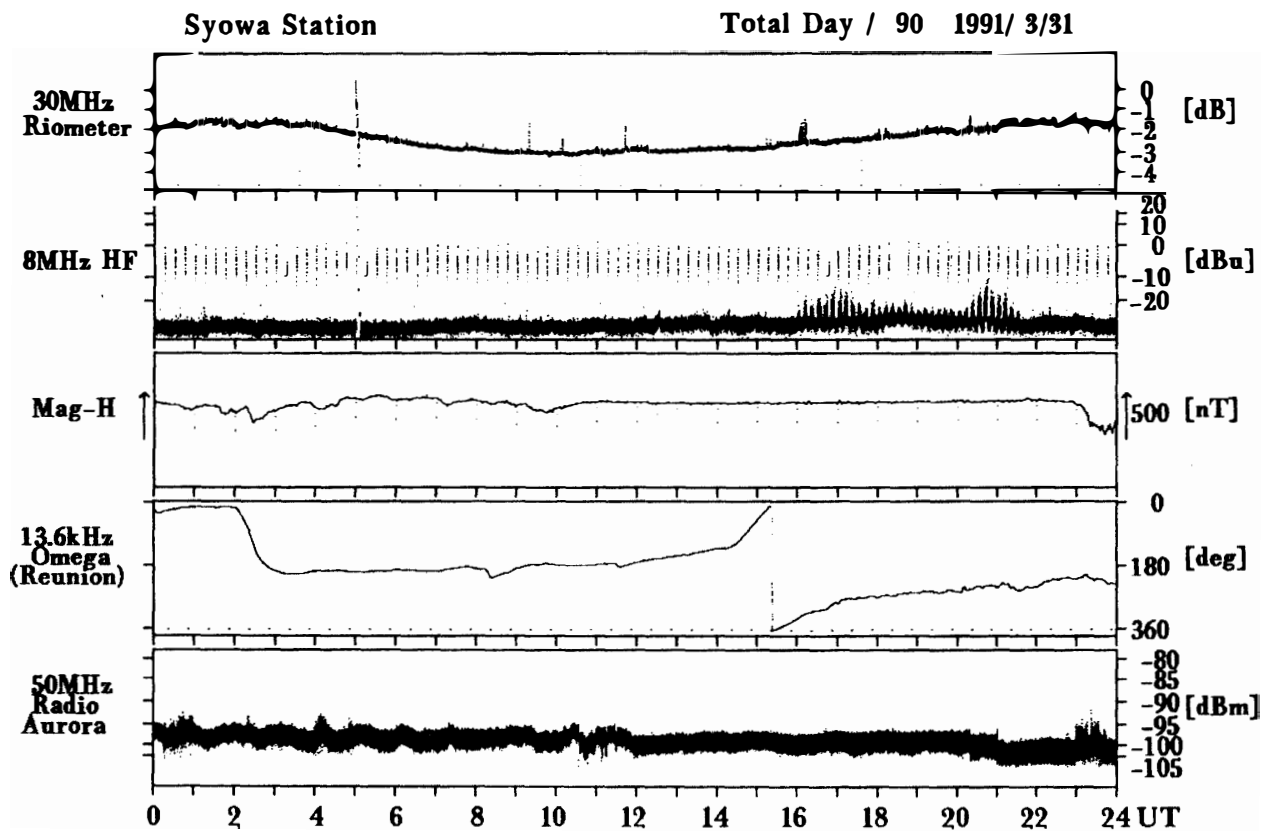
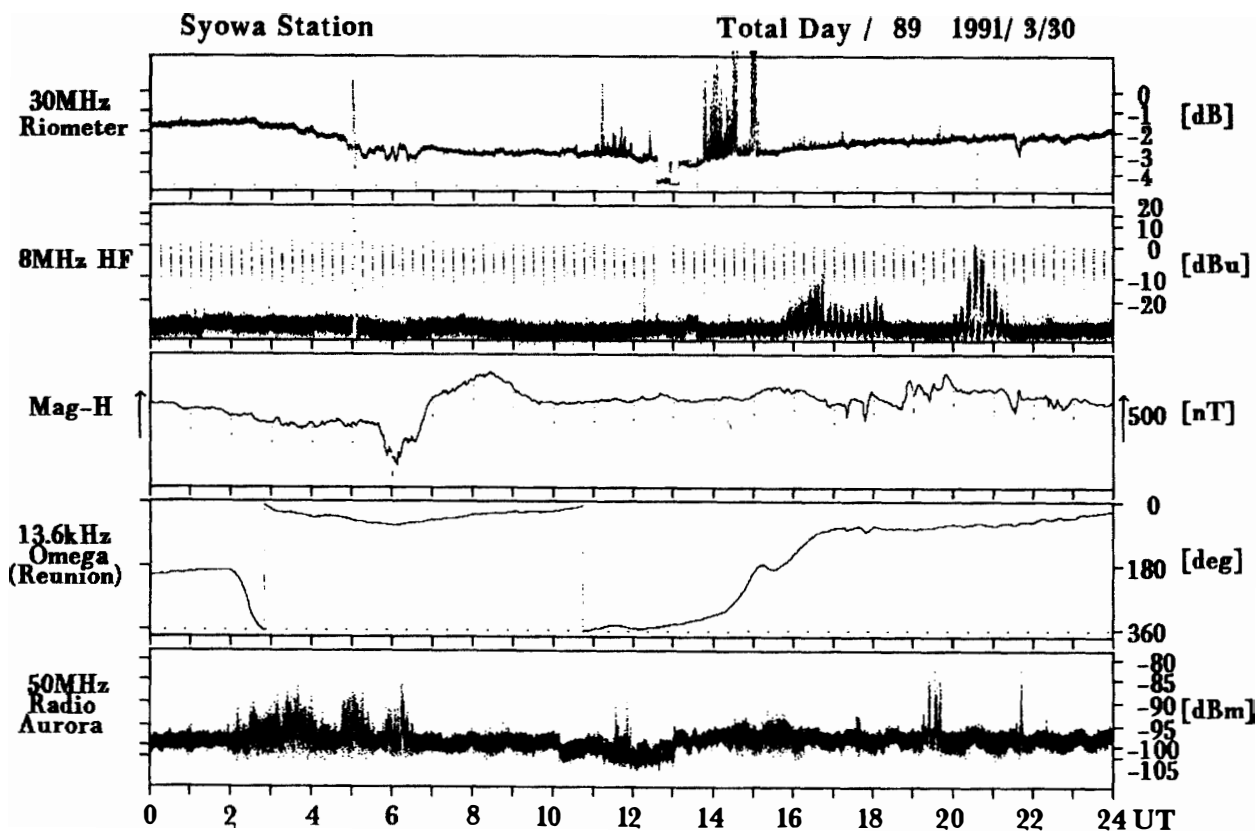
Total Day / 87 1991/ 3/28



Syowa Station

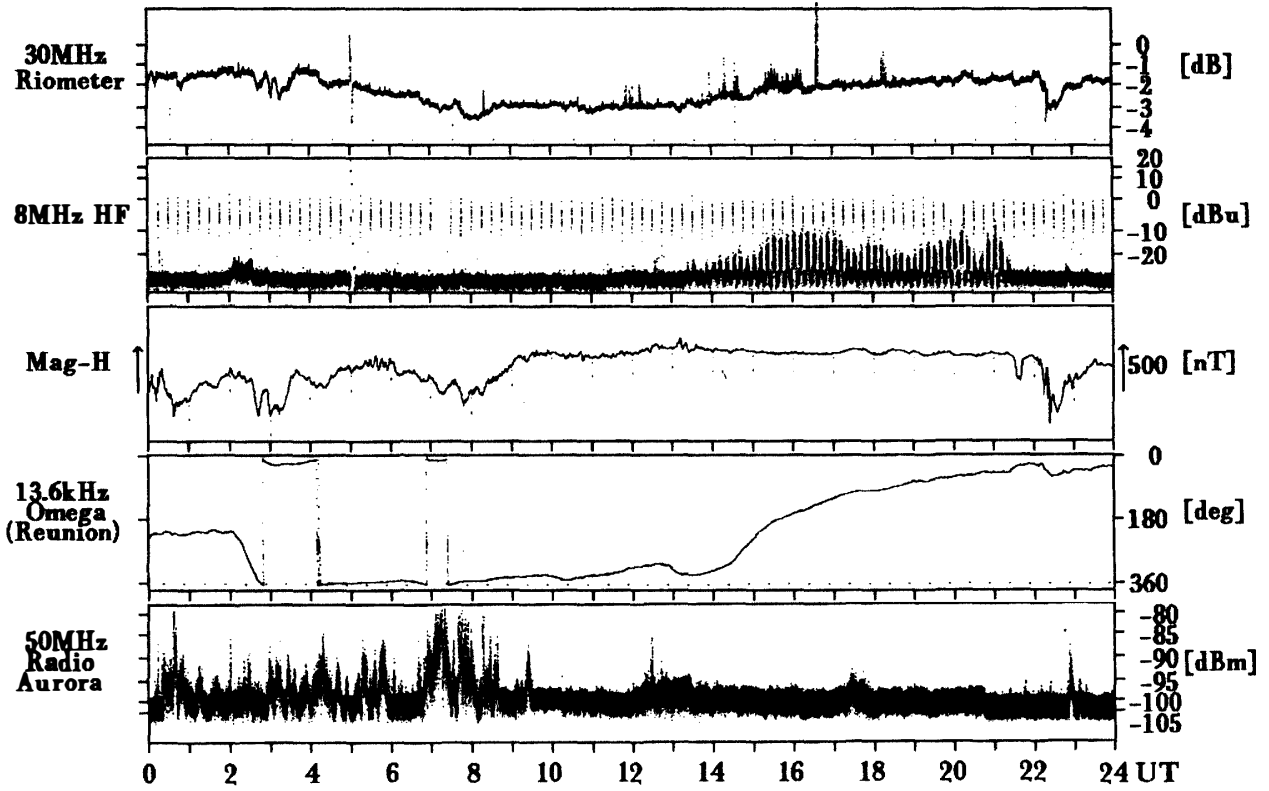
Total Day / 88 1991/ 3/29





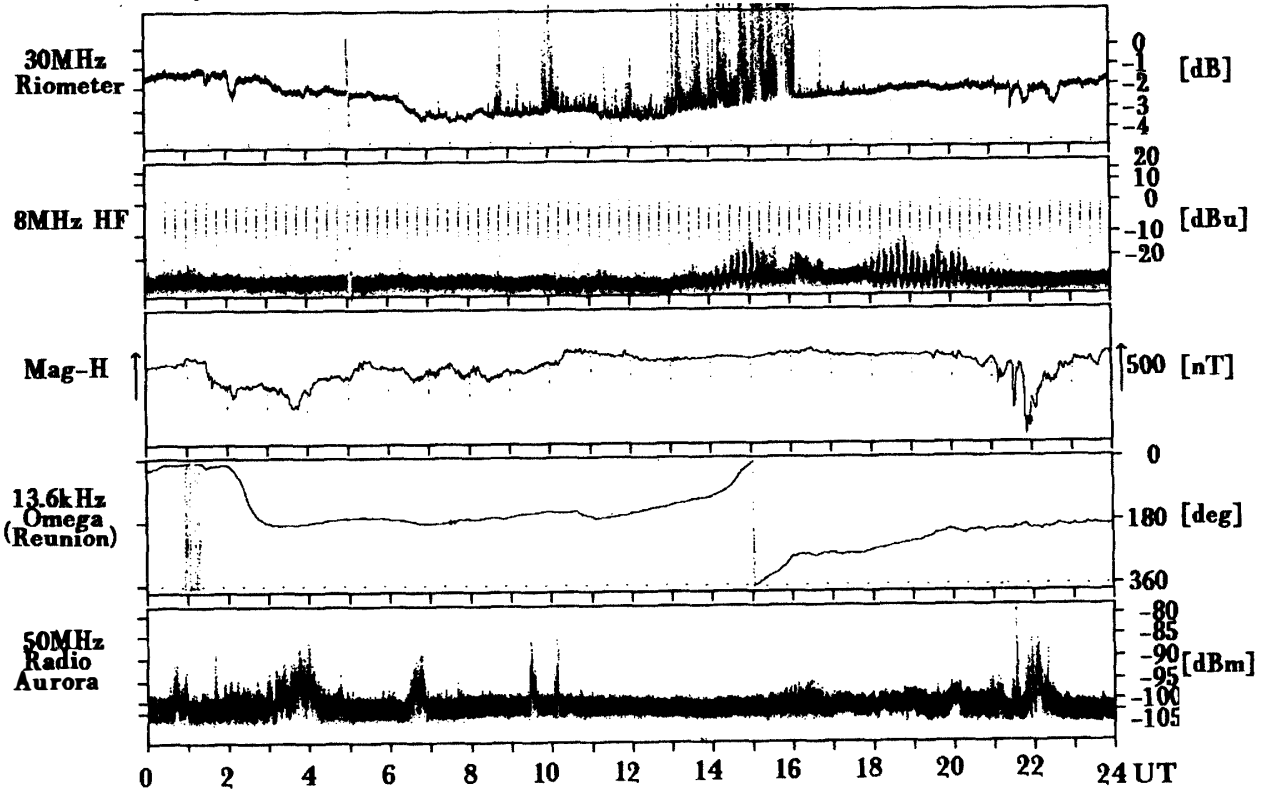
Syowa Station

Total Day / 91 1991/ 4/ 1



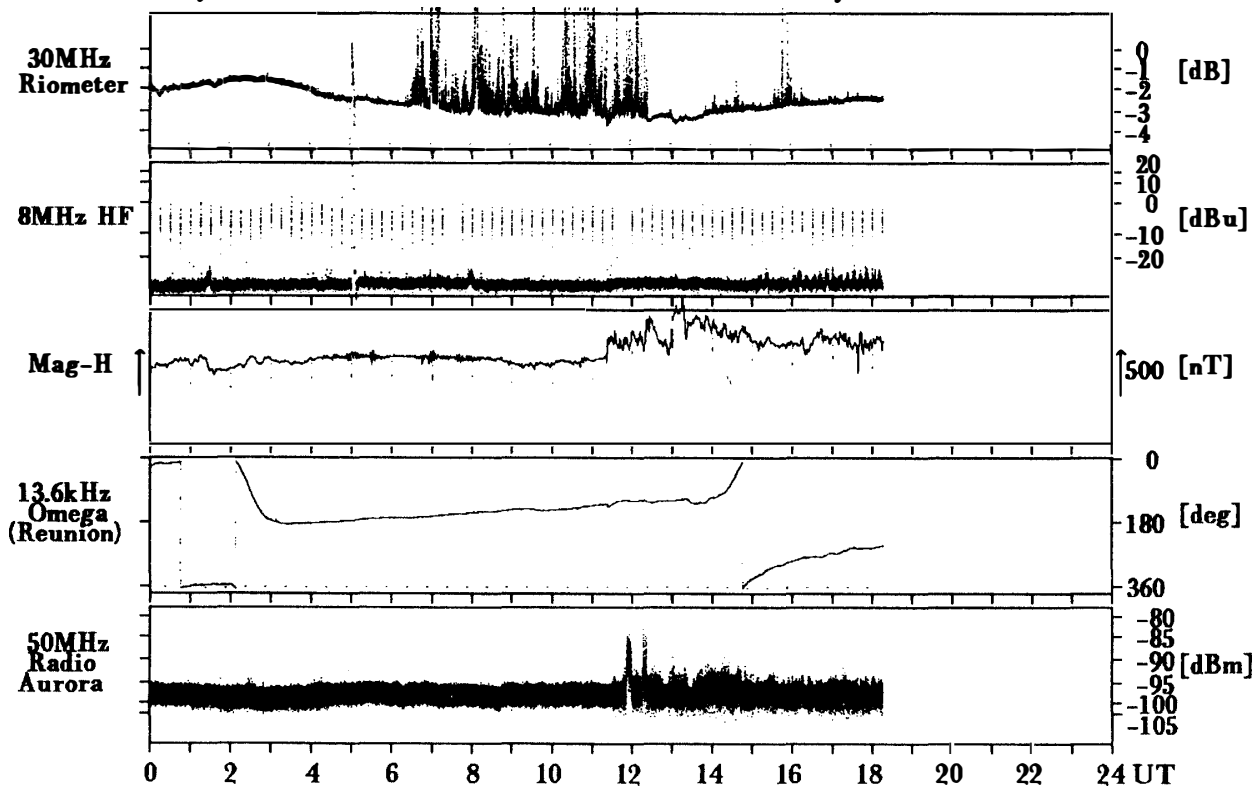
Syowa Station

Total Day / 92 1991/ 4/ 2



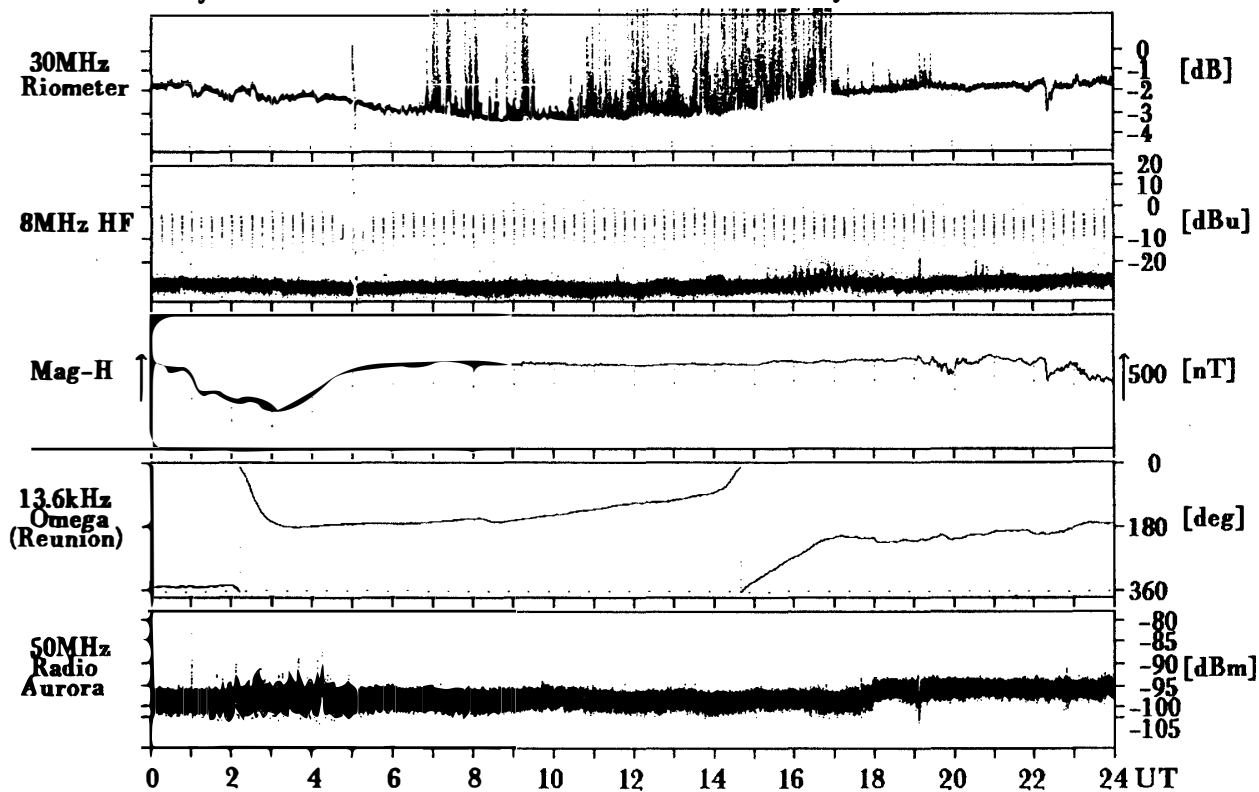
Syowa Station

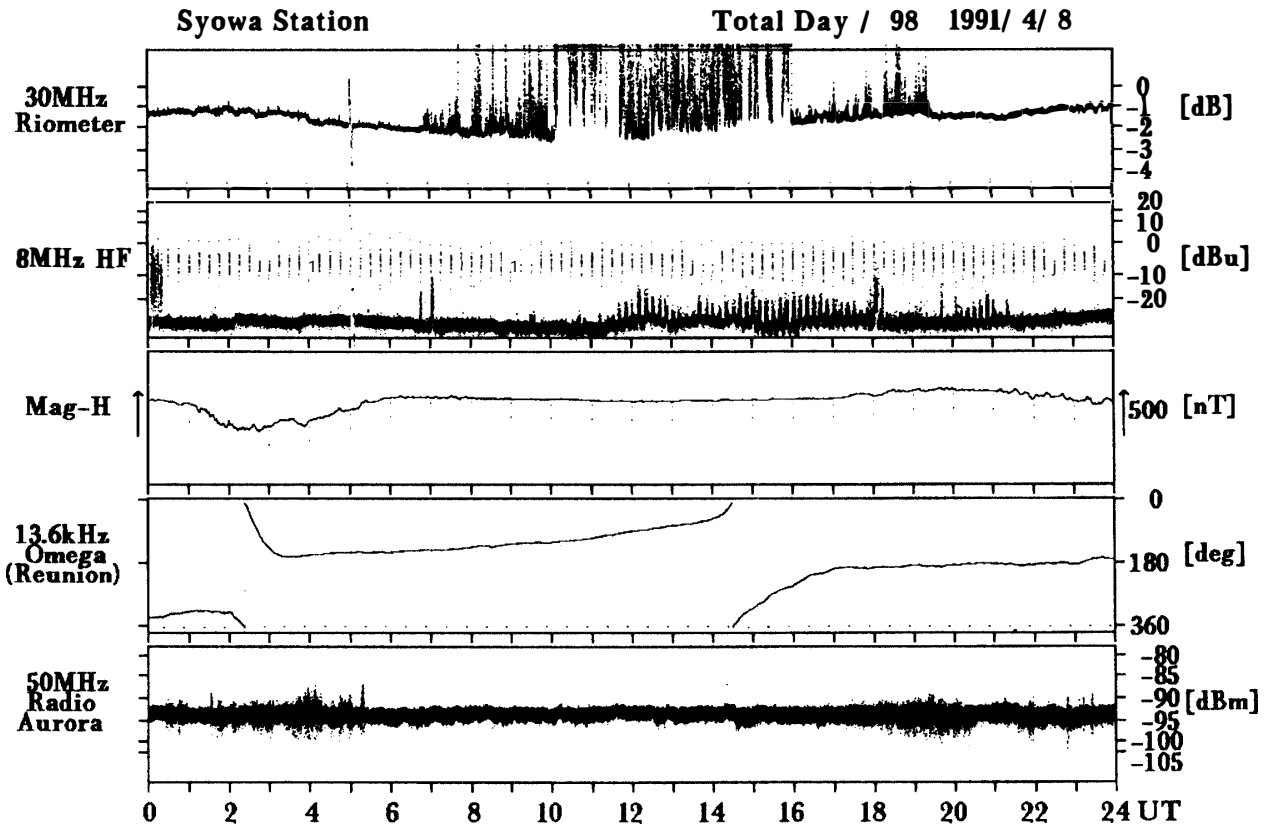
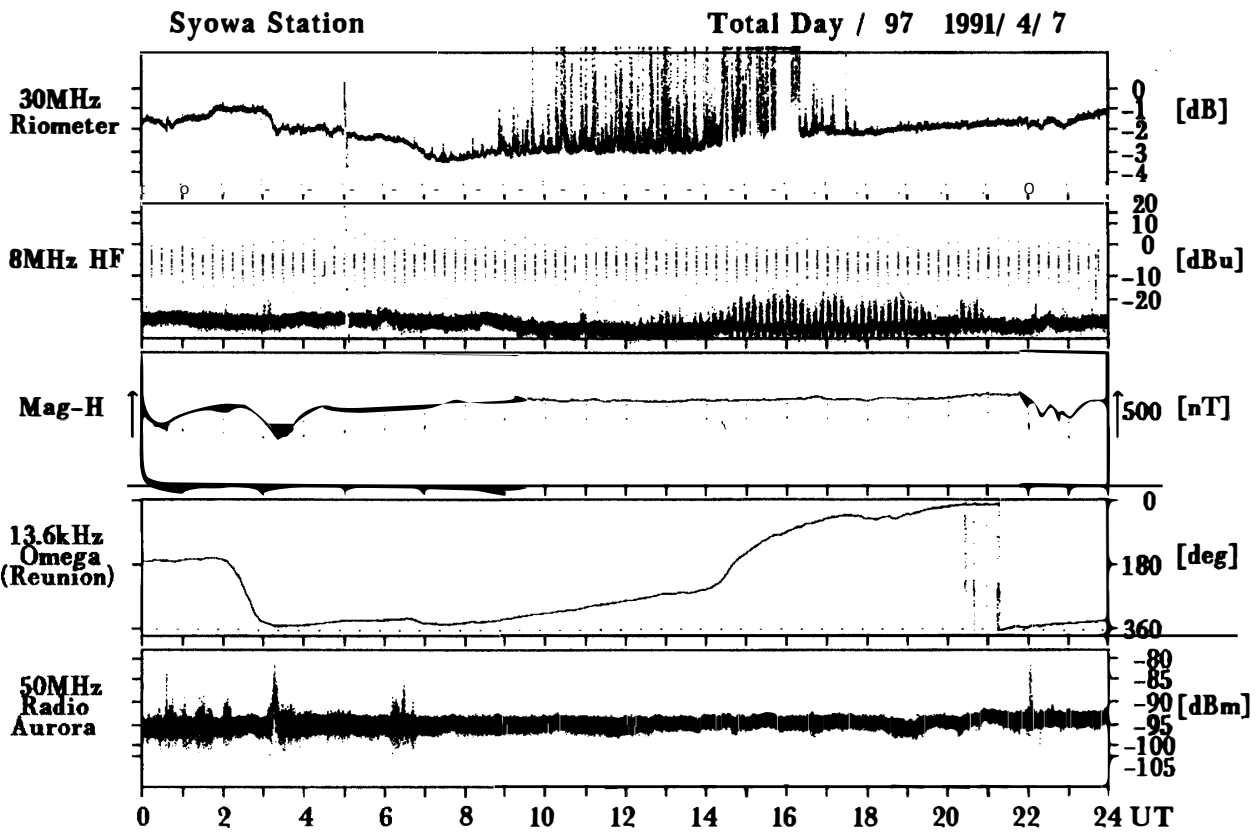
Total Day / 94 1991/ 4/ 4

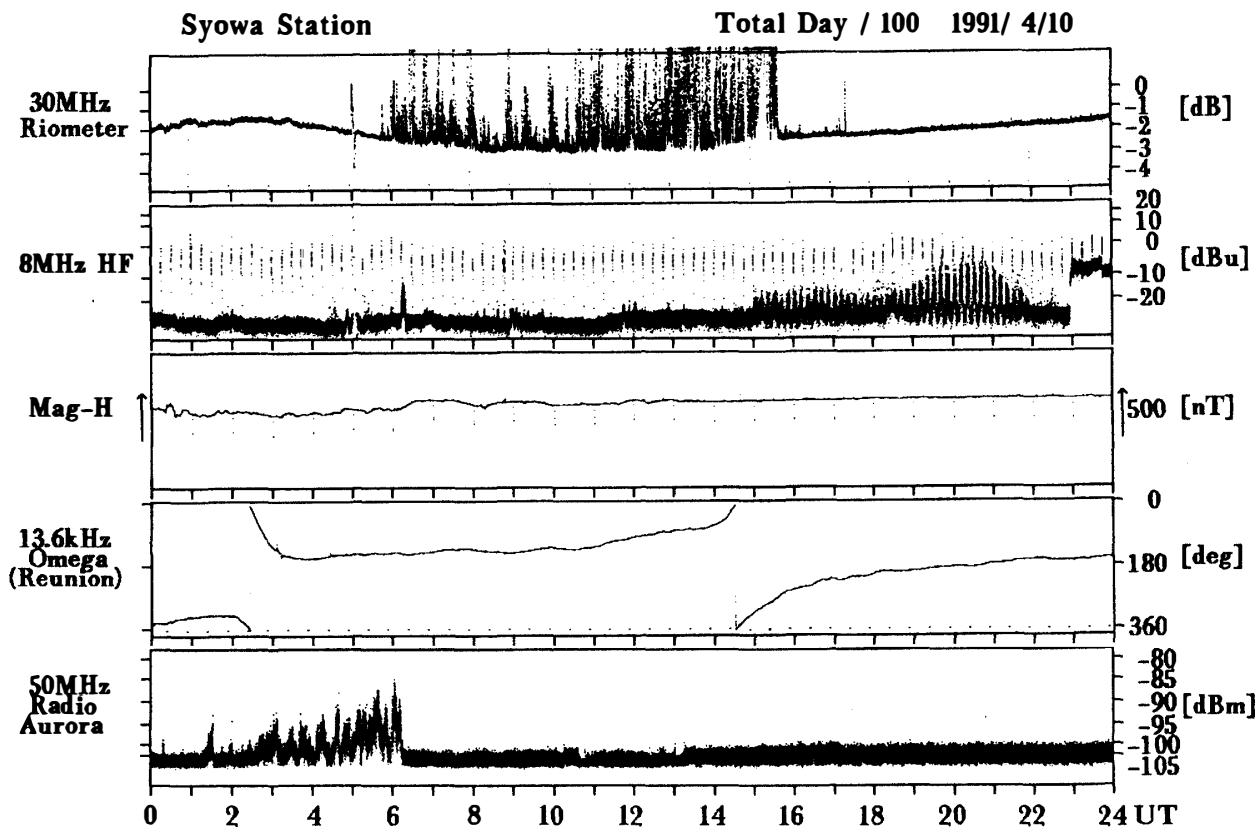
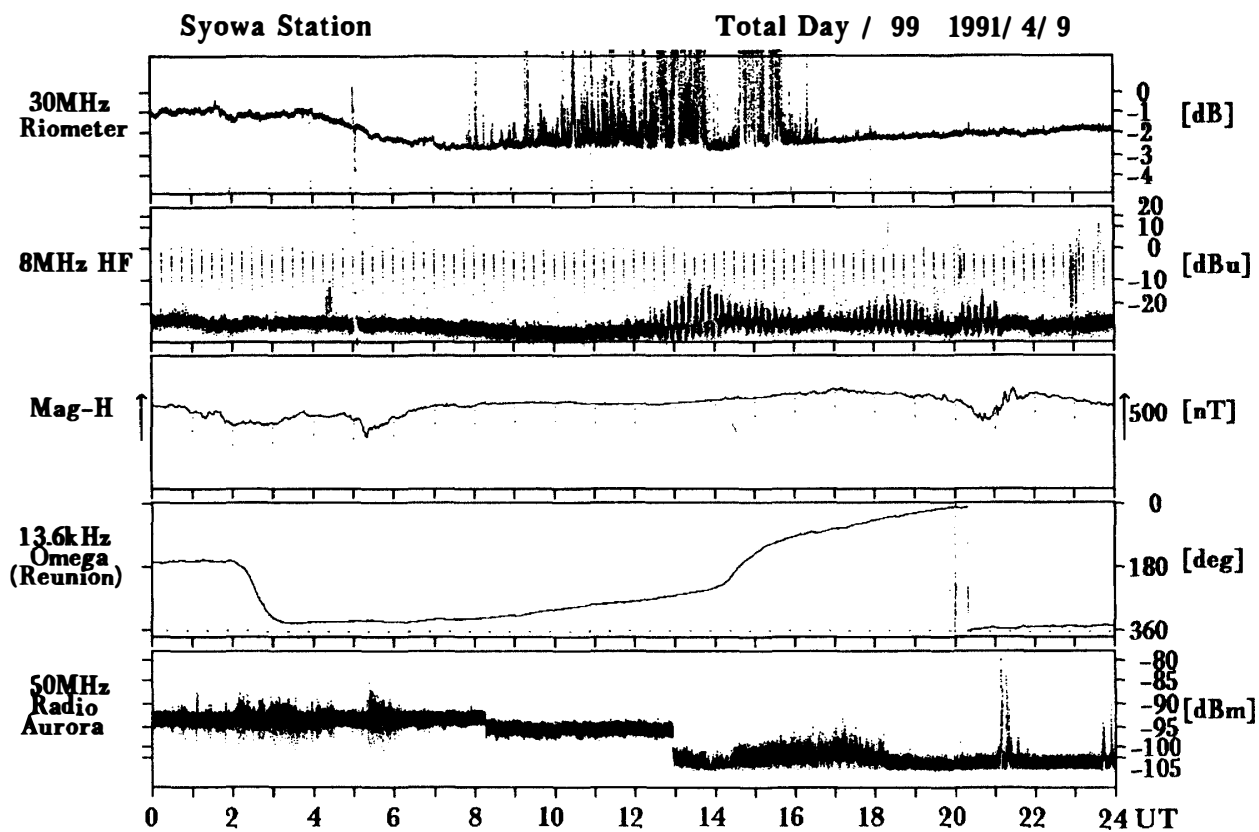


Syowa Station

Total Day / 96 1991/ 4/ 6

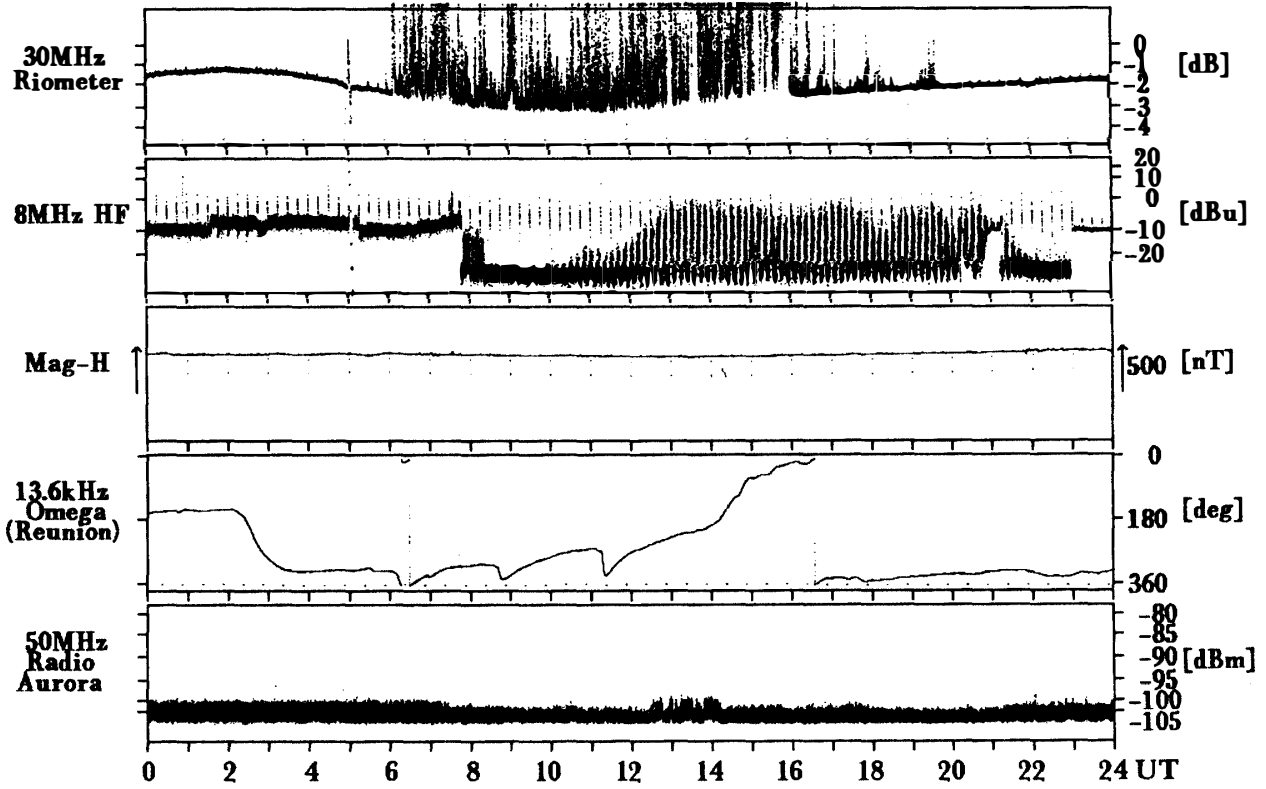






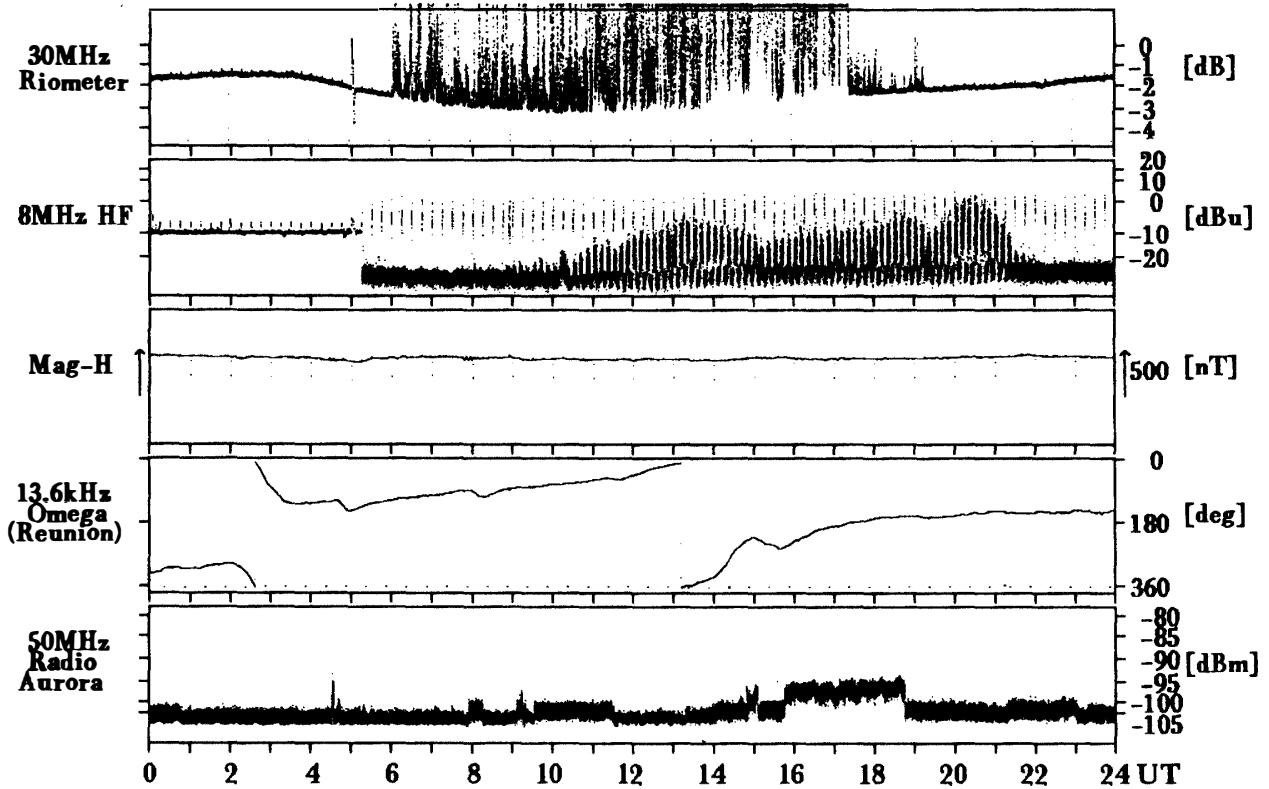
Syowa Station

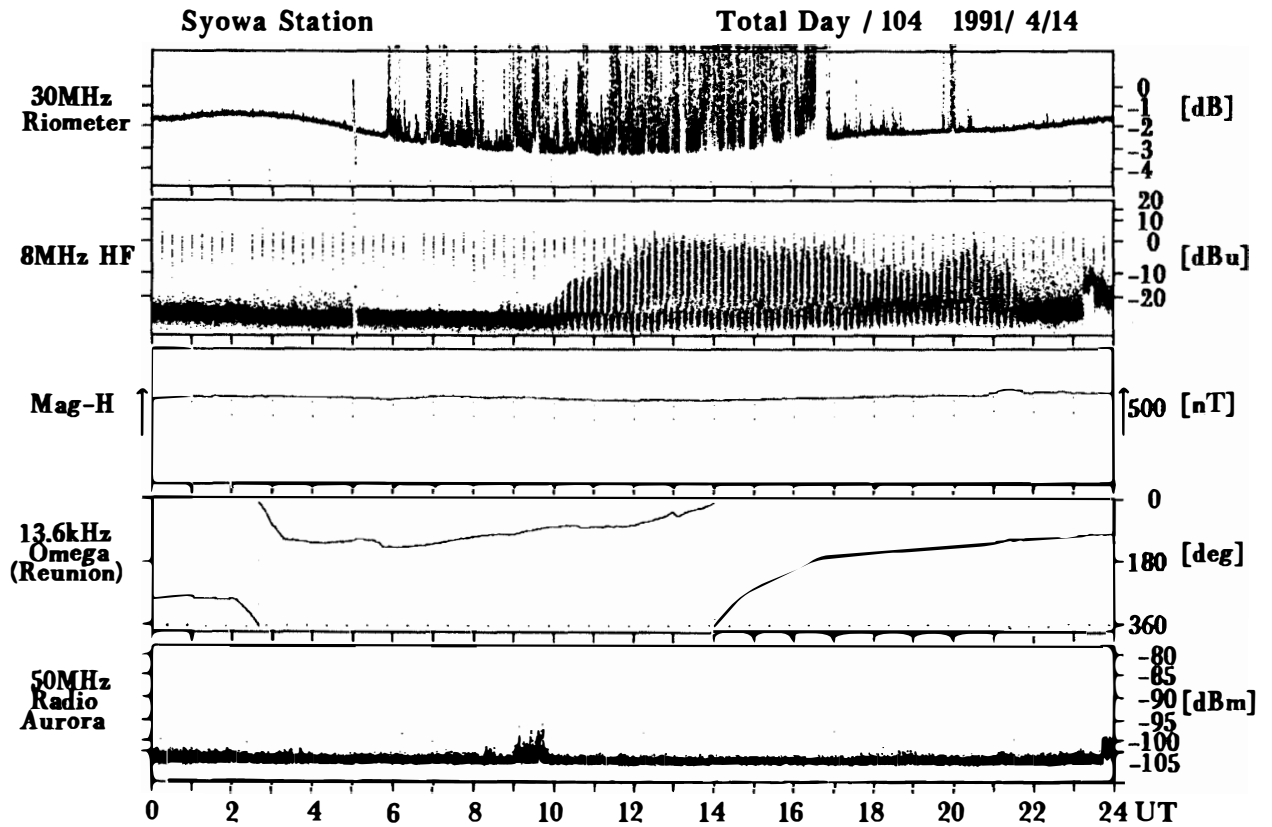
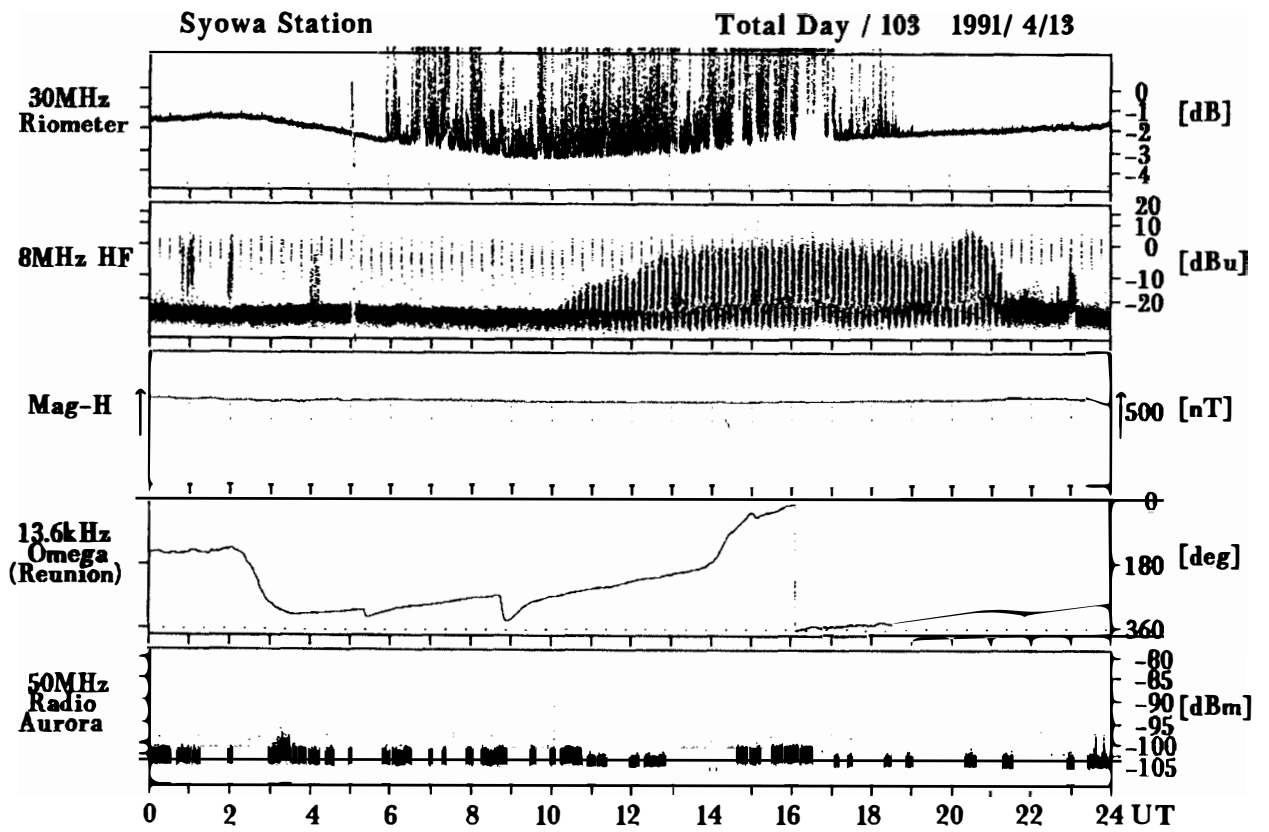
Total Day / 101 1991/ 4/11



Syowa Station

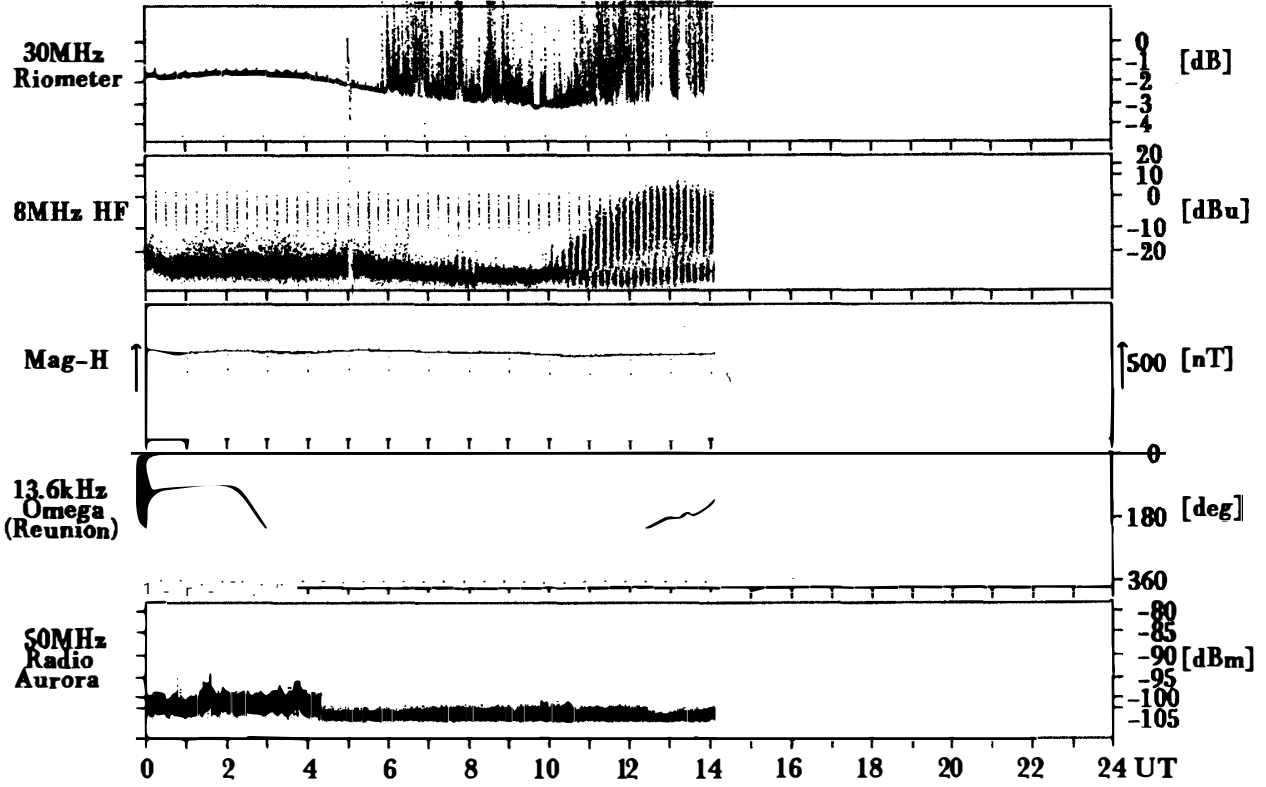
Total Day / 102 1991/ 4/12





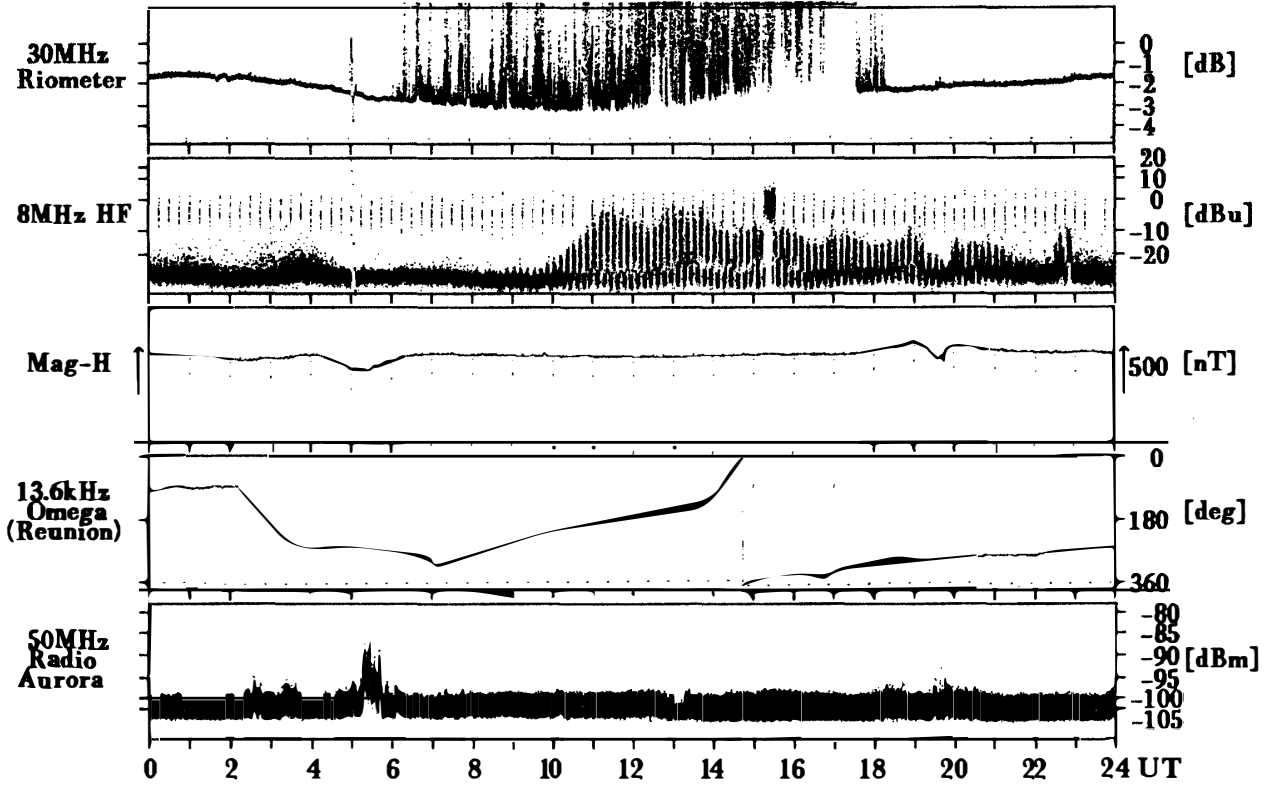
Syowa Station

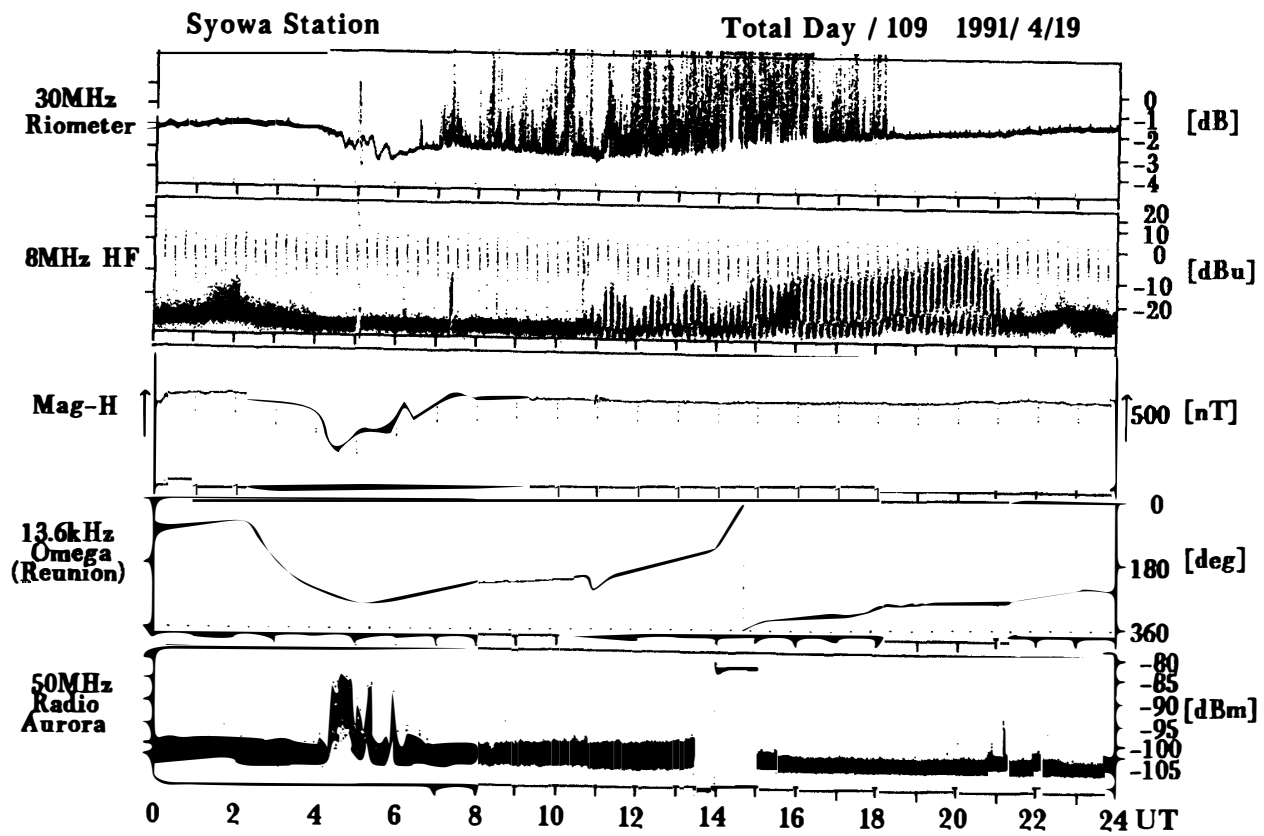
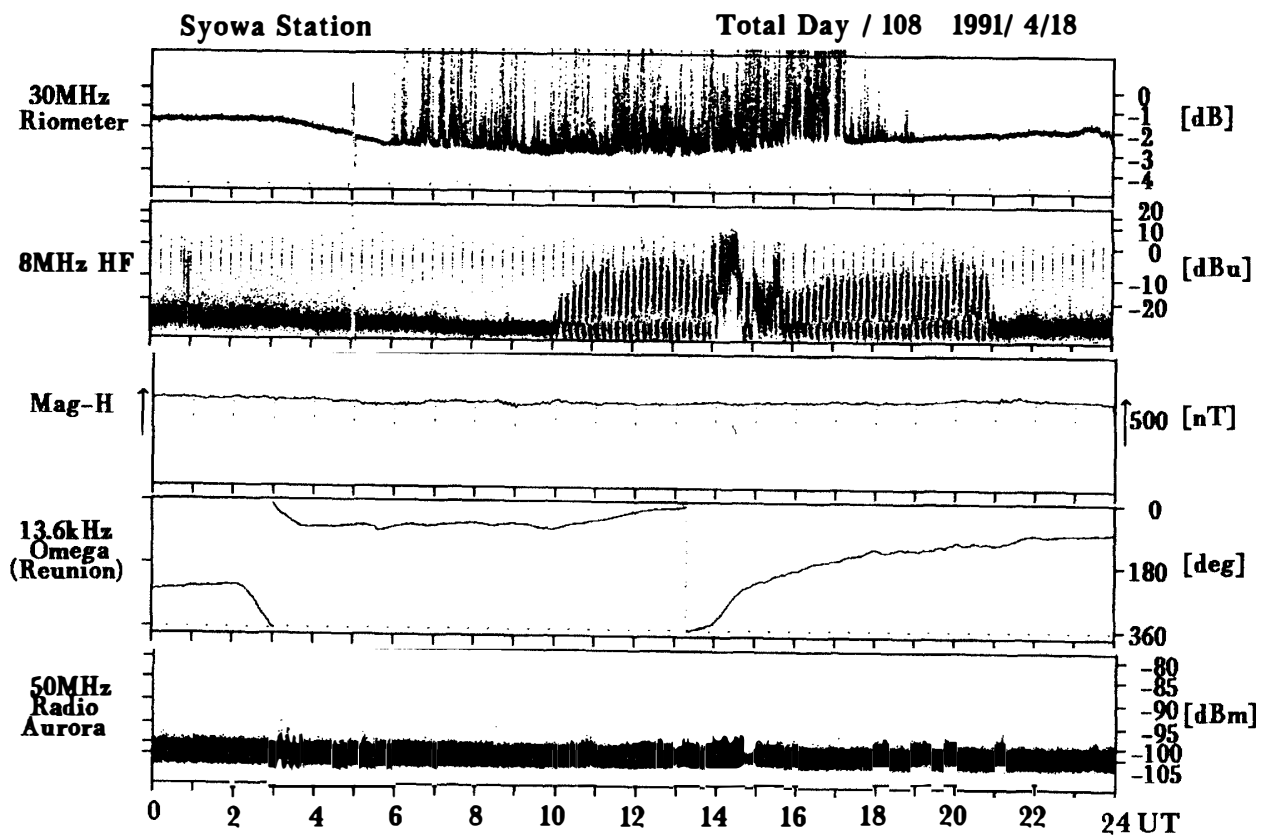
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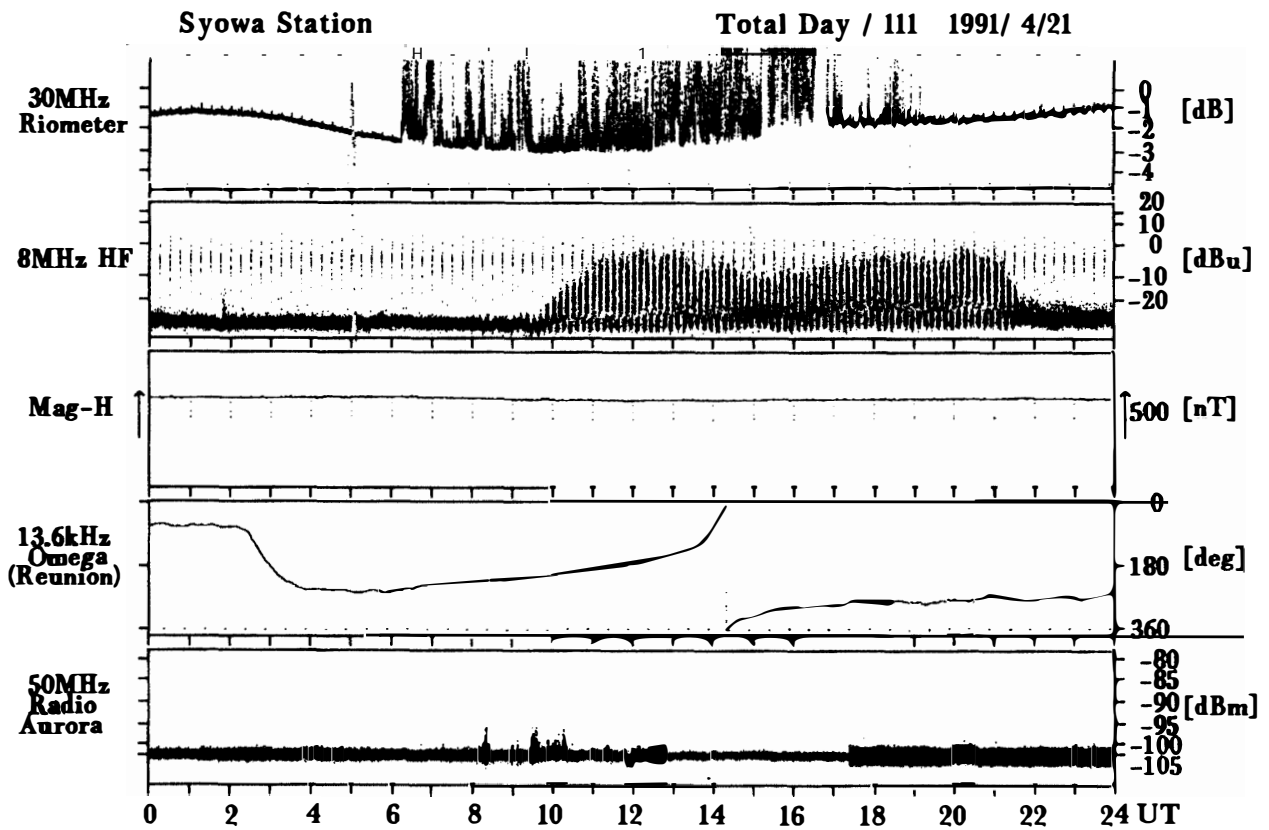
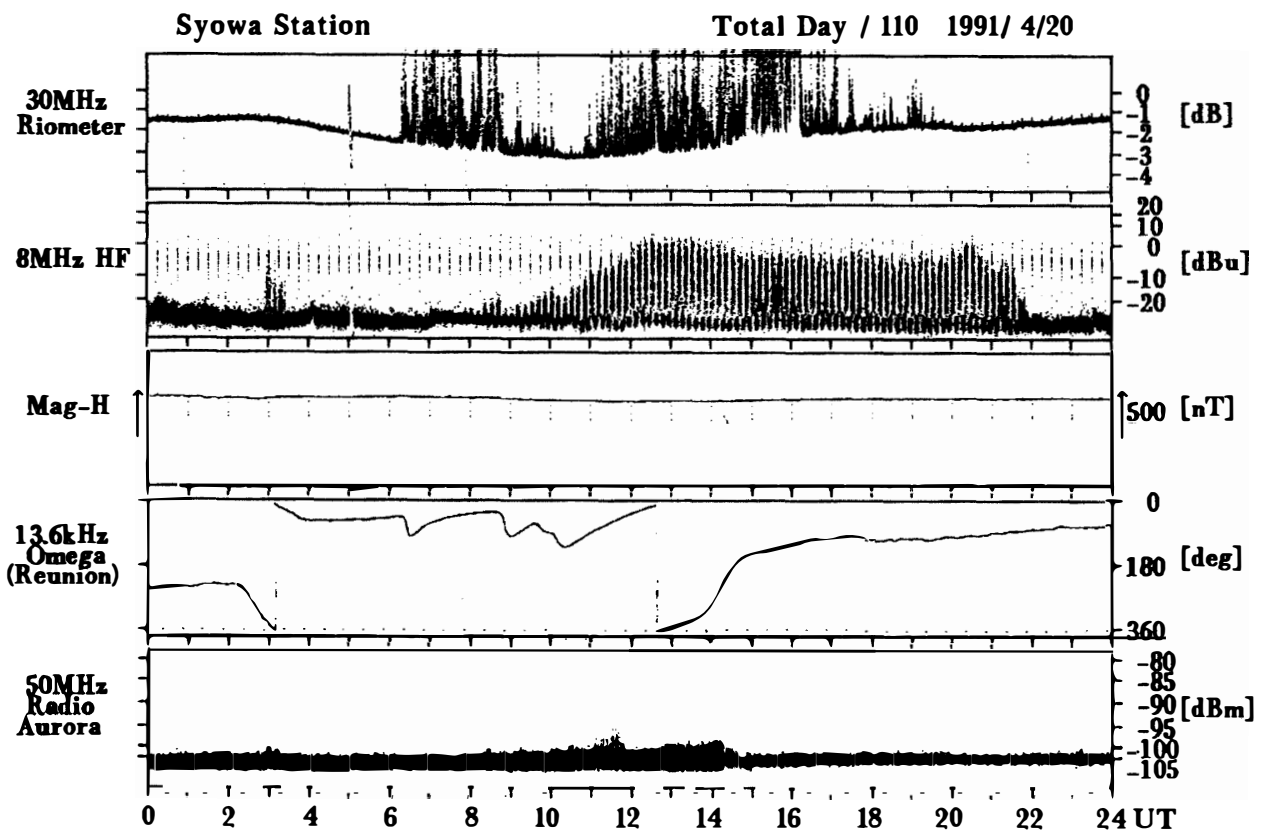


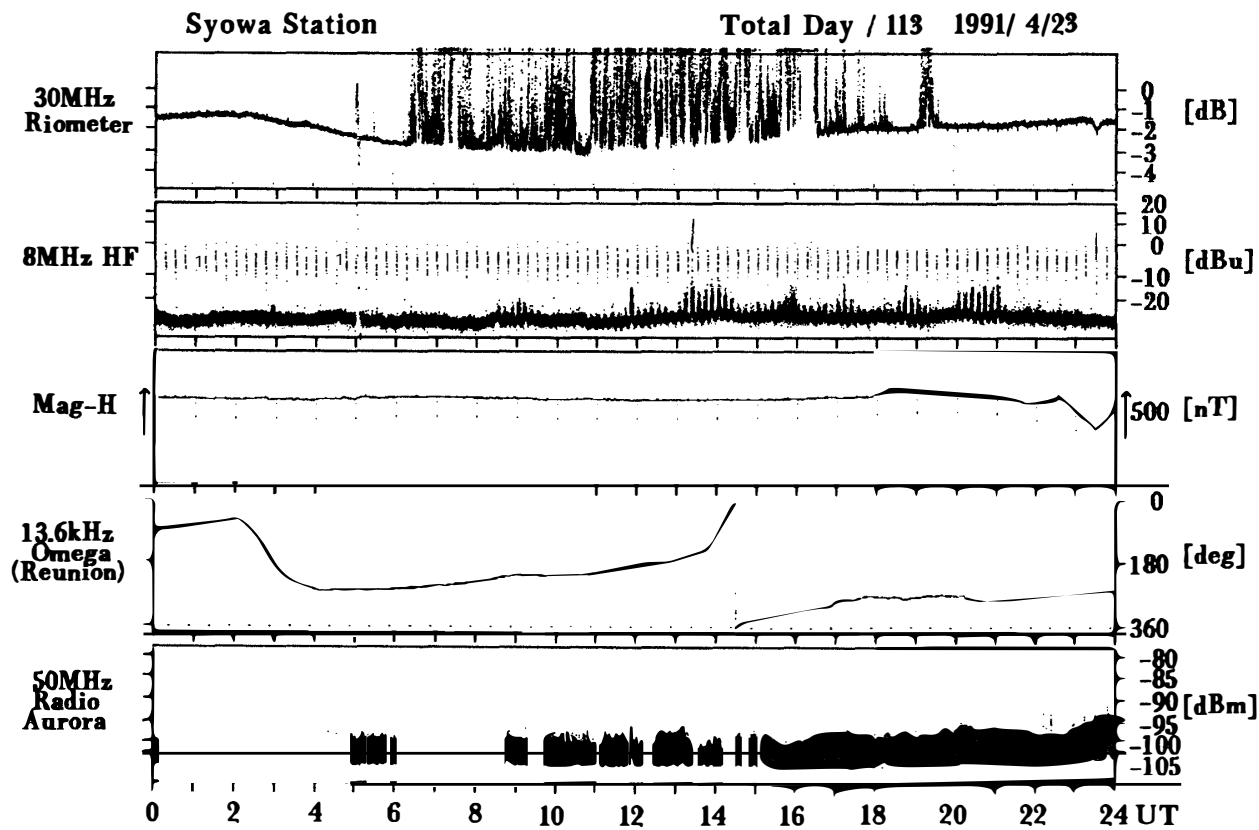
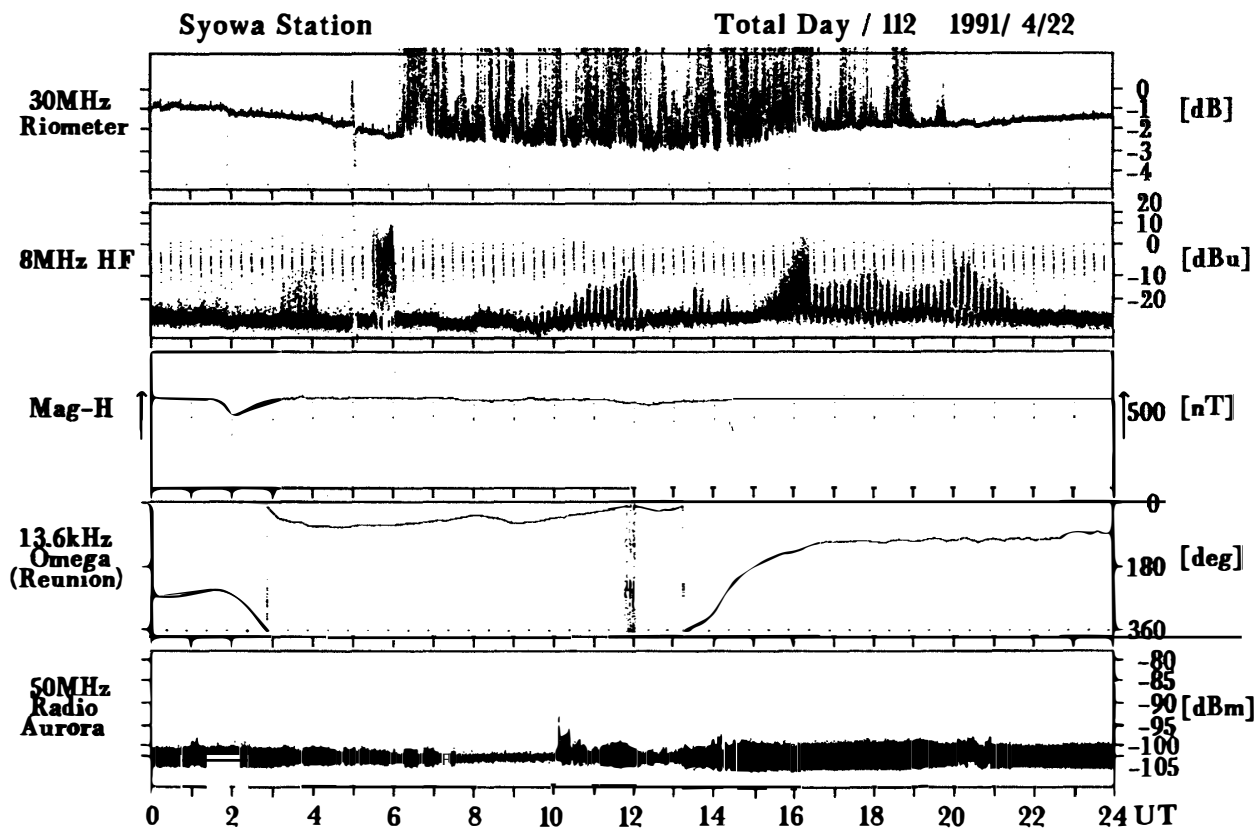
Syowa Station

Total Day / 107 1991/ 4/17



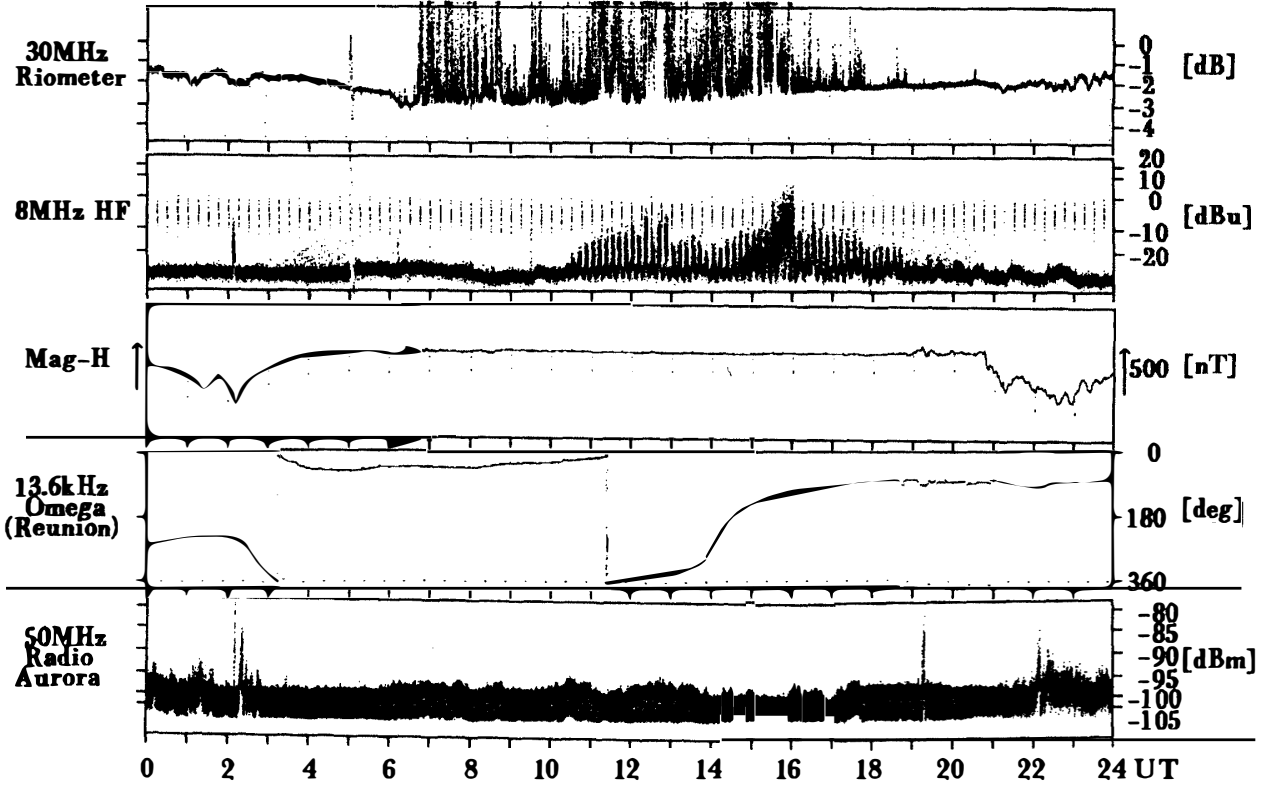






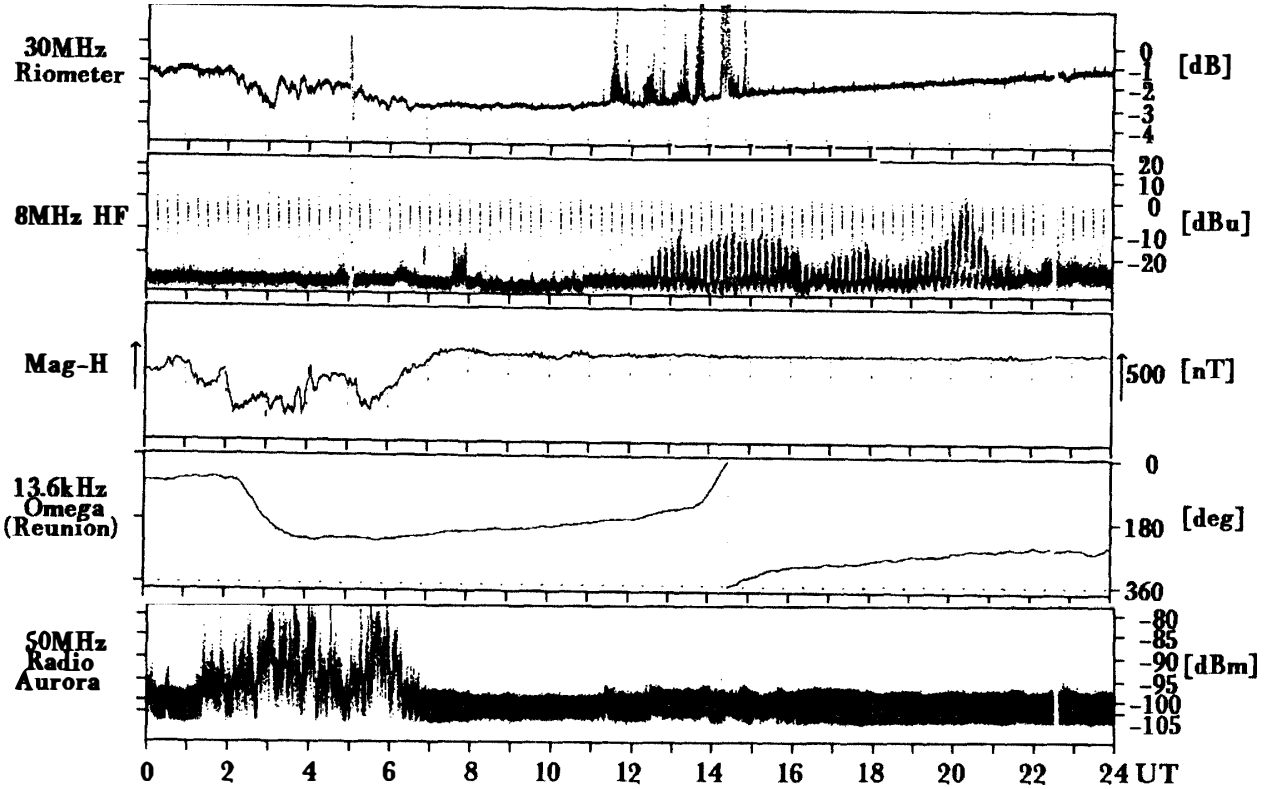
Syowa Station

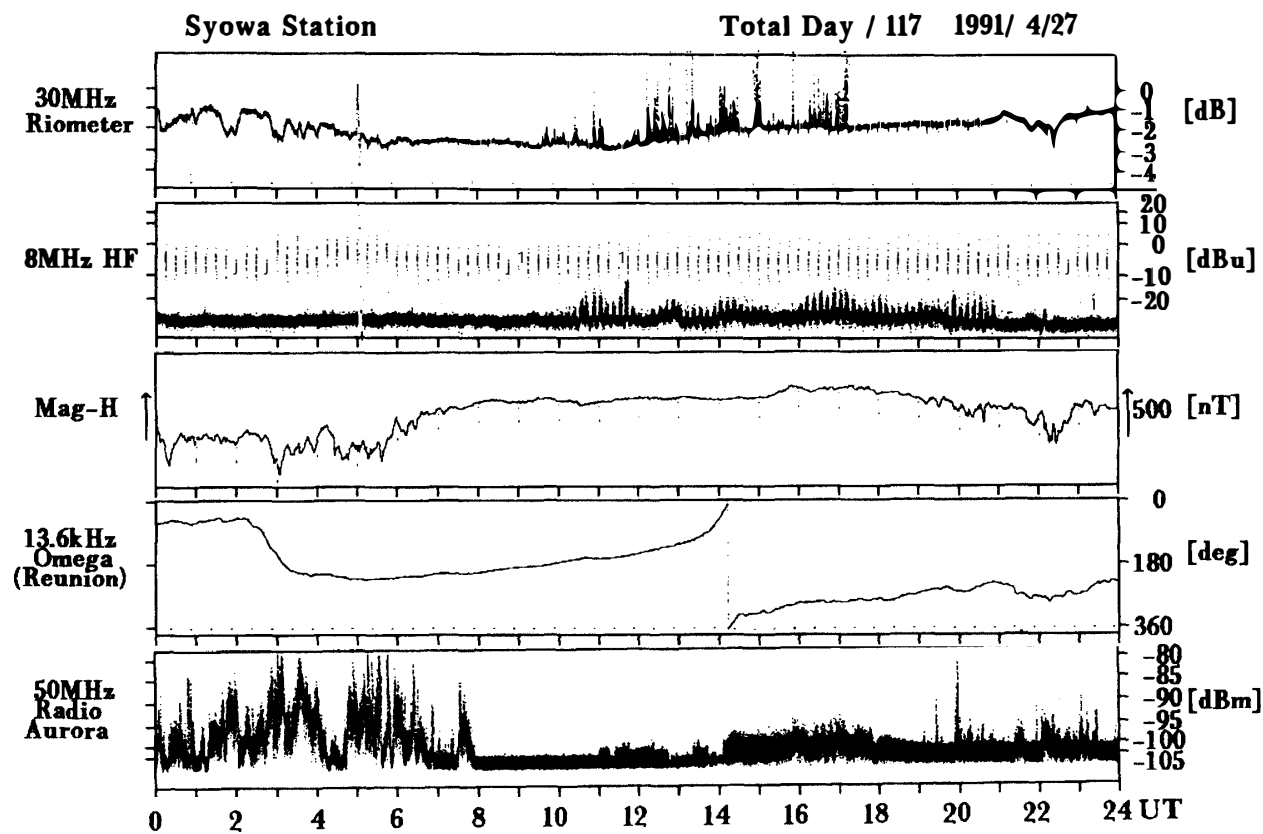
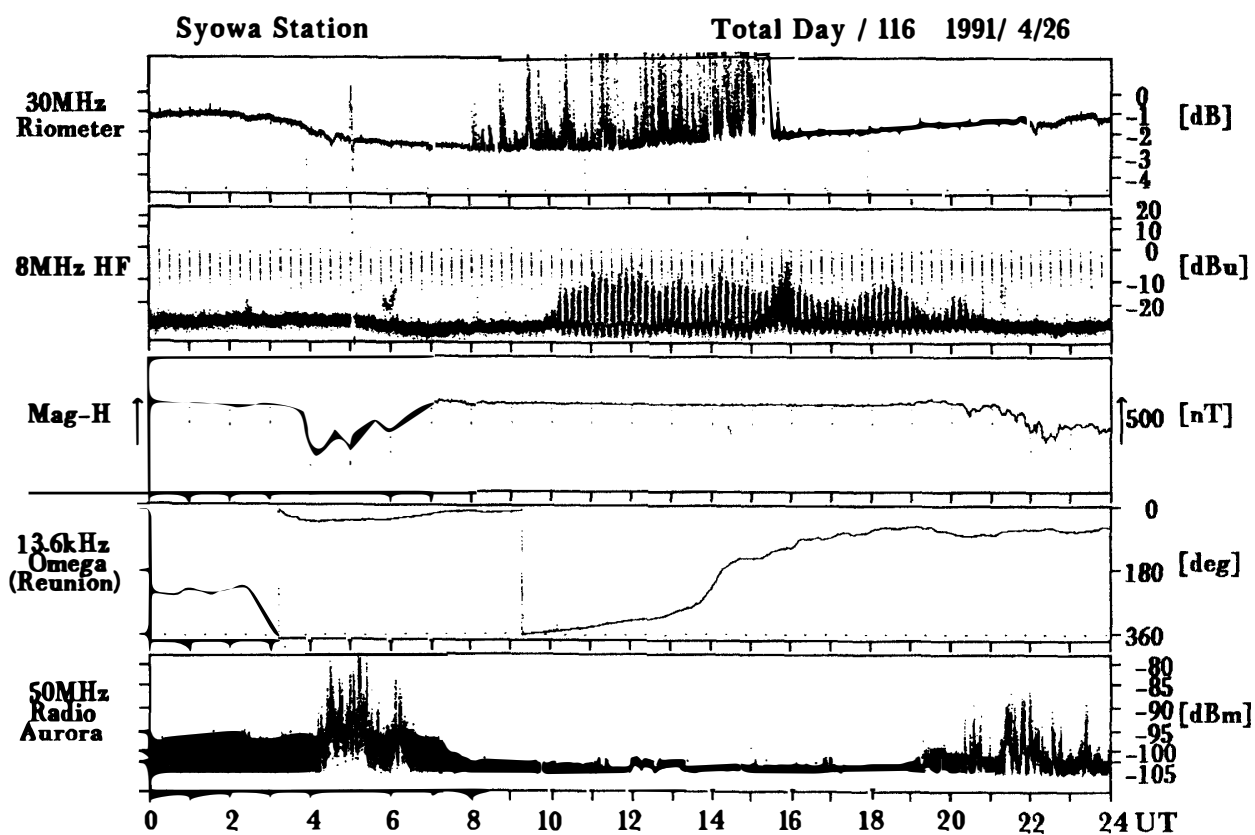
Total Day / 114 1991/ 4/24

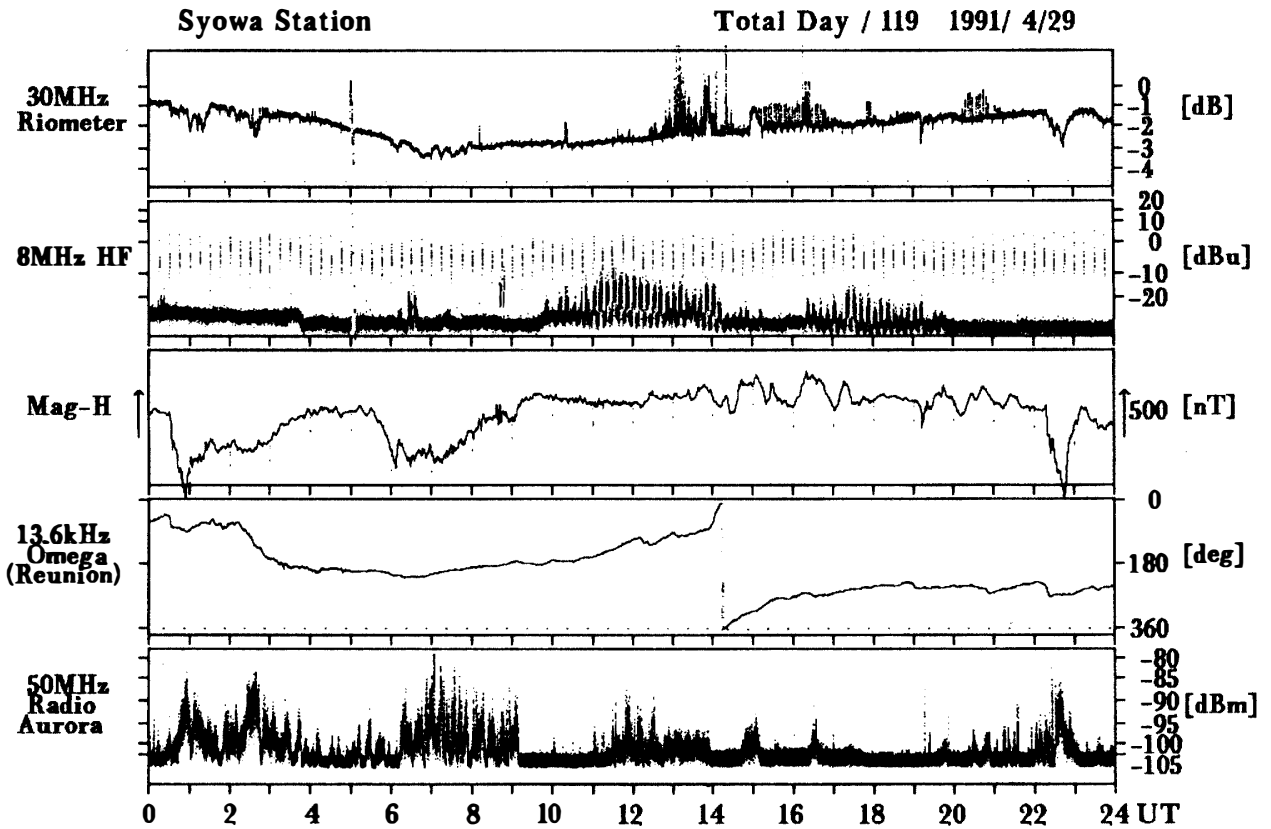
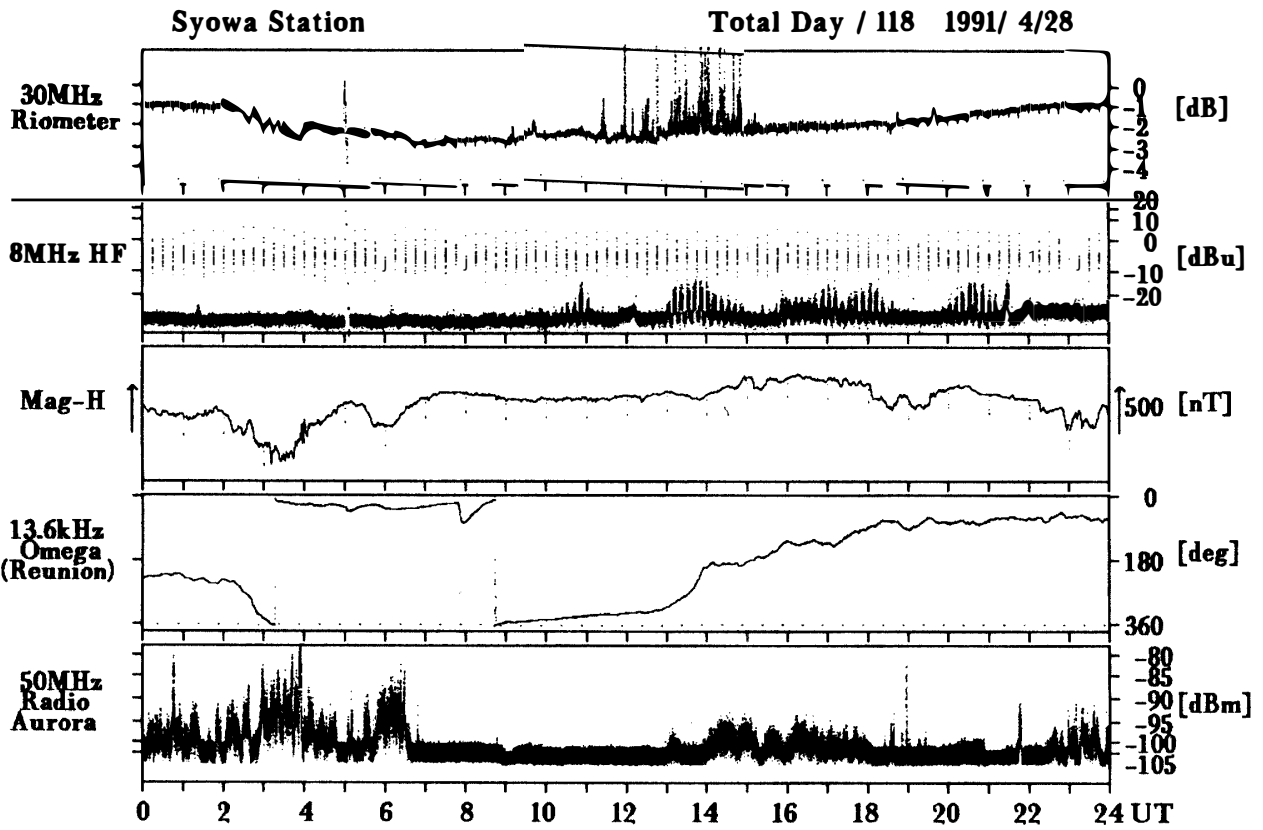


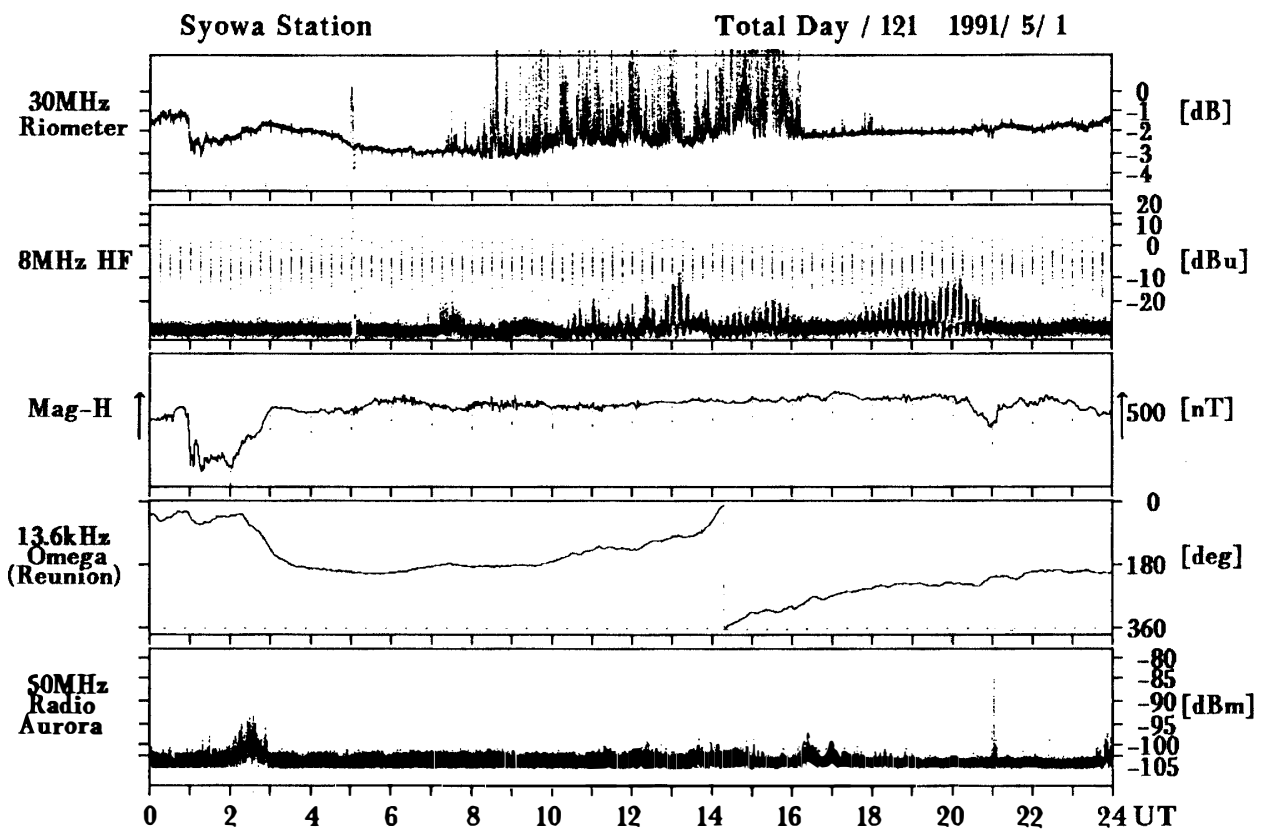
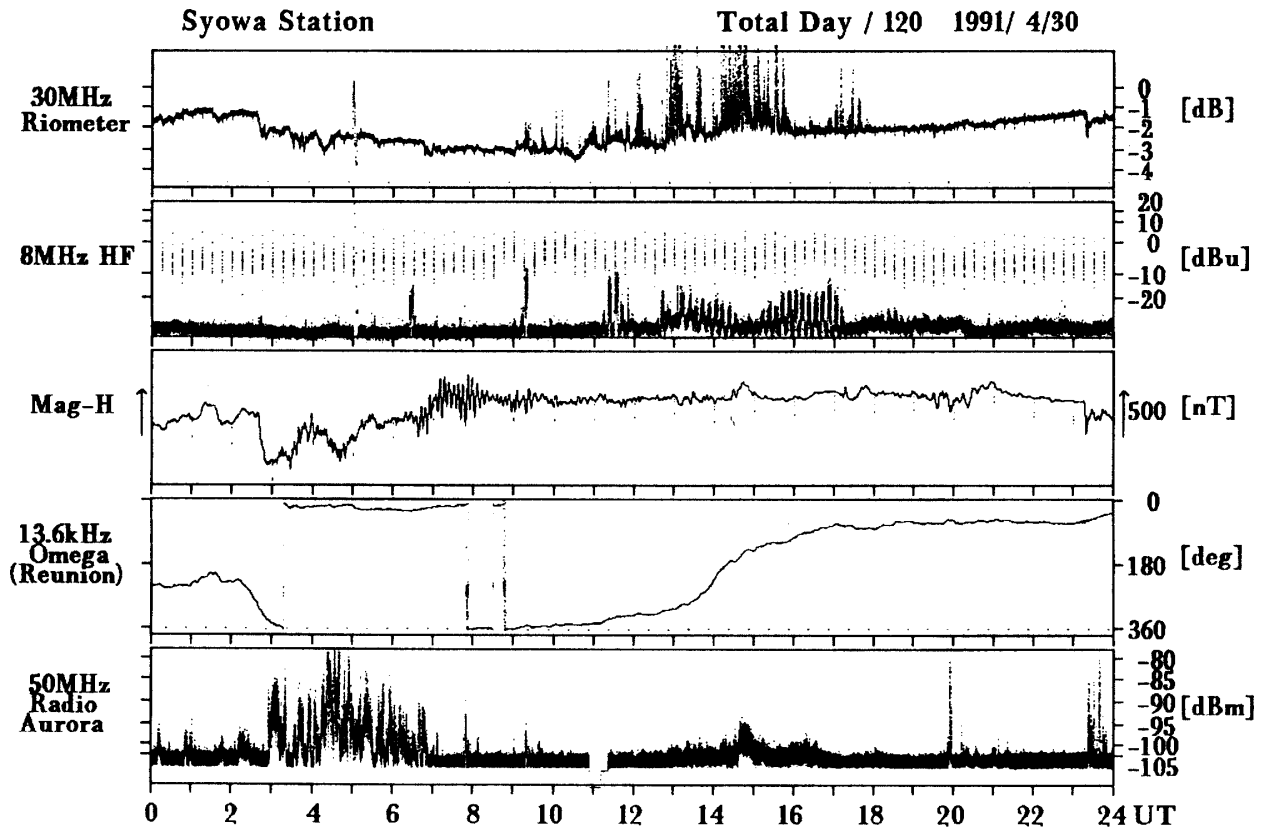
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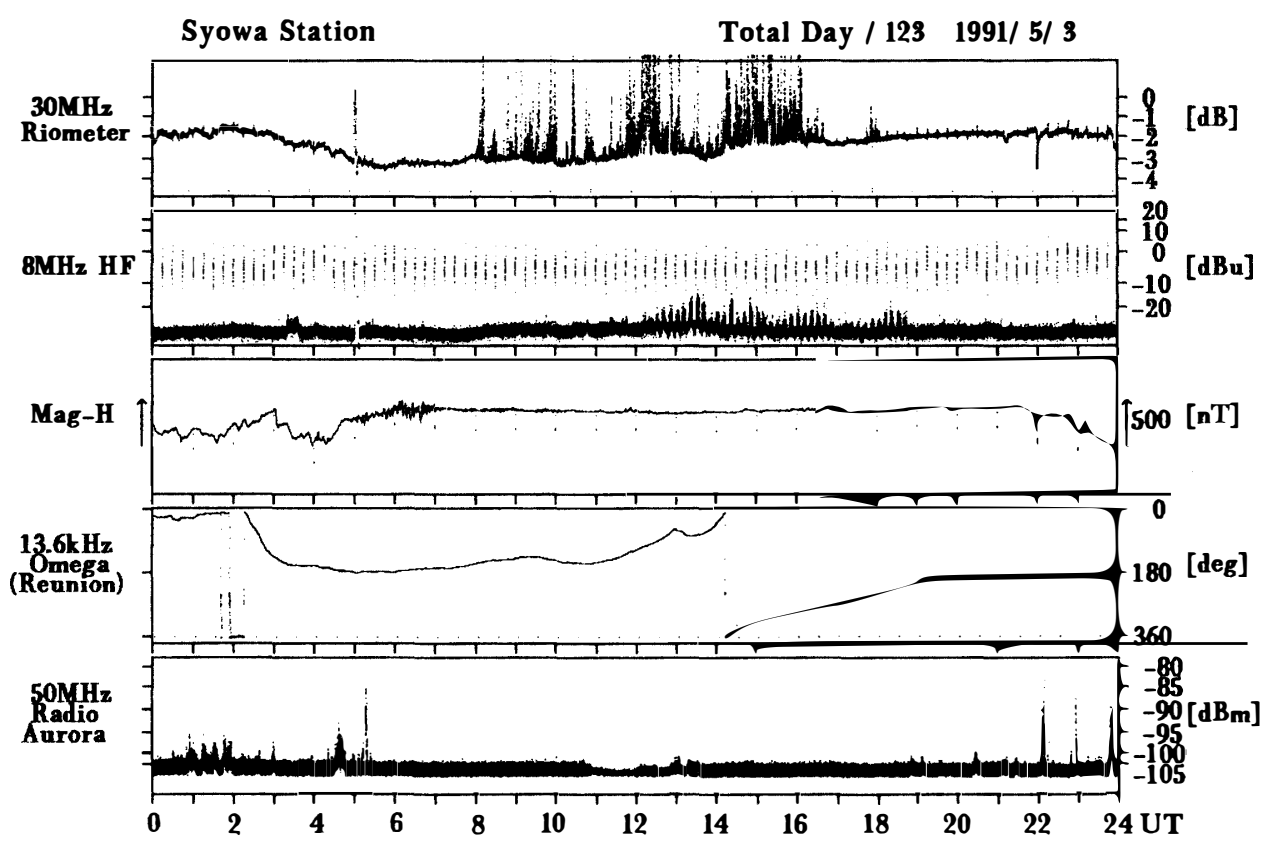
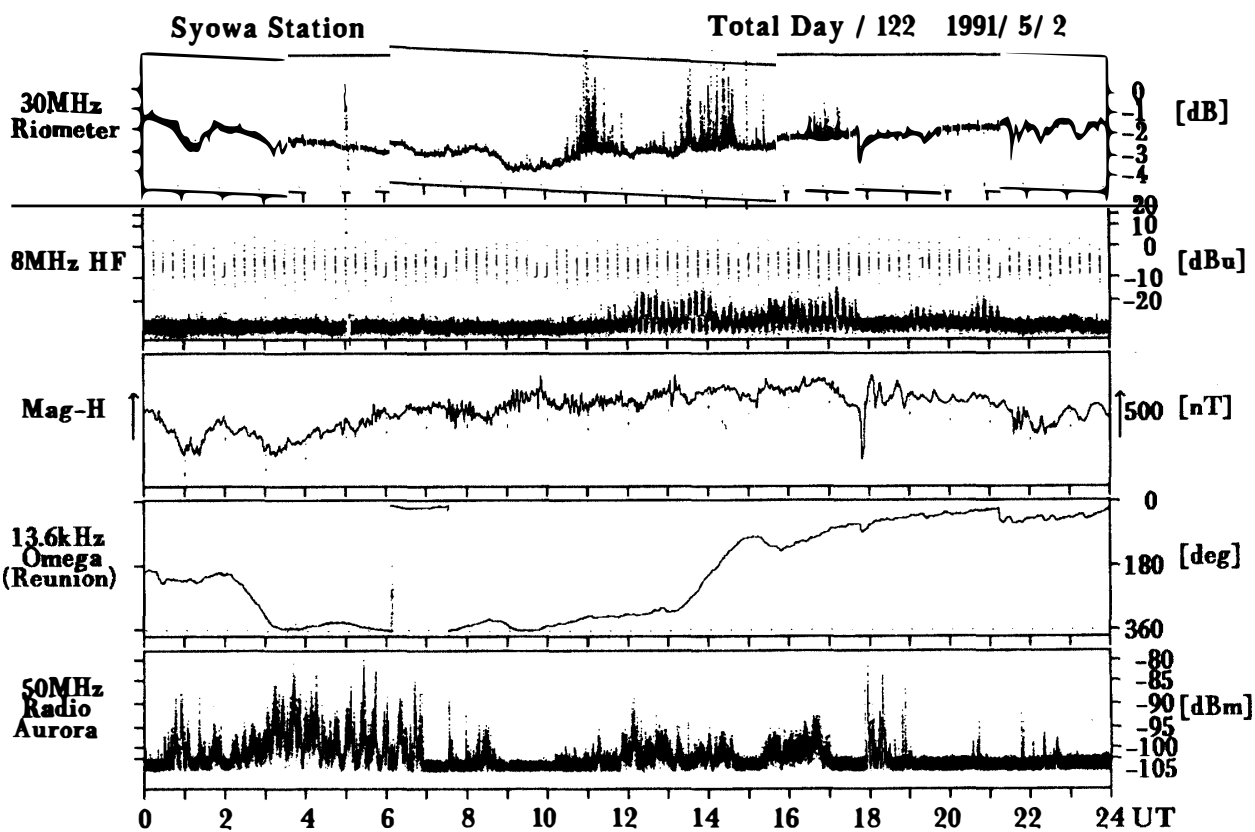
Total Day / 115 1991/ 4/25

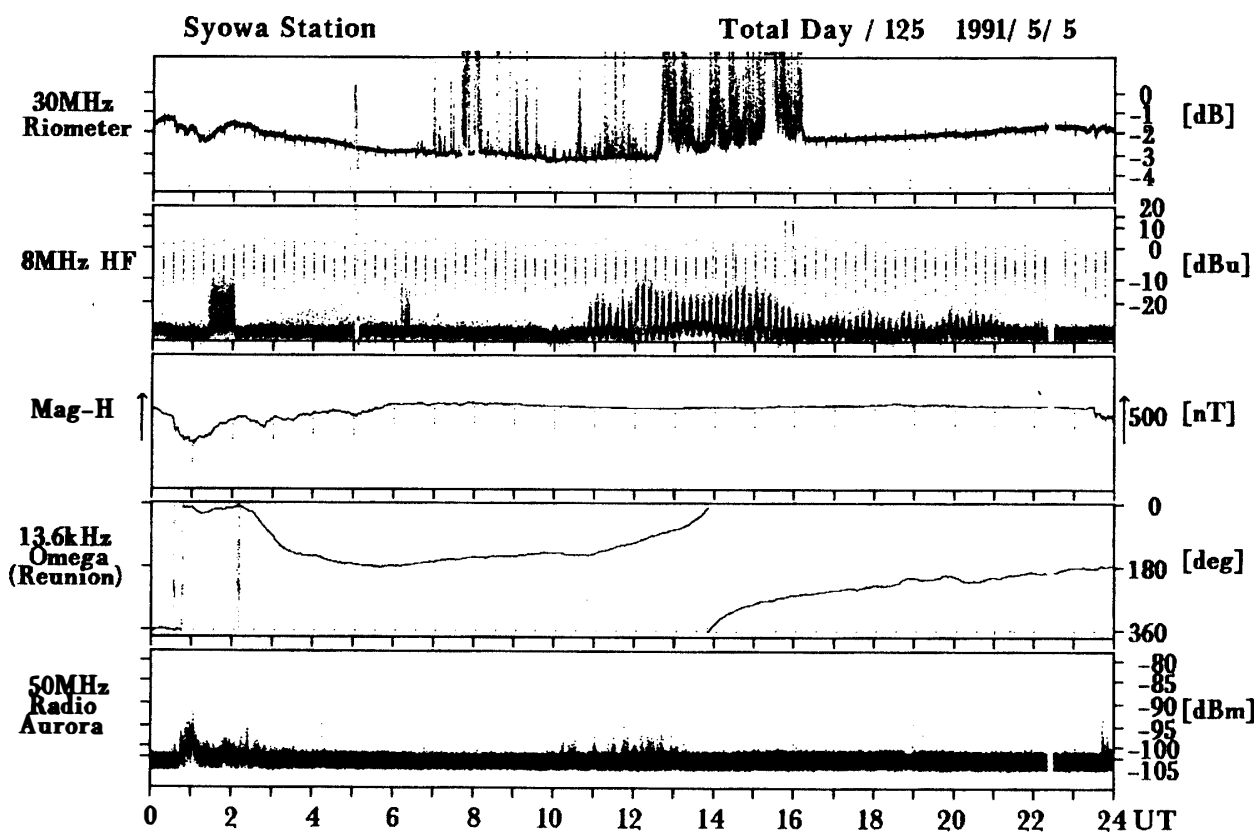
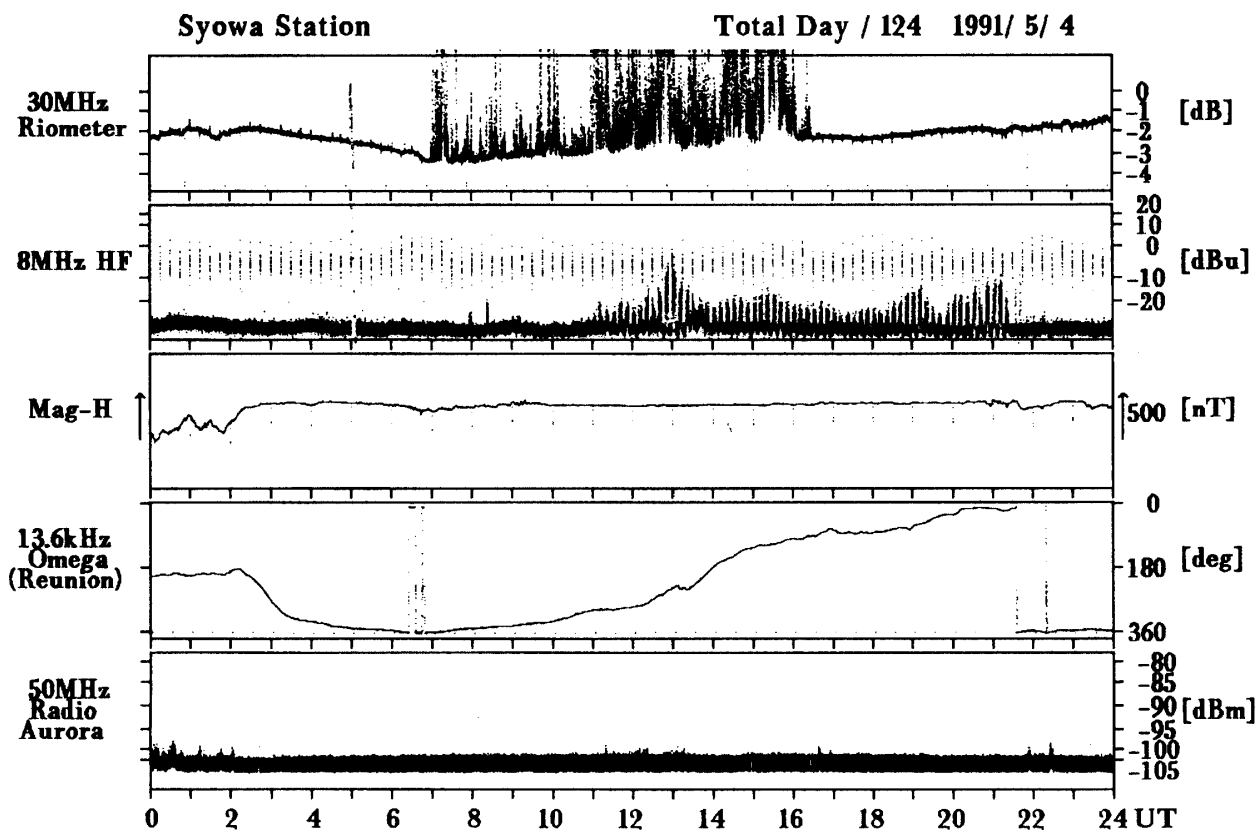


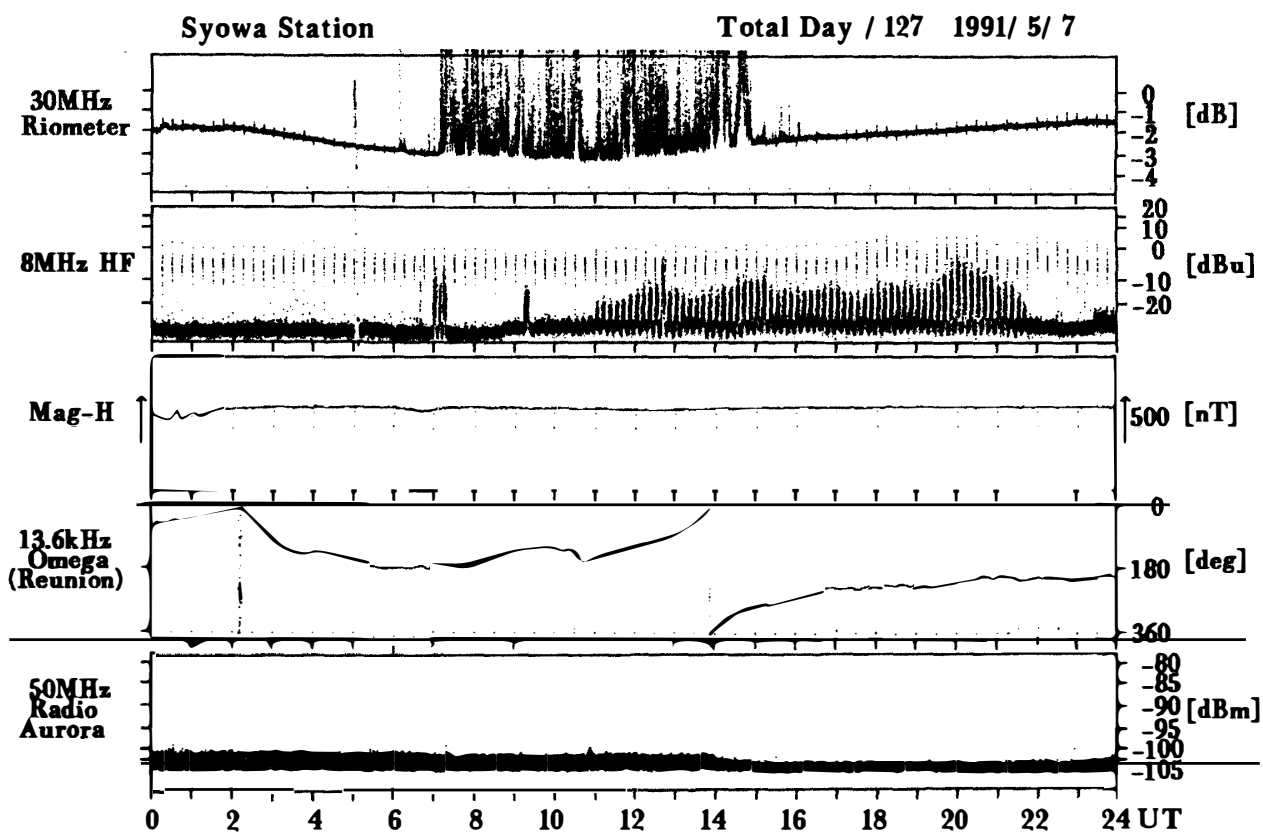
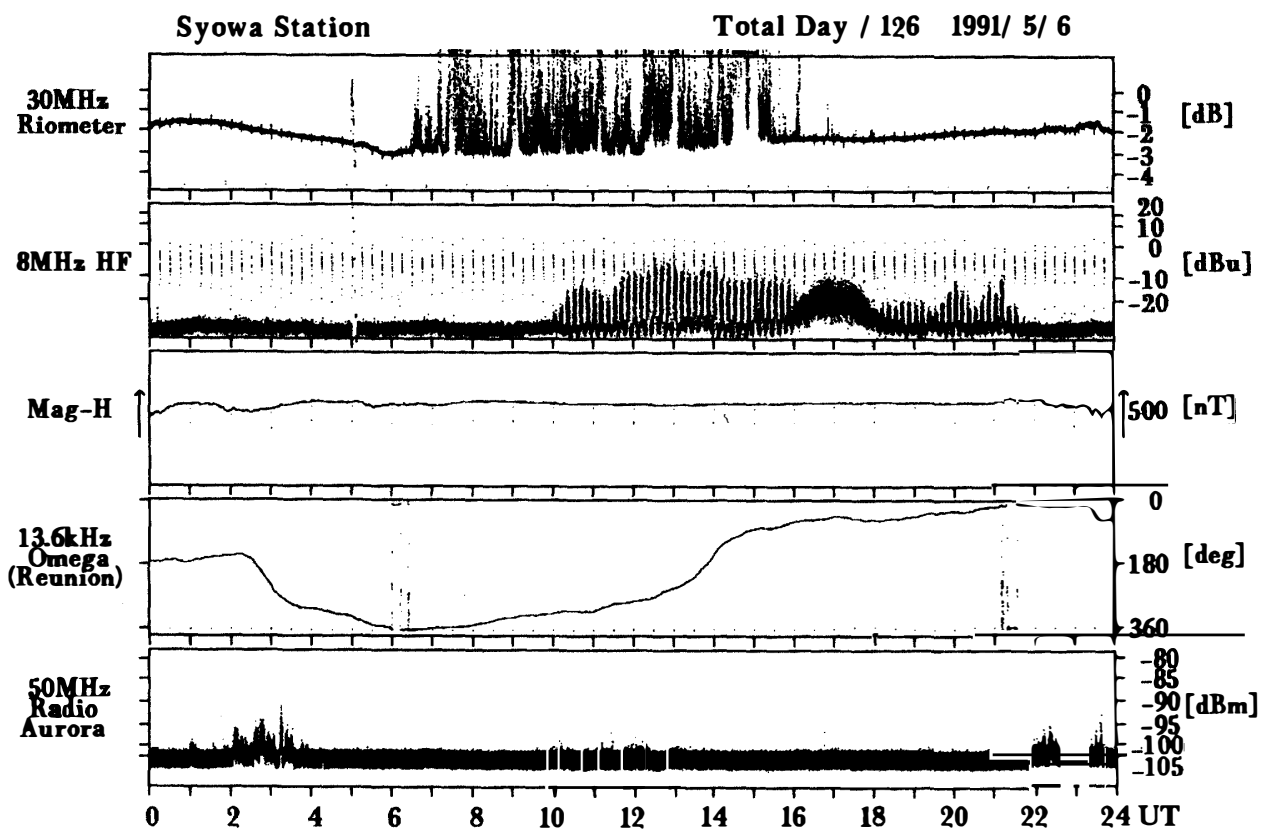






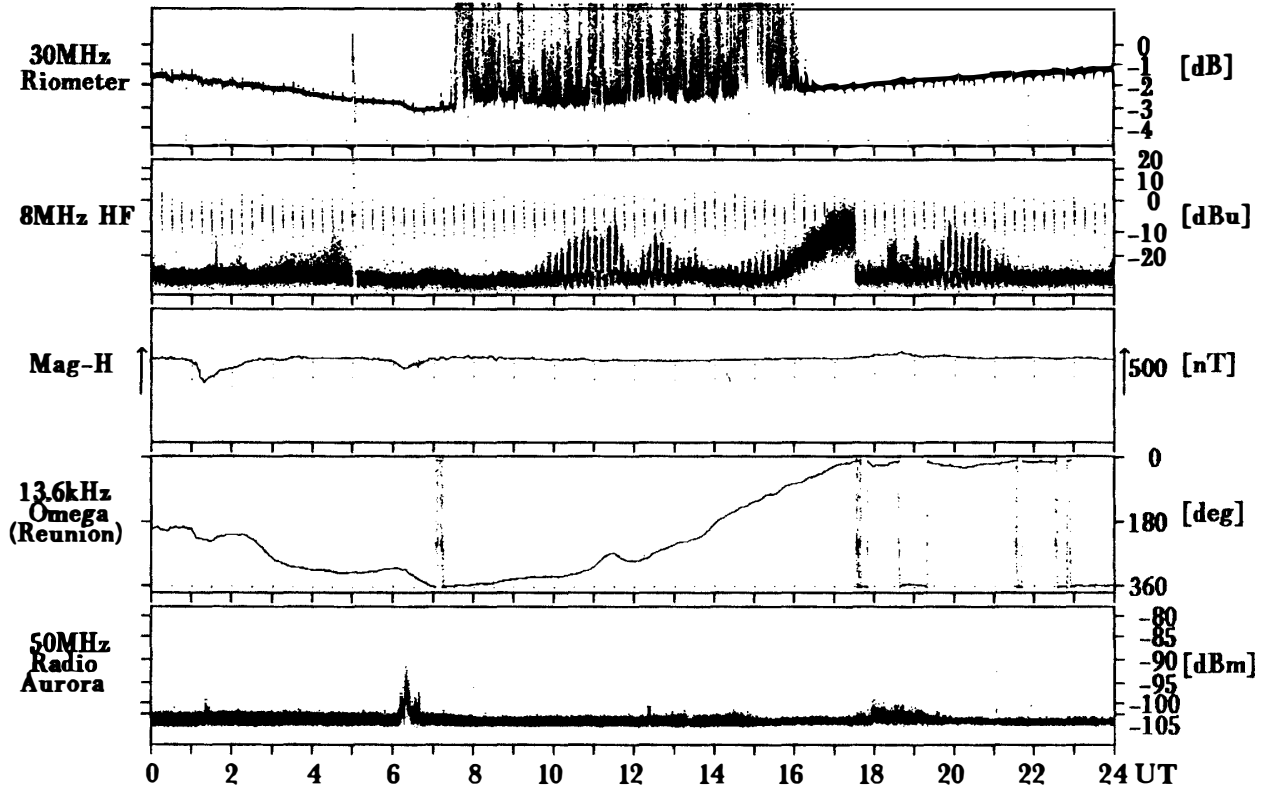






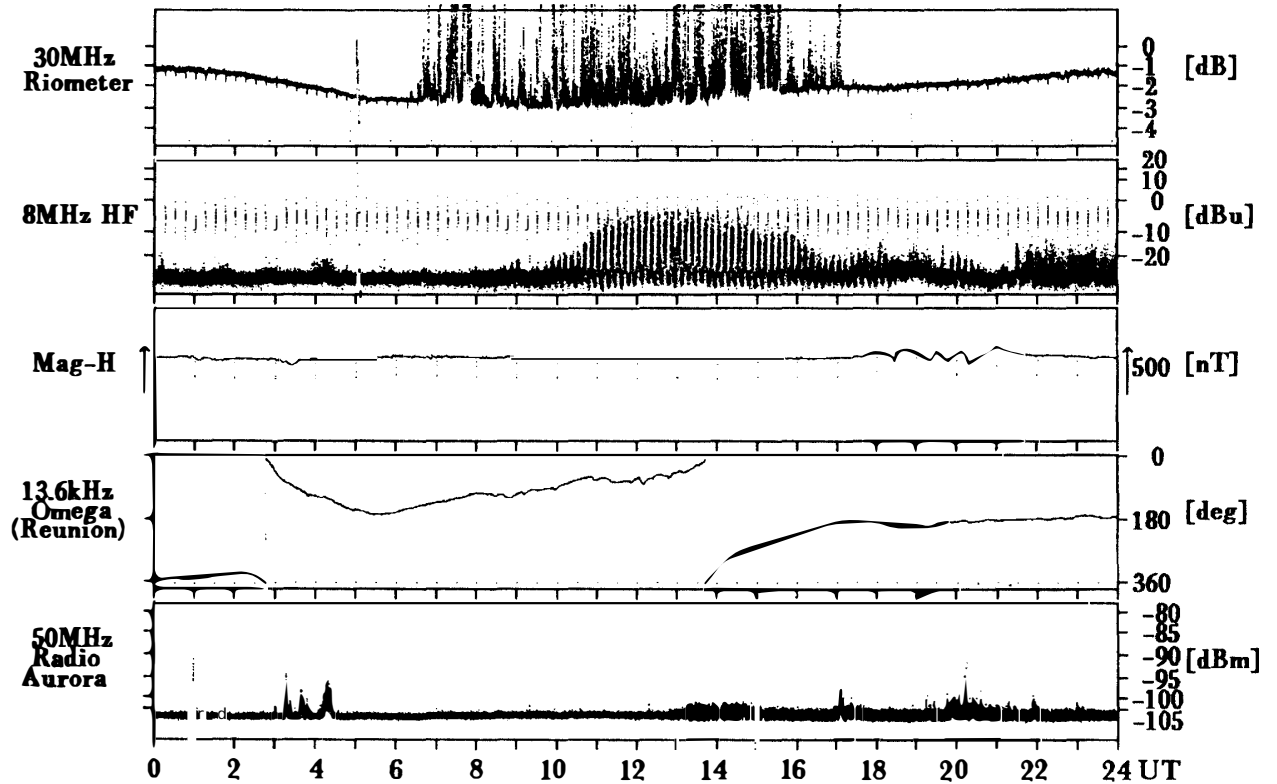
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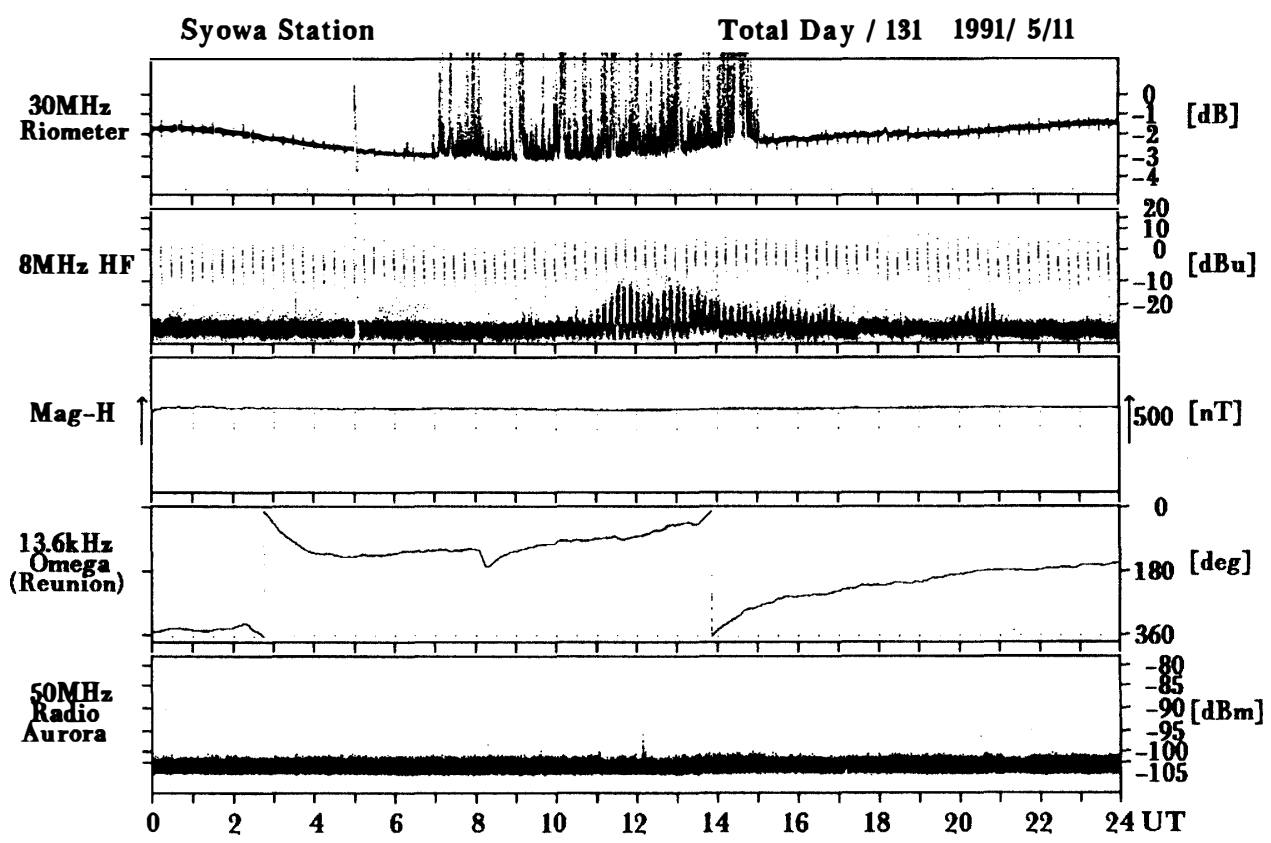
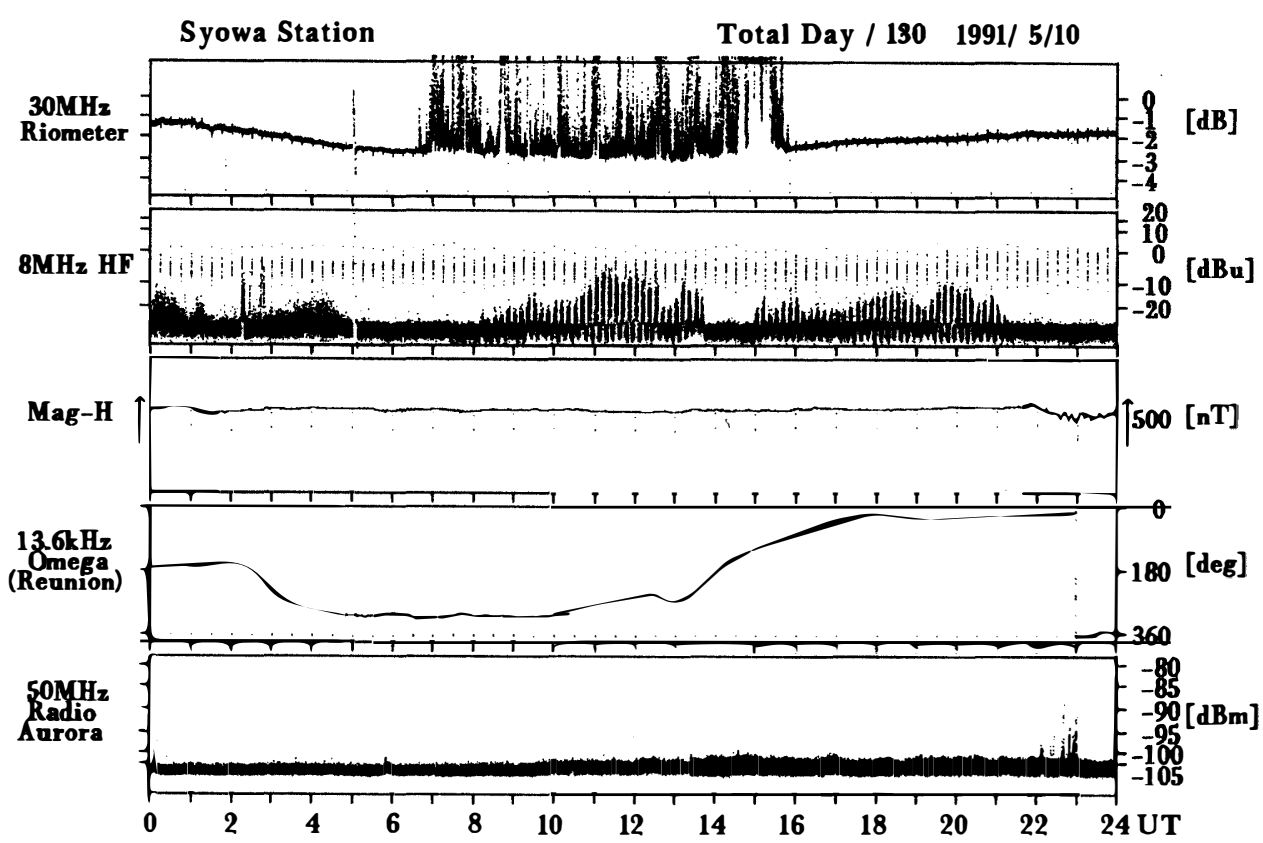
Total Day / 128 1991/ 5/ 8

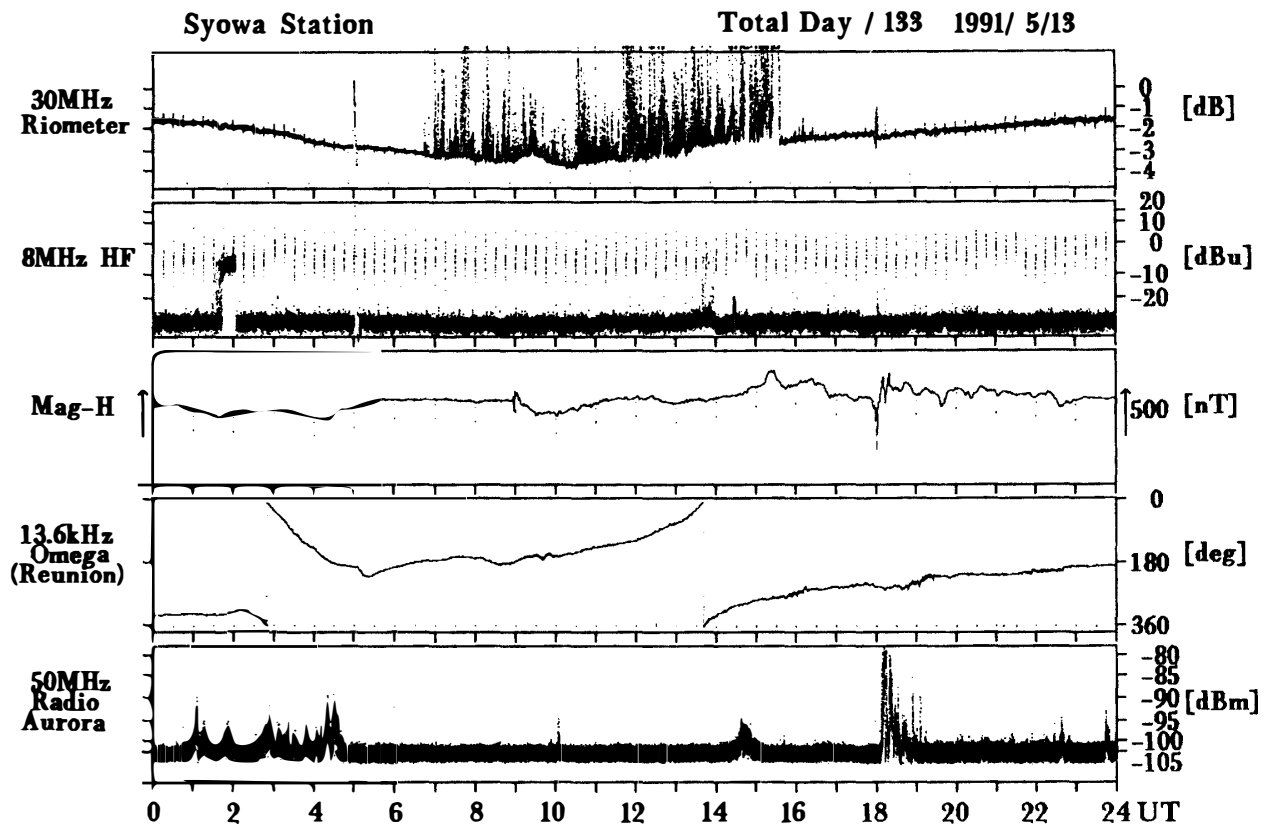
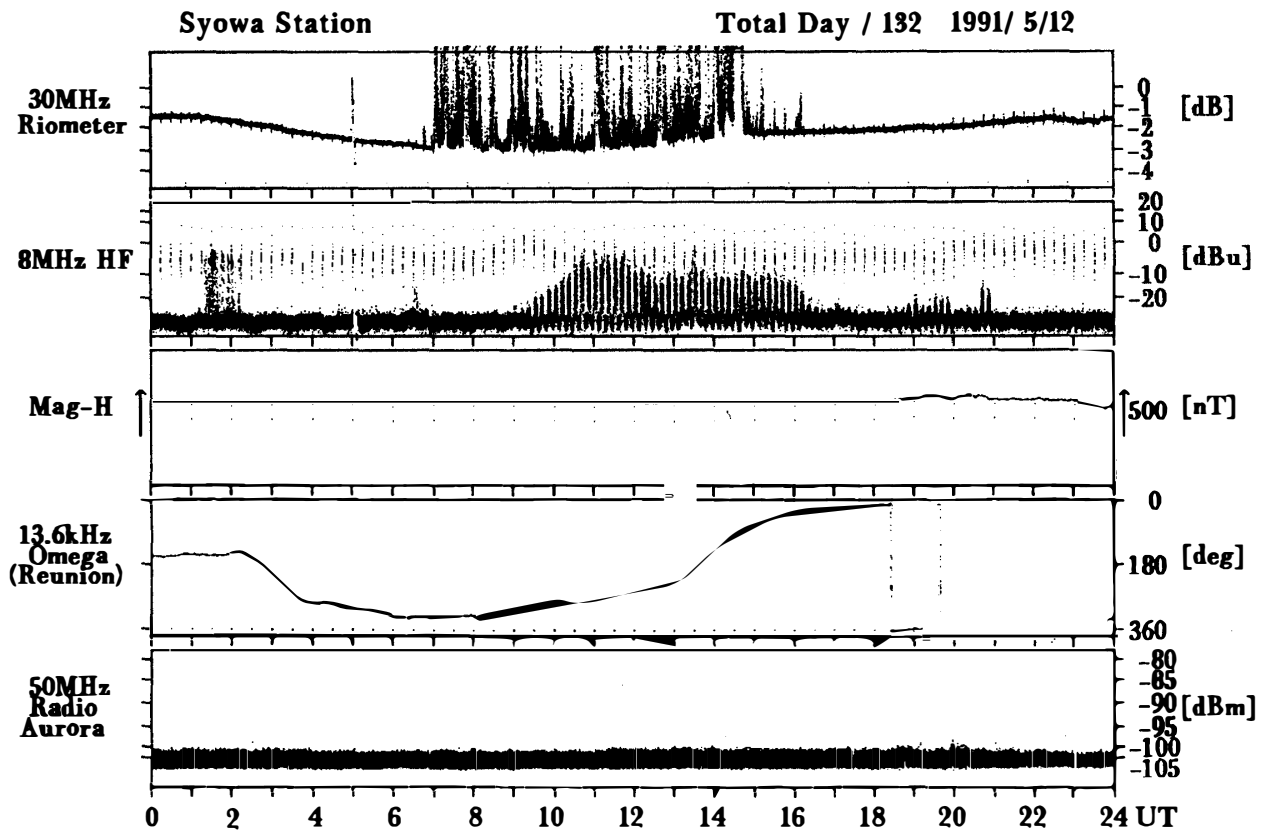


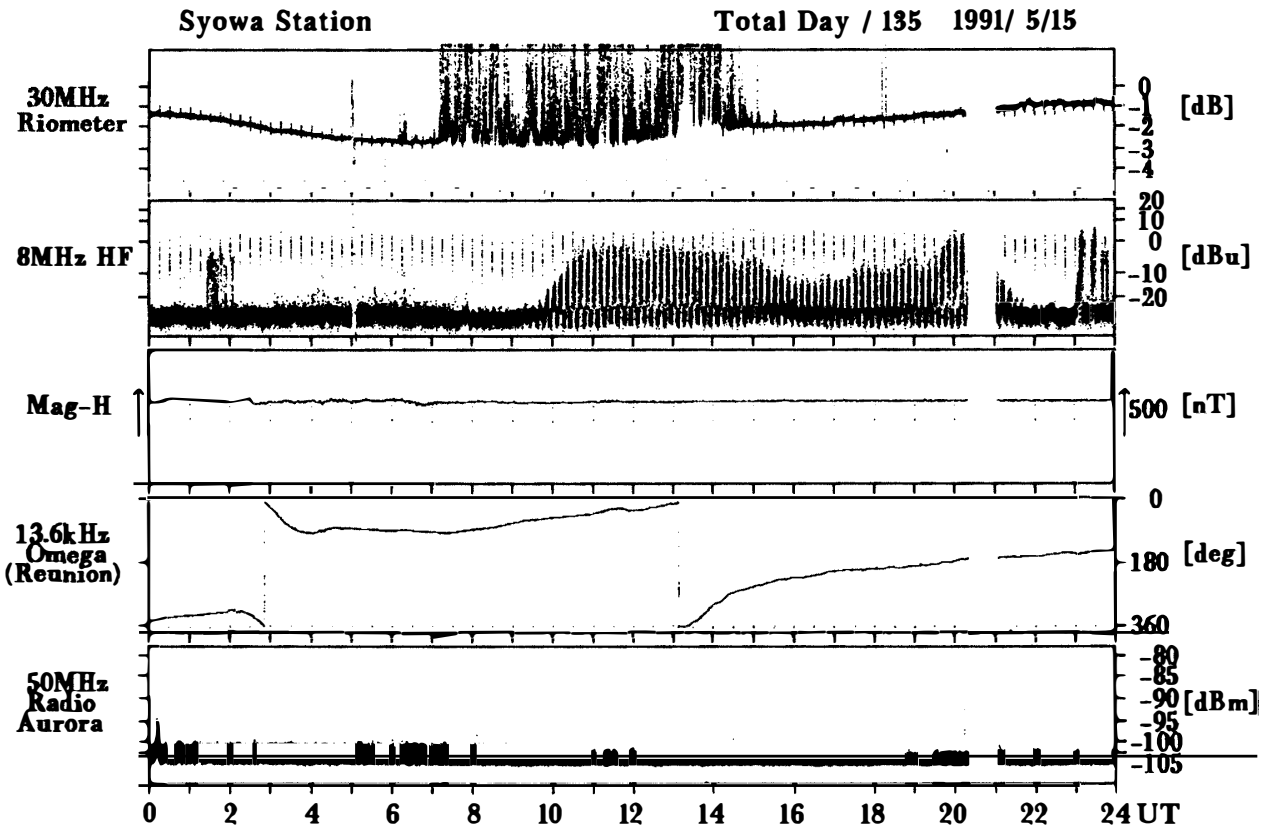
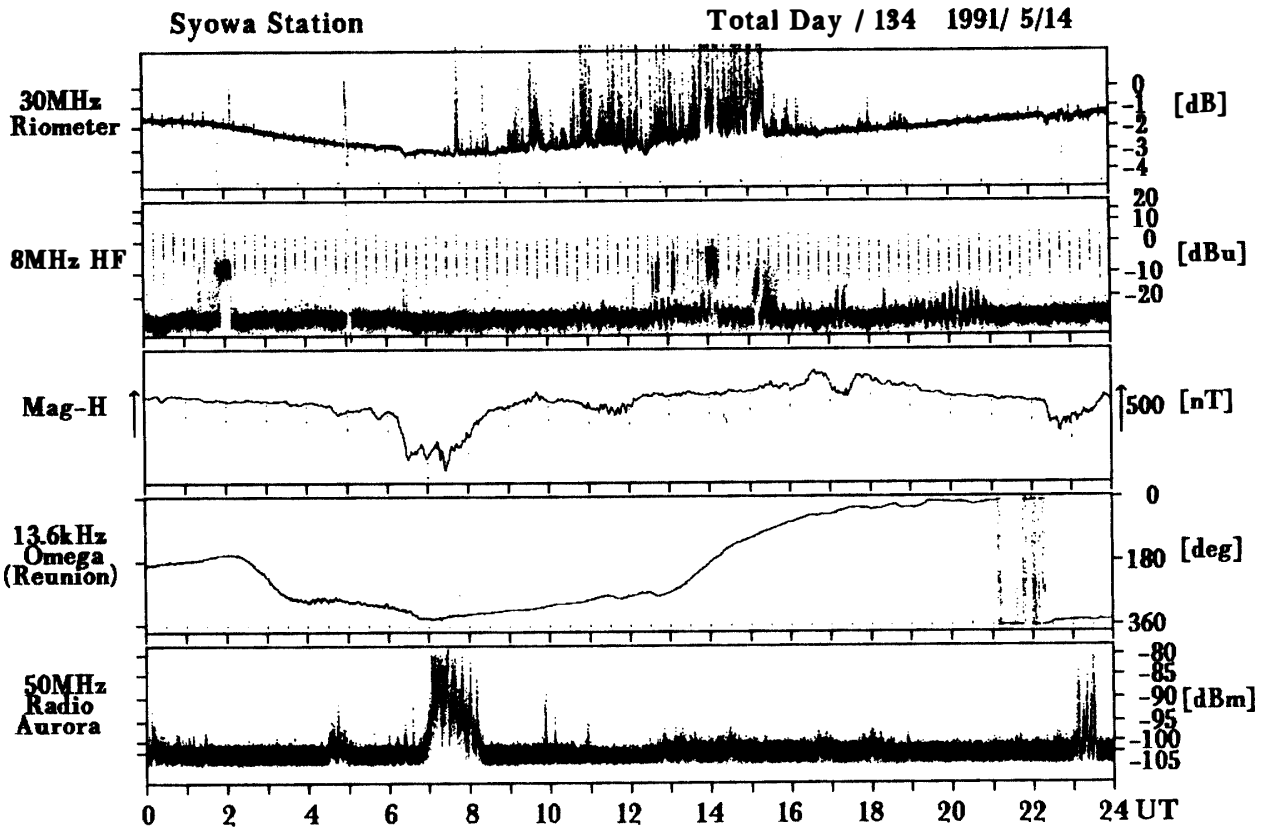
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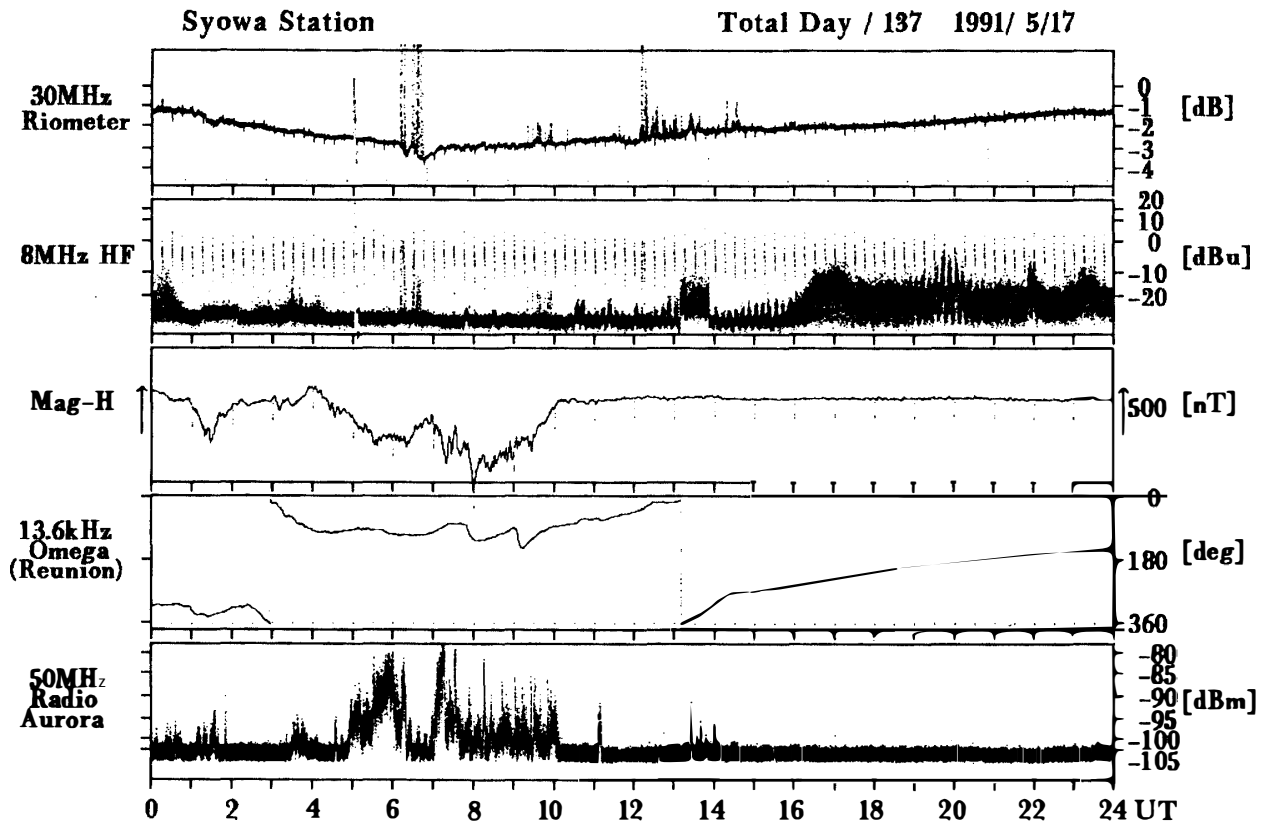
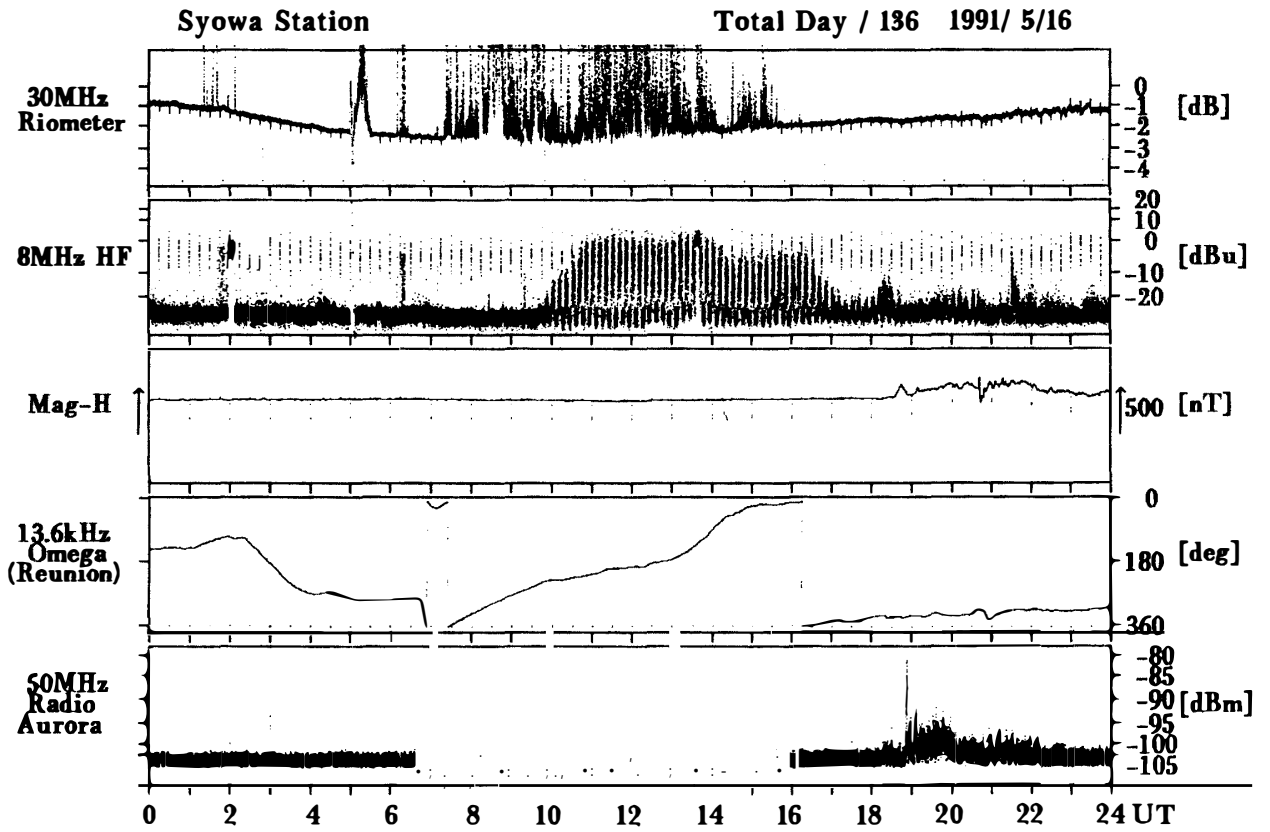
Total Day / 129 1991/ 5/ 9

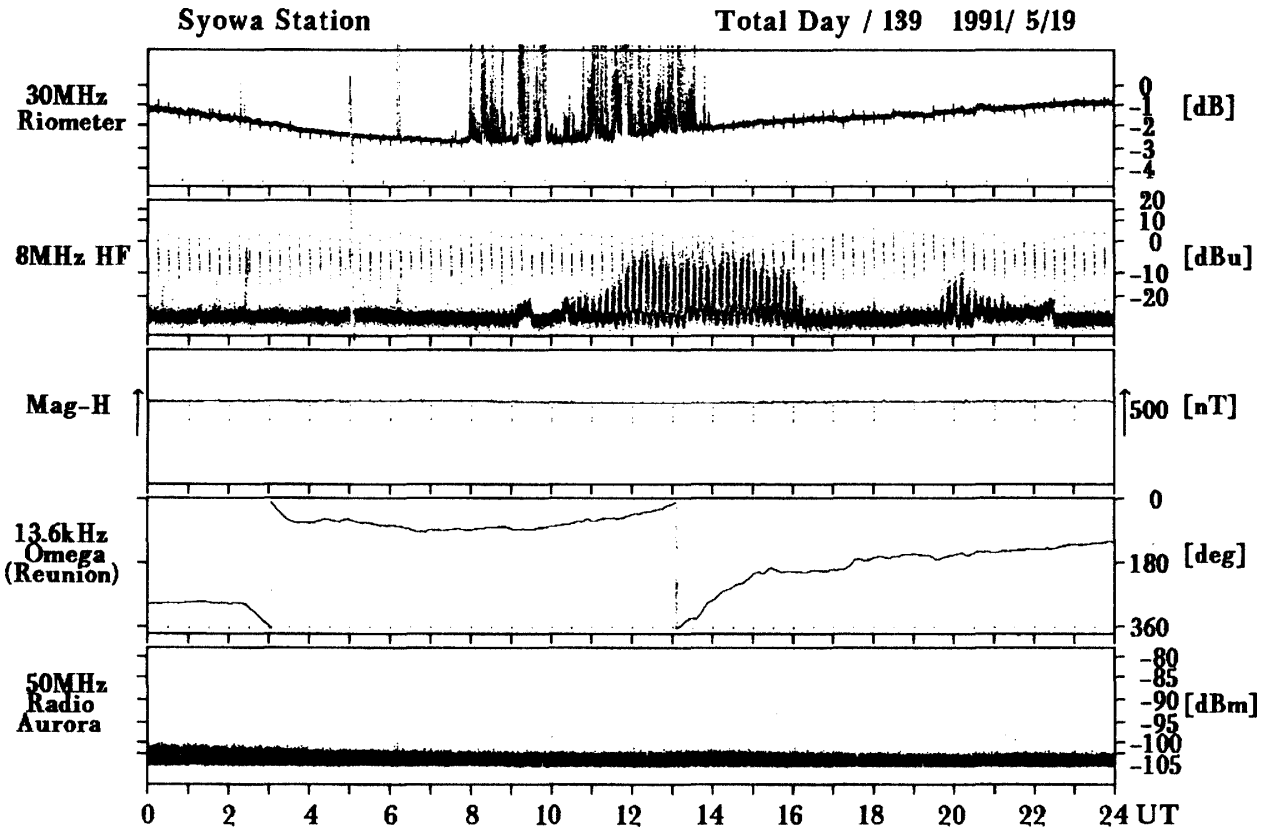
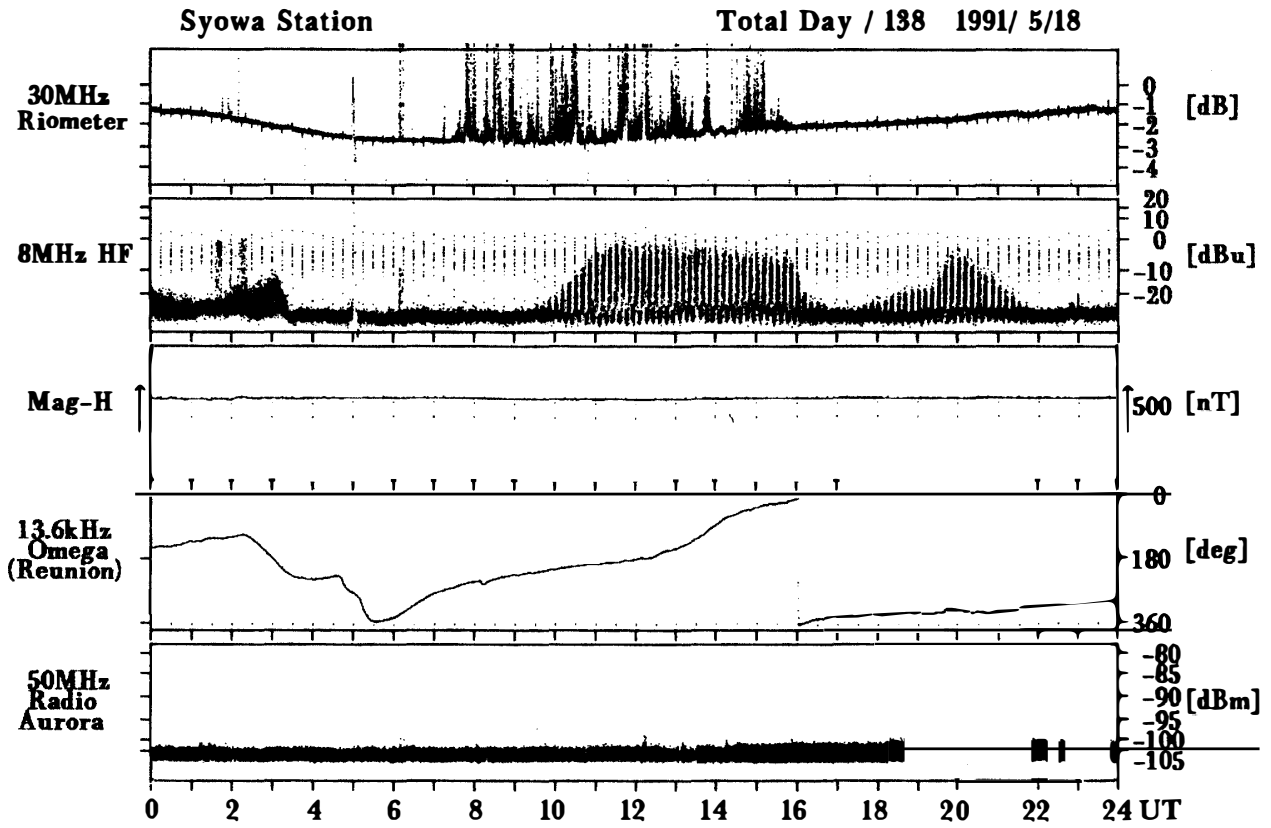


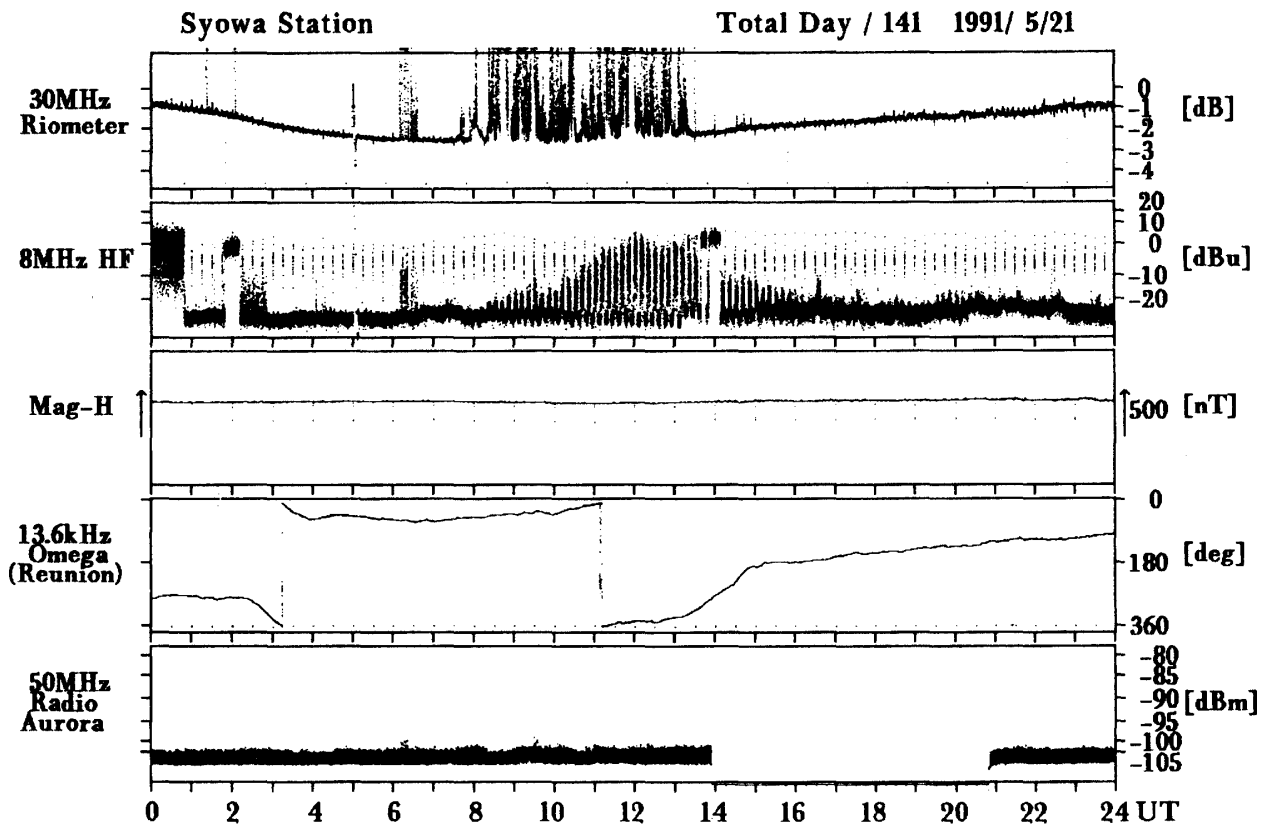
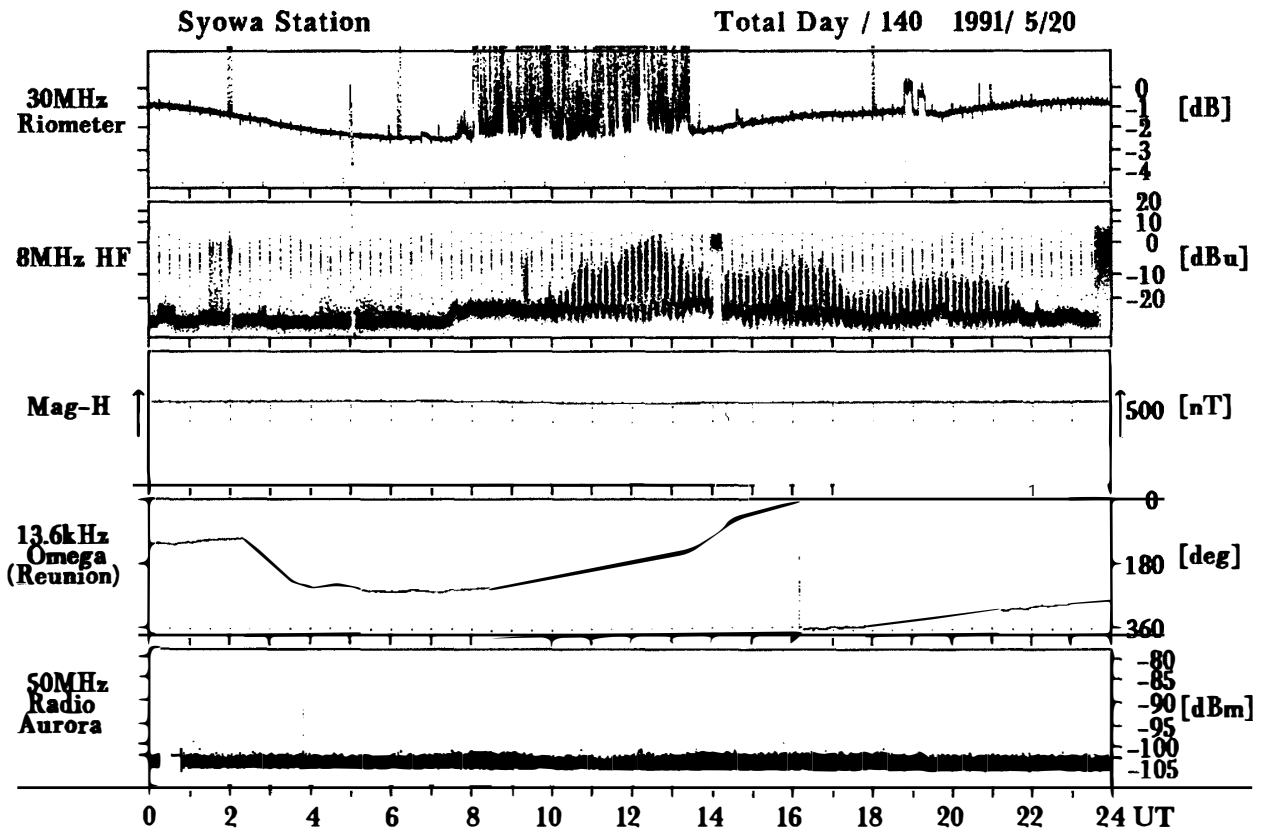






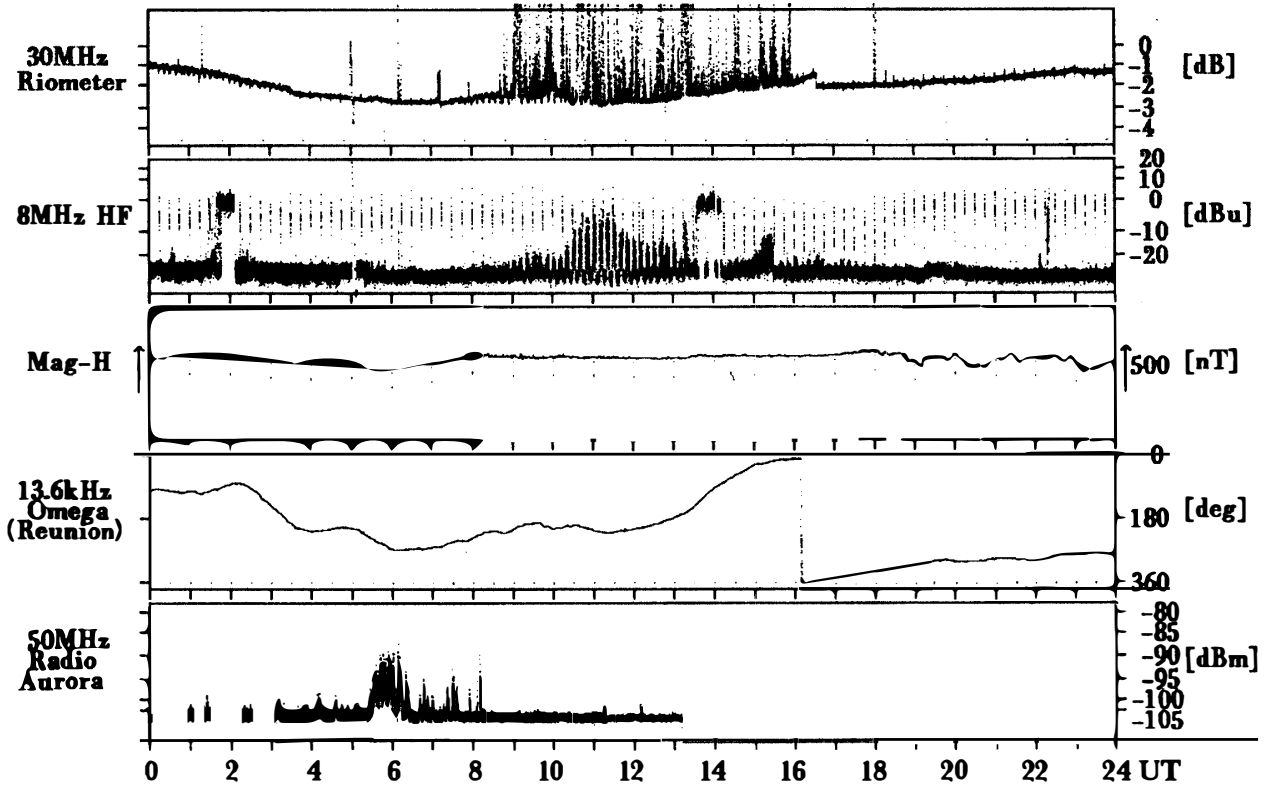






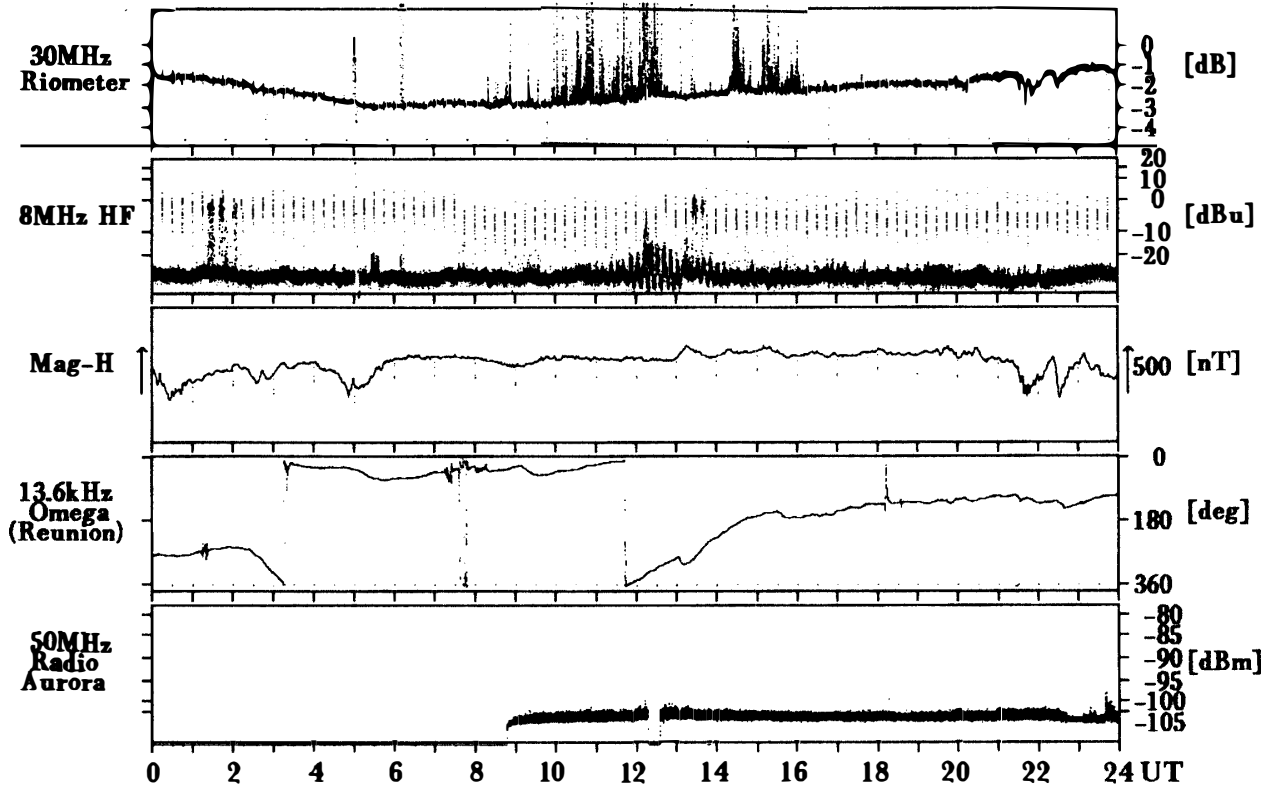
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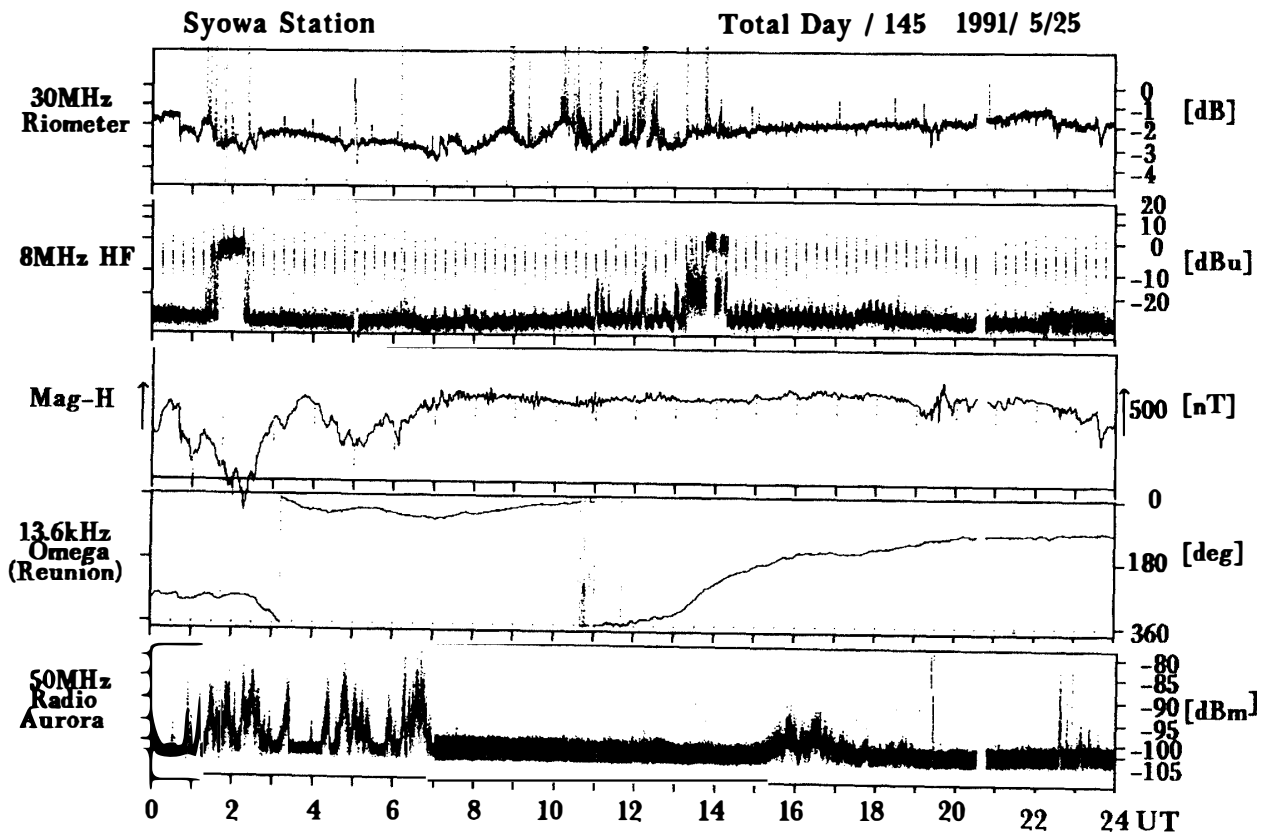
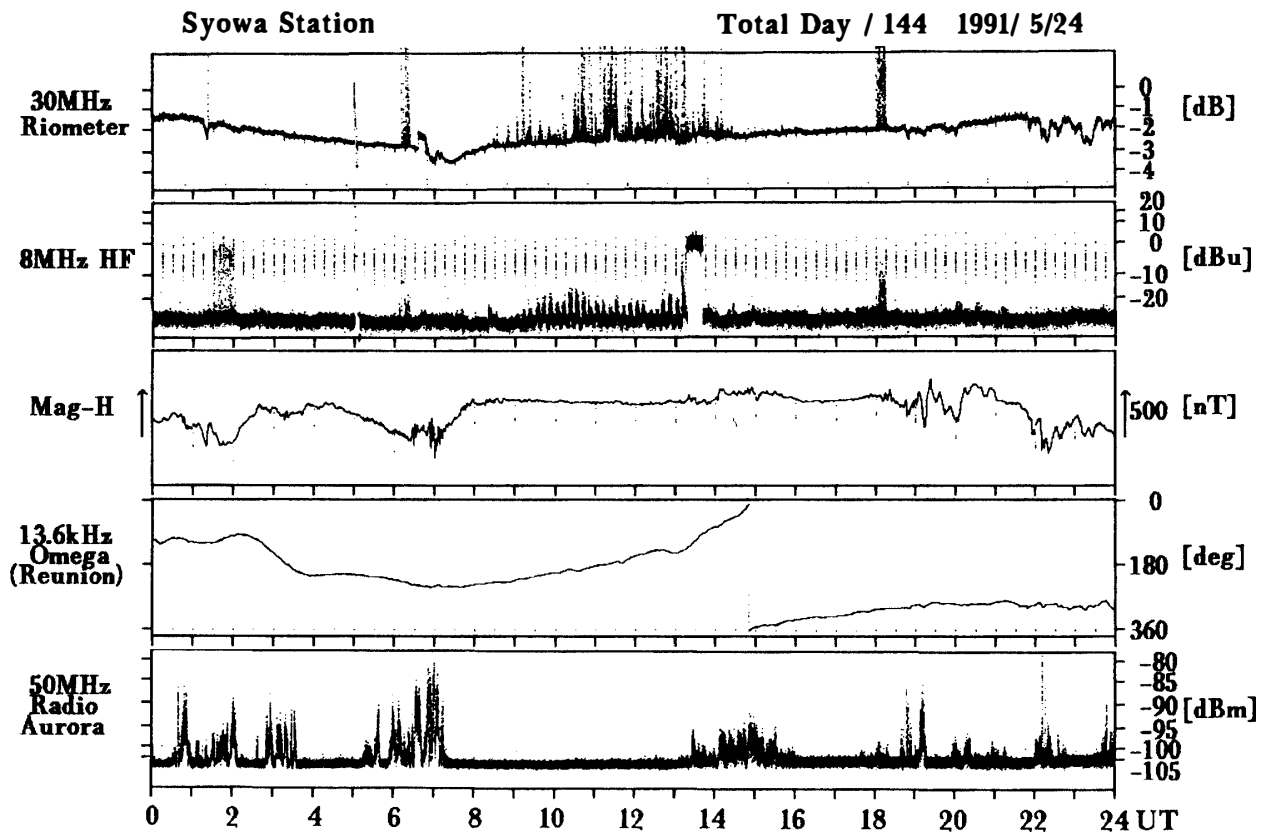
Total Day / 142 1991/ 5/22



Syowa Station

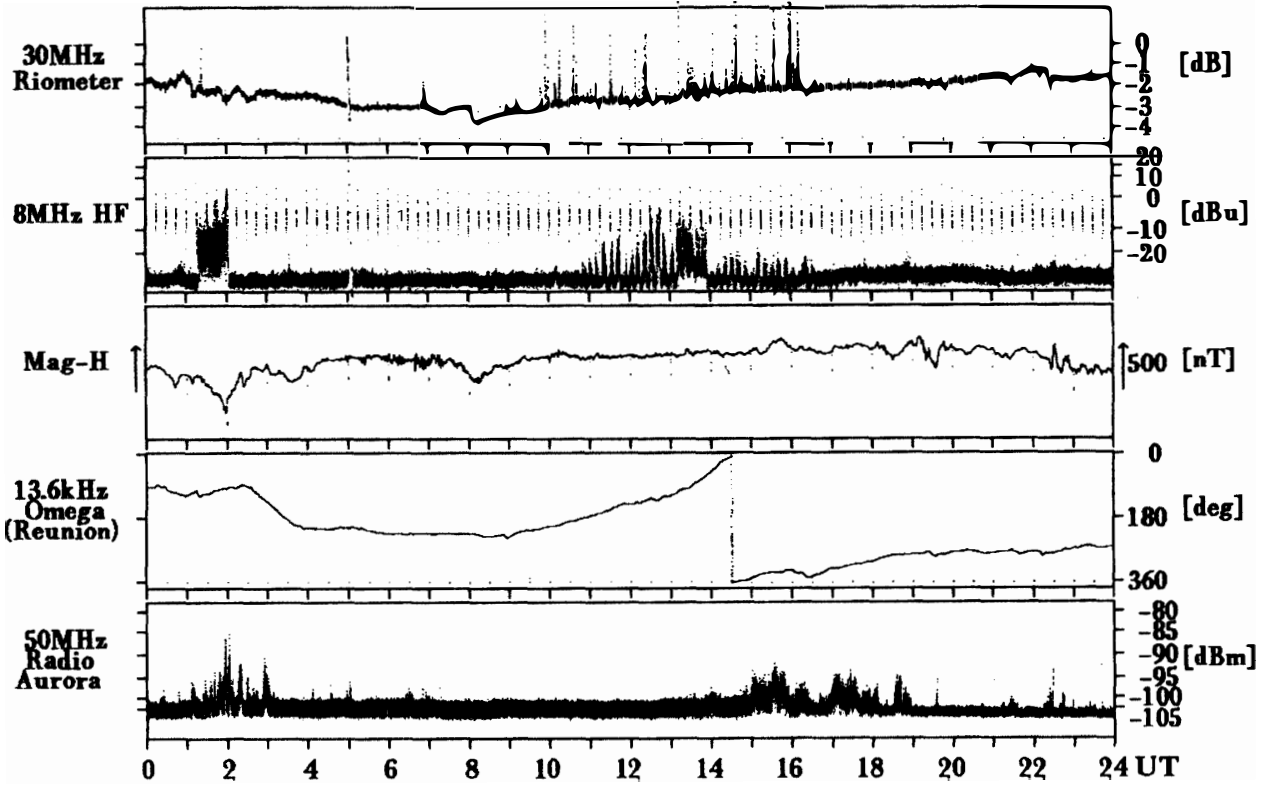
Total Day / 143 1991/ 5/23





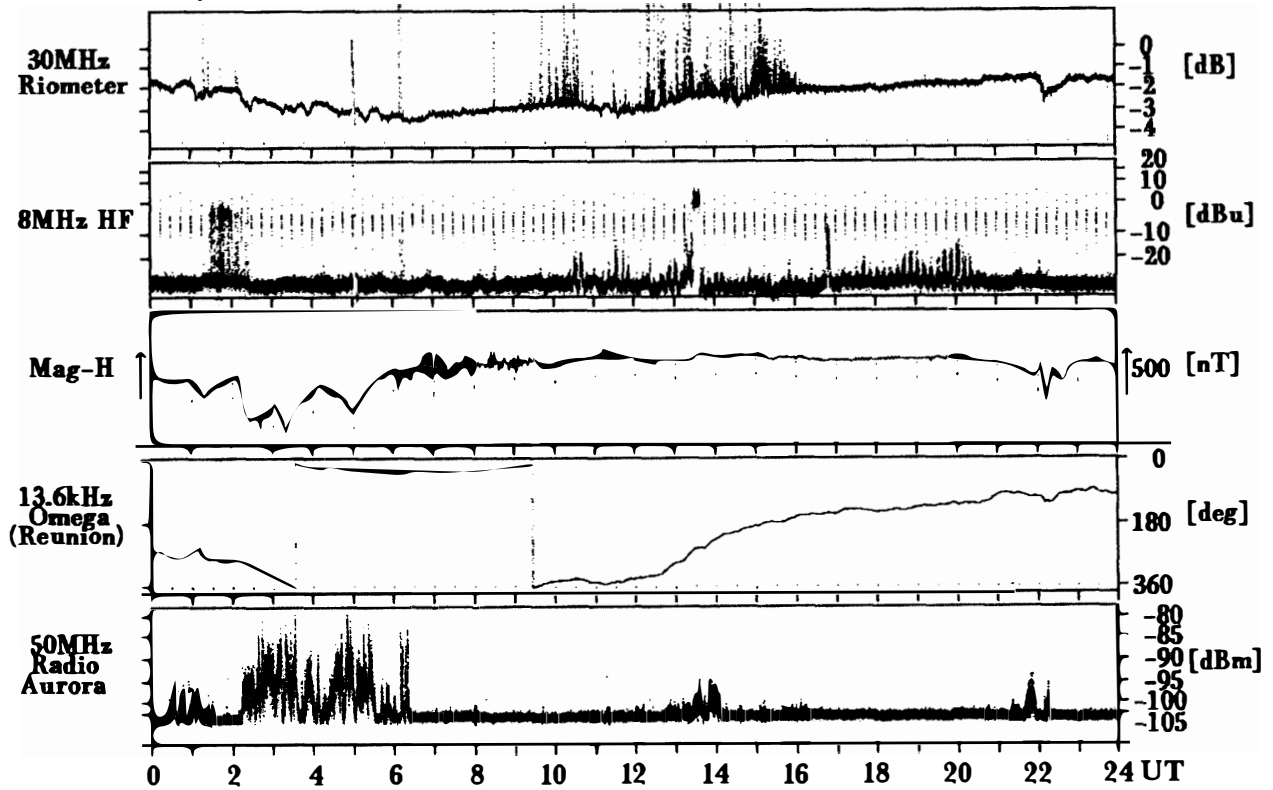
Syowa Station

Total Day / 146 1991/ 5/26



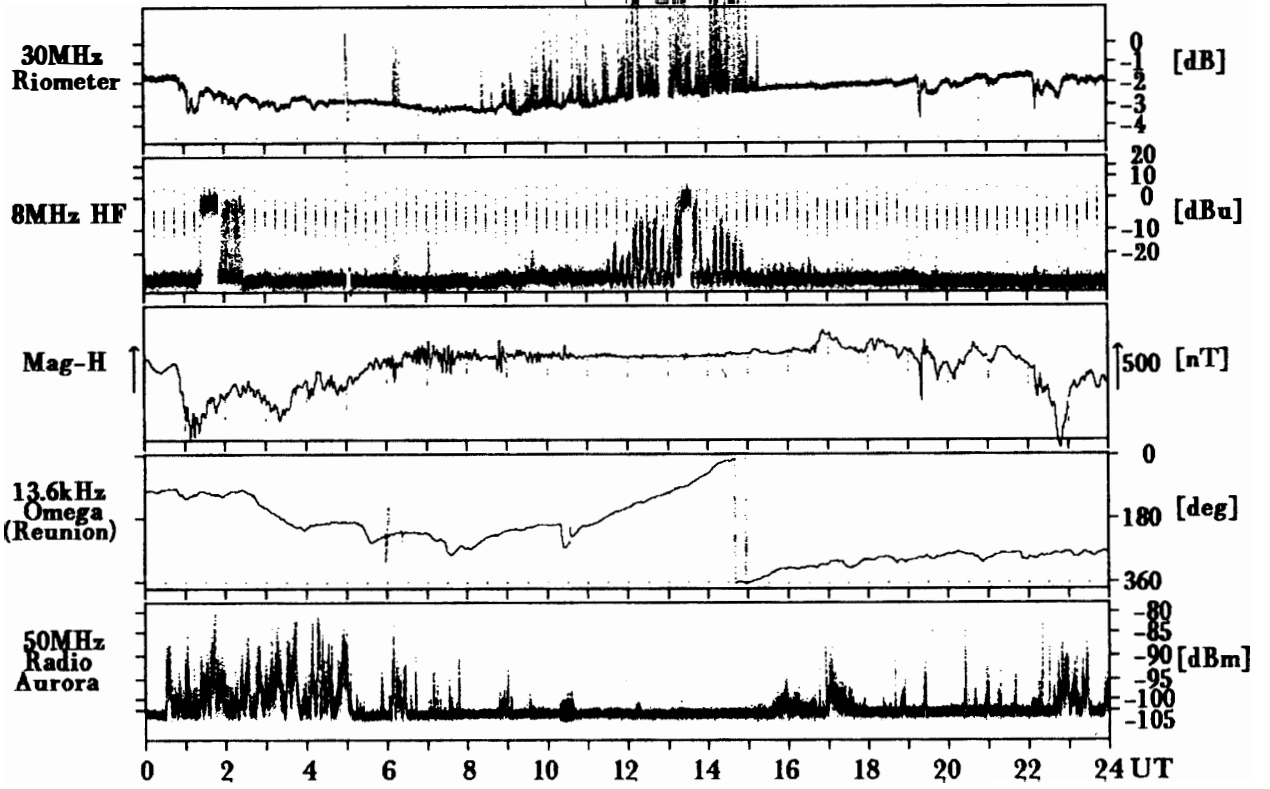
Syowa Station

Total Day / 147 1991/ 5/27



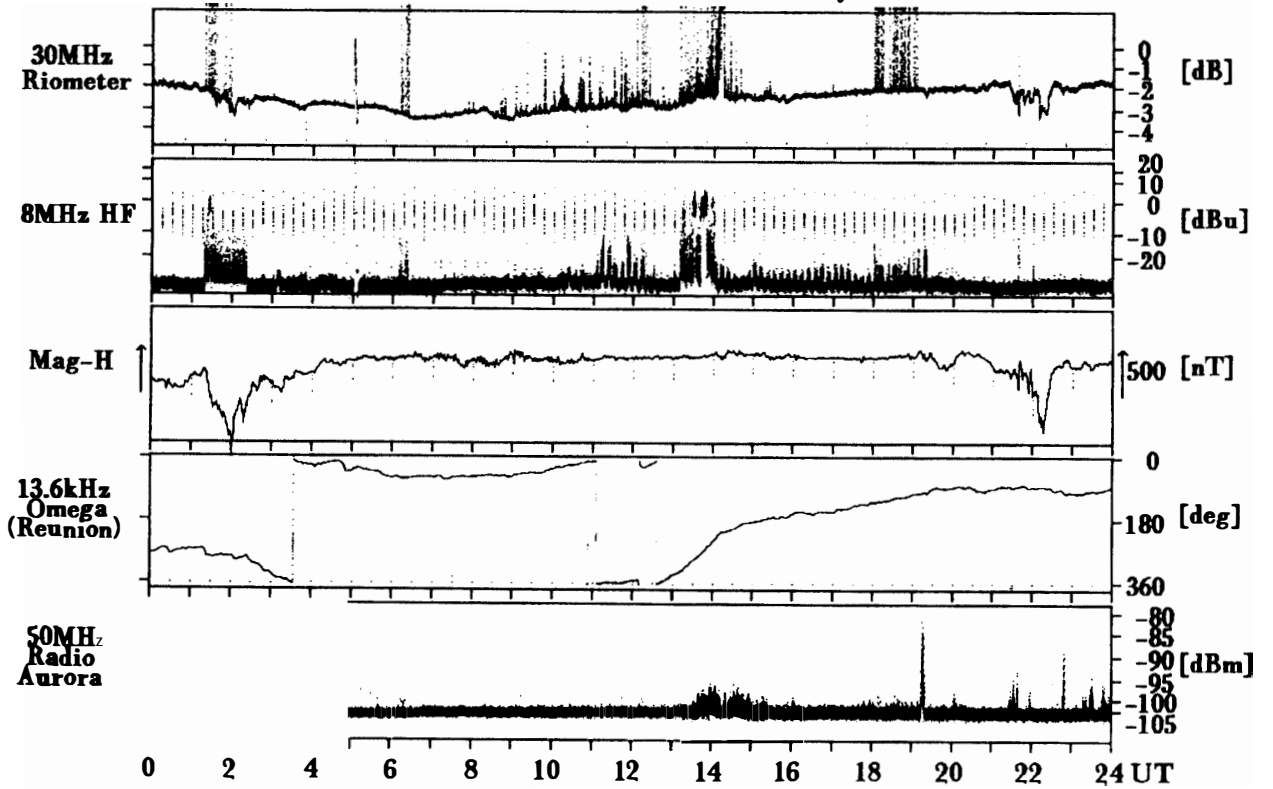
Syowa Station

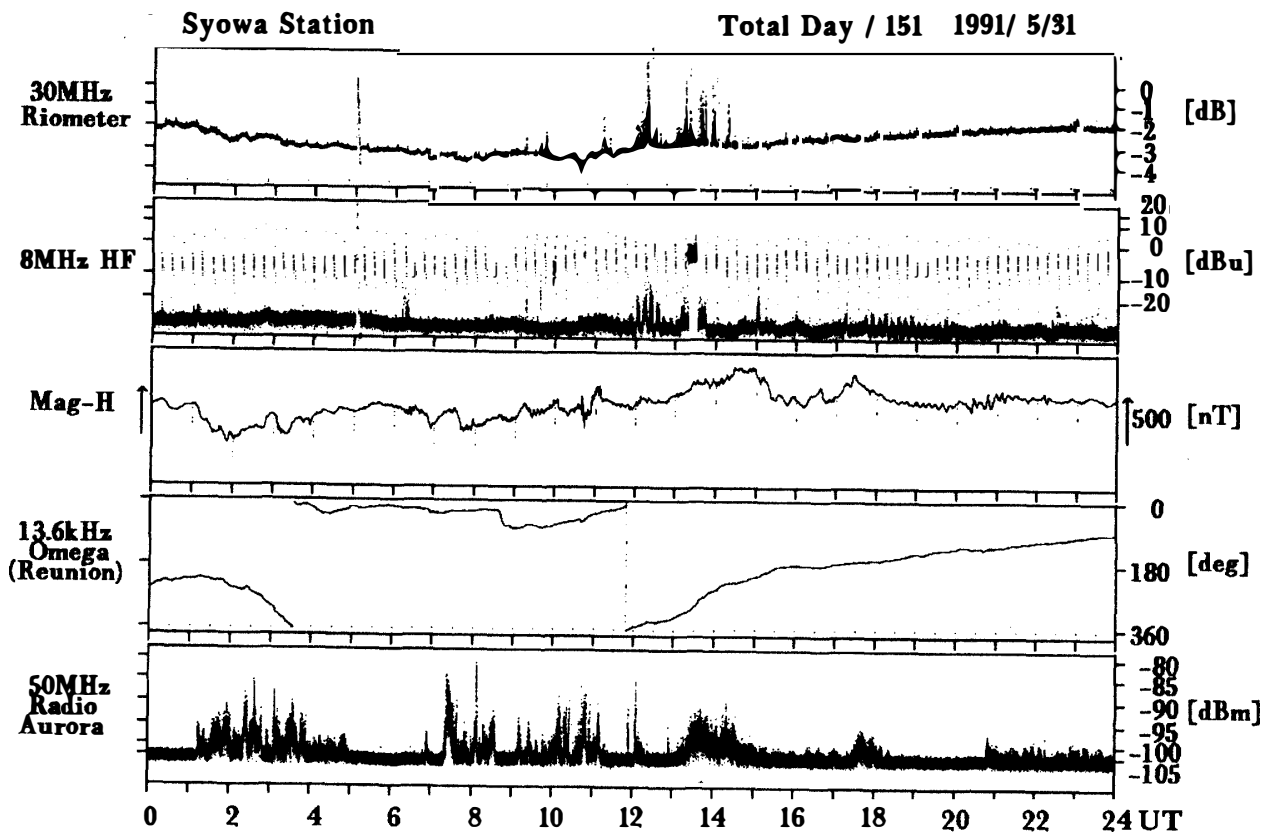
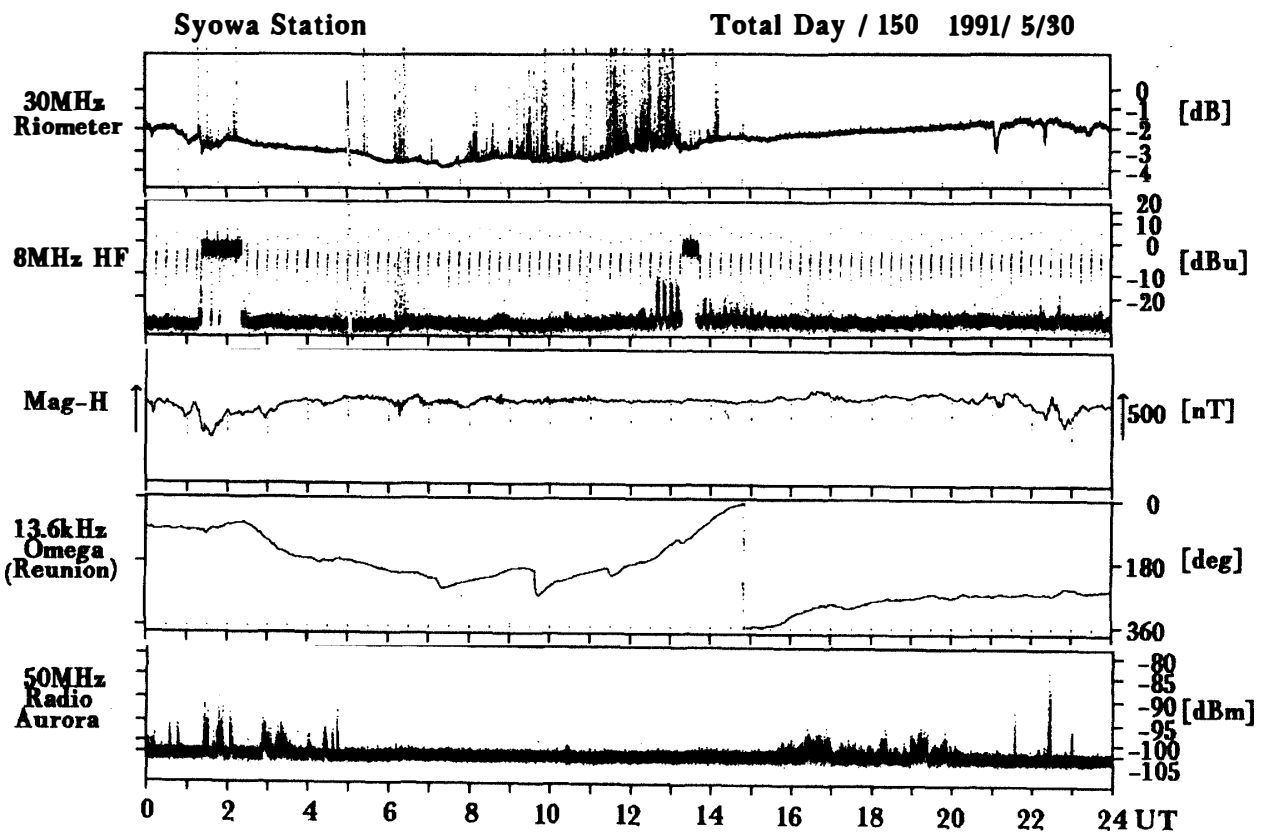
Total Day / 148 1991/ 5/28

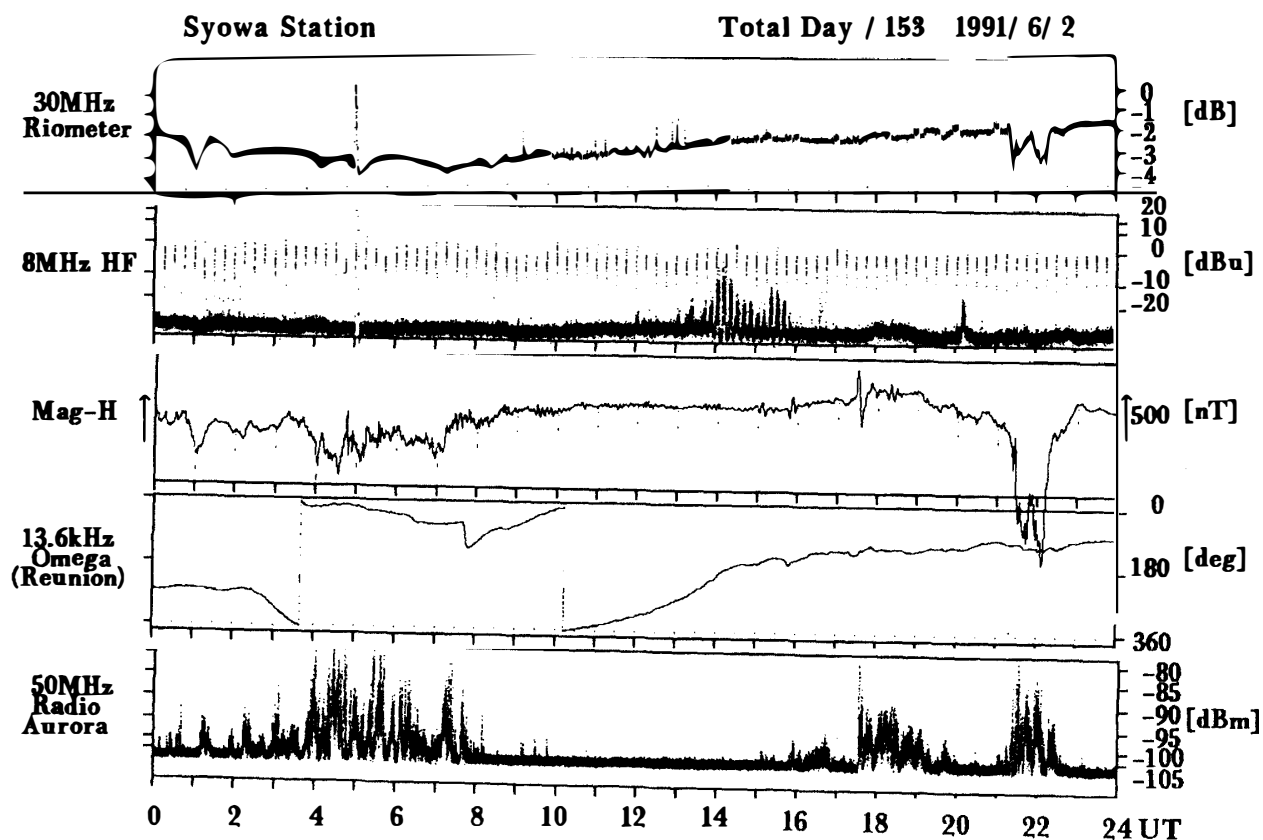
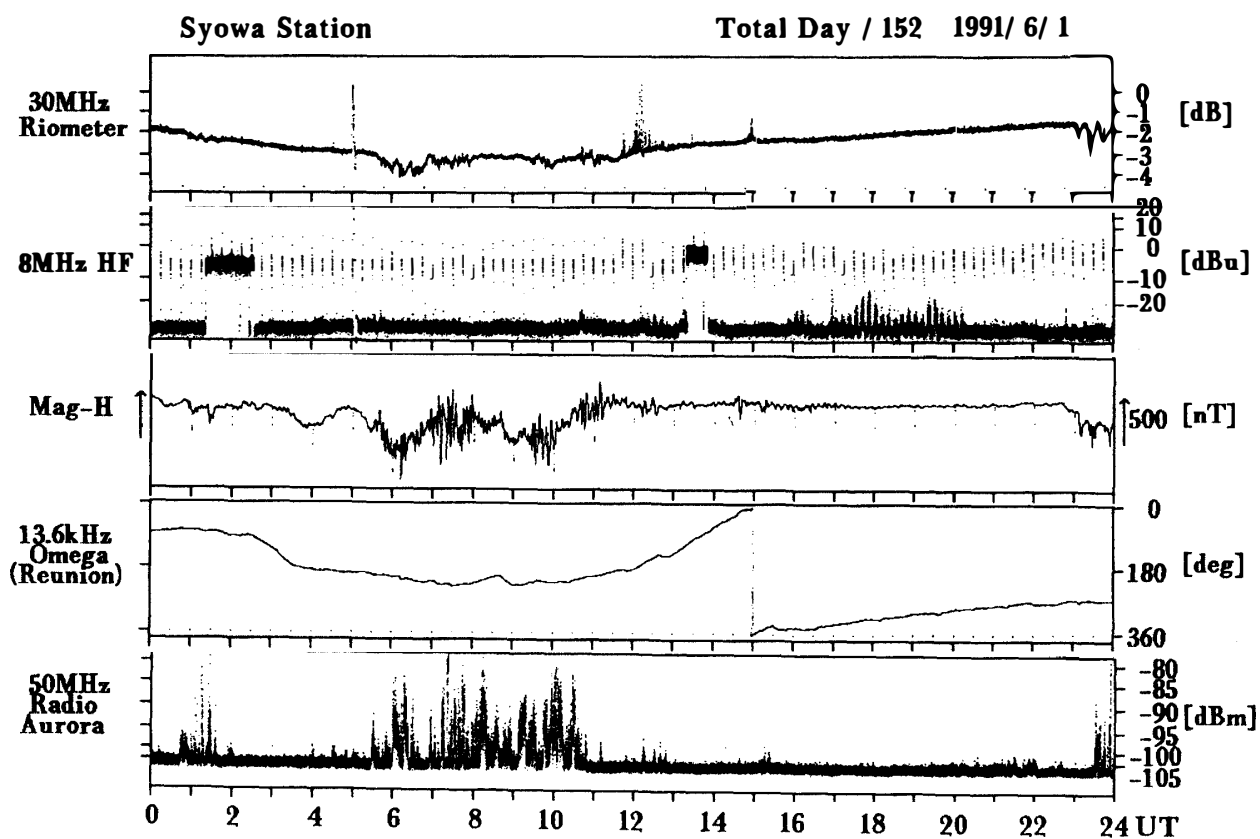


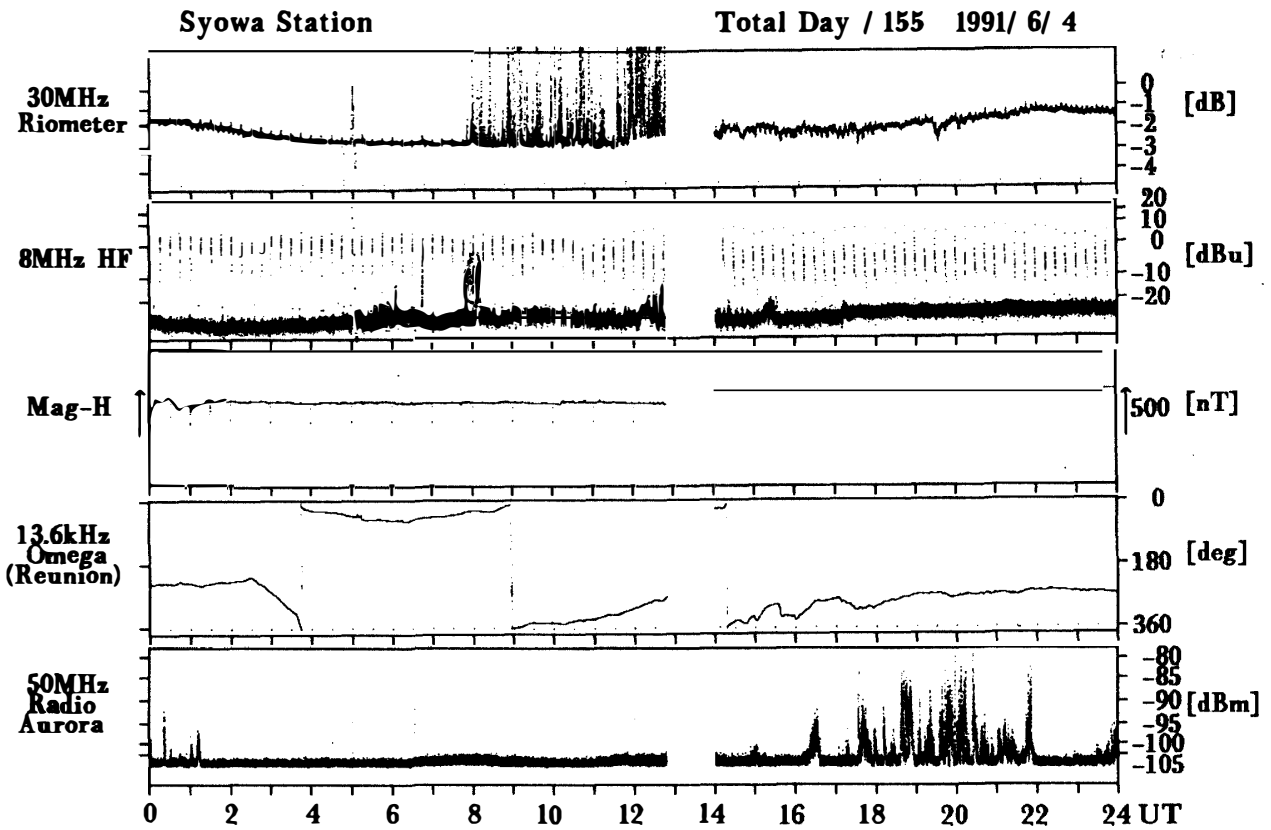
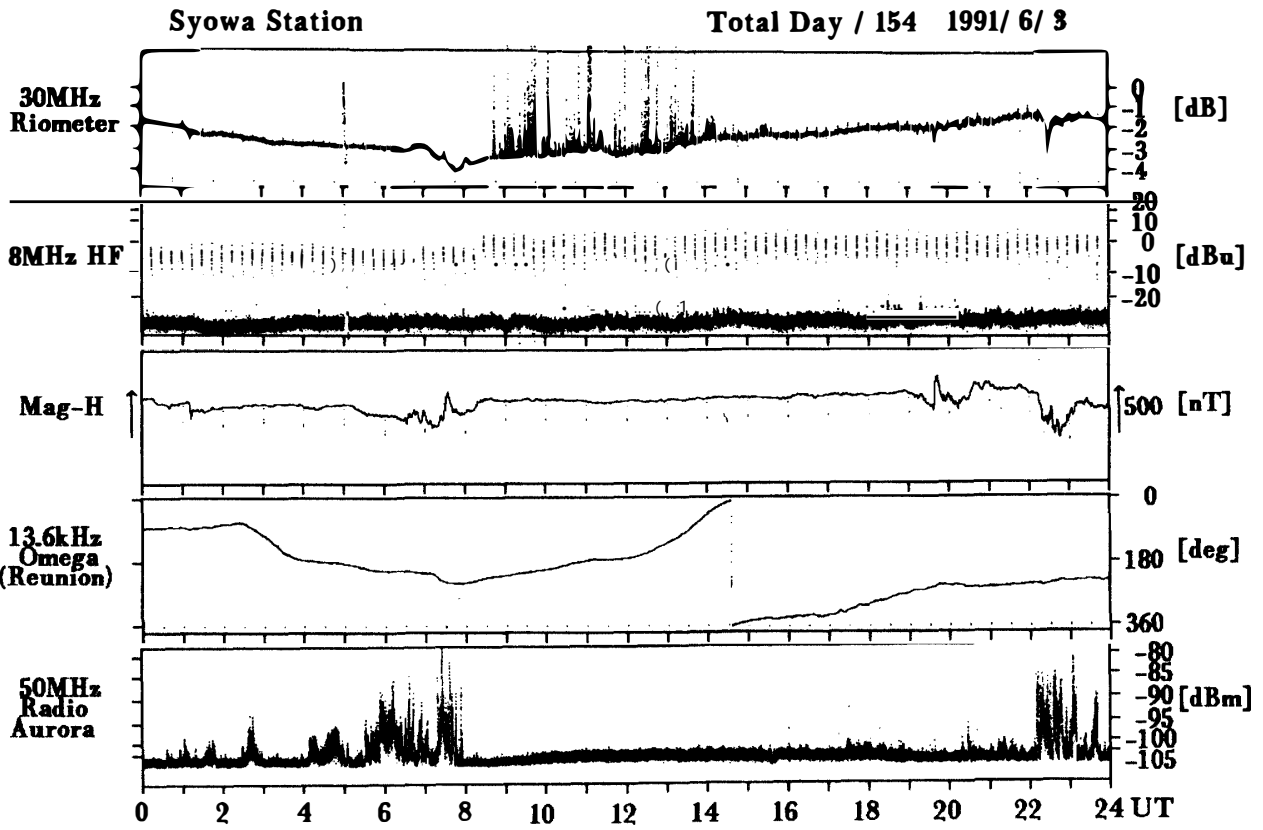
Syowa Station

Total Day / 149 1991/ 5/29



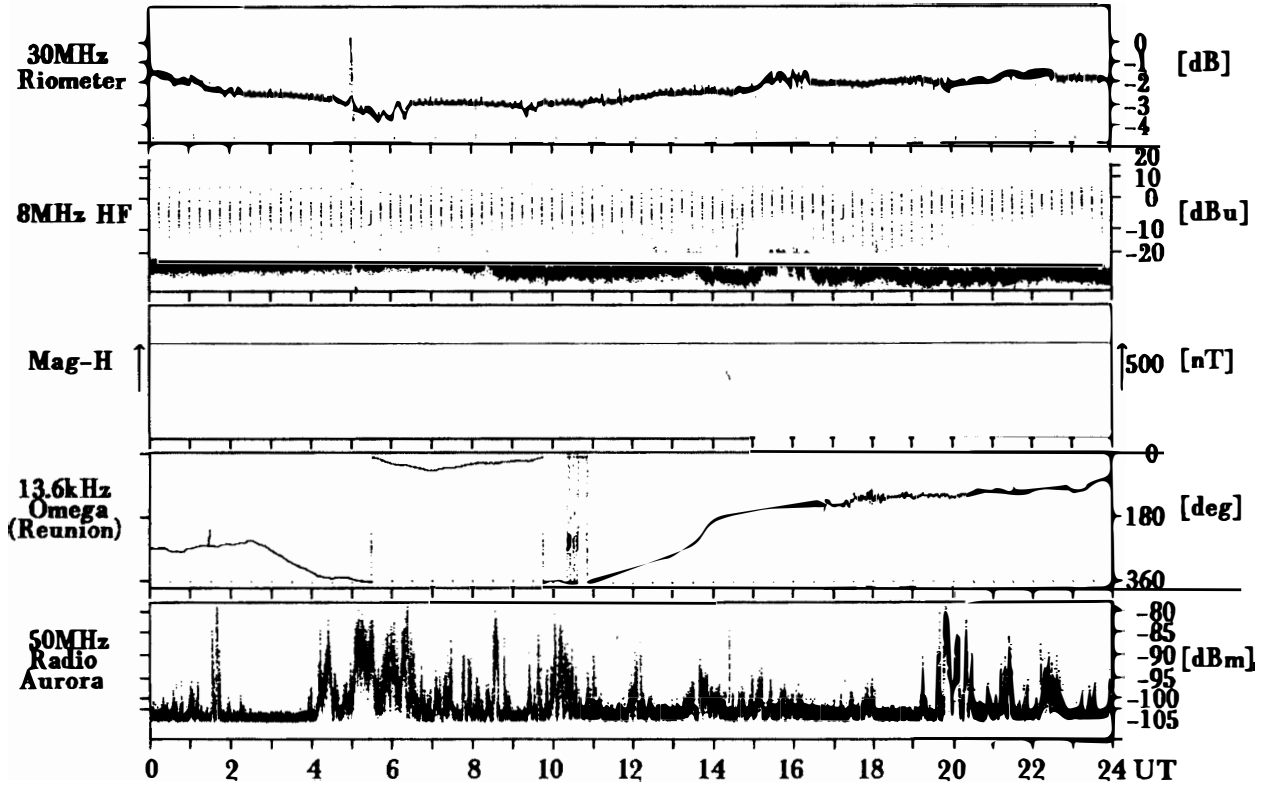






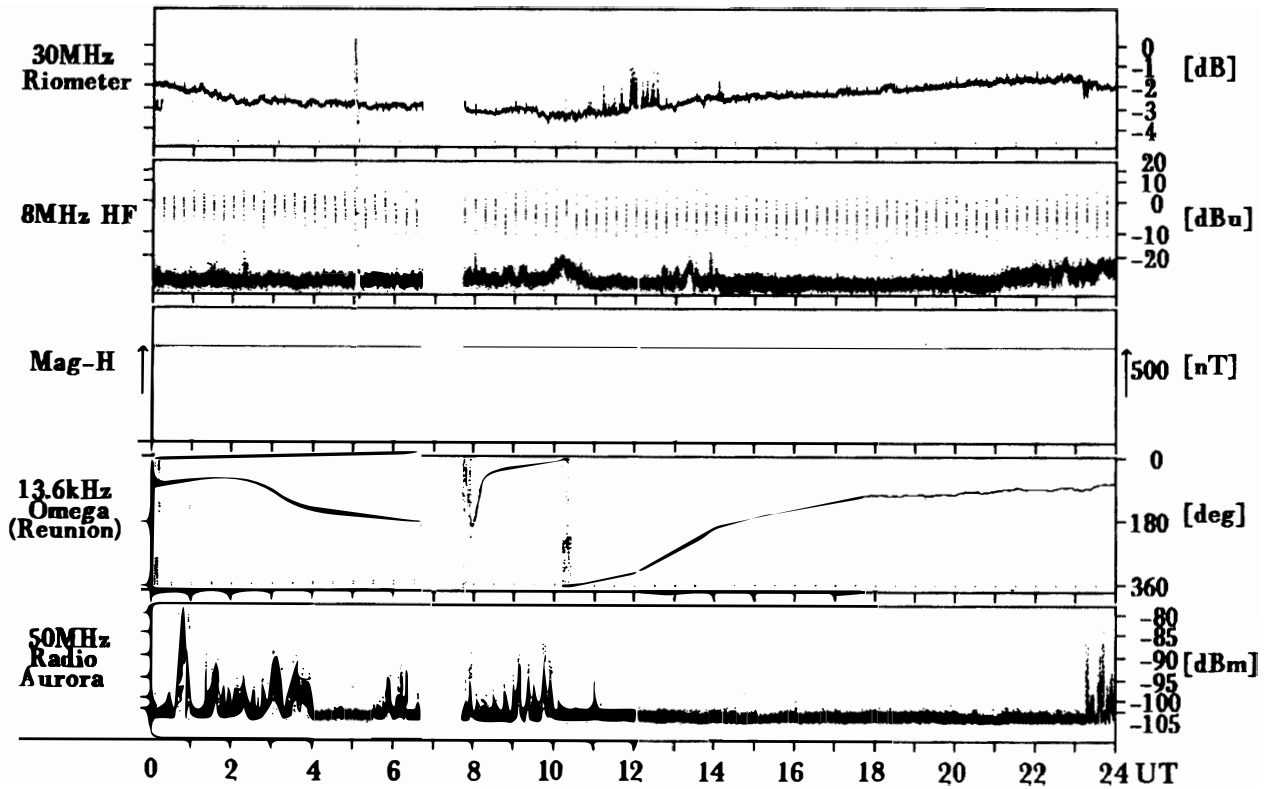
Syowa Station

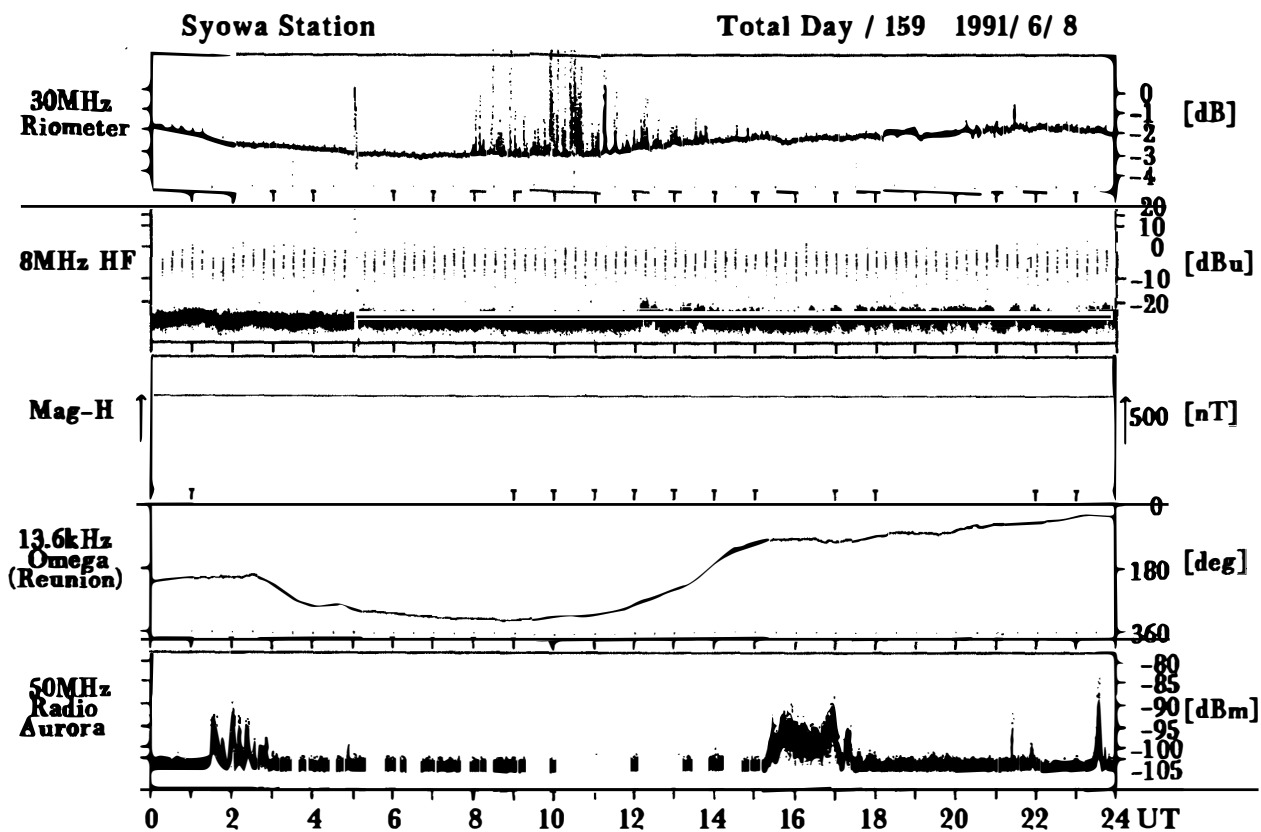
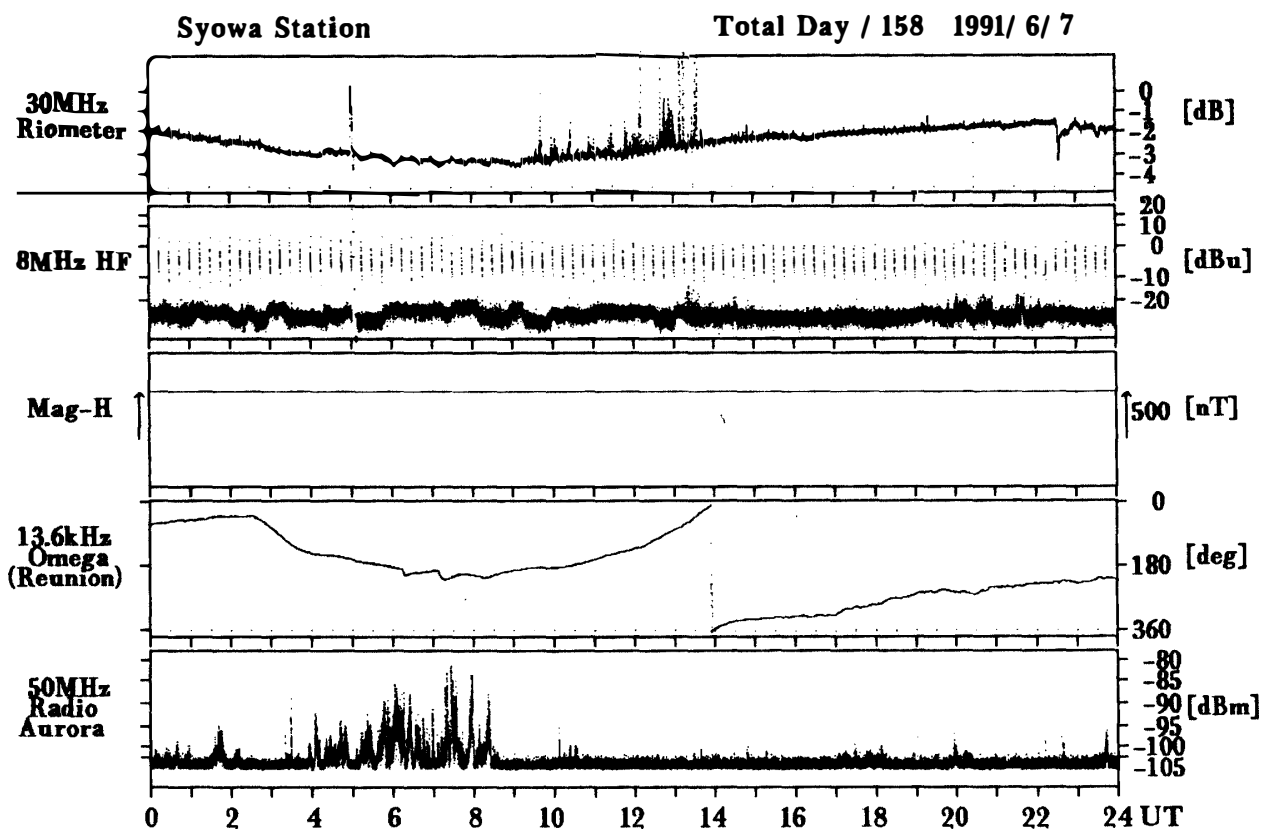
Total Day / 156 1991/ 6/ 5



Syowa Station

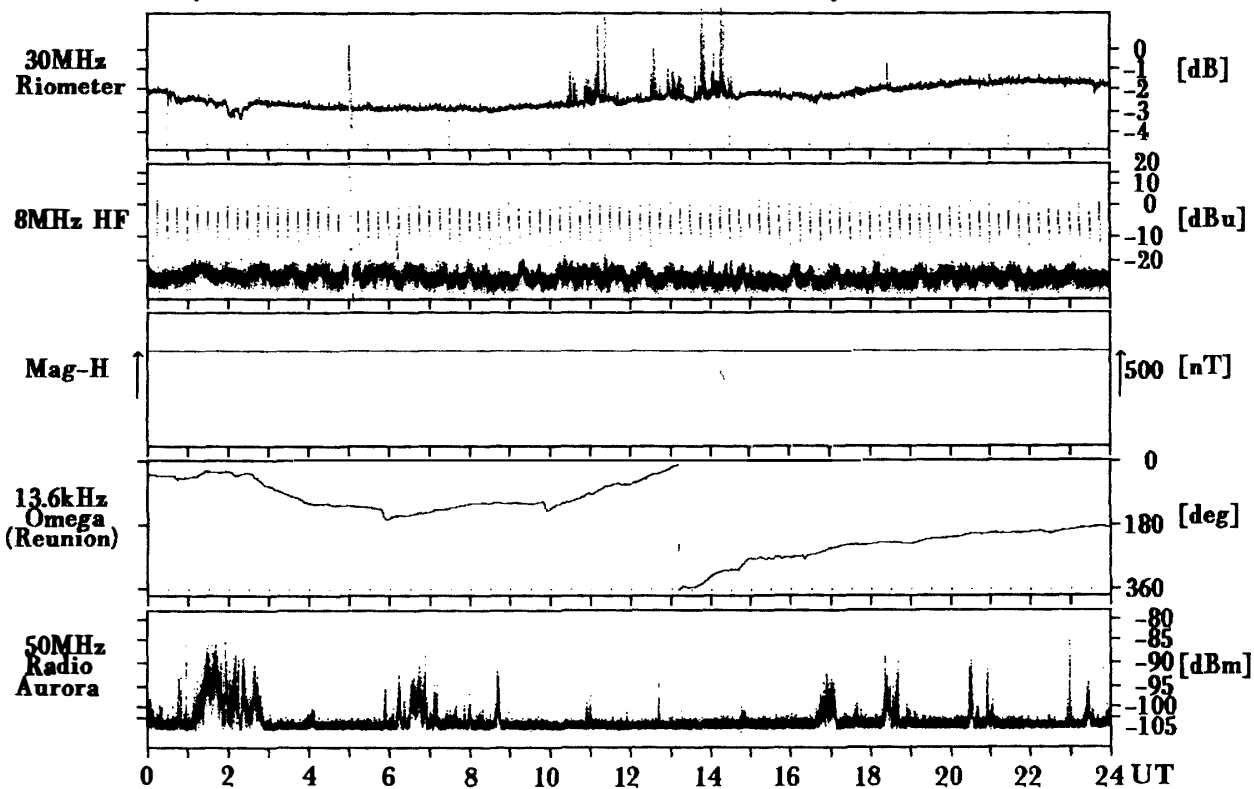
Total Day / 157 1991/ 6/ 6





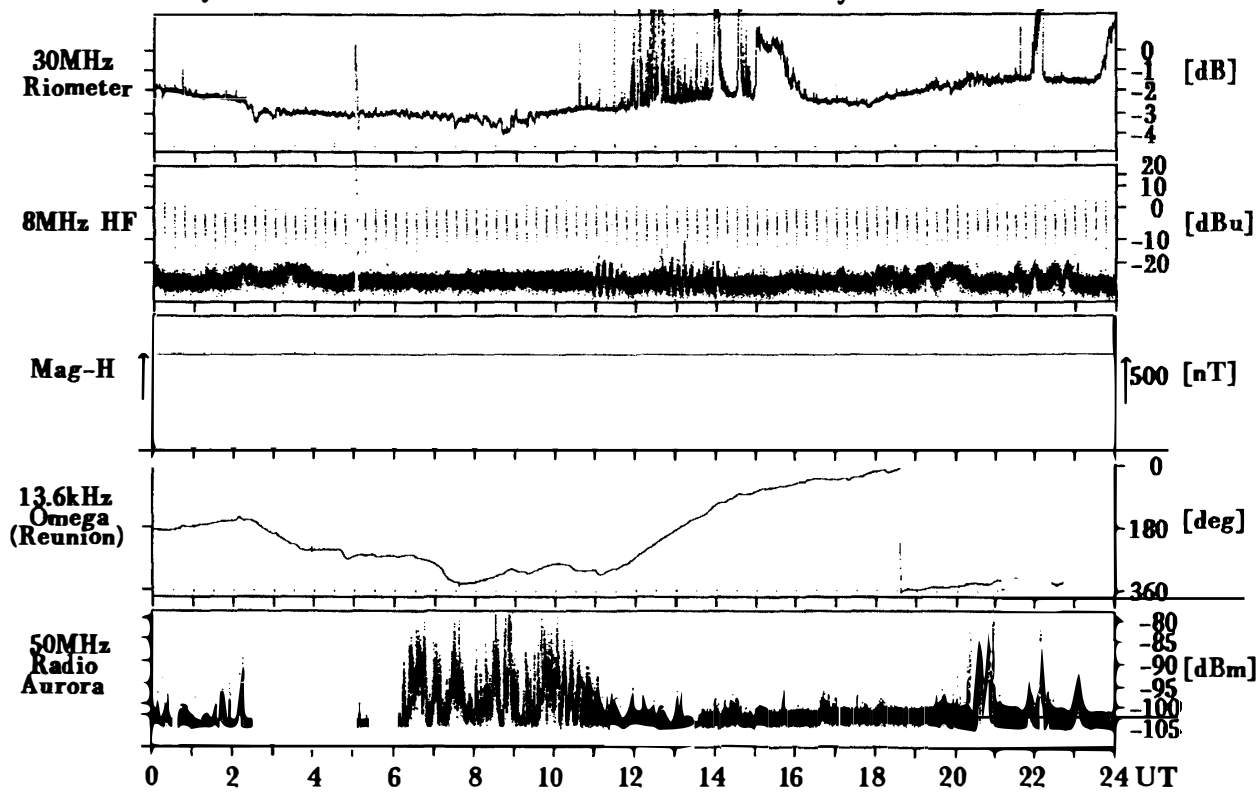
Syowa Station

Total Day / 160 1991/ 6/ 9



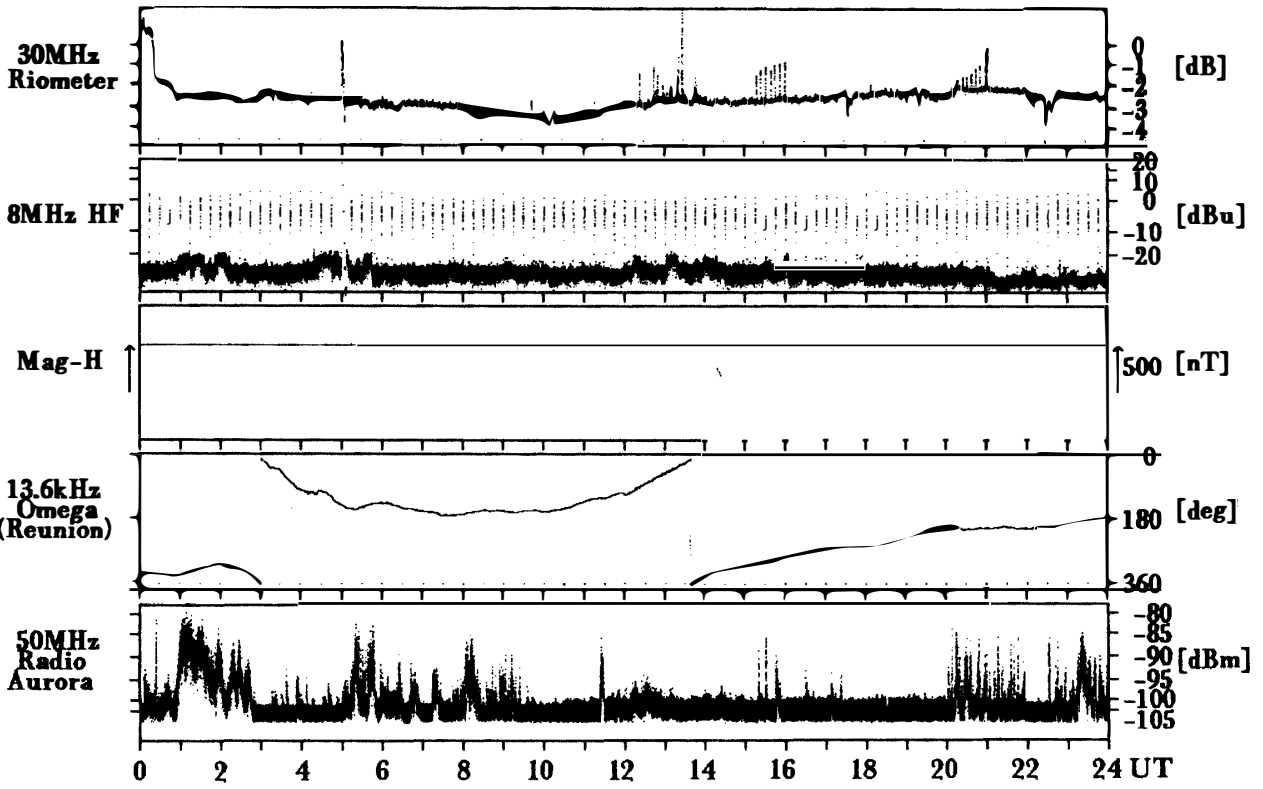
Syowa Station

Total Day / 161 1991/ 6/10



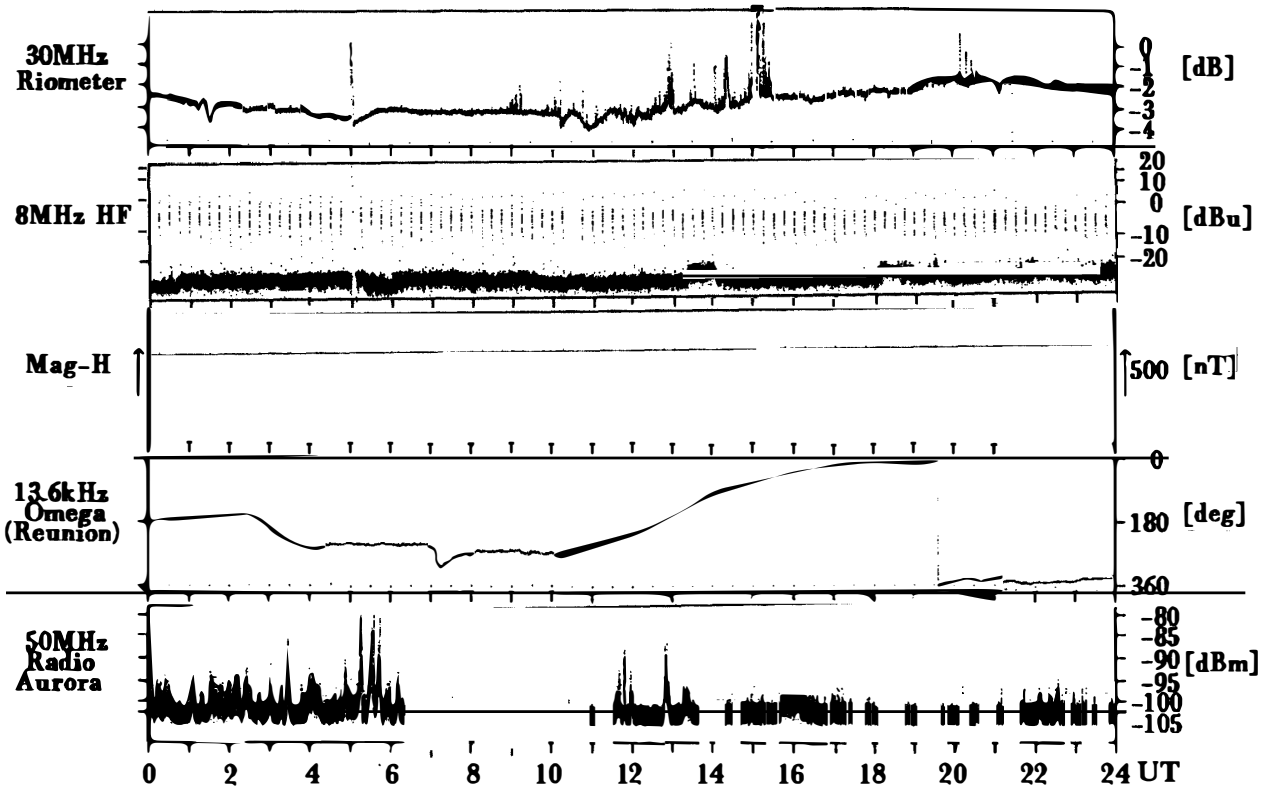
Syowa Station

Total Day / 162 1991/ 6/11



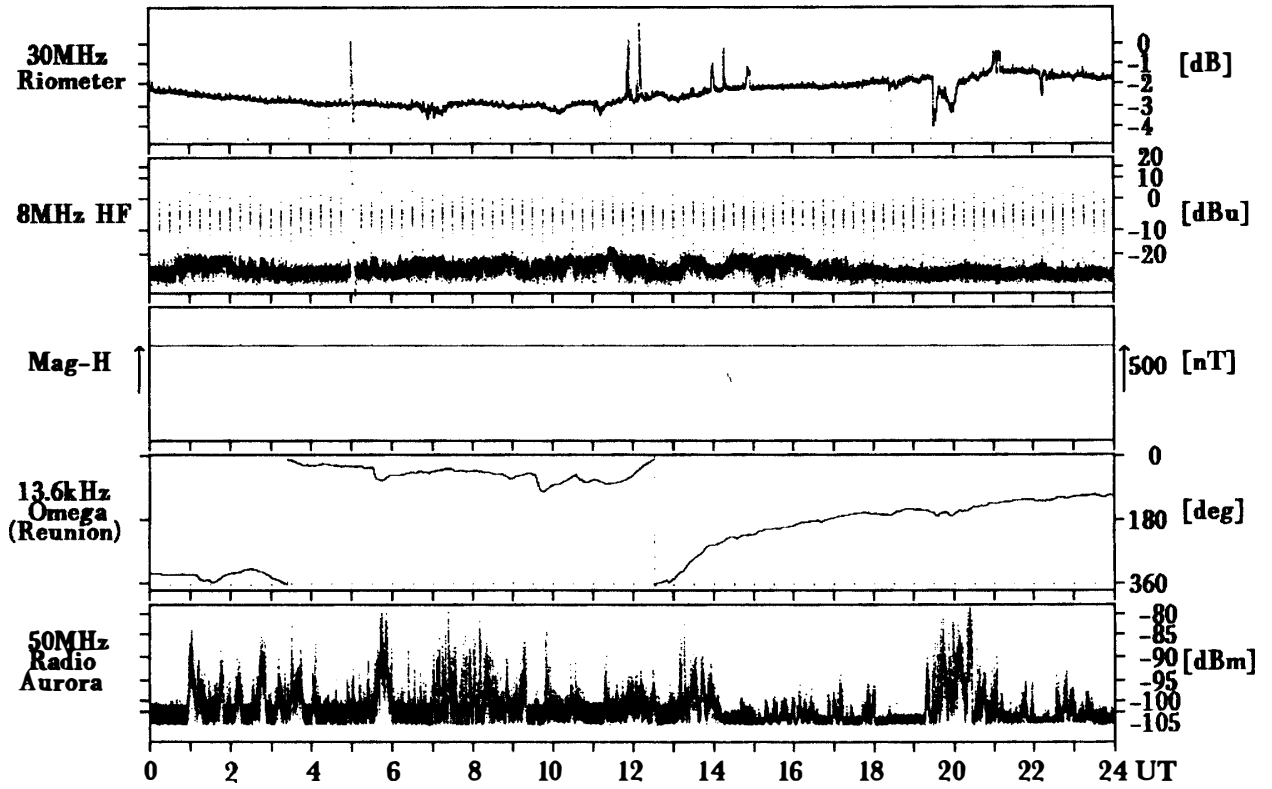
Syowa Station

Total Day / 163 1991/ 6/12



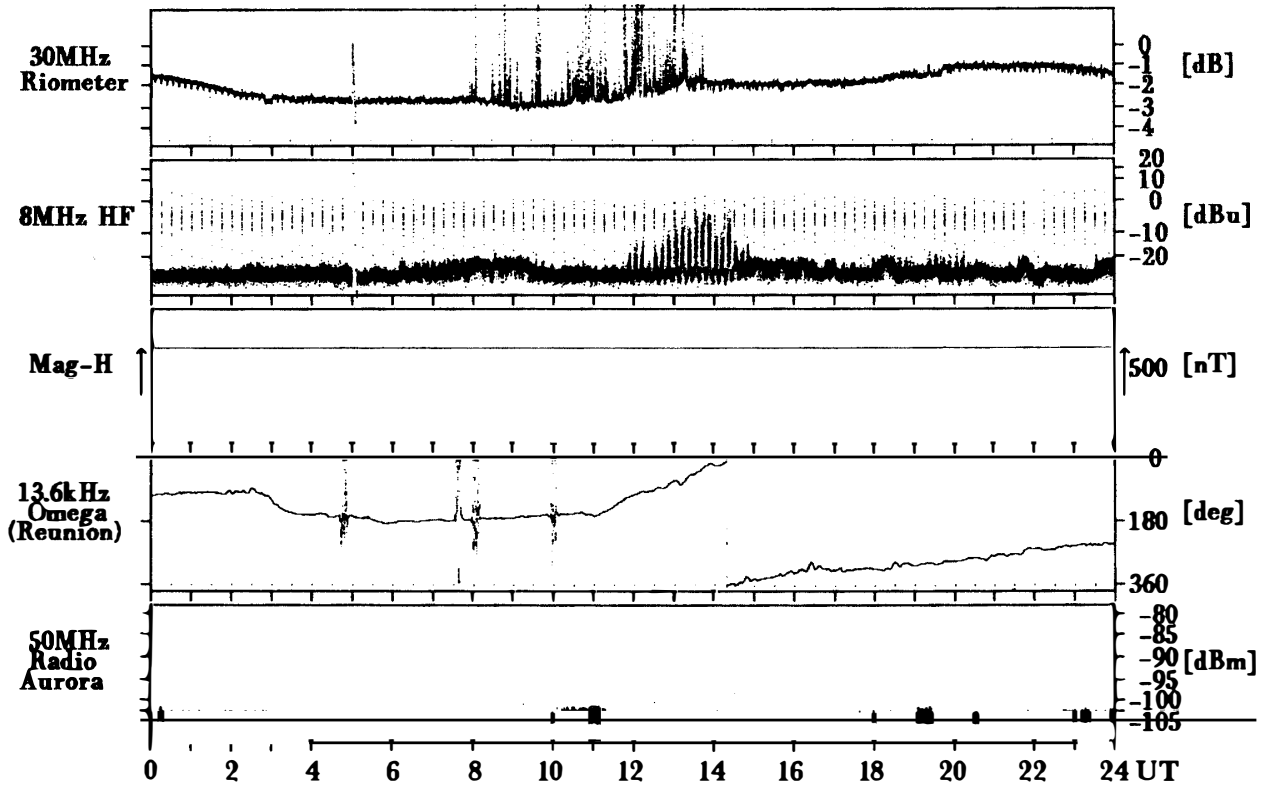
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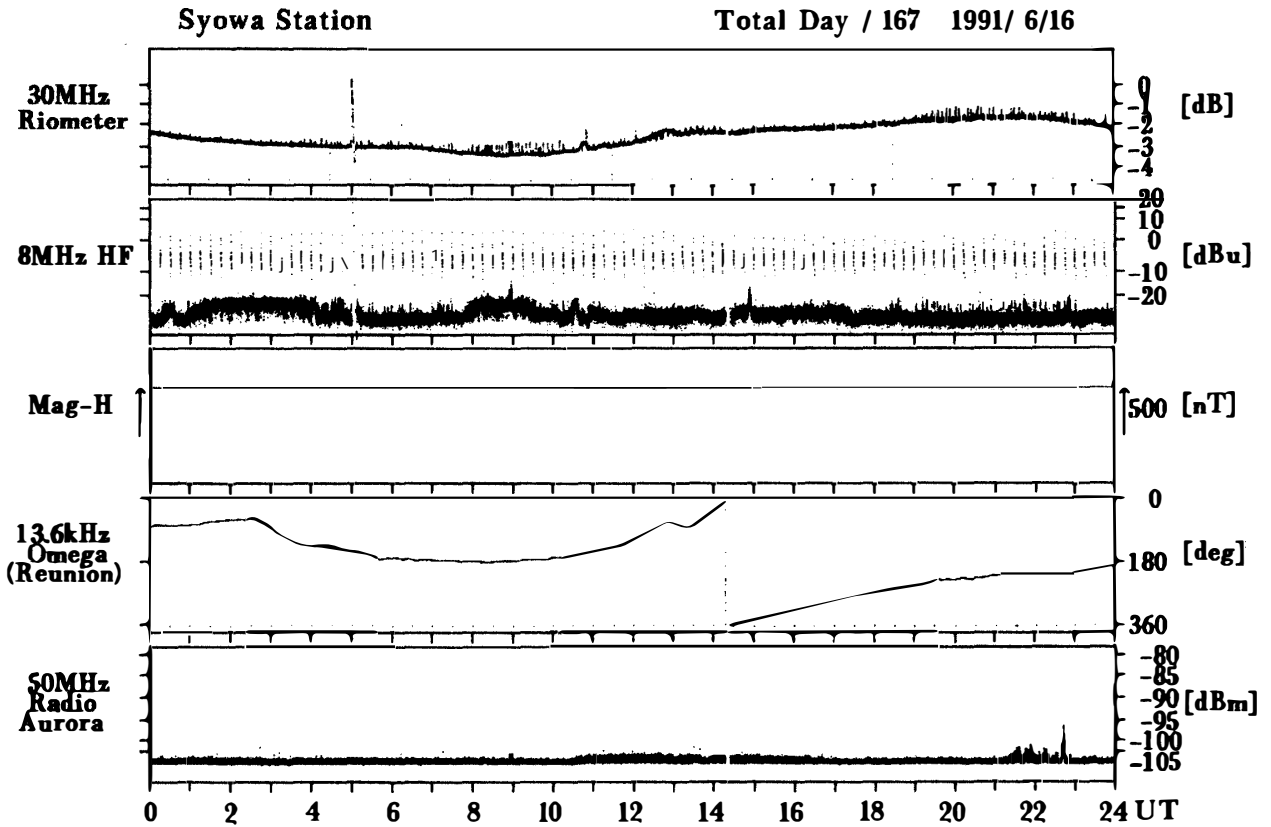
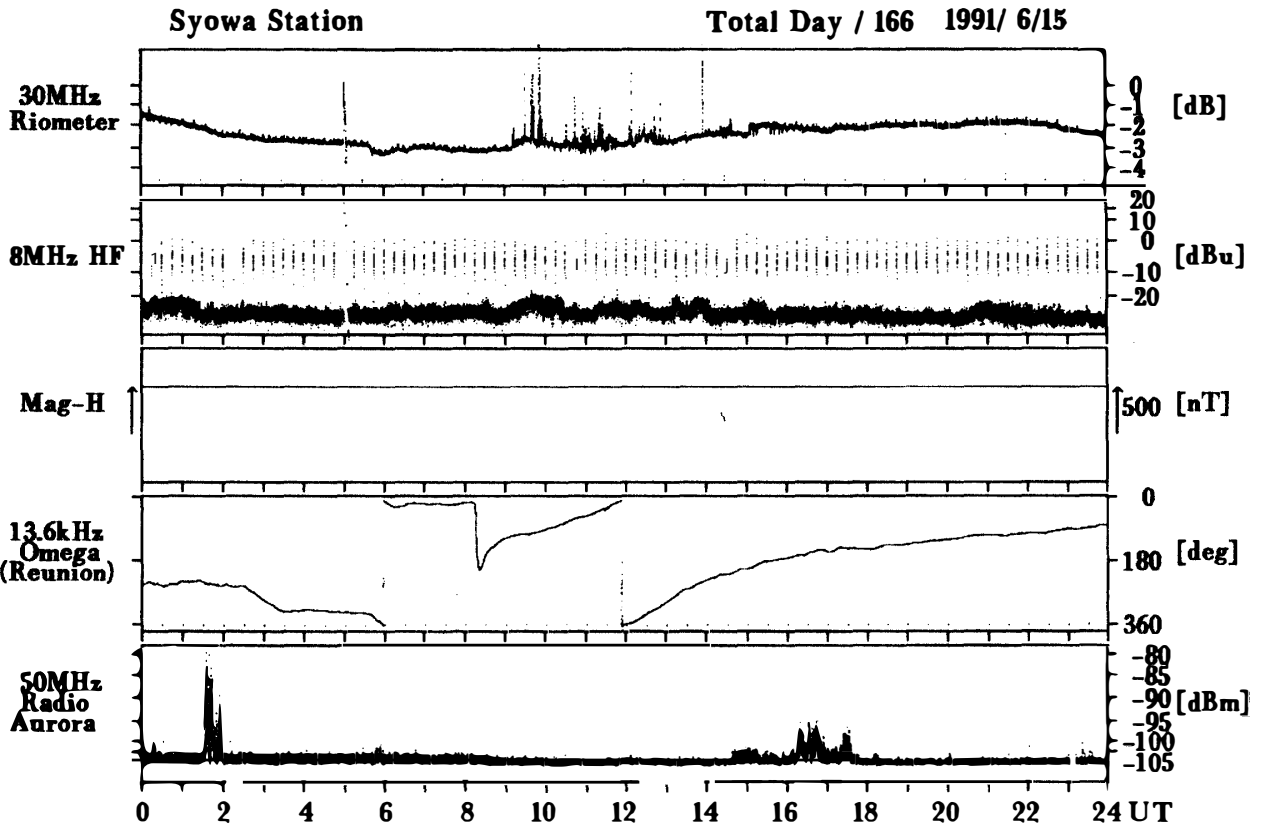
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Syowa Station

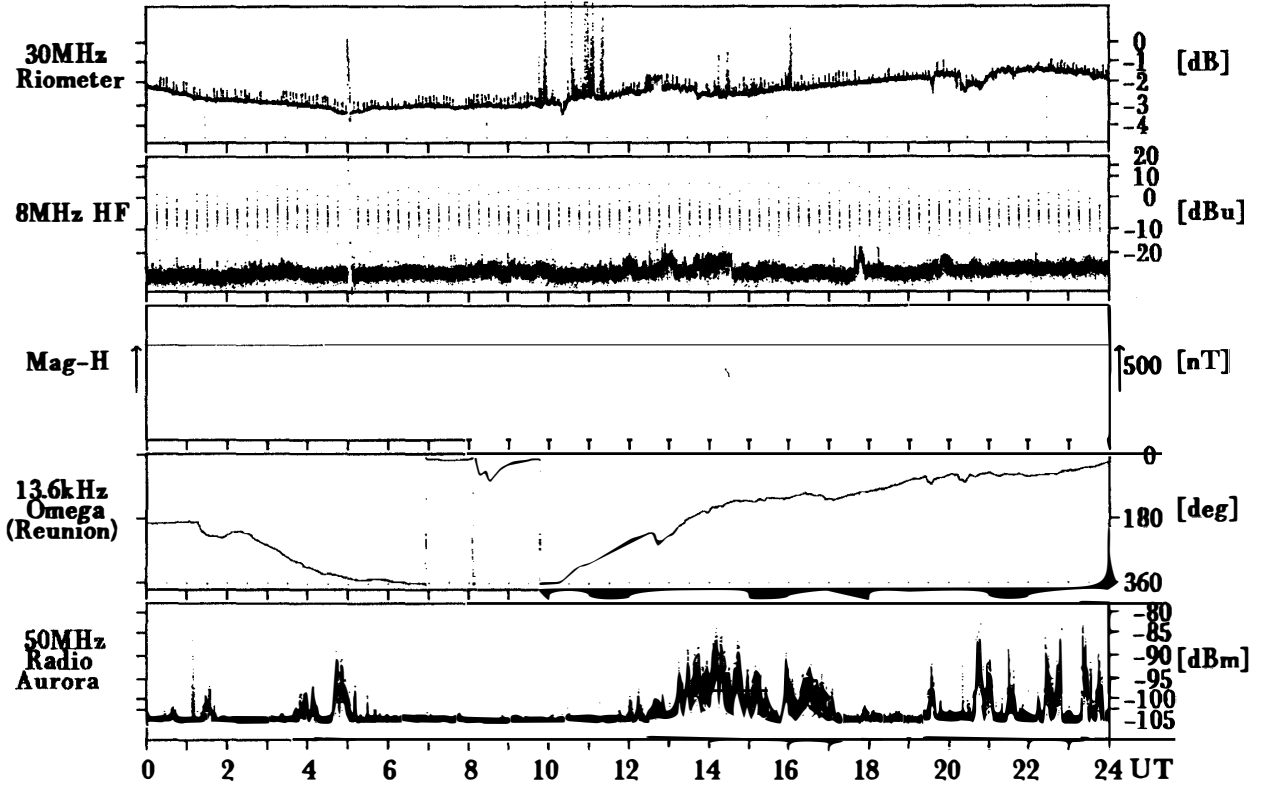
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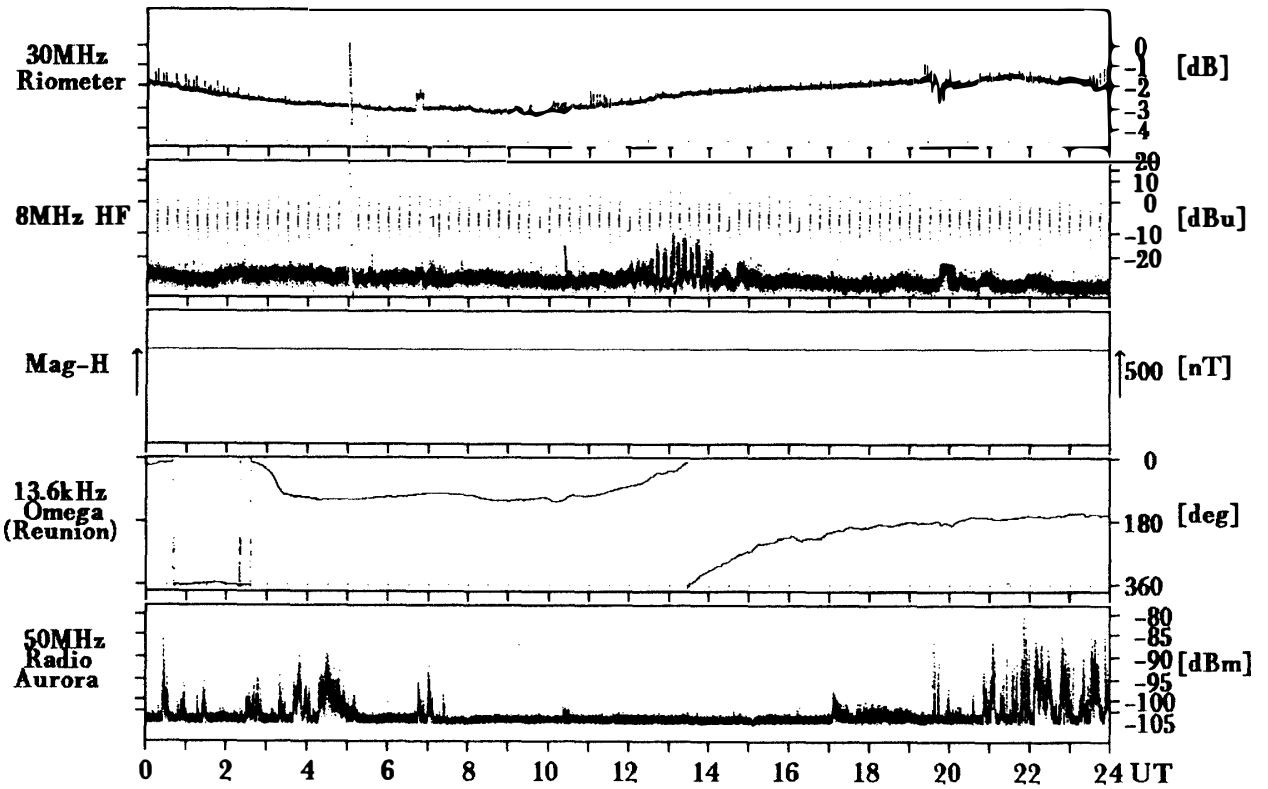
Syowa Station

Total Day / 168 1991/ 6/17



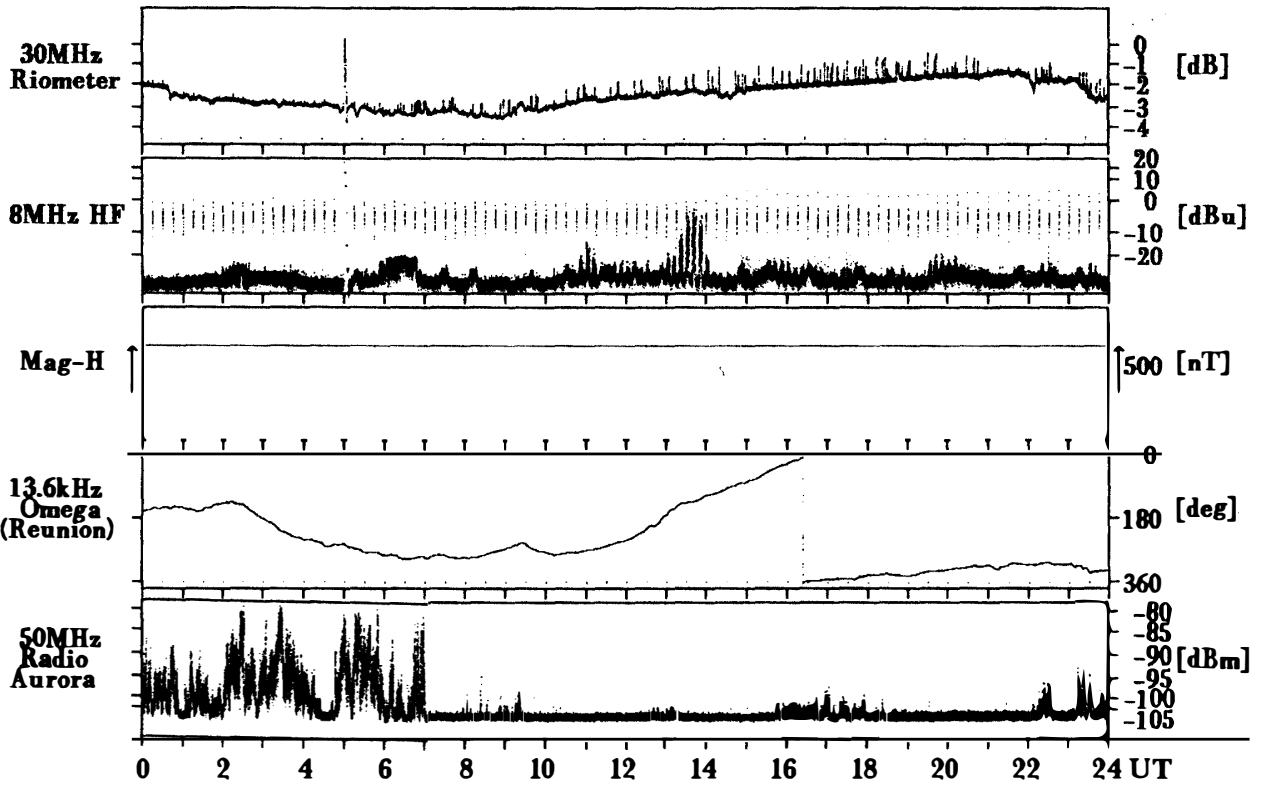
Syowa Station

Total Day / 169 1991/ 6/18



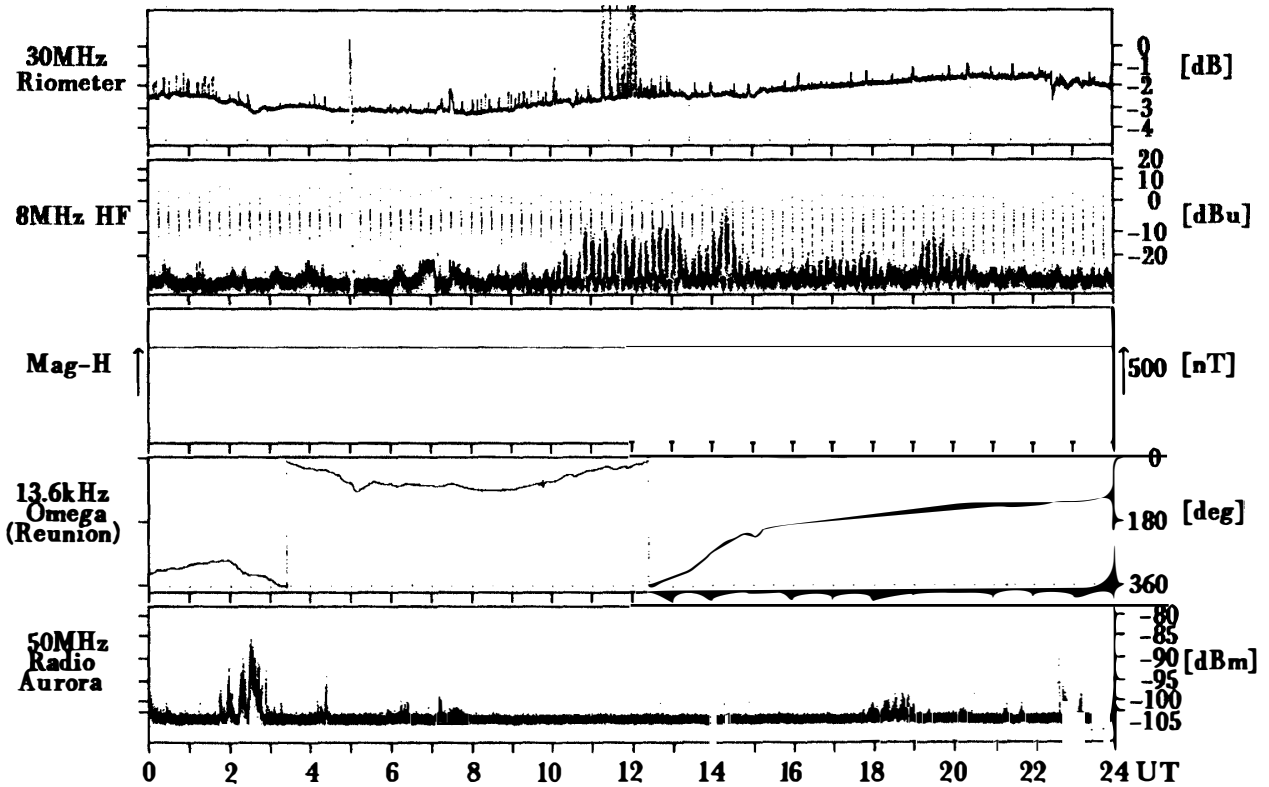
Syowa Station

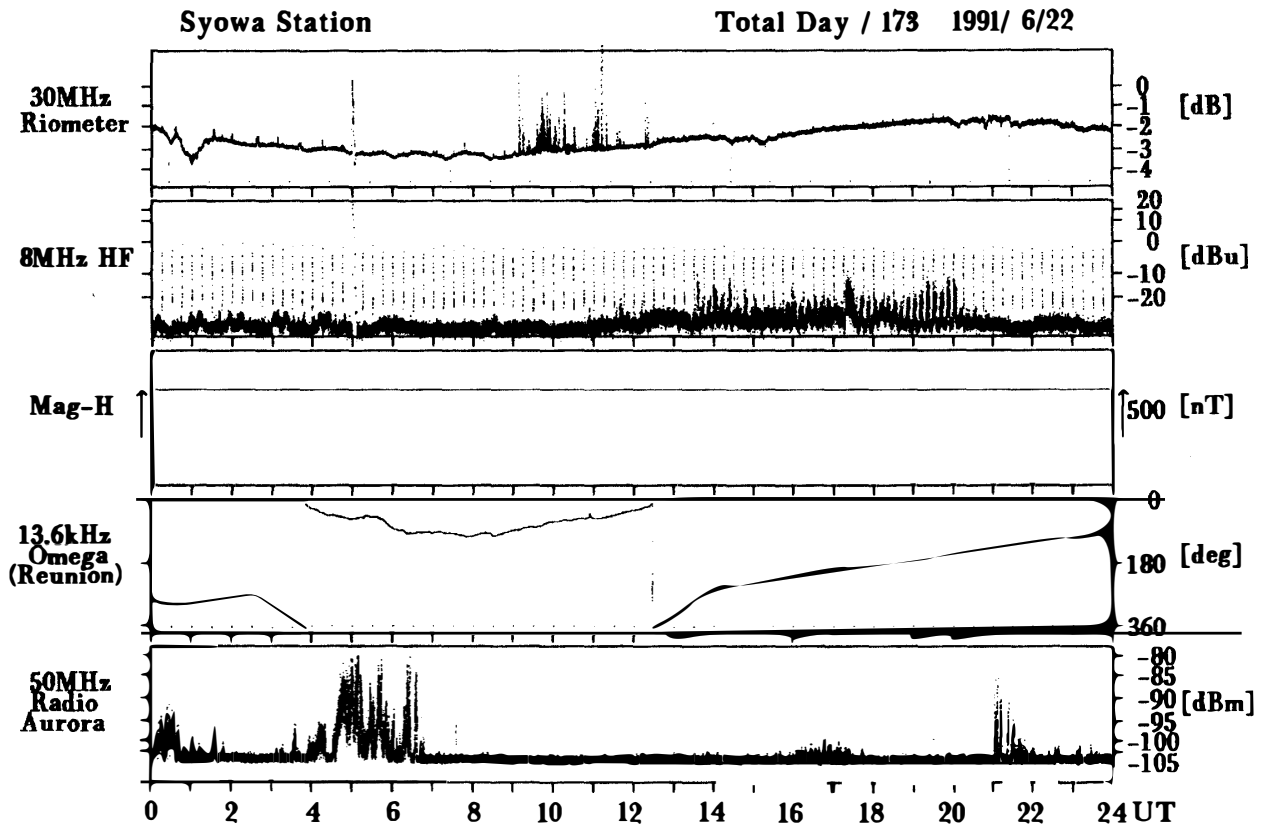
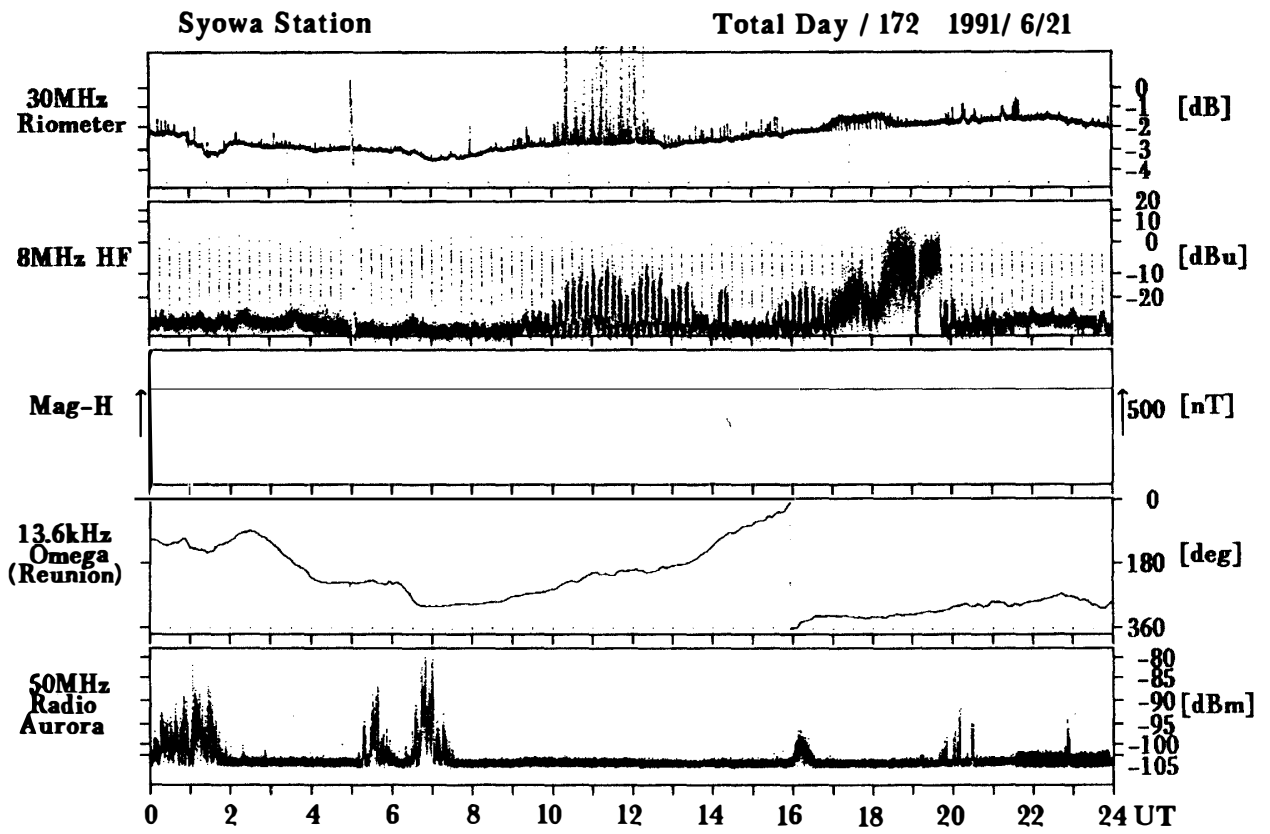
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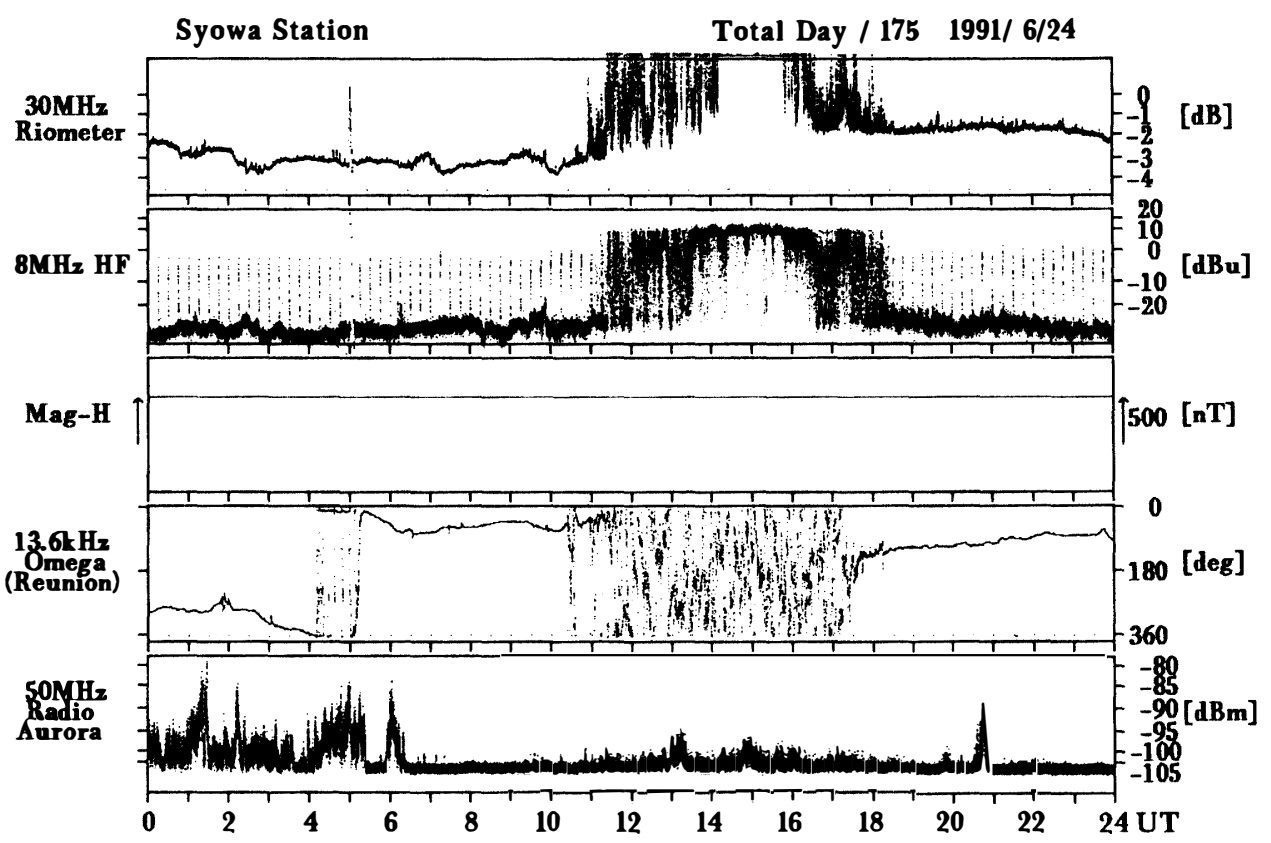
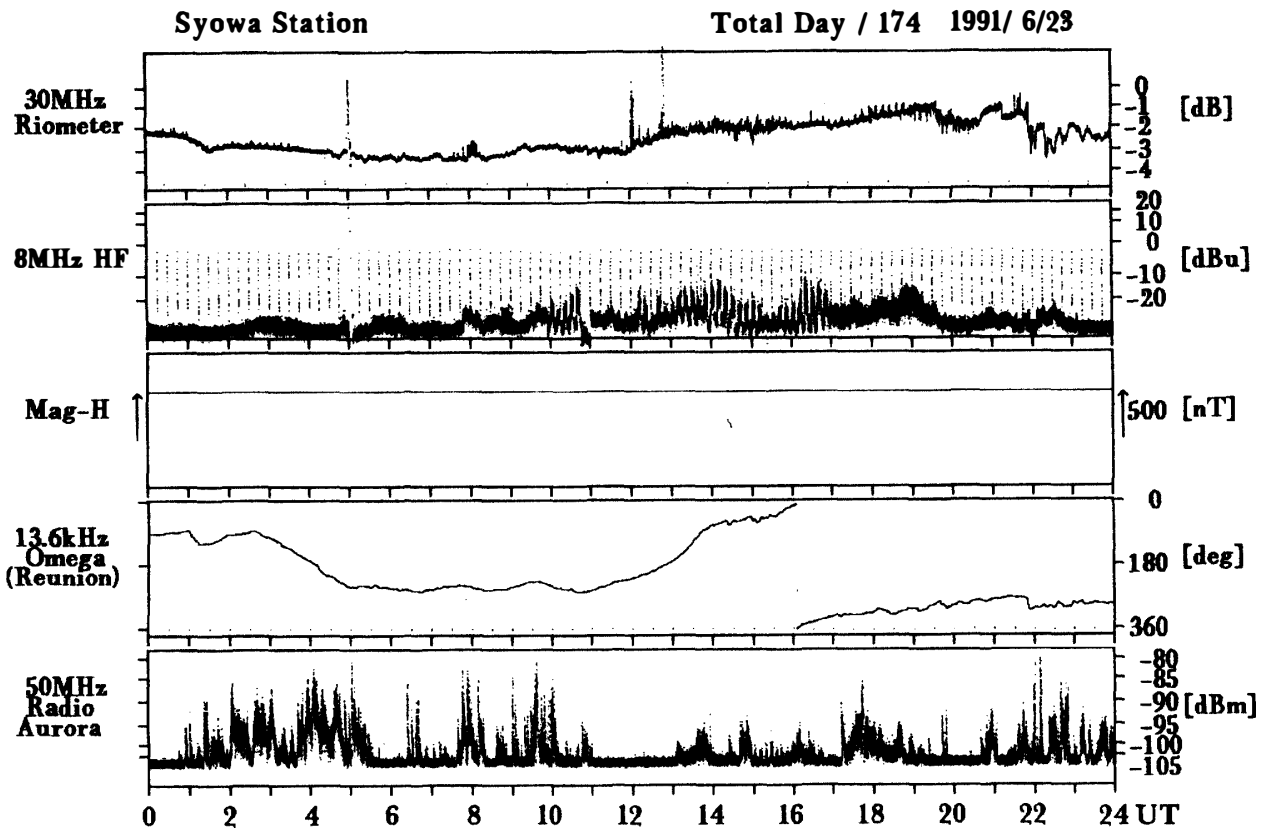


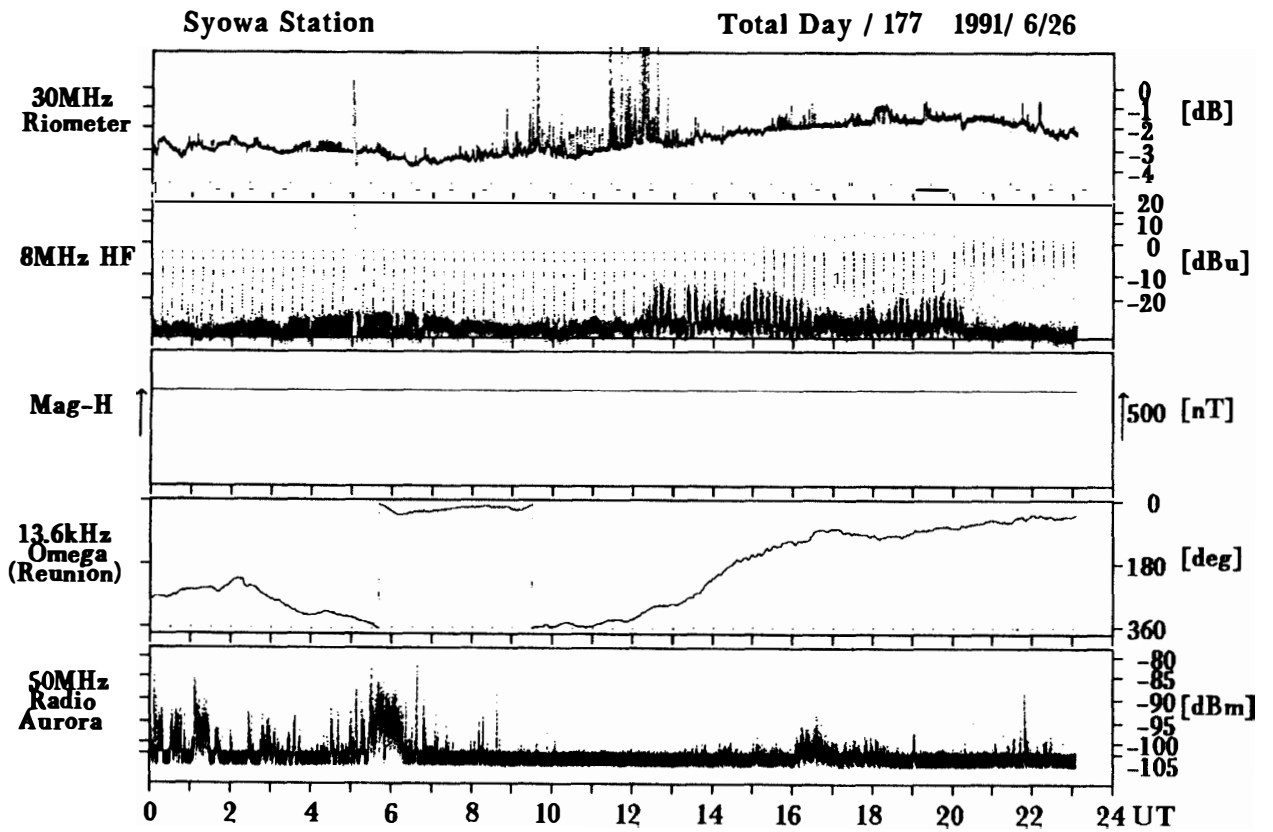
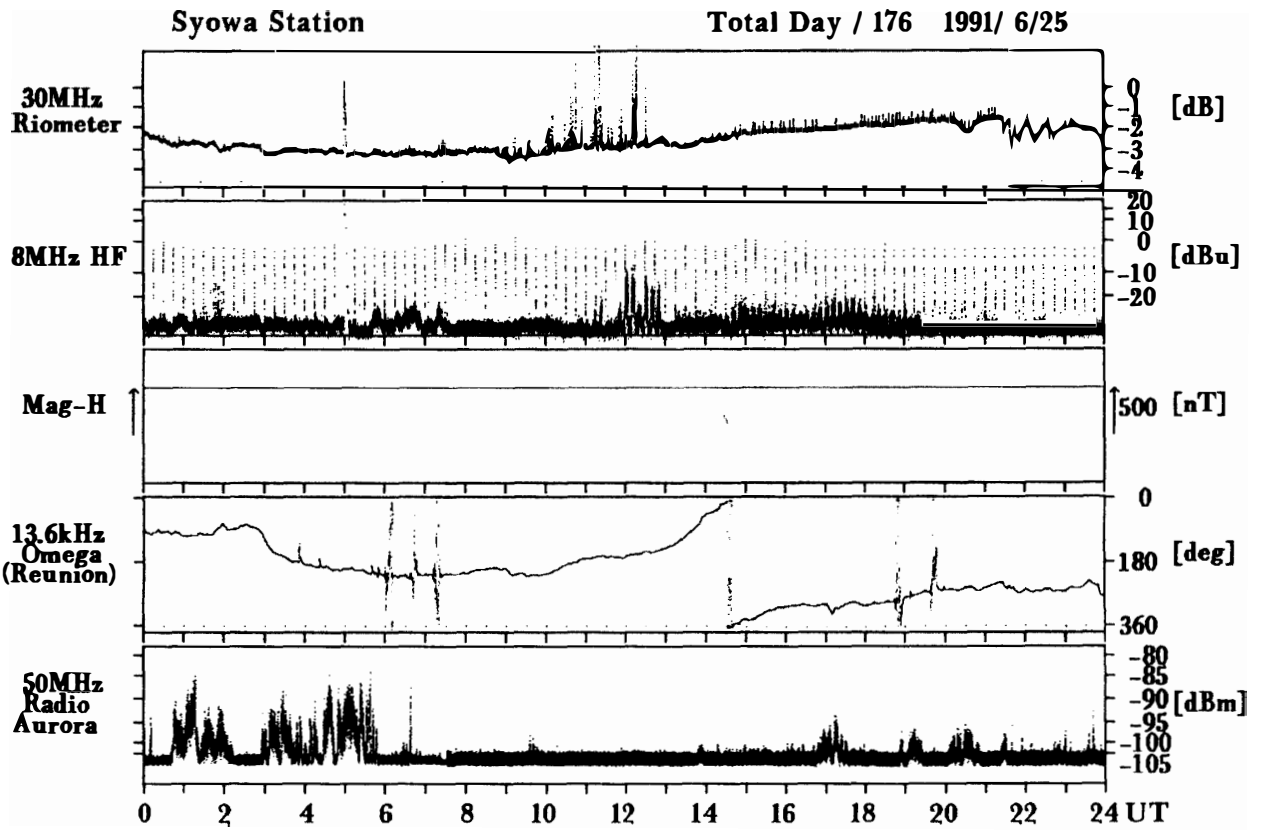
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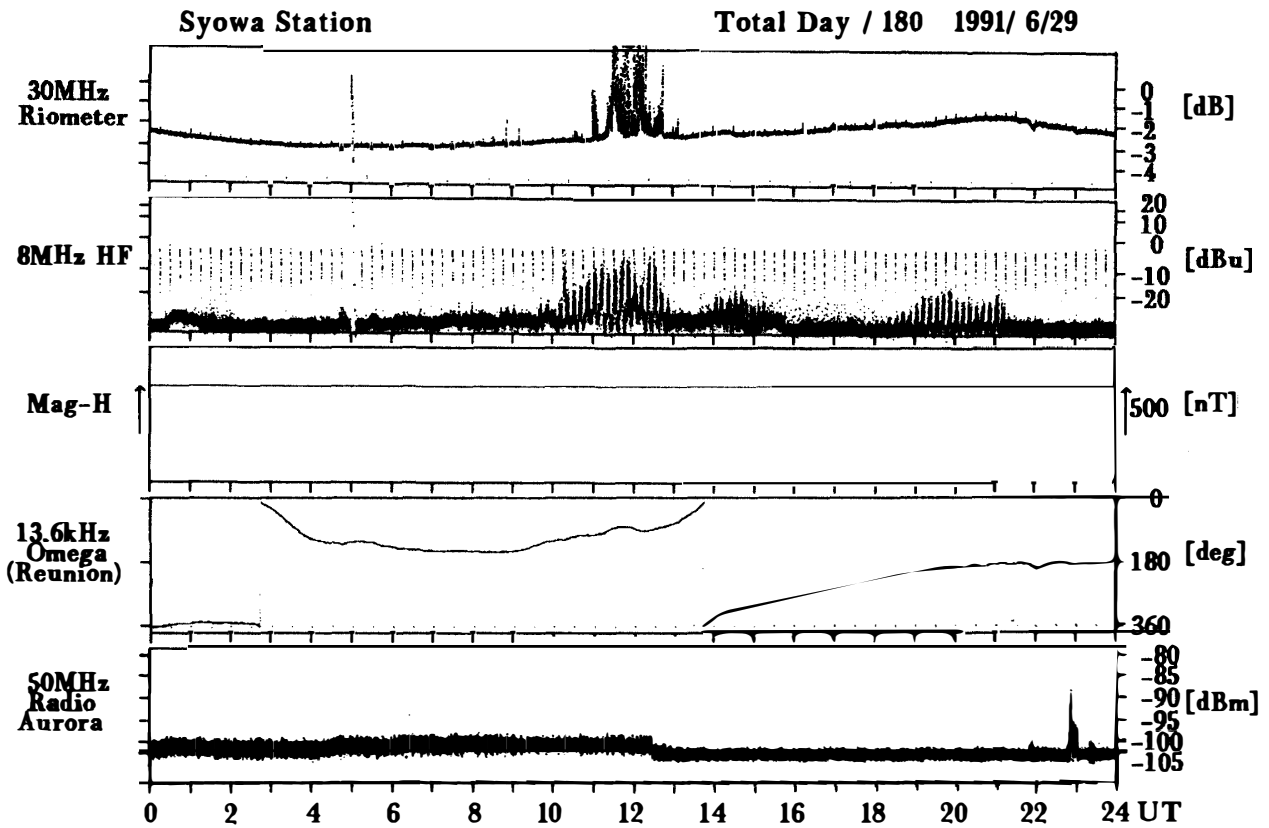
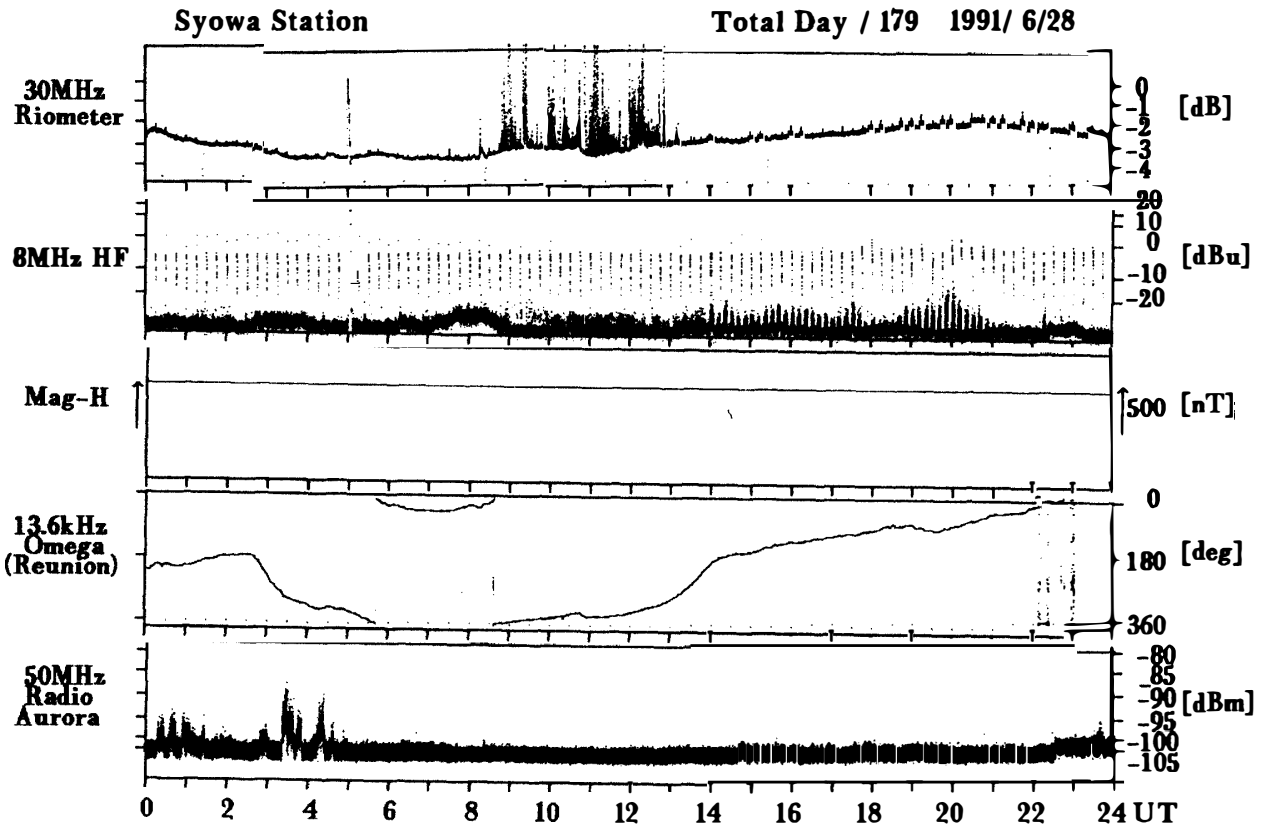
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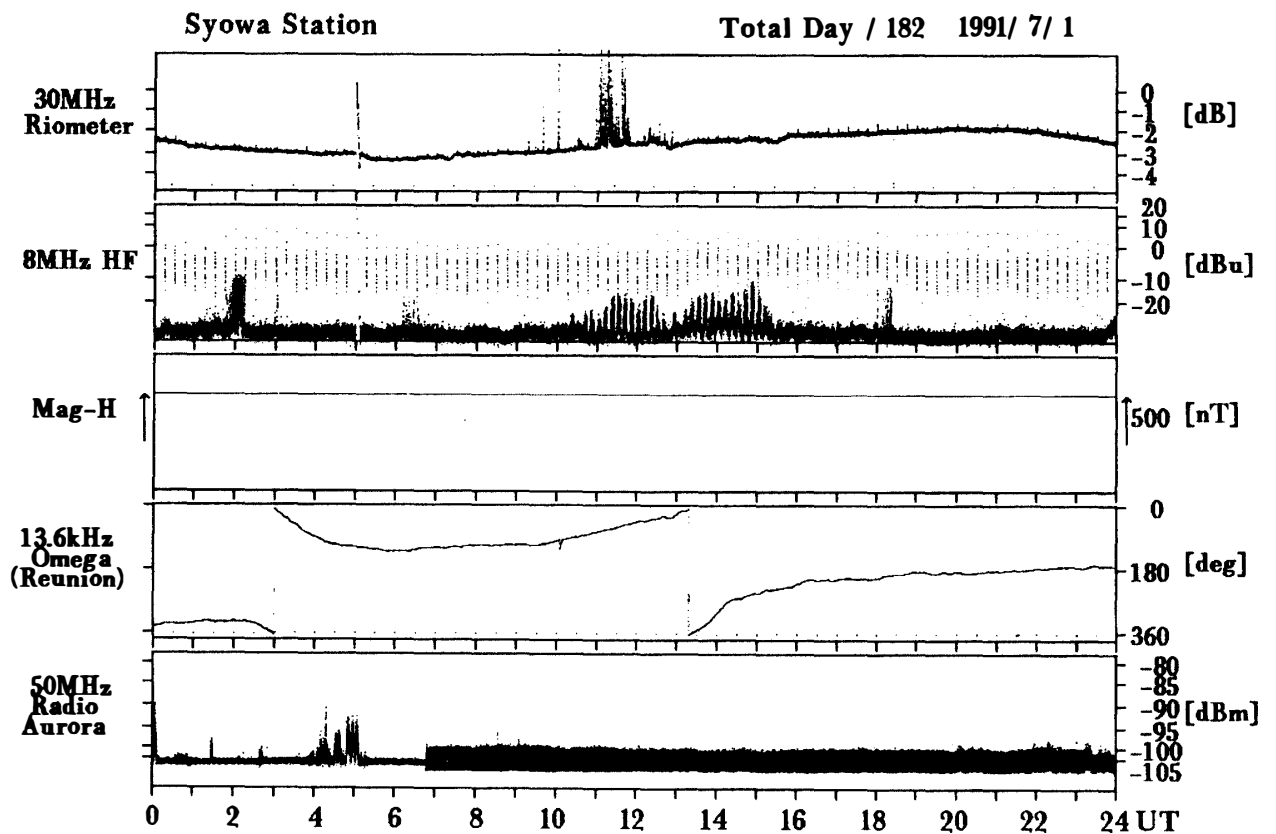
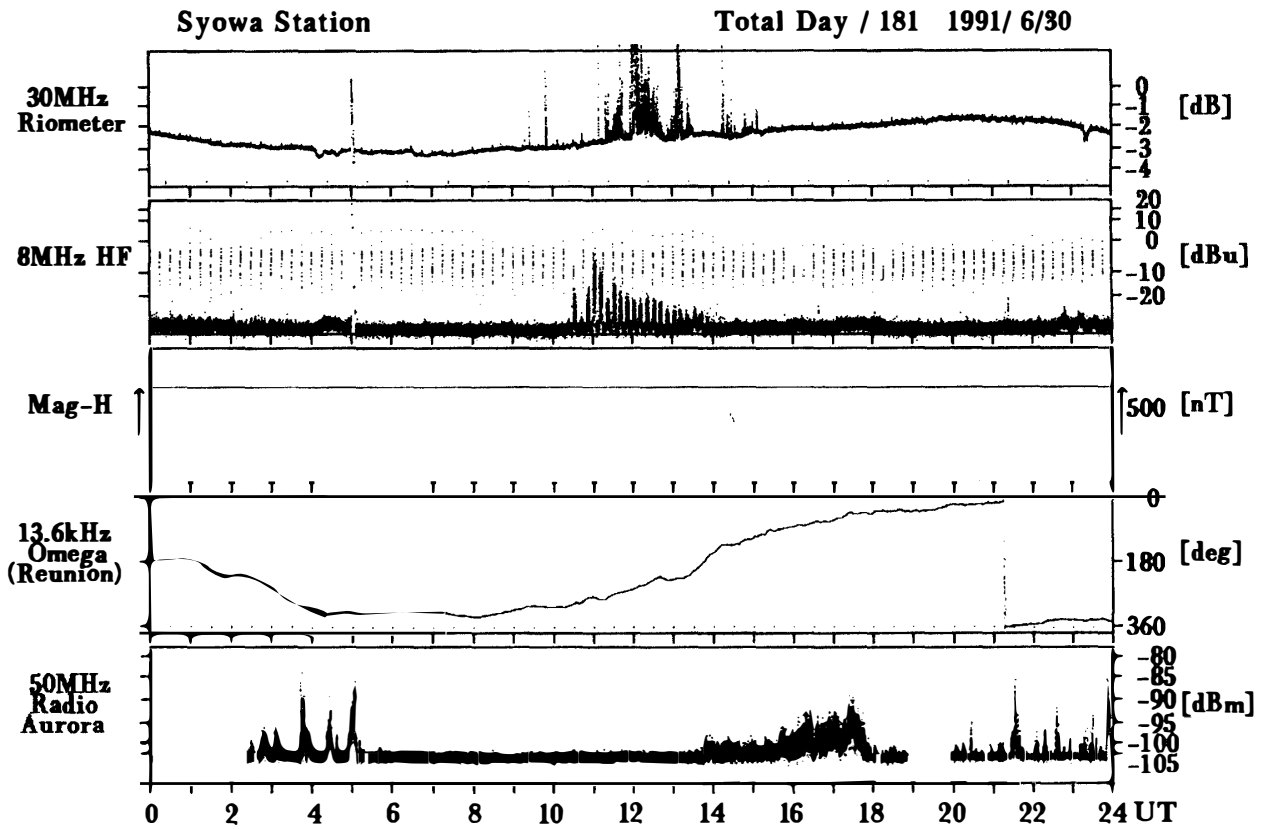


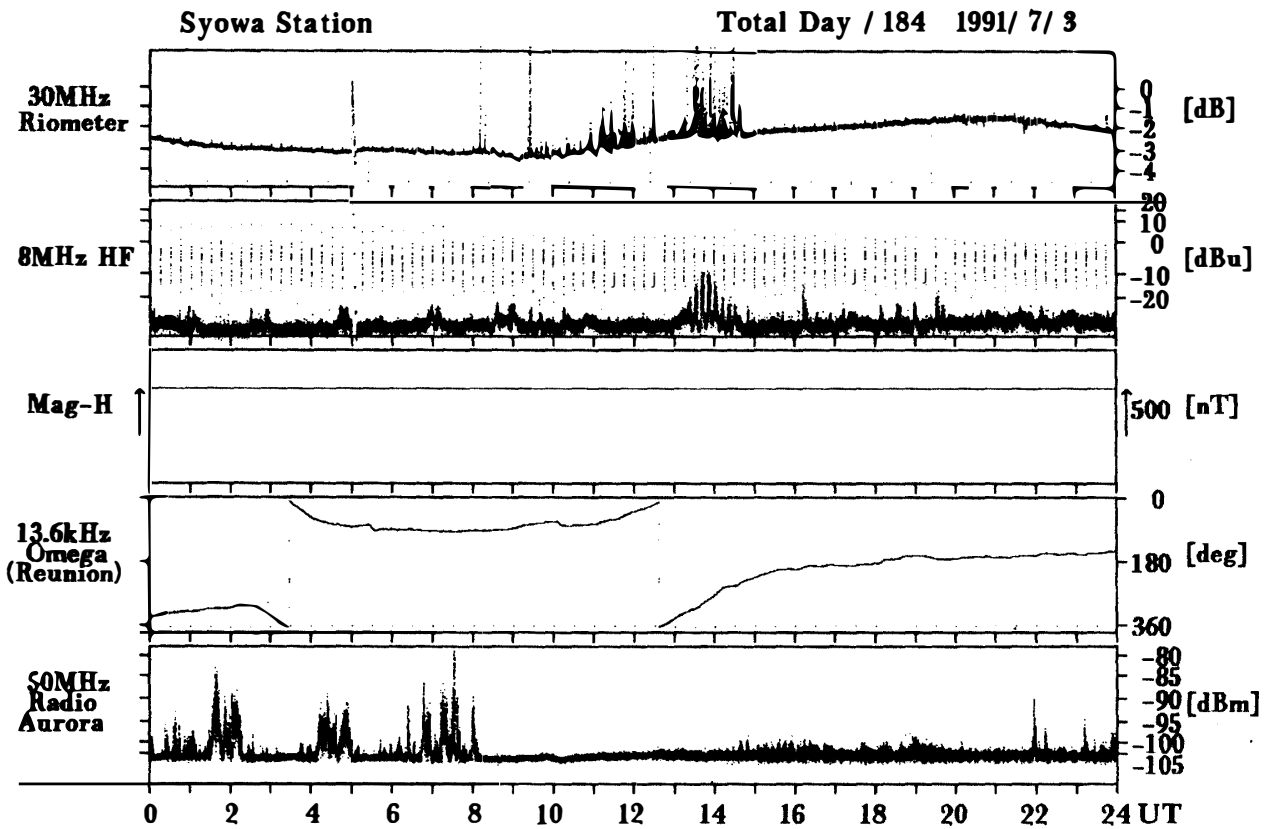
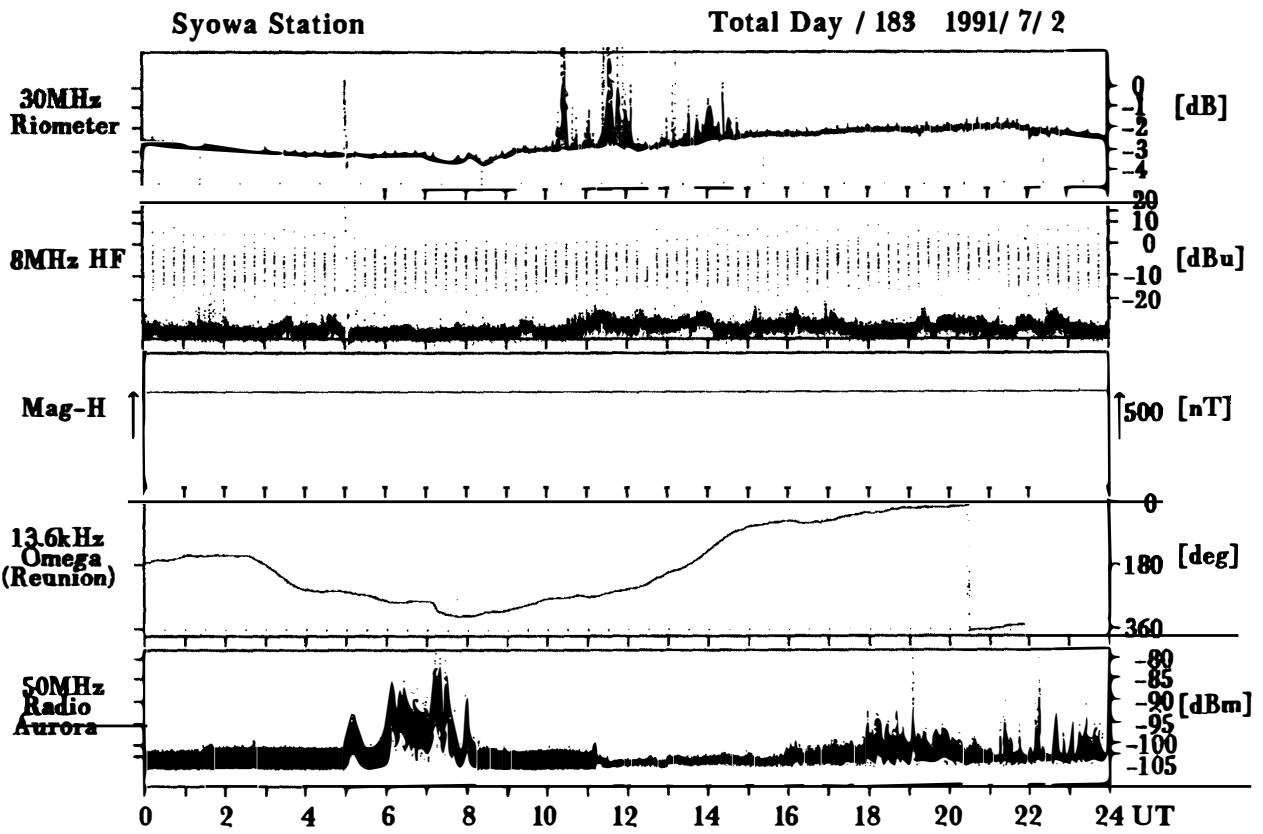


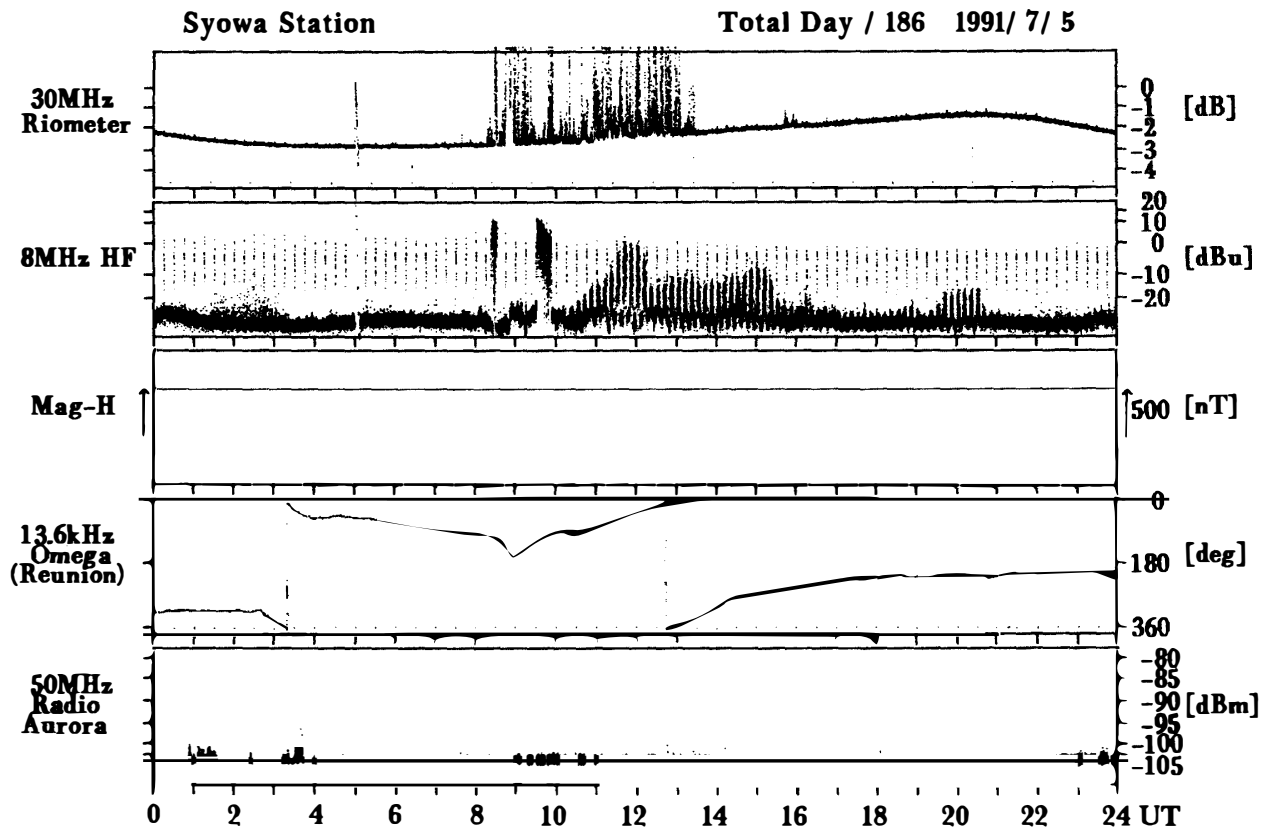
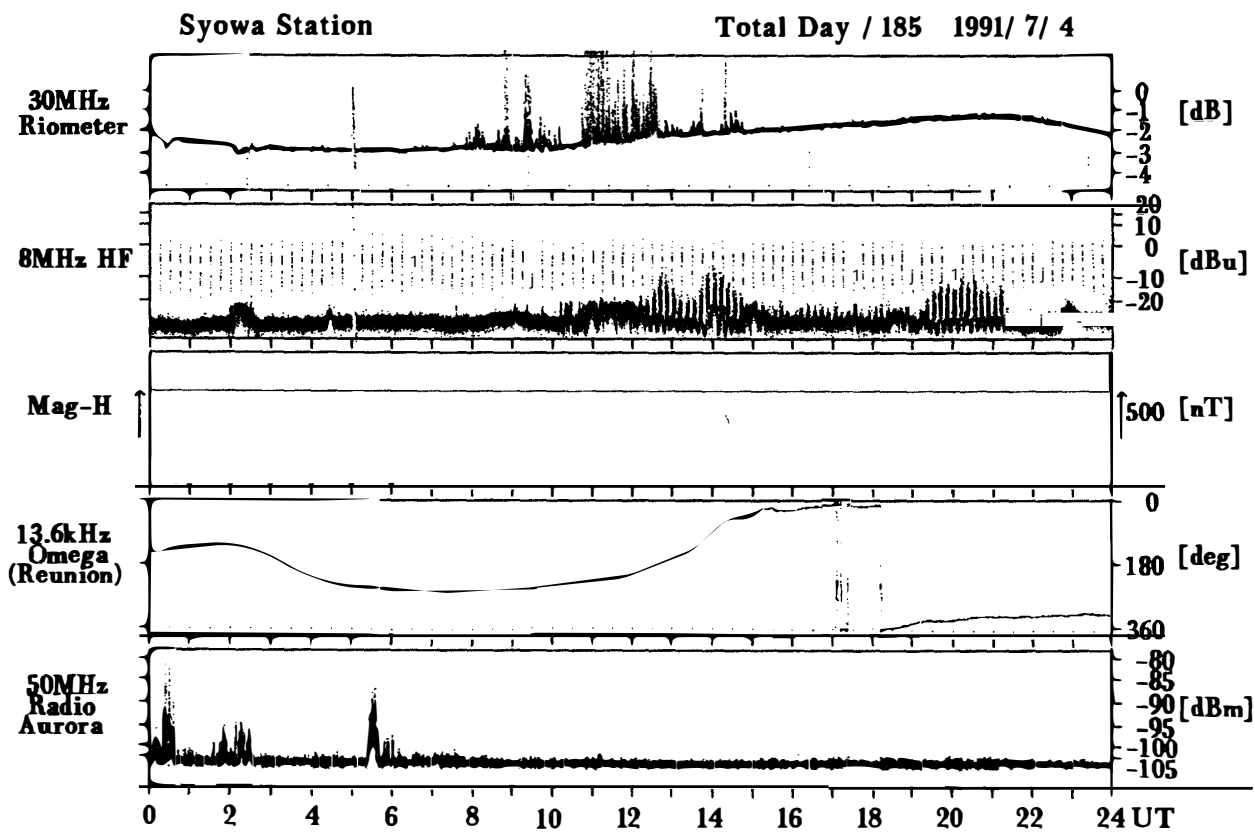


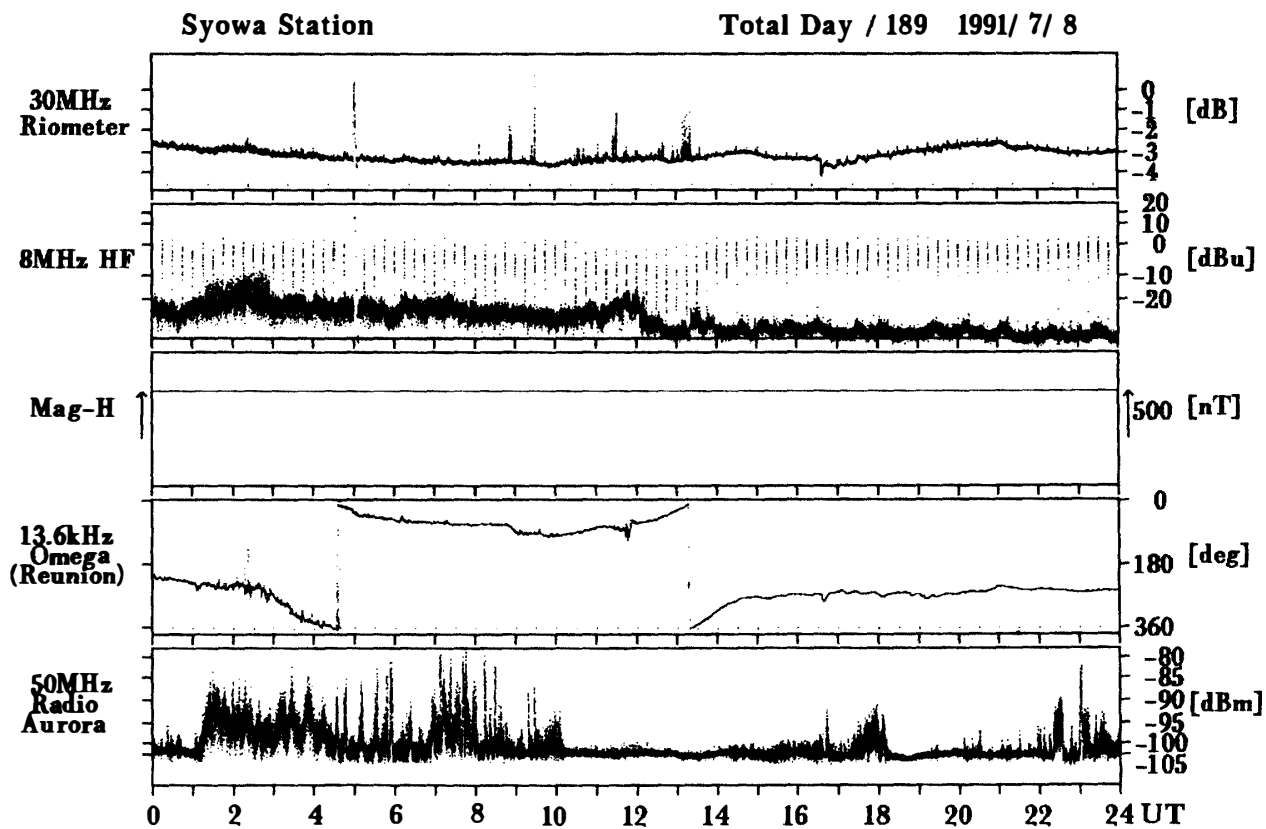
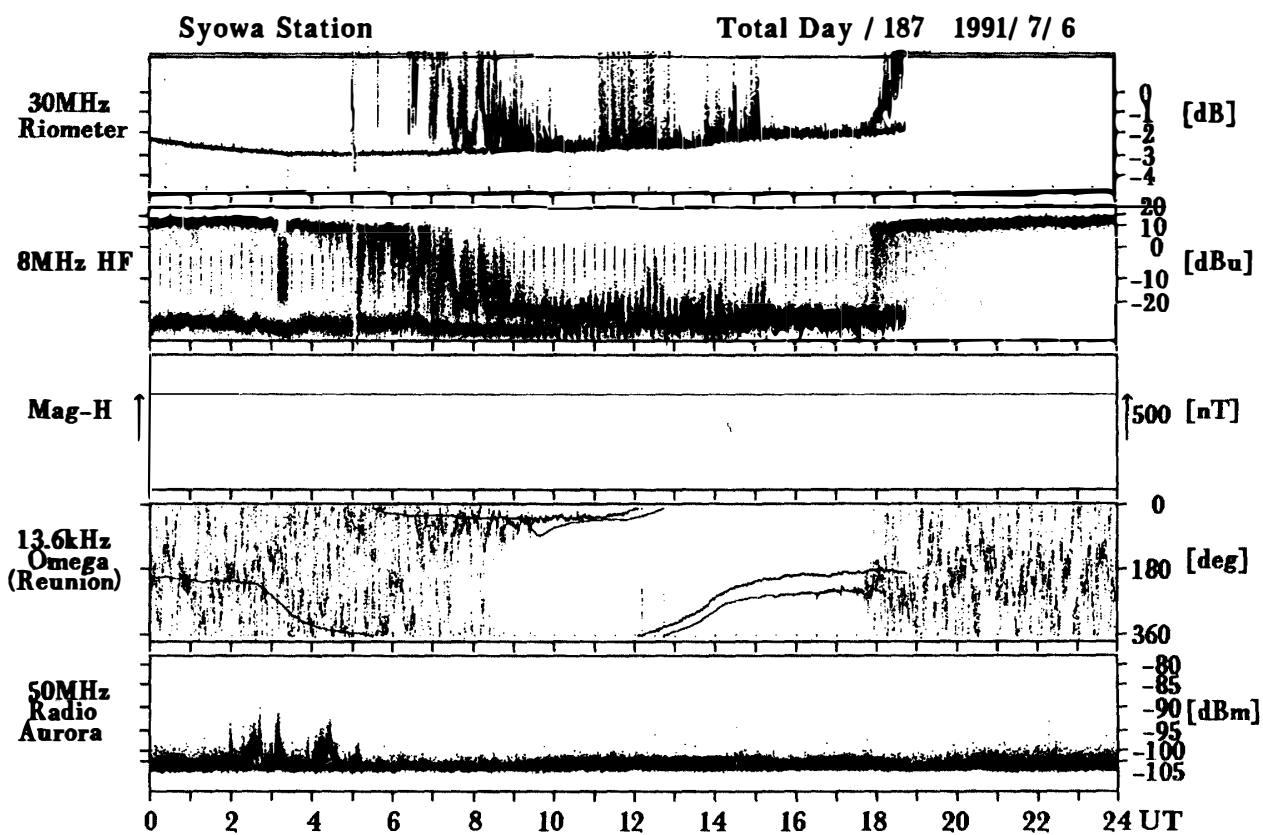


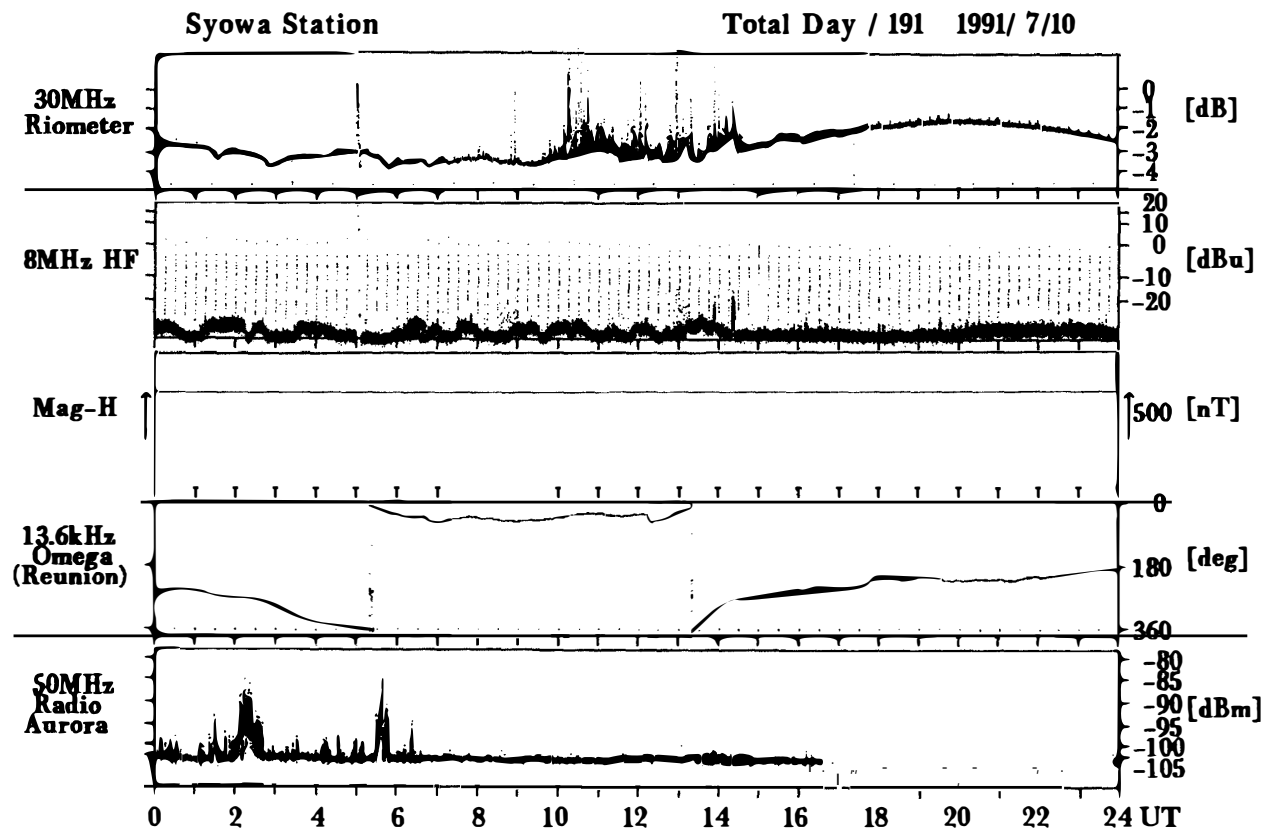
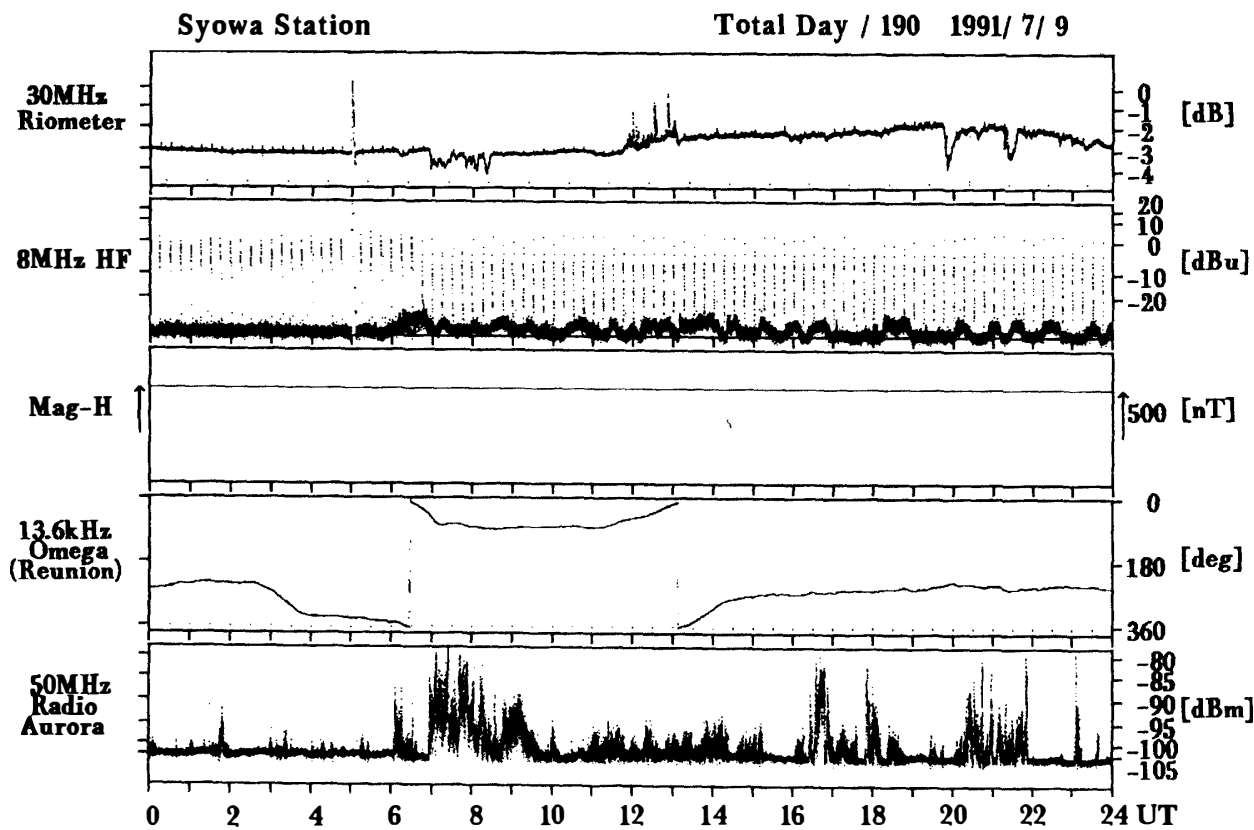






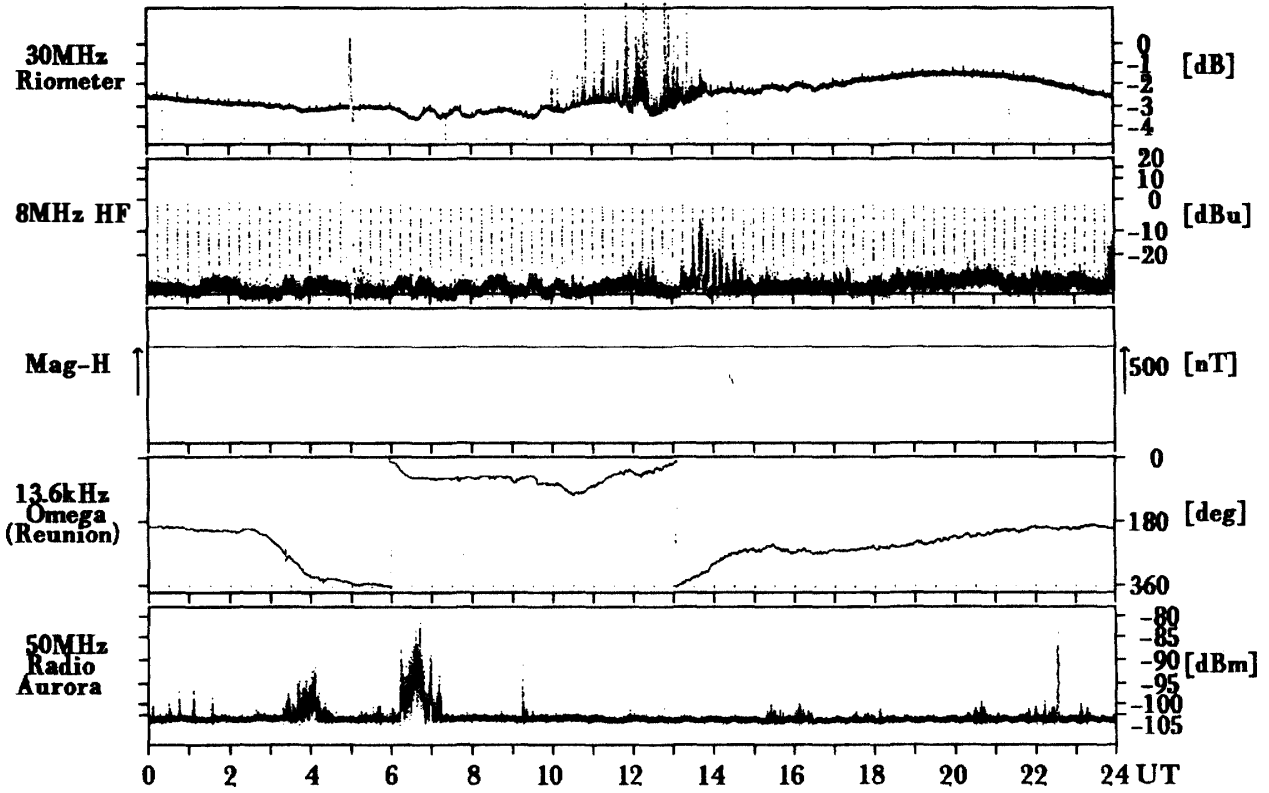






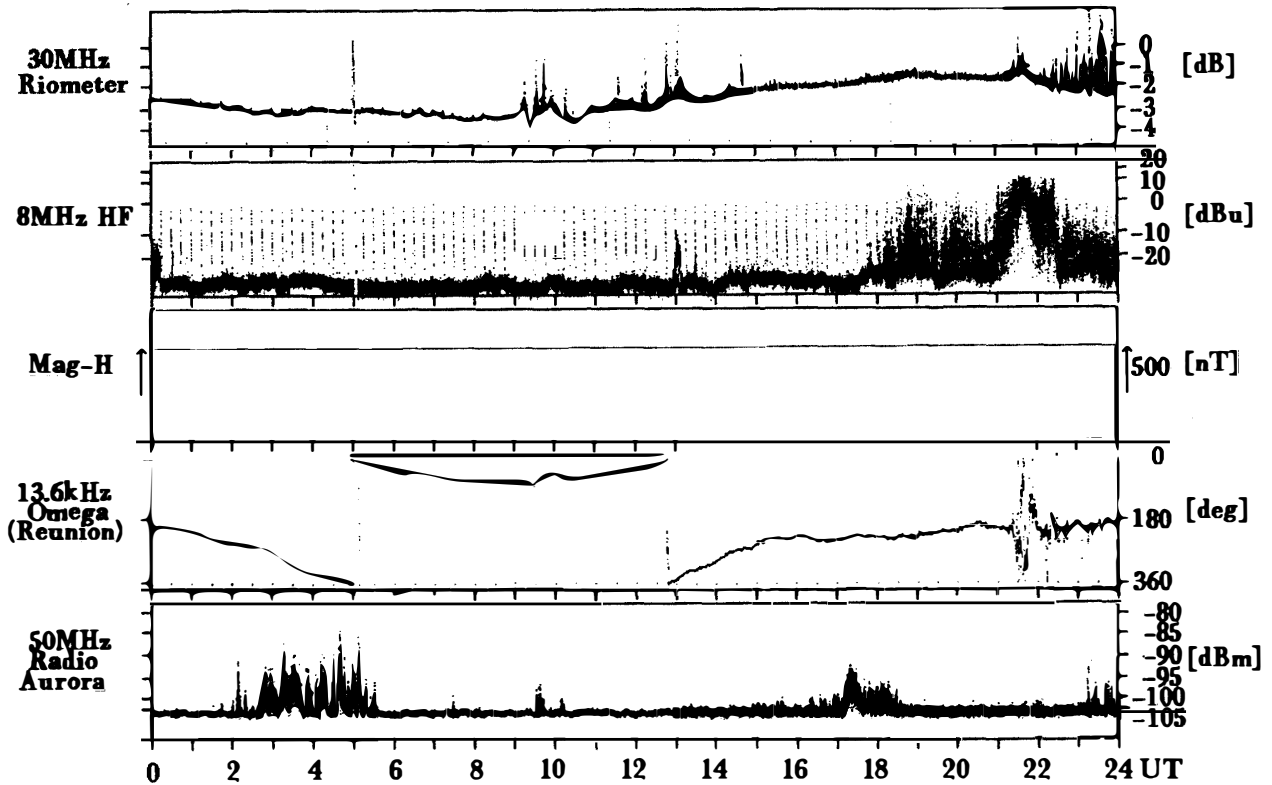
Syowa Station

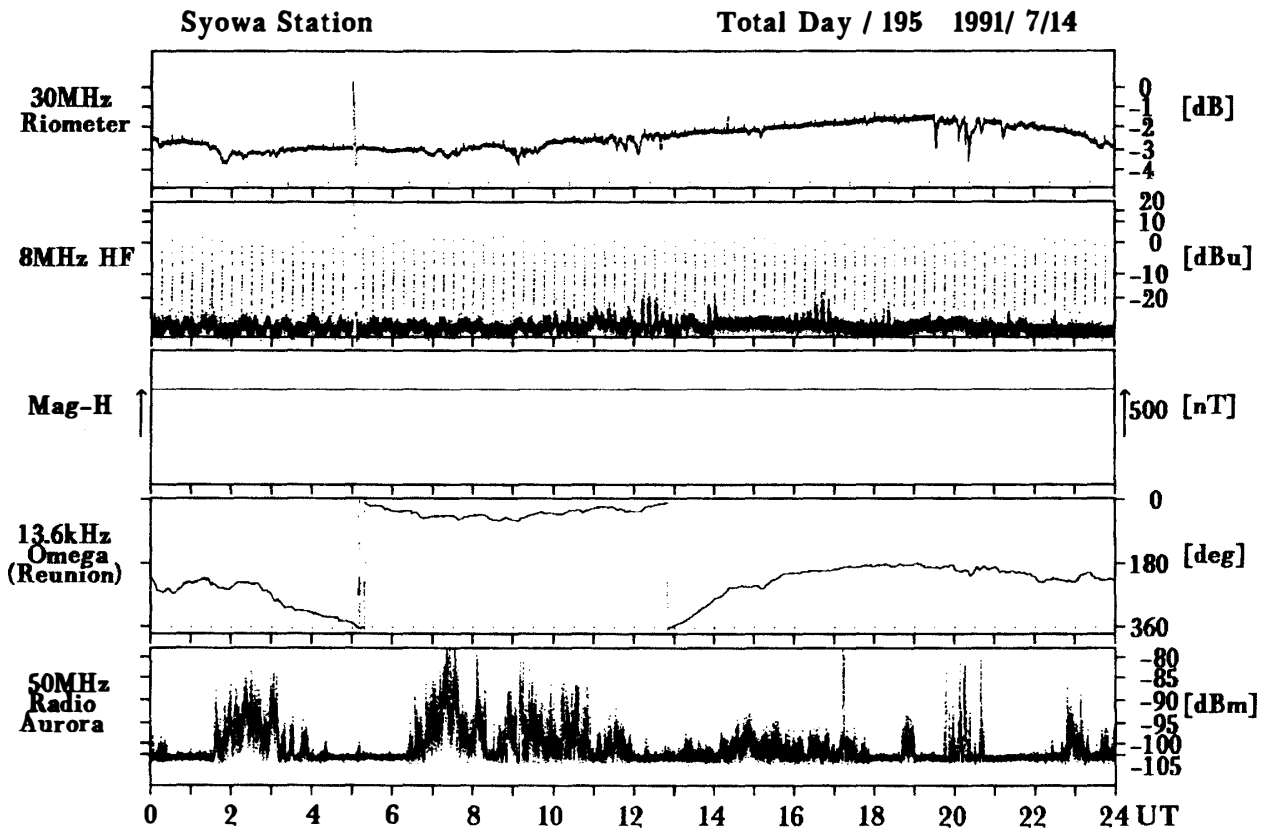
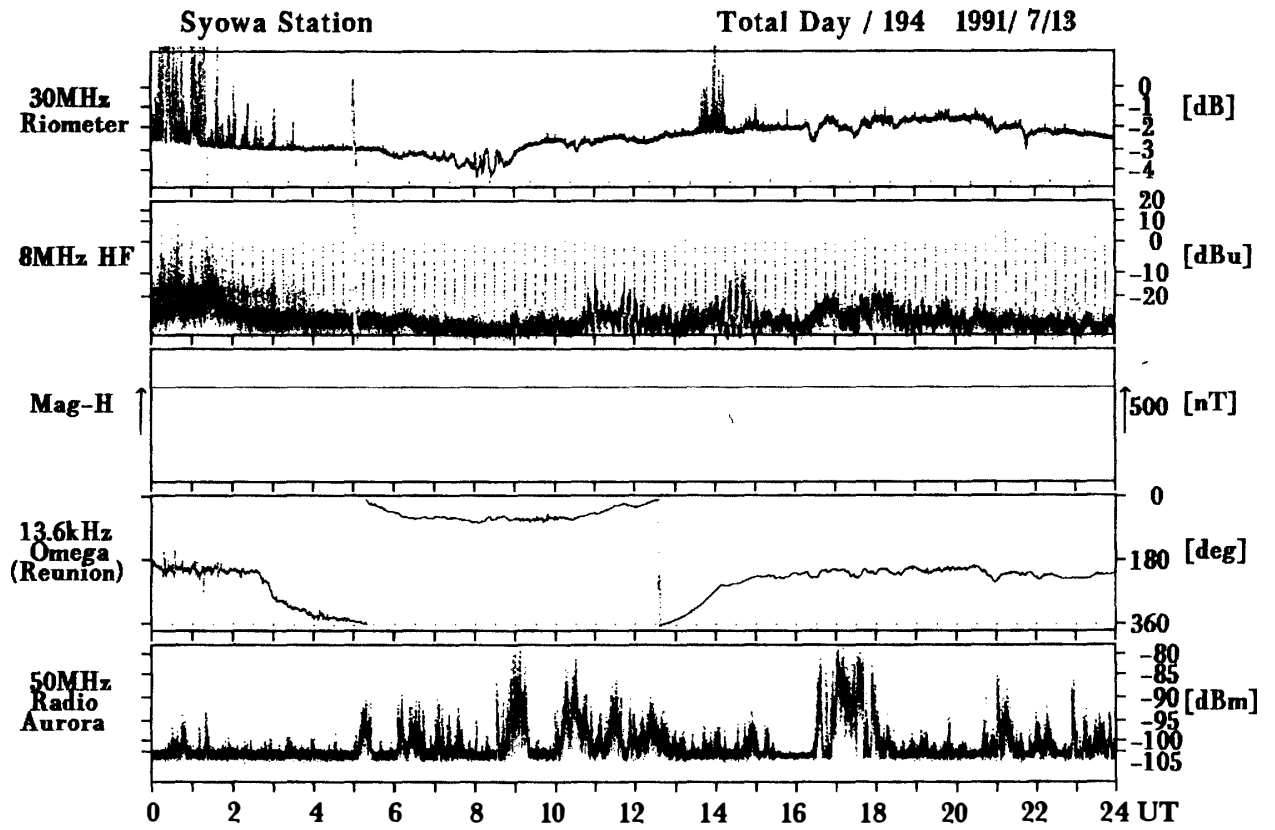
Total Day / 192 1991/ 7/11

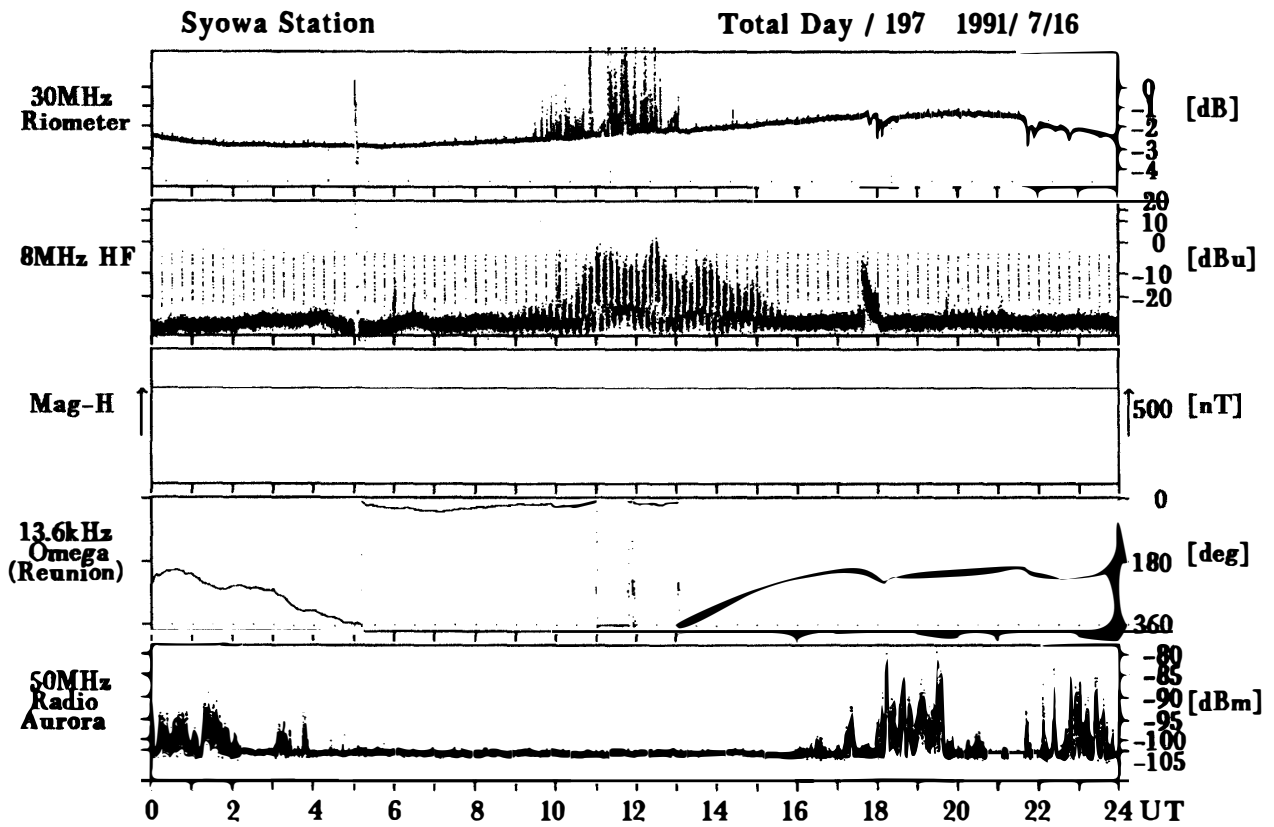
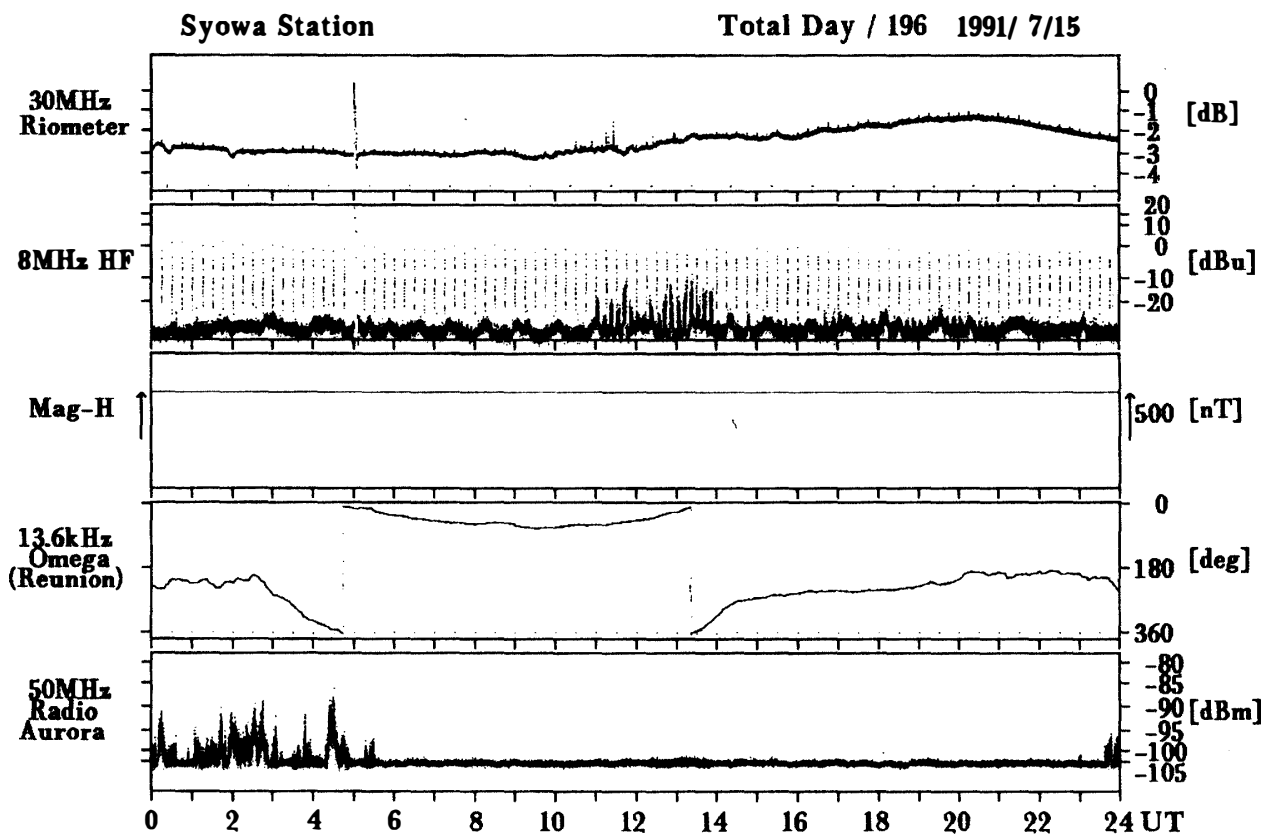


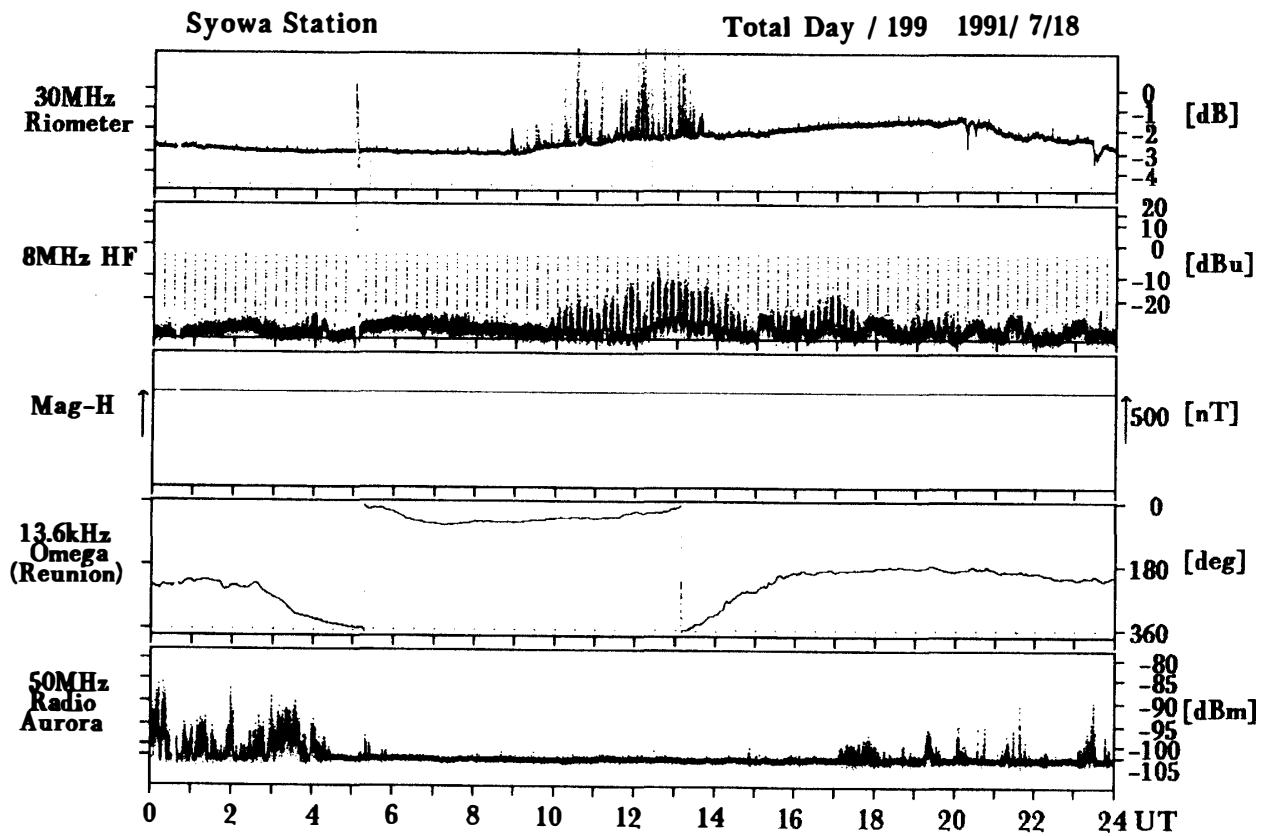
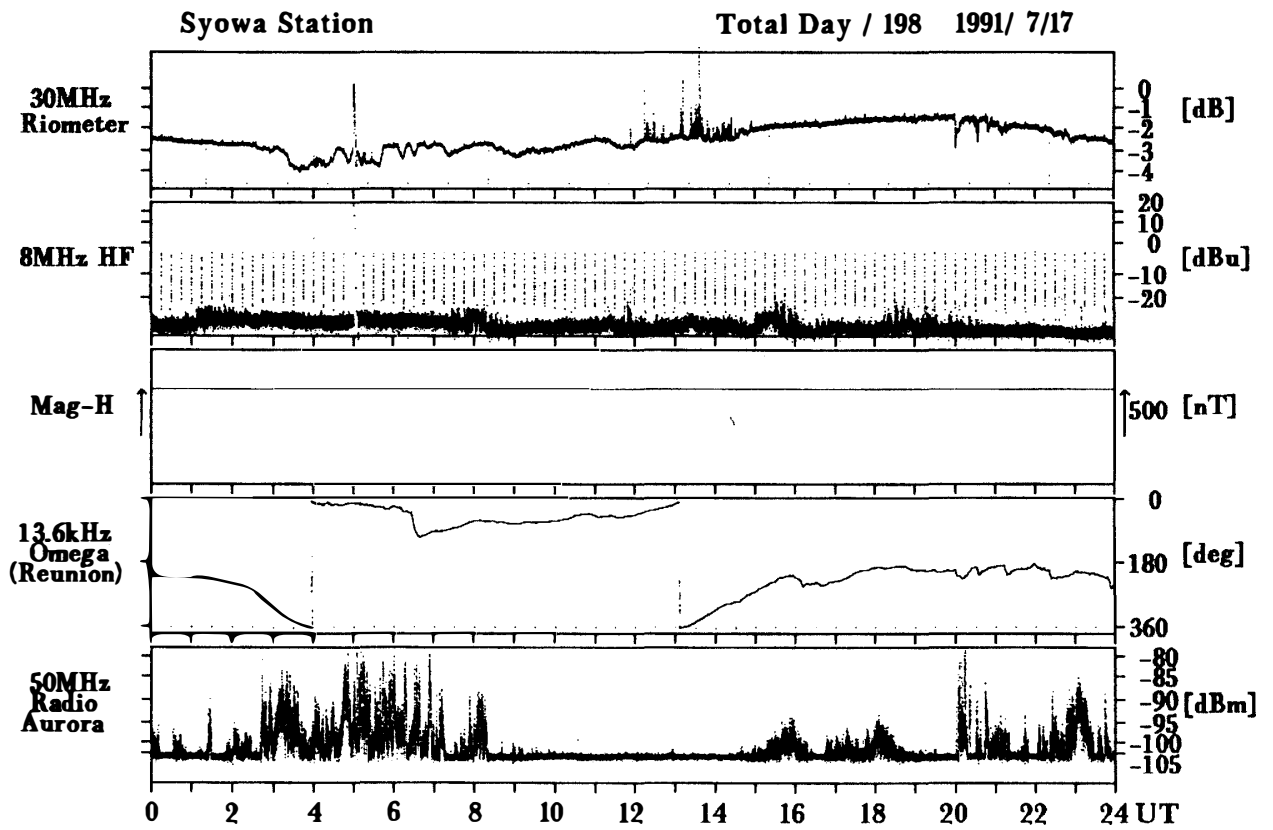
Syowa Station

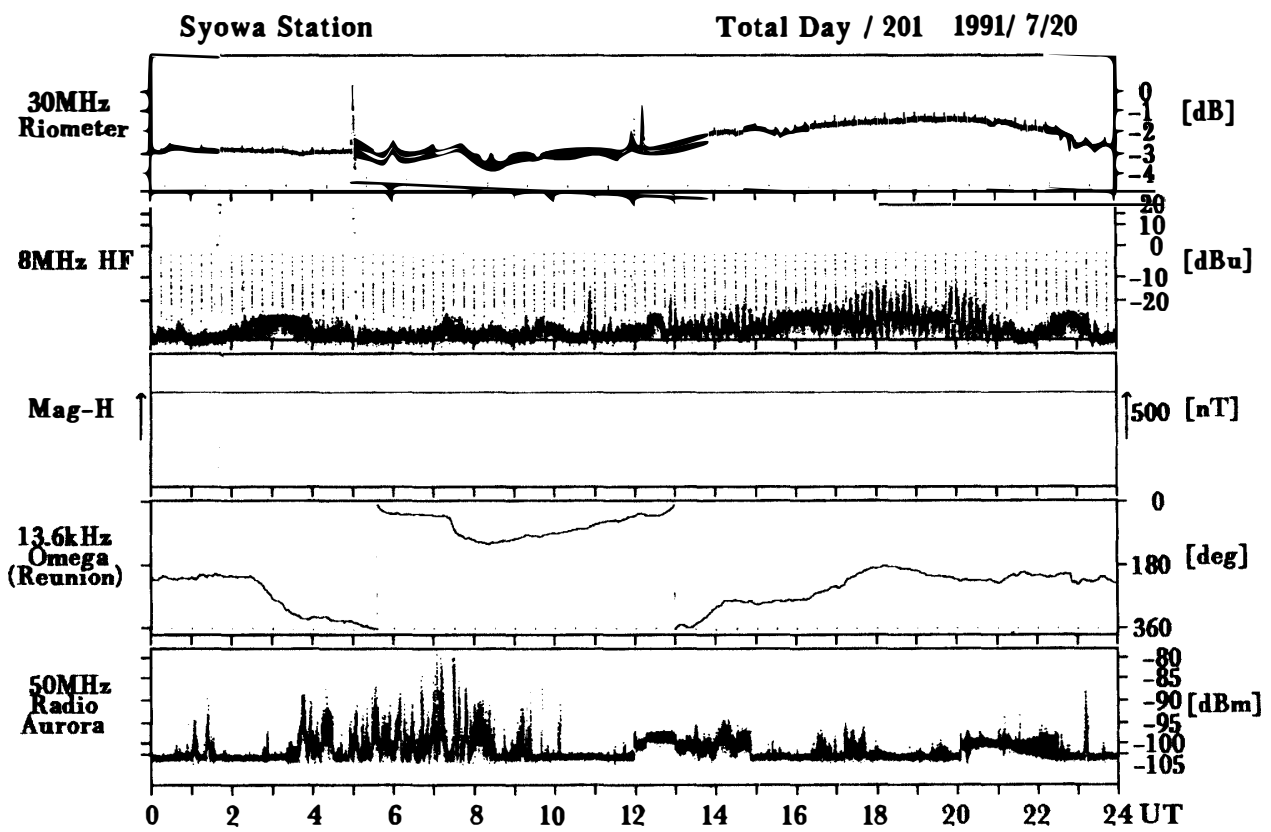
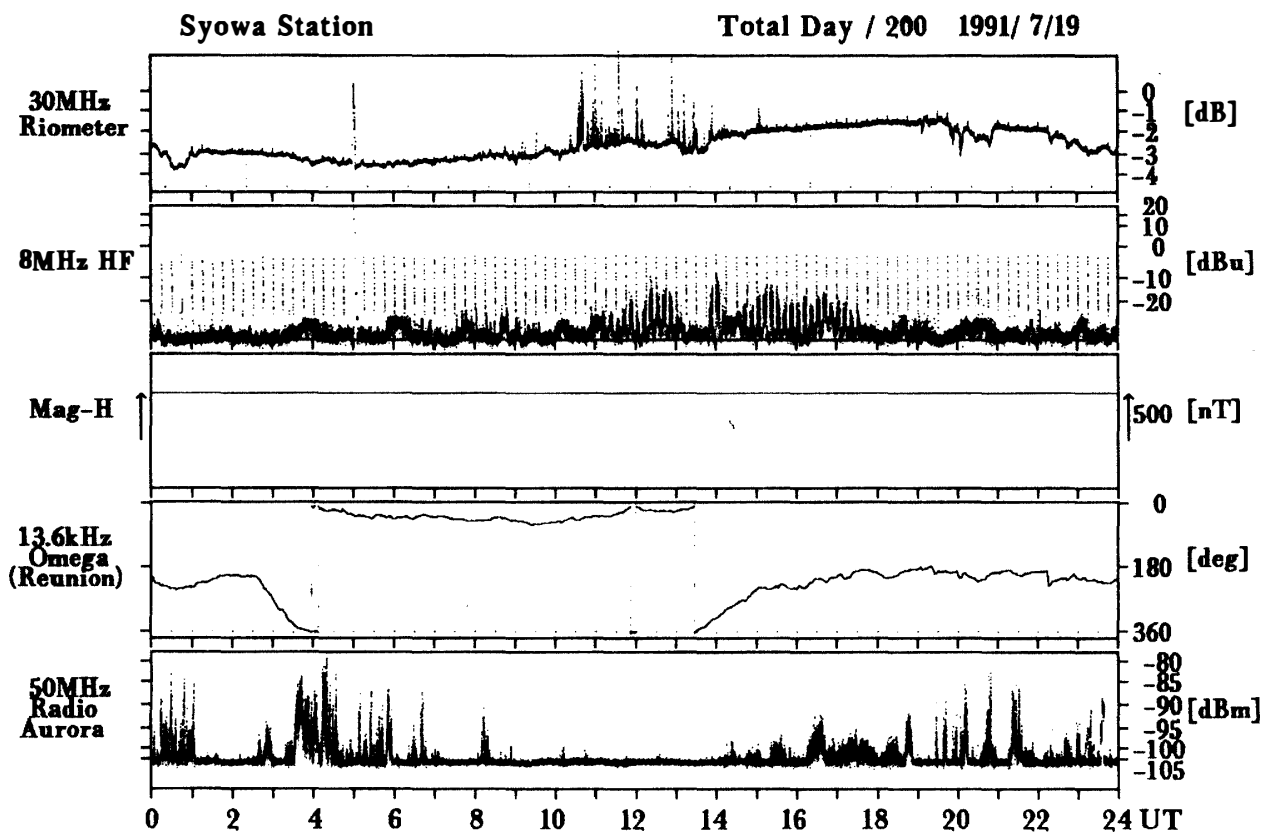
Total Day / 193 1991/ 7/12





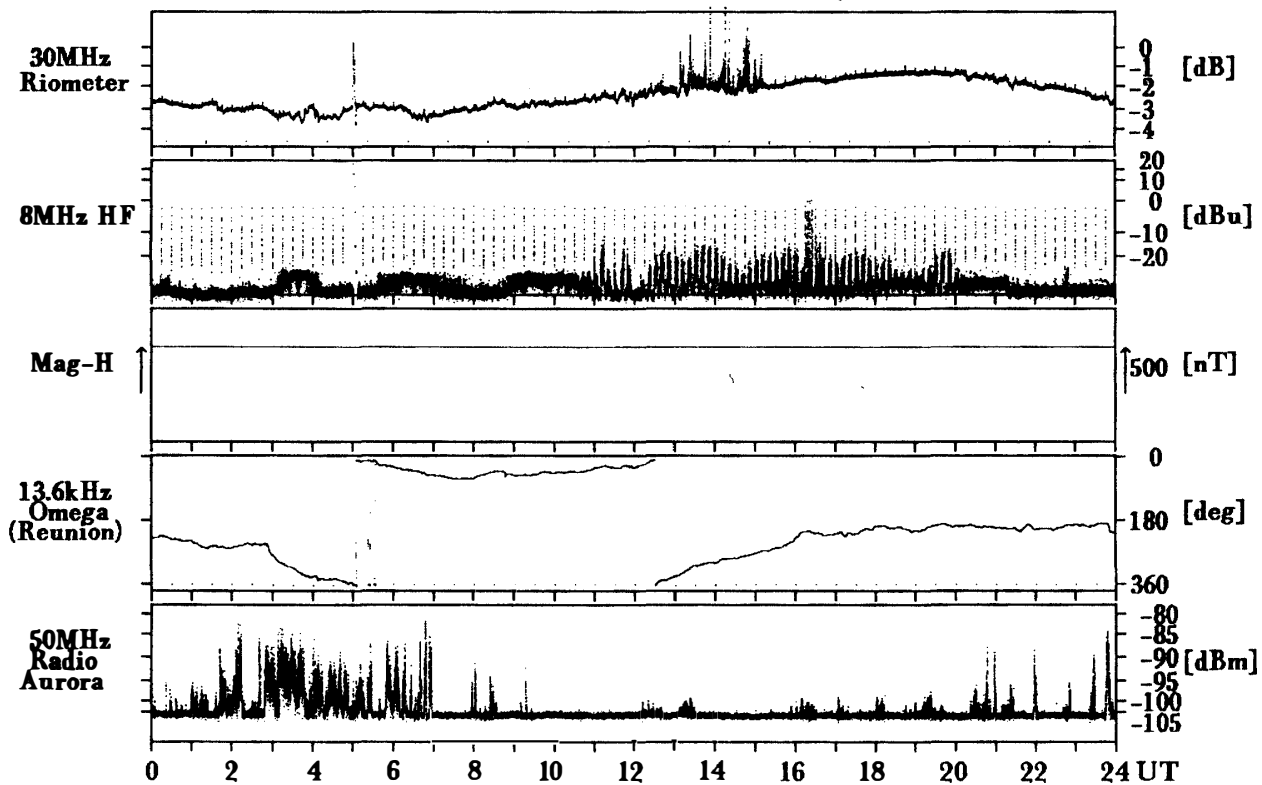






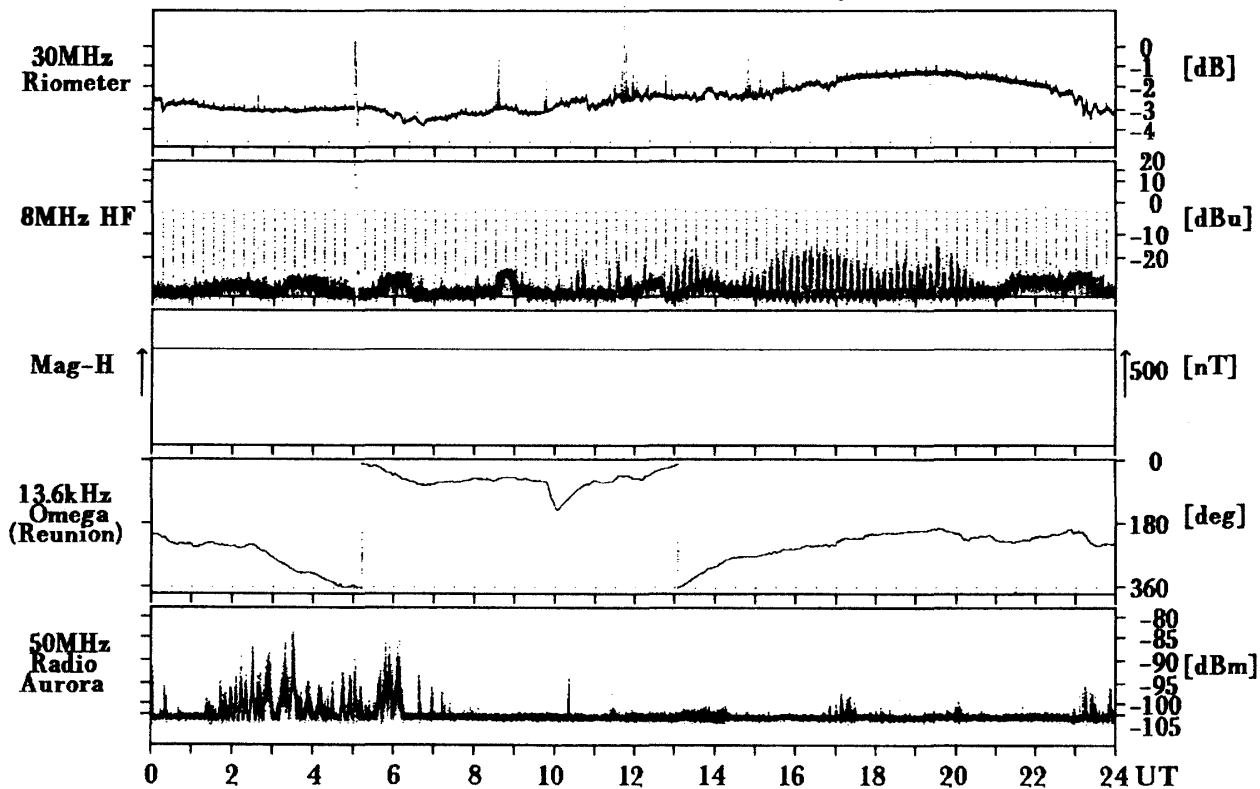
Syowa Station

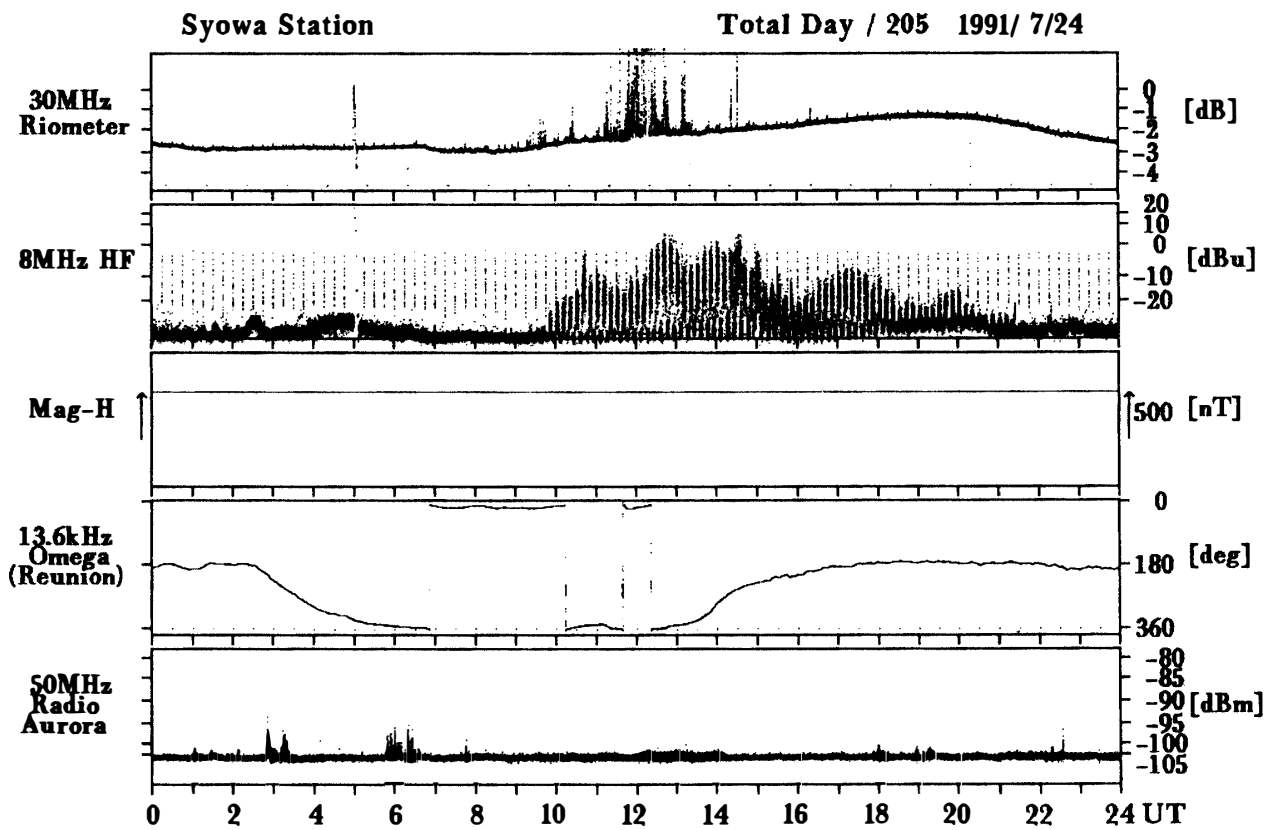
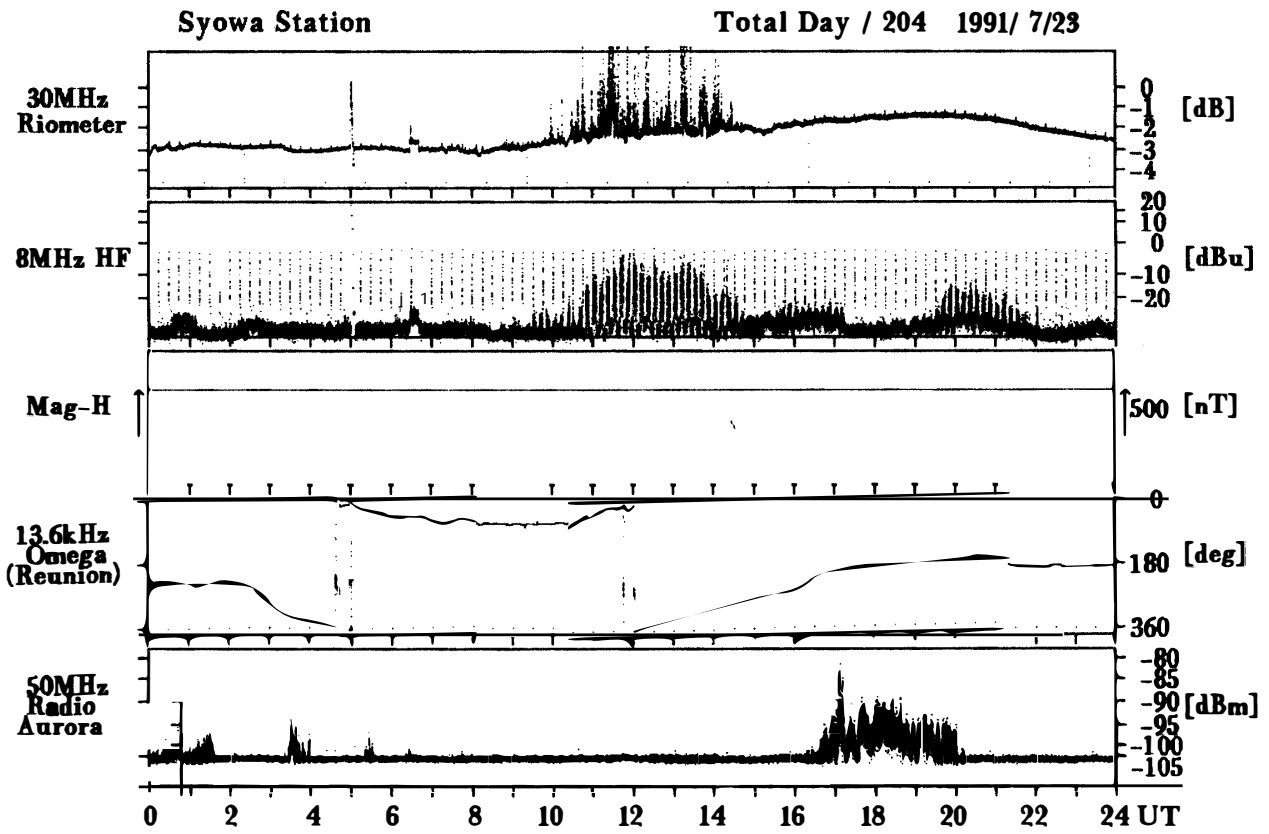
Total Day / 202 1991/ 7/21

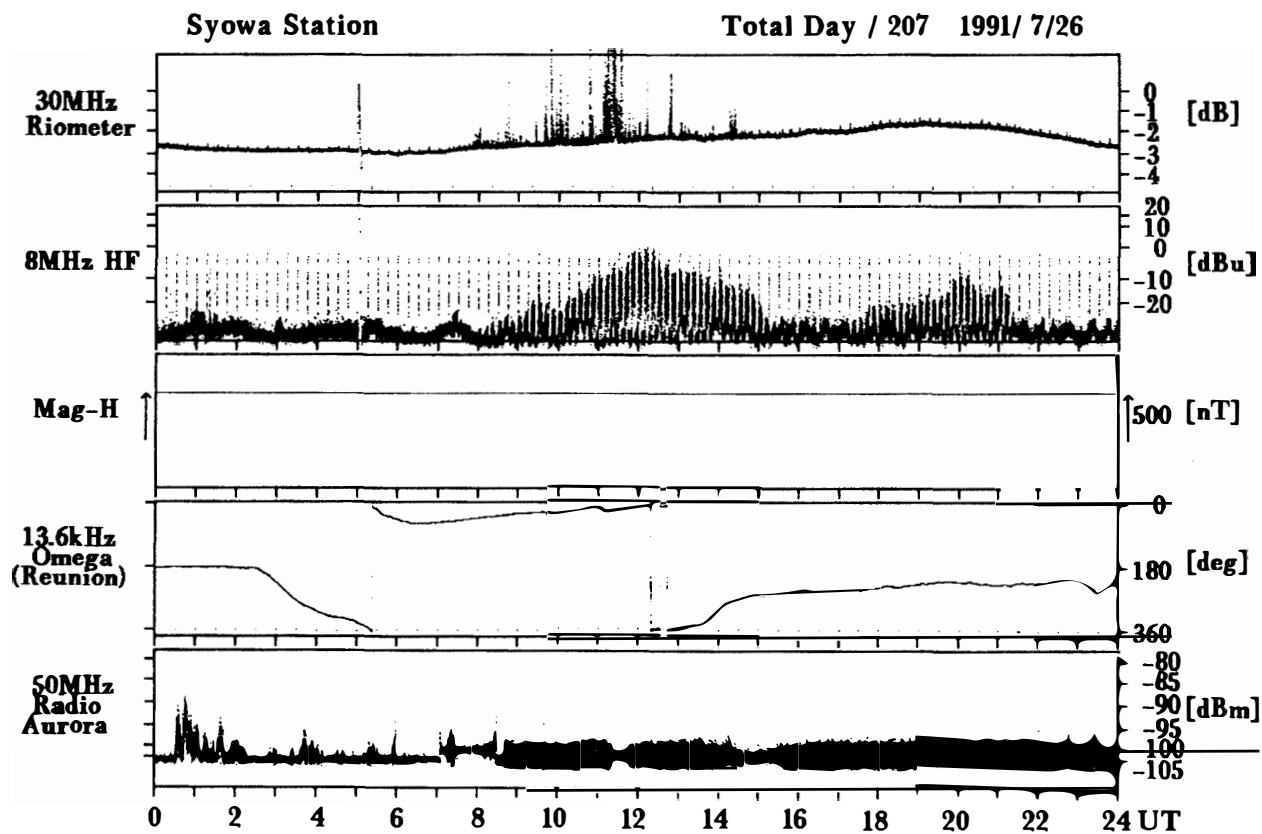
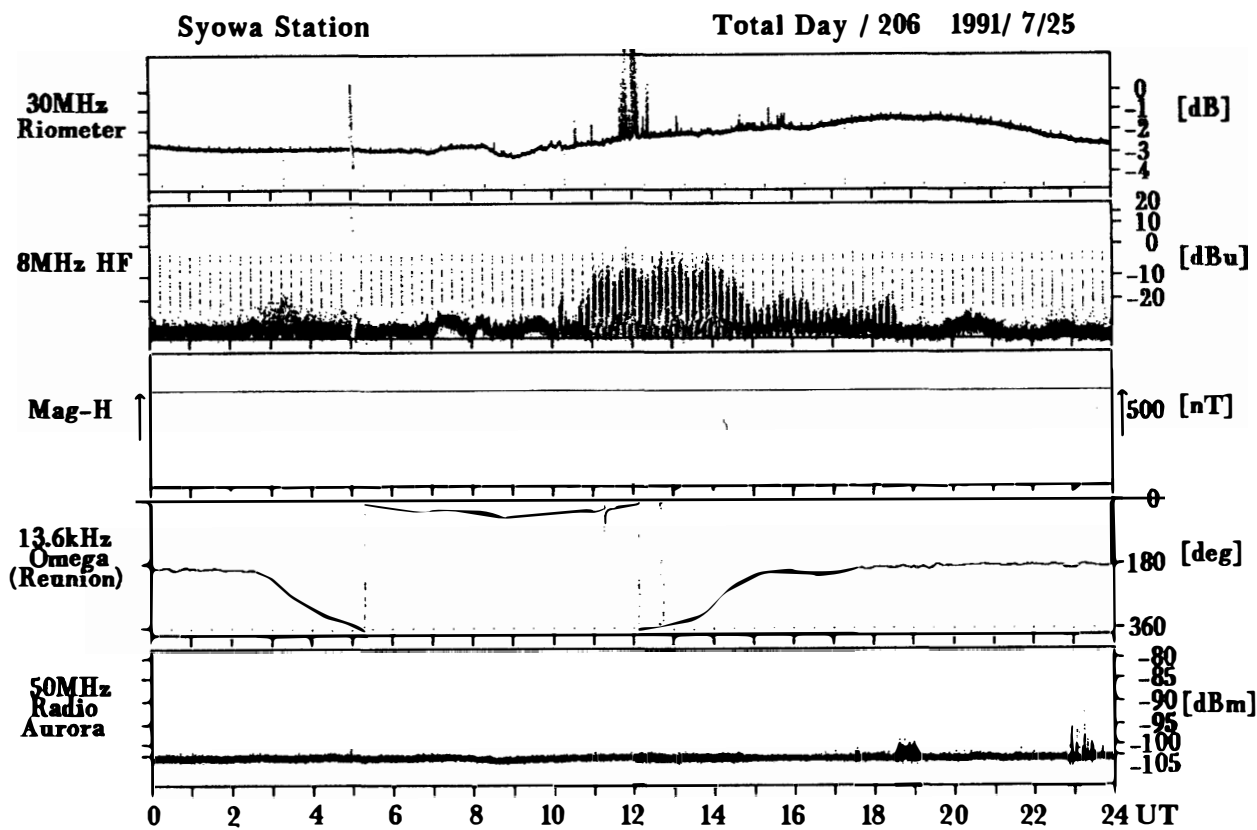


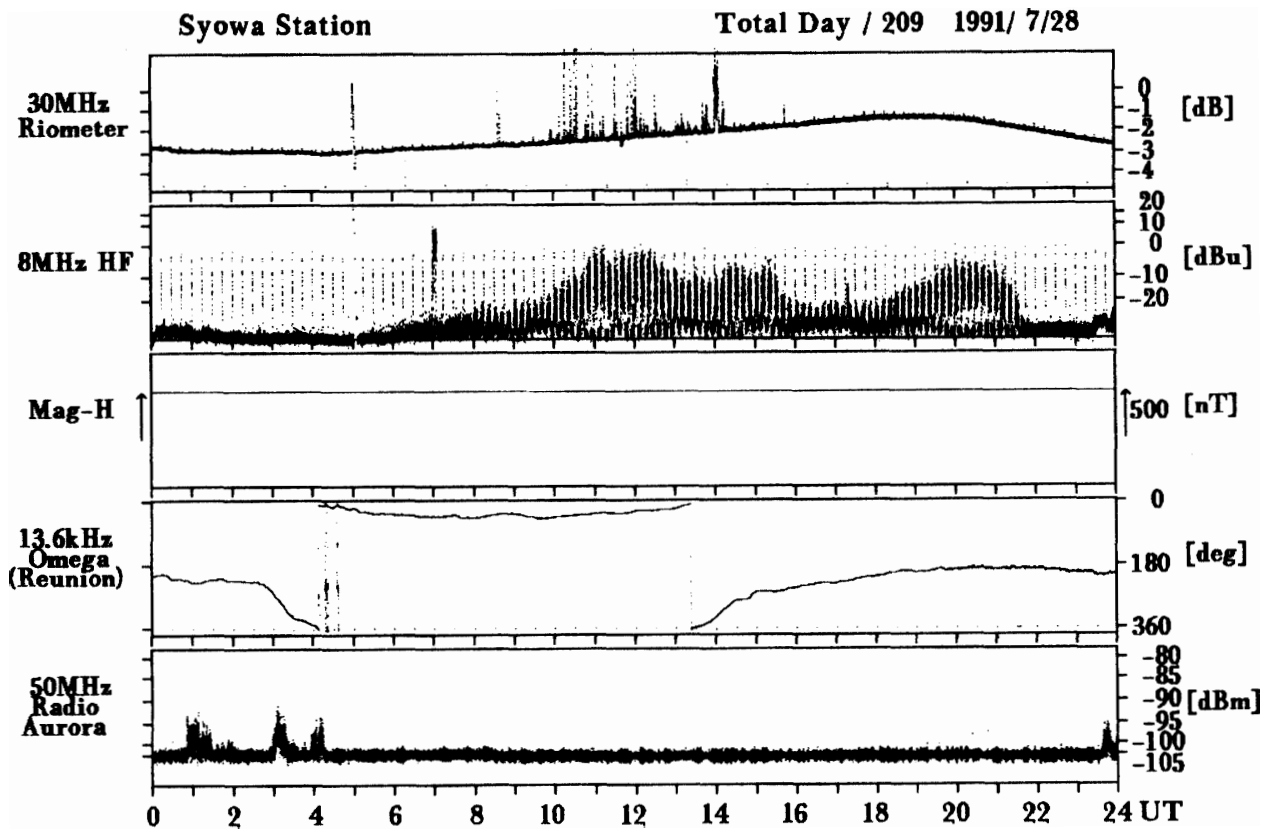
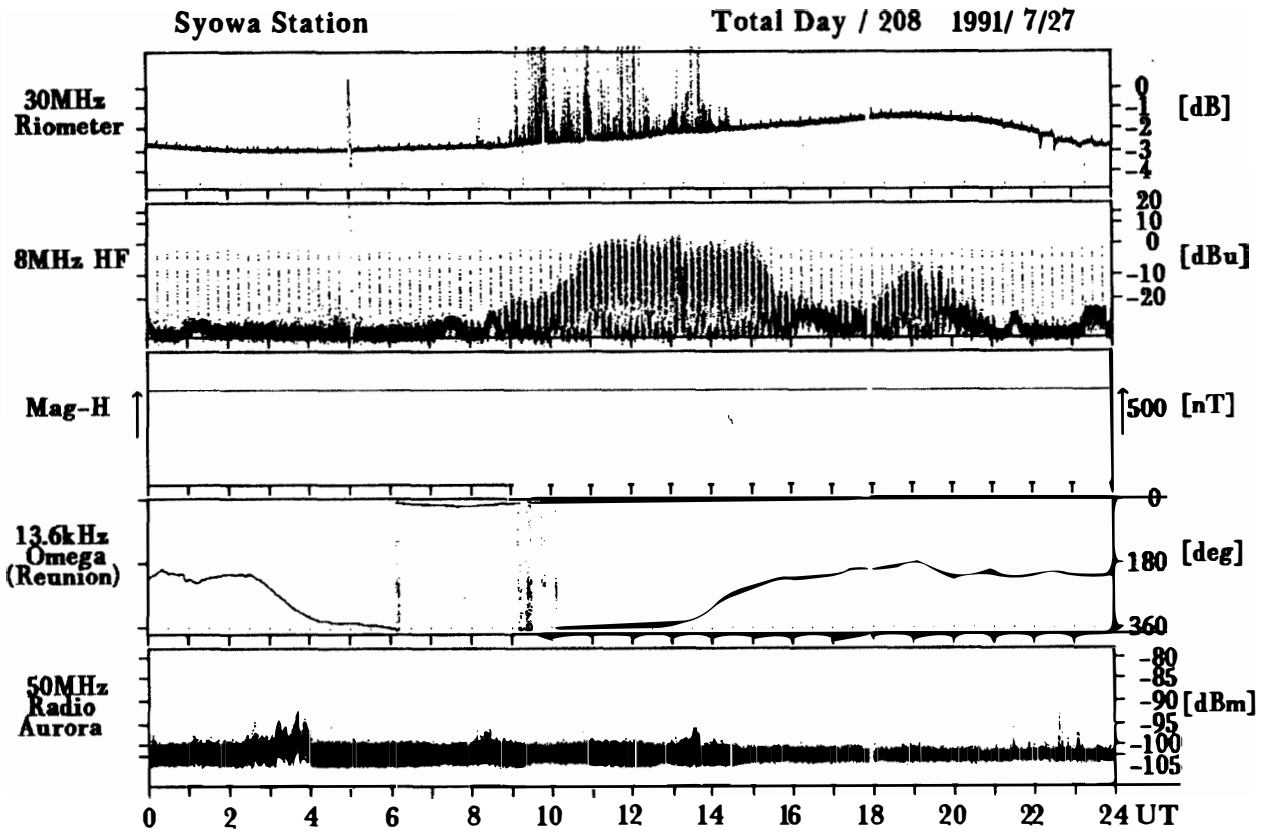
Syowa Station

Total Day / 203 1991/ 7/22



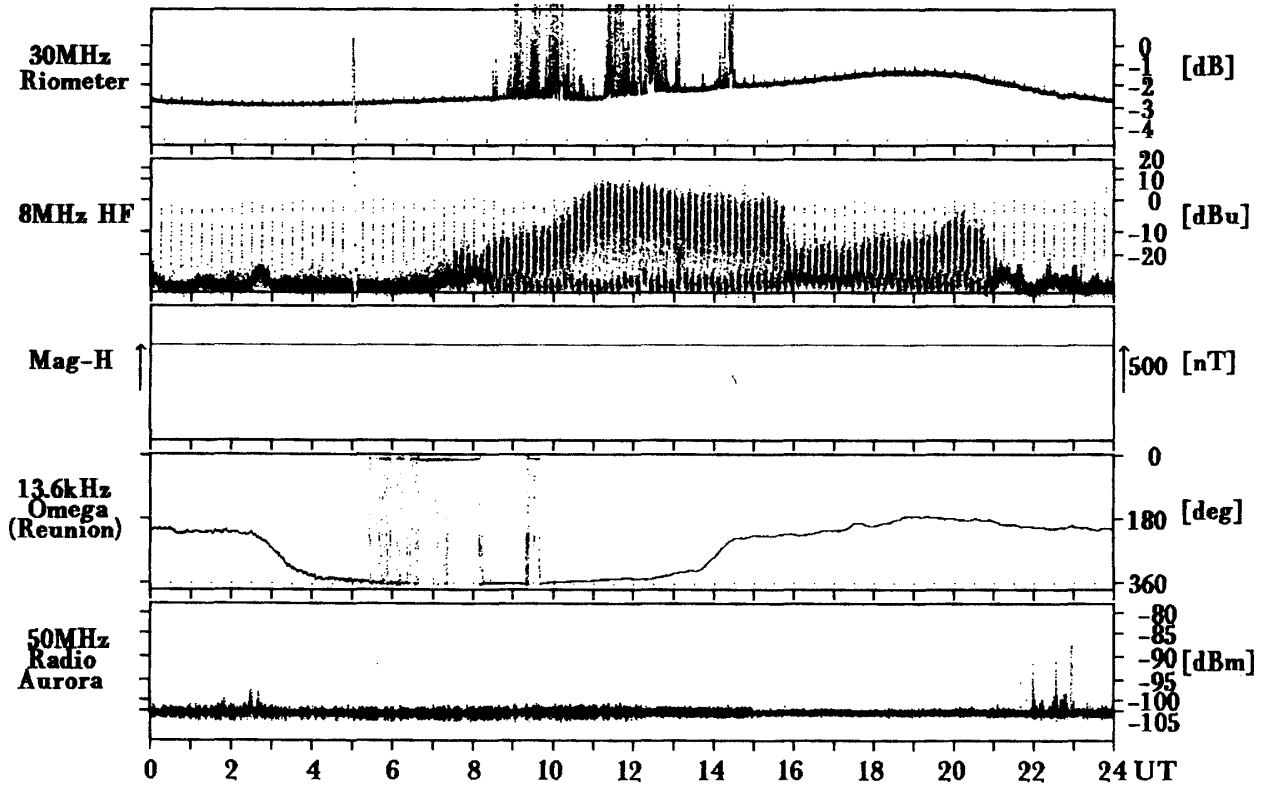






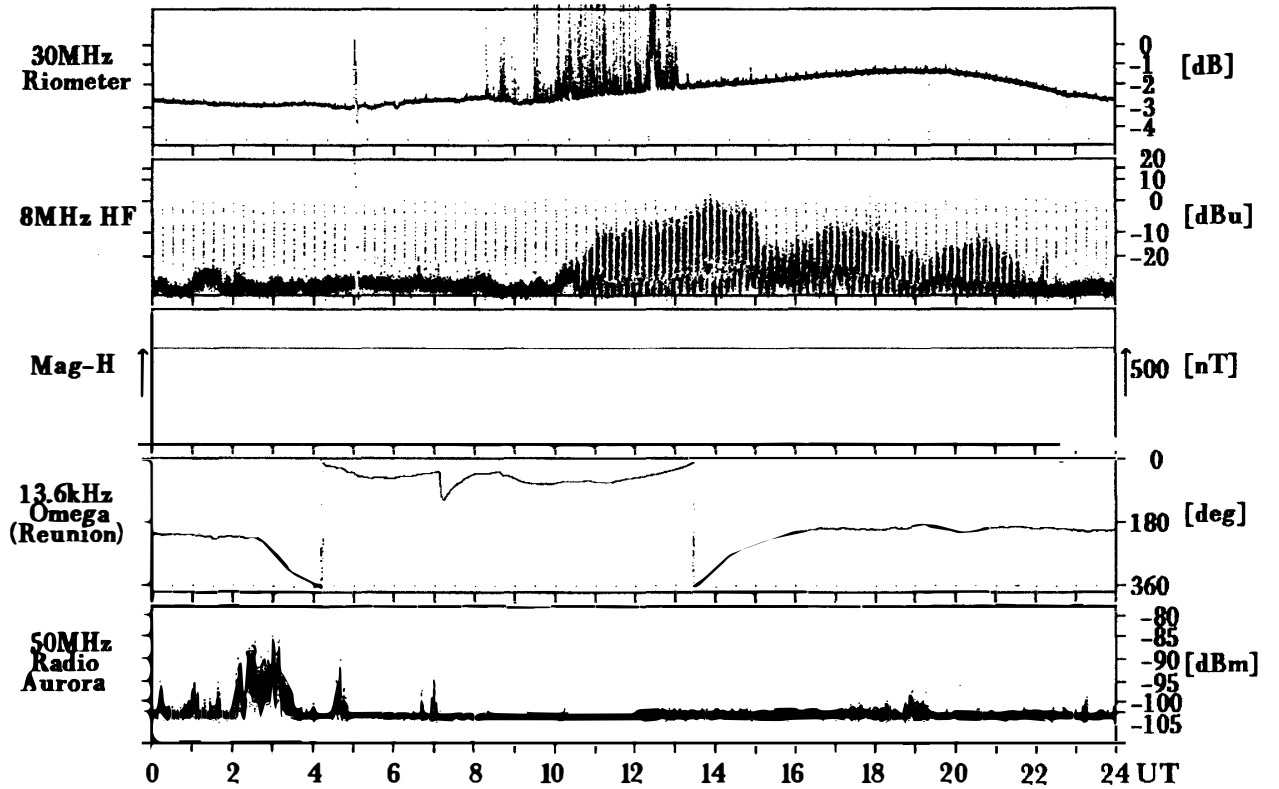
Syowa Station

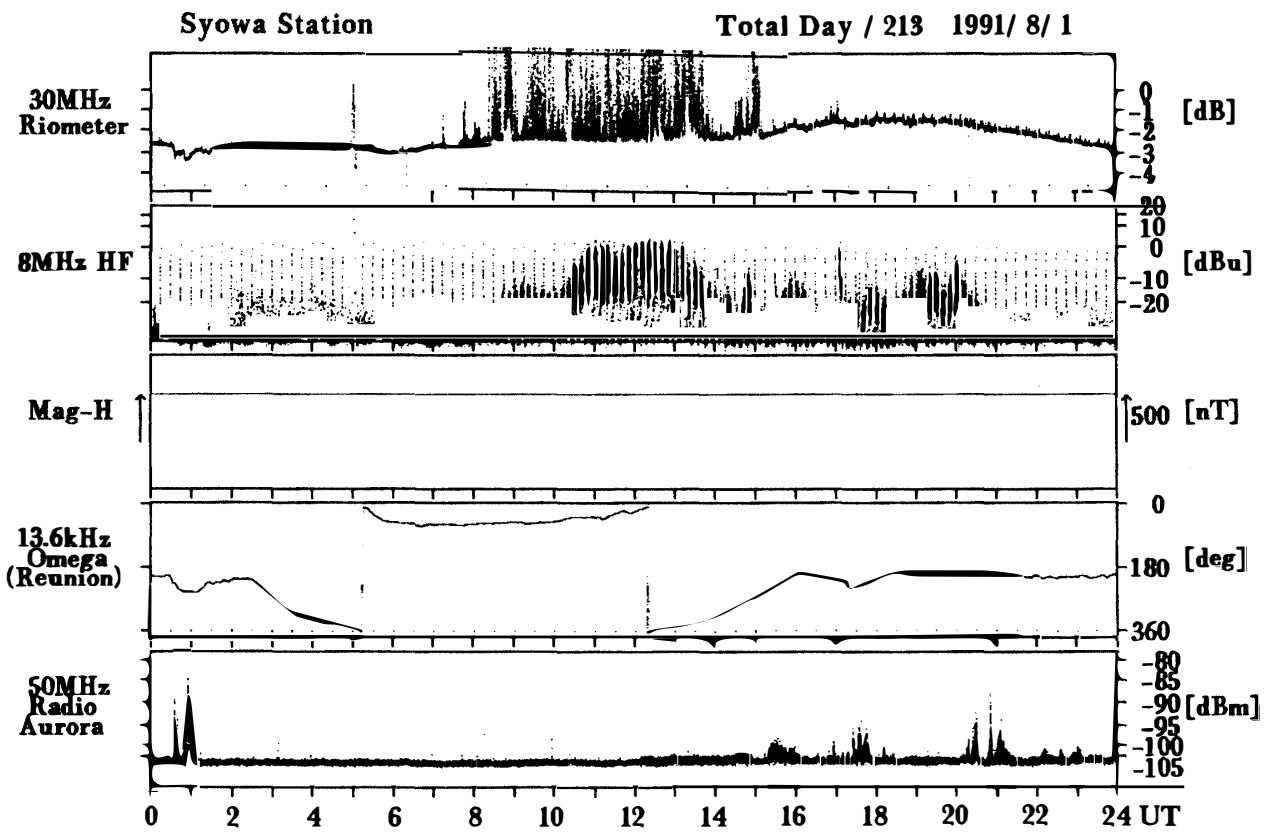
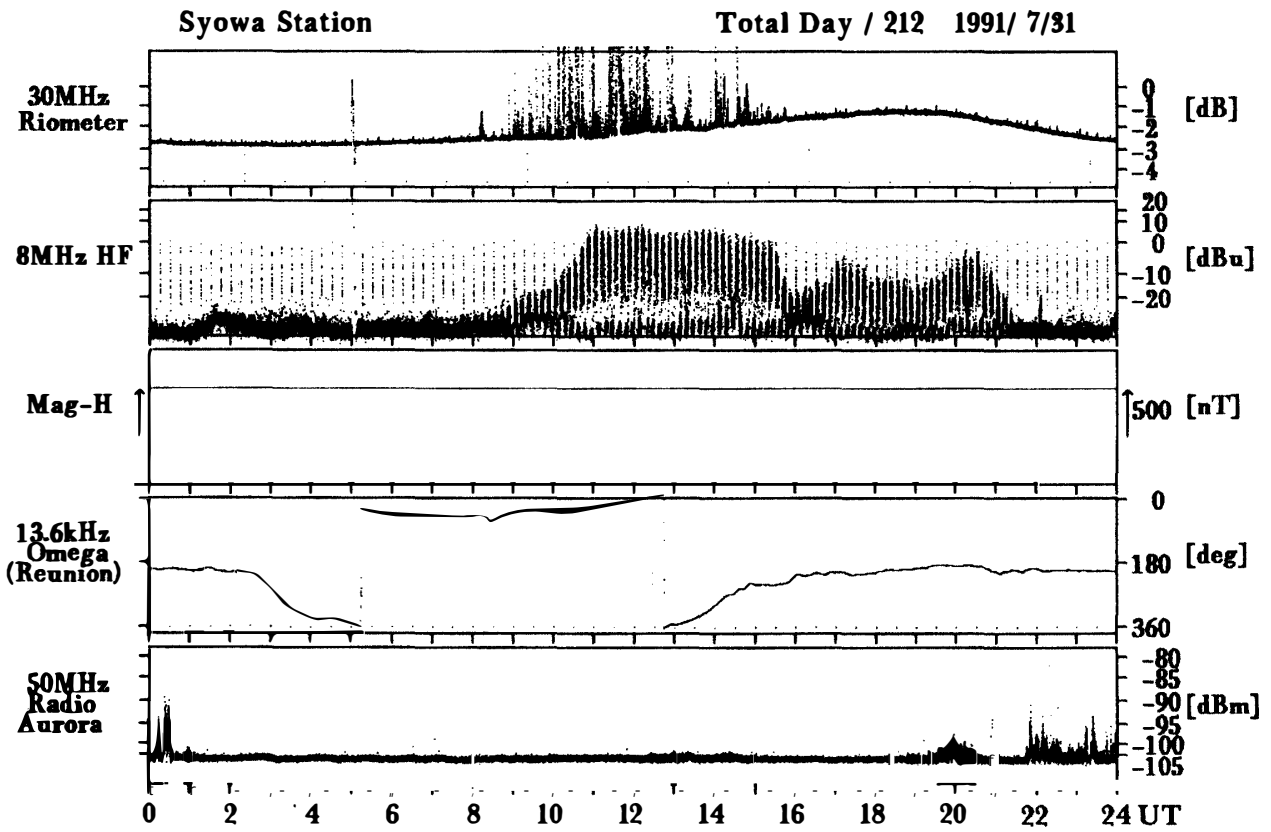
Total Day / 210 1991/ 7/29



Syowa Station

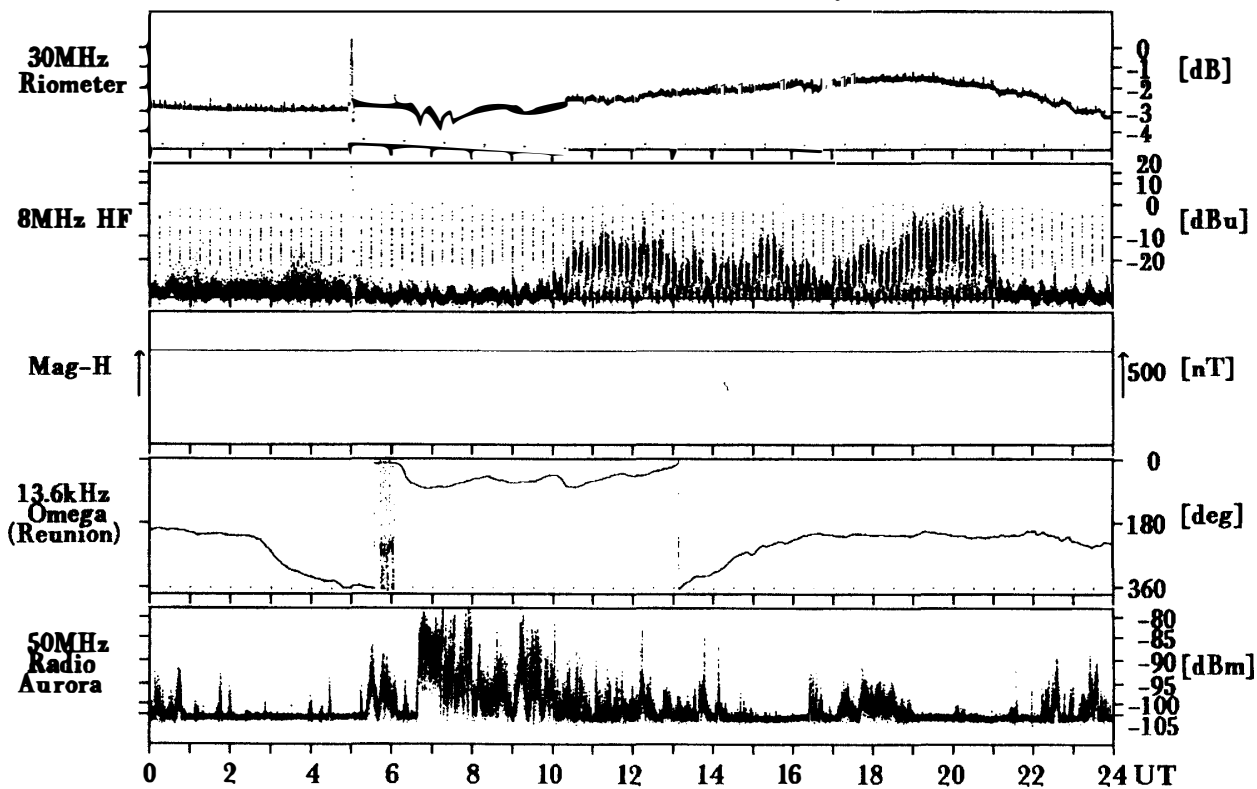
Total Day / 211 1991/ 7/30





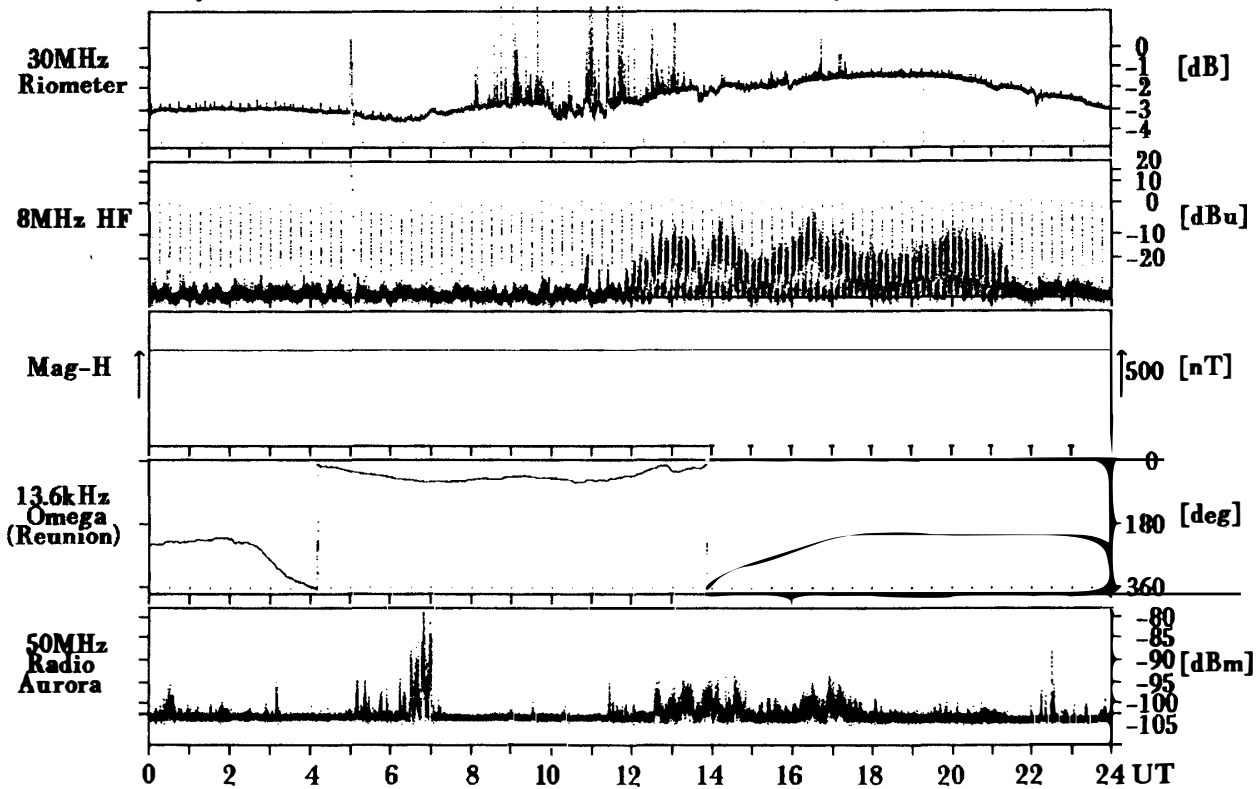
Syowa Station

Total Day / 214 1991/ 8/ 2



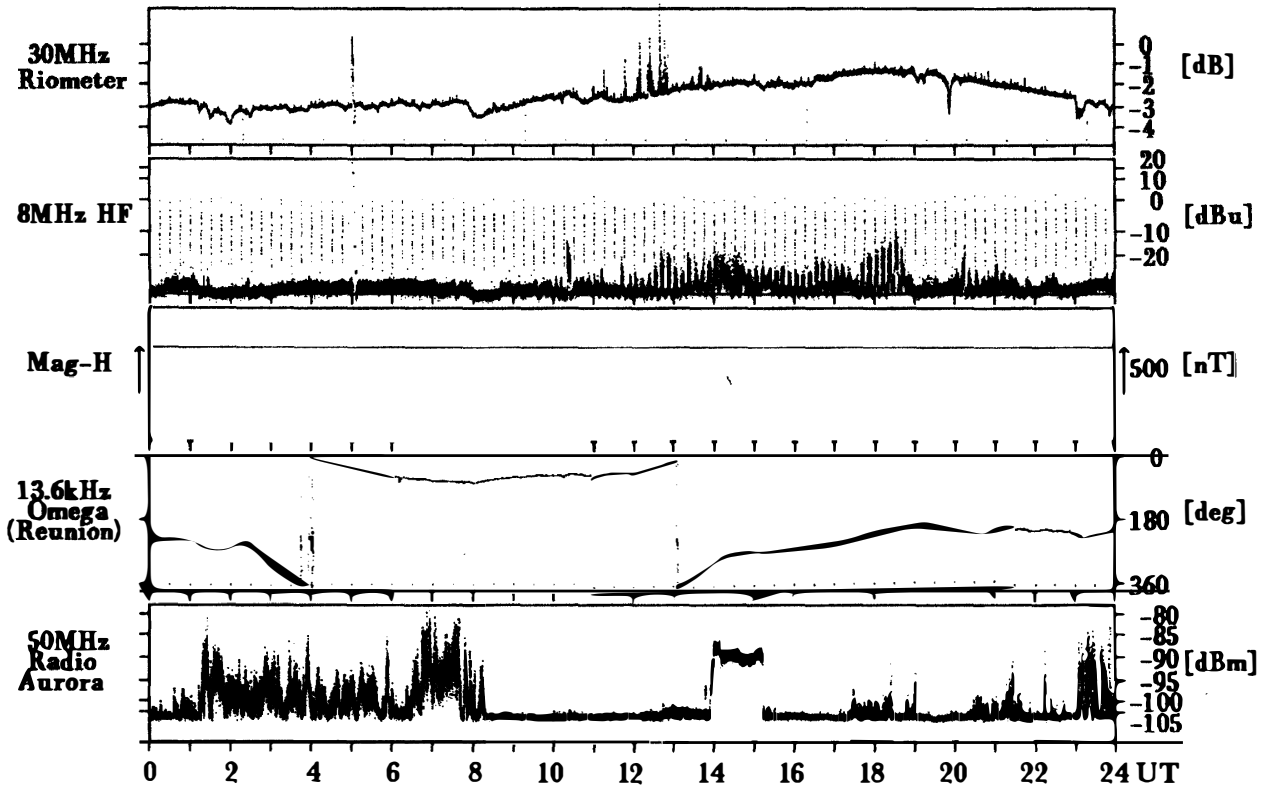
Syowa Station

Total Day / 215 1991/ 8/ 3



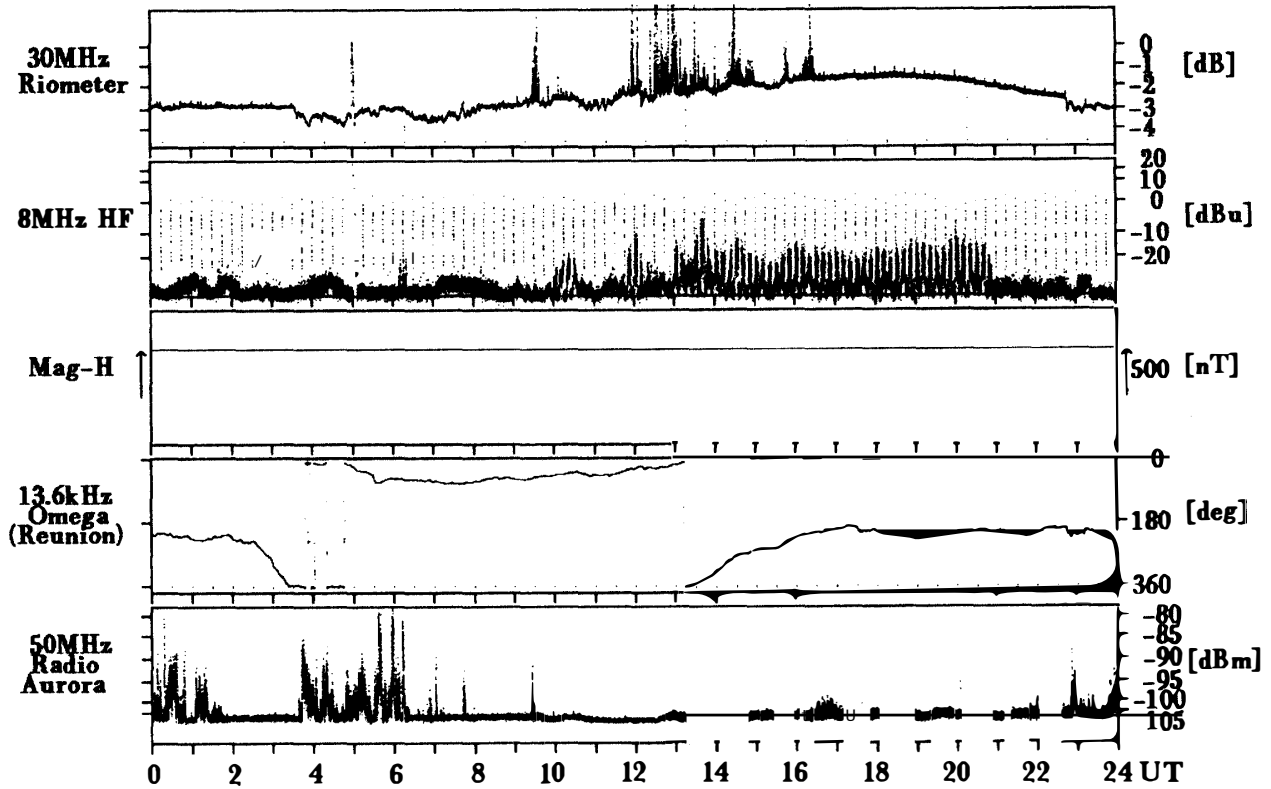
Syowa Station

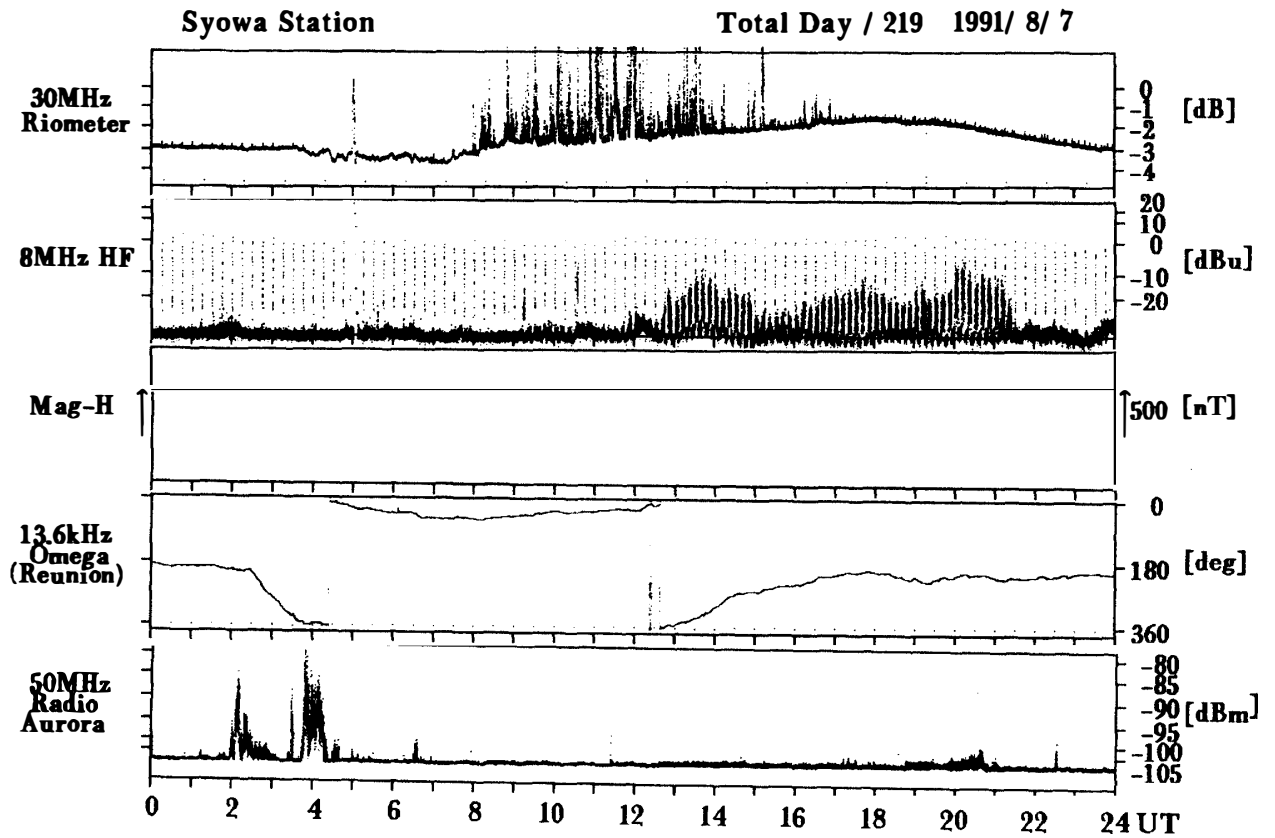
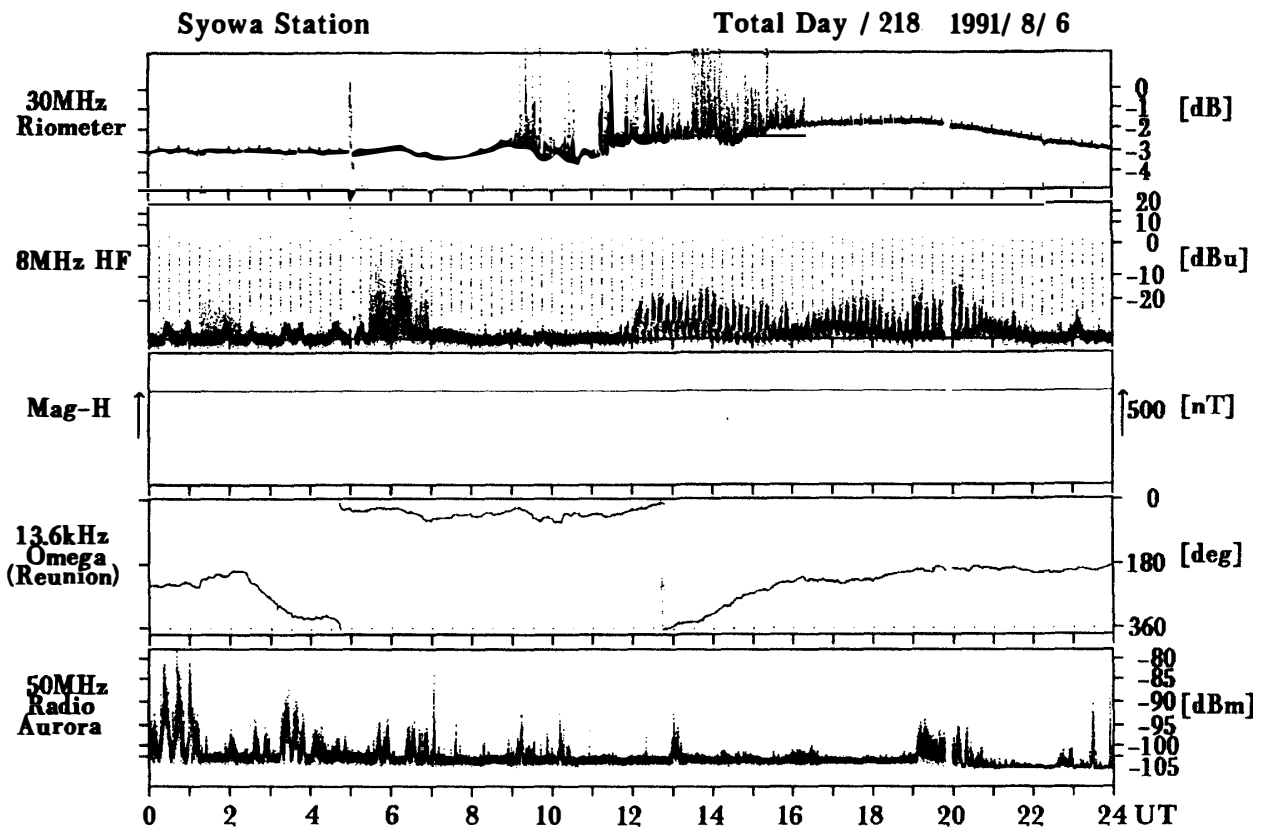
Total Day / 216 1991/ 8/ 4

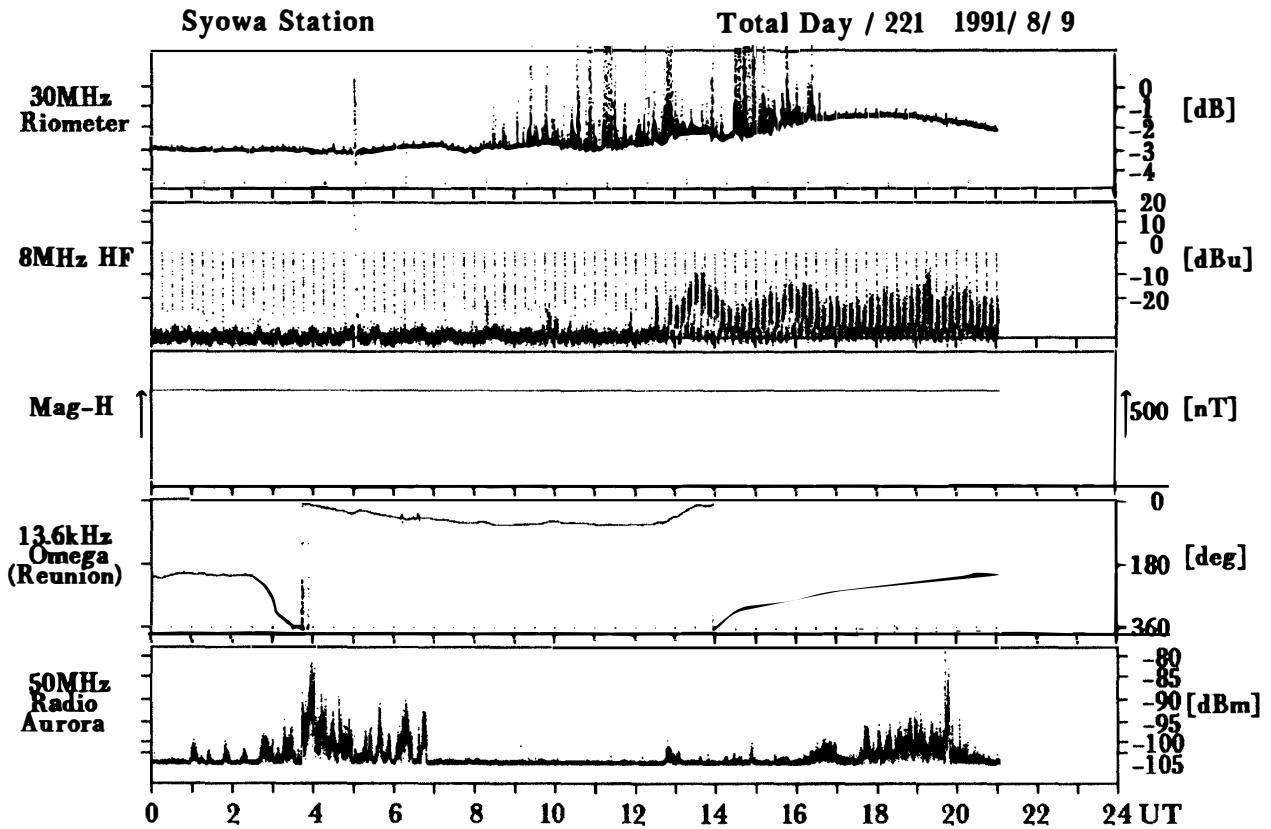
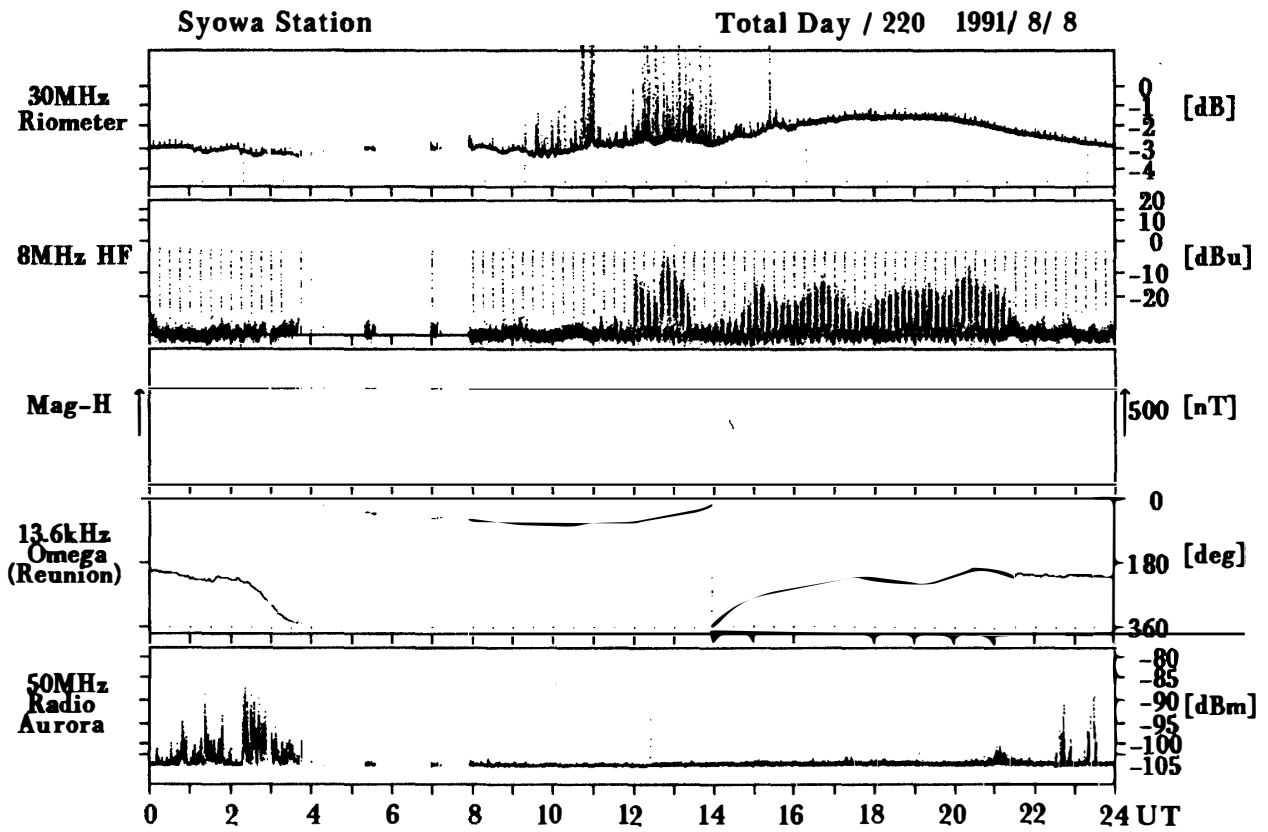


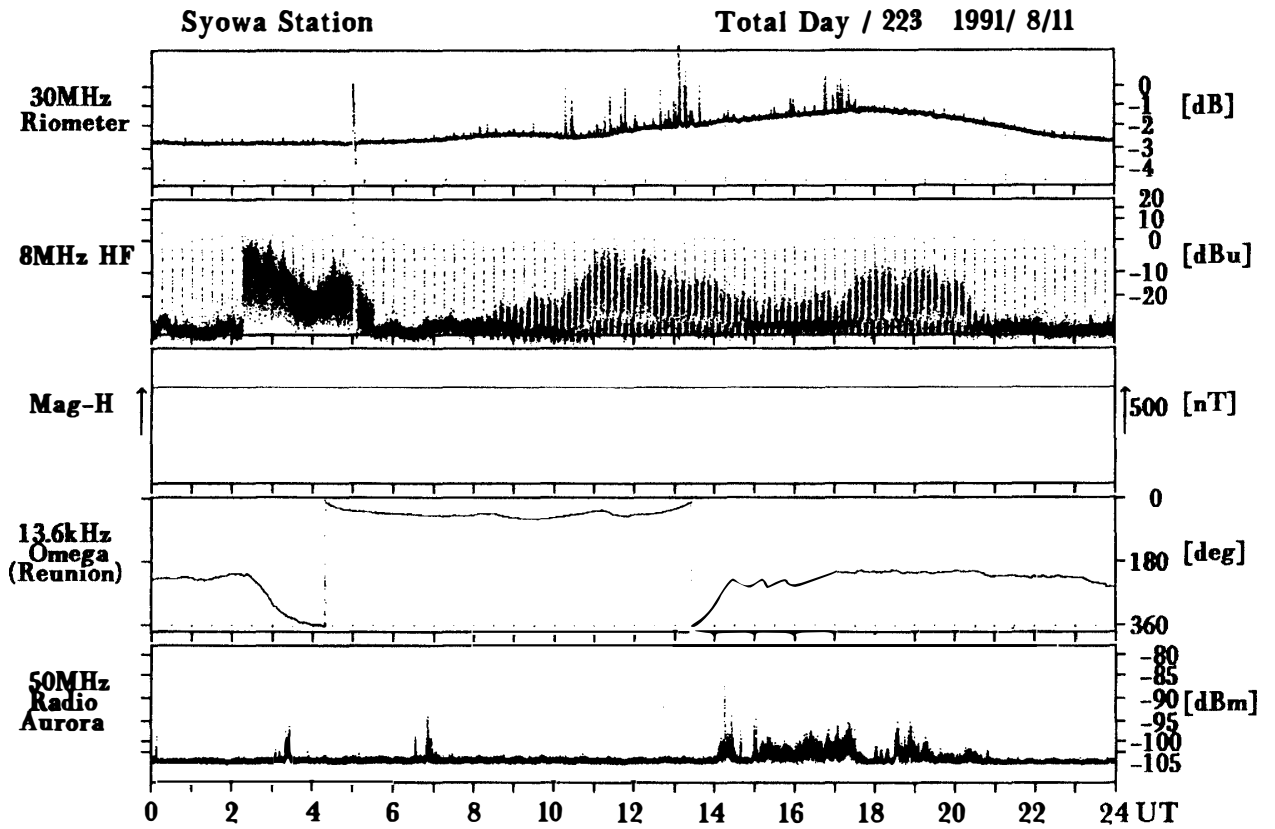
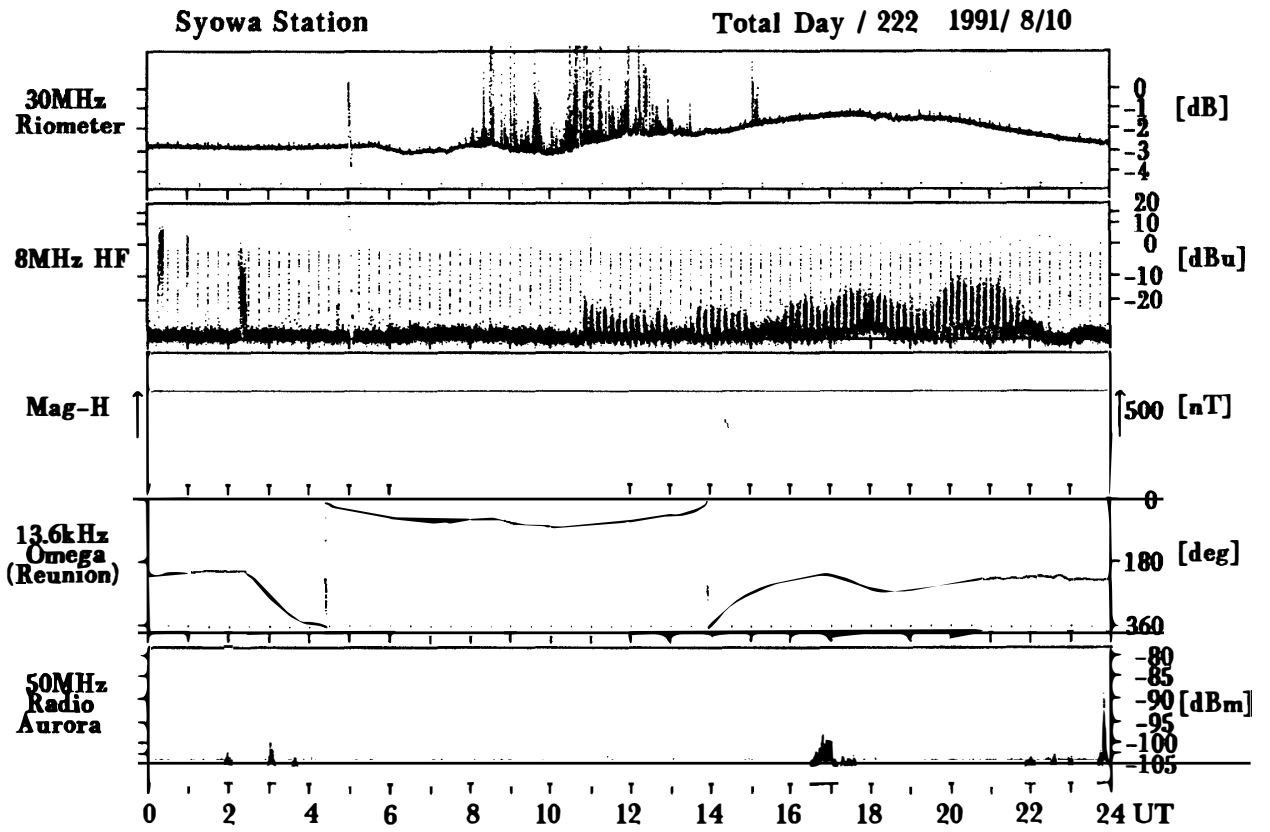
Syowa Station

Total Day / 217 1991/ 8/ 5



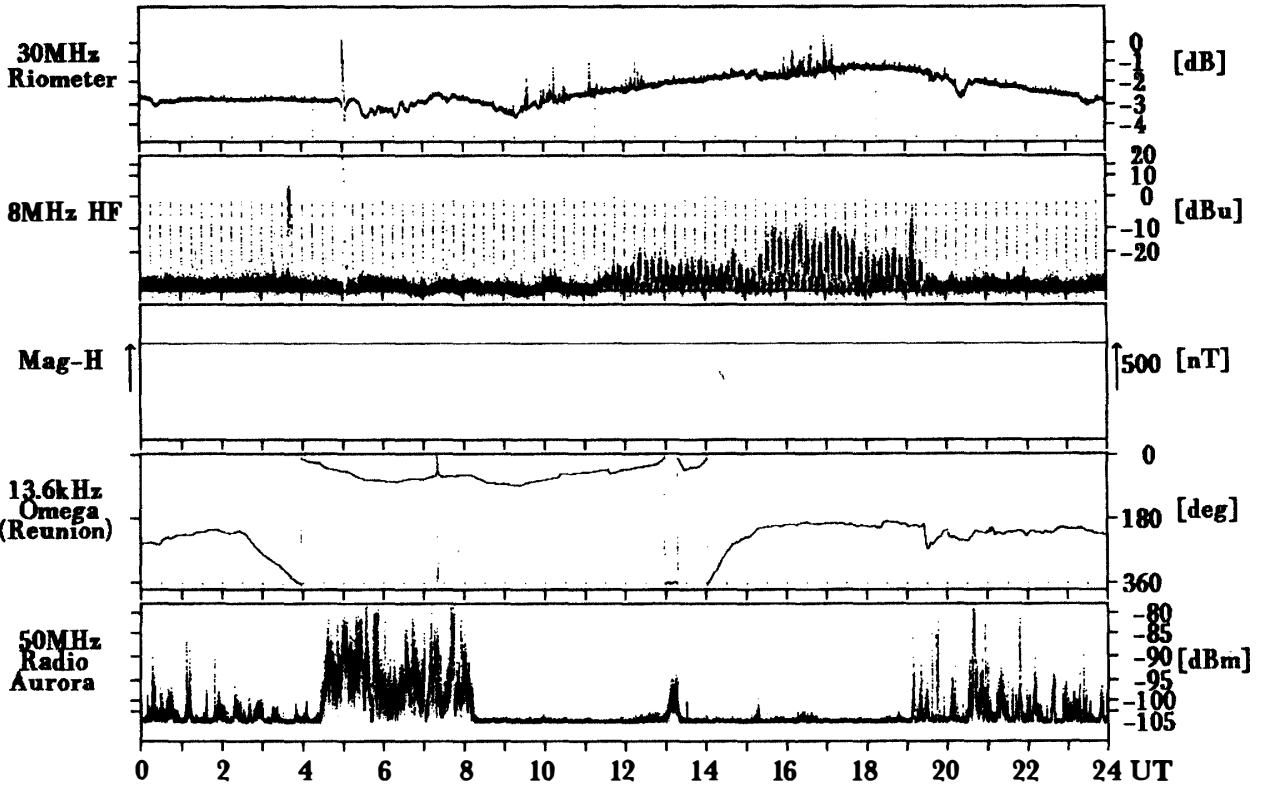






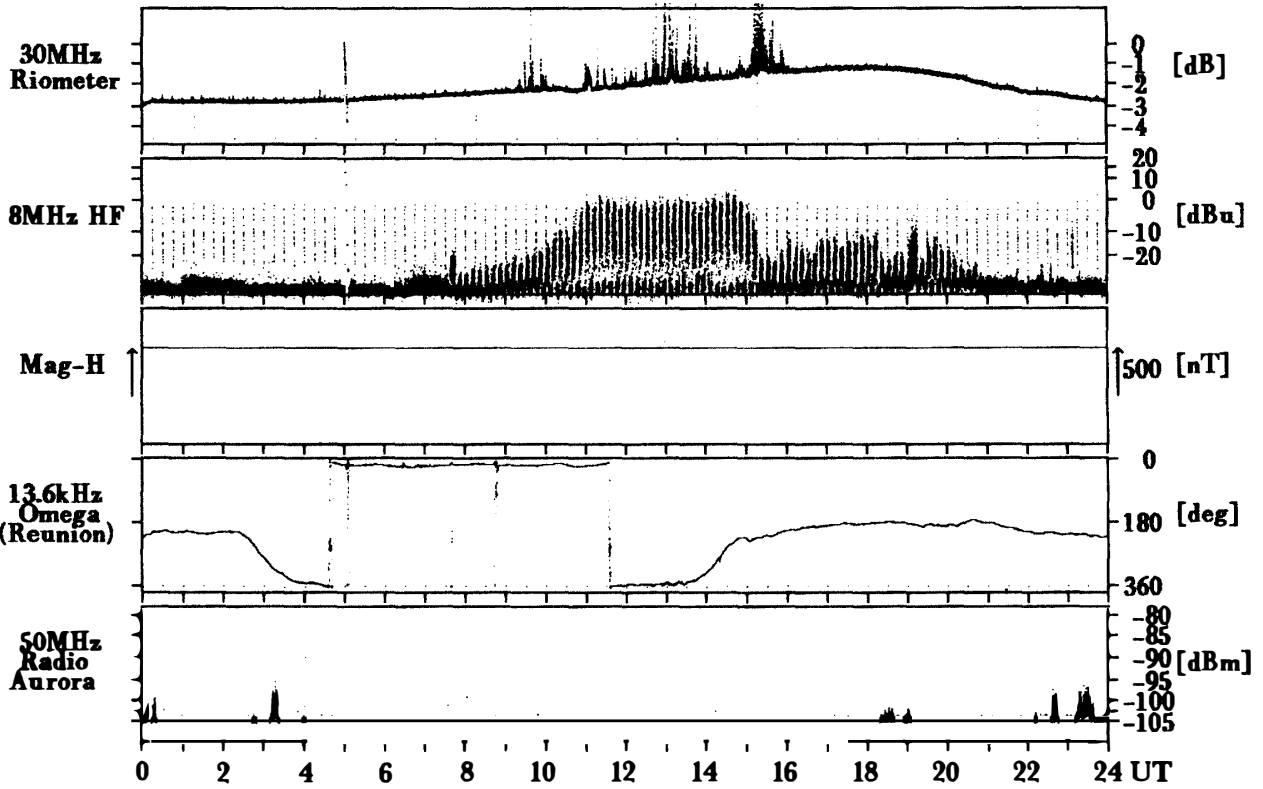
Syowa Station

Total Day / 224 1991/ 8/12



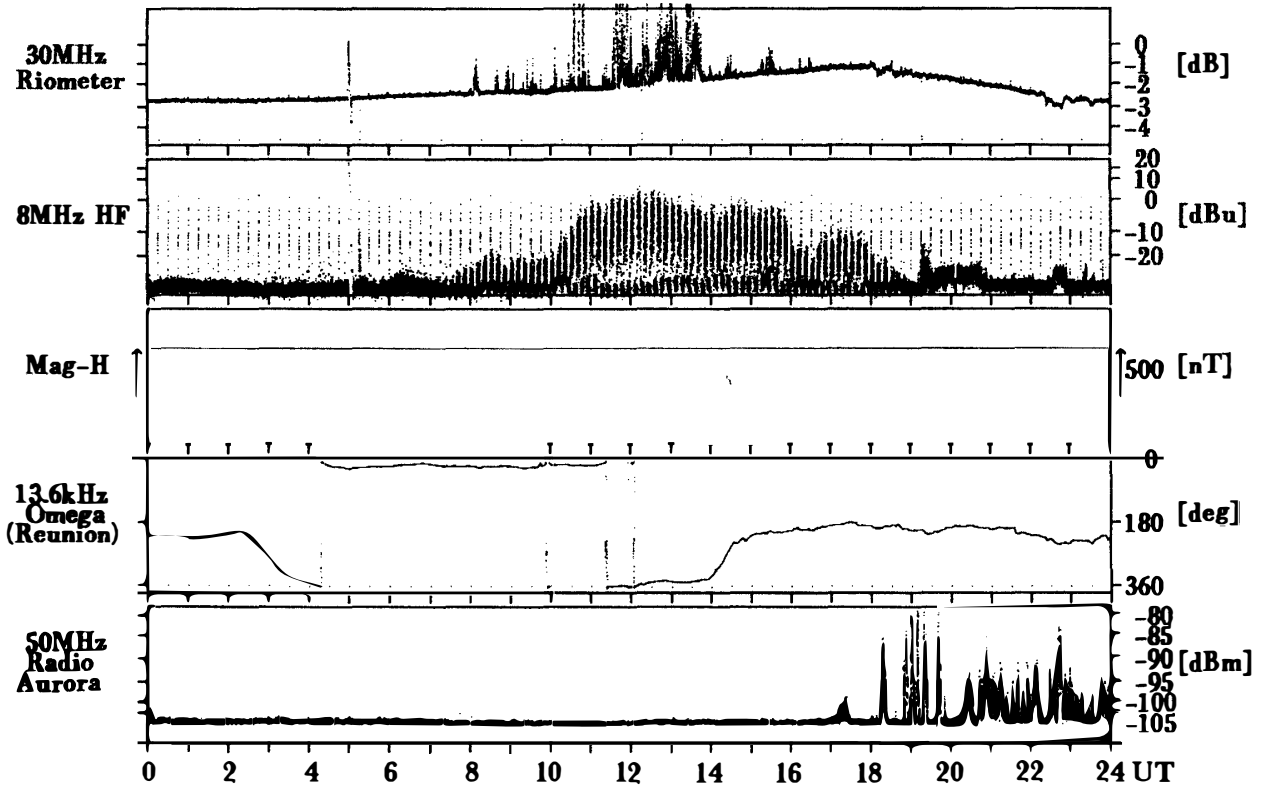
Syowa Station

Total Day / 225 1991/ 8/13



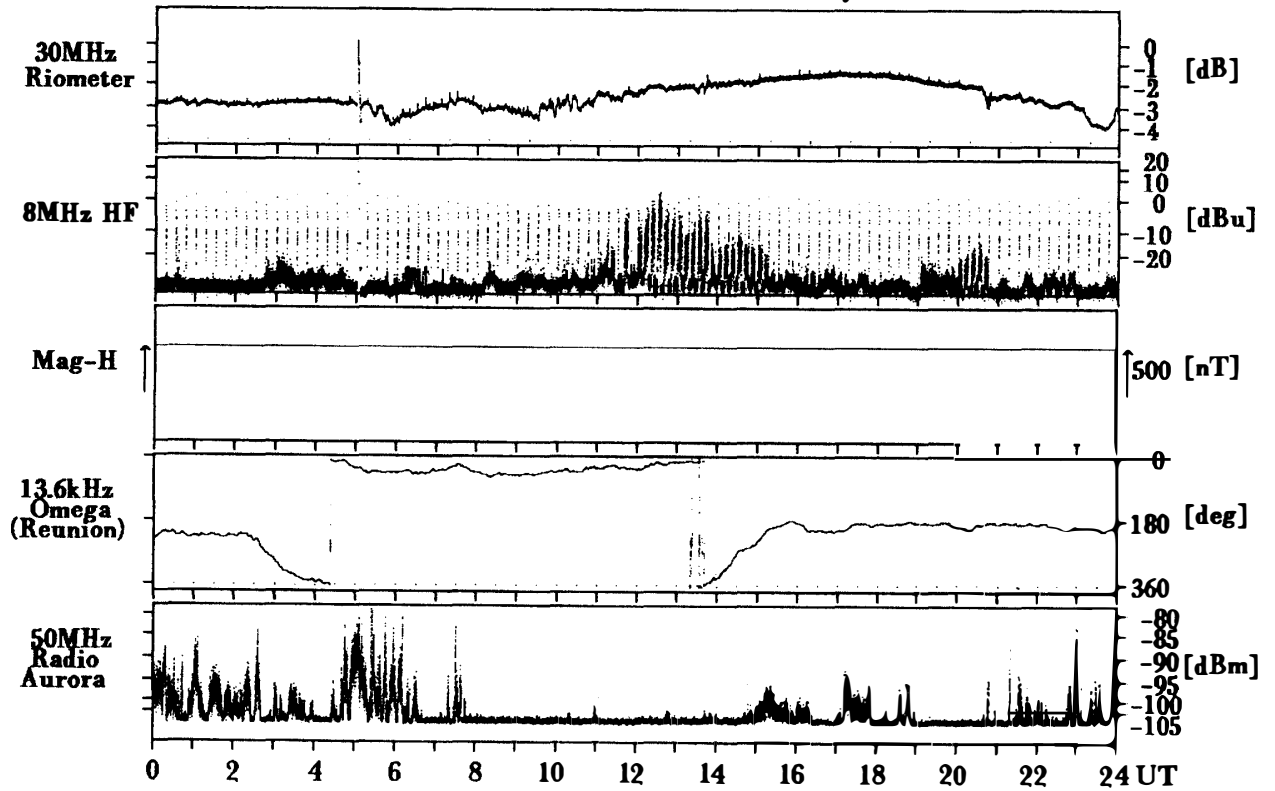
Syowa Station

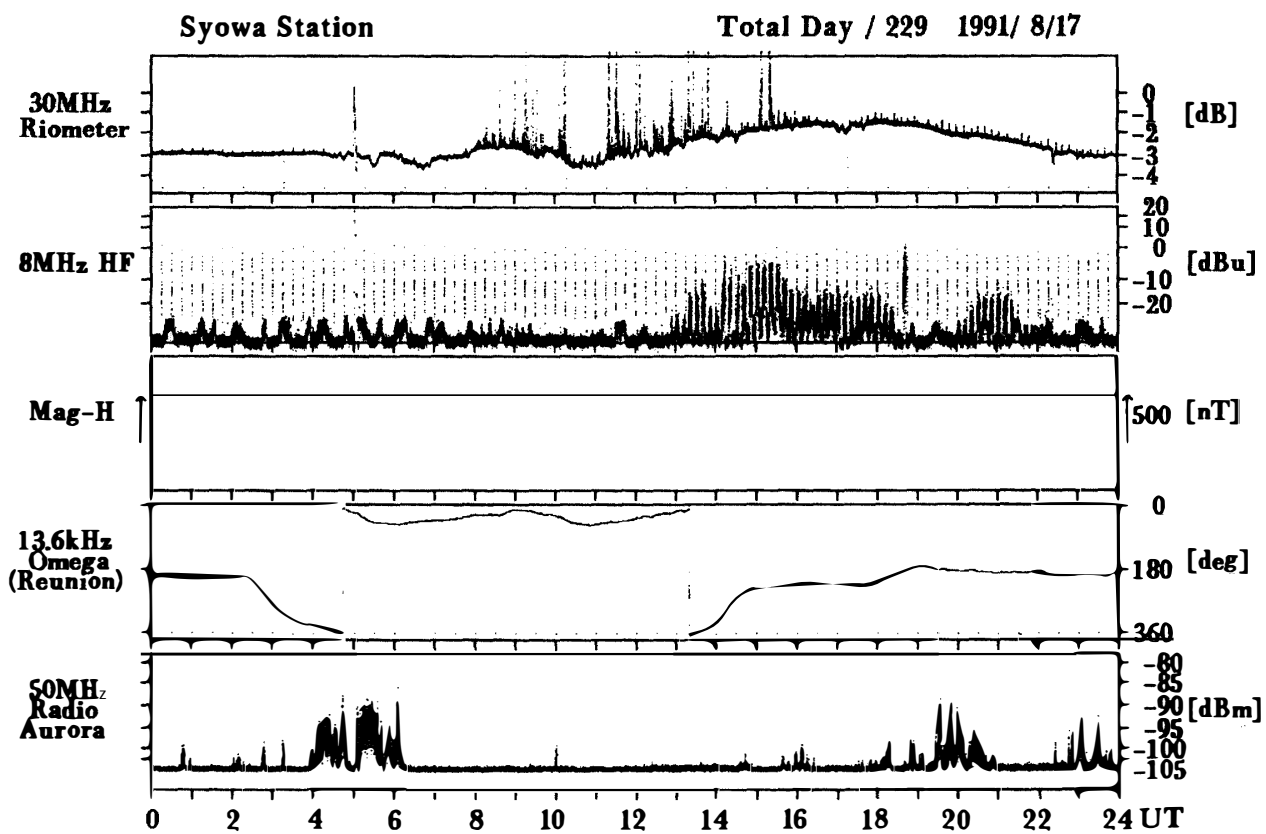
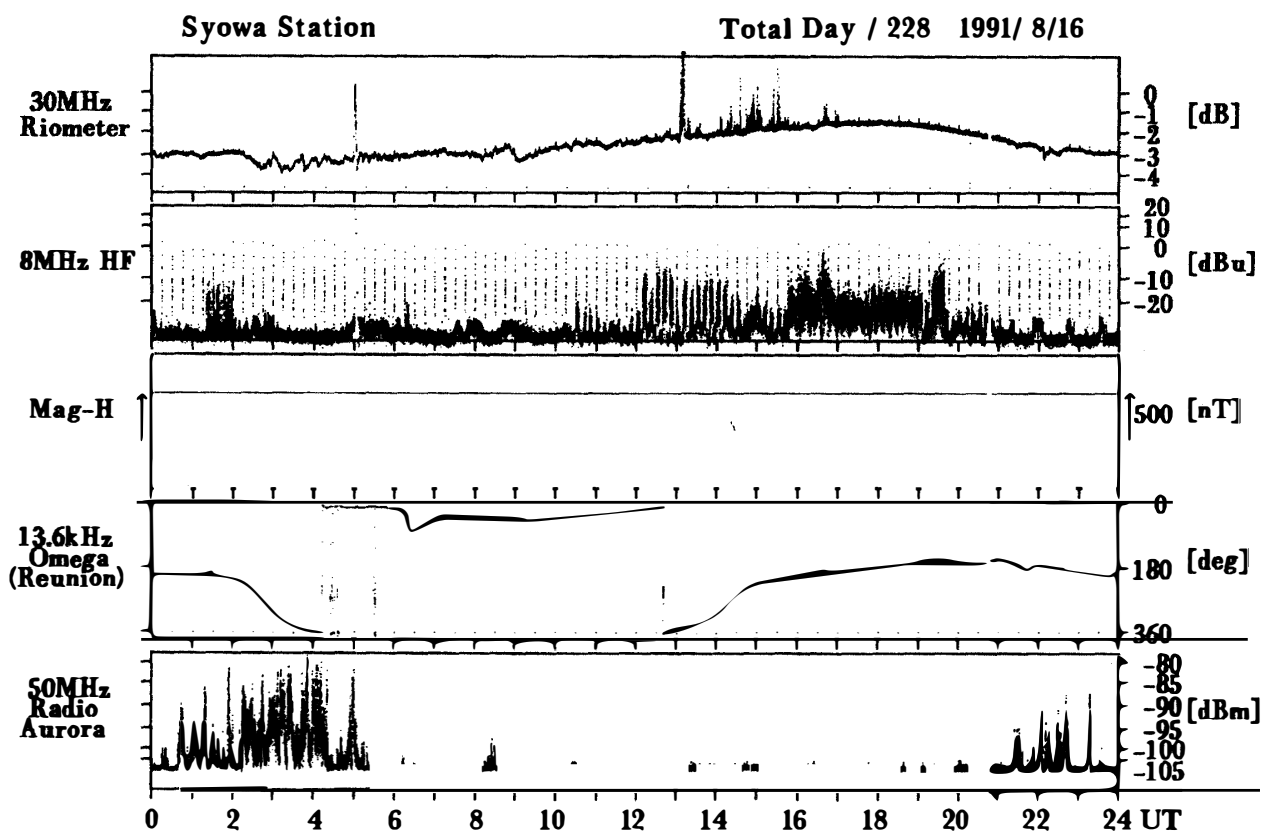
Total Day / 226 1991/ 8/14

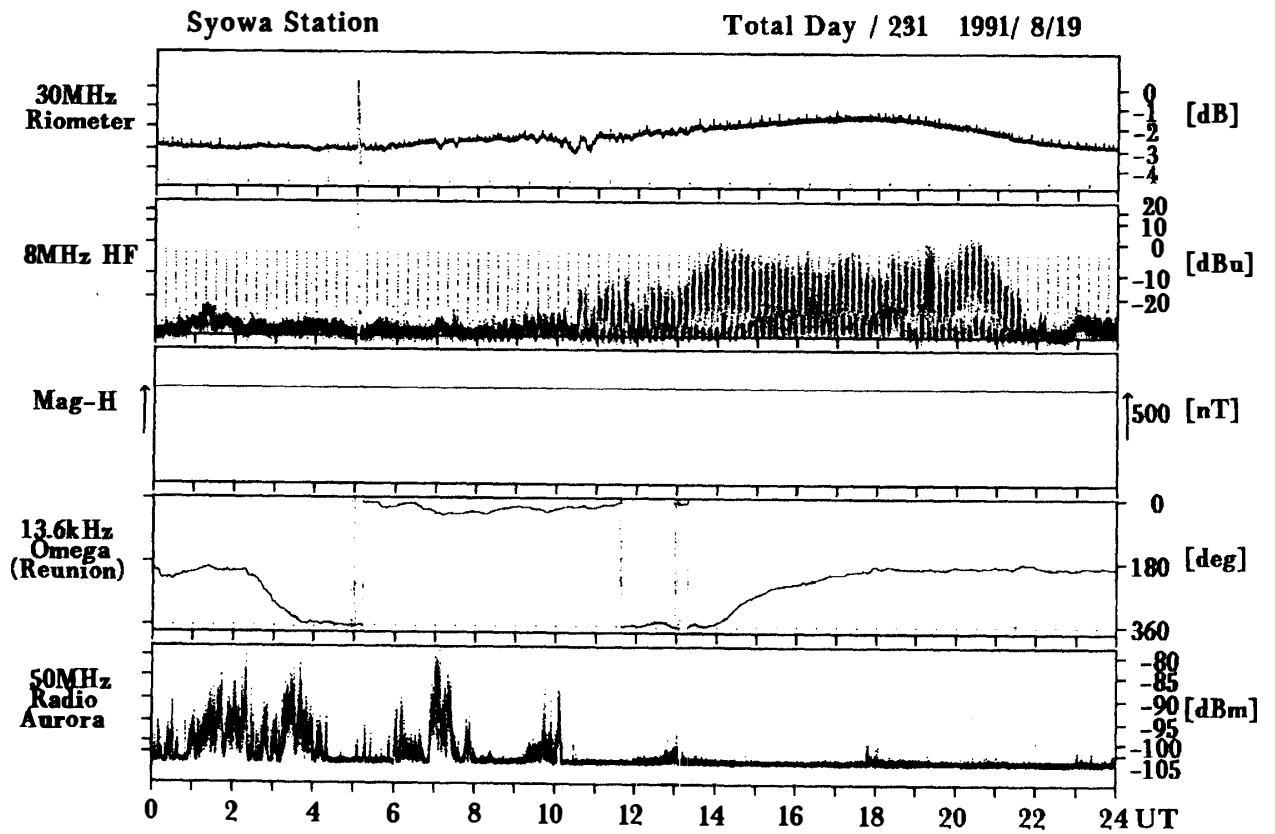
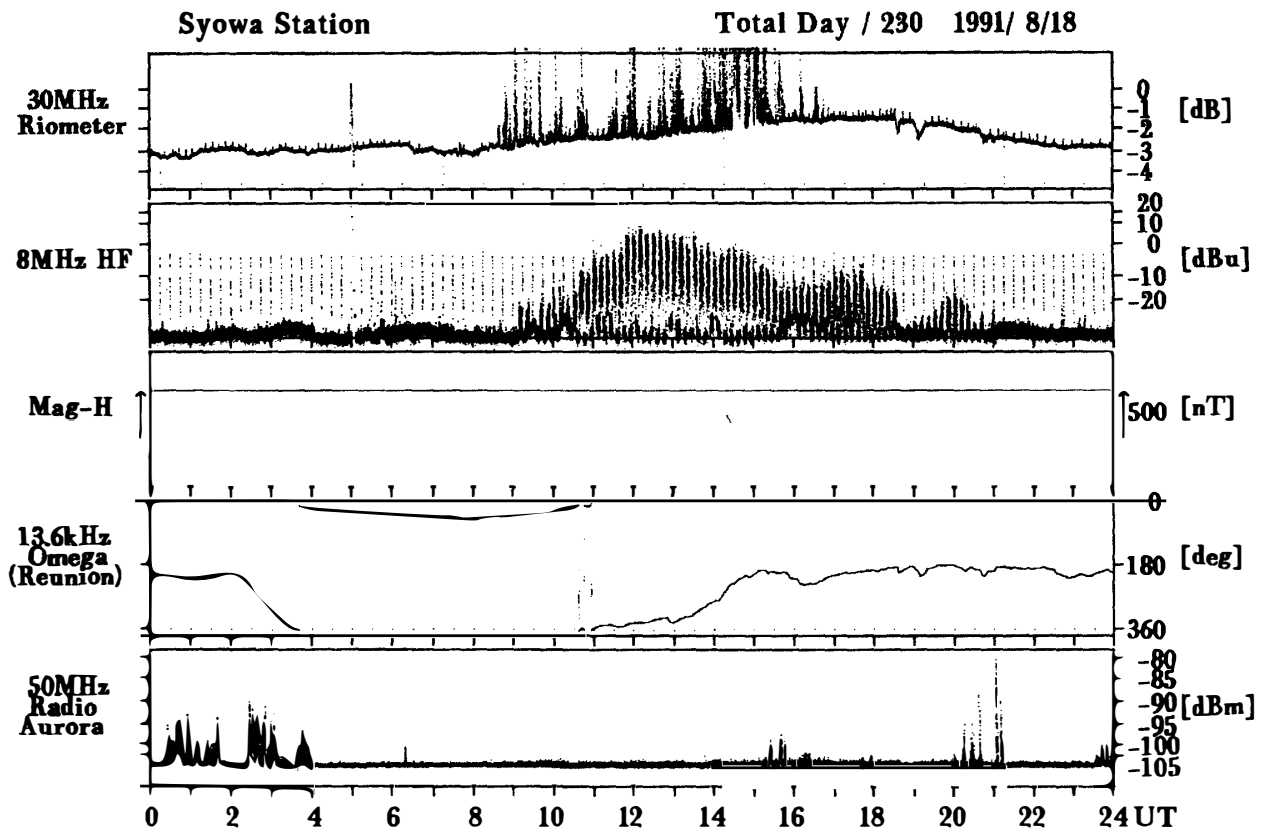


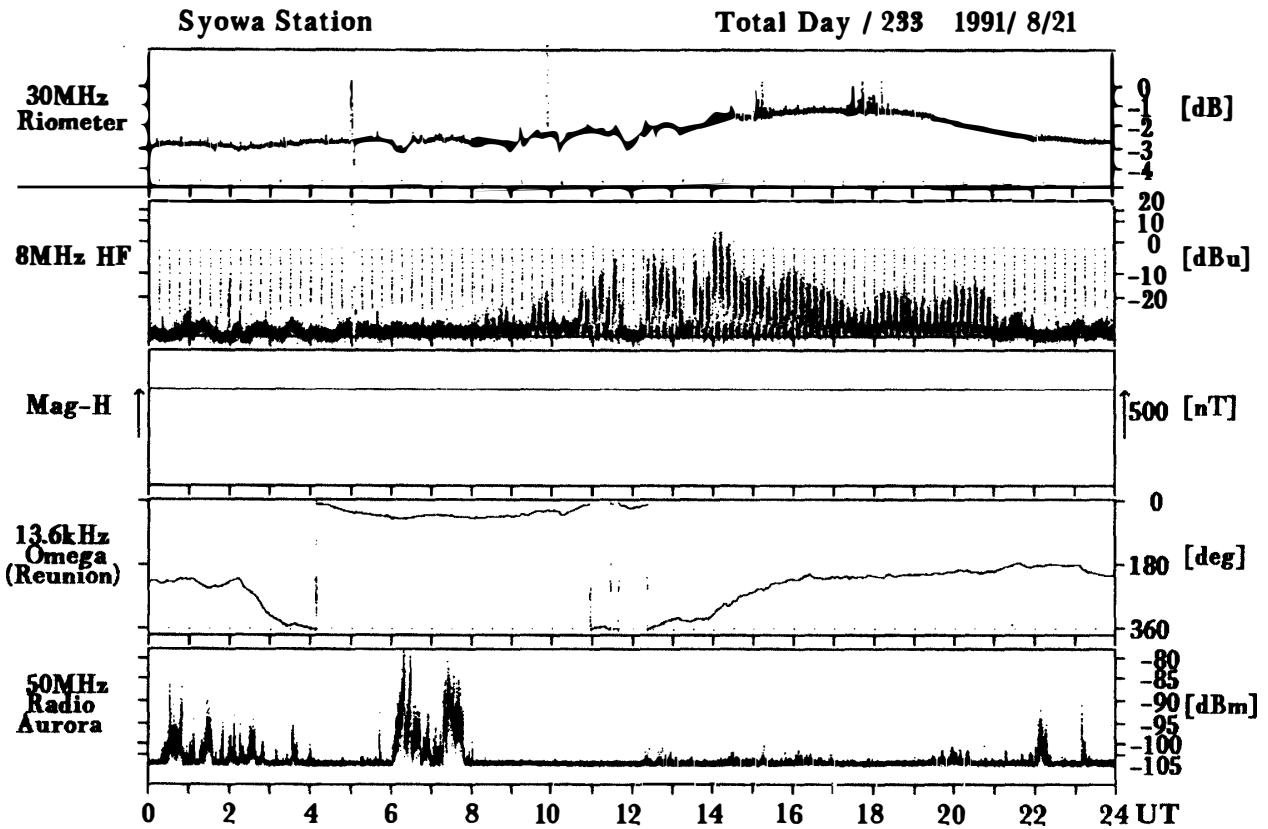
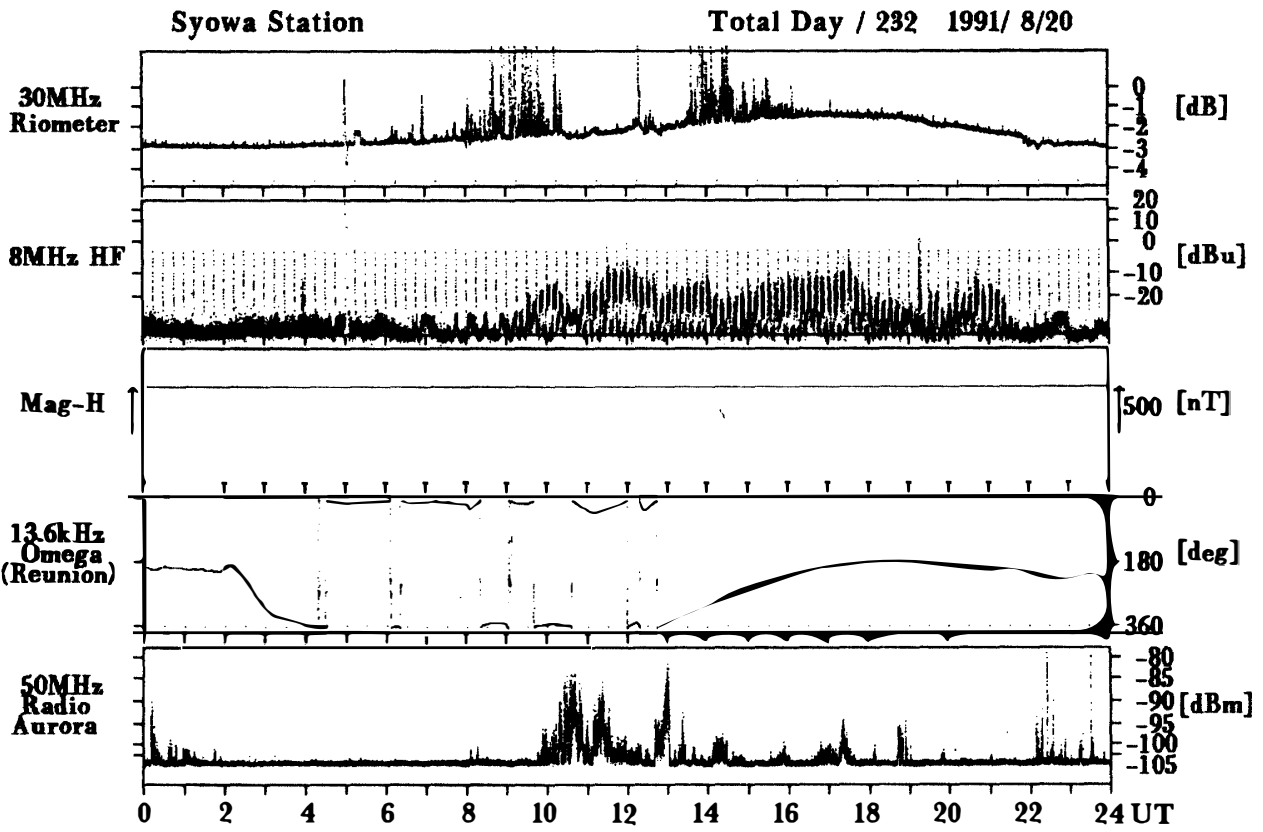
Syowa Station

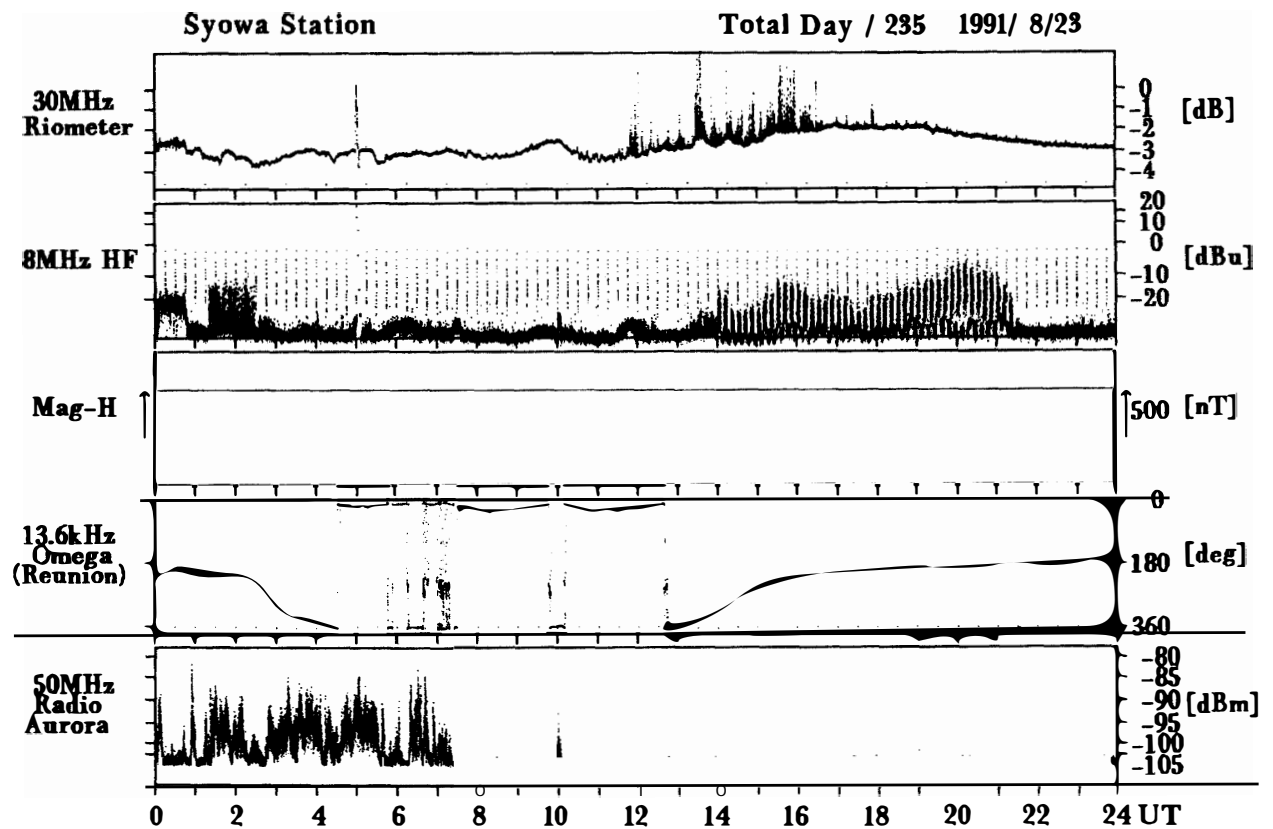
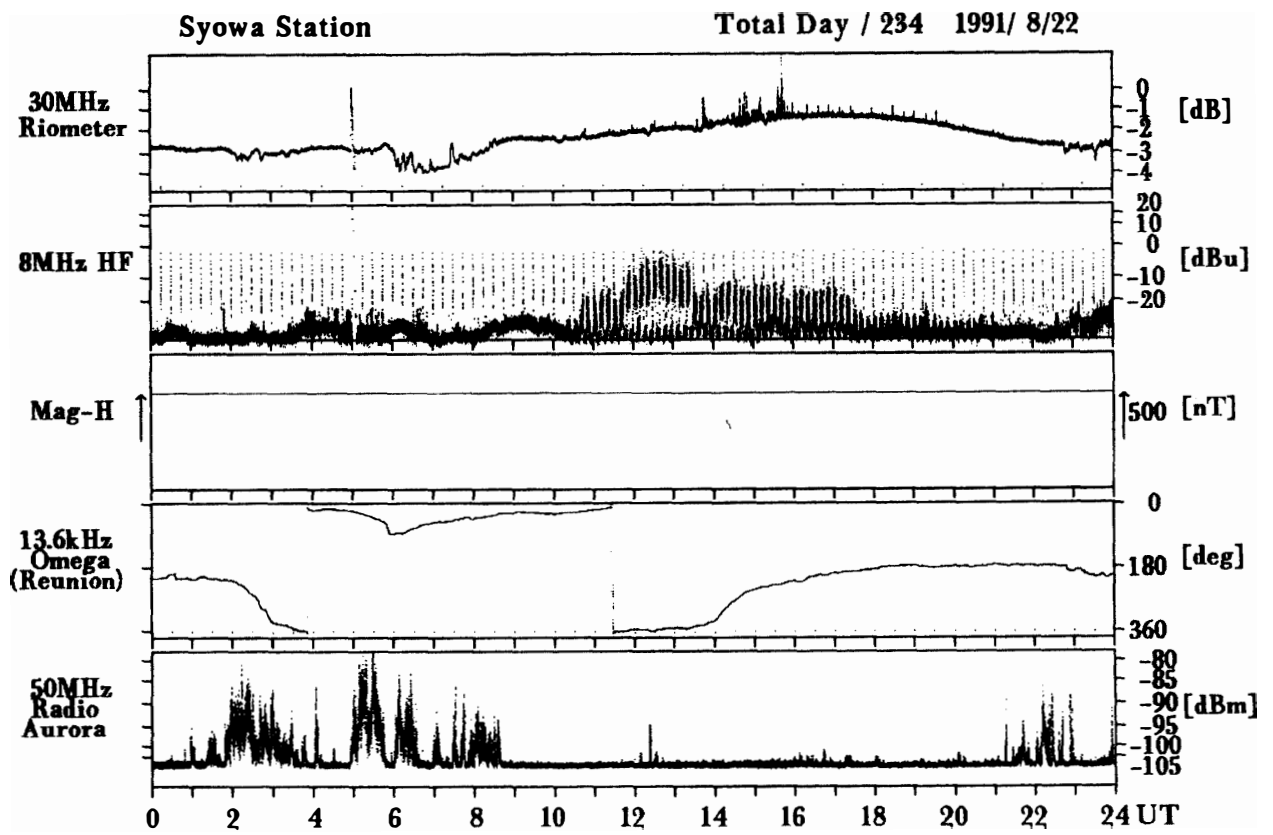
Total Day / 227 1991/ 8/15





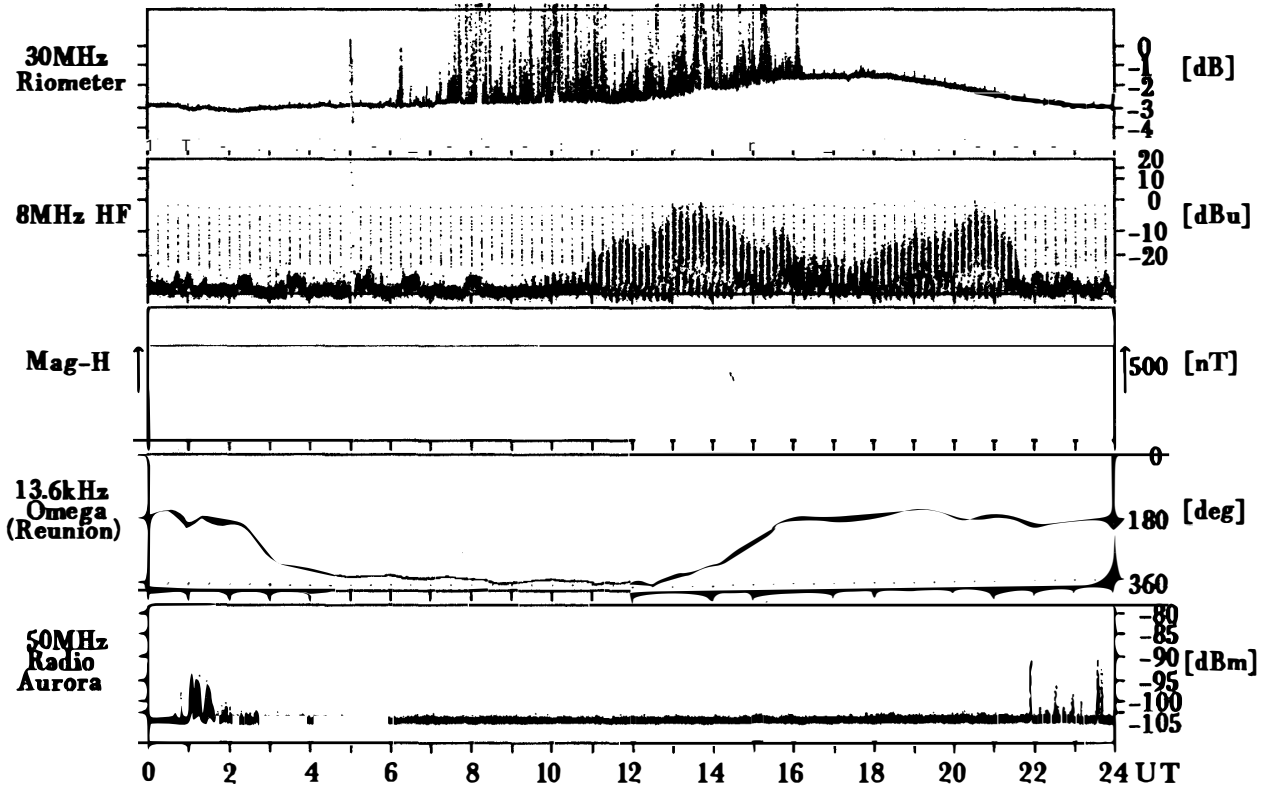






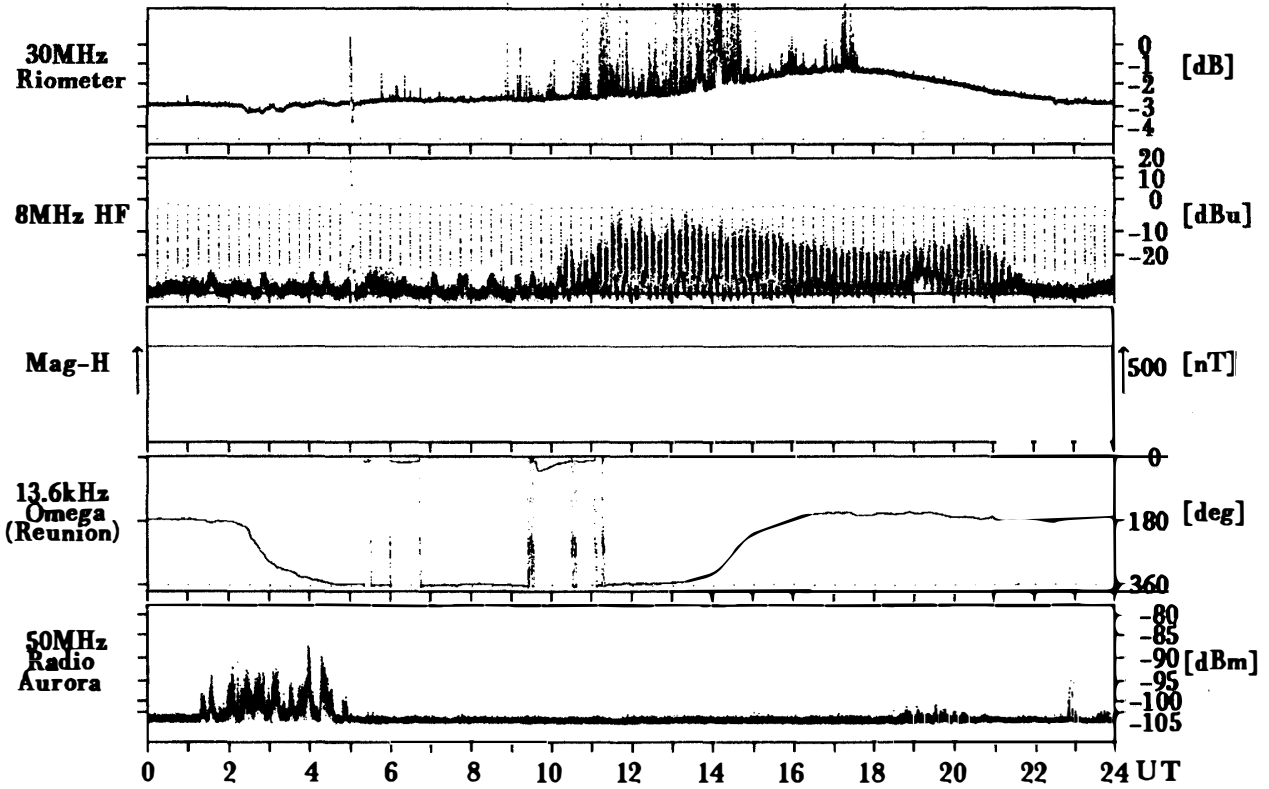
Syowa Station

Total Day / 236 1991/ 8/24



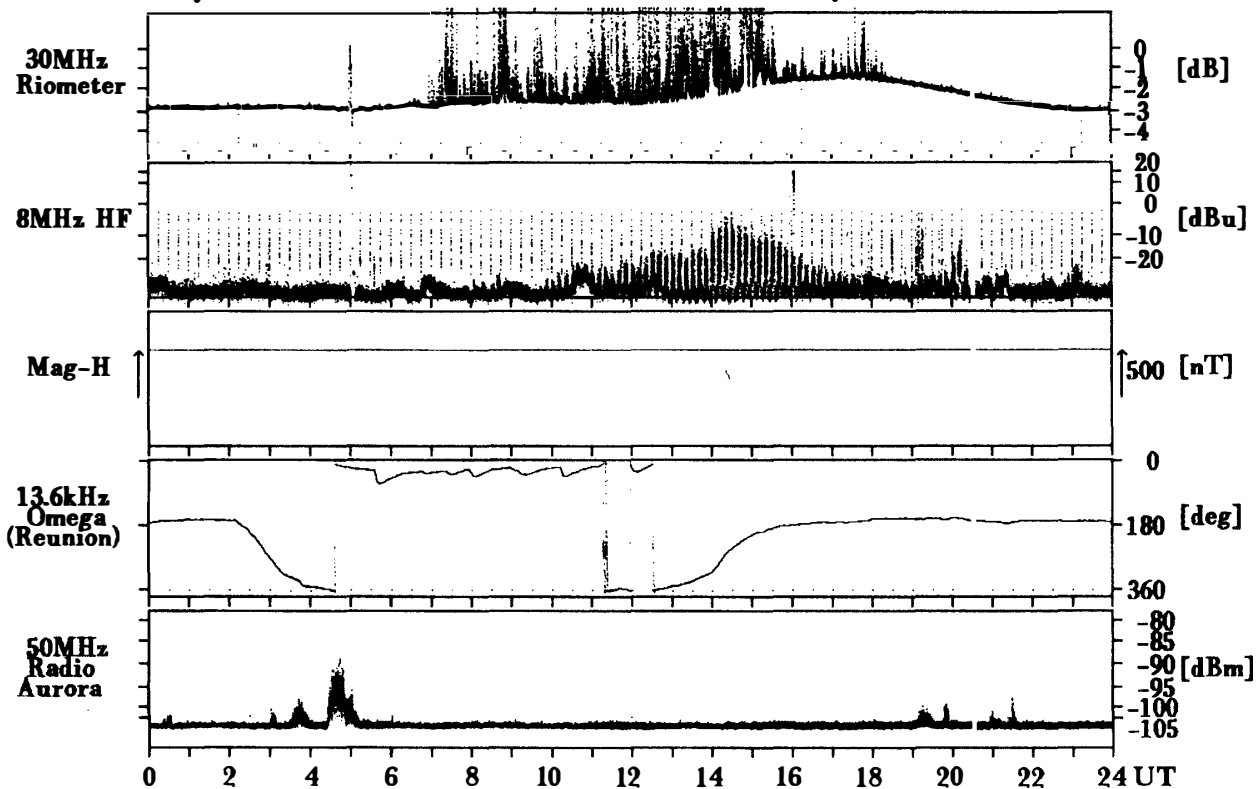
Syowa Station

Total Day / 237 1991/ 8/25



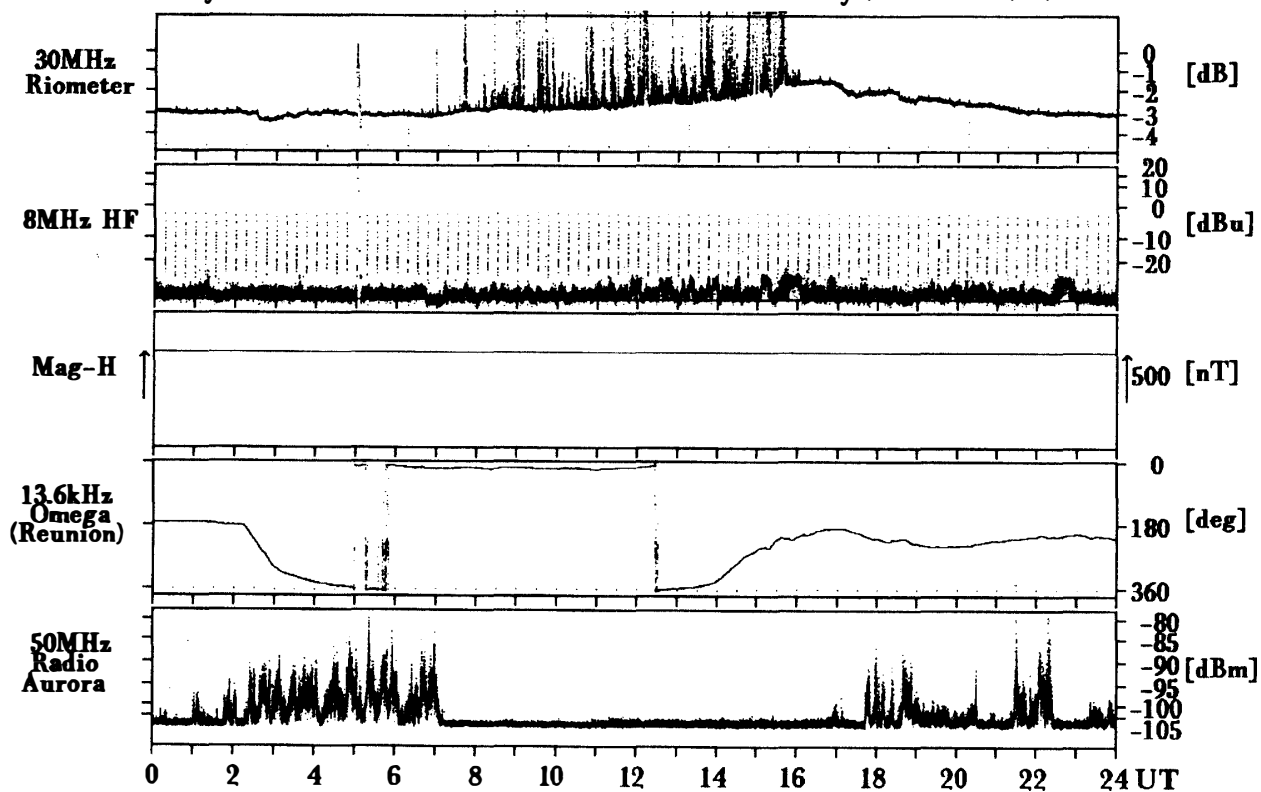
Syowa Station

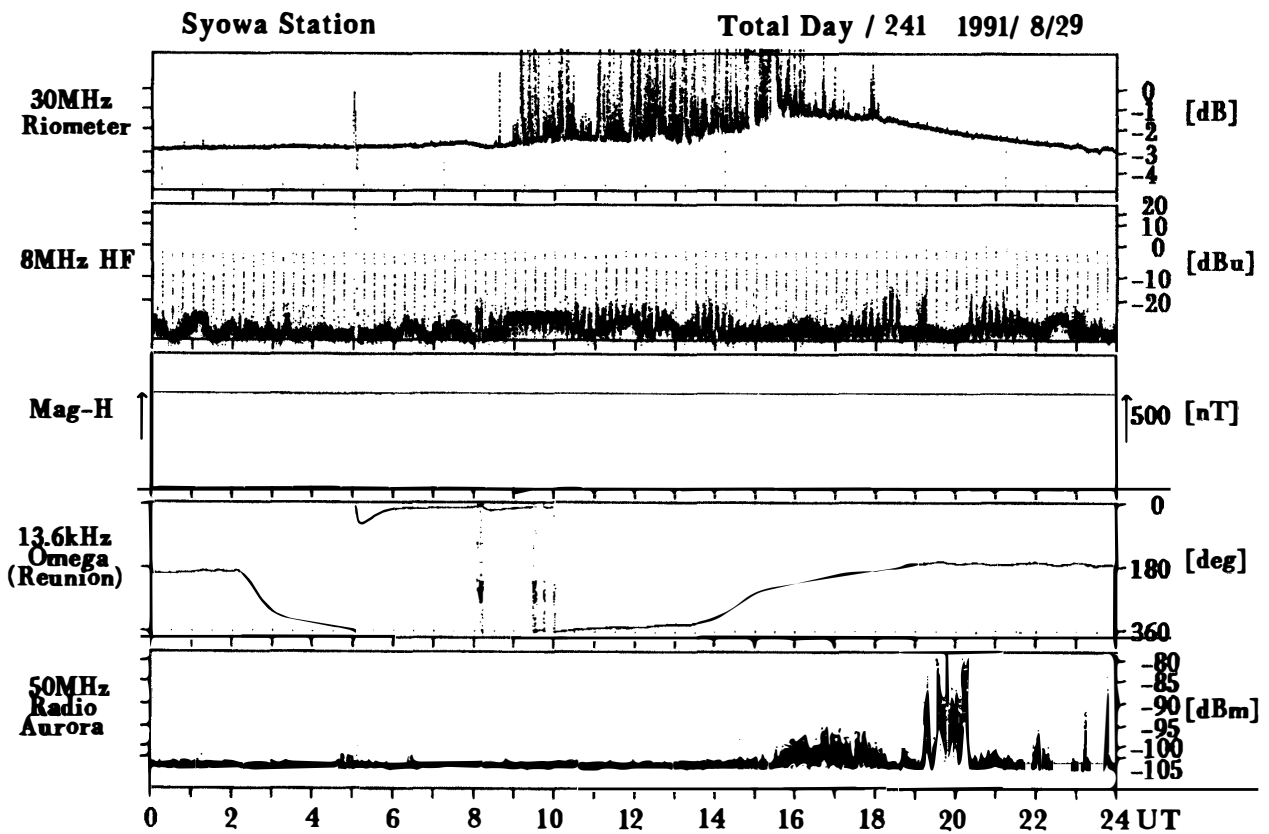
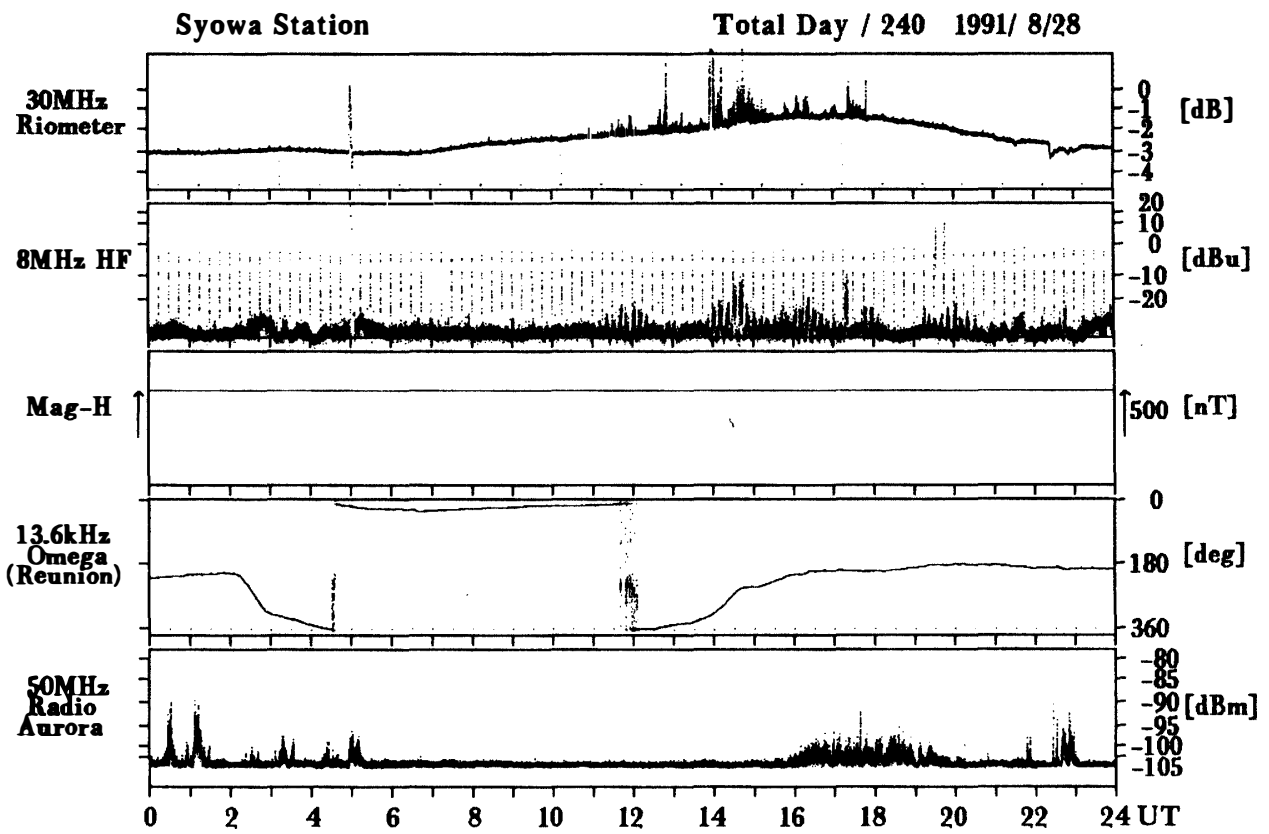
Total Day / 238 1991/ 8/26

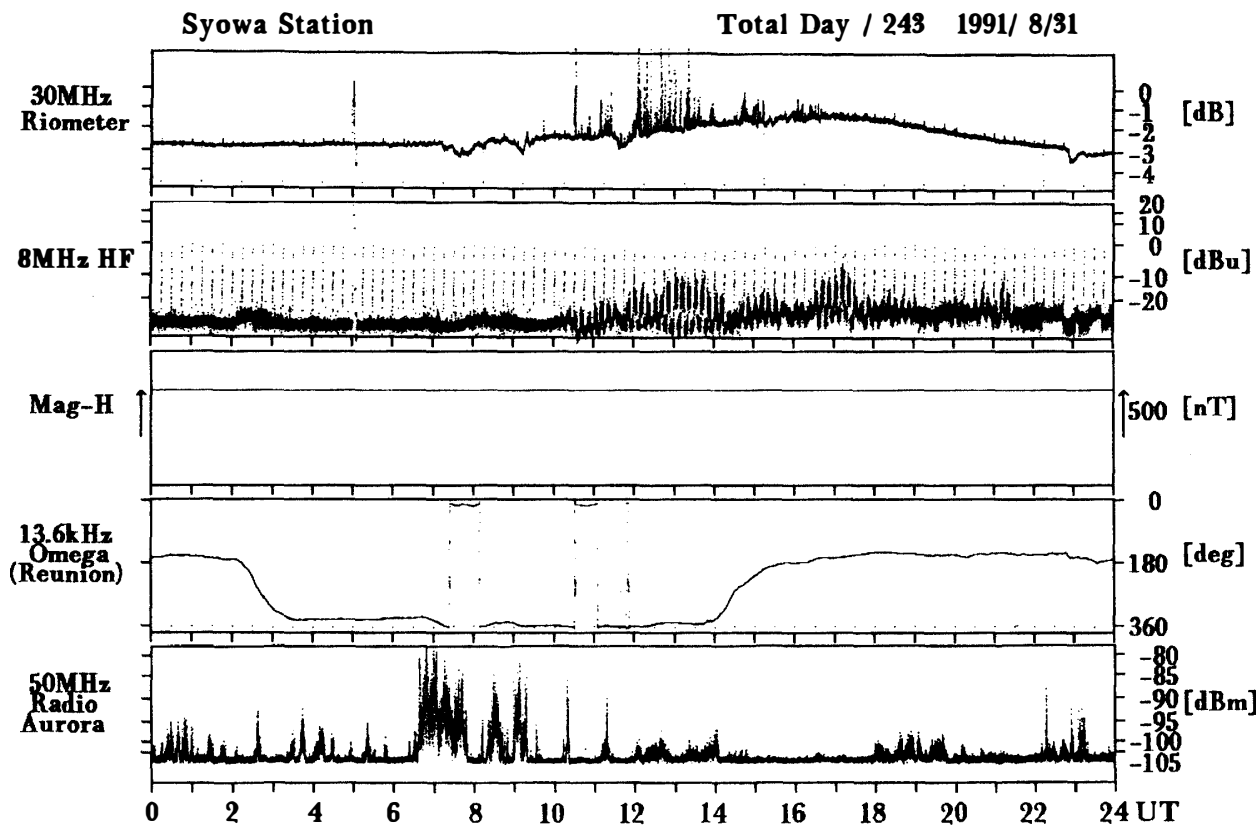
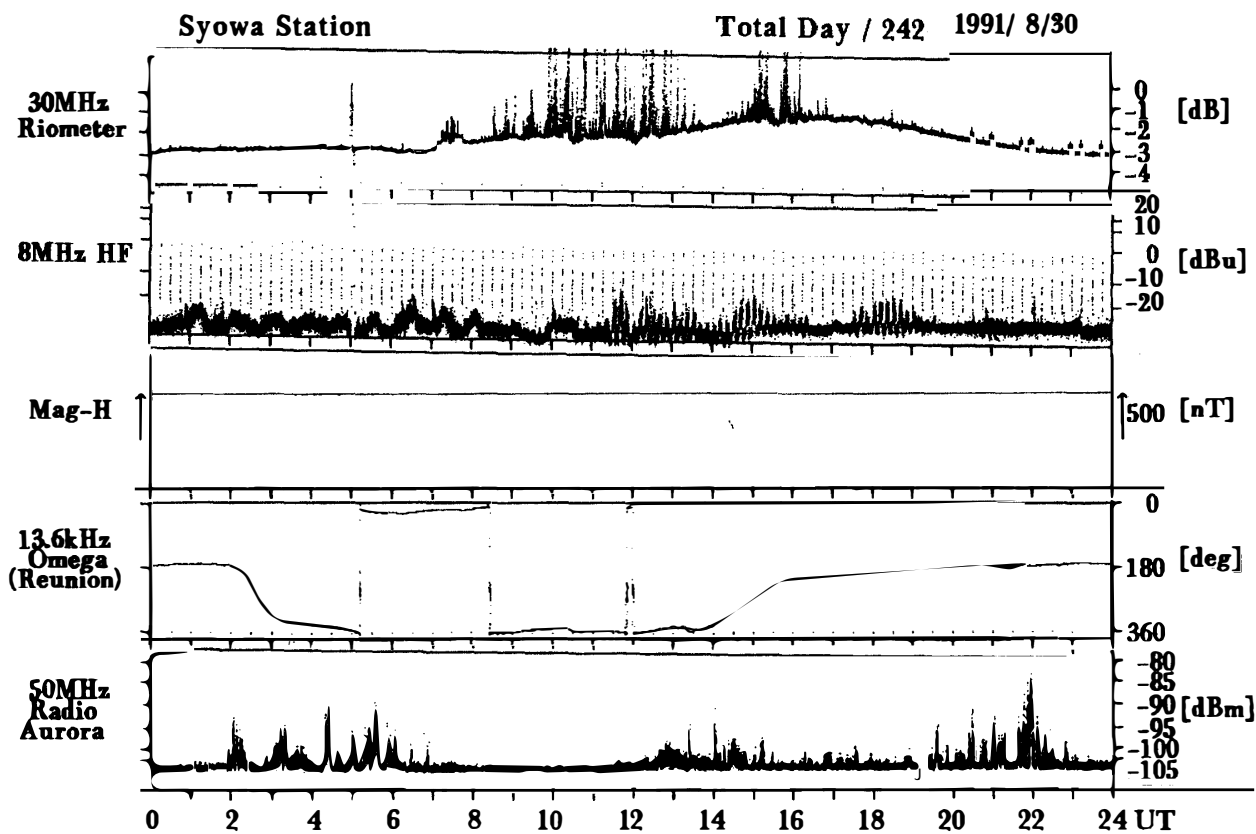


Syowa Station

Total Day / 239 1991/ 8/27

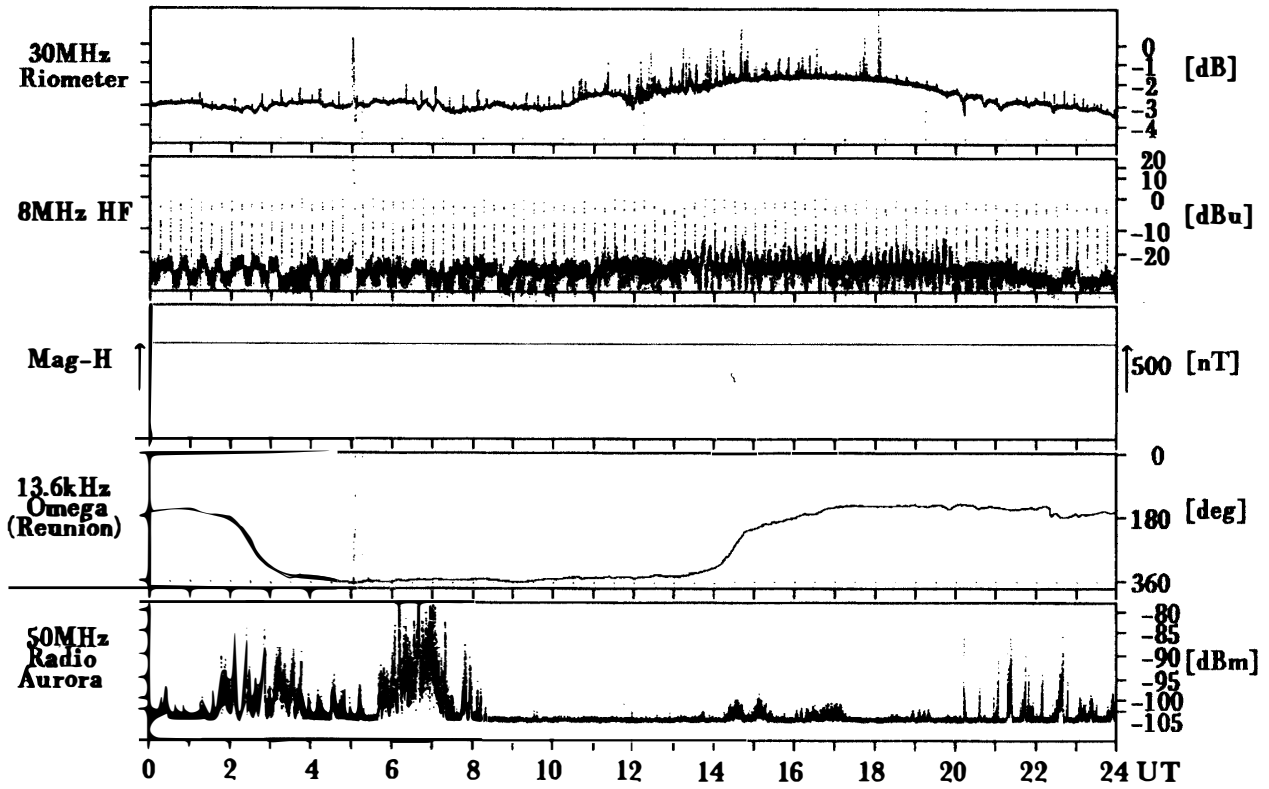






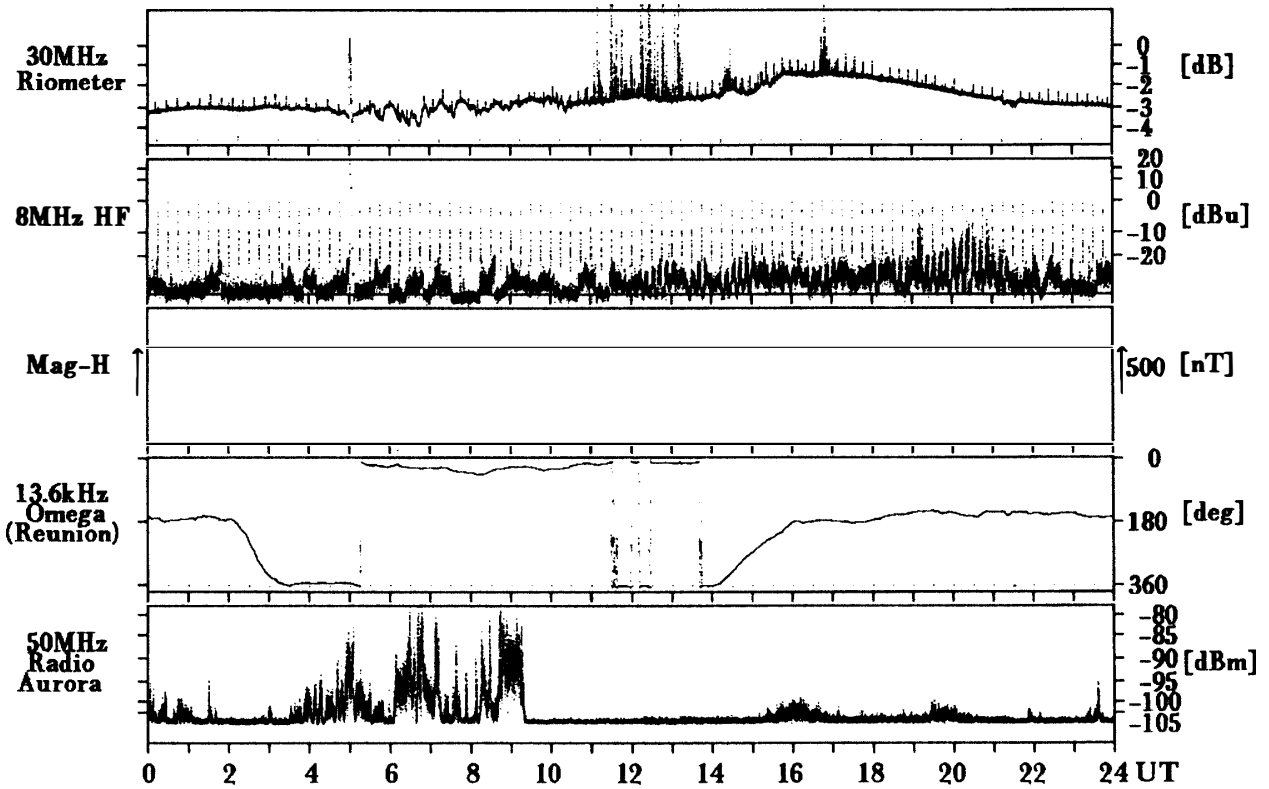
Syowa Station

Total Day / 244 1991/ 9/ 1



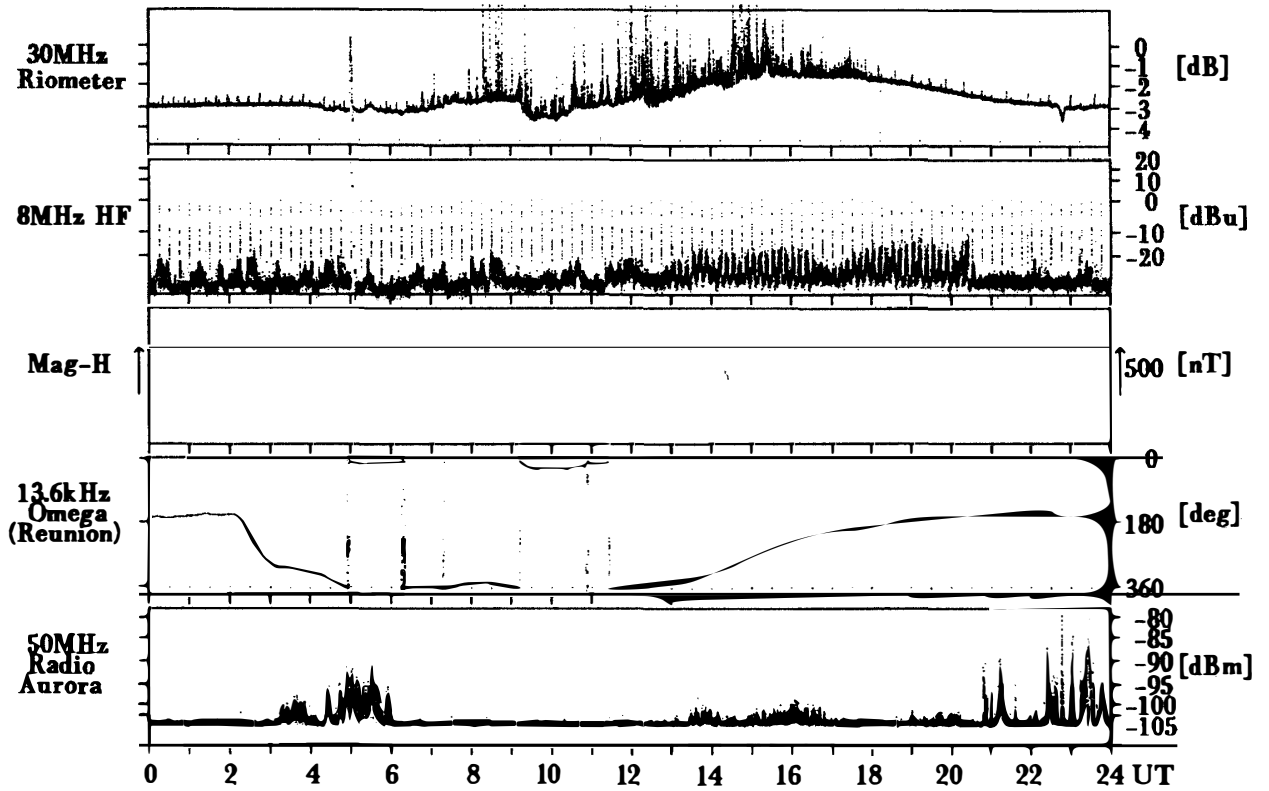
Syowa Station

Total Day / 245 1991/ 9/ 2



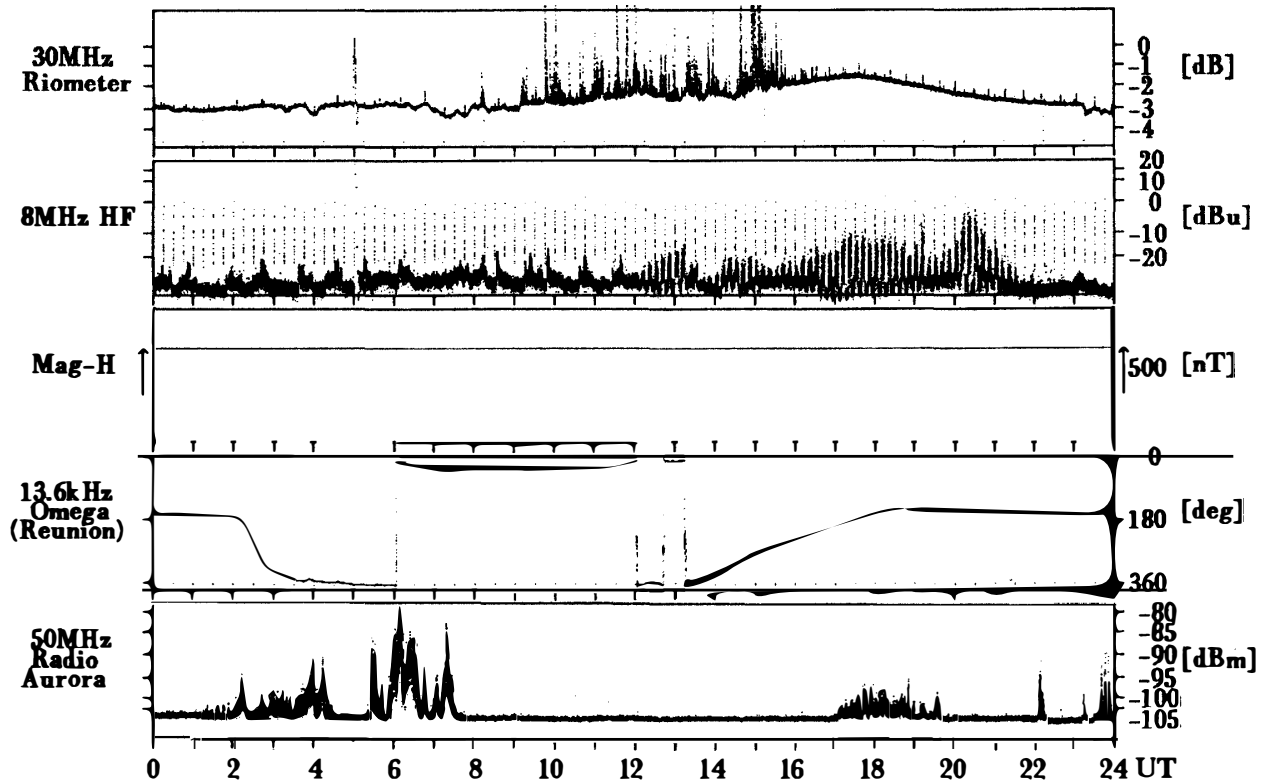
Syowa Station

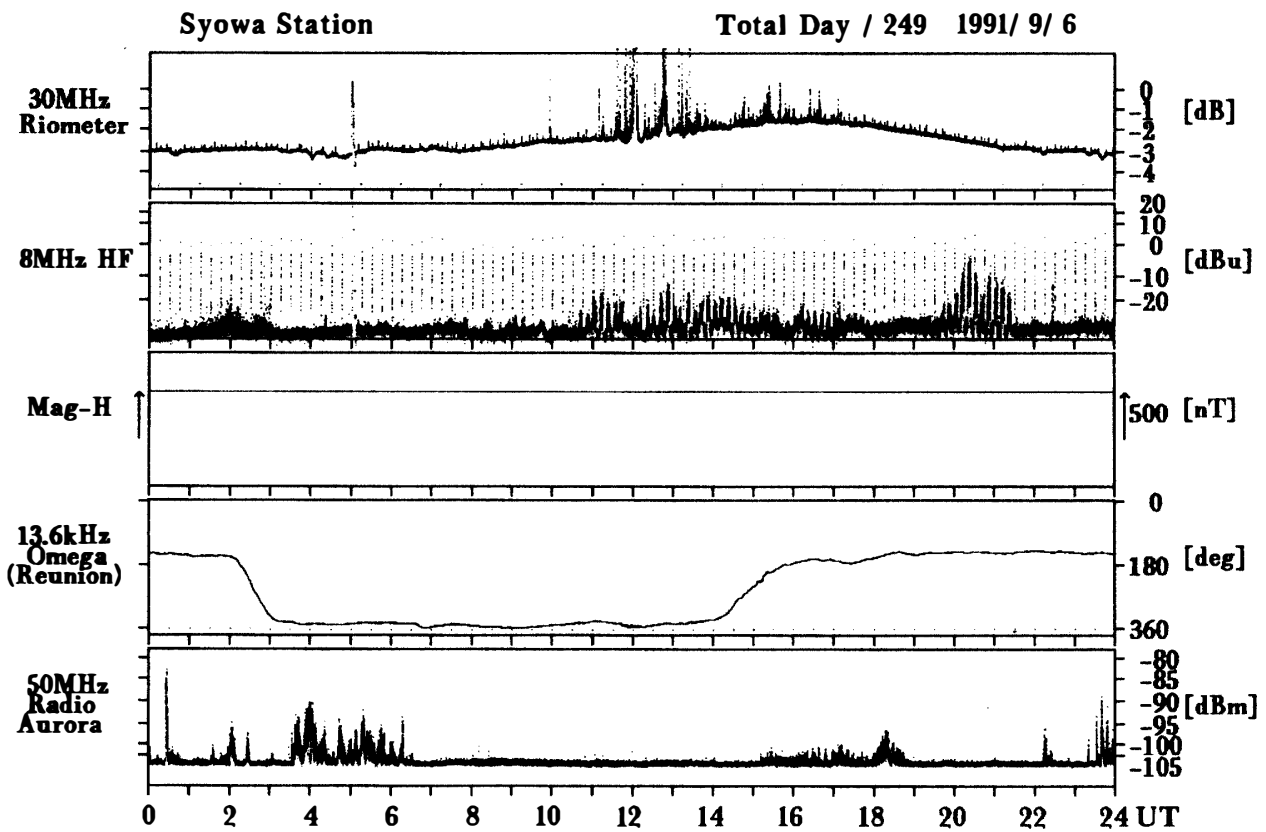
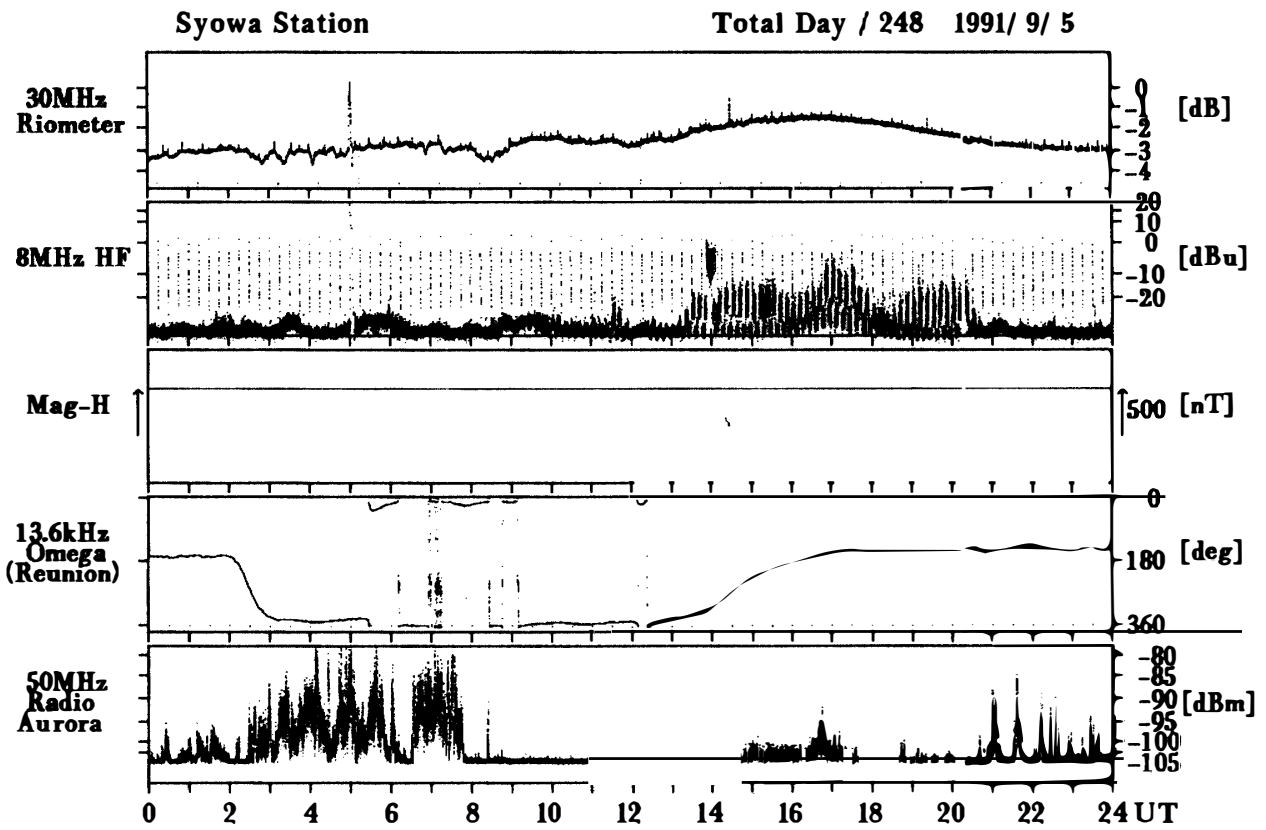
Total Day / 246 1991/ 9/ 3



Syowa Station

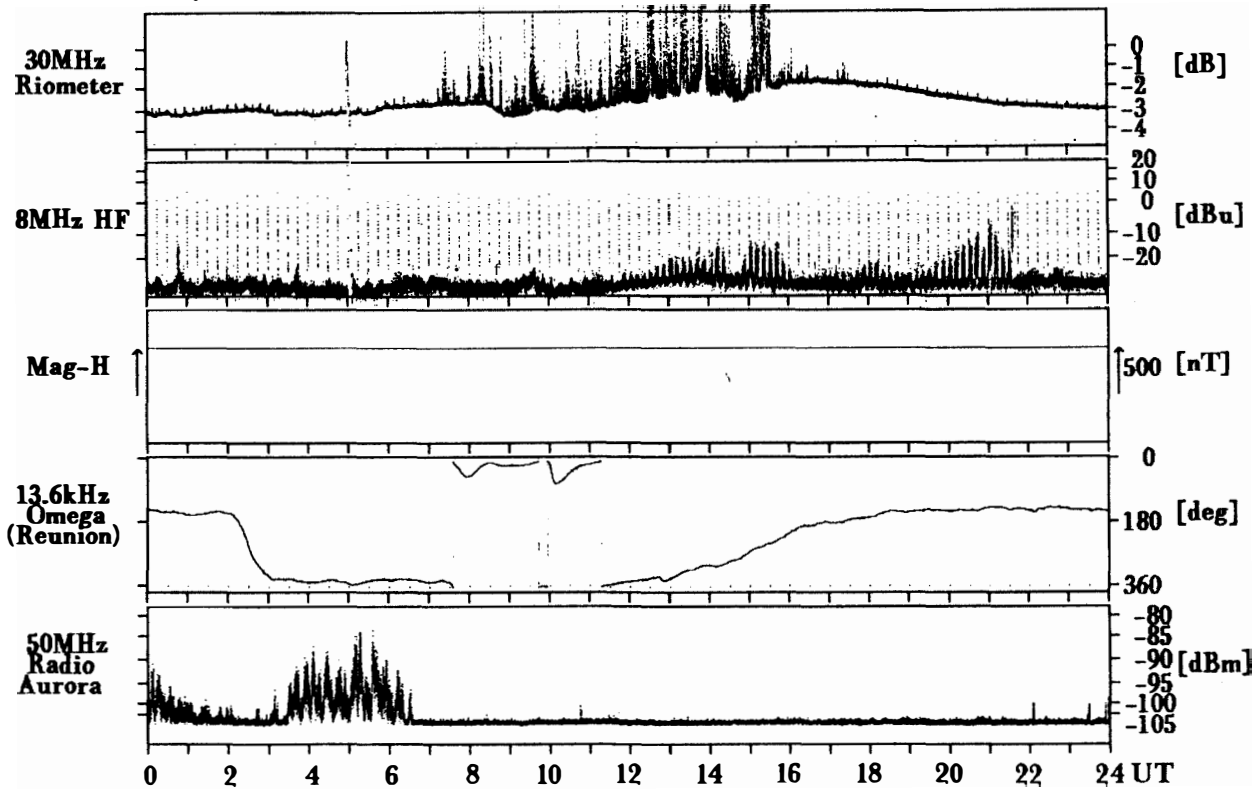
Total Day / 247 1991/ 9/ 4





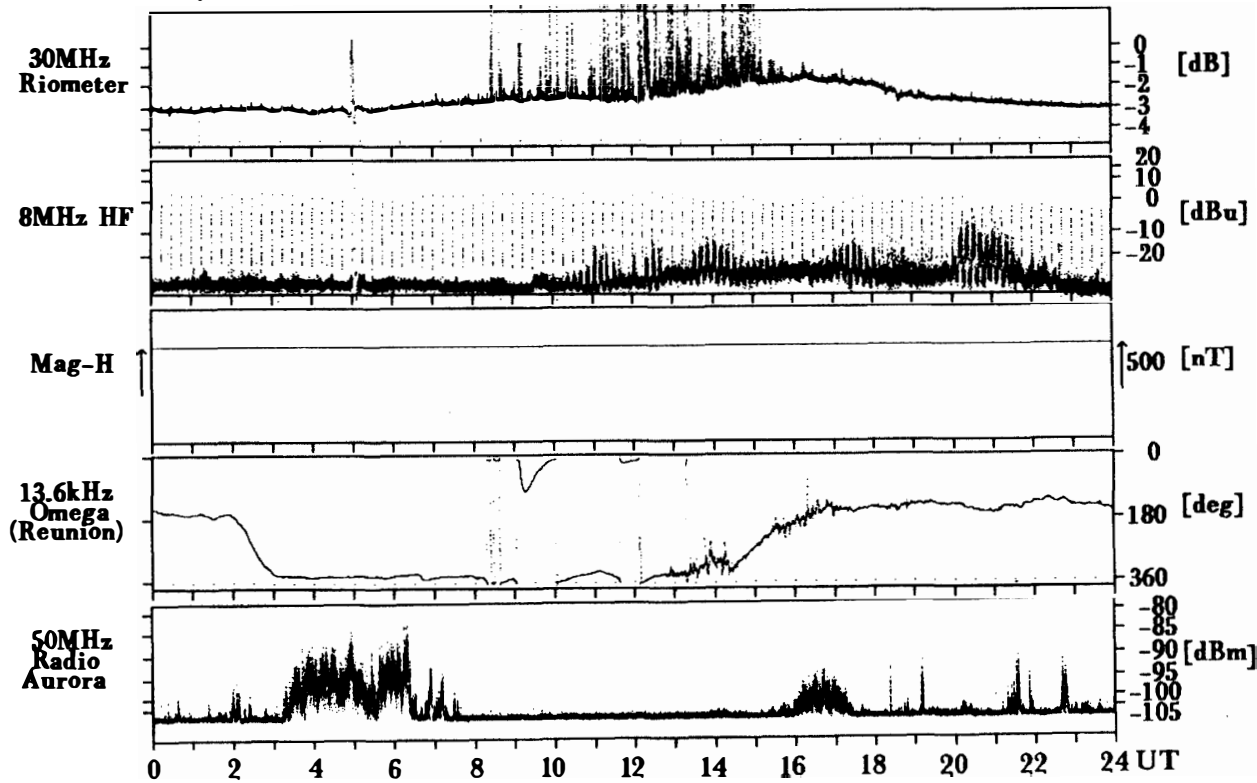
Syowa Station

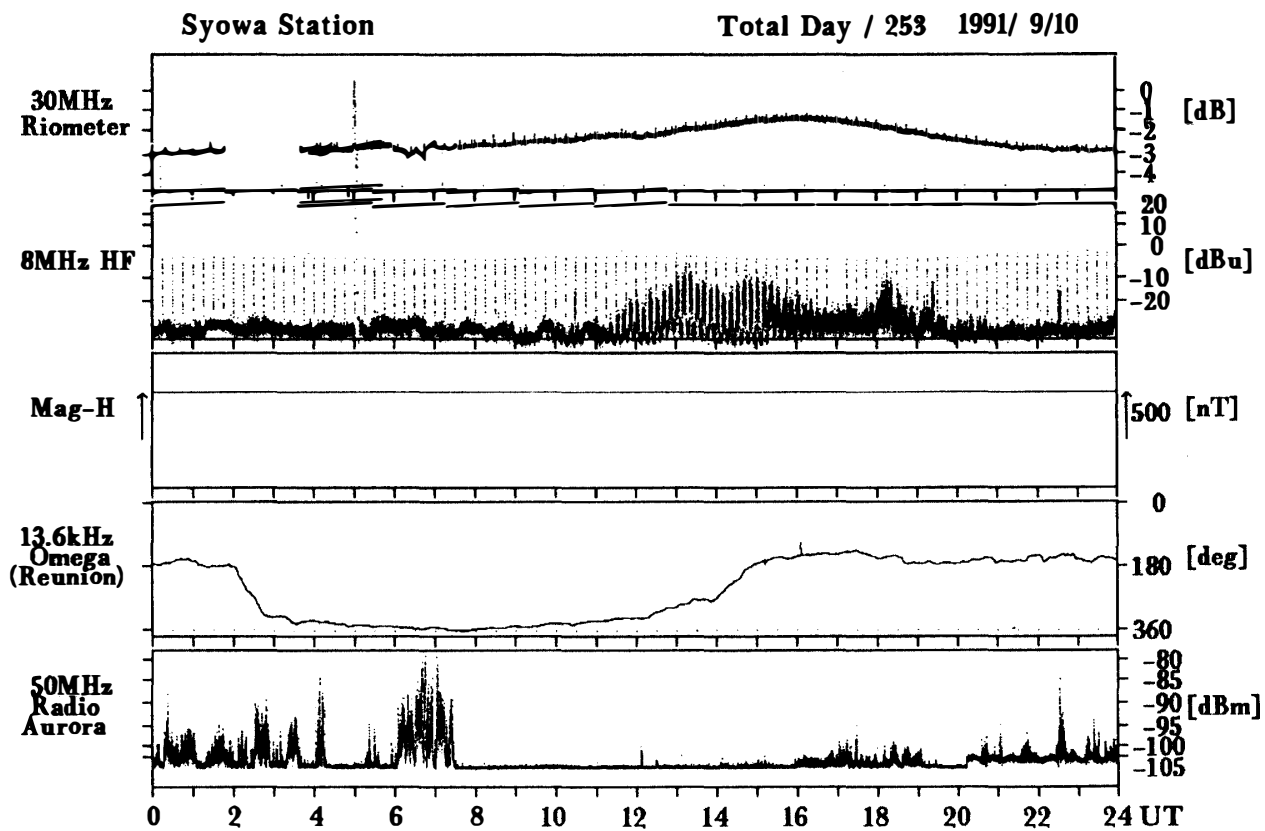
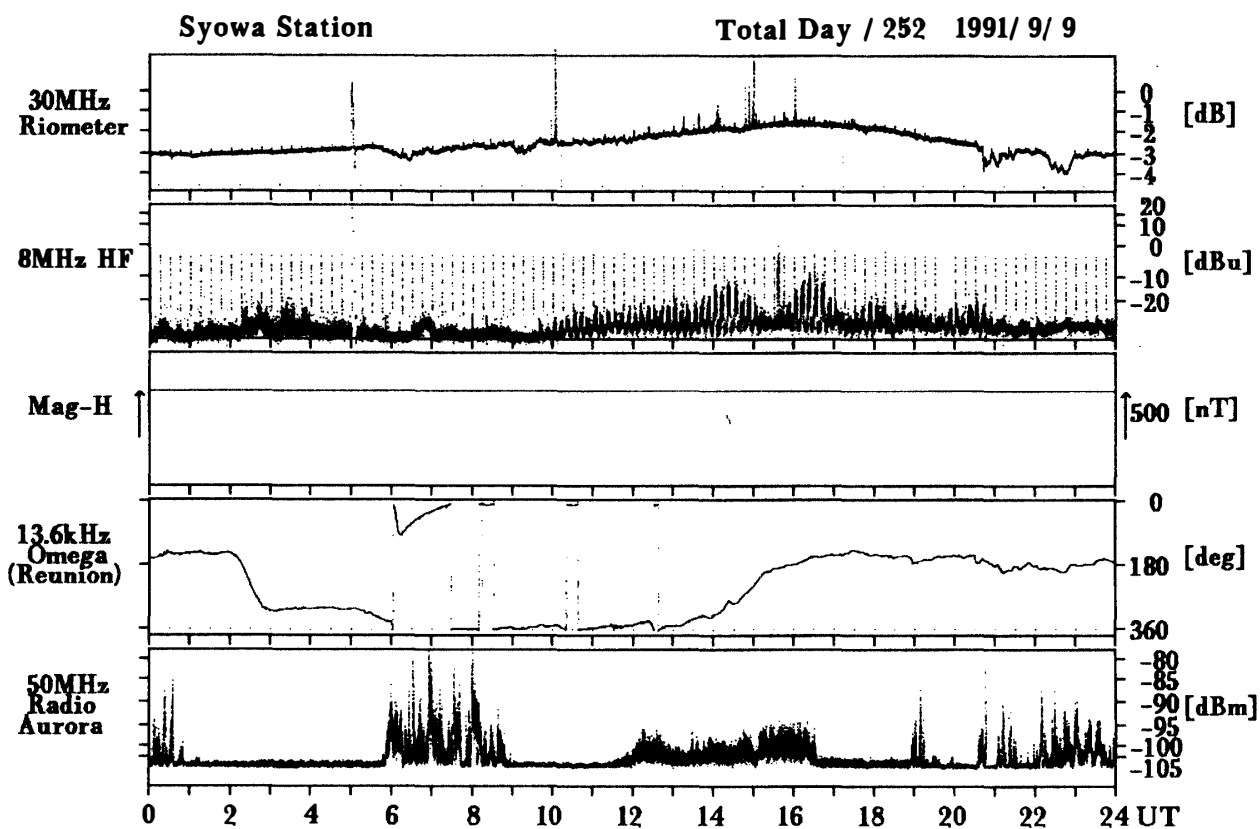
Total Day / 250 1991/ 9/ 7

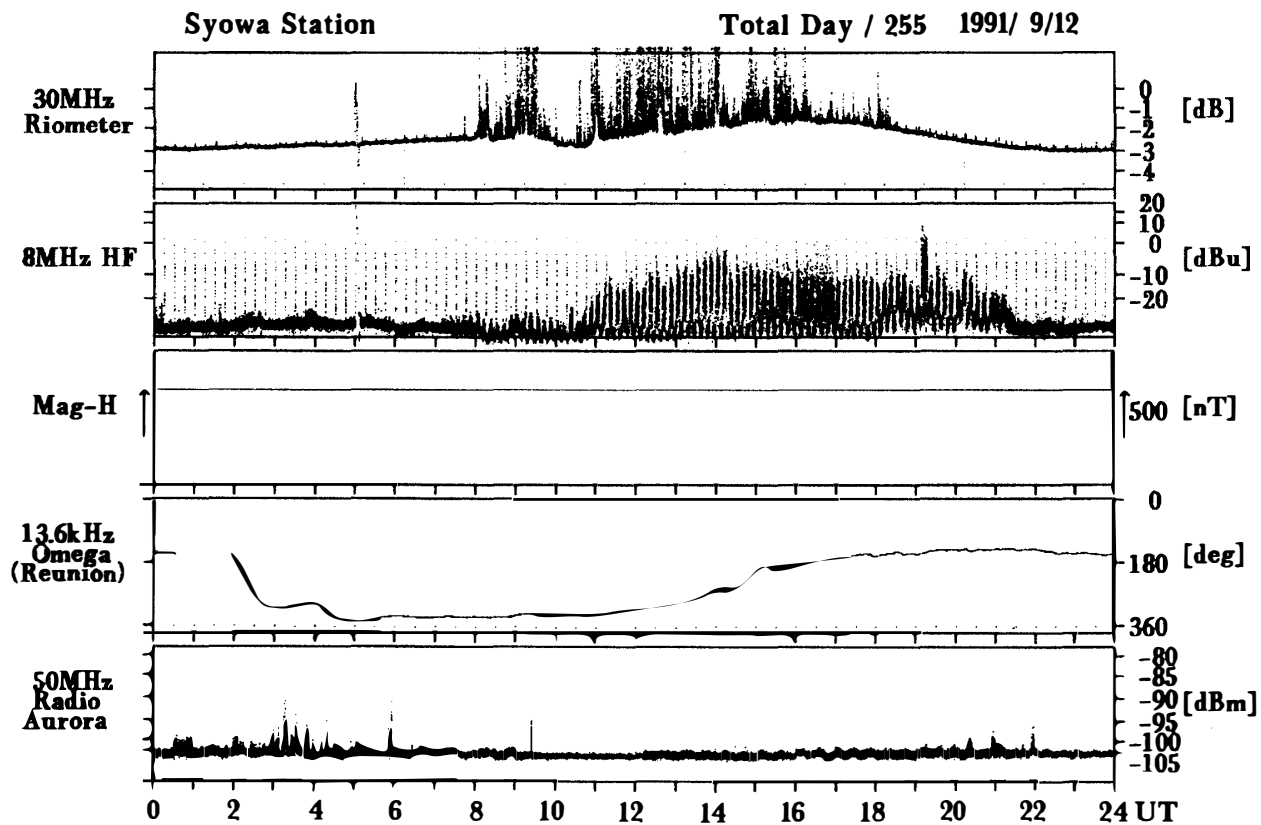
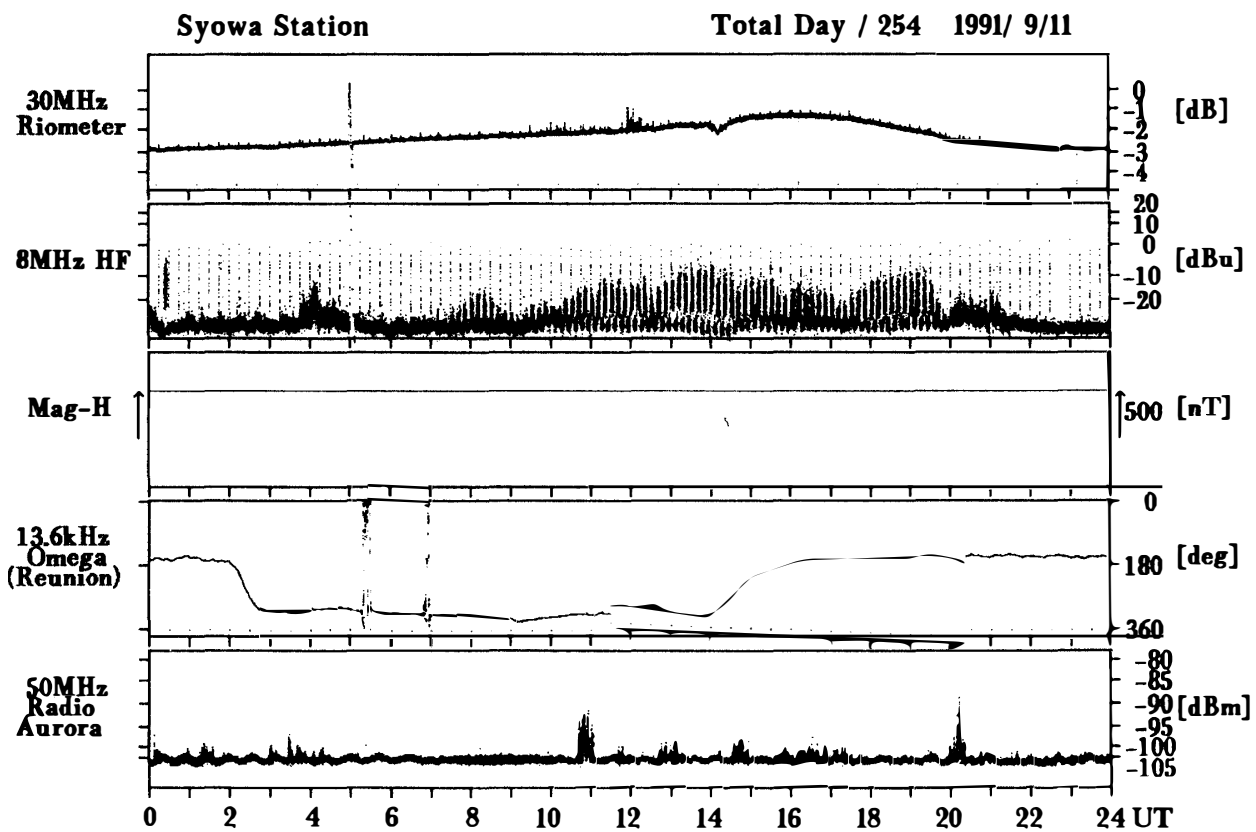


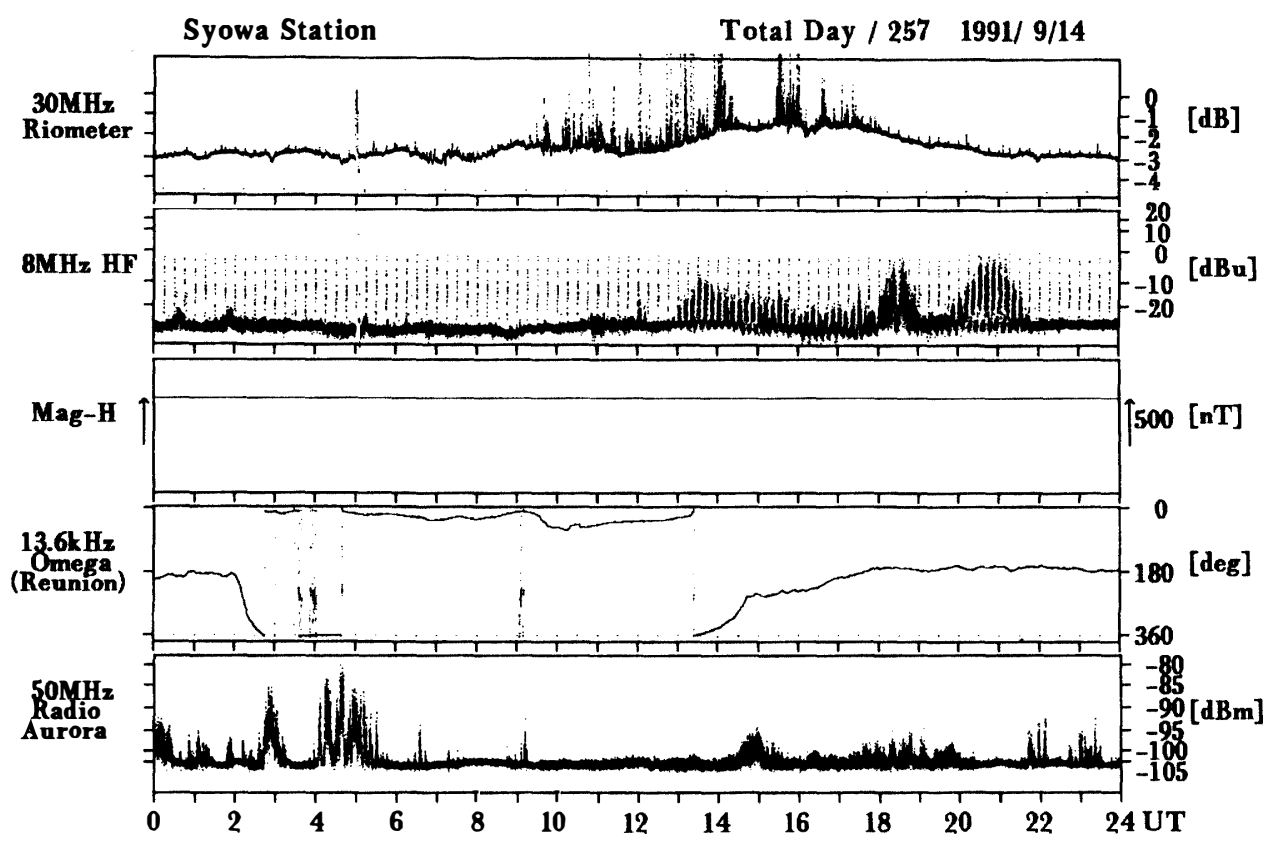
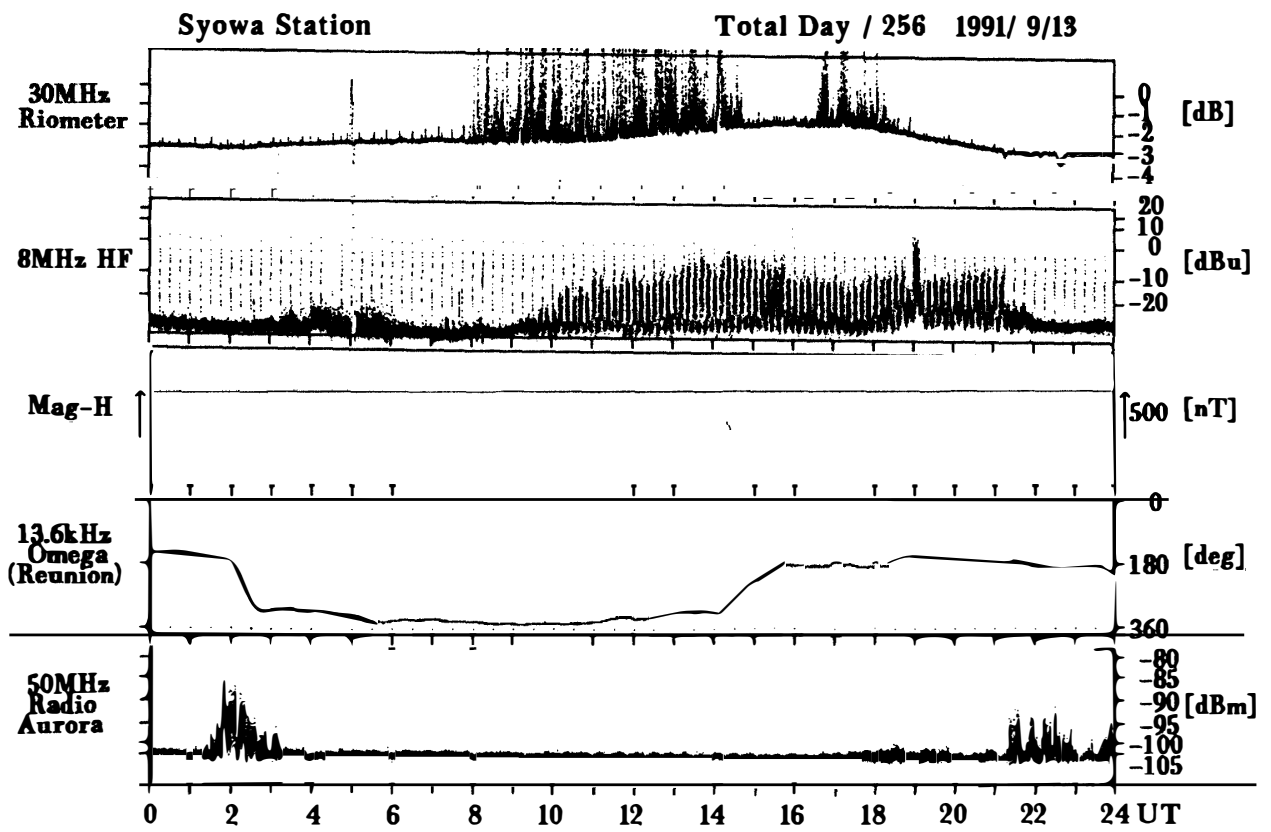
Syowa Station

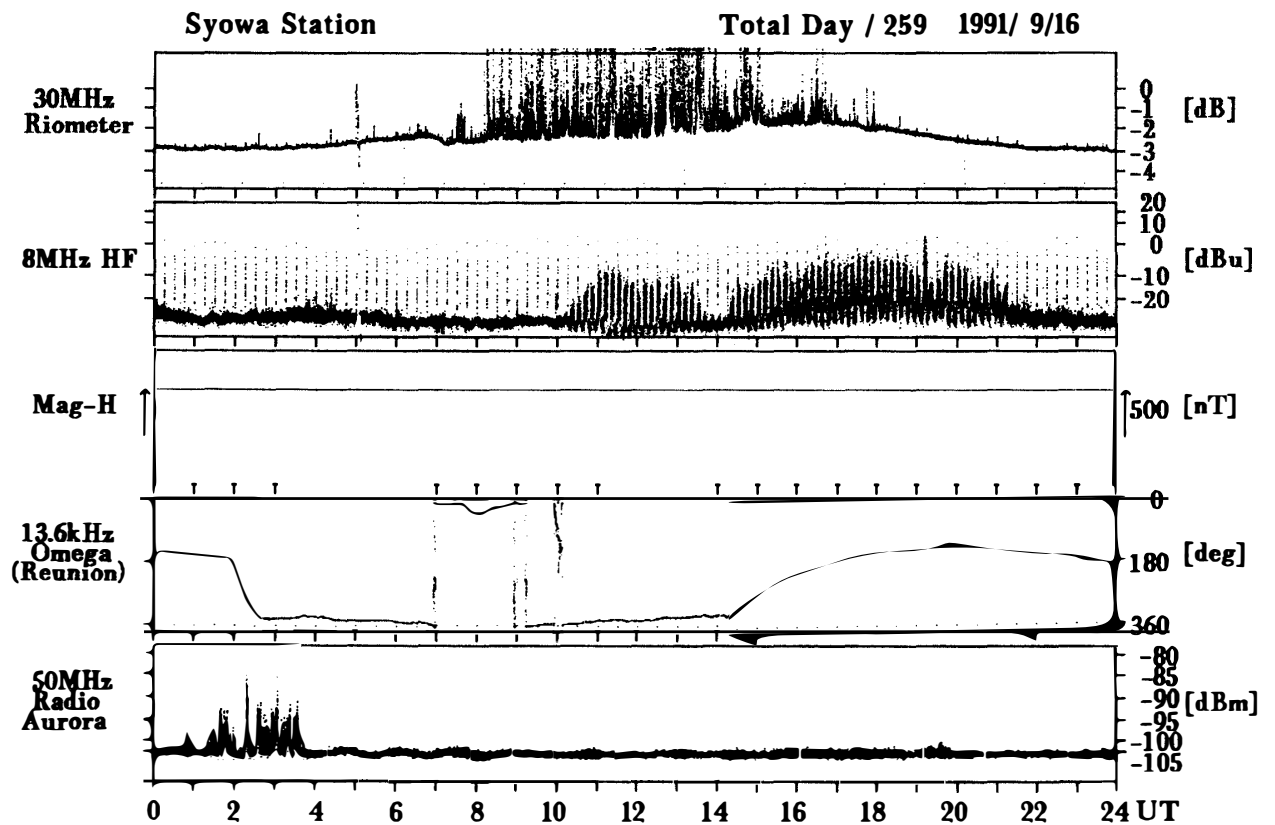
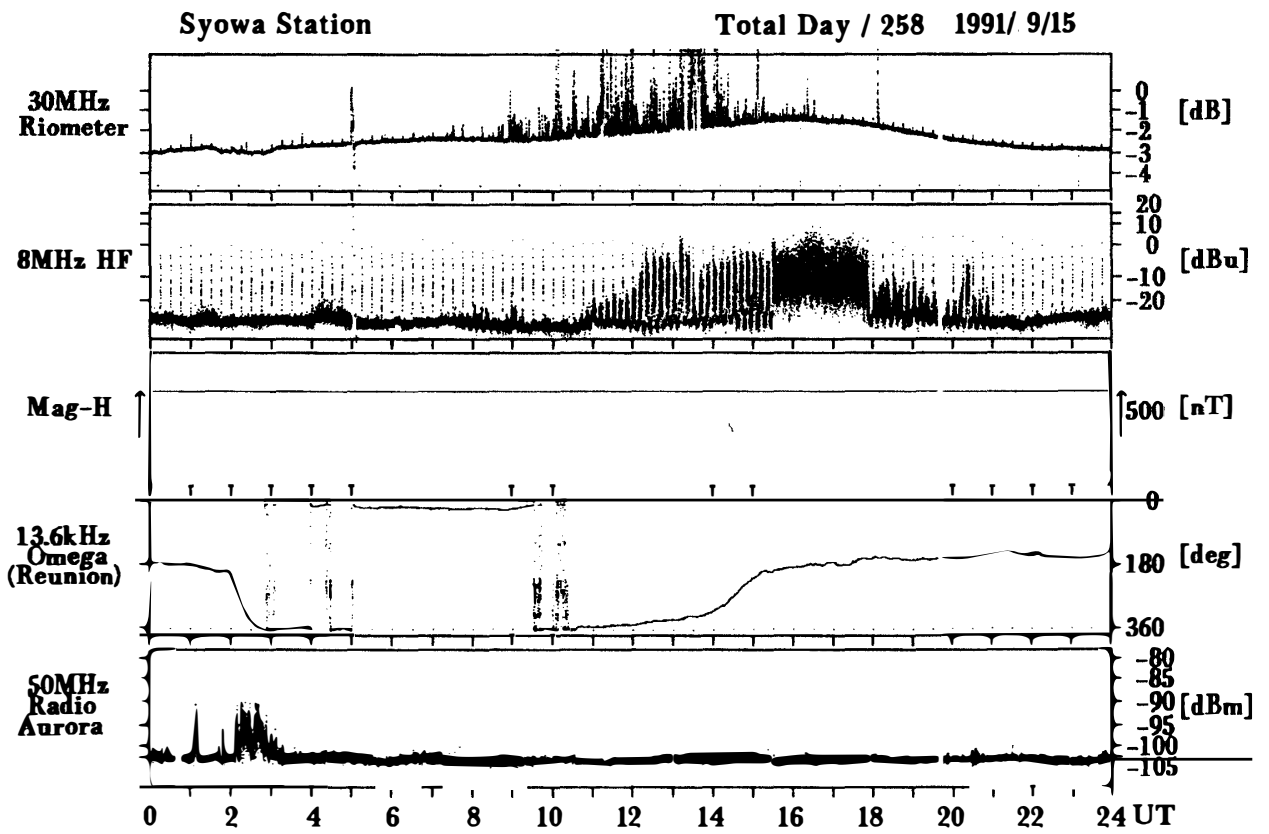
Total Day / 251 1991/ 9/ 8

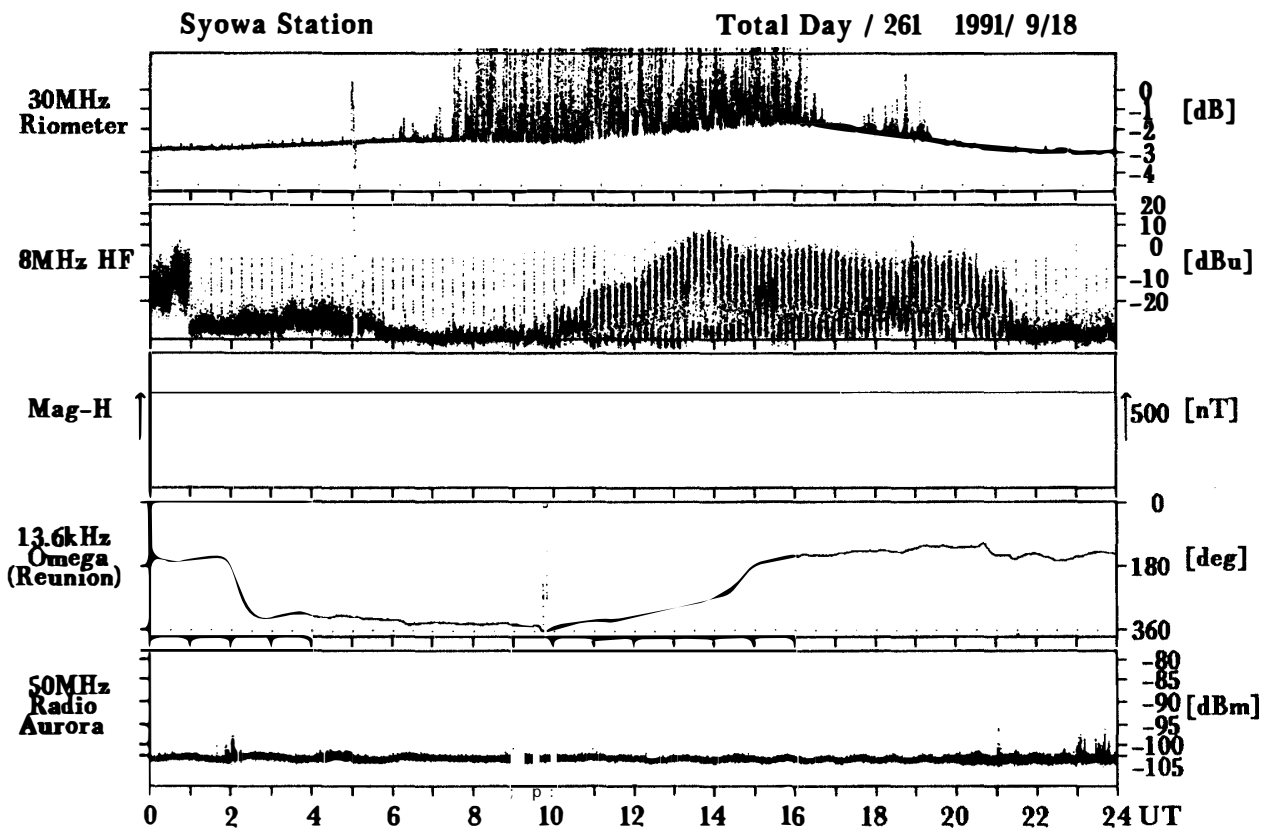
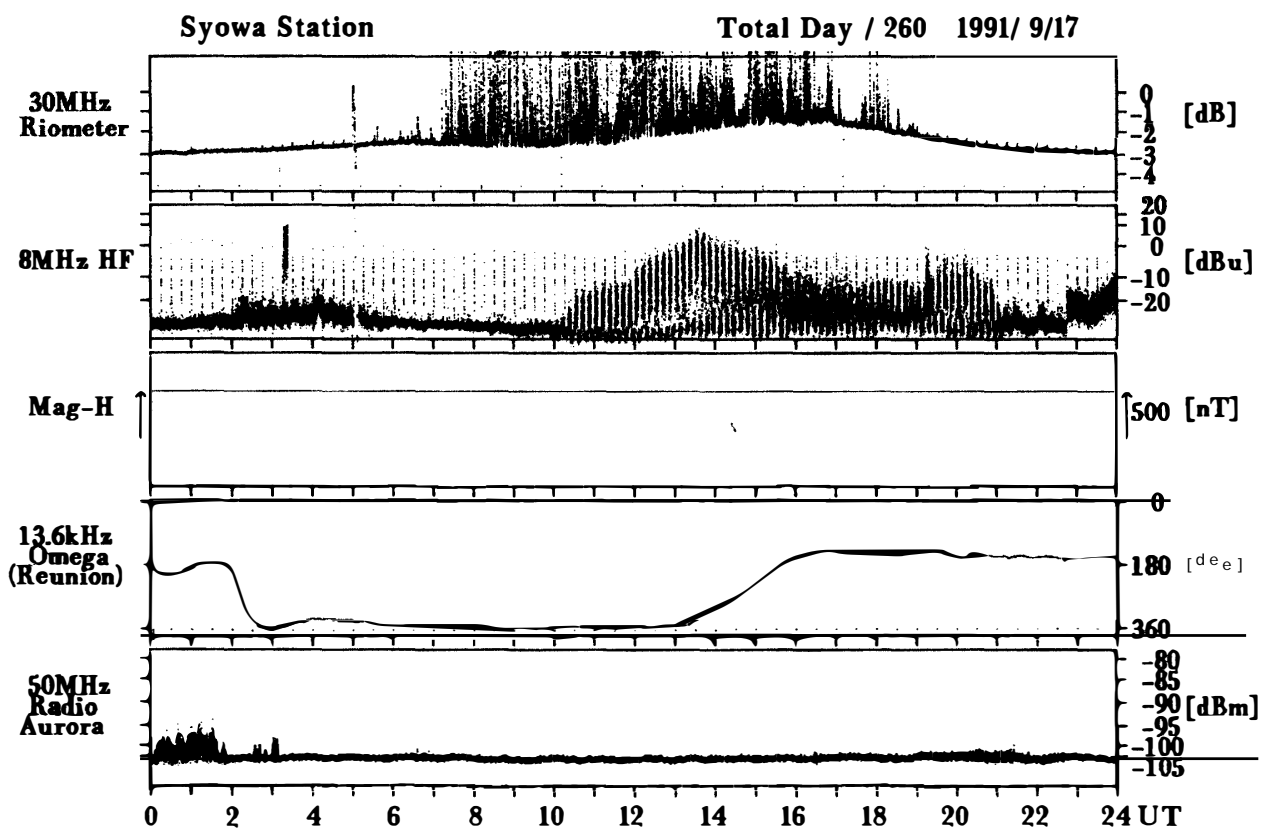


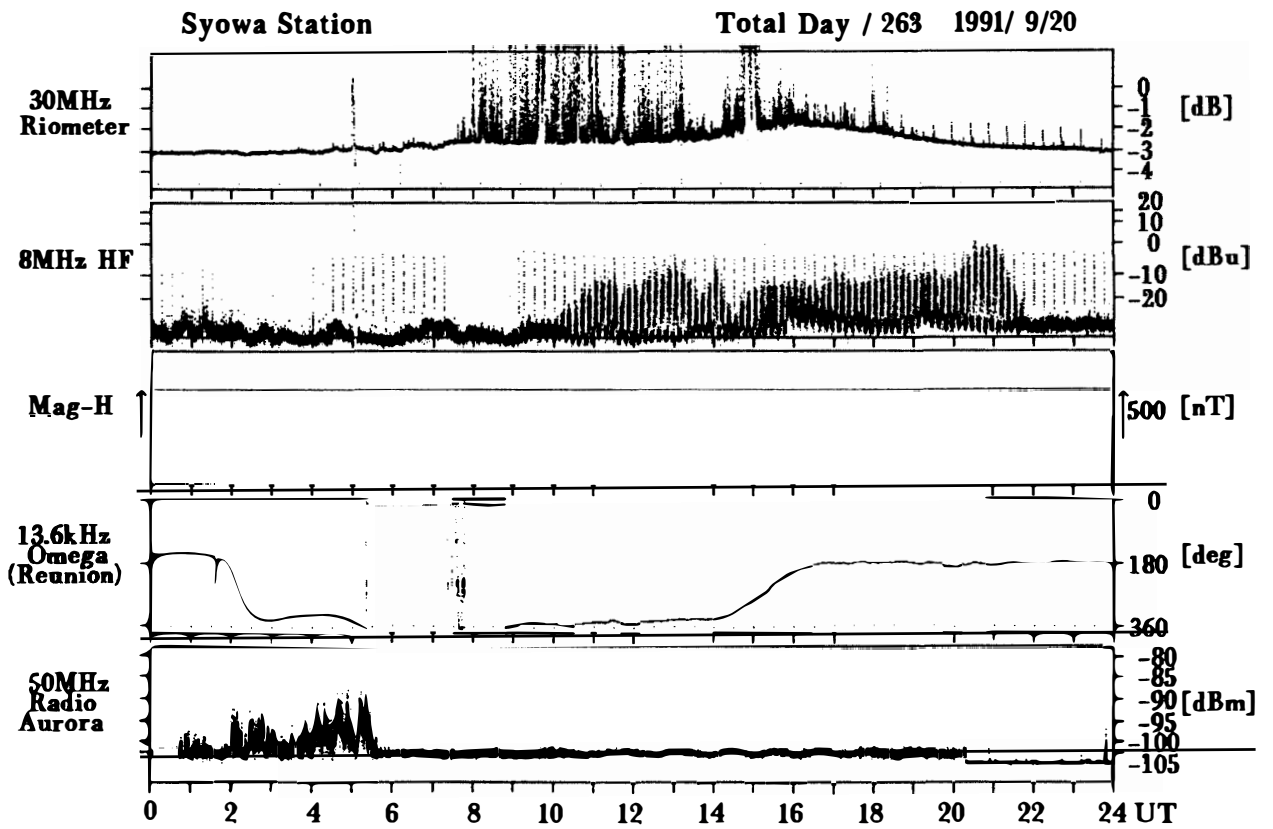
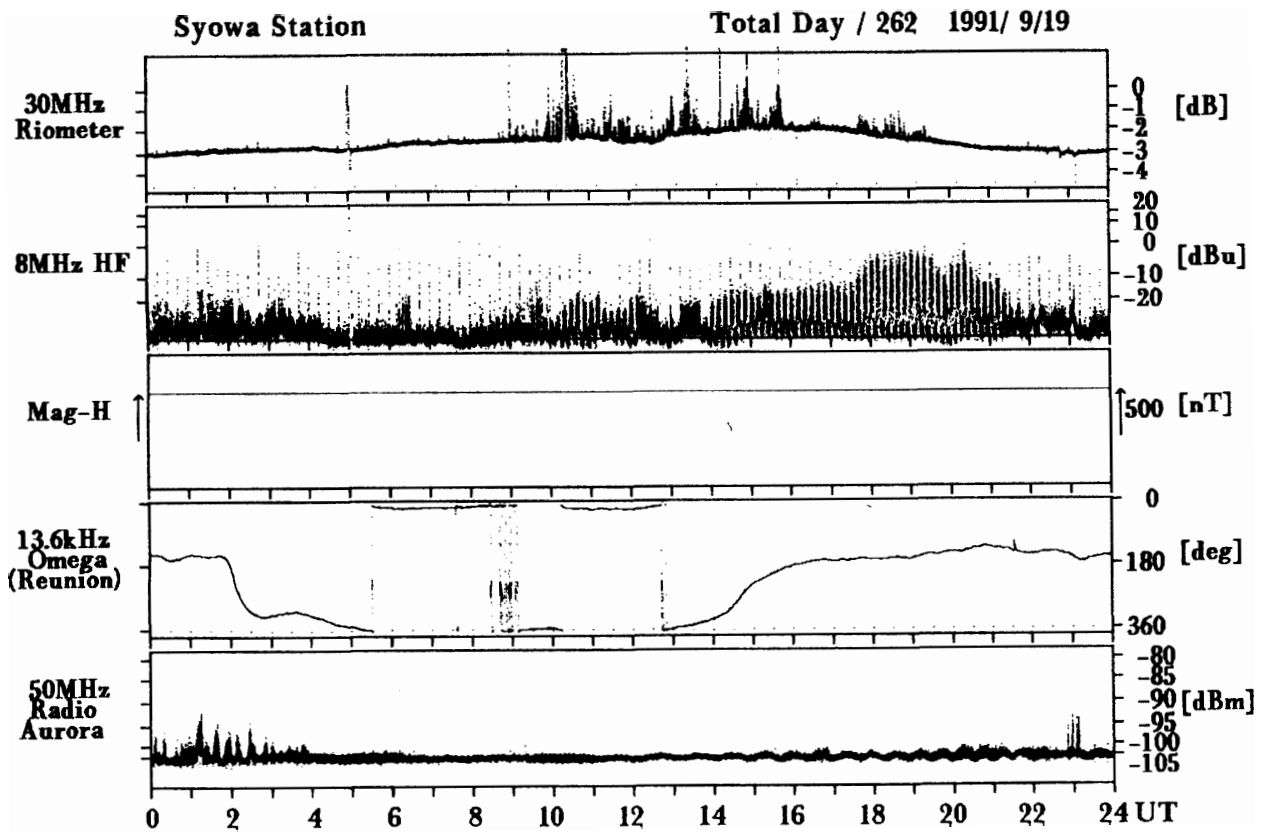






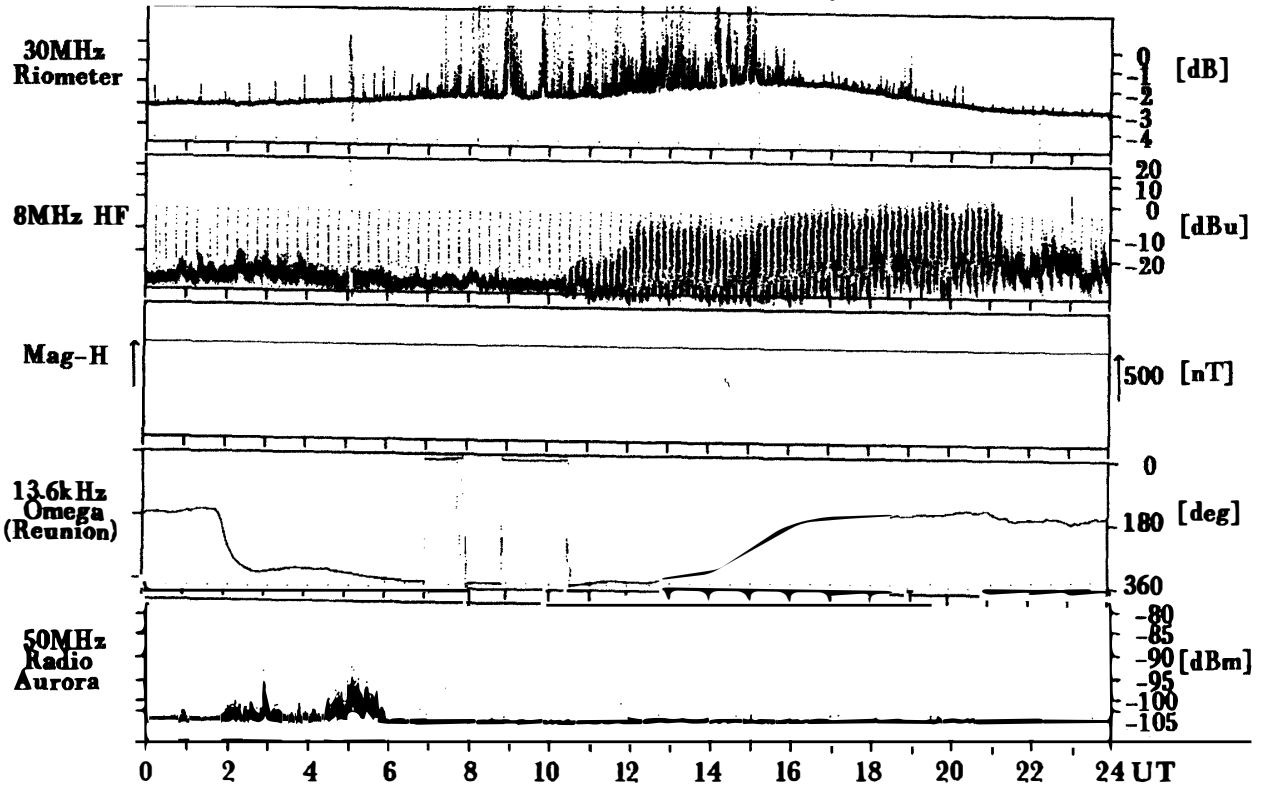






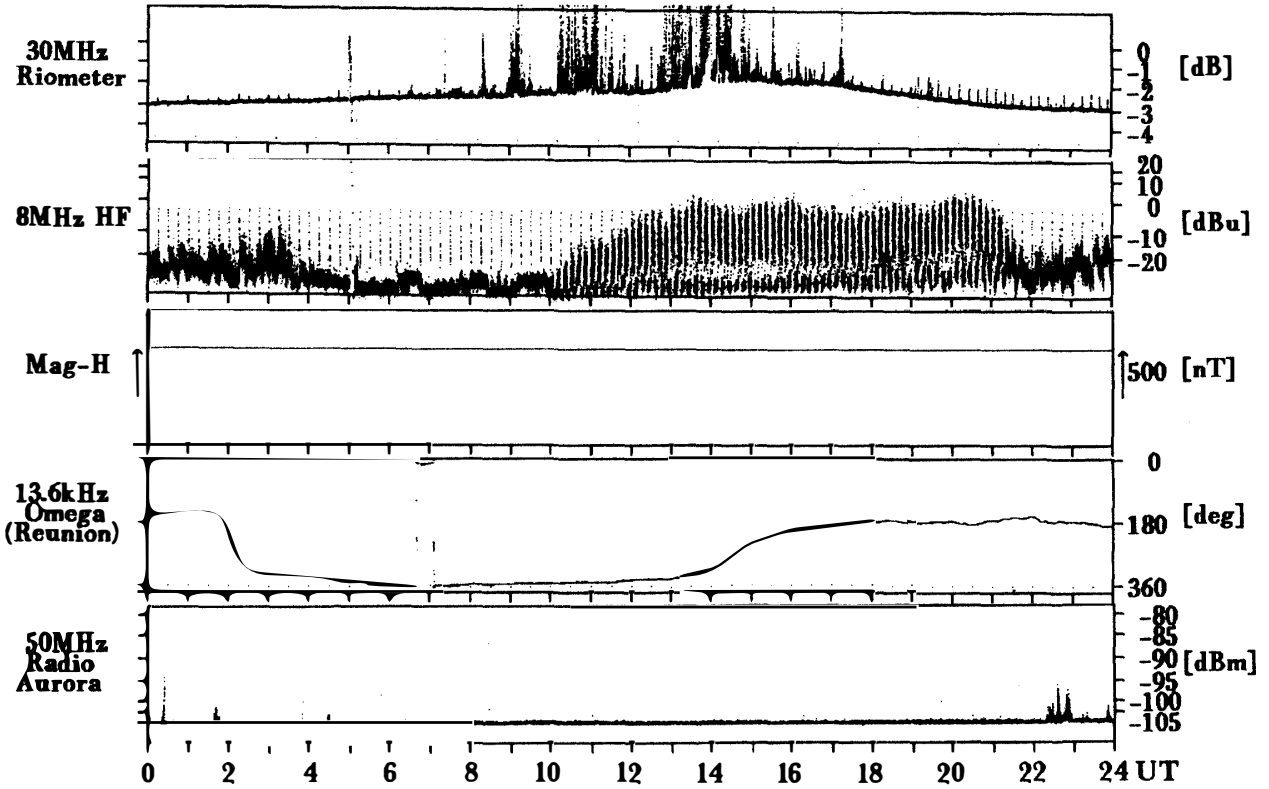
Syowa Station

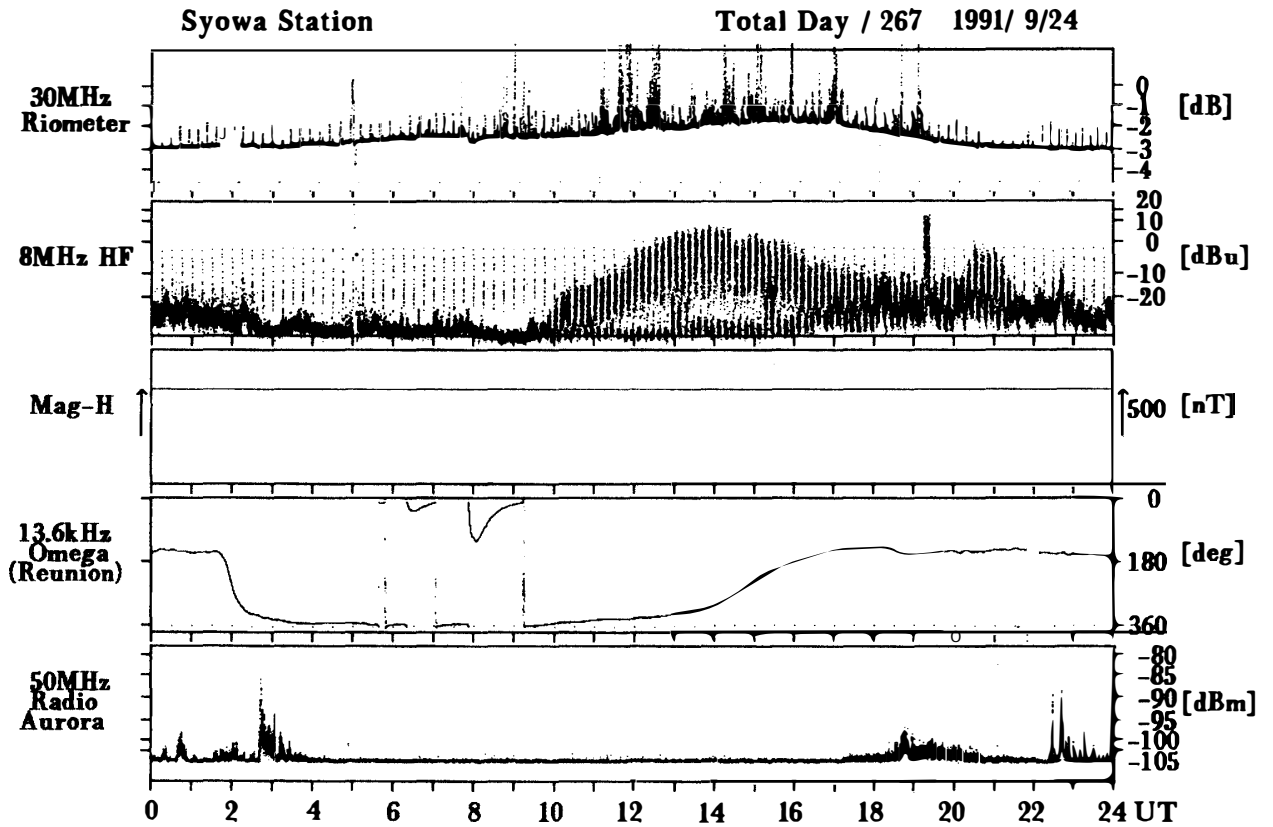
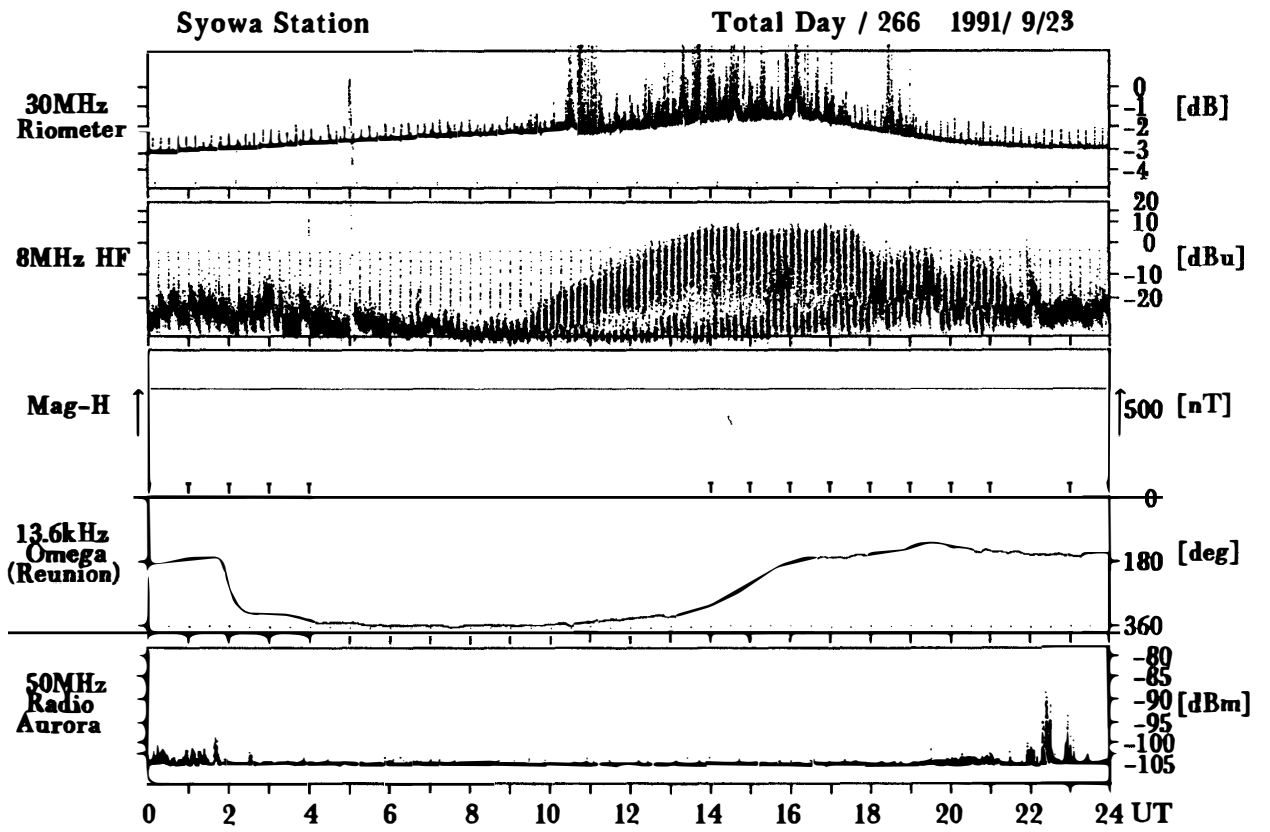
Total Day / 264 1991/ 9/21

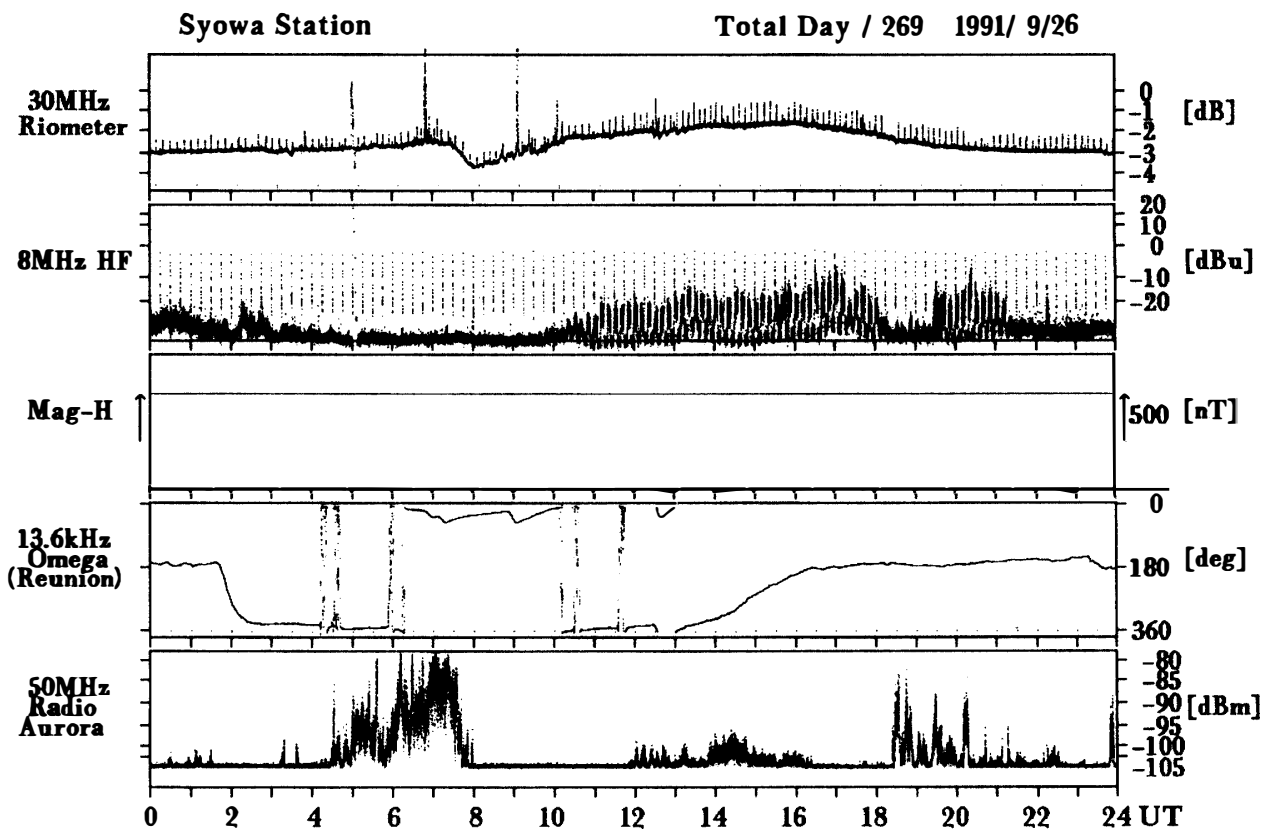
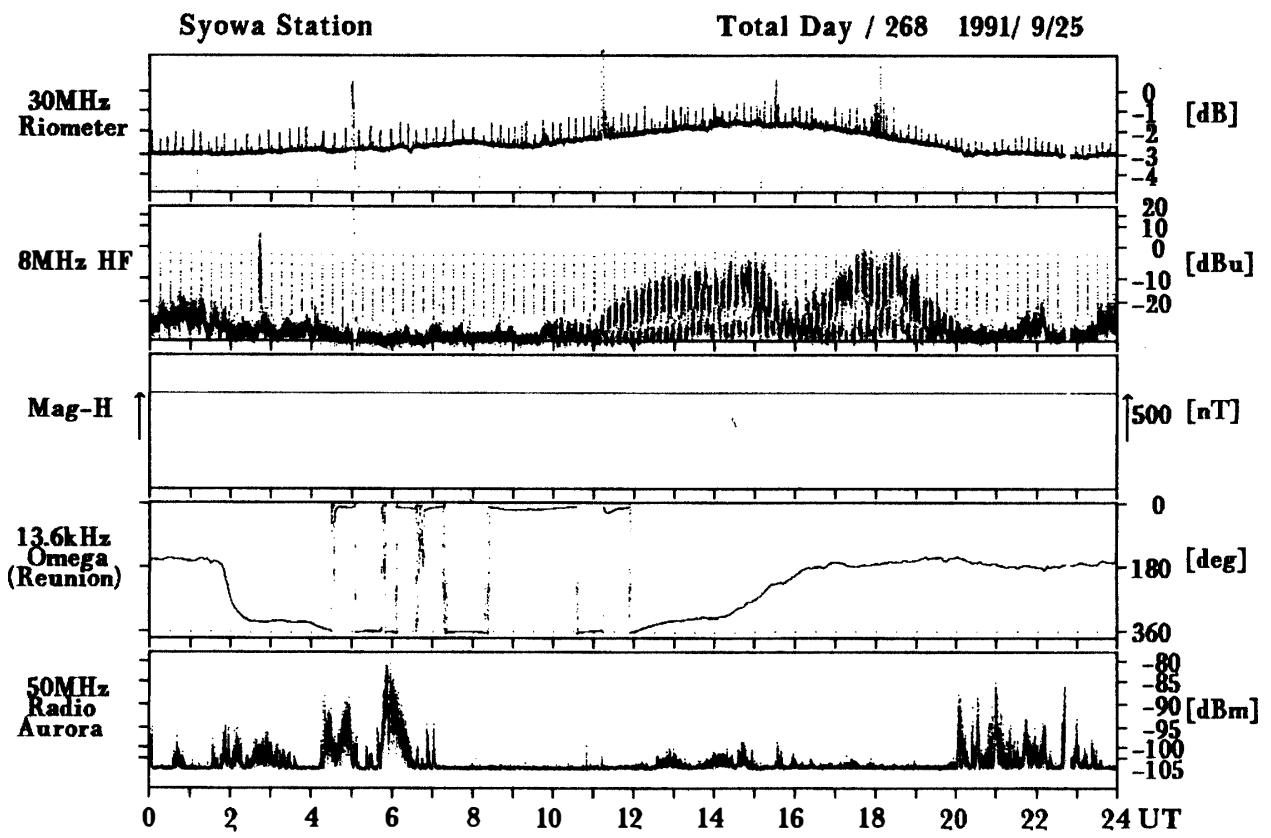


Syowa Station

Total Day / 265 1991/ 9/22

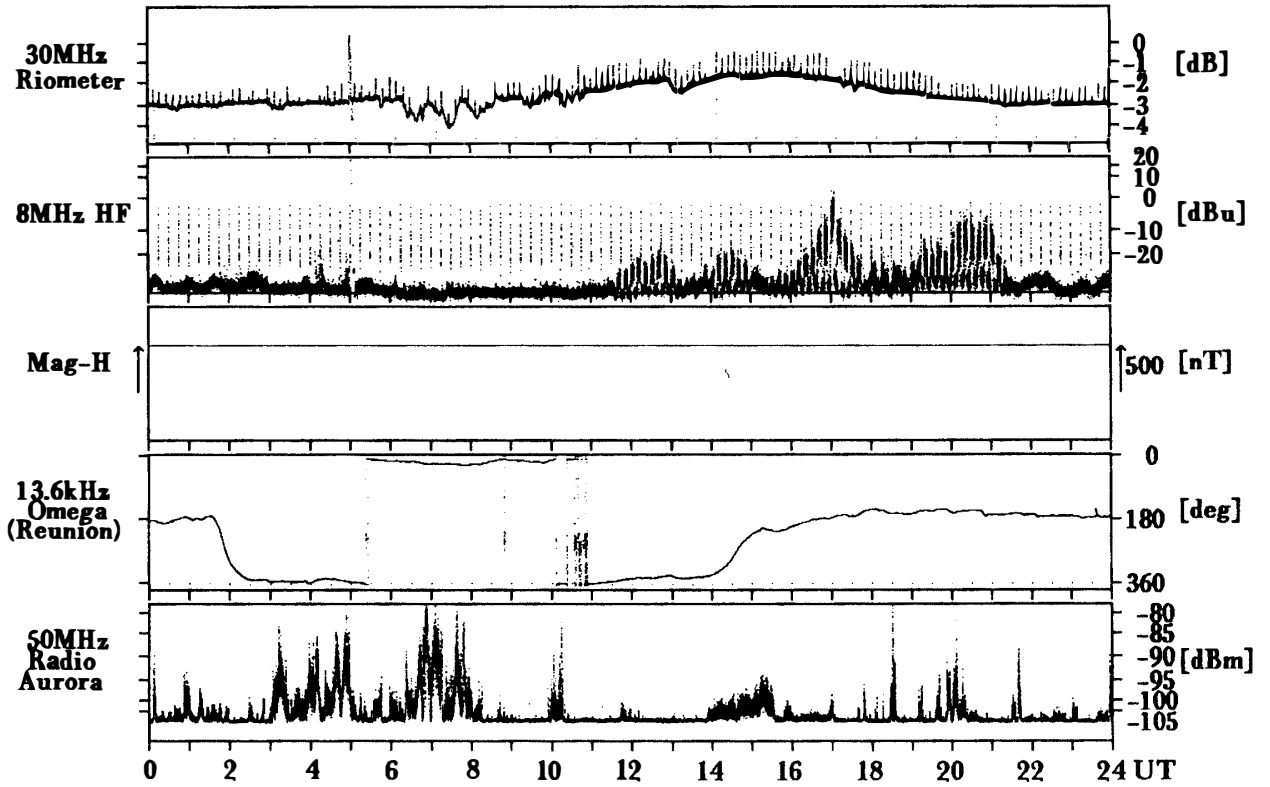






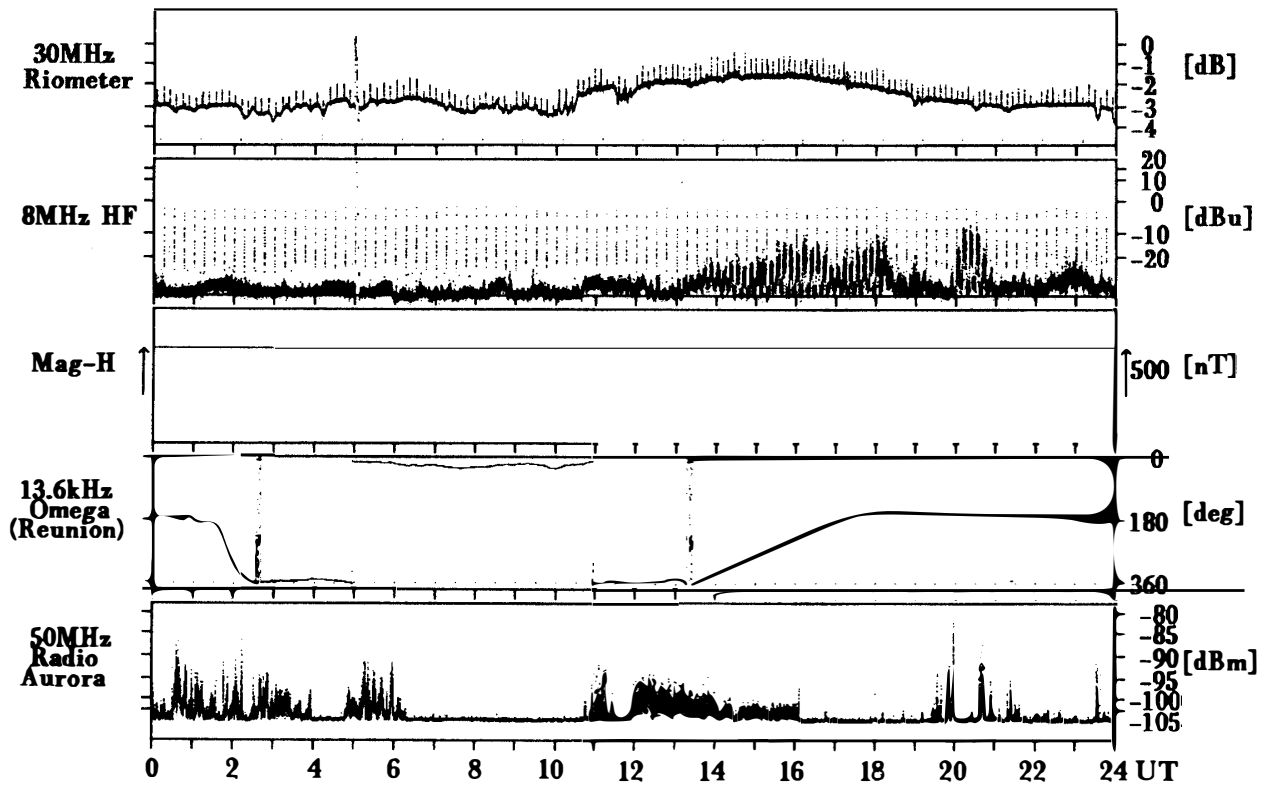
Syowa Station

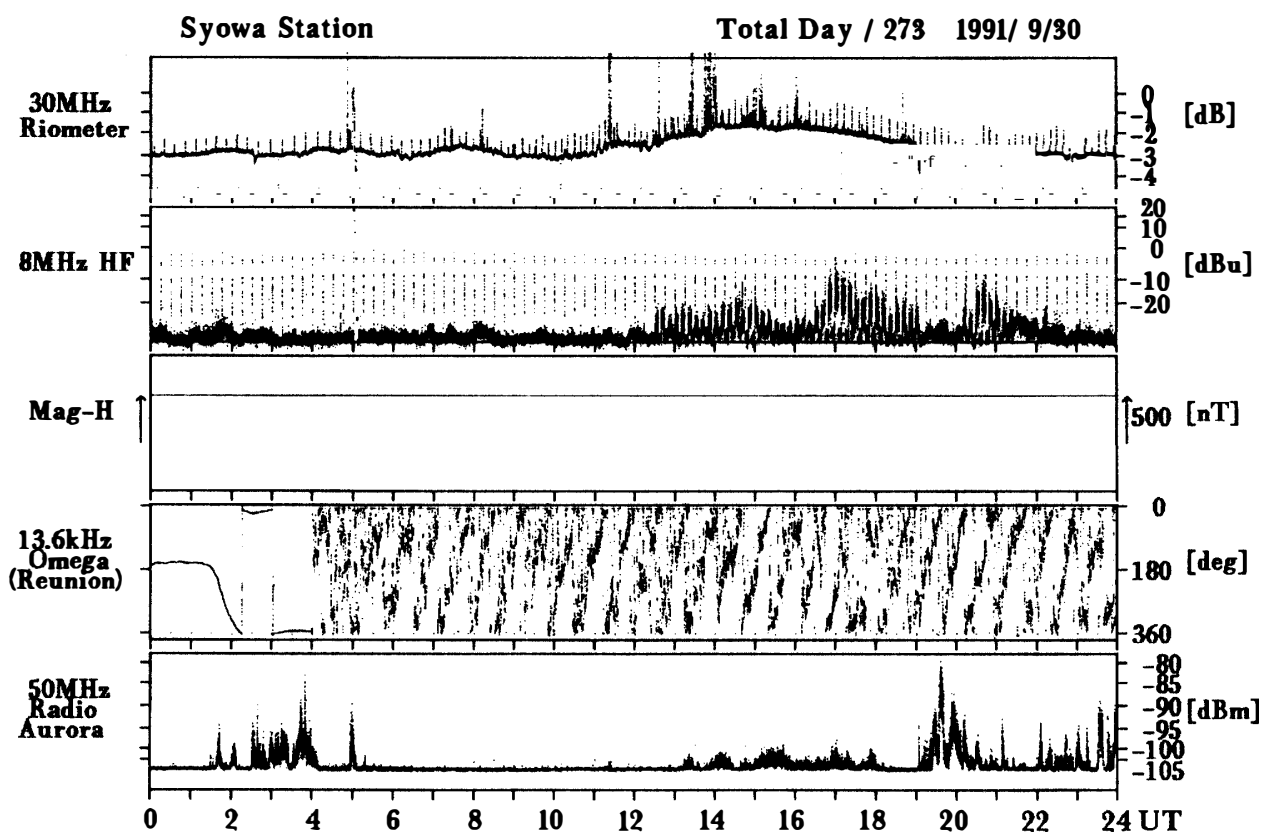
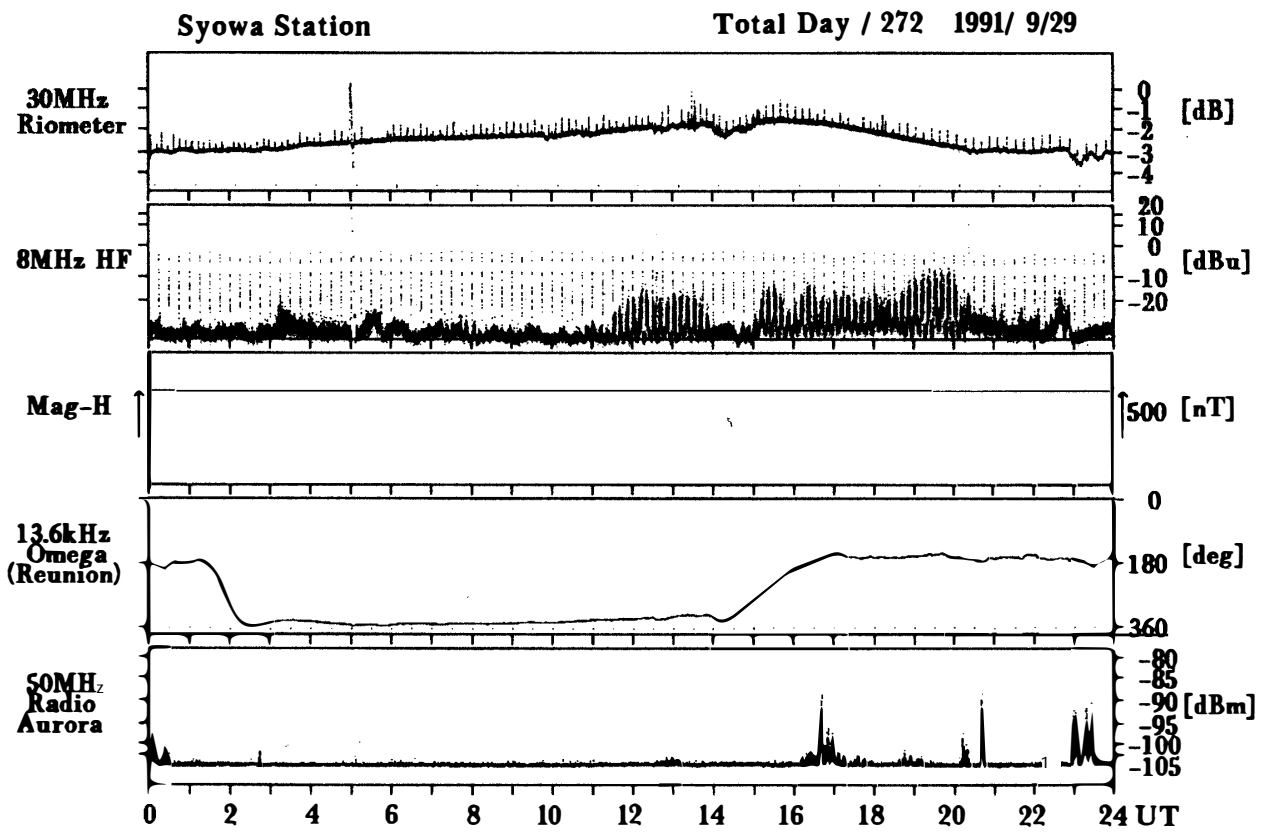
Total Day / 270 1991/ 9/27

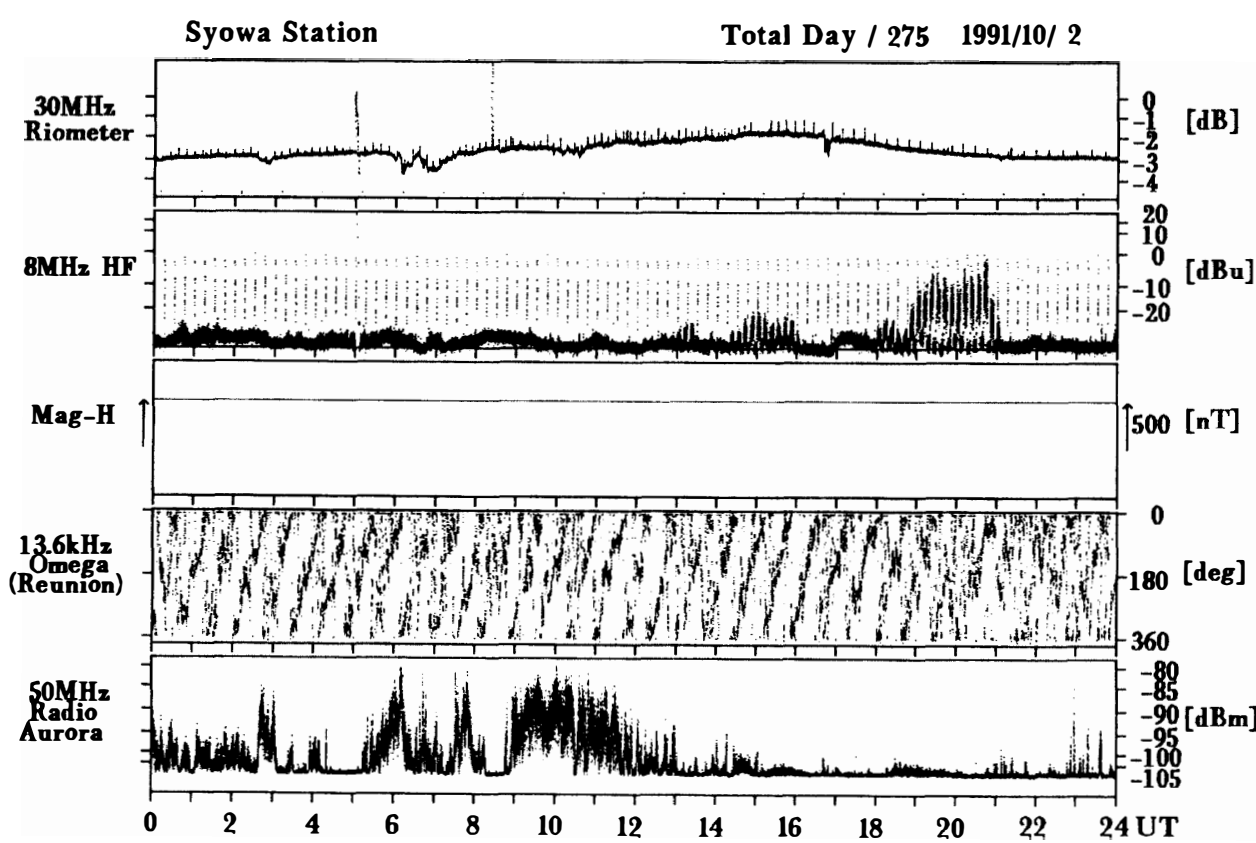
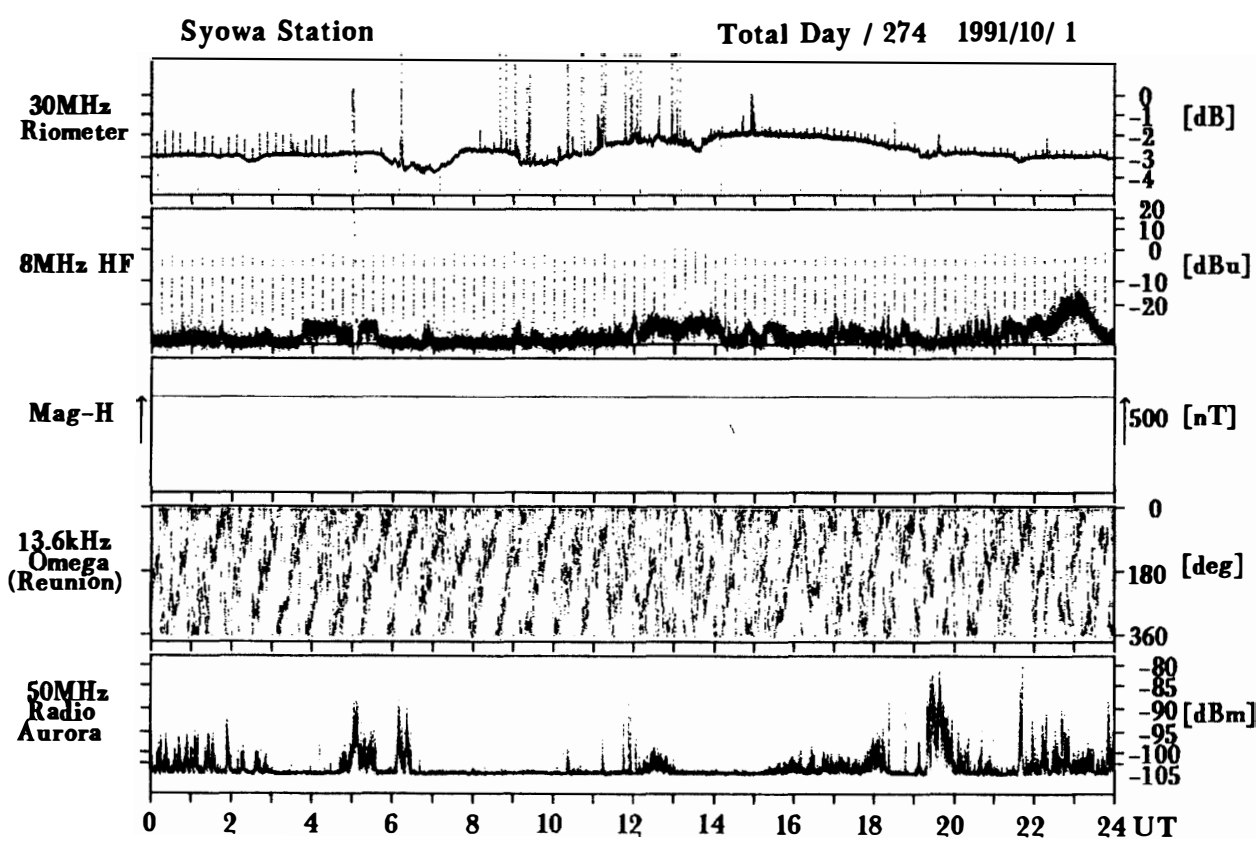


Syowa Station

Total Day / 271 1991/ 9/28

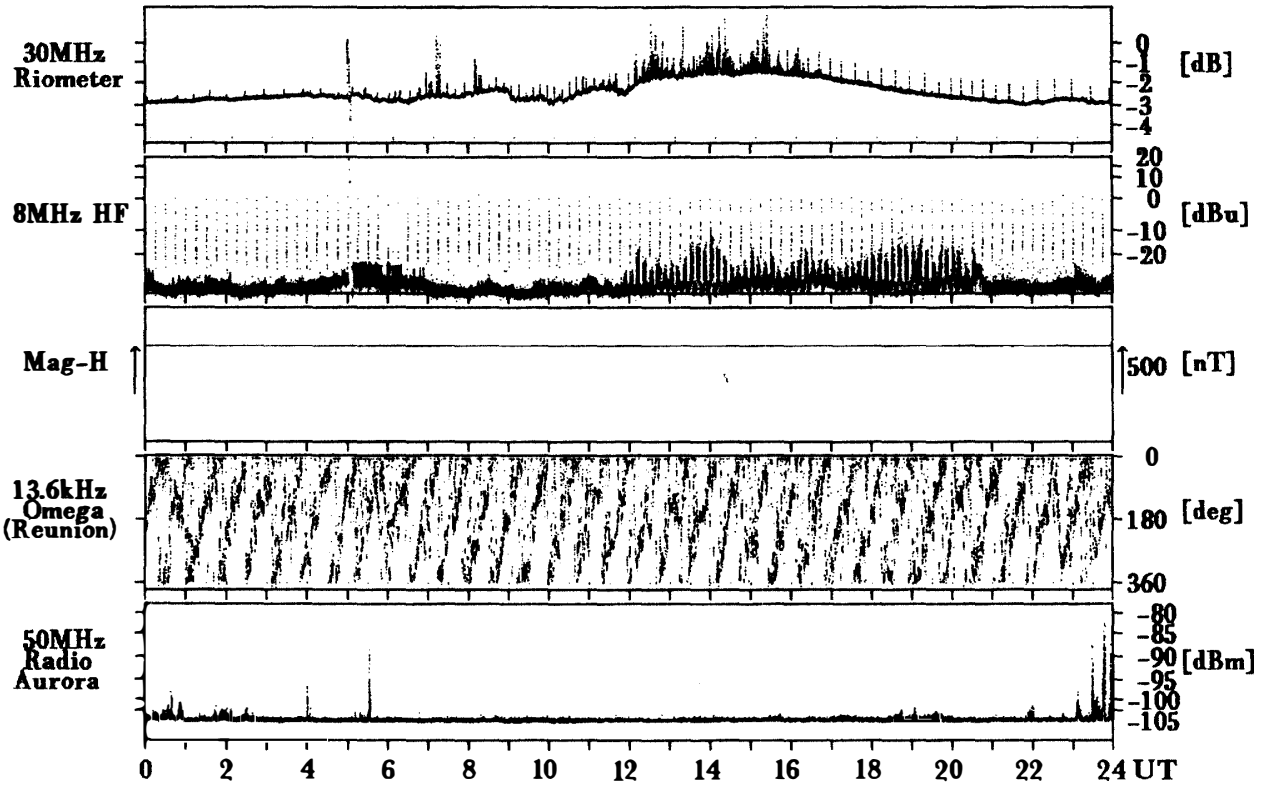






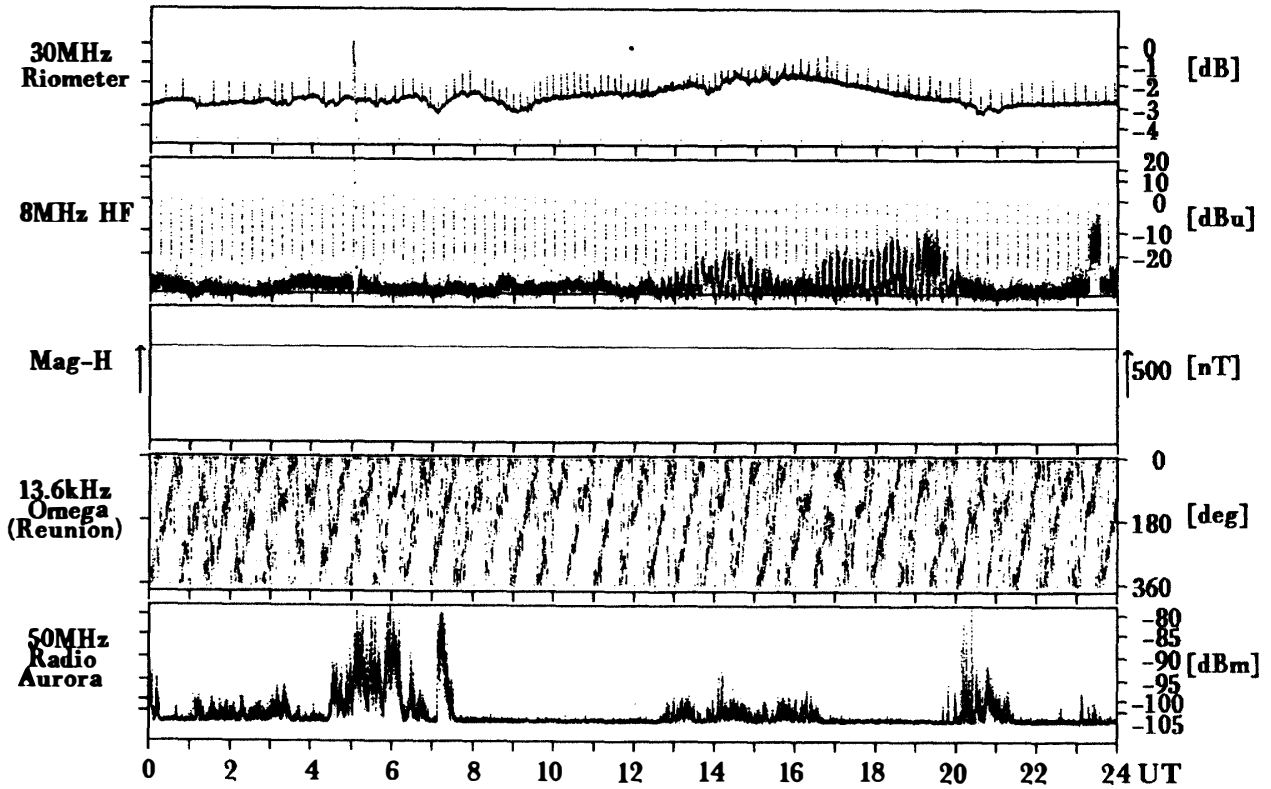
Syowa Station

Total Day / 276 1991/10/ 3



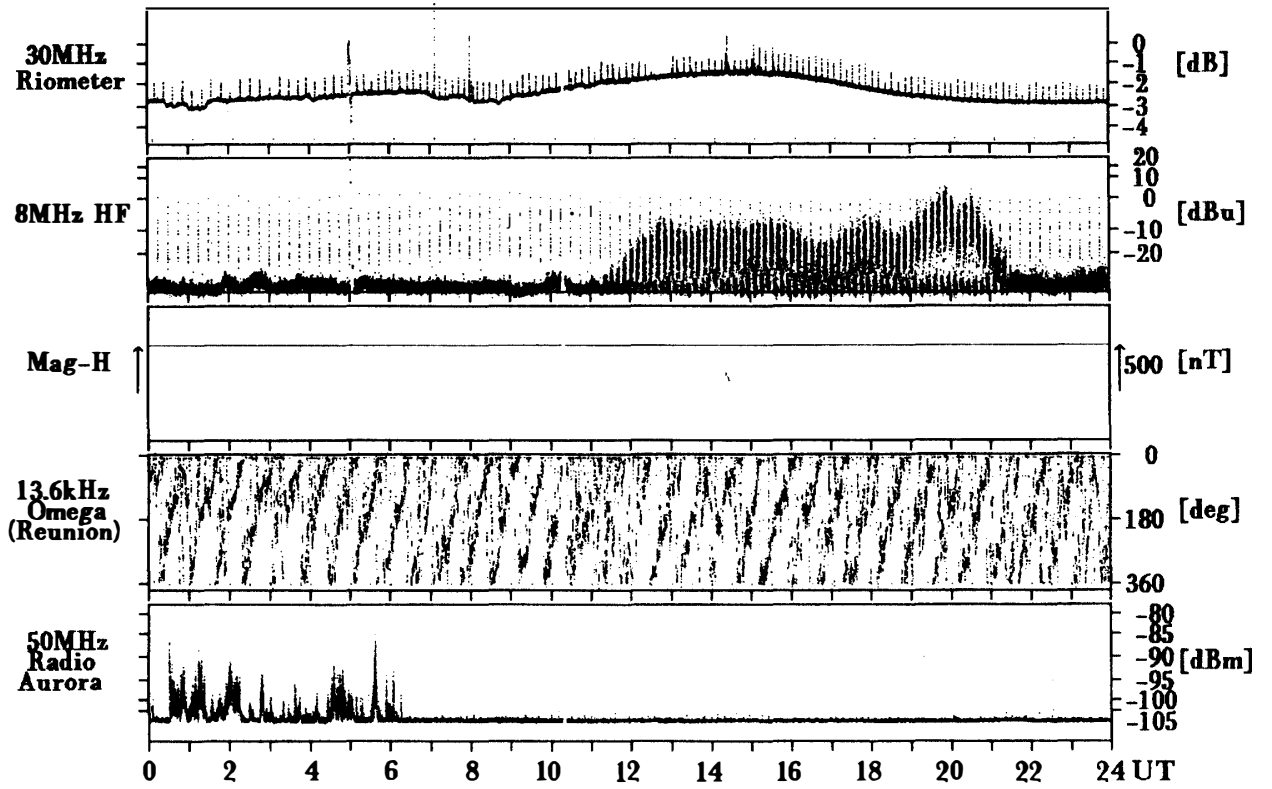
Syowa Station

Total Day / 277 1991/10/ 4



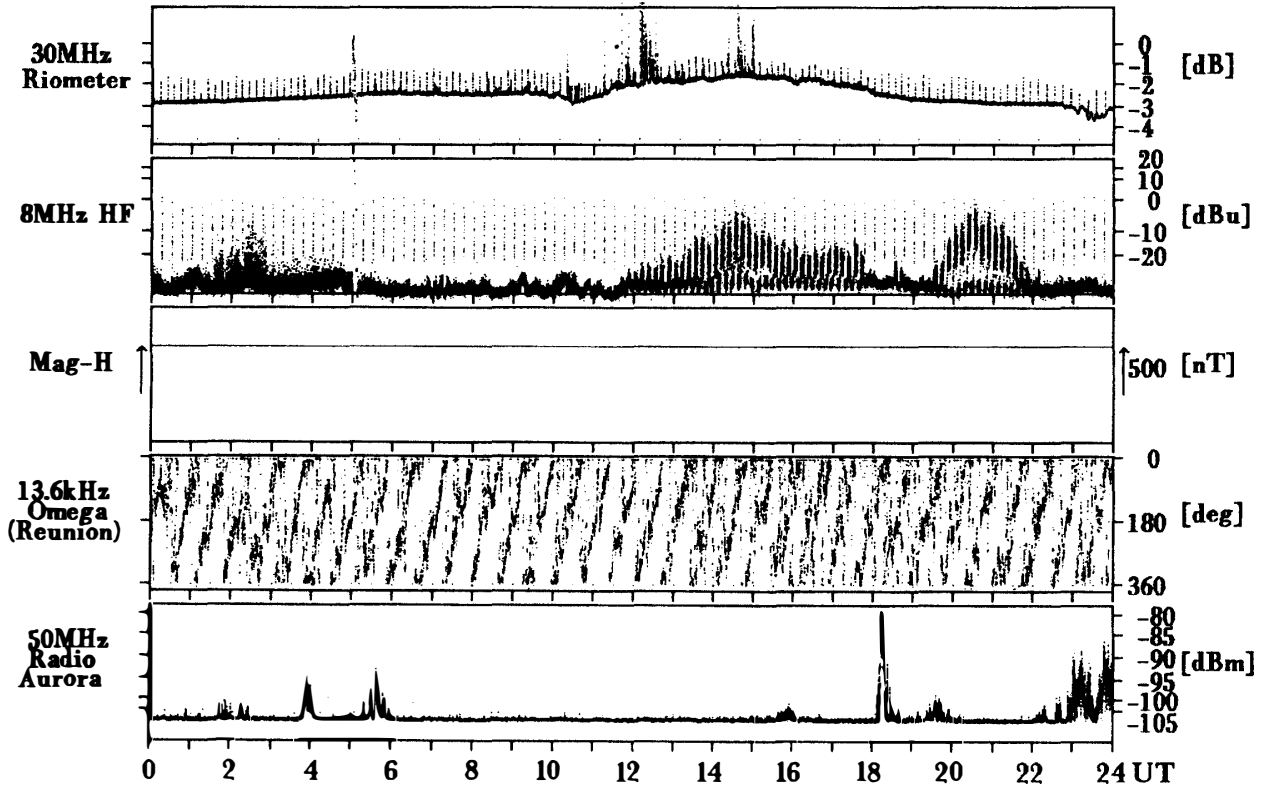
Syowa Station

Total Day / 278 1991/10/ 5



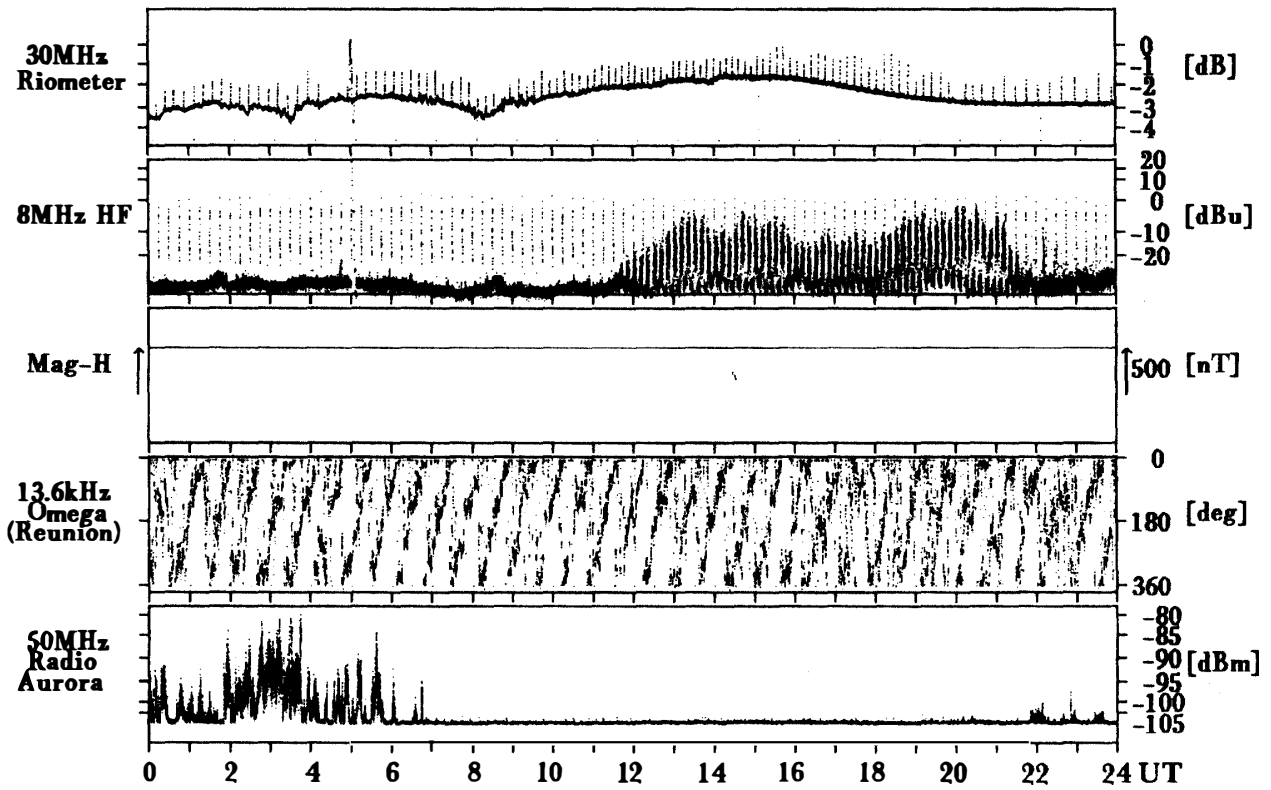
Syowa Station

Total Day / 279 1991/10/ 6



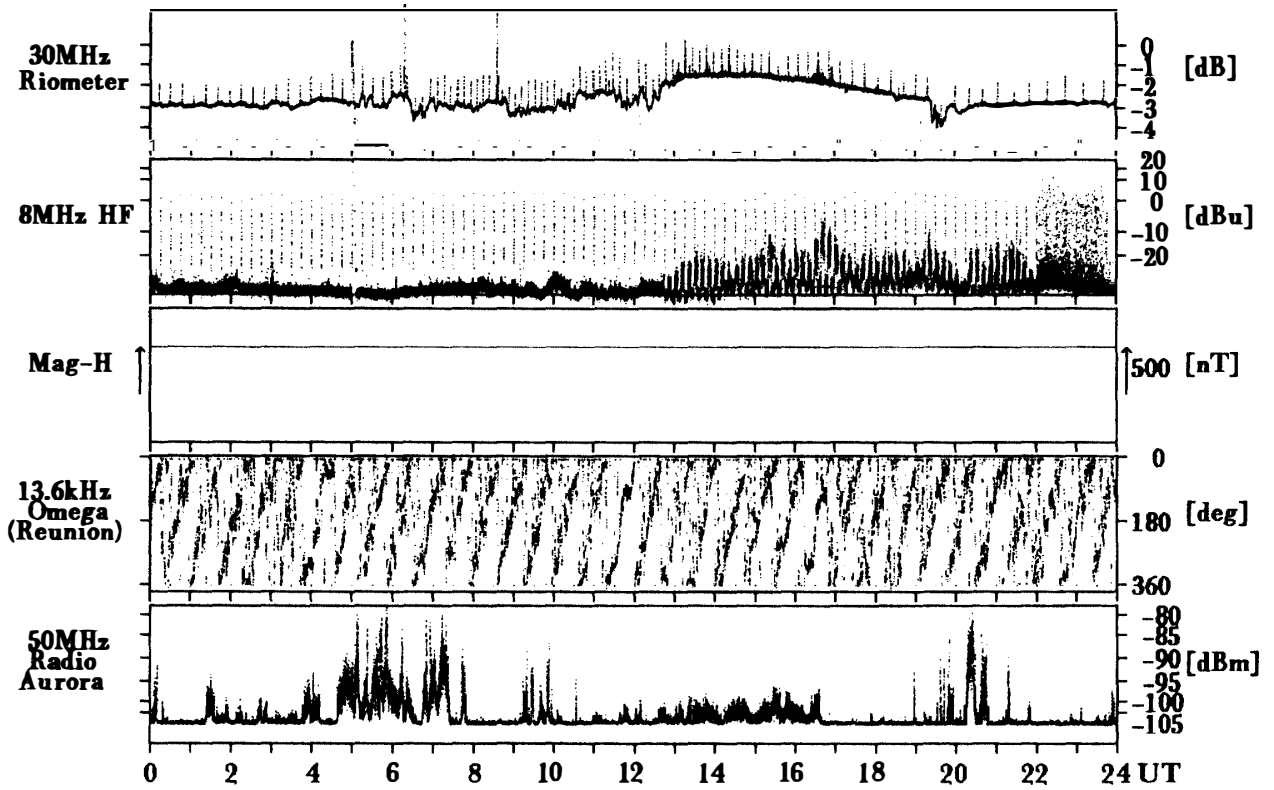
Syowa Station

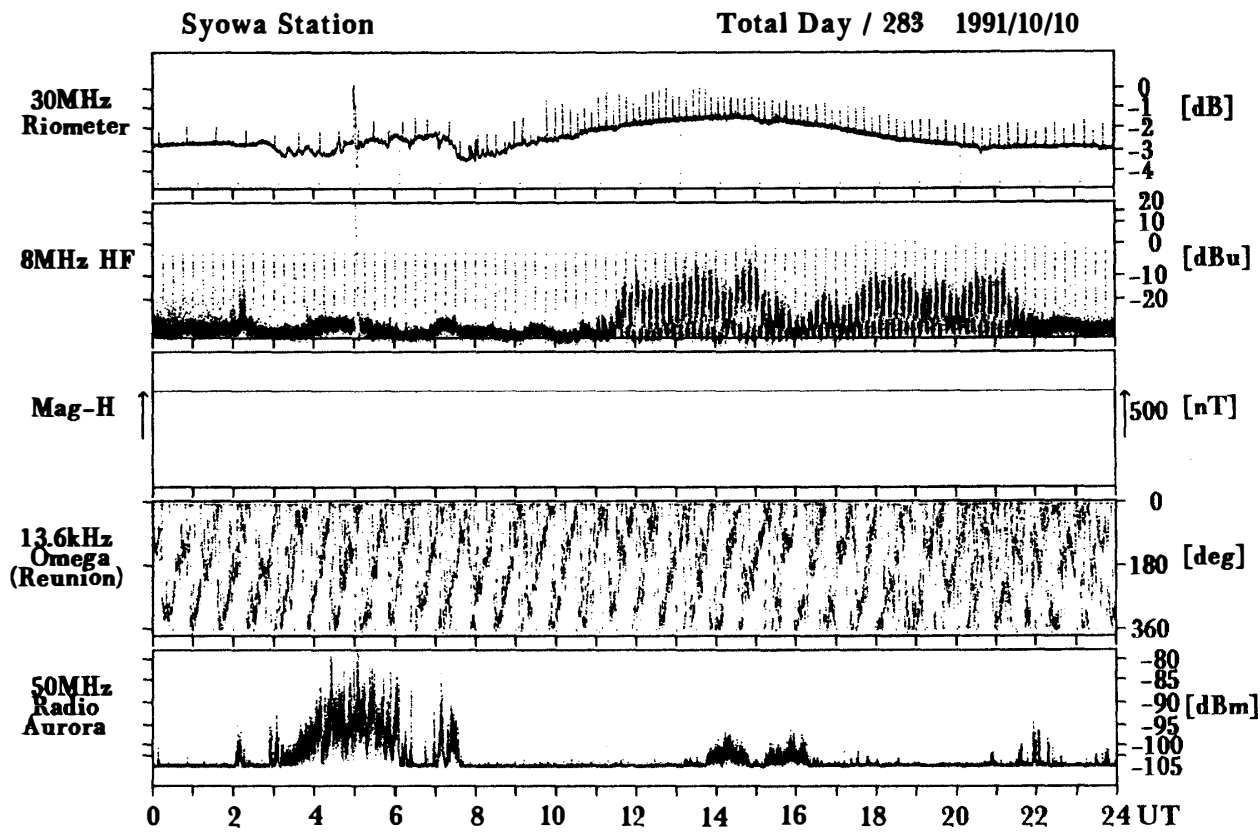
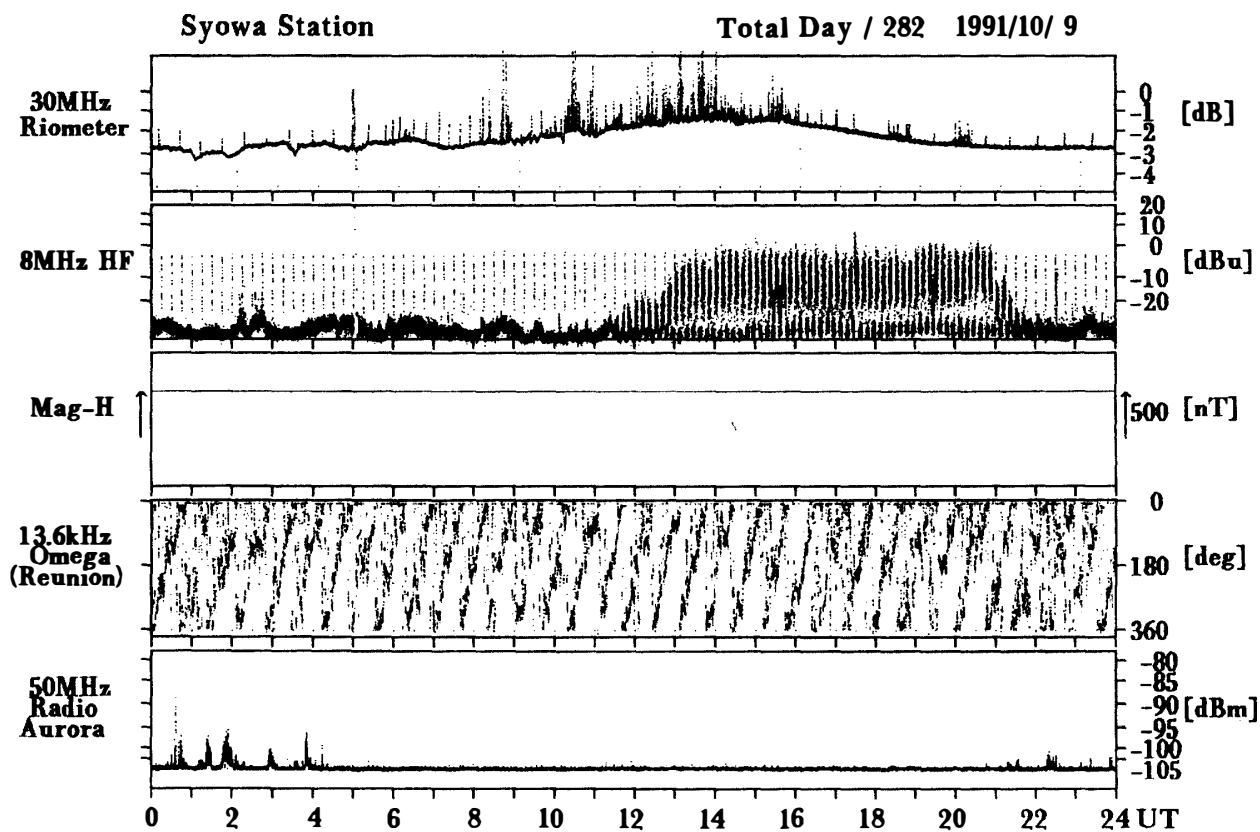
Total Day / 280 1991/10/ 7

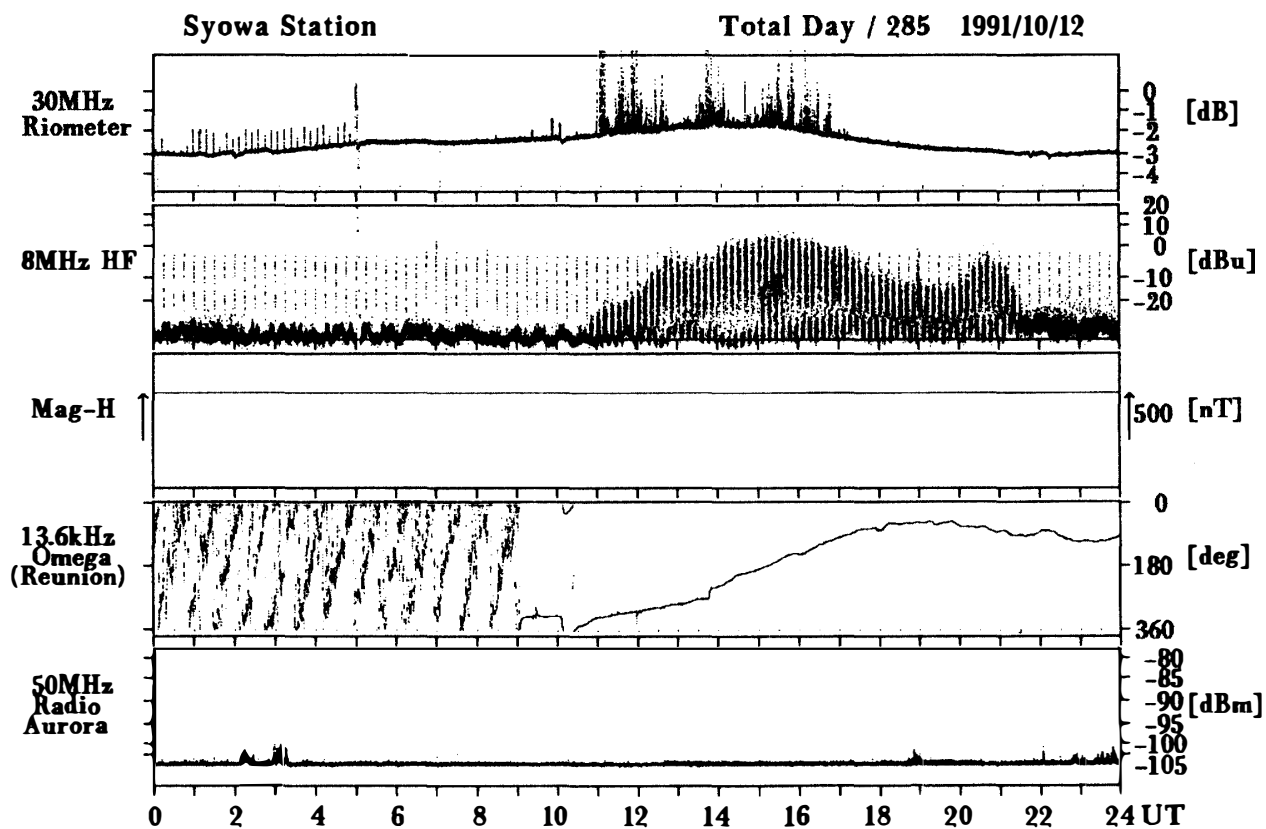
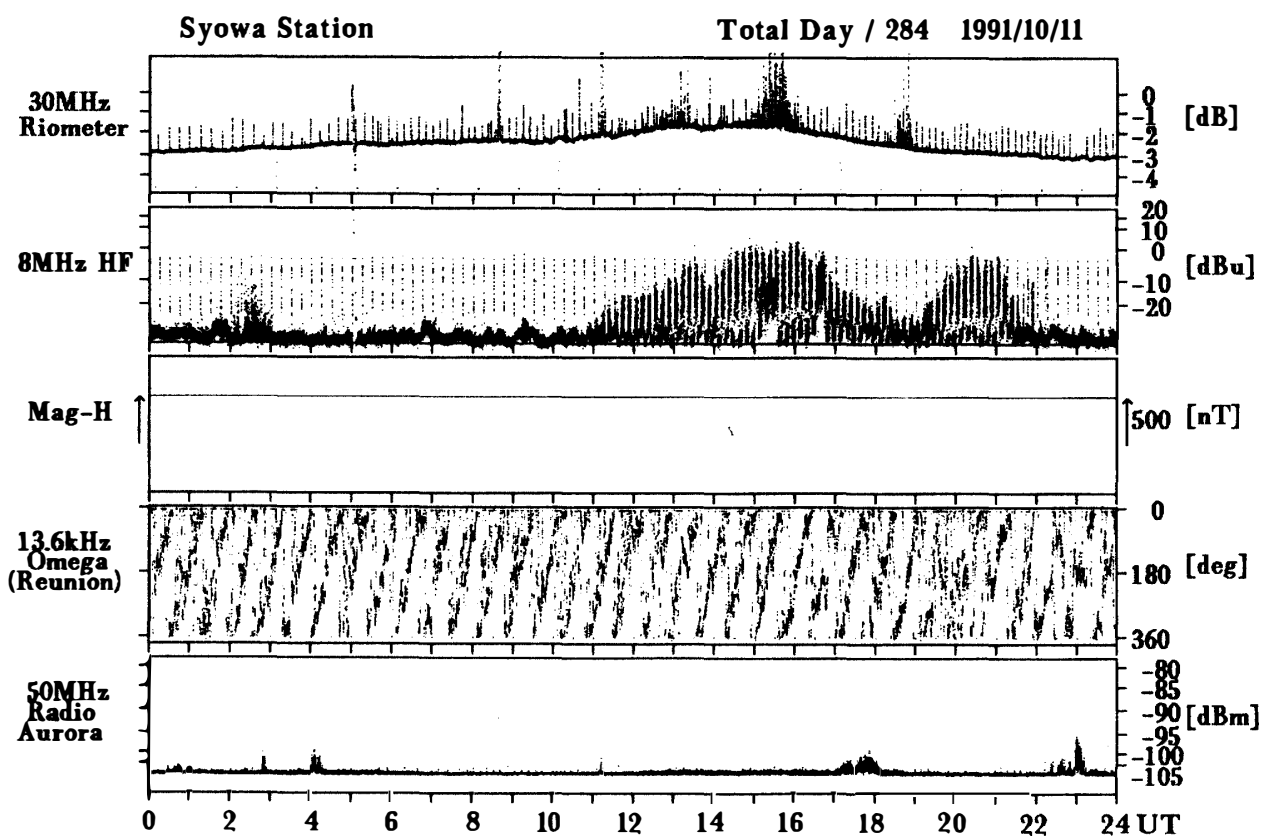


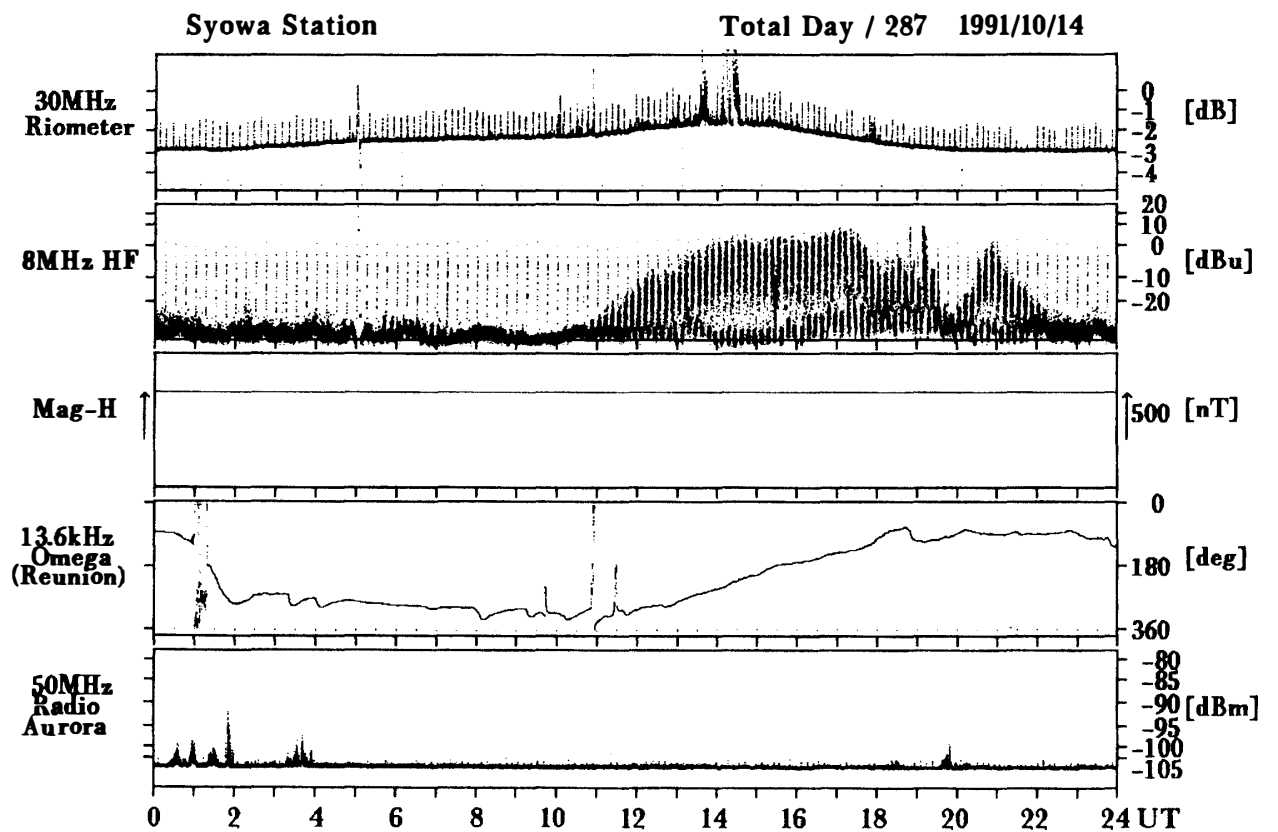
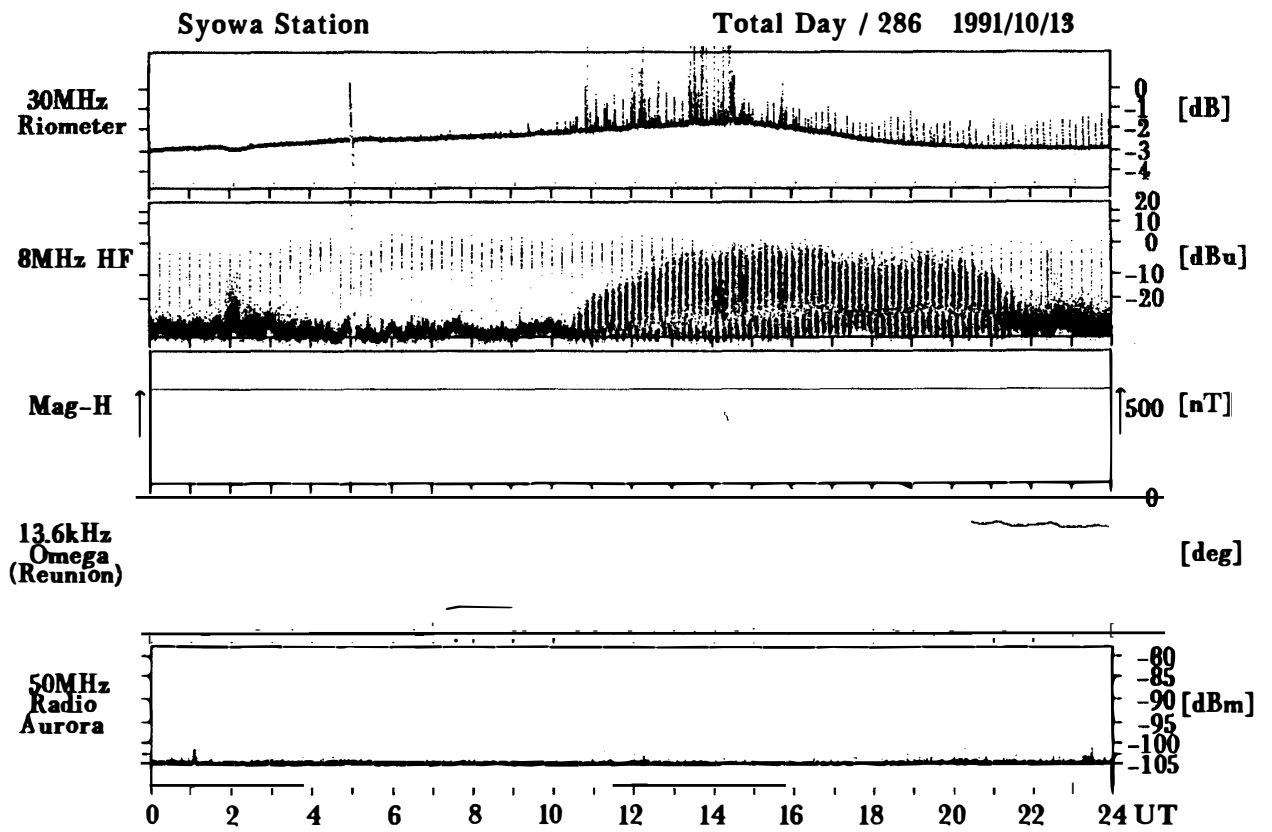
Syowa Station

Total Day / 281 1991/10/ 8



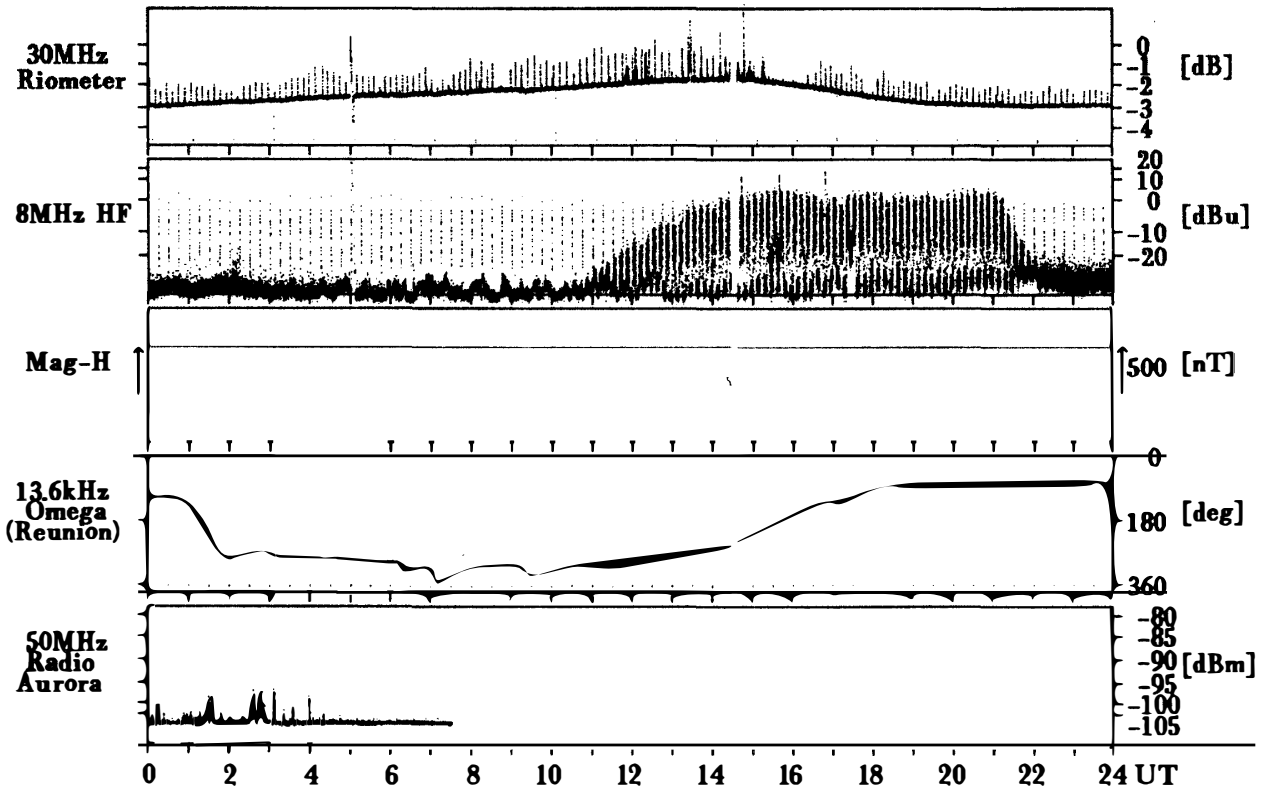






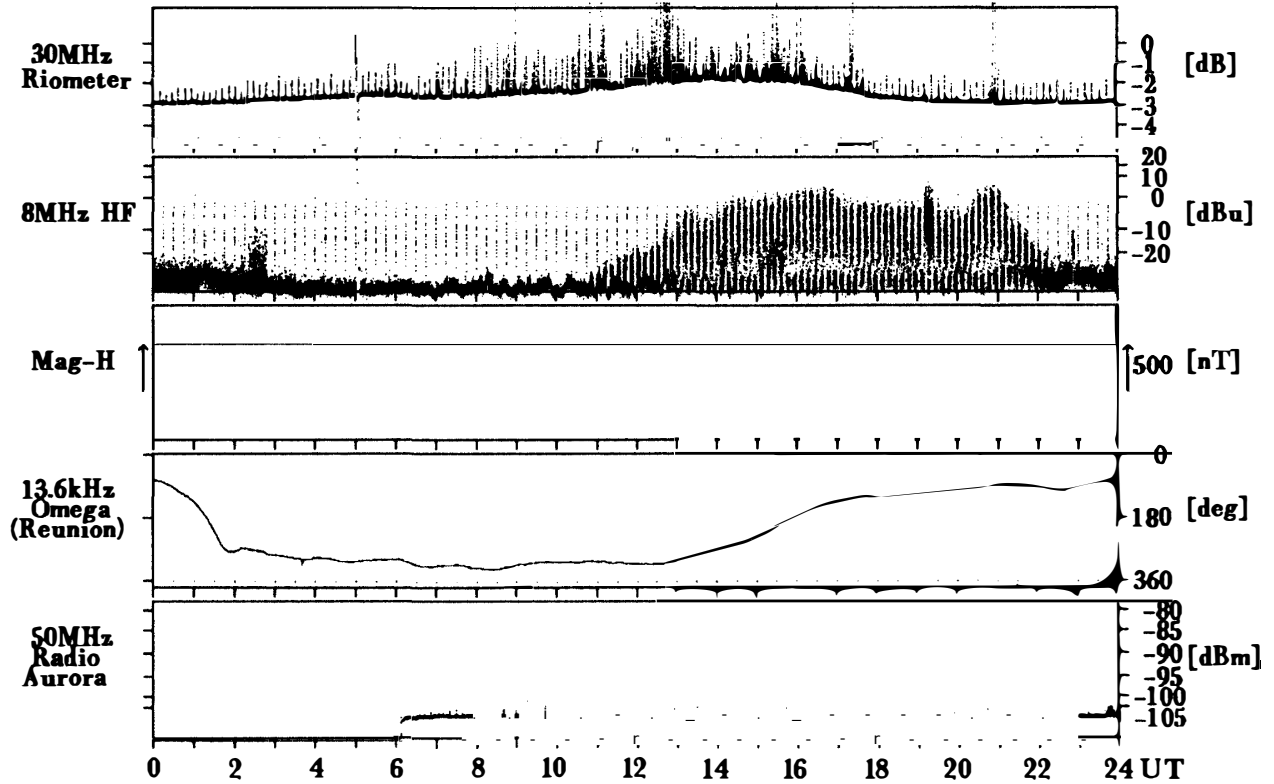
Syowa Station

Total Day / 288 1991/10/15



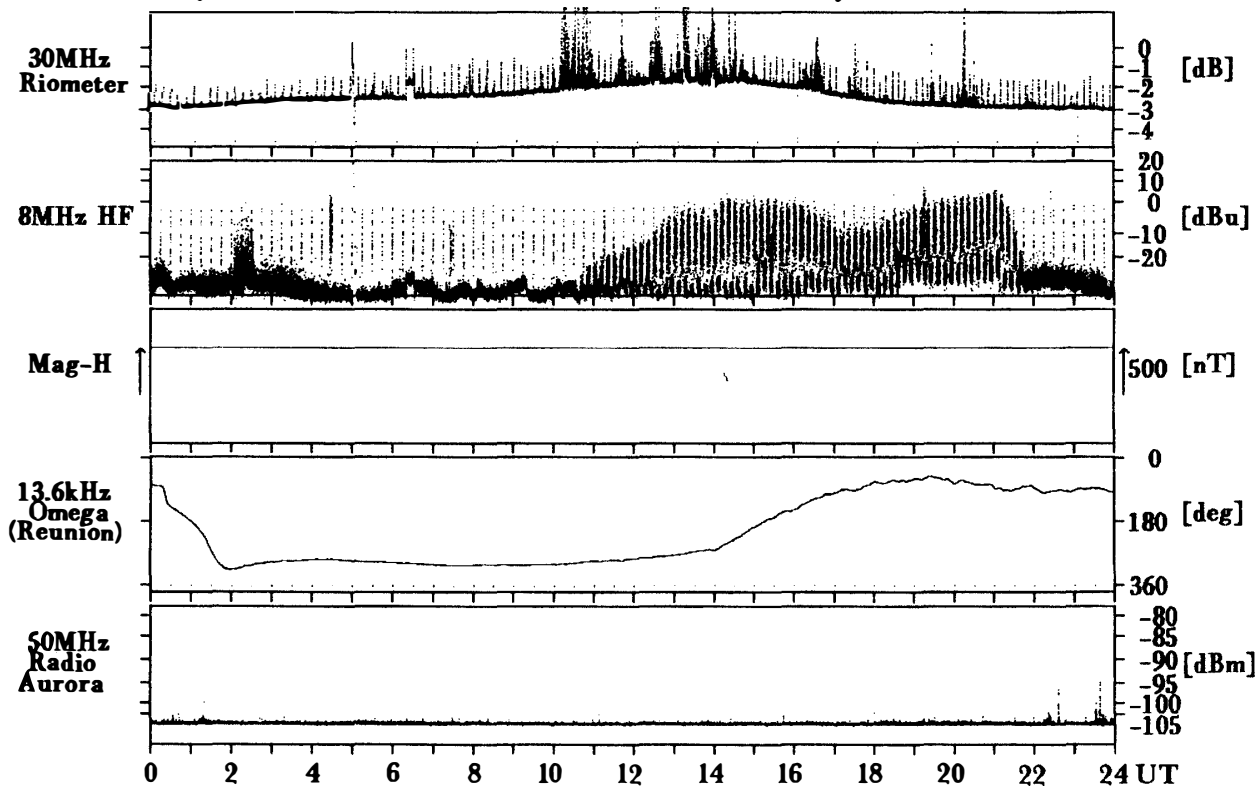
Syowa Station

Total Day / 289 1991/10/16



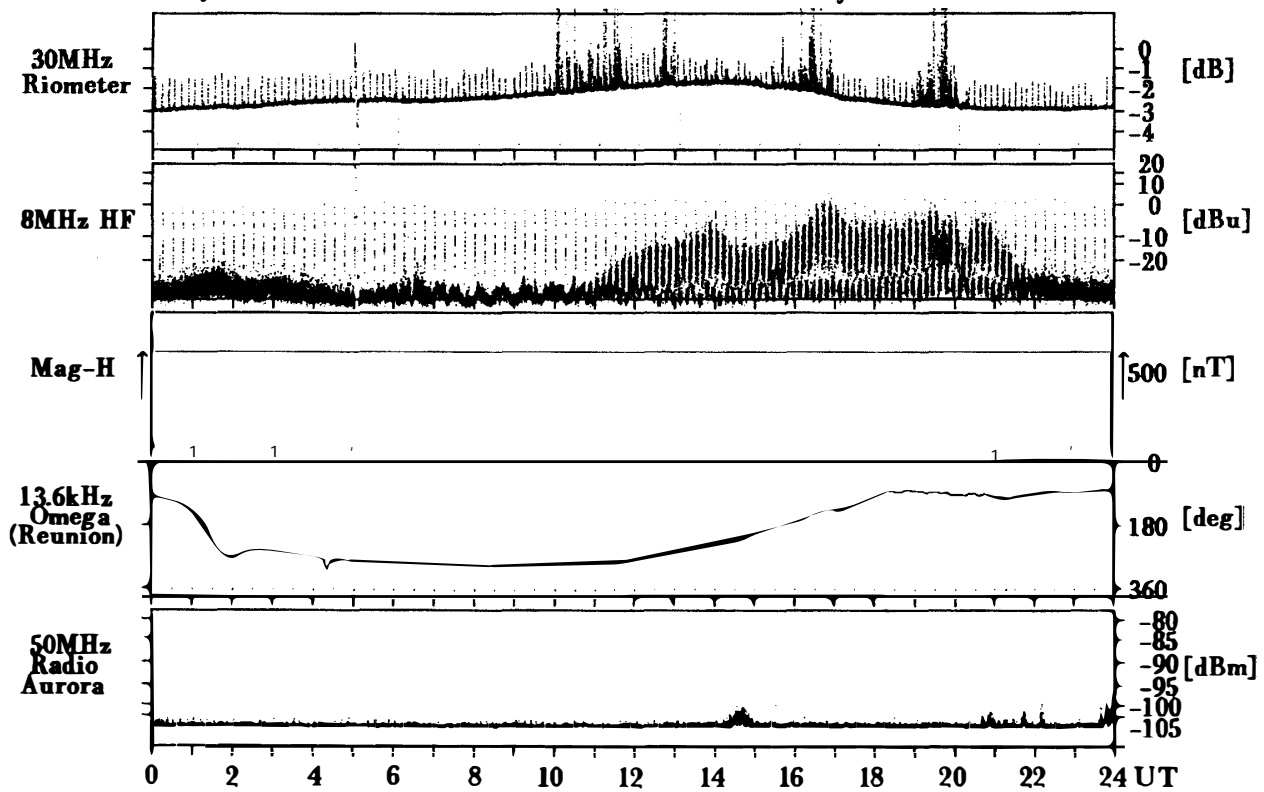
Syowa Station

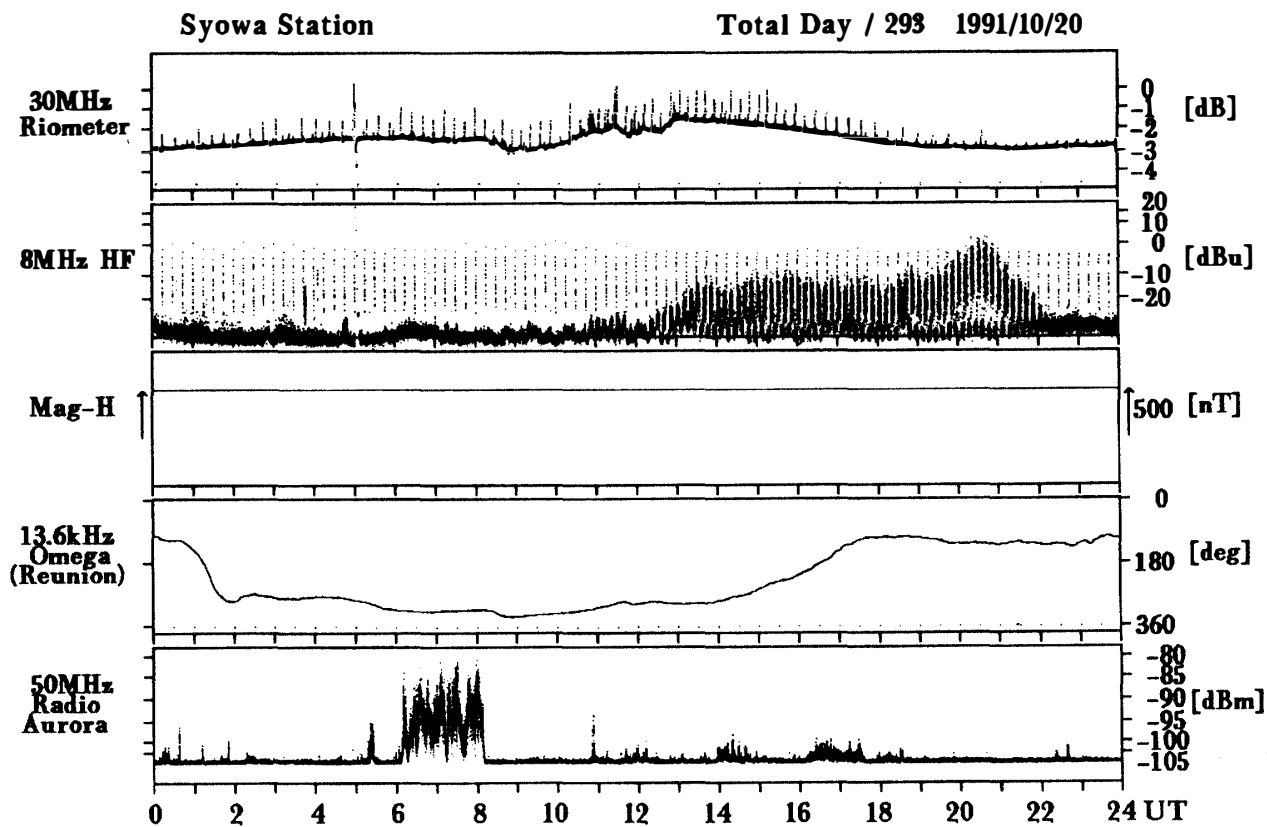
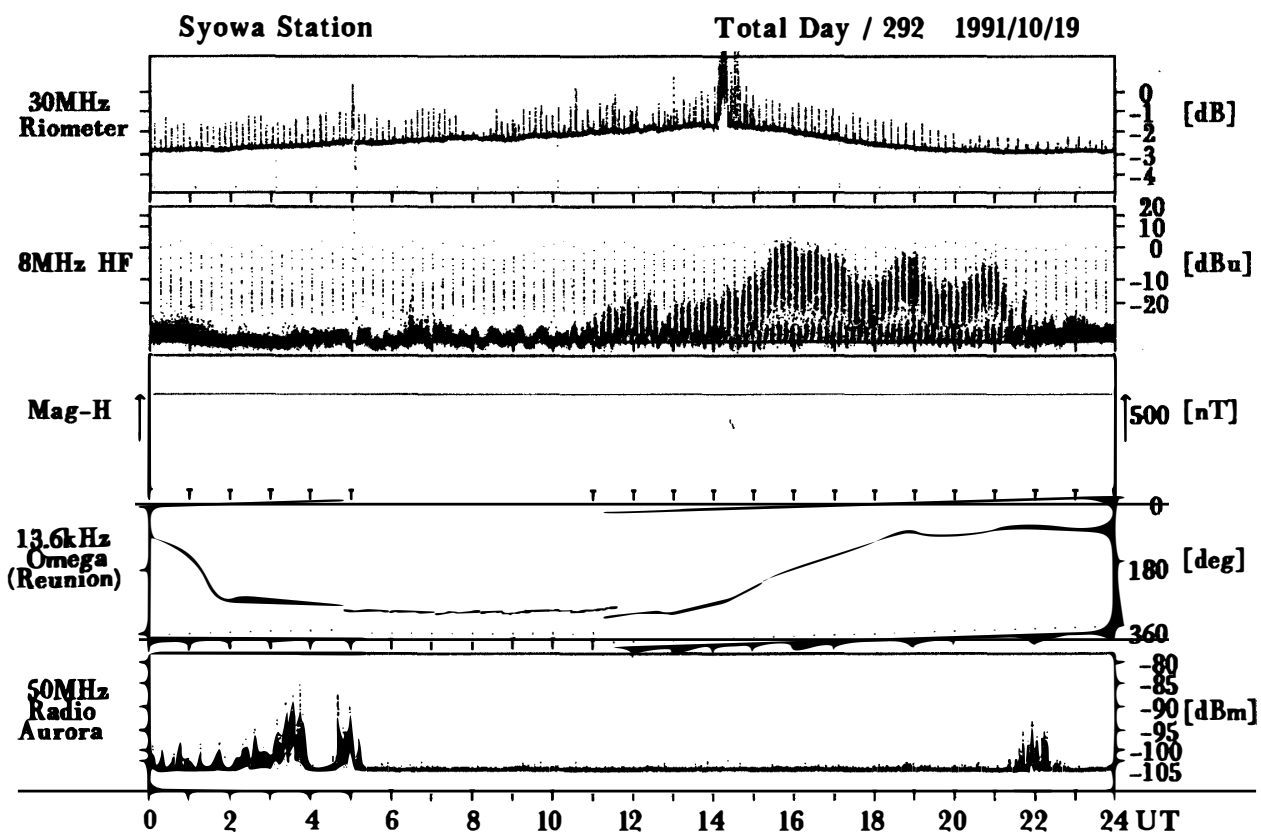
Total Day / 290 1991/10/17

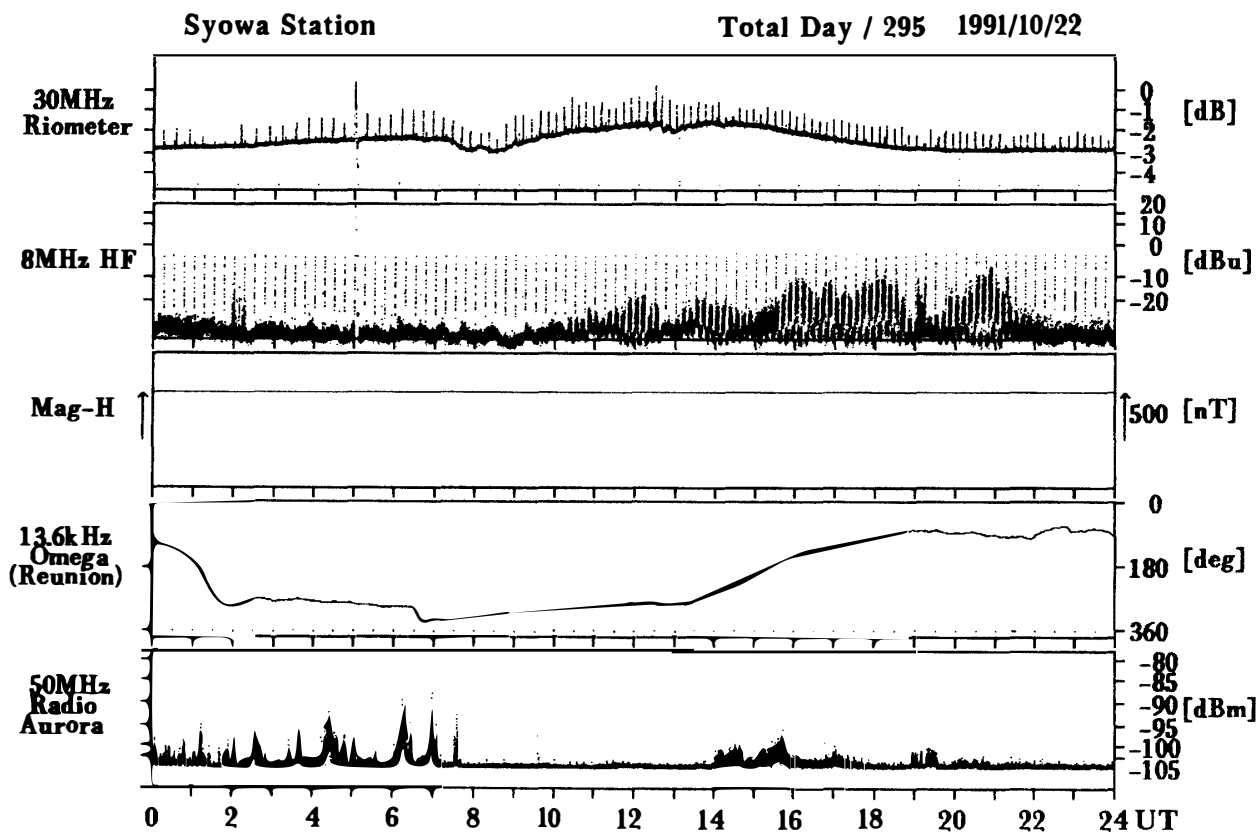
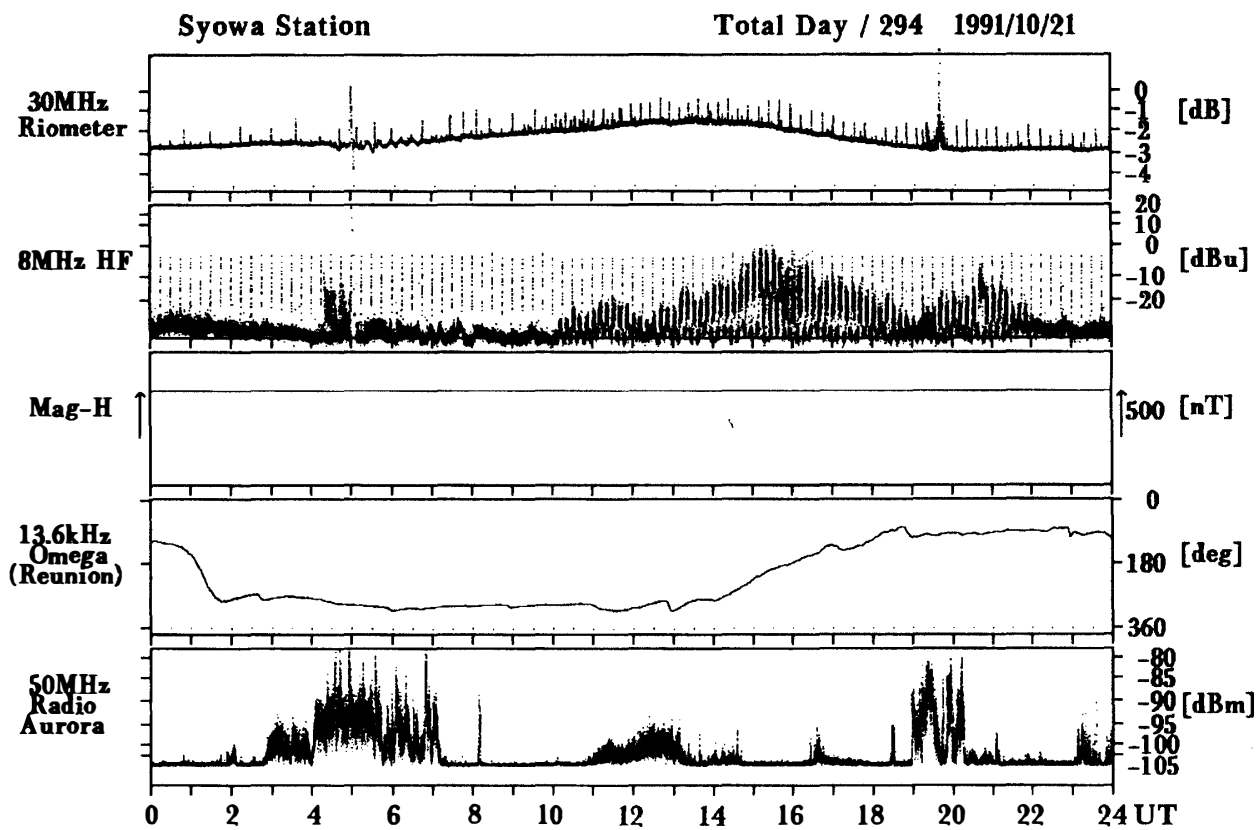


Syowa Station

Total Day / 291 1991/10/18

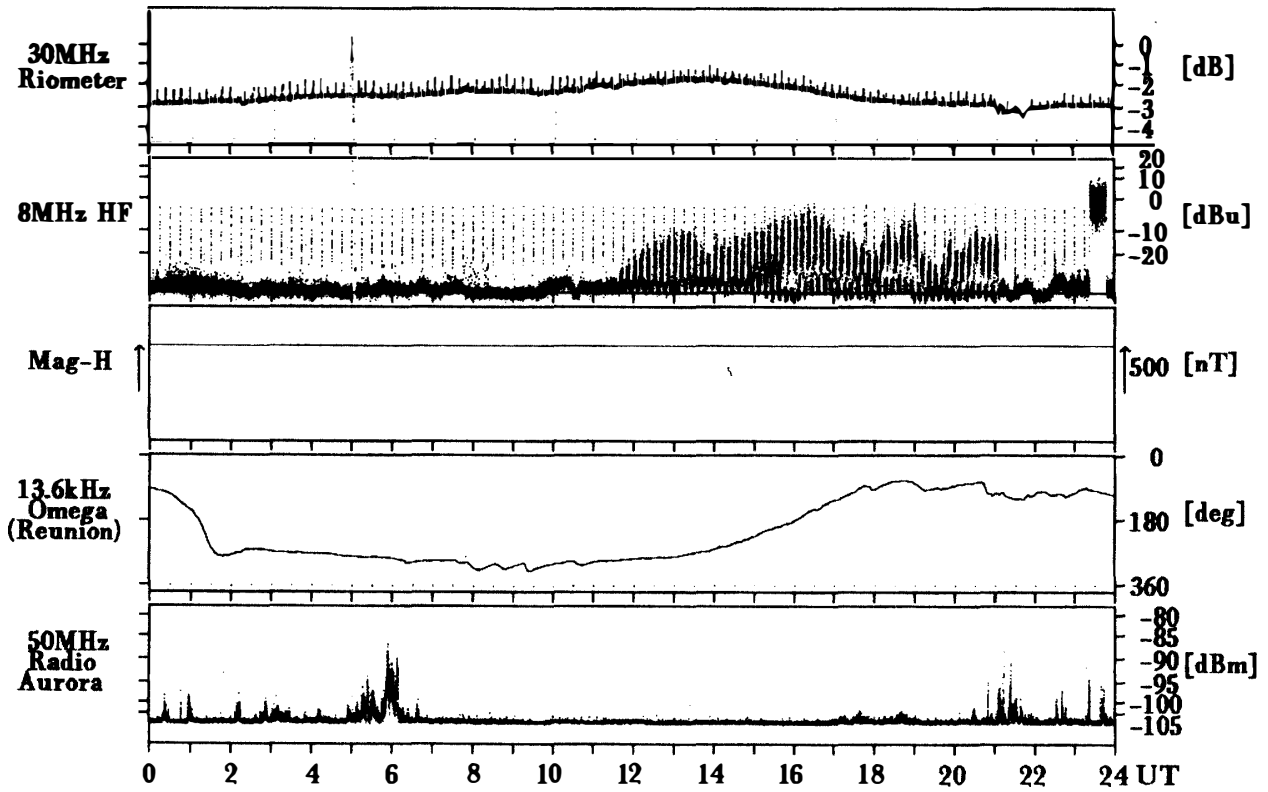






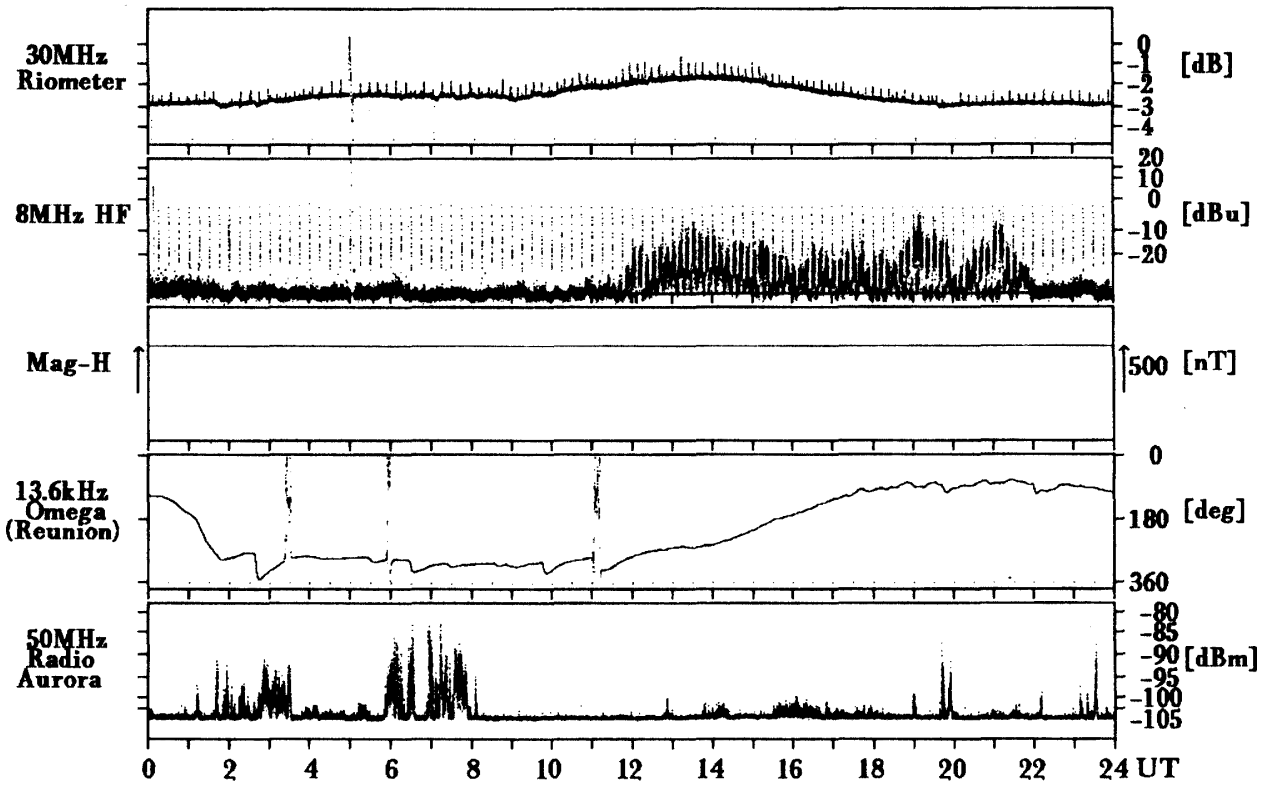
Syowa Station

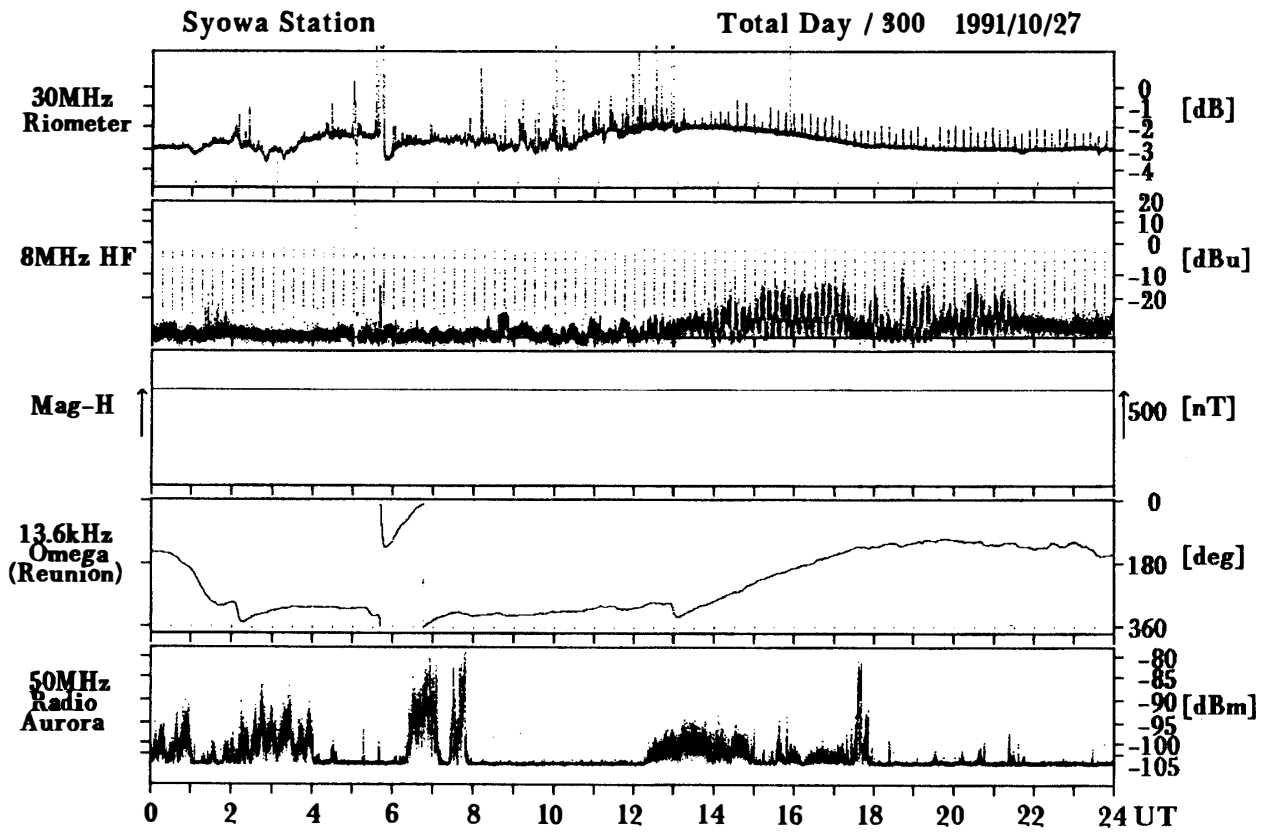
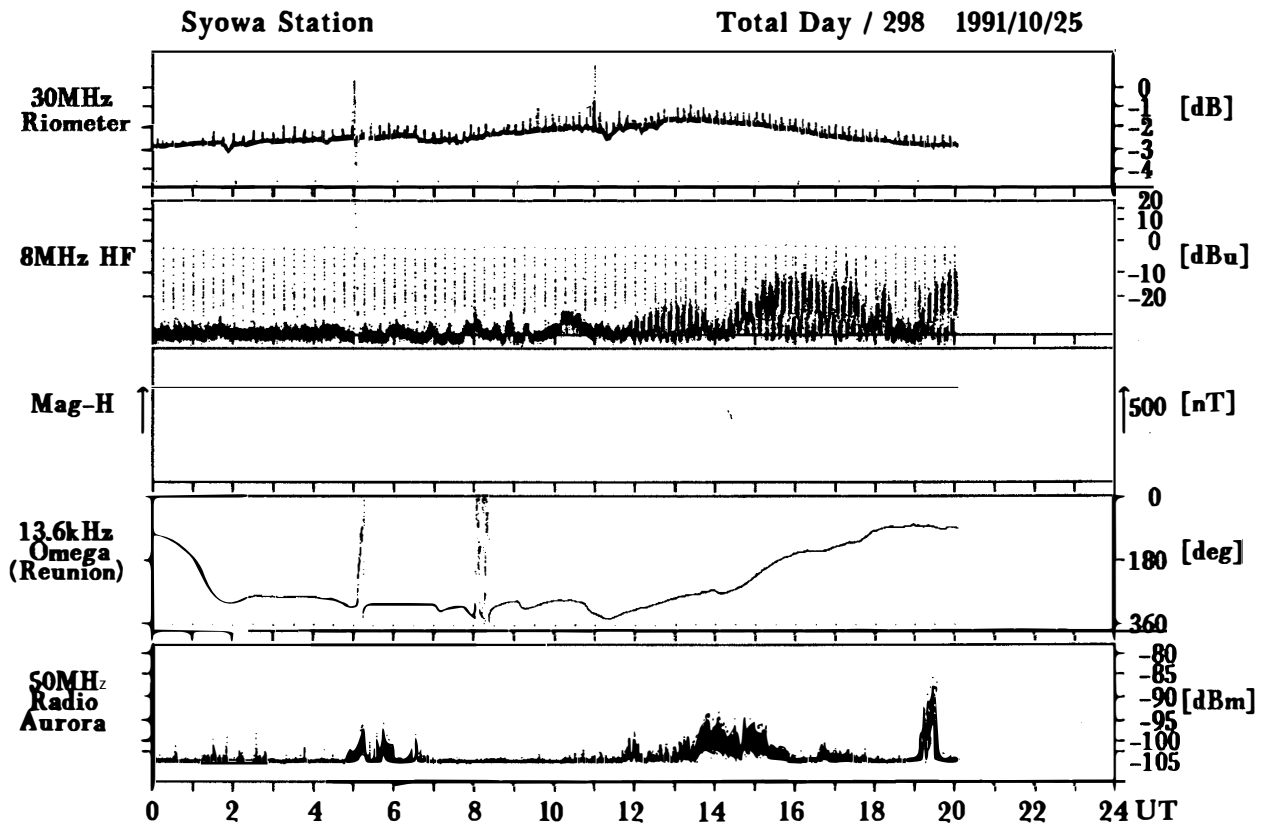
Total Day / 296 1991/10/23



Syowa Station

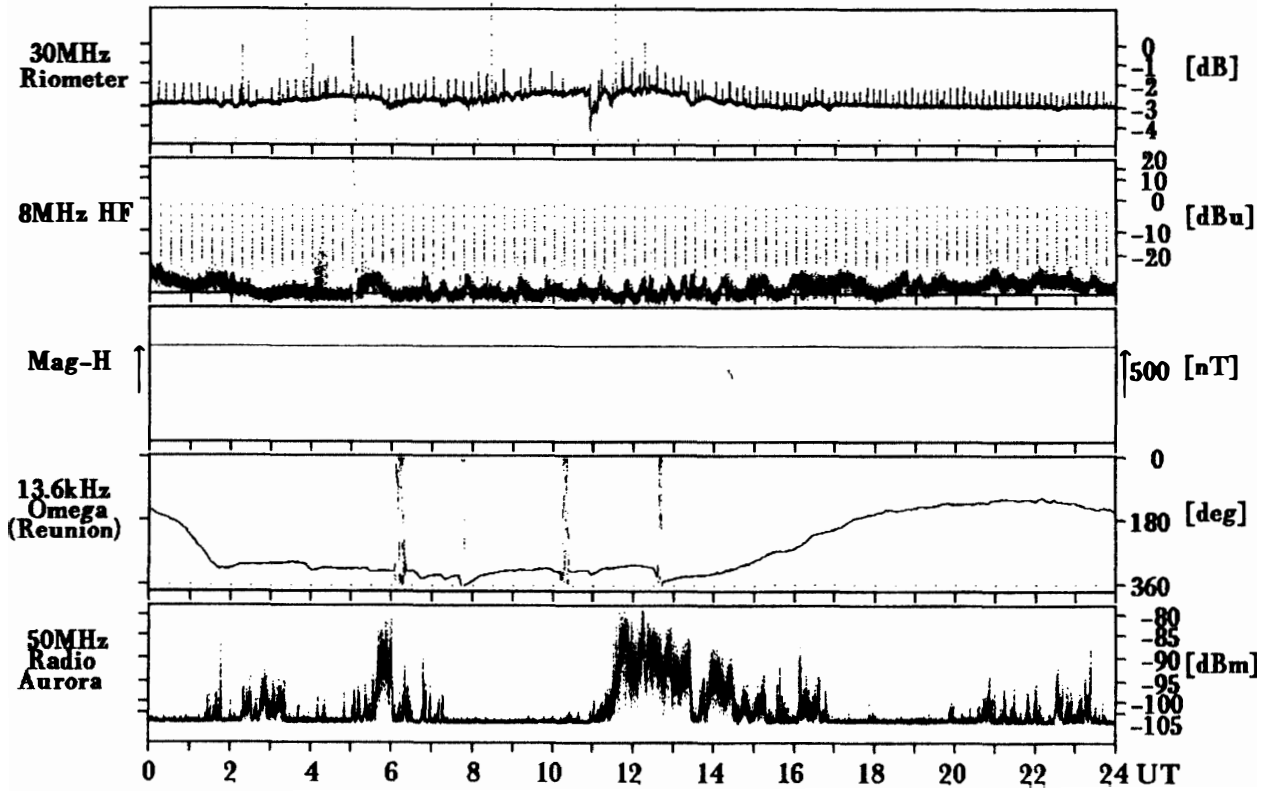
Total Day / 297 1991/10/24





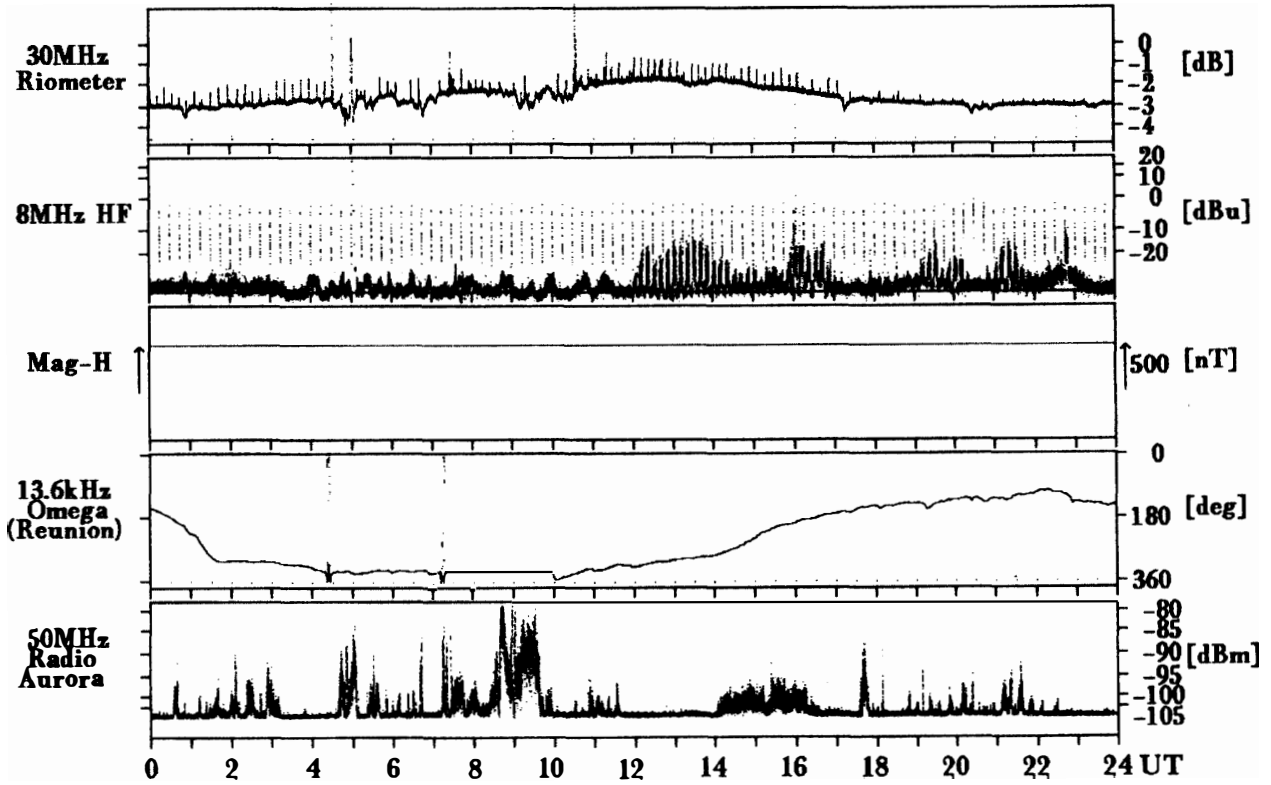
Syowa Station

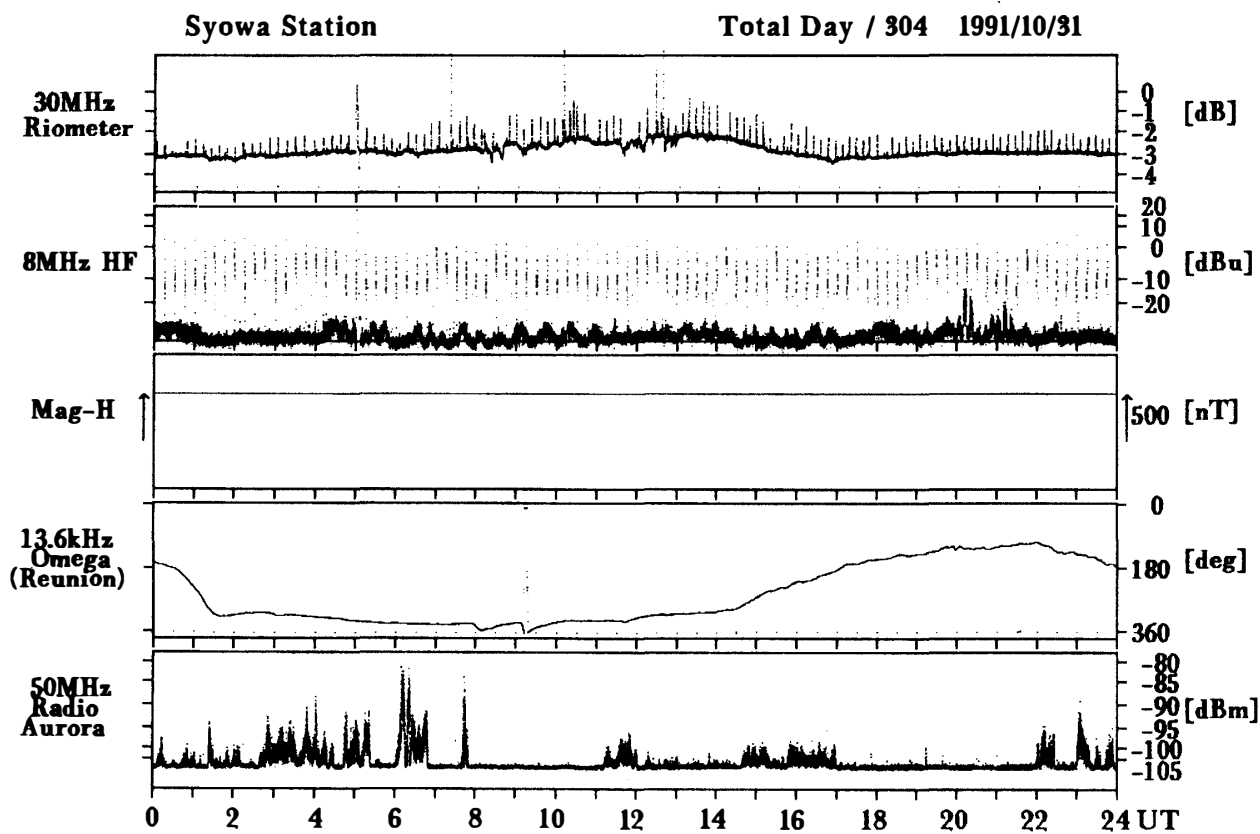
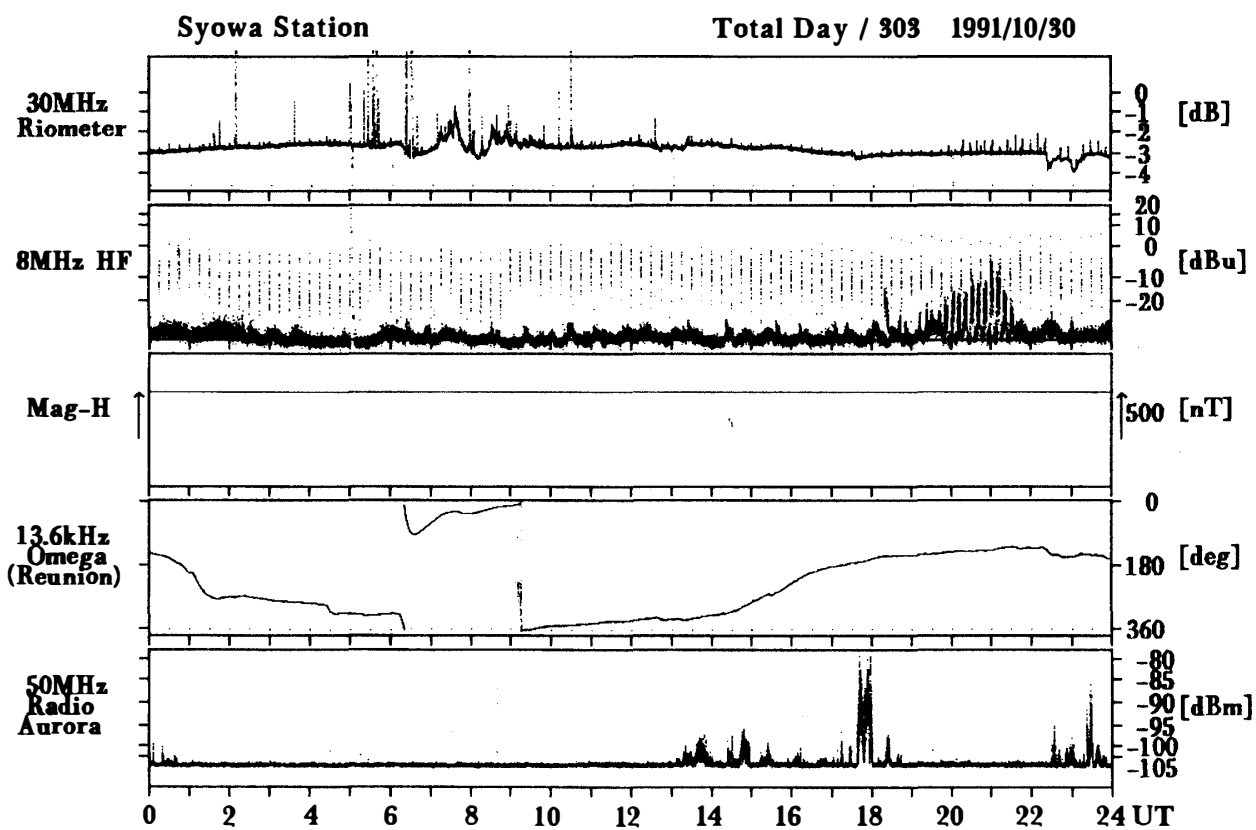
Total Day / 301 1991/10/28



Syowa Station

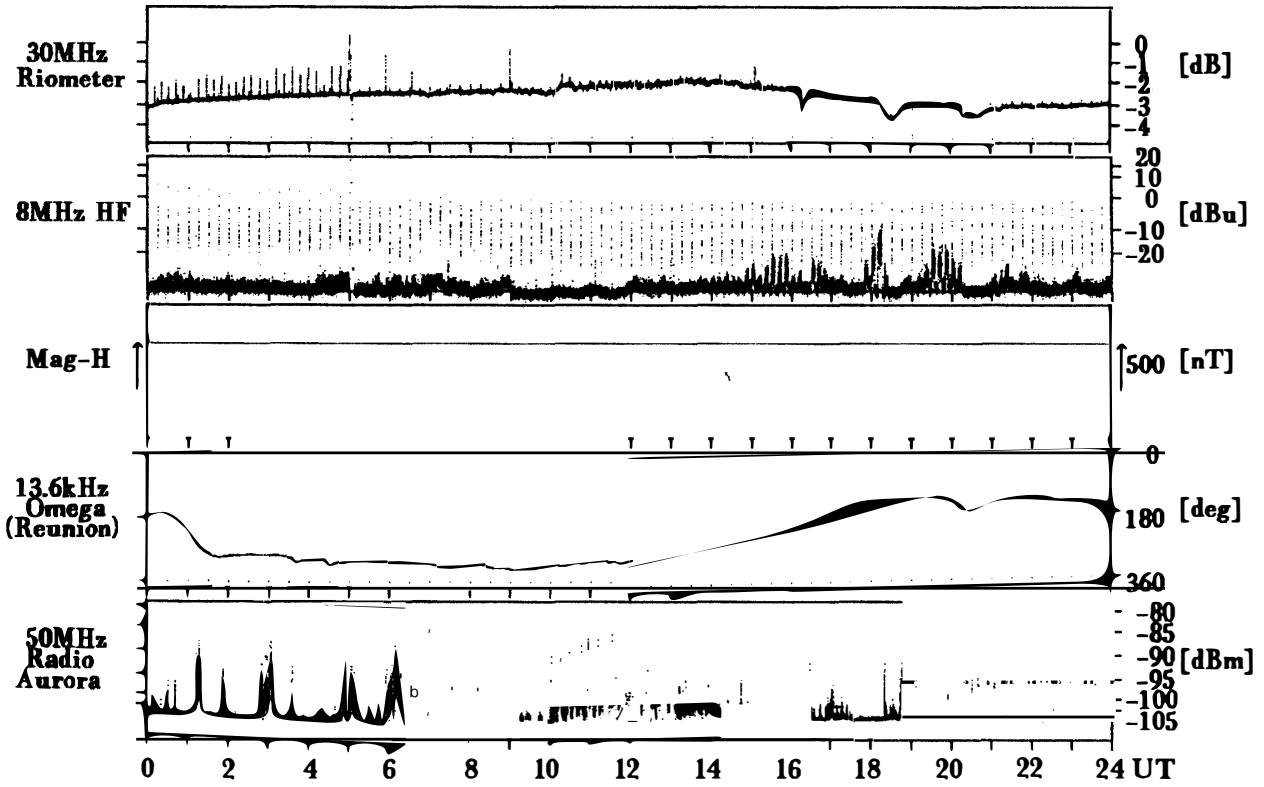
Total Day / 302 1991/10/29





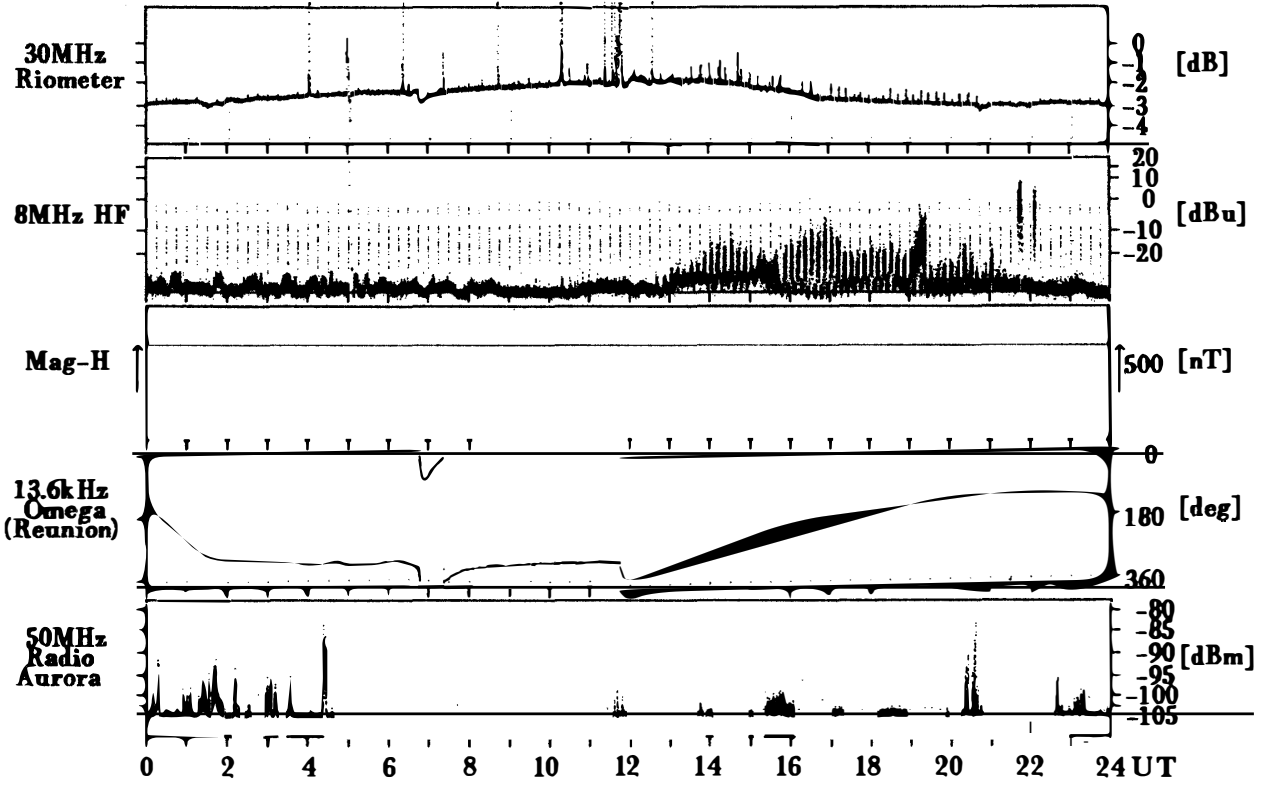
Syowa Station

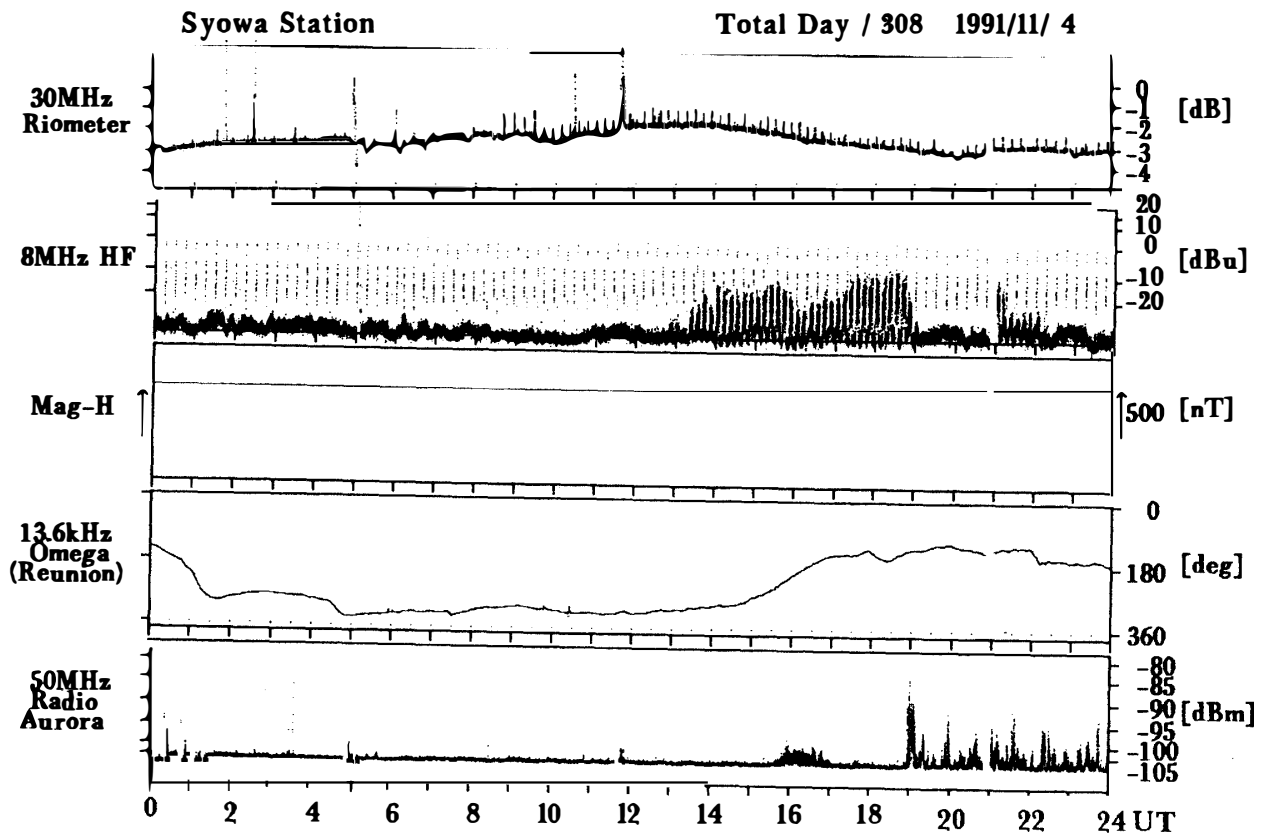
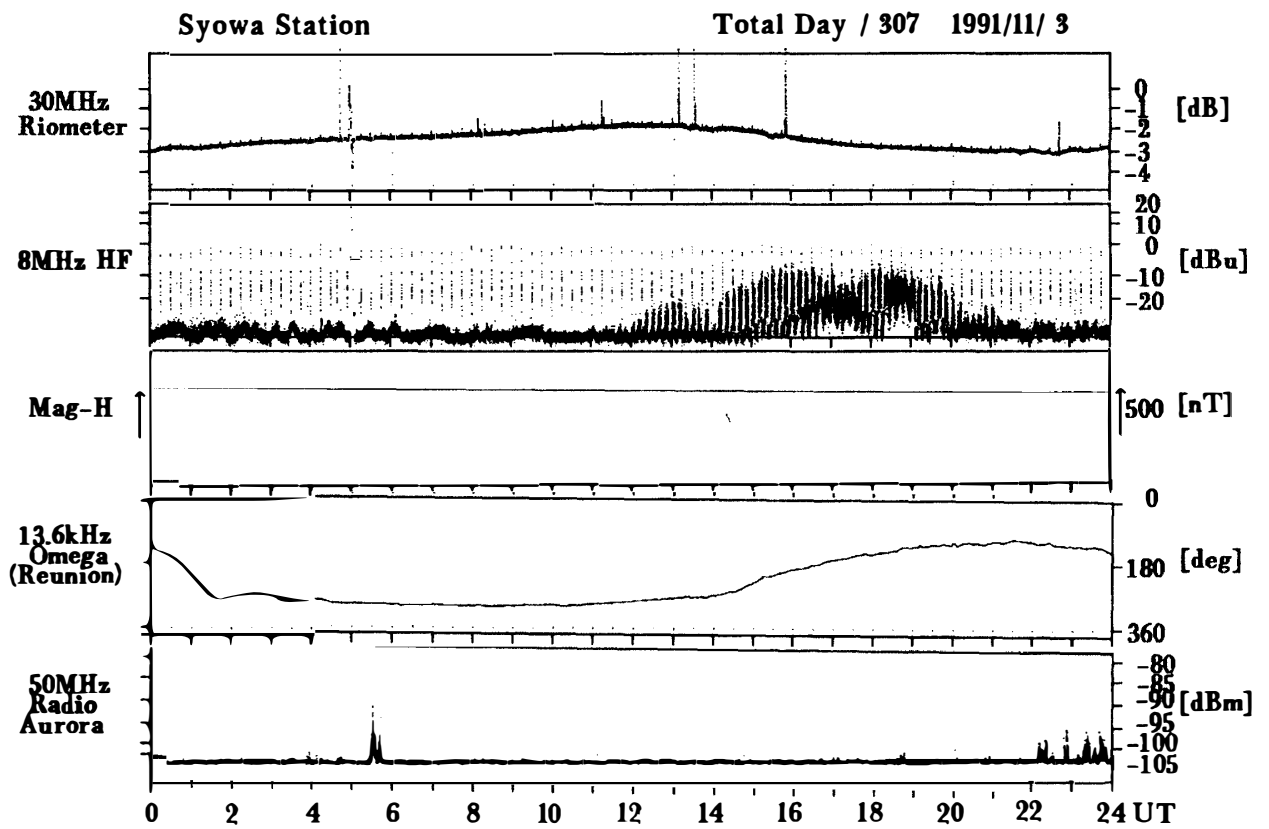
Total Day / 305 1991/11/ 1



Syowa Station

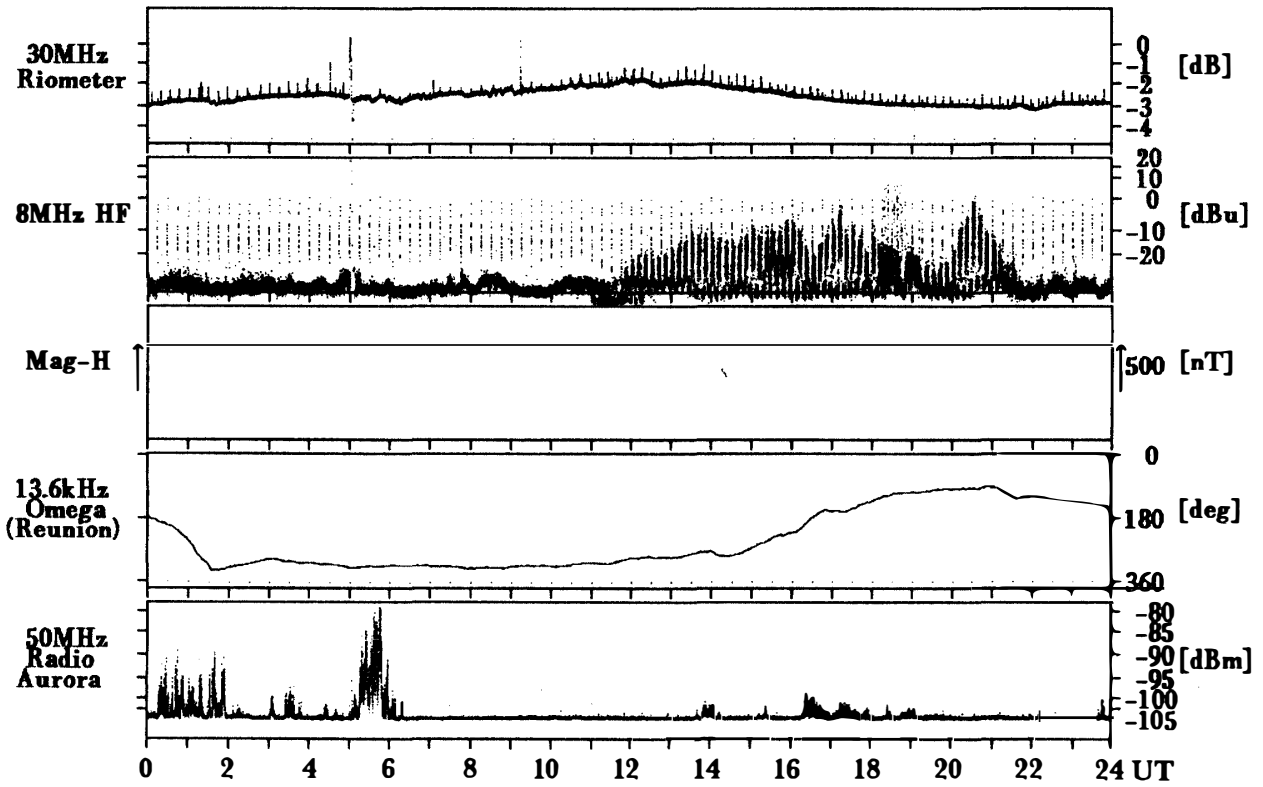
Total Day / 306 1991/11/ 2





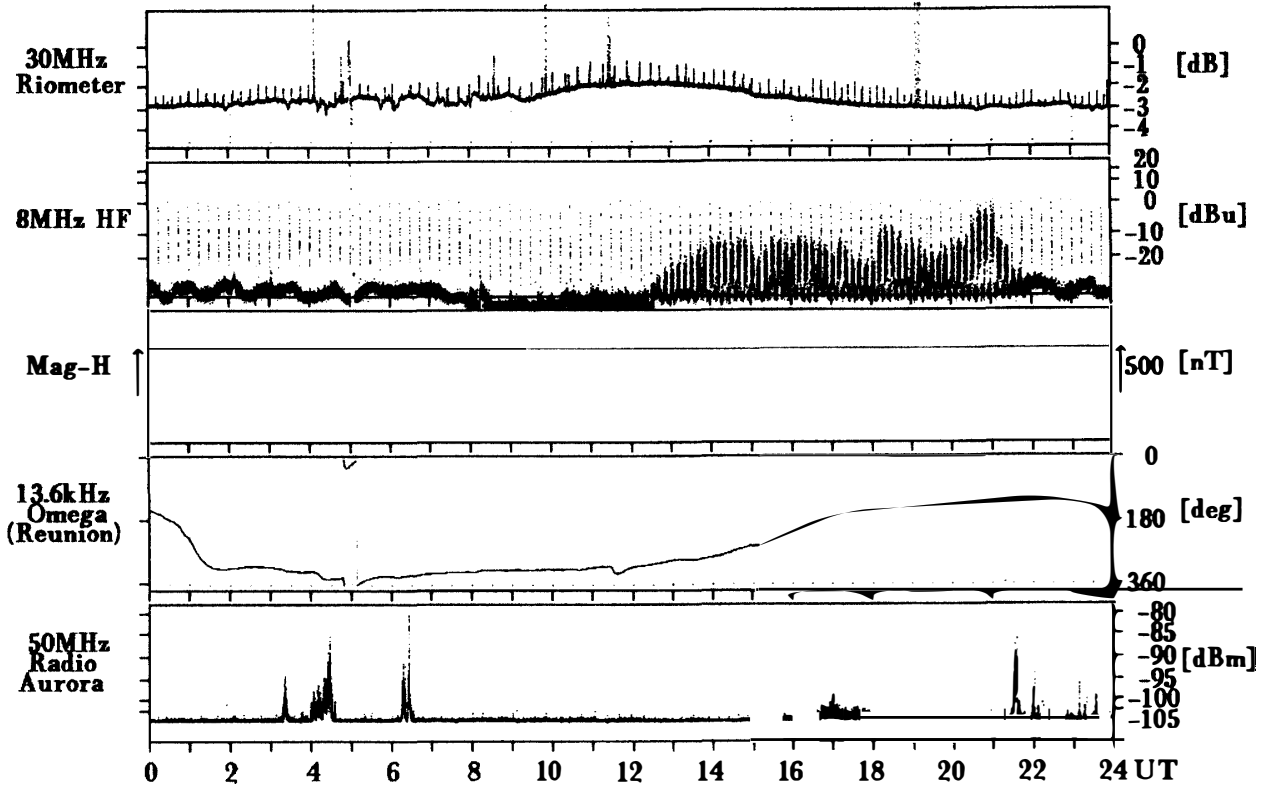
Syowa Station

Total Day / 309 1991/11/ 5



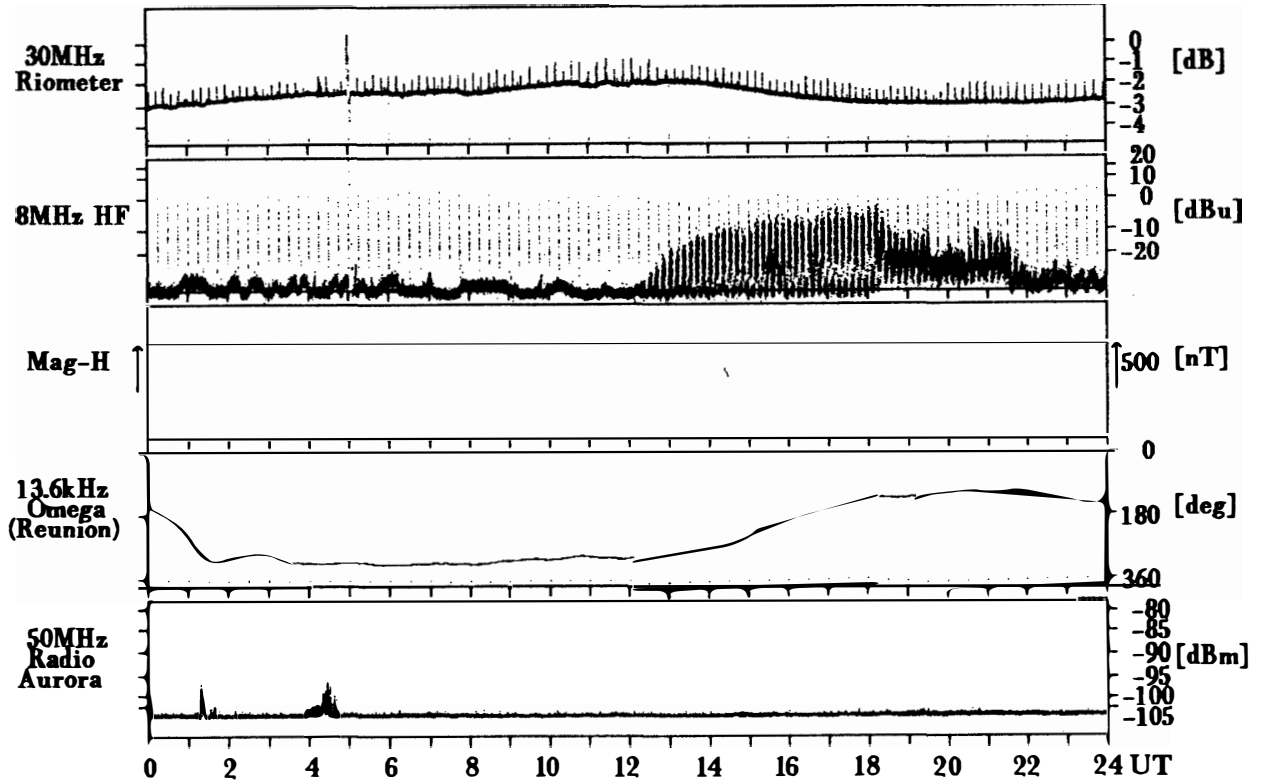
Syowa Station

Total Day / 310 1991/11/ 6



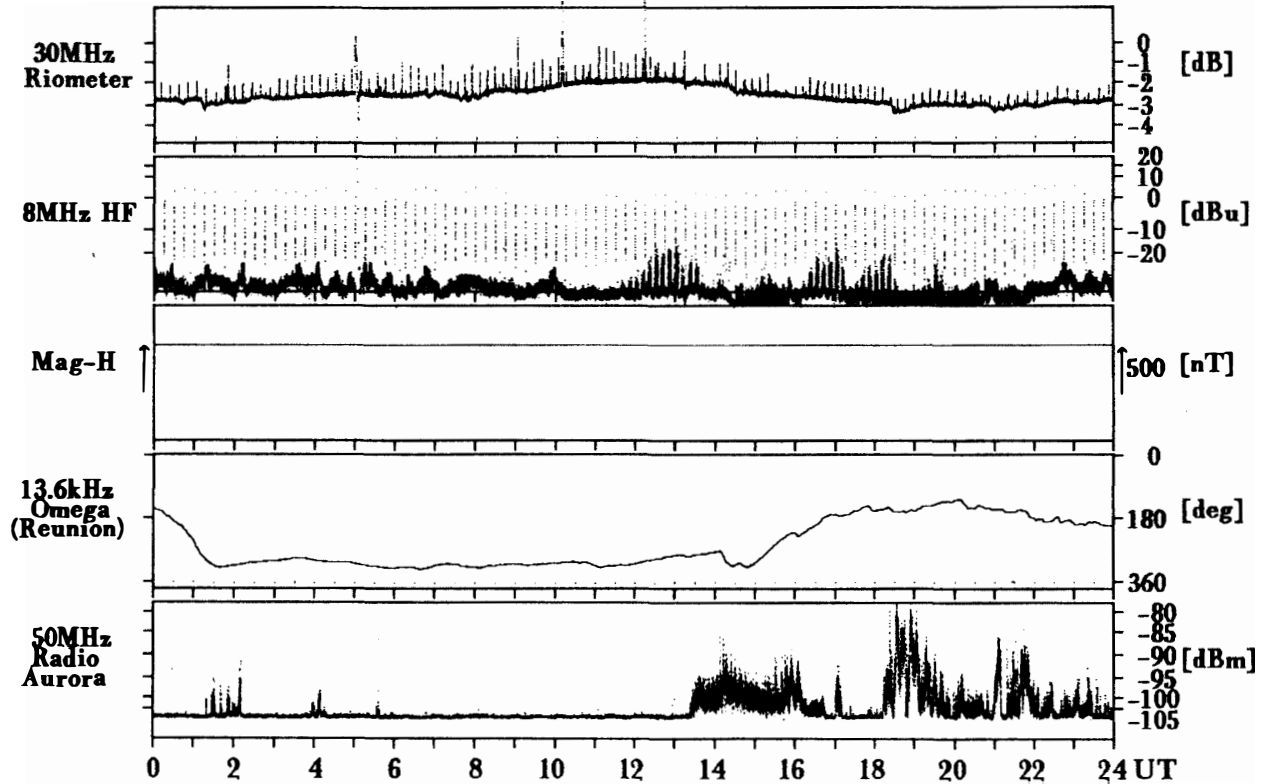
Syowa Station

Total Day / 311 1991/11/ 7



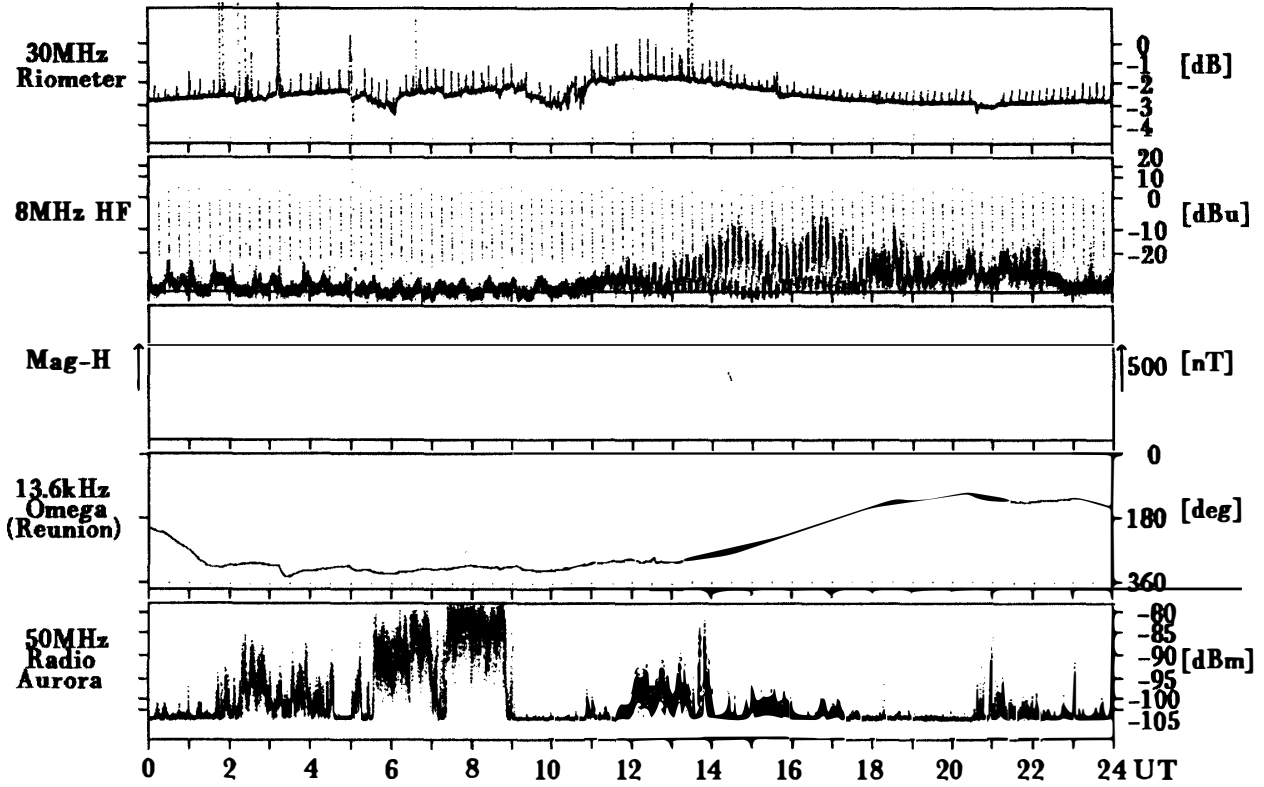
Syowa Station

Total Day / 312 1991/11/ 8



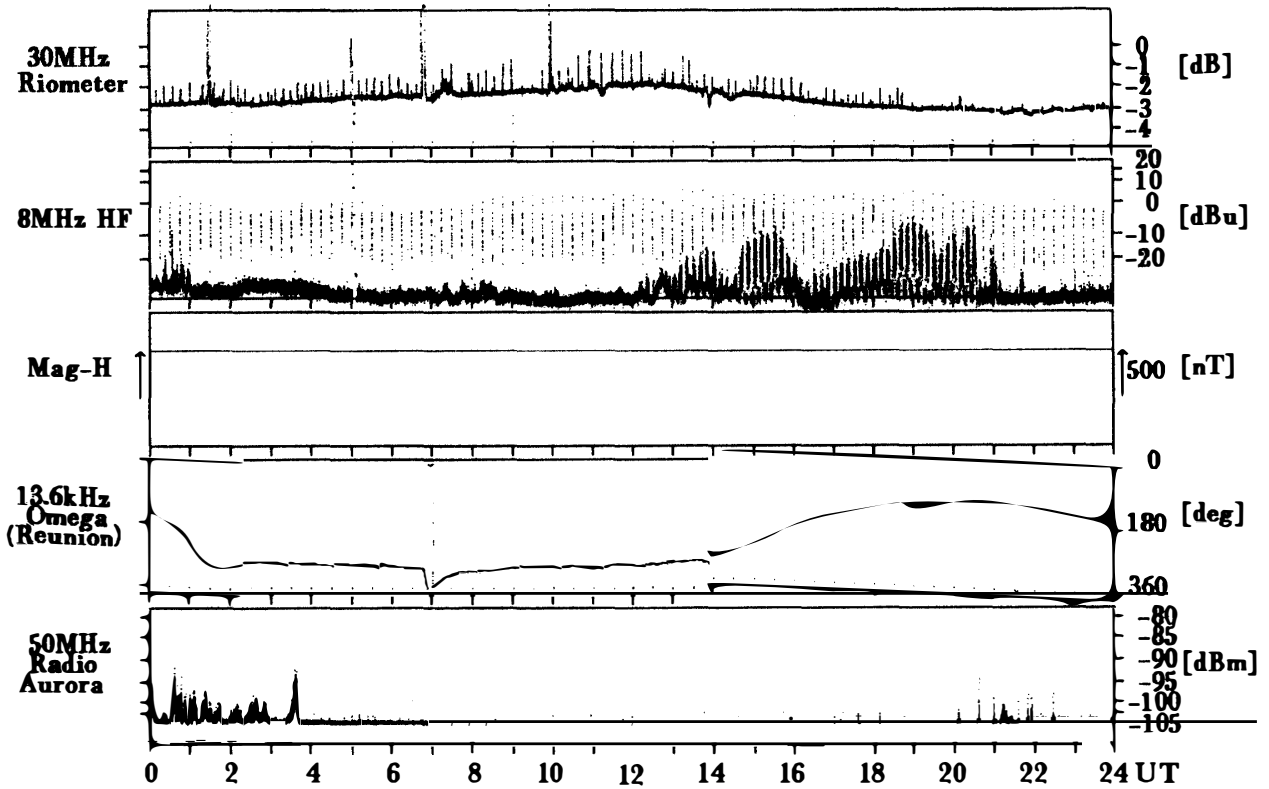
Syowa Station

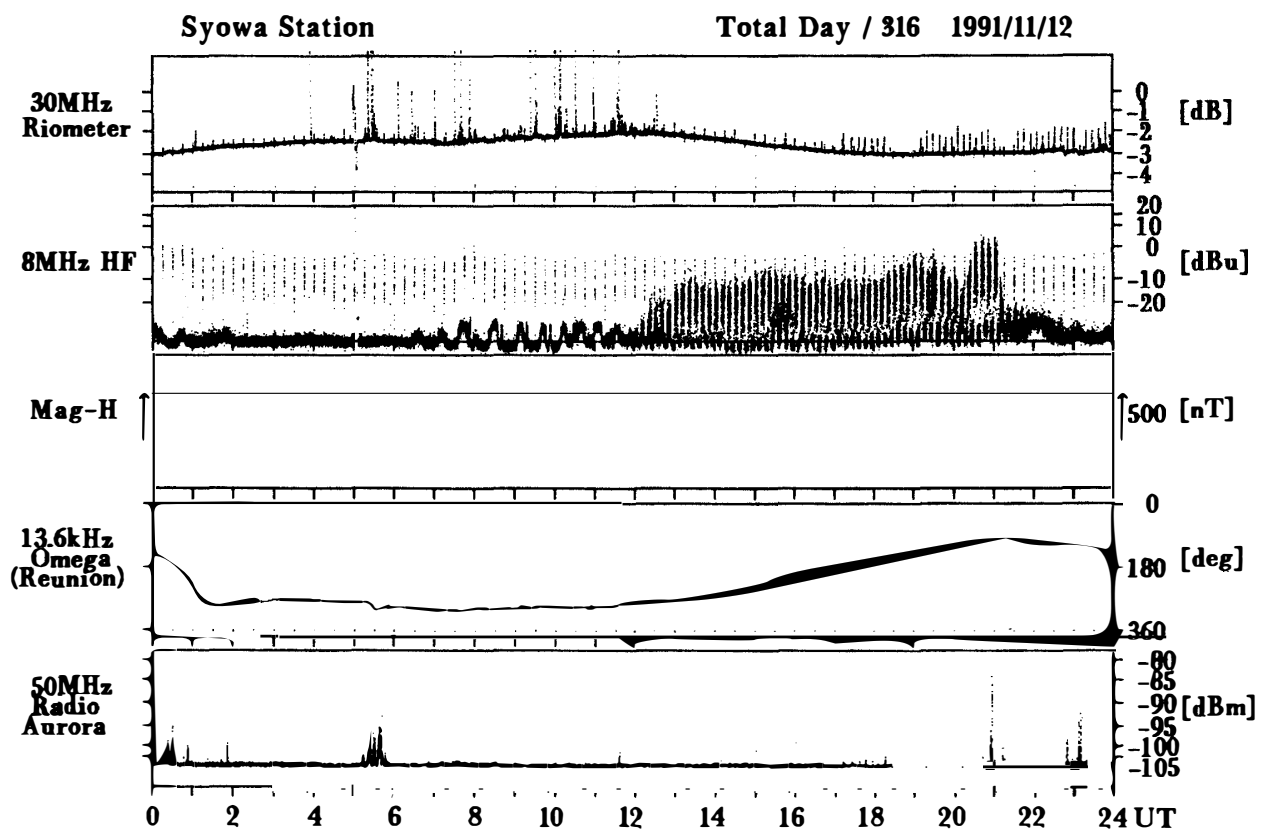
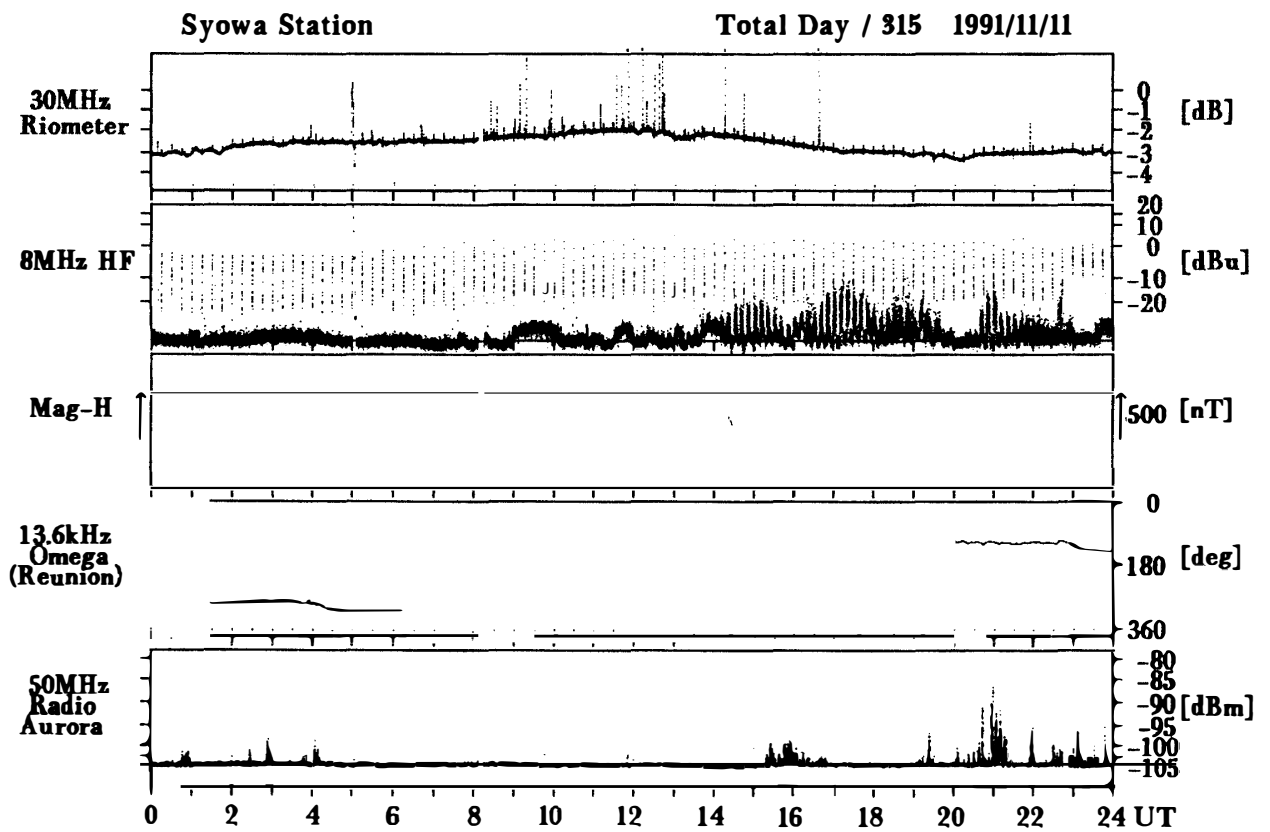
Total Day / 313 1991/11/ 9

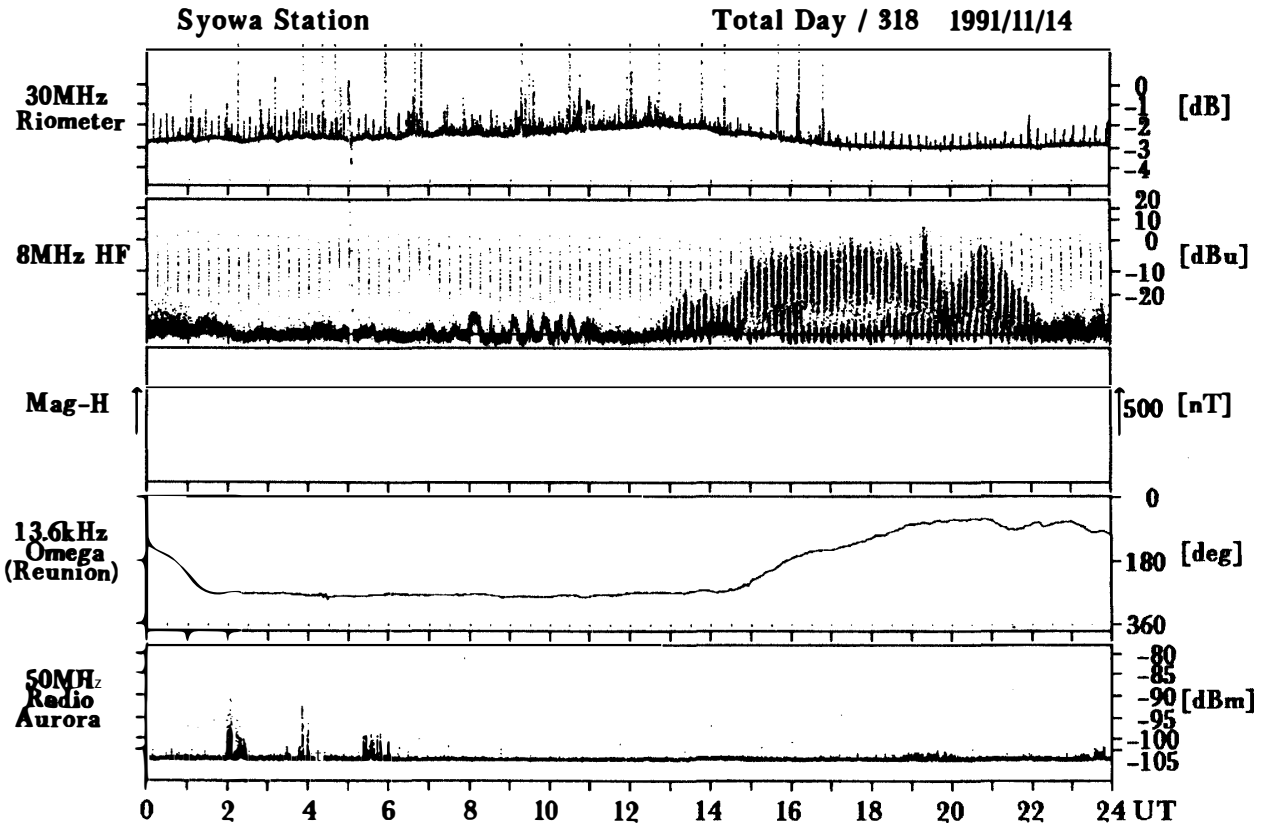
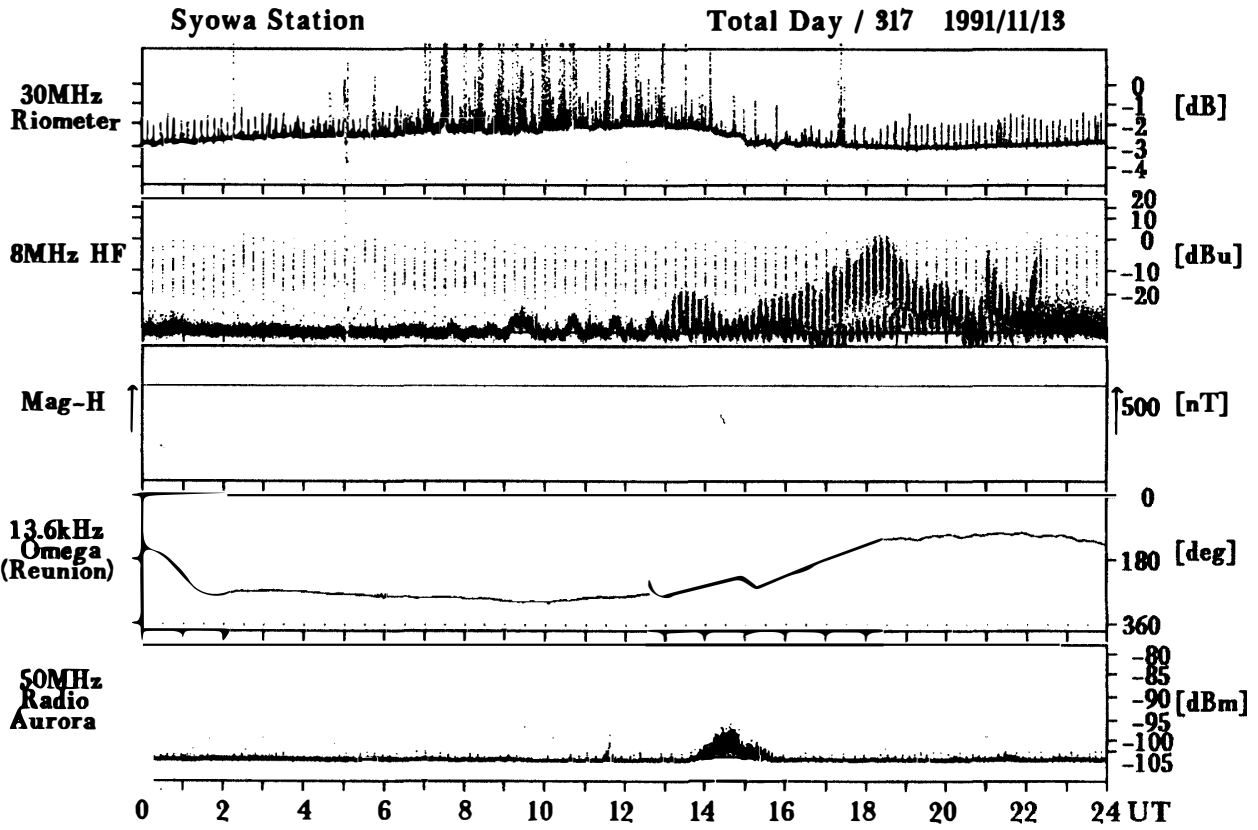


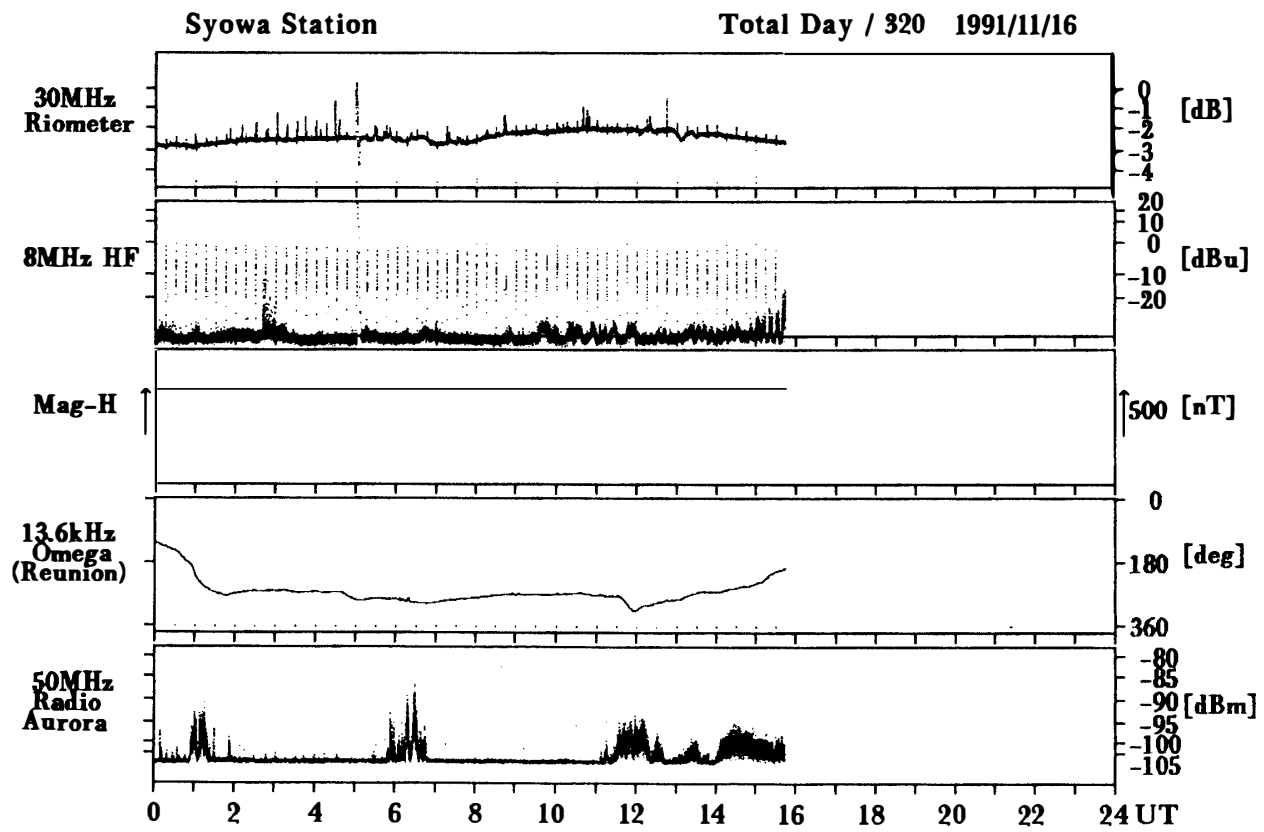
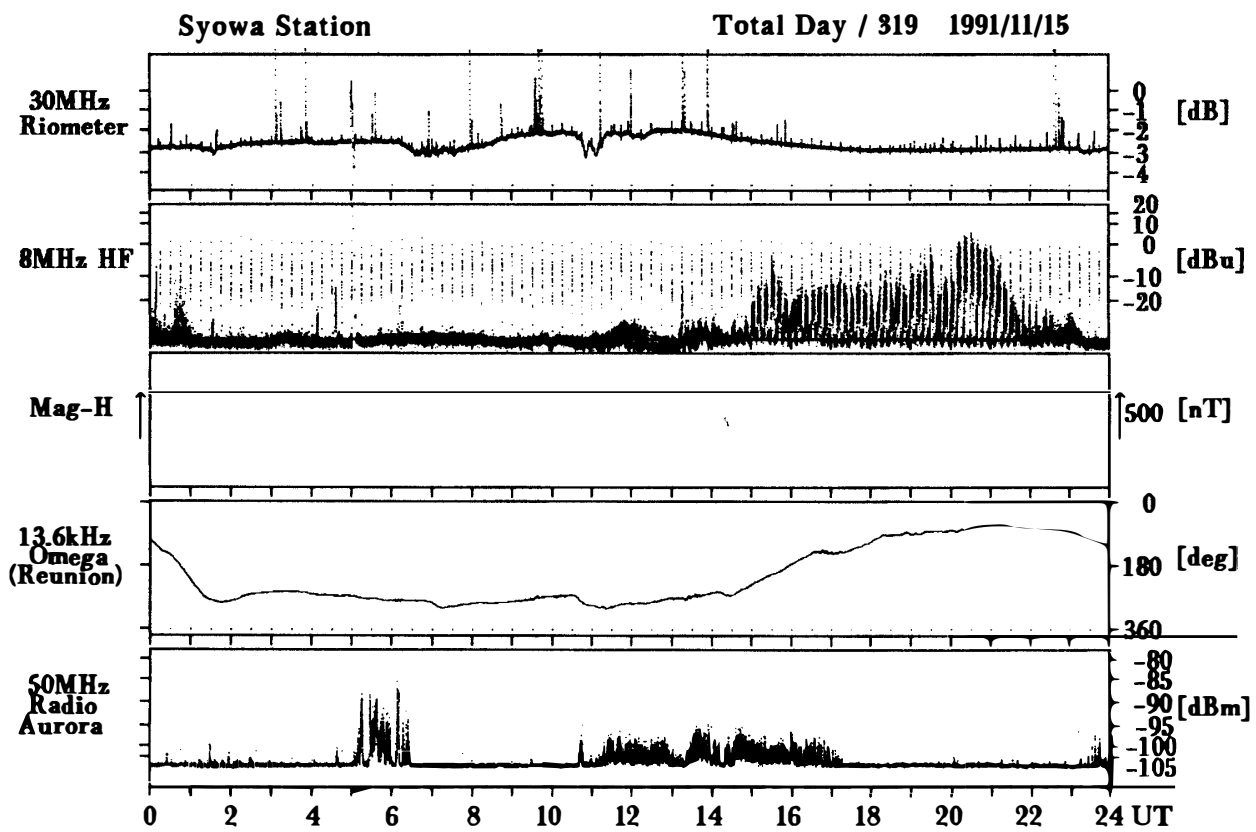
Syowa Station

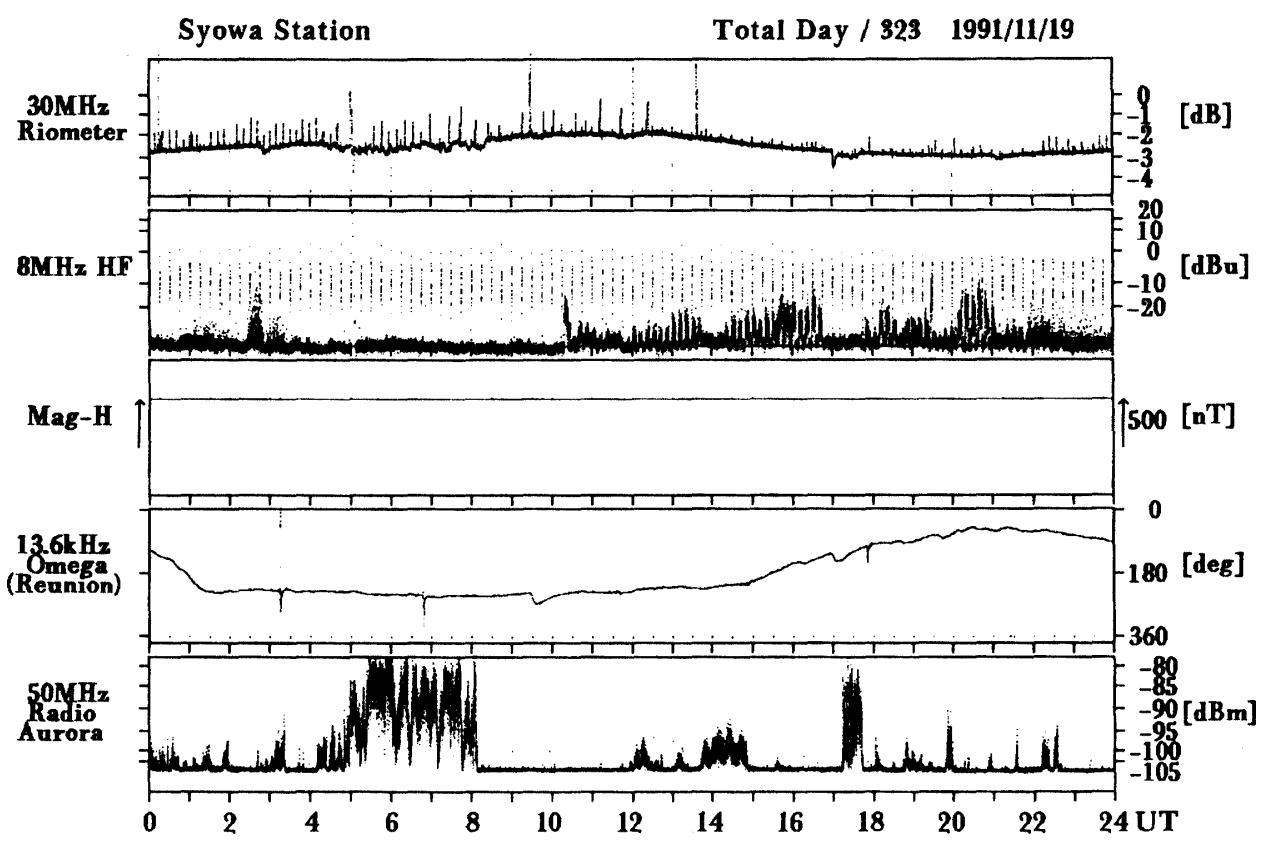
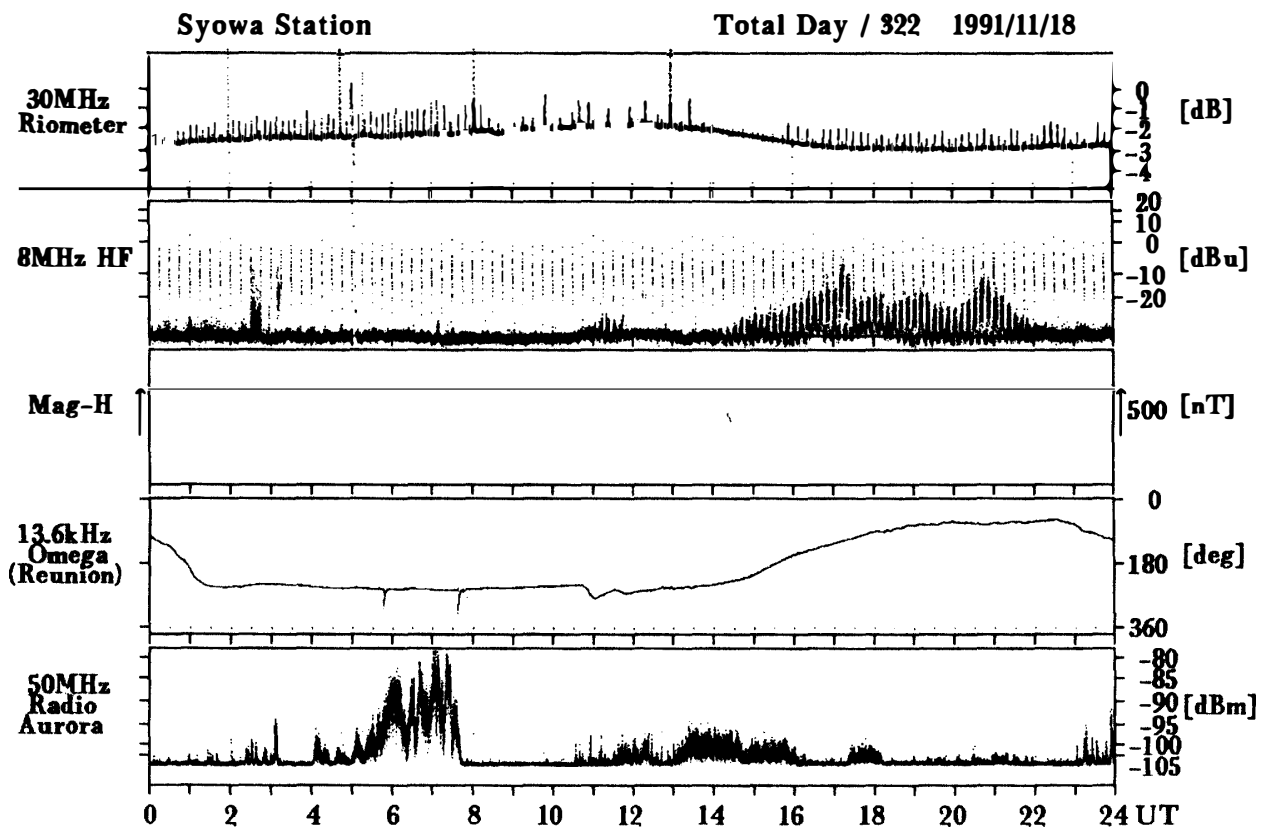
Total Day / 314 1991/11/10

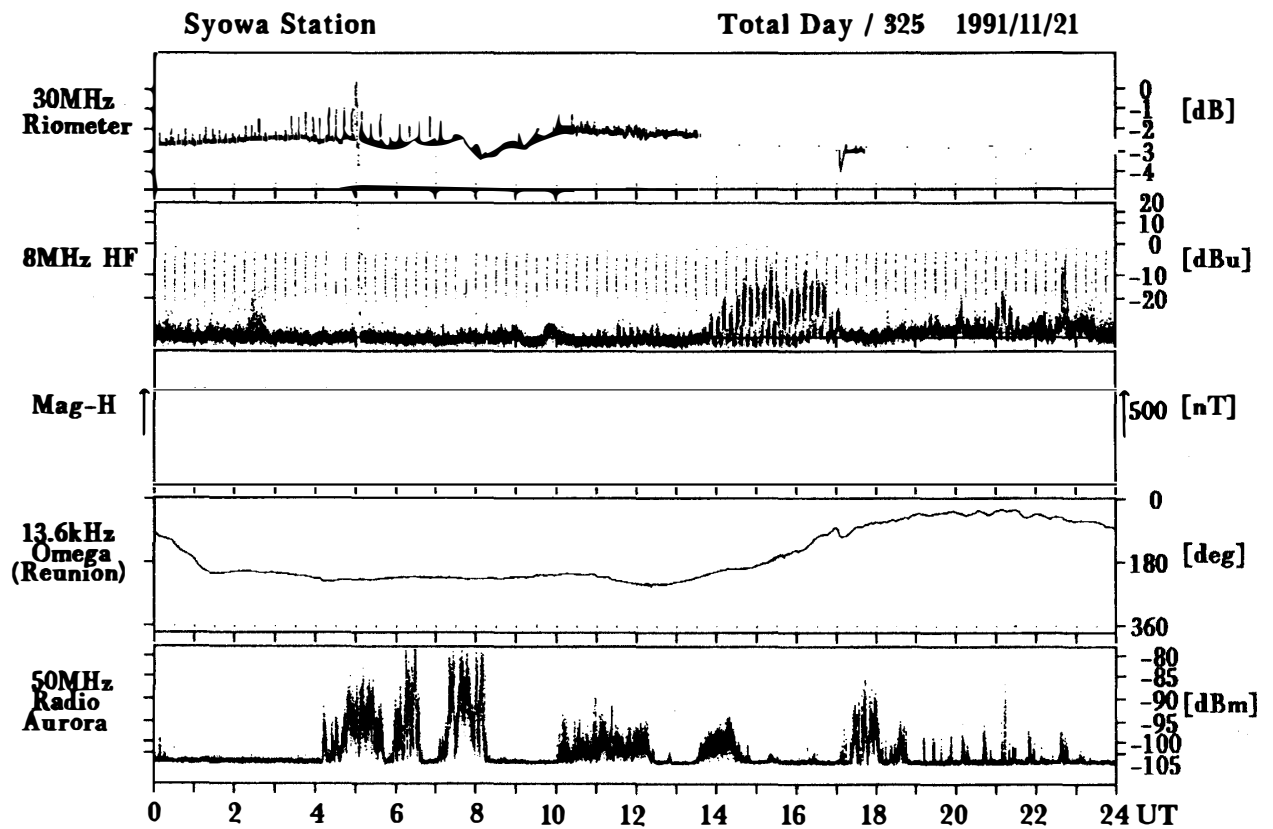
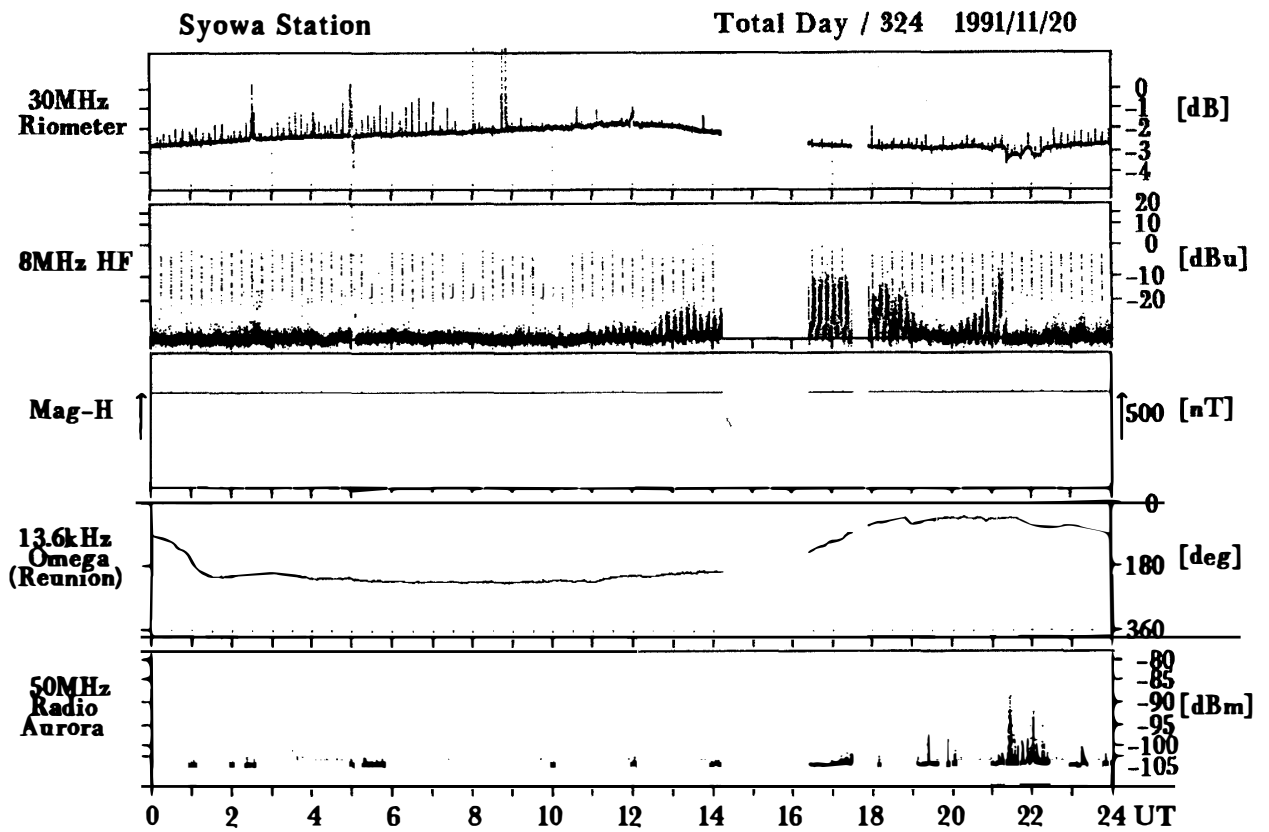


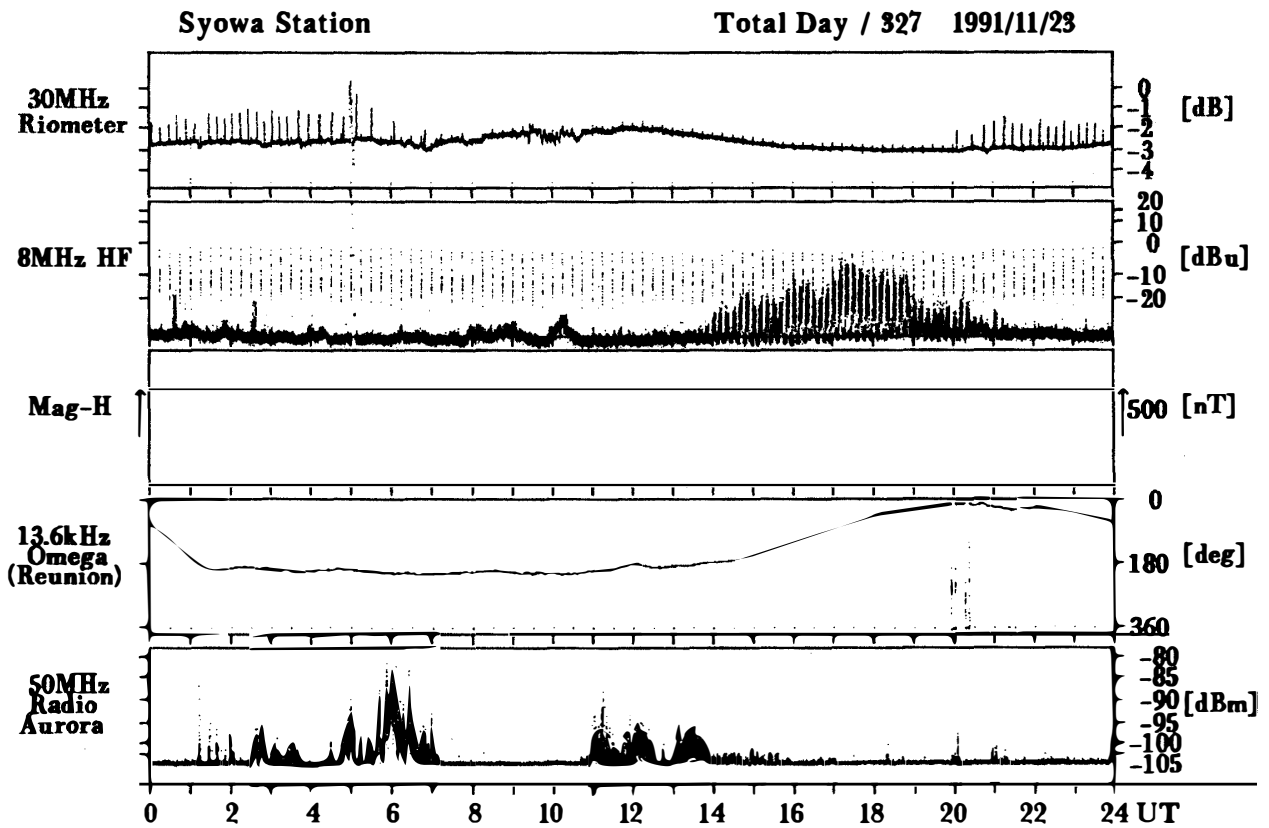
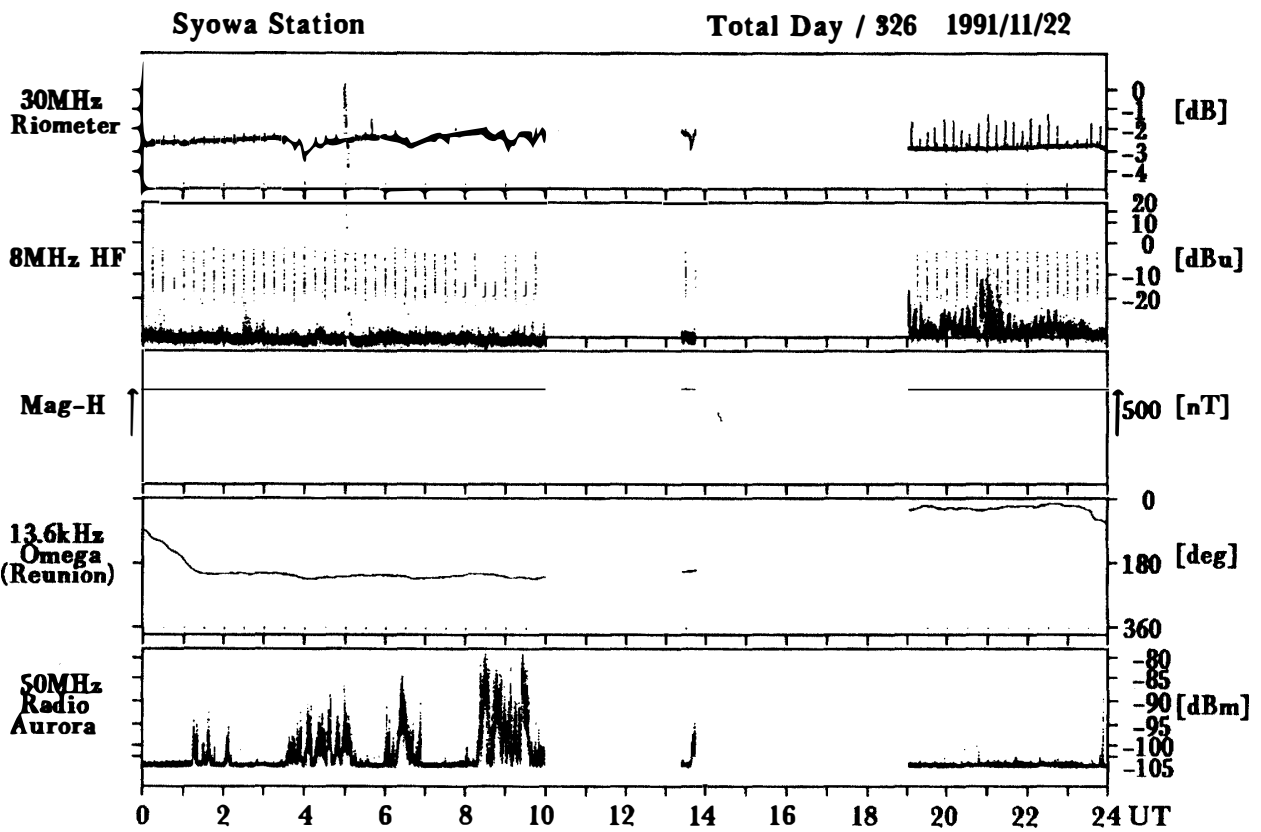






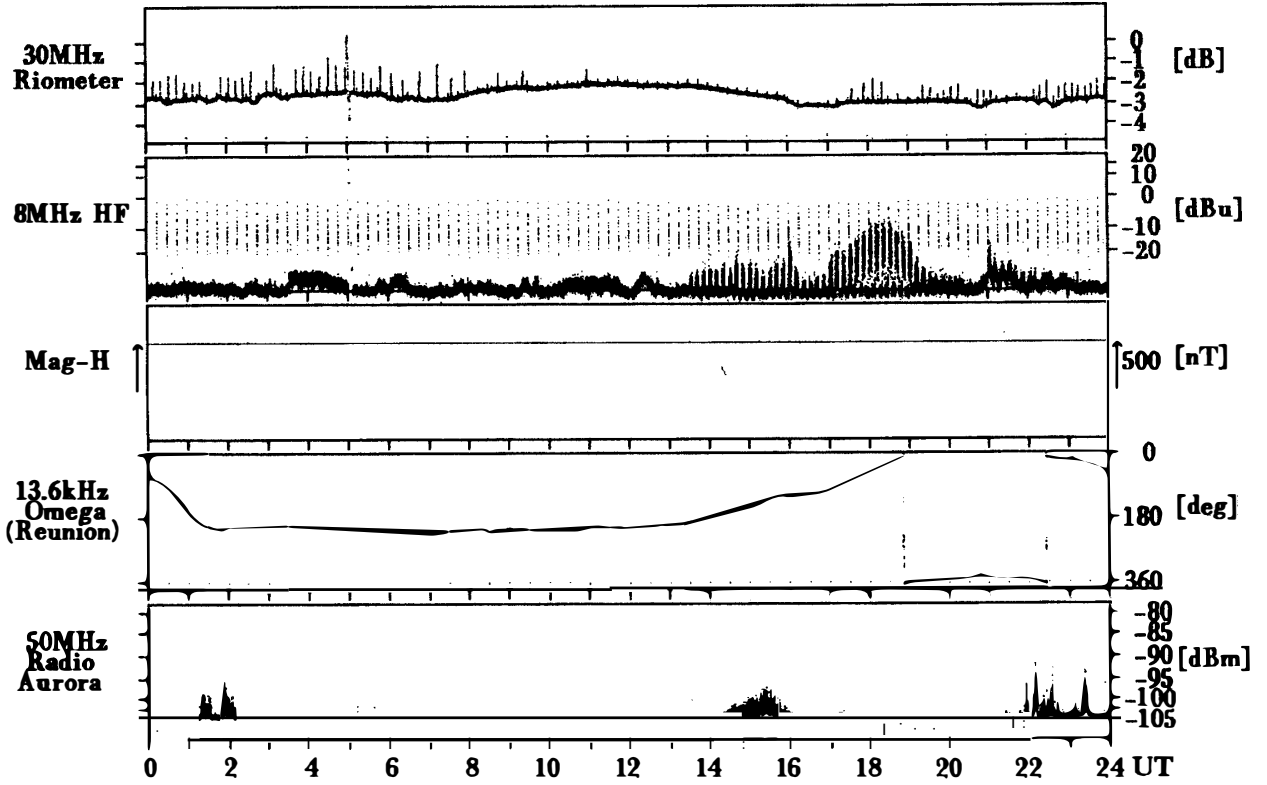






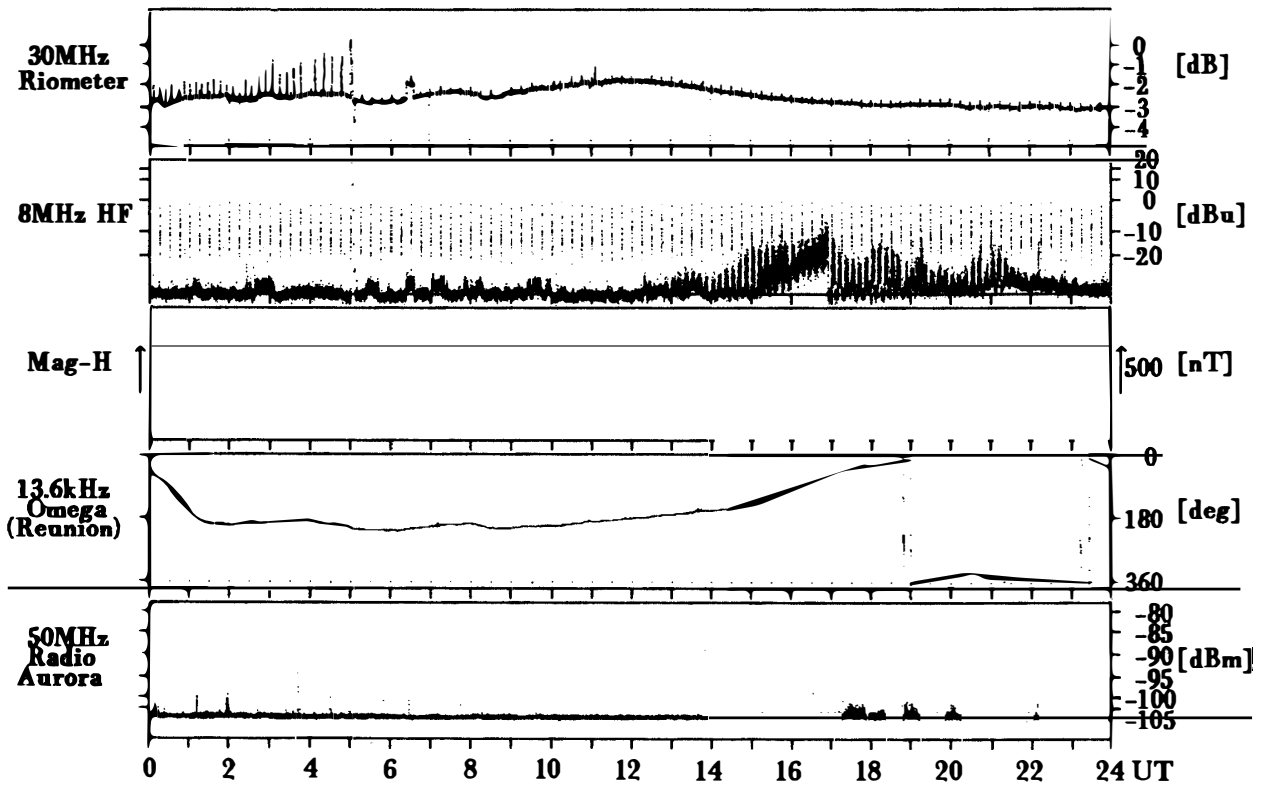
Syowa Station

Total Day / 328 1991/11/24



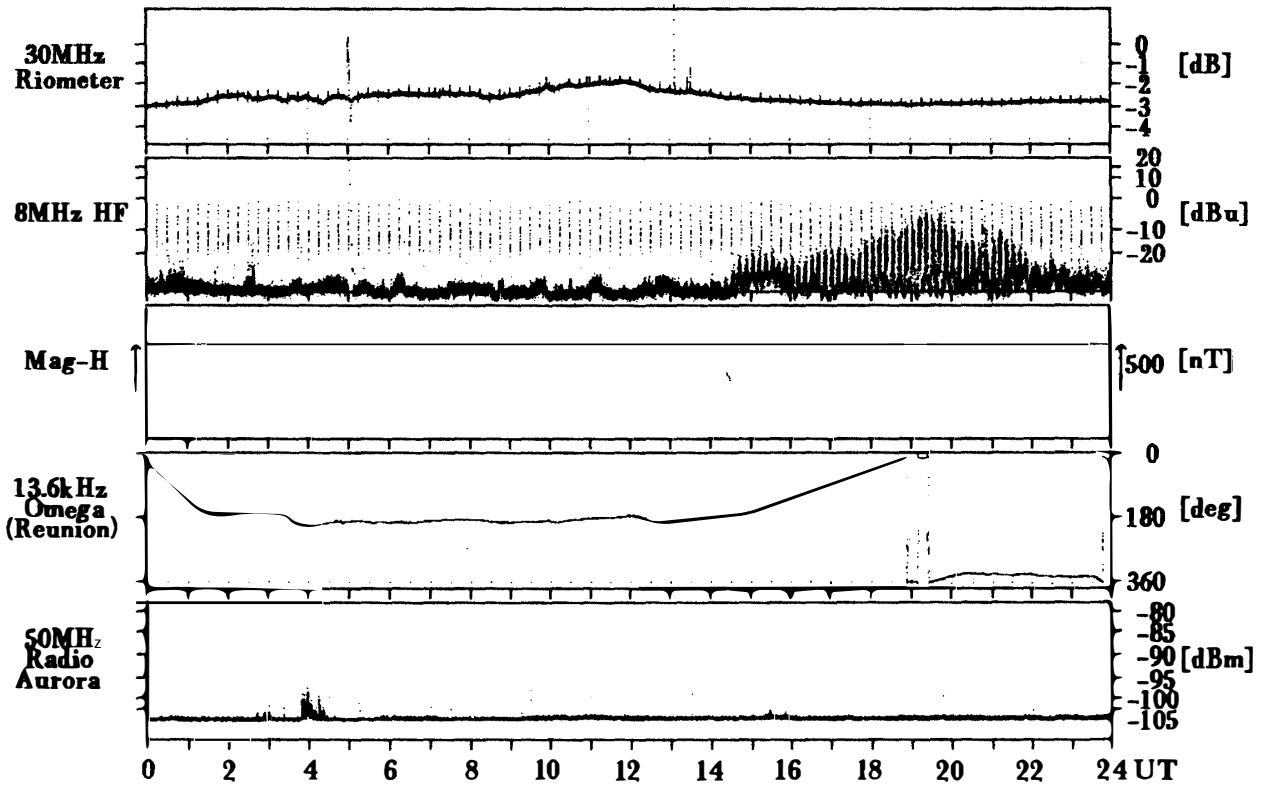
Syowa Station

Total Day / 329 1991/11/25



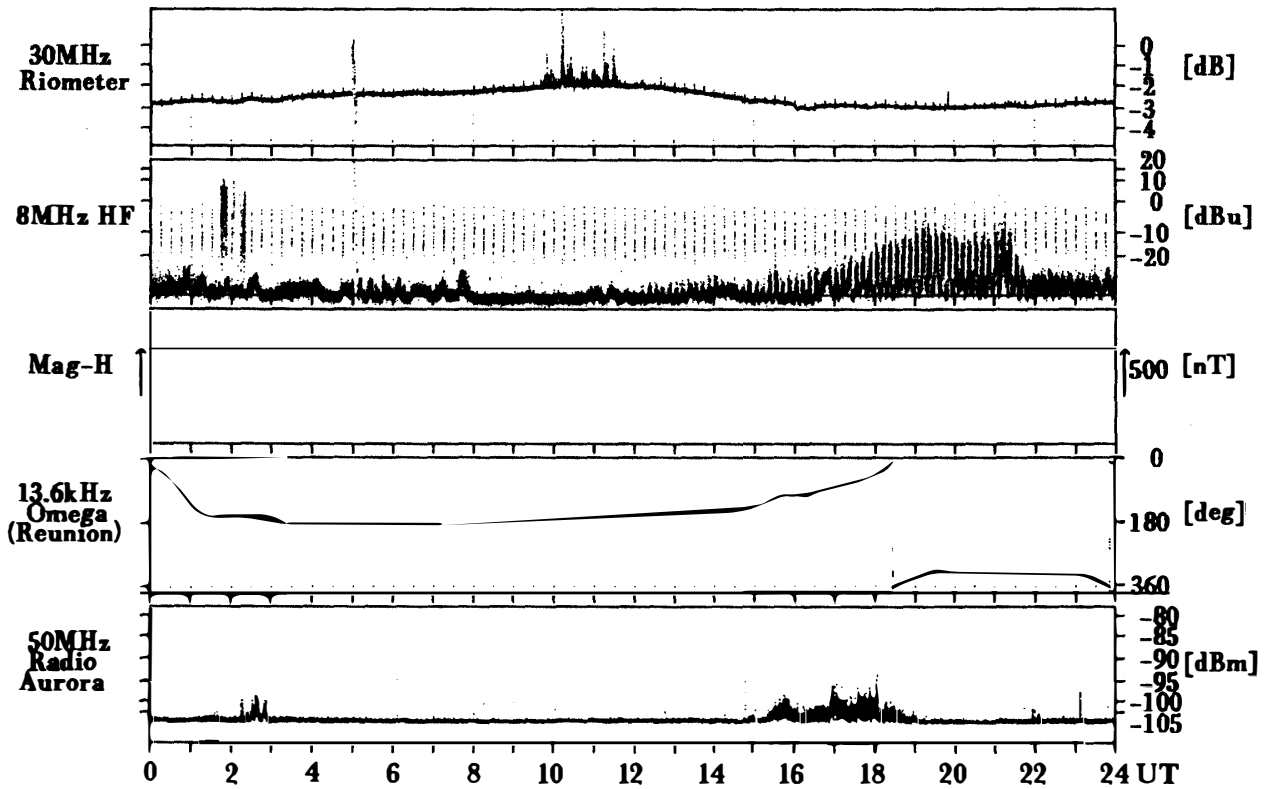
Syowa Station

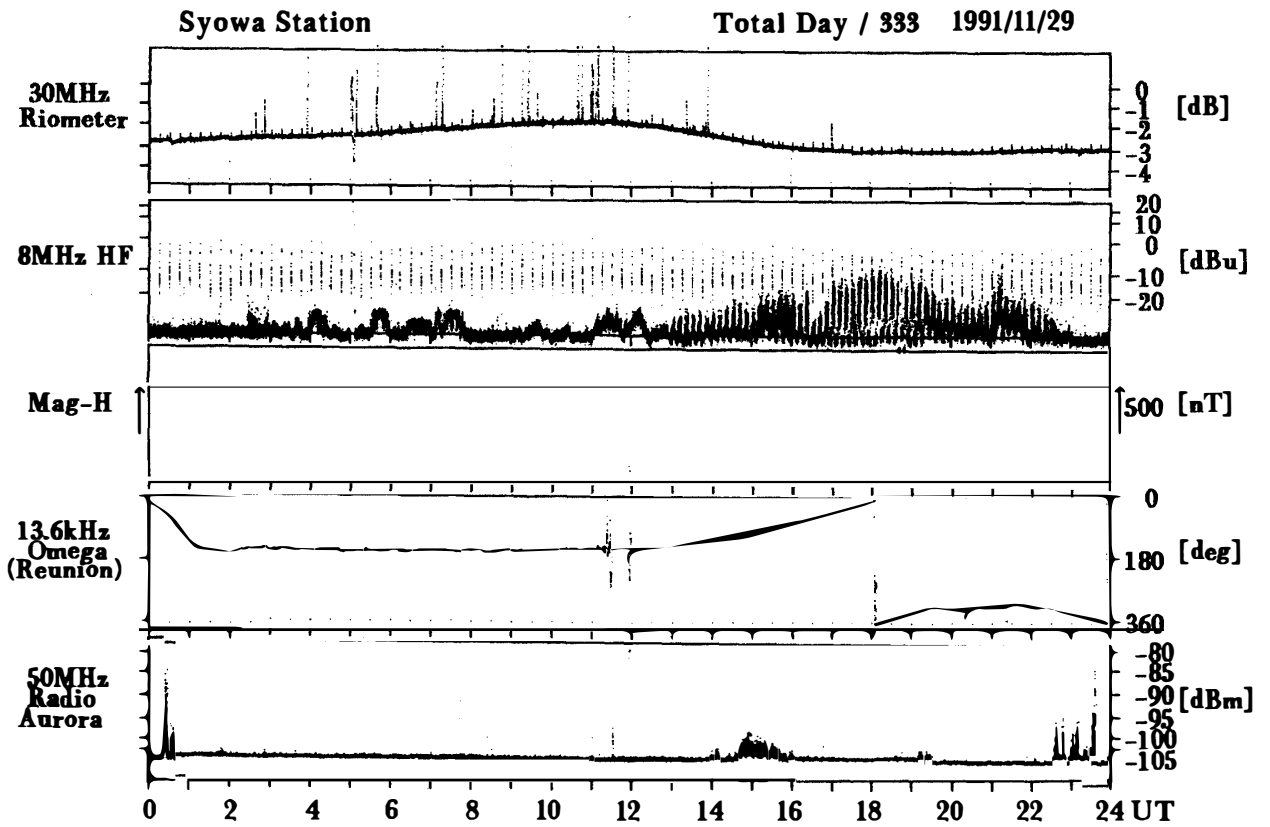
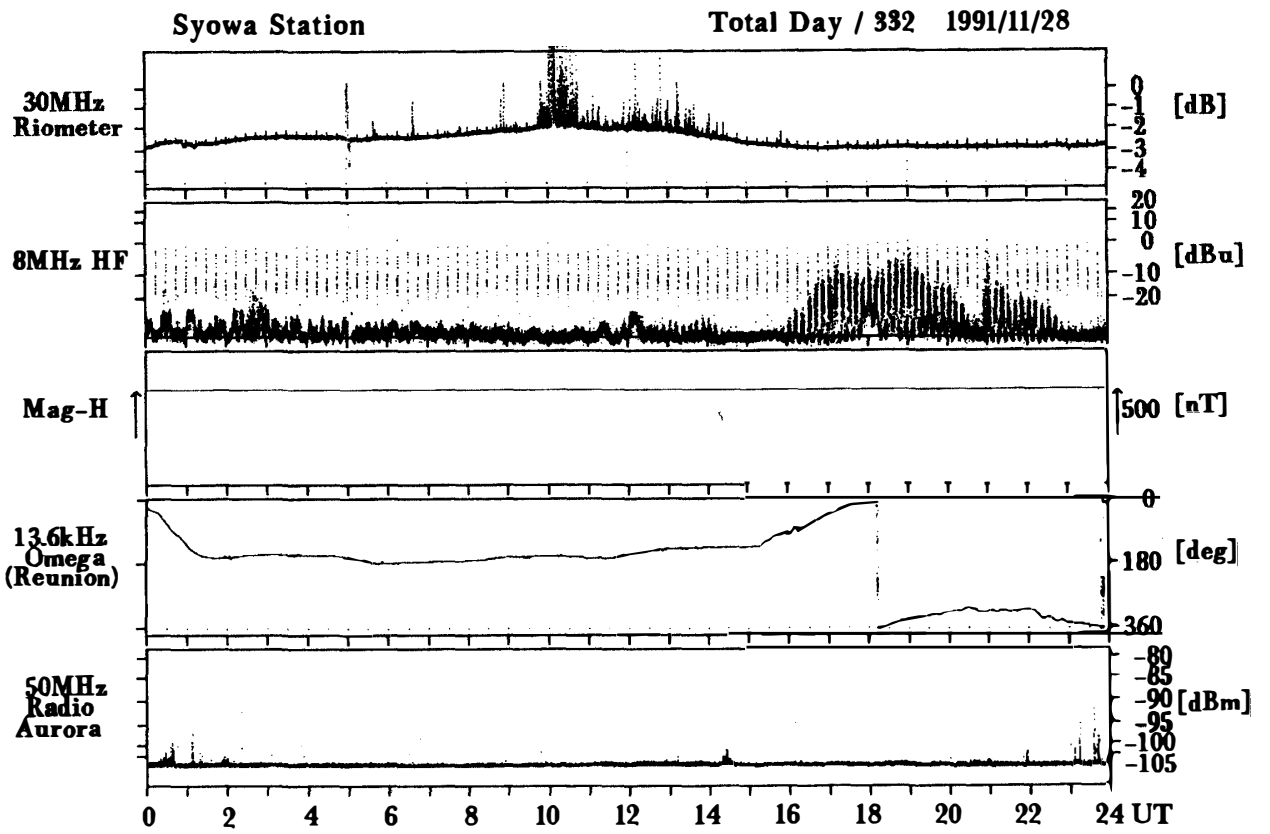
Total Day / 330 1991/11/26



Syowa Station

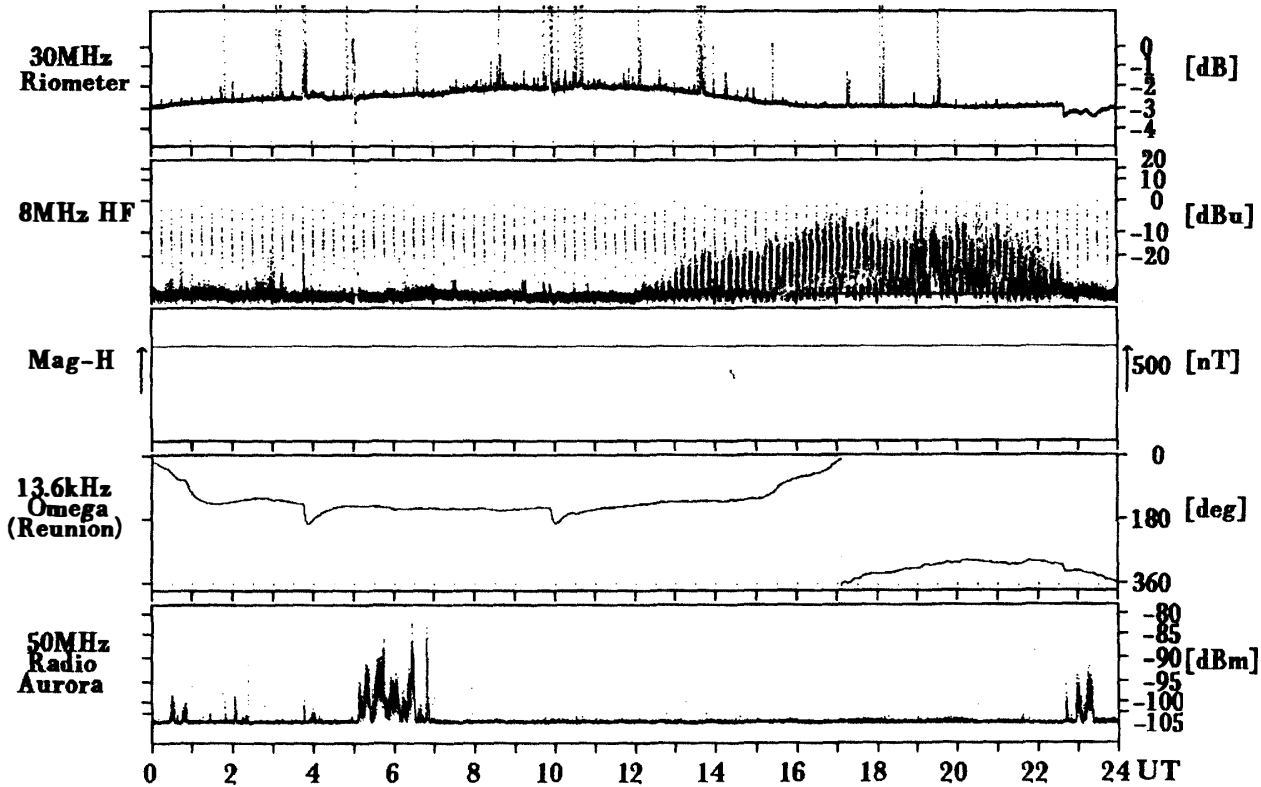
Total Day / 331 1991/11/27





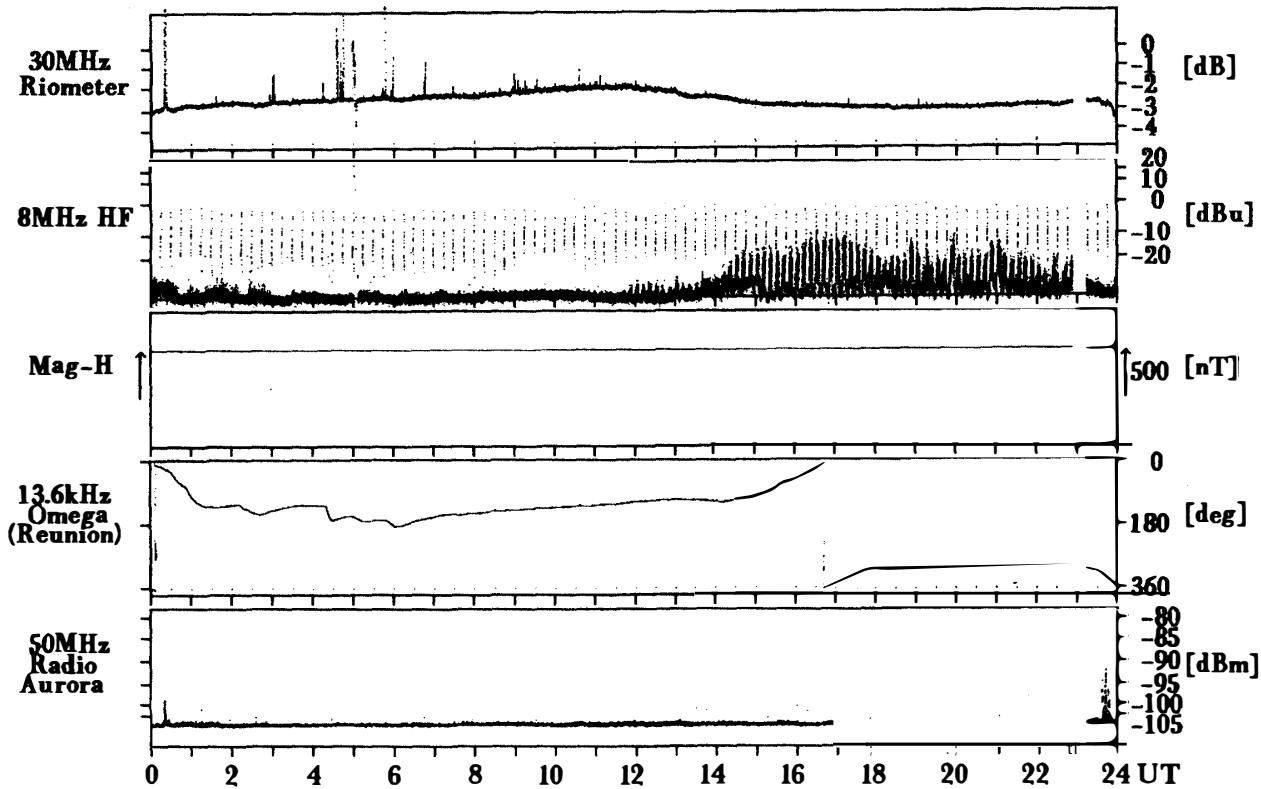
Syowa Station

Total Day / 334 1991/11/30



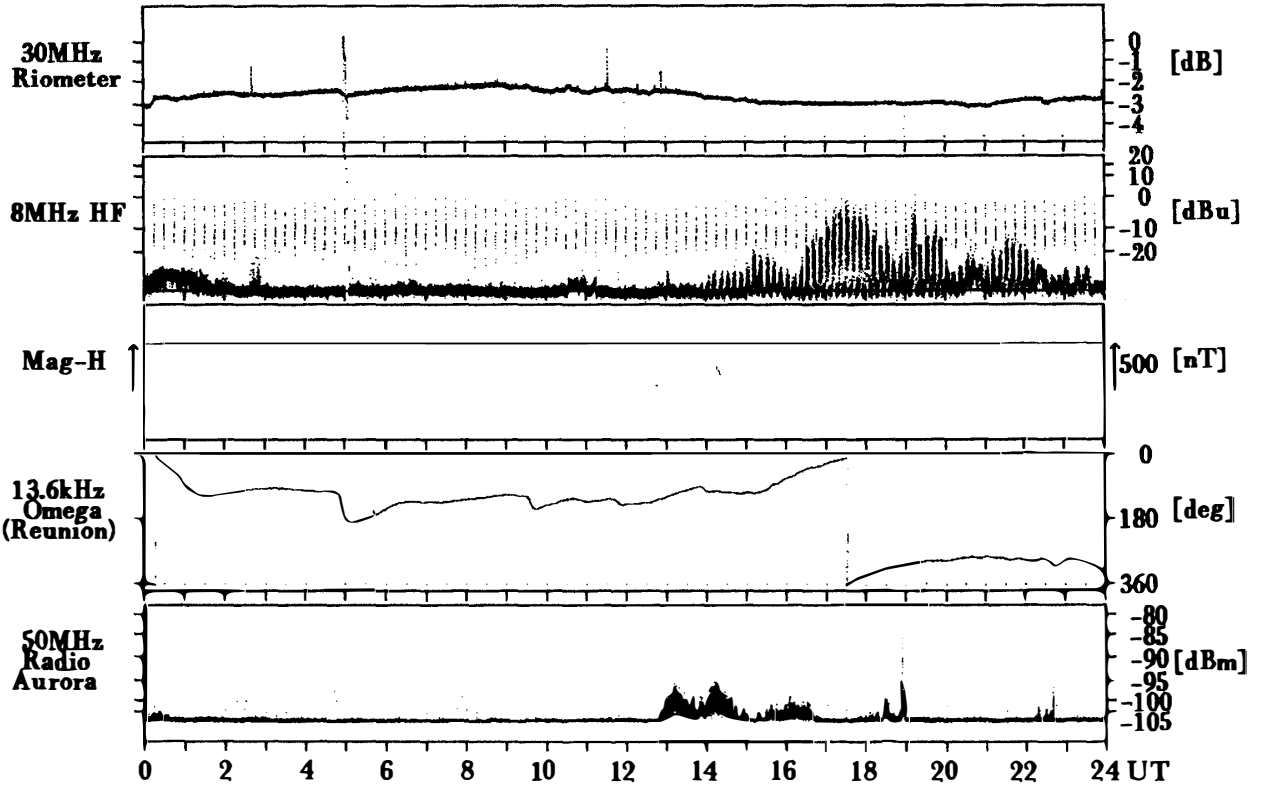
Syowa Station

Total Day / 335 1991/12/ 1



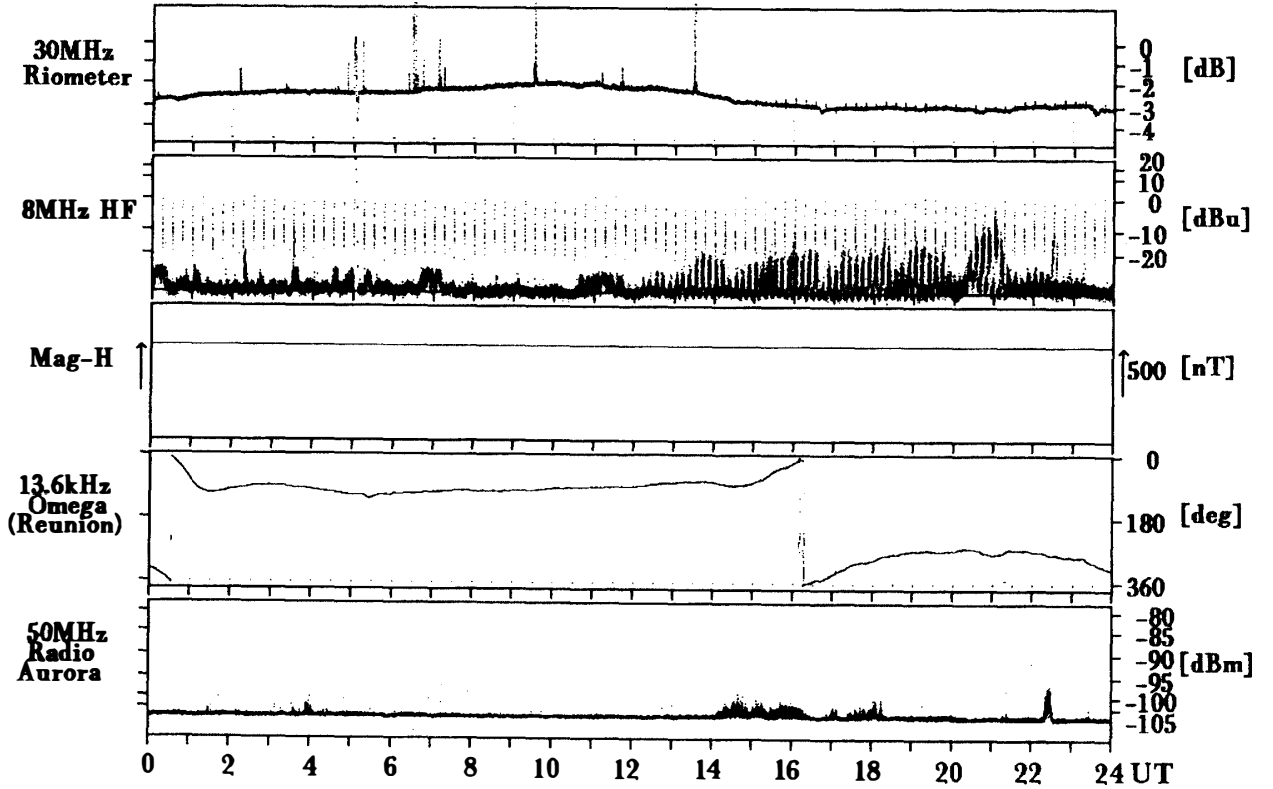
Syowa Station

Total Day / 336 1991/12/ 2



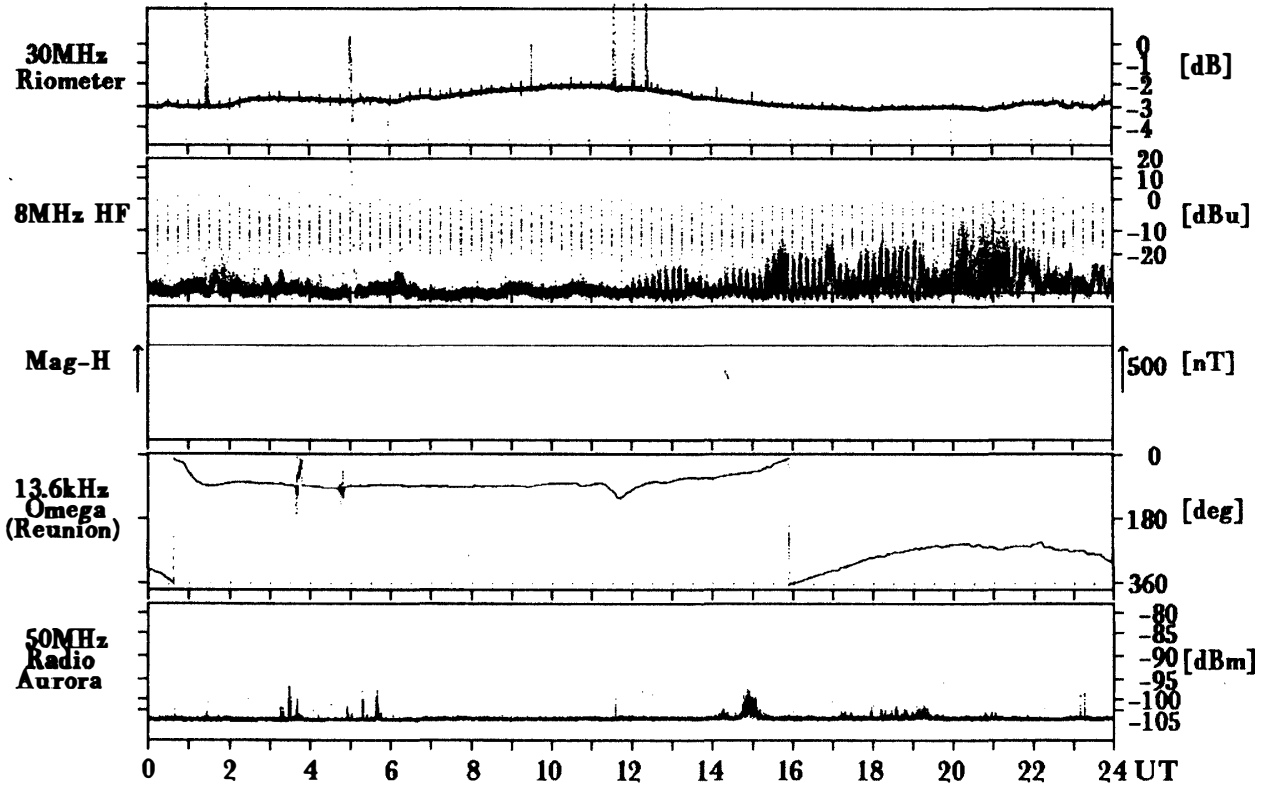
Syowa Station

Total Day / 337 1991/12/ 3



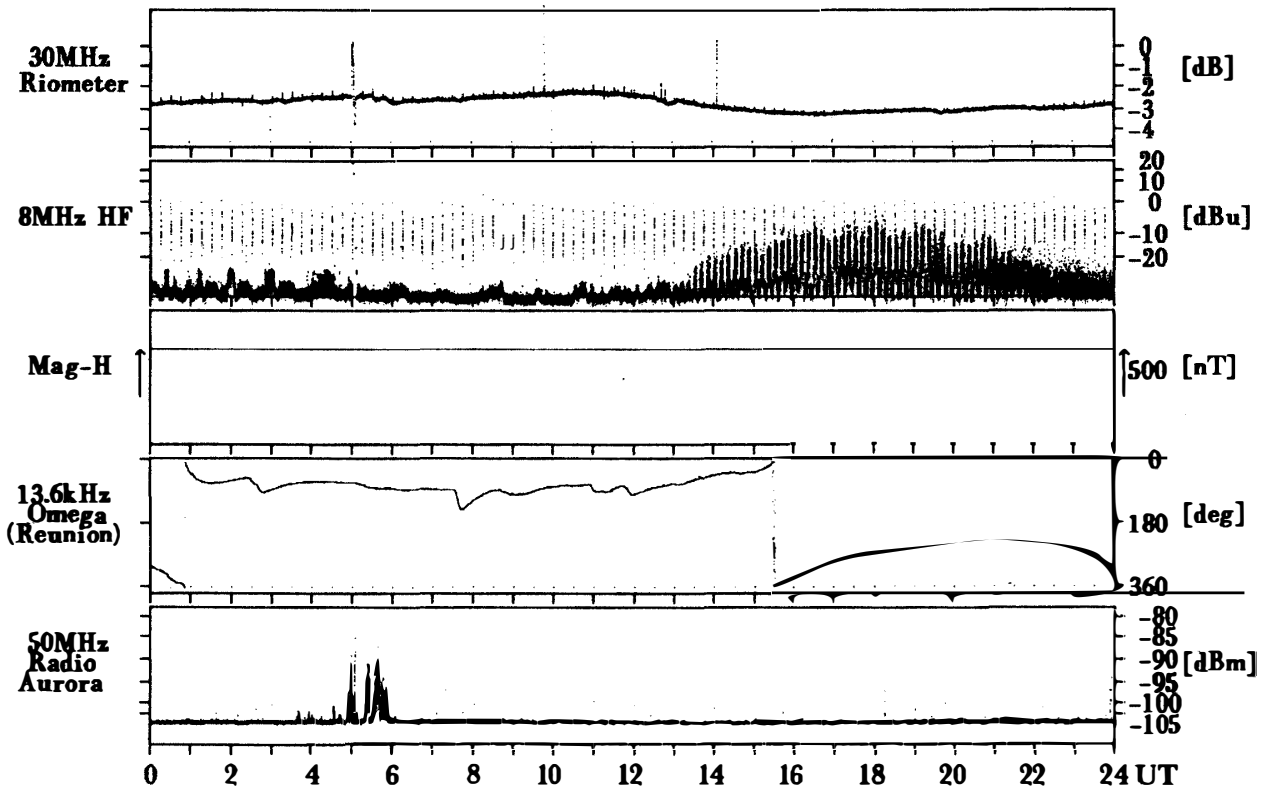
Syowa Station

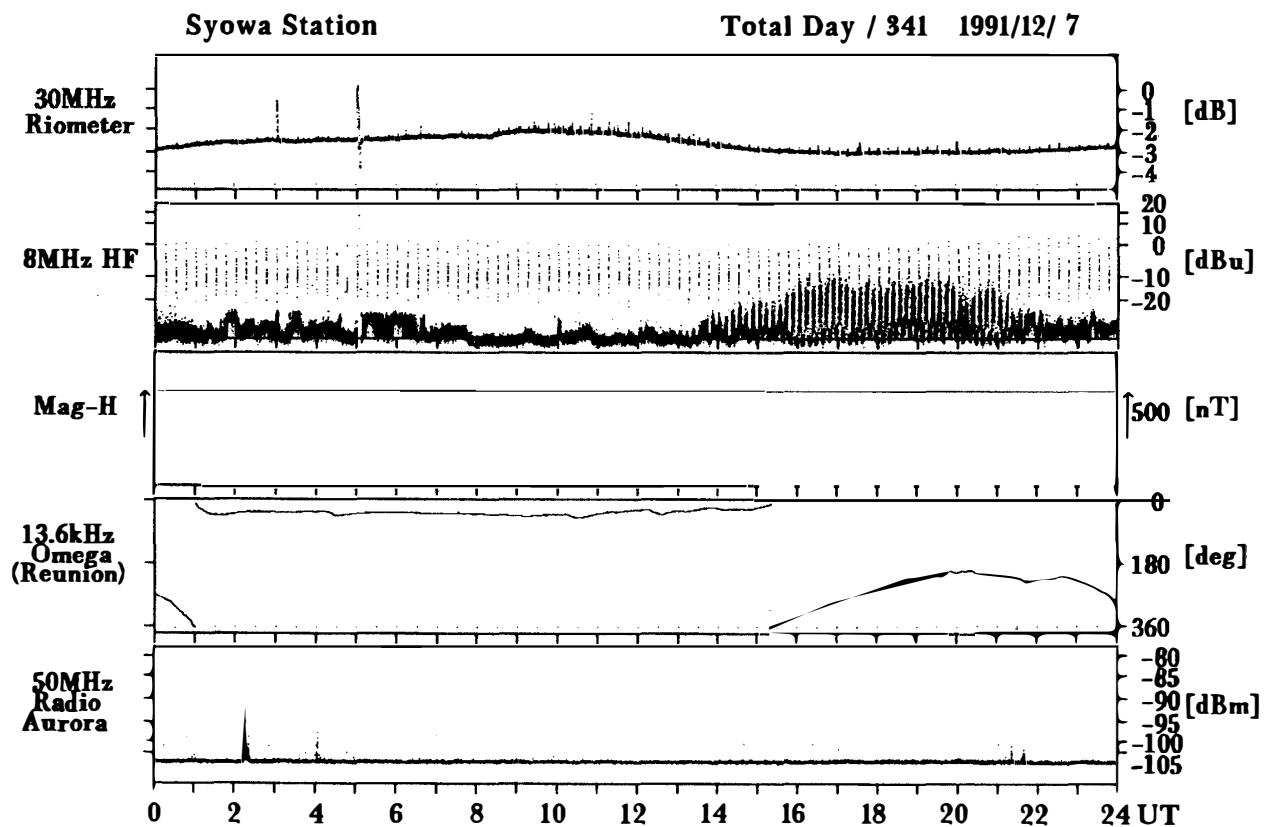
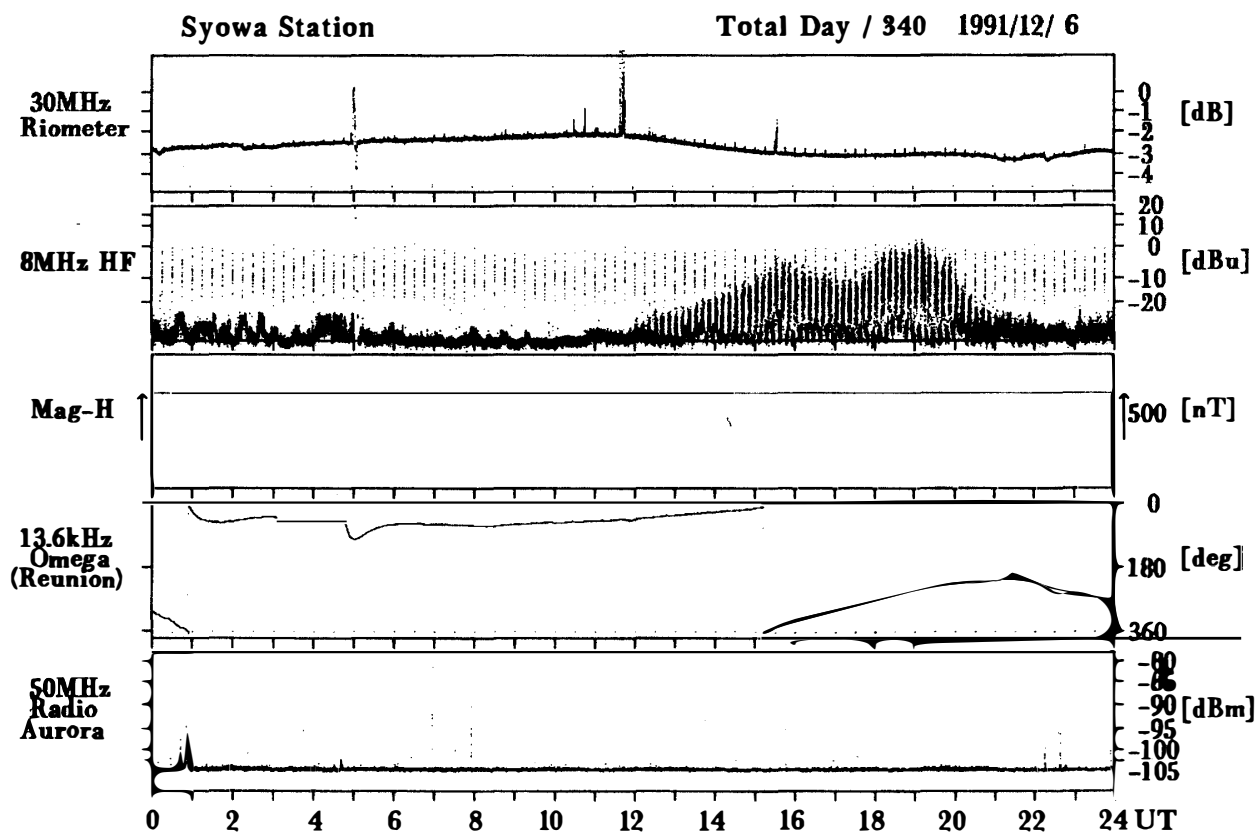
Total Day / 338 1991/12/ 4



Syowa Station

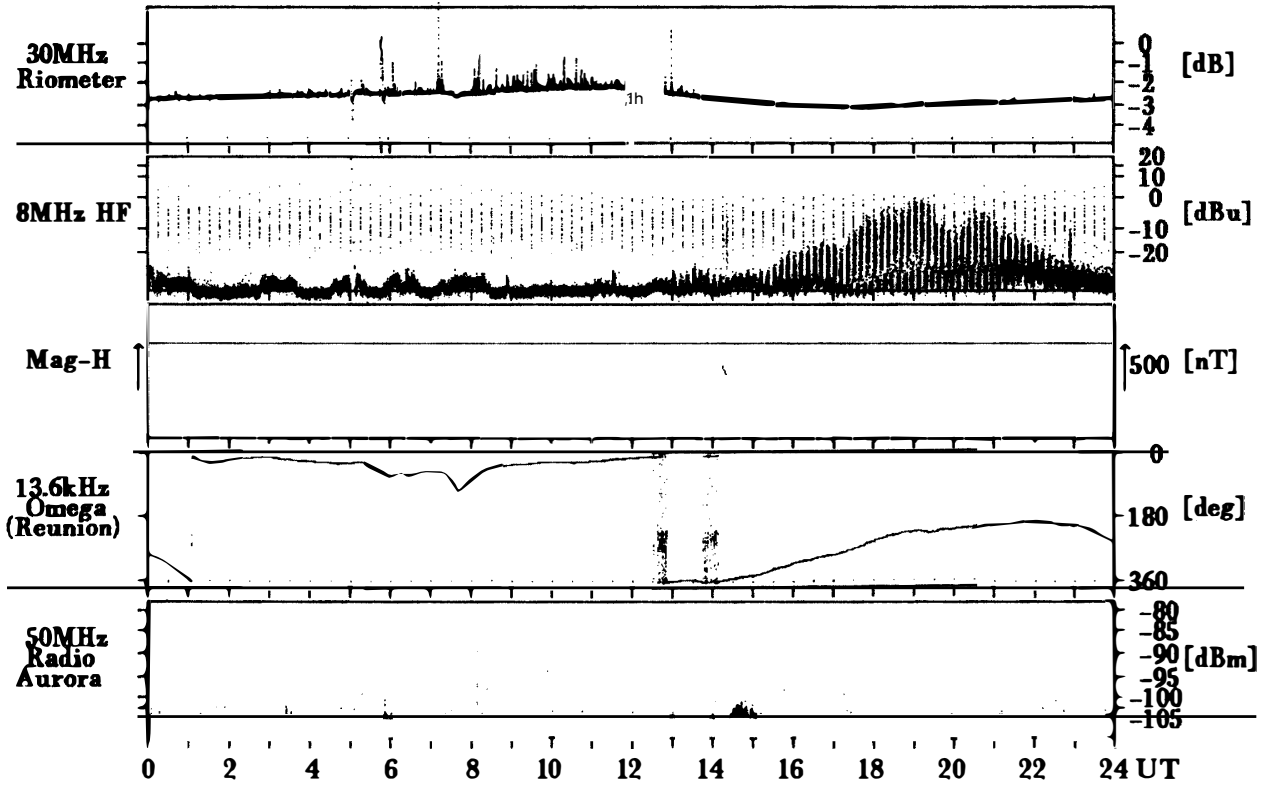
Total Day / 339 1991/12/ 5





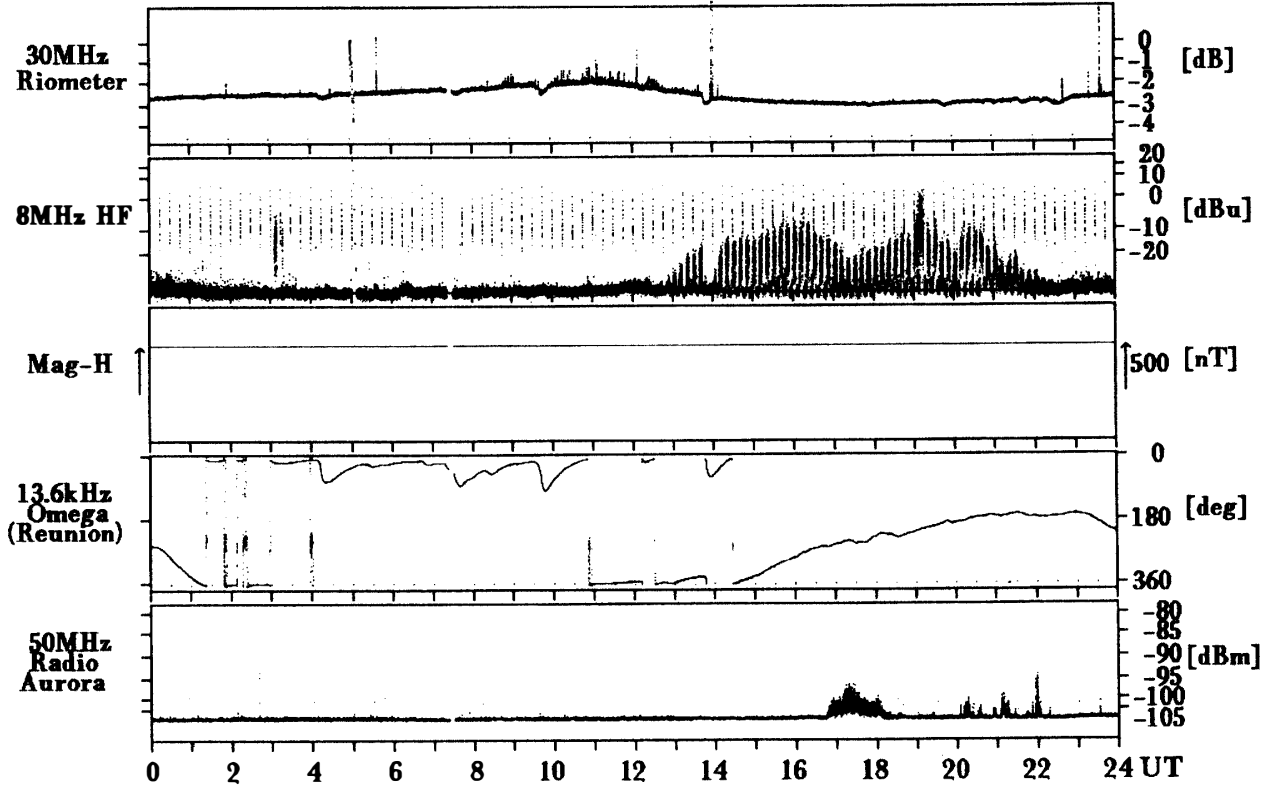
Syowa Station

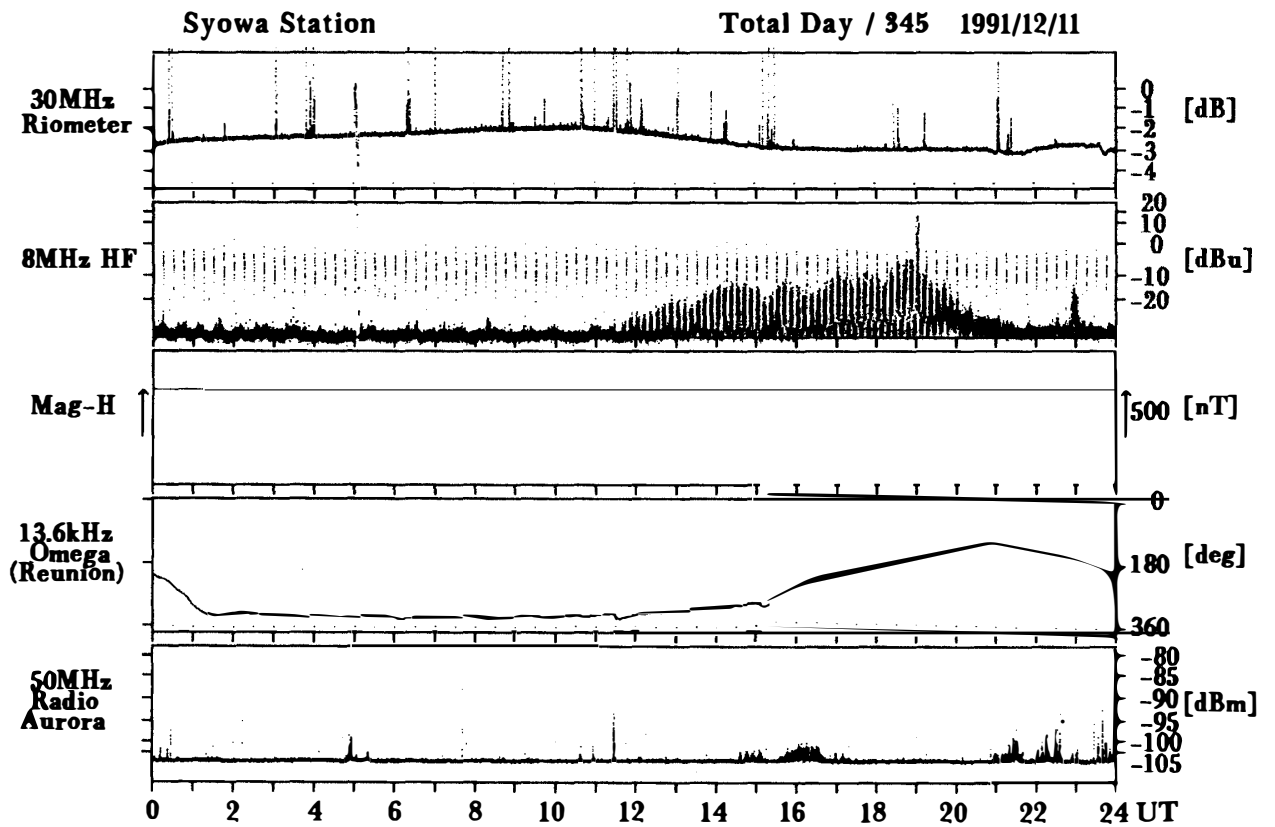
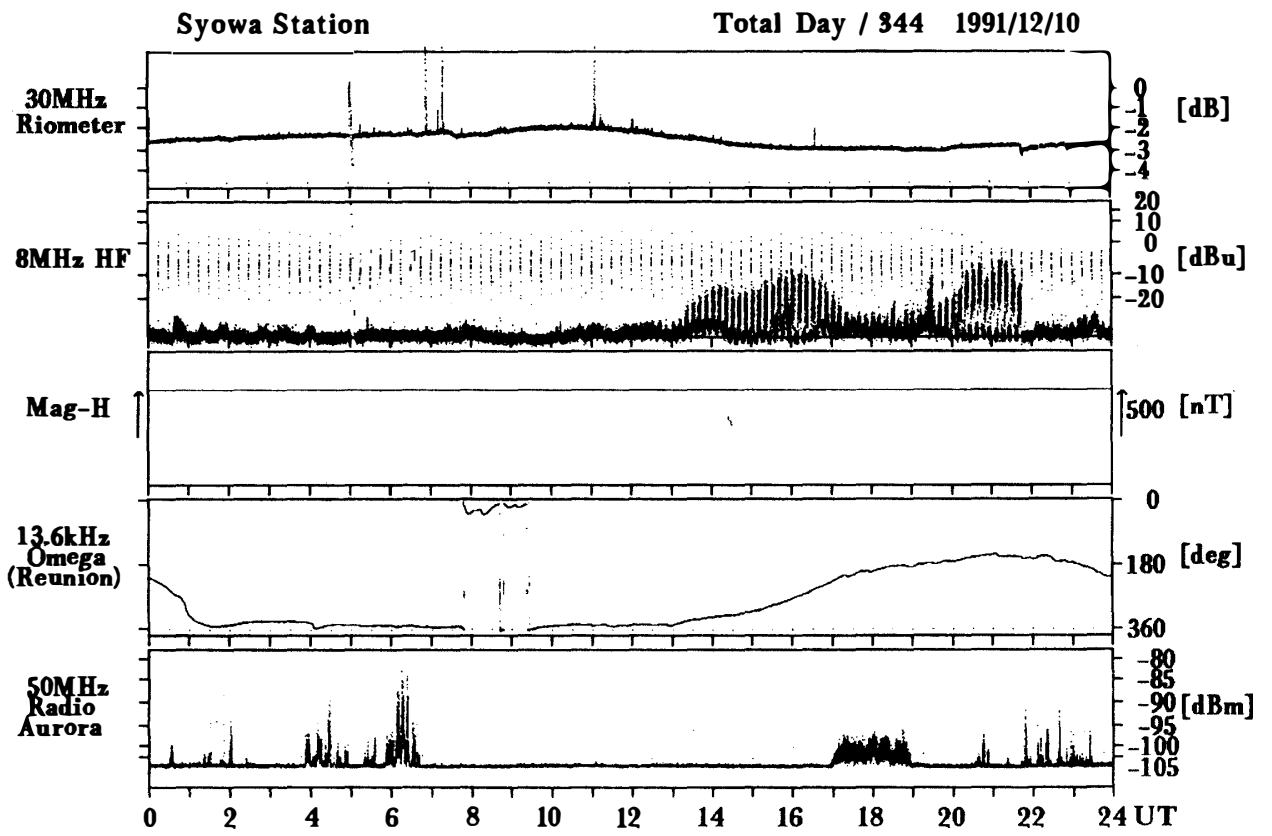
Total Day / 342 1991/12/ 8

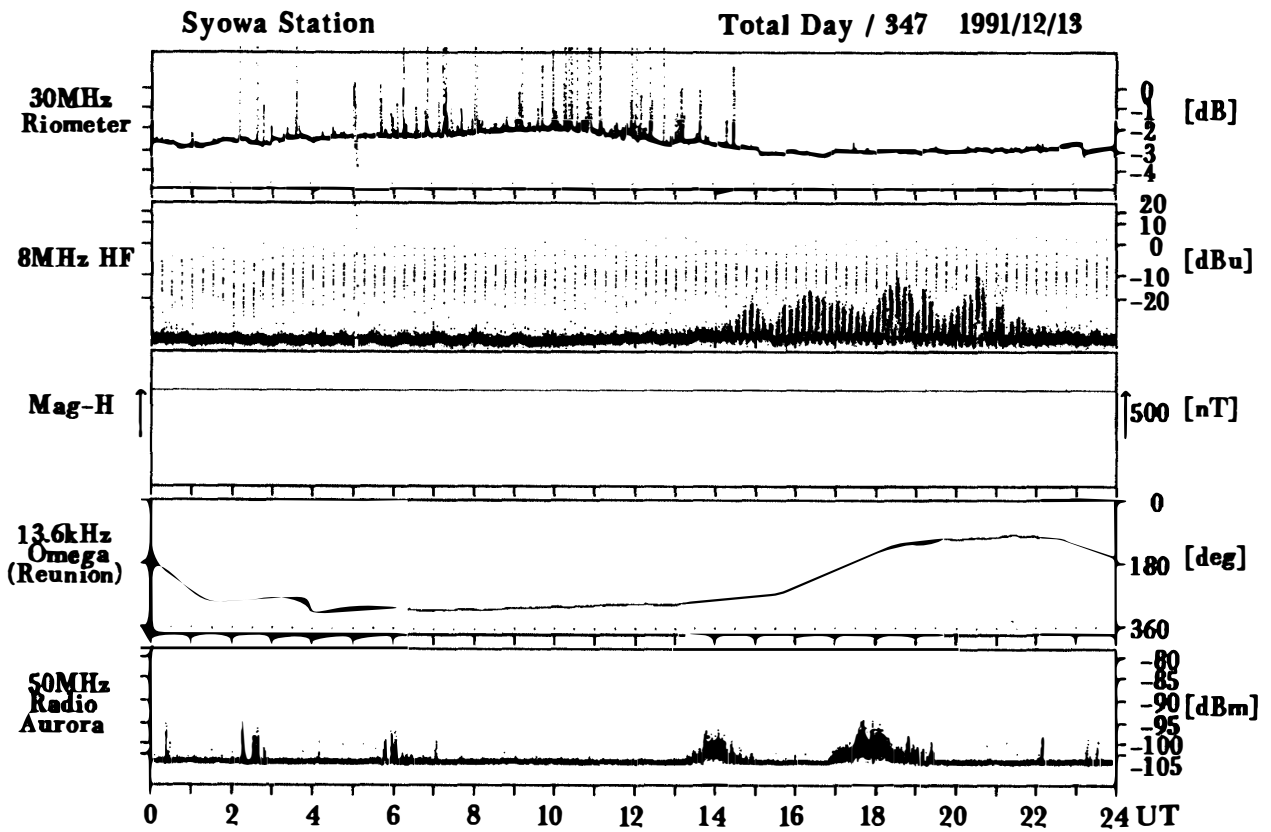
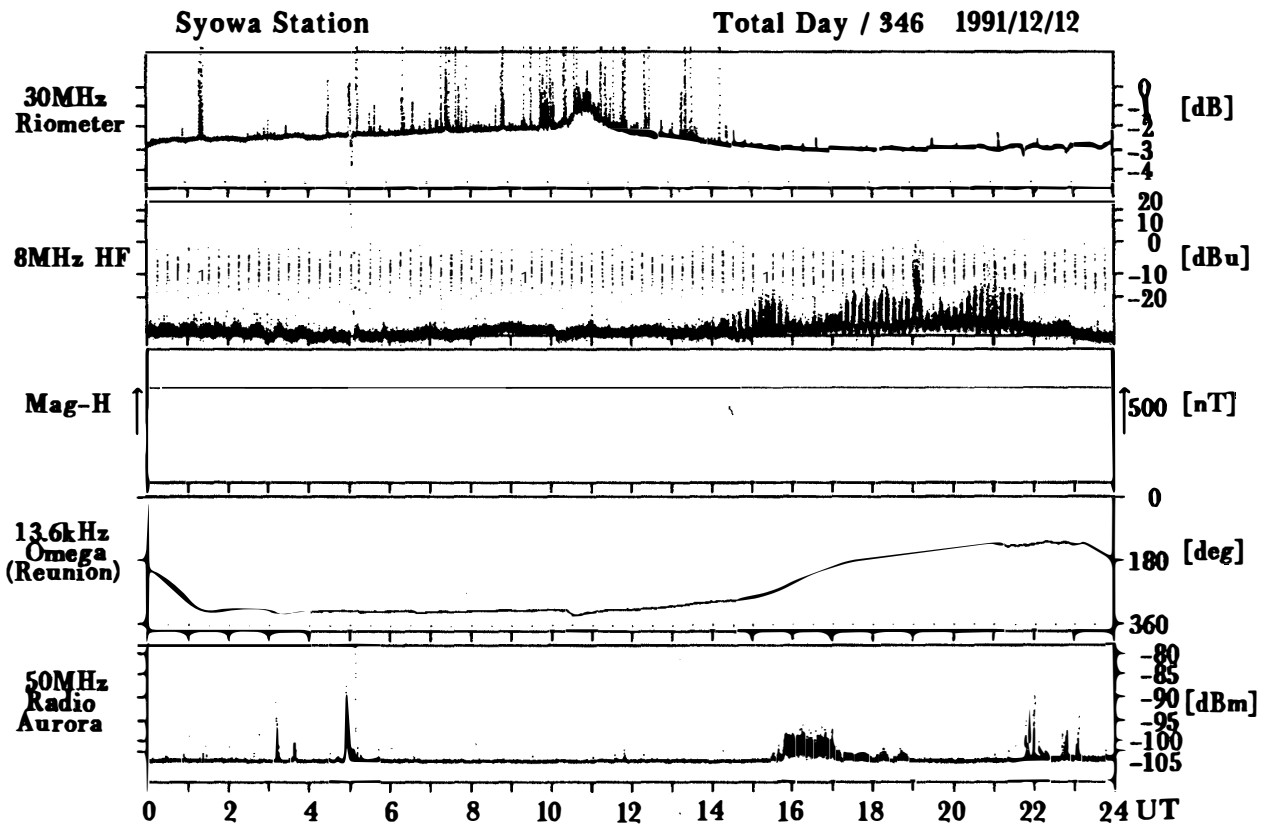


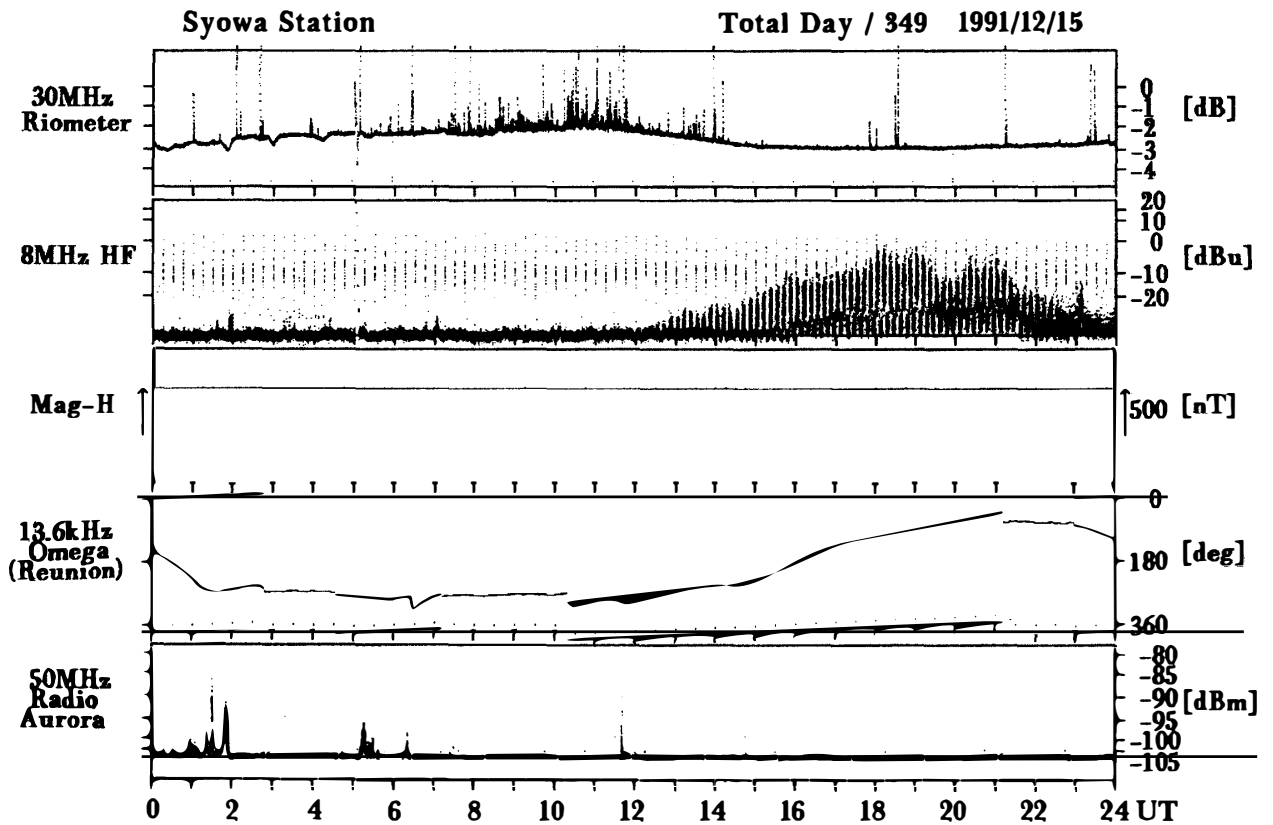
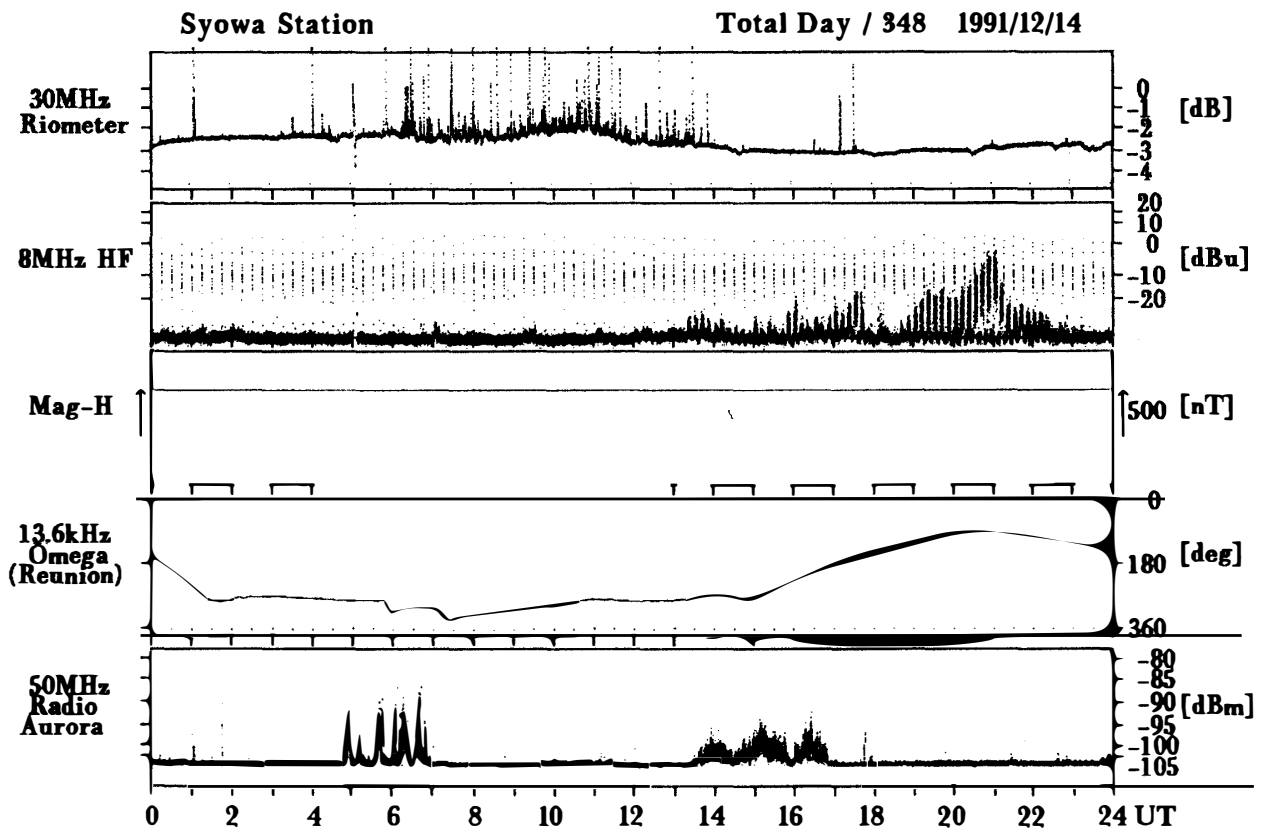
Syowa Station

Total Day / 343 1991/12/ 9



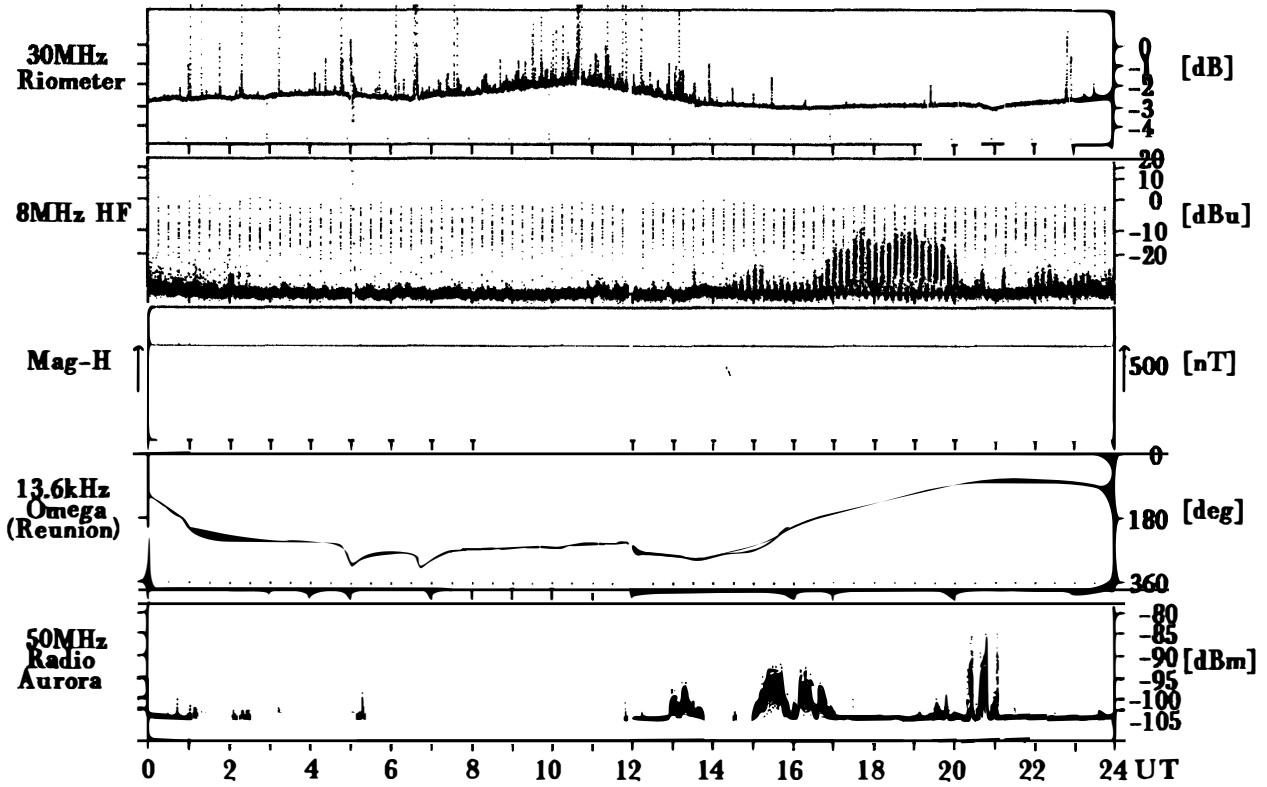






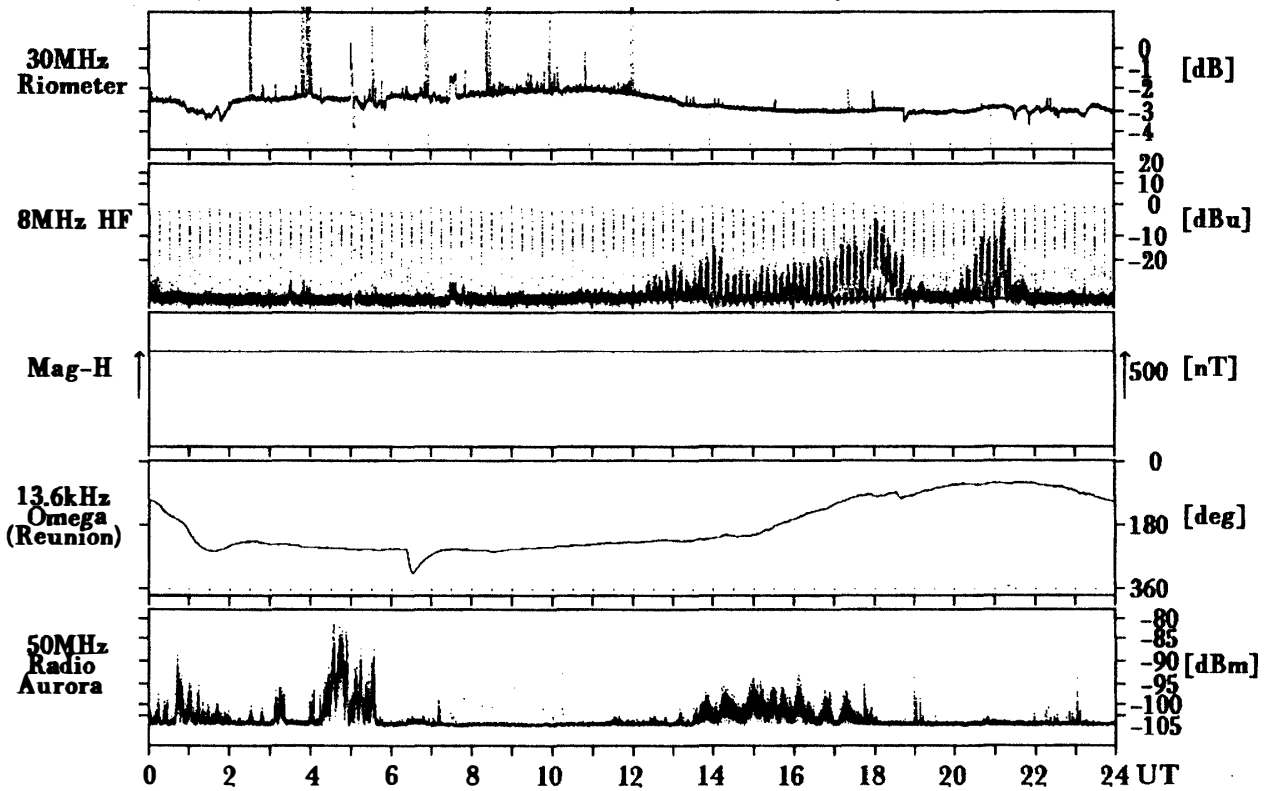
Syowa Station

Total Day / 350 1991/12/16



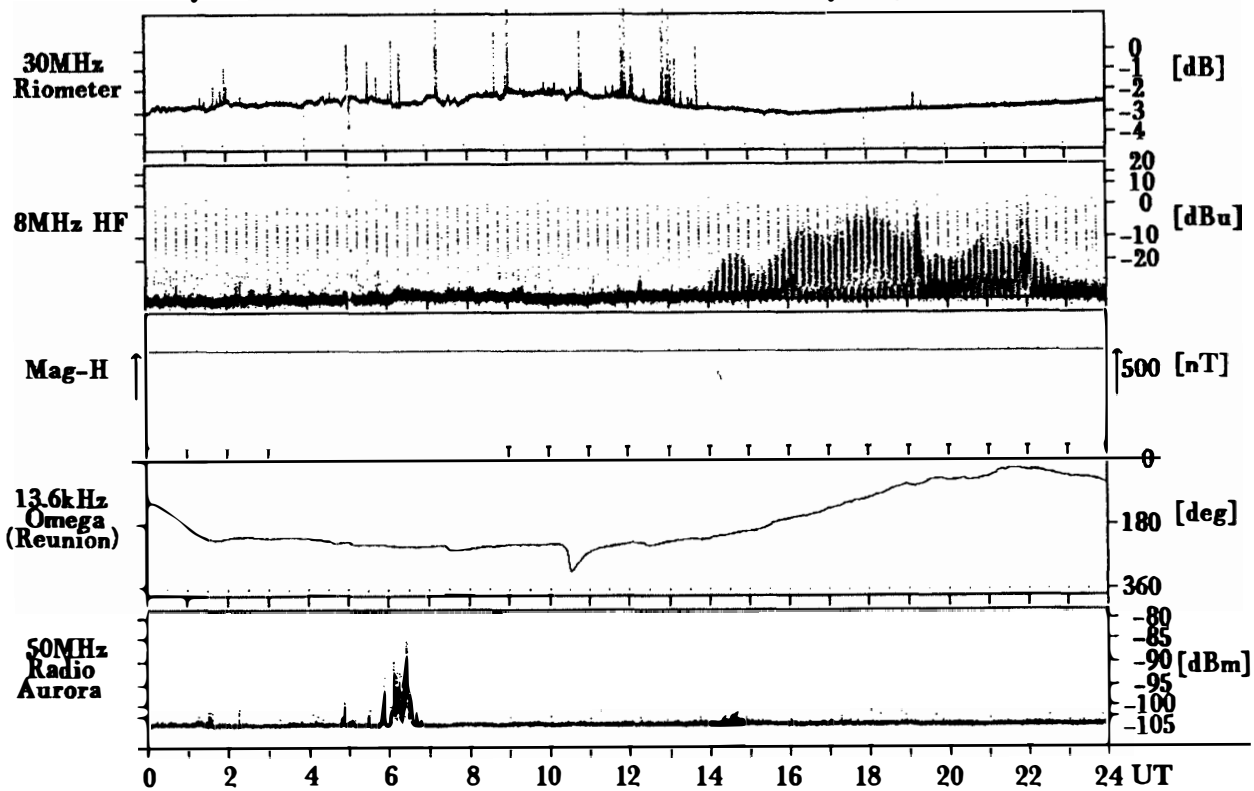
Syowa Station

Total Day / 351 1991/12/17



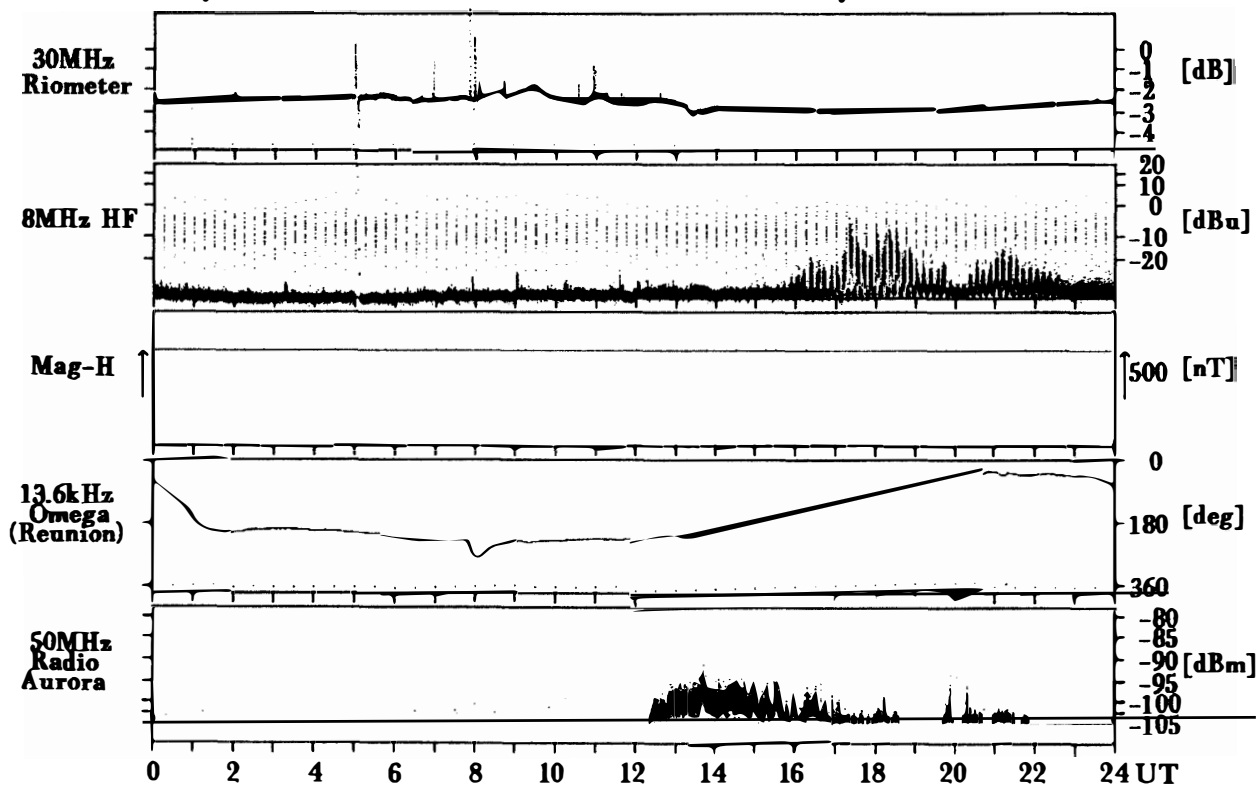
Syowa Station

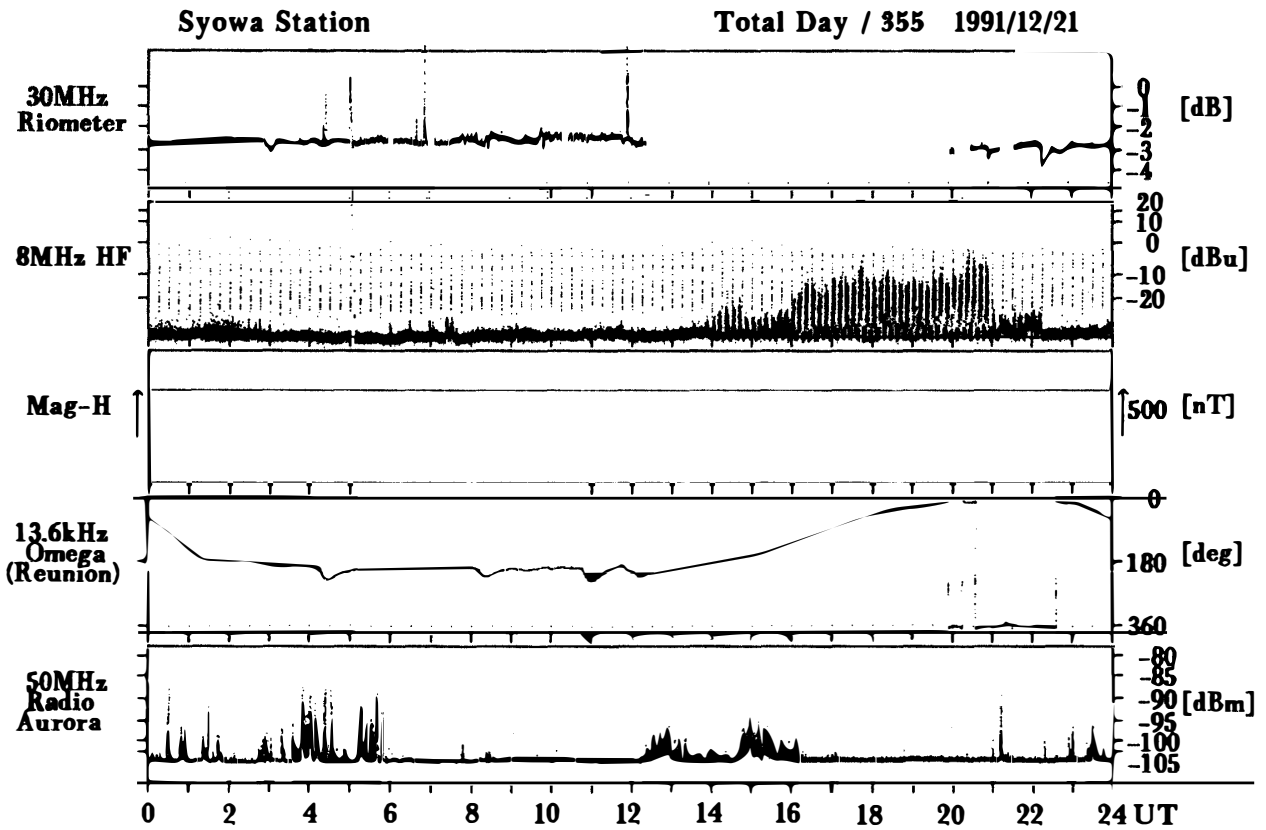
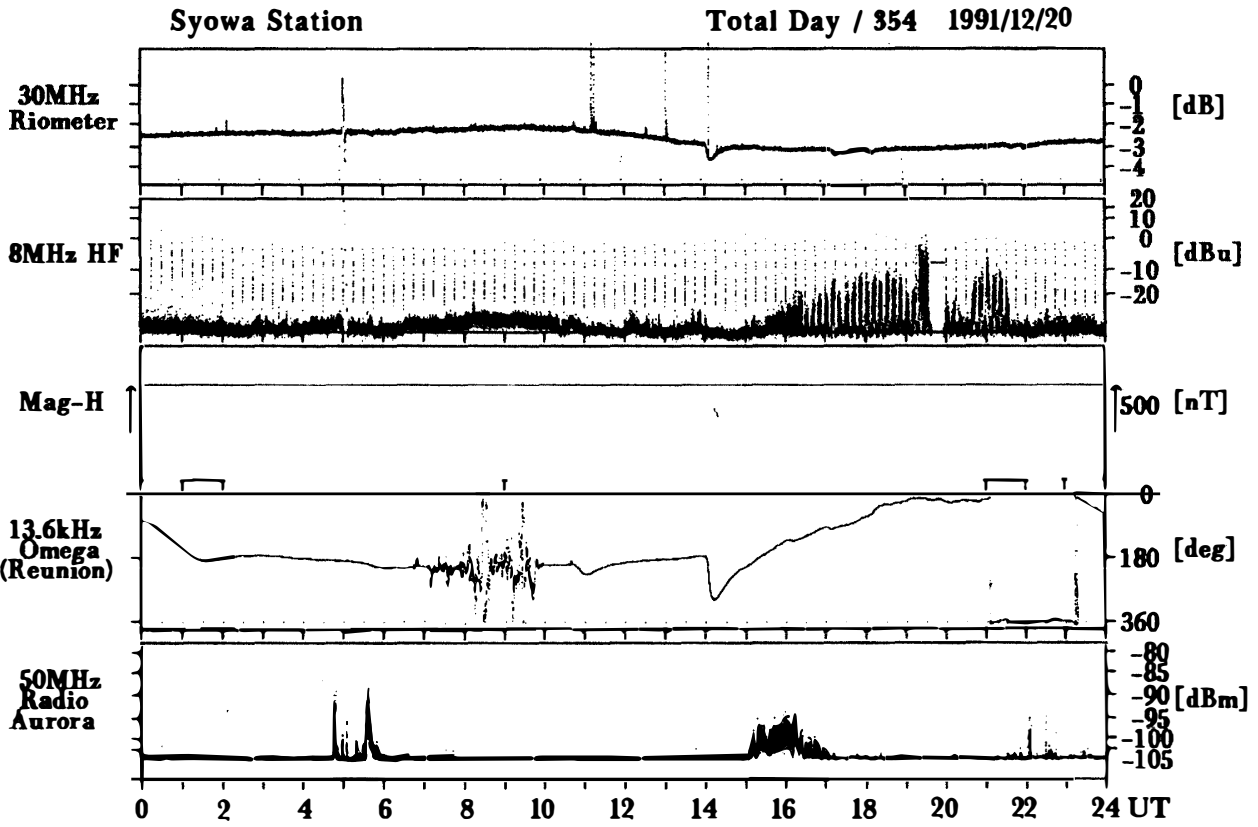
Total Day / 352 1991/12/18

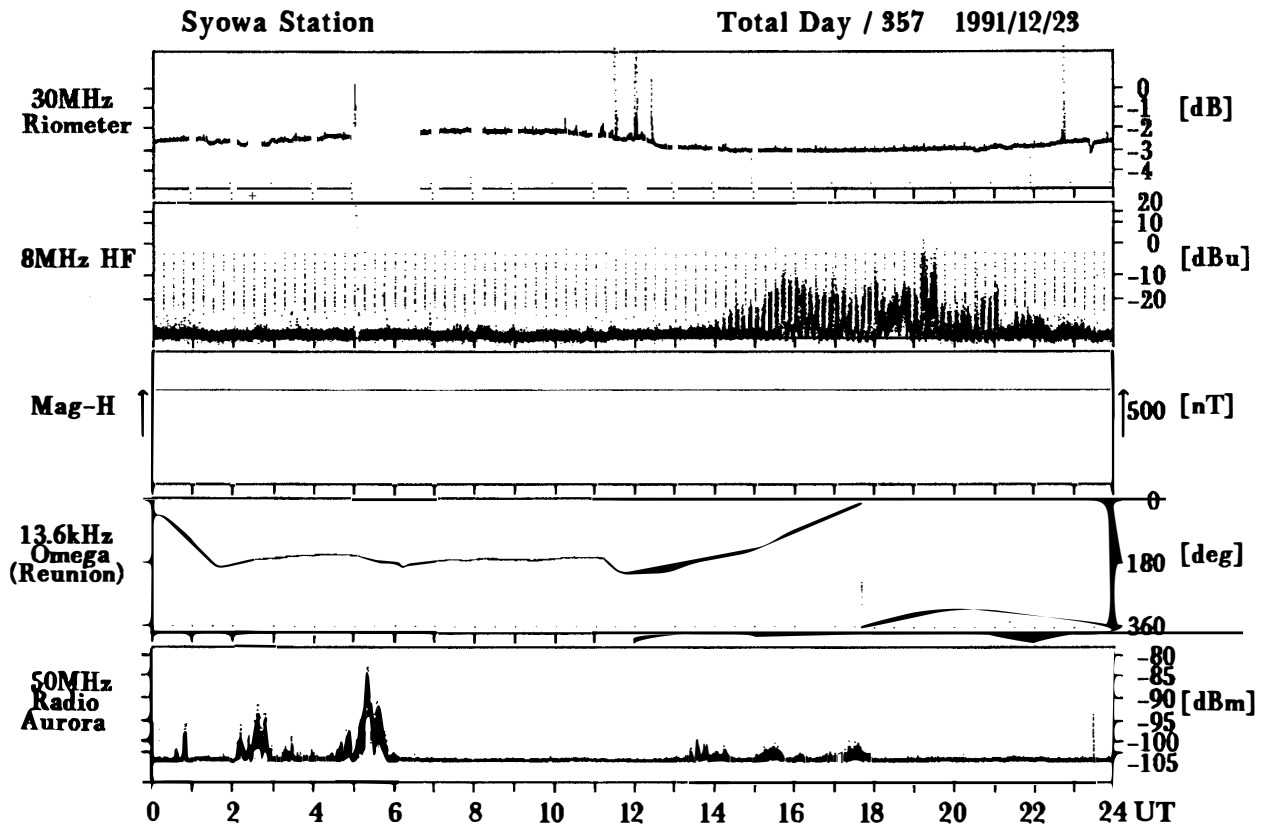
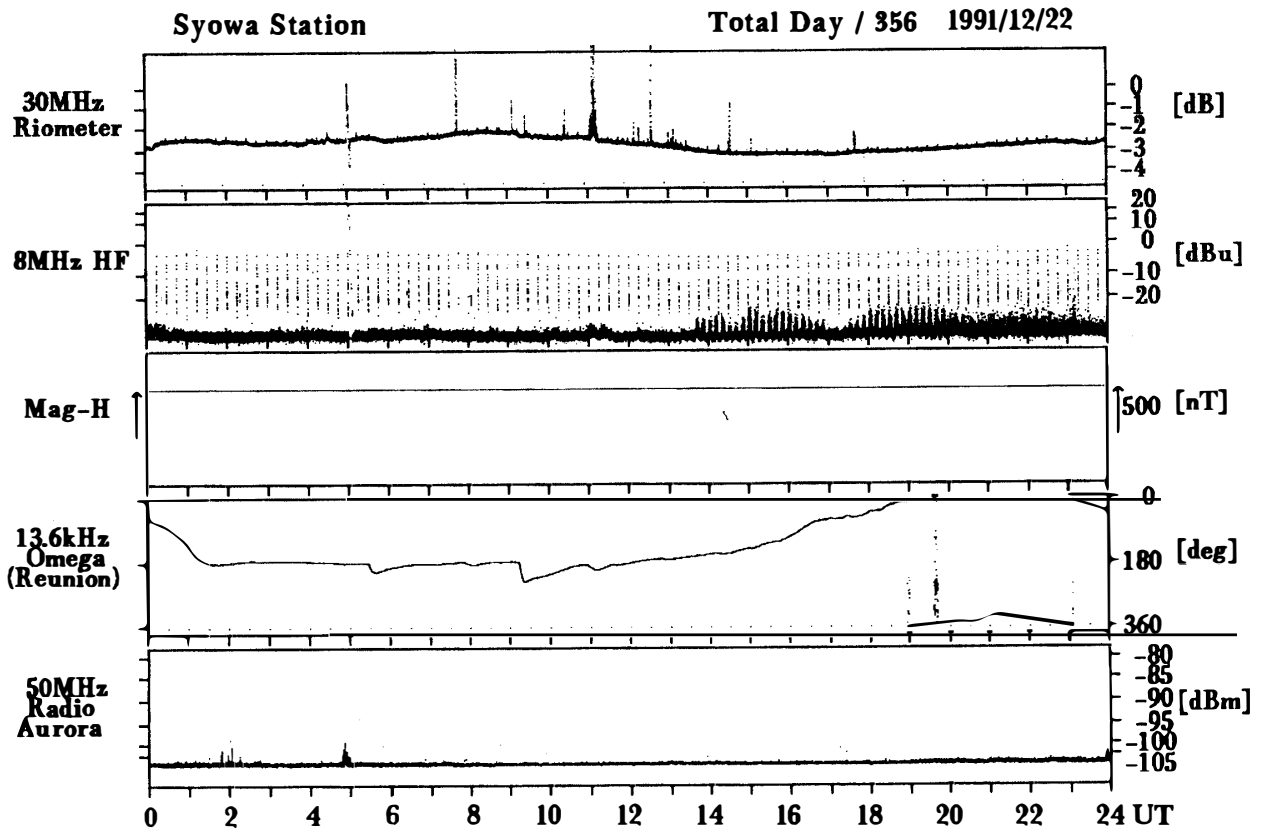


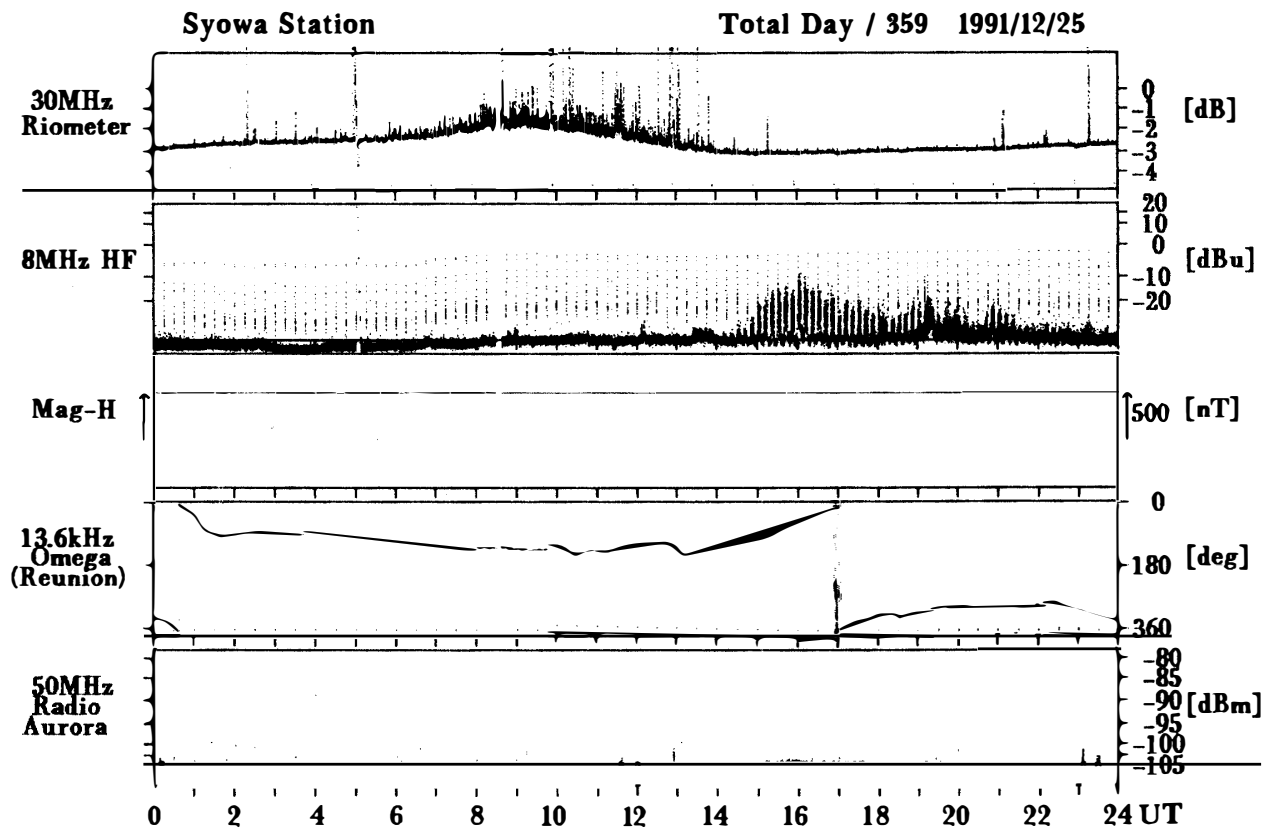
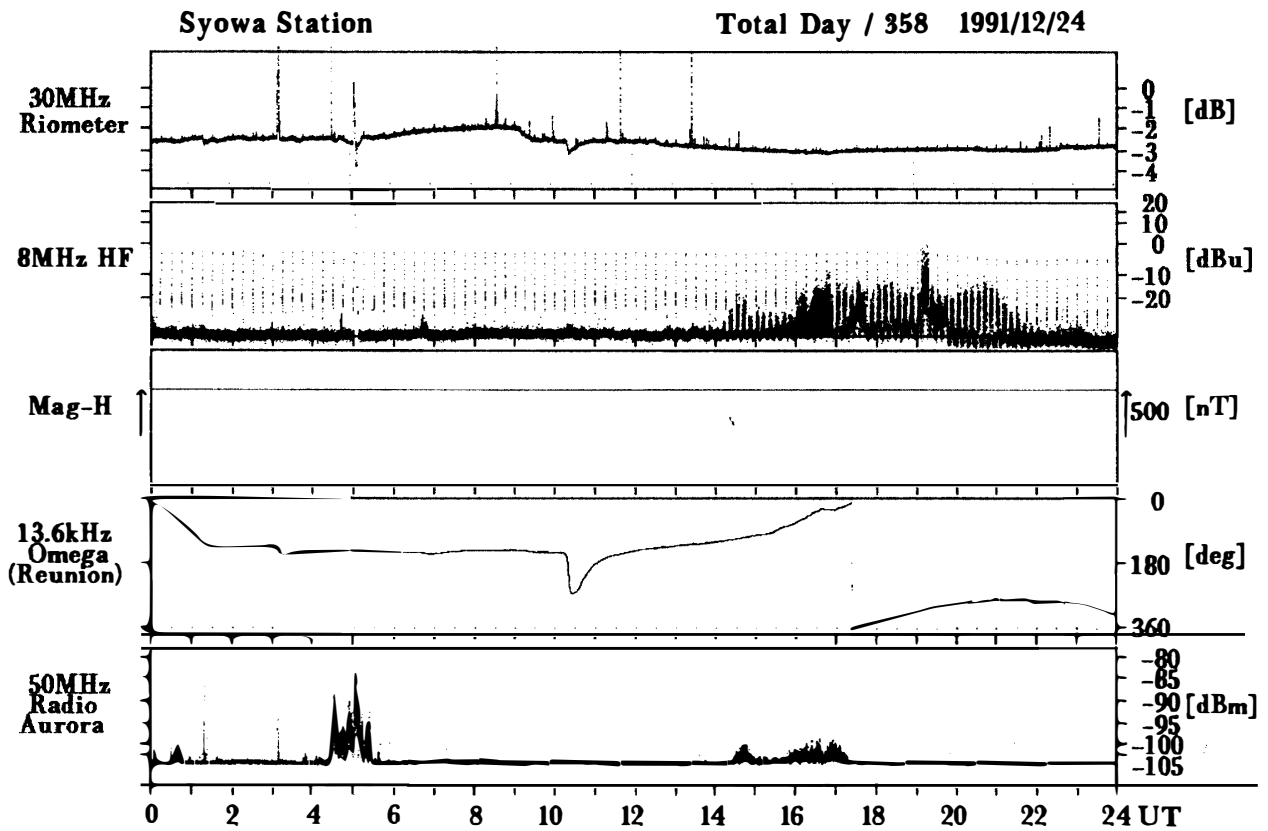
Syowa Station

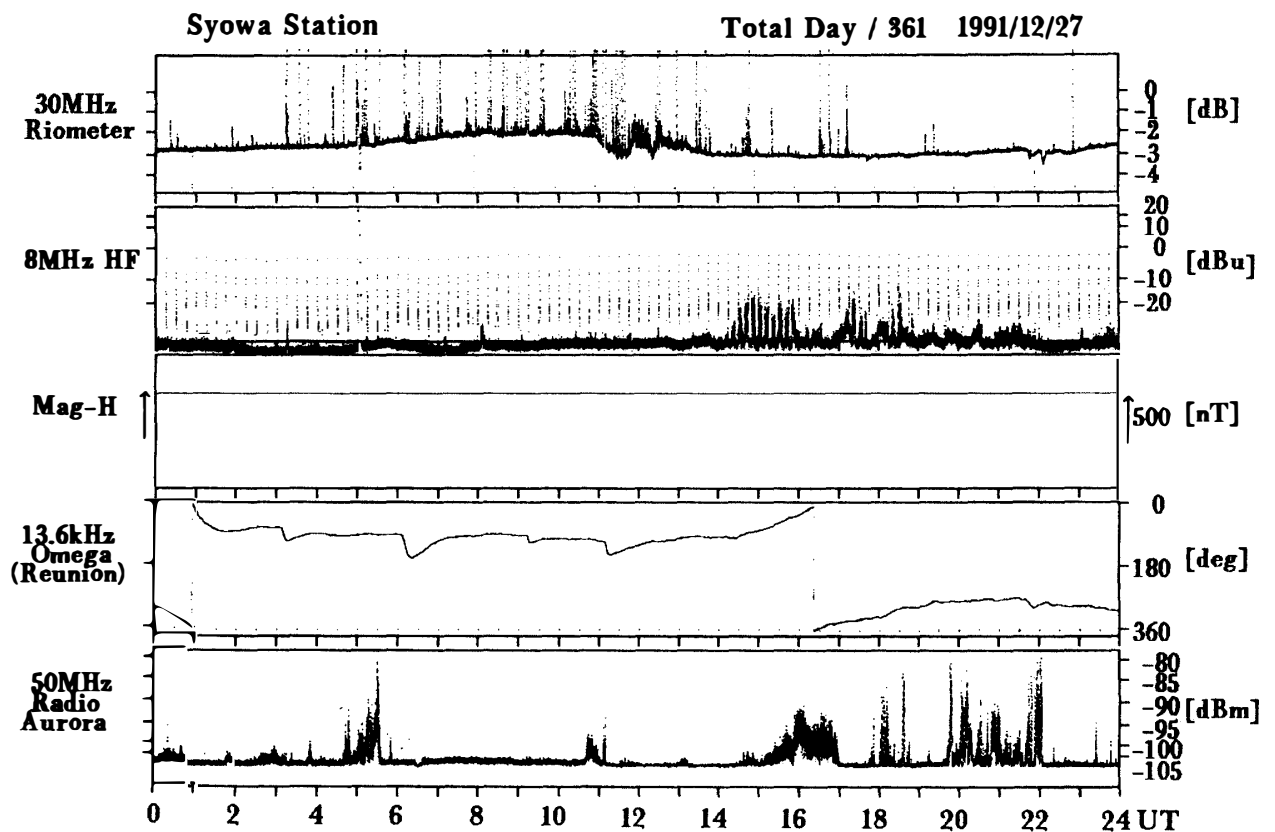
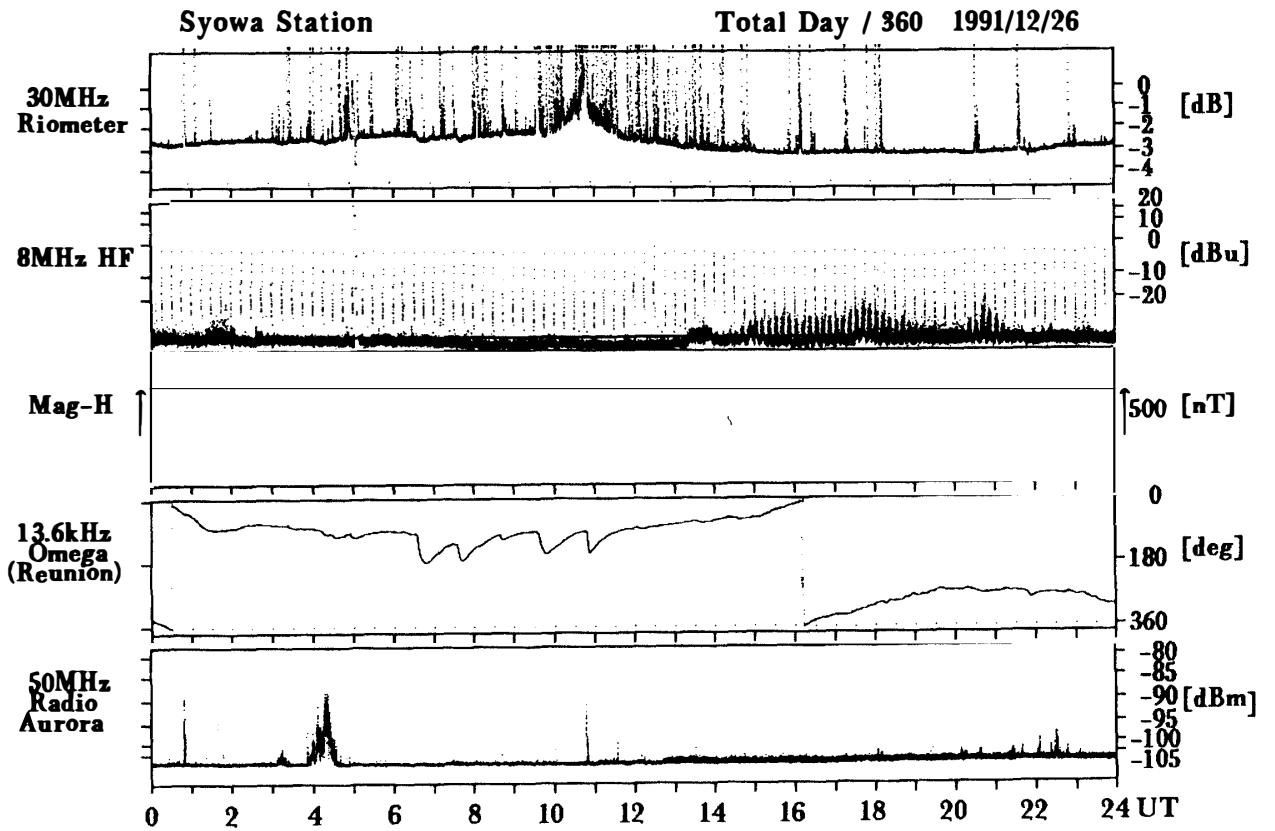
Total Day / 353 1991/12/19





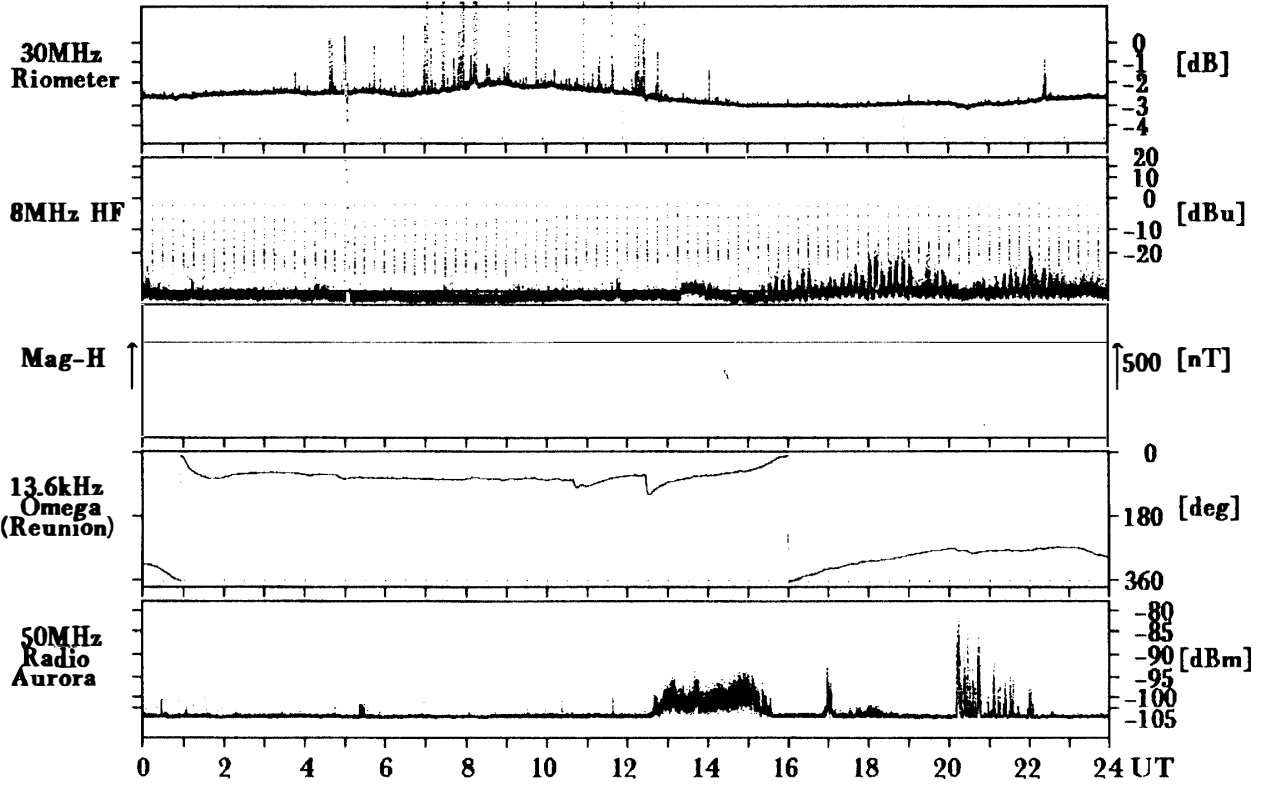






Syowa Station

Total Day / 362 1991/12/28



Syowa Station

Total Day / 363 1991/12/29

