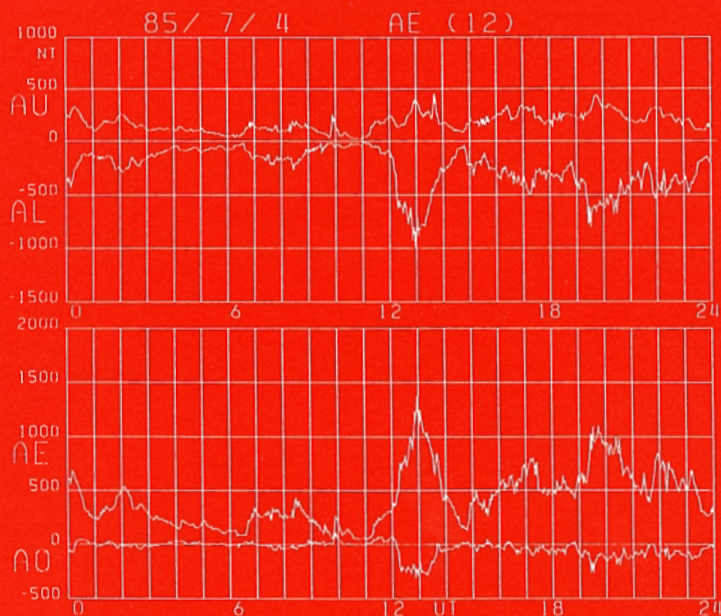


World Data Center C2 for Geomagnetism

DATA BOOK

No. 17

Auroral electrojet (AE) indices
for July-December 1985



MARCH 1989

Data Analysis Center for
Geomagnetism and Space Magnetism
FACULTY OF SCIENCE
KYOTO UNIVERSITY
KYOTO

Division of
Data Collection and Processing
NATIONAL INSTITUTE OF
POLAR RESEARCH
TOKYO

SPECIAL NOTICE

We are publishing the AE indices for the latter half of 1985 prior to publication for the AE indices for the first half of 1985. This reversal in the order of publication is due to technical difficulties in the digitization process connected with the replacement of our digitizing machine. The AE indices for the first half of 1985 will be published very soon in the next Data Book. The tentatively planned order of publication of our Data Books is as follows.

Data Book No.18:	AE indices for January - June 1985.
Data Book	AE indices for January - June 1986.
Data Book	AE indices for July - December 1986.
Data Book	AE indices for January - June 1977.
Data Book	AE indices for July - December 1977.

All inquiries on Data Books and their distribution and notices of change of address should be sent to:

World Data Center C2 for Geomagnetism
Faculty of Science, Kyoto University
Kyoto 606, Japan

World Data Center C2 for Geomagnetism

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PPREFACE

The Auroral Electrojet (AE) index was originally introduced by Davis and Sugiura in 1966 as a measure of global electrojet activity in the auroral zone. The AE index is now widely used for researches in geomagnetism, aeronomy, and solar-terrestrial physics. After the initial development at the NASA/Goddard Space Flight Center the calculation of the index was first performed at the Geophysical Institute of the University of Alaska, which published hourly values of the index for the years 1957 to 1964. The production of 2.5 min values was then made at the Goddard Space Flight Center for the period from September 1964 to June 1968.

After these early publications the index was regularly issued by the World Data Center A for Solar-Terrestrial Physics (WDC-A for STP) in Boulder, Colorado, which published 2.5 min values for the years 1966 to 1974 and 1.0 min values for 1975 and the first 4 months of 1976.

When it became difficult for the WDC-A for STP to continue the production of the AE index, a question was raised if the index could be produced at the WDC-C2 for Geomagnetism, which is operated by the Data Analysis Center for Geomagnetism and Space Magnetism, Faculty of Science, Kyoto University. Responding to this request we decided to produce the index for the two years, 1978-1979, of the International Magnetospheric Study (IMS), and published 1.0 min values of the AE index for these years in the "WDC-C2 for Geomagnetism Data Book" series.

Although the International Association of Geomagnetism and Aeronomy (IAGA) recommended the continuation of the production of the AE index at the WDC-C2, the AE production could not be extended beyond IMS because of the constraints in manpower and computing capability. Increasing demands for the AE index, however, motivated us to resume its production, and we then published the Data Book No.7 for the first half of 1980. After this publication, various possibilities of financial support for the production of the index were explored by the Subcommittee on Solar Terrestrial Physics of the Special Committee for International Cooperation, Science Council of Japan. As a result, the National Institute of Polar Research (NIPR), Tokyo, offered assistance. Beginning with the Data Book No.8, the production of the AE index has been continued at the Kyoto University, but the printing and distribution of the Data Book have been done by NIPR.

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AURORAL ELECTROJET (AE) INDICES

FOR JULY - DECEMBER 1985

1. Derivation and Representation

The AE index is derived from geomagnetic variations in the horizontal component observed at selected (10-13) observatories along the auroral zone in the northern hemisphere. To normalize the data a base value for each station is first calculated for each month by averaging all the data from the station on the five international quietest days. This base value is subtracted from each value of one minute data obtained at the station during that month. Then among the data from all the stations at each given time (UT), the largest and smallest values are selected. The AU and AL indices are respectively defined by the largest and the smallest values so selected. The symbols, AU and AL, derive from the fact that these values form the upper and lower envelopes of the superposed plots of all the data from these stations as functions of UT. The difference, AU minus AL, defines the AE index, and the mean value of the AU and AL, i.e. $(AU+AL)/2$, defines the AO index. The term "AE indices" is usually used to represent these four indices (AU, AL, AE and AO). The AU and AL indices are intended to express the strongest current density of the eastward and westward auroral electrojets, respectively. The AE index represents the overall activity of the electrojets, and the AO index provides a measure of the equivalent zonal current.

In this report we present daily plots and hourly values of the AE indices and "contributing station" plots giving additional information on the indices. The stations that actually give the AU and AL values are named the "contributing stations" of the AU and AL indices. The pair of the AU and AL contributing stations is referred to as "the contributing stations of the AE indices". The plot identifies these AE contributing stations, and also gives information on the data availability for each station.

2. Data Used

To obtain reliable AE indices it is desirable to use as many observatories as possible. However, there are two major difficulties: one is that the distribution of the observatories in operation is not uniform along the auroral zone, and the other is that the digitization of magnetograms is a laborious task.

Table 1. List of AE(12) stations.

Observatory	Abbreviations		Geographic		Geomagnetic	
	IAGA	WDC-A	Lat.(°N)	Long.(°E)	Lat.(°N)	Long.(°E)
Abisko	ABK	AI	68.36	18.82	66.04	115.08
Dixon Island	DIK	DI	73.55	80.57	63.02	161.57
Cape Chelyuskin	CCS	CC	77.72	104.28	66.26	176.46
Tixie Bay	TIK	TI	71.58	129.00	60.44	191.41
Cape Wellen	CWE	UE	66.17	190.17	61.79	237.10
Barrow	BRW	BW	71.30	203.25	68.54	241.15
College	CMO	CO	64.87	212.17	64.63	256.52
Yellowknife	YKC	YEK	62.40	245.60	69.00	292.80
Fort Churchill	FCC	FC	58.80	265.90	68.70	322.77
Poste-de-la-Baleine (Great Whale River)	PBQ	PBQ	55.27	282.22	66.58	347.36
Narssarssuaq	NAQ	NAS	61.20	314.16	71.21	36.79
Leirvogur	LRV	LR	64.18	338.30	70.22	71.04

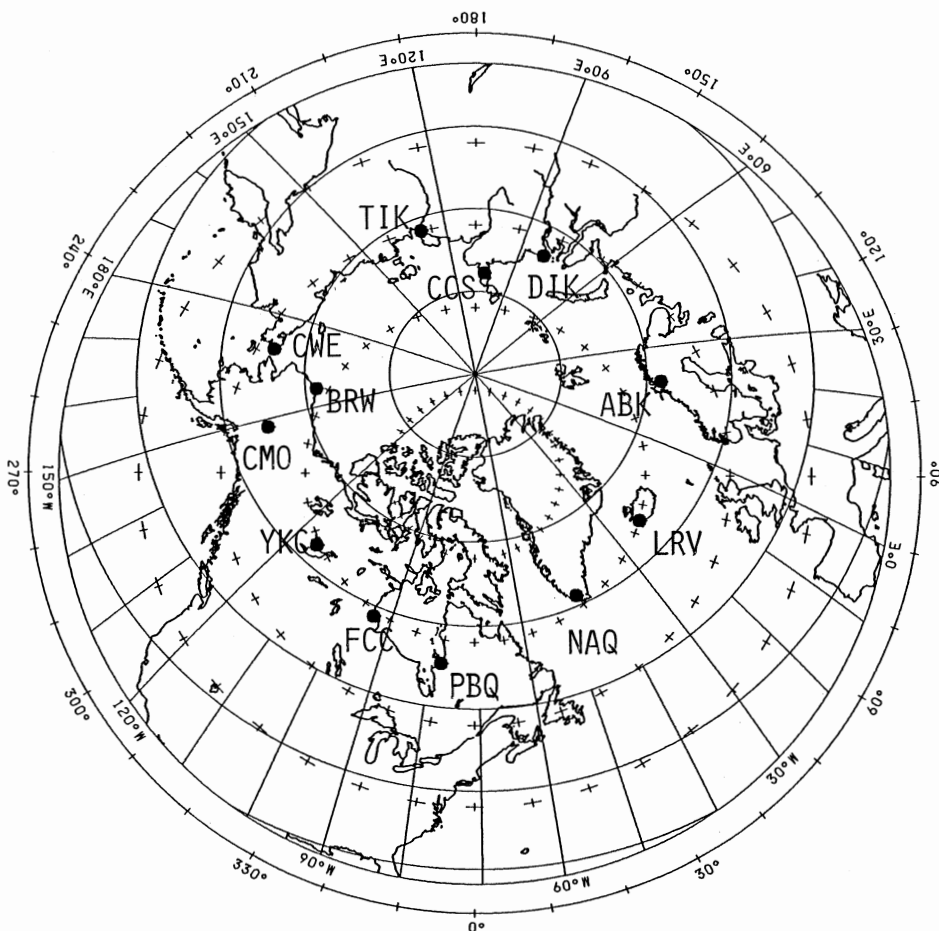


Figure 1. Distribution of AE(12) stations.

This figure is drawn by Lambert projection with the geomagnetic north pole at its center. Geographic coordinates are indicated by solid lines. Geomagnetic coordinates are shown by thin plus signs. Latitude circles are drawn at 10° intervals. Geomagnetic longitude is shown by the numbers along the outer circle and geographic longitude is given by the numbers along the inner circle with suffix E or W.

We used twelve observatories listed in Table 1. The distribution of the stations is shown in Fig. 1. The station Great Whale River was closed in July 1984 due to the high replacement cost of a broken power line and a new station Poste-de-la-Baleine was opened near the old site in September 1984. Its IAGA code is PBQ. In this Data Dook we denoted the sites of these stations by a single representative location under the name Poste-de-la-Baleine.

Of the twelve observatories six are taking digital data; these stations are referred to as digital stations below. Three of the digital stations, Fort Churchill, Poste-de-la-Baleine, and Yellowknife, give data in the X, Y, Z coordinate system. To make these data compatible with the other stations, we convert the X and Y components to the H component by $H=\sqrt{X^2+Y^2}$. If either X or Y is missing, H is also treated as being missing. For the other three digital stations, Barrow, College, and Narssarssuaq, the original digital H component data are used.

If there is any interval during which the digital recording appears faulty, the analog magnetogram is digitized whenever available. We used Abisko data digitized from analog records by the station. For the other non-digital stations the digitization was performed at this Data Center.

3. The Superposed Plot and the Plot of the Contributing Stations of the AE Indices

Figure 2a shows an example of the superposed plot of H traces from the AE stations for April 10, 1978. The upper envelope gives the AU index and the lower envelope, the AL index; Figs. 2b and 2c show sample plots of the contributing stations in geomagnetic (2b) and geographic (2c) local time, for the same day as in Fig. 2a. In these figures, the upper and lower plumes on a diagonal line for each station show the contribution of this station to the AU and AL indices, respectively. In Fig. 2b, for example, the data from Dixon Island (DIK) give the AU index from 0000 to 0240 UT and again from 1330 to 1530 UT, and the AL index from 0640 to 0830 UT. It is seen that from 1100 to 1200 UT Leirvogur (LRV) offers no data. Since Leirvogur is a key station for the AL index for this time interval, the exact AL values may be lower than was calculated for this interval.

We use geomagnetic local time (MLT) for the ordinate of the plot of the contributing stations. MLT is defined by the difference between the geomagnetic longitude of the station and the geomagnetic longitude of the meridian opposite to the subsolar point; and MLT is a function of the geomagnetic longitude of the station, the Sun's declination, and universal time. Figures 3a, 3b, and 3c show the difference between geographic local time GLT and MLT of the stations used to derive the AE indices for winter, summer and equinox, respectively. In these figures GLT is represented for

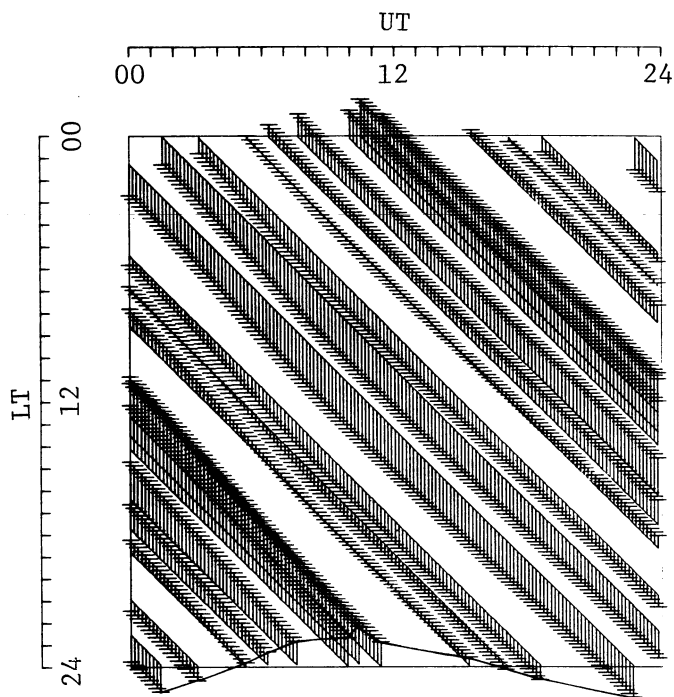


Fig. 3a Difference between GLT and MLT in winter.

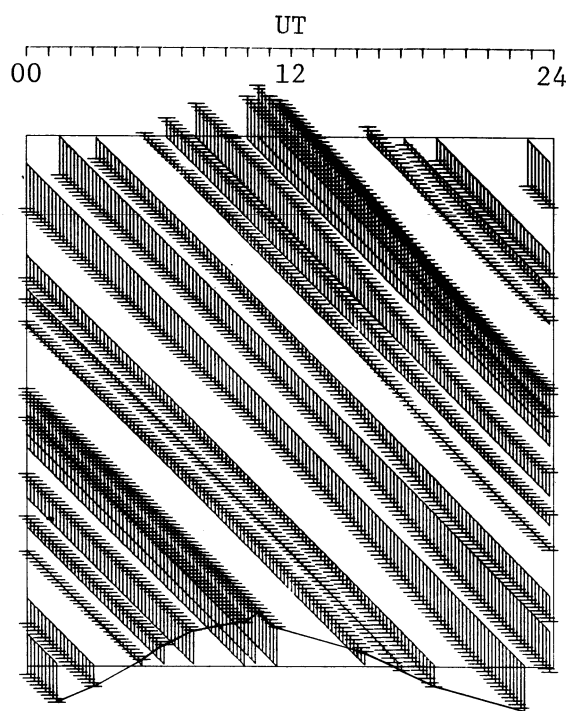


Fig. 3b Difference between GLT and MLT in summer.

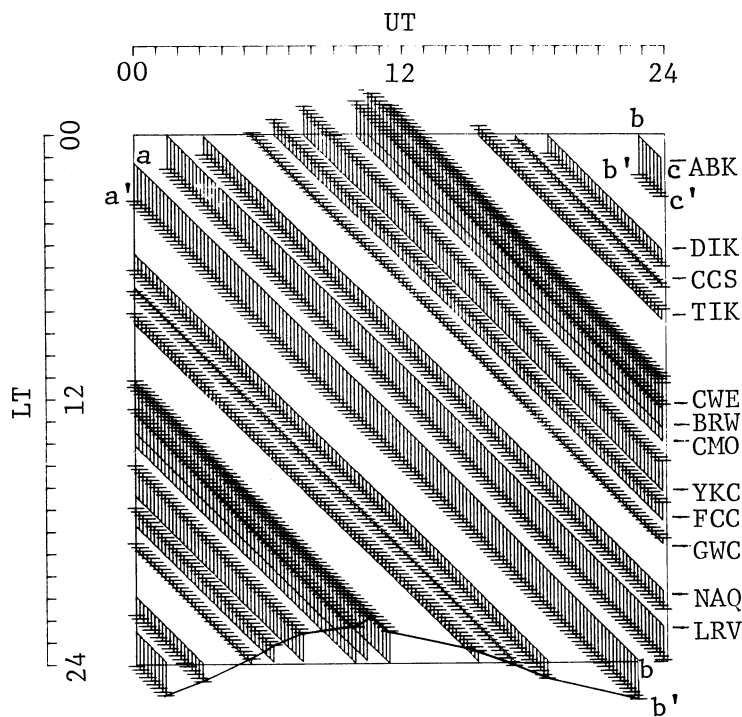


Fig. 3c Difference between GLT and MLT in equinox.

Fig. 3a, 3b and 3c show the difference between the geographic local time (GLT) and the geomagnetic local time (MLT) for winter, summer and equinox, where a-b-c (full line on the top or bottom of the vertical lines) shows the relation between UT and GLT, and a'-b'-c' (crossing of the vertical and horizontal lines) shows the relation between UT and MLT for each of the AE(12) stations.

each station by a straight line which runs diagonally, and MLT is shown by the top of T shaped mark (or the bottom of inverted T). The length of the vertical line of T from the diagonal line is the difference between GLT and MLT. Note that for some stations the difference between GLT and MLT is as much as 2 hours.

4. Results

Monthly quiet-time H reference values for July–December 1985 are listed in Table 2. Table 3 gives hourly average values of the AE indices for each day from July to December 1985.

Daily graphs of 1.0-min AE indices (AU, AL, AE and AO) are shown in Fig. 4, and corresponding plots of the contributing stations are given in Fig. 5. Figure 6 shows the H-traces of magnetograms from AE(12) stations for each month from July to December 1985. Figure 7 shows hourly mean values of each index for the one half year. As a new feature, a summary plot of hourly values of AU and AL indices is added in Fig. 8.

5. Acknowledgements

The calculation of the AE indices in this volume was made possible by the data provided by the AE stations through the World Data Centers. We thank Ms. Y. Yamamoto, Mr. T. Matsumoto and Dr. T. Iyemori of WDC-C2 for Geomagnetism for their assistance in the computation and production of plots, and also to Dr. M. Ayukawa and Dr. T. Ono of National Institute of Polar Research for their contributions in printing and distribution.

TOYOHISA KAMEI,
MASAHISA SUGIURA, and
TOHRU ARAKI

Data Analysis Center
for Geomagnetism and Space Magnetism
Faculty of Science
Kyoto University
Sakyo-ku, Kyoto 606
Japan

Table 2. Monthly quiet-time H reference values (unit in nT)
(Year 1985)

STATION	July	Aug.	Sep.	Oct.	Nov.	Dec.	
Abisko	11684	11680	11681	11674	11675	11676	
Dixon Island	-579	-583	-588	-600	-602	-607	(H0+)
Cape Chelyuskin	332	317	316	310	306	302	(H0+)
Tixie Bay	87	83	77	71	74	62	(H0+)
Cape Wellen	30	30	24	19	19	16	(H0+)
Barrow	9671	9664	9667	9665	9671	9659	
College	12900	12896	12893	12889	12889	12887	
Yellowknife	8728	8732	8727	8725	8730	8729	
Fort Churchill	7721	7726	7714	7720	7721	7727	
Poste-de-la-Baleine	10719	10737	10735	10743	10743	10748	*
Narssarssuaq	12201	12198	12200	12207	12208	12216	
Leirvogur	12427	12424	12424	12426	12430	12433	

* : Great Whale River was closed in July 1984 and Poste-de-la-Baleine is used since September 1984.

(H0+) : Deviation from the H base line on the ordinary magnetograms.

TABLE 3

Hourly average AE indices (AU, AL, AE and AO)
for July-December 1985.

July 1985

AU Index (Hourly mean values, unit nT)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q	192	198	183	160	116	42	134	114	64	42	40	88	101	94	107	84	72	79	71	101	79	103	68	38	99
	64	37	35	37	51	37	16	14	12	17	27	24	32	35	27	24	22	41	48	50	58	82	67	41	37
	35	40	72	61	36	27	31	19	20	24	31	69	85	55	39	30	39	26	37	44	41	79	77	218	51
D	229	165	177	113	109	76	88	117	132	106	55	138	218	270	127	190	267	248	225	300	282	220	233	142	176
	112	130	144	177	169	179	127	143	140	122	146	94	117	151	104	81	77	61	84	110	182	191	127	198	132
D	164	133	179	197	134	123	137	87	91	116	208	94	128	97	60	56	83	138	107	140	179	244	135	303	139
	287	199	280	153	173	187	107	201	116	54	158	135	107	63	120	124	56	51	55	83	130	145	182	127	137
	44	76	41	78	115	173	105	72	54	81	86	95	97	68	86	74	64	179	275	218	215	204	260	78	118
	58	51	130	205	241	192	124	116	37	16	21	15	26	29	53	48	36	37	40	59	109	72	36	37	74
	44	85	113	91	36	37	34	53	75	38	37	37	48	32	22	23	35	42	48	74	156	105	98	126	62
	133	120	154	128	99	58	122	115	81	101	127	94	95	86	112	81	56	49	74	126	180	203	181	185	115
D	205	184	200	424	274	332	239	300	309	311	369	488	445	409	436	425	498	417	329	363	128	71	41	30	301
D	33	27	24	20	20	38	56	40	68	125	231	344	223	145	203	206	370	323	412	206	217	218	222	283	169
	191	157	125	212	245	265	238	316	205	161	286	173	59	83	60	44	93	106	57	29	41	69	59	33	138
	34	60	69	109	210	194	55	73	115	137	155	58	78	68	42	39	23	21	26	34	37	38	50	70	75
Q	60	53	53	55	31	30	82	59	34	47	37	25	31	40	50	64	39	37	49	58	40	71	45	52	48
	100	106	114	124	231	121	91	85	42	161	293	282	289	157	327	236	128	90	78	100	71	52	94	121	145
	214	198	98	111	69	107	126	49	77	122	78	157	144	103	50	44	90	141	78	52	129	179	160	58	110
	44	97	109	71	65	28	90	66	101	150	134	110	111	134	133	92	53	61	56	40	42	43	39	28	79
	25	45	58	96	96	130	123	38	25	42	87	68	72	92	84	160	170	79	44	57	36	35	36	57	73
Q	83	80	133	120	119	123	113	97	162	174	124	115	42	20	20	13	19	16	24	30	31	32	53	51	75
Q	39	29	29	36	55	51	66	83	80	67	73	96	70	52	38	27	32	32	36	42	59	71	85	55	54
	65	41	35	112	207	166	134	155	120	92	55	79	68	50	21	35	37	89	107	109	91	86	109	137	92
	80	64	87	83	59	126	194	125	92	46	76	148	166	141	82	34	30	25	47	66	150	112	152	184	99
	177	149	157	164	96	109	149	117	67	91	82	58	41	40	18	26	56	83	123	131	118	93	95	98	98
	64	46	29	38	152	189	88	36	48	133	95	70	91	58	53	63	36	42	65	79	178	202	200	214	95
	165	110	125	183	124	204	161	204	71	131	189	141	178	173	65	44	47	39	51	71	70	60	66	109	116
	127	137	120	159	120	80	49	69	58	100	105	83	74	45	38	54	33	39	59	145	200	83	64	36	86
Q	52	74	49	37	23	31	47	44	15	16	17	25	56	57	71	47	46	40	49	63	78	74	50	37	46
	32	21	47	80	179	220	124	34	40	61	108	117	143	201	229	70	62	26	20	29	35	30	43	64	84
D	69	43	29	54	39	102	152	116	234	312	336	237	180	267	503	426	245	172	246	208	234	378	336	287	217
Mean	103	95	103	118	119	121	109	101	89	103	124	121	116	106	109	95	94	91	97	103	116	117	111	112	107
5Q Mean	59	54	59	57	55	54	64	59	60	64	55	57	46	40	41	35	31	33	41	48	53	66	60	47	51
5D Mean	140	110	121	161	115	134	134	132	166	194	239	260	238	237	265	260	292	259	263	243	208	226	193	209	200

1985

August

AU Index (Hourly mean values, unit nr)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	196	143	147	81	103	136	72	43	21	51	73	110	119	76	153	110	77	68	121	85	83	110	99	97	99
2	83	116	89	60	140	185	140	147	140	77	81	83	43	32	47	87	111	168	184	163	158	225	157	102	117
3	78	56	24	58	51	19	20	13	31	48	42	29	40	32	27	40	67	40	67	78	89	111	105	85	53
4	67	75	71	116	129	136	127	95	29	93	54	63	67	63	55	35	48	32	34	55	40	61	62	52	69
Q	43	35	29	19	40	31	31	38	32	43	50	39	29	33	36	15	24	37	29	37	27	30	22	25	32
Q	24	38	30	14	14	14	17	16	34	21	37	54	36	30	20	13	18	38	44	64	63	33	26	39	31
Q	47	97	57	18	15	19	36	64	52	28	16	33	43	38	18	11	20	22	18	28	41	53	82	137	41
8	136	103	49	55	69	86	53	77	48	41	52	76	84	67	29	27	19	29	34	61	84	118	111	140	69
Q	100	84	82	68	40	13	8	19	20	27	31	40	50	49	29	22	18	23	41	50	48	45	40	36	41
10	30	36	44	49	98	182	168	211	177	168	168	144	95	65	37	57	64	45	41	65	84	51	42	58	91
Q	135	162	108	115	44	19	15	22	28	30	72	91	67	46	41	24	20	25	36	35	30	26	26	21	52
D	19	20	30	31	30	53	84	100	114	110	120	119	76	75	66	61	91	61	98	247	294	251	188	229	107
D	232	177	428	198	194	281	176	224	216	179	270	144	135	86	86	71	35	100	211	218	252	149	84	60	175
14	52	98	112	163	137	121	174	81	126	111	60	51	37	63	78	59	45	57	77	53	82	89	60	89	87
15	78	45	63	103	143	113	156	131	111	129	99	99	72	75	65	29	42	28	55	48	123	111	142	125	91
16	148	105	81	58	52	35	22	60	50	101	60	45	36	47	57	42	49	52	69	107	92	73	93	100	68
17	58	62	64	98	87	61	84	92	148	201	126	160	175	148	96	142	115	78	62	75	95	94	60	60	102
18	35	19	38	58	82	105	61	73	114	84	51	67	47	76	30	30	49	94	106	129	137	246	162	125	84
19	105	70	77	166	163	192	107	96	41	30	24	62	44	24	18	29	27	41	49	41	70	101	122	150	77
20	129	187	158	103	126	209	128	61	43	47	46	46	40	75	66	82	80	61	78	66	53	92	55	83	88
21	77	33	90	60	55	106	80	55	85	62	22	42	25	19	18	20	26	38	53	22	20	35	72	101	51
D	143	144	148	124	79	123	42	61	205	147	78	71	76	34	43	125	276	214	135	225	190	114	88	95	124
23	115	105	149	170	79	58	52	72	67	120	117	182	48	73	56	57	61	30	47	83	147	127	89	139	94
24	126	95	89	73	40	82	60	27	45	48	46	34	33	24	18	23	37	37	35	38	42	54	38	29	49
25	39	48	87	84	144	223	248	357	186	143	123	91	29	20	59	69	106	87	55	32	69	79	53	55	103
26	89	120	73	82	162	89	112	39	40	34	26	27	27	24	42	31	21	60	117	57	96	143	178	188	78
27	148	173	194	116	66	41	28	25	130	110	85	50	64	51	37	62	84	98	54	23	30	35	40	52	75
28	85	78	59	72	72	56	92	88	136	97	81	92	50	35	49	63	58	123	138	141	158	136	134	103	91
D	180	148	112	124	193	156	154	67	132	100	71	85	110	69	43	69	107	108	246	169	130	95	91	63	117
30	60	139	107	78	120	60	29	19	13	19	14	13	16	16	14	11	20	37	101	208	249	244	159	133	78
D	166	206	136	127	161	185	160	256	295	243	286	305	275	281	171	173	278	278	335	292	199	102	111	72	212
Mean	97	97	97	88	94	102	88	88	93	88	80	82	67	59	51	54	66	72	89	96	105	104	90	91	85
5Q Mean	69	83	61	46	30	19	21	31	33	29	41	51	45	39	28	17	20	29	33	42	41	37	39	51	39
5D Mean	148	139	170	120	131	159	123	141	192	155	165	144	134	109	81	99	157	152	205	230	213	142	112	103	147

September 1985

AU Index (Hourly mean values, unit nr)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q	53	40	38	36	42	49	24	23	19	17	20	25	34	40	11	13	56	86	26	33	85	75	26	37	38
Q	20	14	21	23	51	42	35	26	31	43	41	67	49	31	17	25	26	19	22	19	18	21	18	16	29
Q	19	15	17	33	28	29	81	53	32	18	20	12	17	14	11	14	14	23	24	23	28	26	26	25	25
Q	24	18	20	19	32	27	26	18	20	17	35	21	18	15	10	15	16	15	19	26	23	16	13	15	20
Q	16	15	14	21	20	20	19	16	14	17	16	16	25	19	17	15	21	36	44	39	30	27	23	21	22
	17	21	30	61	73	89	45	46	53	95	79	139	122	97	104	148	181	251	215	282	272	145	131	96	116
	72	82	103	74	117	165	137	105	110	80	61	42	47	23	48	28	30	67	84	78	110	91	89	93	81
	130	97	64	51	50	89	71	117	145	179	112	88	91	139	100	122	72	47	42	128	84	94	121	147	99
	113	64	28	51	103	119	83	64	54	69	164	146	172	120	49	88	180	213	210	97	69	95	51	65	103
	48	59	46	34	80	86	159	128	114	170	103	59	34	17	18	34	62	95	137	175	134	129	145	105	90
	82	126	158	98	73	121	127	85	65	136	150	126	65	16	16	15	23	63	113	211	183	117	42	37	94
	42	38	25	21	19	20	31	38	38	50	53	58	47	74	91	56	48	69	59	44	31	41	46	42	45
	29	23	19	24	29	48	55	81	96	94	93	57	78	52	25	18	21	35	41	36	28	29	44	68	47
D	80	40	40	57	64	58	146	252	393	391	248	116	172	332	222	90	42	30	50	69	95	76	64	53	133
	48	52	74	69	74	40	23	30	22	22	20	26	22	27	32	22	22	43	149	201	85	158	101	97	61
D	164	108	96	240	134	90	88	74	76	109	94	132	182	84	46	63	147	86	73	40	48	114	123	144	106
	150	128	119	75	68	56	84	62	54	111	131	126	52	44	29	26	20	17	21	55	54	75	45	31	68
	28	19	19	15	17	38	60	48	59	107	123	78	31	35	24	20	17	23	24	20	23	24	22	31	38
D	33	31	25	30	34	74	80	98	130	145	56	163	135	51	41	157	263	160	105	145	155	80	73	100	98
D	78	121	167	150	155	84	46	128	115	111	141	134	83	49	96	46	47	63	71	110	124	213	124	152	109
D	66	110	105	117	108	131	164	102	111	79	118	174	108	57	75	57	79	126	121	152	133	109	98	78	107
	67	117	94	96	110	114	118	94	73	28	51	60	50	56	53	76	105	65	62	72	59	28	68	80	75
	49	44	31	32	51	62	80	137	149	217	120	66	47	15	12	11	22	17	26	19	25	17	15	16	53
	19	19	22	48	86	63	57	46	65	59	75	68	57	51	28	43	55	143	187	96	125	105	92	97	71
	74	88	75	61	48	66	97	126	82	42	51	60	53	72	73	185	132	69	106	122	88	135	79	55	85
	47	46	46	37	85	67	71	84	129	216	107	65	28	15	8	29	24	19	57	123	104	103	112	80	71
	68	47	37	33	55	85	109	163	121	158	81	103	24	17	10	18	29	32	69	143	112	202	152	108	82
	56	31	36	32	27	29	46	51	35	49	87	72	81	58	59	47	26	19	26	30	33	43	22	43	43
Q	24	20	33	44	36	30	21	25	18	9	16	27	31	21	10	4	10	11	17	24	22	25	25	22	22
	15	15	19	12	19	23	18	33	22	38	23	28	34	18	18	12	15	22	30	43	36	57	50	29	26
Mean	57	54	54	56	62	67	73	78	81	95	82	78	66	55	45	49	60	65	74	88	80	82	68	65	68
50 Mean	20	16	21	28	33	29	36	27	23	20	25	28	28	20	13	14	17	20	25	26	24	23	21	20	23
5D Mean	84	82	86	118	99	87	104	130	165	167	131	143	136	114	96	82	115	93	84	103	111	118	96	105	110

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Date	October																								Mean
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Q	39	32	24	20	32	16	17	27	29	33	45	50	29	51	61	27	23	11	9	12	11	11	13	16	27
	23	26	52	53	47	50	55	106	128	134	47	31	20	14	10	14	30	38	51	43	50	55	34	39	48
	24	22	22	28	31	38	55	118	154	180	281	139	127	131	172	162	48	44	113	60	43	58	46	49	89
	68	67	74	101	111	86	132	159	180	209	299	241	142	84	163	184	168	104	77	58	175	137	173	97	137
D	78	59	66	128	222	277	280	315	133	193	9	203	145	82	50	109	165	204	192	189	151	201	131	135	155
D	141	184	84	121	91	93	246	192	156	163	85	73	108	115	147	96	97	92	93	83	118	157	145	133	125
D	132	98	85	77	119	92	86	81	101	87	114	120	109	115	78	129	187	170	99	88	80	81	84	149	107
	106	111	106	63	58	57	60	75	57	68	39	46	64	64	67	80	98	42	34	62	103	89	48	35	68
	24	19	33	38	32	42	40	53	30	25	23	20	37	37	52	43	20	32	20	27	13	16	15	23	31
	26	43	59	36	35	35	56	77	76	36	23	21	52	45	22	15	13	12	20	25	44	55	51	101	41
	62	57	55	61	78	106	141	177	188	180	156	133	103	54	44	164	195	171	155	172	98	125	103	138	122
	112	101	101	48	28	30	59	28	40	56	58	43	35	52	23	28	62	34	45	46	57	34	43	52	51
D	59	36	92	146	90	59	52	66	125	109	95	82	53	55	74	57	103	99	47	57	87	61	67	45	76
	45	55	63	44	86	83	74	39	35	68	53	63	38	34	28	17	15	20	27	16	25	23	25	26	42
	22	27	20	30	81	172	187	241	164	62	54	36	19	34	19	20	64	34	40	31	19	48	88	93	67
	132	124	88	115	113	87	103	107	91	196	138	108	125	117	58	60	34	34	32	28	34	64	127	89	92
	97	128	73	103	83	70	78	106	83	93	84	86	67	122	42	14	44	127	188	272	108	46	106	94	96
	103	102	91	61	49	95	116	181	168	114	71	164	96	183	78	104	134	86	80	76	154	103	79	80	107
D	94	115	77	74	80	77	89	114	92	74	160	81	75	71	45	66	20	14	21	15	10	13	19	20	63
	17	18	44	68	100	43	59	39	80	85	78	74	40	33	18	16	13	8	12	25	16	11	19	14	39
	12	14	15	45	60	39	29	38	54	64	54	58	75	42	44	92	200	79	68	116	119	69	65	75	64
	86	139	128	79	86	109	116	167	134	73	41	27	32	38	14	12	26	26	84	152	99	98	78	74	80
	65	51	54	44	46	92	84	71	64	103	43	35	58	40	50	53	36	34	37	51	35	85	113	76	59
	83	49	49	42	38	85	87	104	51	51	31	42	32	10	13	13	20	58	71	38	41	30	24	38	46
	43	43	80	64	59	58	55	67	73	91	57	30	31	37	73	23	22	45	90	98	69	42	45	37	55
Q	33	42	30	22	31	33	42	42	26	27	34	29	23	27	11	5	6	7	7	6	8	10	11	13	22
Q	12	16	17	8	9	8	14	16	18	18	18	18	20	11	7	19	13	17	12	16	28	30	70	94	21
Q	61	38	27	17	28	37	52	55	50	29	19	13	9	6	6	5	10	8	9	8	12	12	11	15	22
	25	33	61	93	216	218	159	148	108	174	183	224	188	122	36	27	27	44	24	11	12	14	9	9	90
Q	30	11	8	9	10	6	10	15	7	9	24	15	14	9	21	19	10	10	20	22	27	17	18	14	14
	15	26	43	64	93	58	26	12	15	15	17	54	103	59	54	21	43	108	142	36	24	31	24	37	47
Mean	59	60	58	61	72	76	85	97	87	90	78	76	66	61	50	54	62	58	63	62	60	58	60	61	67
5Q Mean	31	27	21	15	21	21	25	30	25	23	28	25	19	20	21	15	12	10	11	12	17	16	24	30	21
5D Mean	102	95	83	106	114	123	156	167	136	133	74	128	102	110	85	99	137	130	102	98	118	120	101	108	113

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	44	54	39	20	46	53	46	41	58	85	126	193	126	63	175	172	58	34	84	124	50	51	45	29	76
2	30	26	21	29	30	32	68	143	145	155	104	197	86	248	284	222	143	145	80	94	219	153	83	116	119
D 3	127	136	172	134	130	110	55	51	53	92	102	77	91	95	56	43	130	43	37	36	27	32	37	15	78
4	57	58	69	67	49	52	77	43	35	27	40	48	46	73	27	97	66	85	59	63	55	36	32	35	54
5	26	19	15	16	12	17	22	20	58	60	107	88	140	106	55	81	109	149	170	155	130	182	160	88	83
6	81	113	77	114	124	170	112	72	122	117	64	29	78	38	47	45	50	90	39	36	57	83	56	72	79
7	70	74	53	46	78	130	110	45	63	68	50	85	78	31	10	13	9	8	26	17	12	25	35	48	48
8	50	41	27	13	8	6	7	9	22	20	12	11	14	9	17	14	16	16	27	46	101	84	30	33	26
9	23	30	58	50	20	25	18	24	35	44	50	51	93	57	49	141	201	104	139	128	87	89	71	82	69
10	107	87	86	63	70	60	37	52	65	92	79	104	54	62	41	31	37	28	21	19	61	155	133	94	68
11	70	64	74	56	64	45	59	42	50	59	52	37	35	68	41	18	18	36	34	26	24	31	30	29	44
12	24	23	19	31	23	18	24	22	13	8	10	12	10	16	12	20	12	13	24	48	38	79	62	48	25
13	53	45	33	27	33	52	61	71	65	60	76	83	88	194	124	58	49	77	89	83	142	172	86	93	80
14	87	76	68	99	65	76	44	28	23	35	28	74	78	168	81	38	52	72	116	95	67	49	76	111	71
15	86	70	74	117	88	66	53	36	38	59	104	100	107	124	75	48	34	25	28	73	68	103	95	45	72
16	93	112	106	89	72	70	74	49	54	74	68	51	55	46	50	65	16	13	12	7	20	39	45	33	55
17	19	14	11	14	27	60	63	80	89	59	58	106	48	24	43	138	113	224	126	122	56	67	49	43	69
18	68	72	80	61	73	79	156	66	55	60	60	45	31	29	24	93	81	66	159	181	176	121	89	71	83
19	53	96	107	161	93	34	24	26	42	41	52	25	27	50	37	43	34	32	22	36	35	28	31	28	48
20	29	36	45	61	35	41	30	16	15	22	17	8	9	9	11	14	9	8	8	10	19	34	27	24	22
21	19	28	40	28	30	16	17	39	46	66	35	24	16	17	16	16	13	13	22	16	20	28	52	38	27
22	55	75	110	133	110	23	11	22	28	43	67	67	41	28	37	12	12	17	42	38	18	15	16	11	43
23	9	10	18	16	19	44	19	16	11	13	12	12	15	14	27	25	10	12	8	7	7	13	13	20	15
24	16	25	41	26	18	25	29	44	49	43	42	39	41	45	12	9	8	19	11	7	8	15	43	52	28
25	41	25	22	30	31	39	23	32	29	70	70	27	25	26	23	16	12	9	8	6	12	7	12	23	26
26	28	27	19	27	30	86	151	105	83	33	21	32	21	6	9	10	11	25	15	31	56	93	97	68	45
27	43	34	49	94	139	136	127	111	194	248	158	206	101	187	244	288	208	121	56	59	57	51	48	60	126
28	45	47	33	44	43	24	12	19	23	31	27	23	8	8	16	6	15	17	16	13	11	10	15	13	22
D 29	11	12	20	16	13	12	15	21	56	59	75	111	122	51	11	80	181	217	186	149	-88	7	-29	-7	54
D 30	150	175	260	195	159	129	133	128	164	128	89	125	224	73	28	53	32	27	25	53	59	47	12	29	104
Mean	53	56	61	62	57	57	55	49	59	65	61	69	63	65	56	63	57	58	55	59	53	62	51	47	58
5Q Mean	19	24	32	32	25	28	23	27	26	30	23	19	18	20	15	16	10	13	14	17	18	33	39	36	23
5D Mean	74	78	101	80	73	67	66	82	96	98	89	118	122	132	100	91	107	101	83	83	71	82	37	49	87

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	17	37	30	40	50	45	36	30	49	68	84	74	43	67	40	11	22	53	31	78	59	97	114	131	54
2	114	93	137	111	81	103	64	78	69	33	67	23	62	30	32	20	34	30	47	67	39	21	22	35	59
3	33	30	48	36	45	56	57	58	36	47	55	43	49	69	38	37	38	48	25	18	22	16	18	23	39
4	24	43	38	36	36	88	53	36	89	92	68	48	21	37	18	71	138	146	128	55	55	55	72	43	64
5	51	61	68	59	56	50	43	42	49	50	33	57	52	67	59	30	22	15	26	27	19	21	23	12	41
6	22	29	30	29	28	19	25	31	38	27	16	19	26	17	29	37	22	18	6	10	16	16	26	16	23
Q	22	17	18	22	15	17	23	24	57	106	76	51	28	15	20	12	15	25	54	64	42	27	33	26	34
Q	20	21	25	19	17	19	22	28	33	37	49	37	29	26	28	20	19	15	11	22	29	18	18	19	24
Q	9	20	32	62	38	22	25	20	28	24	11	13	12	17	23	19	20	16	17	21	20	10	20	37	23
10	42	79	49	71	70	69	71	52	75	60	69	291	119	190	242	103	87	64	42	40	41	52	57	48	87
11	106	107	161	139	76	64	99	57	49	41	30	26	20	37	23	25	51	32	12	15	13	31	76	134	59
12	63	45	36	23	46	52	60	62	58	49	29	26	24	25	28	18	15	14	16	30	11	75	140	162	46
13	180	202	233	191	128	211	110	133	181	199	197	85	191	204	177	197	99	39	26	28	43	55	31	80	134
14	79	105	119	72	89	68	83	93	123	63	57	19	25	70	35	25	24	72	36	33	61	69	140	100	69
15	90	93	87	80	59	63	86	38	21	18	23	26	17	13	9	15	33	23	23	21	53	62	29	28	42
16	31	22	27	35	29	33	35	46	33	24	24	24	22	17	20	14	14	17	8	20	48	59	98	92	33
17	110	96	79	33	37	44	48	49	31	34	40	41	32	37	15	40	22	13	12	17	16	9	19	26	37
18	28	25	27	21	20	19	44	68	64	95	158	105	154	92	81	54	32	40	18	18	13	12	12	4	50
D	19	20	54	87	125	127	205	303	274	149	78	224	168	55	28	31	140	85	129	132	165	84	96	168	123
20	176	86	139	100	58	57	83	81	81	62	68	117	226	197	133	58	22	17	21	15	12	18	17	20	78
Q	59	47	81	116	71	31	23	37	25	34	23	18	17	17	16	14	12	7	4	2	12	11	20	25	30
22	25	34	45	65	90	72	79	55	40	24	47	42	49	58	35	38	9	29	39	42	26	27	31	21	43
23	24	25	31	30	27	37	85	51	45	46	41	47	48	59	43	63	70	21	32	77	87	204	144	162	63
24	253	200	98	58	50	85	155	242	141	72	60	58	109	104	43	39	48	34	14	25	13	13	10	11	81
25	19	16	19	25	20	21	36	62	64	62	24	31	26	24	19	23	18	24	56	77	31	33	65	61	36
26	96	97	104	108	128	128	42	17	33	52	49	94	85	121	45	42	19	8	10	17	19	15	16	19	57
27	21	23	26	30	34	48	47	45	44	40	51	61	90	59	27	25	20	12	21	110	129	114	121	68	53
D	113	157	119	127	192	146	94	90	147	159	161	78	187	118	105	197	91	75	156	144	116	109	89	41	125
29	35	29	31	64	71	73	38	29	33	18	13	13	8	7	13	10	6	0	7	16	11	17	23	25	25
D	30	30	73	104	268	268	207	160	239	271	126	281	153	71	59	115	236	197	185	118	95	86	127	78	152
D	69	110	91	65	77	101	104	81	90	87	79	95	80	210	88	124	120	75	69	23	20	30	35	59	83
Mean	64	66	71	70	70	70	68	73	76	64	66	65	67	67	53	51	45	40	39	46	42	48	55	57	60
5Q Mean	29	28	43	45	30	25	34	33	37	49	40	33	26	26	26	25	27	16	23	37	38	54	47	53	34
5D Mean	82	112	120	147	158	158	134	169	192	144	159	127	139	129	102	157	129	91	99	84	86	81	68	85	123

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q	-201	-604	-401	-190	-226	-85	-108	-389	-111	-36	-15	-59	-108	-68	-86	-225	-135	-146	-117	-115	-49	-106	-59	-35	-153
2	-75	-32	-26	-21	-32	-41	-29	-24	-22	-28	-35	-34	-21	-13	-14	-13	-25	-38	-95	-87	-69	-53	-46	-23	-37
3	-17	-25	-85	-88	-25	-28	-24	-17	-14	-14	-23	-29	-143	-119	-62	-65	-26	-27	-18	-46	-42	-47	-60	-225	-53
D	-220	-171	-214	-106	-69	-69	-72	-161	-163	-52	-38	-58	-548	-571	-154	-214	-323	-353	-301	-544	-523	-349	-393	-277	-248
5	-125	-74	-170	-375	-361	-365	-230	-98	-127	-155	-232	-105	-101	-344	-229	-133	-168	-90	-128	-109	-206	-298	-157	-332	-196
D	-279	-145	-253	-358	-261	-153	-426	-312	-165	-118	-349	-224	-190	-112	-120	-92	-85	-259	-216	-153	-185	-417	-182	-378	-226
7	-456	-428	-572	-279	-178	-411	-188	-202	-233	-45	-165	-267	-110	-98	-291	-304	-166	-4	-14	-57	-95	-218	-264	-233	-220
8	-42	-63	-26	-94	-189	-245	-342	-77	-50	-43	-231	-221	-163	-93	-288	-180	-34	-359	-560	-260	-209	-270	-378	-149	-190
9	-46	-92	-214	-500	-422	-301	-249	-203	-70	-17	-16	-18	-19	-31	-120	-160	-186	-66	-43	-71	-132	-111	-62	-59	-134
10	-54	-108	-146	-72	-34	-27	-21	-12	-28	-38	-43	-39	-57	-86	-74	-43	-26	-18	-29	-55	-161	-223	-183	-100	-70
11	-97	-62	-152	-194	-126	-51	-116	-87	-220	-141	-57	-97	-66	-64	-110	-117	-21	-19	-21	-63	-44	-152	-190	-202	-103
12	-194	-420	-388	-602	-500	-341	-300	-281	-188	-283	-688	-447	-455	-581	-593	-655	-568	-593	-449	-780	-213	-16	-25	-35	-400
D	-29	-15	-11	-11	-13	-7	-16	-31	-34	-148	-279	-455	-354	-297	-396	-402	-392	-326	-578	-184	-186	-323	-558	-526	-232
13	-379	-205	-303	-361	-586	-474	-417	-514	-306	-210	-324	-276	-136	-89	-75	-42	-107	-160	-86	-42	-38	-48	-48	-31	-219
14	-46	-91	-155	-150	-358	-406	-74	-54	-144	-169	-354	-143	-97	-81	-152	-63	-19	-15	-22	-24	-24	-39	-66	-115	-119
16	-75	-83	-69	-68	-50	-17	-20	-55	-69	-28	-29	-27	-11	-22	-64	-90	-109	-112	-52	-43	-37	-41	-47	-37	-52
17	-90	-135	-77	-141	-368	-130	-43	-38	-20	-39	-486	-572	-479	-261	-549	-482	-180	-70	-81	-118	-103	-35	-86	-105	-195
18	-301	-367	-139	-212	-143	-94	-89	-51	-100	-142	-88	-148	-450	-160	-55	-73	-339	-181	-67	-39	-154	-537	-290	-80	-179
19	-31	-80	-216	-125	-85	-60	-142	-167	-128	-91	-125	-398	-204	-243	-273	-129	-53	-111	-35	-45	-31	-27	-23	-17	-118
20	-21	-44	-54	-267	-172	-182	-106	-22	-34	-23	-101	-180	-107	-98	-152	-356	-413	-161	-20	-11	-27	-26	-36	-109	-109
Q	-53	-118	-198	-192	-114	-136	-214	-159	-177	-237	-113	-62	-48	-23	-20	-34	-20	-19	-17	-20	-15	-22	-55	-30	-87
22	-29	-32	-36	-33	-33	-76	-53	-48	-77	-100	-30	-70	-107	-51	-31	-19	-16	-6	0	-7	-19	-27	-26	-12	-39
23	-55	-12	-14	-23	-219	-256	-153	-193	-168	-62	-90	-159	-90	-137	-91	-158	-128	-150	-152	-141	-91	-76	-91	-237	-123
24	-79	-41	-45	-39	-28	-92	-263	-213	-118	-17	-16	-200	-414	-347	-264	-106	-29	-19	-55	-96	-82	-213	-136	-142	-127
25	-316	-251	-278	-408	-225	-140	-294	-271	-73	-63	-155	-51	-22	-32	-27	-38	-37	-143	-343	-238	-88	-82	-86	-151	-159
26	-140	-32	-37	-36	-123	-469	-131	-47	-21	-99	-295	-155	-79	-80	-70	-85	-207	-66	-66	-41	-28	-272	-568	-427	-165
27	-267	-138	-288	-214	-115	-321	-425	-294	-42	-73	-372	-434	-312	-325	-63	-40	-21	-41	-94	-143	-72	-42	-39	-229	-184
28	-287	-251	-191	-374	-259	-145	-36	-129	-79	-67	-222	-113	-53	-29	-64	-114	-24	-19	-50	-131	-389	-163	-60	-34	-137
Q	-53	-70	-43	-29	-29	-45	-48	-81	-63	-23	-22	-21	-61	-86	-87	-118	-107	-47	-86	-168	-87	-53	-42	-41	-63
30	-38	-32	-32	-101	-369	-442	-131	-16	-17	-24	-32	-226	-231	-392	-459	-66	-6	-23	-18	-20	-29	-32	-25	-49	-117
D	-53	-28	-24	-25	-43	-104	-334	-544	-432	-760	-528	-191	-384	-356	-808	-861	-729	-268	-373	-406	-406	-317	-594	-581	-381
Mean	-133	-137	-156	-183	-185	-184	-164	-154	-112	-107	-179	-176	-181	-170	-188	-176	-151	-126	-134	-136	-131	-159	-152	-159	-156
5Q Mean	-57	-67	-74	-68	-51	-63	-72	-73	-81	-83	-45	-42	-49	-39	-43	-54	-55	-44	-50	-65	-45	-39	-43	-28	-55
5D Mean	-155	-155	-178	-220	-177	-134	-229	-265	-196	-272	-376	-275	-386	-383	-414	-444	-419	-359	-383	-413	-302	-284	-350	-359	-297

AL Index (Hourly mean values, unit nT) August 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	-261	-70	-87	-165	-166	-294	-271	-40	-8	-32	-76	-92	-60	-47	-361	-347	-95	-89	-216	-85	-52	-202	-84	-131	-139
2	-158	-183	-103	-72	-73	-204	-236	-219	-291	-207	-93	-41	-34	-19	-73	-159	-361	-436	-301	-164	-278	-310	-245	-128	-183
3	-232	-106	-25	-36	-95	-18	-11	-21	-39	-114	-82	-9	-13	-22	-28	-42	-78	-74	-201	-102	-94	-81	-119	-42	-70
4	-62	-113	-119	-160	-229	-223	-272	-194	-21	-47	-82	-44	-56	-66	-147	-107	-64	-34	-23	-36	-56	-63	-64	-27	-96
5	-17	-55	-55	-18	-14	-27	-62	-70	-43	-35	-39	-21	-23	-21	-80	-29	-34	-44	-28	-73	-56	-36	-28	-25	-39
Q	-23	-29	-29	-17	-16	-22	-19	-17	-17	-20	-30	-39	-19	-33	-43	-46	-37	-38	-31	-121	-150	-30	-26	-28	-37
Q	-32	-147	-69	-14	-15	-18	-10	-30	-52	-18	-21	-23	-24	-49	-64	-37	-30	-36	-39	-38	-31	-35	-79	-220	-47
Q	-190	-81	-28	-40	-121	-168	-65	-37	-26	-30	-23	-42	-95	-63	-26	-44	-25	-27	-30	-66	-71	-134	-127	-98	-69
Q	-94	-125	-59	-37	-26	-32	-24	-13	-22	-30	-28	-25	-32	-46	-37	-26	-27	-34	-38	-38	-14	-8	-12	-9	-35
Q	-10	-17	-54	-118	-163	-128	-193	-338	-145	-94	-215	-201	-130	-55	-54	-74	-119	-94	-49	-57	-117	-35	-7	-19	-104
Q	-231	-297	-107	-80	-71	-44	-30	-17	-21	-32	-58	-98	-104	-41	-29	-27	-26	-20	-60	-48	-14	-15	-17	-17	-63
D	-14	-23	-31	-45	-35	-82	-164	-118	-50	-41	-139	-169	-103	-69	-89	-242	-161	-57	-67	-179	-298	-391	-198	-499	-136
D	-507	-525	-499	-417	-243	-713	-297	-367	-784	-321	-716	-371	-440	-271	-132	-62	-99	-139	-287	-341	-618	-496	-260	-76	-374
14	-54	-110	-202	-273	-217	-248	-594	-327	-245	-382	-75	-34	-54	-40	-201	-105	-93	-170	-170	-58	-73	-127	-146	-203	-175
15	-134	-163	-125	-231	-399	-416	-277	-257	-265	-160	-265	-155	-134	-422	-272	-56	-37	-33	-61	-41	-67	-194	-279	-267	-196
16	-205	-184	-158	-177	-167	-116	-29	-27	-194	-167	-81	-48	-28	-38	-144	-258	-154	-123	-96	-355	-171	-73	-205	-234	-143
17	-71	-57	-89	-346	-232	-83	-52	-44	-417	-304	-136	-160	-237	-164	-129	-337	-222	-170	-69	-50	-40	-81	-133	-223	-160
18	-29	-26	-31	-42	-147	-124	-25	-25	-36	-162	-45	-66	-36	-97	-62	-62	-95	-211	-195	-83	-51	-384	-355	-184	-107
19	-77	-175	-83	-448	-461	-293	-284	-92	-23	-26	-32	-39	-85	-36	-51	-32	-26	-36	-61	-41	-49	-148	-110	-136	-119
20	-149	-230	-309	-112	-94	-218	-219	-194	-64	-23	-25	-30	-43	-105	-171	-327	-238	-63	-73	-90	-54	-120	-142	-160	-135
21	-134	-29	-129	-71	-39	-217	-123	-12	-60	-192	-32	-28	-19	-28	-44	-40	-56	-125	-93	-25	-23	-37	-73	-277	-79
22	-232	-329	-505	-216	-42	-80	-17	-31	-553	-508	-63	-81	-182	-121	-162	-327	-456	-546	-290	-406	-465	-97	-110	-249	-253
23	-422	-149	-310	-582	-324	-111	-34	-52	-29	-210	-240	-517	-95	-71	-160	-63	-102	-46	-37	-87	-226	-264	-103	-219	-185
24	-370	-178	-113	-111	-51	-80	-206	-48	-47	-32	-49	-49	-54	-98	-45	-34	-26	-32	-85	-67	-37	-63	-82	-31	-83
25	-28	-46	-131	-69	-100	-200	-254	-567	-398	-146	-85	-160	-130	-73	-202	-137	-98	-160	-35	-18	-75	-148	-74	-28	-140
26	-75	-331	-78	-67	-382	-236	-69	-66	-115	-42	-12	-12	-15	-18	-79	-62	-69	-58	-177	-77	-69	-175	-249	-437	-124
27	-369	-243	-194	-101	-39	-31	-22	-23	-107	-265	-375	-102	-35	-45	-49	-102	-240	-328	-74	-30	-33	-32	-28	-37	-121
28	-77	-154	-85	-7	-30	-31	-64	-159	-155	-96	-94	-284	-113	-24	-51	-332	-219	-195	-466	-297	-140	-175	-295	-200	-156
29	-275	-327	-165	-126	-341	-438	-205	-74	-267	-150	-114	-246	-389	-188	-47	-98	-184	-189	-395	-205	-198	-204	-173	-58	-211
30	-59	-265	-258	-133	-340	-192	-209	-14	-14	-20	-13	-20	-22	-27	-29	-30	-30	-30	-33	-117	-237	-334	-245	-110	-114
31	-257	-322	-95	-167	-115	-311	-426	-390	-361	-558	-795	-465	-406	-459	-236	-224	-574	-754	-437	-407	-138	-80	-249	-189	-351
Mean	-156	-164	-139	-145	-154	-174	-147	-125	-157	-144	-133	-118	-103	-92	-106	-124	-131	-141	-138	-126	-132	-144	-136	-147	-136
5Q Mean	-79	-130	-63	-33	-28	-28	-29	-29	-31	-27	-35	-41	-40	-38	-50	-33	-30	-34	-39	-63	-53	-24	-32	-59	-44
5D Mean	-257	-305	-259	-194	-155	-324	-221	-196	-403	-315	-365	-266	-304	-221	-133	-190	-294	-337	-295	-307	-343	-253	-198	-214	-264

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AL Index (Hourly mean values, unit nT)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
Q	1	-19	-11	-29	-114	-32	-23	-17	-20	-23	-26	-29	-31	-37	-97	-42	-36	-66	-263	-92	-41	-101	-284	-66	-17	-63
Q	2	-12	-14	-34	-91	-56	-38	-12	-12	-45	-105	-126	-106	-29	-28	-65	-80	-58	-33	-29	-21	-20	-19	-16	-18	-44
Q	3	-20	-24	-19	-31	-91	-26	-120	-107	-21	-28	-36	-36	-29	-20	-13	-30	-34	-55	-41	-21	-18	-11	-17	-20	-36
Q	4	-20	-32	-34	-27	-38	-22	-19	-17	-22	-28	-26	-25	-15	-10	-7	-11	-39	-36	-17	-12	-15	-15	-18	-18	-22
Q	5	-19	-20	-21	-16	-21	-17	-7	-10	-15	-18	-24	-23	-20	-15	-16	-13	-12	-23	-44	-87	-42	-15	-12	-10	-22
	6	-9	-7	-52	-115	-108	-106	-53	-21	-16	-51	-115	-117	-122	-253	-182	-212	-192	-286	-280	-339	-236	-88	-66	-121	-131
	7	-191	-158	-294	-173	-134	-134	-119	-104	-108	-83	-81	-49	-25	-22	-25	-22	-27	-101	-91	-64	-30	-39	-167	-154	-100
	8	-148	-77	-46	-46	-59	-76	-113	-212	-151	-157	-139	-214	-314	-161	-252	-153	-106	-18	-102	-105	-324	-233	-208	-145	-145
	9	-143	-54	-60	-41	-200	-242	-73	-13	-24	-51	-231	-422	-411	-262	-84	-64	-455	-499	-537	-146	-35	-141	-157	-124	-186
	10	-36	-65	-106	-32	-81	-128	-582	-280	-51	-156	-137	-85	-39	-15	-18	-62	-281	-345	-306	-337	-203	-307	-339	-244	-176
	11	-152	-213	-217	-141	-228	-174	-337	-167	-43	-197	-198	-152	-111	-55	-33	-34	-12	-73	-200	-537	-230	-115	-33	-20	-153
	12	-42	-75	-70	-9	-9	-12	-80	-66	-94	-53	-75	-70	-37	-55	-200	-202	-246	-318	-134	-42	-28	-47	-46	-13	-84
	13	-10	-8	-7	-7	-26	-161	-113	-119	-51	-69	-272	-137	-163	-119	-47	-62	-135	-74	-95	-89	-63	-38	-45	-104	-84
D	14	-283	-65	-43	-103	-206	-95	-374	-484	-476	-313	-153	-72	-220	-518	-325	-116	-34	-49	-32	-59	-82	-132	-119	-64	-184
	15	-35	-32	-83	-146	-37	-23	-14	-11	-15	-16	-20	-24	-30	-30	-45	-97	-37	-77	-360	-593	-178	-196	-206	-213	-105
D	16	-247	-351	-145	-328	-306	-191	-47	-45	-60	-175	-120	-492	-744	-287	-159	-327	-477	-325	-219	-80	-58	-135	-375	-325	-251
	17	-201	-304	-219	-171	-141	-211	-214	-65	-19	-96	-301	-288	-363	-53	-32	-39	-86	-44	-28	-183	-259	-125	-72	-33	-148
	18	-28	-47	-98	-18	-7	-59	-206	-166	-53	-75	-148	-188	-170	-37	-29	-40	-53	-102	-53	-20	-12	-19	-9	-37	-70
D	19	-95	-113	-46	-91	-63	-88	-141	-128	-116	-741	-1046	-603	-233	-125	-53	-332	-927	-129	-71	-205	-497	-129	-98	-125	-258
D	20	-127	-334	-260	-255	-472	-213	-42	-173	-520	-270	-676	-399	-200	-195	-444	-340	-94	-122	-206	-121	-103	-424	-278	-284	-273
D	21	-83	-85	-268	-332	-262	-304	-348	-109	-96	-104	-168	-511	-166	-156	-205	-120	-297	-378	-577	-327	-263	-156	-226	-278	-242
	22	-175	-126	-105	-111	-170	-195	-390	-118	-31	-20	-47	-47	-83	-150	-338	-250	-310	-317	-125	-230	-146	-39	-73	-53	-152
	23	-37	-15	-14	-15	-108	-96	-155	-354	-442	-378	-272	-52	-27	-27	-16	-38	-121	-72	-22	-16	-24	-22	-11	-12	-98
	24	-16	-17	-13	-50	-61	-15	-48	-159	-72	-19	-190	-264	-75	-21	-261	-138	-227	-395	-719	-317	-203	-305	-309	-191	-170
	25	-116	-128	-184	-32	-14	-36	-235	-692	-279	-37	-56	-48	-76	-136	-208	-351	-332	-167	-211	-401	-204	-527	-309	-46	-201
	26	-33	-126	-63	-53	-309	-264	-209	-279	-250	-721	-221	-61	-17	-13	-22	-75	-63	-29	-129	-273	-204	-364	-440	-259	-187
	27	-118	-45	-16	-13	-19	-201	-440	-347	-227	-311	-268	-164	-68	-25	-34	-67	-140	-93	-108	-362	-312	-365	-414	-115	-178
	28	-24	-30	-72	-103	-42	-57	-129	-79	-31	-22	-77	-115	-259	-244	-223	-36	-64	-105	-110	-101	-128	-23	-33	-8	-84
Q	29	-4	-8	-95	-76	-20	-10	-14	-13	-15	-18	-15	-30	-52	-31	-16	-26	-29	-32	-40	-124	-112	-10	-8	-34	-35
	30	-77	-28	-38	-33	-14	-17	-16	-34	-102	-68	-20	-18	-60	-86	-92	-28	-26	-32	-106	-110	-140	-93	-218	-59	-63
Mean		-84	-87	-91	-92	-111	-107	-155	-146	-115	-146	-174	-158	-136	-113	-116	-167	-156	-166	-178	-131	-150	-147	-106	-131	-131
5Q Mean		-15	-19	-40	-48	-45	-22	-34	-31	-23	-39	-45	-44	-29	-20	-23	-32	-34	-35	-34	-53	-41	-14	-14	-20	-31
5D Mean		-167	-189	-152	-221	-261	-178	-190	-187	-253	-320	-432	-415	-312	-256	-237	-247	-365	-200	-221	-158	-200	-195	-219	-215	-241

AL Index (Hourly mean values, unit nT)

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q 1	-9	-5	-9	-8	-12	-12	-15	-17	-27	-40	-55	-72	-50	-58	-145	-98	-45	-104	-97	-7	-4	-7	-8	-18	-38
2	-62	-121	-99	-19	-23	-77	-85	-143	-143	-91	-24	-17	-12	-14	-19	-18	-49	-59	-87	-30	-16	-24	-26	-59	-55
3	-11	-8	-17	-69	-80	-37	-38	-372	-330	-267	-241	-331	-500	-335	-259	-244	-91	-105	-245	-105	-40	-119	-105	-81	-168
4	-238	-245	-174	-189	-170	-115	-296	-286	-251	-252	-278	-272	-202	-178	-281	-233	-180	-109	-105	-41	-133	-111	-136	-116	-191
D 5	-51	-52	-91	-186	-310	-373	-473	-548	-229	-440	-525	-777	-220	-36	-45	-299	-615	-523	-482	-496	-803	-377	-338	-539	-368
D 6	-450	-406	-188	-232	-200	-199	-960	-628	-543	-691	-362	-312	-596	-495	-626	-331	-225	-203	-256	-187	-150	-288	-548	-631	-405
D 7	-356	-332	-196	-178	-491	-291	-214	-341	-139	-104	-212	-463	-339	-359	-400	-417	-601	-507	-325	-164	-217	-310	-317	-523	-325
8	-537	-410	-136	-147	-302	-189	-117	-281	-107	-130	-409	-93	-89	-350	-318	-302	-296	-208	-151	-91	-373	-224	-72	-19	-223
9	-19	-25	-120	-95	-103	-162	-156	-63	-7	-13	-23	-19	-18	-38	-191	-94	-105	-145	-212	-121	-48	-15	-11	-14	-76
10	-26	-98	-170	-193	-92	-30	-49	-291	-137	-37	-22	-25	-80	-207	-49	-34	-33	-19	-11	-41	-134	-275	-182	-181	-101
11	-138	-153	-126	-132	-135	-153	-288	-561	-222	-163	-85	-58	-63	-39	-80	-187	-292	-283	-140	-135	-105	-282	-130	-236	-174
12	-359	-356	-102	-26	-15	-15	-47	-63	-13	-61	-82	-19	-24	-26	-36	-43	-313	-151	-54	-90	-216	-144	-88	-101	-102
13	-151	-35	-54	-432	-257	-66	-20	-58	-164	-221	-73	-14	-17	-120	-404	-371	-241	-413	-157	-75	-98	-195	-114	-80	-160
14	-11	-26	-77	-150	-84	-87	-60	-8	-13	-38	-251	-140	-41	-26	-24	-149	-130	-40	-98	-64	-40	-29	-5	-4	-66
15	-4	-5	-5	-19	-301	-521	-505	-491	-161	-46	-84	-64	-63	-69	-32	-136	-248	-161	-91	-30	-24	-63	-362	-312	-158
16	-170	-167	-158	-337	-293	-187	-130	-499	-404	-294	-238	-134	-55	-79	-123	-216	-161	-106	-70	-94	-50	-54	-240	-151	-184
17	-208	-174	-125	-215	-117	-26	-15	-83	-53	-36	-69	-125	-51	-145	-63	-47	-112	-372	-450	-295	-53	-44	-146	-261	-137
D 18	-218	-396	-157	-10	-46	-95	-148	-246	-53	-27	-58	-332	-509	-176	-179	-253	-422	-267	-212	-132	-281	-128	-174	-221	-197
19	-366	-50	-35	-21	-125	-112	-93	-194	-263	-104	-506	-275	-167	-83	-224	-24	-12	-22	-34	-28	-13	-12	-9	-6	-116
20	-6	-9	-18	-31	-11	-11	-66	-122	-315	-159	-97	-81	-65	-27	-15	-28	-30	-72	-116	-114	-12	-11	-16	-12	-60
21	-7	-5	-7	-8	-4	-2	-2	-24	-22	-25	-46	-42	-39	-68	-150	-288	-350	-242	-151	-114	-213	-60	-22	-62	-81
22	-108	-308	-136	-57	-101	-347	-366	-202	-256	-24	-19	-11	-32	-20	-18	-68	-179	-229	-209	-453	-419	-210	-86	-126	-166
23	-170	-115	-25	-18	-22	-124	-139	-89	-57	-221	-75	-29	-183	-171	-171	-123	-89	-327	-228	-260	-154	-168	-224	-77	-136
24	-40	-27	-32	-33	-17	-168	-192	-92	-18	-21	-22	-26	-23	-12	-14	-26	-86	-262	-361	-90	-61	-39	-22	-12	-71
25	-13	-19	-94	-109	-34	-92	-78	-19	-53	-228	-100	-16	-54	-162	-187	-40	-88	-299	-292	-204	-80	-24	-69	-31	-99
Q 26	-12	-11	-9	-24	-64	-58	-22	-2	-1	-16	-29	-91	-47	-50	-33	-18	-15	-12	-18	-17	-16	-16	-19	-19	-26
Q 27	-10	-4	-5	-4	-5	-8	-9	-17	-16	-19	-10	-12	-16	-14	-15	-23	-45	-49	-14	-17	-28	-53	-96	-172	-27
Q 28	-90	-15	-7	-10	-3	-26	-34	-35	-14	-11	-8	-13	-14	-15	-15	-15	-16	-12	-16	-21	-18	-12	-22	-14	-19
29	-43	-191	-284	-317	-291	-190	-163	-50	-118	-244	-456	-415	-248	-74	-14	-25	-114	-165	-85	-24	-10	-11	-12	-11	-148
Q 30	-11	-11	-10	-10	-7	-8	-6	-7	-6	-11	-27	-8	-11	-10	-13	-24	-26	-30	-42	-159	-80	-21	-8	-3	-23
31	-4	-10	-93	-50	-8	-1	-2	-3	-5	-10	-7	-19	-129	-137	-69	-73	-157	-397	-352	-56	-7	-8	-2	-7	-67
Mean	-125	-122	-89	-107	-120	-122	-154	-188	-133	-130	-144	-138	-127	-115	-135	-137	-173	-190	-166	-121	-125	-107	-116	-132	-134
5Q Mean	-26	-9	-8	-11	-18	-22	-17	-15	-12	-19	-25	-39	-27	-29	-44	-35	-29	-41	-37	-44	-29	-21	-30	-45	-26
5D Mean	-245	-244	-137	-207	-260	-204	-363	-364	-225	-296	-246	-379	-336	-237	-330	-334	-420	-382	-286	-210	-309	-259	-298	-398	-290

AL Index (Hourly mean values, unit nr) November 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	-111	-157	-104	-23	-73	-341	-127	-28	-11	-134	-413	-416	-375	-298	-412	-528	-58	-59	-201	-467	-94	-108	-129	-46	-196
D	-5	-10	-19	-93	-119	-104	-179	-329	-185	-90	-149	-318	-449	-606	-431	-526	-344	-214	-160	-281	-790	-281	-113	-395	-258
D	-512	-482	-582	-401	-205	-211	-65	-217	-170	-244	-659	-363	-356	-151	-373	-325	-491	-192	-28	-22	-103	-91	-207	-305	-282
4	-295	-315	-439	-412	-212	-77	-124	-272	-107	-41	-59	-88	-73	-185	-206	-329	-370	-304	-349	-242	-142	-126	-64	-82	-205
5	-31	-18	-16	-9	-10	-25	-49	-167	-111	-221	-467	-447	-552	-266	-252	-231	-270	-377	-332	-288	-286	-542	-371	-179	-230
6	-145	-243	-276	-256	-462	-292	-116	-80	-106	-90	-68	-47	-158	-241	-313	-193	-200	-381	-159	-116	-89	-84	-94	-205	-183
7	-163	-246	-265	-219	-217	-187	-120	-68	-66	-133	-409	-186	-152	-69	-24	-22	-23	-11	-37	-188	-147	-62	-34	-86	-131
8	-248	-46	-55	-8	-7	-8	-6	-3	-11	-31	-12	-14	-15	-32	-54	-34	-15	-10	-15	-76	-289	-114	-17	-13	-47
9	-3	-11	-57	-19	-5	-6	-6	-8	-8	-10	-36	-124	-150	-85	-256	-487	-548	-233	-234	-447	-70	-27	-43	-54	-122
10	-160	-168	-74	-122	-176	-43	-50	-88	-76	-196	-168	-258	-265	-174	-49	-114	-106	-22	-9	-29	-123	-638	-316	-123	-148
11	-40	-60	-167	-146	-33	-3	-30	-241	-100	-181	-103	-70	-42	-159	-49	-47	-111	-317	-280	-214	-49	-56	-34	-22	-106
12	-36	-22	-12	-12	-16	-46	-30	-22	-11	-8	-34	-31	-18	-52	-13	-14	-11	-11	-89	-53	-54	-39	-70	-42	-31
13	-67	-52	-26	-38	-42	-52	-113	-70	-247	-28	-43	-274	-570	-756	-162	-69	-184	-74	-110	-275	-774	-324	-93	-141	-191
14	-288	-203	-214	-105	-20	-53	-52	-21	-54	-51	-54	-200	-279	-293	-111	-46	-190	-279	-247	-82	-23	-61	-181	-337	-144
15	-345	-125	-84	-110	-121	-13	-7	-6	-26	-59	-236	-214	-284	-355	-109	-125	-109	-93	-137	-355	-174	-228	-126	-81	-146
16	-161	-119	-62	-40	-62	-87	-54	-23	-84	-215	-216	-63	-119	-132	-201	-37	-56	-135	-162	-64	-82	-230	-170	-52	-109
17	-9	-10	-9	-5	-10	-16	-23	-15	-8	-29	-41	-162	-159	-21	-303	-438	-435	-588	-379	-166	-29	-60	-37	-105	-127
18	-102	-83	-85	-225	-90	-49	-129	-12	-6	-77	-82	-30	-27	-57	-139	-437	-236	-106	-278	-367	-152	-207	-211	-89	-137
19	-66	-95	-267	-365	-32	-7	-16	-26	-51	-57	-85	-34	-27	-22	-46	-49	-132	-102	-44	-45	-139	-66	-52	-18	-77
Q 20	-8	-14	-32	-26	-9	-9	0	-4	-7	-15	-14	-17	-12	-12	-15	-13	-15	-13	-22	-48	-47	-37	-50	-58	-21
Q 21	-17	-118	-64	-40	-10	-1	-2	-16	-107	-44	-8	-9	-27	-87	-13	-16	-11	-10	-72	-19	-24	-20	-28	-24	-33
22	-39	-71	-196	-97	-53	-11	-12	-8	-8	-33	-76	-119	-11	-28	-34	-21	-36	-86	-205	-198	-135	-18	-9	-12	-63
Q 23	-11	-10	-10	-24	-92	-23	-13	-12	-12	-15	-32	-21	-24	-13	-55	-46	-11	-13	-45	-11	-9	-35	-46	-8	-25
Q 24	-8	-13	-24	-26	-7	-16	-18	-64	-68	-92	-92	-60	-96	-179	-21	-9	-20	-23	-28	-19	-24	-15	-40	-85	-44
Q 25	-40	-9	-12	-10	-18	0	-2	-11	-10	-126	-163	-46	-6	-5	-10	-7	-6	-7	-10	-17	-55	-34	-33	-31	-28
26	-30	-8	-5	-9	-49	-196	-114	-132	-130	-18	-8	-22	-27	-46	-19	-19	-47	-48	-59	-48	-54	-74	-35	-8	-50
27	-15	-10	-5	-65	-199	-28	-60	-166	-502	-295	-281	-388	-418	-451	-690	-660	-307	-200	-73	-116	-168	-80	-77	-133	-225
28	-124	-135	-93	-192	-137	-11	-9	-17	-16	-70	-115	-73	-34	-21	-42	-18	-56	-106	-137	-74	-55	-30	-52	-34	-69
D 29	-9	-28	-59	-22	-9	-7	-42	-96	-13	-19	-16	-54	-34	-42	-158	-547	-448	-378	-817	-1082	-1142	-1005	-811	-803	-318
D 30	-590	-1138	-482	-252	-249	-558	-529	-593	-593	-853	-354	-588	-1099	-534	-246	-266	-448	-385	-92	-263	-330	-111	-133	-141	-451
Mean	-122	-133	-126	-112	-91	-82	-69	-93	-96	-115	-149	-157	-195	-179	-160	-188	-176	-159	-160	-189	-188	-160	-122	-123	-139
5Q Mean	-16	-35	-28	-25	-26	-19	-12	-23	-41	-34	-36	-27	-35	-68	-23	-19	-13	-14	-51	-30	-31	-29	-46	-43	-30
5D Mean	-236	-342	-233	-161	-124	-186	-185	-261	-241	-246	-244	-319	-501	-417	-274	-346	-383	-248	-241	-384	-627	-362	-271	-357	-239

AL Index (Hourly mean values, unit nT) December 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	-57	-32	-53	-173	-324	-190	-59	-46	-112	-278	-180	-169	-94	-123	-100	-46	-134	-268	-143	-188	-599	-413	-340	-359	-187
2	-279	-384	-317	-183	-260	-217	-237	-234	-59	-92	-27	-54	-137	-208	-72	-47	-234	-186	-190	-313	-331	-80	-77	-142	-182
3	-62	-35	-48	-112	-187	-110	-79	-108	-60	-105	-105	-204	-220	-151	-74	-200	-341	-86	-76	-33	-23	-25	-79	-54	-107
4	-17	-23	-29	-51	-112	-78	-25	-30	-75	-173	-226	-100	-45	-30	-132	-317	-452	-464	-364	-215	-115	-172	-269	-161	-153
5	-84	-158	-205	-100	-98	-74	-53	-71	-92	-85	-66	-179	-119	-221	-271	-272	-147	-66	-256	-38	-56	-54	-59	-31	-119
6	-33	-85	-101	-34	-13	-16	-17	-46	-79	-93	-86	-70	-71	-97	-187	-71	-38	-24	-51	-50	-29	-28	-27	-5	-56
7	-6	-11	-7	-8	-13	-8	-11	-41	-70	-183	-108	-52	-16	-17	-13	-17	-23	-107	-174	-103	-160	-21	-11	-15	-50
8	-18	-14	-15	-11	-12	-13	-12	-10	-12	-15	-89	-84	-58	-44	-24	-22	-57	-67	-128	-27	-6	-6	-8	-12	-32
9	-11	-11	-58	-49	-4	-9	-12	-28	-9	-8	-11	-13	-14	-57	-41	-9	-21	-16	-64	-125	-55	-14	-36	-33	-29
10	-49	-69	-28	-39	-19	-15	-6	-4	-48	-52	-159	-517	-471	-687	-473	-67	-76	-58	-74	-114	-38	-47	-157	-116	-141
11	-217	-420	-328	-62	-87	-103	-54	-29	-7	-28	-16	-22	-39	-36	-134	-286	-354	-155	-47	-80	-68	-83	-172	-96	-122
12	-7	-16	-29	-33	-28	-26	-35	-15	-10	-11	-15	-11	-16	-25	-23	-20	-15	-126	-116	-206	-89	-85	-69	-130	-48
13	-210	-229	-120	-81	-99	-64	-31	-215	-283	-285	-400	-839	-324	-685	-800	-275	-41	-55	-66	-66	-83	-64	-141	-290	-239
14	-202	-198	-54	-35	-56	-22	-53	-61	-119	-31	-24	-23	-45	-178	-32	-69	-135	-273	-96	-24	-49	-58	-135	-168	-89
15	-92	-115	-307	-197	-144	-122	-160	-9	-11	-20	-20	-65	-35	-26	-14	-75	-135	-34	-15	-21	-137	-316	-139	-42	-94
16	-144	-29	-24	-13	-28	-56	-69	-105	-8	-7	-11	-42	-108	-77	-15	-10	-15	-12	-27	-119	-155	-124	-54	-143	-58
17	-191	-291	-65	-3	-9	-15	-27	-128	-60	-24	-63	-31	-76	-41	-107	-94	-152	-225	-74	-31	-26	-56	-70	-25	-78
18	-16	-16	-23	-14	-33	-30	-24	-71	-139	-192	-291	-191	-611	-346	-32	-20	-36	-37	-22	-14	-25	-21	-15	-80	-96
19	-38	-206	-177	-287	-504	-621	-554	-663	-829	-940	-805	-823	-328	-78	-121	-125	-359	-467	-612	-454	-268	-78	-93	-242	-403
20	-164	-172	-268	-55	-40	-62	-86	-152	-228	-120	-116	-446	-253	-84	-58	-32	-45	-72	-33	-14	-12	-20	-24	-32	-108
21	-49	-65	-45	-33	-47	-14	-5	-14	-67	-40	-147	-63	-49	-51	-16	-13	-12	-10	-13	-38	-69	-39	-20	-11	-39
22	-13	-15	-14	-99	-56	-33	-24	-56	-74	-12	-49	-102	-129	-111	-27	-52	-89	-93	-116	-53	-27	-11	-13	-10	-53
23	-9	-8	-11	-7	-9	-16	-47	-38	-5	-6	-11	-69	-95	-19	-12	-47	-72	-26	-58	-151	-52	-99	-134	-140	-48
24	-102	-99	-62	-44	-41	-136	-211	-123	-49	-30	-63	-44	-77	-77	-129	-177	-79	-45	-42	-22	-21	-16	-15	-19	-72
25	-20	-16	-22	-20	-14	-12	-22	-23	-50	-33	-16	-53	-116	-49	-20	-9	-42	-156	-103	-94	-18	-34	-220	-179	-56
26	-178	-159	-121	-83	-165	-123	-4	-10	-33	-76	-125	-116	-126	-99	-55	-56	-14	-25	-132	-30	-10	-10	-11	-18	-74
27	-15	-22	-14	-67	-106	-67	-65	-72	-61	-183	-81	-98	-244	-97	-16	-17	-17	-37	-60	-340	-434	-155	-122	-126	-105
28	-233	-365	-166	-203	-635	-146	-50	-128	-671	-895	-410	-392	-458	-453	-316	-697	-180	-219	-300	-562	-146	-213	-91	-83	-334
29	-69	-59	-51	-127	-165	-12	-11	-16	-69	-119	-44	-21	-23	-42	-91	-76	-76	-53	-37	-40	-28	-16	-30	-66	-56
30	-123	-306	-831	-732	-747	-373	-143	-437	-762	-282	-384	-175	-53	-111	-490	-945	-596	-445	-390	-99	-212	-420	-237	-168	-394
31	-147	-258	-269	-124	-144	-235	-212	-237	-309	-118	-86	-281	-477	-469	-428	-299	-433	-370	-398	-84	-38	-92	-153	-117	-241
Mean	-92	-125	-124	-99	-135	-97	-77	-103	-143	-146	-136	-172	-158	-154	-139	-143	-142	-137	-137	-120	-109	-92	-97	-100	-124
5Q Mean	-18	-21	-27	-21	-17	-12	-17	-26	-32	-50	-73	-56	-46	-37	-21	-21	-37	-45	-87	-88	-68	-35	-41	-42	-39
5D Mean	-150	-272	-312	-285	-425	-287	-198	-336	-570	-504	-417	-502	-328	-359	-431	-468	-321	-311	-353	-253	-149	-173	-143	-180	-322

AE Index (Hourly mean values, unit nT) July 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q	393	803	585	351	343	127	243	504	176	78	56	148	209	163	193	310	208	227	189	217	129	211	128	74	253
	140	70	62	59	83	79	45	38	35	46	62	59	53	49	41	38	48	79	144	137	128	136	114	66	76
D	53	67	158	149	62	56	37	34	39	55	99	229	176	176	101	95	65	54	56	91	84	128	137	444	105
	451	337	393	220	178	145	160	279	296	160	94	196	767	843	282	405	590	602	527	846	807	570	627	420	425
	238	205	316	553	531	546	359	242	268	278	379	200	219	495	333	215	246	152	213	221	389	490	284	532	329
D	444	279	433	556	396	277	564	401	257	235	557	318	318	209	181	150	170	398	323	294	366	662	318	682	366
	744	628	853	433	353	600	295	404	349	100	323	403	218	163	412	429	223	55	70	141	225	364	447	361	358
	86	140	68	172	304	418	448	150	105	126	319	317	260	162	375	255	99	538	837	479	425	475	640	227	309
	105	145	345	706	664	494	375	321	107	34	39	34	46	60	173	209	224	104	83	130	241	184	98	97	209
	99	194	260	164	71	65	55	67	104	76	81	77	106	119	97	67	62	61	78	130	319	329	282	226	133
	232	184	306	323	226	109	240	203	302	243	185	192	162	150	223	199	78	69	96	190	225	356	372	388	219
D	400	604	588	1027	776	675	540	582	498	595	1058	937	901	991	1029	1081	1066	1010	779	1144	342	88	68	67	702
D	63	43	36	32	34	46	73	72	103	274	511	799	578	443	600	609	762	650	991	392	405	542	781	811	402
	571	363	429	574	833	740	656	831	512	372	611	450	196	173	136	87	202	267	144	72	80	119	107	65	358
	81	152	224	260	570	602	130	128	260	307	510	202	176	150	195	102	43	37	48	59	61	78	116	187	195
Q	137	137	123	124	82	47	103	115	104	76	68	53	43	63	114	154	149	150	102	102	78	114	93	90	101
	191	242	191	266	601	252	134	123	63	200	780	854	768	419	877	719	309	162	160	220	175	88	182	228	342
	515	566	238	324	214	202	215	101	179	265	166	306	594	264	105	119	431	323	147	92	284	717	451	139	290
	77	178	327	197	151	89	233	235	230	242	260	508	316	377	406	222	108	173	93	86	75	70	63	47	198
	48	90	113	364	268	312	230	60	59	66	189	248	180	191	237	517	584	241	65	69	50	62	63	94	183
Q	137	199	332	314	234	260	328	257	340	411	238	178	92	44	41	48	41	36	43	50	47	55	109	82	163
Q	68	62	67	70	89	128	120	132	158	169	104	167	178	105	71	46	49	39	35	50	78	99	112	68	94
	122	55	50	136	428	423	288	350	289	155	145	239	158	188	114	194	166	240	260	251	183	162	202	376	216
	161	106	133	123	88	219	459	339	211	64	93	349	581	488	346	142	60	45	103	163	234	325	289	327	227
	495	401	436	573	322	250	444	389	141	156	238	110	65	73	46	65	94	226	468	370	207	176	181	250	257
	205	79	67	76	276	659	220	83	70	233	391	226	170	138	124	149	244	110	108	108	451	771	629	658	260
	433	249	414	398	241	526	588	500	113	205	562	576	490	499	129	85	69	81	147	216	144	103	107	339	300
	28	415	389	313	533	379	226	86	199	137	169	327	198	127	74	102	169	57	110	277	590	248	125	71	224
Q	107	145	93	67	53	76	97	126	78	40	40	47	118	144	159	166	154	87	136	232	166	127	93	79	110
	71	54	80	181	549	662	256	50	57	87	142	344	374	594	690	137	69	50	49	50	65	63	69	114	202
D	124	71	55	80	82	207	487	662	667	1073	864	428	564	623	1312	1288	975	441	621	616	641	697	931	868	599
Mean	238	233	260	303	305	307	275	257	203	212	304	298	298	278	298	273	246	218	233	241	248	277	265	273	264
5Q Mean	117	122	135	126	108	118	138	133	143	148	102	100	96	81	85	90	88	78	92	114	99	106	104	77	108
5D Mean	296	266	301	383	293	270	364	399	364	467	616	535	625	621	680	706	712	620	648	658	512	511	545	569	498

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	459	214	235	247	270	430	343	84	29	84	149	202	180	124	514	457	173	157	337	171	136	313	184	230	239
2	242	301	194	133	214	390	377	367	432	284	174	125	77	51	121	247	473	605	485	328	437	536	404	232	301
3	312	163	50	96	147	39	32	36	70	163	125	38	43	62	61	70	118	141	280	192	187	193	225	129	124
4	130	190	191	277	359	360	399	289	51	141	137	107	123	129	203	143	112	67	58	92	97	125	127	80	166
5	61	91	86	37	55	59	95	108	75	79	89	60	54	55	117	45	59	81	57	111	84	67	52	51	72
Q	48	69	60	32	31	36	38	35	53	42	68	94	55	64	64	60	56	76	75	186	214	64	54	68	68
Q	81	246	127	33	31	38	47	94	104	47	38	56	67	88	82	48	51	59	58	66	74	89	162	359	89
Q	328	186	77	96	191	255	118	115	75	72	76	119	180	131	56	71	45	57	65	128	156	253	239	239	139
Q	195	211	142	106	68	47	33	33	43	58	60	66	82	96	67	48	45	57	80	90	62	54	53	47	77
Q	41	55	100	168	262	310	363	549	322	262	383	346	225	120	92	132	184	140	91	123	201	86	50	78	195
Q	368	460	216	196	116	64	46	40	50	63	131	190	172	87	71	52	46	46	97	84	45	42	45	39	115
D	34	43	62	77	66	135	249	218	165	151	259	289	180	145	156	303	253	119	166	426	593	643	386	729	244
D	740	704	927	615	438	994	473	592	1000	501	988	515	577	358	218	134	135	239	499	560	872	647	345	137	550
14	107	210	315	436	355	370	769	409	371	494	136	85	92	104	281	165	140	228	249	112	156	217	207	293	262
15	213	209	190	334	542	530	433	389	376	289	364	255	208	498	338	85	81	62	116	90	191	306	422	393	288
16	354	290	241	237	220	152	51	88	245	268	142	93	65	86	202	300	204	177	166	462	263	147	299	336	212
17	130	121	154	444	321	145	137	137	566	505	263	321	413	313	226	480	338	249	131	125	136	177	194	284	263
18	64	46	69	101	230	231	87	100	151	246	97	133	83	174	92	92	145	305	302	213	189	631	518	310	192
19	183	246	161	614	625	486	392	189	64	57	56	102	129	61	69	62	54	78	111	82	120	249	233	288	196
20	279	419	469	216	221	427	348	256	107	71	72	77	83	180	237	410	320	125	152	157	108	213	199	244	225
21	212	63	220	132	95	323	204	68	146	255	55	71	44	48	63	62	83	163	147	47	44	73	147	380	131
22	377	474	654	341	122	204	60	92	759	656	142	153	259	157	206	453	733	761	425	631	657	212	199	345	378
23	539	255	460	753	405	170	86	124	96	331	358	700	144	145	217	121	164	76	84	170	374	393	194	359	280
24	497	275	203	185	92	164	266	76	93	81	96	84	88	123	65	59	64	70	121	107	80	118	121	61	133
25	68	96	219	155	245	423	502	926	585	290	210	252	160	93	262	206	206	247	91	51	145	228	128	84	245
26	165	453	152	150	544	326	182	105	155	76	39	40	42	42	122	94	91	119	295	135	166	319	429	627	203
27	518	417	389	218	106	74	51	50	238	376	461	152	100	96	87	164	325	427	128	53	65	68	69	90	197
28	163	234	146	79	104	88	157	247	292	193	175	376	163	59	101	395	278	319	605	438	299	313	430	304	248
29	456	476	279	251	535	595	360	142	400	250	186	333	499	257	91	168	292	297	641	374	329	300	266	122	329
30	120	406	366	212	461	253	60	34	28	39	28	34	39	44	44	41	51	71	219	446	584	490	315	245	193
31	425	529	232	295	277	497	587	647	658	802	1083	771	682	741	408	398	852	1033	772	700	337	183	361	263	564
Mean	255	262	238	234	249	277	236	214	251	233	214	201	171	152	159	179	199	214	229	224	238	249	227	240	233
5Q Mean	150	215	126	80	60	48	51	62	65	57	77	93	86	78	80	50	51	63	73	107	95	63	73	112	84
5D Mean	406	445	430	315	287	485	345	338	596	472	531	412	439	331	215	291	453	489	500	538	557	397	311	319	412

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q	73	53	68	151	75	73	42	43	44	45	51	57	72	138	55	50	122	349	119	75	187	360	93	55	102
Q	33	29	55	115	108	80	47	39	78	149	169	174	80	60	84	107	85	53	52	41	39	40	35	35	75
Q	41	41	37	65	120	56	202	161	55	47	58	49	48	36	25	45	49	79	67	45	47	39	44	46	63
Q	45	51	56	47	71	49	46	36	44	46	62	48	34	25	18	26	56	53	37	40	39	32	32	35	43
Q	37	36	37	38	42	37	27	28	30	36	41	40	46	35	34	30	35	59	88	127	73	42	36	33	44
6	27	29	83	177	182	195	99	68	70	148	195	257	246	350	286	361	373	537	496	623	509	233	198	218	248
7	264	242	398	248	251	300	258	210	220	165	143	92	74	46	75	52	58	169	176	143	141	132	258	248	182
8	279	175	110	97	109	166	185	330	297	338	188	228	306	454	262	375	226	154	60	231	189	419	356	357	245
9	258	119	89	93	303	362	158	77	80	121	396	570	584	383	134	153	635	713	748	245	106	238	209	190	290
10	85	126	153	66	161	216	742	410	167	327	241	146	75	33	38	96	343	440	444	513	338	437	486	351	268
11	235	340	376	241	302	296	466	253	109	334	349	279	178	72	50	50	37	137	313	748	413	233	77	58	248
12	86	115	96	32	29	33	113	106	134	105	130	129	86	131	293	258	294	388	193	88	60	89	93	57	131
13	41	32	28	31	55	210	169	201	148	165	366	196	243	172	73	81	156	110	137	126	92	68	91	173	132
D	365	105	83	160	271	154	521	737	869	706	403	189	393	851	547	207	78	81	83	129	179	210	184	118	318
15	84	85	158	217	111	63	38	42	37	40	42	51	54	59	78	120	60	121	510	795	264	354	308	312	167
D	412	461	242	569	442	282	135	121	137	285	215	624	927	372	206	390	624	413	293	121	107	250	499	470	358
17	353	433	339	247	210	267	300	128	74	208	433	415	417	99	62	66	107	62	50	239	314	201	117	64	217
18	58	67	118	35	25	98	267	215	114	183	273	267	202	73	54	61	70	126	78	41	36	44	33	70	109
D	129	145	71	121	98	163	223	227	247	887	1102	767	369	177	95	489	1191	290	177	351	652	209	173	226	357
D	206	457	428	407	628	297	88	302	636	382	817	534	284	245	540	386	142	185	278	233	228	638	402	437	383
D	149	196	375	450	371	436	514	212	209	185	287	686	275	214	281	178	376	504	699	481	396	266	325	358	351
22	244	245	200	209	281	310	510	214	105	50	100	109	134	206	392	326	416	384	188	303	205	67	142	133	228
23	87	60	46	48	160	159	236	492	593	596	393	119	76	42	29	49	144	91	49	36	50	39	27	28	152
24	36	37	36	99	148	79	106	206	139	79	267	334	132	73	290	182	283	538	907	415	330	410	401	290	242
25	192	217	260	95	63	104	334	819	363	80	108	109	130	209	281	536	464	237	319	524	292	664	389	103	287
26	81	174	110	92	395	332	282	365	380	939	329	126	45	28	31	104	88	49	187	397	379	469	552	341	259
27	187	94	54	47	75	287	550	512	349	471	351	268	93	43	46	86	170	126	177	505	425	459	568	567	224
28	82	62	109	136	70	88	177	132	68	72	165	187	342	303	282	85	92	125	136	132	62	67	68	31	128
Q	30	29	128	120	56	40	36	38	34	28	33	58	84	53	28	31	41	43	58	148	135	86	34	60	58
30	93	44	57	45	34	41	34	68	125	107	45	47	95	105	111	41	42	55	137	153	176	150	269	89	90
Mean	143	143	146	149	174	175	230	226	198	244	258	238	204	169	159	167	228	222	241	268	213	233	216	173	201
5Q Mean	37	37	62	77	79	52	71	60	48	61	72	73	58	41	37	47	53	57	60	80	66	37	36	41	56
5D Mean	252	272	239	341	362	266	296	319	419	489	564	560	449	371	333	330	482	294	306	263	312	314	316	321	353

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
Q	1	50	38	34	29	45	29	33	46	57	73	100	122	80	110	208	126	68	115	106	20	17	18	21	36	66
	2	87	148	152	73	72	141	249	272	226	72	48	32	29	30	32	80	97	139	73	66	80	61	100	104	
	3	37	31	40	98	112	76	95	491	484	523	471	629	467	431	406	139	150	359	166	83	178	152	131	258	
	4	307	314	249	291	282	201	430	445	432	462	515	346	263	445	418	349	214	183	100	309	250	310	214	329	
D	5	130	113	158	316	533	651	754	864	362	634	535	981	366	120	96	409	780	728	675	955	579	470	675	524	
D	6	592	591	273	354	291	293	1208	822	701	855	448	386	706	610	773	428	322	296	350	271	269	446	694	766	
D	7	489	431	281	256	611	384	301	423	241	192	327	585	450	476	479	542	788	678	425	253	298	392	401	674	
	8	645	523	243	210	361	248	178	358	165	198	448	140	155	415	386	382	395	250	186	154	477	314	121	56	
	9	44	46	153	134	135	205	197	117	39	47	40	56	77	244	139	127	178	274	150	62	32	28	38	108	
	10	53	142	229	229	128	66	107	369	214	75	46	47	133	253	73	51	47	32	67	178	331	234	283	142	
	11	201	211	182	194	214	259	430	739	410	343	242	192	168	94	124	351	488	455	296	309	205	408	234	375	
	12	472	458	204	75	44	46	108	92	54	118	141	63	60	79	60	72	375	186	100	137	274	179	132	155	
D	13	211	72	147	579	348	125	73	124	290	331	169	97	71	176	478	428	345	513	205	133	185	257	182	126	
	14	57	82	141	195	170	171	135	48	48	107	304	204	79	62	53	167	146	61	126	81	66	54	31	30	
	15	26	33	26	49	383	694	693	734	327	108	138	100	82	105	53	156	312	196	132	62	44	112	451	406	
	16	303	292	247	453	406	275	234	607	496	491	377	243	182	197	181	276	195	142	103	123	85	119	369	241	
	17	306	304	200	319	201	97	94	190	138	130	154	212	119	268	107	62	157	500	639	567	162	91	252	356	
	18	323	499	250	73	96	191	265	428	223	142	130	498	606	360	259	358	557	353	293	209	436	233	254	302	
D	19	462	166	113	96	206	189	184	309	355	180	668	357	242	155	270	91	33	37	56	44	24	25	28	180	
	20	23	28	63	99	112	54	126	162	396	245	177	157	106	60	33	44	44	81	130	140	29	24	36	27	
	21	20	19	23	54	65	42	31	63	77	90	100	102	116	111	195	380	550	322	219	231	334	130	88	138	
	22	195	449	265	137	188	456	483	370	391	98	61	39	65	59	33	80	205	256	294	606	518	309	165	201	
	23	236	167	80	63	68	216	225	160	121	325	120	65	242	212	222	178	126	362	265	311	189	254	337	154	
	24	125	77	82	76	56	253	280	197	70	73	54	69	55	23	27	39	107	321	433	128	102	70	47	51	
	25	57	63	175	173	93	152	134	87	127	319	159	47	86	200	261	64	111	346	383	303	150	67	115	70	
Q	26	46	54	40	47	95	93	65	44	27	43	64	121	71	78	45	25	22	19	26	24	24	27	32	33	
Q	27	23	21	24	13	15	17	18	31	34	38	30	31	37	25	23	43	59	67	26	34	57	84	167	267	
Q	28	153	54	35	27	31	64	88	92	65	41	28	27	24	22	22	21	27	20	26	30	30	24	31	42	
	29	69	225	345	410	508	409	323	199	227	419	641	641	438	197	50	53	142	210	110	36	23	26	22	21	
Q	30	23	21	20	21	15	18	18	23	13	21	52	24	26	20	35	44	37	41	62	183	108	40	27	19	
	31	21	37	137	114	101	59	28	16	20	27	24	75	233	197	125	95	201	506	494	93	32	40	27	46	
Mean	186	184	148	169	193	198	241	287	221	222	224	216	195	178	187	192	236	249	230	184	186	167	178	195	203	
5Q Mean	59	37	30	27	40	44	44	47	39	43	54	65	47	51	66	51	42	52	49	58	47	38	56	77	48	
5D Mean	349	341	221	315	375	328	520	532	363	430	321	509	439	348	417	433	558	513	389	310	428	381	400	508	405	

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
1	156	212	143	44	120	394	173	69	70	220	539	610	501	362	587	700	116	94	286	592	145	161	176	76	273	
D	36	37	41	122	149	136	248	472	331	246	254	515	536	854	715	749	488	360	242	376	1010	436	198	512	378	
D	639	618	755	535	336	322	121	269	225	337	762	440	447	247	431	368	622	237	65	59	132	124	245	322	361	
4	353	373	508	479	262	130	202	316	142	68	100	137	120	258	234	426	437	390	390	306	198	164	96	118	259	
5	58	38	32	25	22	42	72	188	169	281	575	535	693	373	308	313	379	527	503	445	417	725	533	268	313	
6	227	356	354	371	587	462	228	153	229	208	133	76	237	280	361	230	251	473	199	153	148	168	151	277	263	
7	234	325	319	265	295	317	230	114	129	202	459	272	230	101	35	36	33	20	47	214	165	75	61	122	179	
8	298	87	83	21	16	16	14	18	34	52	25	26	30	42	72	49	32	28	43	123	391	200	48	47	75	
9	26	42	115	70	26	32	24	27	44	54	86	176	244	142	305	629	751	338	374	576	158	117	116	137	192	
10	269	256	161	185	246	103	87	142	141	289	247	363	320	237	91	146	144	51	31	49	185	794	451	219	217	
11	111	125	242	203	98	50	89	283	152	240	156	108	78	228	91	66	130	353	314	241	75	88	66	51	151	
12	60	45	31	44	40	65	55	45	24	17	45	44	29	69	26	34	24	24	115	101	93	120	133	91	57	
13	121	98	60	65	75	104	174	141	312	88	120	358	660	950	286	128	234	151	200	359	917	497	181	235	271	
14	376	280	283	205	85	129	96	50	79	87	83	274	358	462	193	85	244	353	364	177	92	111	258	449	216	
15	432	196	159	227	209	79	61	43	64	120	332	315	392	480	185	174	144	120	166	430	243	333	222	127	219	
16	255	232	169	130	134	158	129	72	139	289	285	115	174	179	252	103	74	148	175	73	104	271	217	86	165	
17	28	24	21	20	37	76	86	96	98	88	99	268	208	46	346	577	549	813	506	290	85	129	87	149	197	
18	172	156	166	287	164	129	286	78	61	138	142	75	58	86	163	531	318	172	439	550	329	302	162	221	221	
19	121	192	374	527	126	42	41	52	93	99	138	60	56	73	84	93	167	135	67	82	176	95	84	48	126	
20	38	51	78	87	44	51	31	20	22	37	32	26	22	21	27	28	25	22	31	59	67	72	79	83	44	
21	37	146	105	69	41	18	21	55	154	110	43	33	45	104	30	32	25	24	95	36	46	49	82	63	61	
22	95	147	307	230	164	35	24	30	36	76	143	187	53	57	72	34	49	104	248	237	154	34	25	24	107	
23	21	20	29	41	111	67	33	29	24	29	45	34	39	27	82	71	22	26	54	19	17	50	61	29	41	
24	25	39	65	53	25	41	47	108	118	135	134	100	138	225	34	19	29	43	39	27	33	31	85	138	72	
25	82	35	34	41	50	39	26	43	40	196	234	74	32	32	34	24	18	17	19	24	69	42	46	55	54	
26	60	36	25	36	80	283	266	238	213	52	29	55	49	53	29	30	59	74	76	79	111	169	134	77	96	
27	59	45	55	160	339	163	187	278	697	544	440	595	519	639	935	949	516	322	130	177	226	133	127	194	351	
28	171	183	126	236	181	35	23	36	40	101	143	98	42	30	58	24	72	124	155	88	68	41	69	48	91	
29	22	40	79	38	22	20	58	118	69	79	92	166	156	95	170	627	630	597	1004	1232	1054	1012	782	796	373	
D	30	740	1314	744	447	408	688	663	722	758	981	444	714	1324	609	275	320	482	413	119	318	390	160	146	171	556
Mean	177	191	188	175	149	140	126	143	156	182	211	228	259	245	217	253	235	218	217	249	243	224	175	172	199	
5Q Mean	36	60	61	58	52	48	37	51	68	65	59	47	54	89	39	36	25	27	66	48	51	64	88	80	55	
5D Mean	311	421	335	241	198	254	252	344	339	346	334	438	624	551	375	438	491	351	326	468	700	445	310	407	387	

AE Index (Hourly mean values, unit nT) December 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	76	70	84	214	376	237	96	77	161	346	265	244	138	190	140	58	158	322	174	266	660	510	455	491	242
2	394	479	456	296	342	321	303	312	129	125	96	77	199	239	105	68	270	218	239	381	372	103	101	178	242
3	96	66	98	150	233	166	138	166	96	153	161	247	269	221	113	238	380	135	102	53	46	42	98	79	148
4	42	68	69	89	205	167	79	68	165	265	294	149	84	51	169	335	523	602	510	344	172	228	342	206	218
5	137	220	273	160	156	125	97	115	142	135	99	236	171	289	331	304	169	82	284	66	76	77	83	44	161
6	56	116	133	64	43	36	44	79	118	121	103	89	98	115	217	109	60	43	59	61	46	45	54	21	80
7	29	29	26	31	28	35	35	66	128	289	185	103	45	33	33	29	38	133	230	168	204	49	46	42	84
8	40	36	42	32	30	34	36	39	46	53	138	121	88	72	52	42	77	83	141	50	37	25	27	32	57
9	32	44	122	88	28	35	33	57	39	33	23	26	27	75	64	29	41	33	83	148	77	25	57	72	54
10	92	150	79	112	90	85	78	58	124	113	229	808	591	878	716	171	164	123	116	155	80	100	216	166	229
11	324	528	491	202	164	168	154	88	57	69	47	48	60	73	158	312	405	188	61	96	82	115	250	231	182
12	72	62	67	57	75	80	96	79	69	62	45	38	40	51	51	39	31	141	133	237	101	162	210	293	95
13	391	433	354	274	228	277	142	349	466	485	598	926	515	890	979	473	142	95	92	95	127	120	173	371	375
14	281	304	175	108	146	92	137	156	243	95	82	42	71	249	69	94	160	346	133	58	111	128	276	270	159
15	184	209	396	278	204	186	247	48	33	39	43	92	52	39	24	91	168	58	39	43	191	379	169	71	137
16	176	52	51	48	59	91	105	151	42	32	35	66	131	94	36	25	29	30	37	141	204	184	154	236	92
17	302	389	145	36	46	60	77	178	92	59	103	73	108	79	122	135	175	239	87	49	43	66	90	52	117
18	45	42	51	36	55	50	69	140	204	288	450	297	766	438	115	75	69	78	42	34	39	35	29	86	147
19	58	227	232	375	630	749	759	967	1104	1090	884	1047	498	134	150	157	500	553	741	586	433	163	190	411	527
20	341	259	409	156	99	120	171	234	310	183	184	563	480	283	192	90	68	90	56	30	25	39	42	53	187
21	109	114	127	151	119	47	29	52	92	75	170	81	67	68	32	28	25	18	17	41	83	51	41	37	70
22	39	51	60	166	148	107	104	112	115	37	96	145	179	170	62	90	99	122	157	96	55	39	45	33	97
23	33	34	44	38	37	55	134	91	51	54	53	117	144	79	55	111	143	48	91	230	140	304	280	303	111
24	356	301	161	103	93	222	367	367	192	103	123	103	187	182	172	216	127	80	57	48	36	30	27	31	154
25	40	32	42	46	35	34	59	87	116	96	40	84	142	73	40	33	61	181	161	173	50	68	287	242	93
26	275	257	227	193	294	253	47	28	67	128	175	210	211	220	100	99	34	34	144	49	31	26	28	38	132
27	37	46	41	98	141	116	114	119	106	225	132	160	335	157	44	43	37	50	82	451	563	270	245	195	159
28	348	524	287	331	828	293	145	219	818	1054	572	471	646	572	422	895	272	295	456	708	263	322	180	125	460
29	105	90	83	192	238	86	50	45	103	138	62	35	31	49	104	86	84	53	45	57	41	34	55	92	82
30	154	381	937	1001	1016	581	304	677	1035	410	666	329	124	170	606	1181	793	630	509	195	300	548	331	248	547
31	218	369	361	190	222	337	318	318	400	206	166	377	558	679	517	423	554	446	468	109	60	123	189	177	324
Mean	157	192	197	171	206	168	147	178	221	211	203	238	227	222	193	196	188	179	178	168	153	142	153	158	185
5Q Mean	48	51	72	68	48	39	53	61	71	100	113	89	74	65	47	47	64	63	112	127	108	90	97	75	75
5D Mean	233	386	434	434	584	447	333	506	764	649	577	630	468	489	534	625	452	403	453	338	236	255	212	266	446

AO Index (Hourly mean values, unit nT)

Date	July																	1985					Mean		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		22	23
Q	-4	-202	-108	-15	-54	-20	12	-137	-23	2	11	14	-3	12	9	-70	-31	-33	-22	-7	14	-1	4	1	-27
D	-5	2	3	7	8	-1	-6	-4	-4	-5	-3	-5	4	10	5	4	-1	1	-23	-18	-4	14	10	8	0
Q	8	6	-6	-13	5	-1	2	0	2	4	3	19	-28	-31	-11	-17	5	0	8	-1	-1	15	8	-3	-1
D	4	-3	-18	2	19	2	7	-21	-15	26	8	39	-164	-150	-13	-12	-28	-52	-37	-121	-120	-64	-79	-67	-35
Q	-6	27	-12	-98	-95	-92	-51	22	6	-16	-42	-5	7	-96	-62	-25	-45	-14	-22	0	-12	-52	-14	-66	-32
D	-57	-6	-36	-79	-63	-15	-143	-112	-37	-1	-70	-64	-30	-7	-29	-17	-1	-60	-53	-6	-2	-86	-23	-37	-43
Q	-84	-113	-145	-62	-2	-111	-39	0	-58	4	-3	-65	-1	-17	-85	-89	-55	22	19	12	16	-36	-40	-52	-41
D	0	6	6	-7	-37	-36	-118	-3	1	18	-72	-62	-33	-12	-100	-52	14	-89	-142	-21	2	-32	-58	-35	-35
Q	5	-20	-42	-147	-90	-54	-61	-43	-16	0	2	-1	2	-1	-33	-55	-75	-14	-1	-5	-11	-18	-12	-10	-29
D	-4	-11	-16	9	0	4	6	19	22	0	-2	-1	-4	-26	-25	-10	4	11	9	8	-3	-58	-42	12	-4
Q	17	28	0	-32	-13	3	2	13	-69	-20	34	-1	13	10	0	-17	16	14	26	30	67	24	-4	-7	5
D	4	-117	-93	-88	-112	-4	-30	9	59	13	-159	20	-4	-85	-78	-114	-35	-87	-60	-208	-42	27	7	-2	-49
Q	1	5	6	3	3	14	19	4	16	-11	-24	-55	-65	-75	-96	-98	-11	-1	-82	10	14	-52	-167	-121	-31
D	-93	-23	-88	-74	-170	-104	-89	-98	-50	-23	-19	-51	-37	-3	-7	0	-7	-26	-14	-5	1	10	5	0	-40
Q	-5	-14	-42	-20	-73	-105	-9	9	-14	-16	-99	-42	-9	-6	-54	-12	1	2	1	4	5	0	-7	-21	-22
D	-6	-15	-8	-6	-9	6	30	1	-16	8	3	-1	9	8	-6	-12	-34	-37	-1	6	0	14	0	7	-2
Q	4	-14	17	-8	-68	-4	23	22	10	60	-96	-144	-94	-51	-110	-122	-25	9	-1	-8	-15	7	3	8	-25
D	-43	-84	-20	-50	-36	6	17	-1	-11	-9	-4	4	-152	-28	-2	-14	-124	-20	5	5	-12	-178	-64	-11	-34
Q	5	7	-53	-26	-9	-15	-26	-50	-13	29	4	-144	-46	-54	-69	-18	0	-25	9	-2	4	7	7	4	-19
D	1	0	1	-84	-37	-25	8	7	-3	9	-6	-55	-17	-2	-34	-97	-121	-40	11	22	11	3	4	10	-18
Q	14	-19	-32	-35	2	-6	-50	-30	-7	-31	5	26	-2	-1	0	-10	0	-1	2	4	7	4	0	9	-6
D	4	-1	-2	0	10	-12	6	17	1	-16	21	13	-17	0	3	3	7	12	18	16	19	21	28	21	7
Q	4	14	9	43	-6	-44	-9	-18	-23	14	-17	-39	-11	-43	-34	-61	-45	-30	-22	-16	0	4	8	-49	-15
D	0	11	20	21	14	16	-34	-43	-13	13	29	-26	-123	-102	-90	-35	0	2	-4	-14	33	-50	7	20	-14
Q	-69	-50	-60	-121	-64	-15	-71	-76	-2	13	-35	3	9	3	-4	-5	8	-30	-109	-53	14	5	4	-26	-30
D	-37	6	-3	0	14	-139	-21	-5	13	16	-99	-41	5	-10	-8	-10	-84	-12	11	25	-47	-182	-113	-113	-34
Q	-51	-14	-81	-15	4	-58	-131	-44	14	28	-91	-146	-66	-76	0	1	12	0	-21	-35	-1	8	12	-59	-33
D	-79	-56	-34	-107	-69	-32	6	-29	-9	16	-58	-15	10	7	-12	-29	4	9	3	6	-94	-39	2	0	-25
Q	0	1	2	3	-3	-6	0	-18	-23	-3	-2	1	-2	-14	-7	-35	-30	-3	-18	-51	-3	10	4	-1	-8
D	-3	-5	7	-10	-94	-110	-4	8	10	17	37	-54	-43	-94	-115	1	27	1	4	4	2	0	8	7	-16
Q	7	6	1	13	-2	-1	-90	-213	-98	-223	-95	22	-101	-44	-152	-217	-241	-48	-63	-98	-85	30	-128	-146	-82
D	-15	-20	-26	-32	-33	-30	-27	-26	-11	-2	-27	-27	-32	-31	-39	-40	-28	-17	-18	-16	-7	-20	-20	-23	-24
5Q Mean	1	-6	-7	-6	1	-3	-4	-6	-9	-9	4	6	-1	0	-1	-10	-11	-5	-4	-8	3	12	8	8	-1
5D Mean	-8	-23	-28	-29	-31	0	-47	-66	-15	-39	-68	-7	-72	-72	-73	-91	-63	-49	-59	-84	-47	-29	-78	-74	-48

AO Index (Hourly mean values, unit nT) 1985

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	-32	36	29	-41	-30	-78	-98	1	6	9	-1	8	29	14	-103	-118	-8	-10	-46	0	15	-45	7	-16	-19
2	-36	-32	-6	-5	33	-9	-47	-35	-74	-64	-5	21	4	6	-12	-35	-124	-133	-58	0	-59	-42	-43	-12	-32
3	-76	-24	0	10	-21	0	4	-3	-32	-19	9	8	8	8	2	-6	-18	-2	-61	-6	-1	14	-6	21	-8
4	3	-17	-23	-21	-49	-42	-72	-48	3	22	-13	9	5	-1	-45	-35	-7	0	5	9	-7	0	-1	12	-13
Q	5	13	-9	-12	0	13	2	-14	-15	-5	3	5	8	2	5	-6	-4	-2	0	-17	-13	-2	-2	0	-3
Q	6	0	4	0	0	-4	0	0	8	0	3	7	7	-1	-10	-15	-8	0	6	-28	-43	1	0	5	-2
Q	7	-24	-5	1	0	0	12	16	0	4	-1	4	9	-4	-22	-12	-4	-6	-9	-4	4	8	1	-41	-2
8	-26	10	9	7	-25	-39	-5	19	10	5	14	16	-5	1	1	-7	-2	1	2	-2	6	-7	-7	20	0
Q	9	2	-19	11	15	7	-8	2	0	-1	1	7	9	2	-3	-1	-3	-4	1	5	16	18	13	12	3
10	9	9	-5	-33	-31	26	-12	-62	15	36	-23	-28	-17	4	-7	-8	-26	-24	-3	4	-16	7	16	19	-6
Q	11	-47	-66	0	17	-12	-11	-6	2	3	0	7	-3	2	6	-1	-2	2	-12	-5	7	5	3	1	-5
D	12	2	-1	0	-6	-2	-13	-39	-8	31	34	-9	-24	-12	2	-10	-89	-34	1	15	33	-1	-69	-4	-134
D	13	-136	-173	-35	-109	-24	-215	-59	-71	-283	-70	-222	-112	-151	-91	-22	4	-31	-18	-37	-60	-182	-172	-87	-7
14	0	-5	-44	-54	-39	-62	-209	-122	-58	-134	-6	8	-8	11	-61	-22	-23	-56	-45	-2	4	-18	-42	-55	-43
15	-27	-58	-30	-63	-127	-150	-59	-62	-76	-15	-82	-27	-30	-172	-102	-13	2	-2	-2	3	27	-40	-67	-70	-52
16	-27	-38	-37	-59	-57	-39	-3	16	-71	-32	-10	-1	3	4	-43	-107	-52	-34	-12	-123	-38	0	-55	-66	-37
17	-5	2	-11	-123	-72	-10	15	23	-133	-50	-4	0	-30	-7	-16	-96	-52	-45	-3	12	27	6	-35	-80	-28
18	3	-2	3	-7	-31	-9	17	23	38	-38	3	0	5	-10	-15	-15	-22	-57	-44	22	42	-68	-95	-28	-11
19	14	-52	-3	-140	-148	-49	-87	1	8	2	-3	11	-19	-5	-15	-1	0	2	-5	0	10	-23	5	7	-20
20	-10	-20	-74	-4	15	-4	-44	-65	-9	11	10	8	-1	-14	-51	-121	-78	0	2	-11	0	-13	-42	-37	-23
21	-27	1	-19	-5	8	-54	-21	20	12	-64	-4	6	2	-4	-11	-9	-14	-43	-19	-1	-1	0	0	-87	-14
D	22	-43	-91	-177	-45	18	21	12	14	-173	-180	7	-4	-52	-42	-58	-100	-89	-165	-76	-89	-136	8	-11	-76
23	-153	-21	-79	-205	-121	-25	8	9	18	-44	-60	-166	-22	1	-50	-2	-20	-7	4	-1	-39	-68	-6	-39	-45
24	-121	-41	-11	-18	-5	0	-72	-10	0	8	-1	-7	-9	-36	-12	-4	5	2	-24	-14	2	-4	-21	-1	-16
25	5	1	-21	7	22	11	-2	-104	-105	-1	18	-34	-50	-25	-70	-33	4	-36	10	6	-3	-34	-10	13	-18
26	6	-104	-1	7	-109	-73	20	-12	-37	-3	6	7	6	3	-17	-14	-23	1	-29	-9	13	-15	-35	-123	-22
27	-109	-34	0	7	13	4	2	0	11	-76	-144	-25	14	3	-5	-19	-76	-113	-9	-2	-1	1	5	7	-22
28	4	-37	-12	32	20	12	13	-34	-9	0	-5	-95	-31	5	0	-134	-80	-35	-163	-77	9	-19	-79	-48	-31
D	29	-46	-88	-25	0	-73	-140	-25	-3	-67	-24	-21	-79	-138	-58	-1	-14	-38	-39	-74	-17	-33	-53	-40	1
30	0	-62	-74	-26	-108	-65	0	2	0	0	0	-3	-2	-4	-6	-8	-4	1	-7	-14	-42	0	2	11	-17
D	31	-44	-57	20	-19	23	-62	-132	-66	-32	-156	-253	-79	-64	-88	-31	-25	-147	-237	-50	-56	30	11	-68	-58
Mean	-28	-32	-20	-27	-29	-35	-29	-18	-31	-27	-26	-18	-17	-15	-26	-34	-31	-34	-23	-14	-13	-19	-22	-27	-25
5Q Mean	-5	-22	-1	6	1	-4	-3	1	1	1	3	4	1	0	-10	-7	-4	-2	-2	-9	-5	6	3	4	-2
5D Mean	-53	-82	-43	-35	-11	-81	-48	-26	-104	-79	-99	-59	-83	-55	-24	-44	-67	-91	-44	-37	-64	-55	-42	-54	-58

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AO Index (Hourly mean values, unit nT)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
1	16	14	4	-38	4	12	3	1	-1	-4	-4	-2	0	-27	-14	-11	-5	-88	-32	-3	-8	-103	-19	9	-12
Q	3	0	-5	-33	-1	1	11	6	-6	-30	-41	-19	10	1	-23	-26	-15	-6	-2	0	0	1	0	0	-7
Q	0	-3	0	1	-30	1	-18	-26	4	-4	-7	-11	-5	-2	0	-7	-9	-15	-7	1	4	7	4	2	-5
Q	1	-6	-6	-3	-2	2	3	0	0	-5	4	-1	1	2	1	1	-10	-9	1	6	3	0	-1	-1	0
Q	-1	-1	-2	2	0	1	5	1	0	0	-3	-3	2	1	0	0	4	6	0	-23	-6	5	5	4	0
6	3	6	-10	-26	-16	-7	-3	11	17	21	-17	11	0	-77	-38	-31	-5	-17	-31	-27	17	28	32	-12	-7
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11	-34	-43	-29	-21	-76	-25	-104	-41	11	-30	-23	-12	-22	-18	-7	-8	5	-4	-42	-162	-23	1	4	8	-29
12	0	-18	-21	5	4	3	-24	-14	-27	-1	-10	-5	5	9	-53	-72	-98	-123	-36	1	1	+2	0	14	-19
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20	-24	-106	-45	-52	-158	-63	2	-22	-201	-79	-266	-132	-57	-72	-173	-146	-22	-29	-66	-5	10	-104	-76	-65	-81
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22	-53	-5	-5	-7	-29	-39	-135	-11	20	4	2	6	-15	-46	-141	-87	-102	-125	-31	-78	-42	-5	-1	13	-38
23	5	13	8	7	-28	-16	-37	-107	-146	-79	-75	6	9	-5	-1	-12	-49	-26	1	1	0	-2	1	1	-22
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5Q Mean	2	-1	-8	-9	-5	2	0	-2	0	-8	-9	-7	0	0	-4	-8	-7	-6	-3	-13	-8	4	3	0	-3
5D Mean	-40	-53	-32	-50	-80	-44	-42	-28	-44	-76	-149	-135	-87	-69	-69	-81	-124	-53	-67	-27	-44	-37	-60	-54	-64

AO Index (Hourly mean values, unit nT)		1985																							
		October																							
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3	6	6	2	-19	-23	0	8	-127	-87	-43	19	-95	-186	-101	-42	-40	-21	-29	-65	-22	1	-29	-29	-15	-39
4	-84	-88	-49	-43	-29	-13	-81	-63	-35	-21	10	-15	-30	-47	-58	-24	-5	-2	-14	8	21	13	18	-9	-26
D 5	12	-2	-12	-28	-43	-47	-96	-116	-47	-122	-257	-286	-37	22	2	-94	-224	-159	-144	-153	-325	-87	-103	-202	-106
D 6	-153	-111	-51	-55	-54	-52	-356	-217	-192	-263	-137	-119	-243	-189	-239	-117	-63	-54	-81	-51	-15	-65	-201	-248	-139
D 7	-111	-116	-54	-50	-185	-98	-64	-129	-19	-8	-48	-171	-114	-121	-160	-143	-206	-168	-112	-37	-67	-114	-116	-186	-108
8	-214	-149	-14	-41	-121	-65	-27	-102	-24	-30	-184	-23	-12	-142	-125	-110	-98	-82	-57	-13	-134	-66	-11	7	-77
9	2	-2	-42	-28	-34	-59	-57	-5	11	5	0	0	8	0	-68	-24	-42	-55	-75	-46	-17	0	1	3	-22
10	0	-26	-55	-77	-27	2	3	-106	-30	-1	0	-2	-13	-80	-13	-9	-9	-5	4	-8	-44	-108	-65	-39	-29
11	-37	-47	-34	-34	-28	-22	-72	-191	-16	8	35	37	19	7	-17	-11	-48	-55	7	18	-3	-78	-13	-48	-26
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D 13	-45	0	18	-141	-82	-3	15	3	-19	-55	10	33	17	-32	-164	-156	-68	-156	-54	-8	-5	-66	-23	-17	-41
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D 18	-57	-146	-32	24	1	0	-15	-32	56	42	6	-83	-206	3	-50	-74	-143	-90	-65	-27	-62	-12	-46	-70	-45
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Q 26	10	15	9	0	-15	-11	9	19	12	4	2	-30	-11	-11	-10	-6	-4	-1	-4	-5	-3	-2	-3	-2	-1
Q 27	1	5	5	1	2	0	0	-1	0	3	2	1	-1	-1	-3	-1	-15	-15	0	0	0	-10	-12	-38	-3
Q 28	-14	10	9	3	12	5	8	9	17	8	5	0	-2	-3	-3	-4	-2	-1	-3	-6	-2	0	-5	0	1
Q 29	-9	-78	-110	-111	-37	13	-2	48	-4	-34	-135	-95	-29	24	10	1	-42	-60	-29	-5	1	1	-1	-1	-28
Q 30	0	-1	0	0	0	1	3	0	-1	-1	2	1	0	3	-2	-7	-9	-9	-10	-68	-25	-2	4	5	-4
31	4	7	-24	7	41	28	11	3	4	1	4	17	-12	-38	-6	-25	-56	-144	-104	-9	8	10	10	14	-10
Mean	-33	-30	-14	-22	-23	-22	-34	-45	-23	-19	-33	-31	-30	-27	-41	-40	-54	-65	-50	-28	-32	-24	-27	-35	-33
5Q Mean	2	8	6	1	1	-1	3	6	5	1	1	-7	-4	-3	-10	-9	-7	-14	-12	-15	-5	-2	-3	-7	-2
5D Mean	-70	-74	-26	-50	-72	-40	-103	-98	-44	-81	-85	-125	-116	-63	-122	-116	-140	-125	-91	-55	-94	-68	-97	-144	-87

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Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
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D	2	12	7	0	-30	-43	-35	-55	-92	-19	32	-22	-59	-181	-178	-73	-151	-100	-33	-39	-92	-285	-63	-14	-139	-69
D	3	-191	-172	-204	-132	-37	-50	-82	-57	-75	-278	-142	-132	-27	-158	-140	-180	-74	4	6	-37	-29	-84	-144	-101	
D	4	-118	-127	-184	-171	-80	-12	-22	-114	-35	-7	-9	-19	-13	-55	-89	-115	-151	-109	-144	-88	-42	-44	-15	-22	-74
D	5	-2	0	0	3	0	-3	-13	-72	-26	-80	-179	-179	-205	-79	-97	-74	-80	-113	-79	-65	-77	-179	-104	-45	-73
D	6	-31	-64	-98	-70	-167	-60	-4	-3	7	13	-2	-8	-39	-100	-132	-68	-74	-144	-59	-39	-15	0	-18	-65	-52
D	7	-46	-83	-105	-85	-68	-28	-4	-11	-1	-32	-179	-49	-36	-18	-6	-4	-7	-1	-14	-80	-64	-24	-3	-24	-41
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D	9	9	9	0	15	6	9	5	9	13	16	6	-36	-28	-13	-103	-173	-64	-47	-159	8	30	13	13	-26	-26
D	10	-26	-40	5	-29	-52	8	-6	-17	-5	-52	-44	-76	-105	-55	-4	-40	-34	2	5	-4	-30	-241	-91	-14	-39
D	11	15	1	-45	-44	15	20	14	-99	-24	-60	-25	-16	-3	-44	-4	-14	-46	-140	-122	-93	-12	-12	-2	3	-30
D	12	-5	0	3	9	3	-13	-2	0	0	-11	-8	-3	-17	0	2	0	0	0	-32	-2	-7	19	-4	3	-2
D	13	-6	-3	3	-5	-4	0	-25	0	-90	15	15	-94	-240	-280	-18	-5	-67	1	-10	-95	-315	-75	-3	-23	-55
D	14	-99	-63	-72	-2	22	11	-3	3	-15	-8	-12	-62	-100	-62	-14	-3	-68	-103	-65	6	21	-6	-52	-112	-36
D	15	-128	-27	-5	3	-16	26	22	14	5	0	-60	-56	-88	-115	-16	-38	-36	-33	-53	-140	-52	-62	-15	-18	-37
D	16	-33	-3	21	24	5	-8	9	12	-15	-70	-73	-6	-31	-43	-74	13	-19	-60	-74	-27	-30	-95	-62	-9	-27
D	17	4	1	0	4	7	21	19	31	40	14	8	-27	-55	1	-129	-149	-160	-181	-125	-21	12	3	5	-30	-29
D	18	-17	-5	-2	-80	-8	14	13	26	24	-8	-11	7	1	-13	-57	-171	-77	-20	-59	-92	11	-43	-60	-8	-26
D	19	-6	0	-79	-101	29	12	3	0	-4	-8	-16	-4	0	13	-4	-2	-48	-34	-10	-4	-51	-18	-9	5	-14
D	20	10	10	6	17	12	15	14	5	3	2	1	-3	-1	0	-1	0	-2	-2	-6	-18	-14	-1	-11	-16	0
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D	22	7	2	-42	18	28	5	0	6	9	4	-4	-25	14	0	1	-4	-11	-34	-81	-79	-58	-1	3	0	-10
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D	24	3	5	8	0	5	4	5	-10	-9	-24	-24	-10	-26	-66	-4	0	-6	-2	-8	-5	-7	0	1	-16	-7
D	25	0	7	4	9	6	19	9	9	8	-27	-46	-9	8	10	6	3	2	0	0	-4	-21	-13	-9	-3	-1
D	26	-1	9	6	8	-9	-54	18	-13	-23	7	6	4	-3	-19	-4	-4	-17	-11	-21	-8	1	9	30	30	-2
D	27	13	11	21	14	-29	53	33	-26	-153	-23	-61	-90	-158	-131	-222	-185	-49	-39	-8	-28	-55	-14	-14	-36	-49
D	28	-38	-43	-29	-73	-46	5	1	0	2	-19	-43	-24	-12	-6	-12	-5	-20	-44	-60	-30	-21	-17	-9	-23	-23
D	29	0	-7	-18	-2	1	2	-13	-37	21	19	29	28	43	4	-72	-233	-132	-79	-315	-466	-615	-498	-420	-405	-132
D	30	-219	-481	-110	-27	-44	-214	-197	-231	-214	-362	-132	-230	-437	-230	-108	-106	-207	-178	-33	-104	-135	-31	-59	-55	-173
Mean	-34	-38	-32	-24	-16	-12	-7	-22	-18	-25	-43	-43	-65	-56	-51	-62	-58	-50	-51	-63	-66	-66	-48	-35	-37	-40
5Q Mean	1	-5	1	3	-1	4	5	1	-7	-2	-6	-3	-7	-23	-3	-1	-1	0	-17	-5	-5	2	-3	-3	-3	-3
5D Mean	-80	-131	-65	-39	-25	-59	-59	-88	-71	-74	-77	-99	-189	-142	-85	-127	-137	-72	-78	-150	-277	-139	-116	-153	-105	-105

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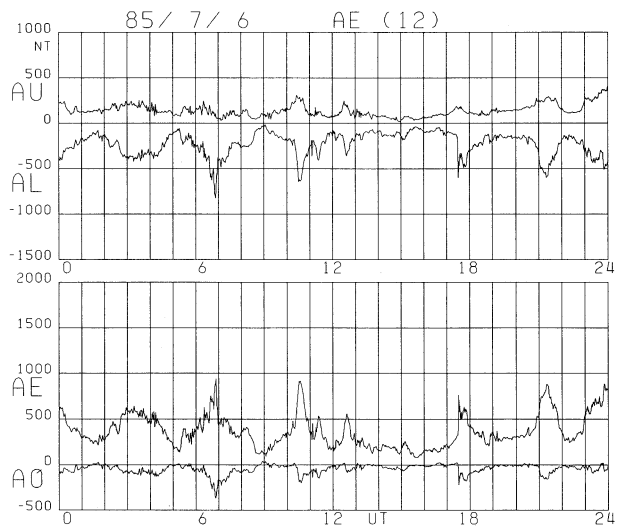
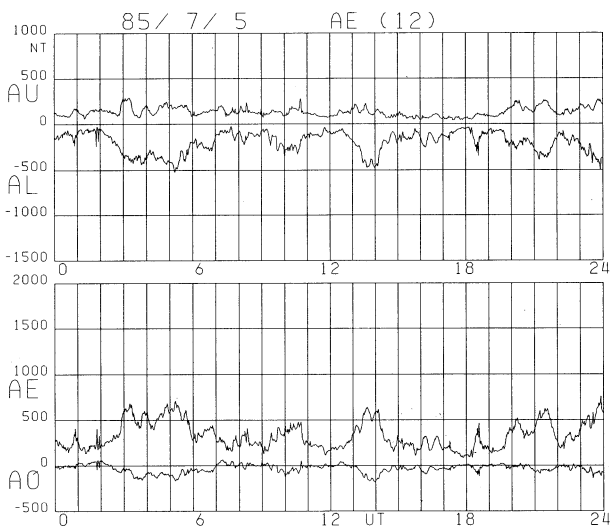
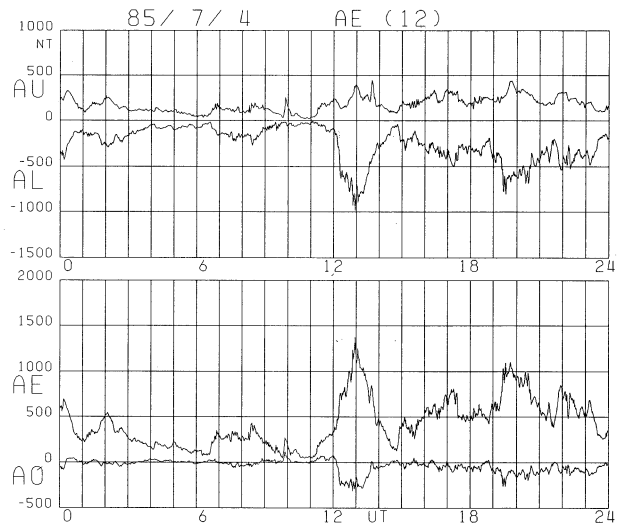
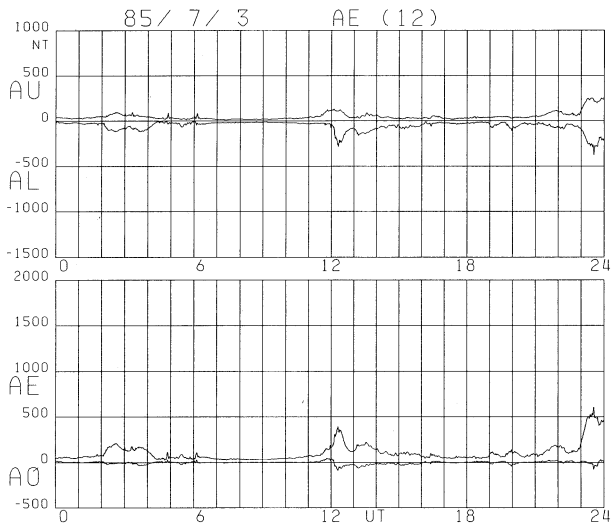
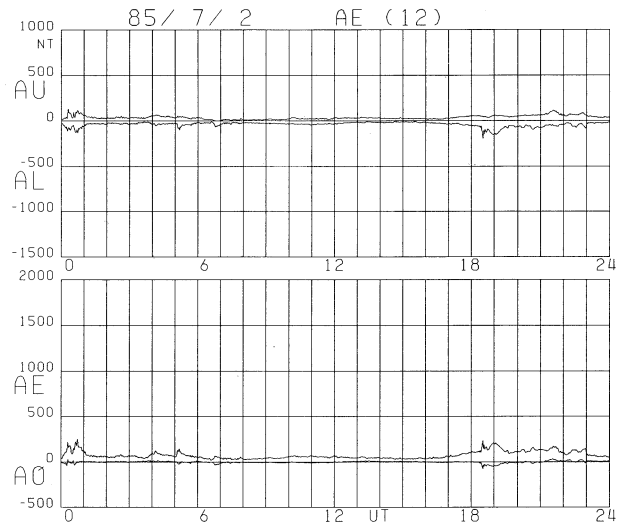
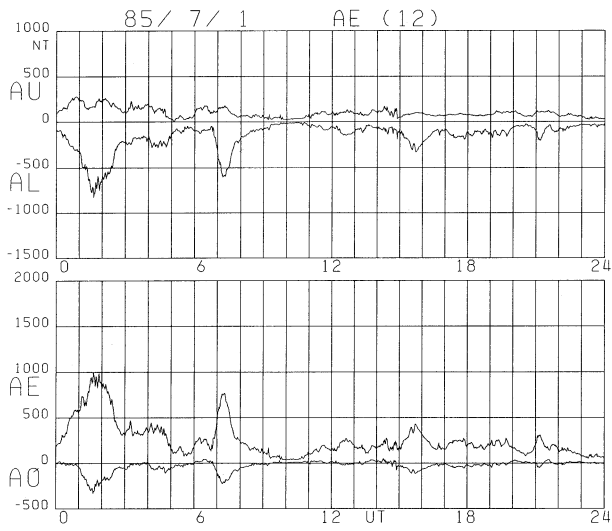
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2	-82	-145	-88	-35	-89	-56	-86	-77	4	-29	19	-15	-36	-88	-19	-13	-99	-77	-71	-122	-145	-29	-27	-53	-61
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4	3	9	4	-7	-10	5	13	2	6	-40	-78	-25	-3	-4	-47	-148	-190	-162	-108	-43	-29	-57	-98	-44	
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Mean	-13	-29	-26	-14	-32	-13	-4	-15	-33	-40	-34	-52	-44	-42	-42	-46	-47	-48	-48	-36	-32	-21	-20	-21	-31
5Q Mean	4	2	7	11	5	6	7	3	2	0	-16	-10	-9	-4	2	1	-4	-13	-31	-25	-15	8	2	5	-2
5D Mean	-33	-79	-95	-68	-133	-64	-31	-82	-188	-179	-128	-186	-94	-113	-163	-155	-95	-108	-126	-83	-30	-45	-36	-46	-98

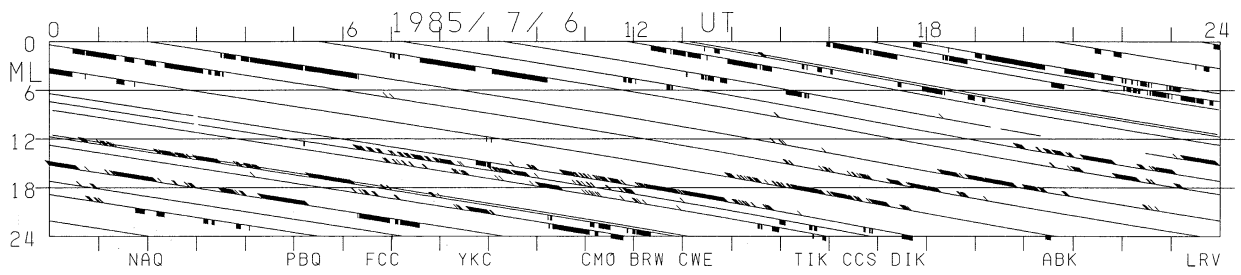
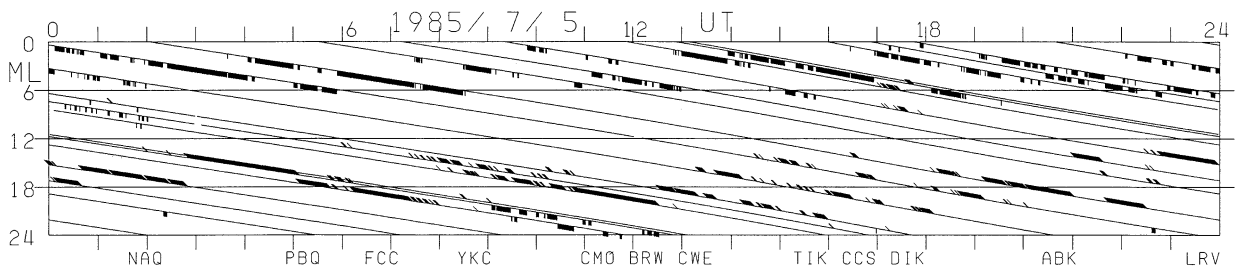
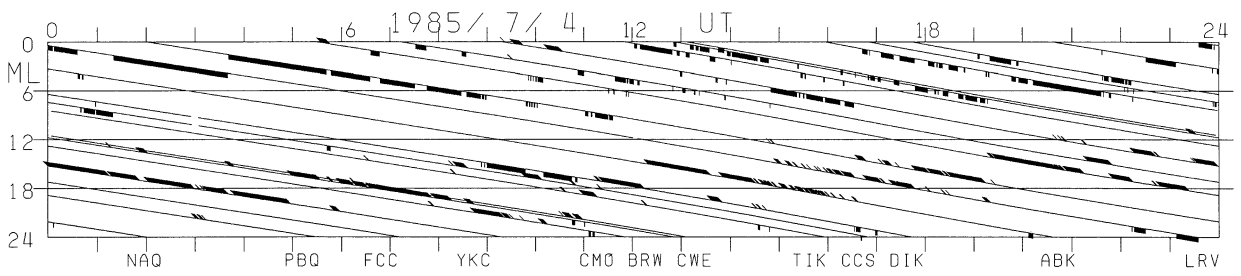
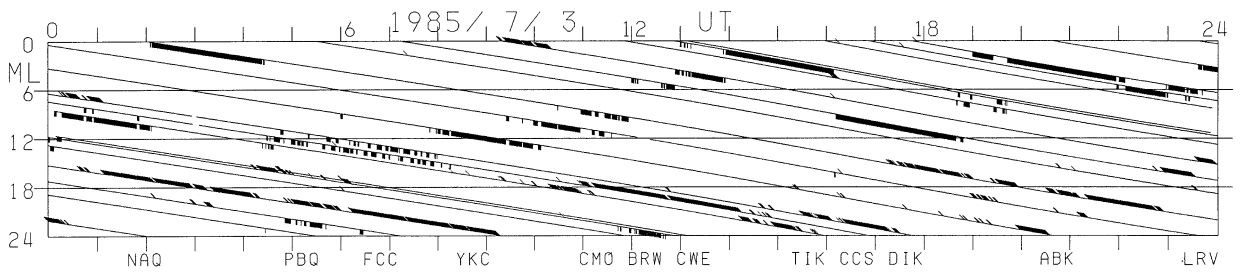
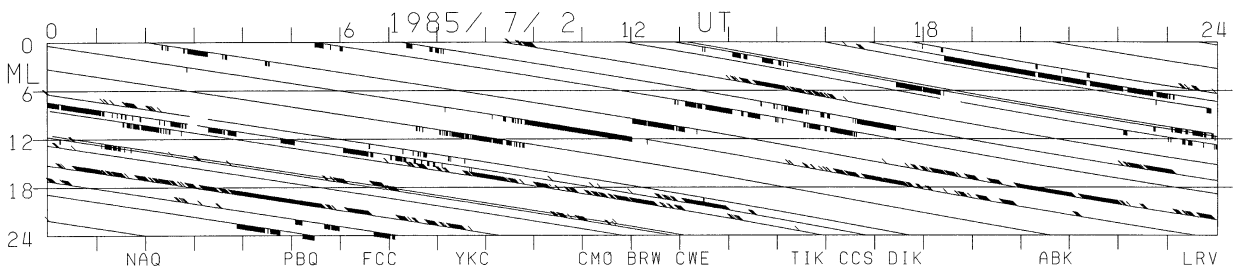
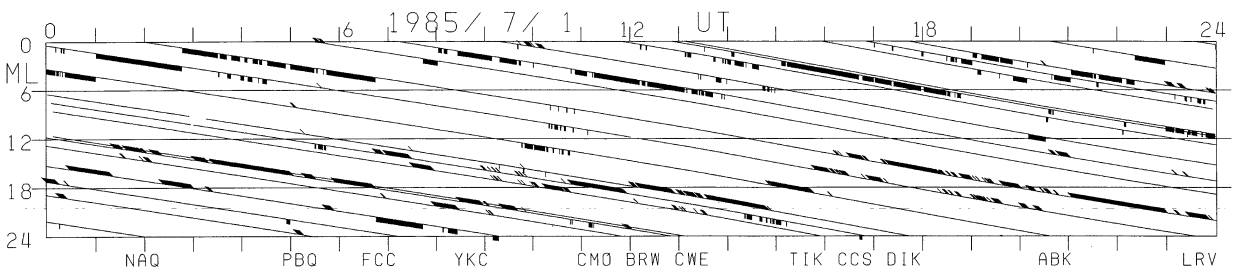
FIGURE 4 (on even pages)

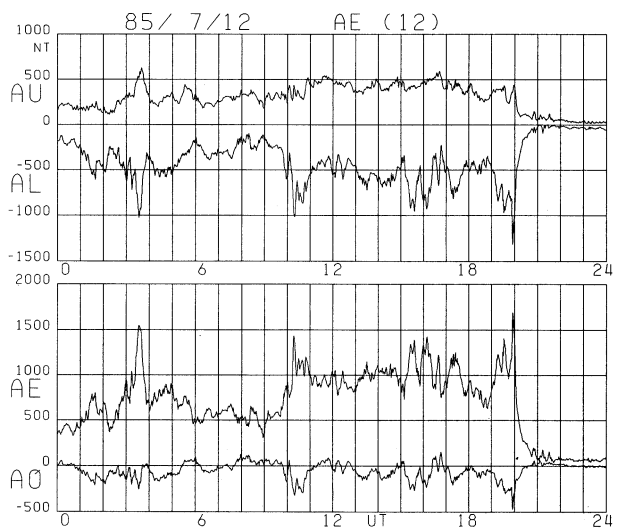
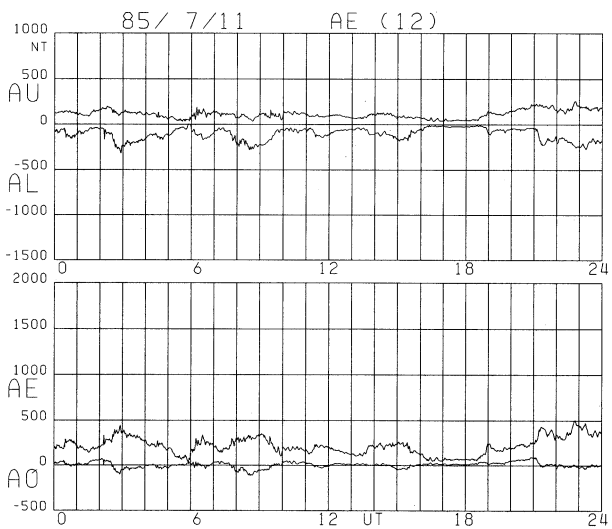
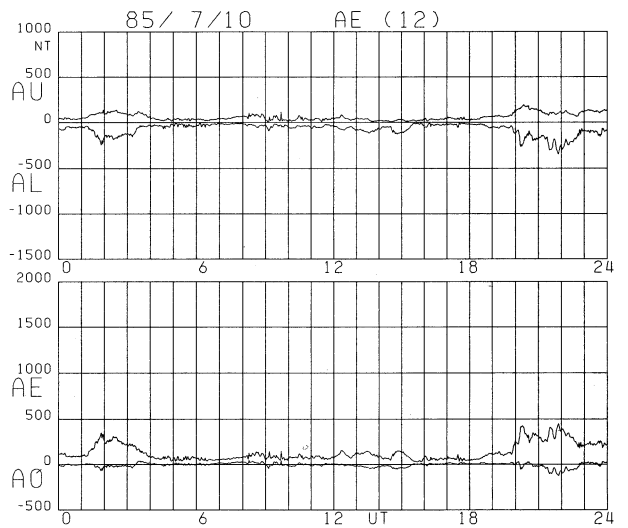
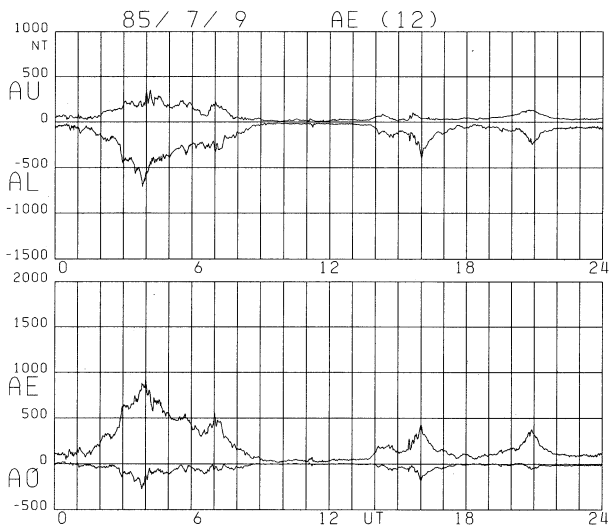
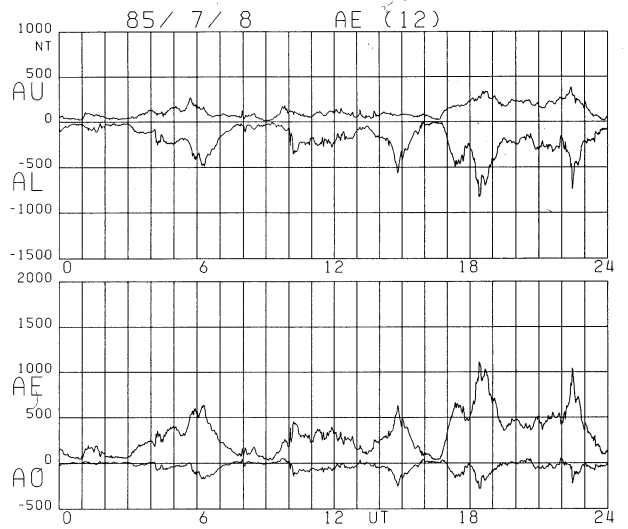
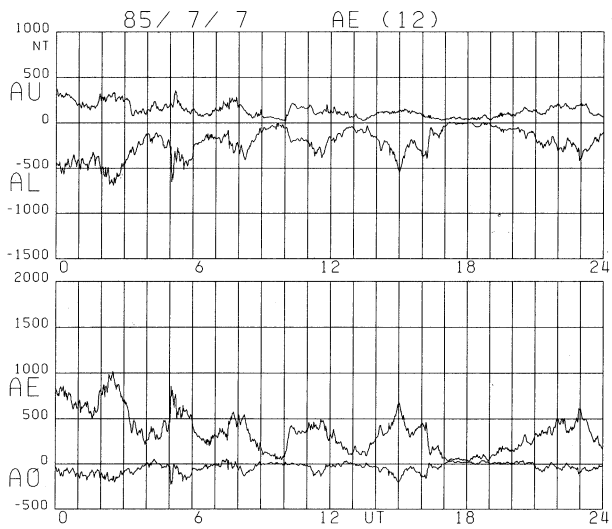
Daily graphs of 1.0 min AE indices (AU, AL, AE and AO) for July-December 1985.

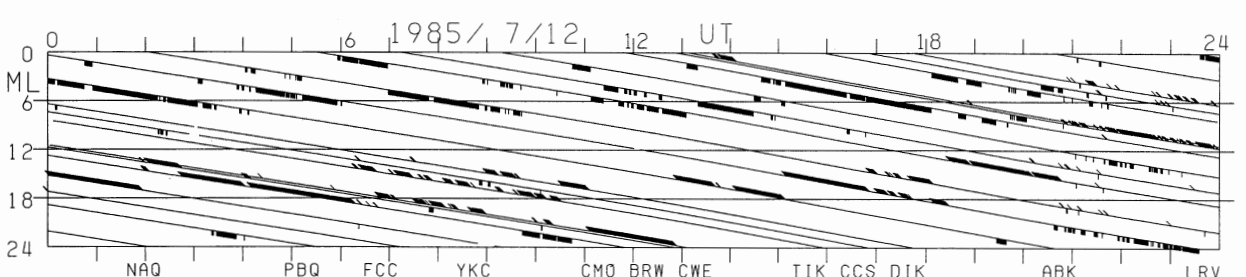
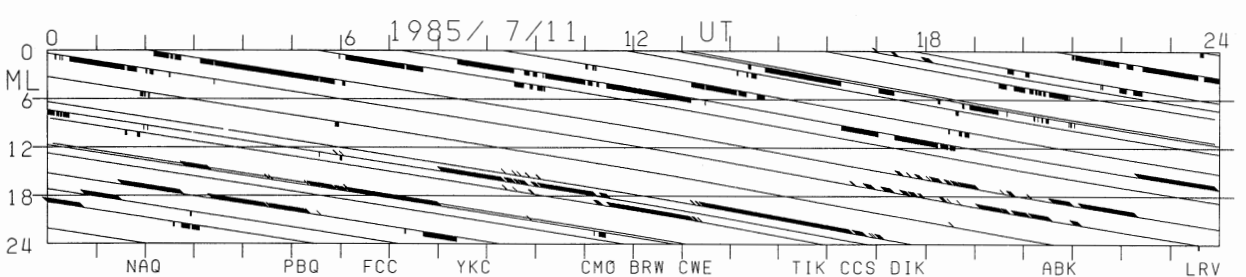
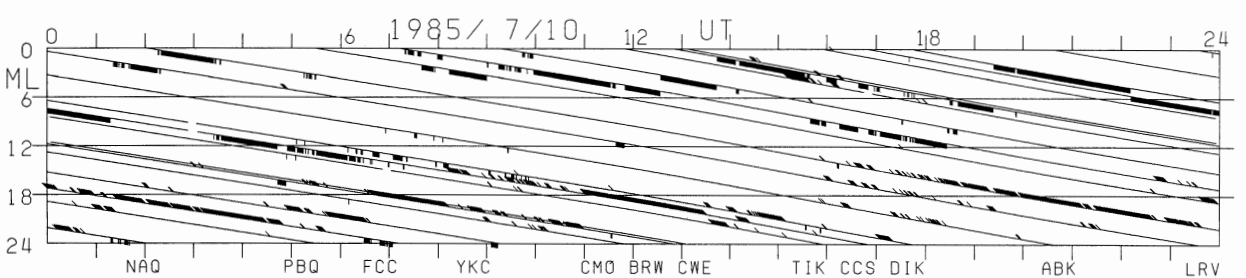
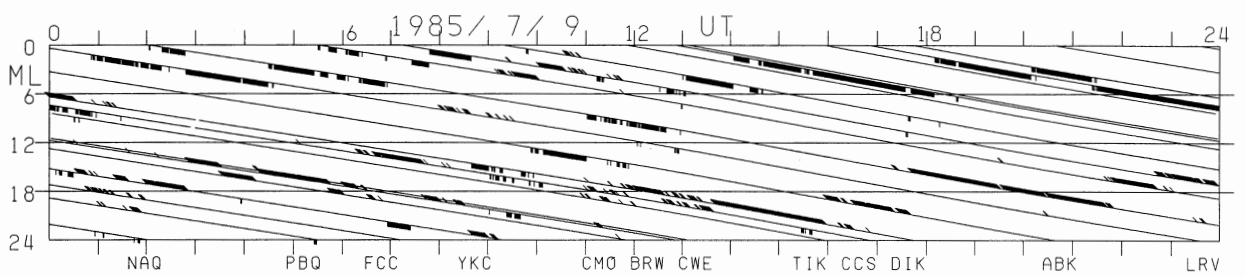
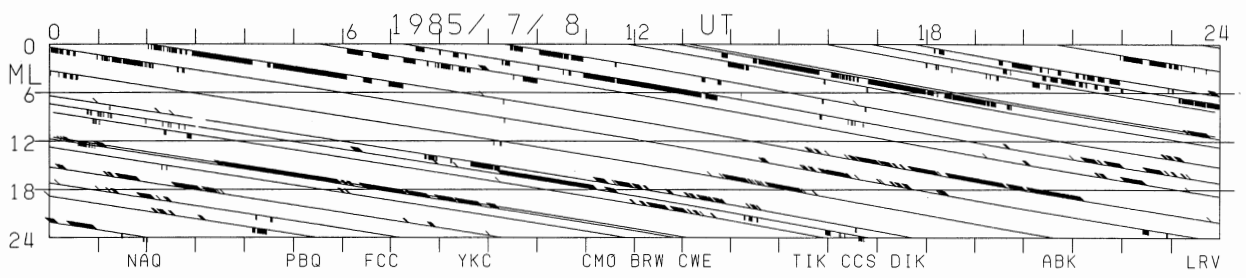
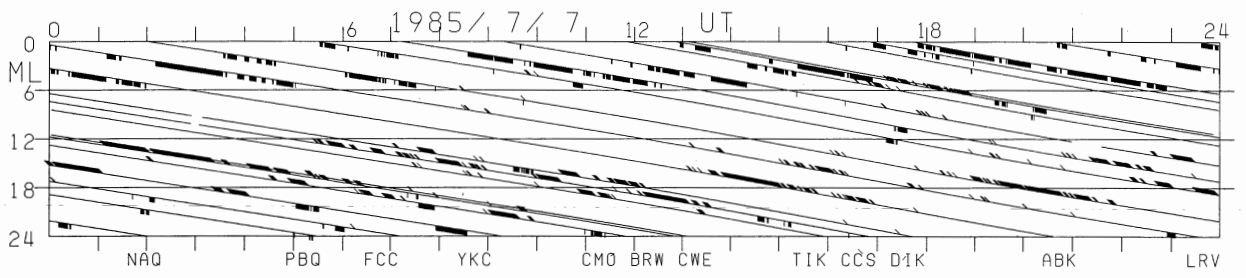
FIGURE 5 (on odd pages)

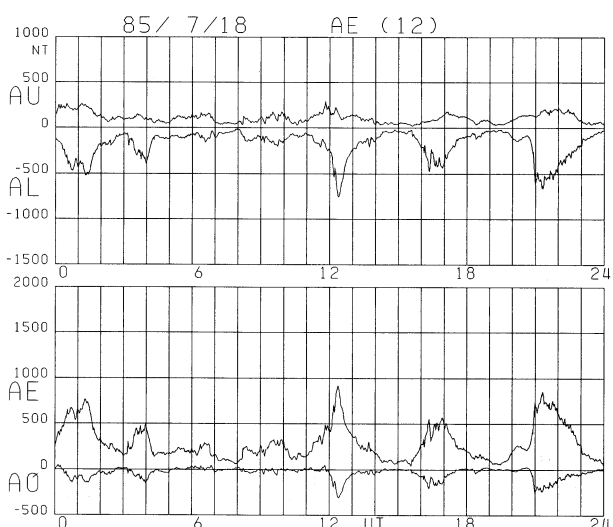
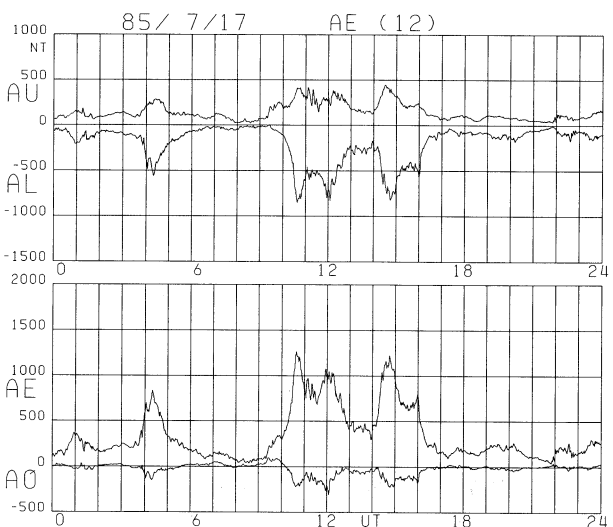
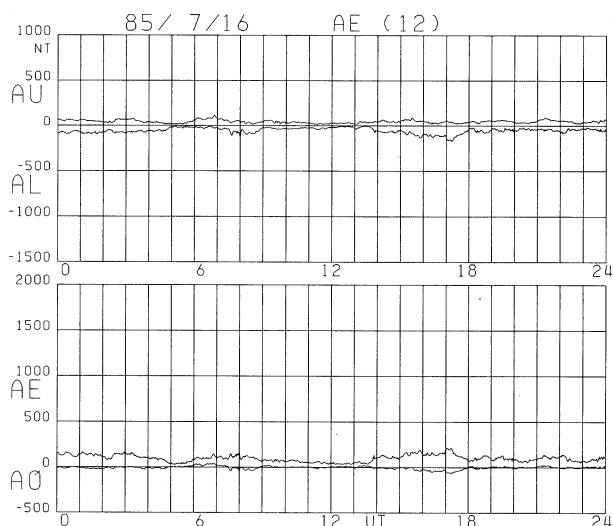
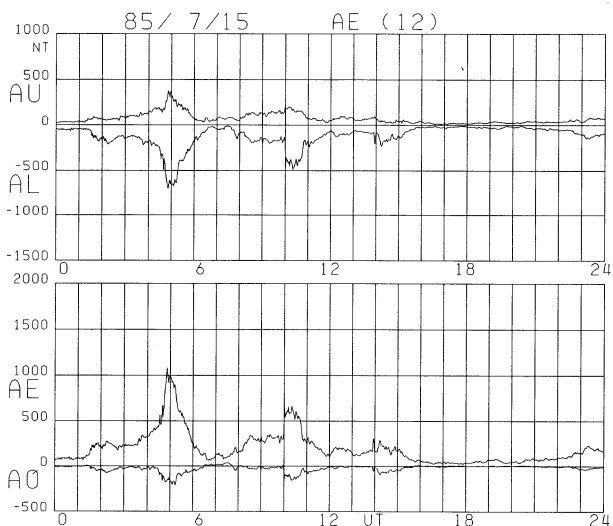
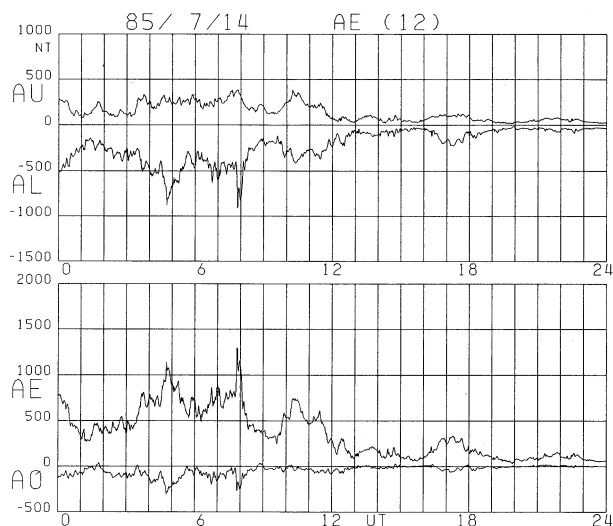
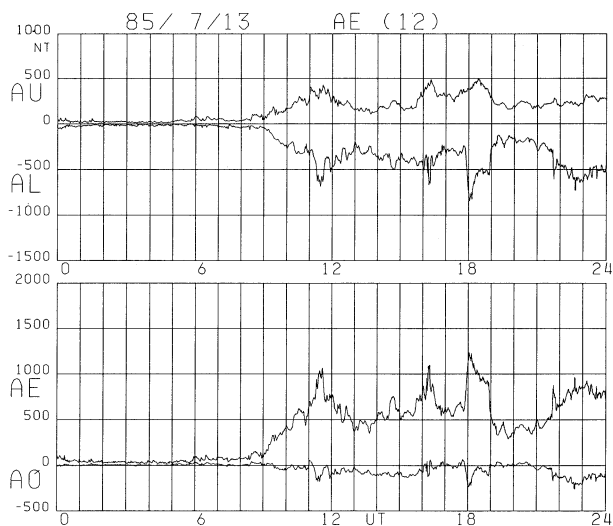
Plots of the contributing station to the AU (upper plumes) and AL (lower plumes) indices, showing which station contributes to these indices at each UT minute.

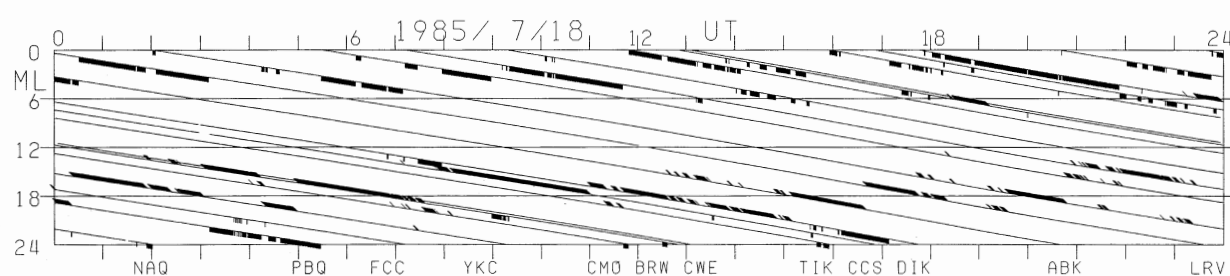
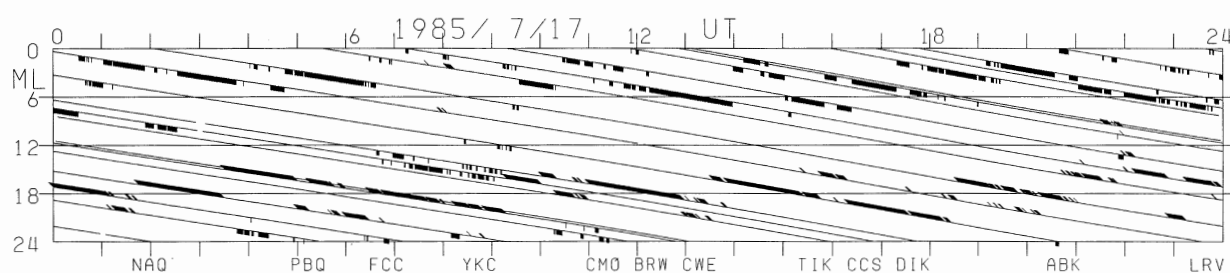
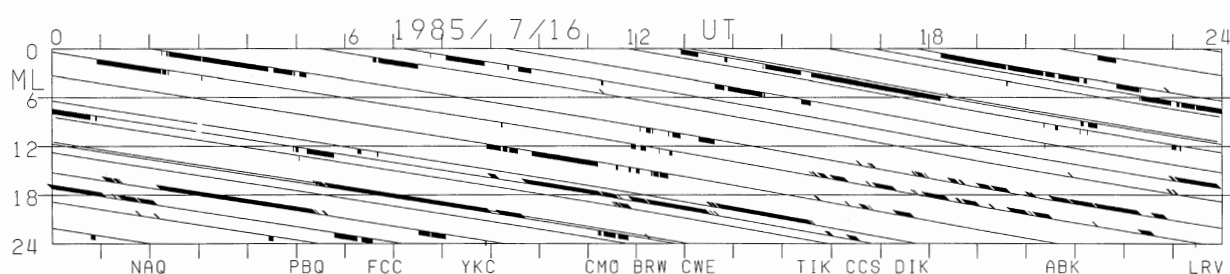
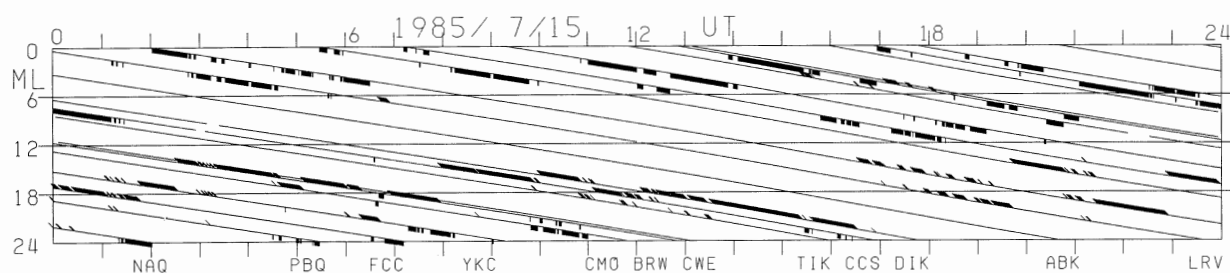
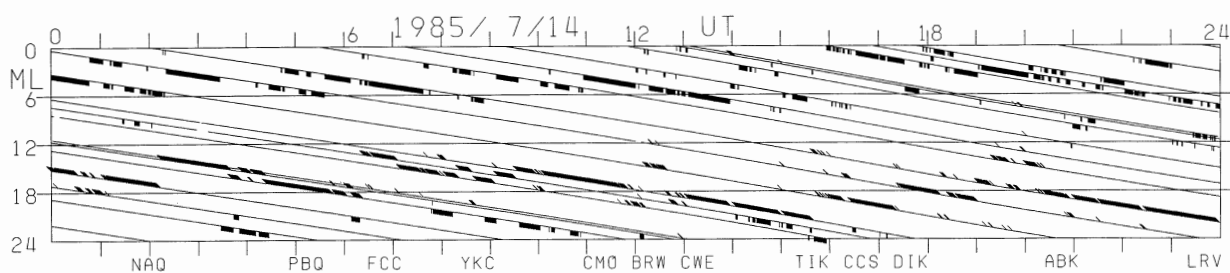
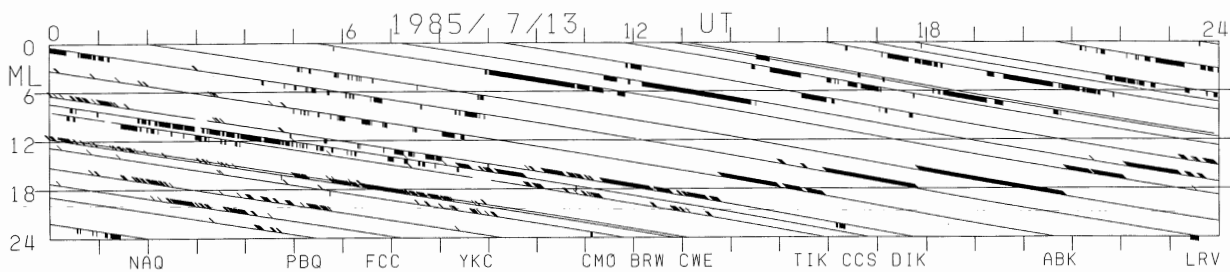


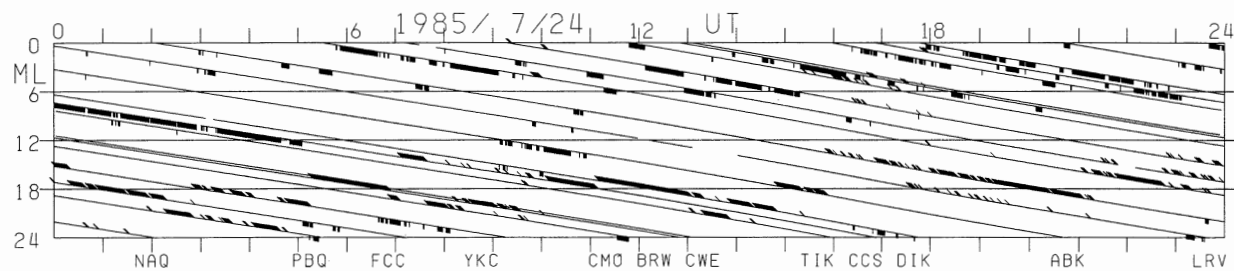
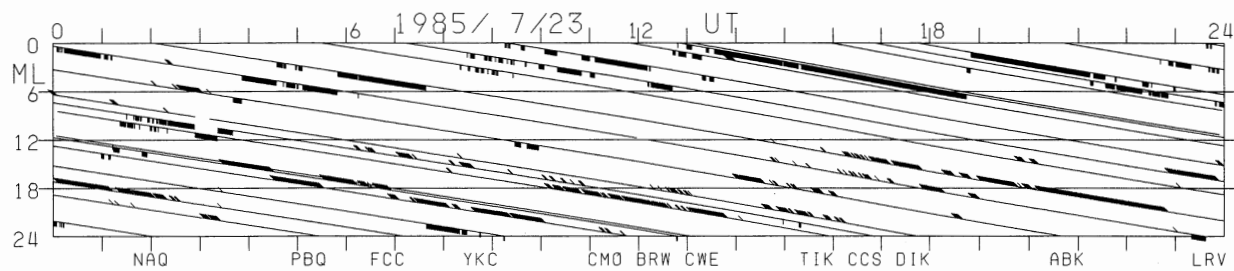
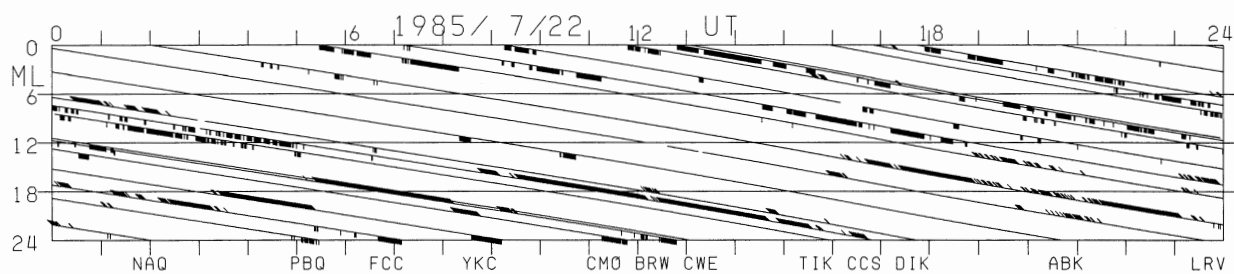
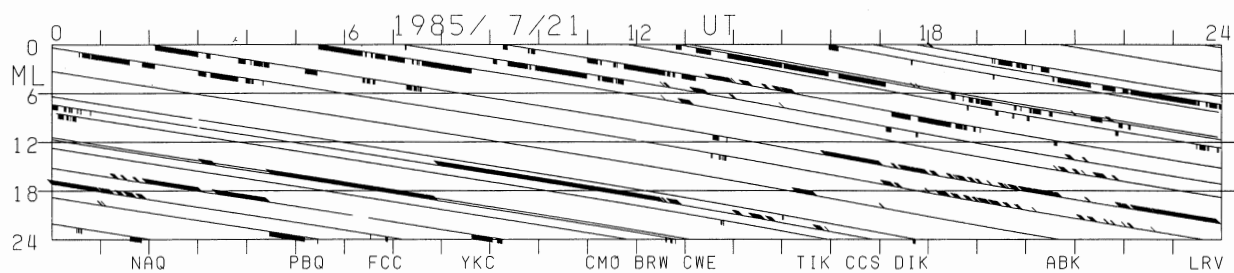
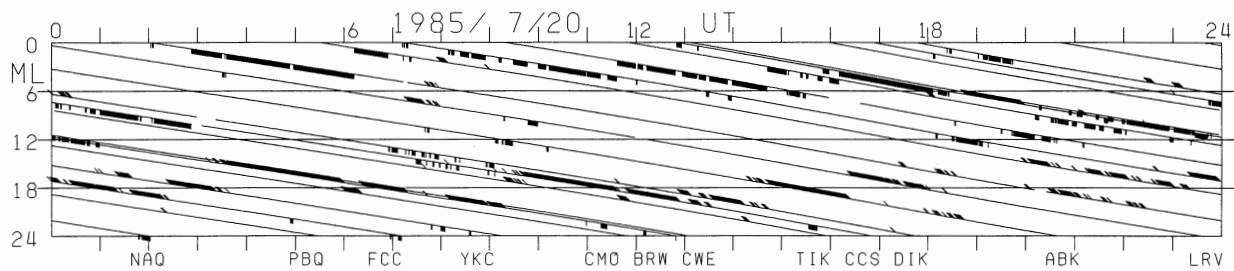
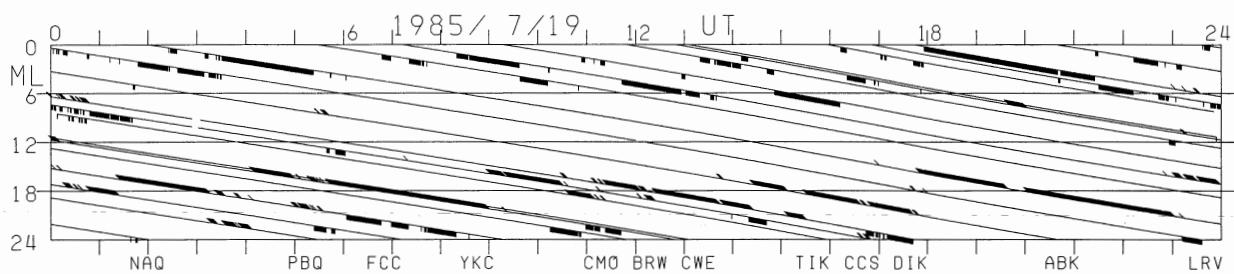


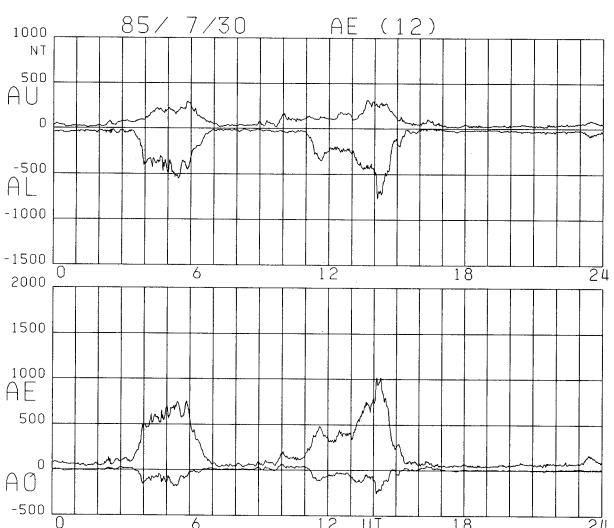
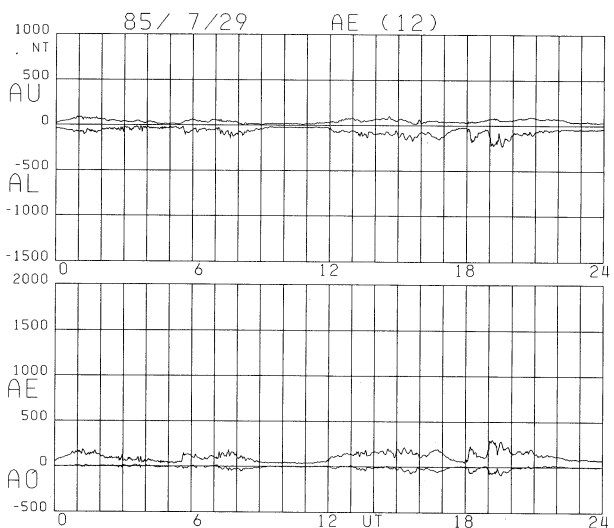
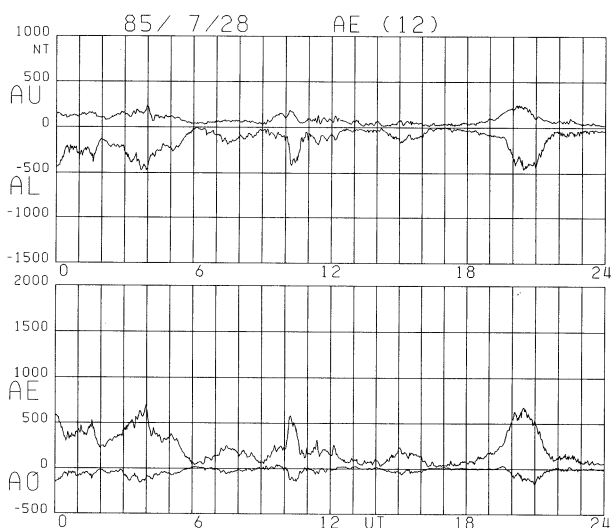
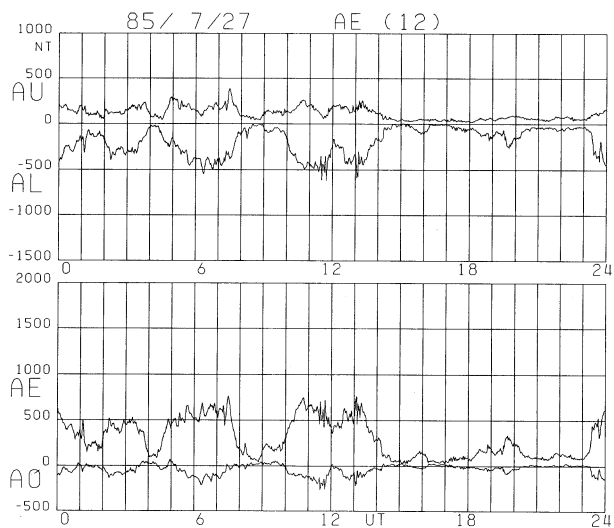
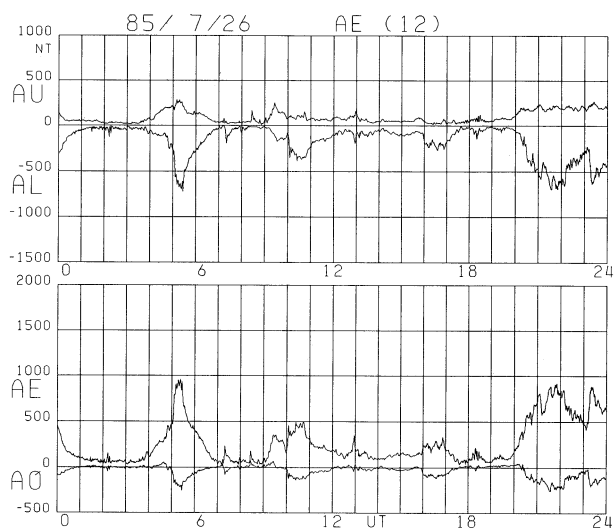
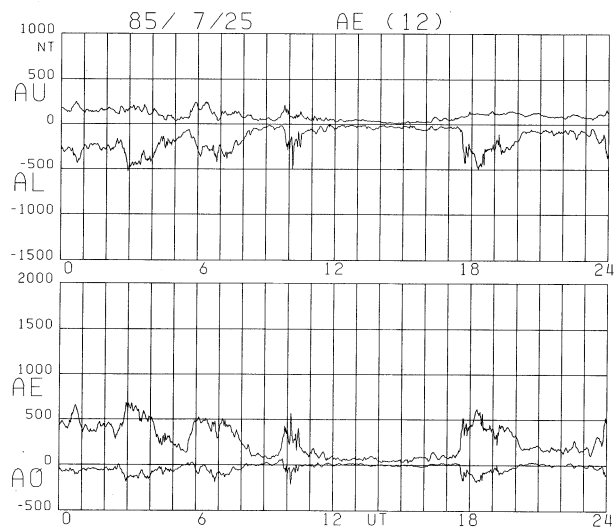


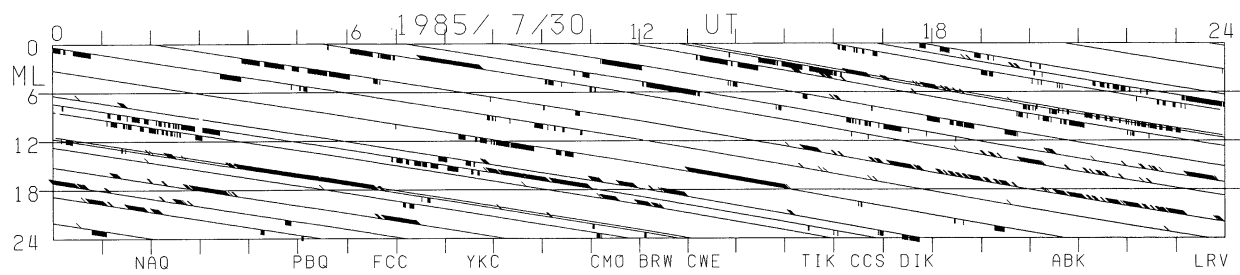
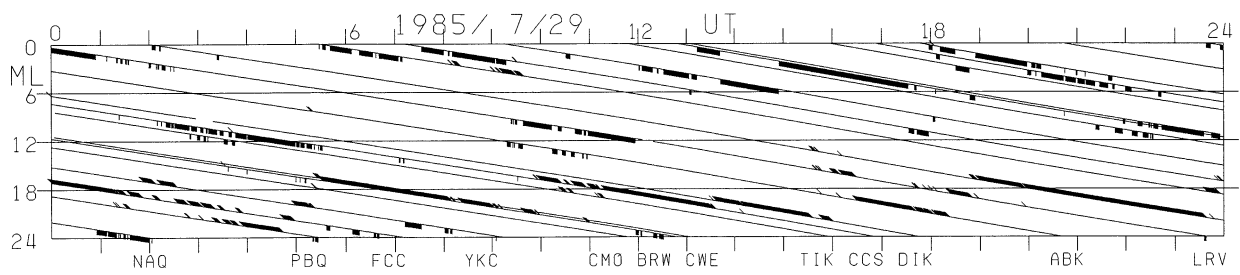
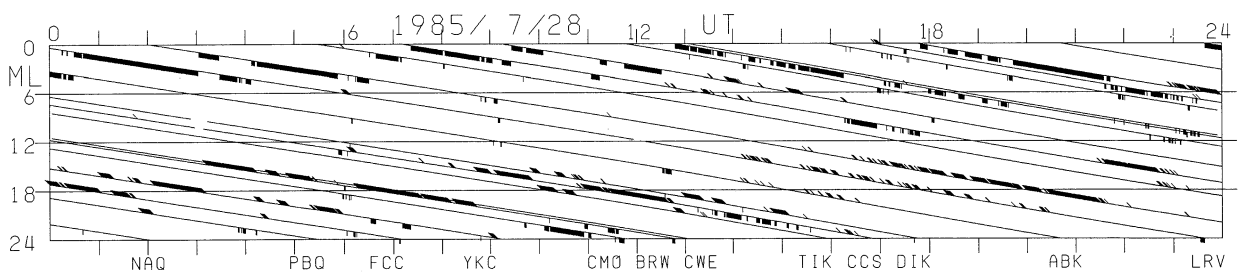
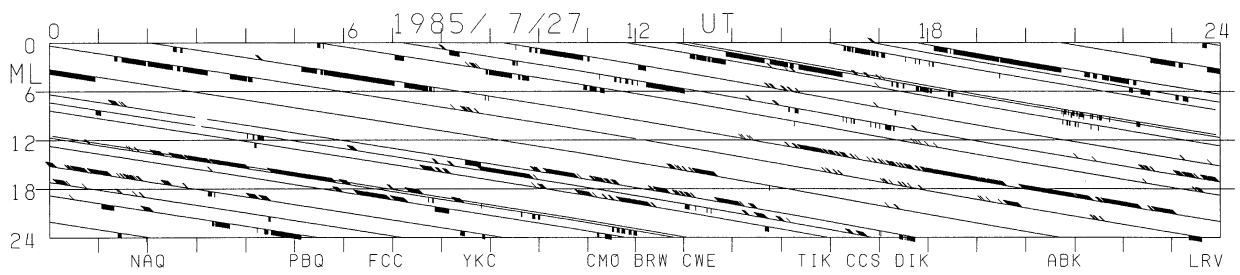
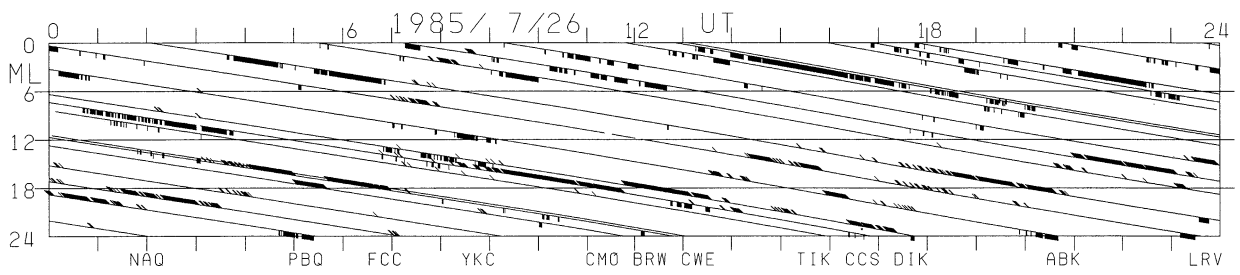
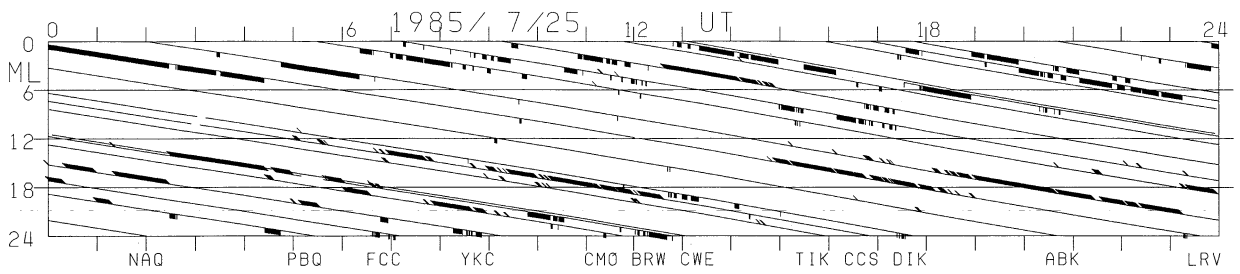


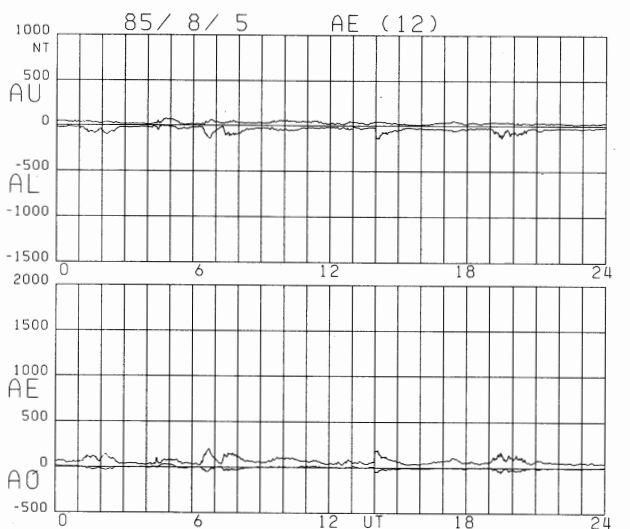
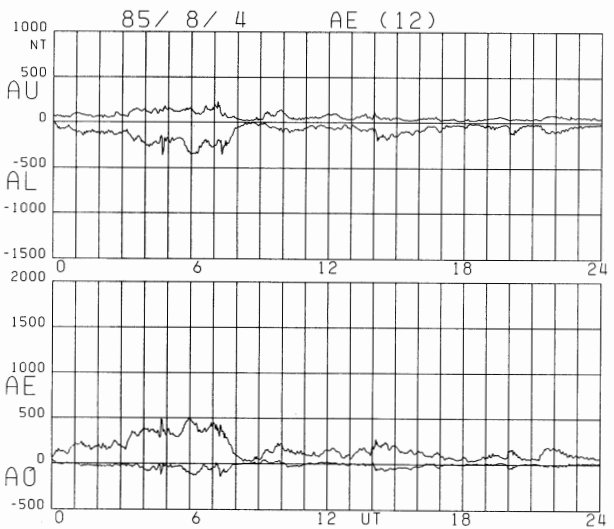
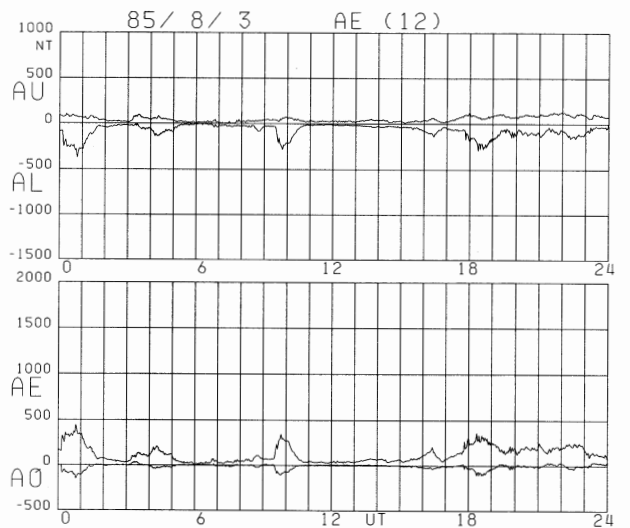
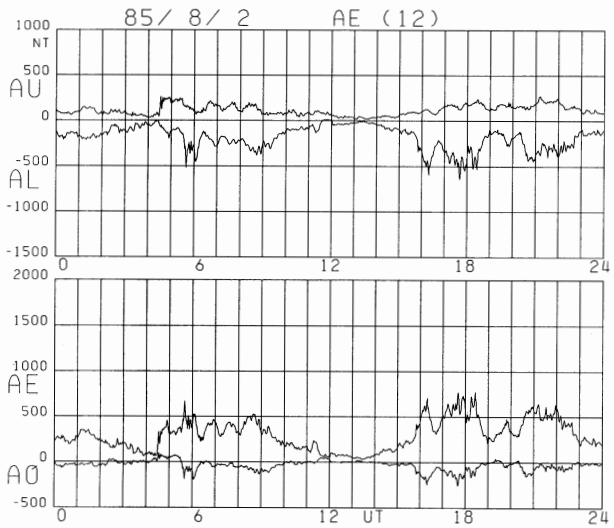
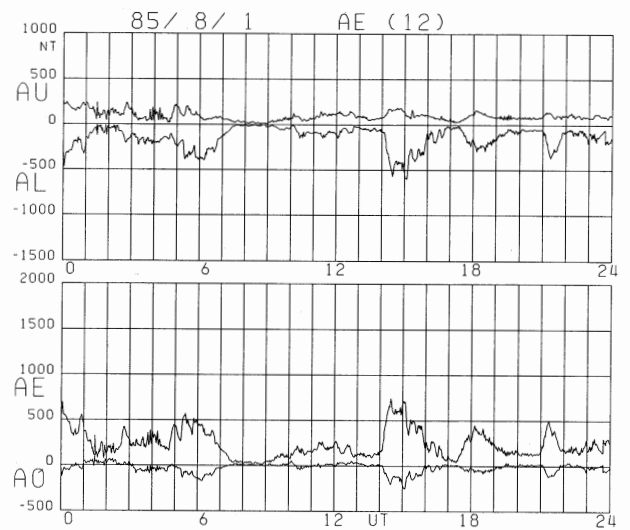
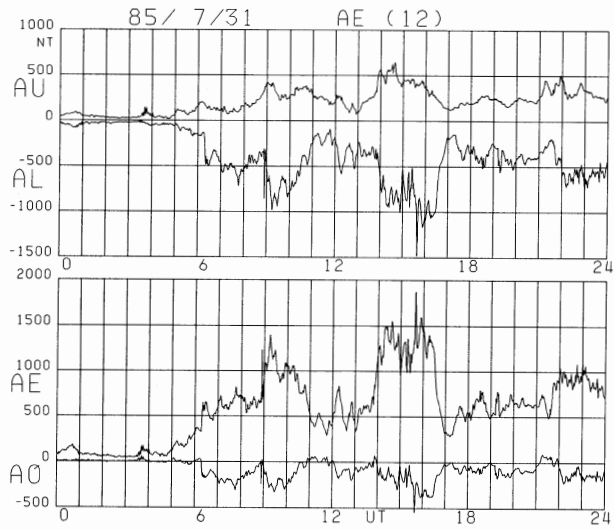


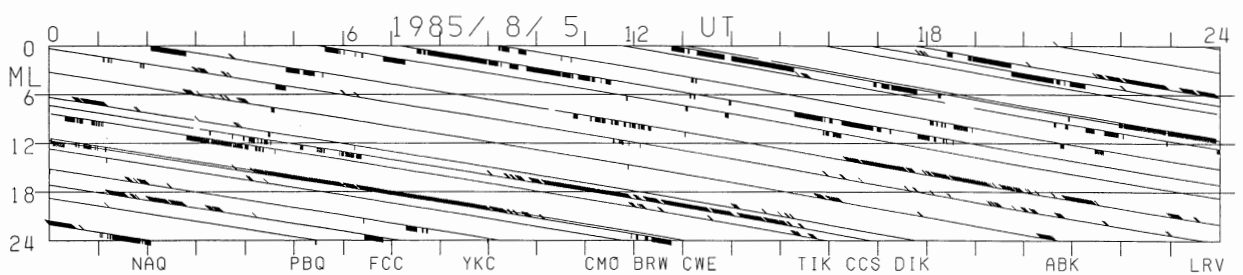
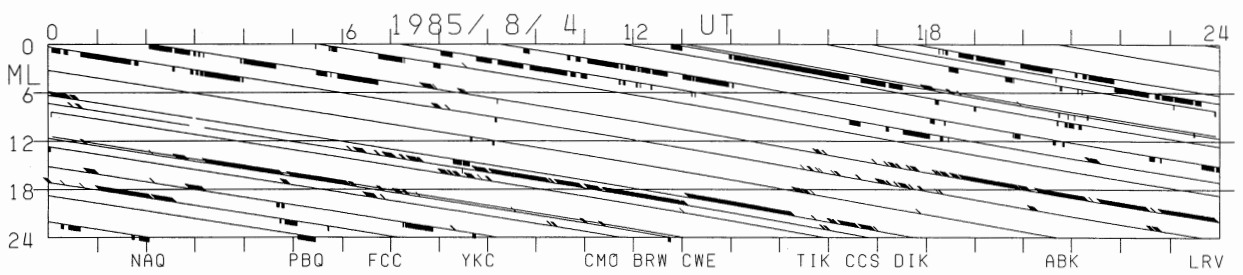
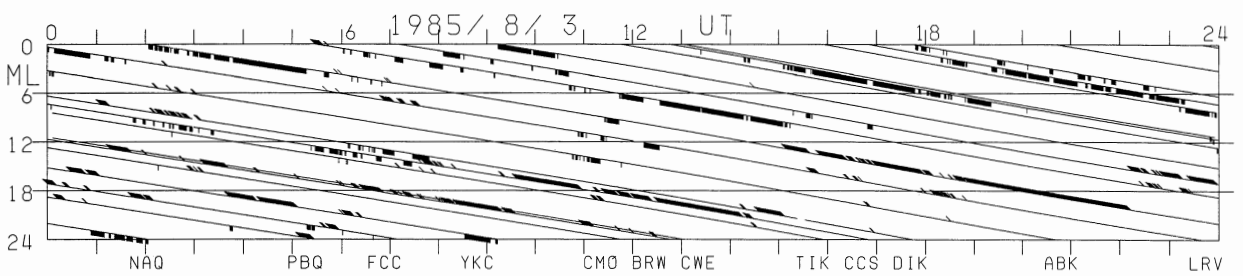
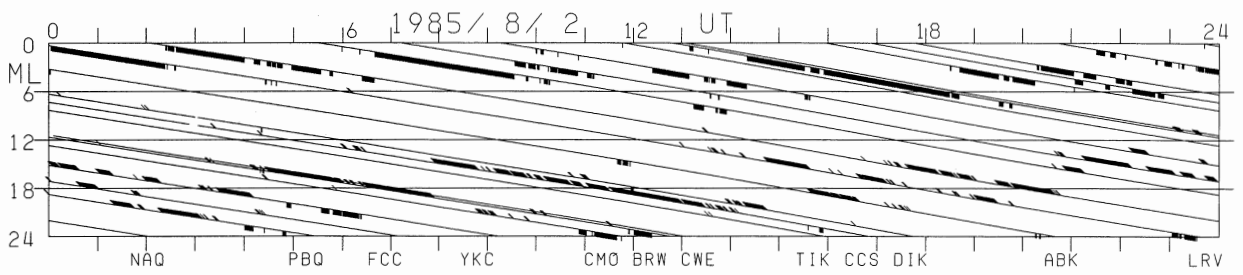
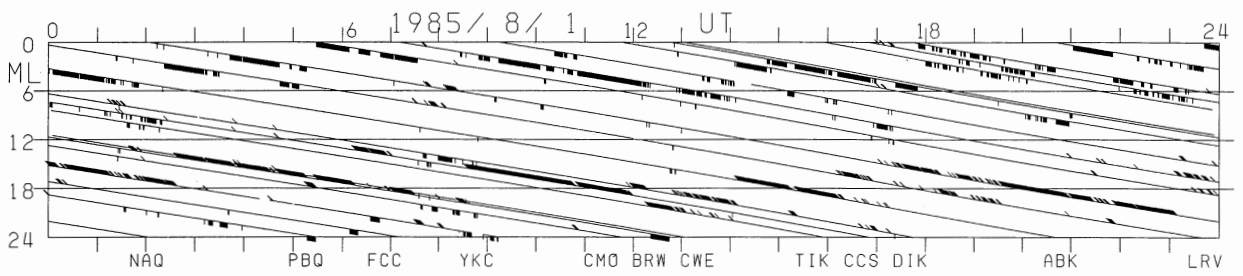
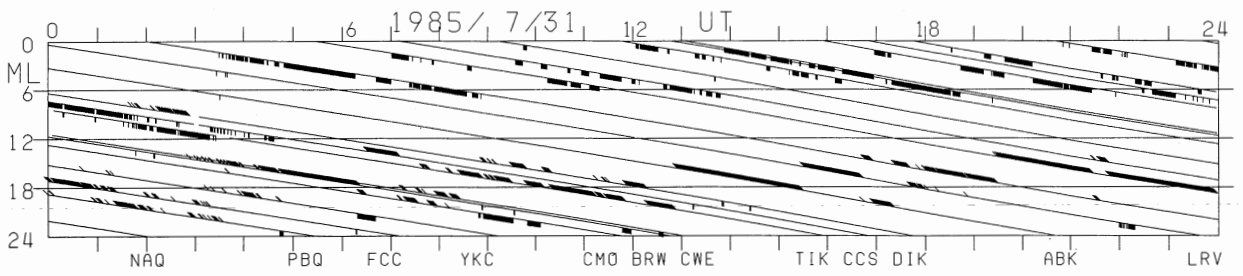


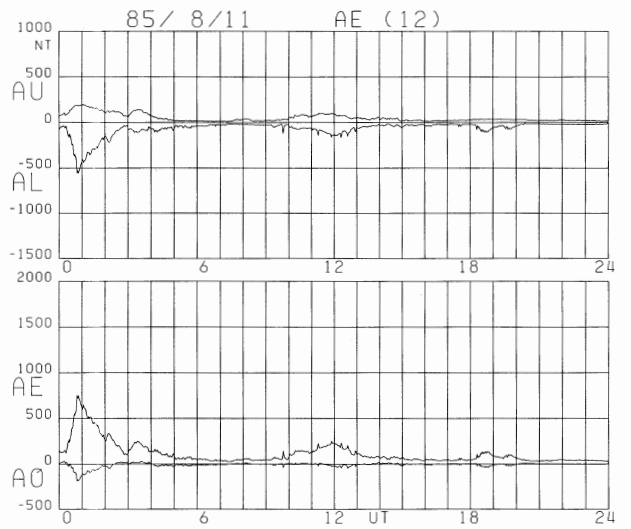
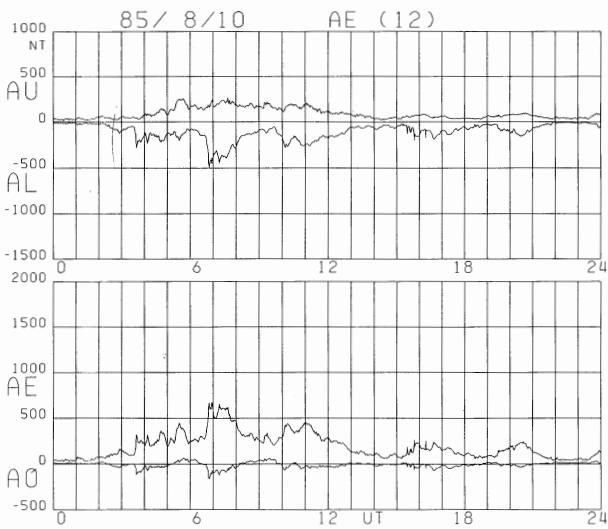
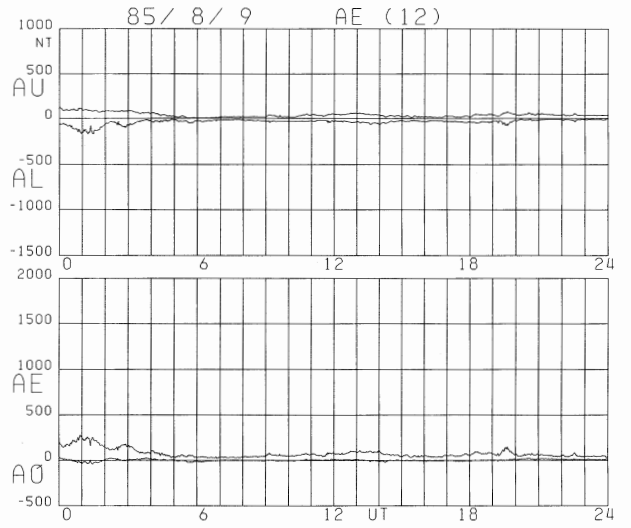
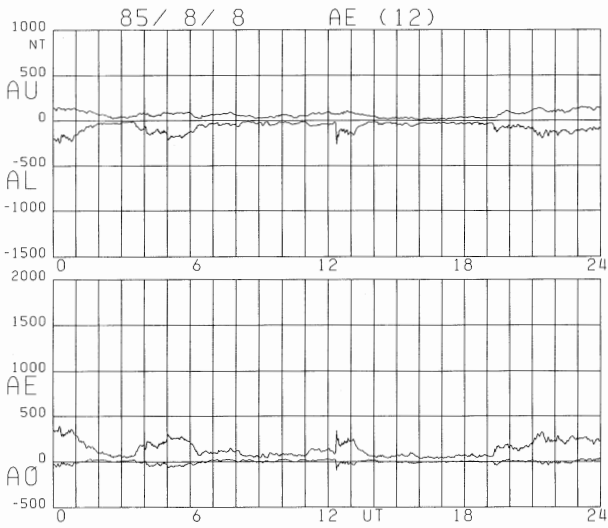
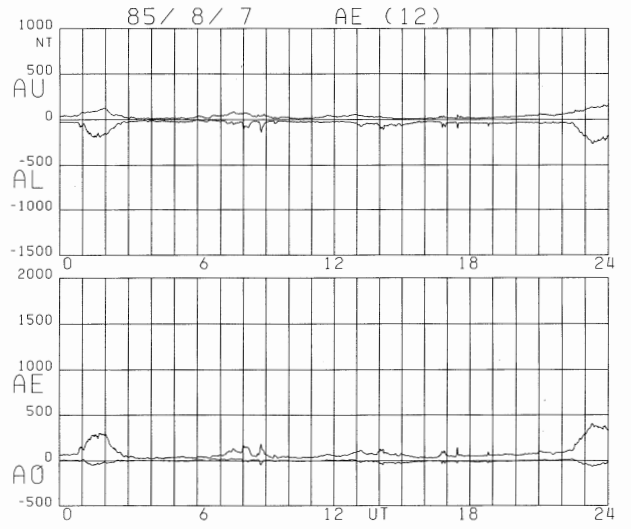
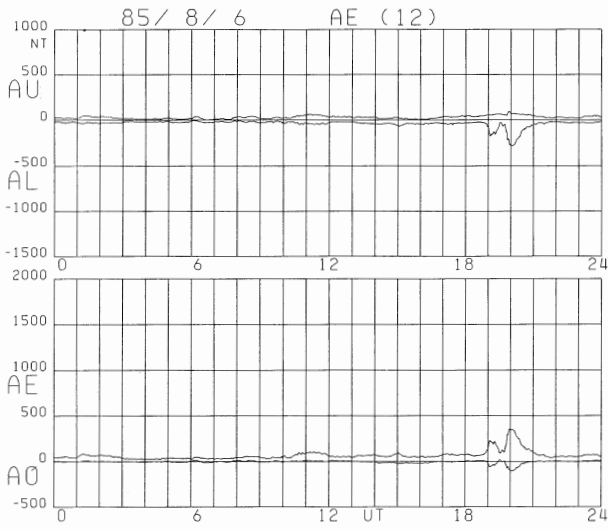


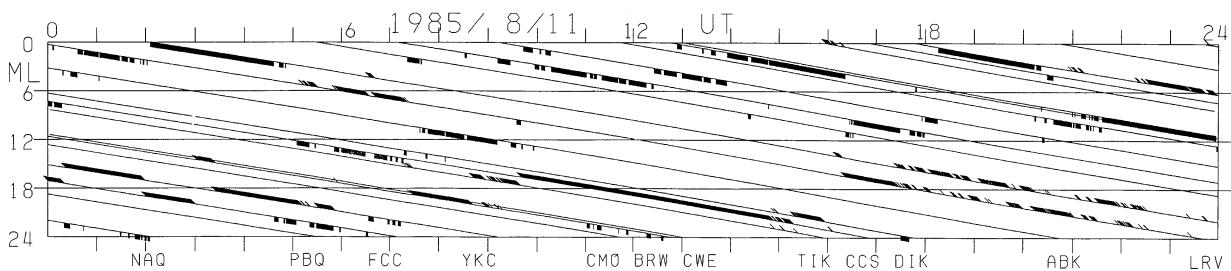
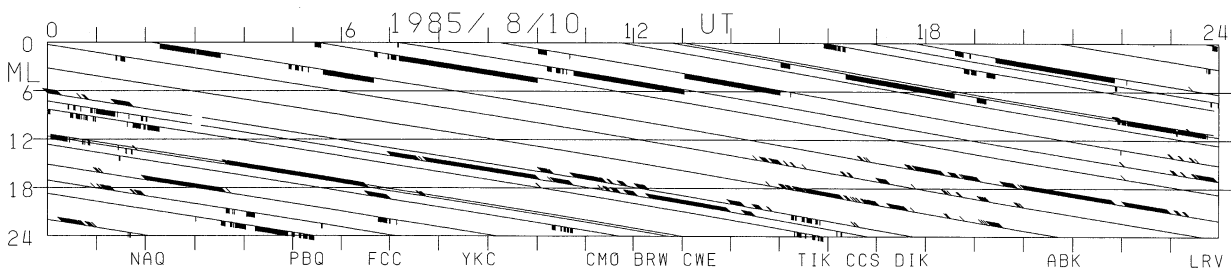
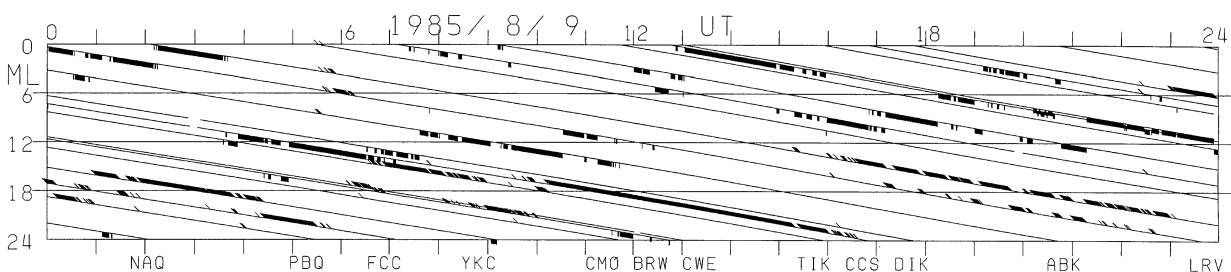
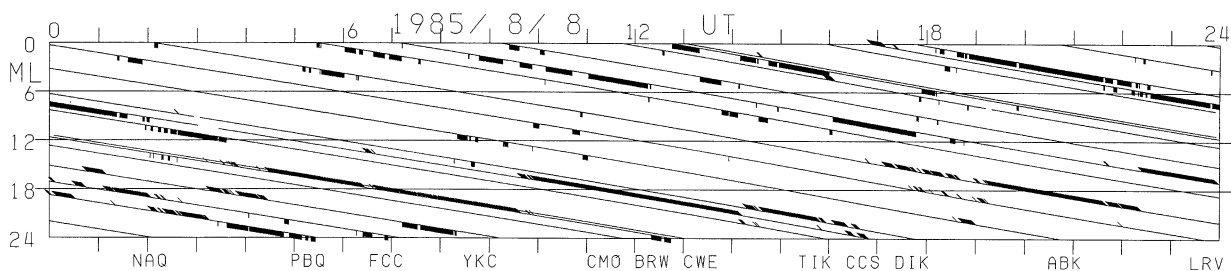
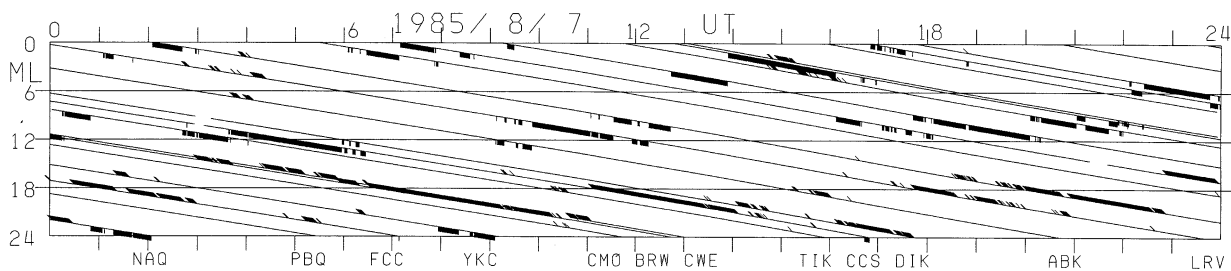
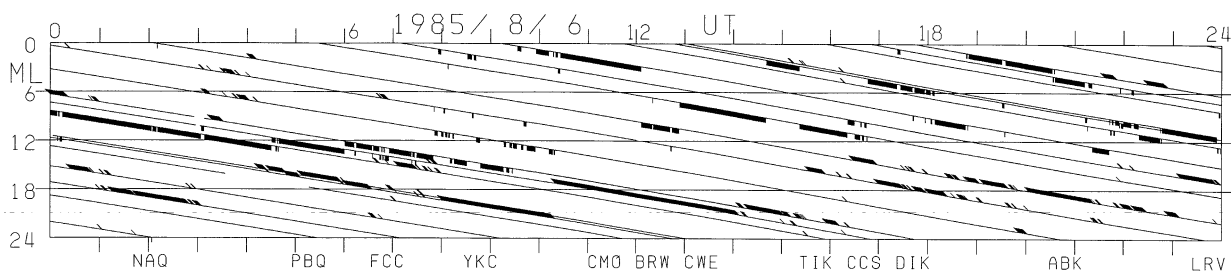


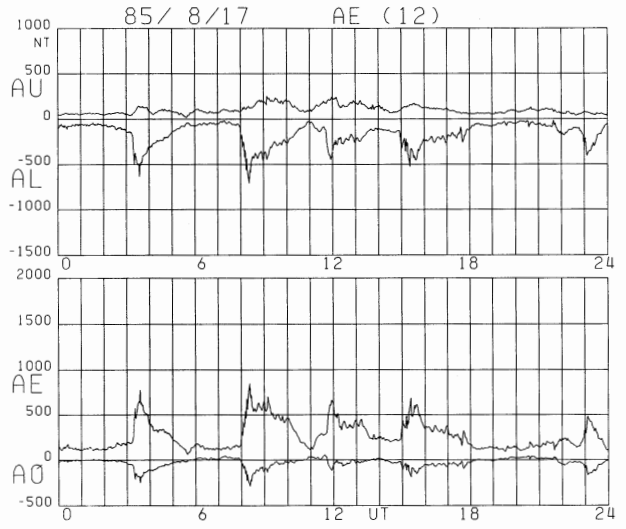
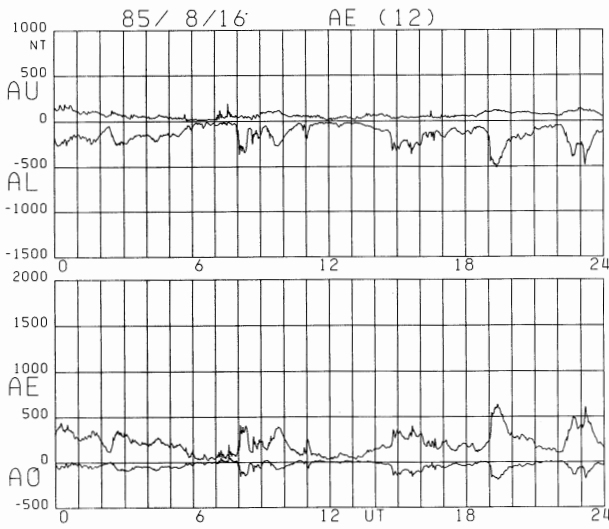
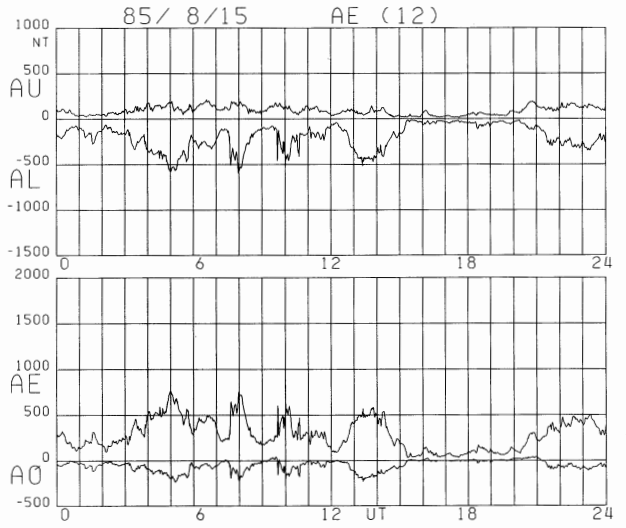
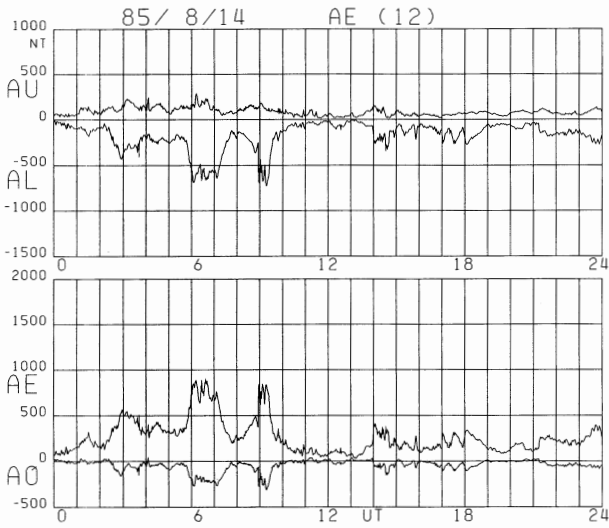
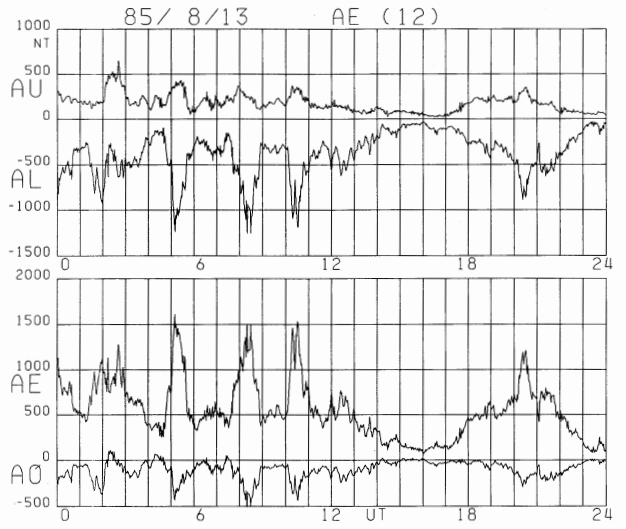
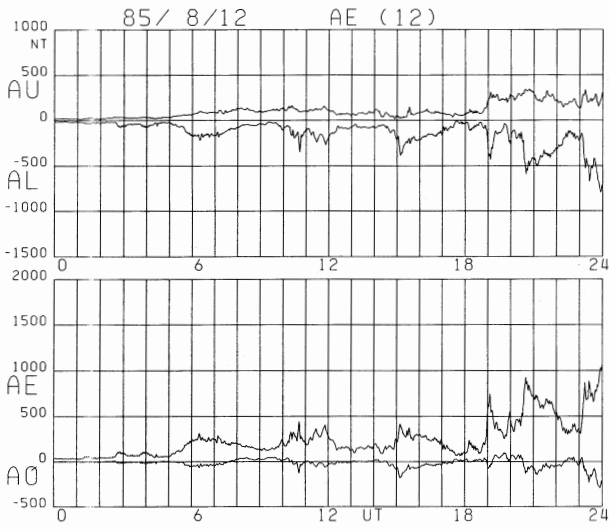


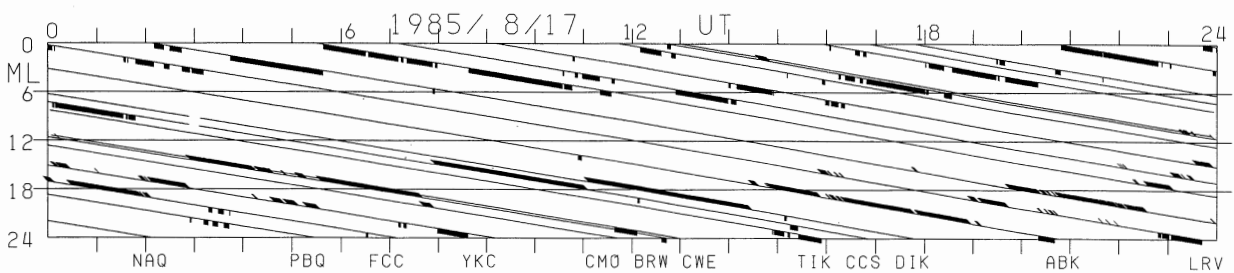
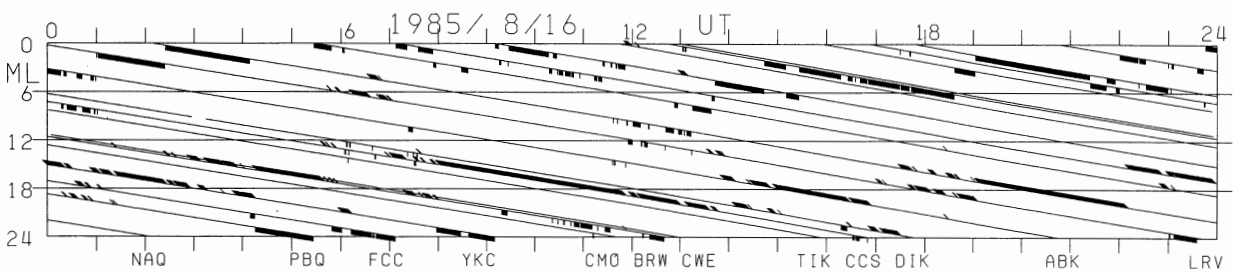
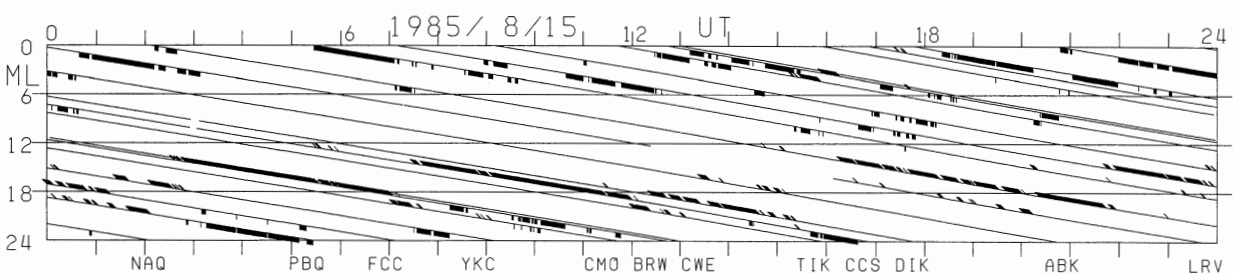
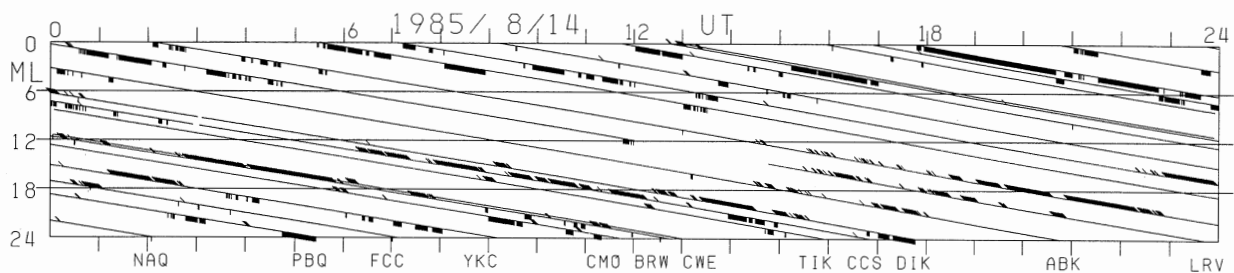
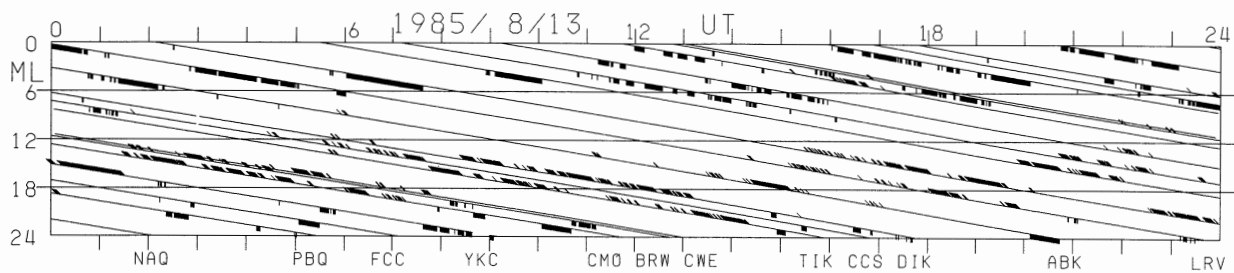
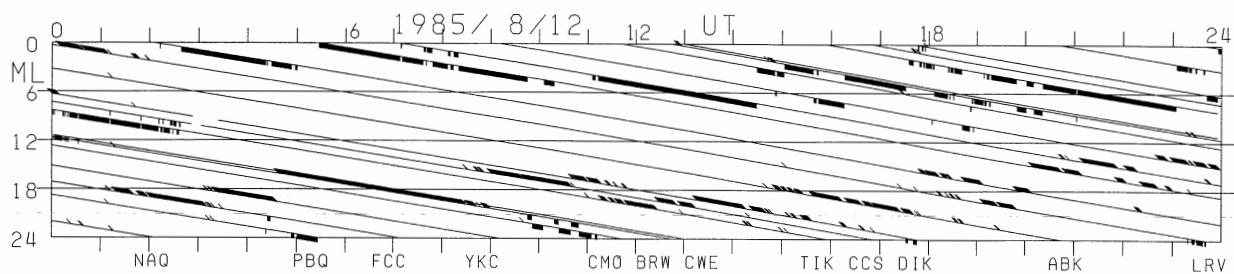


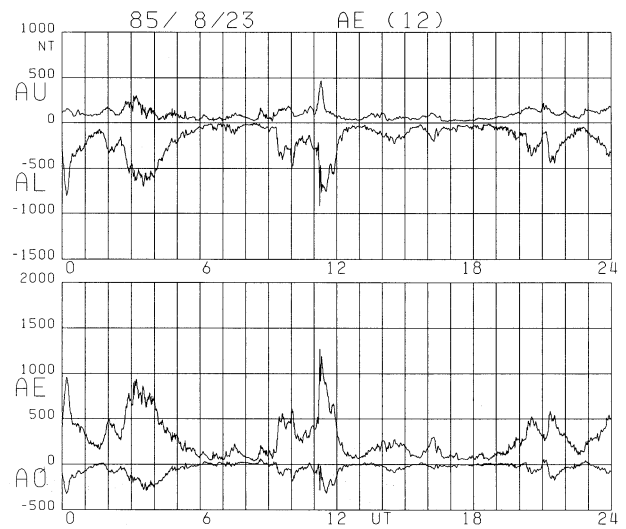
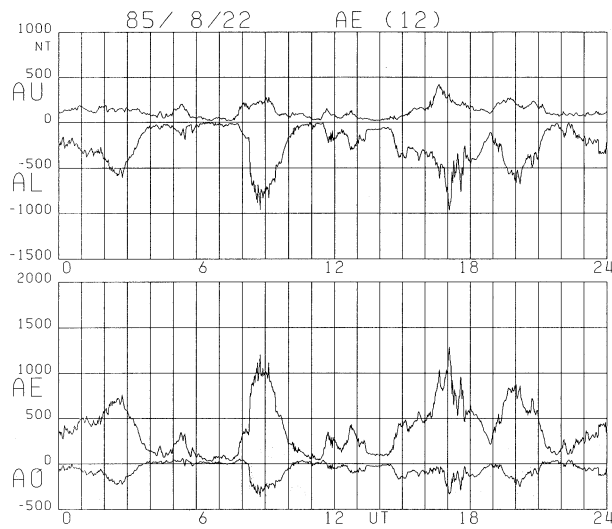
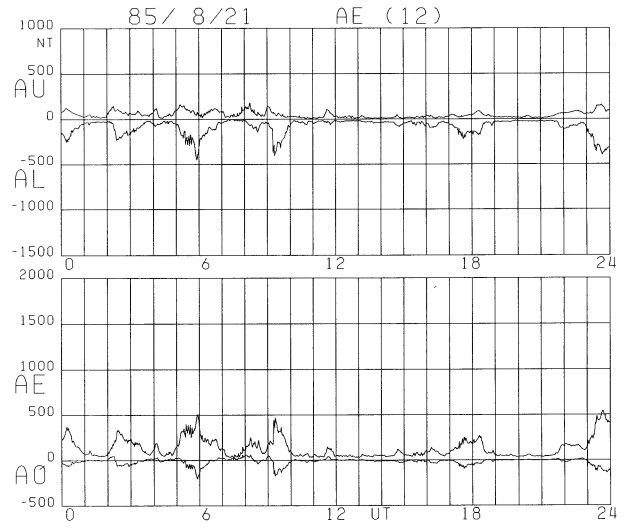
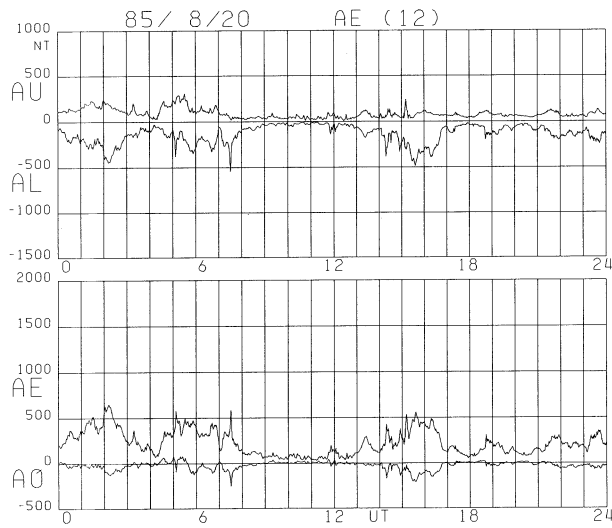
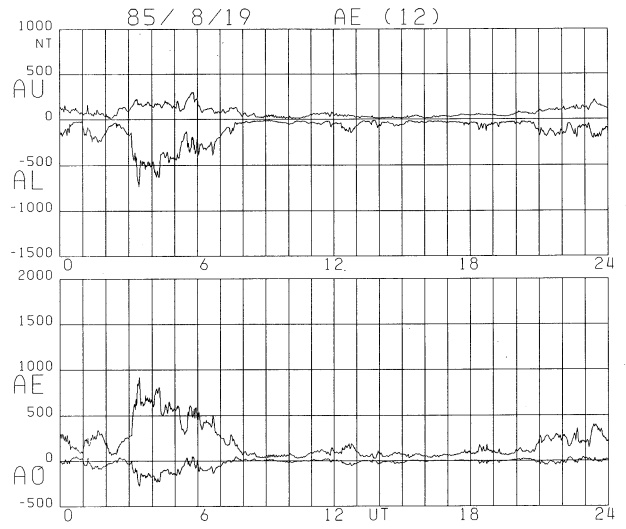
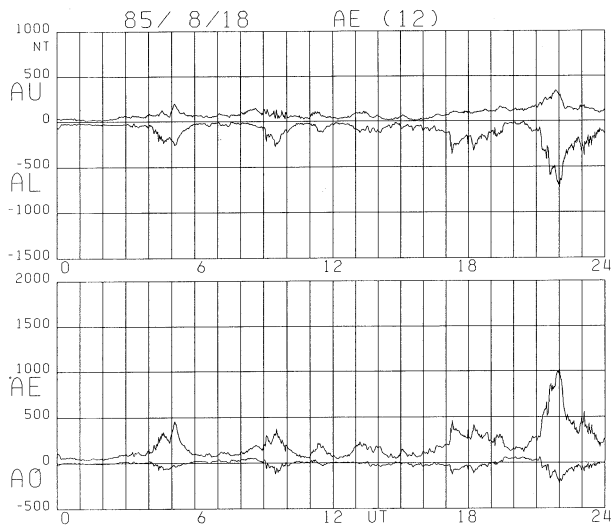


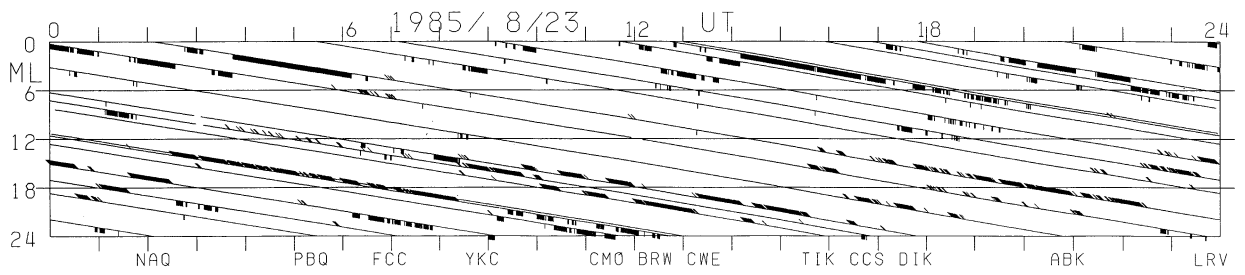
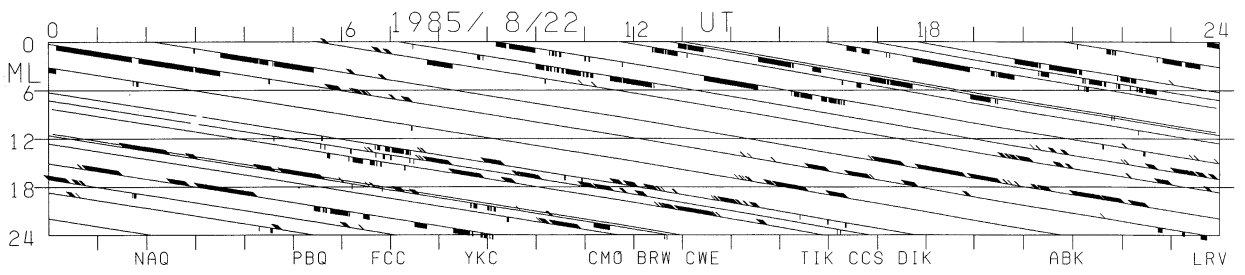
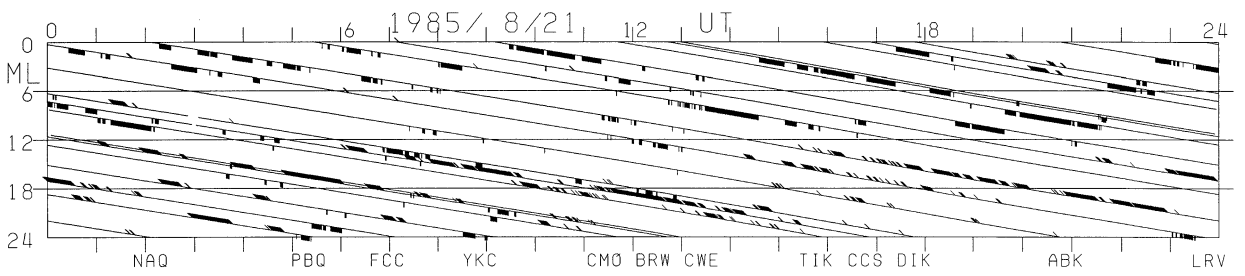
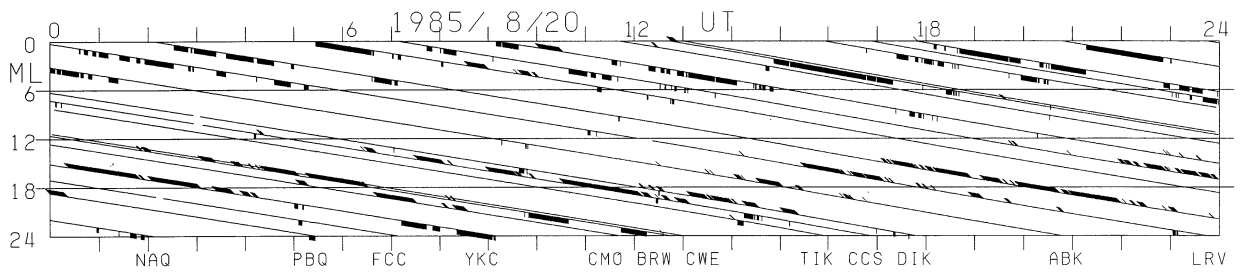
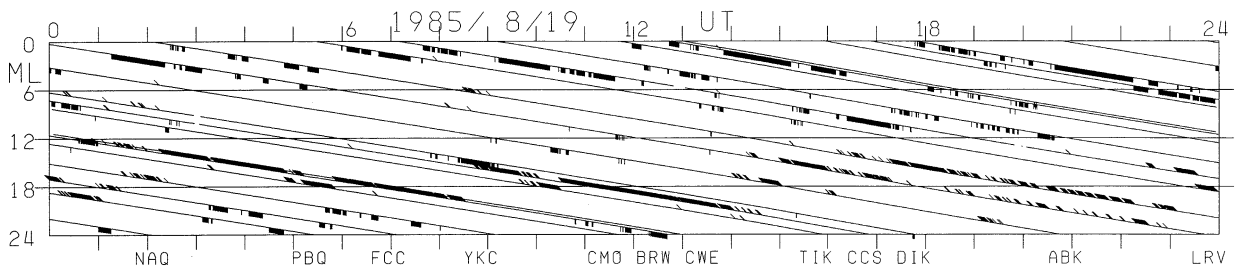
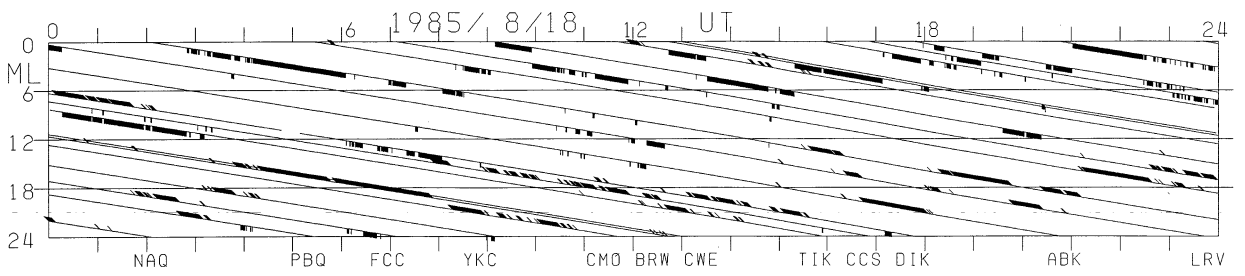


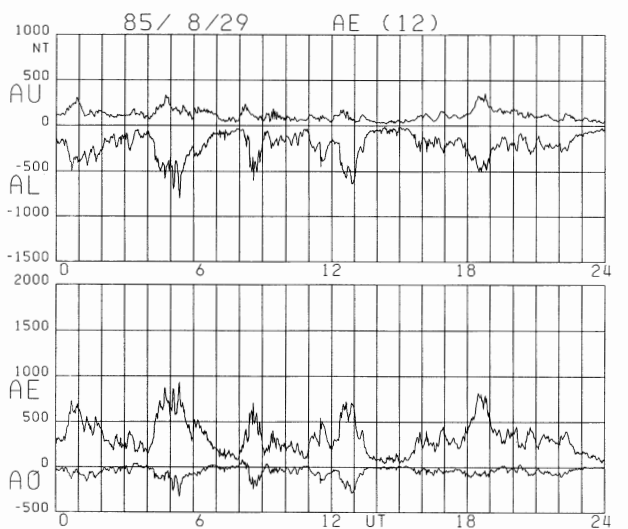
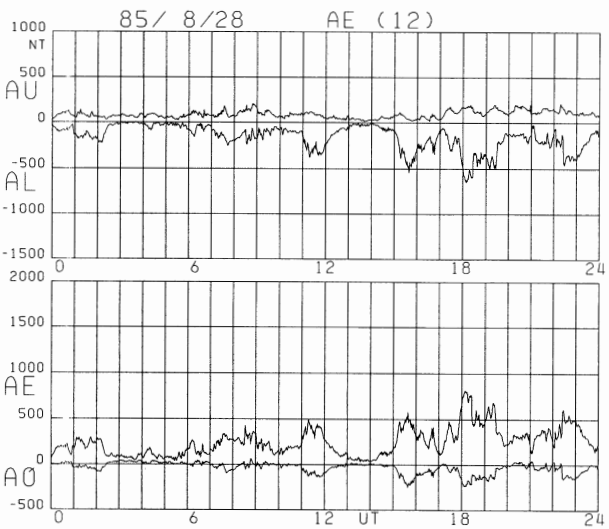
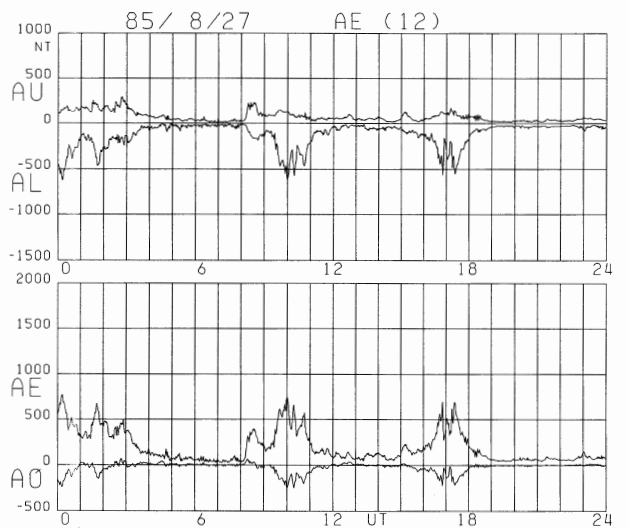
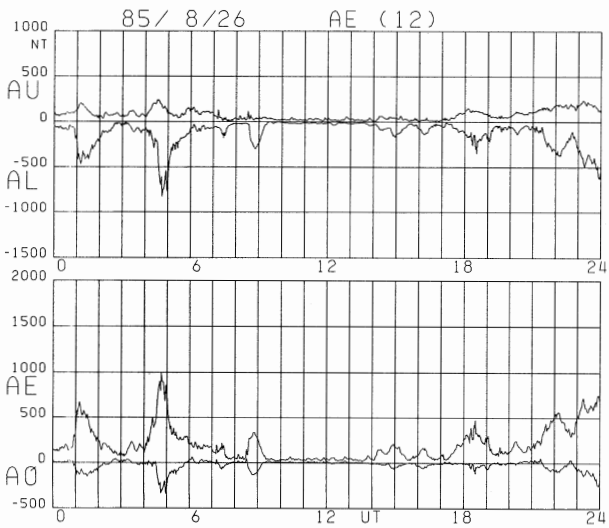
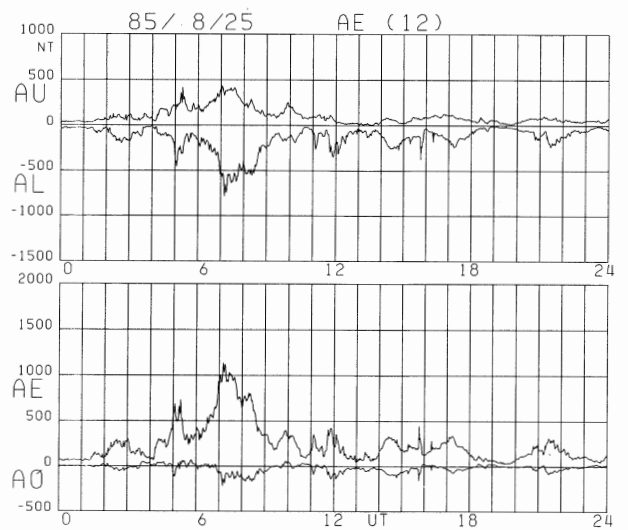
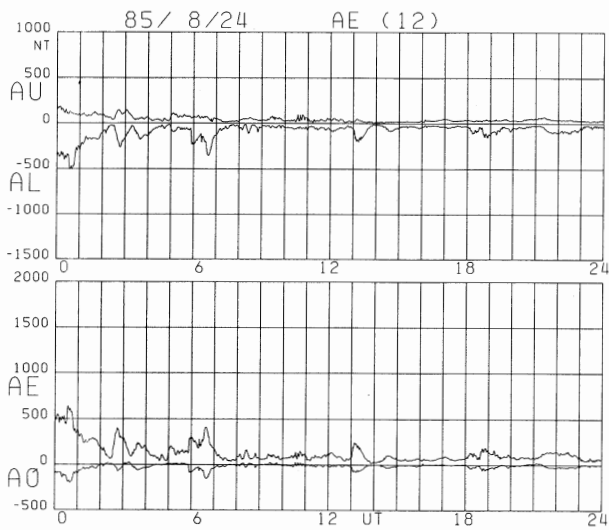


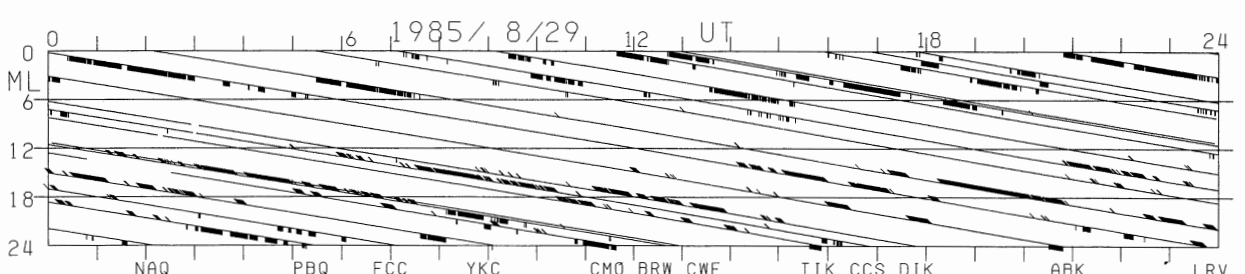
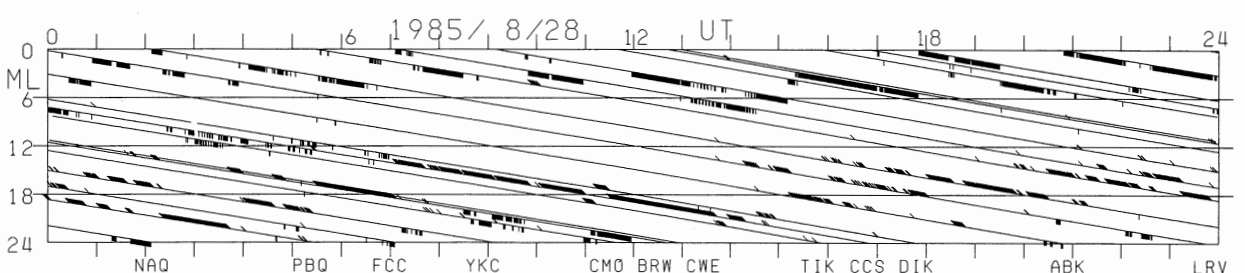
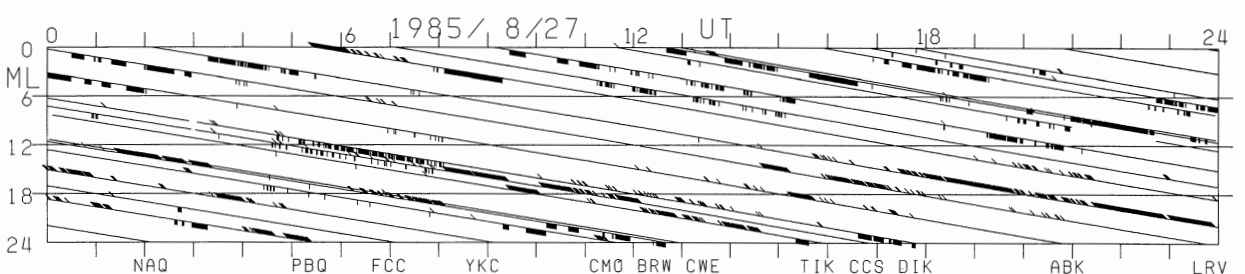
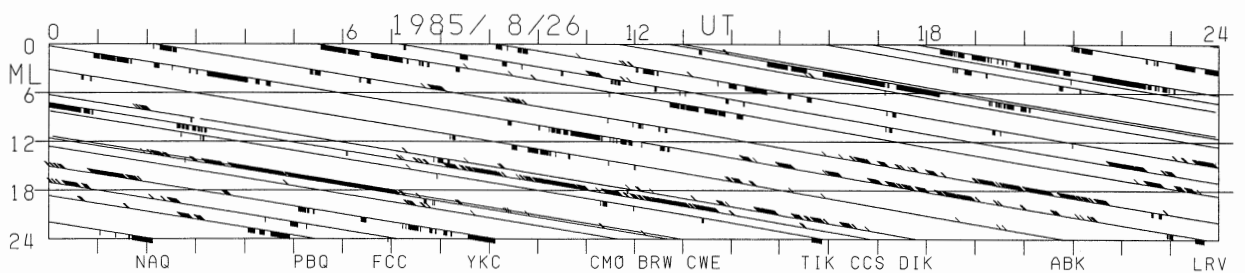
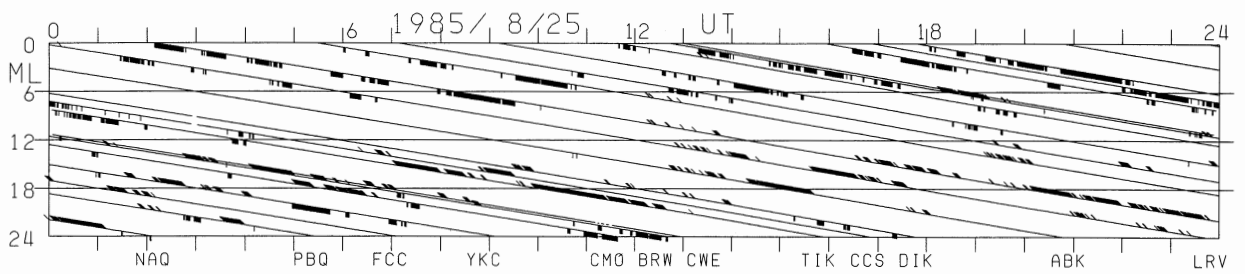
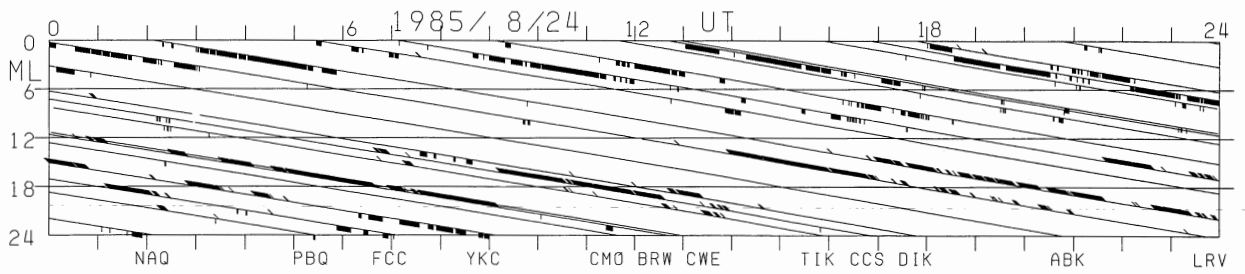


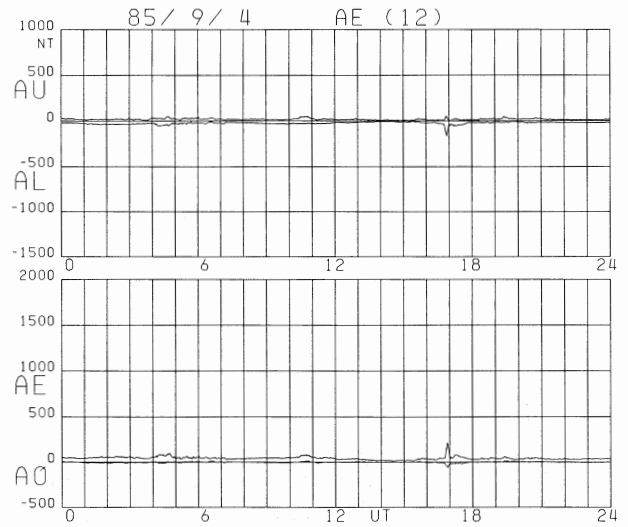
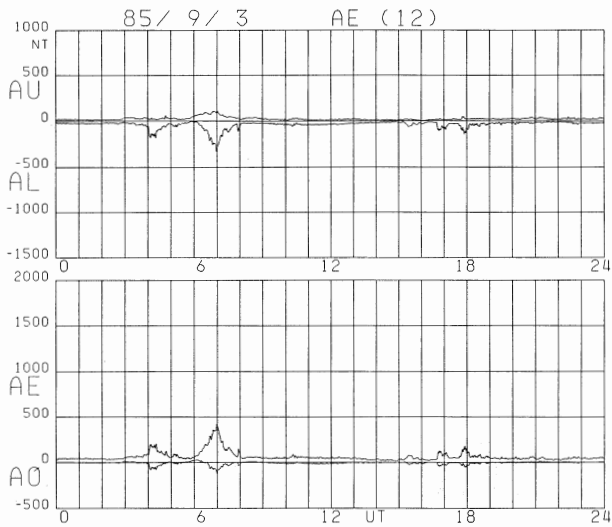
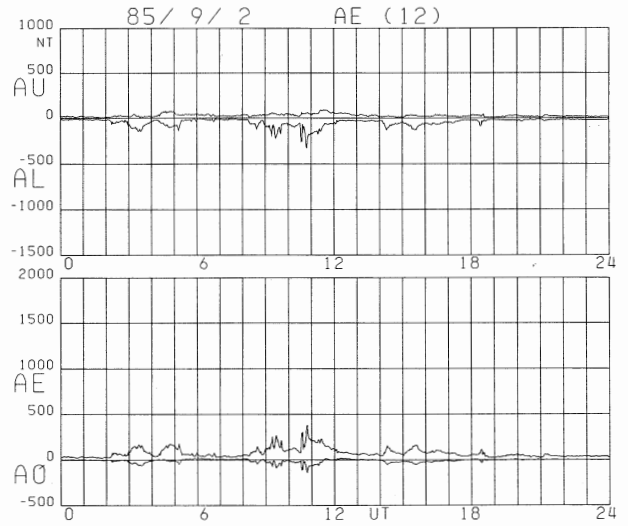
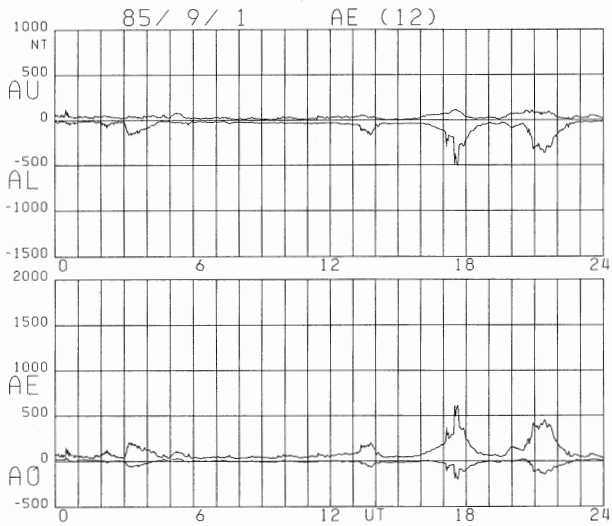
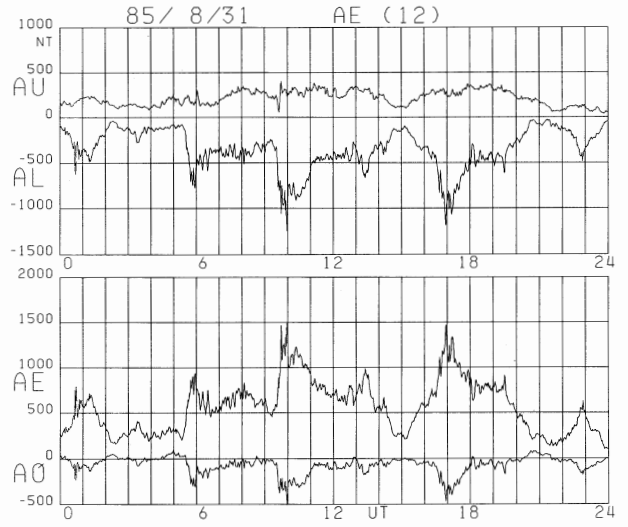
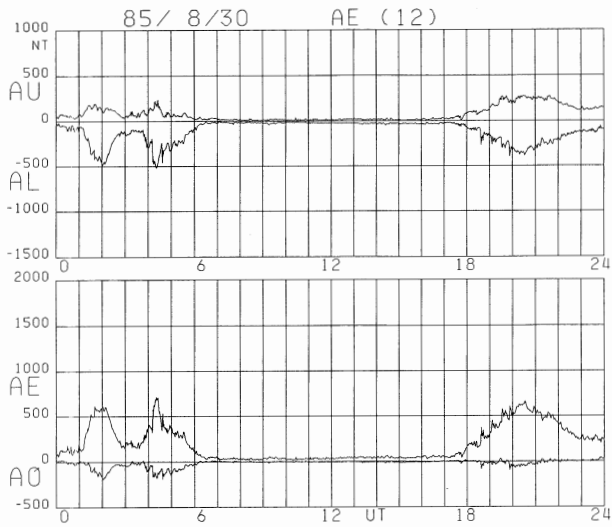


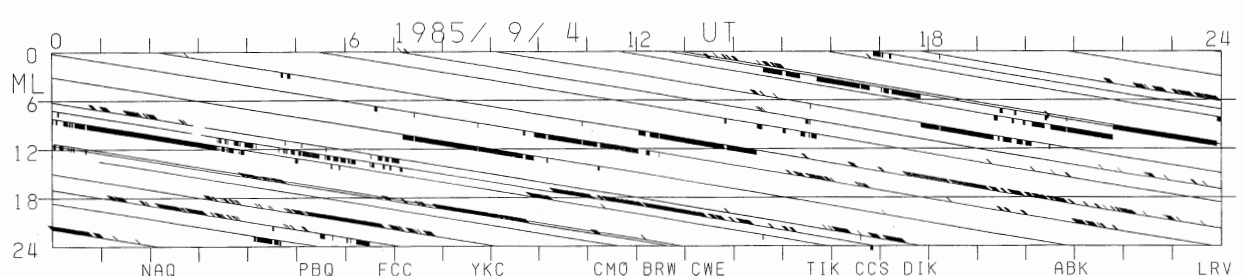
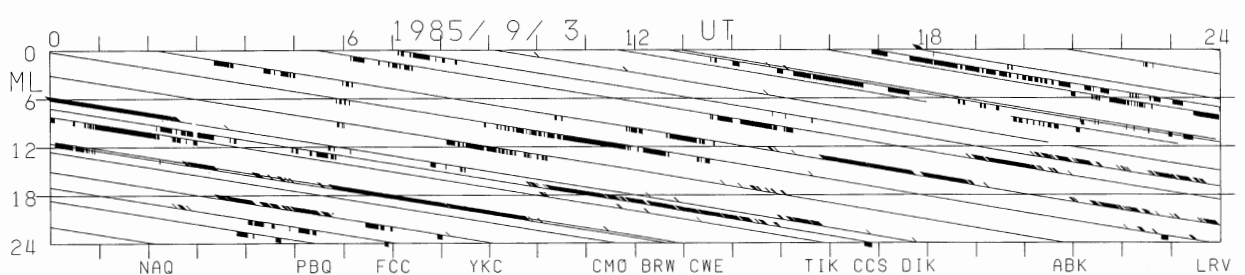
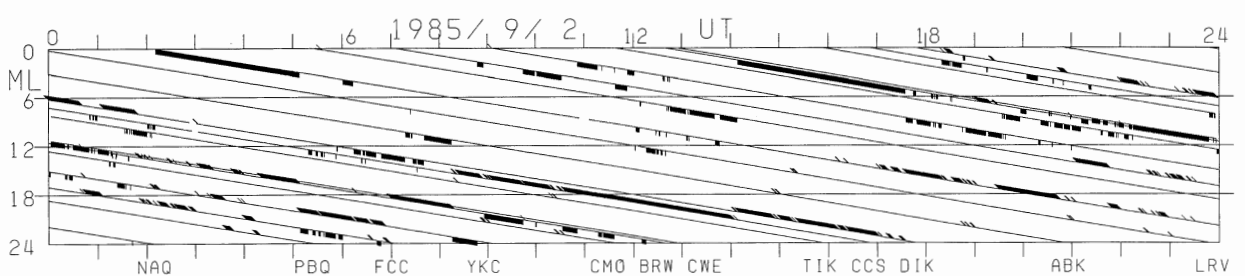
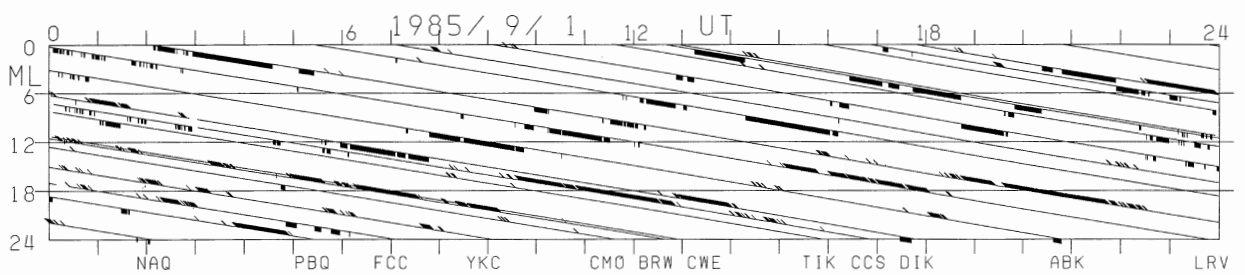
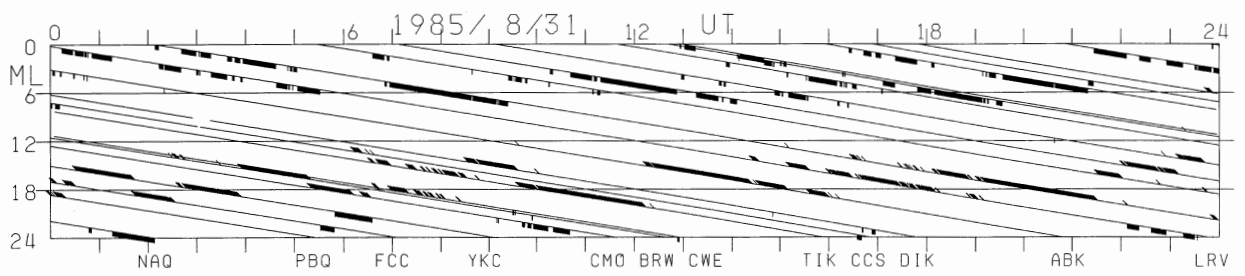
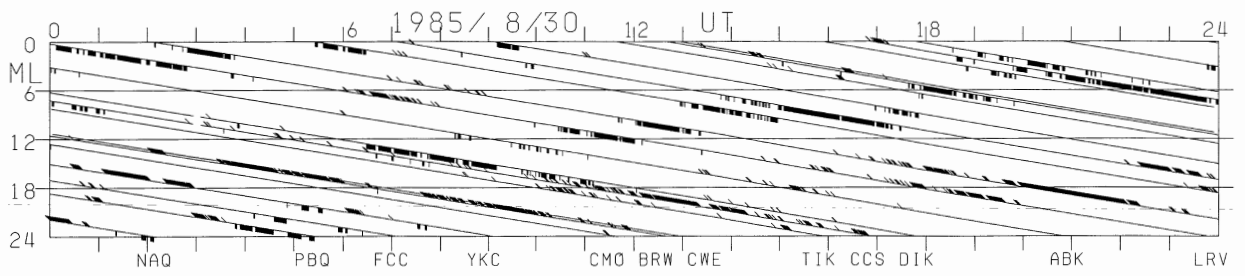


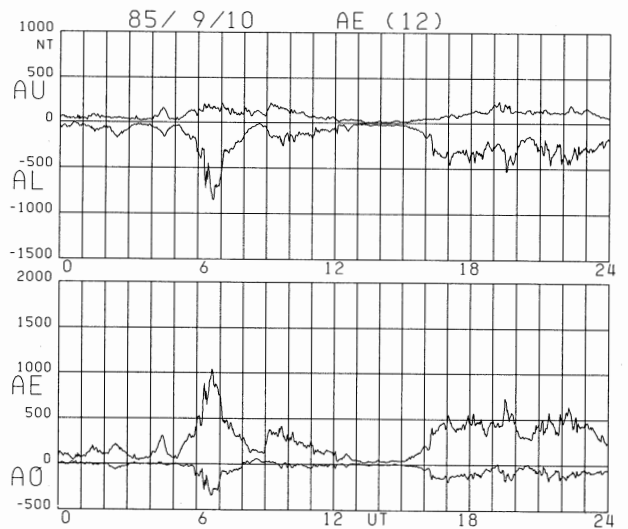
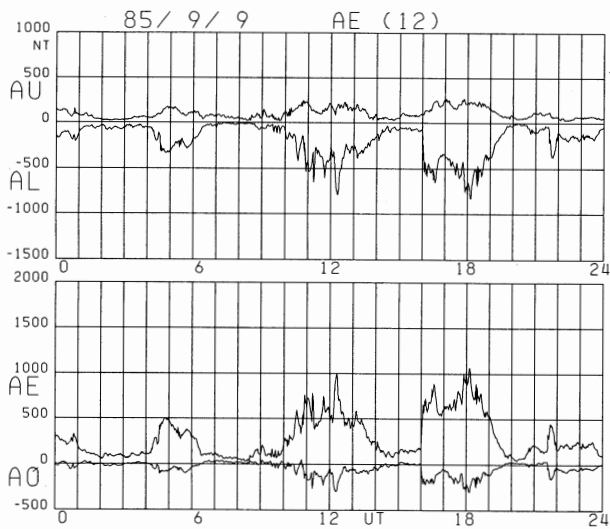
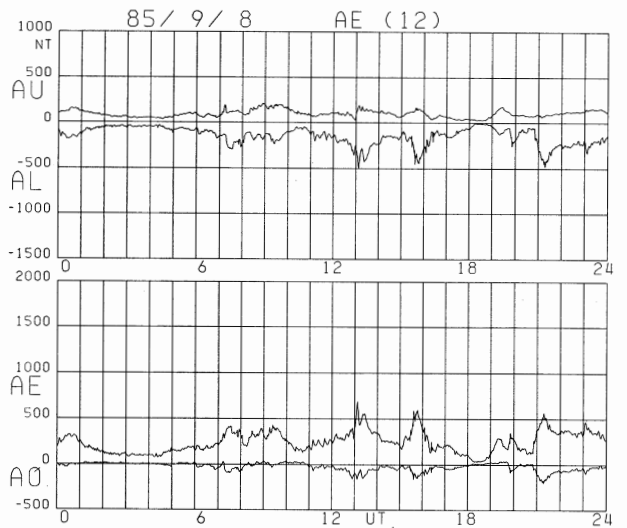
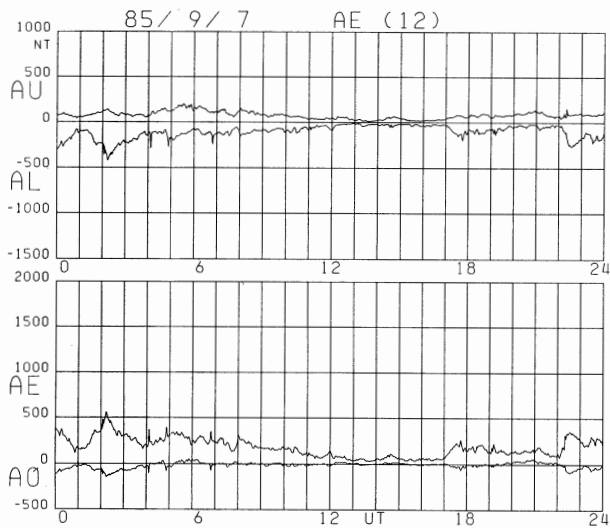
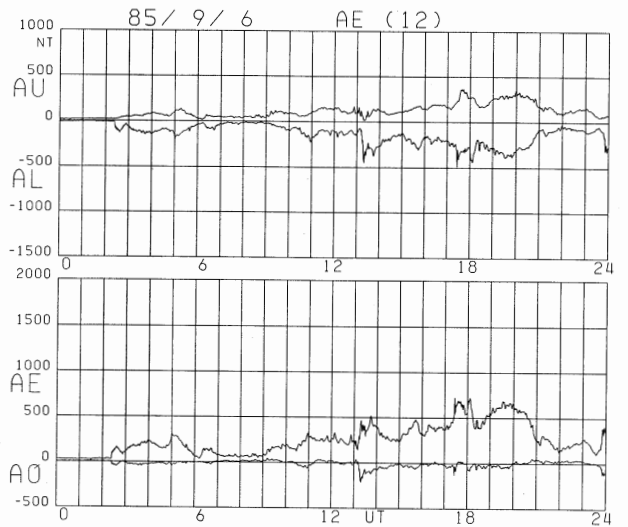
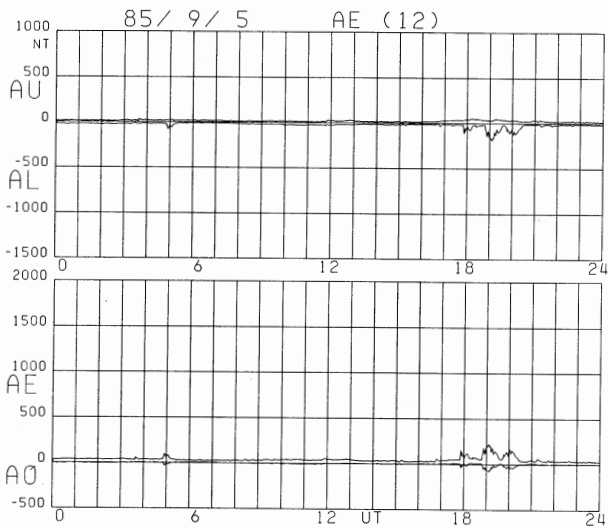


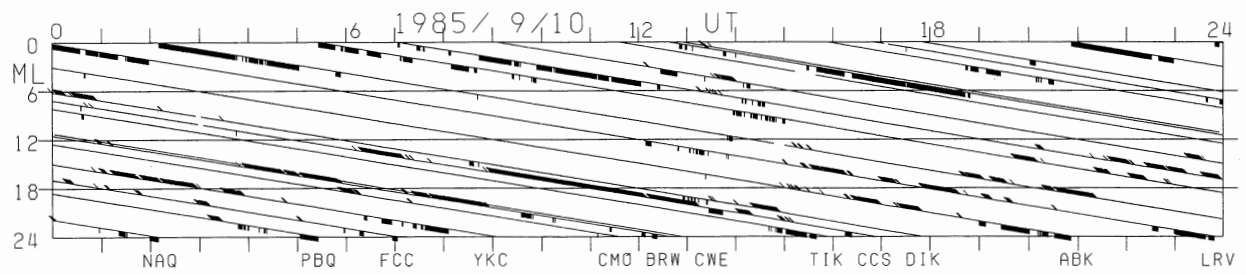
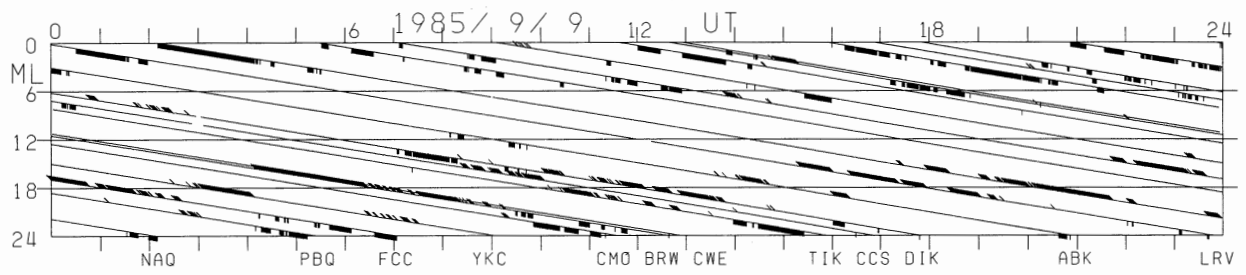
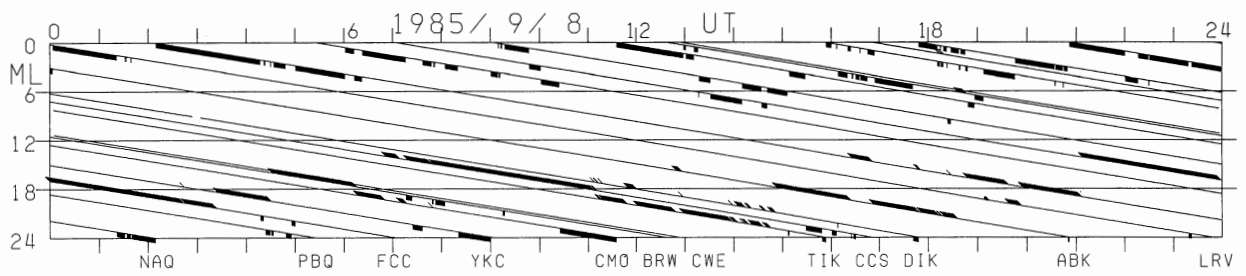
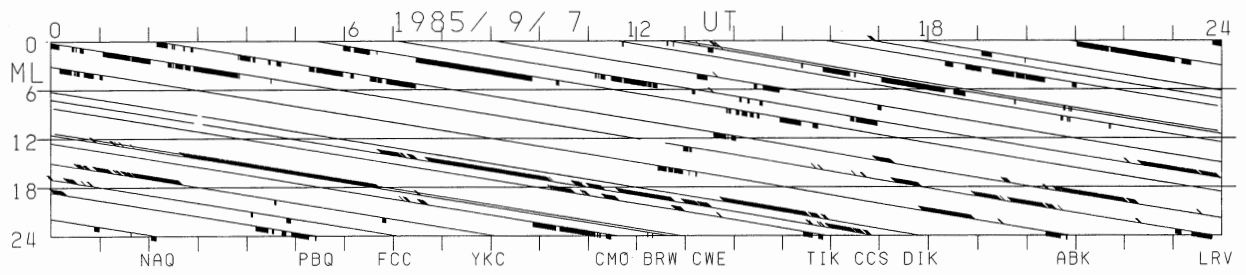
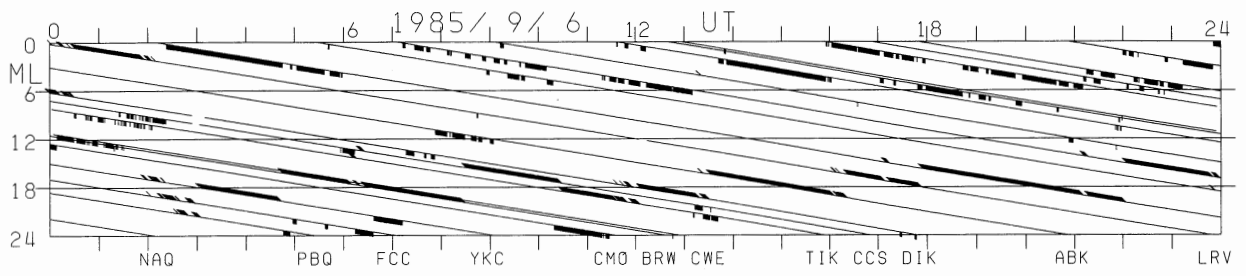
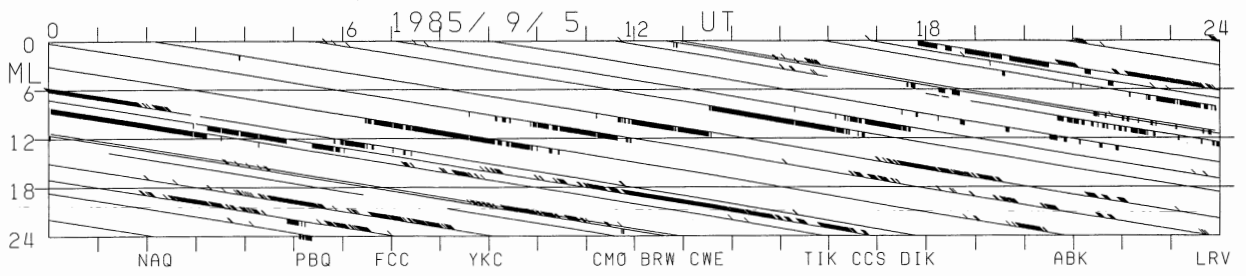


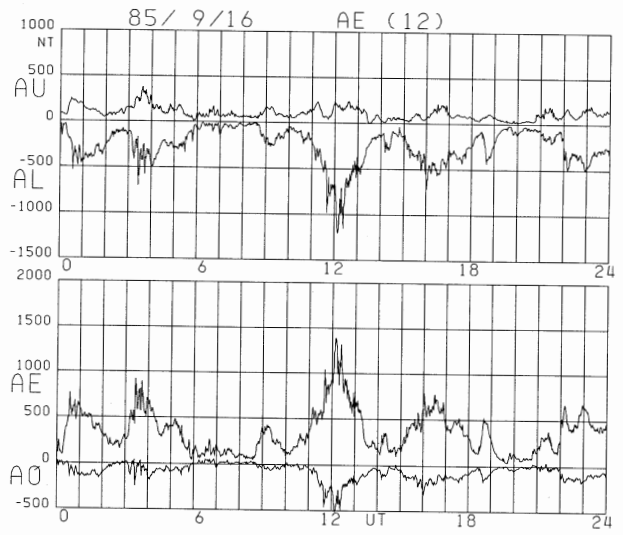
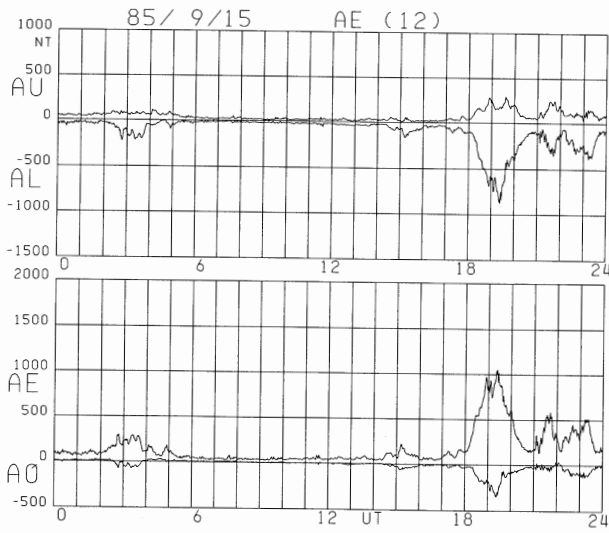
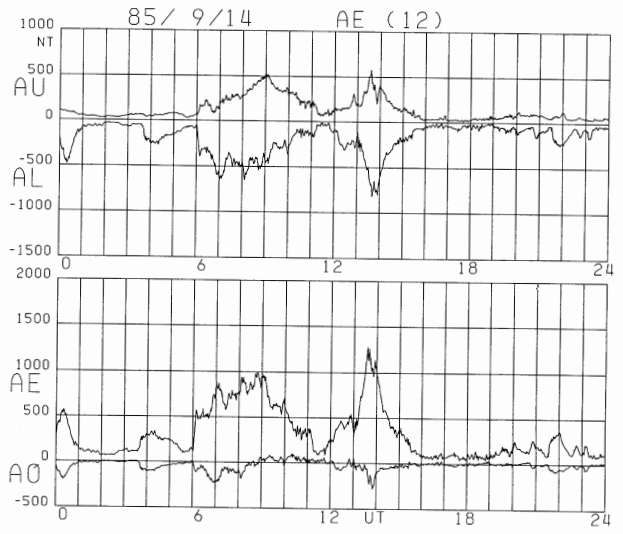
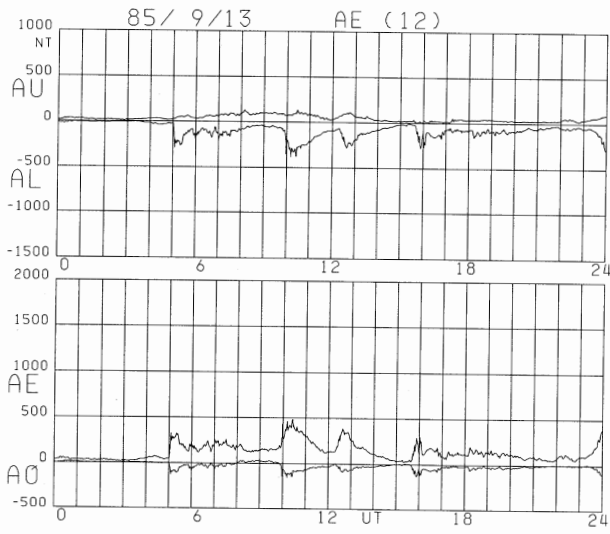
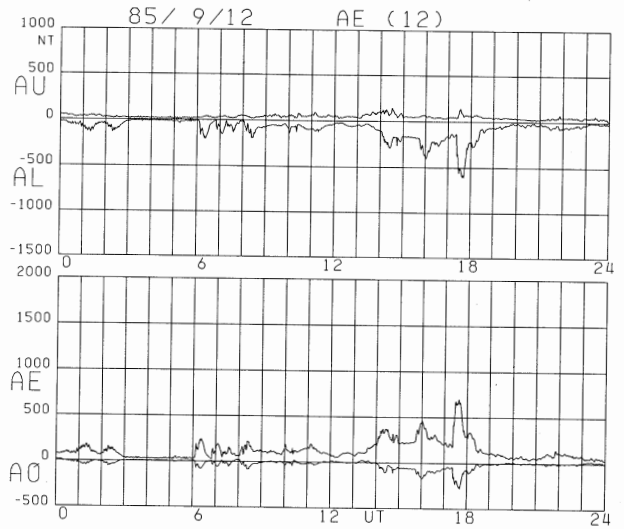
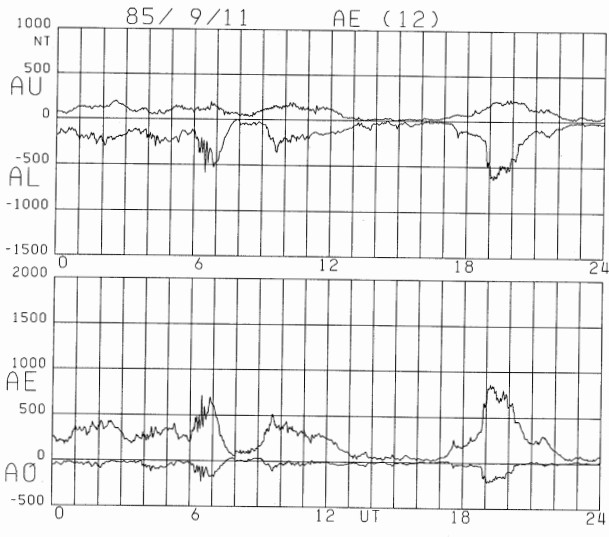


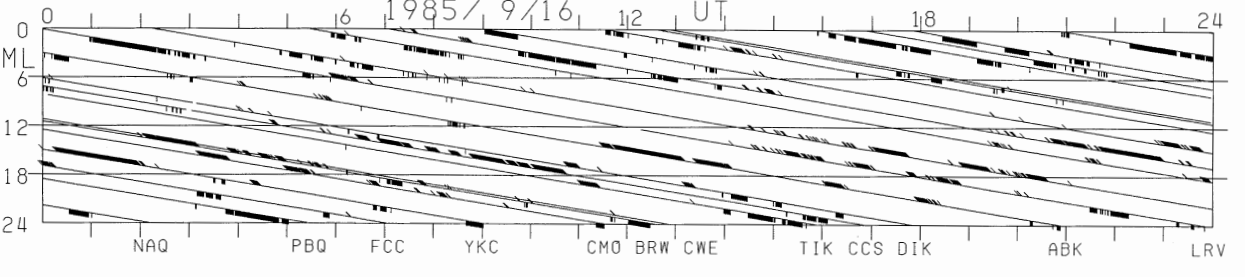
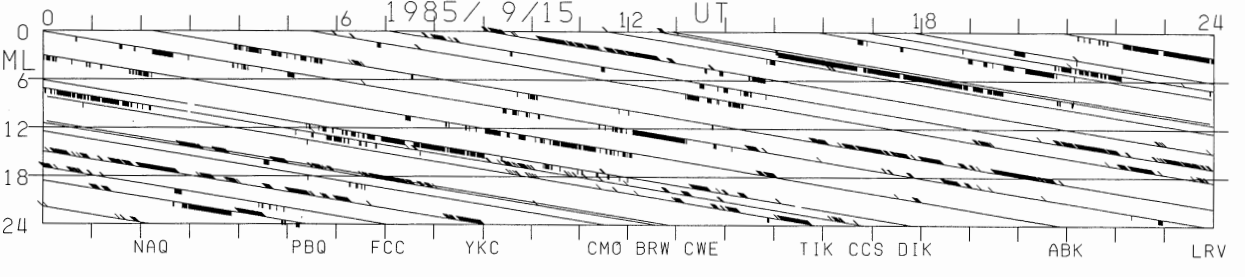
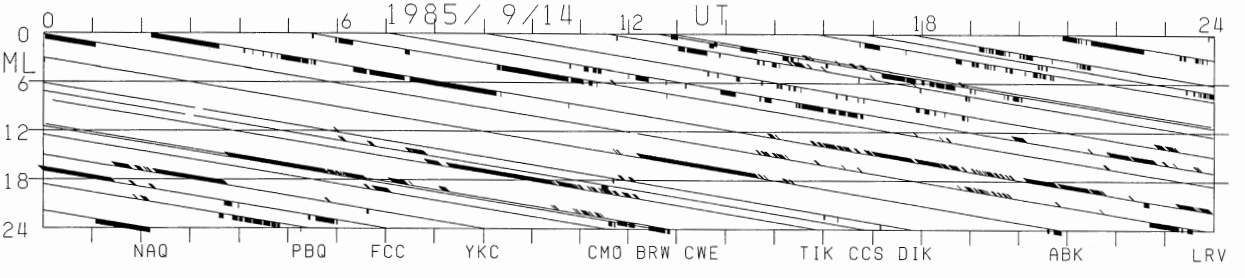
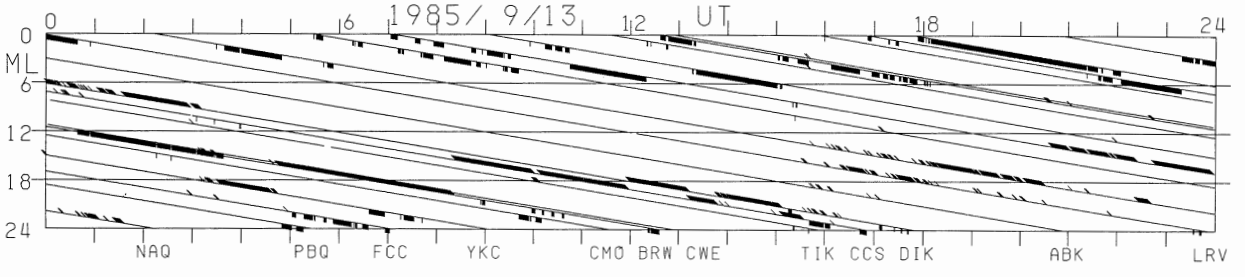
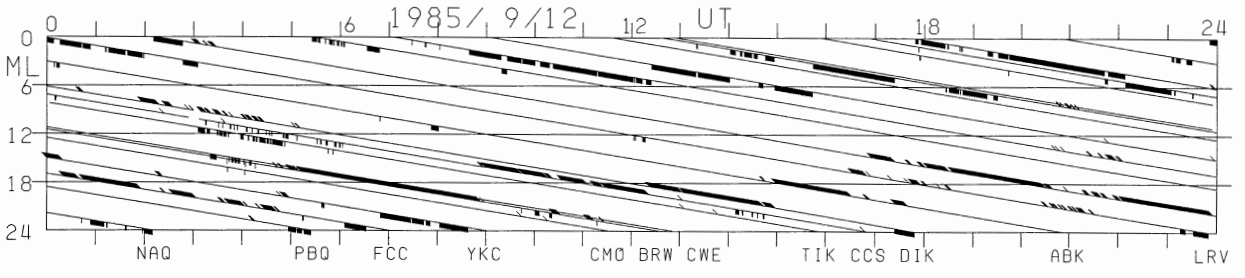
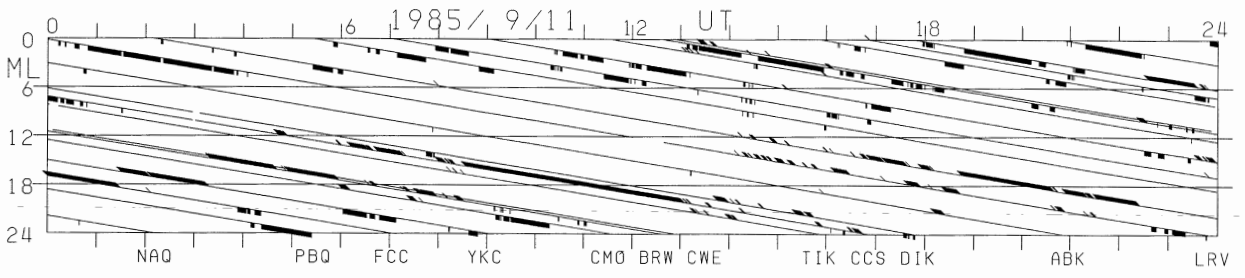


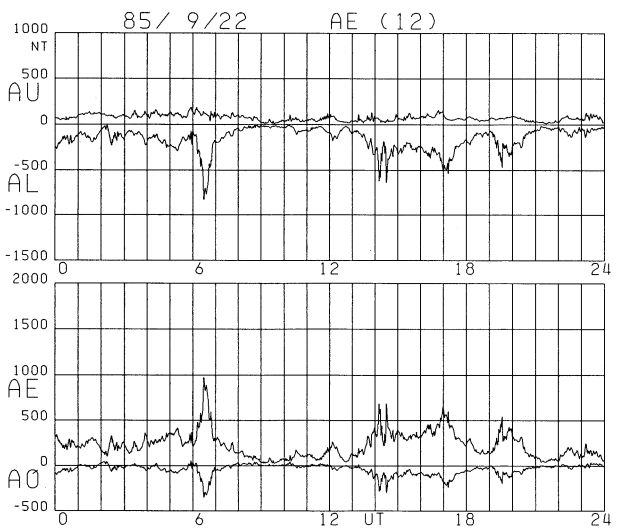
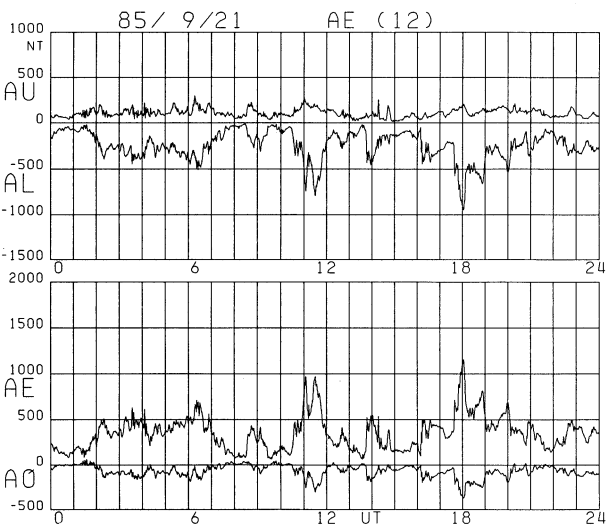
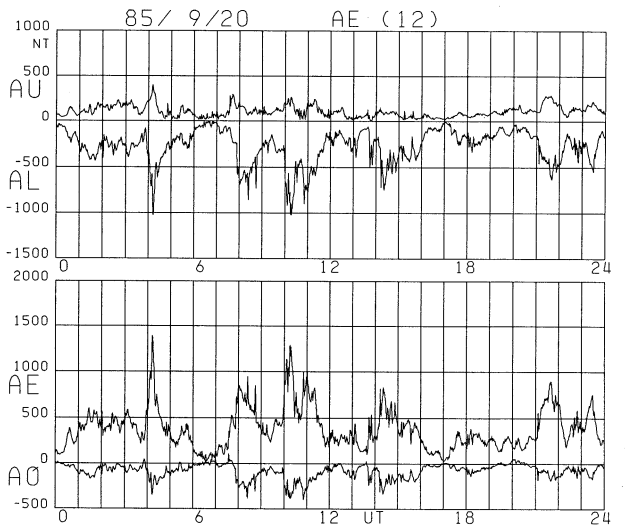
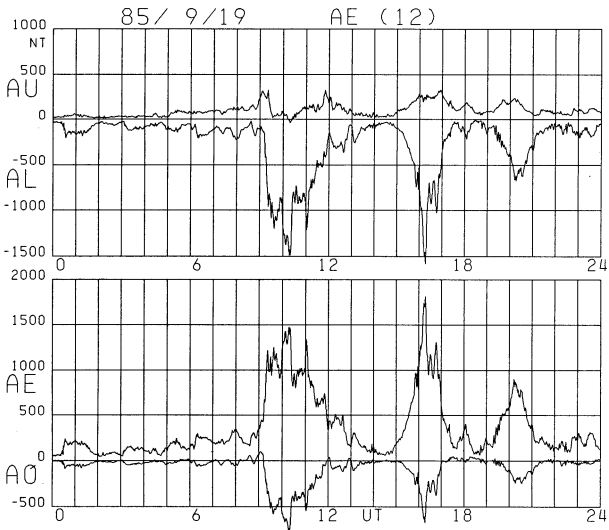
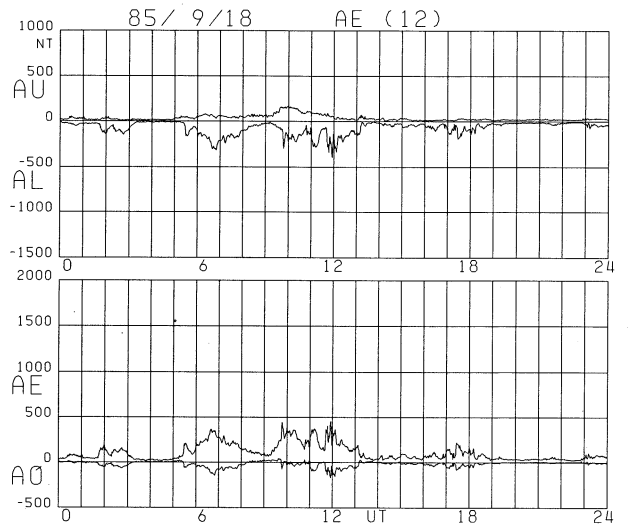
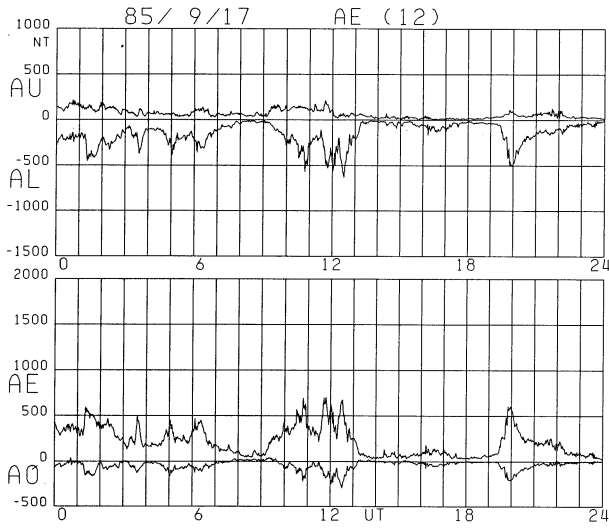


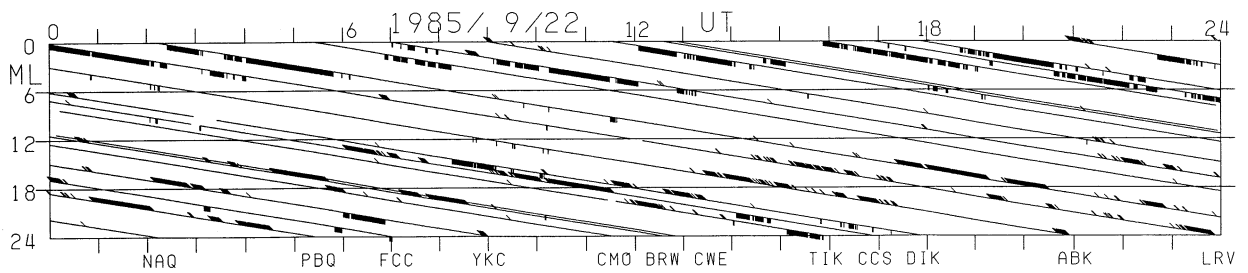
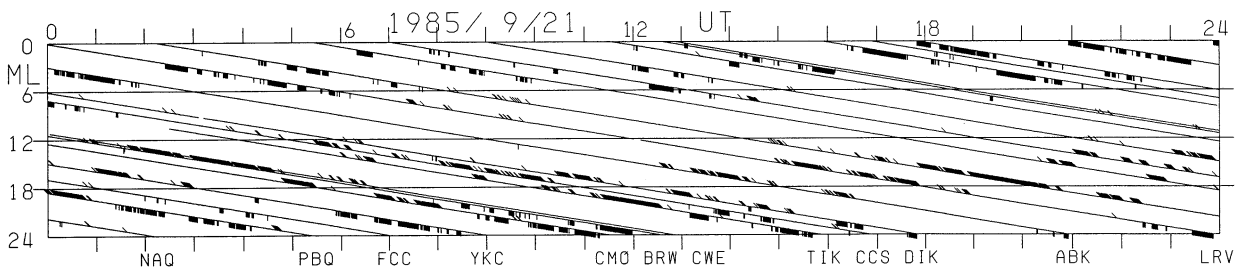
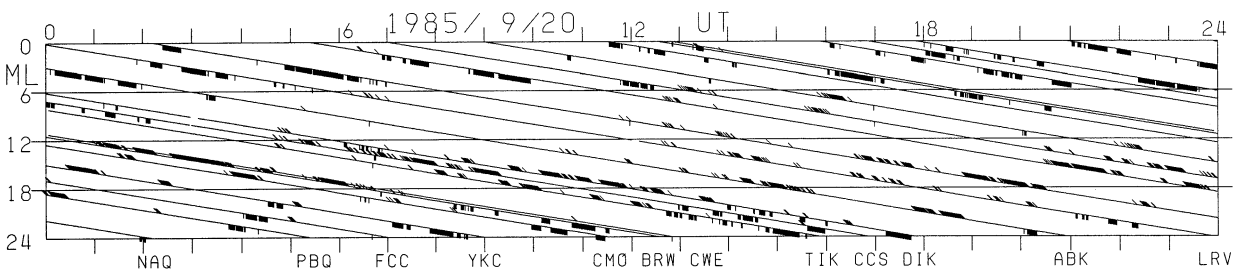
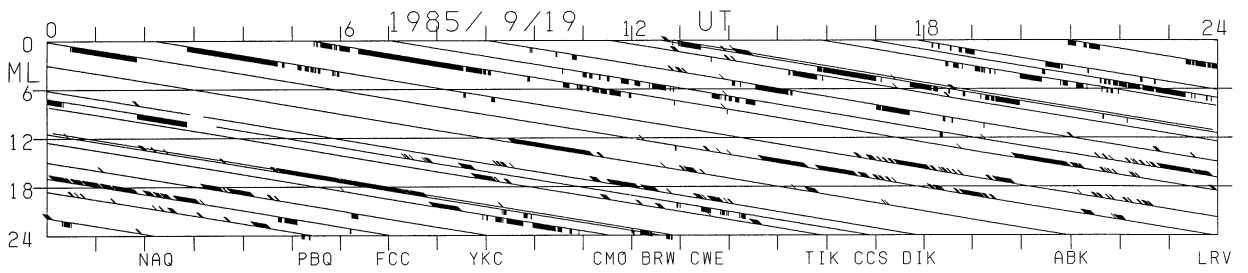
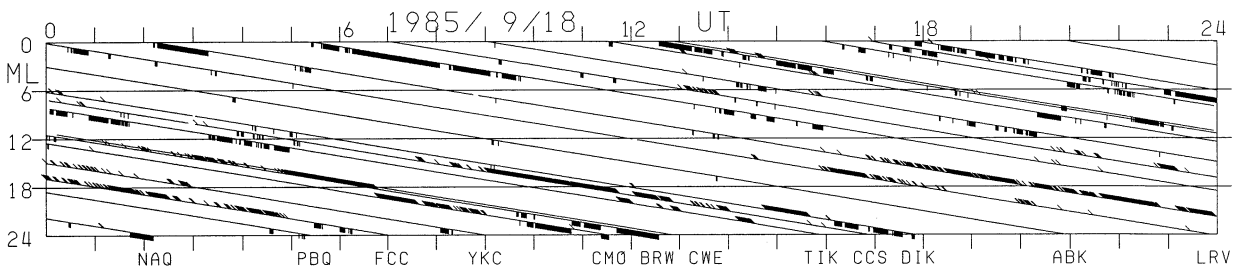
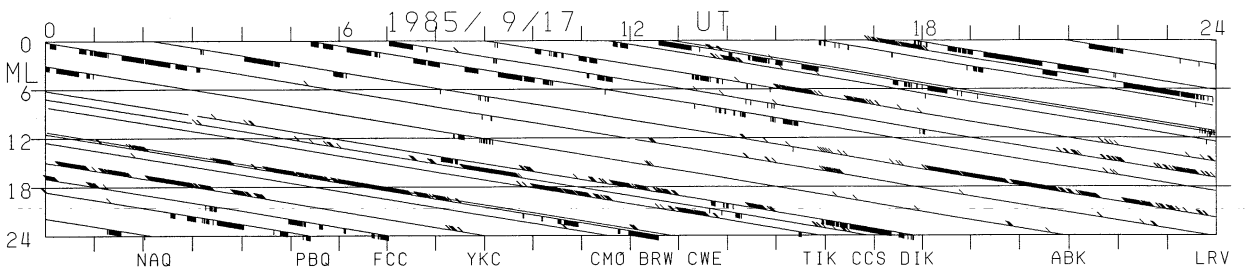


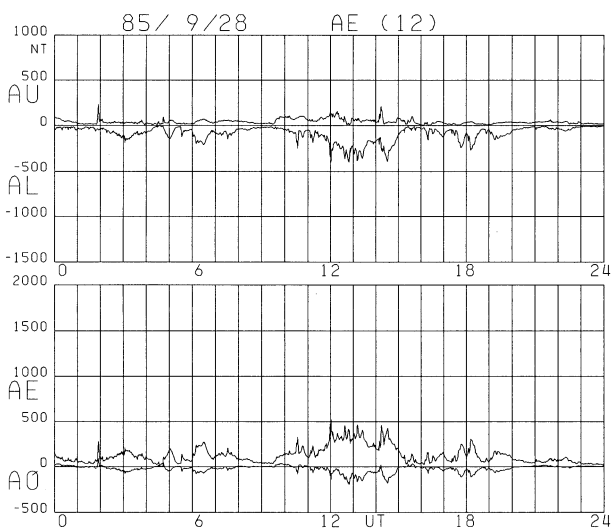
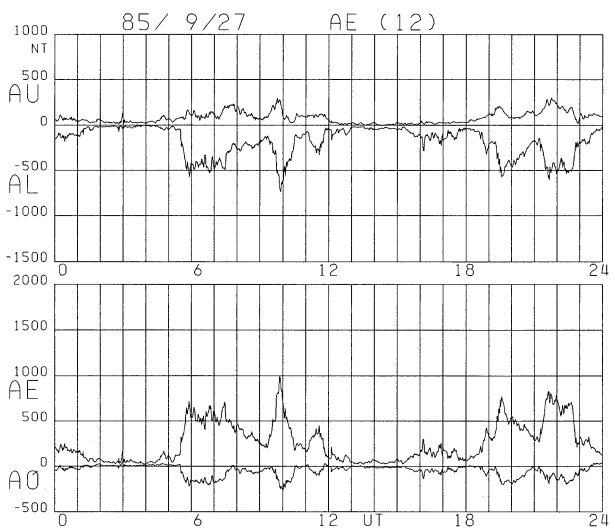
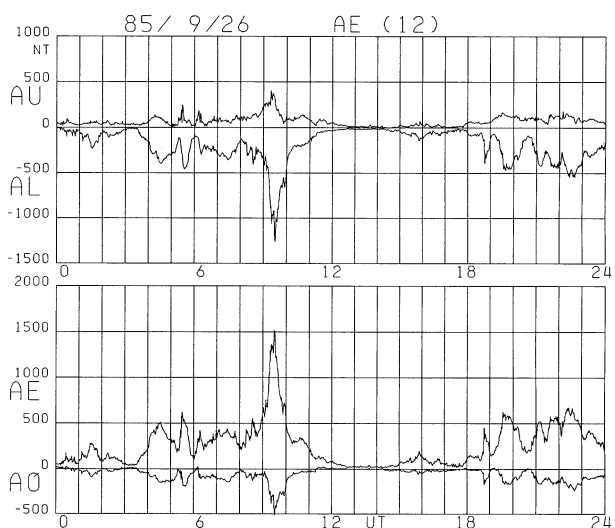
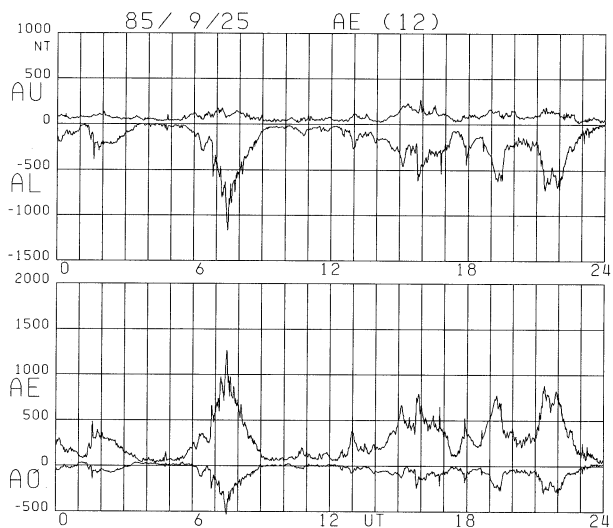
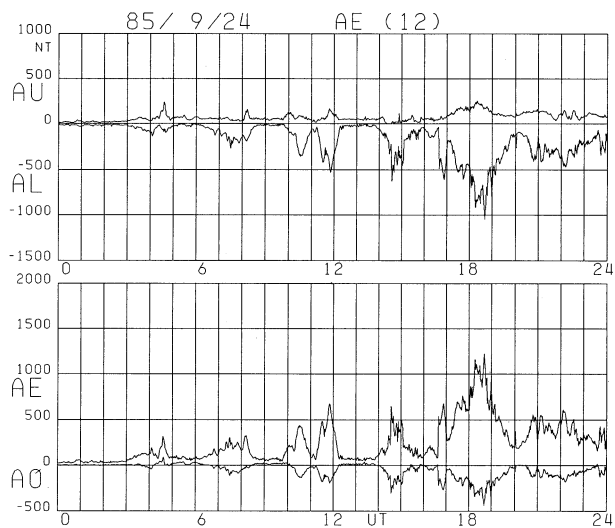
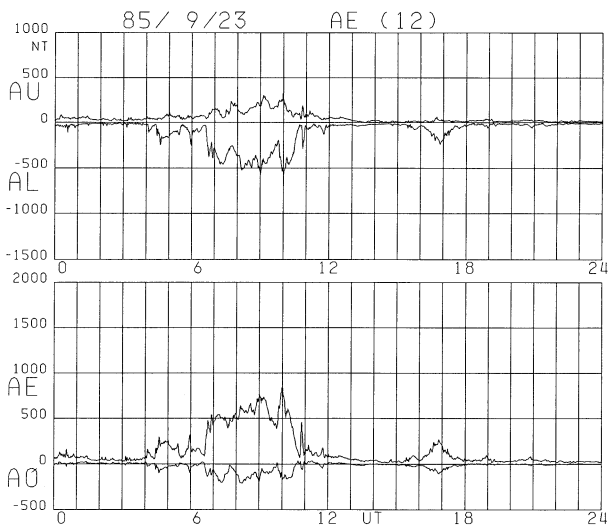


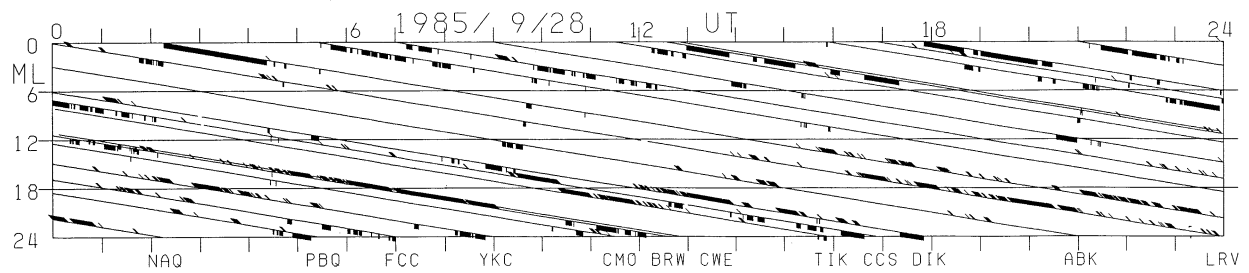
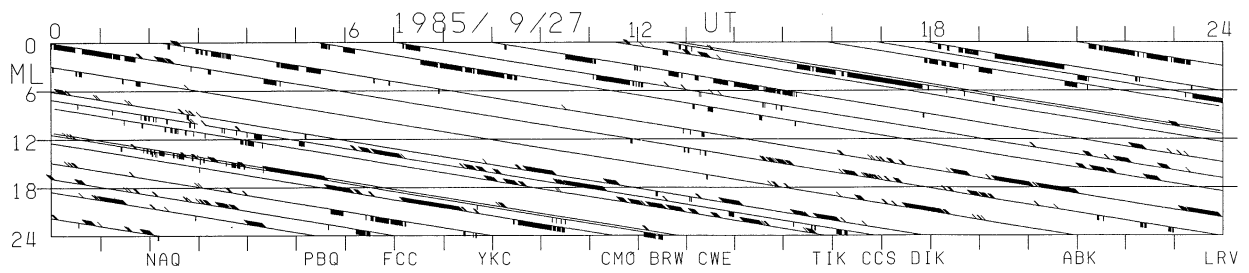
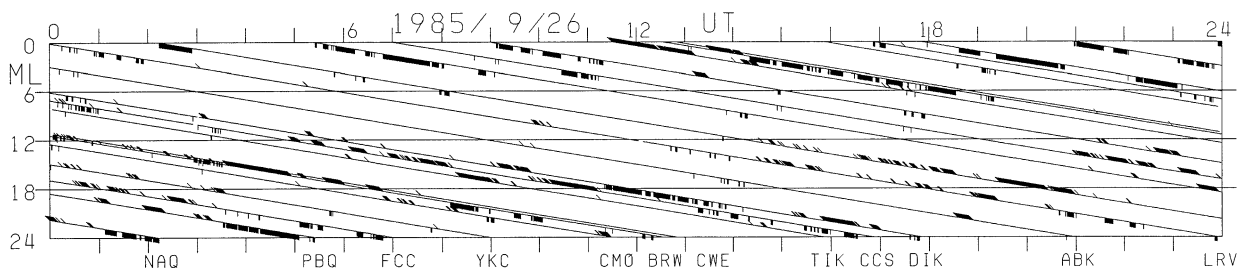
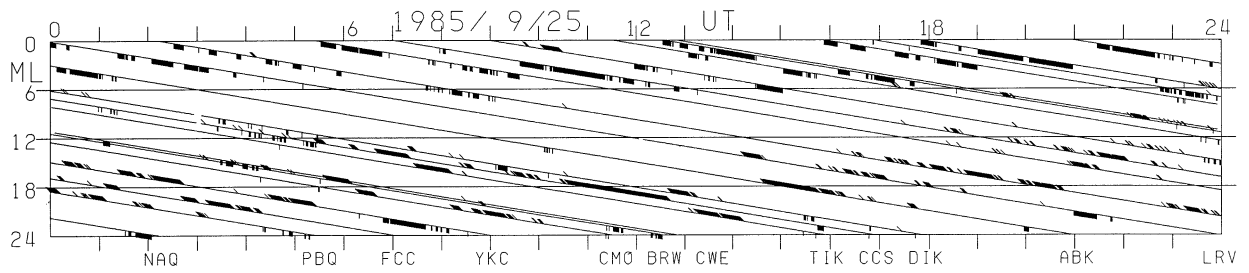
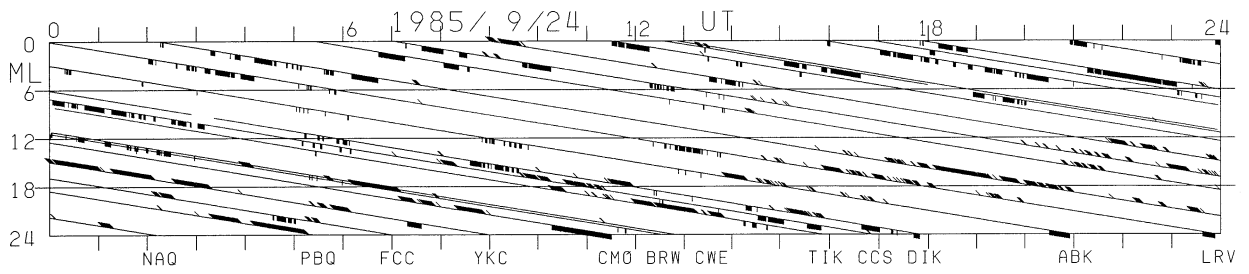
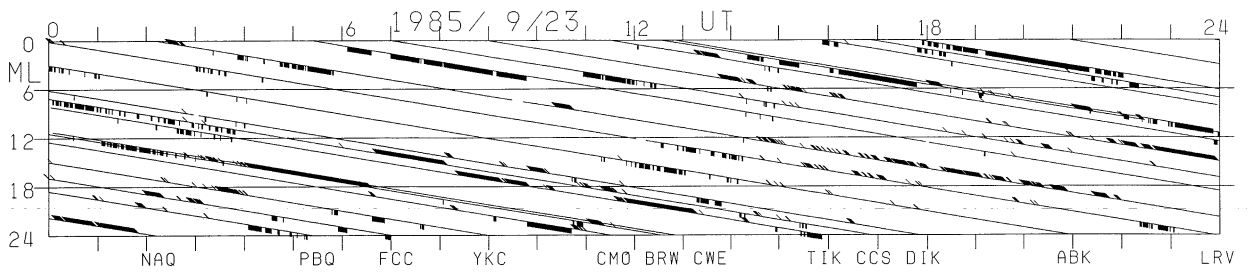


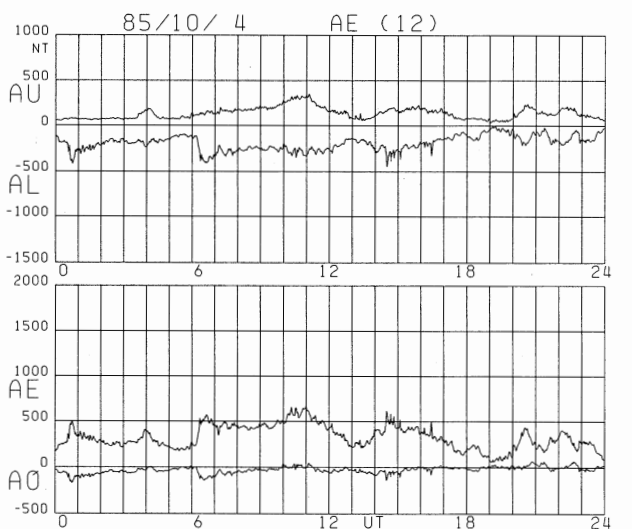
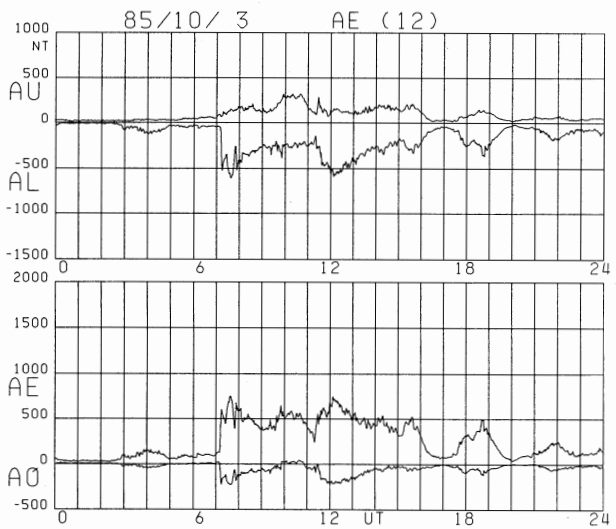
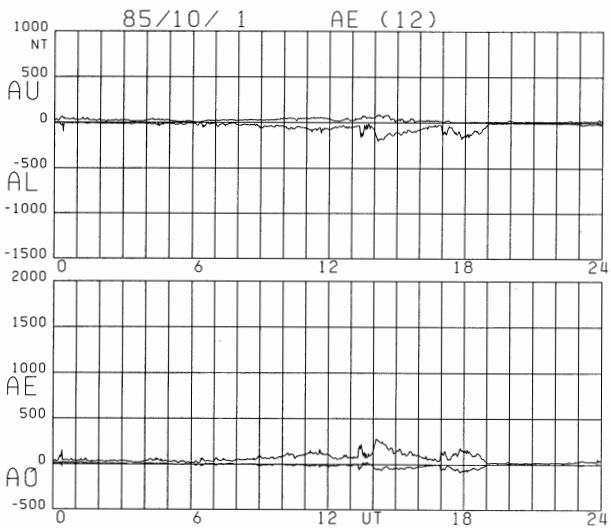
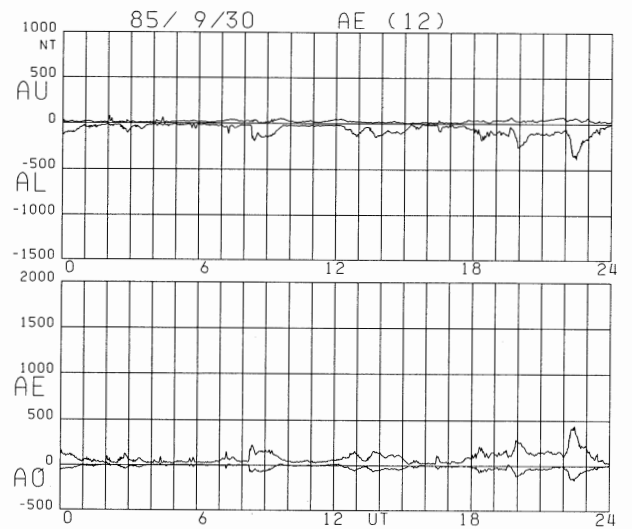
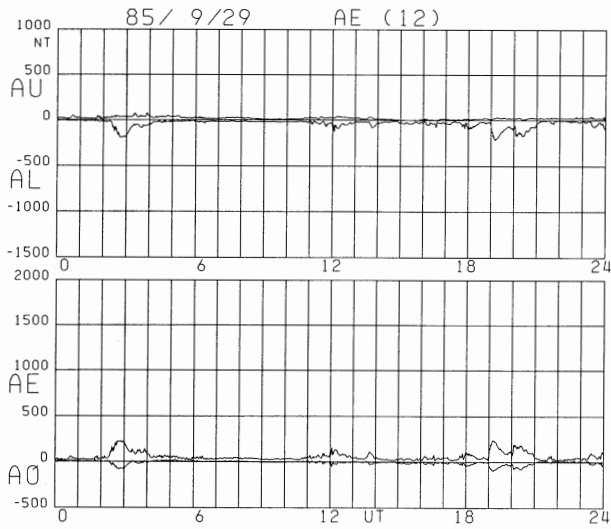


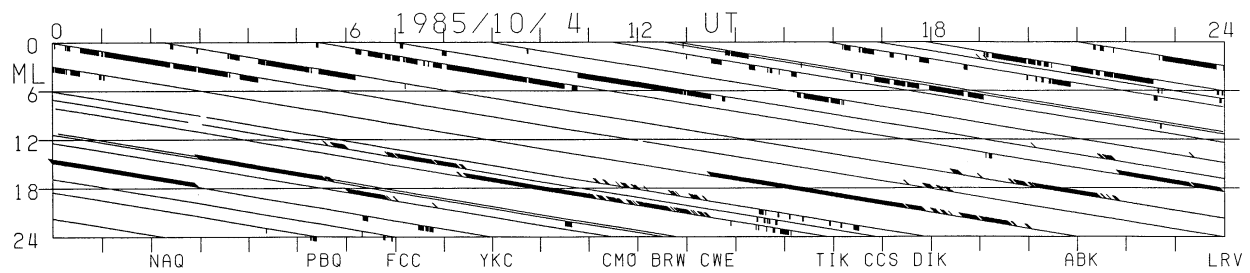
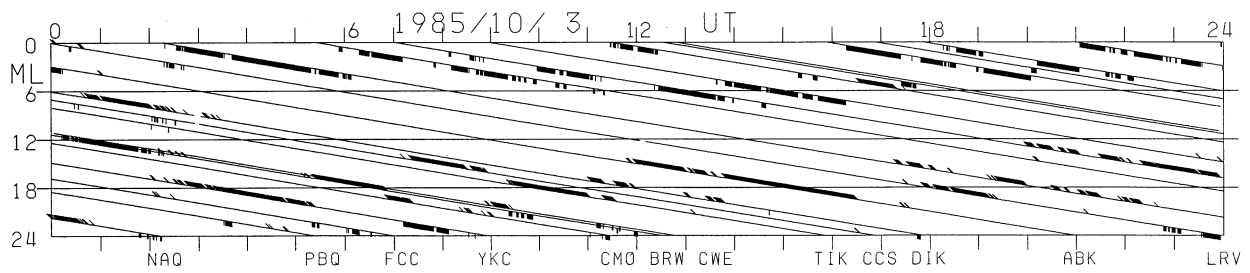
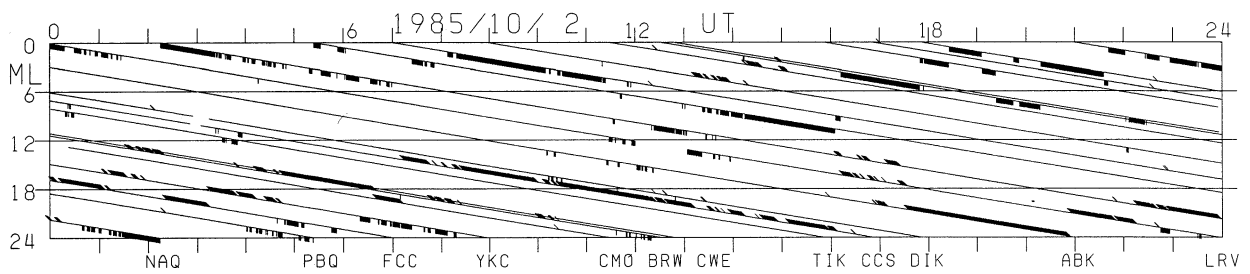
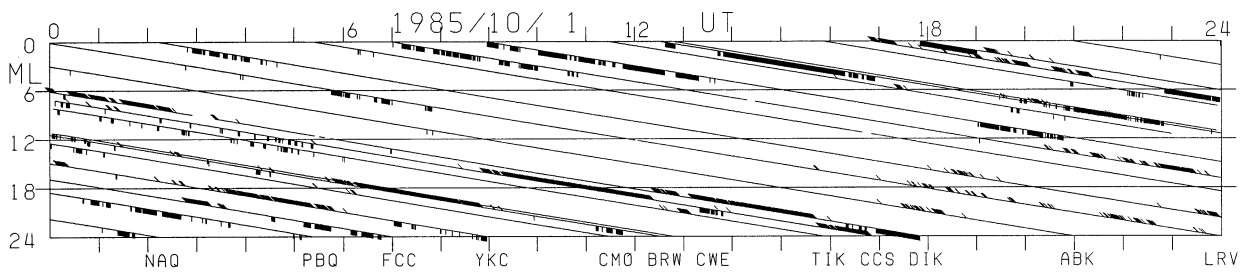
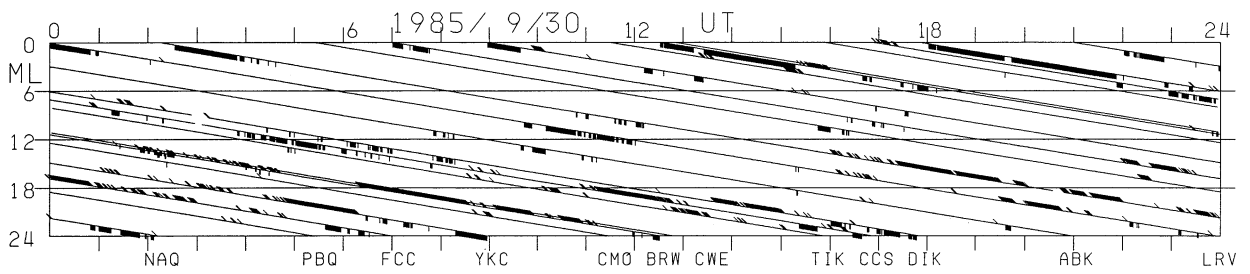
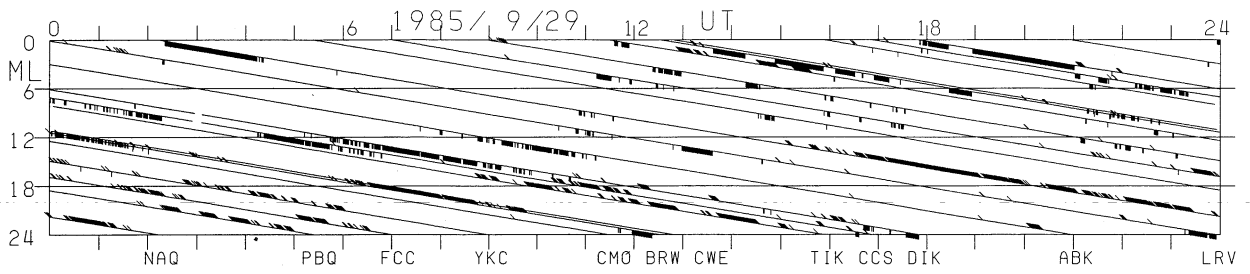


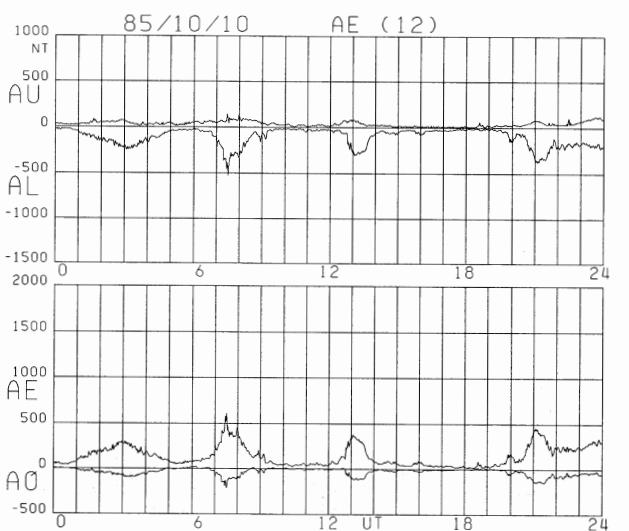
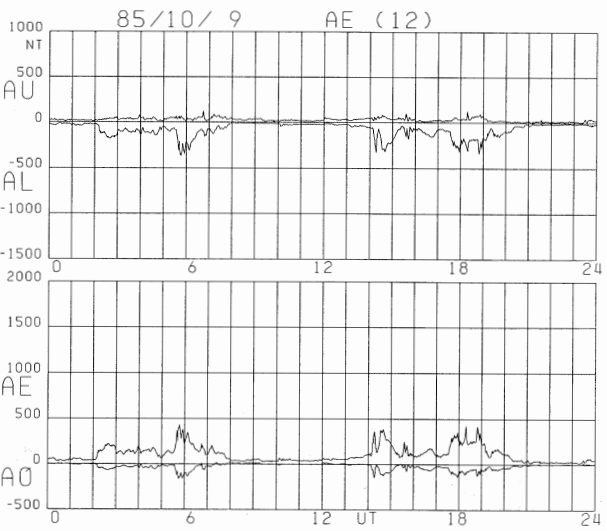
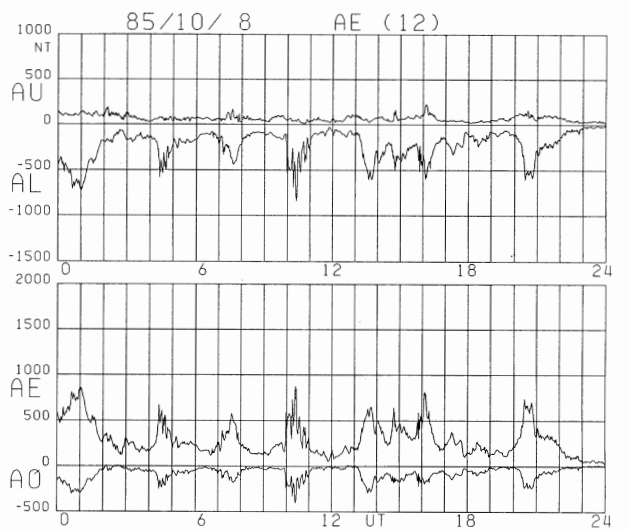
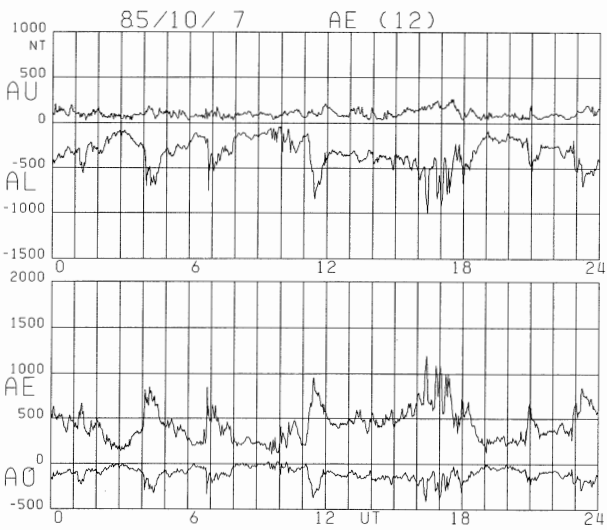
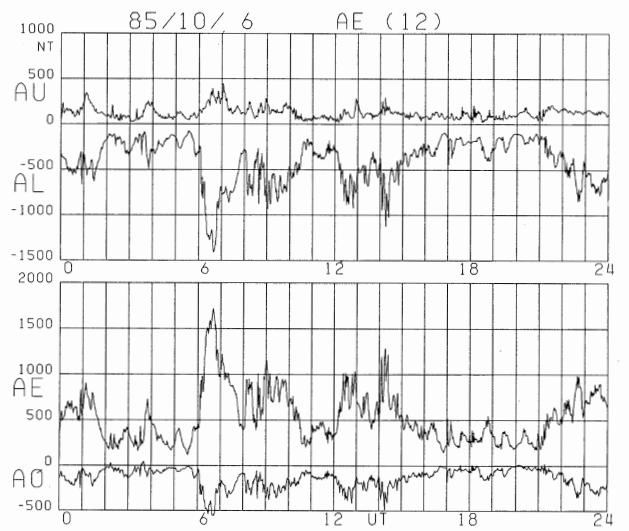
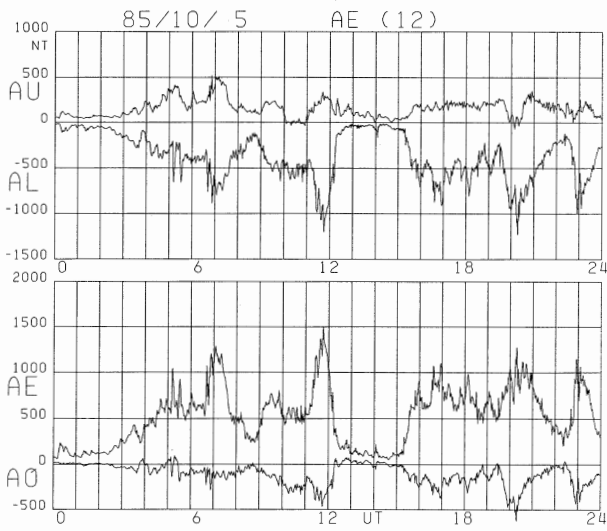


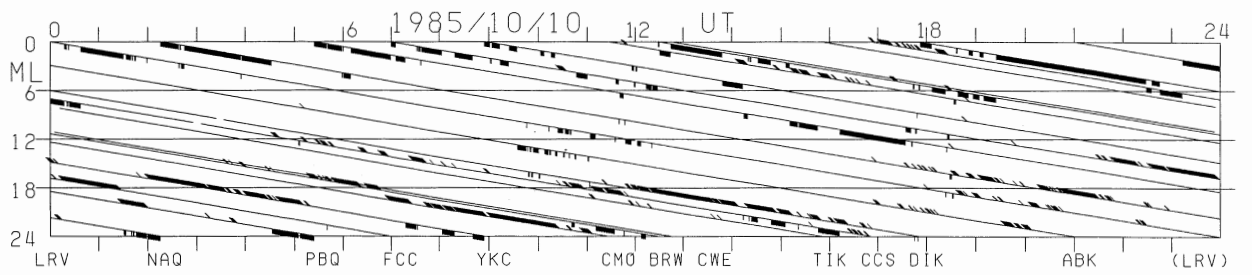
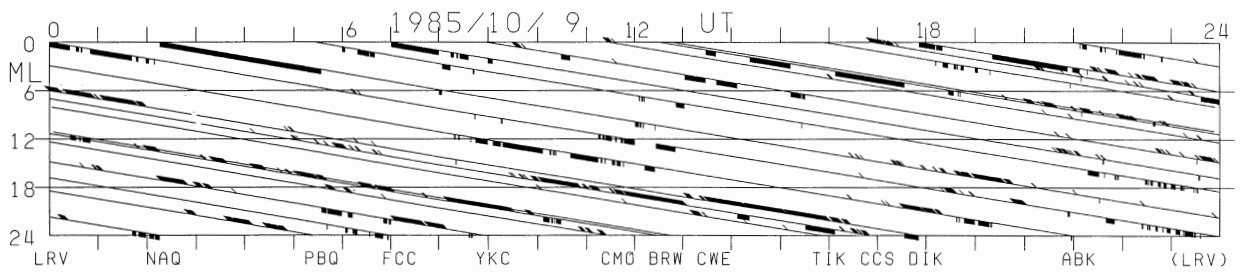
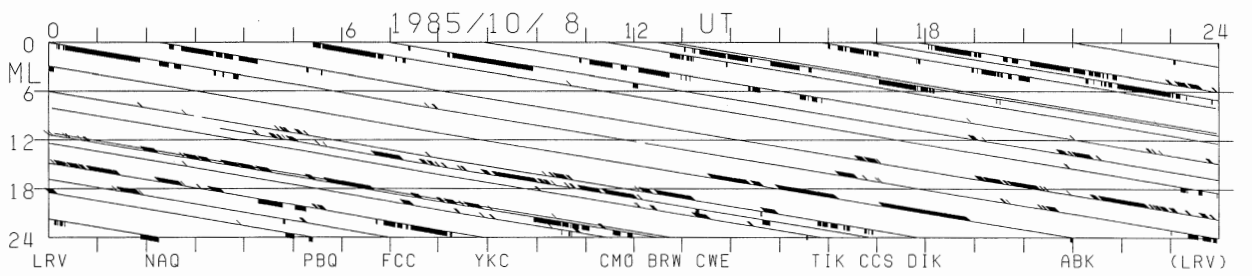
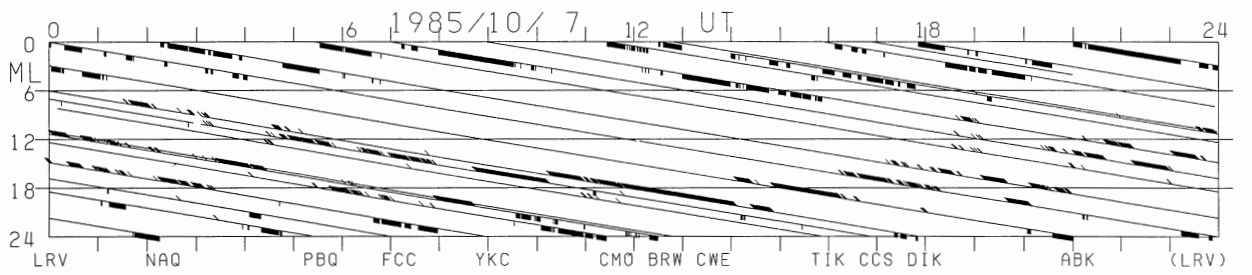
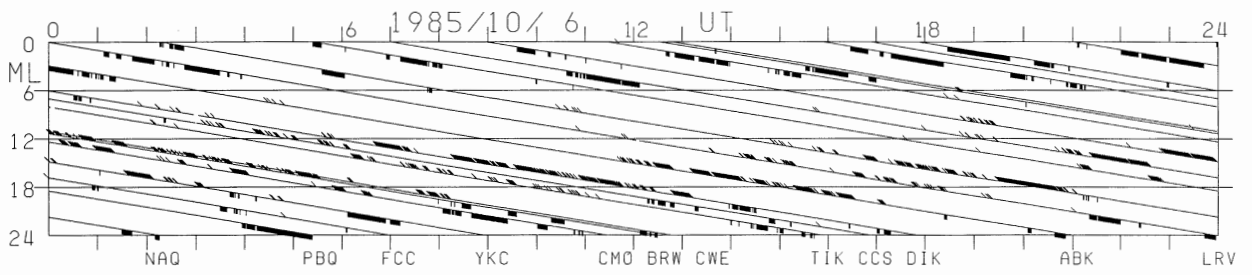
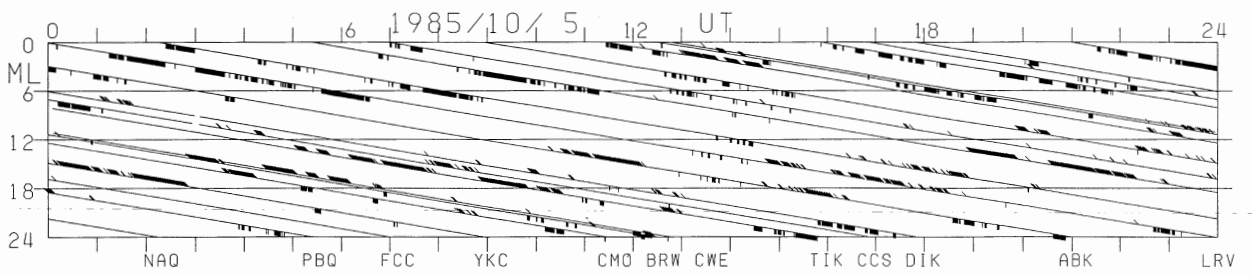


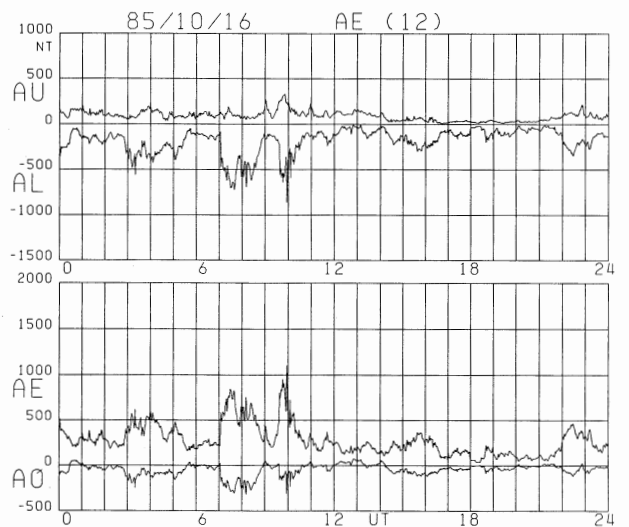
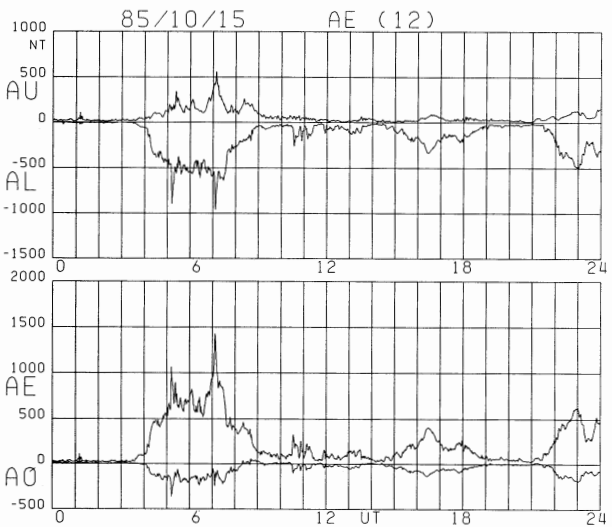
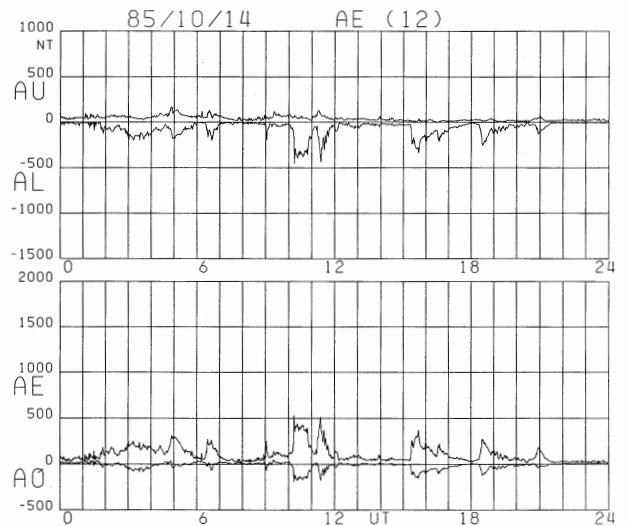
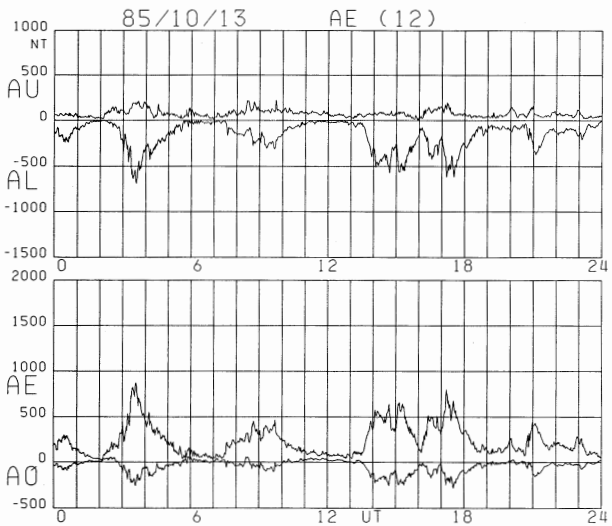
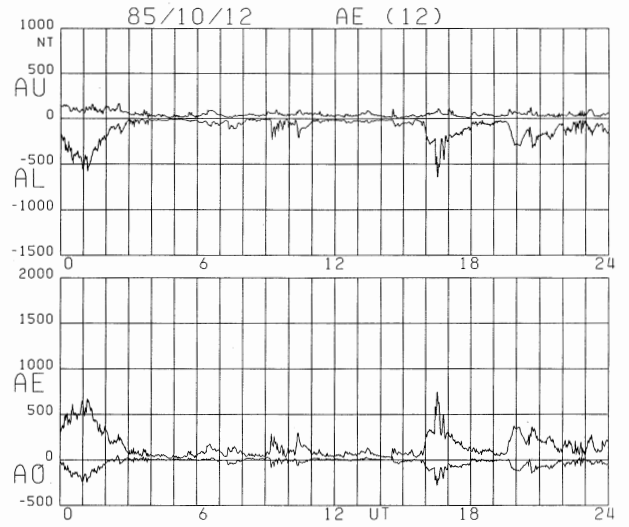
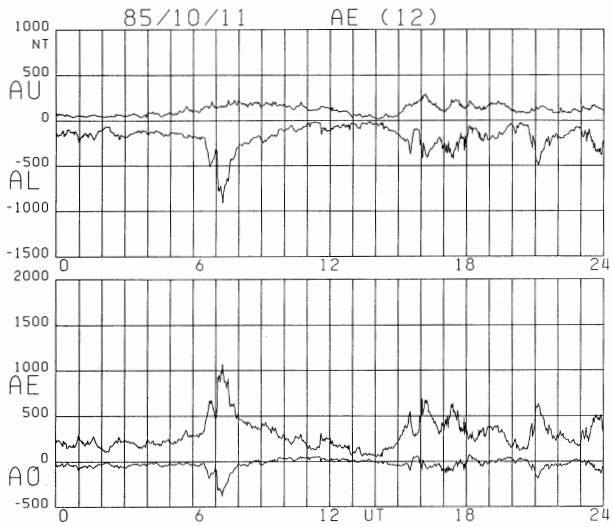


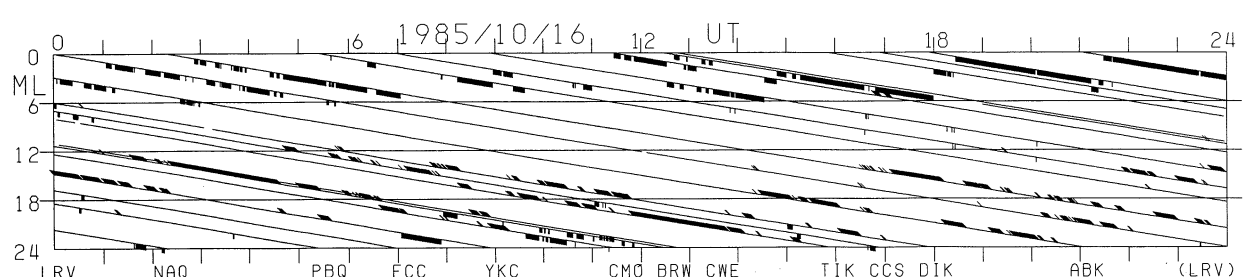
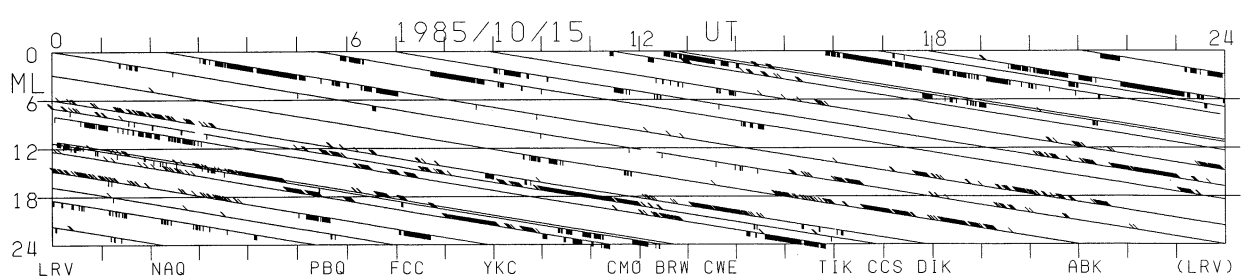
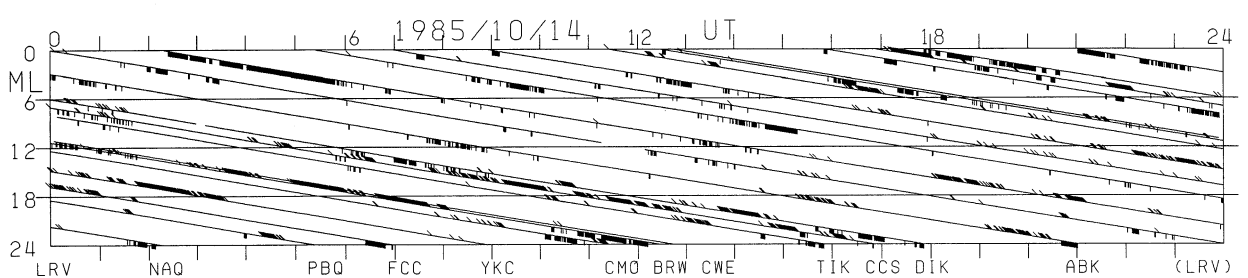
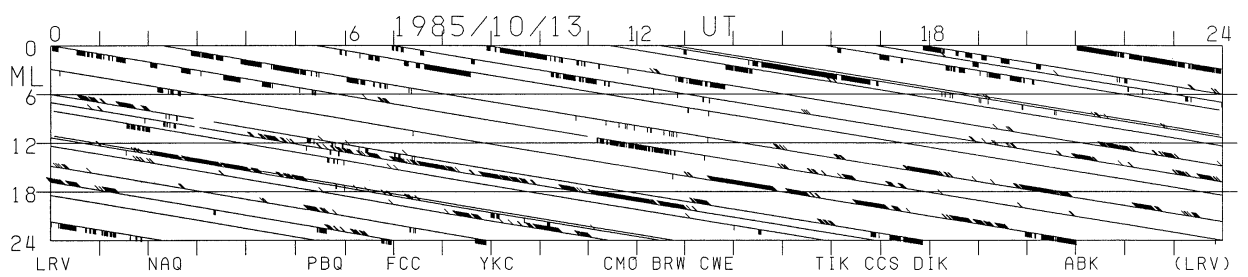
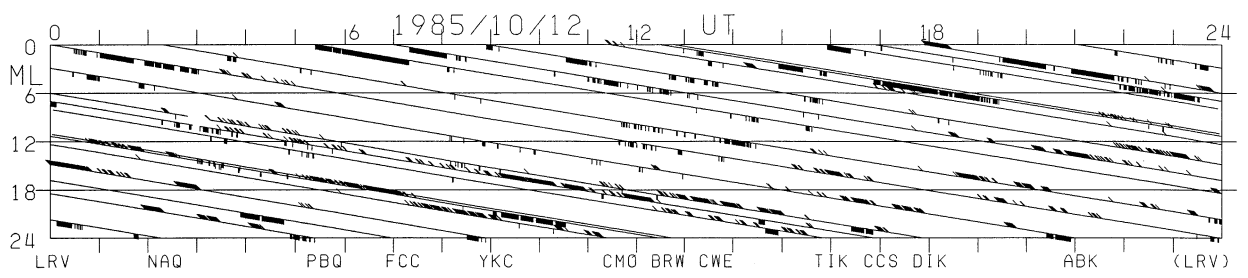
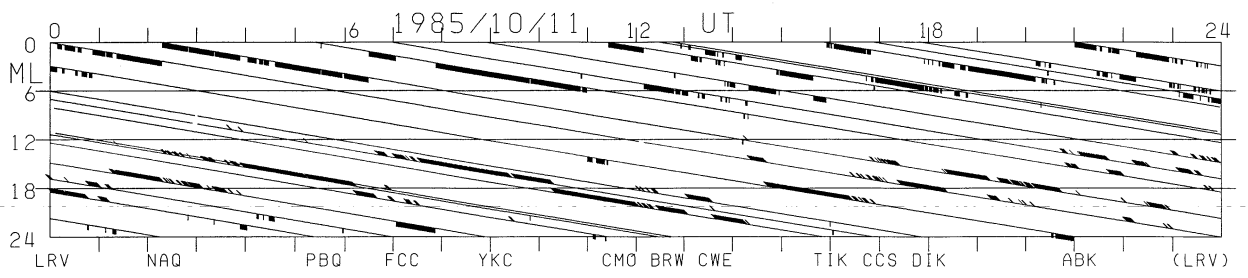


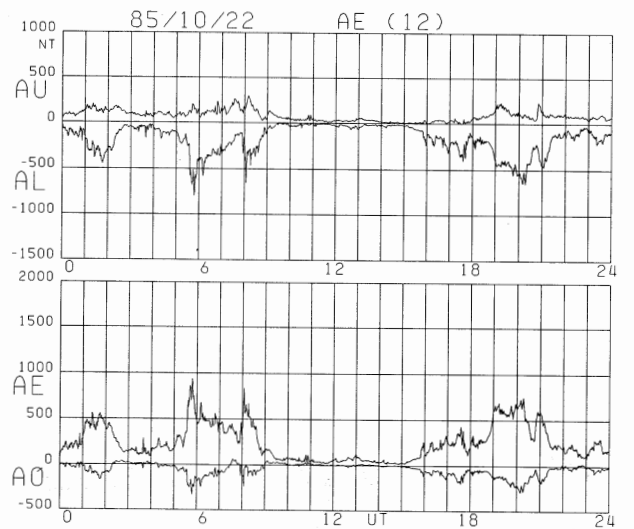
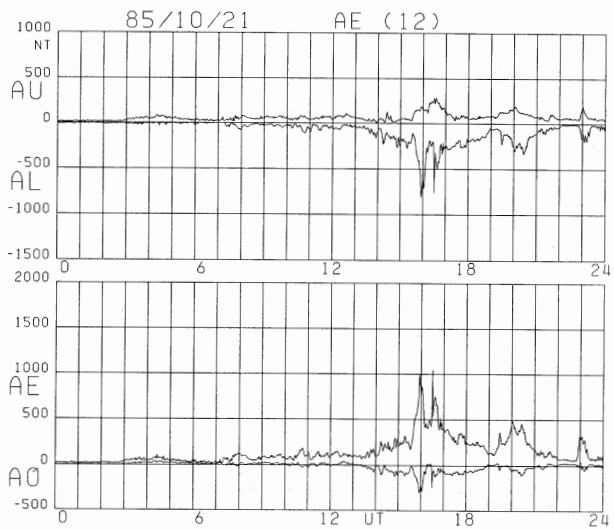
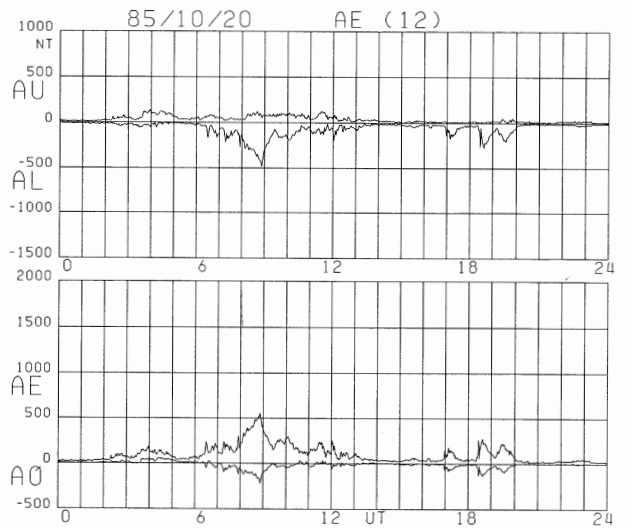
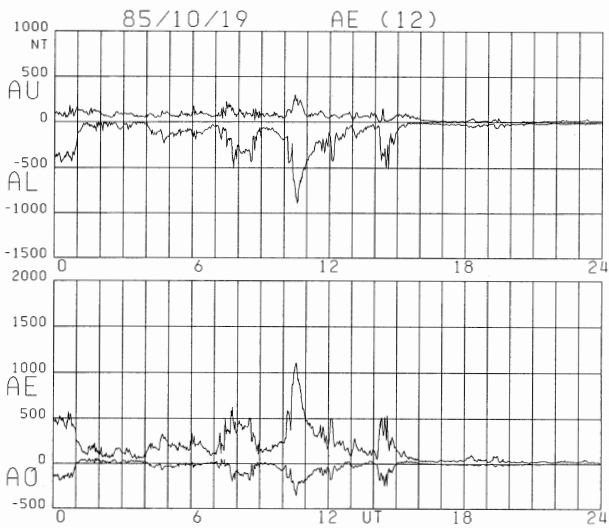
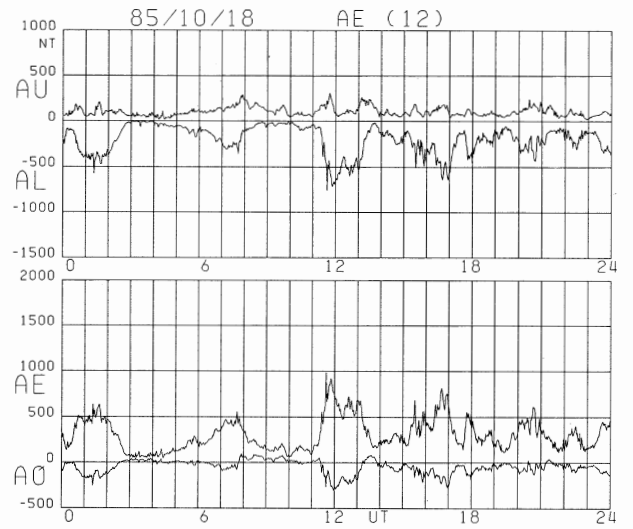
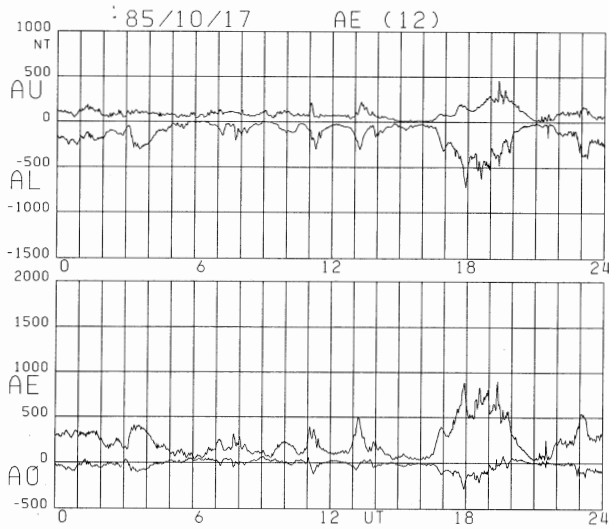


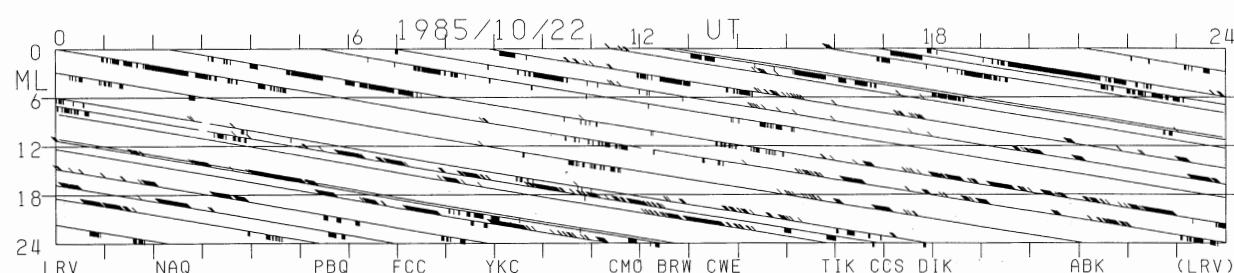
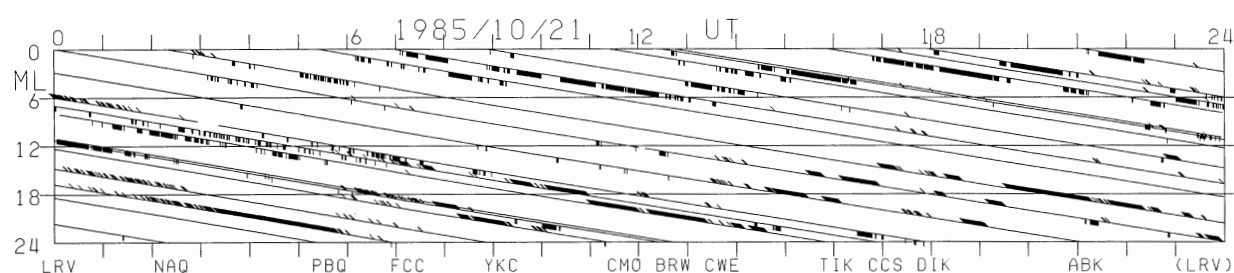
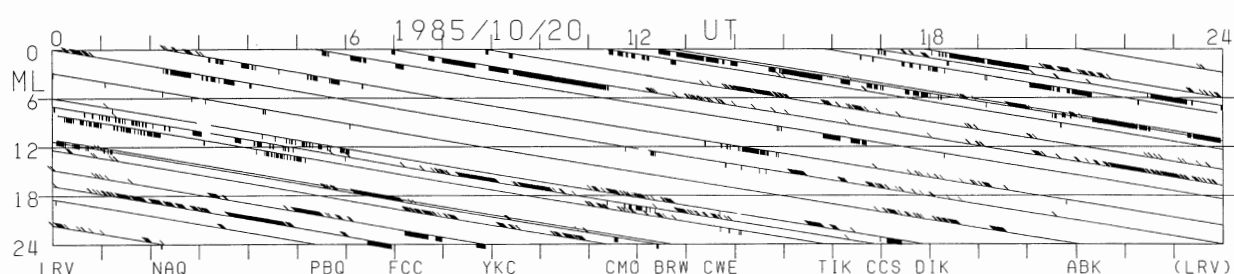
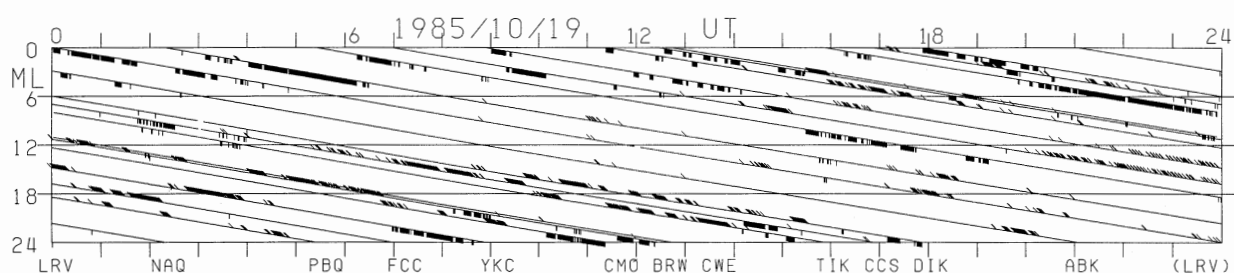
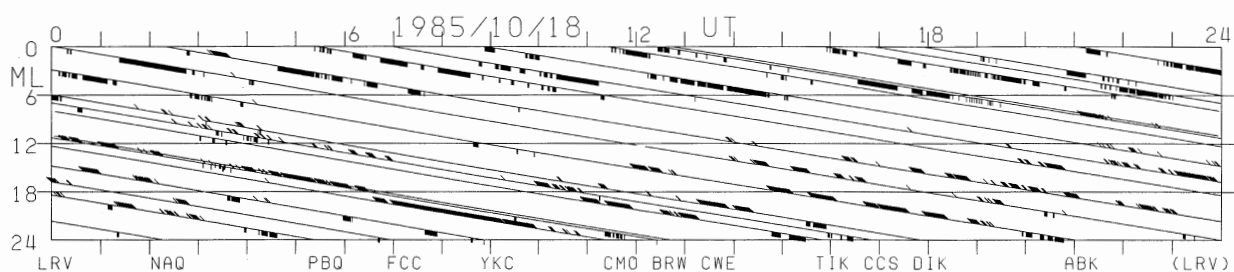
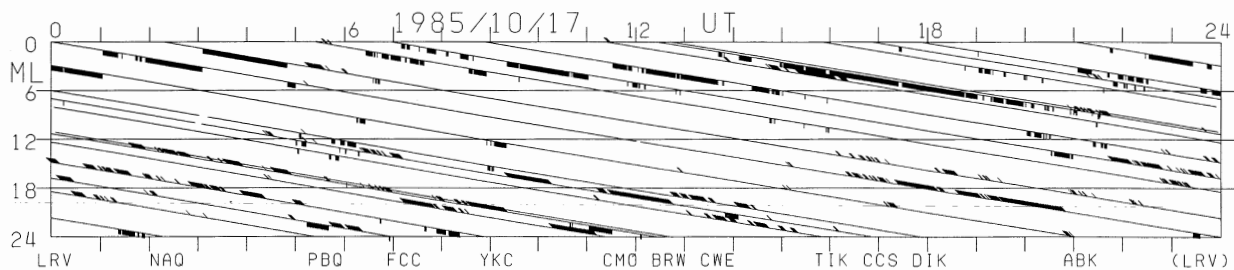


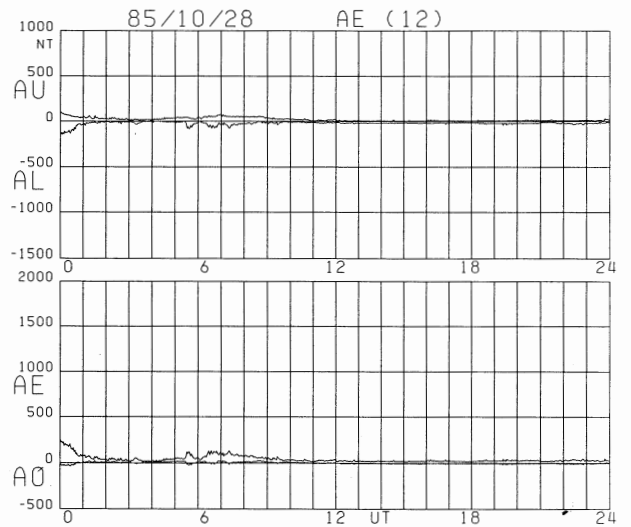
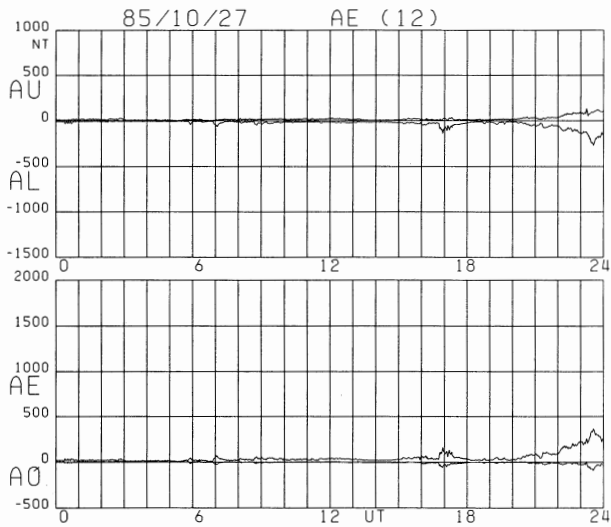
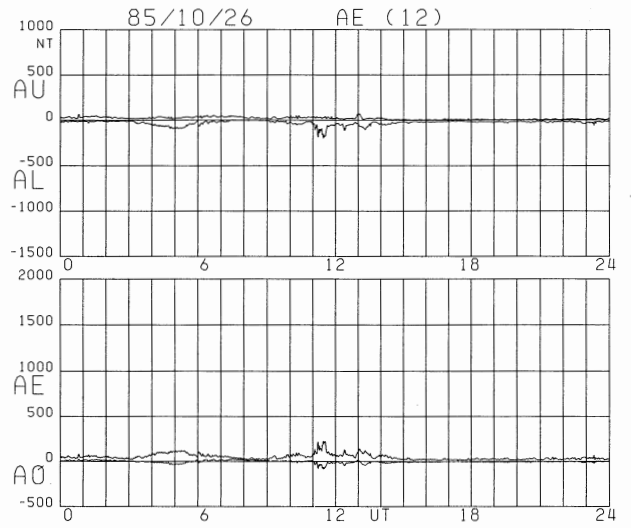
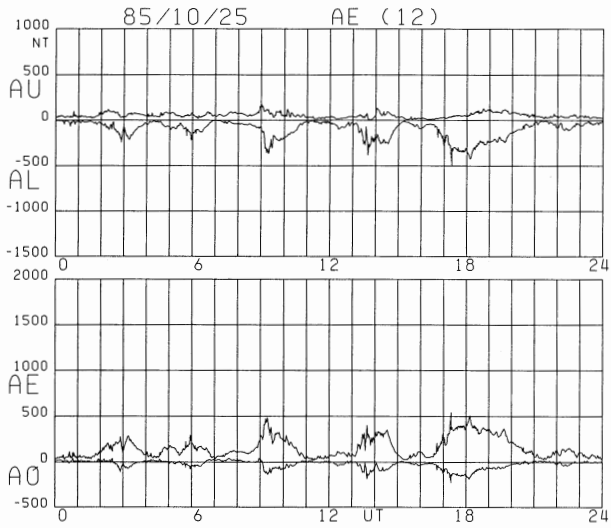
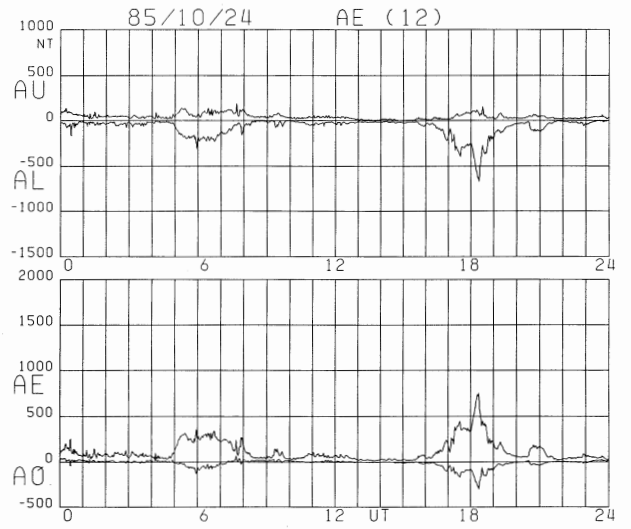
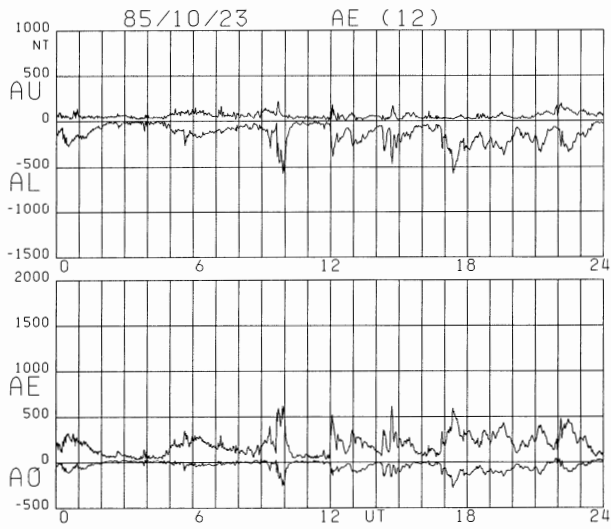


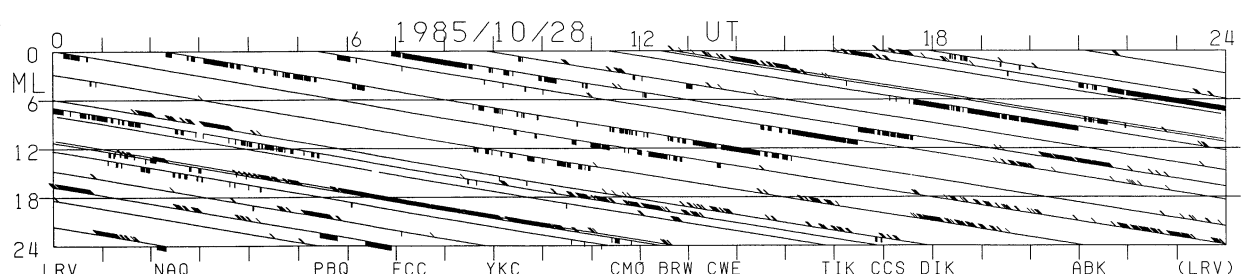
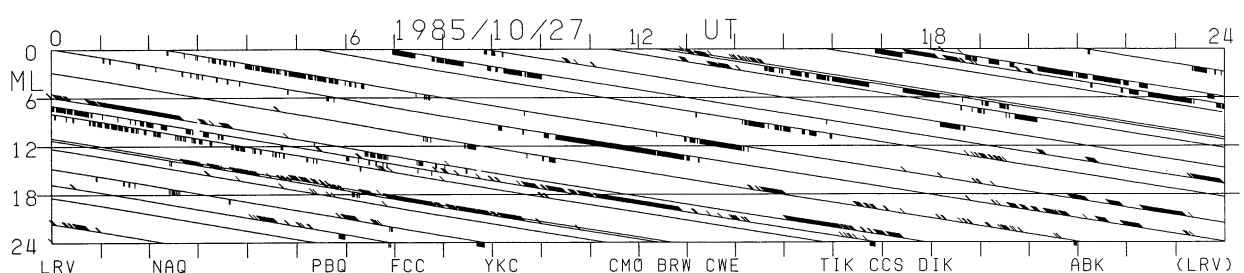
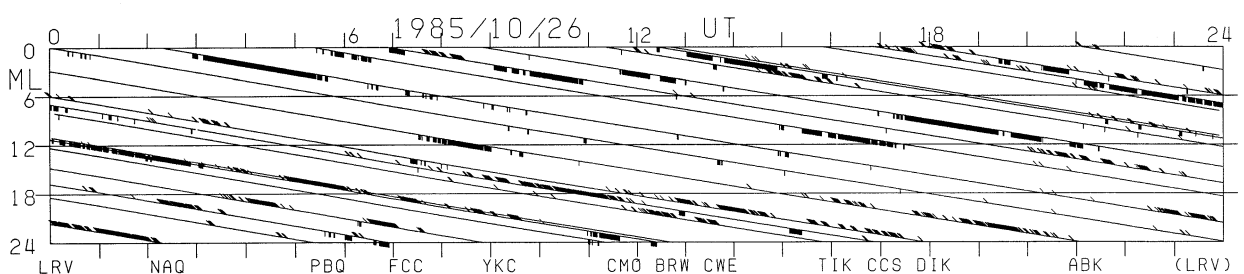
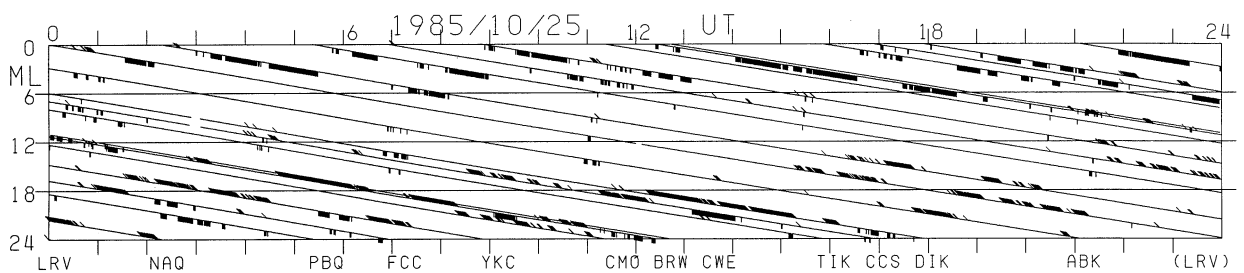
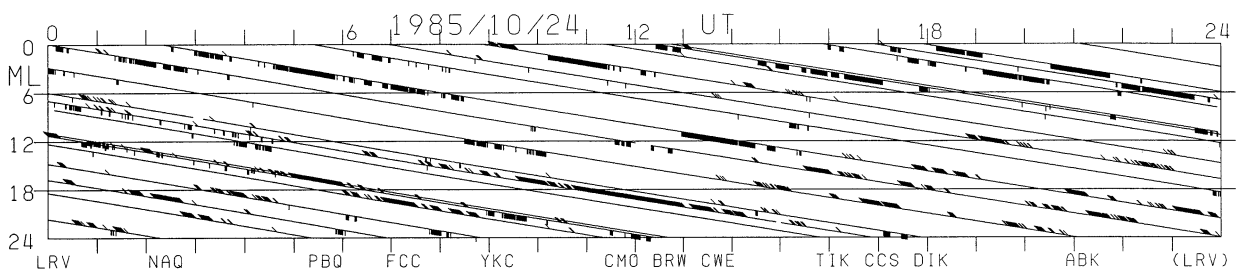
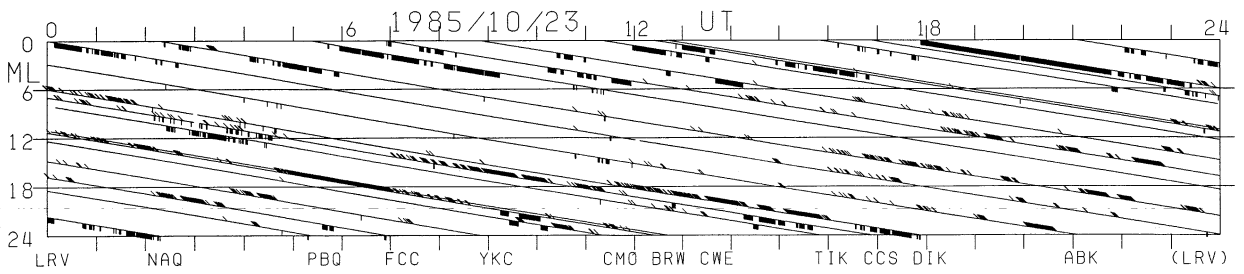


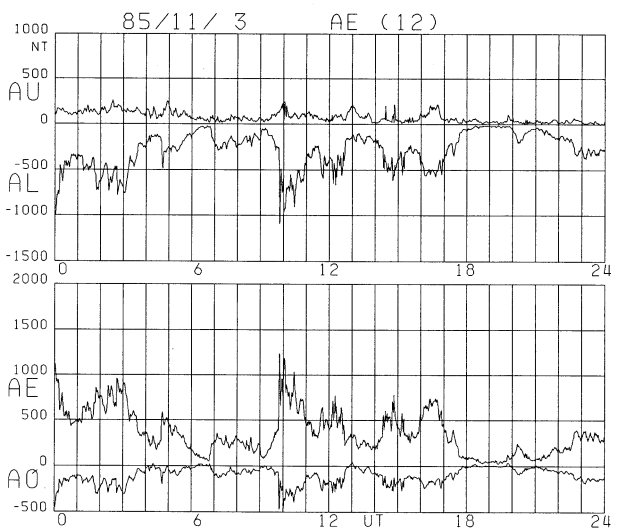
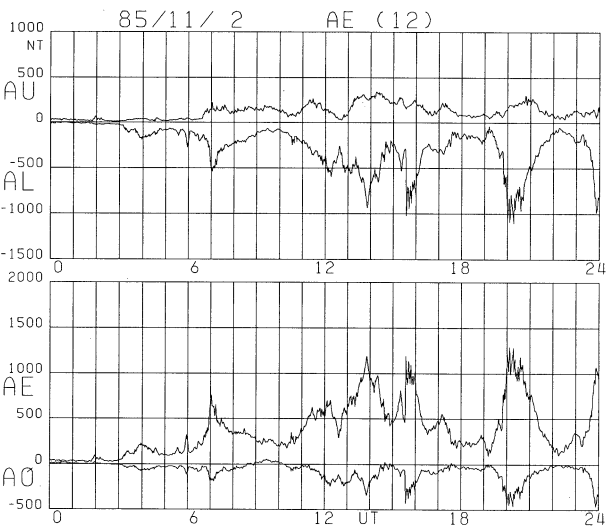
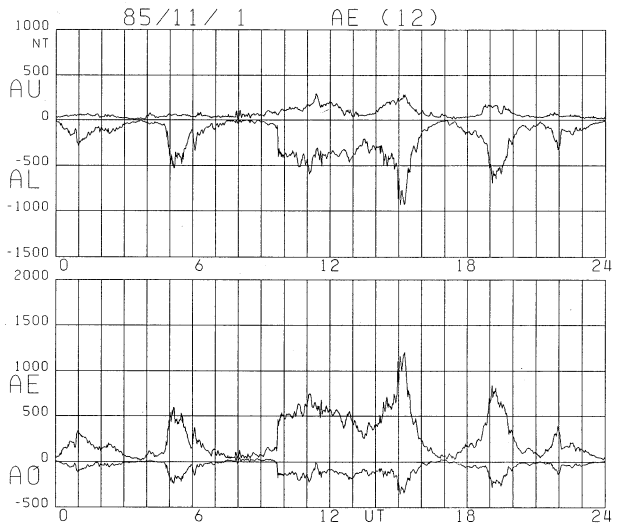
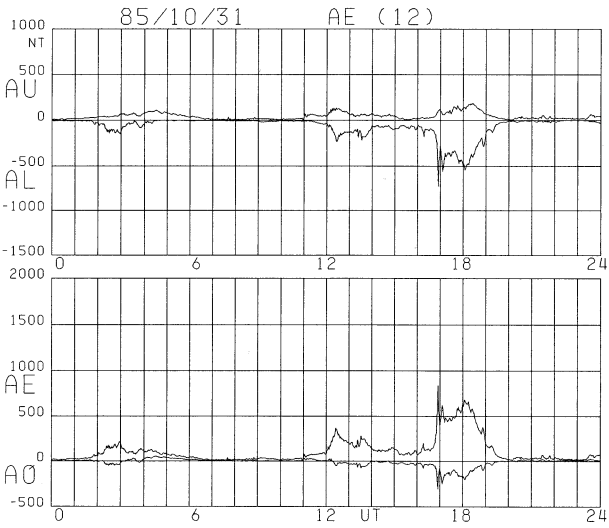
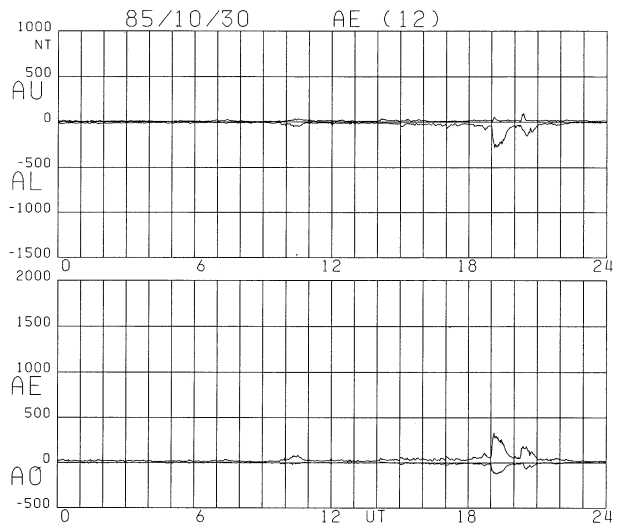
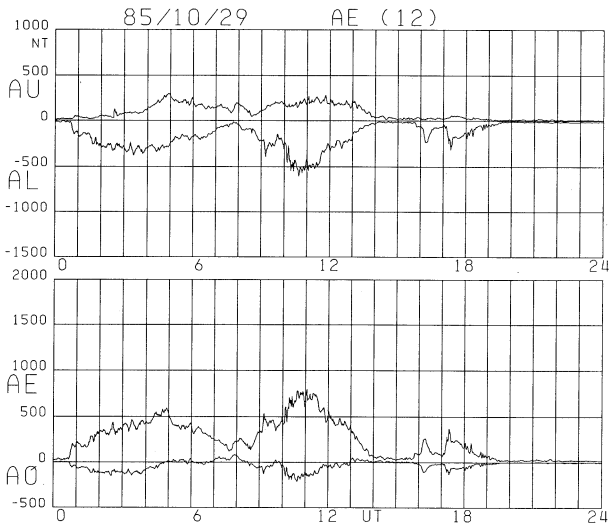


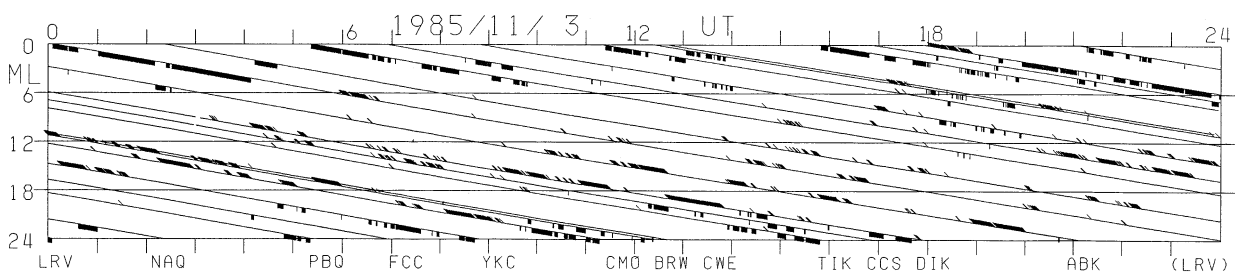
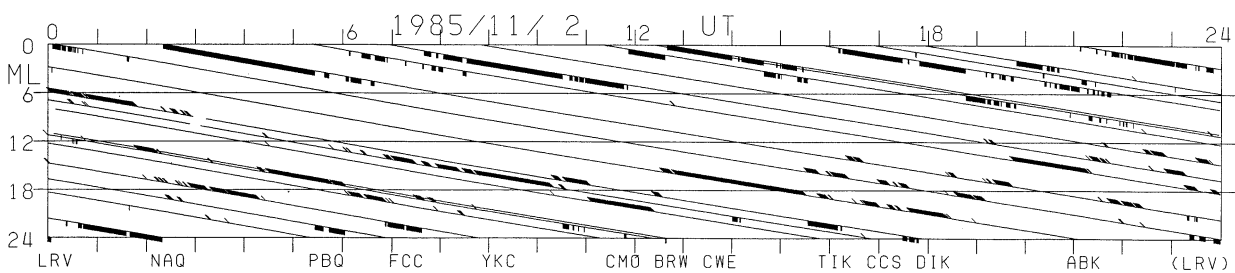
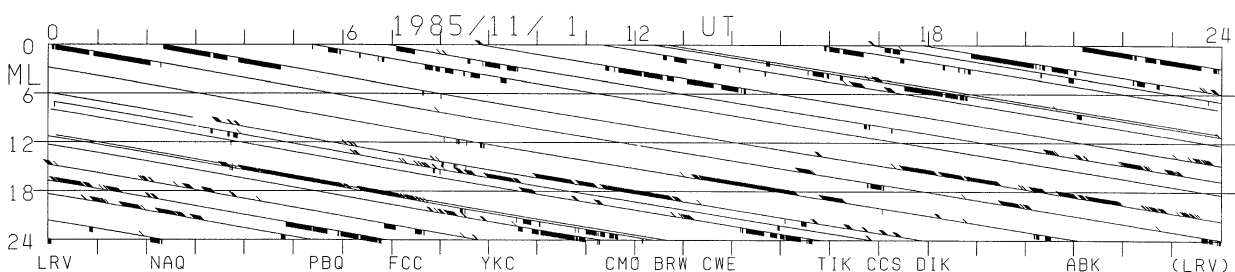
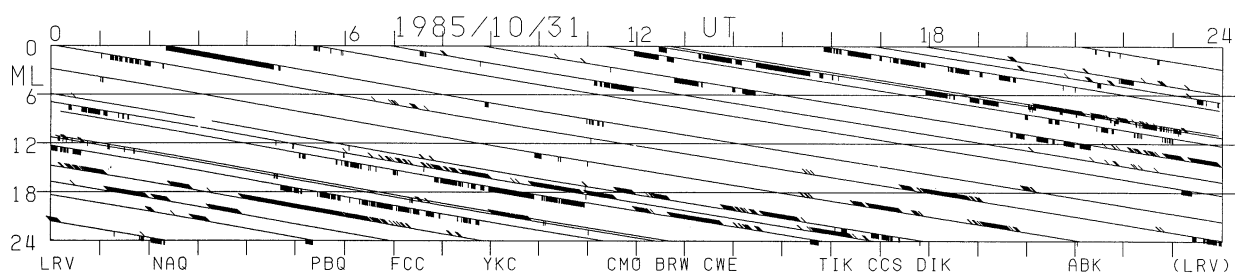
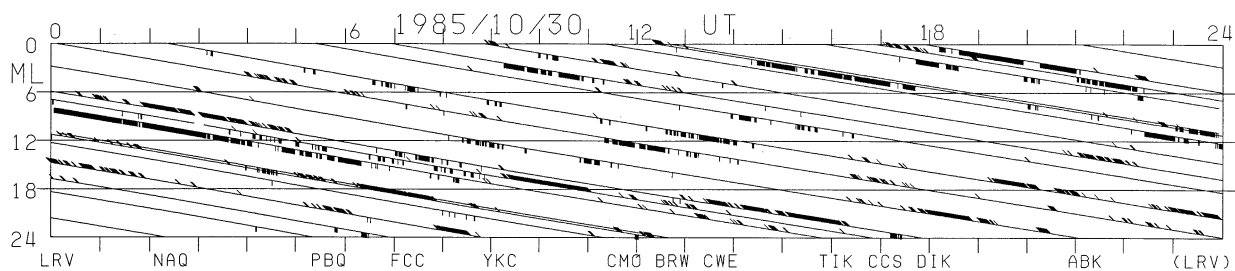
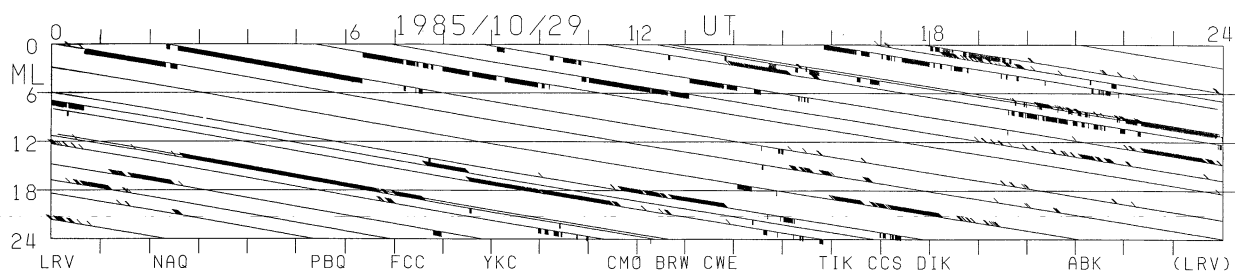


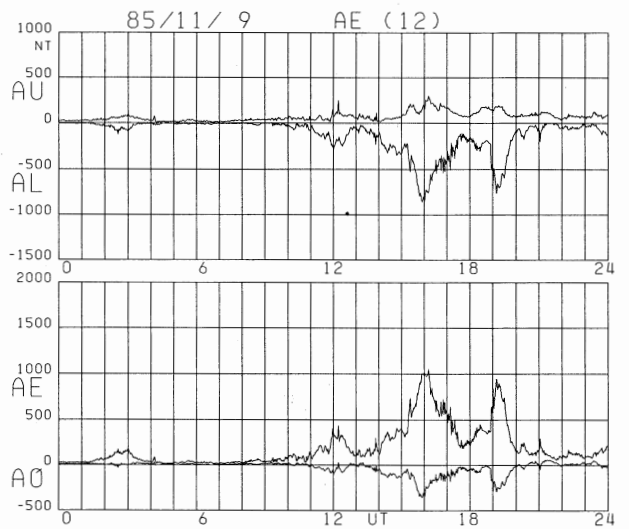
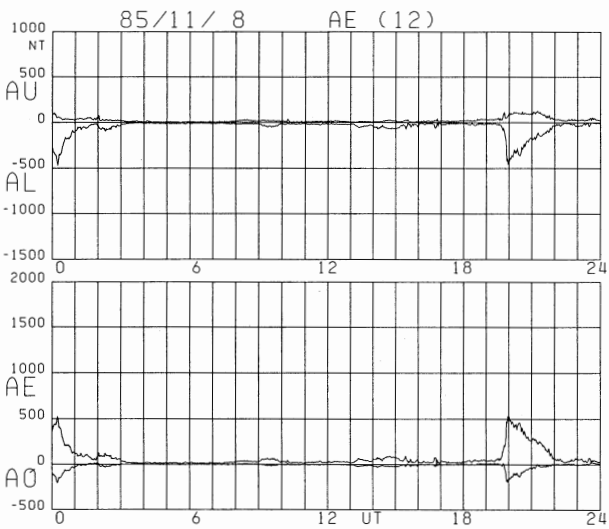
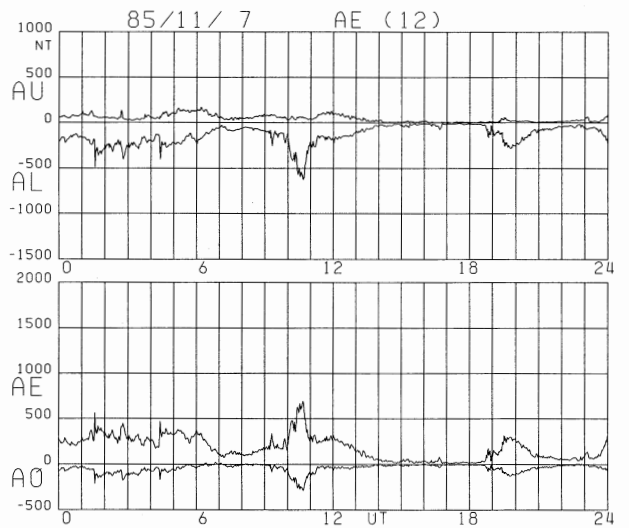
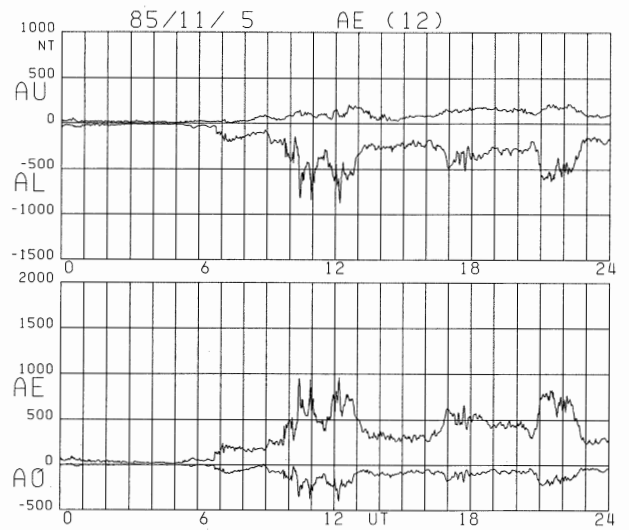
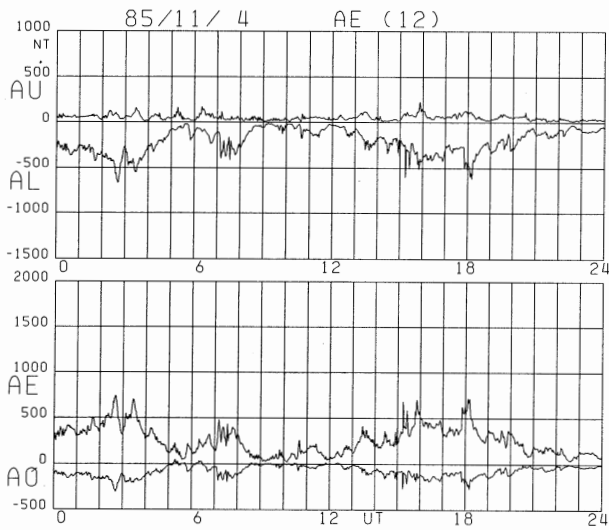


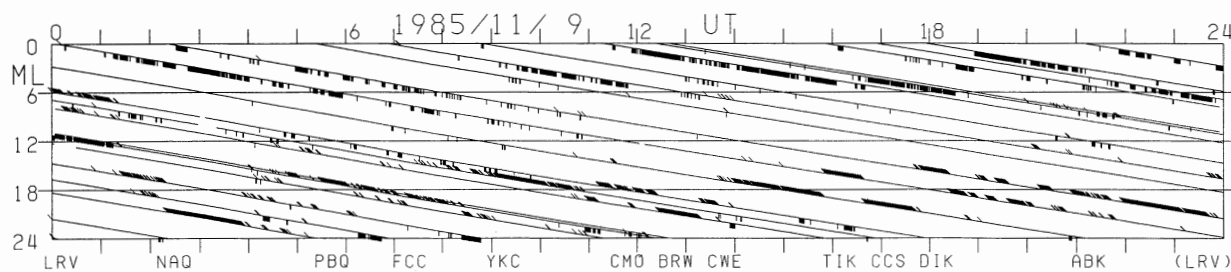
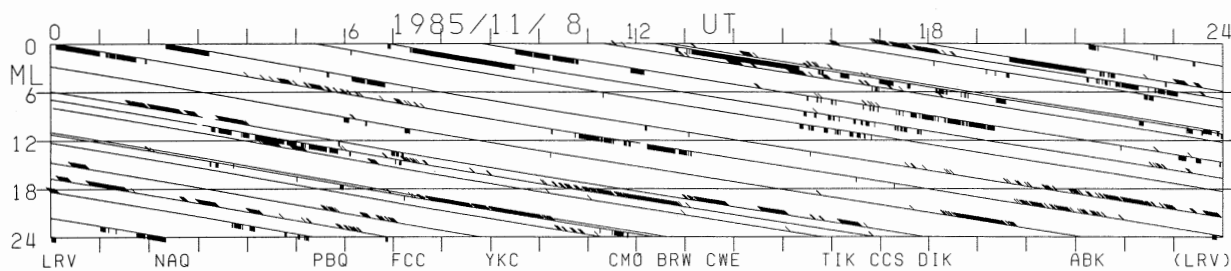
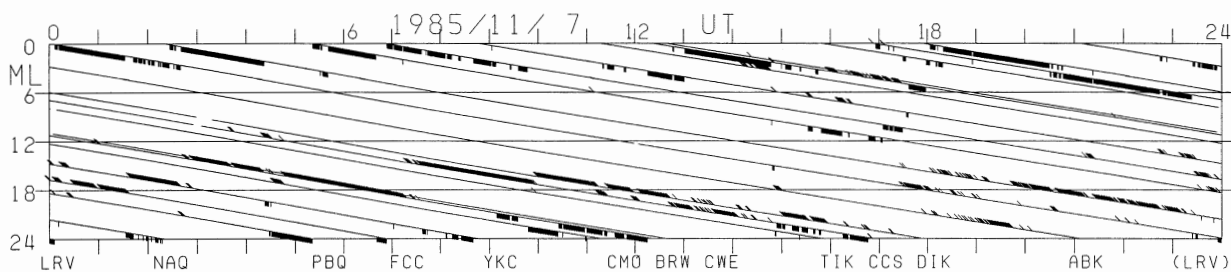
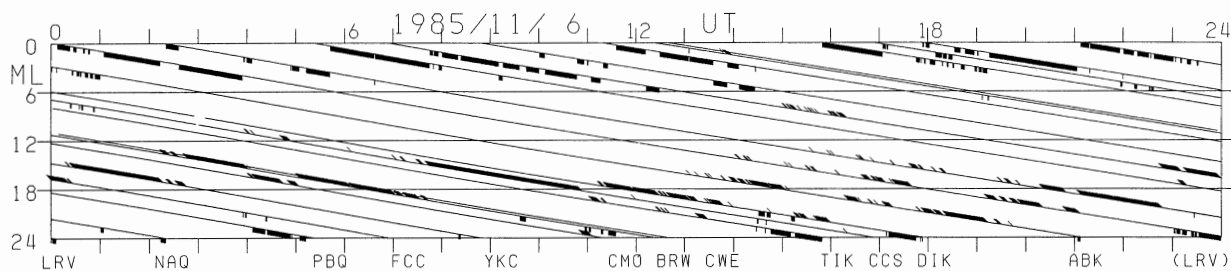
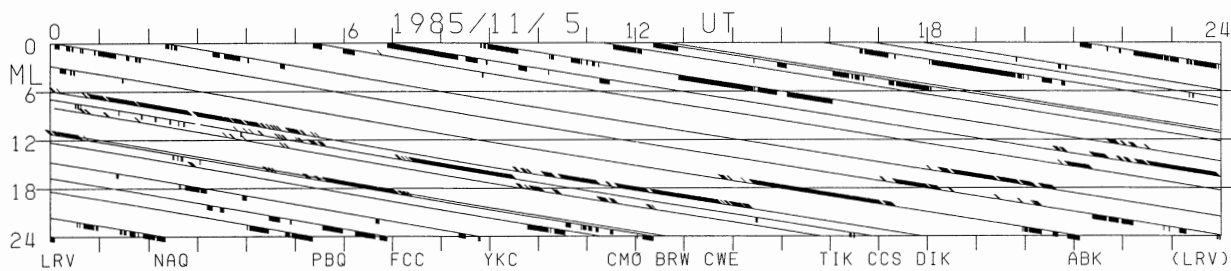
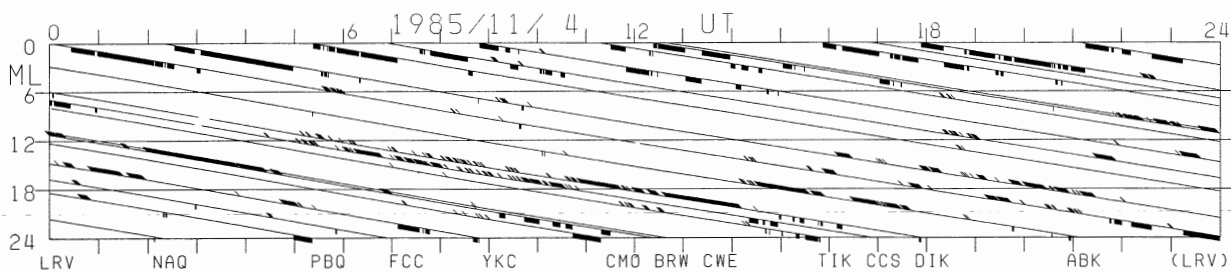


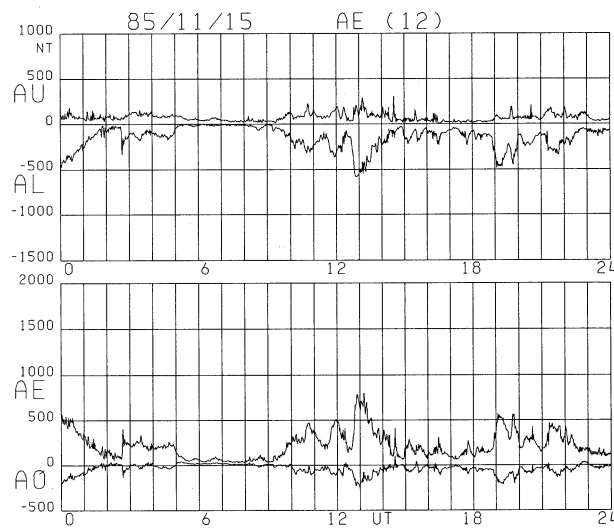
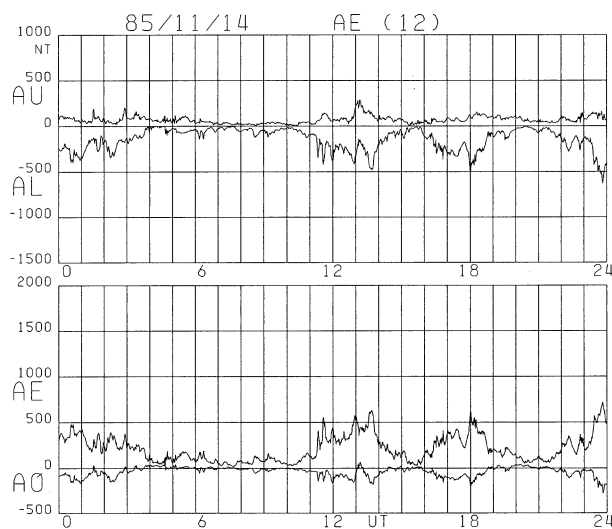
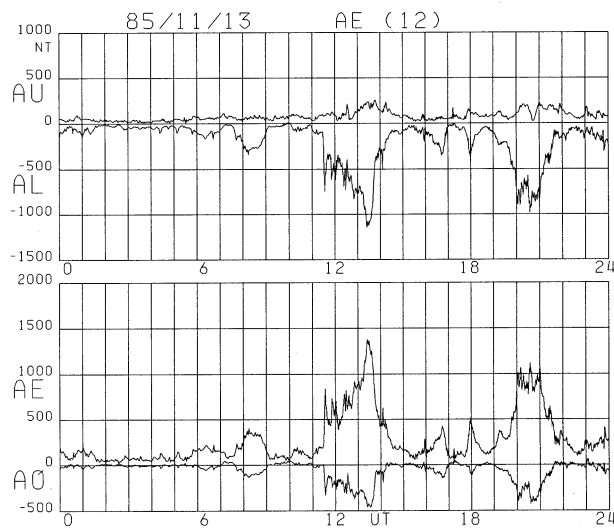
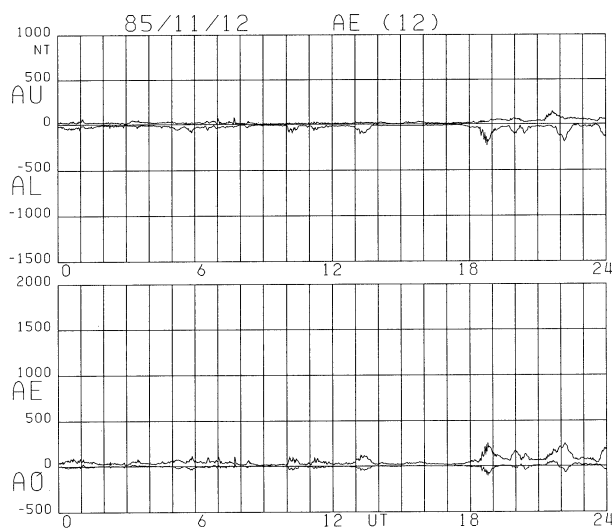
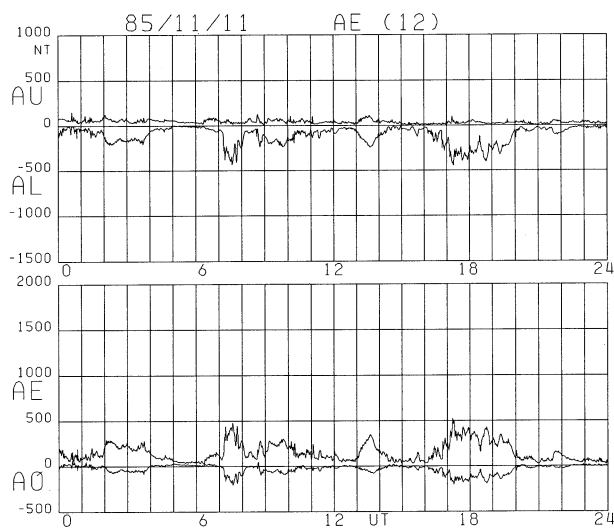
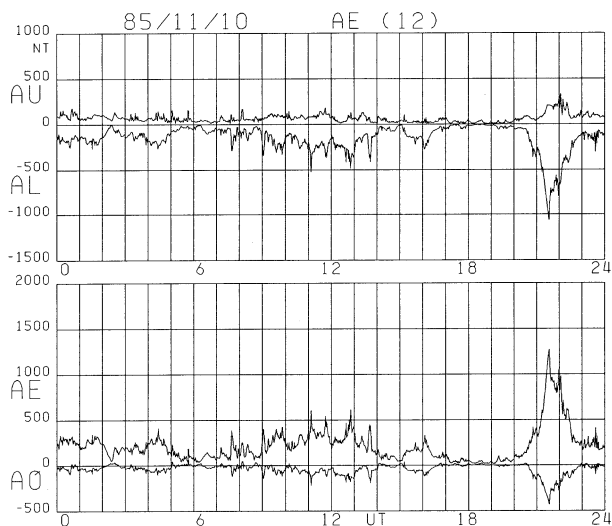


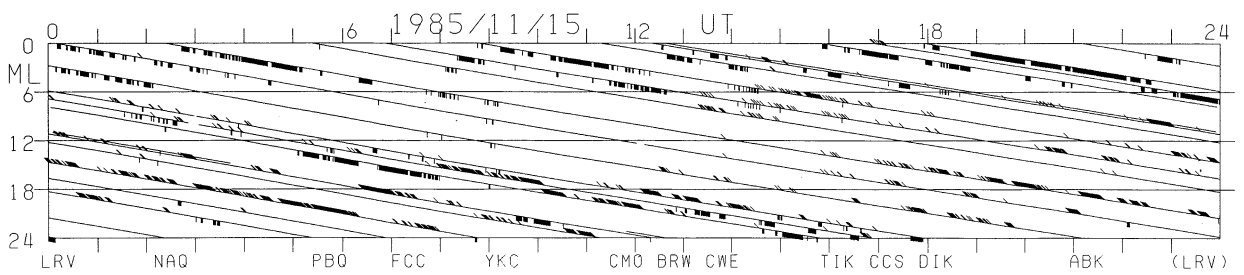
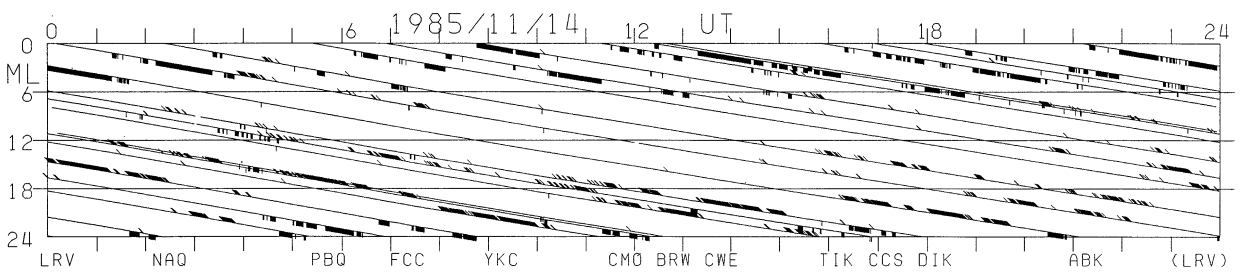
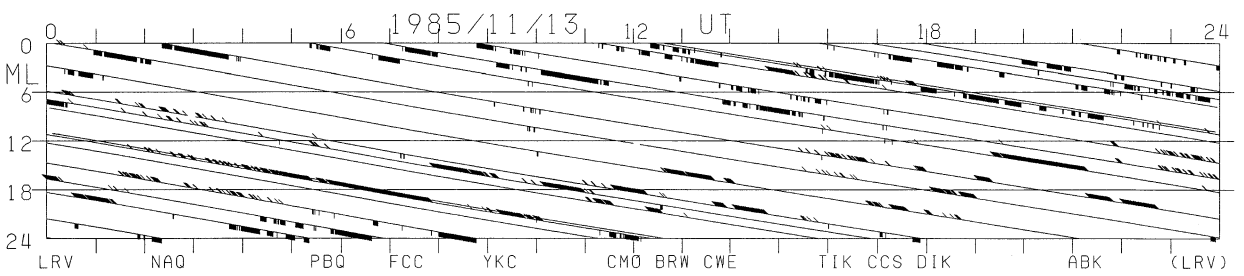
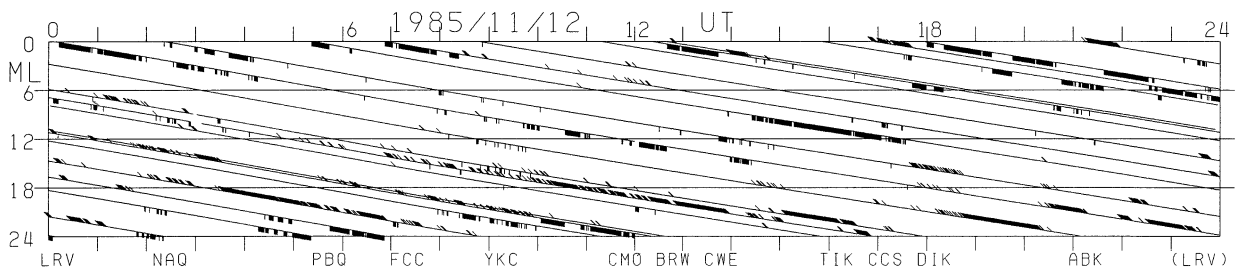
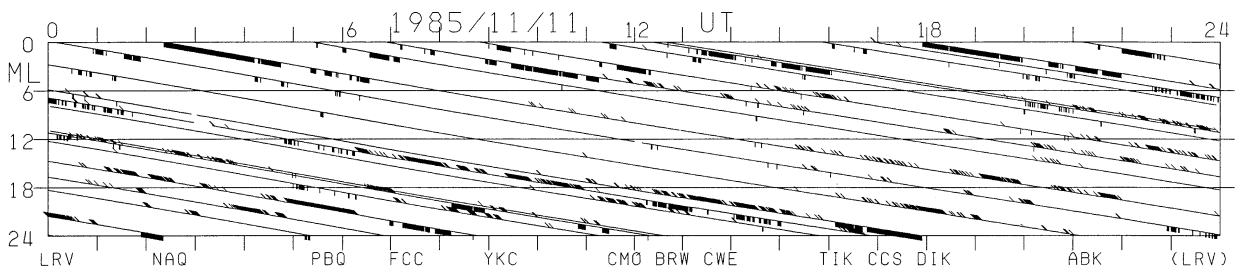
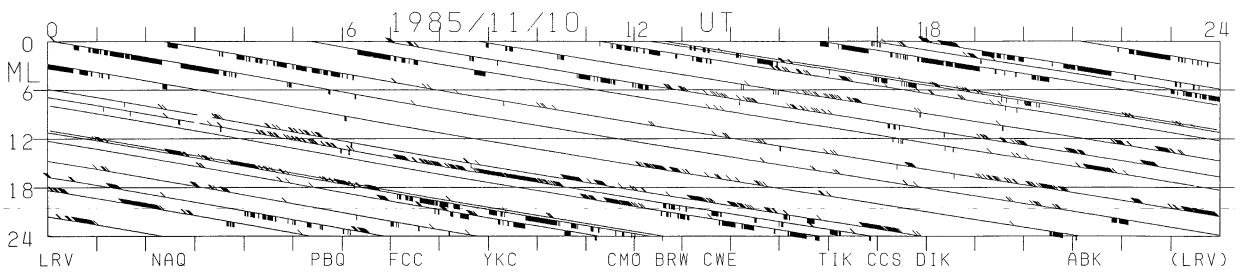


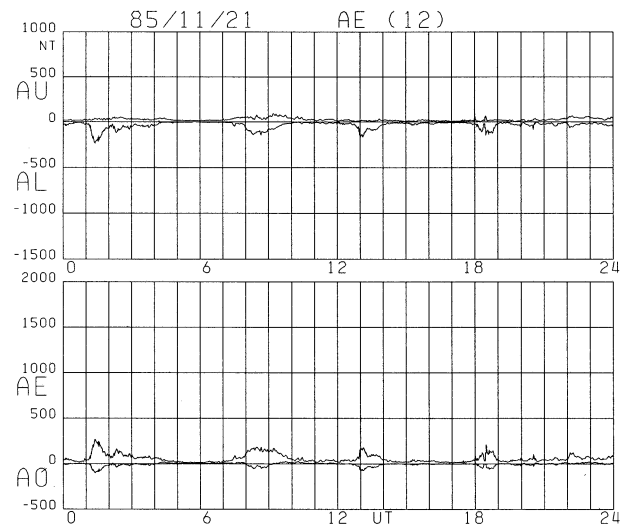
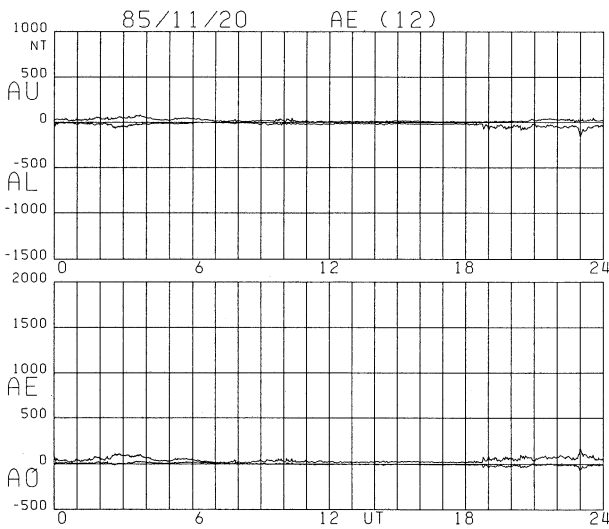
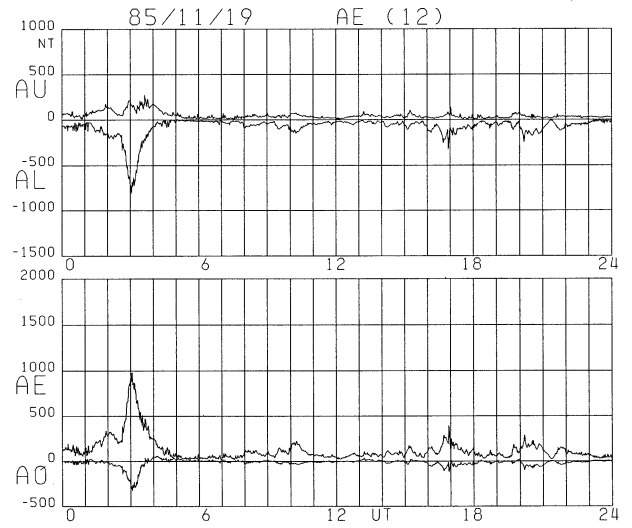
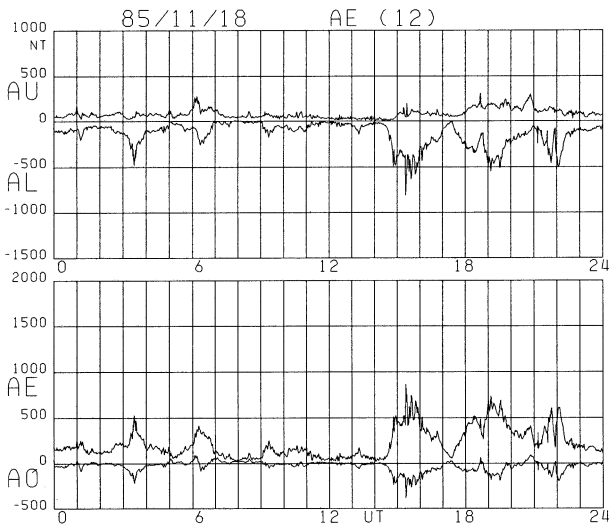
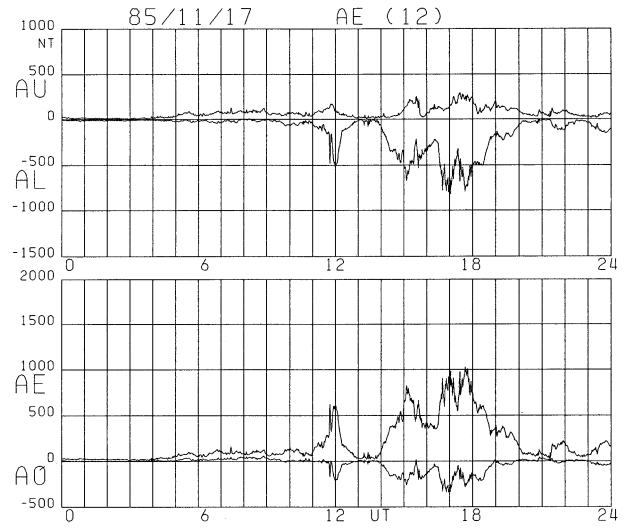
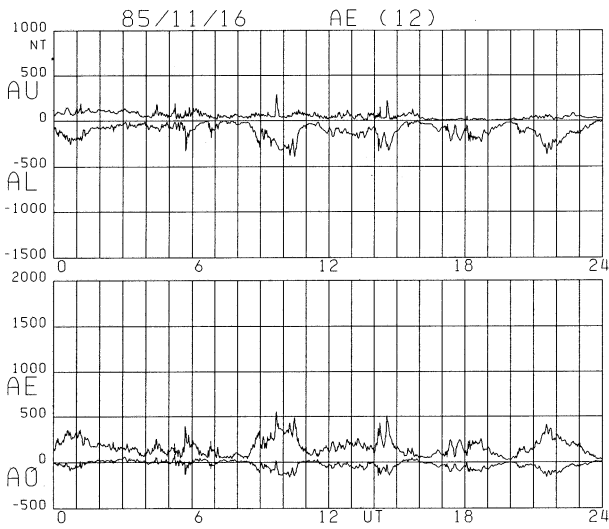


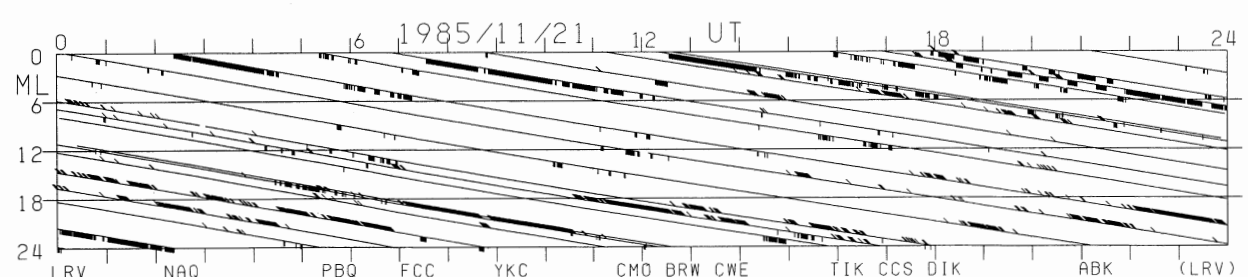
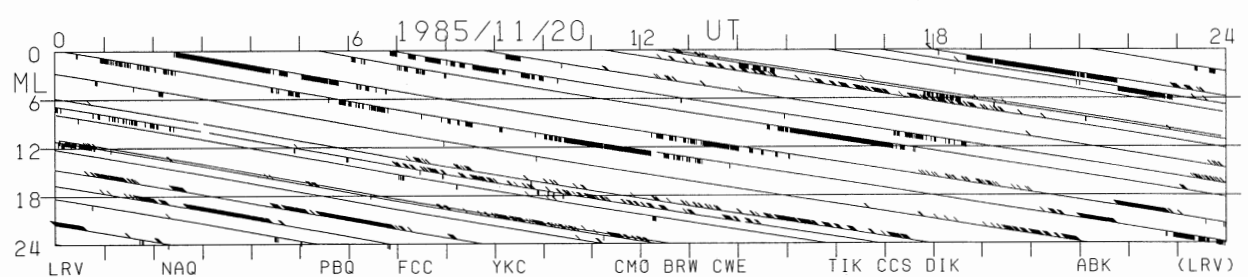
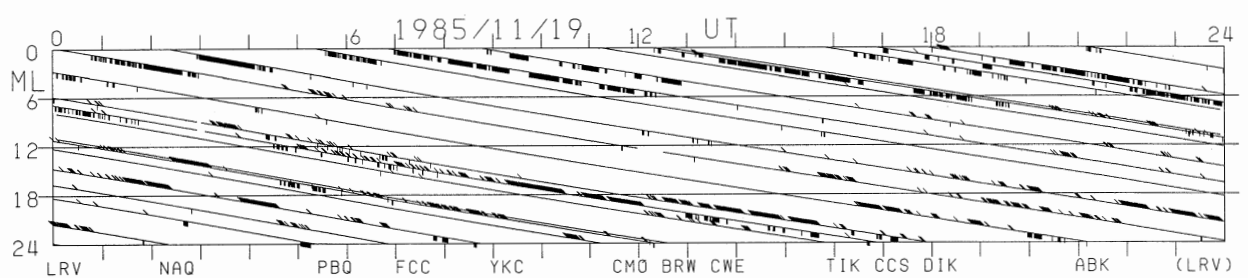
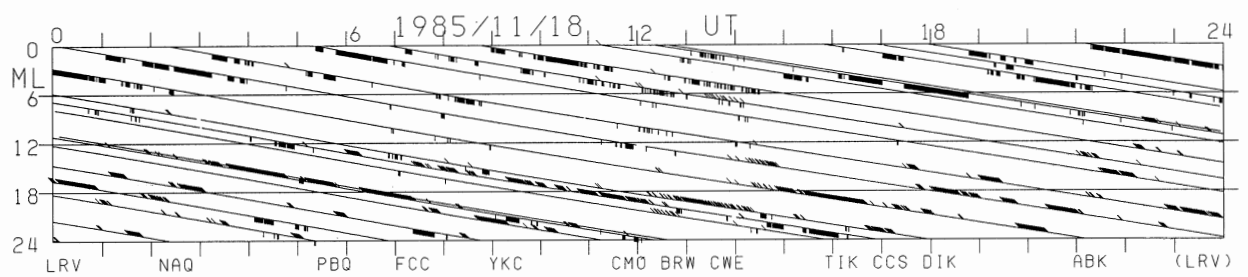
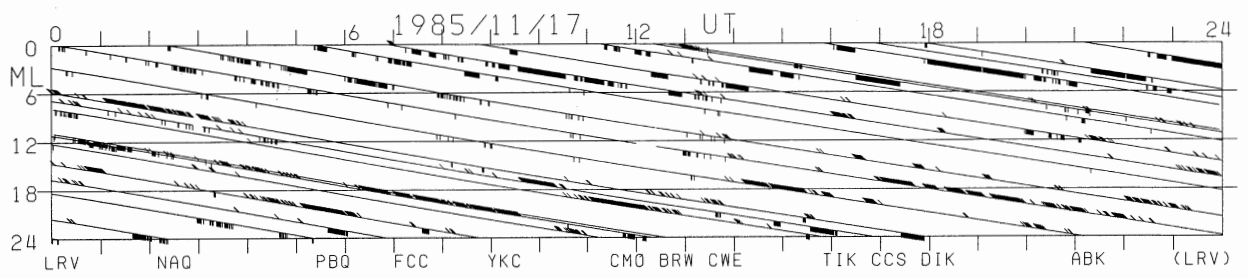
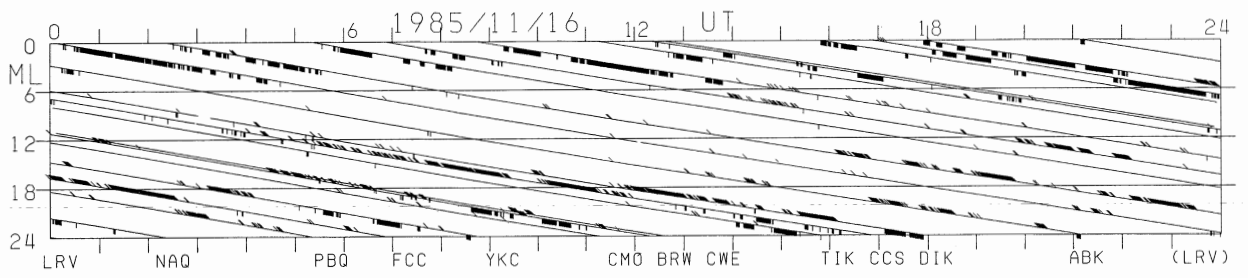


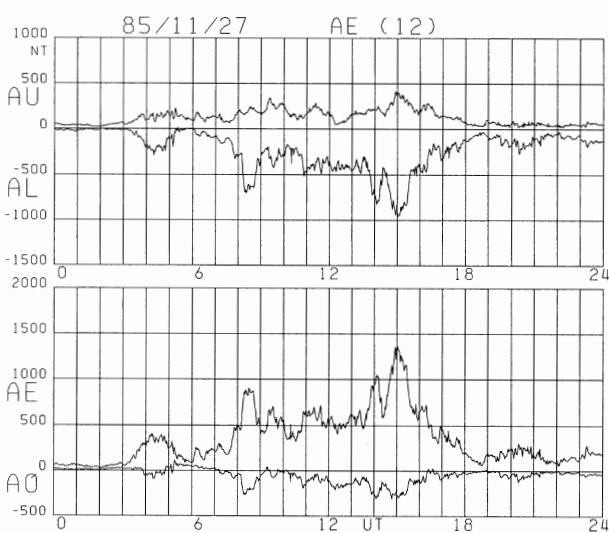
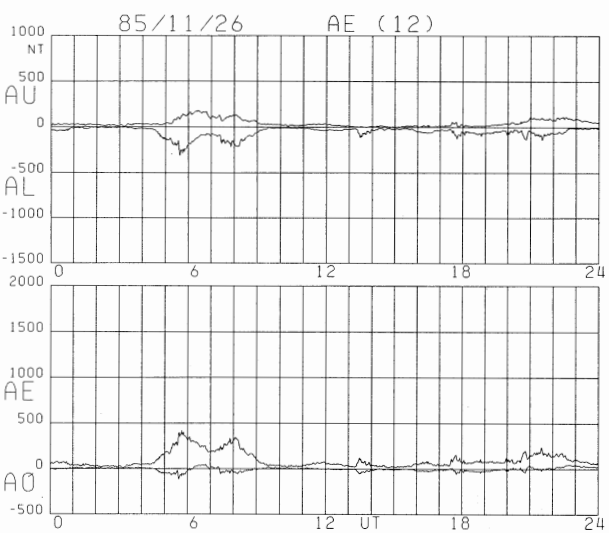
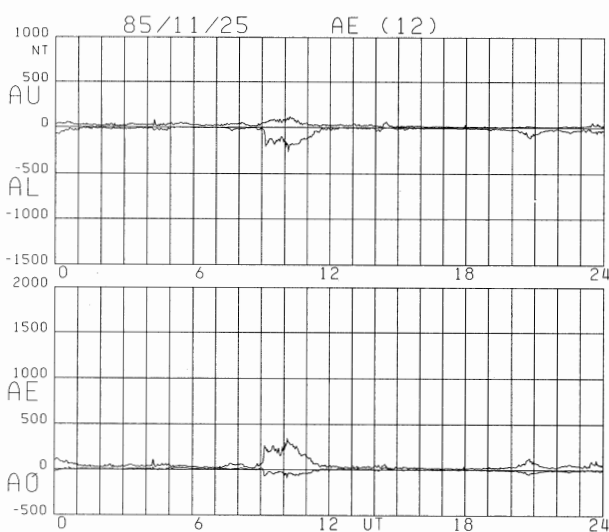
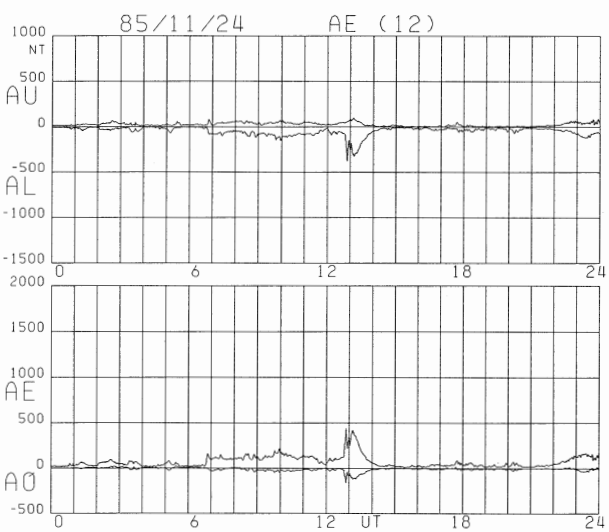
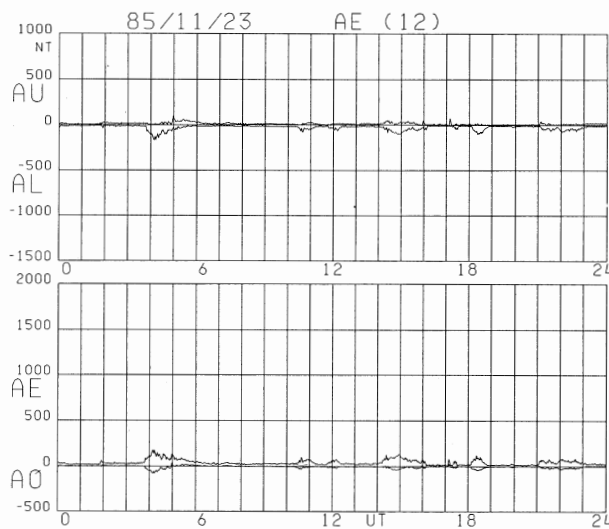
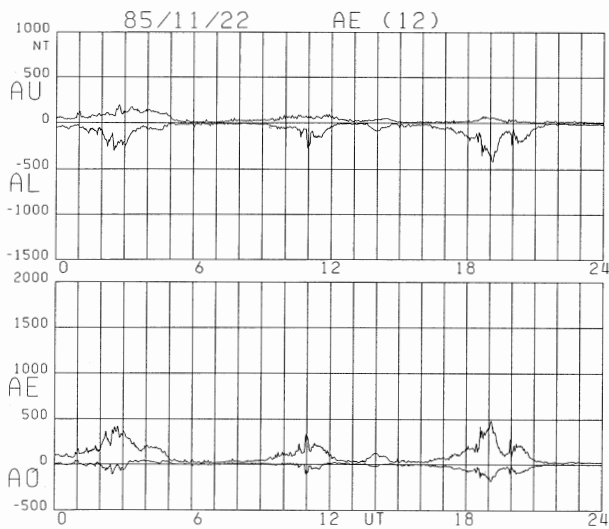


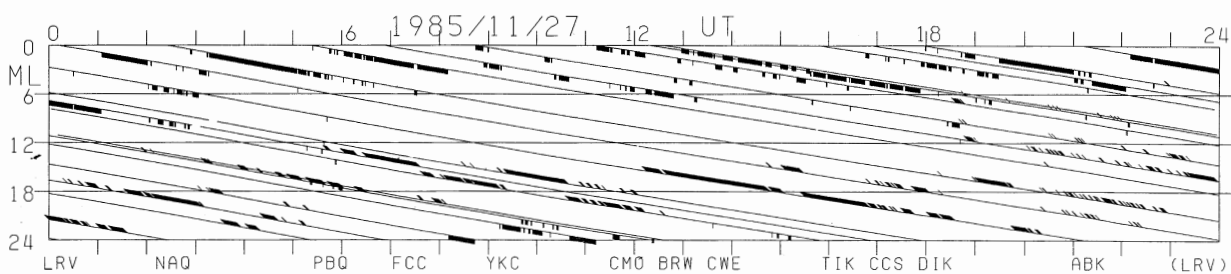
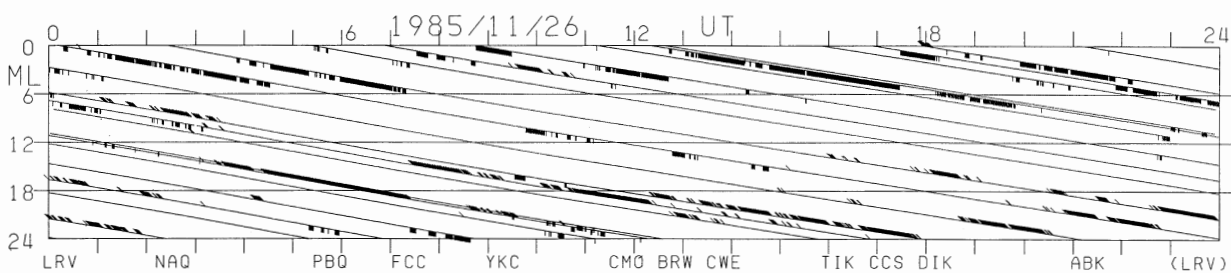
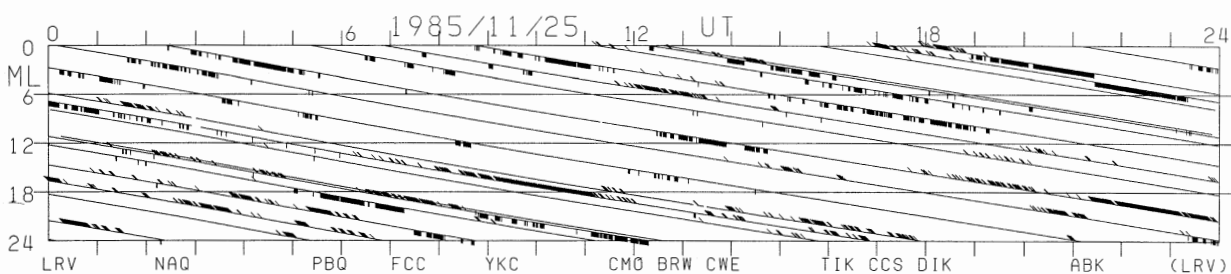
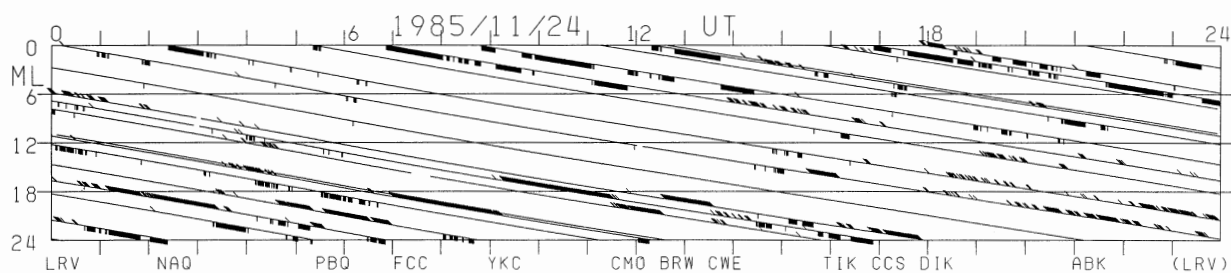
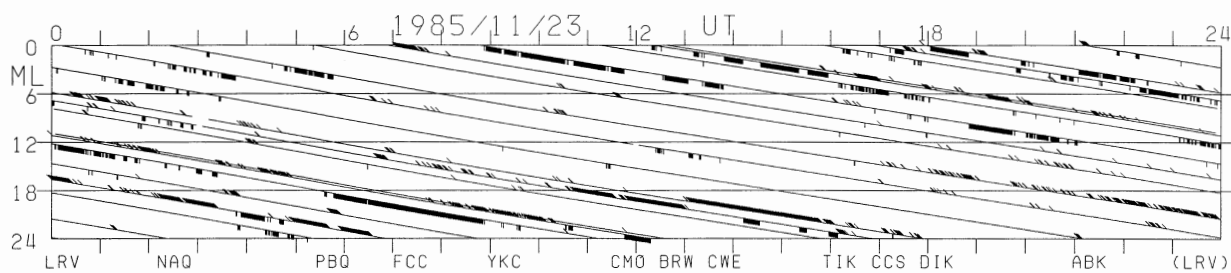
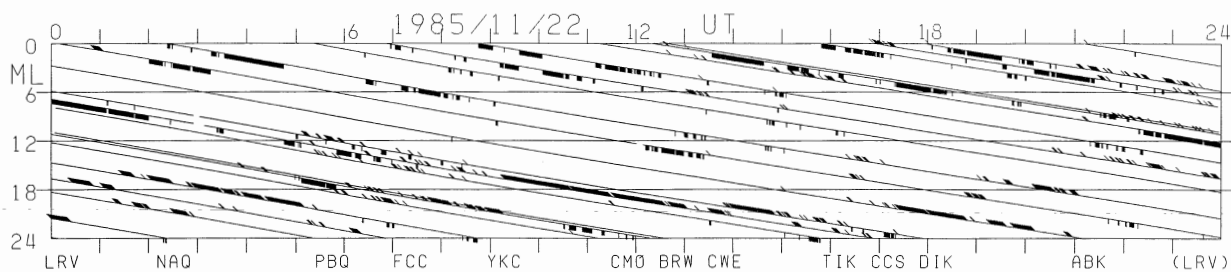


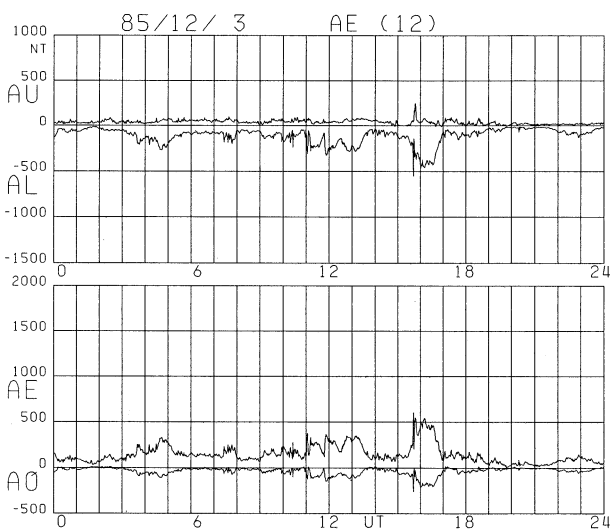
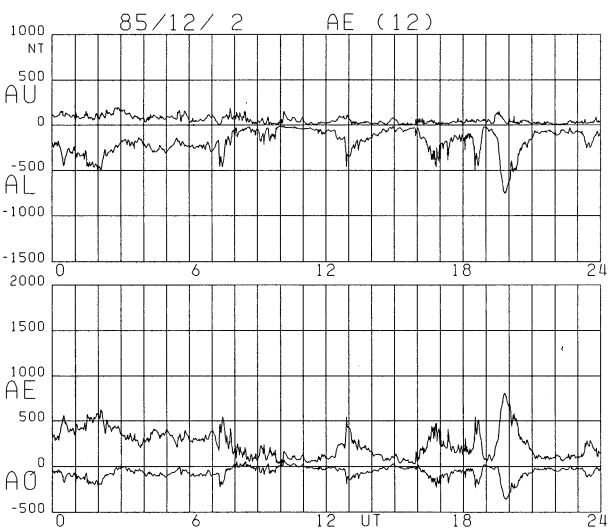
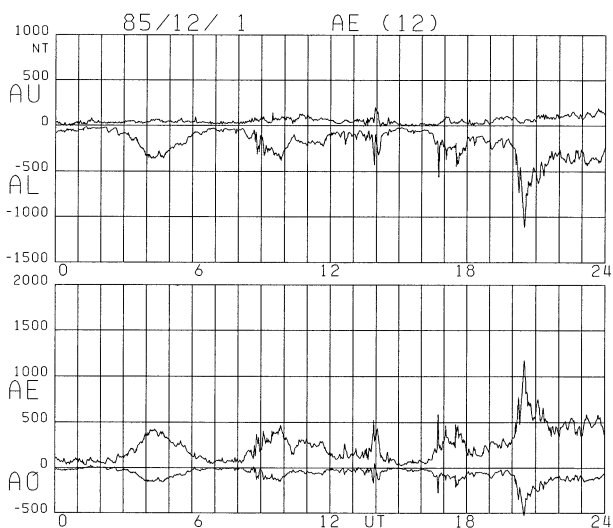
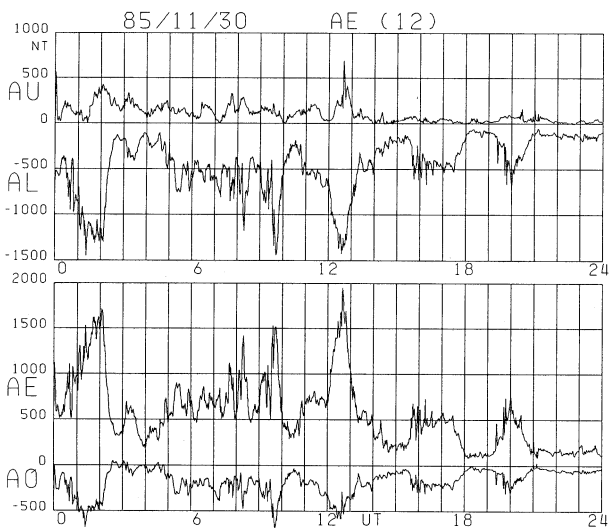
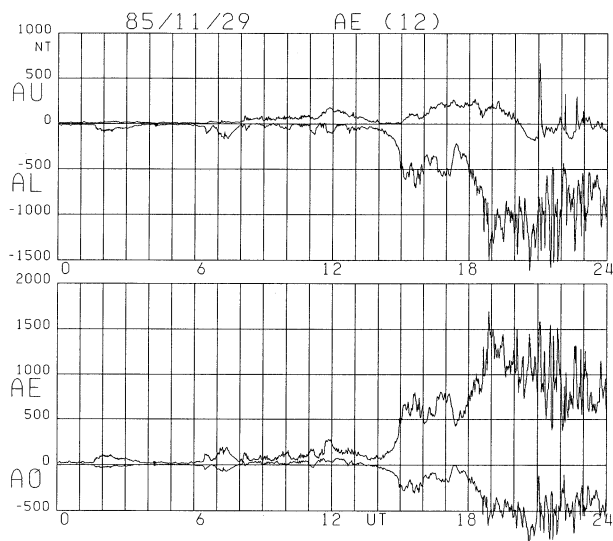
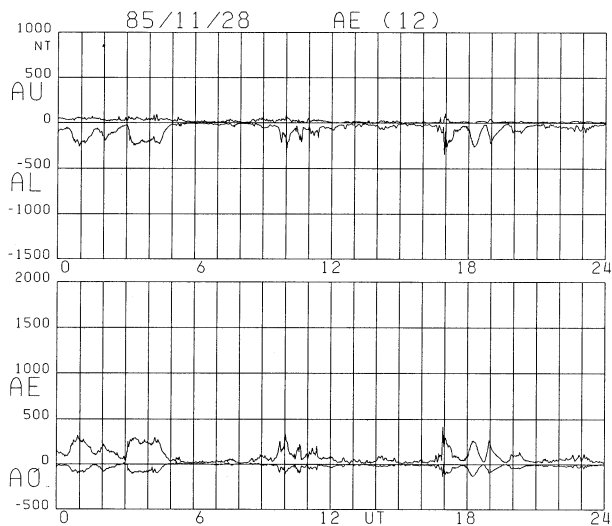


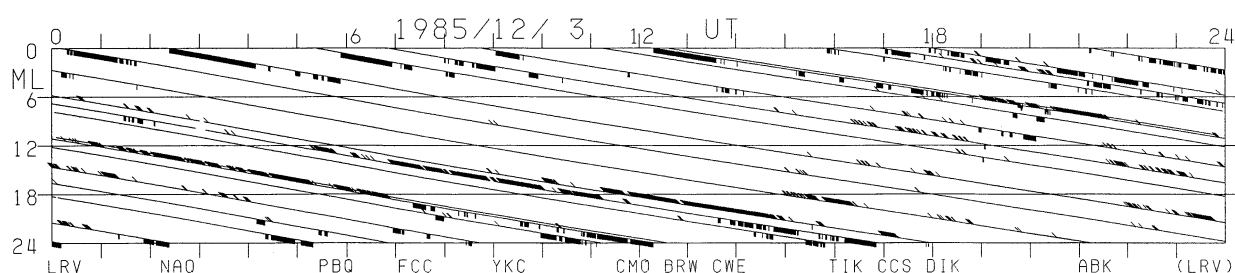
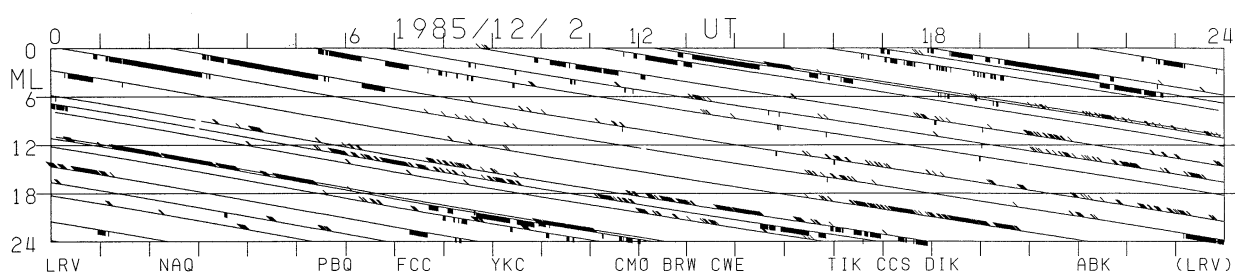
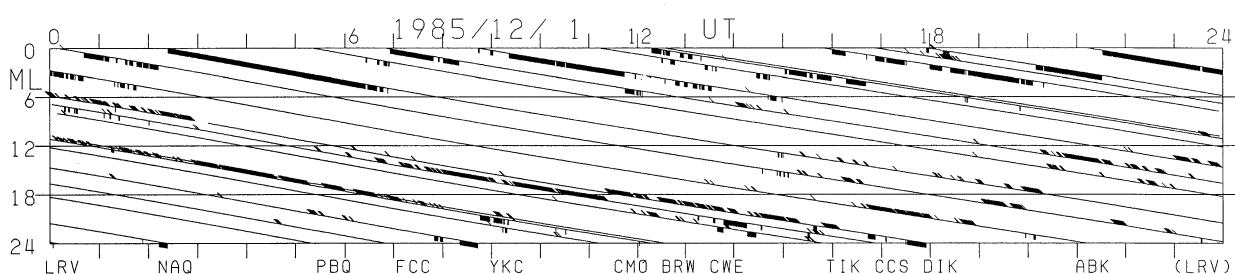
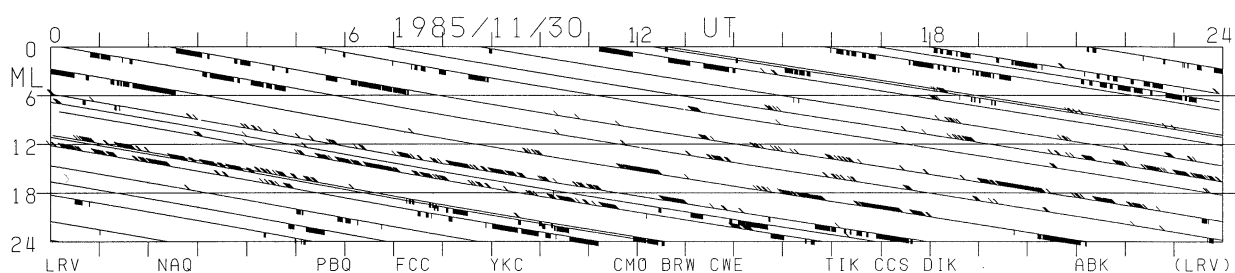
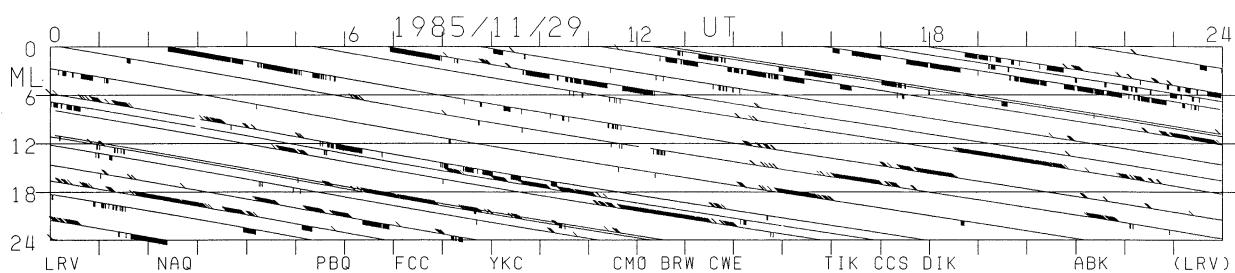
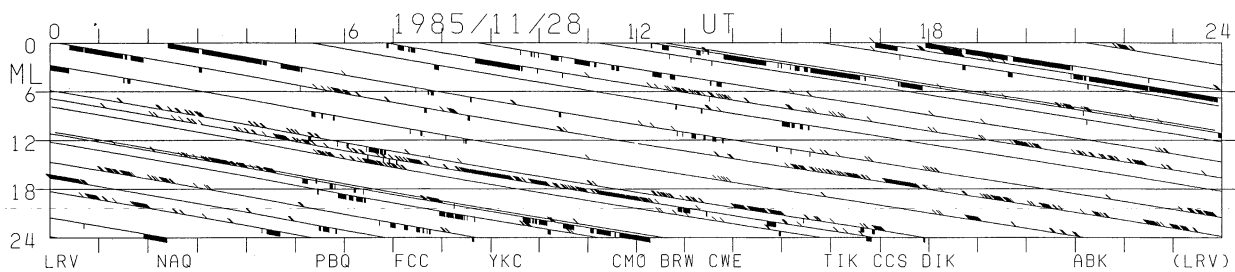


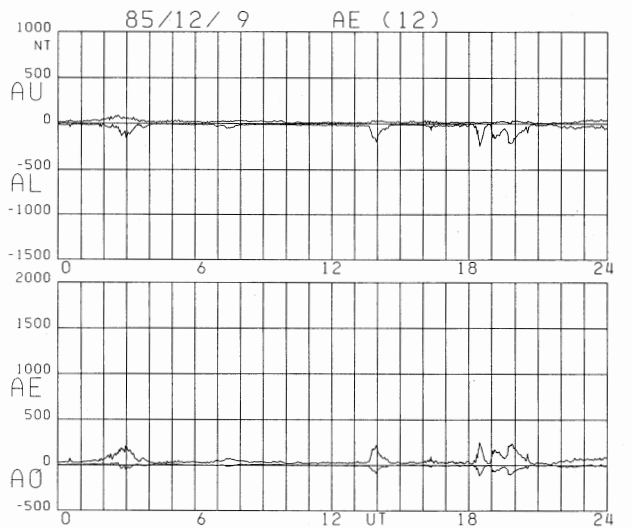
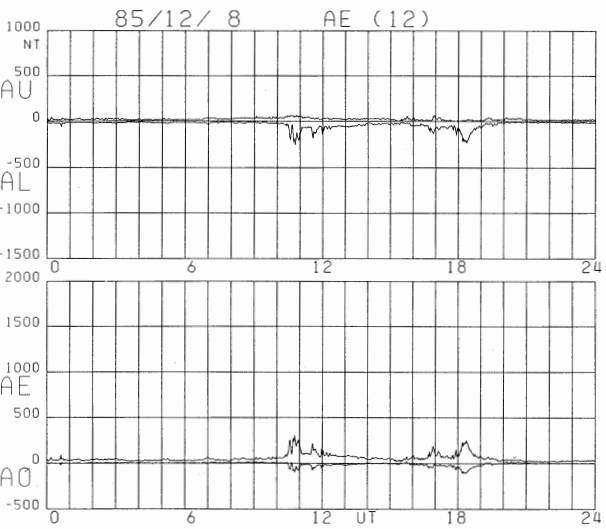
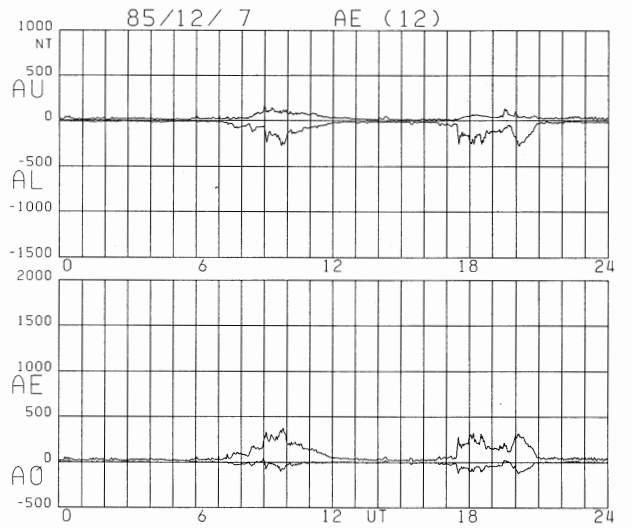
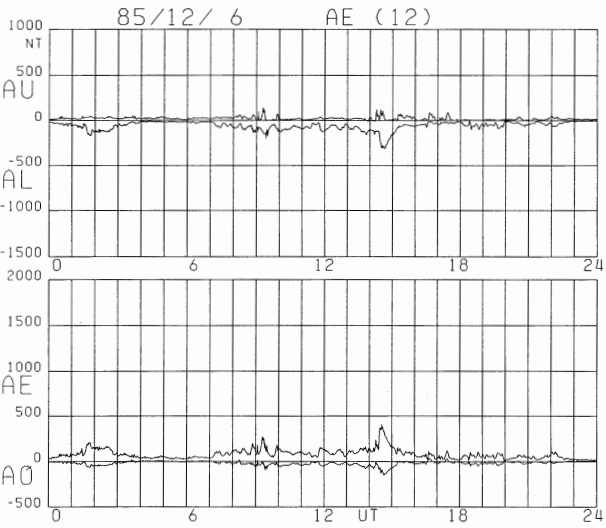
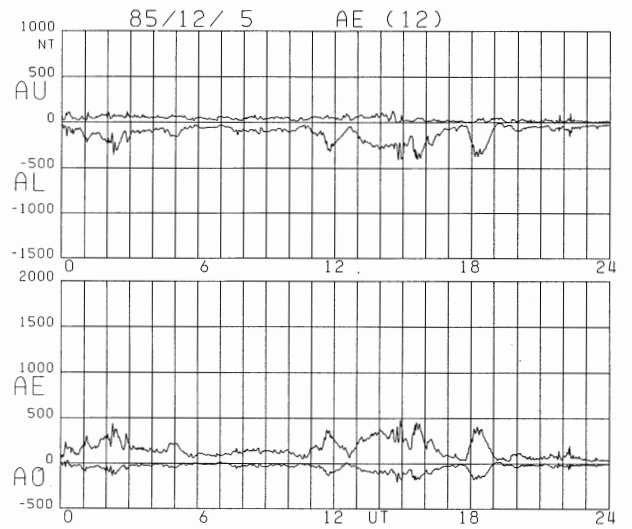
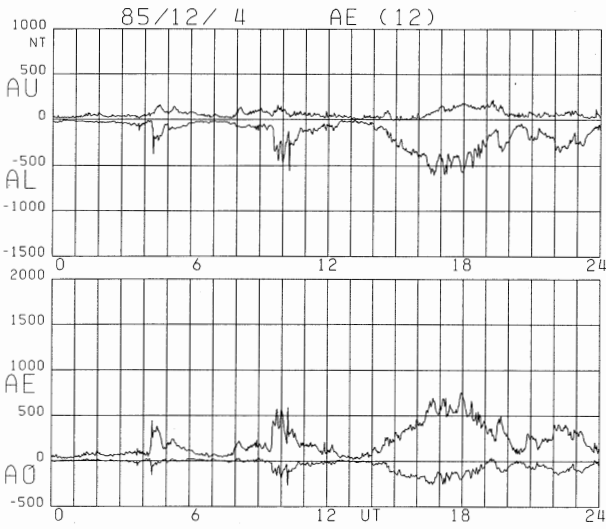


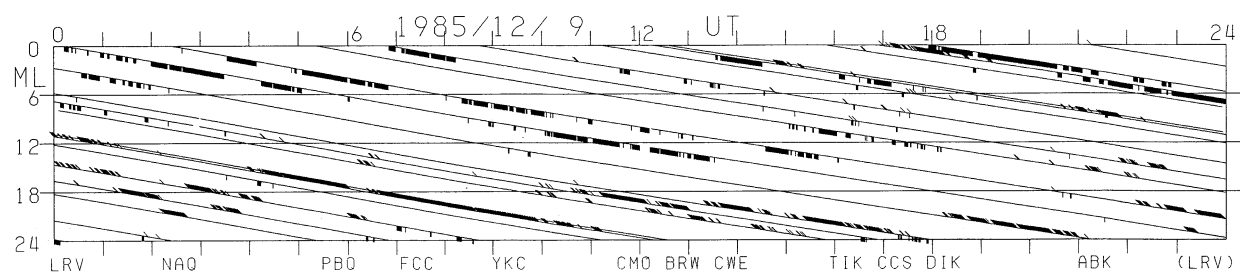
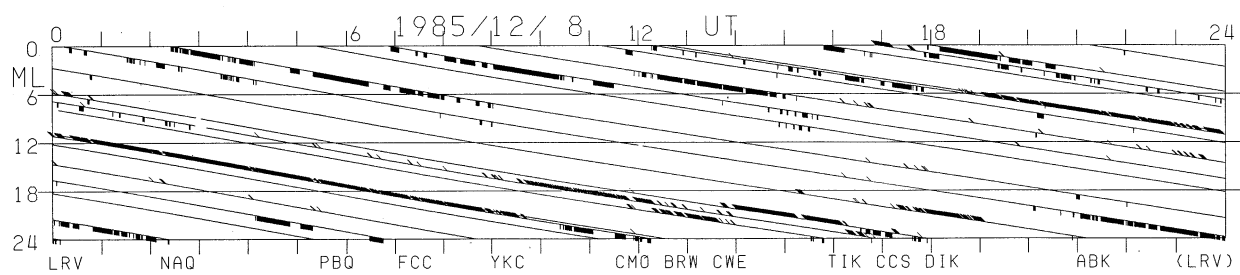
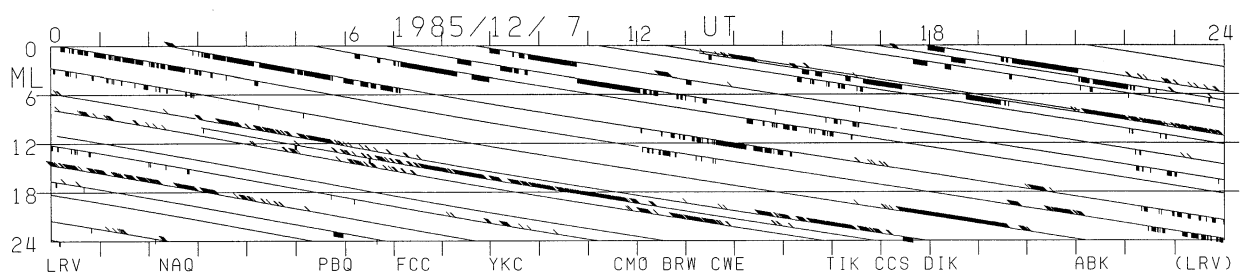
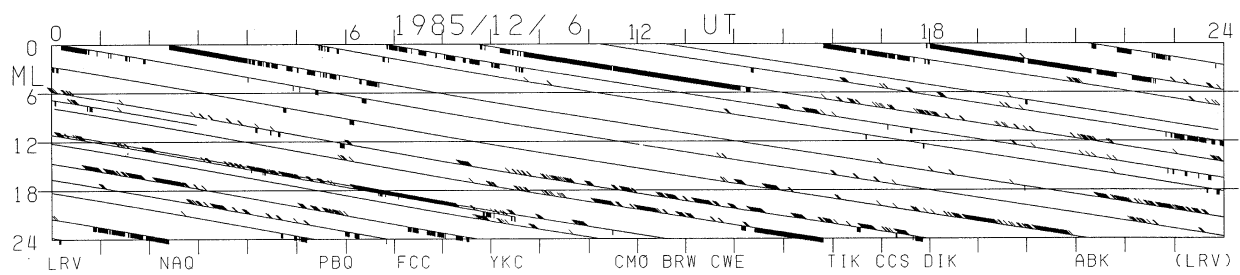
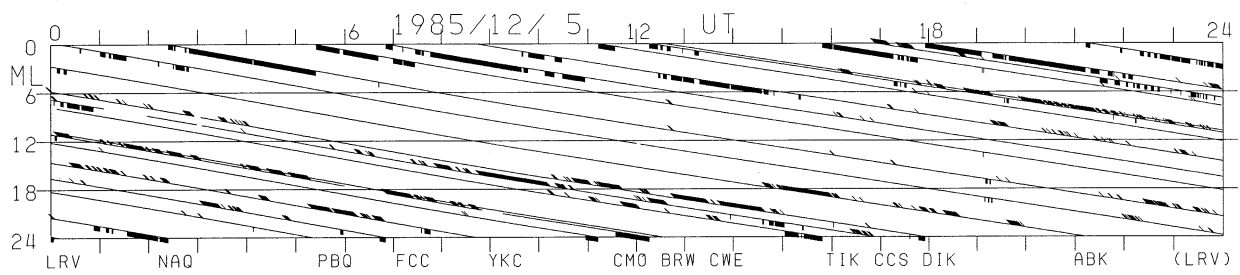
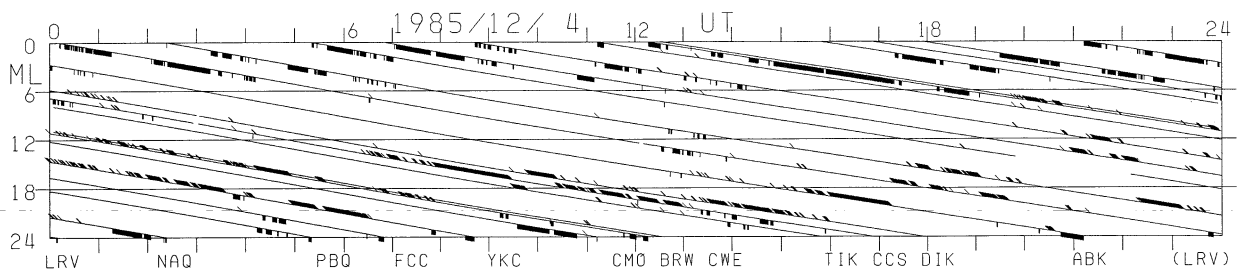


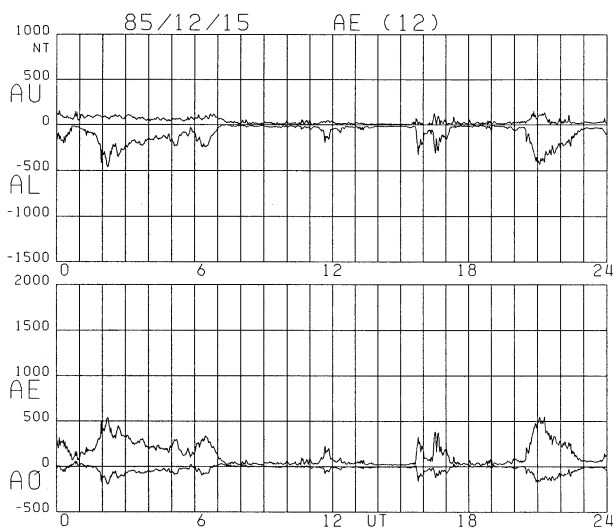
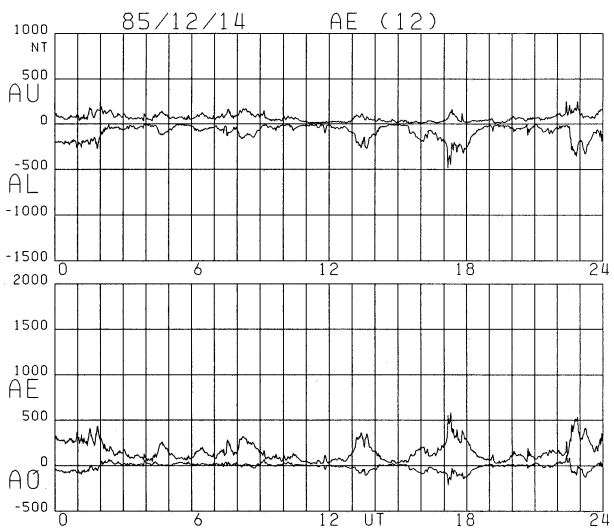
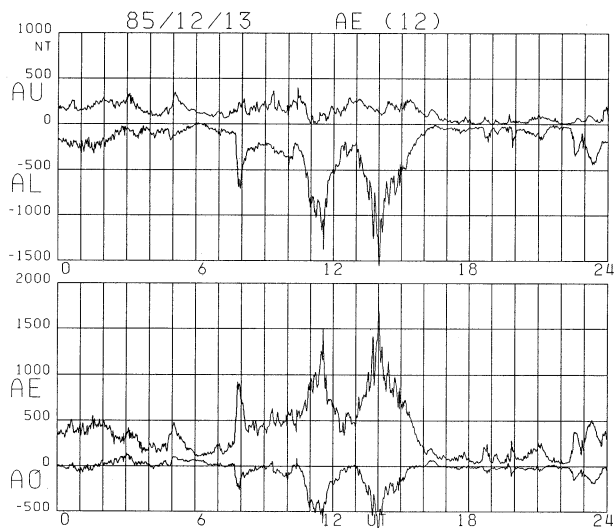
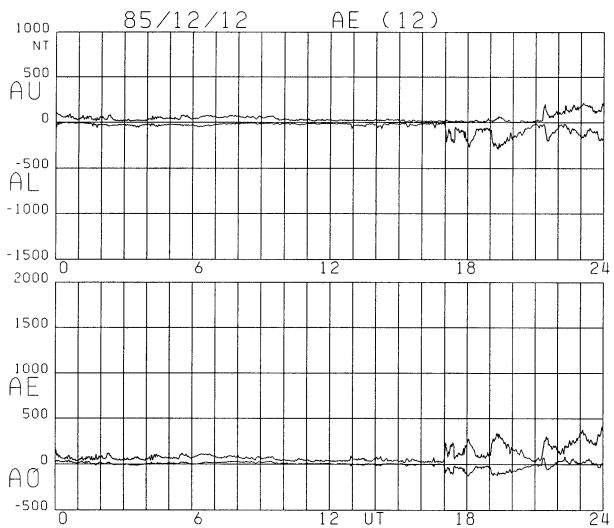
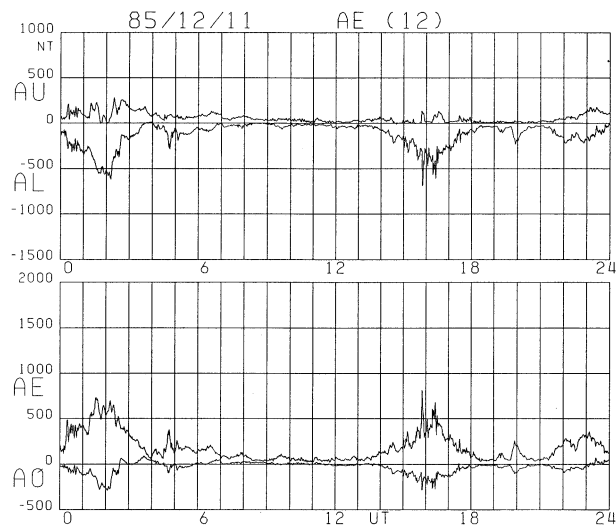
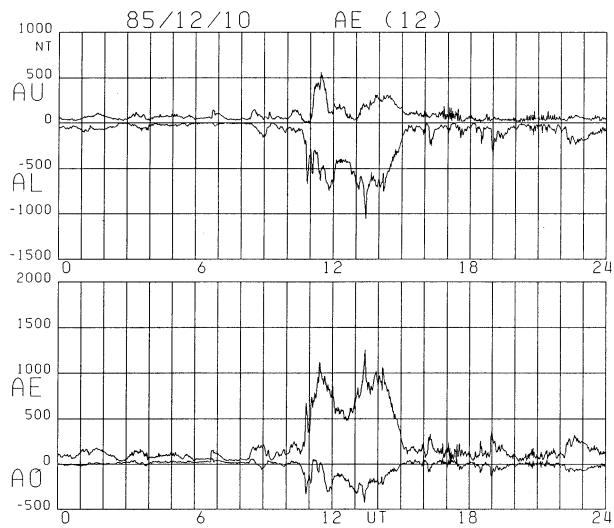


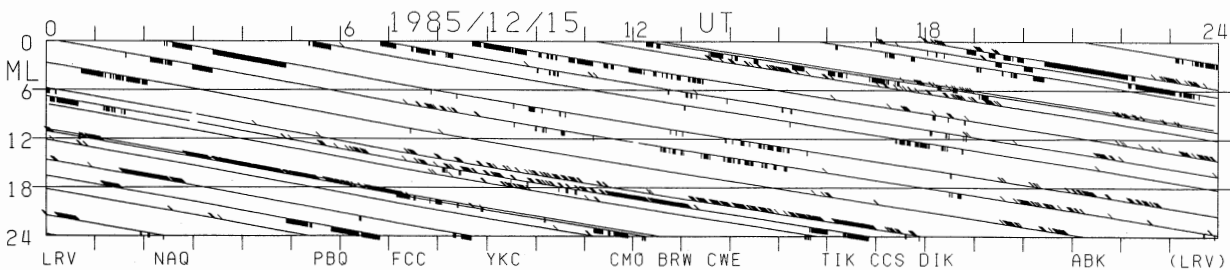
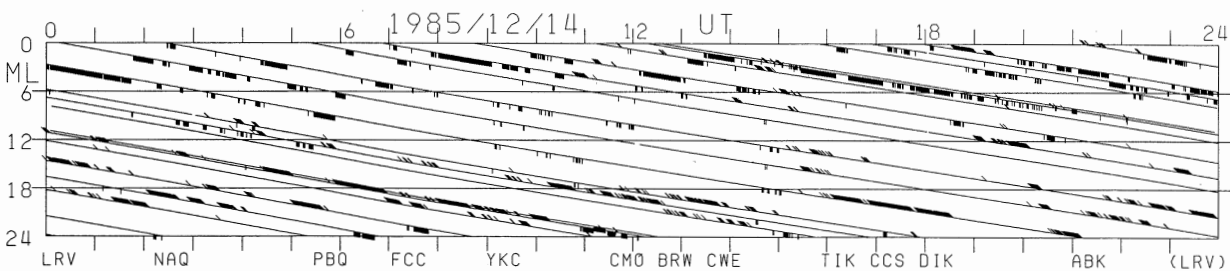
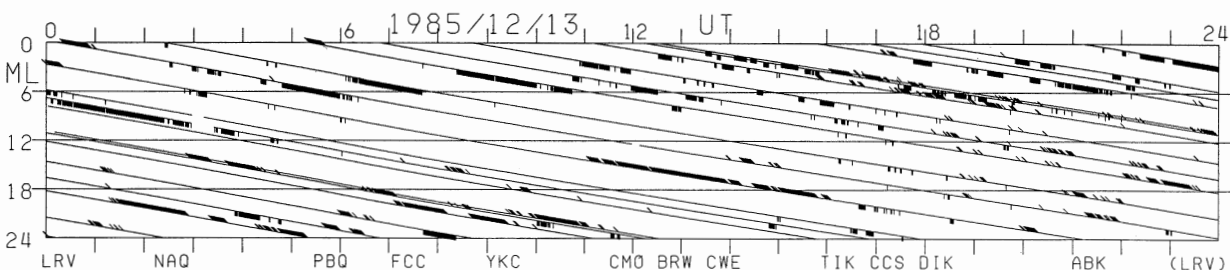
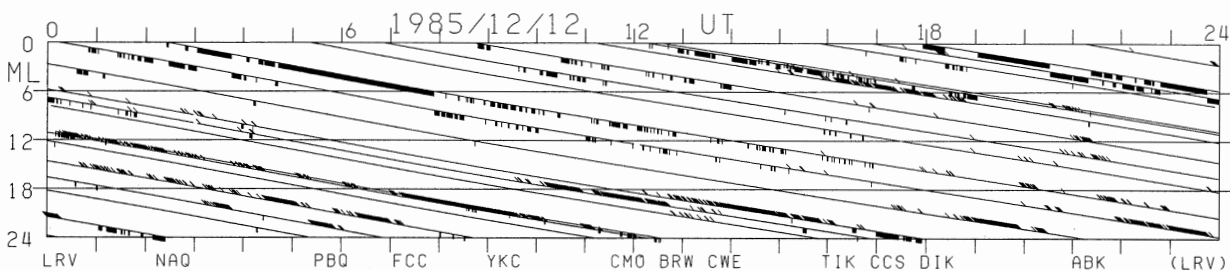
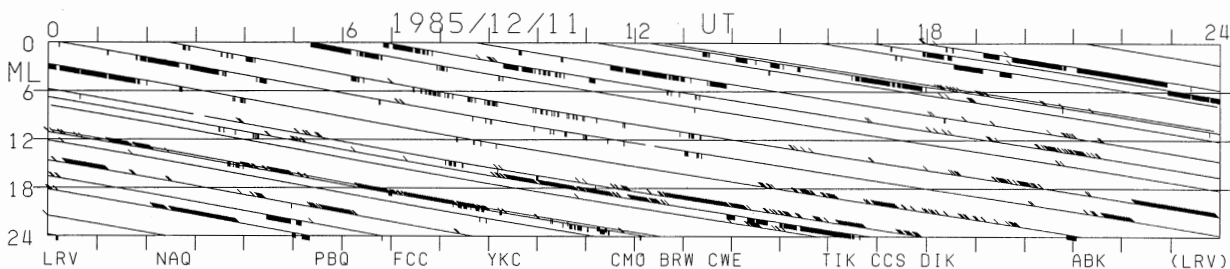
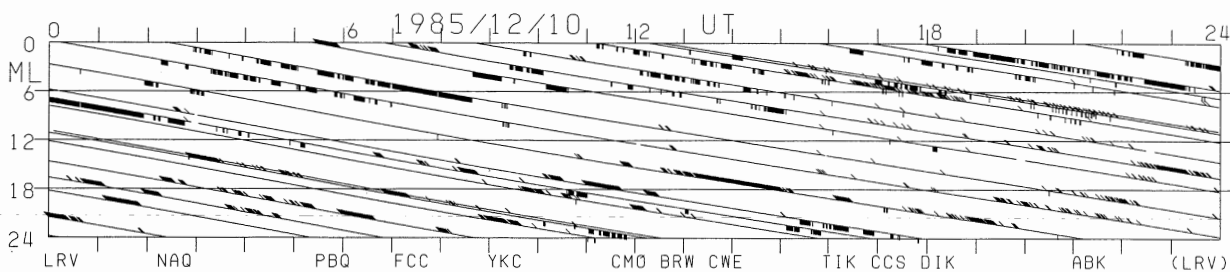


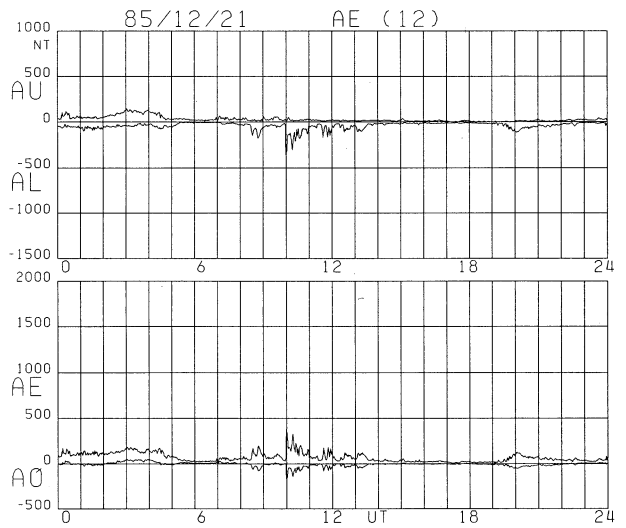
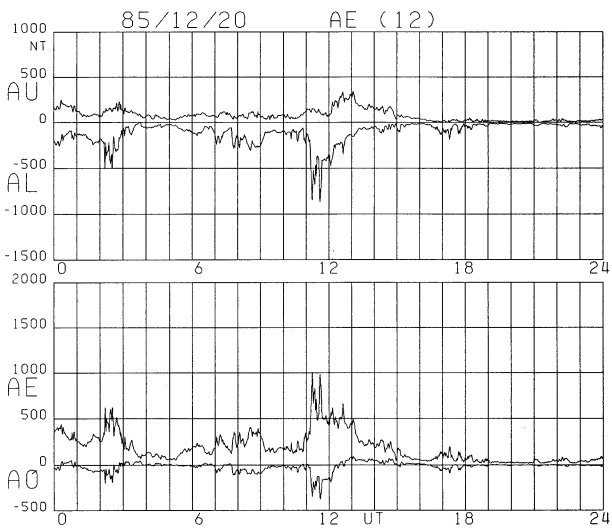
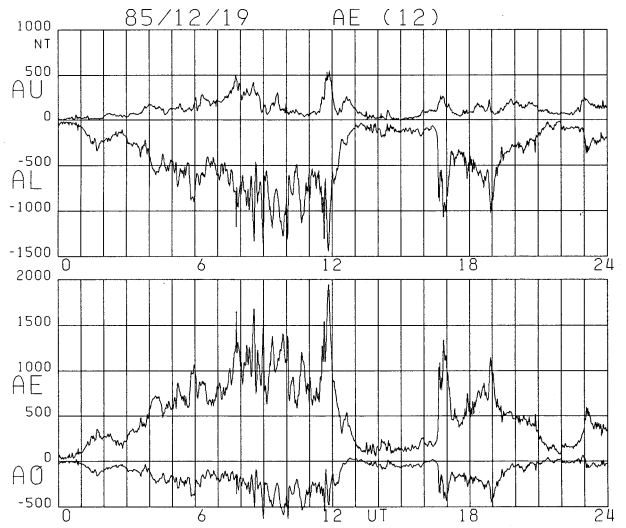
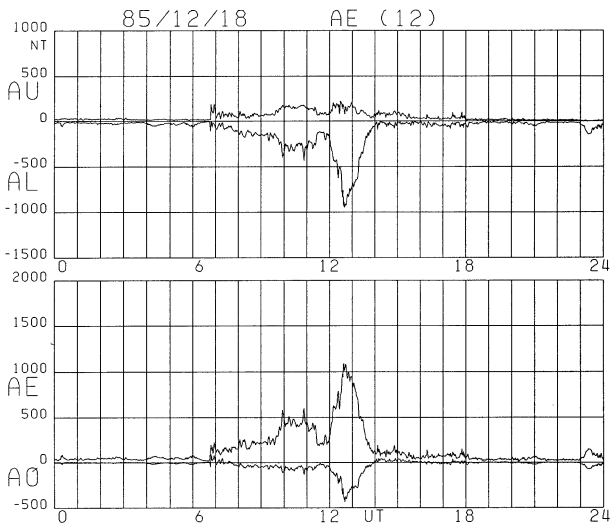
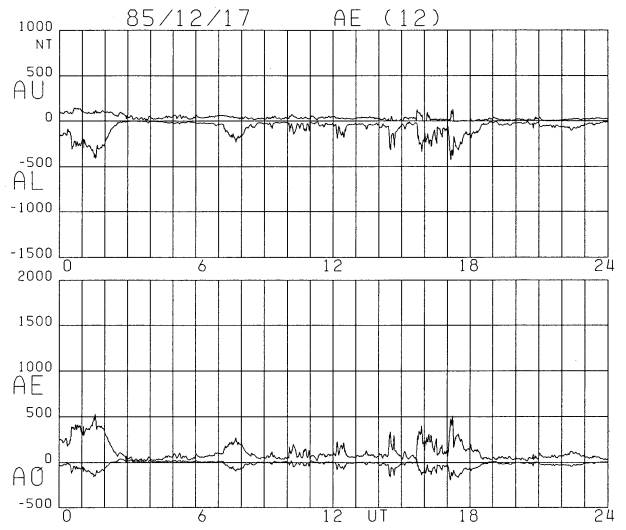
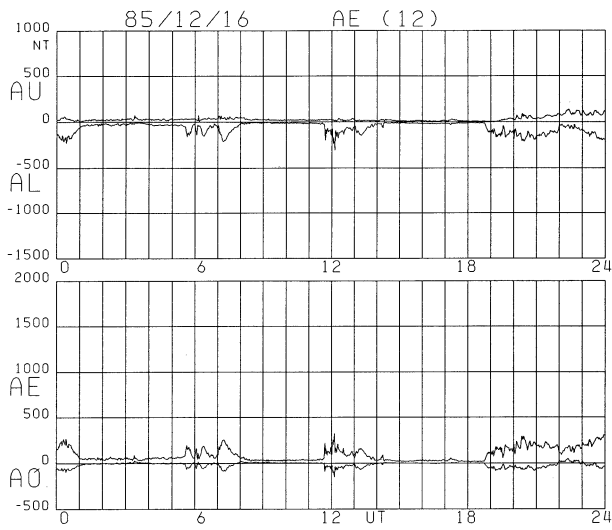


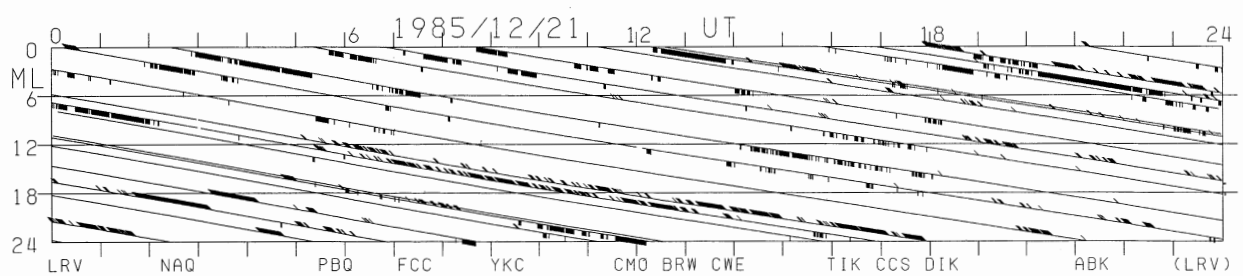
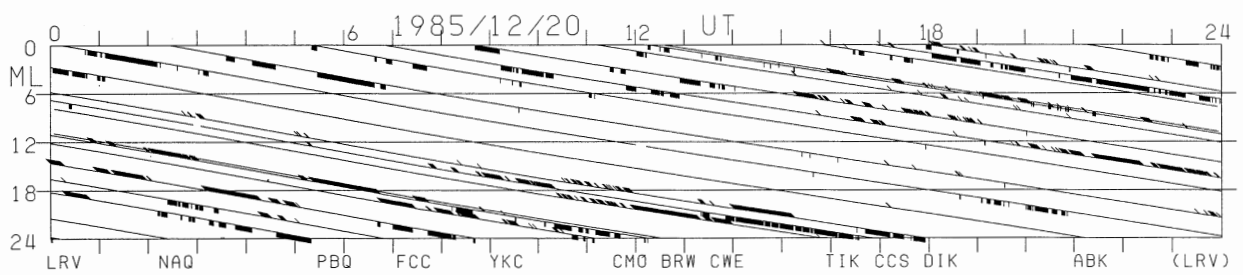
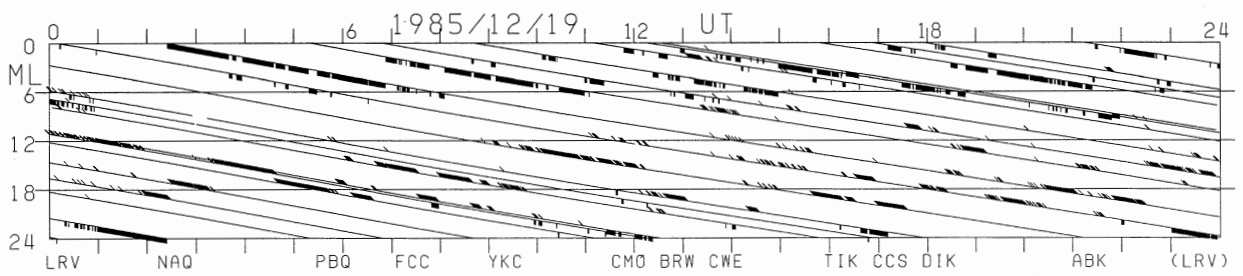
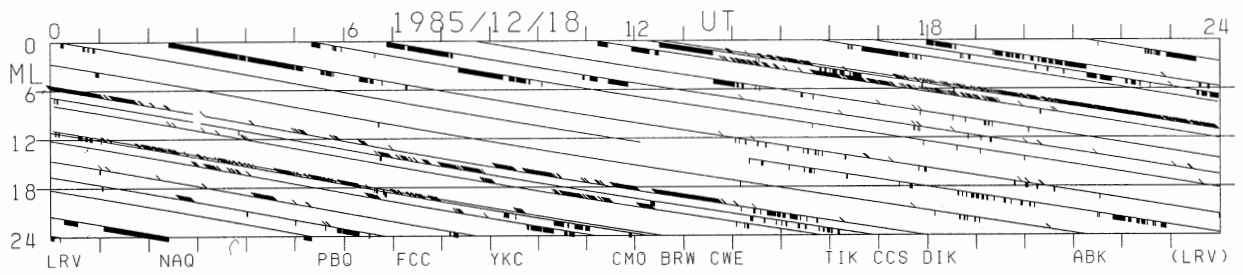
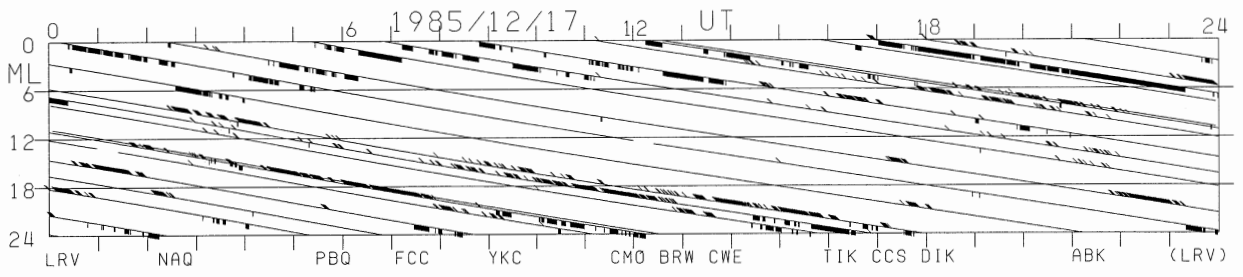
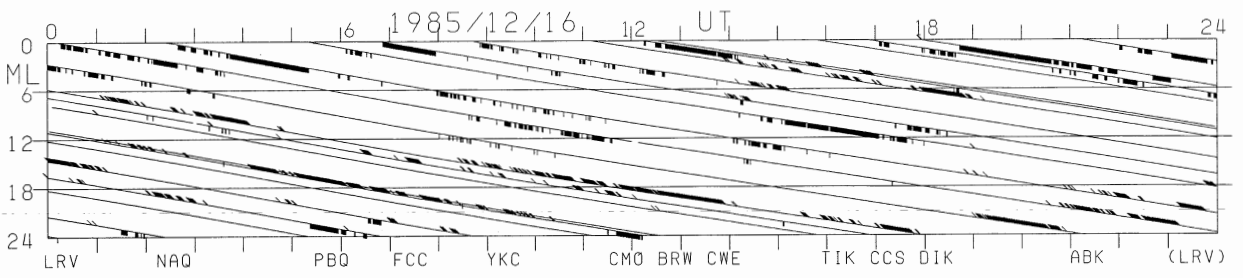


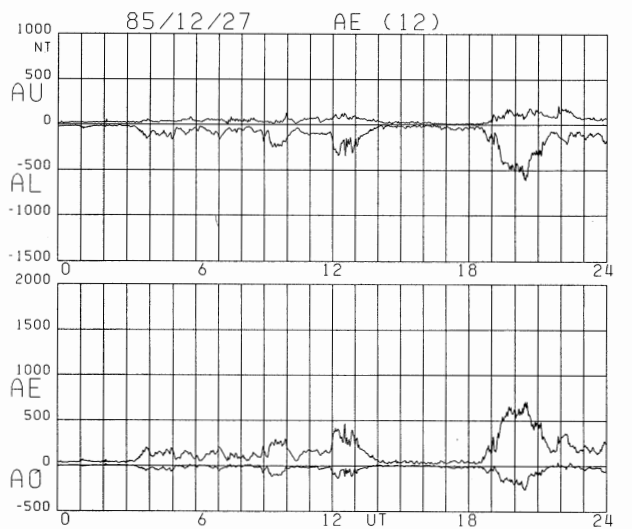
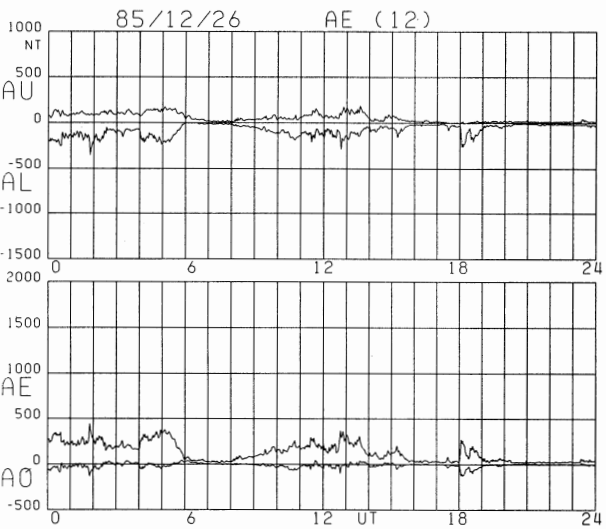
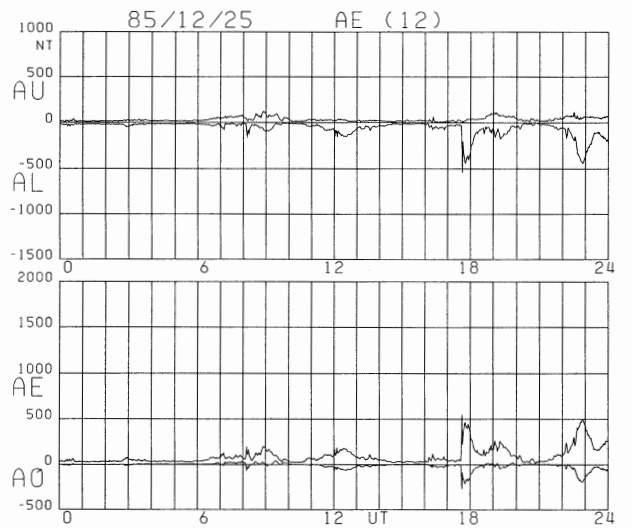
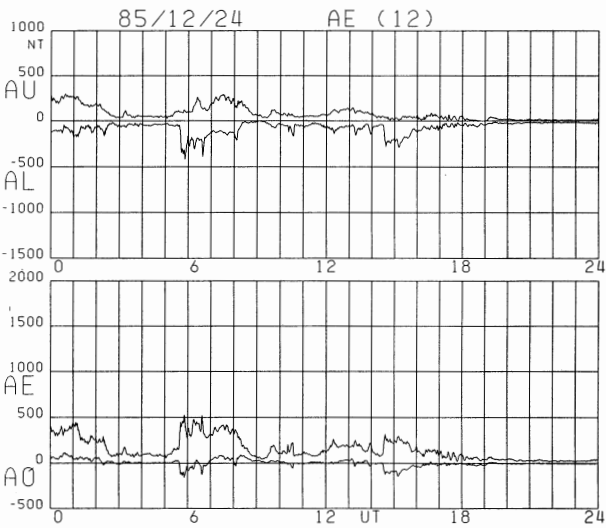
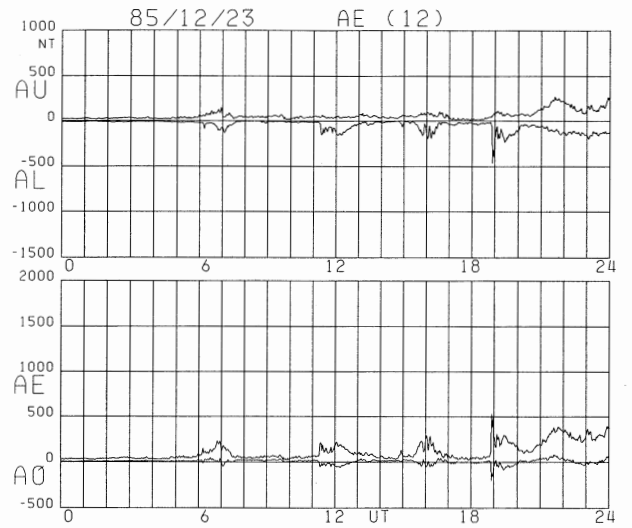
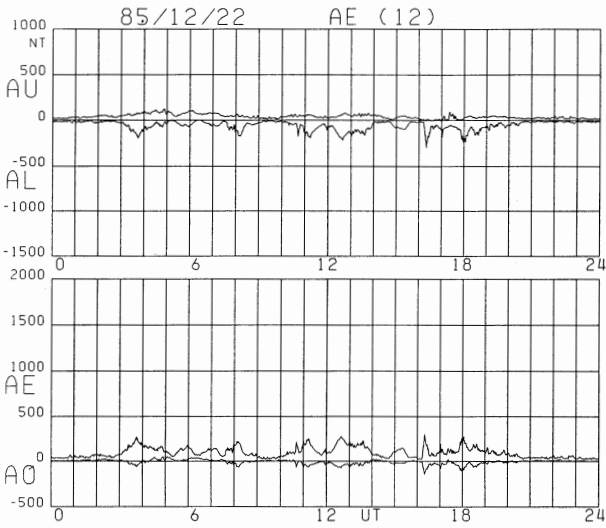


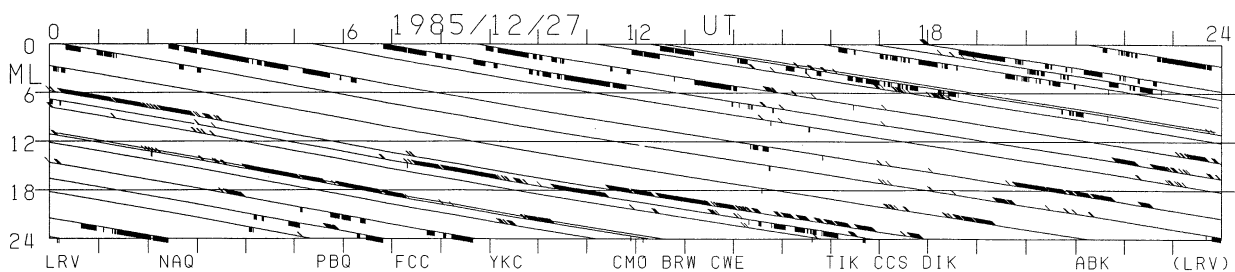
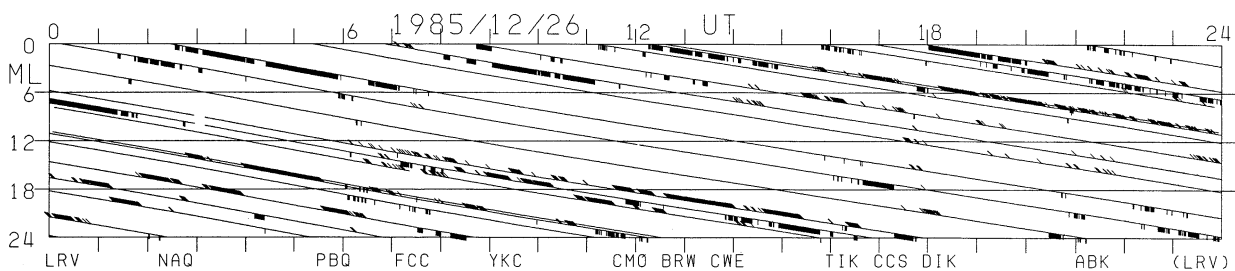
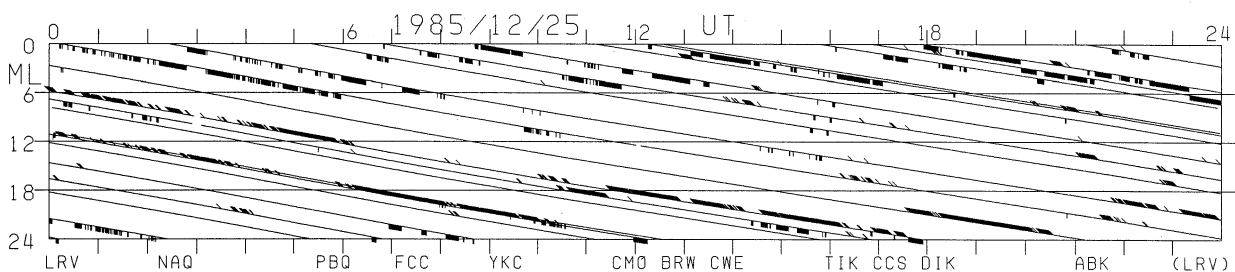
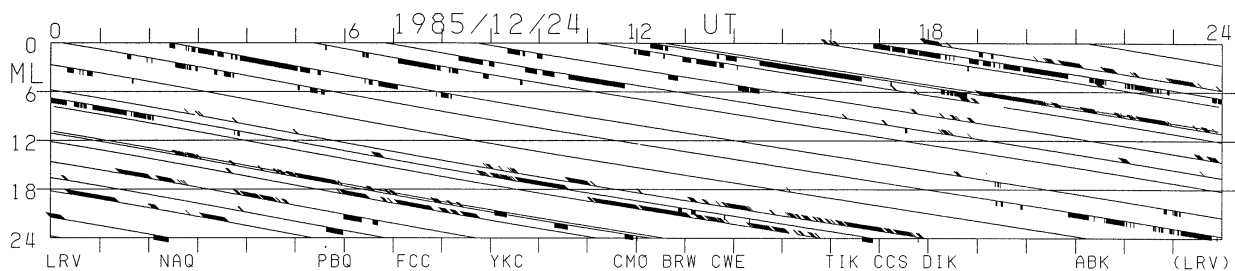
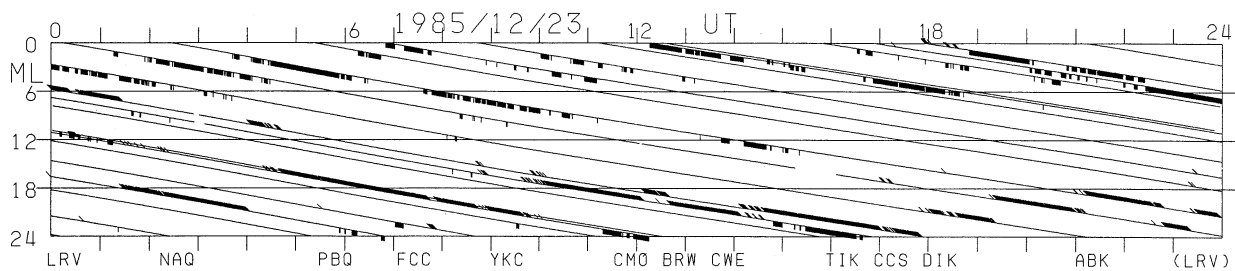
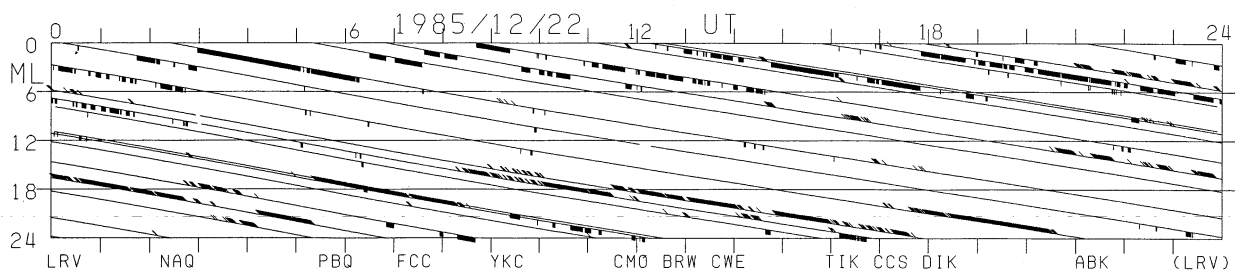


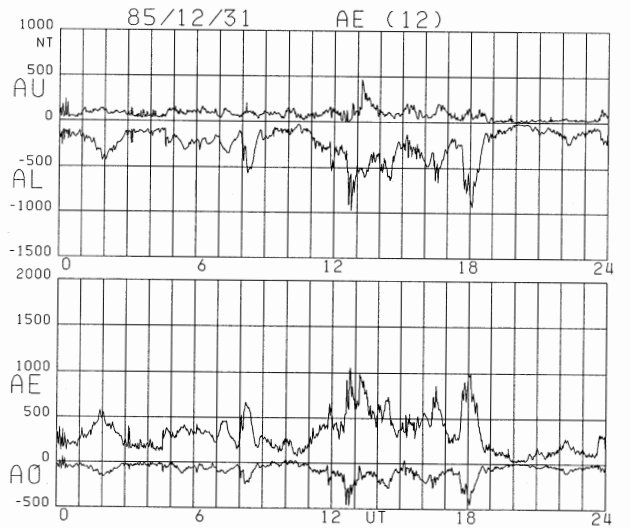
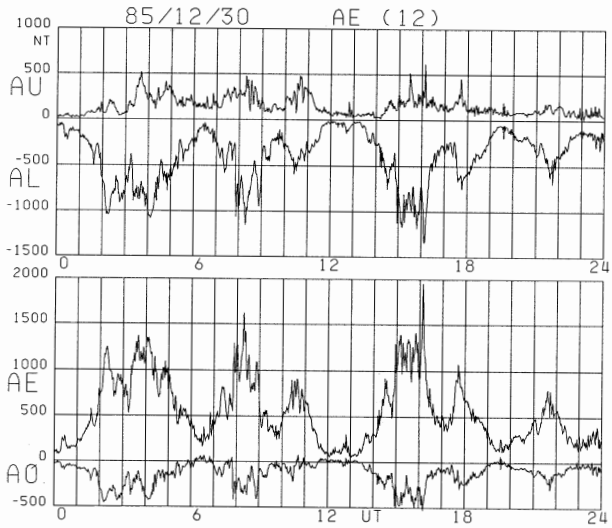
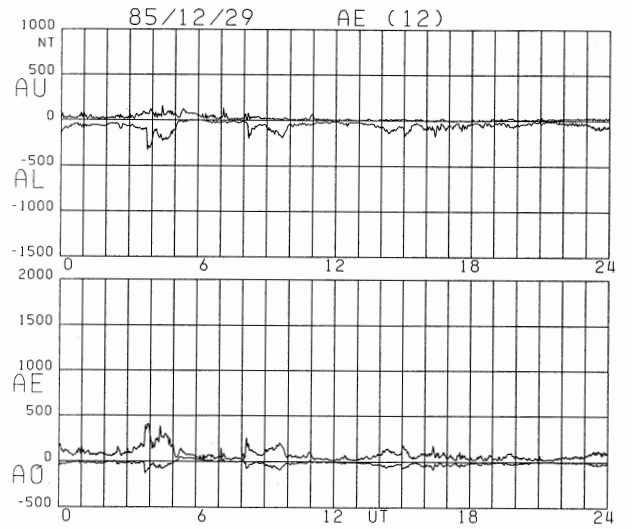
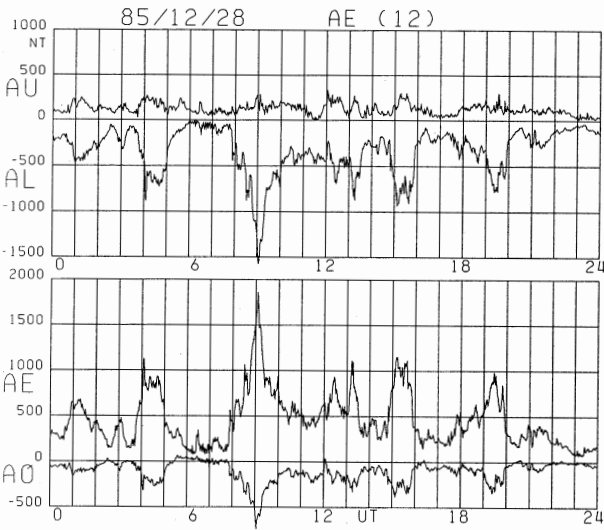












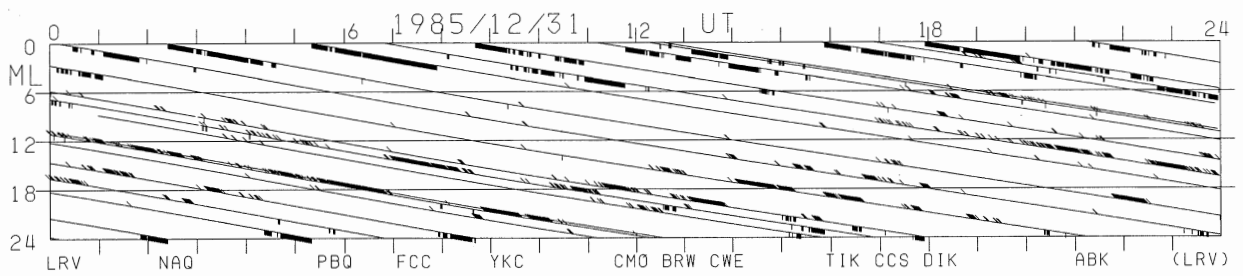
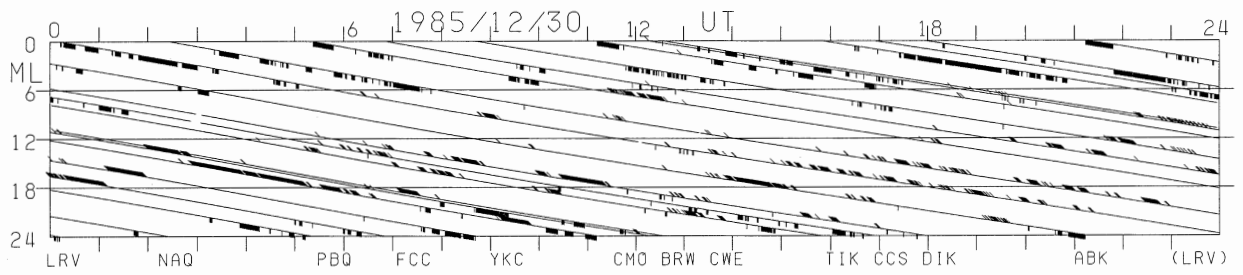
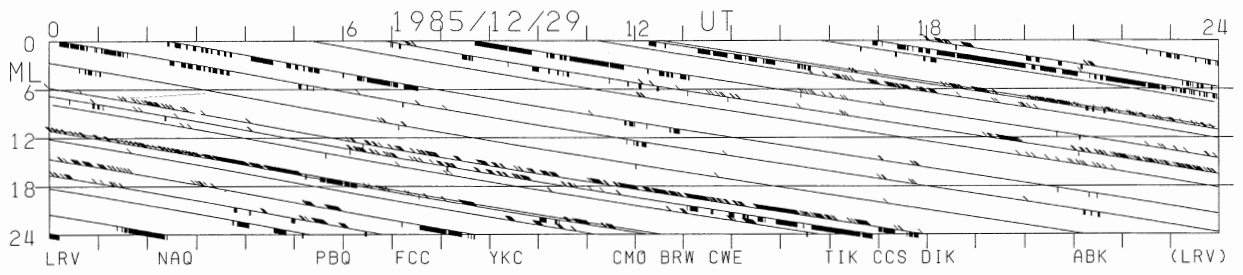
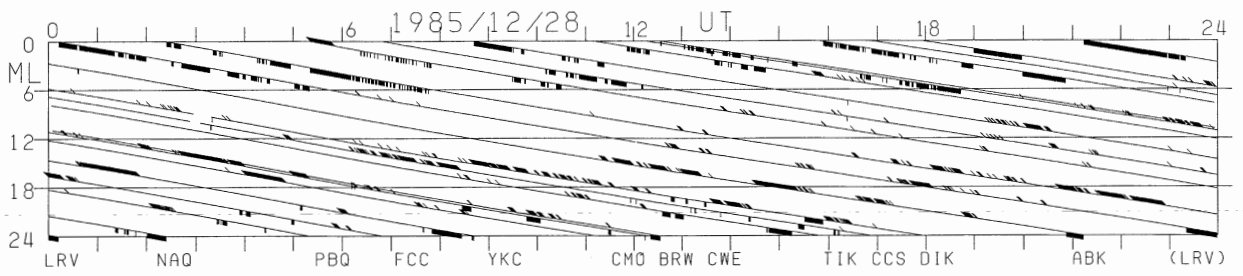
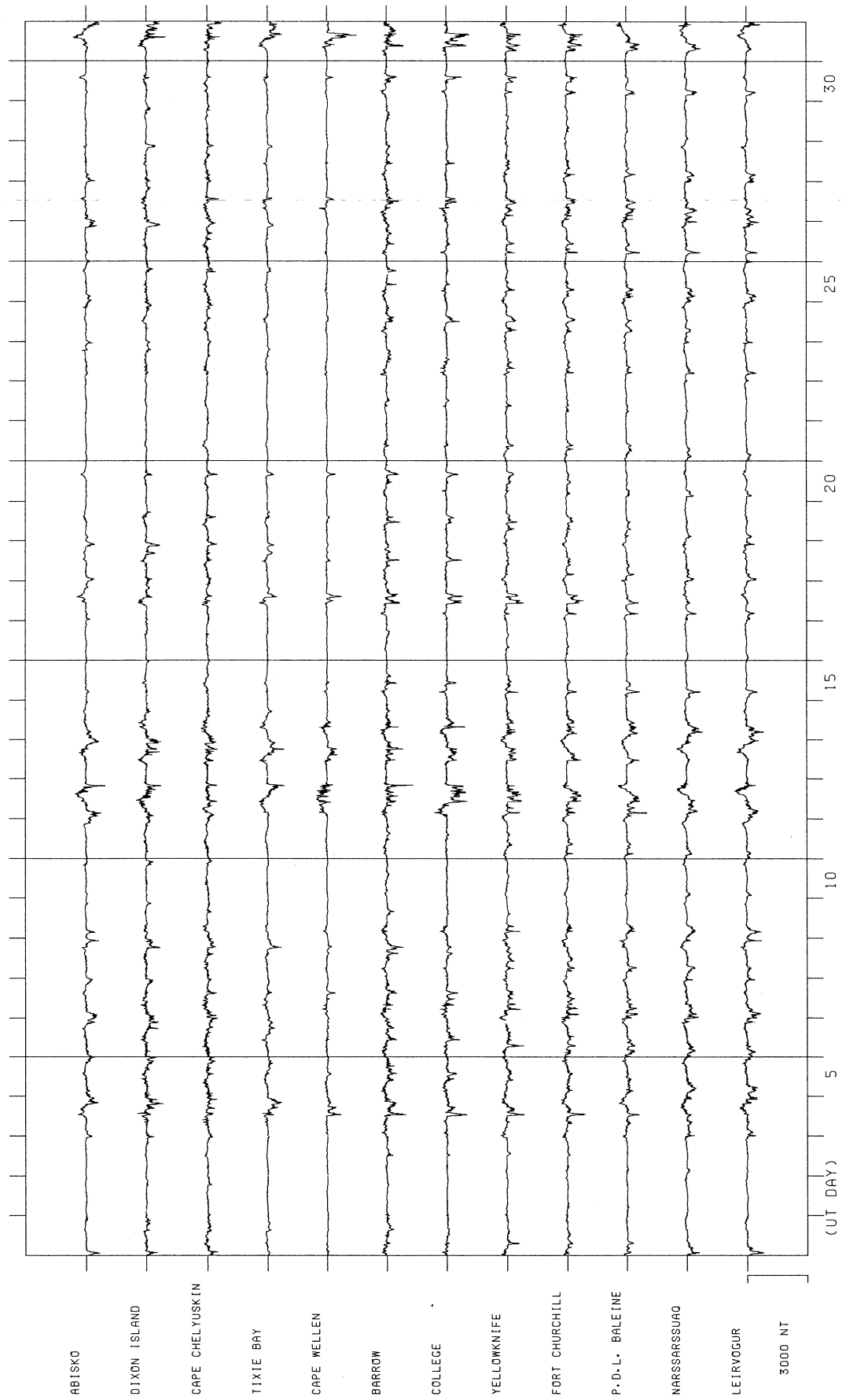
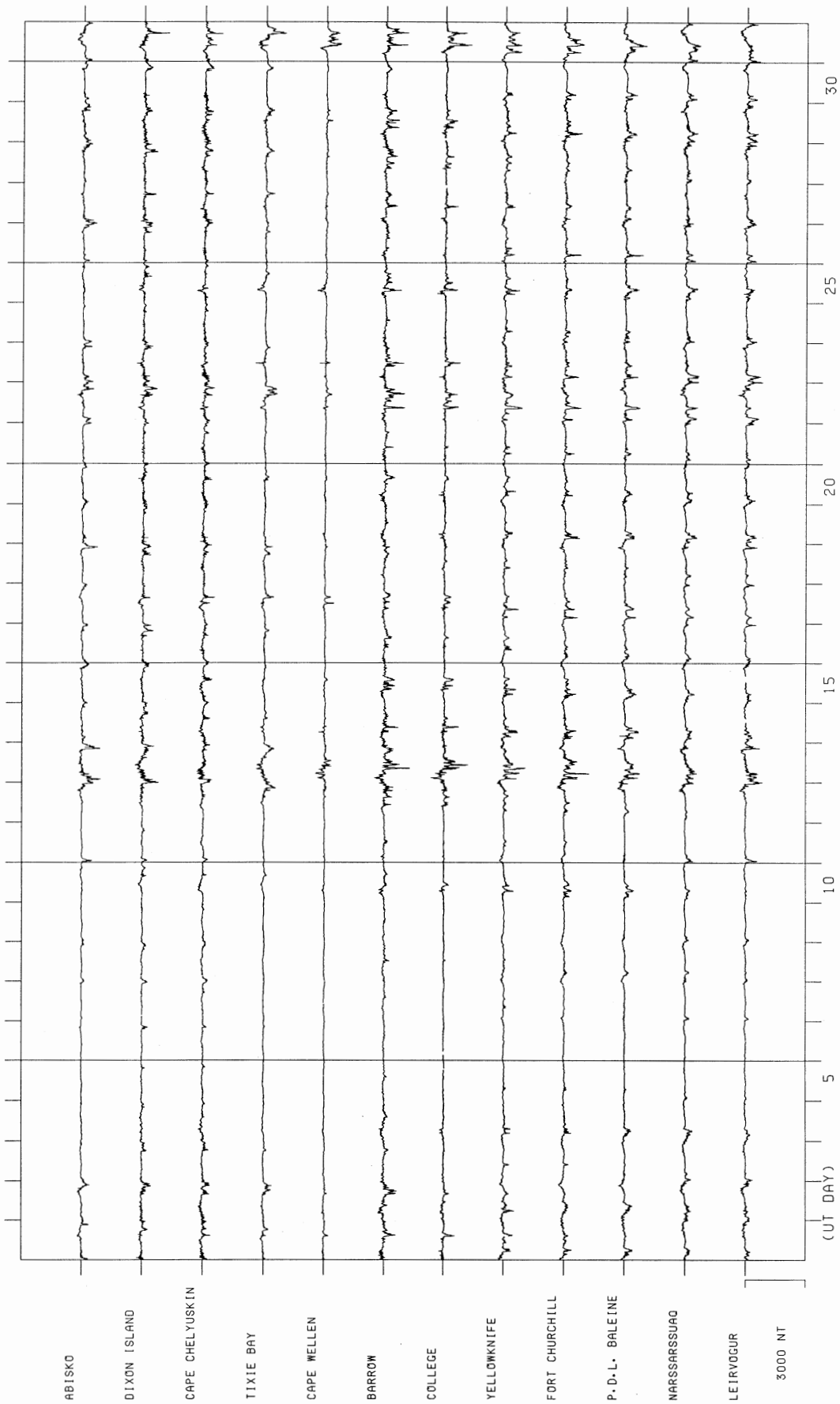


FIGURE 6

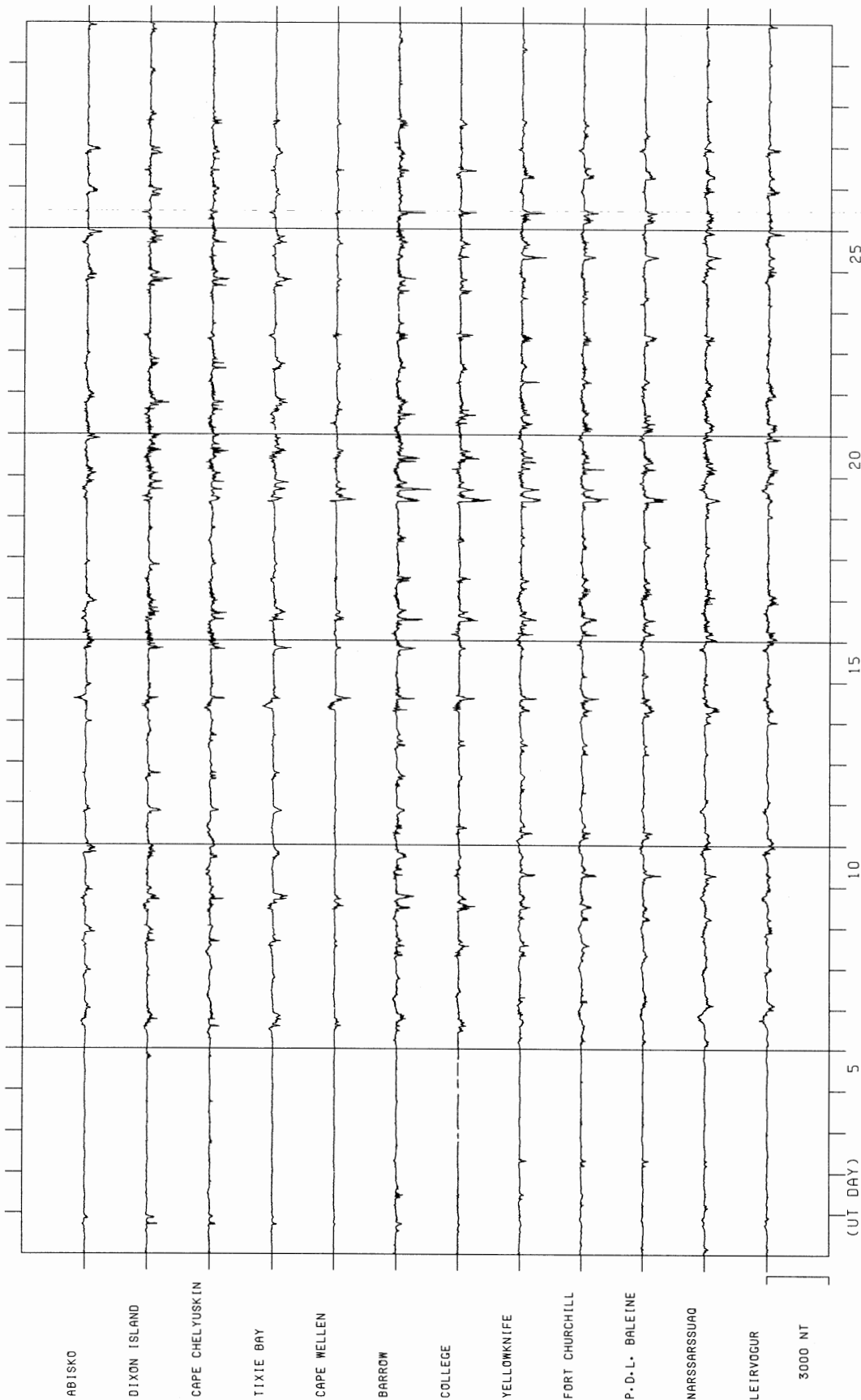
The H traces of magnetograms
from AE(12) stations
in each month
for July-December 1985.



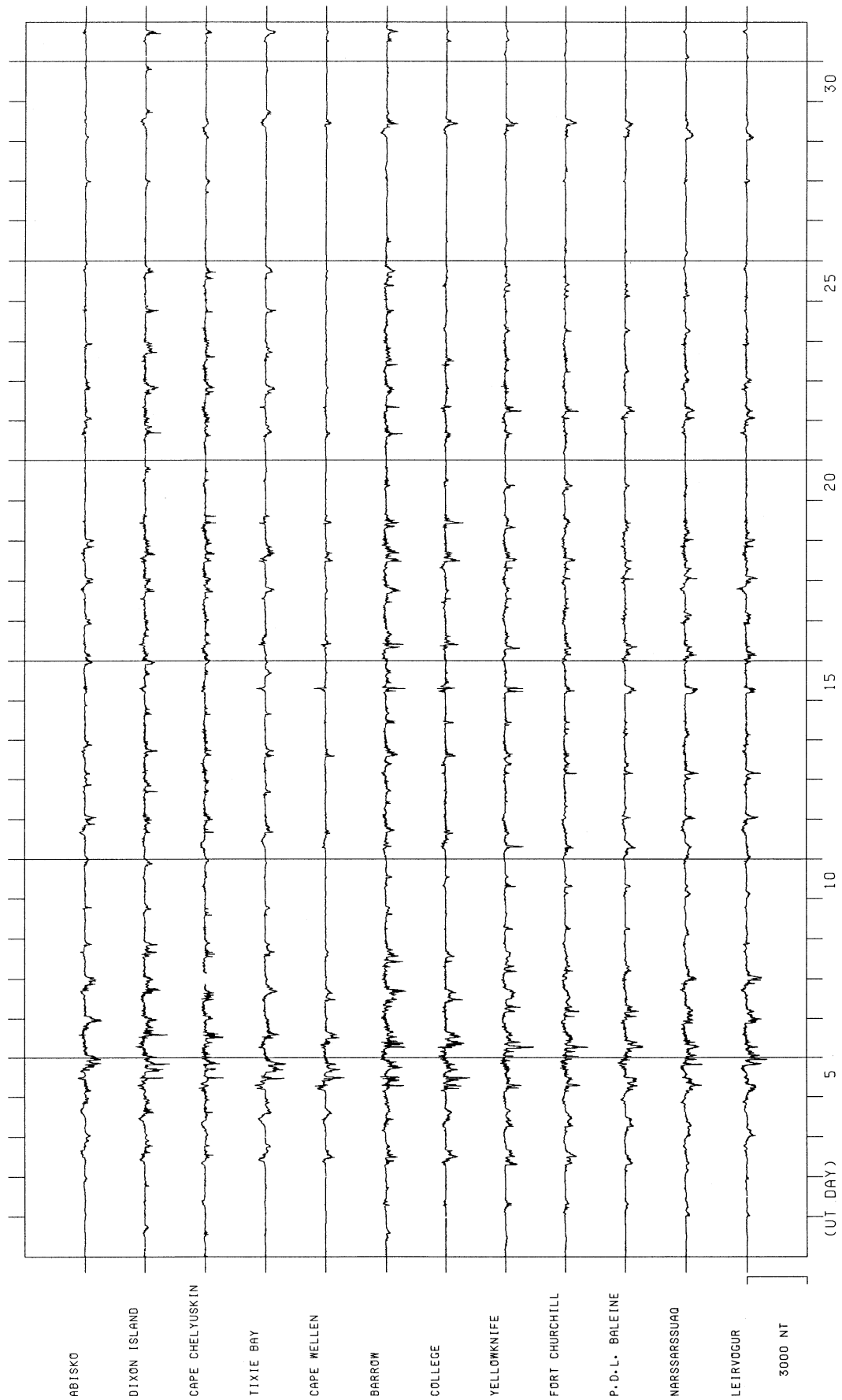
STACKED COMMON SCALE MAGNETOGRAMS FOR JULY 1985



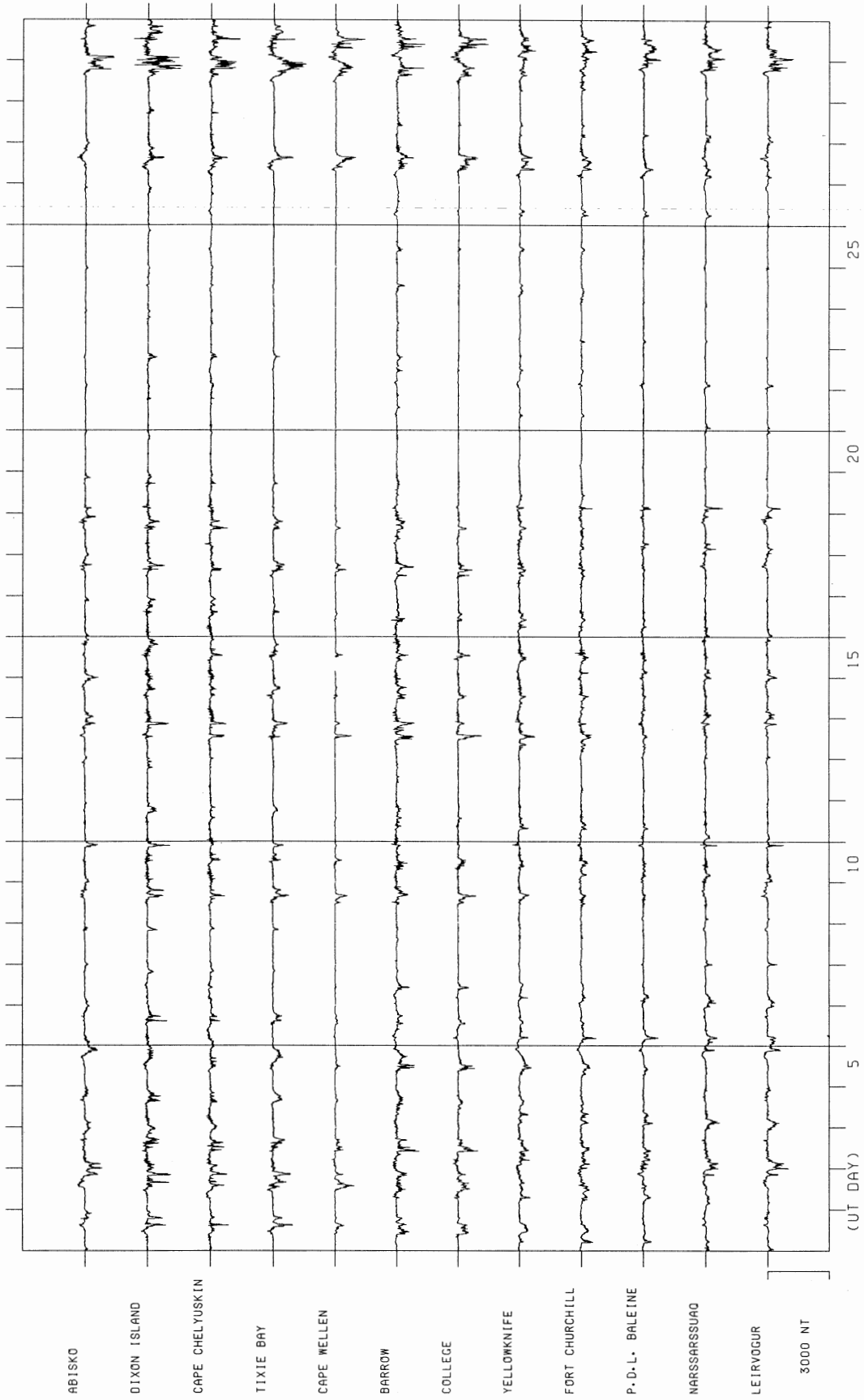
STACKED COMMON SCALE MAGNETOGRAMS FOR AUGUST 1985



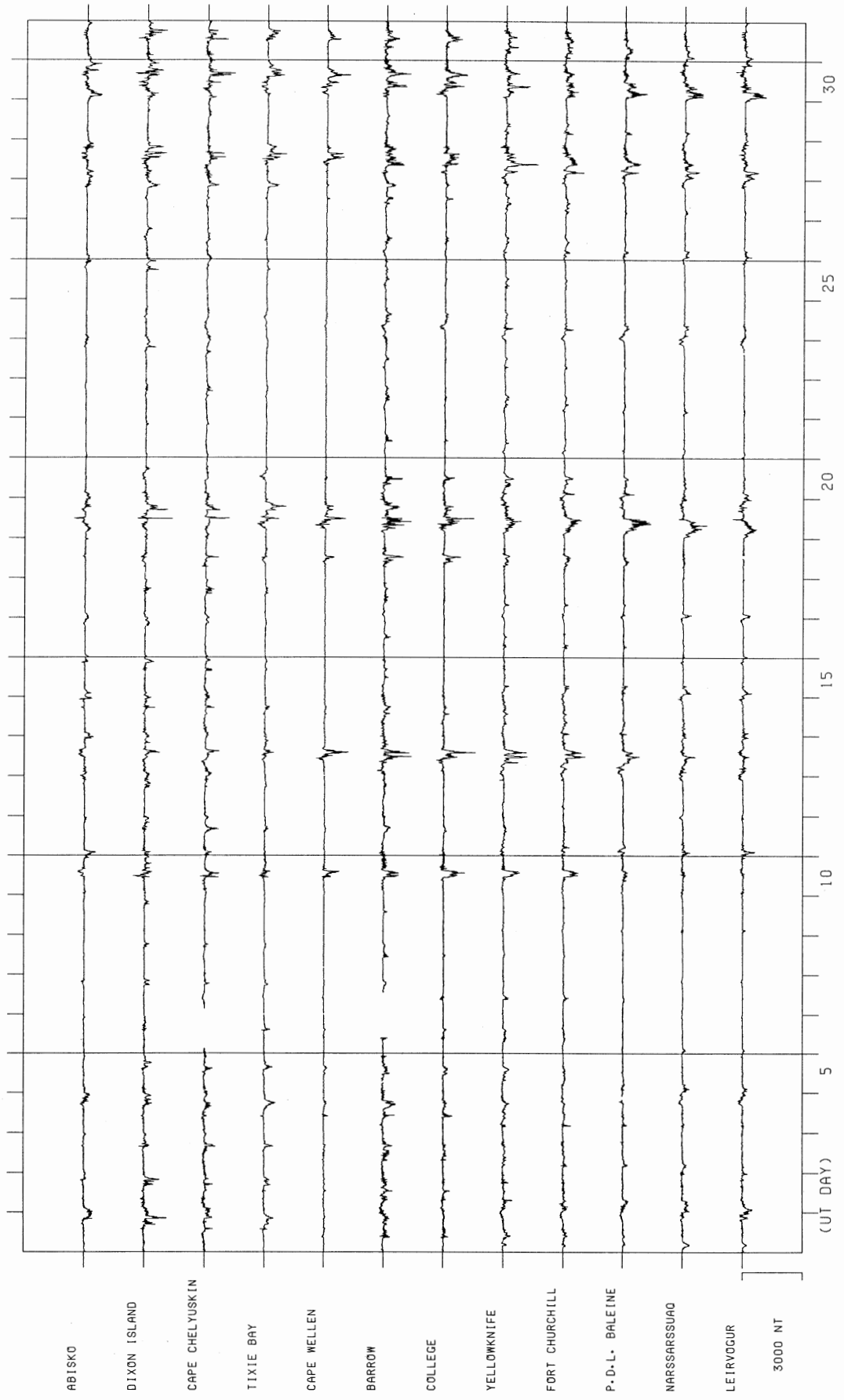
STACKED COMMON SCALE MAGNETOGRAMS FOR SEPTEMBER 1985



STACKED COMMON SCALE MAGNETOGRAMS FOR OCTOBER 1985



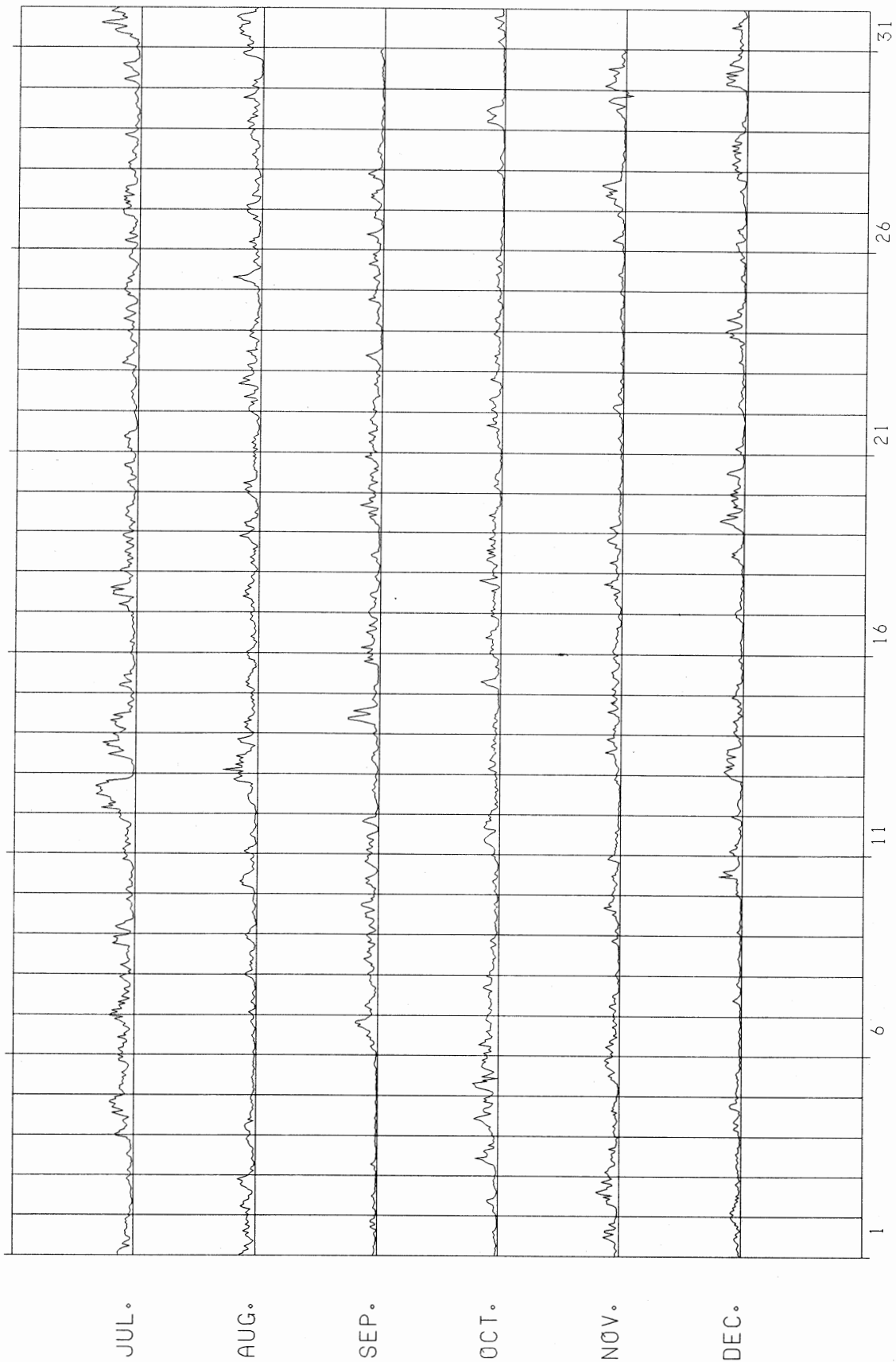
STACKED COMMON SCALE MAGNETOGRAMS FOR NOVEMBER 1985



STACKED COMMON SCALE MAGNETOGRAMS FOR DECEMBER 1985

FIGURE 7

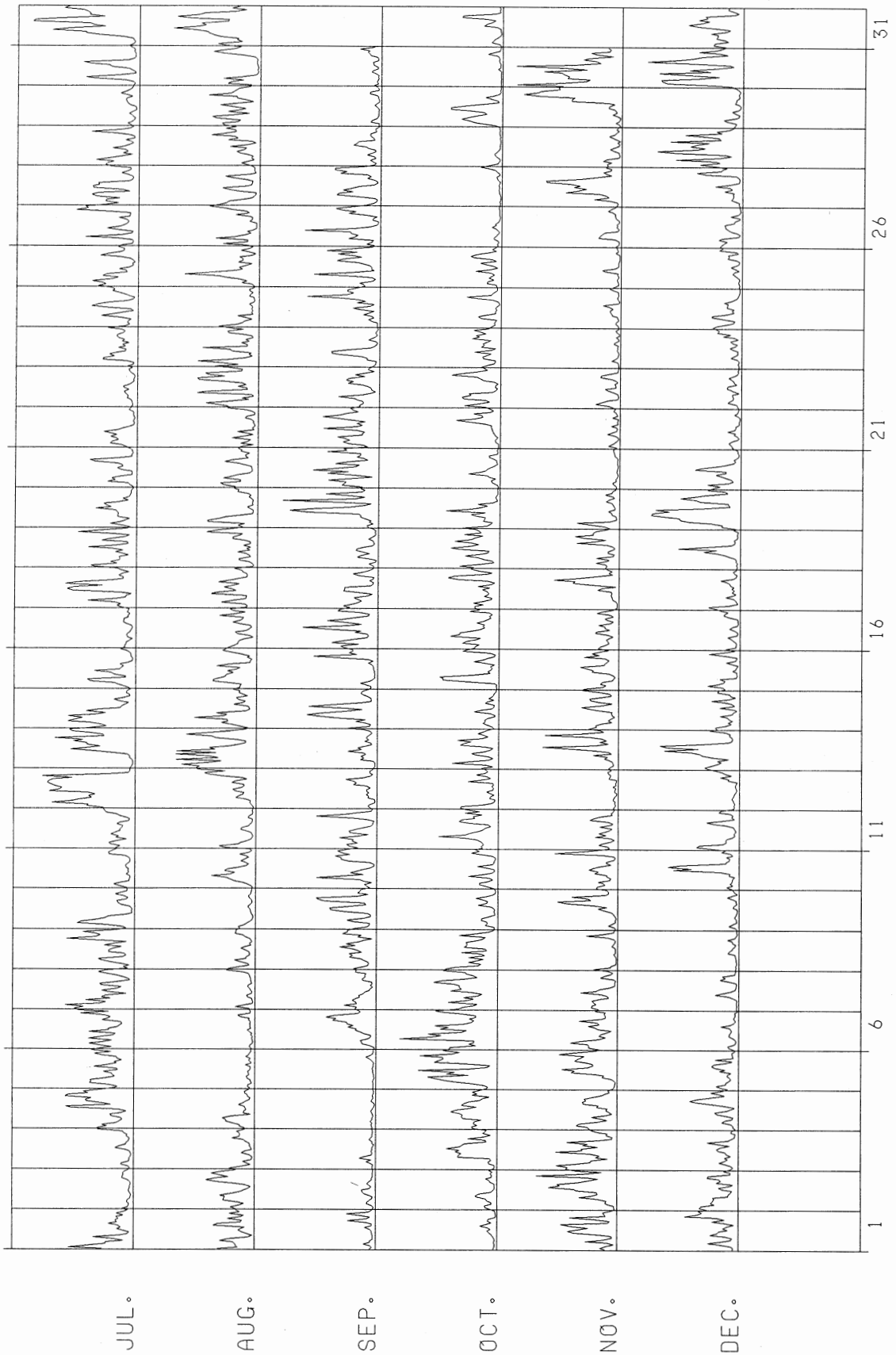
Plots of hourly values of each index
(AU, AL, AE and AO)
for July-December 1985.



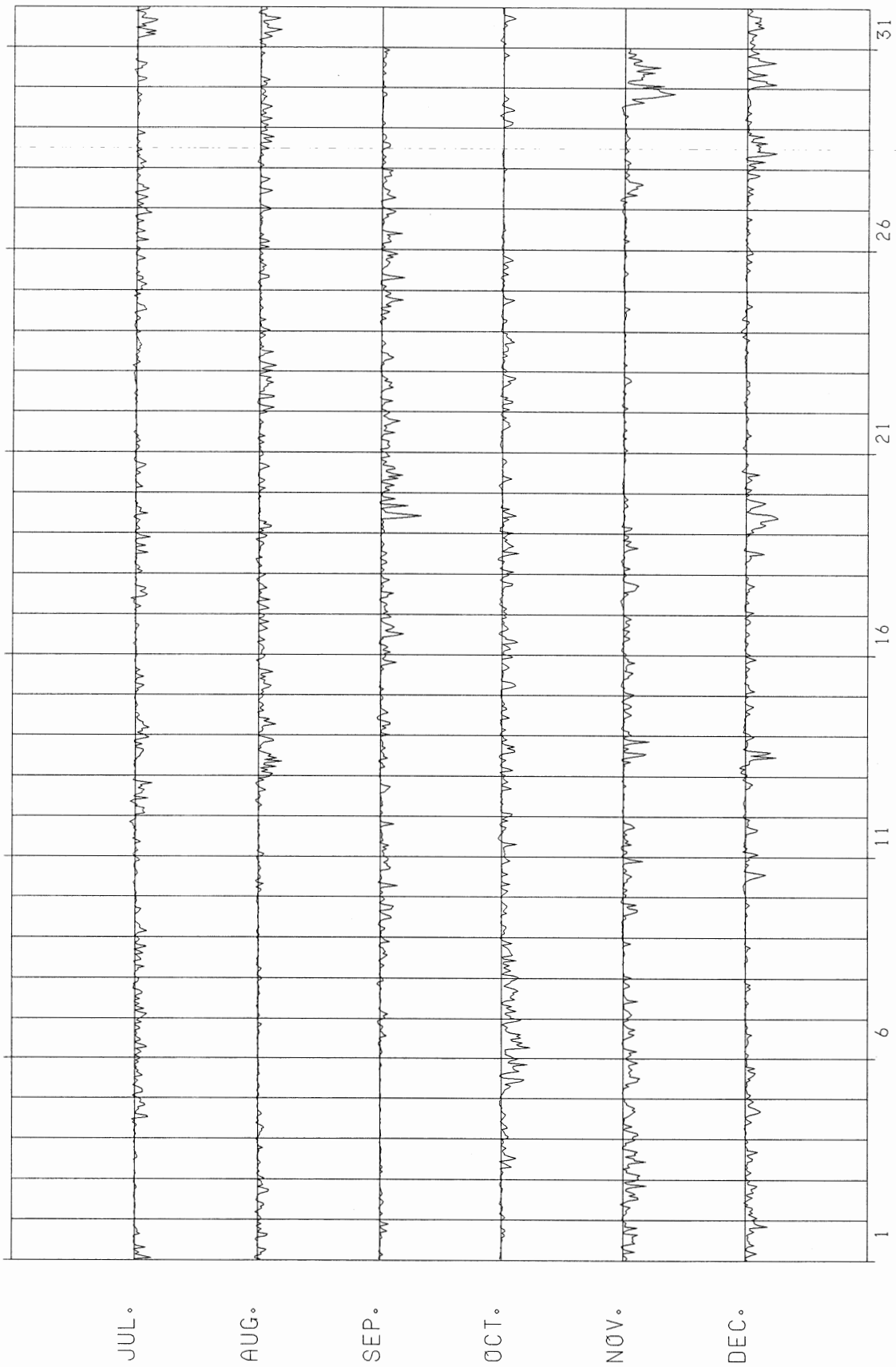
AU HOURLY VALUES FOR THE LAST HALF OF 1985 (1500NT/DIV)



AL HOURLY VALUES FOR THE LAST HALF OF 1985 (15000T/DIV)



AE HOURLY VALUES FOR THE LAST HALF OF 1985 (1500NT/DIV)

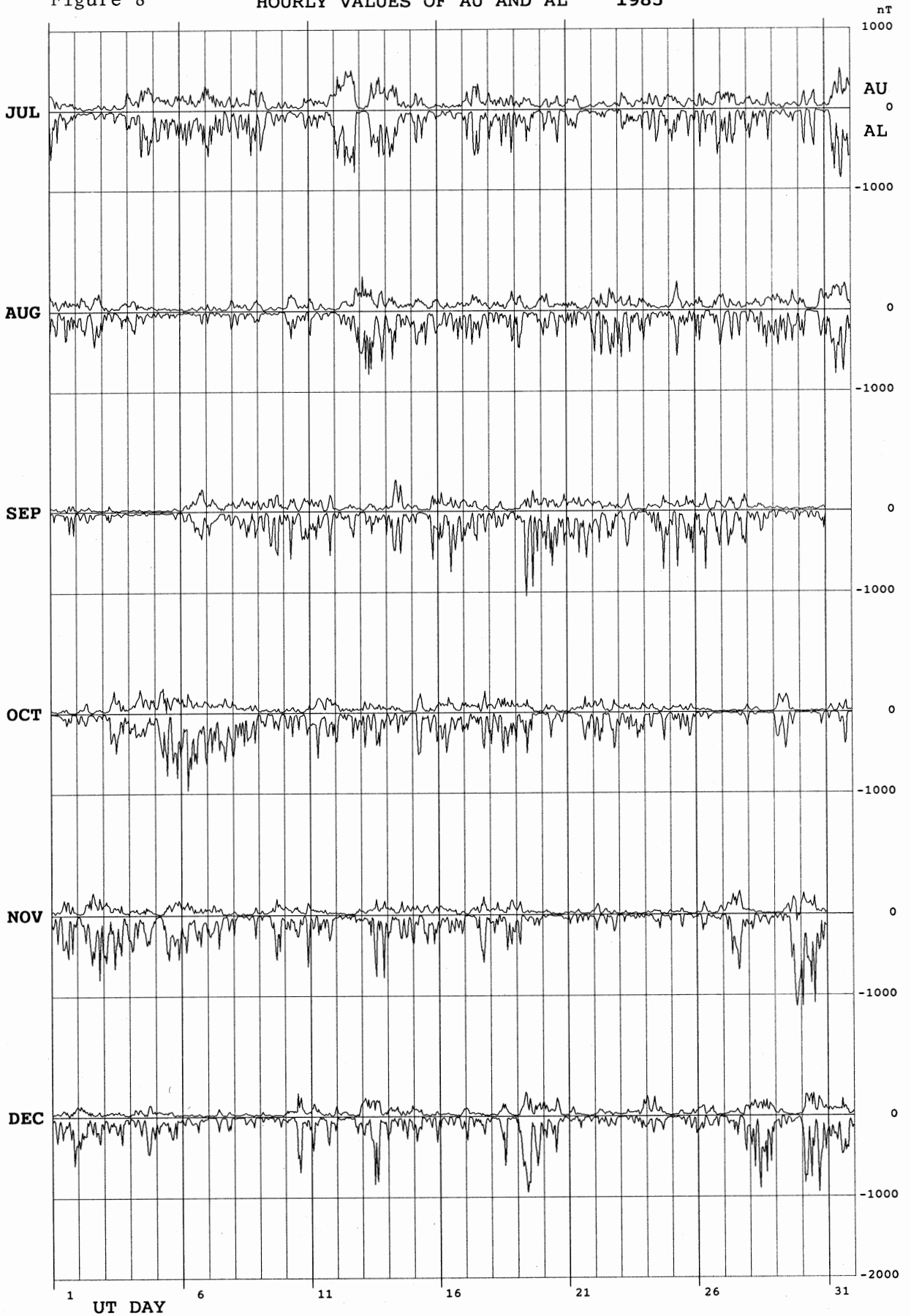


A0 HOURLY VALUES FOR THE LAST HALF OF 1985 (1500NT/DIV)

Figure 8

HOURLY VALUES OF AU AND AL

1985



Publications by the World Data Center C2 for Geomagnetism.

1. Data Catalogue

	Published in
Data Catalogue of World Data Center C2 for Geomagnetism	1987

2. Data Books

No. 1	Equivalent current systems of the daily geomagnetic variations in December 1964	1978
No. 2	Electric fields and neutral winds in the ionospheric dynamo region as deduced from the daily geomagnetic variations in December 1964	1979
No. 3	Auroral electrojet indices (AE) for January-June 1978	1981
No. 4	Auroral electrojet indices (AE) for July-December 1978	1981
No. 5	Auroral electrojet indices (AE) for January-June 1979	1982
No. 6	Auroral electrojet indices (AE) for July-December 1979	1982
No. 7	Auroral electrojet indices (AE) for January-June 1980	1983
No. 8	Auroral electrojet indices (AE) for July-December 1980	1983
No. 9	Auroral electrojet indices (AE) for January-June 1981	1984
No.10	Auroral electrojet indices (AE) for July-December 1981	1984
No.11	Auroral electrojet indices (AE) for January-June 1983	1985
No.12	Auroral electrojet indices (AE) for July-December 1982	1985
No.13	Auroral electrojet indices (AE) for July-December 1983	1986
No.14	Auroral electrojet indices (AE) for January-June 1982	1986
No.15	Auroral electrojet indices (AE) for January-June 1984	1987
No.16	Auroral electrojet indices (AE) for July-December 1984	1988
No.17	Auroral electrojet indices (AE) for July-December 1985	1989

3. Other publications

Report of Aeromagnetic Survey in Japan	1966
Japanese WMS Magnetic Charts for 1965	1966
WMA Inventory; First Issue	1970
WMA Inventory; Second Issue	1971

(WMA: World Magnetic Archives; WMS: World Magnetic Survey)

The publications above are available on request. Requests should be made by mail to:

WDC-C2 for Geomagnetism
Faculty of Science, Kyoto University
Kyoto 606, Japan

(The WDC-C2 for Geomagnetism is operated by the Data Analysis Center for Geomagnetism and Space Magnetism, Faculty of Science, Kyoto University, Kyoto 606, Japan.)

