

World Data Center C2 for Geomagnetism

# DATA BOOK

No. 11

Auroral electrojet indices (AE)  
for January-June 1983



MARCH 1985

Data Analysis Center for  
Geomagnetism and Spacemagnetism  
FACULTY OF SCIENCE  
KYOTO UNIVERSITY  
KYOTO

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

### SPECIAL NOTICE

We publish the AE-index of 1983 prior to that of 1982. This is because the World Data Center A for Solar Terrestrial Physics (Boulder, Colorado), using funds from NASA, is digitizing the whole set of magnetograms necessary for advanced derivation of the index for the period of the magnetospheric tail crossing by the ISEE-3 (October 1982 -December 1983). By the use of the data we are now deriving the provisional AE-index for the period. The same digitized data were used for the derivation of the index in this Data Book No.11 but we followed the normal procedure for quality check which was omitted in the quick derivation of the provisional index.

The schedule of the publication of our Data Book hereafter is as follows;

Data Book No. 12	AE index for July - December, 1982
13	July - December, 1983
14	January - June, 1982
15	January - June, 1984
16	July - December, 1984

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All inquiries about the Data Book and its distribution including change of address should be sent to

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

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, and it is now widely used for studying geomagnetism, aeronomy and solar-terrestrial physics. The index was first derived at the Geophysical Institute of the University of Alaska, and hourly values were published for the years 1957 to 1964. The production of 2.5 min value was then tried at the Goddard Space Flight Center of NASA, and the results from September 1964 to June 1968 were published.

After that, the index was regularly published at the World Data Center A (WDC-A) in Boulder, Colorado, and the Center 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 to continue the production of the AE-index at the WDC-A, it was requested that the index be produced at the WDC-C2 for Geomagnetism which is operated by Data Analysis Center for Geomagnetism and Spacemagnetism, Faculty of Science, Kyoto University. We decided to produce the index for two years (1978-1979) during the International Magnetospheric Study (IMS) and have published 1.0 min values as a part of "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, we could not extend it to the period after IMS because the available man-power and computing facilities were not sufficient for the continuous derivation.

Increasing demands for the index, however, moved us to resume the production of the AE-index and we published Data Book No.7 which contained the index for the first half of 1980. After that, the possibilities of financial support necessary for the production of the index were explored at the Subcommittee on Solar Terrestrial Physics of the Special Committee for International Cooperation, Japan Science Council, and the support was asked to National Institute of Polar Research (NIPR), Tokyo. After Data Book No. 8, the cooperation has been made between the Kyoto University and NIPR. The index is derived at the WDC-C2 and the printing and distribution are made by NIPR.

In derivation of the AE-index in this Data Book No.11 we used digitized data which were specially prepared by the WDC-A for STP in order to promote the use of the index in the data analyses for the period of the ISEE-3 magnetospheric tail crossing. This issue is, therefore, produced as the result of cooperation among the three organizations (WDC-C2 for Geomagnetism, NIPR and WDC-A for STP).



# Auroral Electrojet Indices (AE)

for January - June 1983

## 1. Derivation and Representation

The AE index is derived from the horizontal component of geomagnetic variations observed at some (10-13) observatories along the auroral zone in the northern hemisphere. To normalize the data from each station, a base value of each station for each month is first calculated by averaging all the data of the station on the five international quiet days, and this base value is subtracted from every-day data of the station in that month. Then the largest and smallest values are selected from all the stations. The largest value is called the AU index and the smallest value is called the AL index. These names came from the upper and lower envelopes of the overlapped figure of the data from these stations. The difference between the AU and AL indices gives the AE index, and the mean value of the AU and AL indices gives the AO index. The term "AE indices" is usually used to describe those four indices (AU, AL, AE and AO) in all.

The AU and AL indices are understood to express the strongest current density of the eastward and westward auroral electrojet, respectively. The AE index is understood to represent the overall activity of the electrojets, and the AO index is regarded as a measure of the equivalent zonal current.

In this report we shall present every-day diagrams and hourly values of the AE indices and "Contributing stations plot" of the AE indices which may give more information about the indices. That is, we named stations which give the AU and AL indices "the contributing stations of the AU and the AL index, respectively, and a pair of these AU and AL contributing stations "the contributing stations of AE indices". The plot gives these AE contributing stations on a plane whose coordinates are UT in abscissa and LT in ordinate at the stations. For users who want to check the AE indices in detail, this plot gives information about data availability of each station.

## 2. Data Used

To obtain good AE indices, we must use as many observatories as possible, but we meet two big difficulties: One is that the distribution of observatories in operation is not uniform over the auroral zone, and the other is that the digitization of magnetograms is a heavy job.

We used 11 observatories listed in Table 1. The distribution of the stations are shown in Fig. 1. Cape Wellen was not used in this volume to reduce digitization time as its contribution to AE indices is not frequent. Of these, 6 stations are taking digital data directly (called digital stations).

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
Great Whale River	GWC	GWR	55.27	282.22	66.58	347.36
Narssarsuaq	NAQ	NAS	61.20	314.16	71.21	36.79
Leirvogur	LRV	LR	64.18	338.30	70.22	71.04

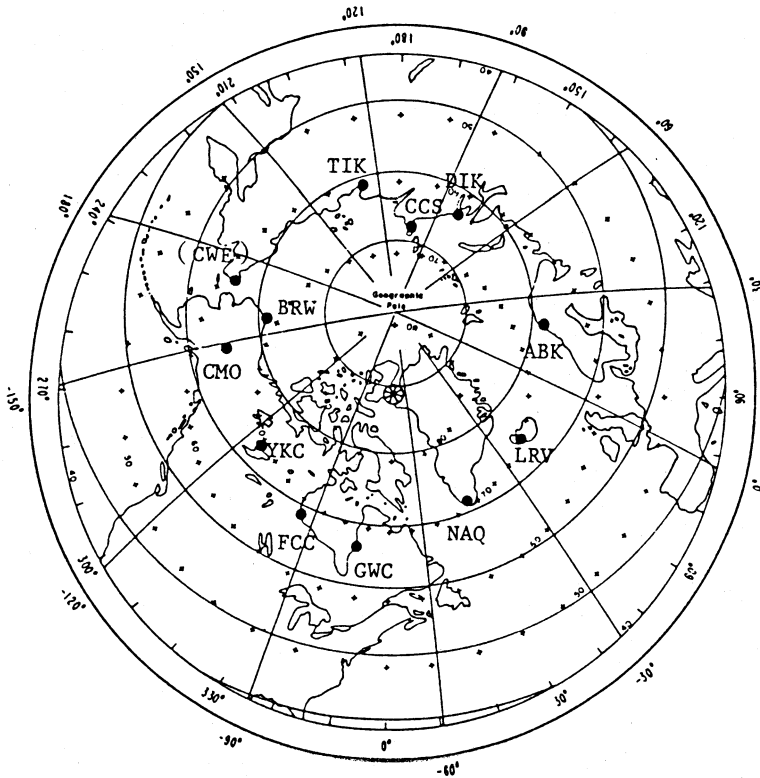
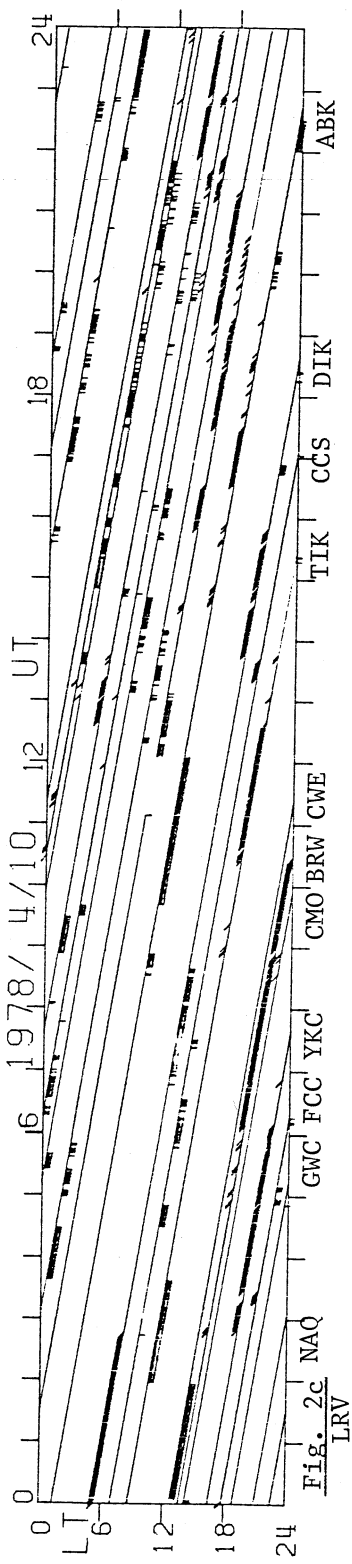
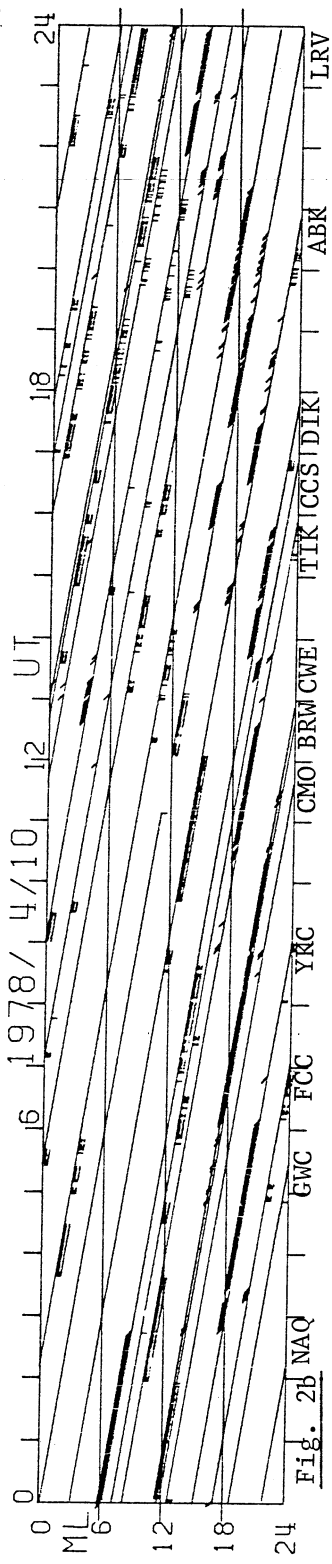
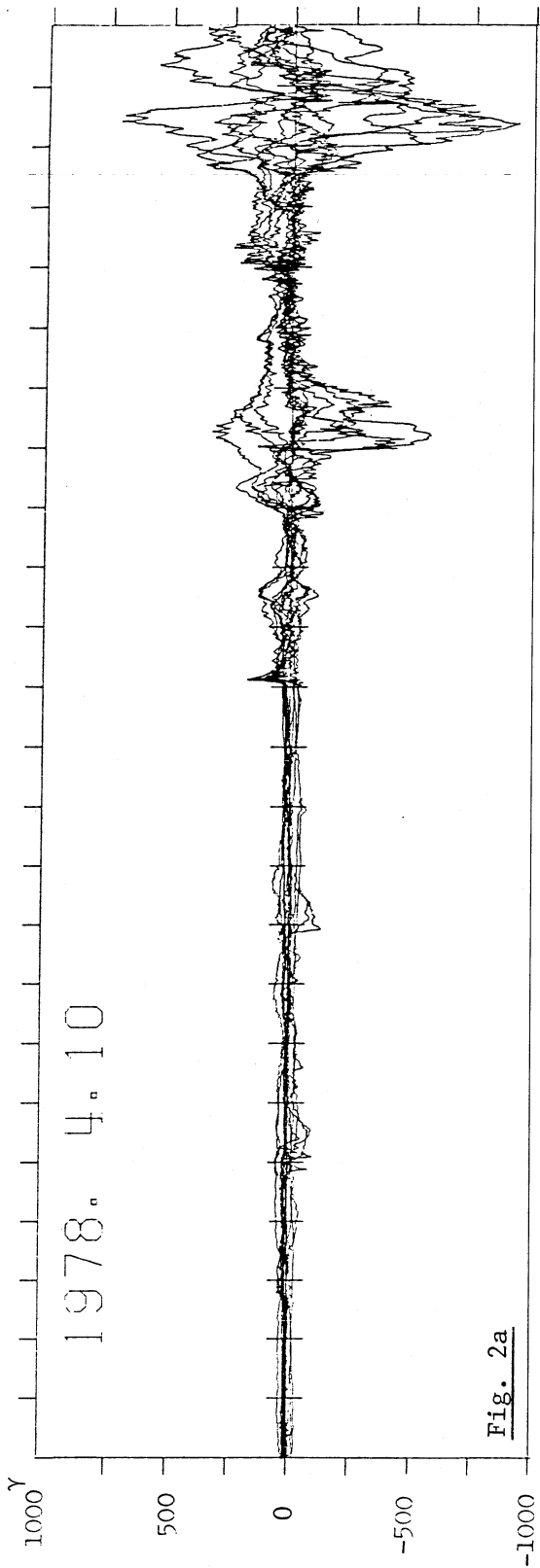


Fig. 1. Distribution of AE(12) stations.

Geographic latitude is indicated by the concentric circles of solid lines. Geomagnetic latitude is indicated by the numbered concentric circles formed by + signs. Geographic longitude is given by the outer circle of numerical values with meridians shown as solid lines every 30°. Geomagnetic longitude is given by the inner circle of numbers and the border of hash-marks at 10° intervals.





Three of digital stations (Fort Churchill, Great Whale River, and Yellowknife) are stations which give data in the X, Y, Z coordinate system. To make these data more compatible to other stations, we converted the X and Y components to H component by  $H=(X^2+Y^2)^{1/2}$ , and we treated the resulted H component to be missing for the period either X or Y is missing. For other three digital stations (Barrow, College and Narssarssuaq), we used the original digital H-component data.

If a digital station has troubles in digital recording, we digitized its magnetograms on microfilm if they are available. As digital data from College had long missing periods in May and June 1983, we digitized its magnetograms for most of these two months.

We used digitized Abisko data supplied from the station.

For other analogue stations (Leirvogur, Cape Chelyuskin, Dixon Island and Tixie Bay), we used digitized data supplied from WDC-A for STP for most of this period, which were specially prepared for the analyses of the ISEE-3 tail crossing period. But hand traced magnetograms were used at the digitization for CCS, DIK and TIK, as photocopies were not available at that time. In derivation of the provisional AE index, we used the data as they were. In this volume we applied normal quality check on the data to keep quality mentioned in data book No.3 and No.4, by using microfiche copy of the normal run magnetograms which we received recently. As we redigitized only serious data and corrected most errors by correcting programs, some small errors under the error detection criterion may not be removed.

### 3. The Overlapped Plot and the Plot of the Contributing Stations of the AE indices

Fig. 2a shows an example of the overlapped plot of the H traces from the AE stations on April 10, 1978. The upper envelope gives the AU index and the lower envelope gives the AL index, Figs. 2b and 2c show sample plots of the contributing stations for the same day as in Fig. 2a, in the geomagnetic (2b) and geographic (2c) local times, where the upper and lower plumes on a diagonal line for each station show the contribution to the AU and AL indices of this station. In Fig. 2b, for example, the data of 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 this is a key station for the AL index at that time, the exact AL values at that time might be lower than the calculated values.

Some explanations are necessary for our trial plots of the contributing stations. On the plots hereafter, the ordinate is the geomagnetic local time (MLT). The MLT is defined by the difference of the geomagnetic longitude of the station and the geomagnetic longitude of the Sun, and it is a function of the geomagnetic longitude of the station, season, and universal time. Figs. 3a, 3b, 3c show the difference between the GLT and the MLT of the stations used to derive AE indices for winter, summer and equinox, respectively. In these figures the GLT is shown by the straight line which runs diagonally, and the MLT is shown by the T (or inverted T) shaped mark. The length of the vertical line 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.

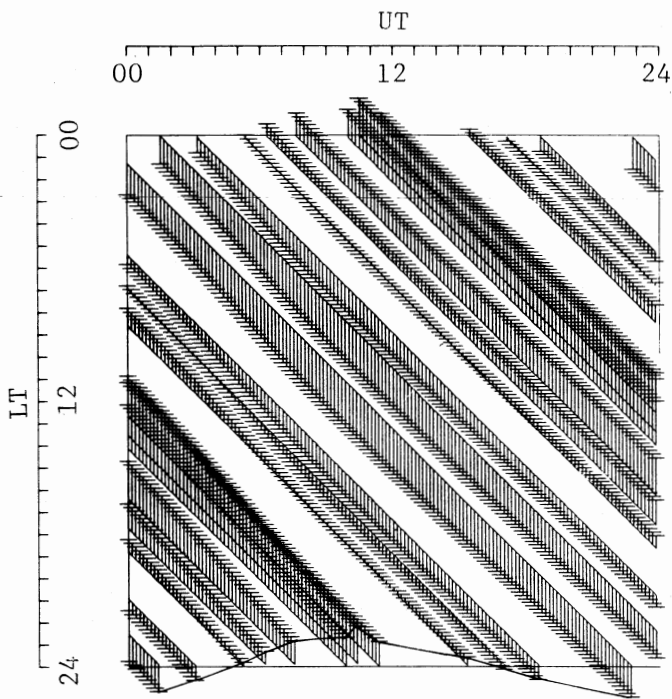


Fig. 3a Difference between GLT and MLT in winter.

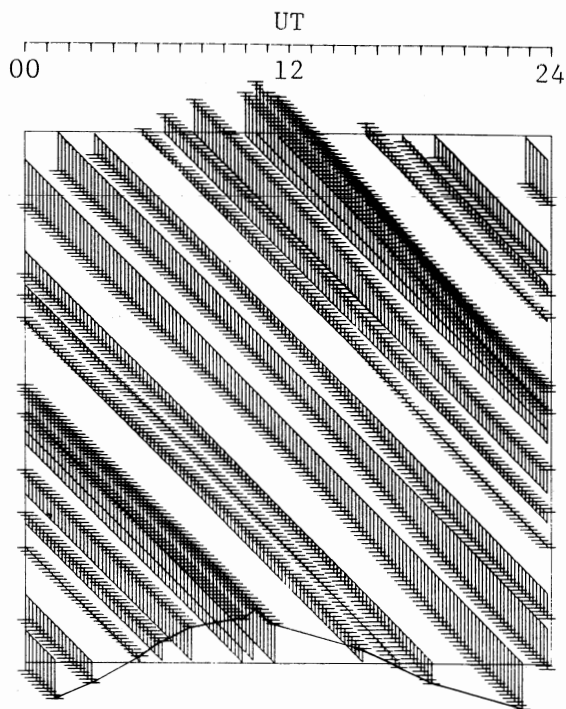


Fig. 3b Difference between GLT and MLT in summer.

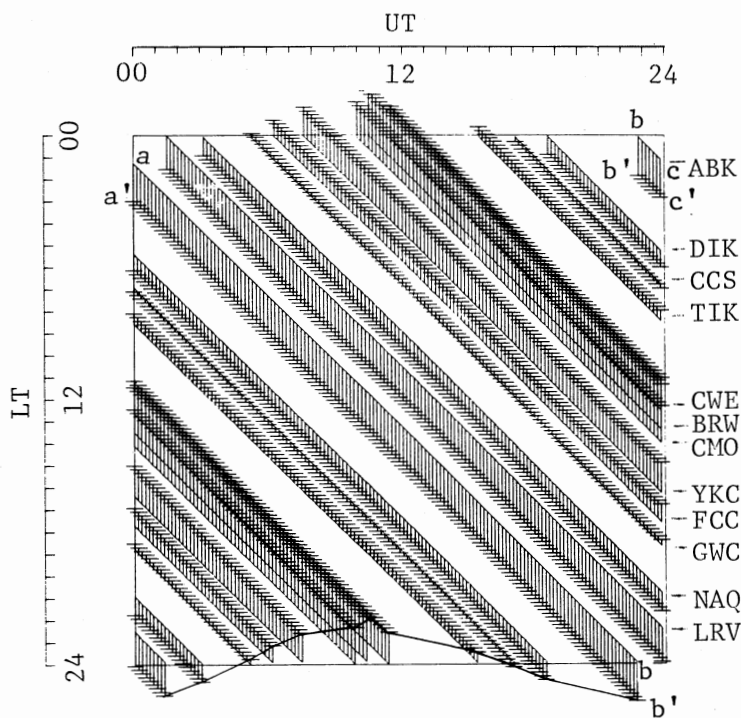


Fig. 3c Difference between GLT and MLT in equinox.

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.

As Cape Wellen (CWE) was not used in this volume, difference between Barrow and Cape Wellen is not available in this volume.

#### 4. Results

Monthly quiet-time H reference values for January-June 1983 are listed in Table 2. Table 3 gives the hourly average values of AE indices on every day from January to June 1983.

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. Fig. 6 shows the H-traces of magnetograms from AE(11) stations in every month from January to June 1983. Finally, Fig. 7 shows a half year of hourly mean values of each index in one page.

#### 5. Acknowledgements

This volume has been accomplished by the data supply from the AE stations through the World Data Centers. Acknowledgements are due to Mr. H. W. Kroehl of the WDC-A for Solar-Terrestrial Physics for supplying digitized data. Acknowledgements are also due to Ms. Y. Yamamoto, Mr. S. Yokoyama and Dr. T. Iyemori of WDC-C2 for Geomagnetism for assistance at calculation and making plots, also to Dr. M. Ayukawa and Mr. Y. Katsuta for arrangements for printing and distribution.

We thank Dr. M. Sugiura of NASA for various assistances to realize quick derivation of AE indices. We also thank Dr. E. Friis-Christensen of Danish Meteorological Institute and Dr. T. Bergmark of Geological Survey of Sweden for quick supply of digital data.

TOYOHISA KAMEI  
TOHRU ARAKI

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

Table 2. Monthly quiet-time H reference values (unit : nT)

(Year 1983)

STATION	Jan.	Feb.	Mar.	Apr.	May	June
Abisko	11741	11741	11731	11731	11737	11739
Dixon Island	-480	-481	-487	-476	-481	-499 (HO+)
Cape Chelyuskin	+405	+408	+403	+415	+423	+420 (HO+)
Tixie Bay	+144	+148	+140	+136	+156	+156 (HO+)
Barrow	9730	9733	9732	9744	9753	9475
College	12946	12954	12948	12934	12954	12956
Yellowknife	8714	8730	8736	8705	8722	8736
Fort Churchill	7625	7652	7652	7636	7659	7659
Great Whale River	10766	10810	10816	10798	10826	10836
Narssarssuaq	12153	12162	12155	12148	12159	12172
Leirvogur	12460	12459	12445	12446	12424	12462

(HO+) : Deviation from the H base line  
on the ordinary magnetogram

TABLE 3

Hourly average AE indices (AU, AL, AE and AO)  
for January-June 1983.

1983  
JANUARY

AU INDEX ( HOURLY VALUES )

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
0 1	78	102	174	123	84	105	181	122	91	42	28	36	55	40	32	22	25	28	40	44	67	27	43	63	69
0 2	71	68	69	66	69	67	72	67	58	59	48	24	68	55	114	64	23	32	23	32	57	30	34	36	54
0 3	40	48	32	29	35	33	50	71	105	107	171	65	121	136	82	98	86	73	50	40	52	48	43	43	69
0 4	42	44	45	33	41	55	61	70	72	82	74	79	31	81	59	58	78	53	51	48	68	50	55	46	57
0 5	42	36	32	32	32	34	37	40	39	88	77	63	73	48	92	52	32	31	27	30	30	32	32	30	44
0 6	29	29	29	31	28	29	31	38	35	27	25	29	27	59	55	34	21	23	26	25	38	29	36	41	32
0 7	55	50	35	37	45	50	45	53	65	87	119	91	99	122	58	30	41	38	33	29	27	23	31	43	54
0 8	41	56	53	67	61	110	102	60	52	53	48	62	97	139	100	54	40	44	75	135	121	71	92	126	77
0 9	163	138	121	83	84	110	143	161	121	82	140	128	76	36	34	69	132	323	229	212	215	138	157	142	135
D 10	108	-20	-9	7	-99	-138	6	-51	23	2	15	39	40	115	129	61	69	38	34	43	57	40	39	36	24
1 11	19	22	19	34	32	29	38	21	23	14	10	10	14	21	22	18	16	18	12	14	24	25	13	73	23
1 12	45	55	44	60	84	108	105	72	37	51	56	36	52	71	82	28	28	31	38	27	54	37	43	49	54
1 13	58	46	56	65	76	64	52	58	28	28	13	17	17	13	24	10	27	86	116	81	90	41	38	46	49
1 14	51	48	48	37	49	46	54	82	99	61	50	33	40	30	79	34	22	25	30	19	41	59	45	75	48
D 15	84	87	96	74	99	122	83	120	61	50	66	103	58	36	49	172	211	191	186	141	105	93	81	69	101
D 16	59	71	70	43	79	122	109	126	126	68	63	20	195	116	162	190	177	211	151	128	112	79	61	64	108
D 17	88	106	110	110	65	78	61	70	73	96	223	107	136	149	89	109	56	50	110	102	138	69	100	145	100
D 18	108	74	40	130	81	112	70	84	78	70	79	118	50	121	160	99	98	77	80	65	107	149	73	53	91
1 19	43	61	62	63	69	111	91	96	84	78	75	50	47	120	98	88	66	64	53	47	55	49	37	68	70
1 20	71	81	80	88	63	72	81	86	68	88	85	44	32	35	35	29	21	43	42	89	105	121	56	42	65
0 21	52	70	52	74	85	81	74	68	39	28	33	36	32	42	74	58	94	37	31	78	45	42	45	36	54
0 22	43	48	42	56	49	82	103	120	91	84	92	50	90	42	78	50	44	37	32	31	48	67	46	47	61
0 23	44	51	53	49	68	87	94	75	55	64	90	74	51	40	32	32	35	42	39	40	37	80	194	181	67
0 24	217	254	230	136	150	176	191	106	144	119	109	165	132	98	95	103	250	244	162	117	175	154	151	309	166
0 25	237	173	114	98	100	130	94	90	65	60	96	103	152	174	101	103	81	97	159	150	104	94	73	54	113
0 26	45	65	134	128	96	100	111	70	76	86	99	152	243	146	149	79	86	127	131	123	44	49	37	50	101
0 27	62	58	80	83	126	107	96	142	160	108	112	66	46	50	60	47	25	36	95	129	81	56	43	39	79
0 28	35	35	40	36	36	38	40	55	73	66	50	41	54	40	100	177	242	119	117	190	205	131	187	291	97
0 29	222	174	150	112	74	70	79	63	60	62	73	73	76	90	72	95	224	257	173	102	68	89	76	89	109
0 30	81	66	69	67	81	97	85	84	77	71	96	214	205	105	57	56	45	66	55	59	62	69	92	113	86
0 31	89	117	108	112	154	134	143	83	68	49	45	51	39	65	89	45	59	107	169	145	177	158	227	190	109
MEAN	77	74	73	69	67	78	83	77	73	65	76	70	78	78	79	69	79	85	82	79	84	70	73	86	76
50 MEAN	48	46	41	44	44	52	57	63	57	69	72	51	71	65	79	46	32	32	28	29	40	36	35	39	49
5D MEAN	87	60	60	72	45	59	65	69	72	57	89	77	95	107	117	126	122	113	112	95	103	86	70	73	85

FEBRUARY 1983

AU INDEX ( HOURLY VALUES )

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
0 1	78	56	71	53	71	140	83	52	50	58	55	64	76	113	99	98	157	131	85	32	38	37	34	27	73
0 2	31	29	36	36	32	28	22	19	20	21	23	26	26	21	22	22	24	79	39	42	29	39	39	33	31
0 3	28	44	35	45	29	47	73	54	81	71	41	43	42	63	58	23	34	41	51	75	51	87	111	90	54
D 4	85	105	141	156	151	165	128	140	106	159	203	160	113	92	58	36	224	-24	-10	40	104	55	115	152	111
D 5	135	121	-1	-176	-93	-184	-56	126	217	-145	31	127	-11	-95	1	257	191	91	-16	-26	-18	54	34	30	24
D 6	187	242	147	58	99	219	192	208	116	73	126	142	166	220	152	152	191	132	58	32	39	42	21	36	127
D 7	74	55	81	79	91	147	251	175	144	143	148	122	249	101	125	186	247	170	98	71	51	74	64	95	127
8	93	142	111	169	159	151	174	80	166	109	70	121	143	61	66	57	37	35	31	22	11	38	56	50	90
9	61	74	63	67	71	68	90	102	66	96	87	177	189	112	155	147	231	254	274	166	141	118	151	166	130
10	123	157	132	158	135	185	221	146	105	121	208	119	144	139	77	39	46	50	46	59	40	36	34	35	107
11	20	17	31	43	41	37	51	73	81	94	85	117	168	110	59	39	31	80	178	127	195	222	79	59	85
12	38	106	34	44	37	69	66	138	122	100	88	99	179	237	344	189	83	103	156	158	90	47	35	23	108
13	78	102	53	65	79	129	116	148	72	123	93	130	179	98	83	87	75	48	36	156	99	152	153	126	103
14	167	149	131	99	53	45	61	99	123	101	91	124	91	56	67	87	177	82	38	30	53	119	142	81	94
15	82	82	99	112	152	125	127	148	117	116	132	120	205	126	160	228	102	149	163	69	75	54	60	47	119
16	53	45	85	137	145	124	104	88	114	158	175	152	154	111	134	185	210	175	77	78	95	67	106	113	120
17	73	55	94	127	119	106	78	105	58	29	64	87	66	53	51	68	71	92	75	46	56	57	42	40	71
18	47	69	81	95	115	133	114	152	76	42	37	52	83	83	72	40	41	70	77	123	82	71	47	34	77
19	25	20	18	15	44	50	70	85	166	144	109	105	155	53	93	67	55	32	37	39	38	57	107	136	72
D 20	175	246	260	141	112	148	167	112	215	149	149	234	179	172	211	260	276	219	178	64	-10	17	120	147	164
21	108	132	88	169	240	406	285	185	119	126	226	178	94	90	113	240	234	209	204	133	137	170	147	3	168
22	117	119	205	132	97	64	62	96	117	97	69	55	79	109	105	40	61	34	39	155	107	98	94	143	96
23	96	201	94	174	175	85	80	41	36	33	38	33	39	37	46	33	57	84	89	82	86	109	110	123	83
24	124	96	85	112	137	146	212	158	100	91	108	114	205	142	105	109	170	159	182	201	199	166	84	61	136
0 25	28	18	38	62	42	83	68	74	73	117	128	132	55	103	79	83	178	201	126	73	45	50	49	34	81
0 26	46	83	81	44	19	19	30	41	42	55	60	42	37	29	45	48	15	53	50	79	124	115	94	118	57
0 27	140	81	42	40	45	56	74	71	80	107	131	95	71	103	69	36	26	27	23	30	65	69	39	42	65
28	25	24	19	29	34	33	20	40	39	29	25	38	45	28	25	28	29	83	62	127	74	55	103	118	47
MEAN	83	95	84	81	86	100	105	105	100	86	100	107	115	91	94	103	116	102	87	81	74	81	81	77	93
50 MEAN	54	51	46	45	33	46	53	51	59	74	76	67	46	63	50	42	55	80	57	59	62	72	66	63	57
50 MEAN	131	153	125	51	72	99	136	152	159	75	131	157	139	98	109	178	225	117	61	36	33	48	70	92	110



DATE		AU INDEX ( HOURLY VALUES )																								MEAN	
		MARCH												1983													
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
D	1	74	81	99	98	177	164	85	79	52	43	40	68	76	62	101	101	143	261	223	233	366	225	110	6	124	
D	2	5	108	137	133	116	138	100	71	60	64	150	137	142	139	155	172	95	307	276	221	175	33	39	22	125	
D	3	50	100	91	127	116	179	149	181	173	156	152	153	215	128	112	153	127	107	180	125	109	97	128	83	133	
	4	120	102	179	103	106	148	175	151	83	76	45	71	103	102	209	88	103	133	122	176	175	159	142	122	125	
	5	90	101	137	164	179	155	204	203	166	158	225	202	214	113	221	205	123	84	107	174	203	166	98	62	156	
Q	6	110	107	93	64	45	22	16	23	25	27	22	21	12	10	22	22	32	86	89	55	32	41	29	65	44	
Q	7	85	84	63	71	51	78	84	78	36	58	109	140	108	44	28	27	19	14	14	15	8	24	39	54	56	
Q	8	84	74	101	70	44	48	40	45	38	54	67	86	113	170	67	80	166	231	155	111	144	139	116	106	98	
Q	9	101	105	160	121	63	91	92	86	85	64	38	47	35	35	31	31	43	56	106	88	45	38	25	26	67	
Q	10	24	23	22	32	32	45	42	37	59	57	42	32	26	22	33	31	34	31	51	95	172	46	51	48	45	
D	11	58	55	59	41	35	35	33	37	43	118	184	101	72	116	62	37	41	108	200	134	213	286	133	111	96	
D	12	111	174	91	39	36	53	60	110	91	104	143	141	70	100	169	247	46	75	140	210	202	82	52	193	114	
	13	80	81	65	99	64	45	67	110	110	130	139	163	77	26	27	38	45	66	98	104	89	56	41	41	78	
	14	28	44	60	109	103	70	113	217	236	108	89	112	125	111	105	124	85	80	72	106	118	63	49	53	99	
	15	49	58	41	84	38	122	65	59	71	92	87	40	88	69	89	154	158	118	111	136	118	85	61	33	85	
	16	28	18	36	59	93	72	54	72	46	35	23	73	104	188	38	25	24	23	18	50	42	30	52	84	54	
	17	59	76	97	139	148	132	142	97	64	61	83	62	31	35	37	29	20	17	42	39	48	26	58	112	69	
	18	60	33	25	26	38	77	91	57	69	75	58	43	44	33	41	68	160	293	279	257	195	159	117	154	102	
	19	136	103	217	246	205	233	230	204	169	215	249	172	182	257	221	86	189	187	229	162	85	113	156	119	182	
	20	133	162	133	192	323	213	217	61	61	51	47	69	91	119	279	285	343	185	208	300	233	210	106	79	171	
	21	135	101	121	89	78	82	51	46	54	67	67	58	42	48	66	85	91	92	148	134	126	82	67	71	83	
	22	90	75	132	164	129	87	91	79	69	49	58	24	29	50	91	83	52	56	71	100	121	168	166	57	87	
	23	61	55	59	76	65	78	114	149	142	194	141	131	94	121	129	64	33	29	84	124	121	119	108	50	97	
	24	52	66	64	92	112	190	198	147	100	72	62	73	78	127	122	74	35	56	134	196	231	166	147	219	117	
D	25	190	148	169	240	179	203	131	27	221	111	211	322	300	457	391	291	304	289	270	245	201	109	81	73	215	
Q	26	103	35	115	118	108	32	28	14	13	15	14	13	14	23	12	13	24	25	44	50	68	46	32	25	41	
Q	27	16	16	29	20	17	15	15	17	21	23	20	34	40	35	33	32	26	28	31	36	57	77	68	54	32	
D	28	31	32	43	79	148	75	103	110	166	122	106	95	162	294	285	280	233	249	329	275	247	162	95	146	161	
D	29	136	148	247	259	111	185	211	195	175	277	171	96	223	110	233	233	247	191	222	221	196	169	132	61	185	
	30	45	72	132	196	229	113	135	171	195	154	187	77	57	71	147	272	199	161	136	196	206	157	185	185	153	
	31	201	206	97	245	225	148	39	45	128	310	252	191	167	237	146	70	51	28	170	208	215	145	77	55	152	
MEAN		82	85	100	115	110	107	102	96	97	101	105	98	101	111	119	112	106	118	140	147	147	112	89	82	107	
5Q MEAN		62	60	75	62	41	55	54	52	47	51	55	67	64	61	38	40	57	72	71	69	85	64	59	57	59	
5D MEAN		98	135	147	159	111	151	130	116	144	142	165	169	190	186	212	219	163	193	217	204	176	98	86	86	154	

AU INDEX ( HOURLY VALUES ) APRIL 1983

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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2	91	106	102	109	103	165	129	193	134	79	110	136	146	104	81	160	174	191	190	198	111	83	110	114	130
3	81	112	88	127	109	218	103	82	79	116	70	128	98	79	31	34	35	47	35	43	52	114	169	206	94
4	174	120	107	146	175	134	223	224	174	143	232	244	193	136	75	146	171	322	315	246	231	189	126	95	181
5	121	141	139	58	62	137	126	127	98	104	99	80	112	72	61	46	97	128	105	79	54	39	44	66	91
D	98	93	140	102	147	204	128	149	243	285	194	158	248	306	214	205	205	239	211	202	207	169	118	116	182
7	158	183	141	93	208	208	111	74	116	94	179	191	164	143	69	195	156	161	194	175	161	151	211	149	154
8	124	187	146	138	150	182	164	127	83	83	108	87	138	190	72	112	133	68	100	64	96	69	86	69	116
9	101	91	69	70	69	86	59	116	110	95	101	95	105	81	56	136	213	144	97	150	140	147	190	153	111
10	130	117	93	103	76	153	60	87	96	75	72	130	92	57	83	102	102	65	114	123	111	94	149	134	101
0	80	89	71	84	80	41	28	74	72	55	42	45	37	34	35	25	23	25	32	49	75	59	46	42	52
0	52	121	64	78	47	55	33	30	75	166	62	142	96	60	43	68	83	107	148	131	175	124	69	119	90
13	198	134	154	91	187	149	100	100	143	128	75	255	270	177	94	68	66	94	134	224	181	155	196	145	147
D	230	272	214	233	347	291	191	270	412	325	234	237	267	225	306	231	236	223	176	294	307	194	226	168	255
D	240	208	187	177	269	167	177	323	263	255	183	240	182	291	283	267	300	284	262	223	115	100	127	219	223
16	206	159	264	187	266	152	152	139	149	112	199	200	149	221	187	191	211	231	184	155	131	242	203	166	186
17	134	177	172	151	160	133	127	156	164	137	102	65	58	77	65	93	236	283	239	228	255	208	88	136	152
0	182	135	87	146	156	69	99	61	36	46	72	76	95	78	99	171	159	83	75	177	171	100	84	56	105
0	44	32	44	59	101	124	125	88	148	276	274	293	244	177	230	266	291	198	133	99	62	90	179	157	156
20	169	199	202	138	169	169	108	78	152	135	177	187	177	160	203	157	149	227	240	238	268	186	215	207	179
21	143	136	195	226	156	204	249	178	117	139	57	63	94	100	55	44	78	84	114	176	211	292	243	184	147
22	220	264	197	168	130	89	157	255	312	350	178	70	45	37	41	46	62	61	56	65	61	65	74	100	129
23	138	119	89	135	230	228	209	174	210	186	172	211	183	118	74	56	59	78	100	124	128	187	285	138	151
D	150	181	126	227	212	183	278	164	151	385	369	244	267	311	260	346	278	344	325	227	325	392	292	169	259
25	220	206	245	202	157	174	160	100	106	98	154	155	173	119	111	222	328	286	258	274	296	252	284	237	201
26	175	158	117	139	106	215	213	219	189	113	184	184	154	242	296	261	184	99	118	117	95	198	220	176	174
27	162	206	167	128	157	67	52	100	105	70	45	96	102	88	74	144	85	58	45	70	81	102	93	105	100
0	116	156	171	190	146	196	152	90	62	67	57	95	131	119	123	55	52	78	120	117	97	122	142	164	117
D	184	157	87	113	185	174	206	189	386	544	412	276	265	313	327	360	237	241	198	142	237	405	292	201	255
30	202	128	94	64	136	173	168	198	202	180	276	246	176	110	100	216	153	190	217	231	272	277	239	219	186
MEAN	145	148	135	135	155	155	141	145	159	170	159	162	153	145	129	152	159	157	157	161	159	162	162	144	152
50 MEAN	94	106	87	111	106	97	87	68	78	122	101	130	120	93	106	117	121	98	101	114	116	99	104	107	103
5D MEAN	180	182	150	170	232	203	196	219	291	358	278	231	245	289	278	281	251	266	234	217	238	252	211	174	234

		1983																									
		MAY																									
		AU INDEX ( HOURLY VALUES )																									
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	169	136	125	172	111	58	139	129	222	225	178	204	155	52	43	49	29	37	62	276	343	187	69	37	134		
2	37	112	116	94	68	76	103	75	72	86	102	111	85	30	23	40	41	409	388	284	189	106	61	62	136		
3	60	55	44	30	31	32	25	51	35	38	55	51	52	30	23	30	40	41	50	91	62	69	100	87	49		
4	139	61	62	185	220	312	270	262	258	266	362	308	215	453	346	223	187	144	92	111	120	97	138	114	206		
5	95	62	46	33	50	92	36	72	23	48	189	95	100	214	115	205	147	69	52	94	206	108	83	50	95		
6	63	100	67	53	182	123	152	172	137	91	91	67	81	96	59	99	87	102	69	111	99	78	67	66	96		
7	40	37	51	75	66	77	108	44	46	37	49	112	68	37	40	42	46	85	119	130	87	46	47	92	66		
8	165	66	21	18	34	86	80	22	18	52	153	110	51	25	43	41	26	82	171	106	79	86	105	165	75		
9	75	61	34	14	118	94	47	19	23	18	22	19	16	13	12	11	28	39	38	37	40	36	25	36	36		
10	30	55	42	40	25	9	10	14	35	71	85	70	82	80	45	53	48	50	47	66	59	64	50	43	49		
11	94	45	46	84	93	71	53	191	394	424	264	278	293	176	189	382	316	300	363	294	198	140	172	175	210		
12	203	143	319	365	186	181	206	289	209	176	92	142	106	78	92	220	334	250	175	202	276	267	179	249	206		
13	171	112	117	94	157	143	294	393	178	325	284	160	216	208	293	332	255	151	211	264	268	221	235	186	219		
14	143	170	296	170	186	119	150	129	85	193	106	103	138	69	97	114	190	291	275	245	135	114	106	88	155		
15	203	157	179	163	187	153	73	104	54	136	147	286	265	151	117	172	86	117	134	109	148	224	243	138	156		
16	143	114	52	44	45	114	127	91	57	125	121	94	26	78	119	80	167	156	141	113	186	172	66	114	106		
17	187	147	178	117	95	78	96	90	68	102	207	282	250	502	413	428	360	143	287	174	368	293	237	177	220		
18	80	47	25	31	29	81	135	163	109	69	52	39	77	107	49	31	49	105	98	112	84	64	33	38	71		
19	24	30	70	32	59	155	70	138	148	102	79	32	44	28	23	31	39	41	50	57	47	38	39	26	58		
20	32	24	25	53	31	31	45	17	17	18	24	23	59	72	52	45	61	64	79	131	216	333	346	216	84		
21	79	52	34	30	73	61	55	66	142	198	151	105	121	145	240	302	190	202	230	166	98	57	54	50	121		
22	56	75	98	126	303	201	263	337	280	163	273	254	292	161	270	306	419	413	343	370	448	365	215	311	264		
23	207	245	341	229	246	215	227	311	336	213	116	191	119	92	121	318	349	298	356	355	298	215	226	284	246		
24	181	188	205	256	129	88	146	132	149	172	128	80	110	212	173	121	347	151	35	386	295	323	169	73	177		
25	104	119	111	47	25	17	12	11	3	8	10	14	22	16	5	12	18	27	28	29	23	20	14	8	29		
26	8	5	10	3	5	5	2	17	10	24	76	79	48	43	52	66	69	124	151	254	306	333	153	116	82		
27	45	93	166	220	136	221	111	68	71	41	65	25	57	59	121	223	266	259	106	49	74	180	42	37	114		
28	29	15	102	237	159	39	23	20	21	20	19	16	11	32	16	22	40	61	51	34	31	92	44	47	47		
29	59	40	35	42	64	50	41	25	27	26	62	94	99	56	35	41	32	31	39	41	50	47	48	41	47		
30	43	52	52	58	63	46	73	41	57	52	27	42	54	41	42	66	137	190	289	230	124	60	63	86	83		
31	194	179	130	79	101	154	206	166	113	159	135	83	33	89	82	118	154	124	108	104	101	103	101	100	122		
MEAN	101	90	103	103	105	102	108	118	109	118	119	114	108	112	110	139	155	146	149	162	163	144	113	106	121		
50 MEAN	43	40	56	73	85	69	38	43	50	47	53	46	50	41	26	31	37	44	45	47	45	43	41	38	47		
50 MEAN	144	119	169	189	161	123	152	207	220	207	192	207	210	225	227	291	355	251	240	285	317	277	194	197	215		

AU INDEX ( HOURLY VALUES )

JUNE 1983

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
	104	105	72	252	256	261	196	157	159	113	119	87	73	113	115	85	140	87	116	111	124	152	87	44	130
Q	157	50	45	36	26	50	55	106	157	103	97	87	150	118	72	64	64	38	69	79	83	51	58	55	74
Q	124	91	111	66	37	23	36	19	92	176	95	51	34	26	16	55	54	62	72	51	68	85	85	58	66
Q	95	69	61	37	20	33	63	104	93	48	22	14	24	24	30	27	27	38	46	43	35	48	48	52	46
Q	54	27	41	37	36	48	86	37	80	187	207	76	44	77	99	103	63	108	125	73	55	46	55	86	77
	62	68	78	53	35	34	80	133	98	50	43	46	59	70	134	84	153	157	134	137	100	127	71	138	89
	92	133	110	29	105	216	94	65	40	78	131	67	36	31	32	51	73	73	120	128	82	55	50	49	81
	61	65	56	51	59	88	148	102	58	73	111	160	209	217	132	182	266	214	166	173	159	162	244	277	143
D	225	123	104	80	107	128	134	164	269	293	216	120	58	58	73	79	84	148	179	245	365	380	350	301	178
D	268	331	283	238	282	364	196	192	197	250	299	191	283	478	511	556	491	376	152	116	76	64	62	79	264
	141	192	147	194	315	260	180	160	134	122	80	58	87	103	77	40	34	63	91	180	115	72	86	71	125
	107	196	206	221	237	188	140	118	167	50	73	152	134	79	69	104	66	66	64	62	82	76	55	45	115
D	63	229	312	134	724	585	345	490	439	522	437	162	256	194	282	401	382	438	335	259	185	155	233	166	322
	215	202	81	118	193	119	55	39	51	133	121	52	41	88	104	76	51	26	54	69	95	92	89	170	97
	235	225	239	223	226	184	183	153	127	148	287	277	271	155	75	117	104	251	289	147	112	145	56	63	179
	63	118	49	49	56	30	36	49	111	147	119	130	111	105	101	186	173	70	50	17	17	49	88	124	85
	107	130	73	85	92	151	171	84	46	35	75	83	124	152	109	166	88	143	241	291	195	163	257	213	136
D	142	160	181	213	191	311	226	335	420	214	293	227	255	256	152	139	240	283	184	96	236	263	289	215	228
D	160	100	182	183	161	125	205	212	178	198	140	225	211	157	160	135	188	170	150	106	96	99	78	164	158
	286	210	149	208	166	57	100	181	222	196	260	186	110	166	198	129	48	49	62	39	125	108	148	145	148
	239	202	146	134	165	219	167	189	88	140	106	85	70	109	76	89	90	166	218	167	113	105	129	151	140
	101	85	38	7	84	142	79	56	104	169	186	208	244	282	271	261	384	392	317	290	241	202	201	177	188
	185	109	77	108	147	127	160	263	379	297	273	253	178	153	191	240	383	407	352	248	184	217	197	240	224
Q	193	97	117	154	162	54	41	49	144	227	175	129	131	55	61	79	49	30	28	39	40	32	23	20	89
Q	20	16	15	16	17	17	17	22	22	27	24	44	68	32	18	19	30	22	82	128	113	105	99	88	44
	71	66	25	19	136	190	138	118	79	72	118	109	119	128	136	153	159	148	77	69	63	87	108	153	106
	59	54	47	38	37	132	178	131	121	125	78	54	37	32	25	23	59	121	172	189	127	120	232	134	97
	113	55	34	23	23	28	38	41	60	52	170	125	106	123	124	128	136	184	209	188	209	163	109	122	107
	168	137	125	108	242	182	215	204	212	204	162	104	131	92	84	121	86	78	53	47	39	44	68	97	125
	73	39	42	40	50	31	47	105	165	102	52	72	103	134	60	41	48	53	62	81	93	112	87	74	74
MEAN	129	122	108	105	146	145	126	135	150	151	150	121	125	126	119	131	140	148	142	128	120	119	124	125	131
50 MEAN	97	60	69	62	54	35	48	46	86	133	104	62	60	42	44	56	44	52	70	66	62	63	62	60	64
50 MEAN	171	188	212	169	293	302	221	278	300	295	269	185	212	228	235	262	277	283	200	164	191	192	202	185	230

AL INDEX ( HOURLY VALUES ) JANUARY 1983

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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0	-11	-10	-8	-6	-6	-5	-4	-3	0	0	-8	-12	-69	-257	-166	-24	-48	-112	-141	-44	-49	-16	-13	-19	-43
0	-17	-20	-25	-24	-43	-42	-86	-147	-292	-269	-285	-270	-420	-587	-374	-112	-60	-56	-32	-104	-28	-50	-34	-41	-143
0	-38	-41	-21	-23	-44	-58	-44	-80	-125	-310	-137	-163	-359	-424	-185	-185	-196	-116	-63	-17	-173	-136	-6	-11	-123
0	-21	-36	-24	-3	-1	-3	-11	-70	-136	-213	-89	-109	-204	-323	-385	-51	-84	-192	-40	-6	-10	-8	-7	-10	-85
0	-11	-7	-17	-5	0	0	-2	-6	-118	-21	-28	-33	-83	-142	-93	-71	-60	-121	-55	-15	-52	-43	-5	-11	-42
0	-52	-78	-20	-12	-5	-7	0	-8	-11	-24	-53	-78	-86	-127	-73	-43	-26	-14	-14	-25	-6	-9	-7	-18	-33
0	-17	-22	-4	-14	-64	-18	0	-1	0	-3	-3	-43	-215	-226	-84	-7	-10	-61	-284	-286	-45	0	-46	-188	-68
0	-141	-72	-42	-7	-12	-40	-160	-76	-25	-33	-200	-170	-15	-14	-23	-207	-1005	-672	-190	-104	-218	-280	-146	-59	-163
0	-252	-914	-671	-753	-889	-1230	-651	-519	-269	-286	-259	-185	-72	-134	-105	-87	-166	-86	-65	-42	-57	-30	-48	-28	-325
1	-21	-23	-22	-15	-23	-21	-22	-24	-25	-28	-25	-22	-23	-18	-16	-20	-13	-16	-21	-22	-22	-22	-15	-74	-23
1	-91	-110	-49	-176	-110	-337	-310	-8	-38	-328	-174	-30	-60	-235	-145	-135	-285	-241	-148	-262	-294	-116	-55	-86	-159
1	-104	-148	-106	-118	-137	-94	-77	-81	-53	-27	-17	-65	-121	-87	-70	-281	-228	-372	-293	-142	-133	-243	-154	-211	-140
1	-77	-47	-60	-39	-48	-41	-190	-157	-83	-81	-75	-114	-161	-375	-269	-119	-100	-207	-269	-36	-49	-81	-283	-179	-131
1	-429	-182	-195	-115	-127	-198	-232	-216	-163	-125	-175	-140	-104	-81	-147	-721	-722	-294	-225	-422	-273	-204	-306	-206	-250
1	-123	-157	-285	-178	-141	-422	-179	-178	-204	-88	-477	-476	-382	-378	-274	-367	-345	-433	-536	-246	-11	-21	-75	-161	-256
1	-934	-225	-228	-129	-102	-141	-120	-105	-152	-311	-560	-455	-760	-625	-139	-320	-208	-224	-495	-683	-390	-138	-230	-538	-317
1	-377	-320	-135	-170	-184	-271	-284	-204	-176	-69	-395	-682	-559	-286	-441	-231	-370	-262	-130	-103	-414	-351	-72	-22	-271
1	-20	-62	-156	-168	-109	-143	-110	-32	-135	-245	-268	-108	-159	-586	-532	-260	-231	-224	-193	-68	-40	-136	-57	-179	-176
1	-254	-193	-165	-63	-85	-121	-216	-175	-133	-295	-161	-49	-67	-65	-102	-114	-146	-120	-160	-456	-455	-243	-45	-28	-163
1	-40	-58	-50	-25	-71	-244	-104	-22	-16	-24	-39	-66	-98	-113	-242	-265	-155	-30	-81	-389	-197	-40	-51	-40	-103
1	-29	-26	-14	-43	-24	-95	-202	-199	-61	-190	-128	-179	-353	-333	-80	-11	-31	-50	-71	-101	-138	-93	-50	-43	-106
1	-63	-40	-40	-74	-115	-58	-26	-18	-57	-119	-68	-51	-22	-7	-3	-3	0	0	5	6	0	-159	-293	-173	-57
1	-210	-146	-96	-83	-99	-105	-8	-11	-23	-16	-65	-59	-25	-3	-171	-222	-175	-154	-181	-119	-233	-161	-236	-468	-128
1	-199	-70	-31	-37	-86	-222	-144	-46	-18	-23	-290	-431	-385	-295	-362	-367	-300	-181	-461	-105	-68	-107	-158	-22	-184
1	-25	-29	-150	-92	-43	-96	-101	-4	-20	-69	-451	-258	-158	-333	-182	-145	-149	-205	-316	-127	-19	-27	-11	-21	-126
1	-62	-38	-84	-103	-66	-19	-127	-125	-151	-50	-57	-11	-12	-55	-81	-23	-47	-134	-305	-352	-51	-22	-7	-9	-79
1	-9	-8	-9	-6	-4	-3	-4	-61	-133	-8	-2	-8	-20	-66	-175	-352	-245	-109	-148	-154	-115	-121	-353	-203	-97
1	-86	-100	-55	-16	-7	-14	-2	-11	-9	-6	-7	-94	-158	-62	-123	-421	-730	-565	-138	-24	-54	-66	-69	-113	-122
1	-63	-54	-59	-159	-58	-78	-110	-209	-348	-56	-285	-632	-362	-153	-184	-256	-187	-265	-174	-86	-37	-59	-253	-380	-188
1	-141	-194	-220	-224	-269	-140	-71	-27	-11	-8	-21	-70	-111	-291	-296	-198	-252	-412	-599	-350	-304	-296	-199	-135	-202
1	-108	-112	-99	-94	-101	-144	-118	-91	-94	-107	-155	-164	-183	-215	-179	-182	-215	-198	-192	-158	-129	-108	-106	-119	-140
1	-24	-31	-16	-13	-7	-22	-45	-57	-65	-89	-61	-82	-159	-236	-159	-40	-49	-97	-64	-38	-51	-33	-16	-20	-61
1	-303	-359	-302	-269	-288	-452	-293	-244	-192	-175	-373	-387	-375	-300	-221	-345	-362	-259	-290	-299	-229	-148	-146	-191	-283

## AL INDEX ( HOURLY VALUES )

FEBRUARY 1983

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
0	-92	-24	-31	-15	-36	-260	-157	-65	-9	-104	-212	-199	-182	-312	-247	-228	-281	-313	-230	-24	-17	-27	-44	-37	-131
0	-30	-39	-65	-55	-12	-6	-7	-14	-9	-5	-19	-61	-24	-23	-26	-34	-86	-282	-140	-75	-16	-32	-155	-170	-58
0	-76	-7	-10	-32	-39	-52	-42	-88	-18	0	-5	-23	-51	-66	-20	-25	-22	-33	-54	-54	-87	-28	-137	-66	-43
D	-55	-39	-17	-17	-9	-99	-96	-36	-5	-97	-198	-100	-80	-19	-17	-24	-459	-1040	-1261	-1152	-176	-527	-304	-254	-278
D	-189	-329	-787	-1148	-812	-1038	-815	-628	-432	-1050	-838	-456	-1042	-984	-607	-576	-589	-863	-1038	-919	-1067	-893	-697	-603	-766
D	-546	-527	-626	-274	-228	-506	-444	-431	-123	-97	-328	-888	-584	-710	-602	-759	-671	-216	-79	-74	-54	-39	-38	-52	-371
D	-207	-378	-283	-517	-543	-518	-524	-597	-502	-425	-892	-731	-564	-954	-714	-856	-384	-129	-65	-62	-127	-201	-132	-479	-449
8	-526	-429	-368	-325	-313	-351	-330	-322	-356	-157	-130	-159	-154	-224	-104	-26	-29	-31	-36	-22	-26	-66	-255	-233	-207
9	-115	-64	-42	-119	-209	-110	-51	-34	-57	-215	-377	-208	-220	-212	-514	-346	-241	-341	-283	-280	-462	-937	-203	-234	-220
10	-226	-233	-367	-628	-295	-213	-132	-154	-327	-262	-193	-325	-259	-110	-98	-81	-146	-237	-351	-67	-31	-54	-35	-40	-203
11	-25	-13	-63	-124	-97	-109	-62	-82	-136	-123	-186	-344	-557	-102	-110	-41	-129	-164	-293	-271	-361	-382	-81	-107	-165
12	-162	-304	-153	-53	-32	-58	-86	-292	-255	-127	-458	-1071	-653	-496	-676	-241	-72	-111	-122	-268	-187	-69	-131	-93	-257
13	-278	-481	-165	-157	-262	-316	-307	-498	-223	-180	-180	-730	-576	-232	-359	-406	-99	-53	-73	-229	-177	-302	-300	-161	-281
14	-397	-453	-197	-295	-114	-56	-85	-545	-520	-199	-166	-249	-149	-136	-242	-333	-348	-256	-81	-15	-33	-437	-291	-126	-238
15	-74	-65	-165	-244	-442	-367	-260	-87	-163	-100	-220	-511	-487	-503	-349	-678	-198	-419	-419	-333	-137	-79	-163	-243	-279
16	-61	-35	-268	-542	-149	-184	-144	-198	-349	-405	-336	-297	-534	-487	-361	-683	-685	-457	-91	-132	-130	-101	-395	-393	-309
17	-175	-43	-147	-297	-150	-157	-248	-135	-83	-16	-94	-332	-268	-90	-253	-295	-279	-194	-295	-120	-136	-287	-92	-58	-177
18	-58	-341	-401	-379	-351	-244	-201	-181	-62	-82	-109	-218	-470	-152	-122	-164	-173	-261	-259	-201	-161	-74	-29	-14	-196
19	-15	-13	-4	-7	-9	-44	-166	-319	-270	-222	-116	-163	-154	-225	-121	-110	-81	-184	-106	-53	-43	-45	-66	-309	-119
D	-484	-383	-209	-62	-108	-295	-377	-395	-146	-105	-65	-376	-675	-457	-384	-715	-314	-333	-440	-374	-545	-640	-208	-268	-348
21	-373	-438	-357	-126	-64	-386	-318	-246	-267	-100	-580	-443	-329	-297	-279	-823	-644	-354	-428	-572	-399	-311	-742	-581	-394
22	-197	-282	-183	-100	-123	-93	-73	-122	-152	-126	-280	-106	-173	-162	-89	-111	-97	-30	-69	-417	-288	-65	-218	-336	-162
23	-451	-131	-53	-209	-222	-39	-39	-28	-64	-45	-44	-35	-64	-53	-54	-168	-296	-214	-357	-285	-148	-115	-206	-357	-153
24	-129	-141	-166	-159	-170	-156	-176	-208	-61	-52	-93	-244	-463	-501	-322	-281	-350	-433	-416	-565	-218	-73	-57	-37	-228
0	-25	-27	-35	-126	-130	-203	-60	-42	-78	-180	-120	-86	-63	-95	-97	-254	-250	-258	-131	-73	-60	-85	-55	-63	-108
0	-77	-83	-132	-30	-12	-9	-9	-16	-25	-80	-120	-53	-45	-46	-52	-59	-63	-166	-150	-90	-66	-41	-77	-72	-66
0	-60	-33	-18	-7	-34	-37	-7	-12	-46	-164	-270	-143	-64	-81	-23	-7	-13	-7	-3	-3	-89	-153	-59	-58	-58
28	-19	-22	-23	-40	-83	-43	-12	-51	-42	-50	-39	-61	-73	-26	-17	-30	-78	-246	-122	-192	-114	-10	-74	-87	-65
MEAN	-182	-191	-190	-217	-180	-212	-186	-208	-170	-170	-238	-307	-319	-276	-244	-298	-252	-272	-264	-247	-212	-195	-187	-197	-226
50 MEAN	-53	-37	-52	-50	-45	-61	-25	-34	-35	-85	-106	-73	-49	-62	-43	-75	-86	-149	-95	-59	-63	-67	-96	-85	-66
50 MEAN	-296	-331	-384	-403	-340	-491	-451	-417	-241	-354	-464	-510	-589	-624	-464	-586	-483	-516	-576	-516	-513	-460	-275	-331	-442

AL INDEX ( HOURLY VALUES )

MARCH 1983

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
D 1	-116	-34	-97	-149	-136	-53	2	-1	-9	-15	-14	-40	-39	-46	-76	-214	-211	-282	-158	-345	-342	-320	-251	-384	-139
D 2	-356	-338	-767	-788	-631	-553	-174	-733	-618	-448	-717	-596	-442	-857	-614	-351	-381	-450	-475	-320	-353	-791	-506	-422	-528
D 3	-433	-250	-278	-261	-303	-101	-90	-362	-244	-246	-212	-752	-354	-145	-247	-413	-358	-248	-410	-314	-110	-91	-345	-562	-297
D 4	-337	-297	-318	-154	-55	-99	-286	-318	-58	-66	-55	-84	-398	-626	-373	-97	-96	-318	-266	-419	-443	-705	-412	-149	-268
D 5	-38	-123	-193	-337	-243	-286	-348	-166	-294	-257	-668	-334	-270	-340	-638	-386	-163	-150	-207	-374	-367	-439	-486	-526	-318
D 6	-493	-420	-83	-27	-18	-23	-21	-30	-23	-13	-14	-13	-11	-18	-43	-88	-112	-190	-222	-60	-38	-94	-100	-107	-94
D 7	-166	-196	-225	-129	-60	-138	-117	-50	-51	-79	-151	-155	-105	-53	-33	-26	-32	-21	-9	-12	-16	-29	-49	-80	-83
D 8	-136	-115	-215	-25	-15	-8	-12	-12	-16	-54	-38	-63	-123	-269	-103	-148	-336	-300	-248	-115	-83	-108	-105	-94	-114
D 9	-96	-319	-175	-35	-17	-16	-33	-62	-13	-12	-7	-11	-9	-12	-14	-16	-14	-21	-152	-114	-49	-93	-42	-14	-56
D 10	-13	-17	-77	-65	-78	-106	-49	-25	-44	-38	-16	-11	-12	-13	-16	-17	-22	-28	-39	-171	-277	-43	-38	-61	-53
D 11	-85	-160	-14	-5	-33	-11	-12	-20	-16	-105	-190	-120	-357	-299	-75	-20	-31	-158	-430	-609	-537	-377	-675	-786	-214
D 12	-396	-462	-229	-80	-105	-69	-143	-312	-189	-171	-259	-528	-97	-435	-557	-800	-913	-811	-979	-683	-809	-528	-1019	-627	-467
D 13	-152	-75	-47	-259	-192	-88	-125	-240	-245	-334	-382	-519	-425	-76	-42	-59	-140	-251	-253	-210	-217	-147	-54	-14	-189
D 14	-21	-103	-149	-506	-402	-137	-81	-464	-648	-330	-229	-177	-420	-211	-183	-267	-245	-197	-114	-152	-235	-45	-46	-127	-229
D 15	-87	-221	-54	-124	-127	-157	-190	-190	-74	-130	-219	-83	-185	-240	-362	-544	-563	-308	-208	-65	-114	-277	-67	-38	-193
D 16	-14	-42	-98	-129	-286	-202	-59	-82	-29	-60	-23	-100	-576	-468	-75	-35	-27	-70	-35	-29	-79	-19	-73	-195	-117
D 17	-124	-111	-296	-249	-264	-272	-164	-127	-25	-31	-250	-75	-23	-15	-51	-63	-19	-6	-32	-131	-96	-31	-89	-322	-119
D 18	-114	-12	-8	-15	-15	-149	-192	-152	-107	-25	-25	-21	-19	-38	-19	-34	-288	-574	-466	-433	-216	-117	-495	-378	-163
D 19	-237	-471	-334	-416	-539	-302	-162	-218	-264	-164	-178	-324	-310	-614	-523	-98	-235	-372	-503	-267	-51	-57	-179	-198	-292
D 20	-128	-322	-573	-392	-410	-316	-187	-54	-48	-26	-115	-185	-165	-219	-548	-647	-432	-237	-356	-584	-549	-314	-132	-75	-292
D 21	-330	-553	-129	-36	-38	-69	-94	-80	-46	-58	-117	-88	-50	-40	-181	-235	-340	-270	-281	-365	-114	-44	-141	-140	-160
D 22	-153	-237	-155	-180	-34	-16	-74	-73	-97	-161	-61	-12	-29	-44	-182	-334	-141	-93	-65	-159	-264	-223	-162	-22	-124
D 23	-56	-165	-88	-91	-112	-139	-248	-365	-182	-134	-102	-117	-101	-169	-279	-143	-34	-12	-106	-289	-108	-88	-30	-4	-132
D 24	-36	-168	-119	-256	-169	-169	-163	-108	-68	-143	-40	-47	-66	-124	-155	-96	-36	-40	-276	-429	-400	-173	-179	-197	-152
D 25	-253	-171	-350	-402	-414	-485	-571	-850	-508	-477	-676	-635	-504	-822	-472	-354	-487	-228	-647	-852	-129	7	-10	-42	-430
D 26	-72	-35	-111	-64	-224	-97	-47	-24	-24	-24	-20	-25	-26	-40	-30	-26	-27	-42	-48	-42	-63	-43	-20	-12	-49
D 27	-10	-13	-19	-16	-14	-5	-7	-12	-17	-19	-45	-52	-44	-76	-36	-20	-21	-19	-11	-7	-37	-86	-76	-21	-28
D 28	-6	-3	-11	-64	-354	-106	-48	-67	-252	-369	-465	-302	-300	-447	-484	-722	-725	-757	-634	-415	-511	-579	-279	-172	-336
D 29	-402	-533	-378	-217	-120	-123	-281	-205	-154	-246	-210	-261	-270	-234	-323	-548	-581	-391	-482	-496	-117	-82	-307	-278	-302
D 30	-72	-37	-87	-215	-371	-201	-258	-207	-253	-158	-306	-184	-37	-59	-285	-631	-682	-169	-142	-236	-281	-225	-219	-504	-243
D 31	-390	-290	-313	-384	-795	-275	-47	-29	-141	-530	-596	-446	-271	-390	-188	-54	-71	-43	-375	-622	-481	-121	-27	-93	-290
MEAN	-171	-203	-193	-195	-212	-153	-138	-181	-153	-158	-206	-205	-194	-239	-232	-240	-250	-227	-278	-300	-241	-202	-213	-214	-208
50 MEAN	-84	-132	-142	-54	-36	-54	-43	-32	-28	-40	-51	-58	-58	-84	-40	-45	-85	-77	-91	-83	-92	-71	-62	-54	-66
5D MEAN	-368	-350	-400	-349	-314	-266	-251	-492	-342	-317	-414	-554	-333	-498	-442	-489	-544	-425	-598	-533	-303	-297	-437	-386	-404

AL INDEX ( HOURLY VALUES ) APRIL 1983

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	-74	-177	-198	-321	-205	-139	-416	-441	-336	-186	-486	-171	-274	-309	-198	-333	-372	-108	-288	-465	-100	-41	-190	-285	-255
2	-468	-280	-144	-204	-161	-84	-364	-264	-53	-31	-149	-281	-84	-42	-79	-440	-418	-412	-291	-374	-191	-85	-206	-268	-224
3	-321	-301	-264	-161	-258	-244	-102	-53	-27	-54	-51	-115	-407	-95	-15	-90	-157	-13	-5	-25	-46	-409	-403	-318	-164
4	-329	-342	-347	-284	-212	-289	-217	-167	-174	-139	-218	-263	-302	-241	-194	-306	-293	-417	-507	-467	-194	-53	-91	-105	-256
5	-75	-519	-349	-53	-26	-53	-140	-138	-139	-106	-54	-75	-84	-138	-39	-37	-65	-157	-145	-43	-2	-4	-24	-72	-106
D	-135	-135	-173	-102	-98	-228	-137	-158	-364	-334	-339	-299	-605	-437	-368	-351	-222	-333	-299	-245	-161	-295	-155	-205	-257
7	-302	-185	-240	-64	-302	-351	-194	-53	-105	-120	-393	-850	-524	-172	-111	-393	-273	-313	-484	-373	-224	-332	-659	-346	-307
8	-189	-292	-265	-273	-135	-343	-514	-174	-91	-97	-170	-161	-493	-552	-103	-193	-409	-183	-73	-19	-81	-113	-82	-73	-212
9	-182	-144	-172	-104	-64	-103	-37	-149	-223	-185	-89	-218	-218	-196	-163	-280	-654	-322	-108	-159	-330	-248	-232	-378	-206
10	-384	-195	-398	-224	-130	-343	-308	-185	-595	-246	-89	-289	-148	-90	-152	-282	-253	-38	-232	-321	-165	-85	-353	-249	-240
0	-247	-113	-57	-179	-85	-155	-33	-157	-214	-55	-24	-25	-22	-17	-15	-12	-20	-10	-15	-25	-92	-63	-18	-19	-70
2	-21	-85	-151	-141	-17	-70	-95	-46	-50	-224	-114	-165	-161	-34	-20	-72	-214	-200	-181	-130	-87	-95	-50	-70	-104
13	-508	-529	-309	-205	-252	-305	-123	-110	-174	-29	-21	-357	-741	-303	-274	-64	-30	-74	-288	-401	-375	-129	-210	-213	-251
D	-98	-299	-339	-249	-330	-377	-300	-251	-344	-420	-302	-318	-443	-419	-599	-353	-476	-640	-273	-497	-735	-328	-302	-284	-374
D	-774	-736	-527	-365	-293	-219	-456	-408	-469	-316	-340	-402	-195	-344	-503	-662	-655	-541	-557	-350	-86	-122	-114	-564	-417
16	-521	-607	-610	-234	-274	-201	-203	-218	-258	-137	-407	-495	-525	-402	-226	-284	-302	-289	-305	-341	-240	-524	-627	-485	-363
17	-242	-225	-208	-181	-292	-183	-151	-157	-307	-292	-143	-52	-18	-47	-106	-181	-474	-407	-555	-453	-550	-249	-60	-109	-235
0	-216	-155	-47	-62	-155	-106	-95	-67	-45	-28	-17	-52	-166	-44	-166	-256	-242	-42	-38	-290	-222	-81	-27	0	-109
0	-5	-16	-18	-38	-93	-218	-92	-35	-134	-359	-315	-206	-294	-355	-412	-356	-249	-175	-112	-87	-27	-51	-138	-270	-169
20	-205	-313	-328	-269	-290	-149	-31	-36	-129	-72	-60	-117	-240	-334	-322	-211	-174	-168	-315	-415	-238	-112	-158	-184	-203
21	-289	-314	-300	-233	-194	-250	-186	-120	-31	-47	-18	-25	-155	-130	-93	-58	-67	-87	-161	-153	-188	-266	-148	-197	-155
22	-219	-297	-298	-332	-288	-312	-234	-321	-420	-501	-81	-29	-18	-20	-16	-41	-44	-63	-32	-7	-2	-6	-23	-56	-152
23	-138	-169	-227	-238	-110	-135	-151	-190	-208	-111	-99	-168	-183	-111	-21	-18	-2	-2	-27	-44	-21	-113	-518	-174	-132
D	-123	-135	-304	-372	-305	-261	-285	-183	-46	-382	-728	-601	-549	-414	-183	-543	-282	-644	-428	-380	-460	-547	-337	-336	-368
25	-290	-346	-355	-315	-84	-60	-78	-49	-23	-46	-431	-304	-346	-183	-288	-303	-432	-631	-628	-470	-358	-467	-534	-334	-306
26	-482	-397	-134	-115	-74	-219	-711	-375	-111	-105	-158	-93	-113	-557	-647	-535	-230	-84	-89	-60	-55	-177	-426	-426	-266
27	-266	-439	-221	-104	-250	-248	-69	-50	-116	-43	-30	-154	-249	-178	-176	-291	-287	-83	-57	-53	-142	-169	-69	-118	-161
0	-253	-287	-406	-470	-245	-232	-229	-51	-41	-44	-19	-30	-239	-102	-112	-38	-14	-61	-132	-149	-83	-91	-111	-100	-147
D	-180	-278	-68	-37	-106	-217	-158	-29	-228	-331	-434	-320	-485	-745	-514	-591	-493	-718	-652	-716	-562	-509	-328	-162	-369
30	-295	-463	-181	-42	-64	-579	-376	-441	-256	-227	-321	-262	-245	-192	-135	-352	-148	-178	-269	-322	-365	-301	-214	-368	-275
MEAN	-261	-292	-254	-199	-179	-222	-216	-169	-190	-175	-203	-229	-283	-240	-208	-264	-265	-246	-251	-261	-212	-202	-226	-225	-228
50 MEAN	-148	-131	-135	-178	-119	-156	-108	-71	-96	-142	-97	-95	-174	-110	-145	-146	-147	-97	-95	-136	-102	-76	-68	-91	-119
50 MEAN	-262	-316	-282	-225	-226	-260	-267	-205	-290	-356	-428	-388	-455	-471	-433	-500	-425	-575	-441	-437	-400	-360	-247	-310	-357



AL INDEX ( HOURLY VALUES ) MAY 1983

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	-219	-193	-181	-294	-112	-39	-89	-226	-289	-282	-261	-427	-280	-55	-49	-20	-40	-44	-47	-386	-627	-91	-63	-34	-181
2	-42	-92	-157	-227	-76	-20	-31	-36	-27	-83	-74	-81	-129	-127	-261	-340	-426	-290	-255	-527	-141	-7	-40	-62	-148
3	-71	-53	-58	-16	-15	-16	-17	-21	-24	-14	-12	-19	-19	-15	-3	-2	-4	1	-20	-56	-13	-26	-52	-107	-27
4	-175	-63	-35	-127	-308	-275	-239	-263	-259	-295	-305	-276	-327	-611	-676	-360	-228	-208	-129	-92	-170	-128	-87	-186	-243
5	-68	-132	-96	-46	-49	-166	-47	-40	-40	-39	-323	-218	-148	-640	-307	-543	-325	-147	-24	-64	-336	-279	-94	-50	-176
6	-60	-175	-87	-47	-374	-468	-422	-188	-165	-259	-48	-84	-94	-228	-115	-164	-170	-162	-170	-85	-44	-64	-105	-115	-162
7	-38	-36	-46	-74	-78	-110	-186	-40	-18	-24	-30	-121	-223	-69	-43	-47	-44	-149	-239	-142	-68	-26	-36	-73	-82
8	-352	-164	-32	-43	-40	-64	-151	-75	-27	-32	-111	-200	-58	-30	-75	-212	-112	-100	-280	-176	-52	-107	-101	-270	-119
9	-154	-48	-51	-41	-79	-153	-112	-28	-20	-23	-20	-18	-20	-39	-34	-27	-21	-27	-26	-40	-34	-33	-29	-29	-46
0	-31	-43	-47	-50	-38	-32	-35	-25	-20	-67	-95	-74	-174	-200	-88	-85	-129	-73	-45	-26	-16	-26	-14	-14	-60
11	-60	-32	-37	-53	-93	-56	-44	-135	-524	-668	-348	-163	-267	-123	-93	-407	-496	-886	-505	-454	-344	-102	-292	-657	-285
D	-543	-731	-500	-339	-481	-219	-134	-252	-335	-243	-64	-395	-376	-245	-98	-356	-648	-475	-258	-307	-650	-592	-323	-477	-377
12	-284	-110	-124	-201	-217	-394	-458	-576	-279	-302	-313	-283	-479	-265	-390	-399	-391	-142	-266	-420	-313	-315	-402	-455	-324
13	-376	-460	-587	-394	-262	-152	-318	-226	-123	-290	-208	-92	-99	-130	-315	-263	-255	-409	-532	-297	-139	-85	-92	-127	-260
14	-417	-554	-399	-314	-238	-286	-143	-111	-38	-74	-79	-413	-389	-246	-151	-204	-109	-255	-235	-126	-116	-342	-444	-184	-245
15	-145	-145	-39	-41	-31	-85	-183	-154	-43	-81	-266	-189	-67	-135	-242	-275	-279	-292	-200	-92	-158	-197	-94	-112	-148
D	-289	-266	-213	-49	-20	-20	-9	-53	-17	-42	-103	-264	-333	-622	-869	-603	-746	-830	-705	-771	-634	-848	-526	-69	-370
17	-36	-32	-34	-120	-94	-111	-163	-234	-112	-33	-45	-40	-68	-199	-167	-73	-45	-113	-56	-124	-93	-53	-31	-28	-88
18	-32	-44	-52	-42	-65	-184	-258	-184	-203	-216	-55	-36	-18	-11	-19	-25	-27	-6	-21	-13	-9	-53	-20	-27	-67
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20	-40	-42	-35	-35	-39	-44	-30	-26	-52	-123	-129	-74	-124	-234	-358	-444	-210	-95	-201	-67	-38	-22	-24	-29	-105
D	-34	-56	-58	-75	-238	-374	-653	-370	-269	-160	-182	-528	-525	-422	-425	-477	-571	-447	-390	-490	-480	-503	-550	-599	-370
22	-456	-326	-319	-212	-248	-228	-327	-340	-571	-184	-84	-347	-237	-131	-136	-578	-676	-750	-462	-489	-345	-447	-312	-303	-354
23	-268	-353	-385	-458	-193	-171	-106	-186	-52	-112	-217	-159	-105	-293	-116	-108	-333	-1074	-1140	-719	-509	-527	-147	-108	-327
D	-121	-186	-275	-85	-52	-39	-48	-37	-116	-44	-24	-46	-34	-32	-47	-52	-56	-37	-27	-28	-33	-38	-47	-46	-64
25	-52	-48	-45	-40	-40	-39	-41	-53	-49	-57	-49	-43	-53	-85	-104	-80	-164	-316	-259	-344	-396	-367	-124	-121	-124
26	-79	-100	-399	-375	-202	-144	-160	-57	-46	-89	-85	-30	-91	-149	-253	-401	-356	-436	-103	-24	-57	-112	-70	-37	-161
27	-36	-39	-65	-157	-166	-32	-30	-43	-36	-35	-35	-32	-17	-7	-14	-26	-58	-76	-46	-48	-25	-28	-43	-44	-47
28	-57	-40	-36	-30	-67	-47	-37	-38	-37	-44	-38	-61	-78	-25	-17	-17	-27	-19	-7	-10	-12	-26	-36	-27	-35
29	-36	-41	-31	-39	-39	-45	-82	-55	-33	-43	-27	-27	-23	-27	-11	-46	-139	-242	-303	-190	-75	-46	-34	-71	-71
30	-151	-169	-248	-106	-63	-86	-233	-189	-55	-48	-86	-99	-26	-42	-93	-67	-179	-172	-77	-67	-46	-46	-145	-118	-109
31	-153	-155	-152	-134	-130	-133	-155	-138	-126	-130	-120	-157	-158	-178	-181	-216	-234	-267	-226	-217	-197	-194	-153	-151	-169
MEAN	-62	-42	-50	-64	-83	-89	-94	-63	-63	-77	-48	-44	-61	-56	-34	-36	-52	-40	-29	-27	-19	-33	-28	-28	-51
50 MEAN	-238	-287	-238	-194	-205	-168	-189	-195	-239	-245	-182	-301	-321	-341	-320	-390	-558	-742	-599	-548	-523	-514	-367	-382	-345

## AL INDEX ( HOURLY VALUES )

JUNE

1983

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	-75	-48	-56	-163	-422	-351	-158	-129	-203	-148	-35	-59	-62	-38	-113	-93	-135	-44	-50	-63	-47	-154	-37	-10	-112	
2	-29	-34	-32	-39	-38	-41	-30	-44	-179	-172	-83	-65	-139	-191	-101	-60	-53	-46	-38	-37	-24	-38	-33	-31	-66	
Q	-101	-74	-140	-86	-80	-45	-69	-39	-33	-198	-193	-55	-27	-28	-53	-52	-173	-108	-56	-80	-157	-109	-56	-35	-85	
Q	-42	-73	-65	-56	-29	-42	-53	-240	-135	-40	-19	-17	-19	-27	-19	-36	-26	-41	-21	-24	-23	-39	-53	-39	-49	
Q	-38	-23	-36	-29	-52	-30	-21	-34	-20	-42	-175	-78	-10	-47	-62	-292	-58	-40	-67	-49	-6	-9	-21	-59	-54	
6	-35	-41	-86	-45	-34	-34	-36	-134	-161	-54	-28	-35	-31	-36	-142	-203	-295	-268	-145	-77	-47	-173	-91	-82	-96	
7	-76	-93	-104	-60	-49	-226	-172	-57	-28	-39	-27	-76	-20	-17	-30	-43	-95	-172	-228	-51	-95	-60	-48	-42	-79	
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9	-211	-99	-78	-21	-34	-43	-183	-196	-352	-297	-158	-68	-79	-28	-34	-11	-73	-195	-360	-57	-429	-366	-326	-268	-186	
D	-355	-293	-243	-271	-289	-237	-103	-153	-292	-214	-319	-200	-311	-649	-565	-643	-405	-208	-119	-41	-14	-34	-44	-45	-252	
11	-71	-328	-318	-197	-188	-245	-188	-112	-64	-59	-82	-106	-98	-131	-227	-119	-78	-71	-70	-190	-110	-52	-55	-41	-133	
12	-68	-218	-281	-232	-271	-292	-111	-48	-55	-54	-46	-102	-37	-27	-18	-62	-57	-29	-20	-19	-15	-18	-38	-22	-89	
D	-26	-85	-769	-1133	-735	-223	-50	-130	-347	-306	-399	-466	-335	-433	-402	-516	-353	-232	-300	-415	-209	-146	-376	-223	-359	
14	-238	-191	-171	-234	-241	-155	-56	-46	-50	-218	-95	-34	-42	-45	-140	-233	-165	-79	-71	-152	-111	-154	-181	-182	-136	
15	-229	-460	-397	-380	-296	-232	-359	-231	-116	-182	-303	-268	-274	-267	-208	-184	-105	-230	-415	-166	-101	-138	-79	-50	-236	
16	-61	-153	-99	-52	-124	-58	-51	-41	-56	-99	-137	-165	-93	-89	-195	-392	-332	-147	-38	-27	-45	-61	-64	-142	-113	
17	-99	-104	-91	-47	-49	-67	-312	-124	-17	-25	-25	-95	-135	-216	-307	-323	-81	-123	-438	-486	-245	-102	-243	-221	-164	
D	-125	-80	-214	-412	-425	-403	-225	-346	-617	-227	-336	-197	-338	-486	-291	-198	-345	-261	-149	-58	-211	-436	-294	-221	-287	
D	-132	-154	-148	-276	-243	-113	-193	-418	-240	-331	-214	-242	-450	-349	-433	-264	-258	-207	-149	-114	-61	-187	-104	-157	-226	
20	-275	-308	-171	-275	-303	-197	-160	-220	-308	-355	-415	-211	-105	-318	-524	-250	-105	-92	-28	-24	-64	-62	-166	-178	-213	
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22	-119	-60	-53	-45	-76	-256	-187	-38	-51	-253	-406	-323	-360	-385	-503	-335	-491	-476	-583	-504	-335	-186	-145	-204	-266	
23	-259	-86	-57	-111	-207	-466	-472	-383	-422	-381	-359	-432	-392	-372	-399	-425	-473	-325	-384	-288	-273	-173	-310	-384	-324	
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26	-87	-50	-40	-30	-29	-151	-88	-45	-51	-106	-61	-65	-62	-131	-231	-242	-195	-173	-36	-22	-46	-77	-83	-150	-94	
27	-59	-80	-46	-42	-32	-49	-225	-149	-21	-36	-90	-48	-24	-30	-44	-57	-98	-243	-354	-201	-125	-75	-190	-180	-104	
28	-208	-54	-39	-32	-41	-41	-32	-31	-44	-43	-75	-107	-100	-141	-168	-231	-179	-87	-256	-262	-115	-64	-81	-185	-109	
29	-119	-91	-139	-112	-109	-80	-131	-294	-177	-101	-239	-86	-123	-85	-34	-131	-97	-78	-77	-46	-27	-30	-47	-69	-106	
30	-104	-38	-45	-30	-37	-48	-47	-63	-153	-107	-32	-40	-113	-196	-62	-13	-41	-120	-58	-50	-53	-135	-151	-68	-75	
MEAN	-130	-126	-147	-159	-161	-156	-141	-139	-150	-147	-157	-138	-142	-177	-191	-203	-183	-159	-176	-151	-112	-117	-126	-133	-151	
50 MEAN	-96	-63	-91	-75	-67	-48	-46	-72	-60	-89	-110	-49	-38	-44	-41	-103	-87	-69	-61	-76	-69	-56	-41	-49	-66	
50 MEAN	-169	-142	-290	-422	-345	-203	-150	-248	-369	-275	-285	-234	-302	-389	-345	-326	-286	-220	-215	-237	-184	-233	-228	-182	-262	

AE INDEX ( HOURLY VALUES ) JANUARY 1983

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
0 1	132	146	212	188	246	307	255	129	124	64	50	73	108	52	70	75	144	261	175	89	161	100	66	85	138
2	82	79	77	72	76	73	77	71	59	59	57	37	137	313	281	90	72	146	165	77	106	47	47	56	98
3	58	76	59	55	80	76	137	219	398	377	457	336	542	725	458	212	147	130	83	145	81	99	78	85	213
4	80	87	67	58	87	114	106	151	198	393	212	242	391	506	244	244	274	170	116	66	242	186	63	59	181
5	64	74	57	36	35	39	50	111	176	302	168	174	278	372	478	104	116	225	69	37	42	42	41	41	130
6	41	37	47	38	28	29	35	46	154	49	54	63	111	201	149	106	81	144	81	41	92	73	41	52	75
7	108	129	57	51	52	58	33	62	78	113	173	170	185	249	132	74	68	53	48	55	35	33	39	62	89
8	59	78	58	82	127	130	103	62	52	57	52	106	312	366	184	63	52	106	360	422	167	71	139	314	147
9	304	211	164	91	197	152	305	238	147	116	340	298	93	51	58	276	1137	995	420	317	434	418	304	201	299
D 10	360	894	662	760	789	1090	658	467	293	288	274	225	113	249	235	149	237	125	100	86	115	72	88	66	350
11	42	46	42	51	56	52	62	47	49	43	37	33	39	40	39	39	31	35	34	38	47	48	29	148	47
12	136	166	94	237	195	447	416	80	76	379	230	67	113	307	228	164	315	274	187	290	349	154	100	136	214
13	162	196	163	184	214	160	130	140	113	55	30	82	139	101	94	292	256	458	410	224	223	284	192	257	190
14	129	96	110	77	98	89	245	240	184	143	127	149	201	405	349	154	123	234	300	57	91	141	328	254	180
D 15	514	270	292	190	227	321	316	338	224	176	242	244	163	118	197	894	934	485	412	563	379	297	387	276	352
16	182	230	356	222	221	544	289	306	330	157	541	497	578	495	438	558	523	645	688	374	124	101	137	226	365
D 17	413	315	336	240	168	221	182	176	226	409	784	562	897	776	229	431	265	274	606	785	529	207	330	685	419
D 18	485	396	177	302	266	384	354	289	255	140	475	801	611	409	601	331	470	341	211	169	522	501	146	76	363
19	64	124	219	232	179	255	203	128	220	323	344	160	207	706	631	349	298	289	247	116	96	186	95	248	247
D 20	326	275	247	152	149	194	298	259	201	384	245	95	100	101	138	143	168	165	203	546	561	365	102	71	229
21	93	129	103	101	158	327	180	91	56	53	73	103	130	156	316	324	250	69	113	468	242	83	97	76	158
22	72	75	58	100	74	179	307	320	153	274	221	230	444	375	159	62	76	87	105	132	187	162	96	91	168
23	107	91	93	124	185	146	122	94	113	183	160	126	73	48	36	36	35	43	33	32	36	239	488	355	125
24	428	401	327	220	250	283	200	117	168	136	175	225	558	102	267	326	426	399	344	237	408	315	387	777	295
25	437	243	145	136	187	353	240	137	84	84	386	535	158	470	464	472	382	278	621	256	173	202	232	77	297
26	70	96	285	221	141	197	214	75	97	156	551	411	402	480	332	226	235	332	448	252	64	77	49	72	228
27	125	97	165	187	193	127	224	268	212	159	169	78	59	105	142	71	72	171	401	482	132	78	50	49	159
28	44	43	49	42	41	42	45	118	208	75	52	49	74	107	276	530	488	230	265	285	321	252	541	495	195
29	309	275	206	130	83	84	82	75	70	68	80	168	235	153	196	518	955	822	311	128	123	156	146	202	232
30	145	121	129	227	140	177	197	293	425	128	382	847	568	259	243	312	234	333	231	146	100	130	345	494	275
31	231	311	330	338	424	275	215	111	80	57	67	122	151	357	386	244	313	520	768	496	481	454	426	325	312
MEAN	187	187	173	165	169	223	203	169	168	174	232	235	262	295	259	253	296	285	275	239	214	179	180	206	218
50 MEAN	73	78	59	59	53	75	104	122	124	159	134	134	231	302	239	87	82	131	93	68	92	71	52	60	112
50 MEAN	390	421	364	342	334	512	359	315	265	234	463	465	472	409	340	472	485	374	403	395	335	235	217	265	369

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AE INDEX ( HOURLY VALUES )

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 0	171	81	103	69	108	401	241	118	60	164	269	264	258	427	348	327	439	445	316	58	55	64	79	65	205
Q 0	62	69	102	92	44	35	30	34	30	27	43	88	51	45	49	57	112	362	180	118	46	72	195	203	89
Q 0	105	52	45	78	69	100	116	144	99	71	47	67	94	130	58	49	58	75	107	129	138	115	249	158	98
D 4	141	144	158	173	160	265	225	177	111	257	402	261	194	112	76	62	684	1015	1250	1193	880	583	420	407	390
D 5	325	450	785	970	718	853	755	755	650	905	870	583	1030	888	608	834	781	955	1021	892	1048	988	732	634	791
D 6	733	770	775	333	327	726	637	640	240	172	456	1031	751	931	755	912	863	349	139	107	94	81	59	89	499
D 7	282	434	364	597	635	666	775	773	647	569	1041	854	814	1055	840	1043	632	301	164	135	179	276	196	574	577
D 8	619	571	480	495	473	503	505	402	523	268	200	281	297	286	172	85	66	67	67	44	37	105	312	284	298
9	177	138	106	187	280	178	142	137	125	312	464	385	410	325	670	493	474	596	559	448	604	456	355	401	351
10	349	390	499	786	430	400	355	301	433	384	402	445	404	249	176	121	193	288	398	127	73	91	70	76	310
11	46	30	95	168	139	146	114	156	217	219	272	462	725	214	171	81	162	246	473	399	557	606	161	167	251
12	201	411	187	98	69	127	153	431	379	228	548	1171	832	734	1021	432	157	216	279	427	278	117	167	116	366
13	356	584	219	223	342	446	424	647	296	304	273	861	757	331	443	494	175	102	110	387	278	454	453	288	385
14	564	602	329	395	168	101	147	646	645	301	258	374	242	193	311	421	526	339	121	46	86	557	433	208	334
15	157	148	264	357	594	493	388	236	281	217	353	631	693	629	510	908	301	569	583	403	213	134	224	291	399
16	114	80	354	680	294	309	249	288	464	564	512	450	689	599	496	869	896	634	170	212	225	169	501	507	430
17	249	98	242	425	269	264	327	240	141	46	159	420	335	145	305	364	352	287	371	166	193	345	135	98	249
18	106	410	482	475	467	378	316	334	139	125	147	270	554	236	195	205	215	333	337	326	244	145	77	49	274
19	41	34	23	22	53	94	236	406	438	368	227	268	310	280	215	179	137	217	144	93	82	103	173	445	191
D 20	659	629	469	203	221	445	545	509	363	254	215	611	855	630	596	976	591	553	618	439	533	658	330	416	513
21	481	571	446	296	305	794	604	432	386	227	807	621	423	387	393	1063	879	564	633	707	537	482	890	584	563
22	315	402	390	233	220	158	136	219	271	225	350	161	253	272	195	152	159	65	109	573	396	165	313	480	259
23	548	332	148	383	397	124	120	70	101	80	83	69	104	92	102	202	354	299	447	368	235	225	317	481	237
24	253	237	252	271	308	303	388	368	162	144	203	360	670	644	429	391	521	592	600	767	418	241	143	99	365
Q 25	54	46	73	188	173	286	128	116	152	298	250	220	118	199	178	338	429	460	259	147	106	135	105	99	190
Q 26	124	167	214	75	32	29	40	58	68	137	181	96	83	75	98	109	80	220	201	170	191	158	172	191	124
Q 27	200	114	60	48	79	93	81	84	128	273	401	239	136	185	92	43	40	35	27	33	155	222	99	102	124
28	46	47	44	69	118	76	32	93	82	81	66	100	119	55	44	59	108	331	186	321	189	65	178	206	113
MEAN	267	287	275	299	267	314	293	314	272	257	339	415	435	369	340	402	370	375	352	329	288	277	269	275	320
5Q MEAN	109	89	98	96	79	108	79	87	95	161	184	142	96	126	95	119	143	230	154	119	127	140	164	150	124
5D MEAN	428	485	510	455	412	591	588	570	402	431	596	668	728	723	575	765	710	634	638	553	546	509	347	424	553

AE INDEX ( HOURLY VALUES )		1983																							
		MARCH																							
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
D	191	116	198	248	315	218	83	81	62	59	55	109	117	109	178	316	355	543	381	578	709	545	362	390	263
D	361	448	906	922	749	692	275	804	679	512	868	734	585	997	770	504	477	758	752	541	529	826	545	444	653
D	483	352	371	389	420	281	240	544	418	403	365	907	570	274	359	567	486	356	591	441	220	189	474	647	431
D	458	401	498	257	162	248	462	470	143	142	102	156	502	729	582	185	200	451	388	596	618	865	555	272	393
D	128	225	331	502	424	442	553	371	461	416	894	537	486	454	860	591	286	234	315	550	571	606	585	589	475
D	605	528	176	92	64	45	37	53	49	41	36	35	24	29	65	110	145	277	312	115	71	136	131	174	140
D	252	281	289	201	112	217	201	129	87	139	261	297	215	99	62	53	52	35	24	28	26	55	90	136	139
D	222	190	317	95	61	57	52	159	55	109	107	150	237	439	172	229	502	531	403	226	227	248	223	201	213
D	198	425	335	157	81	108	127	148	99	77	46	60	45	49	46	48	58	78	258	202	95	132	68	41	124
D	38	40	100	98	111	151	91	62	104	95	59	45	38	37	50	48	57	60	90	268	450	90	90	110	99
D	145	216	74	46	69	47	46	58	60	225	376	223	430	417	138	58	73	267	631	744	750	664	809	898	311
D	508	637	321	120	142	122	204	423	281	276	404	670	168	536	727	1048	960	887	1119	893	1012	612	1071	821	582
D	233	157	112	359	257	134	193	351	355	465	523	683	503	103	69	98	185	318	352	314	307	204	95	56	268
D	50	148	210	616	507	208	195	682	885	440	319	290	546	323	288	392	331	277	187	258	353	110	97	181	329
D	138	280	97	209	166	280	256	249	146	223	308	124	274	310	451	698	722	427	320	201	233	364	129	73	278
D	44	61	136	189	380	276	114	155	77	97	47	173	681	657	114	61	52	95	54	79	122	49	127	280	172
D	184	188	394	390	413	405	307	226	90	93	334	138	55	50	89	93	39	24	74	171	145	58	148	436	189
D	175	46	34	42	55	227	283	210	177	101	84	65	64	72	60	103	448	868	746	690	412	276	613	533	266
D	374	576	553	664	745	536	392	423	434	380	429	498	492	871	744	185	425	560	732	429	137	170	336	318	475
D	263	485	708	586	733	529	405	116	110	78	163	255	258	339	827	933	776	423	564	885	783	525	239	156	464
D	466	656	251	127	117	153	146	126	101	126	185	148	93	89	248	320	431	363	430	501	241	127	210	212	244
D	244	313	288	345	164	103	166	152	167	211	120	37	59	95	274	417	193	150	137	261	586	392	329	80	212
D	118	221	148	168	179	219	362	515	325	329	245	249	196	291	408	208	67	41	190	414	230	208	139	55	230
D	89	235	183	350	283	361	361	256	168	216	103	121	146	252	277	170	71	96	411	626	632	340	326	417	270
D	444	320	520	643	594	689	703	878	730	589	888	958	805	1280	864	646	791	517	917	1097	331	100	92	116	646
D	175	70	227	184	334	131	77	39	38	41	36	39	42	64	43	39	52	68	93	93	132	90	52	38	92
D	28	30	49	36	32	22	23	30	39	43	65	86	86	112	70	52	48	48	43	44	95	165	146	75	61
D	38	36	56	144	504	182	153	178	419	493	573	398	463	741	770	1003	959	1006	963	690	758	742	375	319	498
D	539	682	627	478	232	309	493	401	330	524	382	357	493	344	556	781	830	582	705	717	313	252	440	341	488
D	118	109	220	413	601	316	394	379	448	314	494	262	96	131	433	905	882	330	278	432	489	384	405	691	397
D	593	497	411	629	1021	424	87	76	270	841	849	638	438	628	335	124	122	72	546	831	696	267	105	150	444
MEAN	254	289	294	312	323	262	241	278	251	261	313	304	297	352	352	354	357	346	419	448	389	315	303	298	317
50 MEAN	147	193	218	117	79	111	98	85	76	92	107	127	124	147	80	86	143	150	163	153	178	138	123	112	127
50 MEAN	467	487	549	510	427	418	383	610	487	460	581	725	524	686	655	709	708	620	816	737	481	395	524	473	560

AE INDEX ( HOURLY VALUES ) 1983  
APRIL

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	128	252	293	498	376	262	570	635	524	466	783	410	432	439	343	488	593	191	470	676	194	102	280	407	409
2	560	387	247	314	266	291	495	458	188	111	260	418	232	147	160	601	592	604	481	572	302	168	316	383	355
3	404	414	353	290	368	463	207	137	107	170	123	245	506	176	48	125	193	61	42	69	100	523	573	525	259
4	503	464	456	431	389	424	441	392	349	283	451	508	496	378	270	452	465	739	823	714	426	243	218	201	458
5	197	661	489	112	89	191	267	265	237	211	154	156	197	211	102	83	163	286	250	123	56	44	68	140	198
D	234	229	314	205	246	433	266	309	608	620	533	458	854	743	583	556	427	573	511	448	368	464	274	322	441
7	462	369	382	158	510	561	307	129	222	215	573	1042	689	317	181	589	429	474	679	549	386	484	870	496	461
8	314	481	412	412	286	526	679	302	175	181	280	249	631	743	176	306	542	252	174	84	178	183	169	143	328
9	284	236	243	175	135	190	97	267	334	280	191	314	324	278	219	417	867	466	206	309	471	395	423	532	319
10	516	314	492	328	208	498	369	273	692	322	161	420	241	148	236	385	356	104	346	445	277	179	503	383	341
0	328	204	129	265	166	197	62	232	287	111	68	71	61	52	50	38	44	36	47	75	168	122	65	61	123
0	74	207	216	221	65	125	128	77	126	391	178	309	259	95	64	141	298	307	329	261	263	219	119	189	194
13	707	664	464	298	440	456	224	211	317	158	97	612	1012	480	369	133	97	169	422	625	557	285	407	358	398
D	328	572	555	483	679	669	493	522	758	747	537	556	711	645	907	585	713	863	449	792	1044	522	530	452	630
D	1016	946	715	544	563	387	635	732	733	573	523	642	378	636	786	929	956	826	819	574	202	224	242	784	640
16	728	767	874	422	541	354	356	359	408	250	607	695	674	623	414	475	514	520	489	497	373	767	832	653	550
17	378	403	381	333	453	317	280	314	472	430	245	119	77	124	172	275	711	691	794	681	805	458	149	245	388
0	399	291	135	209	312	175	194	129	82	74	90	129	262	123	266	427	402	126	113	468	394	182	111	55	214
0	49	49	62	98	195	343	219	125	283	636	590	500	539	534	643	624	541	373	245	186	90	141	318	429	325
20	374	514	531	409	460	320	140	115	281	207	238	305	418	495	525	369	323	396	555	653	507	299	374	392	383
21	432	451	497	460	352	455	437	299	150	187	76	89	251	231	149	103	145	171	275	329	400	558	391	382	303
22	439	562	496	501	420	402	393	577	734	852	259	100	64	58	57	87	106	124	88	72	63	71	98	156	283
23	276	289	318	374	341	364	361	366	419	299	271	380	367	231	97	74	61	80	128	169	149	301	805	313	285
D	273	317	432	601	519	446	565	348	198	769	1098	846	817	726	444	889	561	990	754	608	787	941	630	506	628
25	511	553	601	519	242	235	239	149	130	145	585	460	519	304	400	526	760	918	887	746	656	720	820	571	508
26	659	557	252	255	181	436	925	595	301	219	343	278	268	800	944	796	414	184	208	178	150	375	647	603	440
27	429	646	389	233	409	316	121	151	222	114	76	126	351	268	252	436	372	141	103	123	224	272	162	224	262
0	370	445	579	662	392	429	382	142	104	111	77	256	360	222	236	93	66	139	252	267	181	214	254	264	265
D	365	437	156	152	292	393	365	219	615	876	847	596	751	1059	842	952	730	959	851	860	800	915	621	364	626
30	497	592	276	108	202	753	545	640	459	408	598	509	422	304	236	568	301	368	486	554	638	579	454	588	462
MEAN	407	442	391	335	336	379	358	315	350	347	363	393	438	386	339	417	424	404	409	423	373	365	390	370	381
50 MEAN	244	239	224	291	226	253	197	141	176	264	200	227	296	205	251	264	270	196	197	251	219	175	173	199	224
50 MEAN	443	500	434	397	459	465	464	426	582	717	707	619	702	761	712	782	677	842	676	656	640	613	459	485	592

DATE		AE INDEX ( HOURLY VALUES )													MAY					MEAN					
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		18	19	20	21	22
1	389	331	308	467	225	99	228	356	511	507	439	632	436	108	92	70	71	83	110	663	970	279	132	73	316
2	79	205	275	322	146	98	136	112	101	167	160	184	242	213	348	491	726	700	645	812	332	113	103	125	285
3	132	109	103	47	47	49	42	73	59	53	68	71	72	45	27	32	44	39	71	148	76	96	153	195	77
4	315	125	98	314	529	587	510	527	518	562	669	586	544	1065	1023	584	416	353	223	204	291	225	225	301	450
5	164	195	143	81	100	259	84	114	65	88	513	313	249	855	423	749	473	218	77	159	543	389	178	101	272
6	125	276	156	101	558	592	576	361	303	351	141	152	176	325	174	264	259	265	240	197	145	144	172	182	260
7	79	75	98	150	145	188	295	86	65	63	81	235	292	106	83	90	92	236	359	273	157	73	84	149	
8	519	230	54	62	175	151	232	98	46	85	265	310	109	55	118	253	139	183	451	282	132	194	206	435	195
9	230	110	86	56	198	248	160	48	44	41	42	38	37	53	47	38	50	67	65	78	75	70	55	66	83
0	62	98	90	92	65	42	45	40	56	139	182	146	257	280	134	138	177	124	93	93	75	91	65	58	110
11	155	78	84	138	187	128	99	327	918	1092	612	442	560	301	284	789	812	1186	869	749	544	243	466	834	496
12	747	876	820	705	669	401	342	542	545	421	157	538	484	325	191	577	983	726	435	511	928	860	503	727	584
13	456	223	243	297	376	538	752	970	457	628	597	443	695	474	683	731	648	295	479	686	582	538	638	642	545
14	520	631	883	566	450	273	469	356	209	484	315	196	238	200	412	377	446	702	808	544	276	200	199	216	415
15	621	712	579	479	426	440	217	216	93	212	227	701	656	398	269	377	196	373	370	236	265	567	689	323	402
16	290	261	92	86	77	201	312	246	102	207	388	284	94	213	363	356	447	448	341	206	345	369	161	227	255
17	478	414	393	167	116	99	105	123	86	144	311	547	584	1125	1282	1032	1107	974	992	947	1004	1142	763	247	591
18	118	81	60	152	125	193	300	398	223	103	97	80	147	308	216	105	94	220	155	237	178	118	66	68	160
19	57	75	124	76	125	340	330	323	352	318	134	70	63	40	42	57	67	49	73	72	57	92	59	53	127
20	74	58	70	104	69	76	94	66	55	50	49	57	81	160	106	66	84	77	80	208	353	821	724	331	163
21	120	94	70	65	113	106	86	93	195	322	280	179	246	380	599	747	401	297	432	234	138	81	79	80	227
22	91	132	158	203	542	576	917	708	549	325	456	783	817	583	696	785	991	861	735	861	929	870	767	912	635
23	664	572	661	442	496	444	555	652	907	398	200	539	357	224	257	896	1025	1049	819	844	644	663	540	588	602
24	450	542	591	716	324	259	254	320	202	285	346	240	217	506	290	231	680	1226	1175	1105	805	851	317	183	505
25	226	307	387	134	78	56	61	49	119	53	35	61	57	49	53	64	56	65	57	58	56	60	63	55	94
26	62	55	56	44	46	44	44	72	60	83	126	123	102	128	156	146	234	441	411	600	703	701	278	238	206
27	125	195	566	596	338	365	272	126	118	131	151	55	149	208	375	624	623	696	211	74	132	292	113	75	275
28	67	56	168	395	325	72	54	63	57	56	55	50	29	41	31	49	99	138	98	82	57	61	88	93	95
29	116	81	73	73	132	99	79	64	65	71	102	157	178	81	53	60	61	51	47	51	63	74	85	69	83
30	80	94	85	98	103	93	157	97	91	96	55	70	78	69	53	113	276	433	593	422	201	106	99	158	155
31	347	350	380	187	166	241	440	357	169	209	222	183	60	132	176	185	334	297	186	172	148	151	246	219	231
MEAN	256	246	256	239	237	237	266	257	236	249	241	273	267	291	292	357	390	415	377	380	361	339	268	259	291
5Q MEAN	106	84	108	138	169	160	133	107	114	125	103	92	112	99	61	68	90	85	75	75	65	77	70	67	99
5D MEAN	384	408	409	385	367	292	343	404	460	453	376	510	532	568	548	682	914	994	841	834	842	793	563	580	562

AE INDEX ( HOURLY VALUES )

JUNE 1983

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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2	87	85	78	76	65	92	86	151	336	275	181	153	289	309	173	125	118	85	108	117	108	90	92	87	140
3	226	166	252	153	117	69	106	59	126	375	289	107	61	55	69	107	227	171	129	132	227	195	141	93	152
4	137	143	126	94	51	77	118	345	229	90	42	32	43	52	49	64	54	79	68	67	60	89	102	92	96
5	92	51	77	66	89	79	109	72	101	230	383	155	55	125	162	395	122	149	193	122	61	56	76	145	132
6	98	110	165	99	70	68	117	268	260	104	72	82	92	106	276	287	448	426	281	215	148	301	162	221	186
7	170	227	215	89	154	443	267	122	69	118	160	144	57	50	63	95	169	246	348	180	178	117	99	93	161
8	105	105	90	78	87	114	271	237	132	110	203	501	552	570	369	416	586	528	322	272	306	389	476	571	308
9	438	223	183	102	142	171	317	360	622	592	374	189	139	86	107	90	158	345	540	803	795	748	678	570	365
D	624	626	527	511	572	603	300	345	490	465	619	391	595	1127	1077	1199	896	584	273	158	92	100	108	125	517
11	214	521	467	393	504	506	368	272	198	181	163	166	187	235	304	160	113	135	162	371	227	124	142	114	259
12	177	416	488	454	509	481	252	167	223	105	120	255	171	106	88	166	124	96	85	82	99	94	93	68	205
D	90	315	1082	1269	1460	809	396	622	786	828	836	629	592	628	685	918	736	670	636	676	396	303	611	390	682
14	454	394	253	352	435	274	112	87	102	352	218	87	84	134	245	299	217	106	126	222	208	248	272	353	235
15	465	687	637	604	523	417	543	384	244	331	591	546	546	422	284	302	210	482	706	315	215	284	136	114	416
16	125	272	150	102	181	89	89	91	168	247	257	297	205	195	297	578	506	218	90	45	63	110	153	267	200
17	207	235	166	133	142	219	484	209	65	62	102	139	260	370	417	490	170	267	680	779	441	266	502	435	302
D	269	241	397	627	618	715	451	682	1038	442	590	424	594	742	443	338	586	545	335	156	448	701	584	437	517
D	294	255	332	460	405	238	398	630	418	530	354	468	662	507	593	399	447	379	300	222	158	287	183	322	385
20	562	519	321	484	469	254	260	402	531	552	675	398	215	485	722	380	154	142	91	64	191	171	315	324	362
21	563	499	417	279	364	653	488	449	215	263	217	201	142	197	197	402	319	381	675	400	182	196	293	472	353
22	221	146	92	53	160	398	266	95	156	423	592	533	605	668	775	596	876	869	901	796	576	389	347	383	455
23	445	197	135	221	356	594	633	646	802	679	633	686	511	526	590	665	857	733	738	538	458	391	509	625	549
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25	66	69	68	62	56	51	46	51	63	74	76	86	100	93	47	64	108	92	214	338	259	213	152	173	109
26	159	118	66	51	166	342	227	163	131	179	181	175	182	261	369	396	354	321	115	93	110	166	192	304	201
27	120	135	94	80	70	182	404	281	143	162	170	103	63	63	70	82	158	365	527	391	253	197	422	315	202
28	322	110	75	57	66	71	72	73	105	96	247	233	207	265	292	360	316	272	466	451	325	229	192	308	217
29	288	228	264	222	352	263	346	499	389	305	402	191	255	178	120	272	184	156	130	93	67	75	115	167	232
30	178	78	88	71	87	80	96	168	319	211	85	113	217	332	123	55	90	173	121	131	148	248	240	144	150
MEAN	260	250	257	265	308	303	269	276	301	299	309	260	268	305	311	335	324	308	319	282	234	237	252	260	283
50 MEAN	193	124	160	138	123	84	96	120	147	223	216	113	99	88	86	160	132	122	133	143	133	120	104	111	132
5D MEAN	343	332	504	593	639	507	372	527	670	571	554	420	516	618	581	588	564	504	416	403	377	427	432	368	493



AO INDEX ( HOURLY VALUES ) JANUARY 1983

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2	11	10	3	2	-3	-4	-17	-37	-93	-80	-56	-101	-148	-224	-145	-6	13	8	8	-31	12	0	4	0	-36
3	1	1	11	4	-1	8	-4	-4	-25	-113	-31	-41	-163	-170	-62	-62	-58	-30	-5	15	-51	-42	24	17	-32
4	9	0	4	14	15	15	12	-14	-48	-62	-6	-22	-65	-137	-146	0	-25	-79	-6	11	9	11	11	9	-20
5	8	10	5	12	14	15	14	15	-41	3	-1	-1	-27	-40	-18	-17	-18	-48	-13	4	-6	-6	14	14	-4
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7	11	16	24	26	-1	46	51	29	25	22	22	9	-59	-43	8	23	14	-8	-103	-75	37	35	22	-30	4
8	10	32	39	38	35	34	-8	42	48	23	-29	-20	30	10	5	-68	-435	-173	19	53	-1	-70	5	41	-14
9	-71	-467	-340	-372	-494	-684	-321	-285	-122	-141	-121	-72	-15	-9	12	-12	-47	-24	-14	0	0	5	-4	3	-150
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11	-22	-26	-2	-57	-12	-114	-102	31	0	-137	-58	3	-3	-81	-31	-52	-127	-104	-54	-117	-119	-39	-5	-17	-52
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D	-31	-42	-106	-66	-30	-149	-34	-25	-38	-10	-206	-228	-92	-130	-55	-87	-83	-110	-191	-58	50	28	-6	-47	-73
16	-127	-67	-60	-9	-17	-30	-28	-16	-39	-106	-168	-173	-311	-237	-24	-105	-75	-86	-191	-290	-125	-34	-64	-195	-107
D	-133	-122	-46	-19	-51	-79	-106	-60	-49	0	-157	-281	-254	-82	-139	-65	-135	-91	-23	-18	-153	-100	0	15	-89
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19	-90	-55	-42	12	-10	-23	-67	-45	-32	-102	-38	-2	-16	-14	-33	-41	-62	-37	-58	-183	-174	-60	4	6	-48
20	5	5	0	24	7	-80	-15	22	11	1	-2	-14	-31	-34	-83	-103	-30	3	-25	-154	-75	1	-2	-2	-23
21	6	10	13	5	12	-6	-49	-39	15	-52	-17	-63	-130	-145	-1	19	6	-6	-18	-34	-44	-12	-1	1	-22
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24	18	50	41	30	7	-45	-24	21	23	18	-96	-163	-115	-59	-129	-131	-108	-41	-150	22	17	-6	-42	15	-35
25	10	17	-7	17	26	1	4	32	27	8	-175	-52	41	-93	-16	-32	-30	-38	-92	-1	11	10	12	13	-12
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29	9	5	5	-45	11	9	-12	-61	-134	7	-94	-208	-77	-23	-63	-99	-70	-99	-58	-13	12	4	-79	-133	-50
30	-25	-37	-55	-54	-57	-2	36	27	27	19	11	-9	-35	-112	-102	-75	-95	-151	-214	-101	-62	-68	13	27	-45
31	-15	-19	-12	-12	-16	-32	-17	-6	-10	-21	-39	-46	-51	-68	-49	-55	-67	-55	-53	-39	-22	-18	-16	-16	-31
50 MEAN	10	6	11	14	18	15	5	3	-4	-10	5	-15	-43	-84	-39	3	-8	-32	-17	-4	-5	1	9	8	-6
5D MEAN	-106	-148	-120	-97	-121	-195	-112	-86	-59	-58	-141	-154	-138	-96	-50	-108	-118	-72	-87	-101	-62	-31	-37	-58	-98

AO INDEX ( HOURLY VALUES )

FEBRUARY 1983

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0	-23	18	12	6	-5	-2	15	-16	31	35	17	9	-4	-1	8	0	5	4	-1	10	-17	29	-12	11	5
D	14	32	61	68	70	33	16	51	50	30	2	29	15	35	20	5	-117	-532	-636	-555	-335	-235	-93	-50	-83
D	-26	-103	-393	-662	-452	-611	-435	-250	-106	-597	-402	-163	-526	-539	-303	-159	-197	-385	-527	-472	-542	-419	-330	-285	-370
D	-178	-141	-238	-107	-63	-143	-125	-110	-3	-11	-100	-372	-208	-244	-224	-302	-238	-41	-10	-20	-7	1	-7	-7	-121
D	-66	-160	-100	-218	-225	-185	-135	-210	-178	-140	-370	-304	-157	-425	-293	-334	-67	20	16	4	-37	-63	-33	-192	-160
8	-216	-142	-128	-77	-76	-99	-77	-120	-94	-23	-29	-18	-5	-81	-18	14	3	2	-1	0	-7	-13	-98	-91	-58
9	-25	5	9	-25	-68	-20	19	33	4	-58	-144	-15	-14	-49	-178	-98	-4	-42	-4	-56	-159	-109	-25	-33	-44
10	-51	-37	-116	-233	-79	-13	44	-3	-110	-70	7	-101	-56	14	-9	-20	-49	-92	-151	-3	4	-8	0	-1	-47
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13	-99	-189	-55	-45	-90	-92	-94	-174	-75	-27	-43	-299	-198	-86	-137	-158	-11	-2	-17	-35	-38	-74	-73	-16	-88
14	-114	-151	-32	-96	-29	-5	-11	-222	-198	-48	-37	-62	-28	-39	-87	-122	-85	-85	-21	7	9	-158	-73	-22	-71
15	4	8	-32	-65	-144	-120	-65	29	-22	8	-43	-195	-140	-187	-94	-224	-47	-134	-127	-131	-30	-12	-51	-97	-79
16	-3	4	-90	-201	-1	-29	-20	-54	-117	-122	-80	-71	-188	-187	-112	-248	-236	-139	-6	-26	-17	-17	-144	-139	-93
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18	-5	-135	-158	-141	-117	-54	-42	-14	6	-19	-35	-82	-192	-33	-24	-61	-65	-94	-90	-38	-39	-1	8	9	-59
19	4	3	6	3	17	3	-47	-116	-51	-38	-3	-28	0	-84	-13	-20	-12	-75	-34	-6	-2	5	20	-85	-23
D	-153	-67	25	39	1	-73	-104	-141	34	21	41	-70	-247	-142	-85	-226	-18	-56	-130	-154	-278	-310	-43	-59	-91
21	-132	-152	-133	21	88	10	-16	-29	-73	12	-176	-131	-117	-102	-81	-290	-204	-71	-111	-218	-130	-70	-296	-288	-112
22	-39	-80	11	15	-12	-13	-5	-13	-16	-14	-104	-24	-46	-26	8	-34	-17	1	-14	-130	-89	16	-60	-96	-32
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28	2	0	-1	-4	-24	-4	3	-5	-1	-10	-7	-10	-13	0	3	0	-23	-80	-29	-32	-19	22	14	15	-8
MEAN	-49	-47	-52	-67	-46	-55	-40	-50	-34	-41	-68	-99	-101	-92	-74	-96	-67	-84	-87	-82	-68	-56	-52	-59	-65
50 MEAN	0	6	-2	-2	-6	-7	13	8	11	-5	-15	-3	-1	0	3	-16	-15	-33	-18	0	0	2	-14	-10	-4
50 MEAN	-81	-87	-129	-176	-133	-195	-156	-132	-40	-139	-165	-176	-224	-263	-177	-203	-127	-198	-257	-239	-239	-205	-101	-118	-165

AO INDEX ( HOURLY VALUES )

MARCH 1983

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D	-191	-74	-93	-66	-93	28	28	-90	-35	-44	-29	-298	-69	-7	-66	-129	-115	-70	-114	-94	0	3	107	-238	-81
D	-108	-97	-68	-25	24	-54	-83	12	4	4	-4	-6	-147	-261	-81	4	3	-91	-71	-121	-133	-272	-134	-13	-71
D	25	-11	-28	-85	-31	-65	-72	17	-63	-49	-221	-65	-27	-112	-208	-90	-19	-32	-49	-99	-81	-135	-193	-231	-80
D	-191	-156	4	18	12	0	-1	-3	0	6	3	3	0	-3	-10	-32	-39	-51	-66	-2	-2	-26	-35	-20	-24
D	-39	-56	-80	-28	-4	-28	-15	13	-6	-10	-20	-7	1	-3	-2	0	-6	-2	2	1	-3	-2	-5	-12	-13
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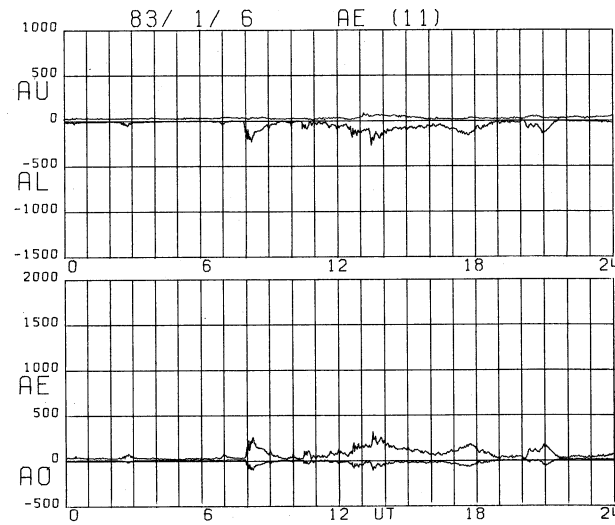
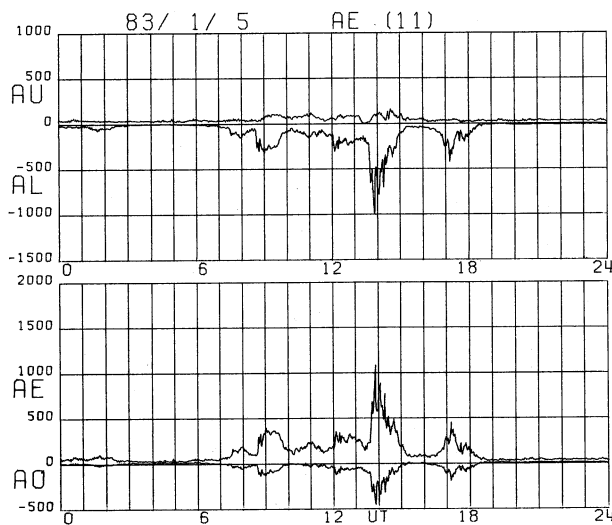
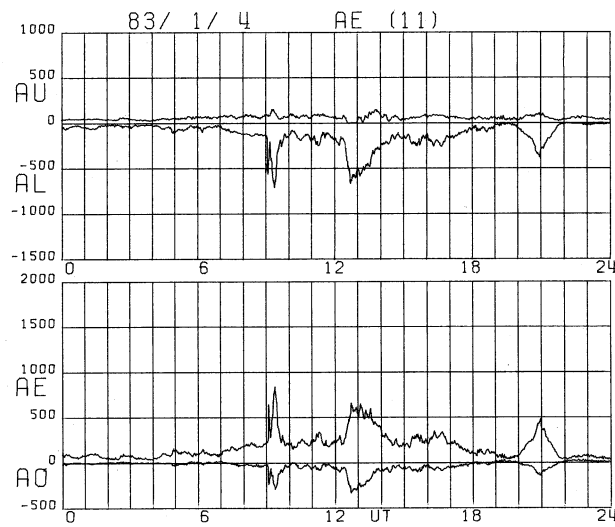
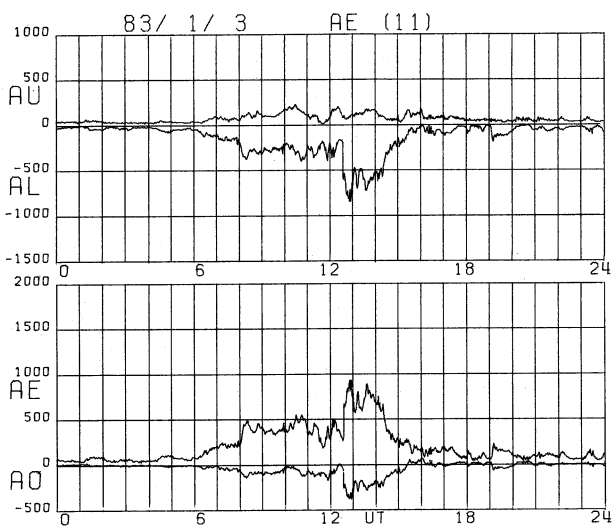
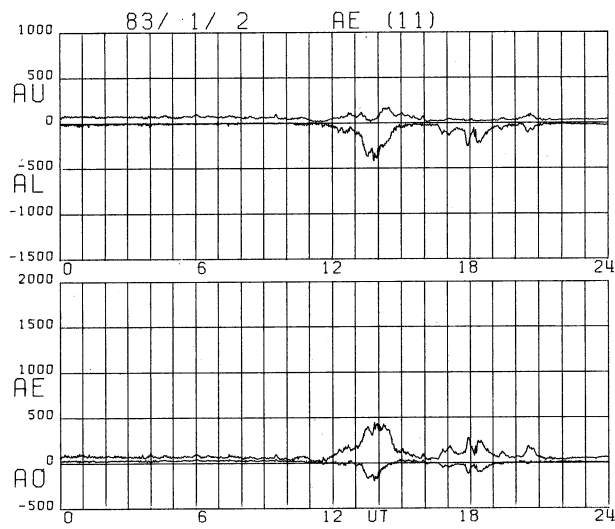
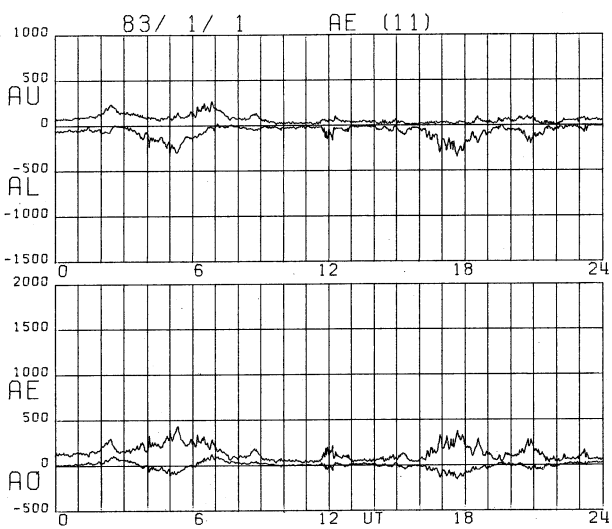
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	14	-11	5	-44	-57	-23	-17	0	-3	0	-42	12	8	0	20	-18	-73	-56	-25	-7	-41	-8	-30	-45	-6	-19			
	15	2	-117	-79	-78	-34	-23	-87	-38	5	-16	-8	4	-1	-55	-66	-33	0	10	-62	-9	5	2	-11	5	-28			
	16	0	-17	-24	-1	-33	-13	-7	3	27	23	-8	-17	8	7	-46	-102	-78	-37	5	-4	-13	-5	11	-9	-13			
	17	3	12	-8	18	21	41	-69	-19	13	4	24	13	-5	-31	-98	-78	3	10	-98	-97	-24	29	6	-4	-13			
D	18	8	38	-16	-99	-116	-46	0	-5	-97	-6	-41	14	-41	-114	-69	-29	-52	11	17	18	12	-86	-2	-3	-29			
D	19	13	-26	17	-46	-40	6	-102	-30	-66	-37	-8	-119	-95	-135	-63	-34	-18	0	-3	17	-43	-13	2	-34	-19			
	20	5	-48	-11	-32	-68	-69	-29	-19	-42	-79	-77	-12	2	-76	-162	-60	-28	-21	16	7	29	22	-8	-16	-32			
	21	-41	-46	-61	-5	-16	-106	-76	-34	-19	8	-2	-14	-1	10	-22	-111	-68	-23	-117	-32	22	7	-16	-84	-35			
	22	-9	11	-7	-18	4	-56	-53	8	26	-41	-109	-57	-57	-51	-115	-37	-53	-41	-132	-106	-46	7	27	-13	-38			
	23	-37	11	9	-1	-29	-168	-155	-59	-21	-41	-42	-89	-76	-108	-103	-92	-45	40	-15	-19	-44	21	-56	-71	-49			
Q	24	-29	1	-22	-3	10	-18	-9	12	34	53	29	36	11	-3	8	-6	-25	-28	-2	9	11	7	0	-5	2			
Q	25	-12	-17	-18	-13	-9	-8	-4	-2	-8	-9	-12	1	17	-14	-5	-12	-22	-23	-23	-39	-14	0	23	2	-9			
	26	-7	7	-7	-5	52	19	24	36	14	-16	27	21	28	-1	-47	-43	-18	-12	19	23	8	5	12	1	5			
	27	0	-12	0	-1	2	41	-22	-9	49	44	-6	3	6	0	-9	-16	-19	-60	-90	-5	1	22	20	-22	-3			
	28	-47	0	-2	-4	-8	-5	2	4	7	3	46	8	2	-8	-22	-50	-21	47	-23	-36	46	49	13	-30	-1			
	29	23	22	-7	-2	66	51	41	-44	17	51	-38	9	3	3	24	-15	-5	0	-11	0	5	6	9	13	9			
	30	-15	0	-1	4	6	-7	0	20	6	-2	9	15	-5	-31	-1	13	2	-32	1	14	19	-10	-31	2	0			
	MEAN	0	-2	-19	-26	-7	-5	-7	-1	0	2	-3	-8	-8	-25	-35	-35	-21	-5	-16	-11	4	0	-1	-4	-10			
50	MEAN	0	-1	-10	-6	-6	-6	1	-13	12	21	-3	6	9	0	1	-23	-21	-8	4	-5	-3	3	10	4	-1			
5D	MEAN	0	22	-39	-126	-25	49	34	15	-34	10	-8	-24	-44	-79	-54	-32	-5	31	-7	-36	3	-20	-13	0	-16			

FIGURE 4 (on even pages)

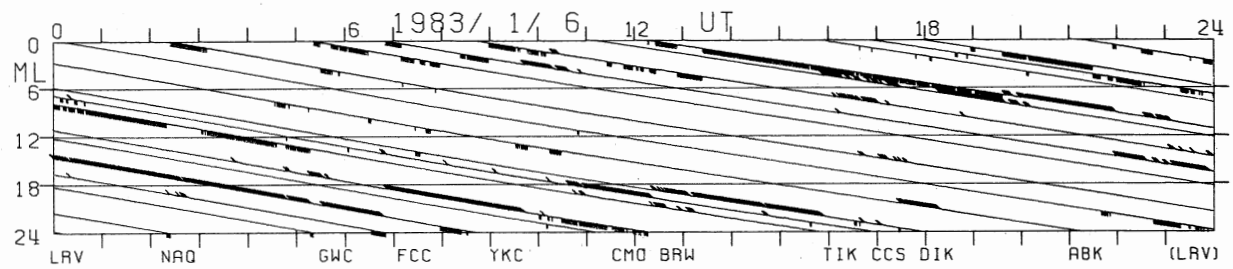
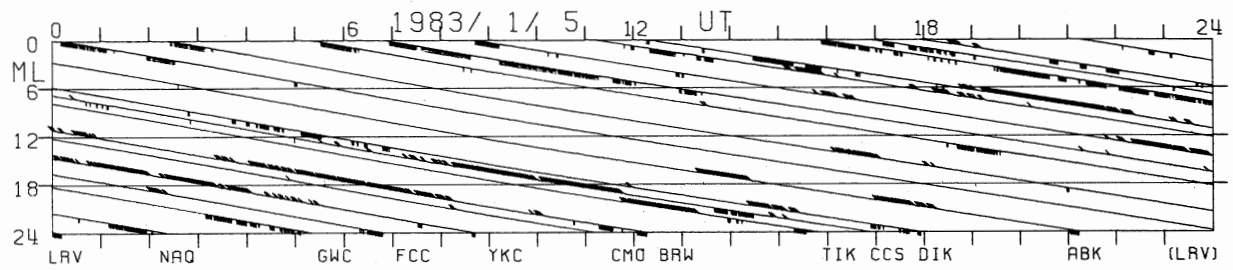
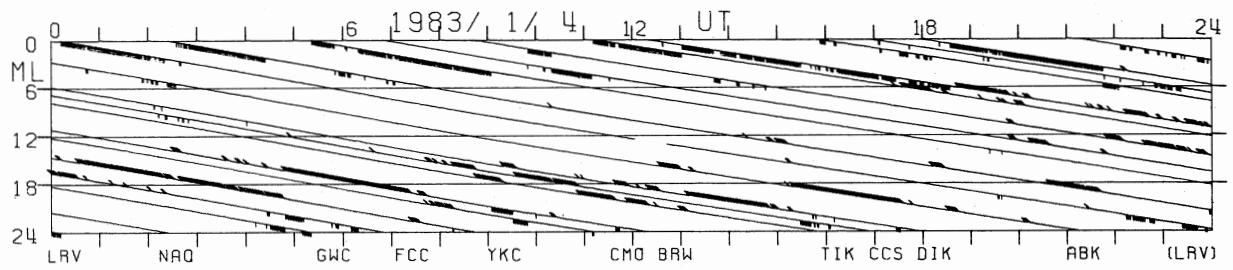
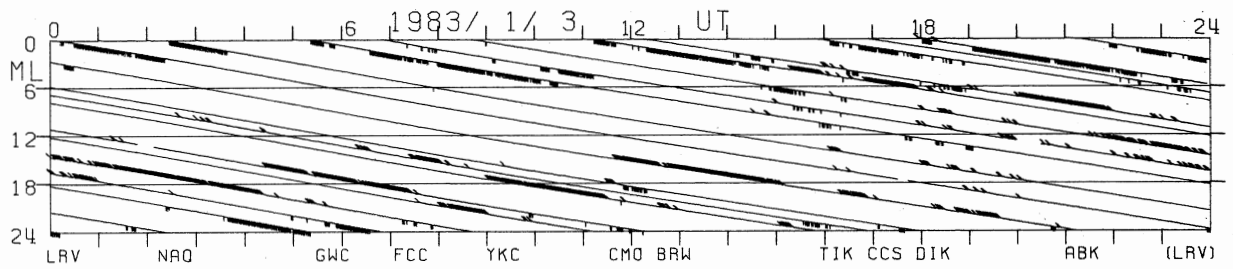
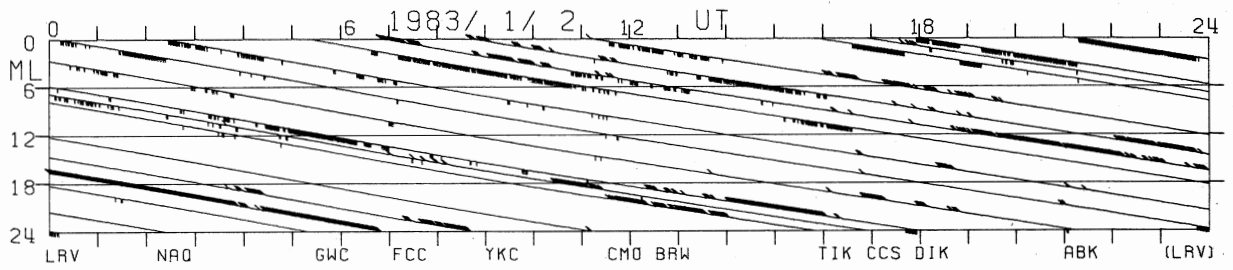
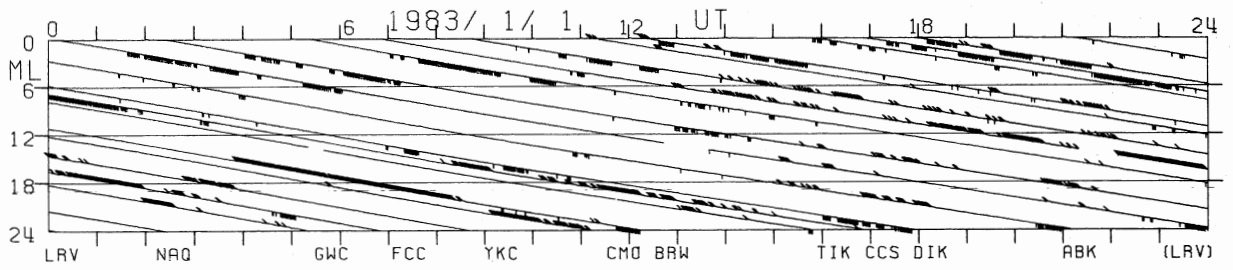
Daily graphs of 1.0-min AE indices (AU, AL, AE and AO) for January-June 1983. Graphs on very disturbed days (Feb. 4, 5, May 24 and June 13) are reproduced on pages 94 and 95.

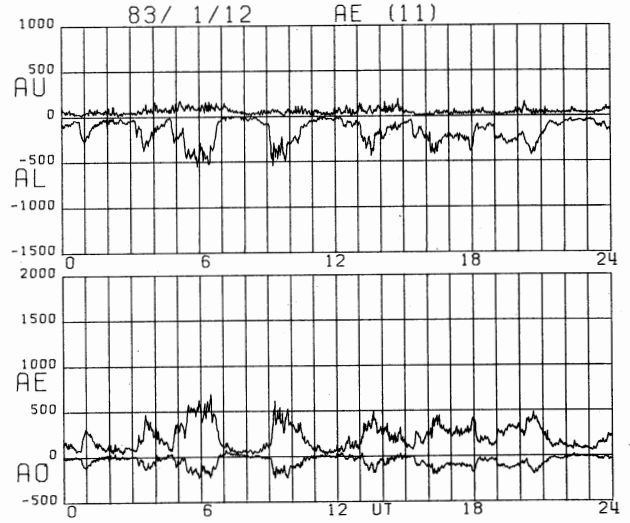
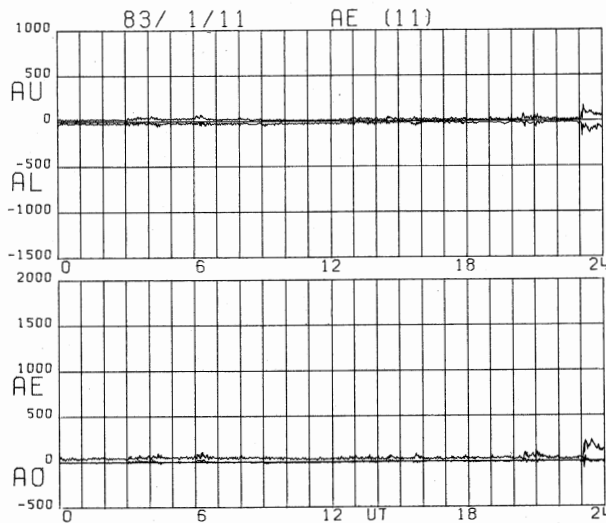
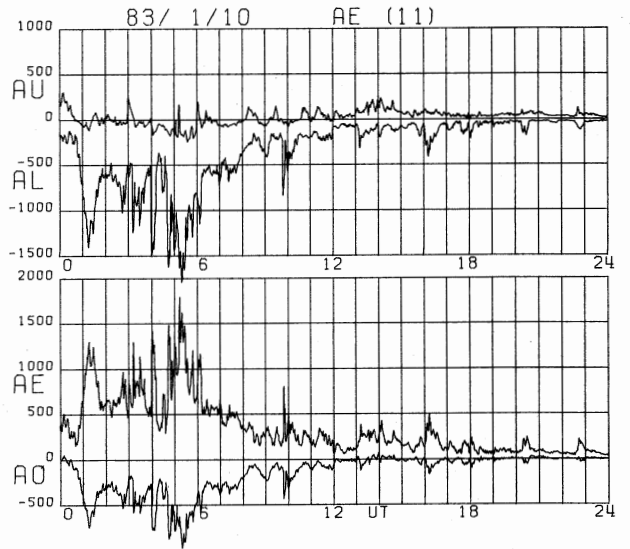
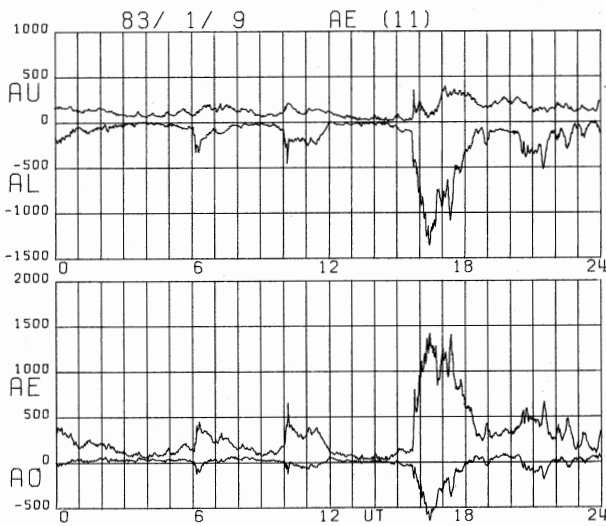
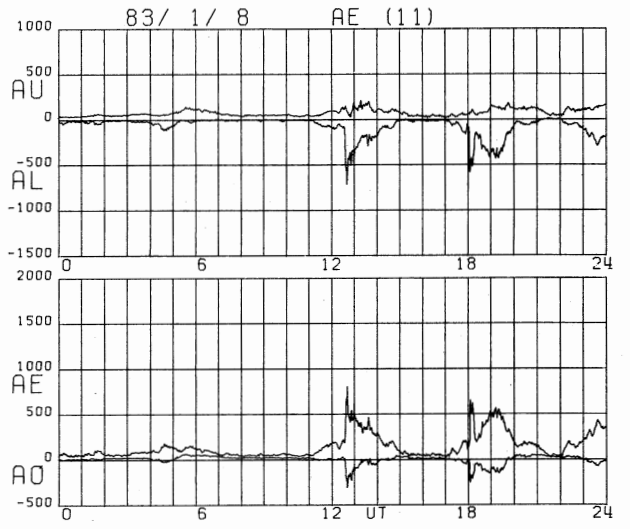
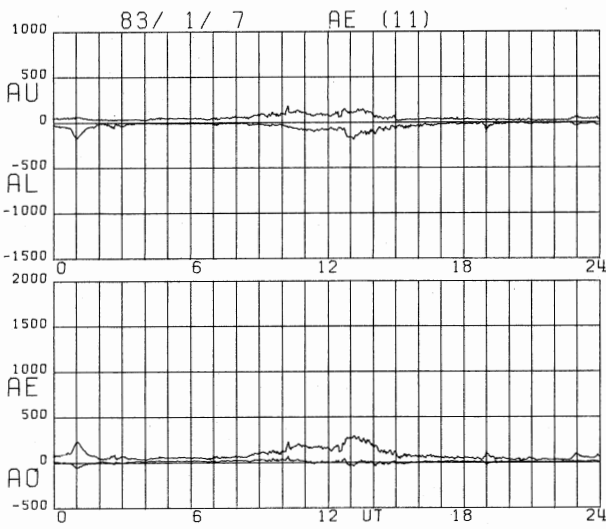
FIGURE 5 (on odd pages)

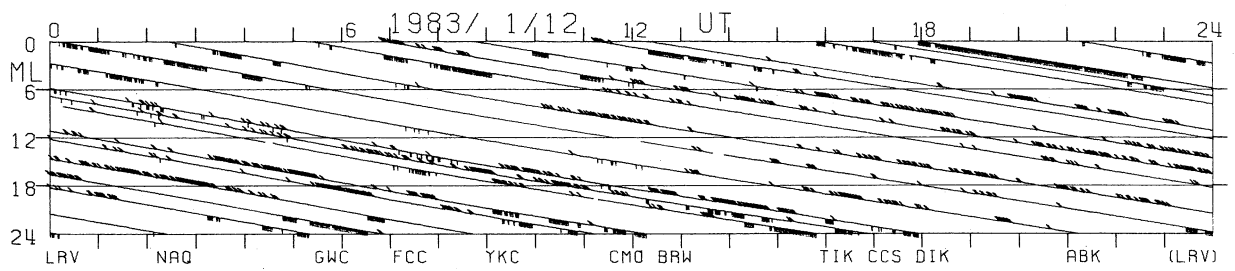
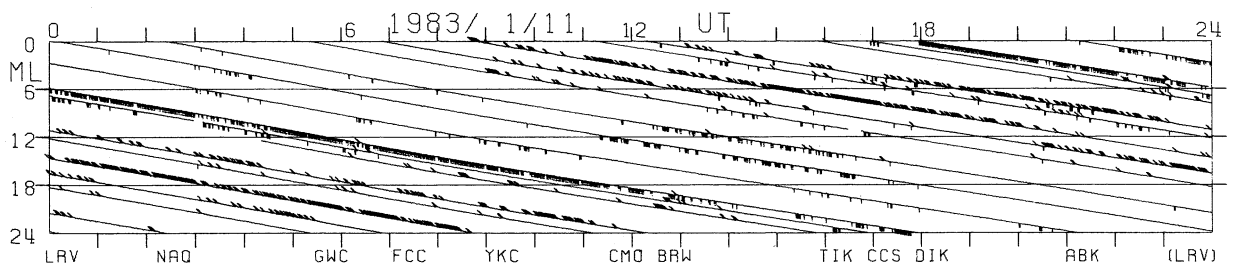
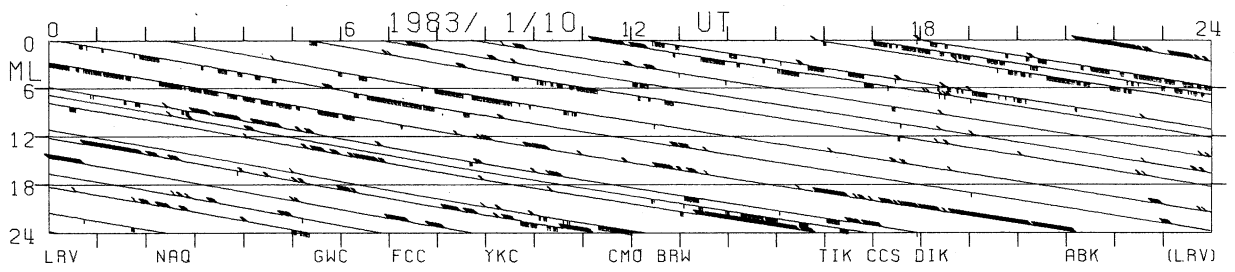
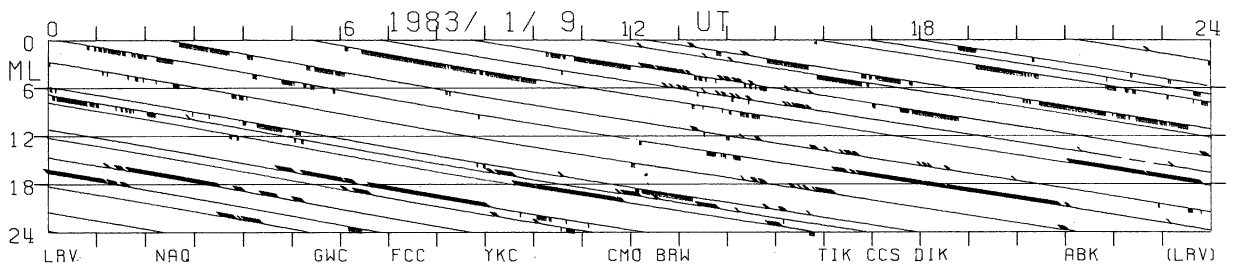
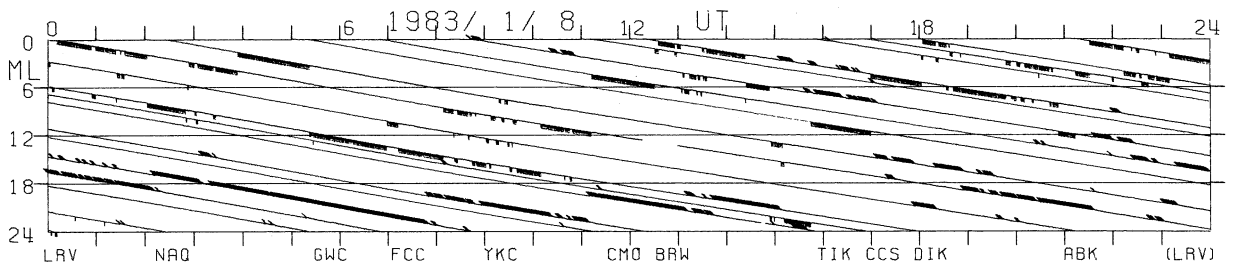
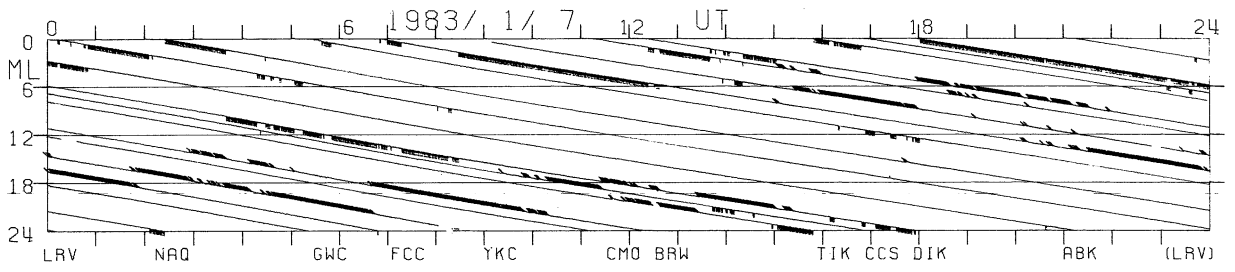
Plots of the contributing stations to the AU (upper plumes) and AL (lower plumes) indices, where you can see which station contributes to these indices at each UT minute.

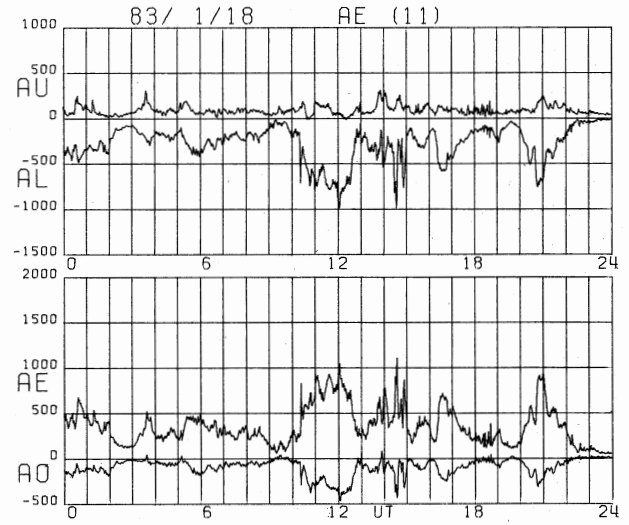
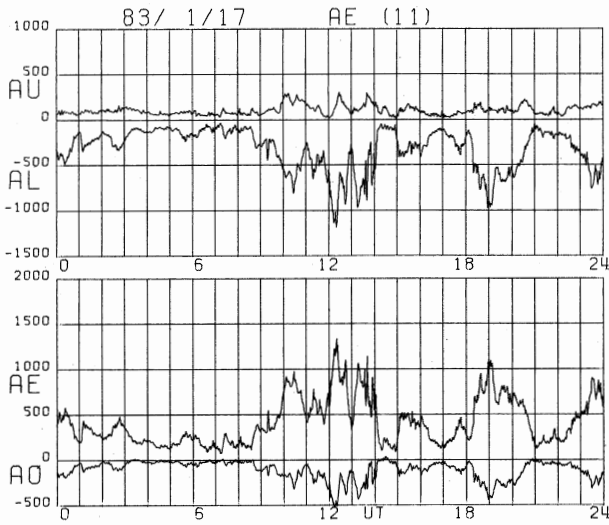
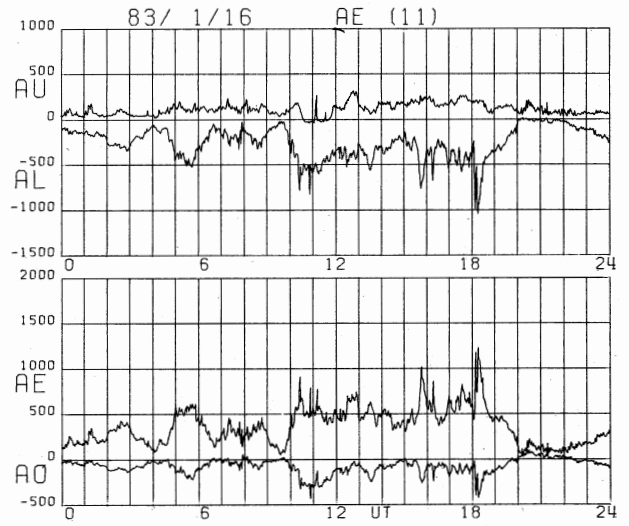
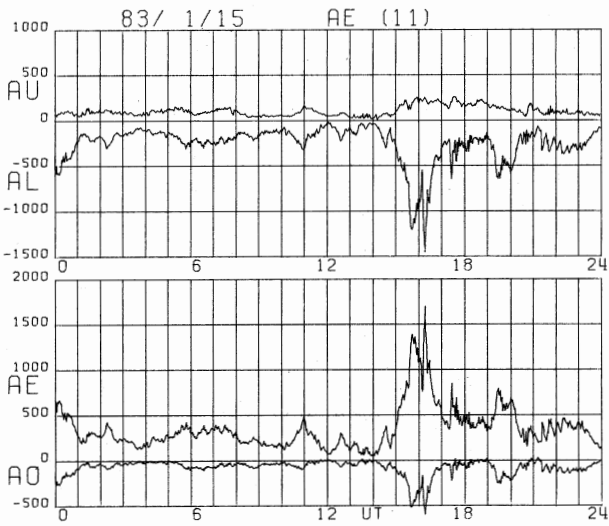
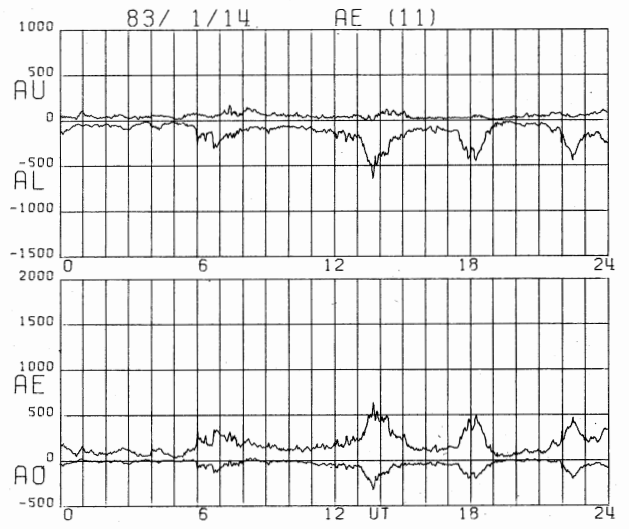
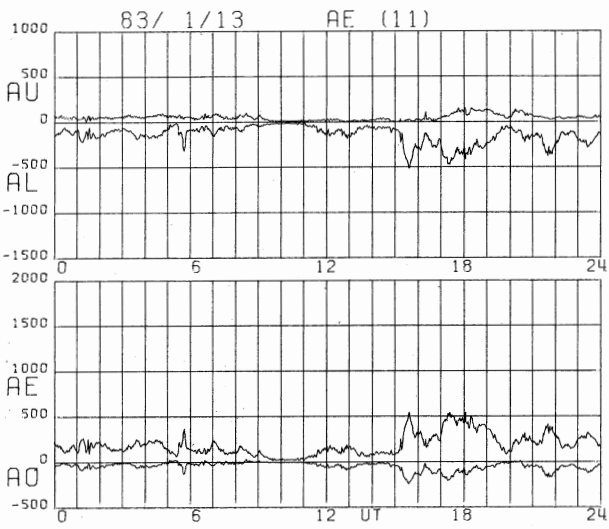


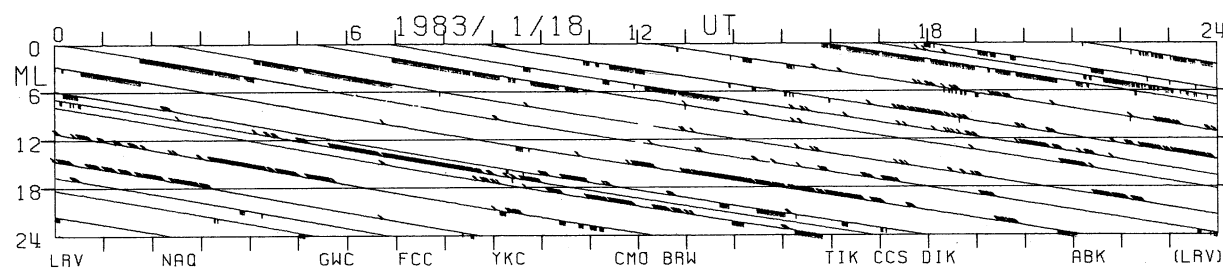
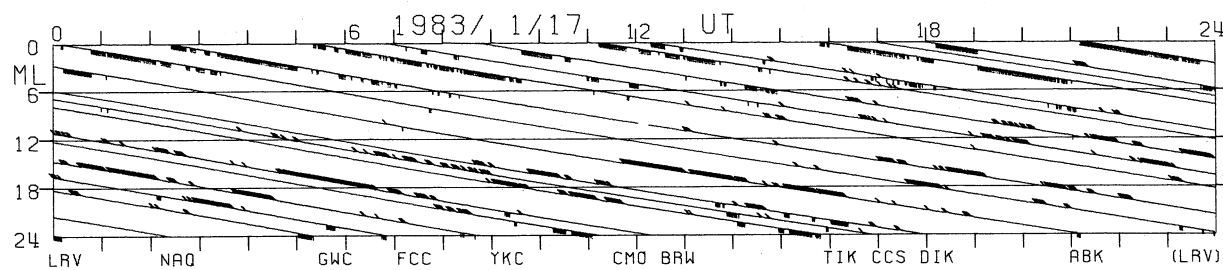
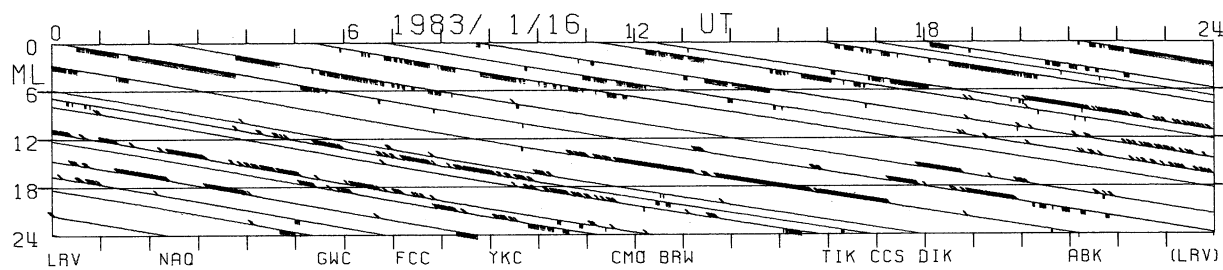
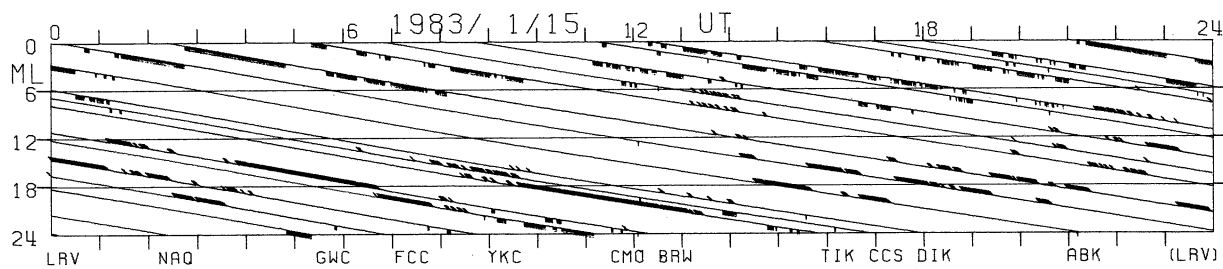
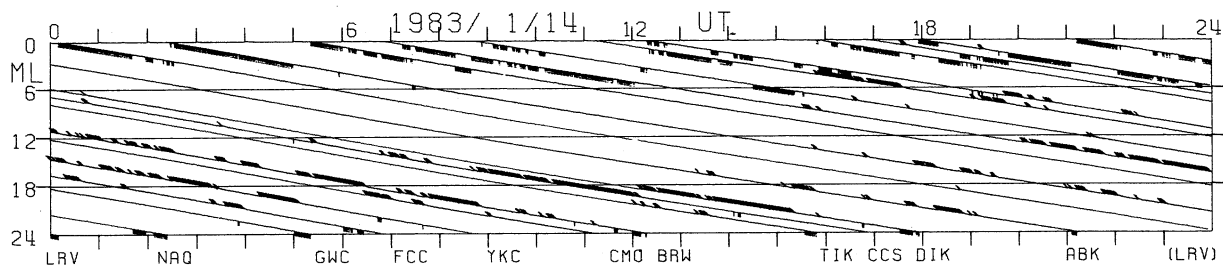
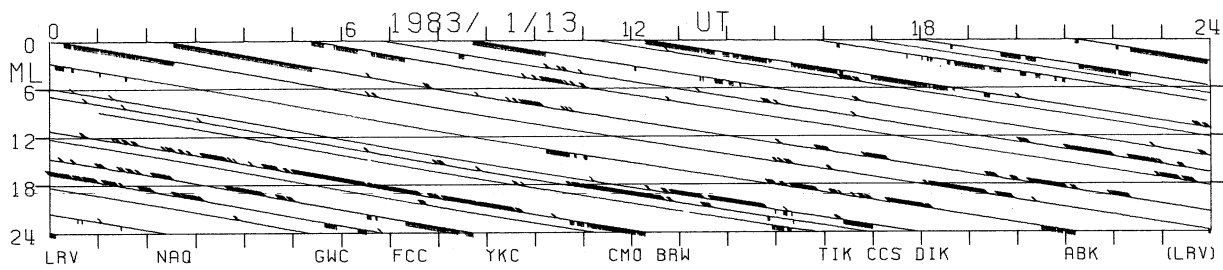


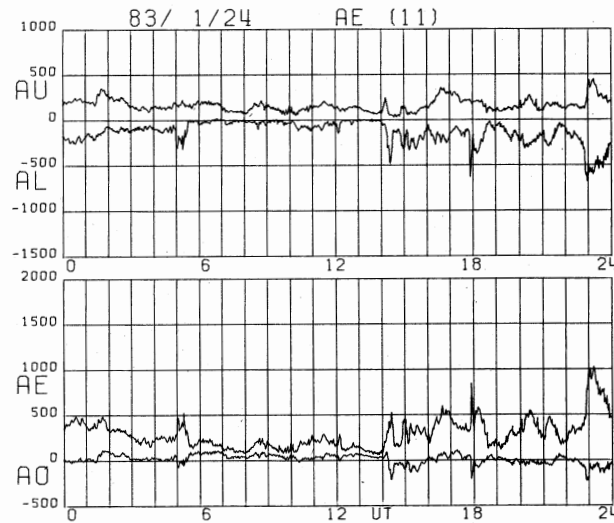
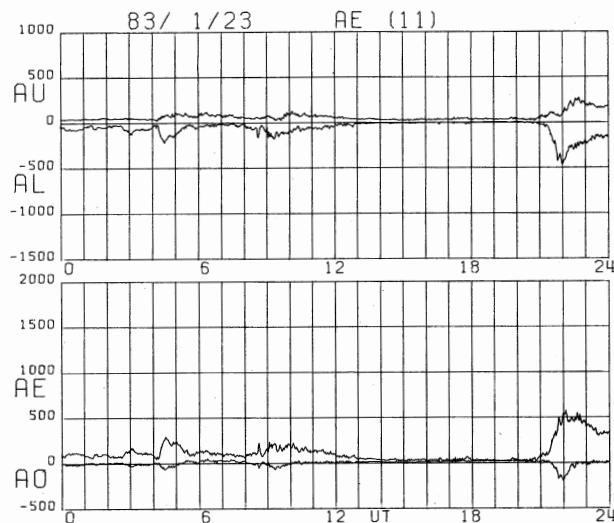
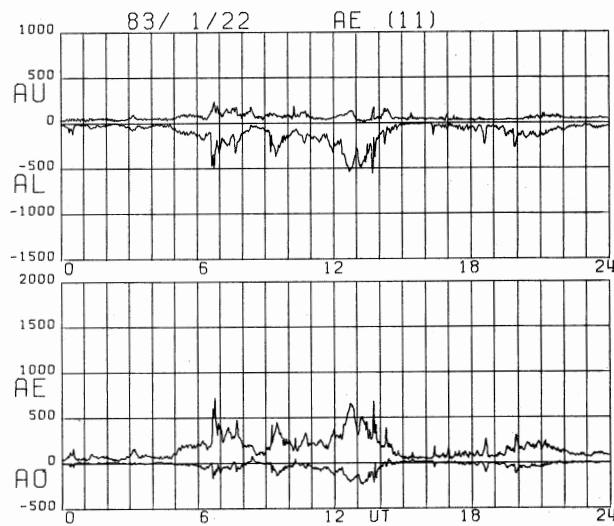
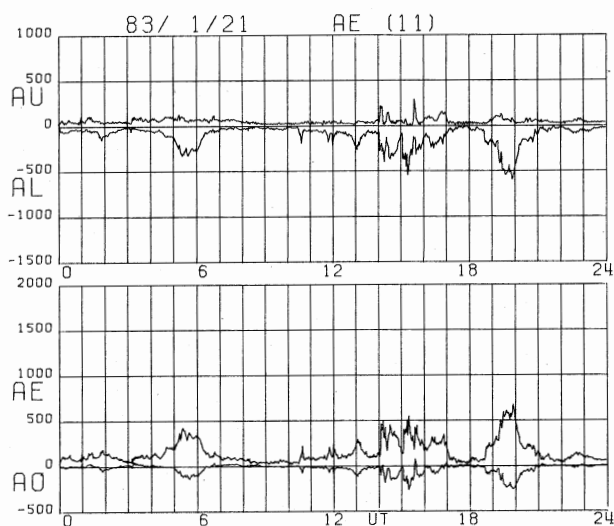
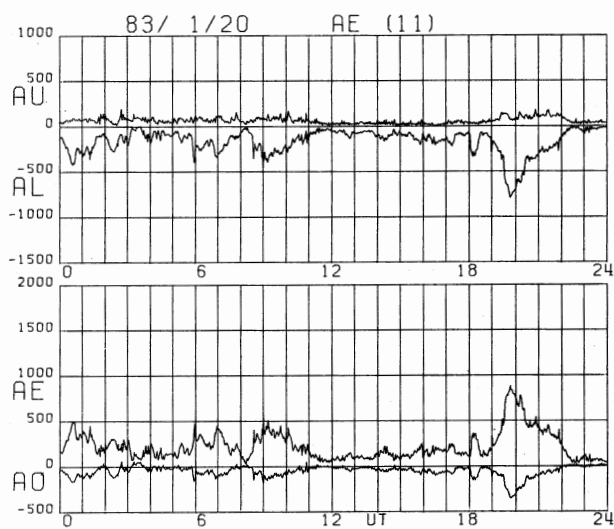
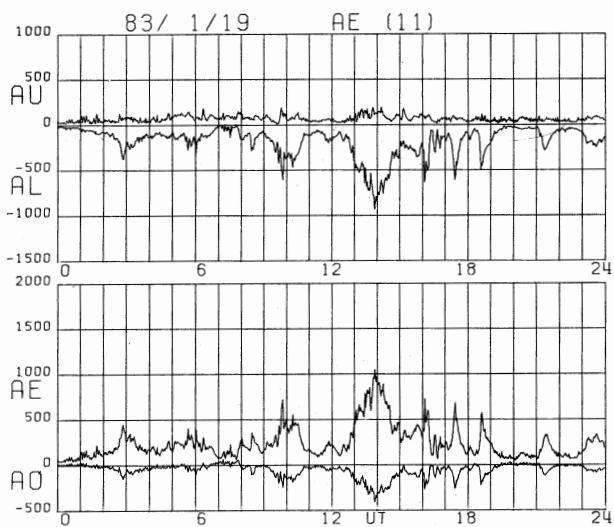


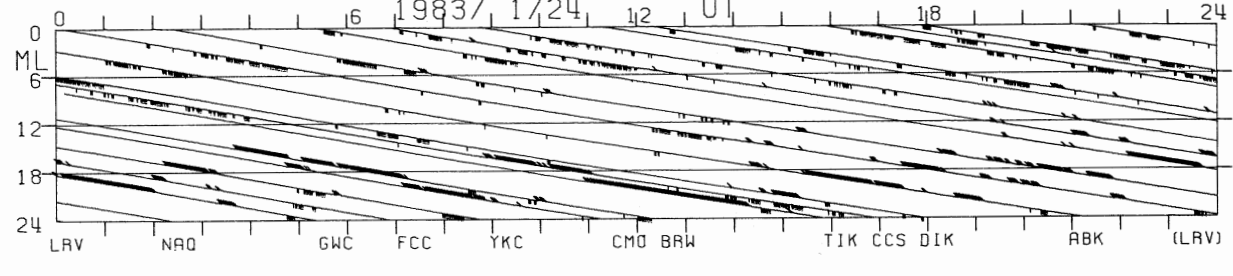
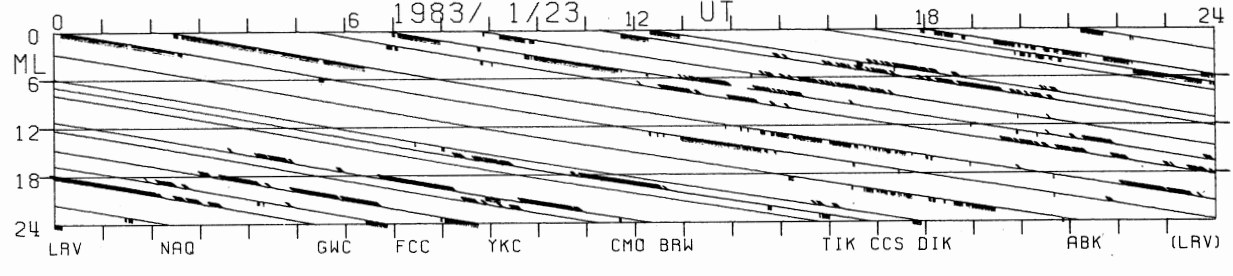
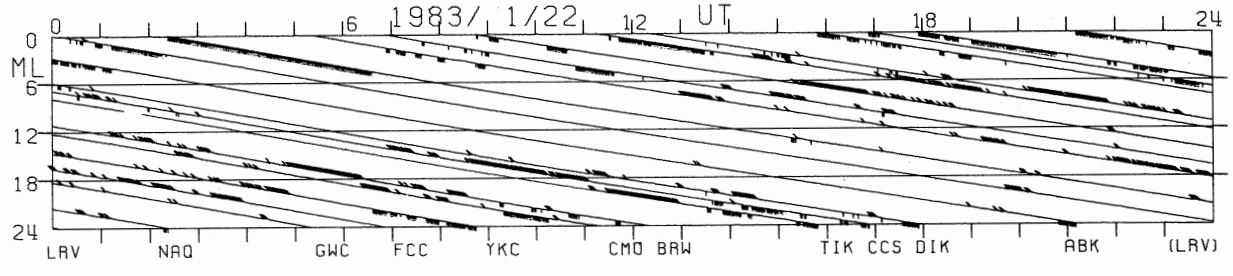
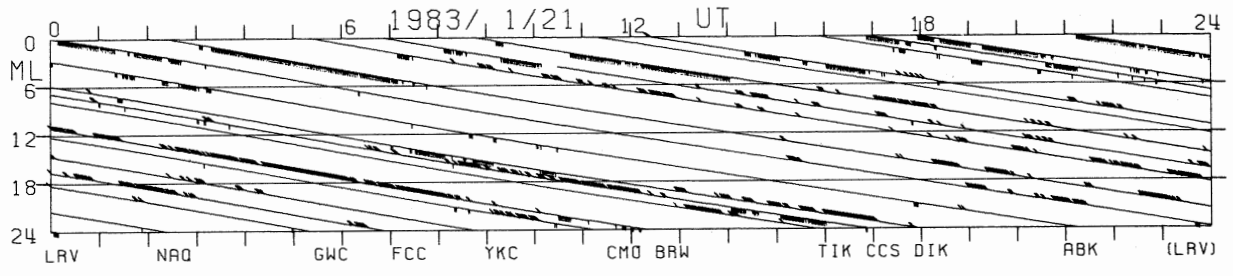
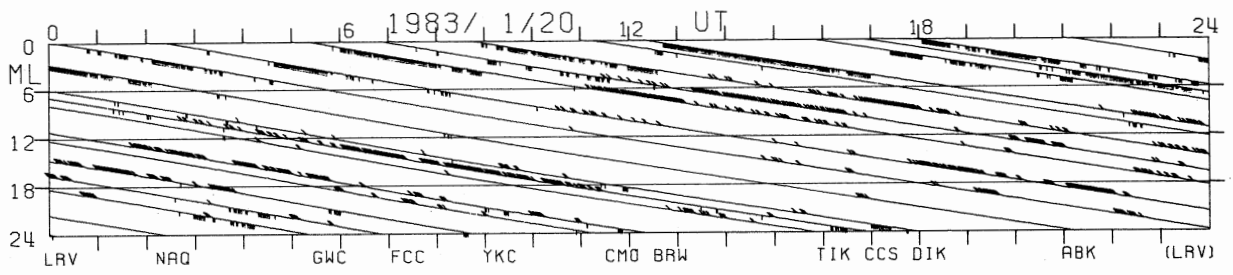
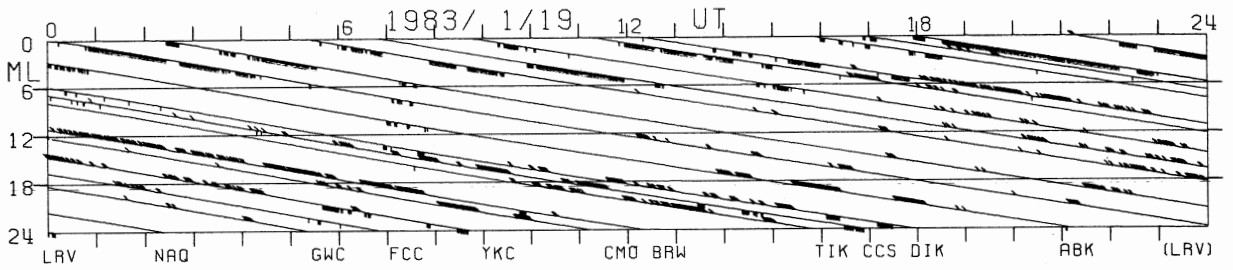


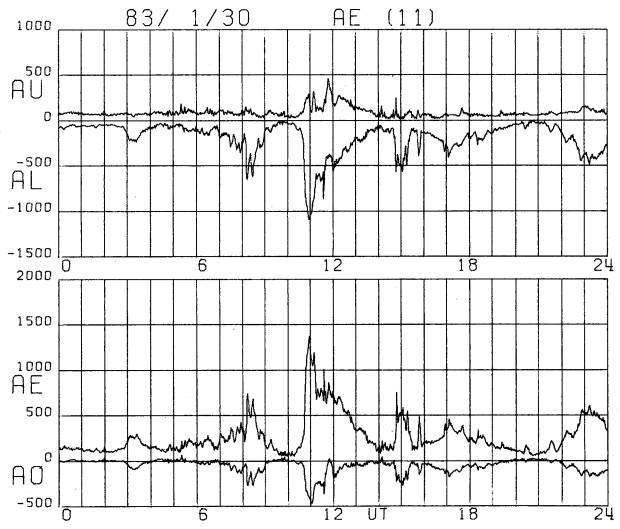
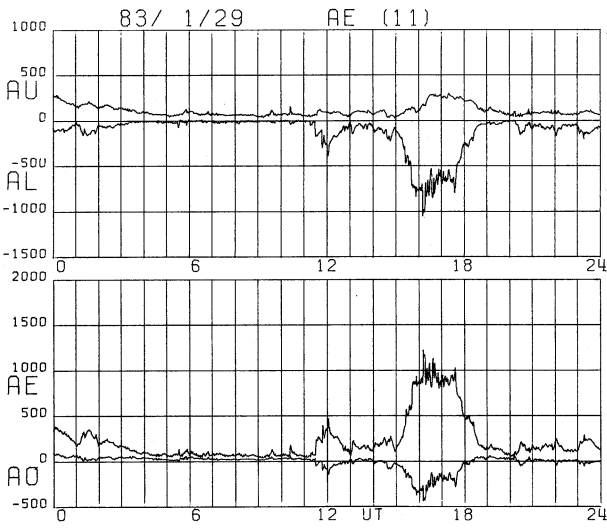
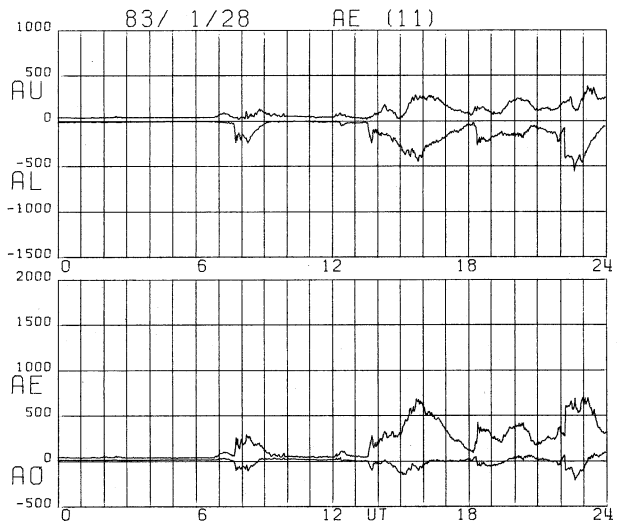
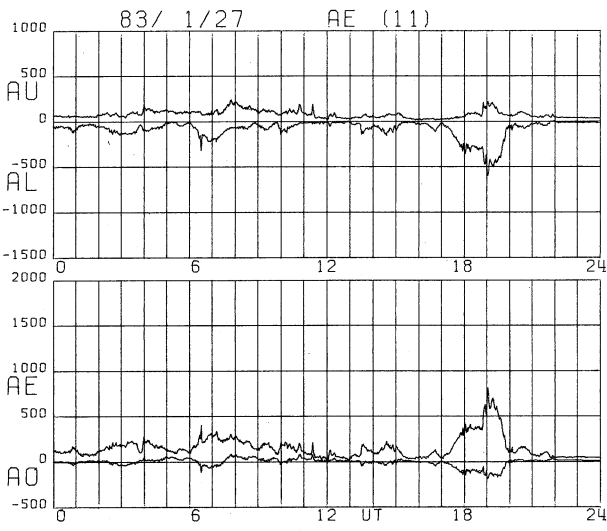
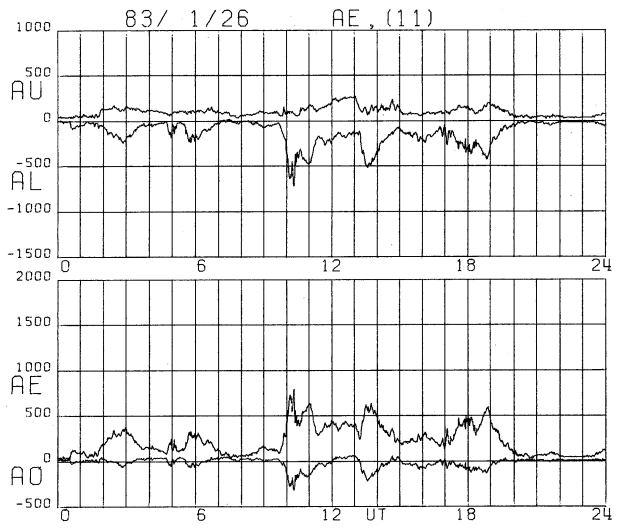
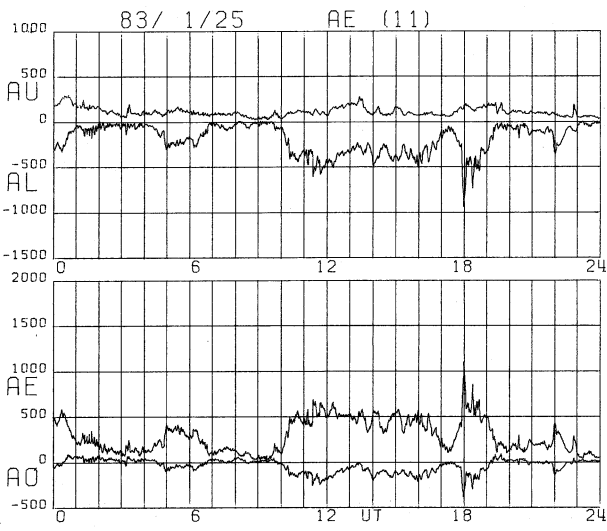




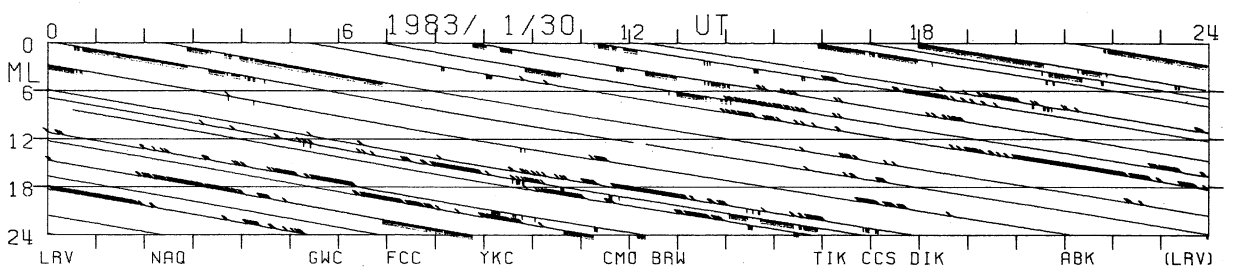
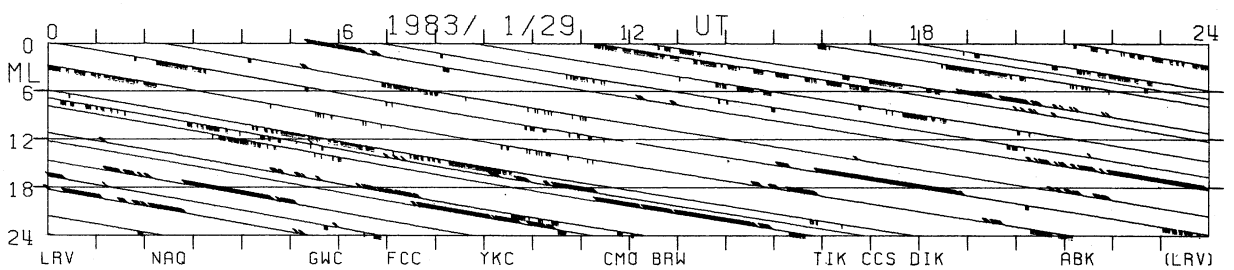
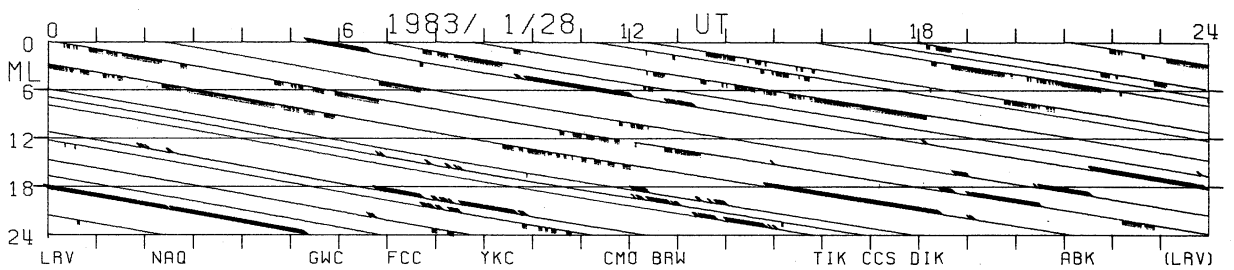
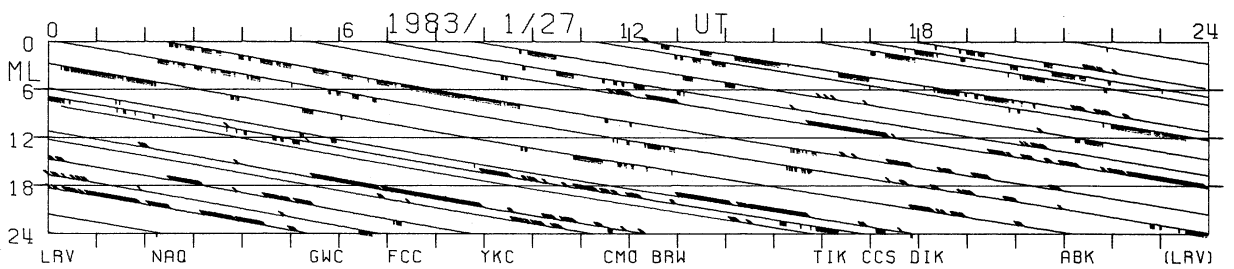
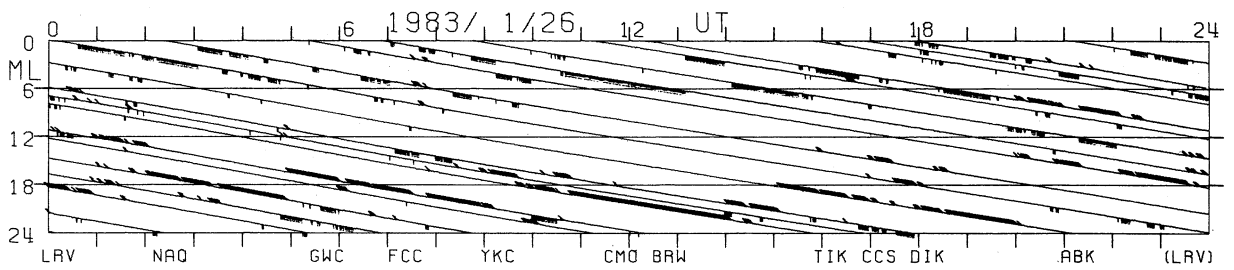
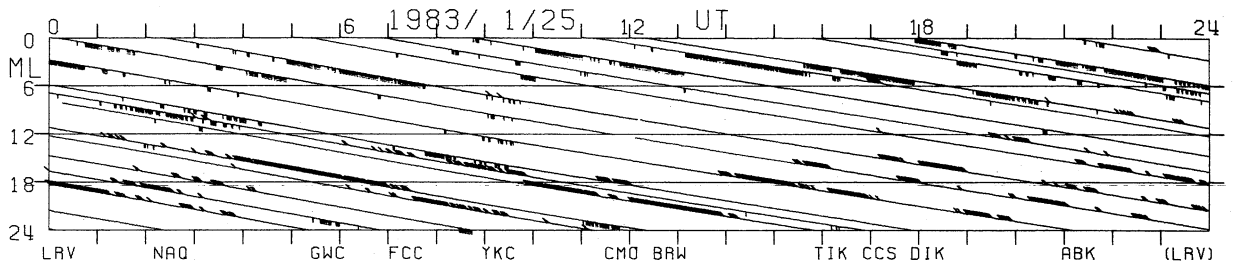


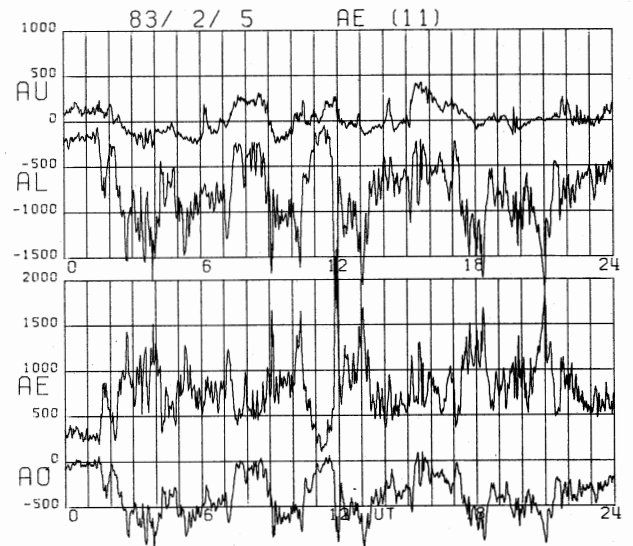
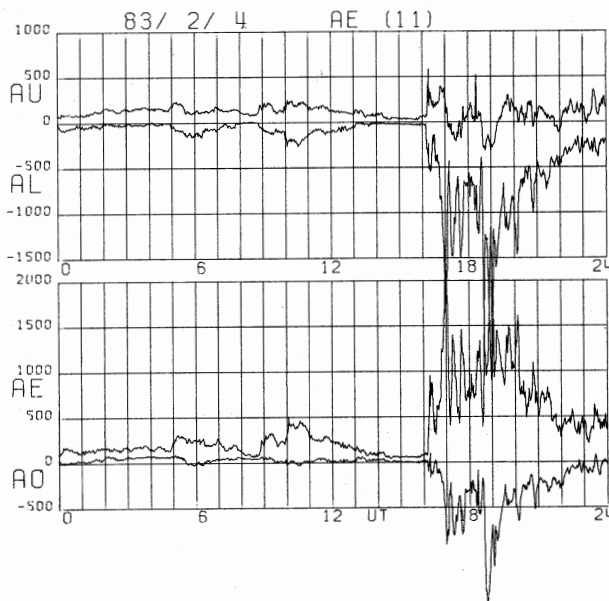
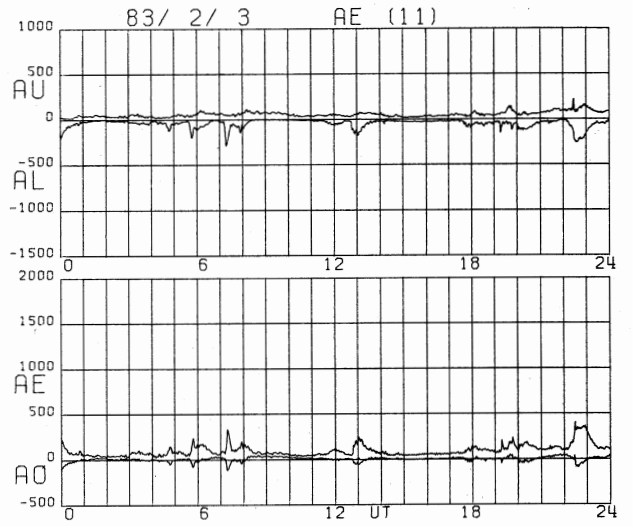
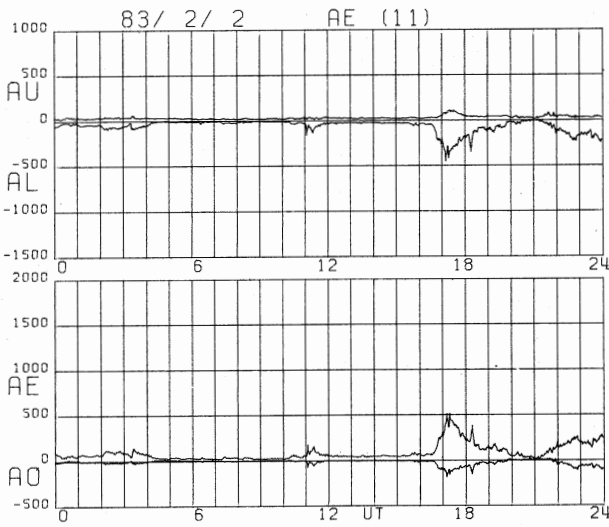
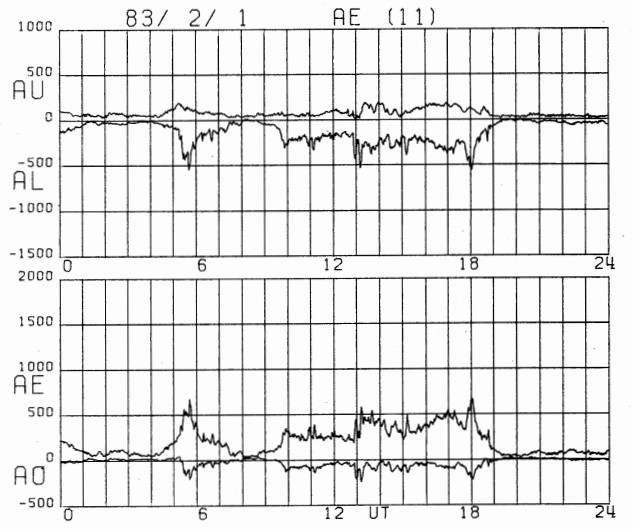
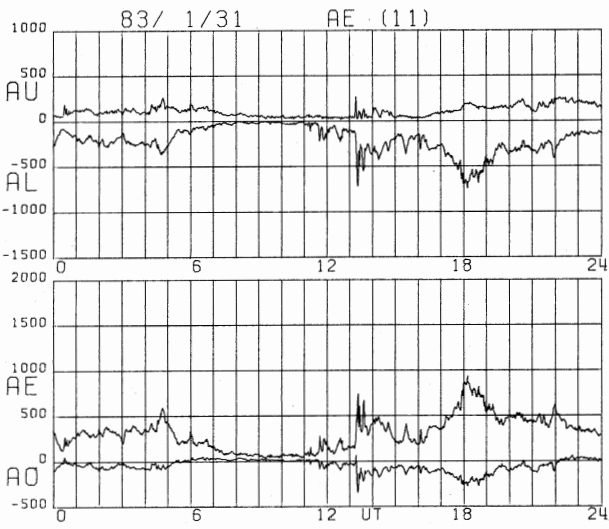


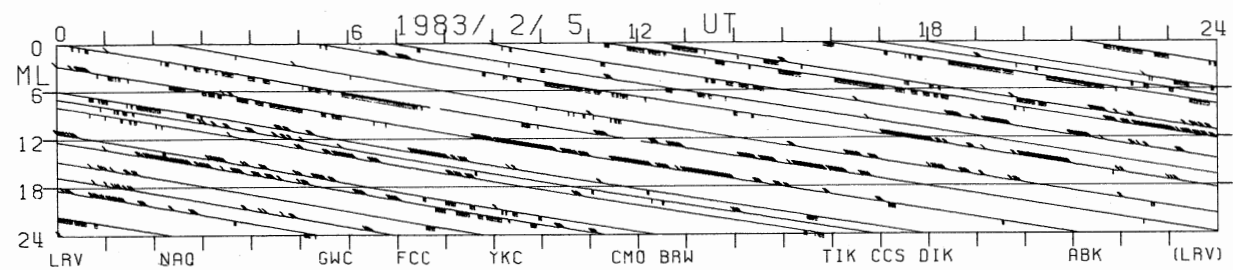
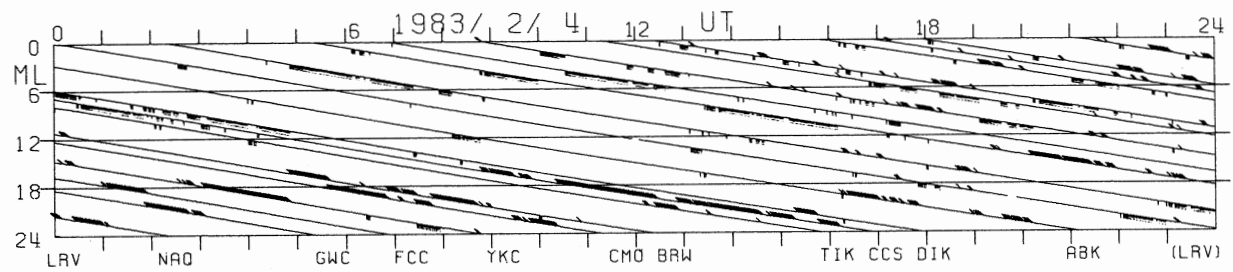
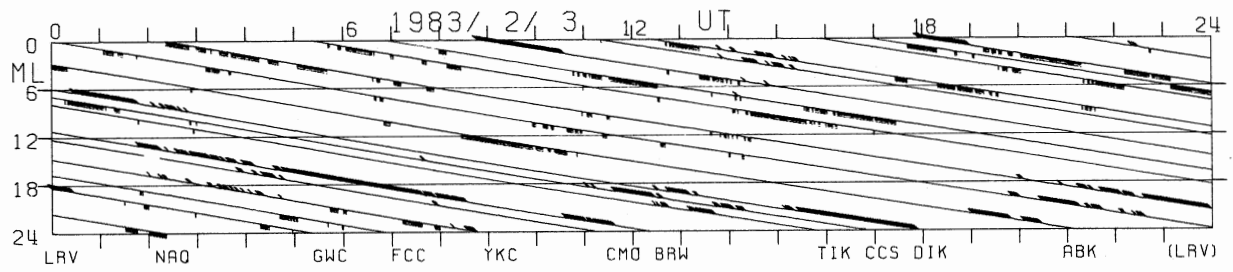
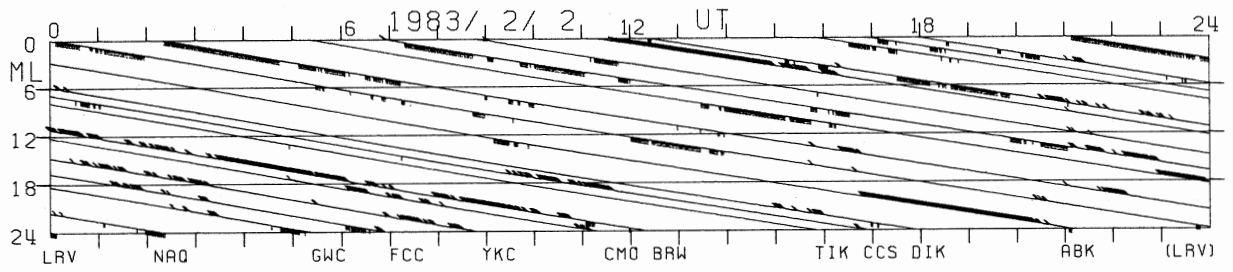
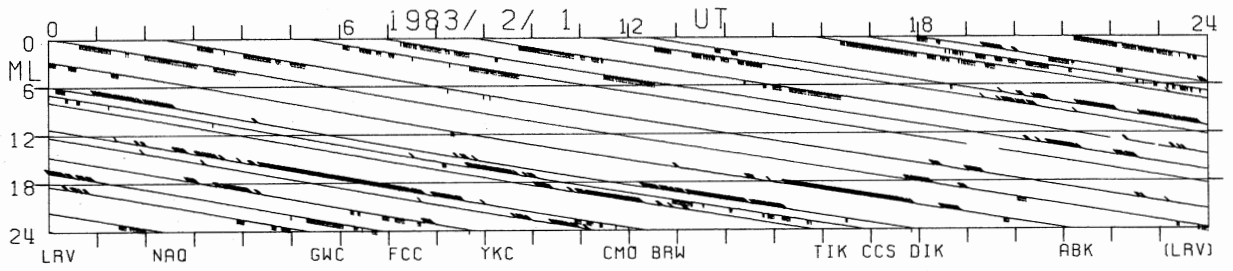
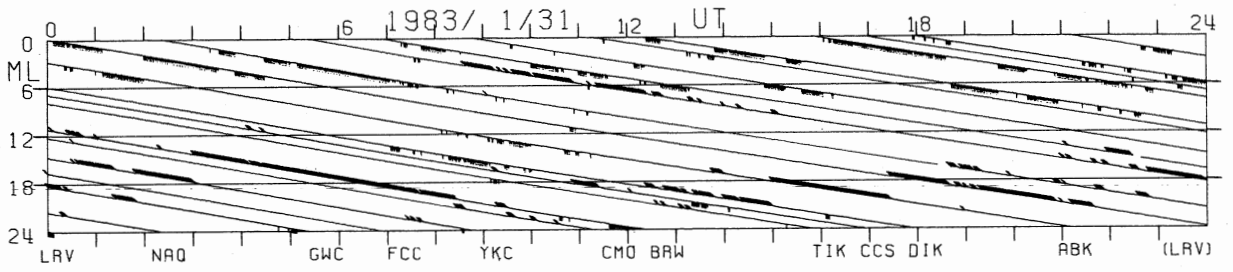


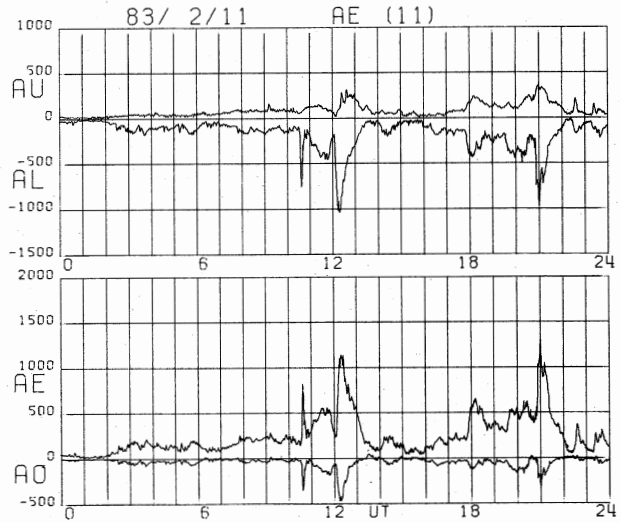
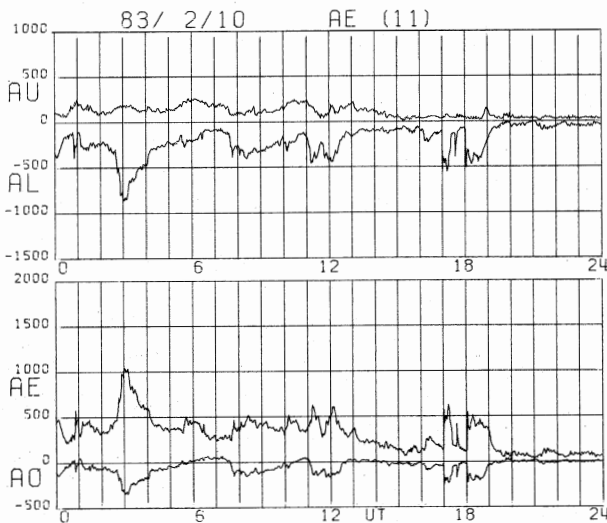
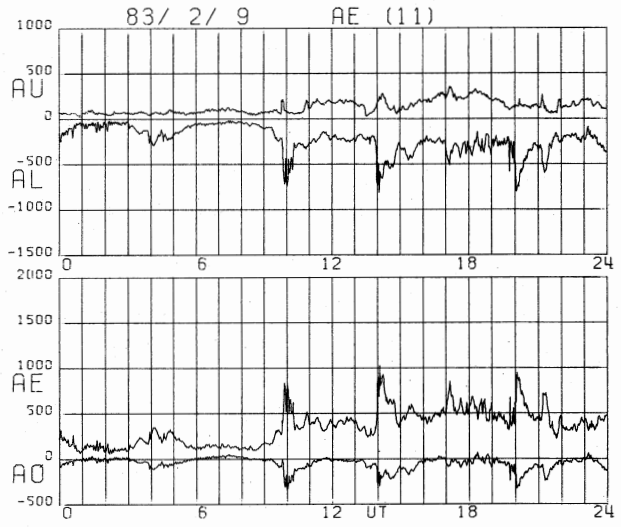
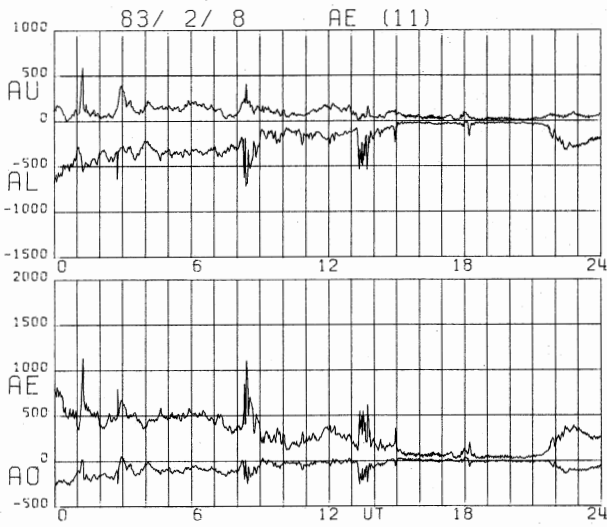
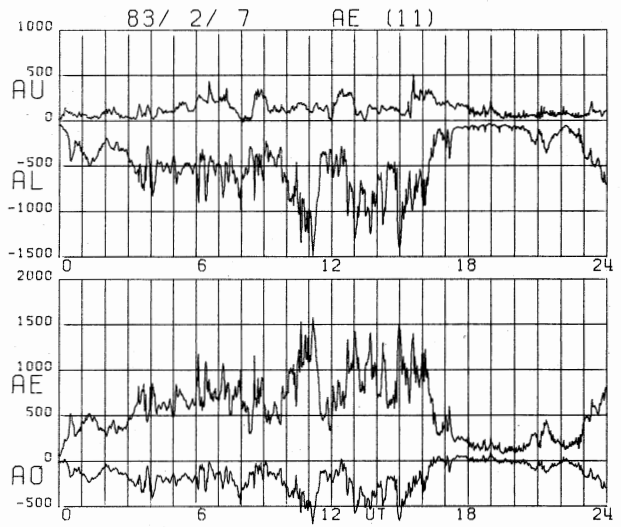
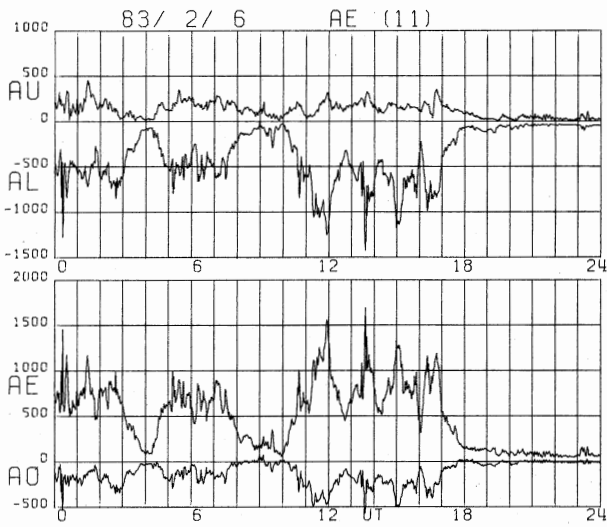


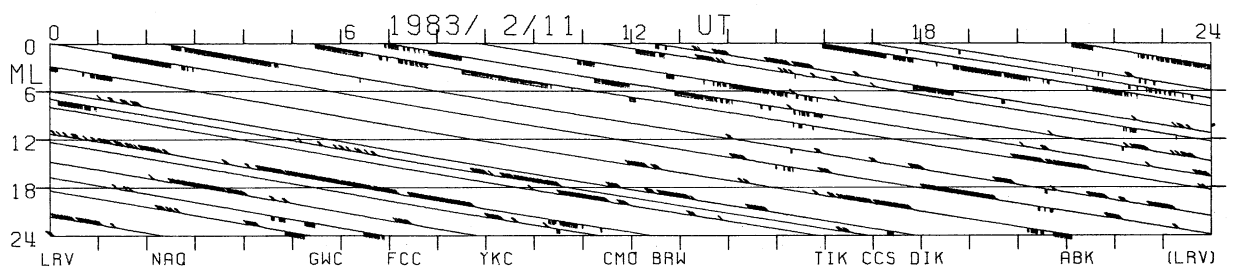
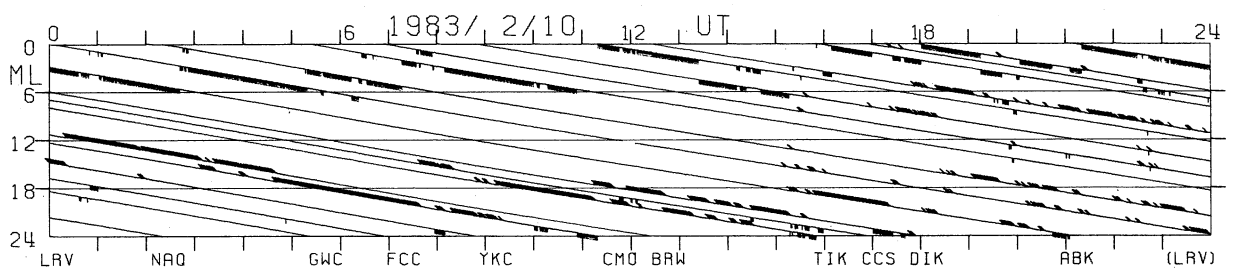
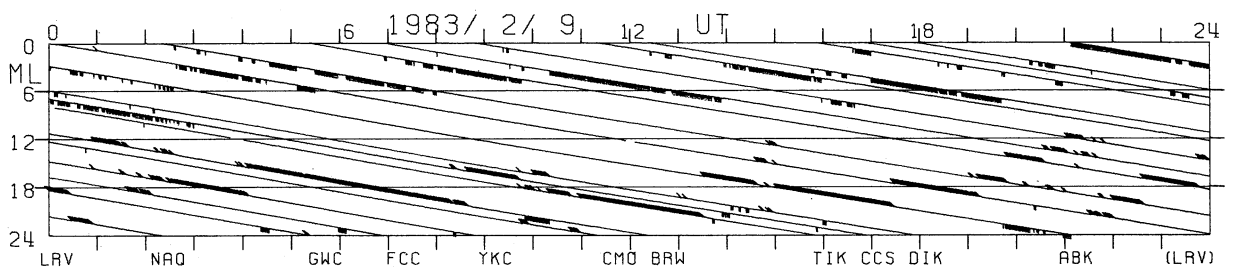
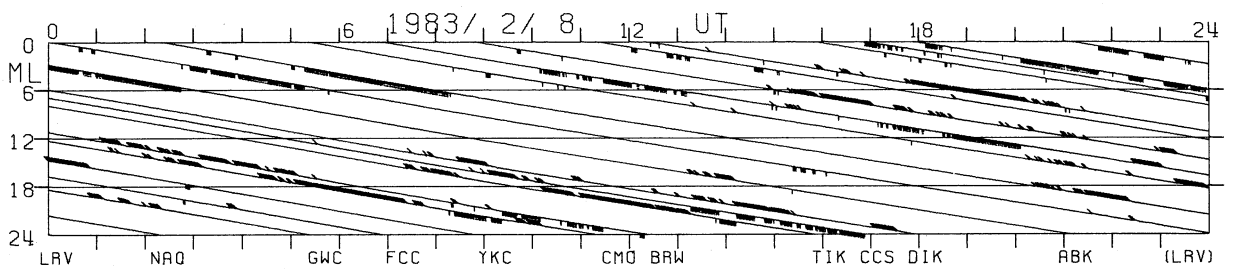
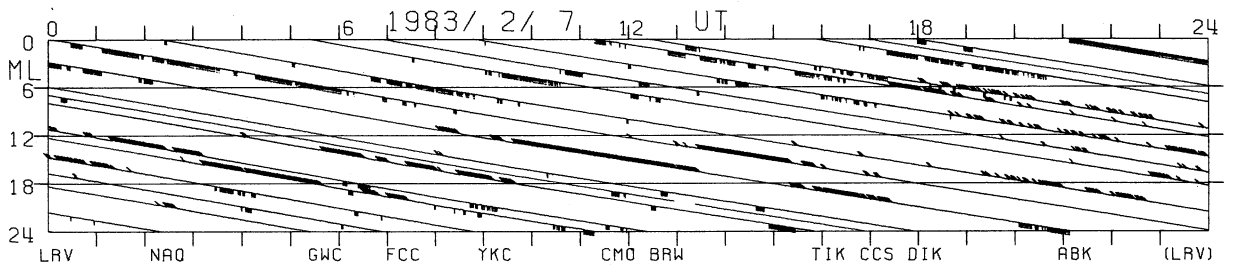
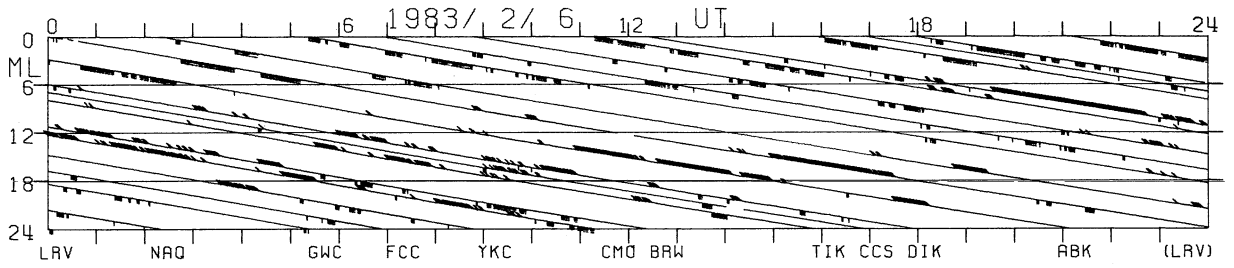


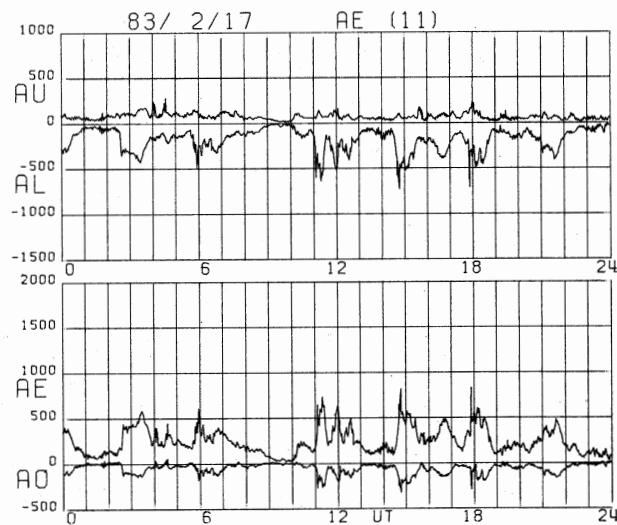
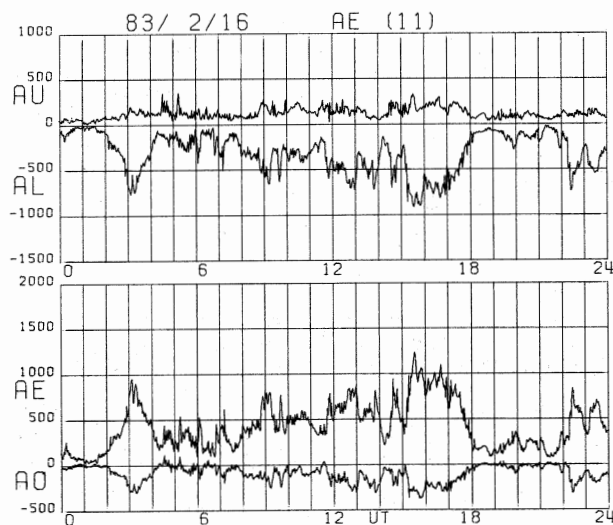
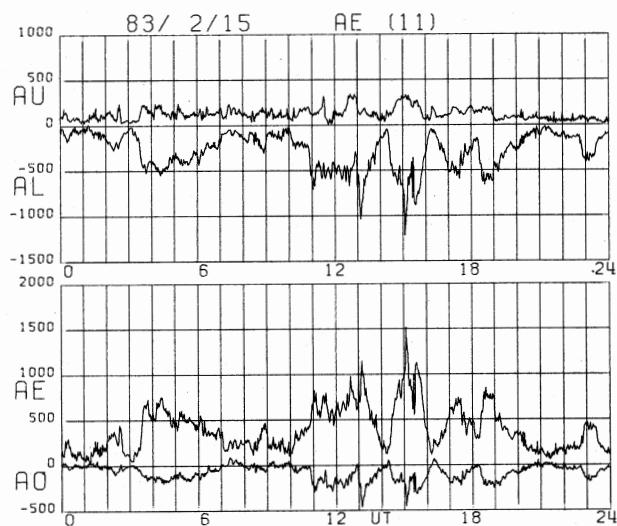
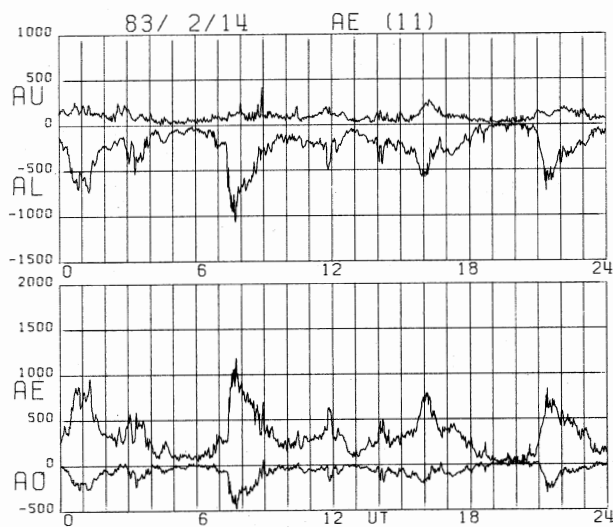
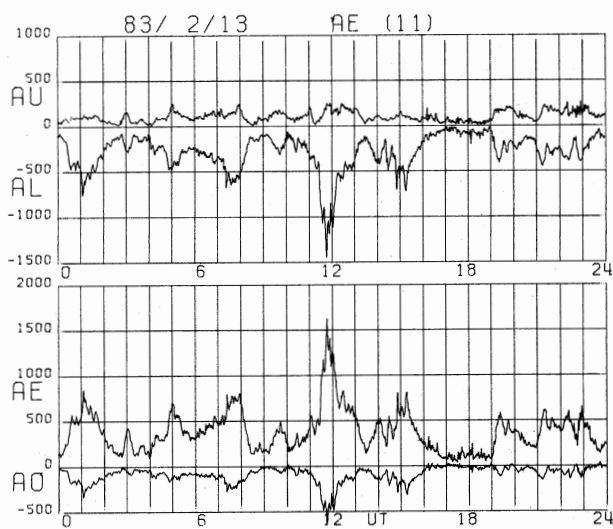
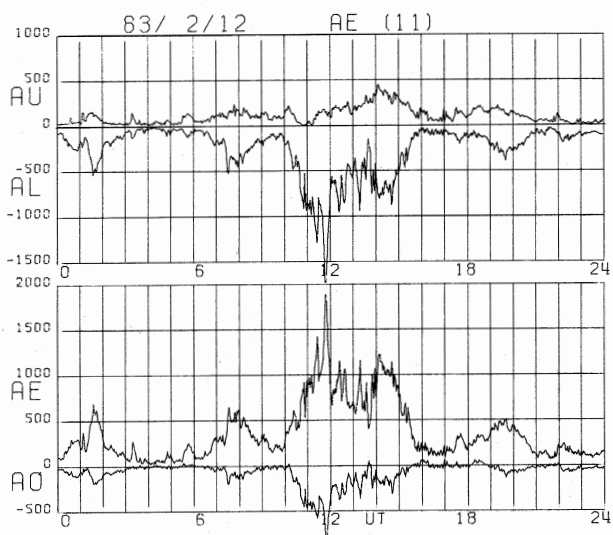


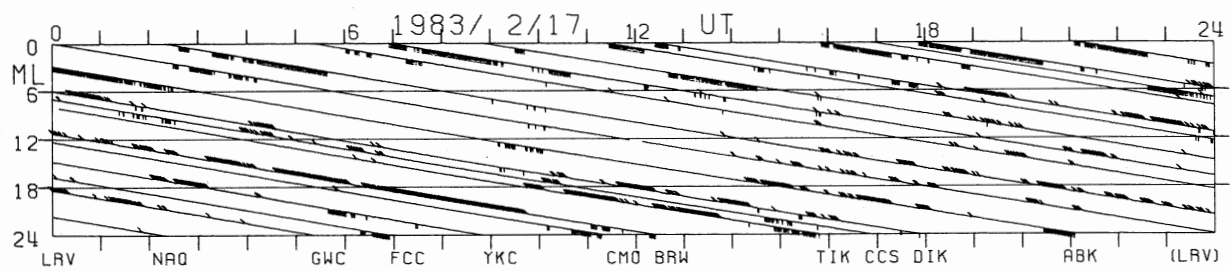
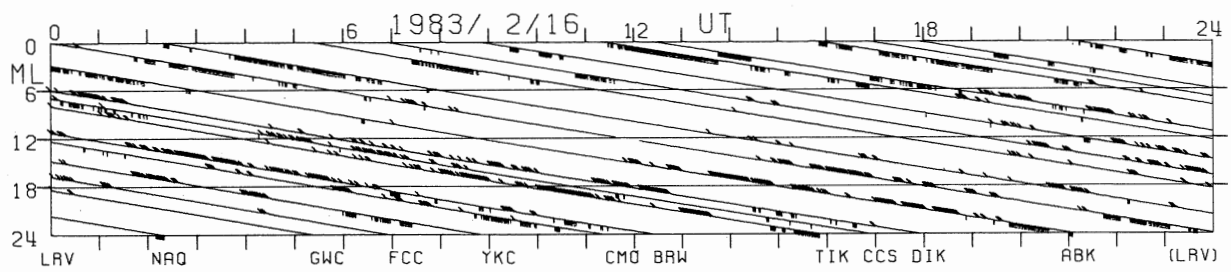
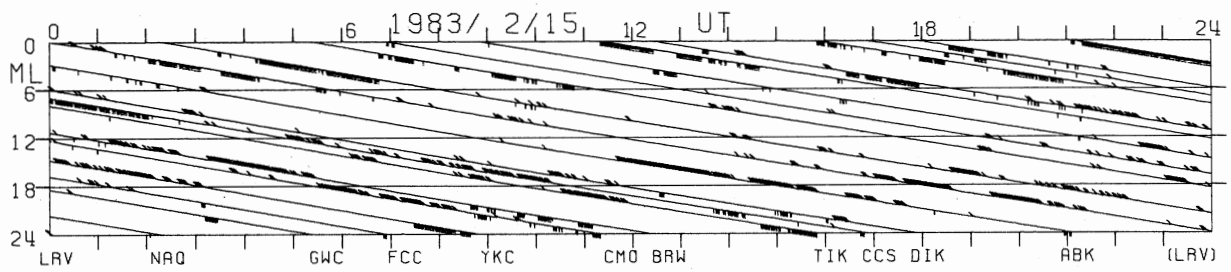
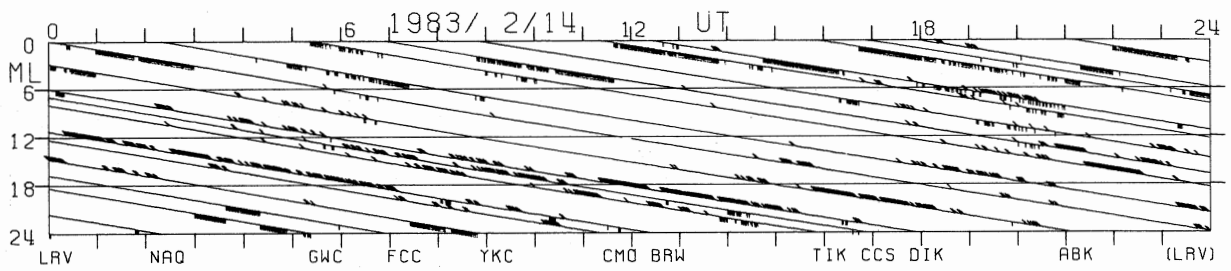
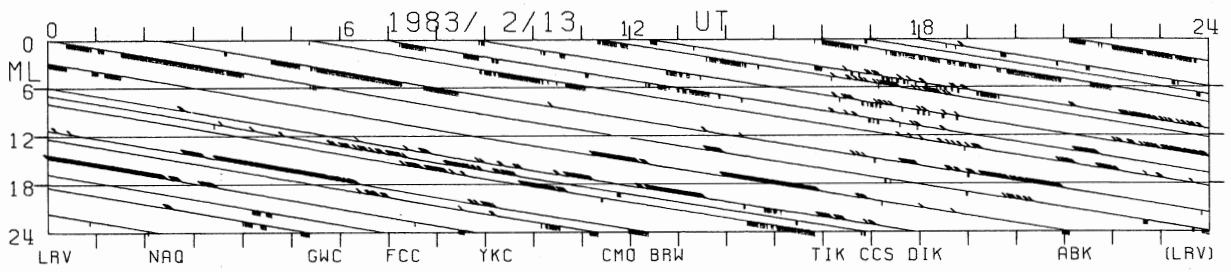
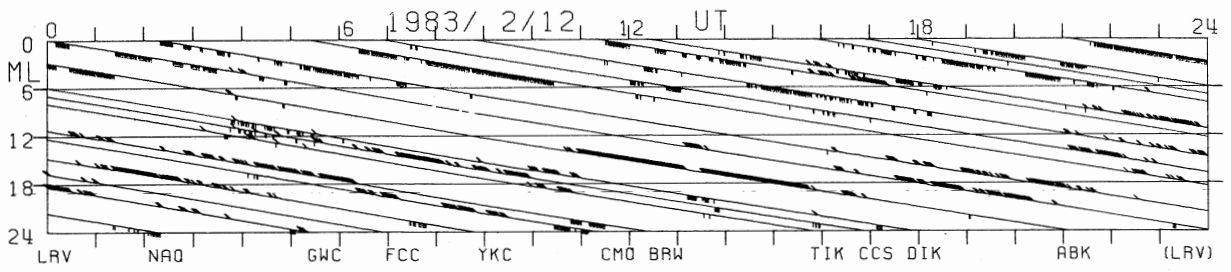


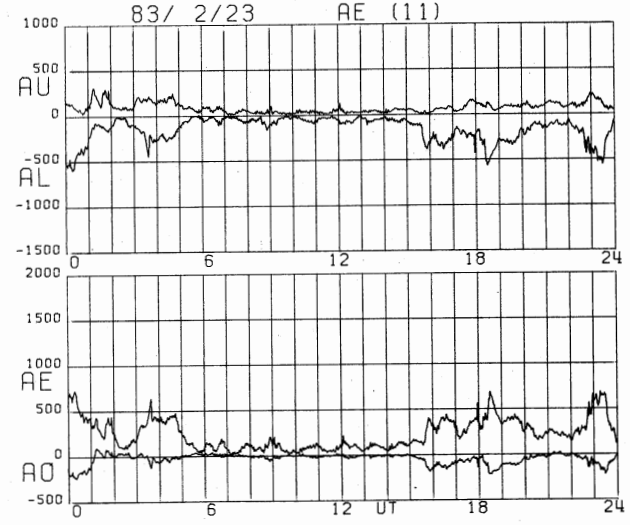
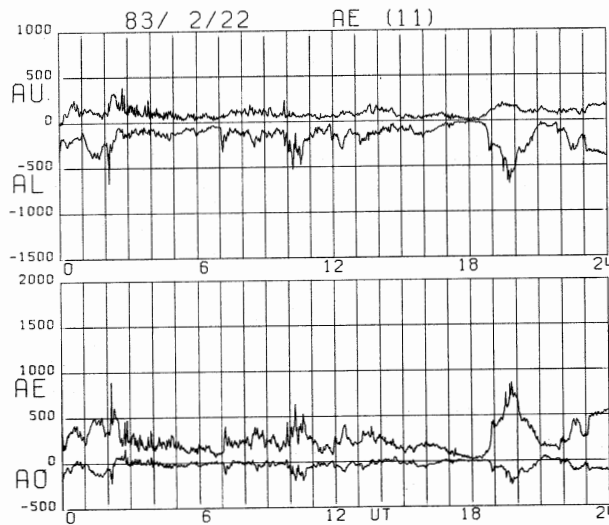
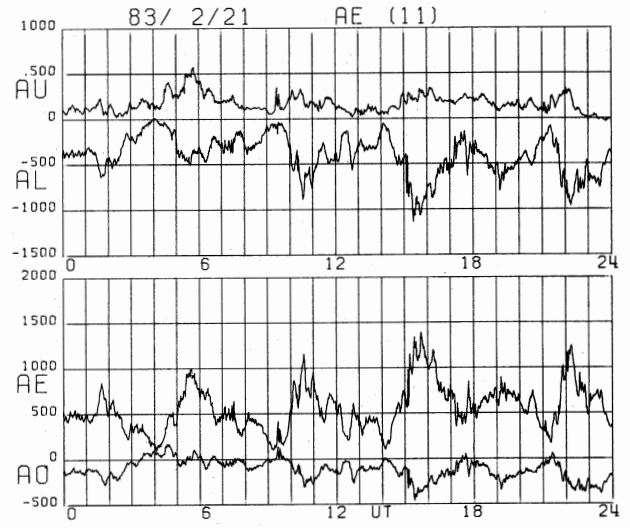
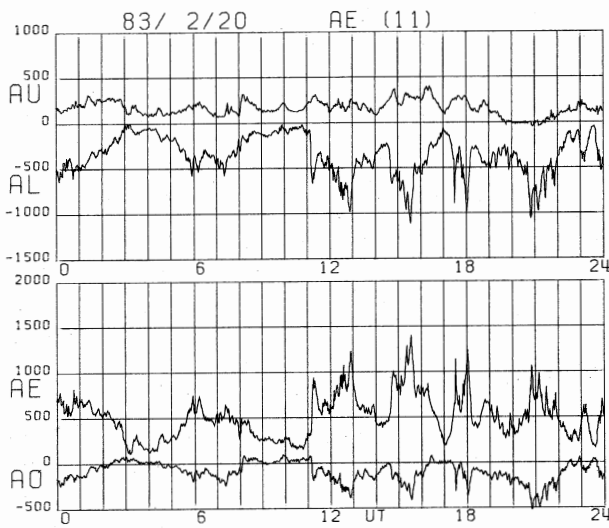
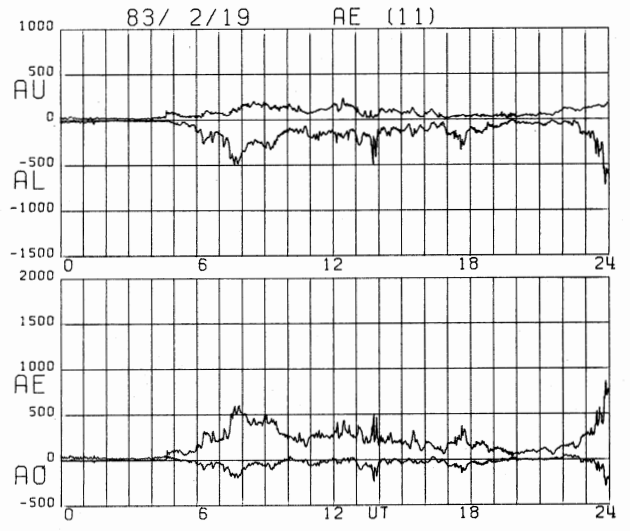
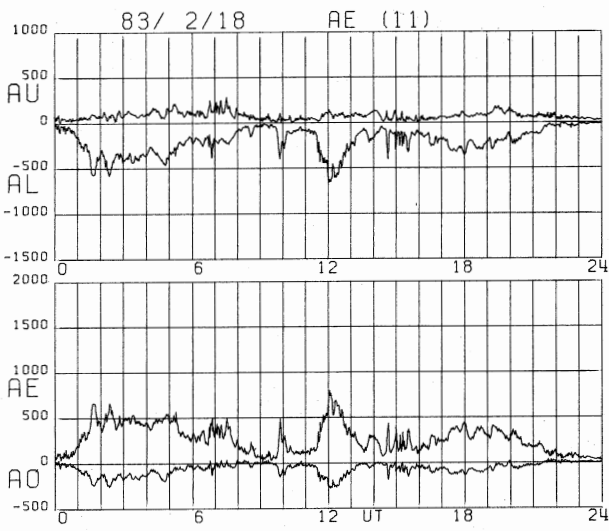




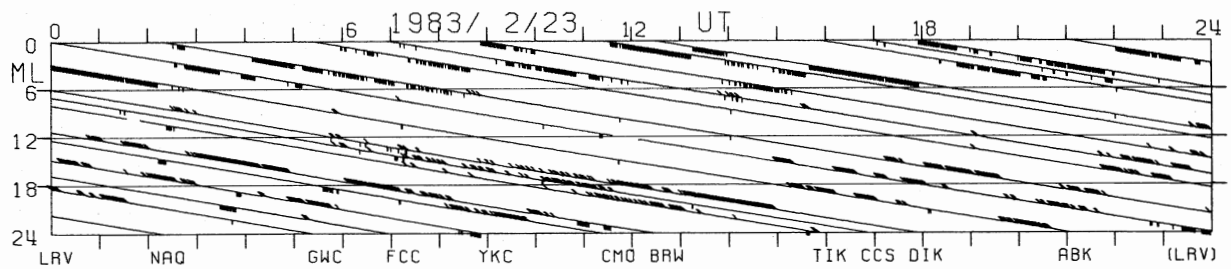
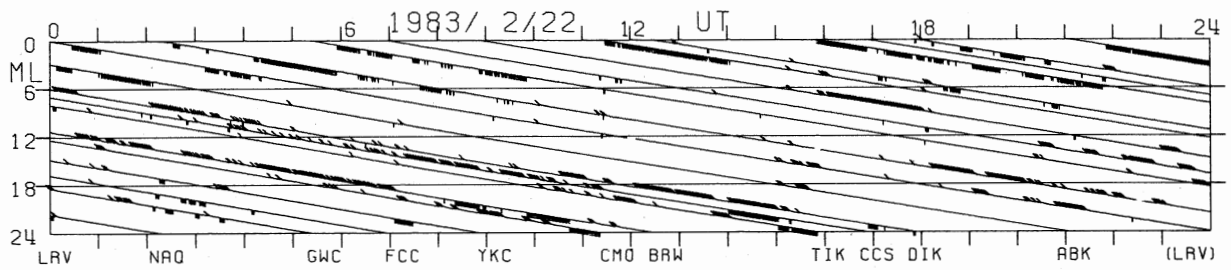
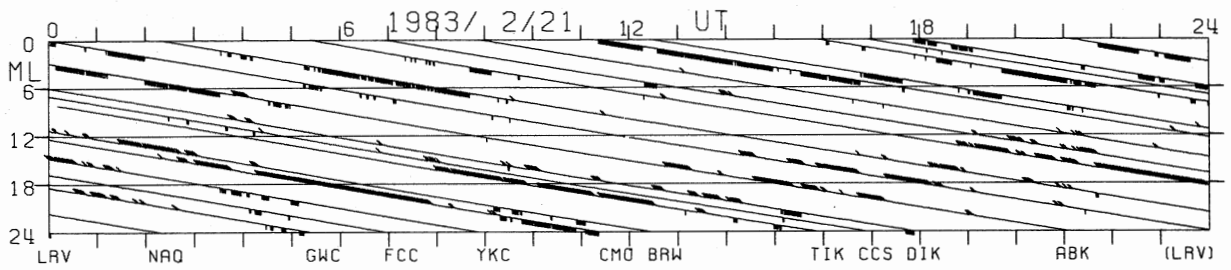
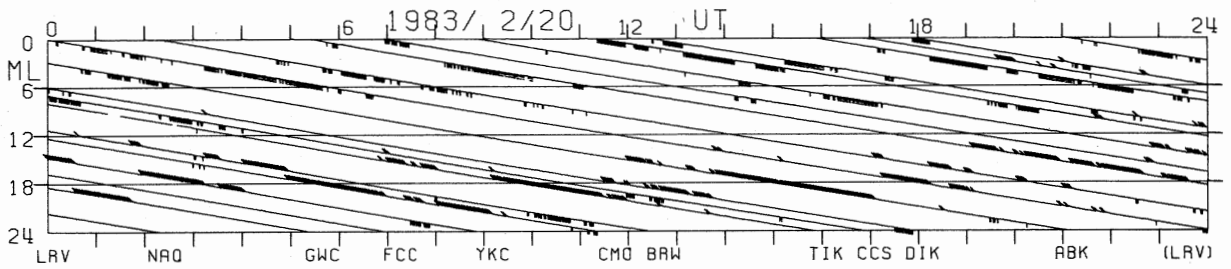
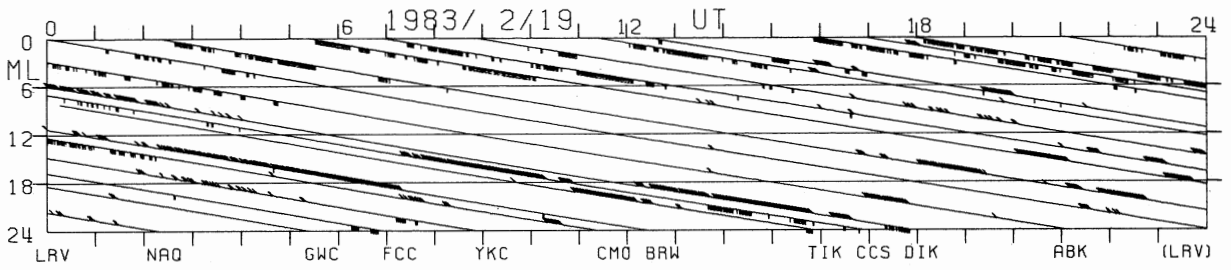
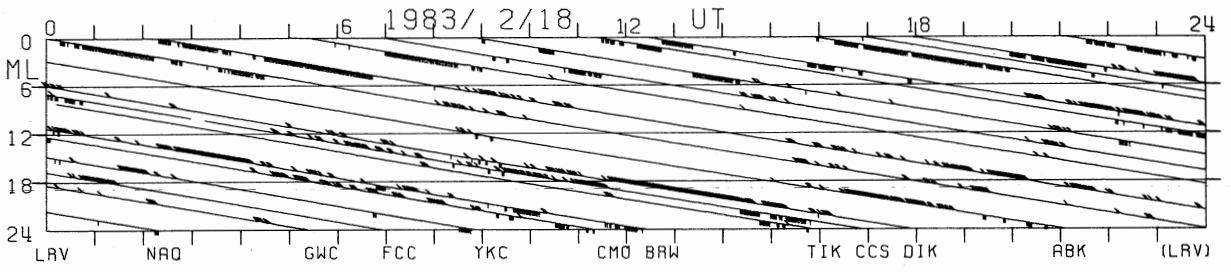


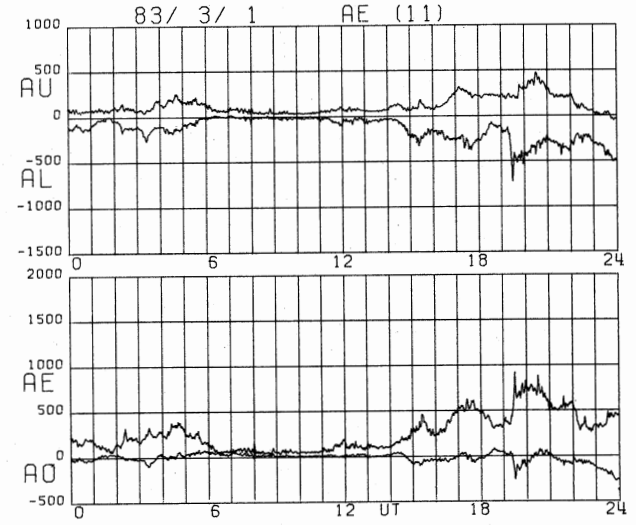
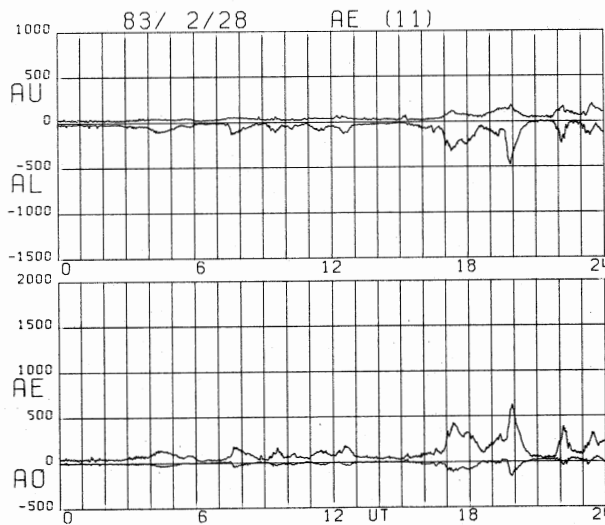
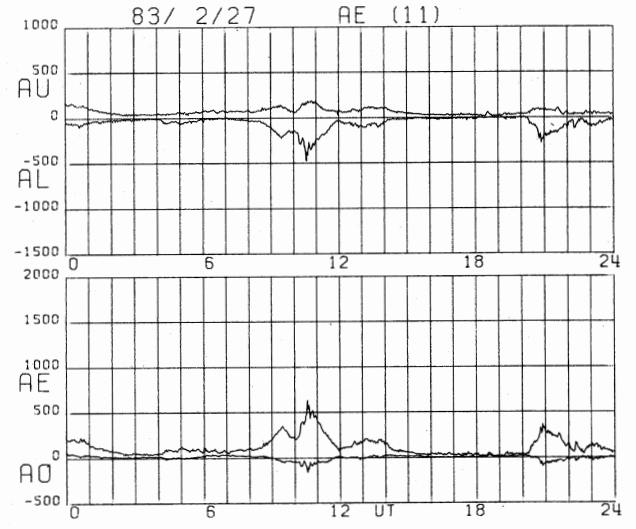
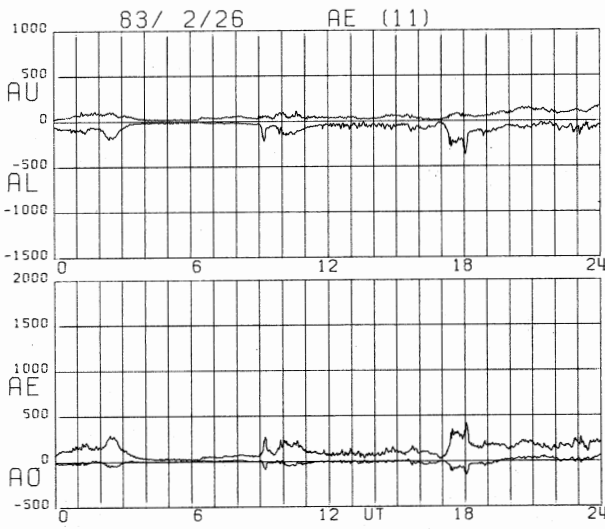
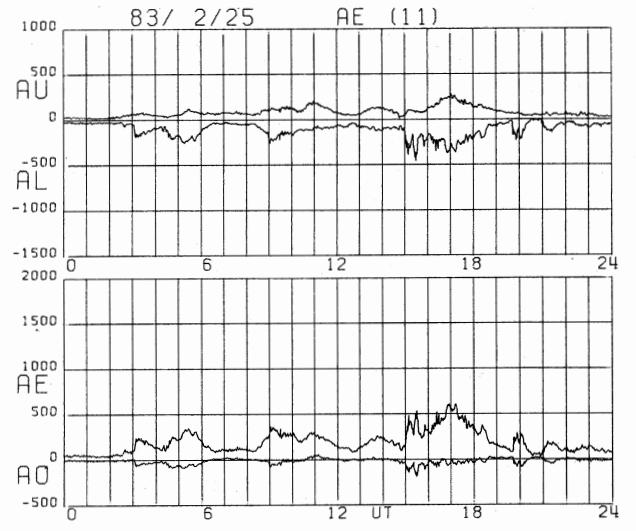
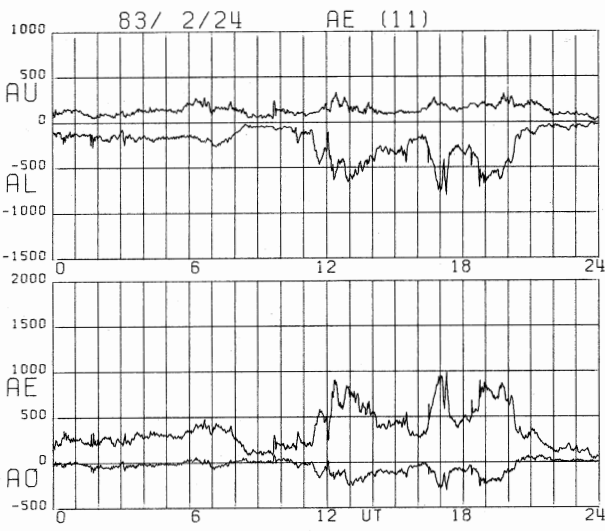


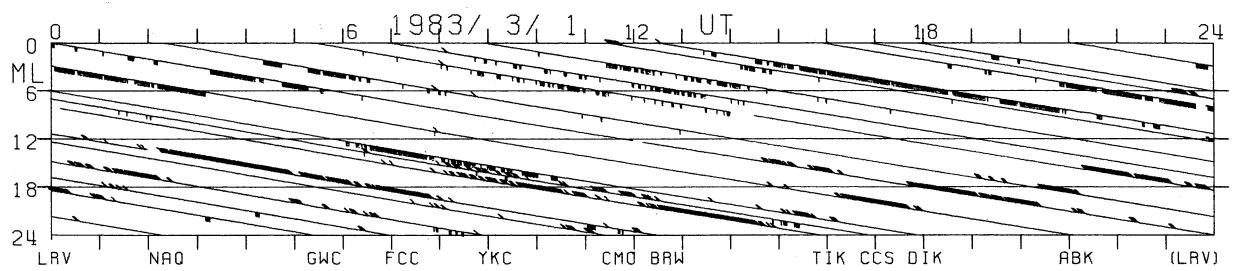
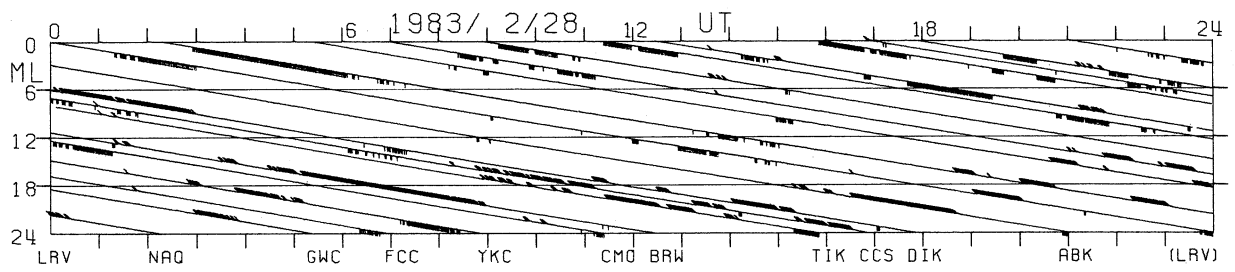
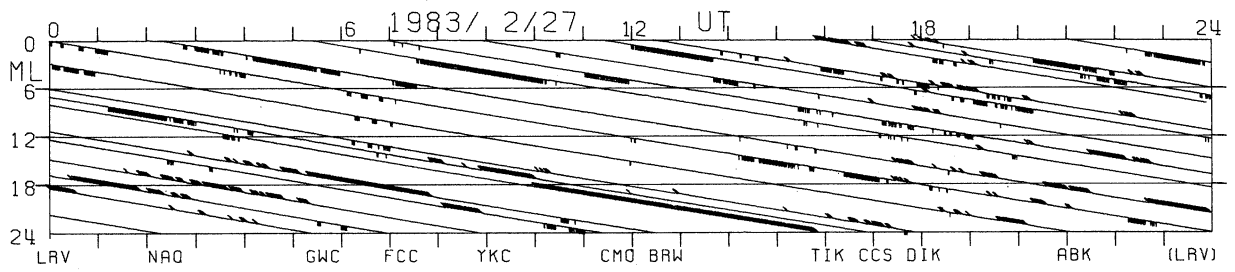
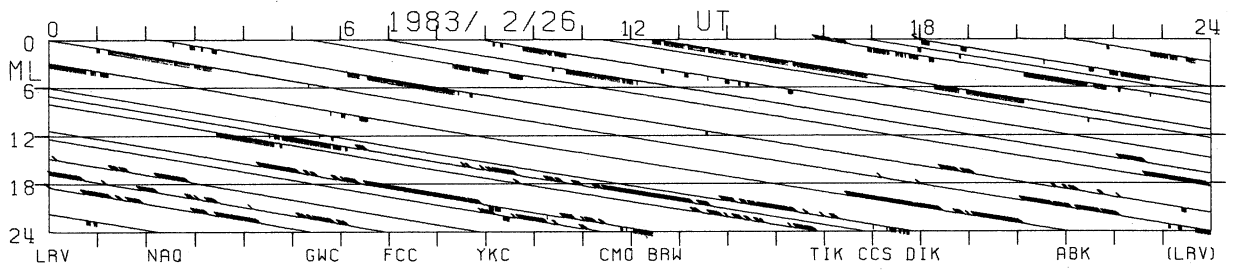
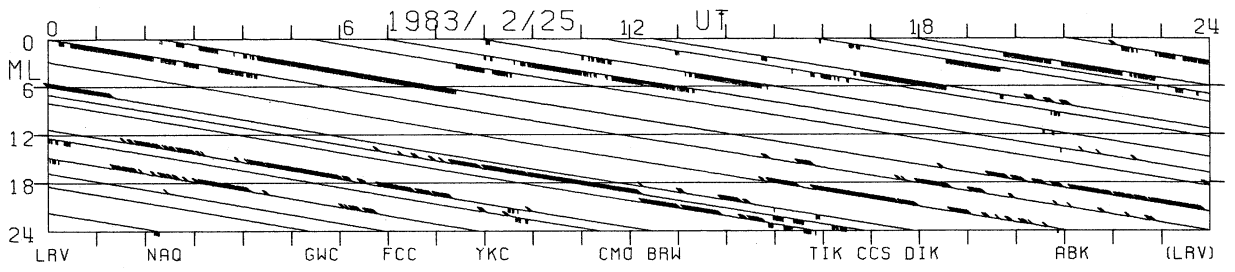
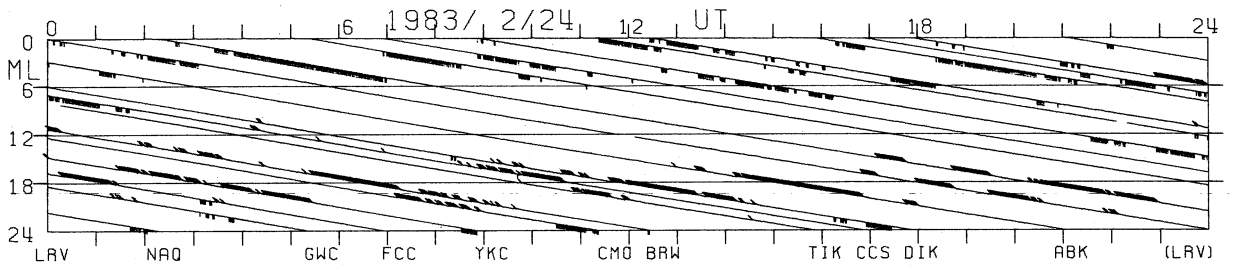


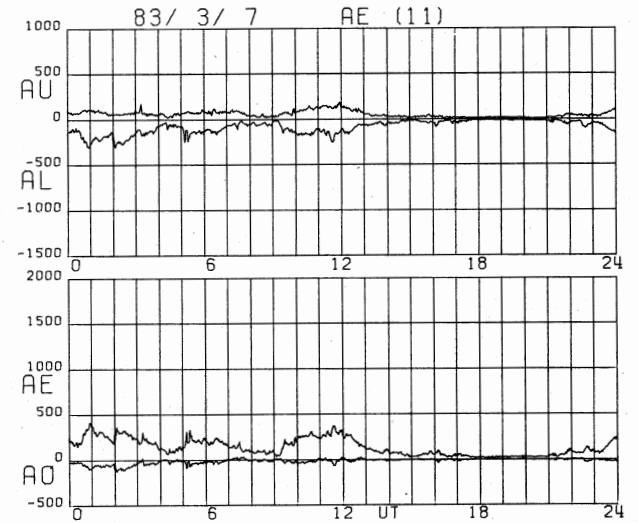
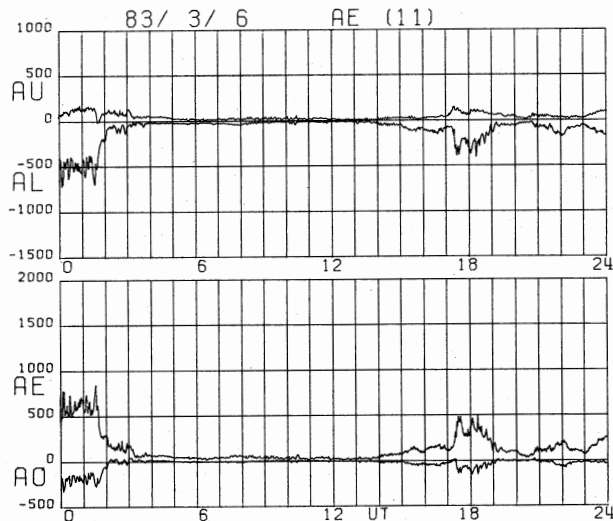
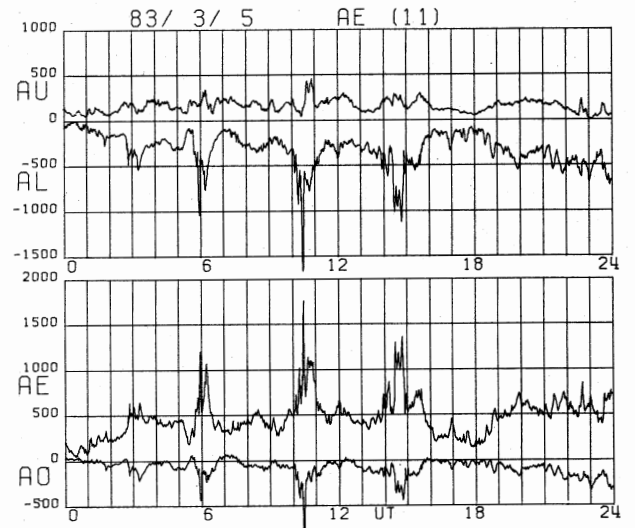
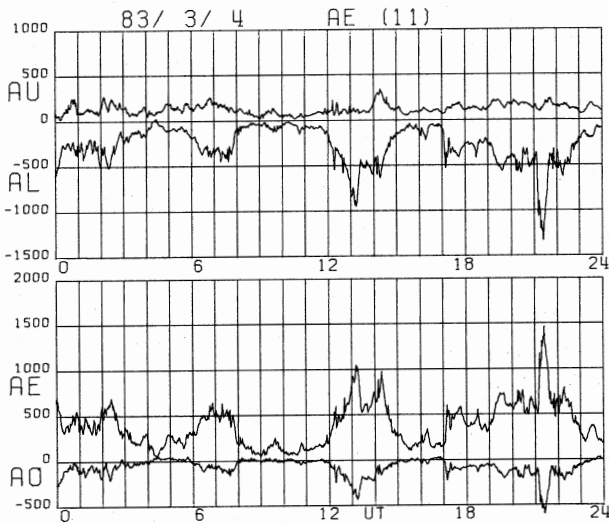
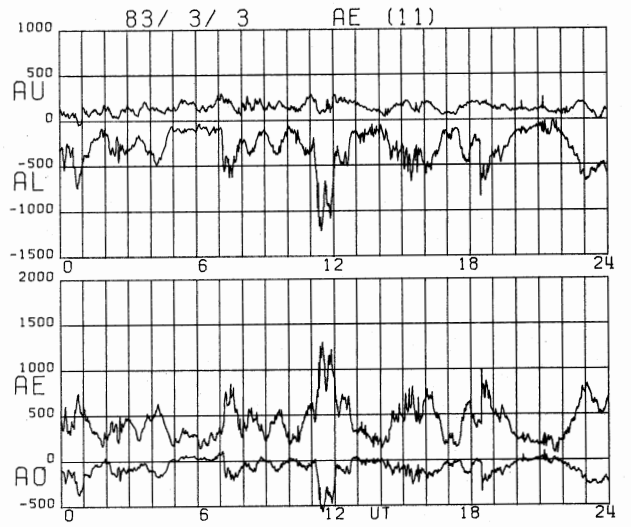
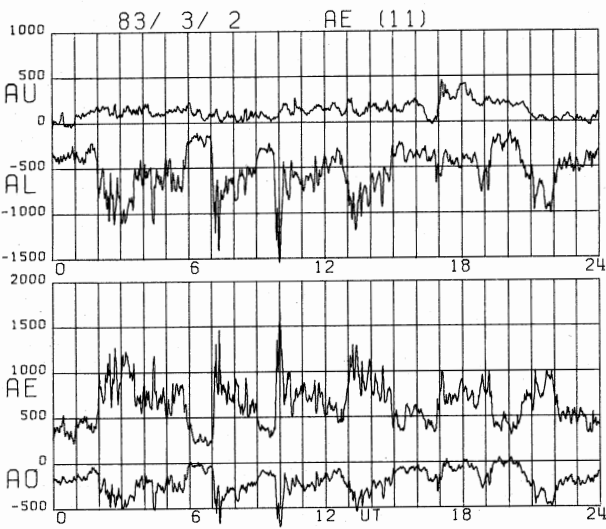


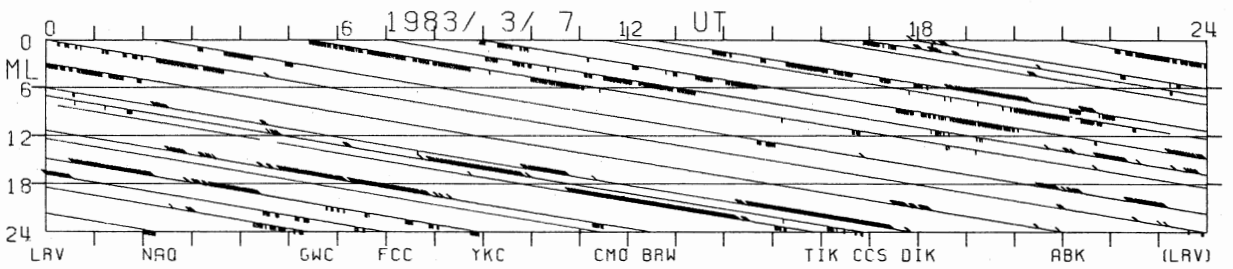
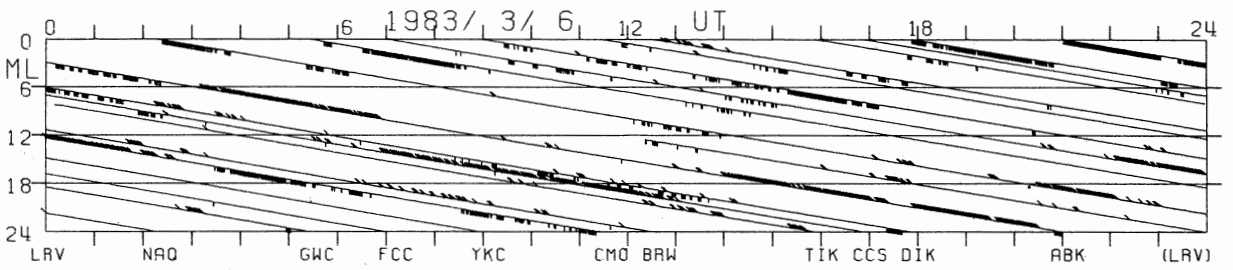
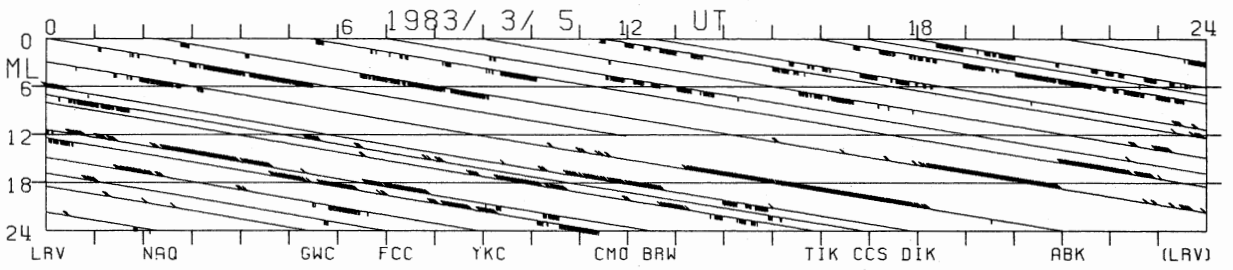
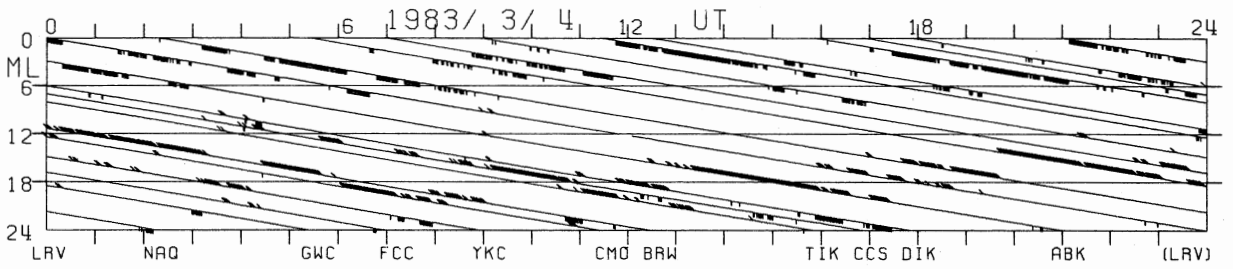
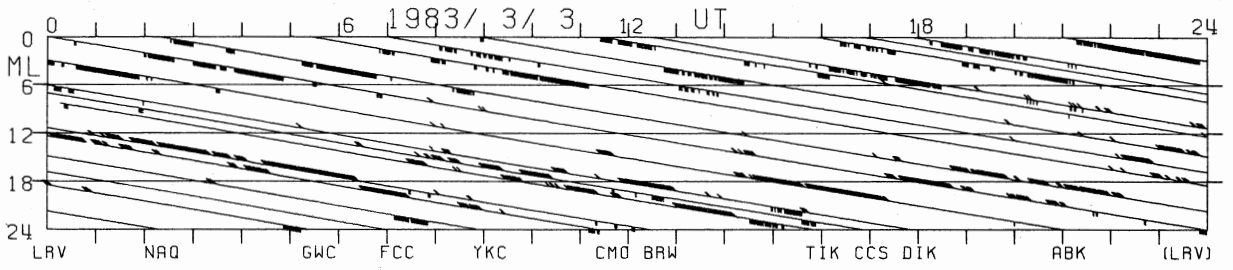
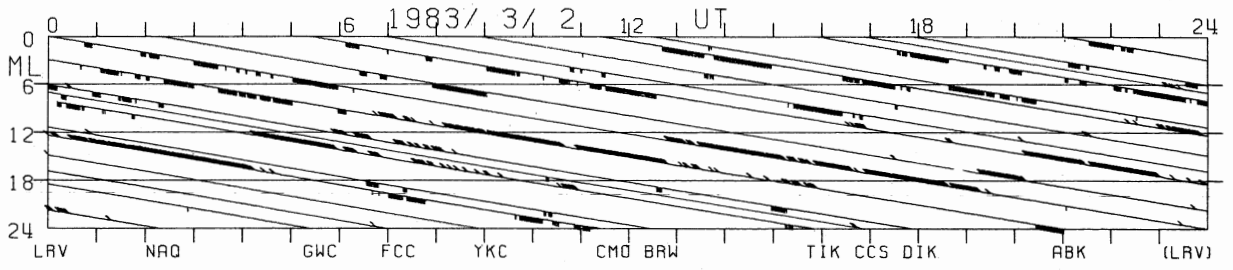


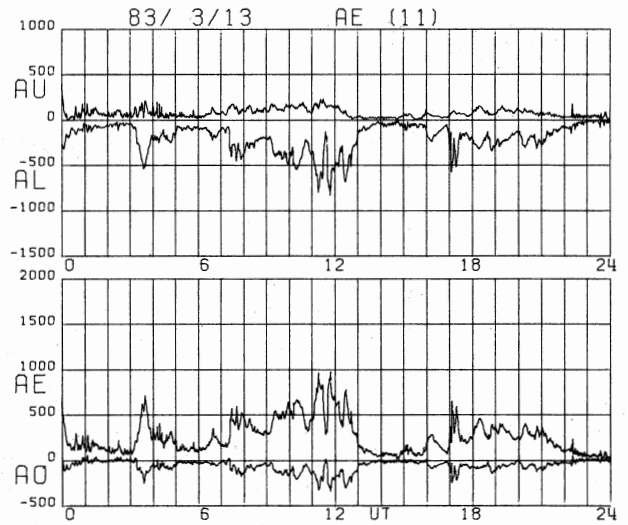
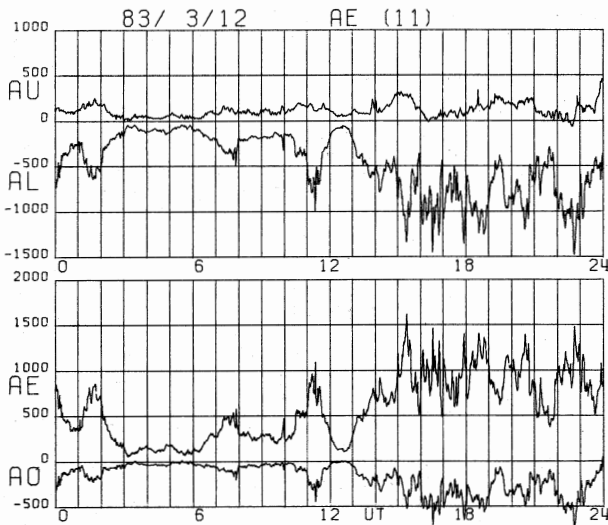
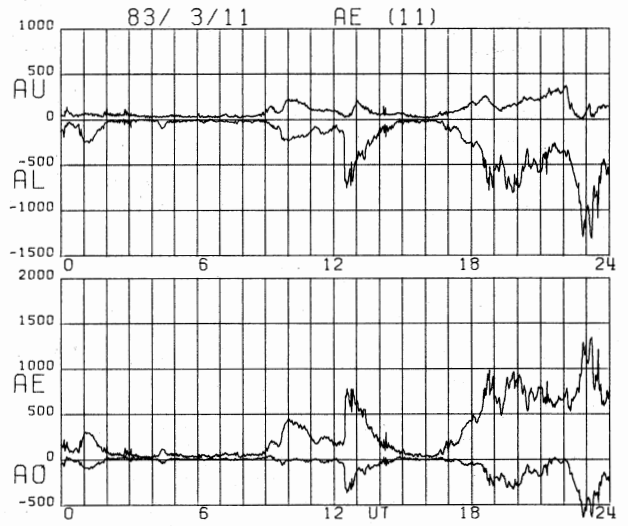
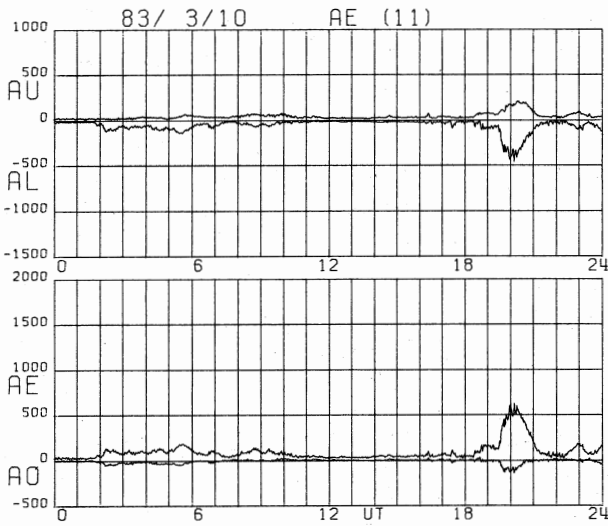
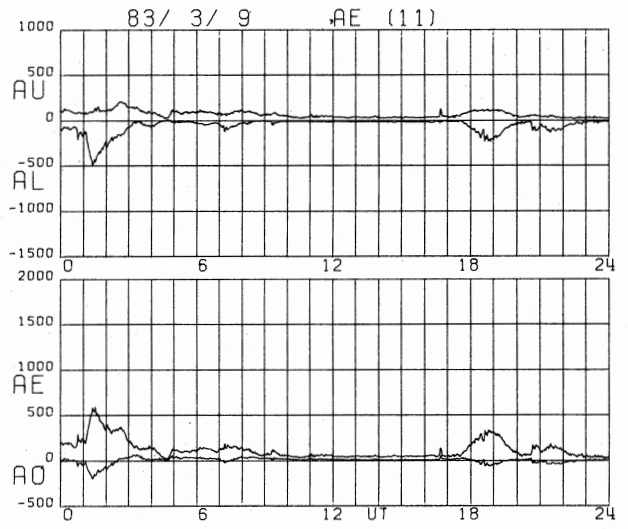
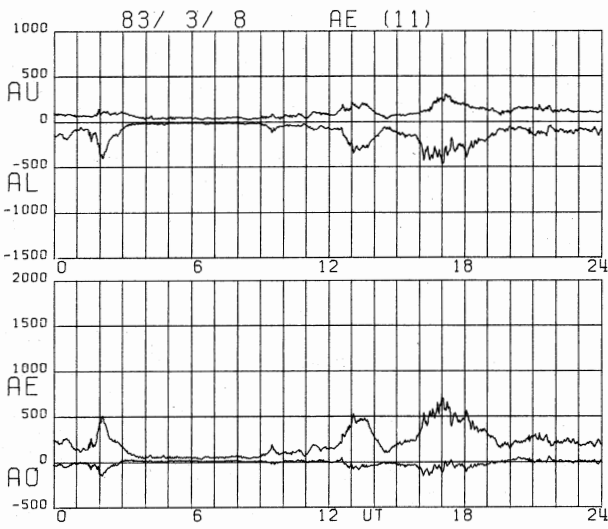


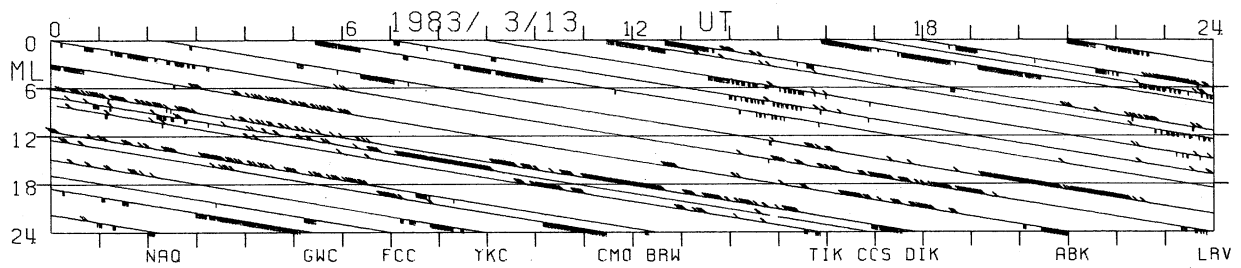
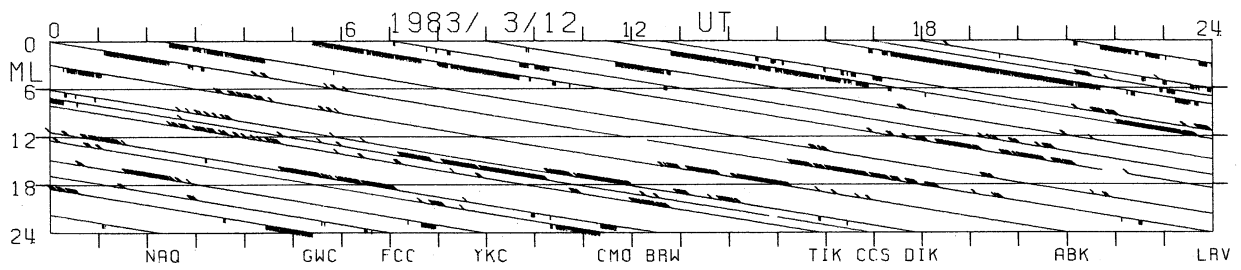
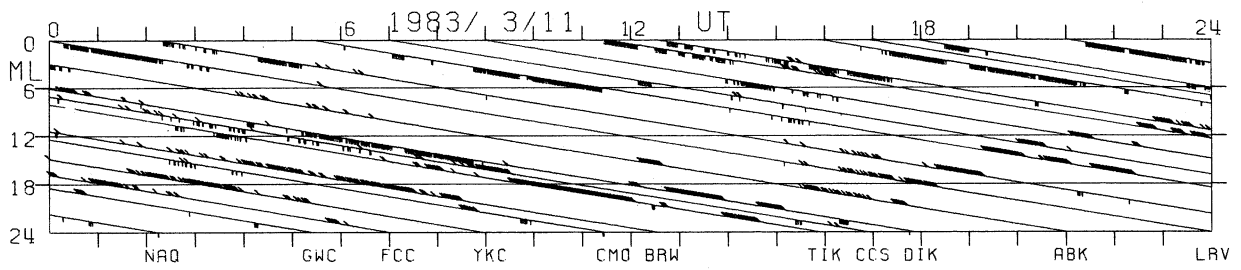
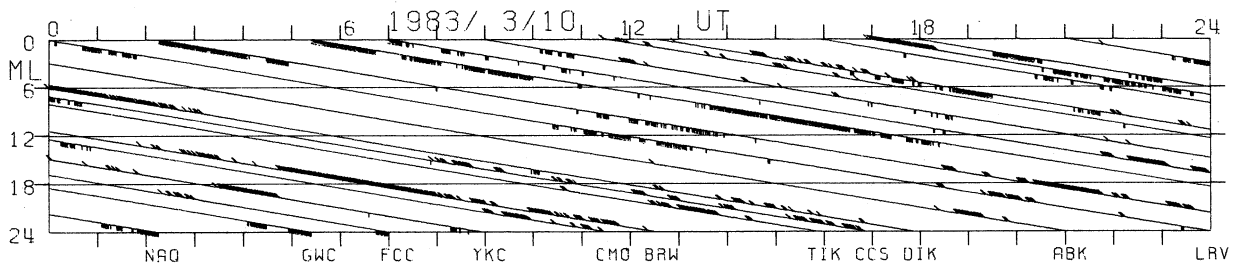
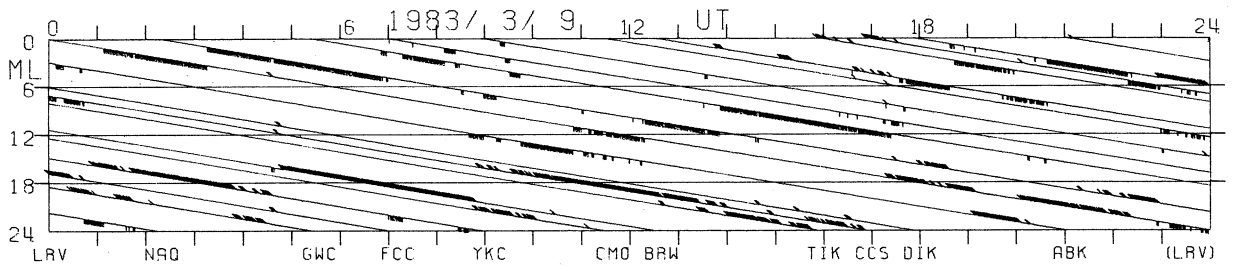
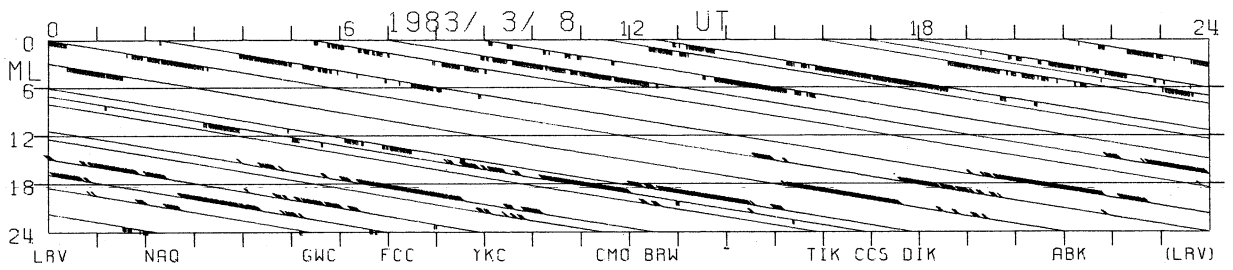


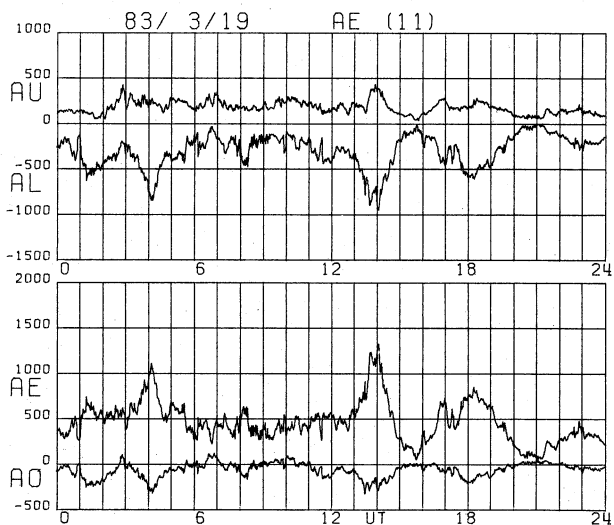
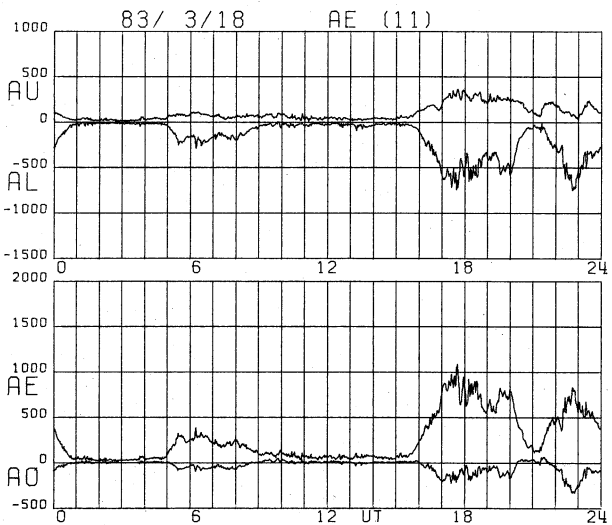
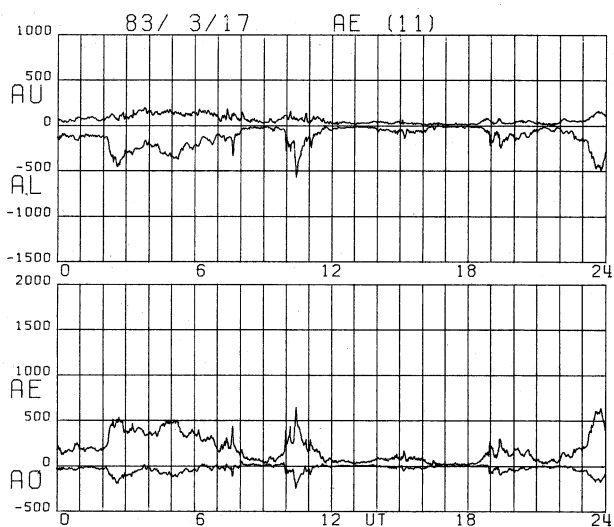
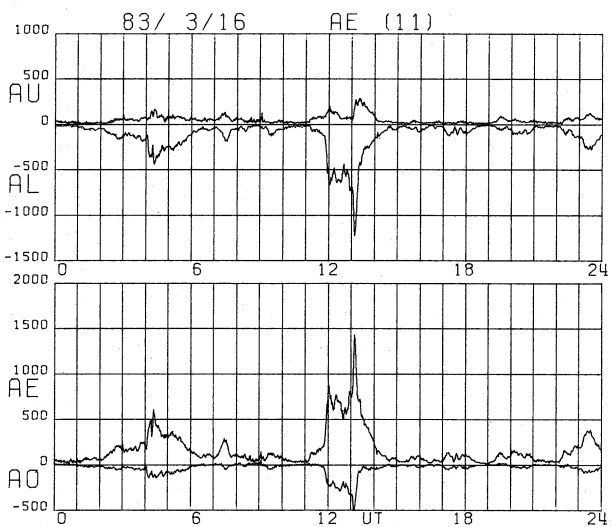
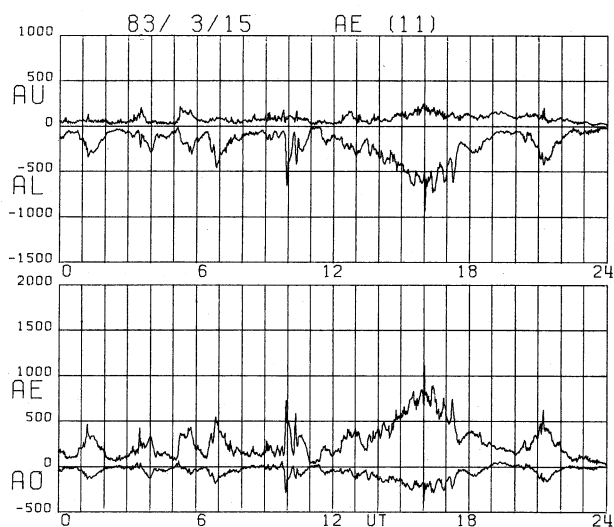
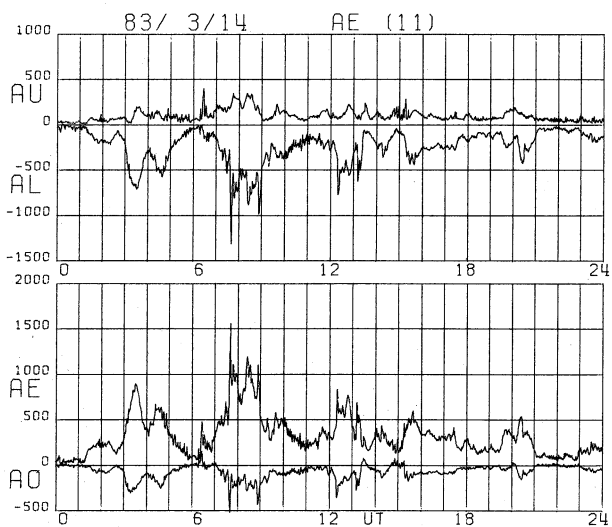




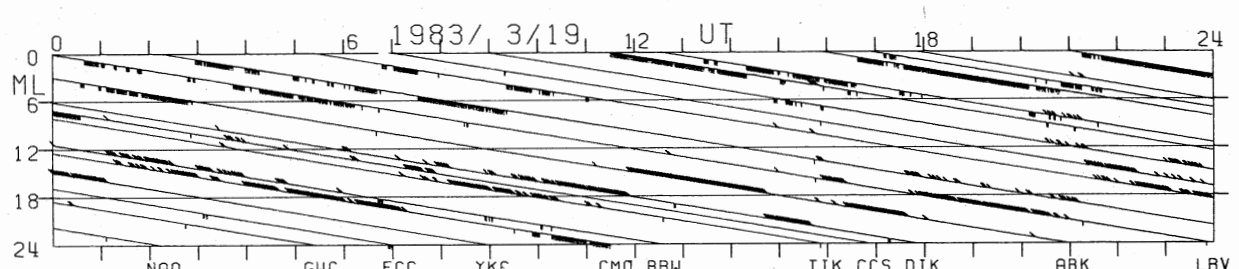
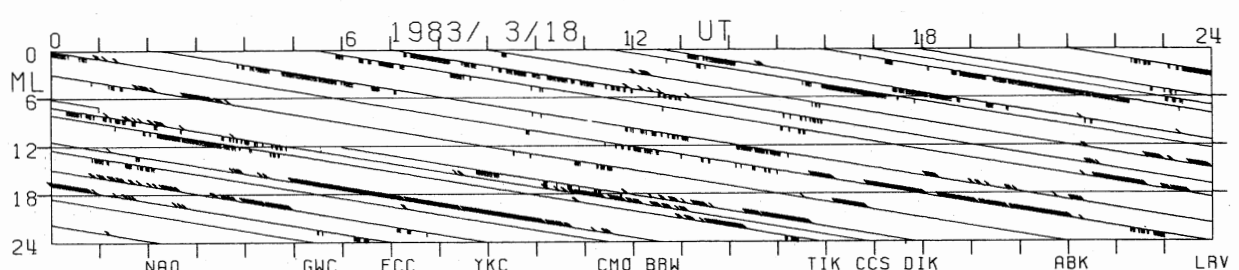
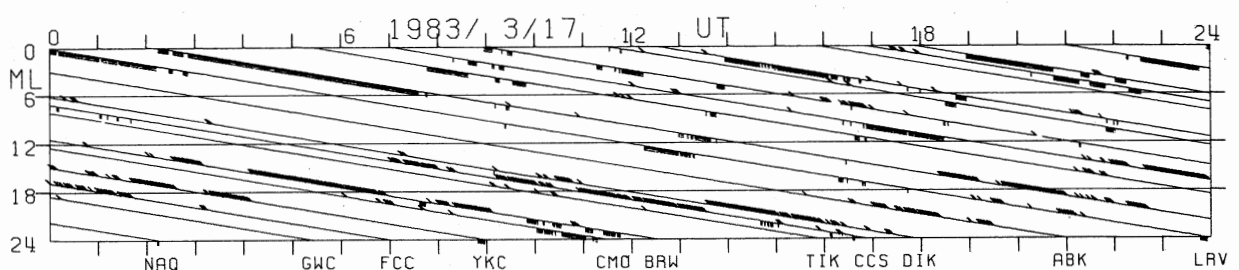
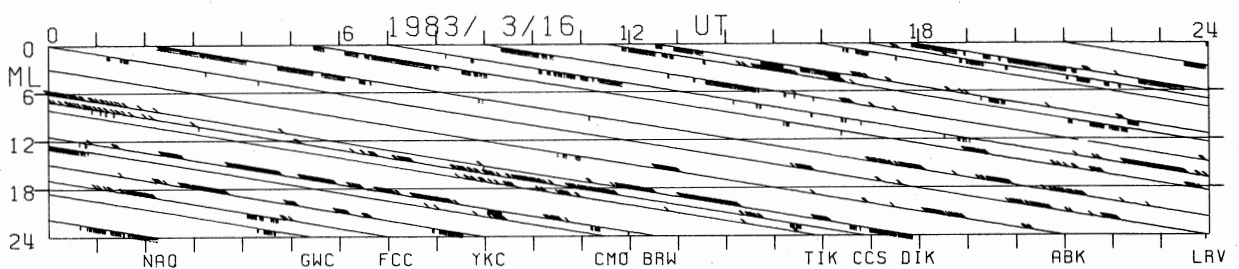
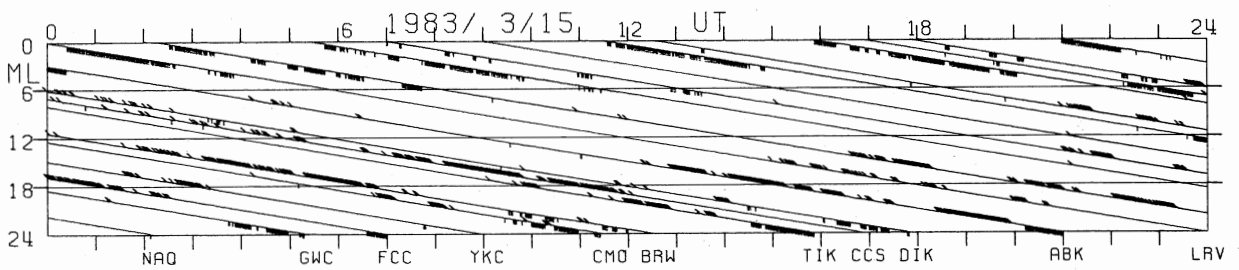
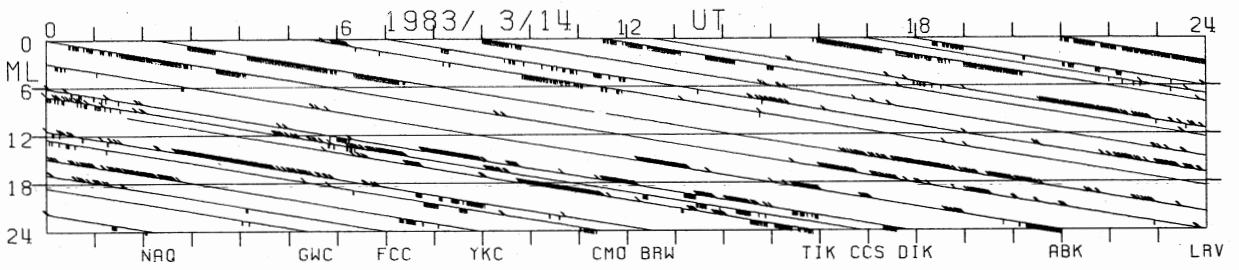


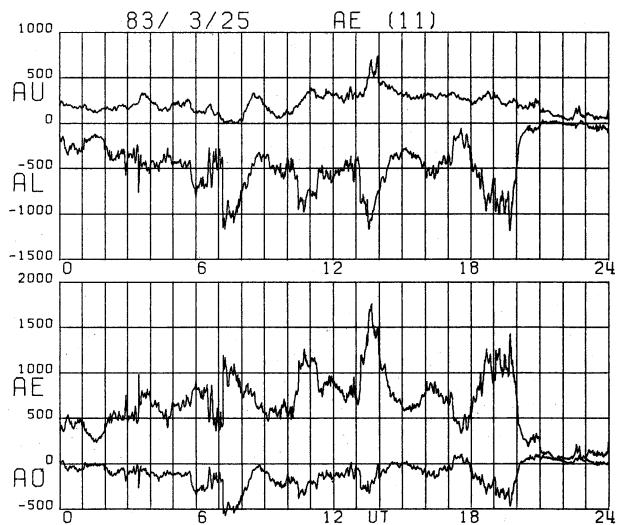
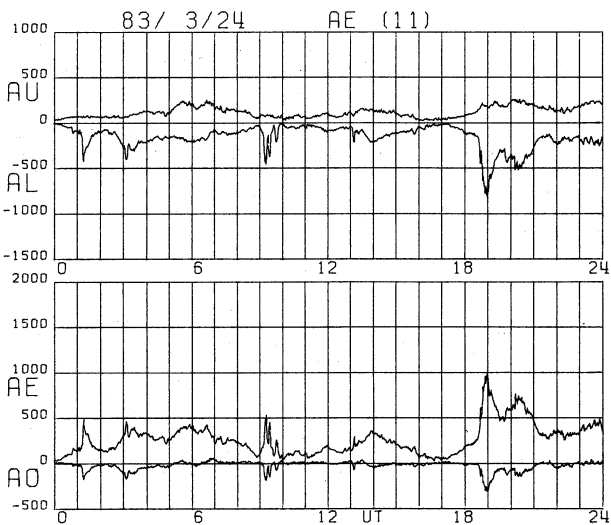
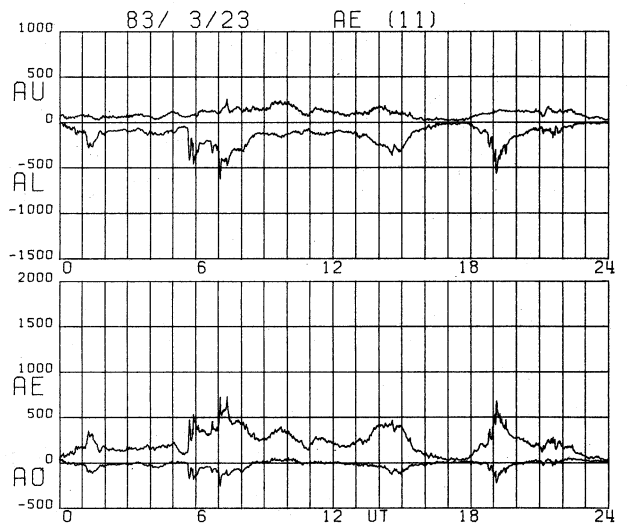
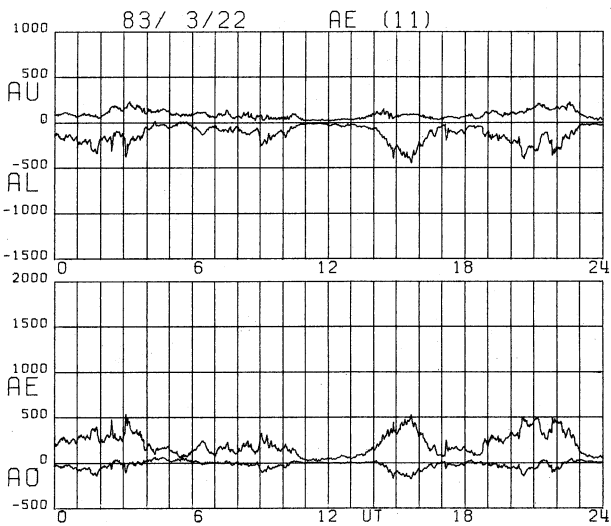
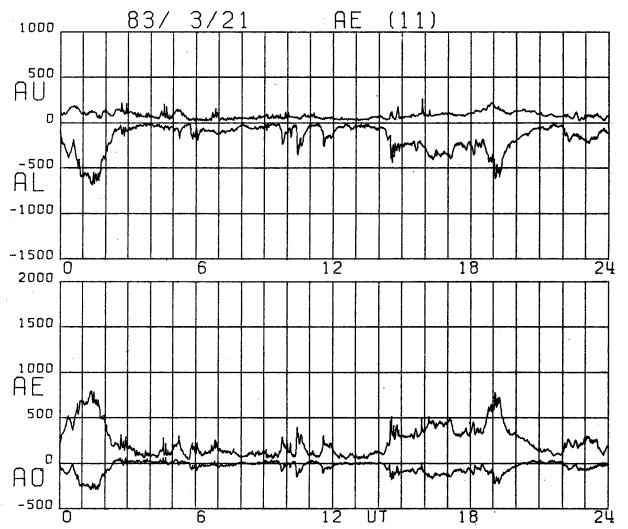
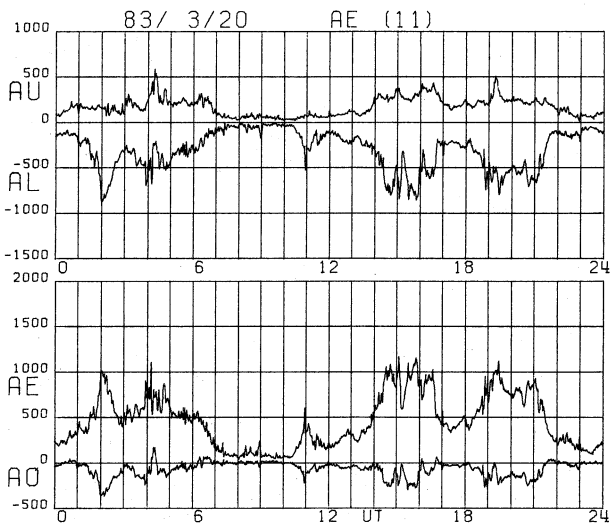


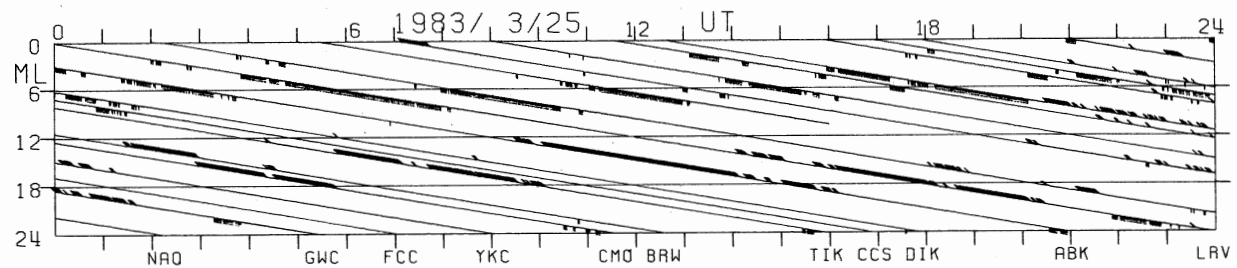
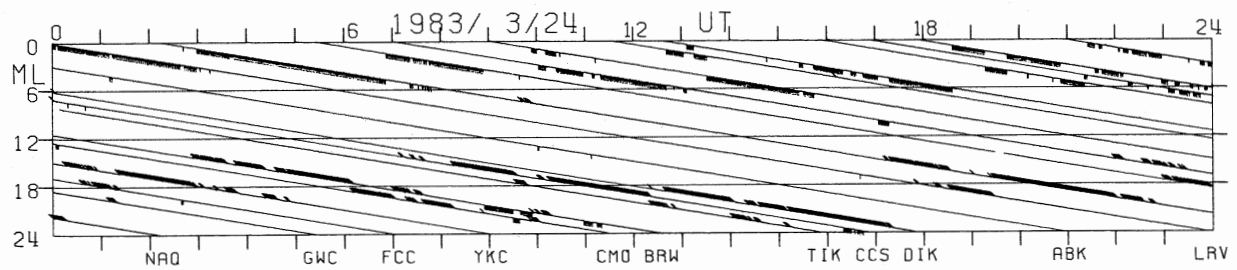
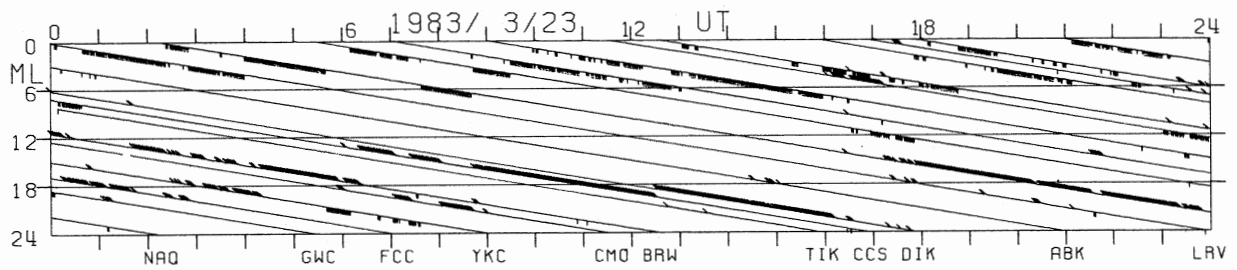
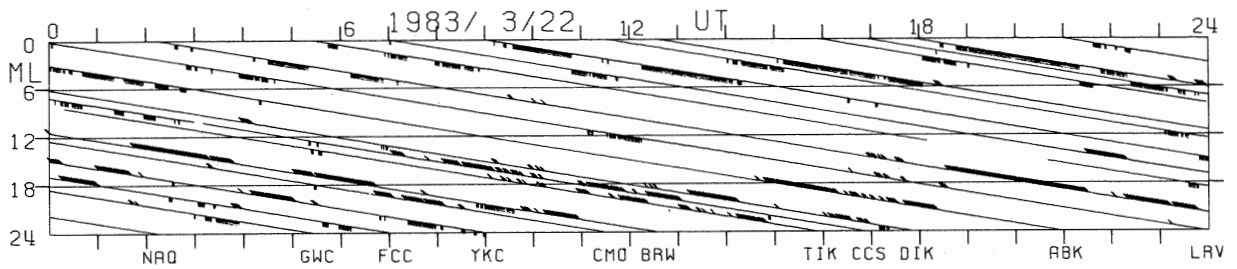
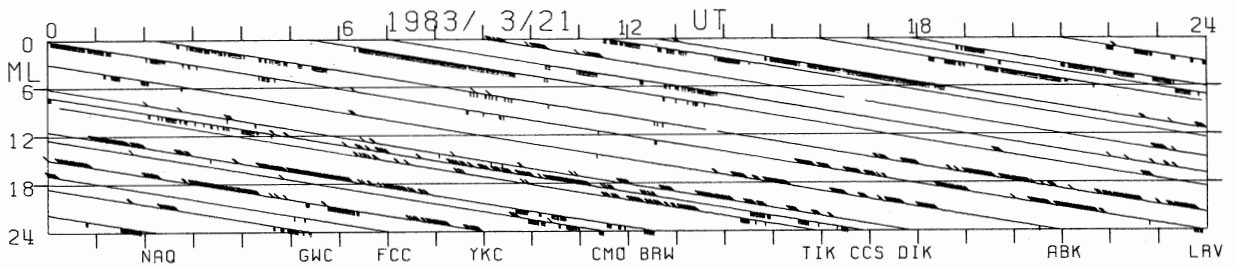
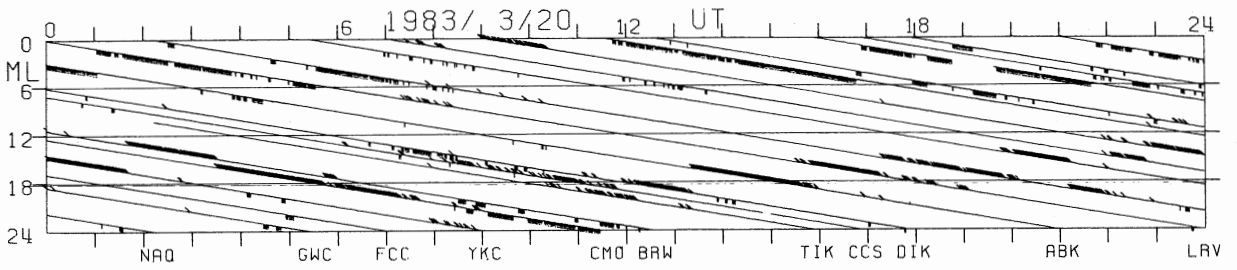


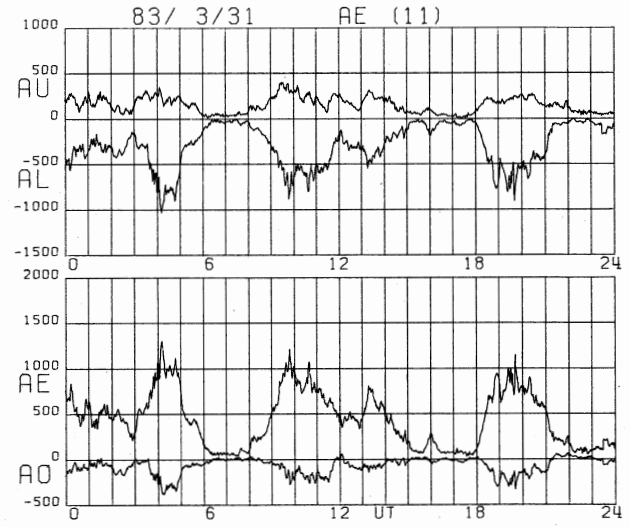
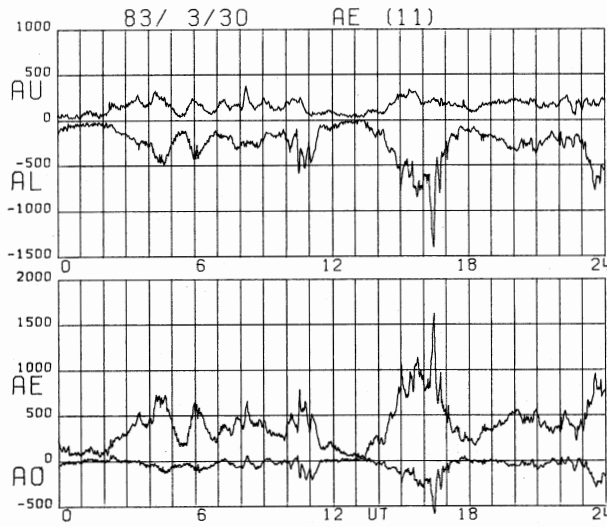
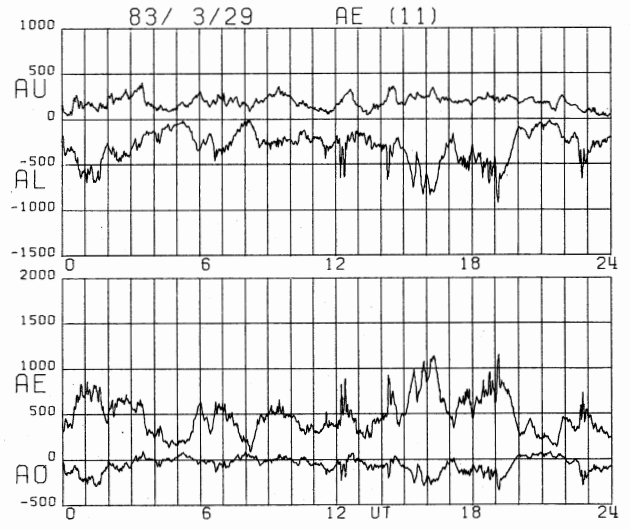
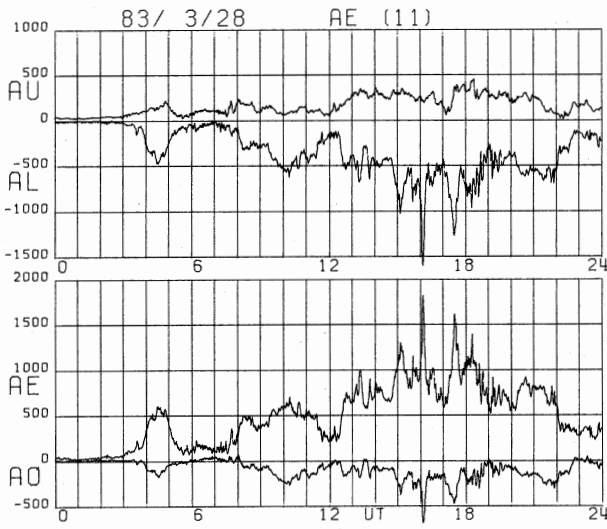
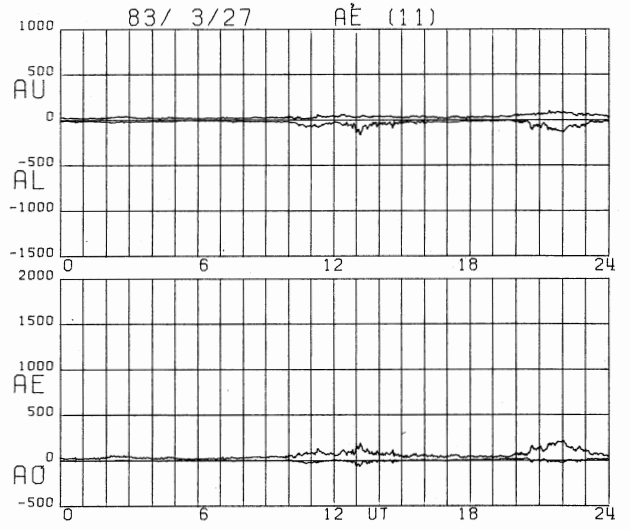
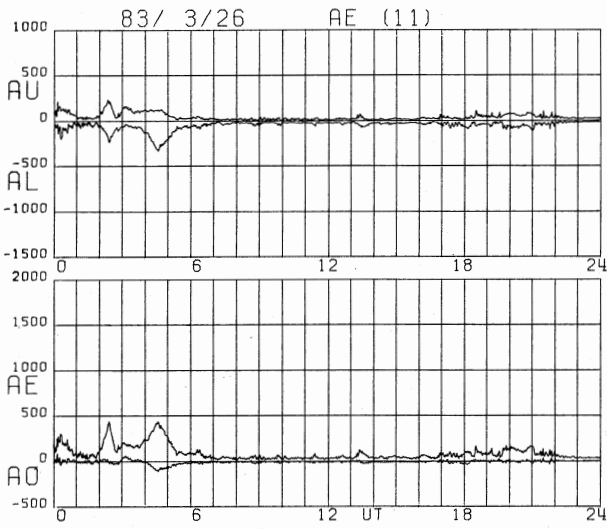


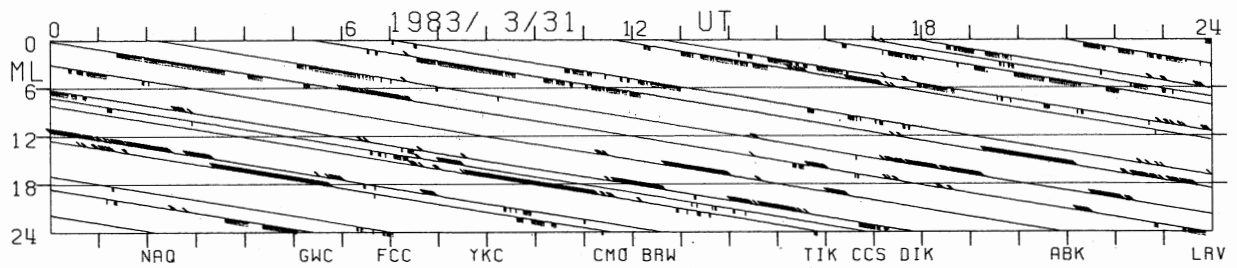
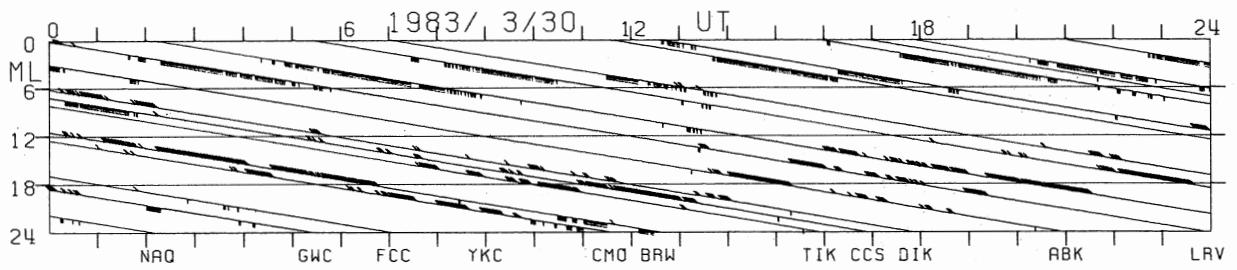
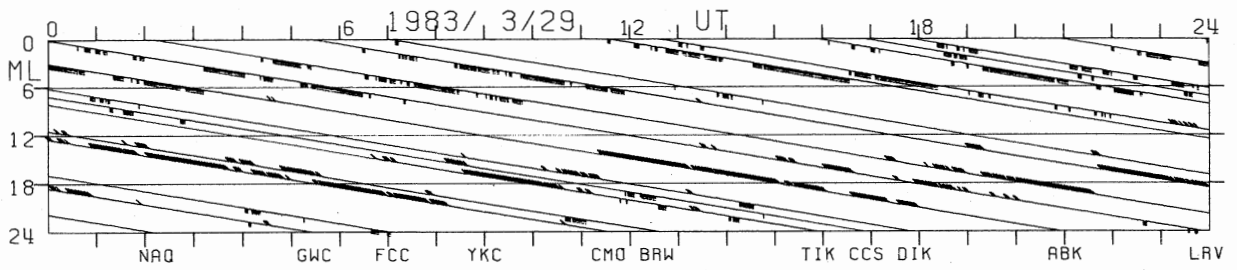
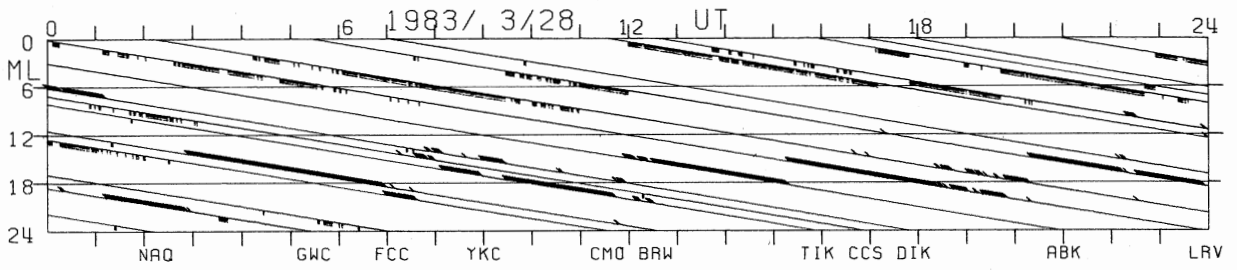
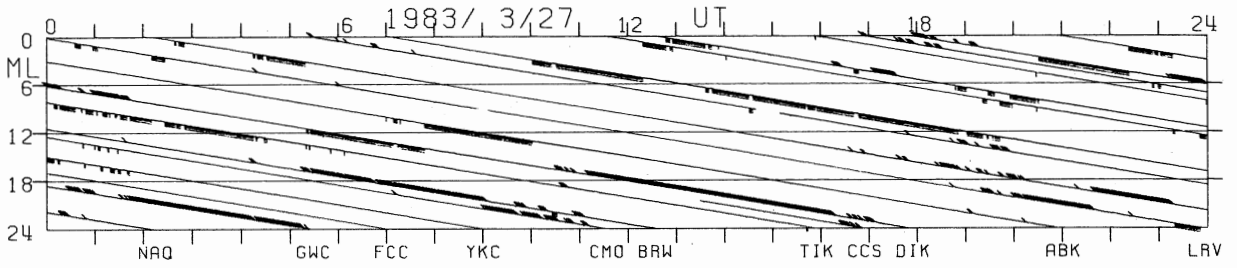
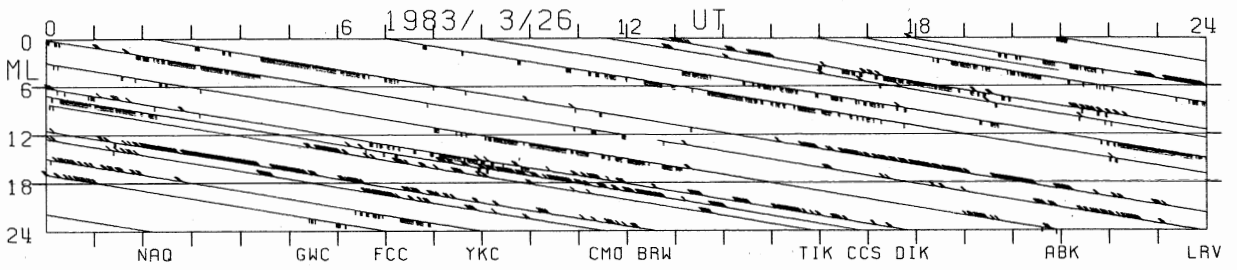


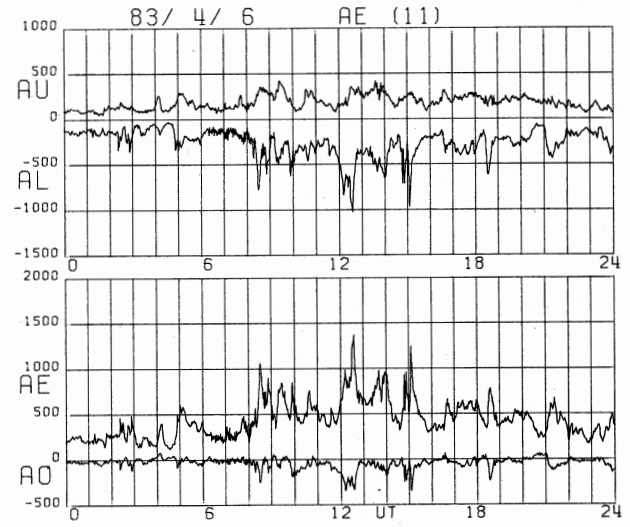
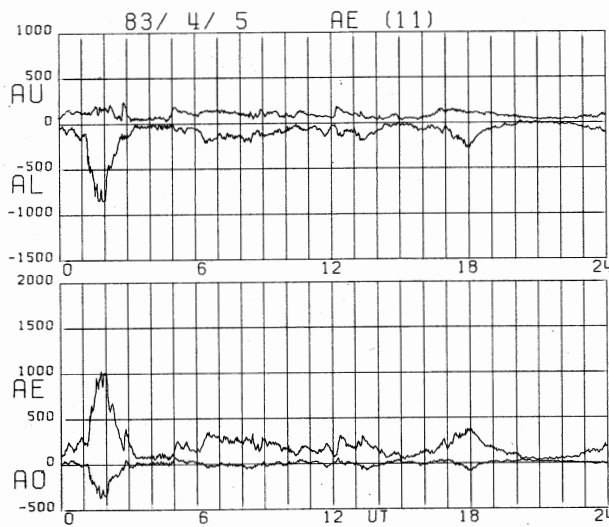
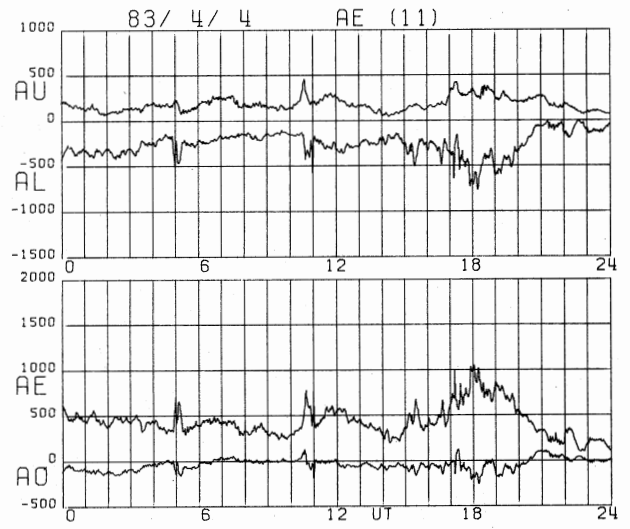
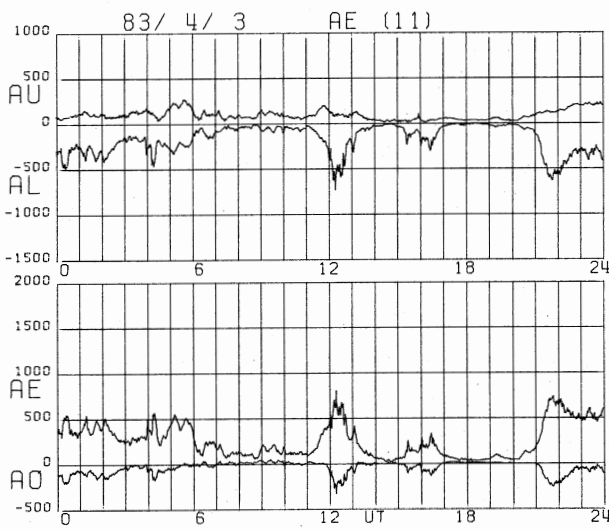
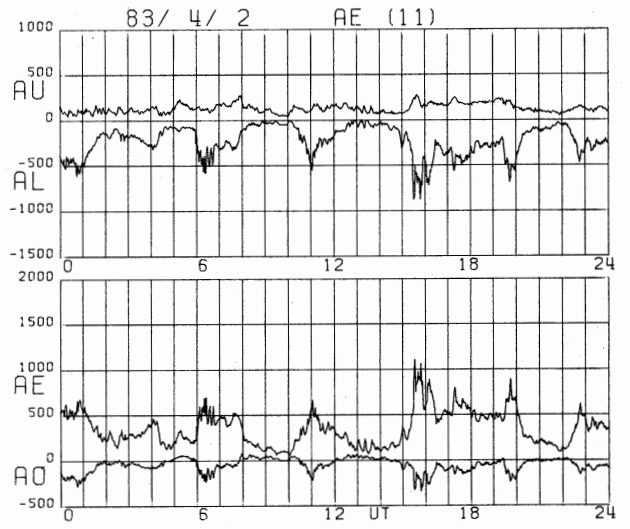
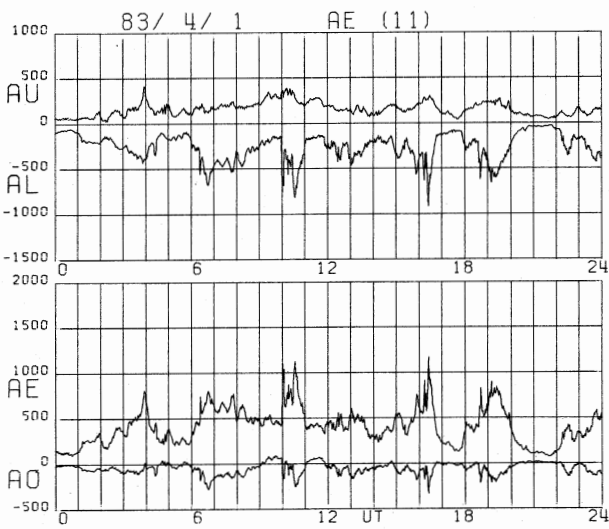


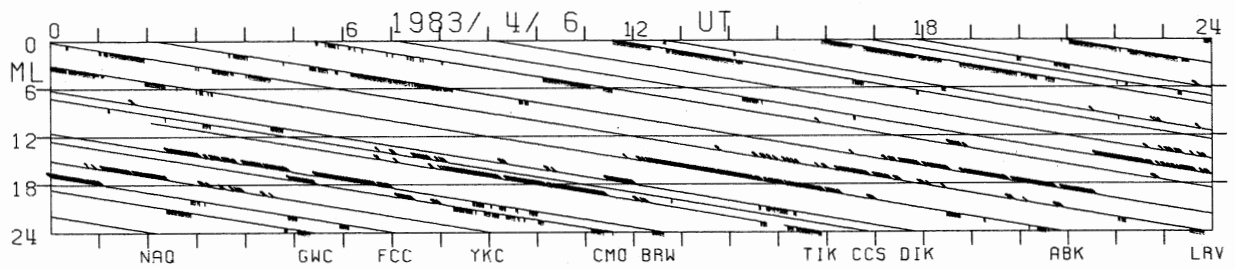
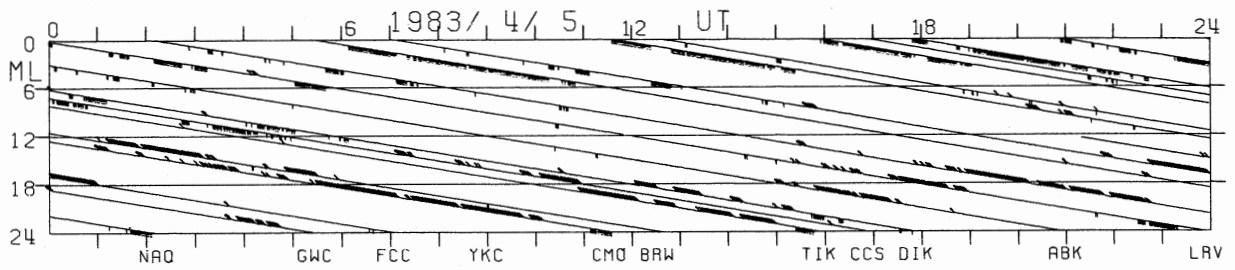
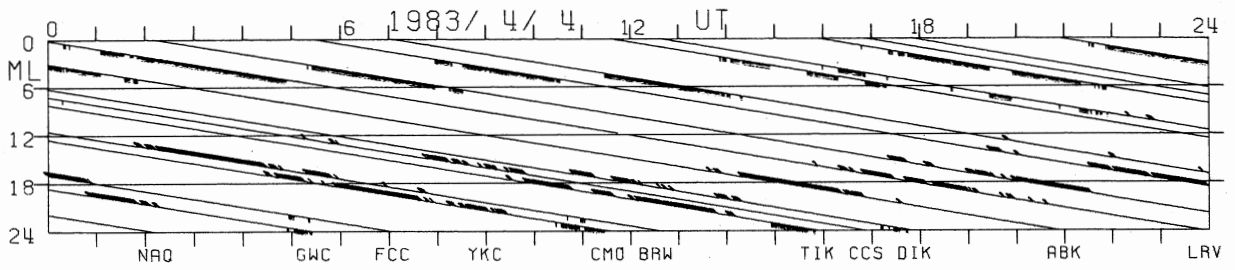
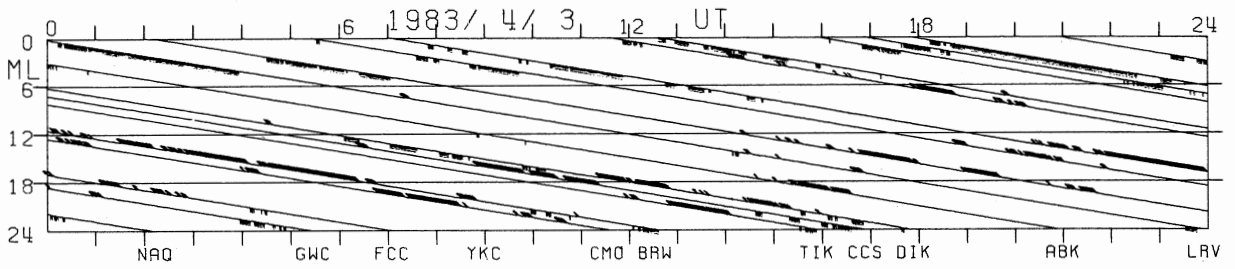
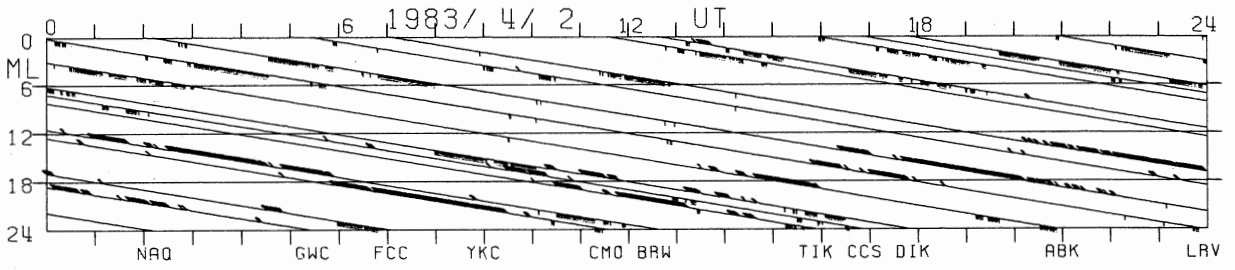
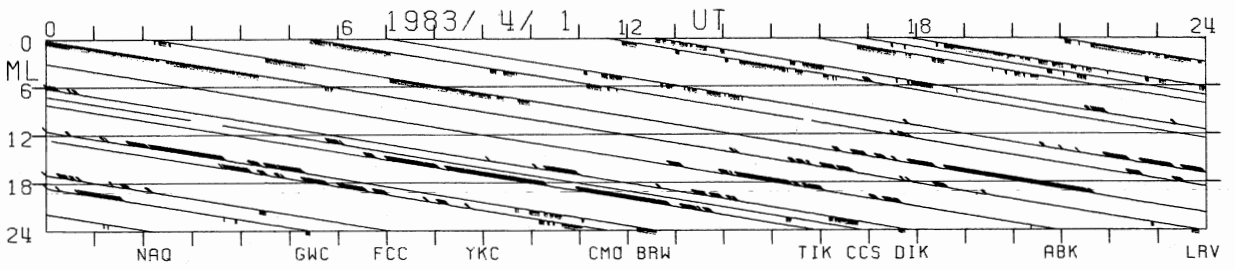


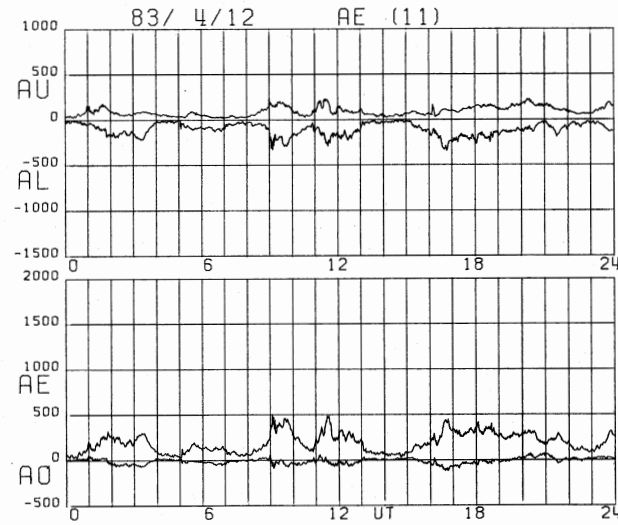
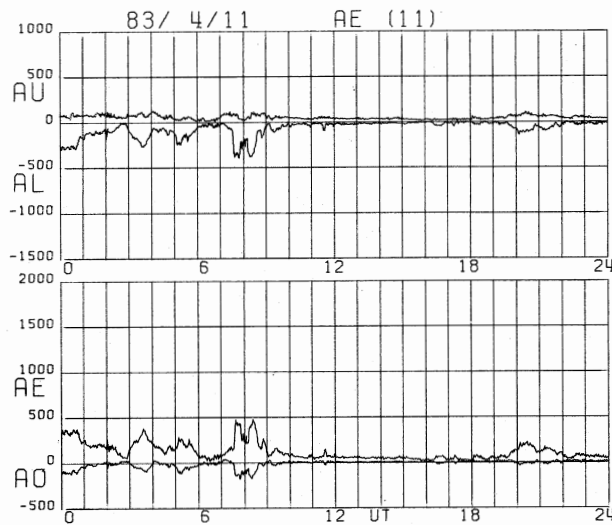
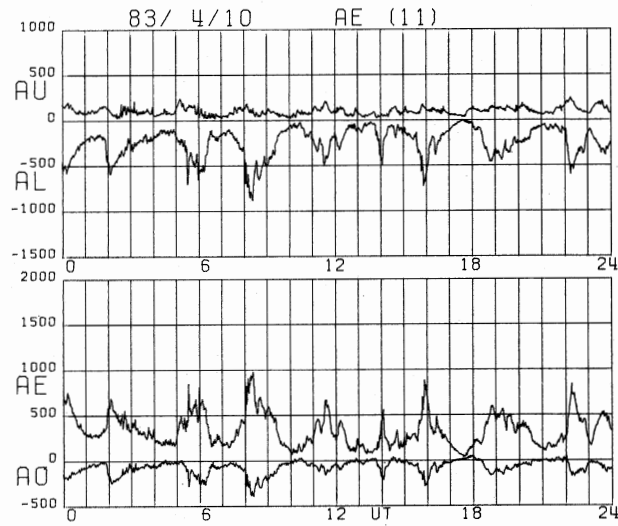
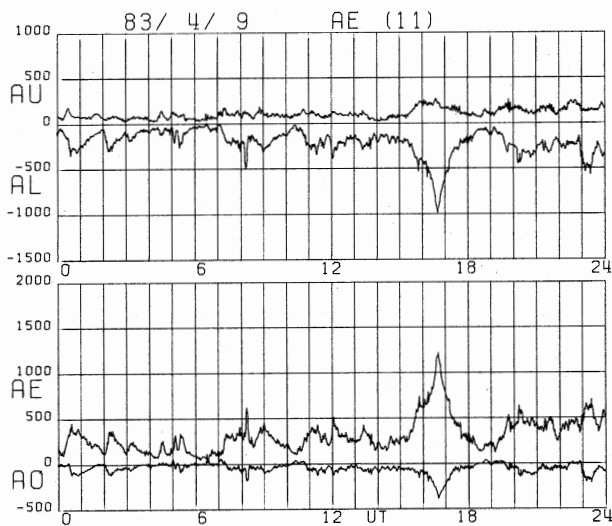
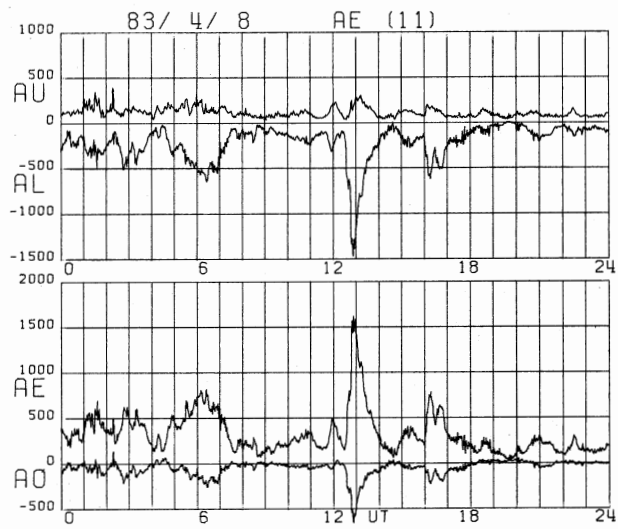
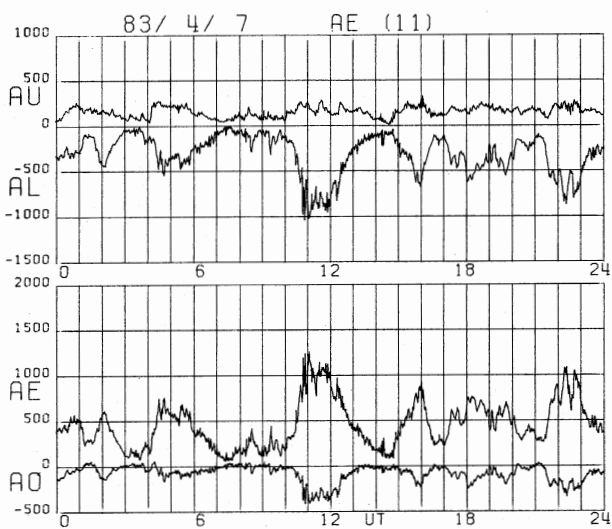




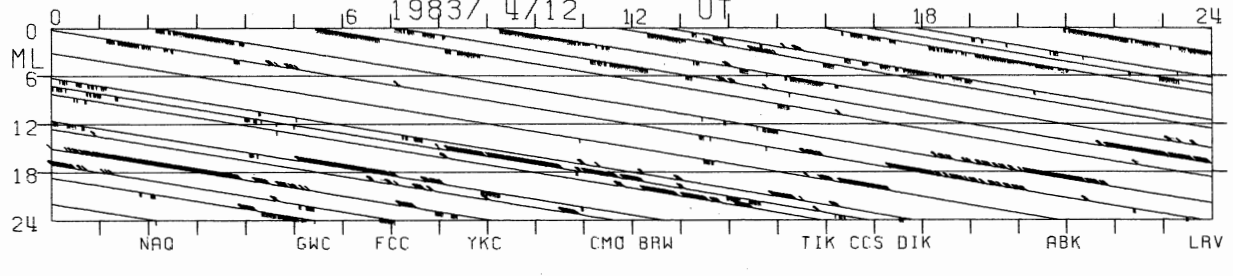
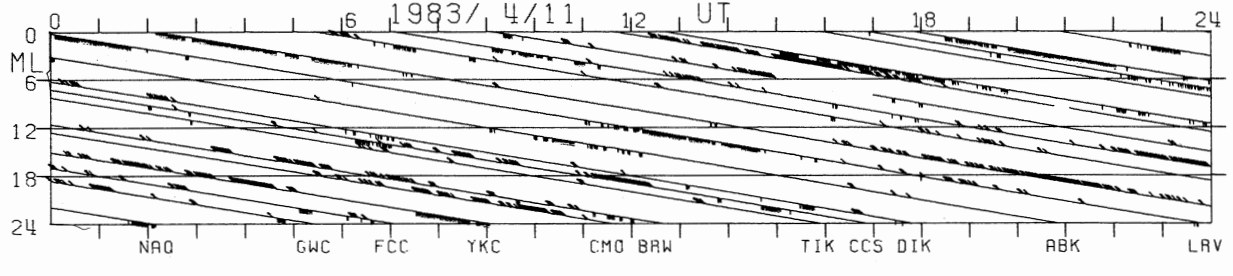
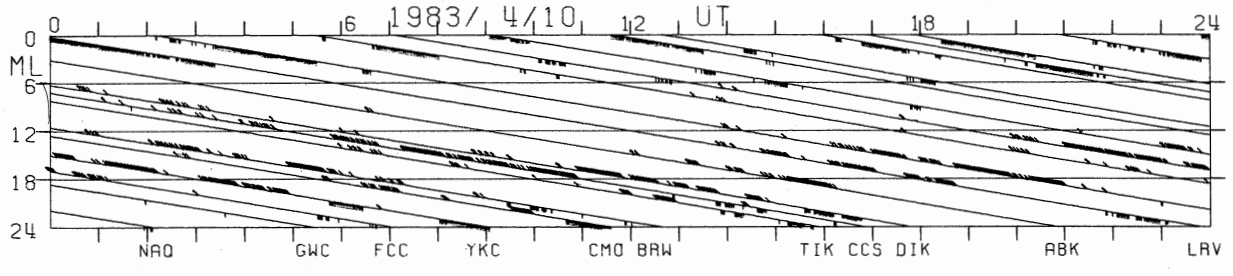
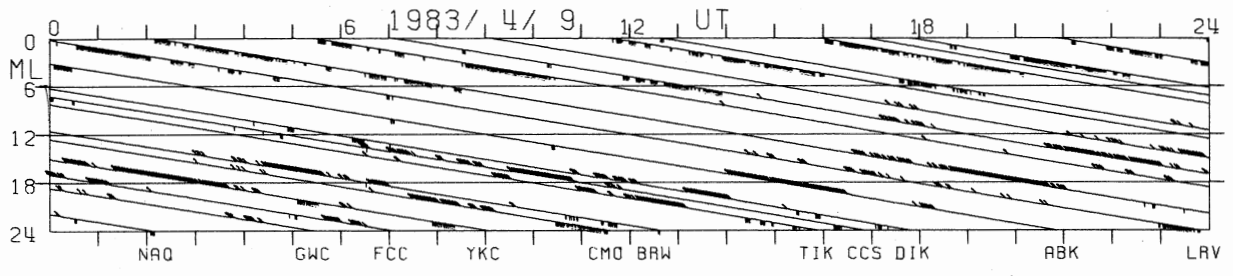
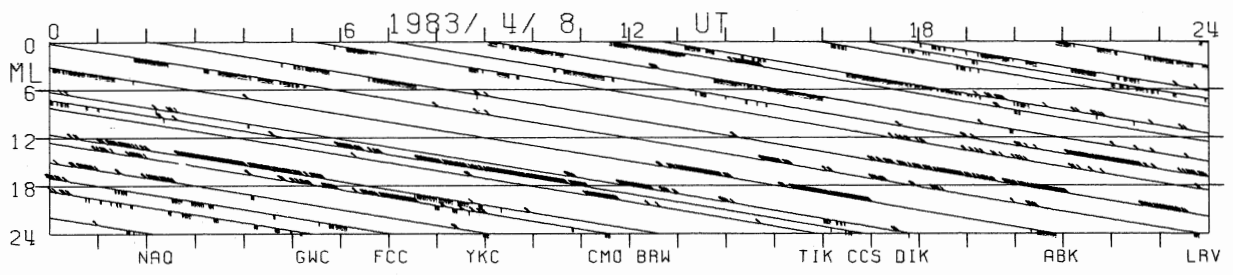
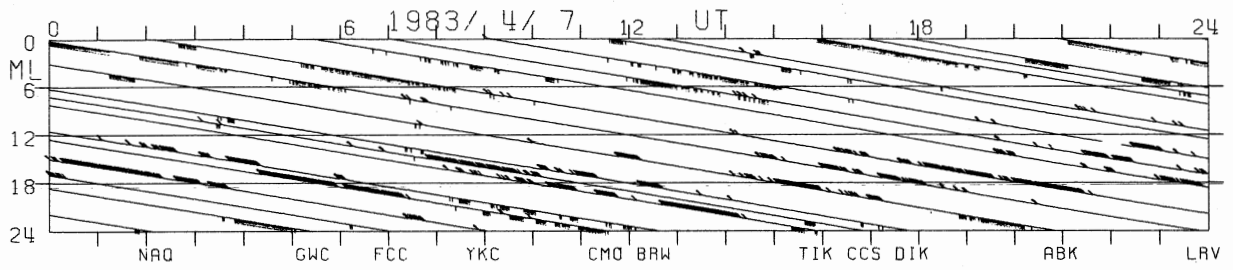


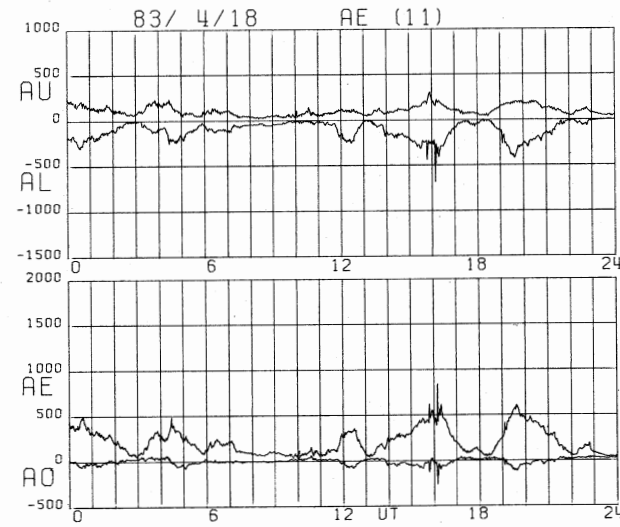
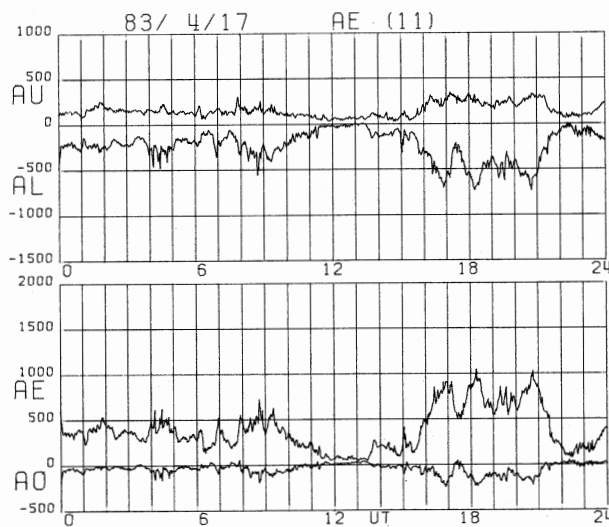
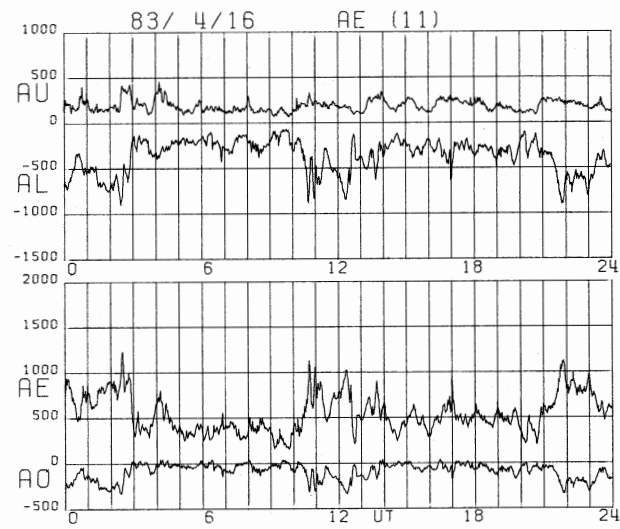
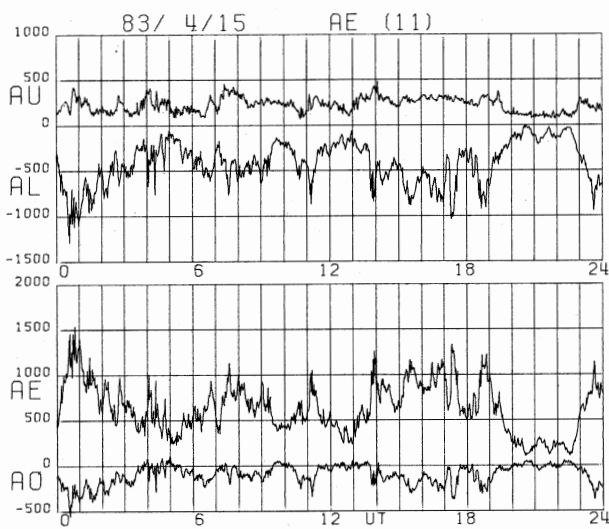
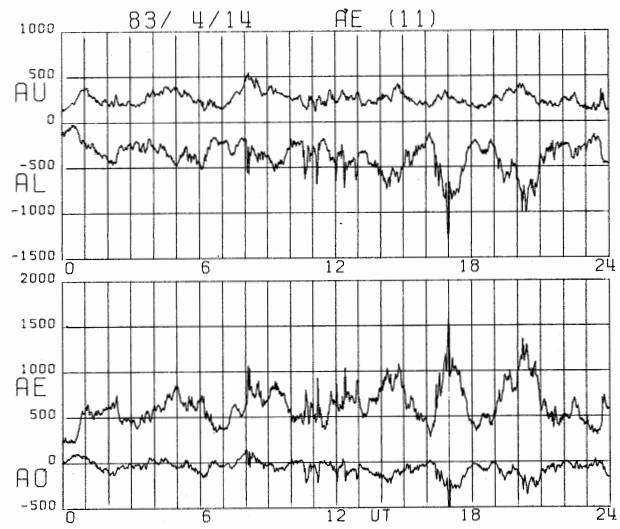
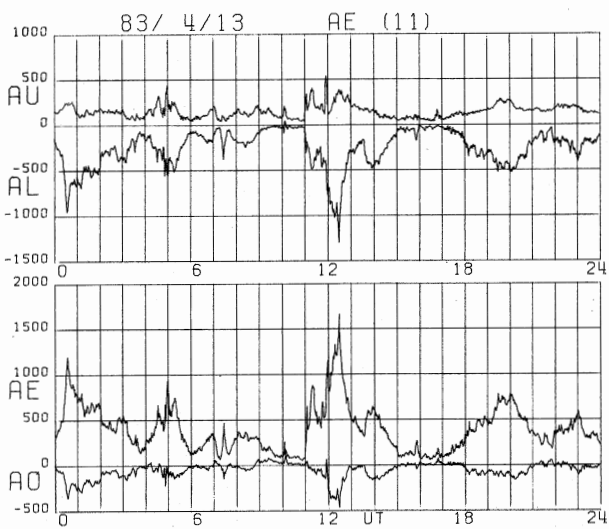


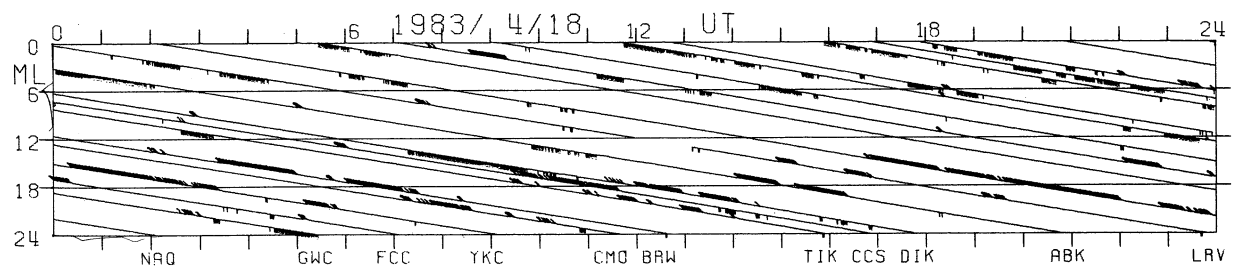
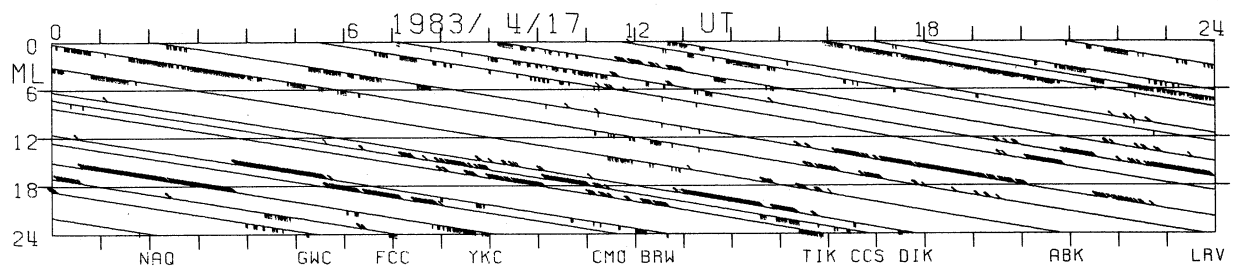
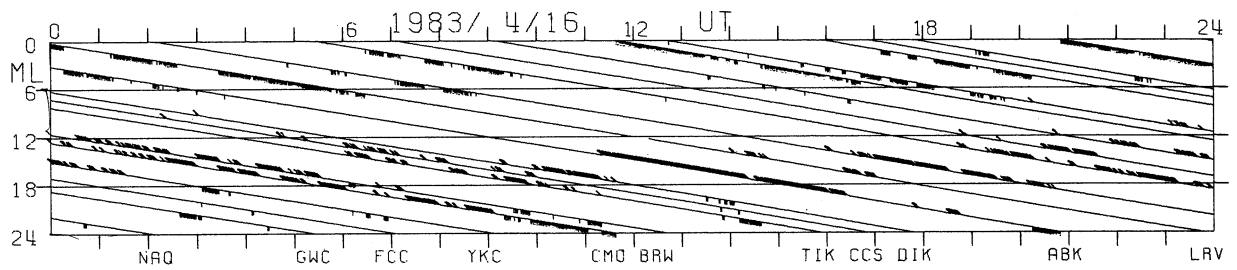
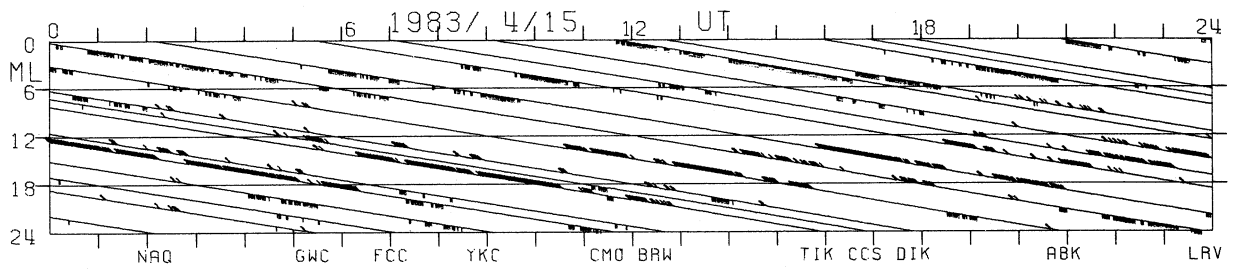
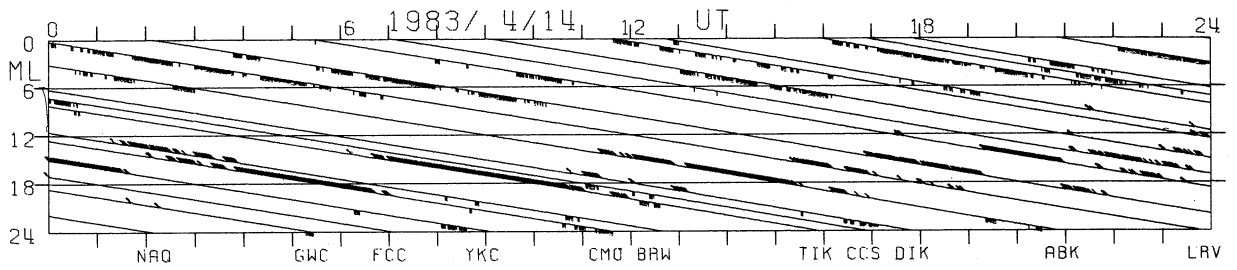
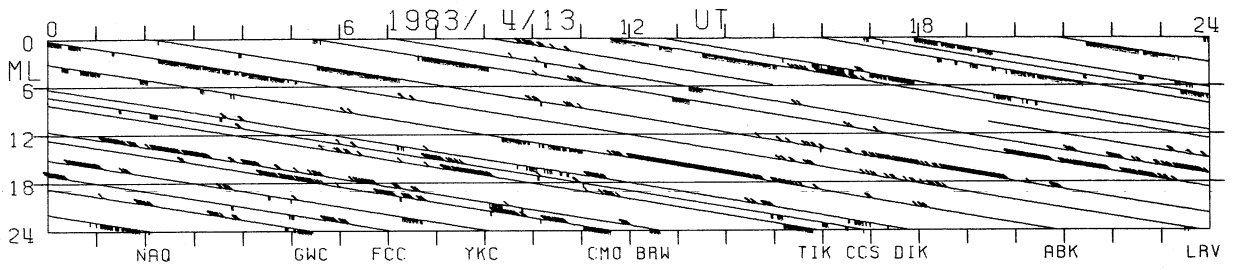


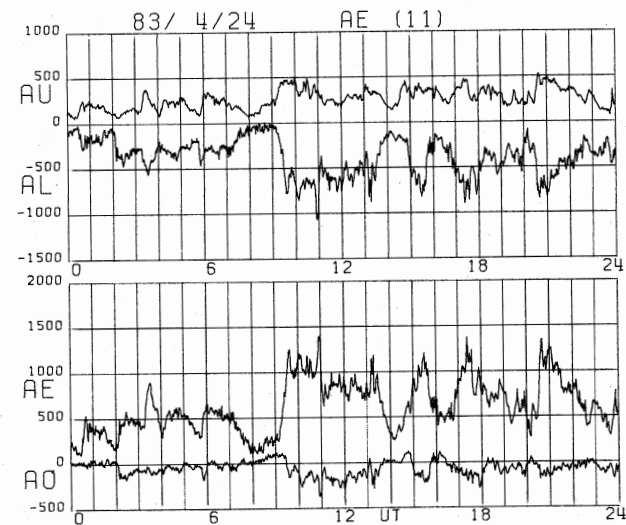
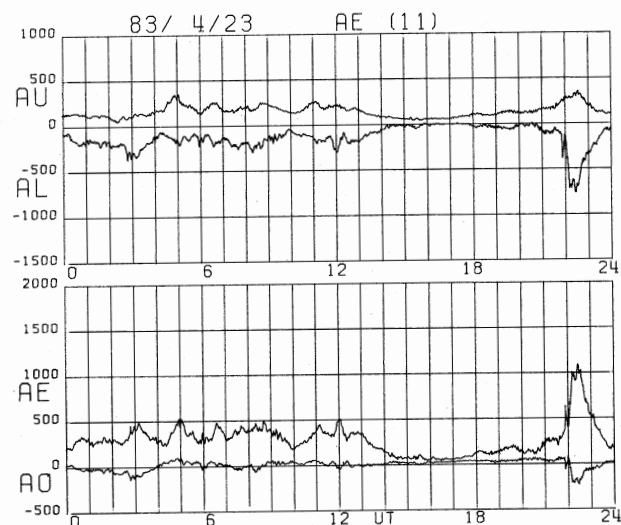
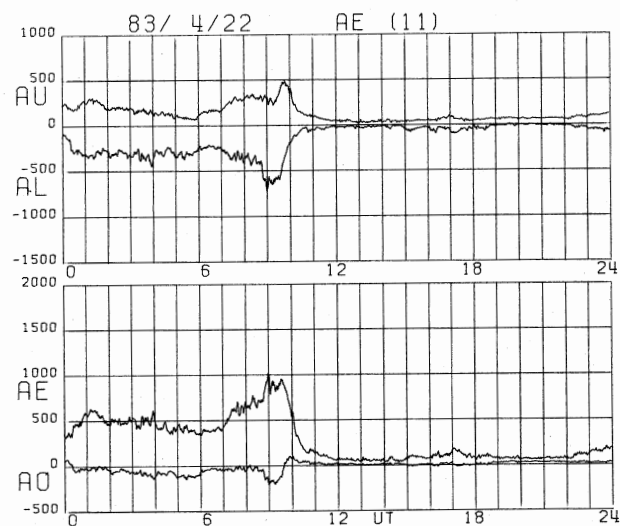
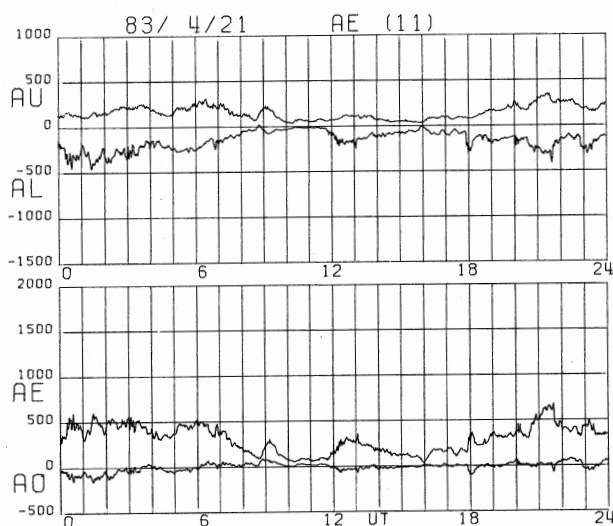
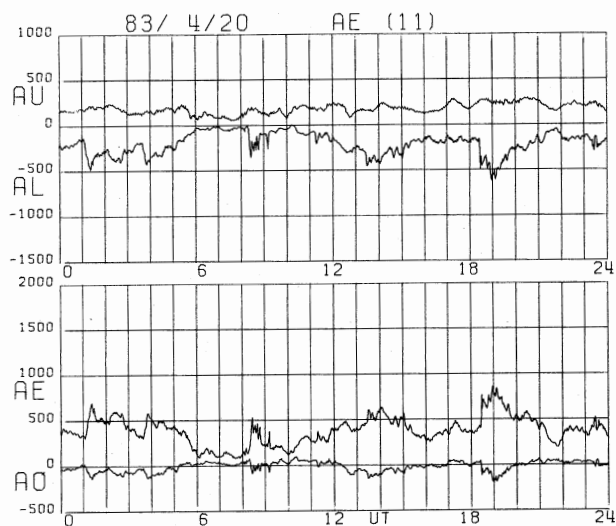
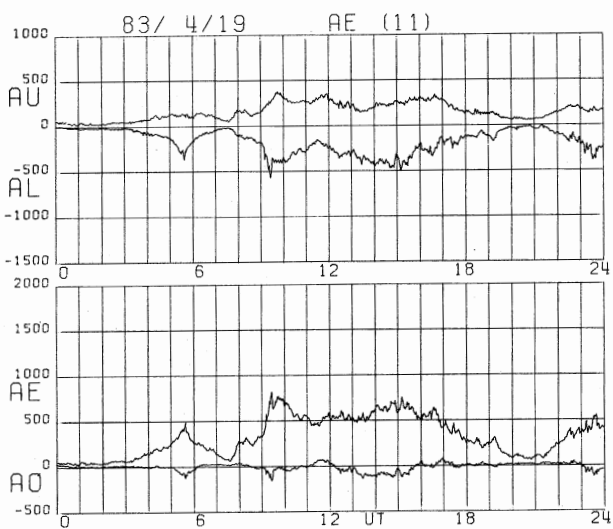


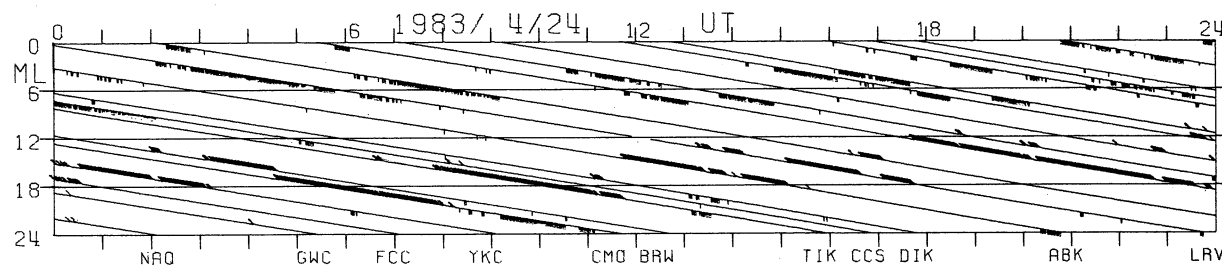
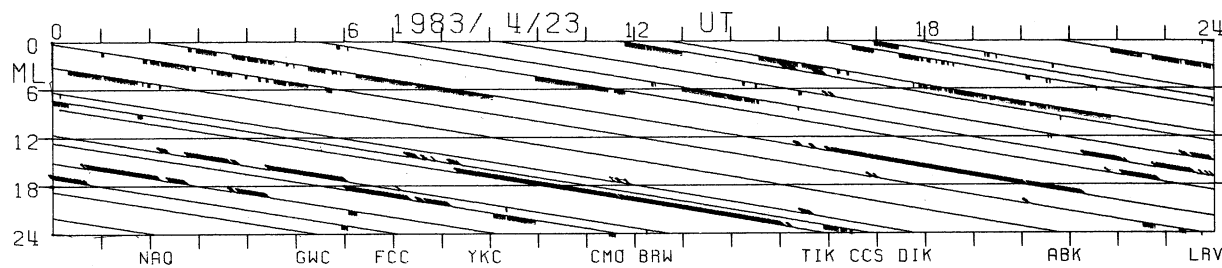
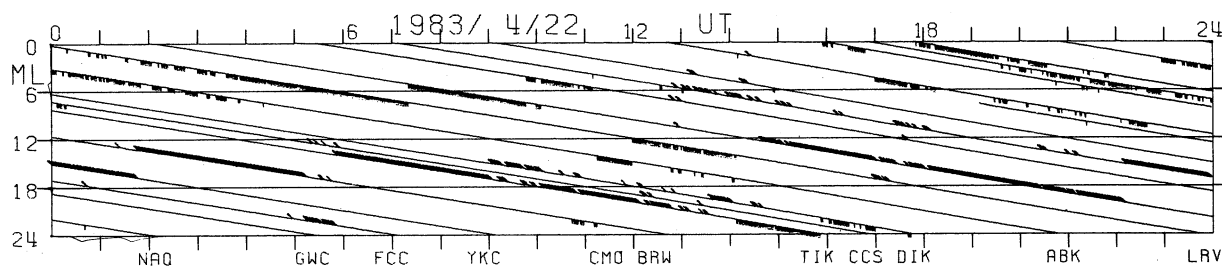
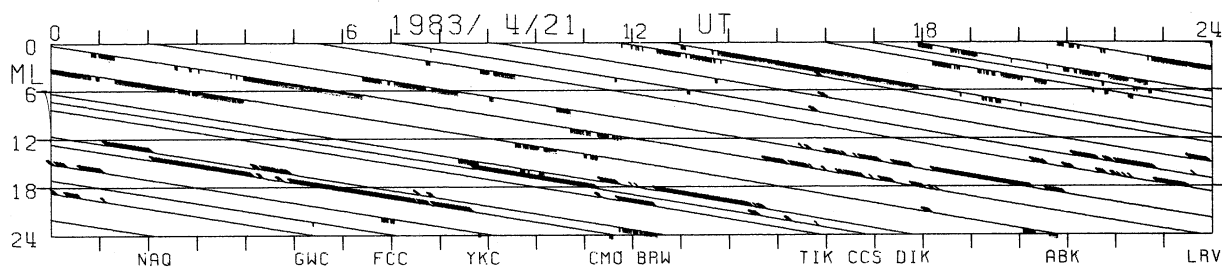
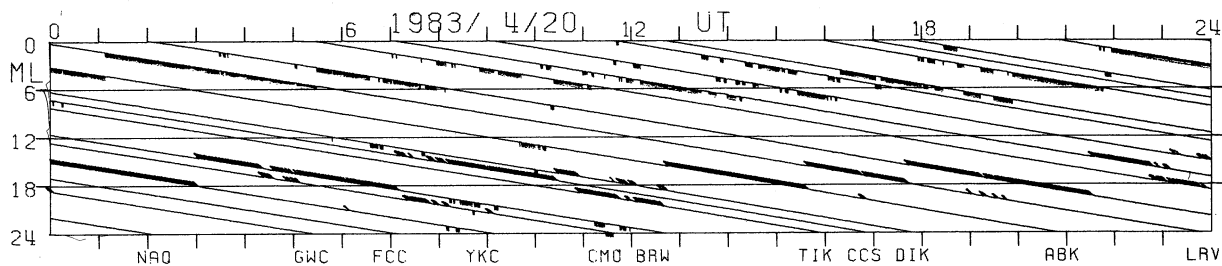
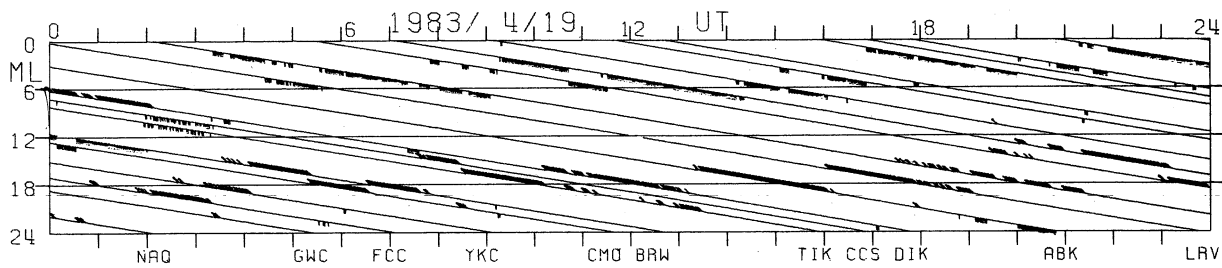


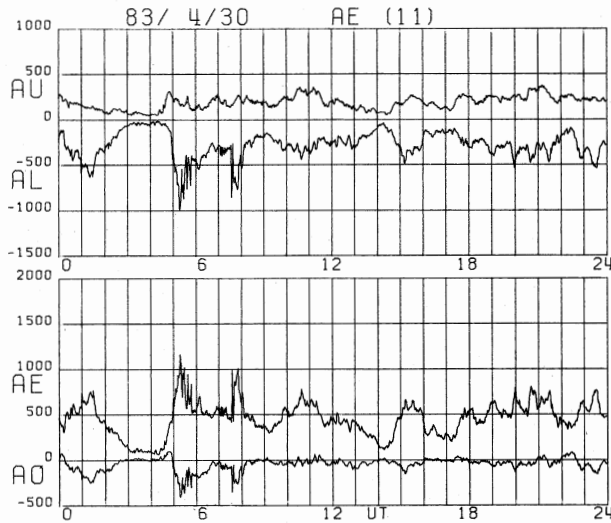
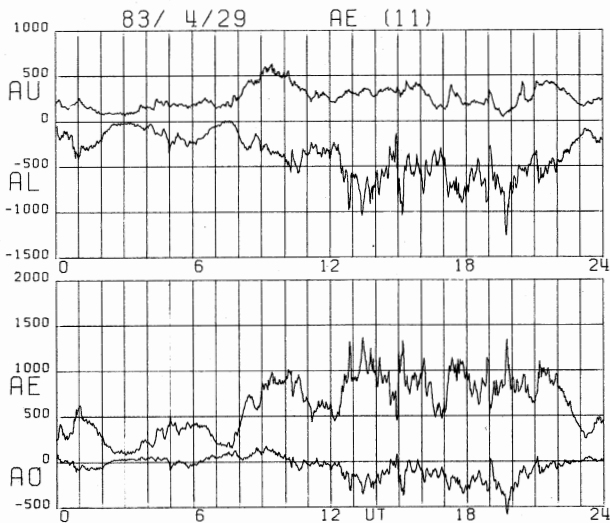
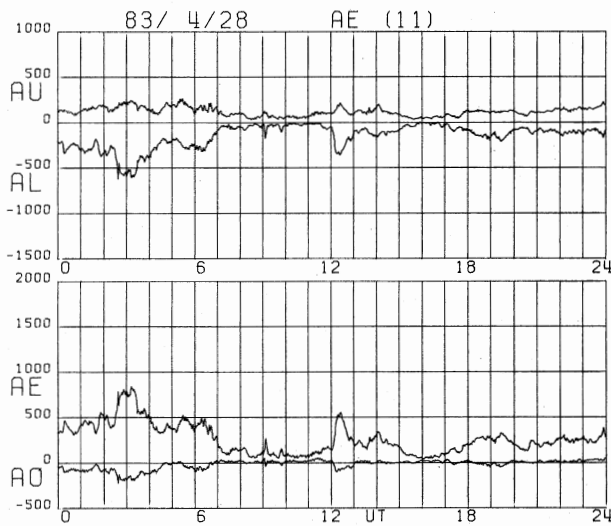
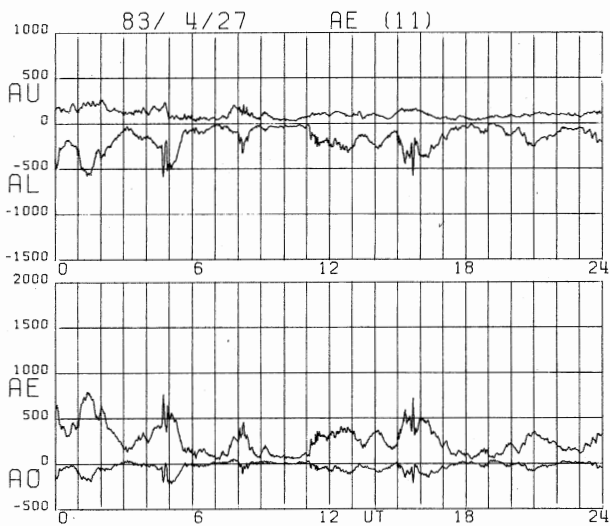
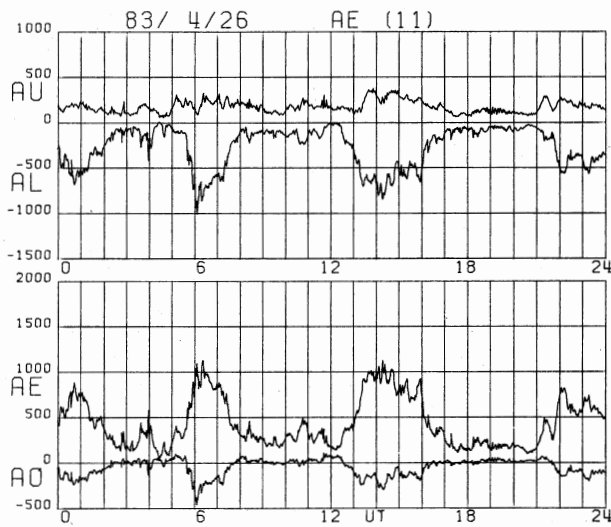
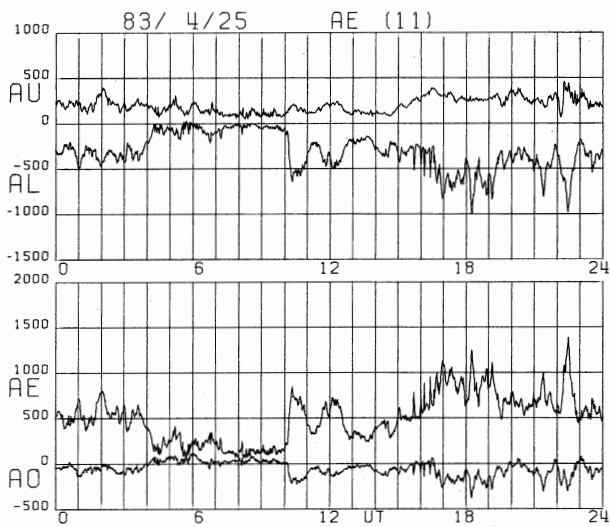


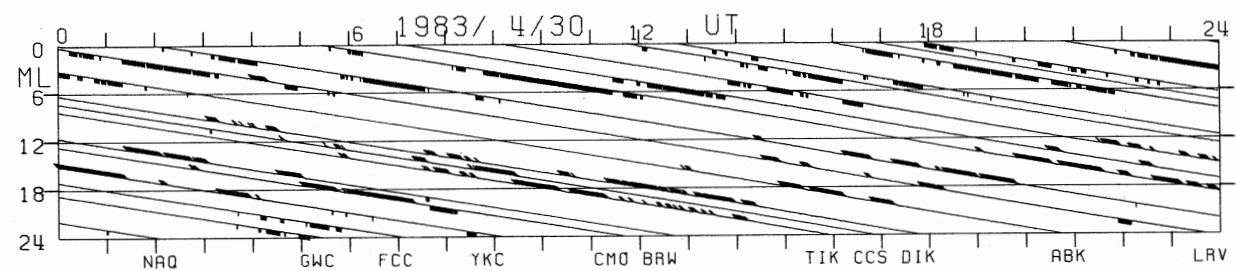
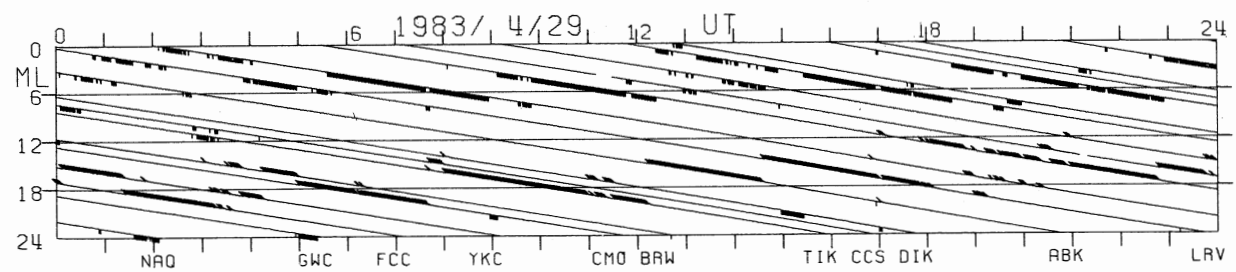
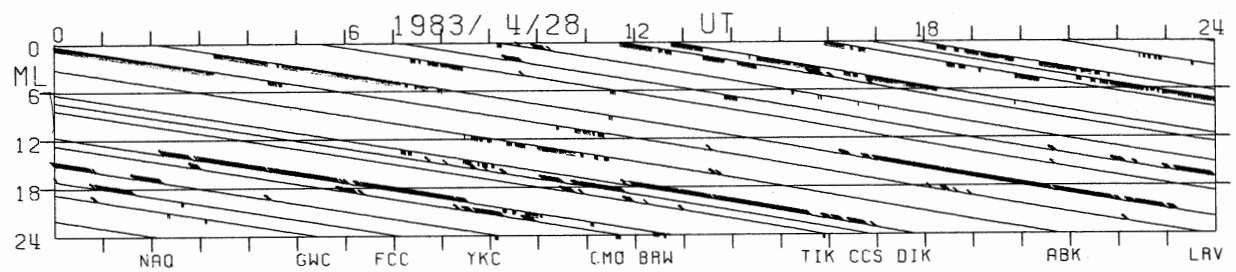
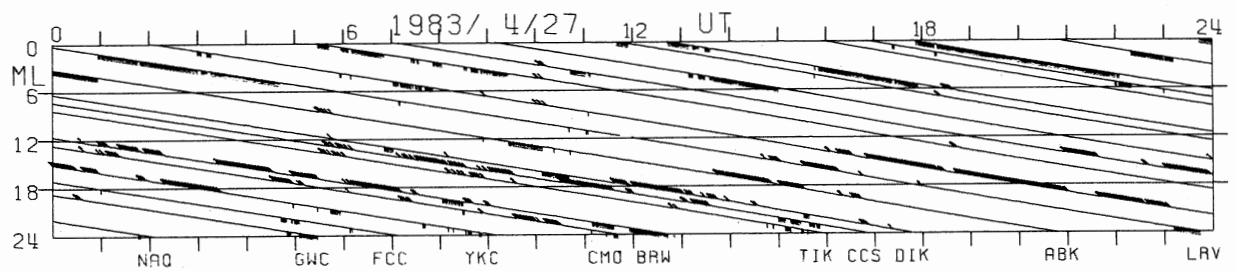
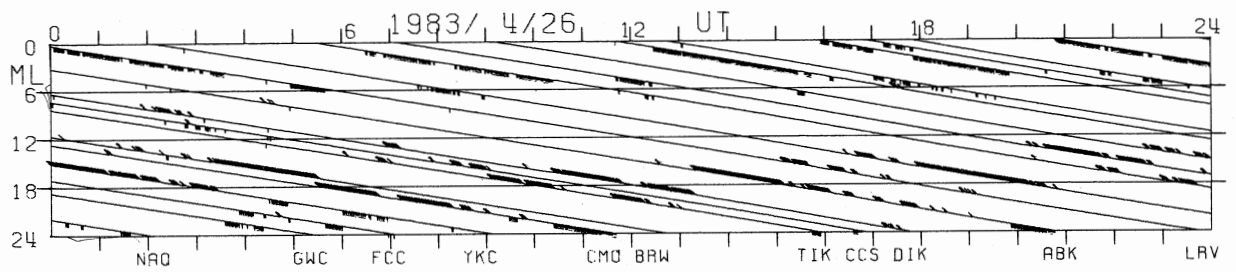
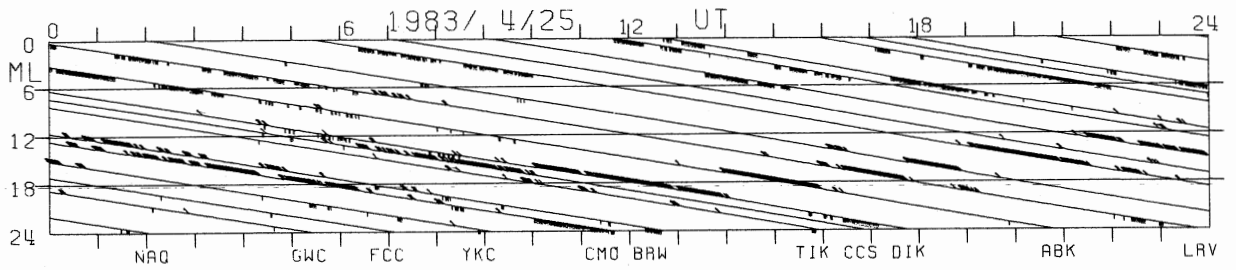


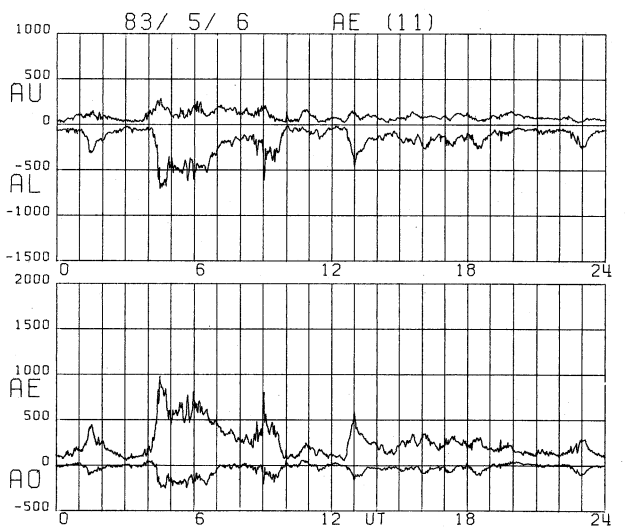
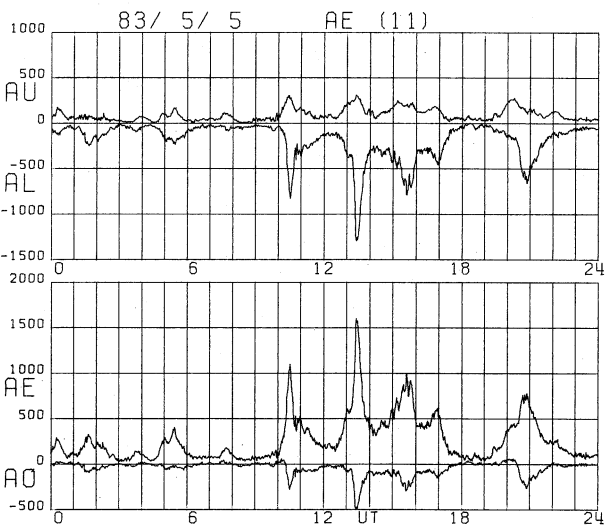
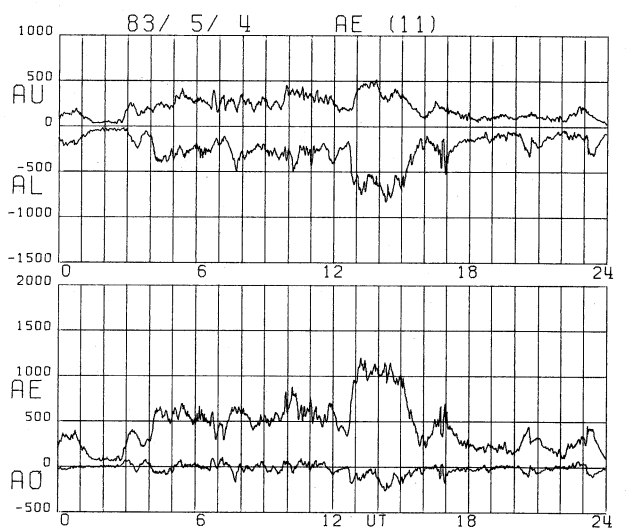
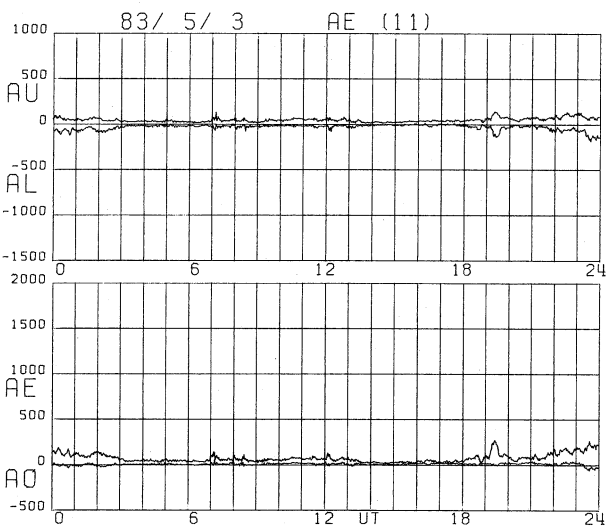
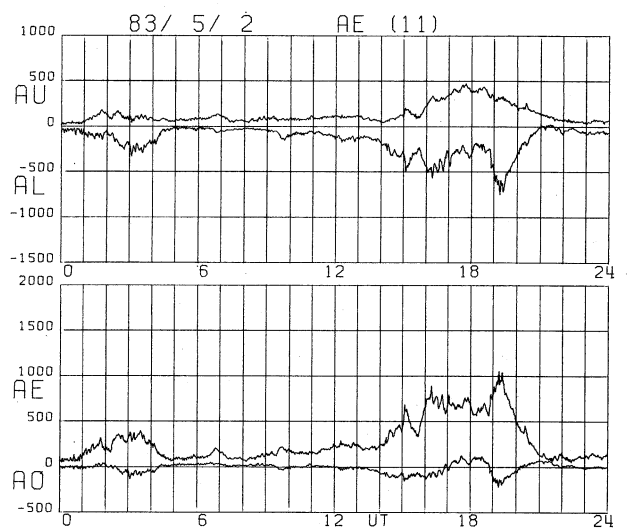
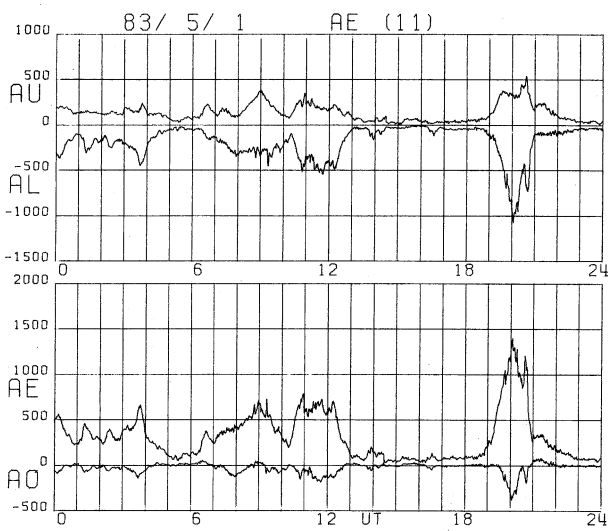




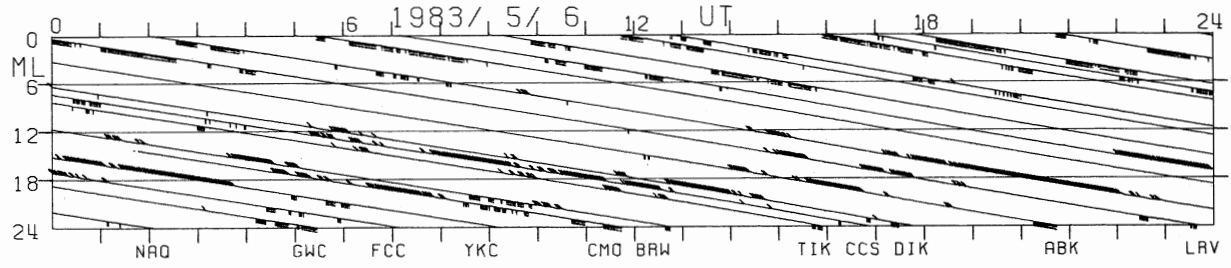
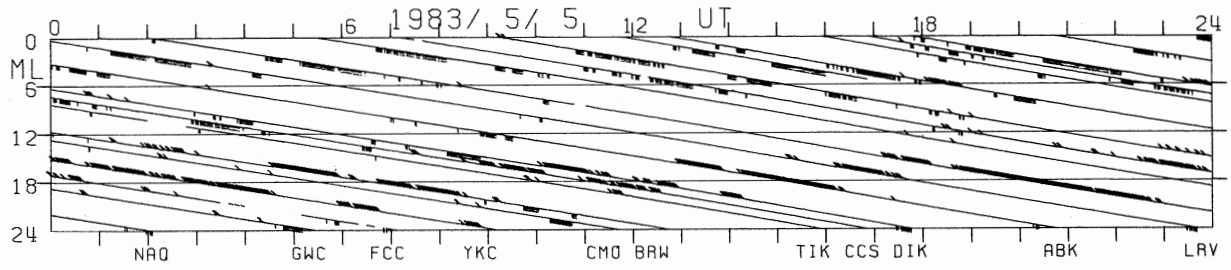
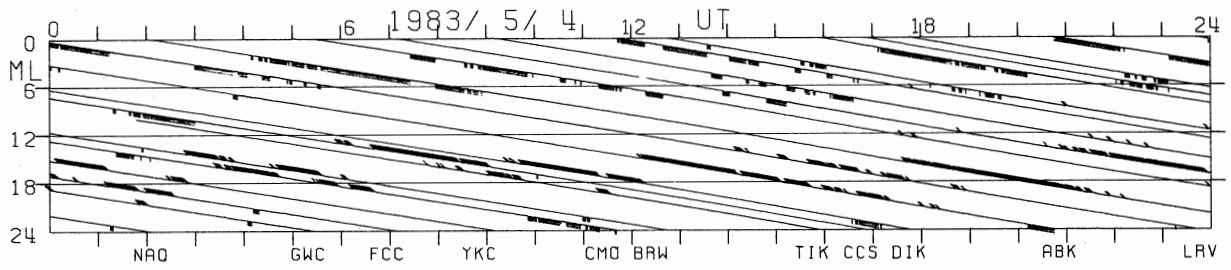
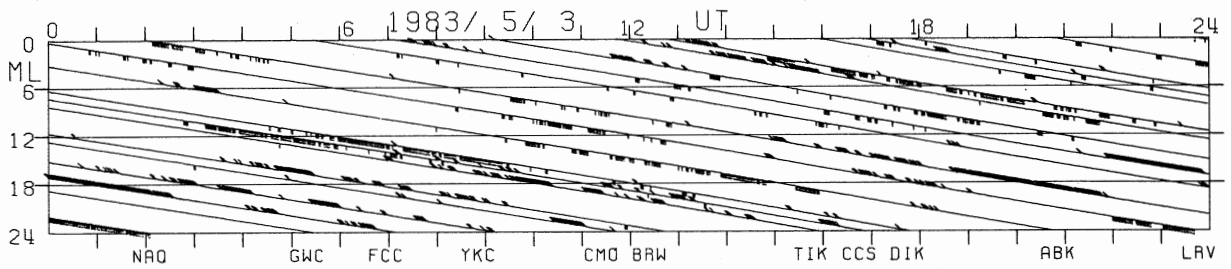
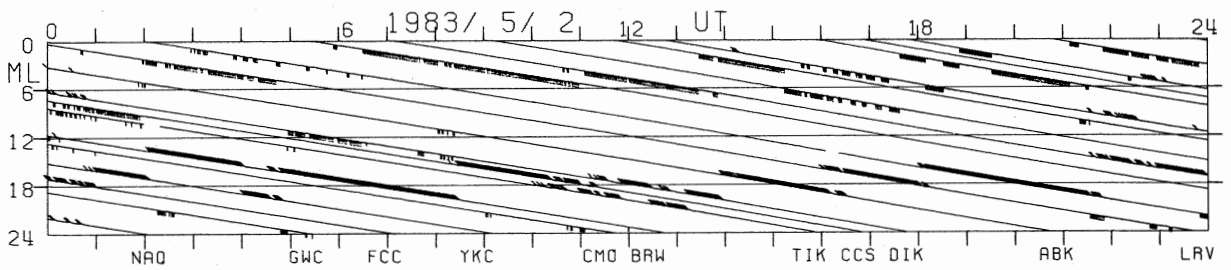
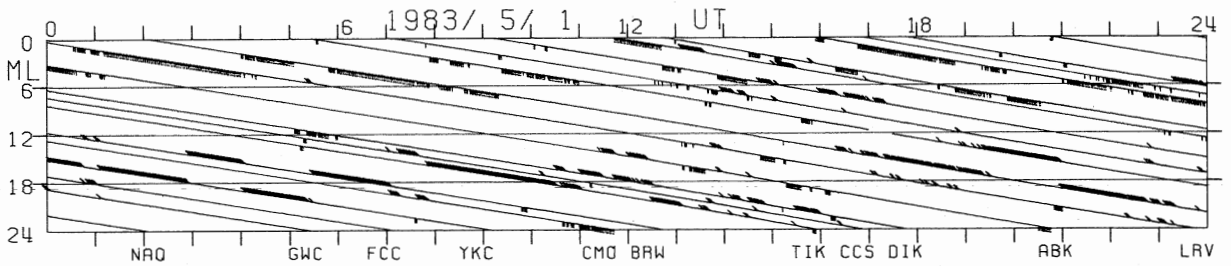


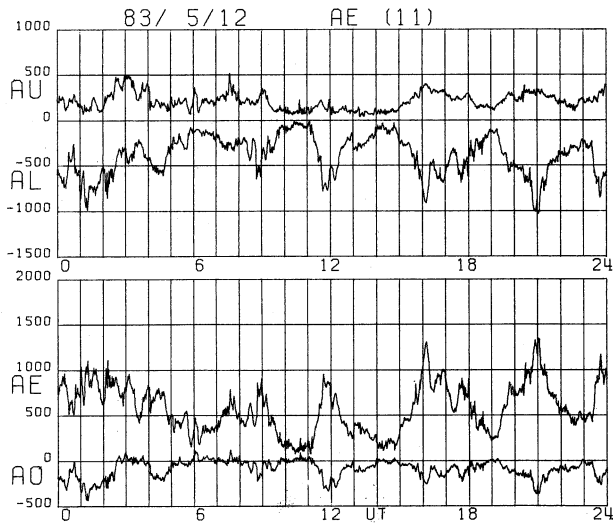
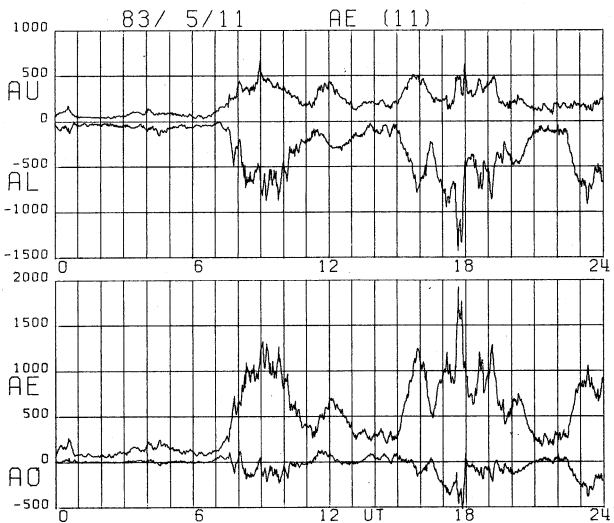
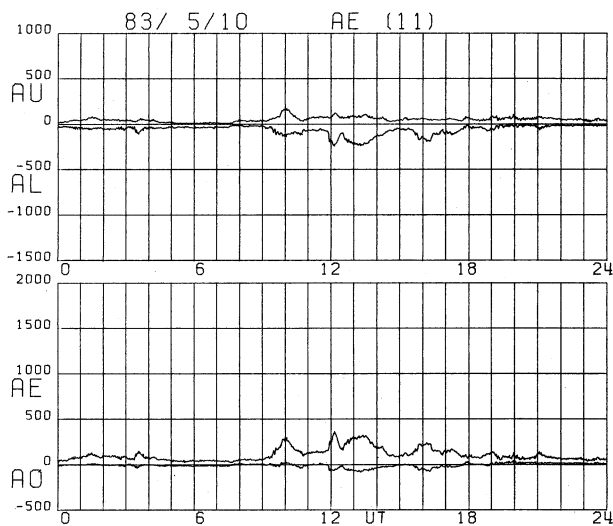
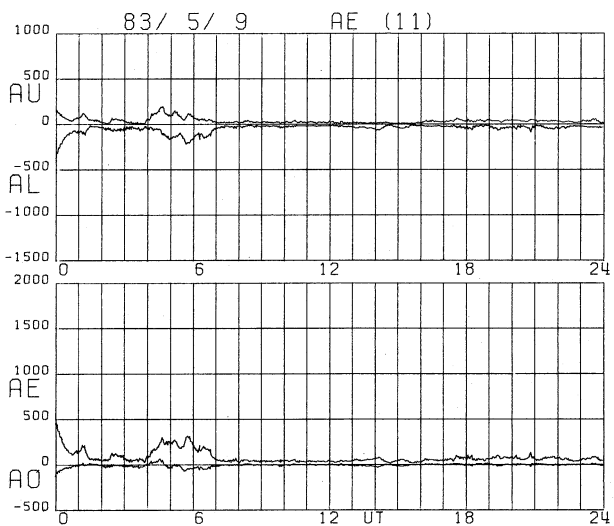
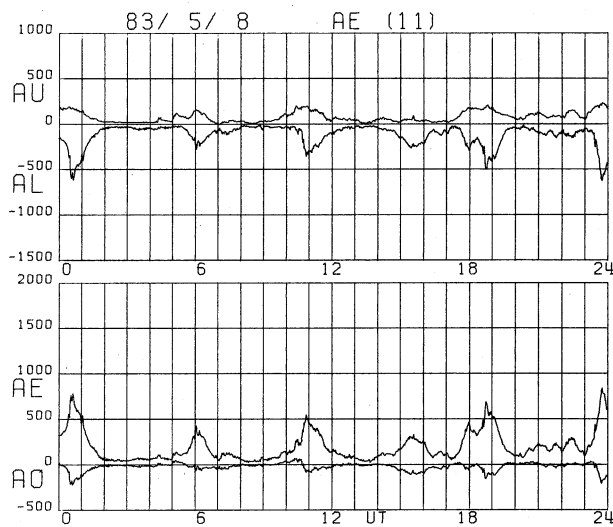
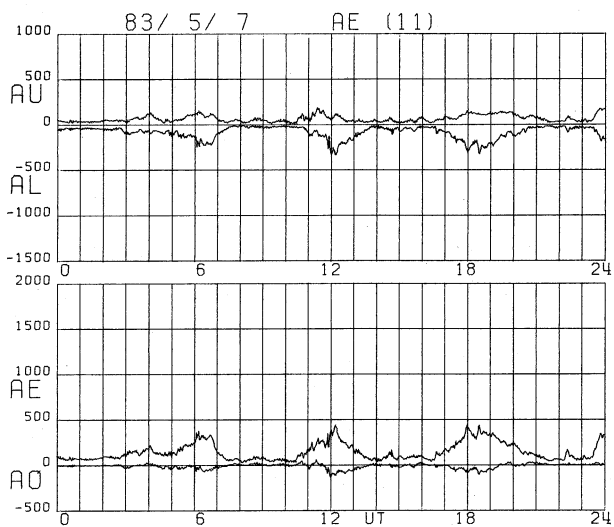


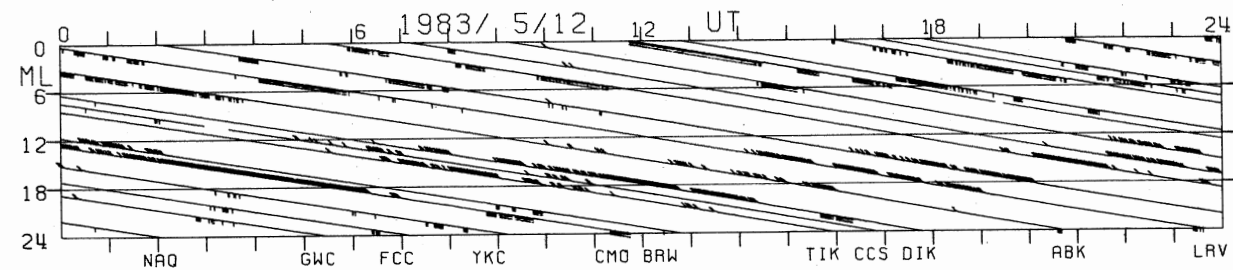
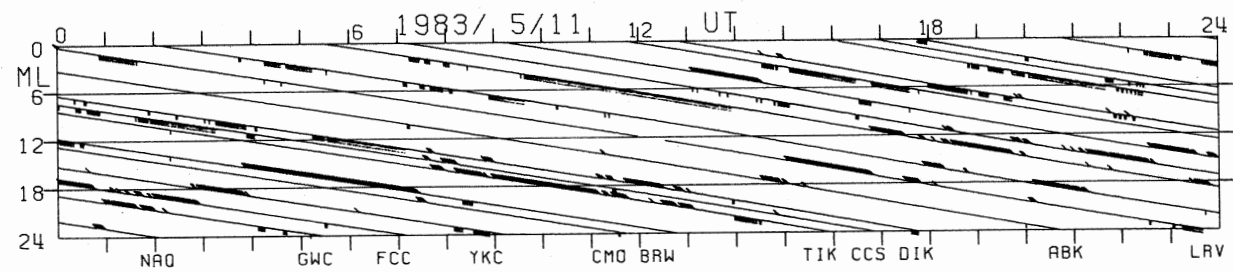
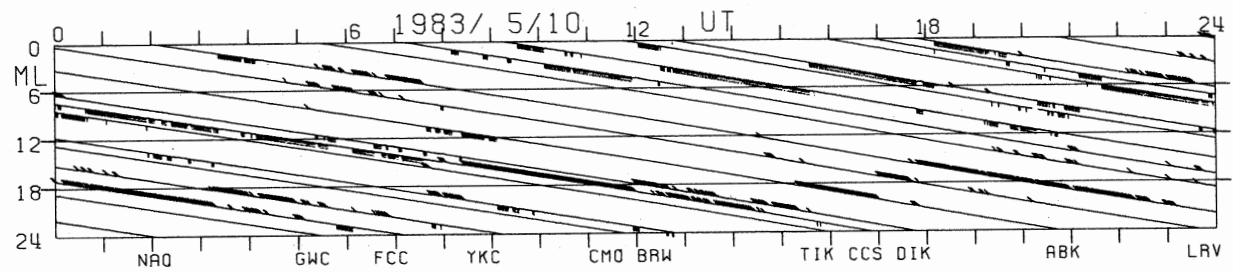
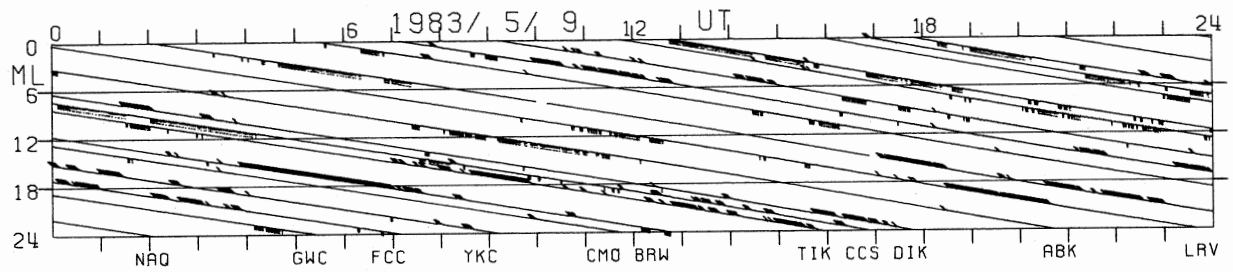
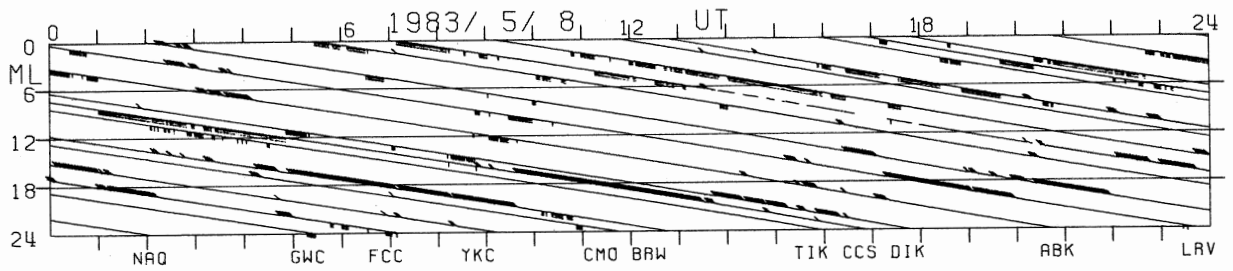
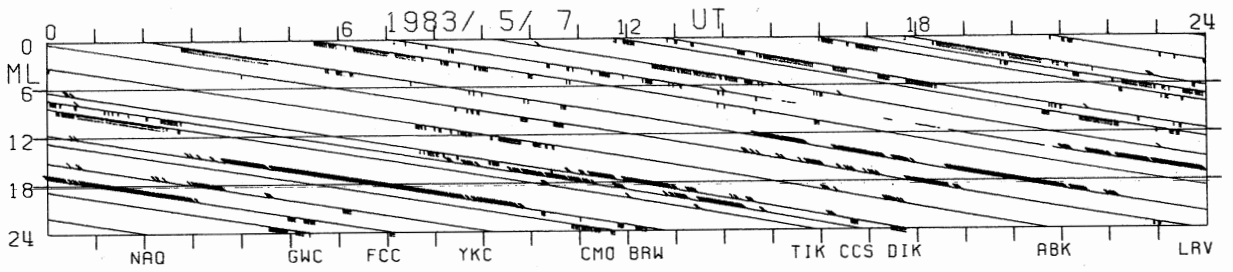


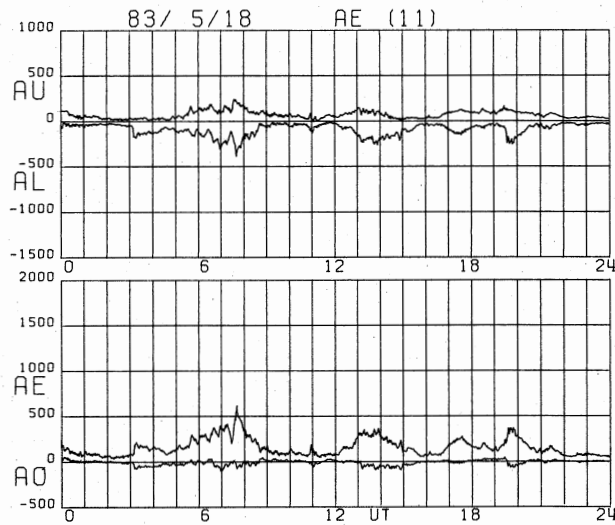
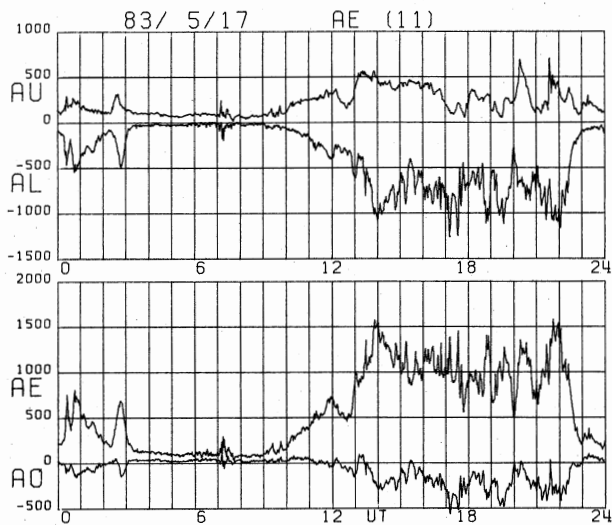
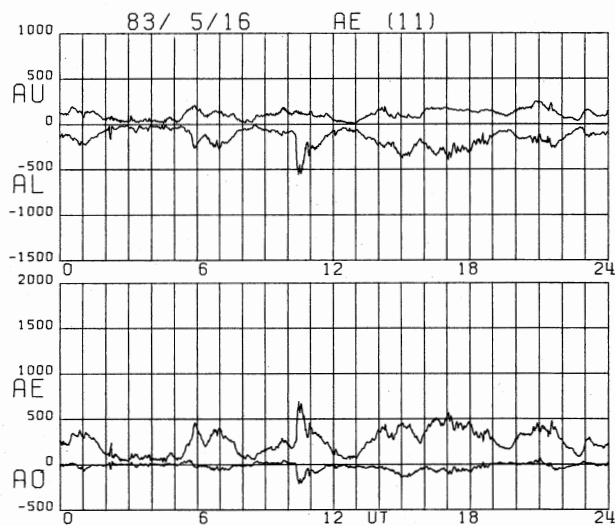
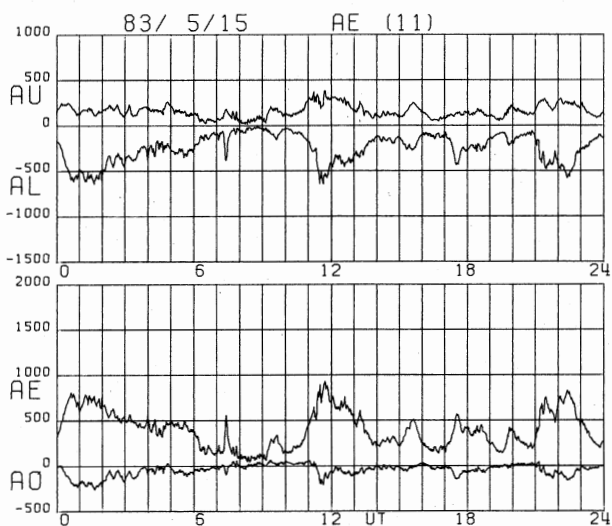
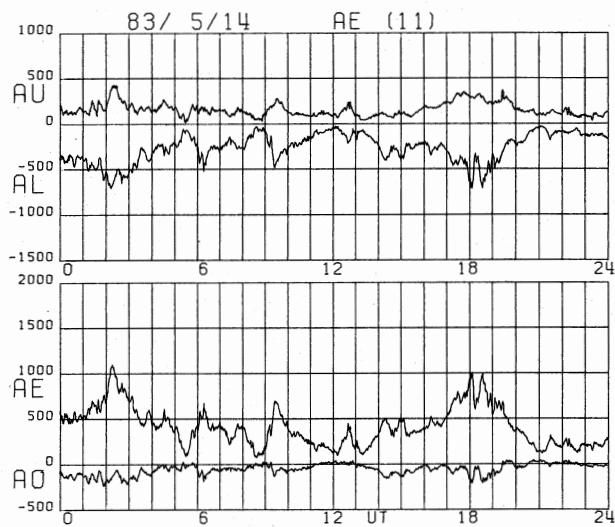
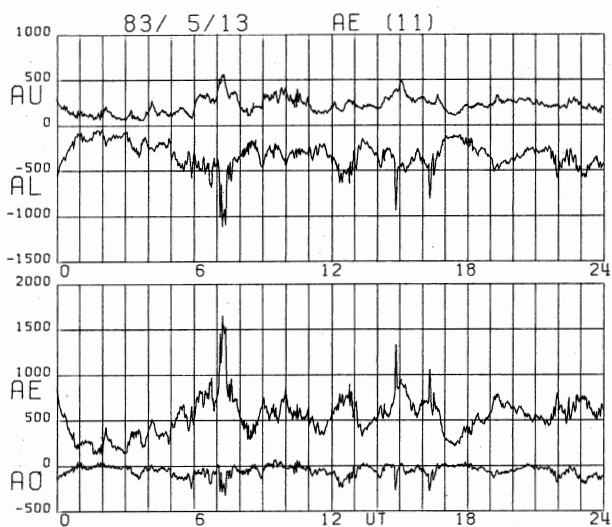


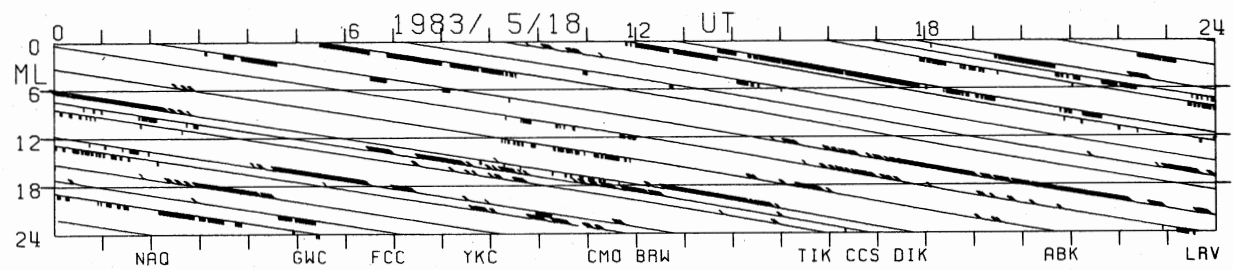
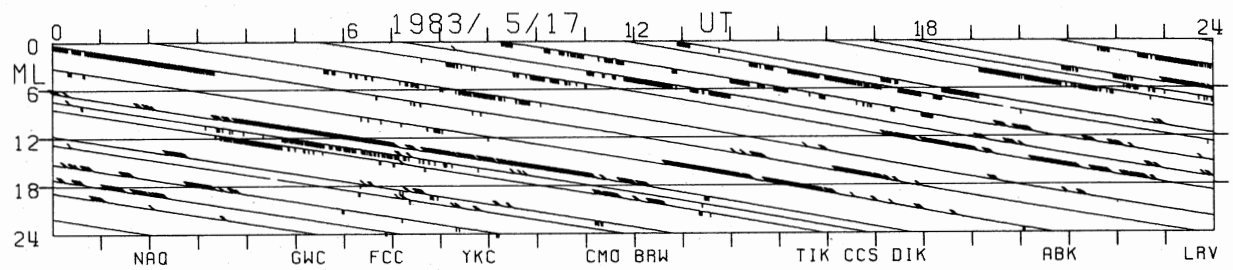
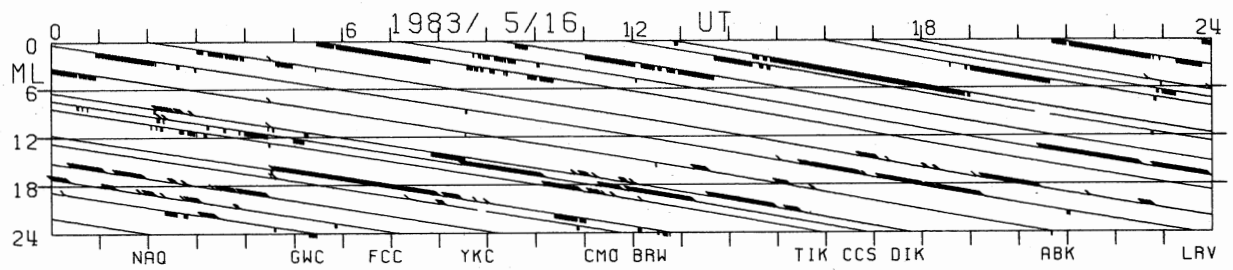
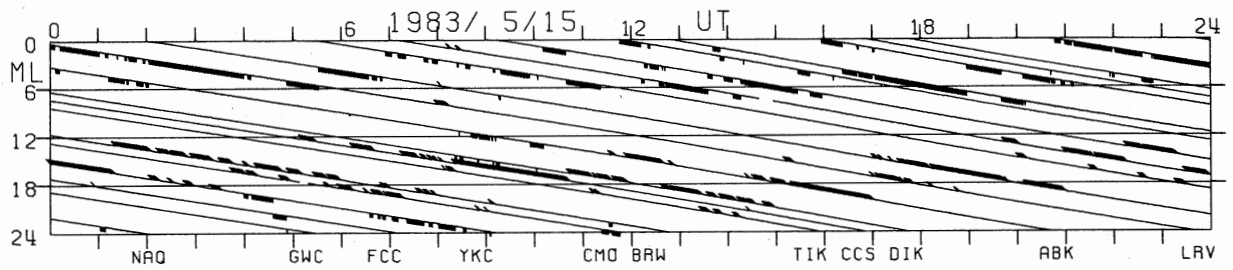
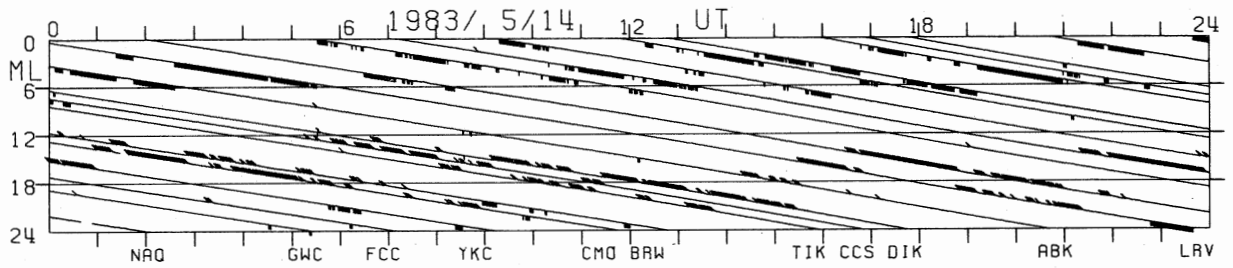
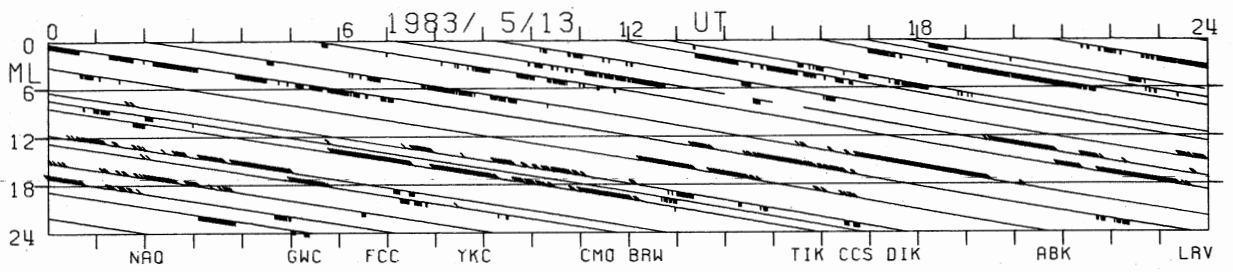


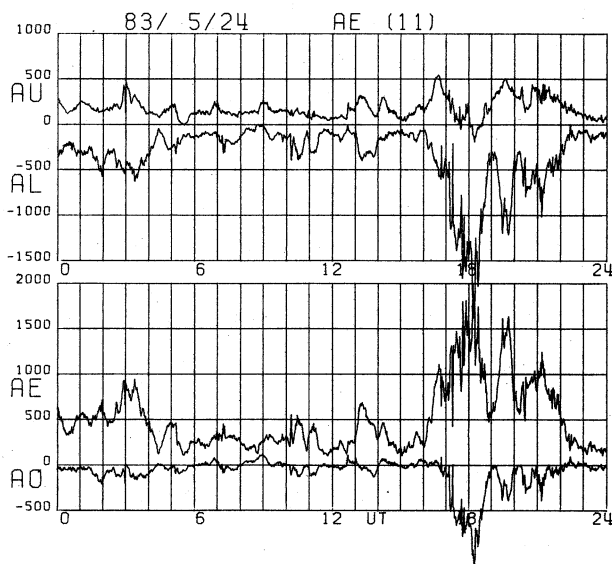
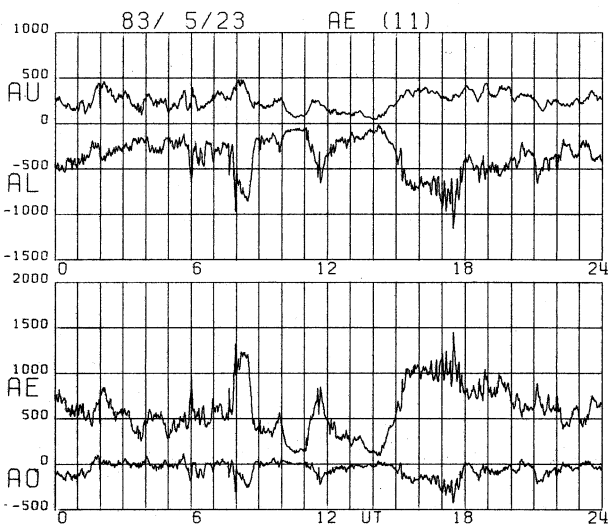
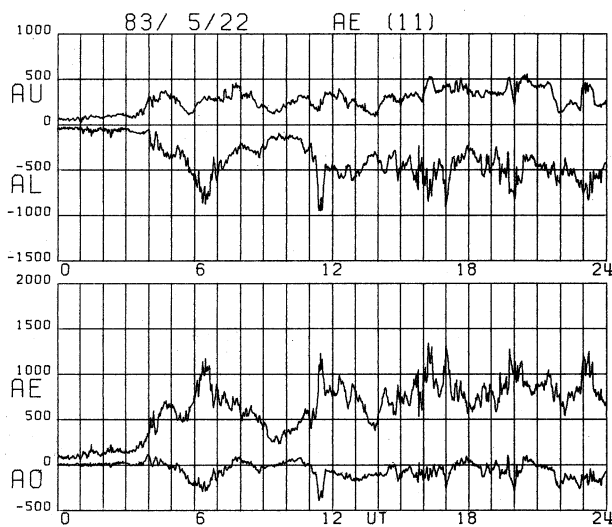
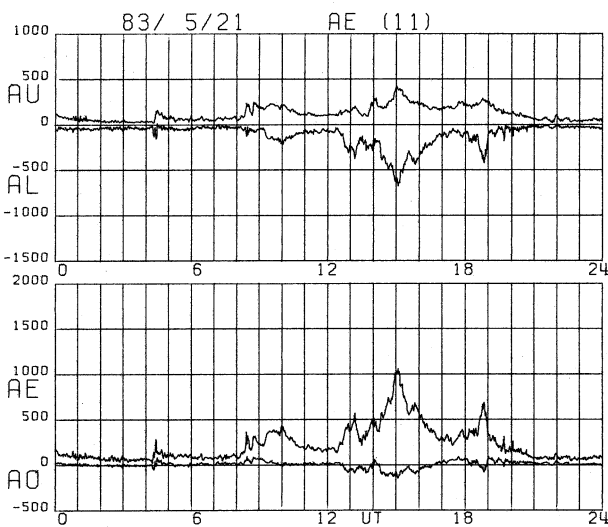
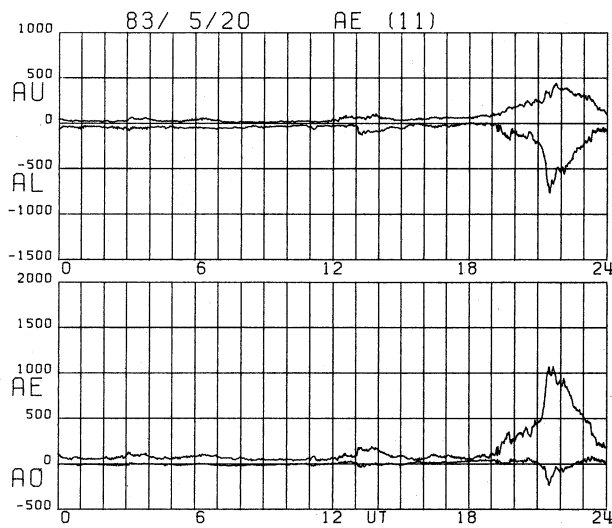
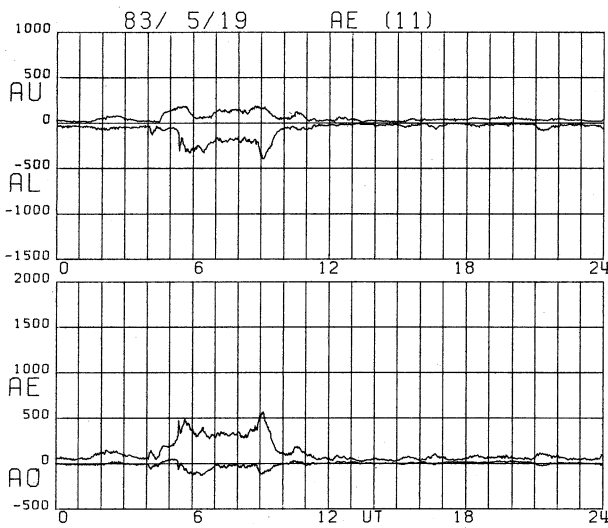


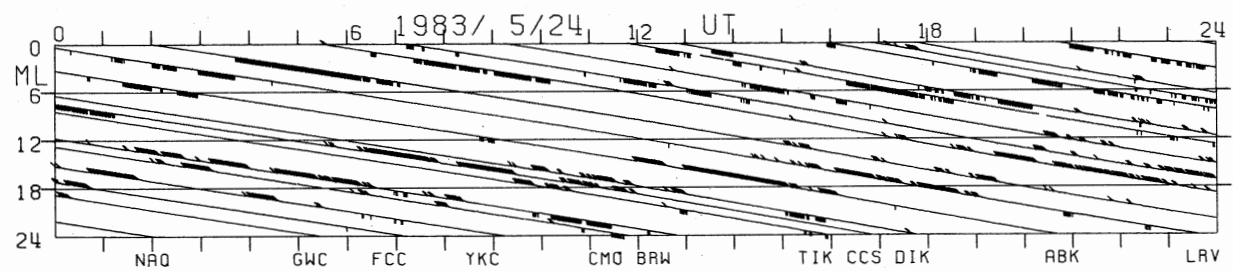
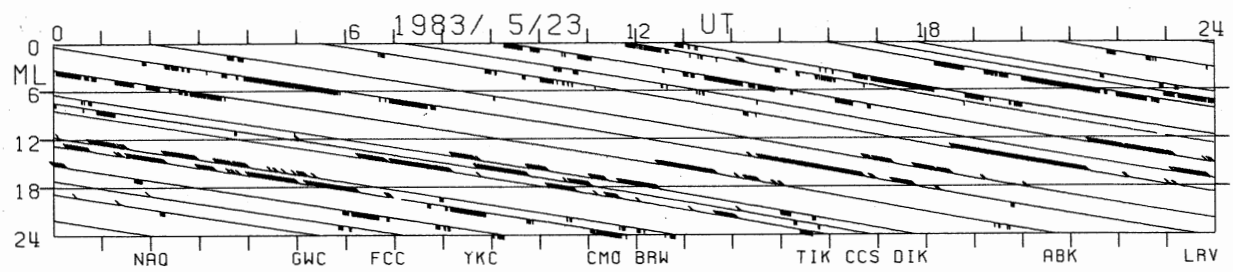
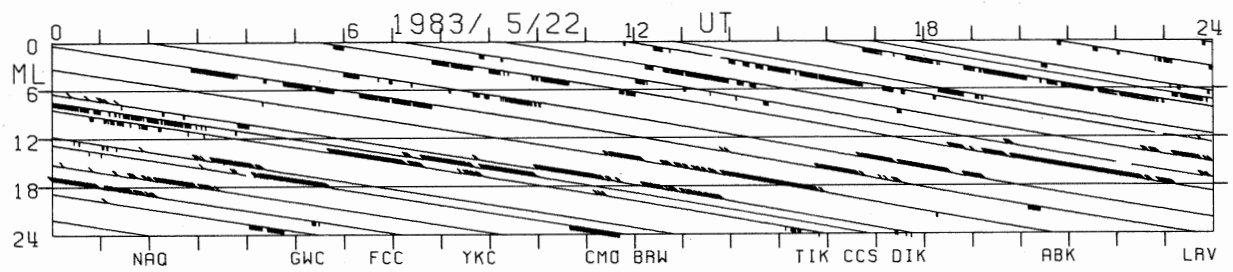
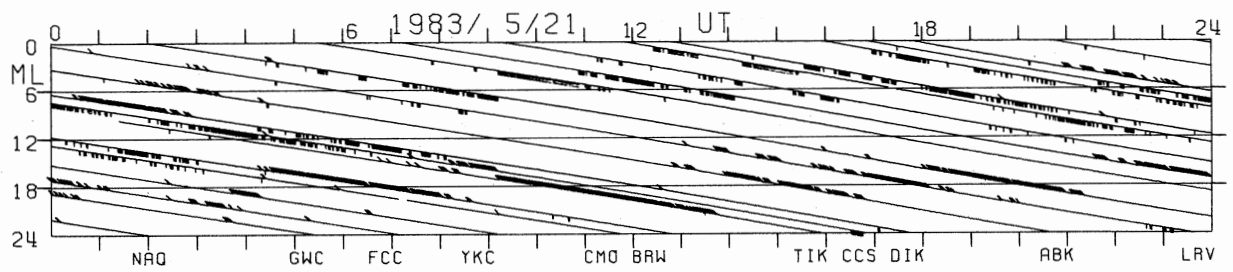
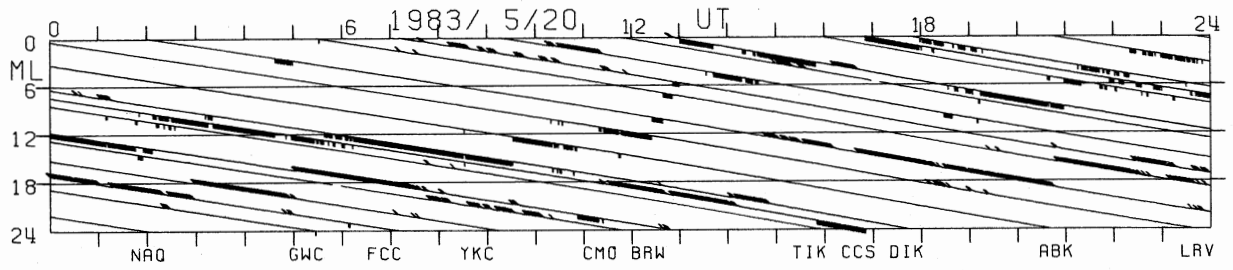
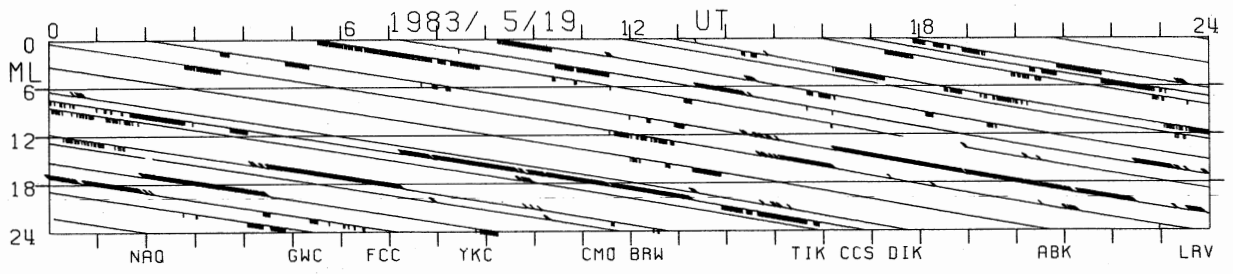


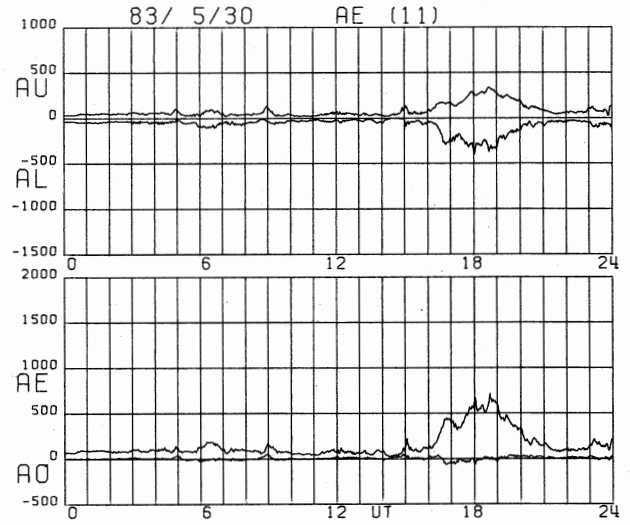
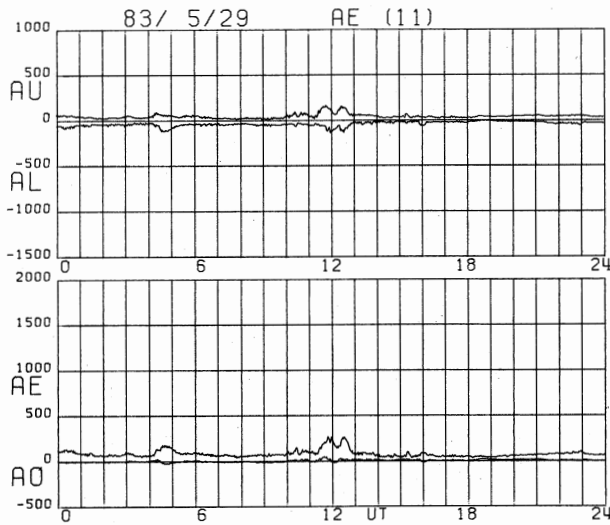
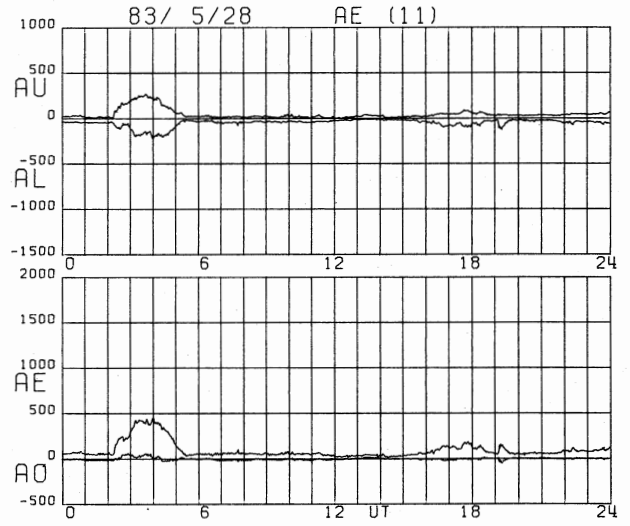
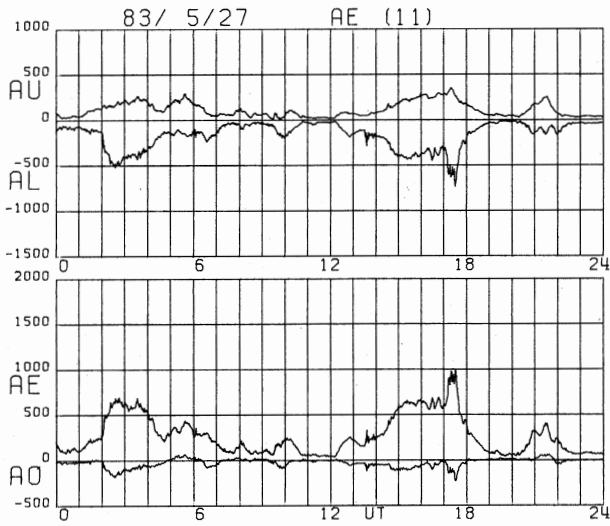
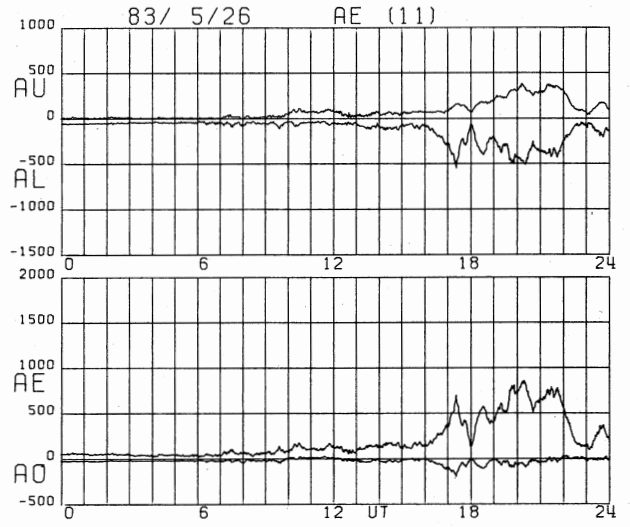
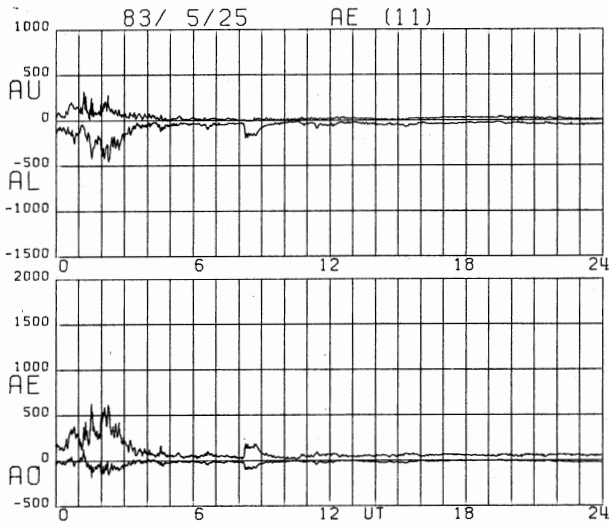




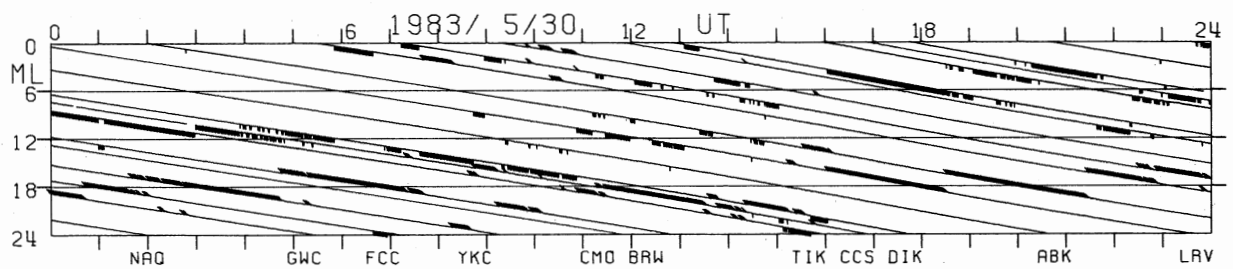
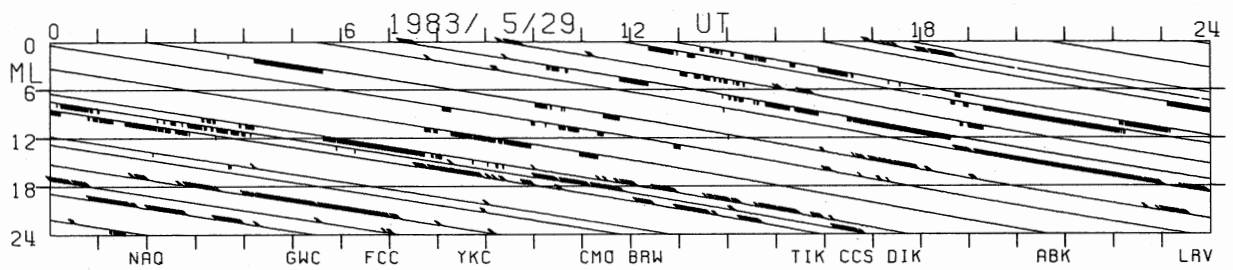
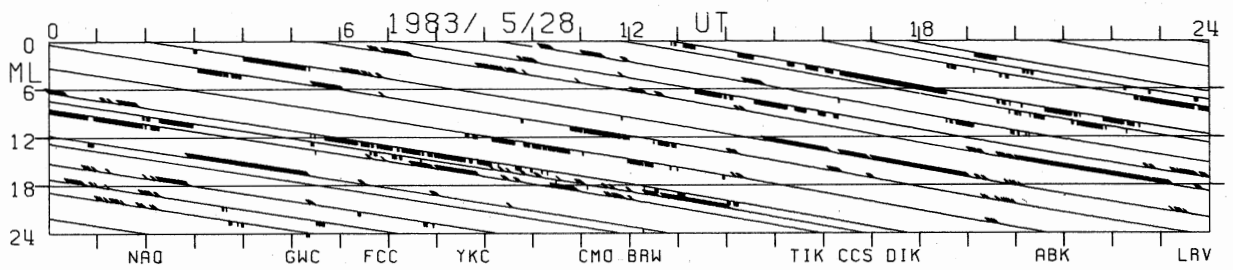
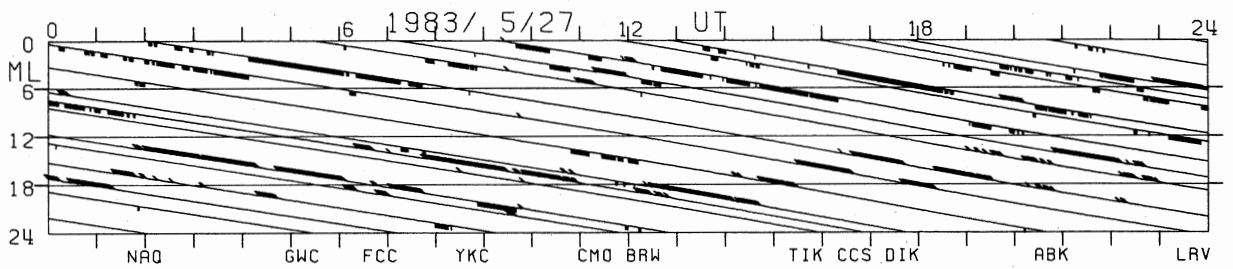
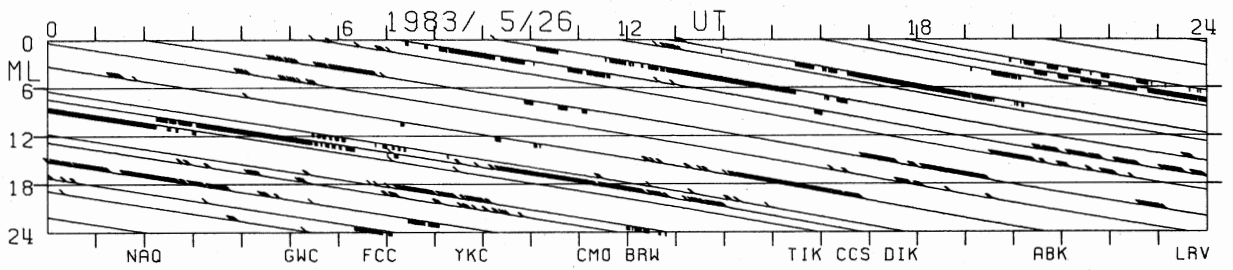
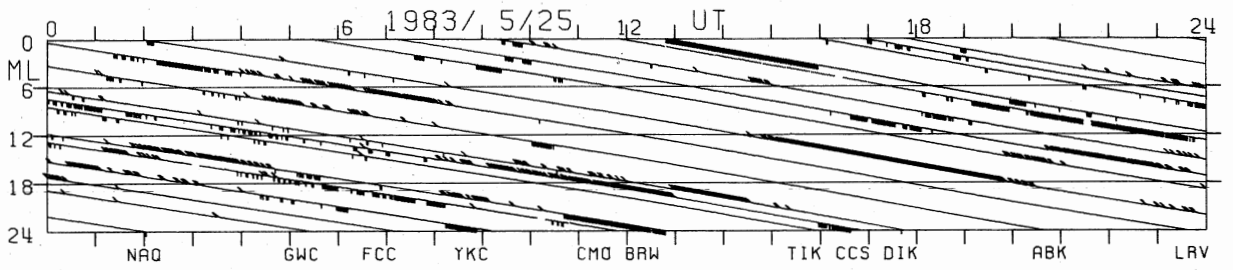


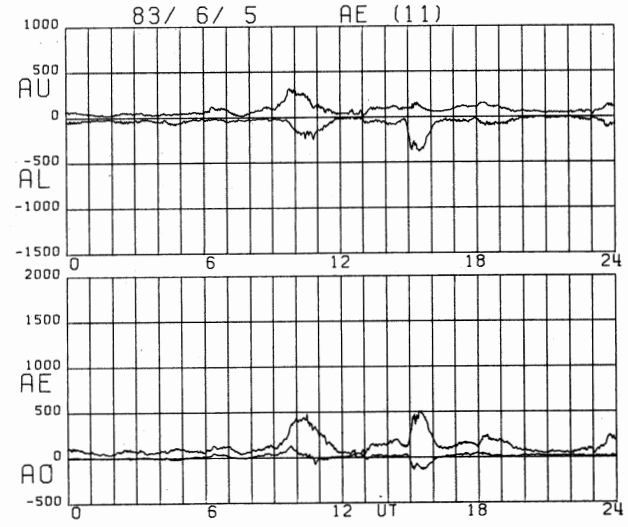
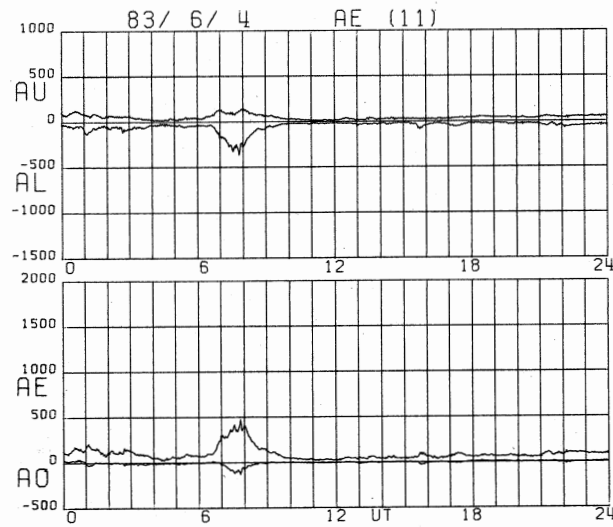
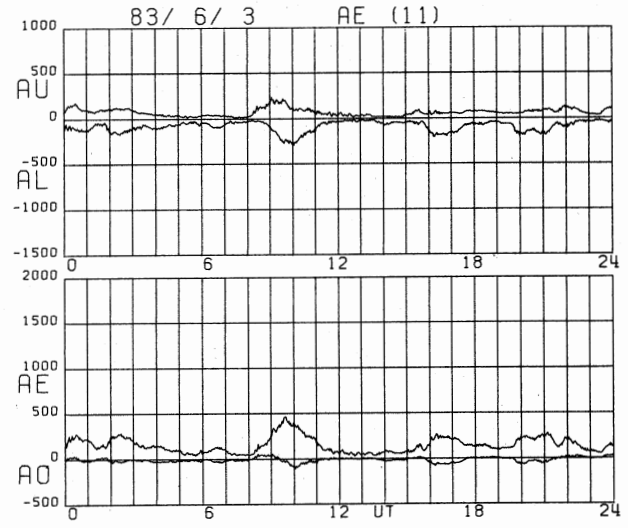
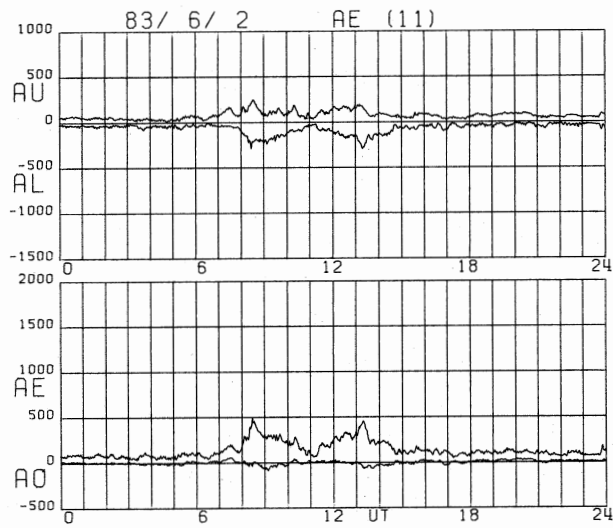
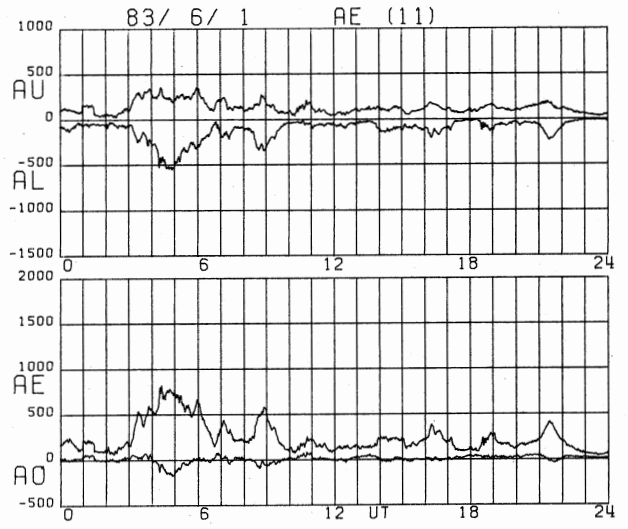
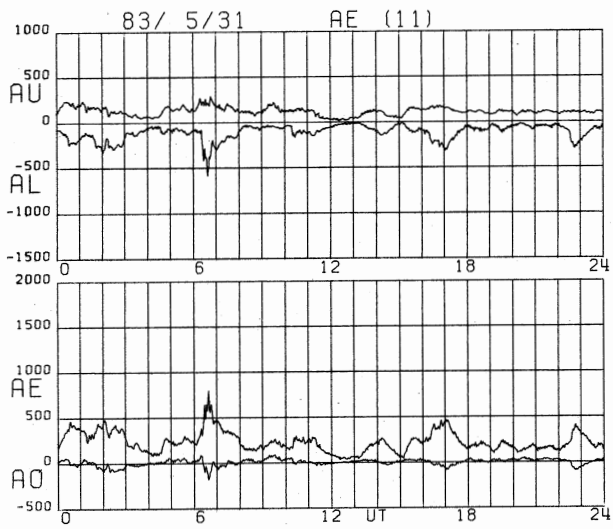


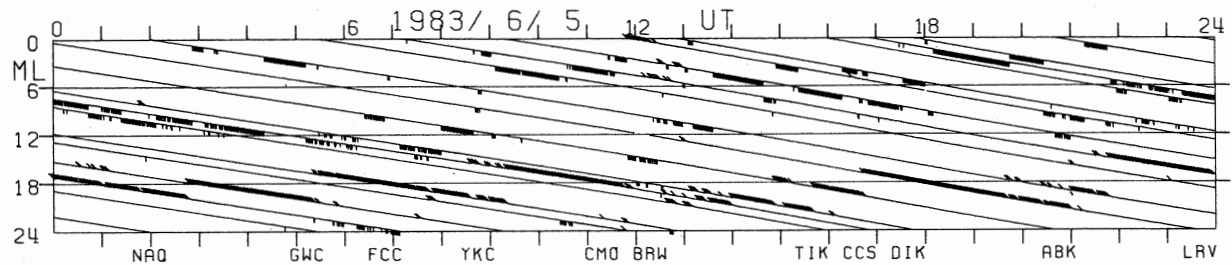
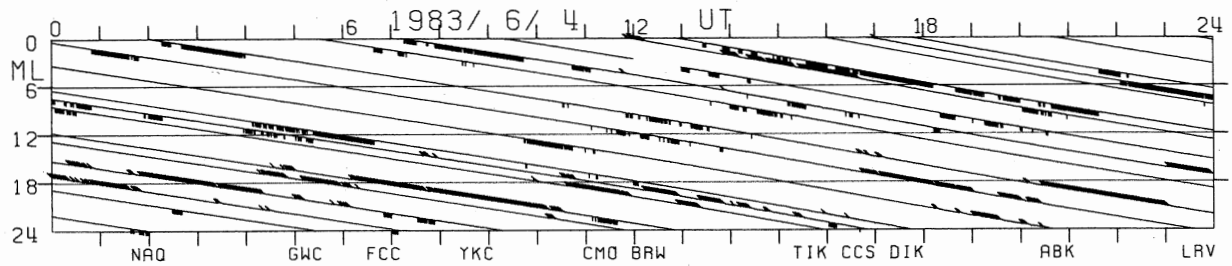
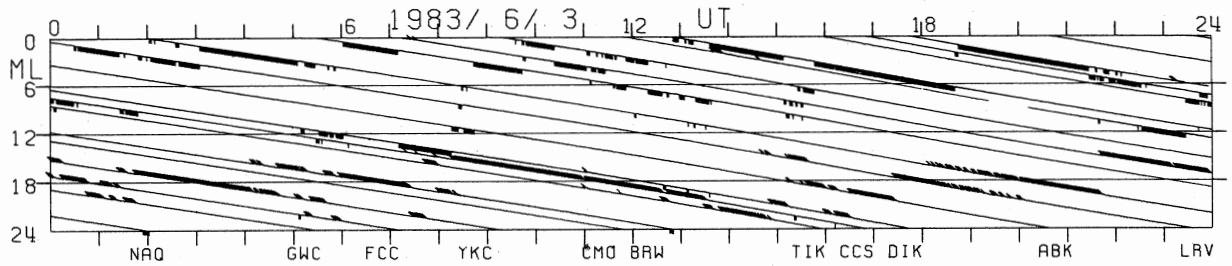
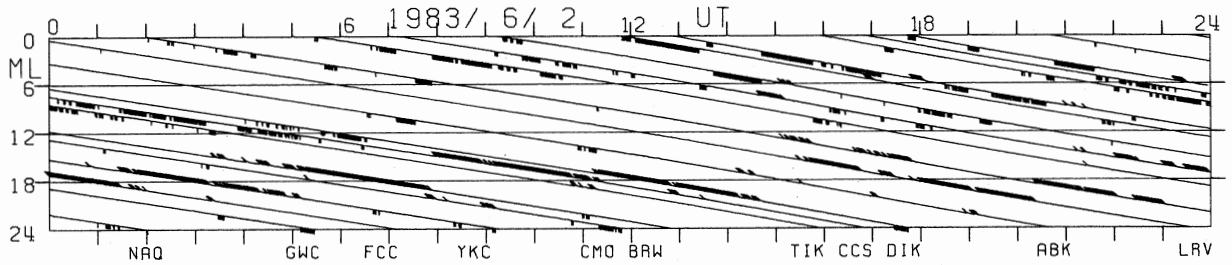
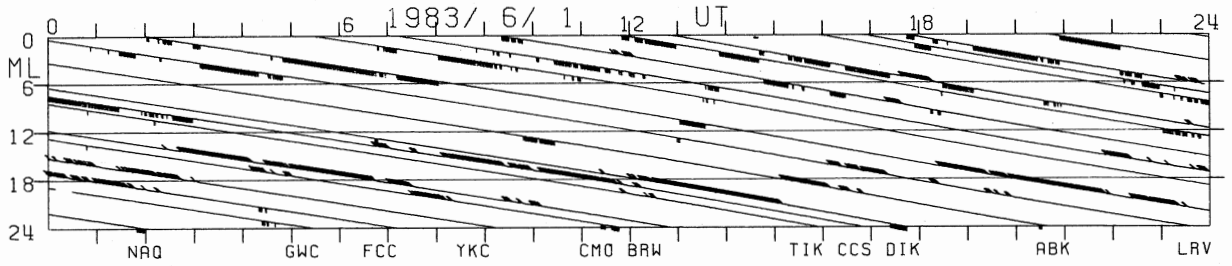
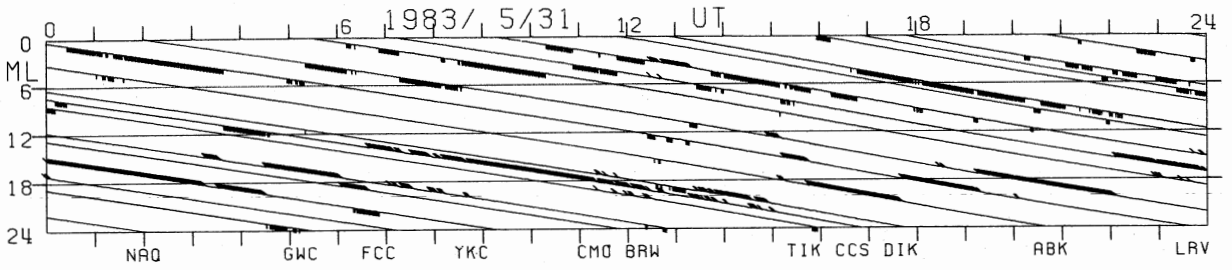


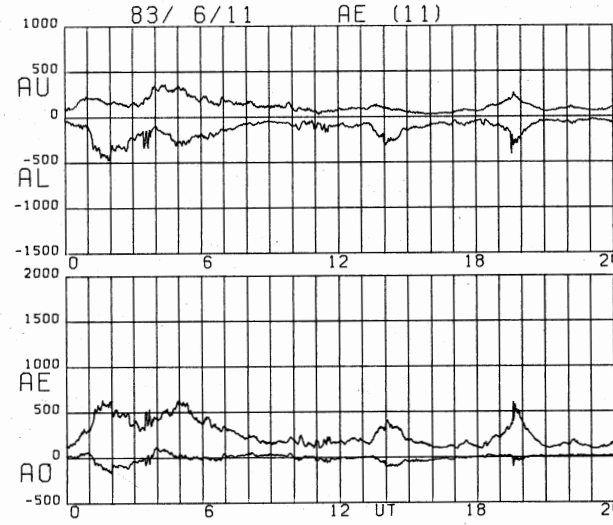
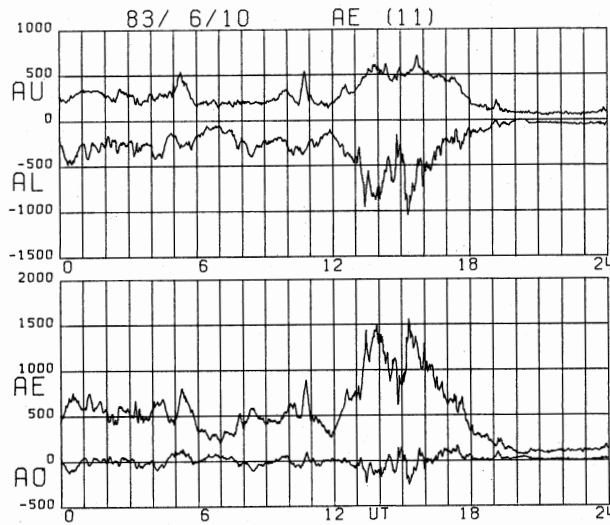
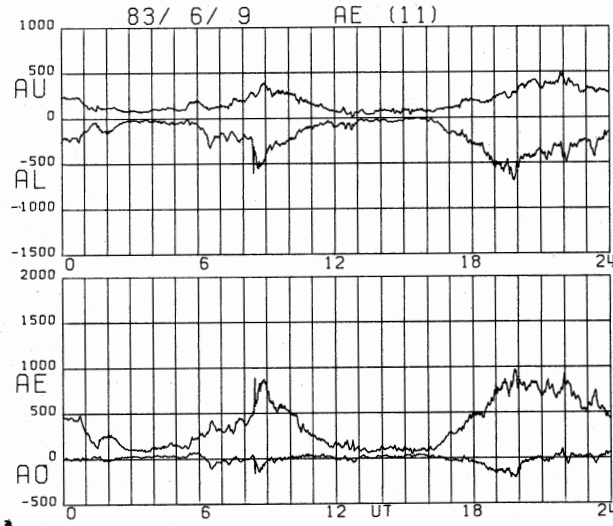
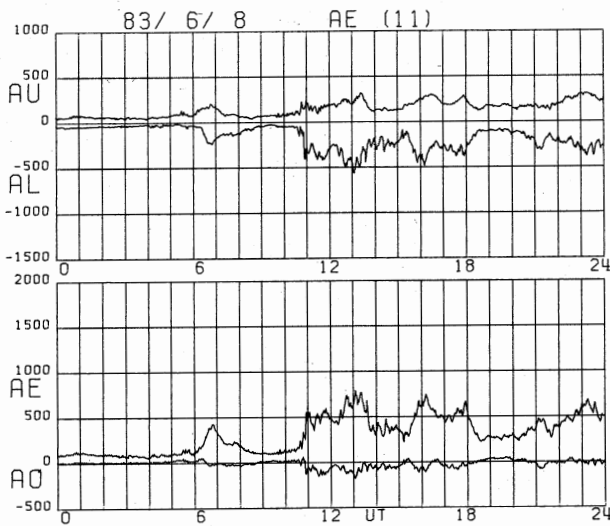
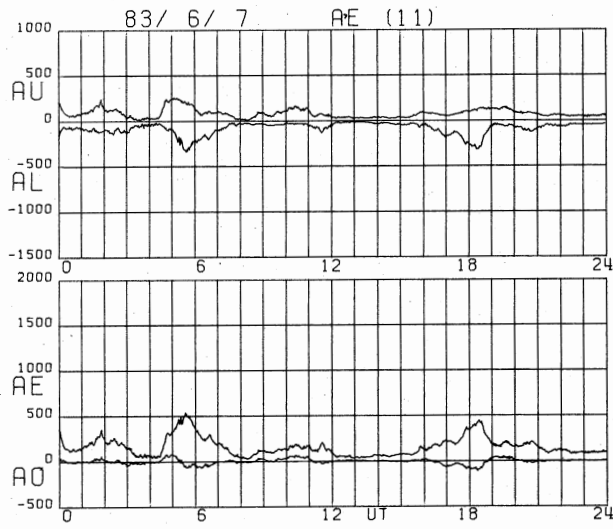
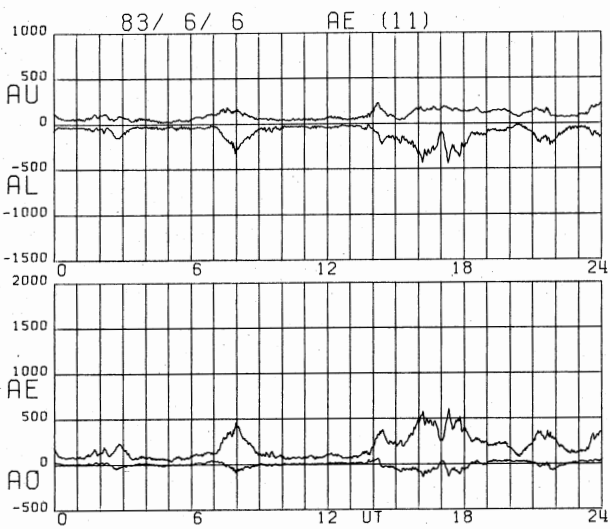


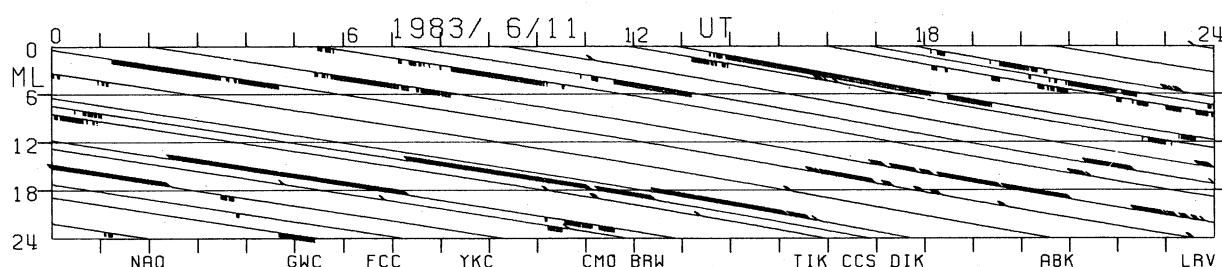
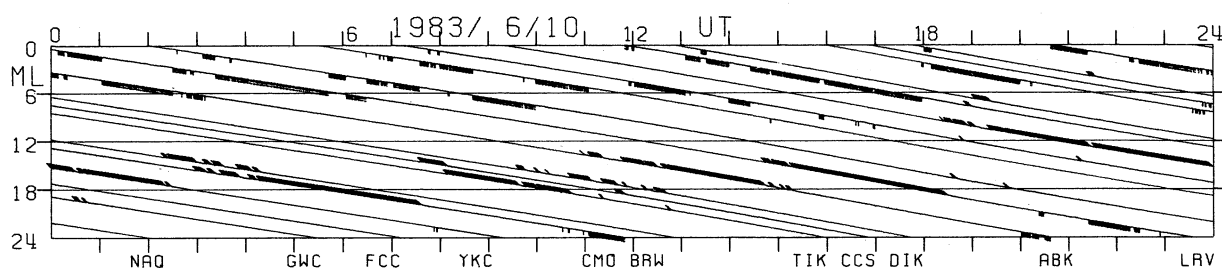
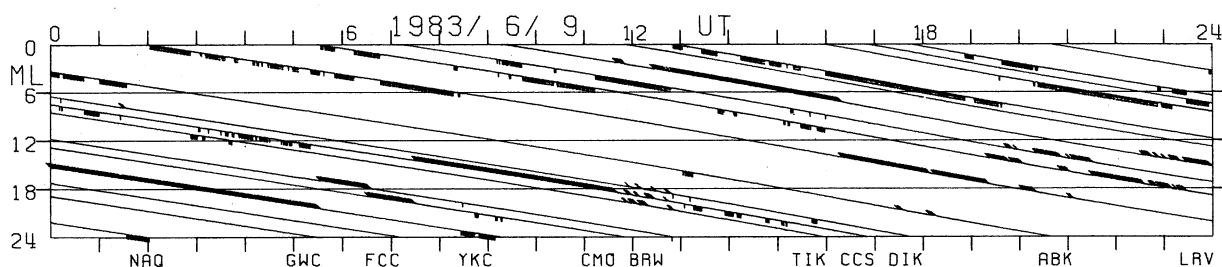
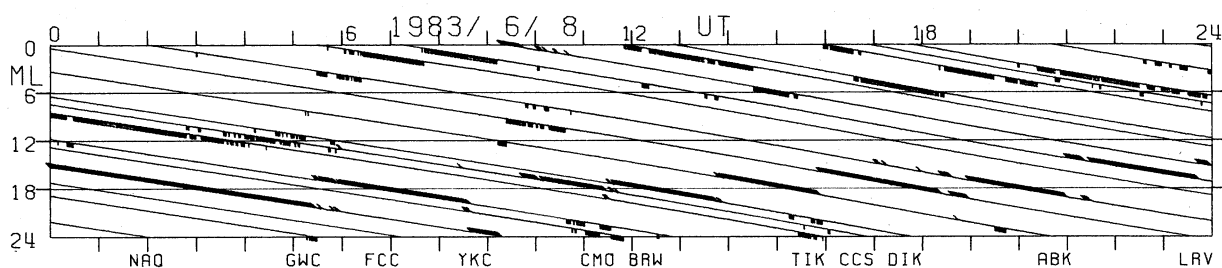
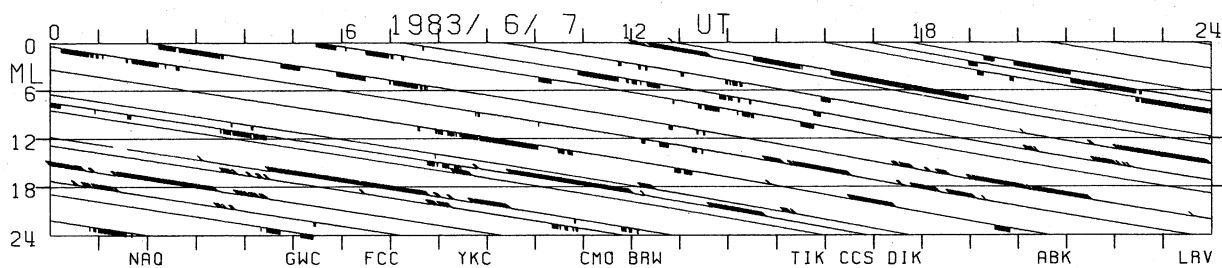
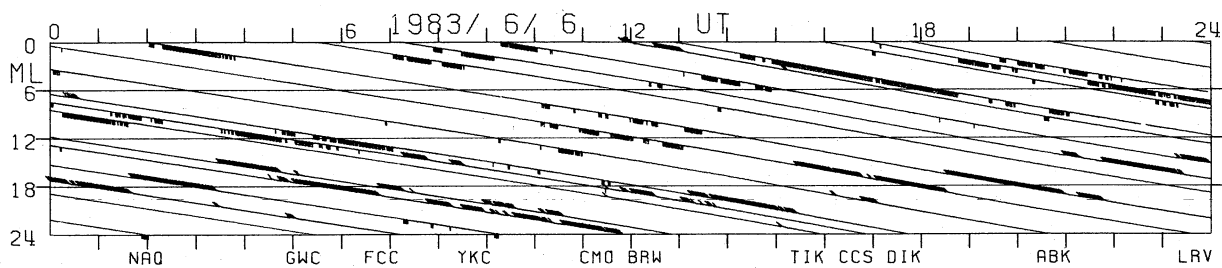


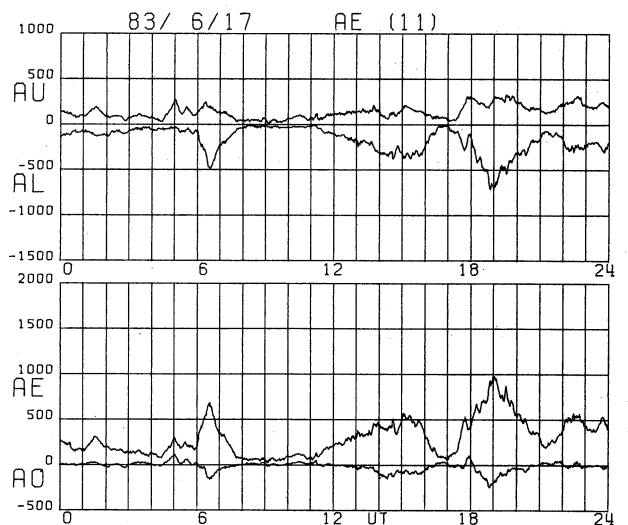
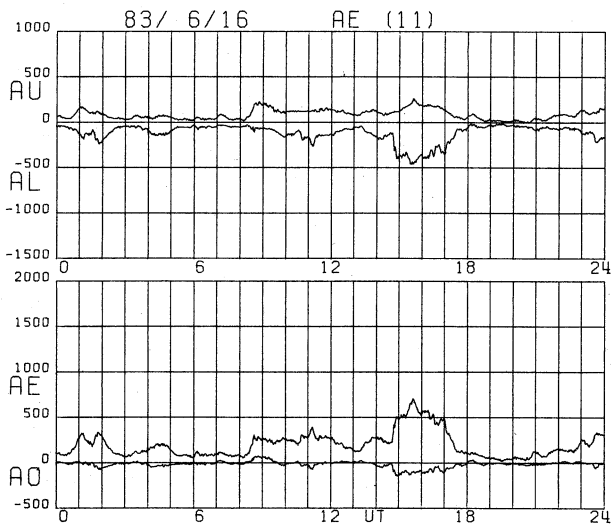
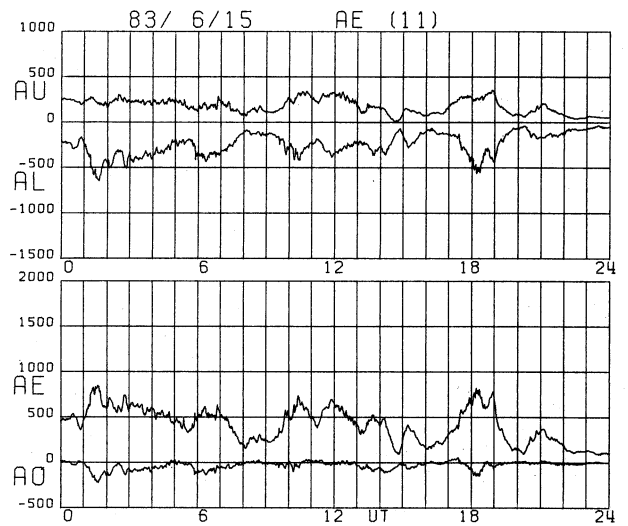
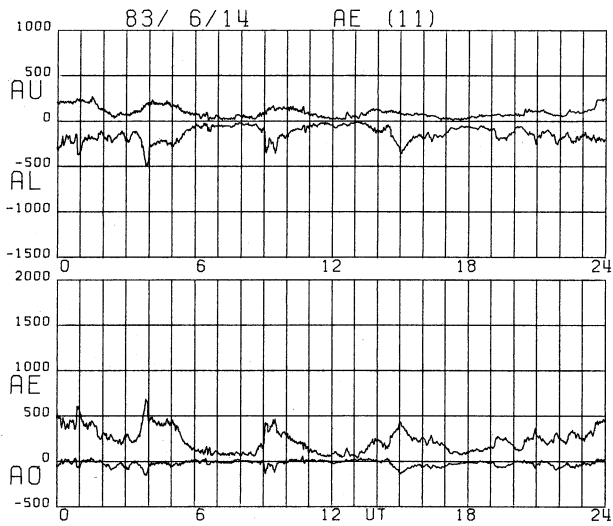
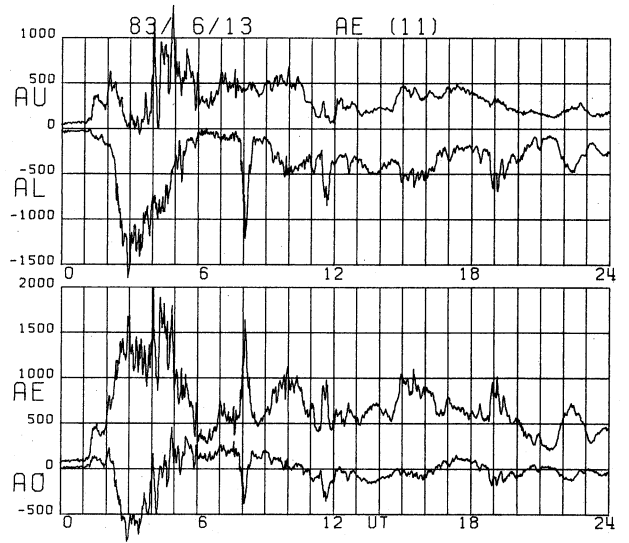
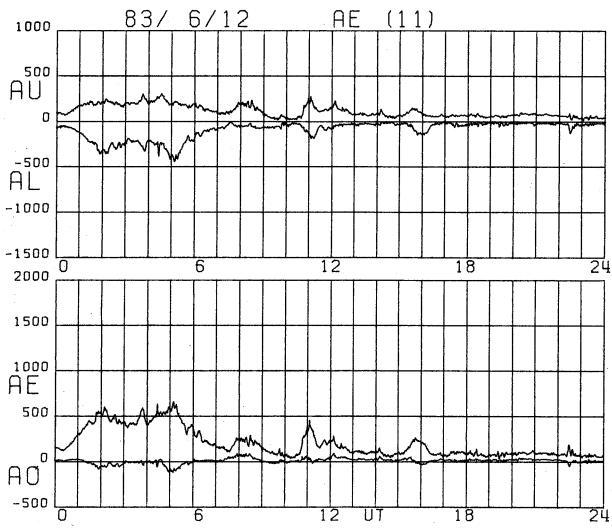


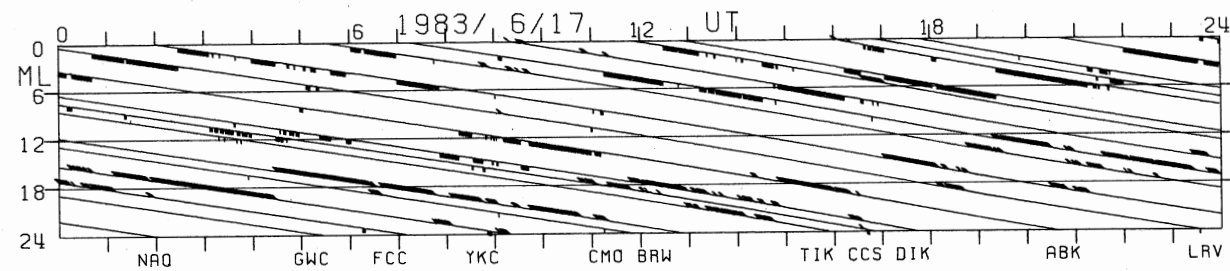
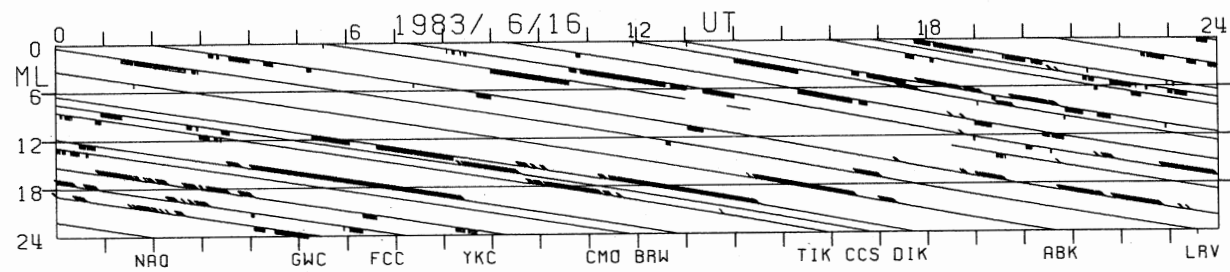
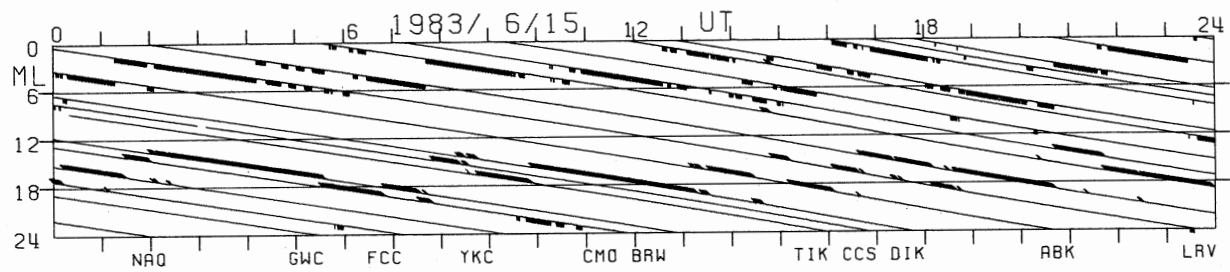
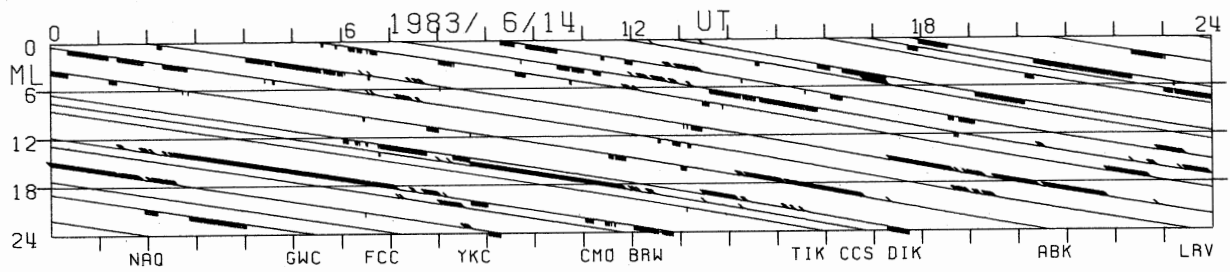
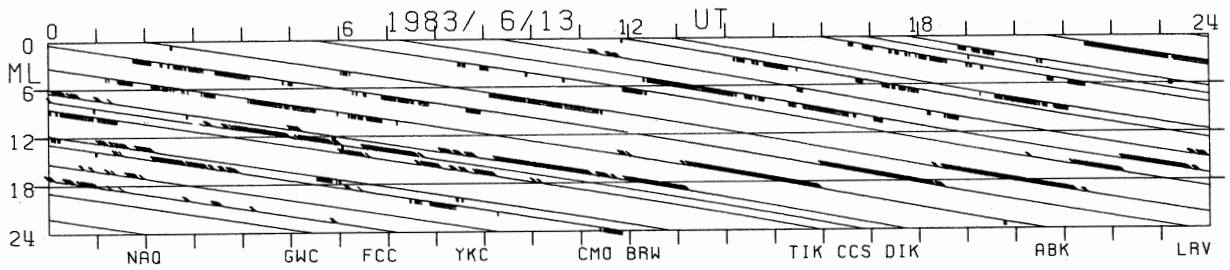
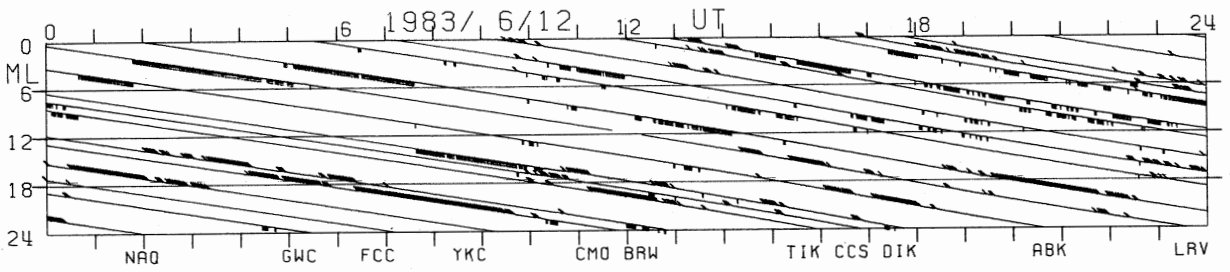


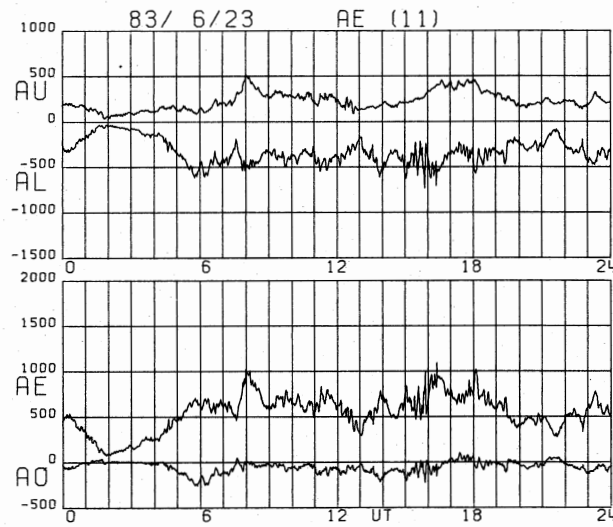
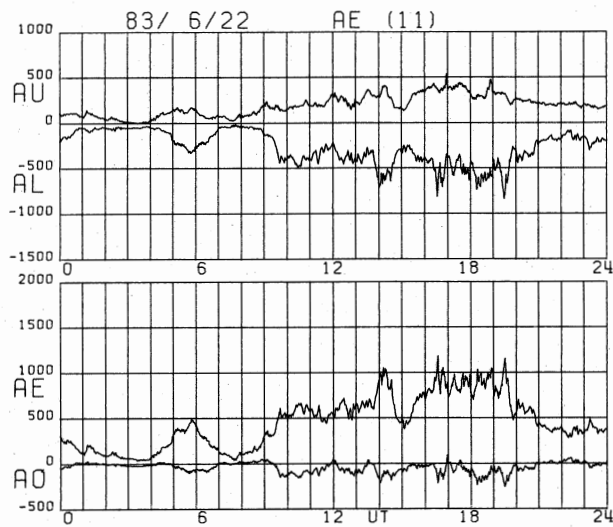
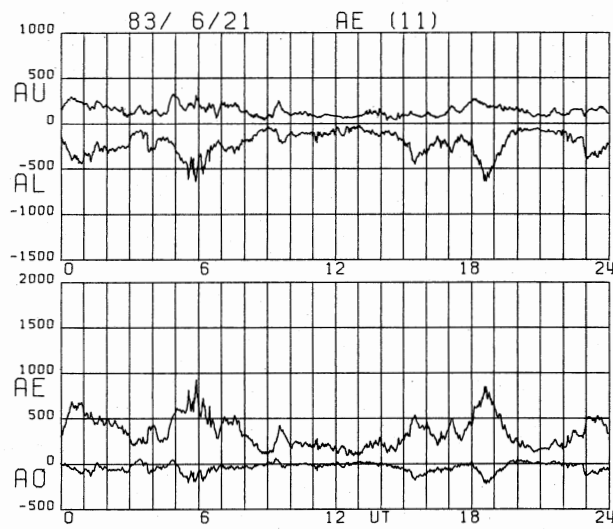
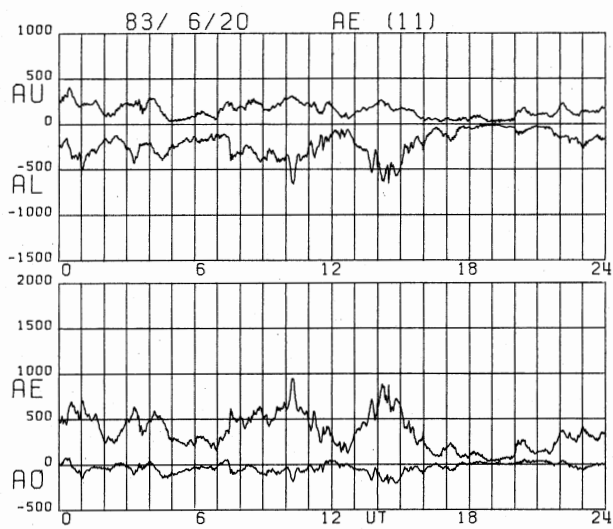
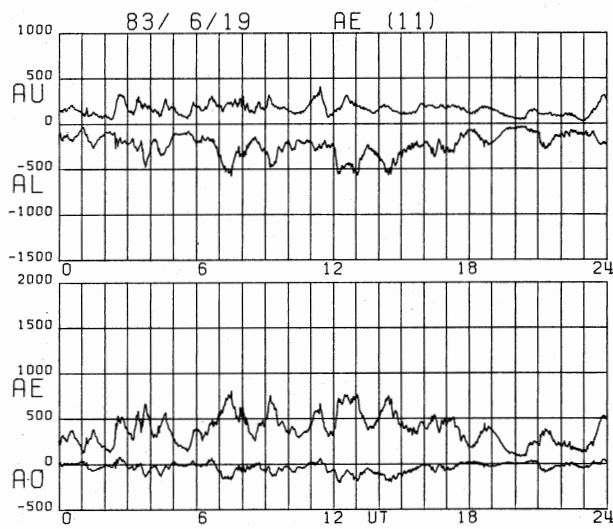
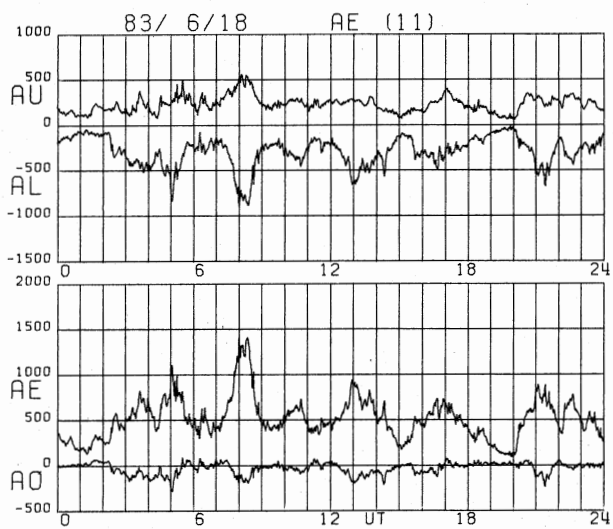




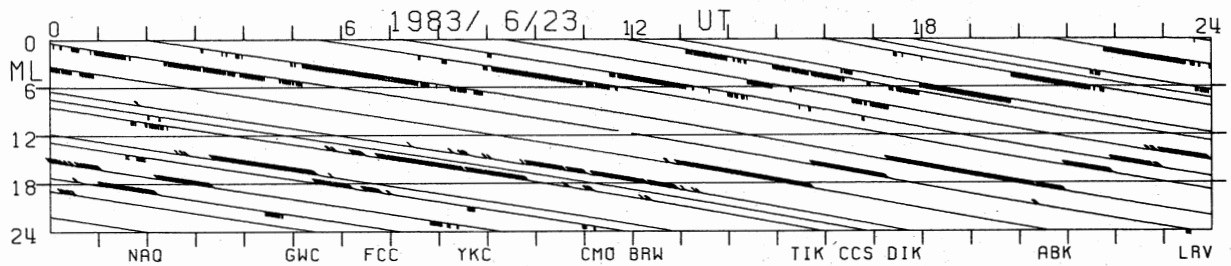
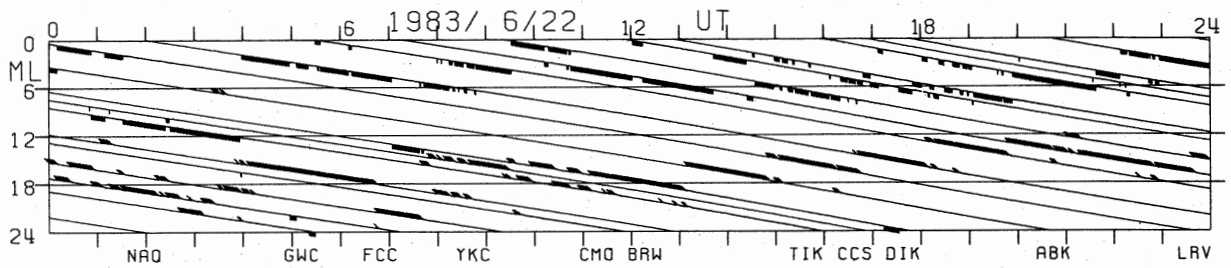
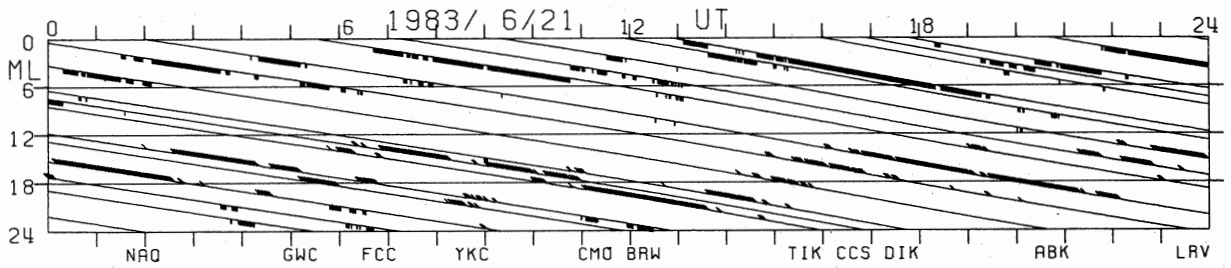
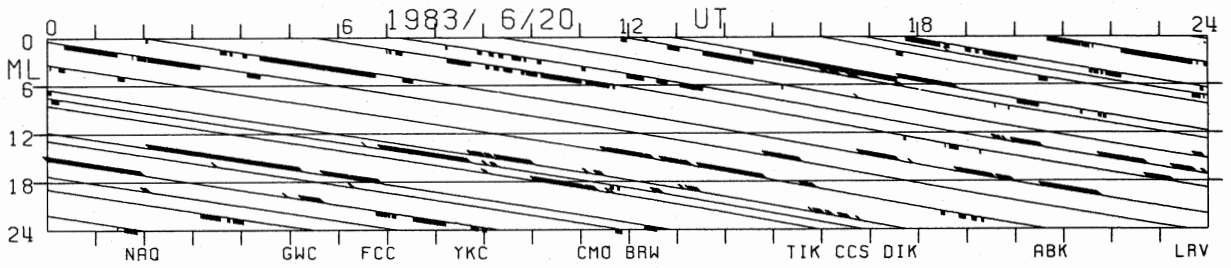
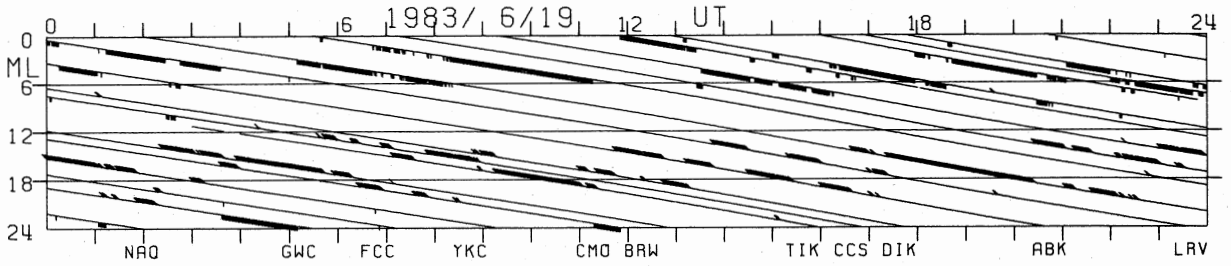
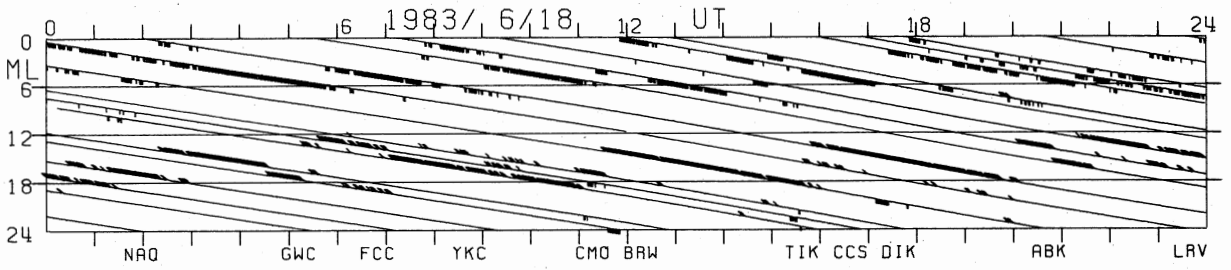


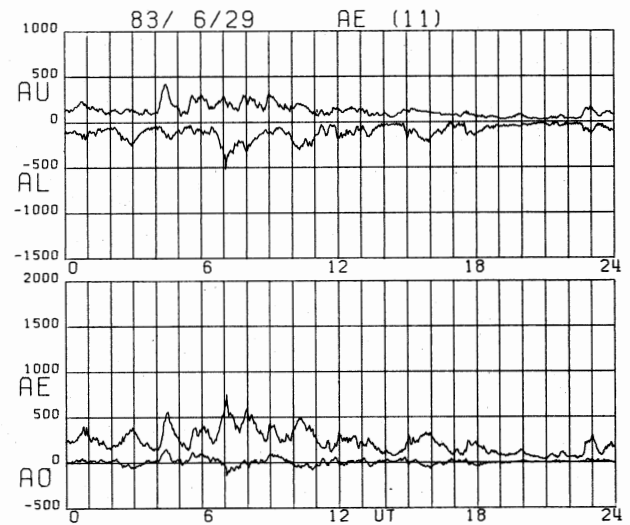
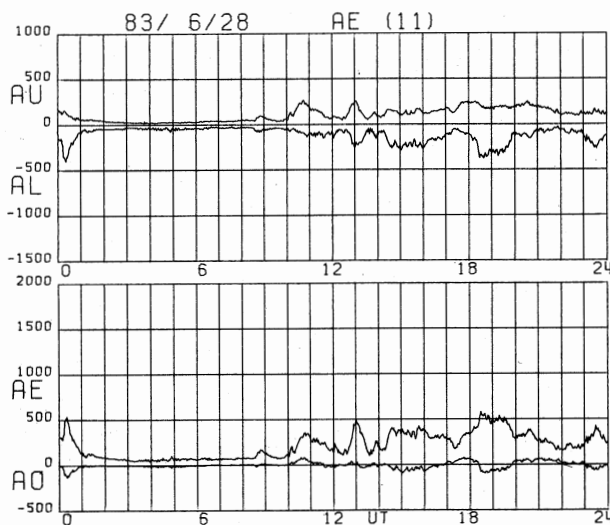
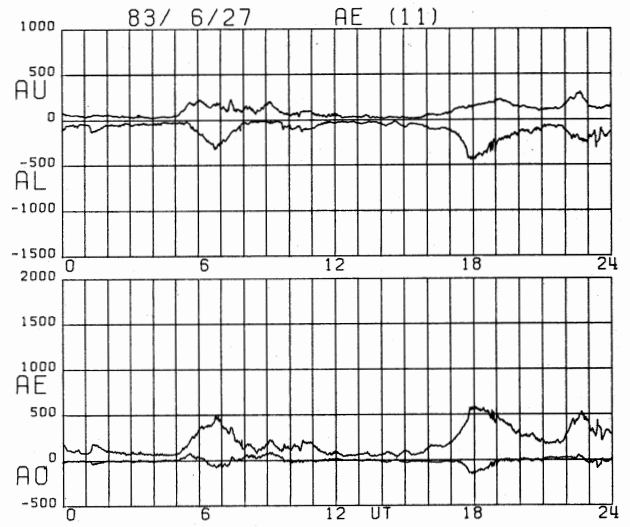
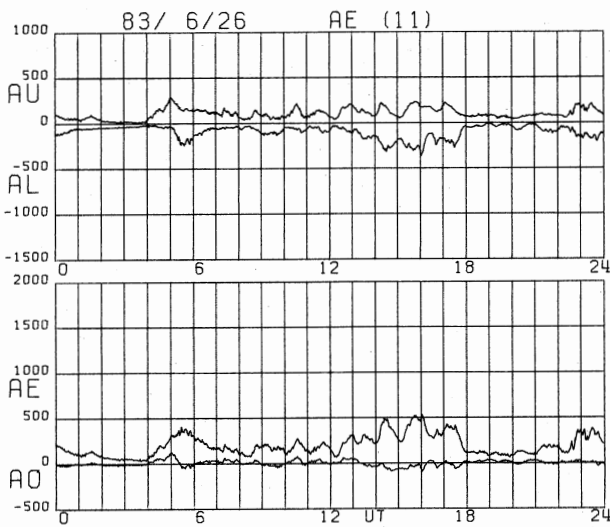
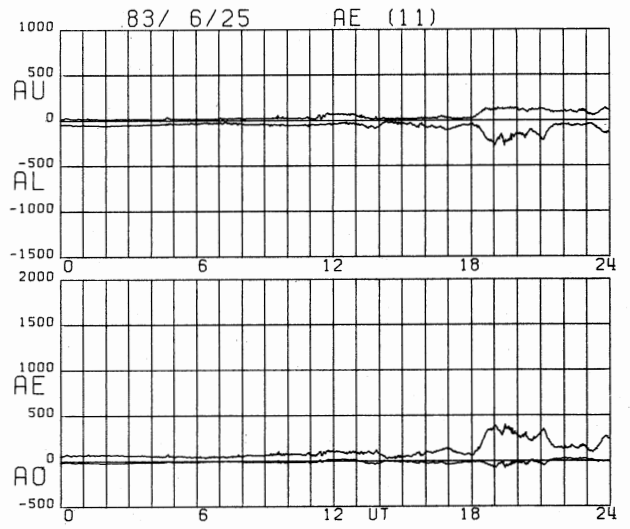
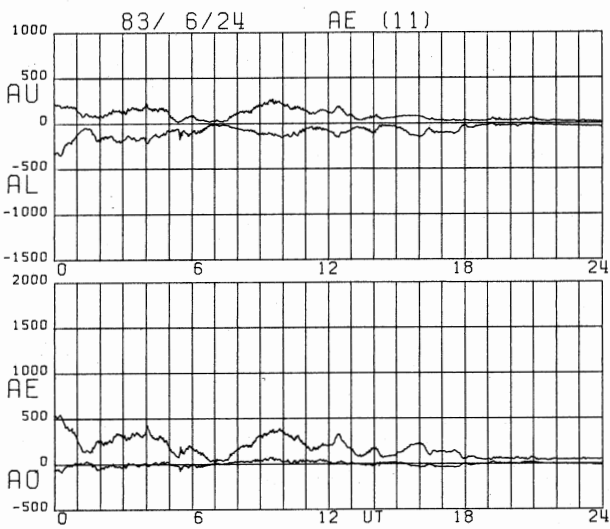


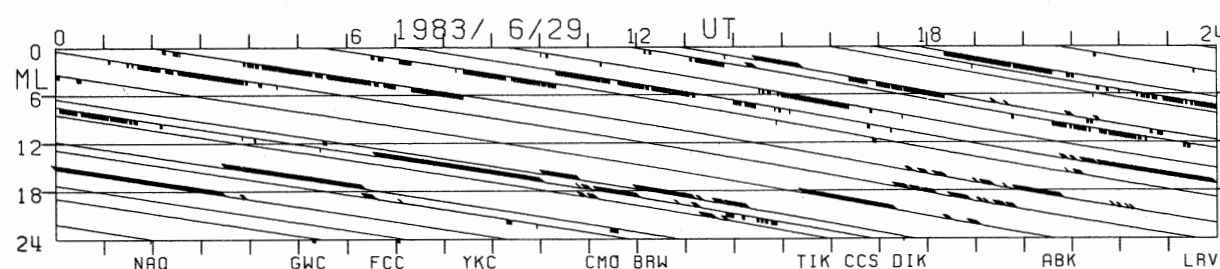
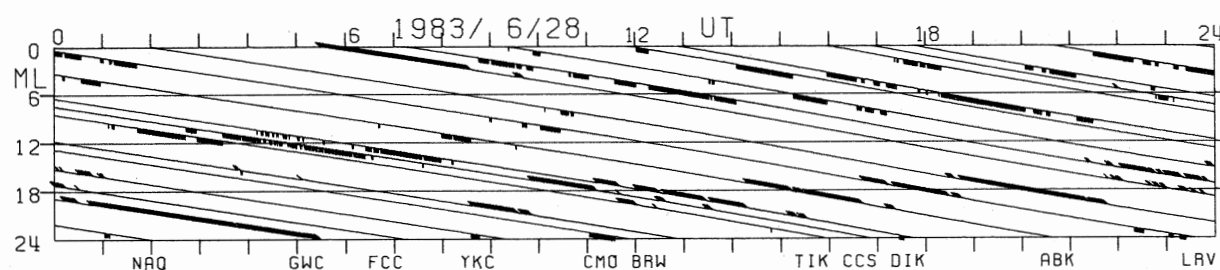
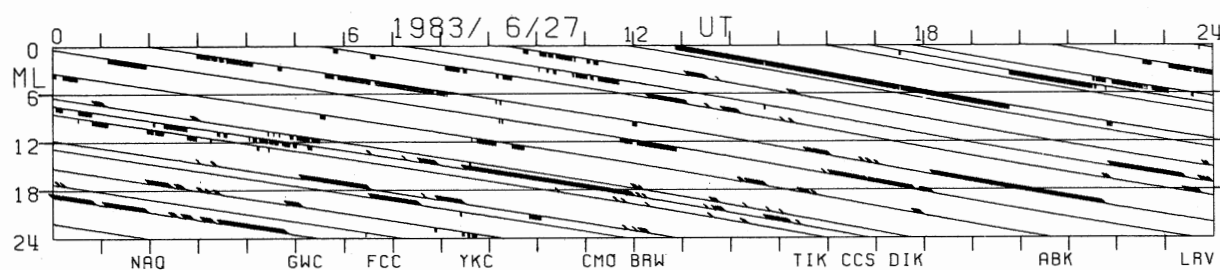
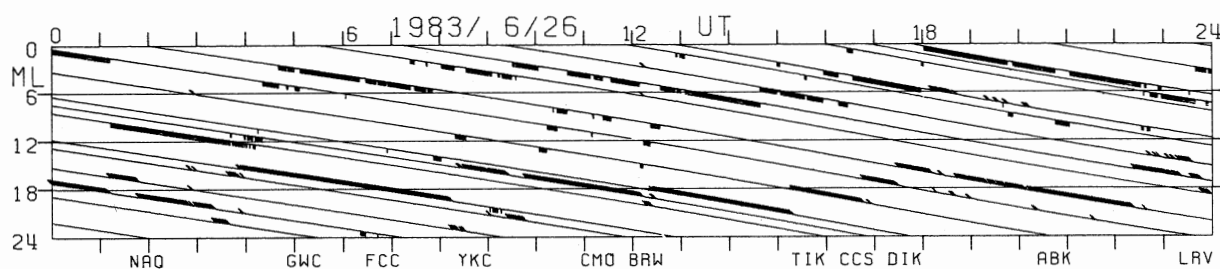
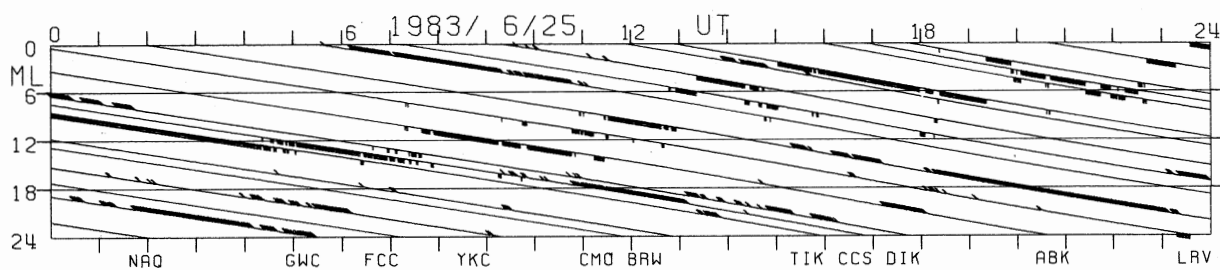
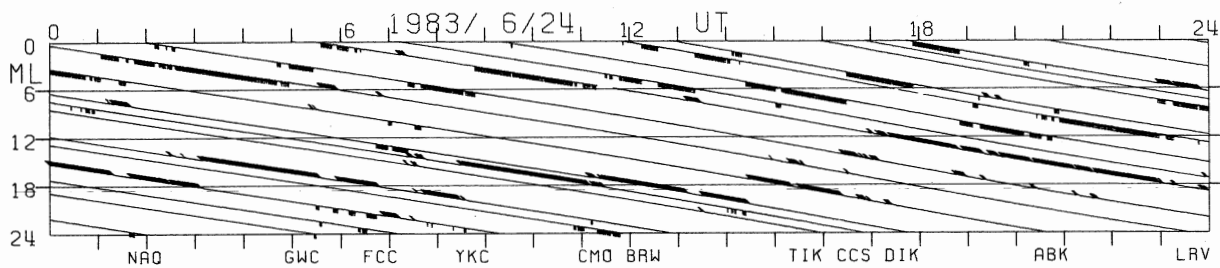


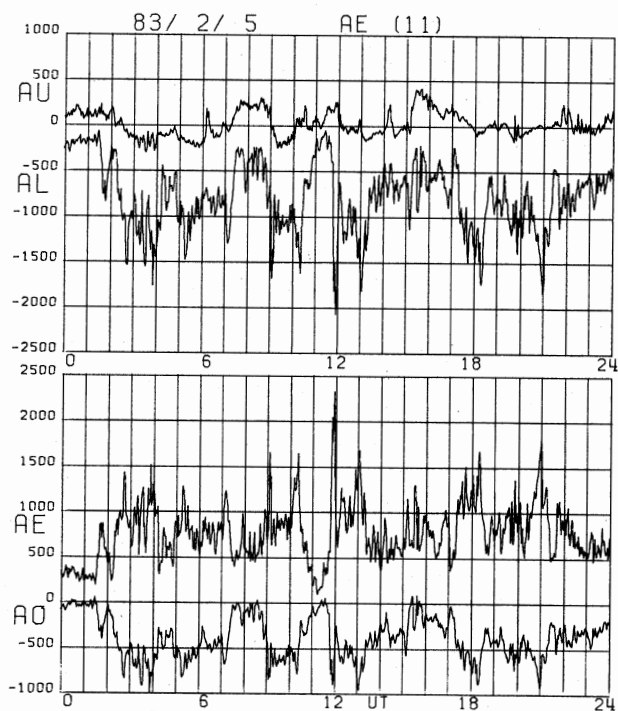
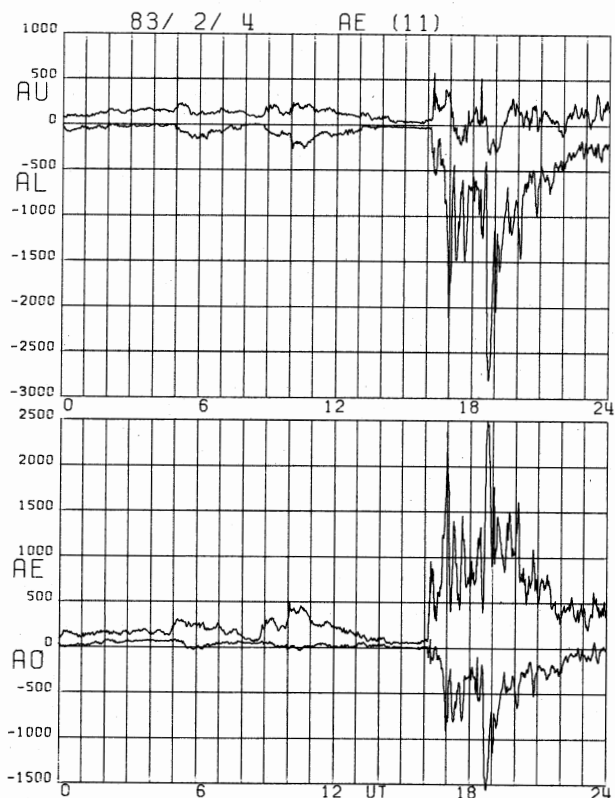
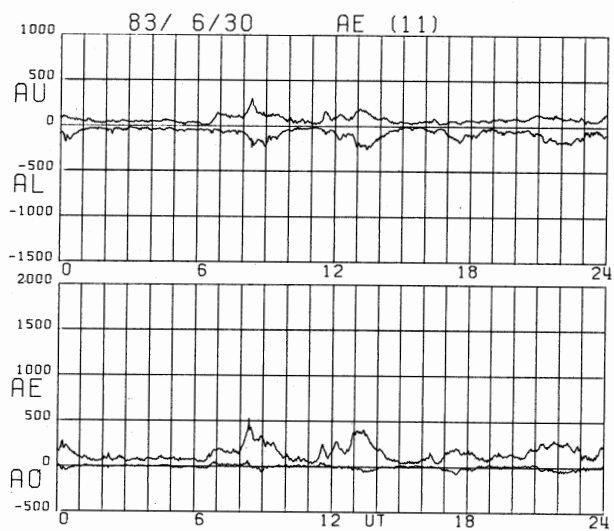












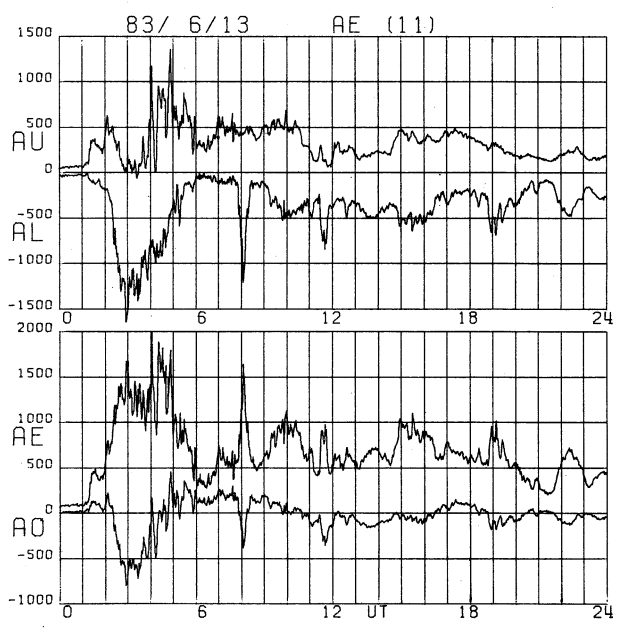
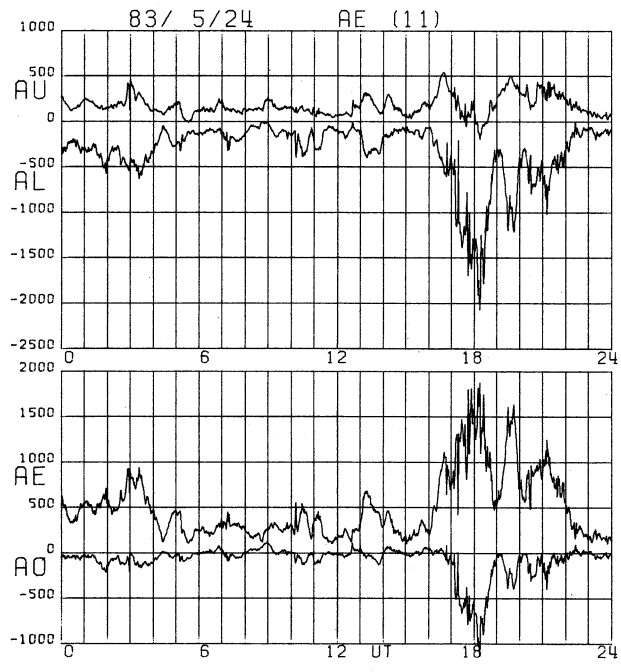
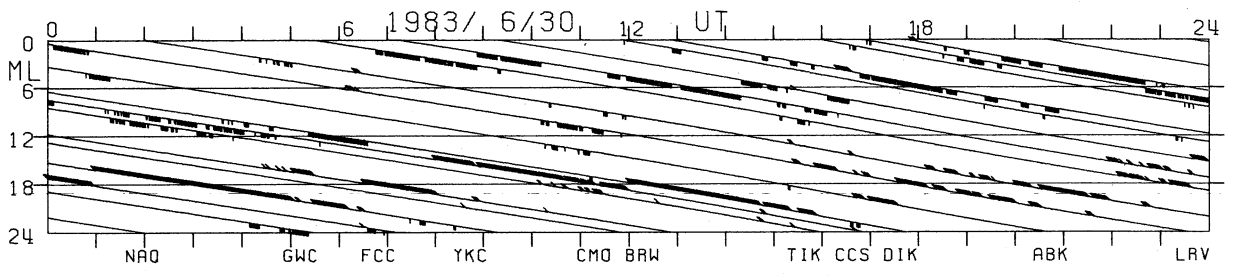
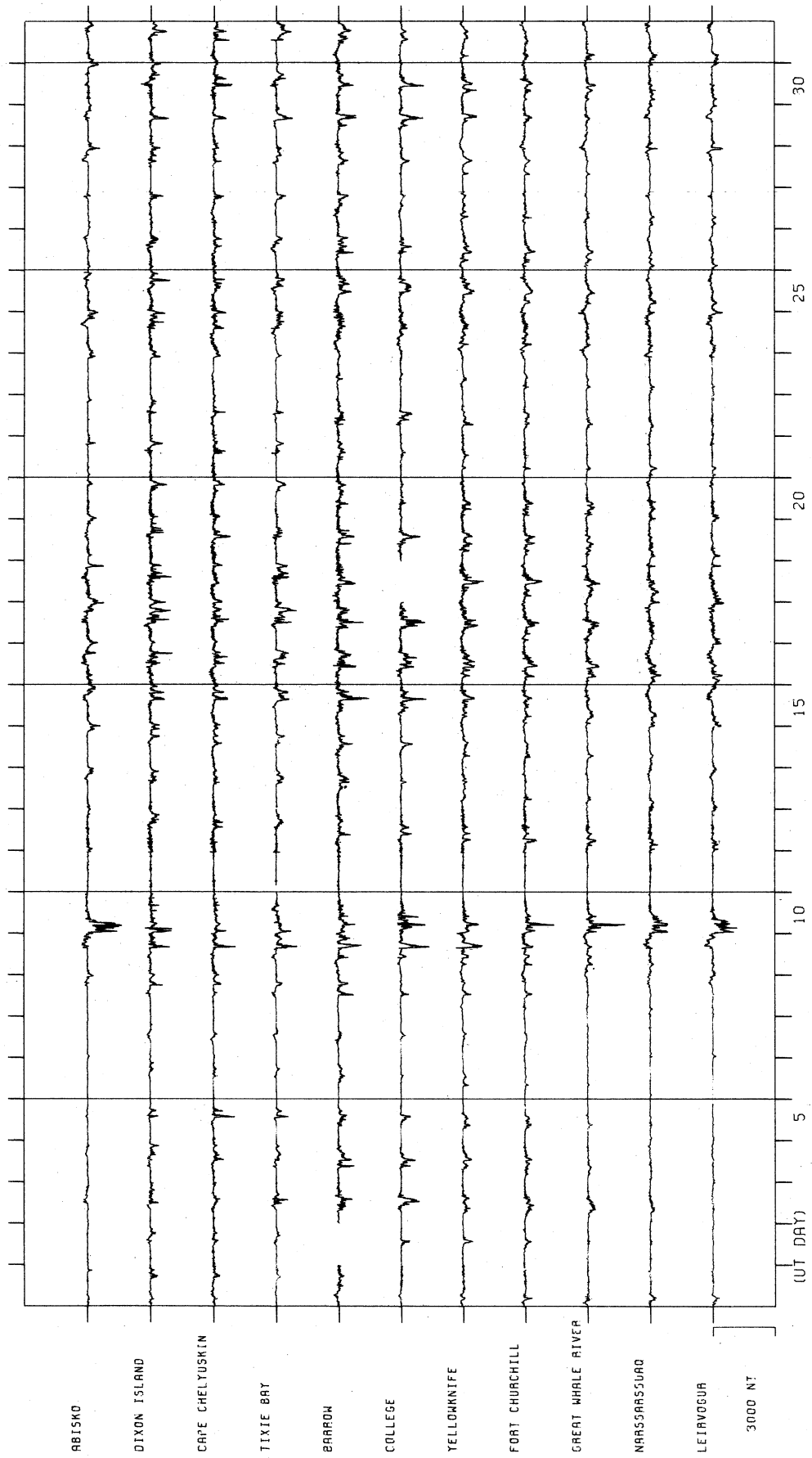
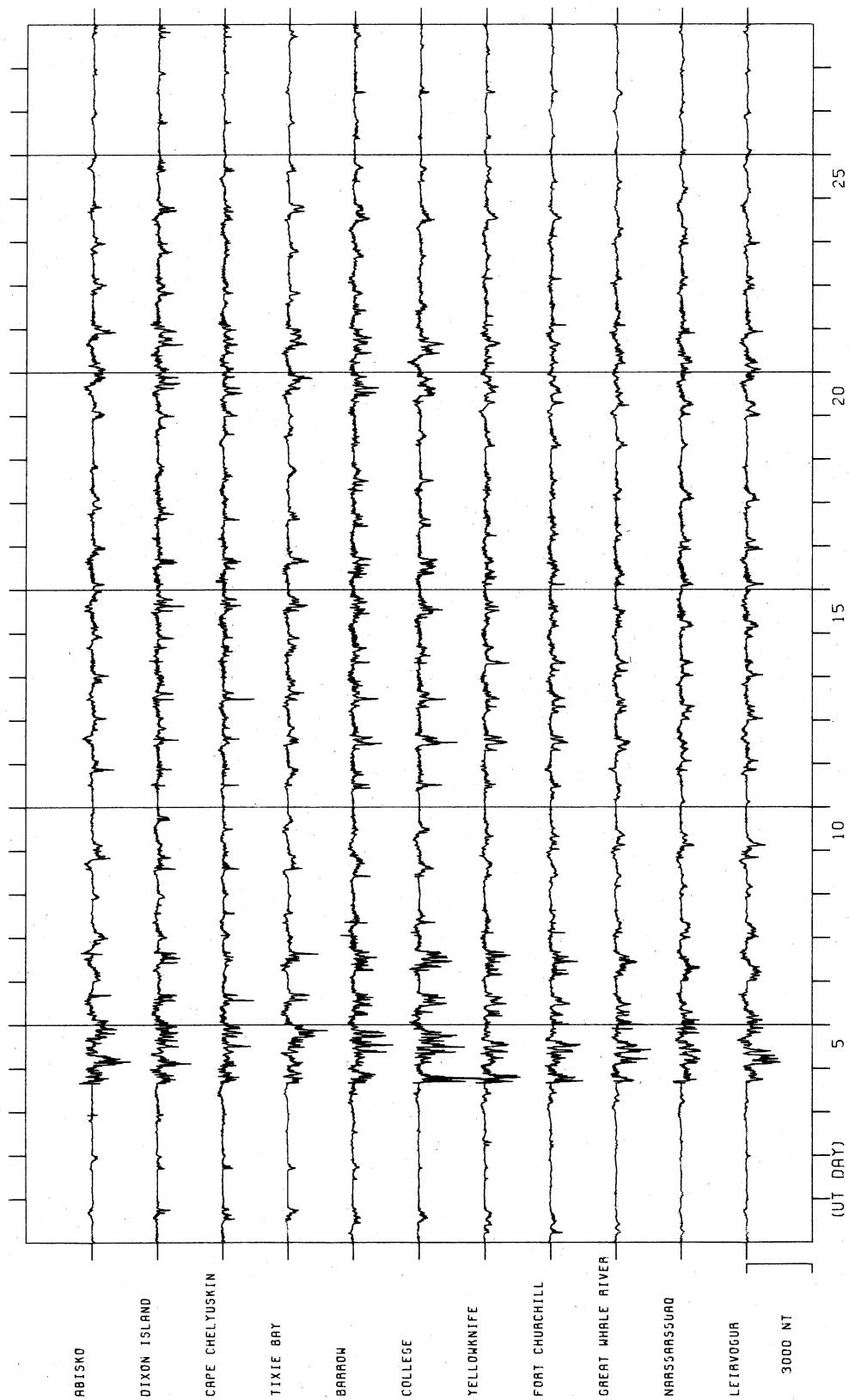


FIGURE 6

The H traces of magnetograms from AE(11) stations  
in every month from January to June 1983.

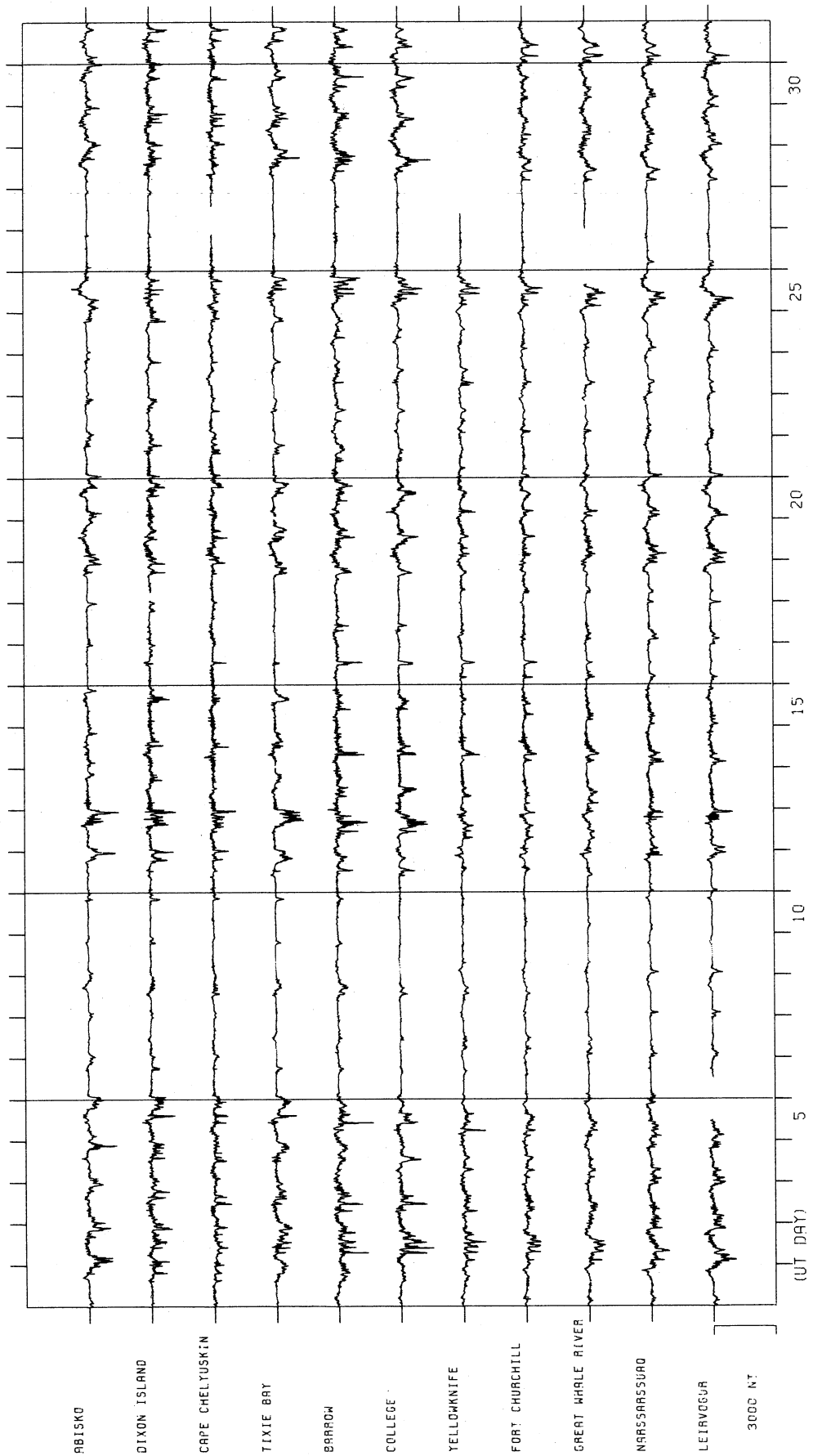


STACKED COMMON SCALE MAGNETOGRAMS FOR JANUARY 1983

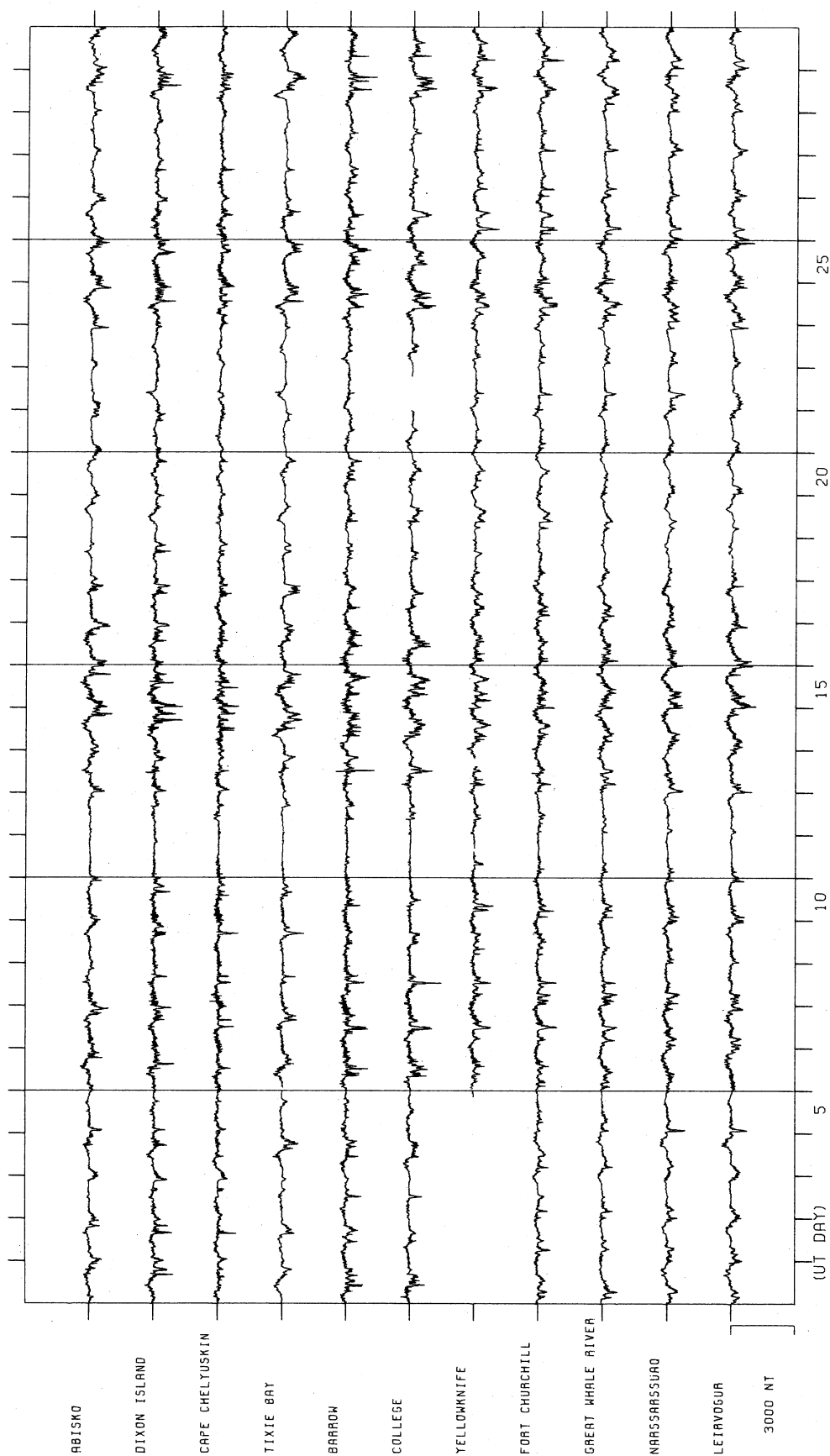


STACKED COMMON SCALE MAGNETOGRAMS FOR FEBRUARY 1983

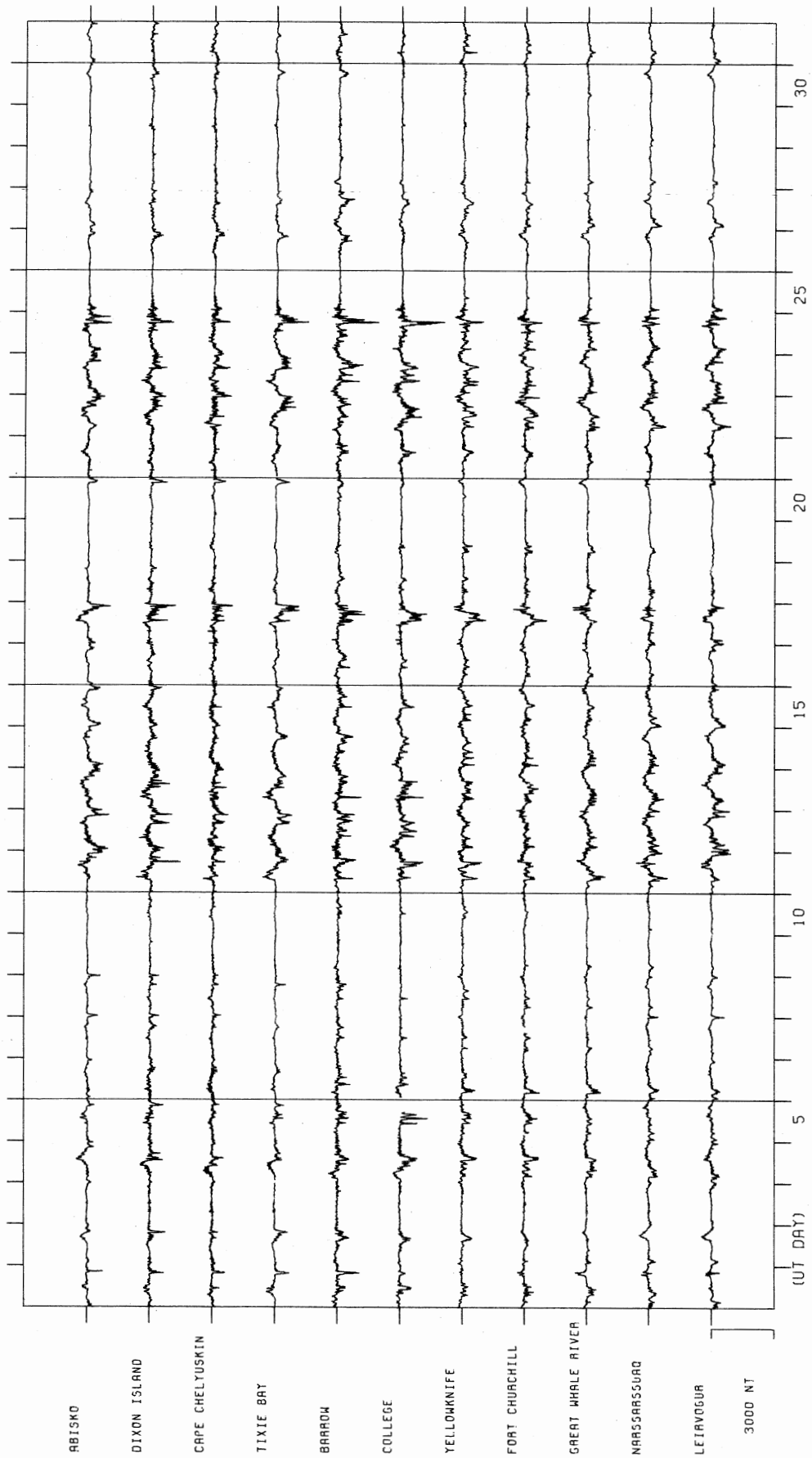




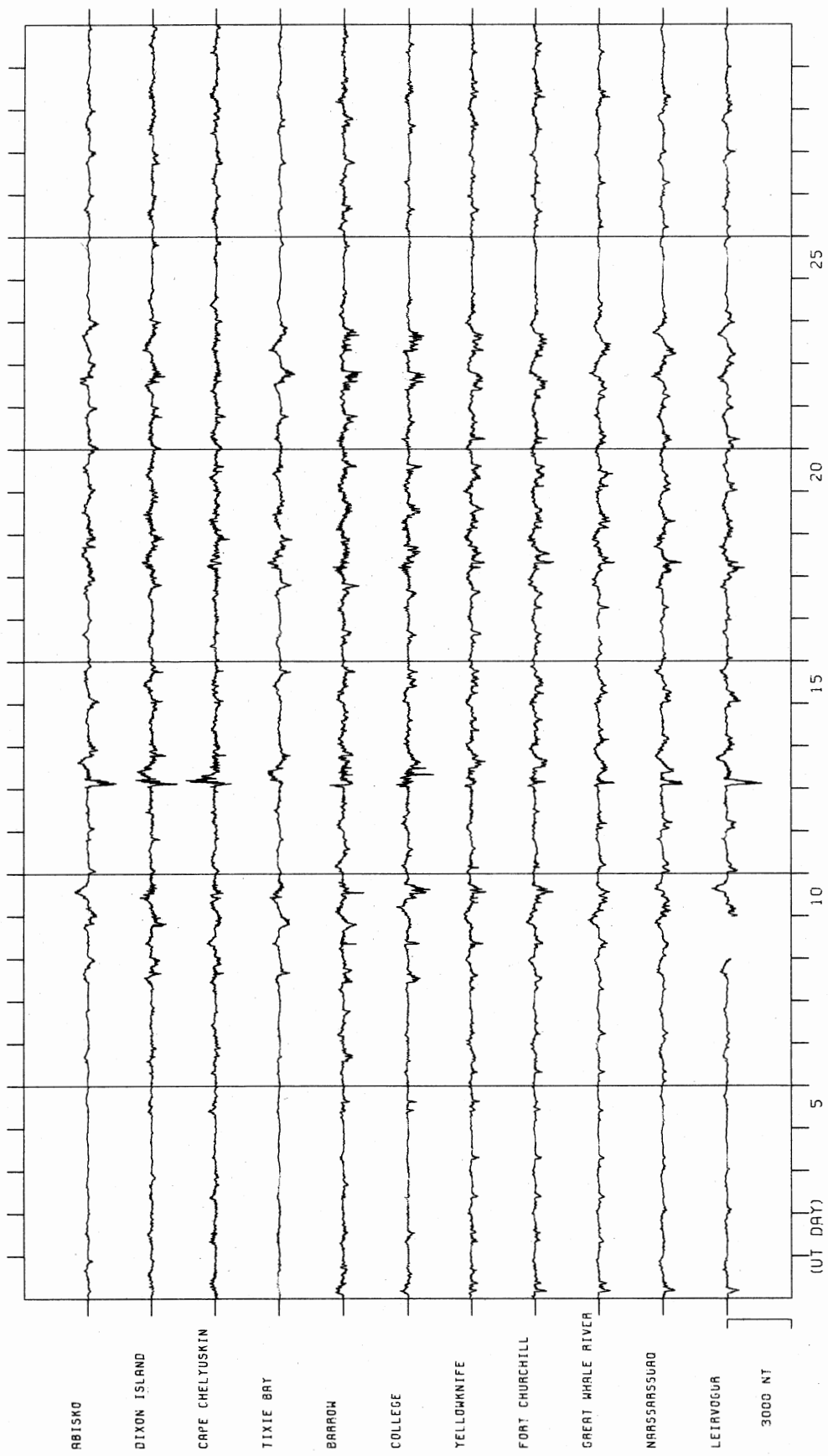
STACKED COMMON SCALE MAGNETOGRAMS FOR MARCH 1983



STACKED COMMON SCALE MAGNETOGRAMS FOR APRIL 1983



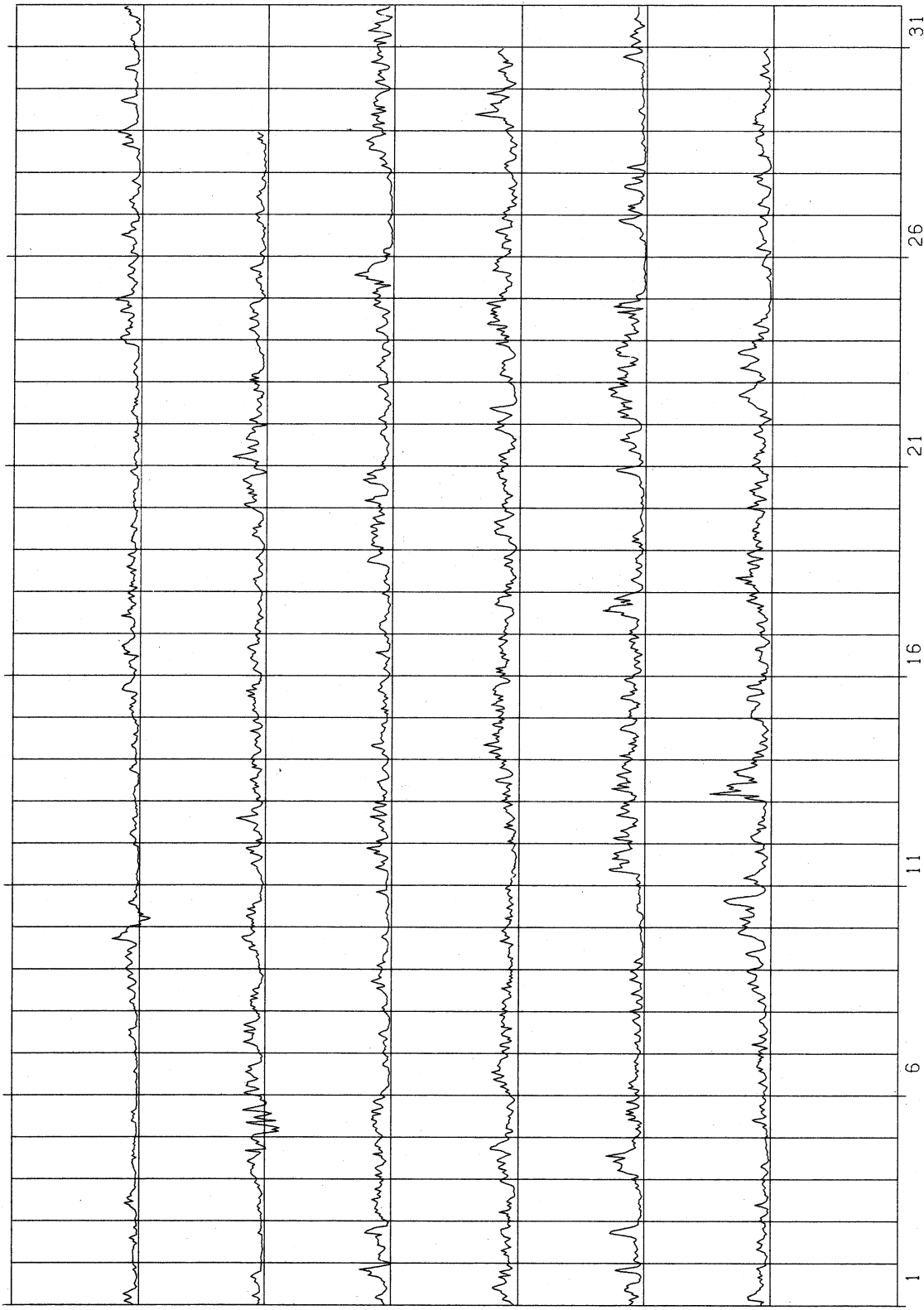
STACKED COMMON SCALE MAGNETOGRAMS FOR MAY 1983



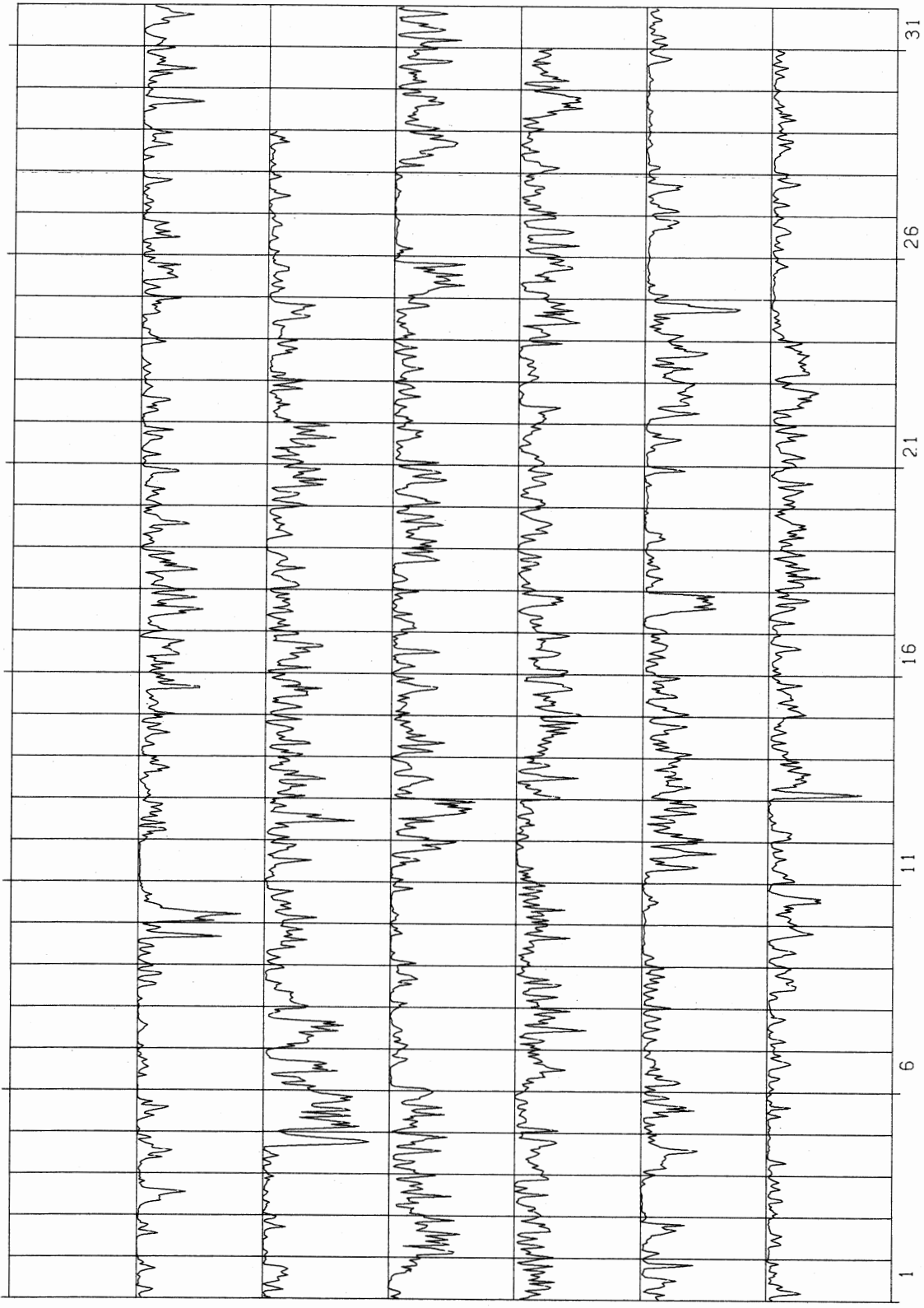
STACKED COMMON SCALE MAGNETOGRAMS FOR JUNE 1983

FIGURE 7

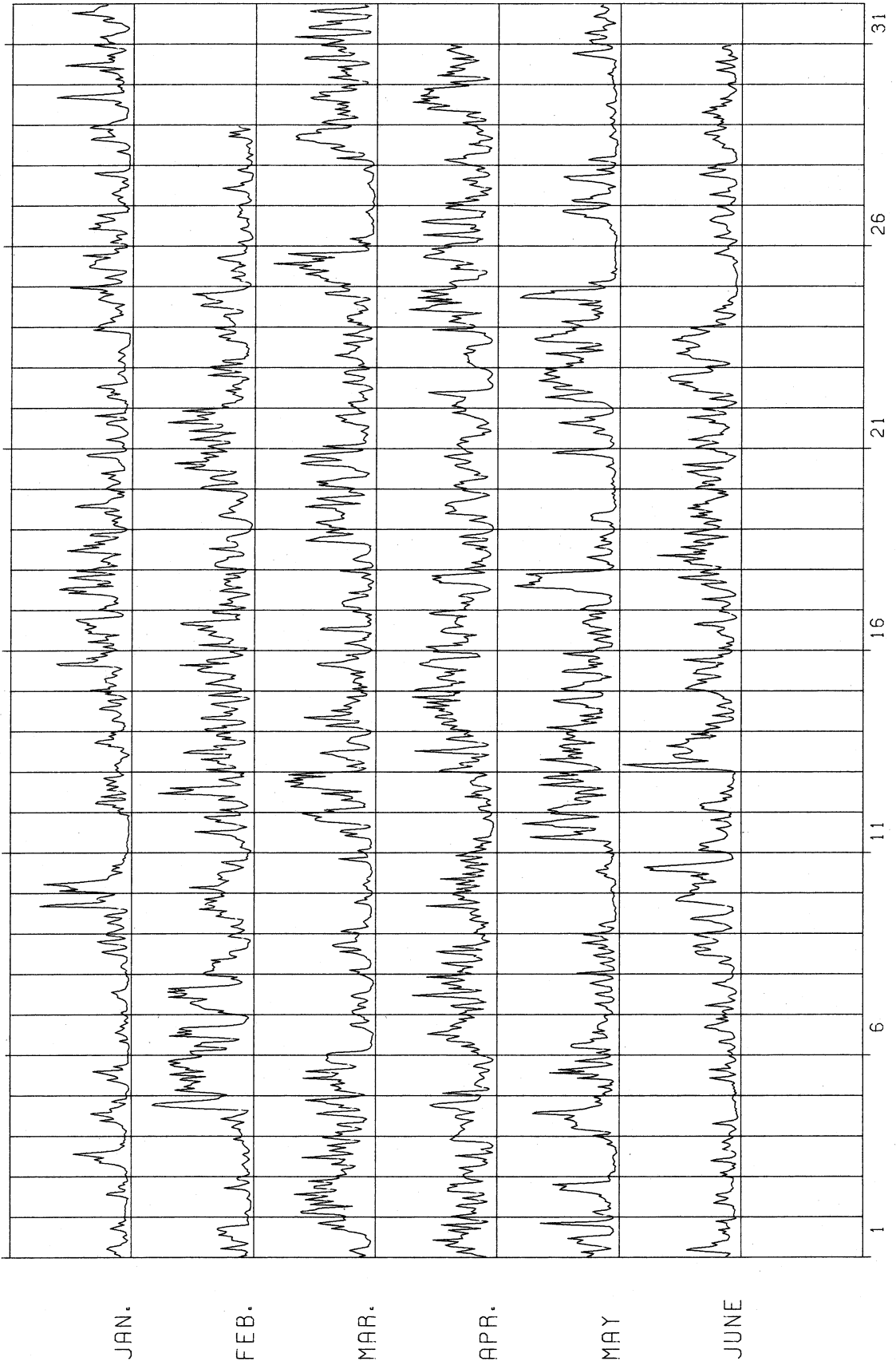
Plots of hourly values for each index from January to June 1983.



AU HOURLY VALUES FOR THE FIRST HALF OF 1983 (1500NT/DIV)

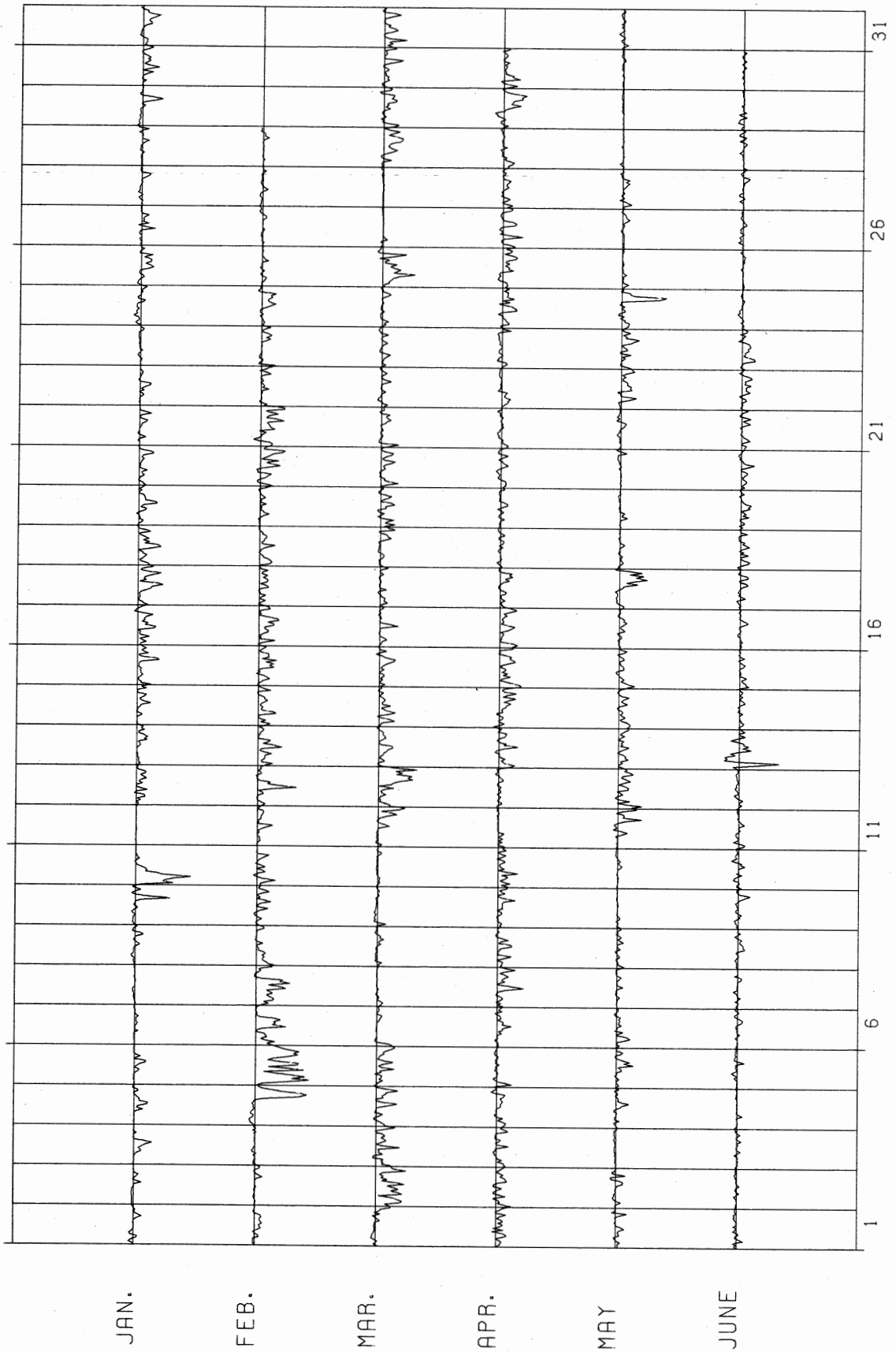


AL HOURLY VALUES FOR THE FIRST HALF OF 1983 (1500NT/DIV)



RE HOURLY VALUES FOR THE FIRST HALF OF 1983 (1500NT/DIV)





AO HOURLY VALUES FOR THE FIRST HALF OF 1983 (1500NT/DIV)

Publications by the World Data Center C2 for Geomagnetism.

1. Data Catalogue

Data Catalogue of World Data Center C2 for Geomagnetism Published in  
1984

2. Data Book

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

(AE-index for 1982 will be published in Data Book No.12 and 14)

3. Others

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)

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

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

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



