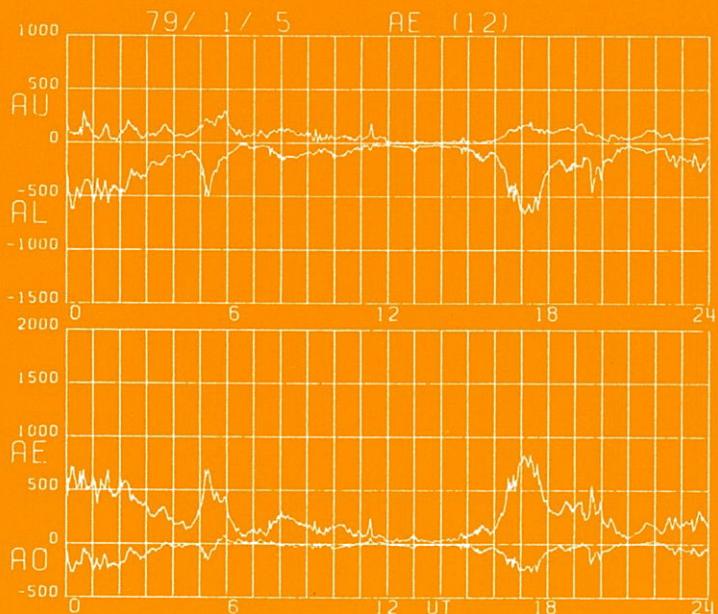


World Data Center C2 for Geomagnetism

DATA BOOK

No. 5

Auroral electrojet indices (AE)
for January-June 1979



APRIL 1982

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

World Data Center C2 for Geomagnetism

DATA BOOK

No. 5

**Auroral electrojet indices (AE)
for January-June 1979**

APRIL 1982

**Data Analysis Center for
Geomagnetism and Spacemagnetism
FACULTY OF SCIENCE**

KYOTO UNIVERSITY

Auroral Electrojet Indices (AE)

for January - June 1979

by

T. Kamei and H. Maeda

1. Introduction

The Auroral Electrojet index (AE) 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 values 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 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 a half of 1976. We have published AE values for the year 1978 as part of the data books (No.3 for the first half of 1978 and No.4 for the last half of 1978.). Please see these data books for the estimation of errors of our AE data.

2. 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 the 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 precisely, this plot gives an information about data availability of each station. Thus the plot will give us an idea which data are to be checked. For these users, we would like to suggest to check our way of derivation of the AE indices and our estimation of errors.

3. Selection of Observatories

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 active observatories are not uniform over the auroral zone, and the other is that the digitization of analogue data (magnetograms) is a heavy job.

We selected 12 observatories listed in Table 1. Of these, only 5 stations are taking digital data directly (called digital stations). Our selection is almost the same as that of the WDC-A. (see Fig. 1)

Three of the stations (Fortchurchill, Great Whale River, and Yellowknife) are the digital 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 two digital stations (Barrow and College), we used the original digital H-component data.

4. Digitizing Machine

Our digitizing machine is made of a semi-automatic sonic digitizer, a large size microfilm reader and a mini computer system.

The sonic digitizer has a pointing pen and two microphone arrays. The pen emits a small sonic pulse from a small electric spark at the top of it. The position of the pen is detected by time lags between the spark and signals received by the microphone arrays. One of the microphone arrays is

Table 1. List of AE(12) stations.

Observatory	Abbreviations		Geographic		Geomagnetic	
	IAGA	WDC-A	Lat. ($^{\circ}$ N)	Long. ($^{\circ}$ E)	Lat. ($^{\circ}$ N)	Long. ($^{\circ}$ 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

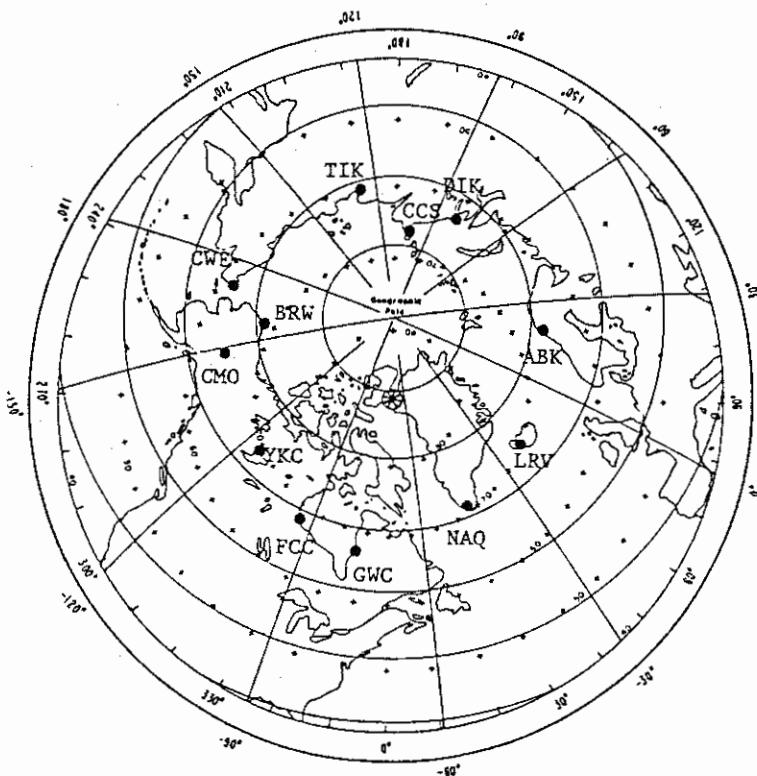


Fig. 1. Distribution of AE(12) stations.

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.

placed on the upper side of a microfilm reader and detects Y position of the pen, and another array is placed on the left side of the reader and detects X position of the pen.

The operator traces the projected figure (magnetogram) on the screen of the microfilm reader. The effective size of the screen is about 60 cm in width and about 40 cm in height. This screen is divided into 4000 x 3000 digital points. The emitting speed of the sparks can be controlled either by the computer or by the operator. Although the emitting speed can be as fast as 100 points per second, available speed is limited to 20 points per second, because of the speed of the CPU of computer and the recording media.

5. Digitization of Analogue Data

The magnetogram on 35 mm microfilm is projected directly on our microfilm reader. The projected figure is almost the same size as the original magnetogram whose size is about 2 cm/hour or 48 cm/day.

Usually, the magnetograms are digitized day by day. When the time marks on the magnetogram are not spaced uniformly or base lines are not straight enough, one magnetogram is divided into several uniform parts and then digitized. We used the ordinary magnetogram for all days. When the H trace crosses other traces, we tried to identify the H trace by referring the insensitive or storm magnetogram. When we trace the H component on magnetograms, we also feed three basic points to define the time and the absolute value of the digitized data, and feed other necessary information like the station identification and observation date.

In digitizing analog data, we could have trouble from the digitizer noise. To be free from such a noise, we digitized as many points as possible to get one value. In determining the three basic points we digitized each point more than 20 times, and we picked the point only when these consecutive 20 readings are all within a limited area. The traced digital data are logically checked by a quality control program to reject spikes caused by the noise. After cleaning by the quality program, the data are averaged to get the final one minute value. Usually, one-min value is determined from an average of 3 or 4 digital readings. We checked all the digitized data visually by the plot on a monitoring graphic display at the reading stage and by the finer common scale plot made by a X-Y plotter after processed by the quality control program.

6. 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 example 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 have been lost.

We think some explanation 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 between the T (or inverted T) shaped mark and 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. The geomagnetic longitude of Cape Wellen (CWE) and Barrow (BRW) are very close, and so it is difficult to separate these two stations on the contributing stations plot. Sometimes, Cape Wellen gives AU and Barrow gives AL, and vice versa. This is thought to be an effect of local current system between the high latitude station and the low latitude station.

When we assume that the observed geomagnetic H component is a result of a simple combination of some simple current systems, this plot of the contributing stations can be regarded as an index of dominant current system at a certain time, though the current system in the auroral zone

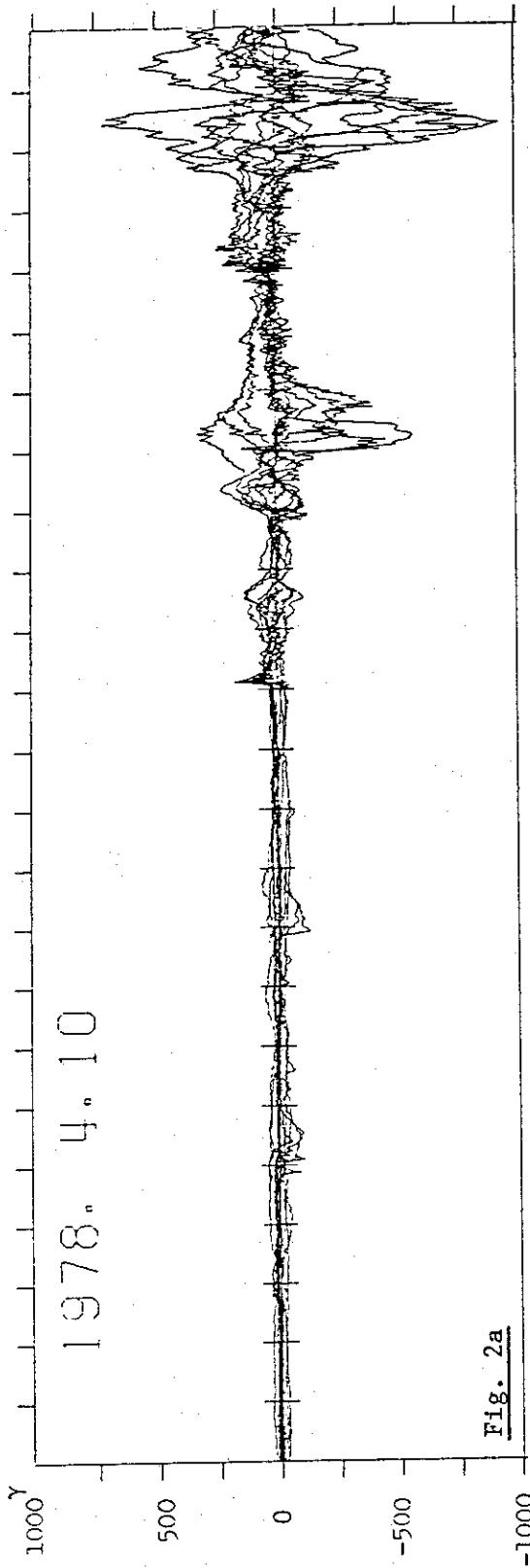
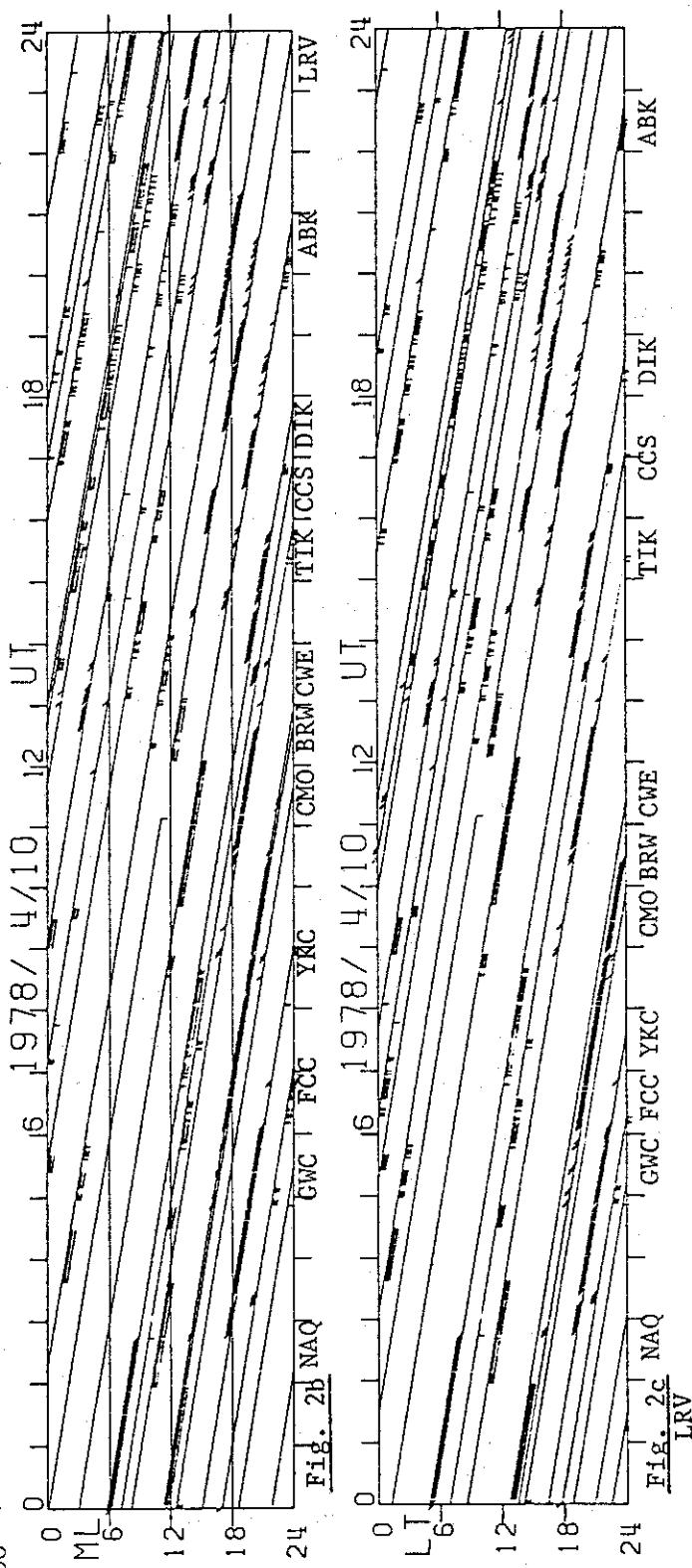


Fig. 2a



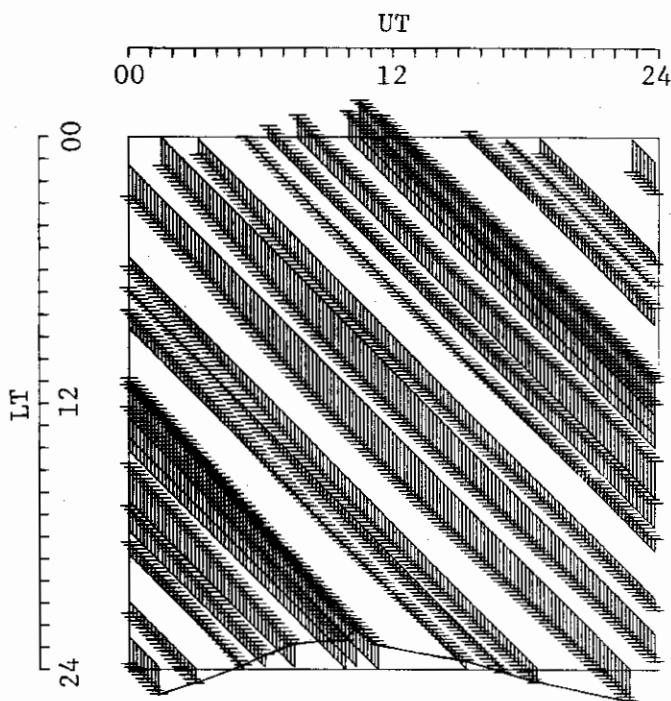


Fig. 3a Difference between GLT and MLT in winter.

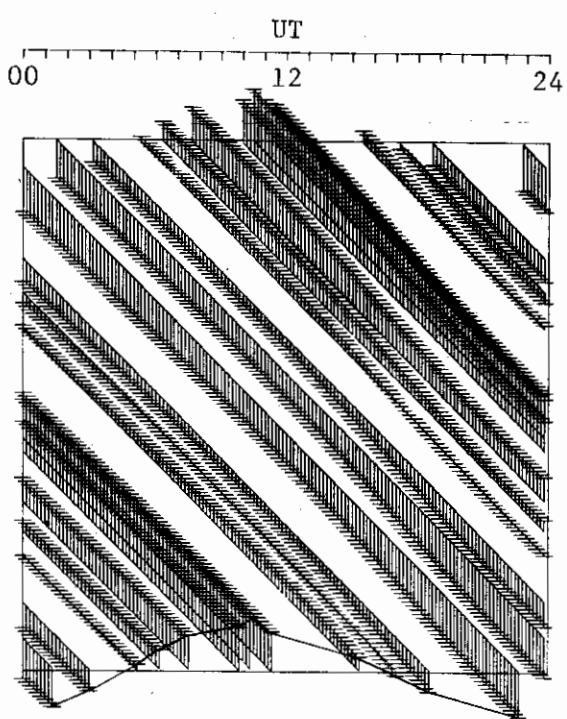


Fig. 3b Difference between GLT and MLT in summer.

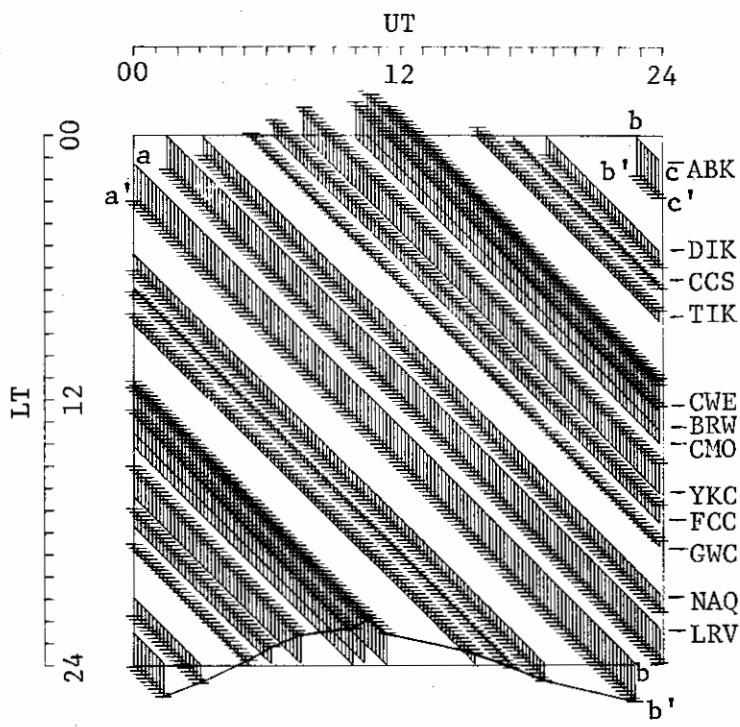


Fig. 3c Difference between GLT and MLT in equinox.

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.

is not very simple, and users must be very careful to check if local current systems may give a false impression of different current systems.

Although we have such limitation of the plot of the contributing stations, and we need more precise analyses, we can point out some characteristics from the plot, most of them confirm our previous knowledge.

(1) In quiet periods, the geomagnetic local time of the contributing stations to the AL index (called here AL time, shortly) is around noon. This is seen best in equinox. This may come from the low latitude Sq current system or from the field-aligned current system connected to the cusp region, or from both of them.

(2) In disturbed periods, the AL time is between midnight and morning.

(3) In some transition periods between quiet and disturbed states, the AL time moves gradually from noon to morning. Then, very sharp and short period AL spikes are seen and the AL time goes pre-midnight. Afterward, the AL time comes back to early morning.

(4) The geomagnetic local time of the AU contributing station (called AU time) is confined in the evening in disturbed periods. But in quiet periods, the AU time is distributed widely and it can be seen at midnight or in the morning.

7. Results

Monthly quiet-time H reference values for January-June 1979 are listed in Table 2, where for four stations only deviations (HO^+) from the H base line are given, because we did not find out any base values. Table 3 gives the hourly average of AE indices on every day from January to June 1979.

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. Finally, Fig. 6 shows the H-traces of magnetograms from AE(12) stations in every month from January to June 1979.

8. Acknowledgements

This volume has been accomplished by the data supply from the AE stations through the World Data Centers and the financial support from the Ministry of Education, Science and Culture of Japan. Acknowledgement is due to Ms. Yohko Yamamoto for her assistance in digitizing magnetograms.

Note: Another example of wrong index is seen in the following figure; where the AU index around 1530 and 1620 (indicated by arrows) is incorrect, because of a lack of data at a key station for this index.

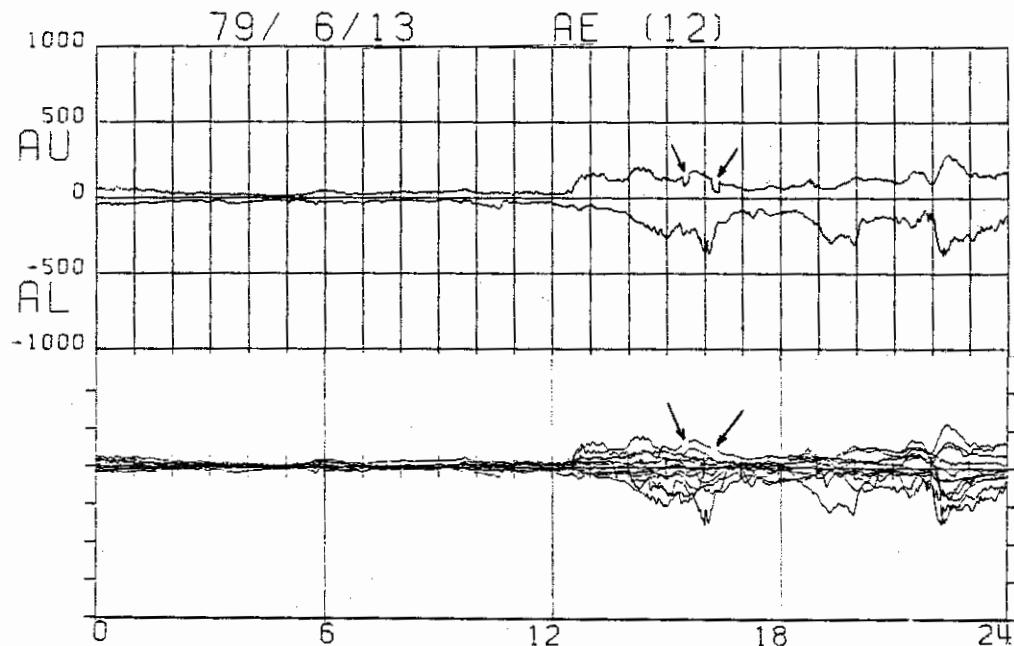


Table 2. MONTHLY QUIET-TIME H REFERENCE VALUES (UNITS : NT = GAMMAS)
(YEAR 1979)

STATION	JAN.	FEB.	MAR.	APR.	MAY	JUN.
ABISKO	11819	11817	11811	11809	11820	11824
DIXON ISLAND	-395	-398	-395	-393	-384	-392
CAPE CHELYUSKIN	528	516	521	530	540	525
TIXIE BAY	240	235	226	241	246	239
CAPE WELLEN	187	187	179	185	190	194
BARROW	9826	9818	9826	9829	9845	9837
COLLEGE	13028	13021	13024	13022	13032	13037
YELLOWKNIFE	8717	8319	8714	8714	8737	8744
GREAT WHALE RIVER	10572	10572	10572	10573	10587	10617
FORT CHURCHILL	7478	7488	7488	7488	7506	7529
NARSSARSSUAQ	12044	12054	12046	12051	12055	12084
LEIRVOGUR	12386	12389	12383	12386	12394	12409

(H0+) : DEVIATION FROM THE H BASE LINE
ON THE ORDINARY MAGNETOGRAm

TABLE 3

Hourly average AE indices (AU, AL, AE and AO) for
January-June 1979.

DATE	AU INDEX (HOURLY VALUES)								JANUARY 1979								MFAN									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	42	43	23	43	46	62	46	38	37	33	22	30	23	37	60	29	13	16	20	15	14	38	52	85	36	
2	55	42	28	23	51	46	49	36	35	63	126	284	266	136	77	191	133	143	258	81	62	50	67	97	97	
3	137	107	60	106	82	69	78	43	74	90	125	220	174	98	89	118	92	49	133	154	231	147	112	88	112	
D	4	56	12	84	90	80	81	138	133	178	224	366	204	128	223	195	173	59	35	52	103	74	25	19	1	114
5	130	64	109	102	77	208	100	91	101	57	49	61	6	7	14	16	93	140	122	116	53	82	69	47	80	
D	6	49	106	108	91	55	78	73	87	50	35	68	126	134	137	95	166	170	136	133	81	44	32	29	47	
D	7	32	29	36	32	30	28	35	53	51	66	56	68	125	86	252	212	220	120	70	80	95	32	25	63	79
8	77	54	64	51	35	37	28	27	17	17	16	6	7	5	7	9	10	13	38	61	83	92	72	37	37	
9	82	62	39	103	77	65	104	42	46	33	22	31	82	68	47	34	31	49	32	22	26	35	17	18	49	
0	10	20	17	23	30	47	38	35	28	24	25	24	23	19	23	23	22	22	18	18	34	23	25	24	26	
D	11	40	49	72	51	53	30	25	19	28	51	55	34	45	46	35	27	25	17	13	12	12	16	34	34	
0	12	19	27	38	77	60	42	86	58	71	69	57	33	76	82	100	68	69	77	54	77	112	78	127	68	
0	13	137	63	39	18	25	47	43	25	23	25	25	33	36	26	25	25	27	38	20	17	14	12	19	33	
0	14	18	21	27	23	49	70	83	113	132	110	54	63	85	125	81	98	49	45	20	18	13	15	15	60	
0	15	16	14	31	45	22	19	28	34	75	97	123	244	266	162	47	64	51	67	68	112	186	131	64	69	
D	16	45	32	80	65	76	57	38	48	51	72	49	25	82	90	61	26	31	17	10	14	24	32	21	46	
0	17	30	27	23	19	18	18	17	19	19	19	24	24	51	34	16	43	71	101	66	55	73	54	79	39	
0	18	90	78	128	128	88	51	38	28	24	25	42	61	84	29	36	129	97	47	76	71	45	43	52	65	
0	19	61	78	91	217	334	131	76	44	23	28	114	70	84	48	34	50	49	37	35	34	44	60	35	125	
0	20	71	33	48	64	50	81	61	56	79	77	74	54	50	102	79	43	59	72	59	41	37	40	43	59	
D	21	40	34	63	47	49	28	41	47	33	61	98	149	73	46	48	63	38	26	33	41	31	26	59	59	
D	22	22	24	20	22	29	23	22	18	20	36	36	36	66	128	65	34	32	23	43	106	130	158	156	204	
D	23	87	37	45	32	41	58	66	47	43	56	84	137	85	143	146	250	277	96	113	185	85	29	-1	21	
D	24	21	54	163	129	72	41	42	60	65	80	75	106	37	34	30	30	38	65	36	36	56	44	39	58	
D	25	29	67	12	160	196	110	97	74	79	80	120	129	89	72	148	217	198	143	165	139	136	127	97	100	
D	26	27	94	120	113	106	109	182	186	161	110	99	69	91	138	82	143	149	215	94	112	139	71	79	186	
D	27	103	108	57	62	119	141	204	72	70	81	77	48	31	29	31	27	112	122	145	156	99	146	72	80	91
D	28	80	88	104	129	101	133	48	71	53	65	85	46	22	25	24	43	55	90	150	98	152	49	59	73	73
D	29	63	76	120	124	84	69	70	84	45	26	50	42	102	101	27	35	40	59	34	43	22	60	93	63	
D	30	102	165	101	121	86	53	61	80	143	149	101	48	108	126	96	76	54	42	65	52	86	125	185	101	
D	31	123	100	75	69	51	79	95	89	84	76	71	66	46	51	54	47	21	23	22	50	77	94	120	82	
MEAN	61	57	64	76	73	66	70	60	63	63	75	80	83	85	74	77	79	68	68	79	71	64	56	68	70	
50 MEAN	49	35	36	33	37	36	39	45	49	45	35	33	46	48	50	35	43	40	41	30	25	27	23	31	38	
5D MEAN	46	47	59	85	90	77	103	98	102	107	145	121	103	132	164	199	180	121	98	123	105	56	43	74	103	

DATE	AU INDEX (HOURLY VALUES)							FEBRUARY 1979																	
	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 68	74	77	51	39	43	29	30	55	62	34	26	24	19	23	19	13	14	17	14	14	12	19	32	34	
2 49	72	107	114	107	48	68	83	83	56	72	82	66	33	44	31	33	47	131	64	148	110	57	78	74	
3 41	65	66	56	38	34	24	22	22	21	21	20	20	18	28	57	59	49	151	208	167	142	89	96	64	
4 119	57	57	122	132	122	109	84	81	61	106	78	73	141	84	186	237	165	117	157	155	156	188	125	121	
5 73	73	92	70	58	69	60	139	126	128	163	144	222	126	49	23	16	16	22	27	26	20	17	30	75	
6 41	27	61	82	192	215	144	124	175	280	259	176	63	104	62	49	60	42	88	77	91	127	152	61	115	
7 44	28	34	20	21	30	28	24	27	35	41	48	76	39	25	36	32	47	45	29	56	79	91	58	41	
8 60	72	48	55	69	59	46	82	54	51	84	88	97	48	41	45	40	47	68	58	66	53	53	74	61	
9 116	106	122	115	98	117	44	38	54	70	53	50	80	41	55	113	65	56	44	40	41	63	56	72	71	
0 10	75	71	55	50	45	37	43	48	49	33	42	35	33	57	72	47	34	30	39	41	28	28	32	45	
11 56	62	122	95	145	80	48	42	38	59	53	36	26	26	20	18	20	23	23	30	63	124	138	129	62	
12 118	61	58	60	67	146	156	118	151	261	152	168	150	109	52	35	31	18	20	21	24	28	22	20	85	
0 13	22	21	21	16	19	28	23	27	17	13	19	12	11	16	22	29	24	18	16	16	15	14	17	19	
0 14	16	19	20	17	18	16	14	16	25	18	24	21	21	16	15	17	16	17	19	26	17	31	19		
0 15	30	31	28	32	38	43	70	65	66	153	294	115	85	59	19	88	123	59	39	35	36	32	19	66	
1 17	22	27	43	79	117	73	45	25	22	65	71	73	39	29	22	21	22	28	20	21	18	12	14	38	
0 18	26	28	22	18	15	18	19	24	24	21	23	22	26	23	25	31	36	26	31	63	44	38	37	28	
0 19	44	36	49	59	66	77	78	88	104	100	86	55	92	64	54	50	50	73	63	62	108	106	110	117	
0 20	128	156	136	81	118	88	125	80	71	97	64	73	76	189	64	59	62	60	24	38	38	33	83		
0 21	66	56	43	114	145	185	191	173	352	180	228	202	67	30	32	63	150	159	252	202	329	198	55	35	
D 22	36	5	22	29	29	68	42	91	114	165	179	150	90	60	48	121	61	79	45	84	82	70	47	54	
D 23	36	69	78	61	110	145	139	110	53	50	51	87	85	36	30	31	14	18	35	86	81	161	133	73	
D 24	87	93	120	139	111	81	98	132	83	73	102	92	107	85	93	124	129	47	96	66	127	187	107	91	
D 25	63	137	127	149	101	91	111	97	72	86	80	131	176	60	34	29	24	21	45	109	131	125	126	92	
D 26	59	79	120	88	74	112	130	117	141	129	148	154	193	142	162	194	254	183	167	123	67	56	43	26	
D 27	125	185	101	109	174	61	125	140	103	71	78	199	159	104	123	185	154	175	89	49	33	63	40	69	
D 28	61	130	88	59	34	22	23	59	51	73	112	135	166	165	137	192	201	220	354	203	178	127	71	84	
M FAN	61	66	69	69	78	77	74	76	81	85	95	88	81	67	57	69	72	64	75	68	82	78	67	63	73
50 MEAN	34	34	30	27	24	24	28	31	27	21	25	22	27	32	29	31	31	41	51	34	36	41	30	30	
50 MEAN	64	72	80	106	114	125	126	119	136	152	118	158	118	80	118	130	122	114	98	119	93	69	63	105	

DATE	AU INDEX (HOURLY VALUES)												MARCH 1979													
	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	39	63	56	57	95	64	90	82	53	82	121	256	251	153	113	216	212	148	155	153	47	47	36	83	111	
2	93	109	107	124	100	166	178	128	55	49	83	106	143	146	117	142	74	35	26	96	117	121	154	118	108	
3	54	119	51	30	20	31	120	64	82	43	19	26	73	72	69	114	217	230	211	190	133	147	127	141	99	
4	105	136	175	91	94	150	83	85	176	233	378	217	125	145	68	35	40	182	247	135	61	83	133	74	135	
5	104	149	112	39	71	168	142	139	146	107	182	115	62	29	23	30	15	29	60	95	61	54	65	107	88	
D	6	75	55	127	143	104	125	84	104	179	235	195	220	179	260	270	249	213	263	154	193	111	168	56	70	160
0	7	78	68	74	88	66	82	90	66	53	35	19	20	23	25	19	12	15	33	66	84	154	173	123	72	64
8	75	69	58	78	92	83	105	53	57	56	34	69	110	72	27	21	23	47	43	25	22	59	62	53	58	
9	59	72	74	64	41	42	54	41	111	170	236	303	211	128	94	52	86	90	78	73	146	114	91	77	104	
D	10	168	114	100	96	304	366	435	230	152	136	206	368	211	56	61	31	81	217	256	269	325	92	11	106	
D	11	210	26	54	5	54	58	45	47	35	72	78	70	155	69	29	32	30	48	31	29	26	18	12	8	52
0	12	15	14	33	37	34	30	42	48	42	29	27	33	26	22	25	22	24	9	36	106	49	34	23	20	33
13	19	21	61	52	66	86	64	74	69	52	35	21	28	22	24	39	15	13	13	13	19	19	18	20	36	
0	14	23	22	22	23	22	26	25	24	22	27	26	22	22	19	17	18	16	21	26	30	30	27	29	26	23
0	15	31	31	30	29	28	31	38	40	50	52	42	50	58	77	52	42	43	46	57	76	86	84	69	80	51
D	16	52	47	68	50	19	69	82	109	60	76	69	53	63	83	65	52	32	38	28	29	40	35	50	35	54
17	60	42	41	45	50	59	118	59	206	234	190	246	196	123	76	40	19	22	17	18	17	16	50	75	82	
18	46	42	36	40	45	55	40	45	55	26	44	42	39	35	31	31	58	35	25	18	23	19	22	16	17	
19	25	24	21	17	19	37	86	90	163	138	235	250	133	151	95	120	67	106	64	52	57	39	43	39	86	
0	20	42	36	42	38	41	45	64	47	74	39	35	50	36	31	34	32	36	57	43	37	45	36	37	43	
D	21	34	32	31	34	33	35	62	39	40	29	26	34	27	34	41	33	42	44	83	51	28	27	31	33	37
22	34	38	39	43	33	34	25	32	51	65	187	118	263	210	366	422	324	121	129	78	56	78	64	48	119	
23	48	54	60	47	71	82	72	37	32	16	7	19	21	16	35	23	61	43	54	135	114	154	89	104	58	
24	157	131	64	70	113	66	102	177	231	150	36	39	28	62	91	56	49	103	92	98	184	175	179	150	108	
25	242	153	91	148	148	132	121	192	186	103	224	195	187	150	174	174	288	284	370	261	212	216	370	248	203	
D	26	99	130	97	120	156	70	49	94	180	166	116	119	189	214	262	182	192	267	348	260	269	212	103	68	165
27	61	37	35	79	63	92	189	256	242	197	112	126	218	162	178	186	298	282	212	224	189	246	224	138	169	
D	28	174	124	170	107	76	62	41	57	170	284	281	309	210	259	136	128	234	247	194	142	178	231	197	177	
D	29	169	155	227	143	136	161	179	293	77	155	206	231	208	262	283	357	379	107	81	143	306	150	74	32	
30	87	151	146	123	130	216	154	92	41	16	22	26	33	88	62	42	25	32	46	42	24	30	33	71	72	
31	64	51	124	111	83	39	48	46	27	33	48	22	28	111	163	231	252	237	239	197	260	209	173	381	132	
MEAN	82	74	78	70	77	89	97	97	100	100	115	119	112	104	99	101	110	109	112	108	109	100	89	88	97	
50 MEAN	38	34	40	44	39	43	56	45	41	37	27	29	29	27	23	26	27	23	27	52	62	59	61	48	37	40
SD MEAN	124	97	132	106	130	149	152	143	125	175	215	249	214	209	223	237	246	191	162	165	195	143	89	90	165	

DATE	AU INDEX (HOURLY VALUES)												APRIL 1979													
	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	240	151	129	183	94	35	26	100	147	180	205	208	348	365	150	184	222	161	148	85	163	220	207	145	171	
2	168	142	200	120	180	156	151	117	85	163	147	136	215	233	261	281	320	302	239	213	244	177	180	196	193	
3	144	125	118	130	62	42	94	132	82	38	49	35	39	33	42	154	261	43	56	77	86	492	204	233	115	
D	4	271	256	184	244	285	309	357	322	355	219	194	269	283	97	30	58	30	57	47	35	33	100	146	177	
D	5	116	80	125	44	109	100	98	211	208	205	278	192	146	110	133	101	324	442	205	140	126	128	103	65	158
6	73	61	83	105	113	127	168	108	44	22	22	20	15	39	62	112	175	61	38	70	59	54	42	52	72	
7	39	30	23	19	40	138	157	124	127	121	109	52	22	28	23	79	114	60	25	43	122	165	71	113	113	
8	148	55	32	39	57	99	66	76	102	98	101	111	75	25	30	40	61	118	182	204	305	254	267	113	113	
9	175	148	133	97	89	51	41	31	30	33	34	30	28	26	20	19	27	32	36	43	42	42	45	53	53	
10	46	47	45	44	103	78	87	151	180	189	97	142	187	205	120	94	40	49	91	93	141	100	61	40	101	
0	11	36	27	21	25	32	30	30	34	38	33	41	50	51	52	78	77	69	73	76	48	31	33	51	36	45
12	36	41	87	69	64	151	112	53	122	75	155	76	44	54	57	61	86	62	112	205	143	72	215	162	96	
13	80	46	28	35	54	53	68	112	151	49	40	69	145	123	62	74	88	115	89	62	52	54	45	44	72	
14	64	44	80	49	47	71	50	32	37	76	93	92	69	61	55	77	195	220	124	69	183	166	190	100	100	
15	131	138	183	131	59	30	38	24	39	90	54	45	59	127	159	160	67	51	76	76	121	151	150	134	96	
0	16	123	143	111	181	158	115	68	113	109	146	99	52	48	79	50	31	30	107	86	55	40	38	34	43	86
17	105	35	28	72	40	74	98	92	84	37	93	93	114	66	66	35	28	28	58	37	55	105	129	97	140	115
18	54	34	44	43	45	59	49	39	66	136	91	29	47	32	42	46	26	33	43	92	94	83	127	95	60	
19	35	43	25	84	45	105	103	107	45	37	37	30	33	36	55	67	104	118	42	41	42	47	35	35	56	
20	32	32	30	34	26	32	27	28	38	39	41	37	35	34	31	29	27	29	38	46	47	42	38	41	35	
0	21	47	40	36	52	62	64	103	94	90	70	66	91	158	156	264	339	337	309	274	278	226	170	143	130	150
D	22	204	324	301	295	322	145	133	153	254	192	250	269	90	54	129	249	249	292	303	246	246	252	146	223	
23	123	121	221	189	115	70	146	150	132	212	212	147	82	123	238	222	156	137	162	124	60	85	148	125	226	
24	195	131	163	170	161	148	121	162	92	64	125	165	127	76	88	86	66	75	114	138	131	144	118	148	125	
D	25	242	257	377	322	384	640	410	324	318	355	176	137	253	416	316	364	349	268	154	170	171	189	202	226	292
26	181	191	136	118	99	38	24	10	6	20	19	22	18	14	17	21	25	80	130	93	125	198	88	70	73	
27	64	108	175	145	97	107	65	141	150	126	83	68	59	77	86	208	330	298	217	268	287	181	180	189	155	
28	280	229	173	146	76	172	211	264	166	187	118	66	86	153	162	188	129	100	145	177	232	281	218	218	174	
D	29	149	183	218	122	316	265	387	186	239	348	257	184	182	166	143	230	401	316	260	304	222	208	212	161	236
30	231	243	178	124	189	253	239	119	152	342	250	85	114	141	110	62	68	85	120	176	120	132	84	75	154	
MEAN	127	116	122	114	117	125	124	120	122	126	117	104	106	104	97	123	148	140	127	129	130	142	125	122	122	
50 MEAN	52	34	27	51	37	60	61	60	54	56	60	52	46	37	46	49	56	58	50	66	68	60	78	64	53	
5D MEAN	196	220	241	205	283	291	277	239	274	263	231	210	190	168	149	200	279	277	184	188	178	162	152	147	217	

DATE	AU INDEX (HOURLY VALUES)							MAY 1979							MEAN											
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	147	115	147	150	277	162	103	113	60	191	74	29	21	13	7	25	22	121	222	251	233	203	173	225	128	
2	135	122	269	163	104	58	134	125	95	119	90	98	76	68	56	83	122	121	123	144	173	144	38	32	25	107
3	12	68	92	50	21	15	20	28	46	81	116	105	82	124	101	37	15	26	79	73	83	81	77	169	67	123
4	175	139	72	25	16	14	24	59	53	128	155	114	78	70	48	59	41	48	90	200	148	148	215	165	97	117
5	114	95	124	93	155	59	67	70	94	174	147	80	54	70	31	30	43	93	94	90	44	35	35	33	30	80
6	27	19	20	17	14	22	10	64	78	63	76	38	25	22	19	45	35	40	40	44	40	37	38	40	36	36
7	76	65	48	36	24	20	19	45	95	261	204	183	254	197	153	58	109	158	274	160	139	163	106	70	122	122
8	51	41	52	41	37	34	132	163	139	64	49	31	35	21	30	34	84	71	69	108	134	83	79	78	69	69
9	46	39	37	27	48	87	85	97	136	163	183	186	178	148	73	67	79	203	193	199	187	138	82	49	114	114
10	52	44	32	22	48	28	25	40	62	68	62	65	76	100	82	43	51	98	58	110	87	78	57	80	61	61
11	83	62	78	52	47	82	187	220	225	211	108	132	151	138	150	256	283	202	136	87	76	167	129	66	139	
12	99	90	77	46	91	74	33	66	57	148	104	138	70	109	79	66	64	101	73	80	97	87	67	42	82	82
13	79	53	47	39	29	24	66	51	62	68	59	48	50	55	62	88	69	45	54	82	107	53	55	47	58	58
14	42	58	85	64	99	71	62	61	62	83	111	146	163	110	151	94	147	103	123	137	136	138	69	52	99	99
15	91	89	53	33	127	171	196	75	79	117	153	74	84	77	93	47	57	70	62	124	155	106	133	50	96	96
16	44	79	104	106	95	76	153	79	38	19	18	42	37	27	21	20	33	40	54	55	43	35	40	44	54	54
17	47	81	78	61	63	72	145	128	101	99	121	98	77	34	21	23	21	32	37	36	38	42	31	28	63	63
18	25	34	32	33	43	45	63	62	65	68	66	130	107	125	36	48	62	147	274	172	168	268	268	270	113	113
19	212	220	294	305	357	211	211	100	62	159	229	248	322	202	182	100	164	176	167	206	243	231	293	170	209	211
20	292	297	211	215	218	248	182	108	50	26	53	172	112	104	107	154	211	164	211	167	216	287	183	69	167	
21	50	31	31	16	24	30	43	67	157	301	202	192	113	69	95	147	149	229	308	274	386	353	294	211	145	162
22	175	262	331	266	198	213	248	365	367	367	206	171	287	118	82	99	170	276	360	303	210	258	218	191	116	229
23	213	143	178	137	143	120	42	26	29	49	46	43	36	43	36	29	24	35	34	35	34	197	197	324	307	253
24	147	193	197	285	197	223	233	347	209	234	248	161	151	193	106	115	201	227	195	191	329	343	340	240	219	219
25	331	204	174	397	333	288	220	188	160	147	278	320	272	270	291	280	367	328	243	227	218	140	152	287	255	255
26	227	188	145	347	279	155	224	93	52	130	143	141	161	147	136	271	365	177	242	161	104	105	153	137	178	178
27	151	148	225	246	240	213	221	236	223	195	199	205	141	150	188	201	159	175	166	102	97	90	116	145	176	176
28	167	160	140	89	75	97	33	64	79	33	32	46	73	81	74	100	114	168	266	226	207	246	179	199	123	123
29	167	91	75	50	36	39	32	16	21	79	183	237	213	106	57	41	62	104	158	152	250	366	134	138	117	117
30	98	94	85	109	127	89	55	42	40	56	62	48	39	39	41	49	47	55	57	52	41	32	30	59	30	59
31	23	18	16	15	14	15	20	29	31	36	20	23	20	14	47	83	58	110	149	90	42	28	23	39	39	39
MEAN	116	107	114	113	98	103	105	105	120	122	124	104	97	83	92	116	131	145	149	150	151	125	118	117	117	117
50 MEAN	30	53	62	49	41	40	68	63	58	73	60	48	45	35	34	37	39	64	73	56	47	42	60	51	51	51
5D MEAN	218	213	228	320	261	218	205	211	189	189	217	246	180	174	146	200	277	251	237	206	228	219	181	217	218	218

DATE	AU INDEX (HOURLY VALUES)								JUNE 1979																	
	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	
01	27	28	20	58	45	76	95	85	59	54	37	36	27	17	24	48	64	59	65	65	105	176	189	163	67	
02	149	159	113	104	121	43	14	20	50	101	149	148	62	51	50	45	55	73	57	40	57	91	192	157	87	
03	86	46	29	18	7	6	15	25	29	56	57	48	49	81	121	80	40	45	68	66	119	164	132	137	63	
04	129	84	56	76	135	173	209	248	375	314	237	158	147	132	71	65	54	58	73	59	75	61	49	51	129	
05	47	36	31	28	20	35	44	44	58	39	33	38	41	45	46	33	30	36	46	46	54	41	39	33	39	
D 6	32	47	56	99	58	50	40	70	77	84	158	125	169	175	147	107	139	158	95	246	290	401	346	248	143	
D 7	381	304	491	485	645	672	351	246	136	103	53	62	116	181	209	334	353	364	258	119	118	137	248	114	248	270
D 8	112	204	202	87	30	110	215	101	175	126	122	55	50	39	76	63	72	104	160	130	144	100	76	91	110	
D 9	93	115	79	114	181	90	116	78	108	220	229	133	93	109	125	138	130	120	94	183	177	191	108	71	129	
D 10	79	87	100	205	224	196	172	258	246	294	134	44	24	60	120	115	81	113	199	93	76	68	64	62	130	
11	39	70	139	225	159	91	90	155	81	79	88	195	185	127	115	83	108	75	89	57	75	71	56	100	106	
12	151	204	101	74	132	141	112	90	34	65	58	98	89	78	59	50	45	48	50	100	125	94	117	56	90	
13	57	46	29	23	15	27	32	30	38	45	33	33	74	134	165	139	91	66	86	89	127	139	139	214	156	
14	174	214	186	148	56	35	24	47	69	74	149	91	87	59	52	41	50	73	80	58	50	45	50	42	81	
15	54	66	84	128	161	123	179	179	186	222	210	159	246	223	124	53	38	53	102	136	200	196	165	242	147	
D 16	237	225	219	155	232	215	174	255	272	203	163	79	97	140	211	227	224	204	220	309	288	257	293	284	216	
D 17	280	145	134	179	81	83	27	111	93	89	111	208	146	121	231	411	321	250	198	96	83	58	68	33	148	
D 18	35	49	36	176	125	98	38	61	43	47	64	63	35	52	34	18	47	51	86	109	95	54	34	36	58	
D 19	33	86	100	71	168	206	202	167	148	155	111	155	117	86	67	67	57	44	39	77	88	117	159	114		
D 20	221	259	161	87	75	72	52	84	73	58	58	73	88	90	76	81	63	31	74	177	211	205	194	129		
D 21	88	70	33	33	169	199	152	162	170	134	129	211	297	212	109	77	187	238	259	323	288	253	204	224		
D 22	238	267	82	72	139	94	166	242	134	68	64	240	285	297	406	462	578	503	312	279	290	260	161	234		
D 23	156	191	282	244	202	235	280	297	261	353	157	110	101	78	58	75	126	125	87	67	167	196	167	245		
D 24	130	114	177	185	266	240	161	184	103	37	116	80	70	64	53	53	54	88	118	71	39	58	131	175		
D 25	139	80	47	66	112	171	184	110	63	124	183	149	81	73	64	47	39	30	49	141	184	125	105	46		
D 26	46	34	17	23	81	122	187	135	68	184	269	112	94	213	156	220	219	238	249	404	386	349	234	171		
D 27	127	99	189	166	110	81	73	130	193	192	162	86	151	175	244	222	126	100	68	67	39	43	33	126		
D 28	24	17	14	17	34	8	12	79	43	34	41	43	48	41	43	39	25	27	28	31	55	96	78	37	40	
D 29	82	45	39	26	16	13	38	48	92	86	137	155	93	100	64	80	115	152	204	143	163	168	189	98		
D 30	228	227	127	68	91	143	231	166	238	236	178	116	85	62	55	67	106	52	57	65	98	123	125	69	126	
MEAN	122	120	112	111	129	128	122	131	124	125	119	113	112	106	113	115	123	118	119	126	143	142	137	125	122	
S0 MEAN	43	35	26	39	46	44	40	58	46	46	41	45	46	50	41	44	44	47	76	90	94	84	91	53	53	
SD MEAN	208	206	226	211	255	253	202	222	176	162	119	123	153	174	206	241	284	270	194	204	230	250	195	208		

DATE	AL INDEX (HOURLY VALUES)												JANUARY 1979														
	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	-51	-26	-63	-42	-216	-52	-4	-7	-10	-14	-17	-26	-46	-168	-16	-17	-21	-53	-14	-6	-25	-165	-251	-55			
2	-34	-13	-16	-14	-19	-19	-13	-15	-39	-238	-431	-253	-182	-197	-513	-483	-275	-387	-246	-233	-374	-233	-374	-174			
3	-196	-102	-62	-82	-35	-9	-25	-35	-180	-152	-206	-262	-208	-169	-210	-82	-47	-356	-383	-352	-310	-247	-218	-172			
4	-177	-407	-381	-266	-258	-212	-171	-174	-358	-362	-387	-458	-472	-525	-467	-430	-651	-578	-710	-651	-474	-436	-487	-561			
5	-439	-452	-352	-184	-114	-273	-52	-57	-124	-82	-86	-27	-31	-28	-36	-104	-334	-519	-205	-226	-108	-54	-103	-168	-173		
6	-113	-101	-111	-5	-7	-19	-14	-15	-11	-14	-42	-209	-473	-269	-76	-215	-317	-184	-113	-129	-10	-14	-26	-30	-105		
D	7	-12	-42	-61	-6	-7	-13	-13	-6	-26	-162	-247	-130	-324	-271	-503	-648	-137	-615	-341	-709	-330	-295	-281	-235	-263	
D	8	-57	-44	-33	-15	-14	-25	-23	-22	-19	-21	-24	-19	-25	-27	-30	-32	-34	-149	-186	-87	-51	-22	-61	-43	-51	
Q	9	-194	-56	-13	-20	2	-2	-80	-84	-71	-14	-15	-22	-66	-91	-27	-17	-66	-174	-94	-21	-22	-32	-28	-14	-51	
Q	10	-16	-23	-26	-66	-21	-10	-6	-7	-12	-17	-19	-20	-21	-25	-25	-27	-25	-45	-129	-52	-17	-10	-26	-10		
Q	11	-17	-28	-44	-4	-5	-6	-1	-2	-3	-11	-96	-33	-56	-32	-26	-26	-16	-12	-5	1	0	0	-2	-3		
Q	12	-1	-3	-51	-121	6	2	-39	-72	-38	-51	-20	-29	-14	-157	-188	-109	-65	-75	-110	-47	-39	-37	-46	-93	-58	
Q	13	-89	-5	-2	-5	-8	-10	-42	-78	-58	-55	-49	-38	-69	-102	-51	-34	-110	-67	-24	-2	-2	-3	-4	-8	-38	
Q	14	-11	-4	-5	-62	-84	-74	-82	-131	-206	-54	-25	-68	-223	-262	-213	-84	-48	-86	-85	-21	-8	-7	-11	-18	-78	
Q	15	-22	-16	-60	-119	-50	-27	-28	-67	-233	-175	-221	-567	-340	-139	-43	-165	-165	-106	-196	-224	-403	-506	-251	-39	-192	
Q	16	-221	-75	-56	-122	-215	-126	-26	-35	-172	-266	-149	-61	-57	-249	-241	-67	-67	-41	-32	-58	-55	-15	-13	-11	-101	
Q	17	-11	-4	-5	-7	-5	-2	0	1	-2	-7	-8	-34	-101	-157	-62	-152	-152	-299	-199	-274	-145	-121	-140	-77	-168	
Q	18	-238	-141	-77	-36	5	4	0	-2	-4	-20	-96	-349	-242	-185	-185	-59	-262	-339	-141	-178	-137	-30	-9	-42	-149	-114
Q	19	-162	-300	-354	-401	-447	-148	-36	-10	-15	-21	-242	-220	-105	-28	-95	-293	-293	-137	-44	-44	-118	-160	-156	-260	-171	
Q	20	-119	-47	-42	-123	-124	-149	-11	-68	-281	-205	-106	-140	-147	-270	-259	-186	-243	-326	-191	-54	-12	-13	-31	-37	-133	
Q	21	-48	-39	-212	-80	-43	-32	-38	-93	-161	-157	-231	-315	-193	-217	-257	-173	-104	-292	-153	-448	-69	-58	-8	-11	-126	
Q	22	-11	-11	-7	-7	-10	-13	-10	-8	-12	-23	-50	-115	-222	-292	-50	-25	-28	-44	-193	-419	-819	-458	-432	-465	-155	
D	23	-125	-20	-46	-63	-74	-132	-181	-150	-149	-326	-420	-677	-592	-527	-801	-673	-673	-557	-551	-653	-525	-525	-510	-611	-449	
D	24	-337	-238	-429	-179	-79	-37	-62	-89	-234	-88	-96	-419	-53	-23	-24	-31	-90	-282	-68	-57	-30	-36	-105	-26	-129	
D	25	-27	-122	-590	-676	-279	-75	-25	-26	-145	-76	-197	-159	-266	-447	-555	-296	-162	-316	-440	-294	-398	-295	-197	-228	-262	
D	26	-335	-233	-73	-44	-80	-122	-222	-186	-222	-263	-198	-244	-202	-294	-442	-431	-444	-550	-497	-462	-424	-382	-360	-289		
D	27	-104	-87	-232	-149	-194	-299	-114	-76	-107	-198	-121	-62	-59	-67	-69	-69	-69	-207	-426	-300	-241	-422	-474	-359	-58	
D	28	-34	-31	-43	-62	-17	-58	-12	-55	-89	-163	-341	-97	-45	-180	-104	-129	-328	-449	-75	-13	-20	-37	-103	-37		
D	29	-129	-92	-93	-21	-64	-47	-15	-35	-47	-15	-20	-32	-49	-210	-126	-122	-41	-248	-163	-75	-74	-168	-68	-77	-232	
D	30	-256	-135	-56	-49	-16	-11	-19	-110	-111	-139	-102	-27	-150	-210	-80	-58	-34	-83	-154	-146	-78	-242	-326	-161	-115	
Q	31	-99	-96	-107	-31	0	-22	-54	-122	-88	-36	-57	-143	-105	-36	-103	-30	-64	-26	-17	-65	-236	-173	-213	-113	-85	
MEAN	-118	-95	-117	-98	-79	-64	-48	-59	-99	-123	-175	-181	-177	-168	-174	-216	-213	-212	-213	-195	-153	-143	-163	-141			
50 MEAN	-28	-12	-16	-28	-24	-20	-26	-55	-27	-39	-38	-93	-114	-75	-64	-100	-77	-86	-59	-36	-33	-20	-41	-48			
5D MEAN	-135	-156	-218	-211	-139	-110	-122	-116	-172	-229	-302	-324	-379	-394	-524	-497	-591	-500	-538	-535	-437	-392	-391	-366	-324		

AL INDEX (HOURLY VALUES.)

FEBRUARY 1979

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	-36	-12	-11	-34	-3	-4	-3	-11	-39	-155	-149	-21	-17	-24	-30	-26	-23	-12	-11	-7	-7	-11	-19	-24	-29		
2	-34	-93	-99	-37	-26	-73	-98	-55	-56	-77	-86	-70	-75	-57	-34	-34	-67	-185	-189	-77	-210	-114	-121	-73	-85		
3	-25	-34	-25	-19	-6	-3	-7	-11	-19	-7	-21	-23	-24	-24	-33	-86	-112	-126	-249	-269	-39	-40	-27	-108	-55		
4	-91	-112	-115	-38	-115	-38	-17	-51	-143	-71	-41	-347	-70	-15	-129	-184	-479	-802	-327	-126	-194	-162	-227	-213	-207	-180	
5	-347	-209	-185	-80	-83	-213	-259	-194	-171	-226	-261	-331	-156	-102	-35	-27	-27	-22	-25	-16	-19	-17	-16	-39	-127		
6	-24	-18	-56	-357	-350	-199	-118	-149	-252	-261	-289	-217	-302	-396	-74	-74	-22	-33	-123	-335	-144	-191	-287	-227	-13	-185	
7	-14	-14	-11	-8	-8	-4	-4	-4	-1	-4	-8	-17	-36	-113	-34	-34	-24	-30	-113	-203	-95	-220	-31	-115	-116	-23	-43
8	-33	-62	-85	-62	-76	-67	-62	-21	-1	-45	-264	-81	-45	-25	-26	-78	-257	-113	-200	-132	-132	-17	-5	-29	-138	-80	
9	-171	-54	-149	-126	-30	-44	-30	-6	-31	-85	-126	-78	-35	-32	-92	-370	-161	-55	-9	-10	-16	-118	-94	-102	-84		
0	10	-30	-16	-27	-5	-3	-20	-17	-16	-11	-64	-21	-22	-46	-85	-28	-66	-197	-21	-3	-3	-5	-3	-3	-34		
11	-74	-38	-141	-169	-14	8	7	0	-16	-42	-63	-22	-26	-25	-27	-24	-21	-22	-18	-86	-167	-232	-282	-325	-76		
12	-289	-273	-248	-322	-343	-234	-233	-260	-308	-243	-337	-571	-440	-440	-34	-38	-38	-31	-18	-18	-12	-7	-7	-4	-6	-182	
0	13	-19	-11	-13	-17	-20	-24	-43	-21	-25	-11	-15	-40	-30	-34	-35	-67	-52	-27	-22	-18	-12	-14	-14	-16	-25	
0	14	-16	-14	-10	-5	-2	-1	-1	-1	-6	-8	-61	-56	-41	-35	-28	-34	-37	-38	-26	-17	-13	-152	-25	-20	-28	
0	15	-15	-20	-65	-71	-15	-41	-106	-111	-160	-353	-246	-98	-191	-105	-100	-211	-275	-94	-37	-18	-10	-13	-20	-20	-100	
0	16	-18	-22	-101	-256	-180	-68	-42	-20	-109	-177	-109	-51	-24	-24	-22	-22	-16	-14	-12	-9	-8	-13	-17	-56		
0	17	-22	-19	-18	-9	-5	0	-3	-8	-15	-70	-33	-26	-34	-95	-41	-56	-18	-14	-117	-157	-117	-12	-9	-12	-35	
0	18	-38	-27	-55	-136	-87	-92	-90	-150	-240	-169	-171	-264	-138	-241	-454	-208	-193	-204	-162	-61	-256	-349	-403	-498	-195	
0	19	-276	-213	-240	-150	-165	-91	-95	-117	-98	-42	-120	-35	-49	-412	-501	-79	-19	-164	-297	-313	-149	-30	-15	-16	-154	
0	20	-14	-40	-40	-20	-13	-13	-27	-42	-41	-26	-18	-37	-30	-50	-32	-46	-68	-132	-236	-240	-223	-129	-51	-224	-193	-81
0	21	-88	-63	-52	-242	-371	-565	-578	-863	-490	-94	-181	-223	-104	-65	-62	-57	-143	-237	-541	-786	-527	-487	-118	-118	-294	
D	22	-125	-323	-175	-35	-39	-74	-197	-258	-450	-390	-523	-110	-137	-209	-93	-231	-158	-120	-99	-132	-66	-98	-52	-22	-172	
D	23	-33	-35	-152	-237	-101	-52	-83	-112	-95	-38	-62	-199	-387	-50	-38	-57	-37	-33	-23	-36	-118	-474	-311	-170	-122	
D	24	-121	-210	-115	-62	-37	-77	-163	-33	-70	-227	-112	-68	-149	-247	-142	-363	-267	-86	-187	-101	-277	-427	-262	-119	-163	
D	25	-48	-76	-98	-149	-121	-280	-163	-88	-120	-38	-49	-120	-182	-166	-38	-28	-23	-36	-18	-56	-279	-326	-160	-152	-117	
D	26	-376	-291	-102	-122	-207	-190	-199	-139	-93	-112	-163	-279	-304	-344	-426	-452	-484	-456	-538	-467	-433	-350	-392	-306		
D	27	-462	-649	-325	-228	-194	-53	-121	-230	-97	-73	-109	-333	-153	-239	-396	-352	-304	-260	-37	-35	-30	-51	-69	-130	-197	
D	28	-194	-281	-117	-31	-12	-22	-17	-48	-97	-51	-120	-138	-125	-138	-210	-559	-434	-394	-533	-455	-299	-58	-27	-96	-186	
MEAN	-109	-108	-98	-105	-93	-93	-101	-111	-109	-104	-146	-134	-122	-119	-119	-147	-154	-132	-152	-136	-129	-149	-115	-110	-121		
50 MEAN	-26	-22	-15	-14	-9	-11	-21	-18	-16	-23	-37	-41	-32	-29	-50	-59	-61	-77	-99	-79	-62	-53	-56	-40			
SD MFAN	-216	-234	-161	-172	-182	-186	-235	-320	-245	-141	-207	-228	-217	-181	-203	-225	-221	-247	-291	-234	-308	-180	-166	-218			

AL. INDEX (HOURLY VALUES)

DATE	MARCH 1979																									
	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	-198	-106	-227	-108	-54	-5	-58	-63	-69	-67	-148	-262	-234	-155	-208	-362	-298	-237	-220	-166	-26	-31	-22	-50	-141	
2	-328	-356	-251	-194	-176	-152	-74	-36	-25	-11	-61	-310	-353	-286	-166	-213	-96	-35	-30	-84	-282	-146	-73	-259	-167	
3	-244	-119	-150	-18	-10	-20	-60	-185	-101	-24	-25	-41	-75	-281	-272	-239	-316	-374	-299	-237	-396	-280	-86	-177	-177	
4	-297	-239	-77	-26	-21	-36	-15	-10	-180	-608	-550	-265	-52	-212	-283	-77	-37	-140	-448	-215	-37	-42	-234	-159	-114	
5	-57	-104	-149	-346	-102	-95	-74	-156	-184	-142	-346	-190	-28	-48	-62	-66	-66	-95	-90	-104	-93	-44	-42	-57	-114	
D	6	-69	-70	-133	-423	-111	-48	-164	-184	-392	-579	-477	-452	-400	-639	-396	-431	-450	-626	-192	-295	-369	-376	-23	-40	-206
0	7	-142	-137	-17	-66	-152	-126	-58	-68	-31	-14	-20	-22	-21	-27	-24	-24	-24	-30	-109	-218	-157	-139	-111	-182	-107
8	-46	-78	-30	-28	-46	-22	-34	-15	-34	-29	-101	-280	-103	-39	-34	-39	-34	-34	-56	-146	-79	-23	-44	-95	-200	-83
9	-220	-217	-185	-20	-64	-82	-22	-14	-110	-240	-326	-183	-102	-165	-176	-202	-189	-98	-19	-31	-96	-106	-52	-46	-123	
D	10	-182	-441	-409	-143	-187	-233	-232	-184	-69	-35	-131	-212	-147	-61	-48	-31	-111	-235	-503	-465	-476	-956	-459	-356	-263
11	-355	-164	-181	-138	-168	-183	-267	-131	-71	-84	-226	-309	-379	-183	-63	-64	-123	-245	-131	-38	-41	-42	-41	-41	-153	
0	12	-39	-32	-53	-104	-82	-66	-34	-171	-256	-129	-57	-50	-42	-33	-24	-25	-35	-46	-48	-223	-78	-30	-38	-39	-72
13	-36	-33	-28	-127	-226	-149	-56	-45	-77	-129	-79	-35	-29	-24	-24	-24	-81	-67	-24	-13	-19	-12	-19	-23	-58	
0	14	-27	-26	-22	-20	-17	-15	-18	-19	-21	-23	-35	-23	-29	-20	-18	-16	-16	-16	-15	-14	-35	-14	-37	-25	-22
15	-27	-24	-19	-22	-17	-8	-6	-1	-3	-16	-27	-38	-40	-45	-32	-23	-45	-56	-76	-66	-8	-128	-41	-57	-34	
D	16	-98	-35	-30	-127	-70	-45	-70	-65	-26	-29	-44	-135	-73	-48	-64	-51	-54	-20	-22	-11	-70	-20	-20	-22	-52
17	-51	-126	-86	-100	-90	-152	-325	-467	-525	-363	-233	-231	-107	-30	-48	-17	-19	-22	-19	-31	-19	-31	-68	-67	-135	
18	-75	-40	-46	-26	-23	-166	-77	-11	-12	-62	-117	-47	-41	-40	-192	-46	-46	-17	-13	-13	-17	-13	-4	-10	-17	
19	-20	-23	-19	-12	-10	-67	-293	-226	-259	-308	-308	-108	-217	-286	-130	-213	-201	-135	-78	-9	-18	-18	-42	-36	-129	
0	20	-21	-25	-24	-22	-93	-160	-122	-169	-127	-45	-23	-23	-32	-34	-34	-96	-72	-52	-19	-10	-54	-31	-30	-57	
D	21	-31	-30	-21	-19	-16	-13	-82	-19	-13	-17	-23	-31	-31	-30	-22	-23	-23	-17	-15	-82	-67	-15	-15	-25	-28
22	-21	-19	-11	-18	-40	-24	-26	-12	-18	-7	-85	-537	-198	-214	-603	-966	-474	-76	-72	-112	-73	-137	-146	-68	-165	
23	-37	-70	-312	-196	-78	-109	-184	-95	-45	-25	-26	-25	-25	-23	-44	-48	-123	-90	-76	-65	-193	-144	-51	-36	-115	-92
24	-116	-58	-80	-78	-61	-60	-110	-259	-338	-175	-26	-18	-36	-57	-76	-75	-69	-128	-152	-89	-156	-164	-129	-279	-116	
25	-258	-144	-214	-143	-57	-246	-196	-118	-161	-229	-297	-188	-98	-142	-265	-254	-300	-400	-501	-276	-137	-277	-373	-371	-235	
D	26	-314	-245	-322	-103	-152	-130	-25	-108	-229	-156	-64	-59	-224	-376	-324	-309	-188	-542	-672	-366	-365	-107	-27	-236	
27	-31	-27	-22	-60	-68	-142	-215	-313	-295	-179	-50	-68	-229	-271	-296	-497	-621	-446	-314	-345	-283	-334	-301	-242	-242	
D	28	-354	-410	-302	-135	-39	-39	-29	-82	-322	-397	-583	-807	-551	-340	-187	-229	-434	-413	-310	-120	-141	-280	-408	-345	-302
D	29	-716	-476	-462	-328	-137	-309	-687	-467	-397	-362	-380	-576	-465	-418	-686	-593	-805	-708	-759	-584	-467	-439	-366	-493	-493
D	30	-231	-360	-150	-191	-377	-297	-165	-107	-66	-49	-54	-38	-169	-67	-38	-30	-30	-92	-115	-31	-33	-33	-40	-70	-118
D	31	-233	-66	-159	-292	-180	-29	-24	-38	-53	-31	-26	-39	-42	-132	-322	-456	-413	-331	-332	-382	-373	-238	-401	-526	-213
MEAN	-157	-138	-135	-118	-95	-96	-111	-129	-149	-151	-159	-169	-152	-160	-159	-190	-178	-192	-162	-145	-159	-136	-135	-149	-149	
50 MEAN	-52	-50	-27	-51	-57	-62	-70	-79	-97	-61	-33	-32	-30	-28	-26	-24	-38	-51	-83	-96	-55	-45	-62	-45	-52	-305
5D MEAN	-268	-283	-263	-209	-123	-96	-152	-229	-253	-283	-327	-477	-374	-343	-330	-468	-412	-431	-357	-350	-443	-295	-235	-235	-235	-235

DATE	APRIL INDEX (HOURLY VALUES)												APRIL 1979													
	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	-329	-147	-182	-377	-84	-25	-19	-78	-244	-254	-311	-404	-496	-579	-288	-240	-213	-193	-121	-59	-163	-307	-653	-329	-254	
2	-192	-726	-593	-120	-54	-105	-183	-79	-31	-128	-92	-71	-356	-506	-440	-399	-421	-454	-303	-222	-186	-115	-233	-189	-258	
3	-114	-93	-190	-183	-36	-30	-88	-271	-51	-24	-25	-24	-26	-21	-135	-729	-990	-878	-856	-694	-667	-696	-350	-300		
D	4	-766	-556	-578	-726	-805	-412	-263	-274	-339	-194	-127	-336	-584	-106	-89	-56	-126	-113	-45	-45	-56	-128	-113	-288	
D	5	-98	-73	-51	-68	-39	-53	-152	-103	-249	-276	-242	-121	-93	-107	-158	-237	-337	-195	-72	-79	-144	-287	-194	-146	
6	-173	-132	-147	-232	-258	-256	-258	-265	-171	-60	-14	-24	-30	-27	-48	-189	-302	-43	-8	-97	-61	-67	-90	-72	-130	
7	-22	-31	-36	-31	-68	-280	-188	-118	-195	-202	-127	-183	-19	-17	-18	-35	-47	-152	-217	-65	-22	-24	-117	-388	-108	
8	-209	-42	-40	-26	-51	-138	-88	-38	-27	-21	-31	-120	-139	-24	-16	-13	-65	-203	-386	-300	-202	-300	-102	-90	-111	
9	-114	-255	-177	-150	-70	-23	-8	-12	-12	-15	-19	-23	-21	-17	-13	-17	-13	-16	-9	-9	-13	-19	-27	-44		
10	-27	-26	-24	-21	-33	-145	-68	-108	-115	-144	-78	-49	-287	-262	-239	-141	-37	-18	-64	-31	-78	-130	-61	-92		
0	11	-26	-29	-34	-28	-28	-30	-26	-27	-25	-39	-44	-44	-54	-66	-81	-104	-103	-55	-8	-5	-17	-30	-32	-39	
12	-30	-31	-136	-69	-15	-67	-103	-43	-45	-43	-190	-97	-42	-52	-63	-71	-234	-46	-57	-112	-100	-62	-250	-284	-93	
13	-97	-26	-27	-25	-81	-51	-41	-120	-162	-61	-27	-38	-319	-337	-120	-88	-147	-160	-92	-38	-14	-39	-51	-51	-92	
14	-50	-45	-110	-92	-16	-35	-111	-23	-12	-32	-123	-12	-40	-22	-16	-62	-255	-344	-369	-69	-13	-251	-447	-279	-121	
15	-196	-207	-228	-177	-25	-24	-21	-18	-35	-49	-74	-74	-17	-29	-124	-201	-304	-73	-32	-48	-17	-77	-172	-304	-292	-114
1	16	-195	-381	-592	-677	-403	-38	-77	-49	-61	-104	-111	-124	-33	-55	-64	-79	-53	-21	-46	-190	-98	-15	-20	-38	-145
0	17	-122	-132	-39	-46	-77	-88	-409	-274	-101	-76	-91	-311	-147	-18	-20	-25	-81	-60	-51	-106	-278	-115	-174	-239	-128
0	18	-97	-38	-39	-53	-114	-154	-53	-12	-32	-285	-219	-22	-11	-15	-31	-23	-16	-7	-14	-105	-73	-82	-97	-118	
0	19	-47	-33	-28	-26	-107	-197	-230	-162	-32	-16	-22	-24	-17	-9	-11	-9	-211	-343	-67	-10	-12	-13	-9	-71	
0	20	-23	-26	-25	-24	-27	-32	-32	-39	-32	-24	-24	-26	-30	-24	-17	-6	0	1	0	-10	-10	-15	-16	-21	
0	21	-32	-31	-24	-31	-57	-77	-103	-274	-22	-25	-43	-346	-369	-421	-348	-286	-352	-267	-429	-624	-509	-204	-215		
D	22	-111	-430	-408	-199	-77	-93	-66	-155	-95	-353	-335	-83	-62	-166	-323	-664	-624	-431	-355	-426	-326	-298	-286	-271	
D	23	-250	-103	-343	-496	-310	-106	-250	-190	-86	-54	-151	-359	-210	-113	-174	-328	-199	-240	-241	-110	-101	-48	-67	-190	
D	24	-309	-213	-194	-265	-370	-177	-174	-249	-55	-42	-84	-244	-175	-92	-118	-196	-153	-105	-139	-148	-129	-140	-83	-75	
D	25	-538	-611	-876	-300	-180	-651	-767	-427	-482	-577	-538	-1138	-949	-481	-716	-626	-409	-500	-346	-190	-555	-184	-372	-526	
26	-769	-95	-198	-119	-40	-33	-34	-29	-25	-21	-24	-19	-22	-29	-35	-55	-63	-120	-277	-128	-181	-247	-126	-53	-93	
27	-41	-121	-415	-320	-77	-54	-49	-134	-194	-138	-50	-38	-35	-93	-131	-313	-710	-668	-444	-285	-517	-613	-420	-374	-260	
28	-397	-579	-451	-95	-27	-128	-438	-386	-525	-332	-150	-47	-87	-234	-336	-427	-315	-195	-171	-263	-383	-430	-528	-304		
D	29	-146	-539	-182	-58	-445	-342	-491	-236	-335	-387	-302	-209	-429	-313	-440	-399	-533	-503	-377	-397	-603	-610	-585	-425	-379
30	-333	-255	-373	-164	-249	-218	-313	-73	-81	-470	-360	-58	-171	-456	-287	-32	-45	-87	-138	-185	-65	-142	-51	-34	-193	
MEAN	-178	-193	-224	-173	-141	-136	-169	-141	-131	-138	-135	-155	-171	-153	-156	-167	-231	-228	-208	-160	-172	-204	-220	-181	-173	
50 MEAN	-63	-51	-33	-35	-70	-100	-149	-102	-44	-88	-80	-85	-51	-26	-32	-33	-82	-92	-28	-46	-76	-47	-66	-87	-65	
5D MEAN	-331	-401	-419	-270	-315	-316	-333	-231	-282	-300	-319	-452	-433	-211	-303	-271	-425	-397	-323	-243	-268	-298	-296	-278	-321	

DATE	AL INDEX (HOURLY VALUES)												MAY 1979													
	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	-237	-484	-396	-267	-338	-237	-97	-148	-115	-280	-171	-45	-45	-36	-32	-48	-67	-126	-316	-427	-406	-380	-344	-367	-225	
2	-350	-523	-423	-306	-156	-53	-151	-211	-90	-95	-171	-124	-135	-131	-120	-114	-181	-140	-146	-182	-169	-41	-36	-39	-170	
3	-44	-46	-222	-100	-32	-23	-25	-24	-38	-63	-116	-94	-117	-224	-205	-85	-62	-16	-68	-120	-125	-83	-221	-92	-108	
4	-301	-143	-44	-48	-27	-42	-54	-32	-72	-65	-102	-140	-145	-88	-71	-49	-87	-66	-85	-175	-235	-167	-148	-207	-108	
5	-98	-51	-96	-81	-69	-49	-19	-28	-39	-158	-164	-57	-36	-45	-72	-78	-98	-90	-66	-73	-23	-26	-24	-30	-65	
6	-27	-29	-27	-27	-22	-22	-34	-42	-40	-33	-21	-23	-20	-13	-57	-28	-34	-10	-11	-9	-12	-31	-32	-27	-27	
7	-42	-83	-34	-24	-27	-40	-39	-31	-34	-150	-137	-118	-337	-365	-343	-153	-103	-127	-375	-169	-100	-127	-46	-25	-126	
8	-28	-27	-26	-29	-36	-31	-61	-265	-178	-46	-32	-24	-13	-6	-24	-17	-50	-61	-31	-64	-38	-22	-23	-28	-48	
9	-18	-21	-23	-27	-32	-53	-81	-40	-73	-111	-117	-81	-179	-262	-107	-38	-36	-188	-158	-165	-210	-133	-43	-35	-93	
10	-102	-43	-31	-30	-39	-31	-29	-27	-28	-22	-26	-31	-53	-54	-80	-61	-15	-60	-38	-82	-39	-67	-34	-50	-45	
11	-188	-60	-54	-32	-93	-55	-156	-377	-181	-135	-45	-111	-236	-352	-203	-289	-179	-129	-16	-42	-142	-201	-124	-143	-143	
12	-112	-76	-86	-25	-42	-35	-42	-52	-52	-105	-88	-131	-51	-36	-41	-86	-58	-43	-32	-94	-41	-45	-27	-74		
13	-38	-37	-85	-35	-27	-28	-128	-109	-96	-123	-103	-64	-25	-35	-52	-38	-54	-89	-126	-57	-54	-57	-122	-64	-64	
14	-34	-45	-55	-42	-128	-109	-75	-58	-39	-39	-47	-192	-306	-236	-247	-113	-113	-105	-56	-48	-69	-66	-31	-101	-101	
15	-54	-102	-95	-39	-73	-266	-274	-56	-34	-89	-115	-53	-51	-70	-120	-213	-76	-45	-72	-107	-161	-145	-113	-30	-102	
16	-34	-93	-237	-243	-109	-17	-112	-221	-24	-30	-29	-41	-35	-29	-50	-20	-18	-22	-33	-22	-44	-37	-33	-33	-64	
17	-34	-71	-99	-119	-71	-64	-134	-154	-83	-40	-41	-35	-51	-34	-15	-41	-49	-9	-19	-31	-34	-33	-39	-54	-54	
18	-34	-37	-27	-28	-32	-35	-32	-38	-33	-37	-70	-69	-224	-112	-88	-70	-239	-490	-123	-56	-185	-220	-191	-104	-104	
19	-287	-455	-328	-240	-284	-332	-105	-51	-101	-233	-385	-385	-334	-398	-400	-233	-216	-200	-281	-324	-211	-240	-123	-227	-259	
20	-347	-366	-383	-386	-248	-208	-162	-58	-22	-29	-30	-84	-208	-195	-225	-195	-255	-371	-227	-127	-213	-257	-117	-47	-198	
21	-47	-36	-30	-31	-29	-60	-28	-46	-221	-155	-128	-54	-75	-5	-112	-402	-311	-187	-418	-571	-438	-399	-405	-370	-202	
D	22	-399	-349	-318	-237	-82	-149	-345	-521	-428	-458	-413	-249	-92	-112	-100	-167	-220	-271	-335	-313	-204	-295	-302	-112	-270
23	-353	-376	-249	-143	-182	-134	-41	-26	-12	-529	-20	-16	-16	-20	-17	-16	-33	-19	-84	-180	-333	-478	-451	-469	-154	
D	24	-389	-284	-183	-145	-185	-500	-285	-142	-133	-326	-217	-168	-438	-309	-106	-124	-481	-404	-229	-383	-322	-140	-205	-264	-264
D	25	-261	-197	-142	-288	-465	-339	-231	-191	-244	-176	-268	-421	-403	-414	-353	-326	-417	-510	-355	-292	-323	-131	-243	-461	-311
D	26	-617	-438	-71	-205	-228	-189	-184	-34	-29	-55	-111	-115	-278	-345	-165	-342	-419	-256	-304	-127	-52	-178	-228	-220	-216
D	27	-226	-217	-309	-418	-518	-521	-220	-219	-267	-275	-353	-231	-174	-371	-369	-180	-240	-184	-61	-71	-84	-73	-175	-249	-249
D	28	-207	-161	-196	-121	-69	-138	-56	-57	-34	-48	-43	-38	-43	-122	-242	-151	-184	-208	-421	-221	-167	-263	-169	-167	-147
D	29	-156	-140	-51	-33	-105	-57	-56	-29	-26	-32	-63	-204	-356	-270	-89	-36	-32	-83	-136	-104	-345	-458	-26	-17	-121
D	30	-26	-31	-50	-55	-217	-55	-44	-29	-38	-45	-27	-13	-3	-10	-5	-15	-10	-16	-21	-21	-16	-25	-33	-18	-36
D	31	-16	-30	-41	-39	-40	-38	-40	-31	-27	-40	-29	-21	-15	-11	-42	-57	-22	-57	-161	-69	-39	-44	-36	-41	
MEAN	-164	-161	-145	-125	-124	-115	-112	-91	-105	-118	-110	-133	-156	-147	-122	-123	-154	-178	-144	-152	-160	-126	-131	-134	-134	
50 MEAN	-31	-53	-125	-105	-56	-32	-69	-91	-42	-49	-41	-46	-62	-53	-48	-45	-20	-37	-59	-52	-49	-44	-72	-55	-55	-263
5D MEAN	-390	-334	-228	-230	-240	-238	-273	-216	-188	-211	-300	-267	-341	-232	-231	-276	-359	-344	-234	-240	-233	-207	-245	-245	-245	

AL INDEX (HOURLY VALUES)

JUNE 1979

MEAN

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
01	-34	-32	-27	-27	-47	-56	-72	-64	-41	-49	-48	-53	-42	-41	-55	-78	-167	-134	-68	-55	-81	-184	-234	-133
02	-94	-108	-88	-77	-142	-68	-18	-28	-53	-74	-123	-118	-53	-50	-100	-122	-168	-117	-43	-42	-46	-77	-135	-76
03	-35	-45	-45	-35	-27	-23	-30	-33	-45	-61	-54	-51	-66	-106	-158	-52	-28	-23	-26	-60	-206	-136	-106	-87
04	-84	-48	-28	-29	-44	-92	-120	-109	-134	-182	-121	-173	-142	-82	-8	0	2	-14	-3	-26	-6	-20	-31	-63
05	-30	-39	-28	-28	-21	-30	-25	-17	-28	-35	-34	-37	-32	-30	-27	-23	-24	-18	-28	-31	-20	-17	-18	-27
D6	-15	-39	-33	-95	-63	-35	-28	-33	-44	-55	-87	-71	-94	-128	-176	-131	-116	-179	-58	-132	-88	-71	-145	-141
D7	-209	-234	-258	-209	-511	-701	-311	-149	-97	-63	-45	-35	-44	-165	-264	-328	-378	-408	-309	-147	-99	-85	-292	-205
D8	-92	-216	-280	-213	-83	-84	-226	-107	-109	-74	-118	-52	-62	-64	-136	-81	-79	-90	-136	-87	-131	-109	-60	-78
D9	-111	-255	-112	-127	-246	-111	-61	-48	-66	-255	-323	-224	-126	-91	-134	-208	-220	-242	-92	-207	-197	-198	-134	-104
D10	-87	-178	-226	-341	-308	-140	-135	-324	-346	-310	-139	-35	-24	-68	-198	-256	-94	-119	-259	-151	-39	-36	-37	-68
11	-71	-69	-205	-287	-202	-95	-60	-152	-179	-122	-103	-128	-200	-170	-142	-216	-144	-90	-77	-23	-56	-59	-72	-66
12	-80	-253	-182	-156	-175	-182	-90	-74	-39	-40	-40	-36	-75	-81	-48	-33	-25	-22	-15	-27	-59	-128	-75	-114
13	-39	-30	-22	-29	-19	-21	-29	-21	-19	-18	-43	-28	-53	-74	-183	-229	-184	-96	-107	-254	-146	-137	-270	-199
14	-173	-111	-206	-150	-43	-46	-33	-15	-31	-74	-72	-117	-70	-53	-32	-42	-57	-160	-143	-19	-20	-23	-24	-72
15	-18	-19	-46	-187	-126	-66	-42	-167	-204	-130	-161	-207	-241	-301	-151	-32	-48	-111	-178	-176	-248	-269	-109	-143
D16	-269	-261	-235	-234	-274	-305	-306	-399	-249	-168	-147	-66	-165	-252	-420	-443	-412	-414	-435	-373	-326	-325	-351	-273
D17	-730	-104	-77	-192	-122	-41	-20	-43	-103	-84	-104	-328	-243	-207	-318	-572	-567	-317	-243	-71	-19	-29	-64	-52
018	-35	-34	-36	-53	-97	-87	-53	-97	-82	-46	-30	-46	-49	-60	-44	-38	-33	-27	-89	-83	-124	-42	-41	-54
19	-41	-121	-115	-75	-121	-115	-224	-217	-169	-156	-122	-124	-161	-184	-121	-149	-182	-137	-26	-26	-98	-177	-220	-132
20	-217	-180	-77	-30	-129	-46	-24	-28	-50	-48	-80	-110	-58	-98	-95	-120	-49	-45	-102	-314	-279	-167	-72	-100
D21	-43	-55	-33	-29	-60	-291	-273	-127	-100	-96	-169	-514	-467	-235	-115	-138	-405	-291	-426	-410	-430	-239	-165	-229
D22	-291	-289	-71	-58	-73	-54	-114	-185	-111	-51	-28	-108	-440	-431	-488	-680	-803	-672	-355	-263	-358	-180	-64	-290
D23	-65	-94	-259	-416	-177	-276	-604	-437	-311	-316	-135	-74	-105	-146	-127	-250	-166	-176	-61	-125	-348	-146	-131	-210
D24	-235	-258	-337	-390	-307	-164	-188	-279	-156	-40	-61	-61	-137	-51	-28	-33	-40	-128	-158	-98	-26	-42	-109	-247
D25	-185	-96	-46	-51	-136	-268	-280	-104	-32	-42	-131	-173	-38	-68	-109	-65	-78	-47	-31	-96	-230	-110	-92	-47
26	-35	-33	-32	-27	-52	-100	-164	-135	-51	-28	-133	-392	-181	-63	-263	-342	-288	-143	-176	-352	-390	-248	-327	-181
27	-105	-83	-192	-287	-243	-96	-89	-161	-128	-246	-147	-57	-148	-336	-343	-302	-318	-208	-147	-48	-11	-26	-55	-160
Q28	-48	-44	-35	-37	-35	-37	-39	-57	-59	-50	-44	-38	-33	-28	-31	-58	-70	-84	-124	-71	-43	-37	-48	-52
29	-95	-60	-43	-36	-47	-32	-25	-27	-48	-96	-60	-98	-123	-103	-61	-72	-145	-265	-206	-363	-73	-50	-110	-177
30	-180	-104	-97	-24	-29	-234	-203	-171	-100	-105	-126	-100	-61	-39	-58	-83	-174	-129	-33	-47	-55	-86	-115	-54
MEAN	-108	-116	-116	-131	-129	-133	-132	-129	-104	-102	-100	-110	-128	-132	-151	-170	-179	-172	-145	-133	-129	-135	-115	
50 MEAN	-36	-38	-36	-36	-47	-47	-42	-42	-38	-47	-48	-41	-41	-51	-70	-72	-63	-58	-63	-71	-98	-93	-69	-54
50 MFAN	-169	-183	-171	-202	-219	-274	-272	-240	-162	-130	-88	-70	-169	-224	-295	-341	-391	-330	-209	-180	-237	-222	-162	-222

DATE	AE INDEX (HOURLY VALUES)							JANUARY 1979							MEAN											
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	93	70	86	85	262	115	52	46	47	49	40	49	51	84	229	47	30	37	74	30	21	64	218	397		
2	90	56	44	40	38	71	65	61	51	50	103	366	716	520	305	260	390	647	627	535	470	309	283	442	92	
3	334	210	124	189	117	103	79	255	332	483	383	663	601	748	663	329	175	98	490	538	458	360	507	285	272	
D	4	234	420	466	358	339	294	309	307	536	587	754	631	106	131	604	712	615	763	756	549	461	507	562	534	
D	5	570	517	462	286	191	482	153	149	226	140	137	89	39	35	52	121	428	659	328	343	161	137	174	216	
D	6	163	208	220	97	56	97	87	103	62	50	111	336	608	407	172	382	489	320	247	210	54	47	56	77	
D	7	44	32	37	38	37	42	49	59	77	229	305	199	450	359	756	860	1358	737	412	791	426	328	307	300	
D	8	135	99	98	67	49	63	53	50	36	37	30	27	31	35	40	42	49	188	248	171	144	86	135	81	
D	9	277	118	52	124	74	68	185	127	119	49	38	55	149	161	75	52	99	224	127	44	49	68	46	33	
D	10	37	41	50	97	68	48	41	36	32	37	42	43	41	45	49	48	51	44	65	164	76	43	32	38	
D	11	57	78	117	55	58	36	25	15	31	63	153	68	111	78	74	62	45	38	23	11	12	14	15	21	
D	12	21	31	90	199	53	40	126	131	111	121	93	87	48	235	271	210	134	146	187	101	117	150	125	127	
D	13	227	68	42	28	27	36	80	126	101	80	75	65	104	140	79	60	137	106	52	23	20	18	18	72	
D	14	30	27	33	105	134	144	166	245	340	166	81	133	309	348	338	166	147	136	131	42	26	21	27	33	
D	15	39	31	92	165	73	46	57	102	310	273	345	813	607	303	91	229	158	264	293	516	693	383	104	262	
D	16	267	108	137	187	291	184	64	85	221	319	222	111	83	332	333	130	94	72	50	68	69	39	46	33	
D	17	42	32	29	27	23	20	17	20	22	27	28	59	146	210	97	170	343	272	377	213	177	215	133	248	
D	18	330	219	206	165	82	46	39	31	29	46	139	412	327	216	96	392	437	188	255	210	76	52	95	208	
D	19	225	349	446	619	782	279	113	54	39	51	357	292	191	77	129	348	343	175	80	79	163	222	192	386	
D	20	191	81	90	187	175	230	73	125	361	283	182	196	198	374	339	229	303	399	251	96	50	54	75	80	
D	21	89	74	276	128	93	61	80	142	196	220	331	465	343	368	331	220	153	356	191	74	103	100	39	38	
D	22	34	36	29	30	39	36	33	27	32	60	87	152	289	422	116	61	61	67	238	526	950	616	589	670	
D	23	212	58	91	96	116	190	248	197	193	383	506	815	678	671	948	924	853	648	766	712	608	541	610	471	
D	24	359	292	593	309	152	179	105	150	300	169	172	527	90	58	55	63	130	348	105	93	88	80	144	63	
D	25	57	190	603	837	475	185	124	102	225	157	318	288	356	519	703	514	360	460	606	434	535	422	295	329	
D	26	363	328	193	157	186	231	404	415	348	333	269	337	342	377	587	581	660	646	611	603	497	462	547	410	
D	27	208	195	289	212	314	441	319	149	179	280	198	111	90	97	101	235	539	423	387	574	506	131	194	281	
D	28	110	123	113	147	191	119	192	60	126	143	229	428	144	69	80	204	147	186	420	600	174	66	177	177	
D	29	193	168	214	146	99	126	106	131	60	47	83	92	313	228	50	77	289	223	110	108	212	90	138	326	
D	30	359	300	157	170	103	64	81	190	255	289	205	76	260	337	177	134	89	126	220	240	166	368	512	314	
D	31	223	197	184	101	50	102	211	172	113	130	210	152	87	159	78	86	50	40	116	313	268	334	196	155	
D	MEAN	181	153	182	175	153	130	119	120	164	164	199	257	265	264	243	252	296	283	282	293	267	218	200	212	
D	SD MEAN	78	49	54	62	56	65	88	105	74	75	73	142	164	127	101	144	119	129	90	62	62	45	73	87	
D	SD MEAN	182	205	278	297	230	188	226	216	275	337	449	446	484	527	689	697	772	624	638	660	544	449	436	441	429

AE INDEX (HOURLY VALUES)

FEBRUARY 1979

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	105	87	88	87	43	48	33	43	95	218	184	47	42	44	54	46	37	27	28	22	22	24	39	57	63	
2	84	166	207	152	134	123	168	139	134	158	153	141	91	79	65	101	232	321	142	359	225	180	152	160		
3	67	81	92	86	64	42	42	32	30	34	40	42	44	43	62	143	172	176	400	478	206	183	118	206	120	
4	212	170	223	237	171	141	162	228	153	103	454	149	89	271	666	1040	493	245	351	317	384	402	334	303	203	
5	421	284	278	152	143	282	320	335	297	355	424	476	378	229	84	51	44	39	48	45	46	38	34	70	203	
6	65	46	119	440	543	414	263	275	429	542	549	394	365	500	137	72	94	165	424	222	283	416	380	74	300	
7	58	43	47	30	26	35	33	27	32	44	59	85	190	74	67	145	50	141	50	88	196	208	81	86	86	
8	95	134	118	146	128	110	104	56	98	349	170	143	74	67	124	297	160	269	192	83	58	214	142	142		
9	289	161	272	241	129	163	76	45	86	157	180	129	116	73	147	483	227	112	53	50	58	182	151	175	157	
0	10	139	103	72	79	52	41	64	67	61	45	107	57	55	104	158	76	101	227	61	45	32	34	67	80	
1	130	101	265	159	72	40	43	55	101	116	59	54	52	49	44	42	46	42	117	231	358	422	456	138	138	
2	409	335	307	382	411	381	379	460	504	490	740	591	187	95	74	69	49	38	29	26	37	37	28	268	268	
3	42	33	35	40	37	44	73	45	53	29	30	59	43	46	51	90	81	51	40	35	30	30	32	34	45	
4	33	34	30	22	21	17	17	26	35	81	76	65	57	48	45	50	55	55	43	35	33	179	43	52	48	
5	15	46	52	95	104	54	85	177	177	227	507	541	214	277	164	119	300	399	153	77	53	47	47	40	40	166
6	36	40	50	145	336	298	142	89	46	43	175	249	183	90	54	45	44	39	44	33	30	27	26	32	96	
7	17	49	47	45	31	23	15	22	24	33	40	92	57	49	60	119	67	88	54	41	150	222	95	48	49	
8	82	82	64	105	195	155	170	169	239	344	278	271	351	194	334	519	263	243	277	225	124	364	456	515	616	
9	405	370	377	232	284	180	221	196	178	114	218	100	122	488	690	144	79	227	358	372	174	70	54	50	238	
0	20	49	74	47	40	40	61	80	79	59	51	72	51	70	96	157	283	309	327	249	113	311	283	125		
1	16	155	120	96	357	517	751	770	1037	843	274	410	425	172	96	121	293	397	794	989	857	685	175	154	441	
2	21	162	338	198	65	69	143	240	350	565	555	703	261	227	270	142	353	219	201	145	217	149	170	101	77	
3	23	71	105	231	299	212	199	223	149	88	115	286	473	109	74	87	69	47	41	71	205	556	473	305	196	
4	24	210	304	237	202	149	159	262	166	154	301	214	160	257	333	236	488	397	134	284	167	405	616	370	211	
5	25	112	214	225	299	223	372	254	200	218	111	135	200	313	343	99	63	52	61	40	102	388	459	286	280	
6	26	436	372	223	212	282	302	330	257	235	242	311	434	497	486	589	646	739	640	706	591	501	488	395	418	431
7	27	588	635	427	338	369	115	247	371	201	145	187	533	312	344	519	537	459	436	127	85	63	114	111	201	311
8	28	257	412	206	91	48	46	41	108	149	125	233	274	291	303	348	752	637	616	889	658	479	186	100	181	310
9	MEAN	171	175	168	176	172	172	177	189	192	190	243	223	205	187	177	217	226	197	228	206	212	229	184	174	195
0	MEAN	62	58	45	42	34	35	51	48	49	51	60	67	55	52	77	92	91	108	132	121	115	89	93	97	72
1	SD MEAN	282	314	235	254	289	302	362	447	398	260	345	387	336	261	284	348	355	344	362	390	355	402	251	231	325

DATE	AE INDEX (HOURLY VALUES)							MARCH 1979							MEAN	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	238	170	284	166	150	71	149	146	123	150	270	487	310	322	578	511
2	423	359	319	276	319	253	165	81	60	145	417	497	434	284	355	171
3	299	240	202	50	32	52	182	250	185	69	46	68	150	354	342	533
4	403	375	253	119	117	187	99	96	357	843	930	484	178	358	352	113
5	162	254	262	385	174	263	218	296	332	250	530	306	91	78	86	98
D	6	145	126	262	568	216	174	250	290	572	815	673	580	900	667	682
D	7	221	206	91	154	219	149	135	85	50	40	43	45	53	45	37
D	8	123	148	88	106	138	107	141	70	93	91	63	171	390	175	62
D	9	280	290	259	85	106	125	78	56	222	411	563	488	314	294	271
D	10	351	556	510	241	492	600	667	415	222	172	339	582	359	118	110
D	11	567	191	237	144	223	242	313	180	107	158	305	381	535	253	93
D	12	56	47	87	143	118	97	78	220	299	159	85	84	68	56	50
D	13	56	54	90	180	293	237	121	120	147	182	115	56	58	49	49
D	14	50	48	44	44	39	41	45	45	44	51	44	51	55	51	40
D	15	59	55	50	52	46	39	45	41	54	69	70	88	99	122	85
D	16	151	83	99	179	90	116	154	175	87	105	115	189	137	132	129
D	17	111	169	129	147	142	212	444	675	760	555	481	429	232	107	89
D	18	121	82	84	67	69	222	104	56	55	101	153	83	73	71	250
D	19	46	47	41	29	30	106	381	317	423	447	609	360	351	438	226
D	20	63	62	66	64	139	225	170	218	203	85	59	76	70	66	69
D	21	65	62	52	53	49	49	146	59	54	47	50	65	58	56	71
D	22	55	57	51	62	73	59	53	45	71	74	273	656	463	425	970
D	23	86	125	372	244	150	192	258	134	78	42	34	45	61	84	146
D	24	273	191	145	149	174	126	214	437	571	326	63	57	65	120	169
D	25	501	298	306	292	206	379	319	348	334	522	385	287	293	440	429
D	26	414	376	419	223	309	201	75	204	410	324	181	180	414	591	587
D	27	93	65	58	139	132	235	404	571	538	377	163	196	449	434	474
D	28	528	535	473	242	117	102	71	140	493	683	865	1116	761	600	324
D	29	886	632	689	472	375	298	489	981	545	553	569	612	784	727	702
D	30	318	511	298	315	509	514	321	201	108	66	77	65	60	258	131
D	31	298	118	284	404	264	69	73	86	81	66	75	61	71	244	485
M	240	214	214	189	173	186	210	228	250	252	275	289	265	259	293	290
M	MEAN	91	85	68	96	97	107	128	125	139	100	62	62	60	57	49
D	MEAN	393	381	397	317	254	246	306	374	543	728	589	554	554	707	660

DATE	APRIL INDEX (H O U R L Y V A L U E S)												A P R I L 1979													
	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	570	300	313	561	179	61	47	179	392	434	517	613	844	945	439	425	436	355	271	145	327	528	861	475	426	
2	362	869	794	241	236	263	336	198	116	291	240	207	572	739	701	680	742	756	542	436	432	293	414	387	452	
3	259	220	309	315	100	73	183	404	134	63	75	59	66	60	65	290	990	1034	935	934	782	1160	900	585	416	
D	4	1039	814	763	972	1091	722	622	598	414	322	605	868	203	120	114	96	184	171	93	81	90	229	261	465	
D	5	216	154	178	114	178	140	153	365	312	454	554	434	267	204	241	260	562	780	401	214	207	274	392	260	
6	246	195	232	338	372	383	527	373	215	83	37	45	46	66	111	303	478	105	47	164	121	122	134	126	203	
7	63	61	60	50	108	420	346	243	323	324	236	42	44	40	63	71	231	331	126	49	68	241	555	180		
8	358	98	73	67	110	238	155	115	130	119	133	232	215	50	47	54	126	321	479	408	606	358	358	226		
9	291	404	312	248	160	75	50	44	43	47	51	50	52	47	38	33	45	44	42	42	53	55	61	73	98	
10	74	70	66	138	225	156	260	295	333	175	192	475	467	359	235	78	69	156	125	220	231	123	69	195		
0	11	62	56	55	61	62	57	62	65	74	86	95	106	119	160	182	173	129	86	48	36	51	83	69	85	
12	67	73	224	138	81	219	216	97	168	119	345	174	87	106	121	133	321	110	170	318	244	136	467	448	191	
13	178	72	55	61	135	106	110	233	314	112	68	107	464	461	183	163	237	276	181	101	67	94	85	96	165	
14	114	90	191	142	65	107	162	56	50	108	217	170	109	84	72	140	452	608	590	194	82	436	615	470	222	
15	329	346	412	309	85	56	61	44	75	140	128	63	89	252	361	465	141	84	126	94	199	324	456	427	211	
16	320	526	704	859	562	154	119	175	214	257	224	85	103	144	129	85	51	154	277	155	56	58	64	82	232	
17	229	168	68	119	118	163	508	367	186	114	184	426	213	54	48	54	140	98	107	212	409	213	316	356	203	
18	152	72	74	98	158	214	102	52	100	422	310	52	60	48	73	69	43	40	56	198	168	166	225	214	132	
19	83	76	54	112	154	304	333	270	78	54	60	55	51	46	66	77	316	461	110	54	57	57	48	56	126	
20	56	59	56	60	54	65	56	68	70	63	66	64	65	59	48	35	27	28	39	57	63	58	60	71	56	
21	79	71	61	84	120	142	207	369	227	93	92	135	312	503	634	761	685	596	626	546	656	795	654	336	366	
D	22	316	756	710	496	401	284	228	220	410	288	604	605	173	117	294	573	957	915	678	636	765	580	446	428	495
23	374	225	565	686	426	178	398	341	219	158	364	629	357	196	297	567	422	401	397	248	264	173	87	153	339	
24	505	346	359	437	532	326	297	412	148	106	209	409	303	169	207	282	220	181	254	287	262	286	203	225	290	
D	25	781	870	1254	623	565	1293	1179	752	801	932	715	1275	1202	897	1032	785	976	678	655	517	362	546	387	599	820
26	452	288	335	238	141	73	59	41	32	42	43	42	40	44	52	77	89	201	408	222	308	447	216	123	167	
27	106	230	591	467	175	163	114	276	345	265	135	107	94	171	217	522	1040	967	661	554	805	796	602	564	415	
28	679	810	626	242	103	302	650	691	520	651	691	520	269	114	174	389	498	616	444	295	316	442	617	712	748	479
D	29	297	524	401	180	762	608	879	423	574	736	559	393	612	479	584	630	935	820	638	702	826	820	798	588	615
30	565	499	553	289	439	472	553	193	234	812	610	143	286	598	397	96	114	172	259	362	186	276	137	110	348	
MEAN	307	311	348	288	260	263	295	262	255	265	254	260	278	258	254	292	380	369	336	290	303	348	347	305	297	
50 MEAN	116	86	61	88	109	161	211	163	99	145	141	138	99	65	79	83	139	151	80	113	146	109	146	153	120	
50 MFAN	529	623	661	477	599	609	612	471	558	564	550	662	624	380	454	472	705	675	508	432	448	462	450	427	540	

DATE	AE INDEX (HOURLY VALUES)												MAY 1979												
	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	385	600	543	418	616	400	200	262	176	472	246	75	67	49	40	74	90	248	539	680	640	584	518	594	355
2	486	645	469	261	113	285	337	185	215	262	223	212	200	177	198	304	262	271	356	315	80	70	65	278	
3	57	115	315	151	54	39	45	52	84	145	234	200	200	349	307	123	79	43	148	152	194	207	161	391	160
4	476	283	118	75	44	58	79	91	126	193	258	224	159	120	109	129	115	177	376	384	316	363	423	206	
5	214	146	222	175	225	109	87	99	134	333	312	138	91	115	104	110	142	184	162	163	68	62	58	61	
6	55	50	48	46	44	46	45	90	121	103	110	60	49	44	33	104	65	76	51	57	50	50	70	73	
7	119	149	83	61	52	61	59	76	129	412	342	302	592	564	496	211	213	286	651	330	240	290	153	95	
8	80	70	80	71	73	66	194	429	317	111	82	56	52	28	56	135	134	103	101	173	173	105	107	119	
9	65	62	62	82	140	167	138	210	275	301	268	359	412	181	106	116	392	366	399	366	399	272	127	85	
10	156	88	63	53	89	61	55	68	90	89	98	130	155	163	105	68	160	97	193	127	146	92	130	107	
11	271	123	85	141	138	343	597	407	347	144	178	264	375	504	461	573	383	267	104	120	309	191	283		
12	212	167	163	72	163	246	126	102	309	236	244	160	241	132	104	106	188	133	123	130	122	109	70	157	
13	118	90	133	76	72	77	162	174	166	122	85	84	103	94	118	179	197	129	108	139	230	96	101	77	
14	76	105	142	108	228	181	138	120	101	122	159	340	470	348	399	208	257	229	194	186	209	137	84	201	
15	146	193	150	73	201	438	470	131	113	207	269	128	136	148	214	260	134	117	134	231	317	252	246	81	
16	80	173	343	350	205	94	265	302	63	49	48	72	57	46	44	38	68	64	98	93	78	73	74	79	
17	81	152	178	135	137	280	283	185	140	162	133	130	69	38	65	71	41	46	56	70	77	66	69	119	
18	59	72	61	62	76	80	95	101	98	105	104	202	178	351	149	137	133	387	765	297	225	454	589	461	
19	500	676	623	546	642	543	206	114	260	463	633	656	601	584	333	381	377	450	532	455	472	536	293	437	
20	640	665	595	602	467	457	344	167	73	56	83	257	321	300	333	350	421	583	395	292	430	544	301	366	
21	99	68	48	57	60	104	95	203	523	358	320	167	146	209	551	461	416	600	693	959	792	694	617	365	
22	575	612	649	504	281	363	594	886	795	665	585	538	212	196	200	338	497	631	639	524	462	515	494	499	
23	568	521	427	281	325	84	53	42	78	66	59	53	51	47	41	69	55	160	358	532	803	759	723	267	
24	536	430	481	469	284	408	734	633	351	368	574	379	320	632	417	222	326	710	600	421	713	667	382	483	
25	593	403	317	686	798	628	451	379	405	323	546	742	677	685	646	607	785	839	599	521	542	272	396	749	
26	845	627	216	553	507	345	408	128	82	186	255	258	440	494	302	613	785	435	547	290	156	285	382	396	
27	379	366	535	664	759	734	442	456	491	416	475	559	374	326	561	571	340	416	351	164	169	175	190	321	
28	375	322	338	212	145	236	90	122	113	82	76	84	117	204	317	252	300	378	687	375	510	348	367		
29	325	233	127	84	142	96	88	46	47	112	246	442	570	378	147	78	95	188	295	258	596	825	156		
30	125	126	136	165	306	111	87	70	94	108	75	52	42	50	47	65	59	76	74	79	76	64	48		
31	40	49	58	56	185	55	57	52	56	72	66	50	45	35	27	91	140	81	168	312	159	82	74		
MEAN	281	270	260	240	239	226	219	218	197	226	241	236	238	254	232	216	241	287	324	295	303	312	252	250	
50 MEAN	62	107	188	157	98	74	138	155	101	101	124	103	96	108	89	84	84	61	102	134	110	97	89	108	
SD MEAN	609	549	457	551	502	457	478	428	378	401	518	514	450	518	379	432	554	613	583	442	469	455	389	463	

DATE	AE	INDEX (HOURLY VALUES)							JUNE							1979												
		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		
01	62	60	47	87	93	133	169	149	101	105	87	90	70	58	80	127	231	193	133	120	187	361	425	298	144	144		
02	245	269	203	182	263	113	33	49	104	176	273	266	116	102	150	224	191	100	82	103	169	328	292	175	175	175		
03	122	91	84	63	43	33	39	56	63	102	119	104	101	148	228	238	92	74	91	92	180	370	270	244	127	127		
04	214	133	86	107	181	266	331	358	510	498	421	280	321	275	154	74	55	87	56	101	67	69	83	199	199	199		
05	78	76	60	50	42	66	71	62	88	76	69	76	74	76	74	57	54	74	77	74	58	57	60	67	67	67		
D6	48	88	90	196	122	86	70	104	123	140	246	198	264	304	323	239	256	338	153	378	379	473	492	391	229	229		
D7	591	540	751	695	1158	1374	664	397	234	167	99	98	161	347	474	663	731	773	567	667	217	223	541	321	502	502	502	
D8	205	422	484	301	115	195	443	209	285	201	240	107	113	104	212	144	151	195	296	218	276	210	136	170	226	226	226	
9	206	372	192	243	428	203	178	127	176	476	553	357	220	200	259	347	351	363	186	391	375	390	243	176	292	292	292	
10	168	267	328	548	533	338	308	583	593	605	273	79	129	319	371	175	233	459	244	115	105	103	131	131	131	131		
11	111	140	346	513	362	187	151	308	262	201	191	324	385	297	257	300	253	166	166	81	131	131	129	167	232	232	232	
12	232	458	284	231	308	324	202	165	74	106	95	174	170	126	94	76	68	64	78	160	253	169	233	106	177	177	177	
13	98	76	52	53	35	49	62	52	58	65	65	76	63	129	208	349	368	275	162	193	344	274	277	486	356	173	173	
14	348	326	394	299	100	83	57	63	101	149	222	208	157	113	84	107	233	223	77	70	68	76	76	67	155	155	155	
15	77	86	131	316	289	190	223	348	391	353	372	366	488	524	276	86	87	164	281	313	448	467	275	387	289	289	289	
D16	508	487	456	391	507	521	481	656	523	373	311	145	263	392	631	670	637	618	656	683	615	583	644	558	513	513		
017	511	250	213	372	205	126	49	156	197	215	537	537	390	329	550	984	888	568	442	168	102	87	133	85	322	322	322	
018	70	85	73	130	223	187	93	108	74	95	115	124	85	98	73	52	74	121	175	193	220	96	76	67	113	113	113	
19	74	209	217	147	292	431	424	373	324	271	280	267	317	301	208	217	250	194	70	65	134	187	295	380	247	247	247	
20	440	441	239	119	106	119	82	135	123	108	106	154	199	149	174	176	183	81	119	279	525	486	362	202	213	213	213	
21	132	127	68	63	231	491	528	437	298	235	226	381	811	679	344	193	326	644	551	749	698	684	444	390	405	405	405	
D22	530	557	155	131	213	149	281	428	246	119	92	349	725	729	894	1142	1381	1312	985	615	553	620	343	300	535	535	535	
D23	223	286	643	661	380	513	885	735	573	669	292	185	206	224	186	203	206	224	292	263	2128	292	546	214	231	379	379	379
24	367	373	515	577	405	463	351	463	260	78	178	142	207	116	82	87	95	217	276	170	66	101	241	424	265	265	265	
25	325	178	94	119	250	440	466	215	96	167	314	323	121	142	173	113	117	78	80	238	414	236	198	94	208	208	208	
26	82	67	50	51	134	224	353	271	120	97	319	662	293	158	476	498	509	363	414	601	794	635	745	562	353	353	353	
27	232	183	387	455	354	179	164	291	322	439	311	144	299	491	518	547	541	334	248	116	79	66	99	89	287	287	287	
028	73	62	50	53	73	45	53	138	103	86	86	82	87	69	57	85	121	140	221	150	81	66	139	92	92	92	92	
29	178	106	83	63	64	45	64	77	141	189	147	236	279	197	162	136	226	380	358	567	217	214	279	367	199	199	199	
30	409	333	225	94	121	379	436	339	339	343	306	217	147	102	113	150	280	181	91	112	154	210	241	123	227	227	227	
MEAN	231	238	230	243	260	263	257	261	230	228	221	224	239	265	286	303	291	265	260	273	279	274	242	254				
50 MEAN	81	74	62	76	94	92	85	102	85	92	95	83	89	102	111	114	108	122	140	162	193	178	161	108				
5D MEAN	380	391	399	414	476	528	476	464	339	293	208	195	323	399	501	583	676	666	524	414	489	446	360	431				

DATE	AO INDEX (HOURLY VALUES)												JANUARY 1979													
	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 -4	7	-19	0	-84	4	20	14	13	9	2	-4	-53	6	-1	-2	-15	0	3	6	-55	-82	-9	-9	-9	-9	
2 10	14	5	3	15	13	18	11	9	11	-55	-73	6	-15	-52	-3	-189	-169	-8	-152	-91	-90	-152	-38	-38	-38	
3 -29	3	0	12	23	29	25	23	20	-39	-52	-20	-16	-53	-39	-45	5	-127	-114	-60	-110	-114	-64	-64	-30	-30	
4 D	-59	-197	-148	-87	-88	-65	-16	-20	-89	-68	-10	-126	-172	-150	-136	-127	-295	-271	-329	-273	-199	-204	-233	-279	-152	-152
5 -154	-193	-121	-40	-18	-32	23	16	-12	-11	-12	-18	-16	-12	-9	-10	-44	-119	-189	-40	-54	-27	-13	-16	-60	-46	-46
6	-31	2	71	42	26	28	35	19	10	12	-41	-169	-65	9	-24	-73	-24	9	-23	-16	8	7	7	-8	-8	-8
D 7	-9	12	15	15	17	9	6	2	2	-47	-95	-30	-99	-92	-125	-217	-458	-247	-135	-314	-117	-191	-127	-85	-92	-92
8 9	9	15	17	8	4	6	-20	-12	0	-1	-2	-8	-5	-9	-9	-10	-10	-10	-54	-62	-1	20	20	5	-3	-3
9 -55	3	12	41	39	31	11	-12	9	3	4	7	-11	9	8	-17	-61	-30	0	2	1	-5	1	1	-1	-1	
0 10	1	-2	-1	-18	12	13	13	10	7	5	2	1	0	1	-1	-2	-12	-47	-14	3	7	7	0	0	0	
0 11	10	13	23	23	11	11	19	-20	0	-1	6	9	4	5	6	5	7	6	5	5	5	5	5	5	8	
12 8	11	-7	-21	33	22	22	-7	15	8	13	-40	-53	-4	1	-16	3	18	97	15	16	4	4	4	4	-21	
0 13 22	28	17	8	4	6	-2	-15	-16	-11	-16	-18	-32	-152	-132	-41	-14	1	8	6	4	3	4	4	4	-24	
0 14 22	2	7	10	-9	-17	-1	0	-8	-36	-27	13	-2	-68	-88	-43	-1	24	-18	-19	0	4	2	1	-9	-9	
0 15 42	0	-13	-36	-13	-3	0	-15	-78	-38	-48	-161	-36	11	-1	-50	-27	-64	-77	-144	-159	-59	12	-61	-61	-44	-44
0 16 -87	-20	11	-28	-69	-34	5	6	-61	-107	-38	-5	-15	-82	-75	-2	-19	-4	-7	-23	-20	4	9	4	4	-27	
17 8	10	8	5	6	7	8	11	8	5	5	-5	-28	-52	-13	-67	-127	-63	-85	-39	-32	-32	-11	-44	-44	-21	
18 -73	-30	25	45	46	28	18	12	9	2	-26	-143	-78	-77	-10	-65	-120	-46	-50	-32	6	16	4	45	45	-24	
19 -50	-125	-131	-92	-56	-8	19	16	3	3	-63	-74	-10	9	-30	-122	-122	-49	-4	-36	-4	-49	-59	-67	-67	-46	
20 -23 -6	-2	-29	-36	-34	24	-5	-100	-63	-15	-42	-48	-82	-89	-71	-91	-126	-65	-6	-12	12	5	2	-36	-36	-36	
0 21 -3	-2	-74	-16	3	-1	0	-22	-63	-47	-65	-82	-22	-33	-91	-63	-63	-27	-114	-57	-10	-17	-7	11	7	-33	
22 D 23	4	5	6	8	4	5	3	6	-6	-39	-77	-81	-7	4	1	-10	-74	-156	-343	-149	-137	-129	-47	-47	-47	
24 -156	-91	-132	"25	-3	2	-9	-13	-83	-3	-9	-155	-8	5	3	0	-25	-107	-15	-107	-10	12	3	-32	4	-35	
25 -1	-27	-288	-257	-41	17	35	-33	2	-37	-14	-88	-187	-203	-39	-17	-85	-137	-76	-130	-83	-49	-62	-72	-72	-72	
D 26 -152	-69	22	33	12	-6	-19	-20	-12	-55	-81	-64	-76	-31	-105	-149	-140	-114	-227	-192	-161	-175	-151	-86	-84	-84	
27 0	9	-86	-43	-37	-78	44	-1	-18	-57	-21	-6	-13	-18	-18	-89	-156	-89	-47	-132	-186	-106	6	-15	-48	-48	
28 24	26	25	33	41	37	17	17	-17	-48	-128	-24	-11	-13	-77	-30	-36	-118	-148	10	18	14	10	-14	-14	-14	
29 -32	-7	13	50	34	5	17	18	14	2	9	-3	-53	-12	2	-3	-103	-51	-20	-19	-62	-22	-8	-68	-68	-12	
30 -76	14	21	35	34	20	-14	15	5	0	10	-20	-41	7	8	9	-20	-44	-26	3	-57	-69	-3	-6	-6		
31 12	2	-15	18	25	28	-16	-2	19	7	-38	-29	6	-23	8	-20	-1	-2	-7	-79	-38	-46	-46	-14	-7		
MEAN	-28	-19	-26	-10	-3	0	10	0	-18	-17	-23	-47	-48	-45	-46	-48	-68	-71	-71	-66	-61	-44	-43	-47	-35	
50 MFAN	8	10	9	1	5	7	6	-9	-34	-60	-78	-100	-137	-130	-179	-148	-204	-188	-219	-204	-166	-173	-145	-5	-5	
5D MEAN	-44	-54	-79	-62	-24	-16	-9	-9	-34	-60	-78	-100	-137	-130	-179	-148	-204	-188	-219	-204	-166	-173	-145	-109	-109	

DATE	AO	INDEX (HOURLY VALUES)												FEBRUARY 1979												
		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	15	30	32	7	17	18	12	9	7	-46	-56	2	3	-2	-3	-4	0	2	2	0	0	3	0	3	2	
2	7	-10	4	37	39	-11	-15	13	13	-10	-6	6	-4	-11	4	0	-16	-29	-6	-30	-2	-31	2	-5		
3	7	6	19	23	24	17	12	7	6	-4	1	0	-1	-2	-1	-14	-25	-38	-49	-30	50	-6	-4			
4	13	-27	-54	3	46	52	28	-29	4	9	-120	3	28	5	-49	-146	-282	-80	-4	-18	-4	-35	-11	-41	-29	
5	-136	-67	-45	-4	-12	-71	-99	-27	-21	-48	-48	-92	32	11	6	-1	-4	-2	-1	4	3	1	0	-4	-26	
6	8	3	2	-136	-78	7	12	-12	-38	9	-14	-19	-119	-145	-6	12	13	-39	-122	-33	-50	-79	-36	23	-35	
7	14	6	10	5	7	12	11	10	12	11	5	-18	2	0	2	-40	-77	-24	3	12	-18	-12	17	-1		
8	12	4	-18	-3	-4	-7	30	25	2	-89	3	25	11	7	-16	-108	-32	-65	-36	24	23	11	-31	-9		
9	-26	25	-13	-5	33	35	6	16	11	-7	-36	-13	22	4	-19	-128	-47	0	17	14	11	-26	-18	-14	-6	
0	10	6	19	18	10	19	16	11	14	15	18	10	-10	6	4	5	-6	8	-16	-83	8	18	12	11	0	
11	-8	11	-9	-36	65	44	27	20	10	8	-4	6	0	0	-3	-2	0	0	1	-27	-51	-53	-71	-98	-6	
12	-85	-105	-94	-129	-137	-43	-37	-70	-77	8	-91	-201	-144	15	-4	-1	-3	-6	0	6	10	9	8	6	-48	
0	13	1	4	3	1	-1	-2	-7	0	0	2	0	-10	-8	-10	-8	-22	-11	-1	0	1	0	-1	0	-3	
0	14	0	1	4	5	6	6	5	3	7	-21	-18	-8	-6	-2	-6	-8	-79	-10	-4	0	2	-62	-3		
0	15	6	4	-18	10	0	-17	-22	-46	-99	24	8	-52	-22	-40	-61	-75	-17	1	8	12	8	0	-1	-16	
0	16	0	1	2	-28	-88	-31	2	1	2	1	-21	-52	-17	-5	2	0	0	2	6	3	5	3	0	-1	
0	17	1	4	4	5	6	7	7	7	4	-24	-4	-2	-3	-35	-7	-12	8	6	-42	-45	-2	13	11		
0	18	3	4	72	-38	-10	-7	-5	-29	-67	-29	-35	-88	-41	-74	-194	-76	-71	-65	-49	0	-74	-121	-145	-58	
0	19	-73	-27	-51	-33	-23	-1	14	-19	-8	13	-11	13	11	-167	-155	-8	19	-118	-127	-61	3	11	7	-35	
0	20	9	-3	2	6	5	3	-1	3	4	-8	-4	-14	-5	-10	-19	-53	-94	-85	-59	-4	4	-68	-52	-18	
D	21	-10	-3	-4	-63	-112	-189	-192	-344	-68	42	23	-10	-18	-17	-14	3	3	-38	-144	-291	-98	-144	-31	-41	-73
D	22	-44	-163	-75	-72	-4	-2	-77	-82	-167	-111	-171	20	-23	-74	-22	-54	-48	-20	-26	-23	7	-13	-2	15	-48
D	23	1	16	-37	-87	4	46	46	27	0	-20	-6	-5	-55	-150	3	0	-13	-8	-2	0	-15	-195	-74	-17	-24
D	24	-16	-57	38	36	2	32	48	6	-76	-4	11	-80	-24	-119	-68	-19	-45	-17	-74	-119	-76	-13	-30	-13	
D	25	7	30	14	0	-9	-93	-36	10	-11	17	18	-19	-25	4	10	3	2	-5	1	-5	-84	-96	-17	-12	-12
D	26	-157	-105	8	-17	-65	-38	-33	-10	23	8	-7	-61	-55	-100	-132	-128	-114	-136	-184	-171	-182	-152	-91		
D	27	-167	-131	-111	-59	-9	3	1	-44	2	0	-15	-66	2	-67	-136	-82	-74	-42	25	6	1	5	-14	-30	
D	28	-65	-74	-13	13	11	0	2	4	-23	10	-3	-1	19	13	-36	-183	-115	-86	-88	-125	-59	33	21	-6	
MEAN	-24	-21	-15	-18	-8	-6	-13	-17	-14	-9	-24	-22	-20	-25	-30	-38	-40	-33	-38	-34	-23	-35	-23	-23	-23	
50 MEAN	3	5	6	5	6	5	3	4	6	1	-8	-7	-4	-3	-10	-12	-15	-10	-33	-18	-5	-9	-7	-5	-5	
SD MEAN	-75	-77	-43	-45	-37	-36	-54	-96	-46	-11	-35	-34	-48	-51	-60	-54	-47	-48	-66	-95	-57	-106	-54	-51	-55	

DATE	AO INDEX (HOURLY VALUES)												MARCH 1979													
	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	-78	-20	-85	-24	20	28	15	8	-7	7	-13	-2	8	0	-46	-72	-42	-43	-32	-6	10	7	6	16	-14	
2	-116	-122	-71	-34	-36	7	51	45	14	18	10	-101	-104	-69	-24	-34	-10	0	-1	5	-81	-12	40	-69	-29	
3	-94	0	-49	5	4	5	29	-60	-9	9	-2	-7	-1	-104	-100	-61	-48	-71	-43	-23	-130	-124	-76	27	-38	
4	-95	-50	48	32	36	56	33	37	-1	-187	-85	-24	36	-33	-107	-20	1	21	-100	-39	11	20	-49	-42	-21	
5	22	-18	-152	-15	36	33	-8	-18	-17	-81	-37	16	-8	-19	-17	-25	-32	-14	-4	-15	4	10	24	-13		
D	6	3	-6	-2	-139	-3	37	-39	-39	-105	-172	-140	-115	-110	-188	-62	-90	-117	-180	-19	-50	-126	-103	15	15	
D	7	-31	-34	27	10	-42	-21	15	-1	10	0	-1	0	-1	-2	-5	-6	-37	-75	-36	7	30	-29	-16	-9	
D	8	13	-4	13	24	22	30	34	18	11	10	2	-16	-83	-14	-3	-8	-5	-4	-51	-26	0	7	-72	-4	
D	9	-79	-71	-55	21	-11	-19	15	13	0	-34	-44	58	53	-18	-40	-73	-50	-4	28	20	24	3	19	-9	
D	10	-6	-163	-154	-23	-58	66	101	22	41	50	37	77	31	-2	6	0	-14	-9	-122	-97	-75	-431	-223	-124	
D	11	-71	-68	-62	-66	-56	-62	-110	-41	-18	-5	-73	-118	-110	-56	-16	-15	-45	-97	-49	-4	-6	-11	-14	-15	
D	12	-11	-8	-9	-33	-23	-17	3	-61	-106	-49	-14	-7	-7	-5	0	-1	-5	-17	-6	-58	-14	-1	-6	-19	
D	13	-8	-5	-16	-36	-79	-31	3	14	-4	-37	-21	-6	0	-3	0	-20	-25	-4	0	0	0	-1	-3	-10	
D	14	-2	-1	0	0	0	2	4	3	2	1	0	-3	-4	-3	0	0	0	2	5	-2	5	0	0		
D	15	1	3	5	2	4	11	15	19	23	17	7	5	8	15	9	9	-1	-4	-9	4	38	-21	13		
D	16	-22	5	18	-38	-24	11	5	22	16	23	11	-40	-4	17	0	0	-10	8	2	8	-14	7	14	6	
D	17	4	-41	-22	-27	-20	-46	-103	-130	-145	-86	6	-17	7	-22	-3	1	-2	1	0	-6	-26	-2	4	-26	
D	18	-14	0	-4	6	10	-55	-25	15	14	-11	-40	-6	-4	-4	-66	-5	0	0	5	5	10	7	2	0	
D	19	-1	0	1	2	4	-14	-102	-67	-47	-84	-68	70	-41	-66	-17	-45	-66	-13	-6	20	18	15	0	-21	
D	20	10	5	8	-4	9	-23	-47	-36	-60	-26	-2	5	11	1	-1	0	-31	-17	2	10	12	-5	2		
D	21	1	0	3	6	7	10	-10	9	13	5	1	-1	-1	5	-4	11	13	0	-7	6	5	2	4		
D	22	5	9	13	11	-3	4	0	9	16	28	50	-208	32	-1	-18	-271	-74	22	27	-17	-8	-29	-40	-9	
D	23	5	-7	-125	-73	-4	-13	-55	-28	-6	-4	-8	-2	0	-13	-5	-49	-13	-16	-29	-14	50	26	-5		
D	24	19	35	-7	-3	25	2	-3	-40	-53	-12	5	10	-3	2	-7	-9	-12	-29	3	13	5	24	-3		
D	25	-8	4	-61	2	45	-56	-37	36	12	-62	-36	3	44	3	-45	-39	-5	-57	-64	-7	36	-29	-2		
D	26	-106	-56	-111	8	2	-29	11	-7	-24	5	25	29	-17	-80	-30	-62	-161	-161	-52	2	-76	-2	-35		
D	27	14	5	6	9	-2	-24	-12	-28	-26	8	30	28	-5	-53	-58	-154	-160	-81	-85	-77	-18	-54	-80	-36	
D	28	-89	-142	-66	-13	18	11	5	-12	-75	-56	-150	-248	-170	-40	-25	-49	-99	-82	-57	10	17	-24	-82	-62	
D	29	-272	-159	-116	-91	-50	12	-64	-196	-194	-121	-77	-73	-183	-101	-67	-164	-105	-347	-312	-307	-138	-158	-181	-166	-151
D	30	-71	-103	-1	-33	-122	-39	-5	-8	-11	-16	-15	-5	3	-39	-2	-2	-29	-34	4	-4	-1	-3	0	-22	
D	31	-83	-7	-17	-90	-48	5	11	3	-12	0	10	-7	-6	-9	-79	-111	-79	-46	-46	-91	-56	-14	-113	-72	
MEAN	-37	-31	-28	-23	-8	-3	-7	-15	-24	-25	-21	-24	-19	-27	-29	-43	-33	-41	-39	-27	-18	-29	-23	-25		
50 MEAN	-6	-7	5	-4	-9	-9	-7	-17	-28	-12	-2	-1	0	0	0	-6	-11	-15	-17	1	-11	-15	-6	-6		
5D MEAN	-71	-92	-65	-51	4	26	0	-43	-63	-54	-56	-113	-80	-66	-53	-114	-81	-119	-96	-92	-66	-149	-102	-71	-69	

DATE	AO INDEX (HOURLY VALUES)												APRIL 1979													
	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	-43	2	-25	-96	5	4	3	10	-48	-36	-52	-97	-73	-106	-68	-27	3	-15	12	0	-42	-222	-91	-41		
2	-12	-291	-195	0	62	25	-15	19	26	17	27	32	-70	-136	-88	-49	-75	-31	-4	28	30	-25	-93	-32		
3	14	-15	-35	-26	12	5	3	-68	15	6	11	4	6	3	10	9	-233	-472	-409	-388	-303	-87	-245	-58		
D	4	-246	-149	-196	-240	-259	-51	46	23	8	12	33	-149	-3	-29	0	-17	-34	-27	0	-4	-11	-13	15	-92	
D	5	8	3	36	-11	20	30	22	29	52	-21	1	-24	12	8	13	-28	43	52	4	33	23	-7	-91	-55	
6	-49	-34	-31	-62	-71	-63	-94	-77	-63	-18	3	-1	-7	5	6	-38	-63	9	15	-13	-1	-6	-24	-9		
7	8	0	-5	-5	-13	-70	-14	3	-33	-39	-8	-64	1	4	1	-2	-11	-35	-50	-2	1	9	2	-110	-18	
8	-30	5	-3	6	-3	-19	-10	18	37	34	-4	-31	0	6	13	-1	-42	-101	-101	0	2	75	87	1	1	
9	29	-52	-21	-26	9	13	16	9	8	10	9	4	2	2	4	4	11	15	16	14	11	8	4	4		
10	8	9	10	34	-33	9	21	32	22	9	45	-49	-28	-58	-22	1	15	13	30	30	-14	0	6	4		
0	11	4	0	-5	-1	1	0	1	2	6	-2	-1	3	-1	-7	-1	-12	-16	8	33	12	7	10	2		
12	2	4	-24	0	23	41	4	4	38	16	-16	-10	0	0	-3	-5	-73	7	27	46	21	4	-17	60		
13	-8	9	0	4	-13	1	13	-4	-5	-5	-6	14	-86	-106	-28	-6	-29	-22	-1	11	19	7	3	-2		
14	6	0	-14	-20	-15	17	-29	-4	12	21	-14	13	18	19	7	-29	-39	-73	26	27	33	-139	-43			
15	-31	-34	-22	-22	16	2	8	2	2	19	-9	13	14	1	-20	-70	-2	8	13	29	21	-10	-76	-9		
0	16	-35	-118	-239	-247	-122	37	9	26	2	17	-12	9	-3	6	-14	-10	4	29	-51	-21	12	8	2	-29	
17	-8	-48	-5	13	-17	-6	-155	-90	-7	-18	0	-98	-39	8	3	1	-11	-10	1	0	-74	-8	-8	-61	-27	
18	-21	-1	-2	4	-34	-62	-1	-12	16	-74	-63	3	17	8	5	1	11	12	14	-6	10	0	14	-11		
19	-5	4	-1	28	-30	-45	-62	-26	-6	9	6	2	7	13	21	28	-53	-111	-12	14	14	18	11	-6		
20	3	2	2	4	0	0	0	-5	2	6	7	4	1	4	6	11	12	15	18	17	16	12	8			
0	21	6	3	5	10	2	-5	0	-89	-22	23	20	23	2	-94	-51	-40	-5	11	-38	5	-100	-226	-182		
D	22	45	-52	-53	47	121	4	19	42	48	-51	-32	3	-3	-18	-36	-184	-154	-91	-36	-43	-75	-72	-23		
23	-62	8	-60	-152	-97	-17	-51	-19	22	23	30	-44	-31	-15	-25	-44	11	39	-42	12	29	37	16	8		
24	-56	-40	-15	-46	-103	-13	-26	-43	17	10	19	-38	-23	-7	-14	-54	-42	-14	-12	-4	1	1	17	36		
D	25	-147	-176	-248	11	101	-5	-177	-51	-82	-110	-180	-500	-347	-32	-199	-27	-138	-69	-172	-87	-9	-82	8	-72	-116
26	-43	47	-30	0	29	1	-4	-8	0	-2	1	-1	-7	-8	-16	-18	-19	-72	-17	-27	-24	-18	7	-10		
27	10	-6	-119	-86	19	26	8	3	-21	-5	16	14	11	-7	-21	-51	-189	-184	-113	-8	-114	-215	-119	-91		
28	-58	-174	-138	25	24	-113	-60	-179	-72	-16	9	0	-40	-85	-118	-92	-46	-12	-42	-75	-73	-154	-83	-64		
D	29	2	-77	17	31	-64	-38	-52	-24	-47	-19	-22	-12	-122	-72	-147	-84	-65	-92	-57	-46	-189	-200	-185	-131	-71
30	-50	-5	-96	-19	-29	17	-36	22	35	-63	-54	12	-28	-156	-87	14	11	0	-8	-4	26	-5	16	20	-19	
MFAN	-25	-38	-50	-29	-12	-5	-22	-10	-4	-6	-8	-25	-32	-24	-29	-21	-40	-43	-40	-15	-21	-31	-46	-28		
50 MEAN	-5	-8	-2	8	-16	-19	-43	-21	4	-15	-10	-17	-3	5	6	7	-12	-17	10	9	-4	5	5	-11		
5D MEAN	-67	-90	-88	-32	-16	-12	-28	3	-4	-18	-43	-120	-120	-20	-76	-35	-72	-59	-68	-27	-44	-67	-71	-64		

AO INDEX (HOURLY VALUES)

DATE	1979												MEAN										
	0	1	2	3	4	5	6	7	8	9	10	11											
1	-44	-183	-123	-57	-30	-36	2	-17	-26	-44	-47	-7	-11	-10	-21	-2	-46	-87	-86	-84	-70	-47	
2	-107	-199	-76	-70	-25	2	-8	-42	2	11	-40	-12	-29	-30	-31	-15	-29	-8	-10	-4	-12	-1	
3	-15	-11	-64	-24	-4	-3	-2	-2	3	8	0	4	-16	-49	-51	-23	-22	4	5	7	-22	-1	
4	-62	-1	13	-10	-4	-13	-14	13	-9	31	26	-12	-32	-8	-10	5	-22	-8	2	12	-43	-25	
5	7	21	13	5	42	5	23	20	27	7	-8	11	8	12	-19	-23	-26	1	13	8	10	4	
6	0	6	0	-4	-2	-4	-6	0	-11	19	17	21	8	1	0	2	-5	3	2	14	16	12	
7	7	16	-8	7	6	0	-9	-9	-7	30	55	32	-40	-83	-94	-46	2	15	-49	-4	19	17	
8	11	11	6	12	5	0	1	35	-50	-18	8	8	3	10	7	2	7	16	5	19	21	24	
9	13	8	6	0	7	16	1	28	30	26	33	52	0	-56	-16	14	20	8	17	16	-11	2	
10	-24	0	0	-3	4	-1	-2	6	16	23	17	16	11	23	1	-8	17	18	10	13	23	5	
11	-52	0	11	10	-22	13	15	-78	21	37	36	43	20	-48	-100	26	-2	11	3	35	16	11	
12	-5	7	-4	10	10	-48	-29	15	3	-6	-13	16	-8	-10	14	15	11	7	7	18	32	25	
13	19	7	-18	1	-5	-14	-14	-35	-19	2	16	6	0	8	3	0	-27	-18	0	12	-7	5	
14	3	6	14	10	-14	-18	-6	1	-11	22	31	-22	-70	-62	-47	-8	-18	-33	8	40	43	34	
15	18	-5	-20	-3	26	-47	-38	9	21	13	19	9	16	3	-13	-82	-8	12	-4	8	-2	-1	
16	4	-6	-65	-67	-6	29	20	-70	6	-4	-5	6	8	3	0	1	0	8	4	8	4	-4	
17	5	5	-10	-28	-3	3	5	-12	8	29	39	30	12	0	2	-8	-13	11	14	8	3	-4	
18	-4	-1	-1	-2	2	5	4	14	11	15	13	29	18	-48	-37	-19	-3	-45	-107	24	55	41	39
19	-37	-116	-16	32	36	-59	-2	5	28	-1	-68	-5	-97	-108	-65	-25	-11	-58	-58	15	4	23	-23
20	-27	-33	-85	-84	-14	19	10	24	14	-1	11	43	-47	-45	-58	-19	-44	-78	-29	18	1	14	32
21	1	-1	-6	-3	0	-7	18	55	39	23	31	28	-3	-8	-126	-80	20	8	-71	-91	-42	-51	
22	-111	-43	6	14	57	32	-47	-77	-30	-124	-120	18	-12	-15	0	1	28	44	-15	-50	-26	-38	
23	-69	-115	-35	-2	-19	-6	-19	0	8	9	13	13	9	4	6	3	1	-1	-67	-75	-71	-106	
24	-120	-20	-42	51	-3	-19	-132	30	32	50	-38	-28	-8	-121	-101	4	38	-126	-104	-18	-26	10	
25	34	3	16	54	-65	-24	-5	-1	-41	-14	5	-50	-65	-71	-30	-22	-25	-89	-55	-32	-52	4	
26	-194	-124	36	71	25	-16	20	28	10	37	15	13	-57	-98	-14	-34	-26	-38	-30	16	25	-36	
27	-36	-33	-41	-85	-138	-153	0	8	-21	-11	-37	-73	-44	-11	-90	-83	-9	-31	-83	-21	2	-18	
28	-19	0	-27	-15	-3	-20	-10	3	22	-6	-5	4	14	-19	-83	-24	-34	-19	-76	2	19	-35	
29	5	-24	12	8	-34	-8	-11	-5	-2	23	59	16	-70	-81	-15	2	14	10	11	24	-47	-53	
30	35	30	17	27	34	-63	0	4	9	8	10	12	17	14	17	18	17	18	20	13	5	11	
31	3	-5	-11	-11	-12	-10	-11	0	-4	3	-4	1	2	1	2	1	12	17	25	-5	10	-5	
32	MEAN	-24	-26	-15	-5	-13	-6	-3	6	7	1	6	-14	-29	-31	-14	-3	-11	-16	2	-1	-4	0
33	SD MEAN	0	0	-30	-26	-6	3	0	-13	6	-8	11	8	-8	-79	-6	-4	8	12	6	2	0	-5
34	SD MEAN	-85	-60	0	44	10	-9	-33	-3	0	-10	-41	-10	-43	-82	-42	-15	0	-53	-13	-6	-6	-13

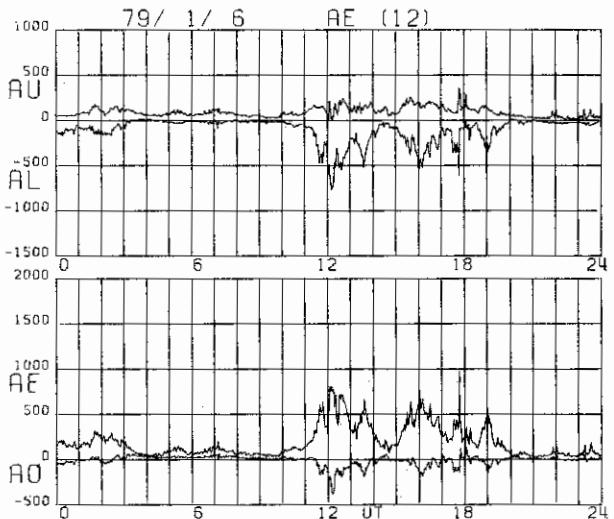
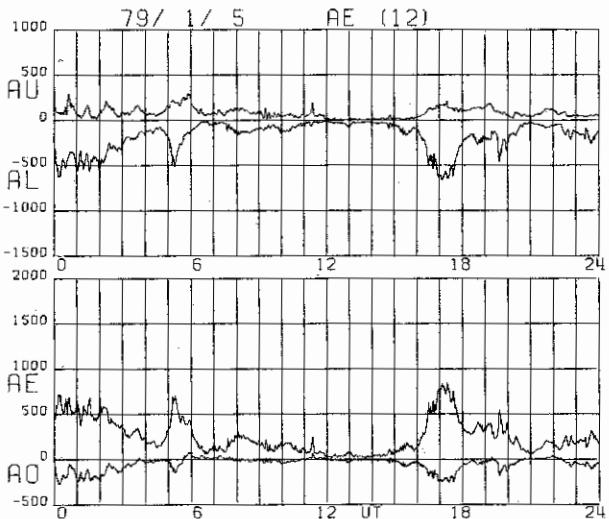
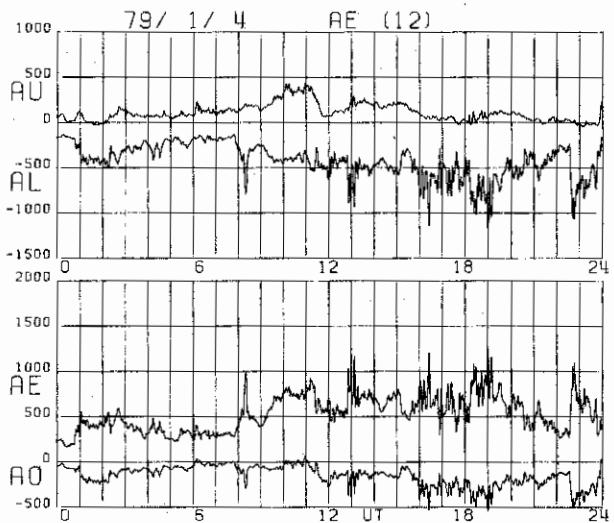
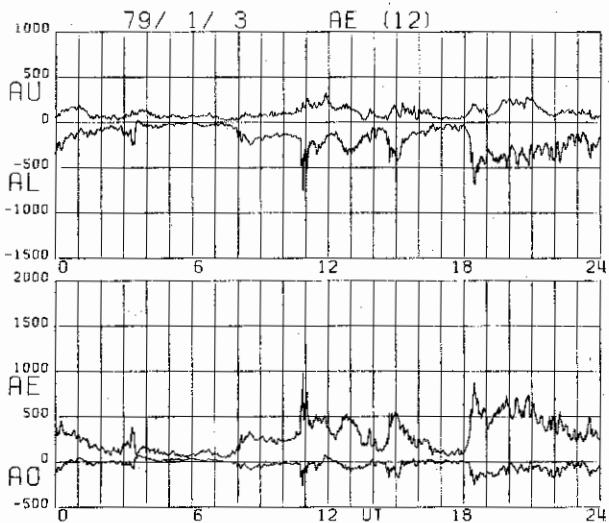
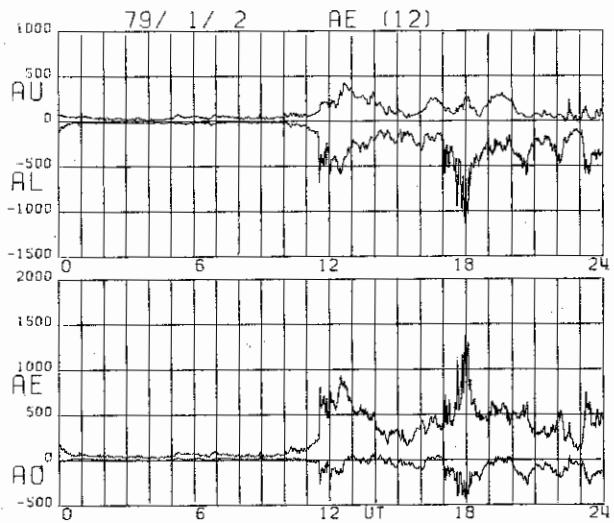
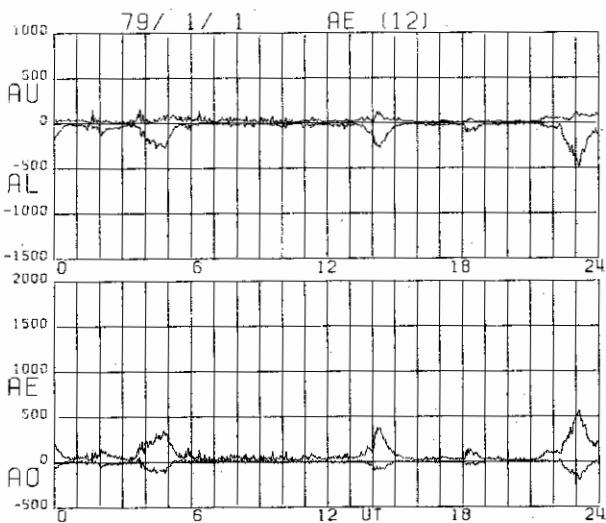
DATE	AO INDEX (HOURLY VALUES)												JUNE 1979												
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
6 1	-3	-1	-3	15	-1	9	11	9	8	2	-5	-8	-7	-11	-14	-14	-51	-37	-1	4	11	-3	-21	14	-4
6 2	26	24	11	13	-10	-12	-2	-4	-1	12	14	4	0	-24	-38	-56	-22	5	-1	4	6	28	11	0	0
6 3	25	25	0	-12	-13	-10	-3	-1	-1	5	-1	-2	-1	6	-6	-38	-5	8	21	18	28	-20	-1	15	0
6 4	22	17	13	22	44	39	43	68	120	65	26	18	-12	-4	-5	27	26	30	29	30	23	26	13	9	29
6 5	7	-2	0	2	0	2	-9	12	14	1	0	0	3	7	8	4	2	8	8	6	16	11	9	2	5
7 6	8	3	10	1	-2	6	5	17	15	13	35	26	37	23	-14	-11	11	-10	18	56	99	164	99	53	27
7 7	65	34	115	137	66	-14	19	47	18	3	12	35	7	-26	-2	-12	-21	-25	-13	8	25	-21	-45	19	-45
7 8	9	-6	-39	-63	-26	12	-5	-2	32	25	2	1	-6	-12	-30	-8	-3	7	11	20	6	-4	7	6	-2
7 9	-8	-69	-15	-6	-31	-10	26	14	20	-17	-46	-44	-16	9	-4	-35	-44	-60	0	-12	-10	-3	-12	-16	-16
7 10	-3	-45	-62	-67	-41	26	17	-32	-49	-8	-2	4	0	-3	-38	-70	-6	-3	-29	17	15	13	-2	-16	
11 11	-15	0	-32	-31	-21	-2	14	1	-48	-20	-7	32	-7	-21	-13	-66	-18	-7	5	16	8	5	-7	17	-9
12 11	35	-24	-40	-41	-21	-20	10	8	-2	12	10	10	3	14	12	11	11	16	10	19	-1	9	1	2	2
13 12	8	7	-3	-1	-2	1	3	8	12	-4	12	-4	1	10	29	-8	-4	-46	-46	-10	-81	-9	1	-27	-21
14 13	0	50	-10	-1	6	-5	-4	15	18	0	38	-12	8	2	9	0	-2	-43	-31	19	14	10	12	8	4
15 14	17	22	18	-29	16	27	67	5	-9	45	24	-23	2	-38	-13	9	-4	-28	-37	-19	-24	-36	27	49	2
16 15	-16	-18	-7	-39	-20	-45	-65	-71	11	16	7	6	-53	-55	-104	-107	-93	-104	-107	-31	-18	-34	-29	5	-39
17 16	24	20	-6	-220	-20	3	-5	-32	-7	5	0	6	1	-47	-42	-43	-80	-122	-33	-22	12	-12	-13	1	-12
18 17	0	6	0	11	13	25	-7	7	5	0	12	-6	3	-6	-3	-7	9	-8	-2	12	-14	5	-3	2	
19 18	-3	-16	-7	-1	21	-8	-5	16	5	12	15	-21	-2	-32	-16	-40	-57	-39	8	5	10	4	-29	-30	
20 19	-1	-39	41	27	22	12	11	16	11	3	-5	-3	-10	15	-10	-7	-28	-8	14	37	-51	-36	13	28	
21 20	22	6	0	2	53	-46	-111	-55	20	16	16	17	65	-76	-66	-40	-108	-112	-153	-179	-27	12	-48	-88	
22 21	-26	-11	5	6	32	19	25	27	11	8	17	10	18	-71	-33	-34	-25	-61	-20	-44	2	20	-75	-38	
23 22	44	47	11	-85	12	-20	-161	-70	-24	18	10	-1	-26	-1	-25	-6	12	9	-6	-20	-19	-13	6	-22	
24 23	-52	-71	-79	-102	-20	37	-12	-47	-2	14	39	25	-12	20	2	-22	-8	-19	-8	8	22	-22	7	5	0
25 24	-22	-7	0	7	-12	-48	-47	2	14	39	25	-12	20	2	-22	-8	-19	-8	8	22	-22	7	5	0	
26 25	4	0	-6	-1	13	10	11	0	8	19	25	-60	-34	15	-24	-92	-33	37	30	-51	6	68	-23	-46	
27 26	10	7	-4	-60	-66	-7	-8	-15	31	-26	7	14	1	-89	-83	-28	-47	-40	-23	9	27	6	-5	-16	
28 27	-11	-12	-9	-8	-1	-13	10	-7	-7	-1	2	9	5	-2	-14	-32	-19	-13	2	-2	-4	-20	-5	-5	
29 28	-6	-6	-1	-4	-15	-9	6	9	21	-1	12	19	15	-5	18	-3	-32	-74	-79	34	55	28	5	-1	
30 29	23	60	14	21	30	-45	13	-2	68	64	25	7	11	11	-1	-7	-33	-38	11	7	20	17	5	7	
31 30	4	17	4	17	-10	-35	-10	6	14	14	14	14	0	0	0	-24	-43	-49	-53	-61	-67	-2	24	-7	
32 MEAN	6	1	-1	-9	0	-2	-5	0	9	10	9	1	-8	-12	-18	-26	-27	-26	-13	-4	6	3	0	4	
33 SD MEAN	3	-1	-4	1	0	-1	0	-1	0	3	0	0	-1	0	2	0	-24	-43	-49	-53	-61	-67	-2	24	-7
34 SD MEAN	19	11	26	4	17	17	-10	-35	-10	6	14	14	14	14	14	14	14	14	14	14	14	14	14	14	

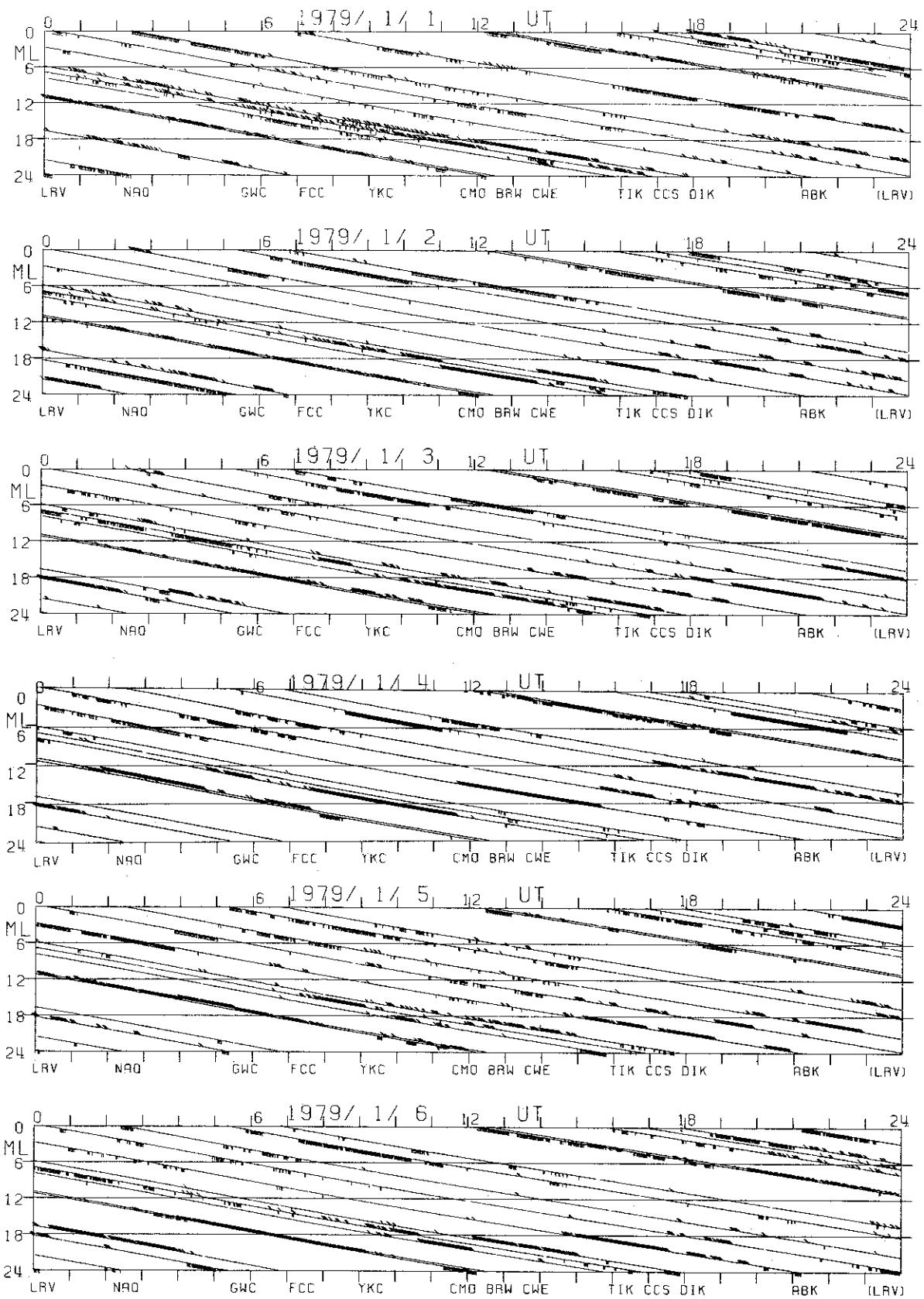
FIGURE 4 (on even pages)

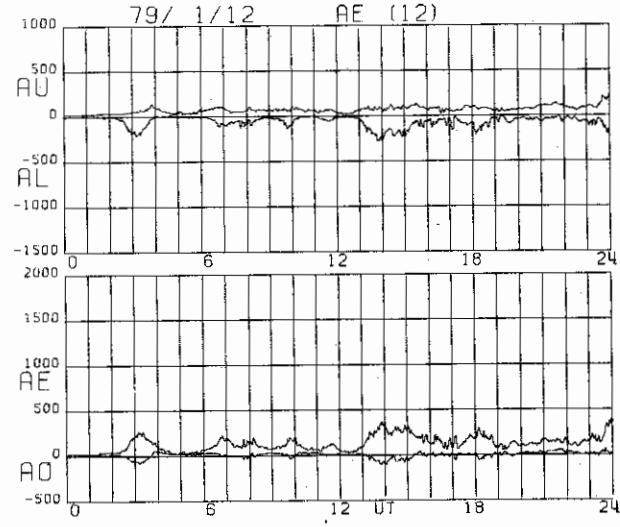
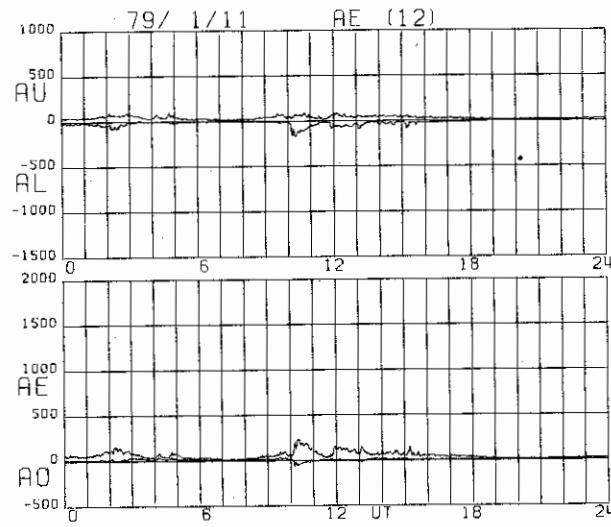
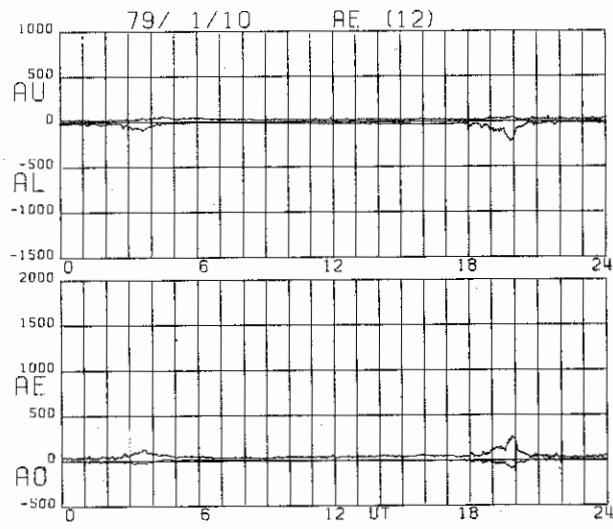
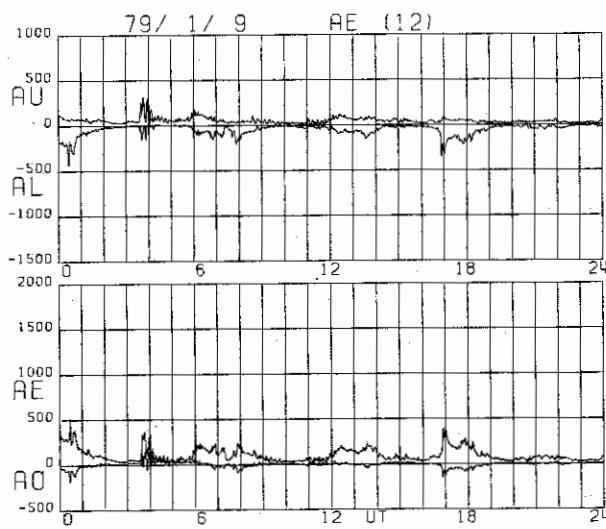
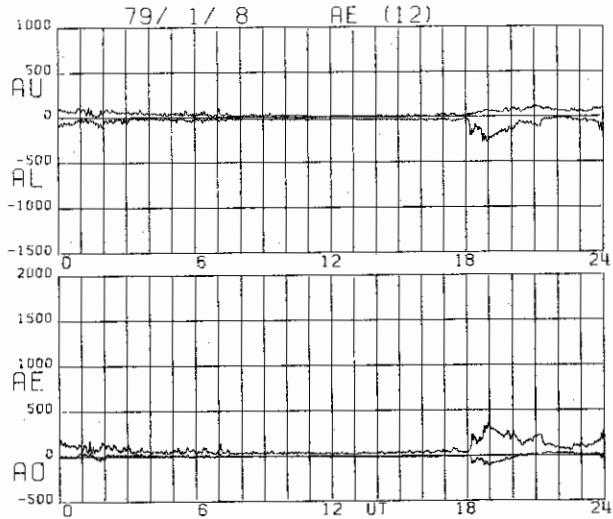
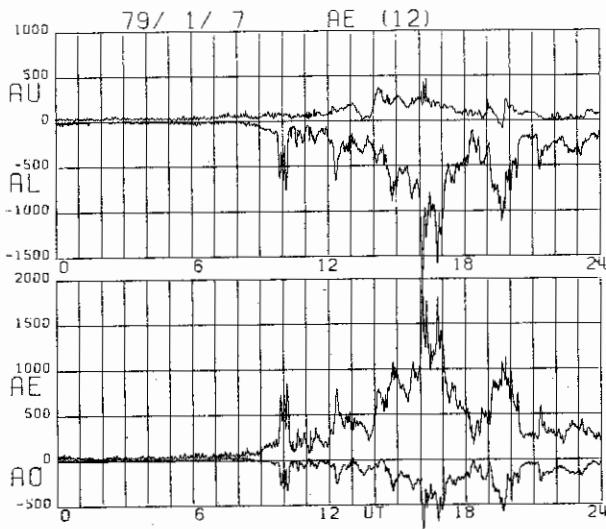
Daily graphs of 1.0-min AE indices (AU, AL, AE and AO) for January–June 1979. Graph on a very disturbed day (January 7, 1979) is reproduced on page 98.

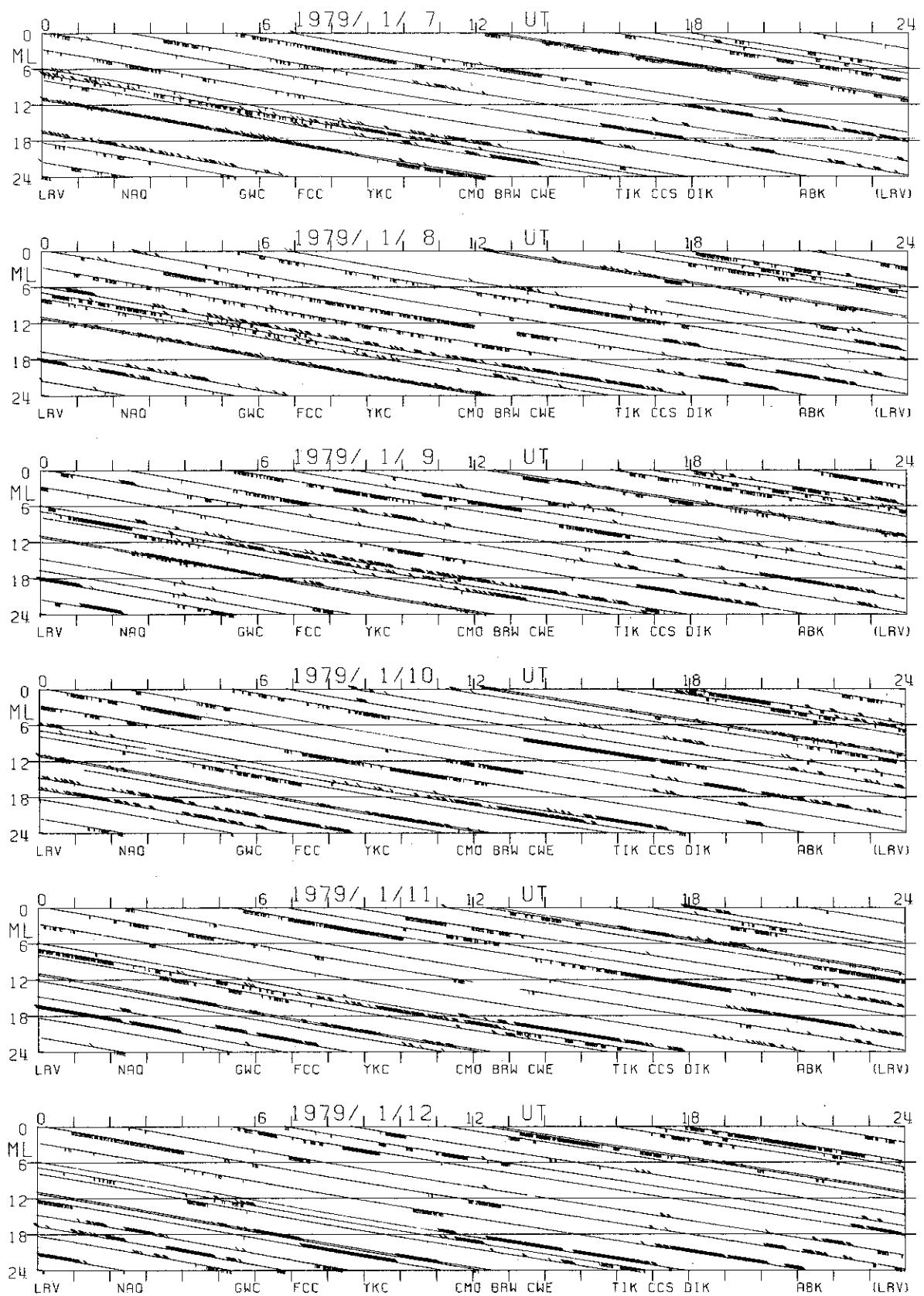
FIGURE 5 (on odd pages)

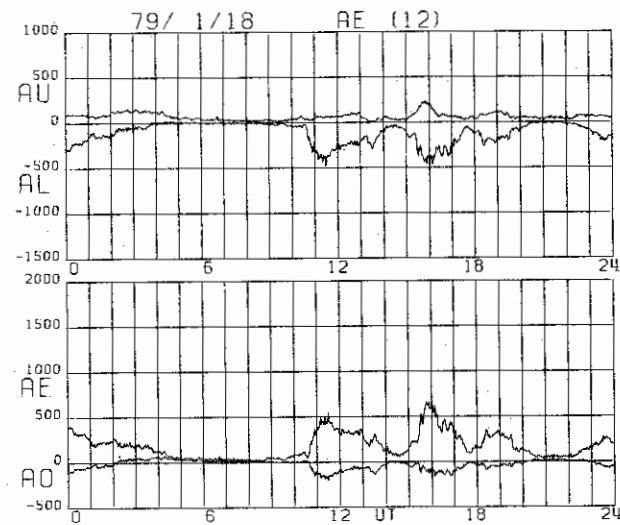
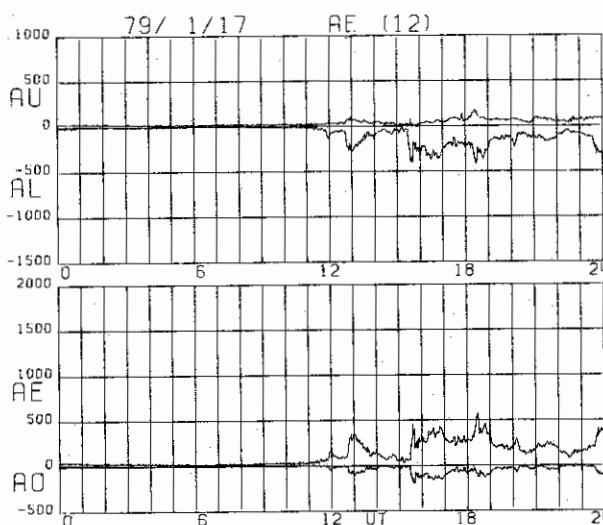
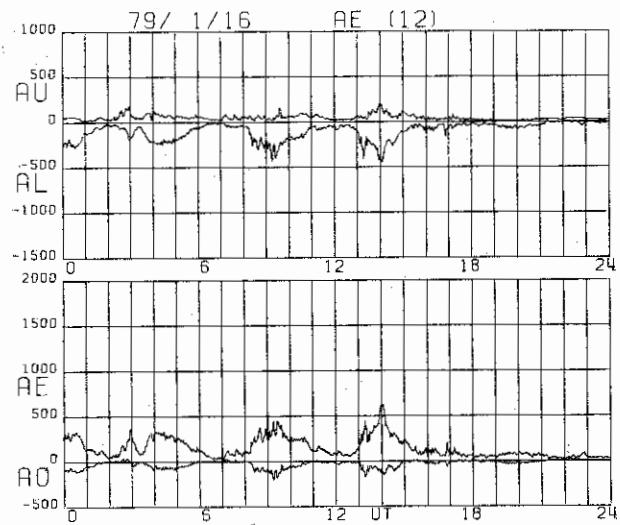
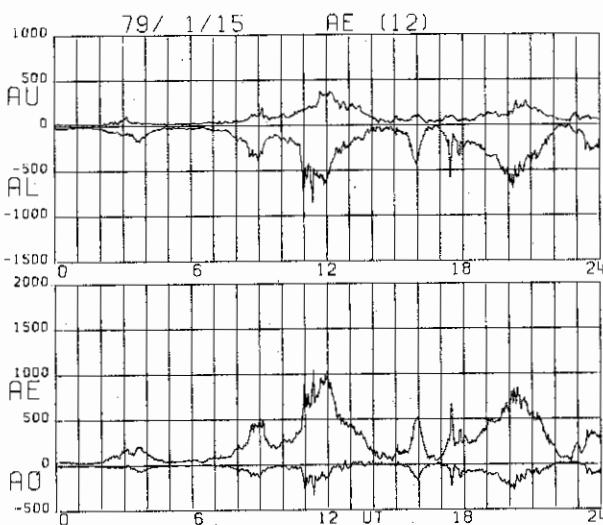
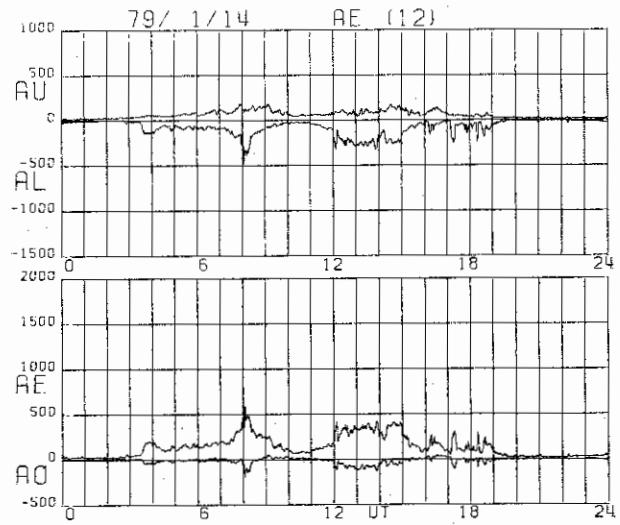
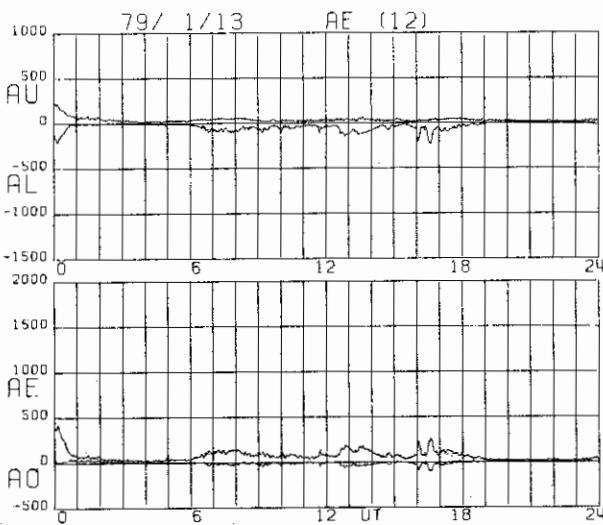
Plots of the contributing stations to the AU (upper plumes) and AL (lower plumes) indices, where you can see which station contributes to these indices at each UT minute.

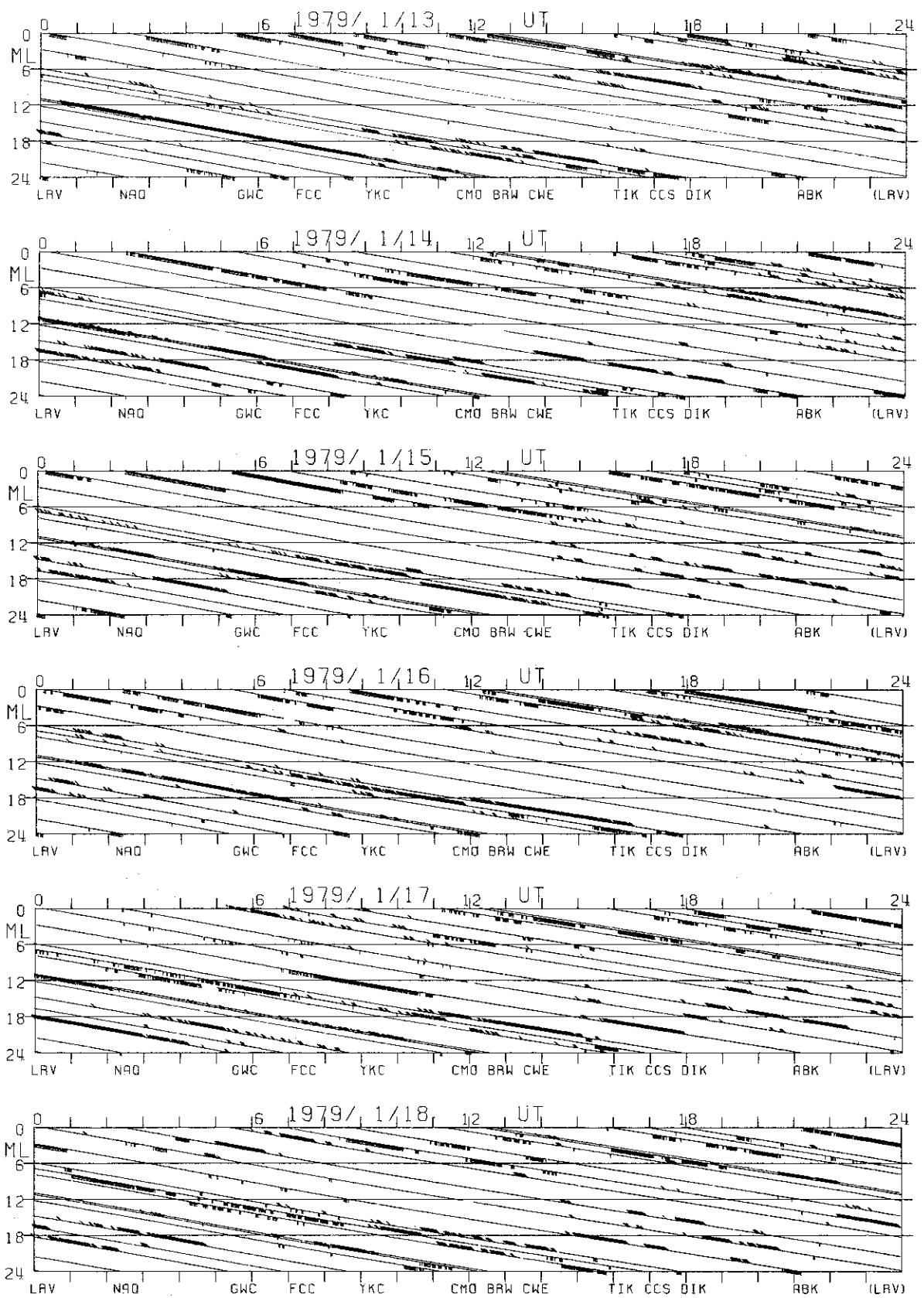


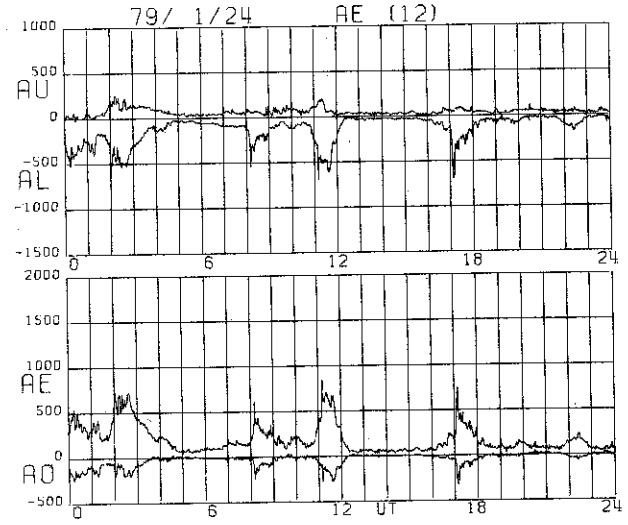
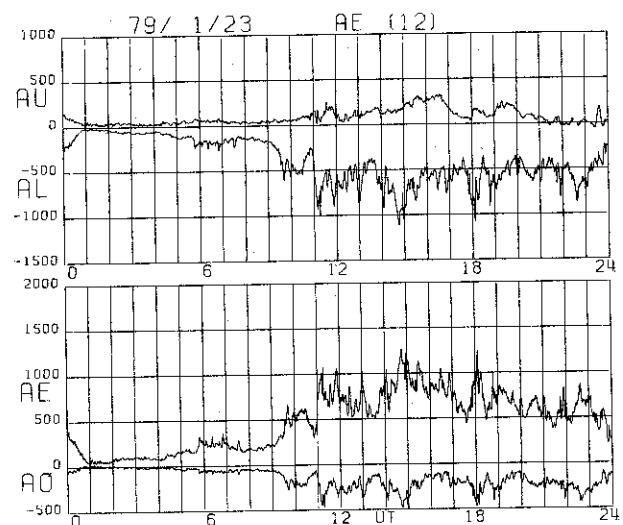
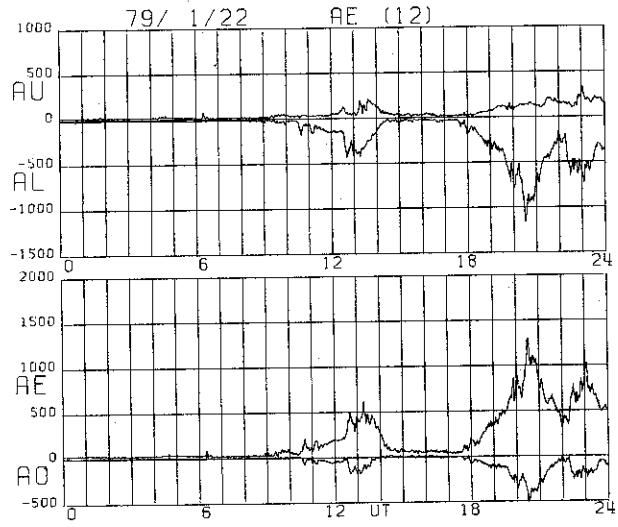
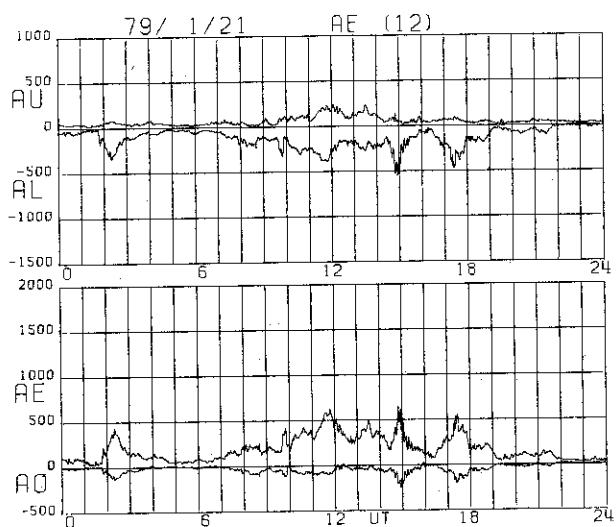
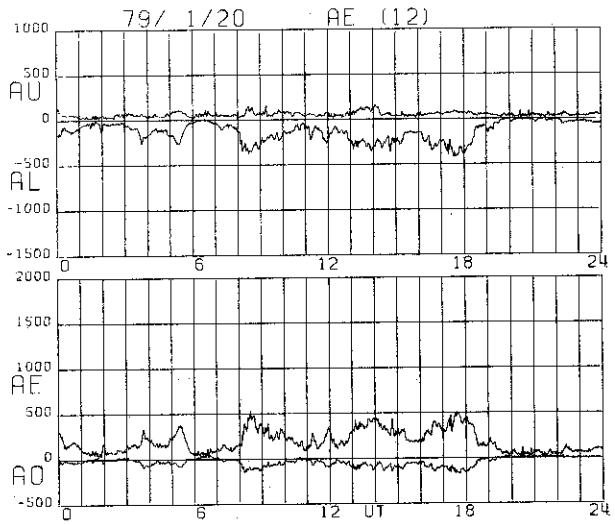
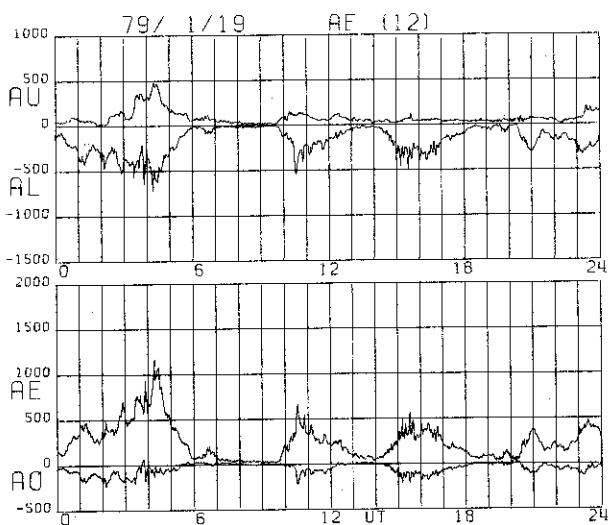


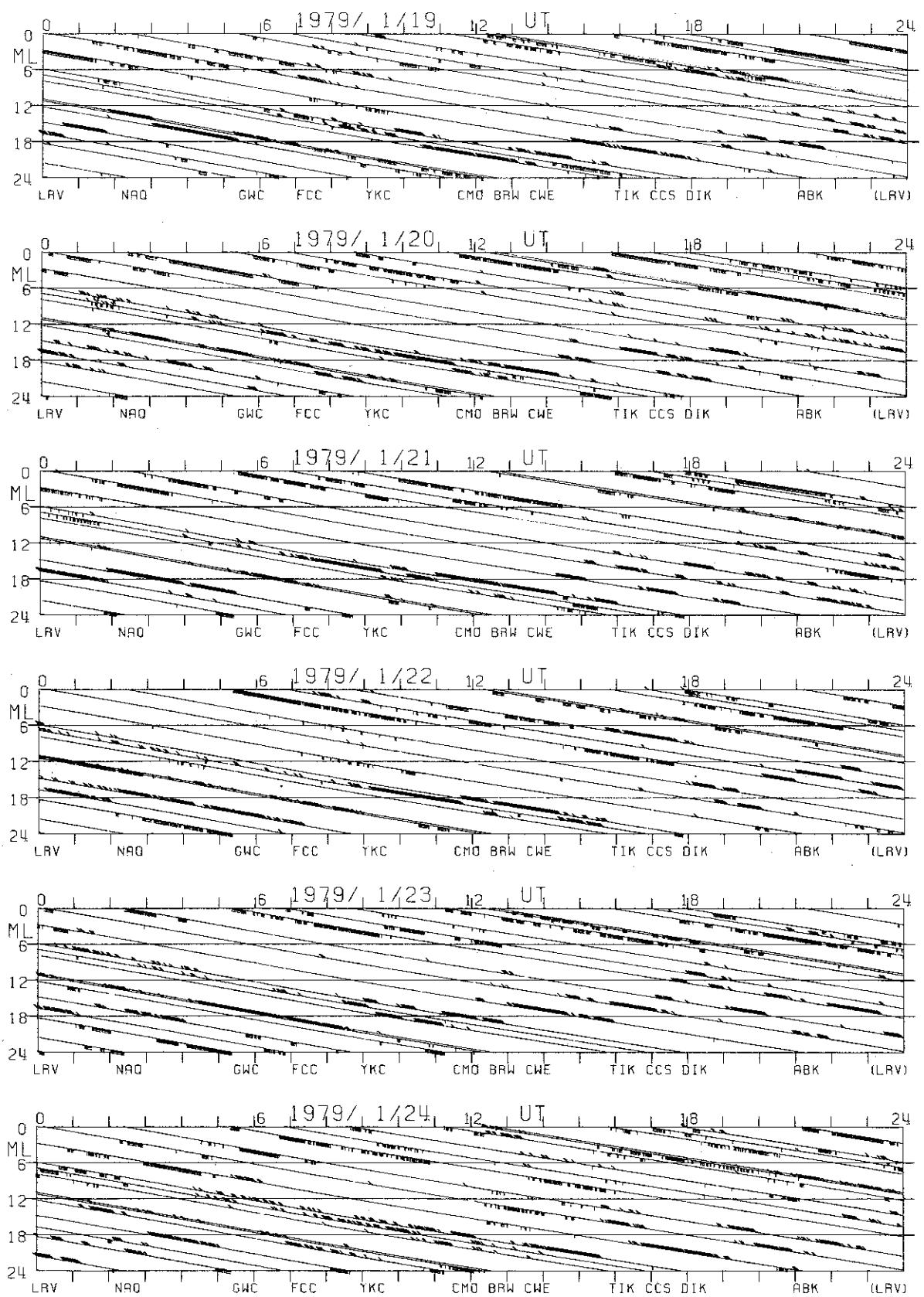


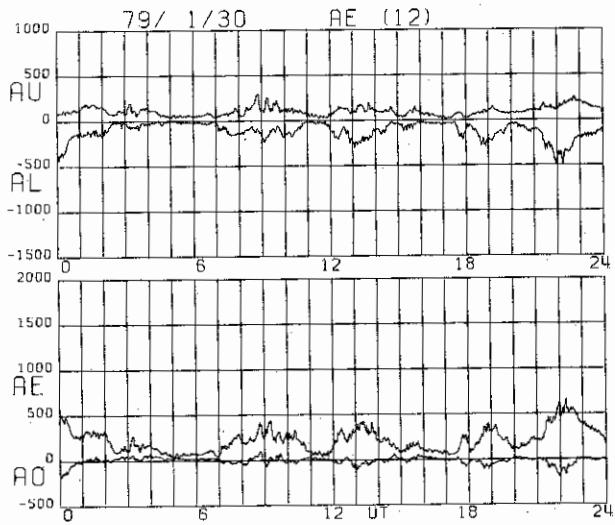
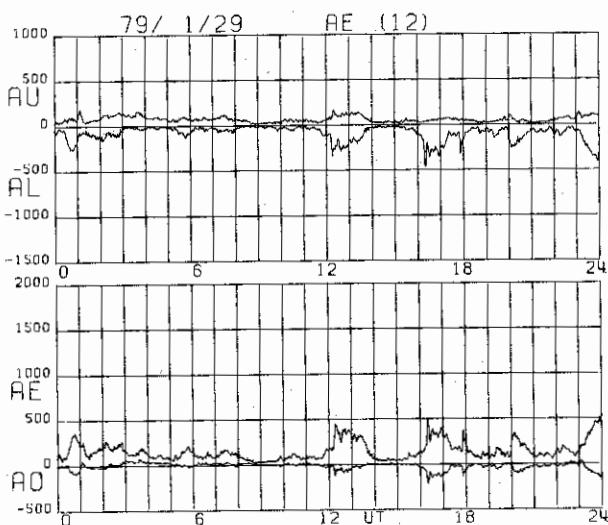
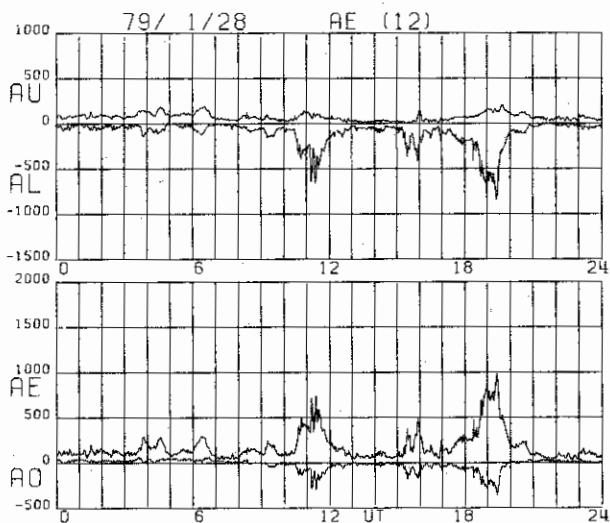
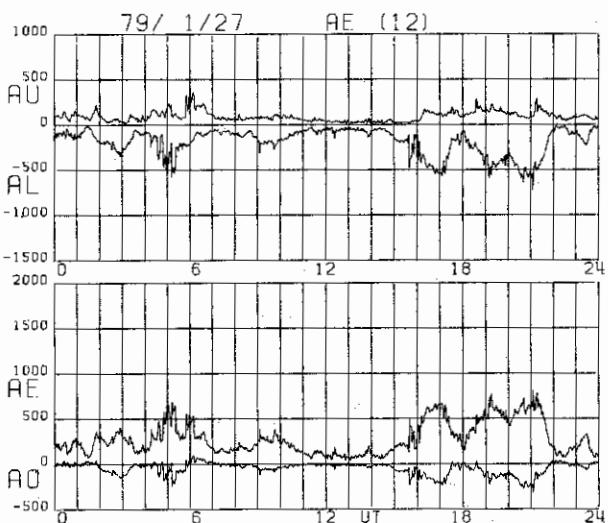
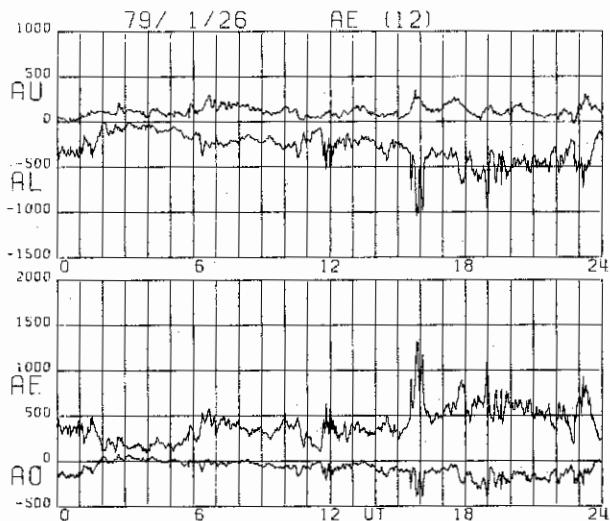
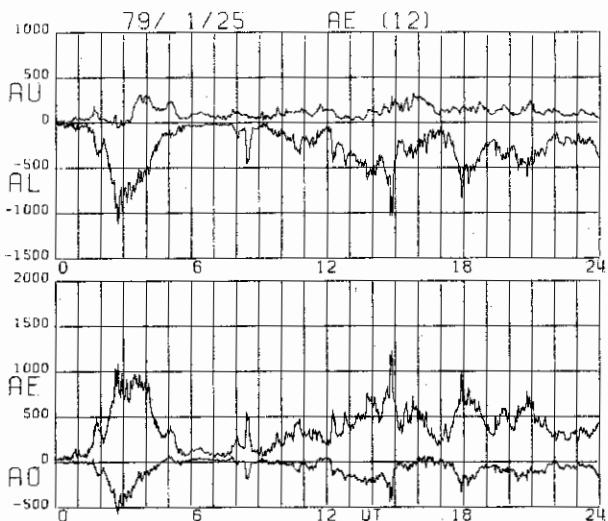


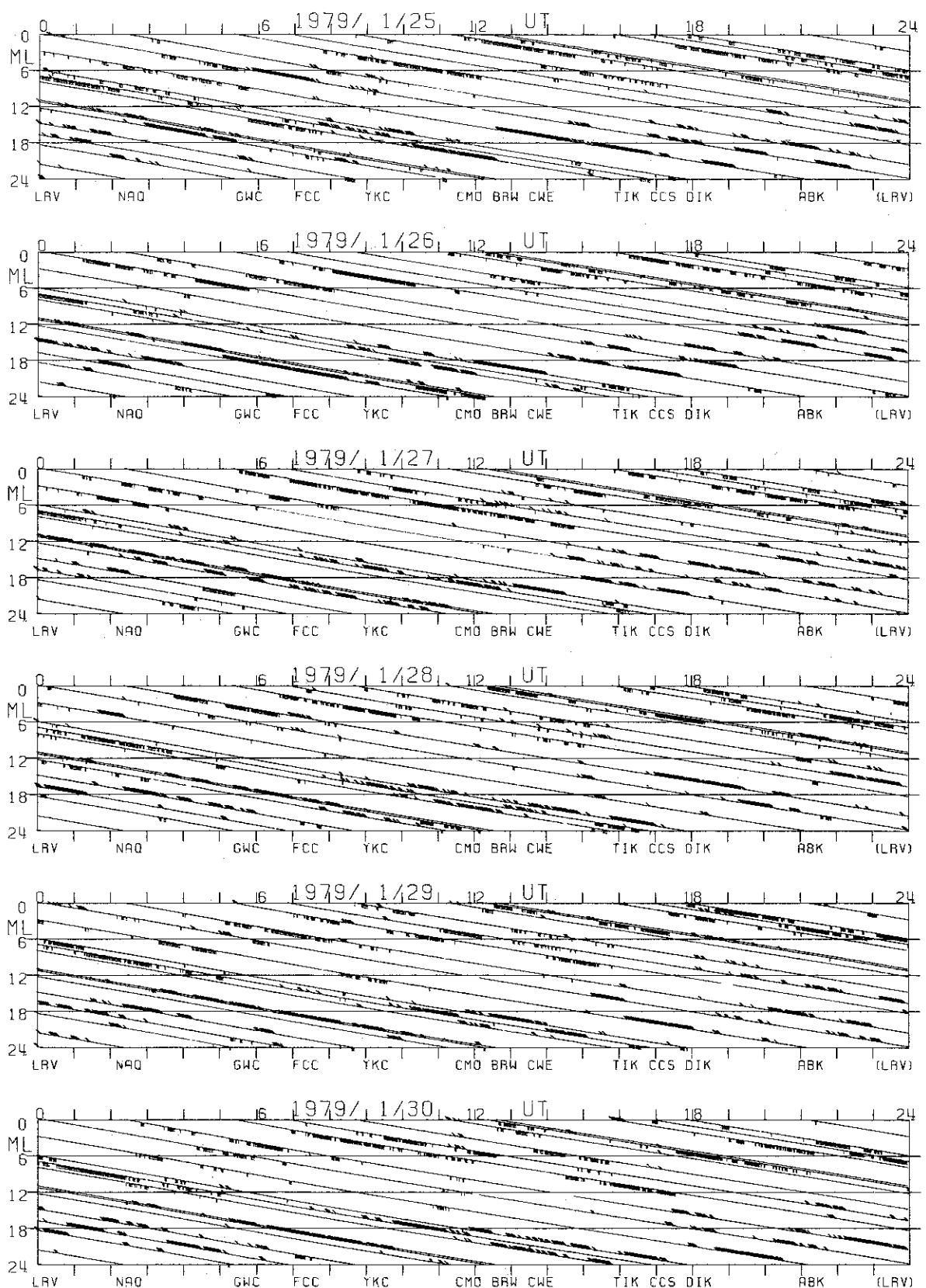


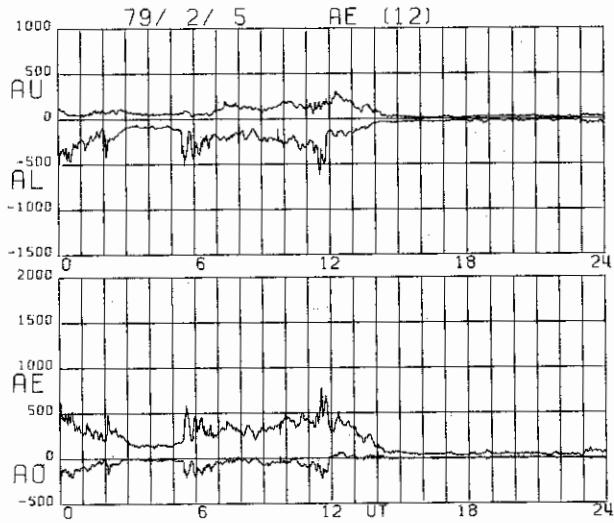
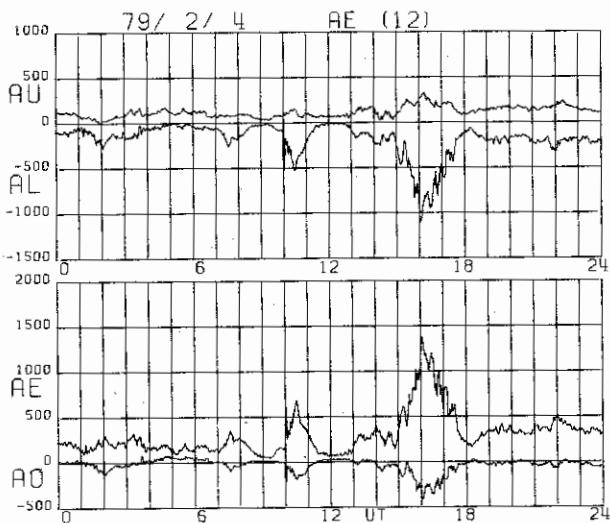
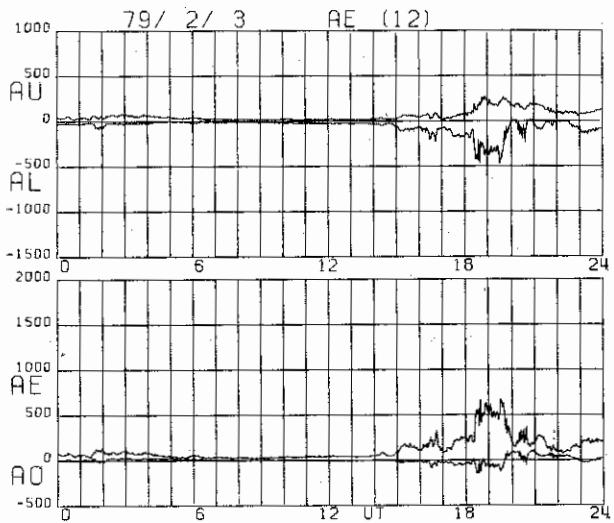
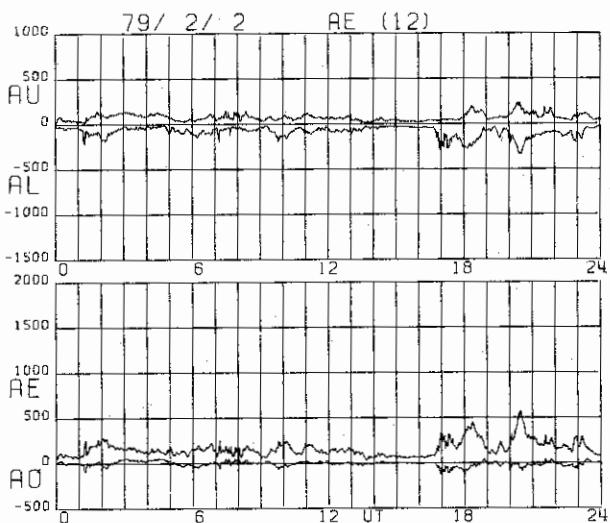
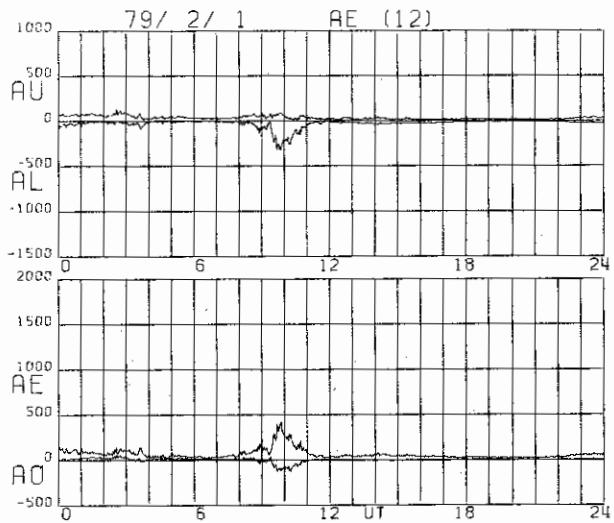
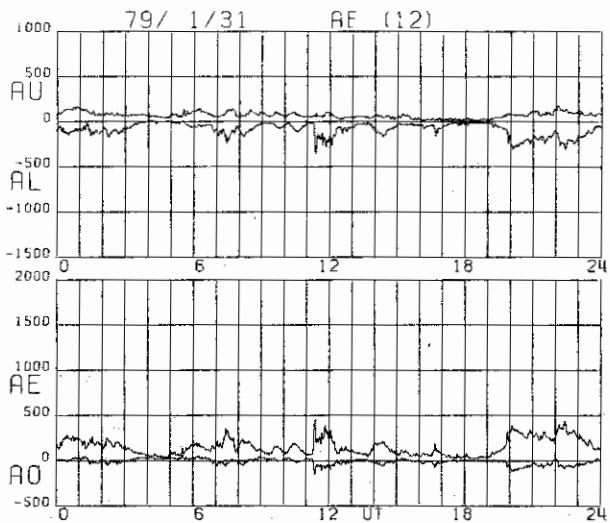


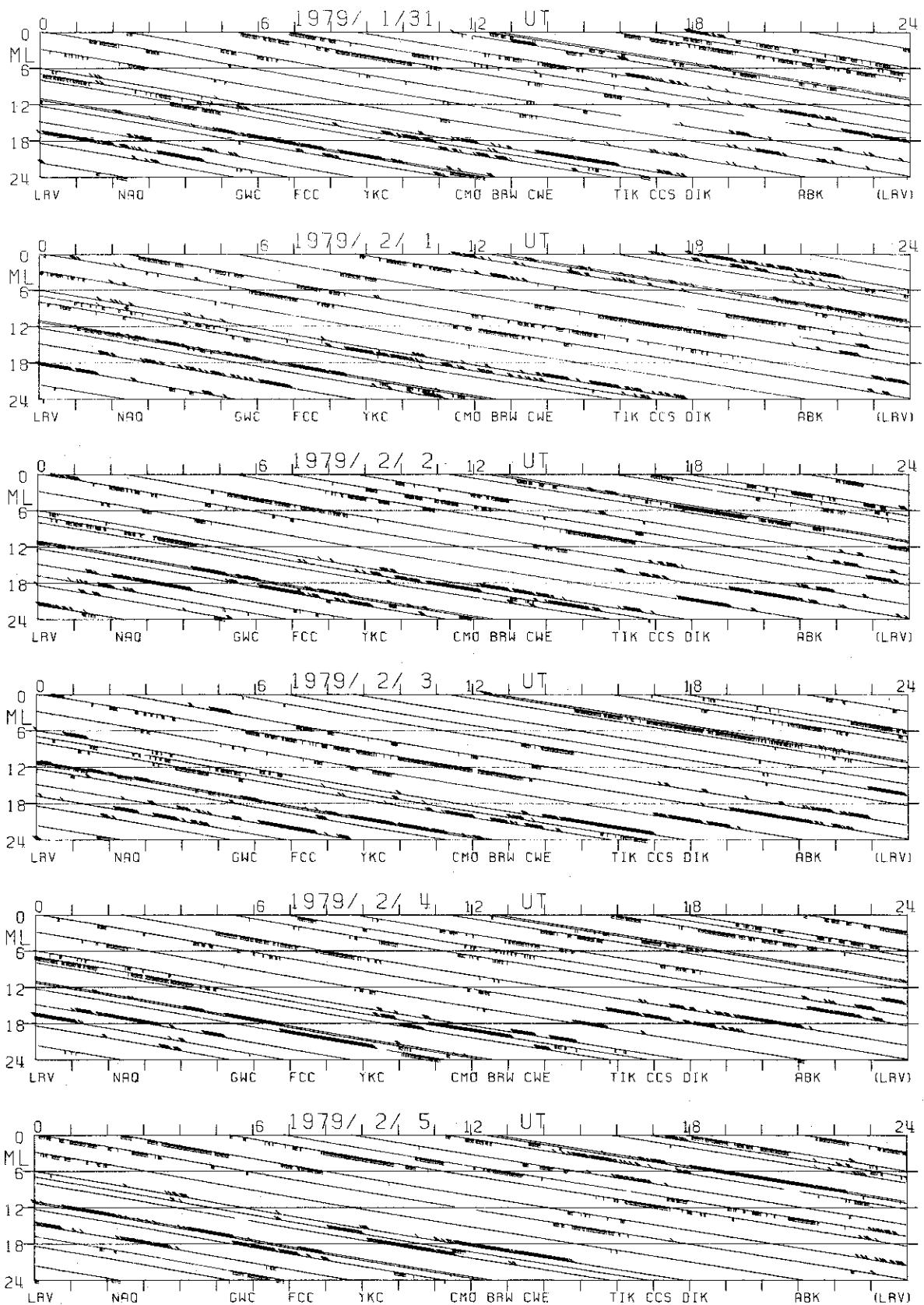


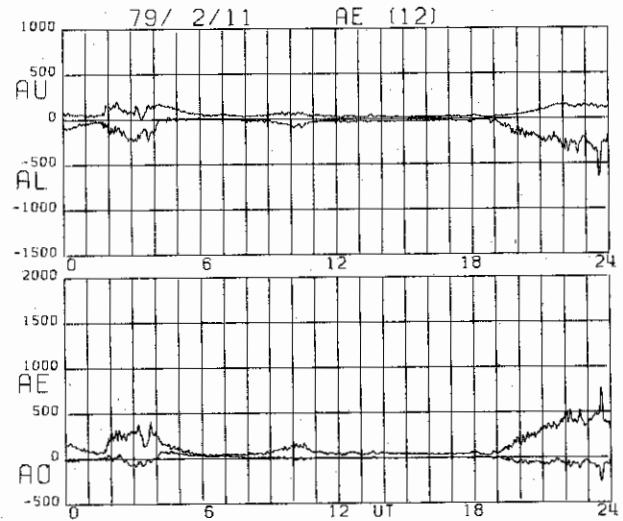
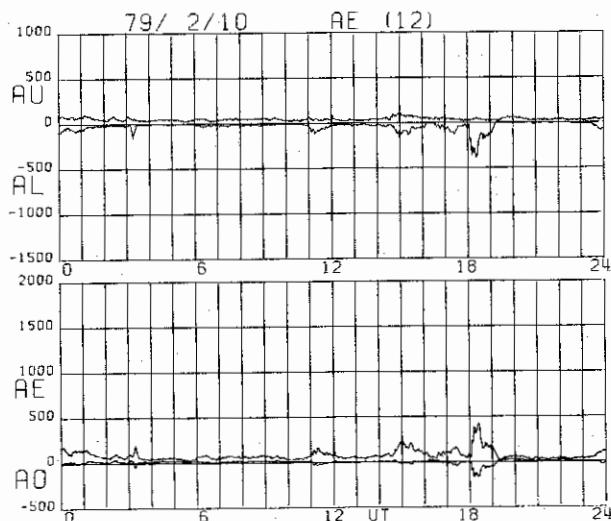
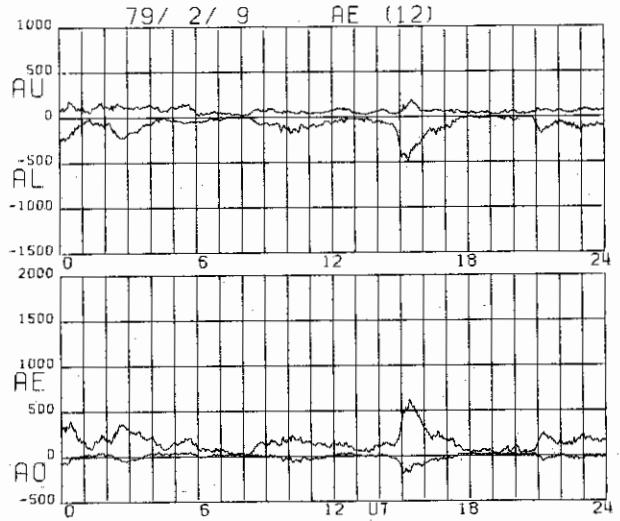
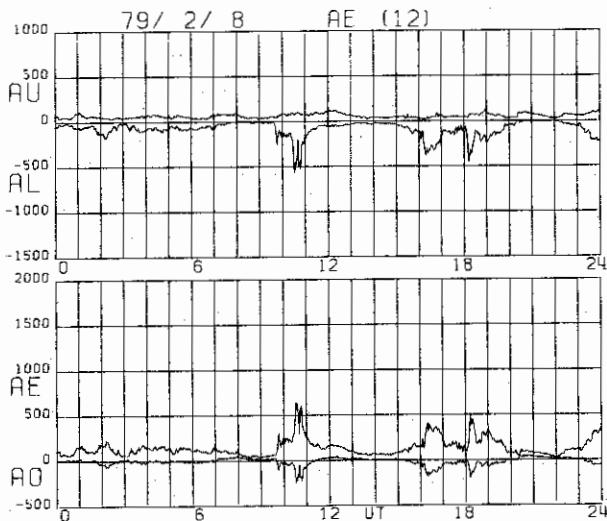
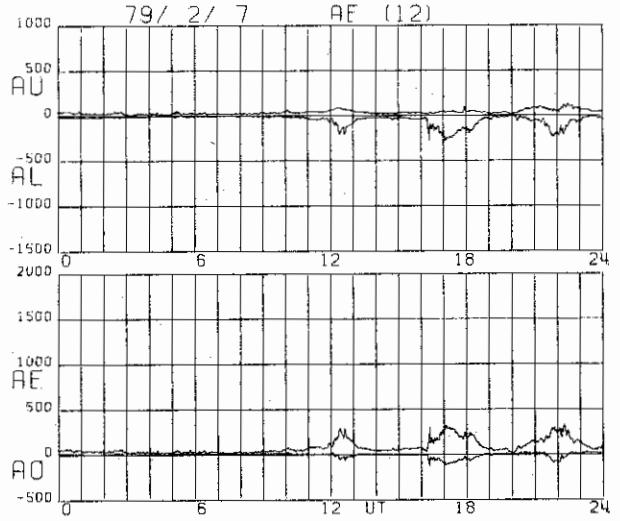
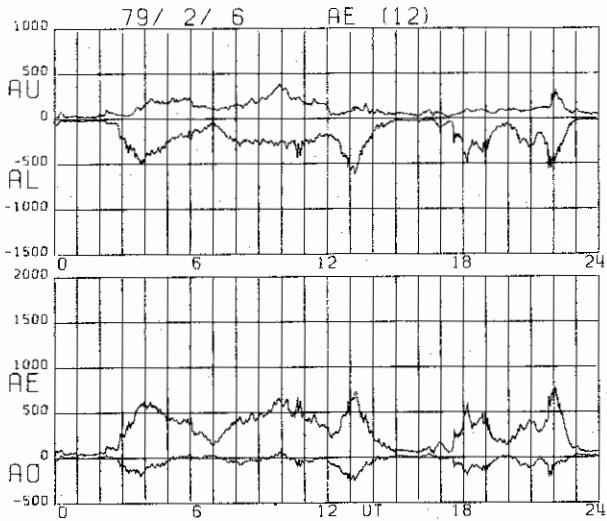


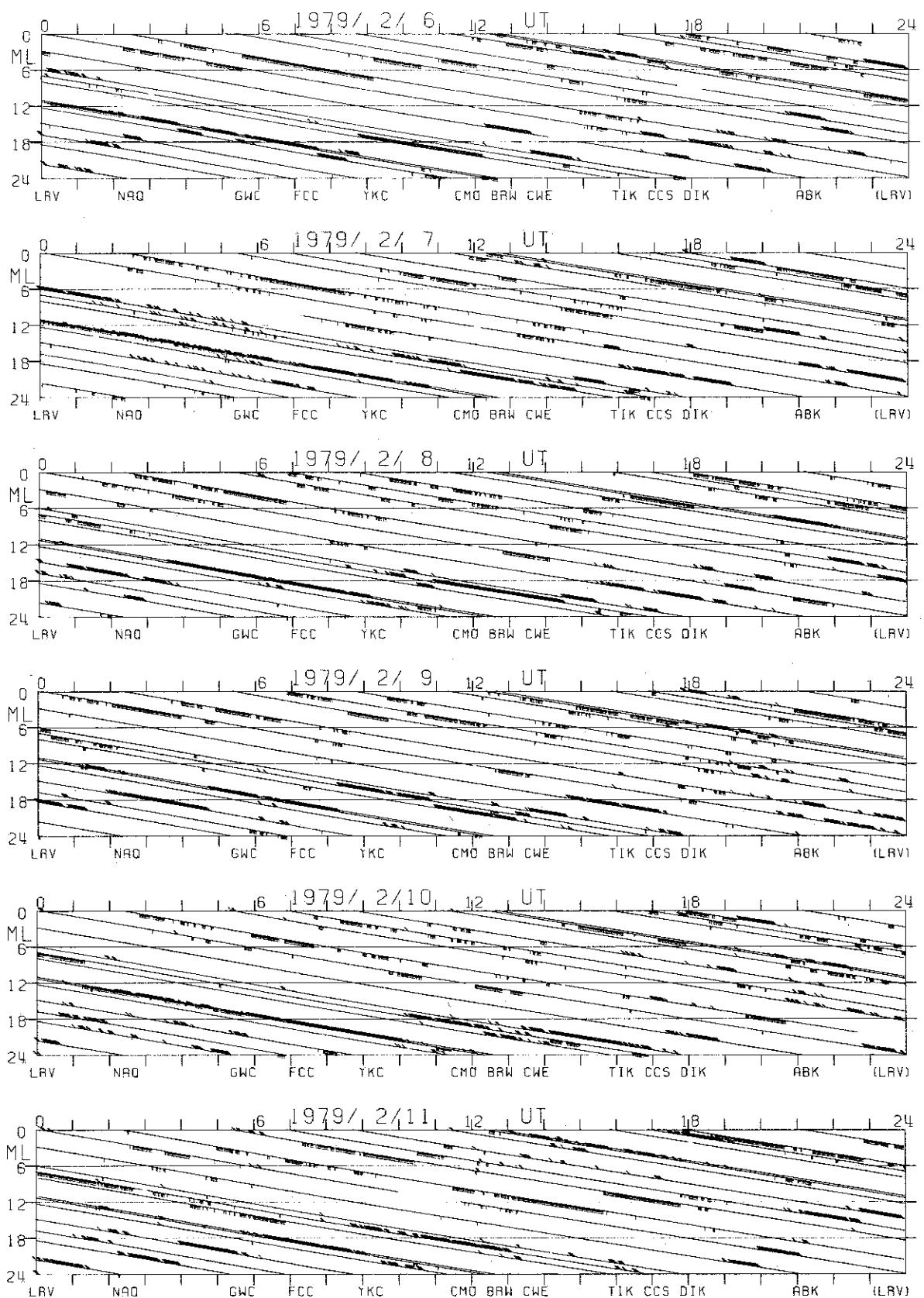


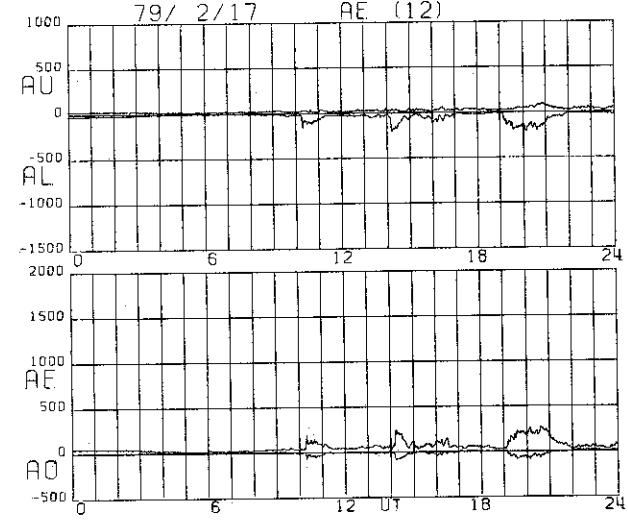
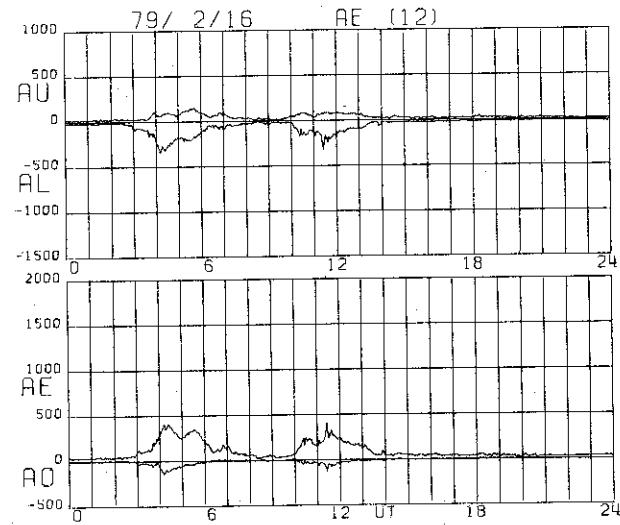
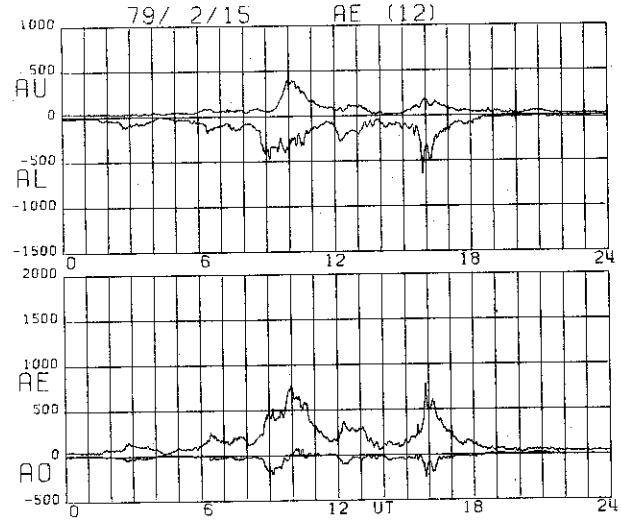
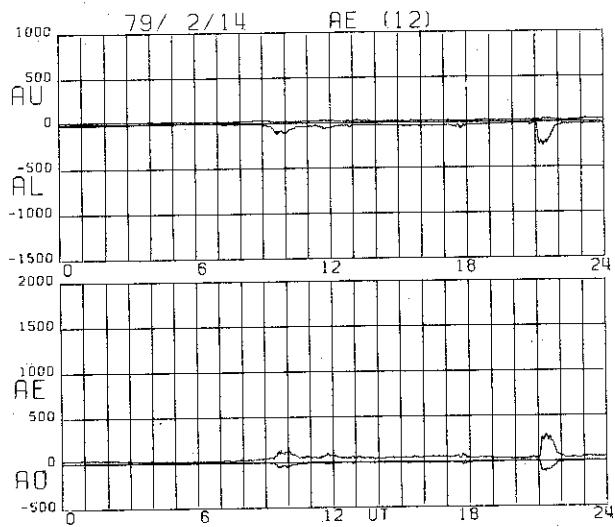
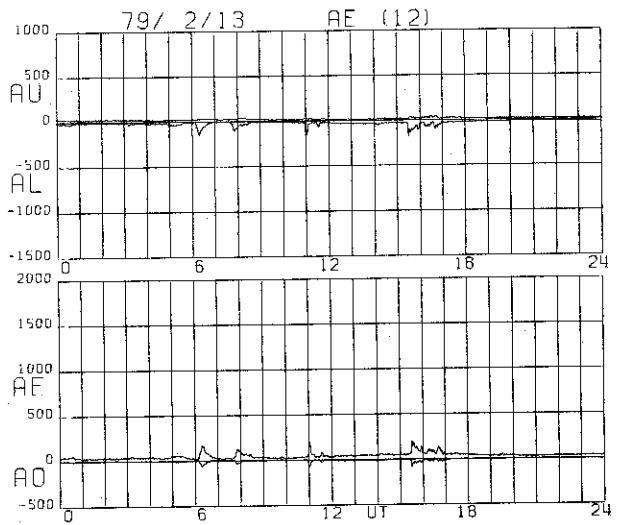
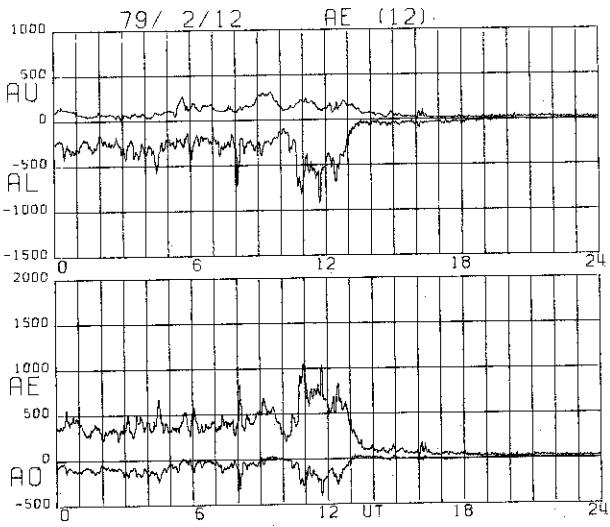


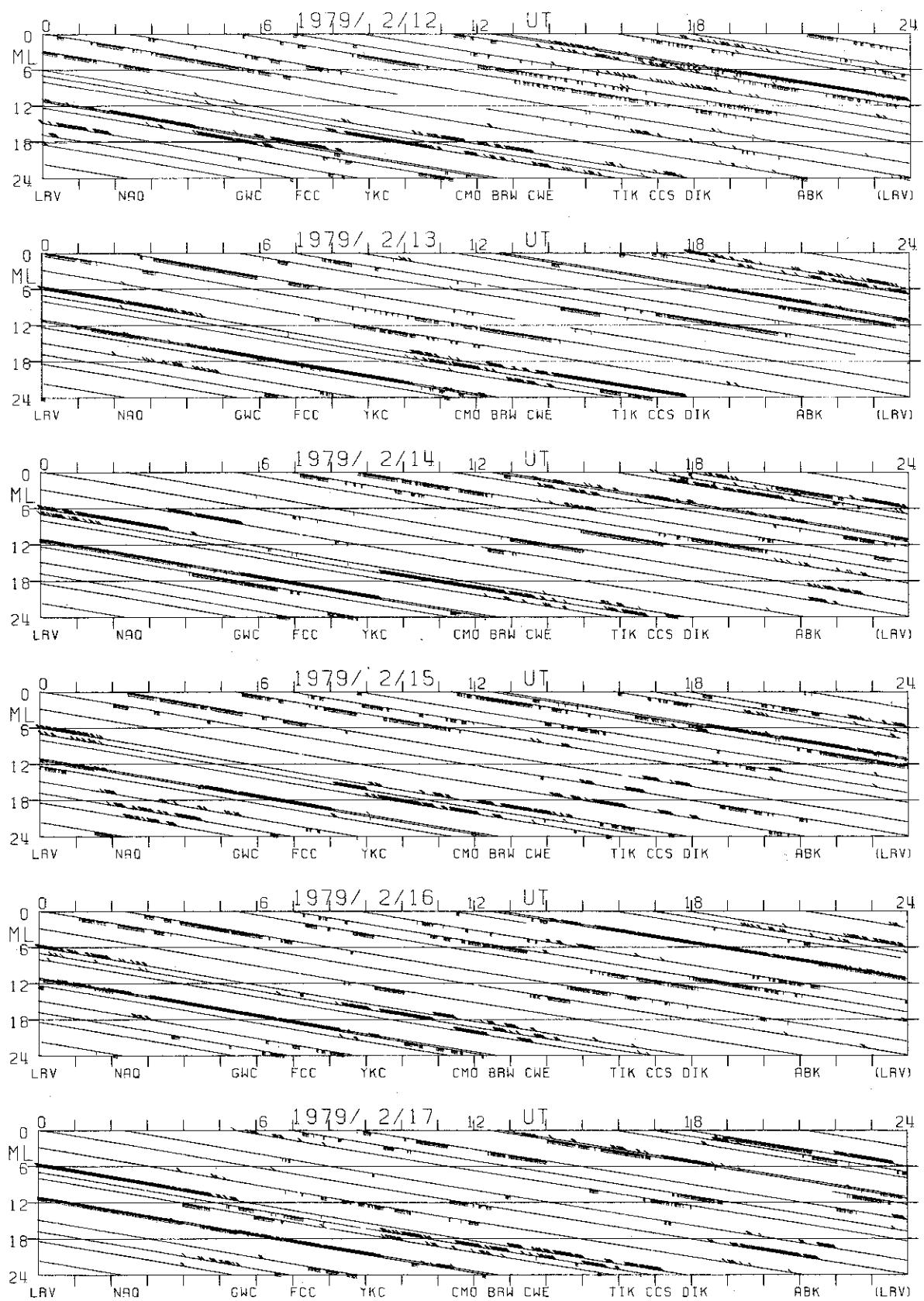


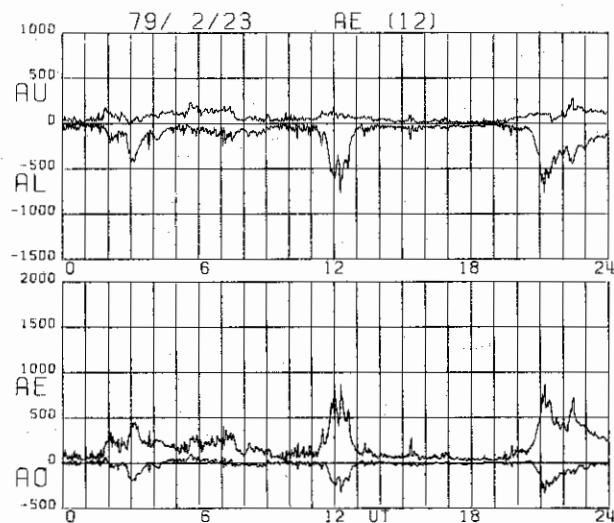
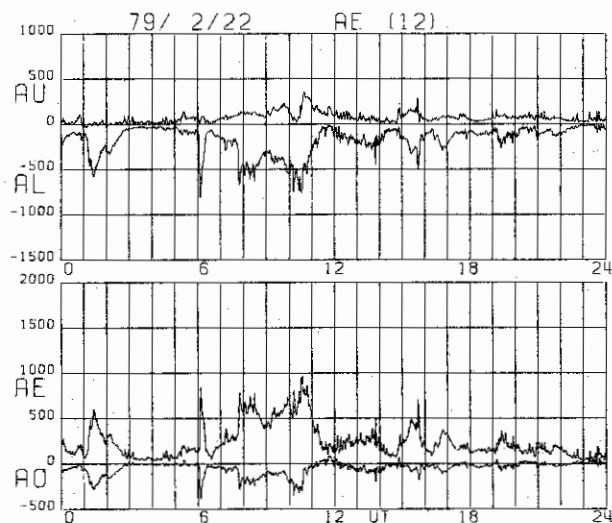
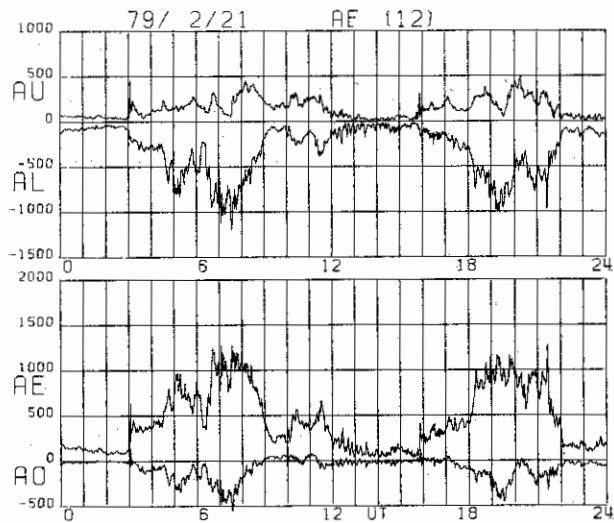
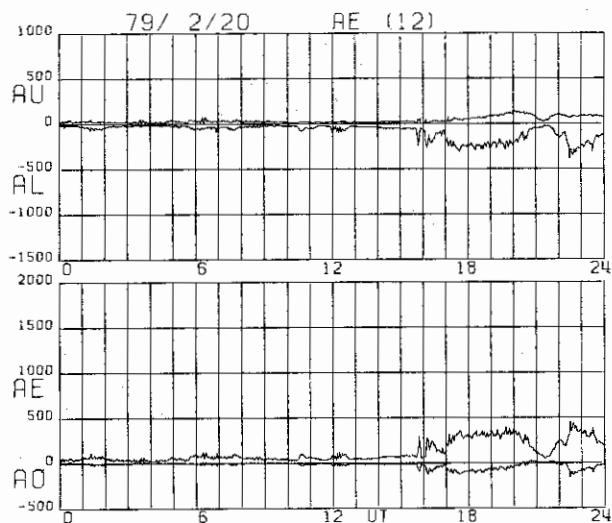
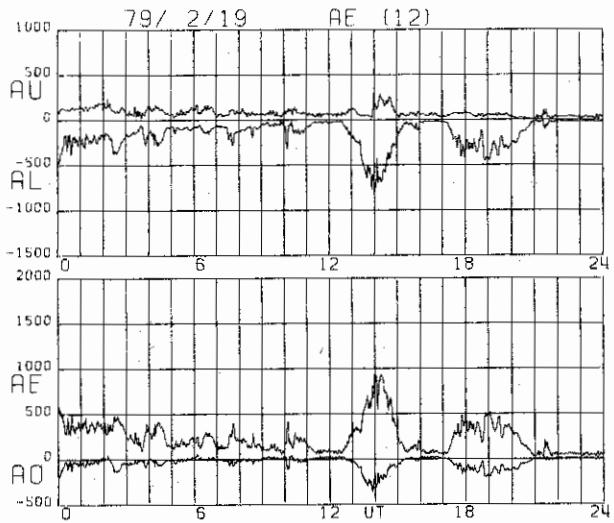
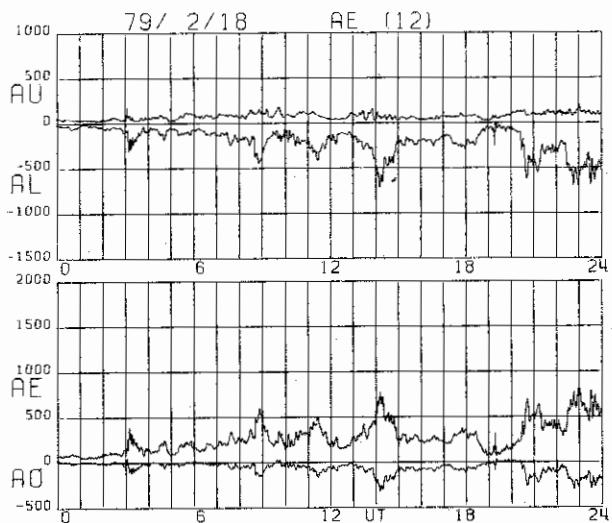


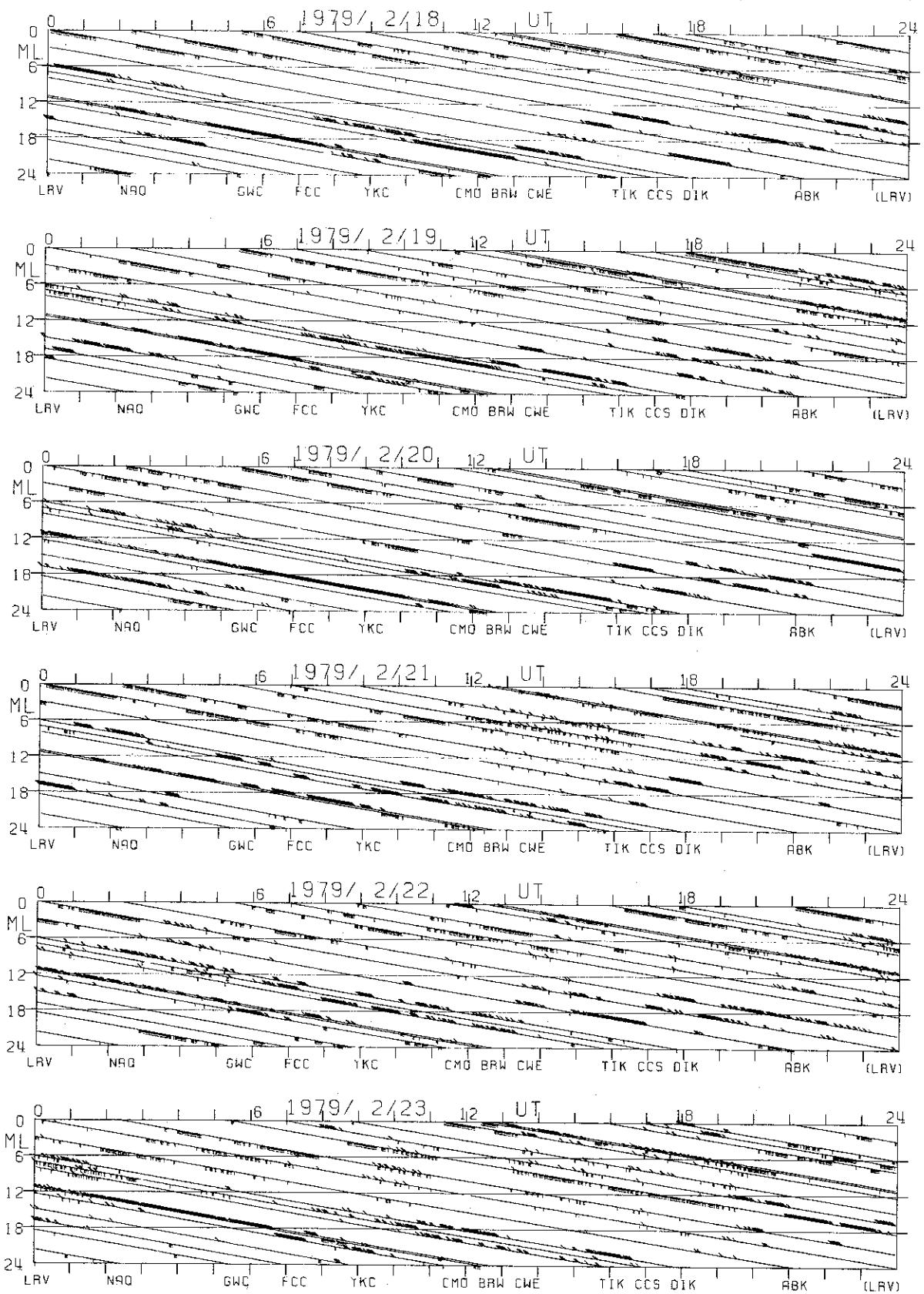


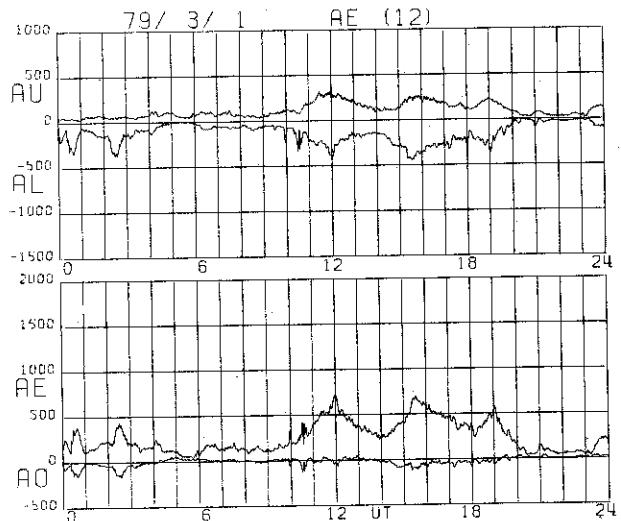
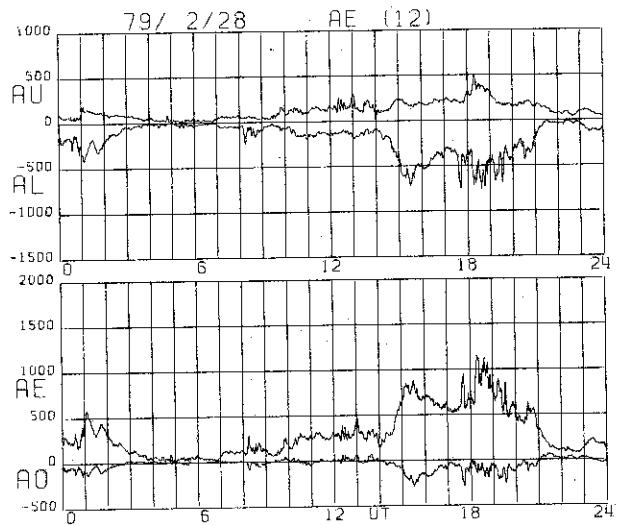
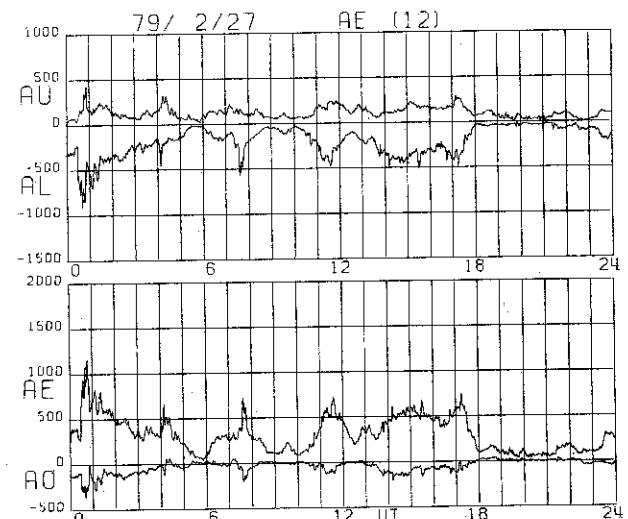
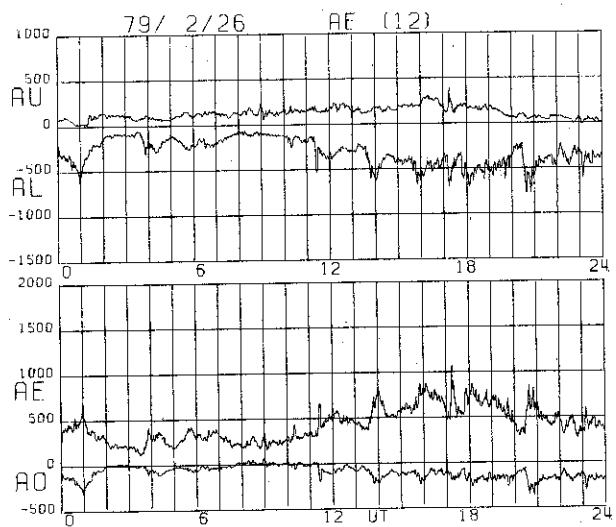
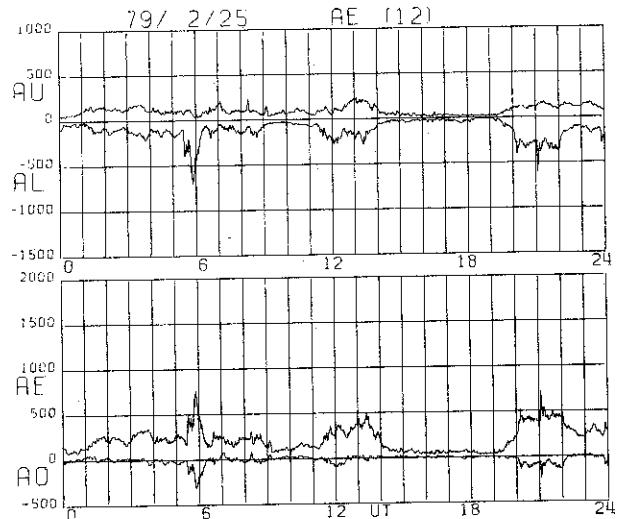
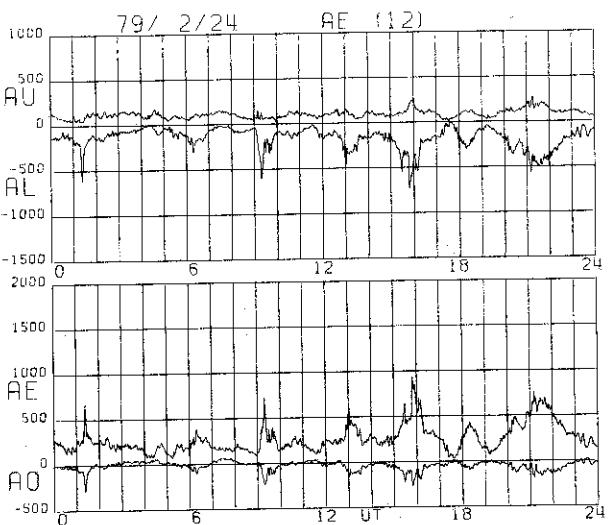


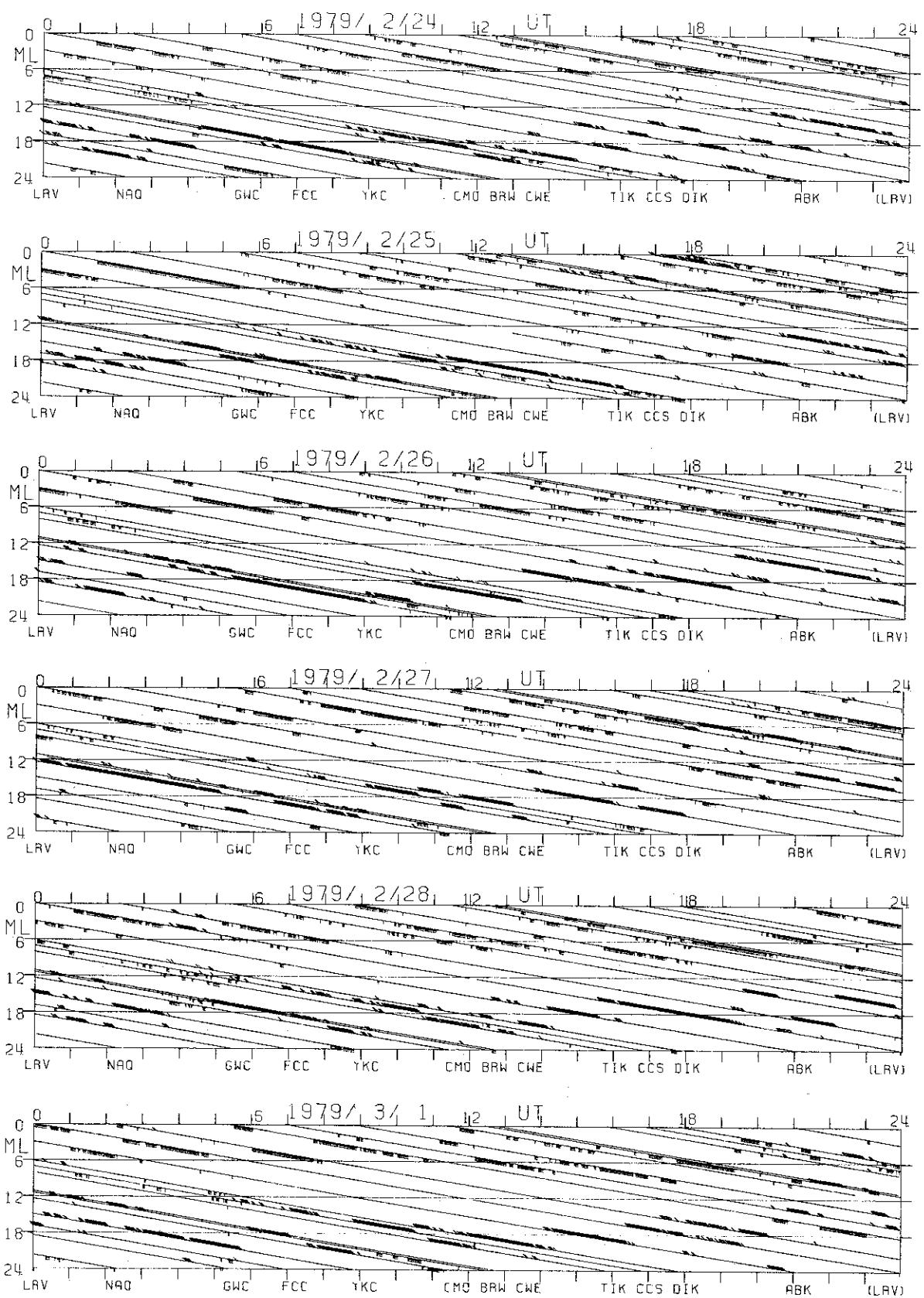


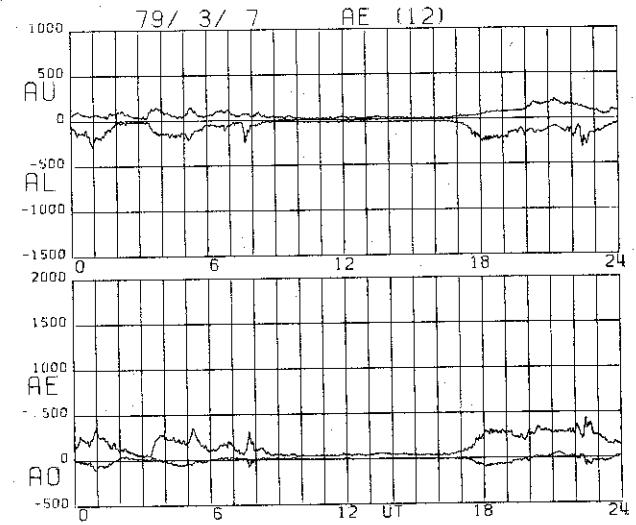
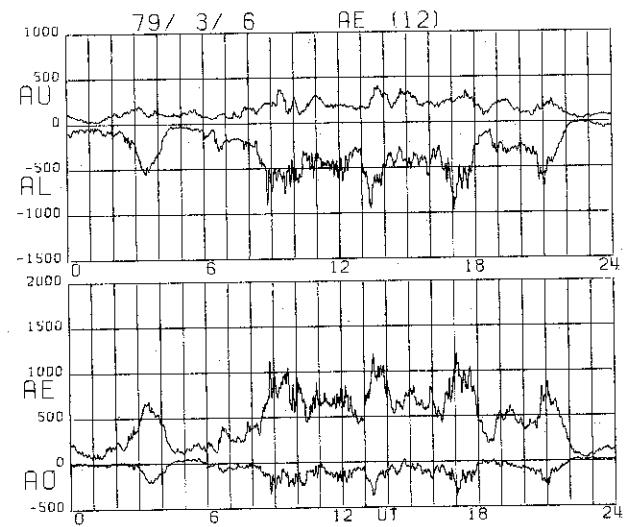
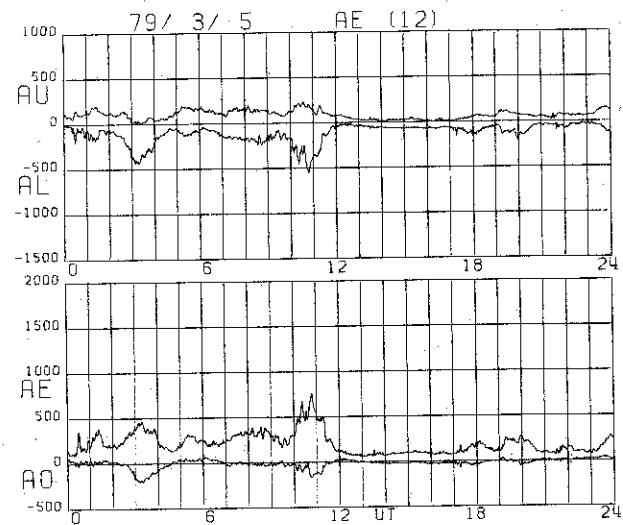
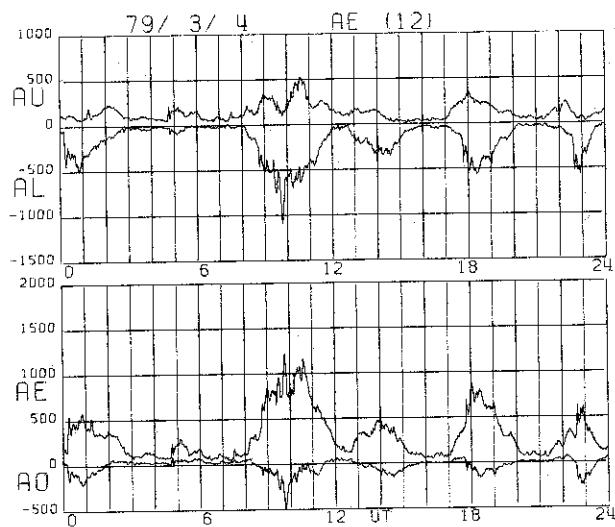
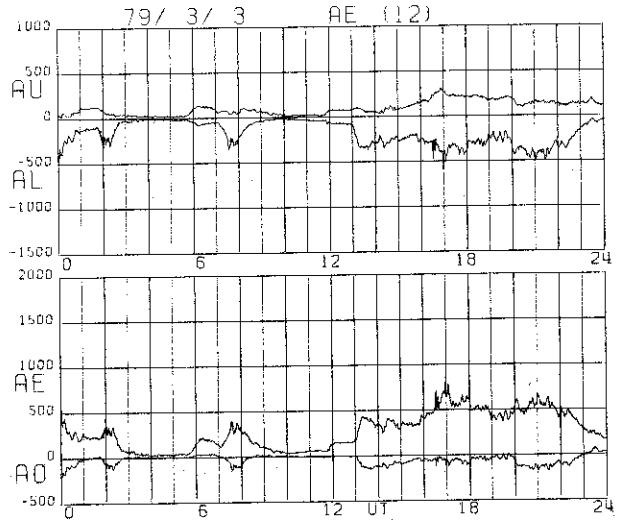
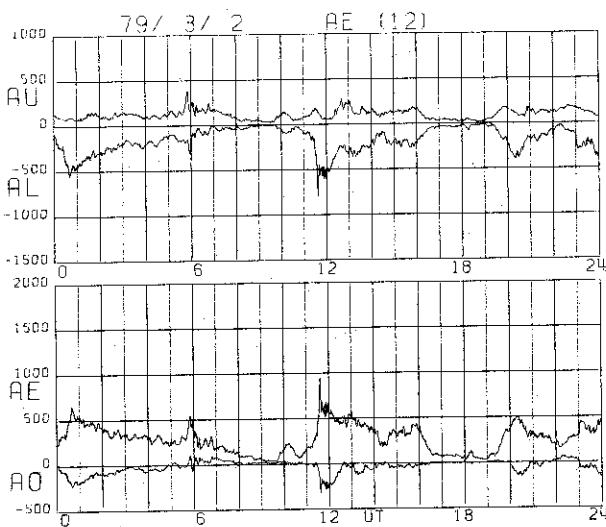


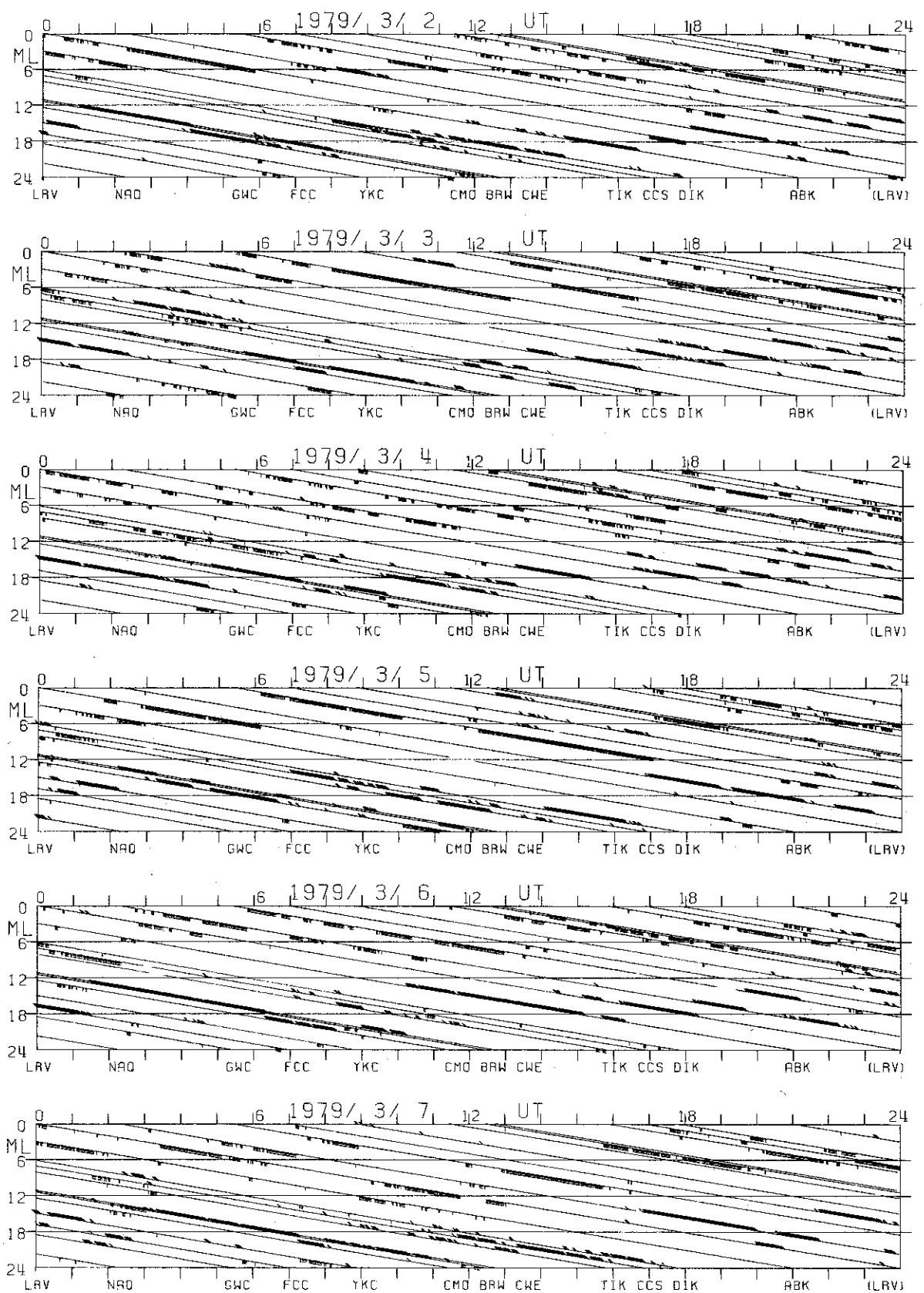


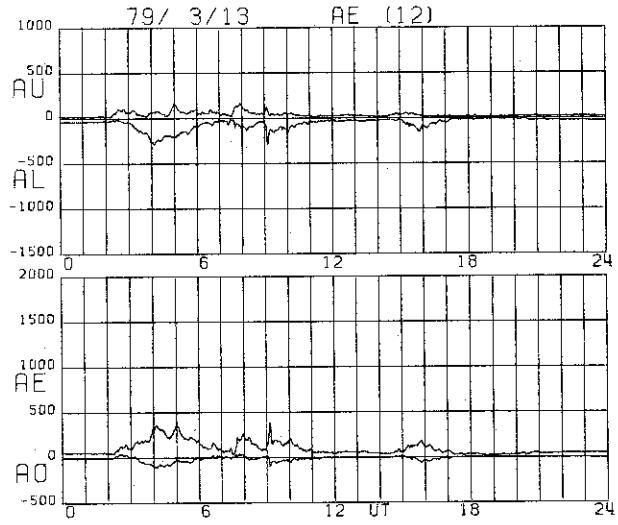
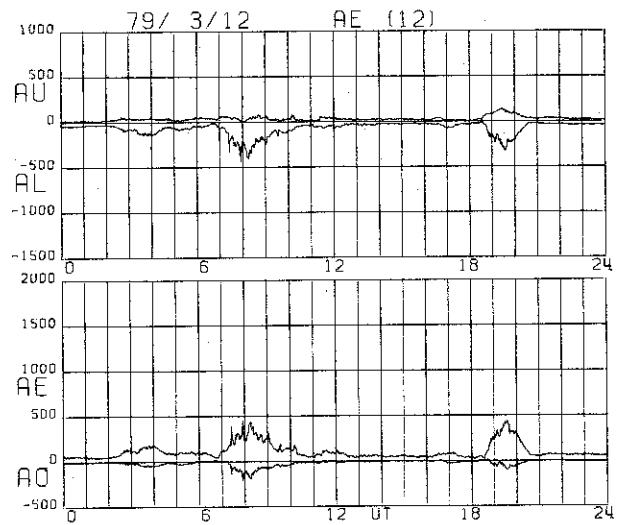
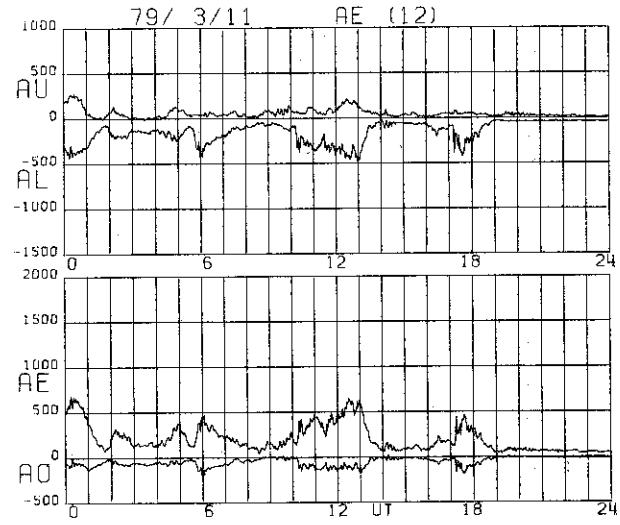
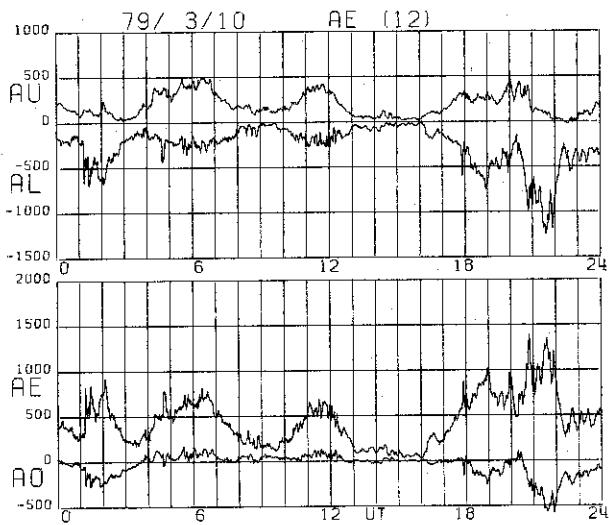
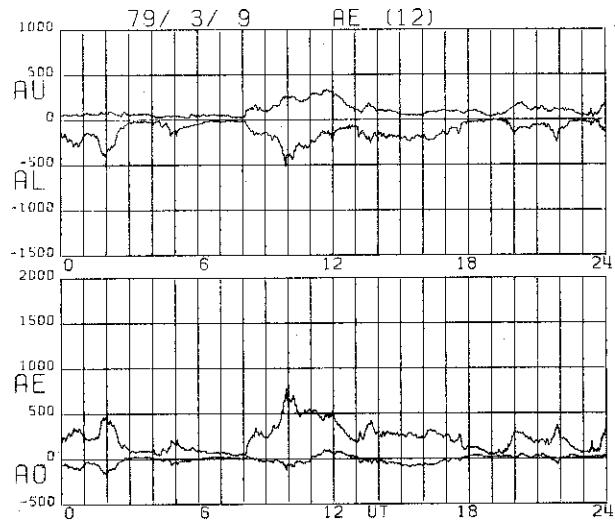
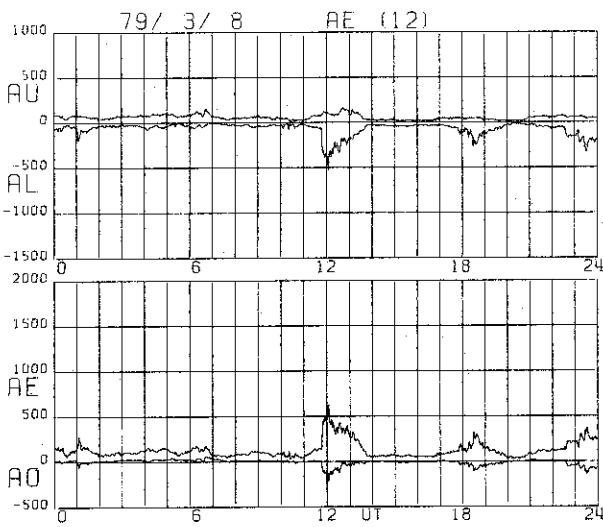


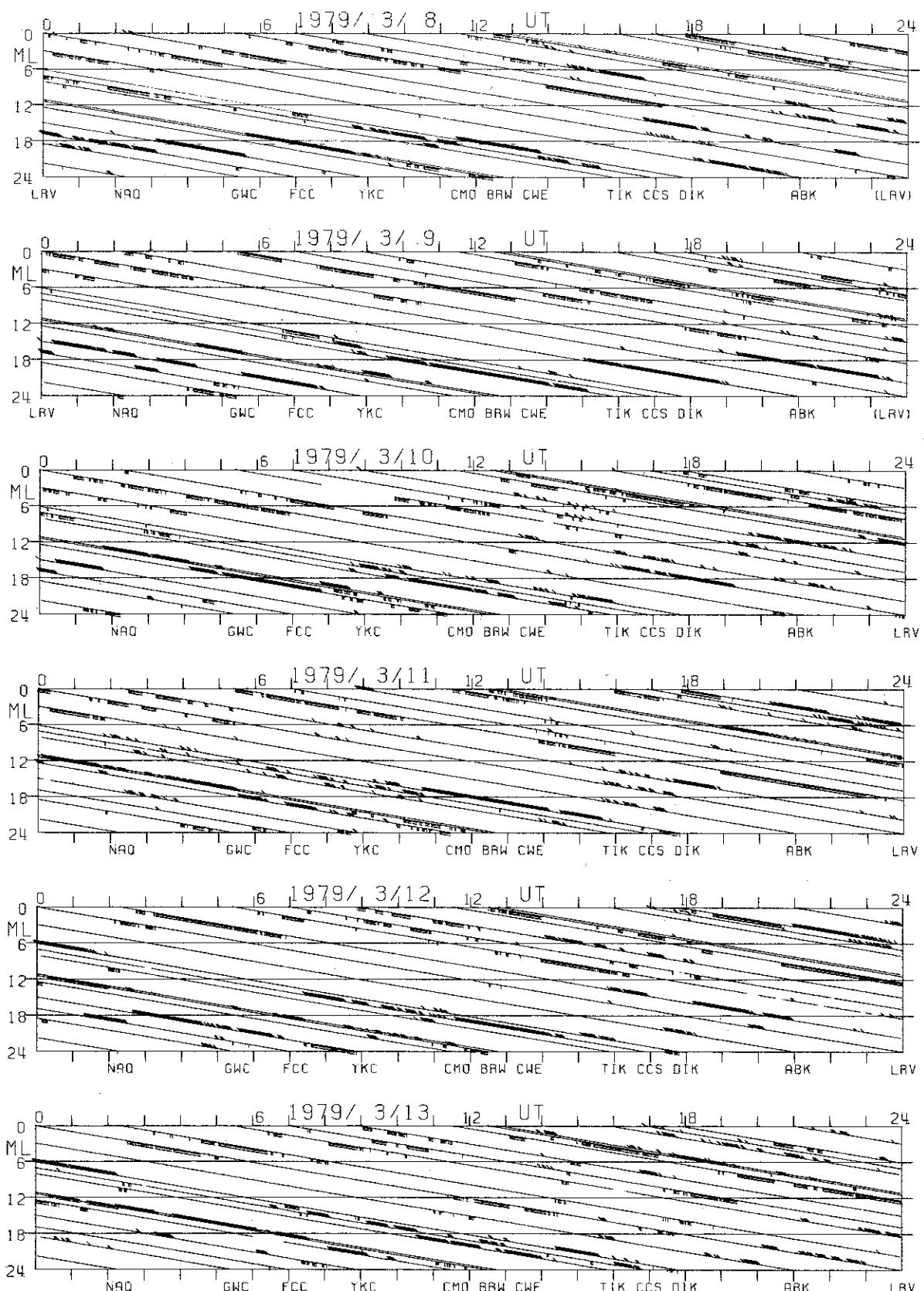


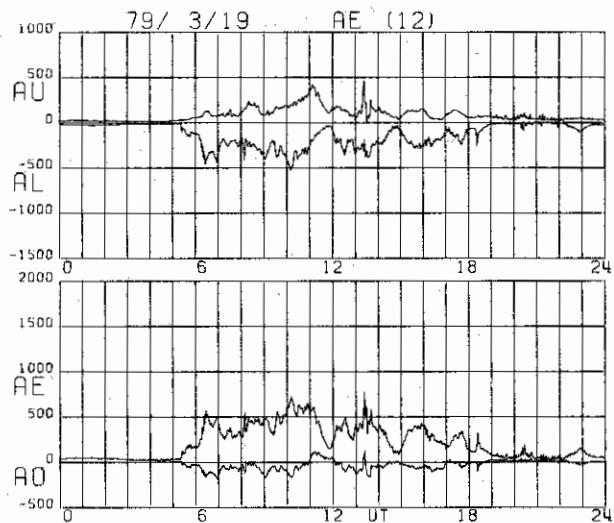
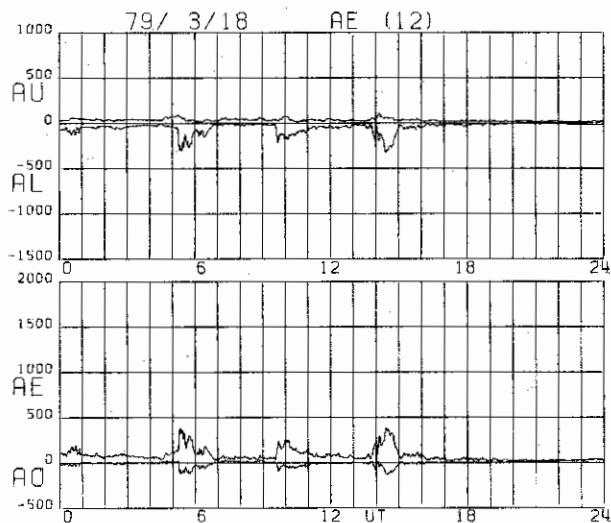
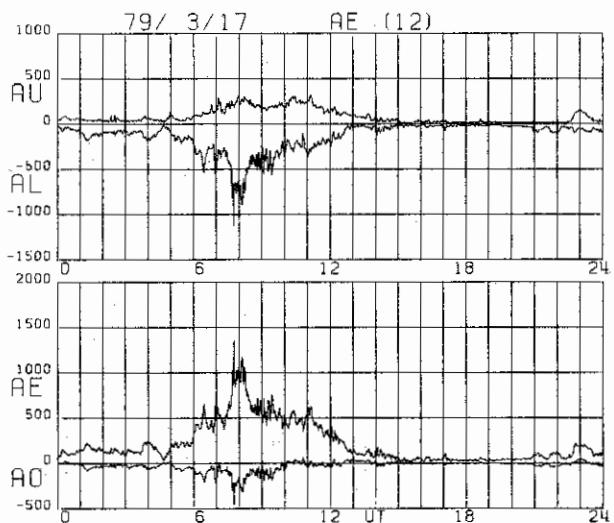
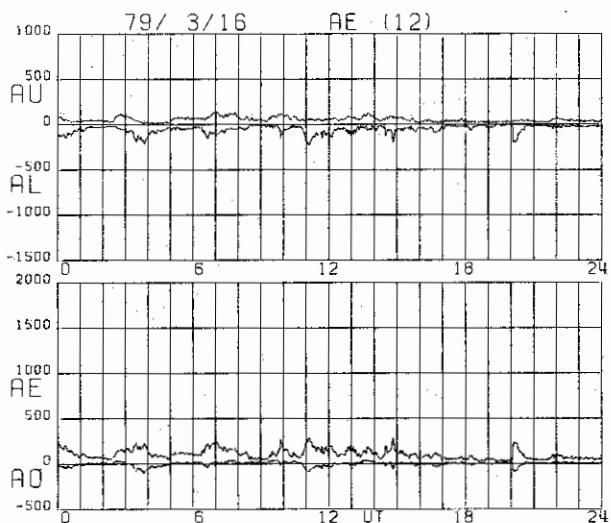
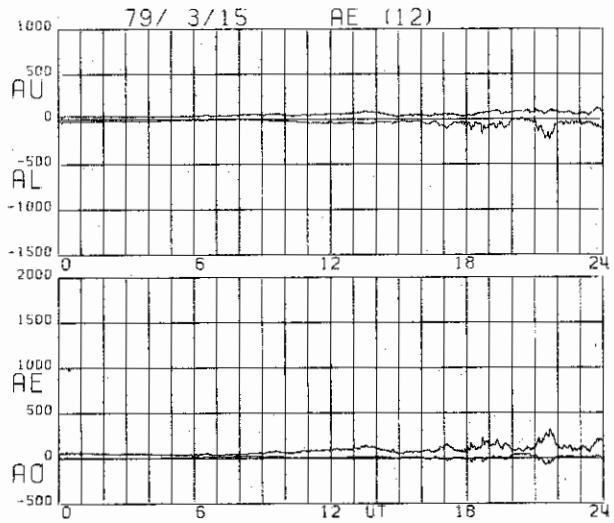
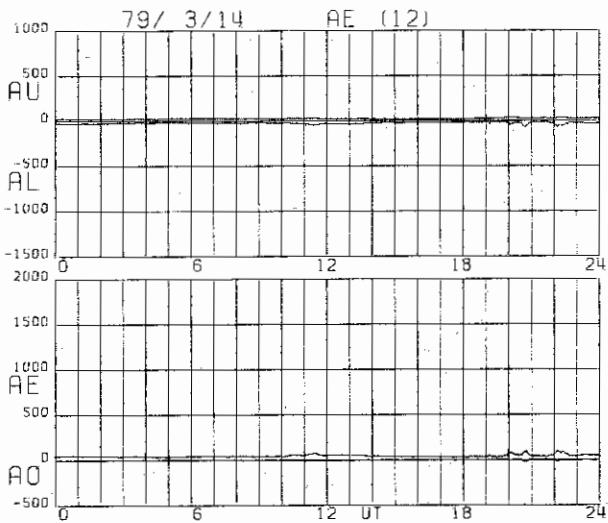


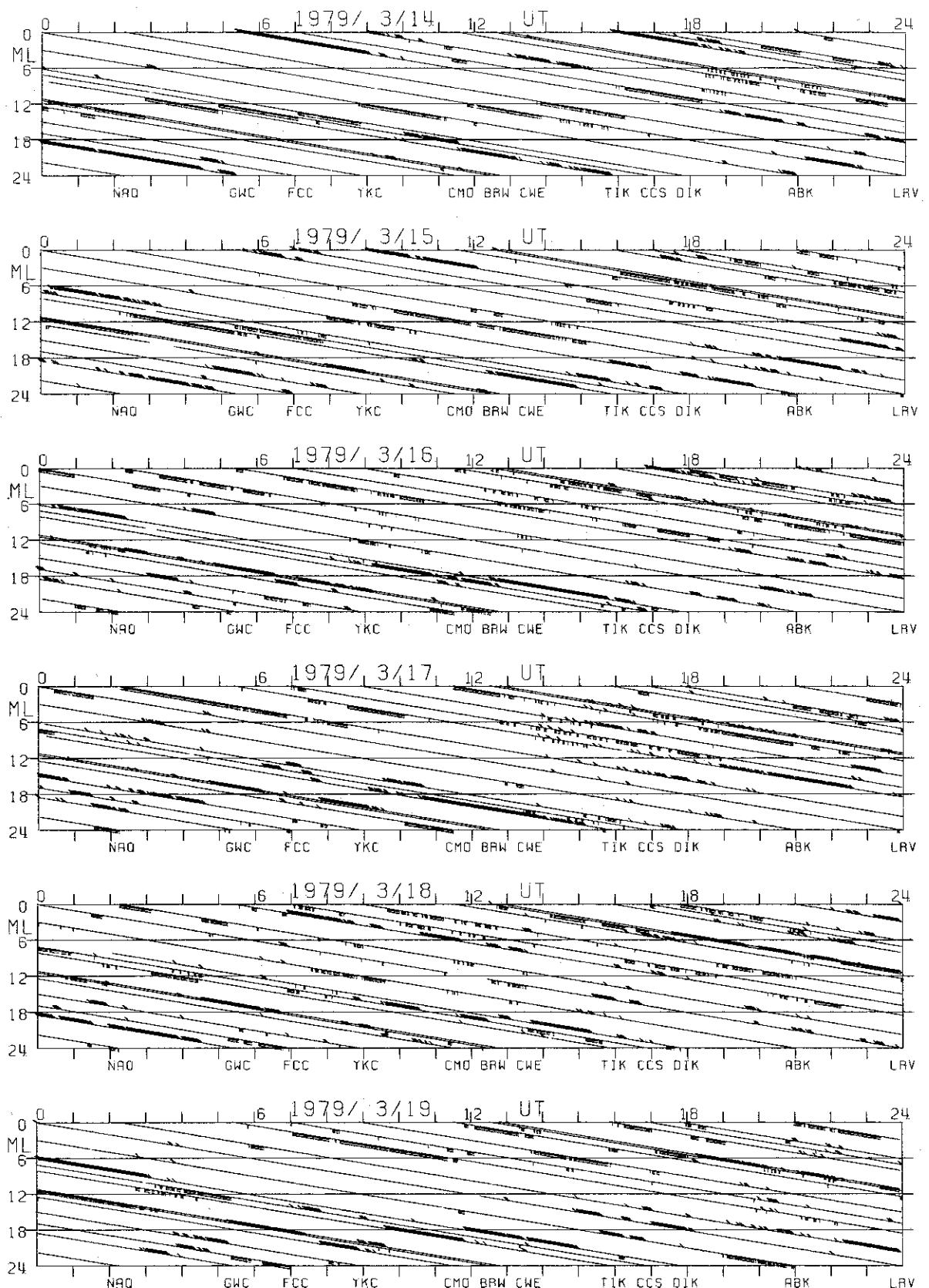


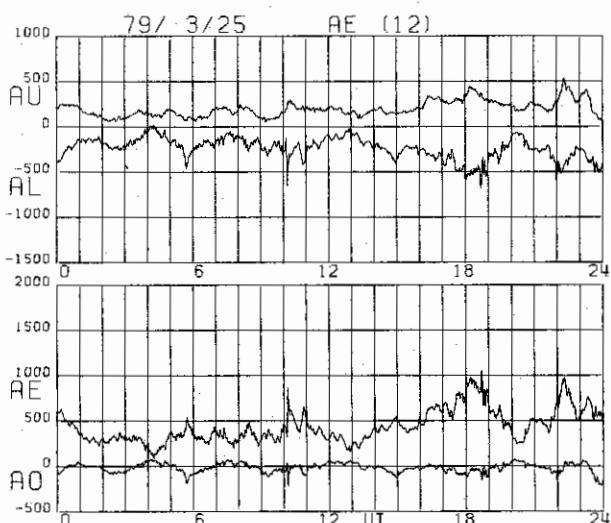
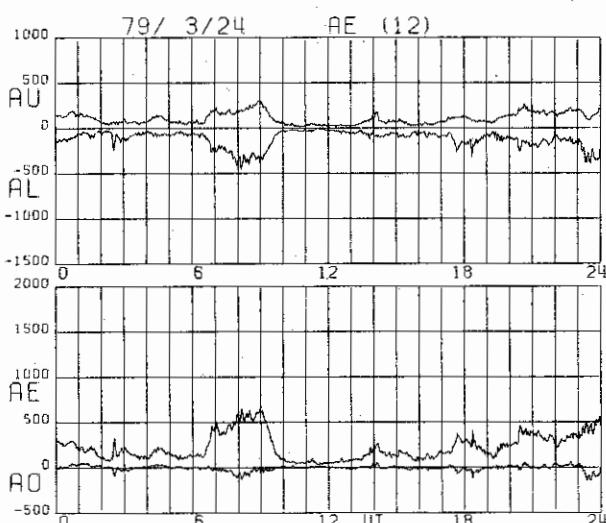
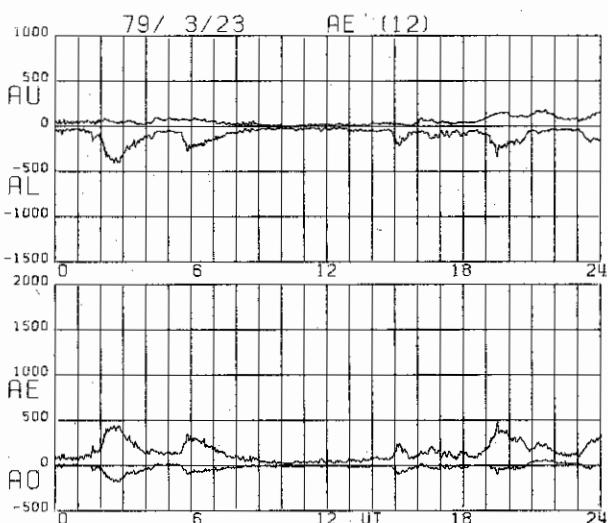
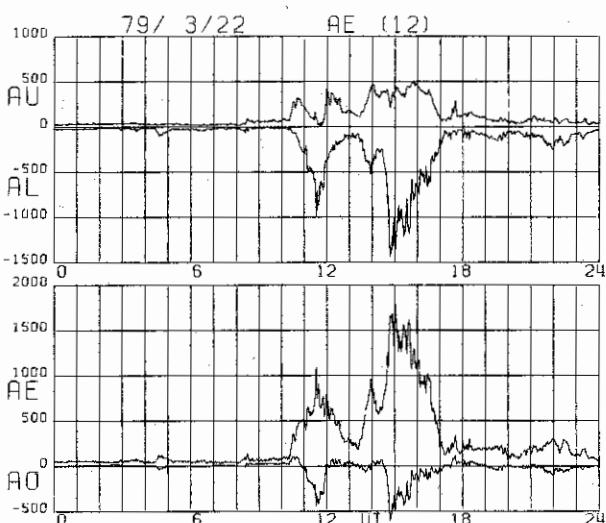
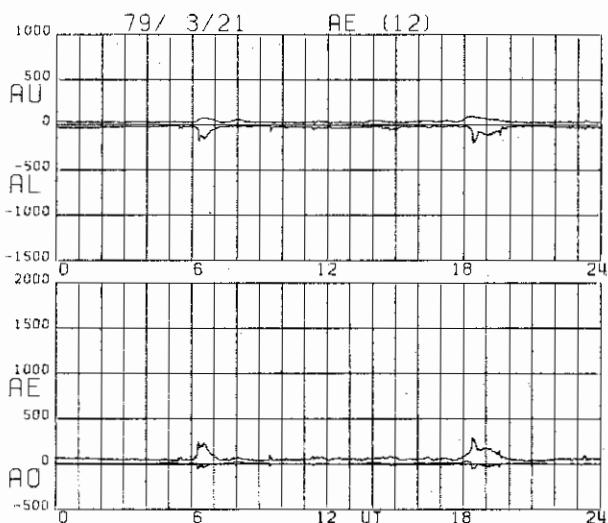
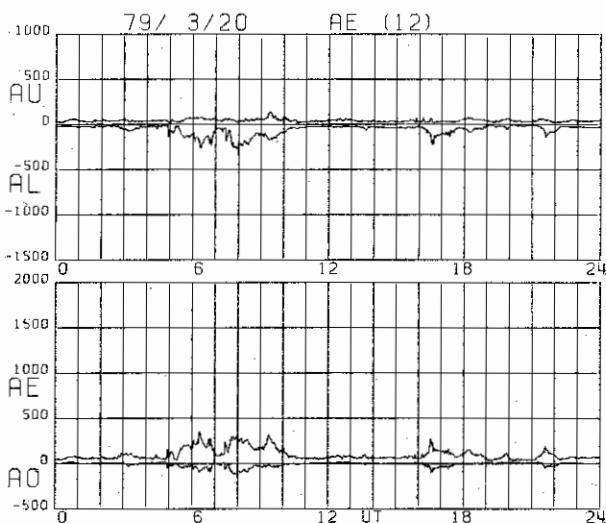


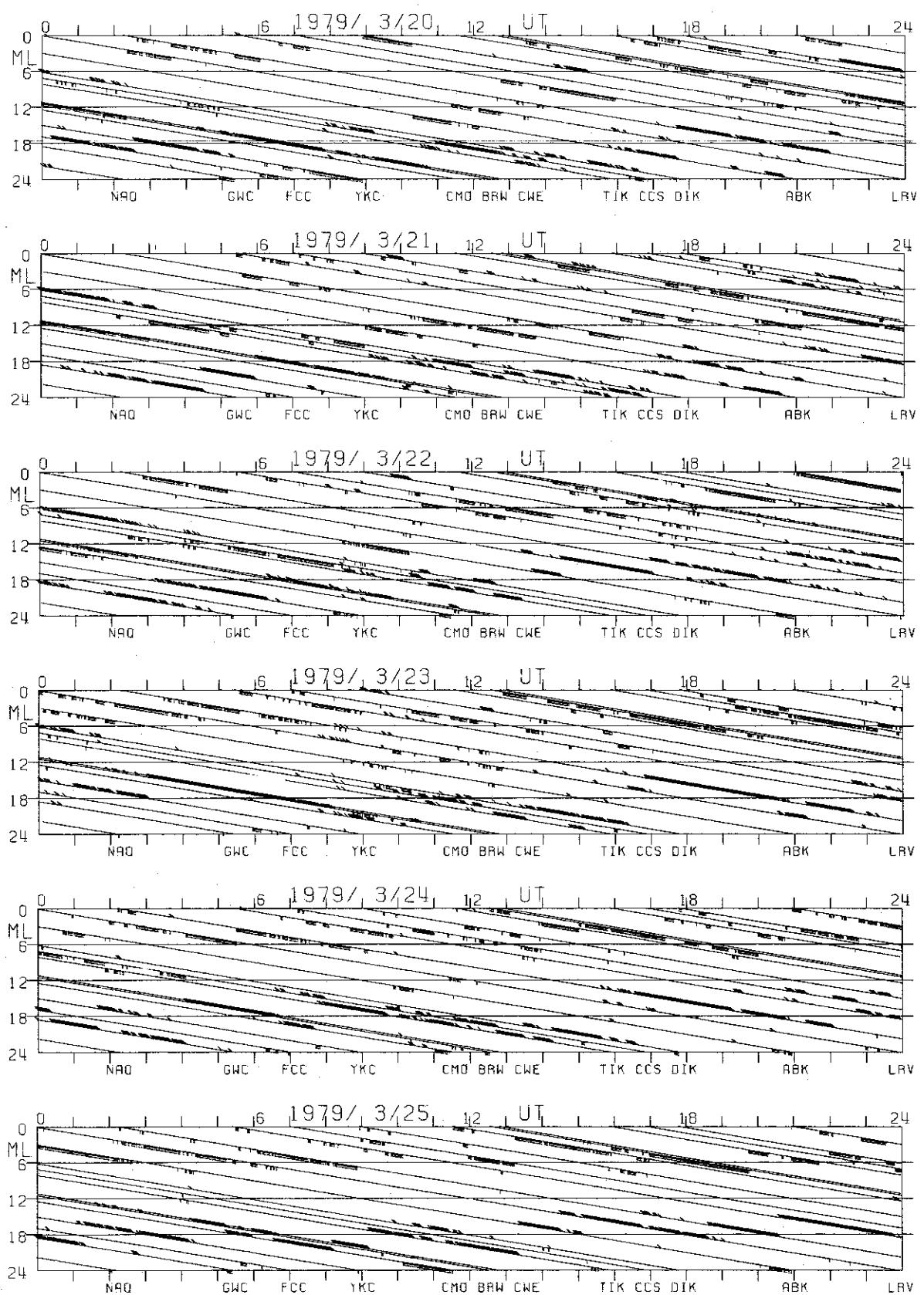


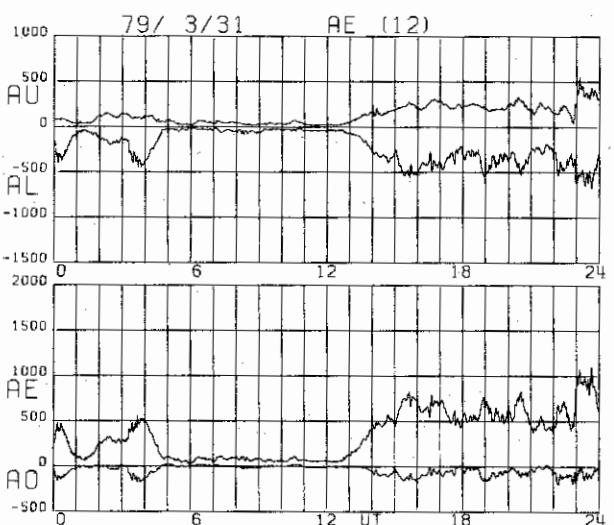
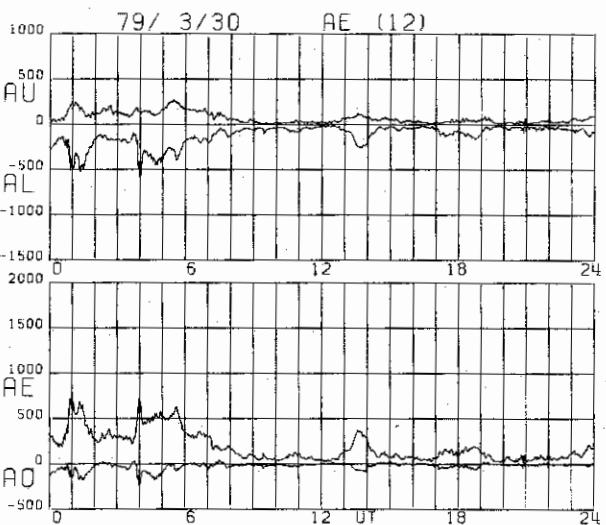
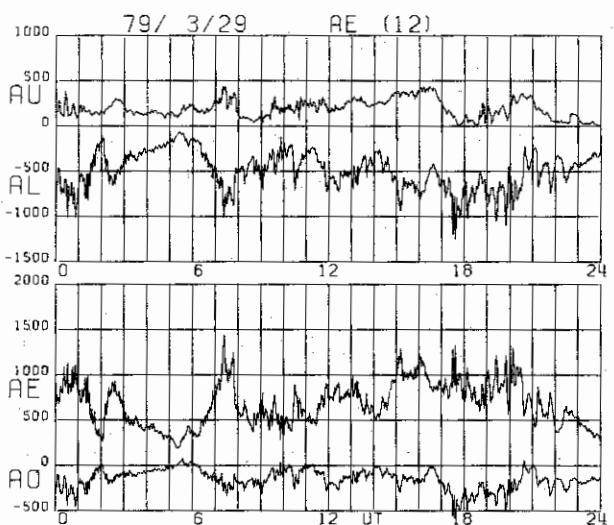
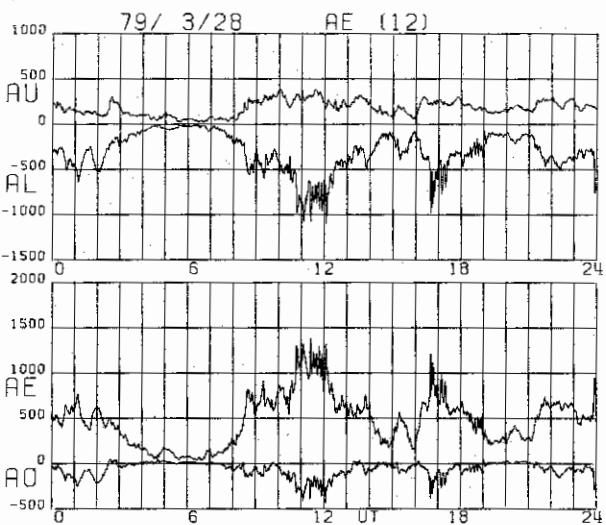
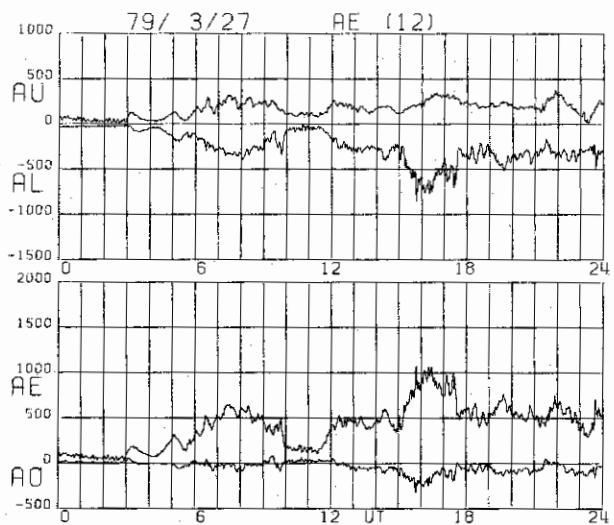
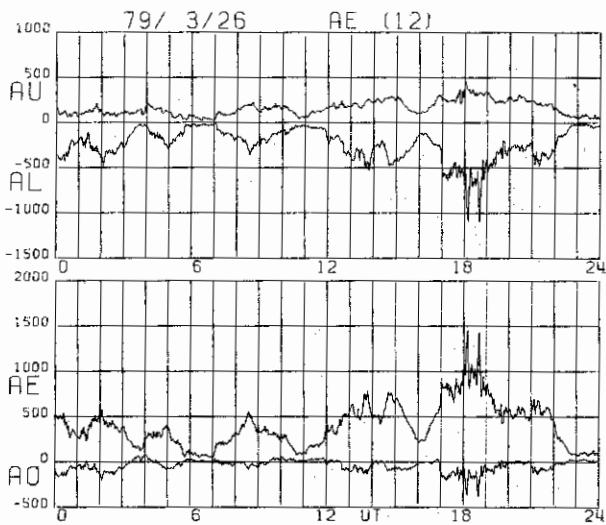


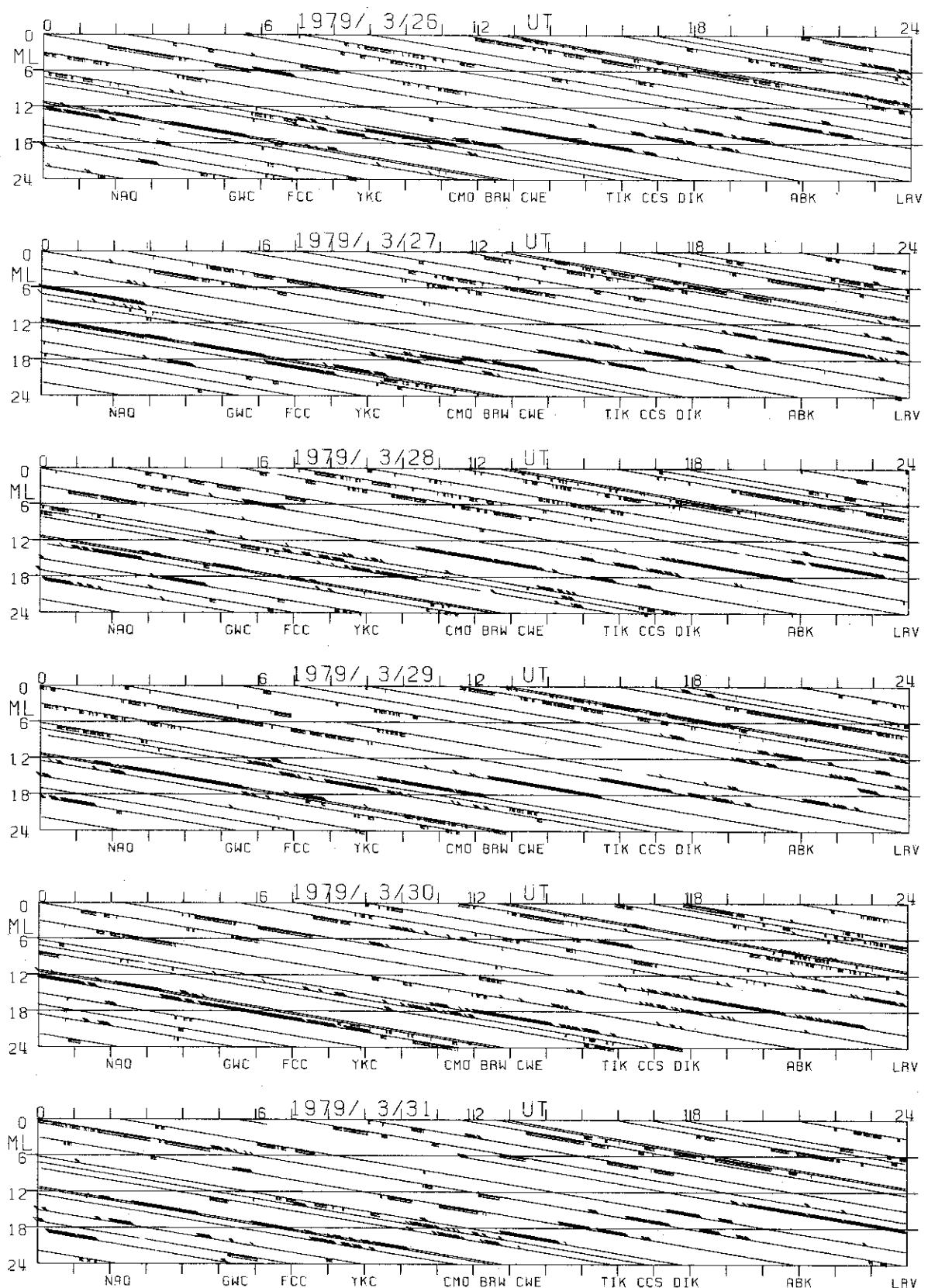


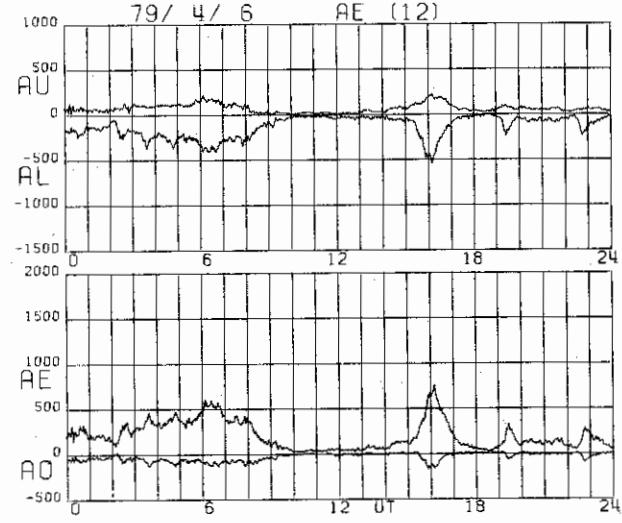
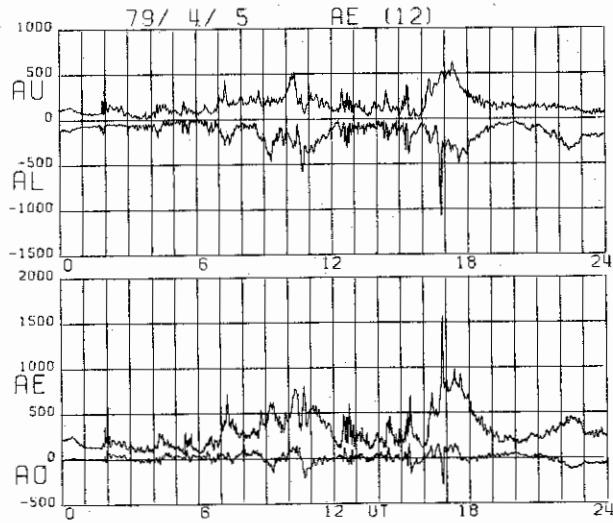
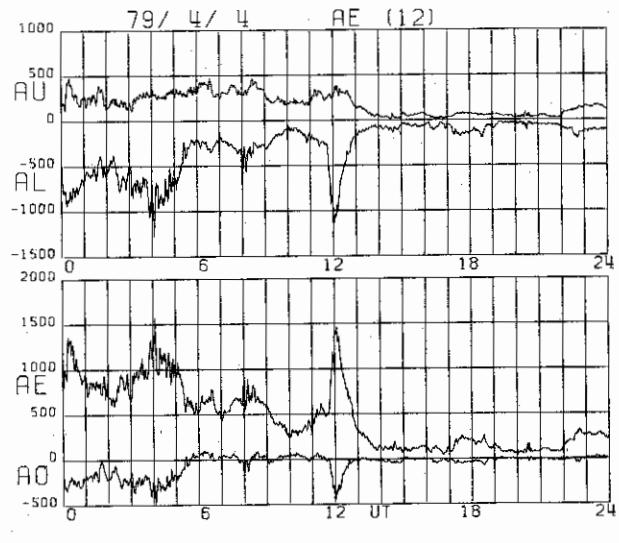
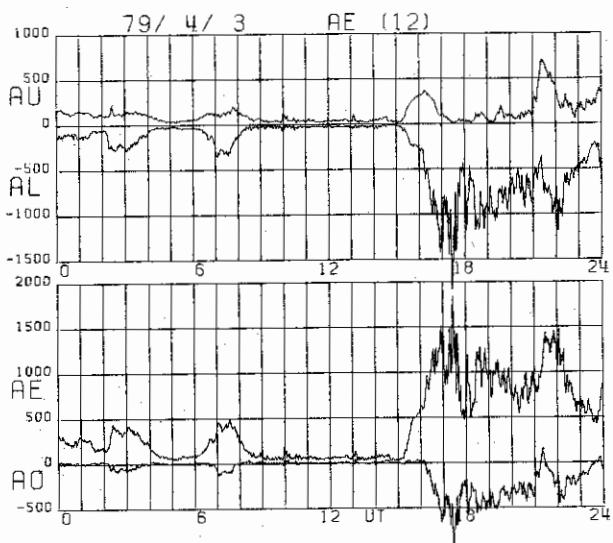
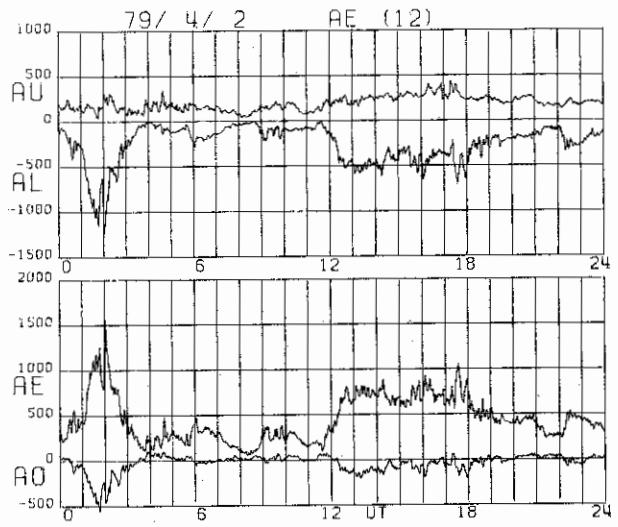
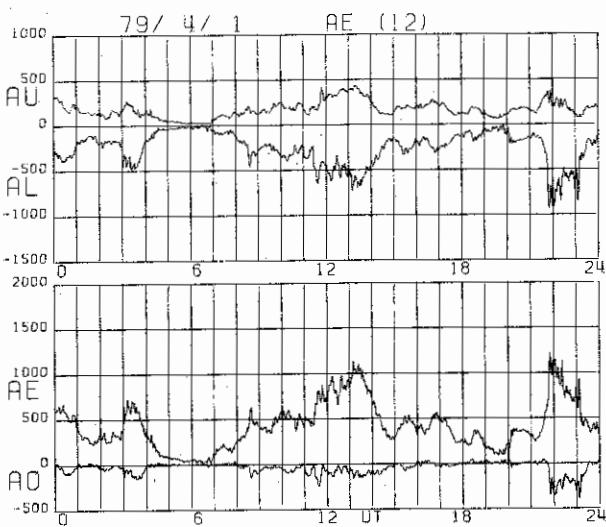


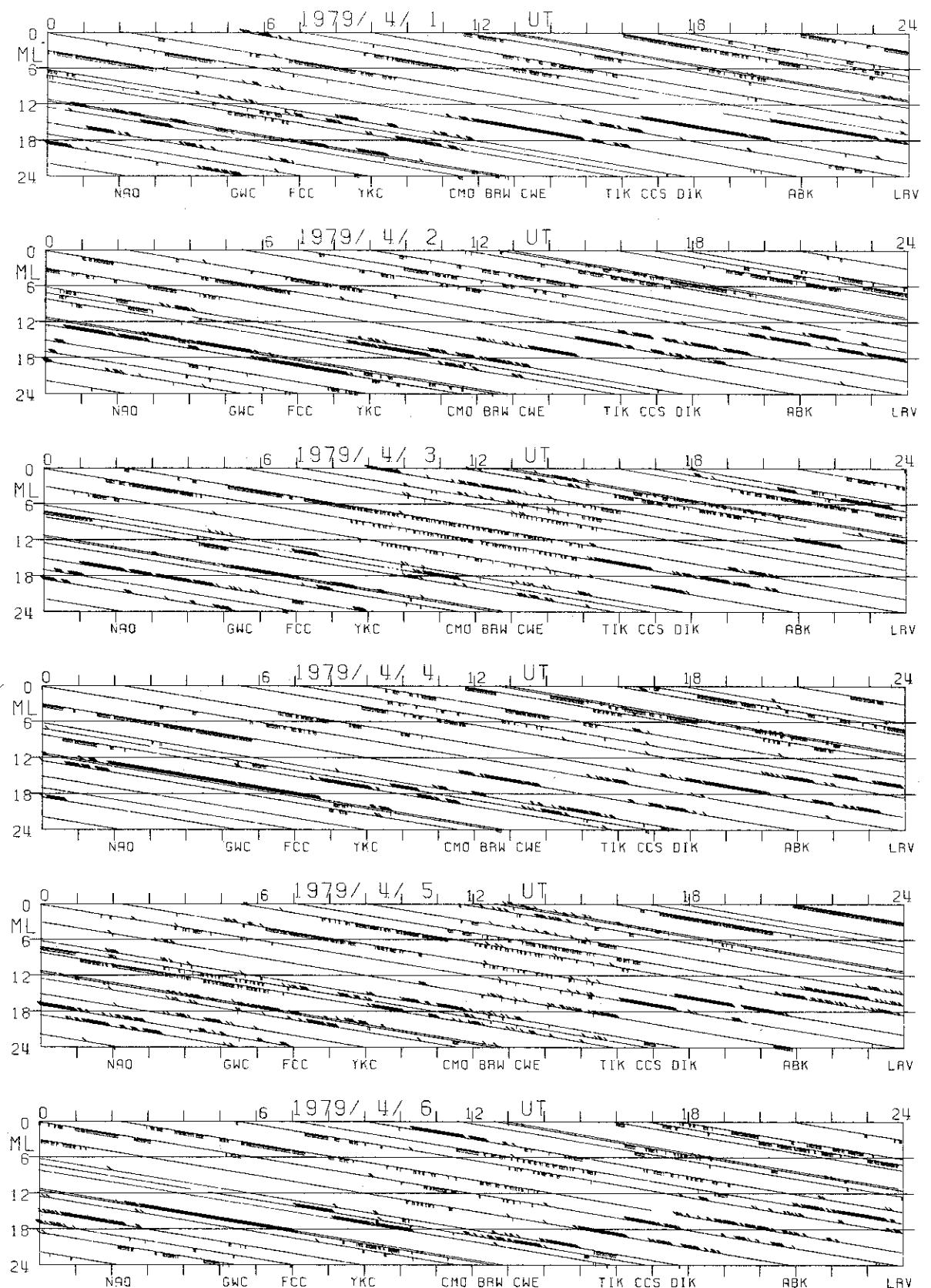


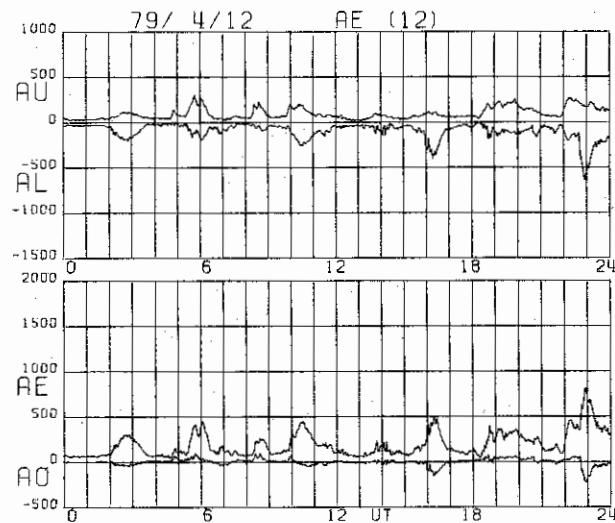
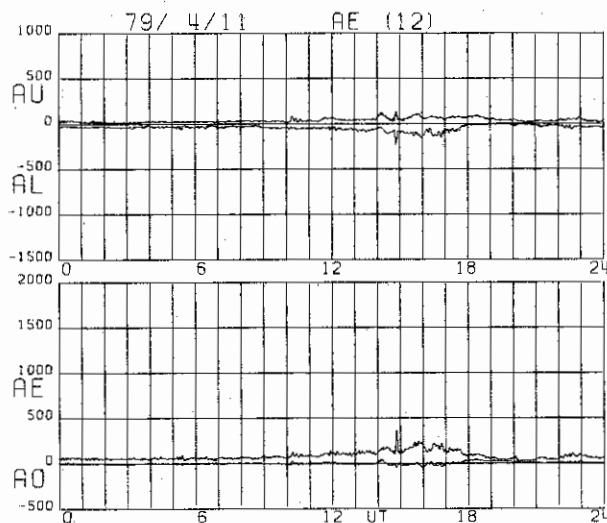
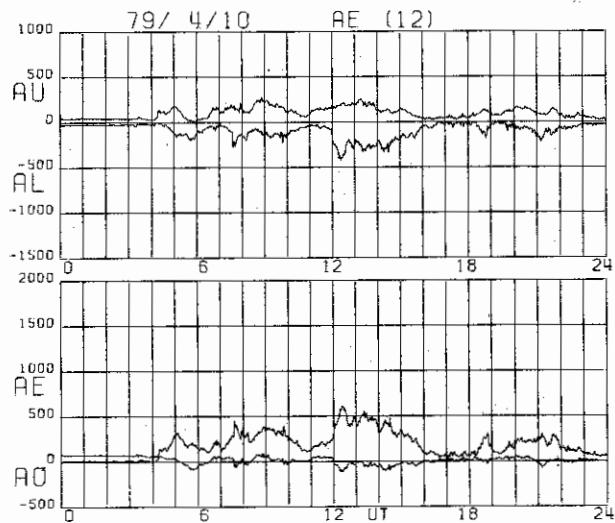
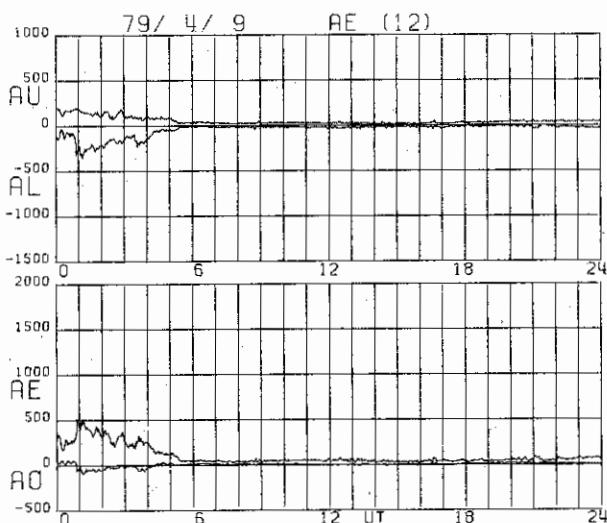
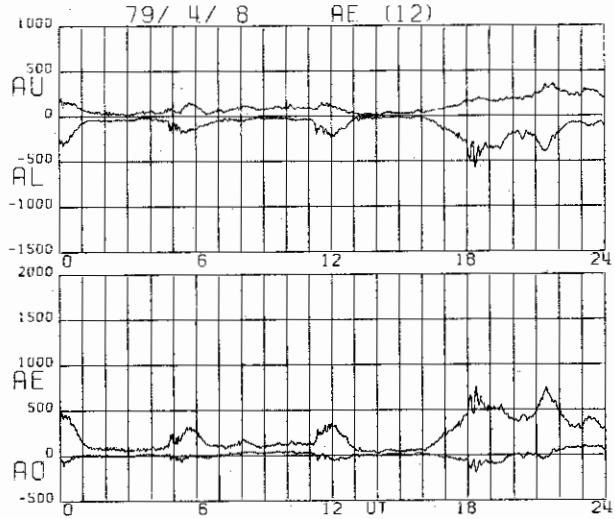
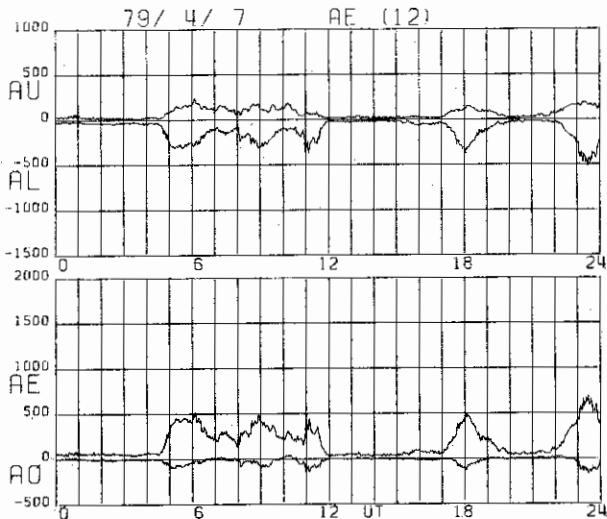


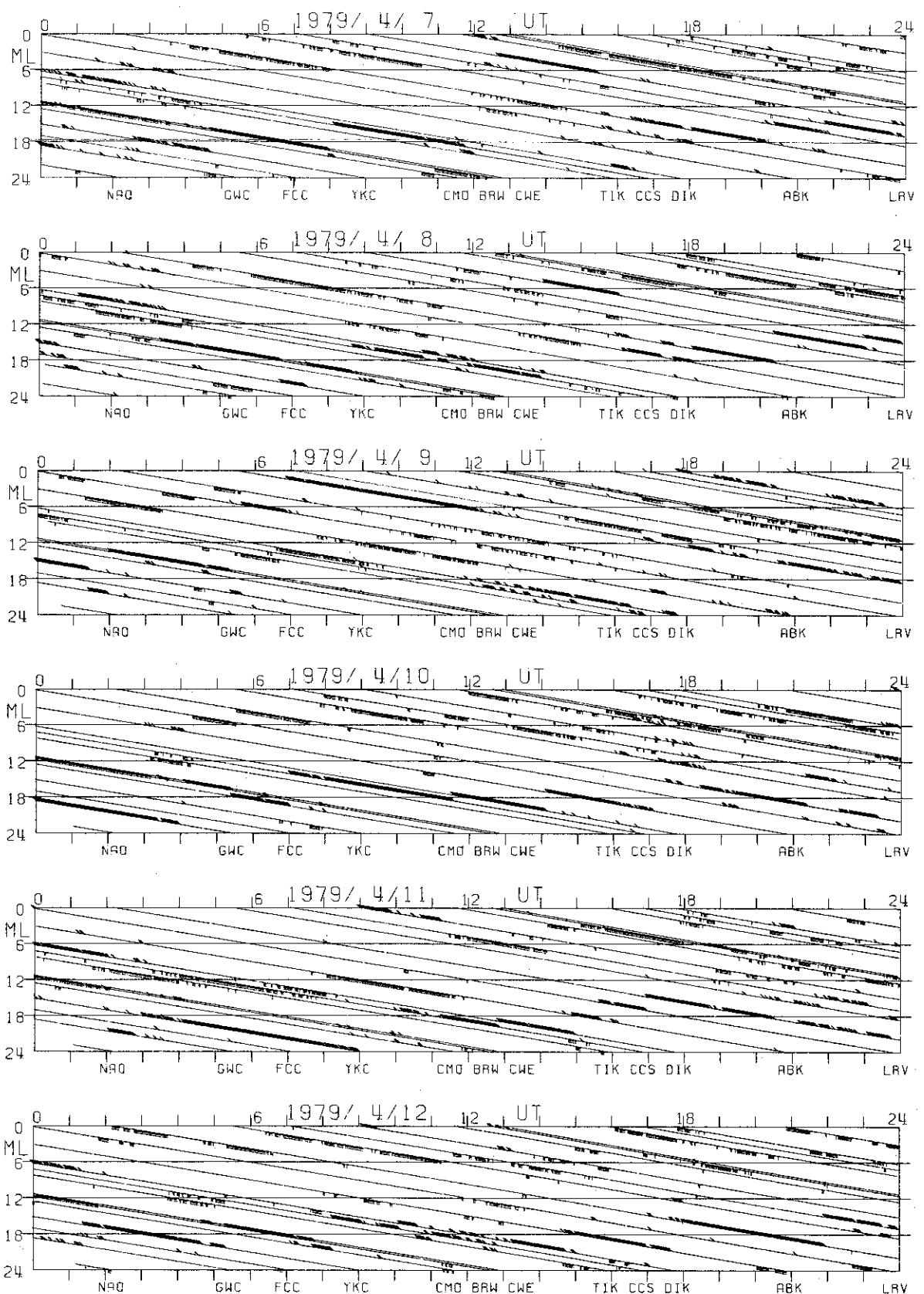


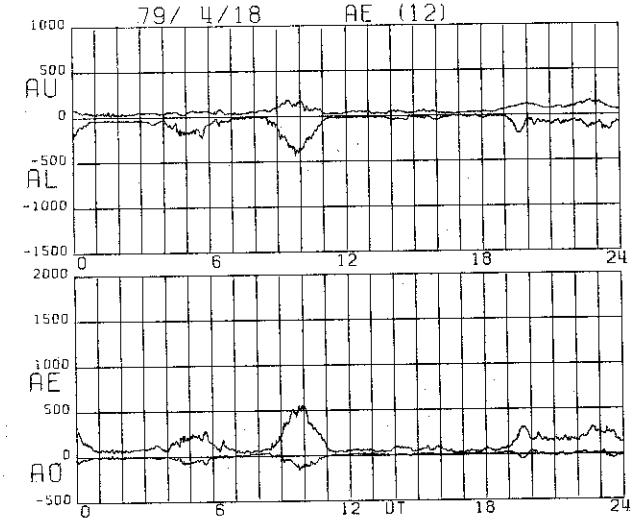
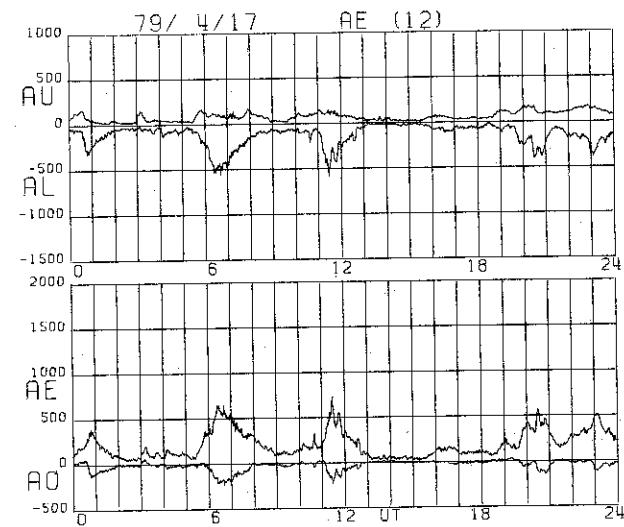
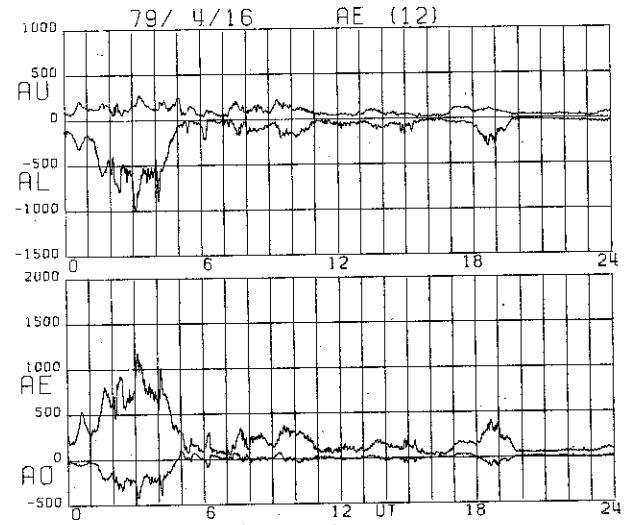
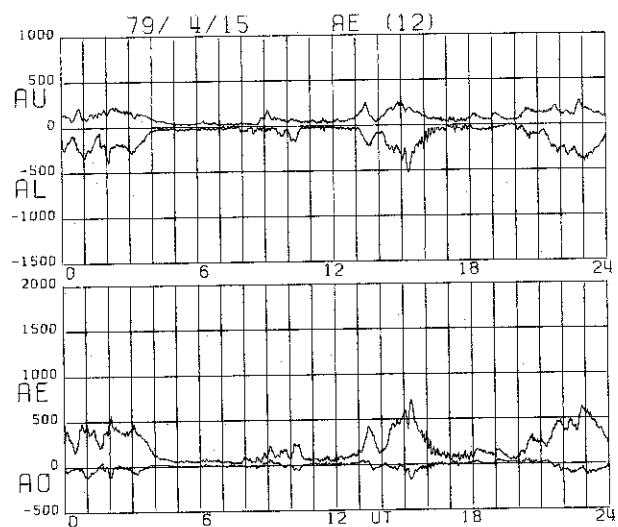
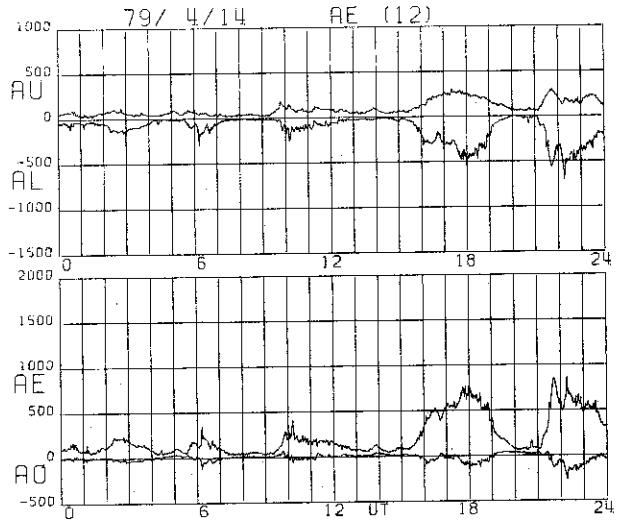
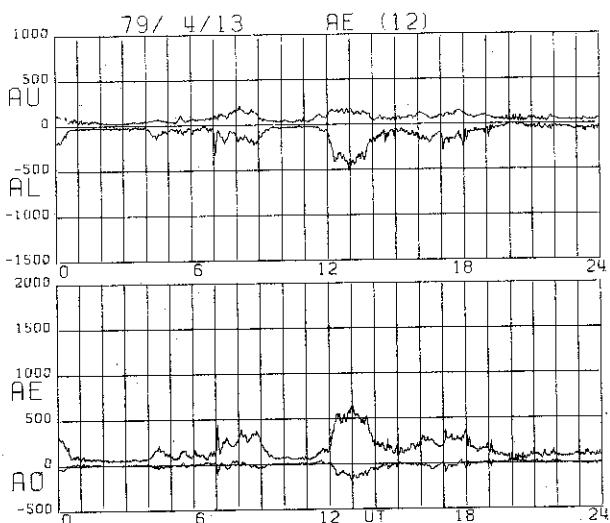


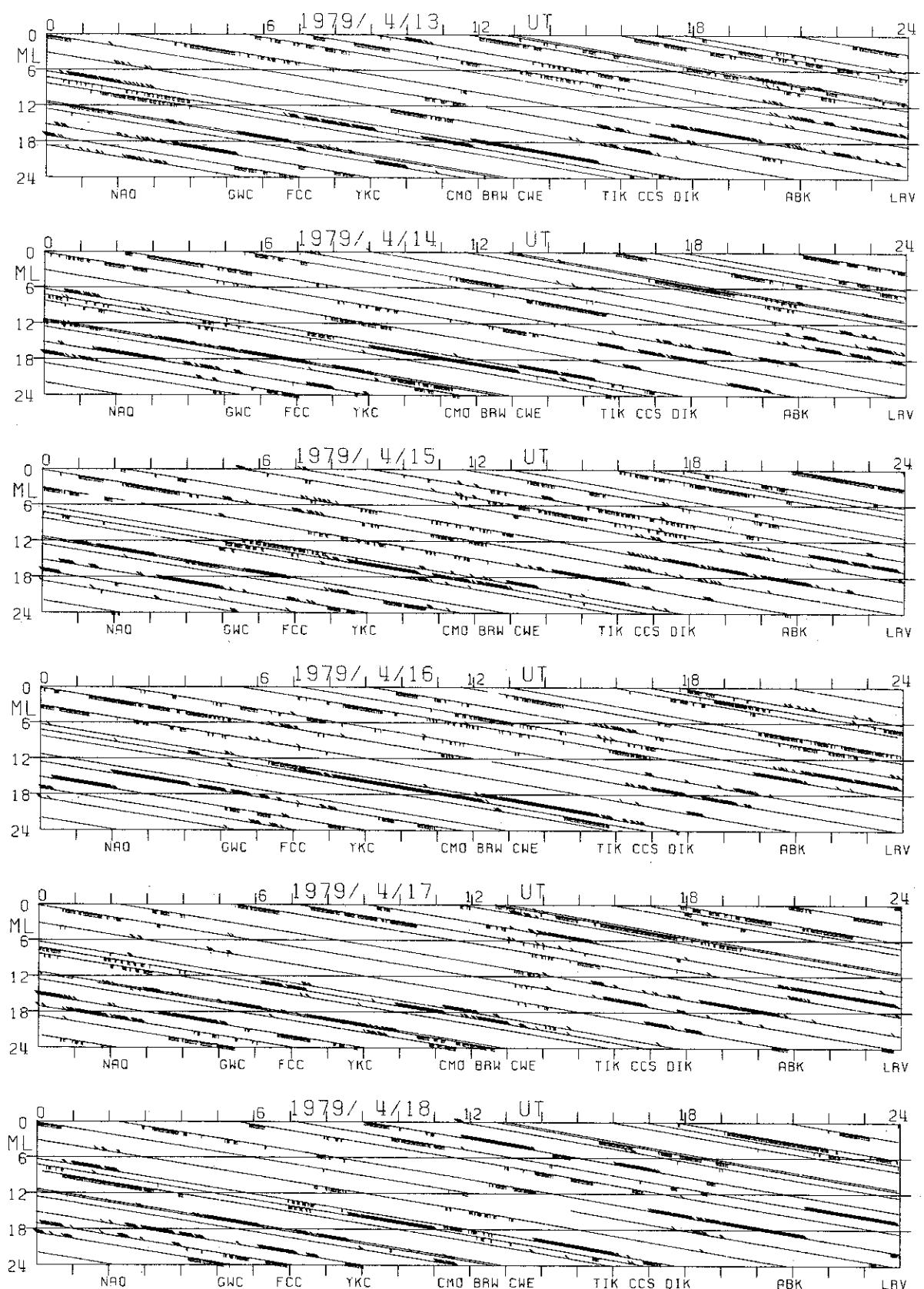


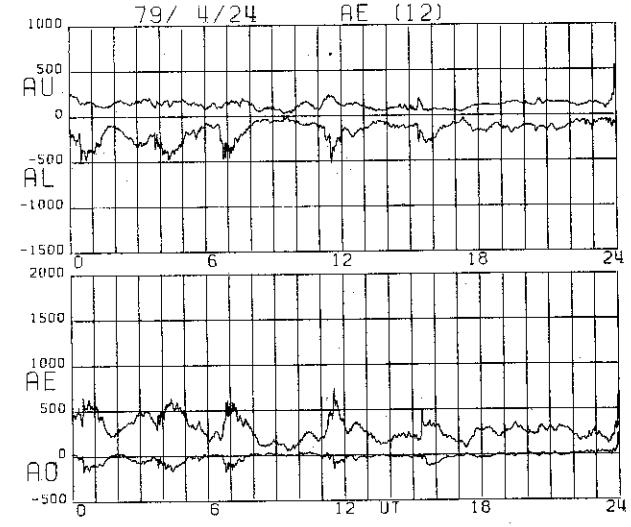
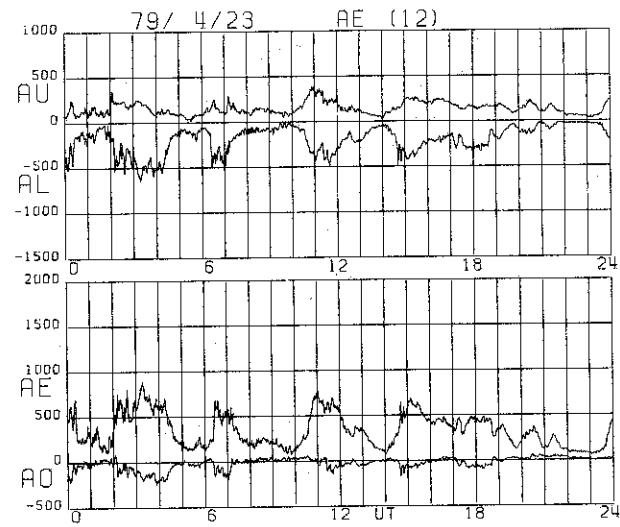
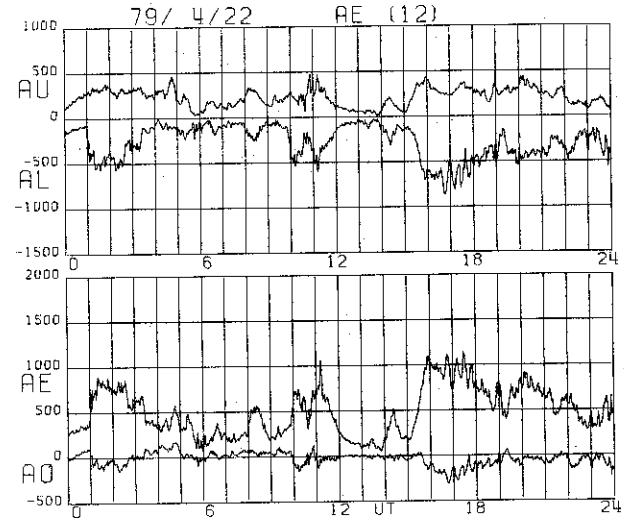
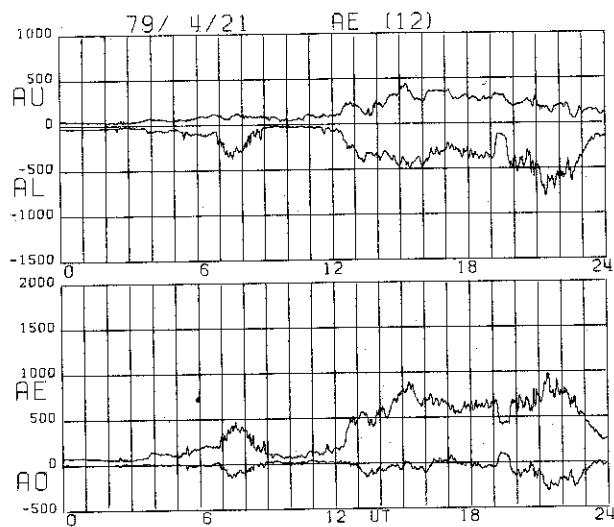
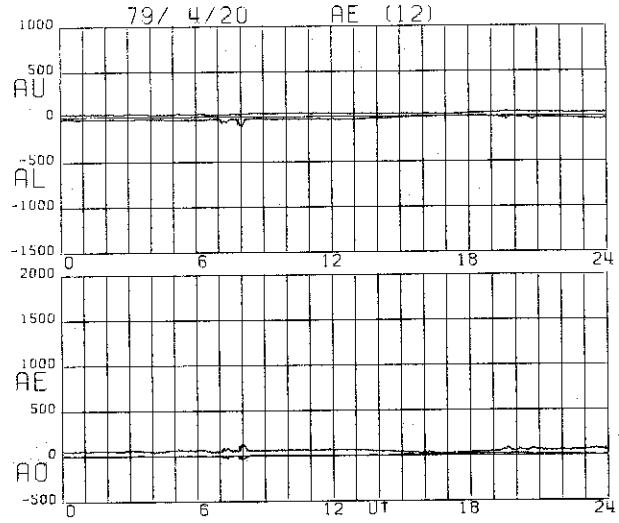
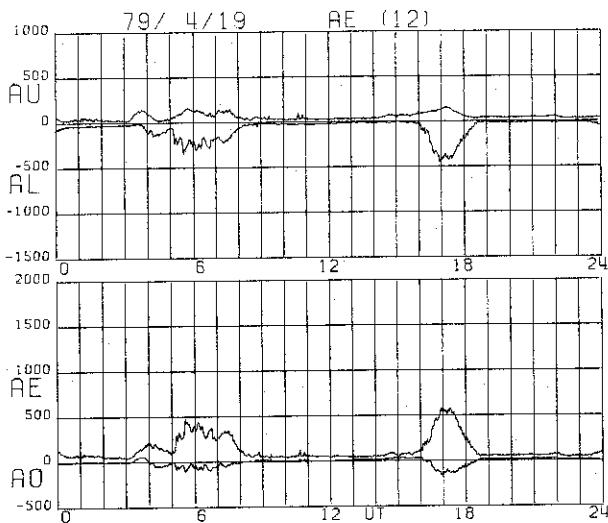


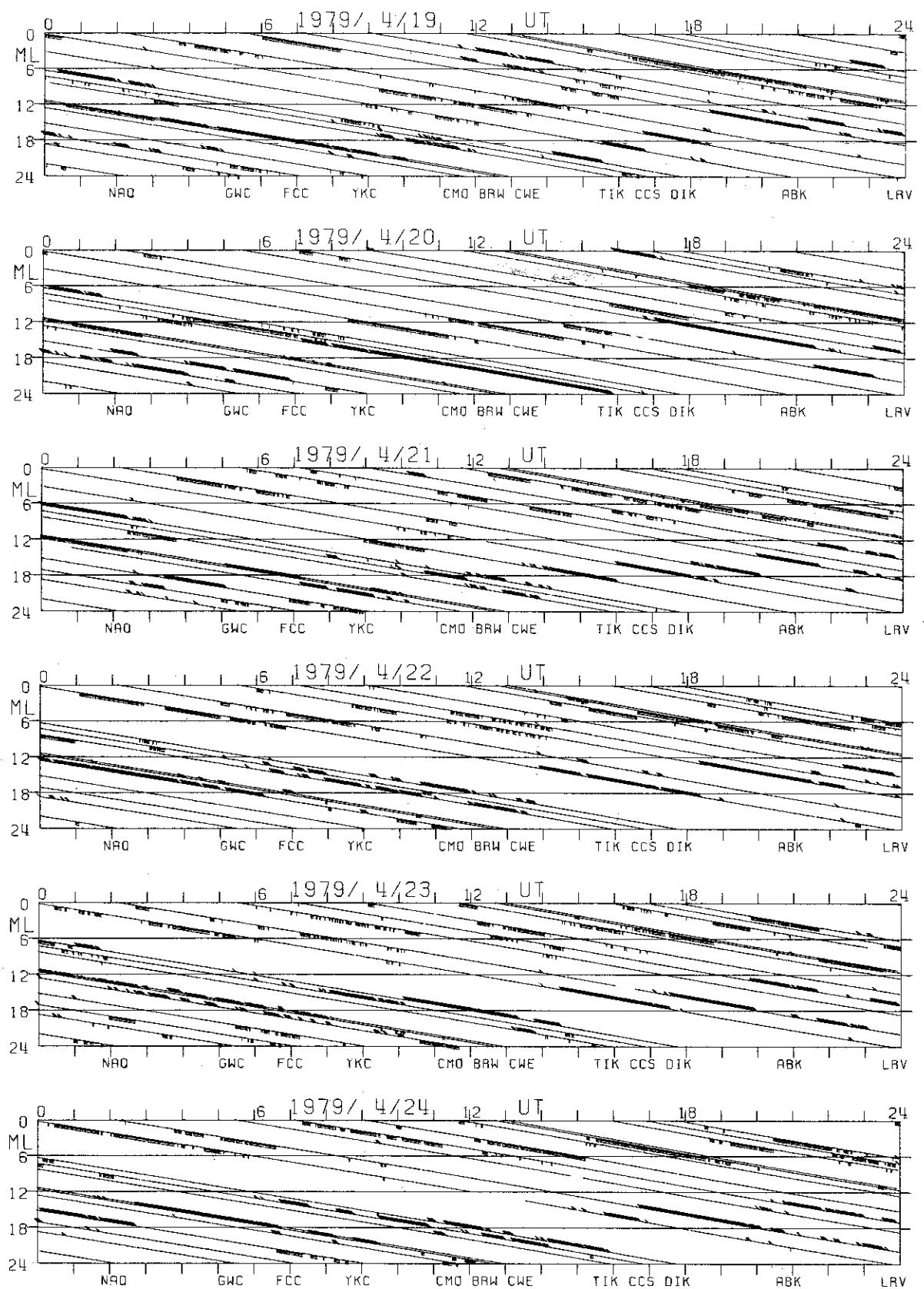


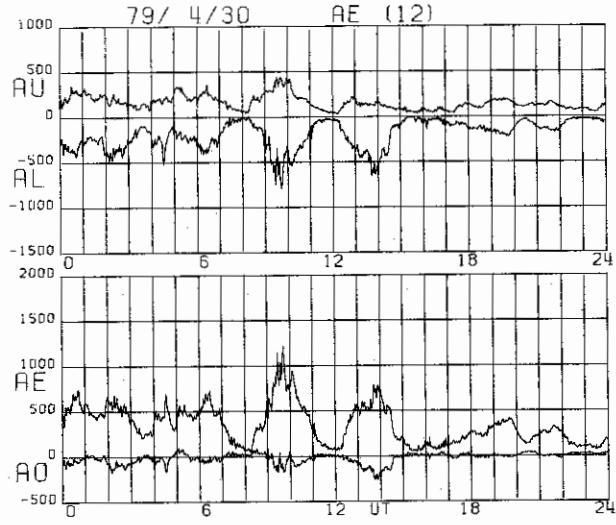
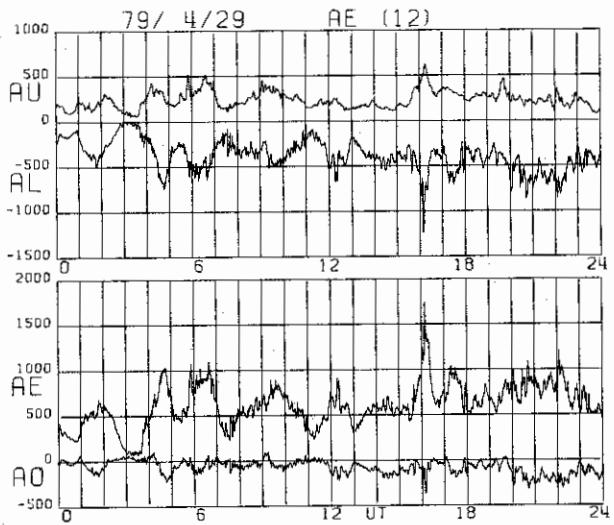
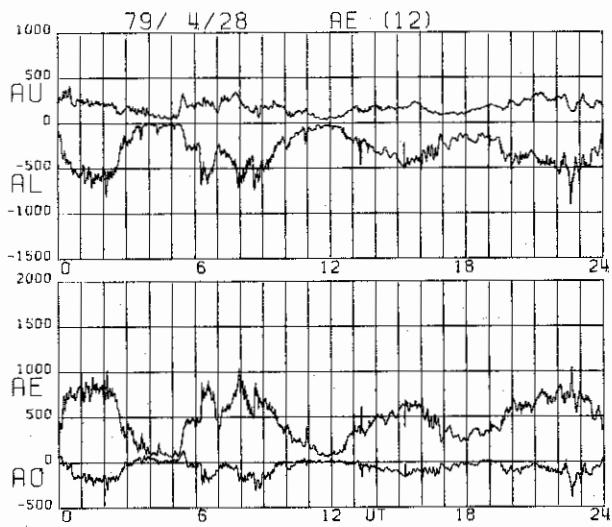
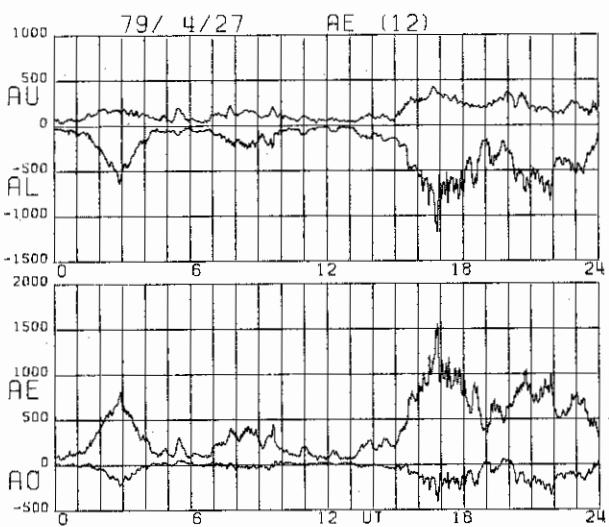
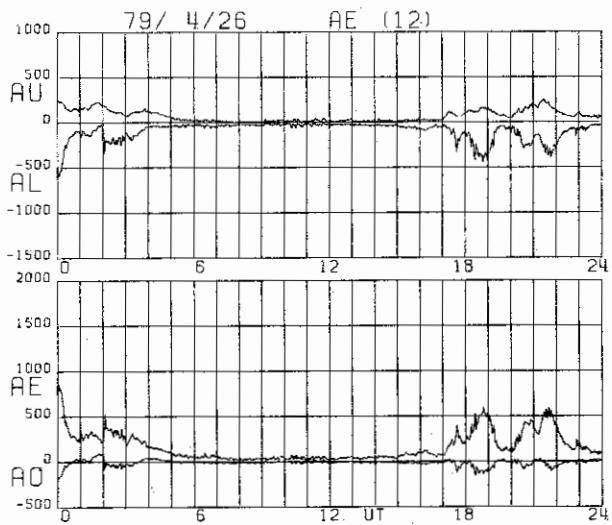
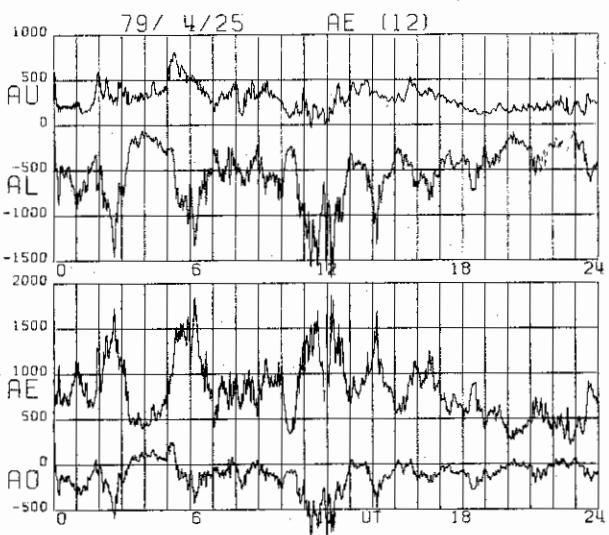


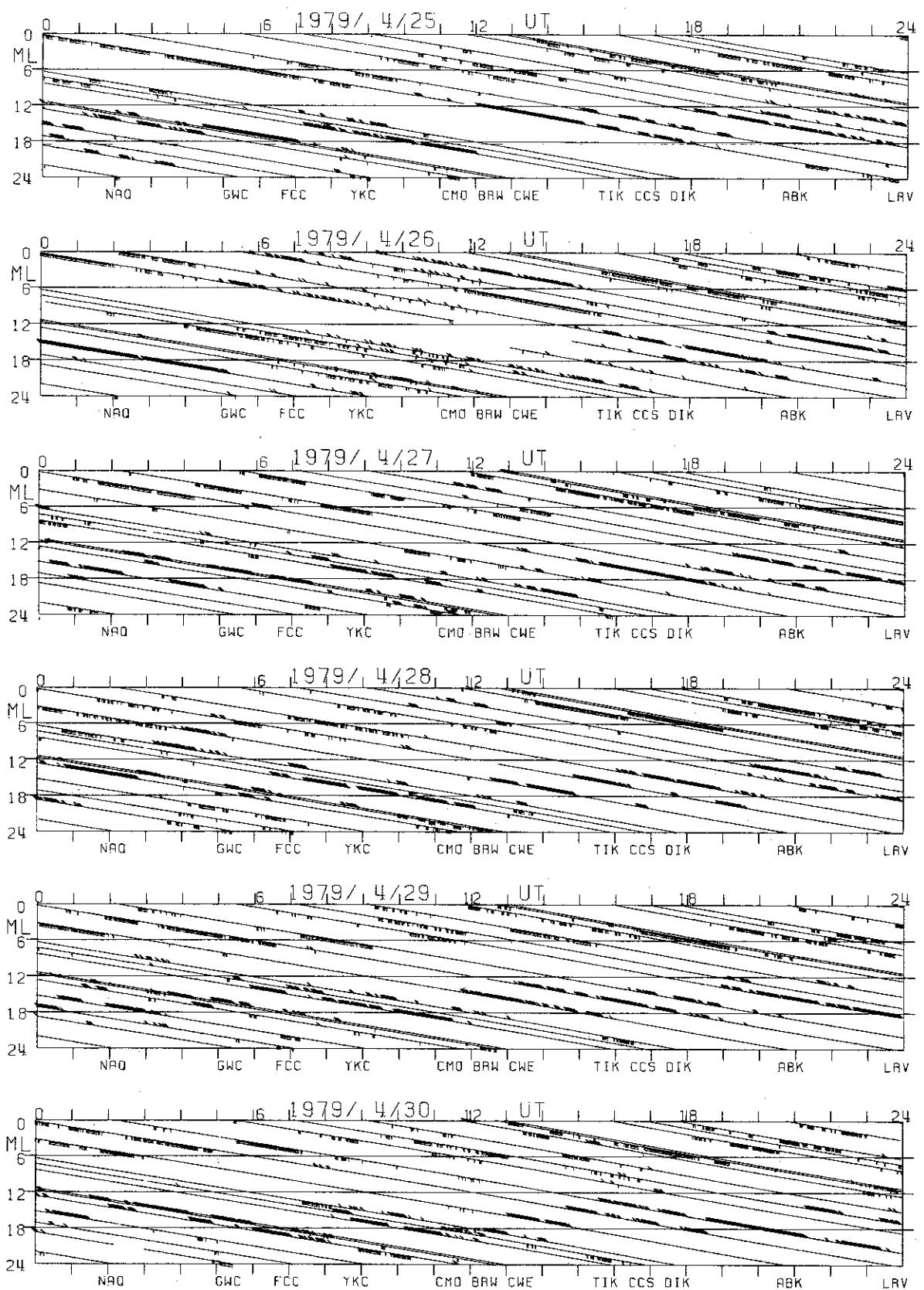


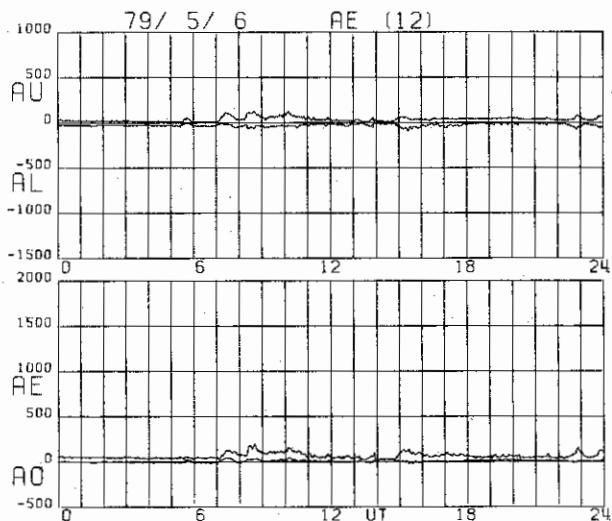
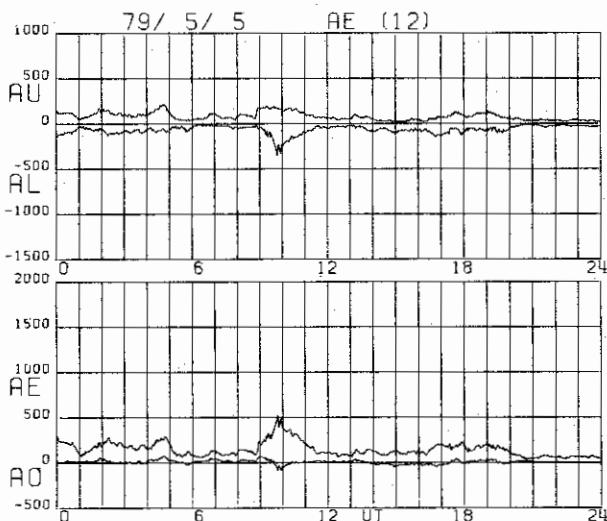
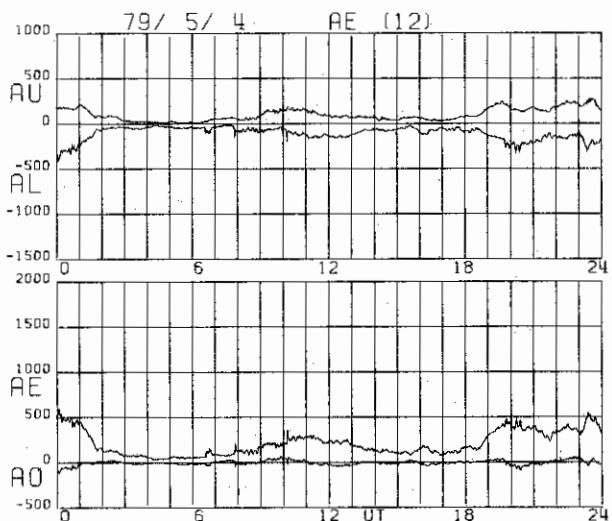
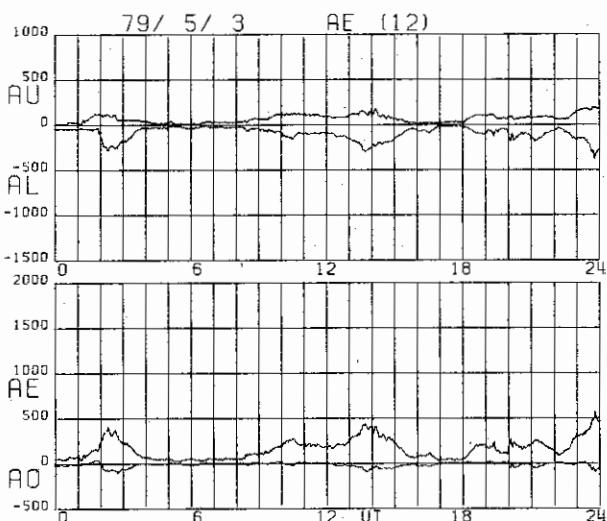
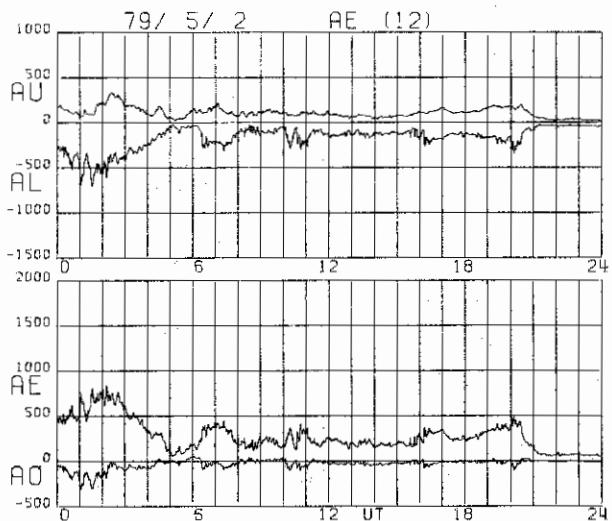
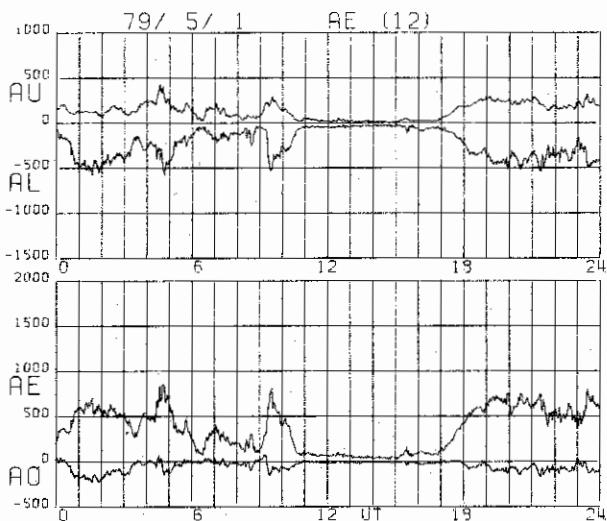


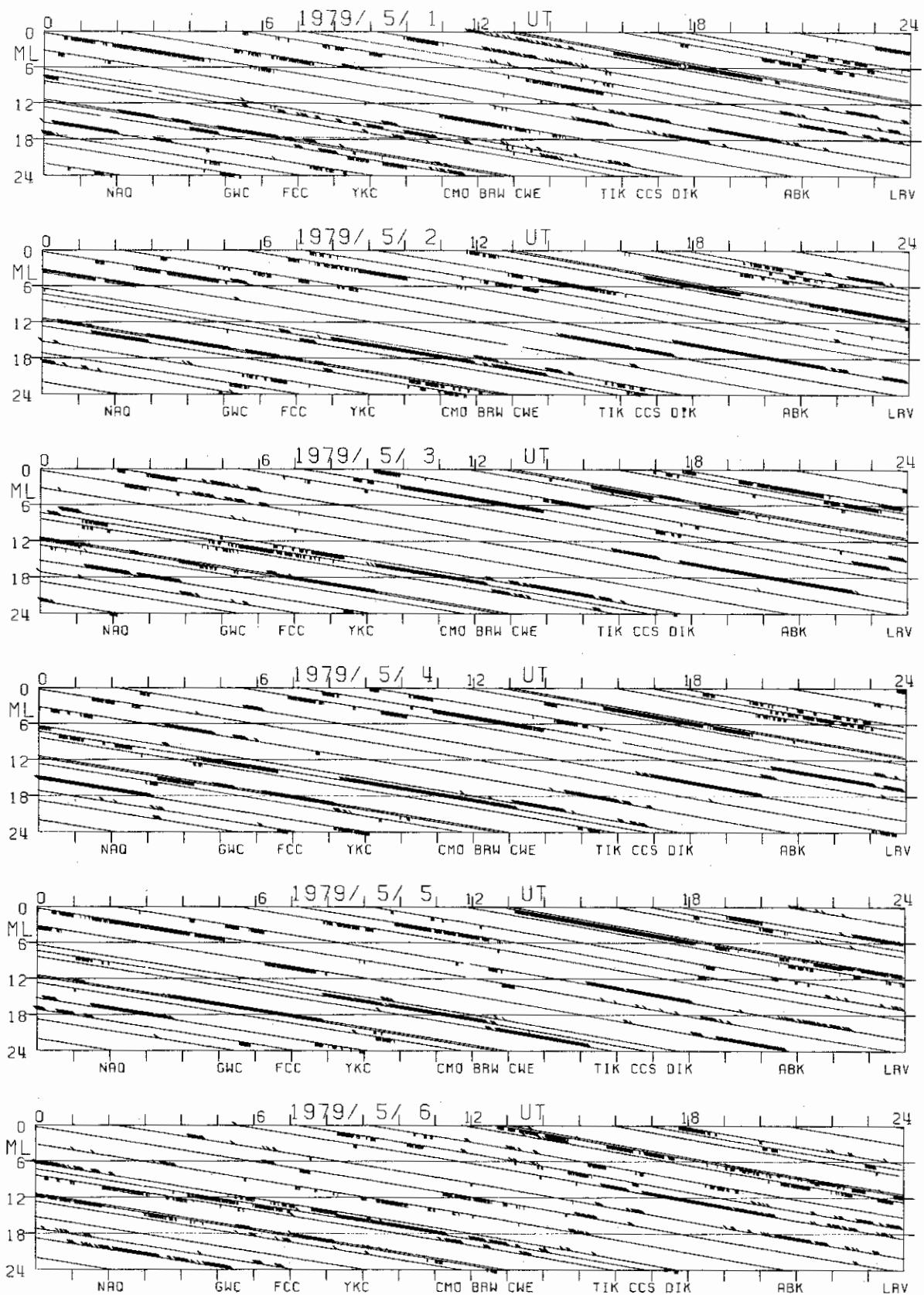


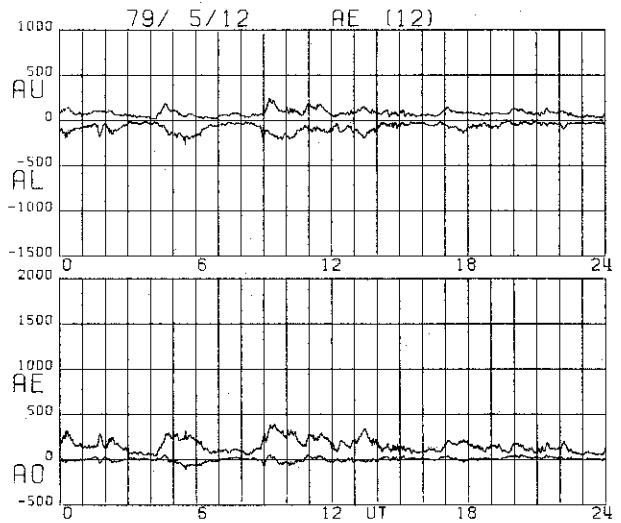
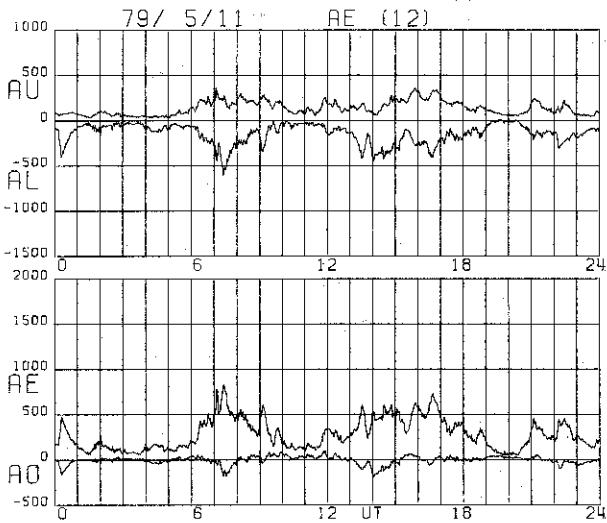
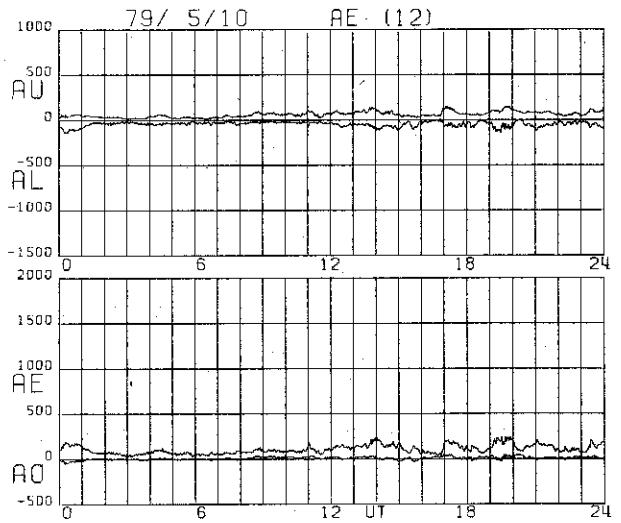
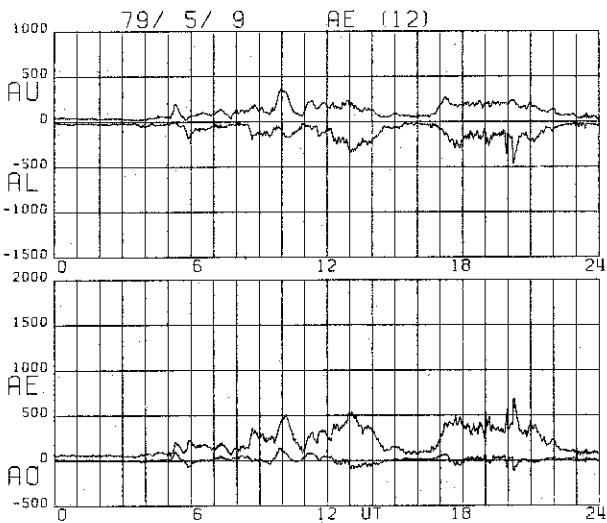
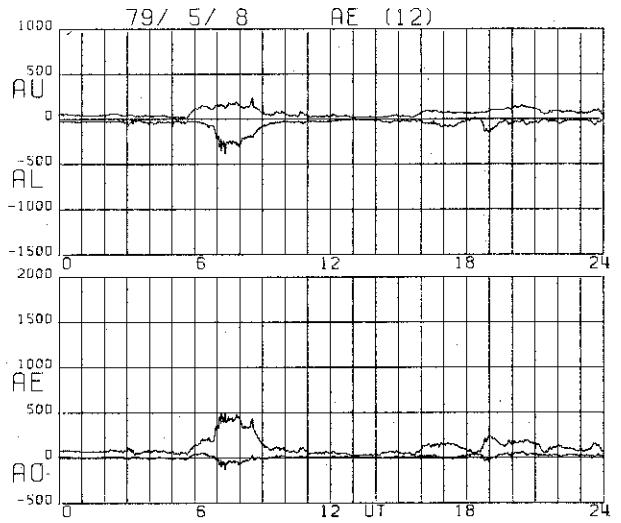
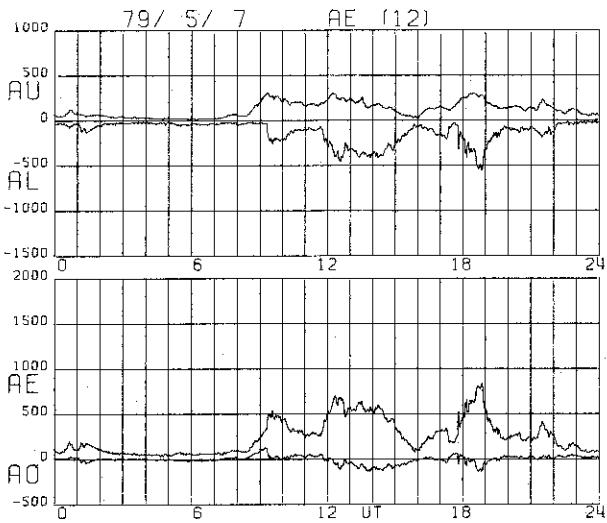


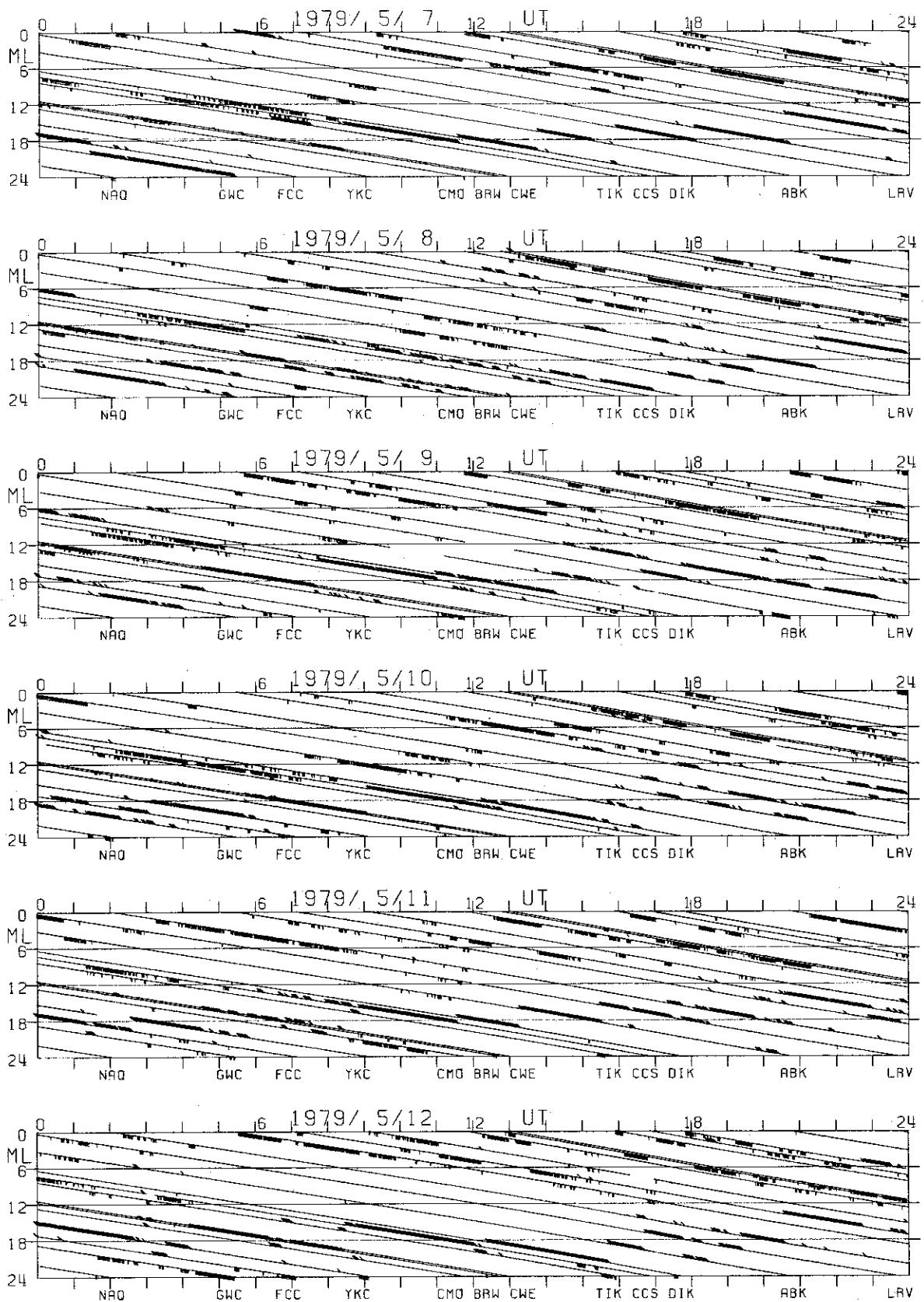


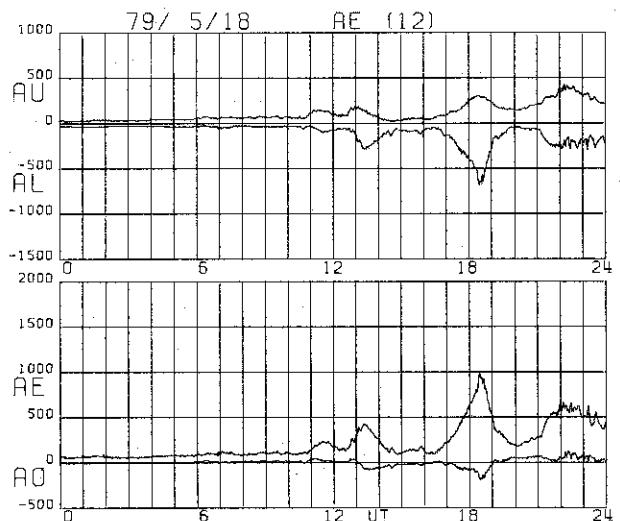
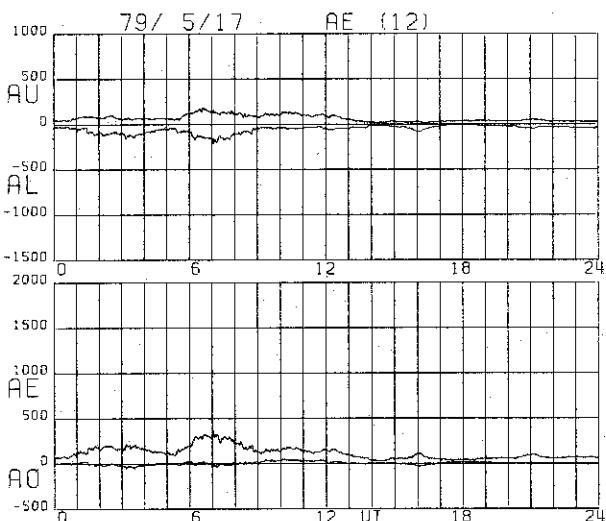
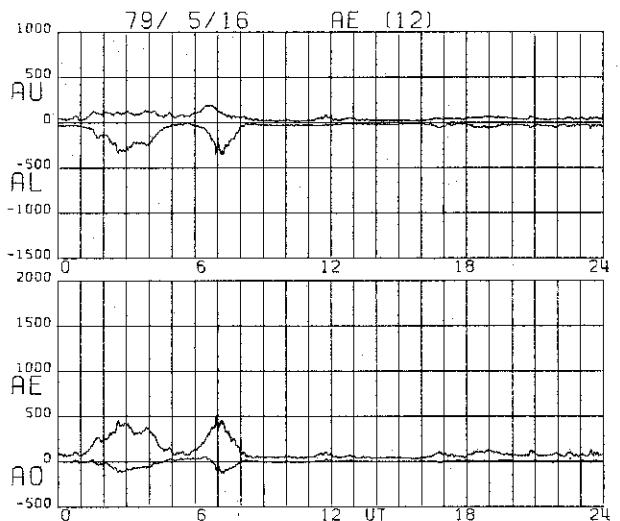
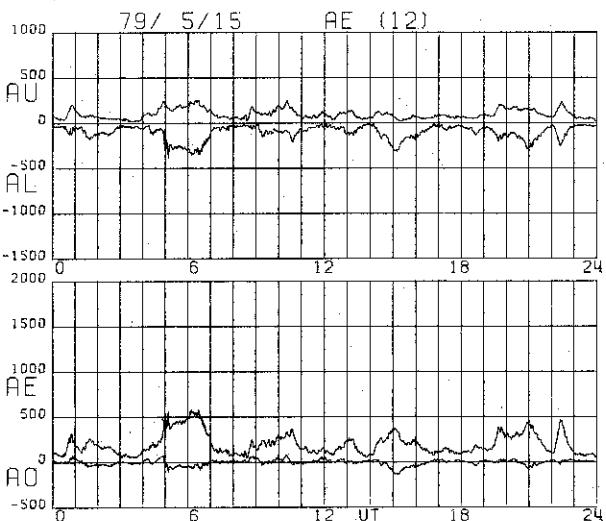
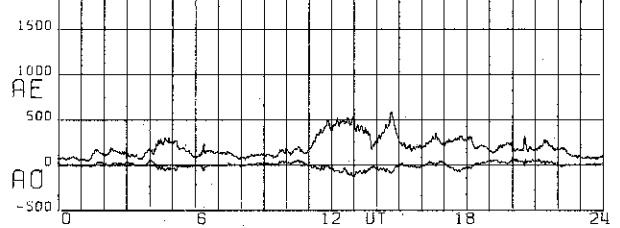
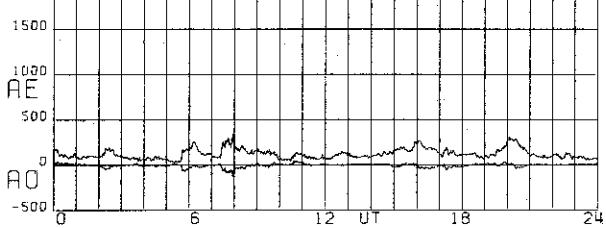
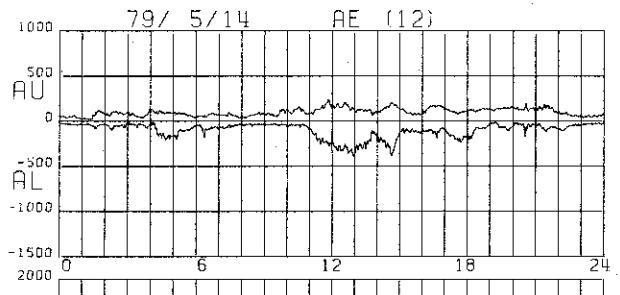
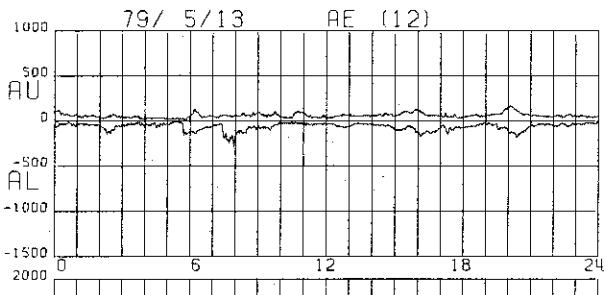


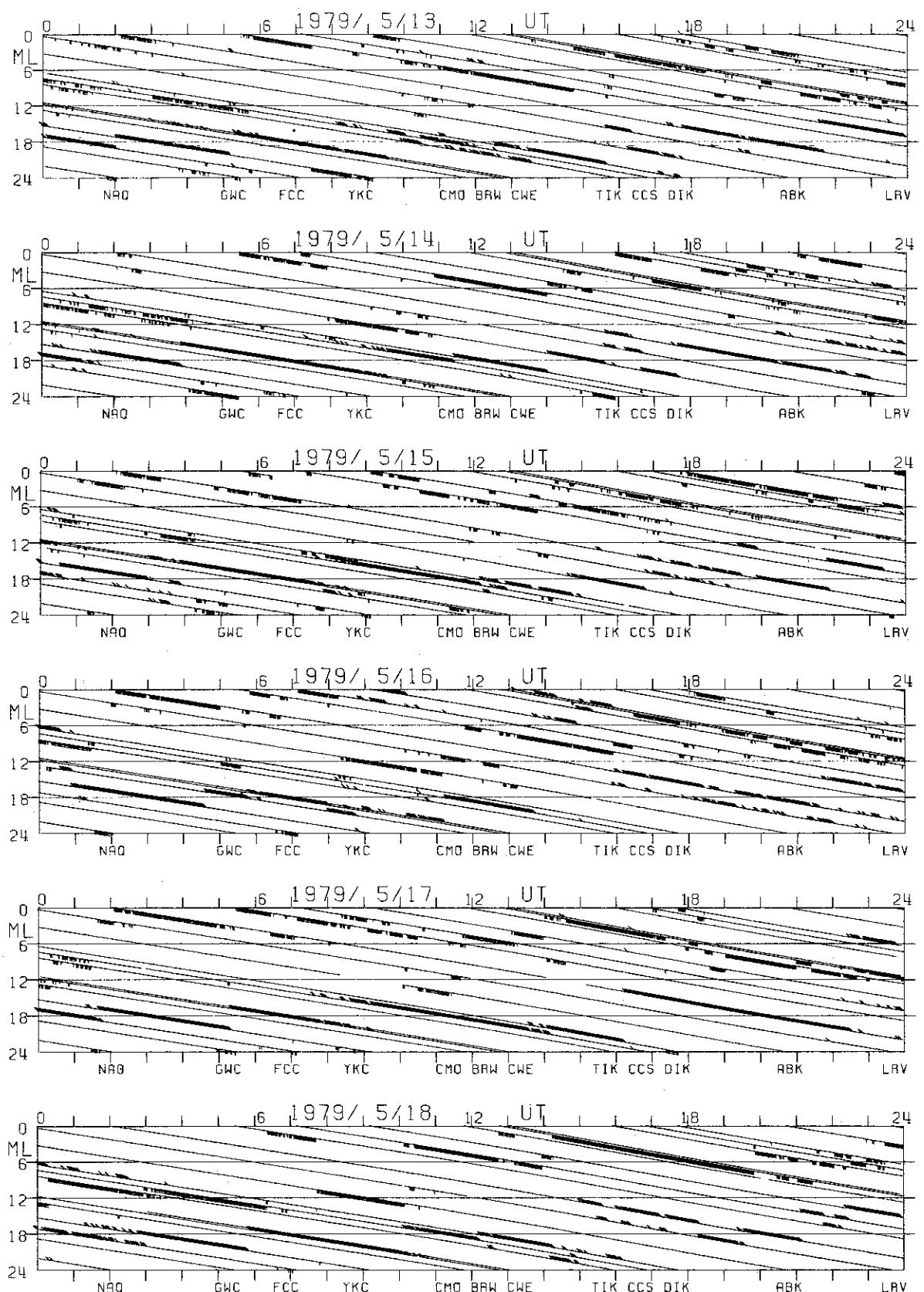


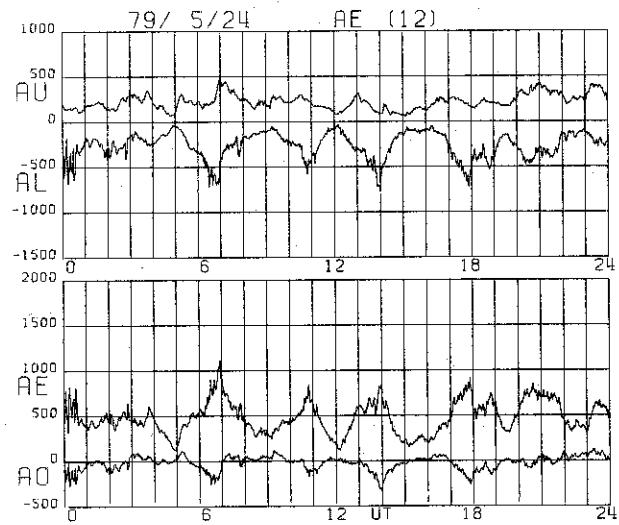
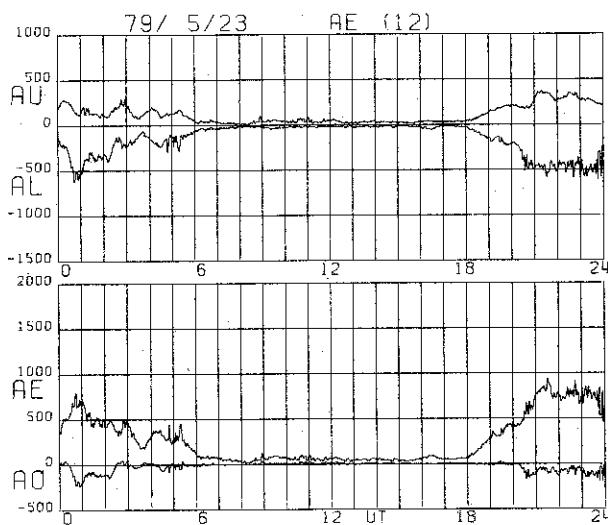
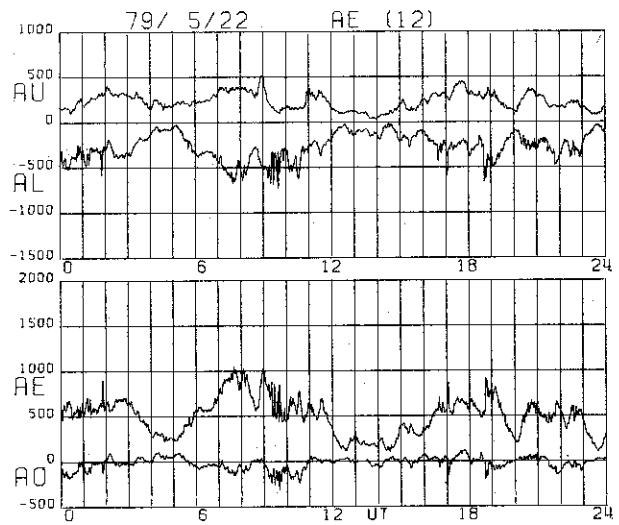
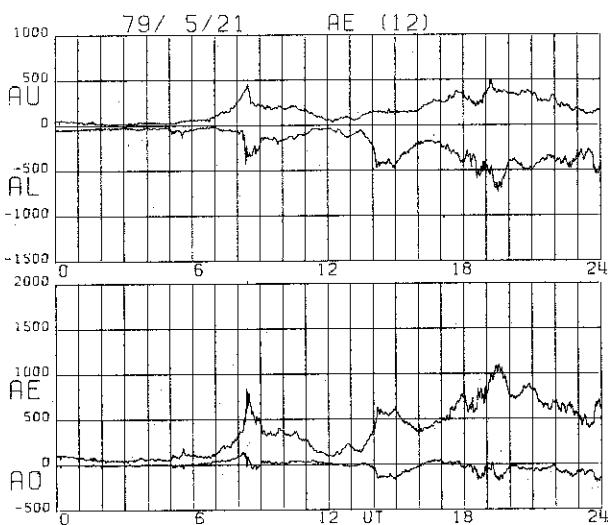
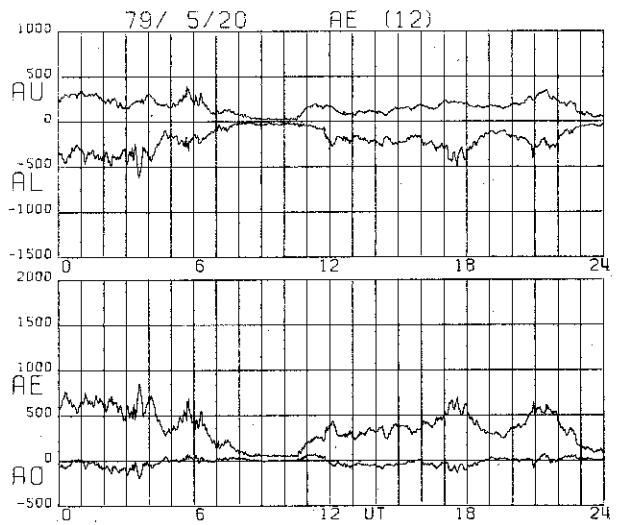
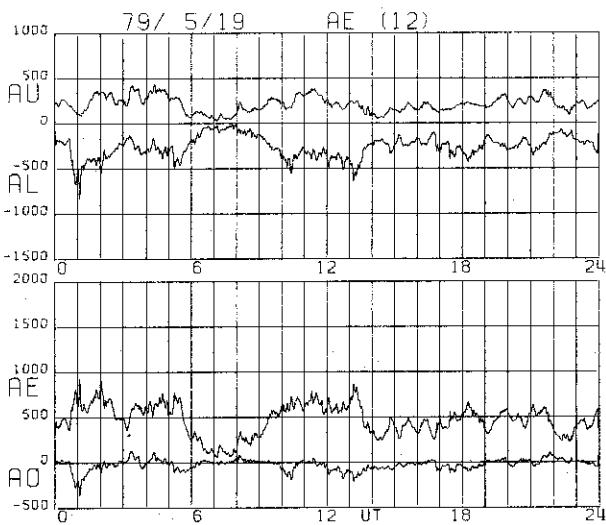


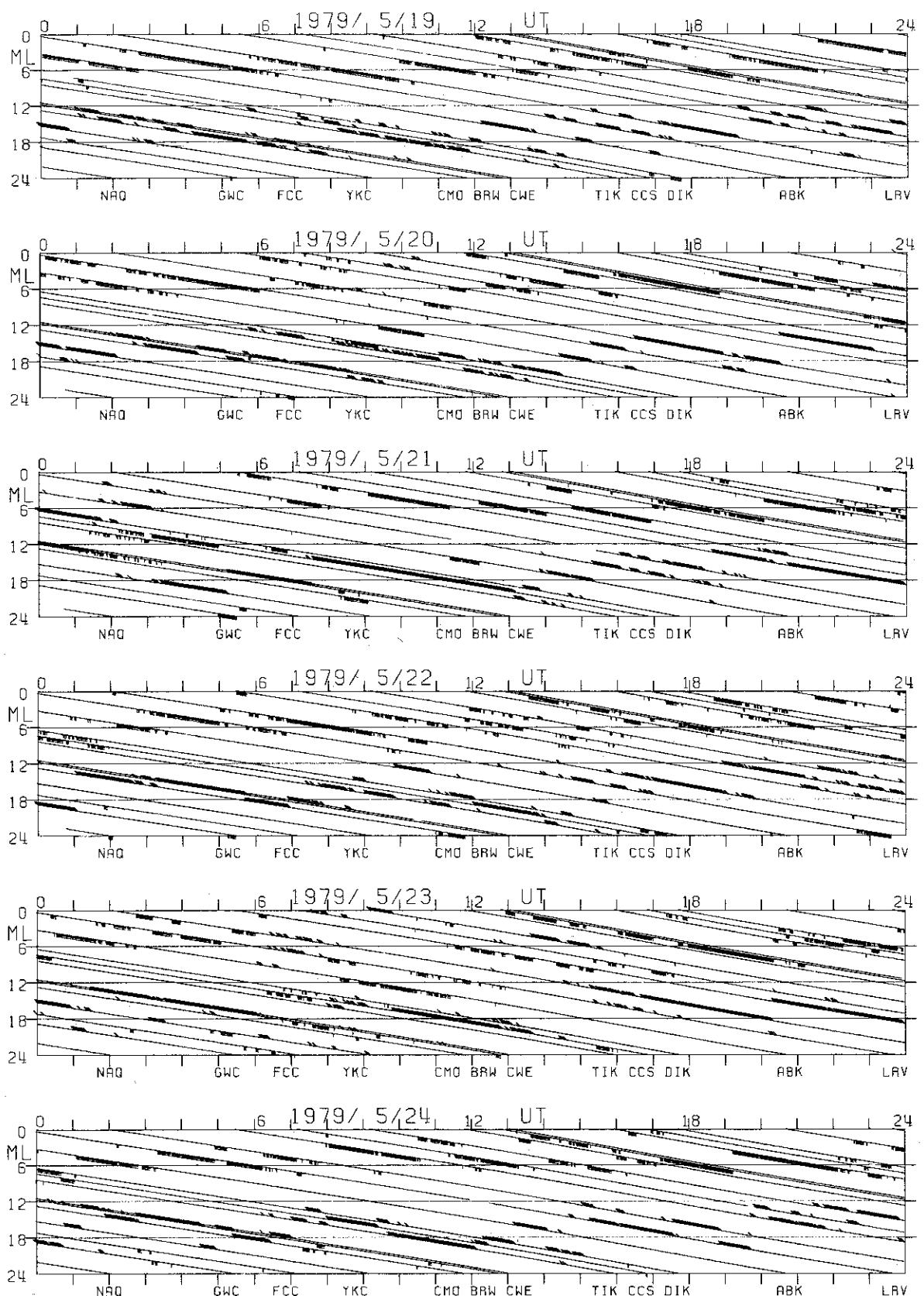


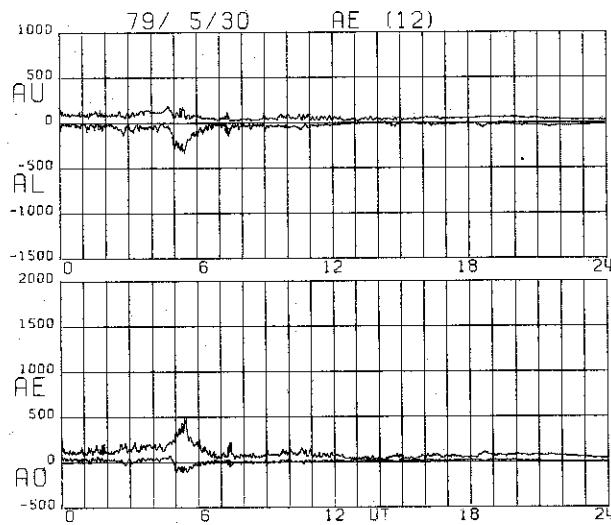
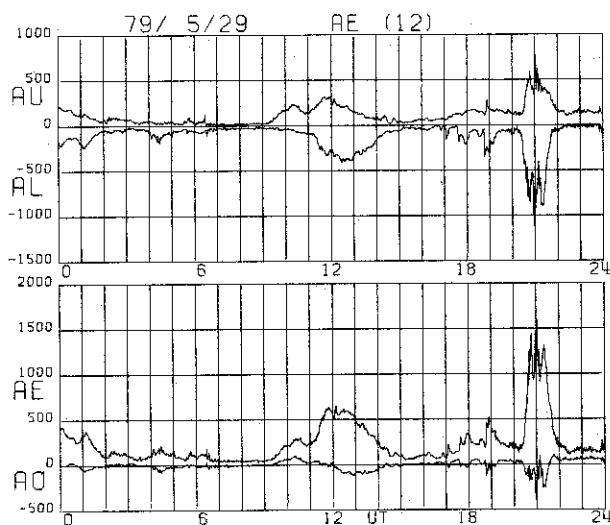
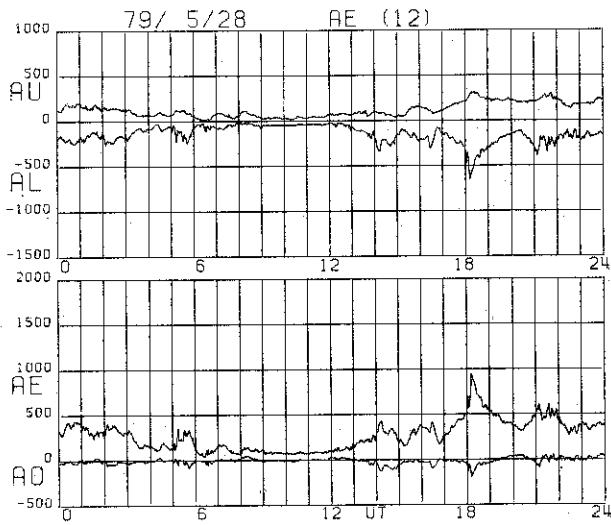
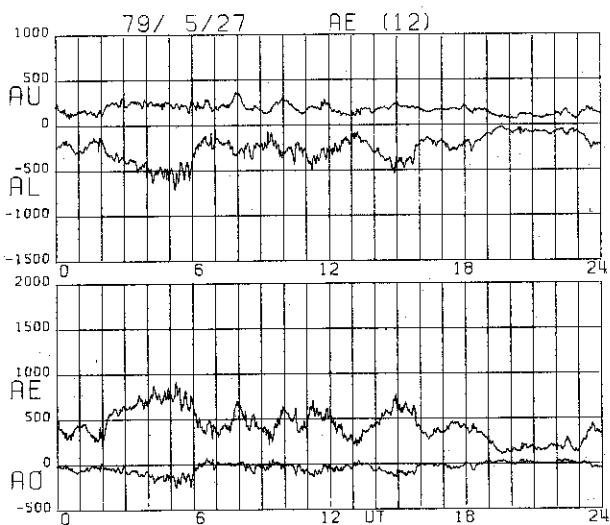
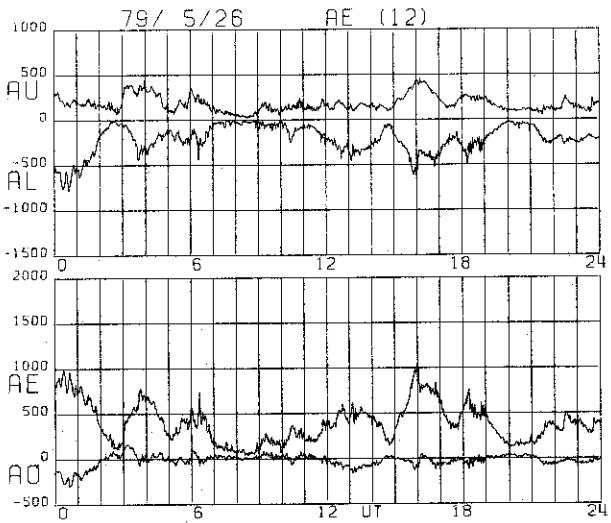
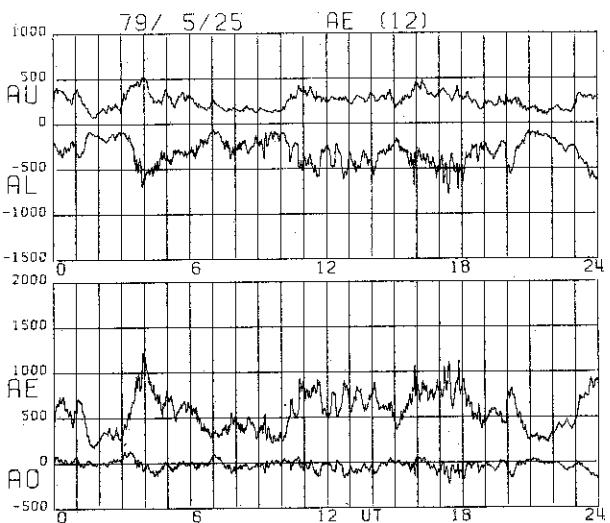


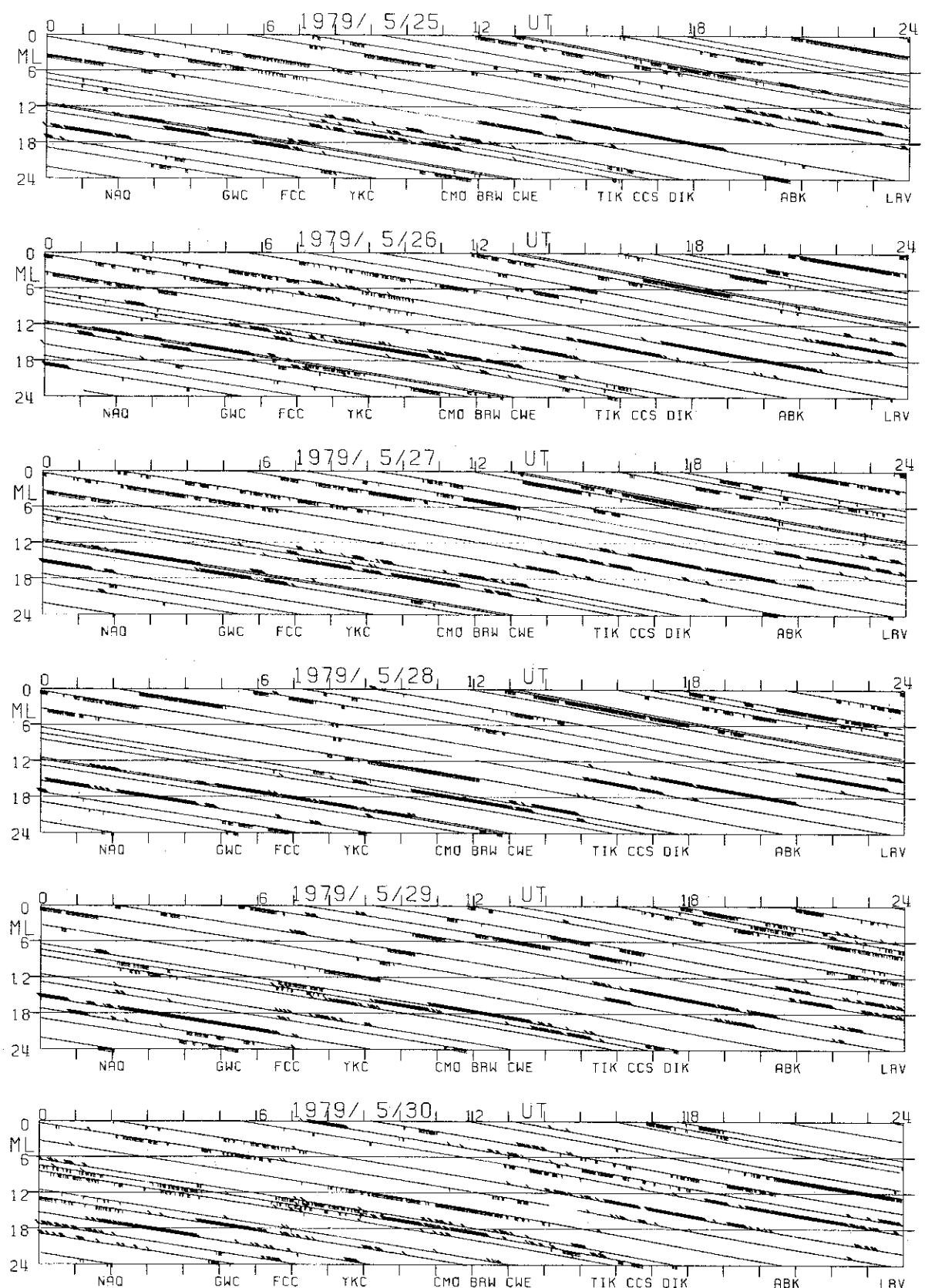


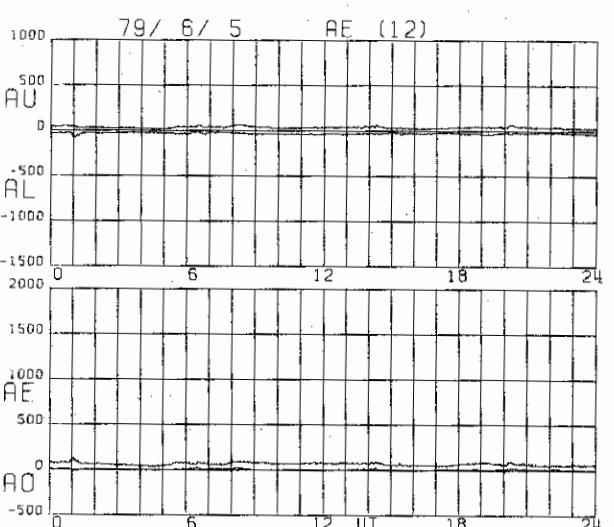
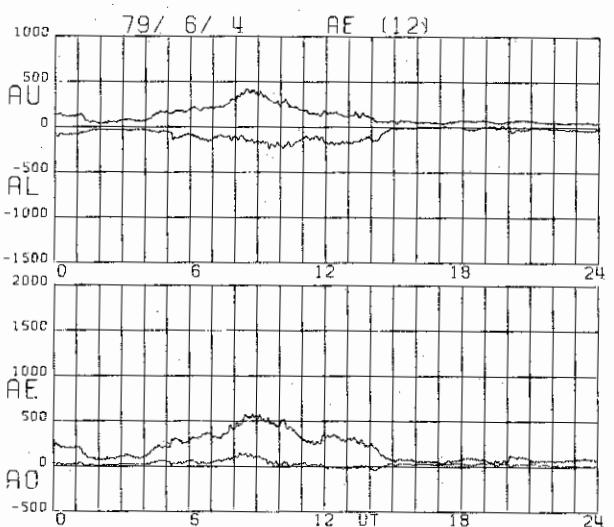
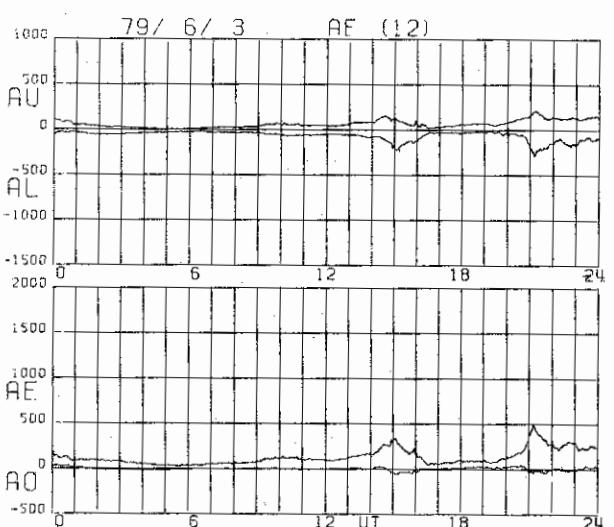
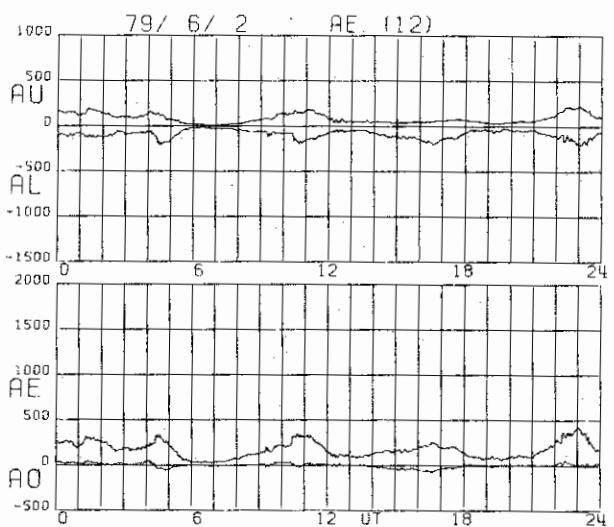
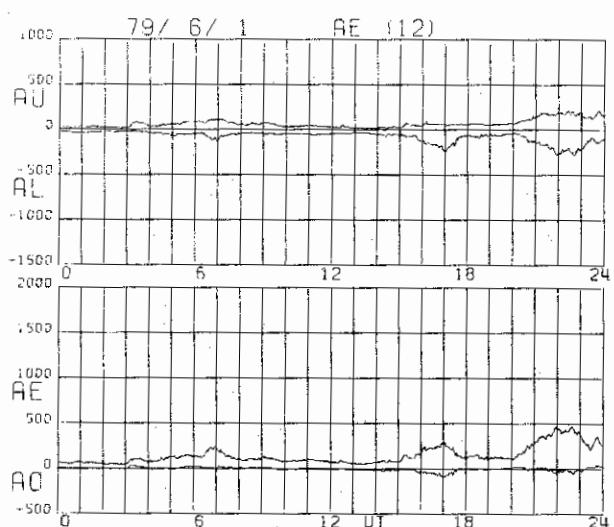
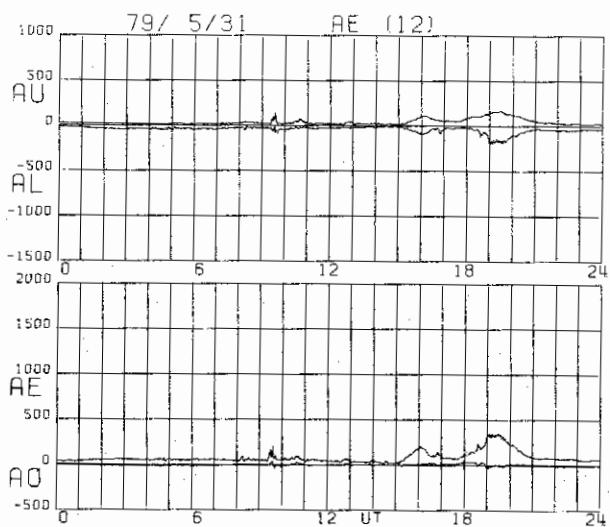


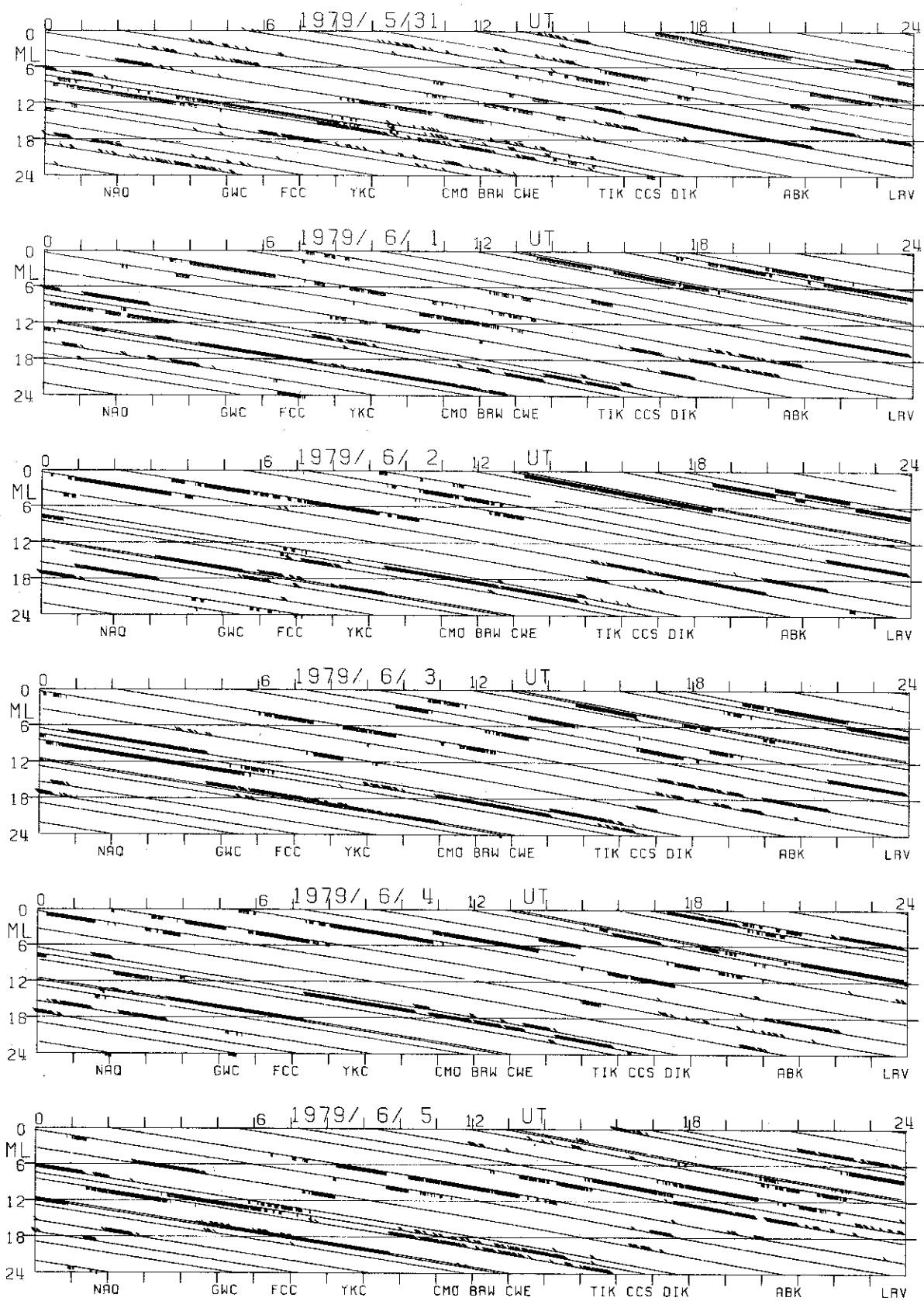


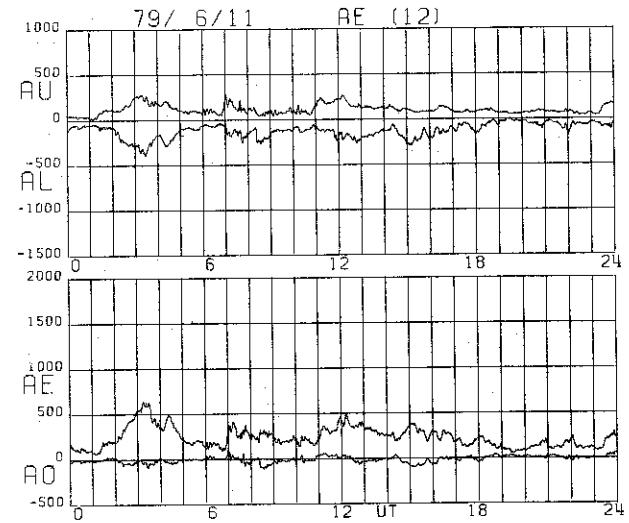
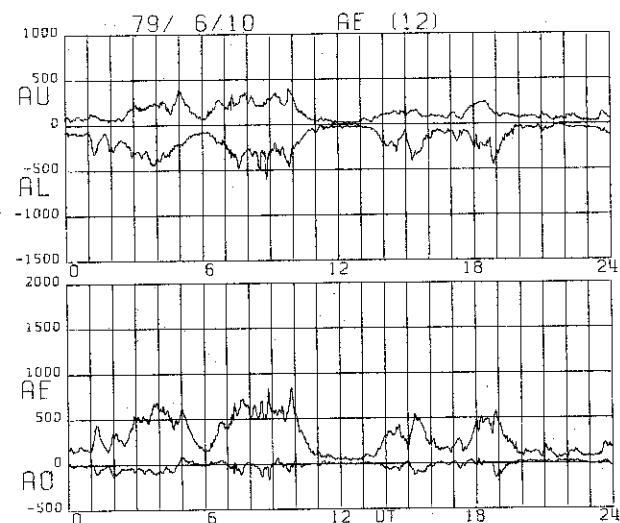
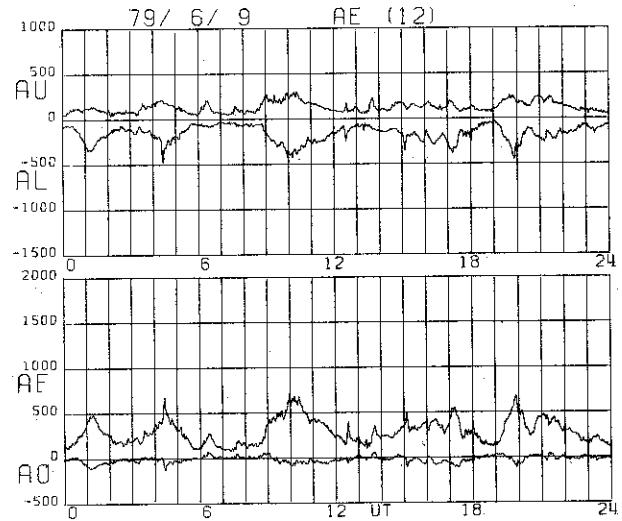
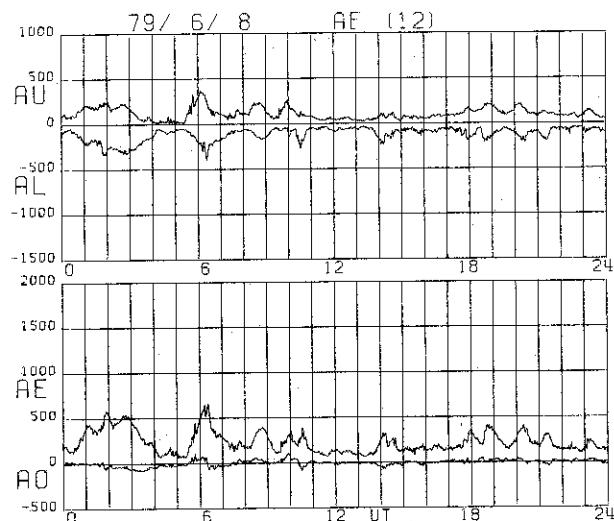
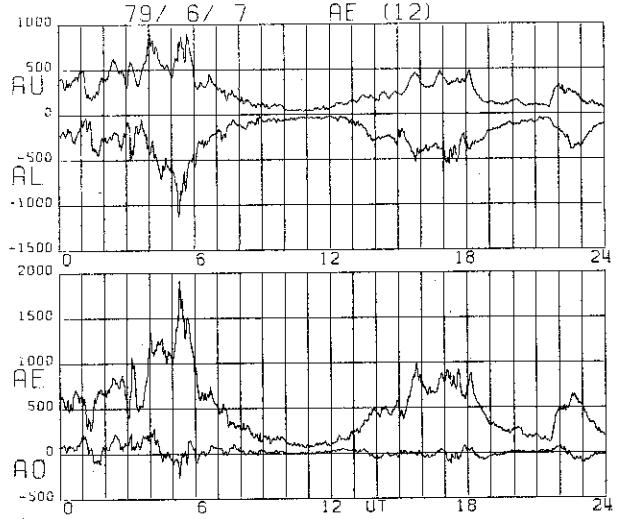
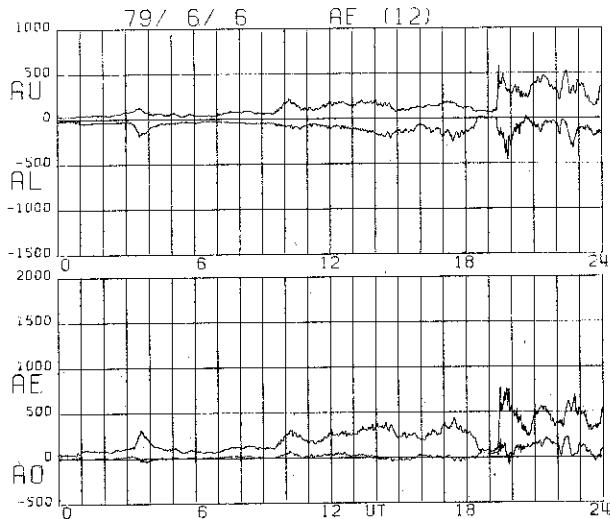


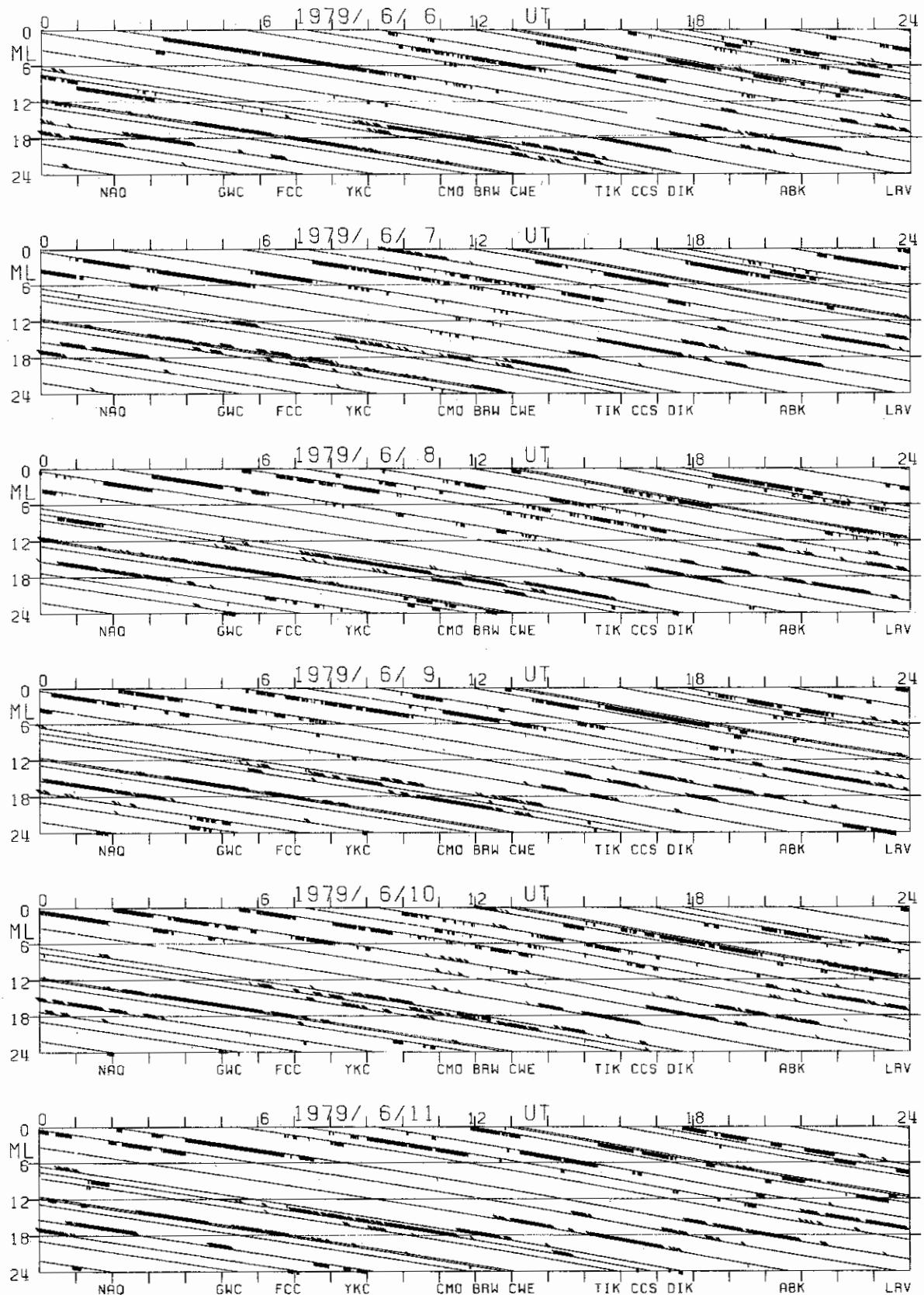


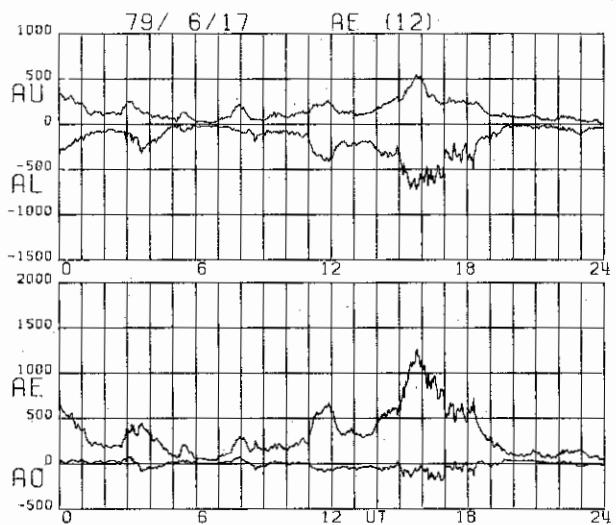
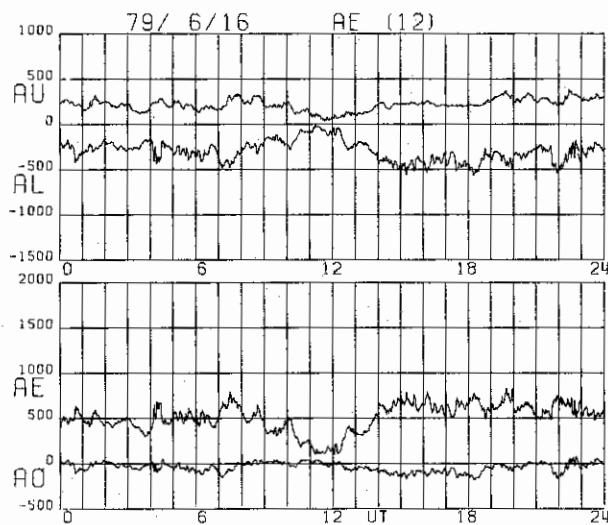
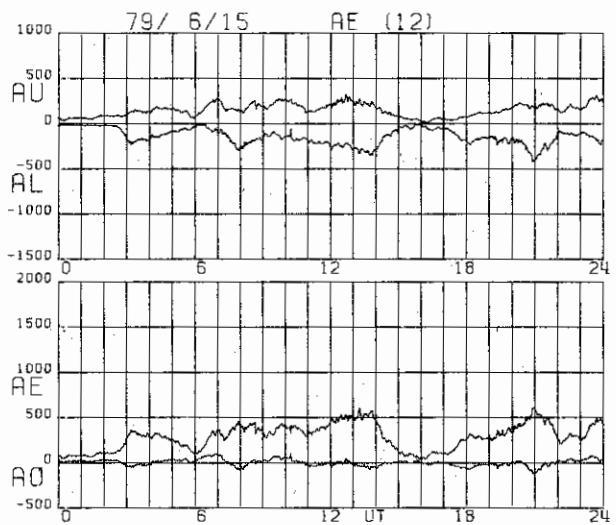
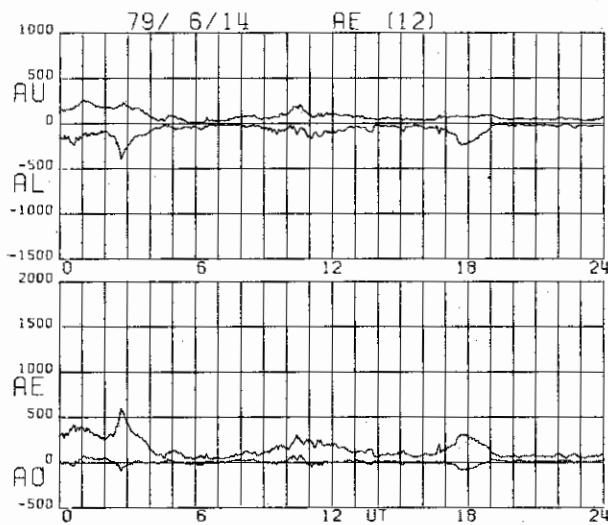
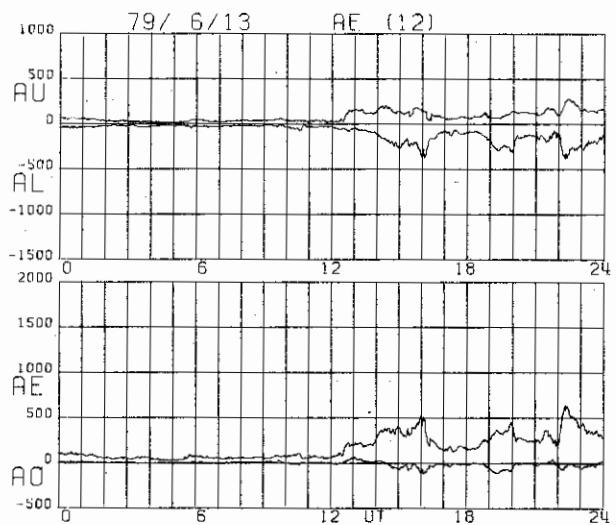
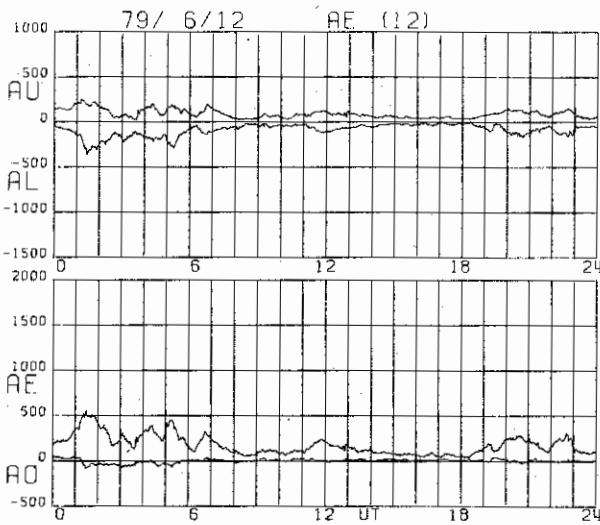


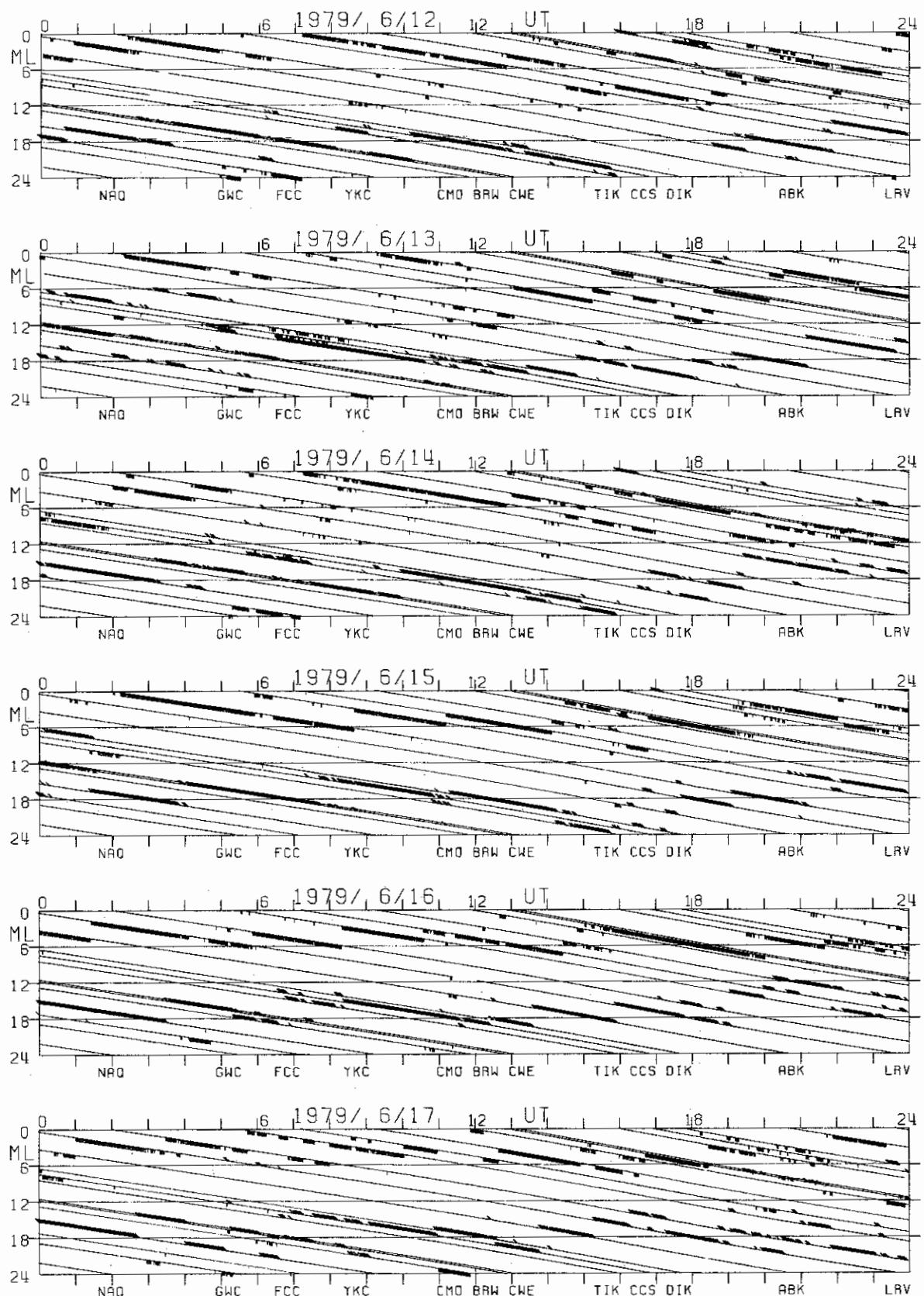


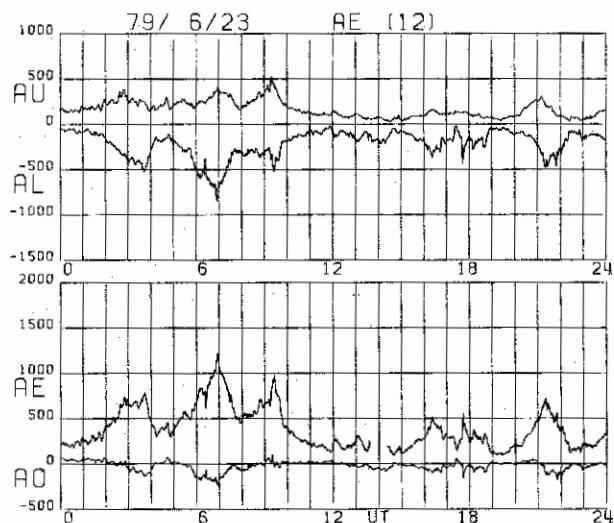
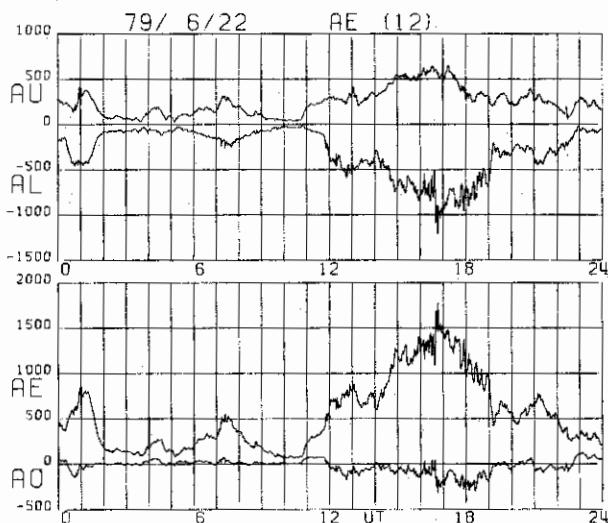
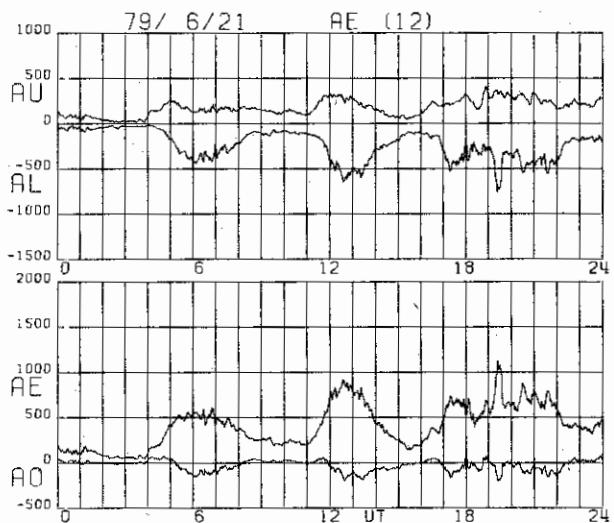
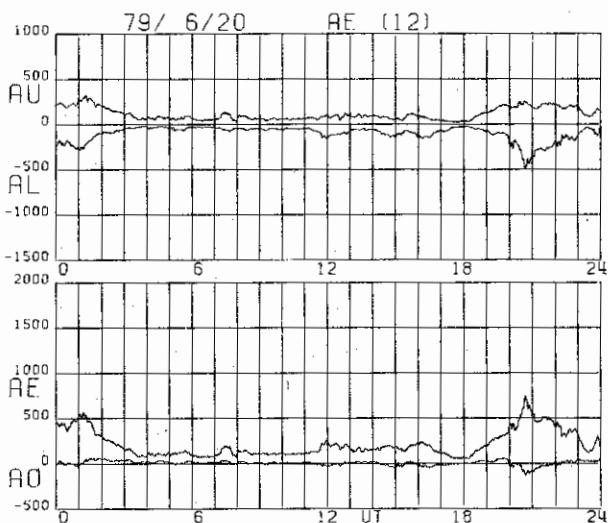
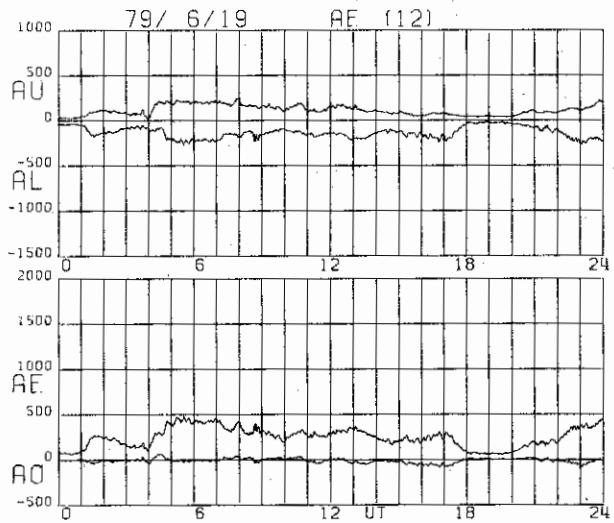
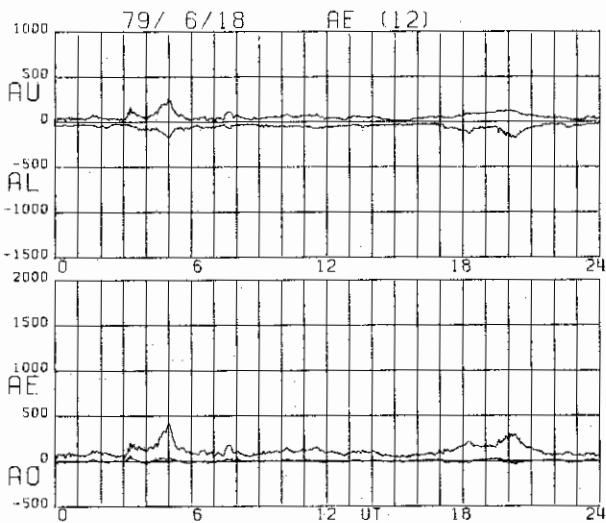


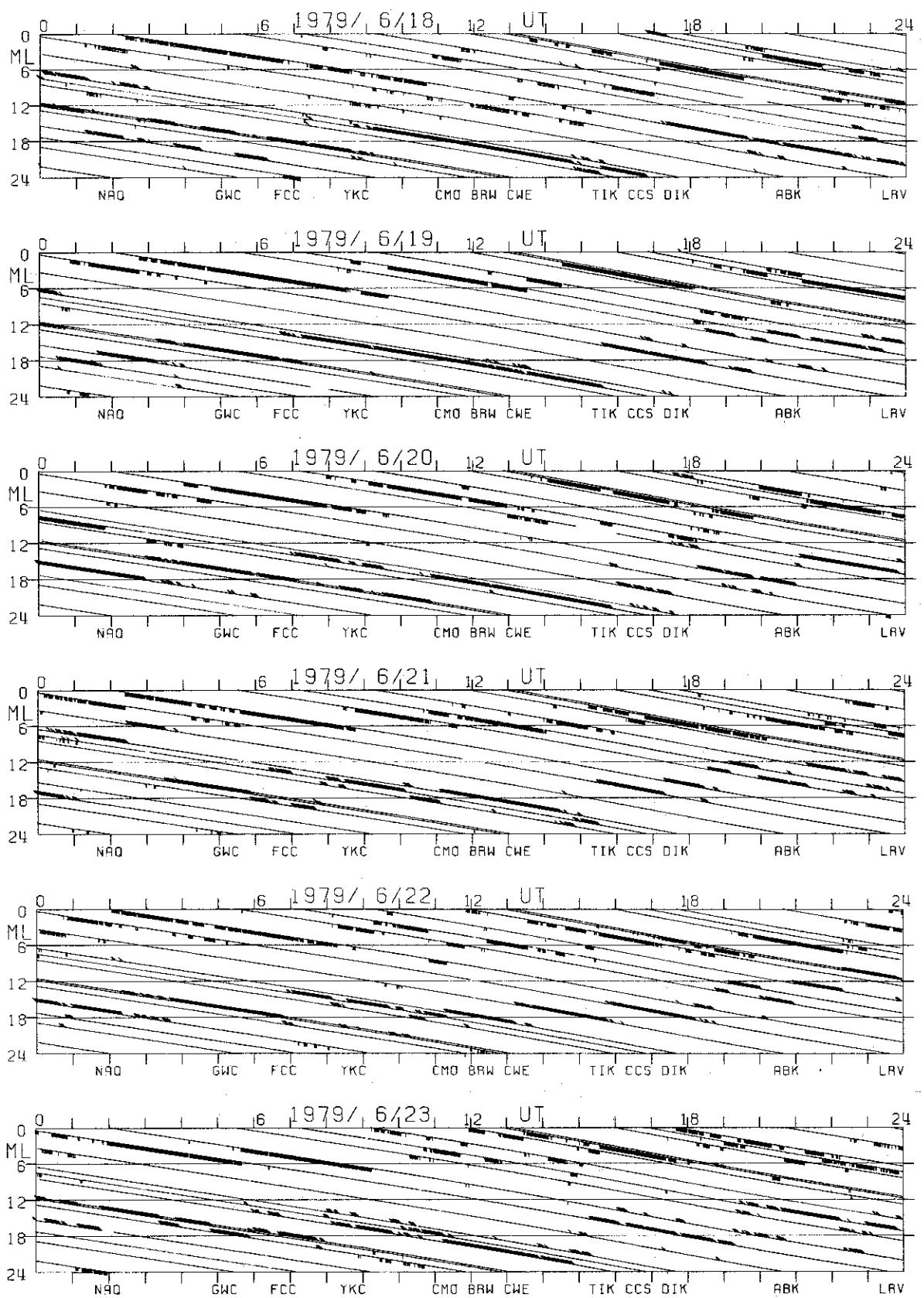


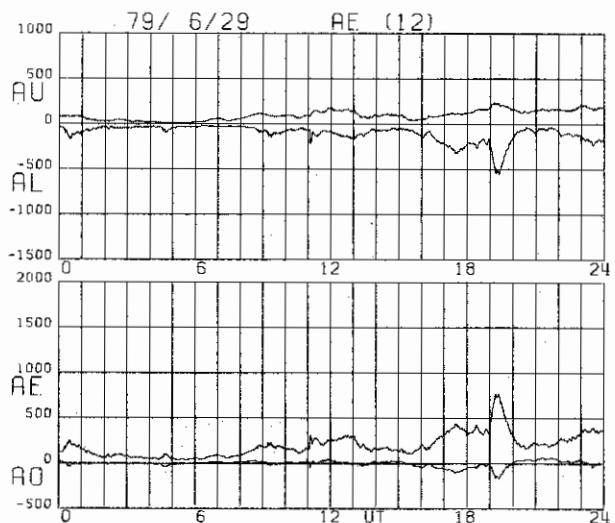
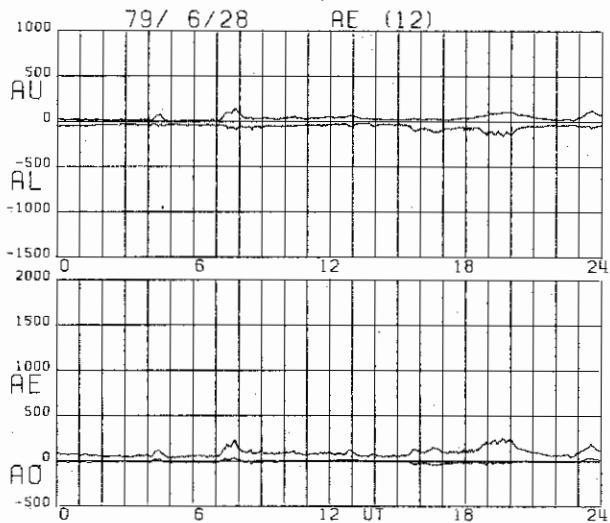
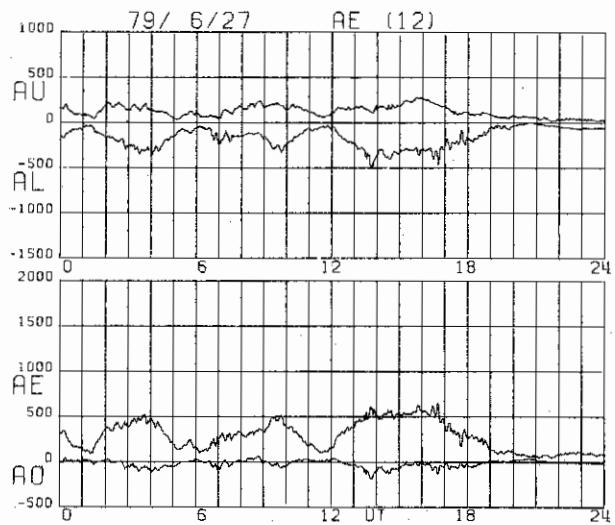
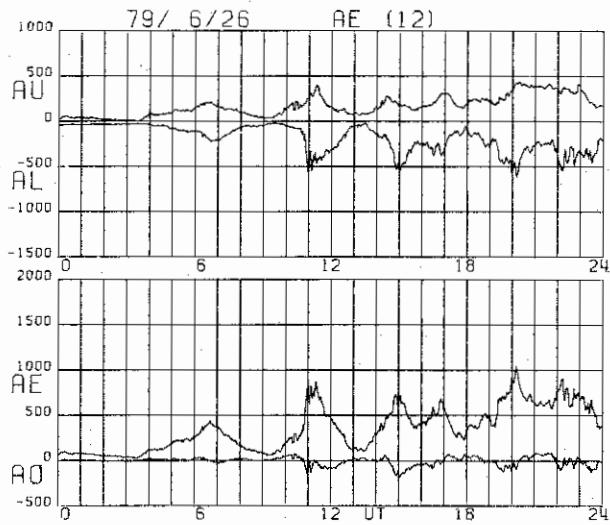
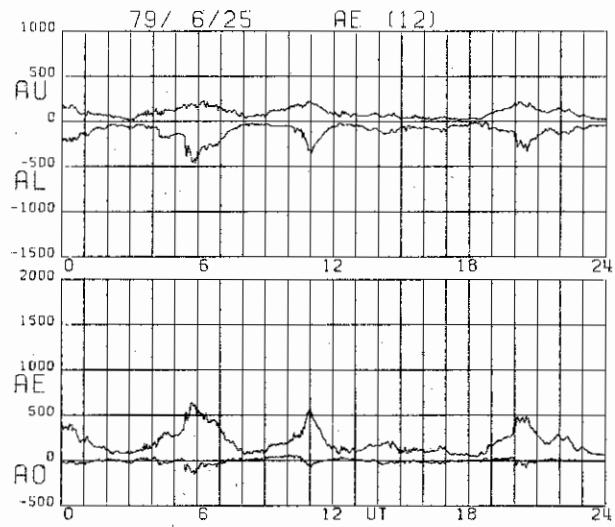
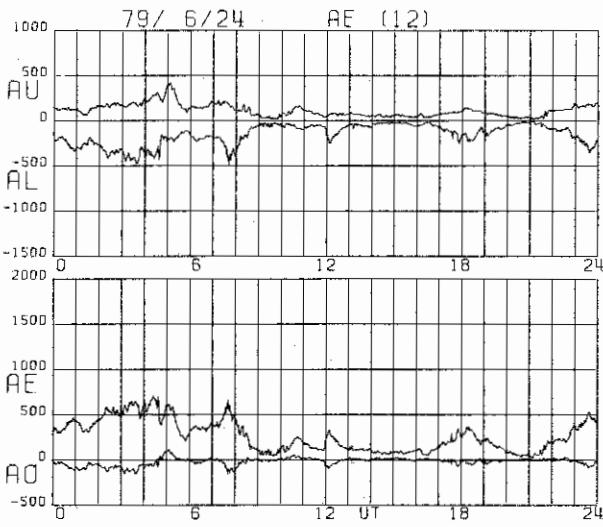


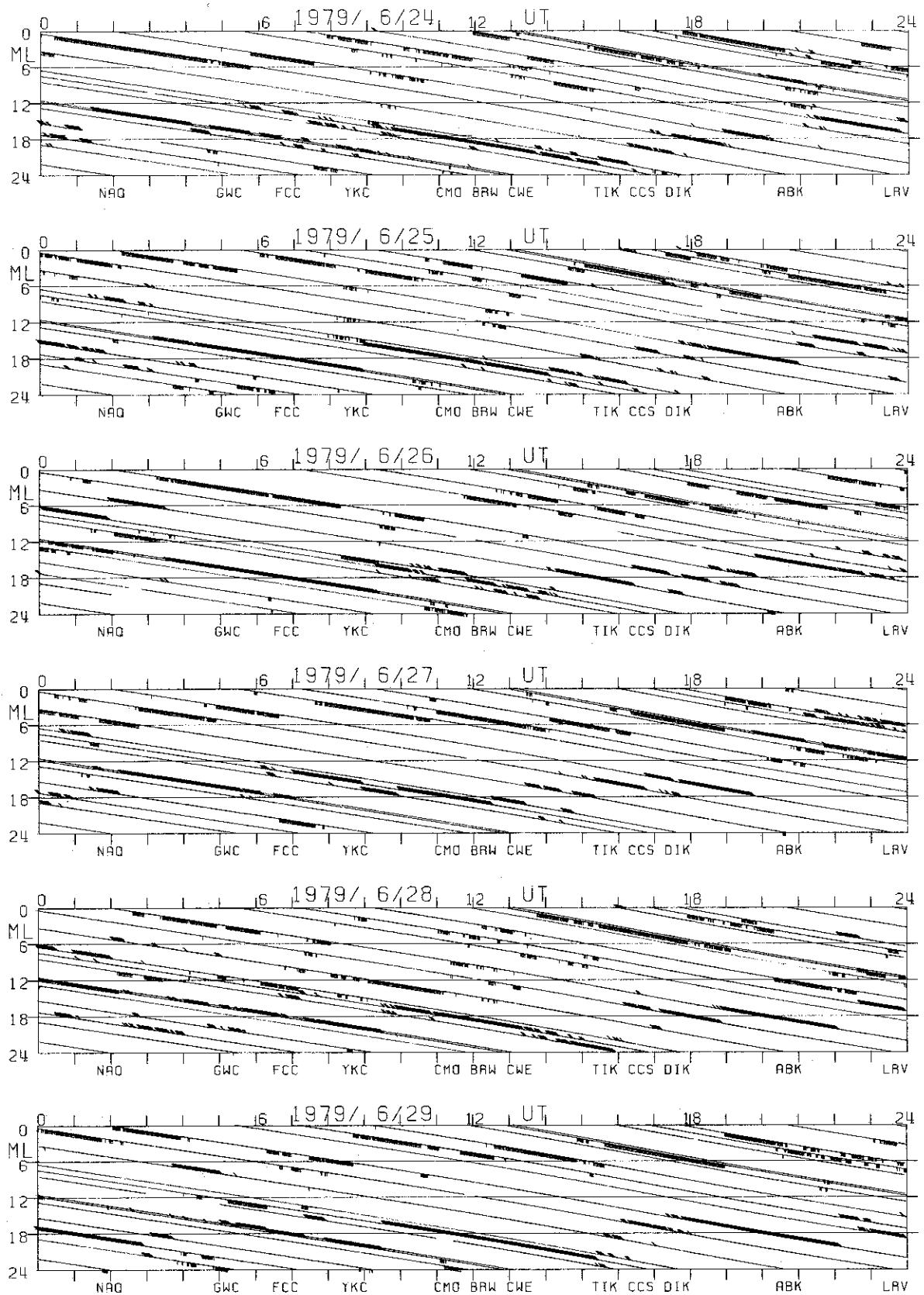


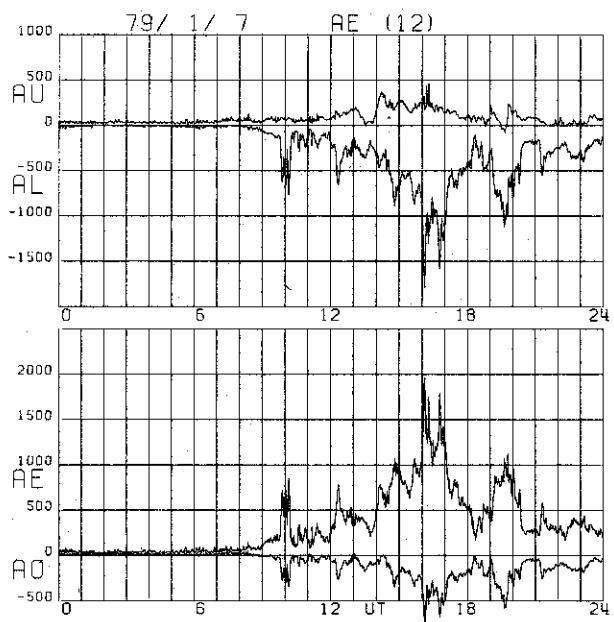
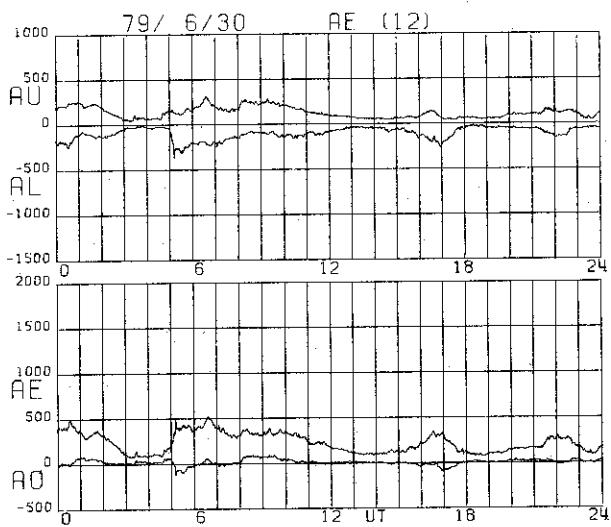












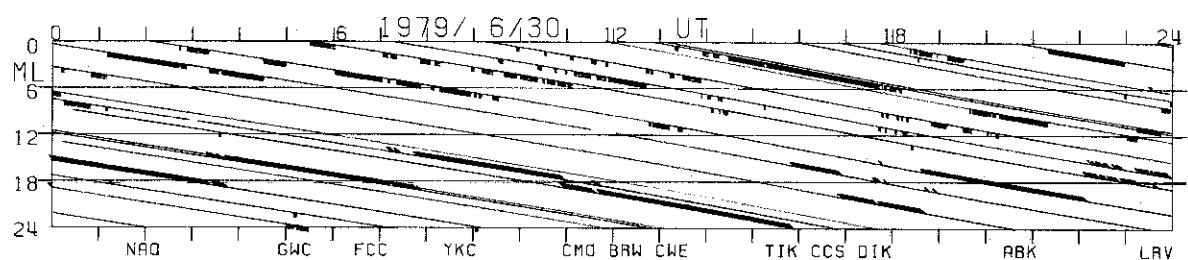
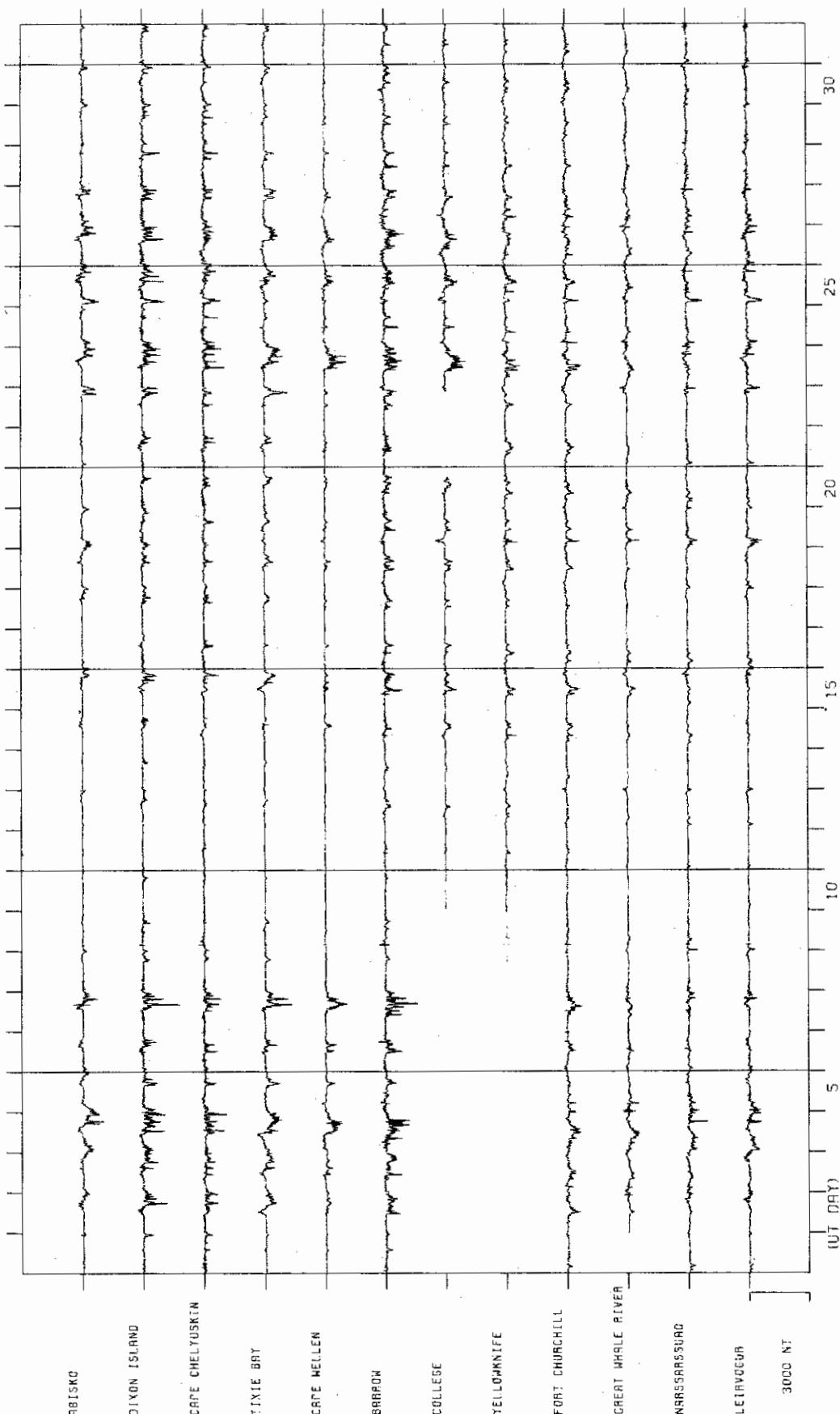
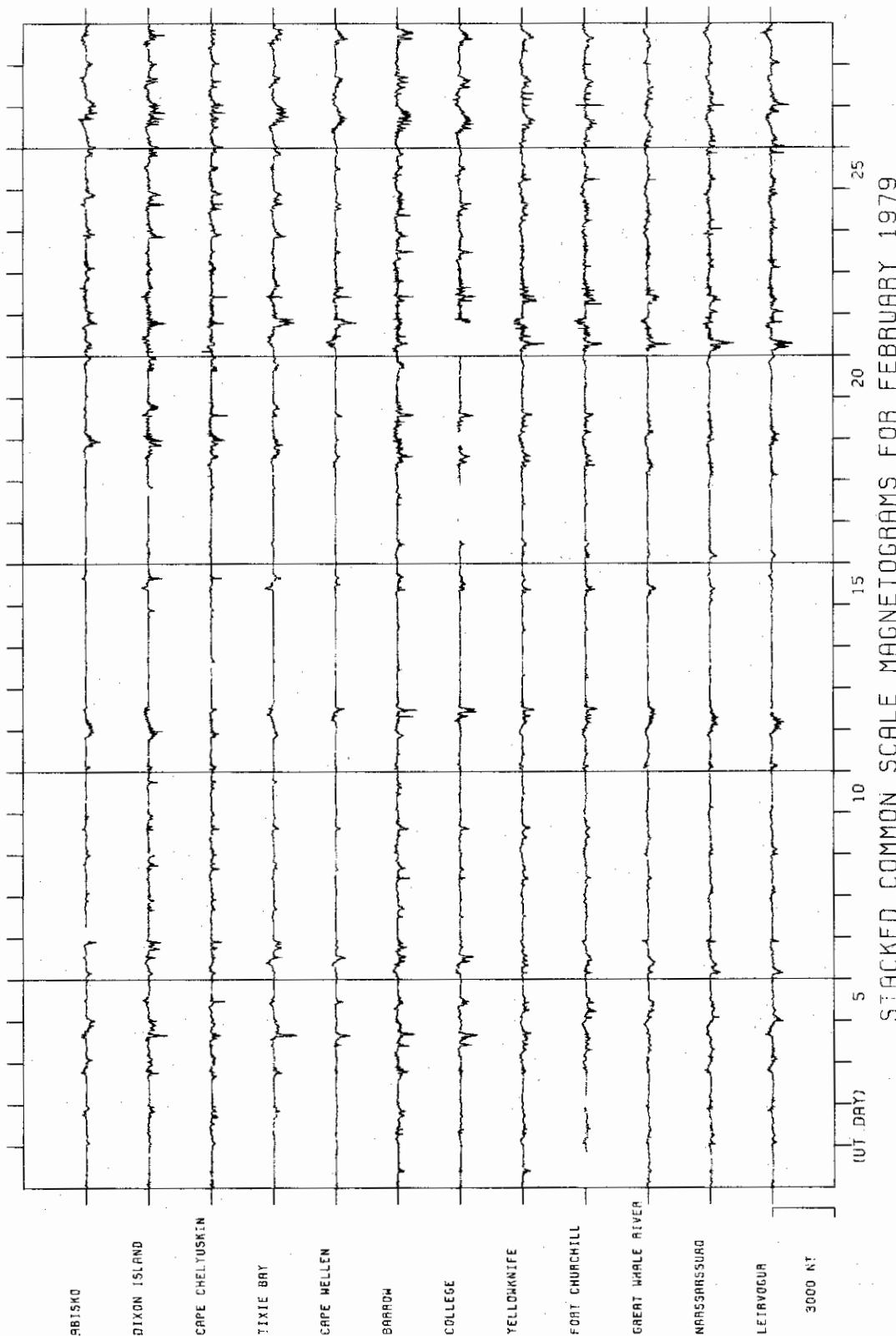


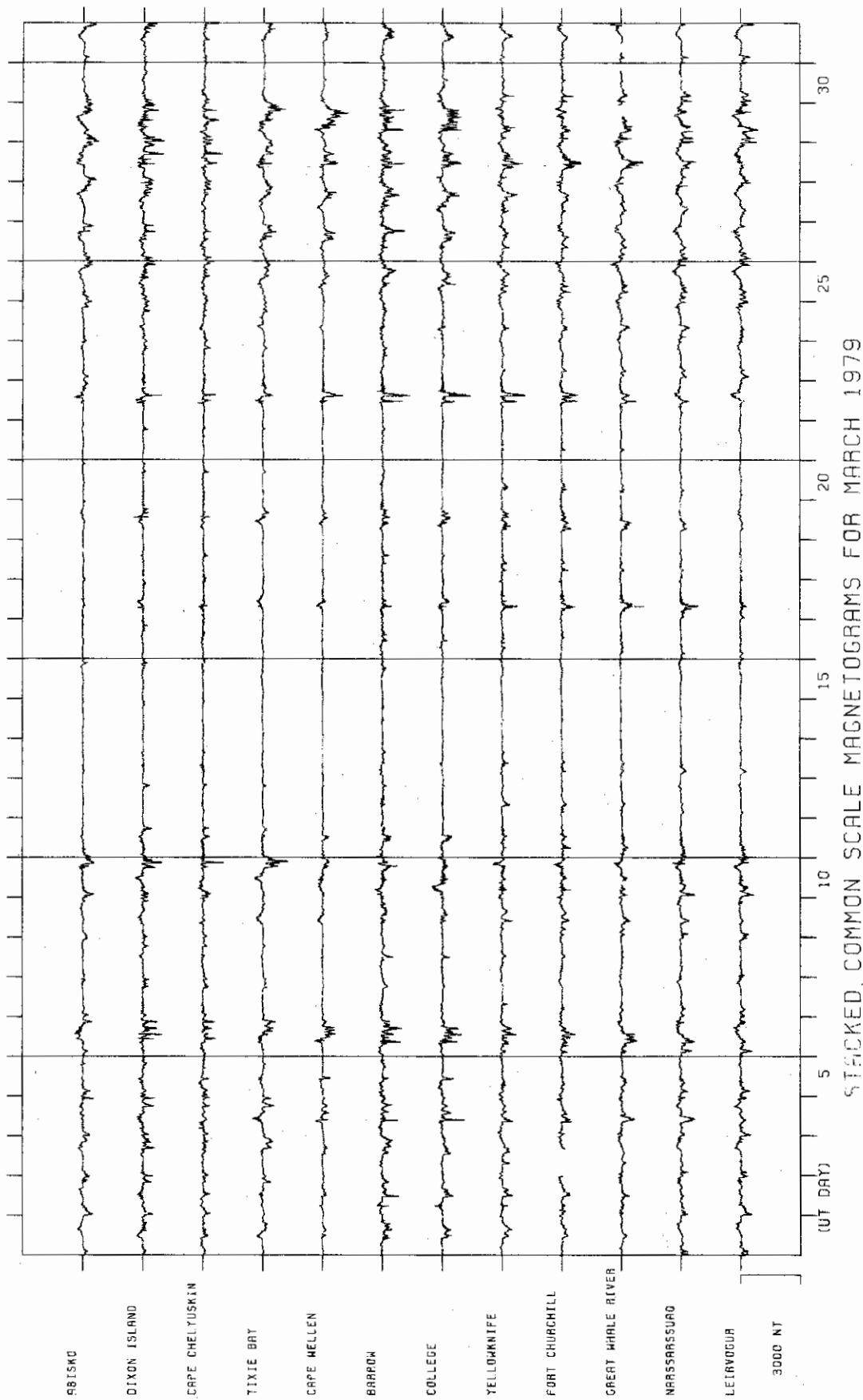
FIGURE 6

The H traces of magnetograms from AE(12) stations
in every month from January to June 1979.

STACKED COMMON SCALE MAGNETOGrams FOR JANUARY 1979







STACKED COMMON SCALE MAGNETOTOGRAMS FOR APRIL 1979

