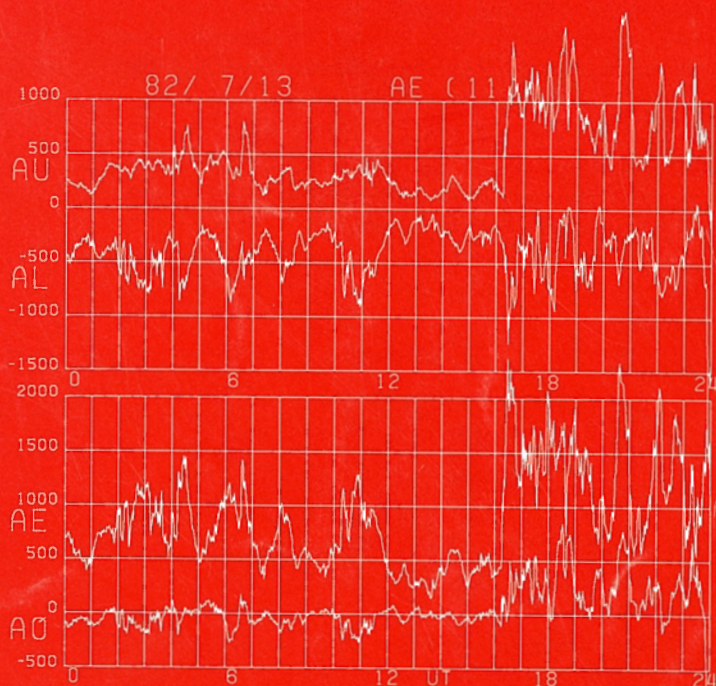


World Data Center C2 for Geomagnetism

DATA BOOK

No. 12

Auroral electrojet indices (AE)
for July-December 1982



JULY 1985

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

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

SPECIAL NOTICE

We published the AE-index of the first half of 1983 as Data Book No.11 prior to that of 1982. In this Data Book No.12 the index for the last half of 1982 is published prior to that of the first half. This is because the World Data Center A for Solar Terrestrial Physics (Boulder, Colorado), using funds from NASA, is digitizing the whole set of magnetograms necessary for advanced derivation of the index for the period of the magnetospheric tail crossing by the ISEE-3 (October 1982-December 1983). By the use of the data we are now deriving the provisional AE-index for the period. The same digitized data were used for the derivation of the index in this Data Book No.11 but we followed the normal procedure for quality check which was omitted in the quick derivation of the provisional index.

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

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

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

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

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PREFACE

The Auroral Electrojet (AE) index was originally introduced by Davis and Sugiura in 1966 as a measure of global electrojet activity in the auroral zone, and it is now widely used for studying geomagnetism, aeronomy and solar-terrestrial physics. The index was first derived at the Geophysical Institute of the University of Alaska, and hourly values were published for the years 1957 to 1964. The production of 2.5 min value was then tried at the Goddard Space Flight Center of NASA, and the results from September 1964 to June 1968 were published.

After that, the index was regularly published at the World Data Center A (WDC-A) in Boulder, Colorado, and the Center published 2.5 min values for the years 1966 to 1974 and 1.0 min values for 1975 and the first 4 months of 1976.

When it became difficult to continue the production of the AE-index at the WDC-A, it was requested that the index be produced at the WDC-C2 for Geomagnetism which is operated by Data Analysis Center for Geomagnetism and Spacemagnetism, Faculty of Science, Kyoto University. We decided to produce the index for two years (1978-1979) during the International Magnetospheric Study (IMS) and have published 1.0 min values as a part of "WDC-C2 for Geomagnetism Data Book" series.

Although the International Association of Geomagnetism and Aeronomy (IAGA) recommended the continuation of the production of the AE-index at the WDC-C2, we could not extend it to the period after IMS because the available man-power and computing facilities were not sufficient for the continuous derivation.

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

In derivation of the AE-index in the Data Book No.11 and 12, we used digitized data which were specially prepared by the WDC-A for STP in order to promote the use of the index in the data analyses for the period of the ISEE-3 magnetospheric tail crossing. They are produced, therefore, as the result of cooperation among the three organizations (WDC-C2 for Geomagnetism, NIPR and WDC-A for STP).

AURORAL ELECTROJET INDICES (AE)

for July - December 1982

1. Derivation and Representation

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

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

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

2. Data Used

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

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

Table 1. List of AE(12) stations.

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

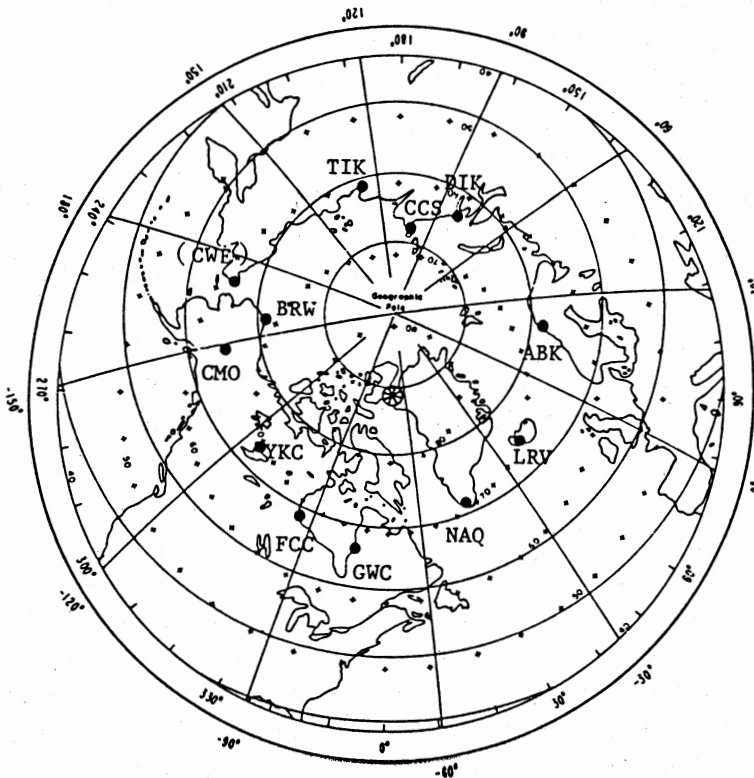
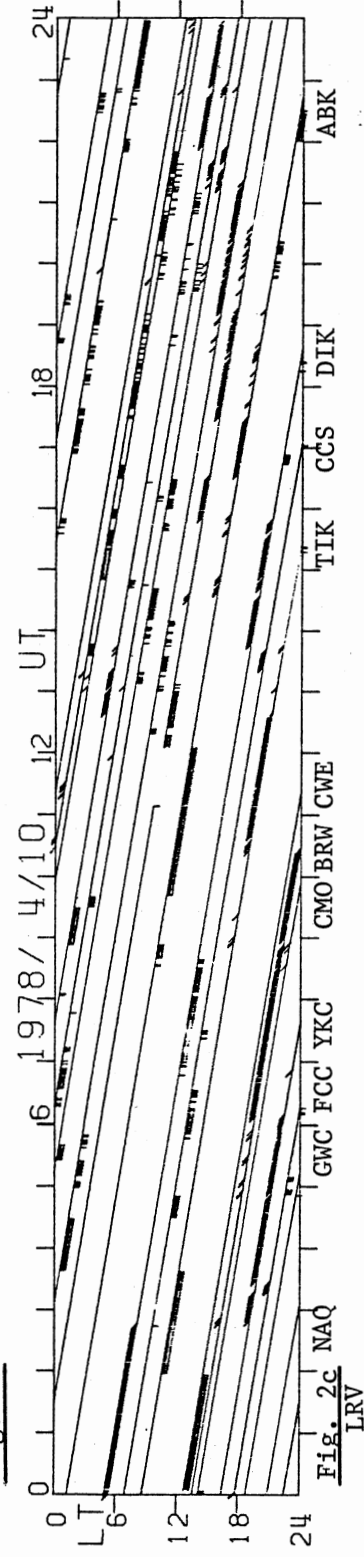
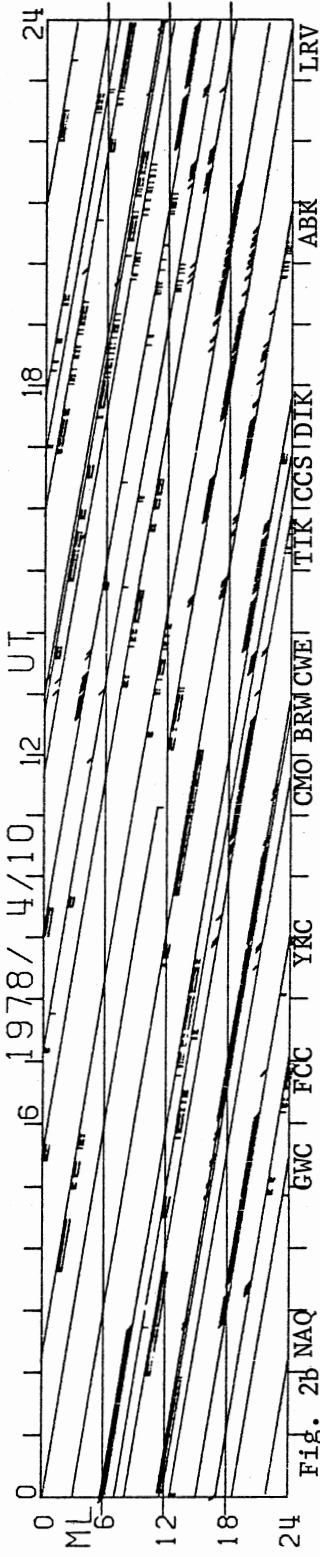
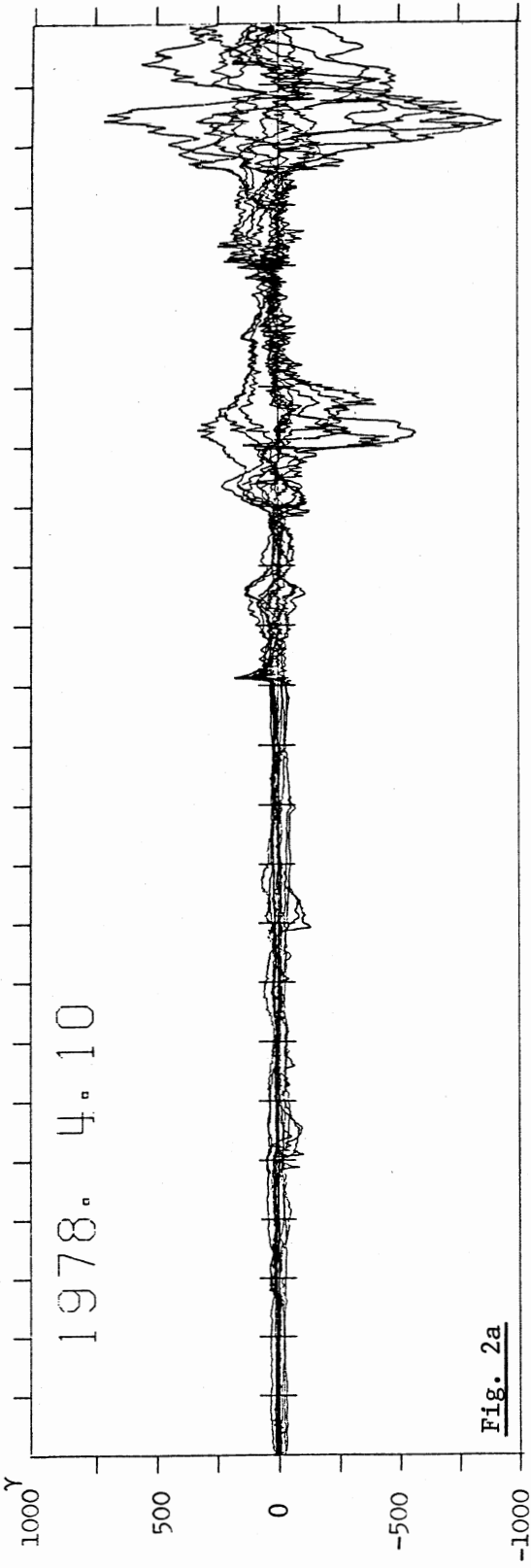


Fig. 1. Distribution of AE(12) stations.

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



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

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

We used digitized Abisko data supplied from the station.

For other analogue stations (Leirvogur, Cape Chelyuskin, Dixon Island and Tixie Bay), we digitized their magnetograms from July to September and we used digitized data supplied from WDC-A for STP from October to December, which were specially prepared for the analyses of the ISEE-3 tail crossing period. We applied normal quality check and correction procedures on these data.

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

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

Some explanations are necessary for our trial plots of the contributing stations. On the plots hereafter, the ordinate is the geomagnetic local time (MLT). The MLT is defined by the difference of the geomagnetic longitude of the station and the geomagnetic longitude of the Sun, and it is a function of the geomagnetic longitude of the station, season, and universal time. Figs. 3a, 3b, 3c show the difference between the GLT and the MLT of the stations used to derive AE indices for winter, summer and equinox, respectively. In these figures the GLT is shown by the straight line which runs diagonally, and the MLT is shown by the T (or inverted T) shaped mark. The length of the vertical line from the diagonal line is the difference between GLT and MLT. Note that for some stations the difference between GLT and MLT is as much as 2 hours.

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

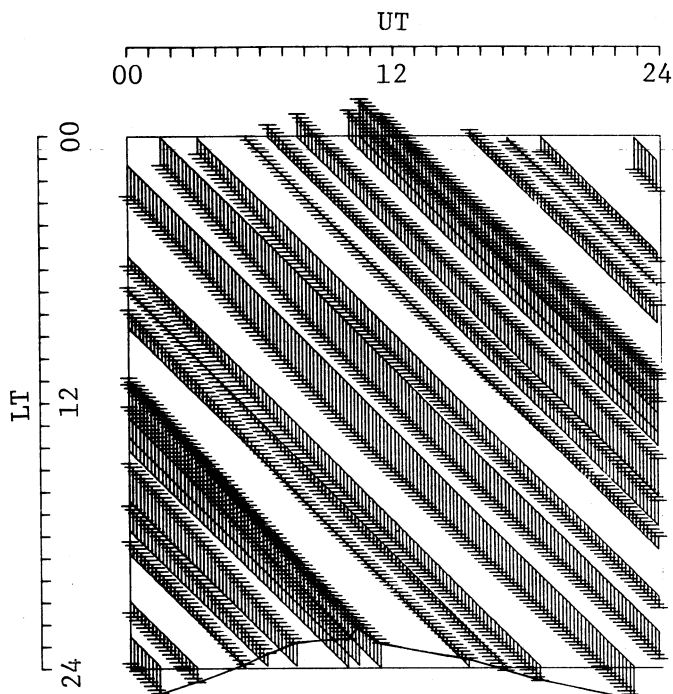


Fig. 3a Difference between GLT and MLT in winter.

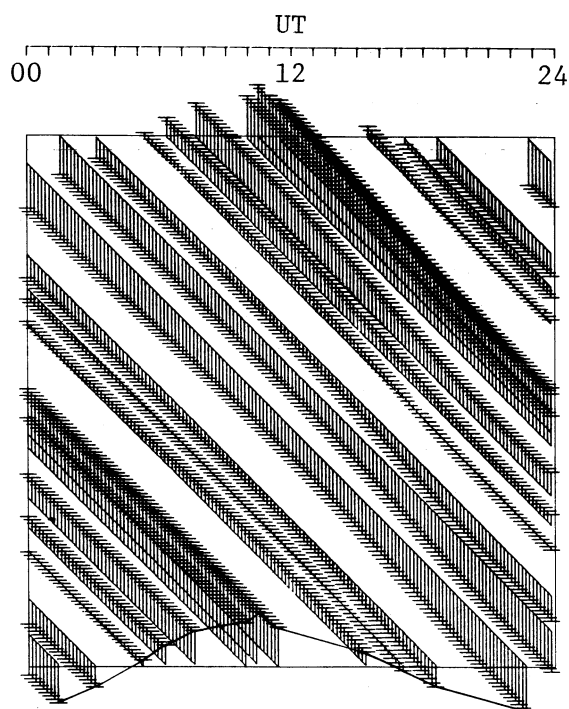


Fig. 3b Difference between GLT and MLT in summer.

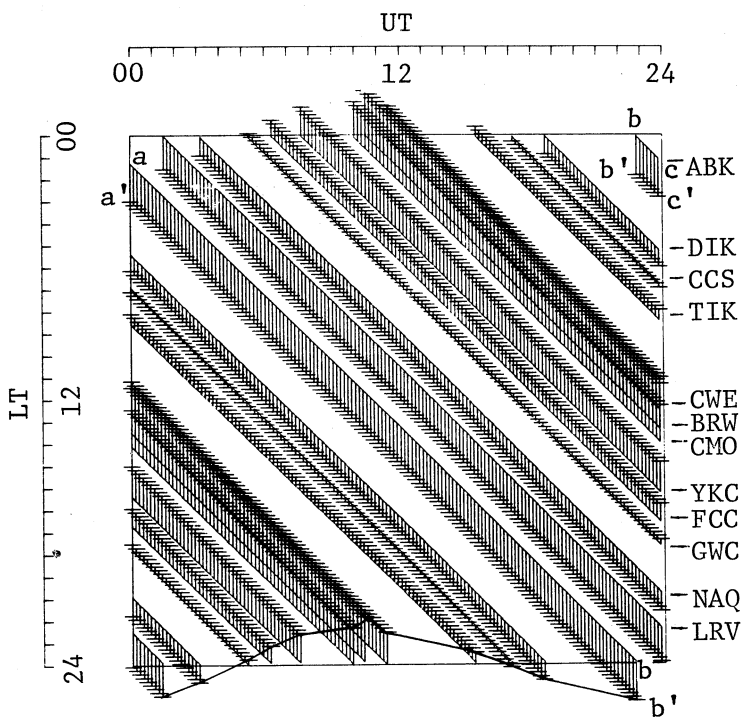


Fig. 3c Difference between GLT and MLT in equinox.

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.

4. Results

Monthly quiet-time H reference values for July–December 1982 are listed in Table 2. Table 3 gives the hourly average values of AE indices on every day from July to December 1982.

Daily graphs of 1.0-min AE indices (AU, AL, AE and AO) are shown in Fig. 4, and corresponding plots of the contributing stations are given in Fig. 5. Fig. 6 shows the H-traces of magnetograms from AE(11) stations in every month from July to December 1982. Finally, Fig. 7 shows a half year of hourly mean values of each index in one page.

We installed a new computer system in our data center and most of plots were made using the new computer and we hope the figures are better than before.

5. Acknowledgements

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

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

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

(Year 1982)

STATION	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Abisko	11757	11737	11735	11741	11738	11737
Dixon Island	6383	6337	6344	6328	6326	6322
Cape Chelyuskin	3439	3400	3386	3398	3376	3374
Tixie Bay	7887	7863	7849	7850	7848	7852
Barrow	9784	9753	9723	9738	9733	9743
College	12975	12955	12927	12966	12957	12955
Yellowknife	8742	8736	8731	8733	8720	8730
Fort Churchill	7639	7643	7601	7636	7632	7642
Great Whale River	10757	10776	10738	10772	10796	10783
Narssarssuaq	12142	12152	12136	12145	12150	12154
Leirvogur	12416	12424	12413	12413	12416	12412

* CORRECTION *

The quiet-time reference value for Barrow June 1983 was misprinted in the DATA BOOK No. 11.

Please read ' 9745 ' for ' 9475 '.

TABLE 3
Hourly average AE indices (AU, AL, AE and AO)
for July-December 1982.

AU INDEX (HOURLY VALUES)

JULY

1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
Q 1	269	95	113	172	162	167	197	80	144	107	136	120	79	127	200	249	261	252	264	264	261	252	264	176	162
Q 2	123	128	147	139	161	164	137	145	61	63	145	157	142	69	33	53	90	119	167	166	171	142	110	52	120
Q 3	34	60	110	78	101	93	82	95	85	102	94	60	28	44	26	28	33	35	74	93	87	80	89	134	73
Q 4	143	105	88	71	52	35	20	13	14	29	100	110	104	75	43	17	23	34	41	47	45	49	54	46	57
Q 5	36	46	46	50	32	30	40	13	22	43	77	102	114	86	89	84	77	77	78	80	67	65	61	55	61
6	45	30	27	25	29	31	32	60	180	175	125	83	51	53	60	110	172	396	320	324	214	151	126	125	123
7	171	230	178	252	374	335	242	259	176	123	72	99	167	95	149	253	412	428	239	136	103	68	62	66	195
8	66	95	93	107	209	215	140	107	135	170	200	208	120	113	84	92	112	154	111	110	142	143	145	283	144
9	289	191	149	126	115	68	52	150	233	227	107	118	181	133	57	59	94	80	53	113	174	97	77	154	129
Q 10	262	119	54	93	220	250	153	219	116	118	218	306	214	67	64	51	82	57	61	116	145	73	55	45	132
11	99	94	81	74	96	76	121	79	47	192	412	273	266	386	604	490	423	461	448	506	353	306	232	206	263
D 12	156	253	229	254	275	156	53	42	44	339	492	501	394	587	509	567	449	548	301	384	242	213	227	263	312
D 13	198	313	369	382	489	420	442	234	275	250	333	351	177	147	211	207	782	1066	1227	793	1084	638	907	669	498
D 14	263	588	143	4	32	273	275	147	91	83	220	227	146	154	187	296	211	309	417	355	317	332	194	279	231
15	283	273	308	360	246	195	194	263	245	205	224	268	297	204	203	120	153	243	213	209	298	257	282	198	239
D 16	218	202	232	233	268	256	174	146	230	474	346	206	173	162	65	198	113	185	122	130	105	252	246	241	207
17	170	348	183	101	135	92	46	74	72	85	129	149	167	213	140	22	9	14	32	72	125	215	245	269	130
18	220	295	133	146	230	111	44	54	148	284	318	432	423	112	138	76	134	218	249	171	55	64	111	107	178
19	247	399	238	148	129	20	37	21	35	20	70	151	234	246	251	197	69	41	39	62	166	237	299	161	146
20	195	279	415	328	192	118	213	153	83	47	80	100	27	14	20	17	25	41	55	54	37	31	37	56	109
21	56	48	41	24	8	13	34	4	-8	-4	-1	-4	-4	5	83	65	32	46	61	152	149	116	208	145	53
22	235	154	41	45	18	4	5	90	147	74	6	4	61	179	232	155	81	133	88	61	45	50	63	56	84
23	162	113	140	101	39	33	70	71	13	18	113	126	148	185	195	36	31	147	127	220	170	126	138	152	111
D 24	117	82	187	299	371	316	223	288	273	427	322	186	76	133	85	284	243	333	325	179	102	83	94	201	218
25	138	61	107	278	189	148	166	184	122	119	123	102	45	63	127	137	158	136	158	222	167	248	150	119	144
26	145	246	182	119	55	83	140	156	161	313	155	144	153	97	95	226	121	93	148	153	175	182	142	184	153
27	147	111	85	132	113	234	280	289	173	64	38	65	43	38	34	150	78	42	72	118	156	109	177	134	120
28	107	136	139	163	195	108	172	142	78	80	144	191	51	75	82	69	199	183	260	106	109	94	59	132	128
29	195	110	90	68	41	103	169	174	87	37	61	127	206	135	130	149	52	63	100	113	134	100	88	46	107
30	35	38	63	42	45	80	129	164	237	178	158	201	75	37	61	66	142	328	162	139	120	112	183	80	120
31	67	137	134	127	171	218	224	236	293	236	206	160	136	58	81	217	124	192	157	119	83	89	178	121	157
MEAN	157	173	146	146	154	143	138	133	129	150	169	171	147	131	137	148	158	204	196	185	180	160	171	159	158
5Q MEAN	119	91	89	86	113	114	86	97	59	71	126	147	120	68	51	46	61	64	84	100	103	81	73	66	88
5D MEAN	190	287	232	234	287	284	233	171	182	314	342	294	193	236	211	310	359	488	478	368	370	303	333	330	293

AU INDEX (HOURLY VALUES)		AUGUST 1982																								
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D	1	136	117	122	100	87	89	129	163	156	152	201	219	142	63	51	86	159	234	227	204	155	204	274	151	
	2	246	191	216	188	206	284	214	114	127	344	410	420	181	258	409	370	435	363	290	210	217	340	240	267	
	3	124	154	202	186	162	175	162	162	262	351	322	259	263	210	333	267	119	283	295	122	103	129	200	204	
	4	123	94	102	125	126	87	97	129	168	110	191	226	105	151	157	181	142	185	212	156	122	135	189	147	
	5	249	155	116	122	220	166	170	217	383	322	194	130	163	110	104	126	279	256	152	187	145	95	84	176	
	6	149	85	122	53	92	156	94	114	162	229	297	231	108	129	149	131	129	139	194	442	276	184	280	174	
D	7	388	252	210	429	317	199	144	278	196	208	307	390	432	373	349	489	337	108	83	97	26	24	26	38	
Q	8	39	24	24	18	10	27	31	32	68	56	46	71	58	93	102	56	46	58	59	63	41	36	42	48	
	9	30	26	15	17	11	84	198	300	211	334	78	48	37	84	108	199	284	381	423	276	289	380	412	185	
D	10	237	210	204	191	269	265	198	278	421	327	289	139	82	64	99	257	256	168	200	294	195	95	222	163	
	11	90	117	154	73	79	123	134	98	145	311	246	220	87	203	210	379	301	423	446	262	112	70	61	57	
	12	51	40	122	52	61	231	314	229	266	73	273	154	110	252	364	283	179	230	275	217	156	131	163	183	
	13	157	146	130	226	183	199	104	164	204	226	202	122	145	120	96	74	117	82	49	75	140	86	49	182	
Q	14	83	23	20	46	64	71	49	26	115	113	121	78	60	58	91	116	147	106	117	227	193	115	119	95	
Q	15	120	74	35	17	16	16	16	16	29	38	40	94	83	92	48	24	12	21	50	52	51	75	71	48	
Q	16	62	45	33	34	121	94	41	39	42	46	45	41	40	42	59	76	100	75	40	42	121	150	188	73	
	17	219	70	52	33	253	191	188	217	188	59	25	21	28	62	90	54	29	27	61	185	124	128	163	228	
	18	311	198	76	87	231	169	86	43	38	41	41	41	71	119	99	151	150	277	180	179	162	73	71	59	
Q	19	99	103	66	71	52	186	43	59	94	105	66	51	59	49	55	68	55	58	150	184	119	112	75	66	
	20	90	107	91	78	42	56	85	57	52	102	47	60	200	193	85	63	60	137	148	130	223	147	189	168	
	21	134	119	153	160	177	40	27	75	30	93	58	47	84	91	89	164	67	34	60	132	88	88	53	54	
	22	151	257	218	39	32	26	36	28	127	106	98	148	211	187	191	205	81	84	124	124	191	92	69	121	
	23	154	110	51	69	68	70	56	133	71	82	63	65	89	89	61	93	197	215	157	135	142	180	209	96	
	24	178	104	109	64	138	169	121	200	177	75	88	82	119	124	153	178	164	106	120	116	94	70	66	43	
	25	64	143	78	119	92	219	241	158	109	163	206	166	143	103	81	41	96	204	114	128	135	102	170	106	
	26	97	140	114	142	110	166	190	146	119	67	56	178	96	110	121	45	66	63	77	125	128	88	122	153	
	27	139	81	57	72	81	49	65	68	92	72	68	104	71	106	34	95	50	56	56	94	101	63	51	47	
	28	44	48	54	41	30	26	30	45	38	66	102	106	70	62	50	58	81	133	113	226	178	261	268	145	
D	29	127	126	152	230	267	275	226	168	339	355	297	149	149	122	153	165	204	348	273	281	152	156	97	101	
D	30	102	87	104	244	286	328	229	189	145	318	279	231	176	116	125	111	170	276	254	211	167	236	204	148	
	31	104	99	178	128	109	87	185	192	132	105	136	107	152	206	129	85	100	106	91	148	157	199	98	106	
MEAN		138	114	109	111	128	139	125	133	152	163	156	141	125	132	137	150	146	166	162	169	146	135	143	124	139
50 MEAN		80	53	35	37	52	78	36	34	69	71	63	67	60	66	71	68	72	63	83	113	105	97	99	91	69
5D MEAN		220	173	177	256	269	270	202	205	245	310	316	265	204	186	227	278	280	252	220	198	151	170	157	118	223

SEPTEMBER 1982

AU INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
0 1	95	79	81	72	90	39	82	92	72	74	109	96	164	167	93	134	94	125	71	53	68	74	58	87	90
2	125	127	165	167	126	154	169	237	173	184	167	187	159	153	147	90	94	135	220	143	172	214	249	211	165
3	188	113	161	194	255	234	195	199	154	233	250	192	256	154	170	135	141	108	149	132	117	138	104	88	169
4	82	109	222	254	193	209	376	226	169	274	202	178	254	296	364	258	355	217	127	187	234	201	240	298	230
5	276	211	172	296	288	274	340	273	281	395	300	303	246	401	313	333	198	81	97	86	151	345	325	437	268
D 6	633	698	557	461	329	426	617	607	51	204	83	91	153	94	53	271	61	20	273	50	23	15	27	46	243
D 7	240	279	173	194	115	231	214	132	187	90	177	133	314	278	85	215	265	73	48	244	124	135	139	159	177
8	98	77	39	66	36	37	34	45	45	90	67	85	46	57	38	36	38	23	36	49	49	128	65	82	57
9	67	221	148	219	245	141	106	84	122	101	174	163	125	60	74	153	107	228	220	175	229	223	157	164	154
0 10	113	103	194	89	84	65	54	48	55	50	53	56	55	58	58	64	70	57	50	48	68	64	67	62	70
11	70	62	81	118	120	106	98	78	117	86	138	163	128	189	115	60	93	152	110	150	70	117	134	136	112
12	137	124	111	123	196	150	124	125	103	120	129	59	47	27	20	47	58	37	61	129	158	66	90	189	101
13	189	200	225	133	58	46	40	35	32	134	69	93	59	28	70	156	52	68	51	57	74	59	50	84	86
14	54	35	42	94	170	82	48	51	110	87	51	34	28	28	40	19	24	101	238	187	124	108	51	29	76
15	26	29	59	92	136	153	168	89	111	100	63	42	35	31	49	56	42	33	65	60	89	80	133	88	76
16	90	71	78	84	75	65	138	150	118	79	76	60	64	63	39	40	33	40	104	186	95	88	127	109	86
17	79	53	60	52	43	43	75	108	137	313	273	89	87	36	27	18	61	81	69	61	58	56	47	56	83
18	112	82	171	151	141	98	64	147	84	77	65	81	73	105	152	129	75	52	181	177	22	154	187	116	112
19	111	92	129	102	182	158	191	139	77	122	189	112	91	159	109	201	88	225	256	247	227	135	169	147	152
20	100	99	64	105	110	160	168	208	130	149	149	189	130	97	132	115	70	117	67	61	90	173	236	105	126
D 21	76	148	203	308	194	216	172	275	286	292	262	137	190	111	104	104	114	154	229	296	267	402	285	324	215
D 22	330	415	223	180	52	112	-62	2	148	129	142	333	231	227	206	230	268	256	242	161	201	144	118	110	183
23	119	136	122	98	137	111	191	146	149	266	227	251	147	86	80	114	112	125	189	170	173	210	164	191	155
24	154	181	121	167	138	186	135	124	99	75	133	197	151	110	287	137	59	63	57	44	76	82	82	62	122
25	42	44	40	44	37	37	38	66	78	72	70	44	75	49	54	36	29	135	225	182	82	98	61	59	71
D 26	47	51	56	126	148	159	144	185	230	309	177	296	437	170	104	167	-18	63	314	235	123	189	232	138	170
27	257	265	222	151	157	173	153	93	121	129	61	88	41	48	63	89	183	221	166	137	99	77	137	138	136
28	133	119	124	137	146	92	85	55	49	57	45	59	51	33	33	27	19	53	53	31	42	99	73	59	70
0 29	51	51	68	95	68	58	66	103	116	139	174	204	145	46	30	38	38	61	100	75	92	56	41	36	81
0 30	34	34	39	45	49	47	57	101	152	165	307	264	185	143	88	199	140	144	244	205	153	207	256	180	143
MEAN	137	143	138	147	137	135	142	140	125	153	146	142	138	116	106	122	98	108	143	133	118	137	136	133	132
50 MEAN	74	64	88	70	66	50	66	90	106	148	183	141	127	90	59	90	80	93	106	88	87	91	93	84	93
5D MEAN	265	318	242	253	167	228	217	240	180	204	168	198	265	176	110	197	138	113	221	197	147	177	160	155	197

DATE		OCTOBER 1982																							MEAN
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	167	190	152	157	95	60	65	76	55	160	204	194	239	164	272	94	159	297	171	125	133	158	128	269	158
2	162	158	118	145	154	234	149	139	182	199	304	207	152	263	174	43	64	147	179	154	108	87	68	44	151
3	84	51	43	42	61	71	75	96	115	87	111	142	126	123	81	63	31	18	63	100	117	56	41	30	76
4	36	23	31	34	59	134	135	116	109	153	212	201	156	113	96	39	35	40	44	70	38	27	20	37	82
5	54	51	62	87	186	198	163	88	30	34	16	20	22	27	22	20	24	51	78	53	28	50	58	74	62
6	154	112	101	140	170	187	186	139	57	49	102	145	163	135	239	264	52	75	203	192	222	238	108	60	145
7	83	71	194	161	221	202	181	171	180	159	94	144	154	81	128	215	239	163	60	51	46	28	26	81	131
8	104	42	41	102	225	95	79	48	91	89	80	19	12	33	117	183	205	180	151	182	122	92	107	87	104
9	89	85	46	45	36	43	37	34	31	26	26	25	39	50	62	32	14	24	21	27	20	34	35	69	40
10	91	67	45	58	50	54	54	51	40	42	78	90	110	85	40	25	42	47	55	34	76	107	185	98	68
11	112	60	38	62	60	89	194	162	78	52	39	57	96	50	52	20	29	46	39	82	117	91	53	28	71
12	58	78	67	70	54	94	80	81	36	44	138	110	50	32	29	34	41	47	49	146	188	190	118	69	79
13	51	63	118	97	127	145	168	107	84	107	200	249	172	226	222	284	246	189	282	165	163	95	168	144	161
14	133	87	120	189	179	194	168	219	84	223	290	118	121	139	159	252	267	218	233	165	131	117	75	59	164
15	48	48	62	72	77	53	63	95	112	144	177	132	67	94	69	48	49	50	79	79	79	59	43	36	75
16	33	60	57	33	29	39	82	58	68	62	85	122	89	95	91	166	156	158	102	112	120	171	87	72	90
17	76	107	126	201	141	81	50	78	73	69	122	154	114	65	67	33	25	65	104	134	115	165	131	135	101
18	96	77	116	68	134	99	70	112	81	73	106	163	85	156	161	212	220	121	85	93	102	85	68	63	110
19	70	57	58	71	48	72	107	71	94	64	53	52	97	128	91	124	110	172	243	157	135	211	161	129	107
20	108	105	137	122	130	169	170	128	183	137	94	73	121	121	102	48	46	33	26	25	33	34	24	29	92
21	43	53	47	65	89	81	71	78	94	69	44	30	27	39	31	25	40	111	88	45	44	48	33	36	55
22	59	53	57	56	48	43	51	48	33	30	27	26	30	38	19	35	20	14	12	12	14	16	18	25	33
23	24	17	25	26	26	35	44	67	79	58	37	29	31	31	39	46	88	95	81	36	57	61	43	40	46
24	33	32	50	64	69	69	58	66	55	49	68	63	67	82	66	76	81	106	173	173	129	118	72	75	79
25	87	84	88	92	84	187	154	144	111	189	168	170	74	219	257	265	242	273	189	180	229	166	55	41	156
26	164	160	149	175	309	90	237	131	67	83	61	69	24	8	15	21	23	63	42	27	24	60	87	63	89
27	67	76	62	66	66	112	87	157	131	115	163	72	88	80	157	104	70	72	114	95	113	119	78	67	97
28	80	122	144	89	72	69	62	123	117	77	138	151	152	164	96	48	45	50	50	70	87	79	103	134	97
29	102	86	73	52	89	100	147	168	215	242	109	75	125	187	127	215	202	202	103	88	91	107	116	90	130
30	93	128	50	87	81	87	92	208	233	176	214	175	194	177	270	222	205	233	250	247	175	110	106	70	162
31	61	83	47	19	54	95	53	37	21	14	14	18	21	36	45	98	126	78	220	206	149	81	65	113	73
MEAN	84	80	81	88	103	105	107	106	94	99	115	106	97	104	109	108	103	110	116	107	102	98	80	76	99
50 MEAN	50	47	48	52	51	48	50	62	62	61	67	55	46	59	51	47	50	57	73	65	55	57	42	49	54
50 MEAN	86	78	110	103	134	147	143	140	116	149	141	120	118	133	136	212	216	170	179	135	116	85	90	97	131

NOVEMBER 1982

AU INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D 1	62	63	124	69	50	66	74	66	81	231	210	135	204	191	194	201	230	155	92	92	112	154	96	79	126
D 2	42	132	72	72	55	61	88	77	72	84	100	140	128	225	271	196	73	237	234	73	32	80	130	93	115
0 3	159	104	155	180	210	239	184	144	144	258	250	153	144	98	79	41	42	26	23	19	14	20	17	20	113
0 4	10	6	8	13	22	34	64	60	51	56	106	183	158	78	95	61	47	53	44	88	133	127	63	57	67
0 5	65	62	58	46	47	71	82	70	64	43	79	130	112	77	36	46	50	80	109	73	68	44	35	29	66
0 6	49	57	58	57	64	94	138	142	92	115	183	121	144	99	46	97	120	54	46	40	33	30	30	30	81
0 7	44	58	48	45	50	45	47	53	45	35	31	28	34	66	54	39	37	33	33	23	32	34	33	36	41
0 8	35	41	34	46	53	64	58	58	72	84	64	56	78	60	65	56	84	188	259	152	55	25	25	33	73
0 9	44	38	36	35	54	40	25	24	21	25	20	28	29	34	32	30	22	27	28	27	27	21	28	34	30
0 10	24	52	43	32	27	46	40	27	29	42	40	71	104	154	84	53	33	87	131	251	191	147	89	75	78
11	108	95	106	224	134	142	111	101	60	151	101	146	145	123	74	184	96	87	99	76	90	69	86	94	113
12	135	134	141	99	80	94	60	41	41	78	67	47	63	105	64	45	65	66	67	90	88	103	56	48	78
13	94	33	162	115	103	79	46	47	72	159	128	90	58	41	50	44	51	54	78	126	87	60	46	44	78
14	51	67	65	47	54	52	66	59	96	147	212	176	108	53	97	169	103	60	42	75	21	47	69	58	83
15	56	72	68	67	83	53	34	30	31	64	94	69	40	56	74	123	181	157	76	76	196	128	120	85	85
16	89	76	67	71	61	67	66	51	82	68	40	35	57	26	26	27	20	25	13	17	42	47	41	32	48
0 17	36	22	22	29	24	29	28	27	33	40	25	28	30	20	24	49	38	34	62	98	84	157	158	130	51
18	134	125	120	96	106	49	26	38	59	63	69	46	53	89	172	236	242	138	61	35	33	32	29	36	87
19	52	48	60	79	81	78	33	38	49	43	37	27	31	56	44	37	74	45	70	100	72	57	57	49	55
0 20	31	28	35	34	21	21	23	22	20	36	32	33	36	39	27	28	24	23	26	61	44	31	28	58	32
21	102	78	60	64	85	267	247	188	113	51	79	94	59	100	115	81	189	148	190	155	87	46	21	24	110
22	34	120	31	5	45	105	155	156	135	162	51	40	25	19	8	11	16	35	66	33	11	11	9	7	54
23	12	13	21	19	30	32	32	28	33	51	91	84	89	67	129	166	225	371	322	231	165	248	142	60	111
D 24	52	73	61	56	43	31	22	30	29	84	100	173	337	182	112	152	-15	44	239	155	61	20	10	-62	83
D 25	94	34	-4	56	83	93	120	122	112	123	148	81	45	71	113	63	110	110	170	59	37	72	26	43	82
26	69	43	62	50	41	101	84	83	144	160	158	145	120	57	115	206	218	97	40	61	103	106	48	78	100
27	70	73	76	113	106	99	117	201	162	124	84	135	209	118	90	126	56	104	109	79	70	66	74	57	105
28	134	38	166	159	62	128	91	100	93	107	170	143	134	137	111	143	140	161	101	90	109	138	109	107	120
D 29	140	154	100	69	86	102	118	139	140	91	74	184	102	122	150	189	150	235	179	89	216	128	143	71	132
30	74	84	61	89	85	49	56	46	29	34	17	23	75	55	66	63	46	24	38	24	20	20	23	22	47
MEAN	70	67	70	71	68	81	77	75	73	93	95	94	98	87	87	98	92	98	101	85	77	75	61	50	81
50 MEAN	33	30	29	31	34	33	37	37	34	38	42	60	57	47	46	41	33	34	38	59	64	74	62	63	44
50 MEAN	78	91	70	64	63	70	84	86	86	122	126	142	163	158	168	160	109	156	182	93	91	90	81	44	107

DECEMBER 1982

AU INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
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0 2	8	9	8	9	10	10	11	14	12	19	18	31	47	126	82	35	33	18	14	13	11	48	30	16	25
0 3	29	46	43	41	29	32	56	45	49	36	40	24	40	60	145	225	148	81	44	30	30	48	54	62	60
0 4	66	155	154	174	99	70	61	48	34	37	34	28	22	28	56	54	30	26	34	38	54	87	91	96	66
0 5	46	78	148	116	116	182	90	140	77	43	33	39	60	43	42	39	47	13	16	21	23	36	35	30	63
0 6	46	64	85	92	68	41	43	42	44	39	39	24	33	21	31	26	18	19	18	19	20	21	22	19	37
0 7	16	17	21	39	83	82	110	50	46	50	77	197	260	118	134	67	117	132	79	176	313	131	59	56	101
0 8	74	87	83	58	101	85	105	207	202	243	237	276	316	306	394	331	302	122	238	176	155	126	85	44	181
0 9	36	59	83	155	202	176	137	86	64	58	52	44	69	126	103	67	51	32	35	69	60	56	52	43	80
0 10	47	35	34	20	62	128	90	220	208	64	176	175	66	106	154	163	318	238	160	281	310	157	86	114	142
0 11	187	161	90	162	170	46	24	34	67	46	25	27	18	9	58	141	193	128	327	226	87	109	191	182	113
0 12	131	91	58	59	58	81	58	74	78	66	60	77	99	42	17	31	87	46	33	41	21	31	67	58	61
0 13	60	42	40	57	57	83	36	24	54	58	88	92	45	30	18	27	30	78	104	26	59	71	49	61	54
0 14	63	58	43	51	70	41	46	48	33	34	43	35	30	42	71	28	17	11	14	12	46	76	87	68	44
0 15	43	98	68	58	71	84	121	132	182	184	198	80	38	26	31	49	27	23	26	20	17	14	13	12	67
0 16	13	16	17	18	17	17	15	21	56	29	22	67	62	86	177	181	235	206	152	145	108	69	49	113	79
0 17	92	99	185	263	202	299	264	179	-18	308	203	269	349	394	353	167	93	114	81	133	53	125	121	110	185
0 18	116	144	110	140	86	63	80	108	132	5	95	137	85	195	238	149	155	149	167	212	186	158	103	60	128
0 19	61	86	116	131	105	130	116	111	106	168	159	232	86	92	135	76	31	33	35	22	30	32	57	86	93
0 20	66	120	67	52	127	138	117	115	68	171	178	244	138	204	234	148	143	239	172	143	166	168	58	82	140
0 21	89	82	80	184	121	118	156	169	184	135	180	103	129	264	204	210	105	124	146	131	89	150	163	99	142
0 22	110	227	201	366	201	140	79	44	39	25	41	21	36	39	152	188	262	140	59	49	29	44	35	39	107
0 23	44	40	28	23	22	58	51	71	101	71	104	81	84	144	343	240	200	234	214	140	87	46	45	58	105
0 24	55	76	88	104	58	43	39	82	68	100	95	152	60	111	145	98	94	69	66	74	94	75	49	45	81
0 25	30	54	63	81	73	70	54	79	99	81	54	61	91	28	81	58	135	91	71	41	32	33	28	35	64
0 26	35	43	42	77	103	82	123	128	94	36	56	58	88	111	62	76	118	102	103	65	43	34	30	34	73
0 27	38	73	63	55	56	47	38	108	131	79	93	162	190	156	90	64	67	63	33	53	125	133	167	188	95
0 28	153	165	165	205	139	155	110	101	166	234	118	136	171	258	218	236	143	63	51	135	151	148	109	150	153
0 29	137	161	127	158	172	144	84	105	102	168	175	152	140	141	172	112	81	76	52	99	132	177	125	100	129
0 30	90	98	193	134	79	168	131	152	105	59	67	61	51	42	24	40	50	100	149	160	64	42	44	52	90
0 31	83	108	169	120	58	64	66	41	81	57	68	81	74	41	32	42	45	35	43	14	24	39	70	74	64
MEAN	66	84	86	103	91	93	81	90	86	87	91	102	96	109	129	109	109	90	88	89	84	79	70	71	91
50 MEAN	41	47	62	57	41	42	33	26	41	37	46	48	41	46	35	29	27	32	37	15	24	33	37	37	38
5D MEAN	86	125	119	168	135	153	126	133	85	114	138	169	134	187	226	163	194	176	127	163	148	130	80	81	140

AL INDEX (HOURLY VALUES)

JULY

1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
0	-352	-149	-176	-151	-305	-312	-268	-51	-137	-88	-186	-78	-206	-149	-159	-127	-127	-131	-275	-368	-351	-323	-383	-267	-213
0	-122	-107	-144	-271	-294	-172	-293	-250	-58	-39	-69	-286	-283	-137	-98	-64	-144	-183	-209	-109	-127	-89	-80	-90	-155
0	-55	-58	-112	-202	-130	-58	-143	-65	-47	-91	-187	-62	-41	-24	-46	-49	-58	-45	-83	-95	-101	-98	-68	-103	-84
0	-162	-92	-52	-50	-48	-43	-36	-42	-35	-29	-68	-107	-99	-103	-95	-89	-95	-52	-30	-37	-54	-77	-69	-40	-67
0	-41	-39	-34	-44	-48	-44	-46	-46	-33	-30	-36	-88	-83	-81	-57	-79	-31	-54	-80	-18	-17	-20	-11	-24	-45
6	-23	-27	-26	-40	-45	-43	-37	-14	-51	-110	-90	-39	-42	-43	-31	-96	-68	-275	-264	-247	-59	-67	-120	-103	-82
7	-108	-154	-81	-144	-227	-230	-167	-142	-161	-77	-71	-32	-132	-158	-252	-417	-530	-464	-329	-76	-43	-15	-42	-96	-173
8	-37	-57	-68	-74	-191	-403	-183	-59	-138	-191	-103	-237	-208	-131	-23	-7	-225	-185	-20	-41	-87	-206	-203	-238	-138
9	-300	-269	-208	-147	-155	-73	-48	-41	-84	-123	-60	-85	-168	-175	-102	-95	-47	-59	-54	-77	-197	-90	-53	-102	-117
0	-276	-137	-46	-72	-195	-289	-135	-115	-86	-127	-201	-222	-278	-77	-33	-49	-50	-64	-141	-112	-94	-28	-19	-30	-120
11	-78	-59	-47	-64	-65	-80	-143	-141	-66	-102	-331	-384	-218	-137	-111	-233	-182	-170	-320	-339	-188	-254	-182	-140	-168
12	-103	-233	-225	-216	-215	-150	-62	-49	-33	-106	-190	-307	-313	-687	-680	-628	-431	-589	-458	-375	-277	-253	-402	-367	-306
13	-366	-400	-575	-495	-489	-311	-582	-335	-427	-226	-580	-474	-174	-139	-274	-225	-516	-414	-324	-417	-330	-310	-611	-497	-395
D	-1613	-427	-653	-112	-817	-466	-929	-1001	-819	-689	-275	-414	-387	-340	-425	-599	-427	-695	-600	-533	-461	-417	-432	-361	-621
15	-430	-421	-281	-480	-470	-356	-291	-380	-480	-443	-480	-435	-315	-300	-264	-318	-265	-244	-304	-312	-320	-282	-352	-551	-366
D	-310	-251	-270	-291	-303	-258	-262	-308	-370	-733	-470	-180	-65	-91	-157	-253	-200	-149	-84	-96	-94	-215	-230	-317	-248
17	-639	-581	-307	-126	-202	-194	-125	-105	-86	-62	-88	-186	-203	-385	-314	-102	-54	-71	-87	-96	-181	-365	-474	-514	-231
18	-432	-409	-357	-173	-232	-229	-47	-68	-191	-399	-333	-398	-546	-213	-288	-148	-186	-271	-243	-136	-79	-74	-124	-105	-237
19	-249	-509	-334	-155	-146	-86	-70	-74	-62	-66	-49	-92	-286	-363	-420	-377	-251	-143	-98	-107	-225	-358	-679	-644	-243
20	-239	-297	-495	-810	-661	-484	-316	-228	-113	-39	-89	-172	-106	-71	-63	-65	-105	-60	-55	-47	-62	-68	-94	-97	-201
21	-114	-86	-72	-72	-77	-84	-66	-75	-65	-55	-50	-40	-47	-51	-144	-296	-172	-93	-81	-153	-161	-201	-192	-137	-108
22	-190	-199	-94	-65	-70	-71	-66	-49	-195	-145	-49	-66	-102	-358	-460	-324	-56	-209	-97	-58	-60	-54	-82	-75	-133
23	-146	-103	-333	-95	-62	-60	-101	-99	-62	-44	-69	-129	-290	-319	-223	-110	-118	-181	-288	-324	-153	-98	-117	-167	-154
D	-202	-99	-291	-604	-753	-515	-518	-392	-401	-592	-346	-171	-77	-342	-186	-324	-712	-875	-982	-603	-202	-85	-114	-229	-401
25	-400	-332	-190	-322	-620	-163	-245	-341	-222	-223	-268	-247	-67	-132	-316	-323	-222	-250	-294	-396	-242	-273	-365	-351	-283
26	-345	-249	-238	-468	-190	-113	-170	-271	-312	-411	-179	-102	-115	-320	-182	-351	-192	-106	-196	-152	-177	-205	-182	-217	-227
27	-297	-229	-86	-83	-141	-645	-712	-365	-164	-78	-59	-92	-198	-165	-157	-259	-217	-64	-61	-101	-130	-160	-300	-454	-217
28	-205	-144	-359	-405	-518	-232	-249	-143	-155	-63	-155	-414	-150	-87	-112	-324	-254	-314	-430	-158	-93	-67	-98	-169	-221
29	-486	-233	-103	-86	-65	-67	-472	-449	-185	-53	-79	-295	-577	-392	-346	-435	-265	-94	-117	-131	-154	-168	-71	-61	-224
30	-46	-57	-65	-42	-49	-60	-227	-295	-403	-273	-246	-263	-139	-31	-39	-79	-113	-538	-304	-166	-82	-72	-222	-166	-166
31	-105	-117	-176	-362	-276	-367	-446	-422	-458	-445	-355	-293	-187	-218	-182	-276	-244	-271	-200	-89	-51	-43	-227	-295	-254
MEAN	-273	-210	-209	-249	-259	-214	-240	-206	-196	-198	-187	-206	-196	-200	-201	-229	-211	-235	-229	-192	-156	-162	-212	-226	-212
50 MEAN	-131	-86	-77	-127	-143	-121	-130	-103	-51	-63	-112	-153	-156	-84	-65	-66	-75	-79	-108	-74	-78	-62	-49	-57	-94
50 MEAN	-518	-282	-402	-543	-515	-340	-470	-417	-410	-469	-372	-309	-203	-319	-344	-405	-457	-544	-489	-404	-272	-256	-357	-354	-394

AL INDEX (HOURLY VALUES) AUGUST 1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D 1	-228	-274	-223	-151	-190	-195	-144	-145	-257	-204	-178	-233	-326	-101	-71	-78	-145	-391	-276	-143	-222	-249	-293	-205	
D 2	-346	-347	-257	-179	-239	-222	-115	-54	-59	-174	-589	-529	-147	-221	-332	-475	-314	-191	-382	-464	-414	-469	-215	-52	
D 3	-74	-407	-520	-472	-268	-257	-245	-146	-200	-391	-378	-375	-253	-316	-329	-226	-160	-218	-385	-151	-82	-137	-417	-274	
D 4	-155	-132	-121	-241	-158	-113	-78	-108	-128	-73	-124	-424	-216	-167	-233	-243	-132	-204	-332	-190	-60	-129	-263	-171	
D 5	-286	-158	-94	-188	-241	-234	-210	-149	-475	-393	-231	-117	-100	-134	-119	-124	-360	-347	-141	-131	-28	-43	-188	-52	
D 6	-112	-160	-290	-165	-92	-164	-146	-93	-81	-148	-484	-322	-154	-120	-281	-228	-95	-77	-188	-376	-270	-108	-226	-294	
D 7	-276	-547	-204	-347	-629	-348	-1094	-521	-110	-556	-870	-761	-804	-546	-565	-963	-367	-69	-31	-18	-34	-34	-37	-59	
D 8	-57	-50	-55	-49	-54	-58	-61	-56	-68	-47	-41	-31	-35	-39	-39	-45	-38	-14	-16	-33	-15	-18	-31	-38	
D 9	-42	-61	-60	-68	-64	-55	-249	-496	-318	-338	-144	-47	-40	-57	-75	-218	-365	-219	-271	-269	-462	-428	-418	-210	
D 10	-207	-223	-419	-163	-294	-232	-268	-188	-444	-333	-207	-204	-142	-123	-119	-373	-416	-180	-169	-338	-157	-21	-196	-238	
D 11	-240	-133	-221	-185	-66	-102	-197	-123	-86	-375	-365	-236	-96	-256	-366	-652	-638	-508	-338	-196	-59	-25	-78	-58	
D 12	-116	-31	-83	-85	-95	-162	-534	-462	-222	-87	-317	-378	-165	-301	-539	-360	-324	-337	-287	-250	-224	-150	-236	-211	
D 13	-198	-107	-159	-344	-185	-135	-151	-174	-223	-200	-125	-172	-235	-166	-168	-97	-112	-127	-49	-65	-157	-118	-17	-92	
D 14	-111	-56	-47	-118	-119	-60	-47	-42	-55	-88	-153	-107	-43	-57	-93	-96	-134	-119	-177	-242	-140	-65	-63	-122	
D 15	-136	-75	-51	-39	-35	-45	-43	-35	-36	-35	-47	-60	-99	-103	-99	-91	-50	-33	-51	-54	-58	-78	-98	-60	
D 16	-37	-37	-21	-61	-110	-169	-82	-29	-34	-43	-49	-47	-46	-40	-46	-46	-95	-253	-146	-39	-20	-71	-257	-243	
D 17	-161	-46	-24	-21	-99	-374	-201	-117	-94	-34	-35	-41	-50	-67	-66	-54	-33	-23	-53	-150	-261	-144	-98	-333	
D 18	-362	-119	-36	-35	-124	-208	-85	-27	-26	-39	-46	-45	-75	-132	-179	-216	-139	-273	-198	-111	-189	-137	-13	-31	
D 19	-90	-79	-33	-25	-87	-198	-36	-22	-80	-109	-51	-37	-45	-37	-45	-70	-50	-101	-247	-155	-96	-108	-52	-42	
D 20	-130	-329	-160	-103	-43	-37	-36	-19	-24	-39	-47	-51	-164	-372	-135	-43	-48	-175	-151	-129	-149	-142	-170	-165	
D 21	-119	-97	-457	-285	-229	-162	-35	-43	-27	-35	-52	-40	-73	-97	-79	-250	-110	-16	-56	-112	-189	-83	-15	-33	
D 22	-79	-279	-278	-38	-16	-20	-12	-14	-61	-164	-98	-176	-173	-292	-284	-349	-109	-50	-174	-119	-268	-129	-15	-41	
D 23	-130	-180	-92	-50	-29	-42	-32	-148	-115	-77	-25	-57	-80	-110	-157	-124	-388	-588	-216	-103	-75	-205	-410	-278	
D 24	-262	-276	-98	-8	-67	-511	-675	-342	-156	-44	-63	-53	-113	-144	-277	-546	-365	-235	-153	-161	-130	-24	-72	-35	
D 25	-28	-231	-253	-238	-282	-398	-391	-169	-161	-196	-440	-235	-204	-80	-158	-62	-106	-311	-323	-120	-129	-80	-177	-289	
D 26	-116	-80	-248	-321	-170	-120	-324	-148	-88	-67	-27	-120	-688	-671	-341	-212	-135	-120	-31	-68	-17	-19	-64	-324	
D 27	-353	-99	-29	-43	-68	-74	-53	-42	-167	-63	-38	-109	-70	-158	-228	-122	-58	-97	-83	-151	-158	-39	-52	-45	
D 28	-39	-65	-92	-60	-55	-42	-27	-27	-21	-35	-62	-218	-174	-75	-51	-72	-176	-299	-151	-182	-136	-302	-345	-118	
D 29	-103	-135	-268	-258	-279	-212	-318	-210	-898	-397	-373	-342	-392	-171	-318	-214	-179	-393	-319	-160	-170	-193	-140	-213	
D 30	-294	-99	-134	-401	-567	-317	-483	-403	-158	-466	-406	-361	-408	-238	-333	-380	-261	-251	-305	-231	-90	-96	-136	-336	
D 31	-168	-90	-268	-198	-188	-74	-173	-383	-230	-103	-93	-154	-269	-429	-191	-226	-246	-233	-78	-159	-275	-283	-166	-205	
MEAN	-163	-161	-170	-159	-165	-172	-212	-159	-160	-174	-199	-194	-186	-195	-203	-235	-201	-196	-186	-167	-151	-138	-158	-160	
50 MEAN	-86	-59	-41	-58	-81	-106	-53	-36	-54	-64	-66	-56	-53	-55	-59	-79	-105	-82	-106	-100	-76	-105	-97	-78	
50 MEAN	-245	-270	-256	-269	-401	-266	-455	-275	-333	-385	-489	-439	-378	-259	-333	-481	-307	-216	-241	-242	-173	-162	-144	-187	

SEPTEMBER 1982

AL INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
Q 1	-124	-80	-87	-81	-112	-54	-47	-73	-36	-23	-43	-40	-184	-263	-197	-175	-65	-160	-115	-33	-7	-13	-10	-51	-86
2	-126	-316	-387	-272	-118	-68	-118	-436	-175	-85	-101	-297	-128	-223	-257	-2	-32	-65	-97	-84	-142	-242	-227	-410	-184
3	-214	-76	-94	-276	-282	-160	-256	-404	-188	-148	-483	-518	-287	-147	-144	-116	-78	-156	-113	-69	-58	-125	-134	-13	-189
4	-23	-87	-203	-268	-142	-119	-325	-165	-61	-325	-525	-497	-490	-241	-386	-423	-269	-270	-133	-162	-287	-397	-487	-275	-275
5	-293	-362	-190	-331	-419	-385	-462	-381	-413	-398	-336	-220	-214	-552	-541	-464	-307	-65	-14	-27	-75	-358	-575	-784	-340
D 6	-380	-274	-444	-711	-1041	-532	-487	-982	-675	-830	-709	-398	-693	-667	-862	-694	-1163	-945	-573	-392	-623	-620	-838	-1050	-691
D 7	-609	-727	-873	-414	-517	-197	-162	-103	-200	-1034	-646	-673	-545	-492	-218	-224	-663	-829	-838	-384	-119	-86	-89	-304	-457
8	-60	-21	-32	-34	-19	-21	-23	-30	-32	-52	-62	-51	-52	-55	-52	-41	-58	-36	-33	-33	-21	-76	-25	-42	-40
9	-51	-176	-88	-45	-143	-71	-65	-80	-87	-63	-78	-252	-291	-88	-141	-196	-111	-124	-198	-218	-610	-399	-135	-176	-162
Q 10	-294	-183	-154	-94	-43	-26	-10	-10	-13	-20	-25	-32	-29	-25	-19	-34	-76	-192	-83	-16	-17	-35	-29	-26	-62
11	-37	-101	-159	-173	-101	-35	-41	-39	-74	-41	-54	-76	-361	-219	-144	-47	-155	-342	-191	-46	-17	-127	-104	-304	-124
12	-284	-172	-65	-41	-174	-156	-53	-60	-46	-115	-25	-18	-17	-11	-7	-49	-104	-8	-19	-99	-346	-53	-46	-244	-92
13	-487	-406	-245	-30	-37	-22	-28	-24	-26	-88	-135	-131	-36	-30	-141	-428	-70	-31	-23	-23	-27	-83	-16	-146	-113
14	-28	-10	-19	-44	-399	-218	-21	-18	-48	-36	-28	-21	-26	-14	-33	-32	-24	-141	-347	-523	-262	-238	-39	-12	-108
15	-11	-12	-16	-27	-99	-263	-163	-28	-144	-51	-25	-52	-29	-21	-29	-69	-127	-76	-45	-57	-37	-31	-208	-128	-71
16	-68	-55	-80	-62	-6	-2	-66	-139	-53	-27	-30	-39	-61	-119	-33	-53	-59	-33	-157	-298	-146	-27	-62	-113	-74
Q 17	-46	-3	-11	-8	-11	-11	-27	-77	-261	-395	-193	-35	-24	-31	-50	-45	-89	-156	-99	-28	-26	-36	-27	-29	-72
18	-82	-374	-204	-256	-53	-7	-20	-196	-171	-42	-31	-40	-29	-161	-316	-223	-67	-56	-217	-436	-694	-307	-131	-25	-172
19	-29	-49	-60	-144	-260	-271	-123	-3	-5	-91	-173	-30	-36	-199	-330	-474	-107	-168	-367	-559	-424	-116	-262	-279	-190
20	-127	-52	-20	-84	-91	-192	-348	-336	-214	-159	-111	-450	-201	-144	-391	-193	-30	-123	-25	-26	-41	-304	-574	-602	-202
D 21	-354	-252	-175	-522	-810	-413	-128	-504	-567	-564	-350	-170	-651	-326	-154	-117	-152	-219	-232	-601	-470	-889	-874	-518	-417
D 22	-610	-867	-1373	-750	-1240	-1087	-1530	-692	-808	-1208	-1135	-709	-573	-310	-472	-458	-254	-327	-475	-456	-468	-382	-442	-363	-708
23	-196	-407	-514	-344	-636	-545	-290	-189	-202	-405	-298	-188	-96	-147	-152	-277	-196	-288	-200	-249	-415	-264	-289	-139	-289
24	-305	-137	-16	-48	-63	-129	-220	-341	-41	-11	-65	-397	-311	-294	-571	-357	-102	-16	-13	-16	-38	-30	-135	-137	-158
25	-44	-42	-34	-28	-30	-18	-15	-12	-71	-83	-130	-98	-42	-78	-23	-32	-18	-166	-378	-182	-14	4	-5	-10	-64
D 26	-18	-75	-127	-214	-227	-146	-166	-350	-425	-311	-362	-728	-386	-1339	-710	-250	-998	-842	-283	-542	-350	-224	-385	-589	-419
27	-268	-444	-369	-176	-126	-141	-92	-77	-247	-532	-246	-141	-44	-75	-217	-101	-601	-510	-337	-224	-168	-129	-249	-481	-250
28	-490	-205	-226	-91	-224	-93	-103	-140	-13	-17	-17	-32	-39	-29	-18	-12	-20	-37	-97	-22	-8	-23	-40	-43	-85
Q 29	-42	-39	-117	-71	-12	-5	-15	-63	-253	-218	-162	-231	-281	-145	-43	-24	-68	-115	-358	-223	-123	-72	-22	-9	-113
Q 30	-16	-11	-5	-6	-8	-10	-27	-111	-278	-346	-288	-287	-338	-350	-150	-271	-252	-192	-307	-247	-88	-439	-319	-172	-188
MEAN	-190	-200	-212	-188	-248	-179	-182	-202	-194	-257	-228	-227	-216	-226	-226	-197	-210	-222	-212	-208	-203	-200	-222	-256	-213
5Q MEAN	-104	-63	-74	-52	-37	-21	-25	-66	-168	-200	-142	-125	-171	-162	-91	-109	-110	-163	-192	-109	-52	-119	-81	-57	-104
5D MEAN	-394	-439	-598	-522	-767	-475	-494	-526	-535	-789	-640	-535	-569	-626	-483	-354	-646	-632	-480	-475	-406	-440	-525	-564	-538

AL INDEX (HOURLY VALUES)

OCTOBER

1982

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	-220	-229	-212	-276	-104	-31	-85	-251	-237	-311	-389	-274	-341	-386	-450	-128	-135	-453	-612	-140	-165	-248	-626	-324	-276
2	-293	-452	-240	-194	-155	-272	-246	-174	-315	-542	-286	-249	-232	-487	-299	-118	-194	-296	-389	-278	-230	-240	-148	-93	-268
3	-164	-327	-89	-61	-118	-196	-232	-214	-143	-198	-237	-228	-245	-321	-240	-167	-137	-72	-63	-75	-155	-141	-244	-45	-171
4	-52	-101	-111	-98	-99	-189	-260	-211	-211	-377	-513	-415	-303	-252	-289	-124	-37	-29	-49	-147	-103	-30	-34	-38	-170
5	-63	-121	-269	-256	-298	-186	-187	-142	-62	-32	-42	-39	-35	-40	-52	-56	-57	-90	-90	-27	-38	-46	-112	-166	-104
6	-281	-198	-149	-196	-236	-259	-285	-288	-85	-63	-117	-343	-218	-233	-415	-346	-58	-78	-367	-536	-605	-486	-225	-136	-258
7	-151	-515	-517	-510	-439	-521	-337	-509	-334	-277	-604	-433	-261	-168	-173	-354	-598	-290	-89	-79	-114	-31	-37	-87	-310
8	-336	-252	-94	-264	-513	-107	-91	-85	-277	-320	-144	-42	-30	-35	-352	-487	-386	-284	-329	-228	-132	-295	-175	-83	-223
9	-84	-141	-39	-32	-30	-24	-25	-38	-25	-24	-35	-29	-32	-29	-34	-64	-54	-20	-17	-25	-30	-32	-32	-143	-43
10	-183	-113	-27	-18	-13	-11	-11	-11	-6	-13	-32	-90	-123	-45	-42	-24	-33	-32	-52	-41	-74	-276	-209	-120	-67
11	-108	-52	-40	-32	-40	-140	-202	-90	-43	-18	-27	-59	-87	-37	-85	-35	-82	-99	-56	-62	-303	-267	-127	-67	-90
12	-72	-150	-52	-29	-27	-51	-70	-106	-50	-48	-250	-160	-21	-18	-34	-62	-206	-122	-98	-449	-608	-456	-116	-21	-136
13	-48	-79	-392	-521	-155	-65	-185	-129	-73	-160	-295	-256	-377	-586	-437	-488	-541	-453	-659	-642	-616	-628	-741	-450	-374
14	-403	-476	-510	-571	-404	-430	-444	-493	-569	-606	-448	-223	-456	-401	-356	-393	-394	-381	-577	-461	-282	-209	-119	-46	-402
15	-74	-70	-37	-28	-23	-28	-22	-29	-63	-107	-213	-77	-75	-45	-22	-23	-24	-28	-83	-146	-19	-42	-19	-36	-56
16	-26	-33	-29	-12	-7	-16	-33	-16	-40	-32	-36	-28	-45	-71	-157	-293	-296	-215	-182	-173	-122	-205	-150	-75	-96
17	-94	-94	-206	-263	-106	-15	-12	-53	-33	-125	-80	-193	-130	-136	-144	-98	-43	-90	-108	-306	-337	-503	-300	-218	-154
18	-204	-198	-36	-97	-205	-44	-48	-166	-148	-13	-42	-153	-232	-590	-674	-689	-483	-182	-54	-174	-236	-221	-77	-91	-212
19	-92	-176	-193	-36	-22	-45	-156	-283	-45	-36	-39	-49	-167	-137	-149	-168	-101	-257	-385	-276	-234	-241	-446	-364	-171
20	-172	-61	-210	-286	-287	-212	-244	-179	-323	-179	-66	-69	-292	-269	-63	-86	-55	-43	-48	-6	-22	-28	-40	-35	-136
21	-45	-249	-265	-79	-57	-29	-52	-128	-141	-65	-20	-23	-21	-26	-36	-69	-147	-258	-255	-78	-46	-25	-30	-52	-91
22	-53	-47	-296	-191	-97	-17	0	0	-3	-31	-22	-36	-33	-34	-131	-43	-35	-39	-23	-26	-32	-29	-20	-17	-52
23	-16	-12	-30	-35	-32	-29	-122	-118	-84	-29	-18	-22	-24	-35	-47	-203	-369	-351	-119	-21	-41	-108	-75	-41	-82
24	-15	-9	-24	-79	-50	-2	0	0	-7	-18	-25	-48	-31	-24	-22	-80	-268	-249	-194	-103	-97	-53	-18	-42	-61
25	-69	-75	-142	-135	-128	-293	-209	-177	-178	-235	-163	-143	-242	-406	-467	-369	-303	-242	-162	-144	-180	-120	-75	-52	-195
26	-236	-394	-216	-102	-135	-200	-232	-72	-14	-45	-64	-144	-137	-82	-52	-47	-36	-123	-72	-53	-39	-45	-44	-36	-109
27	-27	-25	-49	-21	-15	-32	-127	-253	-136	-97	-127	-62	-51	-193	-399	-312	-187	-181	-220	-240	-200	-192	-275	-160	-148
28	-131	-105	-49	-14	-15	-12	-143	-36	-11	-32	-266	-356	-364	-236	-99	-20	-14	0	0	-6	-8	-6	-166	-326	-101
29	-225	-57	-77	-132	-143	-258	-405	-306	-293	-489	-492	-426	-275	-388	-789	-475	-342	-250	-176	-142	-150	-335	-288	-342	-302
30	-386	-298	-275	-204	-65	-170	-192	-357	-434	-594	-447	-482	-716	-292	-391	-467	-520	-594	-636	-348	-172	-309	-380	-133	-369
31	-111	-118	-306	-218	-45	-311	-155	-22	-27	-34	-41	-46	-51	-59	-58	-157	-133	-103	-648	-834	-220	-357	-318	-199	-190
MEAN	-143	-168	-166	-160	-131	-135	-155	-159	-142	-166	-180	-167	-182	-195	-224	-207	-202	-190	-219	-202	-180	-200	-182	-130	-174
50 MEAN	-48	-55	-85	-73	-46	-20	-35	-37	-36	-41	-62	-42	-39	-33	-51	-82	-150	-137	-87	-64	-43	-52	-32	-55	-58
50 MEAN	-187	-249	-360	-390	-237	-317	-305	-291	-259	-313	-376	-276	-284	-320	-362	-373	-401	-295	-429	-431	-276	-312	-300	-224	-315

AL INDEX (HOURLY VALUES)

NOVEMBER 1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D 1	-298	-714	-190	-128	-150	-125	-132	-117	-182	-342	-336	-280	-536	-530	-588	-531	-499	-465	-374	-264	-482	-233	-156	-165	-326
D 2	-106	-94	-228	-105	-44	-99	-287	-158	-58	-154	-528	-543	-344	-631	-681	-681	-796	-487	-596	-460	-347	-461	-262	-516	-406
D 3	-207	-219	-488	-390	-411	-319	-180	-270	-398	-491	-487	-335	-437	-334	-35	-27	-30	-37	-57	-21	-32	-26	-23	-19	-220
0 4	-17	-18	-18	-22	-29	-43	-117	-158	-178	-167	-143	-235	-227	-194	-357	-258	-104	-40	-65	-399	-254	-108	-117	-120	-141
5	-204	-104	-71	-62	-37	-56	-28	-58	-131	-60	-107	-162	-337	-122	-241	-298	-169	-184	-430	-173	-7	-9	-15	-15	-129
6	-60	-111	-77	-27	-32	-164	-245	-160	-280	-127	-93	-79	-134	-125	-85	-140	-263	-80	-49	-54	-36	-8	-17	-20	-103
7	-43	-48	-74	-63	-1	0	-6	-19	-9	-21	-17	-22	-28	-48	-48	-44	-21	-14	-25	-18	-39	-34	-2	-2	-27
8	-1	0	1	-2	-23	-20	-4	-8	-7	1	-3	-8	-15	-13	-11	-3	-53	-208	-368	-121	-43	-25	-18	-19	-40
9	-25	-20	-33	-41	-149	-115	-83	-66	-19	-9	-11	-20	-22	-19	-19	-14	-21	-28	-11	-6	-6	-1	3	-18	-31
10	-93	-90	-78	-3	-5	-16	-7	-1	-56	-118	-136	-91	-178	-223	-49	-95	-139	-229	-313	-308	-100	-70	-104	-103	-109
11	-28	-46	-230	-136	-58	-22	-40	-10	3	-125	-236	-228	-169	-228	-172	-357	-44	-57	-154	-117	-40	-57	-291	-358	-133
12	-151	-206	-94	-16	-29	-40	-22	-11	-17	-70	-284	-362	-306	-185	-53	-37	-147	-149	-284	-115	-155	-86	-99	-7	-122
13	-168	-488	-198	-186	-28	7	2	-4	-36	-310	-400	-88	-24	-49	-39	-224	-149	-29	-183	-642	-366	-28	-33	-32	-154
14	-39	-81	-37	-2	-13	-2	-12	-34	-191	-327	-177	-153	-98	-88	-158	-251	-94	-15	-55	-189	-54	-48	-77	-65	-94
15	-34	-27	-28	-68	-1	8	2	-3	-13	-178	-502	-175	-56	-77	-284	-298	-449	-234	-47	-73	-394	-157	-101	-52	-135
16	-7	-81	-110	-79	-129	-62	-113	-206	-38	-28	-79	-105	-20	-19	-17	-14	-12	-11	-17	-56	-146	-65	-180	-61	-69
17	-20	-5	0	2	3	1	0	0	-2	-3	-7	-11	-17	-19	-19	-13	-5	-37	-42	-110	-213	-201	-54	-50	-34
18	-111	-62	-51	-6	-9	-42	-27	-45	-44	-32	-153	-42	-43	-338	-495	-524	-425	-146	-45	-34	-25	-102	-116	-143	-127
19	-183	-132	-100	-101	-58	7	-7	-10	-12	-19	-24	-28	-33	-24	-91	-253	-210	-87	-82	-156	-171	-293	-52	-13	-89
0 20	-9	-13	-14	-14	-10	-8	-6	-4	-3	-9	-52	-108	-90	-102	-35	-39	-41	-38	-30	-186	-71	-38	-25	-206	-48
21	-189	-87	-64	-178	-308	-398	-286	-204	-90	-63	-110	-348	-393	-339	-135	-98	-296	-357	-394	-560	-861	-666	-599	-553	-316
22	-646	-362	-315	-679	-318	-225	-220	-249	-156	-98	-83	-50	-31	-31	-35	-45	-44	-47	-116	-47	-28	-31	-29	-23	-163
23	-23	-17	-14	-13	-17	-13	-39	-16	-13	-26	-32	-18	-46	-205	-366	-369	-702	-450	-362	-779	-1033	-480	-453	-143	-235
24	-101	-119	-44	-74	-47	-54	-51	-45	-51	-98	-202	-407	-699	-1287	-604	-644	-862	-606	-463	-539	-481	-360	-580	-912	-389
D 25	-483	-143	-119	-155	-230	-458	-396	-500	-668	-525	-354	-214	-432	-386	-622	-390	-332	-644	-450	-103	-65	-171	-288	-89	-338
26	-66	-105	-150	-418	-306	-315	-207	-148	-406	-289	-452	-355	-224	-181	-512	-870	-580	-128	-64	-29	-71	-353	-160	-80	-270
27	-120	-107	-126	-166	-155	-106	-197	-375	-349	-292	-126	-526	-892	-478	-335	-351	-195	-324	-464	-254	-108	-67	-91	-154	-265
28	-424	-775	-285	-72	-50	-198	-107	-89	-125	-194	-355	-401	-295	-361	-301	-250	-193	-348	-680	-269	-122	-322	-313	-417	-289
D 29	-320	-160	-150	-116	-94	-270	-221	-173	-200	-173	-187	-451	-147	-622	-617	-553	-648	-309	-448	-612	-490	-251	-99	-92	-308
30	-102	-158	-232	-216	-250	-144	-197	-123	-118	-66	-70	-77	-116	-148	-282	-112	-73	-77	-65	-62	-59	-55	-53	-51	-121
MEAN	-142	-153	-120	-117	-99	-109	-107	-109	-128	-147	-191	-197	-212	-246	-239	-263	-242	-199	-219	-221	-213	-153	-155	-146	-172
50 MEAN	-22	-20	-27	-27	-37	-33	-42	-49	-42	-41	-46	-79	-76	-76	-95	-73	-38	-31	-34	-143	-116	-76	-39	-79	-56
5D MEAN	-261	-246	-146	-115	-113	-201	-217	-198	-231	-258	-321	-379	-431	-691	-602	-582	-565	-524	-439	-373	-395	-255	-327	-332	-342

AL INDEX (HOURLY VALUES) DECEMBER 1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
Q 0	-11	-13	-15	-15	-13	-13	-12	-35	-133	-44	-53	-30	-47	-41	-55	-24	-17	-18	-88	-38	-13	-13	-11	-11	-32
Q 0	-9	-7	-9	-9	-9	-3	-6	-7	-6	-8	-13	-27	-152	-275	-155	-20	-7	-13	-7	-20	-52	-45	-73	-17	-39
Q 3	-45	-99	-48	-37	-31	-12	-120	-50	-14	-13	-7	-13	-52	-425	-380	-317	-168	-176	-78	-24	-13	-31	-51	-166	-99
Q 4	-85	-158	-199	-78	-4	0	5	6	1	-8	-10	-10	-15	-14	-49	-24	-29	-23	-39	-12	-26	-53	-476	-322	-67
Q 5	-414	-374	-270	-163	-81	-76	-105	-158	-55	-39	-34	-26	-29	-30	-68	-124	-51	-34	-56	-186	-53	-39	-23	-27	-105
Q 6	-38	-39	-21	-8	-5	1	-3	-10	-8	-9	-17	-19	-15	-18	-26	-26	-23	-14	-17	-17	-9	-12	-14	-15	-16
Q 7	-5	0	1	1	-17	-24	16	8	-14	-11	-48	-87	-151	-490	-685	-592	-272	-310	-466	-628	-385	-350	-242	-151	-204
Q 8	-135	-194	-283	-107	-129	-159	-160	-314	-274	-243	-526	-695	-454	-445	-664	-523	-617	-802	-413	-511	-334	-55	-102	-132	-345
Q 9	-118	-96	-83	-101	-154	-69	-47	-52	-79	-152	-29	-29	-201	-959	-627	-190	-46	-63	-41	-51	-48	-114	-100	-124	-149
D 10	-63	-23	-20	-18	-28	-68	-614	-621	-500	-622	-434	-181	-135	-97	-138	-266	-582	-399	-366	-805	-381	-135	-22	-158	-278
Q 11	-177	-122	-138	-216	-55	-12	-14	-14	-44	-25	-16	-30	-21	-31	-81	-424	-643	-444	-587	-345	-358	-431	-171	-133	-189
Q 12	-71	-19	-23	-83	-32	-84	-108	-59	-113	-162	-227	-593	-235	-45	-51	-64	-290	-227	-43	-19	-15	-56	-124	-82	-118
Q 13	-38	-17	-6	-8	-16	-13	-3	-8	-20	-39	-109	-64	-28	-26	-31	-53	-83	-133	-123	-37	-173	-237	-45	-24	-56
Q 14	-9	-3	-1	-2	-7	-1	-15	-16	-10	-8	-34	-99	-70	-82	-68	-31	-32	-28	-16	-19	-197	-528	-324	-143	-73
Q 15	-62	-85	-44	-49	-21	-7	-73	-129	-105	-132	-186	-7	-19	-19	-16	-23	-20	-17	-7	0	-2	-6	-7	-11	-44
Q 16	-9	-5	-5	-9	-16	-86	-207	-335	-261	-227	-295	-495	-488	-446	-532	-534	-534	-331	-583	-443	-339	-393	-450	-382	-309
D 17	-515	-488	-471	-386	-374	-377	-422	-229	-1768	-991	-541	-609	-884	-395	-410	-228	-139	-202	-261	-550	-363	-123	-89	-119	-456
D 18	-130	-351	-260	-237	-84	-112	-89	-148	-359	-1380	-662	-514	-288	-402	-781	-559	-459	-322	-428	-310	-72	-48	-22	-13	-335
Q 19	-6	-12	-31	-32	-50	-76	-286	-265	-167	-169	-331	-618	-681	-284	-207	-22	-33	-61	-46	-38	-43	-27	-30	-77	-150
D 20	-23	-94	-31	-35	-162	-365	-231	-241	-59	-391	-522	-654	-1069	-846	-558	-612	-478	-321	-307	-271	-507	-224	-51	-313	-349
Q 21	-258	-164	-179	-308	-160	-253	-309	-347	-507	-422	-436	-557	-632	-785	-503	-476	-725	-589	-531	-506	-435	-375	-277	-396	-422
D 22	-783	-858	-951	-794	-465	-348	-132	-100	-84	-134	-164	-73	-82	-146	-585	-875	-377	-152	-68	-78	-110	-243	-156	-189	-331
Q 23	-178	-152	-80	-73	-20	-43	-63	-289	-389	-276	-217	-658	-900	-591	-475	-570	-648	-443	-300	-225	-164	-293	-156	-399	-317
Q 24	-162	-184	-350	-132	-27	-39	-77	-289	-181	-228	-327	-457	-384	-443	-489	-291	-391	-338	-230	-165	-182	-36	-100	-145	-235
D 25	-132	-63	-60	-215	-63	-53	-35	-112	-191	-22	-51	-84	-407	-571	-558	-305	-388	-196	-55	-145	-117	-58	-28	-39	-165
Q 26	-48	-96	-192	-119	-86	-115	-154	-78	-5	-8	-33	-112	-250	-458	-259	-178	-256	-192	-229	-103	-55	-30	-18	-27	-129
Q 27	-21	-76	-85	-114	-64	-19	-13	-39	-94	-34	-28	-231	-287	-135	-21	-48	-31	-63	-54	-31	-116	-413	-302	-136	-101
Q 28	-91	-156	-204	-418	-120	-135	-133	-162	-246	-197	-142	-123	-527	-663	-385	-260	-142	-21	-67	-379	-551	-103	-124	-203	-231
Q 29	-154	-124	-52	-180	-229	-47	0	-58	-387	-392	-234	-144	-197	-277	-437	-91	-87	-206	-126	-268	-375	-152	-129	-86	-185
Q 30	-76	-152	-175	-96	-175	-121	-222	-75	-70	-112	-84	-309	-53	-25	-124	-273	-350	-302	-240	-262	-71	-7	-50	-105	-147
Q 31	-237	-311	-80	-16	-54	-10	-21	-25	-29	-53	-64	-139	-56	-18	-28	-35	-35	-43	-28	-24	-26	-55	-128	-50	-65
MEAN	-132	-146	-140	-130	-88	-88	-117	-137	-199	-211	-189	-247	-284	-305	-304	-259	-256	-209	-189	-210	-180	-151	-125	-135	-185
50 MEAN	-66	-77	-25	-11	-19	-7	-9	-17	-39	-30	-51	-55	-59	-75	-57	-31	-33	-44	-52	-27	-54	-72	-54	-23	-41
5D MEAN	-302	-362	-346	-294	-222	-254	-297	-267	-554	-703	-464	-406	-491	-377	-494	-508	-407	-279	-286	-402	-286	-154	-68	-158	-349

JULY 1982

AE INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
Q 1	621	245	290	325	468	480	467	131	282	197	346	198	351	256	295	248	207	258	475	618	613	575	648	444	377
Q 2	246	236	293	412	457	338	430	396	121	104	215	444	426	207	132	118	235	303	377	276	298	231	190	143	276
Q 3	90	118	224	281	232	152	227	161	133	195	283	123	71	70	72	77	91	80	157	188	188	179	157	238	158
Q 4	307	199	141	122	101	79	57	57	50	60	170	218	204	179	139	107	119	86	71	84	100	126	124	86	124
Q 5	78	86	81	95	81	75	87	61	56	74	115	191	199	168	147	164	109	132	160	98	86	87	73	79	107
6	69	57	53	66	75	75	70	75	233	286	216	123	94	97	93	207	242	671	584	571	273	218	247	228	205
7	280	384	259	397	603	566	410	402	339	201	144	132	301	255	402	672	942	893	568	213	147	84	104	163	369
8	104	153	162	183	401	620	325	167	274	363	305	447	329	245	108	100	438	340	131	151	230	349	348	522	283
9	589	461	358	275	271	143	101	192	319	352	168	204	350	309	161	155	142	139	107	190	372	188	131	256	247
Q 10	539	256	100	166	416	540	290	336	204	246	421	529	493	145	98	101	134	122	204	229	240	102	75	77	253
11	178	153	129	138	162	157	266	221	115	296	745	658	486	524	717	724	606	631	769	846	541	560	415	347	433
D 12	260	487	455	471	492	307	116	92	78	447	684	809	708	1275	1190	1195	881	1138	760	759	519	466	629	630	619
D 13	564	713	945	878	978	732	1026	570	703	477	914	827	353	287	487	434	1299	1481	1552	1211	1415	948	1519	1166	895
D 14	1877	1016	797	1116	850	740	1206	1149	911	774	496	643	534	494	613	896	639	1004	1017	888	779	750	626	640	852
15	713	694	589	841	717	552	486	645	726	649	705	704	614	505	469	439	419	487	517	521	618	540	634	750	606
D 16	529	454	503	525	573	516	437	455	601	1208	817	387	239	253	223	452	313	335	207	226	199	468	476	558	457
17	810	929	491	228	338	288	173	181	159	149	218	336	371	599	456	125	63	86	120	169	307	581	719	783	362
18	653	705	492	321	463	342	92	123	340	684	653	832	970	326	427	226	321	490	492	308	134	138	236	213	416
19	498	909	573	304	276	107	107	95	97	87	121	244	521	609	672	574	322	185	138	170	391	596	979	805	391
20	434	576	910	1138	855	603	531	382	196	87	170	274	134	86	83	82	130	101	111	101	100	101	132	153	311
21	171	134	113	96	85	97	101	80	56	50	48	35	42	56	228	362	204	140	143	306	311	317	401	283	161
22	426	354	136	111	88	76	71	140	344	220	56	70	165	539	693	480	137	342	185	119	105	105	146	131	218
23	309	217	475	198	101	94	172	172	76	62	183	256	439	505	419	147	150	328	415	544	323	224	255	320	266
D 24	320	182	478	904	1125	832	743	681	676	1021	669	358	154	476	272	608	955	1209	1308	782	305	169	209	431	619
25	539	395	298	602	811	313	411	526	345	343	393	349	114	196	443	460	381	386	453	618	410	522	516	471	429
26	490	496	421	588	246	197	311	428	474	725	335	247	269	418	278	578	313	199	344	306	353	387	325	401	380
27	445	341	172	216	255	881	994	655	339	142	99	158	243	205	192	409	295	106	133	219	286	269	478	588	338
28	312	280	500	570	714	341	421	287	233	143	301	607	201	163	194	393	453	498	691	265	202	162	157	302	350
29	683	345	194	155	106	171	642	624	272	91	142	423	784	528	478	585	318	157	218	245	289	268	160	107	333
30	81	96	129	85	95	140	357	461	641	452	406	465	215	69	100	146	256	866	467	306	203	184	405	247	286
31	173	255	311	490	449	586	672	659	753	683	562	454	324	278	264	493	369	464	357	209	135	133	406	417	412
MEAN	431	384	357	396	415	359	380	342	327	350	358	378	345	332	340	379	370	440	426	378	337	323	384	386	372
5Q MEAN	252	179	167	215	257	236	218	202	112	135	240	301	278	153	117	113	137	144	193	175	182	145	123	124	183
5D MEAN	710	570	635	778	803	625	705	589	593	785	716	604	397	557	557	717	817	1033	968	773	643	560	691	685	688

AE INDEX (HOURLY VALUES)

AUGUST

1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D 1	366	392	346	252	278	285	324	308	309	415	357	381	453	469	166	123	165	305	626	504	347	378	454	569	357
D 2	594	539	475	369	445	506	330	168	187	518	1000	920	330	479	742	846	749	555	674	676	632	809	456	194	551
D 3	199	562	724	660	431	432	408	308	463	743	701	636	516	528	662	494	279	502	621	275	186	268	619	386	483
D 4	280	228	225	367	285	201	176	238	296	185	316	652	322	319	391	425	275	389	545	347	183	264	454	396	323
D 5	536	315	211	311	462	401	380	367	859	716	426	248	265	245	224	251	640	603	294	319	174	139	273	126	366
D 6	262	247	413	219	185	321	241	207	243	377	781	554	264	251	431	360	225	217	383	819	547	293	507	526	370
D 7	666	800	416	777	947	548	1238	800	307	764	1178	1152	1236	919	915	1453	705	178	116	116	61	60	65	78	646
D 8	97	74	81	68	66	86	92	89	137	104	88	103	94	133	142	102	85	73	75	96	57	59	74	80	90
D 9	73	88	76	85	76	139	448	797	530	672	223	96	79	142	185	418	649	600	694	546	751	809	831	502	396
D 10	445	434	625	356	564	498	467	466	866	661	496	344	225	188	218	630	673	349	369	633	352	117	419	463	452
D 11	331	252	376	259	146	226	332	222	231	687	613	457	185	460	577	1031	939	931	785	459	172	95	140	116	418
D 12	168	72	207	138	157	394	849	692	489	161	591	532	276	554	904	643	503	567	563	467	381	283	400	361	431
D 13	356	254	291	571	369	334	255	338	428	426	328	295	382	287	265	171	230	210	98	142	298	206	68	243	285
D 14	195	81	67	166	184	132	97	68	170	201	275	186	104	115	185	212	281	226	295	470	334	181	183	239	194
D 15	257	151	87	57	51	61	59	51	66	74	78	155	183	195	108	116	63	54	101	107	110	154	171	105	109
D 16	100	83	54	96	232	263	123	69	76	90	96	88	86	83	106	171	354	222	80	63	193	408	431	320	162
D 17	382	118	77	55	353	566	389	334	283	93	60	63	80	130	157	109	63	51	116	337	386	272	261	562	221
D 18	675	319	113	123	357	378	172	70	65	81	87	86	147	252	279	367	289	551	379	292	352	212	86	92	243
D 19	190	183	100	97	140	385	80	82	175	215	118	88	104	87	113	138	105	160	398	339	216	232	128	109	165
D 20	221	438	251	182	86	93	121	76	77	141	95	112	365	567	220	107	109	312	299	260	373	291	359	334	229
D 21	255	218	611	446	407	203	63	119	58	129	110	89	158	189	169	414	178	52	118	246	277	173	70	88	202
D 22	232	538	497	77	50	47	48	43	188	270	197	324	385	480	476	554	192	135	298	244	459	221	84	163	258
D 23	286	292	144	120	97	113	88	282	187	160	89	122	170	200	219	217	585	804	373	239	218	387	620	375	266
D 24	441	381	208	72	205	681	797	543	333	120	151	137	232	268	430	724	529	342	273	278	225	96	139	80	320
D 25	93	375	332	359	375	617	632	327	271	359	646	402	348	183	241	103	202	515	439	249	265	183	348	397	344
D 26	214	221	363	463	281	287	514	295	208	135	85	299	785	783	463	258	201	183	109	194	146	108	187	479	303
D 27	493	182	88	116	150	123	118	111	260	135	107	214	142	265	263	218	109	163	140	246	260	103	104	94	175
D 28	85	114	147	102	86	69	59	73	60	102	165	326	246	139	102	131	258	432	265	408	315	564	614	269	214
D 29	231	262	422	490	547	488	545	378	1237	753	670	491	542	295	472	379	383	742	593	342	323	349	238	316	479
D 30	397	188	239	647	854	647	713	593	304	786	687	593	585	355	459	491	431	528	560	443	257	333	341	485	496
D 31	273	191	447	328	297	162	358	575	364	210	231	262	422	637	321	312	346	339	171	309	433	483	265	341	336
MEAN	303	277	281	271	295	312	339	293	313	338	356	336	313	328	342	386	348	364	350	337	299	274	302	286	318
50 MEAN	167	114	77	96	134	185	90	71	124	136	131	124	114	122	130	147	177	147	189	215	182	204	197	170	143
5D MEAN	466	444	435	527	671	537	658	481	580	696	806	706	583	447	561	759	588	470	462	442	325	333	303	307	524

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AE INDEX (HOURLY VALUES)

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
0	220	160	168	154	202	94	129	165	108	97	153	137	350	431	291	309	160	285	187	87	75	88	69	139	177
1	252	444	553	439	244	222	288	674	349	270	269	485	287	376	406	92	126	200	318	228	316	456	477	622	350
2	404	190	256	471	538	395	453	603	343	382	734	711	545	302	315	252	219	265	263	202	176	264	239	103	359
3	106	197	426	522	336	329	740	392	231	600	729	676	744	538	750	681	624	487	261	351	515	489	639	786	506
4	570	575	363	628	709	660	803	655	696	794	638	524	461	954	855	798	505	147	113	115	227	704	901	1222	609
5	1014	972	1001	1174	1371	959	1105	1590	727	1036	793	490	847	762	915	966	1224	965	847	443	647	636	867	1097	935
6	851	1007	1047	610	634	428	378	237	388	1125	824	807	861	771	304	470	928	903	886	629	243	222	230	464	635
7	159	99	71	100	56	59	57	76	78	142	130	137	99	113	91	79	97	60	70	82	71	205	91	124	98
8	120	398	237	265	389	212	172	165	211	165	253	416	416	149	215	349	219	353	420	394	840	623	294	341	317
9	408	287	348	184	128	92	65	60	69	71	80	89	86	84	78	99	147	251	134	64	86	100	97	89	133
10	109	164	241	292	221	142	140	118	191	128	193	240	489	409	259	108	249	494	302	196	88	245	240	442	238
11	422	297	176	165	371	307	178	185	150	237	156	78	65	39	28	97	163	46	80	229	505	120	137	434	194
12	676	607	471	164	96	68	68	60	58	223	206	225	97	60	212	585	123	100	75	81	102	144	67	232	200
13	83	46	62	138	569	302	70	70	159	125	80	57	55	43	74	53	49	243	587	711	387	348	91	42	185
14	38	42	76	120	236	418	332	117	256	152	89	75	65	54	79	126	170	110	111	98	127	112	342	217	148
15	159	127	159	146	82	67	204	290	172	107	107	100	126	184	74	95	93	73	262	484	242	116	191	223	162
16	126	57	71	61	55	54	103	185	399	709	468	125	112	68	78	63	151	238	169	90	84	93	75	85	155
17	196	456	375	408	194	105	85	344	257	120	97	122	103	267	469	352	142	109	399	614	716	461	318	141	286
18	141	142	190	246	443	431	315	143	82	214	363	143	128	359	440	676	196	394	624	808	651	251	432	427	343
19	228	152	85	190	201	352	518	545	346	309	261	640	331	242	525	309	101	240	93	87	131	478	811	708	329
20	431	401	378	831	1005	630	301	781	854	857	613	308	841	438	258	222	266	374	462	899	738	1292	1160	843	633
21	941	1283	1597	932	1293	1200	1468	695	957	1338	1279	1043	804	538	679	688	523	584	718	618	670	527	561	475	892
22	316	543	636	442	774	657	483	336	352	673	526	440	244	234	232	392	310	414	390	420	589	474	454	331	444
23	460	319	137	215	202	315	356	466	141	87	198	595	462	405	858	495	163	80	70	61	115	113	218	201	280
24	86	86	75	73	67	55	54	79	150	156	201	144	118	128	77	69	48	302	604	365	96	92	67	70	136
25	66	127	183	341	376	306	311	536	655	621	539	1024	824	1510	815	417	979	906	597	778	474	414	617	729	589
26	527	711	592	328	284	315	246	171	369	662	308	230	86	124	280	190	784	732	505	362	267	207	388	621	387
27	624	325	351	228	370	186	189	195	62	74	62	92	91	63	52	40	41	90	150	53	50	122	114	104	155
28	94	91	186	167	81	63	82	166	369	358	337	437	428	192	74	62	106	177	459	299	215	128	64	47	195
29	51	45	45	52	58	58	84	213	430	512	596	553	524	494	238	471	393	337	552	453	242	646	576	354	332
30	329	345	351	336	386	316	325	343	320	411	376	371	356	344	334	320	309	331	356	343	322	339	360	390	346
MEAN	179	128	163	123	104	72	92	157	275	349	326	268	300	253	151	200	191	257	300	198	140	211	176	142	198
50 MEAN	660	758	841	777	935	704	712	767	716	995	809	734	835	803	594	552	784	746	702	673	554	618	687	721	736

AE INDEX (HOURLY VALUES) NOVEMBER 1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
D 1	361	777	316	198	201	191	206	184	264	573	546	417	742	723	783	734	731	621	467	357	595	388	252	245	453
D 2	148	227	300	177	101	160	375	236	130	238	630	684	474	858	954	993	562	835	695	421	494	343	647	500	466
D 3	367	323	643	571	622	559	365	415	542	750	738	489	582	434	115	68	75	63	80	40	47	47	40	40	334
0 4	28	25	26	35	52	78	182	220	230	224	249	419	386	273	453	320	152	94	111	487	388	236	180	178	209
0 5	270	166	130	109	84	128	110	150	196	103	187	293	450	200	278	345	220	266	541	247	75	54	51	45	196
0 6	110	168	136	84	96	259	383	303	373	243	276	201	279	224	132	238	385	136	96	95	69	42	48	51	184
0 7	88	106	122	109	52	45	53	73	55	58	48	50	62	115	103	84	60	51	59	42	72	69	35	38	69
0 8	37	41	33	49	76	85	62	67	80	82	67	64	94	74	77	60	138	397	628	274	99	52	44	52	114
0 9	70	59	69	77	204	155	109	91	41	35	32	48	51	54	52	45	44	55	40	33	33	23	24	53	62
0 10	117	143	122	36	32	63	47	28	86	160	178	163	283	379	134	150	173	318	445	560	292	217	194	178	187
11	137	142	337	360	193	164	152	112	56	277	338	375	314	352	248	542	141	145	255	194	131	128	377	452	247
12	287	341	235	116	109	134	83	53	58	149	353	410	370	291	117	84	213	216	352	205	244	190	155	56	201
13	263	522	361	302	131	71	43	51	108	469	529	179	82	91	91	269	202	84	262	769	455	89	81	77	233
14	92	148	103	50	67	54	78	94	288	475	390	329	207	142	257	422	198	75	98	264	76	95	148	123	178
15	91	100	98	135	85	44	30	33	45	243	597	245	97	134	360	422	631	392	124	151	591	285	223	138	221
16	96	158	177	151	191	129	180	258	121	96	120	141	77	45	44	42	34	37	32	74	189	112	221	94	118
17	57	28	22	26	20	27	27	26	36	43	52	40	47	40	44	64	44	72	105	210	298	360	213	181	86
18	246	188	173	103	115	92	53	84	103	95	223	89	96	428	668	761	668	286	108	70	58	135	146	179	215
19	235	181	161	181	140	70	41	49	62	62	62	56	65	81	137	291	285	133	154	257	244	350	111	63	145
0 20	41	41	49	49	31	29	30	27	24	46	84	141	128	142	63	67	66	61	57	248	116	70	53	264	80
21	292	166	125	242	394	666	533	393	204	115	189	443	453	440	251	180	487	507	585	716	949	714	621	578	427
22	679	482	346	684	363	330	375	406	292	260	135	91	56	52	44	56	62	84	184	81	40	44	39	31	217
23	36	32	35	33	47	46	72	44	46	78	123	103	136	274	496	536	928	823	685	1011	1199	729	597	204	346
D 24	154	192	106	131	91	86	73	75	82	183	303	582	1037	1469	715	798	847	650	703	695	543	380	590	848	472
D 25	578	178	114	212	314	552	516	623	781	649	504	296	479	459	636	455	444	756	621	162	103	243	315	132	422
26	136	149	213	469	348	417	292	232	551	450	611	501	345	240	628	1077	800	226	106	90	175	460	209	158	370
27	191	180	203	279	262	206	314	577	512	417	211	662	1103	597	427	478	253	429	574	334	179	134	165	212	371
28	558	813	452	231	112	326	199	190	219	303	525	545	430	500	413	394	334	510	782	360	232	461	422	524	410
D 29	460	315	250	185	181	373	339	313	340	264	261	636	250	745	769	744	799	544	629	702	707	379	243	164	441
0 30	177	242	293	306	335	193	254	170	149	101	88	101	193	204	349	177	120	102	104	86	80	76	78	74	169
MEAN	213	221	191	189	168	191	185	185	202	241	287	293	312	335	327	363	336	298	322	307	292	230	217	197	254
50 MEAN	56	51	57	59	71	66	80	87	77	81	89	139	134	124	143	116	73	66	74	204	181	151	101	142	101
5D MEAN	340	337	217	180	177	272	301	286	319	381	448	523	596	850	771	744	676	681	623	467	488	346	409	377	450

AE INDEX (HOURLY VALUES)

DECEMBER 1982

DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
0 1	19	26	27	24	26	26	25	49	152	61	73	43	57	55	72	41	29	31	95	42	23	31	26	27	45
0 2	17	17	19	19	20	15	18	22	19	27	32	59	200	402	237	56	41	33	22	33	63	64	104	34	66
0 3	75	147	93	80	61	45	177	97	64	50	48	37	94	486	526	543	316	258	123	55	44	80	106	230	160
0 4	152	314	354	253	104	71	55	42	32	46	45	40	38	44	106	79	60	50	74	51	81	141	568	419	134
0 5	462	453	419	280	198	260	197	299	133	84	68	66	90	74	112	165	99	47	73	207	77	75	58	57	169
0 6	84	105	107	100	75	39	48	53	53	49	57	43	49	40	52	52	41	33	36	38	30	33	36	34	54
0 7	23	16	19	38	101	108	93	41	60	61	126	286	413	609	820	660	390	442	546	804	699	481	303	208	306
0 8	210	282	368	166	231	245	266	522	477	487	764	971	771	752	1058	855	920	925	651	689	490	182	188	178	527
0 9	155	156	168	257	358	246	185	139	144	211	82	74	271	1086	730	258	98	96	76	121	109	171	153	167	229
0 10	110	59	55	39	91	198	705	842	710	687	611	357	203	205	293	430	901	637	527	1086	692	293	108	272	421
0 11	366	284	229	379	226	59	39	48	112	71	43	58	40	41	140	566	836	573	914	572	446	542	362	316	303
0 12	203	111	83	143	91	166	168	134	192	229	289	671	335	88	68	96	377	273	76	61	37	87	192	141	180
0 13	98	60	47	66	74	98	39	34	75	98	197	156	74	56	49	81	113	212	228	64	232	308	95	86	110
0 14	72	61	44	55	79	43	62	65	44	43	78	135	101	126	140	60	50	39	31	31	243	605	413	212	118
0 15	106	184	113	108	93	92	195	262	289	317	385	87	58	46	49	73	47	41	35	20	19	21	21	23	112
0 16	22	21	24	29	34	105	224	356	318	257	318	562	551	533	709	715	770	537	736	589	448	462	499	495	388
0 17	609	588	658	650	577	677	688	410	1750	1300	745	878	1233	790	763	396	232	317	343	684	416	249	211	230	641
0 18	247	497	372	379	170	175	171	256	491	1386	758	653	373	598	1019	709	614	472	595	523	258	206	126	74	463
0 19	68	99	147	164	156	207	404	377	274	339	490	852	768	377	342	99	65	96	82	61	74	60	87	165	244
0 20	89	215	99	87	290	504	349	357	128	563	701	899	1208	1050	793	761	622	561	481	414	673	393	110	396	489
0 21	348	248	260	494	282	373	466	517	692	558	617	661	762	1050	707	687	831	713	677	638	526	526	441	496	565
0 22	895	1086	1154	1161	668	489	211	145	123	159	206	95	120	186	737	1063	640	292	127	127	140	288	191	229	439
0 23	224	193	109	98	44	103	115	361	491	349	322	740	985	735	818	811	849	678	514	365	252	340	203	459	423
0 24	218	262	439	238	86	83	117	371	249	328	423	610	445	555	634	390	485	407	296	239	276	111	150	191	317
0 25	164	118	124	298	138	125	90	192	291	104	105	146	499	600	641	363	524	288	126	187	150	92	56	76	229
0 26	83	139	236	197	190	198	278	207	100	45	89	171	340	570	322	255	374	294	333	169	99	65	49	63	203
0 27	60	151	150	170	122	68	52	149	225	114	122	394	478	292	113	113	99	126	67	85	242	546	469	324	197
0 28	245	322	370	625	261	292	244	264	412	432	262	260	699	921	603	497	286	85	119	515	703	251	234	354	386
0 29	292	287	179	340	402	193	83	164	490	561	410	298	338	419	610	204	169	283	179	368	508	329	255	187	314
0 30	168	251	369	231	256	291	354	228	175	171	152	371	104	68	150	314	401	403	389	422	136	50	95	158	238
0 31	321	421	250	137	114	75	88	67	110	110	133	220	131	60	60	77	81	79	72	40	52	95	199	125	130
MEAN	200	231	228	235	181	182	200	228	286	299	282	351	381	416	434	369	366	300	278	300	265	231	197	207	277
50 MEAN	107	125	89	69	61	50	43	45	81	69	98	104	102	122	94	61	61	77	90	43	80	106	92	61	80
5D MEAN	390	489	467	463	359	408	424	402	640	819	604	576	627	565	721	671	601	455	414	566	435	285	149	240	490

DATE		AO INDEX (HOURLY VALUES)																								MEAN	
		JULY												1982													
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20	-21	-9	-40	-240	-233	-182	-50	-37	-14	4	-4	-35	-38	-27	-80	-23	-39	-39	-9	0	3	-12	-17	-27	-19	-45	
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26	-99	-1	-27	-173	-67	-14	-14	-57	-74	-48	-11	20	18	-111	-43	-43	-61	-35	-6	-23	0	0	-11	-20	-15	-36	
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31	-18	9	-21	-116	-52	-74	-110	-92	-81	-103	-74	-66	-25	-79	-50	-50	-29	-59	-38	-20	14	15	22	-23	-86	-48	
MEAN		-57	-18	-31	-50	-52	-35	-50	-36	-33	-23	-9	-17	-24	-34	-31	-39	-26	-15	-15	-3	12	0	-20	-32	-26	
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50 MEAN		-163	2	-85	-154	-114	-27	-117	-122	-113	-76	-14	-7	-5	-41	-65	-47	-48	-28	-5	-18	48	24	-11	-11	-50	

AO INDEX (HOURLY VALUES)

AUGUST 1982

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	-50	-77	-20	4	-16	30	49	29	33	84	-89	-54	16	18	37	-52	60	86	-45	-126	-98	-64	12	44	-37
	24	-126	-158	-143	-53	-40	-40	7	30	-19	-27	-57	5	-52	1	20	-19	32	-74	-14	10	-3	-107	-81	-37
	-15	-19	-9	-57	-15	-12	9	9	19	17	32	-98	-55	-7	-38	-30	4	-9	-59	-16	30	2	-36	25	-13
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	18	-37	-83	-55	0	-4	-25	9	40	39	-92	-45	-22	4	-65	-48	16	30	2	33	2	37	26	-31	-10
D	55	-147	2	40	-155	-74	-474	-121	42	-173	-280	-185	-185	-86	-108	-236	-15	19	25	38	-4	-4	-5	0	-84
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	-41	-85	4	27	35	-170	-276	-70	9	15	12	13	2	-10	-61	-183	-99	-63	-16	-22	-18	22	-3	3	-40
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	-8	29	-66	-88	-29	23	-66	-1	14	0	13	28	-295	-280	-109	-82	-33	-28	22	28	54	34	28	-85	-37
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MEAN	-12	-23	-30	-23	-18	-16	-43	-13	-4	-5	-21	-26	-30	-30	-32	-42	-27	-14	-11	1	-2	-1	-7	-18	-19
5Q MEAN	-3	-2	-2	-9	-13	-13	-8	-1	7	3	-1	5	3	5	6	-5	-16	-9	-11	6	14	-4	0	6	-1
5D MEAN	-13	-47	-39	-7	-65	1	-126	-34	-44	-36	-86	-86	-86	-36	-53	-100	-13	18	-10	-21	-10	3	6	-34	-38

AO INDEX (HOURLY VALUES)

SEPTEMBER 1982

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3	-13	17	32	-41	-13	36	-30	-102	-16	42	-115	-162	-15	3	12	8	30	-23	17	30	29	6	-14	36	-10
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5	-8	-75	9	-17	-65	-55	-60	-53	-65	-1	-17	41	15	-74	-113	-65	-54	8	40	28	37	-6	-124	-173	-36
D 6	126	211	56	-125	-355	-53	64	-186	-311	-312	-312	-153	-269	-286	-404	-211	-551	-462	-149	-170	-300	-302	-405	-501	-223
D 7	-184	-223	-349	-109	-200	16	25	14	-6	-472	-234	-270	-115	-106	-66	-19	-198	-377	-395	-70	2	23	24	-72	-140
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D 21	-138	-52	13	-106	-307	-98	21	-113	-140	-135	-43	-16	-230	-106	-24	-6	-18	-32	-1	-152	-100	-243	-294	-96	-101
D 22	-139	-226	-574	-284	-593	-487	-796	-344	-329	-539	-496	-187	-170	-41	-132	-113	6	-35	-115	-146	-133	-118	-161	-126	-262
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AO INDEX (HOURLY VALUES)

OCTOBER

1982

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AO INDEX (HOURLY VALUES)

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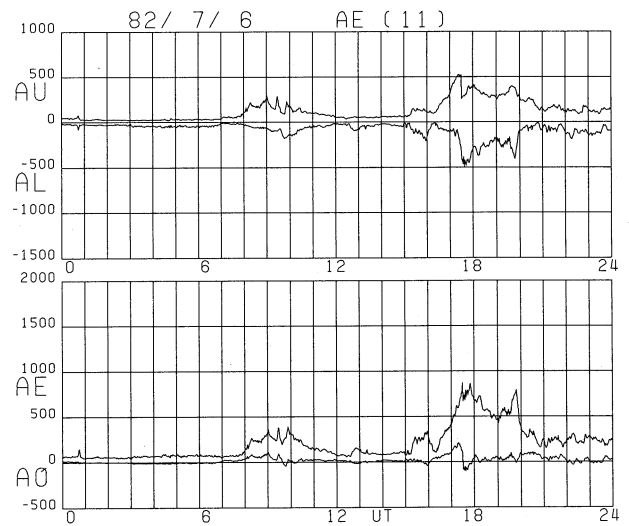
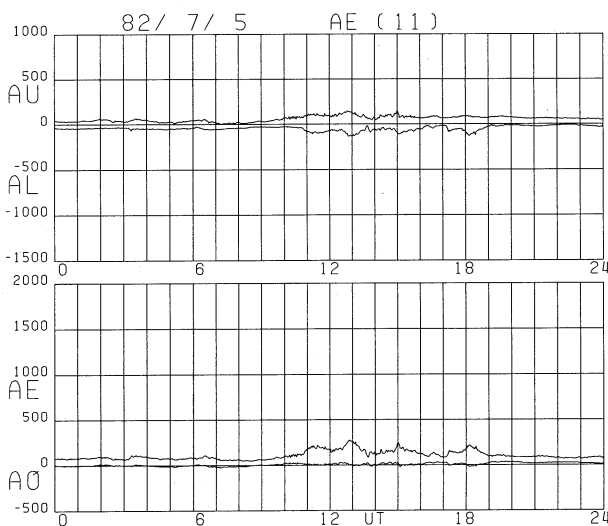
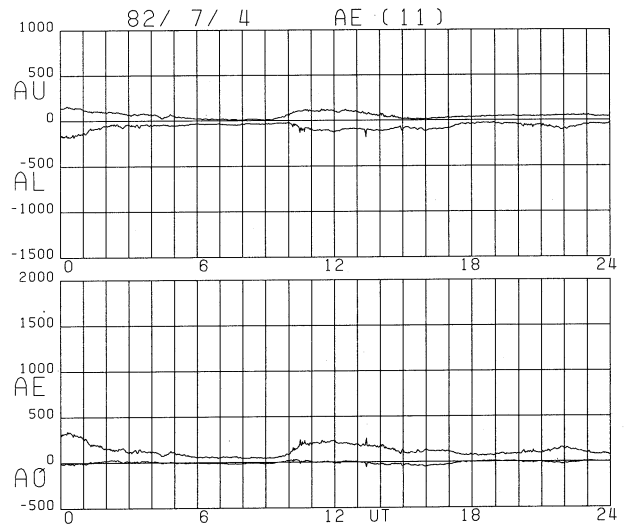
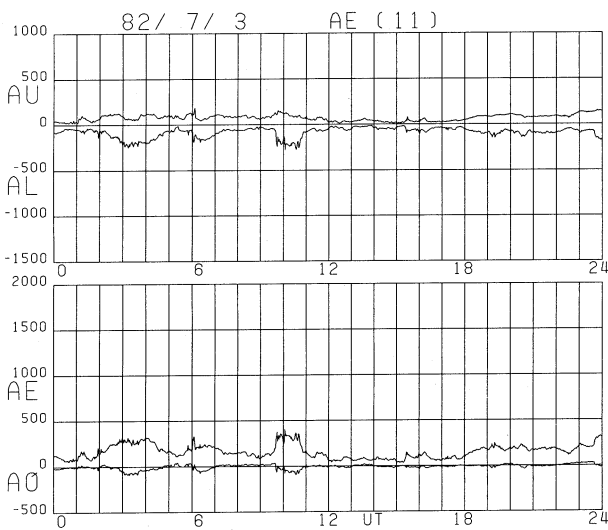
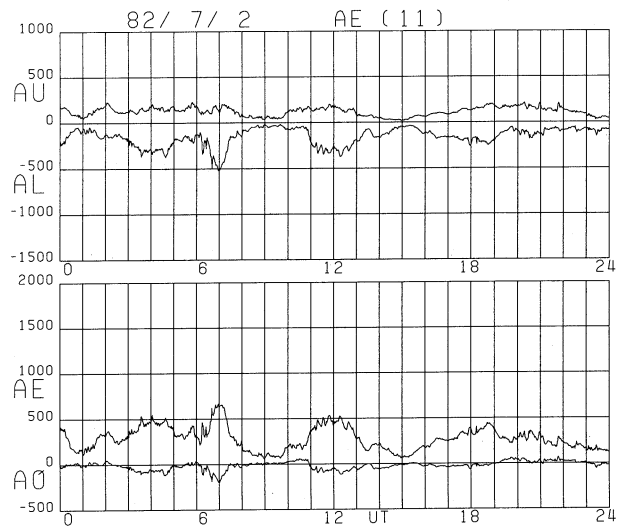
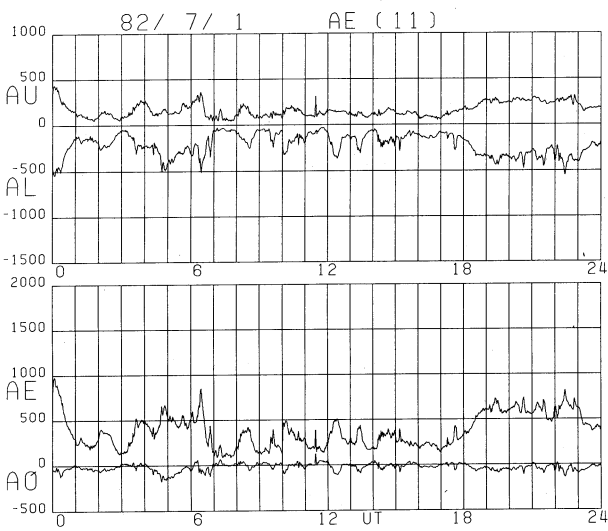
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28	30	4	-18	-105	9	9	-11	-29	-39	18	-11	6	-176	-201	-82	-11	0	20	-7	-121	-198	21	-7	-26	-38
29	-8	18	37	-11	-28	48	42	22	-142	-111	-29	4	-28	-67	-131	9	-3	-64	-36	-83	-121	12	-2	6	-27
30	6	-26	9	19	-47	22	-45	38	17	-25	-8	-123	-1	8	-49	-115	-149	-100	-44	-50	-3	17	-2	-26	-28
0 31	-76	-100	43	51	1	26	21	8	25	2	2	-28	8	11	1	3	4	-4	7	-5	-1	-7	-28	11	0
MEAN	-32	-31	-26	-13	0	2	-18	-23	-56	-61	-48	-72	-93	-97	-86	-74	-73	-58	-49	-59	-47	-35	-27	-31	-46
50 MEAN	-12	-15	17	22	10	16	11	4	0	3	-2	-3	-9	-14	-11	-1	-2	-6	-7	-5	-14	-19	-8	6	-1
50 MEAN	-107	-118	-113	-62	-43	-49	-84	-66	-233	-293	-162	-117	-177	-93	-133	-171	-105	-50	-78	-118	-68	-12	5	-37	-103

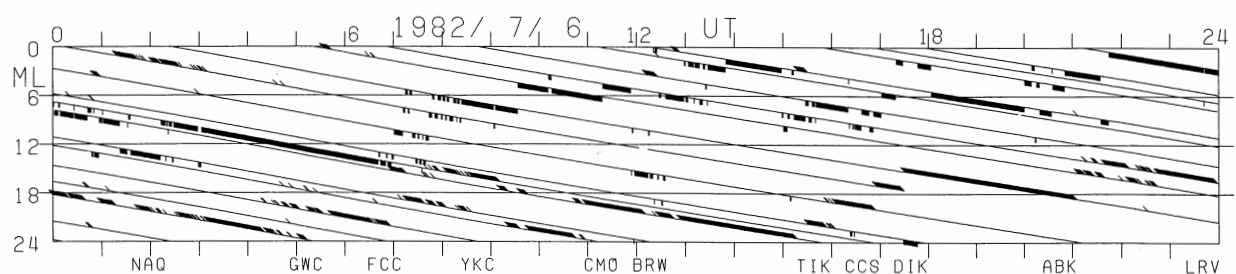
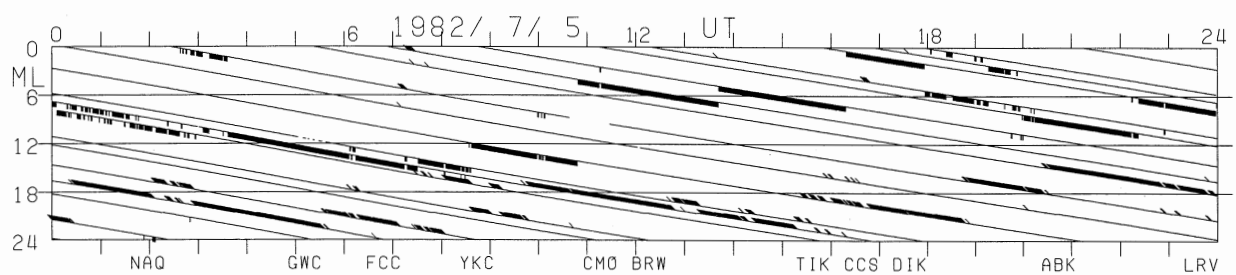
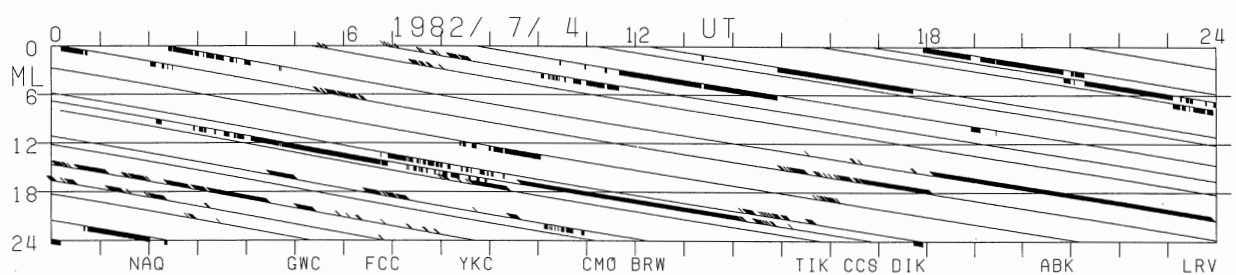
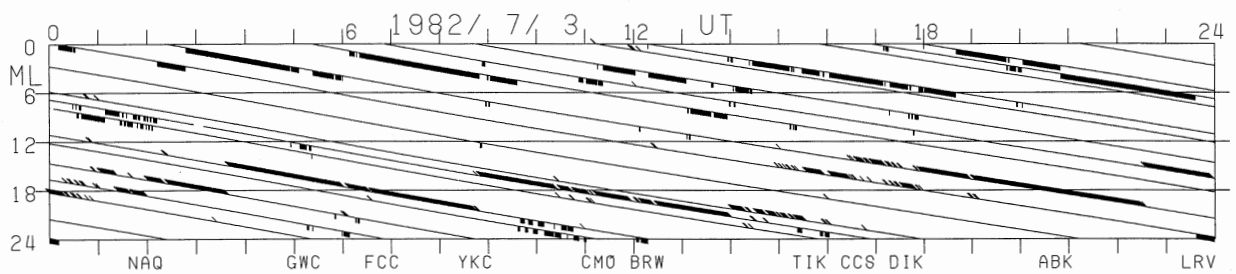
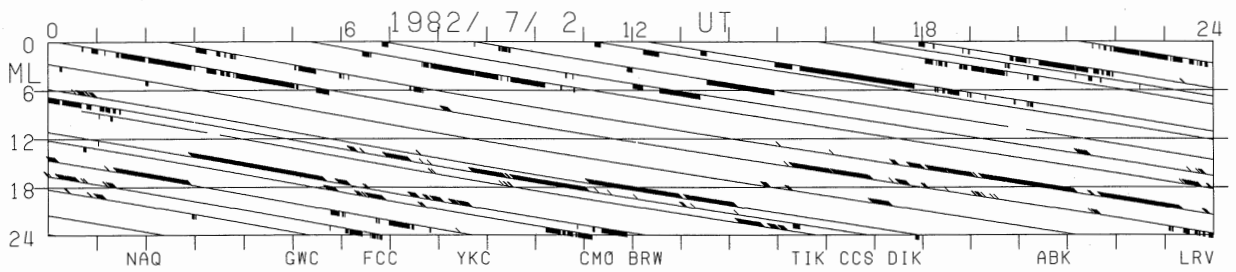
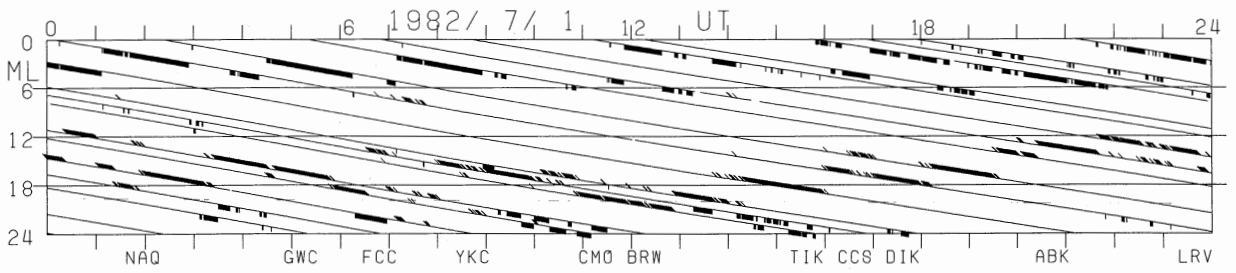
FIGURE 4 (on even pages)

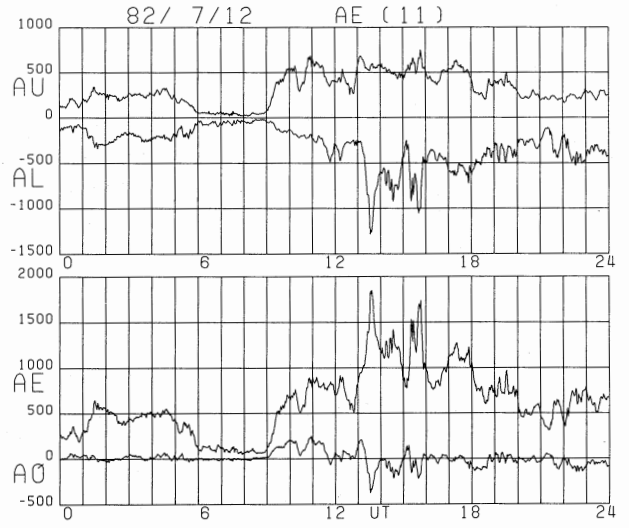
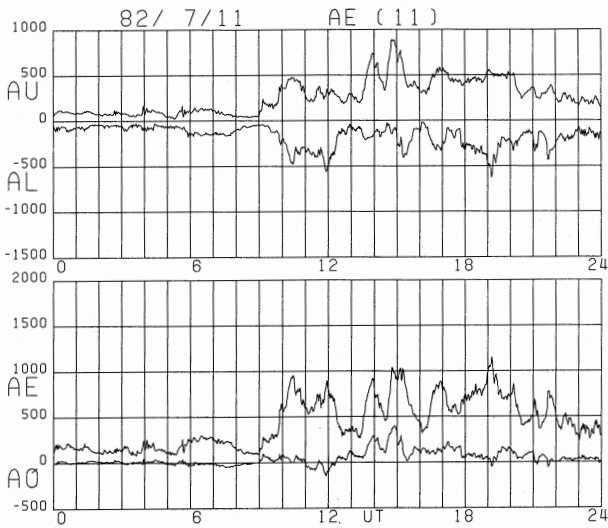
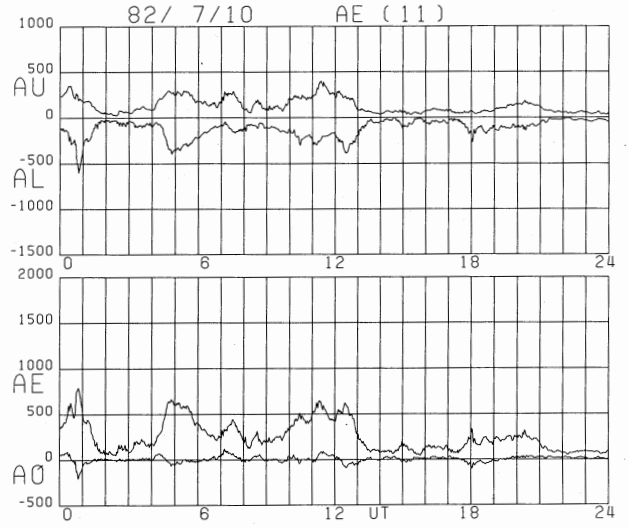
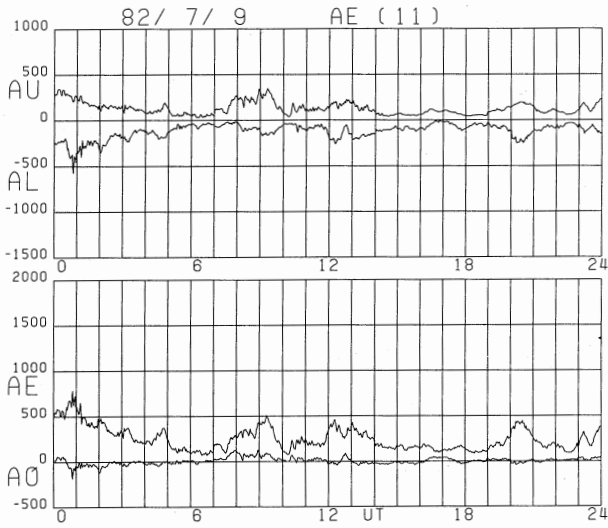
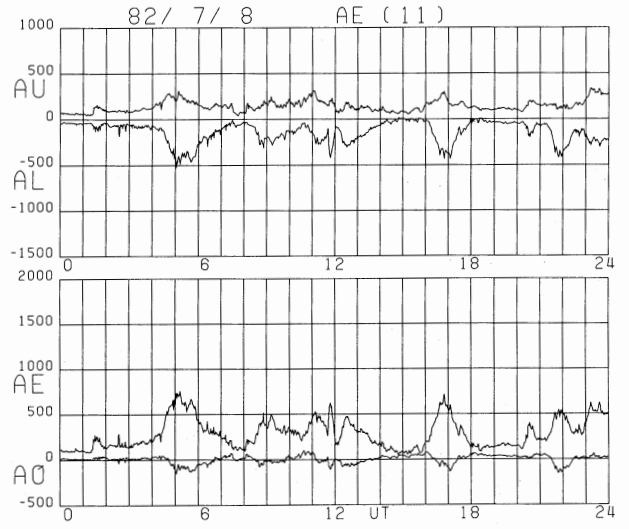
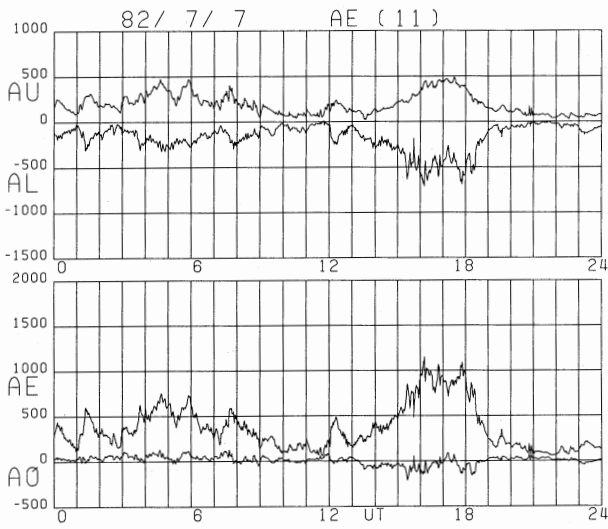
Daily graphs of 1.0-min AE indices (AU, AL, AE and AO) for July-December 1982. Graphs on very disturbed days (Jul. 13, 14, 24, Sep. 6, 21, 22, 26, Nov. 24, Dec. 17 and 18) are reproduced on pages 96, 97 and 98.

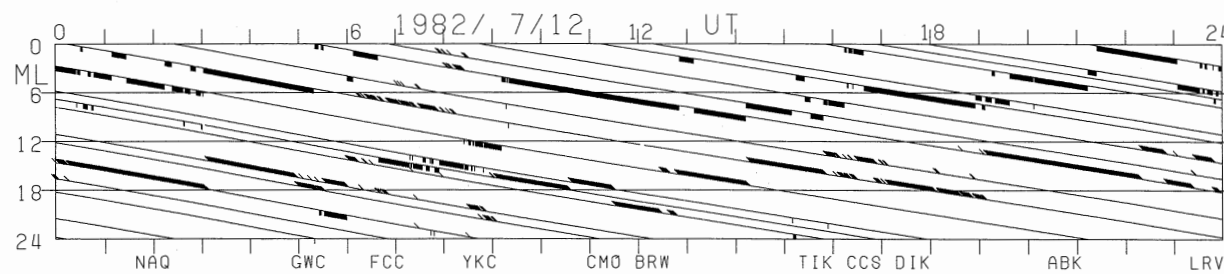
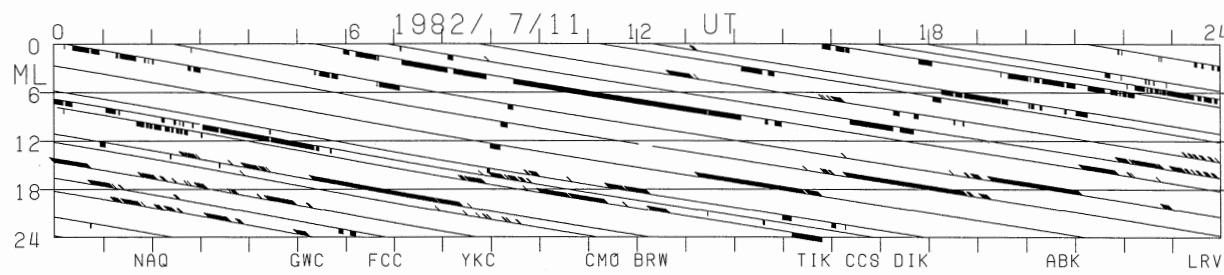
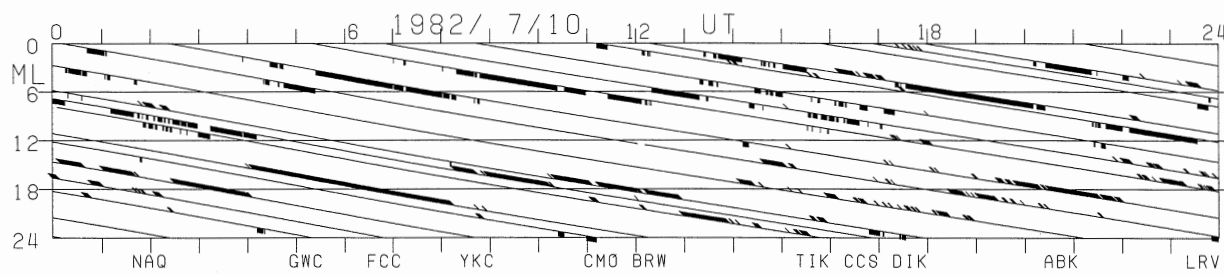
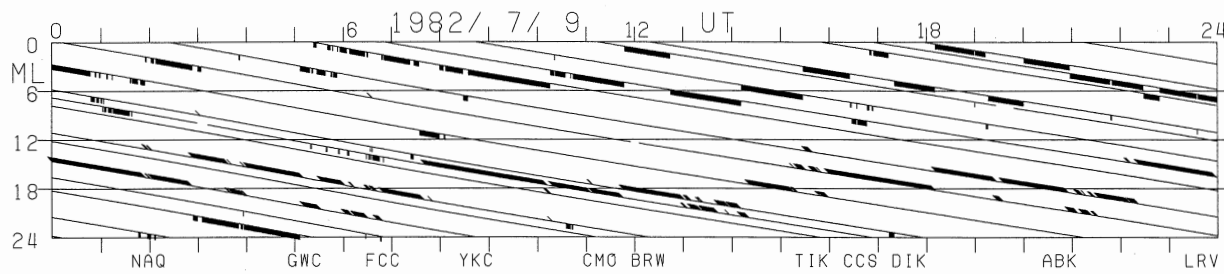
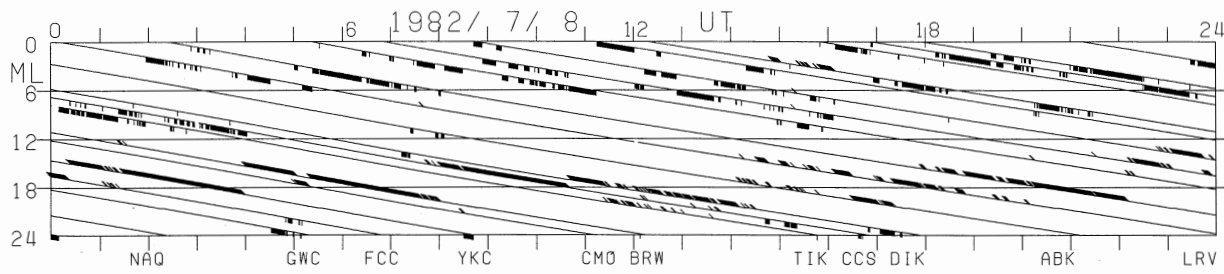
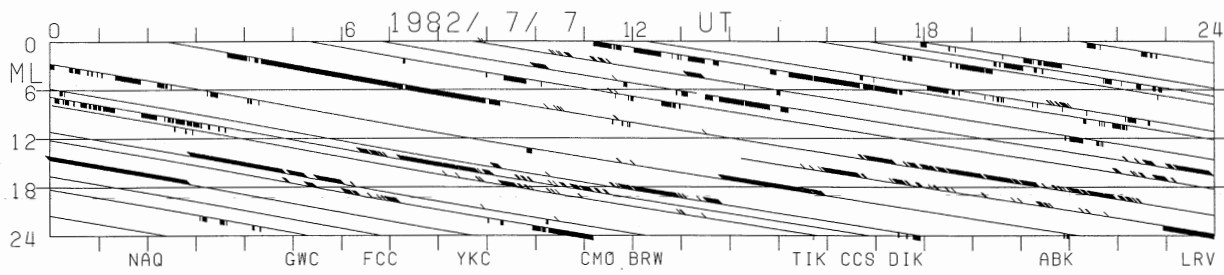
FIGURE 5 (on odd pages)

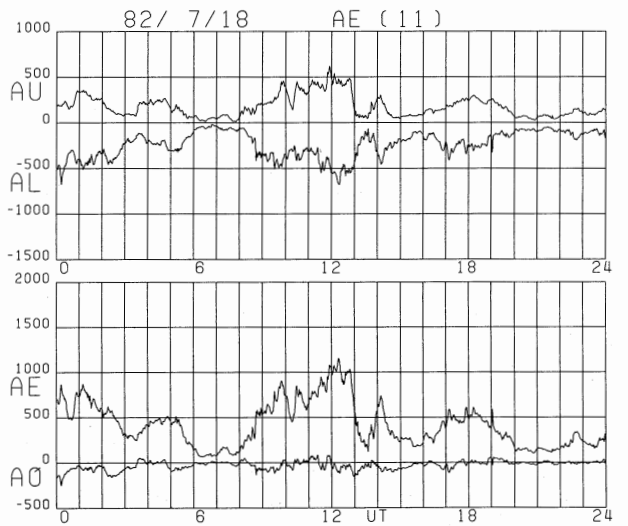
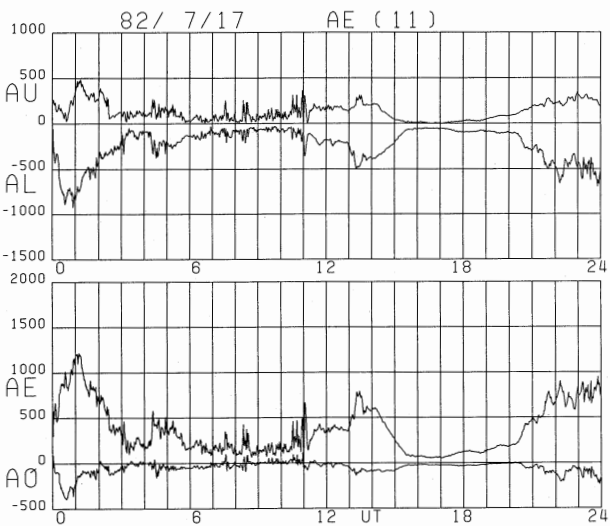
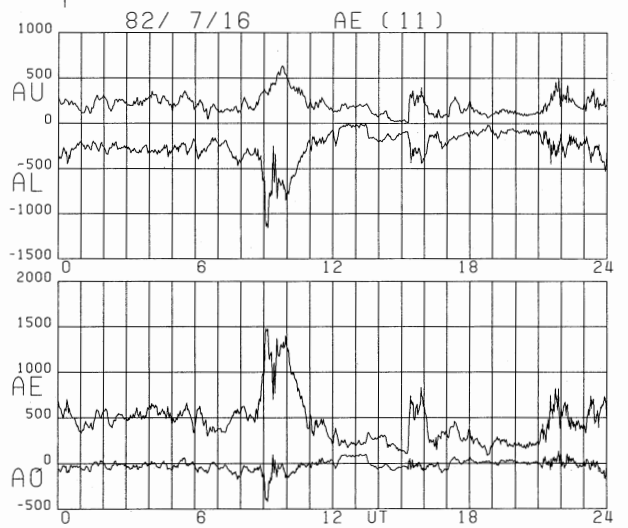
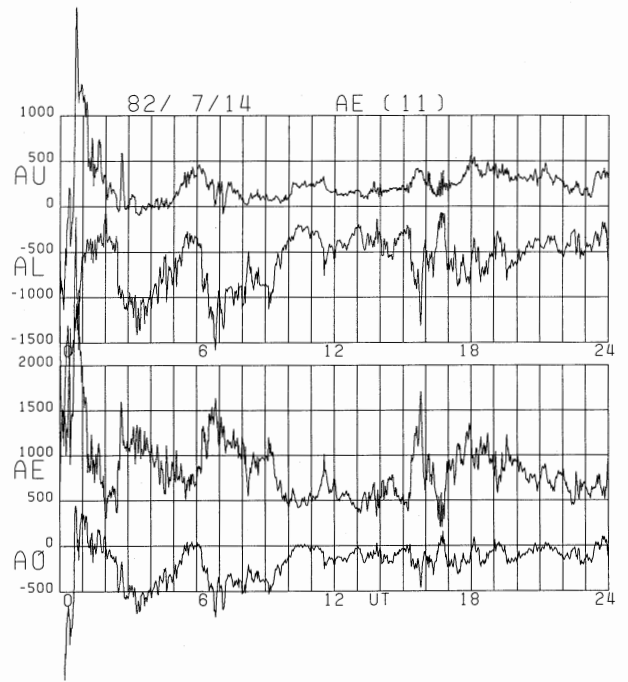
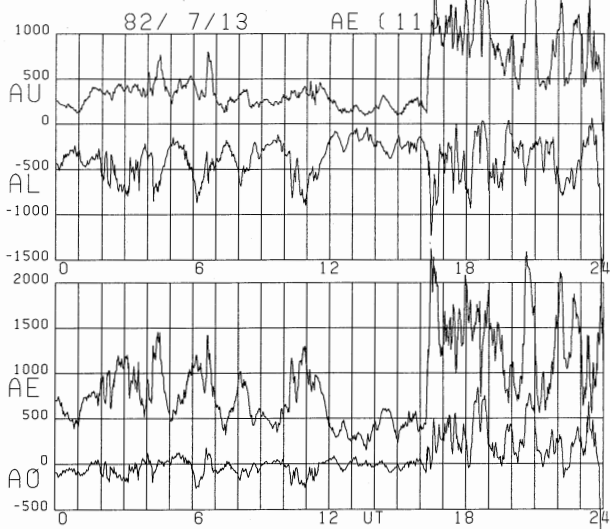
Plots of the contributing stations to the AU (upper plumes) and AL (lower plumes) indices, where you can see which station contributes to these indices at each UT minute.

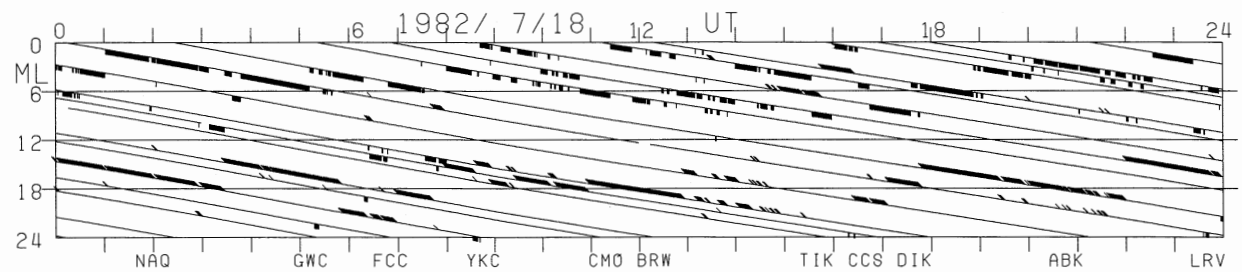
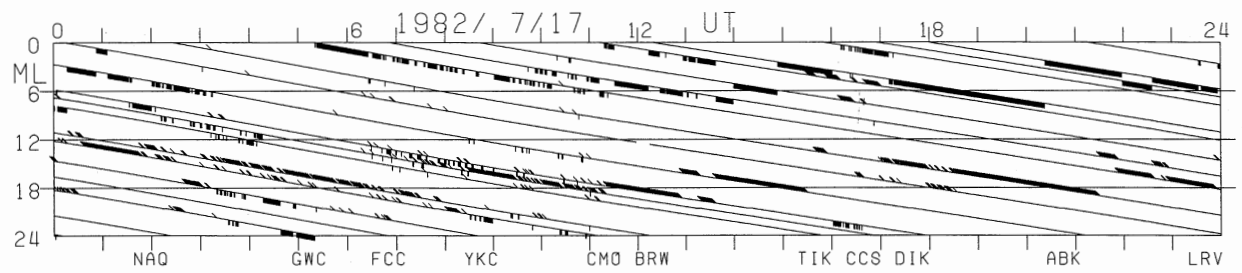
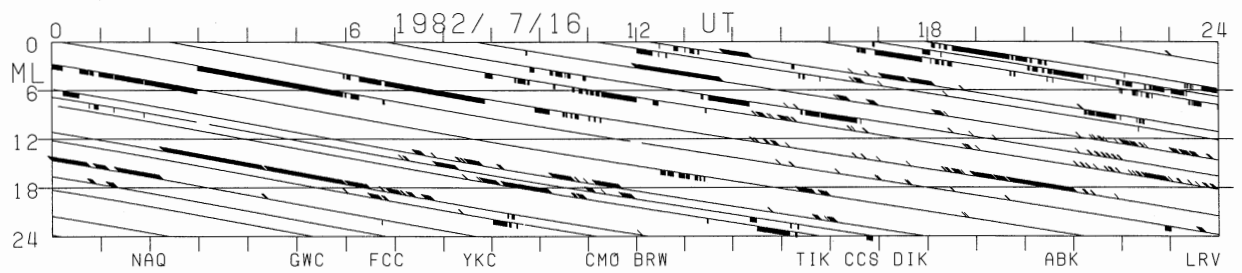
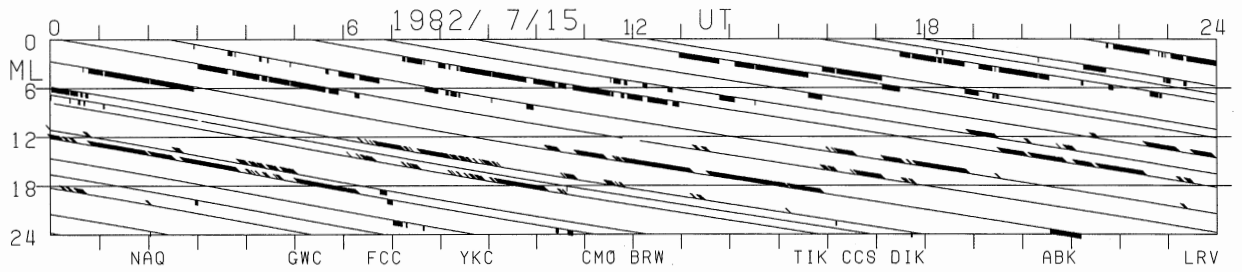
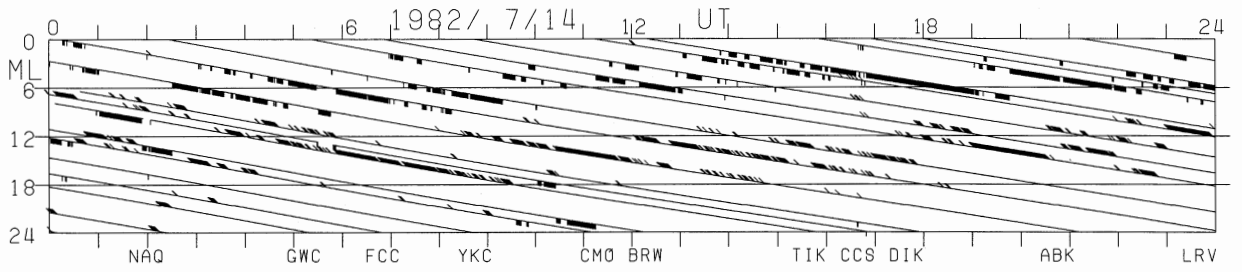
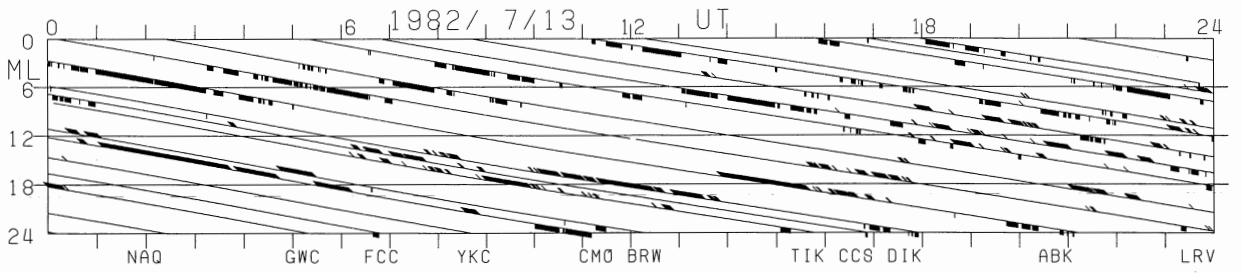


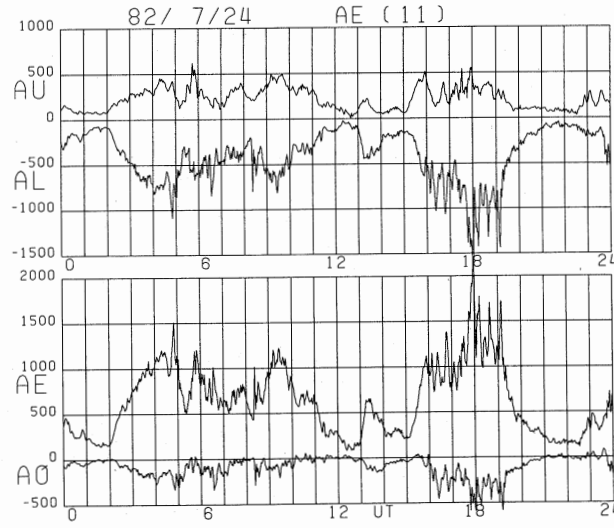
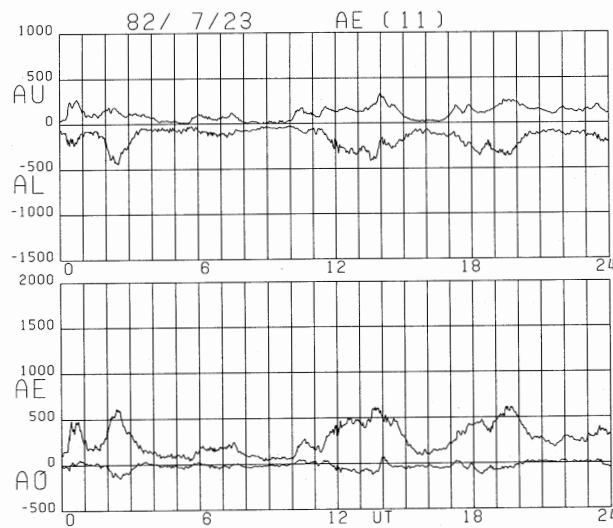
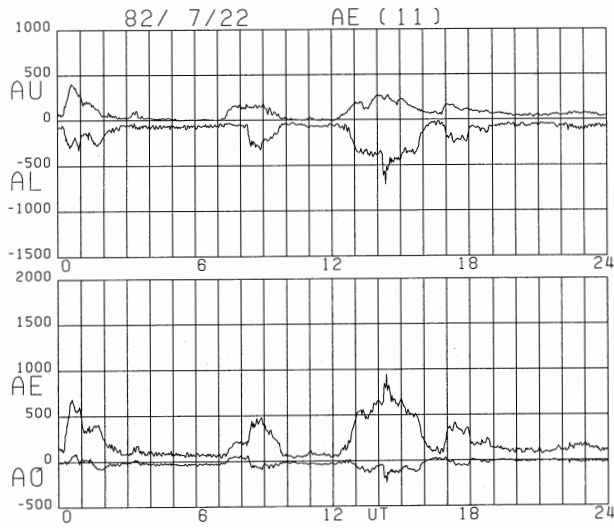
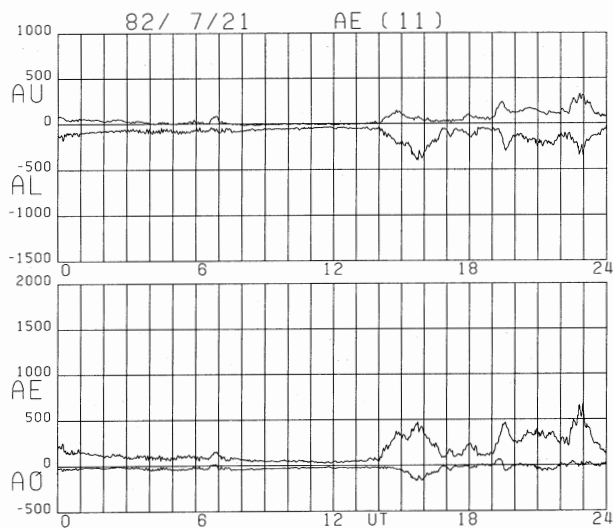
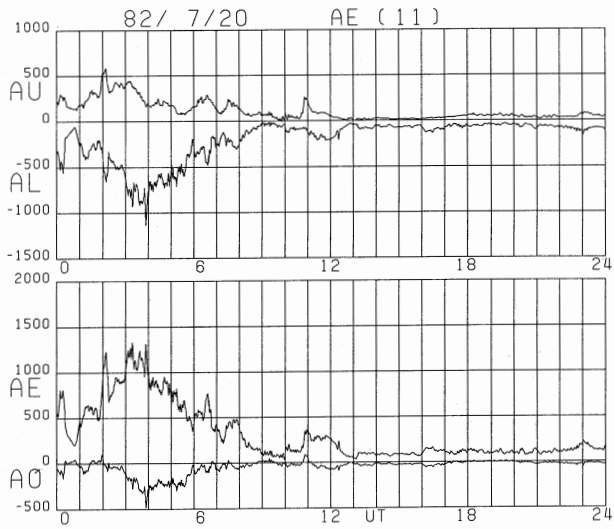
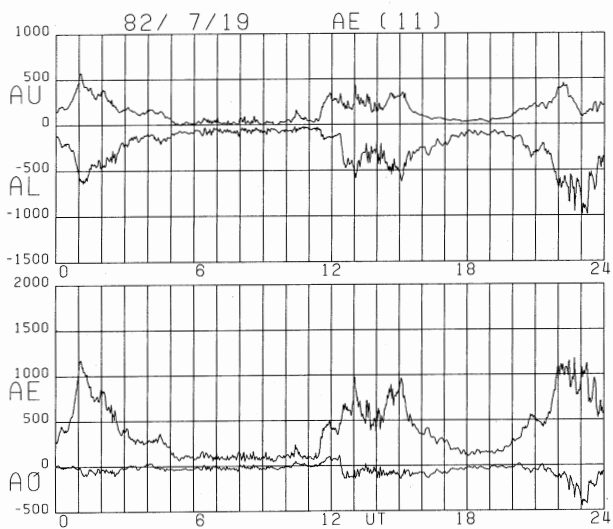


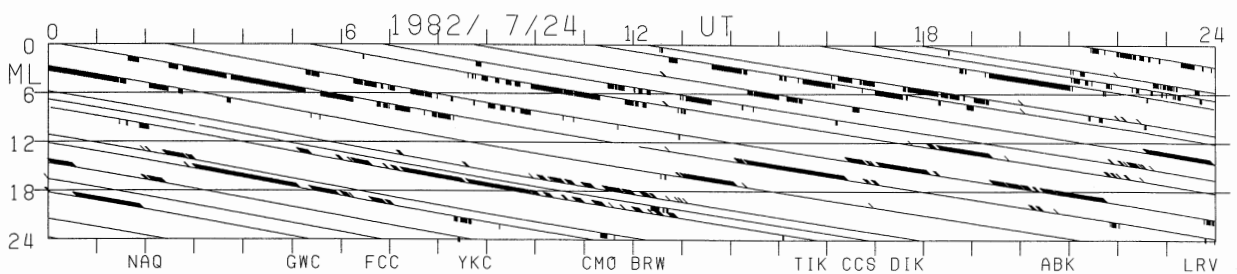
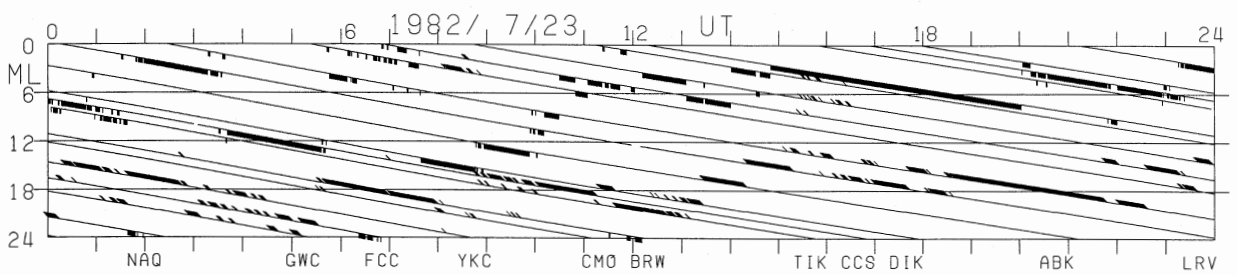
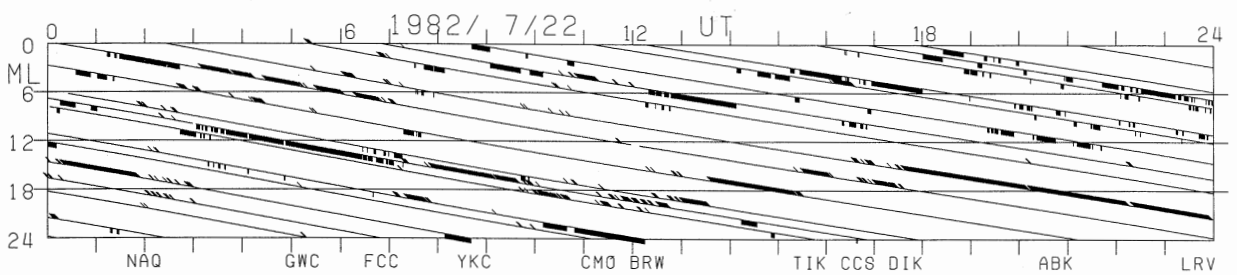
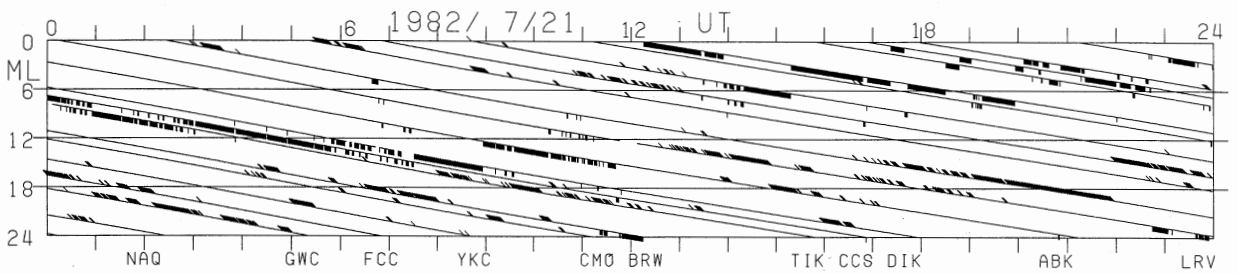
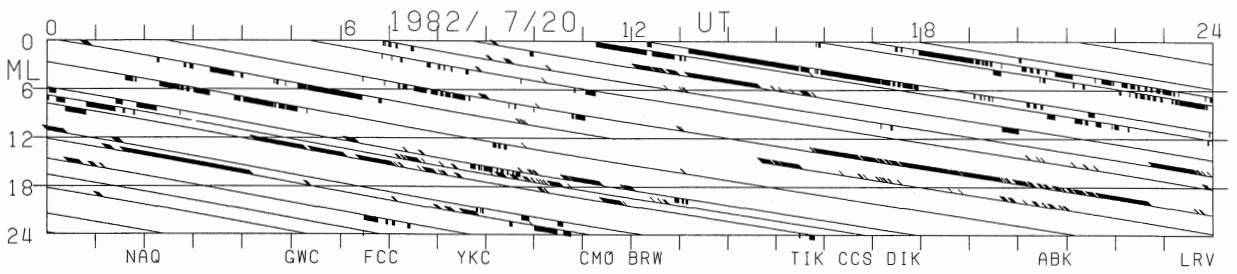
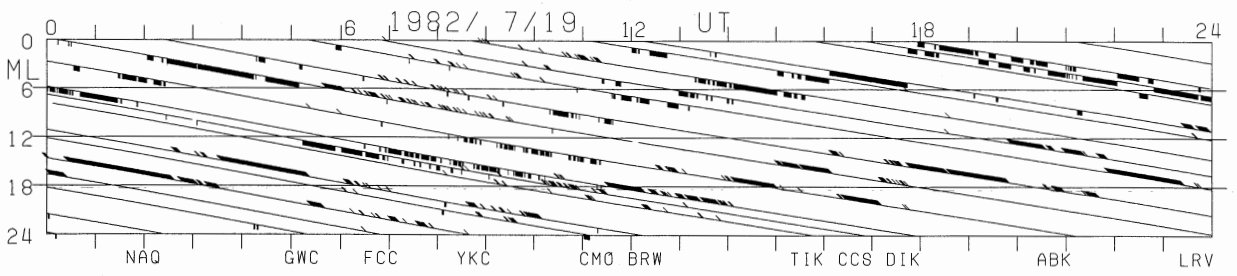


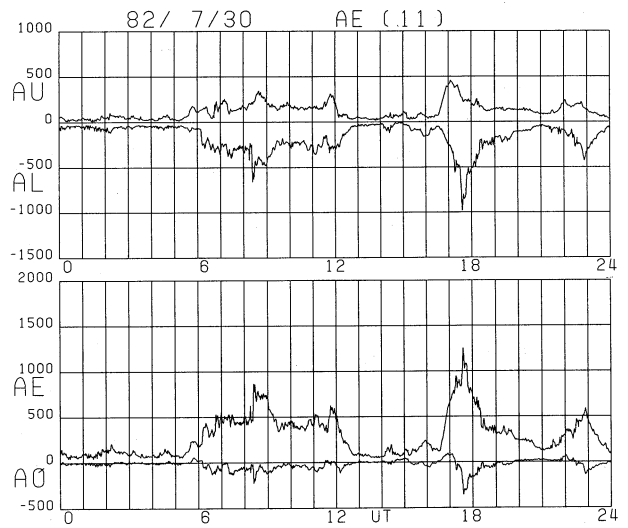
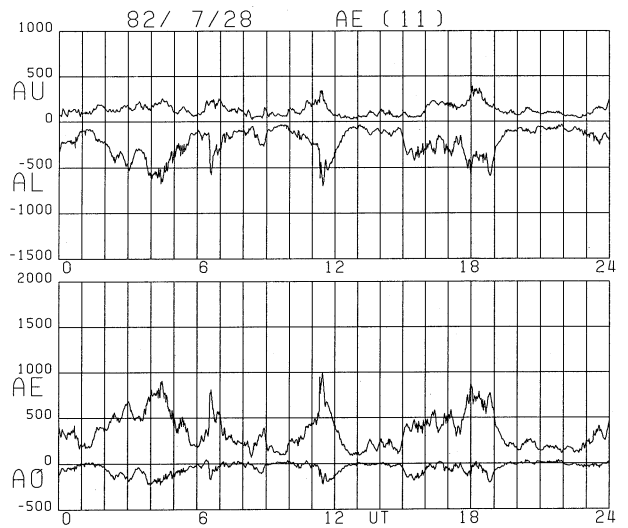
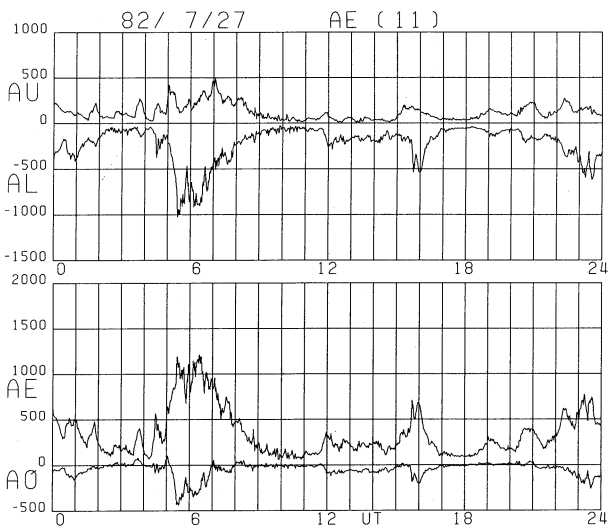
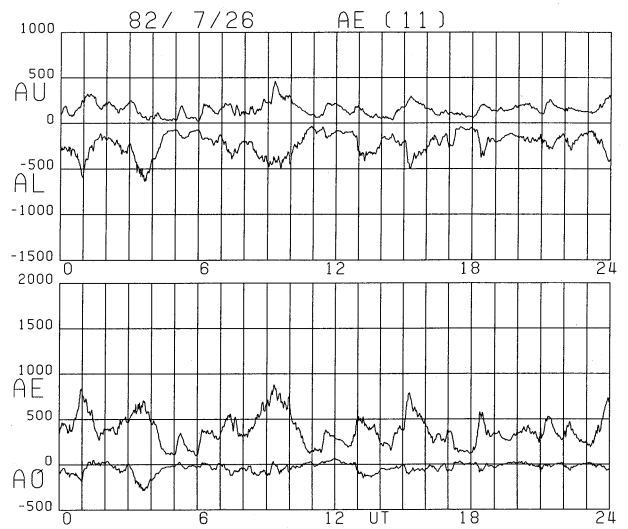
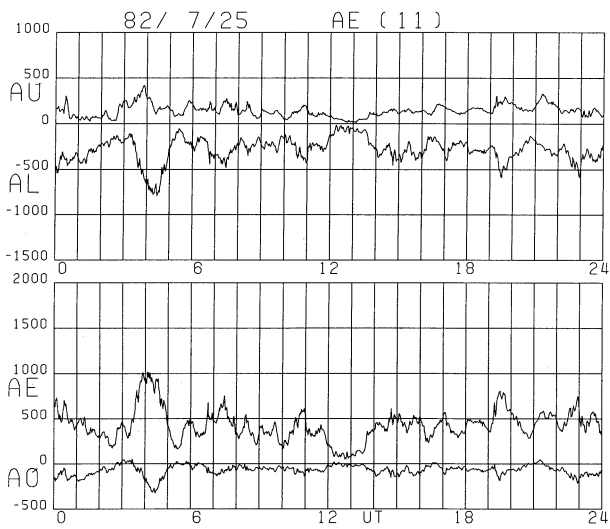


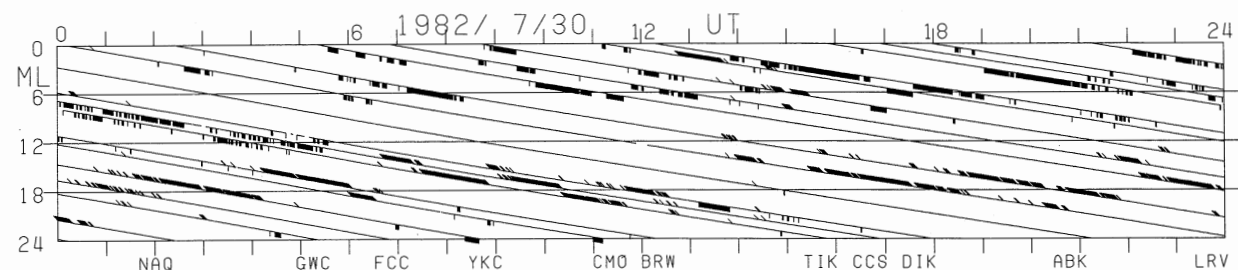
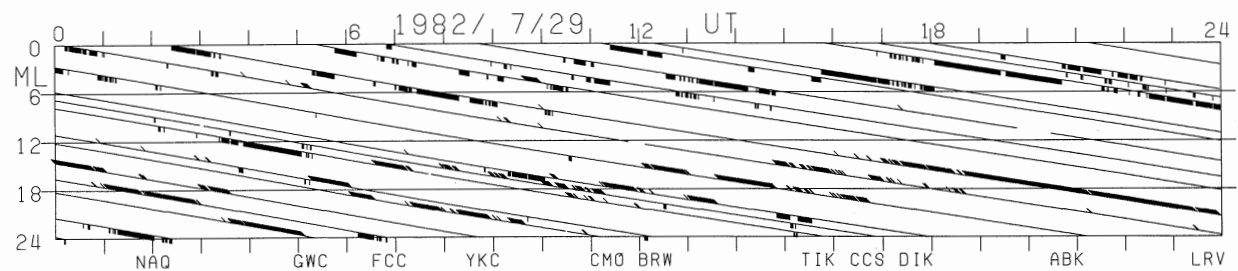
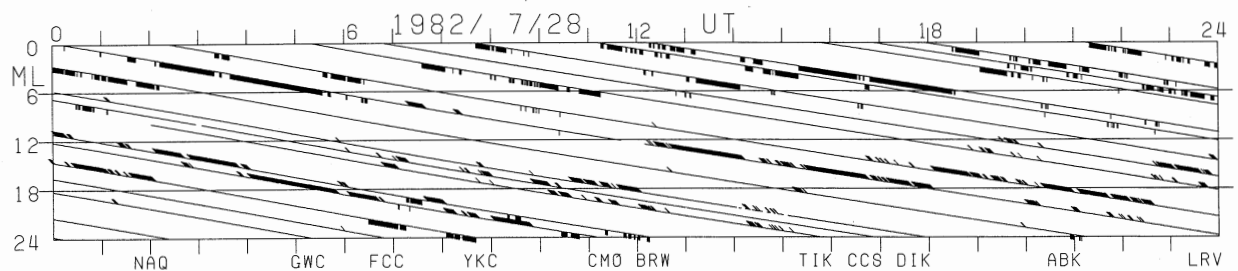
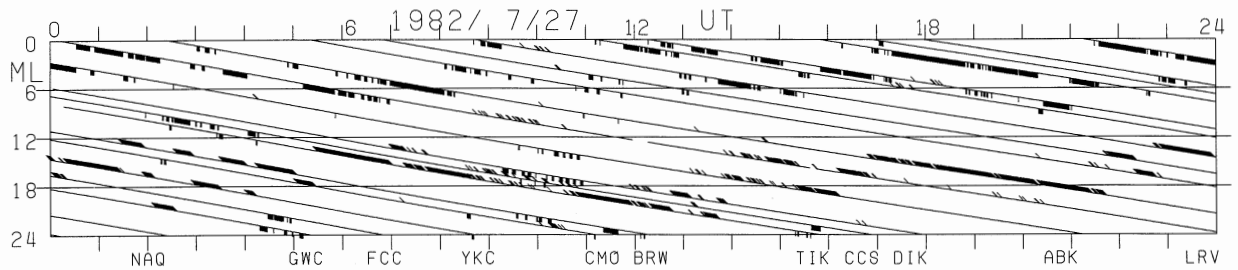
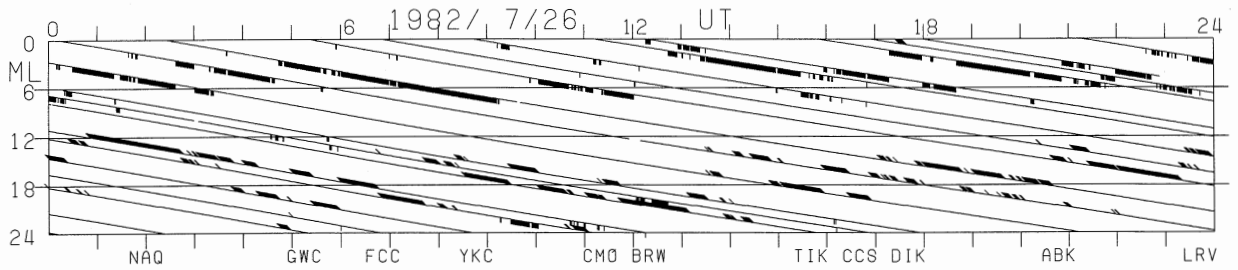
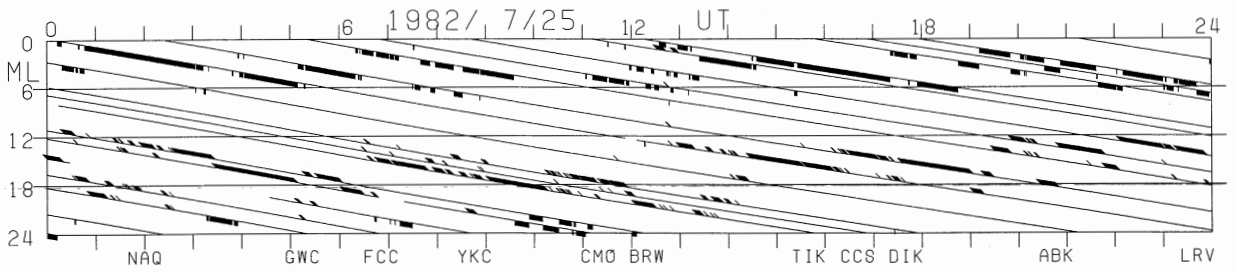


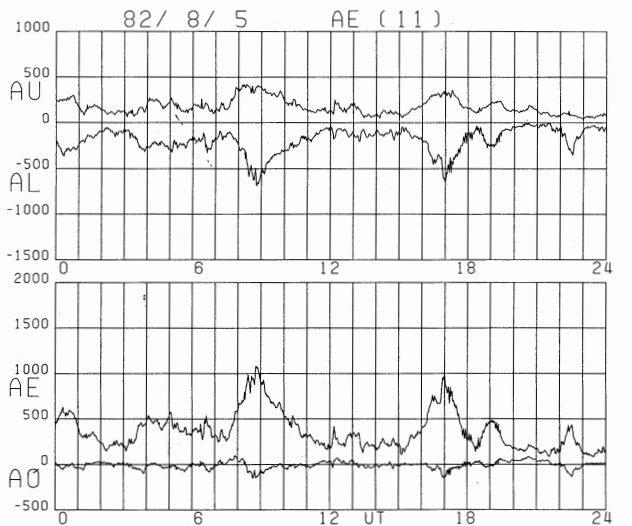
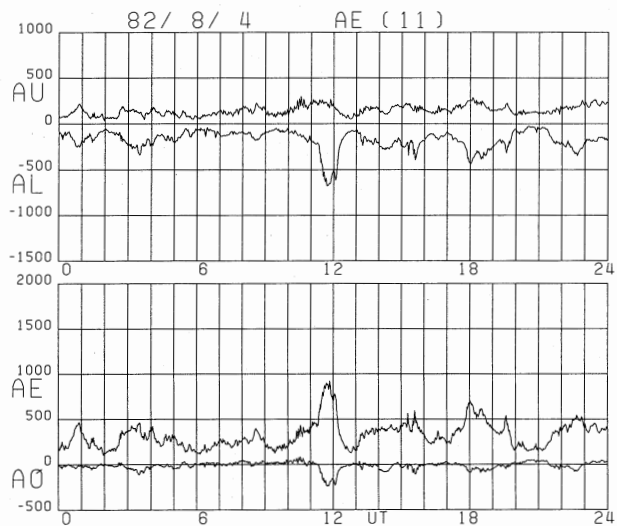
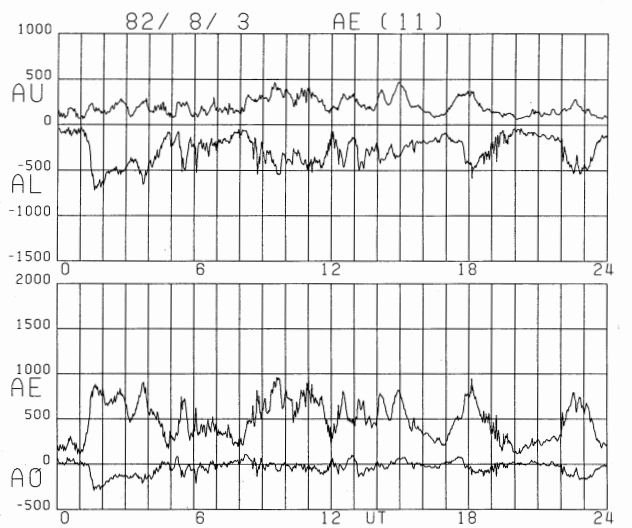
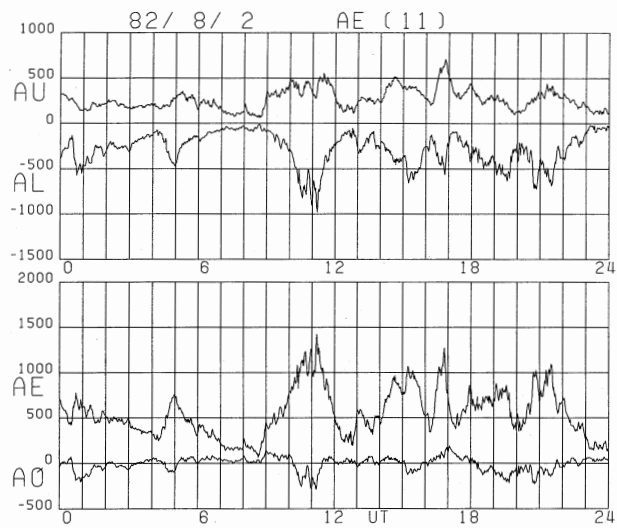
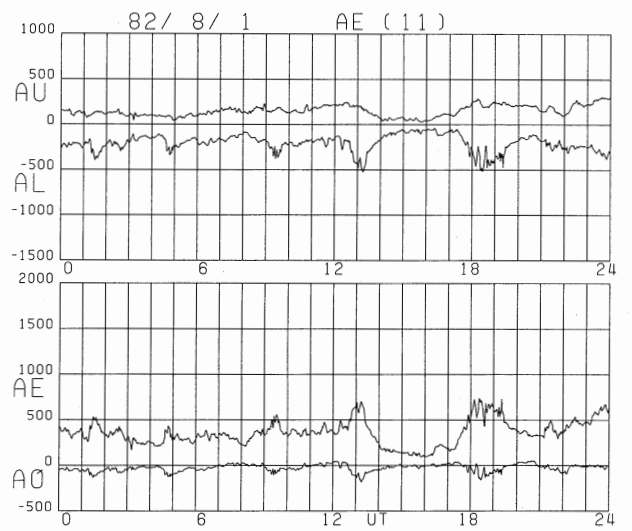
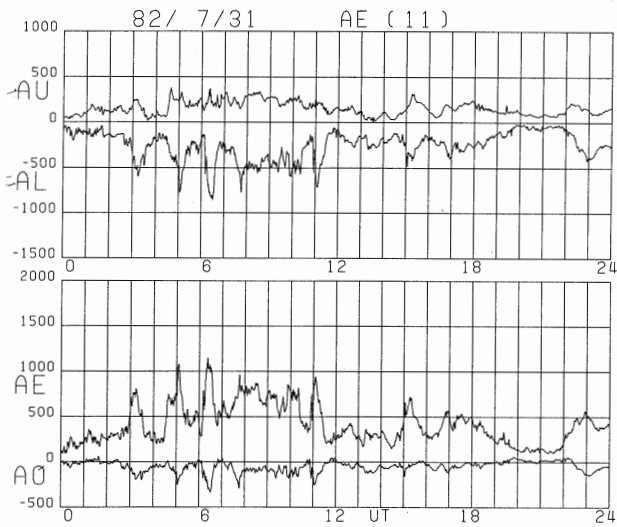


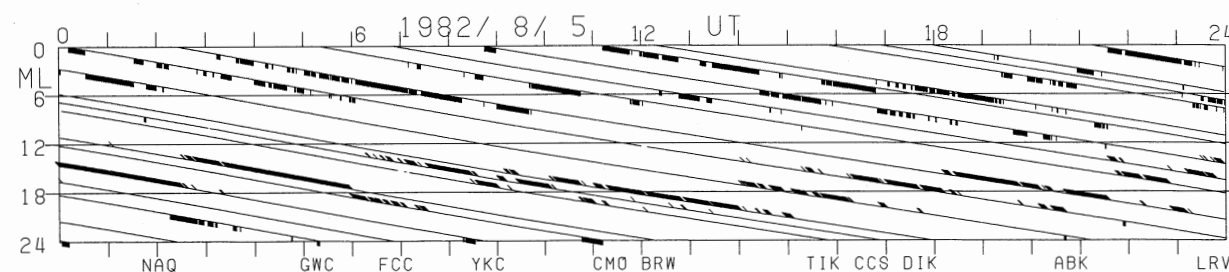
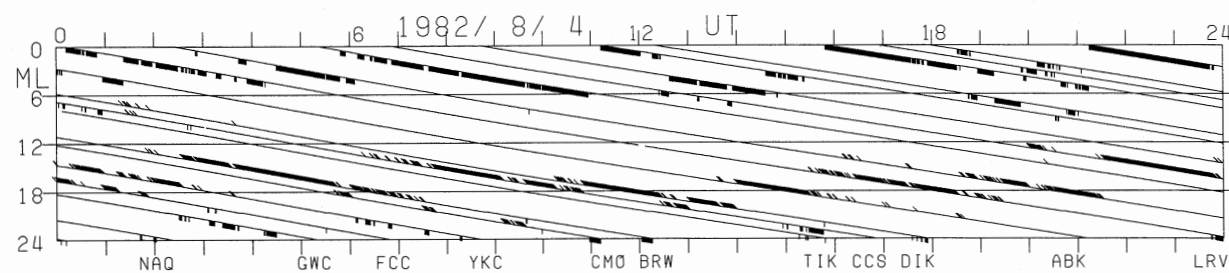
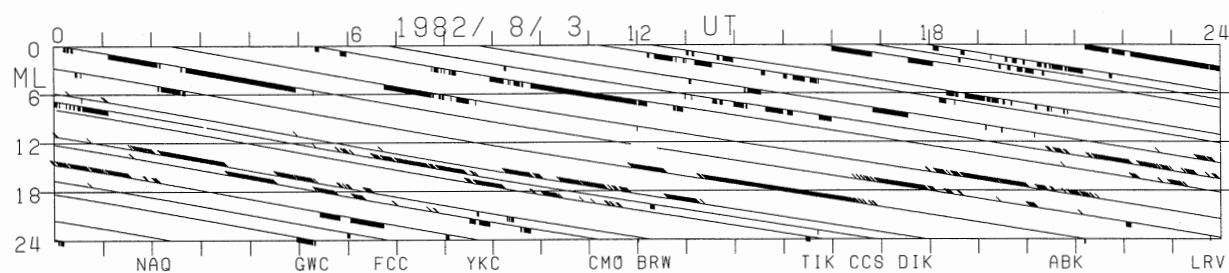
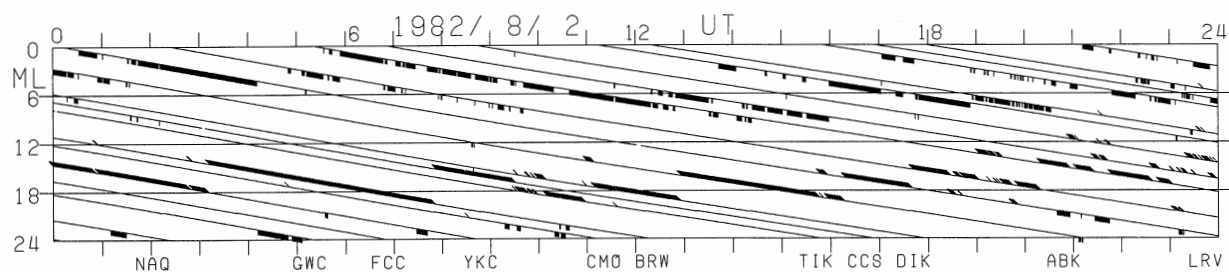
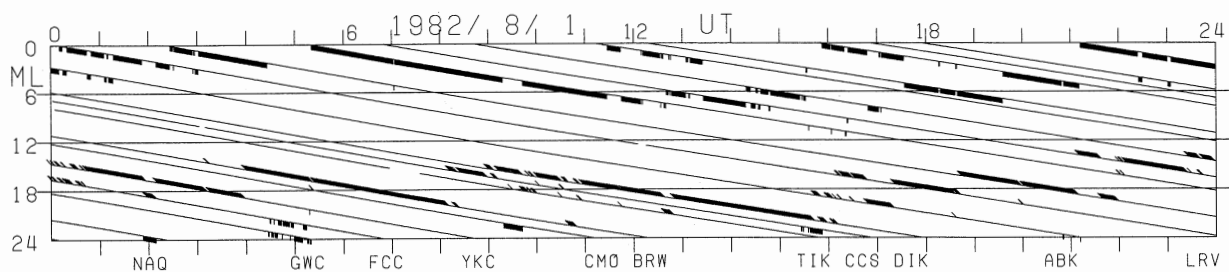
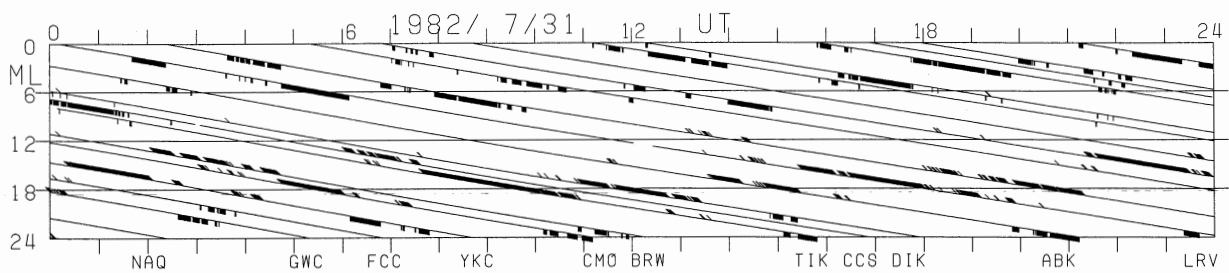


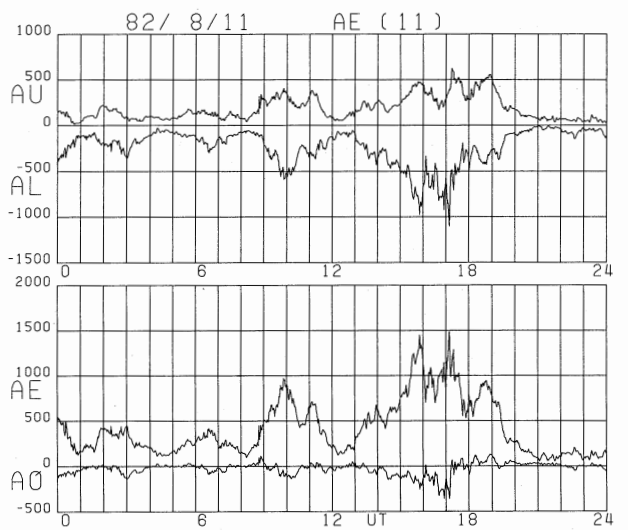
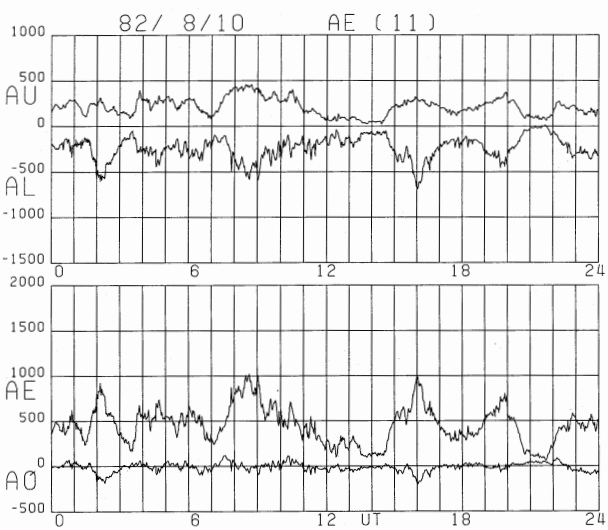
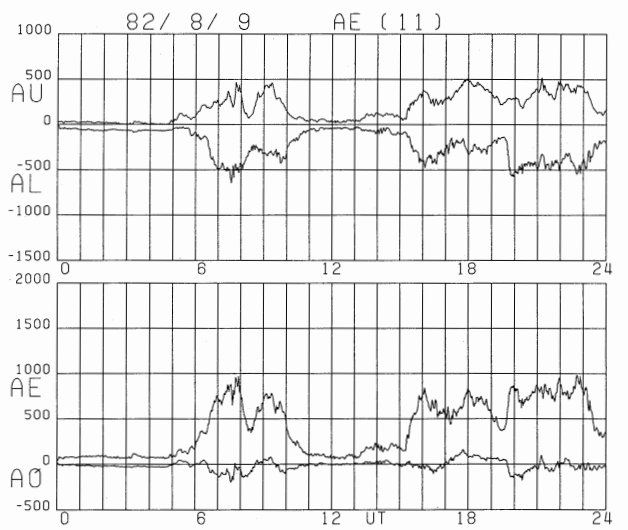
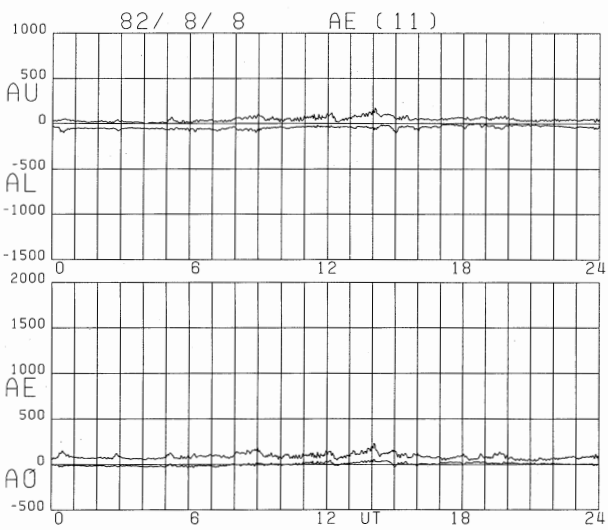
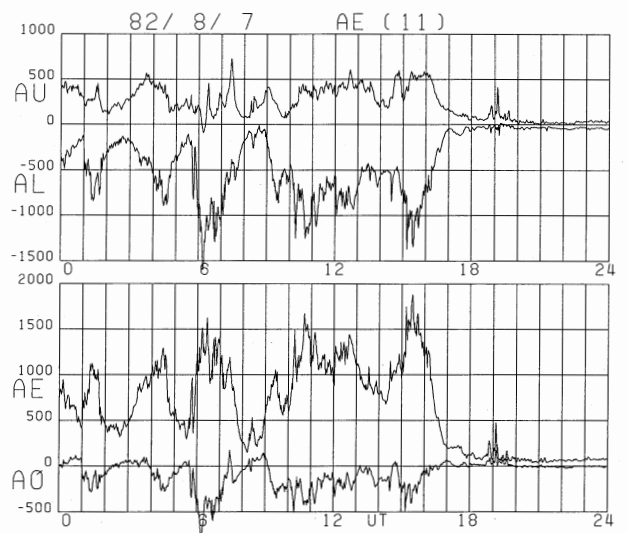
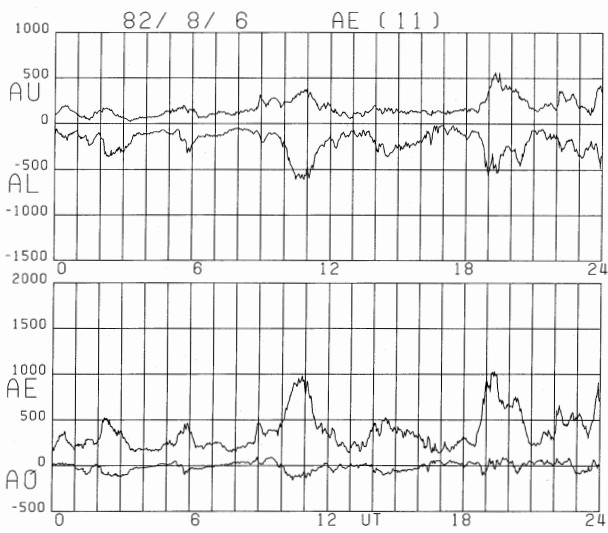


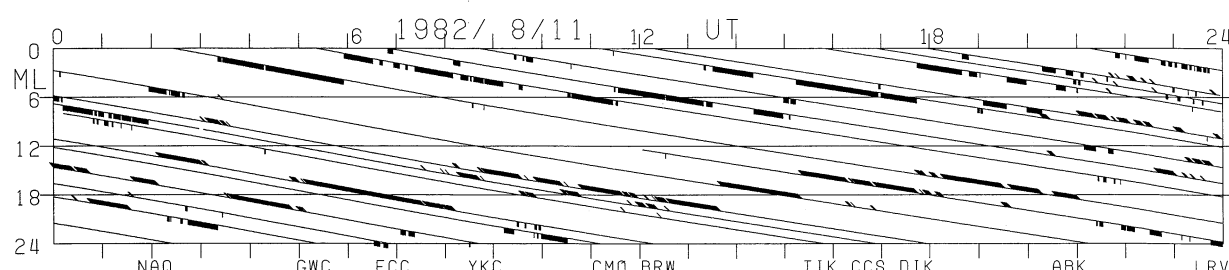
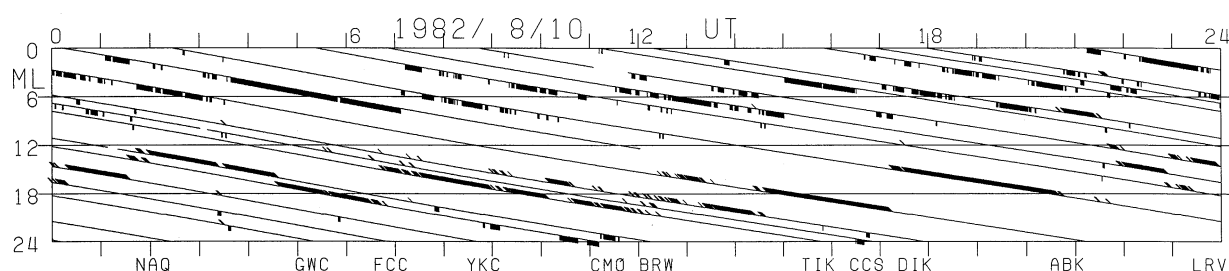
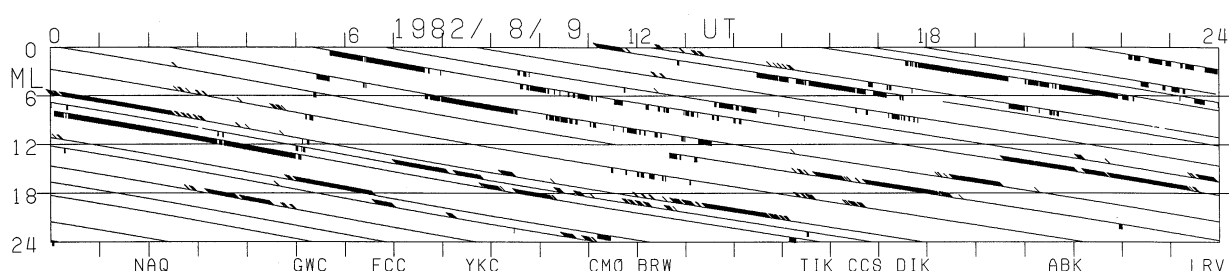
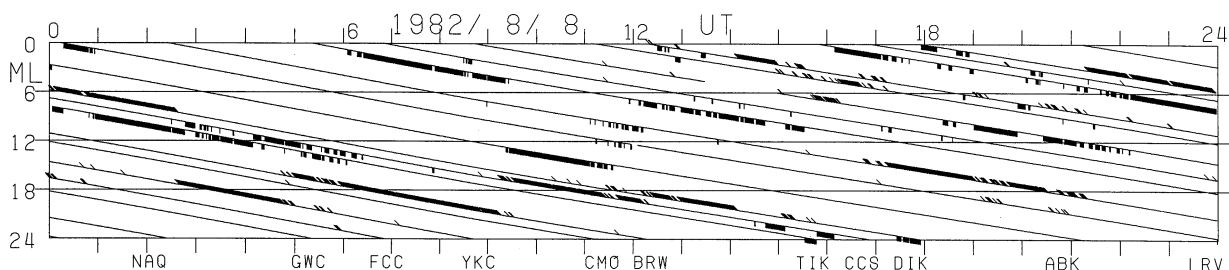
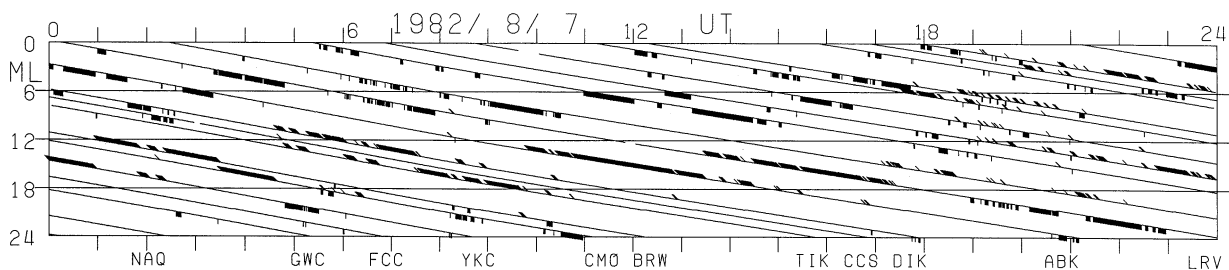
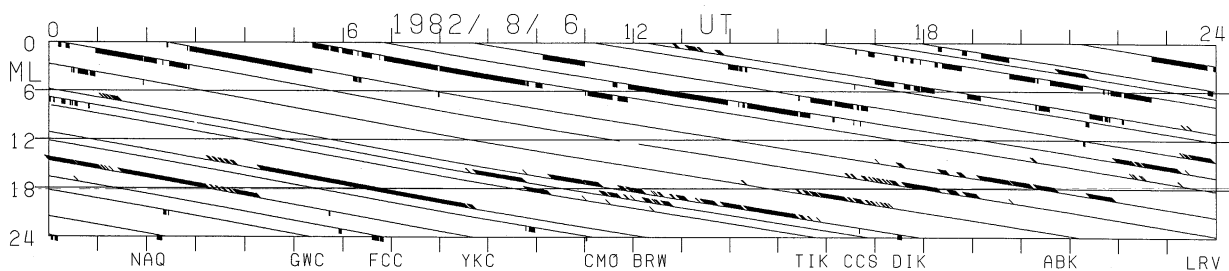


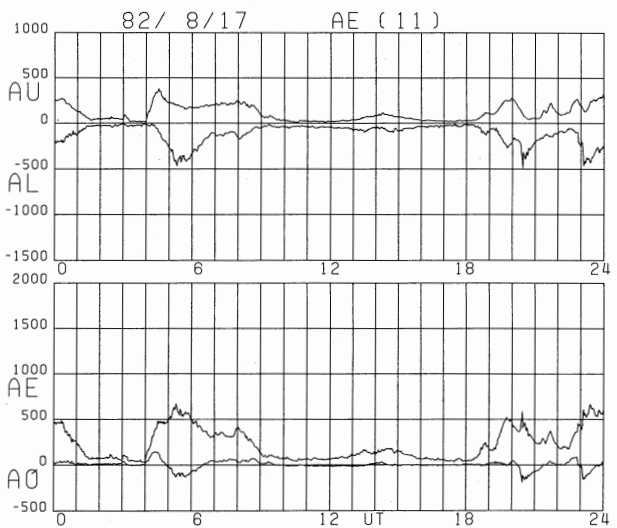
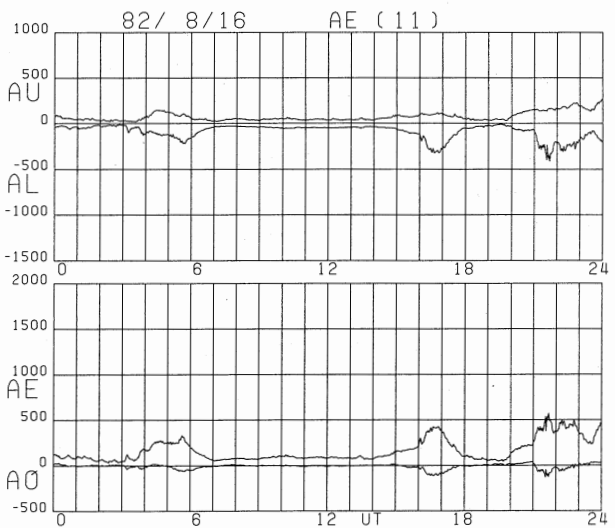
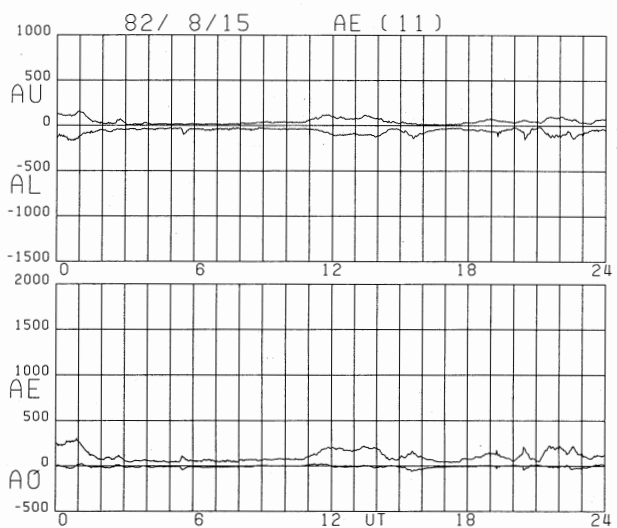
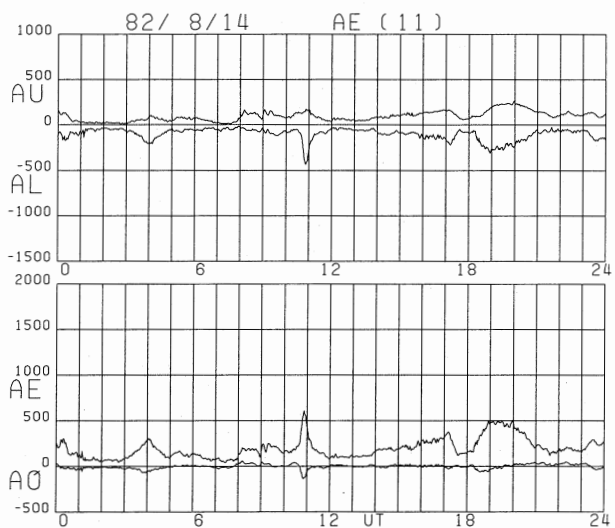
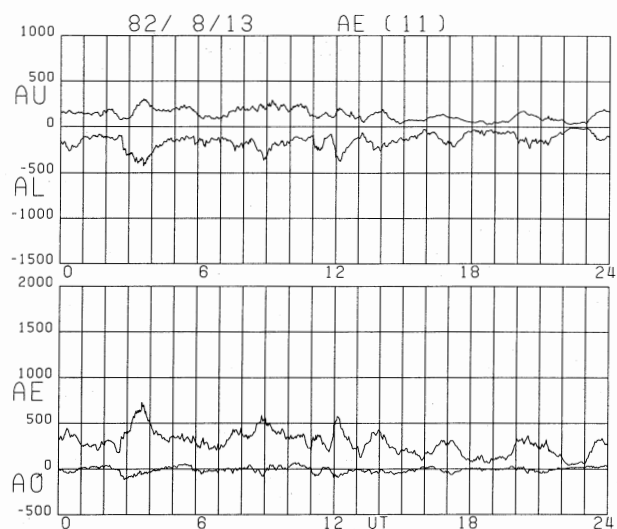
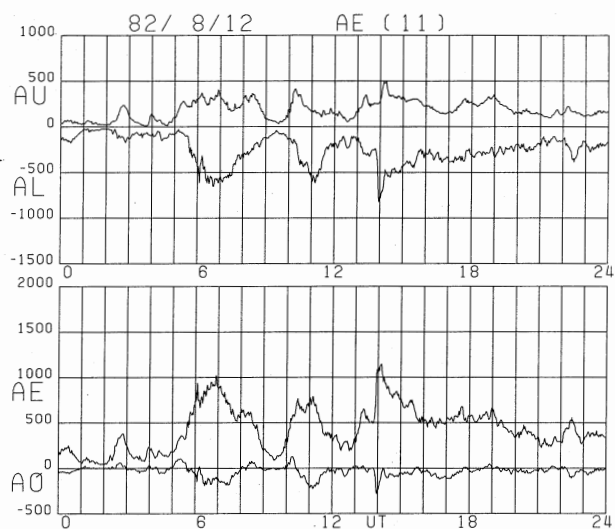


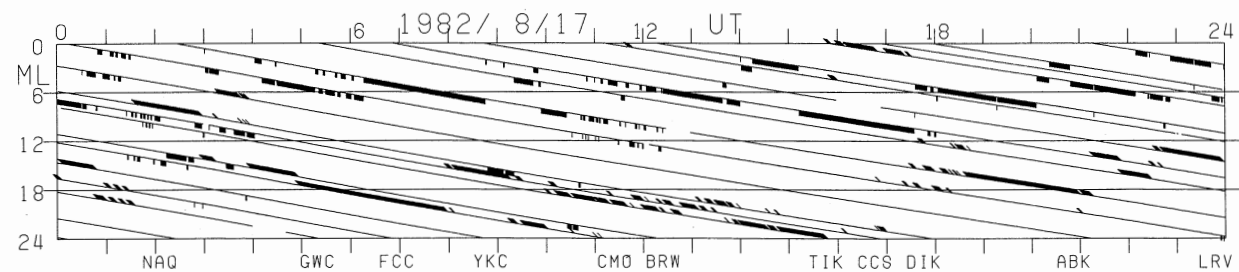
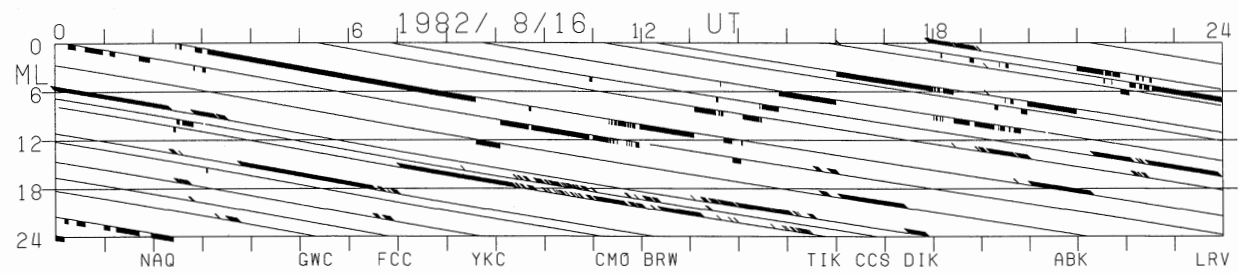
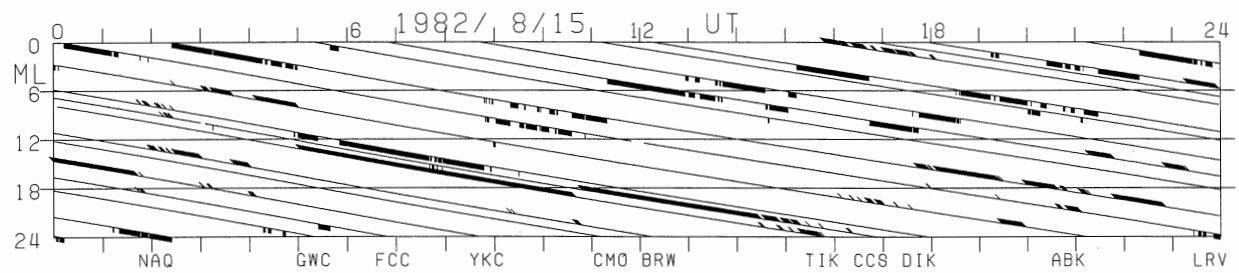
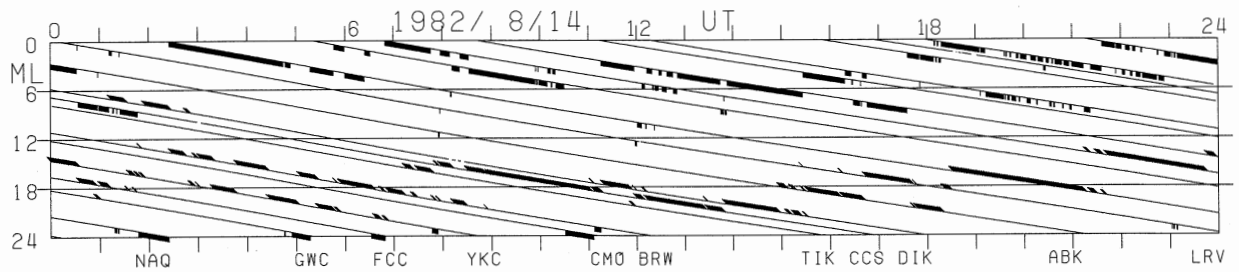
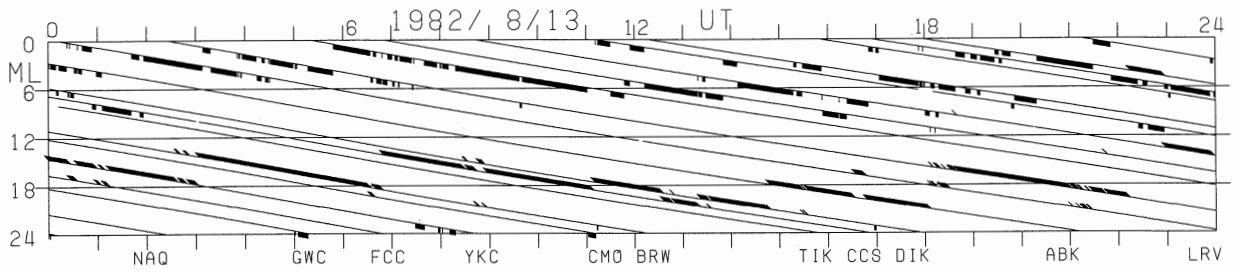
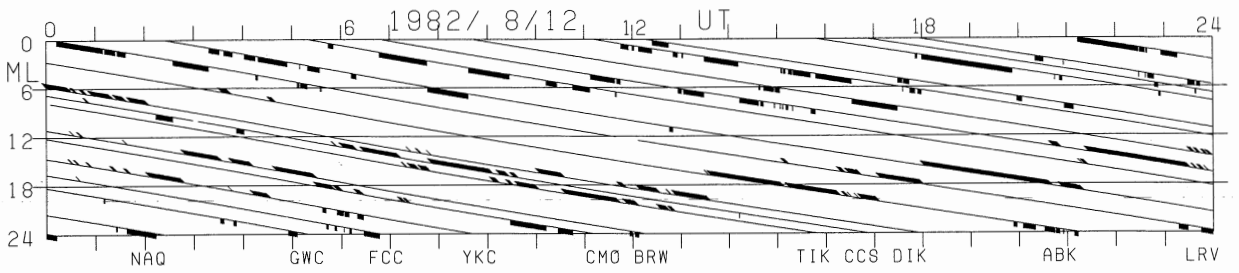


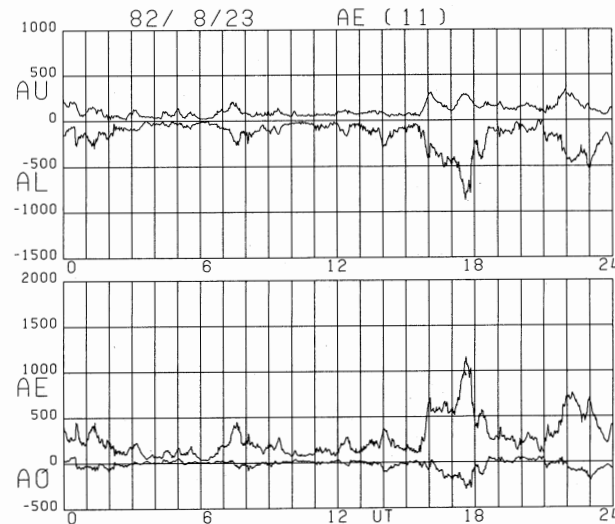
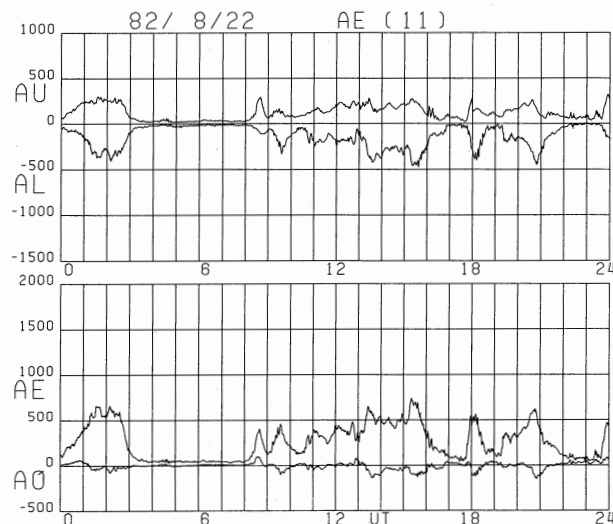
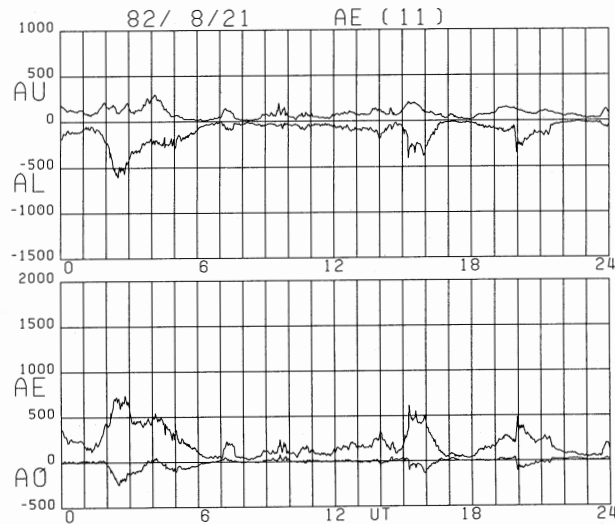
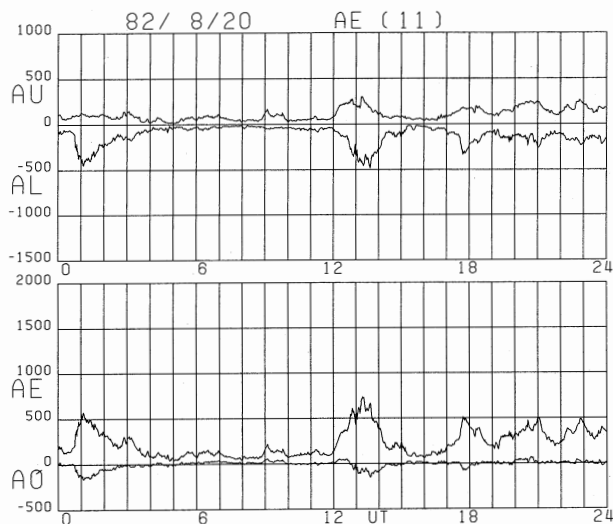
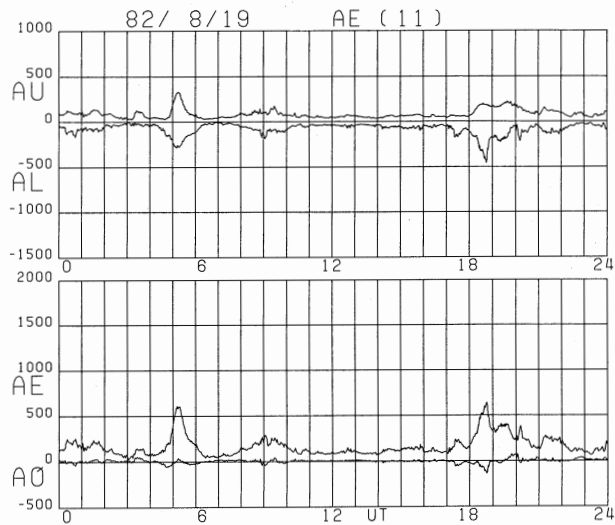
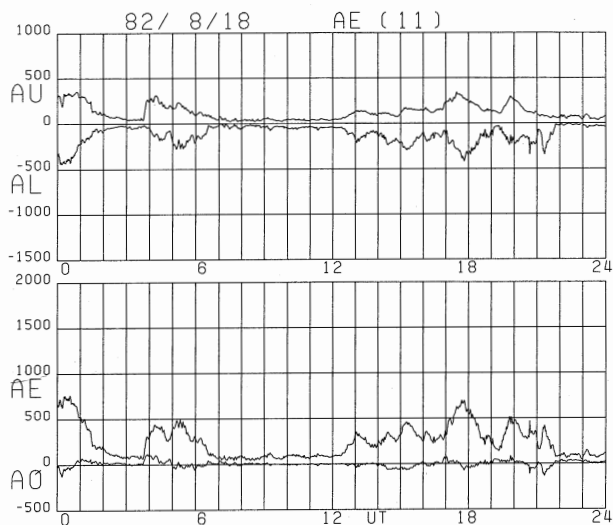


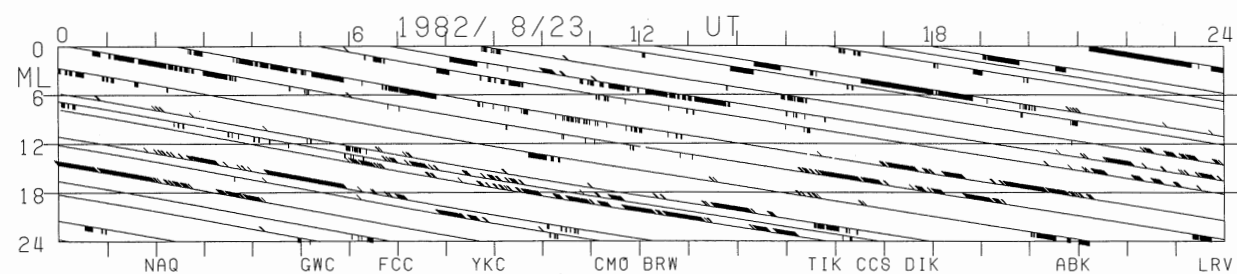
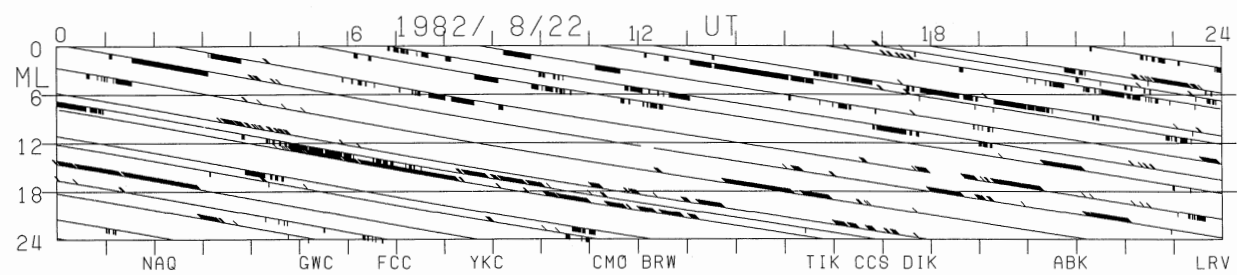
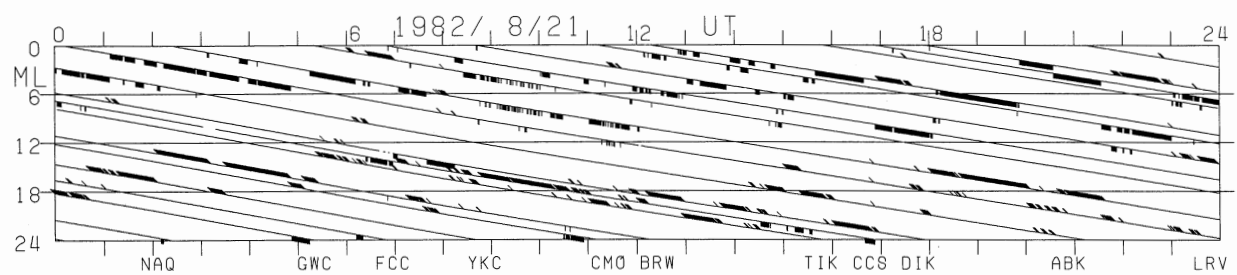
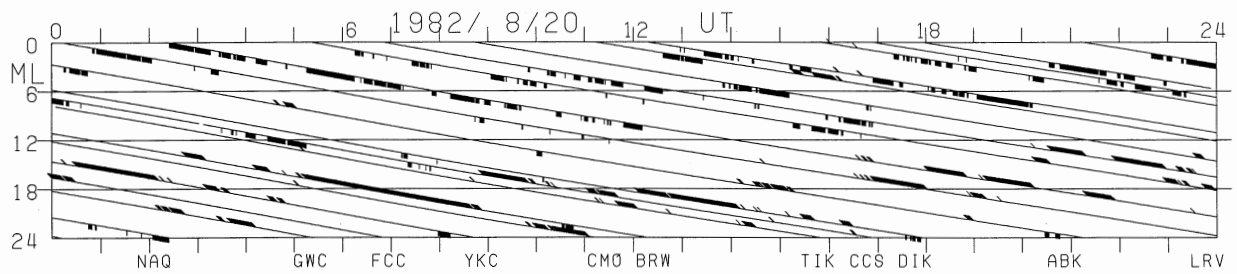
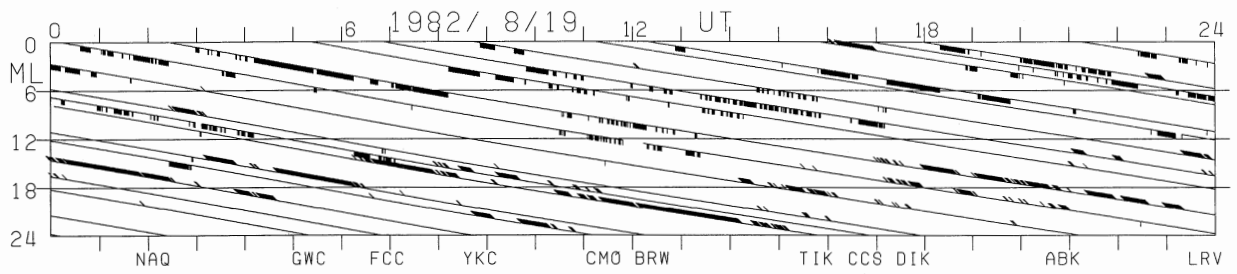
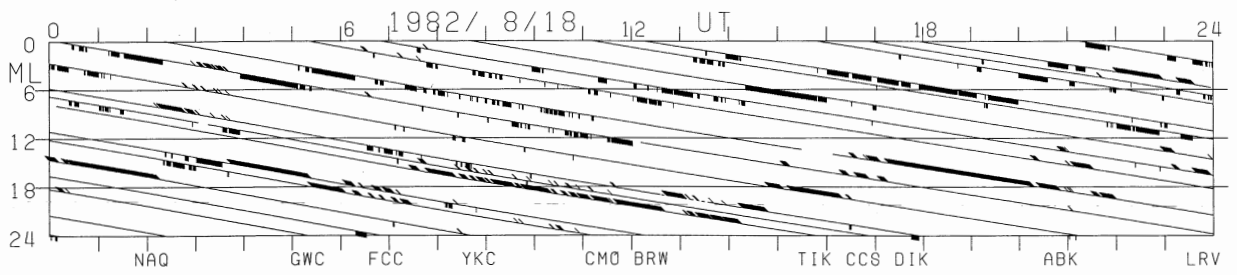


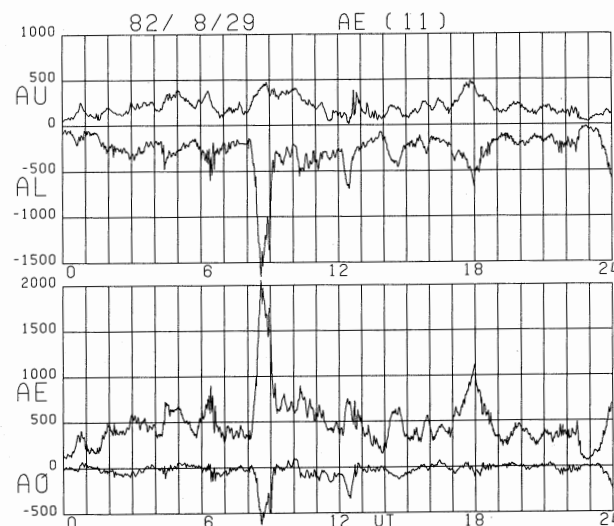
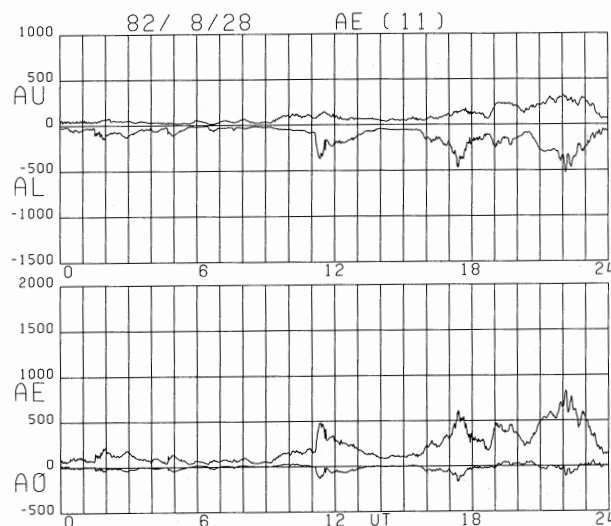
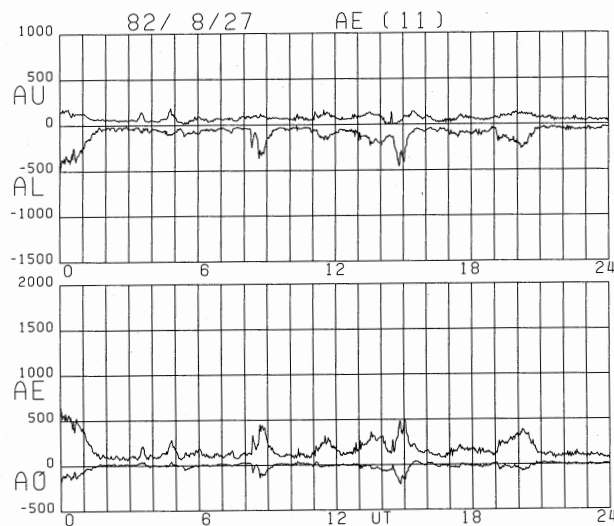
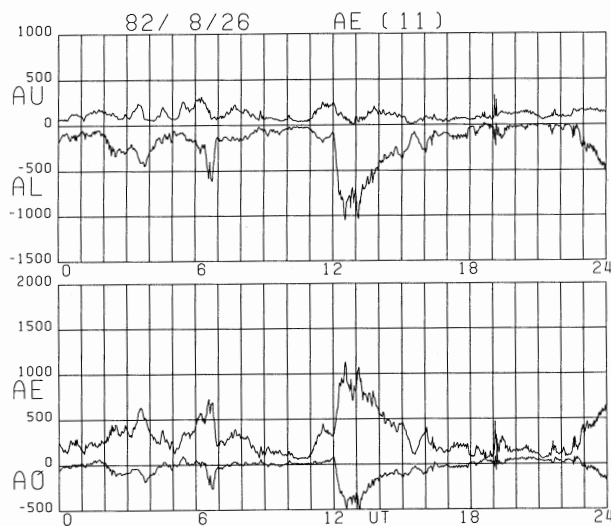
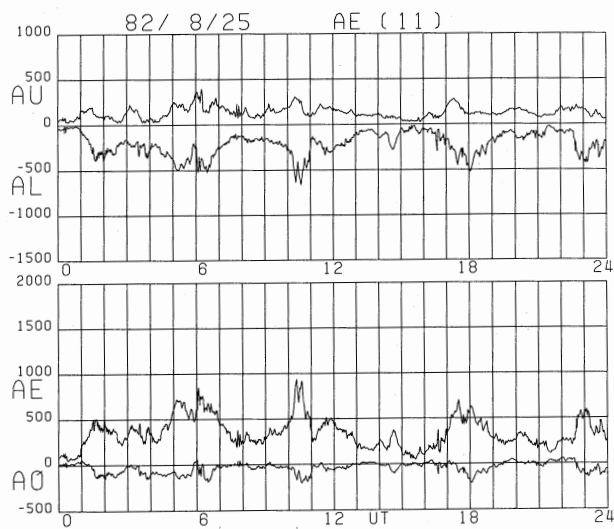
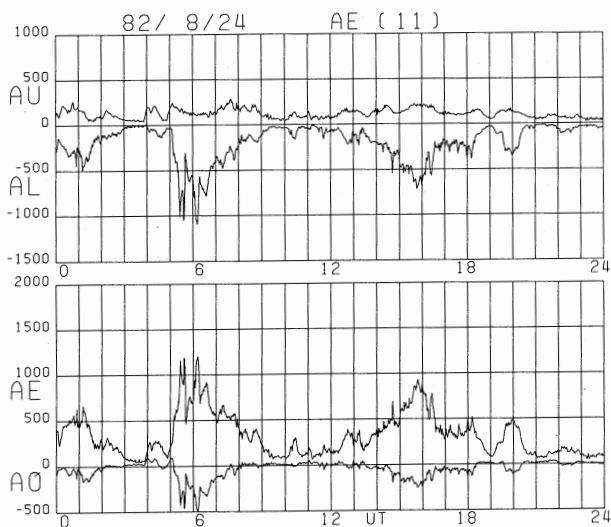


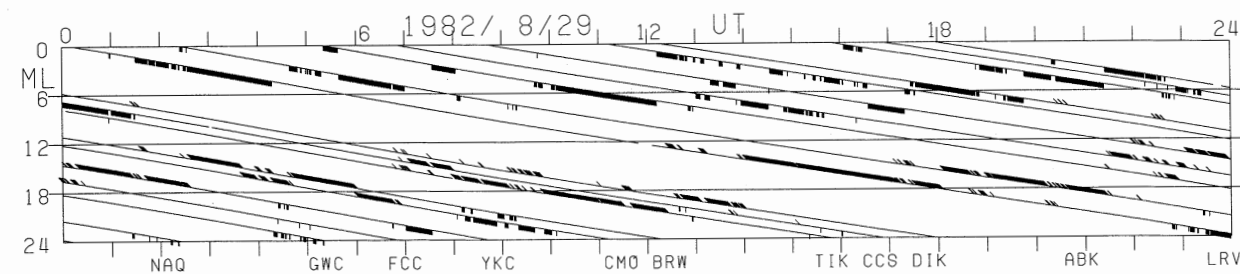
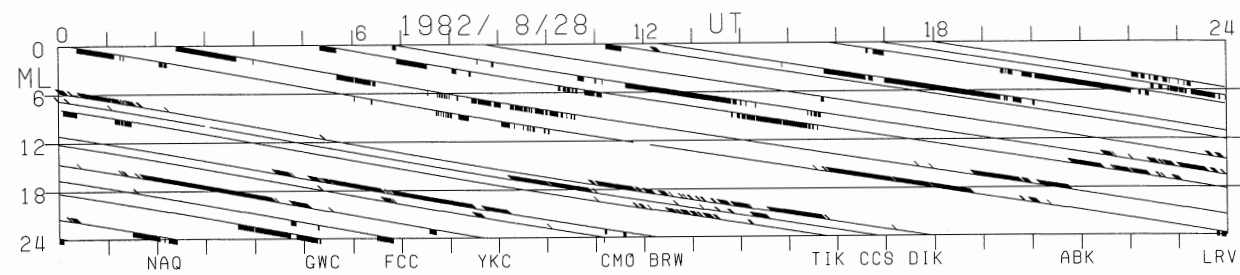
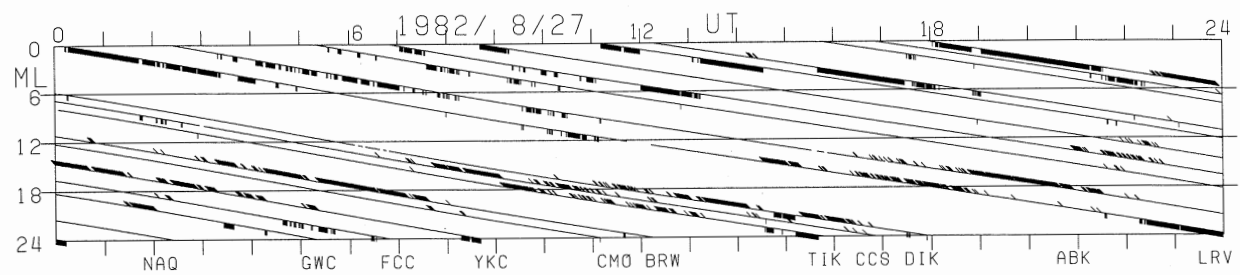
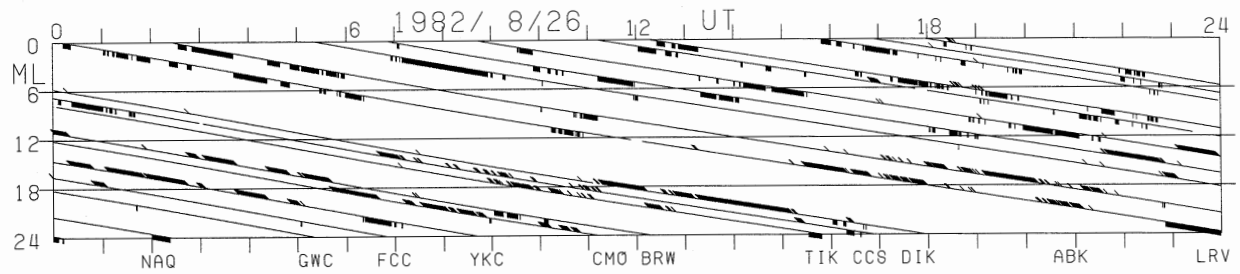
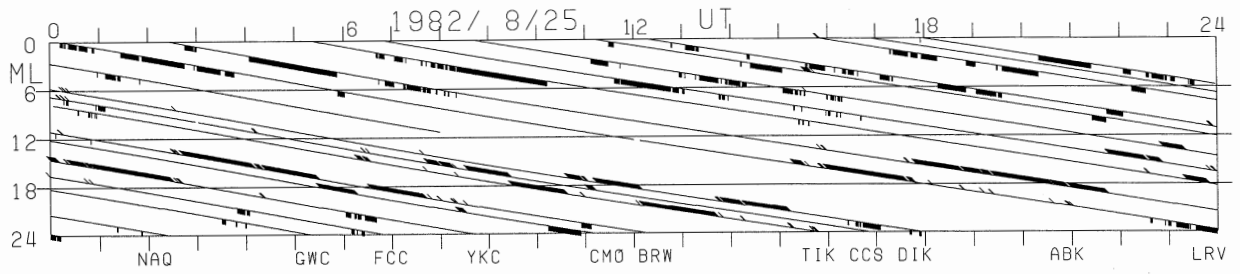
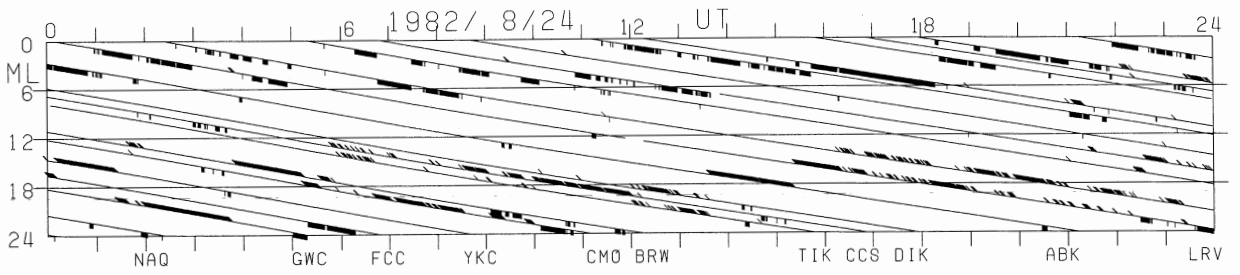


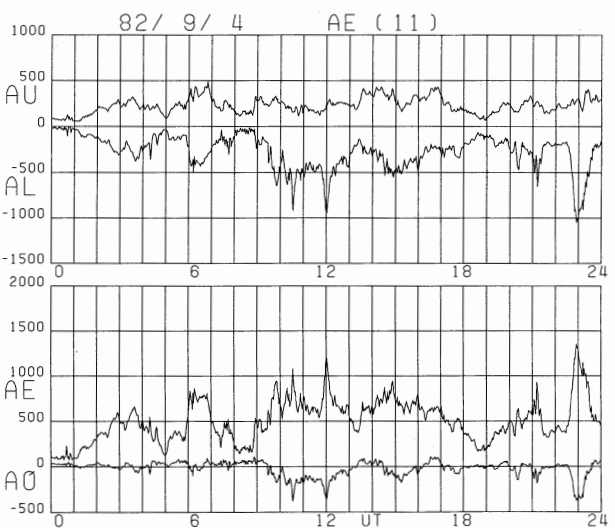
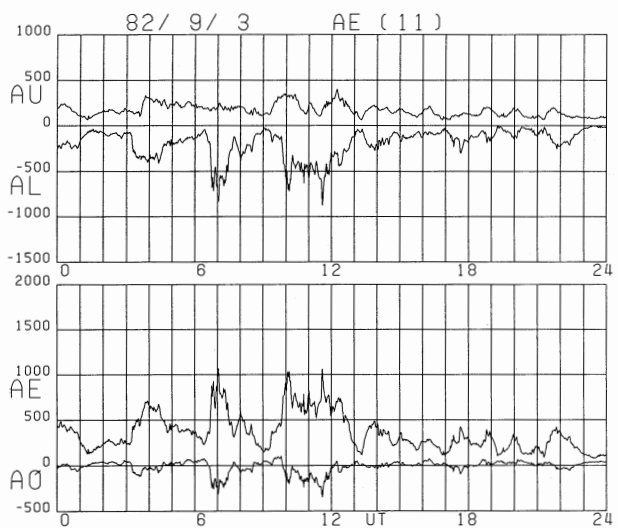
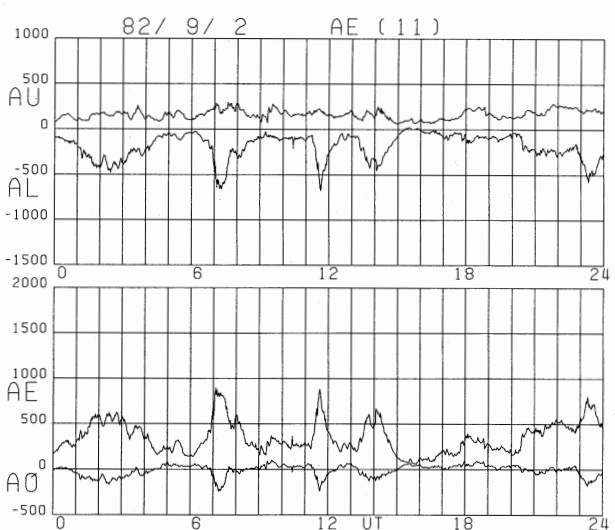
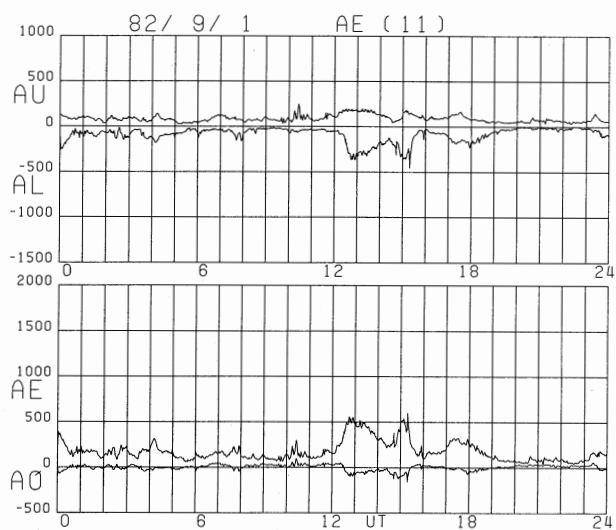
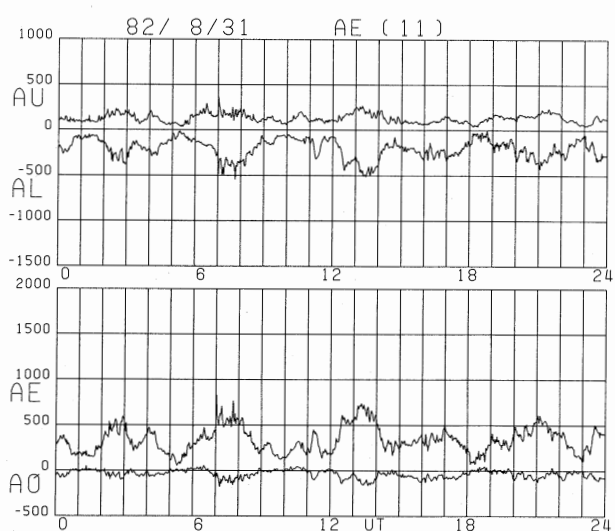
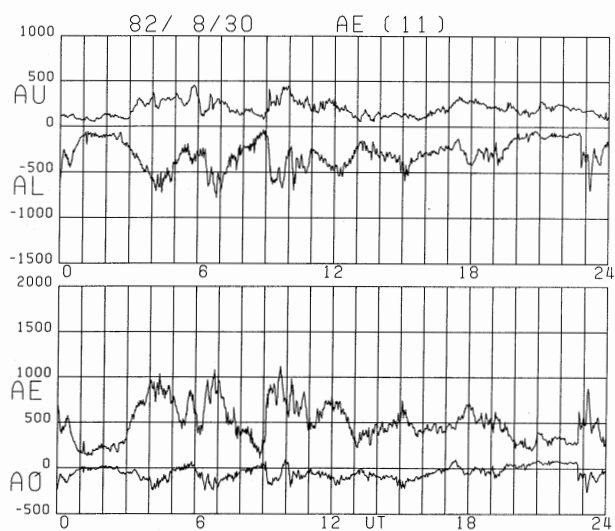


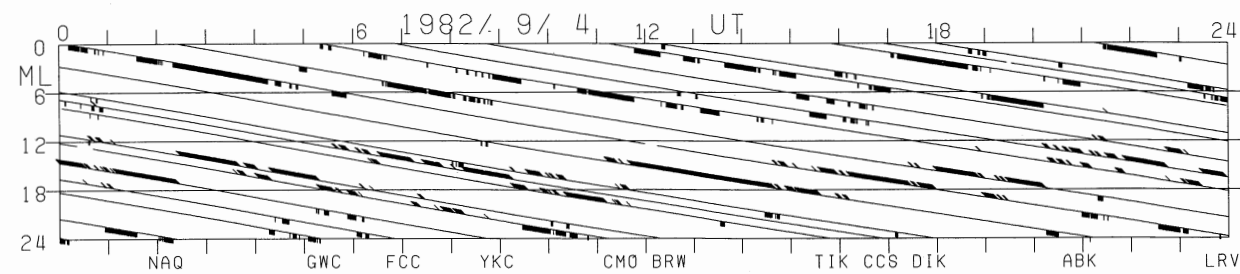
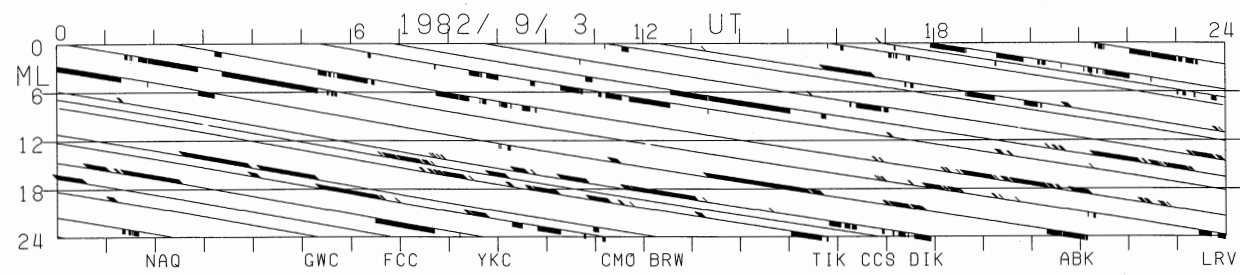
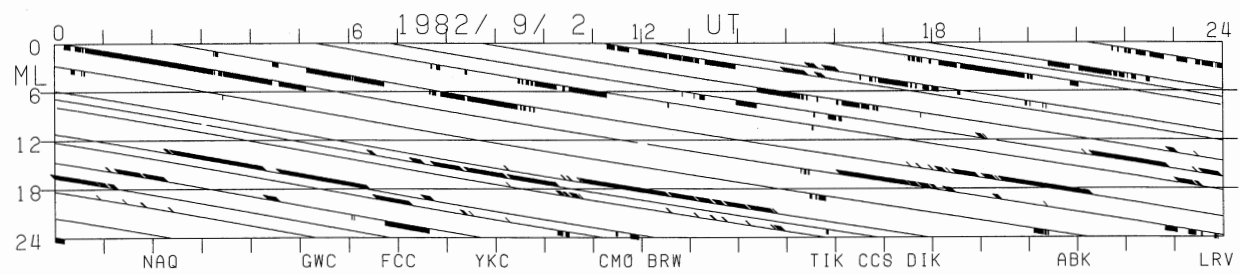
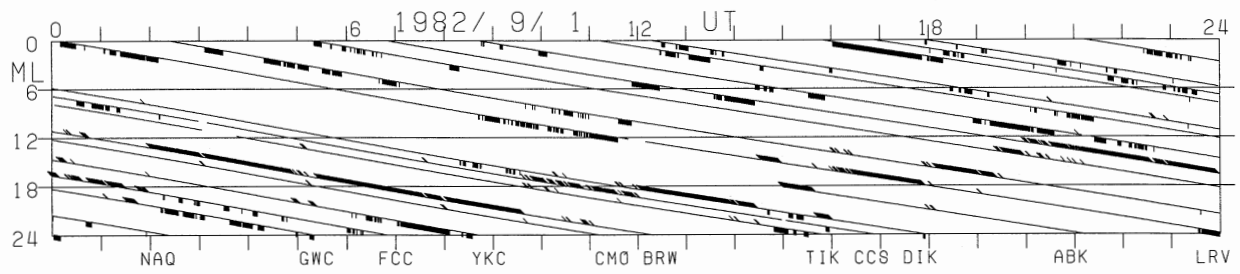
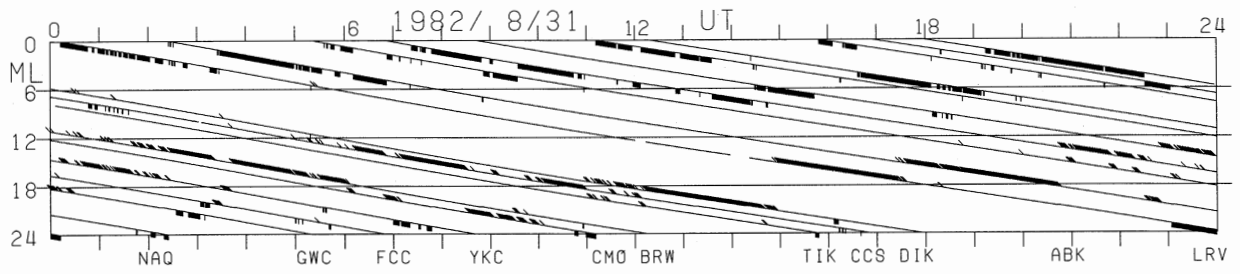
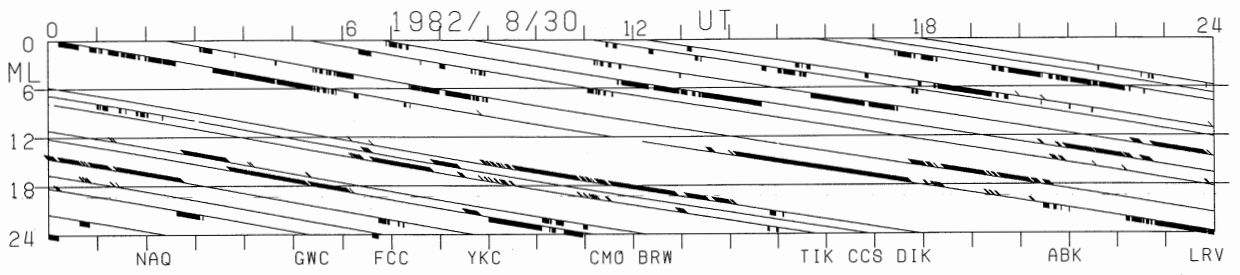


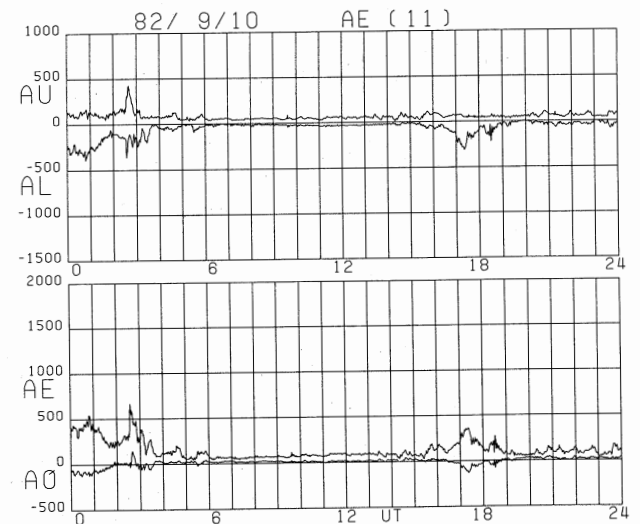
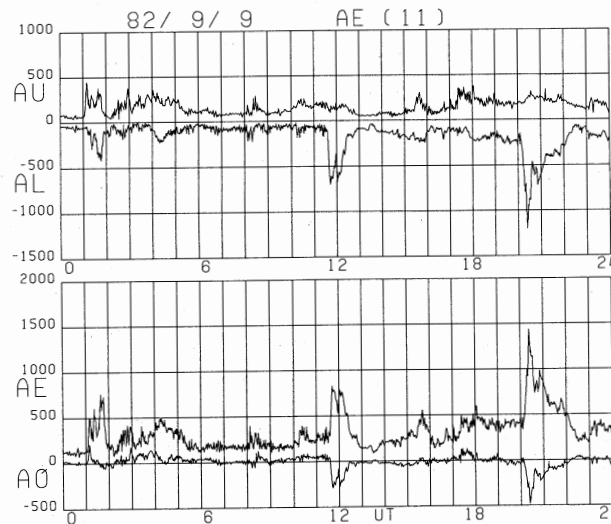
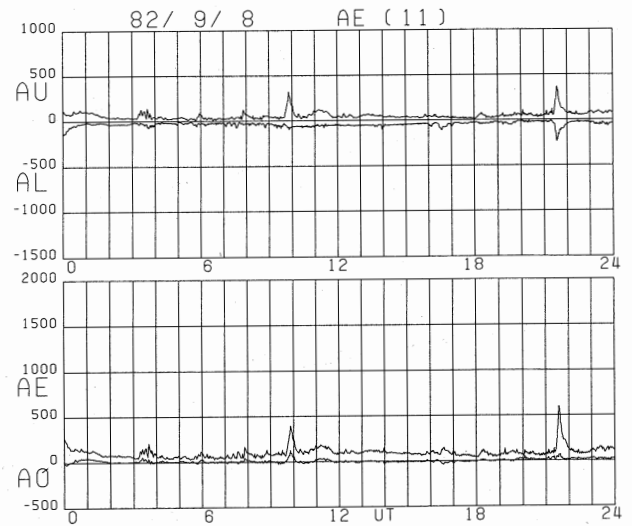
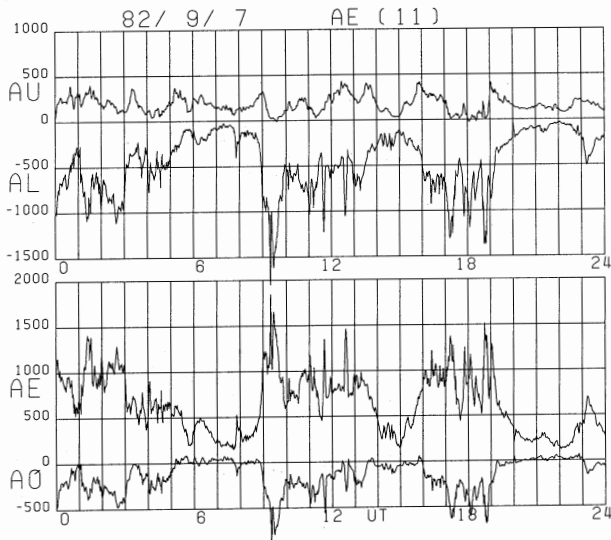
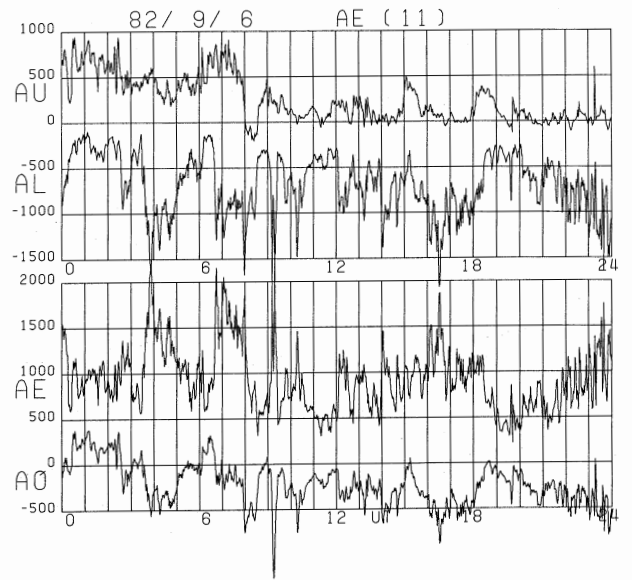
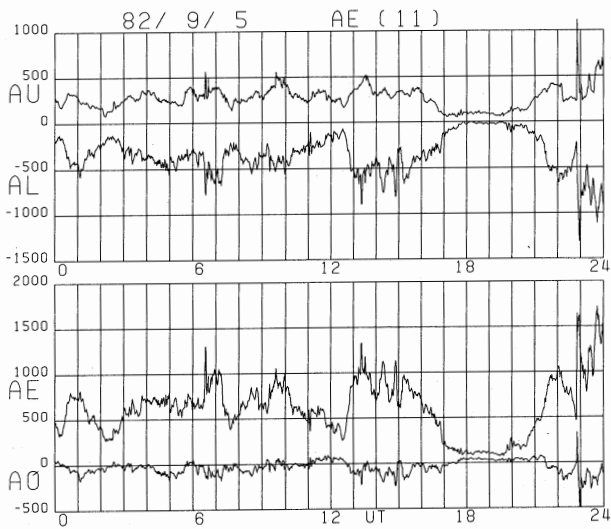


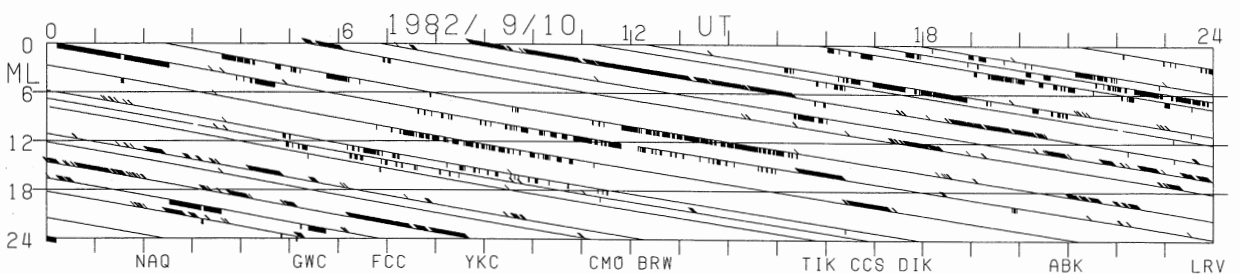
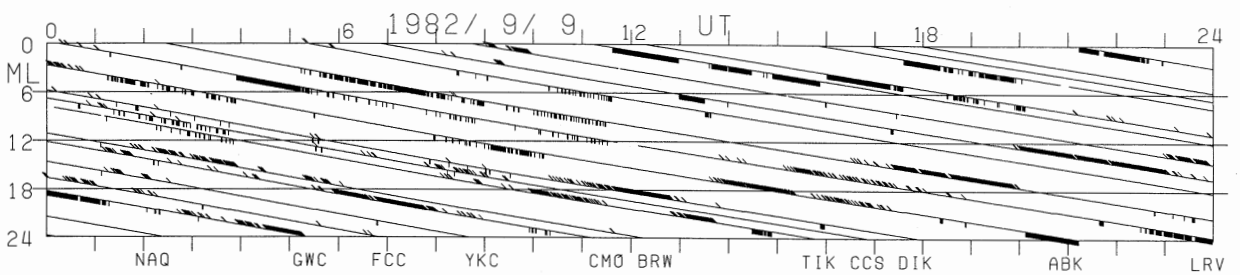
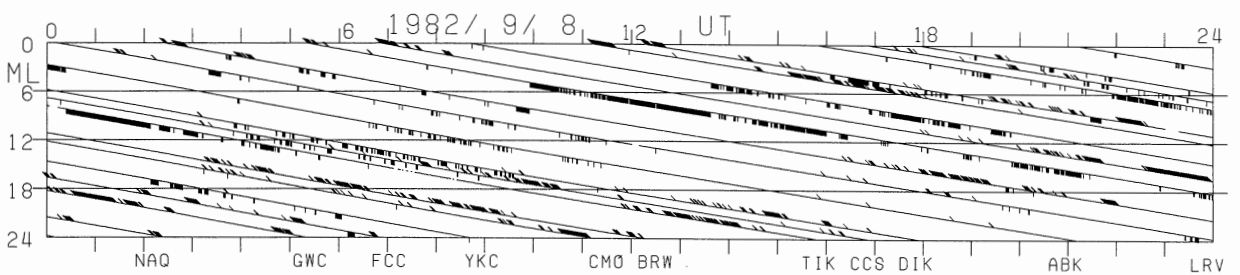
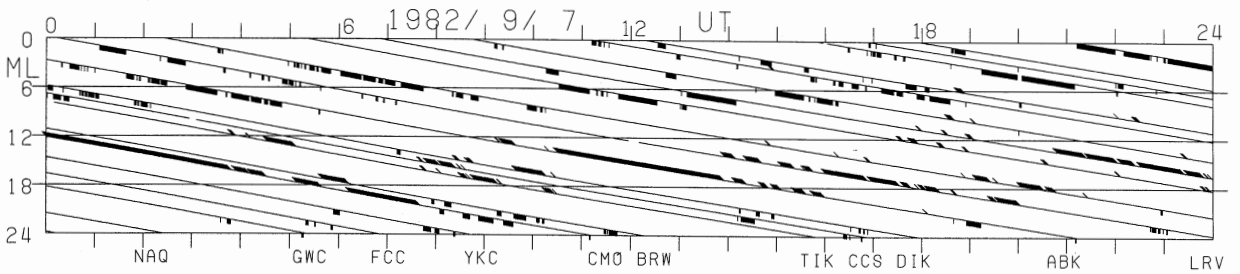
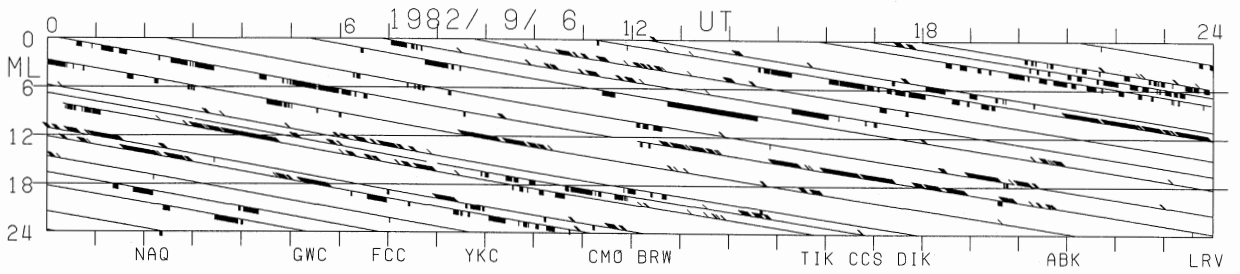
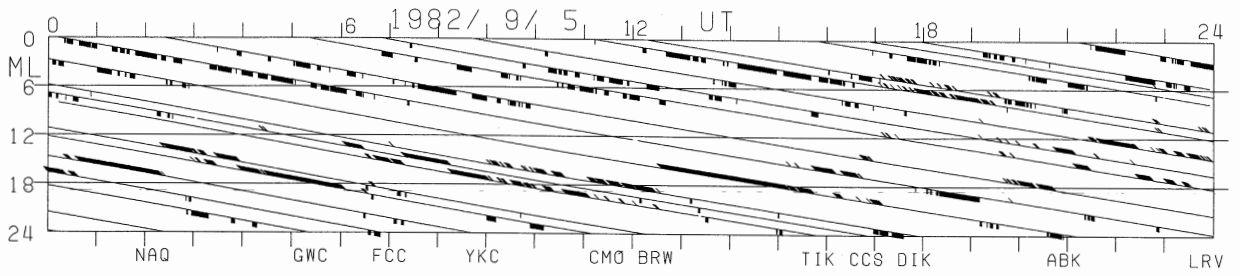


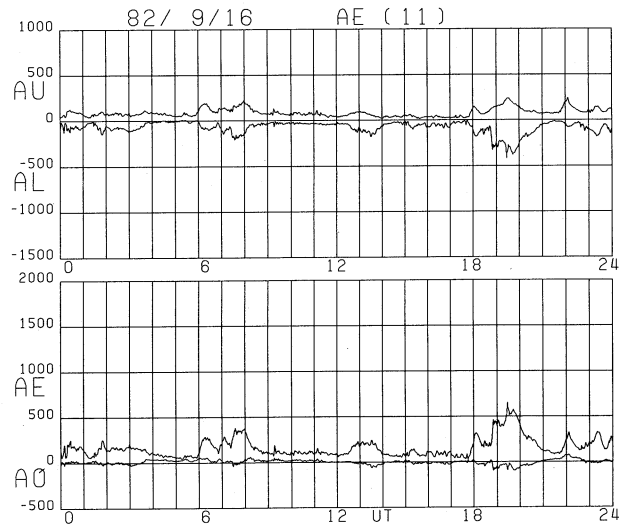
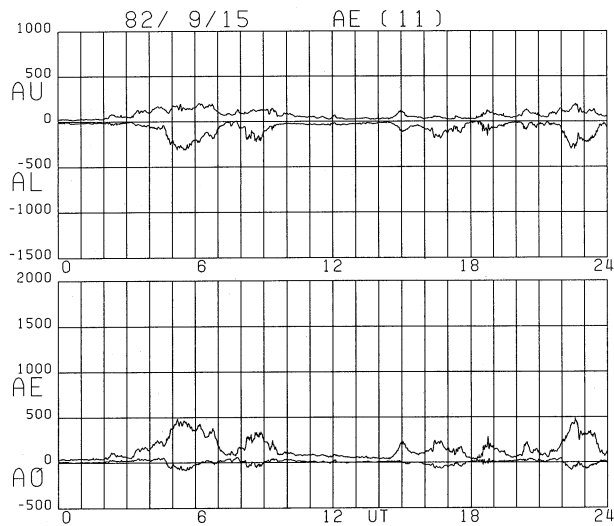
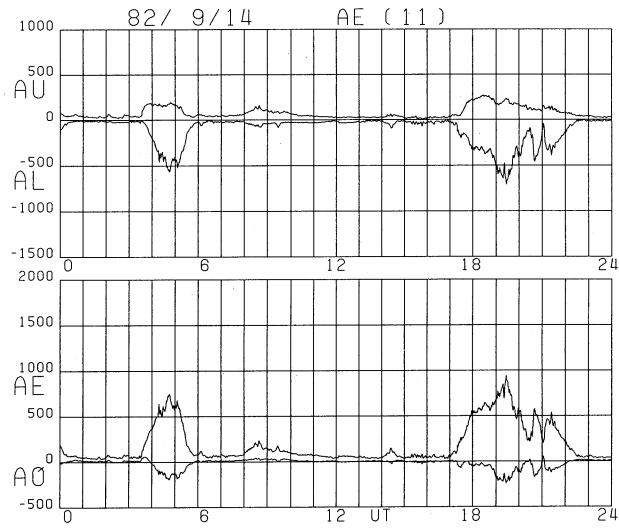
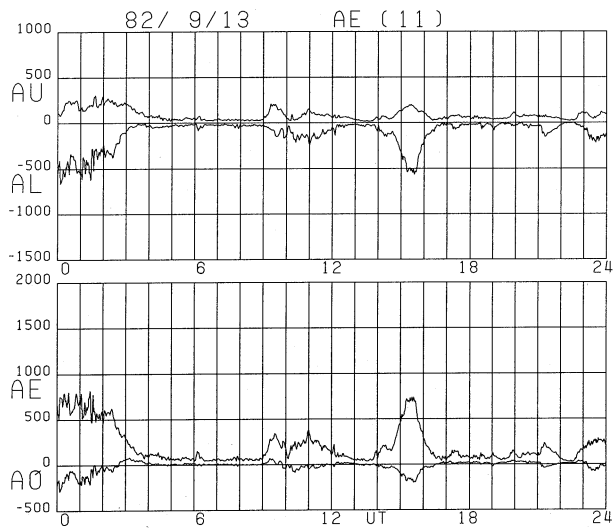
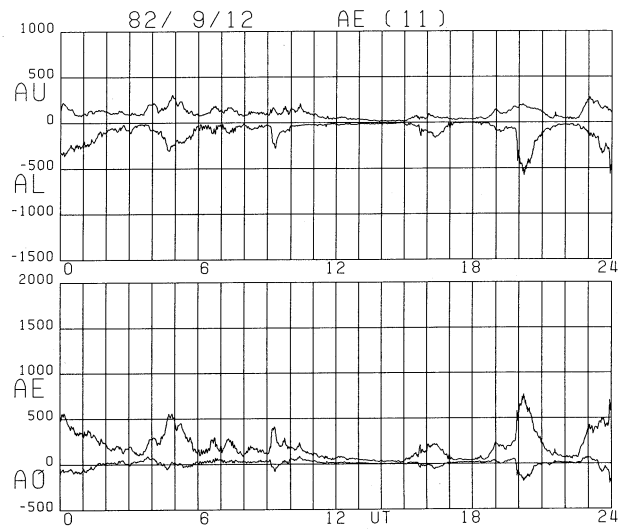
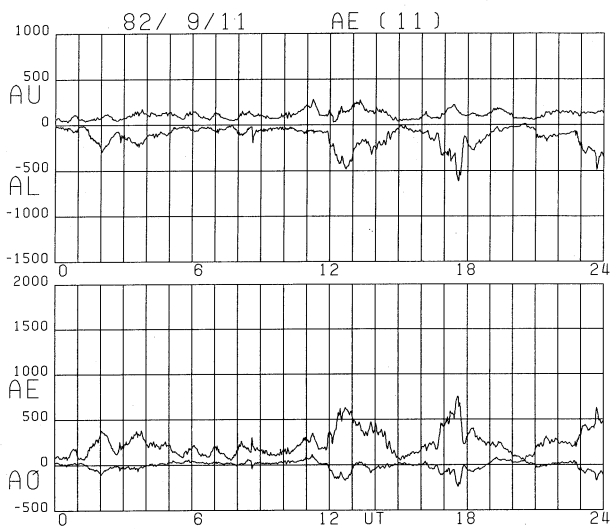


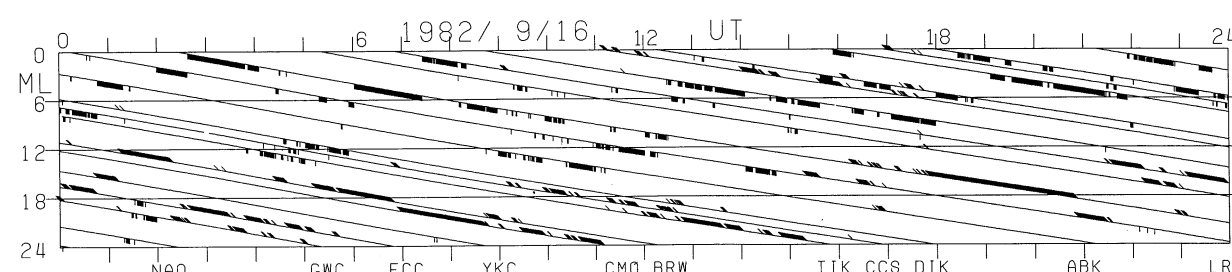
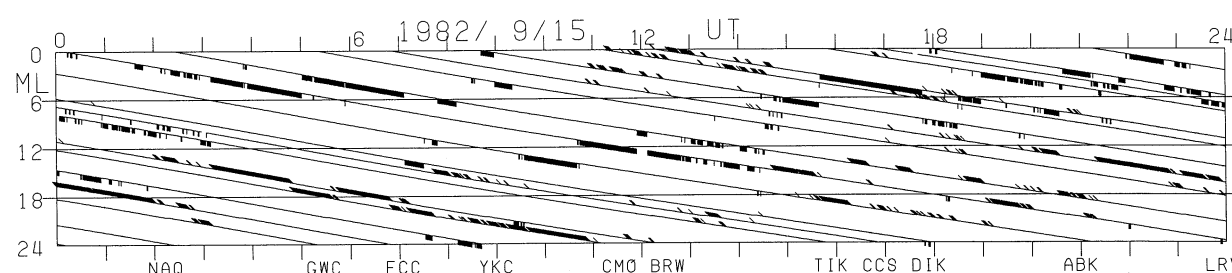
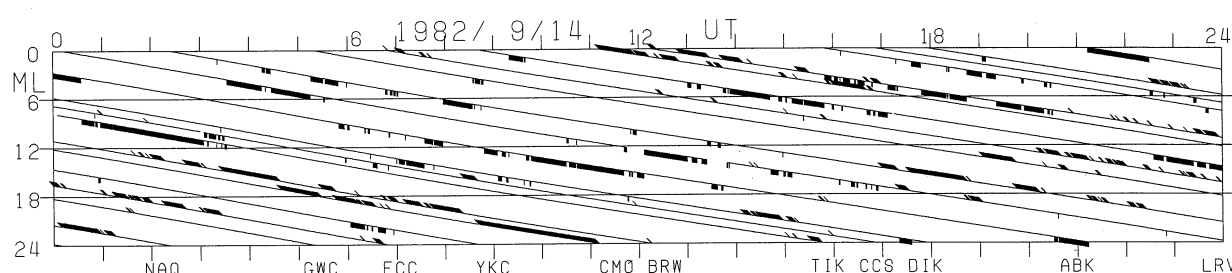
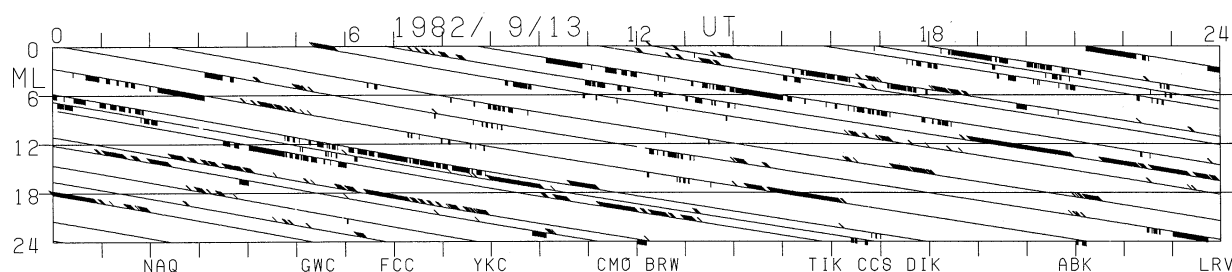
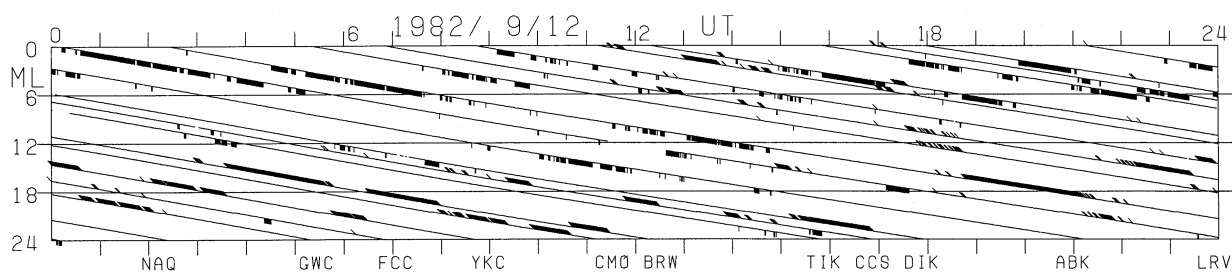
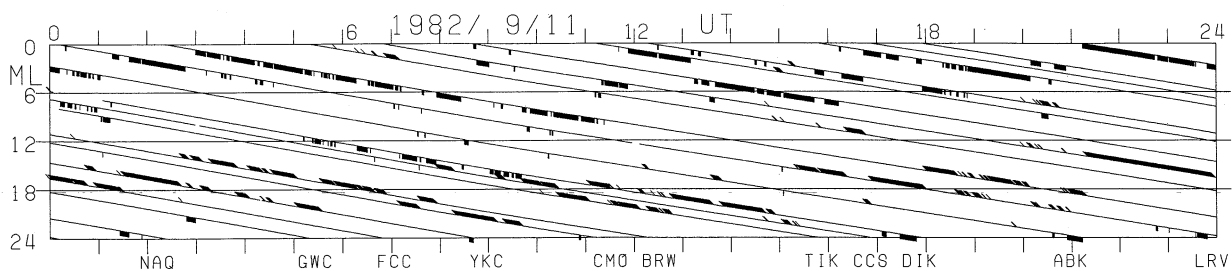


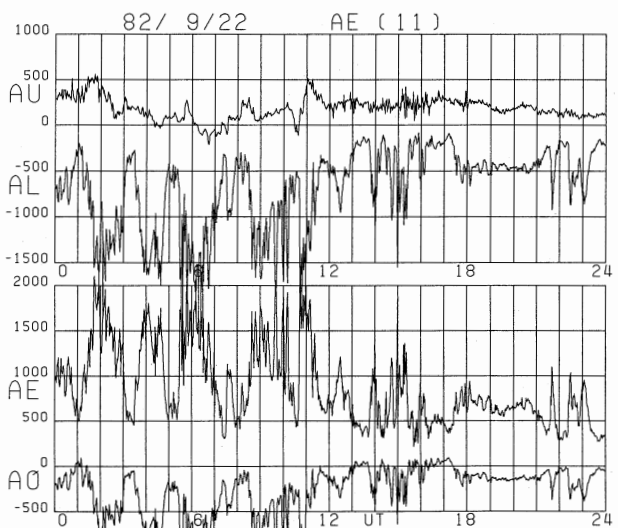
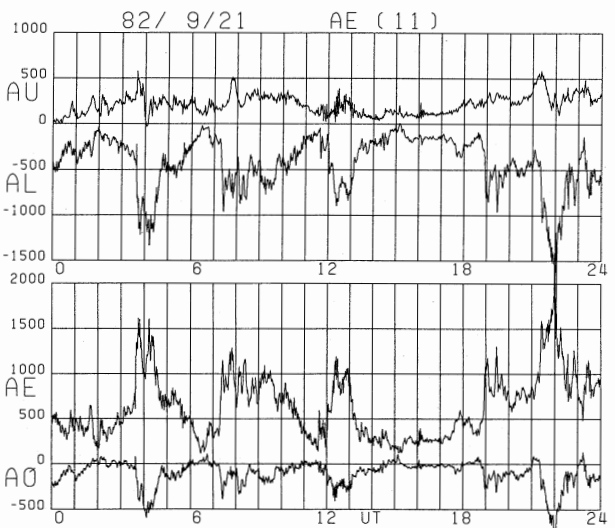
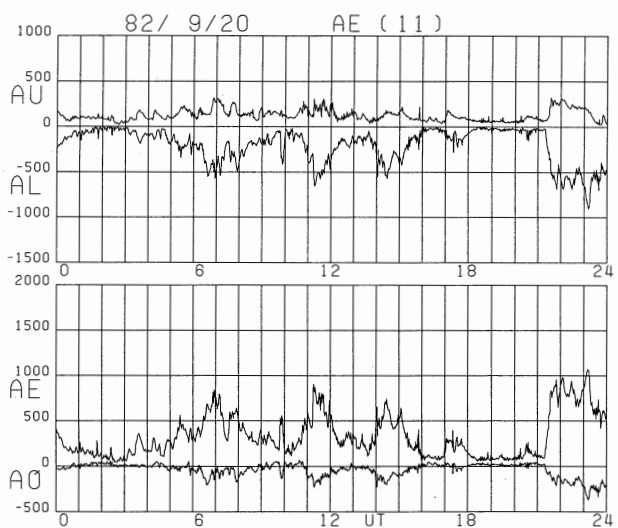
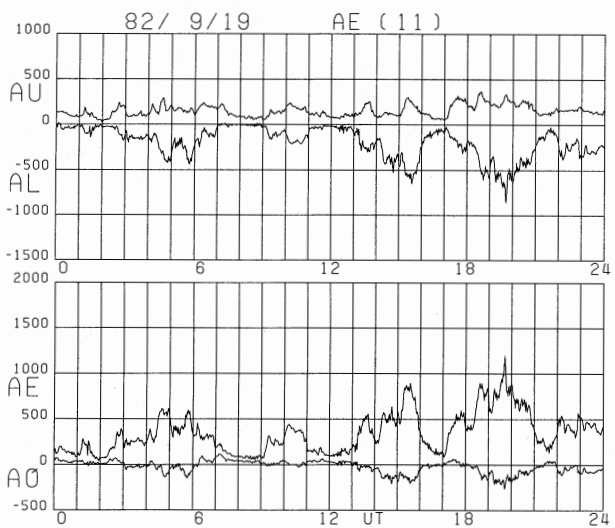
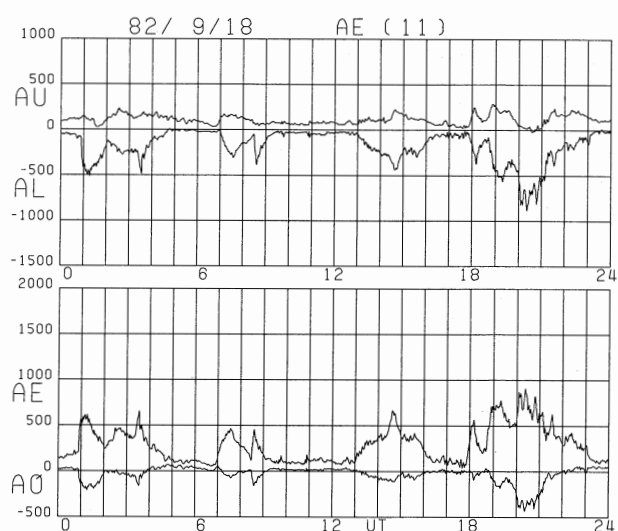
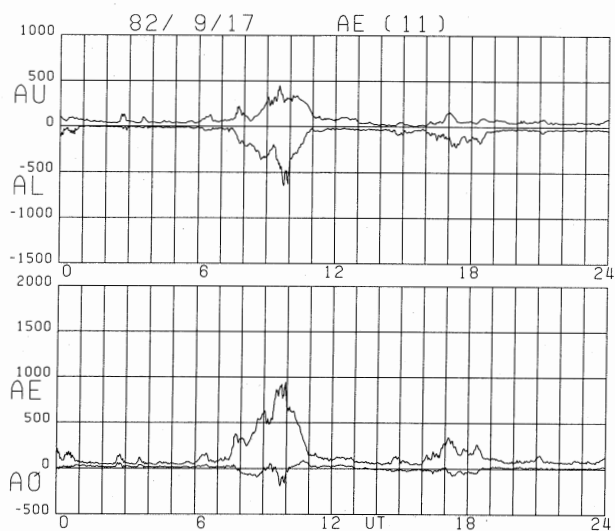


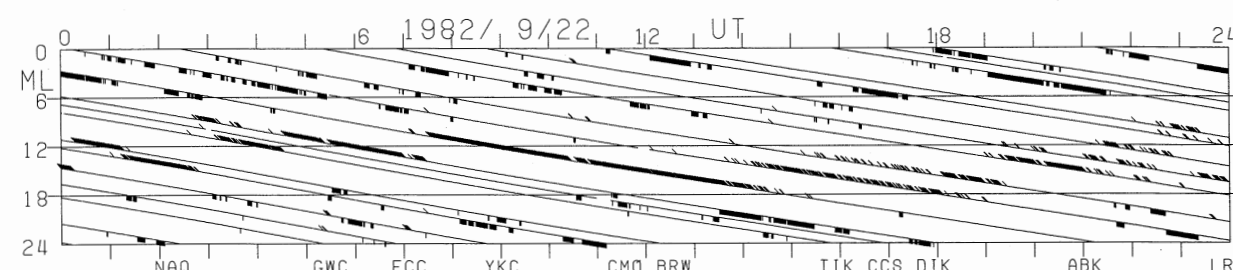
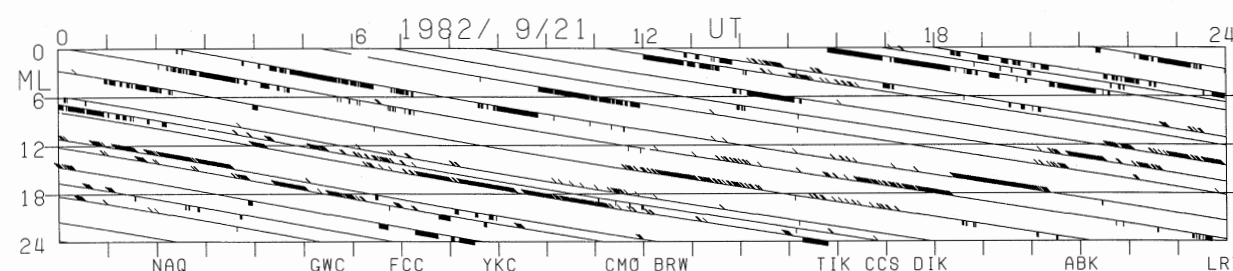
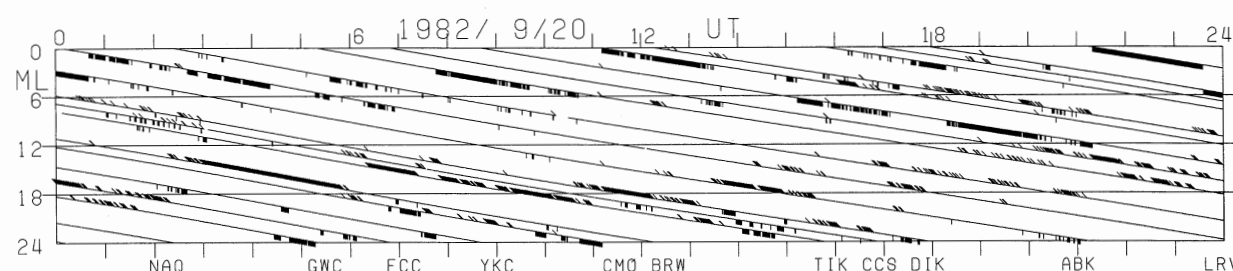
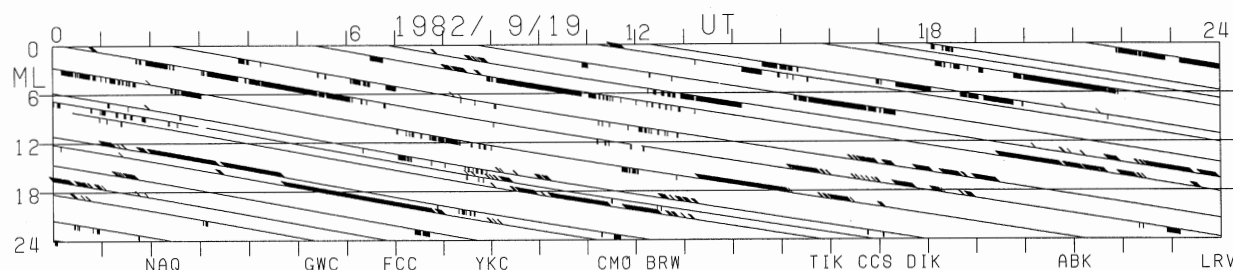
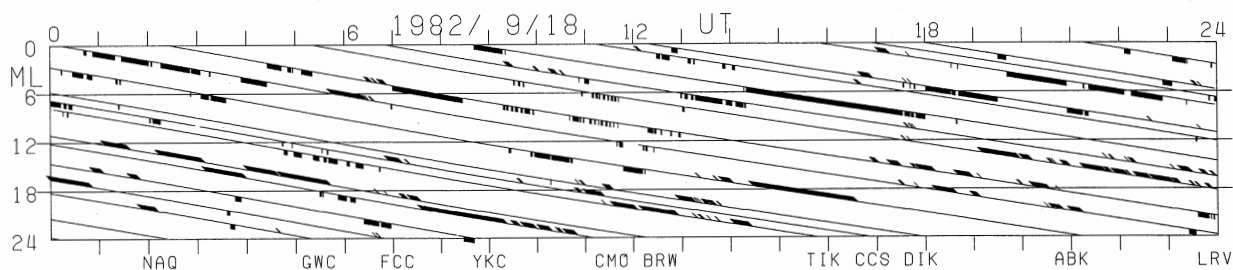
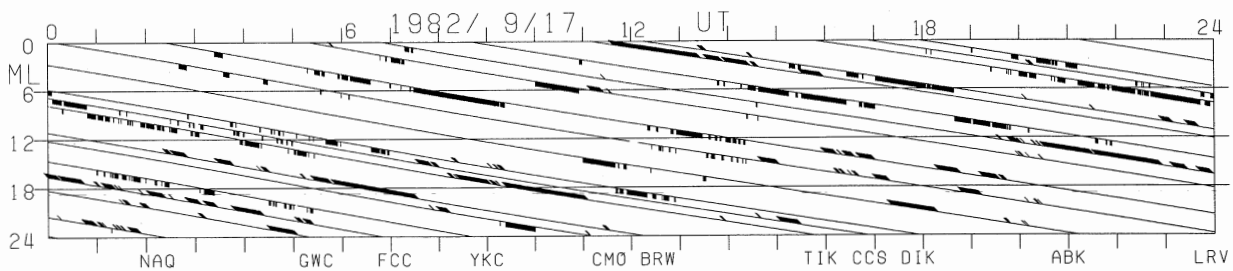


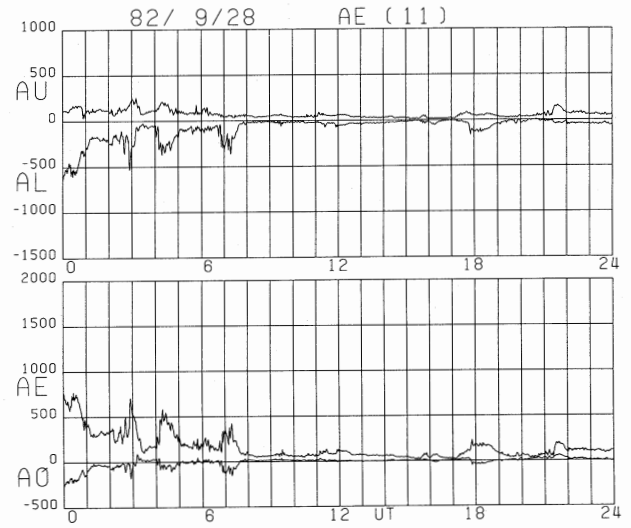
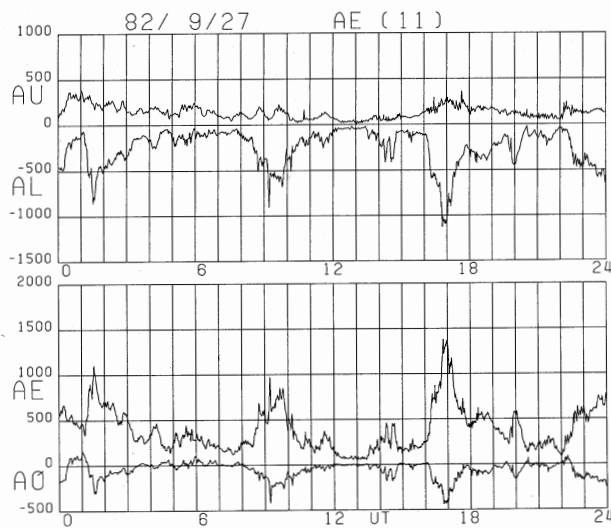
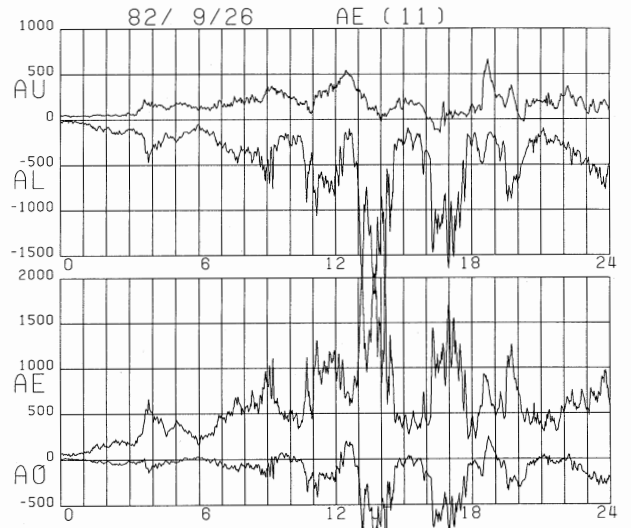
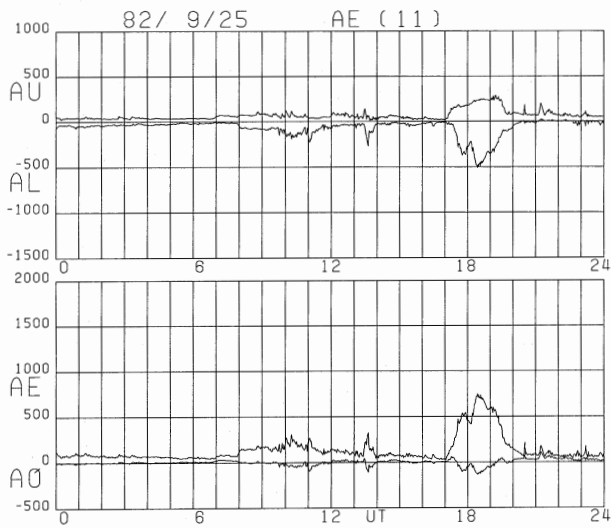
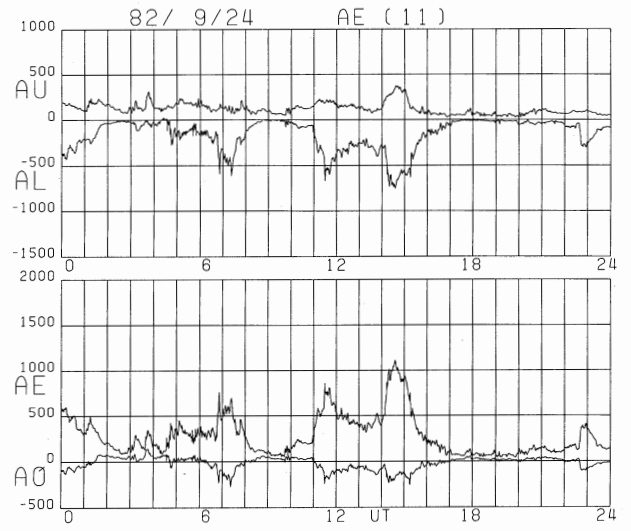
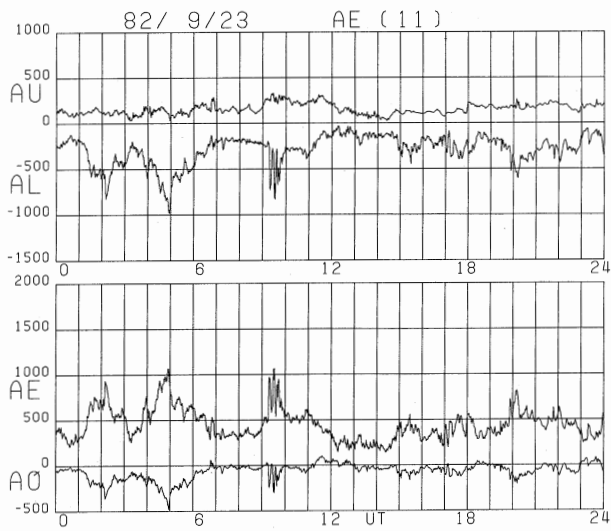


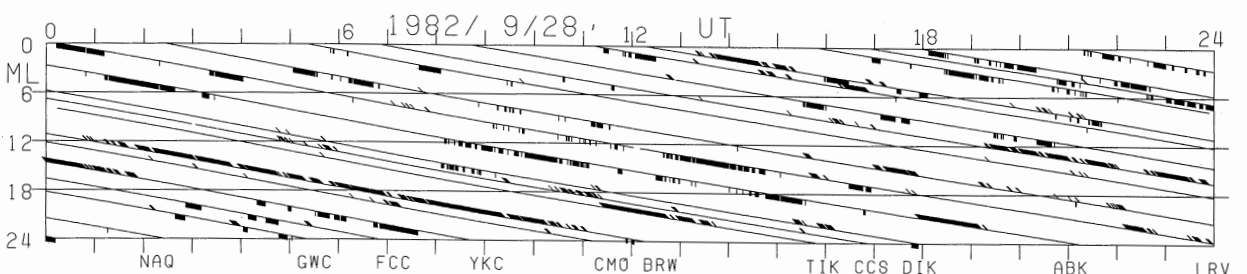
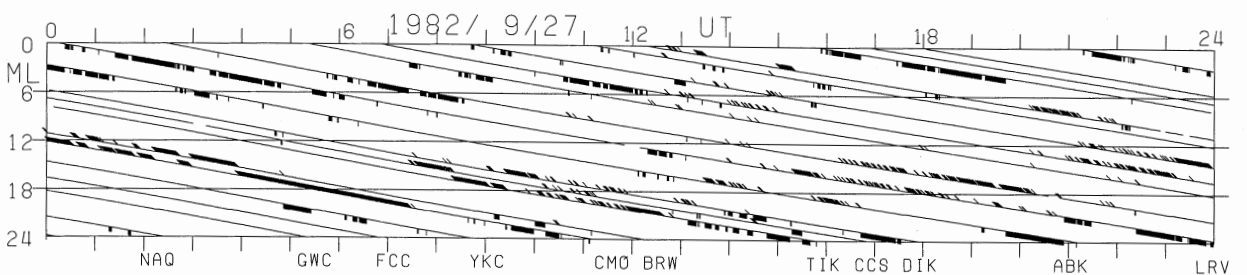
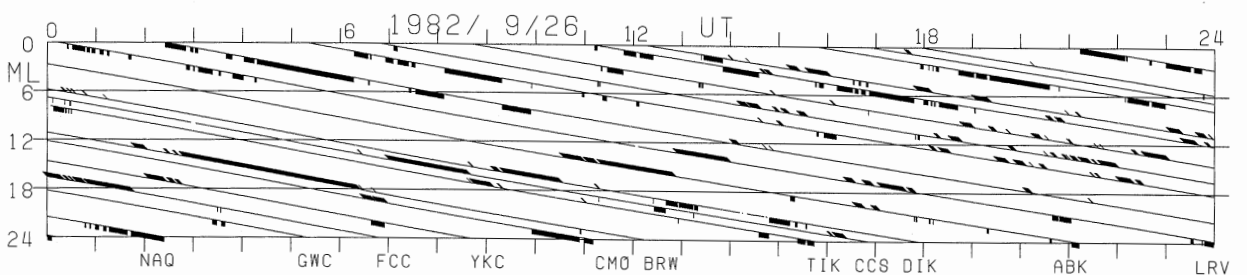
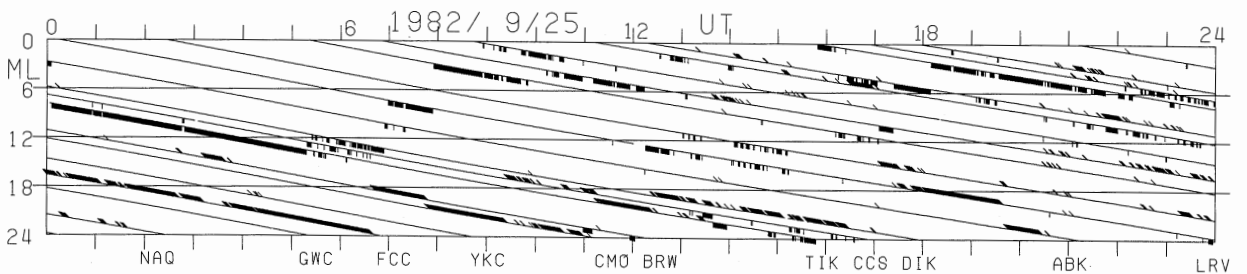
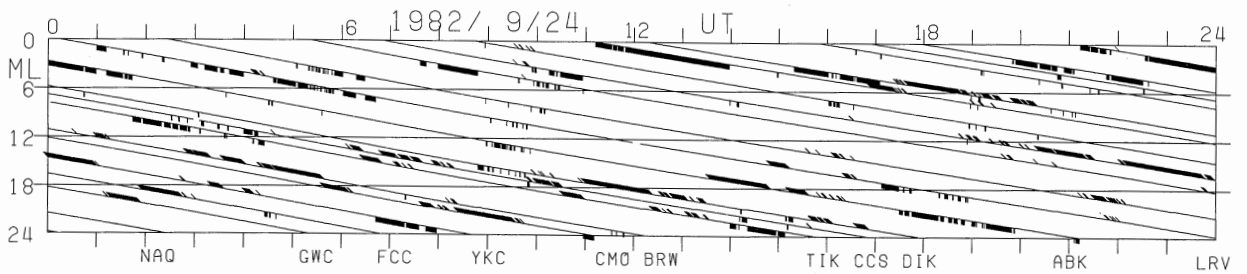
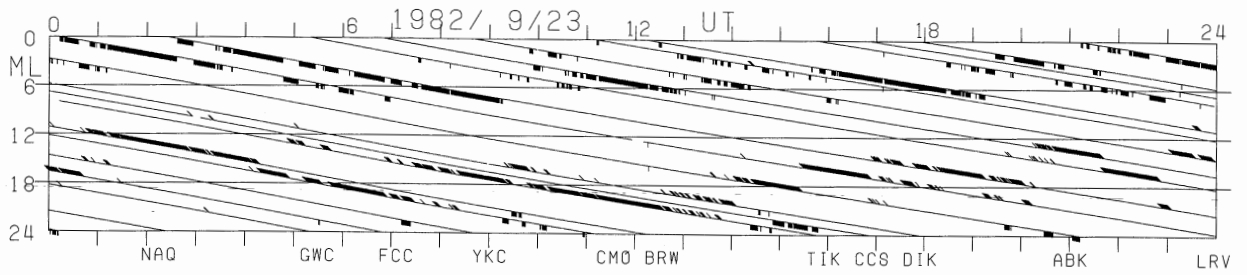


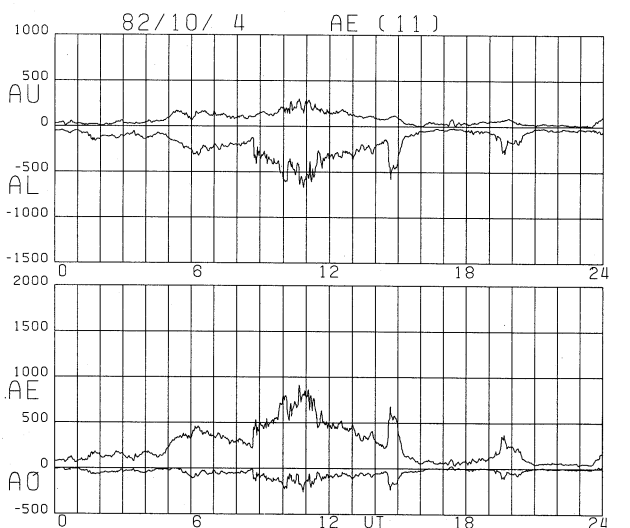
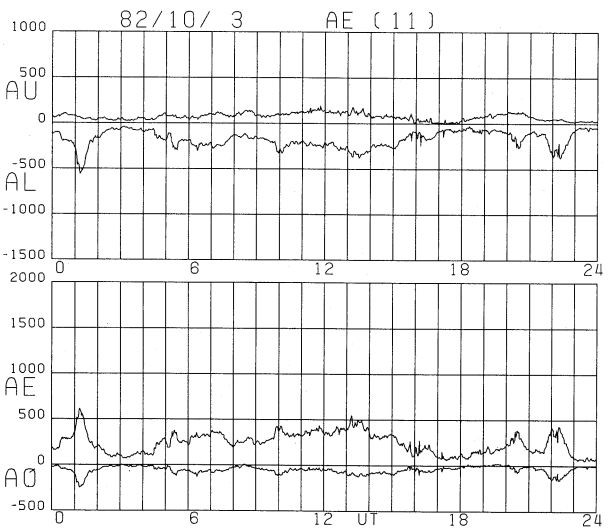
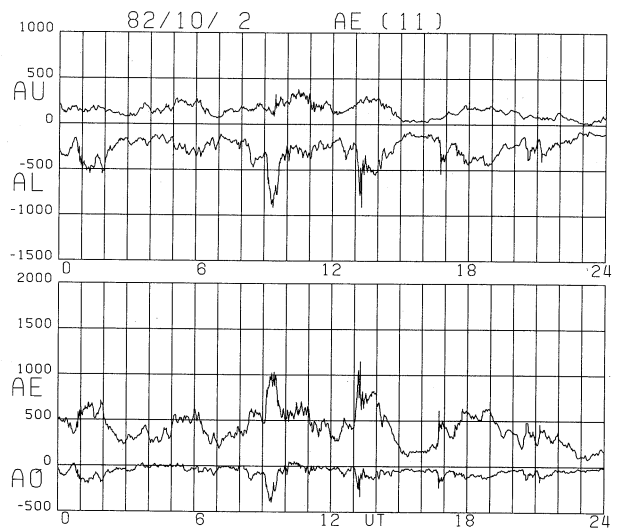
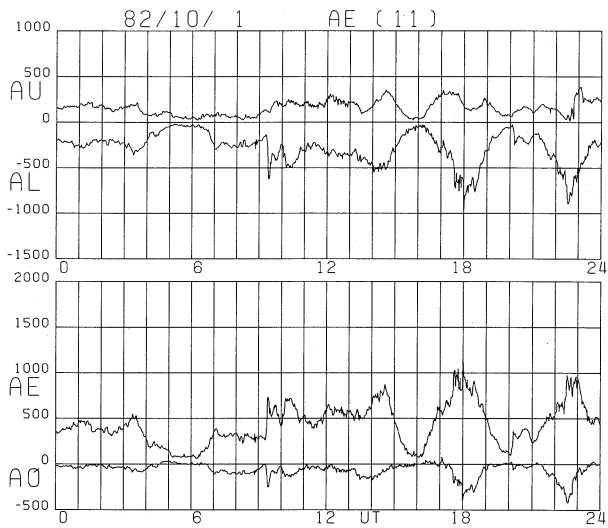
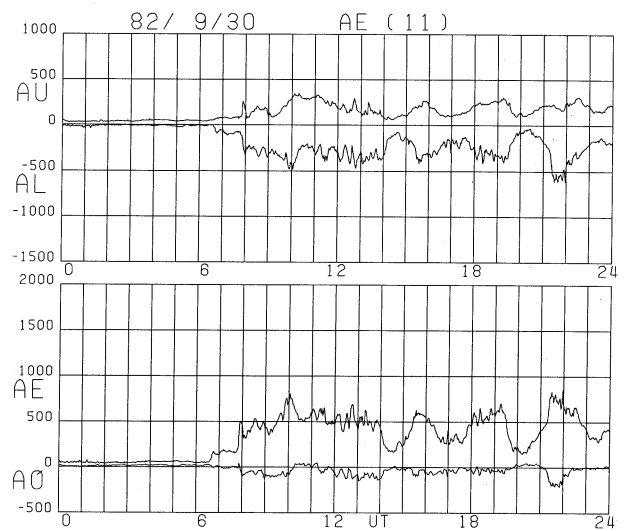
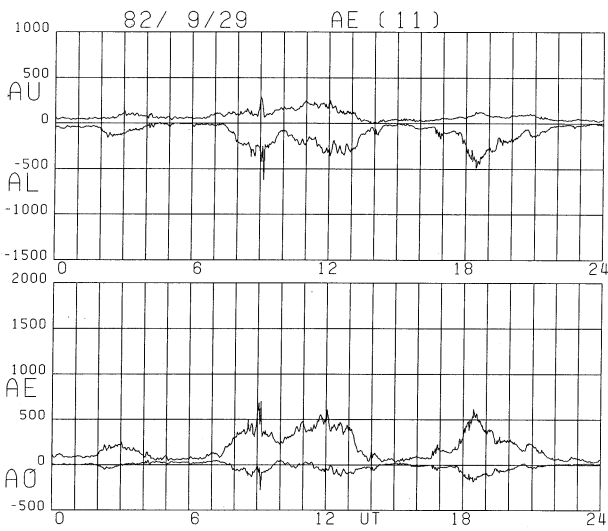


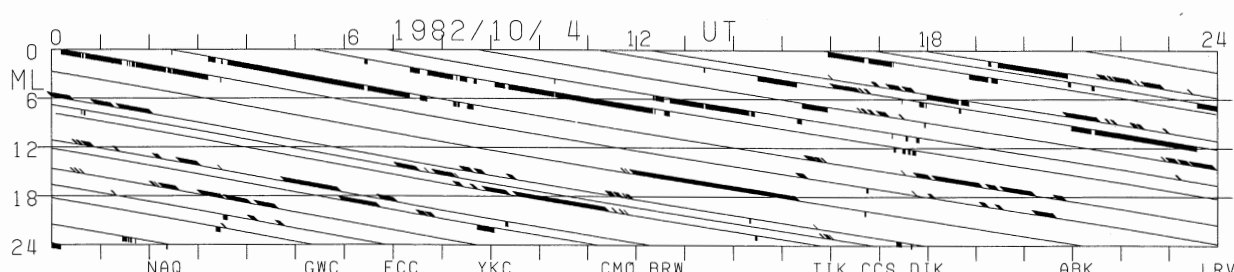
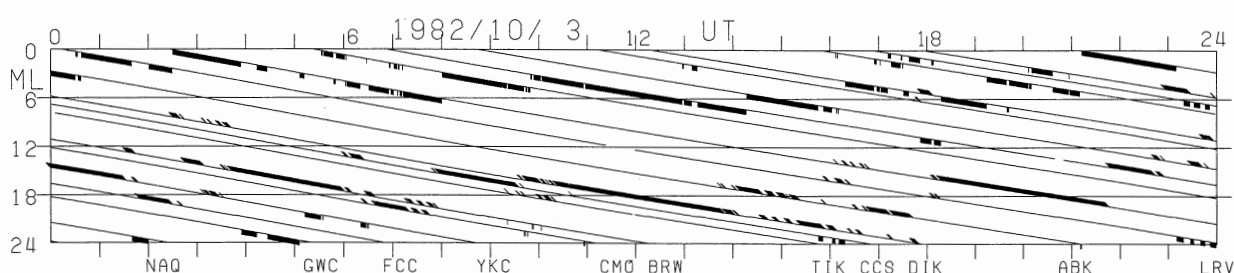
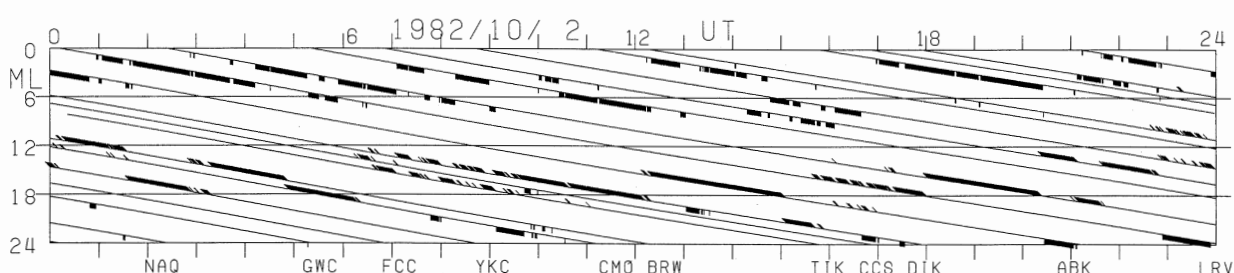
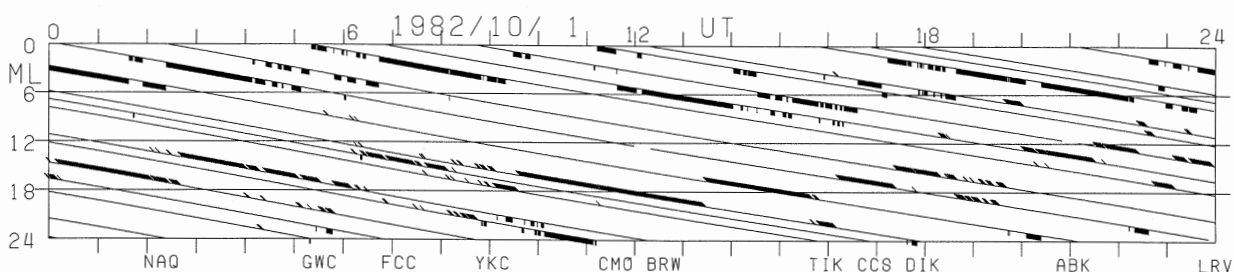
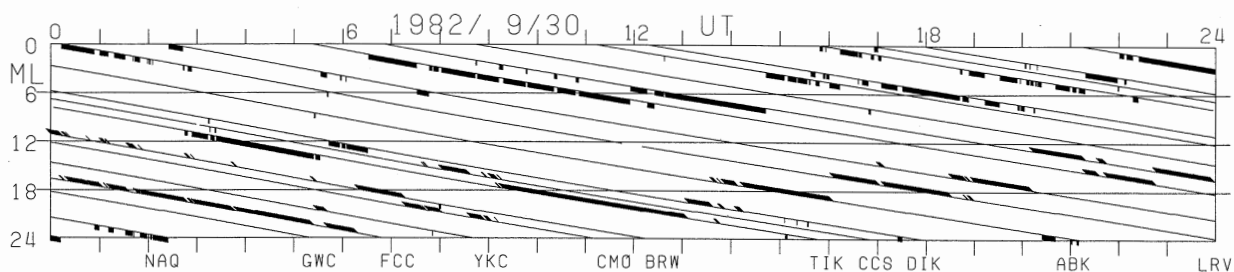
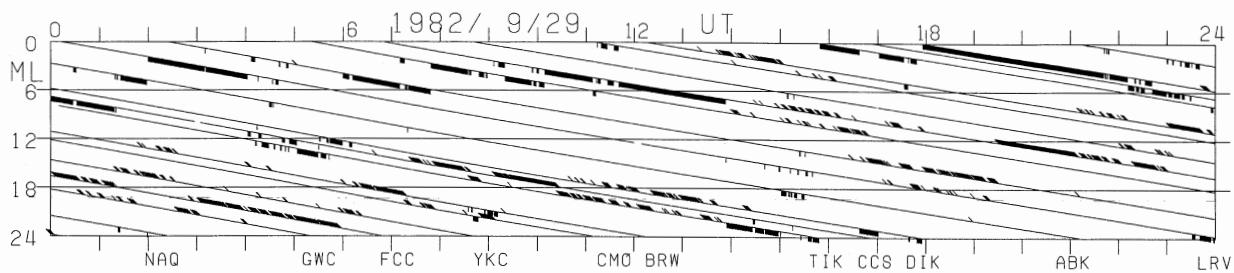


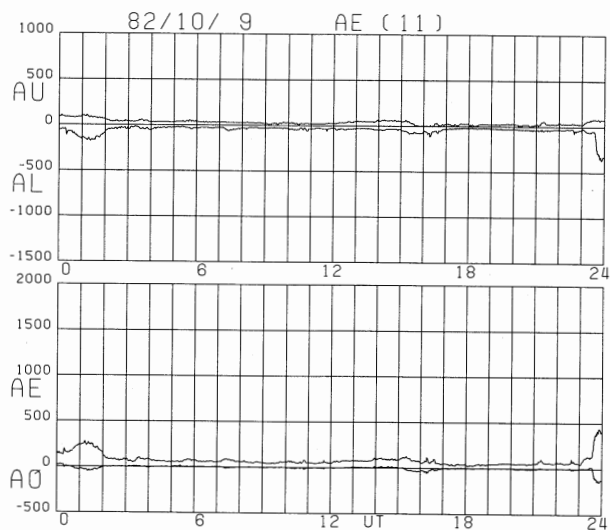
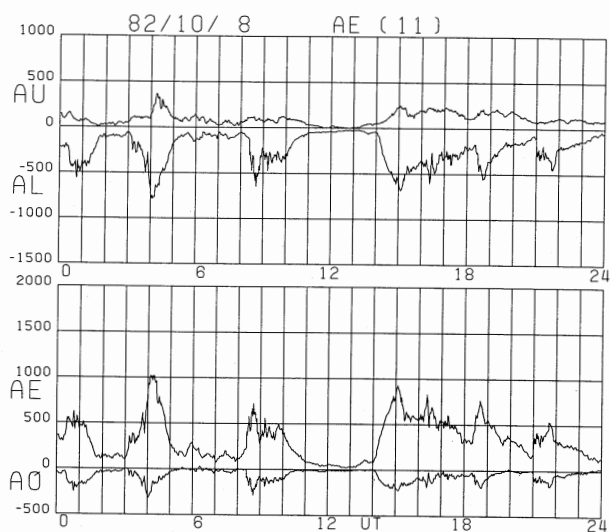
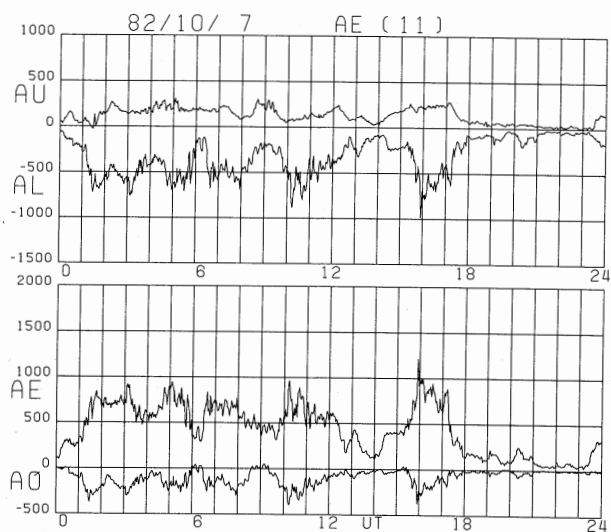
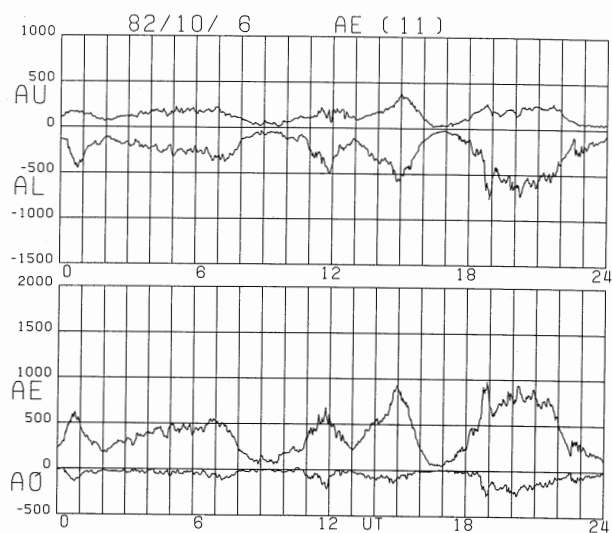
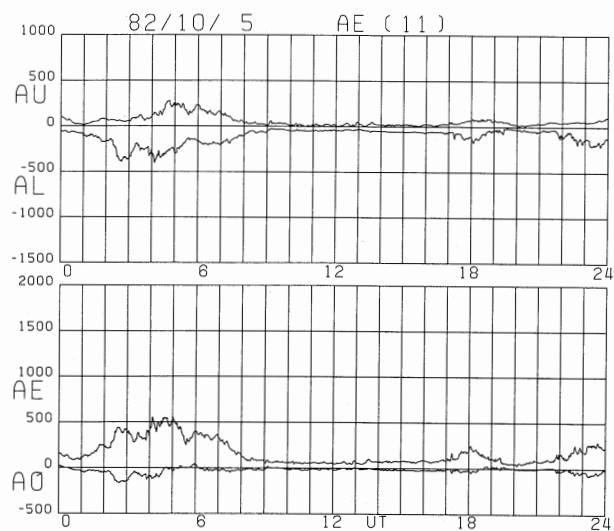


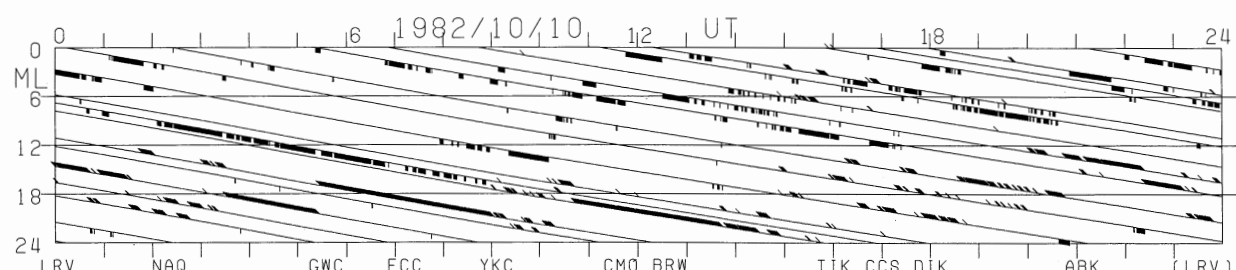
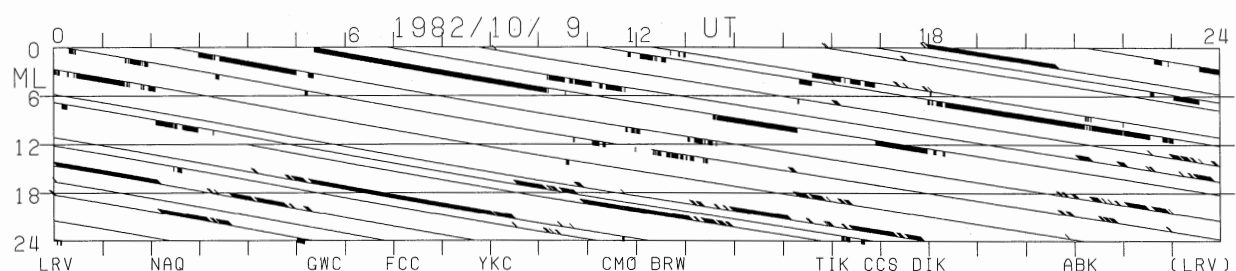
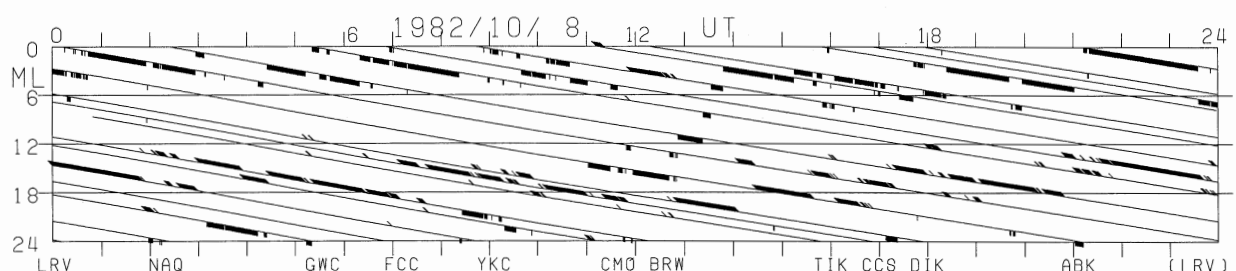
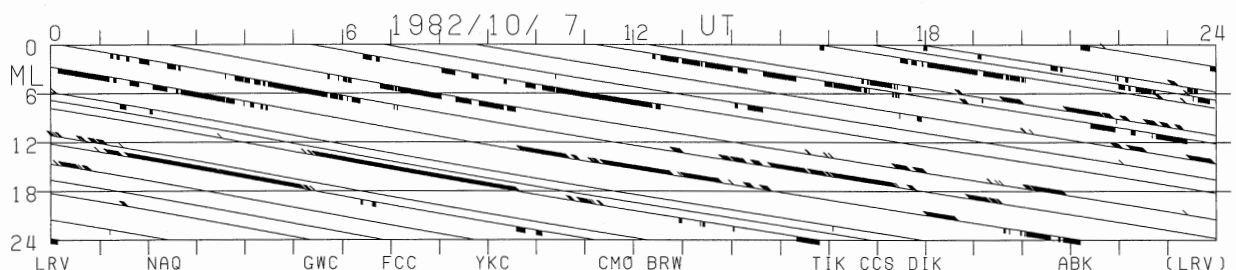
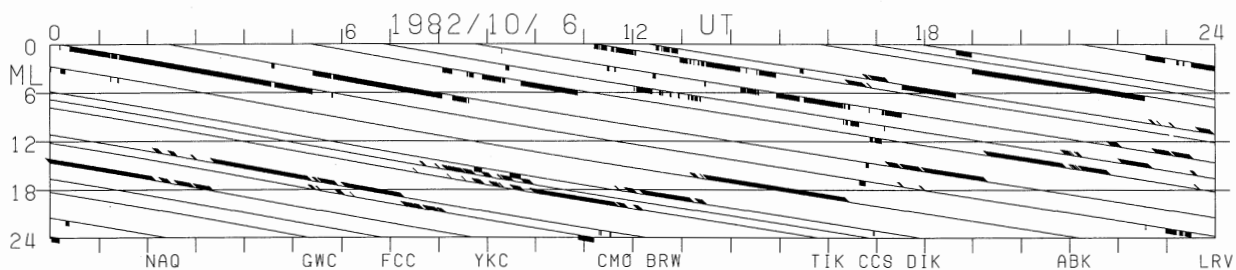
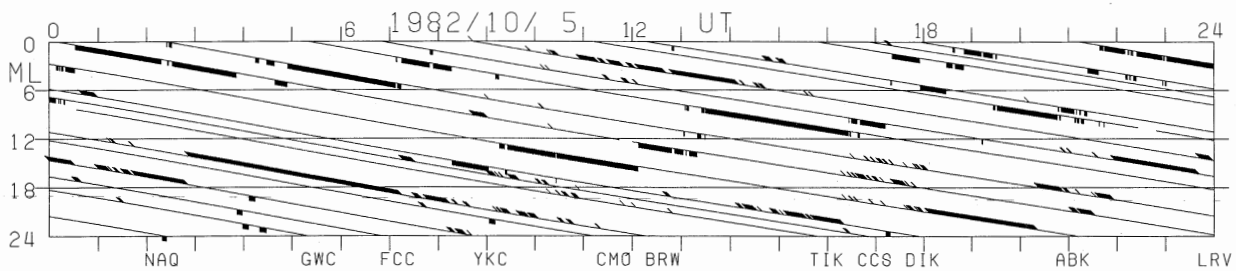


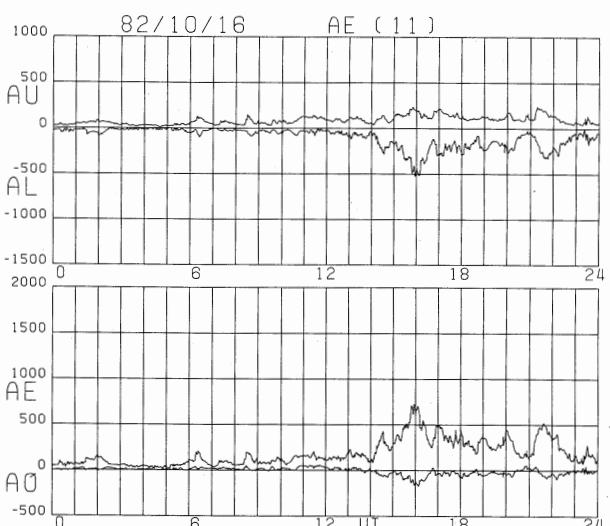
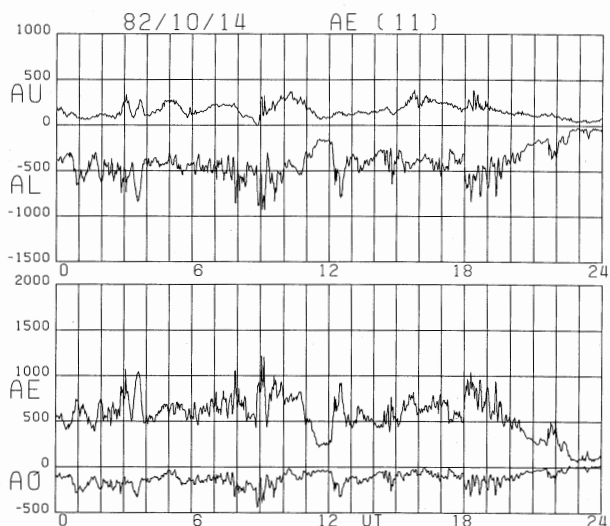
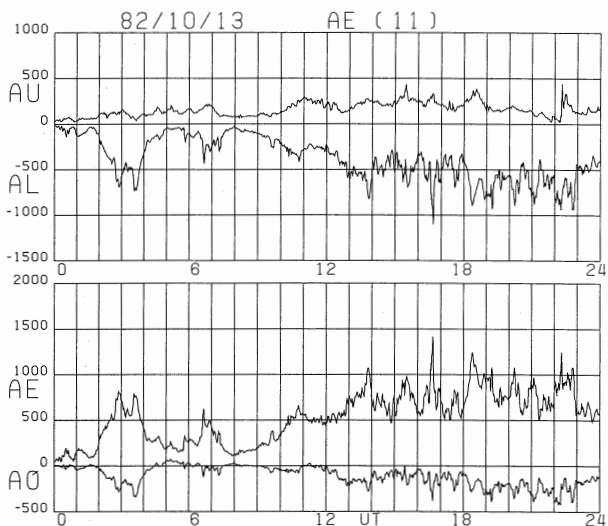
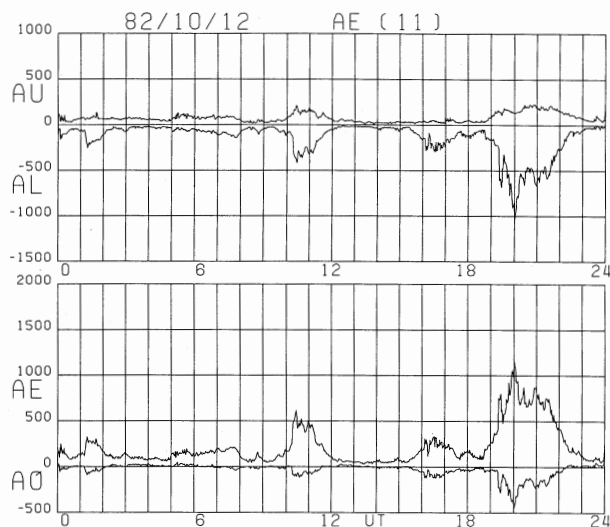
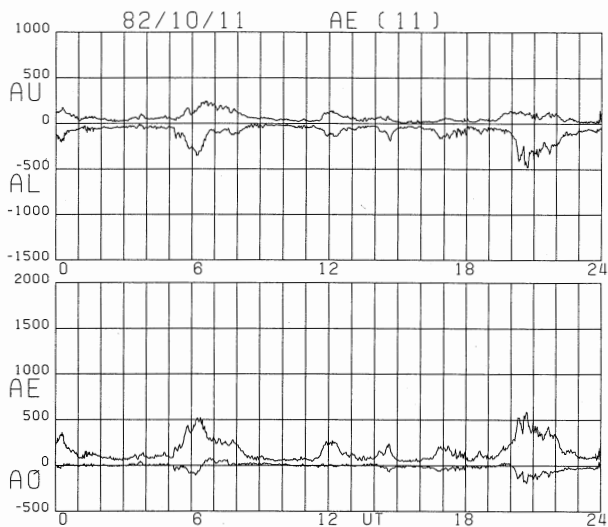


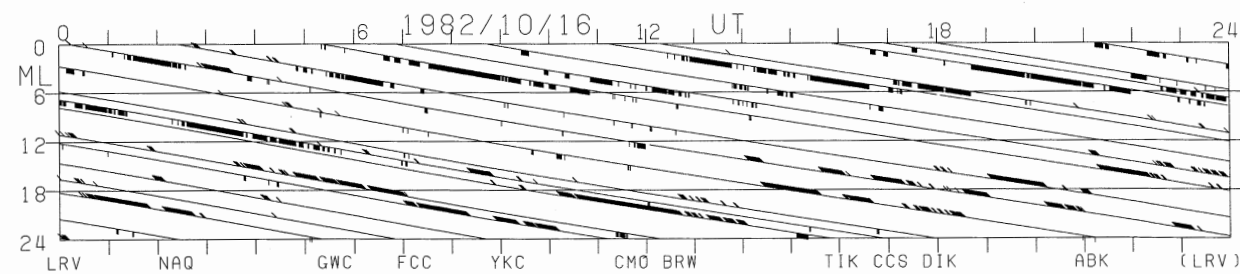
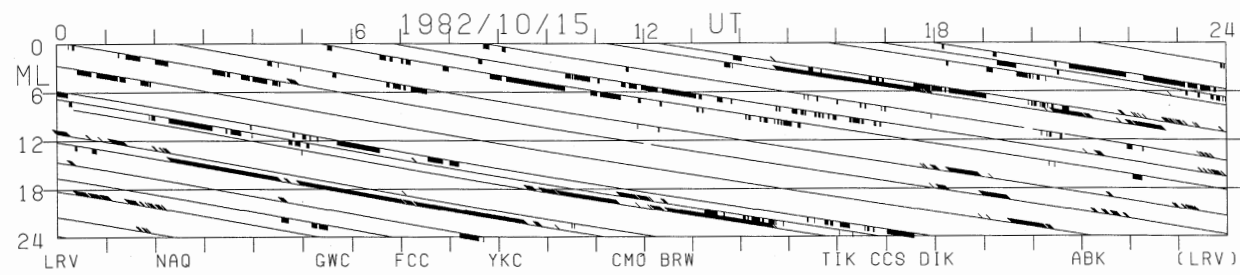
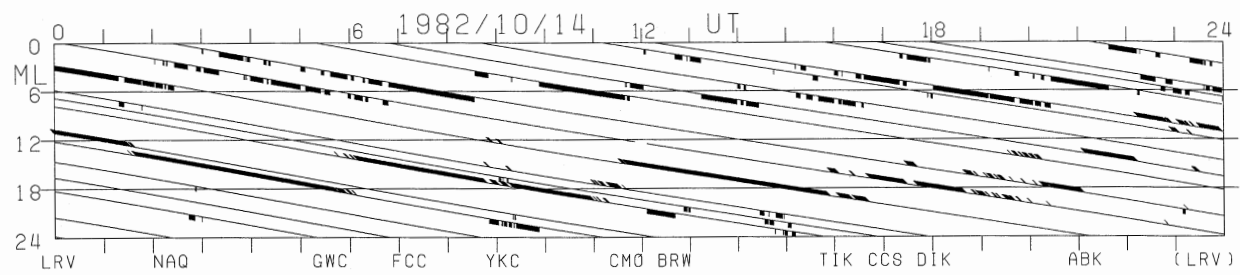
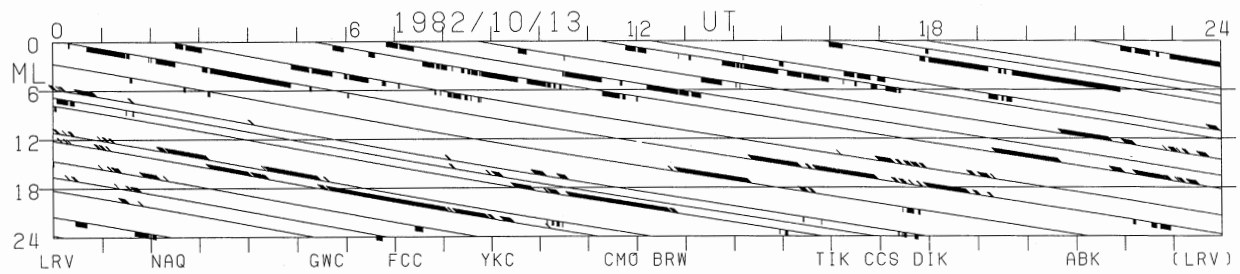
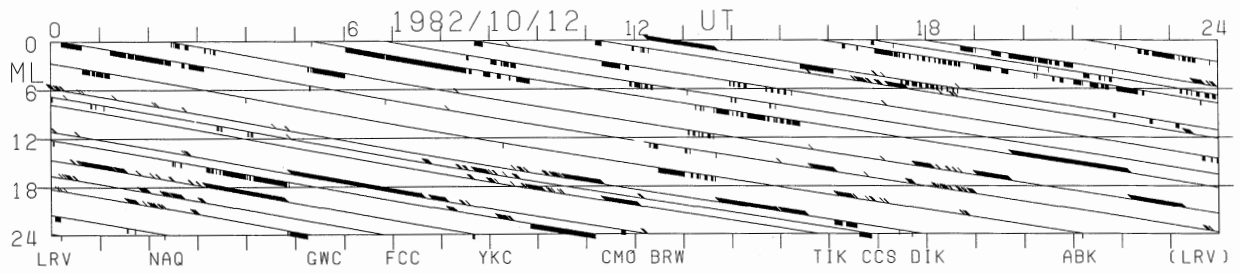
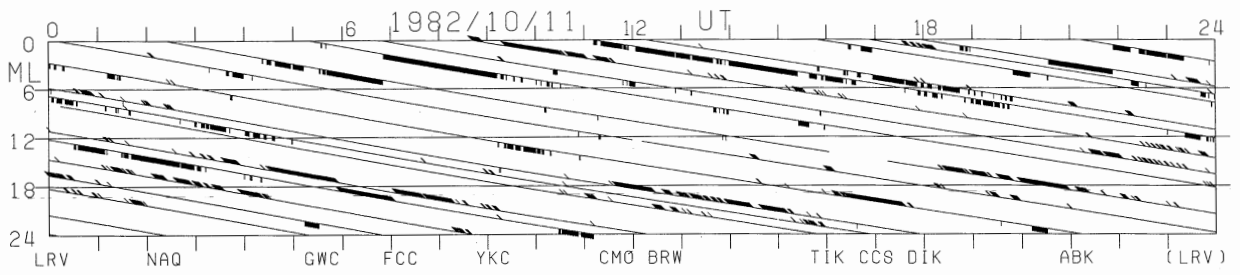


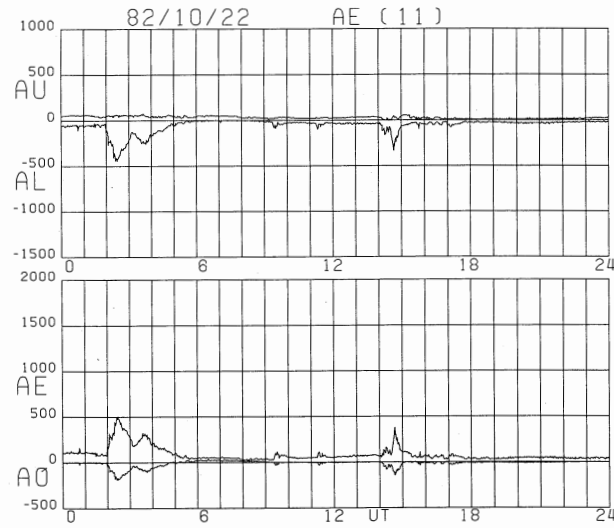
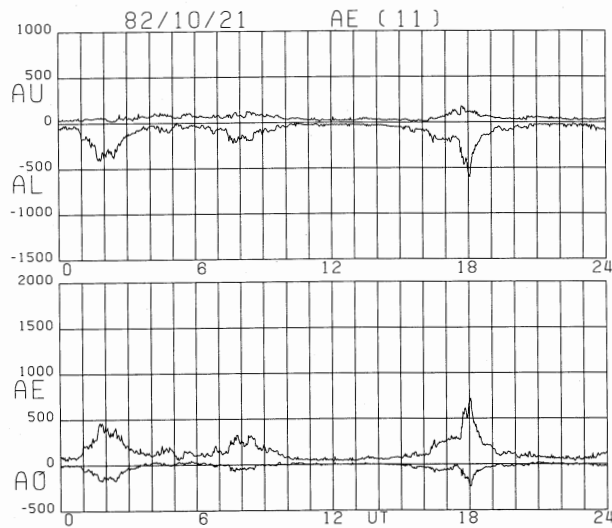
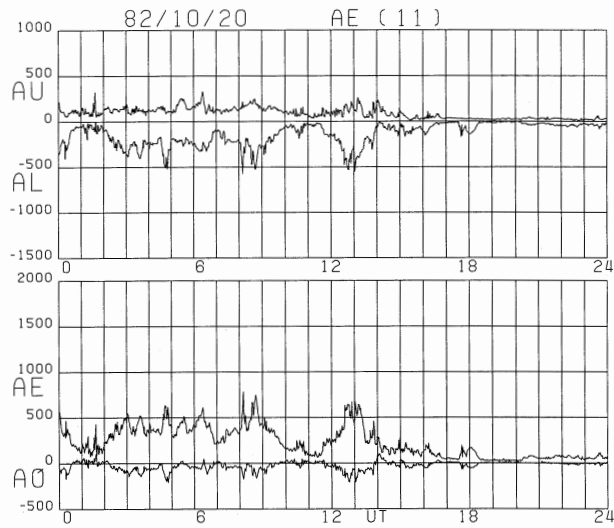
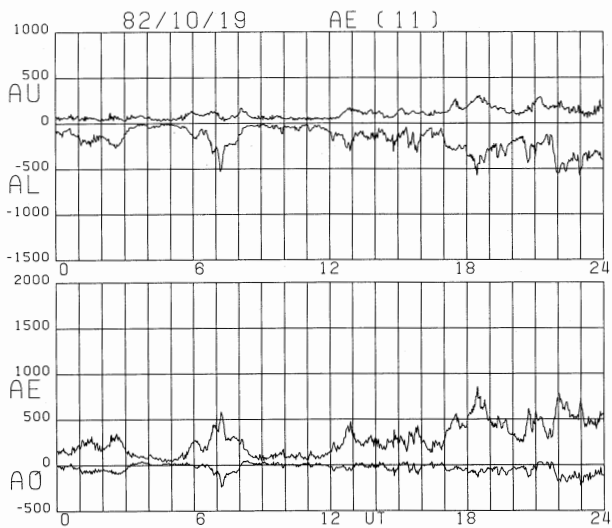
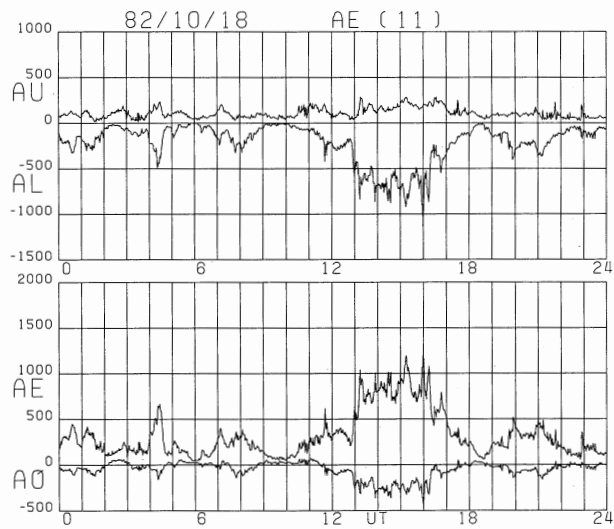
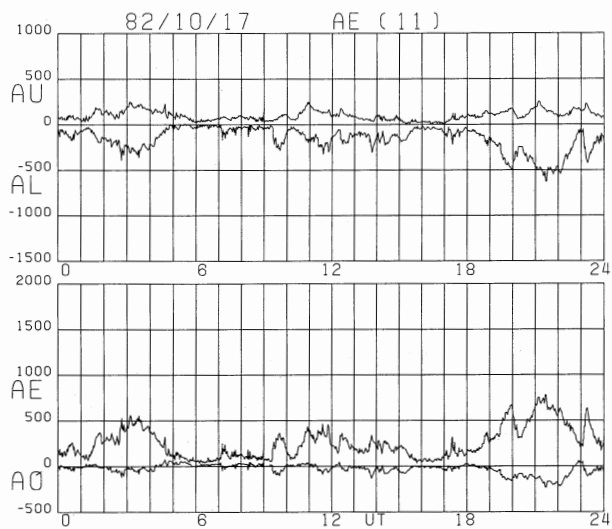


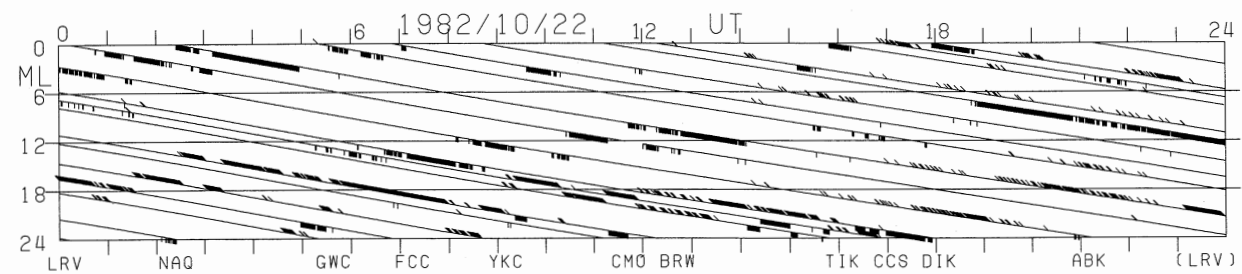
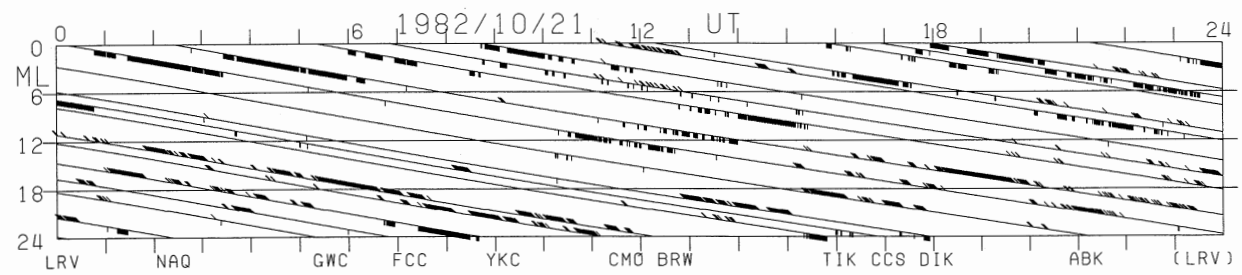
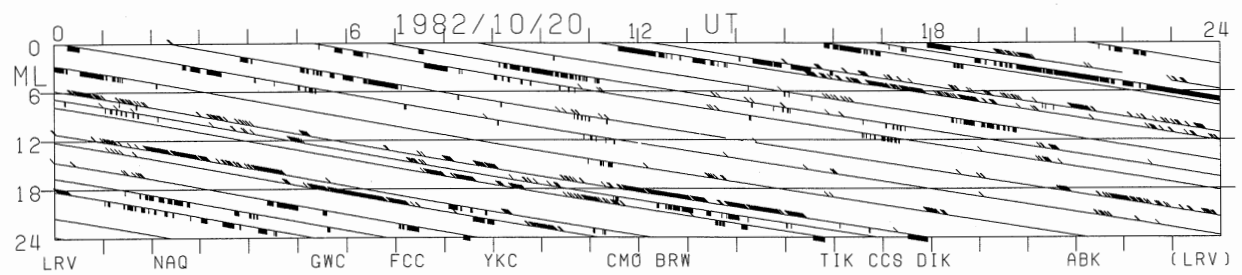
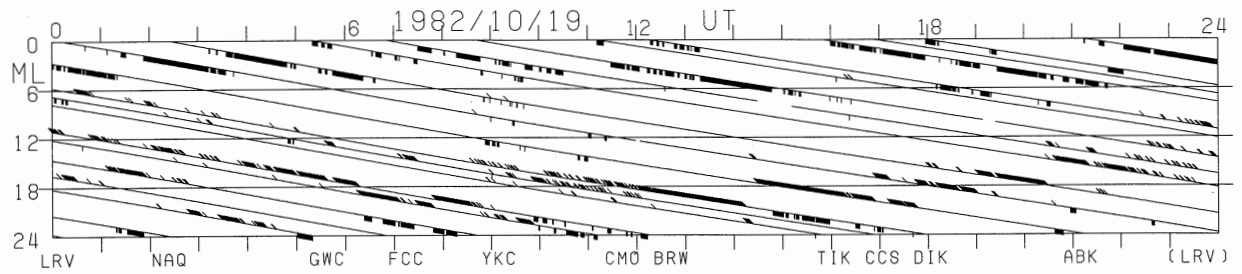
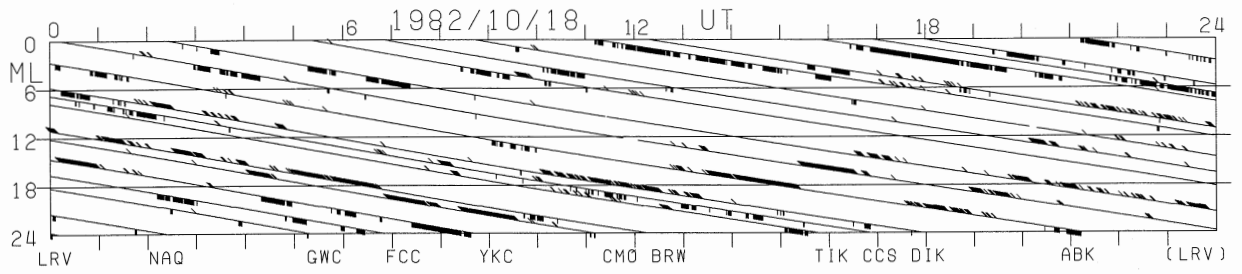
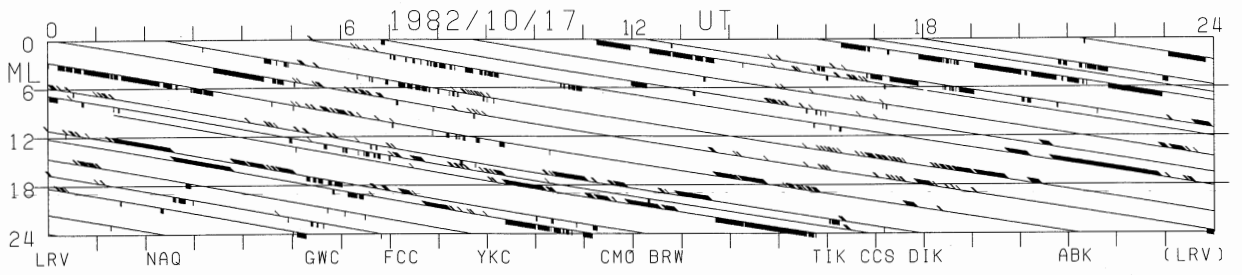


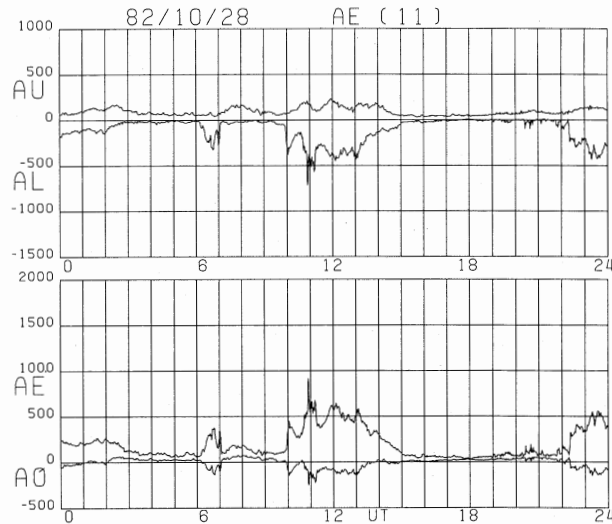
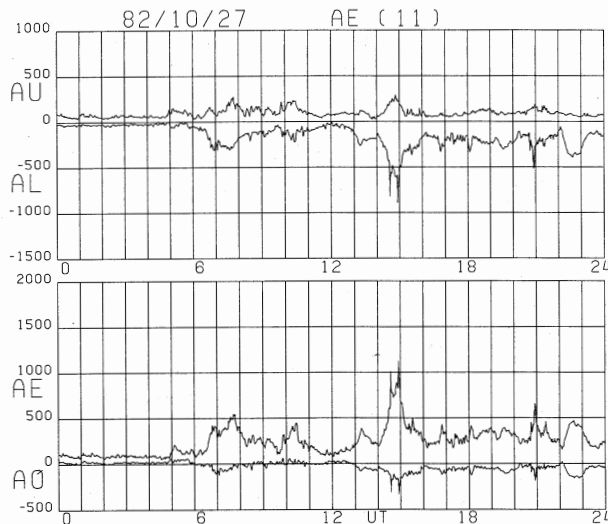
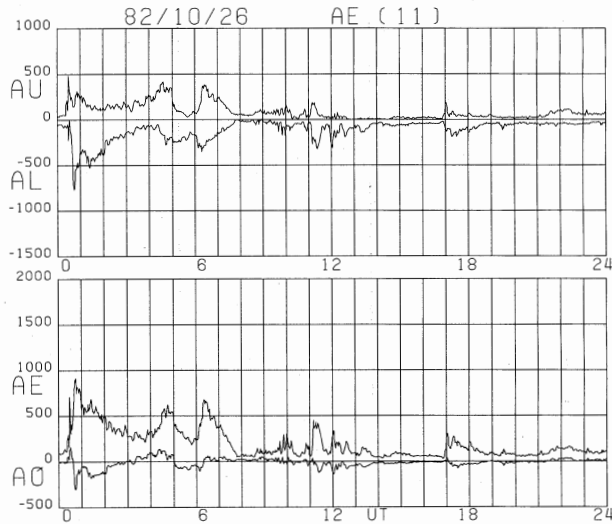
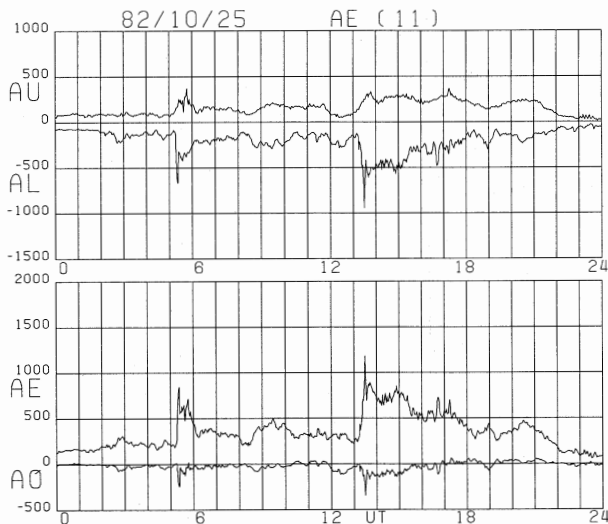
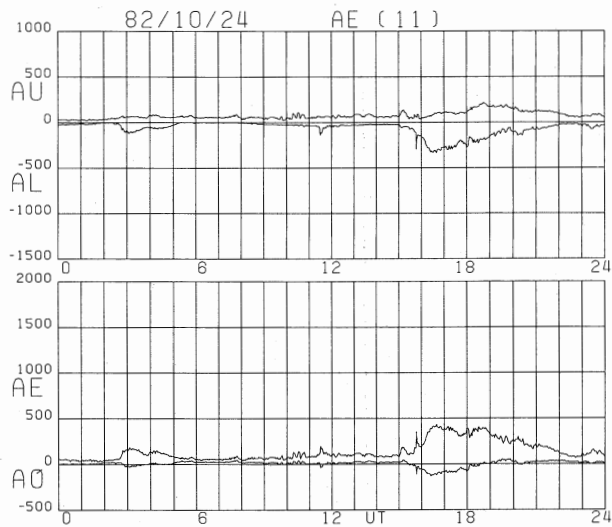
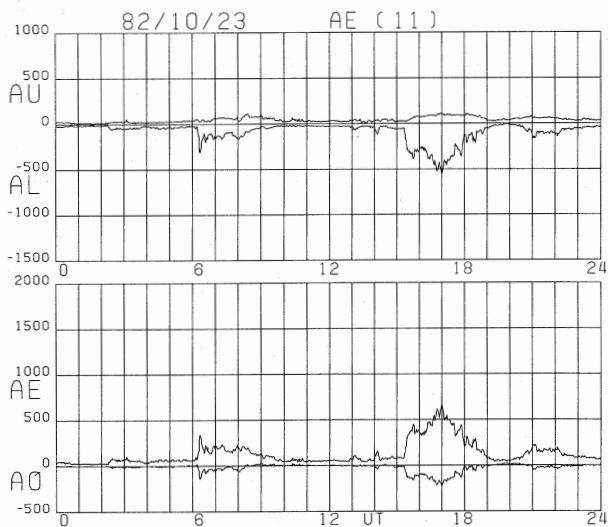


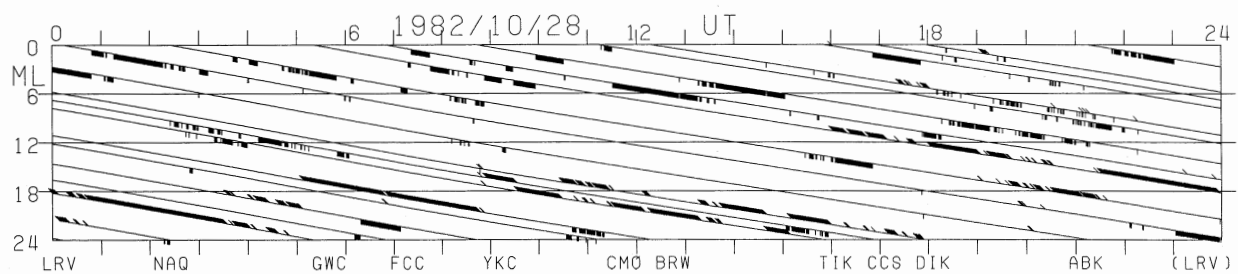
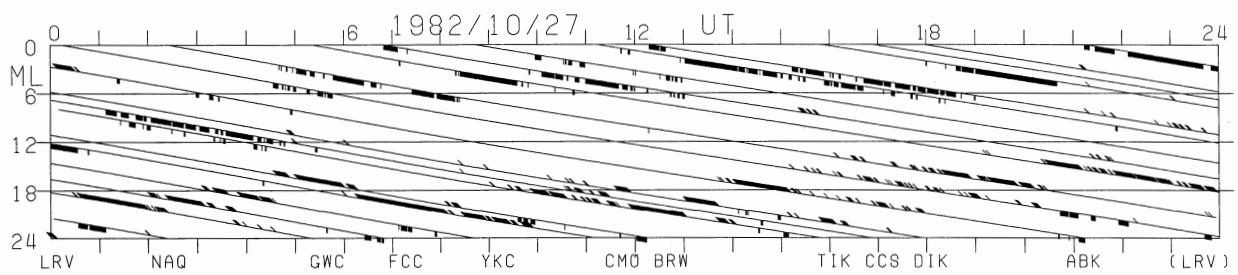
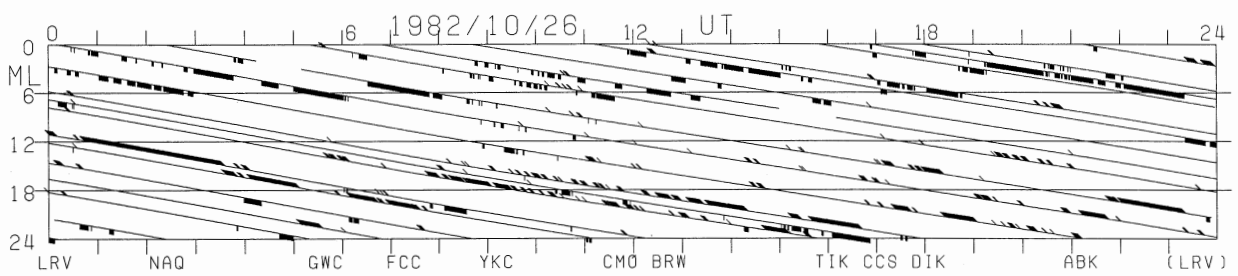
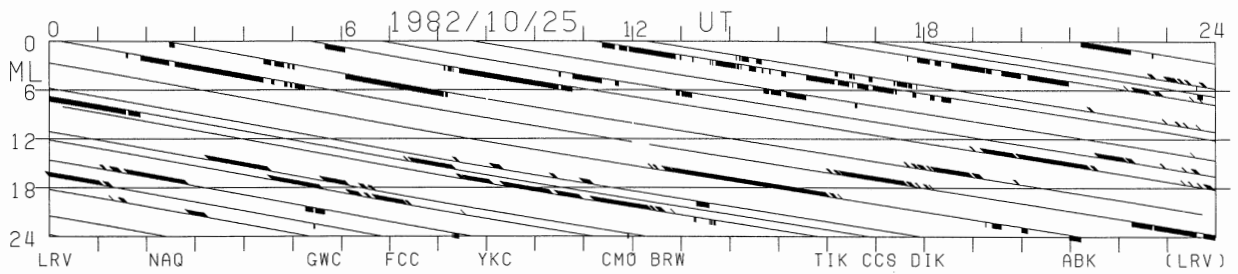
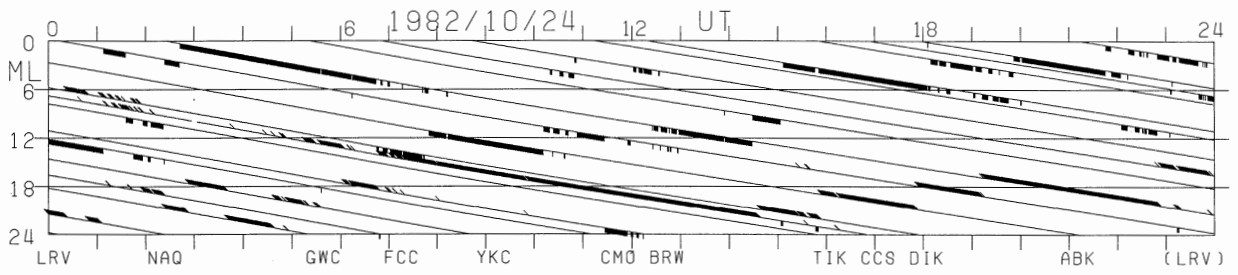
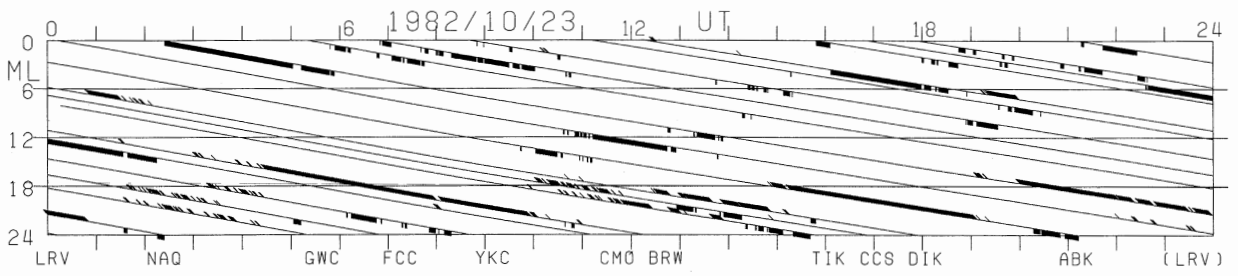


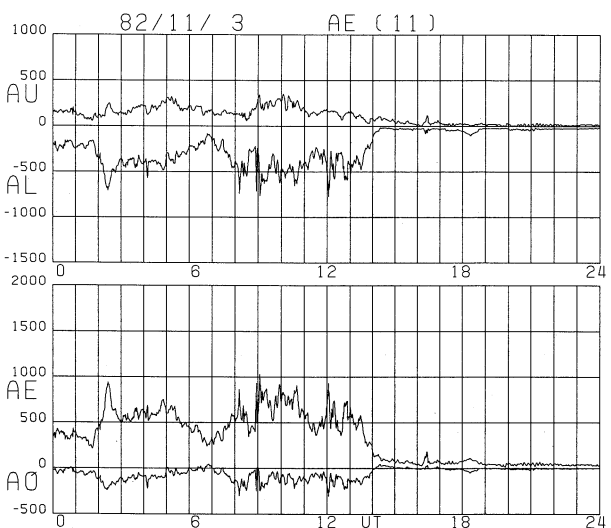
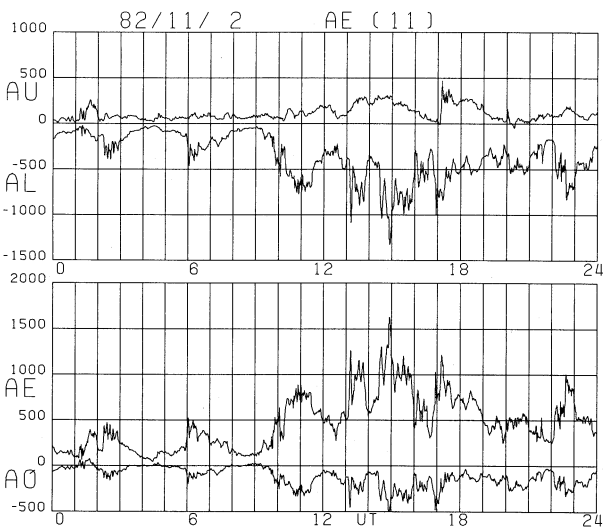
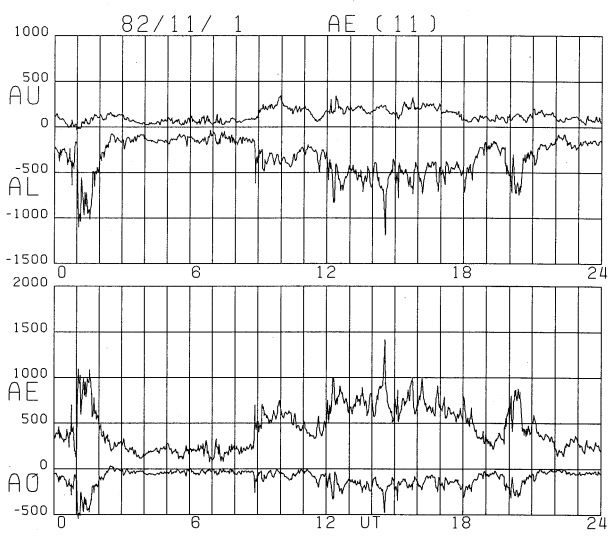
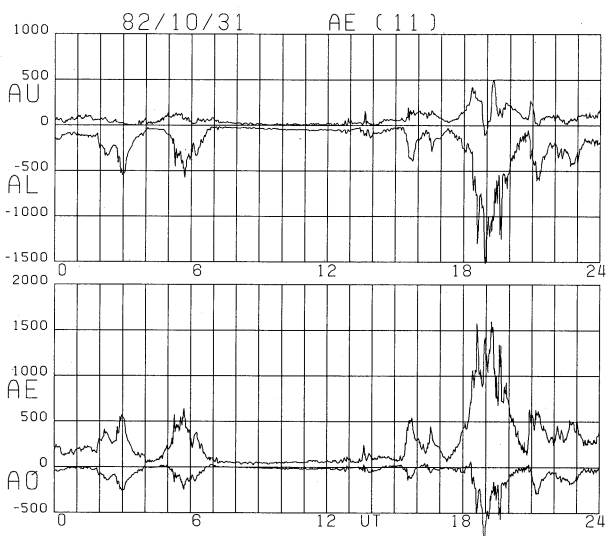
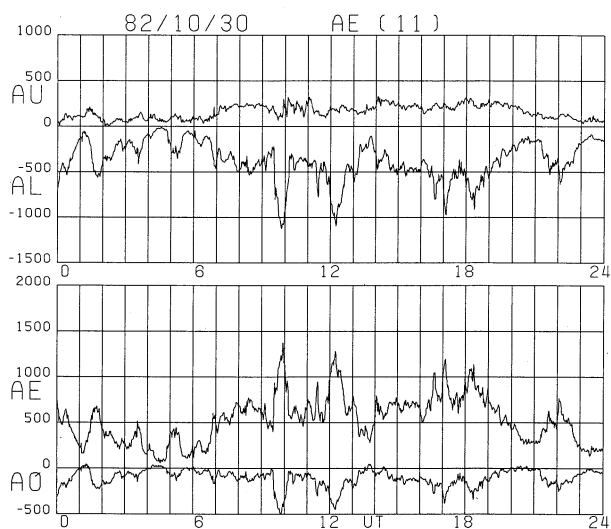
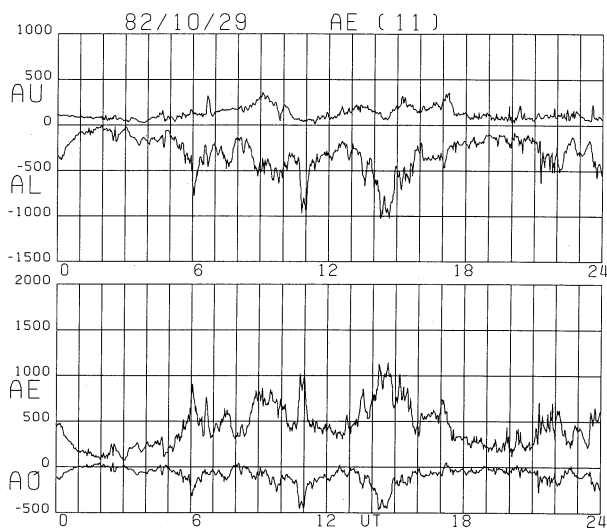


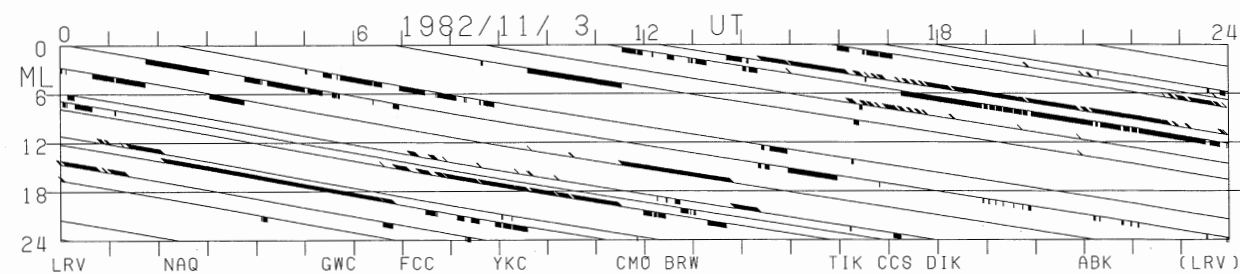
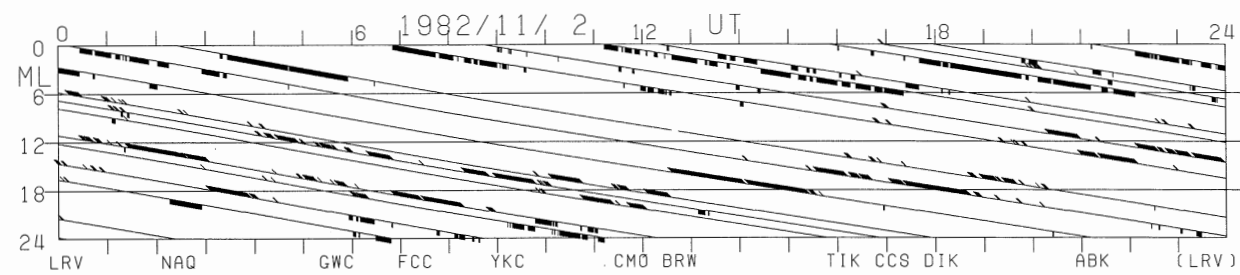
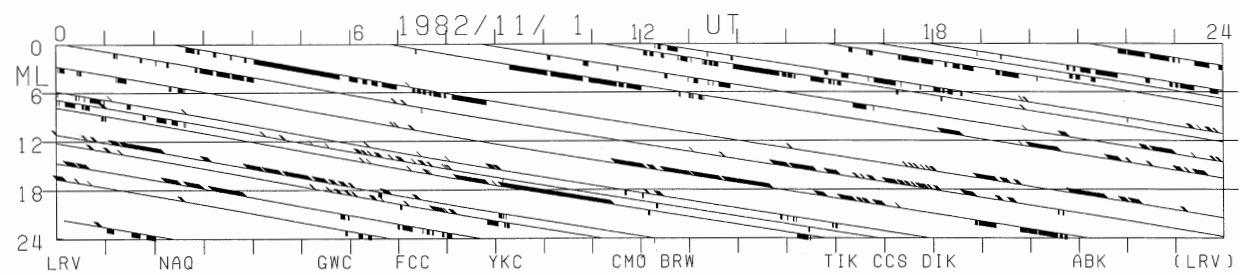
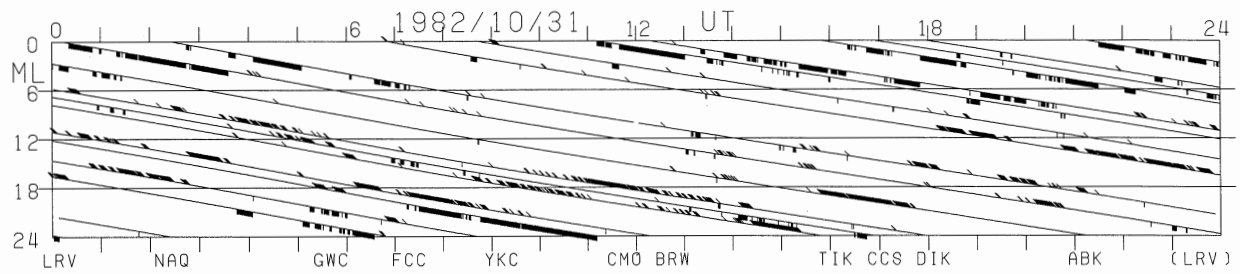
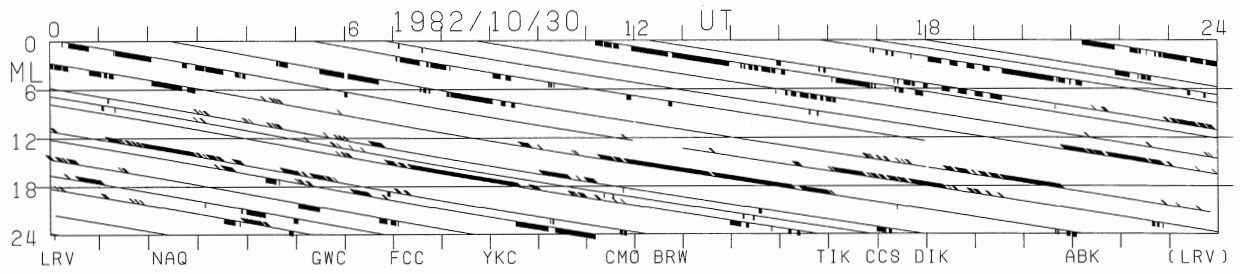
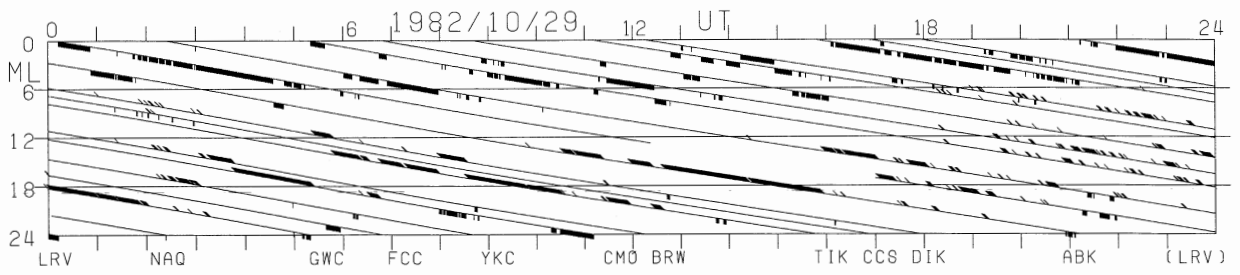


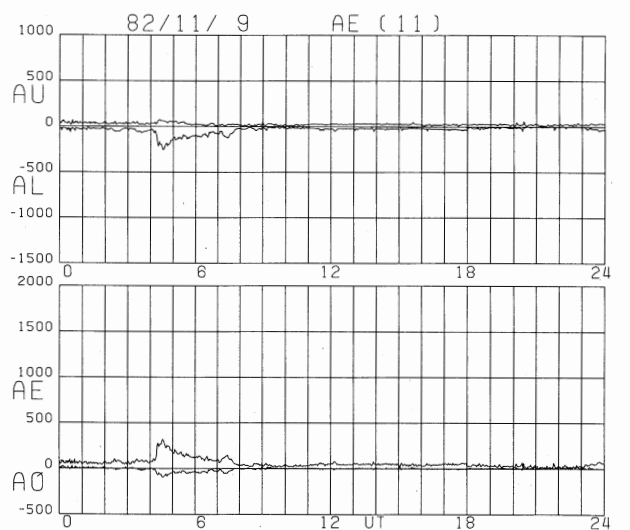
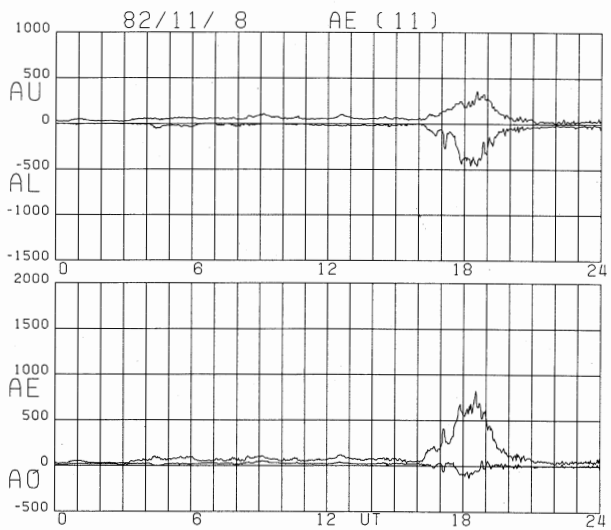
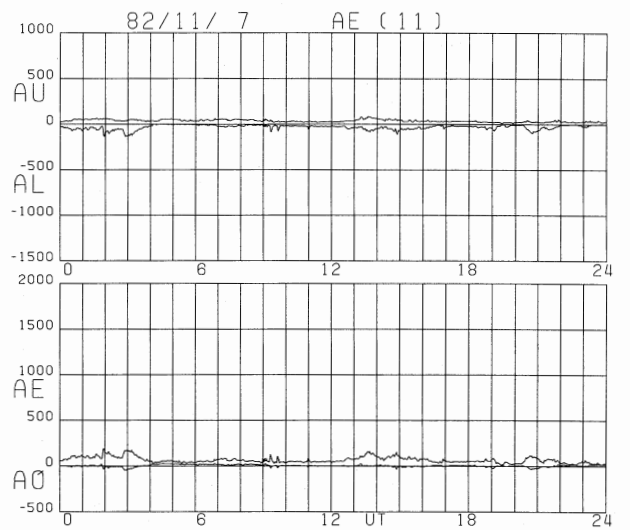
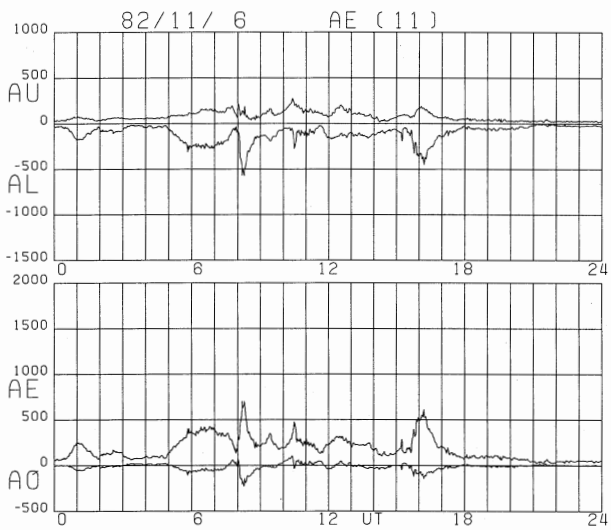
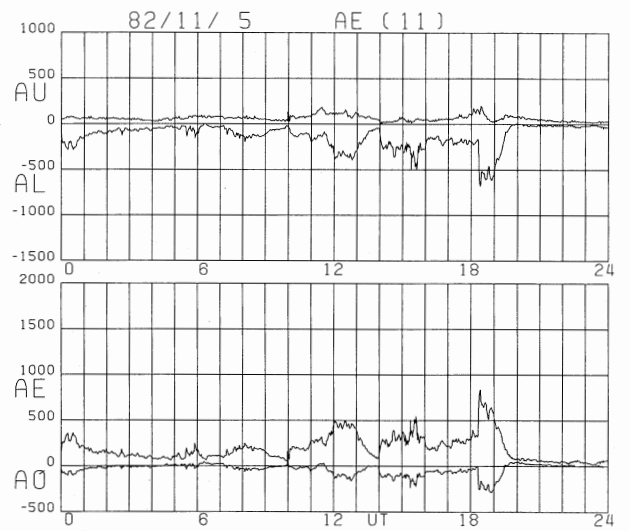
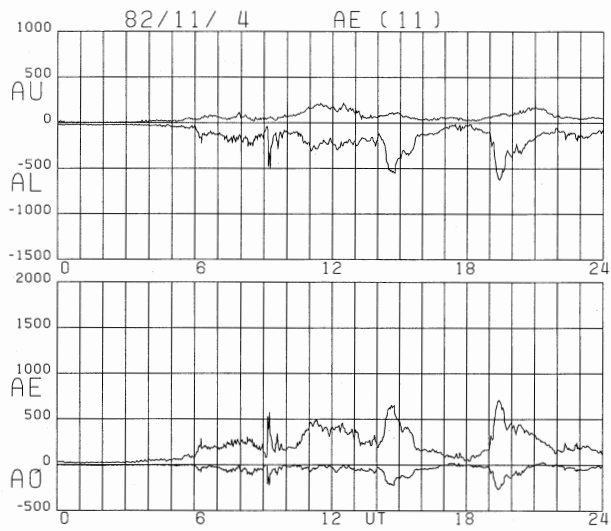


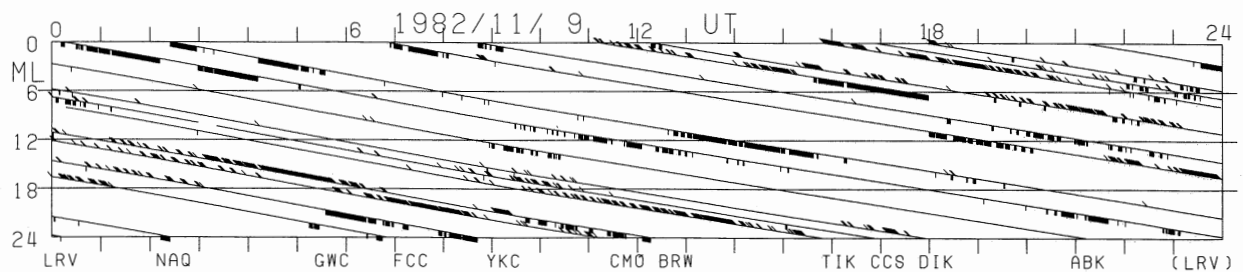
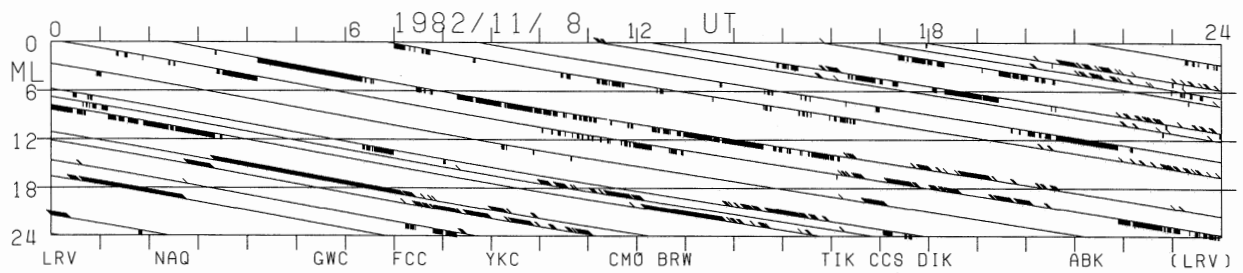
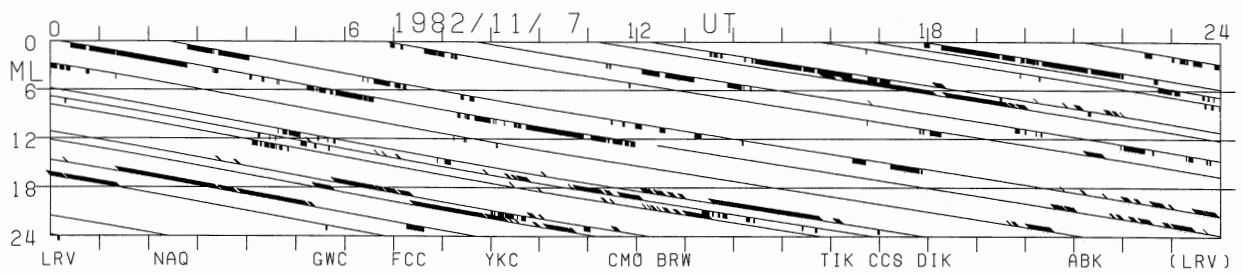
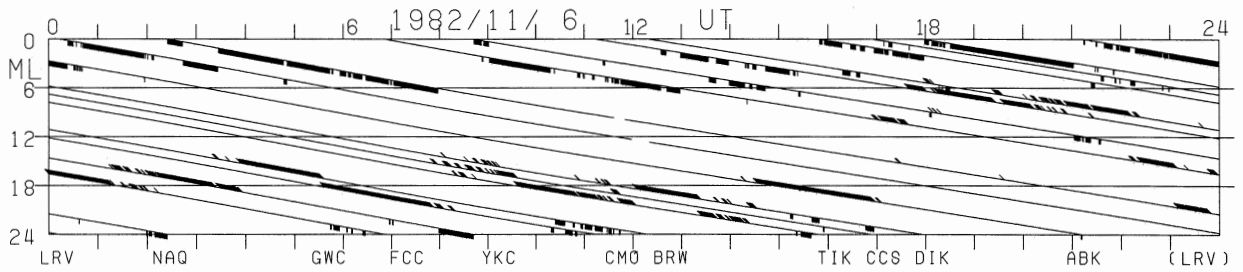
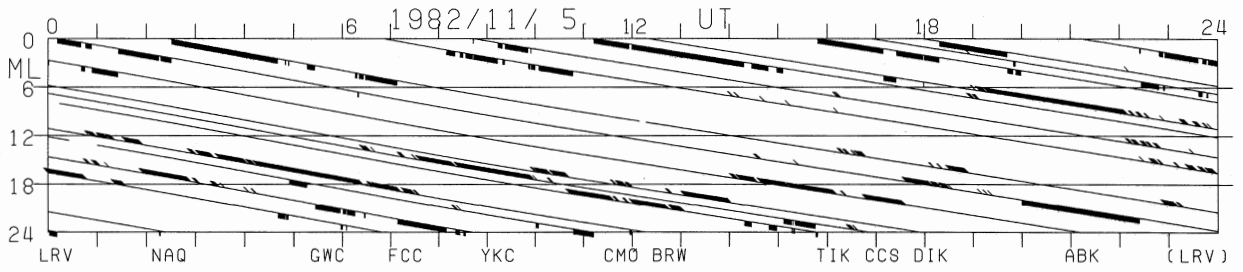
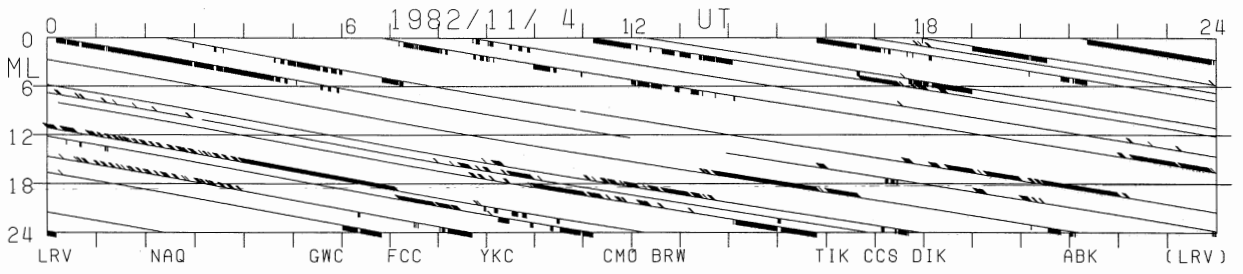


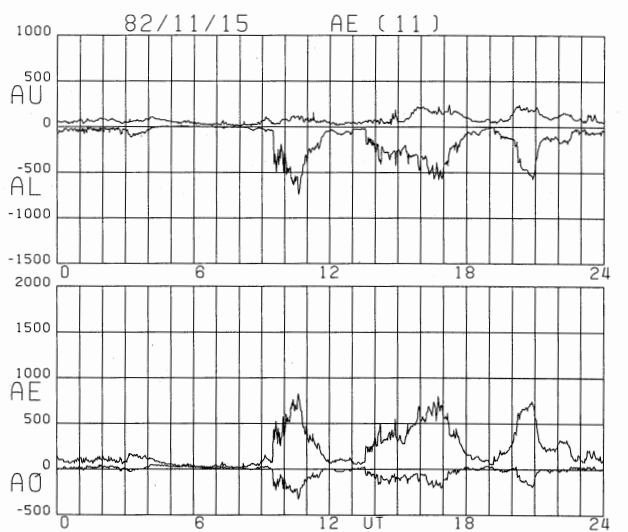
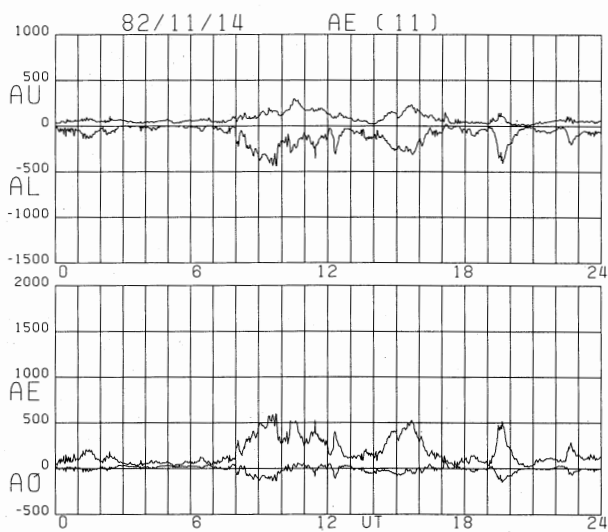
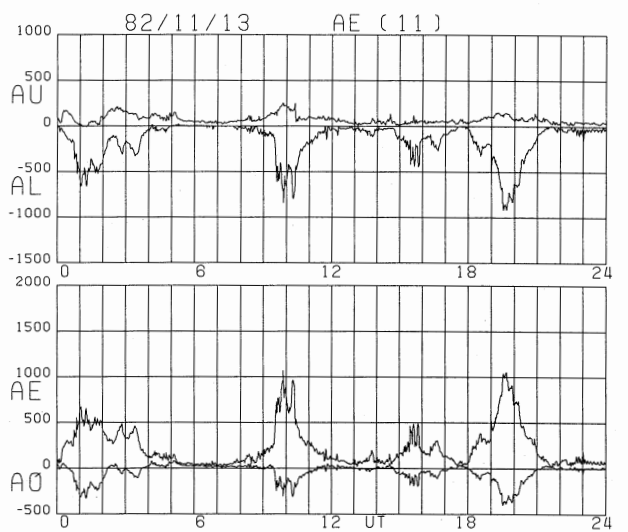
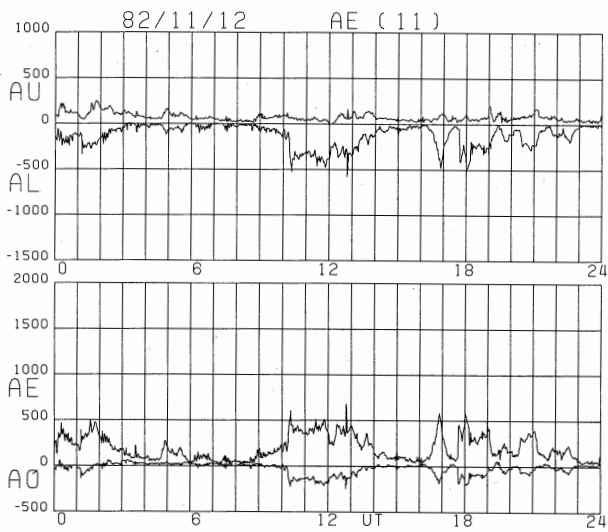
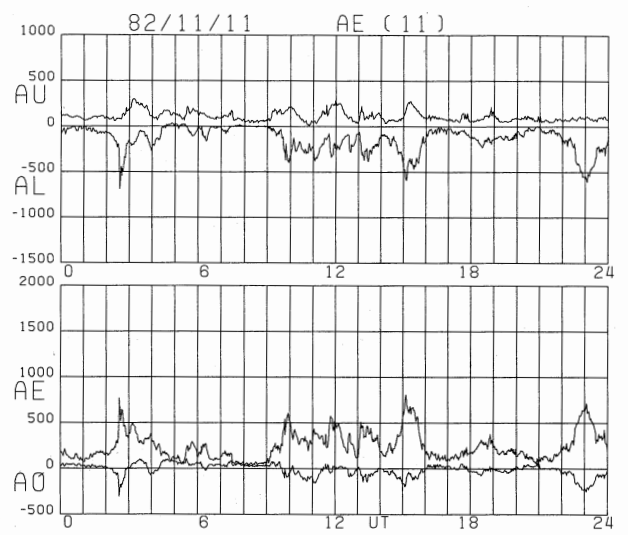
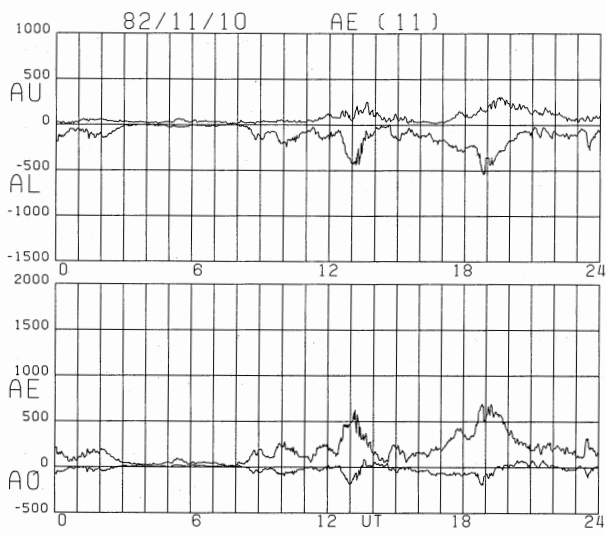


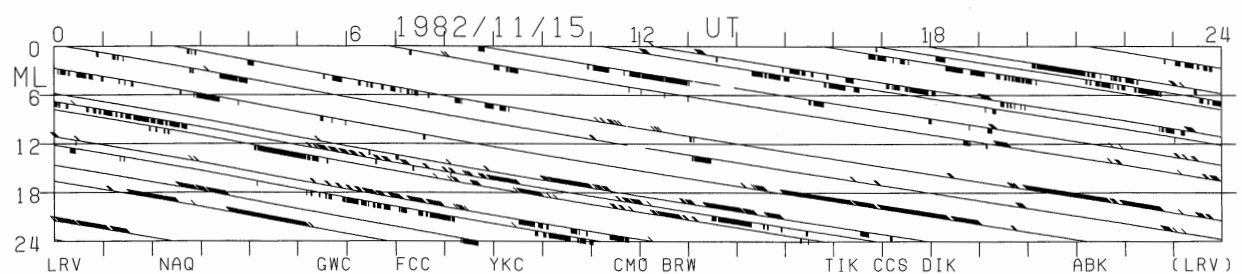
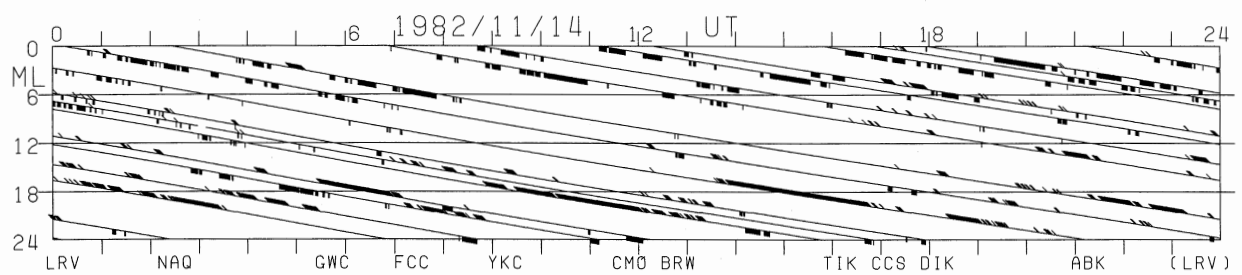
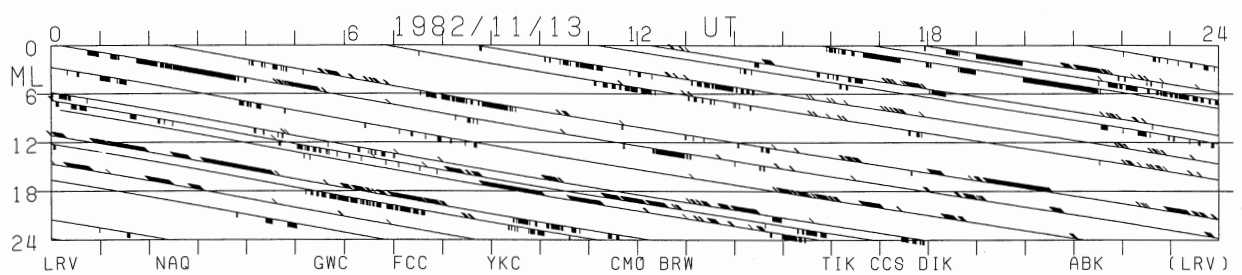
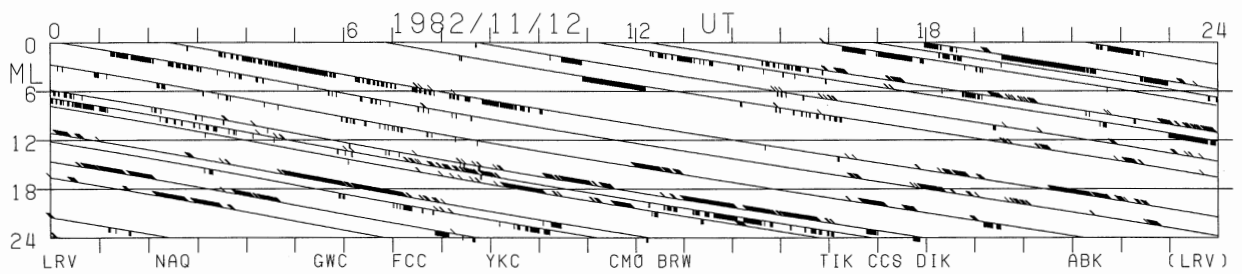
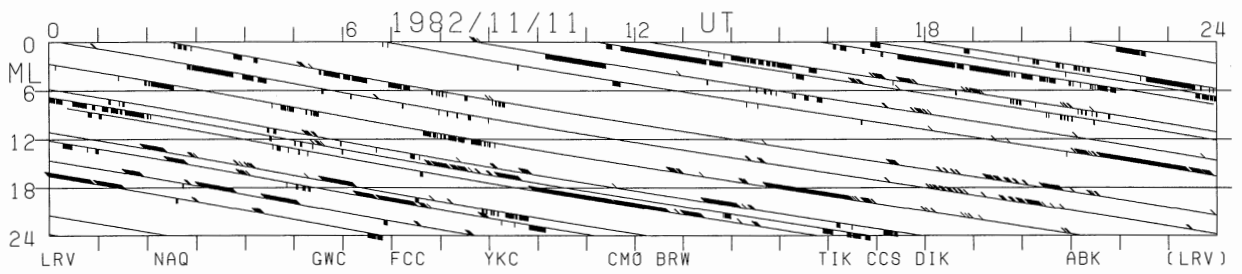
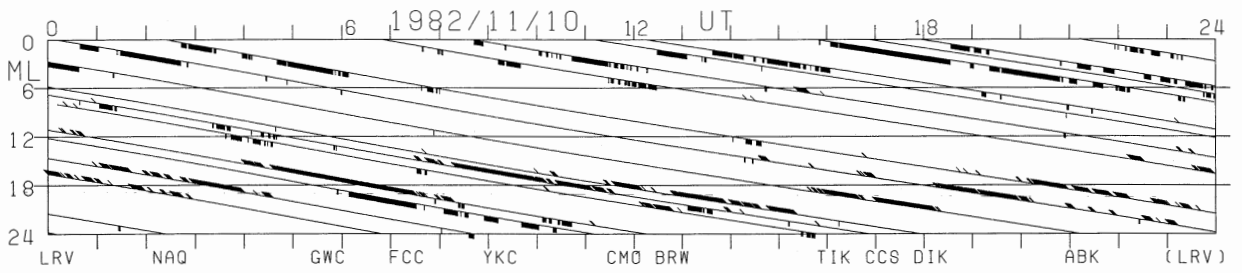


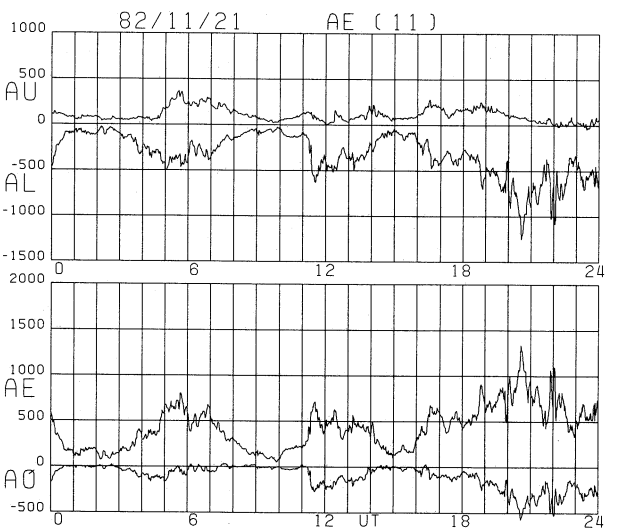
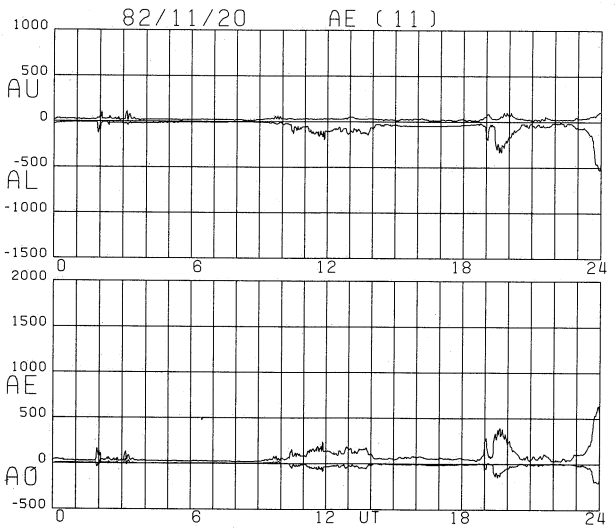
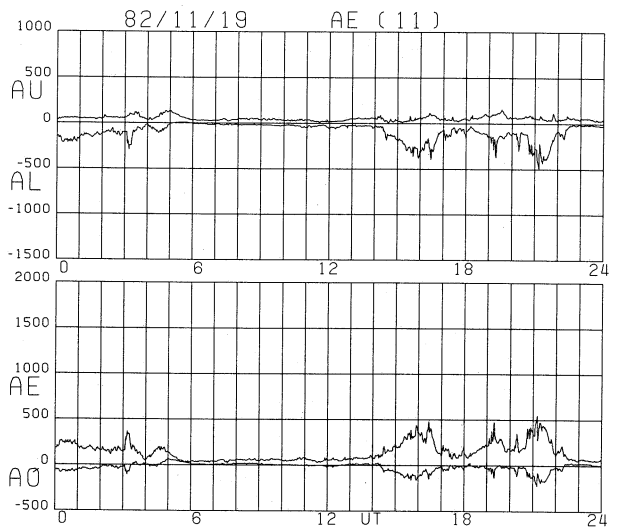
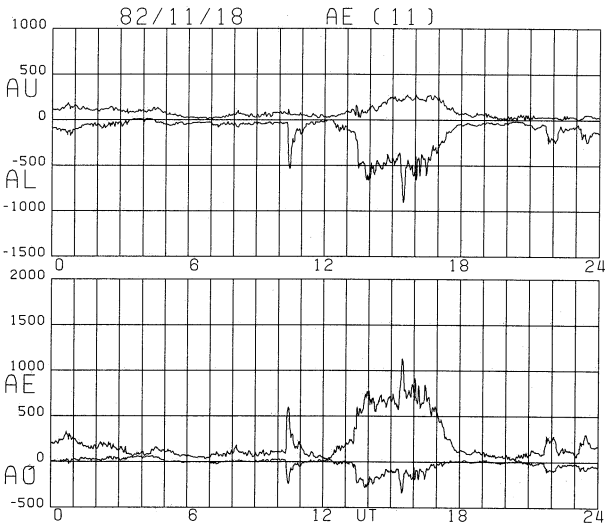
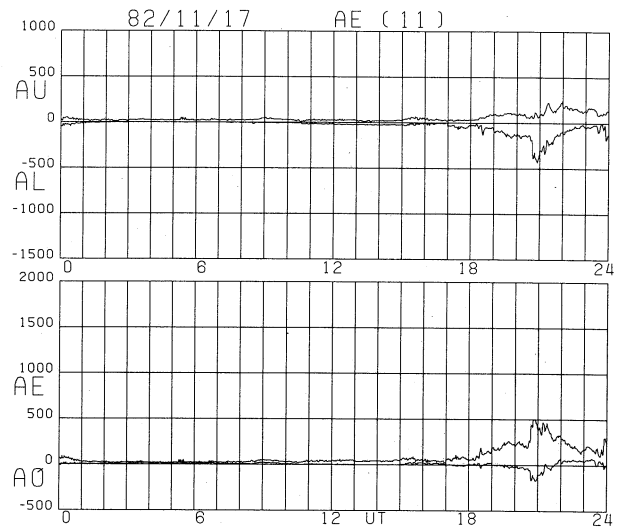
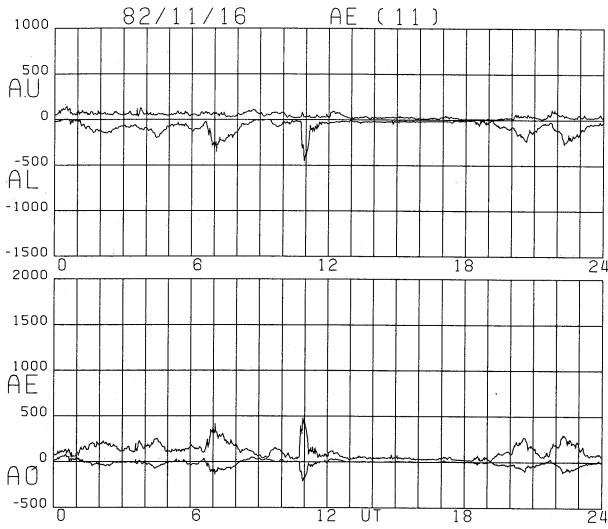


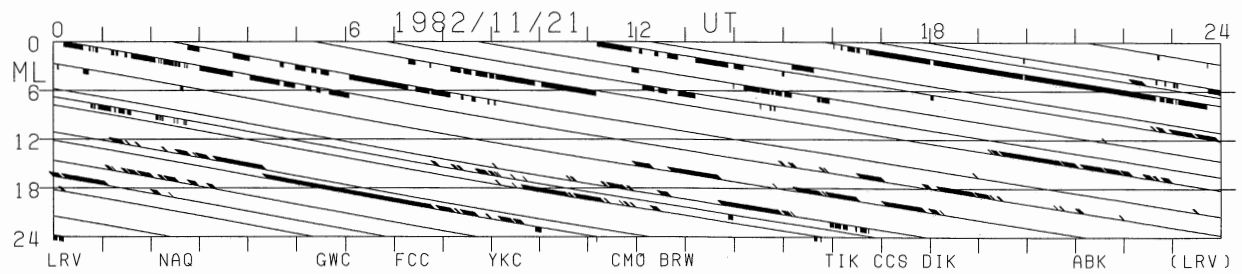
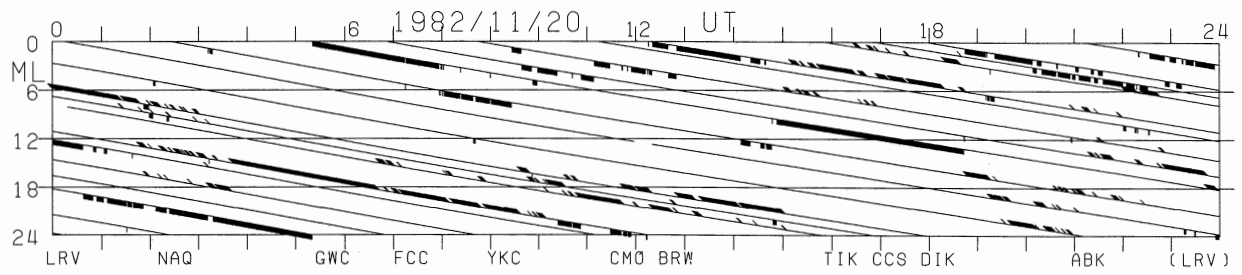
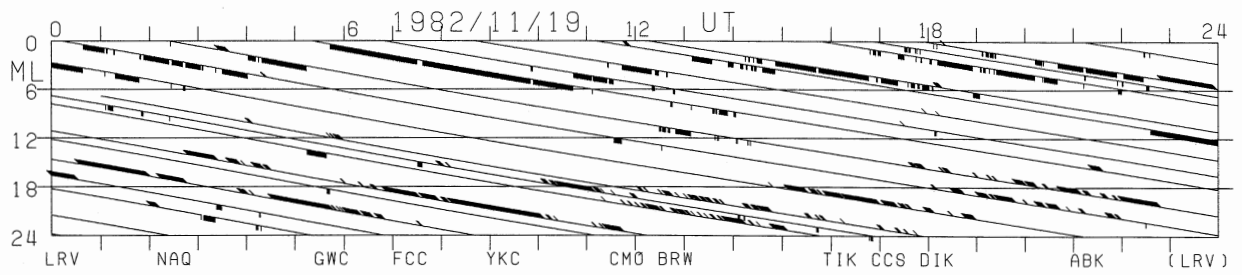
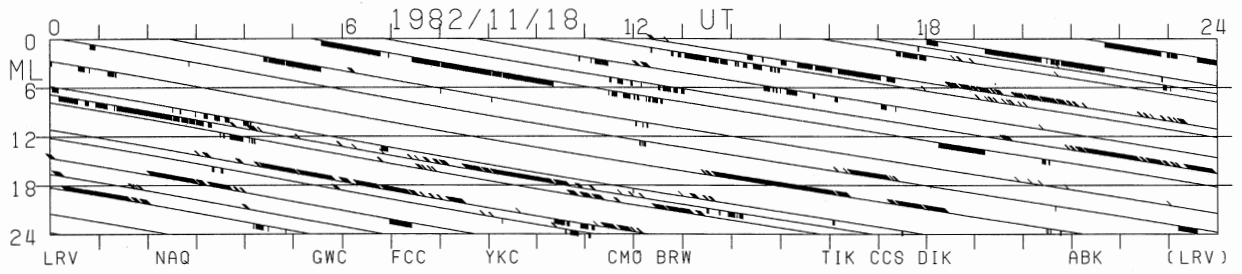
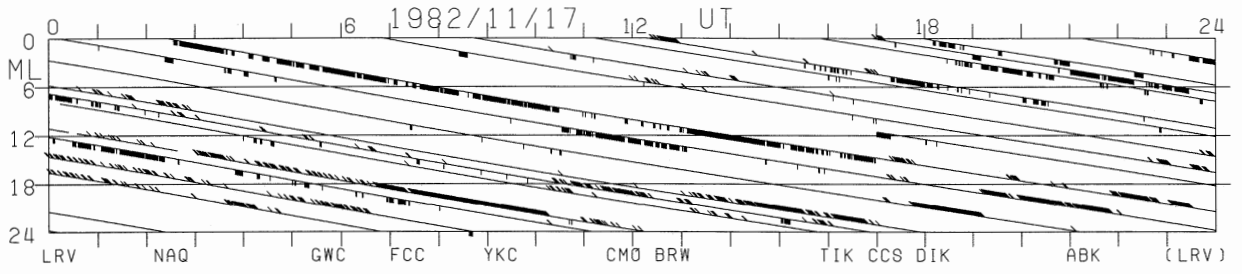
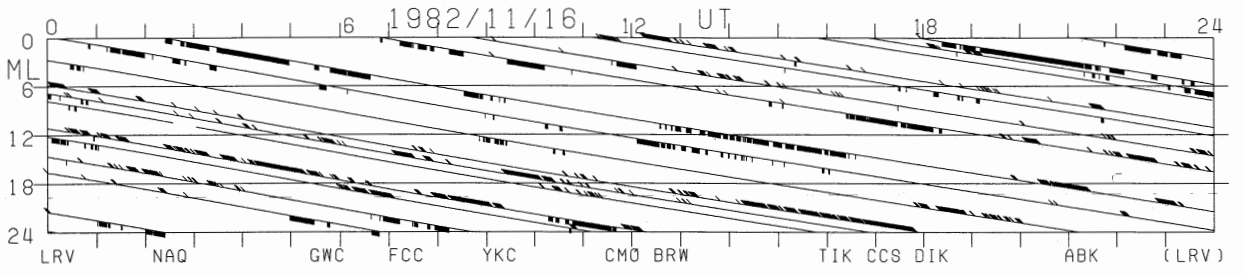


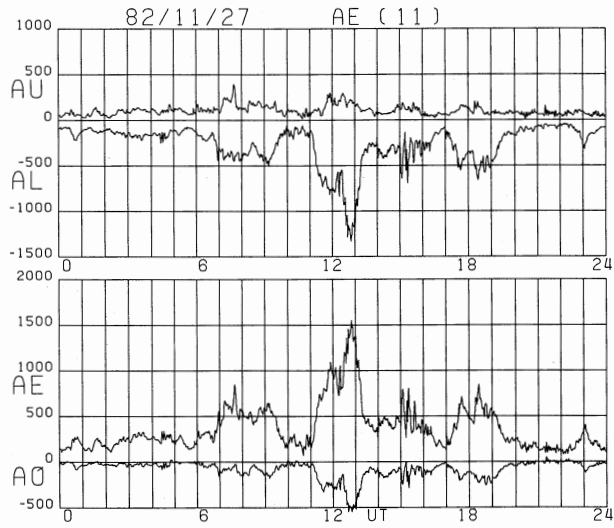
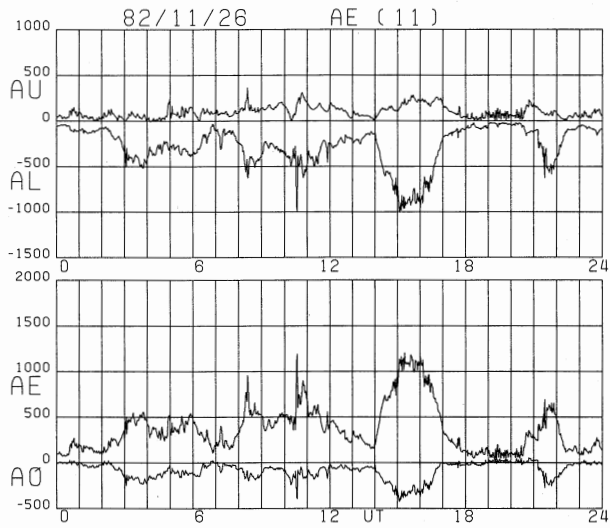
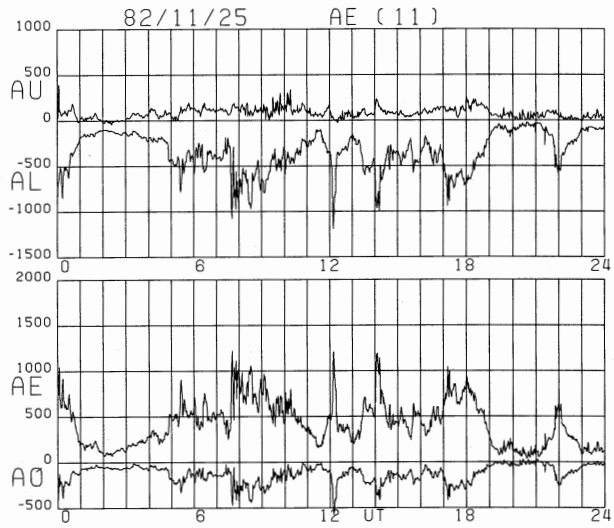
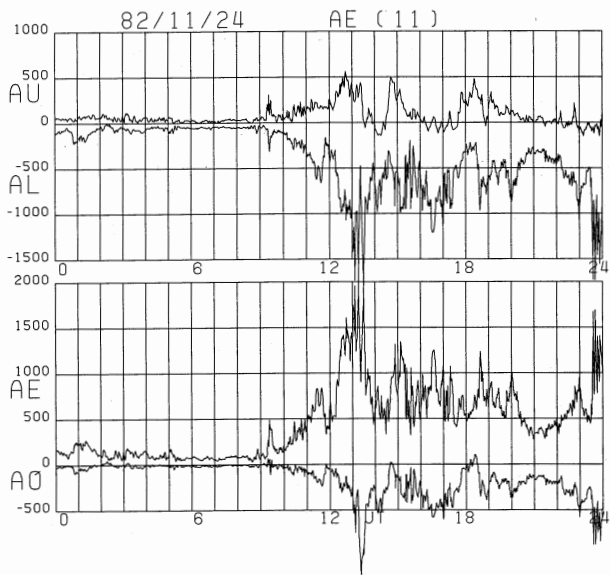
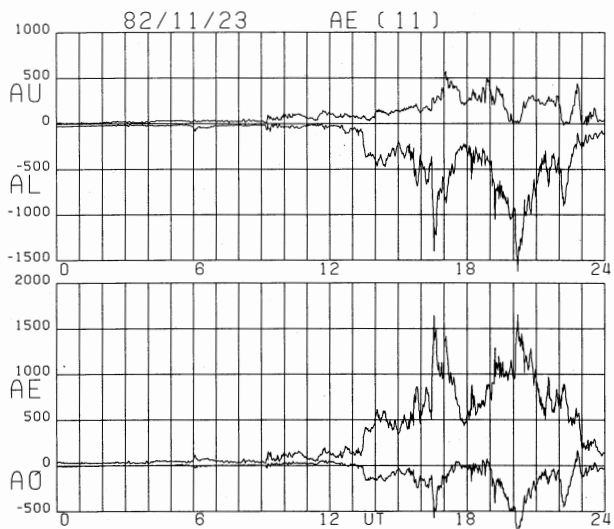
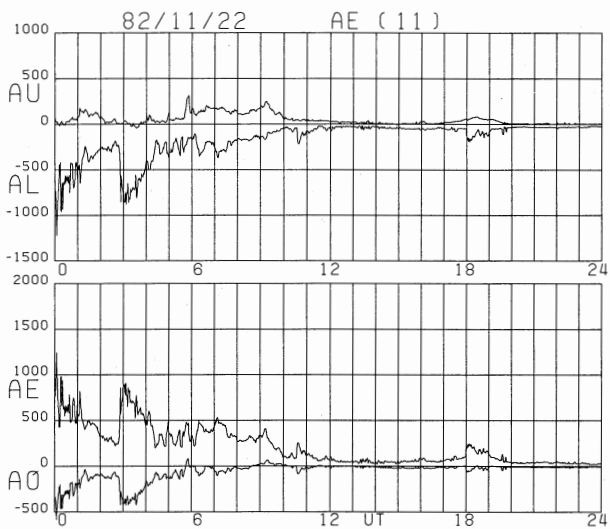


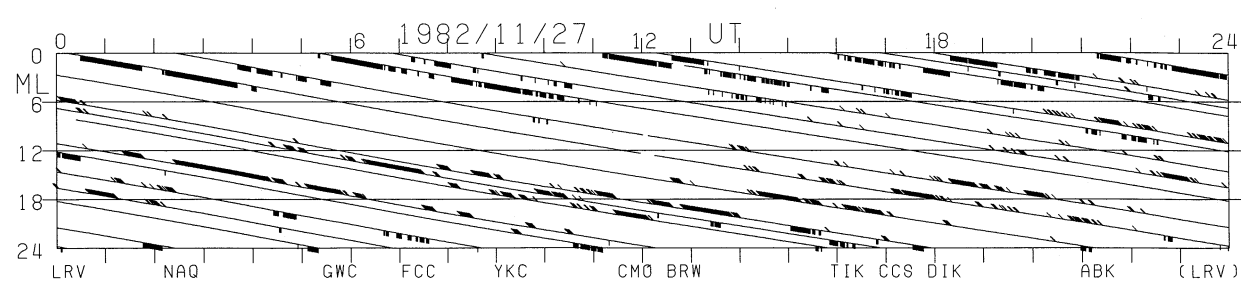
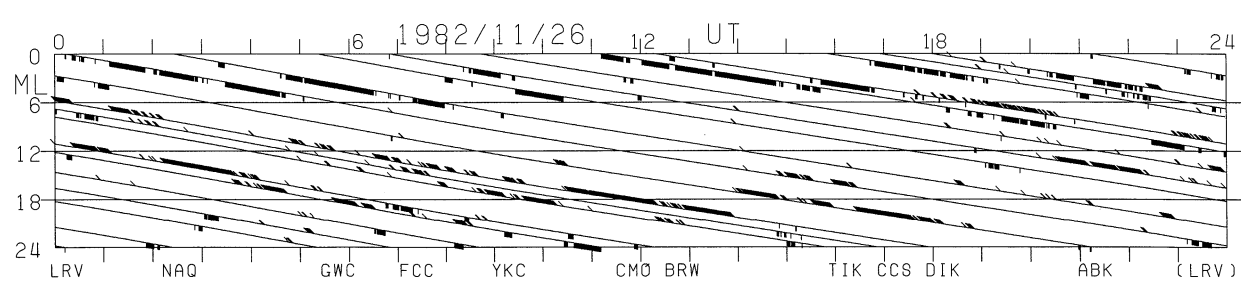
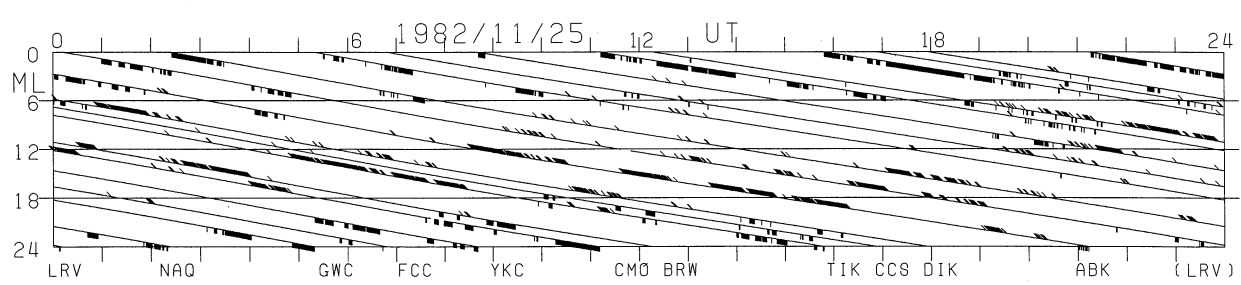
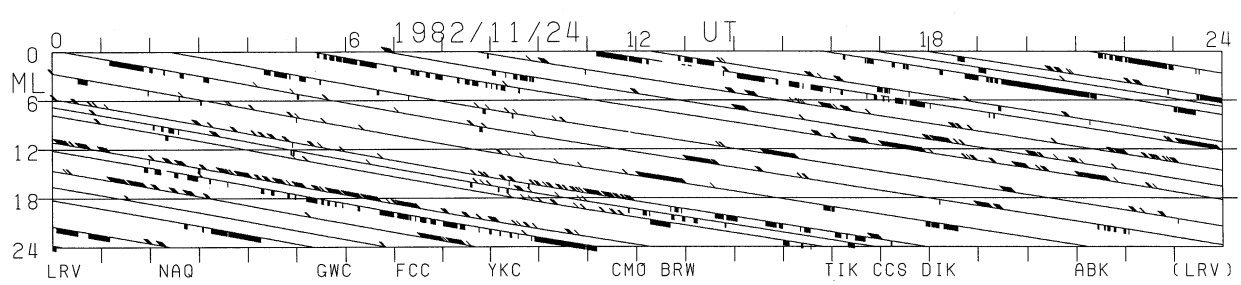
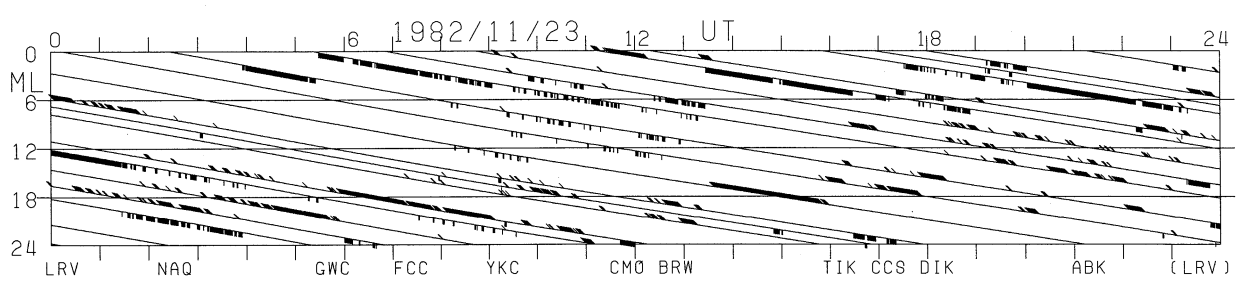
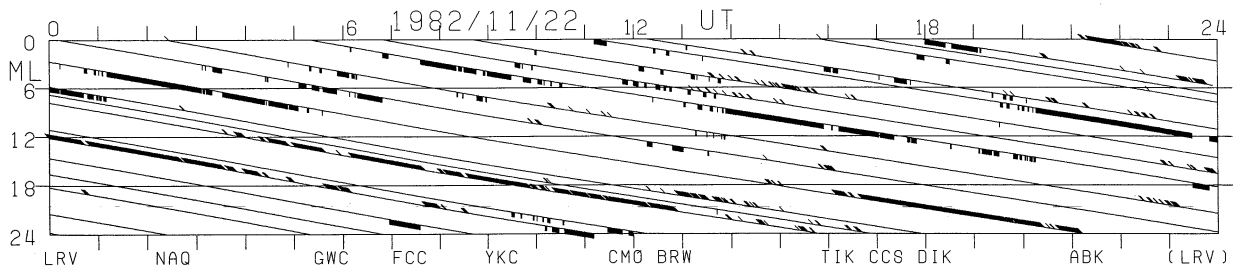


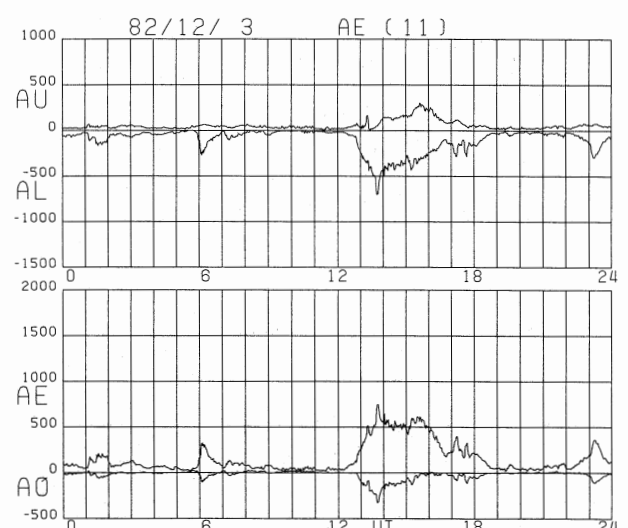
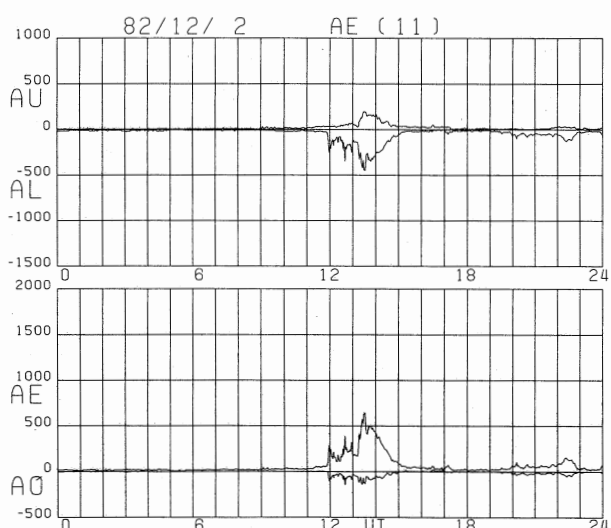
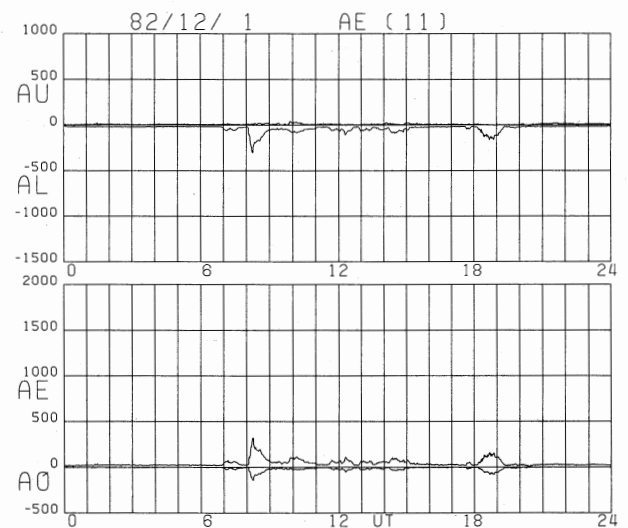
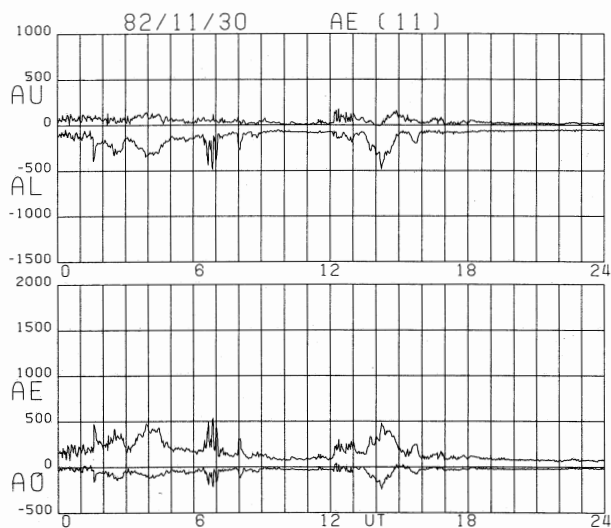
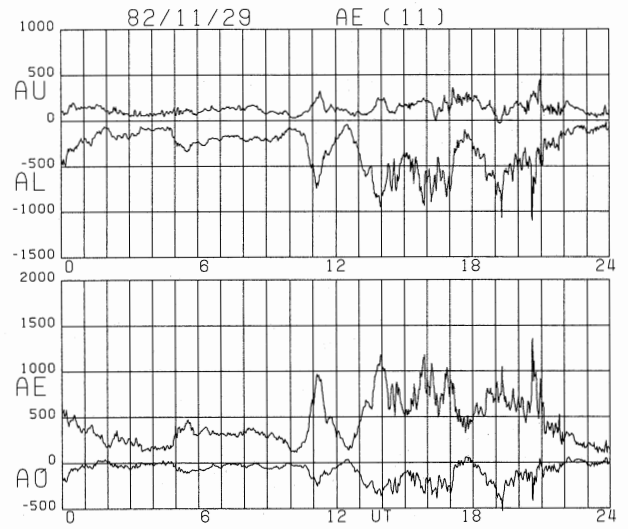
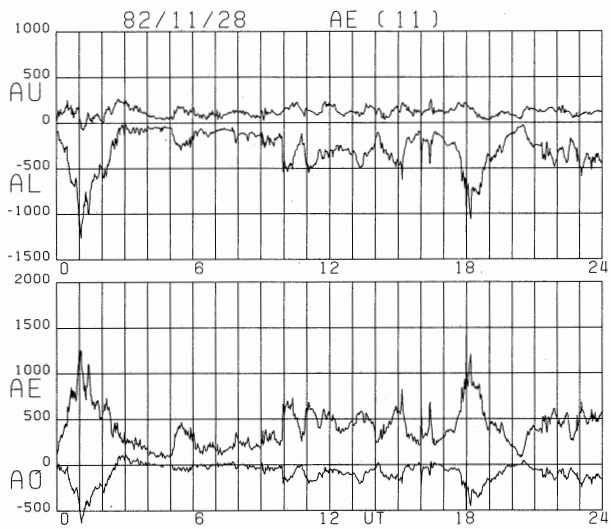


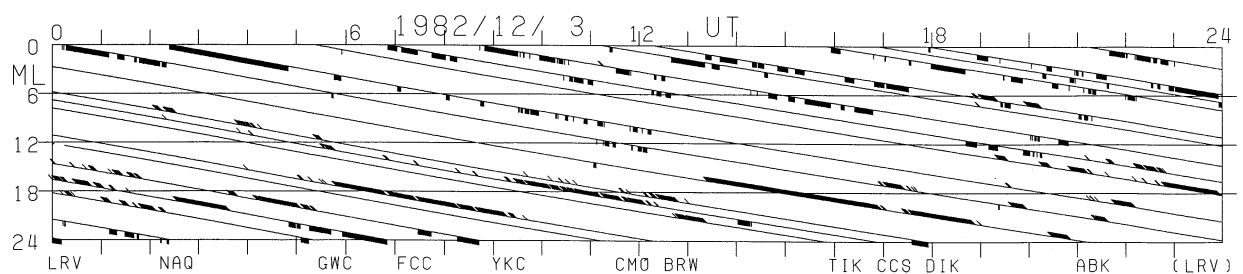
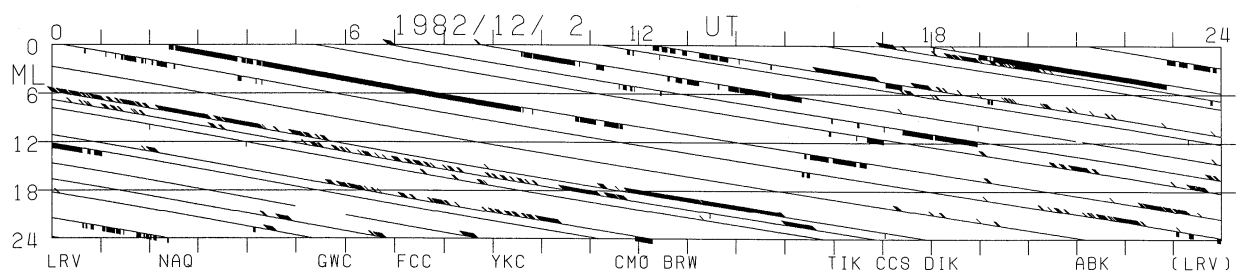
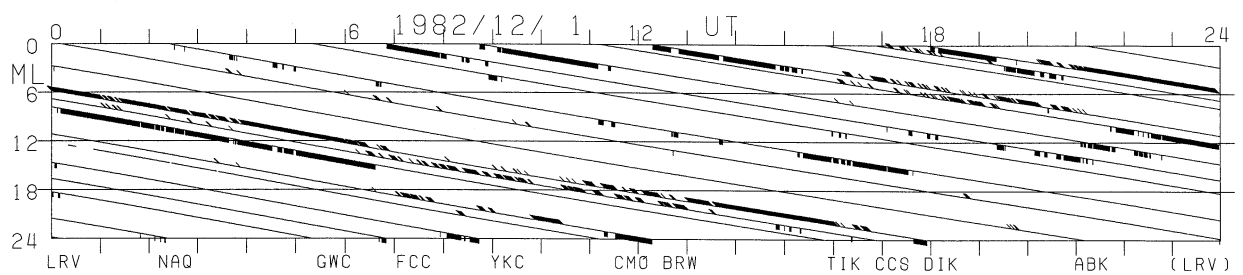
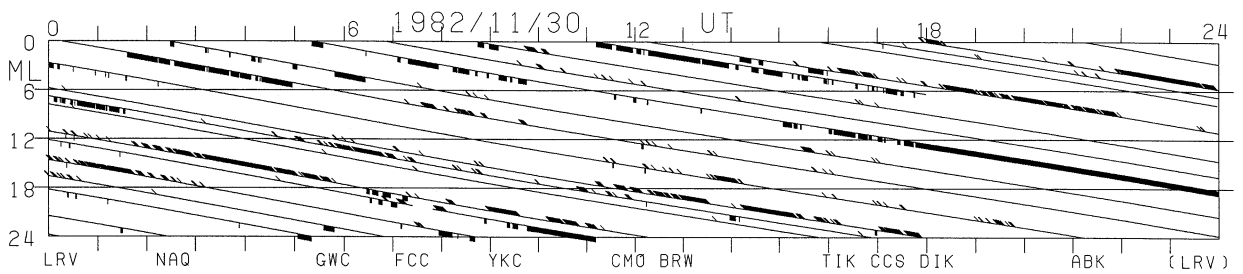
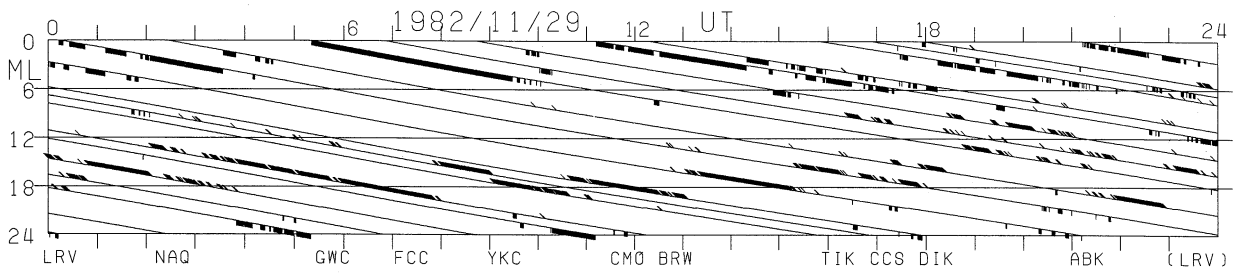
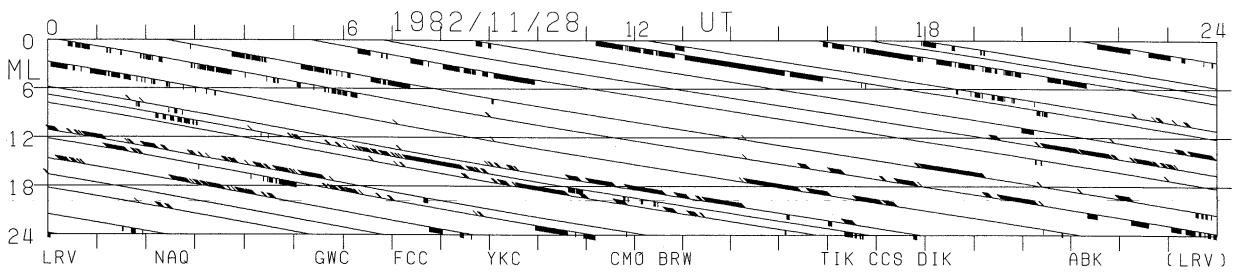


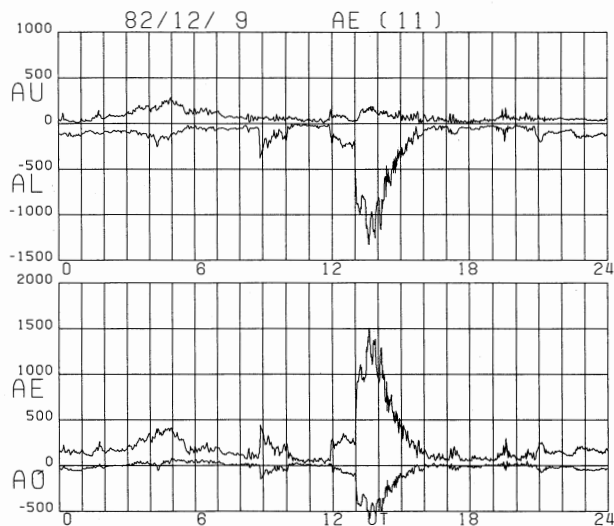
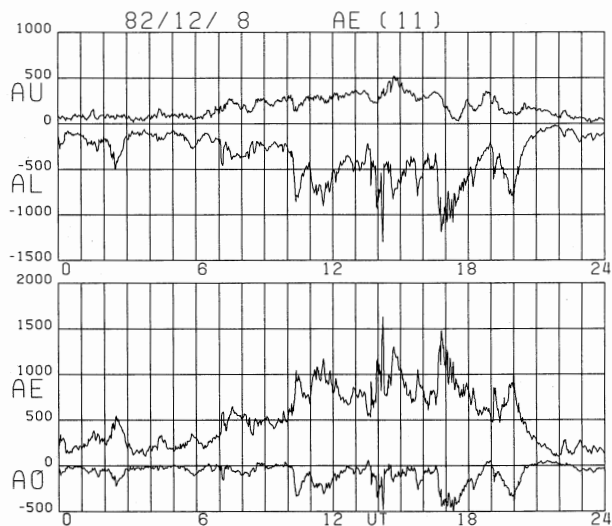
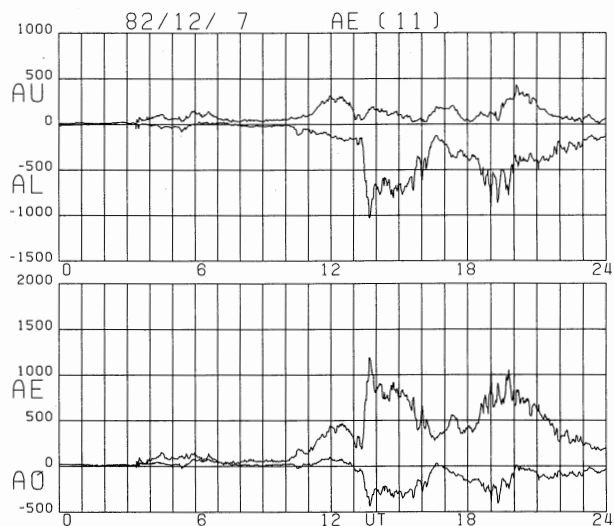
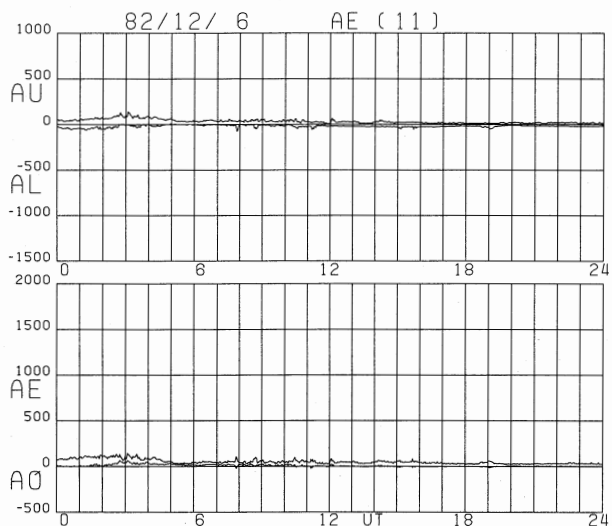
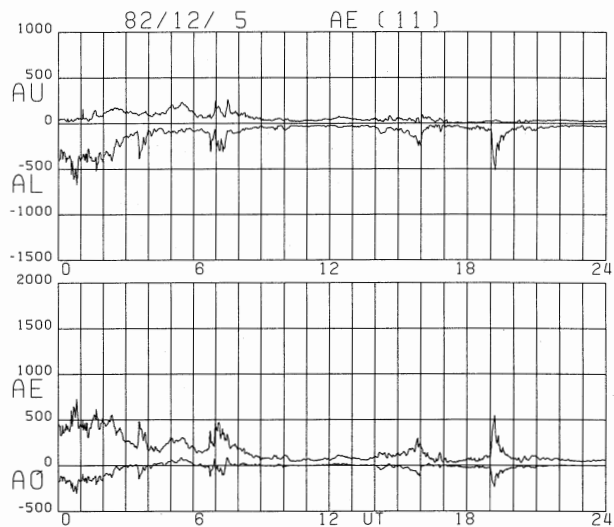
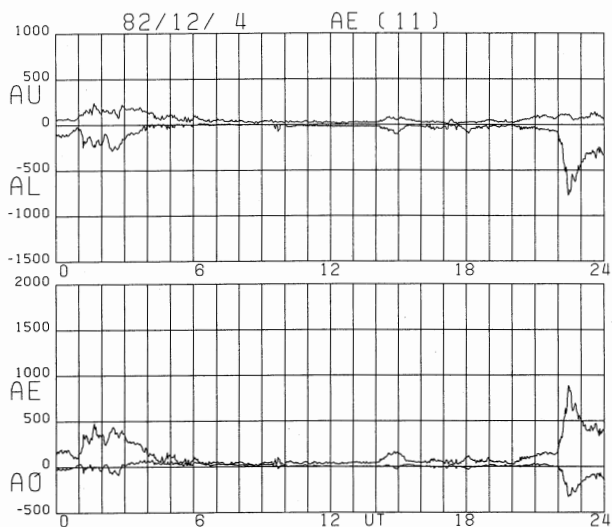


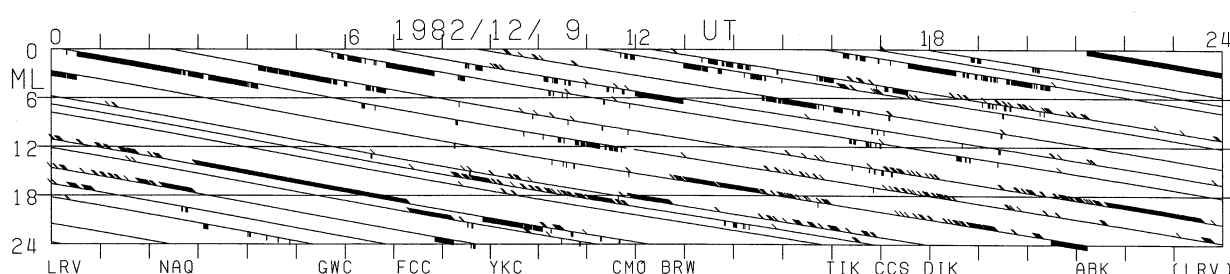
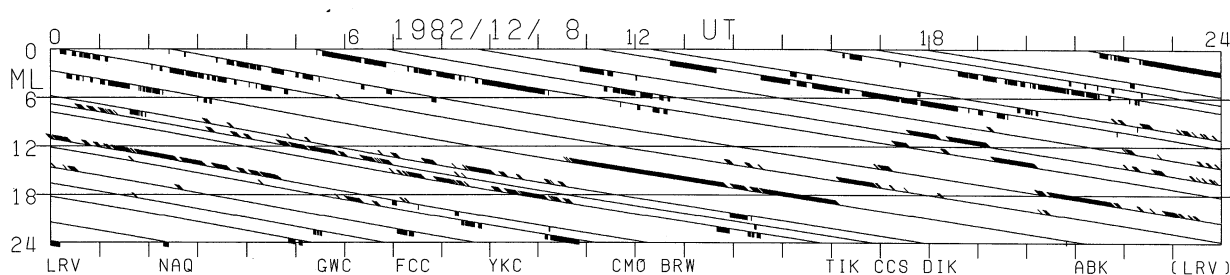
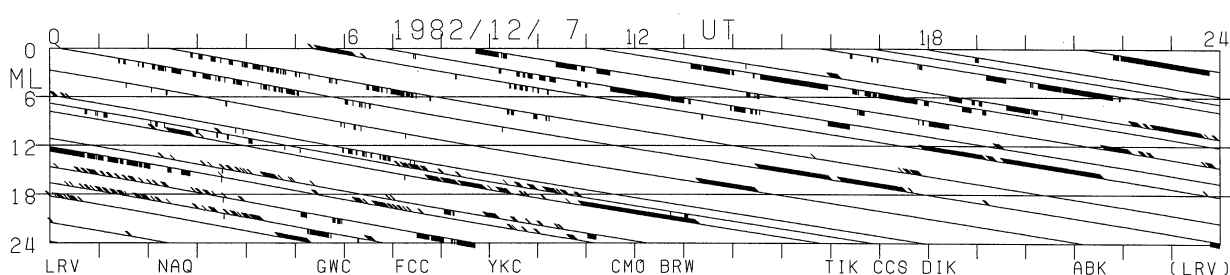
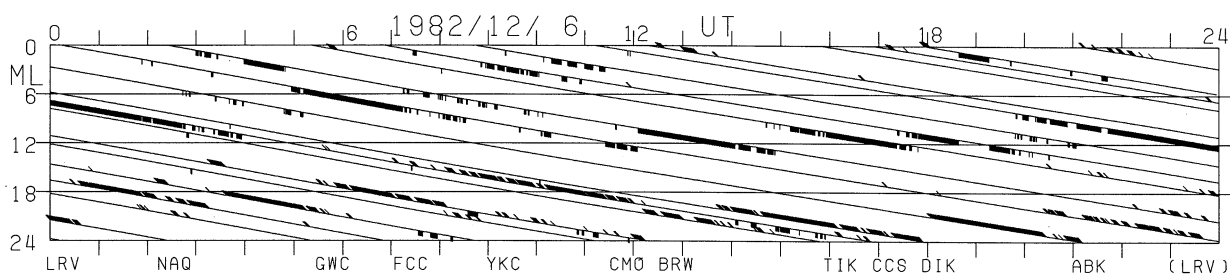
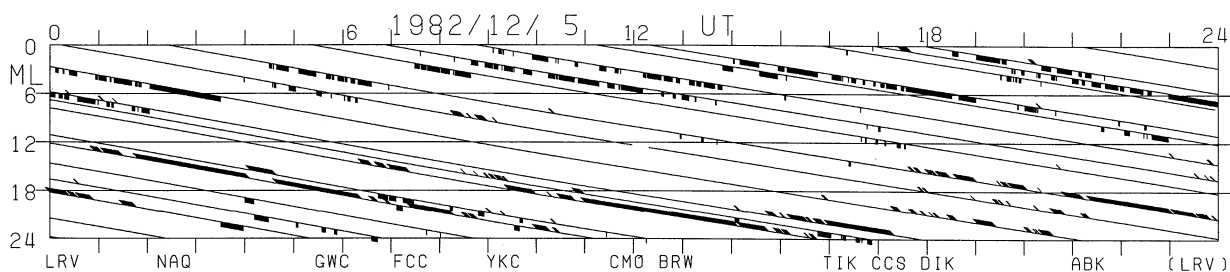
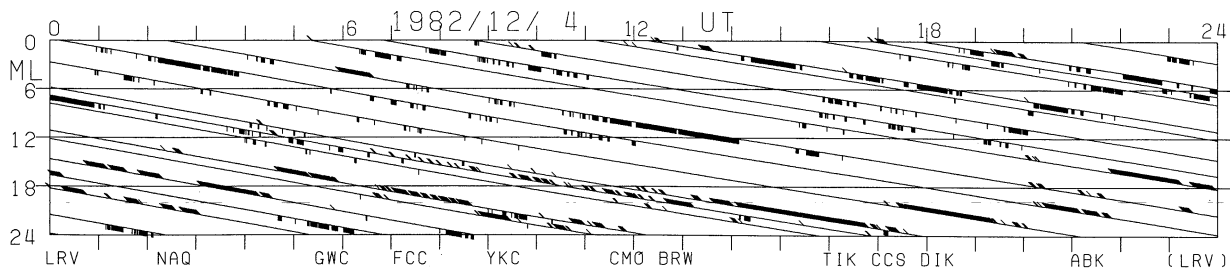


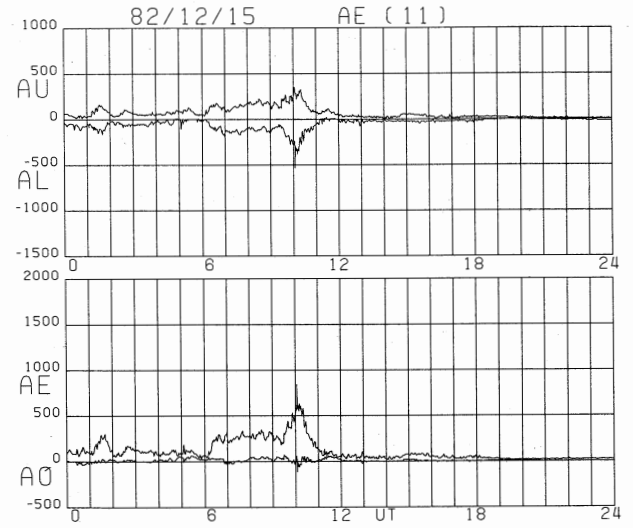
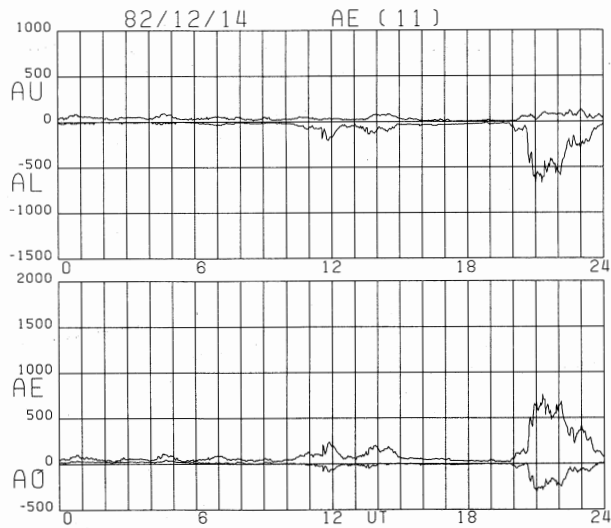
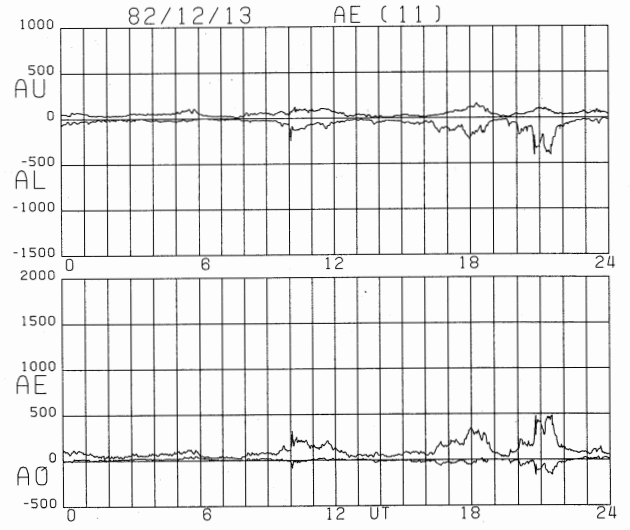
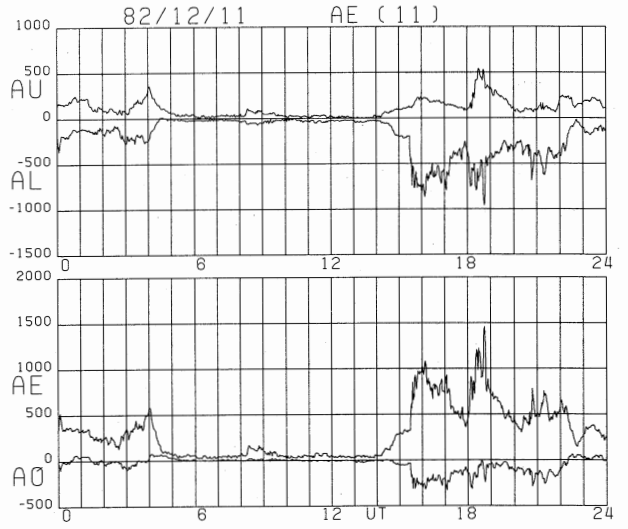
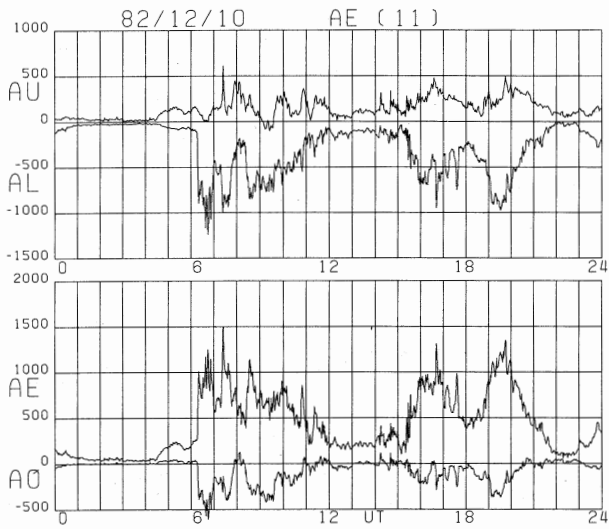


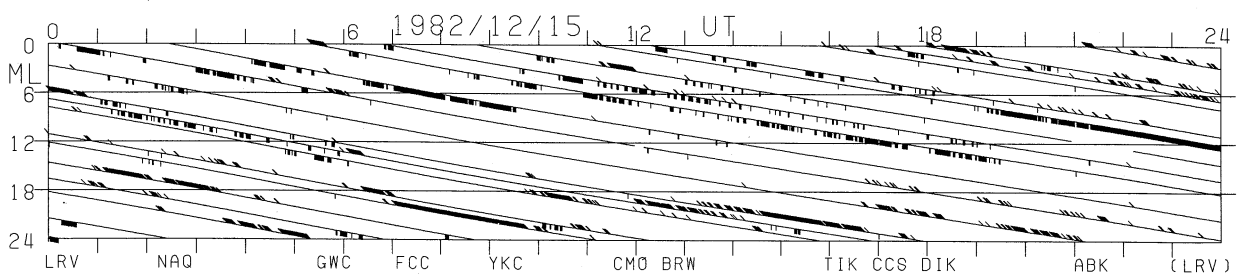
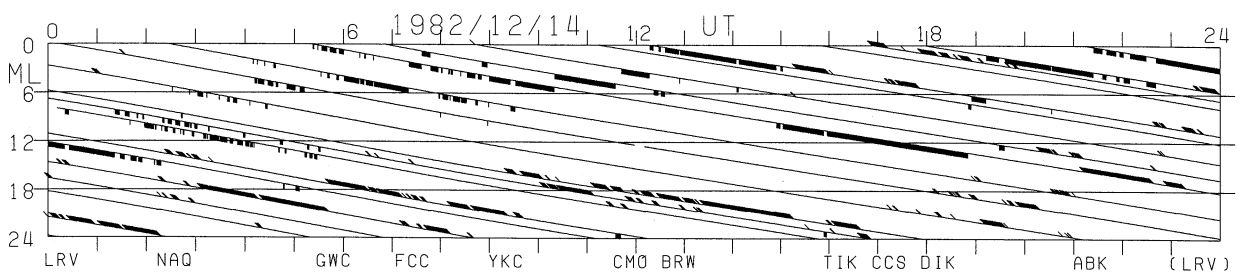
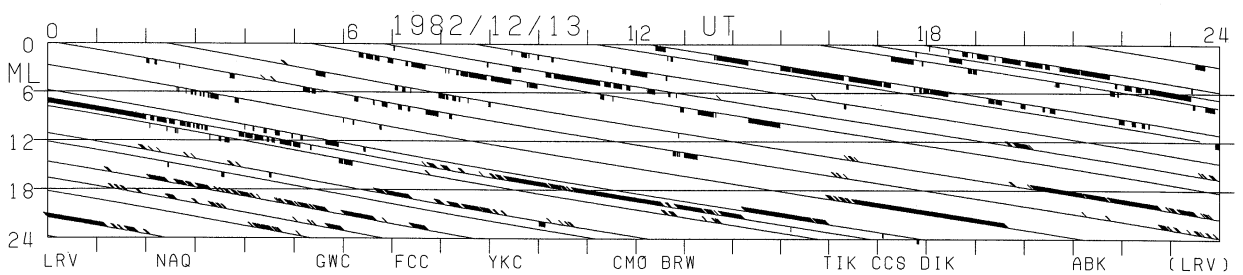
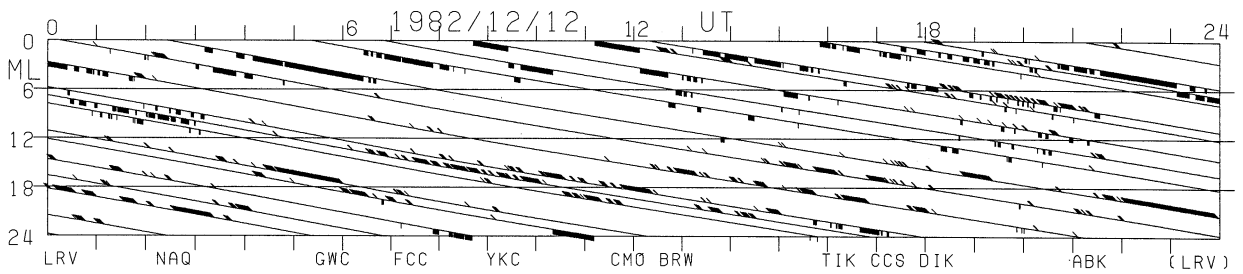
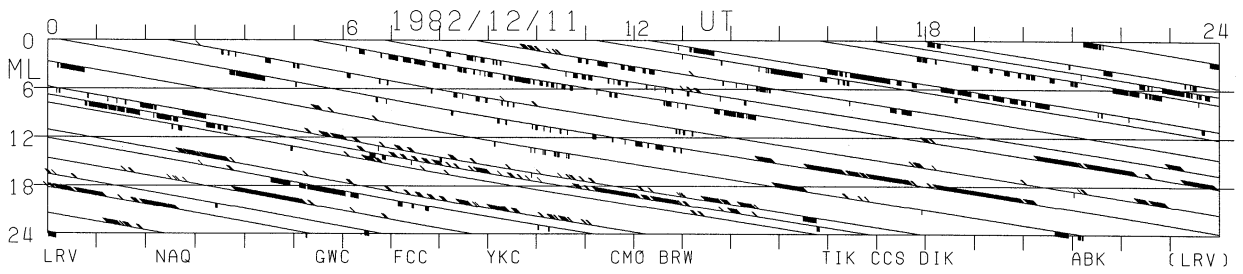
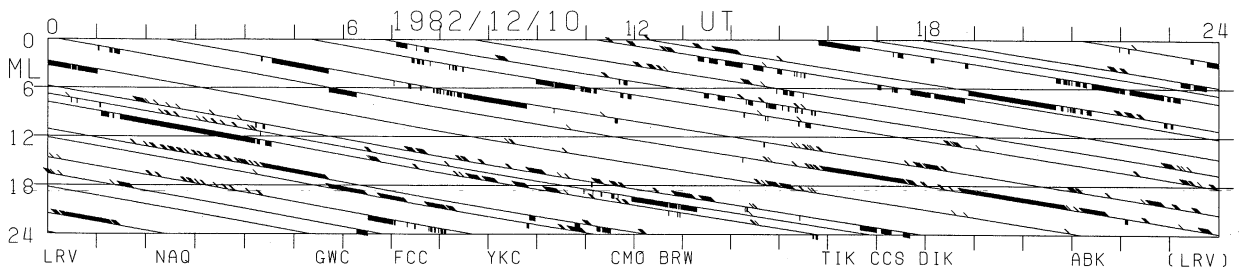


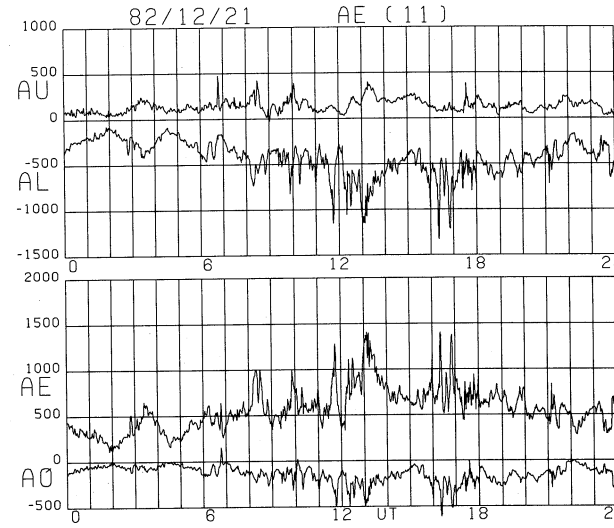
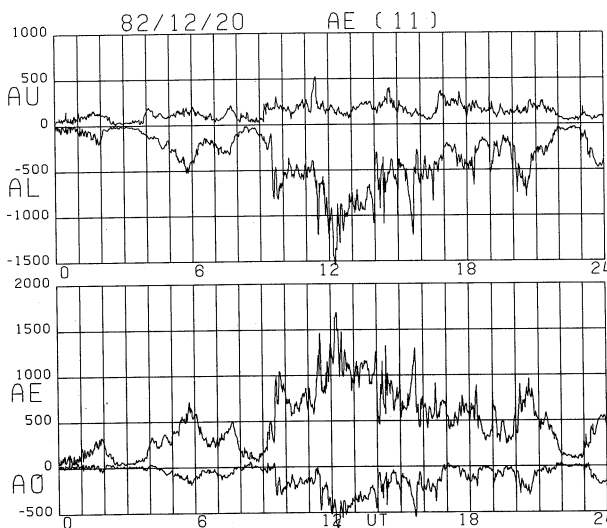
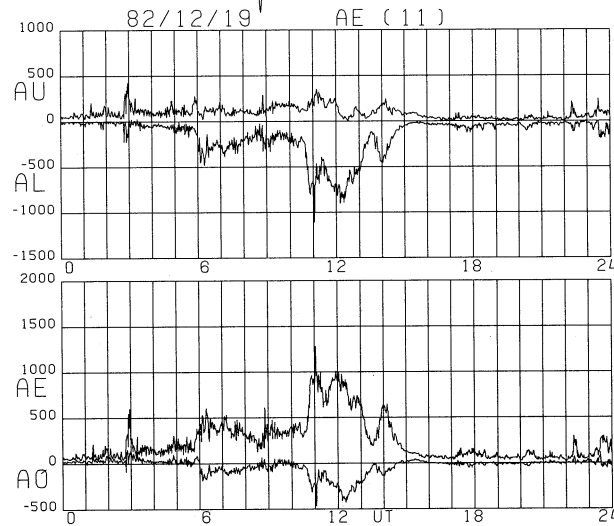
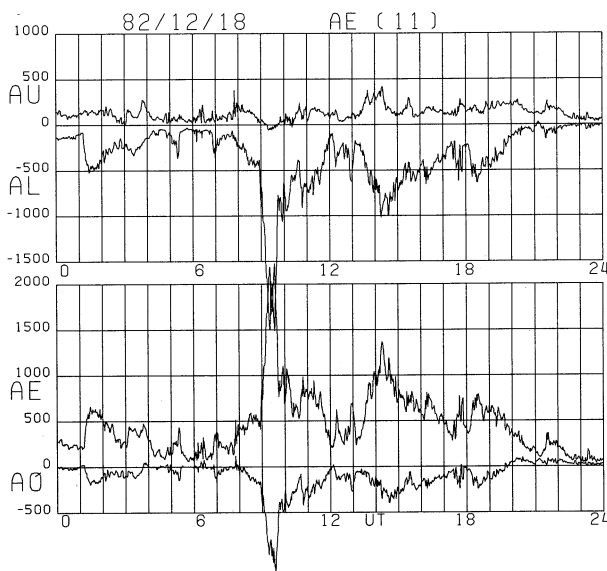
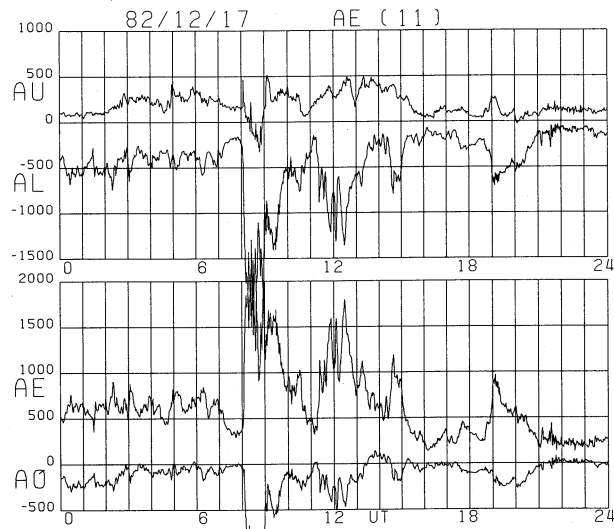
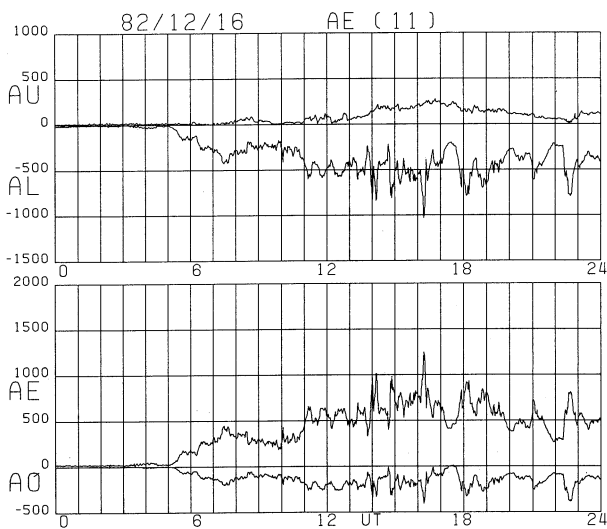


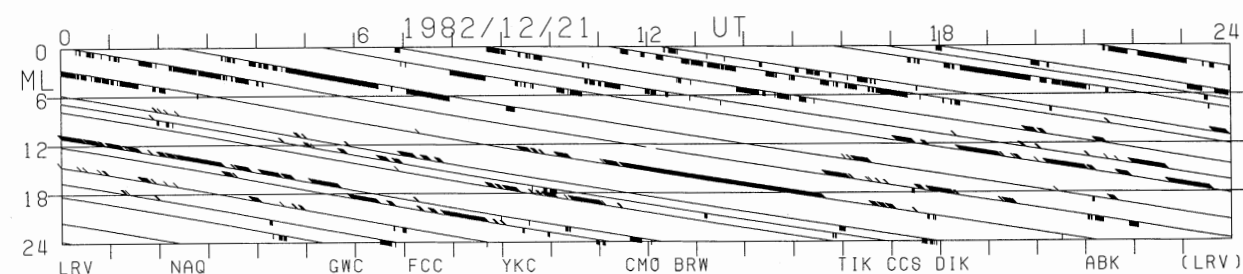
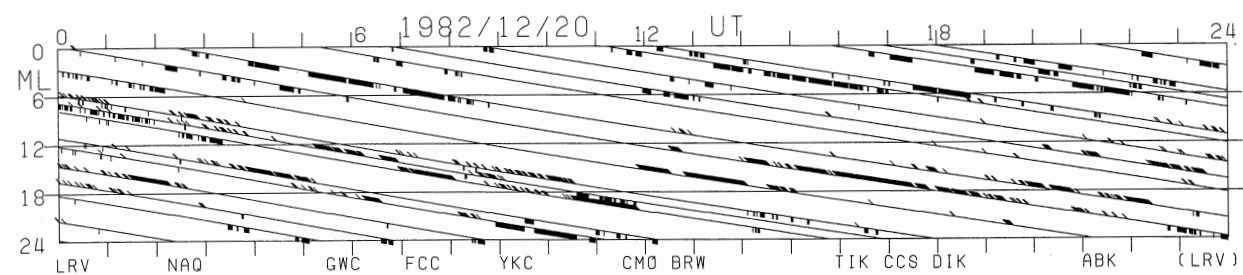
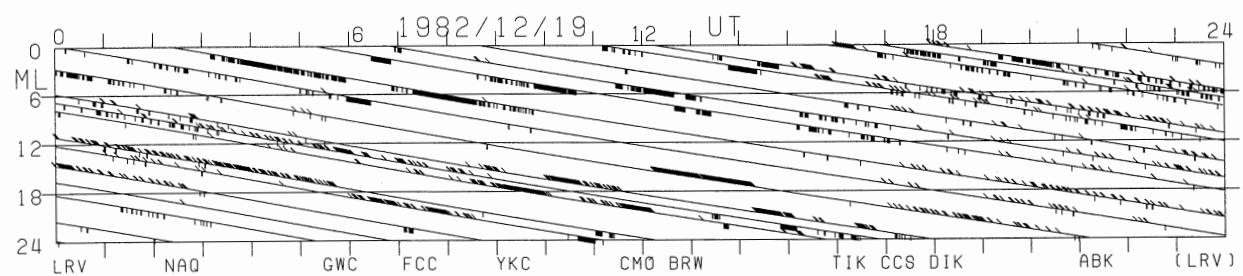
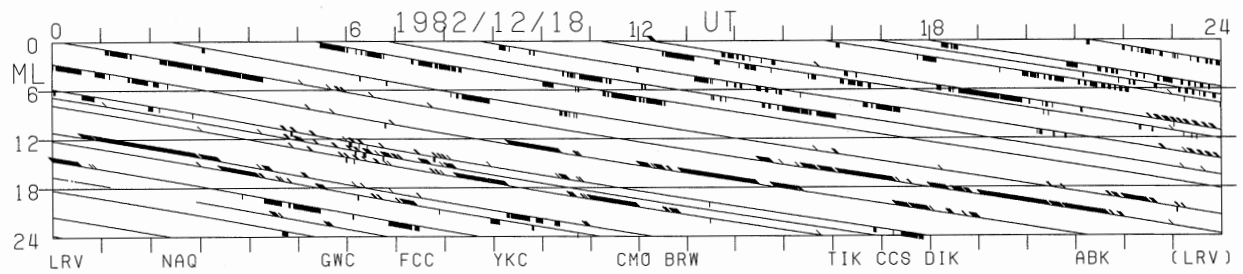
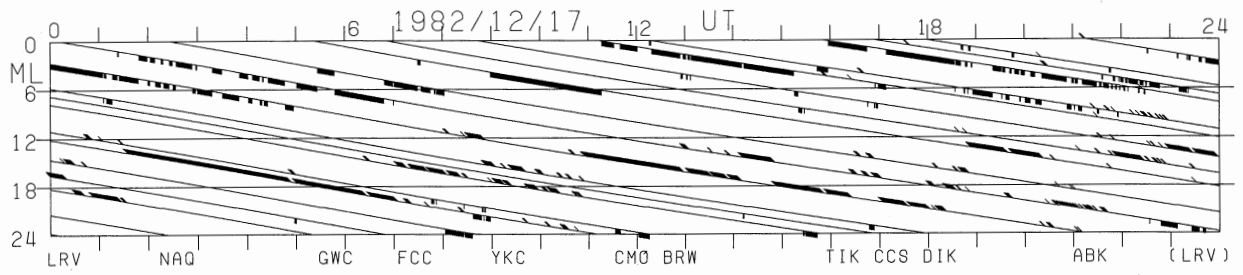
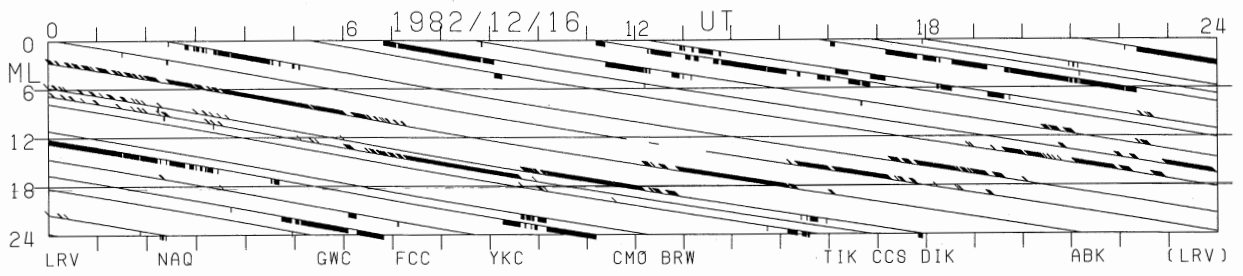


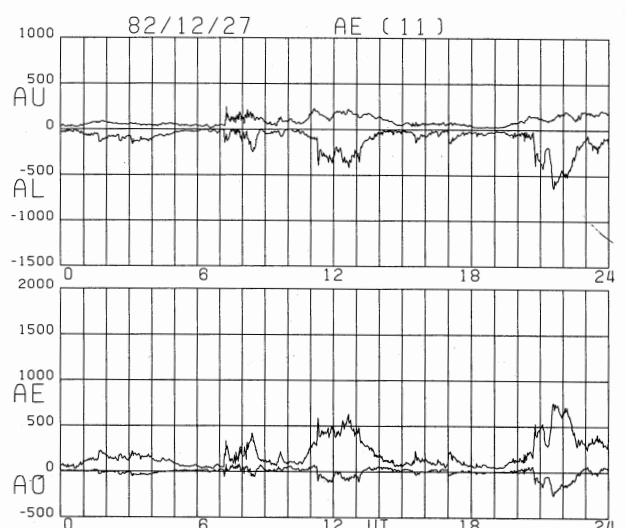
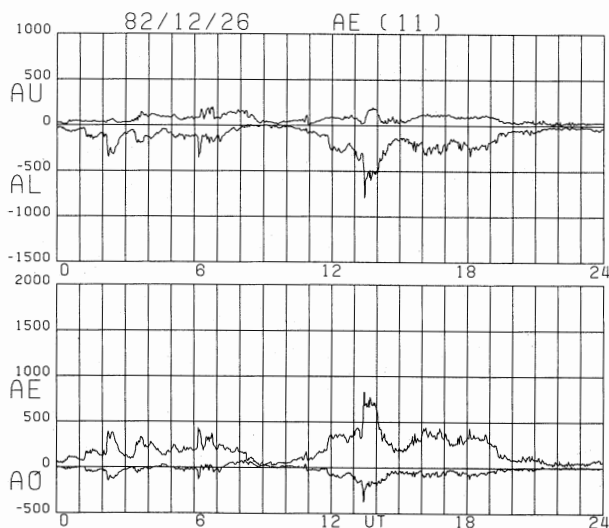
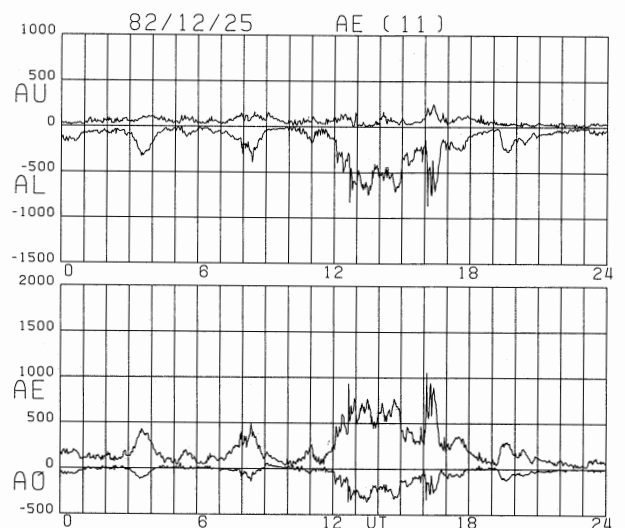
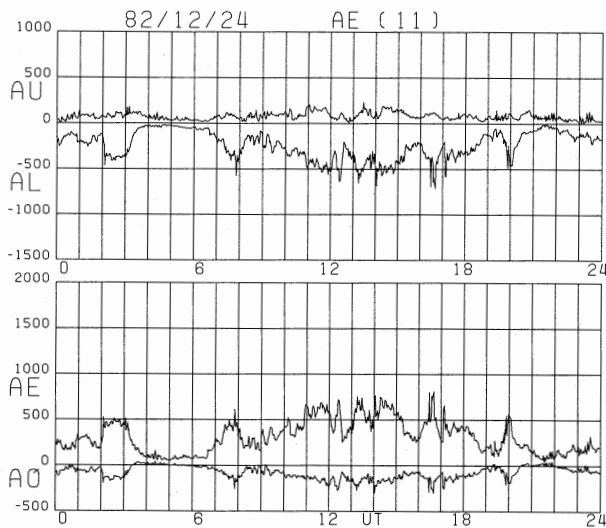
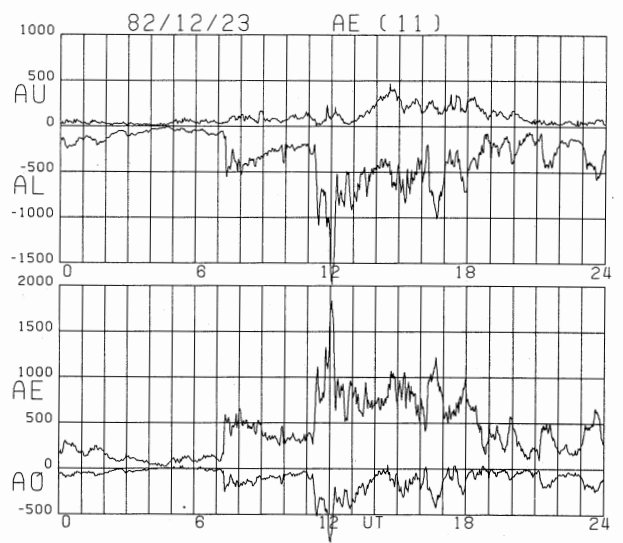
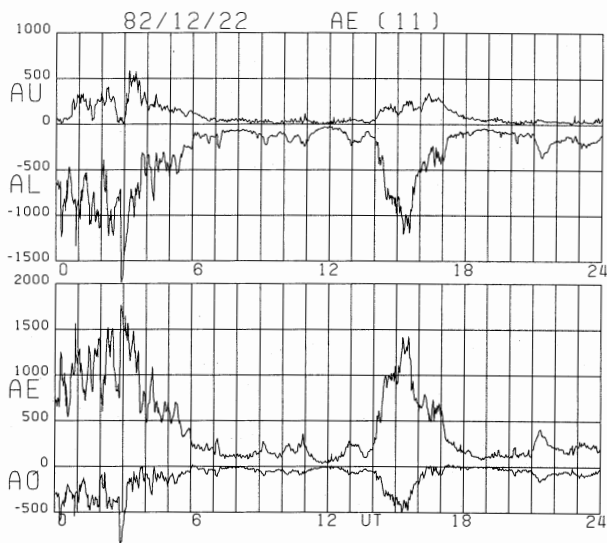


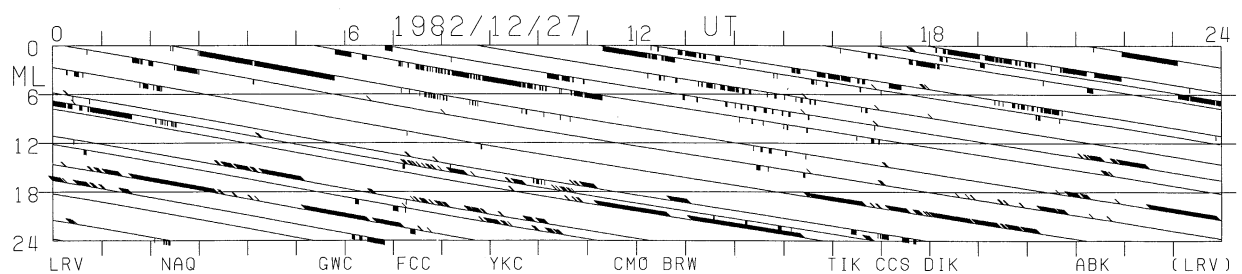
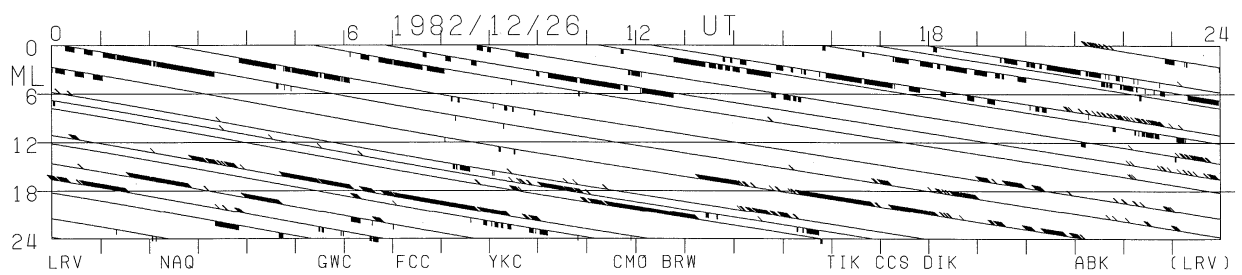
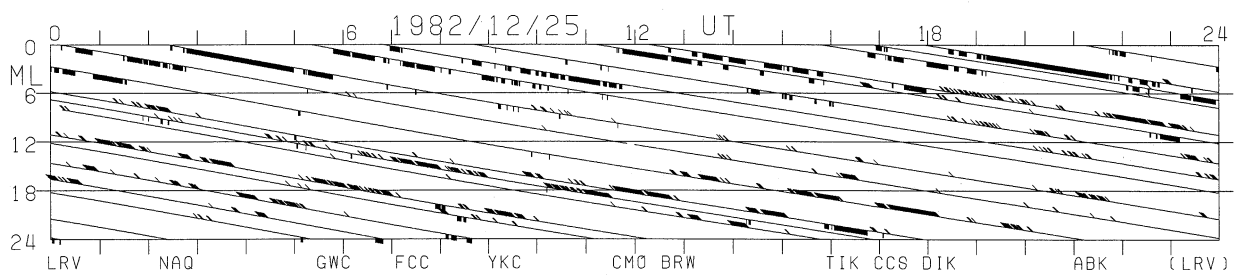
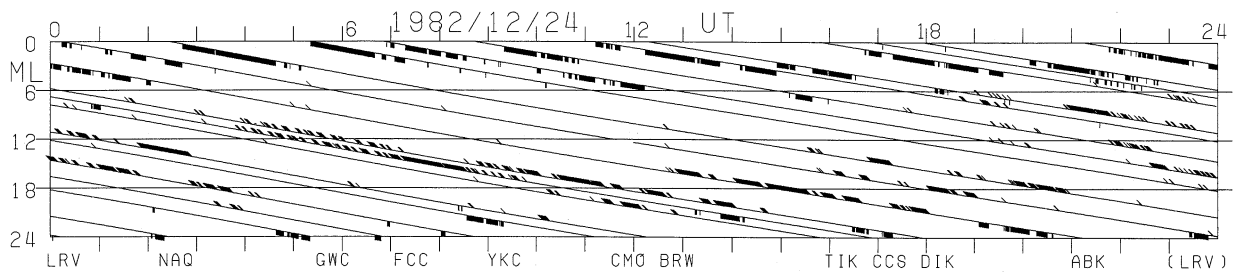
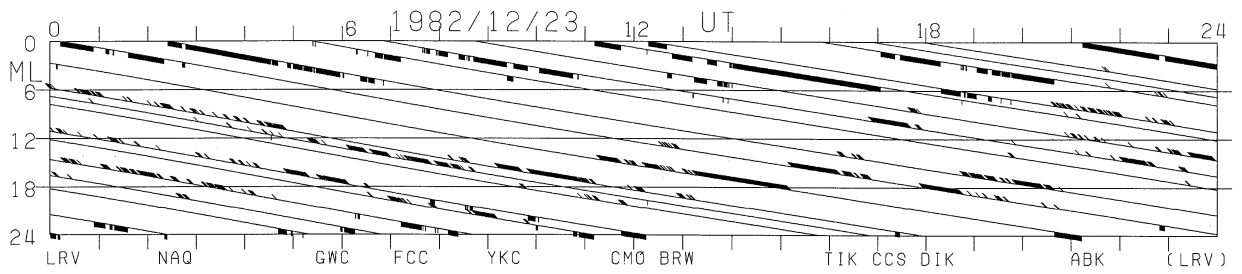
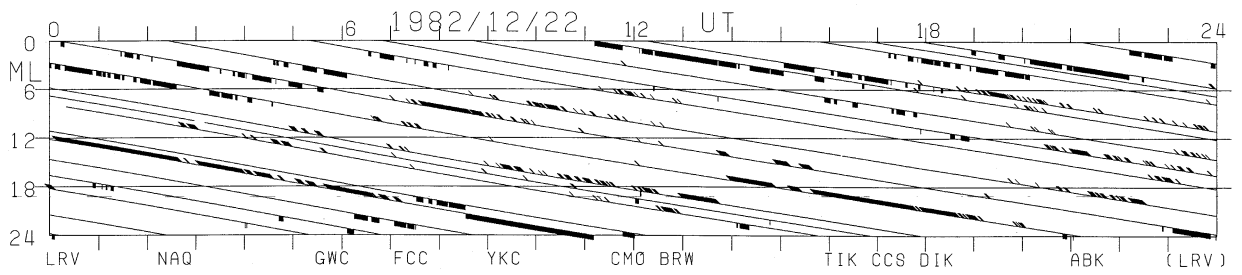


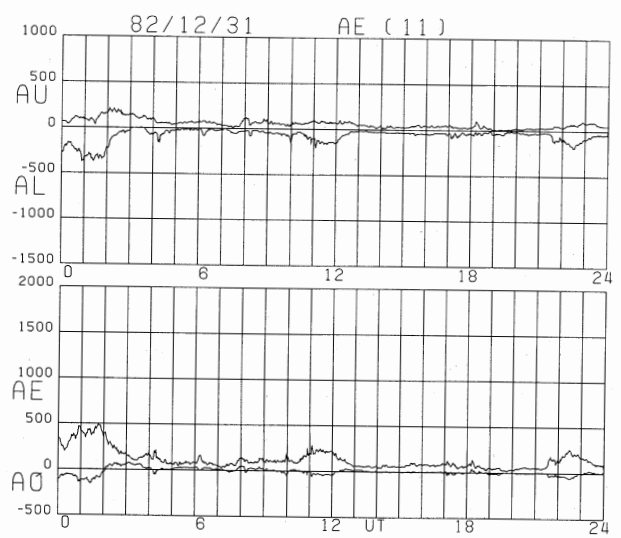
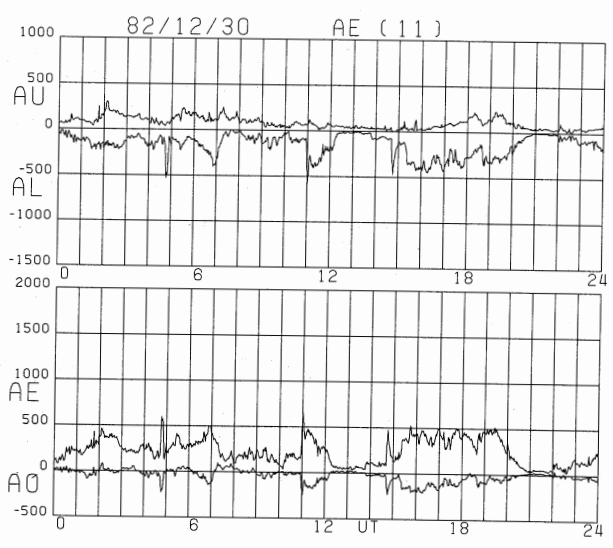
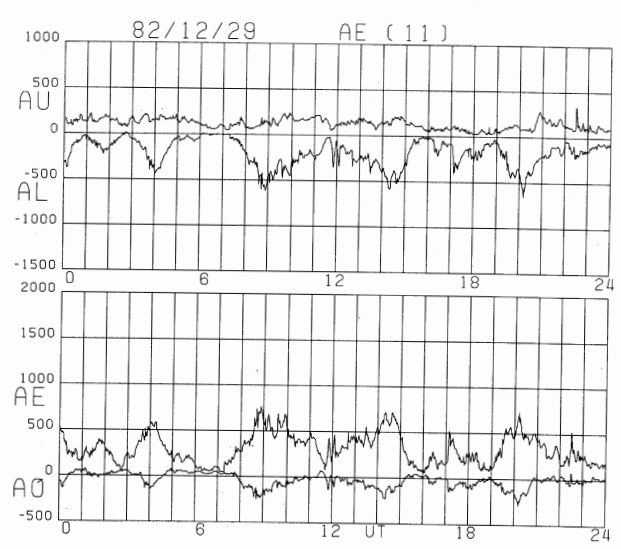
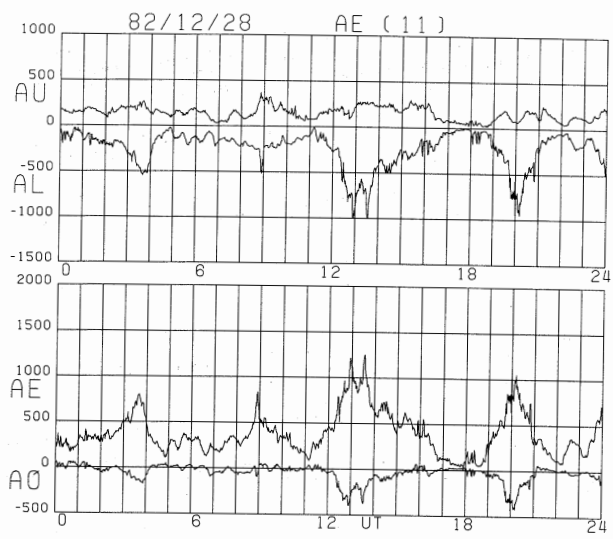


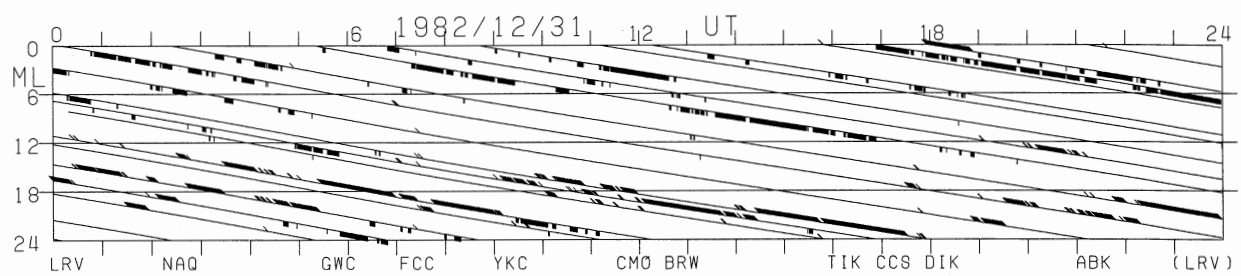
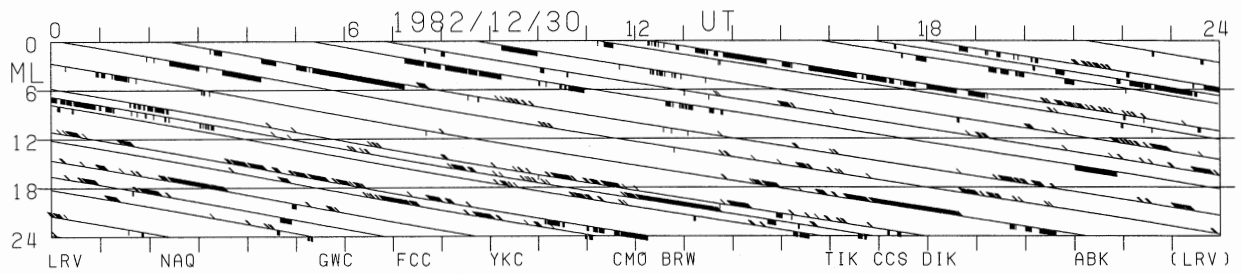
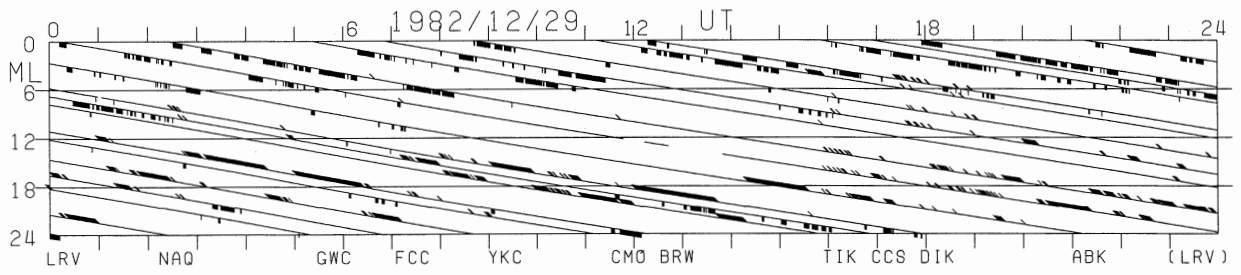
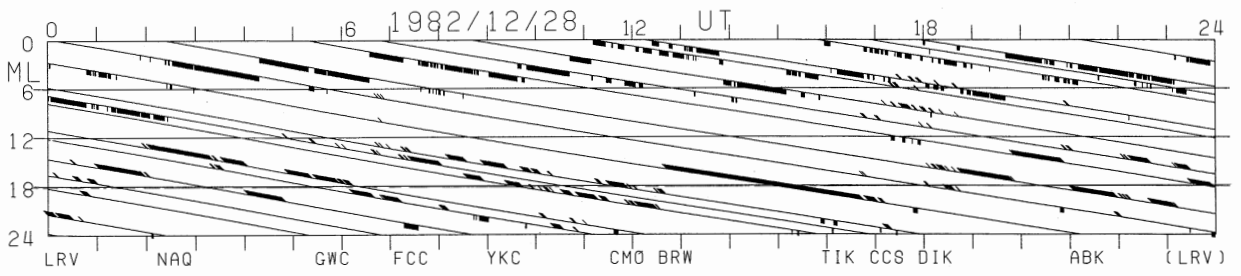


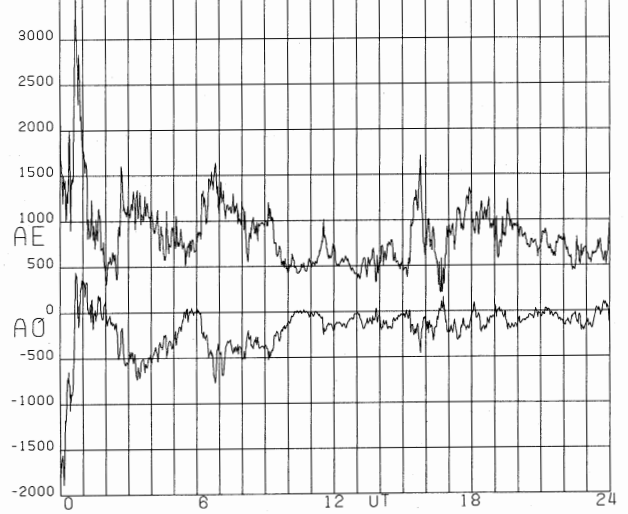
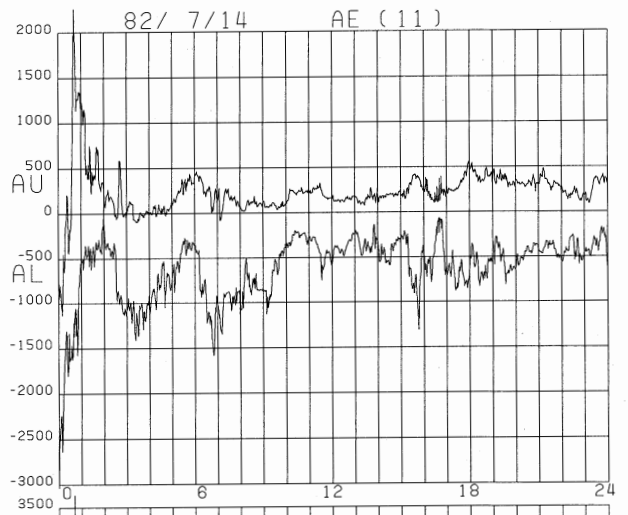
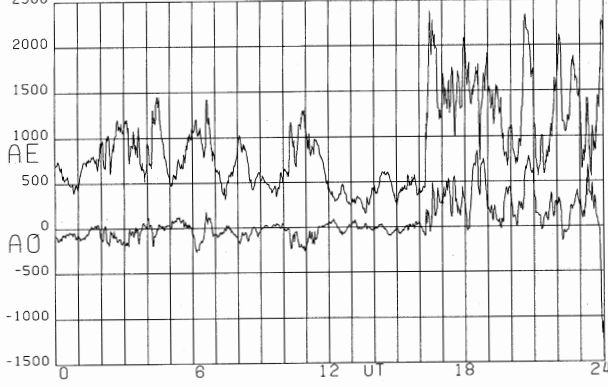
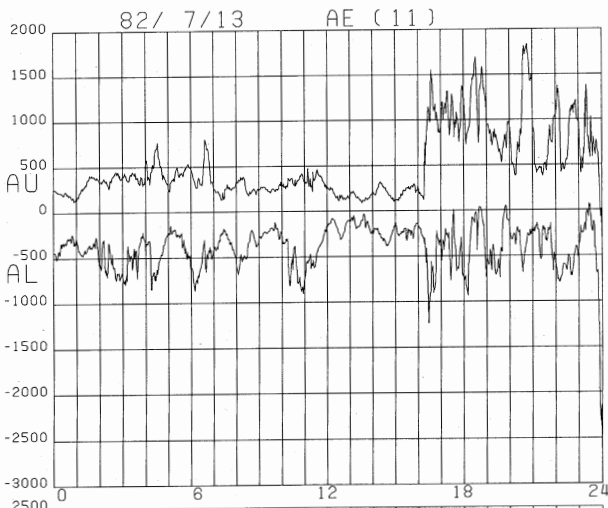


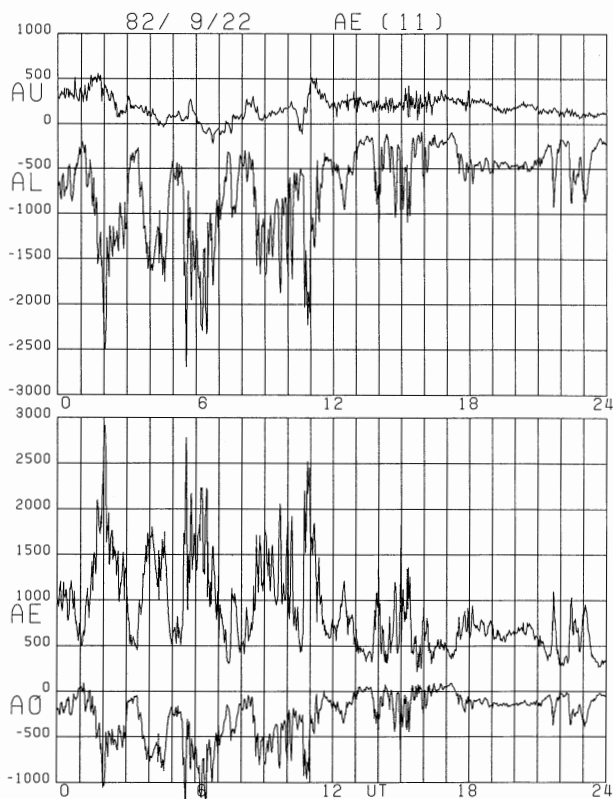
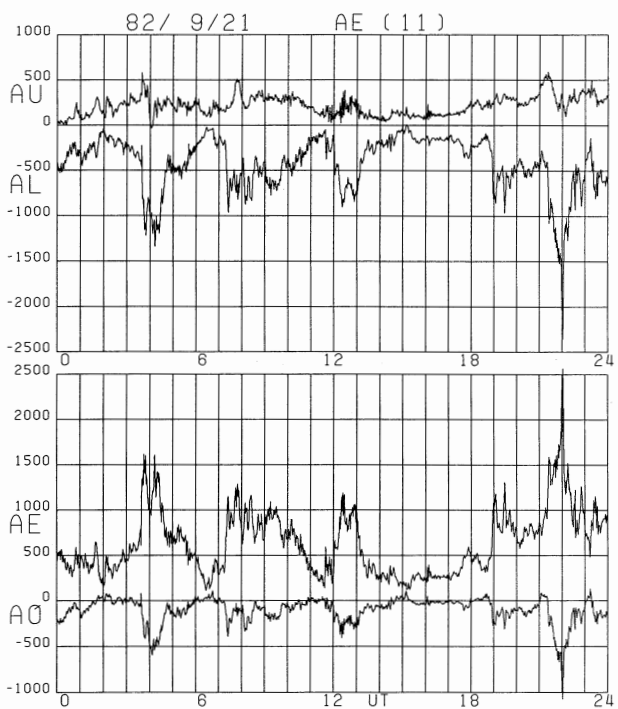
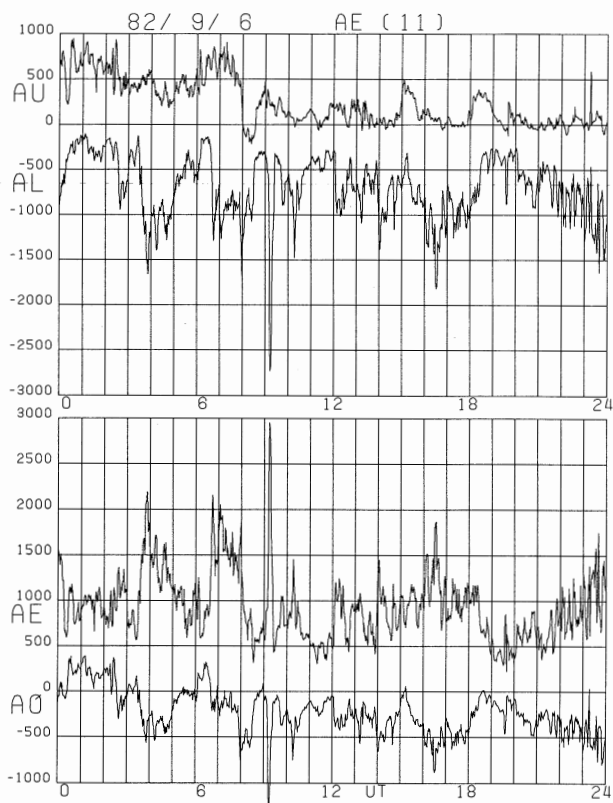
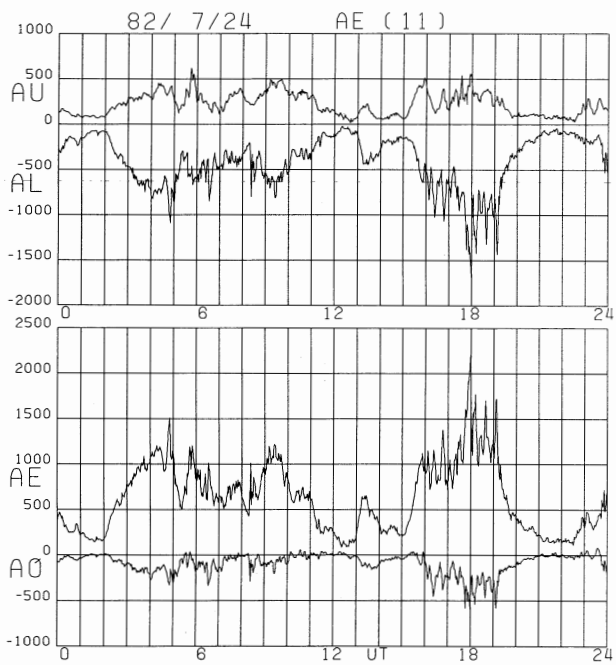












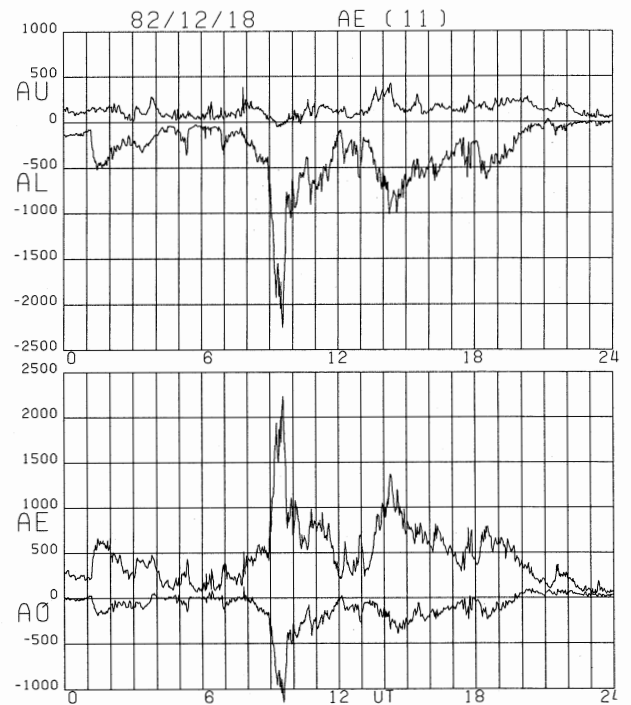
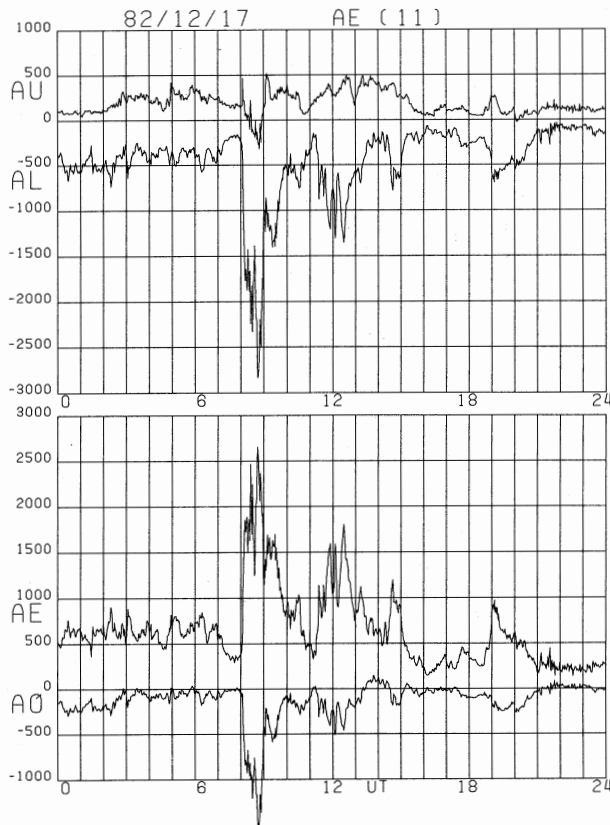
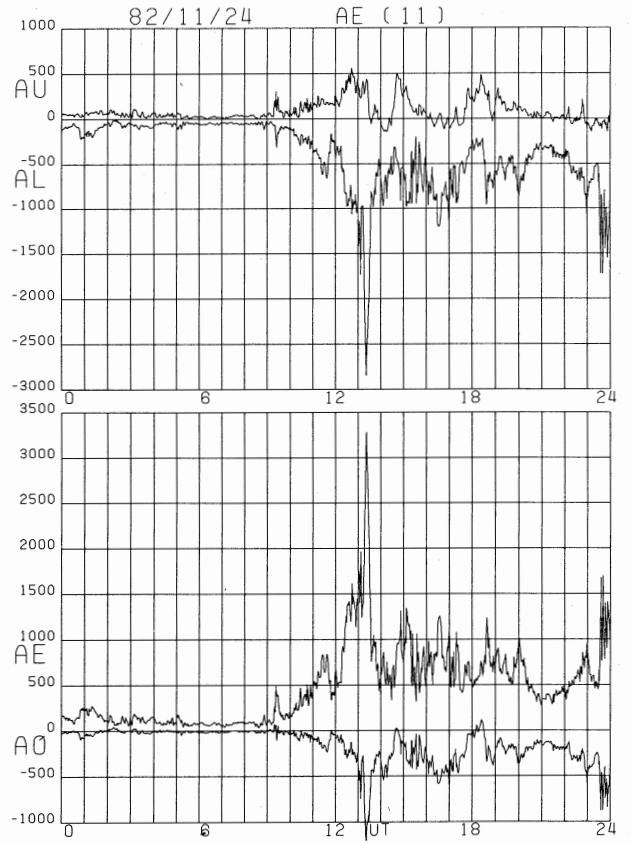
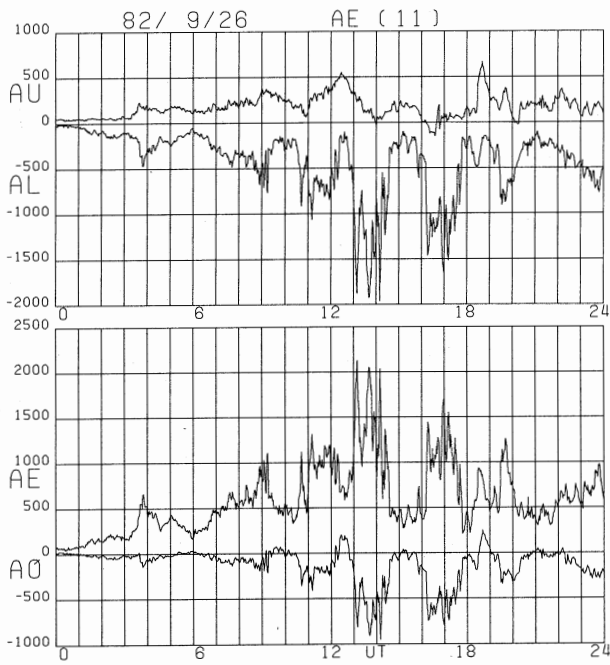
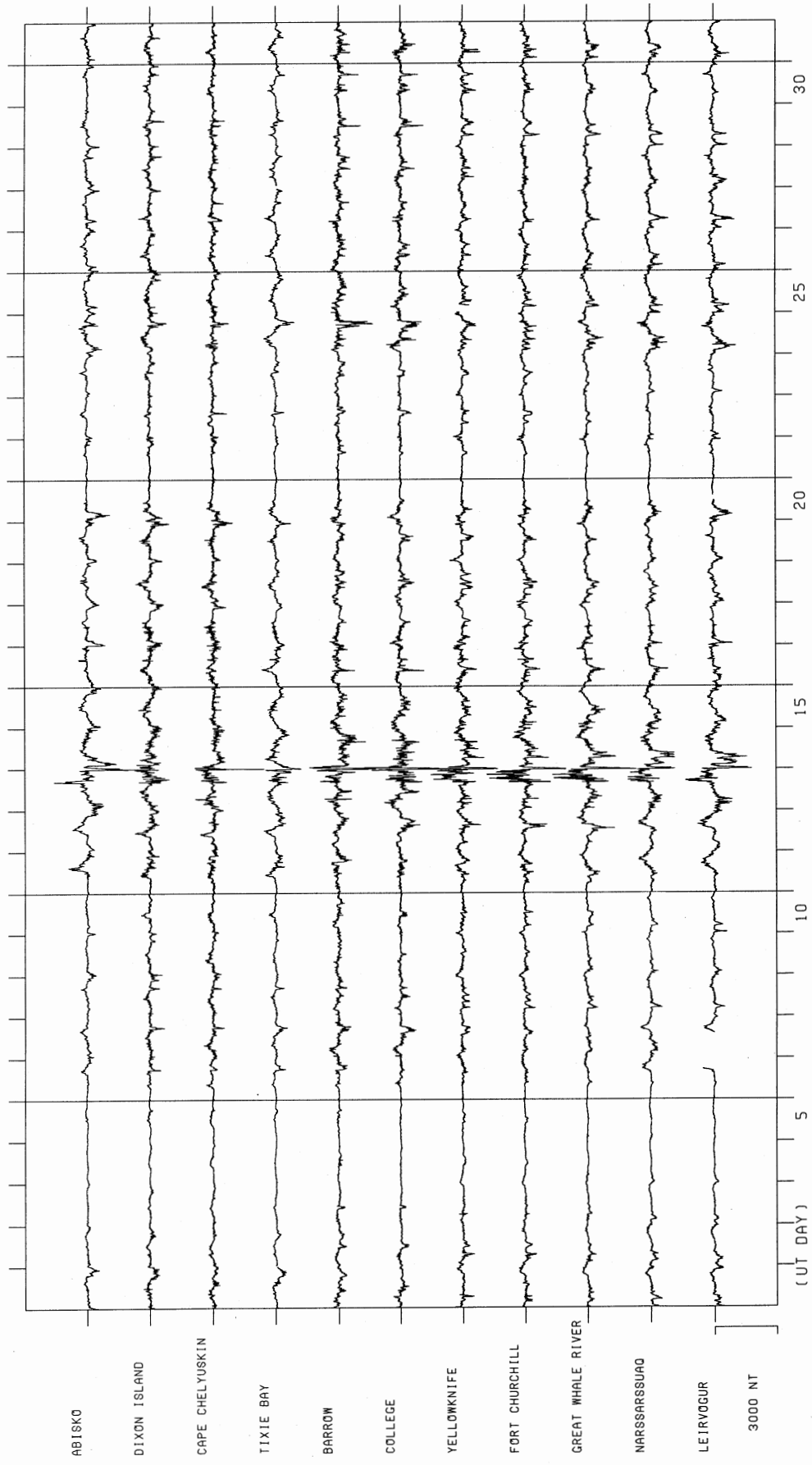


FIGURE 6

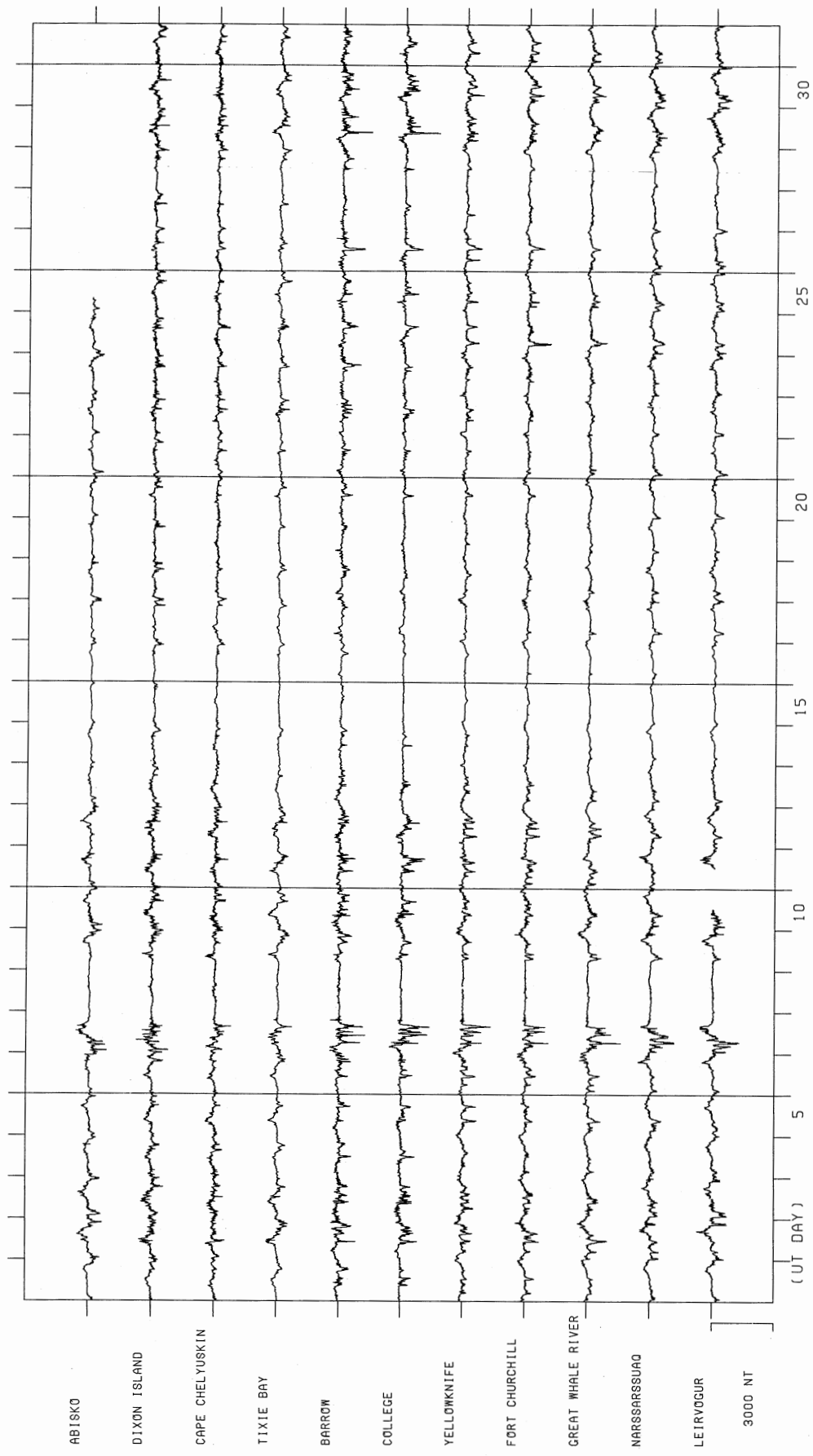
The H traces of magnetograms from AE(11) stations in every month from July to December 1982.

FIGURE 7

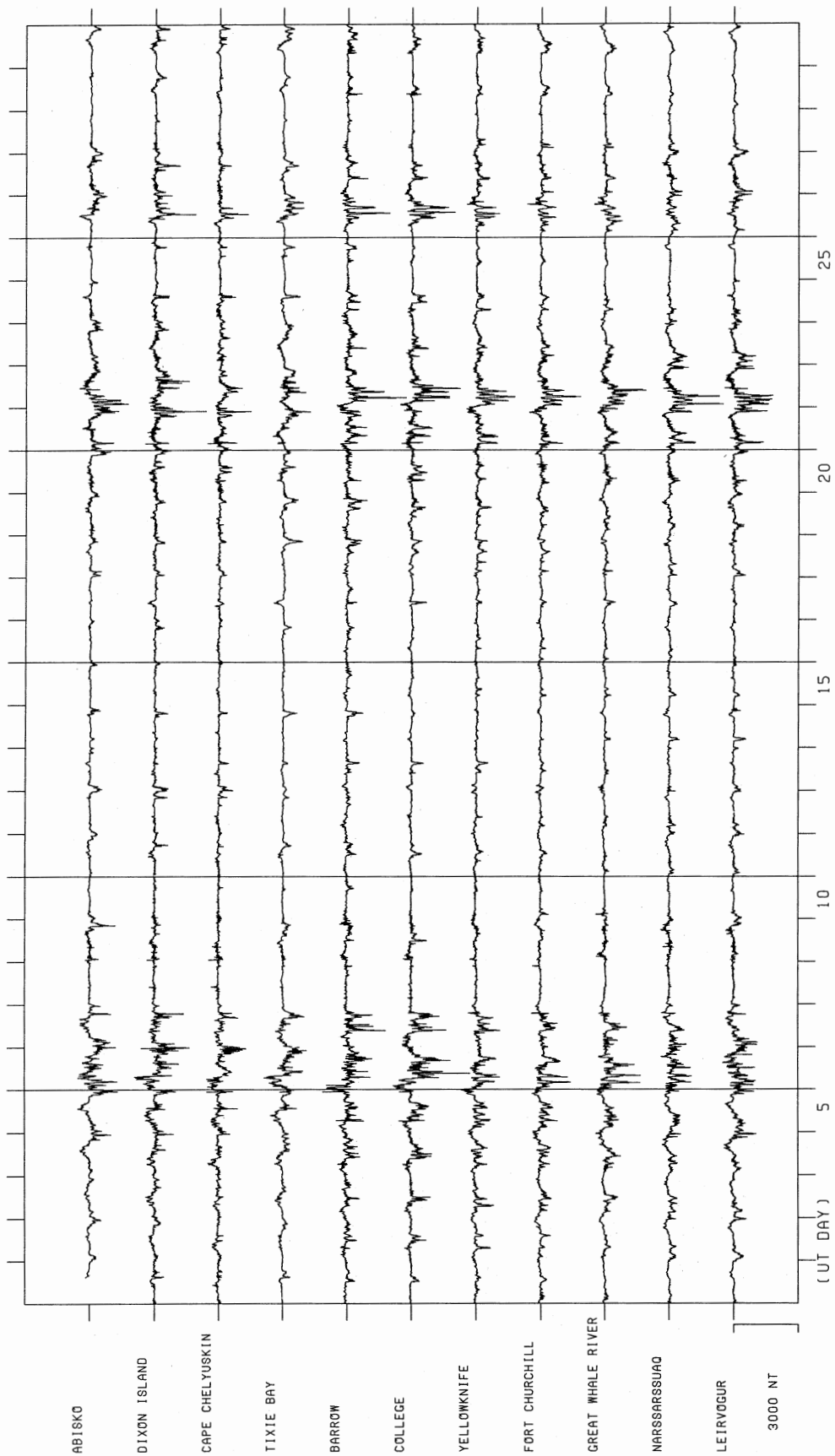
Plots of hourly values for each index from July to December 1982.



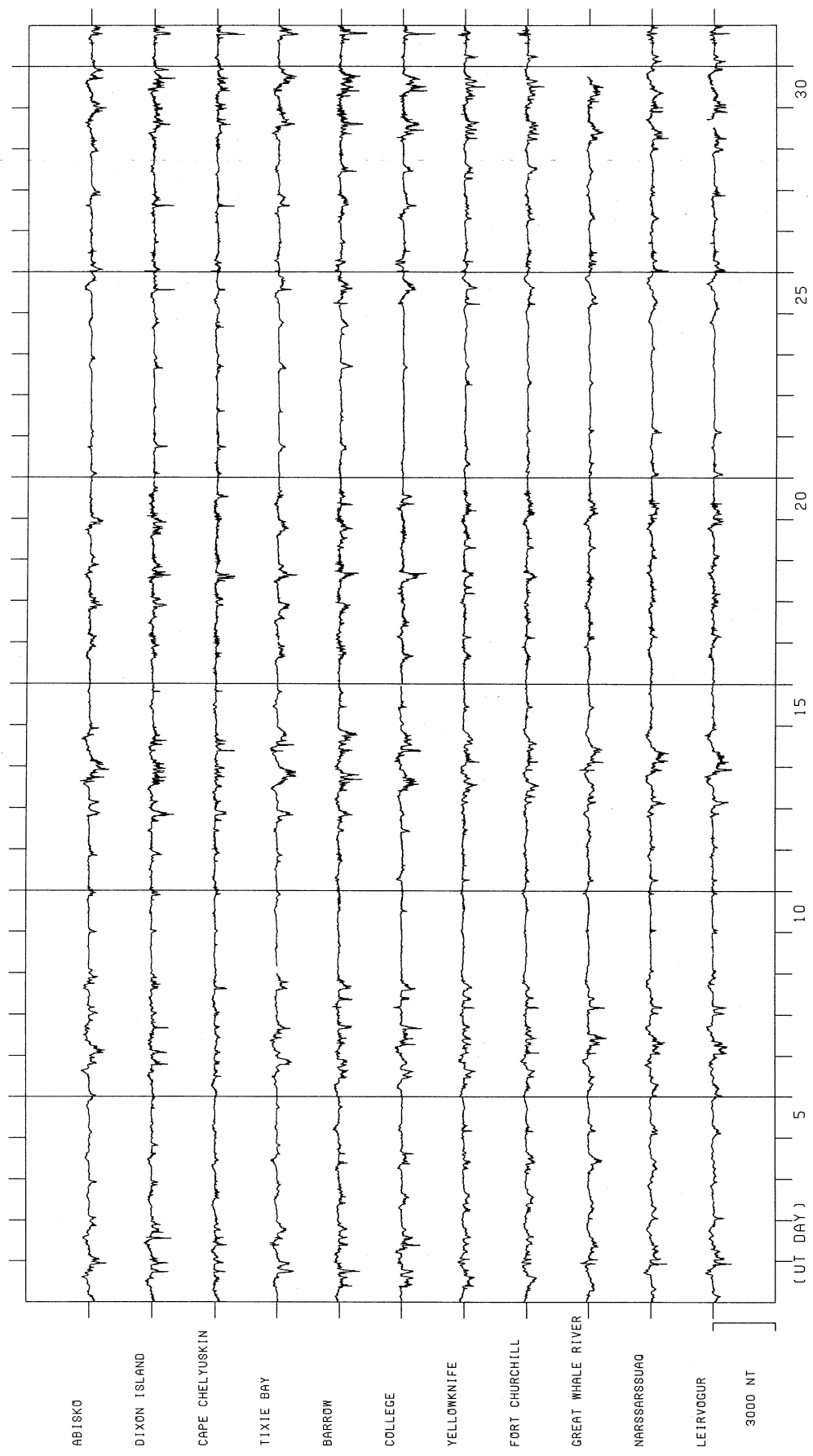
STACKED COMMON SCALE MAGNETOGRAMS FOR JULY 1982



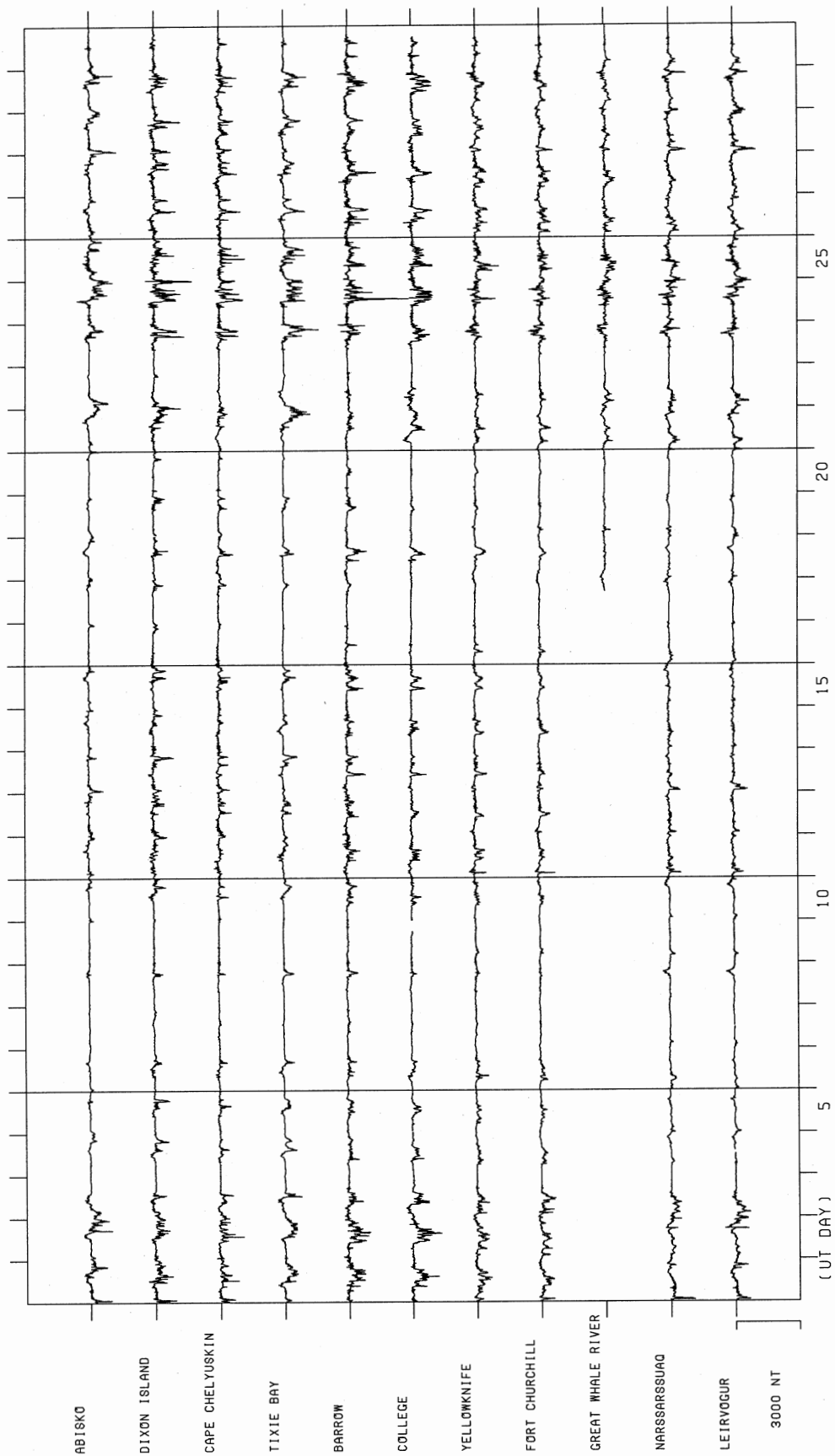
STACKED COMMON SCALE MAGNETOGRAMS FOR AUGUST 1982



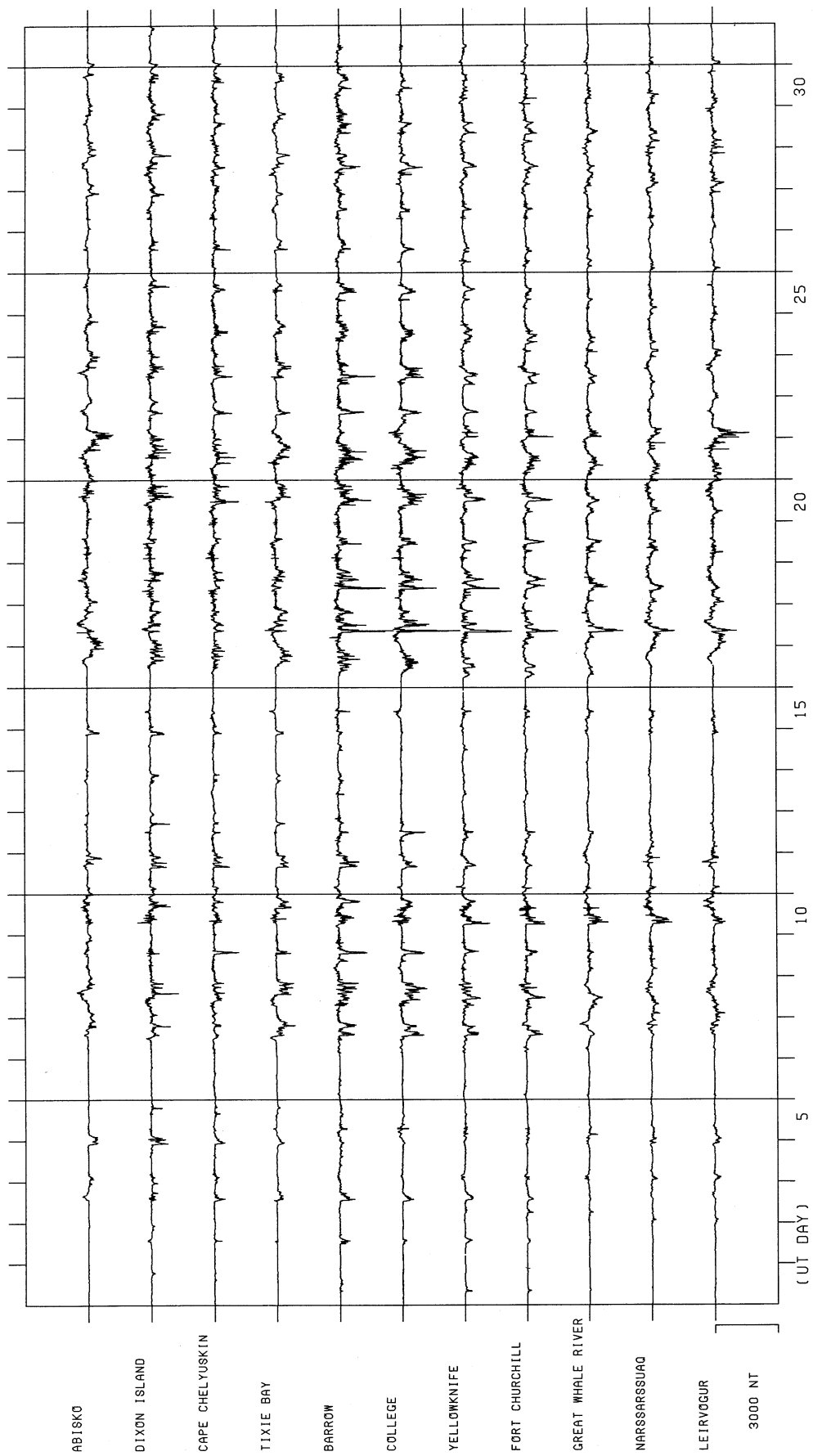
STACKED COMMON SCALE MAGNETOGRAMS FOR SEPTEMBER 1982



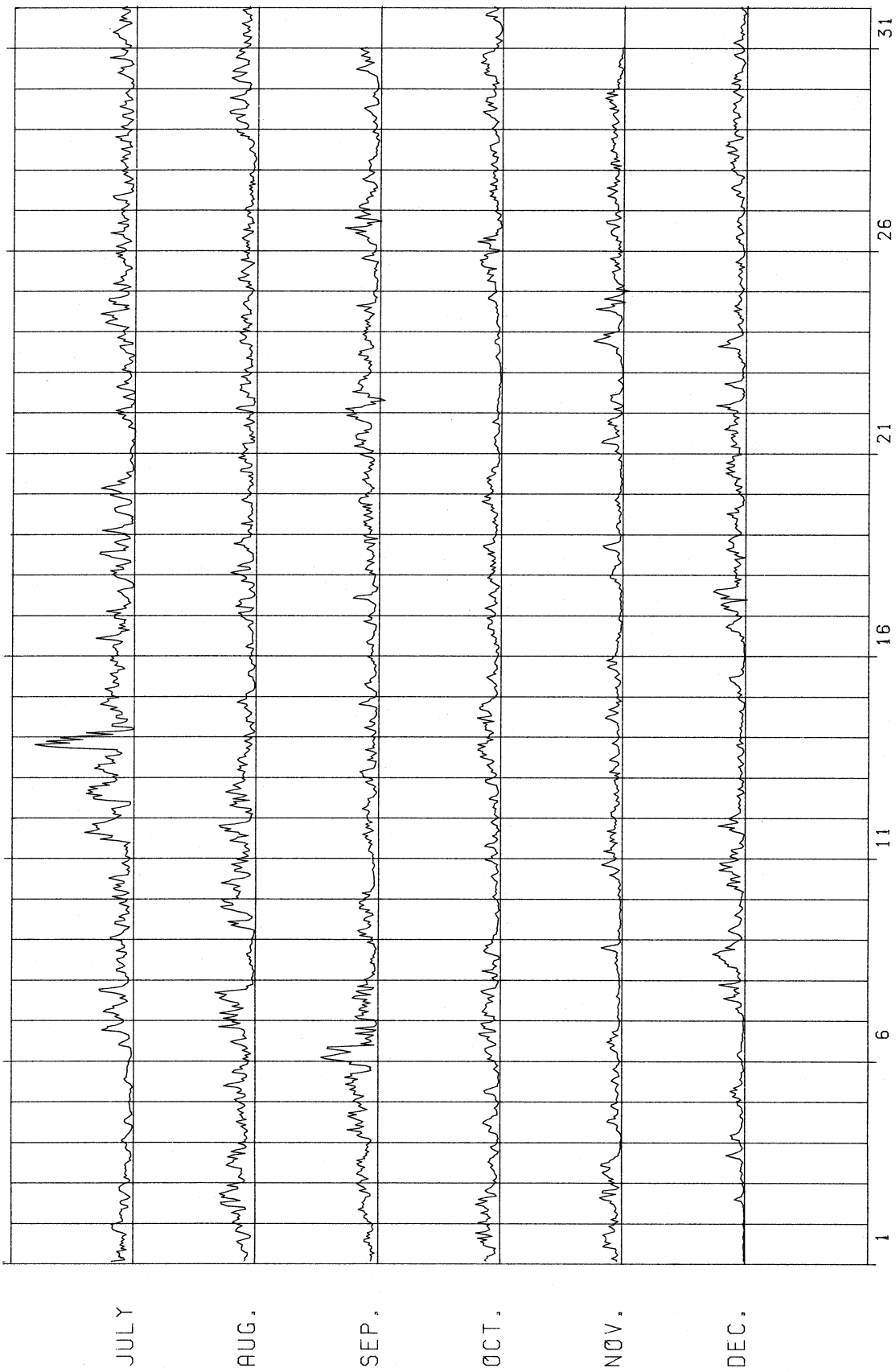
STACKED COMMON SCALE MAGNETOGRAMS FOR OCTOBER 1982



STACKED COMMON SCALE MAGNETOGRAMS FOR NOVEMBER 1982



STACKED COMMON SCALE MAGNETOGRAMS FOR DECEMBER 1982



AU HOURLY VALUES FOR THE LAST HALF OF 1982 (1500NT/DIV)

JULY

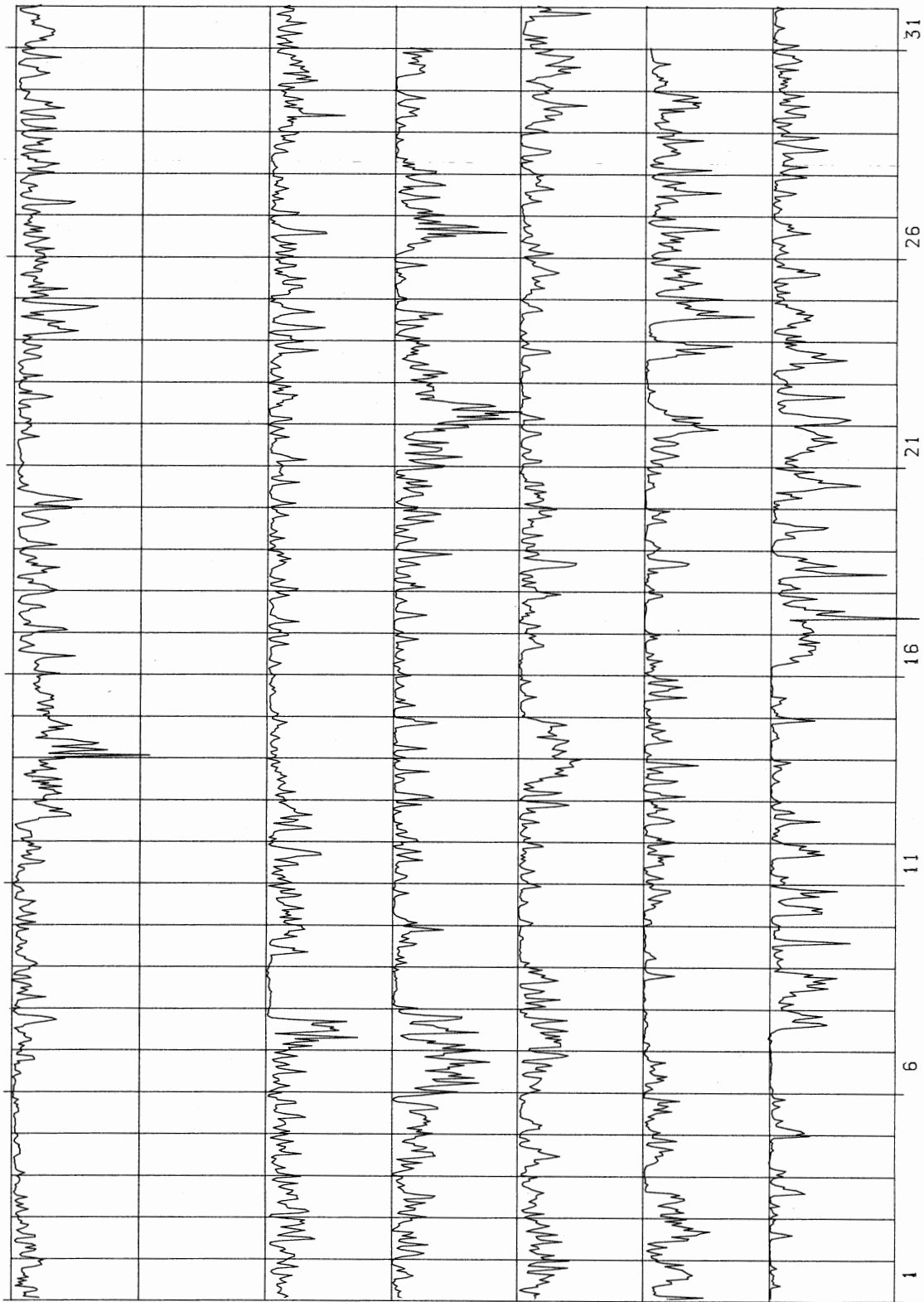
AUG.

SEP.

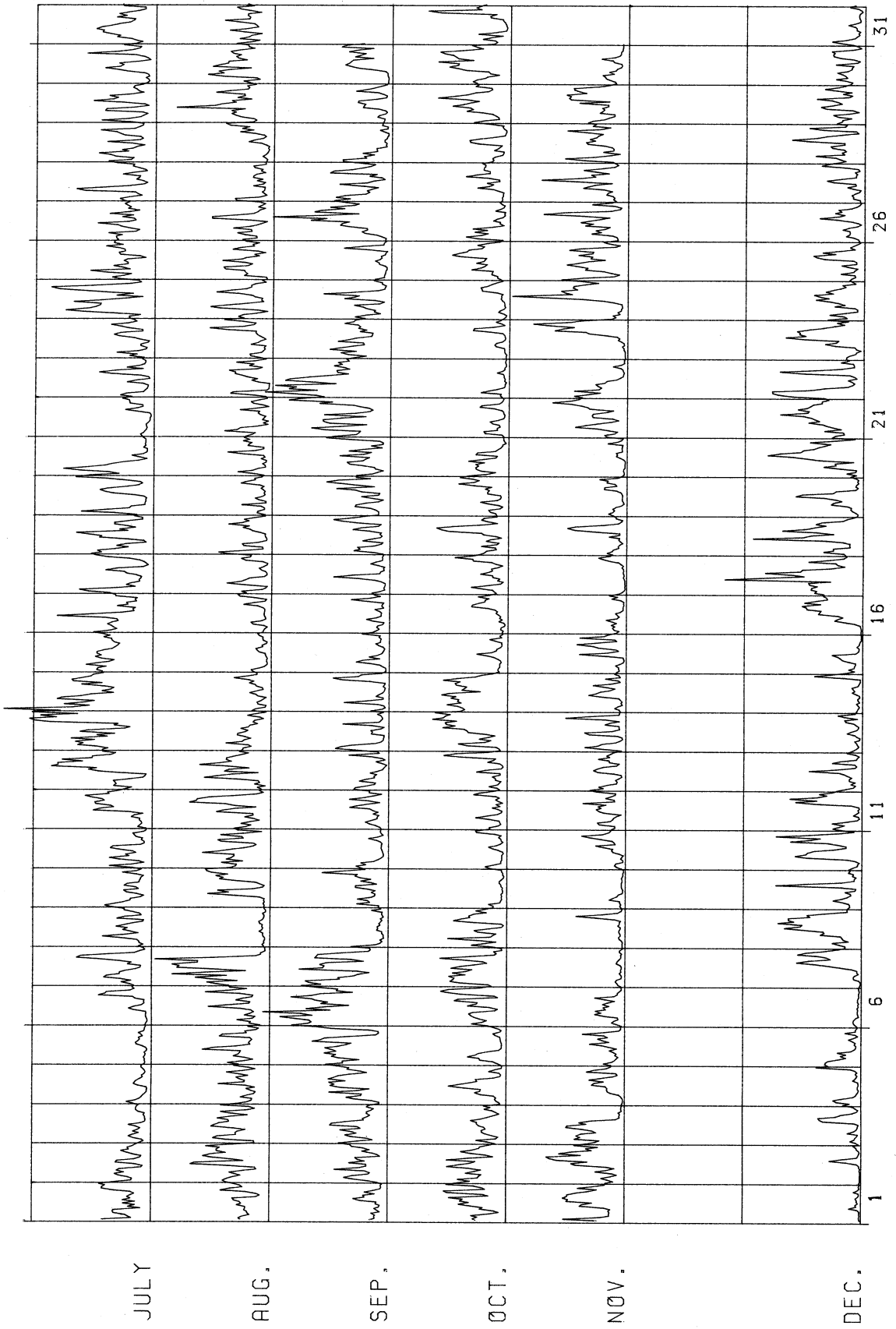
OCT.

NOV.

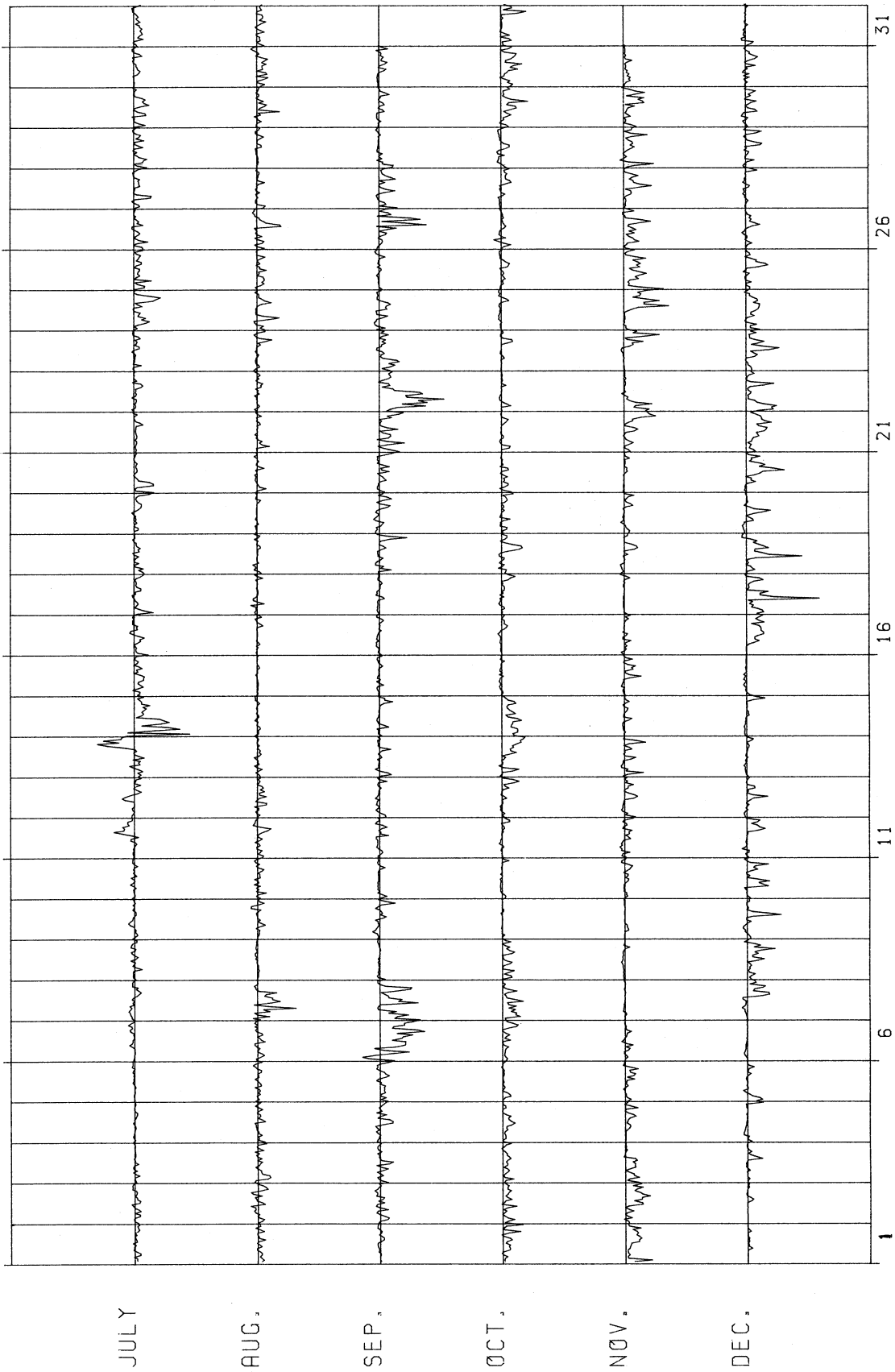
DEC.



AL HOURLY VALUES FOR THE LAST HALF OF 1982 (1500NT/DIV)



AE HOURLY VALUES FOR THE LAST HALF OF 1982 (1500NT/DIV)



A0 HOURLY VALUES FOR THE LAST HALF OF 1982 (1500NT/DIV)

Publications by the World Data Center C2 for Geomagnetism.

1. Data Catalogue

Data Catalogue of World Data Center C2 for Geomagnetism	Published 1984
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2. Data Book

No. 1	Equivalent current systems of the daily geomagnetic variations in December 1964	1978
No. 2	Electric fields and neutral winds in the ionospheric dynamo region as deduced from the daily geomagnetic variations in December 1964	1979
No. 3	Auroral electrojet indices (AE) for January-June 1978	1981
No. 4	Auroral electrojet indices (AE) for July-December 1978	1981
No. 5	Auroral electrojet indices (AE) for January-June 1979	1982
No. 6	Auroral electrojet indices (AE) for July-December 1979	1982
No. 7	Auroral electrojet indices (AE) for January-June 1980	1983
No. 8	Auroral electrojet indices (AE) for July-December 1980	1983
No. 9	Auroral electrojet indices (AE) for January-June 1981	1984
No.10	Auroral electrojet indices (AE) for July-December 1981	1984
No.11	Auroral electrojet indices (AE) for January-June 1983	1985
No.12	Auroral electrojet indices (AE) for July-December 1982 (AE-index for the last half of 1983 and the first half of 1982 will be published in Data Book No.13 and 14)	1985

3. Others

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

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

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

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

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

