

World Data Center C2 for Geomagnetism

Prompt Report

**PROVISIONAL
AURORAL ELECTROJET INDICES (AE11)
FOR MARCH 1989**

July 1989

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1. Introduction

This report gives provisional Auroral Electrojet Indices for March 1989 when a great geomagnetic storm occurred. For the details on the AE indices, reference is made to Data Books Nos.3-17 published from the WDC-C2 for Geomagnetism, UAG reports published from WDC-A for Solar-Terrestrial Physics and the paper by T. Davis and M. Sugiura (1966).

Less rigorous screening of data was made to facilitate a quick publication of provisional AE indices. The final AE indices will be calculated and published in the Data Book series. The version of provisional AE indices reported here, which we call the provisional AE(11) hereafter, does not include data from Dixon Island, which have not been received.

2. Data Used

Eleven observatories listed in Table 1 are used. Hand-traced paper copies from Cape Chelyskin, Tixie Bay, and Cape Wellen, were digitized at this Data Center. Storm magnetograms as well as normal magnetograms were received from these stations. However, there were not enough data to compare the records of two different sensitivities. Therefore adjustments were made to the base line values for the storm magnetograms so as to obtain a best fit with the normal magnetograms.

The H component is calculated from the X and Y components for Yellowknife, Fort Churchill and Poste-de-la-Baleine. For these stations, if either X or Y is missing, H is treated as missing.

3. Results

The monthly quiet-time H reference values for March 1989 are listed in Table 2. Table 3 gives the hourly average values of the provisional AE(11) indices for March 1989. Daily graphs of the provisional AE(11) indices (AU, AL, AE and AO) are shown in Fig. 1, and corresponding plots of the contributing stations are given in Fig. 2. For selected disturbed days, i.e. March 5, 13, 14 and 15, supplemental plots are added to Fig 1. Fig. 3 shows the H-traces of magnetograms from all stations used to derive the provisional AE(11) indices for March 1989.

4. Acknowledgements

The preparation of this report has been made possible by the quick data transmission from the AE stations. In particular, we thank Dr. T. Saemundsson of the University of Iceland, Dr. E. P. Kahrin of the Soviet Academy of Sciences, Drs. A. Gustavsson and B. Olafsdottir of the Geological Survey of Sweden, Mr. L. Wilson and Mr. D. Herzog of the United States Geological Survey, Dr. E. Friis-Christensen of the Danish Meteorological Institute and Mr. G. J. van Beek of the Geological Survey of Canada for their helpful cooperation. We also thank Mr. J. H. Allen, Mr. L. Morris and Mr. C. C. Abston of WDC-A for STP for their support. We gratefully acknowledge the contribution of Dr. T. Ono of the National Institute of Polar Research in printing this report. Our special thanks are due to Ms. Y. Yamamoto for digitization and preparation of figures.

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Table 1. List of Stations

Observatory	Abbreviations		Geographic Coord.		Geomagnetic Coord.	
	IAGA	Other	Lat. (°N)	Long. (°E)	Lat. (°N)	Long. (°E)
Abisko	ABK	AI	68.36	18.82	66.04	115.08
(Dixon Island	DIK	DI, DIX	73.55	80.57	63.02	161.57)
--- not used ---						
Cape Chelyuskin	CCS	CC, CCH	77.72	104.28	66.26	176.46
Tixie Bay	TIK	TI, TIX	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, COL	64.87	212.17	64.63	256.52
Yellowknife	YKC	YEK	62.40	245.60	69.00	292.80
Fort Churchill	FCC	FC	58.80	265.90	68.70	322.77
Poste-de-la-Baleine	PBQ	PDB, GWC	55.27	282.22	66.58	347.36
Narssarssuaq	NAQ	NAS	61.20	314.16	71.21	36.79
Leirvogur	LRV	LR	64.18	338.30	70.22	71.04

Table 2. Monthly Quiet-Time H Reference Values (Unit nT)
For March 1989

Abisko	11587
Dixon Island	*** not available **
Cape Chelyuskin	+184 (H0+)
Tixie Bay	-62 (H0+)
Cape Wellen	+273 (H0+)
Barrow	9552
College	12775
Yellowknife	8730
Fort Churchill	7818
Poste-de-la-Baleine	10884
Narssarssuaq	12239
Leirvogur	12404

(H0+): As the absolute values are not provided by these stations, the deviations from the H base lines on the ordinary magnetograms are given.

1989

March

= provisional AE(11) =

AU Index (Hourly mean values, unit nT)

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean
Q 1	165	124	67	96	88	91	106	71	79	88	97	125	100	97	79	55	56	58	46	55	58	69	63	102	85
2	102	92	88	129	141	330	165	161	126	203	285	183	91	145	221	296	107	55	138	178	114	193	193	129	161
3	88	104	97	110	85	170	115	231	221	124	233	183	148	219	231	293	247	298	206	244	248	228	215	151	187
Q 4	96	139	171	93	62	93	104	153	176	124	156	240	232	173	181	71	85	37	20	21	30	34	38	43	107
5	59	80	110	87	148	148	193	161	209	125	187	145	157	123	198	87	77	67	108	94	66	112	81	91	121
6	81	107	74	76	89	93	58	58	150	151	81	93	74	116	298	207	101	93	130	134	184	127	105	169	119
7	237	188	168	122	114	204	142	90	98	95	94	90	65	55	39	35	37	63	87	62	42	88	110	112	101
8	111	89	74	81	56	87	69	47	42	43	43	39	40	36	32	30	26	42	192	315	199	185	236	295	100
9	80	93	143	128	218	354	297	277	235	178	175	119	185	211	244	139	211	288	274	264	262	239	362	281	219
10	119	123	126	179	205	178	221	203	195	126	140	117	78	72	56	97	197	215	100	99	119	159	109	119	140
11	142	132	118	134	163	146	144	134	144	101	124	91	136	106	87	59	99	135	192	267	224	291	254	201	151
12	93	85	125	95	89	84	151	116	155	167	151	142	63	49	60	83	262	276	315	173	129	100	80	139	133
13	152	240	366	581	882	739	602	1089	227	245	52	-63	-48	287	219	-29	-8	112	7	49	-98	14	303	147	253
D 14	-9	148	276	206	330	152	221	63	166	188	96	90	95	122	71	56	57	356	507	530	326	697	158	114	209
D 15	243	282	157	177	147	180	91	151	193	210	265	98	141	246	234	200	286	284	175	143	120	83	52	42	175
16	34	30	57	39	36	113	91	110	271	441	267	508	334	226	108	125	254	163	40	156	230	200	215	198	177
17	198	183	161	213	193	211	293	352	139	117	243	209	230	277	241	197	268	316	351	269	143	97	100	44	210
18	26	37	54	86	62	45	36	54	103	164	163	125	139	130	337	400	366	167	69	55	44	56	91	90	121
Q 19	64	71	46	42	123	175	421	461	416	248	405	337	279	600	451	395	466	376	362	269	236	175	75	46	272
Q 20	32	42	84	84	118	106	100	68	36	25	40	41	44	18	23	67	120	139	130	64	48	103	111	141	74
21	138	151	152	88	176	168	232	180	229	304	185	158	60	45	21	16	40	51	107	110	112	142	184	95	131
22	126	88	77	63	87	165	213	264	258	225	99	52	41	33	188	251	68	237	189	266	163	255	158	351	163
23	208	65	24	27	58	46	41	45	41	81	183	112	128	333	415	376	330	288	389	304	158	248	197	172	178
24	142	115	208	260	201	43	34	115	134	85	35	29	31	38	35	30	35	35	33	33	27	24	27	45	75
Q 25	32	34	35	39	37	39	33	29	41	63	70	48	37	35	32	66	99	202	257	289	248	156	114	104	89
26	59	73	121	153	108	55	43	34	36	37	91	150	156	66	34	33	41	43	134	80	76	71	93	104	79
27	120	77	67	72	63	63	58	161	151	167	91	86	88	79	74	274	355	245	169	210	316	242	134	217	149
28	88	41	37	55	60	72	129	135	114	114	139	117	92	252	296	196	227	190	240	205	203	121	94	76	137
D 29	177	209	229	209	247	185	151	153	210	140	63	122	175	198	271	290	375	328	196	134	43	119	115	219	190
30	161	130	177	178	166	122	128	248	192	134	173	140	140	105	58	59	50	112	298	324	224	235	122	197	161
D 31	211	166	264	317	360	251	206	243	288	314	165	209	386	444	295	225	273	360	283	223	85	277	178	299	263
Mean	115	114	127	136	158	158	157	182	163	155	147	133	126	159	165	150	167	181	185	181	141	165	140	146	152
5Q Mean	70	75	82	79	73	74	75	75	87	92	105	115	110	90	130	131	145	120	104	96	85	83	83	96	95
5D Mean	113	158	238	270	371	288	254	331	232	265	128	173	188	255	192	133	190	263	206	218	117	261	193	195	218

1989

AL Index (Hourly mean values, unit nr) = provisional AE(11) =

March

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
Q	1	-185	-153	-116	-48	-49	-9	3	4	-36	-152	-39	-82	-78	-99	-308	-97	0	6	-1	-5	-6	-1	-28	-92	-65
	2	-134	-74	-19	-286	-427	-459	-31	-30	-41	-205	-245	-102	-124	-422	-499	-301	-120	-62	-179	-370	-118	-176	-262	-142	-201
	3	-94	-244	-377	-329	-233	-310	-122	-504	-705	-496	-204	-209	-469	-530	-680	-671	-643	-670	-419	-340	-298	-273	-209	-128	-382
Q	4	-145	-200	-60	-7	-14	-14	-80	-78	-55	-227	-155	-348	-243	-366	-318	-69	-51	-16	-28	-7	-8	-4	-12	-19	-105
	5	-24	-63	-160	-134	-114	-213	-369	-593	-390	-130	-253	-1179	-623	-81	-378	-164	-46	-60	-169	-207	-82	-90	-264	-209	-250
	6	-147	-203	-198	-81	-110	-157	-73	-10	-210	-361	-186	-121	-286	-210	-262	-345	-152	-161	-187	-231	-354	-143	-134	-296	-192
	7	-305	-139	-138	-41	-327	-378	-96	-27	-210	-152	-99	-71	-189	-127	-141	-78	-61	-89	-140	-89	-9	-30	-133	-171	-135
	8	-129	-60	-35	-53	-64	-135	-154	-11	-9	-7	-31	-24	-18	-18	-16	-7	-4	-14	-521	-784	-573	-221	-436	-427	-156
	9	-433	-238	-242	-141	-361	-332	-263	-185	-198	-401	-142	-51	-155	-366	-284	-176	-247	-393	-431	-562	-505	-500	-424	-397	-309
	10	-228	-189	-136	-320	-274	-157	-236	-140	-149	-98	-68	-39	-22	-38	-58	-66	-302	-414	-225	-95	-82	-112	-180	-76	-154
	11	-136	-65	-62	-104	-209	-189	-63	-128	-103	-134	-134	-290	-308	-305	-108	-73	-80	-115	-232	-288	-452	-316	-195	-474	-190
	12	-281	-365	-27	-17	-17	-9	-31	-21	-48	-88	-200	-324	-345	-160	-18	-53	-343	-784	-406	-91	-87	-48	-48	-151	-165
	13	-148	-322	-749	-686	-411	-493	-503	-654	-1234	-615	-697	-1284	-1450	-723	-1043	-1254	-1892	-915	-1253	-1229	-1683	-967	-676	-854	-906
D	14	-1026	-737	-1113	-249	-813	-808	-427	-698	-440	-212	-208	-481	-188	-98	-78	-93	-75	-117	-496	-776	-620	-294	-563	-173	-449
D	15	-198	-604	-453	-397	-211	-225	-203	-184	-442	-1002	-396	-381	-402	-333	-253	-325	-282	-246	-161	-218	-199	-203	-99	-30	-310
	16	-23	-23	-35	-96	-136	-149	-152	-69	-167	-701	-192	-569	-621	-261	-198	-106	-516	-330	-164	-249	-505	-346	-308	-298	-259
	17	-406	-496	-481	-314	-359	-273	-504	-635	-510	-793	-611	-403	-419	-467	-417	-336	-416	-322	-239	-226	-215	-164	-163	-9	-382
	18	-5	-22	-33	-124	-106	-18	-11	-16	-43	-87	-160	-161	-174	-256	-728	-817	-458	-219	-59	-16	-41	-57	-77	-89	-157
Q	19	-48	-70	-91	-29	-40	-80	-514	-625	-522	-269	-343	-473	-348	-659	-685	-521	-336	-251	-309	-223	-294	-242	-136	-72	-299
Q	20	-41	-75	-94	-233	-248	-207	-251	-47	-30	-83	-40	-61	-101	-41	-31	-72	-242	-252	-269	-85	-17	-49	-293	-231	-127
	21	-290	-336	-244	-122	-181	-343	-377	-396	-288	-287	-226	-241	-55	-79	-65	-60	-61	-34	-96	-174	-143	-137	-221	-179	-193
	22	-144	-210	-74	-36	-31	-184	-414	-358	-284	-214	-28	-37	-44	-42	-208	-434	-103	-219	-380	-519	-555	-624	-581	-521	-260
	23	-265	-59	-29	-33	-60	-109	-49	-41	-72	-58	-329	-390	-474	-391	-599	-674	-633	-588	-882	-436	-501	-423	-138	-241	-311
	24	-272	-175	-357	-365	-263	-103	-40	-84	-310	-134	-28	-16	-23	-46	-66	-35	-32	-66	-46	-18	-8	-12	-17	-24	-106
Q	25	-22	-25	-29	-27	-26	-25	-22	-20	-18	-20	-99	-102	-61	-13	-17	-81	-176	-317	-451	-471	-302	-171	-129	-96	-113
	26	-39	-59	-216	-239	-87	-25	-18	-14	-12	-21	-18	-169	-396	-139	-24	-37	-55	-176	-192	-94	-30	-52	-212	-155	-103
	27	-77	-3	-8	-25	-26	-25	-15	-50	-26	-43	-22	-26	-64	-51	-48	-154	-445	-324	-144	-106	-300	-645	-668	-219	-146
	28	-137	-50	-34	-48	-45	-57	-260	-177	-125	-171	-189	-402	-203	-418	-408	-199	-320	-166	-256	-352	-193	-69	-59	-21	-182
D	29	-164	-591	-608	-388	-82	-185	-197	-351	-539	-209	-31	-325	-562	-482	-521	-467	-610	-399	-573	-664	-834	-768	-455	-317	-430
	30	-200	-157	-189	-268	-491	-244	-179	-457	-402	-120	-219	-332	-414	-275	-76	-72	-38	-141	-601	-752	-328	-347	-369	-613	-303
D	31	-302	-357	-356	-234	-141	-284	-302	-286	-328	-324	-381	-283	-327	-368	-358	-218	-363	-489	-564	-632	-684	-529	-498	-221	-368
Mean		-195	-205	-218	-176	-192	-199	-192	-222	-256	-250	-192	-289	-296	-253	-286	-259	-293	-269	-324	-332	-323	-258	-257	-224	-248
5Q Mean		-79	-95	-66	-87	-88	-54	-72	-31	-36	-103	-98	-150	-131	-155	-280	-227	-185	-159	-161	-116	-74	-56	-107	-105	-113
5D Mean		-332	-406	-572	-330	-316	-383	-316	-411	-541	-412	-301	-588	-629	-386	-439	-427	-691	-450	-610	-710	-865	-580	-500	-372	-482

AE Index (Hourly mean values, unit nt) = provisional AE(11) = March 1989

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	352	279	184	145	139	102	103	67	116	242	137	207	179	196	388	152	56	51	47	61	65	71	92	195	151
2	237	167	108	416	569	791	198	193	169	408	531	286	216	569	722	598	228	119	319	549	234	371	456	272	363
3	182	349	475	440	319	481	239	735	927	621	427	392	618	749	911	964	891	969	626	586	547	502	425	281	569
Q 4	242	341	232	102	77	108	185	233	233	352	312	589	476	540	501	141	137	54	48	29	38	39	51	62	213
5	83	144	271	222	263	362	563	755	600	256	446	1325	478	205	578	251	124	128	278	303	149	202	346	302	372
6	229	311	273	158	200	251	132	69	361	513	268	215	361	327	560	554	255	256	318	366	539	271	239	466	312
7	544	328	307	165	443	583	239	119	309	248	194	162	255	183	181	114	99	153	228	152	52	118	243	283	237
8	240	149	109	135	121	224	223	60	52	50	74	64	58	54	49	38	31	56	714	1100	774	408	673	723	258
9	514	333	386	270	580	688	562	463	434	580	318	170	340	579	528	316	459	682	706	828	768	740	788	679	530
10	347	313	262	500	481	337	458	344	346	225	209	156	100	110	115	164	501	630	326	194	202	271	289	195	295
11	278	199	181	240	372	337	208	263	248	236	258	382	445	411	196	133	180	251	426	556	678	608	449	677	342
12	375	451	154	113	107	94	183	138	205	256	352	466	409	210	78	138	606	1061	723	265	217	149	129	291	299
13	301	563	1116	1268	1294	1233	1105	1744	1461	862	750	1220	1402	1012	1263	1225	1884	1028	1260	1279	1584	981	979	1001	1159
D 14	1016	886	1389	456	1144	961	649	762	607	401	304	572	284	222	151	150	134	474	1004	1307	947	993	722	288	659
15	442	887	611	576	360	407	295	337	636	1212	661	479	544	580	488	525	569	532	337	362	320	287	152	72	486
D 16	57	55	94	136	173	264	244	180	438	1143	459	1078	956	487	307	232	771	495	205	405	736	547	523	497	437
17	605	680	642	529	552	485	798	988	649	911	855	612	650	744	659	534	685	640	592	496	360	261	264	53	593
18	32	60	88	212	169	65	47	71	147	251	325	287	313	387	1066	1218	825	387	129	72	86	114	169	179	279
Q 19	113	141	138	72	164	256	936	1087	939	517	749	811	628	1259	1136	918	803	628	673	493	531	418	211	118	573
Q 20	74	117	179	318	366	314	352	117	67	59	80	103	145	59	55	141	363	392	400	150	66	153	404	373	202
21	429	488	397	211	357	512	610	577	518	591	411	399	116	124	86	77	102	87	204	286	257	280	406	274	325
22	271	300	153	101	120	351	628	623	543	439	128	90	86	76	397	686	172	457	570	786	719	880	740	873	425
23	474	125	54	62	119	157	90	86	114	140	513	502	603	724	1015	1051	964	877	1273	742	661	673	336	414	490
24	416	290	567	626	465	147	75	200	445	221	65	45	55	84	101	67	68	103	80	52	36	37	45	69	182
Q 25	55	61	66	68	63	65	56	50	59	83	170	150	99	50	50	147	276	521	709	762	551	327	244	200	203
26	99	132	339	393	196	81	61	49	50	59	110	319	553	206	60	71	97	220	327	175	107	124	306	260	183
27	198	80	77	99	106	88	74	212	178	212	114	113	153	131	123	428	802	569	313	316	617	889	804	437	297
28	226	92	72	104	106	130	391	313	240	286	329	519	296	671	705	396	548	357	498	558	398	191	153	97	320
D 29	342	801	838	598	331	372	350	505	750	350	95	447	737	681	793	758	986	727	771	800	878	888	571	538	621
30	362	288	366	447	659	367	309	706	595	255	393	473	554	382	135	132	89	255	900	1077	553	584	492	812	466
D 31	514	525	622	552	502	537	509	530	616	638	546	493	714	813	654	444	637	850	848	857	771	808	678	521	632
Mean	311	320	346	314	351	359	350	405	421	407	341	423	423	413	453	411	462	451	511	514	465	425	399	371	402
50 Mean	151	171	149	169	162	130	148	107	124	197	204	267	242	246	412	359	331	281	266	214	161	140	192	201	209
5D Mean	446	566	811	602	688	673	571	744	774	678	430	762	818	643	633	561	882	714	817	929	983	843	694	569	701

1989

March

= Provisional AE(11) =

AO Index (Hourly mean values, unit nT)

Date.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Mean	
Q	1	-9	-13	-24	23	19	40	54	38	21	-31	28	20	10	-1	-113	-20	28	32	22	24	25	33	17	5	9
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	3	-3	-69	-139	-109	-73	-69	-3	-135	-241	-185	9	-13	-159	-154	-223	-188	-197	-185	-106	-48	-24	-23	2	11	-97
Q	4	-24	-30	55	42	23	38	11	36	60	-50	0	-53	-5	-95	-67	1	16	10	-3	6	10	14	12	11	0
	5	16	7	-24	-22	16	-32	-87	-215	-89	-2	-36	-516	-232	20	-89	-37	15	3	-29	-56	-7	10	-90	-58	-64
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	8	-9	13	19	13	-3	-23	-42	17	15	17	6	7	10	8	7	11	10	13	-164	-233	-186	-18	-100	-65	-28
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	10	-53	-32	-4	-69	-34	10	-7	31	23	13	35	38	27	17	0	15	-52	-98	-62	1	18	22	-35	20	-7
	11	2	33	27	14	-22	-21	40	2	20	-16	-5	-99	-85	-98	-10	-7	9	-19	-10	-10	-113	-12	28	-135	-19
	12	-93	-139	48	38	35	37	59	46	53	39	-24	-90	-140	-55	20	14	-40	-252	-45	40	20	25	15	-5	-16
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D	14	-517	-234	-417	-21	-241	-327	-103	-317	-136	-12	-55	-194	-45	12	-3	-18	-8	119	5	-122	-147	200	-201	-29	-119
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	17	-103	-155	-158	-49	-82	-30	-105	-140	-185	-337	-183	-96	-94	-94	-87	-68	-73	-3	55	21	-35	-32	-31	17	-85
Q	18	9	6	9	-19	-21	12	11	18	29	38	0	-17	-17	-62	-194	-207	-45	-25	4	18	1	0	6	0	-18
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Mean		-39	-45	-45	-19	-16	-20	-17	-19	-46	-47	-22	-77	-84	-46	-60	-53	-62	-43	-69	-75	-90	-46	-58	-38	-47
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5D Mean		-110	-123	-166	-29	27	-47	-30	-39	-154	-72	-86	-206	-219	-64	-122	-147	-249	-92	-201	-244	-373	-159	-152	-88	-131

Figure 1 (even pages)

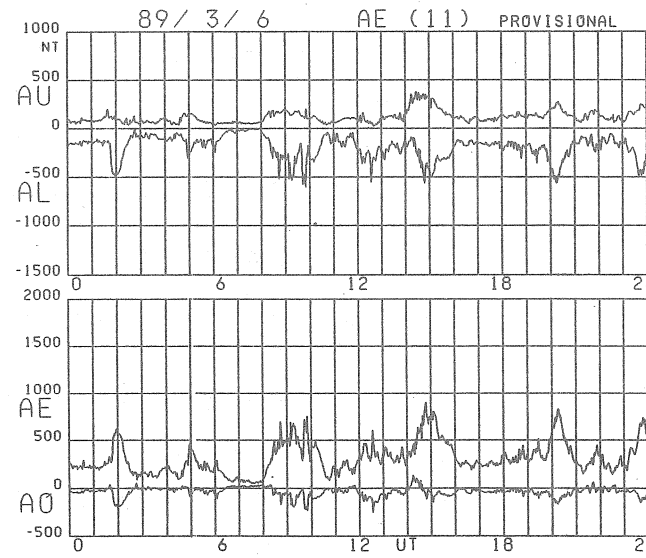
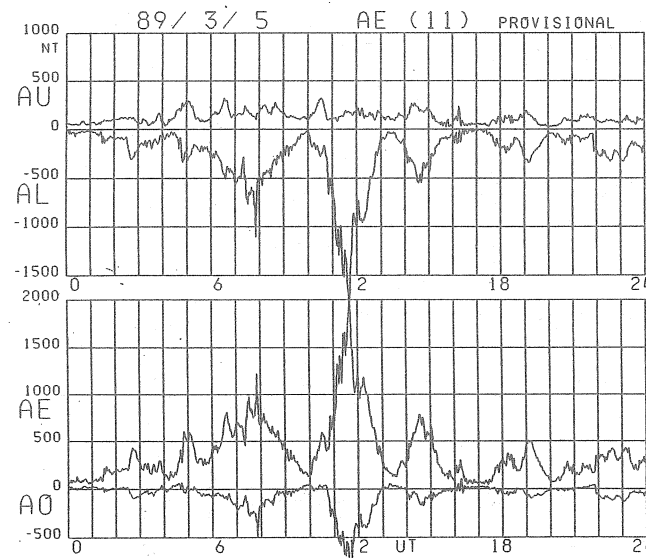
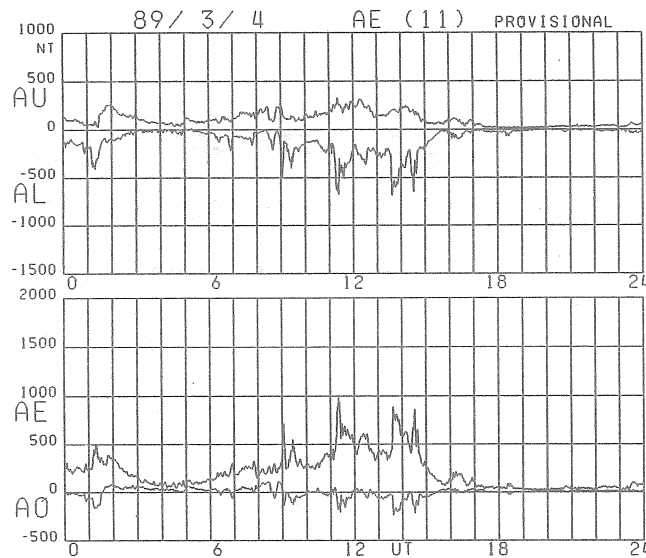
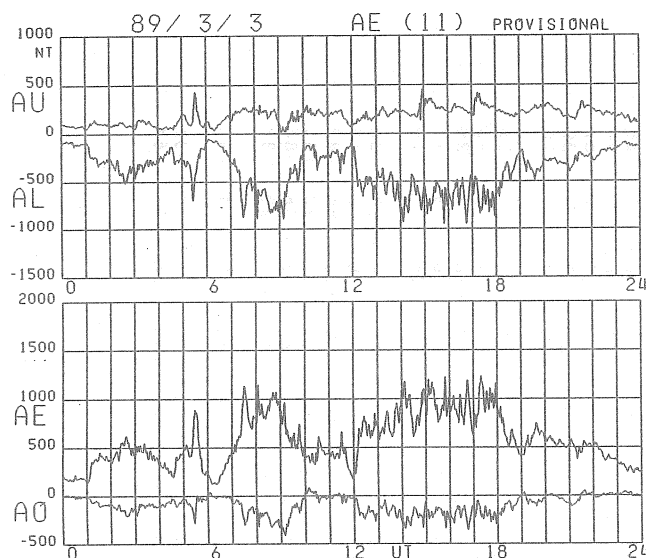
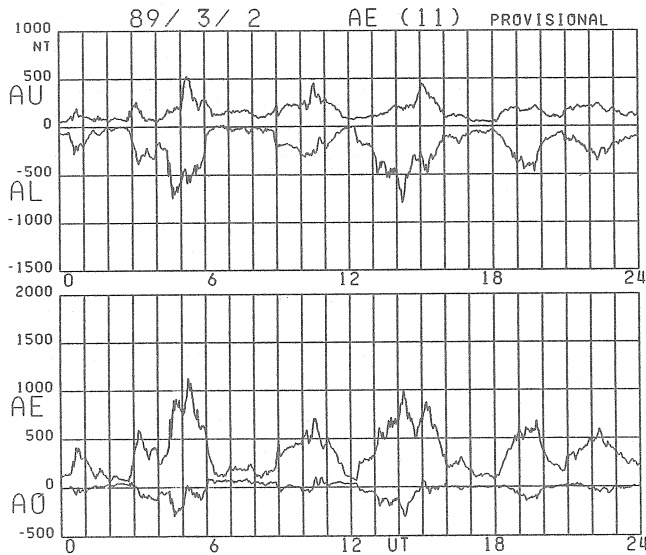
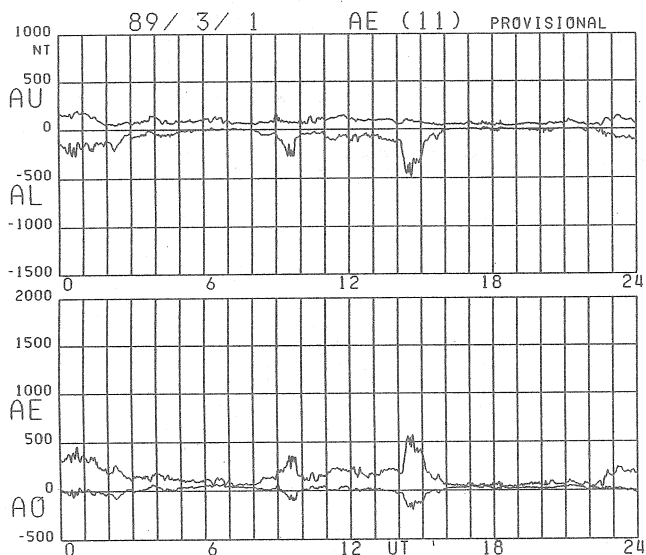
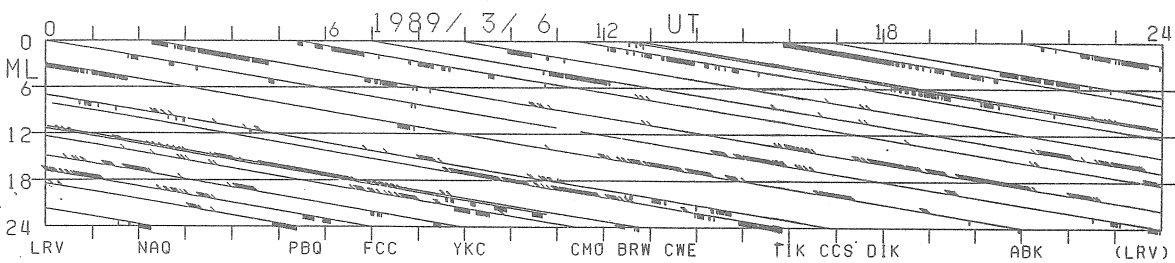
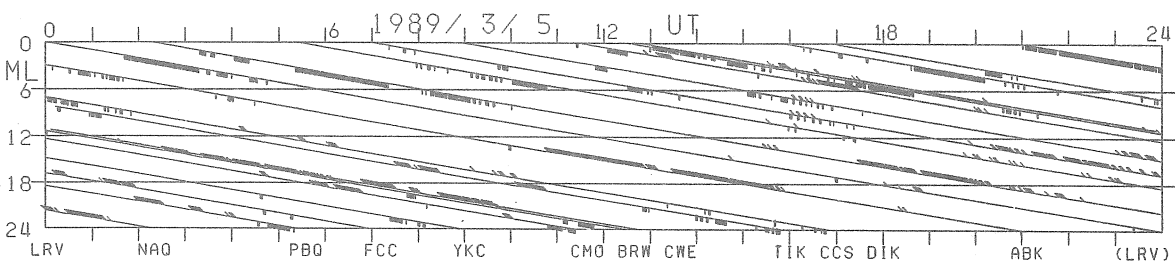
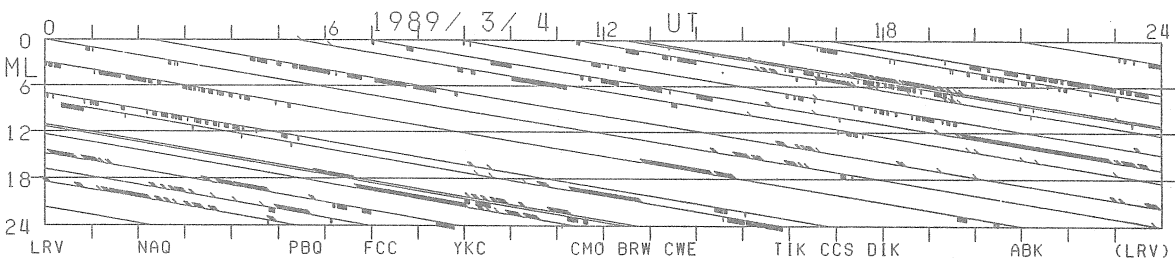
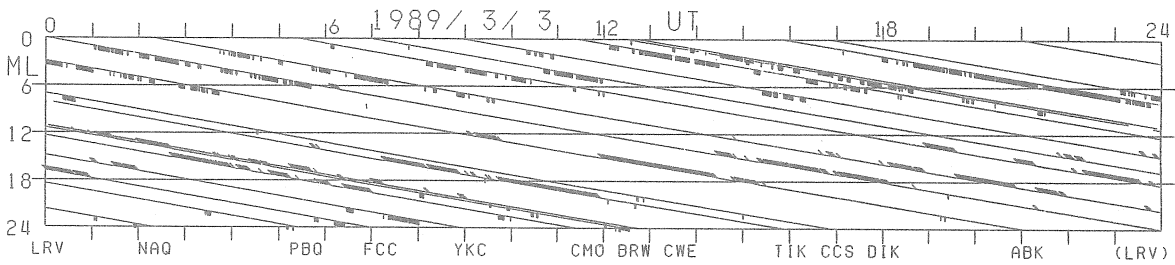
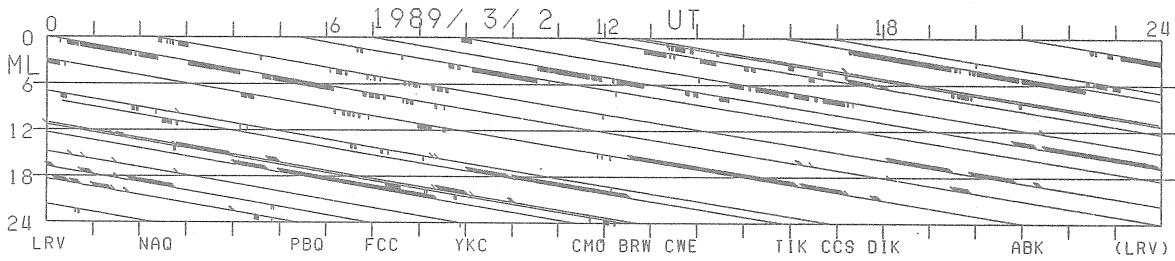
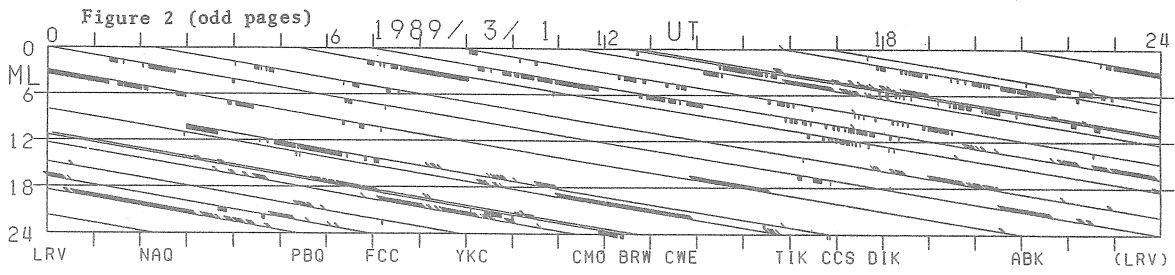
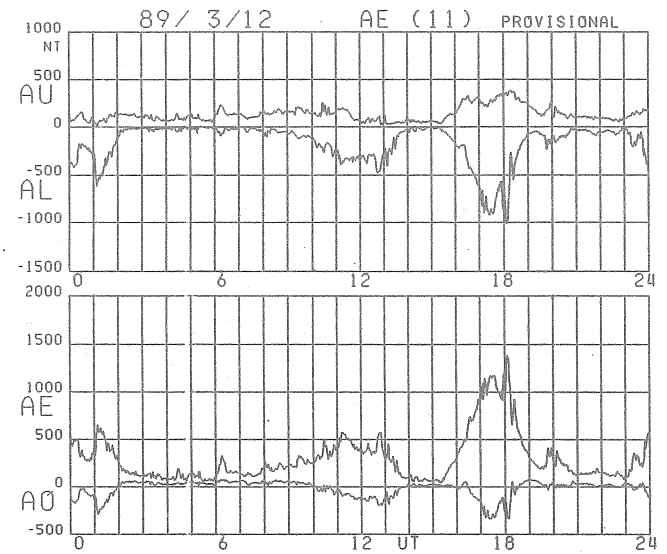
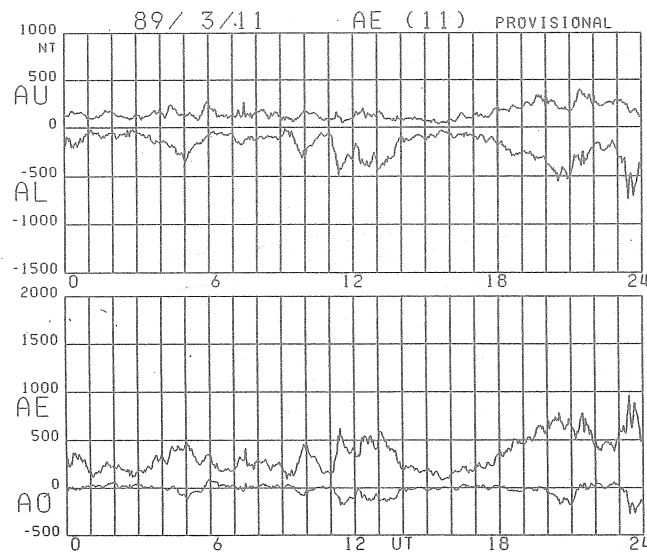
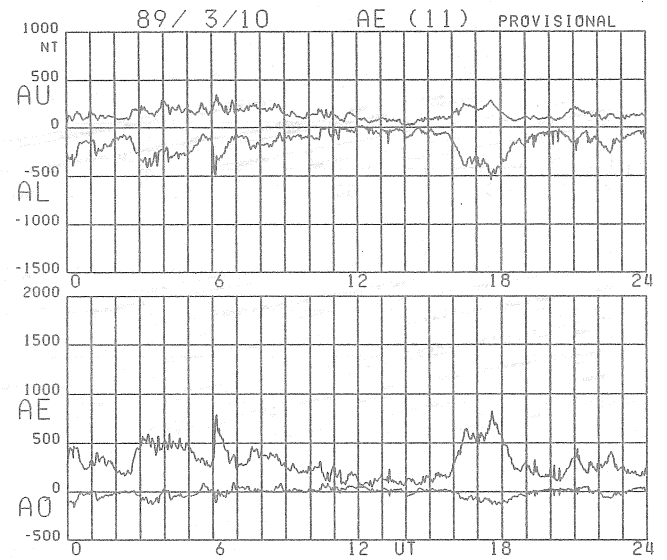
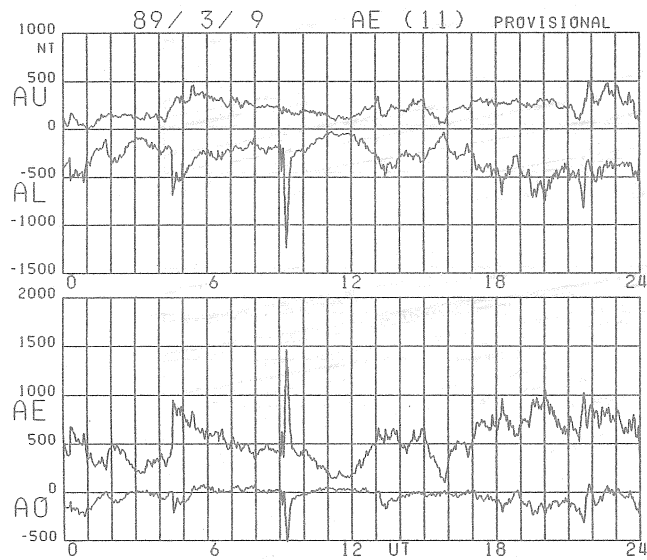
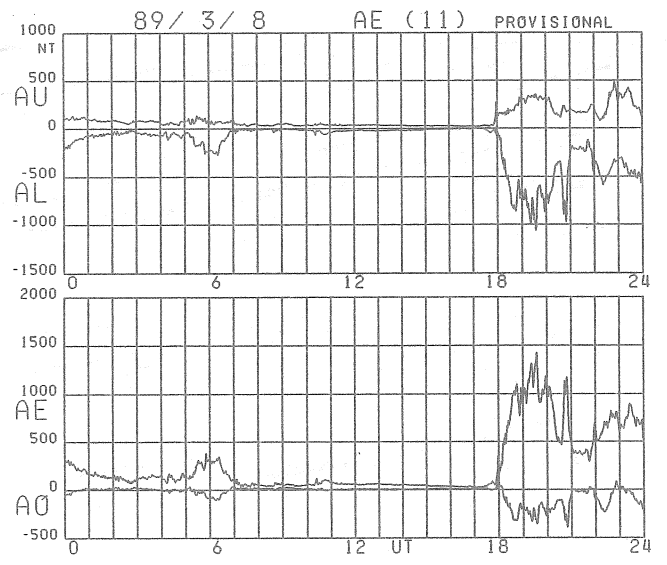
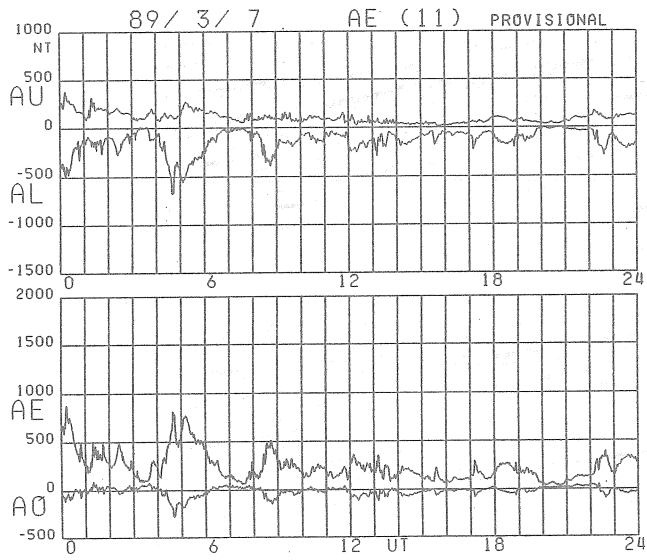
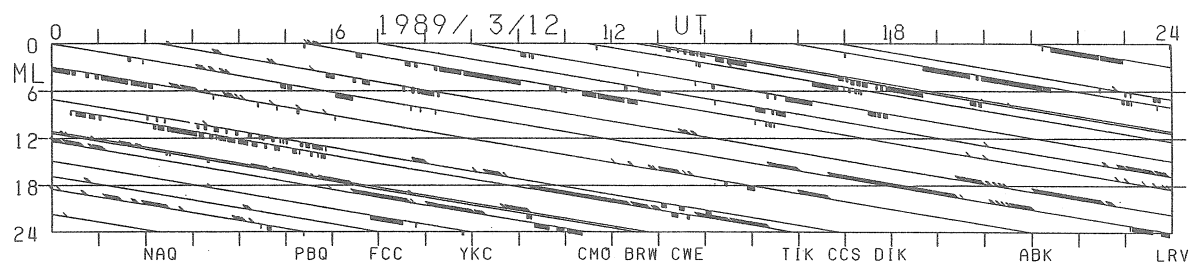
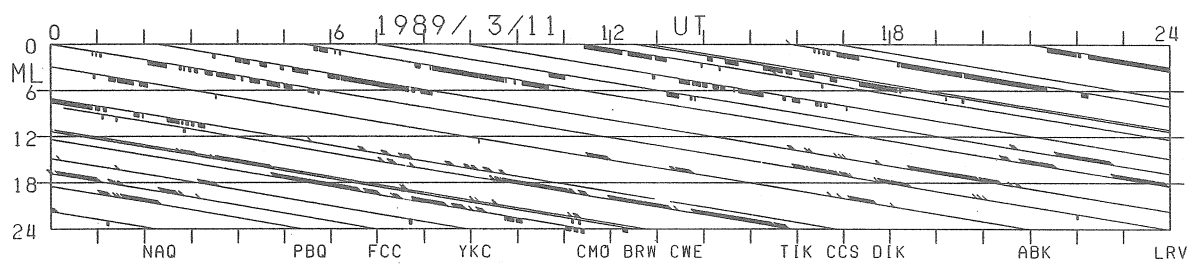
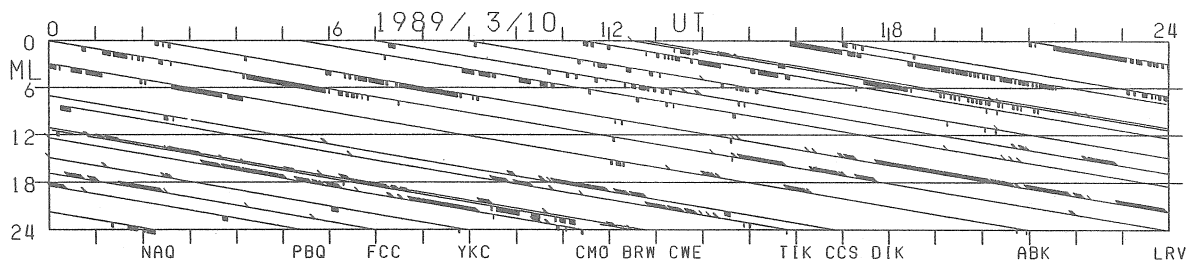
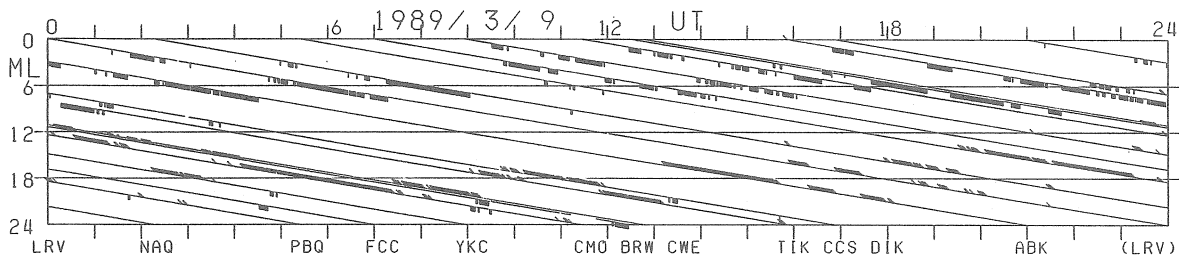
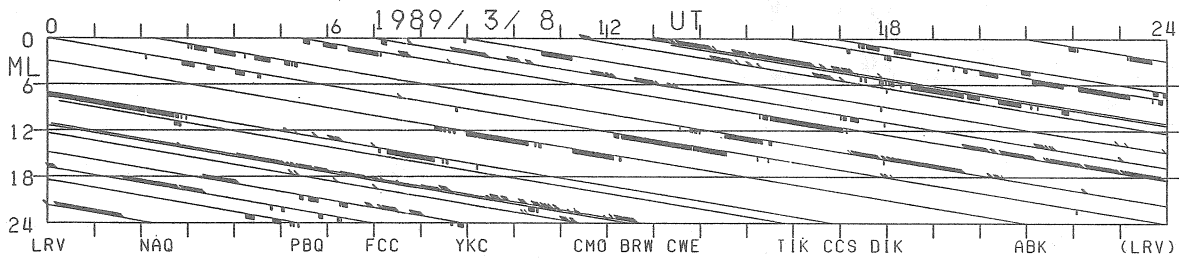
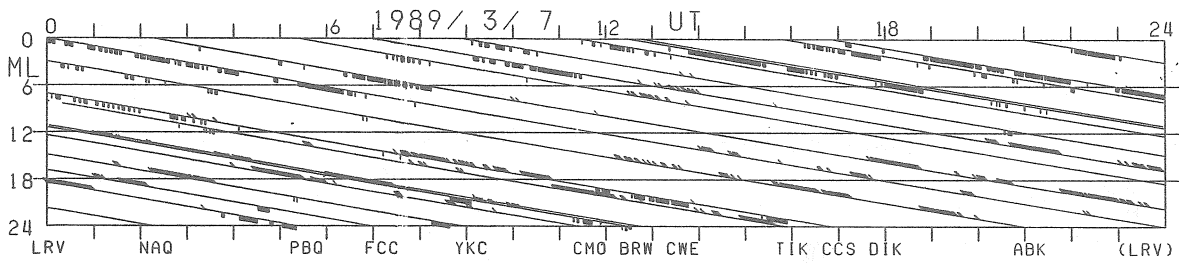
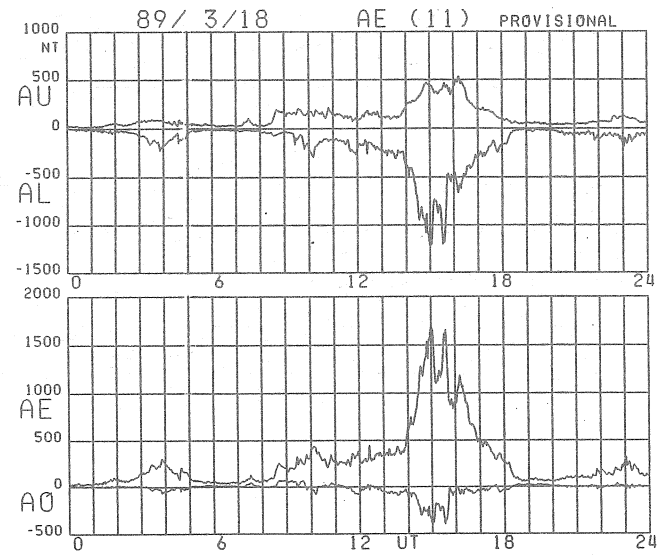
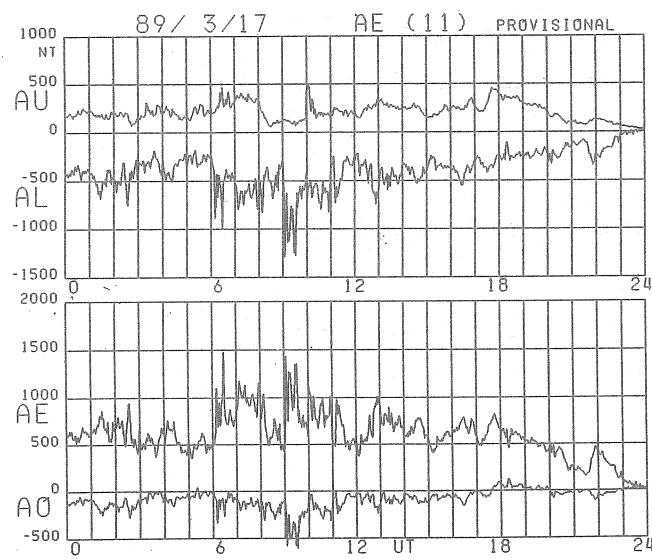
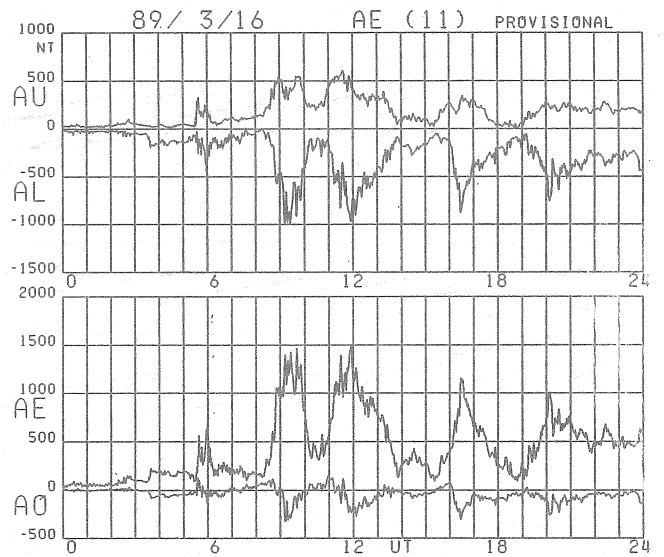
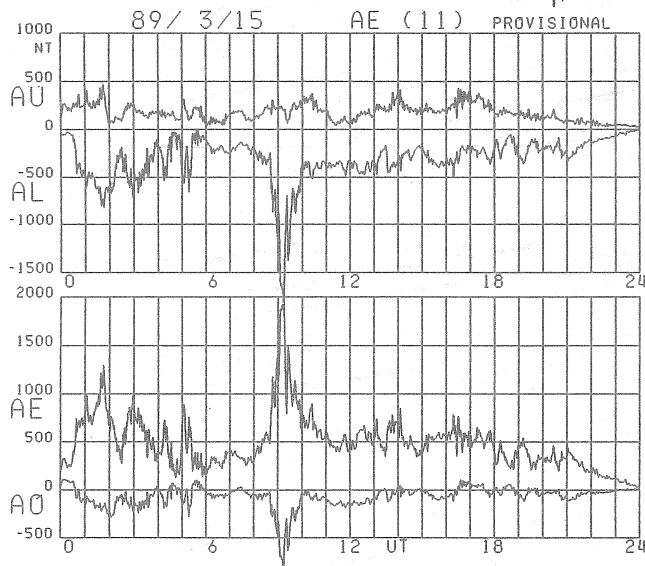
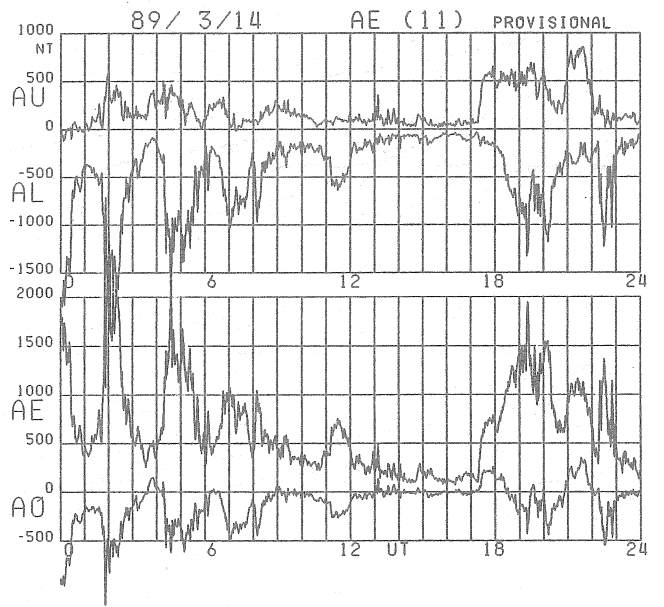
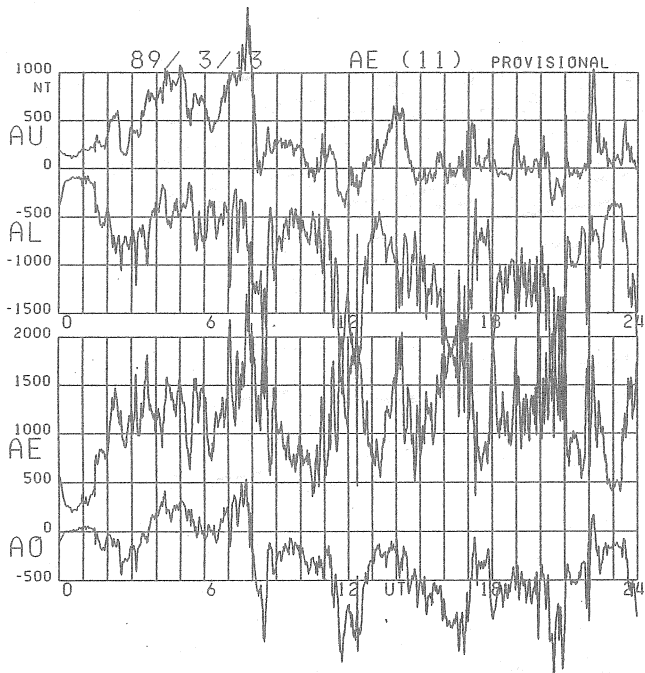


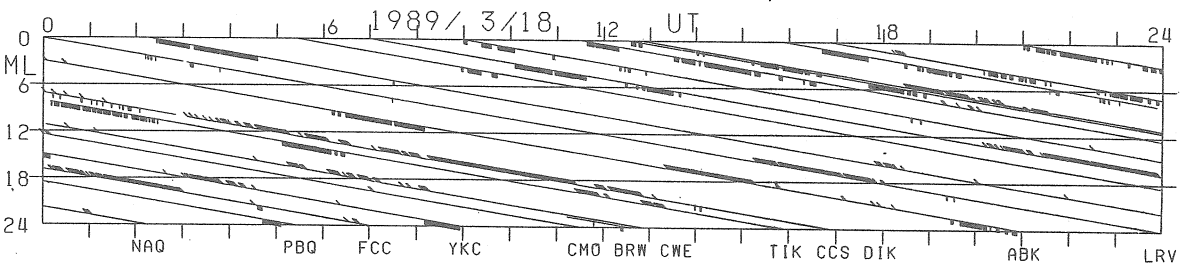
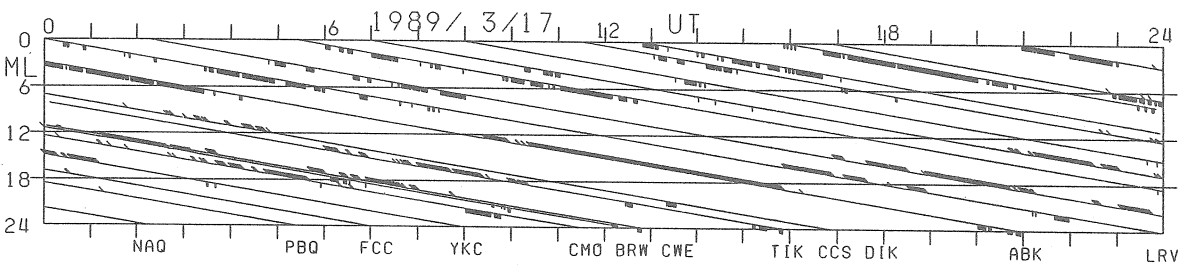
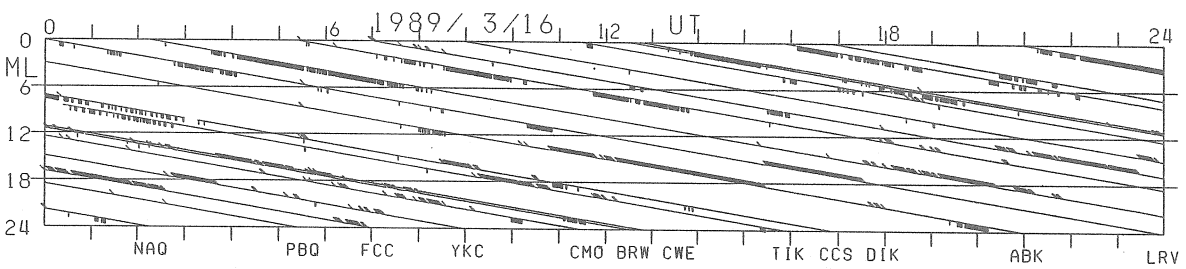
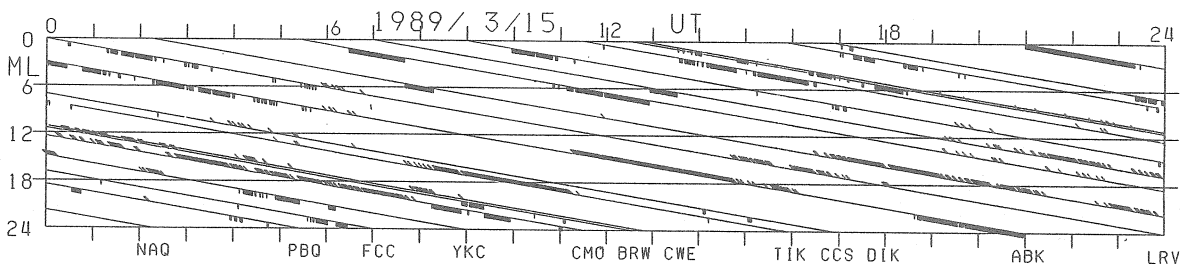
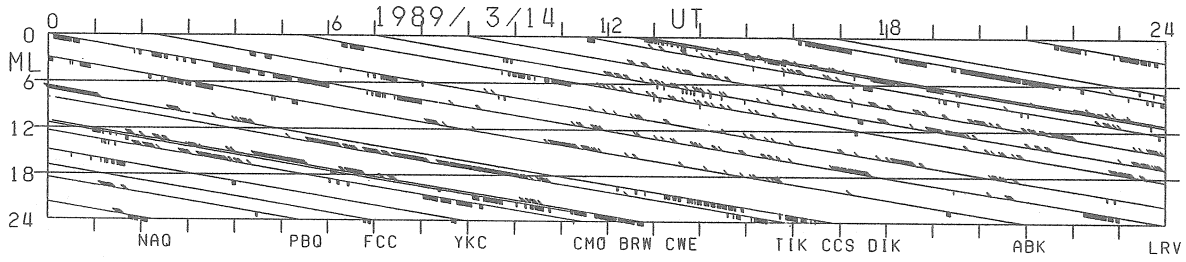
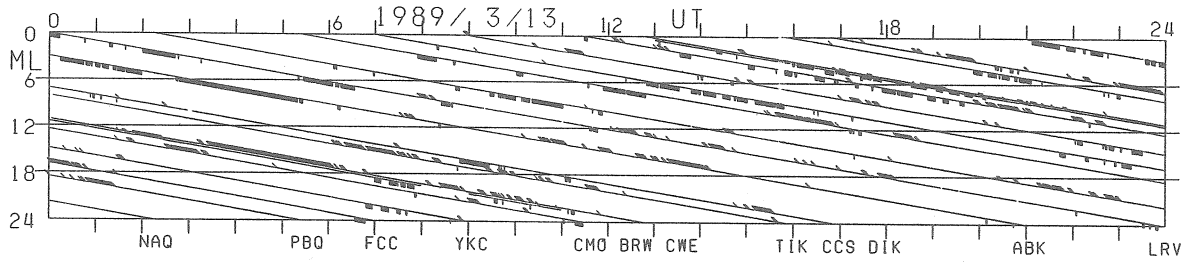
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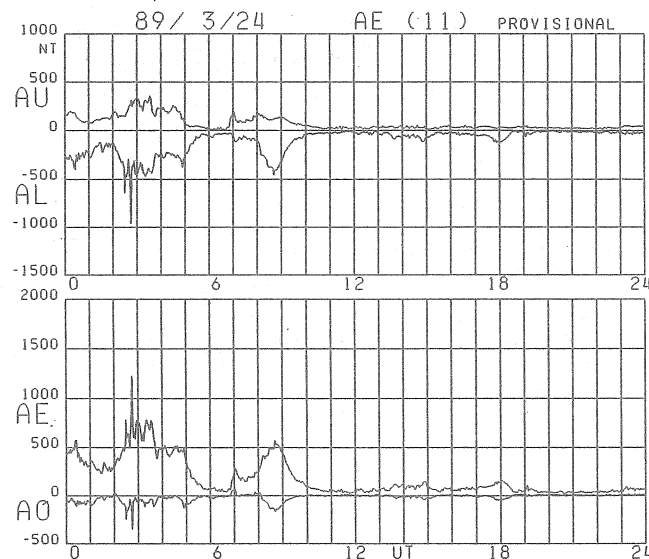
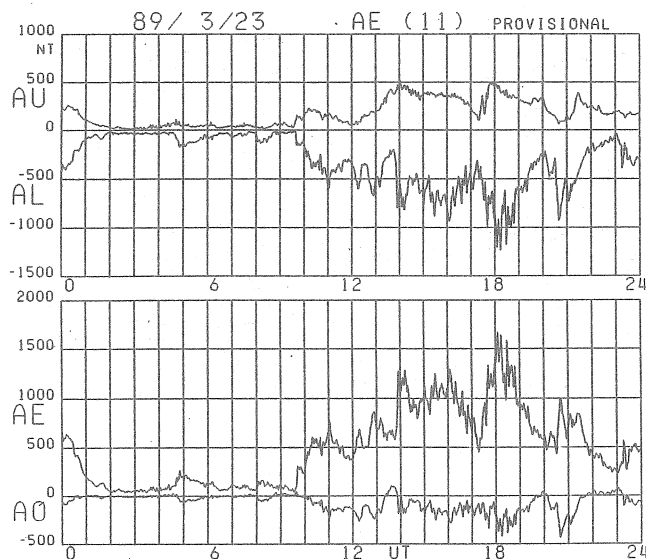
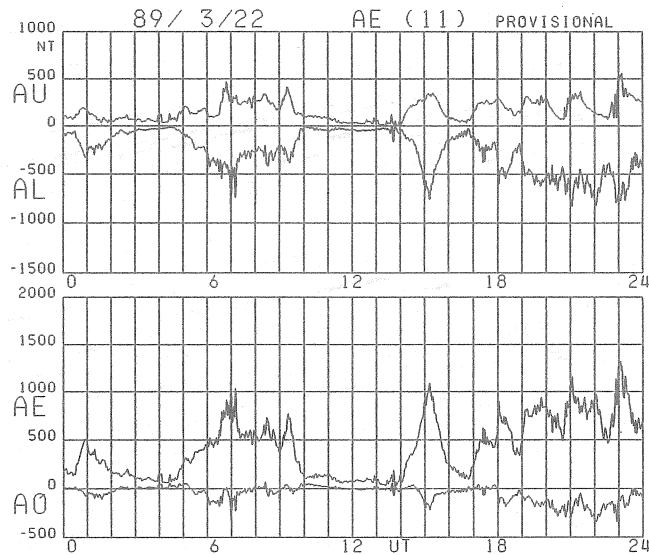
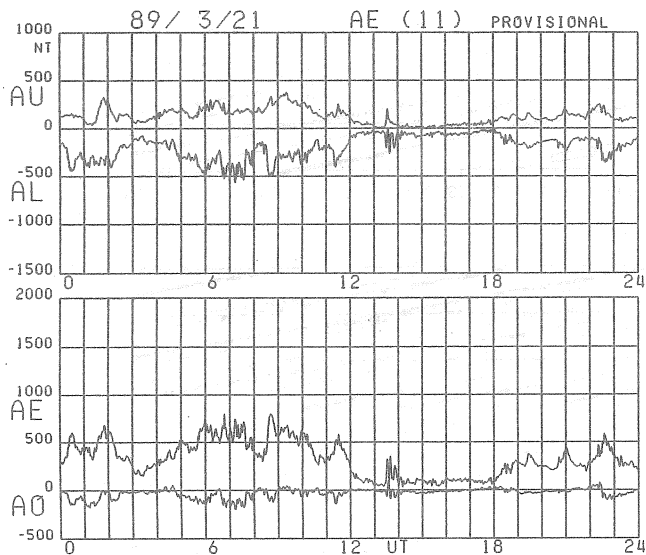
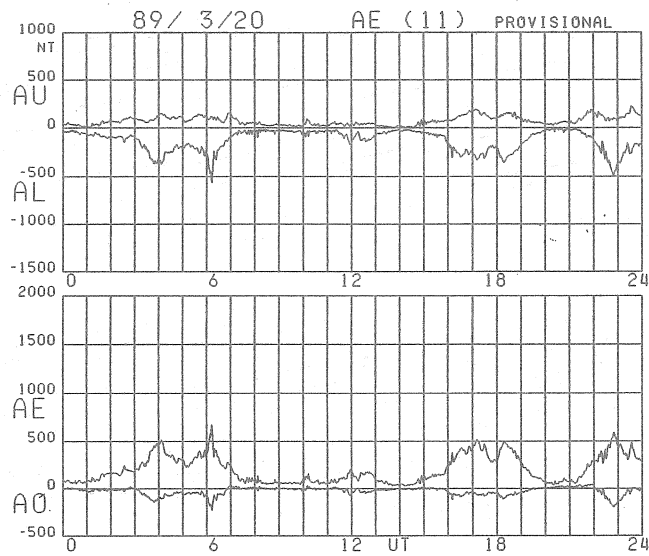
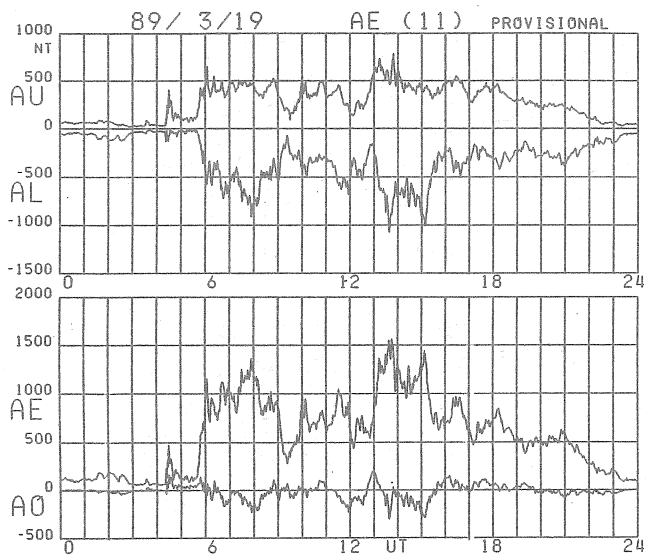


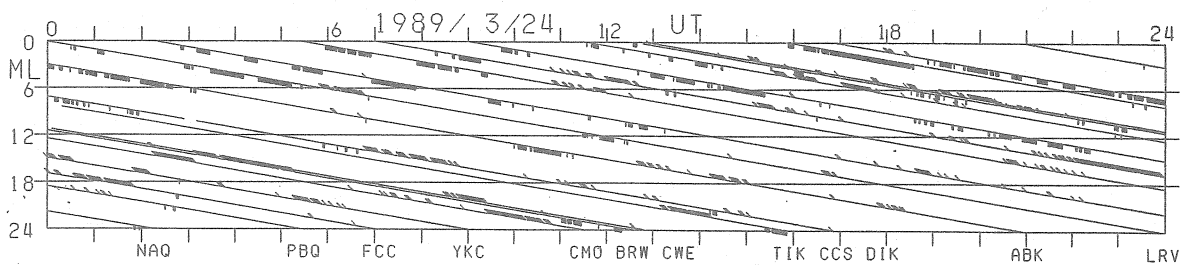
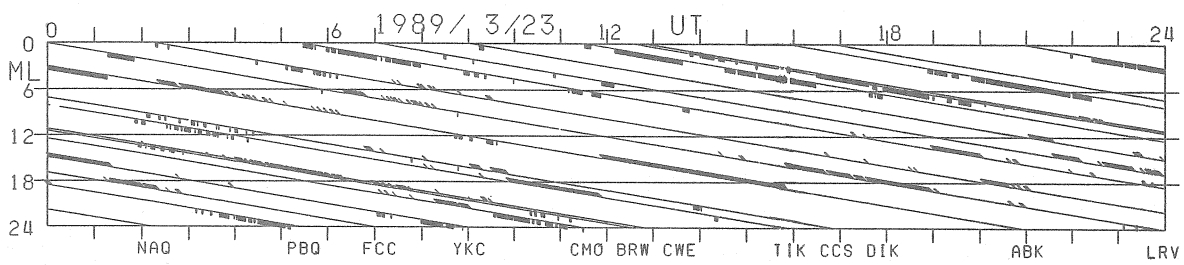
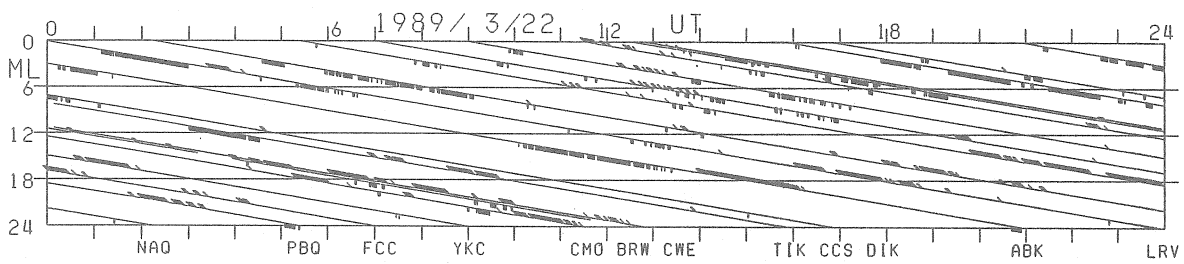
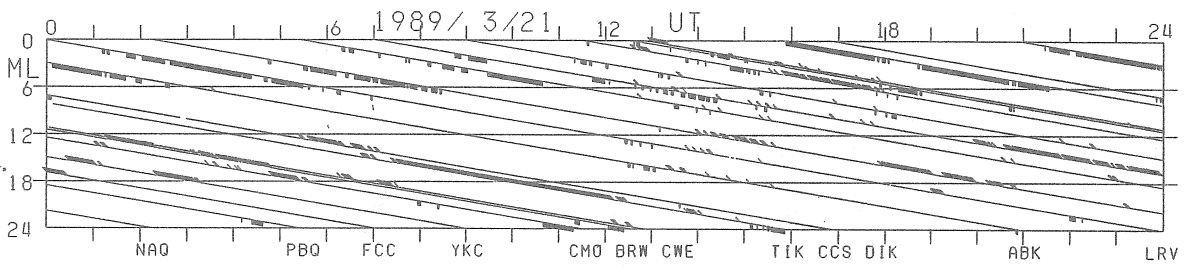
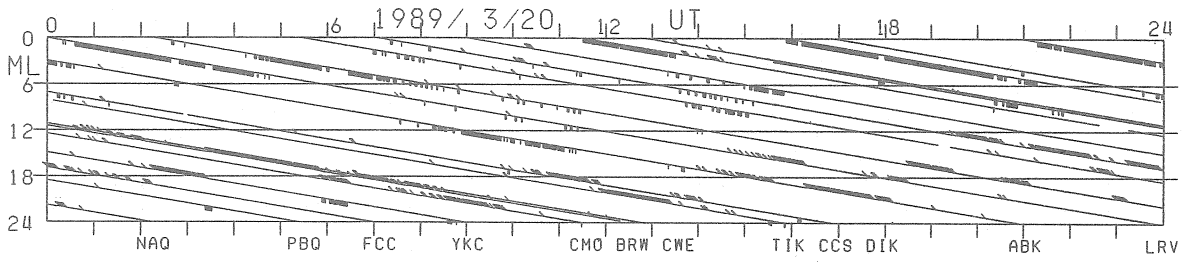
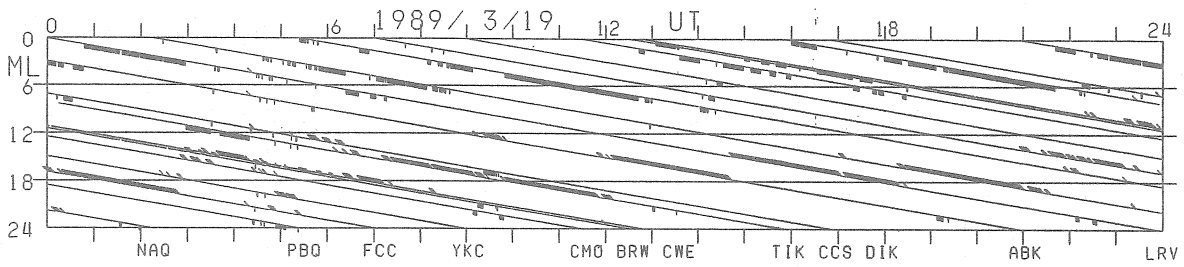


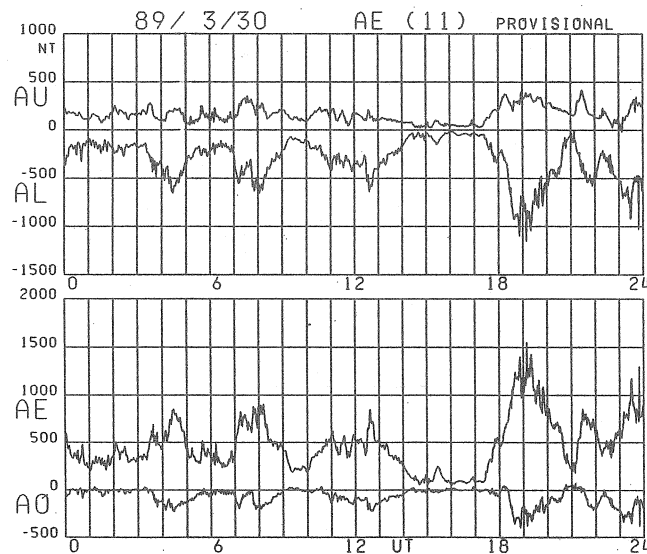
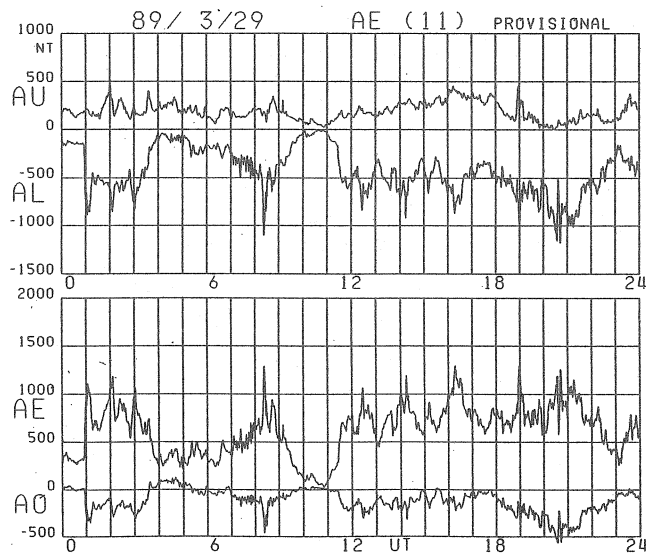
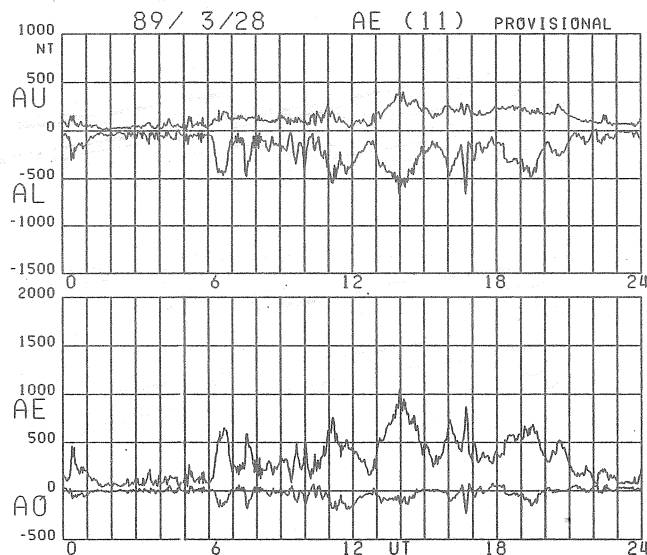
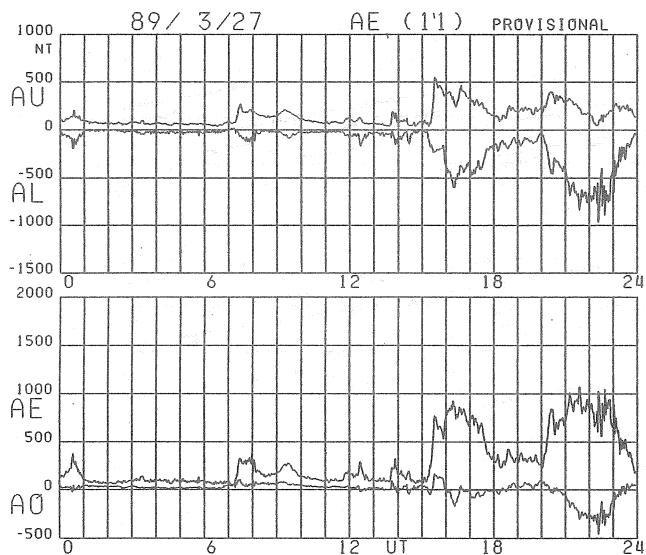
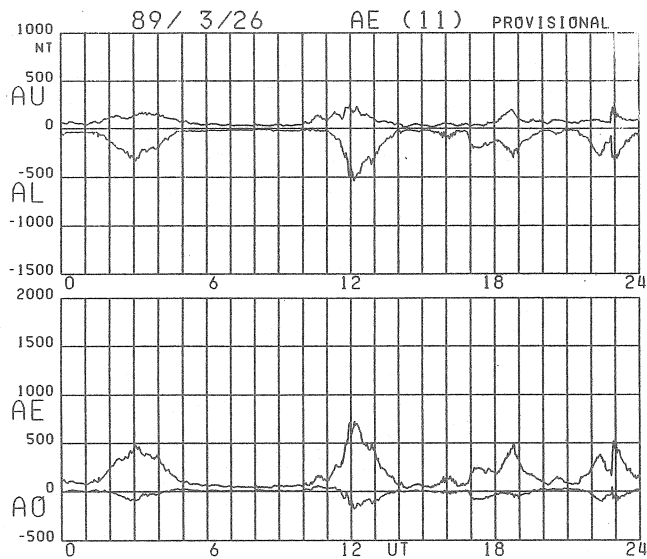
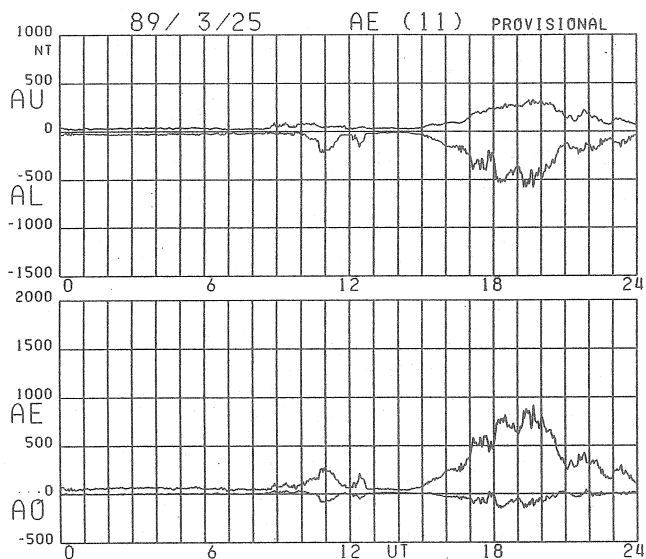


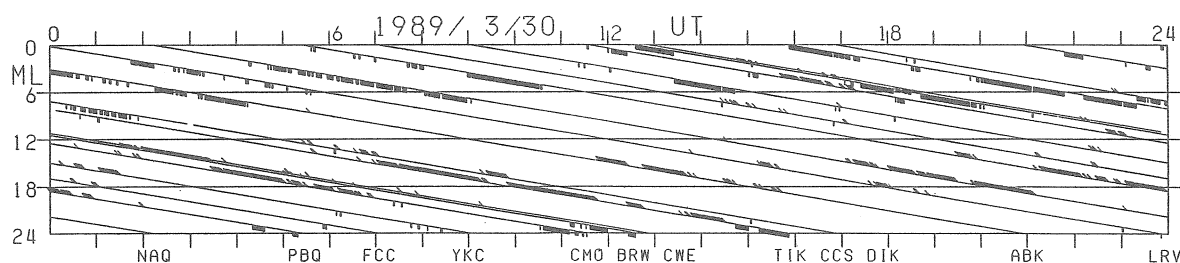
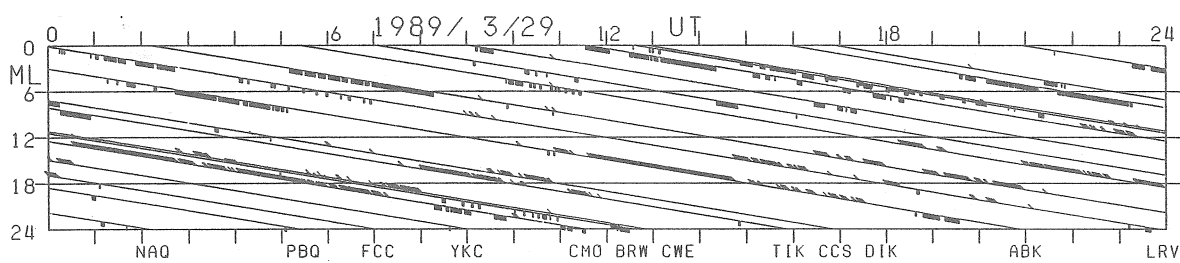
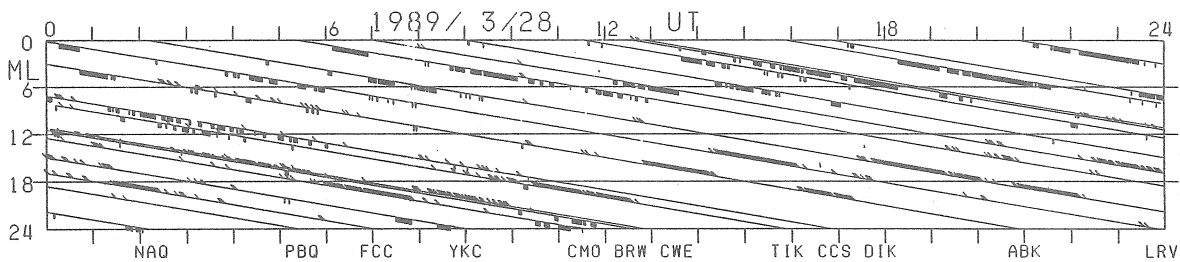
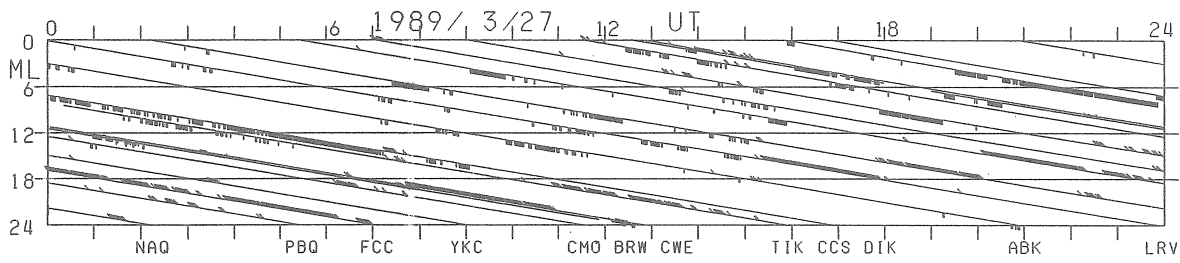
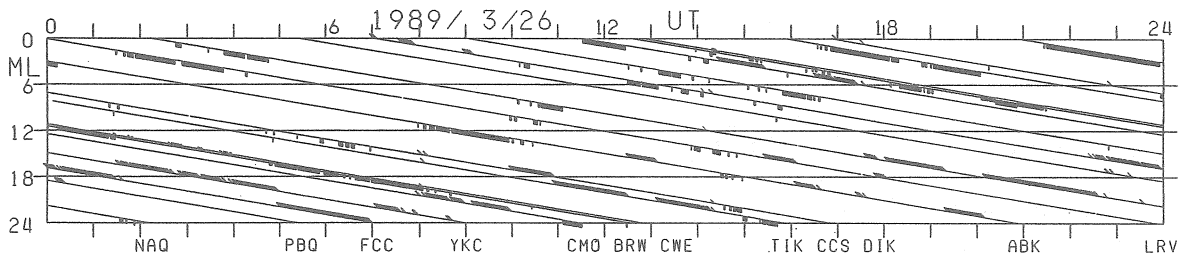
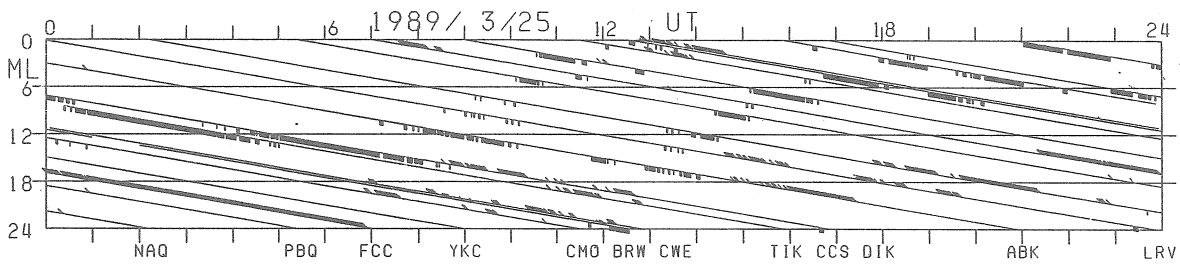


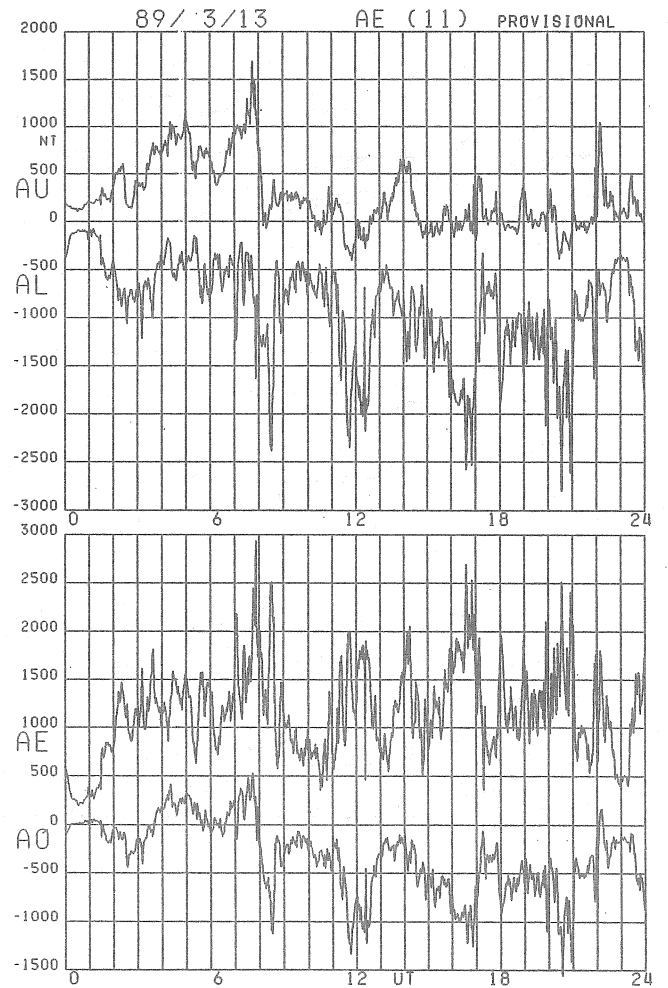
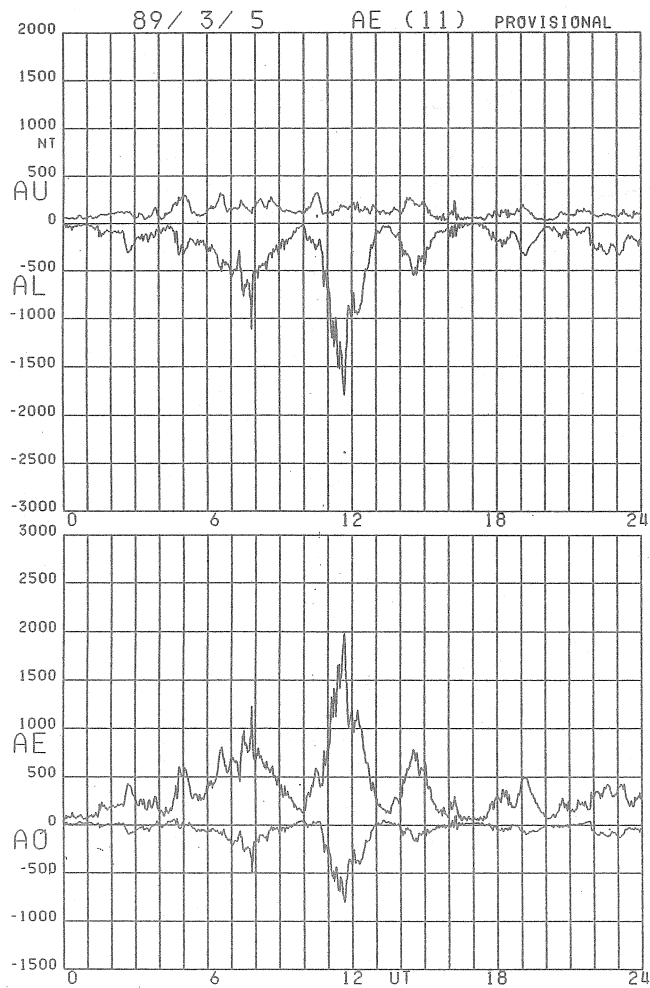
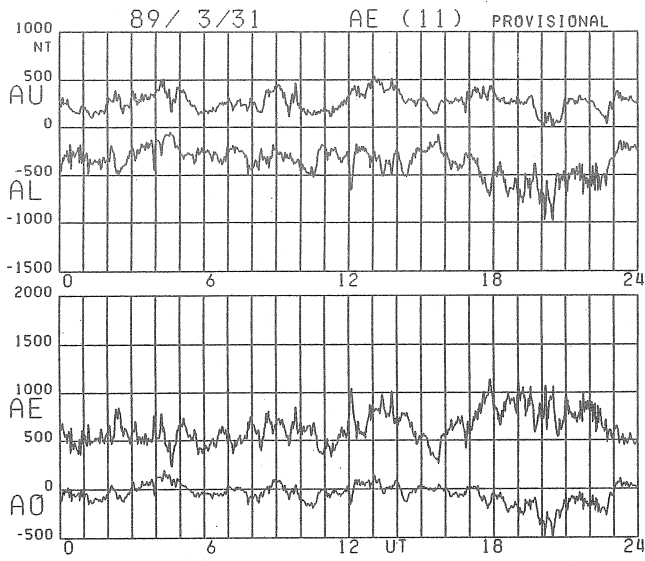


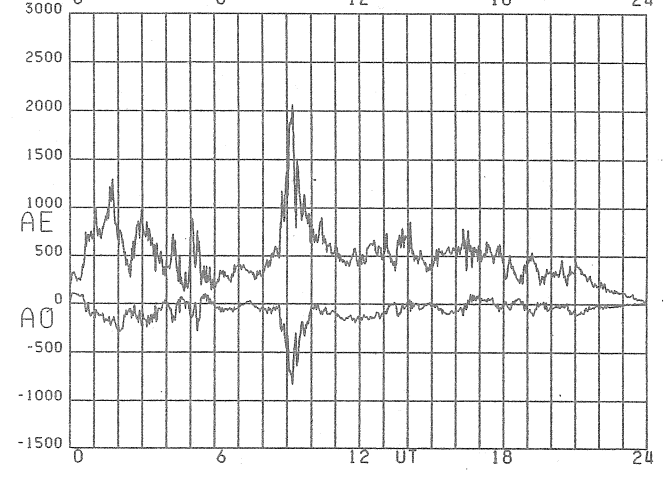
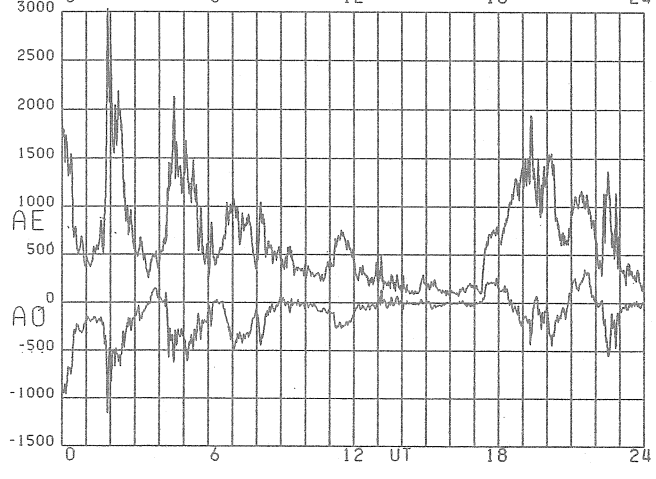
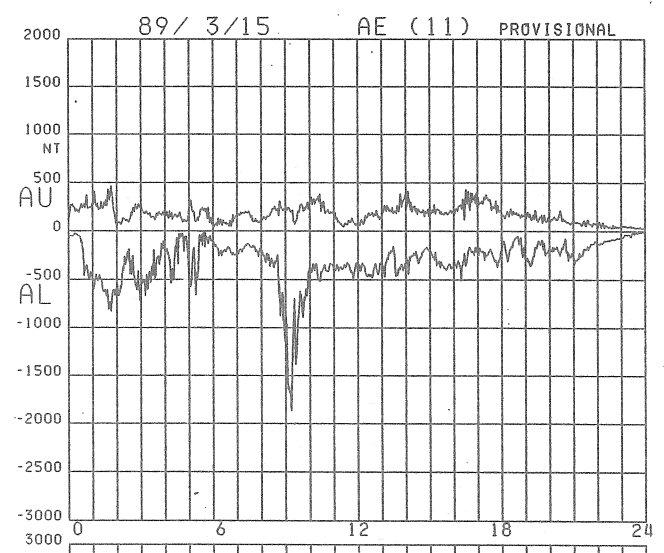
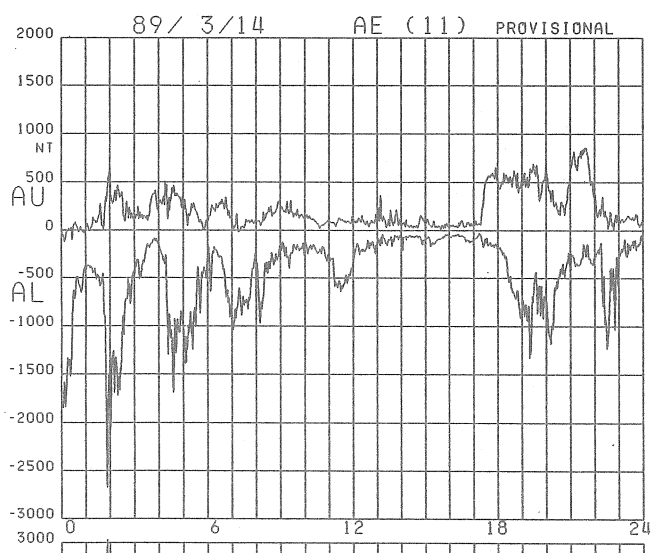
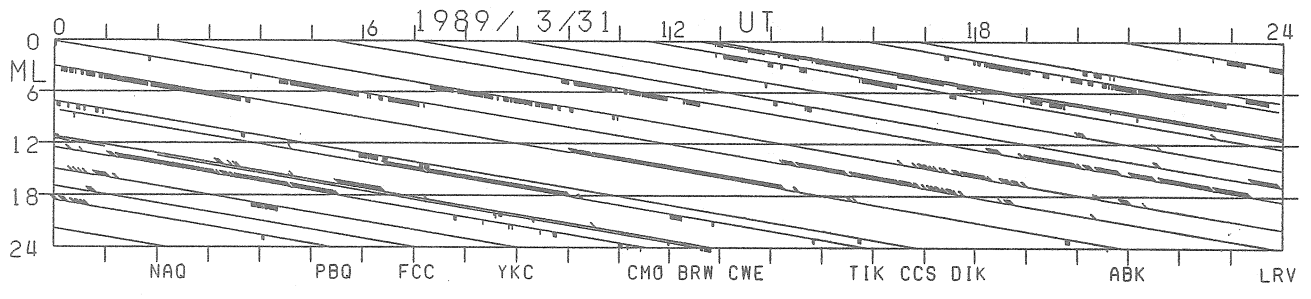












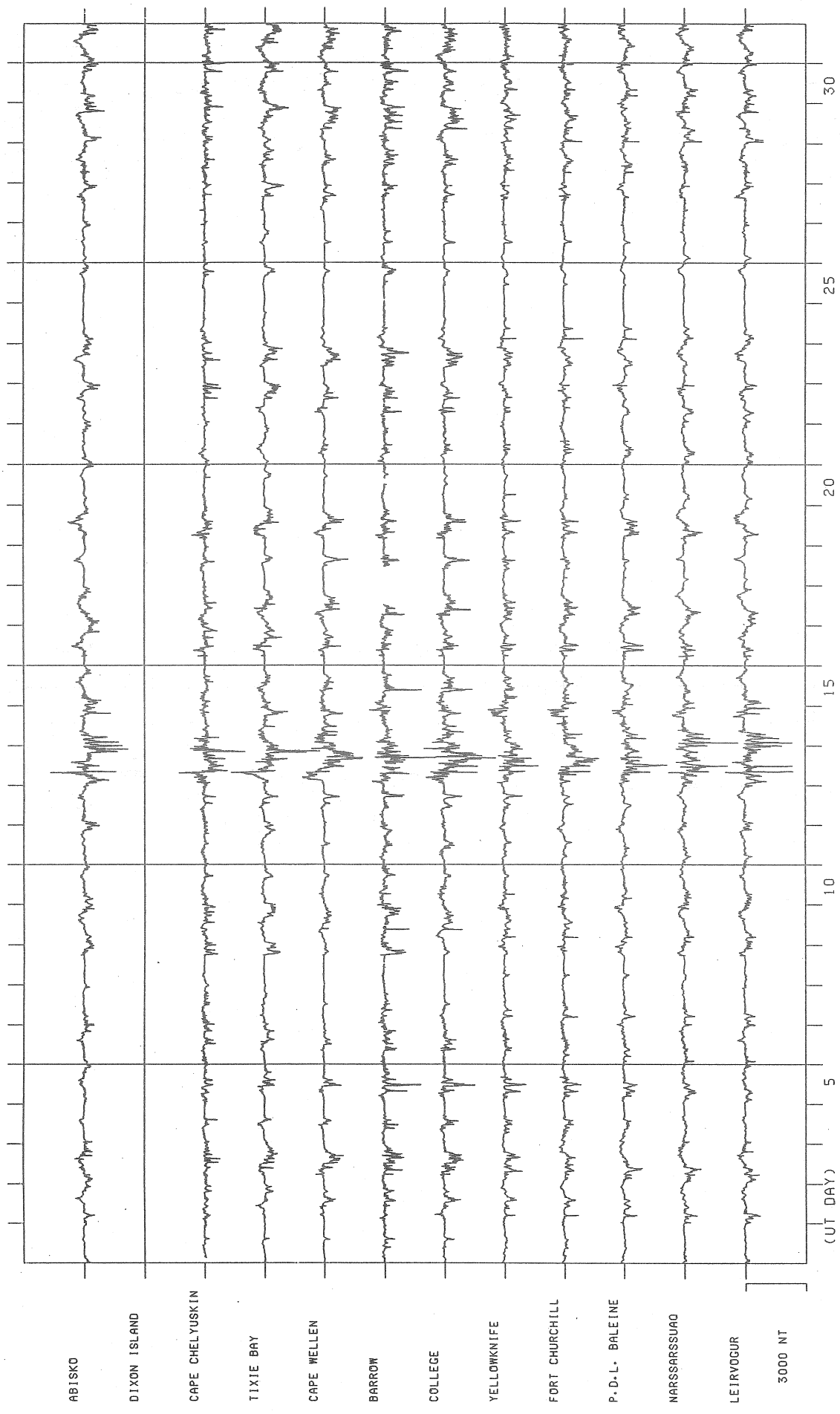


Figure 3 STACKED COMMON SCALE MAGNETOGRAMS FOR MARCH 1989 PRØV AE

