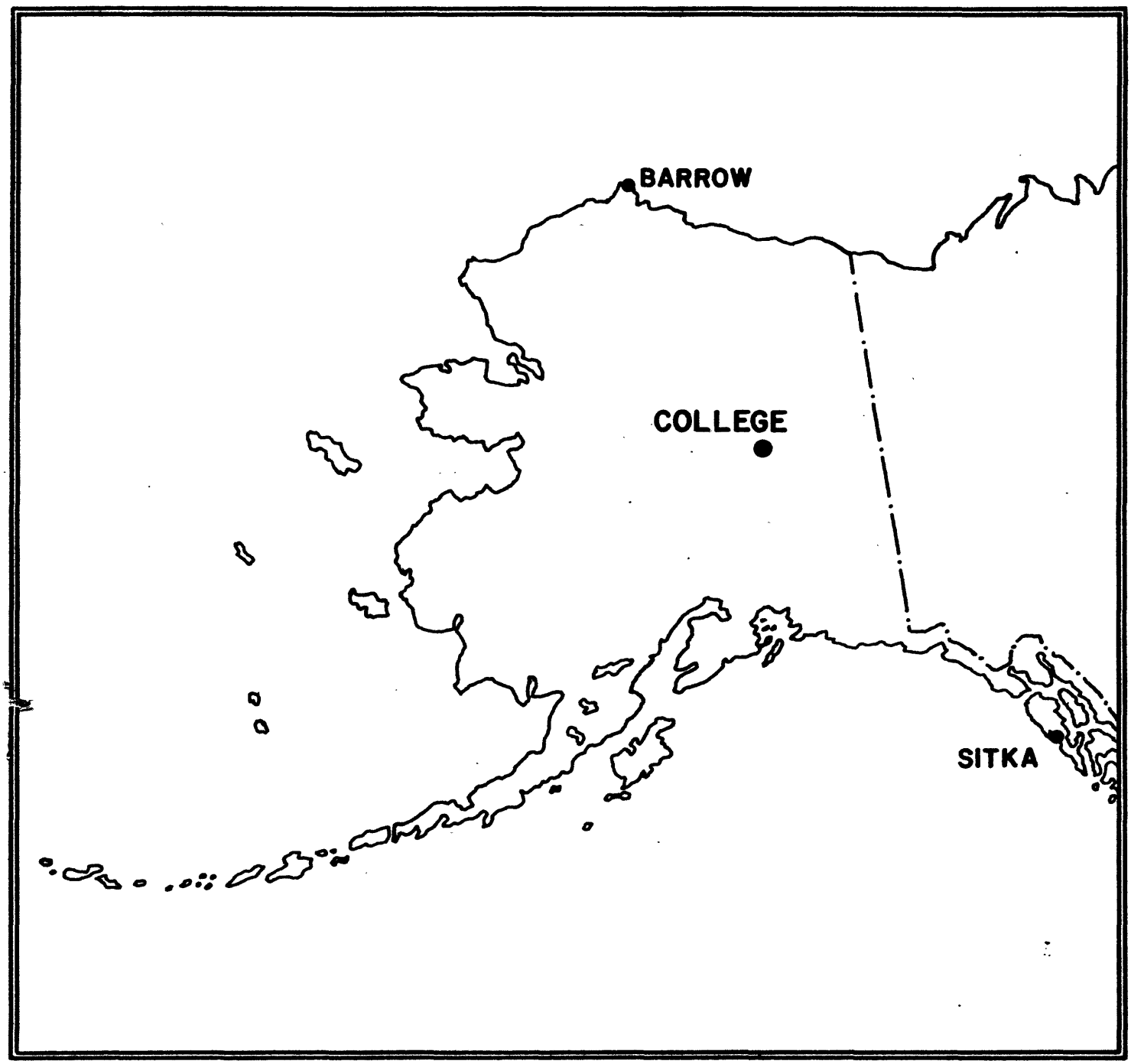
UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

MAY 1985

OPEN FILE REPORT 85-0300E



THIS REPORT WAS PREPARED UNDER THE DIRECTION OF JOHN B. TOWNSHEND, CHIEF OF THE COLLEGE OBSERVATORY, WITH THE ASSISTANCE OF THE OBSERVATORY STAFF MEMBERS: J.E. PAPP, E.A. SAUTER, L.Y. TORRENCE, P.A. FRANKLIN AND IN COOPERATION WITH THE GEOPHYSICAL INSTITUTE OF THE UNIVERSITY OF ALASKA. THE COLLEGE OBSERVATORY IS A PART OF THE BRANCH OF GLOBAL SEISMOLOGY AND GEOMAGNETISM OF THE U.S. GEOLOGICAL SURVEY.

COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

EXPLANATION OF DATA AND REPORTS

INTRODUCTION

The preliminary geomagnetic data included here is made available to scientific personnel and organizations as part of a cooperative effort and on a data exchange basis because of the early need by some users. To avoid delay, all of the data is copied from original forms processed at the observatory; therefore it should be regarded as preliminary. Inquiries about this report or about the College Observatory should be addressed to:

Chief, College Observatory
U.S. Geological Survey
800 Yukon Drive
Fairbanks, Alaska 99701

Requests for copies of the magnetograms except for the current month should be addressed to:

World Data Center A
NOAA D63, 325 Broadway
Boulder, Colorado 80303

OBSERVATORY LOCATION

The College Observatory, operated by the U.S. Geological Survey, is located at the University of Alaska, Fairbanks, Alaska. It is near the Auroral Zone and the northern limit of the world's greatest earthquake belt, the circum-Pacific Seismic belt. Although the observatory's basic operation is in geomagnetism and seismology, it cooperates with other scientists and organizations in areas where the facility and personnel can be of service.

The observatory is one of three operated by the USGS in Alaska. The others are located at Barrow and Sitka.

The position of the observatory site is:

Geographic latitude.....64°51.6'N
Geographic longitude.....147°50.2'W
Geomagnetic latitude.....+64.6°
Geomagnetic longitude.....+256.5°
Elevation.....200 meters

GEOMAGNETIC DATA

Normal, Storm and Rapid Run magnetograms and appropriate calibration data are processed daily at the observatory and are available for analysis or copying. Also available, are mean hourly scalings, K-Indices, selected magnetic phenomena reports and on a real-time basis are recordings from a 3-component fluxgate magnetometer and F-component proton magnetometer.

Magnetic Activity

The K-Index: The K-Index is a logarithmic measurement of the range of the most disturbed component (D or H) of the geomagnetic field for eight intervals beginning 0000-0300, 0300-0600...2100-2400 UT. It is a measure of the difference between the highest and lowest deviation from a smooth curve to be expected for a component on a magnetically quiet day, within a three hour interval.

The Equivalent Daily Amplitude, AK: The K-Index is converted into an equivalent range, ak, which is near the center of the limiting gamma ranges for a given K. The average of the eight values is called equivalent daily amplitude AK. The unit 10γ has been chosen so as not to give the illusion of an accuracy not justified.

The schedule for converting gamma range to K, and K to ak is as follows:

Gamma Range	K - Index	ak
0 < 25	0	0
25 < 50	1	3
50 < 100	2	7
100 < 200	3	15
200 < 350	4	27
350 < 600	5	48
600 < 1000	6	80
1000 < 1650	7	140
1650 < 2500	8	240
2500+	9	400 (10γ)

The Magnetic Daily Character Figure, C: To each Universal day a character is assigned on the basis C=0, if it is quiet; C=1, if it is moderately disturbed; C=2, if it is greatly disturbed. The method used to assign characters at the College Observatory is based on AK as follows:

AK Range	C
0≈11	0
11≈50	1
50+	2

Routine assignment of C was discontinued at College on January 1, 1976.

Selected Phenomena & Outstanding Magnetic Effects

Prior to January 1, 1976, the Normal and Rapid Run records were reviewed at the observatory for selected magnetic phenomena and the events identified were forwarded to the IUGG Commission on Magnetic Variations and Disturbances. This was discontinued on January 1, 1976, but a report on Outstanding Magnetic Effects is prepared monthly for this report.

Principal Magnetic Storms

Gradual and sudden commencement magnetic disturbances with at least one K-Index of 5 or greater, which are believed to be part of a world-wide disturbance, are classified as principal magnetic storms. The time of the storm beginning and ending; direction and amplitude of sudden commencements; period of maximum activity; and storm range are reported. Monthly reports of these data are forwarded to the World Data Center A in Boulder, Colorado.

Magnetogram Hourly Scalings

Magnetogram hourly scalings are averages for successive periods of one hour for the D, H and Z elements. The Value in the column headed "01" is the average for the hour beginning 0000 and ending 0100. Note that the values on the scaling sheets are in tenths of mm with the decimal point omitted. The user of these scalings should keep in mind that the tabular values are hourly means and if he is interested in the detailed morphology of the magnetic field, he should refer directly to the magnetograms.

Magnetograms

The normal magnetograms in this report are reproduced at about one-third the size of the originals. Preliminary base-line values and scale values adopted for use with the original magnetograms are included. For days when the magnetic field is too disturbed for the Normal magnetogram to be readable, Storm magnetograms are reproduced.

Absolutes, Base-lines and Scale Values

To determine the absolute value of the magnetic field from the hourly means or from point scalings the following equations should be used:

$D=B_D+d\cdot S_D$; $H=B_H+h\cdot S_H$; $Z=B_Z+z\cdot S_Z$

where D, H and Z are absolute values;
B_D, B_H and B_Z are base-line values;
S_D, S_H and S_Z are scale values;
and d, h and z are scalings in millimeters.

NOAA FORM 76-133 (9-72)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MAGNETIC ACTIVITY

(Greenwich civil time, counted from midnight to midnight)

OBSERVATORY: COLLEGE, ALASKA

MONTH AND YEAR: MAY 1985

DATE	K-INDICES 00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM	AK
1	2	2	2	5	3	2	0	1	17	12
2	4	5	7	7	4	3	1	2	33	51
3	1	1	3	5	3	3	1	0	17	13
4	2	2	4	5	5	4	0	1	23	21
5	1	2	2	1	1	1	2	2	12	05
6	3	2	3	2	2	2	1	1	16	08
7	2	2	1	2	1	1	1	2	12	05
8	2	2	1	4	2	3	1	1	16	09
9	2	3	3	5	3	0	0	0	16	13
10	0	0	0	0	0	0	1	1	02	01
11	2	2	3	3	0	0	1	0	11	06
12	1	2	4	4	5	2	2	2	22	17
13	2	4	3	2	2	3	2	2	20	12
14	3	3	3	2	1	2	2	1	17	09
15	3	4	3	4	5	5	2	2	28	24
16	2	3	3	3	5	5	2	2	25	20
17	1	2	1	2	4	4	1	2	17	11
18	2	2	1	3	3	3	3	2	19	11
19	2	3	3	4	4	3	3	2	24	16
20	3	2	1	0	0	1	1	1	09	04
21	1	1	1	0	3	3	3	2	14	08
22	2	2	1	2	0	0	1	2	10	04
23	2	2	1	0	1	0	1	1	08	03
24	1	1	0	0	0	0	2	1	05	02
25	0	1	0	0	0	2	2	3	08	04
26	2	2	1	1	4	3	1	1	15	09
27	2	2	2	2	4	0	0	1	13	07
28	0	1	1	3	4	1	1	1	12	07
29	1	2	1	0	0	1	1	0	06	02
30	0	0	0	1	0	0	0	1	02	01
31	3	3	2	0	0	0	1	1	10	05

TIME SCALE ON MAGNETOGRAMS: 20 mm/hr

SUDDEN COMMENCEMENTS

d	h	m

POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)

BEGIN d	h	m	END d	h	m

K SCALE USED:	D	H	Z	
LOWER LIMIT FOR K = 9.....	675.7	322.2		(mm)
CURRENT SCALE VALUE.....	3.72	7.83		(γ/mm)
LOWER LIMIT FOR K = 9	2510	2520		(to nearest 10γ)

SCALINGS AND COMPUTATIONS HAVE BEEN CHECKED.

APPROVED JOHN B. TOWNSHEND, CHIEF, COLLEGE OBSERVATORY
OBSERVER IN CHARGE

NOAA FORM 76-133 SUPERSEDES C&GS FORM 815

☆ U.S. GOVERNMENT PRINTING OFFICE: 1973-761-857

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY: COLLEGE, ALASKA

MONTH: MAY

YEAR: 1985

DATE	TIME U.T.	NATURE OF PHENOMENON [1]	REMARKS
07	11xx	pi 2	
23	13xx	pi 2	
27	20xx	pc 3, pc 4	
30	09xx	pi 2	with small bay

IDENTIFIED BY: JEP

VERIFIED BY: JEP

1. NATURE OF PHENOMENON: ssc, ssc*, si, si*, b, bp, bs, bps, pc1, pc2 - - - pc5, pg, pi 1, pi 2, sfe.

NOAA FORM 86-500
(11/73)

PRINCIPAL MAGNETIC STORMS

WDC-A FOR SOLAR-TERRESTRIAL PHYSICS
ENVIRONMENTAL DATA SERVICE, NOAA
BOULDER, COLORADO 80302 U.S.A.

Data from Individual Observatories: COLLEGE OBSERVATORY, COLLEGE, ALASKA

MAY 1985

Obs. 2 letter IAGA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End	
		day	hr min (UT)	type	D(')	H(γ)	Z(γ)	day	(3 hr - period)	K	D(')	H(γ)	Z(γ)	day	hr
CO	64.6 N	01	22xx	..	..	..	..	02	3, 4	7	288	1750	1080	02	24

COLLEGE OBSERVATORY, COLLEGE, ALASKA -- PRELIMINARY CALIBRATION DATA FOR: MAY 1985

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T. 5-1-85	2400 U.T. 5-31-85	1.0'/mm	3.7γ/mm	27° 16.7' E
H	0000 U.T. 5-1-85	2400 U.T. 5-10-85	7.8γ/mm		12672 γ
	0000 U.T. 5-11-85	2400 U.T. 5-25-85	"		12676 γ
	0000 U.T. 5-26-85	2400 U.T. 5-31-85	"		12681 γ
Z	0000 U.T. 5-1-85	2400 U.T. 5-4-85	7.6γ/mm		55176 γ
	0000 U.T. 5-5-85	2400 U.T. 5-25-85	"		55174 γ
	0000 U.T. 5-26-85	2400 U.T. 5-31-85	"		55171 γ

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T. 5-1-85	2400 U.T. 5-31-85	7.9'/mm	29.5γ/mm	23° 45.8' E
H	0000 U.T. 5-1-85	2400 U.T. 5-31-85	43.8γ/mm		10712 γ
Z	0000 U.T. 5-1-85	2400 U.T. 5-31-85	48.2γ/mm		54120 γ

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION
	FROM	TO	SCALE VALUE
D			
H			
Z			

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
27° 39.3' E	12905 γ	55346 γ

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: MAY 5, 7, 10, 20, 22, 23, 24, 25, 29, 30

Form C&GS-404a

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225

OBSY.	YEAR	MONTH	ELEMENT
COL	85	MAY	D

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (120W M.T.) is hour 08 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q or S	Ten Q	Hr No.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. No.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	192	190	185	193	197	221	222	191	210	218	431	218	01	241	246	234	300	303	312	314	292	272	248	218	206	5854
			02	177	126	73	-69*	-37*	59*	-212*	-77*	368*	106*	114*	215	02	336*	352*	314	292	313	319	300	276	243	228	228	188	4232
			03	203	203	205	203	205	213	217	215	217	339	261	253	03	277	297	337	350	328	339	329	305	272	245	212	184	6209
			04	172	168	148	165	193	204	183	174	226	196	235	184	04	289	297	408	422	498	344	317	282	254	208	174	168	5909
			05	160	163	178	192	203	212	243	214	200	200	219	217	05	245	244	256	286	299	318	321	264	192	178	175	159	5338
			06	152	107	130	122	164	150	229	216	212	208	221	223	06	220	250	273	294	319	336	300	283	257	218	199	183	5266
			07	173	163	156	160	173	203	224	221	214	209	224	216	07	242	230	262	298	311	327	310	277	246	229	166	182	5416
			08	163	126	157	150	187	200	227	234	213	328	283	260	08	240	249	267	296	366	334	318	286	246	231	200	187	5748
			09	143	138	113	94	114	111	135	170	157	134	230	224	09	255	293	267	283	300	286	262	236	233	218	202	201	4799
			10	187	179	183	187	203	217	219	217	219	220	232	233	10	247	253	284	319	351	347	336	284	276	244	212	190	5939
			11	214	207	203	201	190	180	160	248	175	210	217	227	11	245	256	274	275	279	284	305	273	243	207	180	176	5429
			12	164	158	168	177	193	192	184	232	216	101	159	205	12	248	265	315	286	346	338	273	237	200	94	127	146	5024
			13	148	126	135	153	161	157	150	214	194	203	204	217	13	258	284	292	350	386	330	333	335	253	225	166	142	5416
			14	129	127	113	96	157	193	205	207	232	245	220	235	14	252	280	330	353	384	379	336	284	271	221	190	177	5616
			15	159	138	162	145	168	180	198	190	162	110	248	252	15	278	315	328	330	352	355	330	247	218	211	184	151	5411
			16	152	147	170	187	181	154	177	169	166	133	152	237	16	242	420	365	407	448	418	336	272	222	221	173	157	5706
			17	147	150	167	170	193	211	213	216	223	212	207	207	17	244	291	340	289	348	366	343	301	270	187	148	160	5593
			18	136	100	162	156	187	204	204	192	183	170	166	246	18	200	236	270	318	359	344	296	208	200	180	151	129	4997
			19	127	146	151	160	158	151	117	94	190	144	183	216	19	207	243	289	360	353	382	327	267	177	140	137	152	4871
			20	133	103	156	167	190	211	216	216	215	217	213	221	20	226	243	263	292	309	317	303	286	236	230	206	199	5368
			21	190	182	183	189	197	219	222	204	199	202	207	223	21	227	235	295	318	323	366	322	293	258	229	162	167	5612
			22	143	130	154	197	199	208	229	216	224	240	219	207	22	220	233	267	290	326	333	323	271	250	222	208	183	5492
			23	180	178	169	179	217	203	201	203	207	211	211	213	23	226	243	243	279	304	323	306	267	232	207	196	173	5371
			24	150	147	151	179	182	197	212	210	216	224	220	225	24	223	241	264	286	307	308	319	309	272	173	180	177	5372
			25	178	177	172	179	196	218	223	220	218	214	213	212	25	217	240	242	271	373	349	320	312	288	330	117	143	5622
			26	120	109	157	169	190	204	213	203	203	202	194	198	26	207	227	274	345	335	319	314	261	221	203	172	172	5212
			27	184	189	187	187	197	213	203	199	194	243	223	173	27	202	196	246	283	303	317	300	281	230	200	183	177	5310
			28	167	178	184	187	195	202	210	207	190	198	246	218	28	203	274	262	270	292	321	319	298	269	232	188	166	5476
			29	133	123	138	176	198	221	219	201	223	191	197	206	29	215	226	253	275	300	327	305	281	259	204	165	169	5205
			30	169	178	186	196	212	210	203	202	203	206	223	237	30	233	247	278	304	327	344	336	306	273	228	177	154	5632
			31	156	163	154	171	160	176	232	177	179	186	198	207	31	218	253	288	304	327	335	328	312	270	215	201	170	5380

SCALED BY	LYT
CHECKED BY	JEP, PAF
SIGNS REVIEWED BY	JEP
PUNCHED BY	

Preliminary base-line and scale values:

Interval Beginning	Base-line Value	Scale Value

( ) Interpolated
[Significant portion of hour interpolated.
□ No record; or no values available because of faulty record.
[] Scaling uncertain because of magnetic storm.
<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.
* Derived from STORM Mgph., converted to Normal Mgph.

MONTHLY SUM	167,725
MONTHLY MEAN	225
DATES WITH GAPS:	

FORM C&GS-484a

MAGNETOGRAM HOURLY SCALINGS

(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (120W M.T.) is hour 08 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

OBSY.	YEAR	MONTH	ELEMENT
COL	85	MAY	Z

C	Qual S	Test Q	Hr. Dy.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. Dy.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	238	243	243	247	251	280	267	257	226	256	241	172	01	207	203	217	251	252	242	236	231	220	223	223	228	5654
			02	246	245	259	120*	108*	57*	-197*	-33*	253*	399*	95*	238	02	297*	392*	274	234	257	256	249	244	236	234	240	239	4942
			03	238	240	237	240	249	253	253	253	250	146	64	161	03	207	204	229	222	203	216	226	217	214	219	228	226	5195
			04	236	231	233	251	263	263	251	258	201	195	236	259	04	334	112	100	51	57	156	226	230	230	231	235	243	5082
			05	243	248	246	245	251	257	270	239	247	248	250	234	05	227	218	199	200	209	225	217	200	188	193	209	217	5480
			06	230	229	312	314	318	327	289	285	300	270	235	226	06	197	209	183	218	234	223	230	230	229	226	228	231	5973
			07	227	247	286	277	282	276	256	237	234	234	239	174	07	178	205	214	221	216	197	193	201	200	207	211	243	5455
			08	243	241	251	248	254	258	255	259	247	210	126	103	08	161	184	190	143	80	99	166	183	197	210	216	226	4750
			09	232	254	246	255	304	303	357	320	249	195	302	259	09	189	166	203	223	224	217	220	227	233	227	233	236	5874
			10	234	236	233	228	230	233	233	230	230	231	228	226	10	229	227	223	217	212	207	203	189	190	187	197	210	5263
			11	225	229	226	231	226	236	253	265	234	258	253	233	11	223	225	229	221	213	213	220	216	210	207	207	211	5464
			12	217	230	227	231	233	228	233	221	118	203	244	239	12	217	195	66	173	182	128	107	137	168	166	213	235	4611
			13	256	277	290	278	288	303	357	336	295	273	253	235	13	183	190	190	140	143	146	161	183	179	197	229	234	5616
			14	227	239	287	336	350	290	266	253	241	238	243	235	14	213	196	180	194	160	153	174	186	203	196	198	206	5464
			15	219	240	264	279	284	290	275	282	226	222	209	171	15	259	230	252	126	116	203	192	182	193	219	258	267	5458
			16	239	235	239	233	229	250	287	277	257	240	190	223	16	245	237	258	118	48	167	190	213	226	228	220	221	5270
			17	233	234	232	248	253	240	233	230	231	230	230	216	17	153	161	166	150	193	219	218	210	210	214	237	246	5187
			18	249	255	281	250	269	263	261	248	246	233	236	203	18	220	233	168	188	210	156	112	126	182	207	242	253	5291
			19	276	300	337	333	300	307	306	290	296	247	230	238	19	225	222	147	120	140	170	140	168	193	196	209	224	5614
			20	239	293	323	273	240	238	234	233	237	237	230	226	20	227	230	233	232	237	227	226	217	211	222	223	225	5713
			21	231	231	233	237	241	260	258	245	234	229	229	223	21	165	133	181	193	194	107	95	158	186	197	208	226	4889
			22	237	243	249	251	233	237	255	236	243	193	210	223	22	233	237	237	237	236	238	224	209	209	200	207	209	5481
			23	213	226	240	266	279	248	230	228	224	227	226	227	23	219	198	216	226	227	229	227	224	219	214	217	213	5463
			24	218	223	226	231	227	230	230	227	229	229	231	229	24	226	226	220	220	226	221	222	217	208	193	202	209	5320
			25	216	226	232	233	227	229	230	226	224	223	226	225	25	224	226	229	229	220	223	219	212	203	218	189	219	5328
			26	243	270	284	246	244	239	243	236	247	253	237	222	26	210	204	173	100	130	203	203	196	202	215	218	219	5237
			27	221	223	226	232	251	260	254	254	239	241	199	210	27	166	163	197	230	233	231	230	228	220	217	208	216	5349
			28	218	226	227	222	226	226	225	231	242	205	170	186	28	187	173	211	229	211	210	216	217	214	216	211	215	5114
			29	230	233	241	240	242	246	251	250	273	242	230	228	29	229	230	233	230	229	217	205	207	203	205	207	213	5514
			30	214	218	220	223	224	217	216	219	226	230	230	207	30	203	218	220	221	225	220	217	214	214	203	197	196	5192
			31	207	217	221	227	227	261	267	263	263	237	223	217	31	217	221	223	219	211	216	214	203	194	191	193	203	5335

SCALED BY	LYT
CHECKED BY	JEP, PAF
SIGNS REVIEWED BY	JEP
PUNCHED BY	

Preliminary base-line and scale values:

Interval Beginning	Base-line Value	Scale Value

( ) Interpolated
[ ] Significant portion of hour interpolated.
[ ] No record; or no values available because of faulty record.
[ ] Scaling uncertain because of magnetic storm.
<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.
Derived from STORM Mgph., converted to Normal Mgph.

MONTHLY SUM	165,578
MONTHLY MEAN	223
DATES WITH GAPS:	

FORM C&GS-404a

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225

OBSY.	YEAR	MONTH	ELEMENT
COL	85	MAY	H

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (120W M.T.) is hour 08 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q or S	Ten Q	Hr. No.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. No.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	280	280	289	288	295	305	317	320	330	218	134	290	01	264	224	300	303	293	297	292	290	293	289	286	305	6782
			02	290	312	454	585*	613*	388*	193*	271*	26*	-814*	103*	248	02	16	-9	98	290	321	321	323	313	300	281	296	278	5497
			03	284	280	283	290	286	296	300	307	332	144	131	195	03	240	267	237	255	262	311	293	280	278	273	270	270	6364
			04	268	290	310	310	277	310	330	364	304	350	298	134	04	77	-64	-25	142	162	320	314	298	285	279	278	280	5891
			05	285	289	299	300	311	307	309	310	311	300	306	300	05	290	283	267	267	295	293	265	233	263	270	272	274	6899
			06	293	332	330	410	348	384	425	379	338	310	286	285	06	246	269	248	301	288	272	288	278	270	268	264	270	7382
			07	290	294	324	314	306	307	299	299	294	301	300	258	07	287	297	288	284	268	278	290	269	255	250	263	306	6921
			08	292	293	298	321	291	306	307	316	318	310	312	278	08	300	292	257	130	188	282	291	283	268	262	269	260	6724
			09	281	307	321	359	417	415	469	457	367	328	126	205	09	136	234	291	300	290	287	280	293	299	285	270	269	7286
			10	270	277	283	293	298	300	302	300	306	309	309	304	10	302	301	299	294	297	292	280	280	279	282	265	270	6992
			11	282	293	283	297	316	336	370	449	450	409	320	298	11	289	287	288	280	281	287	287	278	272	269	271	278	7470
			12	299	287	277	283	288	310	313	389	336	248	291	293	12	273	-59	151	288	251	223	230	252	251	240	297	300	6311
			13	331	343	333	323	438	482	455	350	360	340	330	297	13	246	231	216	311	176	217	292	291	280	270	280	291	7483
			14	278	340	353	416	358	309	322	368	393	350	320	297	14	271	260	241	248	236	278	279	282	272	266	268	276	7281
			15	309	309	327	383	380	432	351	387	437	373	224	134	15	96	62	-29*	-96*	257	276	271	259	273	267	283	289	6254
			16	289	317	282	279	312	353	367	418	427	400	367	253	16	149	41	-61	-49	160	272	291	261	282	260	255	263	6188
			17	292	306	308	307	290	284	293	292	303	310	320	290	17	190	172	87	122	259	292	283	276	247	229	275	278	6305
			18	299	320	268	326	325	323	311	323	310	317	307	308	18	309	239	171	274	257	185	154	218	250	249	269	293	6605
			19	339	347	359	340	287	363	452	490	420	374	313	297	19	267	191	80	147	262	207	198	260	252	253	273	293	7064
			20	310	379	357	274	258	246	267	272	289	291	291	289	20	289	289	291	293	298	291	288	278	279	272	276	283	6950
			21	286	274	286	305	315	321	309	307	310	303	308	310	21	218	131	289	299	260	170	242	299	277	265	255	289	6628
			22	309	283	312	299	318	302	309	318	315	297	313	306	22	307	303	302	305	299	297	274	289	273	282	275	273	7160
			23	283	281	312	319	294	293	303	307	309	313	314	311	23	301	296	298	294	285	299	303	292	283	280	269	275	7114
			24	287	290	302	302	307	297	300	310	307	314	319	320	24	323	314	309	311	301	297	297	286	268	272	270	273	7176
			25	279	280	289	292	300	300	303	303	310	316	319	319	25	313	319	319	300	311	311	298	291	274	254	252	291	7143
			26	306	304	313	316	297	298	292	305	308	310	310	296	26	289	287	187	130	265	298	280	282	284	270	253	266	6746
			27	285	291	293	308	302	290	300	300	307	311	290	290	27	186	143	287	298	290	288	285	274	270	260	260	273	6681
			28	289	293	292	290	297	286	289	320	313	293	267	283	28	199	152	307	322	299	306	309	295	280	268	268	273	6790
			29	277	298	299	298	308	291	310	323	319	308	298	297	29	304	306	302	301	279	275	289	288	280	270	270	270	7060
			30	275	281	282	296	287	292	301	303	308	311	307	292	30	318	319	309	308	303	293	290	280	275	267	269	279	7045
			31	280	280	304	297	318	346	355	341	318	311	303	306	31	304	301	293	288	291	291	279	276	276	268	273	270	7169

SCALED BY	LYT
CHECKED BY	JEP, PAF
SIGNS REVIEWED BY	JEP
PUNCHED BY	

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Interval Beginning	Base-line Value	Scale Value

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[ ] Significant portion of hour interpolated.
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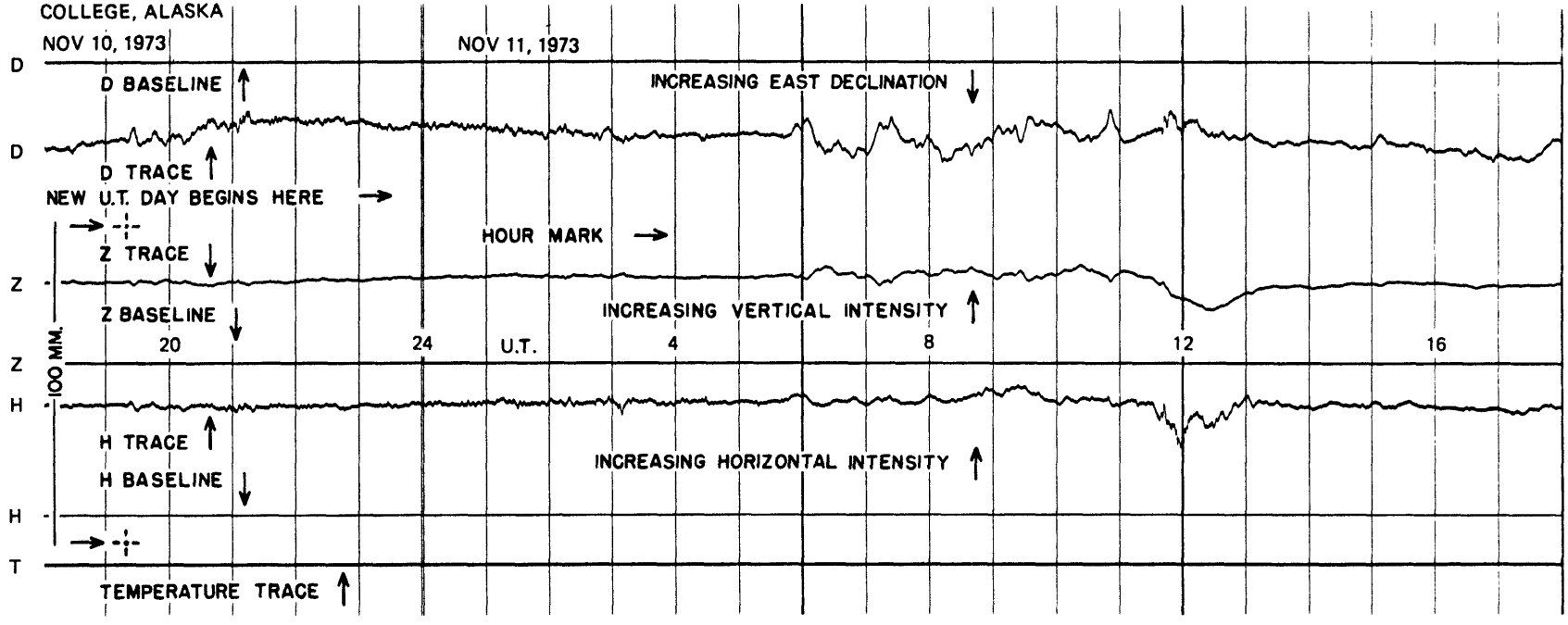
* Derived from STORM Mgph., converted to Normal Mgph.

MONTHLY SUM	211,361
MONTHLY MEAN	284
DATES WITH GAPS:	

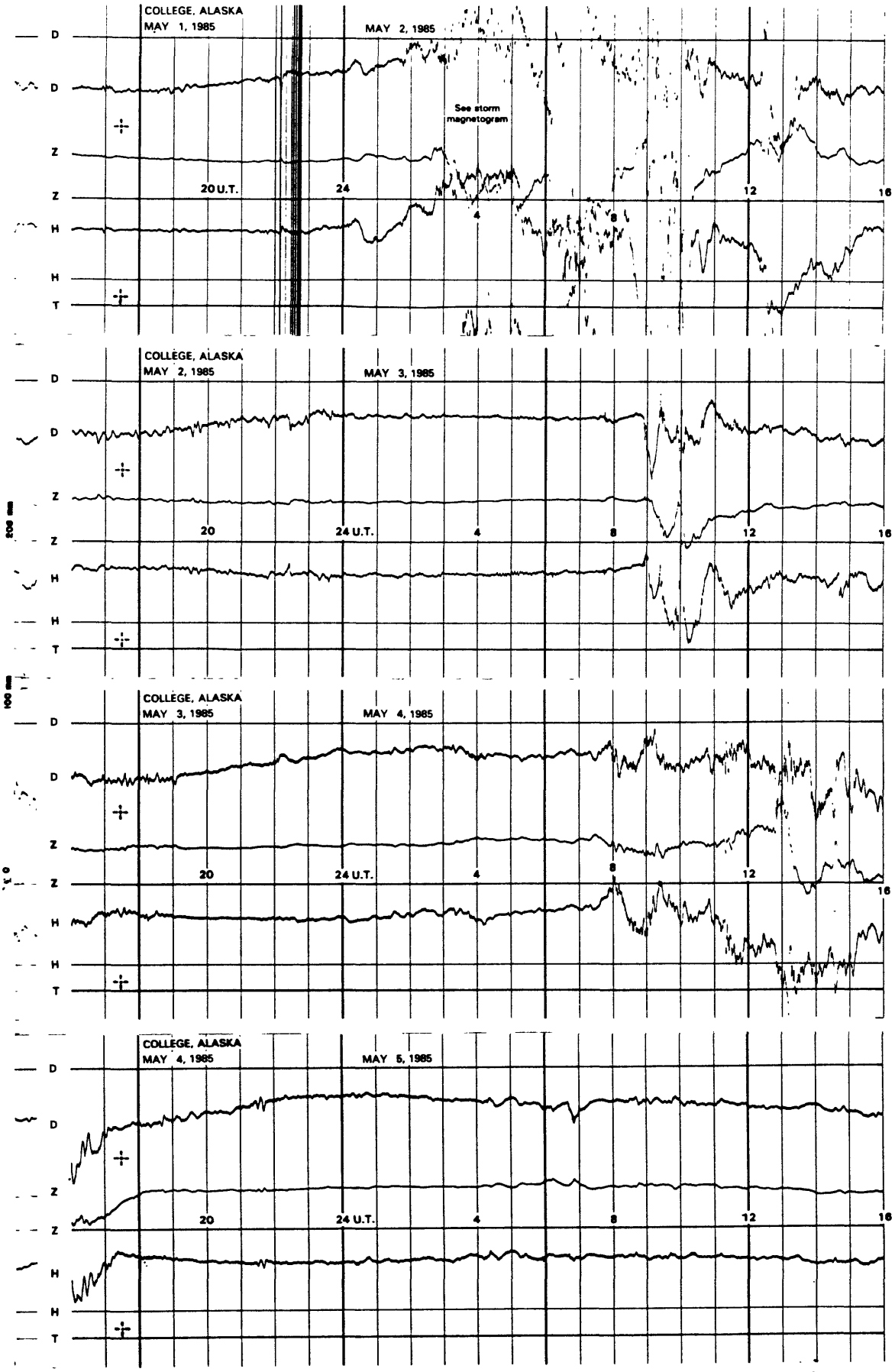
FORMAT FOR NORMAL & STORM MAGNETOGRAMS

(SAMPLE ONLY)

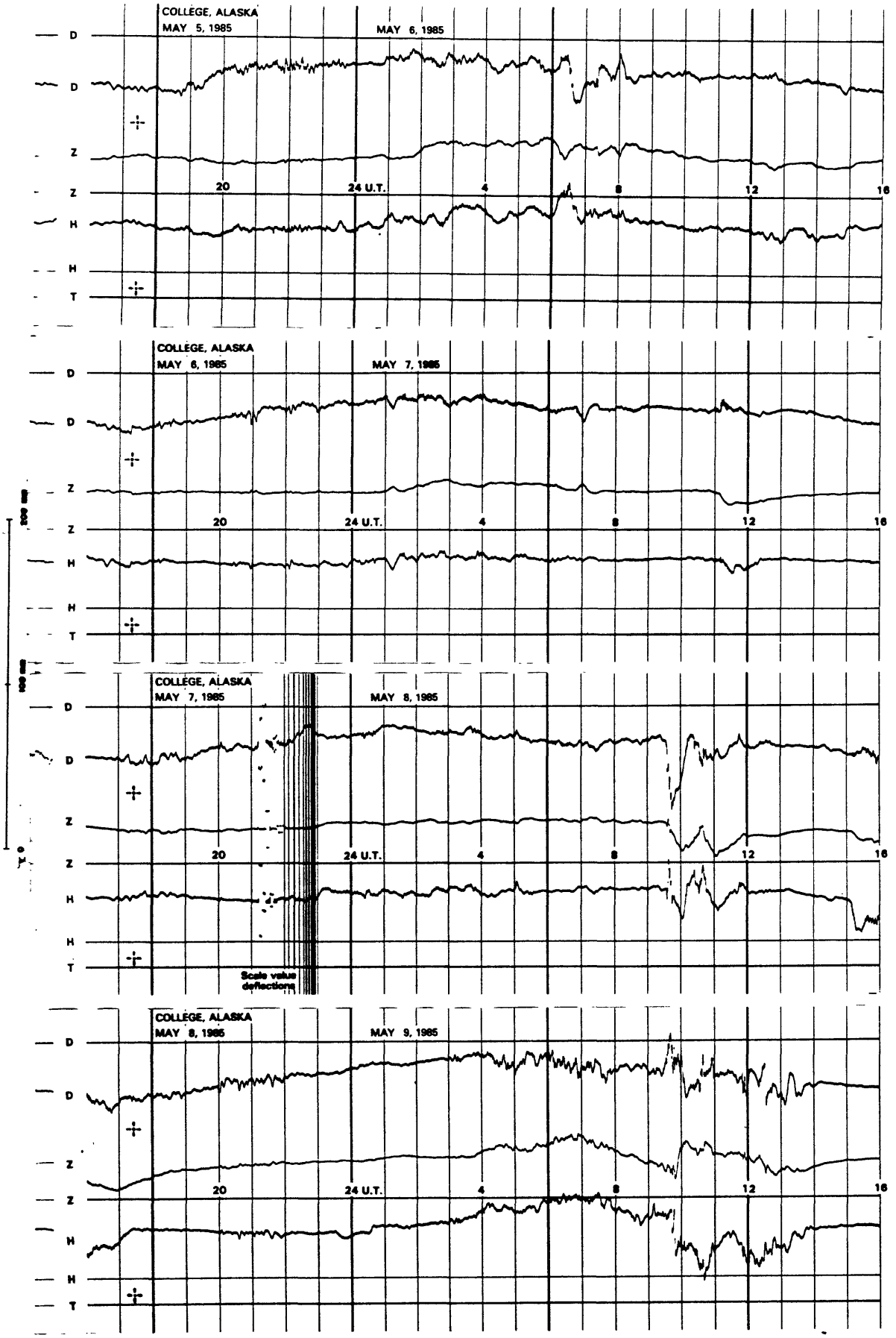


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

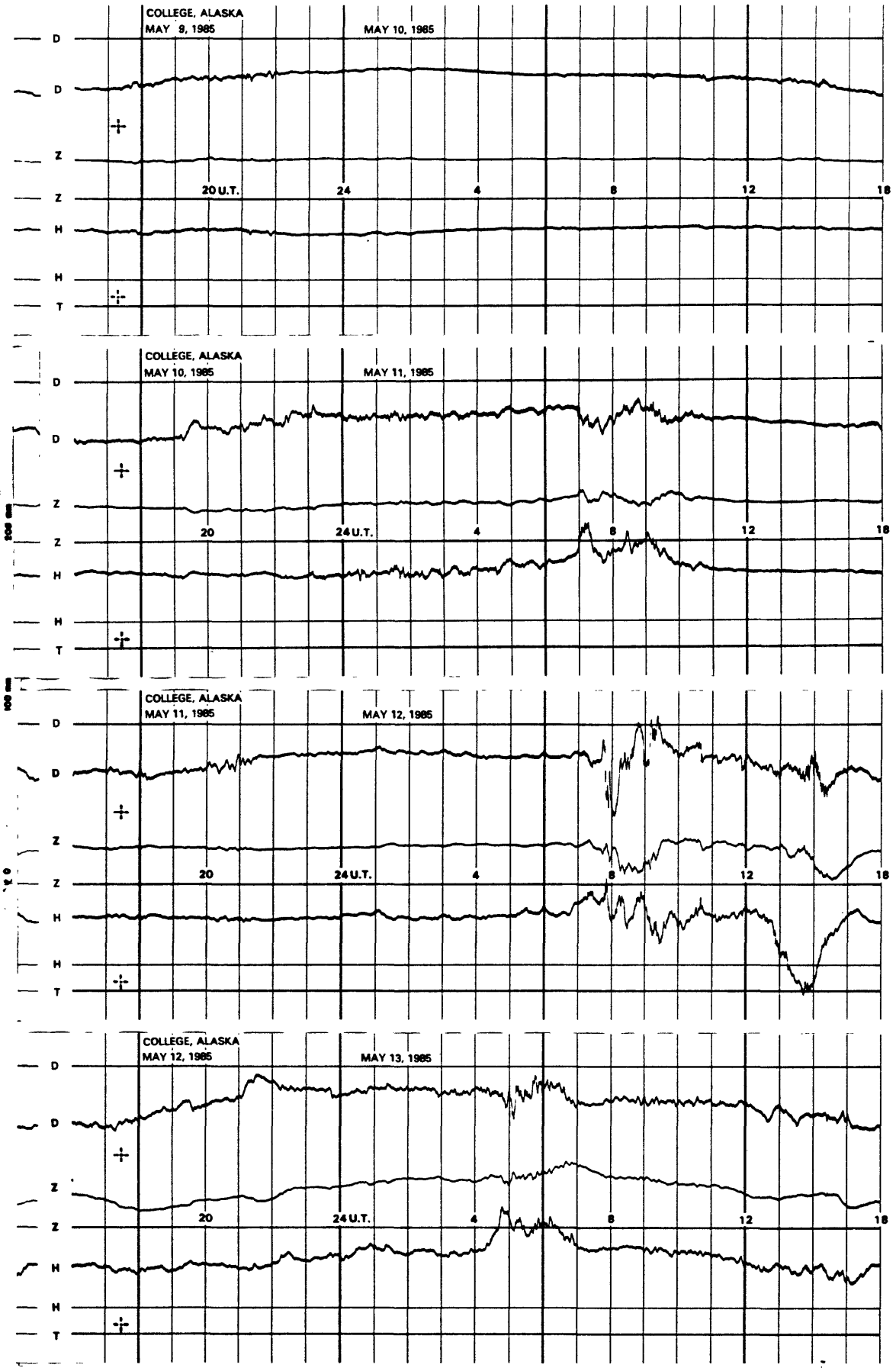
NORMAL MAGNETOGRAMS



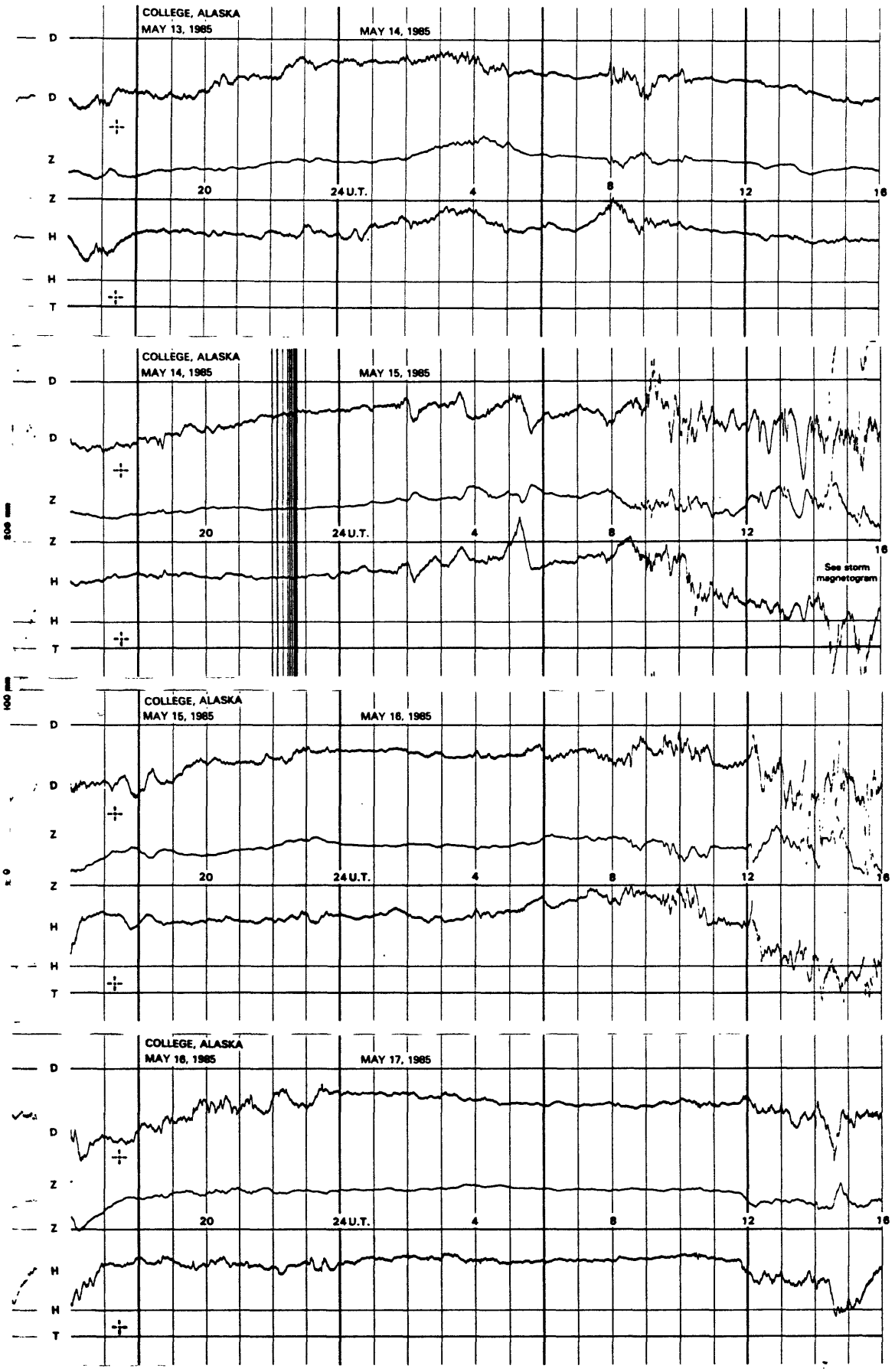
NORMAL MAGNETOGRAMS



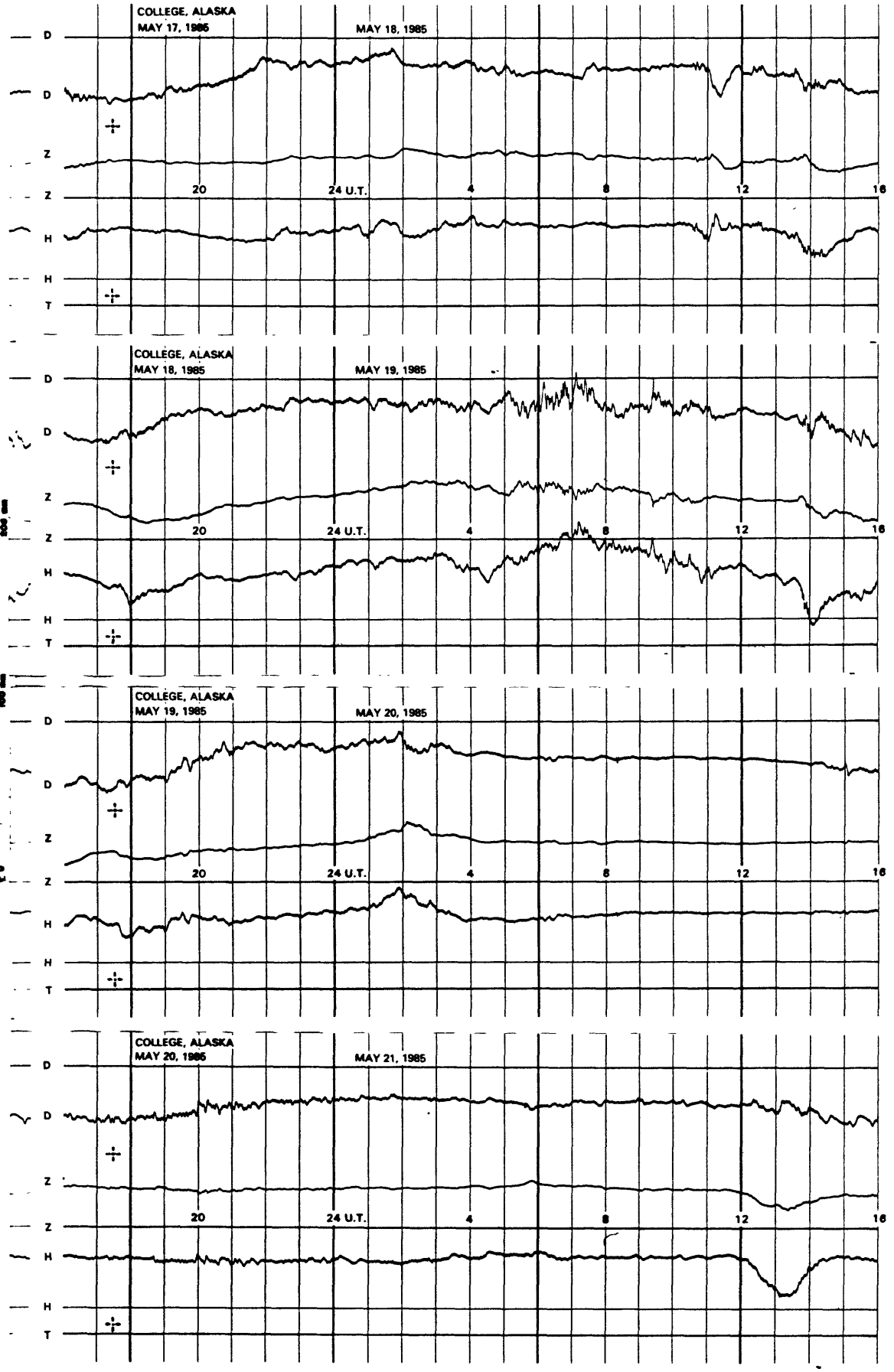
NORMAL MAGNETOGRAMS



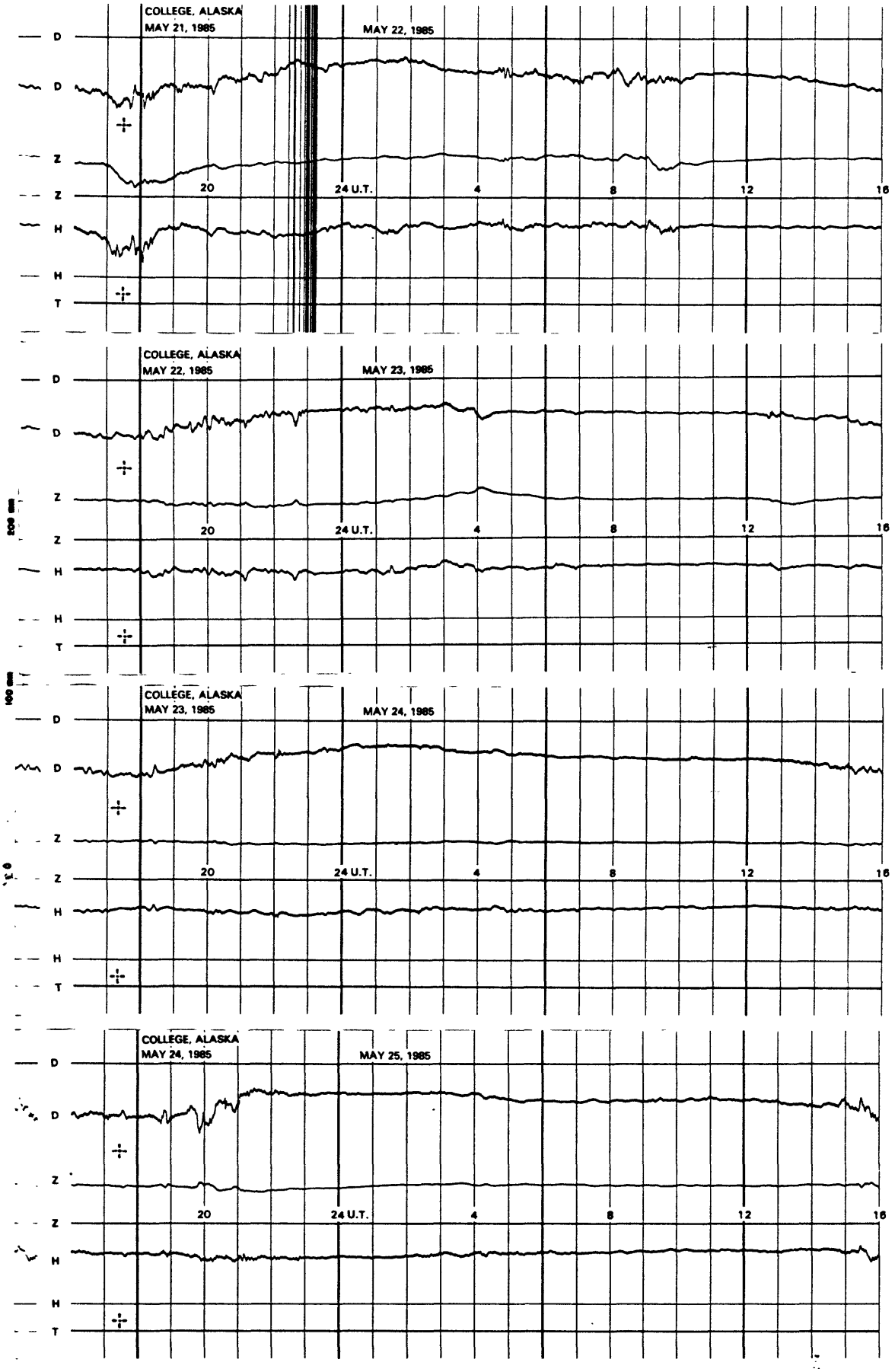
NORMAL MAGNETOGRAMS



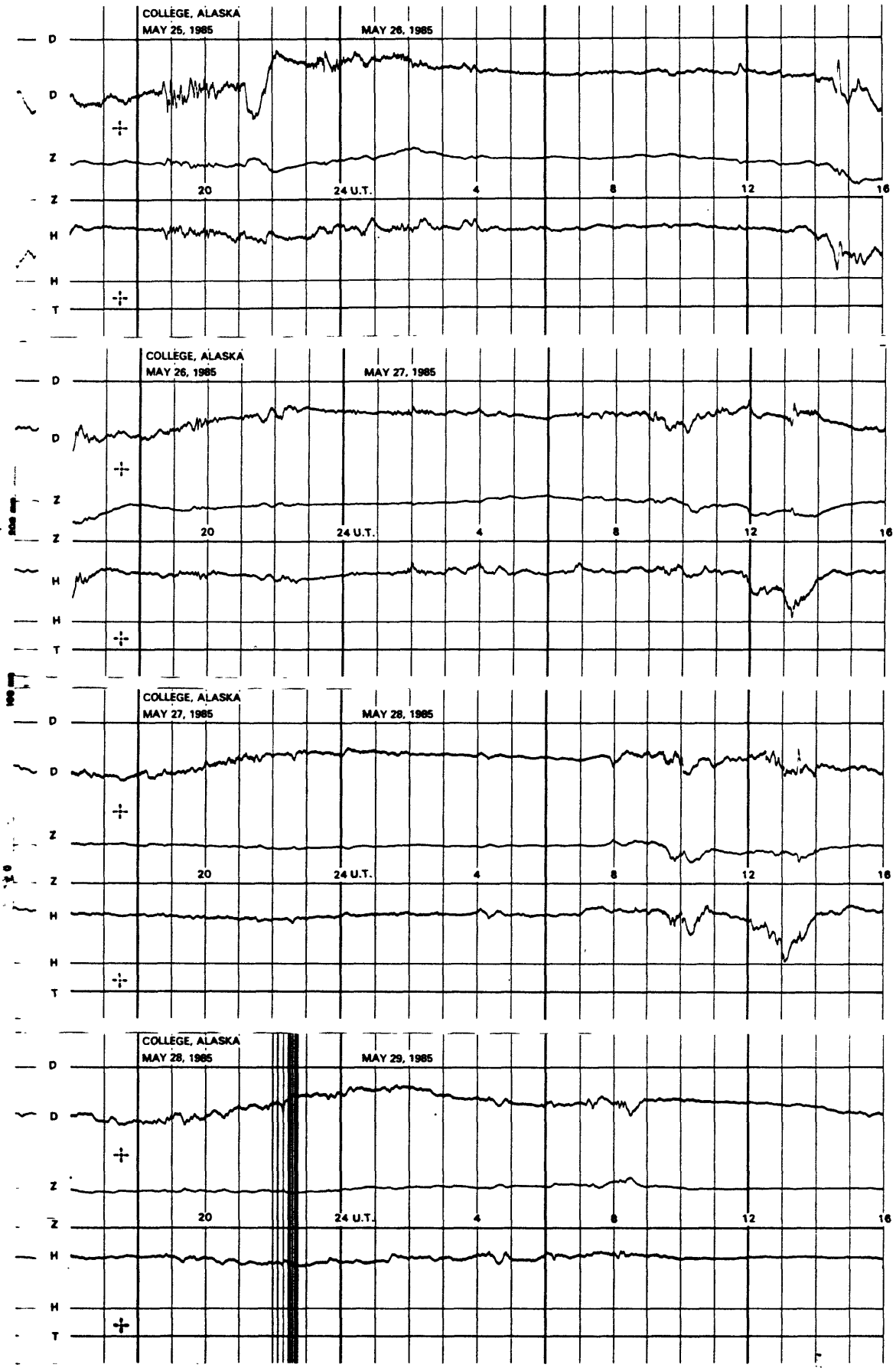
NORMAL MAGNETOGRAMS



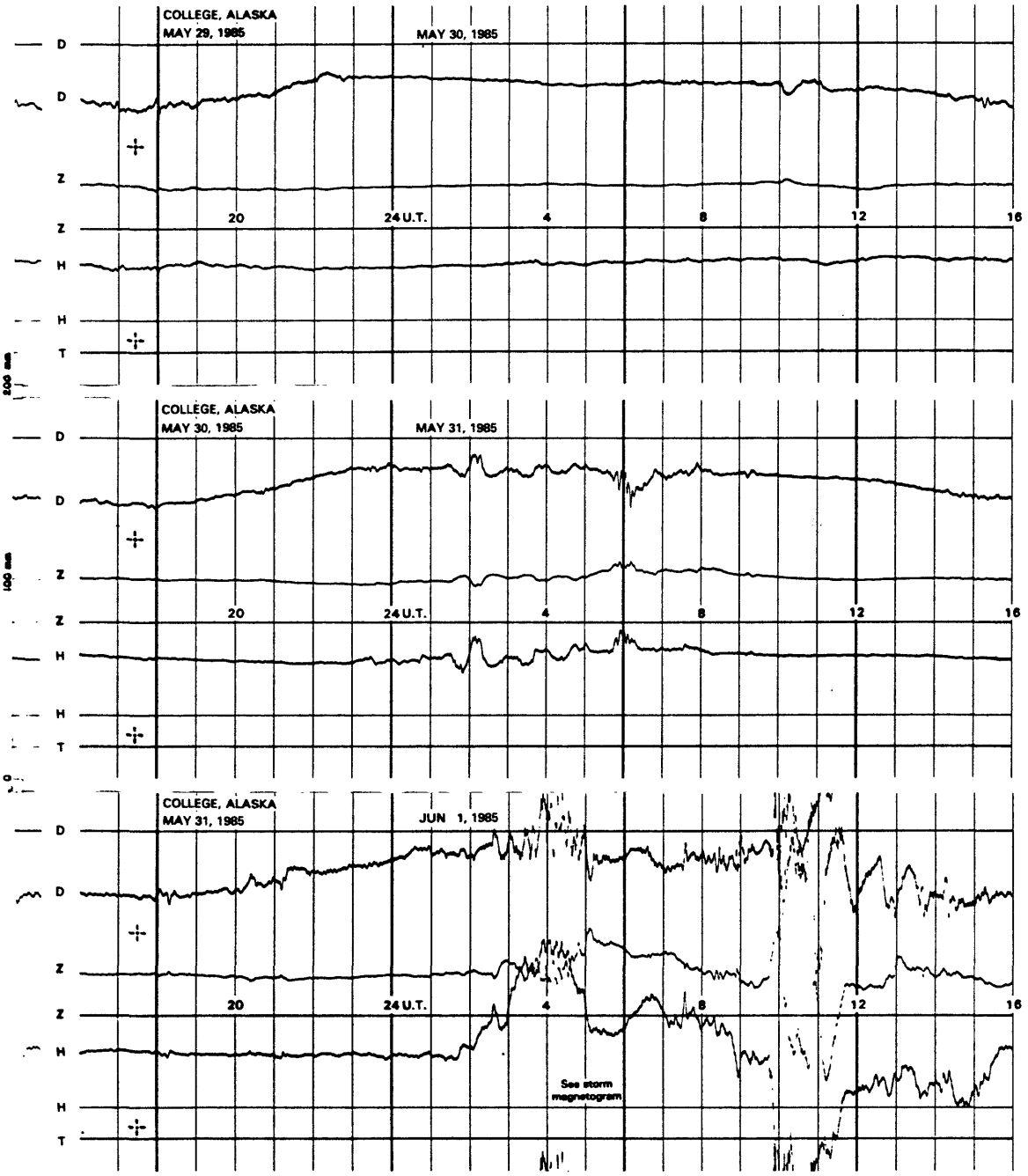
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



STORM MAGNETOGRAMS