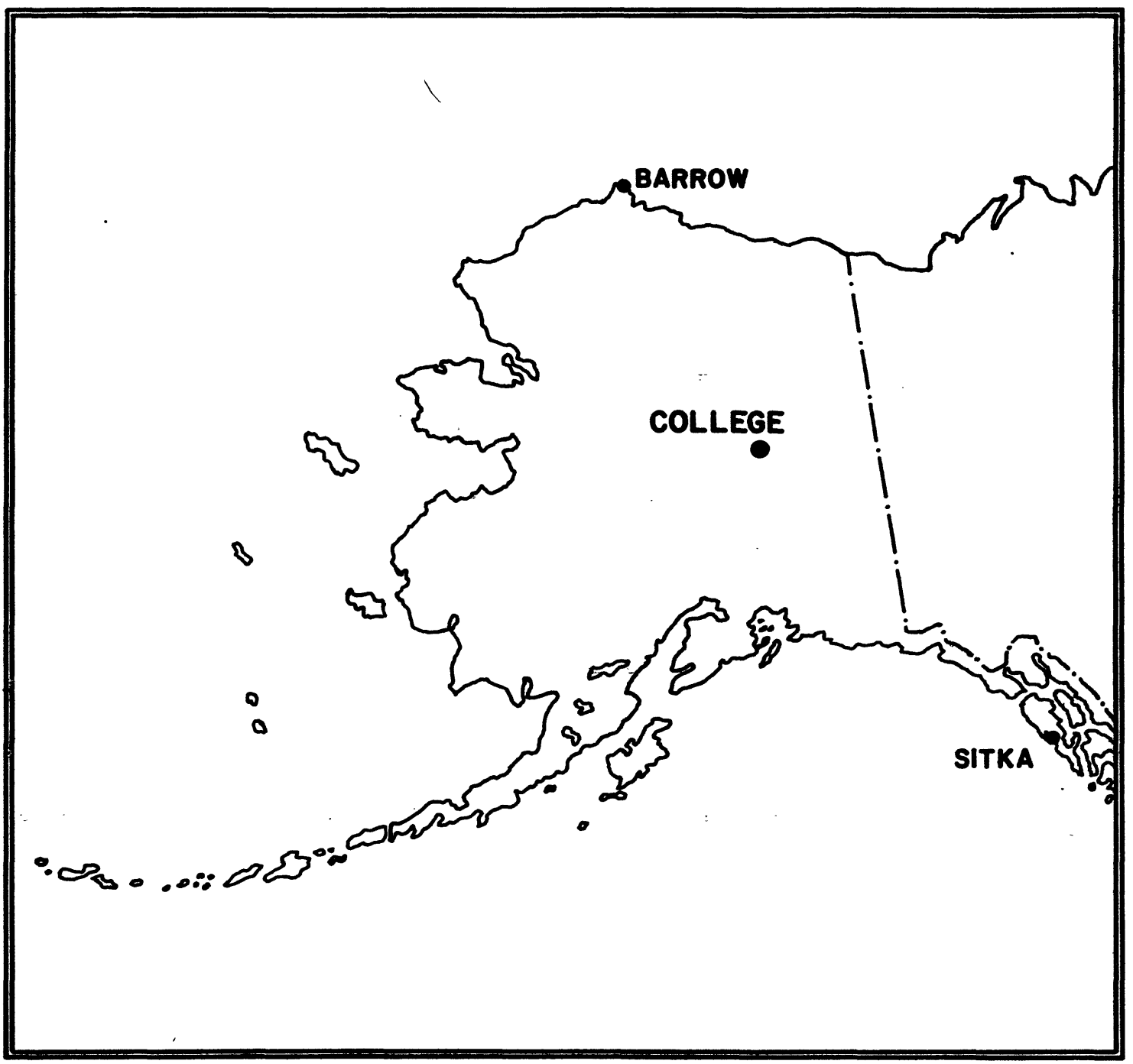
UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

NOVEMBER 1985

OPEN FILE REPORT 85-0300K



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: NOVEMBER 1985

DATE	K-INDICES 00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM	AK
1	1	1	3	6	5	5	3	1	25	27
2	1	0	4	5	5	6	5	4	30	35
3	4	4	3	7	5	4	1	2	30	37
4	2	2	3	3	4	4	3	2	23	15
5	1	0	2	6	6	3	2	2	22	25
6	2	4	2	3	4	3	2	0	20	13
7	1	3	2	5	3	0	0	1	15	11
8	1	0	0	0	1	1	1	2	06	02
9	1	2	1	4	4	6	3	2	23	21
10	2	3	4	5	5	2	2	3	26	22
11	3	2	3	3	4	2	2	1	20	12
12	0	1	1	0	1	0	1	1	05	02
13	1	1	3	5	7	3	4	5	29	37
14	3	2	1	4	5	3	3	2	23	17
15	3	2	1	5	6	2	2	2	23	22
16	2	2	2	4	4	2	2	2	20	12
17	0	0	1	6	5	6	3	1	22	29
18	2	2	2	3	5	5	3	3	25	20
19	3	3	0	2	1	2	2	1	14	07
20	1	0	0	0	0	0	1	1	03	01
21	1	0	1	0	1	0	2	1	06	02
22	1	2	0	3	2	1	2	0	11	05
23	0	0	0	1	0	1	0	1	03	01
24	1	1	0	2	2	0	0	0	06	03
25	1	2	2	3	0	0	0	0	08	04
26	0	1	2	1	0	0	0	0	04	02
27	0	2	5	5	6	6	2	2	28	35
28	1	1	0	3	0	1	1	1	08	04
29	0	0	1	3	5	5	6	5	25	30
30	5	5	7	7	7	3	2	2	38	68
31										

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	BEGIN h	BEGIN m	END d	END h	END m

K SCALE USED:	D	H	Z	
LOWER LIMIT FOR K = 9.....	675.7	322.2		(mm)
CURRENT SCALE VALUE.....	3.72	7.80		(γ/mm)
LOWER LIMIT FOR K = 9	2510	2510		(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

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OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY: COLLEGE, ALASKA

MONTH: NOVEMBER

YEAR: 1985

DATE	TIME U.T.	NATURE OF PHENOMENON[1]	REMARKS
23	16XX	pc4 & pc5	

IDENTIFIED BY: JBT

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

NOVEMBER 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	02	06XX	..	..	..	..	03	4	7	161	1270	690	03	18
		29	06XX	..	..	..	..	30	3, 4, 5	7	279	1880	1070	30	18

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

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 11-1-85	2400 U.T., 11-30-85	1.0'/mm	3.7 γ/mm	27° 16.8' E
H	0000 U.T., 11-1-85	2400 U.T., 11-30-85	7.8 γ/mm		12670 γ
Z	0000 U.T., 11-1-85	2400 U.T., 11-30-85	7.6 γ/mm		55183 γ

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 11-1-85	2400 U.T., 11-30-85	7.9'/mm	29.5 γ/mm	23° 45.9' E
H	0000 U.T., 11-1-85	2400 U.T., 11-30-85	43.9 γ/mm		10695 γ
Z	0000 U.T., 11-1-85	2400 U.T., 11-30-85	48.2 γ/mm		54126 γ

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
27° 36.0' E	12894 γ	55338 γ

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: NOV 8, 12, 20, 21, 22, 23, 24, 25, 26, 28

Form C&GS-404e

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

Values are in tenths of gm. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (135W M.T.) is hour 09 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

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

OBSV.	YEAR	MONTH	ELEMENT
COL	85	NOV	D

C	Q or S	Ten Q	Hr. / Da.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. / Da.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	170	166	172	191	169	200	180	178	189	167	375	274	01	432	318	489*	272	260	242	218	141	141	147	160	160	5406
			02	176	191	192	187	183	179	217	249	201	177	156	223*	02	390*	374*	349*	548*	348	248	220	205	-16*	-56	124	143	5208
			03	134	110	154	214	247	302	215	247	211	215*	230*	264	03	368	248	344	279	149	235	230	200	189	166	152	141	5244
			04	143	156	163	170	193	188	193	315	175	192	185	226	04	213	220	241	259	218	213	204	144	116	138	170	168	4603
			05	179	191	197	193	193	188	186	230	147	303	462	416	05	183*	335	309	387	298	207	158	124	116	86	103	133	5324
			06	140	141	129	117	225	164	199	189	208	180	224	217	06	200	293	264	198	214	208	168	160	154	152	158	164	4466
			07	182	168	157	163	235	188	180	204	209	197	16*	195	07	242	216	221	217	209	209	203	197	169	170	173	173	4493
			08	172	173	183	190	188	194	193	193	199	193	198	204	08	207	201	212	227	223	243	236	242	161	143	156	179	4710
			09	188	171	168	196	194	182	193	193	178	189	186	254	09	291	251	365	477*	263*	200	269	219	180	160	155	164	5286
			10	166	146	172	169	194	189	198	162	69	68	228	267	10	330	190	211	206	200	241	212	210	205	136	105	118	4365
			11	163	161	175	196	184	187	170	250	161	246	167	156	11	199	200	189	224	218	215	195	156	169	164	163	164	4472
			12	168	186	191	184	193	209	202	199	192	191	179	190	12	190	188	207	214	216	219	227	205	202	182	170	160	4663
			13	178	192	189	193	191	197	210	176	264	168	188	153	13	294*	708*	268	237	303	270	240	268	94	38	136	141	5296
			14	129	143	150	149	200	190	204	190	186	186	206	129	14	298	78	221	238	272	238	257	242	166	165	163	163	4557
			15	150	164	155	190	153	186	179	187	188	189	209	236	15	199*	142	169	185	212	223	214	192	169	153	150	144	4338
			16	180	194	170	185	185	221	212	222	206	6	99	200	16	280	254	208	210	217	218	201	216	190	159	124	156	4513
			17	184	192	196	196	187	187	158	179	160	202	202	208	17	205	198	367	215*	177	324	198	126	166	162	175	174	4738
			18	171	186	160	156	158	212	158	194	186	232	194	199	18	202	222	261	309	205	259	277	173	136	129	161	162	4697
			19	162	150	150	278	190	200	194	197	184	210	206	194	19	225	212	216	238	230	184	224	224	198	176	167	168	4772
			20	177	179	181	187	179	177	193	199	198	197	193	196	20	199	198	207	218	212	216	219	213	203	193	173	182	4689
			21	182	179	188	189	188	194	193	183	193	197	183	193	21	197	193	203	223	220	213	218	198	207	177	166	170	4647
			22	165	146	128	145	140	196	190	187	189	188	186	238	22	186	212	235	225	221	200	204	175	163	176	175	180	4435
			23	177	185	177	184	200	197	192	191	192	197	196	194	23	199	198	195	197	199	202	207	204	200	190	182	178	4633
			24	178	184	191	200	206	199	194	192	208	208	216	218	24	222	209	204	209	220	221	219	217	203	197	187	173	4870
			25	163	174	193	180	186	189	199	199	208	230	214	216	25	186	192	210	220	219	213	212	205	200	181	179	172	4740
			26	166	178	180	182	168	163	159	166	227	198	189	211	26	220	203	217	219	221	213	232	224	202	168	161	170	4632
			27	161	182	168	150	156	124	174	175	410	296	307	176	27	374*	326*	445*	525*	344	292	210	154	135	128	141	155	5708
			28	170	170	181	187	210	200	198	194	191	203	195	199	28	186	191	191	200	205	199	210	208	179	165	160	163	4555
			29	170	184	190	191	193	195	195	214	179	194	169	96	29	229	279	279*	421*	359	357	255	88*	216	218	212	216	5299
			30	195	125	108*	79	104	299	402	207*	135*	191*	56*	540*	30	302*	445*	218	257	288	212	169	139	130	134	120	136	4981
			31													31													

SCALED BY	LYT, JEP, HKR
CHECKED BY	JEP, PAF, HKR
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	144,340
MONTHLY MEAN	200
DATES WITH GAPS:	

Form C&GS-604e

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

Values are in tenths of gam. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (135W M.T.) is hour 09 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

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

OBSY.	YEAR	MONTH	ELEMENT
COL	85	NOV	Z

C	Q or S	Tes 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	211	211	214	211	221	261	236	241	225	179	55	-8	01	137	100	225	130	120	166	151	159	179	180	197	198	4199
			02	206	209	218	214	219	225	226	154	224	216	186	308	02	302	605	459	213	158	139	180	170	124	129	179	239	5497
			03	271	244	284	294	238	239	242	206	227	150	73	64	03	172	131	130	168	107	174	187	193	208	210	223	239	4674
			04	253	246	275	269	264	240	232	237	197	211	194	132	04	172	144	98	61	102	144	176	175	174	182	214	226	4618
			05	231	223	219	221	219	217	225	245	201	200	34	82	05	-102	-15	64	72	42	33	64	179	176	210	258	249	3547
			06	243	241	247	278	263	297	299	273	262	226	228	200	06	188	124	127	160	190	173	163	173	182	193	207	219	5156
			07	230	238	241	245	254	258	284	251	226	174	159	68	07	103	171	193	199	206	206	202	196	186	190	202	213	4895
			08	219	217	219	211	209	210	209	208	216	222	216	206	08	204	194	188	186	199	202	195	196	182	176	184	199	4867
			09	203	203	199	200	203	203	210	211	223	226	218	271	09	275	191	180	315	80	25	131	164	189	200	201	212	4733
			10	222	237	231	244	256	232	240	173	118	139	188	122	10	178	195	190	202	200	205	213	207	213	215	254	249	4868
			11	233	246	241	246	236	224	217	248	158	180	199	180	11	195	141	166	193	200	190	182	178	183	193	208	212	4849
			12	213	216	215	215	213	216	214	205	209	205	195	197	12	203	197	207	205	204	206	199	189	191	187	197	203	4901
			13	206	210	214	214	217	224	240	248	212	211	226	130	13	121	-97	2	168	157	185	164	175	61	12	150	202	3852
			14	212	227	232	248	236	232	234	216	226	230	229	182	14	251	143	94	159	171	159	122	158	183	194	206	220	4764
			15	236	231	228	256	227	233	216	231	234	234	161	121	15	259	89	88	189	201	200	190	188	207	207	221	226	4878
			16	238	243	235	236	233	248	233	194	204	34	92	188	16	176	151	166	193	199	199	196	187	193	197	194	202	4626
			17	216	216	216	213	214	212	209	227	240	249	223	147	17	143	191	190	226	100	45	88	132	152	183	190	202	4424
			18	204	216	220	226	248	250	263	279	246	208	199	202	18	213	173	196	105	73	145	124	92	132	174	206	208	4592
			19	218	227	242	290	226	211	212	208	213	223	215	211	19	206	199	193	189	183	183	191	196	202	202	203	211	5054
			20	216	223	220	219	220	223	223	218	216	217	216	216	20	214	213	211	210	210	209	207	206	203	206	206	214	5136
			21	214	216	216	217	216	214	214	216	232	242	219	216	21	207	181	208	210	207	208	207	200	202	196	199	207	5064
			22	205	207	223	253	263	238	223	219	226	231	218	159	22	201	216	197	202	196	187	173	160	168	183	189	207	4944
			23	200	199	199	204	212	209	206	203	203	202	192	191	23	192	193	187	187	196	196	196	194	193	193	190	192	4729
			24	193	195	196	200	204	203	208	216	231	238	218	192	24	180	110	179	203	202	200	197	199	199	199	197	199	4758
			25	203	207	210	207	202	203	206	207	219	139	101	185	25	183	193	193	190	191	192	192	192	190	199	196	193	4543
			26	193	196	198	199	203	241	267	261	248	224	210	204	26	193	189	193	193	187	188	193	186	184	182	183	196	4911
			27	197	206	206	220	249	277	282	191	50	217	-21	193	27	371	358	403	443	16	32	117	131	159	171	190	200	4558
			28	202	211	211	229	235	211	201	201	200	190	131	160	28	194	205	201	209	210	204	209	206	192	200	203	209	4824
			29	210	212	210	210	210	210	214	220	210	214	236	235	29	215	170	140	-52	105	61	154	315	354	308	171	94	4626
			30	-77	-122	80	306	232	200	91	226	239	251	264	226	30	751	125	76	149	190	184	199	190	200	210	210	226	4626
			31													31													

SCALED by	LYT, JEP, HKR
CHECKED BY	JEP, PAF, HKR
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.
[ ] Scaling uncertain because of magnetic storm.
□ No record; or no values available because of faulty record.
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Derived from STORM Mgph., converted to Normal Mgph.

MONTHLY SUM	141,713
MONTHLY MEAN	197
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

Values are in tenths of gam. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (135W M.T.) is hour 09 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

OBSV.	YEAR	MONTH	ELEMENT
COL	85	NOV	H

C	Q or S	Tes Q	Hr. Da.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. Da.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	283	281	280	282	297	301	309	317	340	174	-228*	-129	01	-98	4	-86	12	335	302	264	250	289	289	282	287	4637
			02	292	297	289	287	282	289	373	320	368	322	205	18*	02	-174*	-156	7	-38*	206	284	296	216	82	201	308	317	4891
			03	342	371	490	422	377	348	292	307	350	136*	-500*	-163*	03	-62*	182	124	112	148	302	278	279	271	280	258	226	5170
			04	260	274	290	308	297	294	298	260	300	285	250	182	04	240	106	78	119	216	240	270	261	264	278	295	289	5954
			05	291	280	285	286	283	282	278	270	281	75	-151*	-224*	05	-112*	138	174	162	206	232	240	241	253	256	280	298	4604
			06	289	298	294	338	442	369	314	334	337	355	296	244	06	94	-6	126	236	250	233	258	272	283	284	283	279	6502
			07	279	292	281	290	350	329	312	293	291	204	-168*	190	07	238	294	294	292	293	288	290	278	277	289	289	280	6345
			08	280	284	282	286	282	285	288	288	290	298	286	291	08	288	279	291	299	293	295	295	286	274	280	297	287	6899
			09	291	299	300	300	295	302	297	303	322	313	315	189	09	103	190	-55	-309*	-191*	240	273	273	298	302	289	292	5231
			10	277	290	316	306	320	306	304	299	288	108	143	1	10	5	145	274	297	293	291	291	285	254	221	306	288	5908
			11	284	290	292	295	296	290	306	325	339	323	313	252	11	277	169	285	284	287	260	260	260	270	278	289	288	6812
			12	287	289	294	297	287	280	283	288	279	279	276	281	12	284	280	283	285	286	283	276	283	274	281	277	282	6794
			13	283	288	293	291	293	294	298	303	310	314	300	62	13	-342*	-636*	271	343	290	301	283	222	16	231	262	276	4846
			14	264	283	294	316	304	326	317	289	310	306	284	145	14	-47	148	199	279	234	243	241	270	284	263	272	268	6112
			15	298	292	310	329	324	296	307	288	299	322	364	256	15	28*	-50*	208	287	268	262	262	256	262	245	264	277	6254
			16	282	301	307	296	312	318	304	301	313	206	193	278	16	169	146	264	275	278	275	267	268	279	259	269	280	6430
			17	281	283	288	293	299	301	306	316	320	316	392	176*	17	136*	280	-83*	-55*	179	98	234	270	288	284	281	290	5713
			18	284	278	303	292	302	332	372	333	334	343	307	286	18	270	254	154	-72	248	290	256	224	281	251	280	280	6482
			19	278	307	312	378	306	290	288	281	293	302	320	292	19	268	285	284	277	278	278	281	280	274	275	279	280	6986
			20	287	292	292	293	291	295	288	285	286	288	285	284	20	283	288	288	291	287	283	283	280	283	286	279	280	6877
			21	291	287	290	289	293	290	290	295	304	296	292	287	21	275	273	291	280	287	282	282	284	285	286	281	280	6890
			22	286	280	273	293	310	279	281	289	290	300	302	268	22	305	280	283	283	279	277	268	265	270	283	283	283	6810
			23	288	292	295	293	281	287	284	286	284	282	290	289	23	289	289	285	290	291	290	289	289	292	286	285	288	6914
			24	290	300	303	300	291	293	293	293	295	304	294	272	24	280	252	299	292	289	289	290	286	283	280	280	274	6922
			25	281	293	297	298	298	301	296	293	311	284	250	314	25	311	309	299	297	291	289	285	282	284	279	280	283	7005
			26	286	297	298	301	290	304	330	340	341	302	290	282	26	276	288	283	281	282	289	280	287	277	279	280	289	7052
			27	295	301	308	310	316	338	351	303	93	-40	1*	-176	27	-165	-168*	-467*	-399*	176	293	326	300	281	290	290	294	3451
			28	290	292	291	290	287	290	288	290	282	300	240	260	28	277	279	279	288	279	274	279	276	280	280	280	280	6741
			29	287	288	290	290	287	289	284	284	306	305	347	331	29	295	256	101	-203*	-147	-82	-102	-438*	-109	7	124	280	3570
			30	417*	456*	568*	448	482	214	164	-112*	56*	-747*	-101*	-488*	30	-815*	-297*	177	191	195	238	289	251	247	273	252	271	2634
			31													31													

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

Preliminary base-line and scale values:

Interval Beginning	Base-line Value	Scale Value

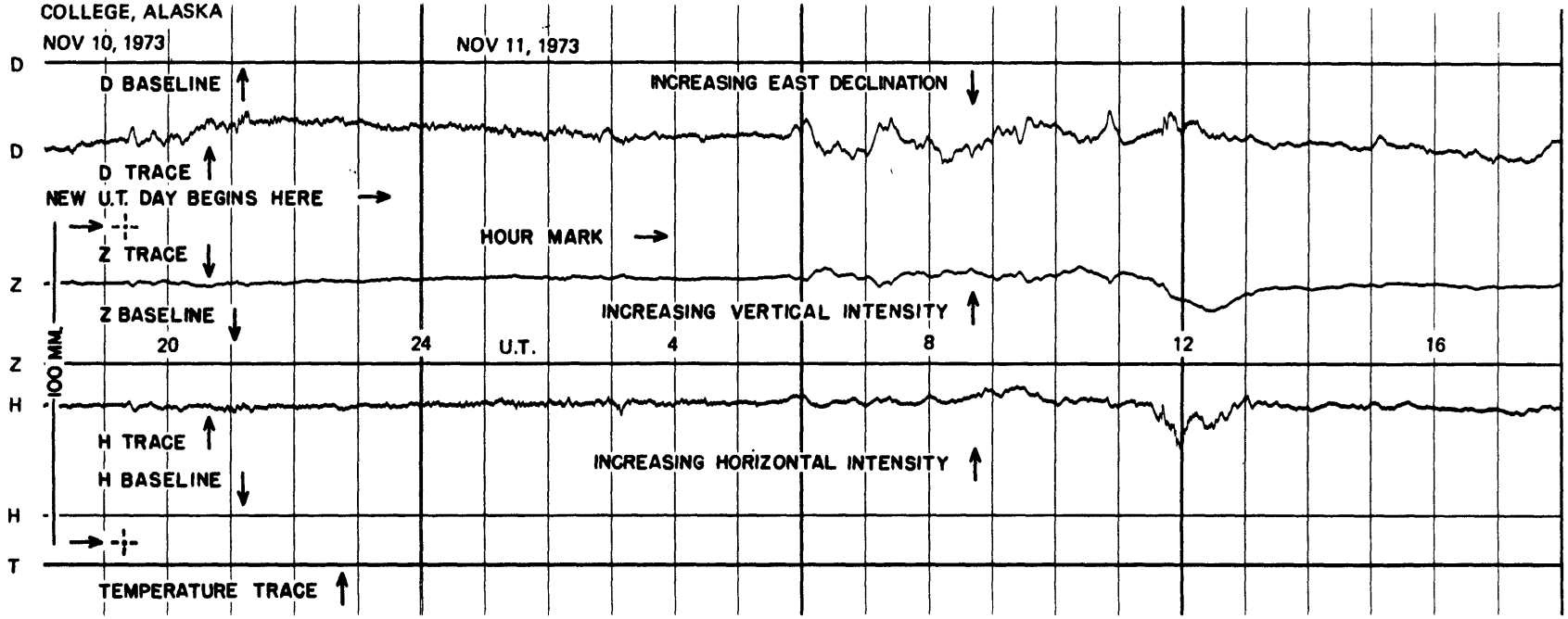
( ) Interpolated
[Significant portion of hour interpolated.
□ No record; or no values available because of faulty record.
* Derived from STORM Mgph., converted to Normal Mgph.
[] Scaling uncertain because of magnetic storm.
<> Record off sheet for part or all of hour; if value is given, curve was estimated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

MONTHLY SUM	177,436
MONTHLY MEAN	246
DATES WITH GAPS:	

01

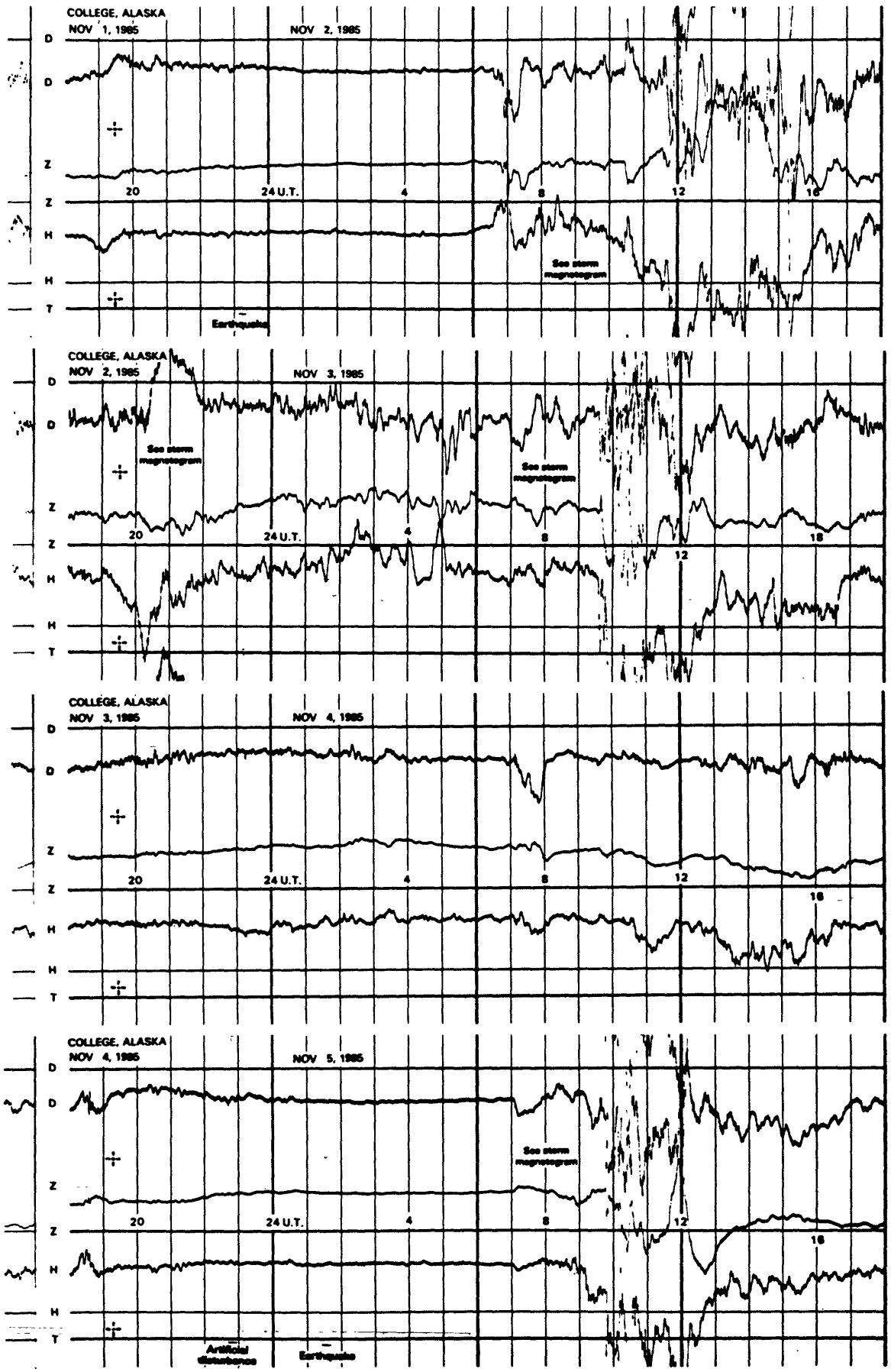
FORMAT FOR NORMAL & STORM MAGNETOGRAMS

(SAMPLE ONLY)

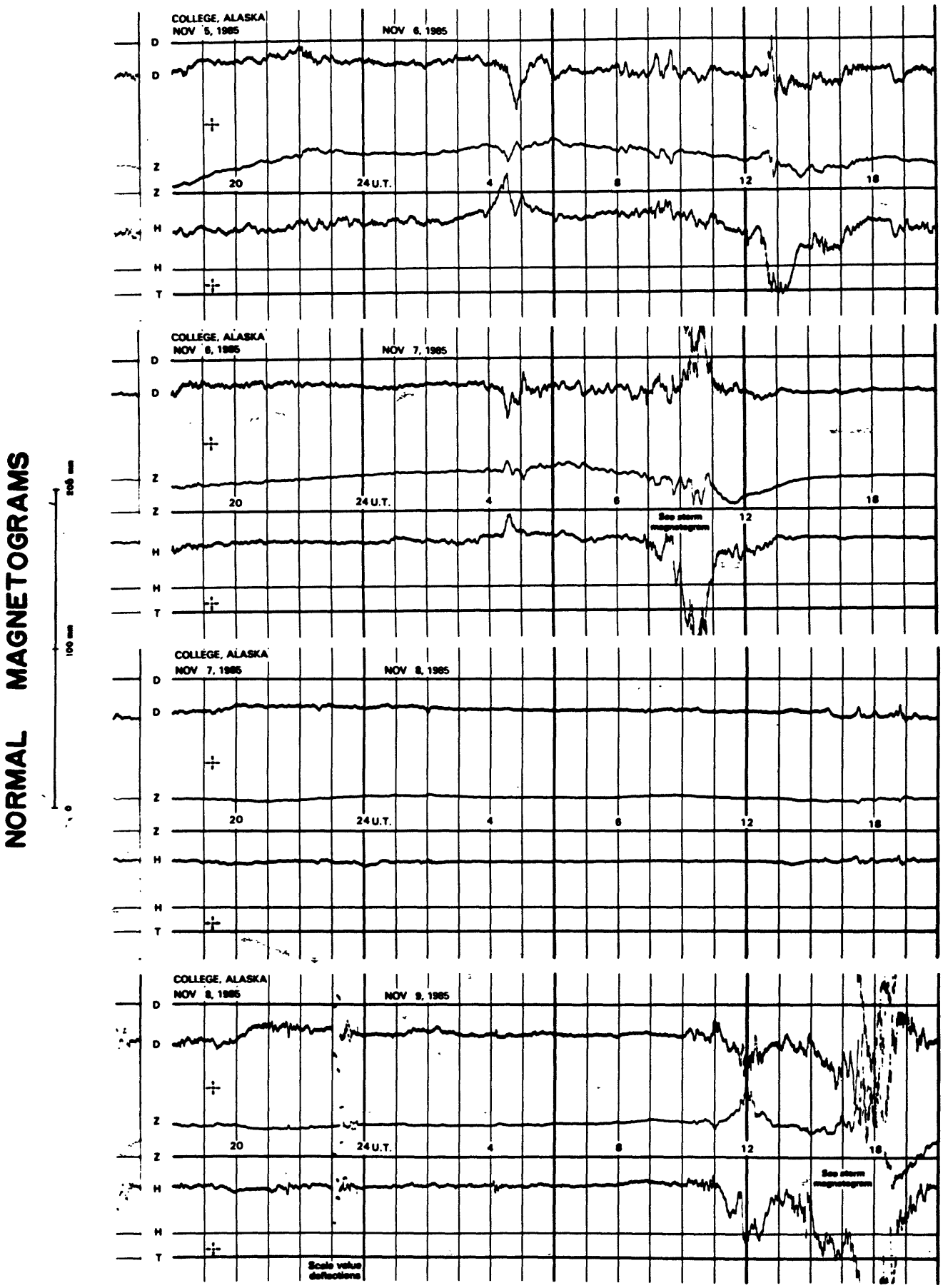


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

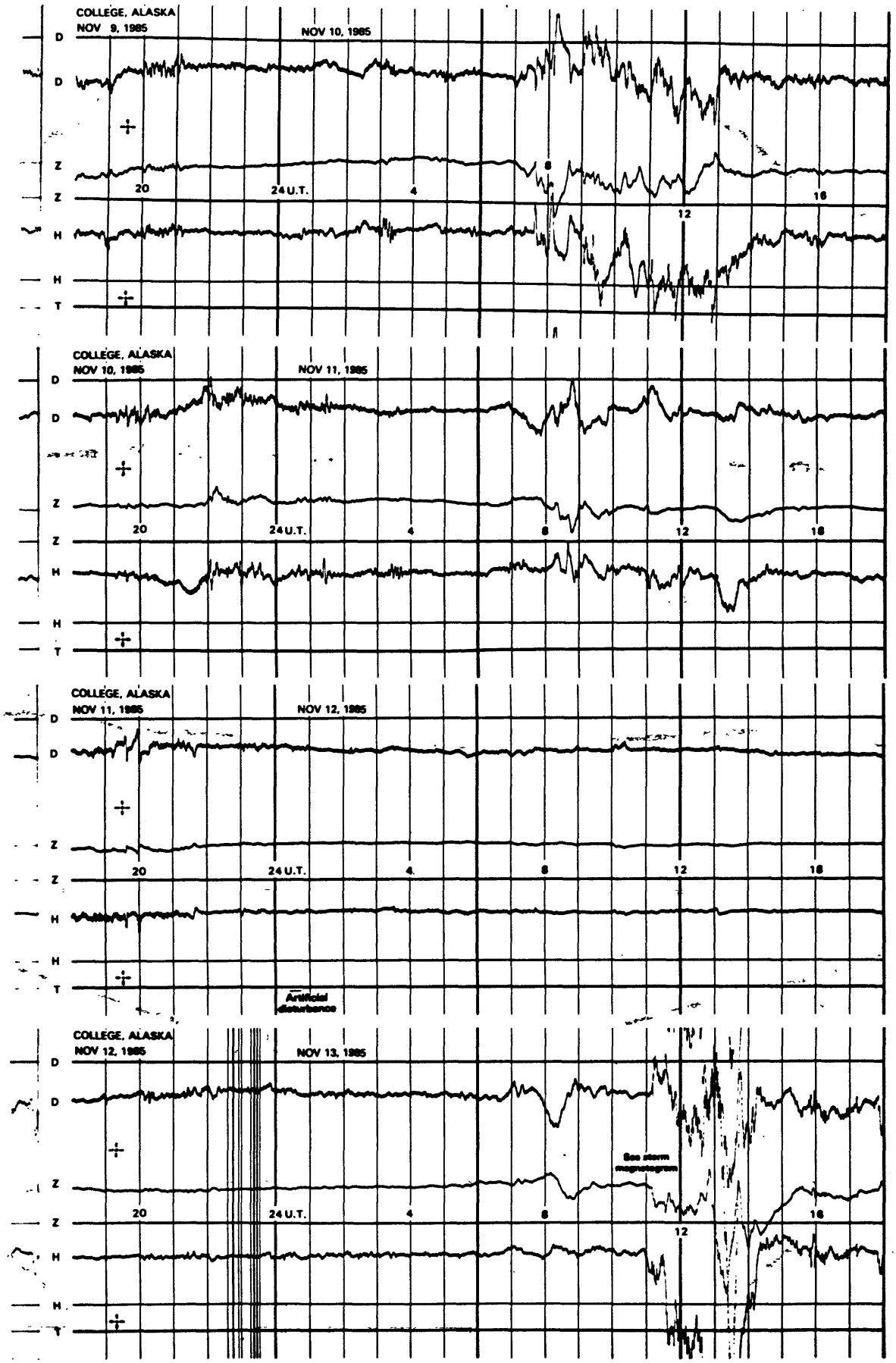
NORMAL MAGNETOGRAMS



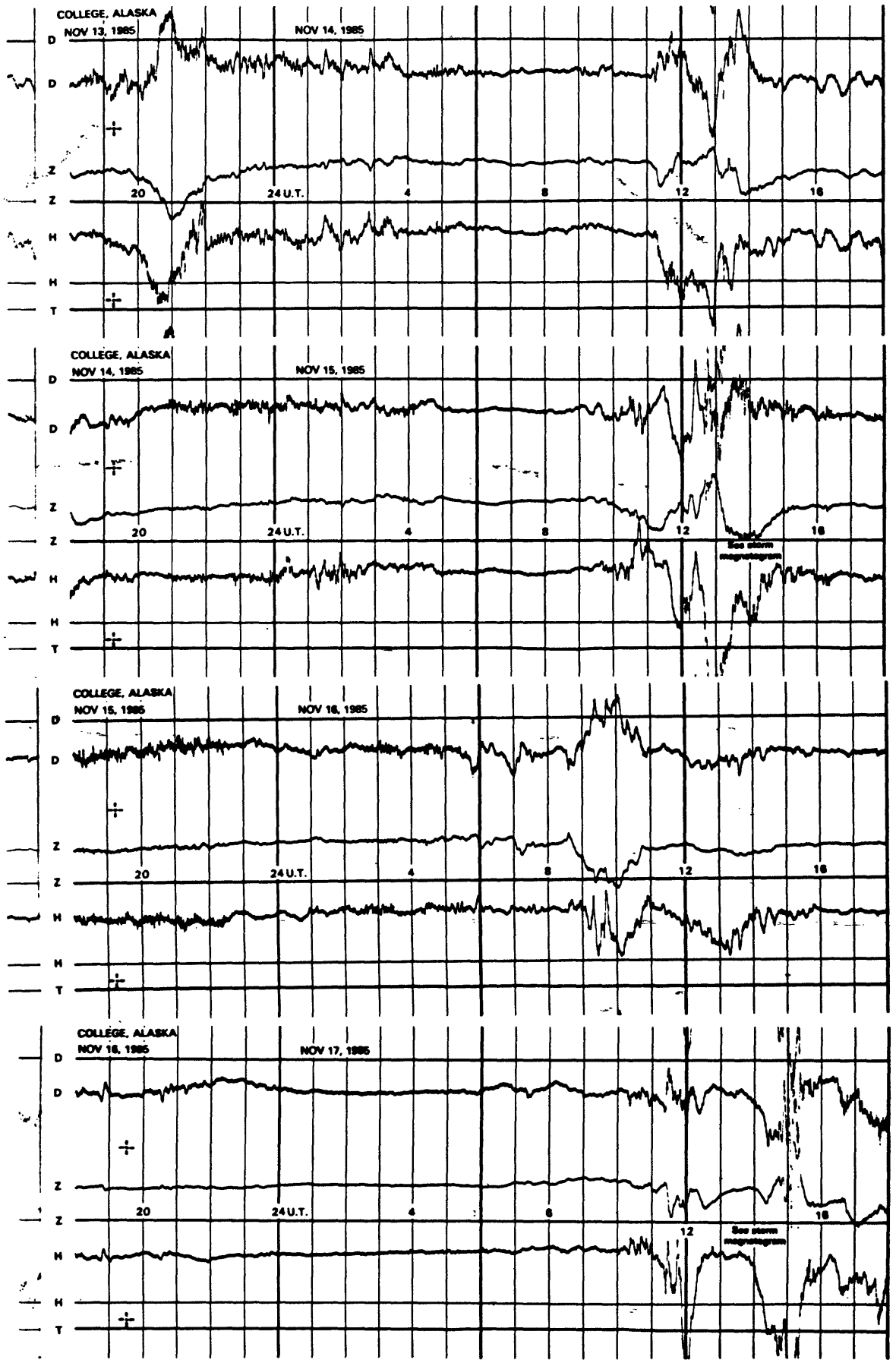
NORMAL MAGNETOGRAMS



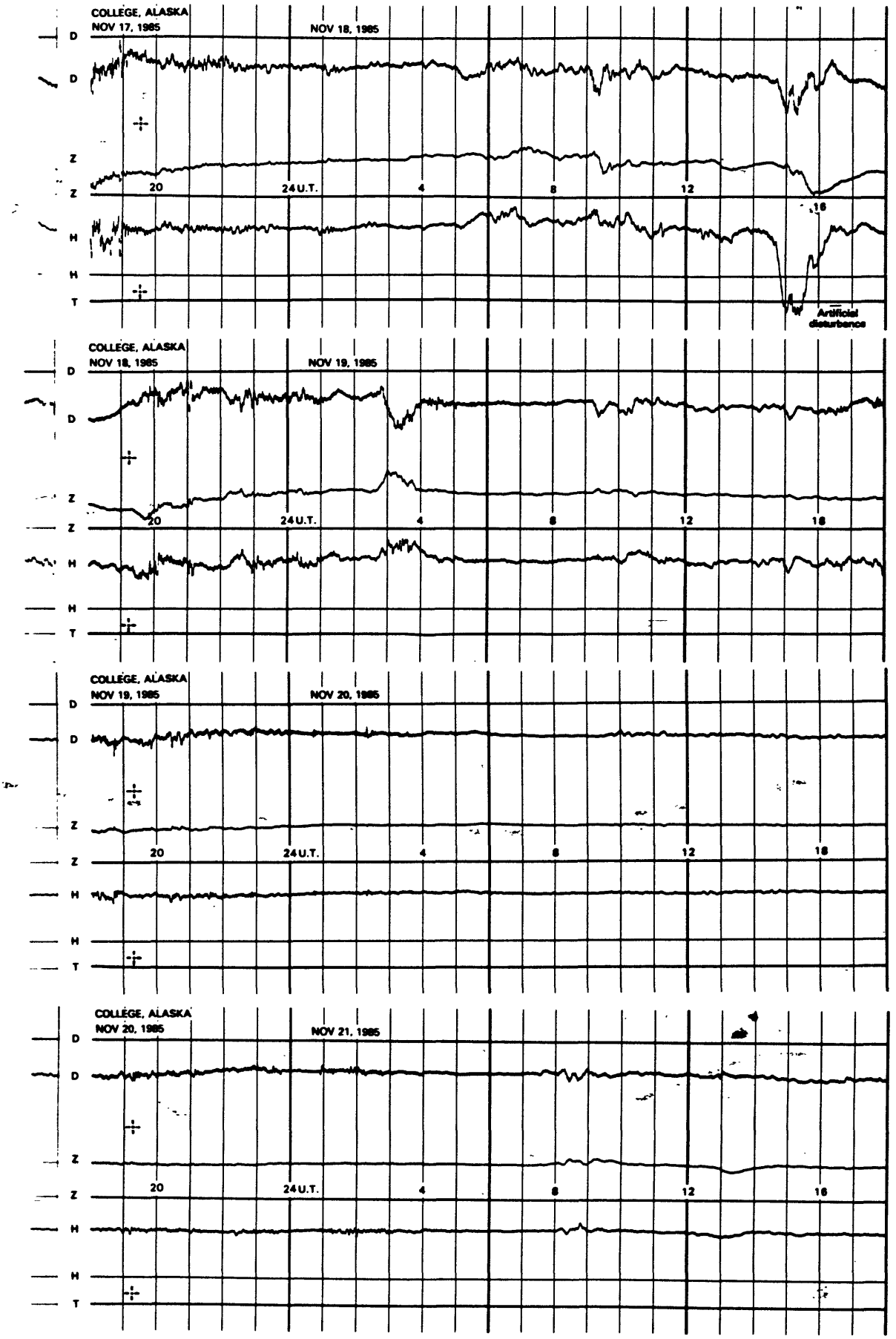
NORMAL MAGNETOGRAMS



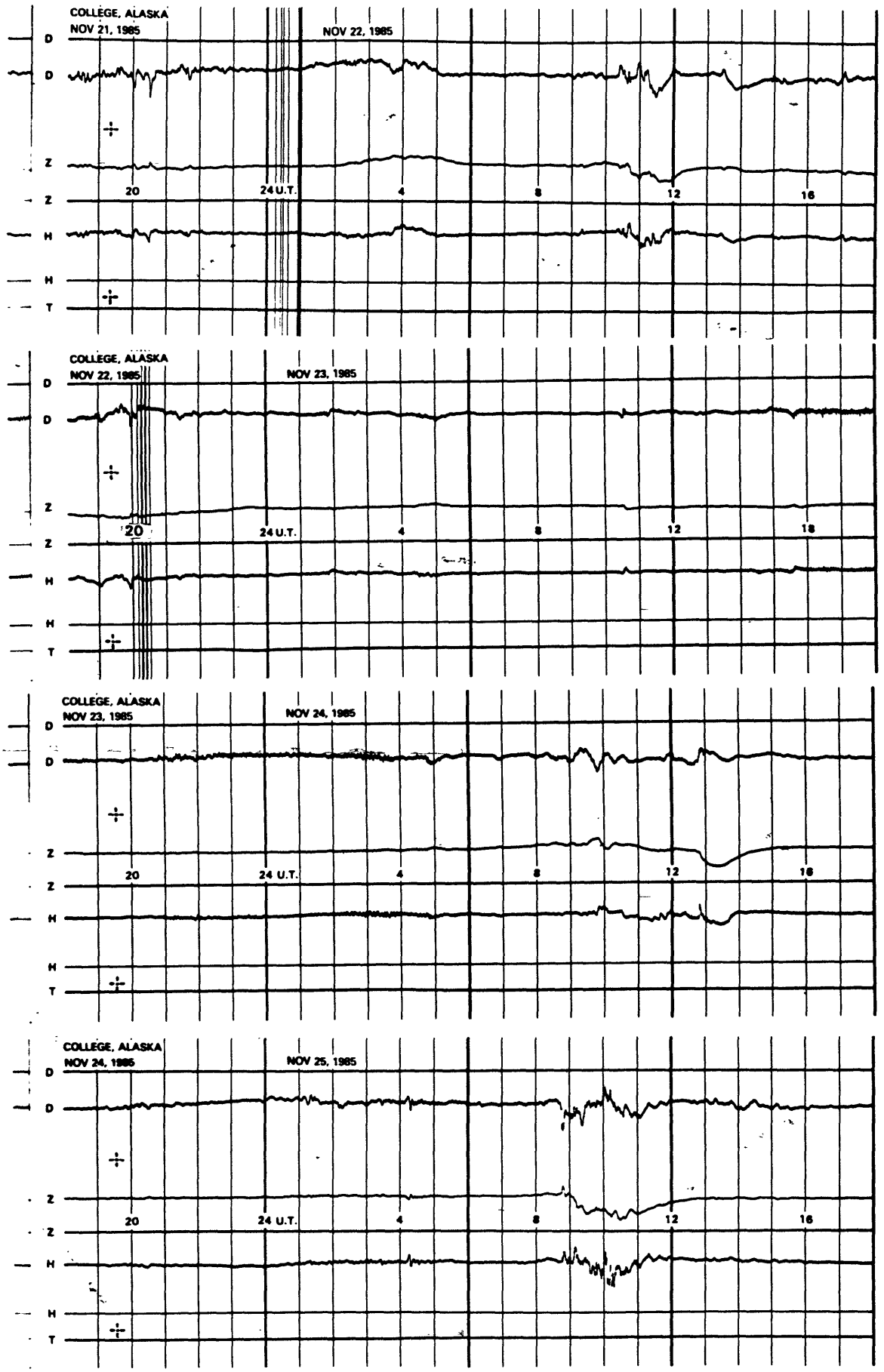
NORMAL MAGNETOGRAMS



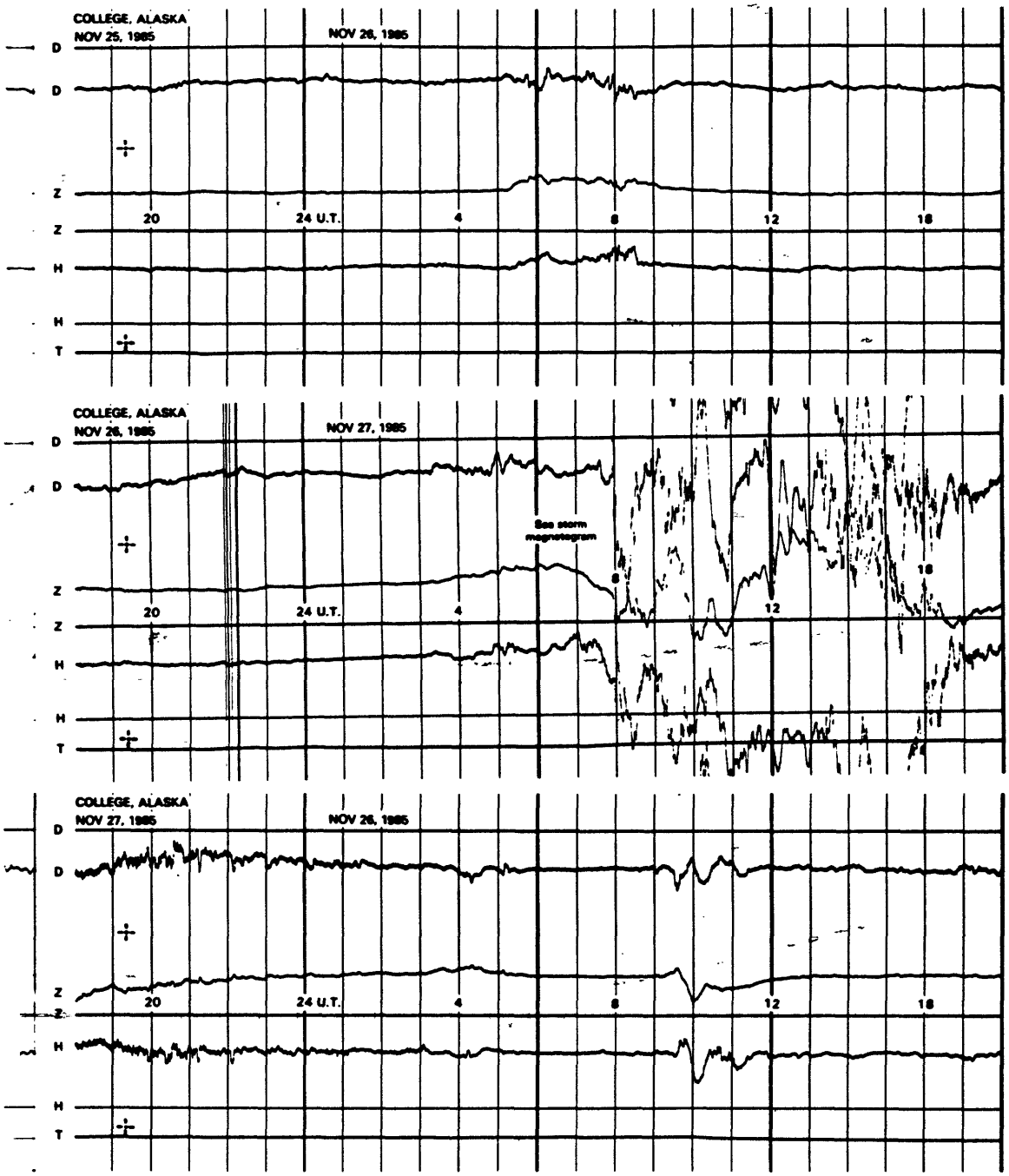
NORMAL MAGNETOGRAMS



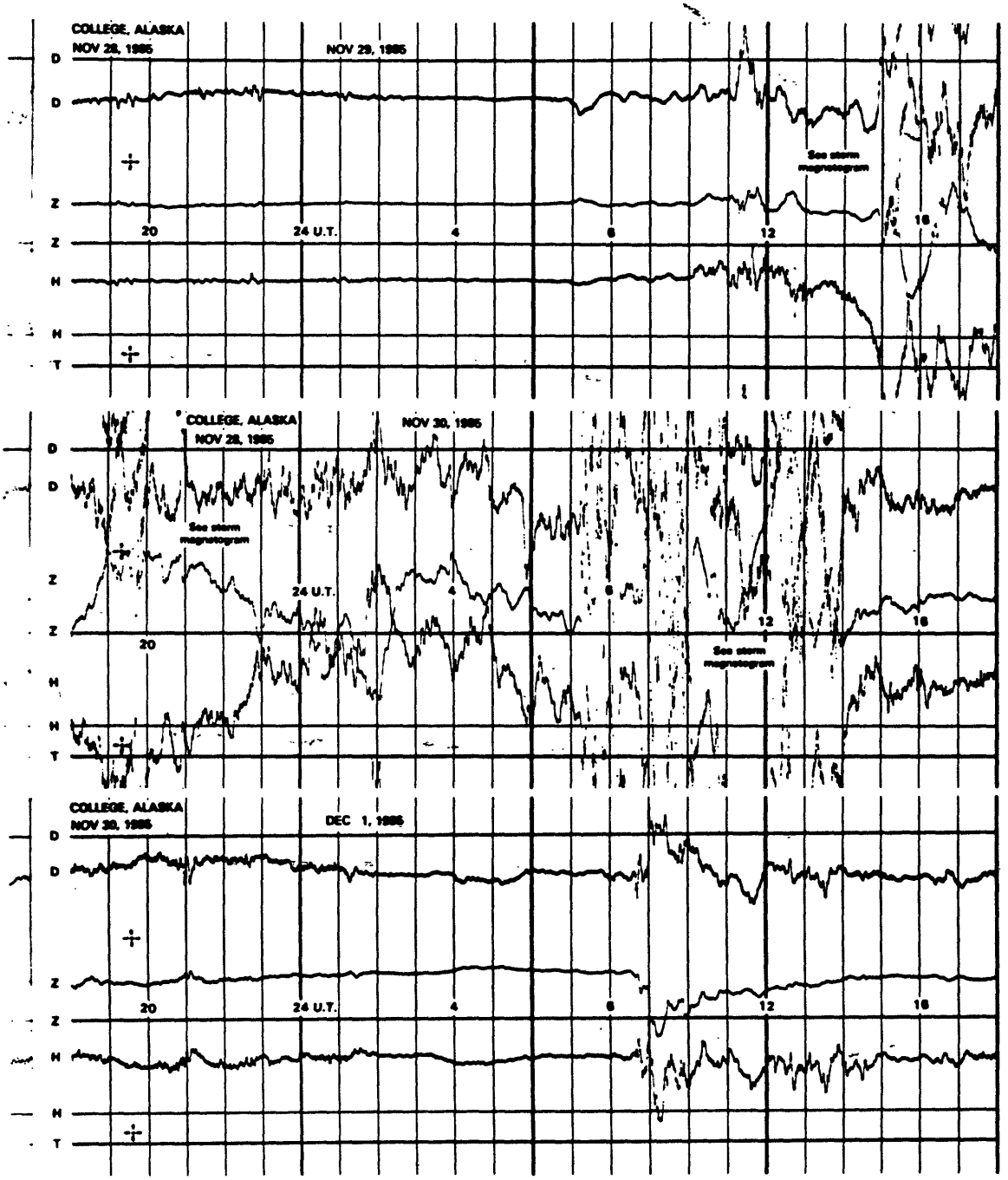
NORMAL MAGNETOGRAMS



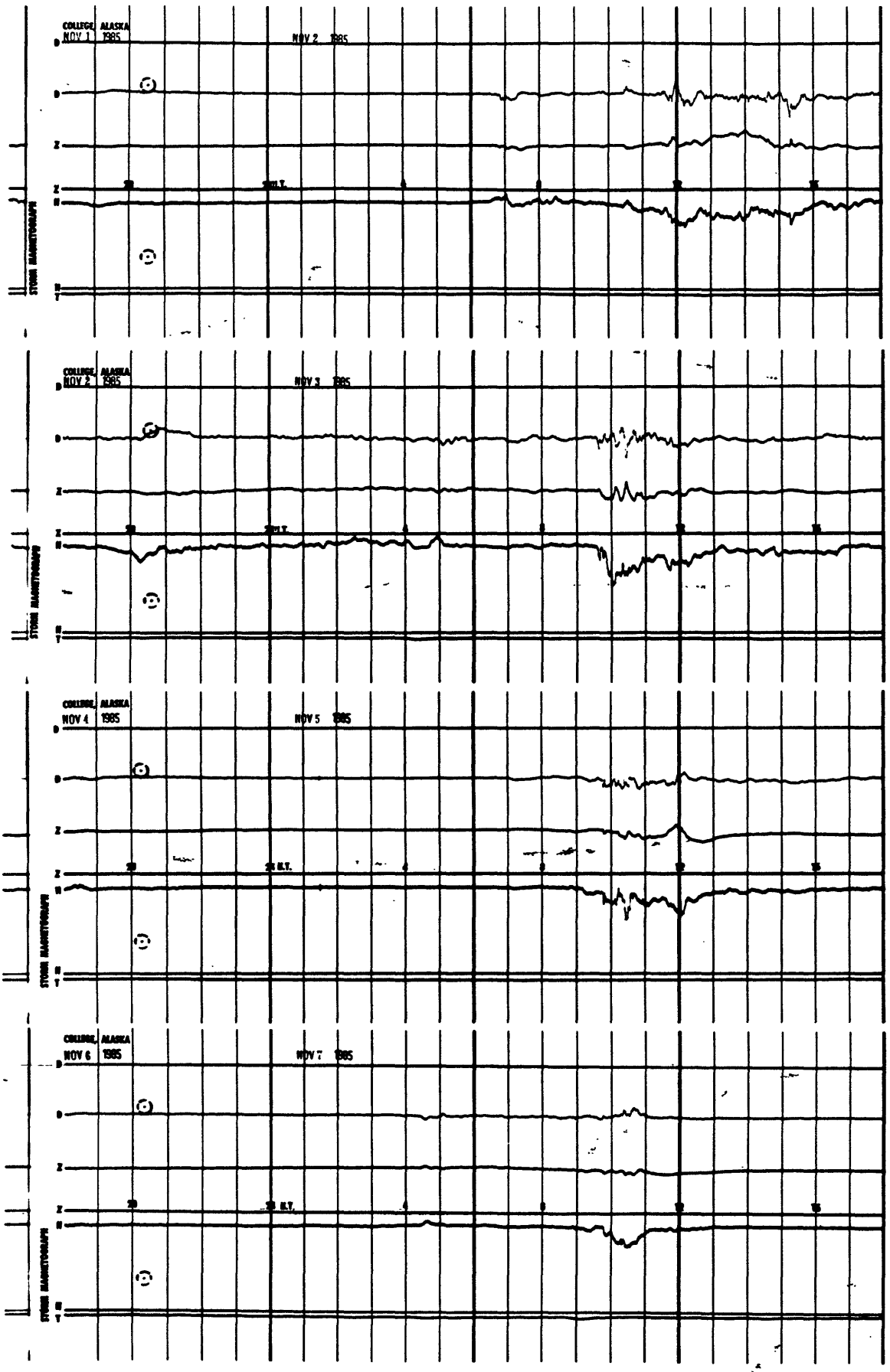
NORMAL MAGNETOGRAMS



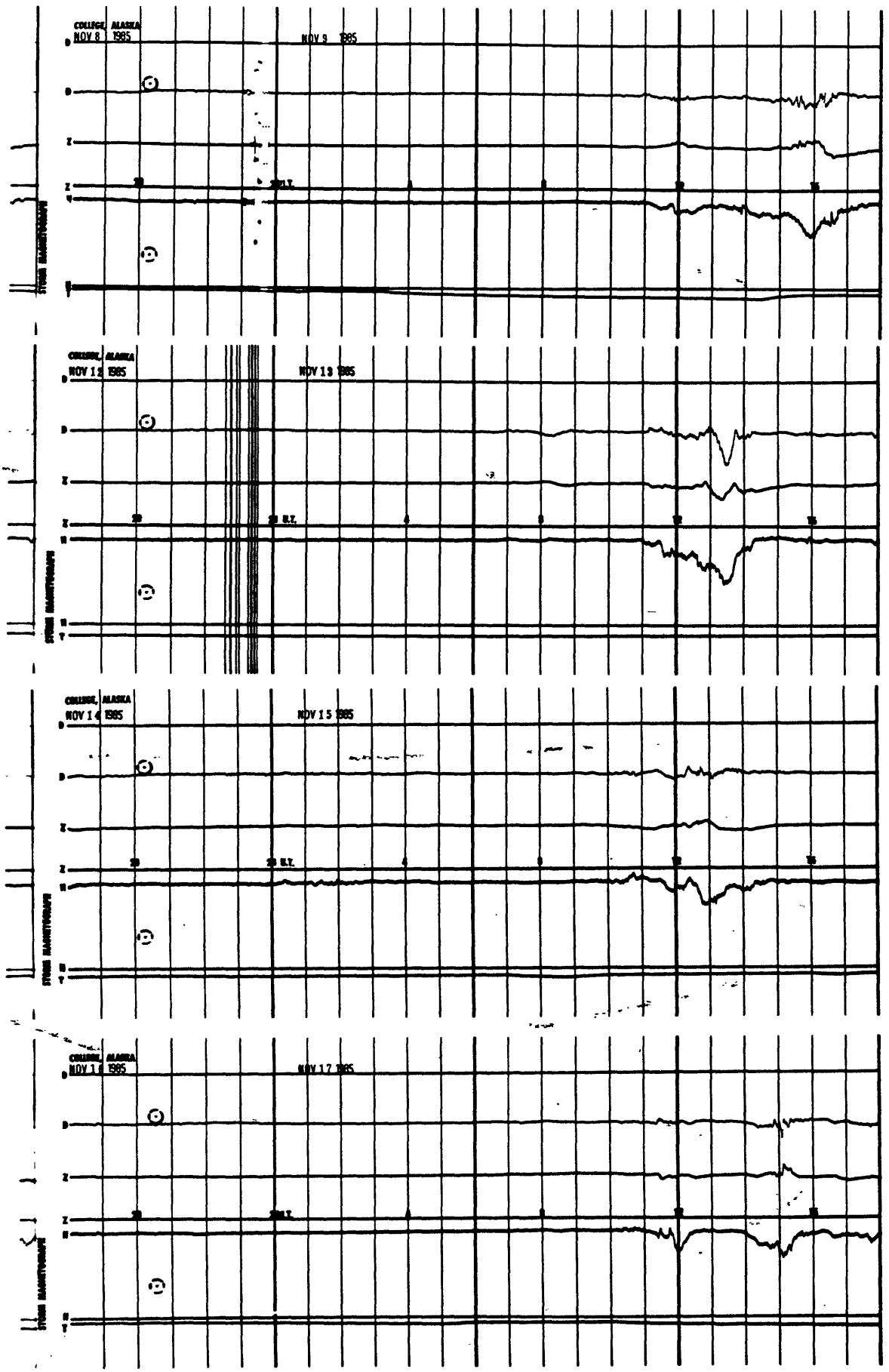
NORMAL MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS