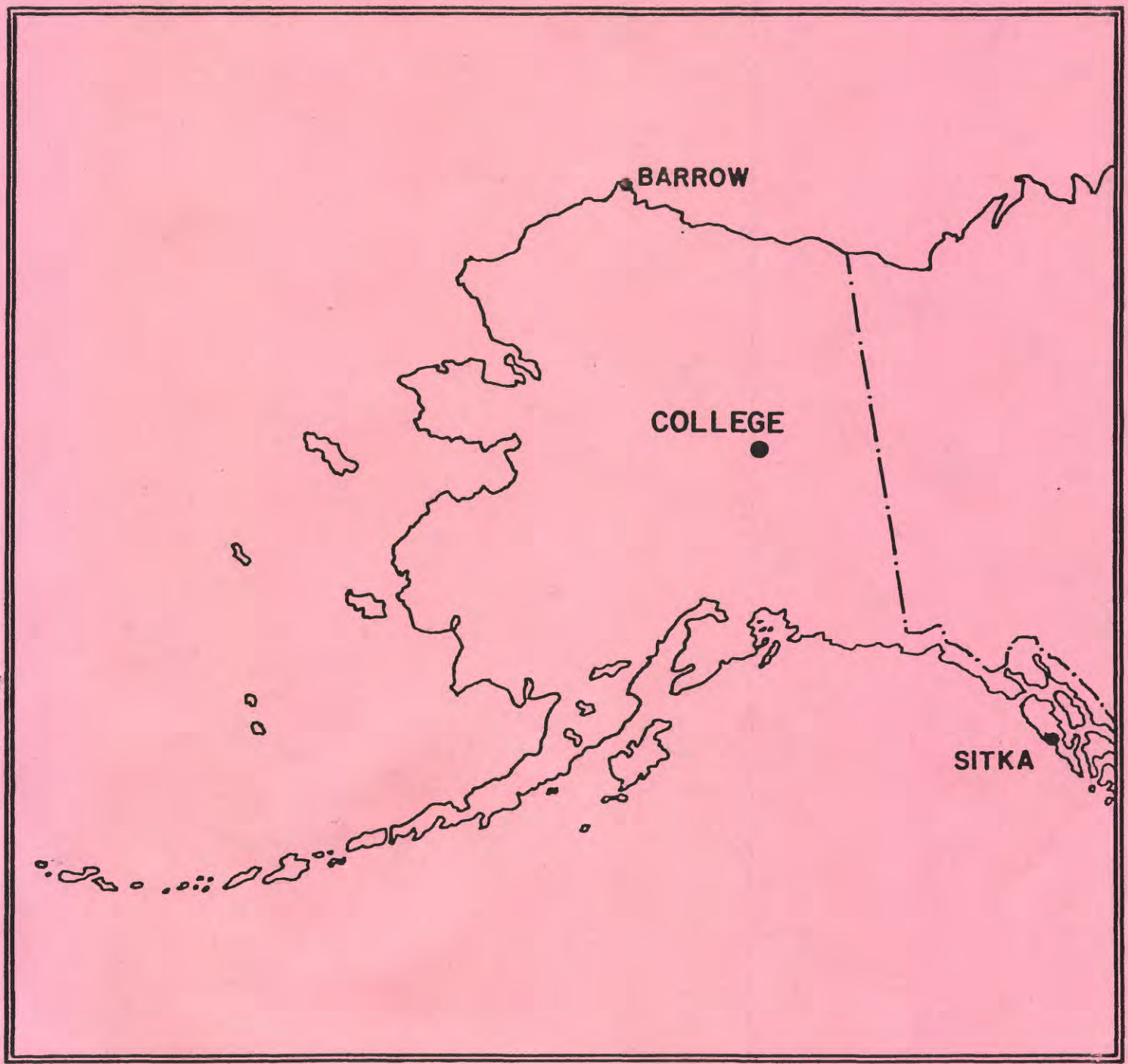
UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

AUGUST 1984

OPEN FILE REPORT 84-0300H



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: AUGUST 1984

DATE	K-INDICES 00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM	AK
1	5	6	7	7	6	5	5	3	44	75
2	4	5	4	6	6	6	2	2	35	45
3	2	4	4	6	5	3	3	2	29	28
4	3	3	5	6	5	3	3	2	30	30
5	2	3	3	2	3	2	1	1	17	09
6	1	1	0	3	2	3	1	1	12	06
7	0	1	1	4	1	0	1	1	09	05
8	3	3	2	5	5	2	2	2	24	19
9	2	3	3	4	5	4	2	3	26	20
10	2	2	3	3	1	2	2	1	16	08
11	1	2	4	5	4	2	3	2	23	18
12	3	3	4	5	5	2	2	2	26	22
13	2	2	1	1	1	2	2	1	12	05
14	1	1	2	3	4	4	4	4	23	17
15	5	3	3	5	5	5	2	2	30	30
16	3	4	4	6	6	3	2	2	30	32
17	3	3	4	4	2	2	2	1	21	14
18	2	2	1	3	1	1	2	1	13	06
19	1	0	2	3	4	4	3	2	19	13
20	3	4	6	2	2	2	2	1	22	19
21	2	1	1	3	3	0	0	0	10	05
22	0	0	0	0	0	0	0	0	00	00
23	0	0	1	3	5	3	1	3	16	12
24	3	4	7	5	6	6	2	2	35	51
25	2	4	4	7	4	2	2	2	27	31
26	3	3	3	4	4	4	1	1	23	17
27	2	2	3	6	7	6	4	3	33	46
28	4	2	6	6	5	6	4	3	36	46
29	3	3	5	6	6	3	3	2	31	34
30	2	4	4	7	7	4	2	2	32	48
31	3	2	3	1	4	3	2	2	20	12

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

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

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY: COLLEGE, ALASKA

MONTH: AUGUST

YEAR: 1984

DATE	TIME U.T.	NATURE OF PHENOMENON [1]	REMARKS
21	11xx	pi 2	With Bay
22	14xx	pc5	
23	02xx	pc5	
23	16xx	pg	

IDENTIFIED BY: JEP

VERIFIED BY: JBT

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

AUGUST 1984

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	24	02xx	..	..	..	..	24	3	7	146	1320	570	24	21
		27	01xx	..	..	..	..	27	5	7	196	1270	1010	30	18
								30	4,5	7					

COLLEGE OBSERVATORY, COLLEGE, ALASKA -- PRELIMINARY CALIBRATION DATA FOR: AUGUST 1984

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-84	2400 U.T., 8-31-84	1.0'/mm	3.7 γ/mm	27° 16.8' E
H	0000 U.T., 8-1-84	2400 U.T., 8-31-84	7.8 γ/mm		12690 γ
Z	0000 U.T., 8-1-84	2400 U.T., 8-31-84	7.6 γ/mm		55172 γ

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-84	2400 U.T., 8-31-84	7.9'/mm	29.6 γ/mm	23° 41.2' E
H	0000 U.T., 8-1-84	2400 U.T., 8-31-84	43.9 γ/mm		10815 γ
Z	0000 U.T., 8-1-84	2400 U.T., 8-31-84	48.3 γ/mm		54054 γ

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION
	FROM	TO	SCALE VALUE
D			
H			
Z			

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
27° 44.6' E	12916 γ	55360 γ

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: AUG 5, 6, 7, 10, 13, 18, 21, 22, 23, 31

FORM 76-106

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

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

OBSY.	YEAR	MONTH	ELEMENT
CO	84	AUG	D

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (150 M.T.) is hour 11 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. 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	163	178	140	170	166	154	-373*	168*	150	246*	437*	184*	01	184	390*	398*	351*	568*	440*	393*	369	331	206	266	242	5921
			02	199	232	220	325	225	266	337	235	240	123*	248	229	02	313*	169	361*	297*	339	365	368	354	272	251	252	248	6468
			03	230	228	226	234	215	299	336	324	241	281	202*	270	03	329*	241*	294	365	417	417	356	341	338	264	276	279	7003
			04	234	235	220	213	214	300	284	260	309	244	229	311	04	324	355	295	320	393	399	358	314	304	272	260	250	6897
			05	249	234	236	234	217	289	288	275	294	254	254	268	05	262	302	356	381	396	372	356	317	280	254	260	247	6875
			06	220	221	238	264	257	260	262	259	252	253	282	288	06	267	290	326	346	391	407	353	327	273	236	217	207	6696
			07	207	217	233	240	236	254	253	243	237	258	200	268	07	277	300	333	363	392	396	386	358	318	292	260	243	6764
			08	212	196	187	212	230	203	256	249	185	280	230	141*	08	7*	313	355	405	414	434	412	390	358	288	244	181	6382
			09	191	194	225	251	224	232	246	213	233	325	242	256	09	368	411*	383	374	401	430	397	363	367	326	129	162	6943
			10	184	206	221	231	271	260	219	270	234	288	253	268	10	282	293	325	348	390	422	396	324	247	200	191	173	6496
			11	185	212	224	232	241	240	189	200	187	132	190	294	11	282	292	330	360	376	395	360	343	332	284	219	125	6224
			12	122	166	119	222	226	199	248	248	293	318	248	223	12	173	339	286	352	386	396	376	382	326	282	255	204	6369
			13	207	227	188	182	232	254	250	252	259	263	260	257	13	279	303	332	349	387	373	384	333	307	263	242	215	6598
			14	213	229	227	247	253	249	253	243	235	213	216	237	14	247	380*	463	527	602*	468	403	355	306	187	156	197	7106
			15	165	165	117	220	170	314	243	290	232	247	253	233	15	260	380*	245	387	428	358	401	380	300	241	240	221	6490
			16	202	216	154	183	238	292	254	269	246	284	250	212	16	189*	259	356	366	447	470	447	377	310	287	260	223	6791
			17	209	217	207	190	304	260	231	337	333	233	269	283	17	283	305	333	363	382	373	382	313	269	243	220	203	6742
			18	226	243	252	247	237	237	243	263	260	277	281	347	18	296	307	326	359	362	357	373	301	272	240	228	206	6740
			19	232	247	253	263	249	253	259	253	251	300	247	373	19	300	356	452	508	572	327	428	410	181	187	232	248	7381
			20	221	227	223	163	191	203	312	239	213	240	257	269	20	275	313	357	380	417	436	387	333	297	270	242	221	6686
			21	227	213	247	253	254	260	257	257	261	265	277	290	21	335	298	327	337	347	355	333	312	290	263	257	247	6762
			22	243	244	252	260	263	259	256	263	263	273	279	281	22	293	295	307	323	343	360	353	347	302	267	249	248	6823
			23	243	240	238	249	257	257	240	247	242	247	277	287	23	331*	410*	433	410	410	393	348	320	312	226	235	126	6978
			24	203	221	150	187	182	223	235	145	235*	378	163	260	24	339*	243*	442*	601*	577*	407	348	315	208	176	183	224	6645
			25	226	217	215	213	277	447	301	292	229	165*	265	284	25	275	287	323	364	393	373	350	314	292	240	219	198	6759
			26	222	220	226	218	208	312	438	246	254	269	258	285	26	287	280	360	347	328	373	362	313	268	236	217	222	6749
			27	217	227	224	250	273	280	362	244	235	254	266	426*	27	-34*	235*	316	374	577*	521*	513	366	74	144	223	221	6788
			28	142	161	176	224	241	226	229	442*	593*	124*	178	257	28	255	302	379*	387*	410	371	362	262	174	246	208	219	6568
			29	211	209	207	260	304	262	351	236	287	157*	196*	186	29	286	165*	280	337	368	394	375	346	302	253	231	213	6416
			30	217	223	206	207	316	365	257	363	238	139*	123*	362*	30	314*	419	316	378	544*	512	395	301	233	164	161	203	6956
			31	213	218	207	253	253	260	235	390	273	236	244	253	31	280	280	310	333	378	360	357	334	308	208	210	217	6610

SCALED BY	LYT
CHECKED BY	PAT, JEP
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	207646
MONTHLY MEAN	279
DATES WITH GAPS:	

FORM 76-106

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 (150 M.T.) is hour 11 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

OBSY.	YEAR	MONTH	ELEMENT
CO	84	AUG	Z

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	247	256	318*	113*	-48*	-60*	87*	363*	204	381*	587*	477*	01	404	682*	574*	368*	256*	346*	282*	269	269	249	283	299	7206
			02	255	286	304	330	296	264	207	314	282	97*	212	338	02	371*	218	294*	167*	147	221	242	233	223	237	255	269	6062
			03	280	284	295	300	290	341	222	209	262	225	97*	94	03	269*	326*	236	228	241	170	224	247	257	248	264	274	5883
			04	317	305	294	297	298	356	289	199*	226	263	203	27	04	298	224	68	209	268	228	189	210	228	242	264	280	5782
			05	284	287	277	282	297	334	316	302	192	243	267	267	05	260	247	200	217	253	249	238	230	229	233	249	247	6200
			06	259	266	283	283	273	273	264	262	259	266	247	103	06	145	214	230	232	175	172	204	223	227	237	250	253	5600
			07	260	267	270	272	273	276	279	278	270	242	97	213	07	229	251	263	263	263	256	243	235	228	233	236	237	5934
			08	234	263	284	289	309	300	306	280	244	186	214	218	08	23	227	253	236	220	197	219	243	237	226	229	233	5670
			09	238	243	263	254	243	259	293	263	200	243	267	203	09	267	405*	340	188	239	243	232	248	253	254	246	264	6148
			10	255	270	260	270	285	273	254	287	261	193	222	250	10	256	253	240	219	227	237	193	177	175	197	218	237	5709
			11	247	256	256	253	247	247	264	177	73*	104	256	419	11	267	256	273	272	260	260	245	249	253	239	240	230	5843
			12	257	313	293	312	263	254	313	277	185	103	156	226	12	173	276	180	253	266	257	231	239	238	240	247	253	5805
			13	287	283	262	287	317	340	307	267	271	253	242	246	13	243	217	233	233	233	230	239	232	227	231	237	237	6154
			14	249	247	237	239	240	247	246	249	268	257	277	276	14	265	457*	207	244	143*	56	23	144	169	177	236	283	5436
			15	268	287	290	311	265	225	265	293	299	299	233	93	15	183	360*	153	184	130	200	241	245	245	246	256	264	5835
			16	269	300	285	300	337	360	358	323	284	60	190	247	16	195	193	225	226	205	204	219	203	190	200	247	248	5868
			17	261	275	253	274	333	277	273	257	148	174	253	234	17	234	233	253	256	251	224	223	203	196	212	217	227	5741
			18	246	259	253	253	260	287	285	266	252	256	249	190	18	197	214	236	227	236	241	244	220	234	232	234	243	5814
			19	252	252	250	250	243	247	247	247	273	260	210	159	19	143	96	120	159	77	-27	96	144	156	200	233	260	4547
			20	257	259	269	293	336	258*	118*	135	278	277	267	260	20	254	249	222	230	226	183	170	196	217	237	242	240	5673
			21	243	253	268	250	247	247	247	247	246	247	251	235	21	203	226	227	236	236	239	242	245	242	240	237	240	5794
			22	243	245	246	244	243	245	242	243	243	244	242	243	22	243	239	247	251	250	249	247	244	233	230	231	233	5820
			23	240	239	239	241	242	247	248	272	273	274	244	223	23	301*	236*	219	203	178	177	213	218	227	223	233	250	5660
			24	276	255	247	320	313*	403	332	200	351*	57	159	267	24	416*	409*	256*	256*	159*	113	176	197	208	218	230	242	6080
			25	256	276	276	293	319	304	234	266	164	326*	81	186	25	261	194	250	272	253	241	228	216	213	227	237	247	5820
			26	284	297	305	321	304	343	286	277	277	247	235	211	26	224	251	240	191	236	228	234	238	239	240	240	245	6193
			27	247	262	286	308	278	274	270	254	252	238	218	460*	27	115*	262	220	253	416*	50*	81	114	146	226	282	331	5843
			28	318	305	281	286	282	279	250	172*	134*	-159	170	357	28	338	333	568*	448*	230	230	212	164	167	242	273	283	6163
			29	304	306	291	336	326	316	190	108	279	171	98	123	29	196	41	-90	156	247	256	273	244	243	239	250	270	5173
			30	293	294	287	293	334	317	304	255	92	157	132	452*	30	107*	51	138	282	266*	75	117	189	207	206	233	257	5338
			31	263	287	302	293	253	244	267	297	224	267	267	248	31	243	233	242	197	277	224	246	243	244	232	247	253	6093

SCALED BY	LYT
CHECKED BY	PAF, JEP
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	180887
MONTHLY MEAN	243
DATES WITH GAPS:	

FORM 76-106

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

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

OBSY.	YEAR	MONTH	ELEMENT
CO	84	AUG	H

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (150 M.T.) is hour 11 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. 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	304	424	607*	679*	354*	264*	180*	79*	411	-10*	-857*	-43*	01	218	-100*	-195*	-100	-94	-46	255	228	228	219	255	290	3550
			02	321	298	523	398	333	527	366	348	284	105*	178	97	02	-92*	121	-64*	49*	236	302	293	280	249	260	263	257	5932
			03	267	308	300	339	459	339	350	318	363	249	-282*	-150	03	-80*	-137*	123	211	181	210	320	303	269	281	260	319	5120
			04	308	335	283	322	327	364	363	379*	281	317	110*	-132	04	-198*	-176*	152	333	286	210	227	263	284	287	297	260	5482
			05	280	287	289	309	344	379	312	309	247	329	300	303	05	300	277	209	291	295	277	259	263	273	269	269	264	6934
			06	286	293	289	277	285	287	294	297	303	303	273	200	06	275	286	289	200	202	258	269	258	261	287	280	290	6542
			07	293	289	284	289	300	293	297	300	315	323	183	300	07	300	309	317	313	318	303	297	289	278	280	282	297	7049
			08	330	322	390	350	313	340	390	323	350	282	353	100	08	20	369	312	260	255	299	303	272	252	262	255	260	6962
			09	293	307	295	300	327	318	309	392	413	383	310	230	09	100	-59	-137*	293	330	314	305	279	227	208	258	287	6282
			10	280	286	268	319	282	289	350	350	327	321	332	323	10	308	307	283	273	302	251	220	230	233	239	269	267	6909
			11	272	283	290	289	293	303	403	492	323*	255	283	80	11	270	339	327	312	300	278	293	273	239	233	252	231	6913
			12	351	327	413	280	283	357	303	310	297	10	194	283	12	20	113	247	313	310	255	290	267	260	255	269	317	6324
			13	302	285	350	375	399	360	288	301	307	291	287	300	13	293	279	307	300	275	293	250	243	240	245	267	277	7114
			14	390	293	310	303	302	310	309	320	340	420	413	400	14	287	43	25	50	5	110	197	260	193	180	290	332	6082
			15	283	347	530	380	340	489	413	387	363	370	130	50	15	160	-30	188	182	10	288	300	287	253	262	251	273	6506
			16	300	313	357	366	499	386	383	303	332	188	230	70*	16	-115*	274	220	232	165	256	293	262	258	267	267	281	6387
			17	300	317	330	362	369	300	318	333	267	322	318	313	17	291	300	300	287	277	279	260	249	265	260	258	272	7147
			18	300	303	299	300	318	320	318	300	293	302	310	277	18	282	287	291	290	308	297	267	260	251	252	273	275	6973
			19	293	300	302	295	297	293	299	317	331	313	297	312	19	270	85	141	20	-30	82	260	221	240	300	287	311	5836
			20	284	270	306	373	501	519*	384*	233	387	344	364	311	20	307	277	259	267	228	209	233	245	264	252	253	279	7349
			21	290	321	291	278	287	290	300	293	297	300	309	280	21	263	298	293	300	293	288	277	267	269	274	280	286	6924
			22	292	293	288	284	287	293	299	303	307	307	310	309	22	310	309	309	310	303	297	283	272	270	271	283	296	7085
			23	293	299	300	299	300	300	310	312	335	353	293	275	23	169	10	159	217	247	301	313	306	287	280	270	300	6528
			24	329	289	356	521	687*	481	423	338	-186*	90	177	260	24	140	-226*	-86*	-226*	-92*	319	292	262	266	318	293	308	5333
			25	318	320	304	352	364	363	337	370	372	-388*	128*	298	25	155	290	309	293	275	274	252	258	266	288	288	272	6358
			26	303	352	317	309	324	390	357	365	356	338	312	225	26	182	128	64	178	302	295	280	288	288	274	289	281	6797
			27	310	324	306	288	293	304	316	341	382	366	249	-193*	27	-287*	286	366	258	-109*	87	28	170	276	301	288	318	5268
			28	428	336	316	303	304	311	362	100*	-142*	-19*	341	118	28	130	80	-148*	-176*	204	214	215	146	234	260	304	310	4531
			29	335	310	340	457	368	378	474	248	368	49*	-271*	184	29	72*	-411*	91	318	308	300	284	248	247	228	254	280	5459
			30	307	353	323	342	417	345	347	332	271	43*	-259*	-119*	30	-349*	1	228	78	-23	133	258	276	243	241	267	282	4337
			31	303	320	354	295	293	306	369	348	336	319	312	307	31	300	300	139	137	286	316	290	276	251	277	282	288	7004

SCALED BY	LYT
CHECKED BY	PAF JEP
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.
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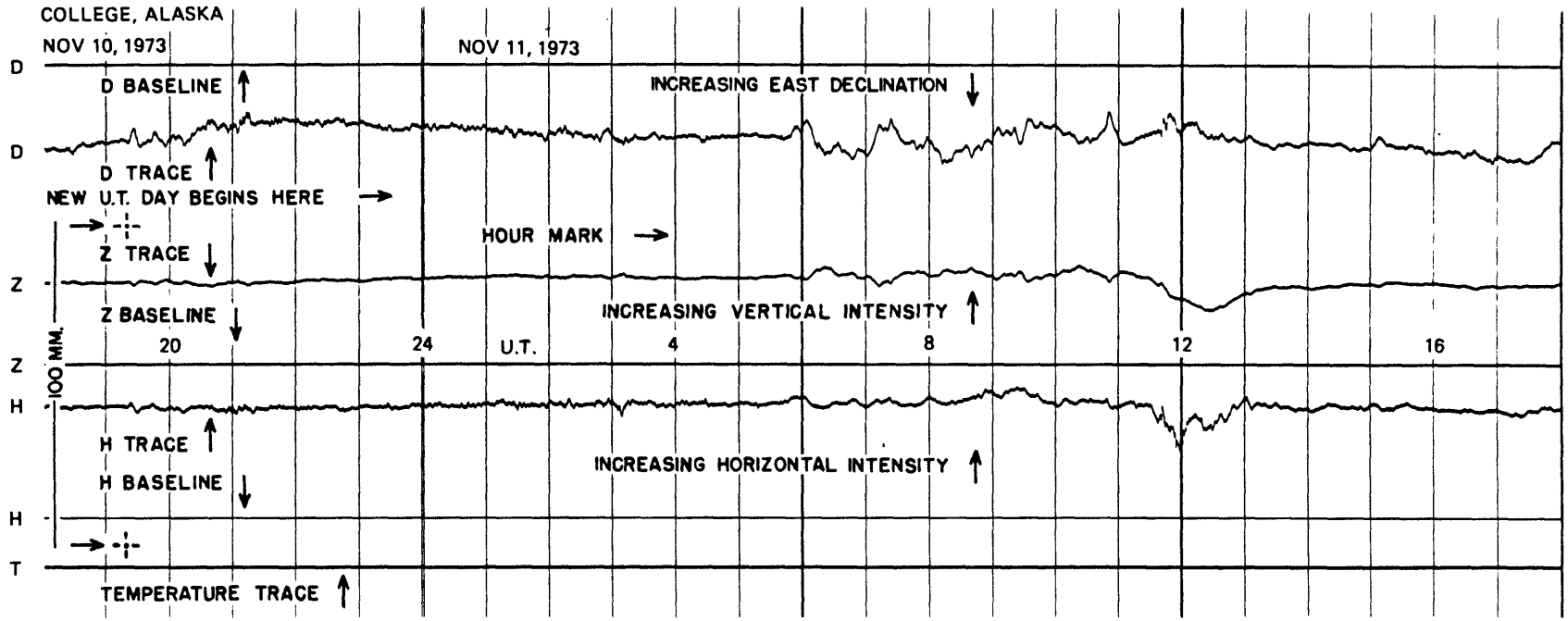
* Derived from STORM Mgph., converted to Normal Mgph.

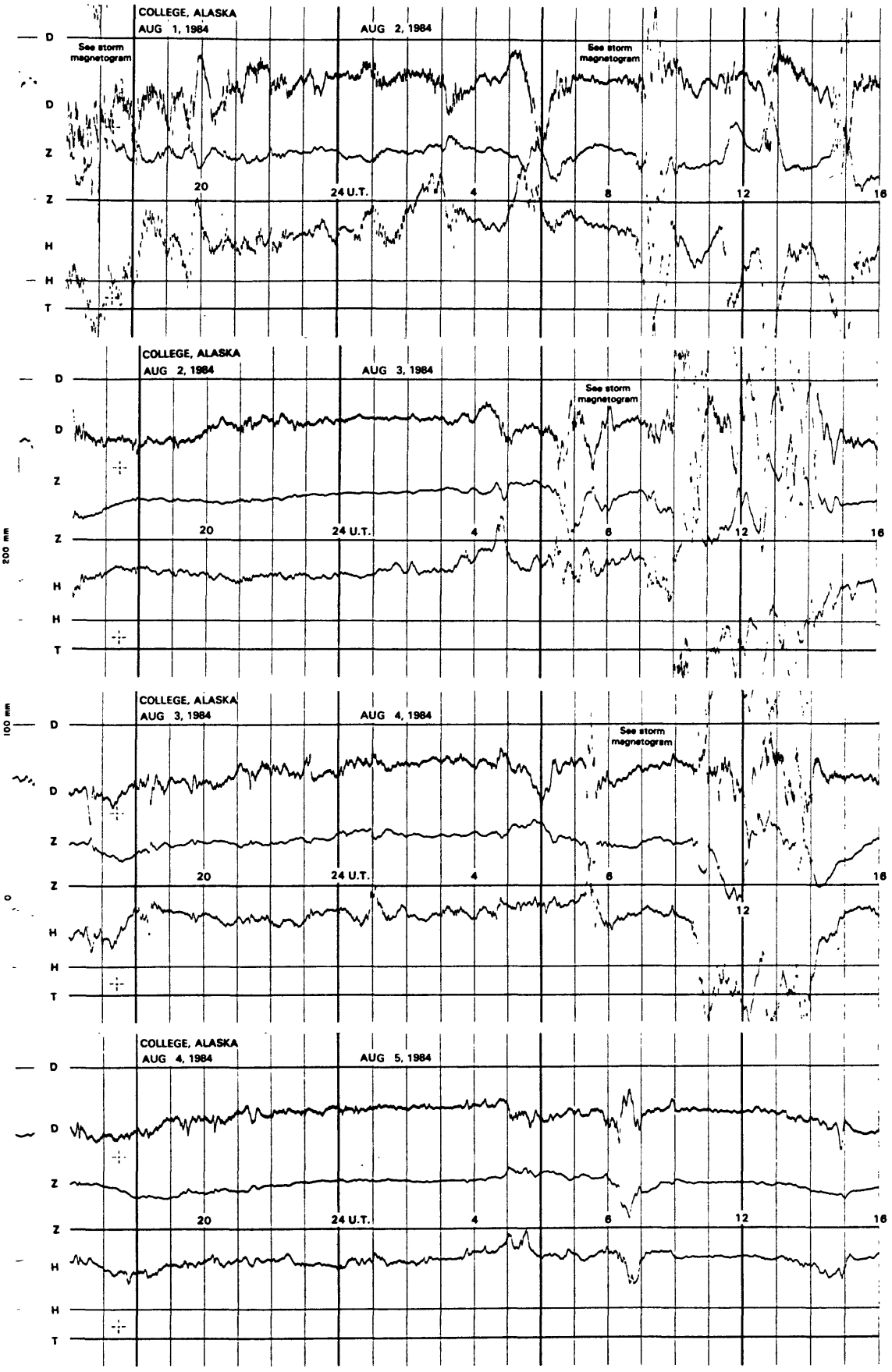
MONTHLY SUM	193017
MONTHLY MEAN	259
DATES WITH GAPS:	

FORMAT FOR NORMAL & STORM MAGNETOGRAMS
(SAMPLE ONLY)

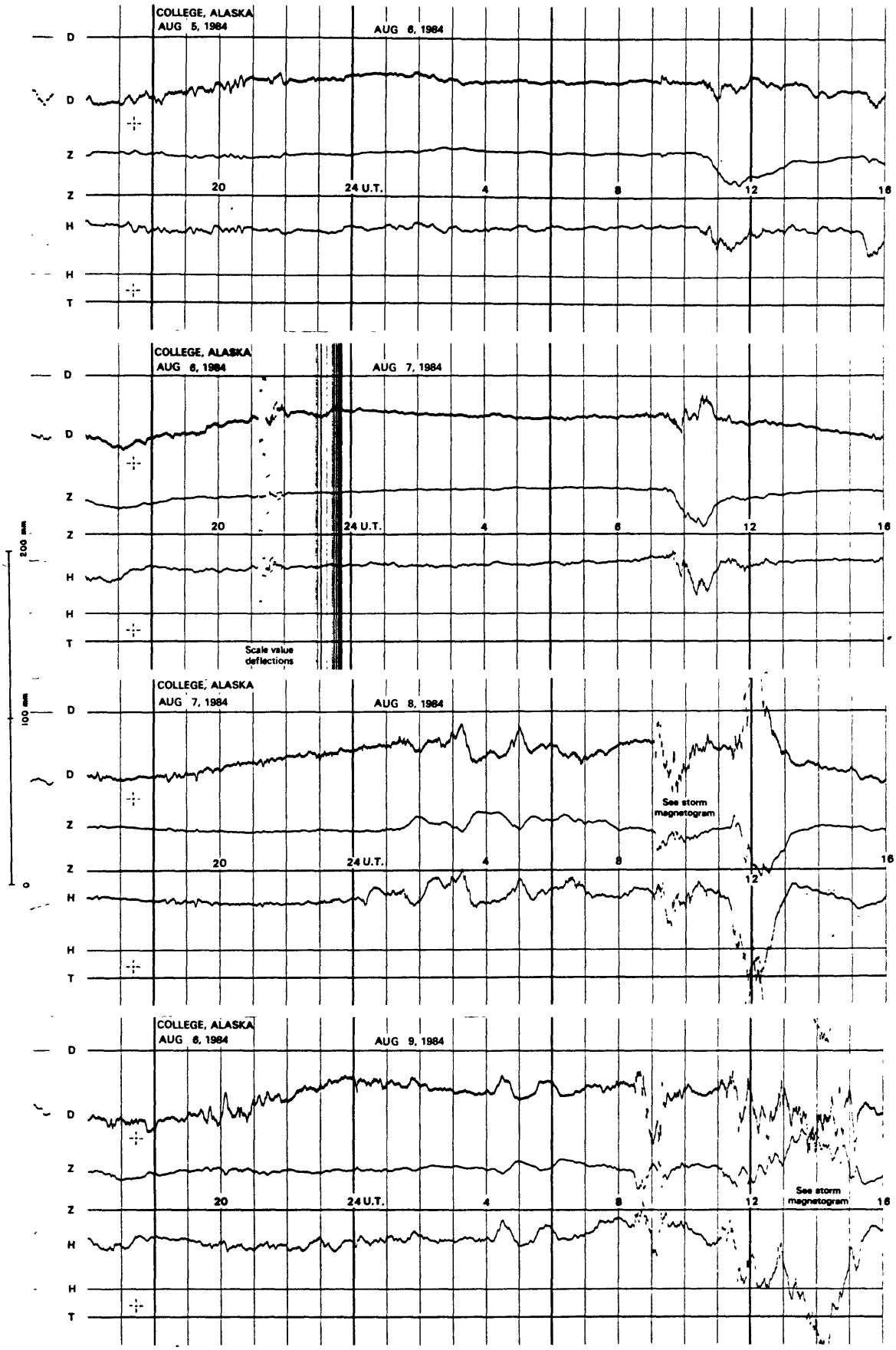


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

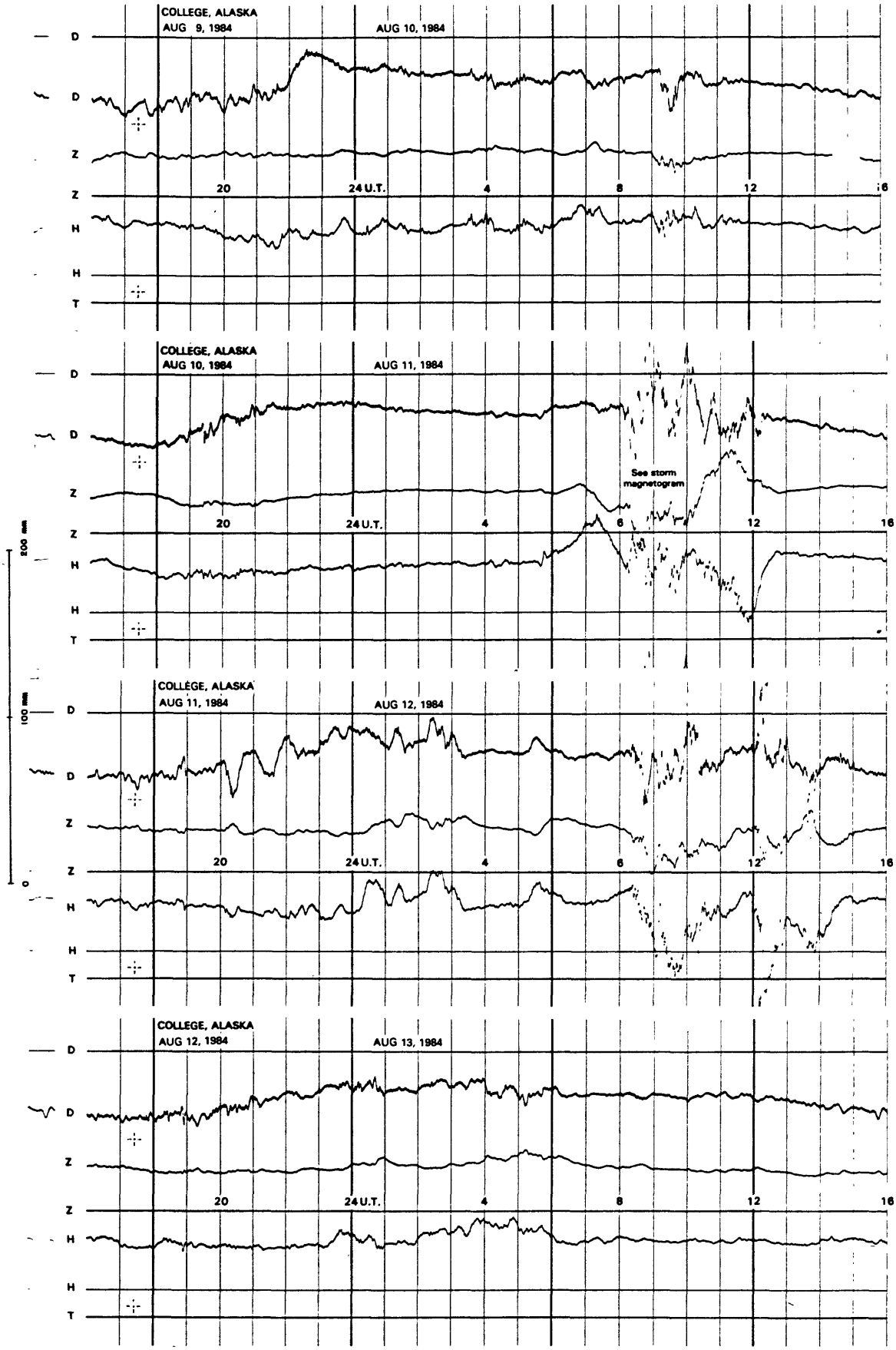
NORMAL MAGNETOGRAMS



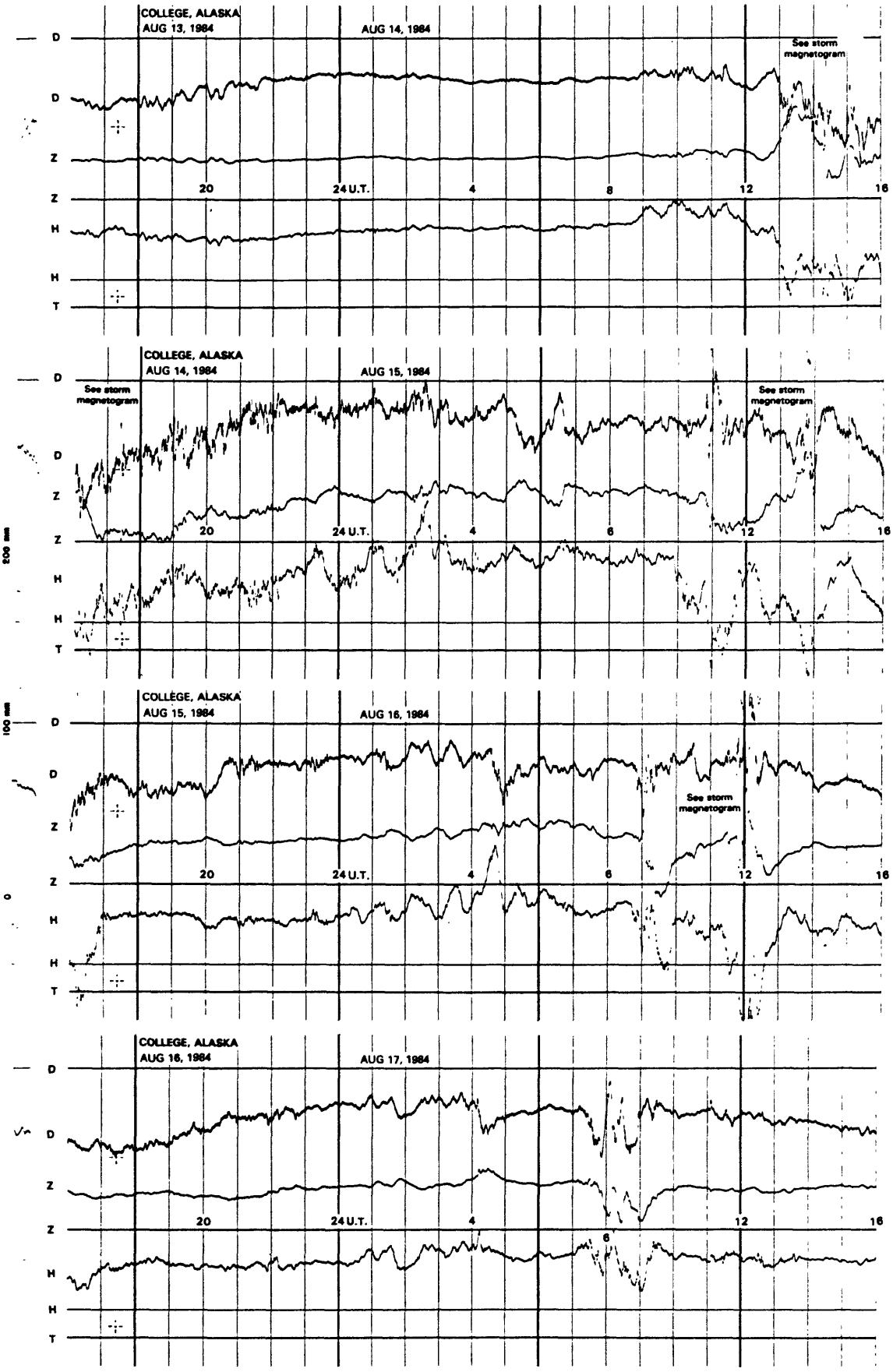
NORMAL MAGNETOGRAMS



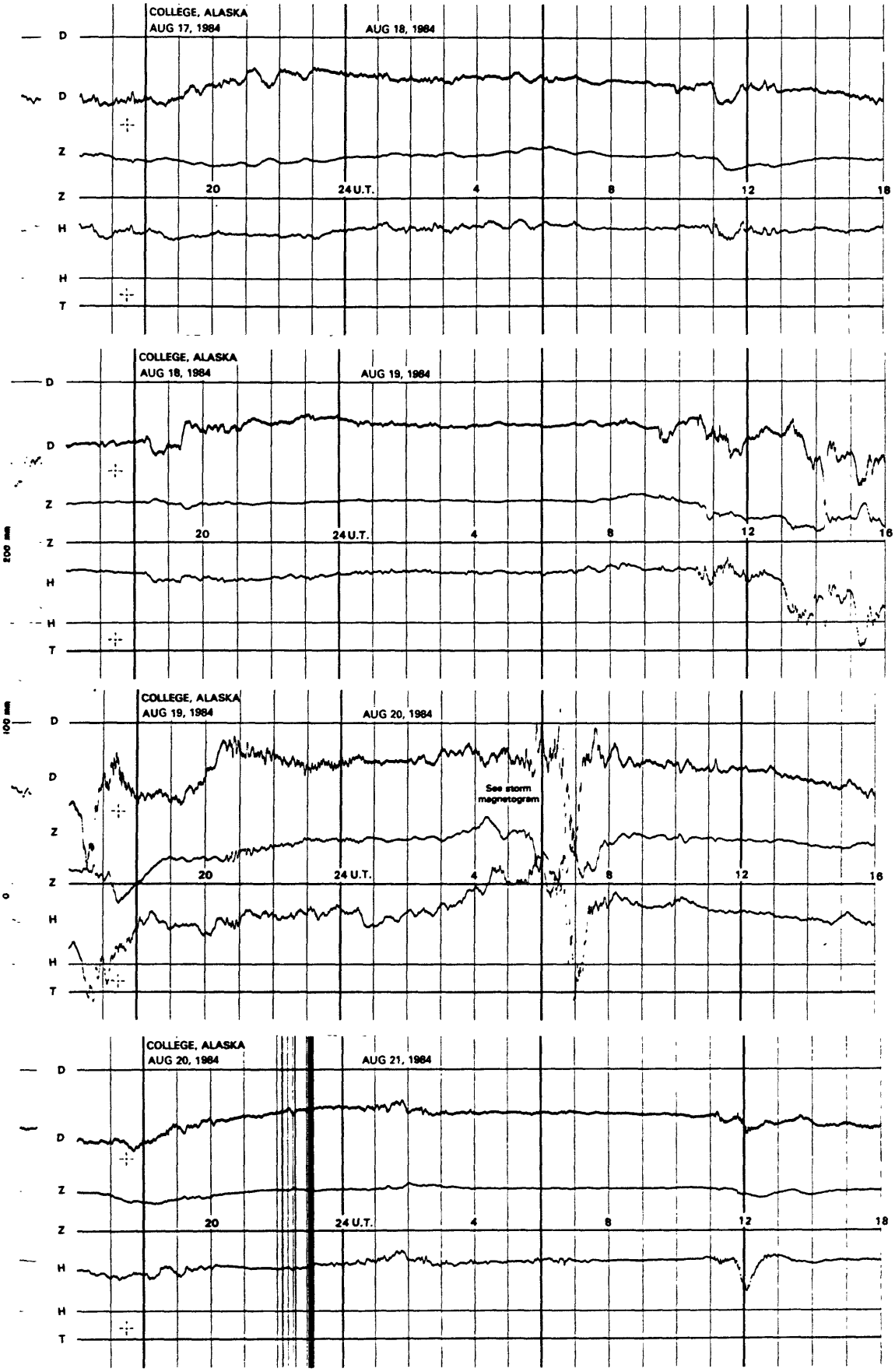
NORMAL MAGNETOGRAMS



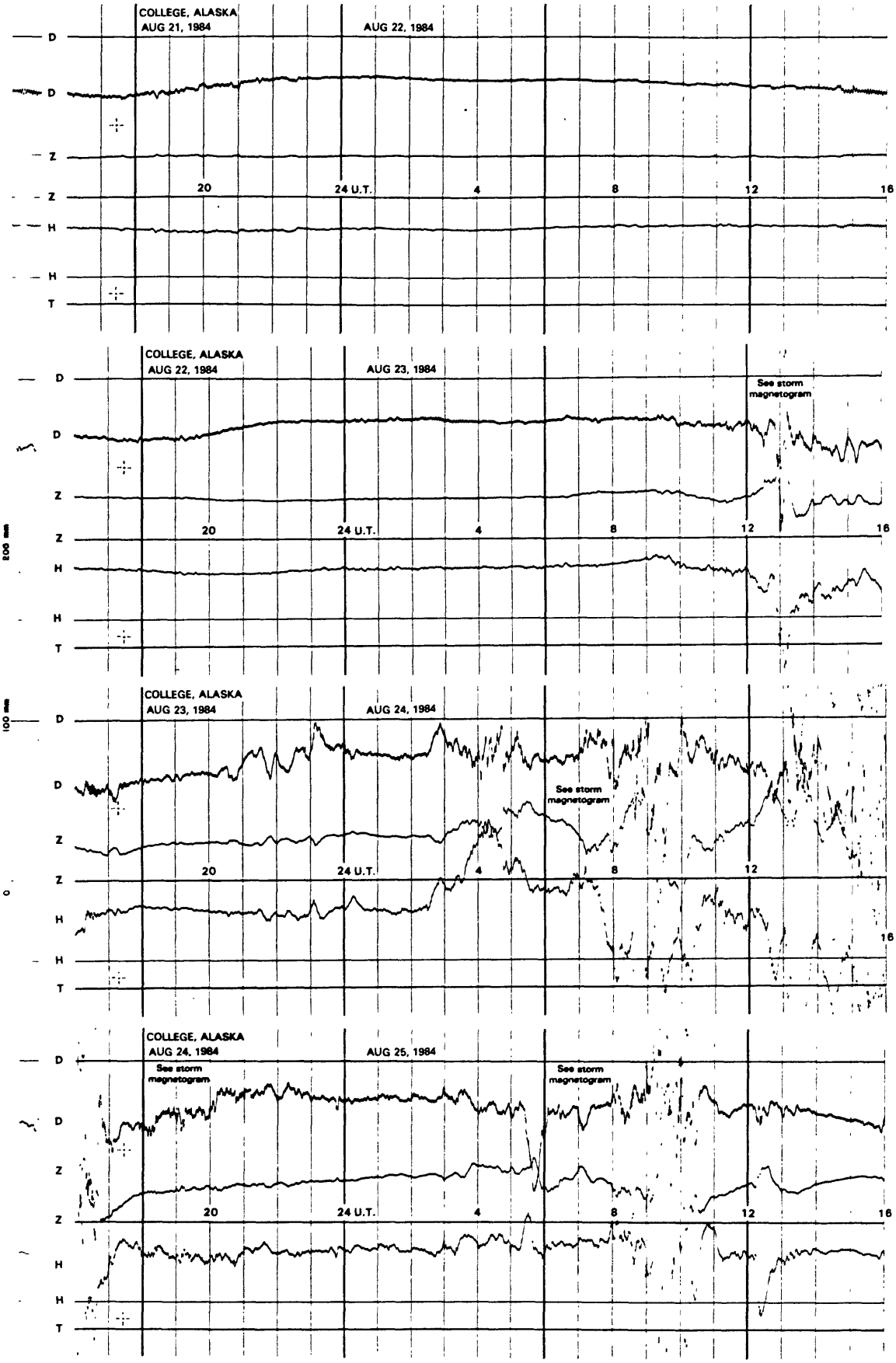
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



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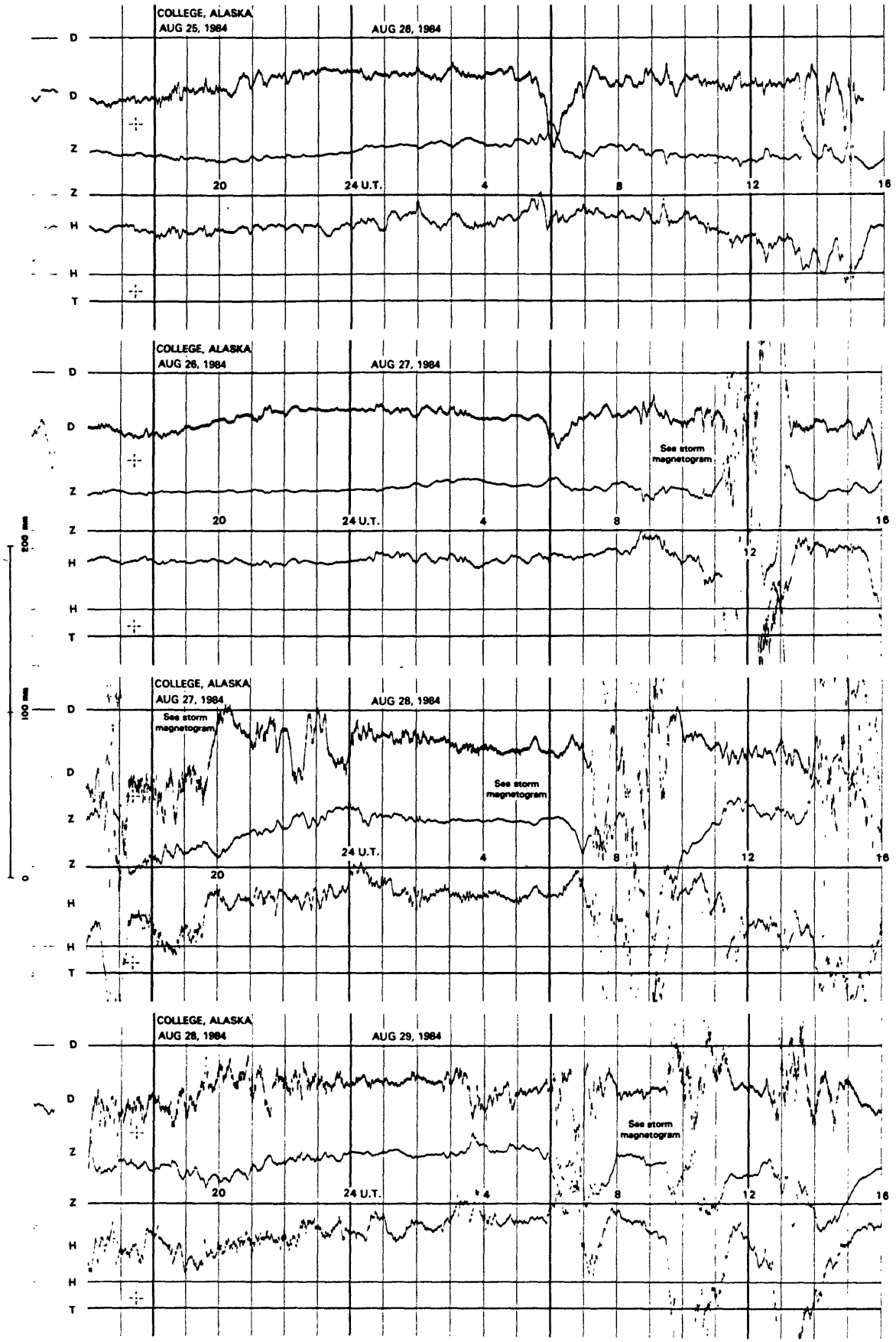
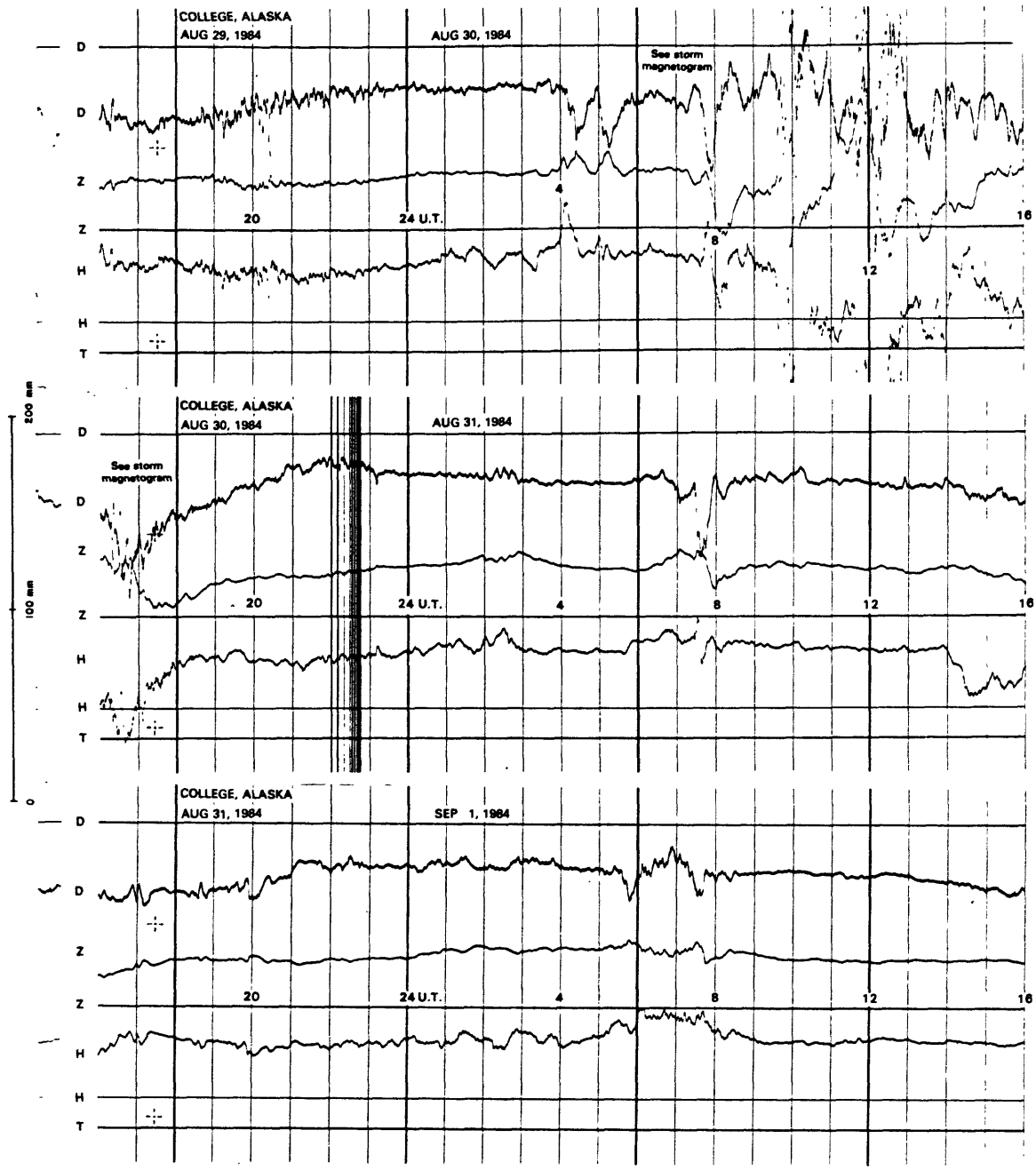
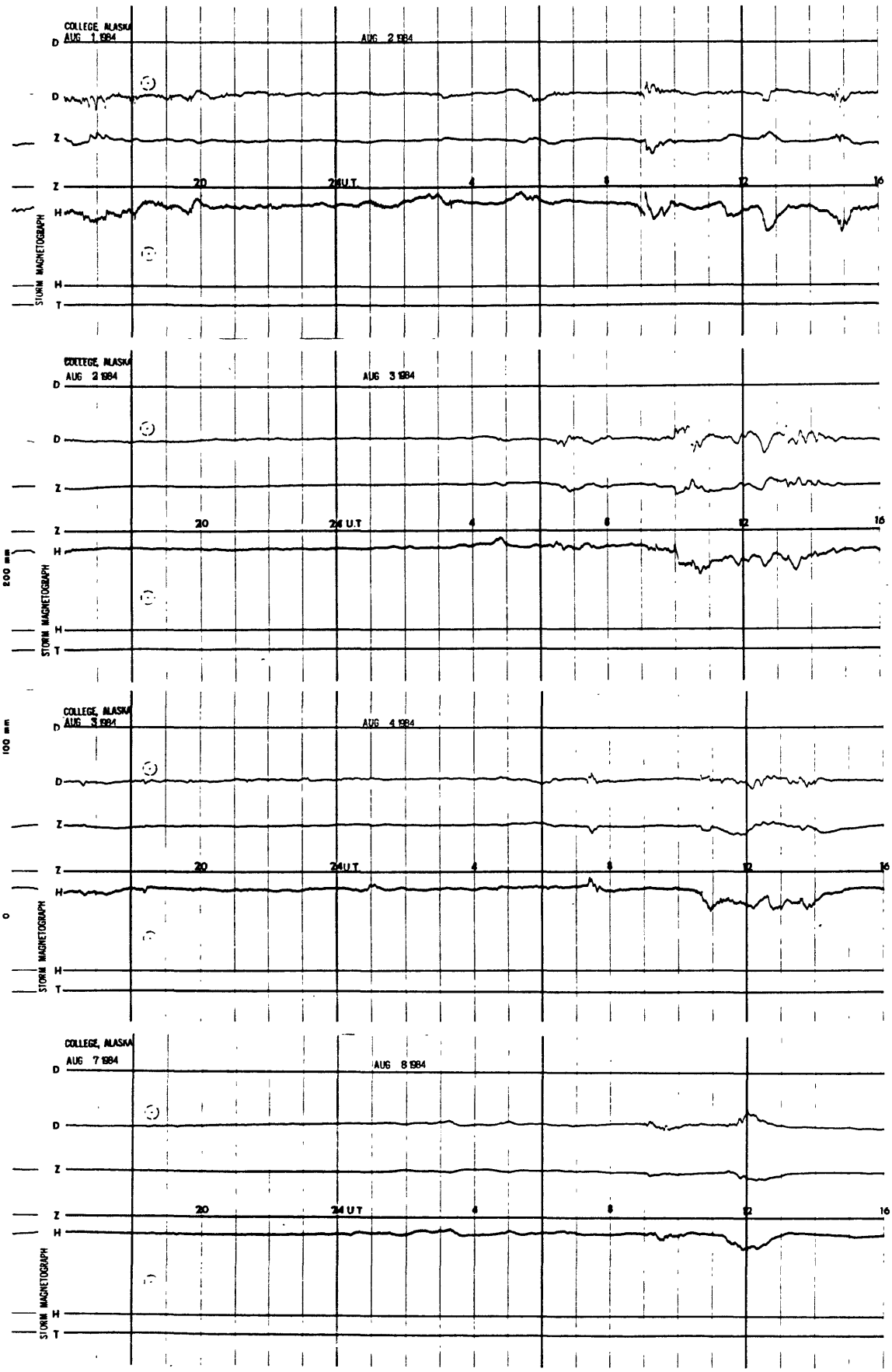


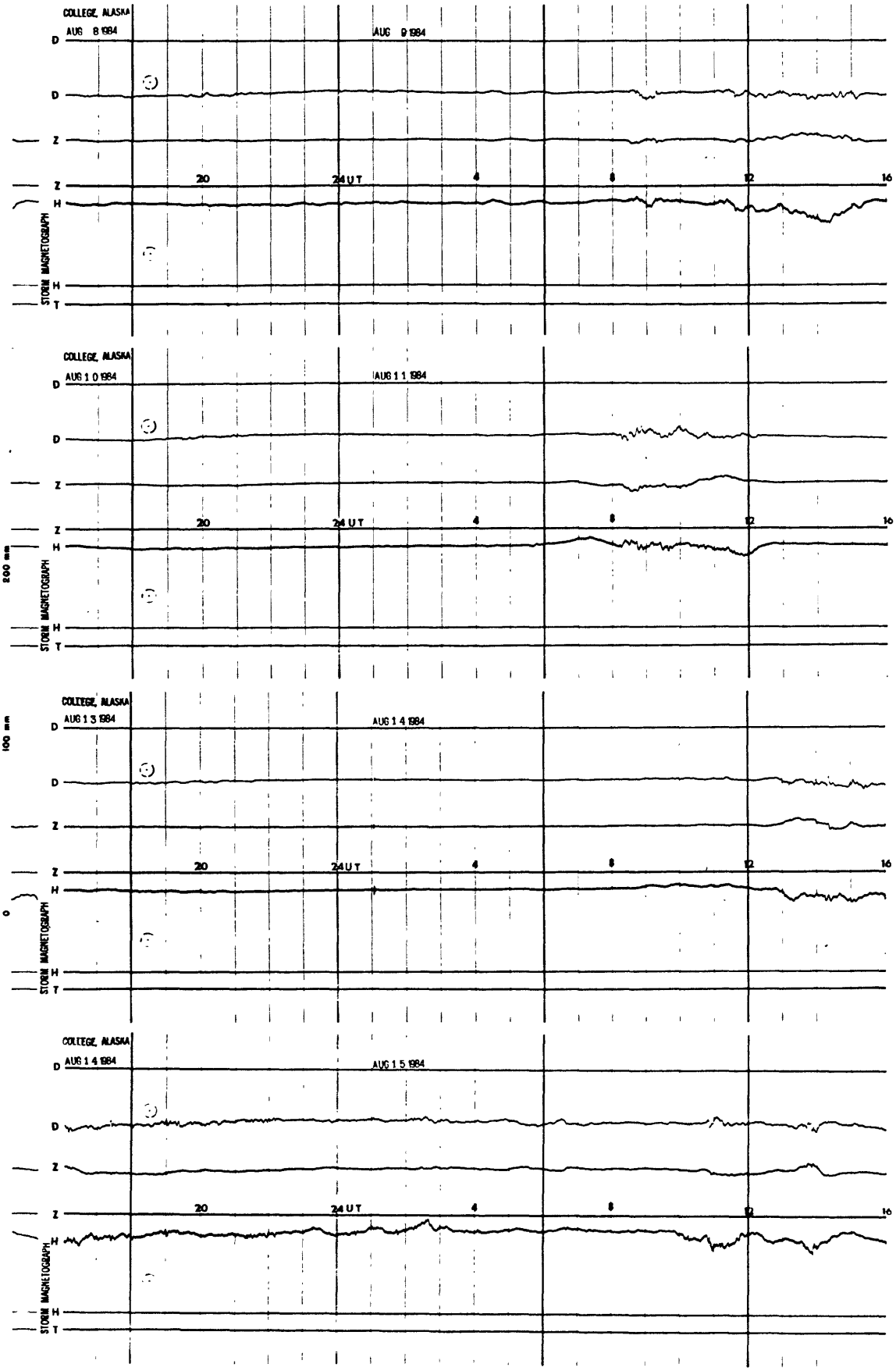
NORMAL MAGNETOGRAMS



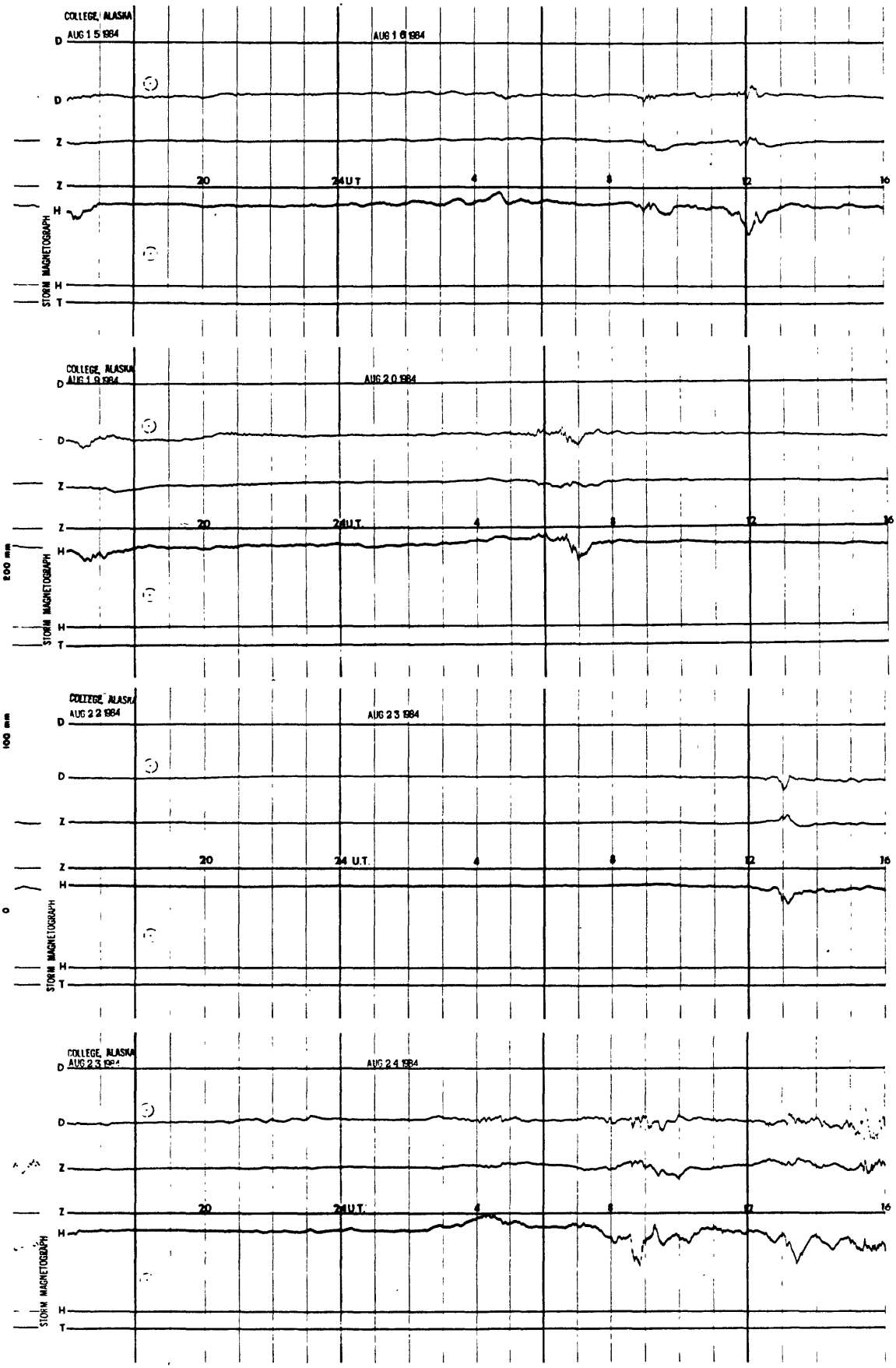
STORM MAGNETOGRAMS



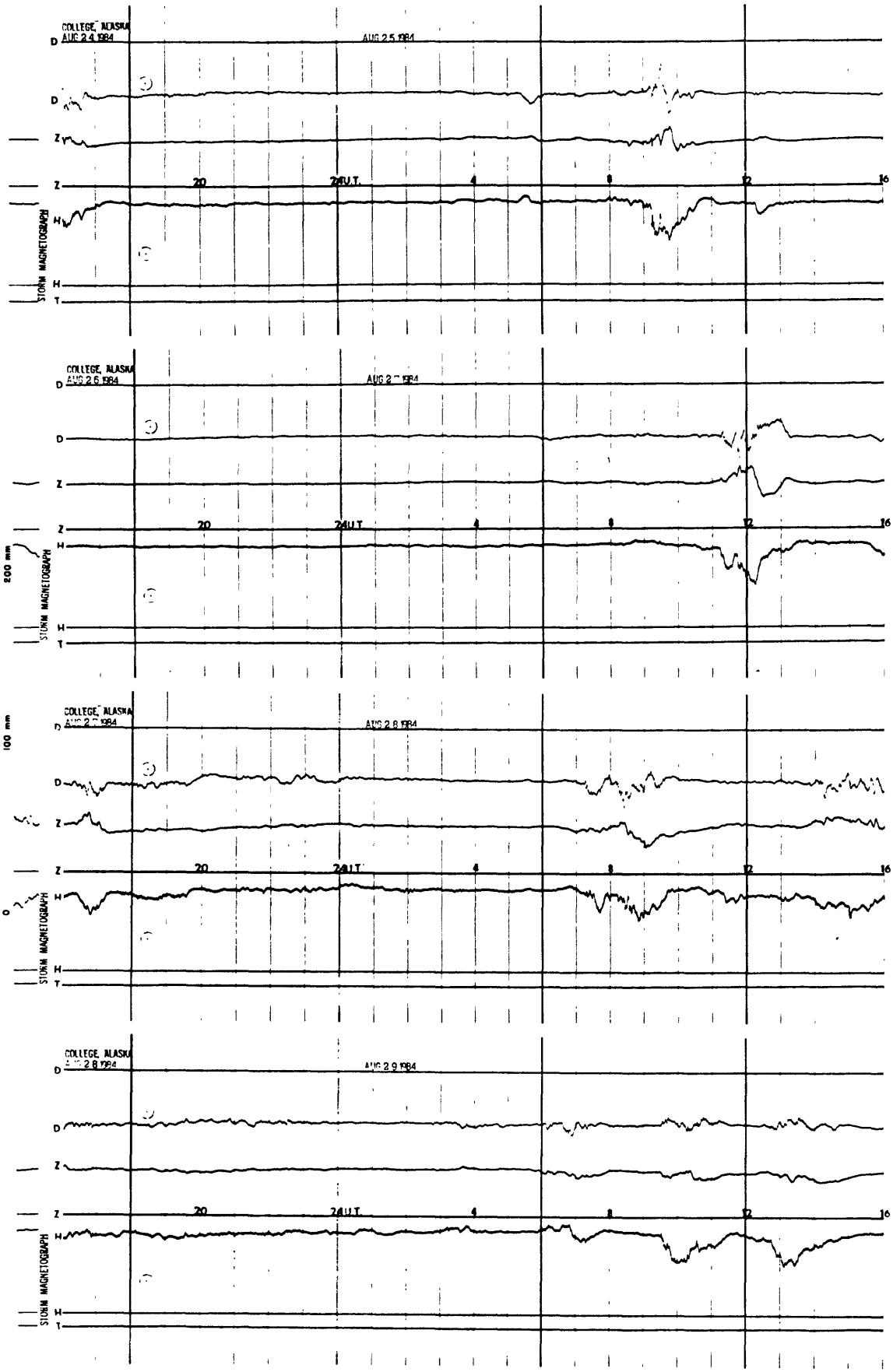
STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS