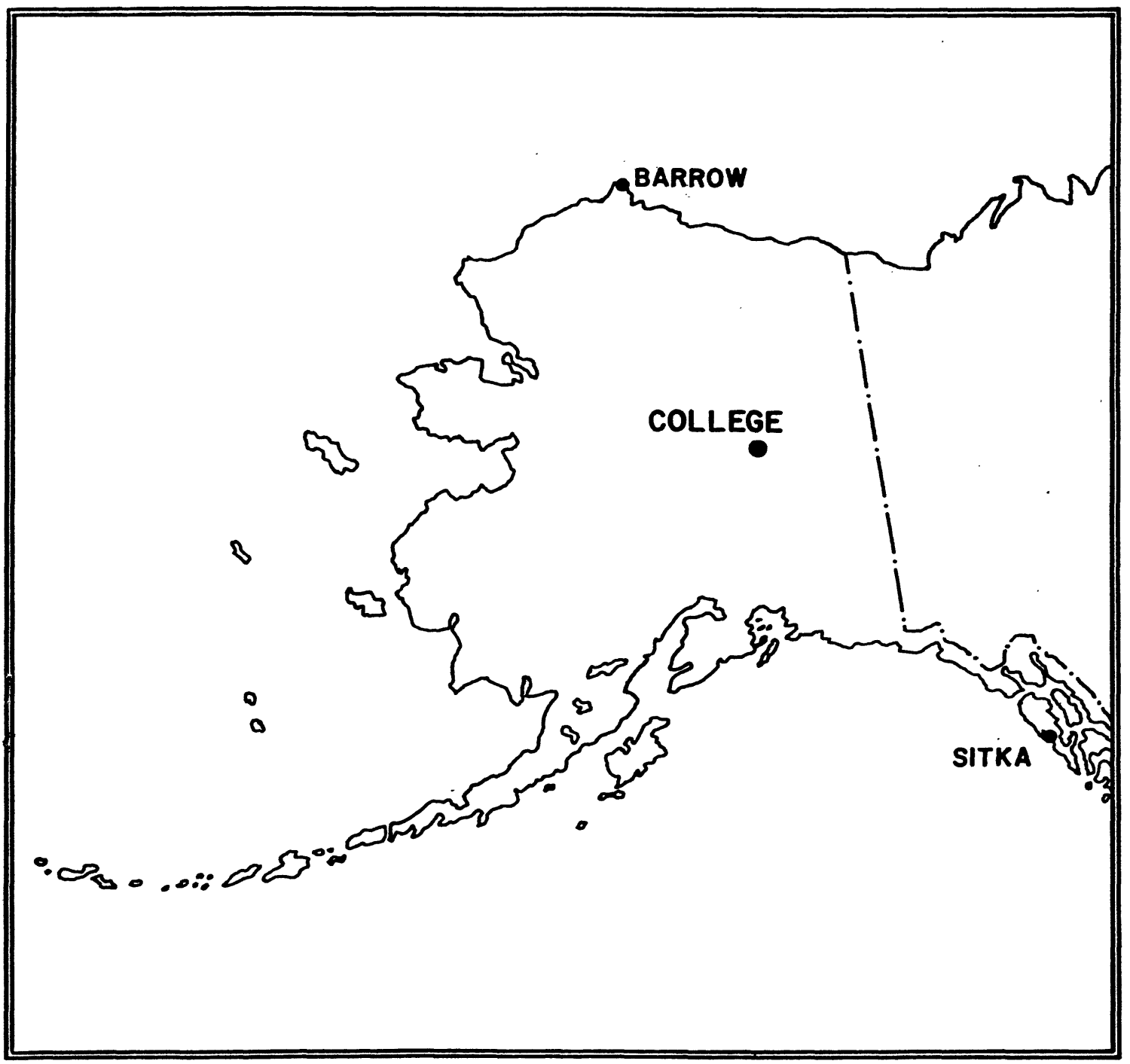
UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

SEPTEMBER 1984

OPEN FILE REPORT 84-0300I



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: SEPTEMBER 1984

DATE	K-INDICES 00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM	AK
1	2	3	3	1	0	2	2	2	15	08
2	3	3	4	4	5	5	2	1	27	24
3	2	4	4	2	2	2	1	1	18	11
4	1	3	6	6	8	8	3	3	38	86
5	3	6	6	7	6	6	4	3	41	65
6	2	2	4	4	5	3	2	1	23	18
7	2	2	2	2	3	2	1	0	14	07
8	2	1	3	3	3	3	2	2	19	11
9	2	2	3	4	3	2	2	3	21	13
10	3	2	6	7	3	4	3	4	32	41
11	3	5	4	4	4	3	3	2	28	23
12	2	2	3	5	5	4	2	2	25	21
13	3	3	3	4	1	2	1	1	18	11
14	2	3	3	5	2	2	2	2	21	14
15	2	1	3	4	4	4	0	1	19	14
16	2	2	1	0	4	3	1	1	14	08
17	1	2	3	0	0	1	1	0	08	04
18	0	1	0	2	0	0	0	0	03	01
19	1	1	3	7	5	5	3	3	28	36
20	3	5	5	6	4	4	2	1	30	32
21	1	0	4	6	4	3	1	2	21	20
22	2	2	6	6	7	2	4	4	33	47
23	4	6	7	8	7	8	5	5	50	120
24	5	5	7	6	6	5	4	3	41	61
25	3	3	7	6	6	6	4	4	39	58
26	4	4	7	7	7	5	3	2	39	68
27	4	4	6	7	6	3	2	3	35	49
28	2	3	2	5	5	4	3	3	27	23
29	3	4	3	4	3	2	2	1	22	15
30	1	2	6	2	0	1	0	0	12	13
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	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: 1973-761-867

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY: COLLEGE, ALASKA

MONTH: SEPTEMBER

YEAR: 1984

DATE	TIME U.T.	NATURE OF PHENOMENON[1]	REMARKS
14	18xx	pc4	
15	02xx	pc5	
17	18xx	pc4	
28	14xx	pg	

IDENTIFIED BY: JBT

VERIFIED BY: EAS

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

SEPTEMBER 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	04	04xx	..	..	..	..	04	5,6	8	282	1870	1400	05	23
		22	19xx	..	..	..	..	23	4,6	8	472	2630	1790	27	18

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

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE		CALIBRATION BASELINE
D	0000 U.T., 9-1-84	2400 U.T., 9-30-84	1.0'/mm	3.7γ/mm	27° 16.8' E
H	0000 U.T., 9-1-84	2400 U.T., 9-30-84	7.8γ/mm		12689γ
Z	0000 U.T., 9-1-84	2400 U.T., 9-30-84	7.6γ/mm		55172γ

STORM MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE		CALIBRATION BASELINE
D	0000 U.T., 9-1-84	2400 U.T., 9-30-84	7.9'/mm	29.6γ/mm	23° 44.9'
H	0000 U.T., 9-1-84	2400 U.T., 9-30-84	43.9γ/mm		10807γ
Z	0000 U.T., 9-1-84	2400 U.T., 9-30-84	48.3γ/mm		54048γ

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
27° 44.4' E	12922γ	55358γ

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: SEP 1, 3, 7, 8, 9, 13, 16, 17, 18, 30

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 counts 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	SEP	D

C	Q or S	Tes Q	Hr. Da.	01	02	03	04	05	06	07	09	08	10	11	12	Hr. Da.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	215	206	213	193	230	274	200	254	258	242	247	262	01	256	283	308	338	358	367	353	304	242	223	196	205	6227
			02	216	235	212	246	158	281	291	232	244	247	264	258	02	255	298	391	466	384	376	355	316	255	238	255	251	6724
			03	253	246	244	252	193	386	204	243	212	242	263	269	03	296	297	313	373	351	358	314	321	295	269	223	242	6659
			04	251	257	239	215	202	232	342	109*	106	139	355*	206	04	363*	426*	665*	959*	363*	410*	420	329	288	280	254	246	7656
			05	250	214	162	62*	537*	356	428	-145*	117	45*	315*	554*	05	395*	410*	633*	570*	704*	489	485	326	209	116	147	187	7566
			06	200	222	249	228	246	269	364	247	430	168	238	272	06	327	234	286	337	380	415	329	292	264	252	234	236	6719
			07	228	220	223	233	238	246	242	262	260	258	263	286	07	295	298	339	374	405	372	346	330	268	257	250	239	6732
			08	234	236	245	255	261	245	222	204	177	272	278	278	08	300	313	342	410	415	425	372	328	322	255	230	208	6827
			09	202	219	232	254	260	272	269	236	266	300	275	251	09	284	302	335	340	359	385	395	361	298	345	257	169	6866
			10	172	186	197	218	232	259	258	309*	531*	245*	214*	248	10	266	296	323	355	458	402	360	428	270	170	180	192	6769
			11	199	203	202	254	251	215	422	231	259	242	197	238	11	288	341	314	356	366	384	304	292	236	199	204	207	6404
			12	225	254	248	271	255	253	261	404	286	283	218	248	12	350	238	449	400	459	410	360	304	265	235	232	231	7139
			13	244	223	217	263	279	266	254	294	243	349	344	252	13	269	288	324	342	360	377	379	346	318	282	250	229	6992
			14	227	233	246	252	242	271	342	222	360	313	234	245	14	294	322	311	348	379	364	347	278	219	208	242	231	6730
			15	252	262	261	264	266	262	254	242	360	213	296	278	15	288	308	314	330	335	356	341	322	327	271	226	212	6840
			16	238	240	252	255	239	238	254	258	247	266	276	282	16	290	297	337	341	354	368	354	313	280	262	270	270	6781
			17	267	253	257	248	250	281	358	236	252	255	269	276	17	285	301	312	317	338	344	338	306	290	266	249	247	6795
			18	262	258	244	247	248	252	266	265	266	271	280	315	18	306	302	303	314	330	335	327	309	292	272	250	250	6764
			19	254	254	248	243	252	238	235	239	225	274	712*	736*	19	268*	410*	459*	601*	752*	446	278	242	191	214	220	252	8243
			20	232	227	277	219	252*	380	276	334	450	194	228*	272	20	306	402*	315*	402	339	313	311	262	218	235	249	262	6955
			21	270	271	268	268	252	256	249	260	222	180*	252*	283	21	363*	321	328	309	356	352	329	306	297	273	237	236	6738
			22	239	253	248	260	259	237	246	359	284*	140*	263*	339*	22	648*	263	310	305	297	320	313	269	288	88	175	218	6621
			23	213	183	198	253	187	-6*	-10*	29*	323*	140*	331*	665*	23	289*	346*	625*	243*	665*	434*	363	307	233	253	247	233	6739
			24	321	249	235*	331*	289	395*	871*	127*	-431*	37*	132*	109*	24	220*	132*	343	570*	426*	243	247	293	222	243	233	214	6051
			25	234	260	325	287	538	470	200	117*	300	188*	346*	474*	25	220*	426*	498*	617*	474*	382	313	213	213	252	260	230	7837
			26	239	248	293	258	279	287	307*	140*	165*	315*	474*	235*	26	704*	459*	402*	362	554*	351	363	263	256	223	240	247	7664
			27	257	227	283	247	337	320	313	268*	379*	207	276*	235*	27	728*	284*	363*	243	333	371	342	293	253	237	245	213	7254
			28	231	239	248	235	379*	260	257	293	237	252	280	286	28	394	353	298	359	393	328	326	282	213	138	193	204	6678
			29	217	231	223	240	230	264	338	277	233	230	260	317	29	293	287	303	289	304	300	307	303	278	223	223	229	6399
			30	218	227	240	222	233	238	269	220*	313	247	288	282	30	275	279	284	287	300	301	307	297	273	257	248	217	6309
			31													31													

SCALED BY	LYT
CHECKED BY	EAS, JEP
SIGNS REVIEWED BY	
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	206678
MONTHLY MEAN	287
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 (150M.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	SEP	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	277	304	302	303	306	322	292	292	285	263	254	246	01	244	251	251	250	238	204	212	226	218	236	244	262	6282
			02	273	277	276	320	329	337	272	257	272	104	178	236	02	242	251	171	122	122	210	236	227	236	246	252	249	5695
			03	257	278	275	269	275	308	291	275	148	261	252	256	03	247	236	217	214	241	240	244	247	239	244	239	243	5996
			04	257	268	277	287	320	307	211	196	128	355	401*	308	04	433*	490*	682*	555*	94*	248*	226	224	226	236	243	249	7221
			05	256	291	304	228*	-207*	-193*	-105*	-385*	-21*	49*	273*	261*	05	363*	452*	426*	638*	415*	-46	-4	106	130	181	217	239	3868
			06	268	283	278	272	278	292	290	250	206	113	244	249	06	348	175	180	250	235	196	174	199	220	242	251	263	5756
			07	267	268	274	279	267	274	279	297	283	283	280	262	07	241	165	190	237	221	227	233	239	240	249	253	252	6060
			08	252	248	248	250	253	252	263	266	256	312	268	257	08	257	251	218	138	198	213	203	206	231	229	231	245	5745
			09	277	252	247	260	254	266	263	255	212	253	254	176	09	192	259	258	257	257	253	238	214	197	222	208	262	5786
			10	278	274	274	282	273	294	290	201*	61*	99*	41*	28	10	229	272	272	255	218	160	144	236	170	188	243	248	5030
			11	272	284	272	290	274	262	277	287	275	228	156	166	11	230	200	234	258	254	243	205	204	220	236	247	256	5830
			12	269	278	273	269	266	280	291	269	231	196	0	197	12	300	26	30	162	179	192	164	201	226	244	254	271	5068
			13	286	277	300	303	270	254	254	278	236	142	121	248	13	260	260	256	280	249	237	240	236	230	226	229	233	5905
			14	239	259	262	254	252	306	292	264	157	170	248	266	14	221	255	229	226	229	238	226	220	231	228	249	266	5787
			15	294	264	254	256	257	250	248	245	273	177	197	238	15	253	253	234	116	177	228	236	236	239	232	242	247	5646
			16	266	276	255	250	255	275	280	279	276	267	262	252	16	247	242	233	150	135	192	210	227	230	233	243	244	5779
			17	250	250	250	243	250	303	280	241	255	252	257	247	17	242	244	245	235	226	223	226	233	236	236	237	243	5904
			18	247	246	247	248	253	252	263	253	253	254	250	211	18	230	238	243	246	246	243	238	235	233	232	230	232	5823
			19	233	240	240	240	243	253	280	283	256	292	499*	397*	19	314*	366*	468*	334*	97*	-70	93	203	200	242	267	257	6227
			20	263	262	317	264	237*	300	262	210	29	213	269*	229	20	254	339*	212*	212	181	153	177	180	195	230	253	259	5500
			21	256	259	260	259	259	270	292	299	252	219*	58*	247	21	265*	200	223	159	189	200	200	217	232	243	248	249	5552
			22	258	267	277	267	258	272	309	214	38*	-38*	230	314*	22	339*	80	229	227	200	187	180	193	213	189	218	253	5174
			23	257	285	294	330	115*	-236*	90*	38*	499*	377*	608*	513*	23	110*	608*	691*	499*	77*	30	203	217	260	307	306	287	6765
			24	350	310	262*	346*	262*	185*	65*	-70*	250*	339*	295*	377*	24	224	183	193	244*	224*	100	167	208	217	264	315	277	5587
			25	273	278	297	272	282	237	154*	135*	153	377*	90*	199*	25	493*	544*	230*	167*	147*	87	166	173	197	273	293	289	5806
			26	284	297	320	323	293	160*	7*	122*	301*	289*	289*	634*	26	845*	698*	327*	222	174*	178	224	237	258	254	273	278	7287
			27	297	293	327	284	330	280	237	83*	147*	200	366*	533*	27	436*	493*	481*	145	207	251	233	213	228	360	287	273	6982
			28	297	282	302	285	366*	306	303	307	284	219	187	233	28	243	93	189	186	121	173	214	197	226	215	228	262	5718
			29	274	294	306	312	334	327	327	303	277	263	252	173	29	177	186	196	237	256	230	216	247	243	243	267	279	6219
			30	284	304	317	294	315	297	207	45*	187	262	284	257	30	254	246	249	257	257	246	240	233	240	248	259	261	6043
			31													31													

SCALED BY: LYT
CHECKED BY: EAS, JEP
SIGNS REVIEWED BY:
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: 176041
MONTHLY MEAN: 245
DATES WITH GAPS:

FORM 76-106

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

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.

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

OBSY.	YEAR	MONTH	ELEMENT
CO	84	SEP	H

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	294	315	306	318	300	367	442	412	336	296	296	300	01	313	298	301	288	263	265	274	246	258	257	255	268	7268
			02	285	282	332	345	392	402	409	384	357	222	298	314	02	300	103	-12	-6	267	311	283	278	272	286	285	291	6680
			03	304	312	284	310	370	420	448	425	266	344	318	297	03	297	269	258	279	294	280	270	258	262	264	268	280	7377
			04	299	298	301	326	369	418	364	216*	214	306	-92*	47*	04	320	335	-165*	-552*	333*	337	291	281	289	292	302	329	5458
			05	387	334	372	519*	171*	75*	93*	211*	429*	368*	31*	-249*	05	-59	38	-143*	-289*	-467*	116	97	111	188	239	254	298	3124
			06	333	352	317	325	302	306	282	326	320	299	304	225	06	108	-48	287	268	236	169	256	274	276	272	273	280	6342
			07	278	291	304	298	298	291	304	322	350	354	337	282	07	259	164	267	268	282	291	274	274	277	271	273	278	6887
			08	293	302	306	302	298	307	327	410	491	348	326	308	08	307	273	230	222	290	277	260	288	280	270	279	274	7268
			09	283	280	304	300	309	302	313	397	429	335	318	178	09	265	317	292	305	293	282	262	262	294	282	286	318	7206
			10	322	322	320	299	309	320	376	424	150	13*	-492*	260	10	381	347	330	277	136	73	230	198	226	210	310	362	5703
			11	367	306	352	350	303	432	358	354	300	317	220	265	11	225	159	332	309	298	239	224	282	272	262	268	287	7081
			12	276	297	313	298	306	316	313	302	314	154	96	326	12	-21	9	152	272	126	196	261	282	277	269	285	307	5726
			13	316	306	323	342	312	301	310	351	407	323	350	332	13	301	290	295	295	266	291	282	278	269	273	273	281	7367
			14	293	288	283	290	312	337	288	332	340	306	59	58	14	316	289	280	279	290	275	244	234	246	251	260	292	6442
			15	311	302	287	301	293	304	303	316	328	206	224	252	15	317	297	221	60	300	291	292	280	266	261	251	268	6531
			16	290	312	281	296	300	311	312	316	318	308	304	300	16	300	289	153	192	221	275	276	285	280	278	283	290	6770
			17	273	282	279	287	302	305	285	312	301	305	300	300	17	299	297	292	278	278	283	280	274	276	280	285	284	6937
			18	283	283	293	291	300	306	295	299	300	299	298	279	18	309	299	297	295	291	289	283	289	287	287	290	288	7030
			19	291	290	293	303	309	309	321	340	414	240	-743*	-664*	19	127	129	-13	-266*	-188*	175	220	263	268	272	317	332	3339
			20	319	323	391	372	474*	353	440	357	281	211	-137*	107	20	153	41	145	79	100	263	248	209	260	295	302	290	5876
			21	293	291	290	292	291	292	315	339	331	183*	-199*	15	21	100	262	20	190	235	288	303	310	292	273	260	271	5527
			22	278	277	302	305	300	330	376	328	37*	222*	352	65*	22	-423*	299	312	285	272	249	280	197	100	200	298	319	5560
			23	300	311	476	509	586*	474*	361*	378*	-709*	-3*	59*	-1450*	23	-805*	-36*	-631*	-451*	3*	89	305	267	190	303	393	435	1354
			24	430	317	603*	390	441*	345*	183*	328*	-614*	261*	233*	-322*	24	-294*	-395*	-103*	-100	-145	171	206	277	261	290	265	288	3316
			25	309	327	337	318	306	399	441*	-137*	219*	-42*	-451*	-266*	25	-103*	-277*	-171*	-238*	37*	121	273	230	273	299	290	343	2837
			26	389	362	390	420	385	401*	155*	65*	-384*	-176*	-126*	-457*	26	-614*	-479*	78	255	8	323	273	247	278	280	285	287	2645
			27	286	368	392	359	370	380	500	227*	65*	303	28	-704*	27	-467*	-14*	0	201	330	283	269	227	238	252	285	293	4471
			28	293	297	332	352	400	307	303	321	342	235	213	80	28	-171*	173	233	52	74	287	249	237	189	210	270	294	5572
			29	309	303	329	453	409	388	362	337	351	300	245	170	29	217	242	256	289	262	250	263	265	240	250	275	284	7049
			30	293	298	306	329	329	391	403	183*	278	372	312	292	30	289	282	290	279	280	280	273	281	280	273	274	267	7134
			31													31													

SCALED BY	LYT
CHECKED BY	EAS, JEP
SIGNS REVIEWED BY	
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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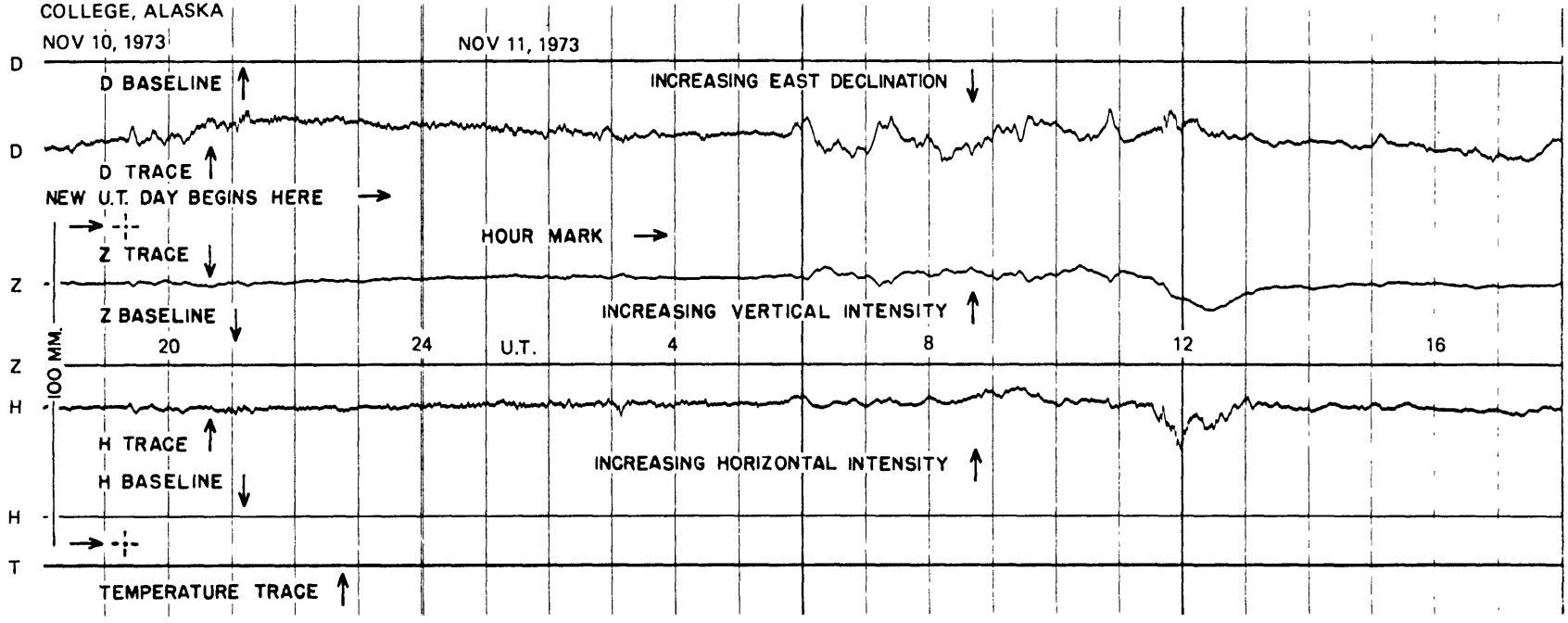
* Derived from STORM Mgph., converted to Normal Mgph.

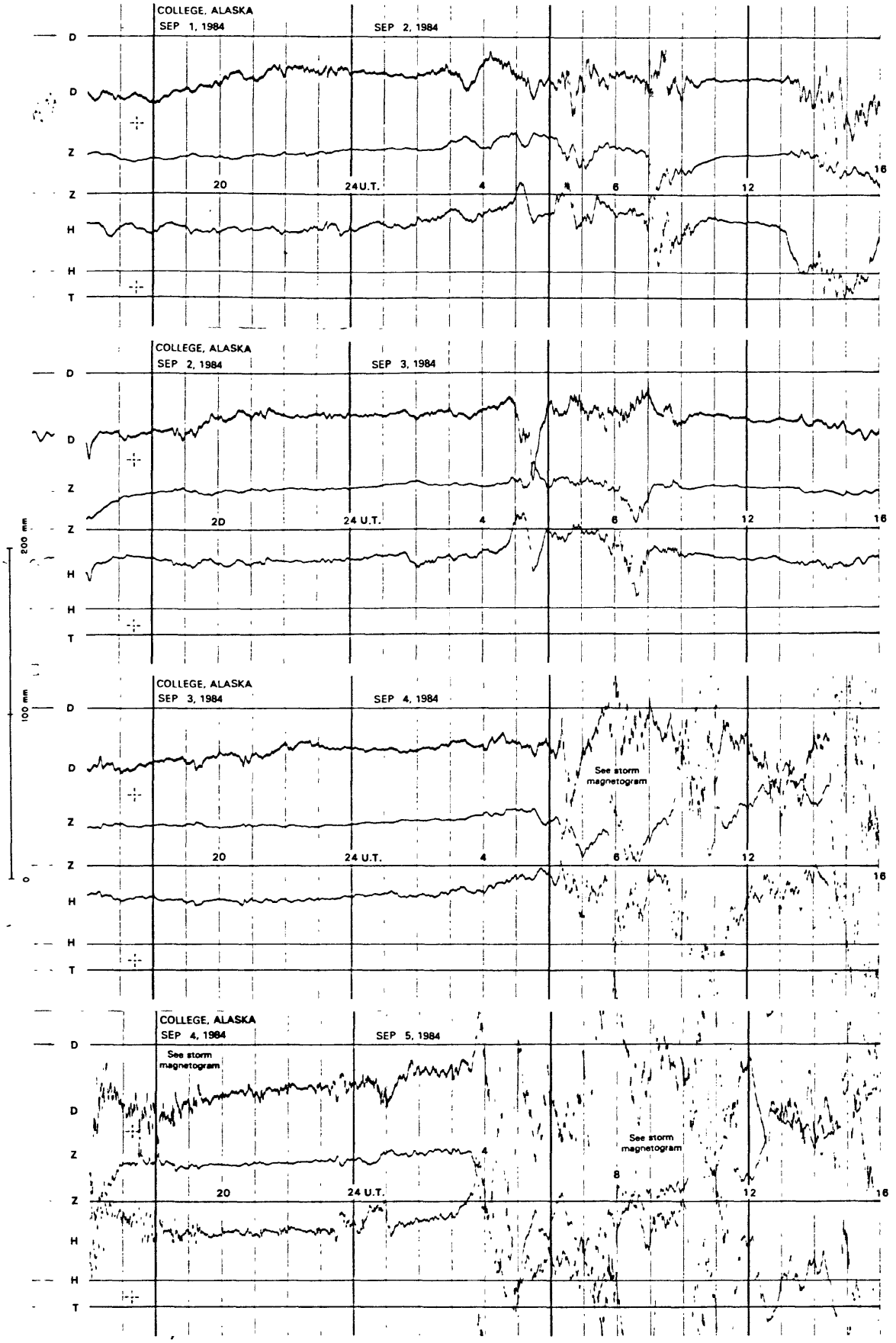
MONTHLY SUM	171877
MONTHLY MEAN	239
DATES WITH GAPS:	

FORMAT FOR NORMAL & STORM MAGNETOGRAMS
(SAMPLE ONLY)

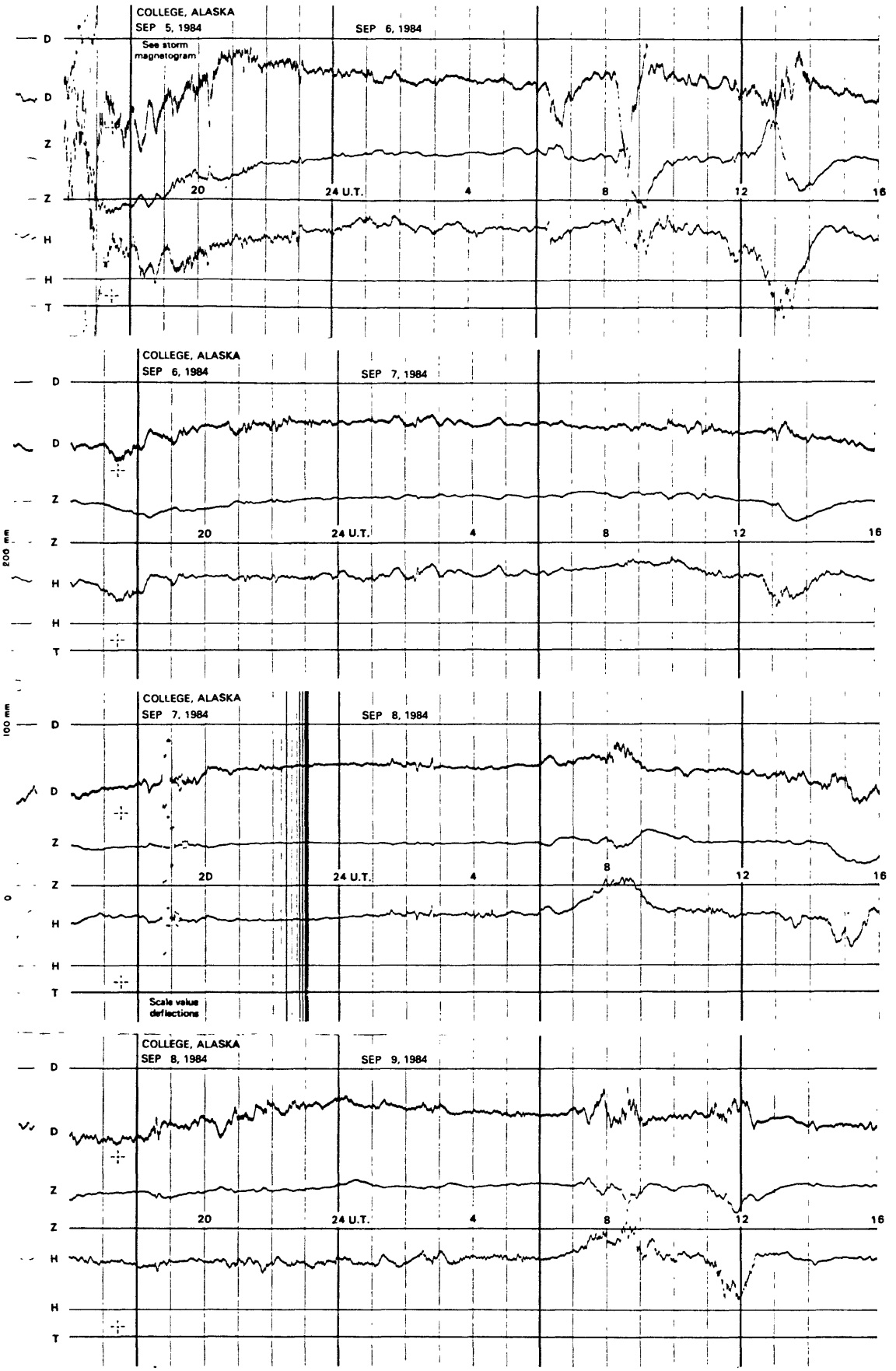


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

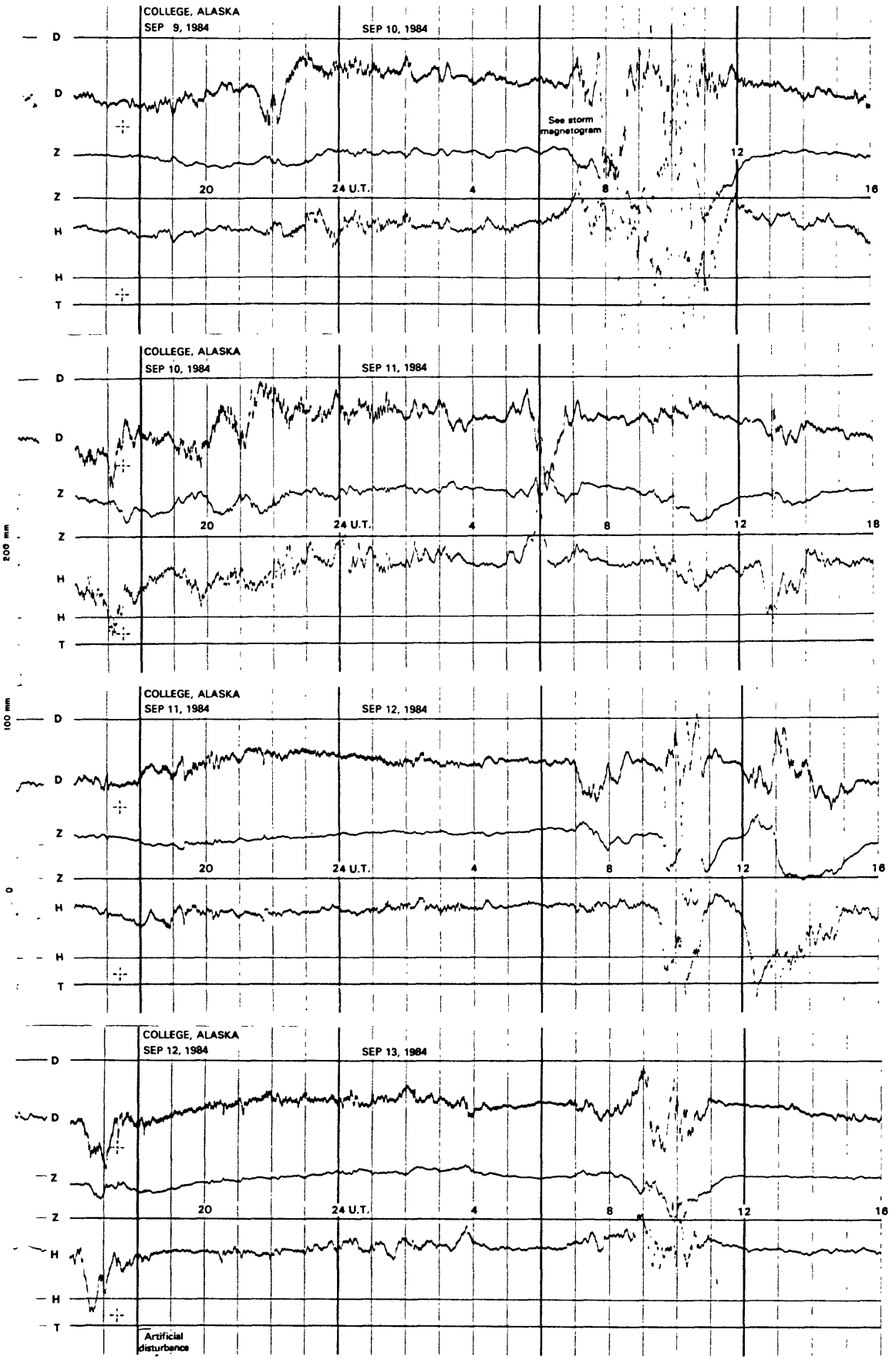
NORMAL MAGNETOGRAMS



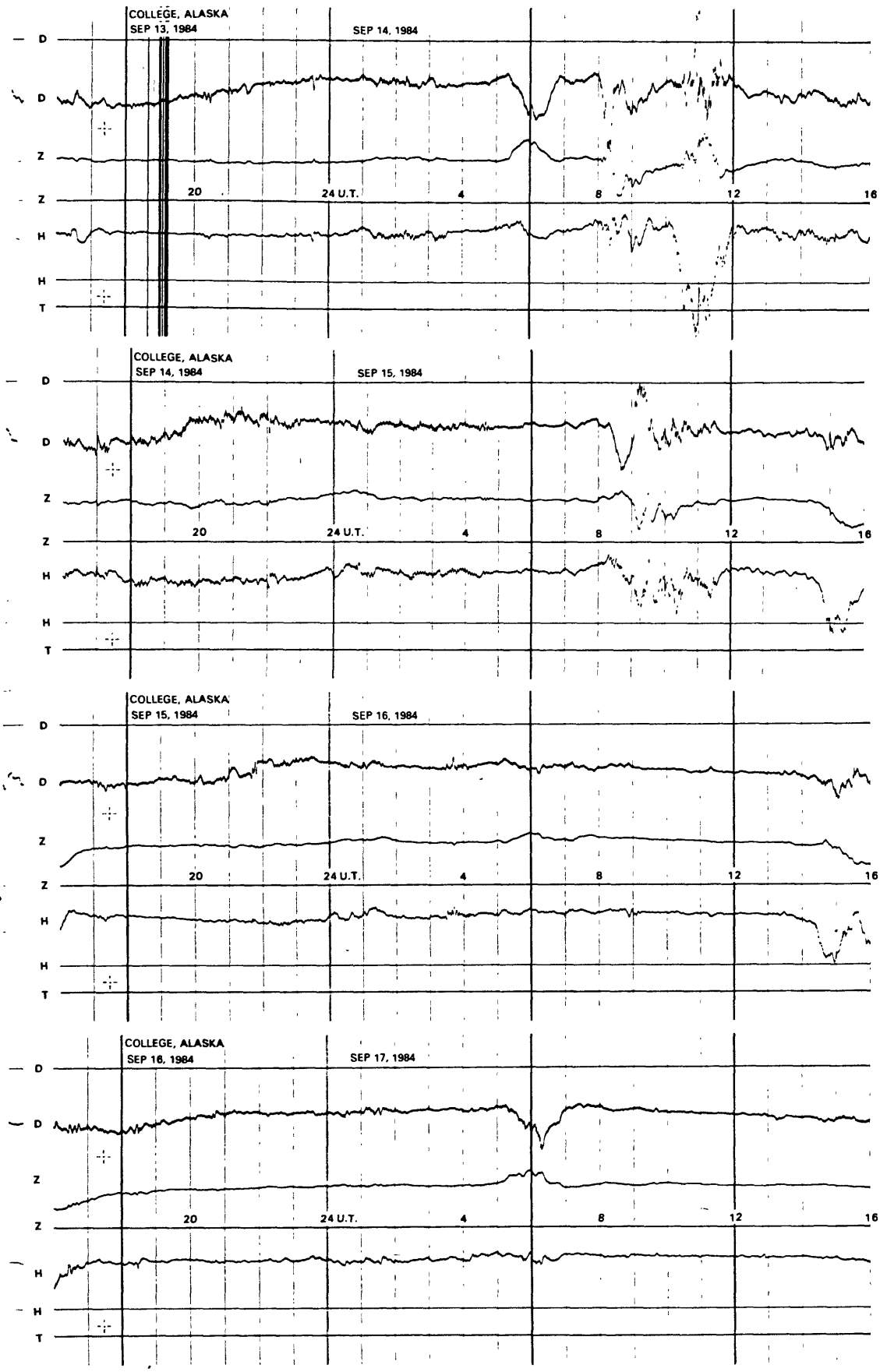
NORMAL MAGNETOGRAMS



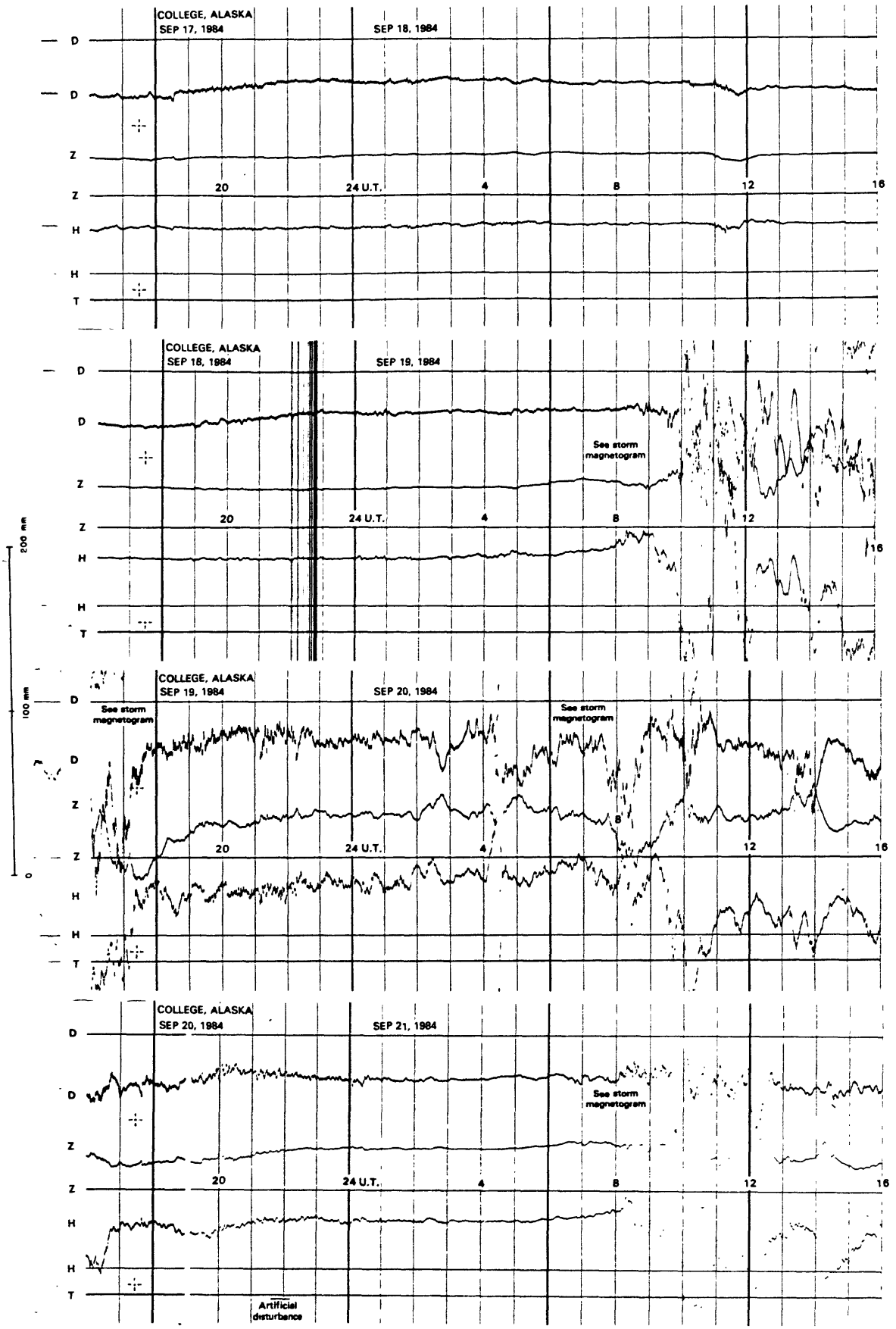
NORMAL MAGNETOGRAMS



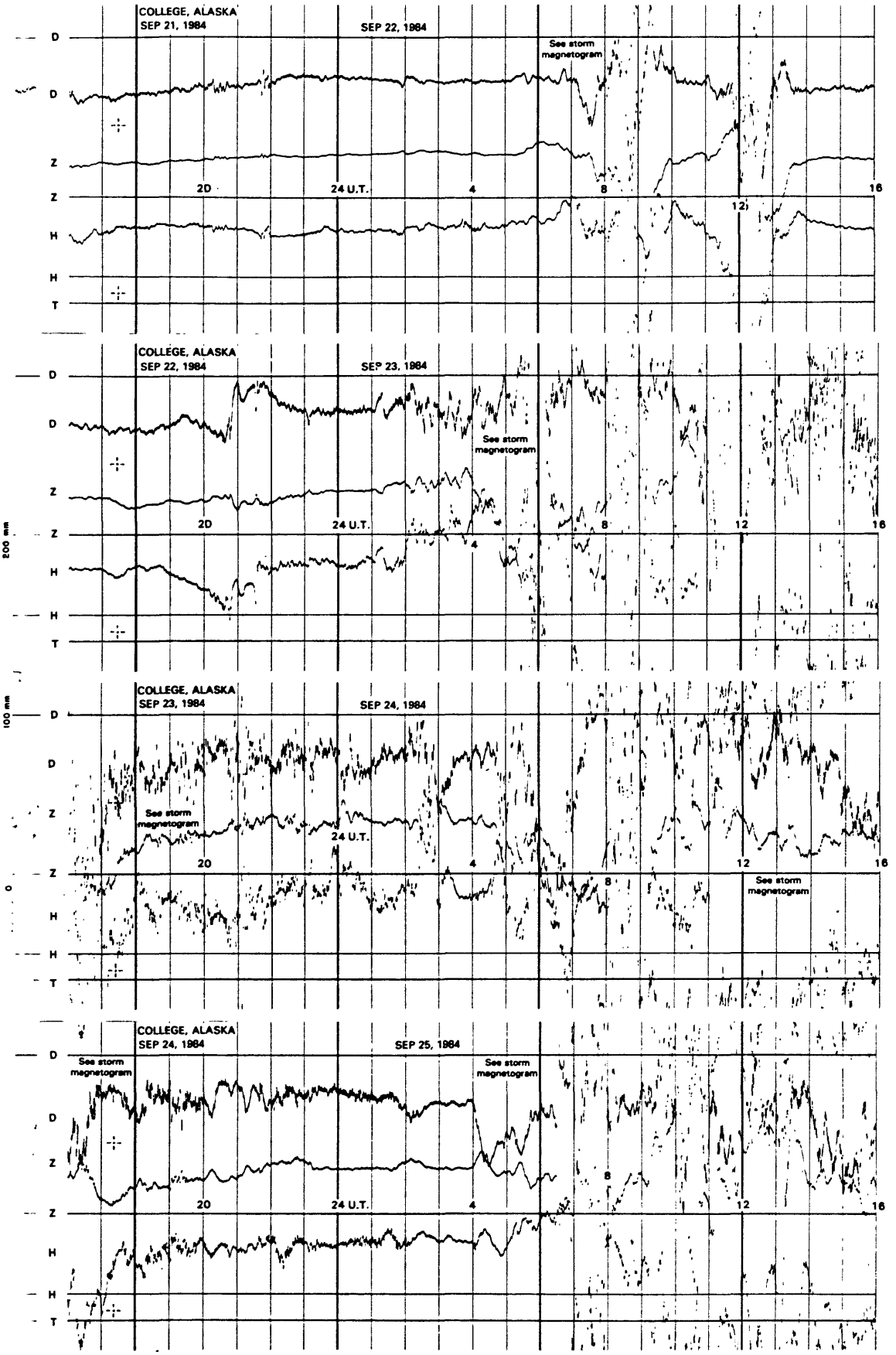
NORMAL MAGNETOGRAMS



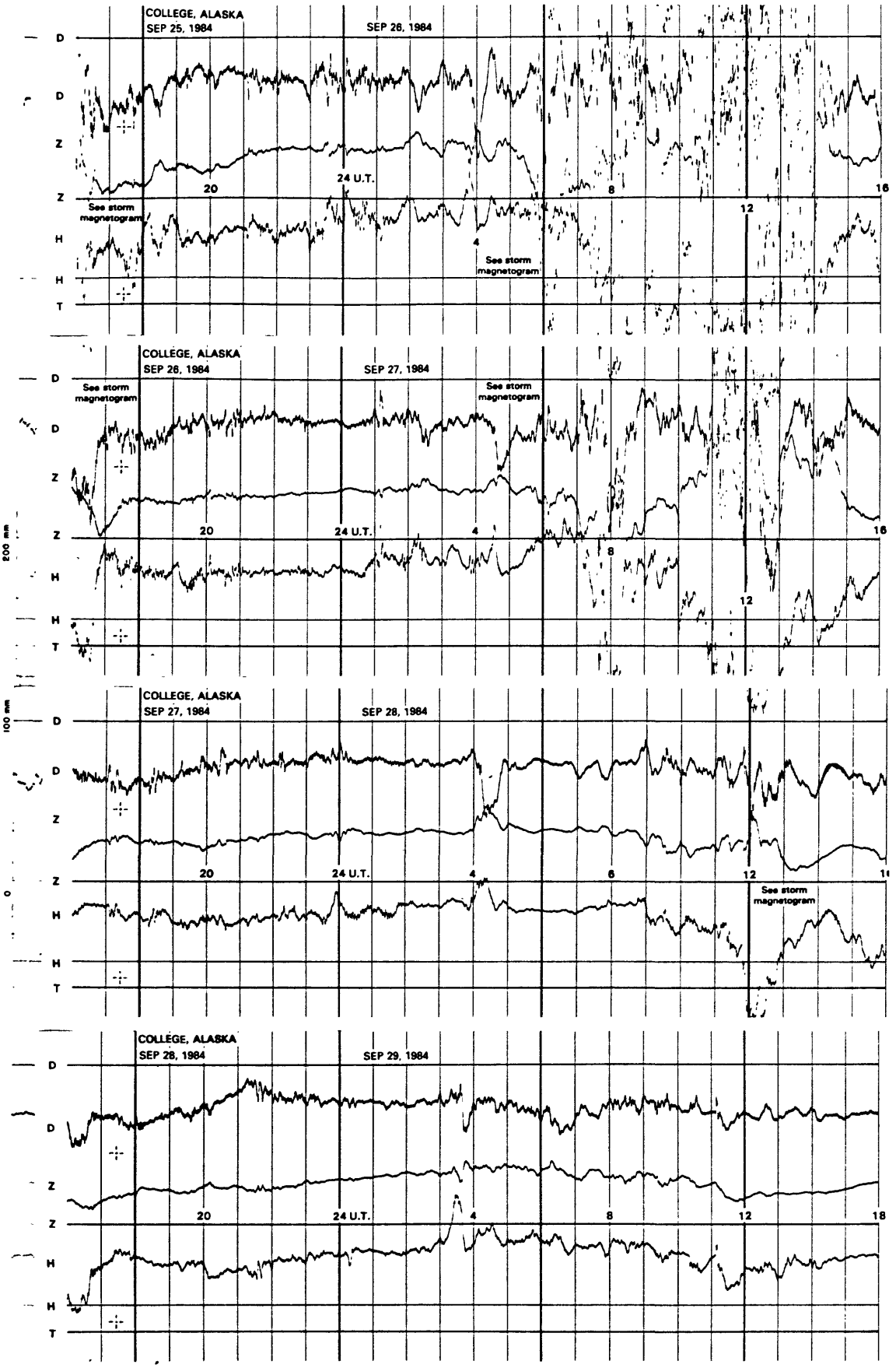
NORMAL MAGNETOGRAMS



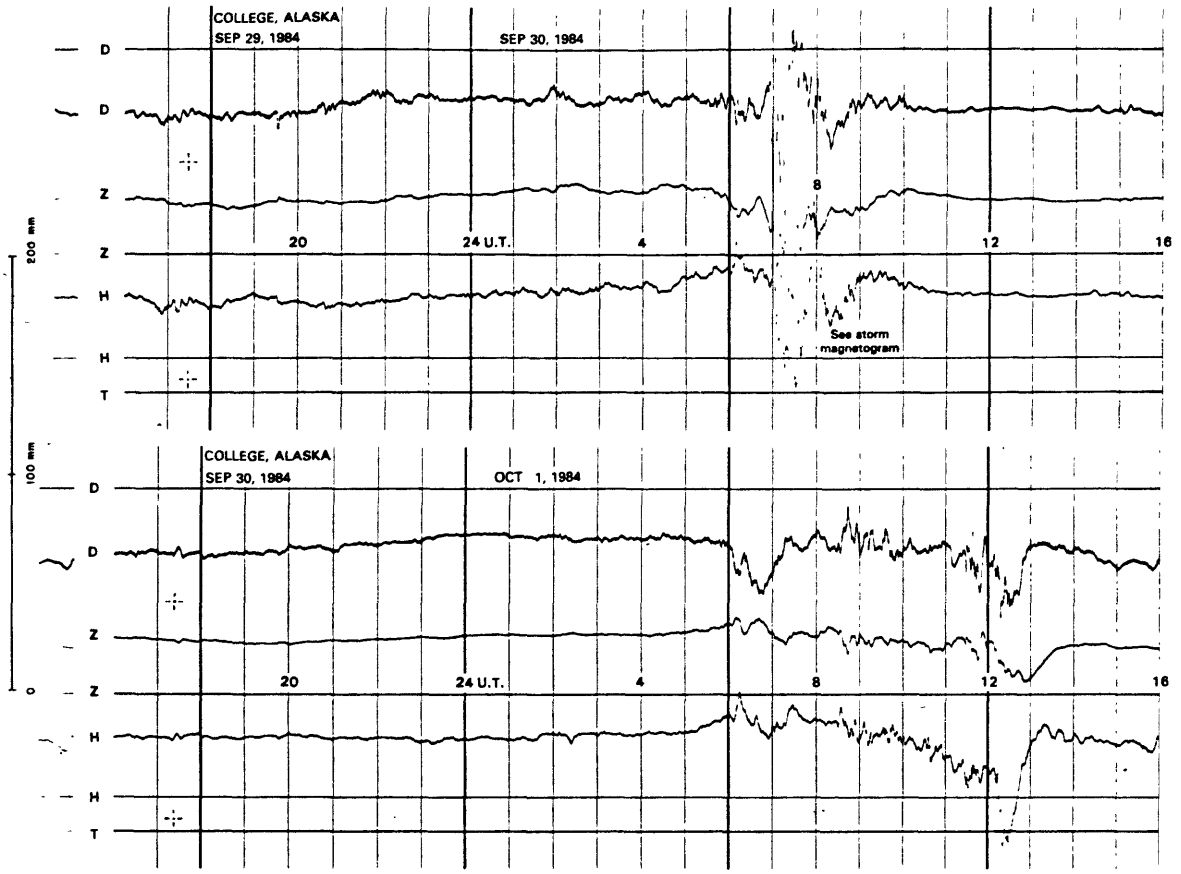
NORMAL MAGNETOGRAMS



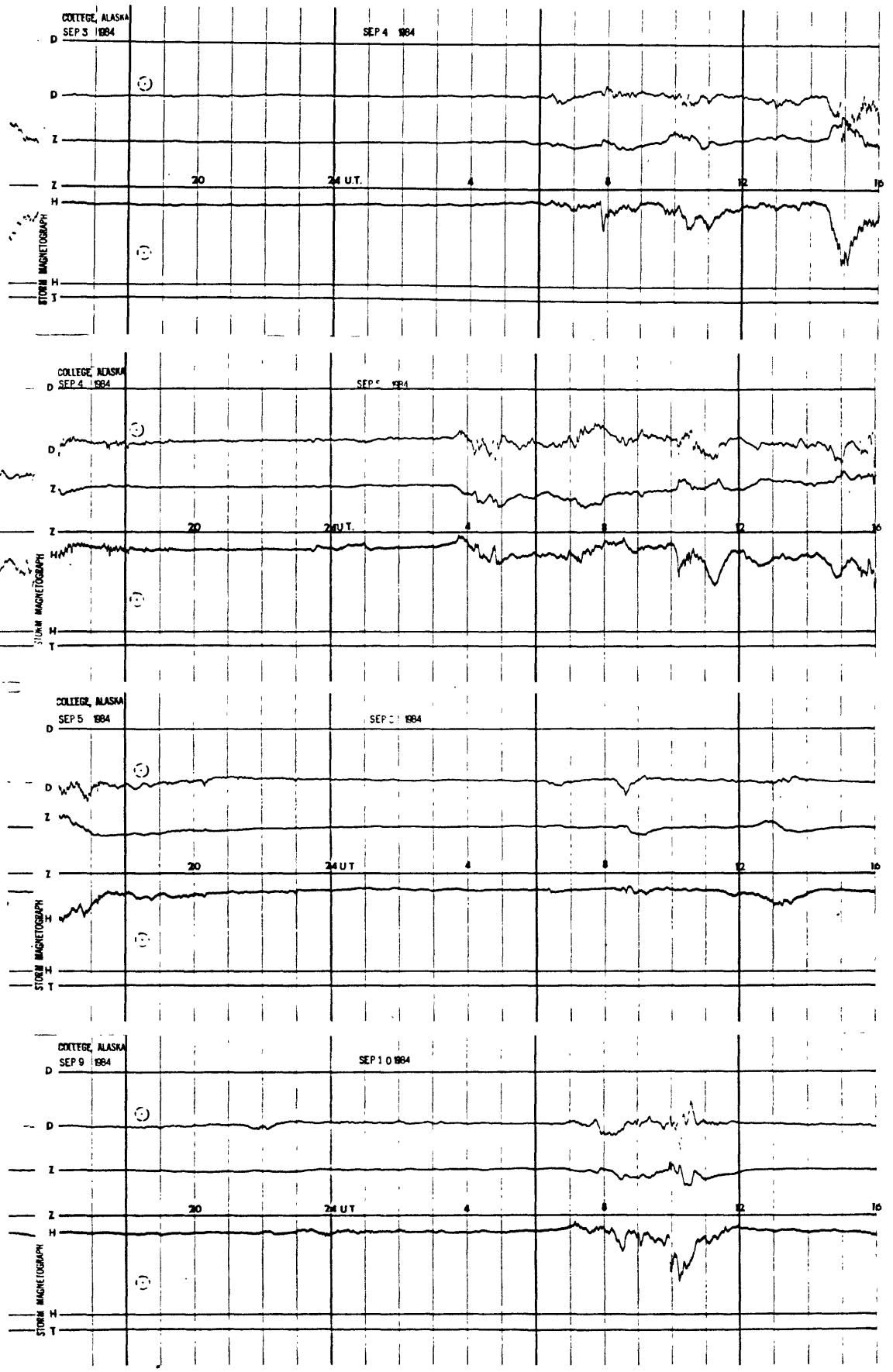
NORMAL MAGNETOGRAMS



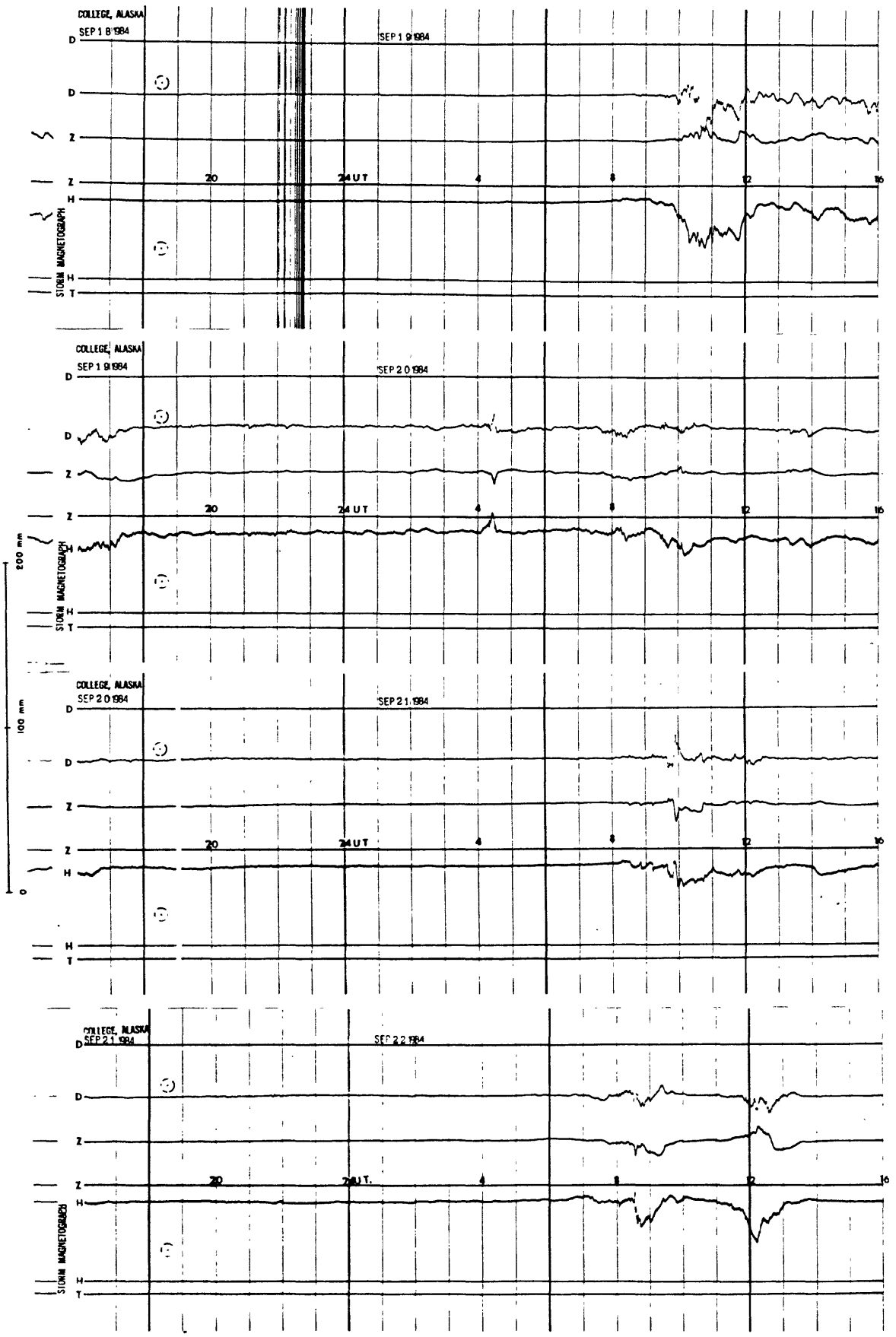
NORMAL MAGNETOGRAMS



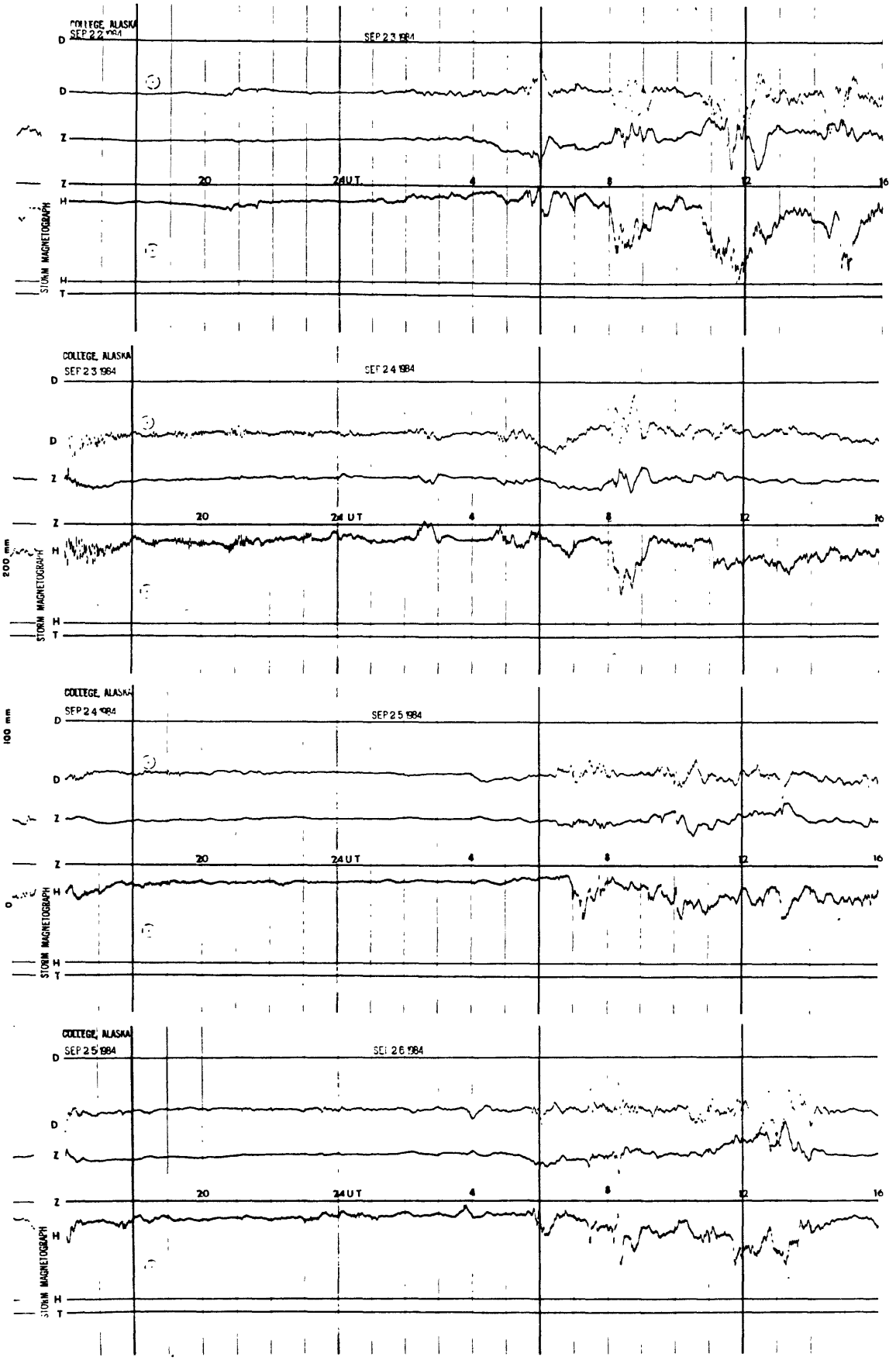
STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS