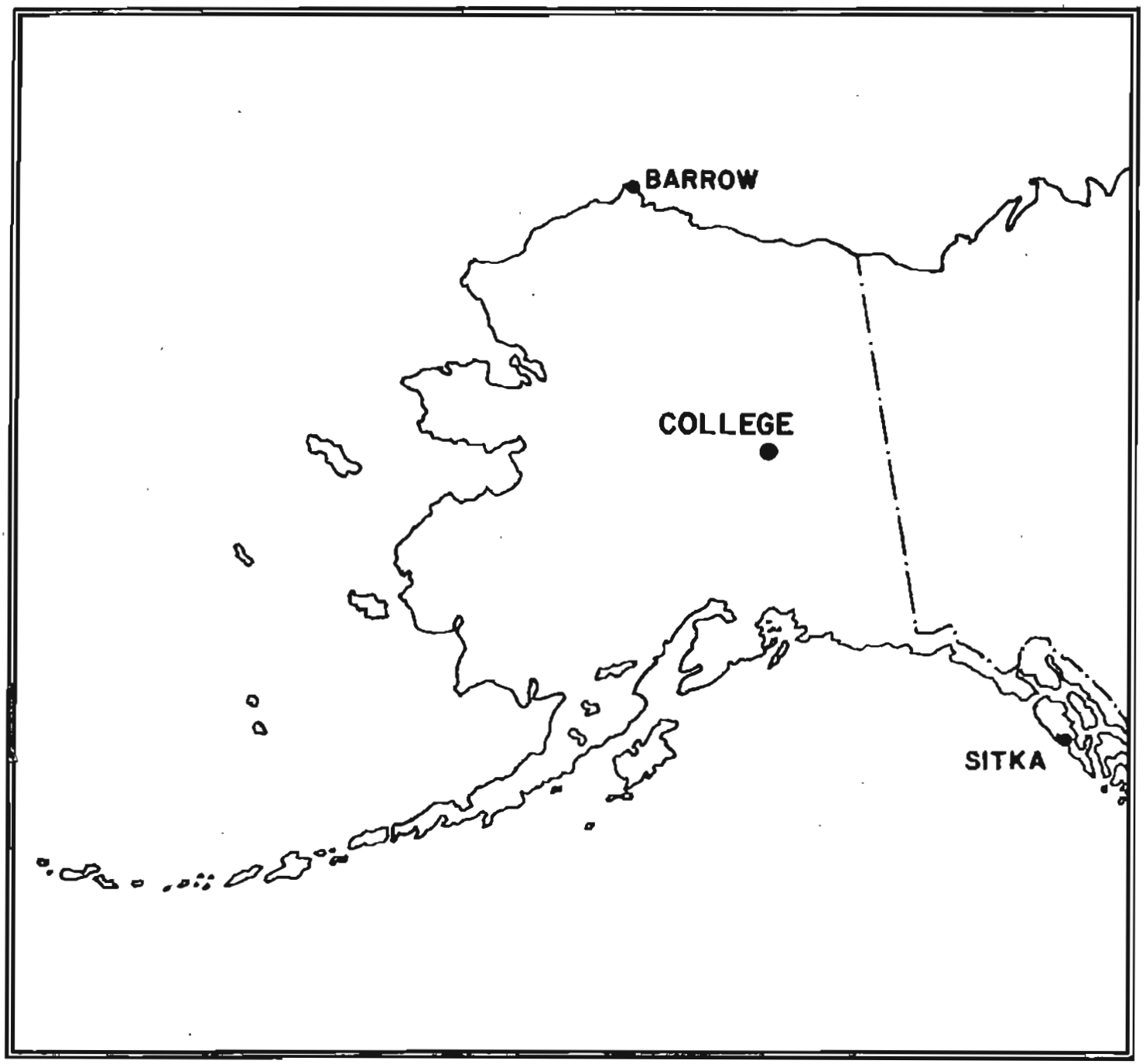
UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

FEBRUARY 1981 OPEN FILE REPORT 81-300B



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

COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

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
Yukon Drive on West Ridge
Fairbanks, Alaska 99701

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

World Data Center A-NOAA
Environmental Data Service
Boulder, Colorado 80302

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 10 γ 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 & 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: FEBRUARY 1981

DATE	K-INDICES 00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM	AK
1	1	3	4	3	5	2	2	3	23	17
2	3	3	4	4	5	5	5	2	31	29
3	2	2	5	4	5	3	1	1	23	20
4	1	1	0	2	0	3	2	1	10	05
5	1	3	4	8	7	7	4	2	36	75
6	2	2	1	4	7	8	7	6	37	81
7	5	4	4	2	1	0	0	0	16	14
8	0	0	0	0	3	5	3	3	14	12
9	4	5	5	4	5	1	0	0	24	25
10	0	1	0	0	1	0	0	0	02	01
11	0	0	0	0	5	3	3	2	13	11
12	2	2	3	4	3	0	2	1	17	10
13	0	0	1	4	3	2	1	0	11	07
14	0	0	0	2	1	1	0	0	04	02
15	0	0	0	1	3	6	3	2	15	15
16	2	2	0	5	4	3	1	0	17	13
17	1	0	2	3	2	3	1	0	12	06
18	0	0	0	0	3	1	1	1	06	03
19	1	1	3	1	1	1	1	1	10	05
20	0	0	2	6	5	5	2	0	20	24
21	0	1	3	5	5	0	0	0	14	14
22	0	0	0	0	0	0	2	2	04	02
23	2	2	1	1	1	3	1	2	13	06
24	1	1	1	2	5	5	4	3	22	19
25	3	4	7	6	4	5	3	3	35	46
26	3	3	4	6	4	6	6	3	35	42
27	3	4	6	6	5	5	3	2	34	40
28	3	2	1	3	2	3	1	2	17	09
29										
30										
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.....	683.8	321.7		(mm)
CURRENT SCALE VALUE.....	3.75	7.81		(γ/mm)
LOWER LIMIT FOR K = 9	2560	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 818

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

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY: COLLEGE, ALASKA

MONTH: FEBRUARY

YEAR: 1981

DATE	TIME U.T.	NATURE OF PHENOMENON [1]	REMARKS
08	1346	ssc*	
15	08XX	pi2	
Mar. 01	0738	ssc*	

IDENTIFIED BY: JEP

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

Data from Individual Observatories: COLLEGE OBSERVATORY, COLLEGE, ALASKA
FEBRUARY 1981

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

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	05	04XX	..	..	..	..	05	4	8	302	2080	1010	06	01
		06	09XX	..	..	..	..	06	6	8	294	1900	950	07	08
		08	1346	s.c.*	-14	-148	-15	08	6	5	95	880	350	09	15
								09	2, 3, 5	5					
		24	13XX	..	..	..	..	25	3	7	168	1180	580	28	00

COLLEGE OBSERVATORY, COLLEGE, ALASKA -- PRELIMINARY CALIBRATION DATA FOR: FEBRUARY 1981

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE		CALIBRATION BASELINE
D	0000 U.T., 2-1-81	2400 U.T., 2-28-81	1.6'/mm	3.7 γ/mm	27° 46.7' E
H	0000 U.T., 2-1-81	2400 U.T., 2-16-81	7.8 γ/mm		12753 γ
	0000 U.T., 2-17-81	2400 U.T., 2-24-81	"		12744 γ
	0000 U.T., 2-25-81	2400 U.T., 2-28-81	"		12752 γ
Z	0000 U.T., 2-1-81	2400 U.T., 2-28-81	7.7 γ/mm		55142 γ

STORM MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE		CALIBRATION BASELINE
D	0000 U.T., 2-1-81	2400 U.T., 2-28-81	7.8'/mm	29.7 γ/mm	23° 49.2' E
H	0000 U.T., 2-1-81	2400 U.T., 2-16-81	44.0 γ/mm		11508 γ
	0000 U.T., 2-17-81	2400 U.T., 2-24-81	"		11490 γ
	0000 U.T., 2-25-81	2400 U.T., 2-28-81	"		11516 γ
Z	0000 U.T., 2-1-81	2400 U.T., 2-28-81	48.6 γ/mm		55054 γ

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD FROM	PERIOD TO	CALIBRATION SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
28° 05.3' E	12993 γ	55380 γ

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: FEB 4, 10, 13, 14, 17, 18, 19, 22, 23, 28

FORM 76-106

MAGNETOGRAM HOURLY SCALINGS

(UNIVERSAL TIME)

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

OBSY.	YEAR	MONTH	ELEMENT
CO	81	FEB	D

Values are in tenths of gam, and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day 0505 (U.T.) is hour 11 of the COMP universal day.
Drinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q or S	Ten Q	Hr. Mo.	01	02	03	04	05	06	07	08	09	10	11	12	Hr. Mo.	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	196	179	142	150	129	115	213	142	128	182	177	231	01	278	248	211	210	230	246	242	263	269	178	119	111	4589
			02	150	139	109	134	119	159	159	132	156*	128	166	155	02	340	407	325	355	493	124	244	184	223	202	170	148	4921
			03	181	168	166	177	164	160	148	142	192	99	199	216	03	188	195	199	197	259	223	238	195	205	187	198	188	4484
			04	180	175	179	174	154	149	151	151	151	159	160	179	04	200	200	200	218	230	189	235	180	158	121	160	157	4210
			05	130	154	165	150	149	112	120	129	118	20*	20*	131*	05	290*	261	325	599*	520*	576*	454	228	232	170	151	117	5321
			06	112	160	161	178	180	168	185	179	174	139	179	44	06	133	385*	417*	345*	900*	583*	314*	448*	342	39	162	137	6064
			07	158	168	194	168	162	120	178	187	198	176	158	174	07	182	199	187	198	207	212	225	230	220	200	189	179	4469
			08	178	176	171	170	173	179	179	177	177	179	181	180	08	186	192	190	200	157	370	226	182	173	185	152	145	4478
			09	169	128	159	127	139	63	200	83	161	112	204	313	09	366	252	209	205	215	209	218	209	195	199	198	202	4535
			10	193	189	181	179	170	179	178	175	177	180	184	189	10	197	200	202	205	206	231	235	226	202	199	198	196	4671
			11	190	183	181	181	179	177	177	169	177	173	175	190	11	226	338	253	238	279	198	165	136	187	178	168	162	4680
			12	130	138	162	138	169	161	170	199	176	195	188	229	12	202	179	217	223	220	229	232	249	194	191	171	179	4541
			13	186	190	186	171	175	171	170	180	186	190	202	193	13	231	242	274	218	230	230	219	217	189	208	199	197	4854
			14	189	172	168	169	169	170	170	171	170	158	165	189	14	199	190	199	188	183	207	221	218	211	206	208	208	4498
			15	200	181	176	169	169	175	178	170	172	179	204	199	15	205	259	222	311	466	295	201	299	104	118	98	74	4824
			16	121	136	164	159	140	126	170	168	162	163	95	176	16	263	264	254	281	253	211	205	221	191	181	187	180	4471
			17	179	159	175	181	181	176	170	169	214	175	171	195	17	247	267	294	197	200	201	200	192	200	179	182	187	4691
			18	187	179	171	171	170	169	169	170	169	171	183	188	18	188	267	236	220	197	197	214	203	202	179	189	171	4560
			19	159	152	156	160	150	136	156	184	123	180	194	199	19	200	203	201	189	185	201	218	215	209	194	170	169	4303
			20	171	168	158	160	161	167	168	162	148	195	127	264	20	340	375	412	347	289	249	204	192	188	179	178	175	5177
			21	165	169	167	164	161	152	218	181	153	157	165	253	21	235	188	210	219	228	233	250	252	229	211	190	179	4729
			22	172	171	165	161	161	161	163	169	170	173	179	185	22	190	197	201	209	218	231	249	253	304	271	193	157	4703
			23	69	153	149	137	129	134	148	148	168	170	167	184	23	218	219	224	242	250	260	264	249	229	208	170	178	4467
			24	161	163	157	159	165	160	163	160	164	168	170	179	24	200	266	332	410	445*	184*	294	207	227	193	124	109	4966
			25	152	142	112	126	120	83	-24	21	-45*	0	122	327*	25	244	344	376	591	470	260	343	251	160	184	179	102	4640
			26	139	90	102	114	51	60	33*	17*	240	178	136	223*	26	214	164	268	367*	335	454*	398*	388	227	147	165	240	4750
			27	108	91	62	107	100	106	48	36	95	128*	157	241	27	202	231	284	120	385	320	248	241	166	189	170	128	3963
			28	134	140	122	143	156	143	164	148	178	164	144	218	28	207	210	192	206	178	267	271	231	194	208	98	133	4249
			29													29													
			30													30													
			31													31													

SCALED BY: EAS, JEP, LLF
CHECKED BY: JEP, EAS
SIGNS REVIEWED BY: JEP
PUNCHED BY:

Preliminary baseline and scale values:

Interval Beginning	Baseline Value	Scale Value

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

MONTHLY SUM: 130808
MONTHLY MEAN: 195
DATES WITH DAPS:

FORM 78-106

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geomagnetism
Branch Federal Center
DENVER, CO 80225

OBSV.	YEAR	MONTH	ELEMENT
CO	81	FEB	H

Values are in tenths of gam. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (500W M.T.) is hour 11 of the Some universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q=3	Tes Q	Hr. Day	01	02	03	04	05	06	07	08	09	10	11	12	Hr. Day	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	285	289	298	309	309	378	424	389	430	410	341	315	01	76	158	324	328	318	308	295	320	300	271	254	309	7458
			02	300	297	332	364	363	348	334	374	328	420	352	349	02	225	-52	112	163	-80	-128	284	354	319	307	299	305	6269
			03	293	279	301	323	322	319	331	367	286	213	269	179	03	-42	224	312	313	274	282	293	292	300	311	308	298	6647
			04	280	279	309	316	328	324	328	333	341	333	323	310	04	300	315	309	280	156	274	282	285	270	268	270	281	7099
			05	314	312	322	335	375	439	412	545	504	400	158	-679*	05	-362*	86	127	-294*	-334*	-113*	97	290	289	286	293	294	4102
			06	319	318	312	329	319	319	299	309	312	335	319	383	06	362	-435*	-814*	11	-232*	-763*	-779*	-148	-164*	12*	147	243	1313
			07	423	409	375	419	372	483	434	333	298	296	308	291	07	290	282	299	300	295	296	296	289	282	281	280	289	7920
			08	283	285	290	299	303	307	305	304	299	299	298	302	08	308	308	319	329	300	-112*	262	301	303	299	253	267	6711
			09	258	401	441	635	537	486	399	433	325	311	262	77	09	-75	106	306	309	308	308	300	298	296	293	298	293	7607
			10	295	294	296	300	309	308	308	308	308	308	309	308	10	308	309	300	295	297	297	298	296	291	291	297	294	7224
			11	291	293	300	305	310	311	312	316	321	319	315	311	11	217	-22	218	337	271	162	138	217	289	292	310	300	6453
			12	240	301	310	340	308	315	320	366	346	280	309	194	12	184	282	330	319	317	314	316	300	291	299	300	299	7180
			13	299	300	309	318	313	321	321	328	339	349	344	194	13	279	230	221	289	319	337	338	330	310	310	304	299	7310
			14	299	301	308	316	319	324	320	321	325	319	319	320	14	310	326	329	319	322	338	332	333	328	321	312	305	7666
			15	300	299	308	318	320	328	329	330	330	330	331	330	15	320	260	245	208	-41*	-177*	268	237	289	300	310	311	6386
			16	309	308	319	329	340	359	329	329	331	349	219	0	16	107	148	241	269	295	239	344	345	330	327	320	318	6804
			17	319	327	328	329	326	325	324	330	314	357	359	322	17	250	271	299	260	274	310	327	330	329	320	319	309	7588
			18	309	312	320	321	324	330	331	330	331	332	337	339	18	321	236	319	335	343	332	336	336	330	321	319	312	7756
			19	296	303	321	330	333	332	338	368	336	341	330	329	19	329	323	339	339	331	330	333	323	311	309	307	307	7838
			20	299	299	310	319	328	330	329	329	330	406	322	94	20	-25	-11	-153*	40	213	213	344	349	348	320	311	310	5984
			21	311	311	318	320	331	342	404	369	350	395*	329	172	21	168	358	339	329	328	327	320	314	317	312	308	300	7666
			22	302	308	311	320	321	324	328	330	332	339	340	340	22	341	342	340	339	338	340	321	320	301	268	239	237	7621
			23	300	331	317	318	333	330	334	341	346	350	357	339	23	329	327	318	248	211	306	322	319	310	310	308	303	7667
			24	311	321	329	331	330	337	330	330	340	348	386	356	24	329	168	51	54	-32	-50*	37	70	215	251	331	298	5713
			25	329	335	399	455	408	559	696	505	-186*	404	294*	-191*	25	22	-78	-28	-139	-8	280	240	178	174	269	249	287	5453
			26	329	392	384	395	408	443	569	572	494	392	248	-68*	26	67	221	182	-198*	169	-248*	-231*	-31	147	342	321	318	5617
			27	272	337	368	349	387	493	579	549	321	-85*	101*	207	27	262	288	68*	-17*	144	0	320	281	293	287	265	263	6252
			28	284	295	275	338	339	358	321	312	337	339	293	296	28	289	261	275	187	243	299	274	252	259	235	244	283	6888
			29													29													
			30													30													
			31													31													

SCALED BY: EAS, JEP, LLF
CHECKED BY: JEP, EAS
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.
< > Period off sheet for part or all of hour; if value is given, curve was estimated for missing part.

* Derived from STORM Mgnh., converted to Normal Mgnh.

MONTHLY SUM: 186252
MONTHLY MEAN: 277
DATES WITH GAPS:

USGS 554-702

FORM 76-106

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

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

Values are in counts of mm, and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day [illegible] M.S.T. is hour 11 of the [illegible] universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

OBSY.	YEAR	MONTH	ELEMENT
CO	81	FEB	Z

C	Qual $	Qual Q	Hr \ Day	01	02	03	04	05	06	07	08	09	10	11	12	Hr \ Day	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	329	337	330	329	349	360	341	310	292	269	306	309	01	381	325	295	319	320	312	300	308	305	295	295	301	7617
			02	353	340	360	361	363	357	335	258	167	343	361	293	02	256	247	111	235	257	76	90	253	299	318	319	325	6617
			03	334	332	330	335	330	332	347	328	210	190	285	302	03	213	211	282	309	311	309	319	309	319	320	339	338	7234
			04	338	332	333	334	336	337	342	349	346	333	313	326	04	323	319	318	311	298	229	240	261	268	269	299	329	7423
			05	330	340	338	329	360	403	409	355	310	182	315	462*	05	462*	317	340	367*	-5 *	128*	158	208	250	269	295	315	7257
			06	321	337	327	326	319	320	333	329	326	321	156	180	06	332	469*	457*	305*	406*	608*	141*	539*	231	152	296	321	7654
			07	298	297	291	281	330	247	373	375	368	349	341	352	07	348	340	330	331	333	339	341	340	340	339	336	339	7960
			08	341	341	336	332	332	330	330	329	328	321	322	320	08	318	320	315	311	300	218	121	209	279	313	345	349	7354
			09	349	343	348	328	292	114	160	139	197	291	370	390	09	380	280	259	309	317	318	331	330	330	339	339	338	7211
			10	339	337	332	329	328	327	326	326	329	330	330	329	10	329	325	319	319	309	316	322	323	324	325	330	336	7632
			11	332	329	329	327	322	321	323	326	325	322	320	318	11	303	347	250	300	278	228	191	145	214	274	307	325	7077
			12	331	330	340	357	348	340	340	340	267	262	277	344	12	360	281	320	325	322	321	320	323	310	311	318	330	7717
			13	333	336	330	329	330	330	339	340	349	340	339	289	13	307	265	194	218	259	261	292	299	301	311	317	319	7347
			14	318	316	319	319	319	320	321	322	325	309	307	309	14	297	308	310	309	301	307	307	307	310	313	318	319	7510
			15	319	317	315	311	313	312	311	312	318	318	305	310	15	299	280	244	221	229	186	62	180	183	156	190	305	6296
			16	323	331	331	342	346	346	351	330	330	330	245	227	16	224	209	210	242	232	288	308	307	300	308	312	319	7111
			17	319	319	315	315	314	312	313	317	319	280	301	314	17	230	190	223	249	237	260	271	281	295	305	312	320	6911
			18	321	319	313	310	310	309	309	310	313	327	329	312	18	302	223	248	256	285	293	298	292	301	308	310	313	7213
			19	320	313	314	314	320	332	340	323	247	330	317	293	19	290	289	291	298	299	301	308	308	308	309	309	310	7383
			20	315	309	308	308	308	308	308	309	314	290	299	401	20	238	198	368	204	146	160	219	278	309	329	333	334	6695
			21	330	329	327	327	321	332	360	352	350	351	324	314	21	194	268	327	323	320	321	323	321	315	315	320	321	7705
			22	320	319	315	312	311	311	312	311	311	311	313	312	22	312	311	310	311	312	316	317	315	321	323	312	318	7536
			23	329	359	332	321	322	324	338	342	340	335	330	330	23	309	313	312	290	252	259	280	298	309	315	320	321	7580
			24	320	319	314	309	310	309	311	312	318	320	319	330	24	326	297	209	163	179	43	61	88	208	341	381	362	6449
			25	373	368	333	330	358	349	278	116	216	274	326	421*	25	321	374	449	385	273	220	231	260	211	263	308	320	7357
			26	362	348	318	344	320	382	313	212	215	204	321	363*	26	310	274	398	217*	194	229	191	372	216	310	300	351	7094
			27	360	367	361	373	353	356	357	229	229	227	290	341	27	299	319	403	243	185	188	278	285	303	337	342	322	7347
			28	338	351	347	343	349	338	350	343	340	313	251	306	28	321	317	318	279	249	267	280	287	292	325	320	340	7584
			29													29													
			30													30													
			31													31													

SCALED BY: EAS, JEP, LLF
CHECKED BY: JEP, EAS
SIGNS REVIEWED BY: JEP
PUNCHED BY:

Preliminary baselines and scale values:

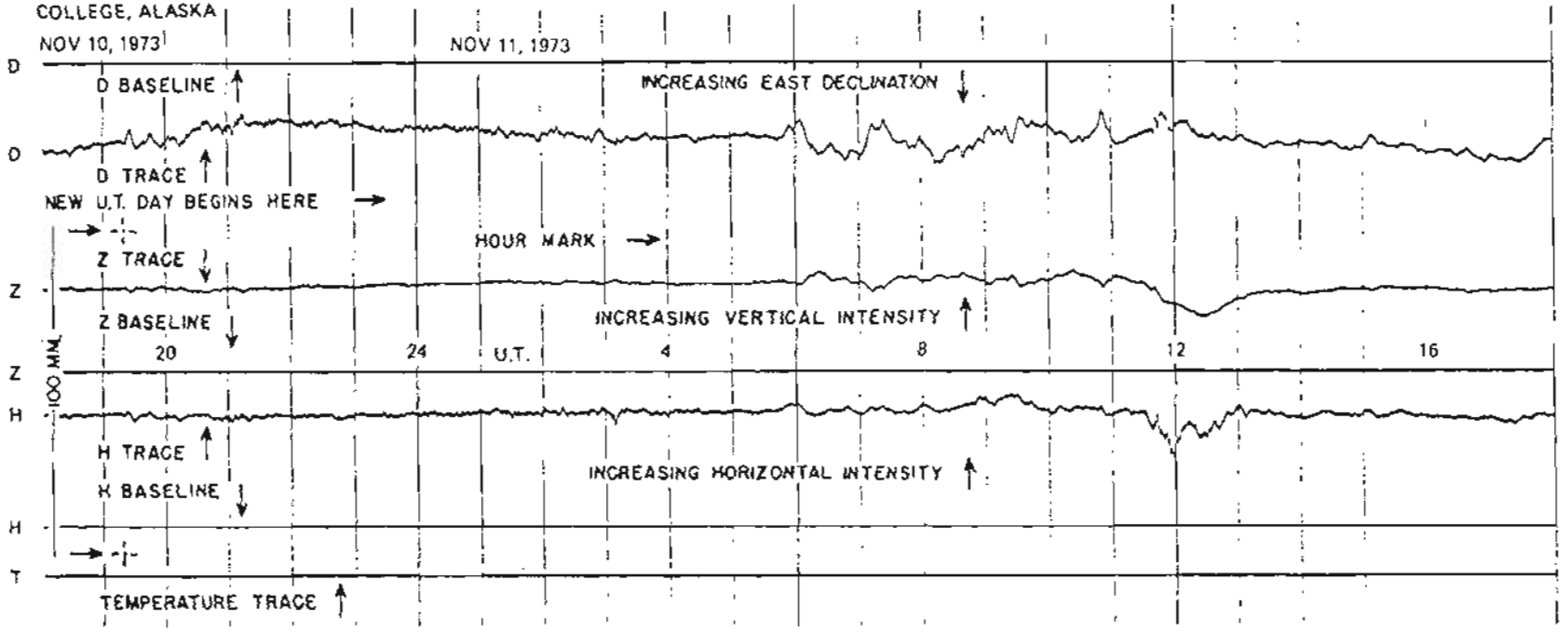
Interval Beginning	Baseline Value	Scale Value

( ) Interpolated
[ ] Significant portion of hour interpolated.
[ ] No records 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 [illegible] Magn., corrected to Normal Magn.

MONTHLY SUM: 204536
MONTHLY MEAN: 304
DATES WITH GAPS:

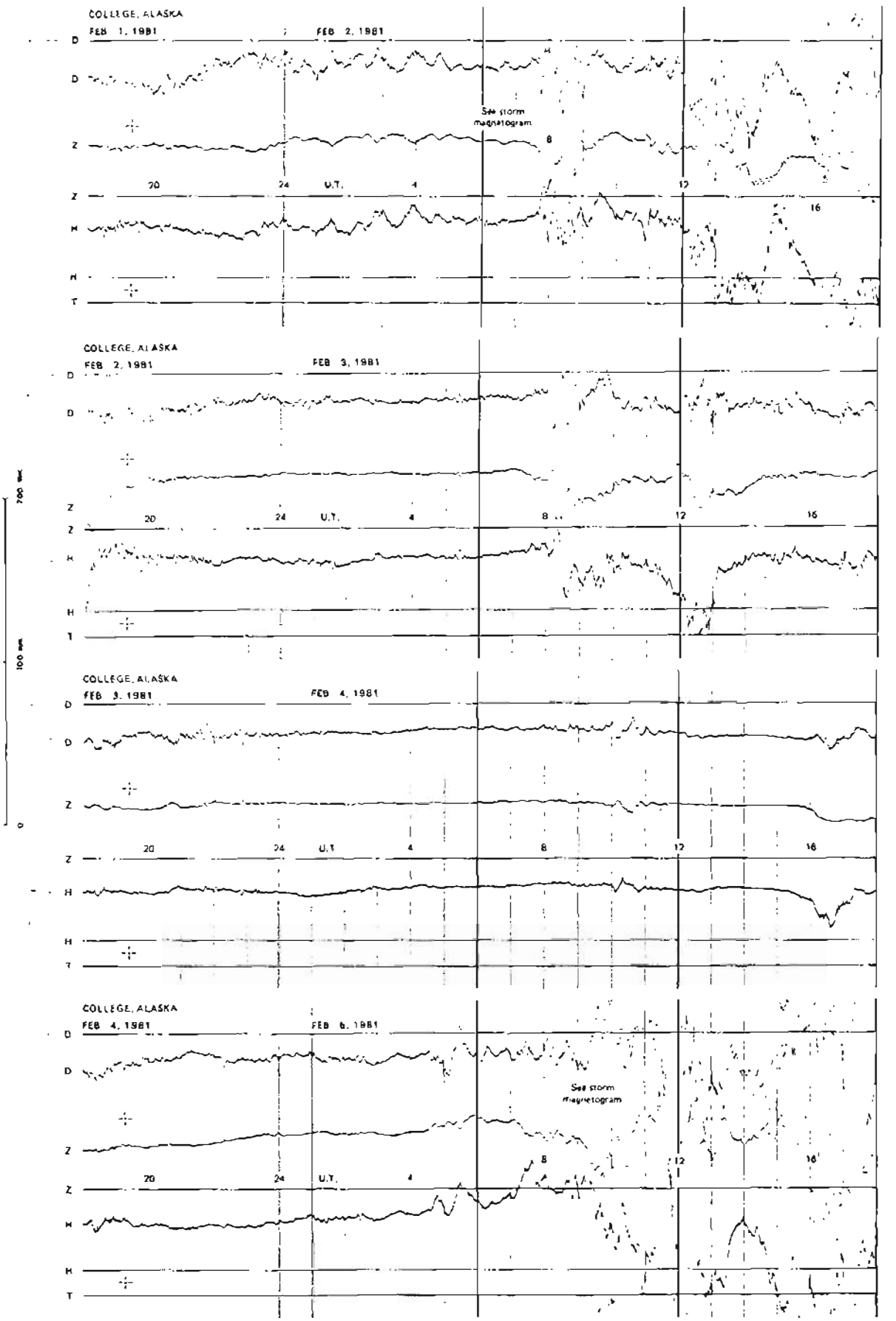
FORMAT FOR NORMAL & STORM MAGNETOGRAMS

(SAMPLE ONLY)

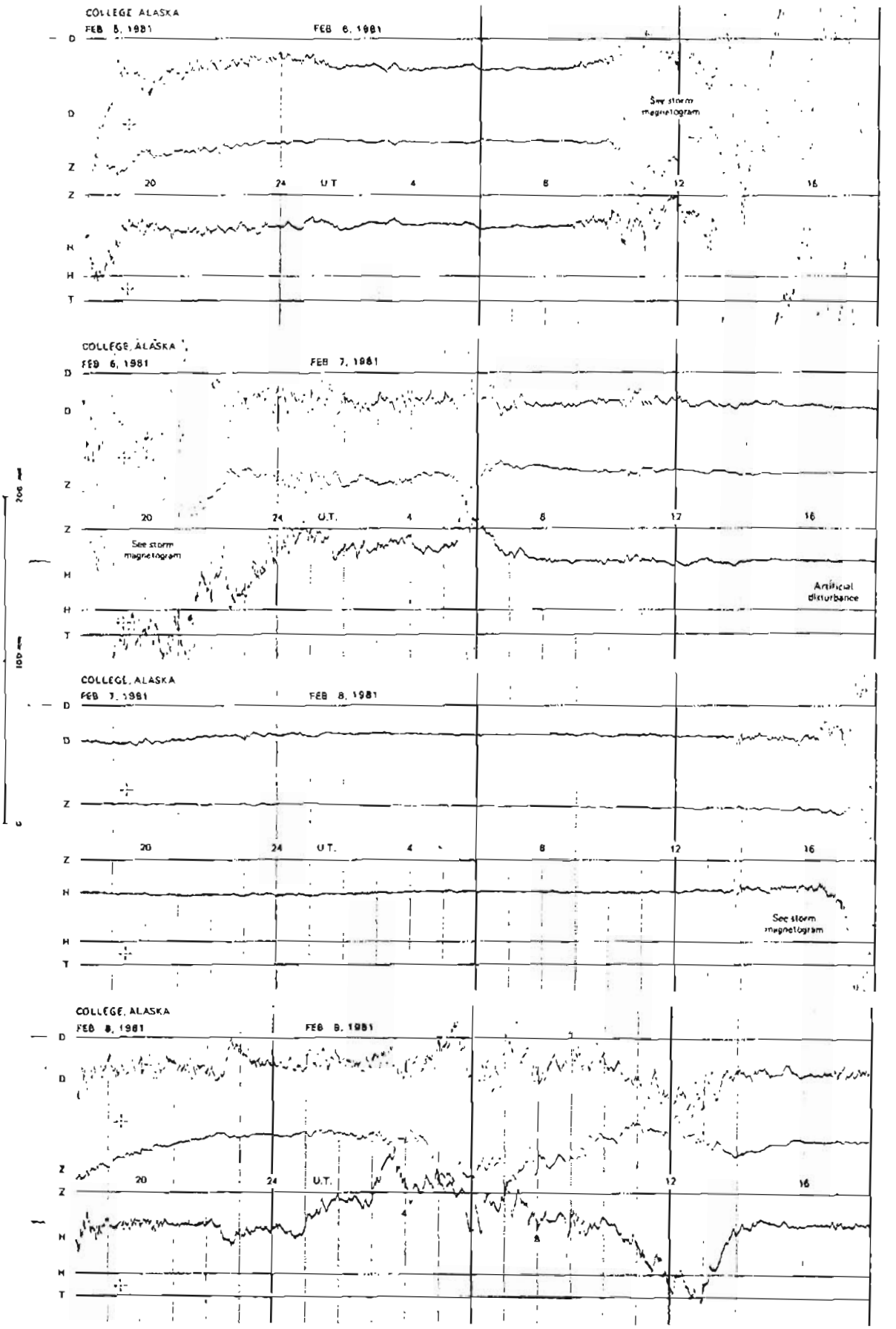


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

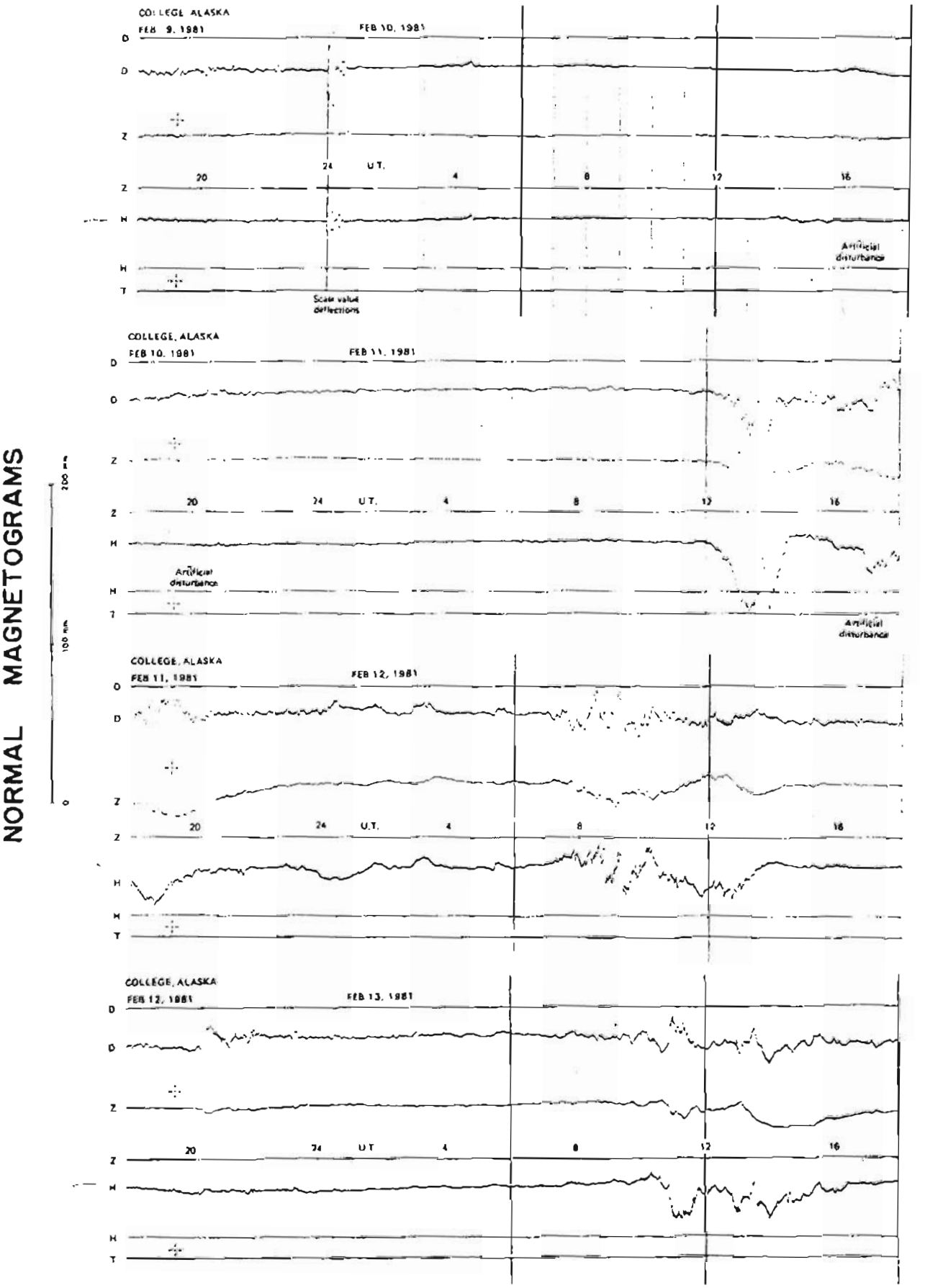
NORMAL MAGNETOGRAMS



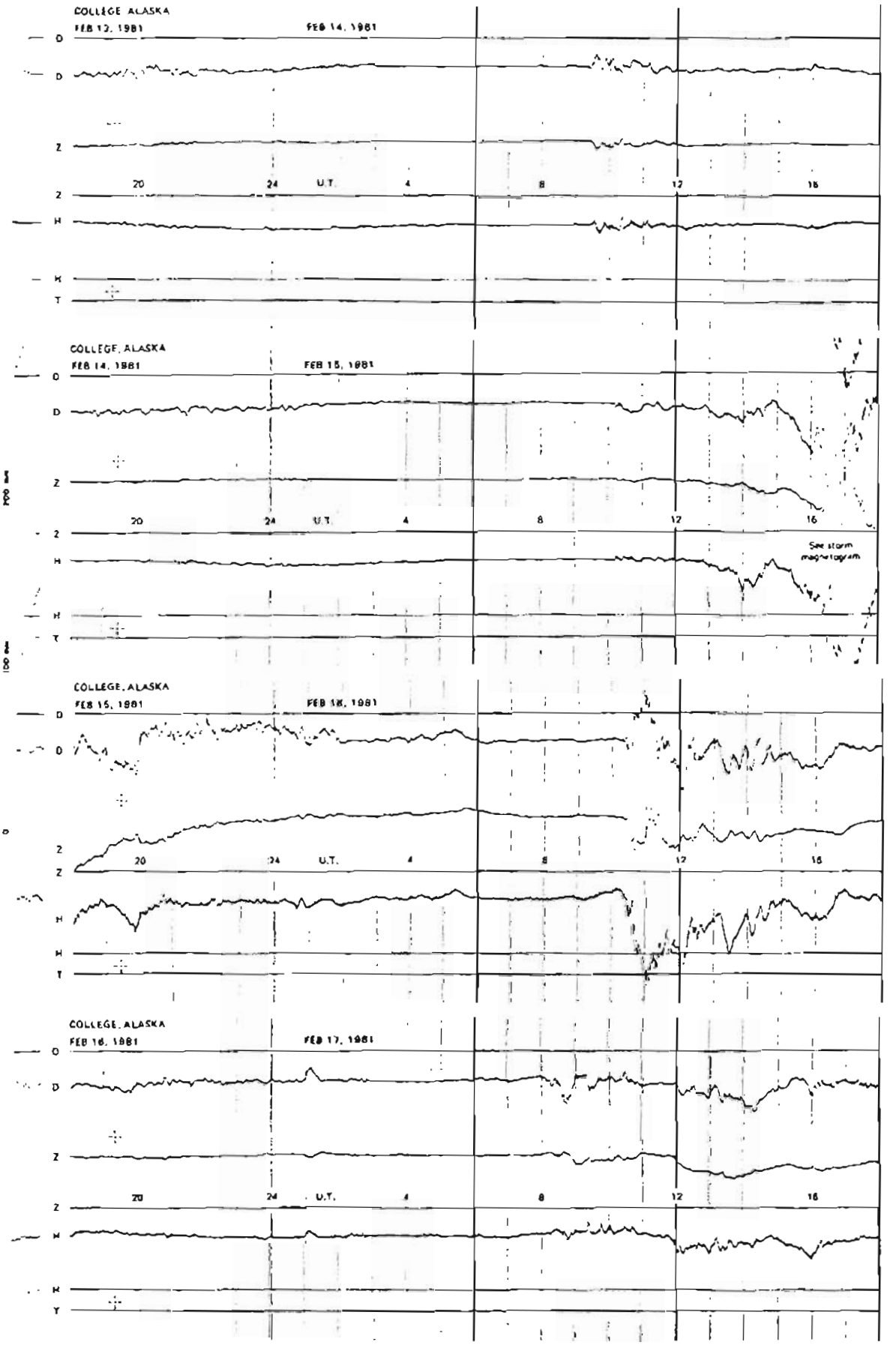
NORMAL MAGNETOGRAMS



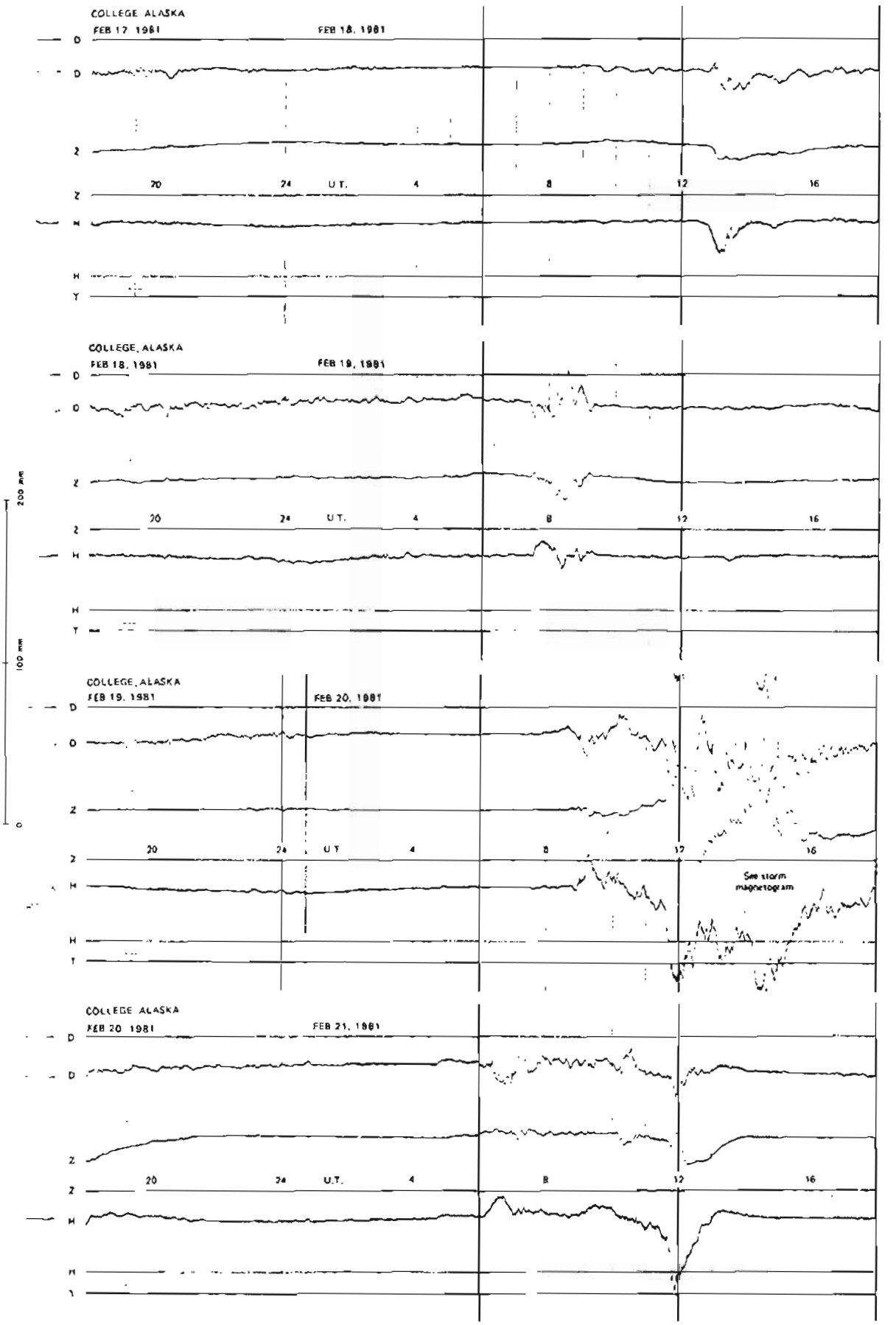
NORMAL MAGNETOGRAMS



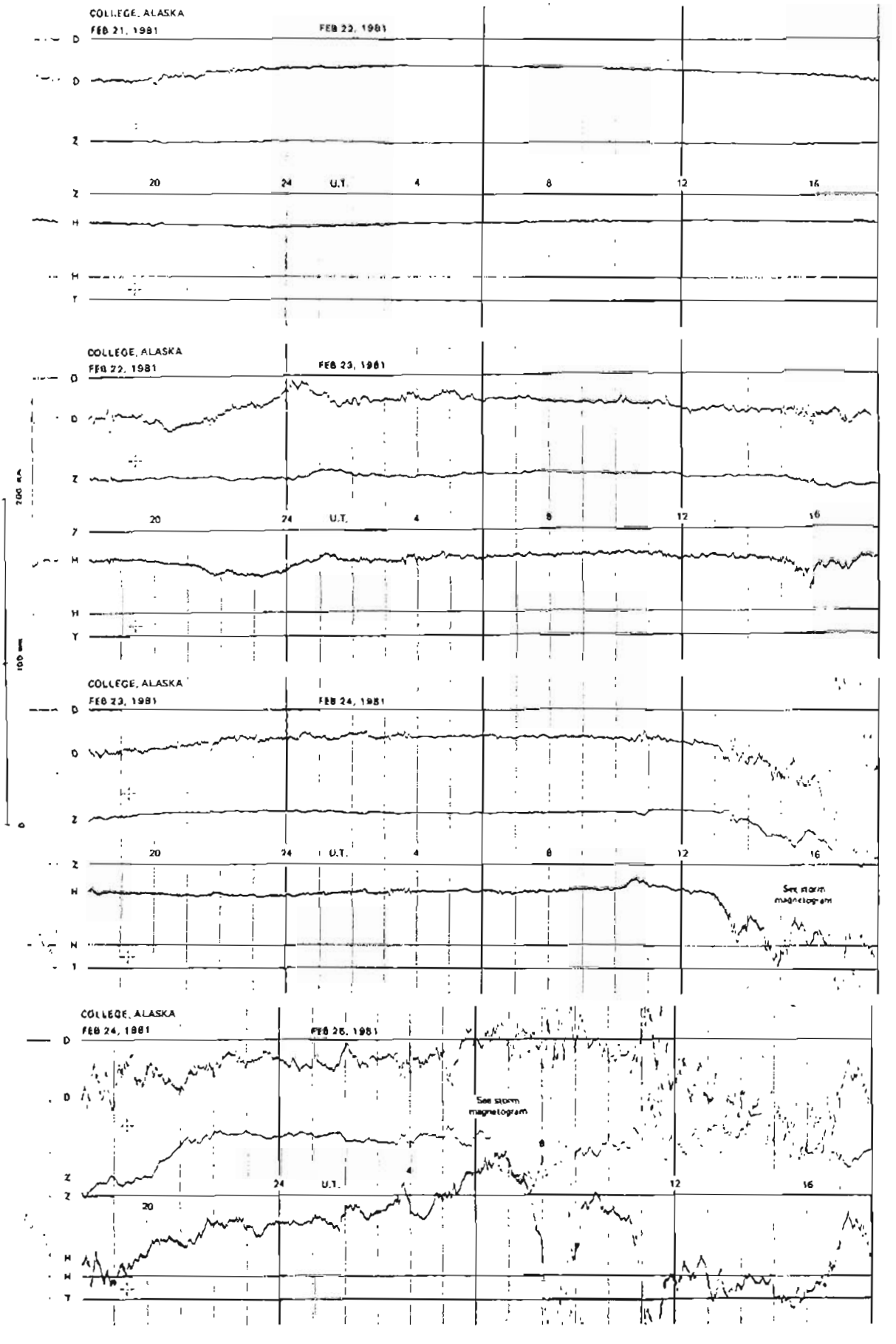
NORMAL MAGNETOGRAMS



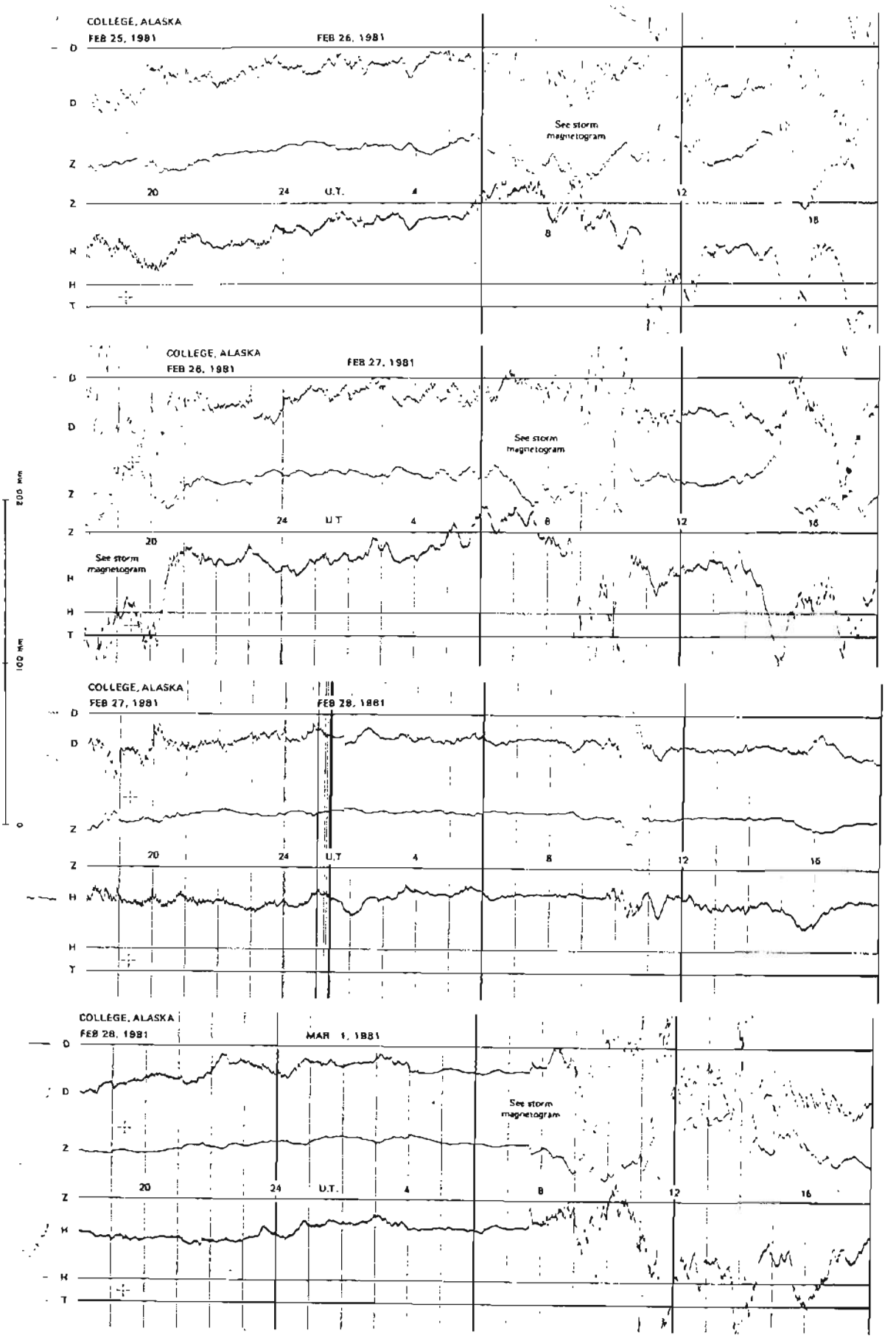
NORMAL MAGNETOGRAMS



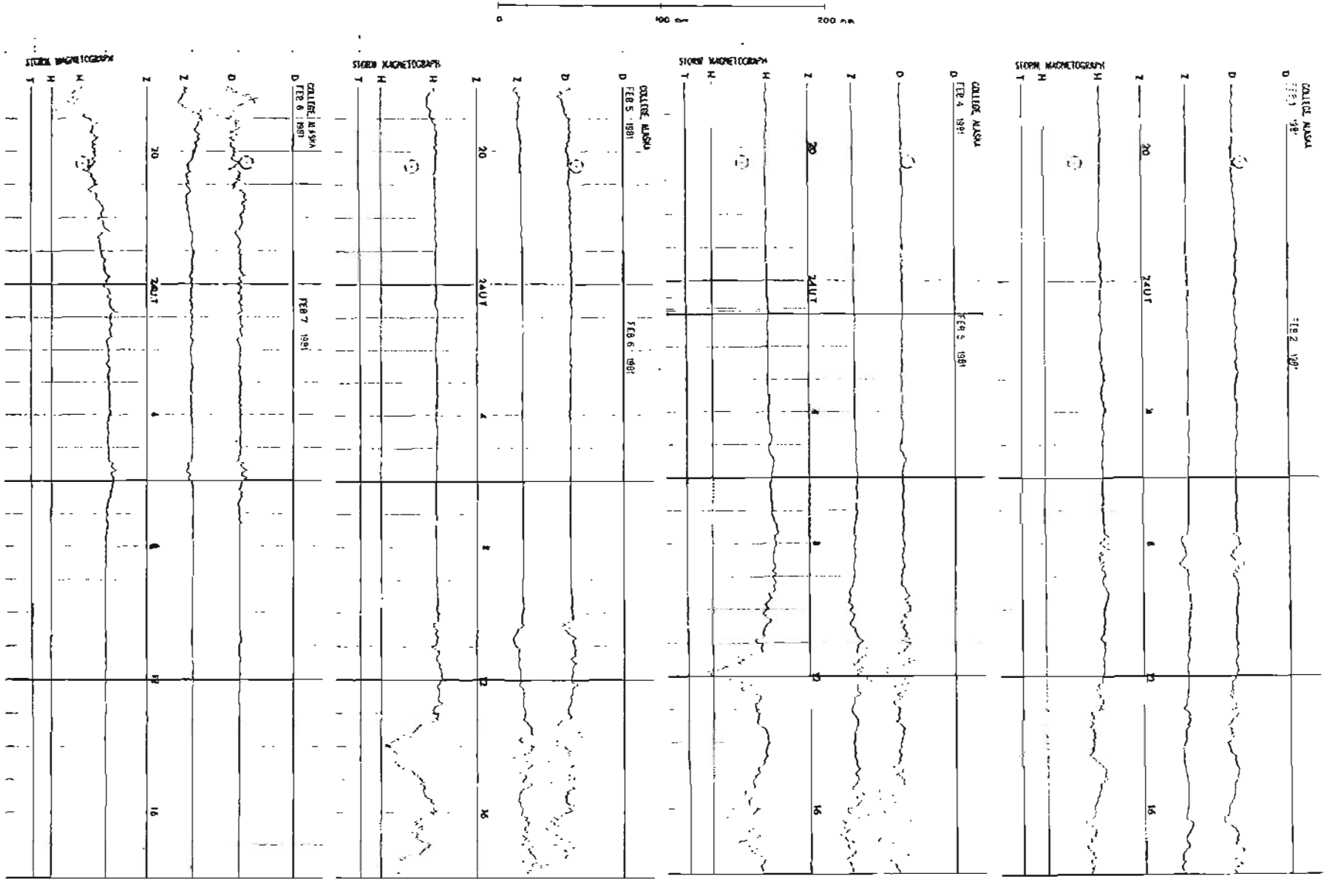
NORMAL MAGNETOGRAMS



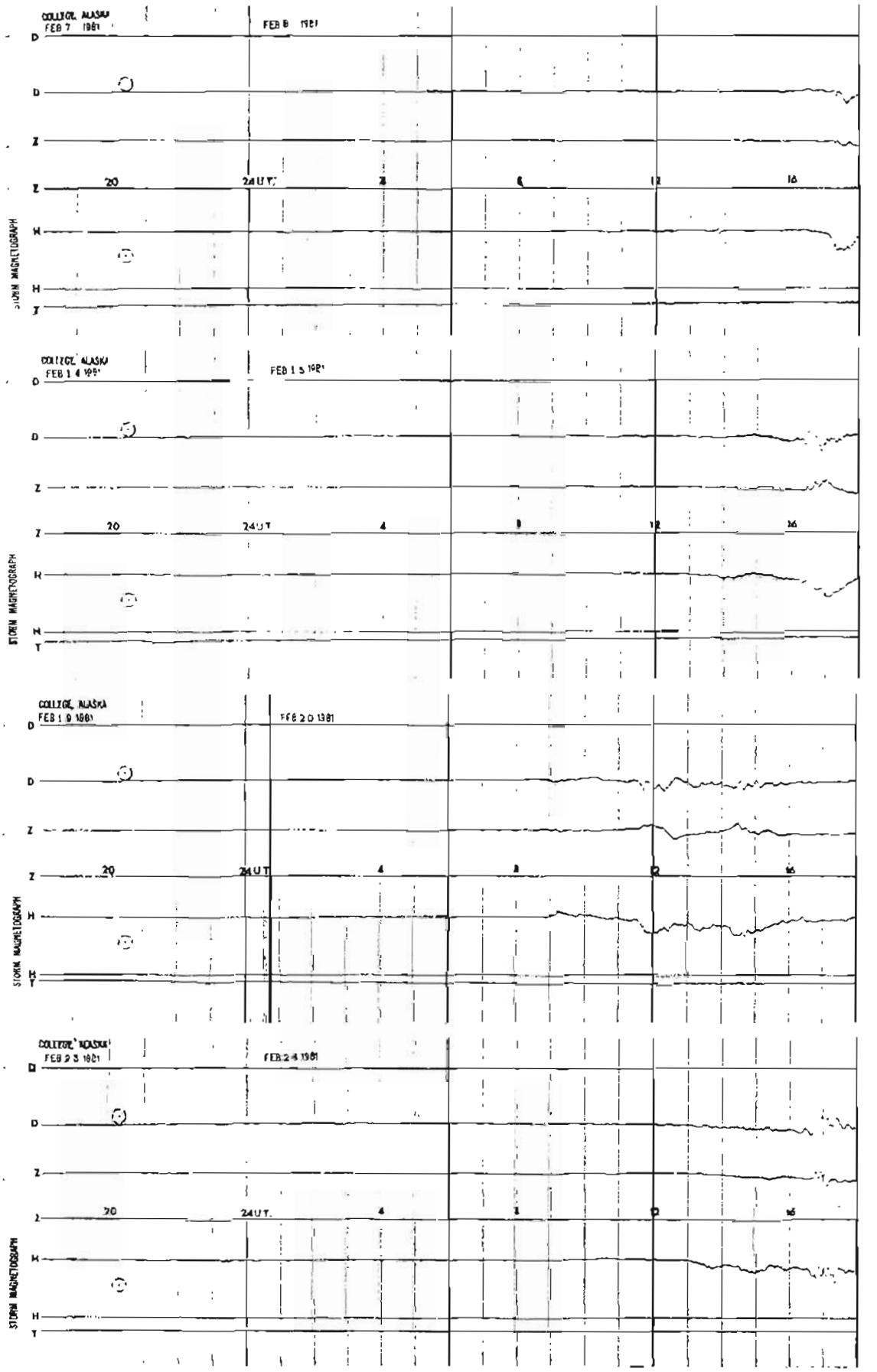
NORMAL MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS