UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

PROPERTY OF
GEOLOGICAL SURVEY
U.S. DEPARTMENT OF THE INTERIOR

AUGUST 1976

OPEN FILE REPORT 76-300H

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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, M. J. MOORMAN, C. E. DEADMON, 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.

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

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.

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

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 "OI" 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										OBSERVATORY COLLEGE, ALASKA									
MAGNETIC ACTIVITY (Greenwich civil time, counted from midnight to midnight)																				MONTH AND YEAR AUGUST 1976									
DATE		K-INDICES										AK	TIME SCALE ON MAGNETOGRAMS 20 mm/hr																
		00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM																			
1		2	2	4	3	2	2	2	2	19	11	SUDDEN COMMENCEMENTS d h m																	
2		2	2	3	3	2	0	0	1	13	07																		
3		1	3	3	1	3	5	1	1	18	13																		
4		1	1	1	3	4	1	0	1	12	07																		
5		2	1	1	2	3	3	1	1	14	07																		
6		1	1	3	1	1	1	1	1	10	05																		
7		1	1	4	4	5	0	1	1	17	14																		
8		1	2	0	0	0	1	1	0	05	02																		
9		1	2	6	6	6	1	1	1	24	32																		
10		3	5	0	5	4	3	0	1	21	20																		
11		2	2	3	3	2	2	1	1	16	08	POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)																	
12		0	1	0	2	1	1	1	1	07	03																		
13		1	1	0	3	0	0	0	1	06	03																		
14		2	1	0	3	5	0	0	0	11	09																		
15		0	0	0	1	0	1	1	1	04	02																		
16		1	0	0	4	6	2	1	1	15	15																		
17		2	2	0	0	1	1	1	1	08	03																		
18		1	2	0	1	1	0	1	0	06	02																		
19		1	1	2	1	3	1	1	1	11	05																		
20		1	2	1	1	1	1	1	0	08	03																		
21		1	1	3	6	3	2	1	1	18	16	BEGIN END d h m d h m																	
22		2	1	0	4	2	1	0	0	10	06																		
23		1	1	5	6	6	7	3	3	32	48																		
24		3	4	5	6	4	5	3	2	32	33																		
25		3	3	5	5	6	5	4	2	33	36																		
26		4	3	5	6	5	3	2	2	30	31																		
27		3	1	1	7	3	5	2	2	24	30																		
28		2	1	3	5	5	3	2	1	22	18																		
29		2	1	3	2	3	2	1	1	15	08																		
30		1	2	1	3	2	1	1	1	12	06																		
31		0	0	2	3	4	3	2	1	15	09																		
K SCALE USED: LOWER LIMIT FOR K = 9..... CURRENT SCALE VALUE..... LOWER LIMIT FOR K = 9										D 683.8 3.76 2570		H 321.7 7.82 2520		Z		(mm) (γ/mm) (to nearest 10γ)													
SCALINGS AND COMPUTATIONS HAVE BEEN CHECKED.																													
APPROVED <u>JOHN B. TOWNSHEND, CHIEF, COLLEGE OBSERVATORY</u>																													
OBSERVER IN CHARGE																													

OUTSTANDING MAGNETIC EFFECTS			OBSERVATORY COLLEGE, ALASKA	
			MONTH AUGUST	YEAR 1976
DATE	TIME U.T.	NATURE OF PHENOMENON ¹	REMARKS	
06	00XX	pc4		
06	21XX	pc4		
12	10XX	pi2	with small bay	
13	11XX	pi2	with small bay	
18	10XX	pi2		
19	12XX	pi2	with bay	
20	13XX	pi2		
21	12XX	pg		
29	13XX	pi2		
30	07XX	pi2		
31	16XX	pg		
IDENTIFIED BY: MJM, JEP			VERIFIED BY: JEP	

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

PRINCIPAL MAGNETIC STORMS
COLLEGE OBSERVATORY, COLLEGE, ALASKA

Data from Individual Observatories:

AUGUST 1976

WDC-A FOR SOLAR-TERRESTRIAL PHYSICS
ENVIRONMENTAL DATA SERVICE, NOAA
BOULDER, COLORADO 80502 U.S.A.

Obs. 2 letter IAOA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End day hr
		day	hr min (UT)	type	D(')	H(Y)	Z(Y)	day	(3 hr - period)	K	D(')	H(Y)	Z(Y)	
CO	64.6 N	09	06XX	..	..	..	..	09	3,4,5	6	144	1070	530	09 15
		23	06XX	..	..	..	..	23	6	7	219	1460	970	26 18

AUGUST

1976

NORMAL MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-76	2400 U.T., 8-31-76	1.0/mm	3.88/mm	28° 07.2 E
H	0000 U.T., 8-1-76	2400 U.T., 8-6-76	7.88/mm		127788
	0000 U.T., 8-7-76	2400 U.T., 8-22-76	7.88/mm		127768
	0000 U.T., 8-23-76	2400 U.T., 8-31-76	7.88/mm		127738
Z	0000 U.T., 8-1-76	2400 U.T., 8-6-76	7.68/mm		551188
	0000 U.T., 8-7-76	2400 U.T., 8-22-76	7.68/mm		551218
	0000 U.T., 8-23-76	2400 U.T., 8-31-76	7.68/mm		551248

STORM MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-76	2400 U.T., 8-31-76	7.9/mm	27.88/mm	24° 20.9 E
H	0000 U.T., 8-1-76	2400 U.T., 8-6-76	44.18/mm		115368
	0000 U.T., 8-7-76	2400 U.T., 8-31-76	44.18/mm		115228
Z	0000 U.T., 8-1-76	2400 U.T., 8-31-76	48.68/mm		540118

RAPID RUN MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		
D	0000 U.T., 8-1-76	2400 U.T., 8-31-76	0.3/mm		1.08/mm
H	0000 U.T., 8-1-76	2400 U.T., 8-31-76		1.08/mm	
Z	0000 U.T., 8-1-76	2400 U.T., 8-31-76		2.48/mm	

MONTHLY MEAN ABSOLUTE VALUES*		
D	H	Z
28° 22.1 E	130538	553558

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: AUGUST 6, 8, 12, 13, 15, 17, 18, 19, 20, 30

FORM 645-4046
10-57

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 (150W 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 COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
SEISMOLOGICAL DIVISION

C		Q ₁ T ₁ S ₁ W ₁		Q ₂ T ₂ S ₂ W ₂		Q ₃ T ₃ S ₃ W ₃		Q ₄ T ₄ S ₄ W ₄		Q ₅ T ₅ S ₅ W ₅		Q ₆ T ₆ S ₆ W ₆		Q ₇ T ₇ S ₇ W ₇		Q ₈ T ₈ S ₈ W ₈		Q ₉ T ₉ S ₉ W ₉		Q ₁₀ T ₁₀ S ₁₀ W ₁₀		Q ₁₁ T ₁₁ S ₁₁ W ₁₁		Q ₁₂ T ₁₂ S ₁₂ W ₁₂		Q ₁₃ T ₁₃ S ₁₃ W ₁₃		Q ₁₄ T ₁₄ S ₁₄ W ₁₄		Q ₁₅ T ₁₅ S ₁₅ W ₁₅		Q ₁₆ T ₁₆ S ₁₆ W ₁₆		Q ₁₇ T ₁₇ S ₁₇ W ₁₇		Q ₁₈ T ₁₈ S ₁₈ W ₁₈		Q ₁₉ T ₁₉ S ₁₉ W ₁₉		Q ₂₀ T ₂₀ S ₂₀ W ₂₀		Q ₂₁ T ₂₁ S ₂₁ W ₂₁		Q ₂₂ T ₂₂ S ₂₂ W ₂₂		Q ₂₃ T ₂₃ S ₂₃ W ₂₃		Q ₂₄ T ₂₄ S ₂₄ W ₂₄		Q ₂₅ T ₂₅ S ₂₅ W ₂₅		Q ₂₆ T ₂₆ S ₂₆ W ₂₆		Q ₂₇ T ₂₇ S ₂₇ W ₂₇		Q ₂₈ T ₂₈ S ₂₈ W ₂₈		Q ₂₉ T ₂₉ S ₂₉ W ₂₉		Q ₃₀ T ₃₀ S ₃₀ W ₃₀		Q ₃₁ T ₃₁ S ₃₁ W ₃₁		Q ₃₂ T ₃₂ S ₃₂ W ₃₂		Q ₃₃ T ₃₃ S ₃₃ W ₃₃		Q ₃₄ T ₃₄ S ₃₄ W ₃₄		Q ₃₅ T ₃₅ S ₃₅ W ₃₅		Q ₃₆ T ₃₆ S ₃₆ W ₃₆		Q ₃₇ T ₃₇ S ₃₇ W ₃₇		Q ₃₈ T ₃₈ S ₃₈ W ₃₈		Q ₃₉ T ₃₉ S ₃₉ W ₃₉		Q ₄₀ T ₄₀ S ₄₀ W ₄₀		Q ₄₁ T ₄₁ S ₄₁ W ₄₁		Q ₄₂ T ₄₂ S ₄₂ W ₄₂		Q ₄₃ T ₄₃ S ₄₃ W ₄₃		Q ₄₄ T ₄₄ S ₄₄ W ₄₄		Q ₄₅ T ₄₅ S ₄₅ W ₄₅		Q ₄₆ T ₄₆ S ₄₆ W ₄₆		Q ₄₇ T ₄₇ S ₄₇ W ₄₇		Q ₄₈ T ₄₈ S ₄₈ W ₄₈		Q ₄₉ T ₄₉ S ₄₉ W ₄₉		Q ₅₀ T ₅₀ S ₅₀ W ₅₀		Q ₅₁ T ₅₁ S ₅₁ W ₅₁		Q ₅₂ T ₅₂ S ₅₂ W ₅₂		Q ₅₃ T ₅₃ S ₅₃ W ₅₃		Q ₅₄ T ₅₄ S ₅₄ W ₅₄		Q ₅₅ T ₅₅ S ₅₅ W ₅₅		Q ₅₆ T ₅₆ S ₅₆ W ₅₆		Q ₅₇ T ₅₇ S ₅₇ W ₅₇		Q ₅₈ T ₅₈ S ₅₈ W ₅₈		Q ₅₉ T ₅₉ S ₅₉ W ₅₉		Q ₆₀ T ₆₀ S ₆₀ W ₆₀		Q ₆₁ T ₆₁ S ₆₁ W ₆₁		Q ₆₂ T ₆₂ S ₆₂ W ₆₂		Q ₆₃ T ₆₃ S ₆₃ W ₆₃		Q ₆₄ T ₆₄ S ₆₄ W ₆₄		Q ₆₅ T ₆₅ S ₆₅ W ₆₅		Q ₆₆ T ₆₆ S ₆₆ W ₆₆		Q ₆₇ T ₆₇ S ₆₇ W ₆₇		Q ₆₈ T ₆₈ S ₆₈ W ₆₈		Q ₆₉ T ₆₉ S ₆₉ W ₆₉		Q ₇₀ T ₇₀ S ₇₀ W ₇₀		Q ₇₁ T ₇₁ S ₇₁ W ₇₁		Q ₇₂ T ₇₂ S ₇₂ W ₇₂		Q ₇₃ T ₇₃ S ₇₃ W ₇₃		Q ₇₄ T ₇₄ S ₇₄ W ₇₄		Q ₇₅ T ₇₅ S ₇₅ W ₇₅		Q ₇₆ T ₇₆ S ₇₆ W ₇₆		Q ₇₇ T ₇₇ S ₇₇ W ₇₇		Q ₇₈ T ₇₈ S ₇₈ W ₇₈		Q ₇₉ T ₇₉ S ₇₉ W ₇₉		Q ₈₀ T ₈₀ S ₈₀ W ₈₀		Q ₈₁ T ₈₁ S ₈₁ W ₈₁		Q ₈₂ T ₈₂ S ₈₂ W ₈₂		Q ₈₃ T ₈₃ S ₈₃ W ₈₃		Q ₈₄ T ₈₄ S ₈₄ W ₈₄		Q ₈₅ T ₈₅ S ₈₅ W ₈₅		Q ₈₆ T ₈₆ S ₈₆ W ₈₆		Q ₈₇ T ₈₇ S ₈₇ W ₈₇		Q ₈₈ T ₈₈ S ₈₈ W ₈₈		Q ₈₉ T ₈₉ S ₈₉ W ₈₉		Q ₉₀ T ₉₀ S ₉₀ W ₉₀		Q ₉₁ T ₉₁ S ₉₁ W ₉₁		Q ₉₂ T ₉₂ S ₉₂ W ₉₂		Q ₉₃ T ₉₃ S ₉₃ W ₉₃		Q ₉₄ T ₉₄ S ₉₄ W ₉₄		Q ₉₅ T ₉₅ S ₉₅ W ₉₅		Q ₉₆ T ₉₆ S ₉₆ W ₉₆		Q ₉₇ T ₉₇ S ₉₇ W ₉₇		Q ₉₈ T ₉₈ S ₉₈ W ₉₈		Q ₉₉ T ₉₉ S ₉₉ W ₉₉		Q ₁₀₀ T ₁₀₀ S ₁₀₀ W ₁₀₀		Q ₁₀₁ T ₁₀₁ S ₁₀₁ W ₁₀₁		Q ₁₀₂ T ₁₀₂ S ₁₀₂ W ₁₀₂		Q ₁₀₃ T ₁₀₃ S ₁₀₃ W ₁₀₃		Q ₁₀₄ T ₁₀₄ S ₁₀₄ W ₁₀₄		Q ₁₀₅ T ₁₀₅ S ₁₀₅ W ₁₀₅		Q ₁₀₆ T ₁₀₆ S ₁₀₆ W ₁₀₆		Q ₁₀₇ T ₁₀₇ S ₁₀₇ W ₁₀₇		Q ₁₀₈ T ₁₀₈ S ₁₀₈ W ₁₀₈		Q ₁₀₉ T ₁₀₉ S ₁₀₉ W ₁₀₉		Q ₁₁₀ T ₁₁₀ S ₁₁₀ W ₁₁₀		Q ₁₁₁ T ₁₁₁ S ₁₁₁ W ₁₁₁		Q ₁₁₂ T ₁₁₂ S ₁₁₂ W ₁₁₂		Q ₁₁₃ T ₁₁₃ S ₁₁₃ W ₁₁₃		Q ₁₁₄ T ₁₁₄ S ₁₁₄ W ₁₁₄		Q ₁₁₅ T ₁₁₅ S ₁₁₅ W ₁₁₅		Q ₁₁₆ T ₁₁₆ S ₁₁₆ W ₁₁₆		Q ₁₁₇ T ₁₁₇ S ₁₁₇ W ₁₁₇		Q ₁₁₈ T ₁₁₈ S ₁₁₈ W ₁₁₈		Q ₁₁₉ T ₁₁₉ S ₁₁₉ W ₁₁₉		Q ₁₂₀ T ₁₂₀ S ₁₂₀ W ₁₂₀		Q ₁₂₁ T ₁₂₁ S ₁₂₁ W ₁₂₁		Q ₁₂₂ T ₁₂₂ S ₁₂₂ W ₁₂₂		Q ₁₂₃ T ₁₂₃ S ₁₂₃ W ₁₂₃		Q ₁₂₄ T ₁₂₄ S ₁₂₄ W ₁₂₄		Q ₁₂₅ T ₁₂₅ S ₁₂₅ W ₁₂₅		Q ₁₂₆ T ₁₂₆ S ₁₂₆ W ₁₂₆		Q ₁₂₇ T ₁₂₇ S ₁₂₇ W ₁₂₇		Q ₁₂₈ T ₁₂₈ S ₁₂₈ W ₁₂₈		Q ₁₂₉ T ₁₂₉ S ₁₂₉ W ₁₂₉		Q ₁₃₀ T ₁₃₀ S ₁₃₀ W ₁₃₀		Q ₁₃₁ T ₁₃₁ S ₁₃₁ W ₁₃₁		Q ₁₃₂ T ₁₃₂ S ₁₃₂ W ₁₃₂		Q ₁₃₃ T ₁₃₃ S ₁₃₃ W ₁₃₃		Q ₁₃₄ T ₁₃₄ S ₁₃₄ W ₁₃₄		Q ₁₃₅ T ₁₃₅ S ₁₃₅ W ₁₃₅		Q ₁₃₆ T ₁₃₆ S ₁₃₆ W ₁₃₆		Q ₁₃₇ T ₁₃₇ S ₁₃₇ W ₁₃₇		Q ₁₃₈ T ₁₃₈ S ₁₃₈ W ₁₃₈		Q ₁₃₉ T ₁₃₉ S ₁₃₉ W ₁₃₉		Q ₁₄₀ T ₁₄₀ S ₁₄₀ W ₁₄₀		Q ₁₄₁ T ₁₄₁ S ₁₄₁ W ₁₄₁		Q ₁₄₂ T ₁₄₂ S ₁₄₂ W ₁₄₂		Q ₁₄₃ T ₁₄₃ S ₁₄₃ W ₁₄₃		Q ₁₄₄ T ₁₄₄ S ₁₄₄ W ₁₄₄		Q ₁₄₅ T ₁₄₅ S ₁₄₅ W ₁₄₅		Q ₁₄₆ T ₁₄₆ S ₁₄₆ W ₁₄₆		Q ₁₄₇ T ₁₄₇ S ₁₄₇ W ₁₄₇		Q ₁₄₈ T ₁₄₈ S ₁₄₈ W ₁₄₈		Q ₁₄₉ T ₁₄₉ S ₁₄₉ W ₁₄₉		Q ₁₅₀ T ₁₅₀ S ₁₅₀ W ₁₅₀		Q ₁₅₁ T ₁₅₁ S ₁₅₁ W ₁₅₁		Q ₁₅₂ T ₁₅₂ S ₁₅₂ W ₁₅₂		Q ₁₅₃ T ₁₅₃ S ₁₅₃ W ₁₅₃		Q ₁₅₄ T ₁₅₄ S ₁₅₄ W ₁₅₄		Q ₁₅₅ T ₁₅₅ S ₁₅₅ W ₁₅₅		Q ₁₅₆ T ₁₅₆ S ₁₅₆ W ₁₅₆		Q ₁₅₇ T ₁₅₇ S ₁₅₇ W ₁₅₇		Q ₁₅₈ T ₁₅₈ S ₁₅₈ W ₁₅₈		Q ₁₅₉ T ₁₅₉ S ₁₅₉ W ₁₅₉		Q ₁₆₀ T ₁₆₀ S ₁₆₀ W ₁₆₀		Q ₁₆₁ T ₁₆₁ S ₁₆₁ W ₁₆₁		Q ₁₆₂ T ₁₆₂ S ₁₆₂ W ₁₆₂		Q ₁₆₃ T ₁₆₃ S ₁₆₃ W ₁₆₃		Q ₁₆₄ T ₁₆₄ S ₁₆₄ W ₁₆₄		Q ₁₆₅ T ₁₆₅ S ₁₆₅ W ₁₆₅		Q ₁₆₆ T ₁₆₆ S ₁₆₆ W ₁₆₆		Q ₁₆₇ T ₁₆₇ S ₁₆₇ W ₁₆₇		Q ₁₆₈ T ₁₆₈ S ₁₆₈ W ₁₆₈		Q ₁₆₉ T ₁₆₉ S ₁₆₉ W ₁₆₉		Q ₁₇₀ T ₁₇₀ S ₁₇₀ W ₁₇₀		Q ₁₇₁ T ₁₇₁ S ₁₇₁ W ₁₇₁		Q ₁₇₂ T ₁₇₂ S ₁₇₂ W ₁₇₂		Q ₁₇₃ T ₁₇₃ S ₁₇₃ W ₁₇₃		Q ₁₇₄ T ₁₇₄ S ₁₇₄ W ₁₇₄		Q ₁₇₅ T ₁₇₅ S ₁₇₅ W ₁₇₅		Q ₁₇₆ T ₁₇₆ S ₁₇₆ W ₁₇₆		Q ₁₇₇ T ₁₇₇ S ₁₇₇ W ₁₇₇		Q ₁₇₈ T ₁₇₈ S ₁₇₈ W ₁₇₈		Q ₁₇₉ T ₁₇₉ S ₁₇₉ W ₁₇₉		Q ₁₈₀ T ₁₈₀ S ₁₈₀ W ₁₈₀		Q ₁₈₁ T ₁₈₁ S ₁₈₁ W ₁₈₁		Q ₁₈₂ T ₁₈₂ S ₁₈₂ W ₁₈₂		Q ₁₈₃ T ₁₈₃ S ₁₈₃ W ₁₈₃		Q ₁₈₄ T ₁₈₄ S ₁₈₄ W ₁₈₄		Q ₁₈₅ T ₁₈₅ S ₁₈₅ W ₁₈₅		Q ₁₈₆ T ₁₈₆ S ₁₈₆ W ₁₈₆		Q ₁₈₇ T ₁₈₇ S ₁₈₇ W ₁₈₇		Q ₁₈₈ T ₁₈₈ S ₁₈₈ W ₁₈₈		Q ₁₈₉ T ₁₈₉ S ₁₈₉ W ₁₈₉		Q ₁₉₀ T ₁₉₀ S ₁₉₀ W ₁₉₀		Q ₁₉₁ T ₁₉₁ S ₁₉₁ W ₁₉₁		Q ₁₉₂ T ₁₉₂ S ₁₉₂ W ₁₉₂		Q ₁₉₃ T ₁₉₃ S ₁₉₃ W ₁₉₃		Q ₁₉₄ T ₁₉₄ S ₁₉₄ W ₁₉₄		Q ₁₉₅ T ₁₉₅ S ₁₉₅ W ₁₉₅		Q ₁₉₆ T ₁₉₆ S ₁₉₆ W ₁₉₆		Q ₁₉₇ T ₁₉₇ S ₁₉₇ W ₁₉₇		Q ₁₉₈ T ₁₉₈ S ₁₉₈ W ₁₉₈		Q ₁₉₉ T ₁₉₉ S ₁₉₉ W ₁₉₉		Q ₂₀₀ T ₂₀₀ S ₂₀₀ W ₂₀₀		Q ₂₀₁ T ₂₀₁ S ₂₀₁ W ₂₀₁		Q ₂₀₂ T ₂₀₂ S ₂₀₂ W ₂₀₂		Q ₂₀₃ T ₂₀₃ S ₂₀₃ W ₂₀₃		Q ₂₀₄ T ₂₀₄ S ₂₀₄ W ₂₀₄		Q ₂₀₅ T ₂₀₅ S ₂₀₅ W ₂₀₅		Q ₂₀₆ T ₂₀₆ S ₂₀₆ W ₂₀₆		Q ₂₀₇ T ₂₀₇ S ₂₀₇ W ₂₀₇		Q ₂₀₈ T ₂₀₈ S ₂₀₈ W ₂₀₈		Q ₂₀₉ T ₂₀₉ S ₂₀₉ W ₂₀₉		Q ₂₁₀ T ₂₁₀ S ₂₁₀ W ₂₁₀		Q ₂₁₁ T ₂₁₁ S ₂₁₁ W ₂₁₁		Q ₂₁₂ T ₂₁₂ S ₂₁₂ W ₂₁₂		Q ₂₁₃ T ₂₁₃ S ₂₁₃ W ₂₁₃		Q ₂₁₄ T ₂₁₄ S ₂₁₄ W ₂₁₄		Q ₂₁₅ T ₂₁₅ S ₂₁₅ W ₂₁₅		Q ₂₁₆ T ₂₁₆ S ₂₁₆ W ₂₁₆		Q ₂₁₇ T ₂₁₇ S ₂₁₇ W ₂₁₇		Q ₂₁₈ T ₂₁₈ S ₂₁₈ W ₂₁₈		Q ₂₁₉ T ₂₁₉ S ₂₁₉ W ₂₁₉		Q ₂₂₀ T ₂₂₀ S ₂₂₀ W ₂₂₀		Q ₂₂₁ T ₂₂₁ S ₂₂₁ W ₂₂₁		Q ₂₂₂ T ₂₂₂ S ₂₂₂ W ₂₂₂		Q ₂₂₃ T ₂₂₃ S ₂₂₃ W ₂₂₃		Q ₂₂₄ T ₂₂₄ S ₂₂₄ W ₂₂₄		Q ₂₂₅ T ₂₂₅ S ₂₂₅ W ₂₂₅		Q ₂₂₆ T ₂₂₆ S ₂₂₆ W ₂₂₆		Q ₂₂₇ T ₂₂₇ S ₂₂₇ W ₂₂₇		Q ₂₂₈ T ₂₂₈ S ₂₂₈ W ₂₂₈		Q ₂₂₉ T ₂₂₉ S ₂₂₉ W ₂₂₉		Q ₂₃₀ T ₂₃₀ S ₂₃₀ W ₂₃₀		Q ₂₃₁ T ₂₃₁ S ₂₃₁ W ₂₃₁		Q ₂₃₂ T ₂₃₂ S ₂₃₂ W ₂₃₂		Q ₂₃₃ T ₂₃₃ S ₂₃₃ W ₂₃₃		Q ₂₃₄ T ₂₃₄ S ₂₃₄ W ₂₃₄		Q ₂₃₅ T ₂₃₅ S ₂₃₅ W ₂₃₅		Q ₂₃₆ T ₂₃₆ S ₂₃₆ W ₂₃₆		Q ₂₃₇ T ₂₃₇ S ₂₃₇ W ₂₃₇		Q ₂₃₈ T ₂₃₈ S ₂₃₈ W ₂₃₈		Q ₂₃₉ T ₂₃₉ S ₂₃₉ W ₂₃₉		Q ₂₄₀ T ₂₄₀ S ₂₄₀ W ₂₄₀		Q ₂₄₁ T ₂₄₁ S ₂₄₁ W ₂₄₁		Q ₂₄₂ T ₂₄₂ S ₂₄₂ W ₂₄₂		Q ₂₄₃ T ₂₄₃ S ₂₄₃ W ₂₄₃		Q ₂₄₄ T ₂₄₄ S ₂₄₄ W ₂₄₄		Q ₂₄₅ T ₂₄₅ S ₂₄₅ W ₂₄₅		Q ₂₄₆ T ₂₄₆ S ₂₄₆ W ₂₄₆		Q ₂₄₇ T ₂₄₇ S ₂₄₇ W ₂₄₇		Q ₂₄₈ T ₂₄₈ S ₂₄₈ W ₂₄₈		Q ₂₄₉ T ₂₄₉ S ₂₄₉ W ₂₄₉		Q ₂₅₀ T ₂₅₀ S ₂₅₀ W ₂₅₀		Q ₂₅₁ T ₂₅₁ S ₂₅₁ W ₂₅₁		Q ₂₅₂ T ₂₅₂ S ₂₅₂ W ₂₅₂		Q ₂₅₃ T ₂₅₃ S ₂₅₃ W ₂₅₃		Q ₂₅₄ T ₂₅₄ S ₂₅₄ W ₂₅₄		Q ₂₅₅ T ₂₅₅ S ₂₅₅ W ₂₅₅		Q ₂₅₆ T ₂₅₆ S ₂₅₆ W ₂₅₆		Q ₂₅₇ T ₂₅₇ S ₂₅₇ W ₂₅₇		Q ₂₅₈ T ₂₅₈ S ₂₅₈ W ₂₅₈		Q ₂₅₉ T ₂₅₉ S ₂₅₉ W ₂₅₉		Q ₂₆₀ T ₂₆₀ S ₂₆₀ W ₂₆₀		Q ₂₆₁ T ₂₆₁	
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[illegible]

MENT

6	AUG	2
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24	SUM
324	7143
319	7545
323	7438
310	7527
308	7056
315	7599
307	6955
301	7462
322	7533
317	7218
315	7631
285	7169
299	7282
316	7240
308	7519
301	7146
303	7262
291	7202
301	7156
295	7403
296	6837
302	7186
343	7633
313	7242
313	6398
358	7646
325	6796
308	6455
310	7269
315	7423
311	6845

SUM	224216
MEAN	301

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

200 mm
100 mm
0

STORM MAGNETOGRAMS

STORM MAGNETOGRAMS