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A Paleomagnetic Study of the Reunion Subchron in Pliocene Lacustrine Beds, Beaver Basin, Utah

by

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INTRODUCTION

The geological record contains evidence for past natural climatic variability, as well as for the consequences of past climatic change on the biotic and abiotic environments. The geological record of past climate change can be used to help develop models to predict possible future climatic systems and changes. However, understanding the timing of past climatic change and the consequent environmental responses, developing paleoenvironmental reconstructions, and developing predictive models depend upon precise correlation between climatic records and thus upon having a high quality, precisely calibrated time scale. For one type of time scale, the geomagnetic polarity time scale, age control on chron and subchron (event) boundaries should be as precise as possible, and all minor events should be known.

Much recent work has focused on refining the ages of chron and subchron boundaries in the late Cenozoic; some of this work which is relevent to the present study is listed in Table 1 and in the reference section of this paper. This study, part of the USGS Global Change Research Program, was conducted to refine the isotopic age calibration of normal polarity events comprising the Reunion Subchrons of the Matuyama Reversed Chron (Figure 1). Our objective was to identify Reunion Subchrons in surface exposures containing potentially datable volcanic ashes. The Beaver basin of south-central Utah was chosen for this study because it contains exposures of basin-fill sediments deposited in and around a perennial lake in late Pliocene and early(?) Pleistocene time. Six ash beds have been identified in the lacustrine rocks, and range in age from possibly 2.4 Ma or older, to younger than 2.0 Ma, spanning the estimated time interval occupied by the Reunion Subchrons, about 2.27 Ma to 2.11 Ma (Hilgen, 1991; McDougall and others, 1992).

REUNION SUBCHRON

The Reunion Subchron was named (Gromme' and Hay, 1971; defined by McDougall and Watkins, 1973) after the volcanic island of Reunion in the southwestern Indian Ocean, for lavas of normal polarity that are sandwiched between reversed polarity lavas. These normal polarity lavas and a few others that were recognized elsewhere in the world were originally assigned to the Olduvai Subchron. Oceanic magnetic profiles showed, however, that the Olduvai Subchron was preceeded by one or two short normal polarity events. Restriction of the Olduvai Subchron to less than 2.0 Ma, (at that time) roughly between 1.71 and 1.9 Ma (Gromme' and Hay, 1971), prompted the recognition that normal polarity lavas with ages in the 1.95 to 2.16 Ma range represent one or more older, distinct normal polarity events that then were termed the Reunion events.

Only one normal polarity event is preserved on Reunion Island (McDougall and Watkins, 1971), but elsewhere evidence for two closely spaced normal events or rarely, three Reunion events (Table 1), has been reported. For example, early studies of the magnetostratigraphy of the Shungura Formation, Turkana basin, Ethiopia (Shuey and others, 1974; Brown and others, 1978) reported two and possibly three Reunion events. Later, however, new K-Ar ages were obtained that indicated to Feibel and others (1989) that the lowest of these three normal polarity events, previously called "Reunion I", correlated with the older X Subchron of deep-sea sediment cores, estimated to be 2.37 Ma. The middle polarity event, previously "Reunion II", was considered by Feibel and others (1989) to be the lower Reunion event ("Reunion I"), and the highest, previously unnamed event was considered to represent the higher ("Reunion II") event. Recently, Rogers and others (1992) reported weak evidence for a third short Reunion event below the Olduvai Normal Subchron. In contrast, only one Reunion event was interpreted to be present in two cores in lake sediments from Utah just northwest of Beaver (Thompson and others, 1995), a situation also found in some marine sections (Hilgen, 1991).

Estimates of the ages of the boundaries of the Reunion subchrons have varied (Table 1). Revised estimates based on K-Ar dated fluvial rocks in the Shungura Formation (McDougall and others, 1992), on astronomical calibration of Mediterranean sapropels (Hilgen, 1991), and on $^{40}Ar/^{39}Ar$ plateau ages for the normal polarity lava flows on Reunion Island (Baksi and others, 1993) are 2 to 7 percent older than the previous age estimate of the boundaries (McDougall, 1977; Mankinen and Dalrymple, 1979; Feibel and others, 1989). Although the age estimates for the Reunion II boundaries in the Turkana basin agree closely with astronomically calculated ages, the ages of both the Reunion I and Reunion II Subchron boundaries in the Turkana basin depend on assumptions of uniform depositional rates between only two dated ashes of 1.88 Ma and 2.32 Ma (McDougall and others, 1992). The ages reported by Rogers and

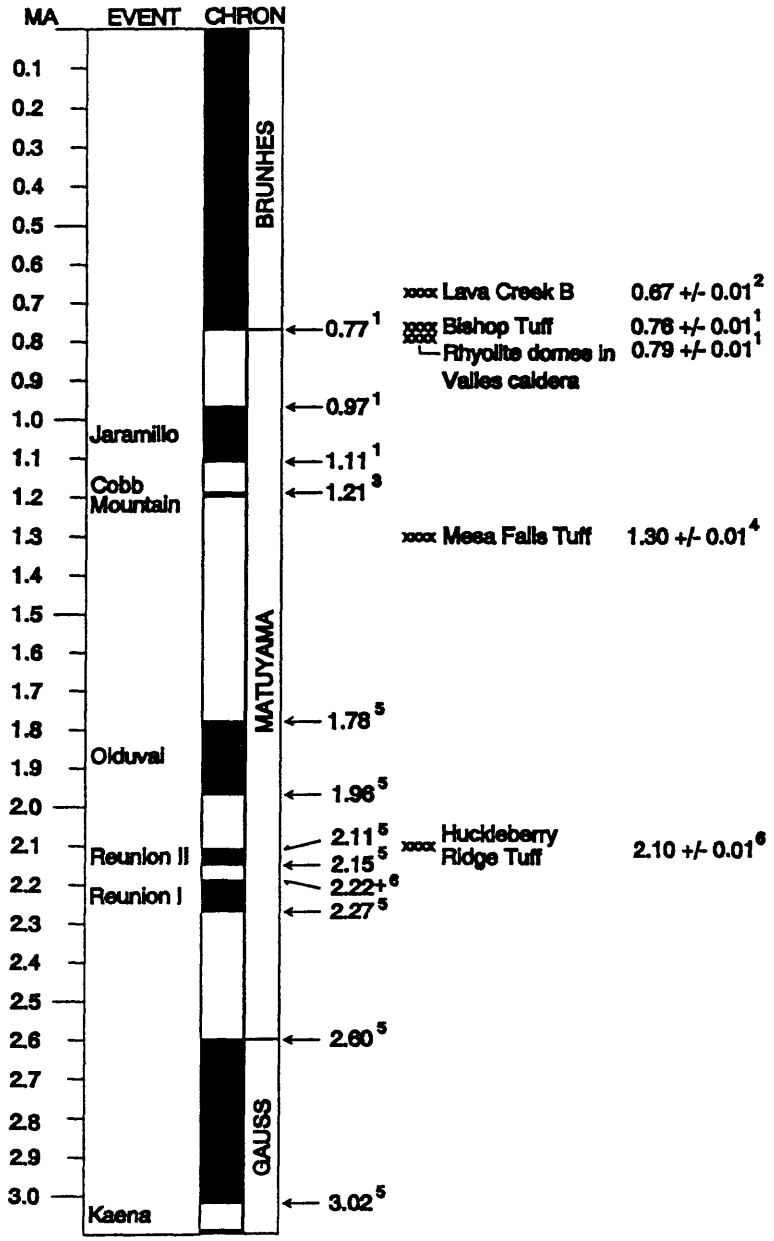


Figure 1. Geomagnetic polarity time scale for the last 3 Ma, constructed using recent dates for selected chron/subchron boundaries, Yellowstone Group tuffs, and important volcanic units used to calibrate parts of the time scale. Superscripts indicate sources for dates: 1, Izett and Obradovich, 1994; 2, Izett and others, 1992; 3, Obradovich and Izett, 1992; 4, Obradovich and Izett, 1991; 5, McDougall and others, 1992; 6, this report.

others (1992) for their highest and lowest Reunion events correspond to those of the two Reunion events discussed by Mankinen and Dalrymple (1979).

Table 1. Selected References on Identification of Reunion Subchrons. Errors assigned to ages not shown.

Reference	Single Event	Reunion I	Reunion II	III
McDougall & Watkins, 1973	2.02			
Shuey, Brown, Croes, 1974		present	present	possible
Brown, Shuey, Croes, 1978		present	?-2.0 (top)	possible
McDougall, 1979	2.02			
Mankinen & Dalrymple, 1979		2.14-2.12	2.04-2.01	
Fiebel, Brown, Mcdougall, 1989		2.12-2.10	2.04-2.00	
Hilgen, 1991	2.15-2.14			
McDougall et. al., 1992		2.27-2.19	2.15-2.11	
Rogers et. al., 1992		2.14-2.12	2.04-2.01	2.09-2.06
Obradovich and Izett, 1992			2.18-2.11	
Baksi et. al., 1993		not dated	2.15-2.12	

GEOLOGY

The Beaver basin is a structural and topographic basin in south-central Utah (Figure 2), locally containing as much as 1400-2000 meters of basin-fill sediments of late(?) Miocene to early(?) Pleistocene age (Machette, 1982; 1985). The upper part of this basin fill consists of intertongued lacustrine, fluvial, and alluvial fan sediments deposited in and around a perennial lake, informally called Lake Beaver (Machette, 1982), in late Pliocene and early(?) Pleistocene time.

Six ash beds are known from upper basin-fill rocks. They are, from the highest down, (1) the Last Chance Bench ash bed, possibly as young as 1.8 Ma, (2) the 2.10 Ma Huckleberry Ridge ash bed, about 40 meters below the Last Chance Bench ash bed, (3) a thin (1 cm) ash about 21.5 meters below the Huckleberry Ridge ash bed, (4) the 2.20 Ma Taylor Canyon-C ash bed, 23.5 meters below the Huckleberry Ridge ash, (5) the 2.22 Ma Indian Creek ash bed of Izett (1981), 2.9 meters below the Taylor Canyon-C ash, and (6) the Hogsback ash bed of Machette (1982), of undetermined distance below the Indian Creek ash bed. The Hogsback ash shows chemical and mineralogical similarities to 2.3 to 2.4 Ma rhyolites northeast of Beaver (Machette, 1982), but is undated in the Beaver area.

The area sampled for this study is informally known as the Triple Ash locality (Forester and Bradbury, 1981; Machette, 1982) because the Indian Creek, Taylor Canyon-C, and Huckleberry Ridge ash beds are exposed in succession (Figure 3). The rocks at the Triple Ash locality sampled for this paleomagnetic study were mapped by Machette (1983; Machette and others, 1984) as part of the lacustrine facies, QTsl, representing sediments deposited in Lake Beaver. At the sampling locality the lake sediments are overlain by gravels that mantle a pediment surface cut across the basin-fill deposits. Machette called these deposits the gravels of Last Chance Bench ; they were deposited after the closed Beaver basin was breached and Lake Beaver drained at around 0.75 Ma ago (Machette and others, 1984).

Lacustrine rocks at the Triple Ash locality strike from about N10E to about N40E, and dip from 11 to 15 degrees east. Four partial sections in NW1/4NW1/4NE1/4SW1/4, sec. 31, T. 28 S., R. 7 W., were sampled to construct a composite section at the Triple Ash locality (Figure 4). Rocks in the partial sections are described in Appendix 1. Bedrock between the four exposures is partially covered by colluvial gravel and vegetation; however, the stratigraphic relations between the sections were resolved by uncovering and tracing tephra and pea-gravel marker beds in the lower and middle parts of the composite section. A fault offsets the Huckleberry Ridge ash bed about 2 meters between two of the partial sections; this was the only fault found between the measured sections.

SAMPLING METHODS

The sampling levels were measured using a magnetic compass and tape. Sampling began at the

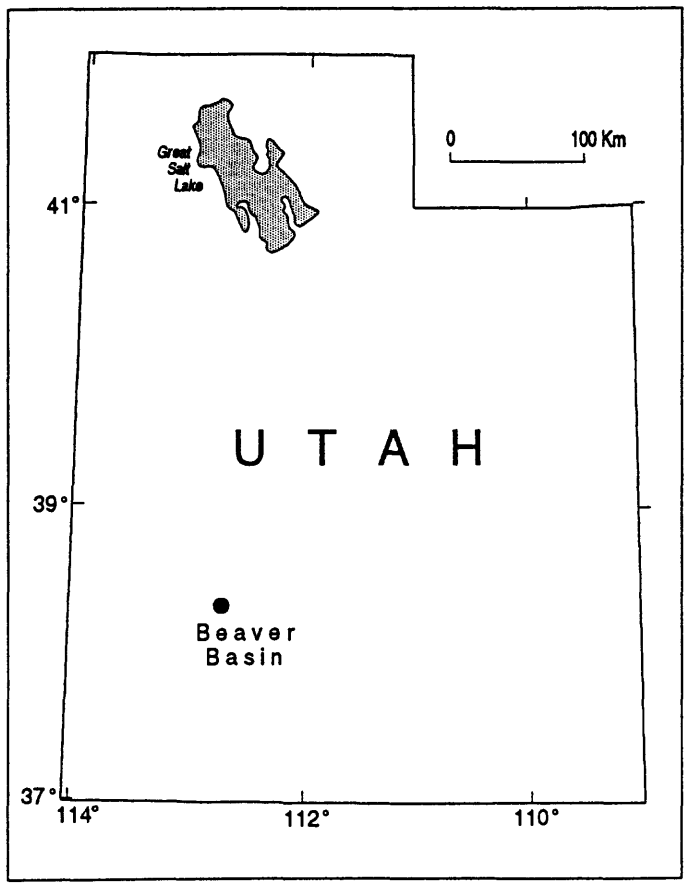


Figure 2. Map showing location of the Beaver Basin, Utah.

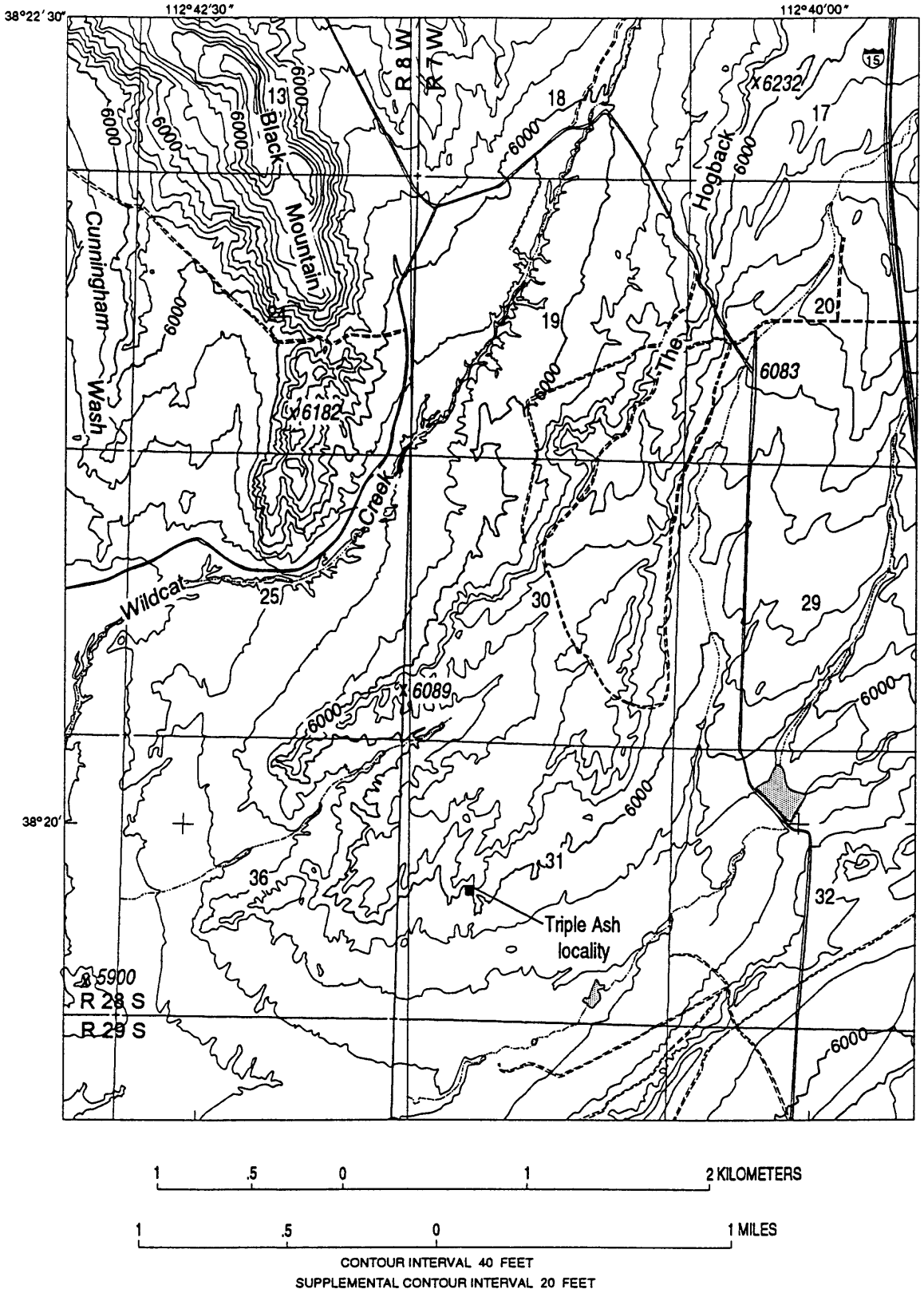


Figure 3. Topographic map showing location of Triple Ash locality, Beaver County, Utah. Base from Beaver 7.5 minute quadrangle, Utah, 1986 provisional edition.

lowest exposures, about 3.5 meters below the lowest (Indian Creek) ash bed exposed in this area, and continued upwards into the Huckleberry Ridge ash bed, spanning a total stratigraphic interval of 30.3 meters. Where possible, samples were collected from pits dug every meter; 2.3 meters was the greatest stratigraphic separation between levels. In a few cases, additional samples were collected between the major levels to provide additional data in parts of the section which, based on examination of initial results, were considered key or problematic. Sample levels are shown in figure 4.

To reach relatively unweathered bedrock, the sample pits were dug about 1 meter deep. At least five oriented samples, encased in either 3 cm^3 or 6 cm^3 hexahedral plastic containers, were collected at the major levels, fewer at intermediate levels. Samples were carved in relief on the outcrop and the sample holders were slipped over the still-attached samples. After measurement of a sample's orientation using a magnetic compass and clinometer, the sample was detached from the outcrop. A total of 197 samples were collected in this fashion. Collection data for these samples is given in table 2. In addition, 38 oriented blocks, hardened with sodium silicate ("water glass") but not encased in plastic containers, were collected from some levels for laboratory preparation. Brief descriptions of the rock types in each pit were recorded in a notebook. Claystone, often silty or sandy, was typically sampled; more rarely, interlaminated siltstone and claystone was sampled.

Samples of the three major ash beds at the Triple Ash locality, the Indian Creek, Taylor Canyon-C, and Huckleberry Ridge ash beds, were collected for isotopic dating by the $^{40}Ar/^{39}Ar$ laser fusion method. In addition, samples of the Taylor Canyon-C ash from the principal locality at the Cowan pumice mine near Benton Hot Springs, Calif., were collected for $^{40}Ar/^{39}Ar$ dating by J. D. Obradovich and G. A. Izett. Only the Indian Creek ash from Beaver and the Taylor Canyon-C ash from the principal locality in California proved datable. Pollen samples were collected from each pit, but these samples were barren because near-surface weathering destroyed the pollen grains (Bob Thompson, oral commun., 1995).

MAGNETIC MEASUREMENTS

Samples were progressively demagnetized using either alternating field (AF) or thermal demagnetization techniques. Remanent magnetization after each step using either technique was measured on a cryogenic magnetometer having a backround noise level less than $1x10^{-4}$ A/m (10^{-7} G) (Van Domelen and Rieck, 1992). During AF demagnetization, peak fields of 1, 2.5, 5, 7.5, 10, 15, 20, 25, 30, 35, 40, and 45 mT were typically employed; in some samples additional demagnetization steps, up to 90 mT , were used, and in later-collected samples some of the low-field steps were dropped. Thermal demagnetization included some or all of the following steps in degrees C: 100, 200, 300, 330, 360, 400, 450, 500, 540, 590, 630, and 680. Thermal demagnetization was discontinued if sample magnetizations were lowered to the noise level of the magnetometer. Results of the AF and thermal demagnetizations are given in Appendix 2.

In addition to the alternating field and thermal demagnetization studies, low-field magnetic susceptibility and isothermal remanent magnetization measurements were conducted. Magnetic susceptibility (MS), which principally reflects the concentration of any strongly magnetic minerals present (Thompson and Oldfield, 1986), was measured on a commercial instrument that produced a low (0.1 mT) peak field; for these experiments the instrument ran at 600 Hz. Two different diameter coils were used to accomodate the differently-sized plastic specimen holders. Isothermal remanent magnetizations (IRMs) were imparted to assess relative concentrations of high coercivity minerals such as hematite and goethite in a material, or the proportion of low coercivity minerals to high coercivity minerals (King and Channell, 1991). IRMs were imparted with a commercial impulse magnetizer to one specimen from each level utilizing forward inductions of 1.2 T and backfield inductions of 0.3 T. The remanence imparted at 1.2T, the near-maximum induction produced by our laboratory equipment, is denoted as the SIRM, for "saturation" isothermal remanent magnetization. From the forward and backfield IRM values, several other mineral magnetic parameters were calculated. The parameter HIRM ("hard" IRM) reflects the concentration of the high coercivity minerals hematite and goethite, and is derived by the following formula: $(IRM_{-0.3T} + SIRM)/2$. The S parameter, calculated as $-IRM_{-0.3T}/SIRM$, measures the proportion of low coercivity minerals to high coercivity minerals (King and Channell, 1991).

Figure 4. Measured sections at the Triple Ash locality, Beaver Basin, Utah. Vertical scale in meters; no horizontal scale. Relative horizontal positions of sections shown here approximate the offsets between the sections in the field.

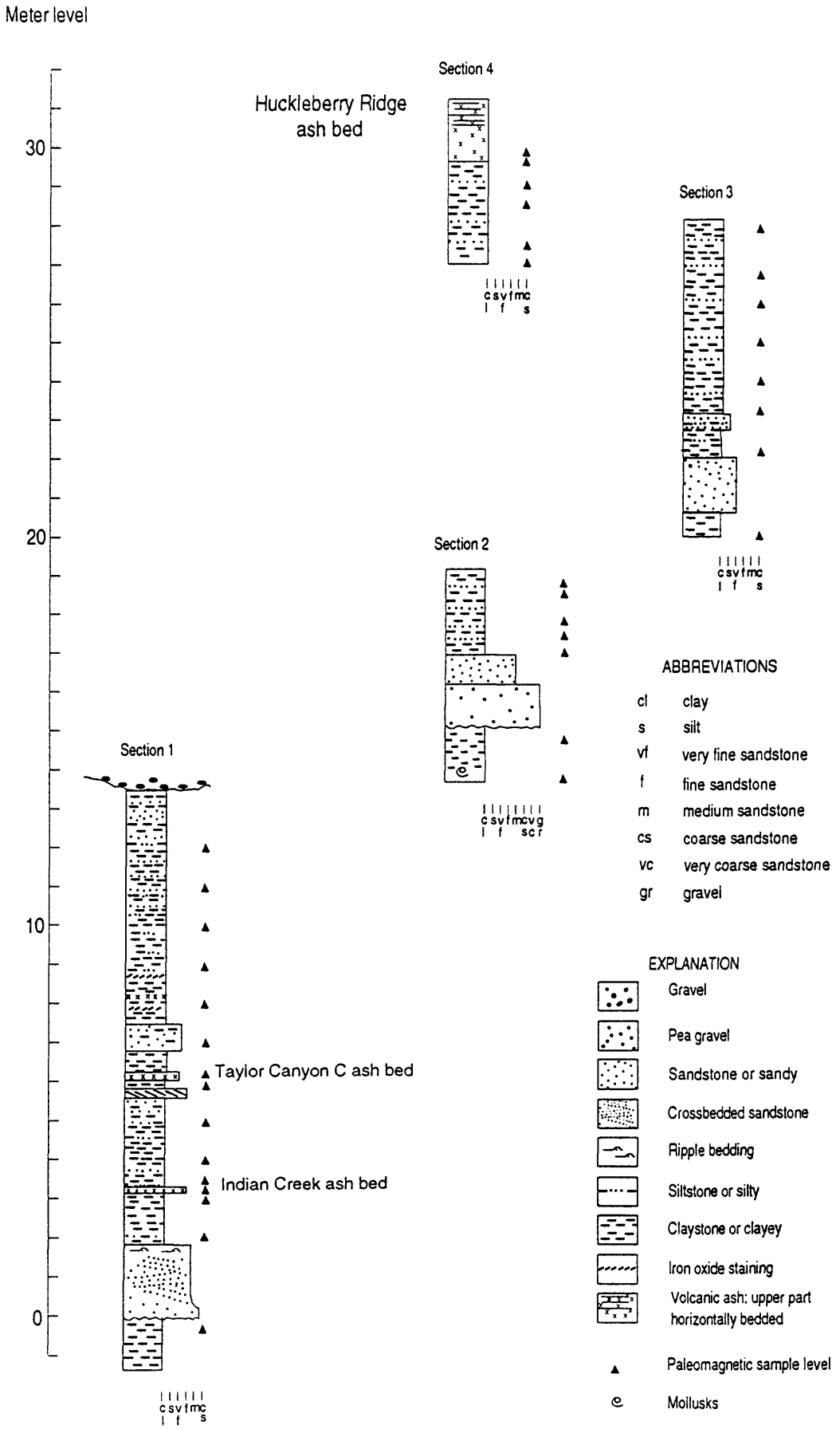

Meter level
30
20
10
0
Huckleberry Ridge ash bed
Section 4
Section 3
Section 2
Section 1
c s v f m c
l f s
c s v f m c v g
l f s c r
Taylor Canyon C ash bed
Indian Creek ash bed
ABBREVIATIONS
cl clay
s silt
vf very fine sandstone
f fine sandstone
m medium sandstone
cs coarse sandstone
vc very coarse sandstone
gr gravel
EXPLANATION
Gravel
Pea gravel
Sandstone or sandy
Crossbedded sandstone
Ripple bedding
Siltstone or silty
Claystone or clayey
Iron oxide staining
Volcanic ash: upper part horizontally bedded
Paleomagnetic sample level
Mollusks

Table 2. Paleomagnetic sample collection data from the Triple Ash locality in the Beaver Basin, Utah. Column headings are: No.–sample number; Ht.–height relative to base of first sandstone near the bottom of the section; Strike–local strike of beds; Dip–local dip of beds–dip direction is 90° clockwise from strike; Az.–azimuth of sample, determined as the direction of a line on the top face of the cube and pointing into the rock; Hade–hade of the top surface of the cube; Vol.–sample volume in cms (sometimes approximate) contained in the plastic collection cube.

No.	Ht.	Strike	Dip	Az.	Hade	Vol.	No.	Ht.	Strike	Dip	Az.	Hade	Vol.
1	-0.3	40	15	307	1	6	48	17.1	35	11	57	3	3
2	-0.3	40	15	50	9	3	49	17.1	35	11	40	5	2.9
3	-0.3	40	15	356	16	3	50	17.1	35	11	37	5	3
4	-0.3	40	15	82	20	6	51	17.1	35	11	50	17	3
5	-0.3	40	15	38	25	6	52	17.1	35	11	67	2	3
6	3	40	15	20	28	6	53	14.8	35	11	26	10	6
7	3	40	15	10	1	3	54	14.8	35	11	31	6	6
8	3	40	15	51	-6	6	55	14.8	35	11	38	3	5
9	3	40	15	100	6	6	56	14.8	35	11	49	4	6
10	3	40	15	52	6	3	57	14.8	35	11	22	9	5
11	3	40	15	31	12	3	59	17.95	35	11	35	24	3
12	2	40	15	43	19	6	60	17.95	35	11	17	0	3
13	2	40	15	83	2	2.9	61	17.95	35	11	23	13	3
14	2	40	15	85	3	3	62	17.95	35	11	36	2	5.3
15	2	40	15	65	11	6	63	17.95	35	11	43	-4	2.7
16	2	40	15	72	5	5.7	64	17.95	35	11	25	1	3
17	3.5	40	15	31	8	2.9	65	20.1	35	11	78	-2	6
18	3.5	40	15	55	6	4.8	66	20.1	35	11	59	0	2.9
19	4	40	15	61	6	3	67	20.1	35	11	77	-10	2.9
20	4	40	15	40	6	3	68	20.1	35	11	89	6	5.9
21	4	40	15	20	0	3	69	20.1	35	11	82	5	5.8
22	4	40	15	44	2	3	70	22.3	35	11	122	11	3
23	4	40	15	116	-2	3	71	22.3	35	11	147	12	3
24	4	40	15	120	3	3	72	22.3	35	11	140	19	3
26	4.84	40	15	79	5	6	73	22.3	35	11	120	11	3
27	4.84	40	15	104	3	6	74	22.3	35	11	120	10	3
28	4.84	40	15	64	15	6	75	23.3	35	11	97	10	3
29	4.84	40	15	50	2	6	76	23.3	35	11	55	7	3
30	4.84	40	15	98	3	3	77	23.3	35	11	84	9	3
31	7	40	15	43	35	3	78	23.3	35	11	110	14	3
32	7	40	15	35	8	3	79	23.3	35	11	91	14	3
33	7	40	15	60	10	3	80	24.1	35	11	127	5	3
34	7	40	15	47	2	3	81	24.1	35	11	140	10	2.9
35	7	40	15	39	13	3	82	24.1	35	11	81	15	3
36	6	40	15	30	-3	6	83	24.1	35	11	100	32	3
37	6	40	15	35	-4	2.9	84	24.1	35	11	61	8	2.9
38	6	40	15	15	0	5.8	85	25.1	35	11	144	29	3
39	6	40	15	48	-1	5.8	86	25.1	35	11	138	4	3
40	6	40	15	355	-3	3	87	25.1	35	11	154	14	3
41	6.2	40	15	61	6	5.8	88	25.1	35	11	138	14	3
42	7.95	40	15	39	7	2.8	89	25.1	35	11	86	6	2.8
43	7.95	40	15	28	4	3	90	26.1	35	11	102	0	3
44	7.95	40	15	23	7	3	91	26.1	35	11	99	8	2.8
45	7.95	40	15	72	2	2.8	92	26.1	35	11	116	6	3
46	7.95	40	15	21	1	3	93	26.1	35	11	101	21	3
47	17.1	35	11	53	11	2.8	94	26.1	35	11	77	14	2.9

Table 2--continued

No.	Ht.	Strike	Dip	Az.	Hade	Vol.
95	26.7	35	11	117	0	2.9
96	26.7	35	11	68	9	2.9
97	26.7	35	11	122	-11	2.9
98	26.7	35	11	57	6	2.9
99	26.7	35	11	86	13	2.8
100	26.7	35	11	126	2	3
101	18.9	35	11	25	8	2.8
102	18.9	35	11	60	22	2.8
103	18.9	35	11	30	6	2.8
104	18.9	35	11	55	19	3
105	18.9	35	11	32	27	3
106	18.9	35	11	27	28	3
107	28	35	11	140	20	2.8
108	28	35	11	156	16	2.8
109	28	35	11	123	16	3
110	28	35	11	157	50	3
111	28	35	11	116	17	2.8
112	27.1	35	12	21	4	3
113	27.1	35	12	12	0	3
114	27.1	35	12	17	4	3
115	27.1	35	12	27	3	3
116	27.1	35	12	2	3	3
117	28.6	35	12	54	7	2.9
118	28.6	35	12	65	7	2.9
119	28.6	35	12	55	2	2.9
120	28.6	35	12	22	7	3
121	28.6	35	12	5	23	2.8
122	29.7	35	12	43	30	6
123	29.7	35	12	32	39	6
124	29.7	35	12	57	44	3
125	29.3	35	12	25	4	3
126	3.2	40	15	23	47	3
127	3.2	40	15	40	30	2.8
128	3.2	40	15	14	-14	3
129	6.1	40	15	73	9	3
130	6.1	40	15	75	20	3
131	6.1	40	15	88	10	3
132	6.1	40	15	80	12	3
133	6.1	40	15	65	29	3
134	29.8	35	12	27.5	3	3
135	29.8	35	12	24	93	3
136	30.3	35	12	30	0	2.9
137	29.8	35	12	15	13	2.9
138	29.8	35	12	23	12	3
139	29.8	35	12	16	16	3
140	29.8	35	12	0	0	3
141	29.8	35	12	0	0	7.2
142	29.8	35	12	22	94	2.8
143	29.8	35	12	315	5	2.6
144	29.8	35	12	35	23	3
145	6.1	40	15	37	7	2.8
146	6.1	40	15	46	10	2.9
147	6.1	40	15	42	2	3
148	3.2	40	15	358	99	2.7
149	3.2	40	15	347	103	2.7
150	6.1	40	15	52	9	2.8
151	3.2	40	15	356	96	2.7
152	6.1	40	15	55	3	5.4
153	6.1	40	15	40	12	4.8
154	3.2	40	15	57	7	2.9
155	6.1	40	15	32	13	2.9
156	6.1	40	15	28	31	2.5
157	6.1	40	15	30	39	2.8
158	9	40	15	25	15	2.9
159	9	40	15	53	3	3
160	9	40	15	43	95	2.9
162	9	40	15	43	25	2.9
163	10	40	15	60	16	6
164	10	40	15	43	8	3
166	10	40	15	70	15	3
167	10	40	15	71	23	2.9
168	10	40	15	78	18	3
169	9	40	15	33	15	2.9
170	10.9	40	15	60	21	5.9
171	10.9	40	15	66	15	5.9
172	10.9	40	15	50	7	5.5
173	10.9	40	15	69	17	3
174	10.9	40	15	70	4	3
175	10.9	40	15	64	11	3
176	10.9	40	15	73	9	5.8
177	12	40	15	38	30	5.8
178	12	40	15	42	26	3
180	12	40	15	29	39	6
181	12	40	15	42	35	3
182	12	40	15	46	19	5.9
183	12	40	15	40	21	3
184	13.88	35	11	65	10	2.9
185	13.88	35	11	81	37	2.9
186	13.88	35	11	54	29	3
187	13.88	35	11	47	56	3
188	13.88	35	11	55	45	2.9
189	27.55	35	12	14	30	5.4
190	27.55	35	12	30	15	6
200	17.4	35	11	52	7	2.8
201	17.6	35	11	51	27	2.8
202	17.6	35	11	78	39	2.4
203	17.6	35	11	78	37	3
204	17.6	35	11	75	37	3
205	18.55	35	11	356	6	3
206	18.55	35	11	54	9	3
207	18.55	35	11	347	92	2.8
208	29.1	35	12	73	6	3
209	29.1	35	12	47	9	5.8
210	29.1	35	12	62	26	3

To aid in the identification of the ferromagnetic minerals present in the Beaver samples, Curie temperature determinations were made on magnetic separates from eight different stratigraphic levels. Magnetic separates were obtained by disaggregating samples in water and collecting magnetic grains adjacent to a strong magnet past which the slurry was circulated. The magnetization of each magnetic separate, measured under the influence of an external 0.3T induction, was recorded as the separates were heated from 30°C to 640°C at a rate of 20°C/minute and then cooled in an air environment.

DEMAGNETIZATION BEHAVIOR

The samples responded in different manners to demagnetization. Results of progressive AF and thermal demagnetization are illustrated in equal-area projections and orthogonal vector diagrams for each sample in Appendix 2. Samples principally displayed one of two demagnetization behaviors. At demagnetization levels above about 15 mT, magnetization directions of some samples changed little and their trajectories are linear on vector diagrams and directed toward the origin of the diagrams (e.g., sample 49, Appendix 2). These samples are mostly of normal polarity and come from the middle interval (13 to 19.5 m) of the stratigraphic section. Apparent stable reverse polarity magnetization, however, was isolated in several samples of sediment from the 2 m level and from the Taylor Canyon C ash from the 6.1 m level.

A second demagnetization behavior is common in samples from the basal and upper parts of the section. In these samples, directions of magnetization commonly change from north declinations and steep positive inclinations to southeast to south declinations and shallow positive or negative inclinations during progressive demagnetization at levels above 15 mT (e.g., sample 92, Appendix 2). Trajectories of demagnetization paths on vector diagrams may be curved, and they typically do not trend toward the origin of diagrams. This behavior suggests that the remanent magnetization of these samples is a mixture of normal and reverse components in which the south-directed reverse component has a slightly higher range of coercivities than the north-directed normal component. The stratigraphic intervals that contain the southerly component are best shown by the southeast to southerly declinations of sample magnetization at intermediate demagnetization levels (Figure 5). Inclinations show a less pronounced stratigraphic zonation because the AF demagnetization does not fully separate the negative and positive inclination components.

Magnetization removed over the 20 mT to 40 mT demagnetization interval from samples throughout the stratigraphic section (Figures 6a and 6b) mostly has northeast declination and moderate positive inclination. The apparent difference in demagnetization behavior between samples having apparent stable normal and overprinted reverse magnetizations is interpreted to reflect the superposition of a normal overprint component on zones of normal and reverse polarity, respectively. These magnetizations are apparently carried by a magnetic phase having higher coercivity than that for the normal overprint components. This interpretation suggests an apparent polarity zonation of Figure 7 in which a normal zone from approximately 13 m to 19.5 m lies between reverse polarity zones from -0.3 m to 13 m and from 19.5 m to about 26.5 m. Declinations from about 26.5 m and higher in the uppermost part of the section are highly variable and no polarity can be confidently inferred. The question of whether this apparent polarity zonation is suitable for magnetostratigraphy is considered further after the discussion of rock magnetic properties.

Remagnetization circles (Halls, 1976) were fit to demagnetization paths of 47 samples principally from lower and upper parts of the section that showed wide range of directions to better define the direction of one of the components having overlapping coercivities (Figure 8). These circles converge on a bipolar line with northeast-down and southwest- up orientation. The intersection of remagnetization circles gives the direction of the least dispersed of the two mixed components (Halls, 1976). For the Beaver Basin rocks it is not fully certain, however, if the intersection of remagnetization circles corresponds to the reverse or overprinting normal component. The latter interpretation is favored. It is notable that in geographic and tilt-corrected coordinates the declination of the intersection lies 16° and 46° degrees clockwise, respectively, from an axial dipole declination. This declination discordance may record clockwise vertical-axis rotation of the rocks in a dextral shear environment inasmuch as Machette (1982) described several right lateral offsets of the southern part of a central horst within the Beaver Basin that commence adjacent to the sample locality.

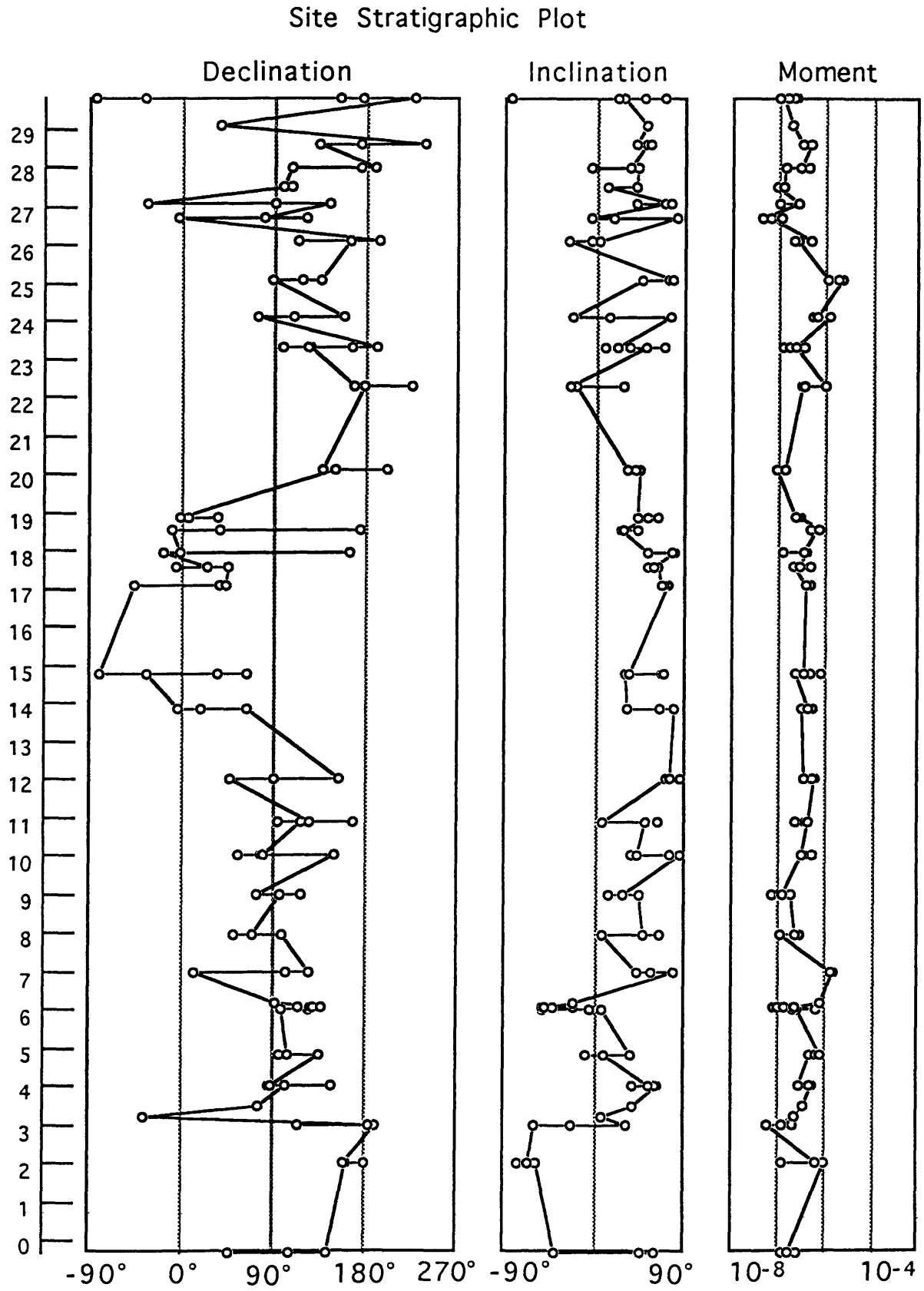


Figure 5. Stratigraphic plots of tilt-corrected declination, inclination, and moment of remanent magnetization remaining after alternating-field demagnetization to 30 mT. Stratigraphic height is in meters. Remanence moments are in A/m.

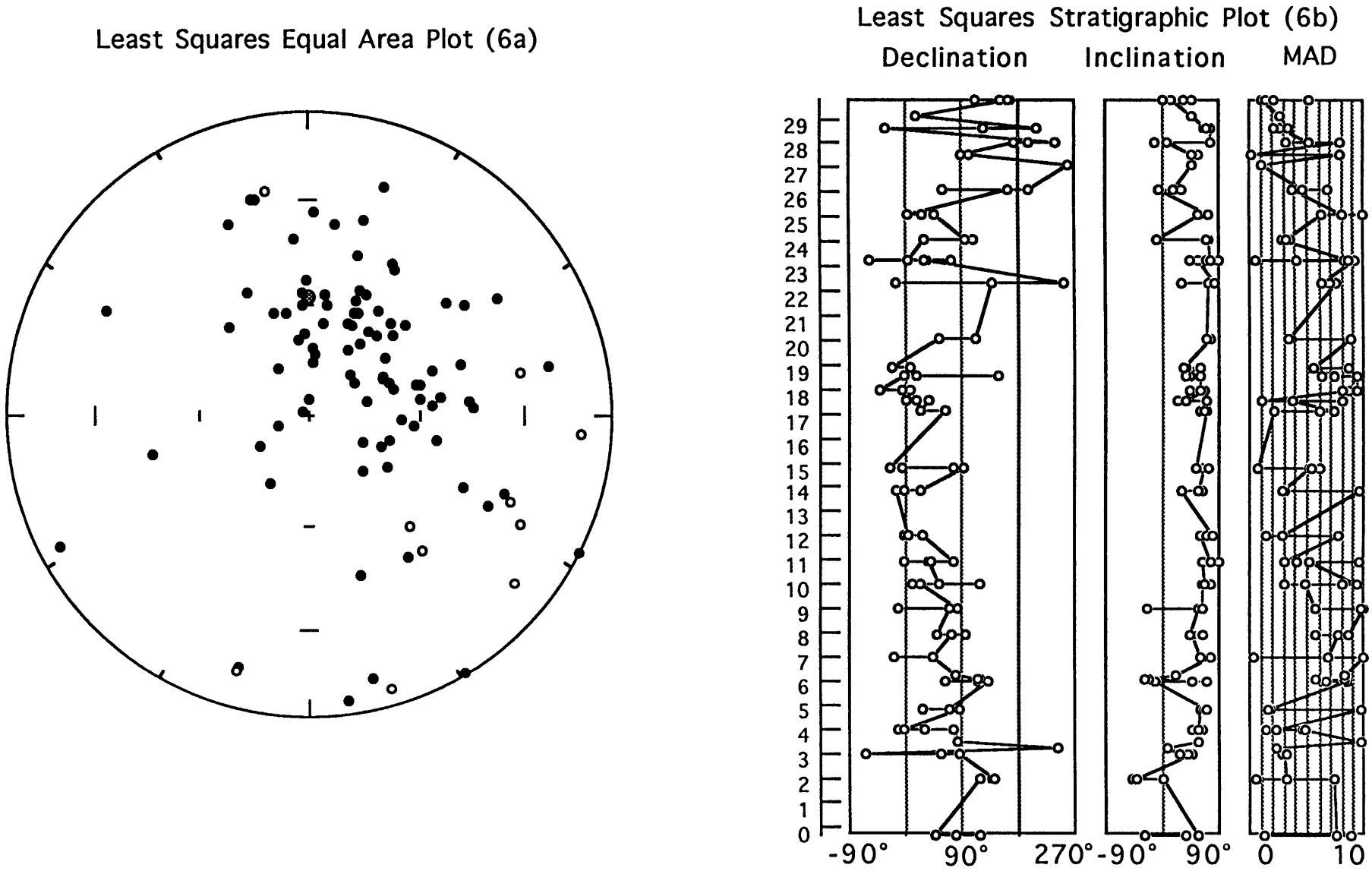


Figure 6. Equal-area plot (6a) and stratigraphic plots (6b) in geographic coordinates (uncorrected for tilt) of remanent magnetization vectors removed by alternating-field demagnetization between 20 mT and 40 mT. For equal-area plot, open and solid circles are projections on the upper and and lower hemispheres, respectively, and the shaded open circle is the modern dipole position for the Triple Ash locality. MAD is maximum angular deviation (in degrees) of least-squares fit.

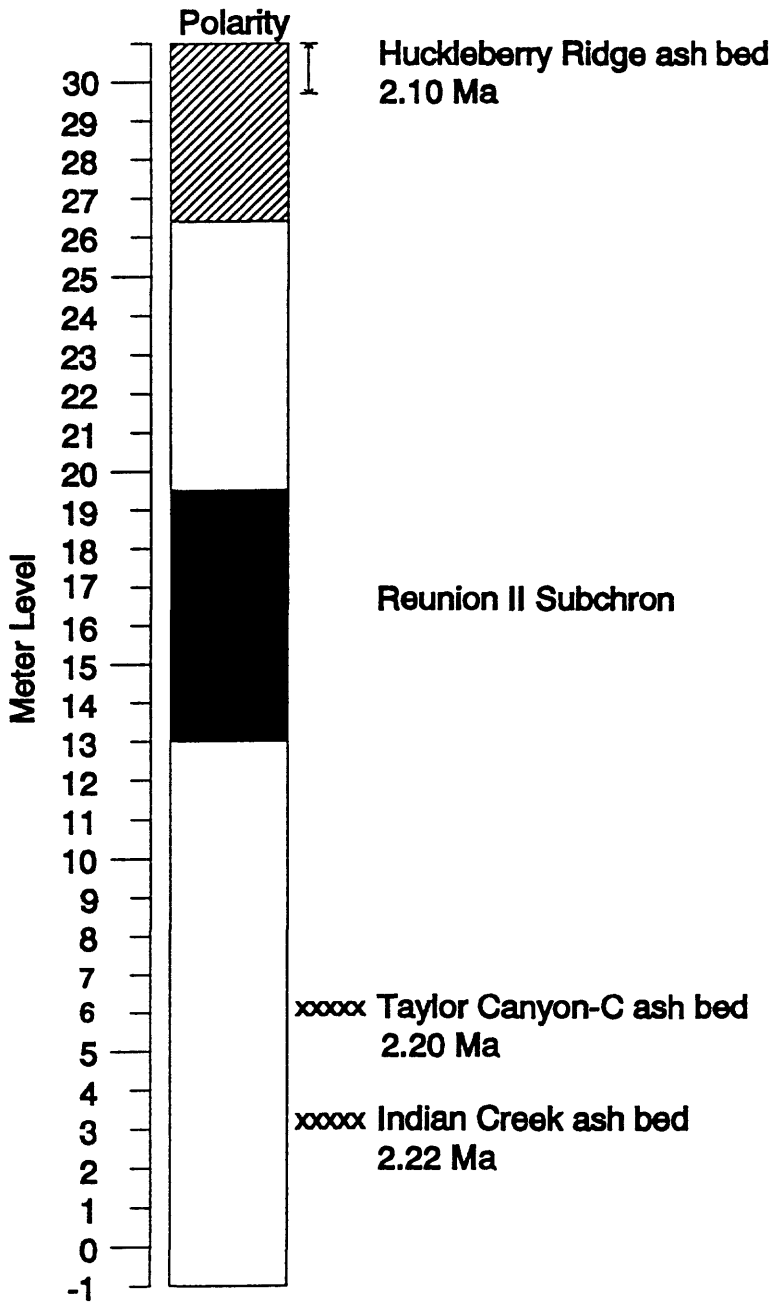


Figure 7. Interpreted paleomagnetic stratigraphy at the Triple Ash locality, Beaver basin, Utah. Black, normal polarity; white, reversed polarity; diagonals, indeterminate or intermediate polarity.

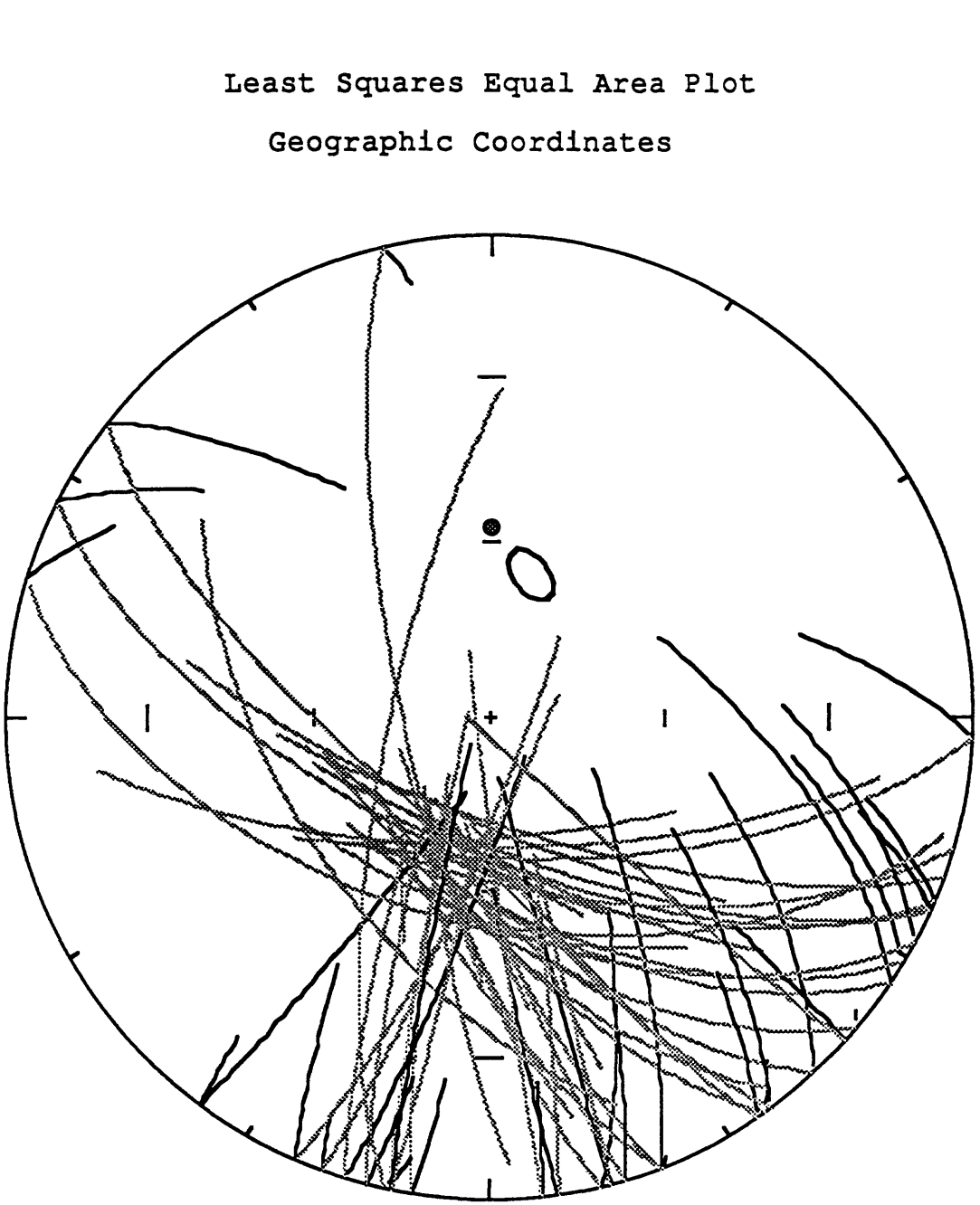


Figure 8. Equal-area plot of arcs of remagnetization circles fitted to demagnetization paths of 47 samples, principally from lower and upper parts of the stratigraphic section. Black and gray segments of arc are projections on lower and upper hemispheres, respectively, and the shaded open circle is the modern dipole position for the Triple Ash locality. Ellipse gives ninety-five percent confidence interval about best intersection of the planes. In geographic coordinates, the best intersection line has declination = 16.1° and inclination = 65.3°. In tilt-corrected coordinates (not shown), the best intersection line has declination = 45.6° and inclination = 67.2°.

In contrast to the demagnetization behavior of the other samples, samples from the Huckleberry Ridge ash bed carry low moment magnetizations that are little affected by AF demagnetization, suggesting they are carried by hematite (samples 135-144, Appendix 2). The directions from individual samples are randomly oriented when considered as a horizon.

Thermal demagnetization of 30 samples was conducted in an attempt to better separate magnetization components. This proved unsuccessful. Most remanence unblocked by about 450° C (e.g., sample 28, Appendix 2), but the components removed had highly dispersed directions (Figures 9a and 9b). At demagnetization steps above 450° C, remanence was weak and varied erratically in direction and moment (sample 42, Appendix 2). Magnetic susceptibility was measured after heating steps above 400° C and was compared to preheating values to check for growth of new magnetic minerals. The magnetic susceptibilities after thermal demagnetization typically remained the same or decreased from preheating values. This precludes an explanation of the erratic demagnetization behavior above 450° C by laboratory production of magnetite from sulfide minerals.

MAGNETIC MINERALOGY AND ROCK MAGNETIC PROPERTIES

Several observations and rock magnetic tests were obtained for the samples in an attempt to better understand the magnetic mineralogy and to assess whether it is primary or secondary (e.g., diagenetic).

Petrographic observation of magnetic separates

Magnetic separates were obtained from eight disaggregated samples. Polished grain mounts for each of the magnetic separates were examined under reflected light at 400X magnification to identify their mineral constituents.

Ilmenohematite is the predominant magnetic phase in all the magnetic separates. It occurs principally as individual, equant or lathlike grains, 1 to 10 μ in maximum dimension. The equant grains are typically optically homogenous and darker in reflected-light color than lathlike grains. Many lathlike grains are partly replaced by pseudobrookite or hematite.

Magnetite was observed much more rarely than ilmenohematite in the magnetic separates. Where preserved, magnetite exclusively occurs within composite grains as blocks between a trellis pattern of hematite and TiO_2 (rutile or anatase) laths arranged along original [111] crystallographic planes. This association reflects high temperature oxidation-exsolution of original titanomagnetite grains in igneous source rocks (Haggerty, 1976). Magnetite was probably much more common in the sediments at the time of deposition, however, because all of the magnetic separates contain abundant former titanomagnetite grains consisting of only the hollow trellis of hematite-TiO_2 laths. Magnetite that was formerly present in these grains must have been nearly completely dissolved and, because it is unlikely that these delicate grains would have survived sedimentary transport (Reynolds and others, 1986), the dissolution probably occurred as a diagenetic process in the Beaver Basin. Magnetite dissolution in other sedimentary rocks has been attributed to humic acids generated from organic-rich lacustrine rocks (Reynolds and others, 1986).

Volcanic rock fragments that contain minute iron oxide inclusions are a large proportion of grains within the magnetic separates from the Beaver Basin. The individual iron oxide inclusions within the fragments, however, are too small to be optically identified with confidence. Sparse oxidized biotite grains that typically contain abundant hematite inclusions along cleavage planes are also present in the separates.

Magnetic susceptibility.

Magnetic susceptibility at room temperature was measured for all samples. Values range (Table 3) over two orders of magnitude, from 3.74E-6 to 6.98E-4 (SI volume units), and they cluster into three groups (Figures 10 and 11). Most samples have magnetic susceptibilities ranging over a restricted interval from 1.22E-4 to 2.53E-4. This group includes lithologies from claystone to sandy claystone that contain scarce thin sand laminae. A group having higher magnetic susceptibilities, from 3.32E-4 to 6.98E-4, consists mostly of sandy claystone, and interlaminated silty claystone and very fine grained sandstone. These correlations suggest that high magnetic susceptibilities are linked to coarser silty and

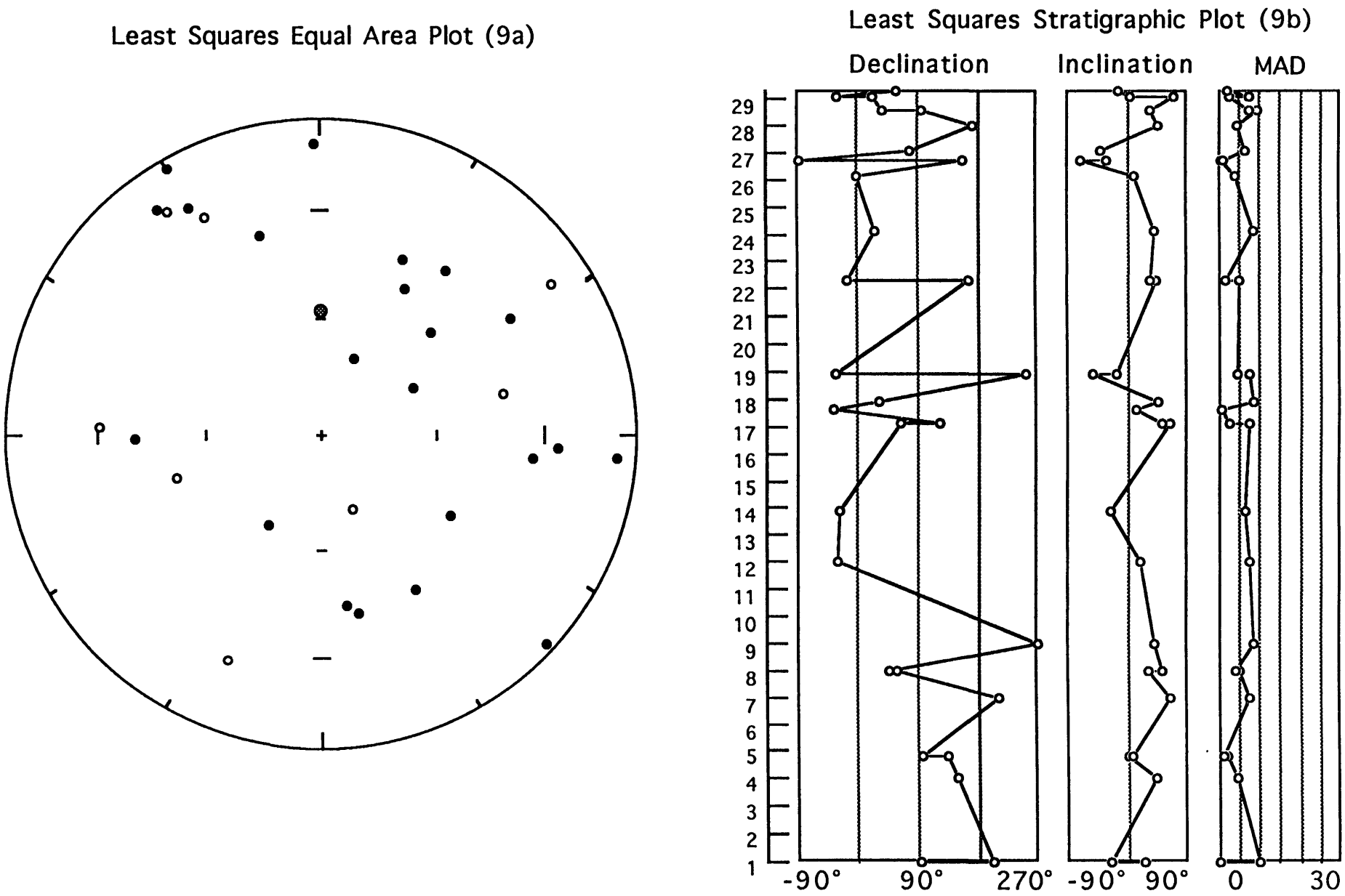


Figure 9. Equal-area plot (9a) and stratigraphic plots (9b) in geographic coordinates (uncorrected for tilt) of remanent magnetization vectors removed by thermal demagnetization between 300° and 400° C. For equal-area plot, open and solid circles are projections on the upper and lower hemispheres, respectively, and the shaded open circle is the modern dipole position for the Triple Ash locality. MAD is maximum angular deviation of least-squares fit.

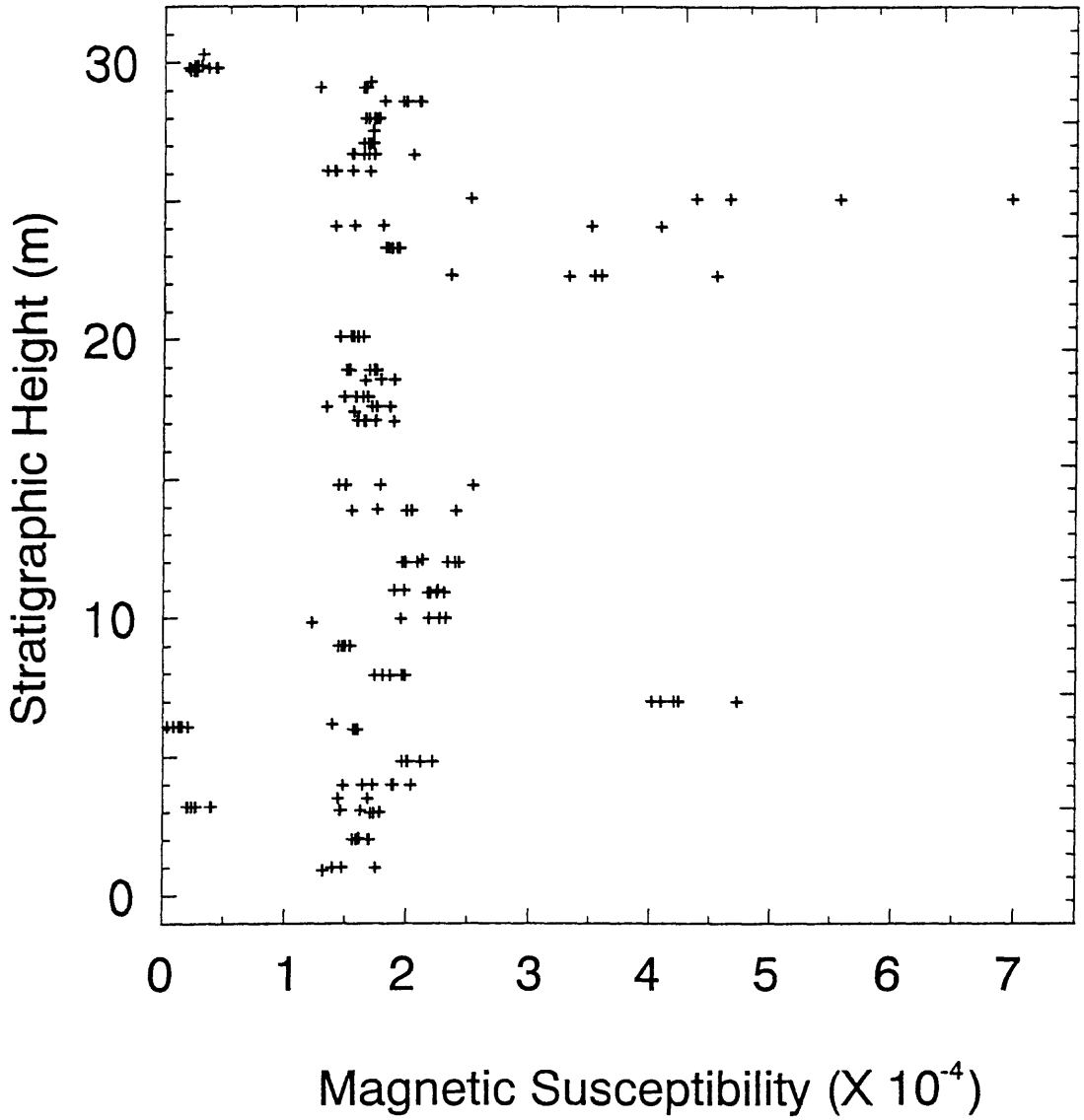


Figure 10. Plot of room temperature magnetic susceptibility (SI volume) versus stratigraphic height for all samples from Triple Ash locality.

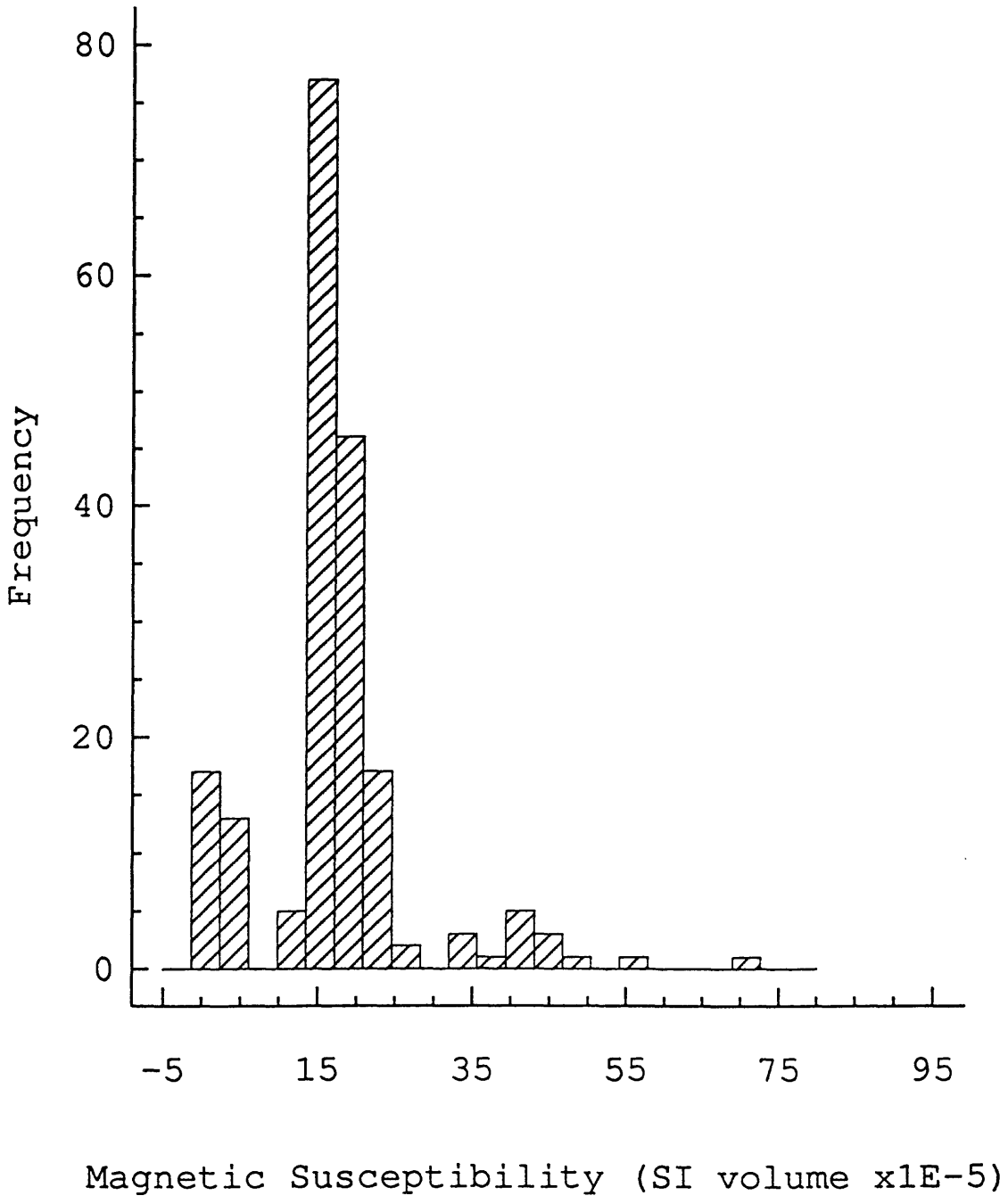


Figure 11. Histogram of magnetic susceptibility for all samples from Triple Ash locality.

Table 3. Low field magnetic susceptibility data from the Triple Ash locality, Beaver basin, Utah. The colume labelled "height" refers to stratigraphic height above base of section. The colume labelled "volume" refers to the volume, in cm^3, of the sample cube.

sample	height	volume	SI vol	sample	height	volume	SI vol
1	-0.3	6	1.470E-04	48	17.1	3	1.642E-04
2	-0.3	3	1.318E-04	49	17.1	2.9	1.650E-04
3	-0.3	3	1.394E-04	50	17.1	3	1.735E-04
4	-0.3	6	1.745E-04	51	17.1	3	1.884E-04
5	-0.3	6	1.396E-04	52	17.1	3	1.587E-04
6	2.97	6	1.732E-04	53	14.8	6	1.495E-04
7	3.06	3	1.456E-04	54	14.8	6	1.436E-04
8	3.06	6	1.622E-04	55	14.8	5	1.776E-04
9	3.06	6	1.463E-04	56	14.8	6	1.490E-04
10	3	3	1.778E-04	57	14.8	5	2.535E-04
11	2.97	3	1.704E-04	59	17.95	3	1.482E-04
12	2	6	1.696E-04	60	17.95	3	1.572E-04
13	2	2.9	1.558E-04	61	17.95	3	1.632E-04
14	2.05	3	1.608E-04	62	17.95	5.3	1.577E-04
15	2	6	1.590E-04	63	17.95	2.7	1.673E-04
16	2	5.7	1.685E-04	64	17.95	3	1.631E-04
17	3.5	2.9	1.439E-04	65	20.1	6	1.591E-04
18	3.5	4.75	1.683E-04	66	20.1	2.9	1.635E-04
19	4	3	1.890E-04	67	20.1	2.9	1.533E-04
20	4	3	1.482E-04	68	20.1	5.9	1.444E-04
21	4	3	1.641E-04	69	20.1	5.8	1.552E-04
22	4	3	1.877E-04	70	22.3	3	3.586E-04
23	4	3	1.719E-04	71	22.3	3	4.545E-04
24	4	3	2.032E-04	72	22.3	3	3.529E-04
26	4.84	6	1.998E-04	73	22.3	3	2.347E-04
27	4.84	6	2.007E-04	74	22.3	3	3.319E-04
28	4.84	6	1.959E-04	75	23.3	3	1.832E-04
29	4.84	6	2.212E-04	76	23.3	3	1.921E-04
30	4.84	3	2.110E-04	77	23.3	3	1.905E-04
31	7	3	4.089E-04	78	23.3	3	1.812E-04
32	7	3	4.720E-04	79	23.3	3	1.862E-04
33	7	3	4.200E-04	80	24.1	3	1.558E-04
34	7	3	4.240E-04	81	24.1	2.9	1.404E-04
35	7	3	4.014E-04	82	24.1	3	1.791E-04
36	6	6	1.596E-04	83	24.1	3	3.501E-04
37	6	2.9	1.563E-04	84	24.1	2.9	4.080E-04
38	6	5.8	1.577E-04	85	25.1	3	4.374E-04
39	6	5.8	1.575E-04	86	25.1	2.95	5.571E-04
40	6	3	1.567E-04	87	25.1	2.95	4.655E-04
41	6.2	5.85	1.394E-04	88	25.1	3	6.976E-04
42	7.95	2.8	1.954E-04	89	25.1	2.75	2.510E-04
43	7.95	3	1.734E-04	90	26.1	3	1.399E-04
44	7.95	3	1.801E-04	91	26.1	2.8	1.539E-04
45	7.95	2.8	1.859E-04	92	26.1	2.95	1.683E-04
46	7.95	3	1.980E-04	93	26.1	3	1.333E-04
47	17.1	2.75	1.646E-04	94	26.1	2.9	1.404E-04

Table 3—continued.

sample	height	volume	SI vol	sample	height	volume	SI vol
95	26.7	2.9	1.717E-04	149	3.2	2.74	3.982E-05
96	26.7	2.9	1.533E-04	150	6.1	2.83	1.360E-05
97	26.7	2.9	1.542E-04	151	3.2	2.7	2.028E-05
98	26.7	2.9	2.032E-04	152	6.1	5.4	1.477E-05
99	26.7	2.75	1.670E-04	153	6.1	4.8	1.571E-05
100	26.7	3	1.630E-04	154	3.2	2.9	2.709E-05
101	18.9	2.75	1.740E-04	155	6.1	2.9	2.048E-05
102	18.9	2.8	1.685E-04	156	6.1	2.5	1.484E-05
103	18.9	2.75	1.724E-04	157	6.1	2.8	1.302E-05
104	18.9	2.95	1.523E-04	158	9	2.88	1.531E-04
105	18.9	3	1.510E-04	159	9	2.95	1.440E-04
106	18.9	3	1.498E-04	160	9	2.88	1.534E-04
107	28	2.75	1.753E-04	162	9	2.9	1.472E-04
108	28	2.75	1.645E-04	163	10	5.95	2.313E-04
109	28	3	1.671E-04	164	10	2.95	2.261E-04
110	28	3	1.713E-04	166	10	2.98	1.952E-04
111	28	2.8	1.732E-04	167	9.85	2.9	1.223E-04
112	27.1	3	1.666E-04	168	10	2.96	2.175E-04
113	27.1	3	1.664E-04	169	9	2.94	1.492E-04
114	27.1	3	1.708E-04	170	10.9	5.9	2.168E-04
115	27.1	3	1.629E-04	171	10.9	5.95	2.302E-04
116	27.1	3	1.680E-04	172	10.9	5.5	2.188E-04
117	28.6	2.9	1.798E-04	173	11	2.97	1.894E-04
118	28.6	2.9	1.979E-04	174	11	2.97	1.975E-04
119	28.6	2.9	1.952E-04	175	10.9	3	2.243E-04
120	28.6	3	2.080E-04	176	11	5.75	2.248E-04
121	28.6	2.85	2.096E-04	177	12	5.8	2.081E-04
122	29.7	6	2.070E-05	178	12	3	2.390E-04
123	29.7	6	2.472E-05	179	12	5.9	2.329E-04
124	29.7	3	2.604E-05	180	12	6	1.955E-04
124	29.7	3	2.374E-05	181	12	2.97	1.982E-04
125	29.3	2.95	1.684E-04	182	12.1	5.9	2.124E-04
126	3.2	3	1.980E-05	183	12	2.97	2.420E-04
127	3.2	2.8	2.350E-05	184	13.88	2.88	2.394E-04
128	3.2	3	3.896E-05	185	13.88	2.94	2.031E-04
134	29.8	3	1.960E-05	186	13.88	2.95	1.988E-04
135	29.8	3	2.076E-05	187	13.92	3	1.750E-04
136	30.3	2.94	3.133E-05	188	13.88	2.94	1.544E-04
137	29.9	2.94	2.650E-05	189	27.55	5.4	1.701E-04
138	29.9	3	2.712E-05	190	27.55	6	1.710E-04
139	29.8	3	4.303E-05	200	17.4	2.85	1.558E-04
140	29.9	3	2.440E-05	201	17.6	2.85	1.705E-04
142	29.8	2.8	4.188E-05	202	17.6	2.4	1.851E-04
143	29.8	2.61	3.585E-05	203	17.6	3	1.743E-04
144	29.9	2.98	3.006E-05	204	17.6	3	1.337E-04
145	6.1	2.75	3.741E-06	205	18.55	3	1.647E-04
146	6.1	2.94	8.828E-06	206	18.55	3	1.885E-04
147	6.1	3	8.686E-06	207	18.55	2.83	1.774E-04
148	3.2	2.7	2.051E-05	208	29.1	2.98	1.626E-04

Table 3--continued.

sample	height	volume	SI vol	sample	height	volume	SI vol
209	29.1	5.8	1.649E-04	210	29.1	2.97	1.270E-04

sandy grain size. Sandy claystones from level 16 (24.1 M above the base), however, show a mixture of moderate to high magnetic susceptibilities. Samples of the Indian Creek, Taylor Canyon C and Huckleberry Ridge ashes form a third group that has low magnetic susceptibilities, from 4.30E-5 to 3.74E-6.

Temperature dependence of magnetic susceptibility

The temperature dependence of magnetic susceptibility (Figure 12) was measured for two of the magnetic separates and four bulk sediment samples. Both magnetic separates show a prominent loss of magnetic susceptibility between 500°-600° C that is indicative of magnetite. Heating curves of both separates show less prominent losses of magnetic susceptibility by about 300° C that probably reflect contributions from ferrimagnetic ilmenohematite. The lack of a similar low-temperature magnetic susceptibility signature upon cooling may reflect exsolution of this ferrimagnetic ilmenohematite to nearly pure ilmenite and hematite at high experimental temperatures to 700° C. Additionally, the sample from the 26.3 m level displays a magnetic susceptibility peak at about 400° C upon heating that is not repeated in cooling. Perhaps this peak reflects the presence of maghemite that oxidized to hematite during heating.

Temperature dependence of magnetic susceptibility for four bulk samples (Figure 12) differs from that of the magnetic separates in that the signature of magnetite is not as prominent and is largely masked by the electromagnetic noise of these experiments. Three of the four samples had a strong increase of magnetic susceptibility upon cooling below temperatures of about 400° C. This increase did not develop in experiments in which maximum temperatures were only 450° C (not shown), and thus the responsible mineralogical changes must have occurred at higher temperatures. The increase of magnetic susceptibility upon cooling could reflect exsolution of antiferromagnetic ilmenohematite into more magnetic ferrimagnetic ilmenohematite upon cooling. Antiferromagnetic ilmenohematite was probably not included in the magnetic separates due to its low saturation magnetization (Nagata, 1961).

Isothermal remanent magnetization (IRM) acquisition

Following the methods of King and Channel (1986), one or more samples from each level were imparted with isothermal remanent magnetizations to investigate the relative amounts and the ratios of high and low coercivity magnetic minerals. Most samples form a group with S ratios between 0.88 and 0.93 and HIRM values between 2E-2 and 7E-2 A/m (Figures 13 and 14). Samples from several horizons form a second group with distinctly lower S ratios and corresponding higher HIRM values. Excluding the results from the ashes which have low magnetic susceptibility, horizons with low S and high HIRM typically also have high magnetic susceptibility values (Figure 15). The converse, however, is not always true.

S ratios are commonly interpreted as a measure of relative proportions of magnetite and pure hematite, but for the Beaver Basin rocks two experiments suggest that IRM acquired at inductions greater than 0.3 T is predominantly carried by ilmenohematite. Three samples were given IRM's progressively in thirteen steps up to 1.2 T (Figure 16). Although about ten percent of the IRM was acquired above 0.3 T, it was mostly acquired by 0.4 T or 0.6 T rather than progressively through to the maximum 1.2 T induction as is typical of rocks dominated by pure hematite. The coercivity of ilmenohematite having x (mole fraction ilmenite) greater than about 0.45 is lower than that of pure hematite (Nagata, 1961), providing a potential explanation of why little IRM was acquired above 0.6 T.

Six samples that were given orthogonal IRM components imparted with 0.3 T and 1.2 T inductions were thermally demagnetized to determine the unblocking temperatures of the low and high coercivity components, in the manner of Lowrie (1990). These experiments (Figure 17) reveal that the high coercivity component unblocks between 150° C and 475° C heating steps instead of up to 680° C, as would be expected for pure hematite. A presence of magnetite in the samples is clearly indicated by unblocking of the low coercivity component up to 580° C, but an inflection at between 300° and 400° in demagnetization curves of the <-0.3 T-component also suggests the presence of an additional phase having lower unblocking temperature, probably ilmenohematite.

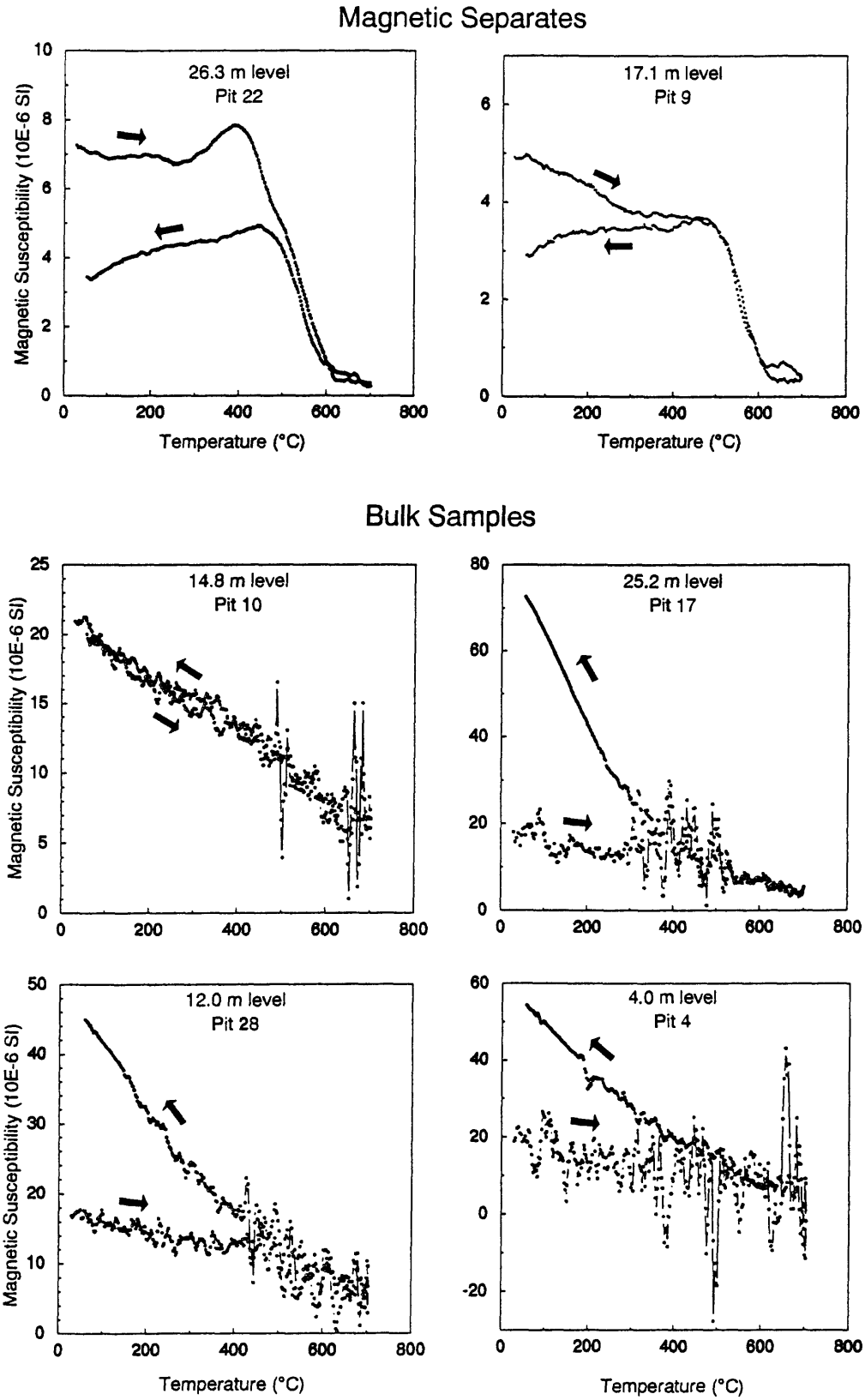


Figure 12. Plots of magnetic susceptibility versus temperature for selected magnetic separates and bulk samples.

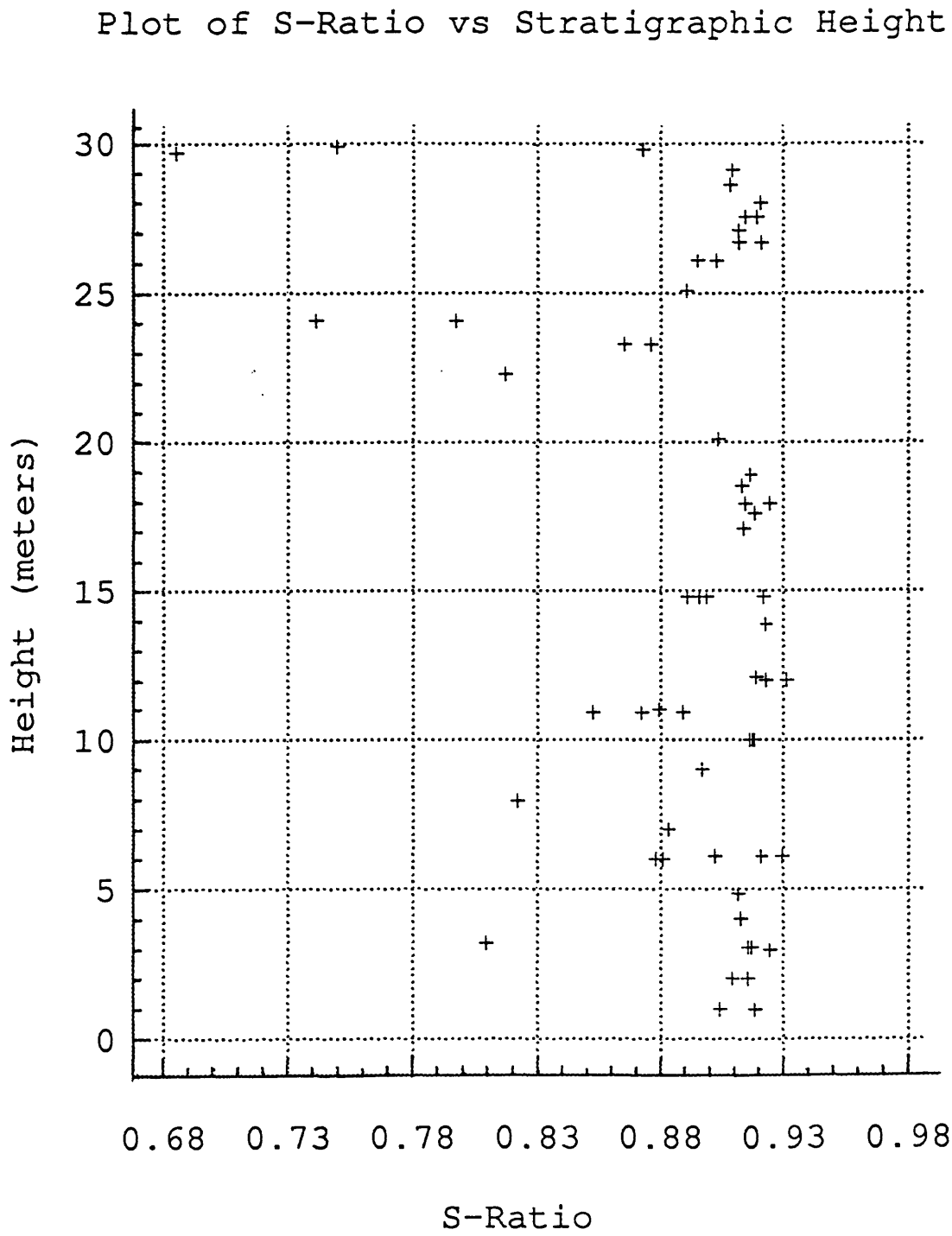


Figure 13. Plot of S ratio, after King and Channel (1986), for a subset of samples versus stratigraphic height.

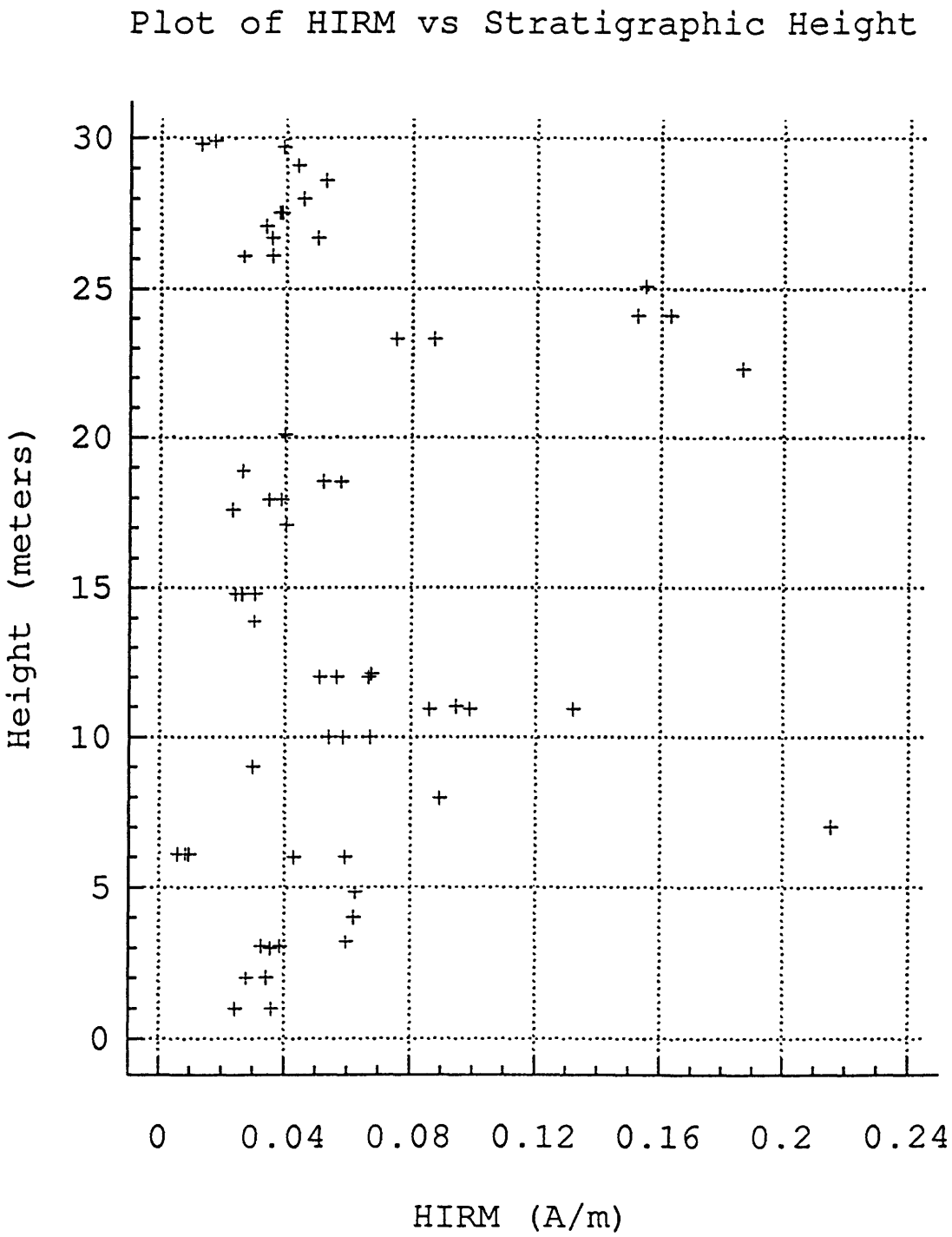


Figure 14. Plot of hard isothermal remanent magnetization (HIRM), after King and Channel (1986), for a subset of samples versus stratigraphic height.

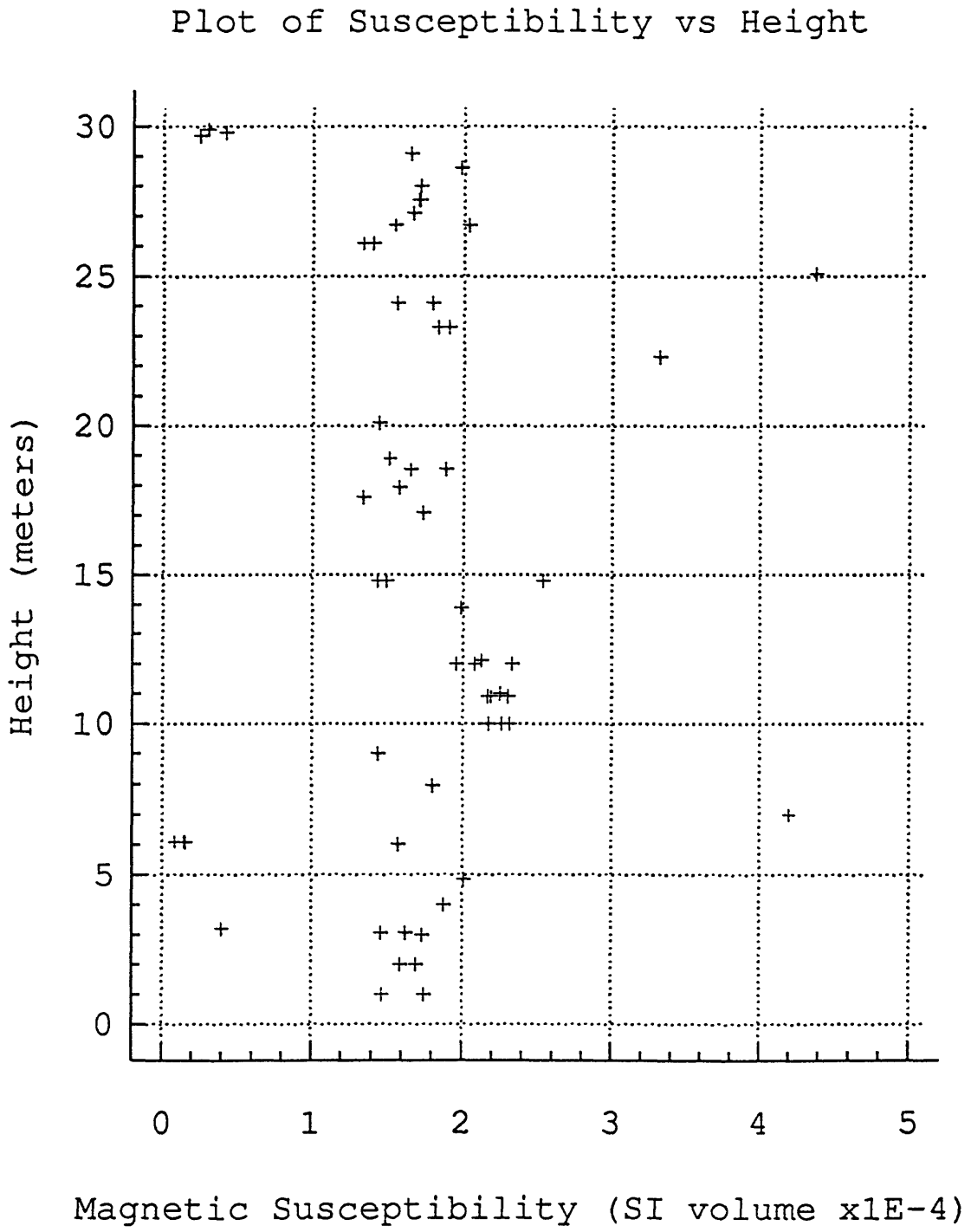


Figure 15. Plot of magnetic susceptibility for a subset of samples versus stratigraphic height.

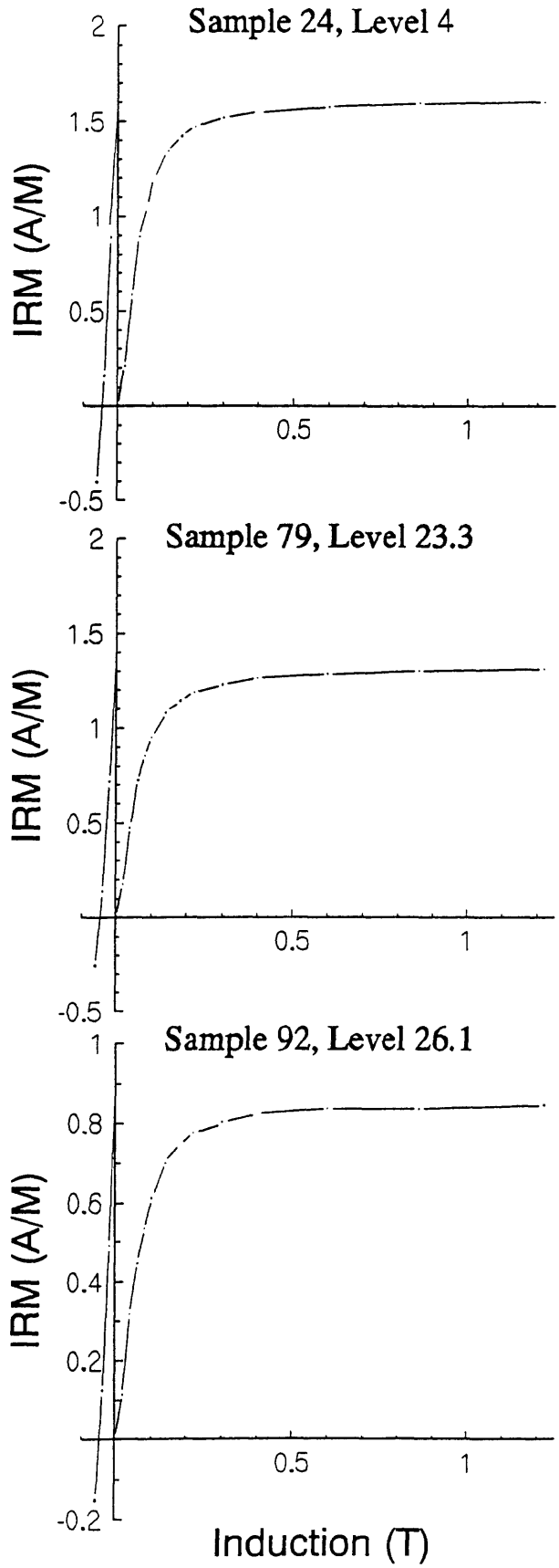


Figure 16. Plots of progressive acquisition and backfield demagnetization of isothermal remanent magnetization.

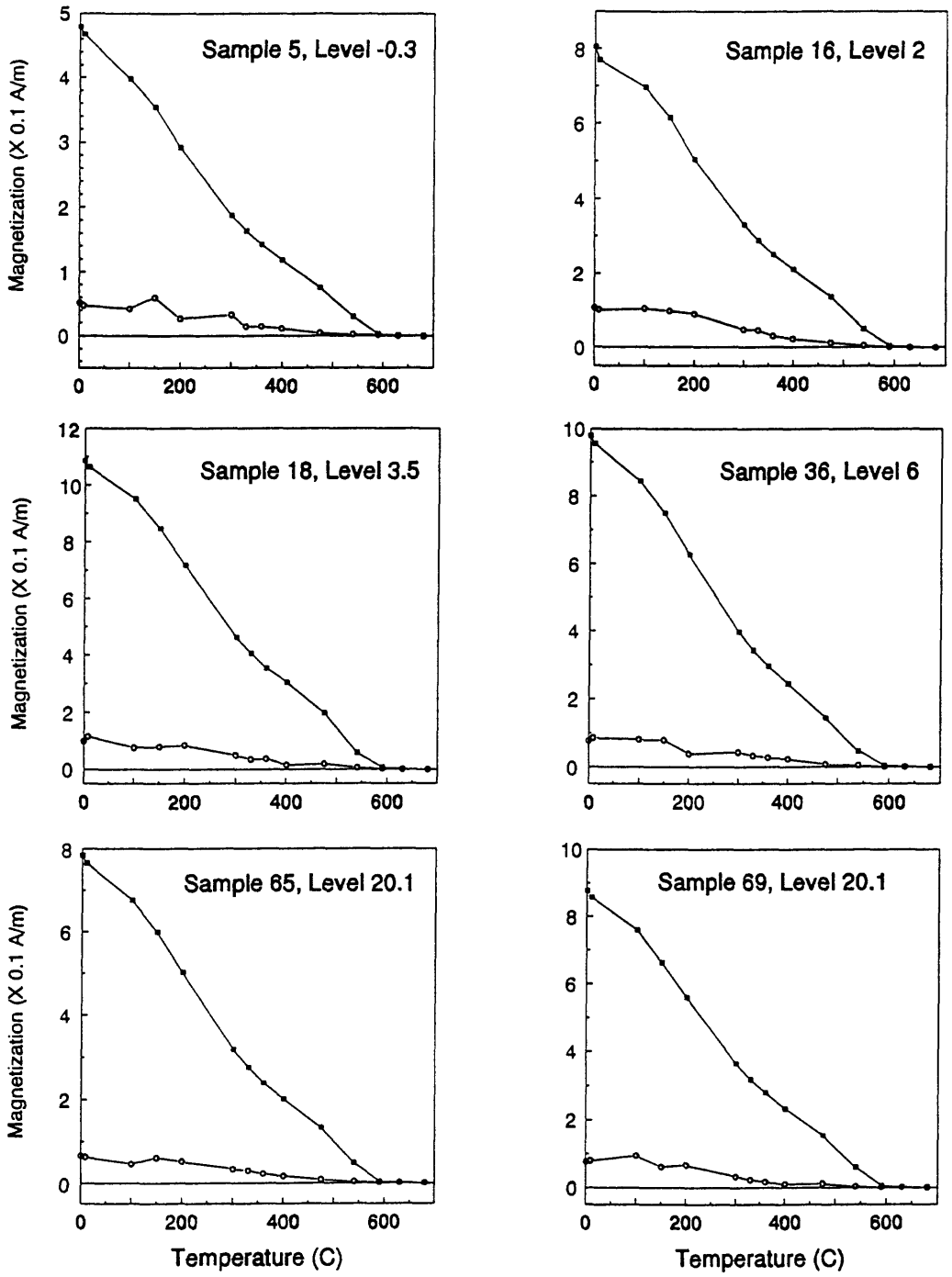


Figure 17. Decay of low and high coercivity IRM components during thermal demagnetization.

Strong-induction thermomagnetic experiments.

The temperature variation of magnetization induced by a strong induction (0.3 T) was measured for eight magnetic separates (Figure 18). All curves for all samples show inflections at high temperatures that indicate the presence of nearly pure magnetite having Curie temperature between 558° and 585°. A sharp reduction of magnetization at temperatures below about 300° in several samples also suggests that there are significant contributions from a mineral with lower Curie temperature. Again this mineral is most likely ilmenohematite. Ilmenohematite with Curie temperature less than about 300° C is ferrimagnetic (Nagata, 1961) and thus has sufficient saturation magnetization to have expression in these thermomagnetic experiments. Subtle inflections of the heating curves of some samples at about 400° that are not repeated on cooling may reflect the presence of a magnetic phase such as maghemite that breaks down at higher temperature.

DISCUSSION

Definition of the distribution and length of Reunion events from the magnetostratigraphy of the Beaver Basin rocks is complicated by the complex magnetic behavior of samples and the failure of AF and thermal demagnetization techniques to isolate cleanly the different magnetization components in the rocks. The interpreted polarity zonation of Figure 7 will mimic the correct interval the geomagnetic polarity time scale only if it reflects remanence acquired at or closely following deposition of the sediments.

Although several rock magnetic tests indicate that magnetite is present in the rock samples, the lack of significant natural remanence unblocked between 450° and 580° C in thermal demagnetization suggests that this magnetite does not carry an important detrital remanent magnetization (DRM). Why do these magnetite grains carry no significant natural remanence? The most likely explanation is that the magnetite particles were poorly aligned by the geomagnetic field at time of deposition, probably because they occur principally as inclusions in larger rock fragments. There was probably considerable DRM carried by magnetite in the composite titanomagnetite grains when the sediments were first deposited in the Beaver Basin, but the petrographic observations suggest that this magnetization was largely destroyed during diagenetic dissolution of magnetite. Magnetite inclusions within rock and mineral fragments were probably protected from dissolution. Although the magnetite grains in rock fragments should not carry significant detrital remanence, they were probably susceptible to later viscous or partial thermoviscous resetting. Consequently these grains may carry most of the normal polarity overprint that overlaps the AF and thermal demagnetization spectra of other magnetization components.

Critical to the polarity interpretation is the identity and origin of the magnetic mineral or minerals that carry the higher coercivity component that is of reverse polarity in basal and upper parts of the sequence. The petrographic observations and rock magnetic properties suggest that ilmenohematite is the most likely carrier. Because ilmenohematite only forms at high temperatures, these grains must have been transported to and deposited in the basin. The magnetization carried by ilmenohematite is thus interpreted as a DRM. Dacites of the Bullion Canyon Volcanics (Cunningham and others, 1983) exposed adjacent to major drainages that currently feed into Beaver Basin from the Tushar Mountains to the east are potential source rocks for the ilmenohematite grains. Rock magnetic properties suggest that ilmenohematite grains may have a range of compositions that span the ferrimagnetic-antiferromagnetic transition (Nagata, 1961), but acquisition of DRM was probably most efficient for the more strongly magnetized ferrimagnetic grains.

These conclusions suggest that the polarity zonation of Figure 7 is a depositional record. Nonetheless, because demagnetization techniques were unable to fully isolate the DRM component, only the gross aspect of the geomagnetic field can be discerned.

The correlations and ages of the three ashes in this section aid considerably in the interpretation of the paleomagnetic section and indicate that the rocks at this locality between the Indian Creek and Huckleberry Ridge ash beds were deposited in roughly 120,000 years (2.22 Ma-2.10 Ma). Previously, the Indian Creek ash was thought to be possibly as old as 2.38 Ma, based on tentative correlation with the Rhyolite of Cudahy Mine (Izett, 1981); if correct, this age would have required either an extremely slow sedimentation rate or a significant hiatus in the 2.82 meters of section between the Indian Creek and Taylor Canyon-C ash beds. However, a hiatus of unknown duration may be present above the Taylor

Canyon-C ash bed as suggested by the occurrence of the 1.25 meter thick pea gravel in partial section 2; the sharp contact between the pea gravel and underlying claystone raises the possibility of erosion of claystone at that contact. This possibility of erosion precludes confident determination of sedimentation rates of the lake deposits between the Taylor Canyon-C and Huckleberry Ridge ash beds at this locality. Likewise, the overlapping errors on the Taylor Canyon-C and Indian Creek ash beds disallow determination of sedimentation rates in the lower part of the section.

There is a hiatus of unknown duration in the lowest part of the section. The 1.82 meter thick sandstone overlying the lowest paleomagnetic level contains rounded claystone fragments, and shows scour relief of about 1 cm at the contact with the underlying claystone in the exposure examined; these facts indicate at least some erosion of the underlying claystone by the sandstone. Thus, other than similarity in lithology with stratigraphically higher claystones, there is little evidence to closely associate the lowest two samples in time.

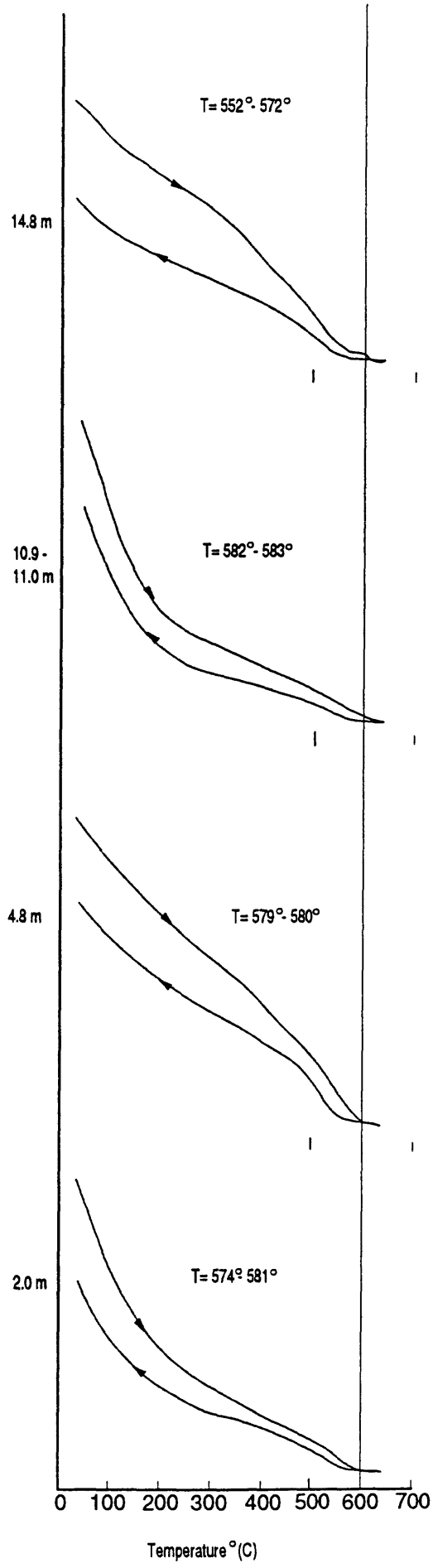
The reversed zone between the base of the section and about 13 meters represents the reversed interval between the Reunion I and Reunion II Subchrons. Older estimates of the ages of its boundaries place the Reunion I Subchron roughly between 2.10 and 2.14 Ma (Table 1). More recent estimates, based on new isotopic ages and correlations of tuffs in the Shungura Formation, Ethiopia, in combination with linear interpolation between dated tuffs (assuming constant sedimentation rates), have increased the estimated age of the Reunion I Subchron from 2.27 Ma at the base to 2.19 Ma at the top. These ages for the Reunion I indicate that the reversed zone at Beaver containing the Indian Creek and Taylor Canyon-C ash beds lies in the reversed interval between the Reunion I and II Subchrons. Further, the ages on these two ashes at Beaver suggest that the top of the Reunion I Subchron is older than 2.22 Ma.

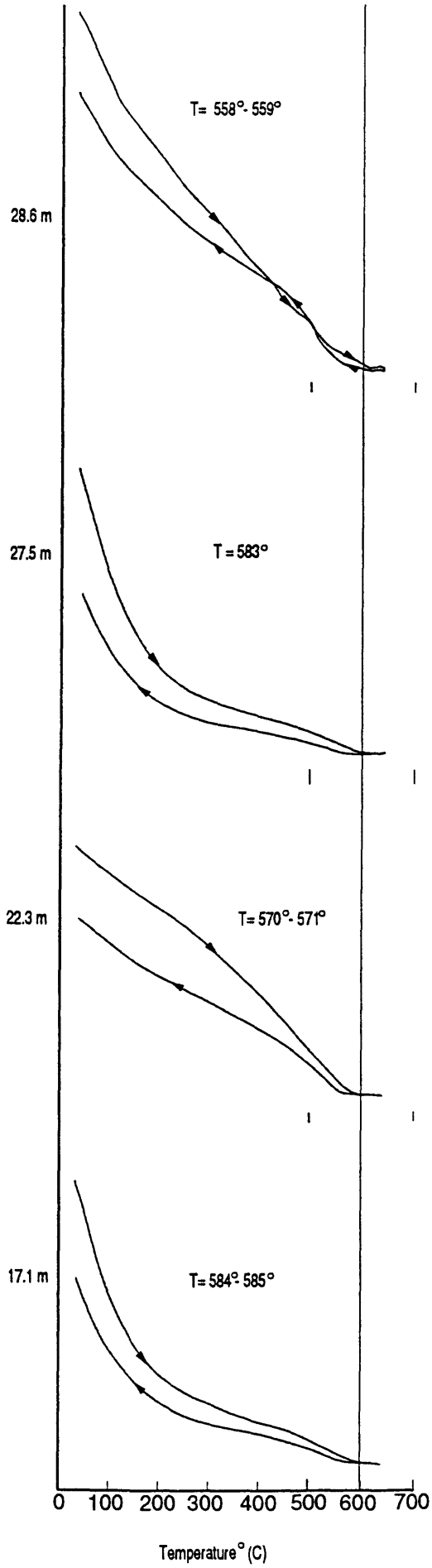
Based on interpolation between tie points derived from $^{40}Ar/^{39}Ar$ plateau ages, Baksi (1993) estimated an age of 2.24-2.27 Ma for a single Reunion Subchron in sea-floor cores; however, he threw this result out and substituted an age of 2.14 ± 0.03 Ma based on concordance between $^{40}Ar/^{39}Ar$ dating of the event on Reunion Island (2.14 ± 0.03 Ma) and astronomically obtained values (2.14-2.15 Ma). He suggested that the discrepancy with the interpolated dates could have arisen from (1) problems in identifying the Reunion Subchron in sea-floor cores or (2) the existence of more than one Reunion event. Baksi's interpolated ages may in fact provide evidence for the Reunion I Subchron being shorter than estimated by McDougall and others (1992), much as our data do; obviously, the reasons for the discrepancies in ages for the Reunion Subchron in Baksi's 1993 study should be resolved.

At Beaver, the normal polarity zone between 13 and 19.5 m represents the Reunion II Subchron. Although the boundaries of this normal polarity zone at Beaver are not directly dated, the intermediate position of this zone between dated ashes of 2.20 and 2.10 Ma is compatable with recent estimates of the ages of the boundaries of a single Reunion event or the ages of the boundaries of a younger (Reunion II) event (Hilgen, 1991; McDougall and others, 1992; Baksi and others, 1993; see table 1). Our work shows no clear evidence for the Reunion II Subchron being composed of more than one normal polarity event; however, the presence of an unsampled 2-meter-thick gravel and sand interval within the normal polarity zone at Beaver does not exclude the possibility of a short reversal. In their study of the paleomagnetism of lacustrine rocks in Death Valley, CA, Holt and Kirschvink (1995) interpreted a normal polarity doublet below the Olduvai Subchron as the Reunion Subchron, with beginning and ending ages (taken from Hilgen, 1991) of 2.15 and 2.14 Ma. If these assumed ages are correct, then the normal polarity doublet in Death Valley corresponds to the normal polarity zone at Beaver. Interestingly, the Huckleberry Ridge ash is also present in the Death Valley lacustrine rocks, and as at Beaver, is roughly 10 m stratigraphically above the Reunion normal polarity zone.

The change from normal to reversed polarity between 19 and 20 meters appears to be fairly abrupt. From 26.7 meters to the top of the section, the section contains intermediate, normal, and reversed directions. Some anomalous demagnetization directions, such as in pits at the 26.7 and 28.0 meter levels, may have been influenced by fault movement; other directions may represent a geomagnetic field excursion. An intermediate direction of southwest declination and shallow inclination is well established for the Huckleberry Ridge Tuff in other areas (Reynolds, 1977; Anders, 1989; Byrd and Smith, 1994), and these authors suggested that this intermediate direction is perhaps related to a boundary of the Reunion Subchron(s). Southwest directions are present during demagnetization in some of the specimens at Beaver at the 28.6 and 29.8 meter levels. However, the presence at Beaver of the reversed polarity zone

Figure 18. Plots of magnetization produced under a strong induction (0.3 T) versus temperature for magnetic separates from the Triple Ash locality.


T= 552°- 572°
14.8 m
T= 582°- 583°
10.9 -
11.0 m
T= 579°- 580°
4.8 m
T= 574° 581°
2.0 m
0 100 200 300 400 500 600 700
Temperature °(C)


T= 558°- 559°
28.6 m
T = 583°
27.5 m
T= 570°- 571°
22.3 m
T= 584°- 585°
17.1 m
0 100 200 300 400 500 600 700
Temperature° (C)

above the top of the Reunion II normal polarity zone, between roughly 20 and 26.7 meters, argues against the mixed directions above 26.7 meters and the intermediate directions of the Huckleberry Ridge Tuff being related to the top of the Reunion II Subchron.

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We thank Glen Izett for suggesting this study, and for providing preliminary stratigraphic information about the major volcanic ashes in the Beaver area. Michael Machette spent two days in the Beaver area with J. Honey, showing him ash localities and working out stratigraphic and faulting problems in the vicinity of the Triple Ash locality; he also let us use his field notes, maps and photos during this study. We thank Richard Reynolds for discussions regarding petrographic observations. John Hargrave owns the land on which the Triple Ash locality is found, and generously allowed J. Honey to extensively sample the rocks there; without his permission, this study would have been much more difficult to undertake. Jeannine Honey helped in the collection of samples, with the result that a sufficient number of samples was obtained for this study. Figures 2, 3, and 4 were skillfully prepared by Ramon Sabala.

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APPENDIX 1

Measured sections at Triple Ash locality in NW1/4NW1/4NE1/4SW1/4, sec. 31, T. 28 S., R. 7 W.

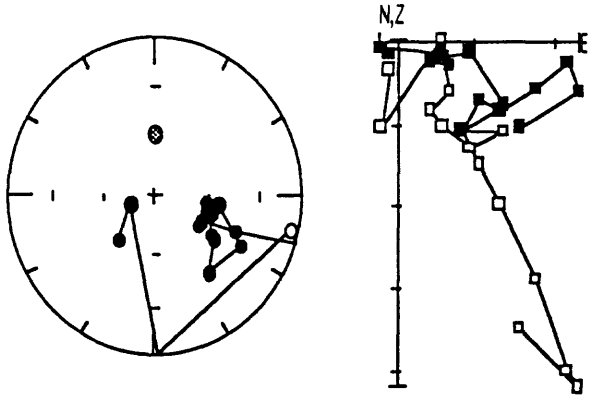
	Thickness (meters)
Partial Section 4	
Volcanic ash, massive, clean in basal 92 cm; horizontally bedded in following 61 cm; contains increasing amount of clay upwards in bedded part. Upper part of unit a tuffaceous siltstone. Numerous paleomagnetic samples from this ash. Correlated with Huckleberry Ridge Tuff of the Yellowstone area, Wyoming.	1.53+
Claystone, olive brown, sandy, silty; shows iron staining and mottling around apparent roots. Thin sandstone laminae present about 50 cm above base of unit. About 1.5 meters above base of unit is interlaminated claystone and clayey sandstone; upwards the unit becomes increasingly claystone-rich up to the Huckleberry Ridge ash, although still containing sandstone and siltstone laminae. Samples from paleomagnetic level 21 collected from base of section, and samples from paleomagnetic level 22 collected 1 meter below top of unit. Sharp upper contact	2.50
Partial section 4 starts at paleomagnetic level 21, which correlates to 1 meter below top of partial section 3.	
Offset: Partial section 3 is about 50 meters south of partial section 4. Base of partial section 3 correlates to top of partial section 2.	
Partial section 3	
Top of hill	
Claystone, olive- to medium-gray, sandy, with thin, very fine grained sandstone interbeds; unit dominated by claystone. Samples from paleomagnetic level 15 from sandy claystone with orange mottling, taken about 10 cm above base of unit. Samples from paleomagnetic level 16 taken 90 cm above base, from level 17 taken 190 cm above base, from level 18 taken 290 cm above base, from level 19 taken 350 cm above base, and from level 20 taken 477 cm above base of unit (paleomagnetic level 20 is about 1.5 m below Huckleberry Ridge ash)	4.90
Sandstone, clayey, thinly bedded	0.40
Claystone, olive-gray, slightly sandy. Samples from paleomagnetic level 14 are 10 to 15 cm above base of unit. Gradational upper contact	0.60
Sandstone, orangish-gray, very fine grained, soft	1.45
Claystone, olive-brown. Paleomagnetic level 13 at base of unit	0.65
Covered interval	1.0

	Thickness (meters)
Offset: Partial section 2 is about 60 meters north of partial section 3, in a north-south trending gully. Base of partial section 2 correlates to top of partial section 1.	
Partial section 2	
Interbedded sandy claystone and clayey sandstone, containing thin, low-angle cross-bedding. Rocks at paleomagnetic level 12 contain orangish-red specks and streaks. Paleomagnetic levels 9, 11, and 12 are at the base of the section, 85 cm above the base, and 15 to 30 cm below the top of the unit, respectively	2.0
Sandstone, grading up to clayey sandstone	0.75
Pea gravel, medium-grained to granulitic, with scattered pebbles up to 1 cm	1.25
Claystone, greenish-gray, containing abundant snail shells; weathered. Grades up to massive claystone. Paleomagnetic levels 30 and 10 are at the base of the section and 1 meter above the base, respectively. Sharp upper contact	1.33
Covered interval	0.38
Offset: Partial section 1 is about 100 meters west of partial section 2. Base of partial section 1 in gulley at base of hill.	
Partial section 1	
Gravels of Last Chance Bench; not measured	
Coarsening-upward unit. Consists of olive-brown claystone with numerous laminae of siltstone and very fine grained sandstone; becomes increasingly silty and sandy upwards. About 90 cm above base of unit, excavation pit shows interlaminated claystone, siltstone, and sandstone, but with claystone dominant. About 190 cm above base and higher, unit is composed of roughly equal parts interlaminated sandstone and claystone. Unit highly weathered near top. Paleomagnetic levels 27 and 28 are respectively located 87 and 187 cm above base of unit. Sharp upper contact	3.37
Claystone, olive-gray to olive-brown, massive; almost pure claystone in the lowest 40 to 70 cm, contains scattered siltstone laminae for rest of unit. Two thin reddish-orange iron-stained layers are present, one located 45 cm above base of unit, and the other located 125 cm above base of unit. Paleomagnetic level 8 is 48 cm above base of unit, paleomagnetic level 25 is 148 cm above base of unit, and paleomagnetic level 26 is 13 cm below top of unit. Gradational into overlying unit	2.61
Sandstone, very fine grained, clayey. Basal 25 cm is clean sandstone followed by clayey, silty sandstone; top 20 cm or so is fine- to medium-grained. Paleomagnetic level 7 is in a thin, olive-gray, silty claystone interbed	0.65
Claystone, olive-brown, massive; contains local iron staining; bottom several cm tuffaceous. Sharp upper contact	0.65
Offset: About 17 meters southeast on the face of the same hill, this section is continued downwards.	
Volcanic ash, very fine grained. Variable thickness from 2 to 10 cm. Correlated with Taylor Canyon-C tephra near Benton Hot Springs, Calif. Sharp upper contact	0.10

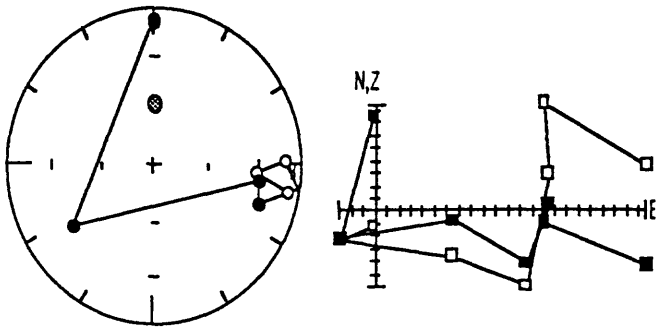
	Thickness (meters)
Claystone, olive-brown, massive. Paleomagnetic level 6 is about 12 cm below top of unit..	0.25
Sandstone, light-gray to grayish-orange, fine-grained, friable; faint indications of low-angle cross-bedding. Sharp upper contact.....	0.22
Claystone, olive-brown, massive, with scattered stringers of siltstone and very fine grained sandstone; tuffaceous and silty in basal 10 cm; increasingly sandy and with some very fine grained sandstone laminae in top 10 cm. Contains rare, horizontal burrows. Claystone with some reddish-orange specks at paleomagnetic level 4. Paleomagnetic levels 4 and 5 are 165 and 65 cm below top of unit, respectively	2.35
Volcanic ash, medium- to lower coarse grained in lower part; fine- to very fine grained in upper part. Called the Indian Creek ash bed and tentatively correlated with the rhyolite of Cudahy Mine near Black Rock, Utah.....	0.085
Claystone, olive-brown, massive; weakly iron-stained in places; contains rare blebs of ash from the overlying bed, probably due to bioturbation. Paleomagnetic levels 2 and 3 are, respectively, 22 cm and 1.22 m below top of unit. Sharp upper contact.....	1.40
Sandstone, light-gray. Lower 22 cm medium- to coarse-grained; contains grains of quartz, weathered feldspar, and rock fragments; also rounded claystone fragments. Grades up to 160 cm of fine- to medium-grained sandstone containing low-angle cross-bedding and ripple laminae. Sharp upper contact.....	1.82
Claystone, moderate olive-brown. Paleomagnetic level 1 is 30 cm below top of unit. Sharp upper contact with about 1 cm relief. Total thickness of unit unknown. Base of exposures.	

Appendix 2. Intensities are in emu/cc; to change to SI, multiply remanence by 1000. G. Dec. = geographic declination, G. Inc. = geographic inclination, S. Dec. = stratigraphic declination, S. Inc. = stratigraphic inclination.

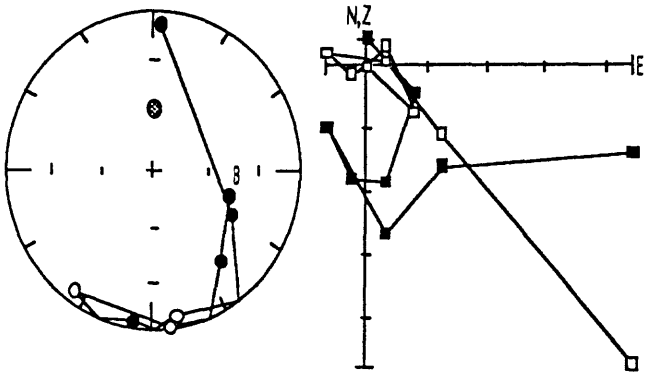
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
1	nrm	116.4	76.3	123.3	61.5	3.96E-04
1	AF 010	83.6	72.5	104	60.2	4.83E-04
1	AF 025	70.6	72.2	96.5	61.6	4.56E-04
1	AF 050	91.9	70.1	107.3	57	3.44E-04
1	AF 075	118.4	66.6	122.6	51.8	2.50E-04
1	AF 100	120.5	64.8	123.7	49.9	1.93E-04
1	AF 150	146.3	53.7	142.3	39.2	1.72E-04
1	AF 200	115.3	49.6	118.4	35	1.90E-04
1	AF 250	79.9	66	97.4	54.5	1.59E-04
1	AF 300	86.2	72.9	105.8	60.3	1.18E-04
1	AF 350	106	75.3	117.7	61	9.41E-05
1	AF 400	106	53.5	111.8	39.5	9.07E-05
1	AF 450	102.7	9.1	102.9	-4.3	5.64E-05
1	AF 500	282.4	64.7	253.6	76.3	1.06E-04
1	AF 550	244	55.7	220.9	59	3.65E-05



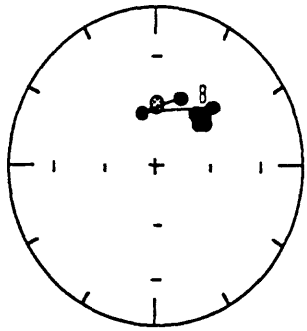
2	TT 100	101	4.2	100.7	-8.9	2.34E-04
2	TT 200	97.7	-19	93.6	-31.4	1.65E-04
2	TT 300	89	-0.5	87.9	-11.8	1.47E-04
2	TT 330	104.8	38.6	108.5	24.9	1.45E-04
2	TT 360	90.9	41.1	97.1	29	7.45E-05
2	TT 400	243.1	27.5	234.9	32.4	4.38E-05
2	TT 450	358.1	-0.5	359	9.4	7.53E-05

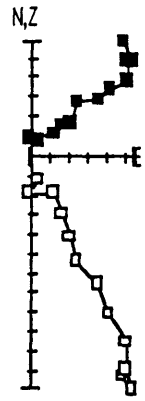


3	nrm	98.5	58.6	107.3	45.2	6.67E-04
3	TT 100	143.6	42.4	141.3	27.7	2.35E-04
3	TT 200	173.3	9.8	172.6	-1.2	2.70E-04
3	TT 300	212.8	-6.9	214.8	-8.5	1.22E-04
3	TT 330	190.2	12.7	188.2	5	1.84E-04
3	TT 360	169.4	2.6	169.9	-9	1.90E-04
3	TT 400	114.8	54	118.5	39.4	1.20E-04
3	TT 450	1.5	-0.8	2.3	8.5	4.22E-05

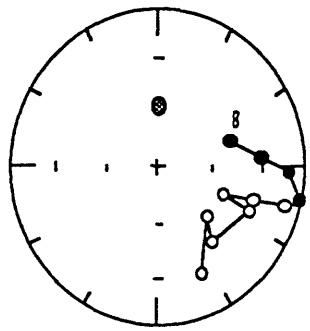


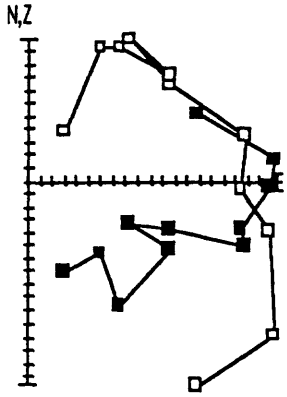
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
4	nrm	19.6	52.8	40.2	55.5	1.36E-03
4	AF 010	24.4	57.4	48.5	58.3	1.40E-03
4	AF 025	23.4	55.5	46	56.9	1.30E-03
4	AF 050	29.7	56.2	52.3	55.9	1.15E-03
4	AF 075	28	55.7	50.3	55.9	9.72E-04
4	AF 100	29.2	54.4	50.5	54.5	7.99E-04
4	AF 150	20.7	52.7	41.3	55.1	6.43E-04
4	AF 200	26.9	57.1	50.5	57.4	4.92E-04
4	AF 250	26.1	50.5	44.8	51.7	3.73E-04
4	AF 300	30.8	46.2	46.7	46.5	2.47E-04
4	AF 350	334.3	47.9	344.7	61	2.05E-04
4	AF 400	6	45.6	21.6	52.4	1.41E-04



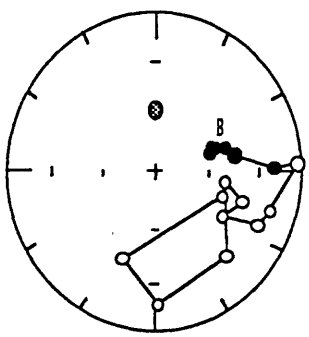


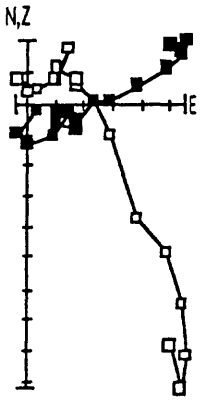
5	AF 010	52.7	52.6	69.4	47.1	2.14E-04
5	AF 025	77	40.3	85	30.4	2.34E-04
5	AF 050	88.3	22.8	91.3	11.3	1.99E-04
5	AF 075	100.9	15.2	102	2	1.76E-04
5	AF 100	106.5	2.8	106	-10.9	1.87E-04
5	AF 150	110	-18.1	107.5	-32.1	1.42E-04
5	AF 200	115.3	-36.5	111.2	-50.8	1.41E-04
5	AF 250	116.1	-18	114.3	-32.6	1.51E-04
5	AF 300	140.3	-25.4	142.2	-40.1	1.60E-04
5	AF 350	131.7	-36.9	132.2	-51.9	1.31E-04
5	AF 400	154.3	-13.4	156.7	-26.9	8.49E-05





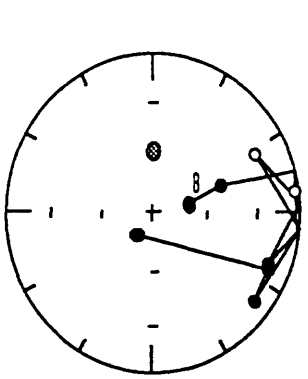
6	nrm	45.3	60.3	68.6	55.8	9.46E-04
6	AF 010	45.7	63.7	71.9	58.8	1.08E-03
6	AF 025	47.9	58.9	69.6	54	1.01E-03
6	AF 050	55.5	55.3	73.2	49	8.64E-04
6	AF 075	62.4	51.5	76.9	44	6.92E-04
6	AF 100	66.5	52.7	80.7	44.3	5.38E-04
6	AF 150	82.7	30.2	87.7	19.5	3.03E-04
6	AF 200	86	8.7	86.6	-2.2	2.32E-04
6	AF 250	108.3	-5.4	107	-19.3	1.86E-04
6	AF 300	116.2	-8.2	115.1	-22.8	2.03E-04
6	AF 350	123.1	-30.1	121.5	-45	1.61E-04
6	AF 400	110.8	-23	107.7	-37	1.32E-04
6	AF 450	104.9	-37.1	98	-50.3	2.29E-04
6	AF 500	136.1	-14.3	136.8	-29.2	1.60E-04
6	AF 600	175.6	-6.3	177.8	-16.6	1.37E-04
6	AF 700	191	-33.8	201.4	-39.9	1.29E-04
6	AF 800	112.7	-35.4	108.1	-49.6	6.45E-05

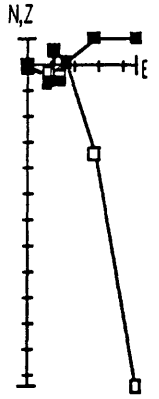




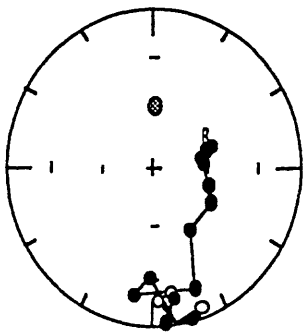
Appendix 2

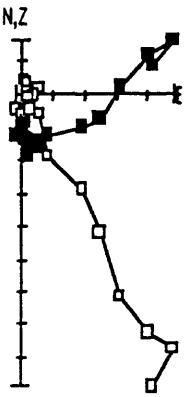
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
7	nrm	30.9	73.5	76.2	69.7	1.32E-03
7	TT 100	50.5	54.5	68.7	49.4	4.53E-04
7	TT 200	81.8	6.5	82.1	-3.6	1.55E-04
7	TT 300	109.2	31.3	111.5	17.1	9.53E-05
7	TT 330	67.1	-16.7	62.2	-23	1.31E-04
7	TT 360	128.7	28.4	128.8	13.4	1.05E-04
7	TT 400	112.2	29.8	114.1	15.4	1.48E-04
7	TT 450	264.7	69.8	218.2	75.8	1.37E-05



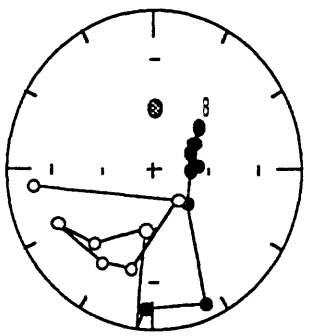


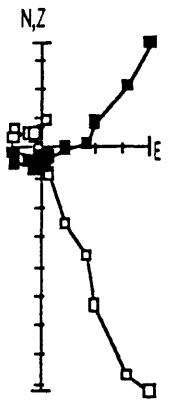
8	nrm	44.3	69.9	78	64.2	9.83E-04
8	AF 010	47.4	61.3	71.1	56.3	9.24E-04
8	AF 025	46.6	64.8	73.6	59.5	8.36E-04
8	AF 050	55.2	70.7	85.8	62.8	6.88E-04
8	AF 075	90.6	71.3	107.2	58.3	4.94E-04
8	AF 100	111.1	67.7	118.2	53.2	3.63E-04
8	AF 150	157.3	66.1	147.7	52.1	2.42E-04
8	AF 200	162.9	32.7	159.1	19.8	1.77E-04
8	AF 250	195.7	27.1	189.8	20.2	1.36E-04
8	AF 300	191.1	39.8	182.1	31.5	1.21E-04
8	AF 350	159.3	5.7	159.4	-7.4	1.52E-04
8	AF 400	166	13.9	164.8	1.6	1.44E-04
8	AF 450	175.6	-7.5	178.1	-17.7	1.44E-04
8	AF 500	168.4	-10.4	171.2	-22	9.11E-05
8	AF 600	176.9	13	175.4	2.6	1.85E-04
8	AF 700	174.9	28.4	170.6	17.4	1.57E-04





9	nrm	25.1	56.1	48.1	57	9.80E-04
9	AF 010	25.2	63.7	56	63.6	8.62E-04
9	AF 050	26.9	69.7	66.3	67.9	5.73E-04
9	AF 075	50	72.4	85	65.1	4.00E-04
9	AF 100	39	77.5	88.9	70.7	2.72E-04
9	AF 150	133.5	80.2	131.4	65.2	9.58E-05
9	AF 200	159.7	23.9	157.5	10.7	6.51E-05
9	AF 250	187.3	21.1	183.5	12.5	4.69E-05
9	AF 300	172.6	-49.5	188.9	-59.1	6.07E-05
9	AF 350	209.8	-37.6	221.6	-38.8	7.70E-05
9	AF 400	233.9	-32.3	242.1	-27.6	1.21E-04
9	AF 450	202.1	-29.5	211	-33	6.63E-05
9	AF 500	185.5	-28.1	193.6	-35.8	8.38E-05
9	AF 600	136.2	-54.5	140.2	-69.3	9.90E-05
9	AF 700	258.1	-28.3	263.1	-18.5	1.08E-04

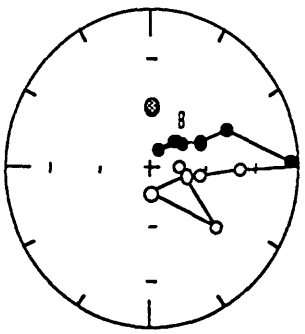


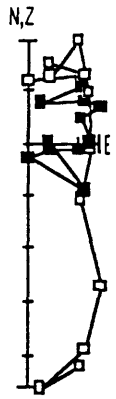


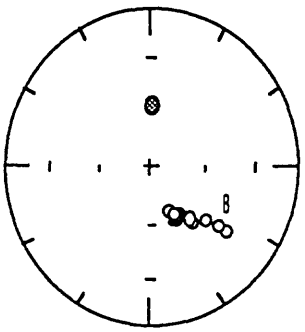
10	nrm	341.9	72.7	41.4	81	1.31E-03

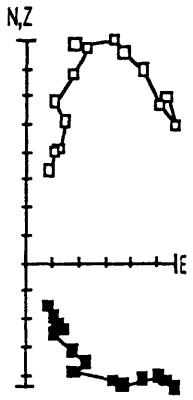
Appendix 2

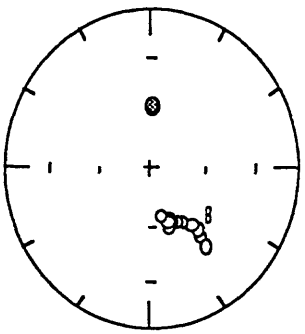
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
11	nrm	31.8	57.8	55.5	56.8	1.32E-03
12	nrm	6.6	66.2	43.8	70.3	4.49E-04
12	AF 010	336.8	69	17.2	79.9	4.69E-04
12	AF 025	13.9	68.2	53.9	69.9	4.13E-04
12	AF 050	38.2	62.2	64.7	59.1	3.14E-04
12	AF 075	50.2	46.6	64.3	42.1	1.58E-04
12	AF 100	85.5	16.6	87.5	5.6	1.27E-04
12	AF 150	96.6	-27.4	90.7	-39.5	1.55E-04
12	AF 200	106.5	-48.7	95.9	-62	2.21E-04
12	AF 250	114.2	-55.9	103.6	-70	1.36E-04
12	AF 300	153.4	-64.3	178.8	-76.8	1.23E-04
12	AF 350	129	-26.8	128.8	-41.8	1.94E-04
12	AF 400	107.4	-62.1	86.3	-74.9	1.54E-04
13	nrm	118.9	21.1	119.6	6.4	8.37E-04
14	nrm	31.7	50.3	49.8	50.1	8.37E-04
15	nrm	129	-26	128.8	-41	9.03E-04
15	AF 010	128.6	-19.5	128.4	-34.5	8.75E-04
15	AF 025	129.3	-25.9	129.2	-40.9	8.63E-04
15	AF 050	132.6	-33.9	133.2	-48.8	9.25E-04
15	AF 075	137.7	-38	140	-52.8	9.55E-04
15	AF 100	139	-41.6	142.2	-56.3	9.67E-04
15	AF 150	147.5	-47.3	155.1	-61.3	8.99E-04
15	AF 200	142.1	-47.1	147.4	-61.6	8.79E-04
15	AF 250	144.4	-47.8	150.9	-62.1	7.66E-04
15	AF 300	148.6	-51	158.1	-64.8	6.42E-04
15	AF 350	143.5	-47.2	149.5	-61.6	5.84E-04
15	AF 400	146.1	-44	152.2	-58.2	4.80E-04
15	AF 450	144.8	-47.3	151.3	-61.6	4.55E-04
15	AF 500	145.3	-48.4	152.4	-62.6	3.76E-04
16	nrm	139.3	-30.7	141.4	-45.5	1.03E-03
16	AF 010	140.5	-24.3	142.4	-39	1.02E-03
16	AF 025	138.4	-34.6	140.6	-49.4	1.10E-03
16	AF 050	140	-38.9	143.1	-53.6	1.18E-03
16	AF 075	143.6	-43.1	148.6	-57.5	1.26E-03
16	AF 100	146.4	-44.2	152.8	-58.4	1.31E-03
16	AF 150	149.9	-49.2	159.2	-62.9	1.25E-03
16	AF 200	149.4	-48.5	158.2	-62.2	1.22E-03
16	AF 250	150	-46.2	158.2	-59.9	1.08E-03
16	AF 300	152.2	-44.8	160.7	-58.3	9.54E-04
16	AF 350	152.8	-48.2	162.9	-61.5	9.11E-04
16	AF 400	155.3	-52.1	168.4	-65	7.88E-04

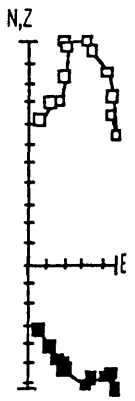






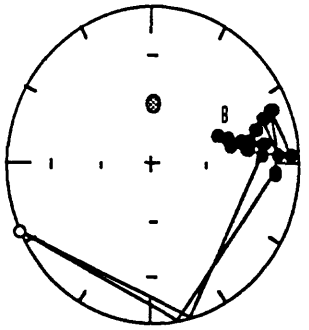


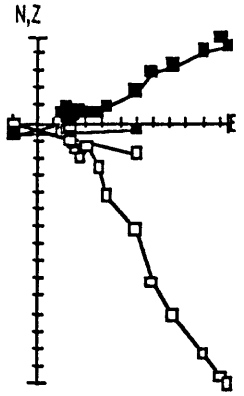




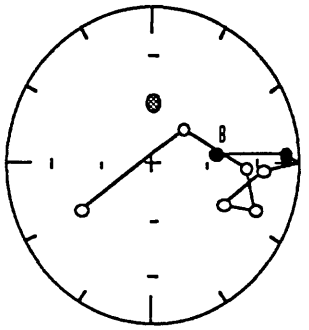
Appendix 2

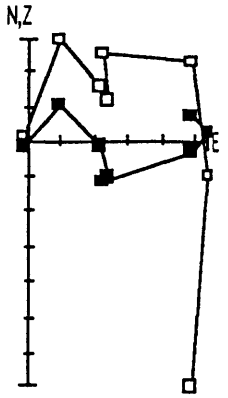
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
17	nrm	344.2	68.1	24.6	77.4	1.15E-03
18	nrm	47.6	54.7	66.5	50.3	1.90E-03
18	AF 010	50.3	55.6	69.2	50.4	1.94E-03
18	AF 025	48.8	55.6	68	50.8	1.71E-03
18	AF 050	49	56.3	68.7	51.4	1.42E-03
18	AF 075	47.9	55.7	67.4	51.1	1.19E-03
18	AF 100	57.3	51.5	72.7	45	8.68E-04
18	AF 150	62.7	52.6	77.6	44.9	5.99E-04
18	AF 200	72	44.1	82	35.1	4.61E-04
18	AF 250	73.6	32.8	80.1	23.7	3.33E-04
18	AF 300	64.9	44.5	76.1	36.8	3.33E-04
18	AF 350	68	41.3	77.7	33.1	2.79E-04
18	AF 400	64.6	33.8	72.3	26.6	2.52E-04
18	AF 450	63.1	25.9	68.8	19.3	1.71E-04
18	AF 500	81.9	25.7	85.9	15.3	1.78E-04
18	AF 600	62.5	18.6	66.3	12.4	1.91E-04
18	AF 700	84	16.5	86.1	5.9	2.02E-04
18	AF 800	78.2	36.1	85	26.1	2.28E-04
18	AF 900	244.7	-6.7	245.5	-0.3	1.61E-04
18	AF 999	89.8	28.6	93.7	16.7	6.27E-04
19	nrm	3.6	68.1	45.1	72.5	2.11E-03



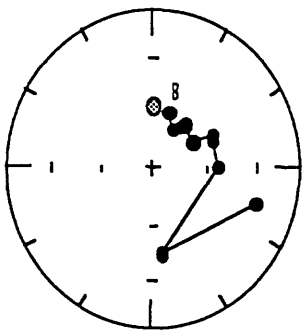


20	nrm	59.9	62.2	81.1	54.5	8.46E-04
20	TT 100	84.1	21	87	10.3	5.47E-04
20	TT 200	96.2	-12.8	93.2	-25.1	5.34E-04
20	TT 300	119.7	-30	117.4	-44.7	3.52E-04
20	TT 330	114.6	-10	113.3	-24.4	2.86E-04
20	TT 360	97.8	-24.7	92.7	-37	2.64E-04
20	TT 400	69.4	-60.4	41.2	-64.5	3.23E-04
20	TT 450	223.7	-45.8	238.3	-42.9	2.25E-05



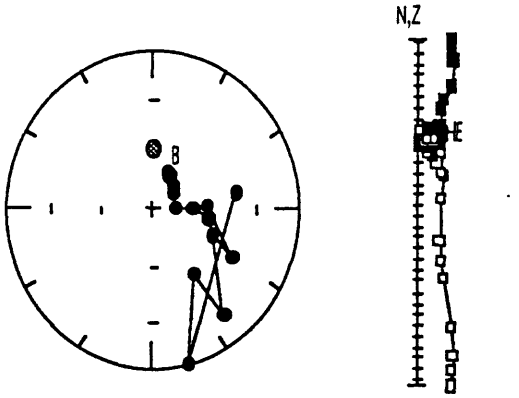


21	nrm	358	52.1	17.1	60.3	1.89E-03
21	AF 025	0.8	60.2	28.5	66.9	1.68E-03
21	AF 075	10.1	59.6	37.3	63.9	1.17E-03
21	AF 100	13.5	58.3	39.3	62	9.53E-04
21	AF 150	27.9	65.3	60.2	64.2	7.32E-04
21	AF 200	42.1	56	62.7	52.7	5.53E-04
21	AF 250	46	57.7	67.1	53.3	4.26E-04
21	AF 300	69	62.3	87.7	52.8	2.71E-04
21	AF 350	185.7	54.3	172.4	44.3	2.01E-04
21	AF 400	103.9	41.3	108.1	27.6	1.04E-04

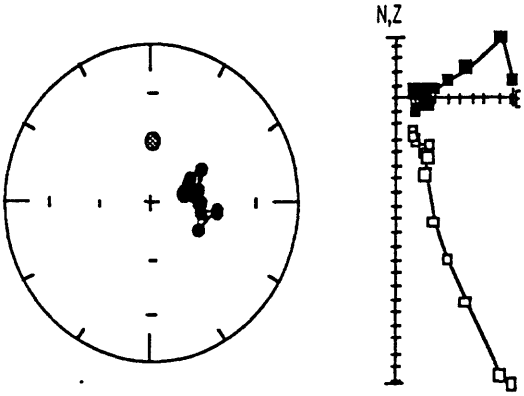


Appendix 2

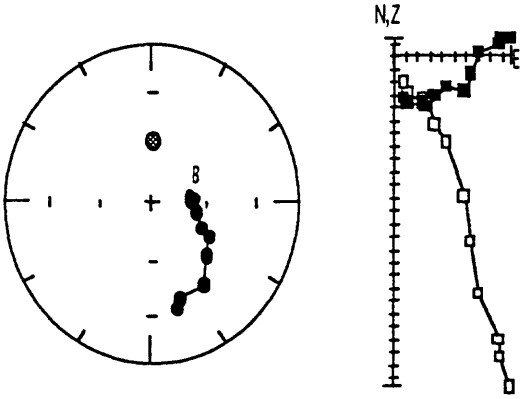
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
22	nrm	354.9	62.3	24.8	70.1	2.37E-03
22	AF 010	354.5	60.7	22.1	68.9	2.53E-03
22	AF 025	357.6	63.5	29.9	70.5	2.22E-03
22	AF 050	358.4	67.9	39.7	73.6	1.90E-03
22	AF 075	358.3	68.7	41.7	74.3	1.42E-03
22	AF 100	0.9	71.8	53	75.6	1.26E-03
22	AF 150	4.6	78.8	82.5	77.6	1.07E-03
22	AF 200	44.5	75.6	87.5	68.5	6.89E-04
22	AF 250	77.9	69.6	98.5	58.2	4.88E-04
22	AF 300	59.6	67.9	85.6	59.6	4.70E-04
22	AF 350	114.9	53.5	118.5	38.8	3.25E-04
22	AF 400	100.7	67.9	111.7	54.1	3.79E-04
22	AF 450	145.6	32.8	143.8	18.3	2.81E-04
22	AF 500	153	63.8	145.4	49.6	2.69E-04
22	AF 600	167	13.8	165.8	1.7	1.31E-04
22	AF 700	66.1	49.4	79	41.3	1.43E-04



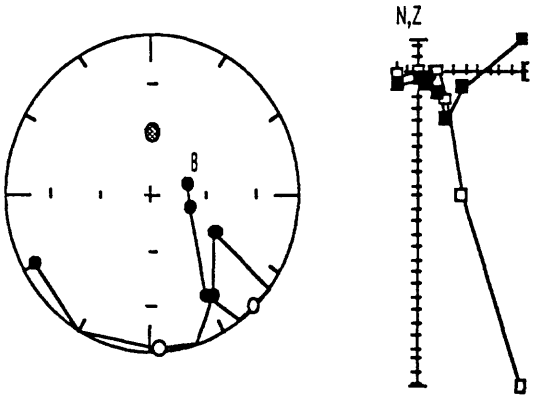
23	nrm	43.3	72.7	81.6	66.6	2.32E-03
23	AF 025	26.7	66.4	60.8	65.4	2.27E-03
23	AF 075	26.8	70.4	67.5	68.4	1.64E-03
23	AF 100	26.1	72.5	71.2	70	1.28E-03
23	AF 150	25.5	74.9	76.6	71.7	9.75E-04
23	AF 200	34.4	71.9	75.1	67.8	6.26E-04
23	AF 250	59.3	71.9	89.6	63.1	4.76E-04
23	AF 300	77.9	73.3	101.5	61.5	5.14E-04
23	AF 350	80.8	64.2	97.1	52.8	4.48E-04
23	AF 400	110.6	75.7	120.2	61.1	3.63E-04
23	AF 450	34	60	59.3	58.3	3.05E-04
23	AF 500	41.3	69.1	74.9	64.2	3.22E-04



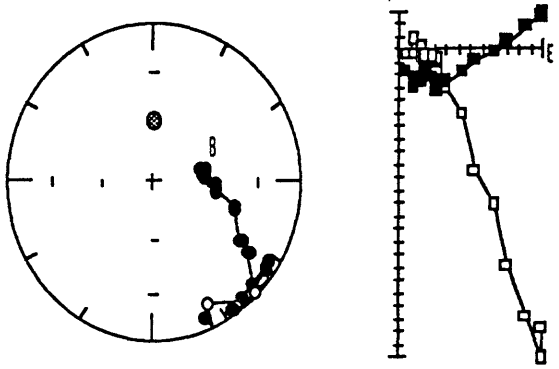
24	nrm	36.7	74.3	80.9	69	2.75E-03
24	AF 010	36.9	73.8	80	68.7	2.50E-03
24	AF 025	41.1	74.3	83.1	68.2	2.36E-03
24	AF 050	42.9	75.9	87.2	69	1.98E-03
24	AF 075	69.5	76.6	101	65.6	1.59E-03
24	AF 100	100.6	73.3	113.9	59.4	1.27E-03
24	AF 150	109.9	67.7	117.4	53.3	8.25E-04
24	AF 200	132.8	64.4	131.9	49.5	6.95E-04
24	AF 250	149.7	52.8	145.1	38.5	5.89E-04
24	AF 300	151.2	51.9	146.4	37.6	5.37E-04
24	AF 350	170.5	49.3	162.1	37.1	4.50E-04
24	AF 400	172.5	44.2	165	32.4	3.78E-04



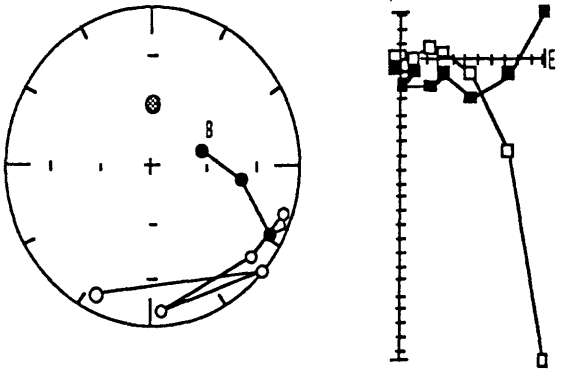
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
26	nrm	28.8	73	73.8	69.8	2.68E-03
26	TT 100	72.1	80.6	107.8	68.5	1.07E-03
26	TT 200	152.3	40.7	148.8	26.6	4.83E-04
26	TT 300	135.9	13.8	135.7	-1.2	2.32E-04
26	TT 330	114.7	62.8	119.6	48.2	1.34E-04
26	TT 360	150.2	39	147.2	24.8	1.40E-04
26	TT 400	177.4	8	176.8	-2.2	4.32E-05
26	TT 450	242.2	3.9	240.6	9.4	2.17E-04



27	nrm	48.6	66.5	76.8	60.5	2.49E-03
27	AF 010	44.9	67.8	75.8	62.4	2.70E-03
27	AF 025	49.2	69.1	80.1	62.5	2.34E-03
27	AF 050	56.5	69.4	85.2	61.5	1.90E-03
27	AF 075	70.5	65.8	91.1	55.8	1.44E-03
27	AF 100	78.6	67.1	97.3	55.8	1.14E-03
27	AF 150	98	54.8	105.9	41.5	7.43E-04
27	AF 200	119	45.7	121	30.9	5.57E-04
27	AF 250	124.1	37.5	125	22.5	4.33E-04
27	AF 300	133.9	23.2	133.6	8.2	4.50E-04
27	AF 350	124.9	21.9	125.2	6.9	3.54E-04
27	AF 400	141.1	21	140.4	6.2	3.25E-04
27	AF 450	144.6	10.7	144.4	-3.8	2.89E-04
27	AF 500	146.5	18.5	145.6	4	2.60E-04
27	AF 550	135.1	11.7	135	-3.2	2.89E-04
27	AF 600	121.9	23.5	122.5	8.6	2.66E-04
27	AF 700	153.6	-1.3	154.4	-15.1	3.30E-04
27	AF 750	159.3	22.5	157.3	9.2	1.82E-04

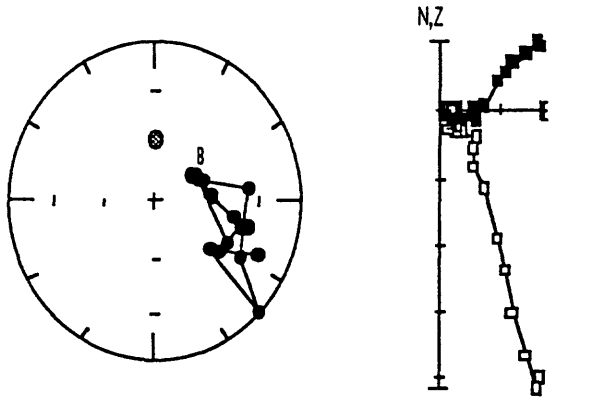


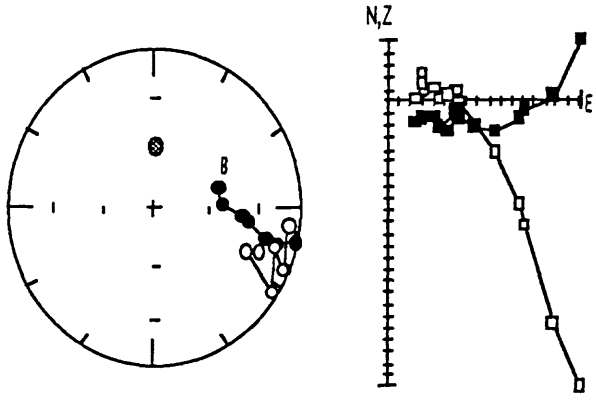
28	nrm	43.4	66.7	73.3	61.7	2.46E-03
28	TT 100	88.5	50.4	97.4	38.3	1.07E-03
28	TT 200	116.9	25	117.9	10.4	6.16E-04
28	TT 300	108	7.5	108	-6.5	3.66E-04
28	TT 330	130	2.9	130	-12.1	3.18E-04
28	TT 360	175.1	1	175.9	-9.6	1.97E-04
28	TT 400	131.7	14.8	131.7	-0.2	1.41E-04
28	TT 450	202.4	-7.8	205	-12	8.19E-05

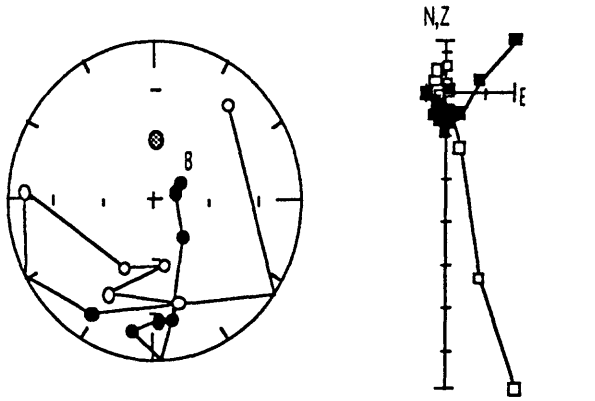


Appendix 2

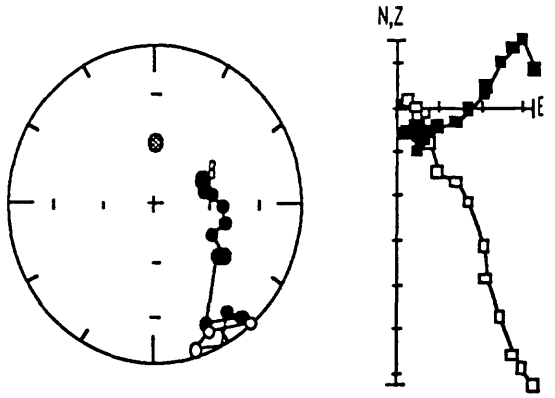
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
29	nrm	26.4	65.7	59.5	64.8	4.43E-03
29	AF 010	22.9	65.5	56.5	65.6	4.57E-03
29	AF 025	24	66.3	58.5	65.9	4.04E-03
29	AF 050	24.5	66.2	58.9	65.7	3.32E-03
29	AF 075	30.3	65	61.7	63.4	2.68E-03
29	AF 100	37	64.6	66.3	61.5	2.19E-03
29	AF 150	58.2	66.1	83	58.3	1.37E-03
29	AF 200	62.7	66.2	86.1	57.6	1.02E-03
29	AF 250	88.4	57.2	99.4	45	7.92E-04
29	AF 300	98.4	47.6	104.6	34.4	7.37E-04
29	AF 350	99	52.1	106	38.7	4.99E-04
29	AF 400	112.5	57.3	117.2	42.8	4.29E-04
29	AF 450	34.9	66.2	66.7	63.3	2.97E-04
29	AF 500	72.4	45.9	82.9	36.6	3.82E-04
29	AF 550	119.4	47.3	121.5	32.5	2.02E-04
29	AF 600	134.2	15.6	134	0.7	2.70E-04
29	AF 650	126.4	65.5	127.6	50.5	1.75E-04
29	AF 700	123.7	60.1	125.6	45.2	2.08E-04
29	AF 800	112.8	37.2	115.2	22.8	2.92E-04
30	nrm	52.5	58.7	73.1	52.8	2.99E-03
30	AF 025	69.7	61.1	87.5	51.6	2.37E-03
30	AF 075	83	51.5	93.4	40.3	1.61E-03
30	AF 100	88.8	48	97	36	1.45E-03
30	AF 150	100.3	36.3	104.3	23	1.08E-03
30	AF 200	103.1	27.3	105.6	13.7	8.21E-04
30	AF 250	102	14.6	103	1.3	6.47E-04
30	AF 300	97.2	4.5	96.9	-8.1	6.22E-04
30	AF 350	113.5	11.1	113.8	-3.3	5.03E-04
30	AF 400	113.7	9.6	113.9	-4.8	6.02E-04
30	AF 450	107.4	-1.2	106.6	-15	4.53E-04
30	AF 500	123.4	9.1	123.4	-5.8	3.15E-04
30	AF 600	115	-18.3	113	-32.7	4.01E-04
30	AF 700	112.1	-9.6	110.6	-23.8	3.70E-04
31	nrm	9.1	70	54	72.4	7.18E-03
31	TT 100	0.7	76.4	70.4	77.8	4.41E-03
31	TT 200	157	79.7	141.2	65.4	1.34E-03
31	TT 300	177.3	37	170.8	26.2	7.18E-04
31	TT 330	184.7	34.9	177.9	25.5	9.34E-04
31	TT 360	195	24.7	189.8	17.7	6.03E-04
31	TT 400	161.6	-22	166.2	-34.5	4.62E-04
31	TT 450	198.9	-28.7	207.5	-33	6.11E-04
31	TT 500	160.2	-44.1	170.7	-56.4	7.82E-04
31	TT 540	189.6	-45.6	205.4	-51.4	7.05E-04
31	TT 590	270.6	-23	273.4	-11.1	4.24E-04
31	TT 630	216	19.5	210.9	17.7	1.46E-04
31	TT 680	45.8	-22.5	39.4	-23.2	1.69E-04



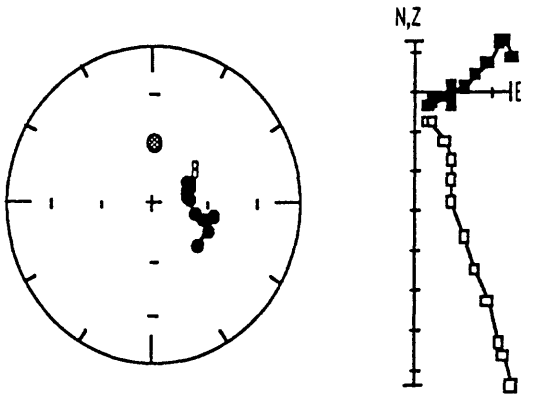




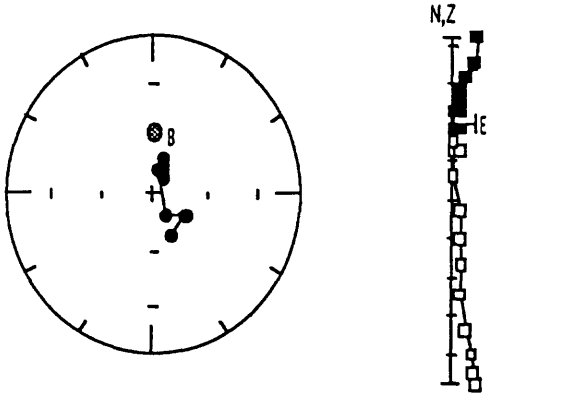
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
32	nrm	49.5	-51	30.8	-51.1	9.65E-03
33	nrm	45.1	67.3	75.2	61.9	7.14E-03
33	AF 010	34.5	62.9	62.5	60.6	6.80E-03
33	AF 025	35.1	64	64.3	61.4	6.38E-03
33	AF 050	39.5	64.5	68.1	60.8	5.44E-03
33	AF 075	48.6	66.7	77	60.7	4.43E-03
33	AF 100	56.9	64.2	80.5	56.8	3.79E-03
33	AF 150	75.5	62.2	92.3	51.7	2.72E-03
33	AF 200	93.1	62.4	104.7	49.5	2.23E-03
33	AF 250	106	68.2	115.1	54	1.79E-03
33	AF 300	123.1	57.4	125	42.4	1.26E-03
33	AF 350	125.1	60.5	126.5	45.6	9.27E-04
33	AF 400	158.6	31	155.5	17.6	1.15E-03
33	AF 450	141.4	22.6	140.6	7.9	9.61E-04
33	AF 500	145	31.2	143.4	16.6	8.09E-04
33	AF 600	162.8	8	162.6	-4.6	6.41E-04
33	AF 700	154.7	0.6	155.4	-13	5.98E-04
33	AF 800	138.7	14.2	138.5	-0.6	6.18E-04



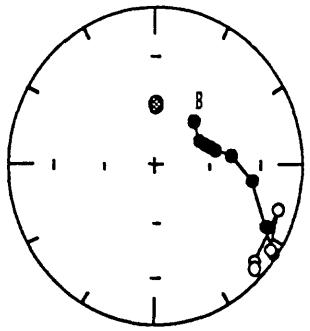
34	nrm	26	72.4	71	70	7.84E-03
34	AF 010	22	68.4	60.5	68.1	7.15E-03
34	AF 025	23	68.4	61.2	67.8	6.80E-03
34	AF 050	26.6	71.2	68.9	69	5.66E-03
34	AF 075	28.8	73.4	74.7	70.1	4.78E-03
34	AF 100	37.1	76.1	84.9	70.2	3.92E-03
34	AF 150	31.7	75.3	80.6	70.7	2.96E-03
34	AF 200	70	77.6	102.4	66.3	2.41E-03
34	AF 250	85.6	73.5	105.9	60.9	2.02E-03
34	AF 300	83.3	68.6	101.2	56.6	1.49E-03
34	AF 350	130.9	73	130.5	58	9.35E-04
34	AF 400	106.7	70.5	116.2	56.2	9.41E-04

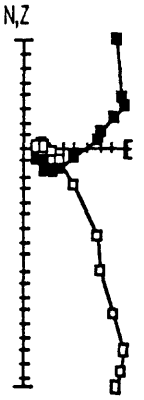


35	nrm	349.8	61.6	17.7	70.8	7.16E-03
35	AF 010	347.1	66	22.5	75.1	6.69E-03
35	AF 025	347.2	65.4	21.2	74.6	6.21E-03
35	AF 050	342.9	66.7	19	76.7	5.51E-03
35	AF 075	338.2	67.8	15.4	78.7	4.54E-03
35	AF 100	342.9	68.3	23.5	77.9	3.73E-03
35	AF 150	341.4	68.8	23.1	78.6	3.03E-03
35	AF 200	342.8	70.9	33	79.7	2.32E-03
35	AF 300	339.2	66.2	12.2	77.1	1.38E-03
35	AF 350	256.8	85.5	146.3	77.2	7.27E-04
35	AF 400	100.5	83.9	121.5	69.5	7.67E-04
35	AF 450	187.5	79	154.5	67.1	5.11E-04



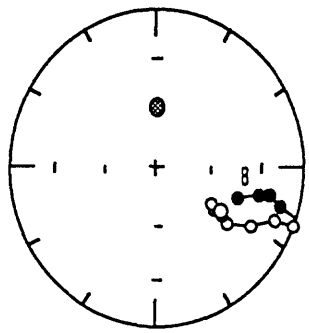
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
36	nrm	18.7	55.7	41.7	58.3	2.08E-03
36	AF 010	33	64.7	63.4	62.4	1.87E-03
36	AF 025	40.2	64	68.1	60.2	1.72E-03
36	AF 050	45.5	63.5	71.6	58.6	1.44E-03
36	AF 075	55.2	62.3	77.7	55.5	1.10E-03
36	AF 100	67.1	56.2	82.9	47.5	8.79E-04
36	AF 150	90.3	45.3	97.6	33.1	4.85E-04
36	AF 200	116	29.8	117.5	15.2	3.32E-04
36	AF 250	124.5	18.3	124.8	3.4	2.63E-04
36	AF 300	124.1	9.3	124.1	-5.6	1.92E-04
36	AF 350	109	1.5	108.5	-12.5	1.45E-04
36	AF 400	131.7	4.5	131.7	-10.5	1.24E-04
36	AF 450	134.2	8.1	134.2	-6.8	2.17E-04

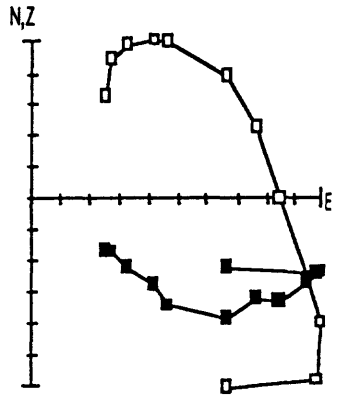




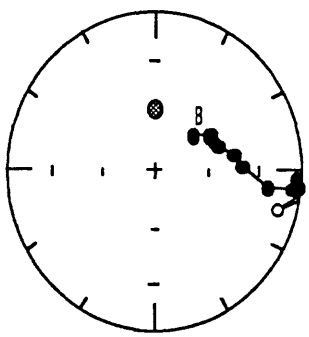
37	nrm	66.5	18.6	70.1	11.4	1.43E-03

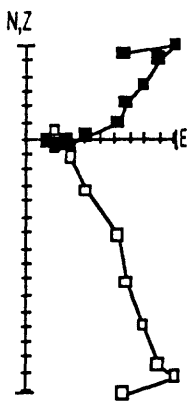
38	nrm	101.4	54.3	108.4	40.7	9.23E-04
38	AF 010	98.6	43.4	104	30.2	1.16E-03
38	AF 025	99.4	34.5	103.2	21.3	1.09E-03
38	AF 050	103.3	28.1	105.9	14.6	1.01E-03
38	AF 075	110.5	14	111.1	-0.2	9.06E-04
38	AF 100	113.3	-0.7	112.7	-15.1	8.66E-04
38	AF 150	120.8	-12.2	119.9	-27	8.61E-04
38	AF 200	126.9	-26	126.3	-41	7.66E-04
38	AF 250	124.3	-30.4	122.9	-45.3	7.13E-04
38	AF 300	125.3	-36.3	124	-51.2	6.29E-04
38	AF 350	123.6	-39.4	121.5	-54.3	5.50E-04
38	AF 400	123.8	-32.8	122.3	-47.7	4.47E-04





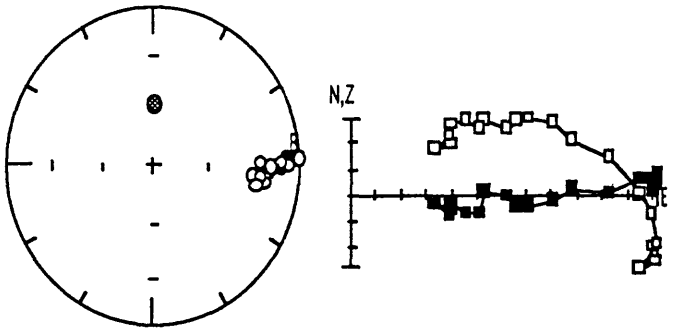
39	nrm	22.2	61.2	50.5	62.2	1.84E-03
39	AF 010	39	54.6	59.2	52.2	1.92E-03
39	AF 025	37.8	57.1	60	54.7	1.78E-03
39	AF 050	45	58.2	66.7	54	1.48E-03
39	AF 075	50.9	57.8	71.2	52.3	1.17E-03
39	AF 100	65.5	53	80	44.8	8.86E-04
39	AF 150	75.5	50.5	87	40.5	5.21E-04
39	AF 200	92.9	36	97.8	23.6	3.34E-04
39	AF 250	96	14.7	97.2	2.1	2.69E-04
39	AF 300	95.2	18.9	97.1	6.5	2.57E-04
39	AF 350	91.5	16.5	93.2	4.6	2.24E-04
39	AF 400	106.8	0.2	106.1	-13.6	2.07E-04
39	AF 450	94.8	14.6	96.1	2.2	1.33E-04



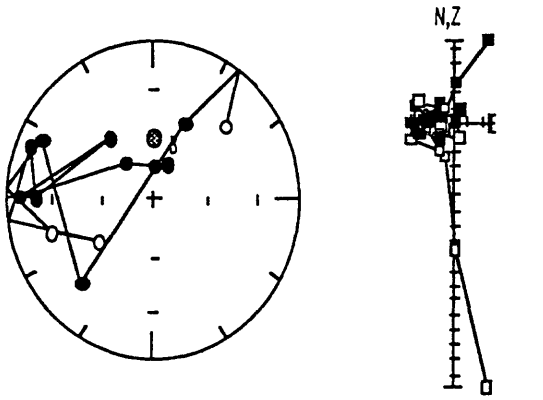


40	nrm	33.1	60	58.5	58.5	1.99E-03

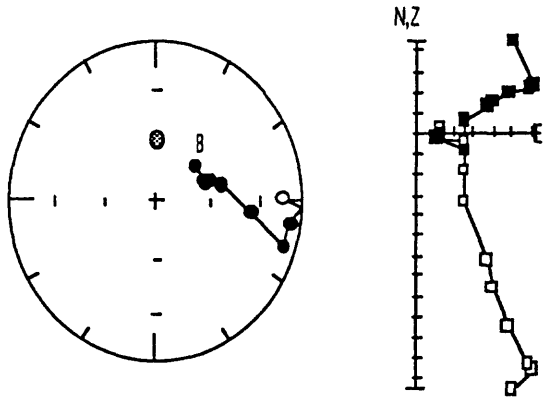
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
41	nrm	86.4	20.3	89	9.1	1.22E-03
41	AF 010	86.5	24.4	89.9	13.2	1.18E-03
41	AF 025	84.9	22.4	88.1	11.5	1.24E-03
41	AF 050	83.5	19.2	86.1	8.6	1.24E-03
41	AF 075	85.2	14.2	86.8	3.4	1.20E-03
41	AF 100	85.9	10.5	86.8	-0.3	1.15E-03
41	AF 150	89.9	3.5	89.5	-8	1.04E-03
41	AF 200	89.7	-2	88.4	-13.4	9.01E-04
41	AF 250	93.1	-6.7	91	-18.6	8.51E-04
41	AF 300	95.5	-9.8	93	-22	7.67E-04
41	AF 350	96.2	-11	93.6	-23.3	7.20E-04
41	AF 400	92.4	-10.2	89.6	-21.9	6.64E-04
41	AF 450	92.4	-16.5	88.4	-28.1	5.98E-04
41	AF 500	100	-13.2	97.2	-26	5.78E-04
41	AF 550	101.1	-18.6	97.6	-31.5	5.44E-04
41	AF 600	98.4	-20.5	94.2	-33	4.84E-04
41	AF 700	99.4	-12.6	96.7	-25.4	4.51E-04
41	AF 800	98.8	-15.3	95.6	-27.9	3.82E-04
41	AF 900	103.1	-16.5	100	-29.7	4.58E-04



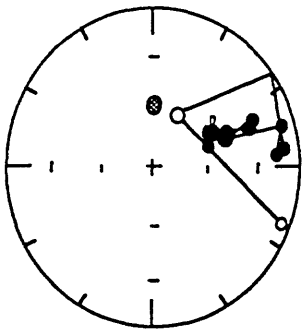
42	nrm	353.3	62.9	23.9	71.1	1.89E-03
42	TT 100	339.5	61.5	3.6	73	9.02E-04
42	TT 200	316.9	51	320.7	65.8	2.53E-04
42	TT 300	271.5	-0.9	270.7	10.8	2.18E-04
42	TT 330	319.3	35.4	321.8	50.2	2.60E-04
42	TT 360	272.4	10.1	269.7	21.8	3.39E-04
42	TT 400	291.4	-3.2	291.1	11	3.13E-04
42	TT 450	213.5	-54	233.9	-53	1.28E-04
42	TT 500	244.1	-36.4	252.7	-29.2	3.00E-04
42	TT 540	295.8	2.5	295.2	17	1.05E-04
42	TT 590	231.2	27.1	223.2	29	1.73E-04
42	TT 630	10.7	40.8	24.1	46.6	1.39E-04
42	TT 680	56.9	-29.6	48	-32.8	2.41E-05

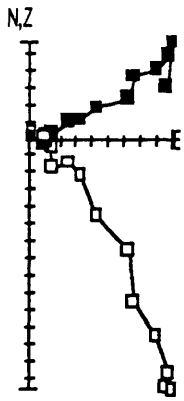


43	nrm	20.9	60	47.9	61.5	1.43E-03
43	AF 010	40.8	64.4	68.9	60.4	1.34E-03
43	AF 025	41	64.6	69.4	60.6	1.30E-03
43	AF 050	38.8	64.7	67.8	61.1	1.09E-03
43	AF 075	39.5	64.1	67.6	60.4	8.77E-04
43	AF 100	44	61.9	69	57.5	7.40E-04
43	AF 150	56.6	58.9	76.3	52.1	4.31E-04
43	AF 200	88.6	46.7	96.5	34.7	3.13E-04
43	AF 250	106	22.3	107.6	8.5	2.73E-04
43	AF 300	96.1	20.4	98.2	7.7	1.12E-04
43	AF 350	89.3	-2.7	87.8	-13.9	1.37E-04

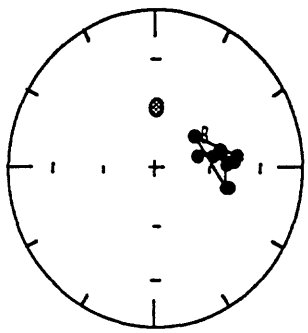


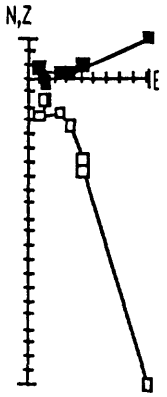
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
44	nrm	44.5	62.9	70.3	58.3	1.71E-03
44	AF 010	35.7	55.9	57.2	54.2	1.81E-03
44	AF 025	38.7	56.4	60.2	53.9	1.69E-03
44	AF 050	41.8	55.8	62.4	52.6	1.45E-03
44	AF 075	40.3	54.7	60.4	52	1.21E-03
44	AF 100	53	50	68.3	44.6	9.24E-04
44	AF 150	51	49.4	66.4	44.5	6.38E-04
44	AF 200	59.6	37.7	69.1	31.4	4.06E-04
44	AF 250	58	32.3	65.9	26.6	2.95E-04
44	AF 300	53.5	52.4	70	46.8	2.15E-04
44	AF 350	70.9	17	73.8	9	1.08E-04
44	AF 400	80	27.6	84.6	17.4	1.52E-04
44	AF 450	79.3	21.3	82.6	11.5	1.19E-04
44	AF 500	52.1	-60.4	25.5	-60.1	5.39E-05
44	AF 600	112	8.7	112.1	-5.6	9.37E-05



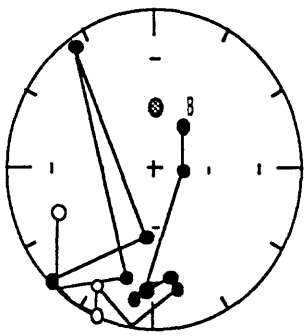


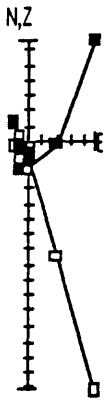
45	nrm	35.5	70.1	72.6	66.2	2.41E-03
45	AF 025	53.7	63.4	77.5	56.8	7.94E-04
45	AF 150	56.2	60.1	76.8	53.2	7.27E-04
45	AF 200	70.4	55.5	85.1	46.2	4.64E-04
45	AF 250	67	52.2	80.9	43.8	3.51E-04
45	AF 300	22.1	62.7	52.1	63.4	2.88E-04
45	AF 350	91.9	61.3	103.4	48.5	2.18E-04
45	AF 400	70.4	60	87.4	50.4	1.99E-04





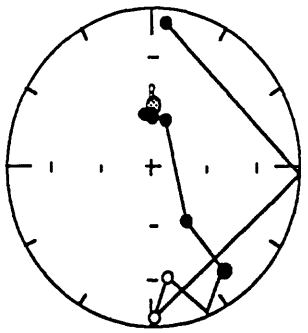
46	nrm	9	58.4	34.9	63.2	1.81E-03
46	TT 100	25	80.3	92.5	74.4	7.65E-04
46	TT 200	190.9	33.6	183.7	25.5	1.86E-04
46	TT 300	194.8	25.6	189.4	18.5	1.91E-04
46	TT 330	178.5	42.2	170.5	31.5	8.93E-05
46	TT 360	174.8	36.7	168.7	25.4	9.20E-05
46	TT 400	203.5	-15	207.9	-18.7	1.36E-04
46	TT 450	203.5	4.1	203	-0.2	1.45E-04
46	TT 500	224.5	0.4	224.2	1.5	8.59E-05
46	TT 540	210.8	61	187.8	55.6	2.12E-04
46	TT 590	325.1	-8.2	325	6.2	1.70E-04
46	TT 630	205.5	35.7	196.2	30.7	2.19E-04
46	TT 680	238.2	-36.1	247.3	-30.2	7.06E-05



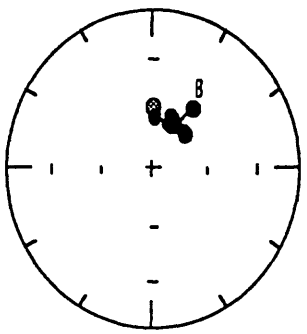


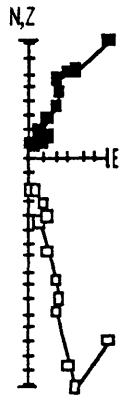
47	nrm	334.3	62.4	349.9	71.3	1.91E-03

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
48	nrm	338.7	53.7	349.9	62.3	1.56E-03
48	TT 100	344.2	56	357.9	63.7	8.04E-04
48	TT 200	357.1	59	15.1	64.4	4.46E-04
48	TT 300	155.4	66.1	146.6	56.2	1.23E-04
48	TT 330	144.7	30.3	143	19.9	1.83E-04
48	TT 360	168	-23.6	172.1	-31.4	9.16E-05
48	TT 400	179.1	0.9	179.4	-5.5	7.58E-05
48	TT 450	4.2	5.1	5.5	10.6	9.50E-05

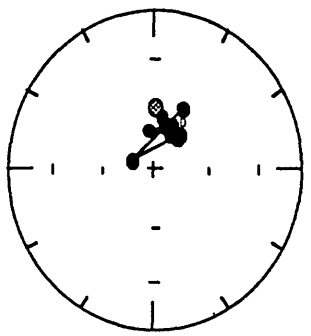


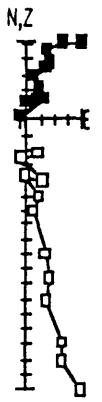
49	nrm	21.9	50.2	35.4	51.5	1.65E-03
49	AF 010	6.9	63.1	29.4	66.4	1.77E-03
49	AF 025	5.2	61.7	26.2	65.4	1.62E-03
49	AF 050	3.6	56.6	20.4	61	1.25E-03
49	AF 075	6	58.6	24.4	62.4	1.13E-03
49	AF 100	8.7	61.2	29.4	64.3	9.54E-04
49	AF 150	3.4	60.2	23	64.4	7.37E-04
49	AF 200	1.3	60.8	21.3	65.3	5.07E-04
49	AF 250	18.3	62.6	40.1	63.8	4.59E-04
49	AF 300	20.3	64.3	43.7	64.9	3.57E-04
49	AF 350	347.1	56.2	1.5	63.4	2.45E-04
49	AF 400	3.5	61.3	24	65.3	2.51E-04



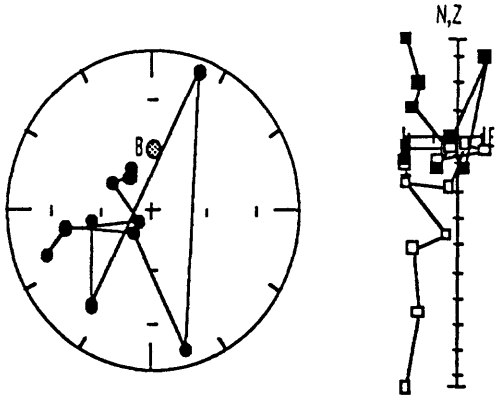


50	nrm	8.6	68	37.2	70.3	1.91E-03
50	AF 010	0.6	66.2	26.5	70.3	1.71E-03
50	AF 025	1.6	64.4	25.2	68.5	1.59E-03
50	AF 050	355	62.5	16	68.1	1.30E-03
50	AF 075	359.8	63.9	22.8	68.4	1.13E-03
50	AF 100	358.9	62.3	20.1	67.2	9.77E-04
50	AF 150	350.9	56.9	6.5	63.5	6.86E-04
50	AF 200	1.2	61.9	22.2	66.3	5.59E-04
50	AF 250	334.9	61	349.6	69.8	3.79E-04
50	AF 300	12.8	65.4	37.8	67.3	4.43E-04
50	AF 350	298.1	66.4	292.4	77.3	2.51E-04
50	AF 400	11.3	52.3	25.8	55.4	2.65E-04

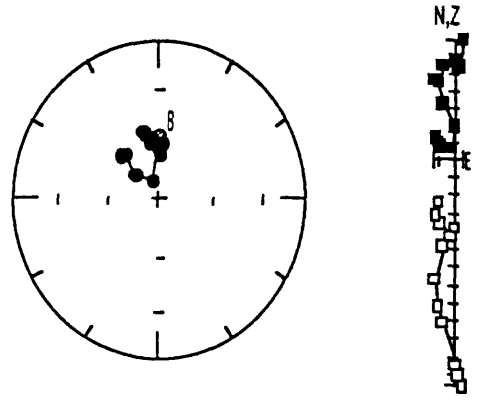




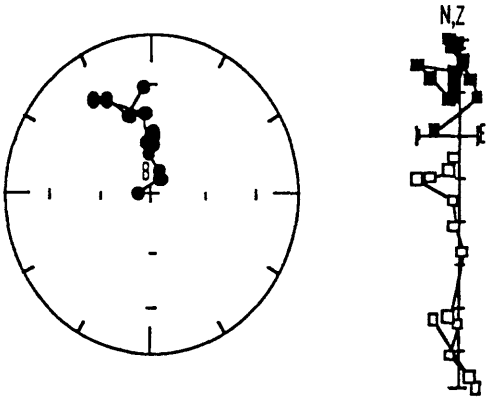
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
51	TT 100	323.3	55.3	330.6	65.6	1.03E-03
51	TT 200	316.2	57.8	321.3	68.5	7.06E-04
51	TT 300	301.9	51.7	300.9	62.7	4.66E-04
51	TT 330	272.5	73.4	234.3	80.7	3.73E-04
51	TT 360	263.3	29.5	258.2	37.4	2.67E-04
51	TT 400	252.3	16.3	249.1	22.7	2.47E-04
51	TT 450	266.6	30.4	261.6	38.7	2.72E-04
51	TT 500	255.2	69.9	223.3	74.6	1.94E-04
51	TT 540	167.6	18.9	165.6	10.7	1.16E-04
51	TT 590	18.4	6.2	19.8	9.2	3.19E-04
51	TT 630	221.2	28	215.3	28.6	1.64E-04
51	TT 680	269.3	46	260.8	54.5	4.50E-05



52	nrm	350.2	54.7	4.2	61.5	1.45E-03
52	AF 010	346.4	59.1	2.7	66.3	1.32E-03
52	AF 025	346.2	56.5	0.6	63.8	1.28E-03
52	AF 050	341.7	50.5	352	58.8	1.06E-03
52	AF 075	338.1	52.2	348.4	60.8	9.49E-04
52	AF 100	337.2	45.4	344.9	54.3	8.18E-04
52	AF 150	338.1	46.7	346.4	55.5	5.86E-04
52	AF 200	344.3	56.1	358.1	63.7	4.25E-04
52	AF 250	322.1	69.8	340	79.8	4.27E-04
52	AF 300	310.6	60.7	313.7	71.7	3.70E-04
52	AF 350	316.8	49.6	320.5	60.3	3.49E-04
52	AF 400	313.9	48	316.5	58.8	2.68E-04

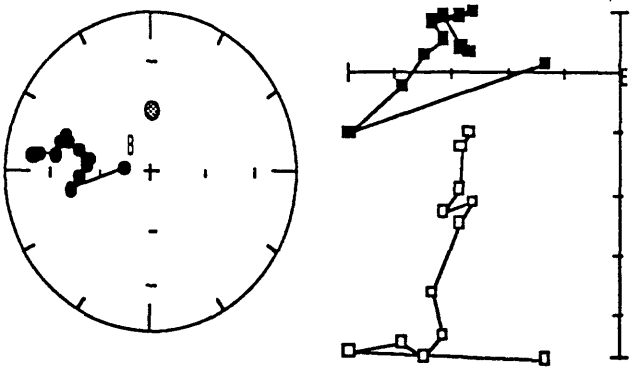


53	nrm	294.2	71.6	279.3	82.2	4.33E-04
53	AF 010	342.2	74.9	28.2	80.9	5.93E-04
53	AF 025	343.2	70.5	14.5	77.3	5.77E-04
53	AF 050	338.3	60.4	353.6	68.8	5.49E-04
53	AF 075	345.1	56.9	359.5	64.4	4.84E-04
53	AF 100	341	54.1	352.9	62.4	4.74E-04
53	AF 150	350.3	51.5	2.7	58.4	3.23E-04
53	AF 200	342	53.7	353.9	61.9	2.40E-04
53	AF 250	346.3	38.8	353.5	46.6	2.10E-04
53	AF 300	324.7	18.3	326.3	28.6	2.15E-04
53	AF 350	329.7	24	332.3	33.9	1.78E-04
53	AF 400	336.2	36.8	341.6	45.9	1.18E-04
53	AF 450	349.6	24.9	354	32.4	9.86E-05

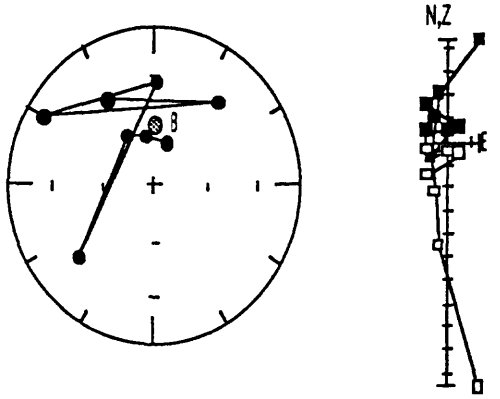


Appendix 2

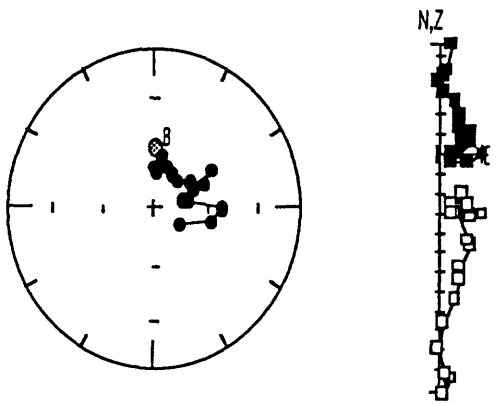
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
54	nrm	288.2	63.8	277.4	74.1	4.90E-04
54	AF 010	265.1	35.1	258.9	43.2	6.68E-04
54	AF 025	273	40	266.7	49	5.87E-04
54	AF 050	281	43.6	275.3	53.5	5.81E-04
54	AF 075	285.3	43.5	280.6	53.7	5.36E-04
54	AF 100	287.7	36.2	284.6	46.6	4.99E-04
54	AF 150	290.4	28.6	288.5	39.3	3.88E-04
54	AF 200	293.3	26.1	291.8	36.9	3.49E-04
54	AF 250	289	24.1	287.2	34.6	3.99E-04
54	AF 300	281.7	22.9	279.3	32.9	3.46E-04
54	AF 350	280.2	12.7	278.7	22.6	3.08E-04
54	AF 400	278.9	9.9	277.6	19.7	2.86E-04



55	nrm	357.3	61.2	17.2	66.4	1.15E-03
55	TT 100	335.6	55.2	346.8	64.2	4.95E-04
55	TT 200	323	49.4	328.4	59.7	2.44E-04
55	TT 300	234.9	28.6	228.7	31.8	1.26E-04
55	TT 330	355.3	28	0.6	34.6	6.50E-05
55	TT 360	299.9	3	299.8	14	1.14E-04
55	TT 400	32.3	32.3	39.3	32.1	9.60E-05
55	TT 450	326.3	27.2	329	37.4	2.37E-04

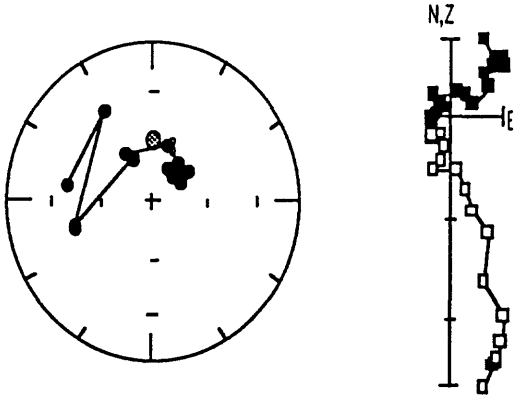


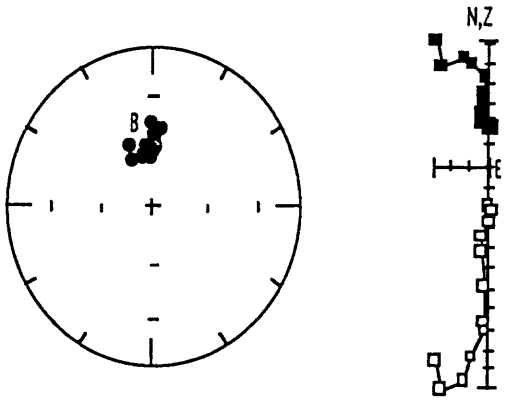
56	nrm	351.7	56.9	7.4	63.4	1.28E-03
56	AF 010	343.7	63.8	3.8	71.2	1.29E-03
56	AF 025	346.4	61.8	5.1	68.9	1.20E-03
56	AF 050	342	61.2	359	69.1	1.06E-03
56	AF 075	346.7	61.7	5.4	68.7	9.14E-04
56	AF 100	356	63	17.6	68.3	7.90E-04
56	AF 150	2.9	66.6	29.5	70.2	6.76E-04
56	AF 200	8.1	69.5	39.2	71.7	5.99E-04
56	AF 250	30.2	67.2	55.5	65.7	5.03E-04
56	AF 300	36	70.1	63.5	67.2	4.69E-04
56	AF 350	42.9	77.1	79.2	71.9	2.61E-04
56	AF 400	43.5	54.9	57.9	51.9	2.46E-04
56	AF 450	46.7	64.2	66.3	60.1	3.63E-04
56	AF 500	48.8	76.5	81.6	70.7	3.15E-04
56	AF 550	29.7	77.6	73	74.2	2.62E-04
56	AF 600	34.2	78.9	78.8	74.5	3.00E-04
56	AF 700	78.9	60.9	89.8	52.5	3.88E-04
56	AF 800	90.9	67	101.1	57.4	2.97E-04
56	AF 900	103.9	85.1	118.4	74.3	3.10E-04

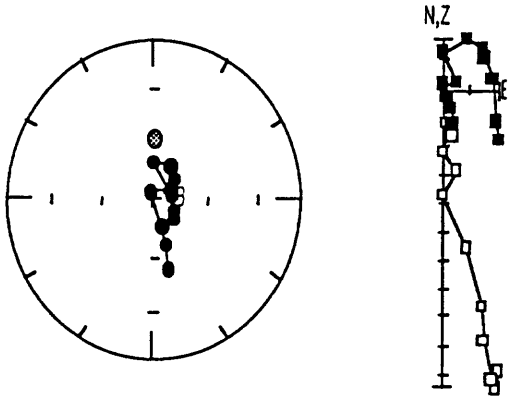


Appendix 2

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
57	nrm	357.4	67	24.4	71.7	2.82E-03
57	AF 010	6.8	71.3	41.5	73.5	2.56E-03
57	AF 025	7.9	69.5	39.2	71.8	2.58E-03
57	AF 050	9.9	70.3	42.3	72.1	2.51E-03
57	AF 075	14.7	68.3	43.4	69.5	2.38E-03
57	AF 100	20.2	68.3	48.3	68.4	2.11E-03
57	AF 150	10.5	67.7	38.7	69.8	1.72E-03
57	AF 200	26.6	65.6	50.7	64.9	1.25E-03
57	AF 250	21.7	73.1	57.5	72.2	9.63E-04
57	AF 300	12.6	64	36.1	66.1	7.67E-04
57	AF 350	359	55.5	14.7	60.7	5.86E-04
57	AF 400	321.5	50.4	326.8	60.8	5.89E-04
57	AF 450	324.6	56.6	332.9	66.7	4.59E-04
57	AF 500	325.1	55.8	333.2	65.8	3.04E-04
57	AF 550	259.7	37.2	252.5	44.5	2.64E-04
57	AF 700	326.4	24.1	328.8	34.3	2.31E-04
57	AF 800	282.8	30.2	279.7	40.3	2.41E-04
59	nrm	329.5	44.6	335.4	54.4	1.17E-03
59	AF 010	326	53.3	333.4	63.3	1.22E-03
59	AF 025	335.3	53.3	345.4	62.3	1.18E-03
59	AF 050	338.7	52.5	349.4	61.1	1.07E-03
59	AF 075	344.9	53.6	357.4	61.2	9.18E-04
59	AF 100	342.2	56.1	355.6	64.1	8.51E-04
59	AF 150	343.1	54.3	355.6	62.2	6.65E-04
59	AF 200	342	49.1	351.9	57.4	4.86E-04
59	AF 250	340	49.1	349.4	57.6	4.02E-04
59	AF 300	350.3	44.9	359.9	52	3.40E-04
59	AF 350	350	39.4	357.7	46.6	2.73E-04
59	AF 400	355.7	42.3	4.9	48.6	2.80E-04
60	nrm	146.7	85.7	131.1	74.9	1.02E-03
60	AF 010	75.8	88.4	119.1	77.9	1.07E-03
60	AF 025	7.6	81.7	79	79.8	1.03E-03
60	AF 050	3.1	76.8	54.2	78.2	8.97E-04
60	AF 075	6	72.8	44	74.8	7.83E-04
60	AF 100	359.3	66.2	25.2	70.5	5.91E-04
60	AF 150	340.2	61.8	357.2	69.9	3.93E-04
60	AF 200	357.2	78.4	57.4	80.1	2.87E-04
60	AF 250	314.9	74.7	337.5	85.1	2.12E-04
60	AF 300	213.8	81.7	162.1	76.1	1.18E-04
60	AF 350	187.9	73.1	164.6	66.1	1.69E-04
60	AF 400	181.1	60.6	168.1	53.4	2.04E-04

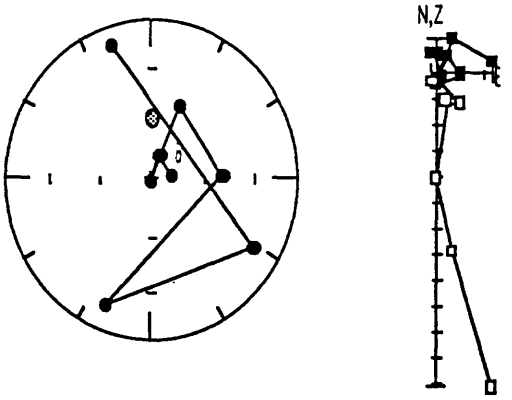


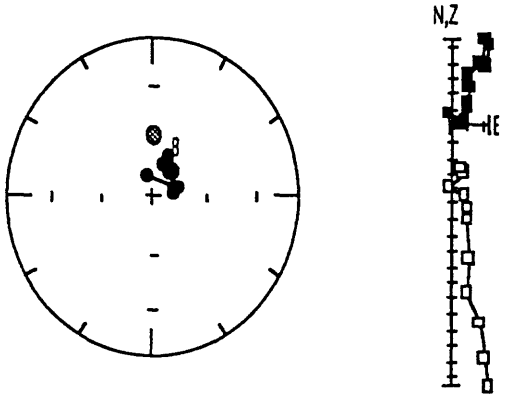


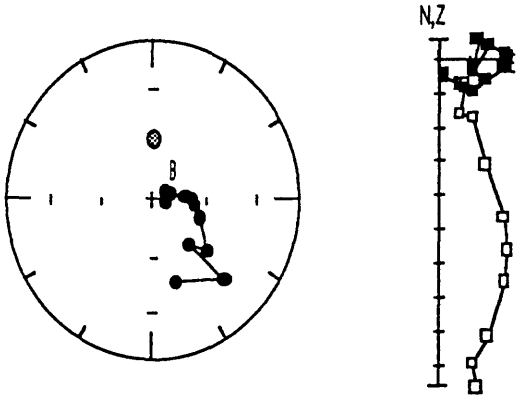


Appendix 2

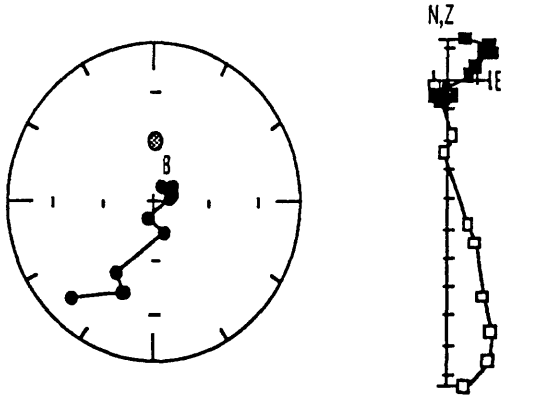
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
61	nrm	10.5	80.9	76	79.1	1.23E-03
61	TT 100	347.1	71.2	20.8	77.1	6.97E-04
61	TT 200	294.6	78.7	219.3	88	3.99E-04
61	TT 300	11.2	45.9	22.7	49.3	1.27E-04
61	TT 330	76.8	57.6	87	49.5	1.33E-04
61	TT 360	205.1	18.7	201.7	16.5	3.53E-05
61	TT 400	120.8	30.7	121.2	19.7	1.89E-05
61	TT 450	340.5	3.9	341.4	12.8	9.12E-05
62	nrm	359.2	69.4	30.3	73.3	1.54E-03
62	AF 010	358.7	66.5	25	71	1.75E-03
62	AF 025	359.1	63.2	21.3	68	1.60E-03
62	AF 050	357.9	65.9	23.2	70.6	1.32E-03
62	AF 075	351.3	66.7	16.9	72.5	1.11E-03
62	AF 100	356.2	67.2	23.3	72	8.79E-04
62	AF 150	1.5	70.1	34	73.5	6.08E-04
62	AF 200	5.2	70.4	38.2	73.1	5.51E-04
62	AF 250	12.3	79.2	68.9	78	4.49E-04
62	AF 300	325.5	68.5	343.8	78.2	3.91E-04
62	AF 350	24.6	76.6	67.4	74.4	2.98E-04
62	AF 450	15.9	81.5	80.4	78.6	2.60E-04
63	nrm	9.8	52.8	24.6	56.2	1.77E-03
64	nrm	6.7	57.3	24.2	61	1.38E-03
65	nrm	348.3	79.6	60.2	82.1	9.76E-04
65	AF 010	334.3	84.6	102.5	83.2	9.02E-04
65	AF 025	8.1	80.5	73.2	79.3	8.28E-04
65	AF 050	48.5	78.2	84.5	72.1	6.86E-04
65	AF 075	58.3	76.1	86.6	69.2	5.96E-04
65	AF 100	74.3	75.1	95	66.6	5.05E-04
65	AF 150	100.2	73.4	109.7	63.1	3.37E-04
65	AF 200	131.6	60.9	130	49.9	2.14E-04
65	AF 250	147.2	70.2	139.7	59.7	1.82E-04
65	AF 300	137.4	41.6	135.7	30.8	1.34E-04
65	AF 350	172.5	53.8	163.6	45.7	6.26E-05
66	nrm	34.7	48	46.7	46.9	8.54E-04
67	nrm	69.6	65.4	84.8	57.9	1.37E-03



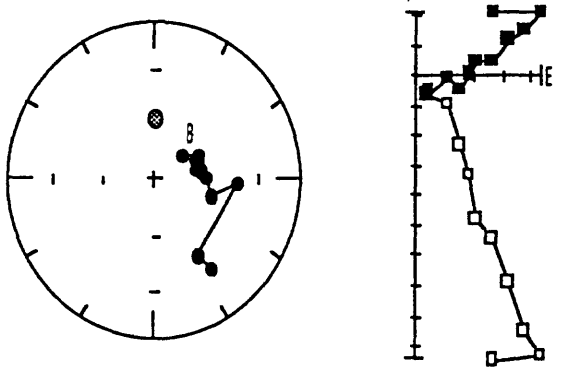




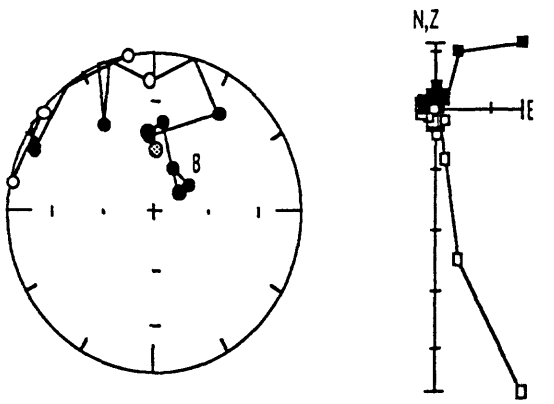
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
68	nrm	337.2	74.9	22.1	81.8	1.05E-03
68	AF 010	359.1	76.6	50.7	78.8	9.67E-04
68	AF 025	4.6	77.8	59.1	78.5	8.73E-04
68	AF 050	3.3	76.3	52.2	77.8	7.52E-04
68	AF 075	4.8	79.1	64.9	79.1	5.61E-04
68	AF 100	354.8	81.8	77	81.6	4.90E-04
68	AF 150	265.5	77.6	205.1	82	2.51E-04
68	AF 200	203.7	80.3	162	74	1.95E-04
68	AF 250	222.8	47.3	210.8	47.6	9.59E-05
68	AF 300	208.7	41.2	199.6	39.1	8.72E-05
68	AF 350	226.4	16.3	223.1	18.1	7.54E-05
68	AF 400	211	40.3	202	38.7	1.00E-04



69	nrm	20.9	70.2	51.7	69.9	9.99E-04
69	AF 010	42.5	65.9	64.2	62.4	1.04E-03
69	AF 025	43.3	68.6	67.4	64.7	9.39E-04
69	AF 050	46	67.8	68.7	63.5	7.63E-04
69	AF 075	57.2	70.4	79.4	64.2	6.00E-04
69	AF 100	50.6	71.9	76.4	66.5	5.19E-04
69	AF 150	70.2	68.9	87.4	61.2	3.73E-04
69	AF 200	97.3	66.3	105.4	56.2	2.78E-04
69	AF 250	85.6	51.3	92.5	42.3	1.40E-04
69	AF 300	154	52.9	148.5	43	9.06E-05
69	AF 350	148.6	42.6	145.4	32.3	7.47E-05

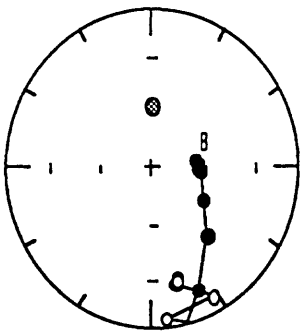


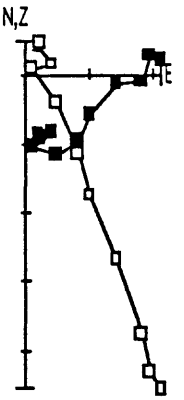
70	nrm	26.9	68.6	54.4	67.5	5.09E-03
70	TT 100	2.6	62	23.8	66.2	2.72E-03
70	TT 200	14.1	72.5	50.2	73.1	8.49E-04
70	TT 300	16.7	74.6	56.9	74.2	2.99E-04
70	TT 330	356.5	36.5	4	42.8	5.48E-04
70	TT 360	346	40.8	353.8	48.7	3.23E-04
70	TT 360	346.9	43.7	355.6	51.3	2.70E-04
70	TT 400	29.9	25.1	35.1	25.6	3.72E-04
70	TT 450	0.3	-25.5	356.7	-19	2.30E-04
70	TT 500	324.4	25.2	326.7	35.5	1.98E-04
70	TT 540	349.5	-8.2	348.9	-0.3	2.14E-04
70	TT 590	295.6	-0.8	295.5	10	2.26E-04
70	TT 630	309.9	-13.2	309.8	-2.2	2.47E-04
70	TT 680	280.9	-11.8	281.4	-1.7	1.22E-04



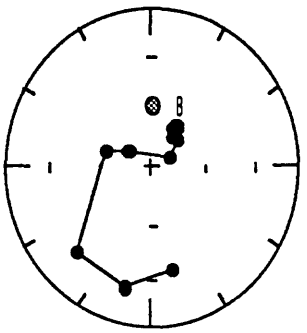
Appendix 2

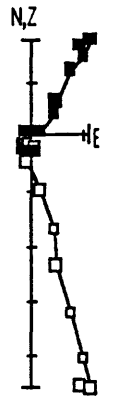
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
71	nrm	62.2	71.8	84.2	64.9	5.00E-03
71	AF 010	58.3	71.8	81.6	65.4	4.69E-03
71	AF 025	73.5	72.9	92.6	64.6	4.17E-03
71	AF 050	79.6	71.1	95.3	62.3	3.02E-03
71	AF 075	116.8	67.8	119.3	56.9	2.09E-03
71	AF 100	142.1	53	138.9	42.4	1.69E-03
71	AF 150	160.5	27.6	157.9	18.5	1.29E-03
71	AF 200	173.9	1.9	174.1	-5.3	1.03E-03
71	AF 250	152.2	-0.6	152.7	-10.4	9.14E-04
71	AF 300	164.2	-17.7	167	-26.1	9.73E-04
71	AF 350	162.8	-19.7	165.9	-28.2	1.05E-03
71	AF 400	163.1	-18.1	166	-26.6	1.02E-03



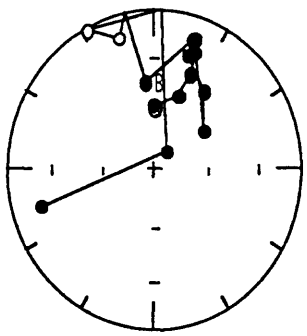


72	nrm	6.6	64.1	30.3	67.4	4.91E-03
72	AF 010	10.5	62.8	32.7	65.4	5.04E-03
72	AF 025	11	64.1	34.7	66.5	4.40E-03
72	AF 050	9.3	63.1	31.8	65.9	3.52E-03
72	AF 075	6.2	68.7	36.1	71.5	2.47E-03
72	AF 100	14.9	69	44.6	70	1.80E-03
72	AF 150	3.6	78.3	60.7	78.9	9.95E-04
72	AF 200	302.5	63.2	300.9	74.2	4.68E-04
72	AF 250	290.8	52.7	285.7	63.3	2.76E-04
72	AF 300	229.1	25	223.8	27.2	3.21E-04
72	AF 350	198.7	25.9	194	22.4	3.25E-04
72	AF 400	174.3	42.6	167.9	34.9	3.26E-04



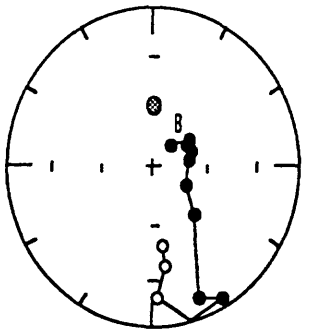


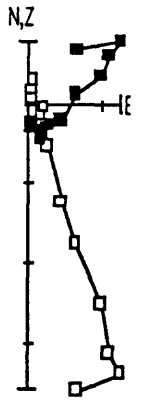
73	nrm	348.2	49	359	56.3	2.73E-03
73	TT 100	8	45.4	19.2	49.5	1.70E-03
73	TT 200	14.5	32.4	21.6	35.7	8.50E-04
73	TT 300	17.2	20.2	21.4	23.2	5.07E-04
73	TT 330	37.4	57.5	53.8	55.5	4.26E-04
73	TT 360	25.8	40	35.2	40.9	3.92E-04
73	TT 400	13.3	21.7	17.9	25.3	4.38E-04
73	TT 450	16.2	12.3	18.9	15.6	2.97E-04
73	TT 500	346.5	36.5	353.1	44.3	4.92E-04
73	TT 540	346.3	-23.1	343.8	-14.6	1.51E-04
73	TT 590	333.1	-11.8	332.4	-2	8.28E-05
73	TT 630	352.8	73.5	33.8	77.9	3.10E-04
73	TT 680	255.7	13.8	253.1	20.8	1.53E-04



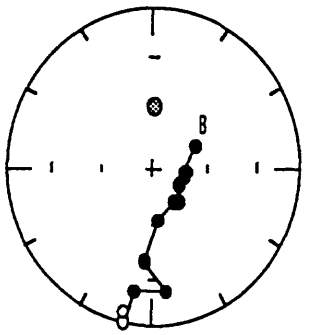
Appendix 2

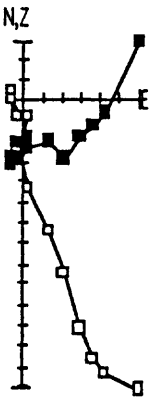
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
74	nrm	4	73	42.8	75.3	3.73E-03
74	AF 010	30.6	68.2	57	66.5	3.71E-03
74	AF 025	31.1	70.3	60.1	68.2	3.38E-03
74	AF 050	41.4	71.1	68.9	67.2	2.72E-03
74	AF 075	46.9	75.7	79.2	70.3	1.85E-03
74	AF 100	108	79.9	116.7	69.1	1.32E-03
74	AF 150	142.7	66.9	137.4	56.2	6.37E-04
74	AF 200	161	22.1	158.9	13.1	4.75E-04
74	AF 250	151.3	15.1	150.4	5.2	3.93E-04
74	AF 300	175.5	-11.6	177.8	-18.4	3.06E-04
74	AF 350	167.6	-30.2	172.9	-37.9	2.92E-04
74	AF 400	165.4	-40.1	172.9	-48	4.19E-04



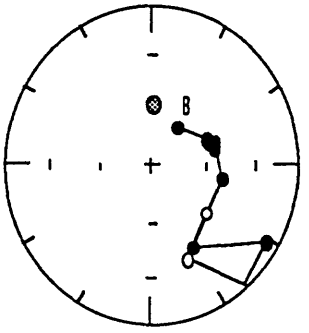


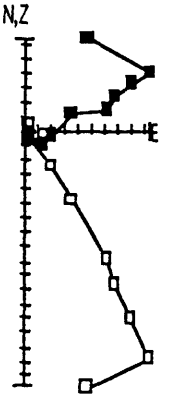
75	nrm	40.8	68.1	64.9	64.6	1.56E-03
75	AF 010	67.7	80.5	98.2	72	1.41E-03
75	AF 025	83.9	82.8	108.8	72.9	1.32E-03
75	AF 050	115.2	84.3	121.6	73.3	1.17E-03
75	AF 075	159.6	77.5	143.8	67.6	9.10E-04
75	AF 100	166.2	79	146	69.4	6.83E-04
75	AF 150	197	67.7	176.1	62.4	4.83E-04
75	AF 200	195.4	44.2	186.3	39.7	3.61E-04
75	AF 250	178.5	29.5	174.3	22.6	2.02E-04
75	AF 300	193.7	25.7	189.3	21.3	2.30E-04
75	AF 350	192	3.1	191.9	-1.2	3.20E-04
75	AF 400	191.5	-4	192.5	-8.3	2.93E-04





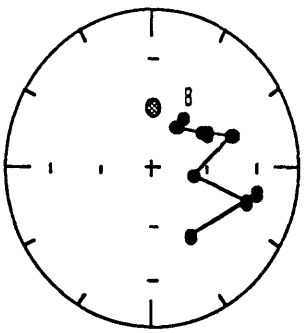
76	nrm	12.9	63.8	36.1	65.8	1.94E-03
76	AF 025	49.4	61.5	66.6	57.2	1.88E-03
76	AF 050	51.5	61.1	68	56.4	1.56E-03
76	AF 075	54.1	60.9	70.1	55.8	1.28E-03
76	AF 100	61.5	60.5	75.9	54.4	1.08E-03
76	AF 150	57	58.3	71.1	52.9	6.01E-04
76	AF 200	92.1	59.5	99.6	49.8	3.12E-04
76	AF 250	156	50.1	150.7	40.4	8.28E-05
76	AF 300	121.4	19.3	121.5	8.3	1.67E-04
76	AF 350	154.3	-27.1	157.9	-36.6	7.54E-05
76	AF 400	128.6	-40.5	129.4	-51.4	7.67E-05

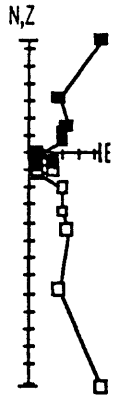




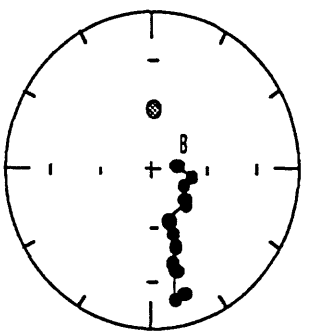
Appendix 2

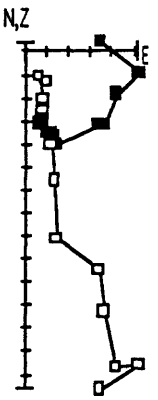
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
77	nrm	16.1	57.8	34.1	59.7	1.54E-03
77	AF 050	146.4	-46	152	-56.1	1.38E-03
77	AF 100	9.3	62.3	31.1	65.2	8.59E-04
77	AF 150	38.5	59.2	55.8	56.9	5.19E-04
77	AF 200	43.8	58.2	59.9	55	4.04E-04
77	AF 250	60.9	47.2	70.2	41.6	2.92E-04
77	AF 300	79.7	76.1	99.1	67	1.25E-04
77	AF 350	106.2	43.3	108.8	32.9	1.83E-04
77	AF 400	156.3	58.3	149.4	48.5	1.41E-04
77	AF 450	99.7	37.6	102.5	27.6	6.55E-05



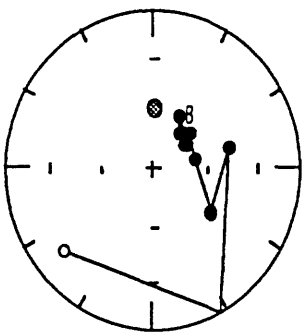


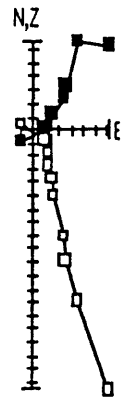
78	nrm	28.4	80.8	81.8	76.5	1.50E-03
78	AF 010	77.2	77.7	99.3	68.7	1.46E-03
78	AF 025	96.9	82.1	113.1	71.6	1.44E-03
78	AF 050	135.8	77.8	130.8	66.9	1.22E-03
78	AF 075	138.2	74.7	132.9	63.8	1.05E-03
78	AF 100	178.6	70.3	160.9	62.4	9.14E-04
78	AF 150	173	63.4	160.6	55.2	6.73E-04
78	AF 200	171.9	55.6	162.6	47.4	5.39E-04
78	AF 250	174.2	46.8	166.9	39	4.16E-04
78	AF 300	171.5	42.2	165.5	34.2	3.52E-04
78	AF 350	172.9	24.8	169.8	17.2	3.27E-04
78	AF 400	168.1	28.3	164.8	20	3.83E-04





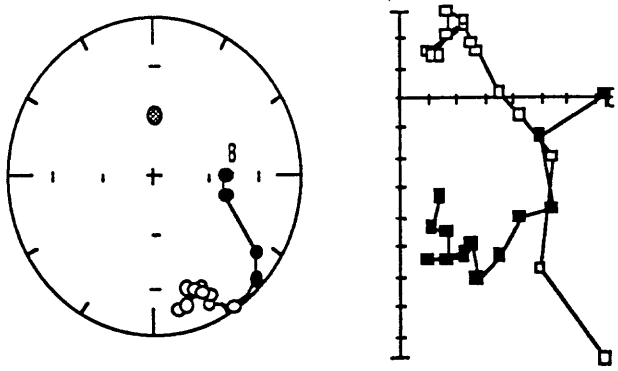
79	nrm	19.2	65	43.4	65.7	2.14E-03
79	AF 025	10.9	56.2	27.8	59.2	1.50E-03
79	AF 075	12.8	64.6	36.8	66.6	1.06E-03
79	AF 100	18.9	65.8	44	66.5	8.63E-04
79	AF 150	25.4	69.7	54.7	68.7	5.26E-04
79	AF 200	25	62.6	46.3	62.5	4.06E-04
79	AF 250	50.6	72	76.5	66.6	2.80E-04
79	AF 300	123.5	61.3	123.9	50.3	2.18E-04
79	AF 350	65.3	52.2	75.7	45.8	1.01E-04
79	AF 400	225.3	-24.3	229.9	-21.9	1.36E-04

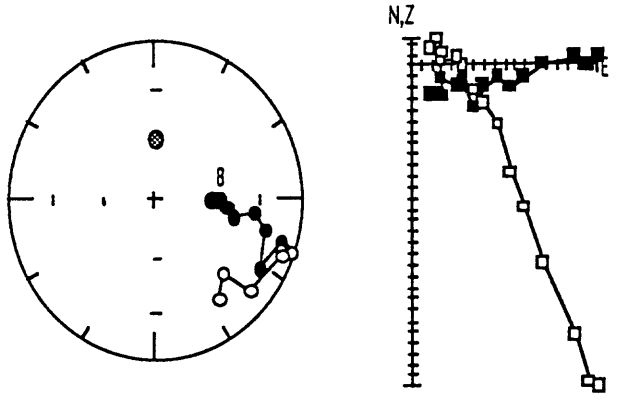




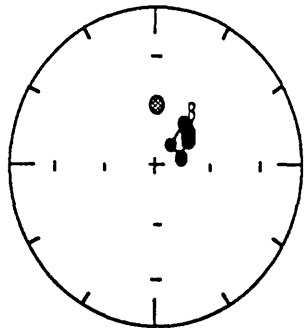
Appendix 2

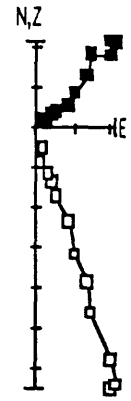
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
80	nrm	79.3	58.3	89.2	49.9	1.14E-03
80	AF 025	98.1	58.3	104.1	48.2	7.69E-04
80	AF 075	124.3	28	124.4	17	6.85E-04
80	AF 100	133.2	17	132.9	6.1	5.86E-04
80	AF 150	146.6	8.6	146.3	-1.7	6.31E-04
80	AF 200	154.7	-3.5	155.5	-13	6.86E-04
80	AF 250	152	-8.7	153.2	-18.5	5.83E-04
80	AF 300	154.6	-13.9	156.5	-23.4	6.31E-04
80	AF 350	167.6	-8	169.2	-16	5.72E-04
80	AF 400	153.6	-15.6	155.6	-25.2	6.22E-04
80	AF 450	160.1	-18.3	162.8	-27.2	6.37E-04
80	AF 500	157.6	-14.8	159.8	-24	5.21E-04
80	AF 600	163.3	-8.5	164.9	-17.1	4.71E-04
80	AF 700	154.6	-11.9	156.2	-21.4	3.85E-04
81	nrm	97.4	63.7	104.8	53.7	1.10E-03
82	nrm	72.9	65.9	87.5	58	3.41E-03
82	AF 010	74.9	67.2	89.7	59.1	3.32E-03
82	AF 025	73.2	65.1	87.3	57.2	2.88E-03
82	AF 050	77	63.1	89.3	54.8	2.18E-03
82	AF 075	86.3	59	95	49.9	1.67E-03
82	AF 100	95.6	55.2	101.5	45.3	1.37E-03
82	AF 150	92.1	41.6	96.3	32.2	9.75E-04
82	AF 200	102.1	34.8	104.4	24.6	7.86E-04
82	AF 250	121.2	28.7	121.5	17.7	7.31E-04
82	AF 300	106.4	22.7	107.5	12.2	5.21E-04
82	AF 350	109.5	10	109.7	-0.6	5.21E-04
82	AF 400	111.1	1.7	111	-9	4.77E-04
82	AF 450	112.5	3.6	112.4	-7.1	3.07E-04
82	AF 500	131	-4.2	131.2	-15.1	4.24E-04
82	AF 550	133.9	-24.7	134.9	-35.5	4.36E-04
82	AF 600	144	-15	145.3	-25.4	3.43E-04

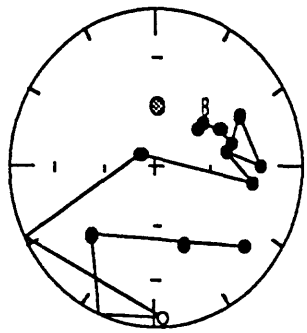


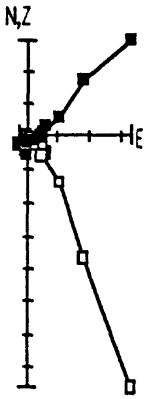


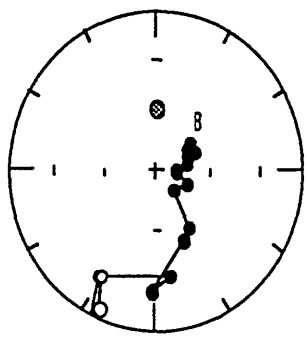
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
83	nrm	18.5	64.7	42.4	65.6	7.15E-03
83	AF 010	21.6	64.4	44.9	64.7	7.07E-03
83	AF 025	23.7	65.5	48	65.3	6.38E-03
83	AF 050	16.9	61.4	37.8	62.9	5.19E-03
83	AF 075	21.9	64.3	45.2	64.6	4.32E-03
83	AF 100	22.7	66.8	48.6	66.7	3.49E-03
83	AF 150	29.1	68.2	55.7	66.8	2.60E-03
83	AF 200	23.1	69.1	51.8	68.6	1.87E-03
83	AF 250	20.2	67.8	47.6	68	1.49E-03
83	AF 300	29.4	78.2	74.3	74.7	1.18E-03
83	AF 350	356.8	72.2	34	76.1	9.30E-04
83	AF 400	15.4	60.8	35.8	62.7	5.57E-04
84	nrm	30.1	60.2	49	59.3	8.81E-03
84	TT 100	30.4	56.3	46.8	55.6	4.42E-03
84	TT 200	47.6	52.8	60.5	49.1	1.89E-03
84	TT 300	63.8	51.8	74.2	45.6	8.31E-04
84	TT 330	52.4	39.4	60.2	35.3	8.31E-04
84	TT 360	83.8	38.1	88.5	29.5	6.09E-04
84	TT 400	67.7	57	79.4	50.1	7.67E-04
84	TT 450	93.6	43	97.9	33.4	3.69E-04
84	TT 500	306.8	67.8	308.6	78.8	4.11E-04
84	TT 540	177.4	0.1	177.9	-6.6	5.14E-04
84	TT 590	233.8	34.5	226.1	37.3	3.75E-04
84	TT 630	129.6	33.5	129.1	22.6	1.78E-04
84	TT 680	166.6	54.9	158.4	46.1	1.96E-04
85	nrm	26.1	67.7	52.6	66.8	7.64E-03
85	AF 025	37.9	69.3	64.1	66.2	6.78E-03
85	AF 075	23	71.2	55	70.4	4.37E-03
85	AF 100	33	73.5	66.4	70.6	3.58E-03
85	AF 150	37.3	78.3	78.8	73.6	2.59E-03
85	AF 200	14	83.2	88	79.4	1.85E-03
85	AF 250	93.2	82.1	111.6	71.8	1.53E-03
85	AF 300	160.8	86.3	133.9	75.8	1.04E-03
85	AF 350	154.5	65.4	146.2	55.4	6.90E-04
85	AF 400	165.2	59.3	156	50.4	5.27E-04
85	AF 450	187.3	30.4	182.3	24.9	5.32E-04
85	AF 500	178.5	41	172	33.9	5.58E-04
85	AF 600	215	25.2	209.9	24.7	4.75E-04
85	AF 700	202.9	-3.5	203.8	-5.7	6.74E-04
85	AF 800	204.2	-23.5	209.2	-25.1	4.16E-04
86	nrm	20.9	62.1	42.2	62.8	1.09E-02

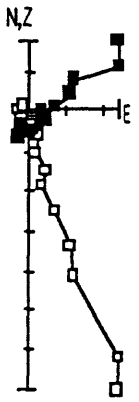




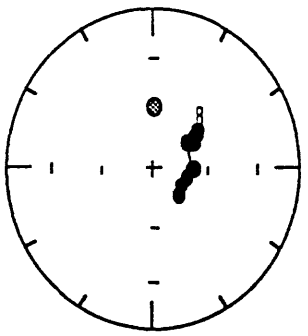


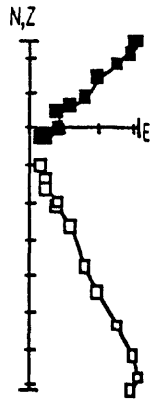


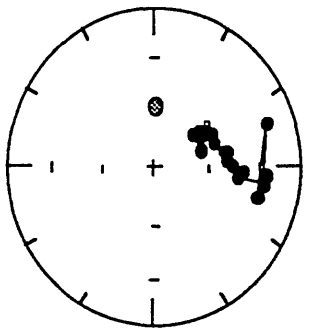


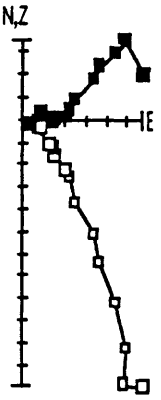


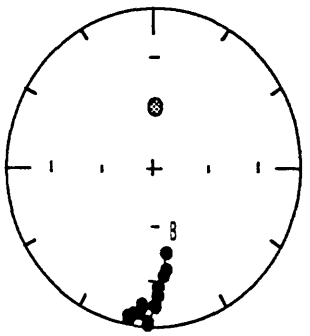
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
87	nrm	32	64.8	54.6	63.2	8.01E-03
87	AF 010	32.9	61	52.1	59.6	7.88E-03
87	AF 025	33.3	59.7	51.6	58.2	7.29E-03
87	AF 050	34.7	61.8	54.4	60	6.22E-03
87	AF 075	32.4	63.1	53.4	61.6	5.09E-03
87	AF 100	35.7	66.4	59.2	64	4.18E-03
87	AF 150	37.5	65.1	59.5	62.5	2.96E-03
87	AF 200	28.2	68.1	54.9	66.8	2.27E-03
87	AF 250	64.5	75.8	89.8	68.2	2.17E-03
87	AF 300	100.1	83.1	115.3	72.5	1.74E-03
87	AF 350	78.9	80.7	103.6	71.3	1.41E-03
87	AF 400	141.9	81.9	132.3	71.1	1.04E-03
88	nrm	48.6	67.7	70.6	63.1	1.34E-02
88	AF 010	30.8	64.5	53.2	63.1	1.33E-02
88	AF 025	35.4	61.5	54.8	59.6	1.19E-02
88	AF 050	39	59.8	56.7	57.3	9.75E-03
88	AF 075	40.4	58.3	56.9	55.7	7.69E-03
88	AF 100	47.1	57.7	62.4	53.9	6.39E-03
88	AF 150	54.2	59.4	69.3	54.4	4.49E-03
88	AF 200	68.7	55.9	79.8	48.9	3.41E-03
88	AF 250	76	56.4	86	48.4	2.95E-03
88	AF 300	79.1	54.7	88	46.4	2.13E-03
88	AF 350	86.5	48.5	92.7	39.5	1.88E-03
88	AF 400	91.4	51.3	97.3	41.8	1.65E-03
88	AF 450	95.1	35.5	98.2	25.8	7.32E-04
88	AF 500	90.2	34.3	93.6	25.1	8.58E-04
88	AF 550	66.3	25.2	70.1	19.1	9.42E-04
88	AF 600	102.6	37.8	105.2	27.6	4.39E-04
89	nrm	47.9	70.1	72.5	65.3	4.17E-03
90	nrm	181.5	52.7	171.5	45.8	9.36E-04
90	AF 010	180.4	39.8	174	33	1.00E-03
90	AF 025	179.8	43.4	172.6	36.5	9.60E-04
90	AF 050	183.3	32.7	178.1	26.5	8.68E-04
90	AF 075	182.6	27.5	178.5	21.3	7.79E-04
90	AF 100	182.4	20.9	179.5	14.7	7.42E-04
90	AF 150	188	19.8	185	14.5	6.42E-04
90	AF 200	188.1	15	186	9.8	5.60E-04
90	AF 250	192.4	10.1	191	5.8	5.54E-04
90	AF 300	191.2	8.3	190.2	3.8	4.48E-04
90	AF 350	190.7	14.7	188.6	10	3.81E-04
90	AF 400	183.1	8.9	182.1	3	2.85E-04



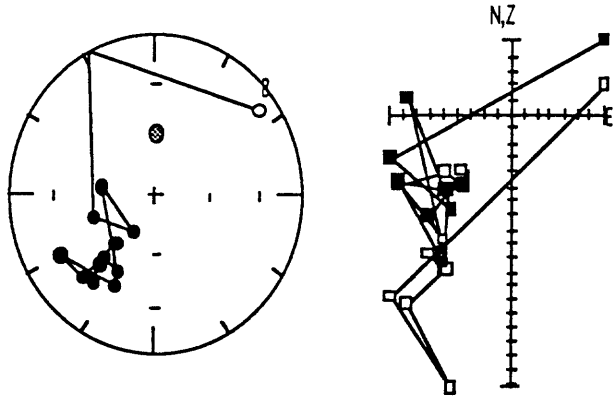


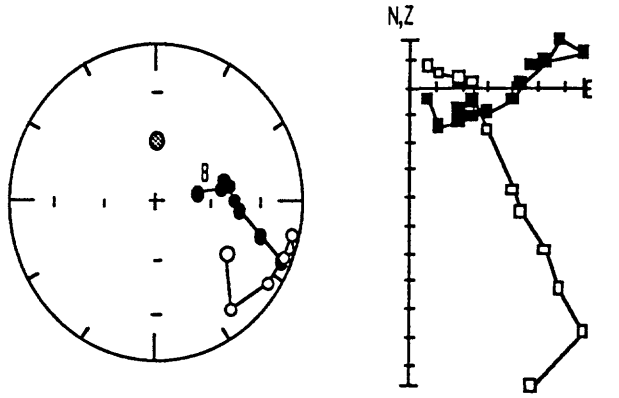


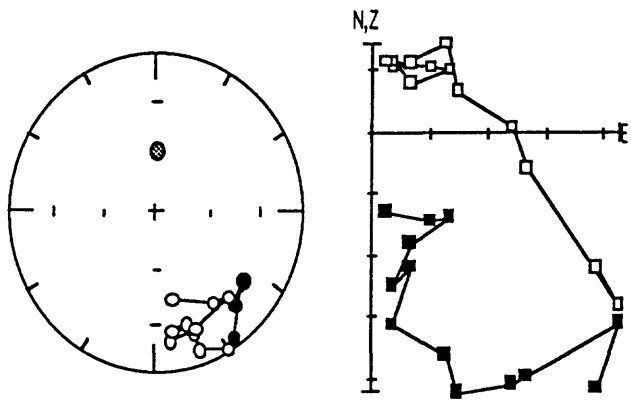




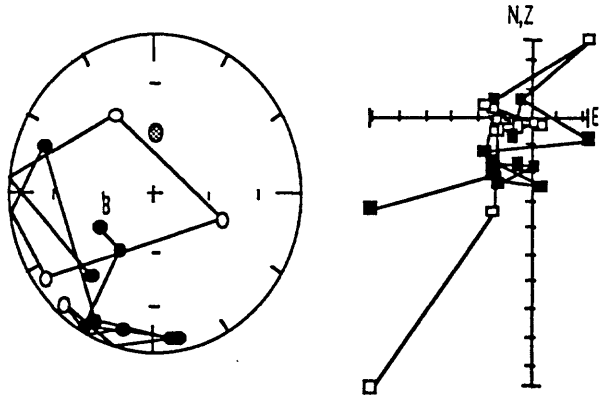
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
91	nrm	55.6	-9.3	53.6	-13	9.01E-04
91	TT 100	261.5	45.8	251.9	53.2	1.59E-03
91	TT 200	238.7	65.3	213.8	67.5	2.08E-03
91	TT 300	284.9	49.2	278.9	59.3	1.53E-03
91	TT 330	219.9	46	208.5	45.9	1.51E-03
91	TT 360	232.4	44.1	221.5	46.4	1.35E-03
91	TT 400	237.5	54	222	56.8	1.28E-03
91	TT 450	215	37.9	206.5	37.1	1.44E-03
91	TT 500	244.1	21.4	239.8	26.4	1.08E-03
91	TT 540	245.3	21	241.1	26.2	1.07E-03
91	TT 590	229.4	26.9	223.6	29.1	8.27E-04
91	TT 630	230.2	40.3	220.6	42.2	7.51E-04
91	TT 680	224.4	31	217.6	32.2	7.22E-04
92	nrm	54.7	72.3	79.6	66.3	1.18E-03
92	AF 010	66.3	59.4	79.3	52.6	1.12E-03
92	AF 025	60.4	56.4	73.1	50.6	9.48E-04
92	AF 050	68.7	55.2	79.6	48.2	7.92E-04
92	AF 075	79.8	54.9	88.7	46.5	6.25E-04
92	AF 100	89.1	52.1	95.6	42.8	5.47E-04
92	AF 150	104.6	37.1	106.9	26.7	3.47E-04
92	AF 200	113.3	19.3	113.8	8.5	2.65E-04
92	AF 250	102	5	102	-5.1	2.45E-04
92	AF 300	112.1	5	112.1	-5.7	2.03E-04
92	AF 350	123.9	2.8	123.8	-8.2	2.24E-04
92	AF 400	142.4	-5.8	143	-16.3	1.84E-04
92	AF 450	123.9	-30.6	123.8	-41.6	1.08E-04
93	nrm	138	32.1	136.8	21.3	6.11E-04
93	AF 025	125.9	39	125.8	28	5.96E-04
93	AF 075	147.2	16.9	146.3	6.7	4.81E-04
93	AF 100	149.8	8.8	149.5	-1.2	4.73E-04
93	AF 150	160.3	0.1	160.8	-8.9	4.52E-04
93	AF 200	159.3	-12	161.1	-21	4.10E-04
93	AF 250	171.1	-11.6	173.4	-19.1	3.32E-04
93	AF 300	160.8	-18.2	163.6	-27	2.57E-04
93	AF 350	169	-17.7	172.1	-25.5	2.79E-04
93	AF 400	157.4	-13.9	159.5	-23.1	2.10E-04
93	AF 450	135.3	-17.8	136.2	-28.6	2.17E-04
93	AF 500	142.9	-21.4	144.7	-31.8	2.07E-04
93	AF 600	163.3	-34.2	169	-42.5	1.76E-04
94	nrm	65.5	78.5	94	70.5	9.09E-04



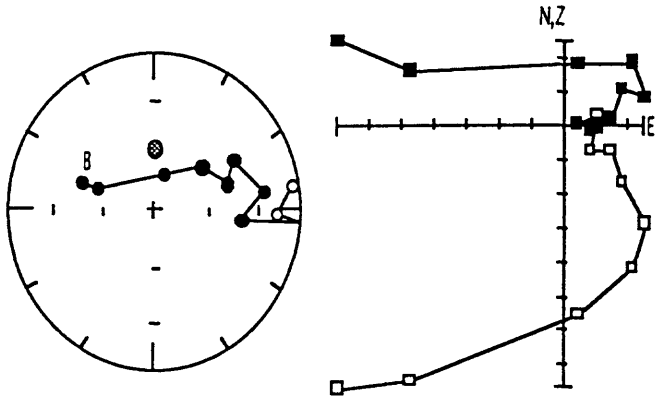




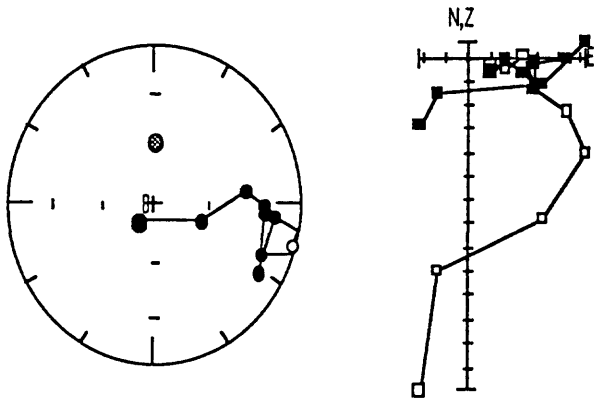
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
95	nrm	253.5	49	241.5	54.9	1.19E-03
95	TT 100	229.7	53	214.7	54.4	4.25E-04
95	TT 200	210.3	4.8	209.5	3.8	2.60E-04
95	TT 300	171.9	16.2	170.2	8.5	2.53E-04
95	TT 330	219.8	-7.6	221.2	-6.5	2.18E-04
95	TT 360	196.8	16.8	194	13.1	1.81E-04
95	TT 400	175.4	16.7	173.5	9.5	1.81E-04
95	TT 450	208.9	11.4	206.8	10	2.77E-04
95	TT 500	292.2	9.5	291.6	20.2	1.59E-04
95	TT 540	232	-12.5	234	-9.1	2.17E-04
95	TT 590	112.1	-38.5	109.5	-49.1	3.62E-04
95	TT 630	337.1	-51.7	331.3	-42.1	8.91E-05
95	TT 680	227.1	31.4	220.2	33.1	1.19E-04



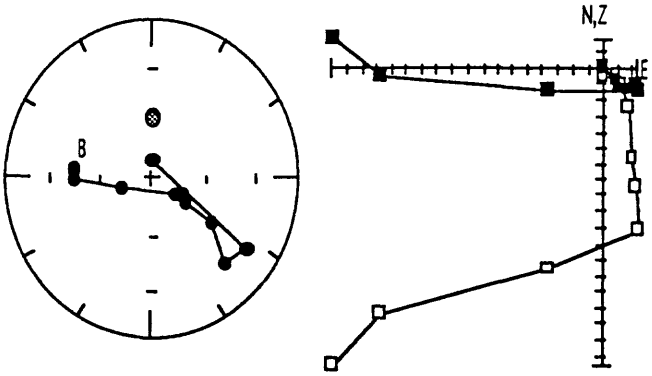
96	nrm	292.3	35.3	290	45.9	1.07E-03
96	AF 010	292.4	45.6	289.1	56.3	9.03E-04
96	AF 025	352.5	64.8	15.7	70.6	5.85E-04
96	AF 050	33.4	56.5	49.6	55.2	5.14E-04
96	AF 075	60.5	52.2	71.6	46.5	3.96E-04
96	AF 100	51	41.7	59.6	37.9	2.75E-04
96	AF 150	76.5	33.6	81	26	1.68E-04
96	AF 200	91.6	49	97	39.5	1.15E-04
96	AF 250	93.4	-8.6	92	-17.9	1.15E-04
96	AF 300	80.9	3.1	80.8	-4.8	4.41E-05

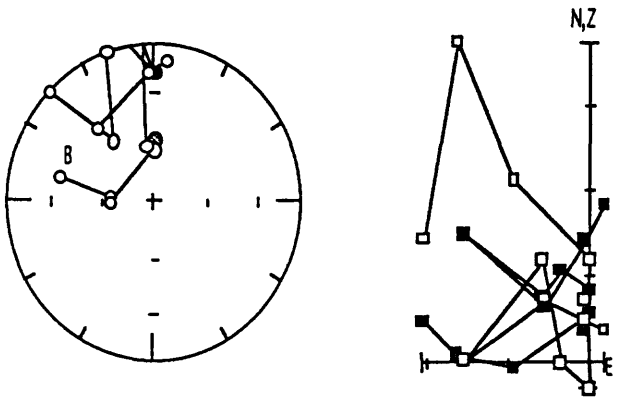


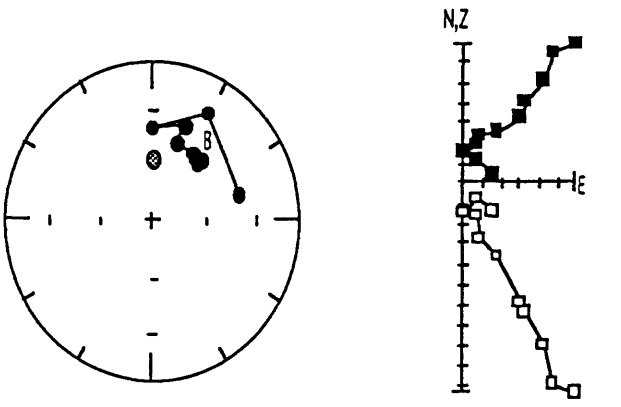
97	nrm	253.2	71.3	218	75.4	1.44E-03
97	AF 010	260	72.3	222.9	77.5	9.19E-04
97	AF 025	99.7	73.1	109.2	62.8	7.63E-04
97	AF 050	75.5	44.8	82.4	37.2	6.61E-04
97	AF 075	86.7	36	90.7	27.2	4.90E-04
97	AF 100	91.4	34.6	94.7	25.2	3.17E-04
97	AF 150	111.5	33	112.8	22.3	3.46E-04
97	AF 200	104.7	8.5	105	-1.8	2.52E-04
97	AF 250	93	27.7	95.4	18.2	1.64E-04
97	AF 300	120.6	28.8	121	17.8	1.11E-04



No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
98	nrm	280.2	35.9	275.9	45.7	2.59E-03
98	AF 010	273.9	36.7	268.5	45.9	2.13E-03
98	AF 025	269.9	64.6	249.9	72.5	1.31E-03
98	AF 050	107.9	85.7	120.2	74.8	1.05E-03
98	AF 075	97.7	82.4	113.7	71.9	7.82E-04
98	AF 100	121.6	79.2	123.3	68.2	6.16E-04
98	AF 150	124.4	60.3	124.6	49.3	3.18E-04
98	AF 200	138.1	39.8	136.5	29	1.88E-04
98	AF 250	124.7	32.9	124.8	21.9	1.26E-04
98	AF 300	329.7	71.3	356.9	80.2	6.26E-05
99	nrm	271.9	38.8	265.7	47.7	2.03E-03
100	TT 100	279.8	-44.7	283.4	-34.6	2.59E-04
100	TT 200	253.5	-74.6	274	-66.2	4.11E-04
100	TT 300	245.4	-73.7	268.1	-66.2	2.34E-04
100	TT 330	22.8	-68.3	359.9	-63.8	1.34E-04
100	TT 360	8.6	-66.8	350.5	-60.3	8.55E-05
100	TT 400	357.7	12.2	0.1	18.7	9.10E-05
100	TT 450	341.9	-8.9	341.4	-0.1	1.15E-04
100	TT 500	328.6	-61	322.9	-50.7	1.55E-04
100	TT 540	313.8	-11.9	313.6	-1	2.19E-04
100	TT 590	321.9	-50.3	319	-39.7	1.14E-04
100	TT 630	1.1	-25.6	357.4	-19.1	1.52E-04
100	TT 680	7.7	-16.8	5.2	-11.5	1.90E-04
101	AF 010	27.9	48.3	40.3	48.4	1.38E-03
101	AF 025	22.8	49.3	35.9	50.4	1.28E-03
101	AF 050	25.8	49.7	39	50.2	1.04E-03
101	AF 075	25.1	50	38.4	50.6	8.19E-04
101	AF 100	27	51.9	41.1	52.1	7.36E-04
101	AF 150	21.3	47.1	33.4	48.6	4.73E-04
101	AF 200	8.2	43.3	18.6	47.4	3.77E-04
101	AF 250	12.2	33.2	19.5	36.8	2.59E-04
101	AF 300	352.3	34.3	359	41.3	2.17E-04
101	AF 350	23.3	22.7	28	24.5	1.57E-04
101	AF 400	66.2	46.6	74.7	40.2	2.16E-04

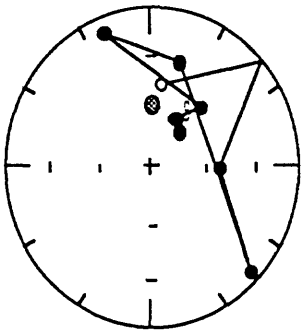


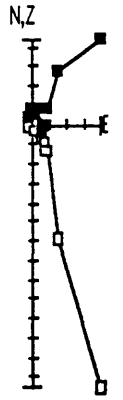


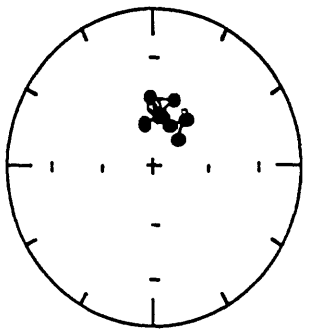


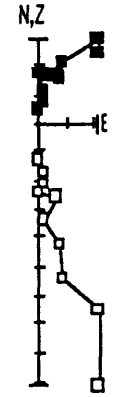
Appendix 2

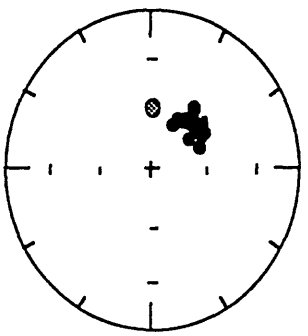
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
102	nrm	16	65.4	40.9	66.7	1.48E-03
102	TT 100	9.5	58.9	28.3	62	6.70E-04
102	TT 200	30.4	49.2	43.1	48.9	1.84E-04
102	TT 300	338	1.2	338.6	10.4	4.60E-05
102	TT 330	9.7	28.5	15.7	32.7	7.42E-05
102	TT 360	134.5	16.4	134.2	5.6	8.59E-05
102	TT 400	80.6	60.6	91.1	52.1	1.09E-04
102	TT 450	19.9	-51.5	7.8	-47.5	1.17E-04
103	nrm	11.5	50.1	25	53.3	1.51E-03
104	nrm	12.4	68.8	42.1	70.3	9.71E-04
104	AF 025	17.1	59	35.9	60.6	7.51E-04
104	AF 075	359.1	62.3	20.3	67.1	5.88E-04
104	AF 100	1.4	63.2	23.8	67.5	4.58E-04
104	AF 150	349.8	56.5	4.9	63.3	3.77E-04
104	AF 200	5.5	49.8	18.6	54.1	3.14E-04
104	AF 250	348	45.3	357.4	52.8	3.01E-04
104	AF 300	352	56	7.1	62.5	2.36E-04
104	AF 350	352.2	58.5	9.2	64.8	1.91E-04
104	AF 400	334.2	58.1	346.5	67.1	1.38E-04
105	nrm	43.3	66.3	65.3	62.6	1.42E-03
105	AF 010	27	65.9	51.2	65	1.28E-03
105	AF 025	36.5	56.3	52.3	54.5	1.11E-03
105	AF 050	26.7	57.6	44.2	57.6	9.69E-04
105	AF 075	32.2	59.1	50.2	57.9	8.22E-04
105	AF 100	40.8	59.5	58	56.7	6.86E-04
105	AF 150	14.8	58.2	33.1	60.3	5.33E-04
105	AF 200	12	58.2	30.3	60.9	4.43E-04
105	AF 250	18.6	56.8	35.9	58.3	3.67E-04
105	AF 300	22.6	49.8	35.9	50.9	2.88E-04
105	AF 350	41.6	58.1	57.9	55.3	3.07E-04
105	AF 400	4.9	61	25.3	64.8	2.12E-04

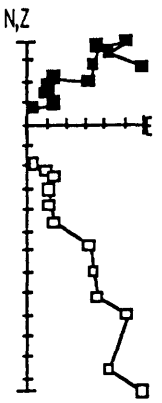






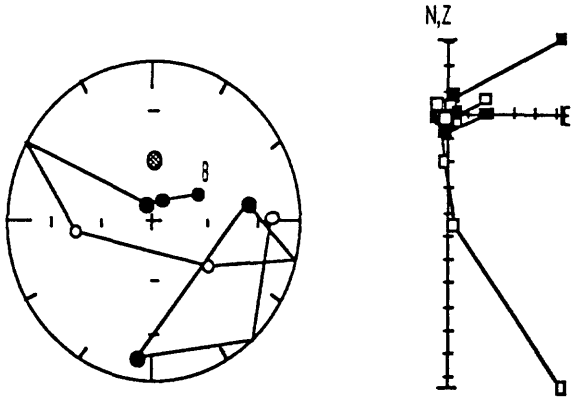




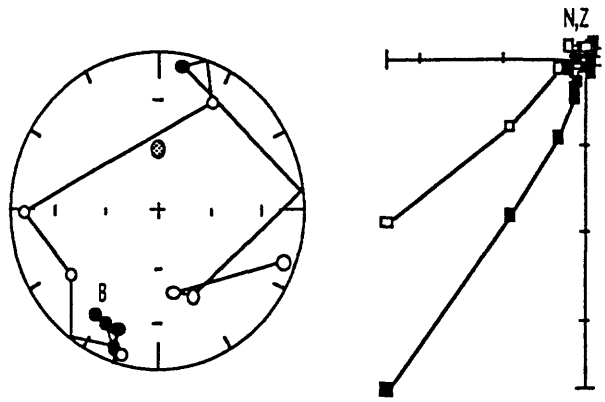


Appendix 2

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
106	nrm	37.2	64.4	58.5	61.9	1.30E-03
106	TT 100	344.2	72.4	20.8	78.6	4.71E-04
106	TT 200	319.4	69.5	334.5	79.8	1.99E-04
106	TT 300	253.6	-53.7	263.2	-46.1	6.79E-05
106	TT 330	127.1	-40.7	127.5	-51.7	5.02E-05
106	TT 360	74.3	42.6	80.9	35.1	6.42E-05
106	TT 400	190.2	18.9	187.3	14.1	6.78E-05
106	TT 450	90.2	-11.1	88.4	-20	1.83E-04

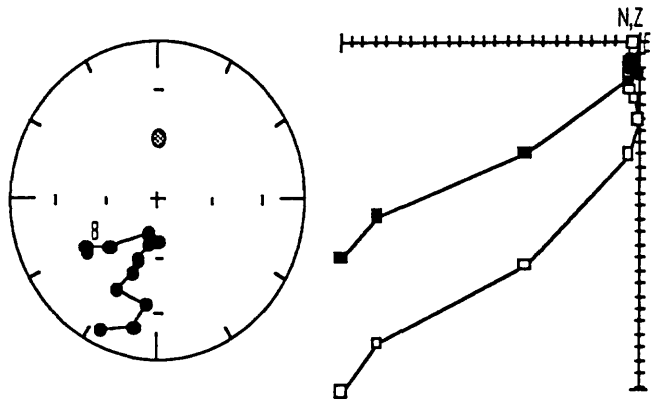


107	nrm	217	22.8	212.4	22.7	4.85E-03
107	TT 100	211	22.5	206.6	21.3	2.14E-03
107	TT 200	200.6	10.5	198.9	7.6	9.64E-04
107	TT 300	194.3	-2.9	195.2	-6.7	4.84E-04
107	TT 330	204.1	24.3	199.5	21.8	3.96E-04
107	TT 360	201.4	13.5	199.1	10.7	2.94E-04
107	TT 400	228.2	-33.4	234.8	-30.3	2.70E-04
107	TT 450	267.1	-19.4	268.8	-10.6	1.06E-04
107	TT 500	33.4	-25.7	28.2	-24.8	2.39E-04
107	TT 540	9	4.6	10.2	9.3	8.11E-05
107	TT 590	151.8	-30.1	155.5	-39.8	2.10E-04
107	TT 630	161.9	-37.8	168.3	-46.3	1.46E-04
107	TT 680	110.4	1.8	110.2	-8.8	7.69E-05



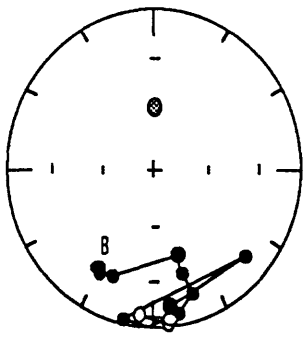
108	nrm	220.8	26.4	215.3	27	4.70E-03

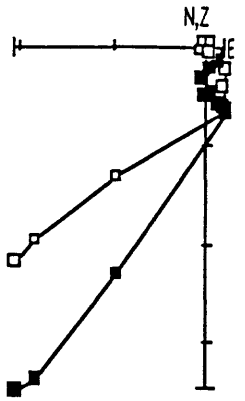
109	nrm	244.2	37.7	235.8	42.3	4.06E-03
109	AF 010	246.4	37.4	238.1	42.4	3.50E-03
109	AF 025	240.9	49.9	227.7	53.5	2.18E-03
109	AF 050	230.3	71.4	197.2	71.2	9.41E-04
109	AF 075	210.8	72.5	180.9	68.7	6.78E-04
109	AF 100	218.9	68.4	192.3	66.6	4.88E-04
109	AF 150	217	58.2	199.7	56.9	4.60E-04
109	AF 200	213	50.8	200	49.1	2.93E-04
109	AF 250	214.1	37.4	205.8	36.5	2.85E-04
109	AF 300	193.7	38.1	186.4	33.4	2.74E-04
109	AF 350	195.3	24	191.1	19.9	2.03E-04
109	AF 400	207.2	10.8	205.3	9.1	1.58E-04

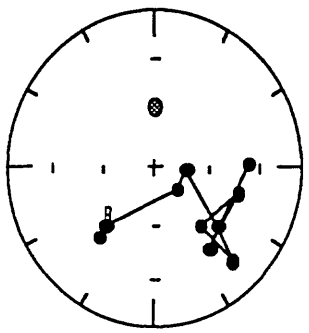


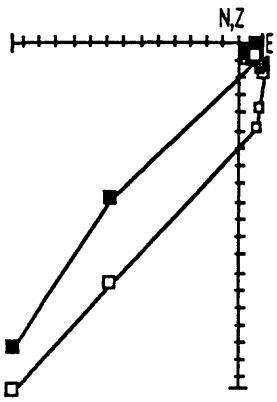
Appendix 2

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
110	nrm	216.8	28.2	210.9	28	4.56E-03
110	AF 010	214.6	27.4	209	26.8	4.29E-03
110	AF 025	209.1	29.4	203.2	27.7	2.80E-03
110	AF 050	171.2	51	163.2	42.8	9.13E-04
110	AF 075	169.1	40.1	163.8	31.8	7.16E-04
110	AF 100	165	26.9	162.2	18.3	6.79E-04
110	AF 150	170.9	16.5	169.2	8.7	5.88E-04
110	AF 200	174.5	5.1	174.3	-2.1	4.79E-04
110	AF 250	185.1	-3	186.1	-8.4	4.80E-04
110	AF 300	172.8	1.4	173.1	-6	4.26E-04
110	AF 350	193.4	8.3	192.3	4.1	3.17E-04
110	AF 400	131.8	29.1	131.3	18.2	1.86E-04
110	AF 450	175.3	20.4	172.8	13.2	2.01E-04
111	nrm	227.9	40.2	218.4	41.8	2.94E-03
111	AF 025	233.5	47	221.5	49.4	1.80E-03
111	AF 075	149.2	84.5	133.1	73.9	5.03E-04
111	AF 100	61.3	80.5	95.3	72.6	3.94E-04
111	AF 150	130.7	53.5	129.6	42.6	2.57E-04
111	AF 200	139.8	31.7	138.5	21	2.00E-04
111	AF 250	144.4	60.7	139.7	50.2	1.22E-04
111	AF 300	101.8	51.2	105.9	41	1.33E-04
111	AF 350	147.4	46.7	143.9	36.4	1.38E-04
111	AF 400	80.7	44.9	87	36.6	1.23E-04

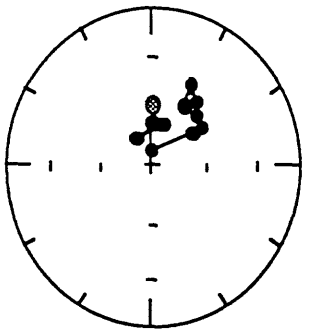


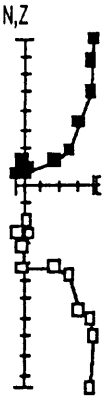




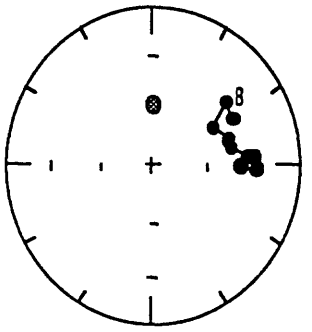


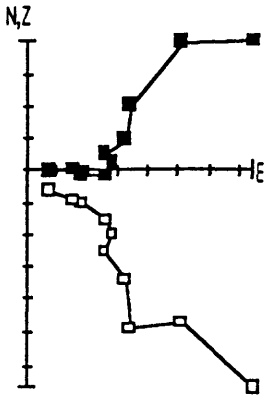
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
112	nrm	14.5	51.5	30.1	54.2	1.32E-03
112	AF 350	351.3	61.7	13.2	68.4	1.99E-04
112	AF 010	16.4	39.4	26.5	42.3	1.19E-03
112	AF 025	23.7	47.3	37	48.3	9.43E-04
112	AF 050	26.3	54.4	43.2	54.5	8.03E-04
112	AF 075	35	57.7	53.2	55.8	5.69E-04
112	AF 100	29	64.3	53.4	63	4.77E-04
112	AF 150	322.4	71.5	348.7	82.1	4.45E-04
112	AF 200	341.4	59.3	358.6	67.9	3.56E-04
112	AF 250	353.7	62.4	16.7	68.4	2.76E-04
112	AF 300	318.1	61.7	326.8	73.1	2.52E-04



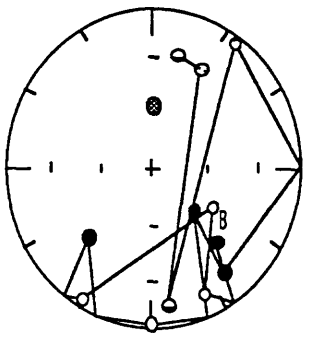


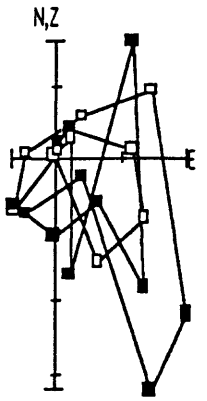
113	nrm	51.8	42.8	61.4	38.3	1.08E-03
113	AF 010	42.2	38.7	51.3	36.3	7.98E-04
113	AF 025	43.7	54.5	59	51	6.28E-04
113	AF 050	61.2	51.5	72.7	45.1	4.73E-04
113	AF 075	66.5	51.8	77.3	44.5	3.63E-04
113	AF 100	77.1	44.1	84.1	35.5	3.42E-04
113	AF 150	87.6	40.6	92.6	30.7	3.00E-04
113	AF 200	86.7	38.3	91.3	28.5	2.07E-04
113	AF 250	80.1	40.6	86	31.6	1.77E-04
113	AF 300	82.6	49.2	90	39.8	9.41E-05





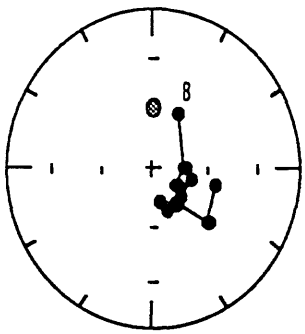
115	TT 100	139.8	48.6	137.2	37	3.64E-04
115	TT 200	154.9	-5	156	-15.3	3.65E-04
115	TT 300	121.6	-39.1	120.8	-51.1	7.49E-05
115	TT 330	209	-4	209.9	-5.1	8.73E-05
115	TT 360	233.8	35.6	225	38.6	1.14E-04
115	TT 400	180.7	4.5	180.5	-2.3	1.05E-04
115	TT 450	139.5	69.9	134.4	58.1	1.67E-04
115	TT 500	145.1	31.7	143.1	20.3	2.36E-04
115	TT 540	36	-3.7	35.2	-3.8	2.02E-04
115	TT 590	170.8	-6.5	172.5	-14.8	1.67E-04
115	TT 630	34.8	-31.7	27.5	-30.9	6.04E-05
115	TT 680	19.1	-30.8	12.8	-26.9	2.77E-05



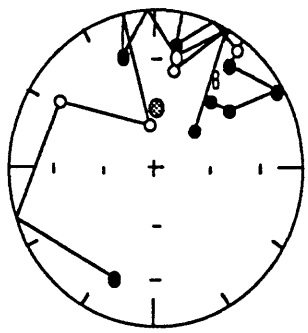


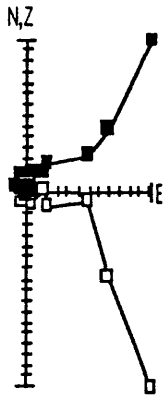
Appendix 2

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
116	nrm	8.9	54.2	26.1	57.9	1.30E-03
116	AF 025	48.3	78.9	87.9	71.9	1.16E-03
116	AF 075	102.6	86.1	119.5	74.3	7.60E-04
116	AF 100	142.4	80.3	132.9	68.5	5.96E-04
116	AF 150	82	78.7	103.8	68.3	4.48E-04
116	AF 200	189.6	76.2	160.5	68.2	2.97E-04
116	AF 250	213.6	78.5	168.6	73.3	2.69E-04
116	AF 300	160.7	78.4	142.9	67.5	2.44E-04
116	AF 350	133.5	59.8	131.3	47.9	1.80E-04
116	AF 400	93.3	65.5	102.8	54.7	2.13E-04

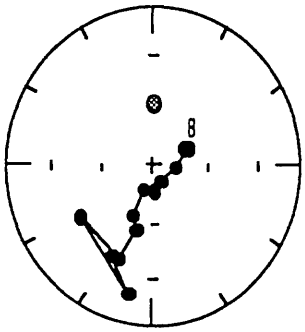


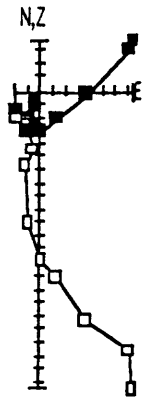
117	nrm	29.6	44.2	41.3	44.1	2.57E-03
117	TT 100	44.1	41	53.7	38.1	1.25E-03
117	TT 200	57.8	9.7	59.2	4.9	6.90E-04
117	TT 300	33.1	19.7	37.4	19.6	3.58E-04
117	TT 330	38	-7	36.5	-7.5	2.51E-04
117	TT 360	5.7	16.2	9.4	21.8	2.15E-04
117	TT 400	20.7	-40.4	11.6	-36.5	1.04E-04
117	TT 450	24.2	61.3	46.3	61.2	1.28E-04
117	TT 500	17.4	-33	10.7	-28.7	1.14E-04
117	TT 540	338.9	17.7	341.9	27.5	1.92E-04
117	TT 590	20	-72.6	351.5	-66.5	8.72E-05
117	TT 630	302.5	-34.8	302.8	-22.8	1.58E-04
117	TT 680	207.4	27.4	201.6	25.2	3.85E-05



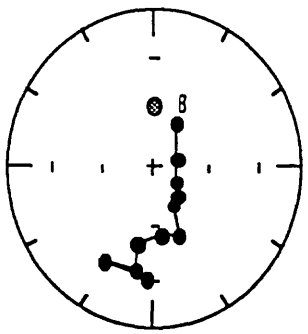


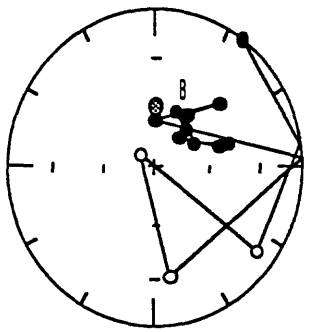
118	nrm	28.2	71.9	62.7	69.6	2.40E-03
118	AF 010	33.4	71.4	65.5	68.3	2.10E-03
118	AF 025	18.7	83.6	93.7	78.1	1.76E-03
118	AF 050	255.4	84.8	149.5	80.5	1.43E-03
118	AF 075	235.8	79	177.2	77	1.31E-03
118	AF 100	249.5	73.9	203.7	76.5	1.02E-03
118	AF 150	226.8	62.5	203.5	62.5	6.32E-04
118	AF 200	212.7	58.2	194.4	55.8	5.33E-04
118	AF 250	211.5	39.4	202	37.7	4.06E-04
118	AF 300	244.9	34.5	236.6	39.8	3.12E-04
118	AF 350	195.7	23.5	191.4	19.1	3.15E-04
118	AF 400	214.2	38.4	204.9	37.2	1.55E-04

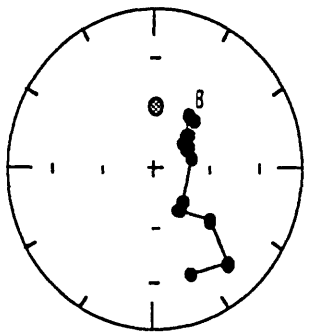


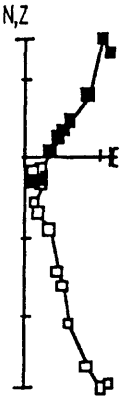


No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
119	nrm	6.4	60.7	28.6	64.3	2.57E-03
119	AF 025	20	79.3	76.3	76.2	2.16E-03
119	AF 075	117.5	87.3	123.6	75.3	1.42E-03
119	AF 100	155.2	80.9	138.2	69.6	1.22E-03
119	AF 150	173.8	76.5	151.5	66.8	8.41E-04
119	AF 200	168	61.1	157	51.5	7.07E-04
119	AF 250	187.7	61.3	172	54.3	5.53E-04
119	AF 300	189.8	61	173.9	54.4	4.73E-04
119	AF 350	207.2	52	193	48.9	3.87E-04
119	AF 400	199.2	38.6	190.8	34.4	3.17E-04
119	AF 450	217.1	31.7	209.7	31.4	2.12E-04
119	AF 500	189.7	35.6	183	29.8	2.92E-04
120	nrm	3.2	54.6	20.3	59.4	3.76E-03
120	TT 100	15.6	62.8	39.9	64.4	1.88E-03
120	TT 200	10.4	67.3	40.7	69.4	9.24E-04
120	TT 300	56.8	58.7	72.2	52.8	7.15E-04
120	TT 330	61	53	73.1	46.6	7.06E-04
120	TT 360	31.9	67.7	59.4	65.4	5.75E-04
120	TT 400	15.3	54.6	32.8	56.9	4.46E-04
120	TT 450	35.7	41.7	46.2	40.4	2.38E-04
120	TT 500	344.4	57.9	1.3	66.1	4.91E-04
120	TT 540	166.8	-22.1	170.9	-30.7	2.43E-04
120	TT 590	101.9	-88.2	308.8	-79.6	1.53E-04
120	TT 630	126.9	-2.2	127	-14.2	1.63E-04
120	TT 680	35.4	0.6	35.6	0.5	4.02E-05
121	nrm	21.6	57.5	40.9	58.3	3.33E-03
121	AF 010	16.6	55.7	34.7	57.7	3.42E-03
121	AF 025	19.6	65.8	46.9	66.2	2.85E-03
121	AF 050	18	69.8	51.2	69.9	2.21E-03
121	AF 075	23.7	70.3	56.6	69.2	1.74E-03
121	AF 100	24.4	72.4	60.7	70.7	1.52E-03
121	AF 150	39.6	74.7	75.1	69.9	9.56E-04
121	AF 200	149.2	78.7	137	67.3	7.56E-04
121	AF 250	164.3	76	146.7	65.5	6.25E-04
121	AF 300	134.9	61.3	132.3	49.5	4.61E-04
121	AF 350	141.9	34.8	140.1	23.3	3.55E-04
121	AF 400	164.9	40.1	159.7	30.5	3.49E-04
122	nrm	357	60.2	18.1	65.8	1.25E-04
123	nrm	40.8	2.6	41.2	1.4	2.12E-04

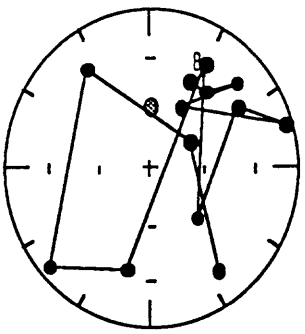


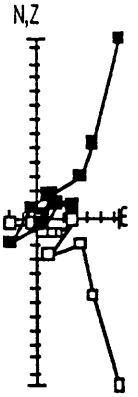


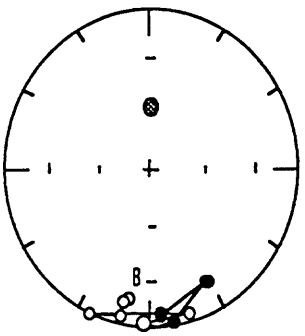


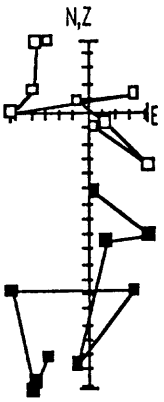


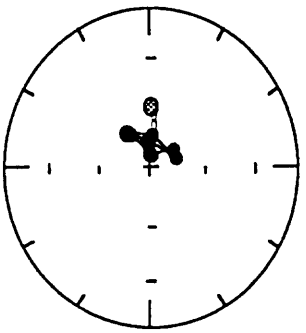
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
125	nrm	17	37.1	26.3	39.9	1.86E-03
125	TT 100	28.8	38.7	38.5	39	8.77E-04
125	TT 200	42.9	24.6	48.1	22.4	4.95E-04
125	TT 300	12.4	51.5	27.9	54.6	3.25E-04
125	TT 330	72	11.8	73.3	4.4	2.90E-04
125	TT 360	50.2	34.3	57.4	30.5	2.18E-04
125	TT 400	138.5	65.2	134.5	53.4	1.43E-04
125	TT 450	24.5	23.8	30	25.5	2.38E-04
125	TT 500	202.2	38.3	193.7	34.7	8.45E-05
125	TT 540	229.4	5.8	227.9	8.6	2.68E-04
125	TT 590	323.6	13.8	325	25.1	8.91E-05
125	TT 630	33.7	66.6	59.6	64.1	1.21E-04
125	TT 680	147.3	32.4	145.1	21.2	3.36E-05
126	nrm	43.5	-10.4	40.7	-10.9	2.00E-04
127	nrm	23.8	-37.2	14.1	-31.8	4.95E-03
128	nrm	340.7	-10.3	340.2	2.7	3.05E-04
135	nrm	187.4	-11.5	190.1	-16.8	1.70E-04
135	AF 025	189.9	-9.9	192.3	-14.7	1.86E-04
135	AF 075	191.4	-0.5	192	-5.2	1.87E-04
135	AF 100	205	1.4	205	-0.7	1.29E-04
135	AF 150	164	2.7	164.3	-6.6	1.22E-04
135	AF 200	182.9	3.2	182.9	-3.2	1.65E-04
135	AF 250	172.4	12.1	171.2	3.9	8.46E-05
135	AF 300	155	30.9	152.3	20.3	9.62E-05
135	AF 350	177.7	15.7	175.7	8.3	5.19E-05
138	nrm	328.8	66.8	349.5	76.9	2.30E-04
138	AF 025	317.8	58.7	325	70.2	2.22E-04
138	AF 075	323.6	71.4	350.8	81.8	2.14E-04
138	AF 100	323.3	73.1	357.3	83.4	1.64E-04
138	AF 150	8	74.4	53.6	75.4	1.43E-04
138	AF 200	19.8	77	68.8	74.9	1.66E-04
138	AF 250	333.7	67.1	357.6	76.4	1.35E-04
138	AF 300	317.7	56.2	323.8	67.8	1.53E-04
138	AF 350	340.5	65.4	4.5	73.7	9.56E-05
138	AF 400	20.3	76.7	68.2	74.6	1.37E-04

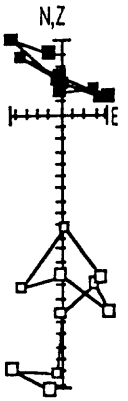




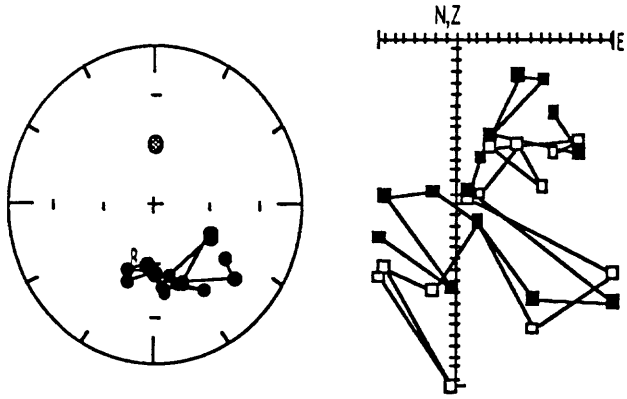




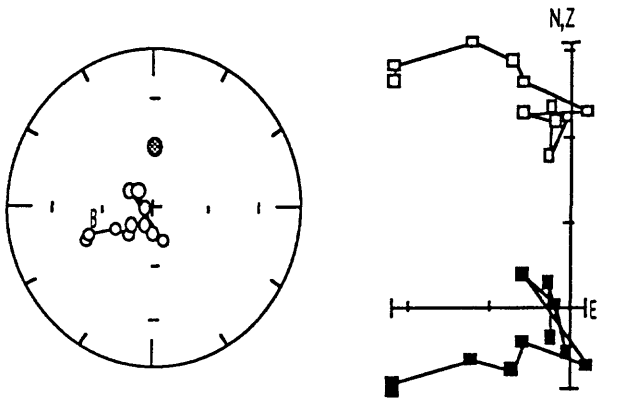




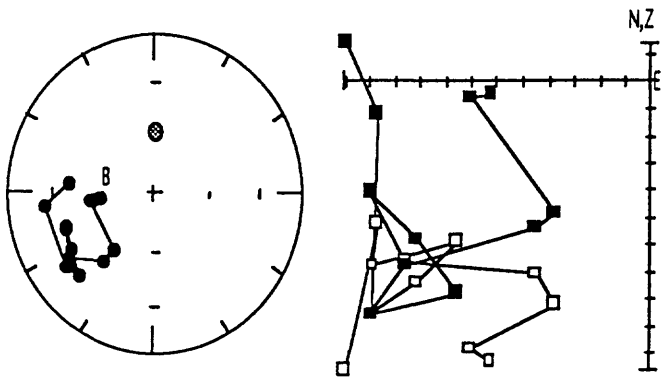
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
139	nrm	216.1	49.4	202.4	48.2	2.91E-04
139	AF 025	197.5	59.6	180.8	54.3	3.90E-04
139	AF 075	221.2	53	205.3	52.6	2.61E-04
139	AF 100	208.9	61.8	188.6	58.4	2.69E-04
139	AF 150	183	52.2	172.2	44.8	2.35E-04
139	AF 200	172.5	55.6	162.4	46.7	3.63E-04
139	AF 250	152	47.7	147.4	36.8	3.55E-04
139	AF 300	186.8	53.6	174.8	46.8	2.01E-04
139	AF 350	181.6	59.6	168	51.8	1.79E-04
139	AF 400	116	66.5	118.8	54.6	1.17E-04
139	AF 450	109.3	67.4	114.3	55.7	1.64E-04
139	AF 500	167.4	56.3	158.1	46.8	1.35E-04
139	AF 600	131.7	42	130.8	30.1	1.83E-04
139	AF 700	125.3	53.8	125.3	41.8	1.56E-04



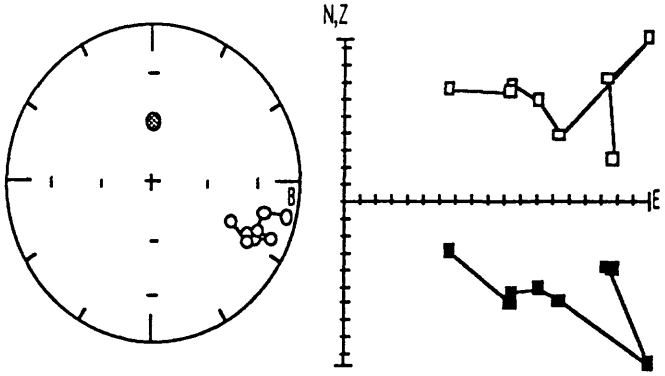
142	nrm	233	-53.2	246.4	-48.2	3.58E-04
142	AF 025	234.2	-55.4	248.4	-50.1	3.69E-04
142	AF 075	213.7	-69.4	243	-66.5	3.40E-04
142	AF 100	192	-69.1	224.9	-70.5	3.07E-04
142	AF 150	190.7	-74.4	235.5	-74.8	2.74E-04
142	AF 200	147.8	-62.2	162.3	-72.6	2.42E-04
142	AF 250	294.1	-84.9	301.7	-72.9	2.40E-04
142	AF 300	143.8	-82.1	275.4	-84.8	2.19E-04
142	AF 350	156.6	-67.8	183.2	-76.5	2.30E-04
142	AF 400	34.8	-87.7	315.8	-77.8	1.82E-04
142	AF 450	164.4	-74.2	213.1	-80	2.40E-04



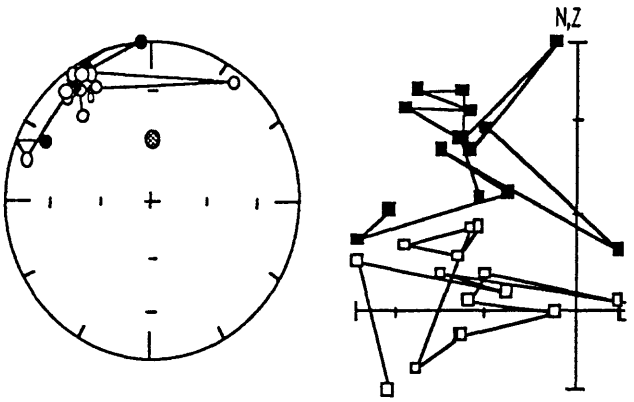
144	nrm	275.3	48.6	266	58.6	1.20E-04
144	AF 025	273.2	44.4	264.9	54.1	1.21E-04
144	AF 075	233.6	50.7	218.5	53	1.02E-04
144	AF 100	231.2	42.8	219.8	45	9.90E-05
144	AF 150	240.7	24.6	235.1	29.3	1.34E-04
144	AF 200	255.9	28.8	249.9	36.1	1.45E-04
144	AF 250	244.6	28.5	238.1	33.9	1.31E-04
144	AF 300	230.4	25.6	224.5	28.2	1.23E-04
144	AF 350	237.1	21.8	232.1	25.9	1.54E-04
144	AF 400	266.9	16.5	264	25.8	1.20E-04
144	AF 450	280.8	30.3	276.9	41.1	1.61E-04



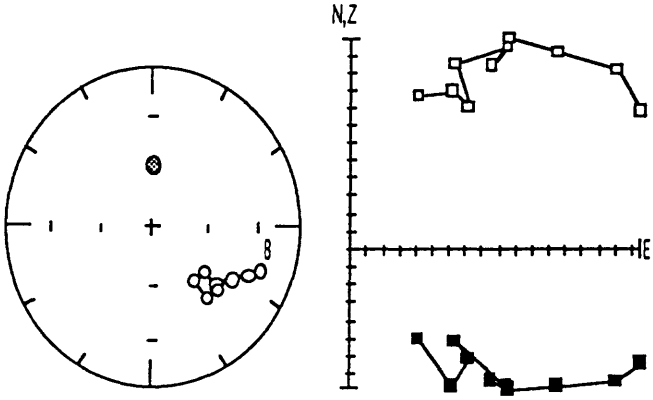
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
147	nrm	103.6	5.7	103.5	-7.7	1.74E-04
147	AF 025	105.4	-9.3	103.6	-22.9	1.83E-04
147	AF 075	117.6	-9.3	116.6	-23.9	2.33E-04
147	AF 100	114.5	0.3	114	-14.2	1.51E-04
147	AF 150	114.3	-9.3	113.1	-23.8	1.45E-04
147	AF 200	118.7	-14.7	117.4	-29.3	1.36E-04
147	AF 250	121.2	-12.8	120.3	-27.6	1.36E-04
147	AF 300	117.3	-26.9	114.9	-41.5	9.70E-05



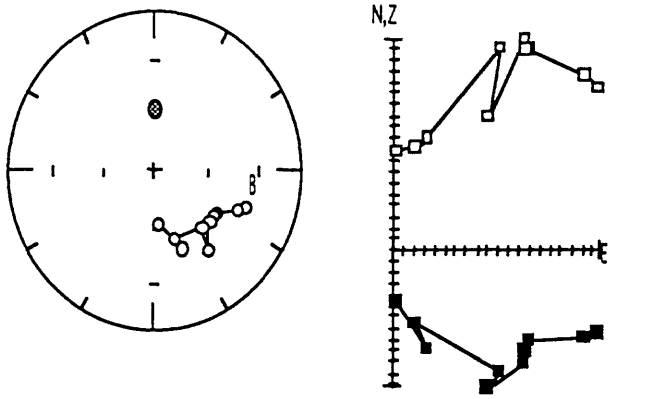
149	nrm	320.7	-43.9	318.8	-29.1	1.84E-04
149	AF 050	325.7	-29.1	324.2	-14.6	2.29E-04
149	AF 100	318.9	-28.2	318.1	-13.4	2.92E-04
149	AF 150	333.7	-33.8	330.9	-19.9	2.55E-04
149	AF 200	322.6	-3.1	322.8	11.6	2.98E-04
149	AF 250	331	-8.6	330.9	5.4	2.64E-04
149	AF 300	325.4	-8.1	325.3	6.4	2.21E-04
149	AF 350	356.4	-10.3	355.4	0.2	2.82E-04
149	AF 400	325.9	-17.1	325.2	-2.7	2.06E-04
149	AF 450	333.9	-23.9	332.1	-10.1	2.19E-04
149	AF 500	38.5	-8.1	36.5	-7.4	8.12E-05
149	AF 600	319.5	-24.6	318.7	-9.8	2.30E-04
149	AF 700	330.2	-21.8	328.9	-7.7	1.48E-04
149	AF 800	285	-25.2	287	-11.5	2.60E-04
149	AF 900	297.8	4.6	297.1	19.3	2.46E-04

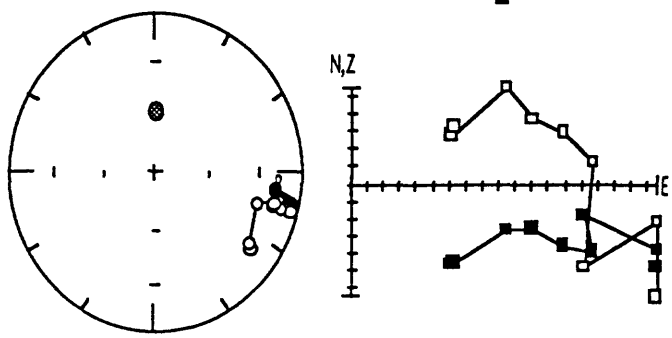


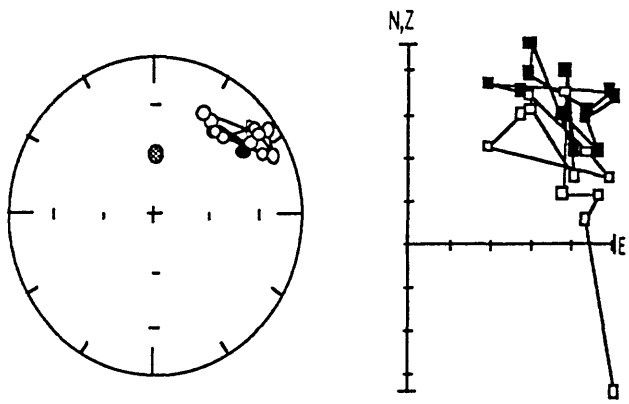
152	nrm	111.3	-8.6	109.9	-22.8	2.03E-04
152	AF 050	116.3	-15.2	114.8	-29.7	2.05E-04
152	AF 100	122.6	-22.3	121.4	-37.1	1.85E-04
152	AF 150	129.4	-29	129.2	-44	1.73E-04
152	AF 200	130.5	-27.7	130.6	-42.7	1.54E-04
152	AF 250	129.2	-28.4	129	-43.4	1.68E-04
152	AF 300	129.3	-37.3	129.1	-52.3	1.34E-04
152	AF 350	130.6	-25.5	130.7	-40.5	1.24E-04
152	AF 400	139.3	-27.1	141.1	-41.9	1.34E-04
152	AF 450	137.7	-38.5	140.2	-53.3	1.09E-04

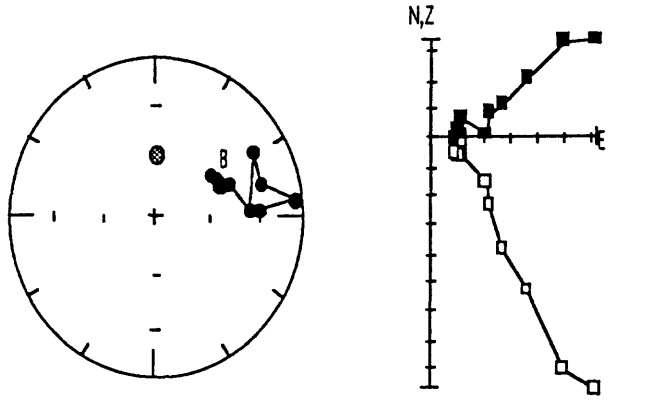


No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
153	nrm	113.1	-20.1	110.7	-34.4	2.54E-04
153	AF 050	115.6	-23.7	113.1	-38.1	2.52E-04
153	AF 100	123.4	-34.3	121.6	-49.2	2.36E-04
153	AF 150	126	-33.9	125	-48.9	2.36E-04
153	AF 200	129.3	-34.7	129.1	-49.7	2.47E-04
153	AF 250	141.4	-23.4	143.3	-38.1	1.94E-04
153	AF 300	135.7	-35.4	137.3	-50.3	2.34E-04
153	AF 350	154	-40	161.5	-53.4	1.14E-04
153	AF 400	153.2	-33.6	158.8	-47.1	1.37E-04
153	AF 450	160.5	-50.4	174.4	-62.4	1.01E-04
155	nrm	100.9	32.1	104.2	18.7	2.03E-04
155	AF 025	99.6	19.4	101.3	6.4	1.92E-04
155	AF 075	93.4	30.9	97.3	18.5	1.51E-04
155	AF 100	104.7	8.5	104.8	-5.1	1.53E-04
155	AF 150	105.7	1	105.1	-12.6	1.37E-04
155	AF 200	104.3	-4.9	102.9	-18.3	1.20E-04
155	AF 250	108	-16	105.5	-29.8	1.14E-04
155	AF 300	126.8	-6	126.6	-21	8.18E-05
155	AF 350	126	-8.6	125.7	-23.6	8.39E-05
158	TT 100	46.9	32.1	55.7	29.1	6.96E-04
158	TT 200	56.5	-2.2	55.4	-6.4	5.28E-04
158	TT 300	67.1	-5.7	64.9	-12.3	5.26E-04
158	TT 330	54	-10.8	50.8	-14.1	4.98E-04
158	TT 360	52.6	-30.6	43.3	-32.7	6.56E-04
158	TT 400	65.5	-12.7	61.6	-18.7	4.89E-04
158	TT 450	41.3	-30.5	32.5	-29.6	6.37E-04
158	TT 500	47	-34.8	36.4	-35.2	6.02E-04
158	TT 540	59.6	-17.1	54.6	-21.5	5.77E-04
158	TT 590	57	-10.2	53.8	-14.2	6.26E-04
158	TT 630	35.8	-30.8	27.2	-28.6	4.76E-04
158	TT 680	47.3	-33.5	37.2	-34.1	5.41E-04
159	nrm	41.5	53.8	60.7	50.8	1.12E-03
159	AF 025	35.3	54.6	56	53.1	1.00E-03
159	AF 075	39.9	53.9	59.4	51.3	6.66E-04
159	AF 100	46.5	56	66.4	51.6	4.83E-04
159	AF 150	52.6	49.8	67.9	44.5	3.30E-04
159	AF 200	76.3	45.9	86.2	36	2.53E-04
159	AF 250	52.1	27.4	59	23.3	1.43E-04
159	AF 300	66.8	34.6	74.6	26.9	1.21E-04
159	AF 350	81.4	15.6	83.4	5.5	1.23E-04
159	AF 400	78.8	40.6	86.7	30.4	1.02E-04



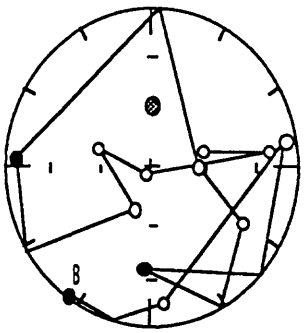


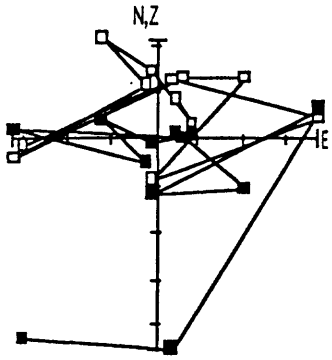




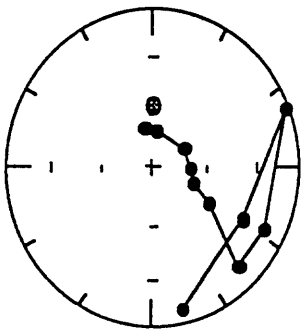
Appendix 2

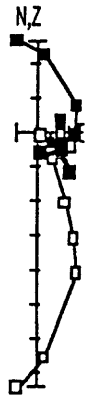
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
160	TT 100	215.9	2.6	215.4	1.5	5.23E-04
160	TT 200	173.1	-4.4	174.9	-15.3	4.66E-04
160	TT 300	80.2	2.7	79.8	-7	3.82E-04
160	TT 330	195.5	43.9	184.5	36.3	1.45E-04
160	TT 360	120	-14.5	118.9	-29.3	2.64E-04
160	TT 400	103.9	-52.2	90.5	-65	1.42E-04
160	TT 450	273.9	-4.6	273.6	7.5	3.28E-04
160	TT 500	178.5	-58.1	203.4	-65.6	1.29E-04
160	TT 540	271.3	-71.9	288	-58.8	2.46E-04
160	TT 590	149.2	-74.9	228.3	-85	1.42E-04
160	TT 630	86.5	-10.1	83.5	-20.7	9.00E-05
160	TT 680	91.1	-49.7	75.4	-60.1	9.72E-05



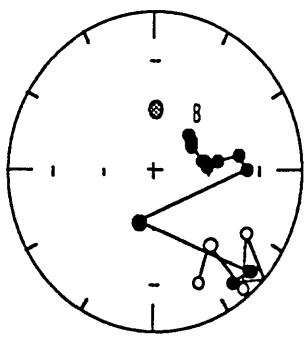


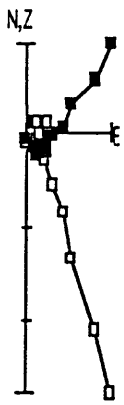
162	nrm	332.3	56.4	347	69.6	7.95E-04
162	AF 025	343.1	60.2	6.8	71.1	6.98E-04
162	AF 075	18.1	69.6	59.9	69.9	4.37E-04
162	AF 100	50	77.7	94.1	69.1	3.38E-04
162	AF 150	82.7	78.2	108.8	65.4	2.26E-04
162	AF 200	114.5	66.7	120.1	52	9.92E-05
162	AF 250	136.8	29.3	136.2	14.4	1.67E-04
162	AF 300	115.5	28.6	116.9	14	7.52E-05
162	AF 350	66.2	10	67.7	3.2	8.64E-05
162	AF 400	114.1	45.4	117.1	30.8	1.10E-04
162	AF 450	170.2	21.7	167.5	10	6.32E-05





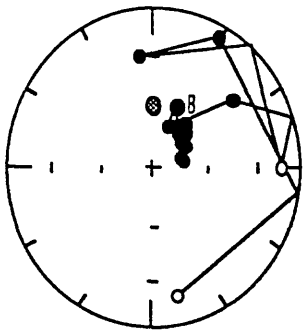
163	nrm	16.4	60.8	44.8	63.4	3.09E-03
163	AF 050	20.4	64.4	52.9	65.3	2.31E-03
163	AF 100	22.9	65.9	57.1	65.9	1.46E-03
163	AF 150	46.3	69.1	78.3	63.1	9.53E-04
163	AF 200	58.6	68.8	85.8	60.6	6.17E-04
163	AF 250	58.8	63	80.9	55.4	3.53E-04
163	AF 300	67	50.2	80.1	41.8	3.13E-04
163	AF 350	78.9	48.1	89	37.7	2.56E-04
163	AF 400	228.4	64	198.5	62.2	9.83E-05
163	AF 450	134.1	26.2	133.8	11.3	1.65E-04
163	AF 500	143.8	28.4	142.5	13.8	2.24E-04
163	AF 600	122.8	-12.1	122.1	-26.9	2.87E-04
163	AF 700	140.6	9.4	140.5	-5.3	2.07E-04
163	AF 800	138.7	-25.6	140.4	-40.4	2.01E-04
163	AF 900	154.1	-12.3	156.3	-25.9	2.75E-04

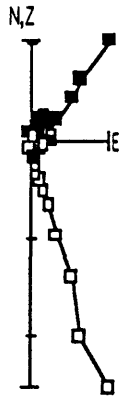




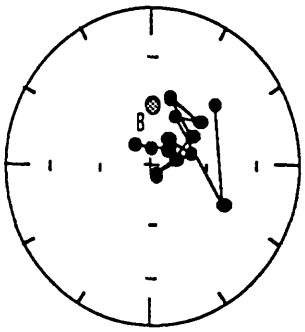
Appendix 2

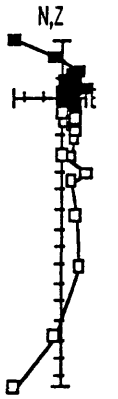
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
164	nrm	14.2	58.3	39.9	61.8	2.87E-03
164	AF 050	8.4	62.9	40	67.2	2.17E-03
164	AF 100	15.2	62.7	46.1	65.3	1.52E-03
164	AF 150	11.9	67.2	50.4	69.7	1.04E-03
164	AF 200	18.9	68.5	58.4	68.9	7.08E-04
164	AF 250	13.8	75.1	71.3	74.3	5.20E-04
164	AF 300	21.1	75.8	77	73.1	5.17E-04
164	AF 350	5.2	49.9	23.5	56.5	4.64E-04
164	AF 400	354.8	59.2	20.4	67.5	3.84E-04
164	AF 450	1.6	59.6	28.5	66.2	2.79E-04
164	AF 500	43.1	34.1	52.8	32	1.77E-04
164	AF 600	91.5	-2.1	90.2	-13.8	2.48E-04
164	AF 700	347.5	19.3	352	30.8	1.10E-04
164	AF 800	27.1	4.8	28.8	7.9	3.02E-04
164	AF 900	165.8	-7.1	167.9	-19.2	1.50E-04





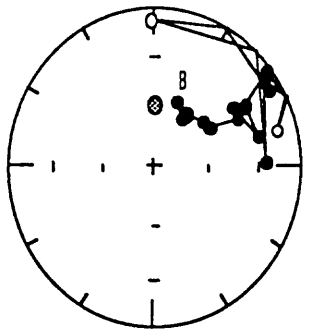
166	nrm	314.9	60.3	319.5	75.2	1.61E-03
166	AF 050	326.9	66.5	351.5	79.9	1.30E-03
166	AF 100	347.1	71.6	40.5	79	9.25E-04
166	AF 150	351.5	71.3	43.5	77.7	6.45E-04
166	AF 200	355.8	66	32.8	72.9	4.72E-04
166	AF 250	31.5	71.1	71.8	67.9	4.42E-04
166	AF 300	301.2	79.7	148	84.9	3.08E-04
166	AF 350	6.3	77	75	76.8	3.33E-04
166	AF 400	24.4	63.6	55.2	63.7	2.46E-04
166	AF 450	1	45.5	16.1	53.4	1.59E-04
166	AF 500	26.9	54	48	54.7	2.27E-04
166	AF 600	3.8	55.1	26.1	61.6	9.14E-05
166	AF 700	110.6	59.8	116.2	45.4	1.53E-04
166	AF 800	33.3	42.5	47.1	42.5	1.67E-04

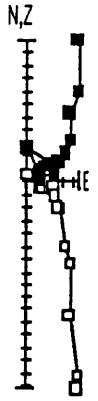




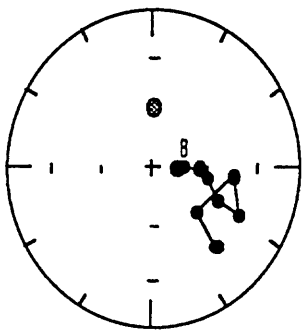
Appendix 2

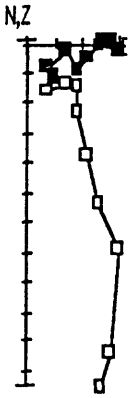
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
168	nrm	4.2	46.9	20.5	54	1.99E-03
168	AF 050	8.5	56.1	32	61.3	1.72E-03
168	AF 100	12.2	53.9	33.8	58.4	1.22E-03
168	AF 150	29.2	53.5	49.7	53.6	8.02E-04
168	AF 200	36.3	54.5	56.8	52.8	6.37E-04
168	AF 250	50.4	40.5	61.9	36.3	3.73E-04
168	AF 300	45.5	37.4	56.3	34.6	3.50E-04
168	AF 350	68	34.9	75.7	26.9	2.74E-04
168	AF 400	49.7	31.8	58.1	28.2	1.28E-04
168	AF 450	51.4	6.1	52.6	2.9	1.91E-04
168	AF 500	76.5	-5.7	74.3	-14.4	9.30E-05
168	AF 600	51.8	13.1	54.8	9.6	1.32E-04
168	AF 700	82.2	34.7	88.2	24	1.33E-04
168	AF 800	0.8	-18.4	358	-8.6	2.65E-04
168	AF 900	56.3	14.1	59.3	9.5	2.46E-04



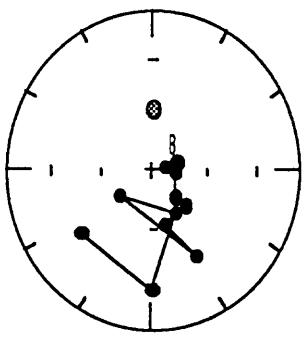


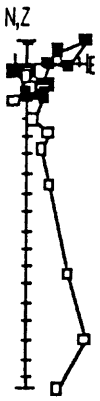
169	nrm	10.2	79.8	87.9	76.8	1.18E-03
169	AF 025	25.8	78.3	86.3	73.5	1.08E-03
169	AF 075	61.5	73.6	93	64.1	7.62E-04
169	AF 100	58.4	73.1	90.7	64.2	5.97E-04
169	AF 150	79.6	71.3	100.8	59.5	4.31E-04
169	AF 200	106.4	63.4	114.1	49.2	3.01E-04
169	AF 250	113.2	49.5	116.7	35	2.43E-04
169	AF 300	84.4	55.6	95.9	44	1.88E-04
169	AF 350	138.4	71.1	134.9	56.2	1.88E-04
169	AF 400	141.8	49	139.4	34.2	1.76E-04



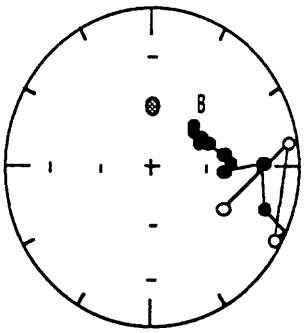


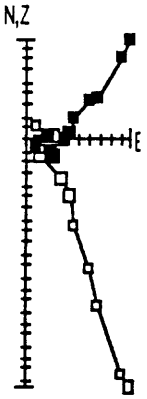
170	nrm	335.8	77.3	72.4	83.5	1.78E-03
170	AF 050	7.4	75.7	70.5	76.1	1.55E-03
170	AF 100	4.8	81.2	93.7	77.8	1.16E-03
170	AF 150	1.9	80.7	91.3	78.2	6.75E-04
170	AF 200	171.7	85.9	138.7	71.8	4.79E-04
170	AF 250	134.6	79	132	64	4.15E-04
170	AF 300	194.3	71	167.6	61.3	3.56E-04
170	AF 350	157.2	53.6	150.7	39.8	2.69E-04
170	AF 400	264.4	59.7	238.1	67.7	2.13E-04
170	AF 450	178.1	79	150.7	66.2	1.44E-04
170	AF 500	187.2	35.3	179.9	26.3	1.70E-04
170	AF 600	241	33.6	230.5	37.7	6.86E-05



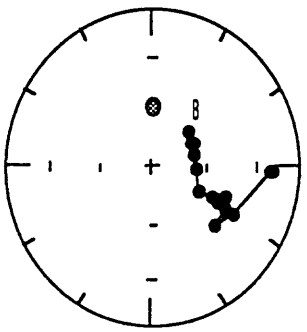


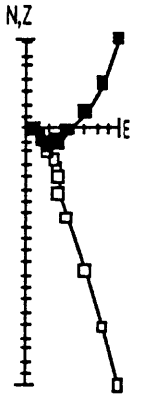
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
171	nrm	24.3	57.7	48.8	58.7	2.53E-03
171	AF 025	24.5	60.1	51.3	60.7	2.36E-03
171	AF 075	32.9	63.8	62.3	61.8	1.65E-03
171	AF 100	34.2	60.7	60.1	58.8	1.33E-03
171	AF 150	43.3	60.9	67.6	56.8	9.17E-04
171	AF 200	63.1	57.4	80.4	49.3	6.54E-04
171	AF 250	73.2	55.9	87.4	46.1	4.85E-04
171	AF 300	78.5	60.6	93.6	49.7	2.24E-04
171	AF 350	81.1	36.3	87.6	25.8	2.74E-04
171	AF 400	105.3	33.5	108.3	19.6	2.52E-04
171	AF 450	118.7	9.6	118.8	-5.1	3.18E-04
171	AF 500	81.5	3.6	81.2	-6.3	2.27E-04
171	AF 600	120.6	-29.6	118.5	-44.3	1.72E-04



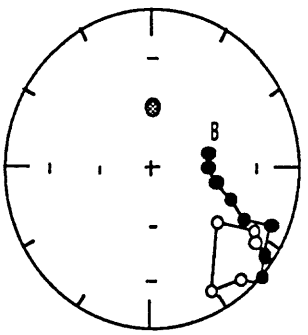


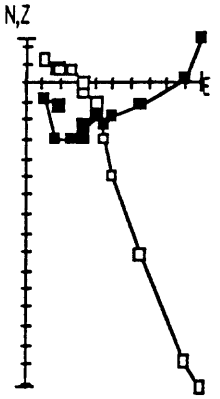
172	nrm	18.8	60.9	47.1	62.8	2.35E-03
172	AF 050	26.6	66.4	60.7	65.3	1.78E-03
172	AF 100	38	70.7	75.2	66.1	1.27E-03
172	AF 150	57.3	74.2	91.6	65.3	8.09E-04
172	AF 200	99.8	75.6	114.7	61.6	6.12E-04
172	AF 250	107.1	67.2	115.5	53	4.96E-04
172	AF 300	109.2	63	115.9	48.7	4.27E-04
172	AF 350	102.3	59.4	110.2	45.7	3.55E-04
172	AF 400	113.5	56.8	117.9	42.2	2.89E-04
172	AF 450	131.4	58	131	43	2.90E-04
172	AF 500	115.3	51.4	118.6	36.7	1.61E-04
172	AF 600	87.1	31.1	91.8	19.7	5.77E-05





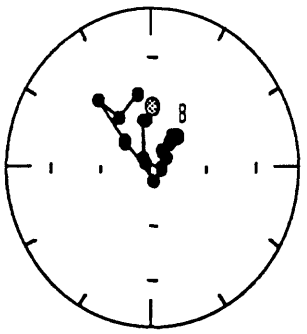
176	nrm	51.4	64	76.3	57.7	1.92E-03
176	AF 050	64.1	68	88.6	58.9	1.74E-03
176	AF 100	84.3	66.2	100.4	54.2	1.13E-03
176	AF 150	102.6	57.1	109.9	43.4	7.14E-04
176	AF 200	113.3	45.6	116.4	31.1	5.77E-04
176	AF 250	111.7	27.7	113.4	13.4	4.50E-04
176	AF 300	125	21.7	125.3	6.7	4.05E-04
176	AF 350	132.3	15.2	132.2	0.2	4.33E-04
176	AF 400	138.7	5.5	138.8	-9.3	3.99E-04
176	AF 450	151.3	-0.3	152	-14.3	3.51E-04
176	AF 500	128	-28.4	127.5	-43.4	1.91E-04
176	AF 600	120.5	-6.6	119.9	-21.4	2.36E-04
176	AF 700	123.4	-3	123.1	-17.9	2.40E-04

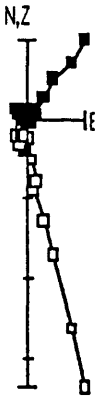


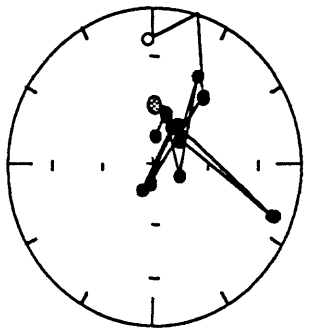


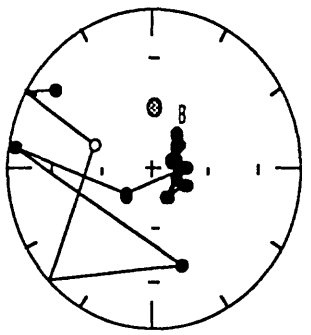
Appendix 2

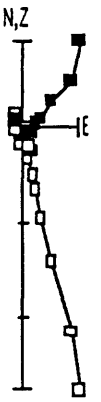
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
177	nrm	4.8	63.9	38	68.9	3.63E-03
177	AF 050	4.2	65.3	39.8	70.2	2.81E-03
177	AF 100	0.9	63.7	33.8	69.8	1.84E-03
177	AF 150	358	67.7	38.9	73.6	1.34E-03
177	AF 200	343.7	70.7	33.5	79.4	8.87E-04
177	AF 250	347.4	74.9	57.6	80.5	7.90E-04
177	AF 300	330.8	78.9	89.1	84	4.92E-04
177	AF 350	309.3	71.2	306.5	86.2	3.84E-04
177	AF 400	335.9	52.5	349.4	65.2	2.88E-04
177	AF 450	312.7	67	317.5	82	3.49E-04
177	AF 500	284.9	79.7	168	82.9	2.37E-04
177	AF 600	309.4	54.5	309	69.5	3.26E-04
177	AF 700	318	28.8	319.7	43.6	2.82E-04
177	AF 800	319.3	43.8	322.9	58.5	2.07E-04
177	AF 900	339.9	38.3	348.2	50.8	2.61E-04
178	TT 100	338.7	63	4.7	74.5	2.23E-03
178	TT 200	353.6	54.1	13.7	63.2	8.66E-04
178	TT 300	34.5	85.3	111.9	74.7	8.10E-04
178	TT 330	17.9	31.6	27.6	36.1	4.87E-04
178	TT 360	9.7	66.7	47.6	69.9	5.26E-04
178	TT 400	108.5	28.7	110.6	14.6	4.00E-04
178	TT 450	4.8	59.6	31.9	65.3	3.13E-04
178	TT 500	262.2	71.8	209.5	76.4	4.32E-04
178	TT 540	358.3	61	26.7	68.1	5.86E-04
178	TT 590	273.6	75.9	197	81	2.85E-04
178	TT 630	23.5	41.6	37.3	44.1	1.42E-04
178	TT 680	3	-31	357.3	-21.3	1.70E-04
180	nrm	3	62.7	34.4	68.4	2.95E-03
180	AF 050	6.6	68.1	47.6	71.7	2.25E-03
180	AF 100	3.8	70	49.8	73.7	1.46E-03
180	AF 150	3.4	75.8	69	77	9.70E-04
180	AF 200	354.9	76	66.8	79	6.57E-04
180	AF 250	9.2	84.5	108.5	77	5.18E-04
180	AF 300	225.7	84	152.8	74.4	3.50E-04
180	AF 350	70.6	83.5	112.7	70.9	2.59E-04
180	AF 400	216.5	83.7	152.6	73.4	2.31E-04
180	AF 450	29.7	77.9	86.6	72.6	2.18E-04
180	AF 500	260.2	63.5	227.8	69.9	2.04E-04
180	AF 600	278	-8.1	278.2	4.7	9.01E-05
180	AF 700	170.9	48.9	162.6	36.8	8.38E-05
180	AF 800	277.7	-67.8	289.7	-54.2	1.66E-04
180	AF 900	306.8	1.6	306.7	16.6	1.22E-04



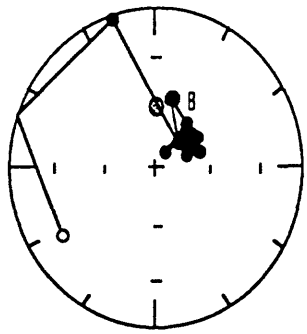


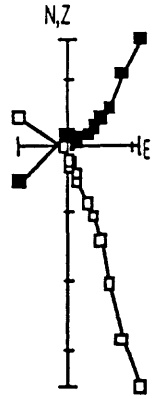




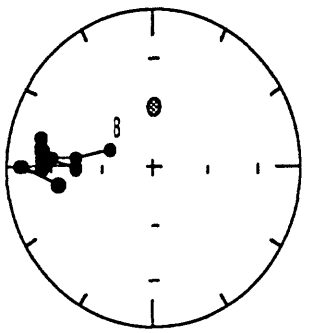


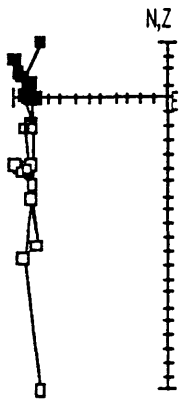
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
182	nrm	11.6	56.7	35.8	61	4.09E-03
182	AF 050	11.4	60.1	39.2	64	3.19E-03
182	AF 100	15.7	64	48.3	66.2	2.23E-03
182	AF 150	19.4	63.3	50.6	64.7	1.56E-03
182	AF 200	25.3	63.5	55.8	63.4	1.16E-03
182	AF 250	24.7	66.4	59.3	65.9	9.25E-04
182	AF 300	11	66.6	48.4	69.4	5.85E-04
182	AF 350	18.1	73.3	68.3	72.3	5.43E-04
182	AF 400	37.1	68.6	71.5	64.7	4.47E-04
182	AF 450	6.8	67.4	46.3	71.1	2.78E-04
182	AF 500	359.3	44.8	13.9	53.2	2.84E-04
182	AF 600	10.4	57.8	35.7	62.3	3.05E-04
182	AF 700	342.4	72.2	38.8	80.5	3.02E-04
182	AF 800	5.4	68.5	47.5	72.3	2.43E-04
182	AF 900	343.2	-10.6	342.6	2.1	1.69E-04
182	AF 999	229.8	-28.3	237.2	-24.8	9.99E-04



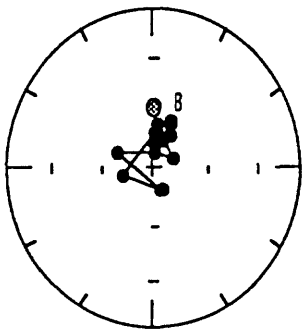


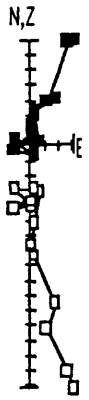
184	TT 100	296.1	52.8	292.8	63.6	2.33E-03
184	TT 200	282	36.2	277.9	46.2	1.60E-03
184	TT 300	278.3	21.2	275.8	30.9	1.20E-03
184	TT 330	281	12.8	279.6	22.8	1.25E-03
184	TT 360	285	11.4	283.9	21.7	1.28E-03
184	TT 400	272.8	15.7	270.5	24.9	1.14E-03
184	TT 450	279.5	15.1	277.7	25	1.23E-03
184	TT 500	276.4	15.5	274.4	25.1	1.19E-03
184	TT 540	275.4	37.5	270	46.8	1.45E-03
184	TT 590	271.4	1.6	270.7	10.8	1.10E-03
184	TT 630	264.5	26.3	260.1	34.4	1.27E-03
184	TT 680	271.6	2.2	270.8	11.3	1.05E-03





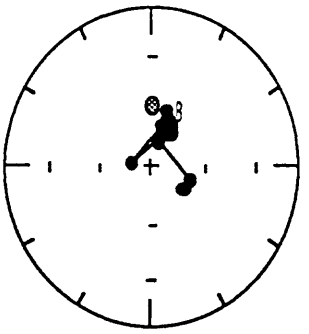
185	nrm	3.9	60.6	23.8	64.6	1.79E-03
185	AF 025	2.3	59.4	21.1	63.8	1.67E-03
185	AF 075	349.8	69.5	20.1	75.2	1.26E-03
185	AF 100	3	67.2	30.5	70.8	1.10E-03
185	AF 150	344.5	64.3	5.4	71.6	7.66E-04
185	AF 200	337.8	69.7	5.3	77.5	6.72E-04
185	AF 250	347.9	60.1	5.4	67	5.61E-04
185	AF 300	11.9	77.6	62.7	77.1	3.10E-04
185	AF 350	332.7	73.9	11.1	81.9	4.06E-04
185	AF 400	295.4	58.2	290.9	69	3.10E-04
185	AF 450	218.5	83.5	156.8	77.6	2.90E-04
185	AF 500	276	64.4	258.5	73.2	4.27E-04
185	AF 600	343.4	64.5	4.2	71.8	3.84E-04

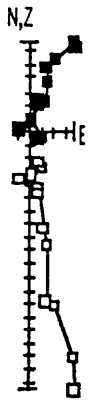




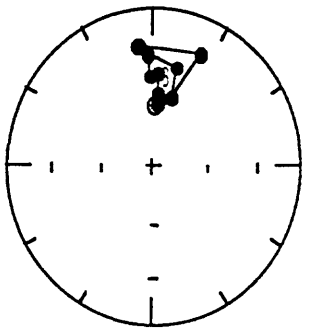
Appendix 2

No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
186	nrm	5.1	66	31	69.3	2.09E-03
186	AF 025	6.2	62.2	27.8	65.7	1.88E-03
186	AF 075	1.5	61	21.7	65.5	1.45E-03
186	AF 100	354	62.8	15.2	68.5	1.38E-03
186	AF 150	2.5	61.1	22.8	65.3	9.56E-04
186	AF 200	1.9	66.4	28.2	70.2	7.84E-04
186	AF 250	0.5	54.9	16	59.9	5.17E-04
186	AF 300	1.4	59	19.8	63.6	5.21E-04
186	AF 350	292.3	67.9	280.8	78.4	3.71E-04
186	AF 450	345	69.7	14.9	76.3	3.34E-04
186	AF 500	92.5	78.5	108.1	68.4	3.03E-04
186	AF 600	120.9	80.2	123	69.3	2.45E-04

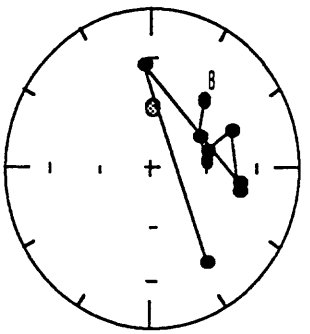


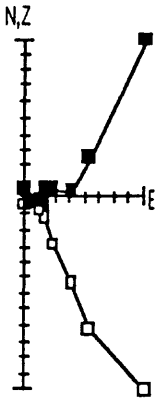


187	nrm	351.9	49	3.3	55.8	1.89E-03
187	AF 025	351.8	48.3	2.8	55	1.63E-03
187	AF 075	351.1	50.6	3.1	57.4	1.17E-03
187	AF 100	354.5	49.2	6.3	55.4	9.96E-04
187	AF 150	353.2	45.6	3.4	52.2	7.28E-04
187	AF 200	355.6	34.8	2.6	41.3	5.56E-04
187	AF 250	350.1	35.5	356.8	42.8	4.62E-04
187	AF 300	351.9	23.6	356.2	30.8	4.05E-04
187	AF 350	7.1	31.7	13.9	36.3	3.01E-04
187	AF 400	4.3	47.7	16.2	52.3	1.98E-04
187	AF 450	19.3	22.1	23.9	24.7	2.63E-04
187	AF 500	348.8	17.5	351.9	25.2	1.63E-04



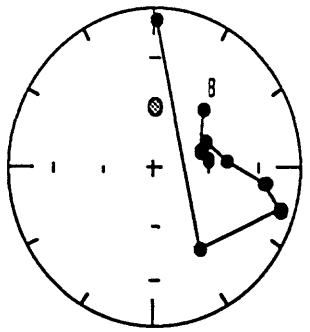
189	nrm	28.1	42.9	39.3	43.1	1.75E-03
189	AF 050	38.5	61.4	58.8	58.5	9.52E-04
189	AF 100	60.7	67.3	80.6	60.2	6.20E-04
189	AF 150	53.4	63.1	72.1	57.4	3.52E-04
189	AF 200	55.2	46	65.5	40.9	1.90E-04
189	AF 250	97.7	50.4	102.7	39.5	1.81E-04
189	AF 300	91.4	50.1	97.5	39.8	1.25E-04
189	AF 350	350.5	25.4	355.6	33.5	6.46E-05
189	AF 400	149.9	42.4	146.4	31.4	3.89E-05

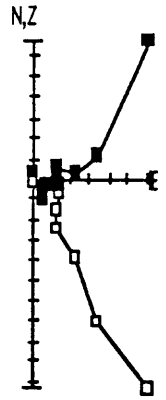




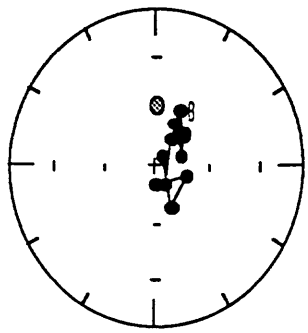
Appendix 2

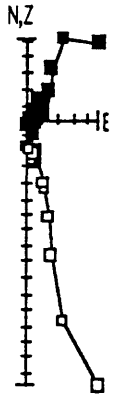
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
190	nrm	28.8	48.6	42.4	48.5	1.38E-03
190	AF 050	47.5	68	71.7	62.9	7.97E-04
190	AF 100	62	67.3	81.6	60	4.52E-04
190	AF 150	44.6	62.8	65	58.7	2.80E-04
190	AF 200	74.7	57.2	86	48.7	2.01E-04
190	AF 250	93.6	34.9	97	24.5	1.58E-04
190	AF 300	105.9	22.2	107	10.8	8.43E-05
190	AF 350	153.8	49.9	148.6	39.1	1.39E-04
190	AF 400	359.8	0.6	0.5	7.4	4.00E-05



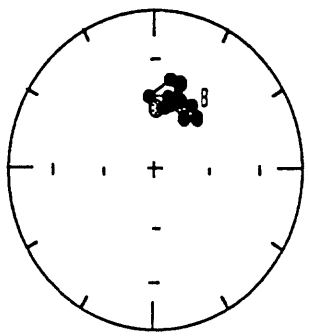


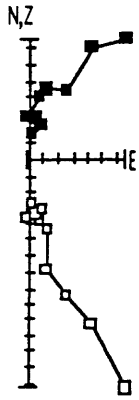
201	nrm	17.4	66.5	43.4	67.4	1.81E-03
201	AF 050	4.3	61.3	24.9	65.2	1.39E-03
201	AF 100	2.4	62.2	23.8	66.3	9.39E-04
201	AF 150	9.3	66.6	36	69.1	6.61E-04
201	AF 200	25.8	77.3	69.9	74.6	4.52E-04
201	AF 250	17.4	67.8	45.1	68.6	4.19E-04
201	AF 300	9.9	55.1	26	58.4	2.80E-04
201	AF 350	359.8	69.8	31.8	73.6	2.77E-04
201	AF 400	224.6	84.7	152.5	78.6	2.44E-04
201	AF 450	249.8	80.3	180.6	80.4	1.68E-04
201	AF 500	88.2	82.1	109.5	72	1.81E-04
201	AF 600	179.3	75.5	156.7	67.3	2.28E-04
201	AF 700	333.2	76.9	29.8	83.8	1.74E-04





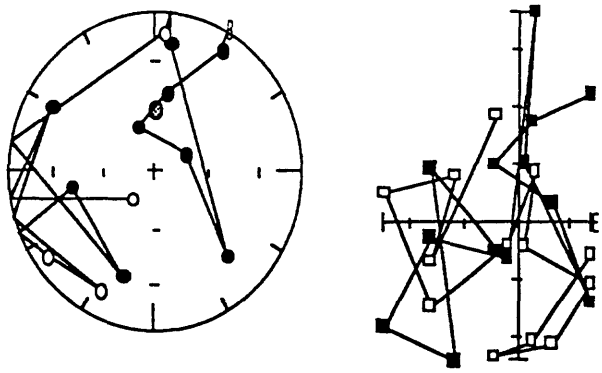
203	nrm	25.4	54.3	40.9	54.7	1.75E-03
203	AF 050	18.2	49	31.1	51	1.32E-03
203	AF 100	12.4	56.2	29.3	58.9	9.89E-04
203	AF 150	0.9	50.5	13.9	55.7	8.30E-04
203	AF 200	7.7	38.9	16.6	43.1	6.26E-04
203	AF 250	2.1	37	10.1	42.3	5.46E-04
203	AF 300	345.6	44.4	354.3	52.2	4.51E-04
203	AF 350	359.1	46	10	51.6	4.20E-04
203	AF 400	355.5	51.3	8.3	57.3	3.21E-04
203	AF 450	7.8	48.5	20.3	52.5	3.84E-04



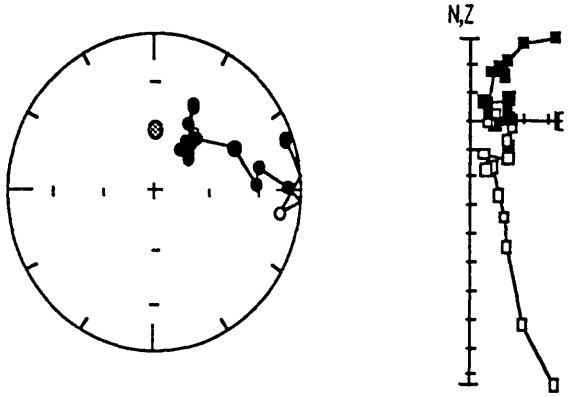


Appendix 2

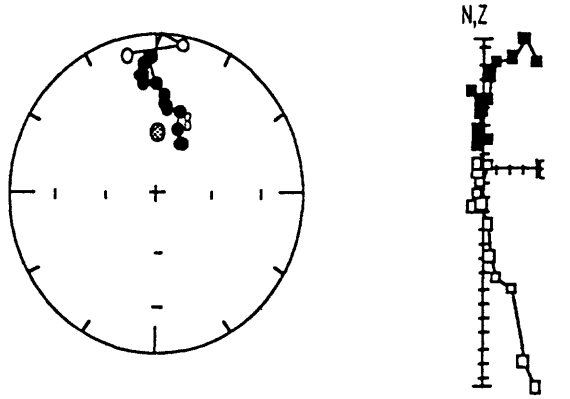
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
203	TT 100	28.7	11.6	31	12.6	2.69E-04
203	TT 200	358.8	43.6	8.8	49.4	2.74E-04
203	TT 300	328	55.3	336.9	65.1	2.59E-04
203	TT 330	28.2	72.9	62	70.9	2.24E-04
203	TT 360	137.5	39.1	136	28.3	2.22E-04
203	TT 400	4.4	15.8	7.6	21.1	1.14E-04
203	TT 400	7.6	-19.1	4.8	-13.8	3.81E-04
203	TT 450	204.6	34	197.8	31.3	7.43E-05
203	TT 500	265.8	33.9	260	42.1	2.22E-04
203	TT 540	231.6	-13	233.7	-9.7	3.11E-04
203	TT 590	202.6	-15.2	205.7	-17.3	2.81E-04
203	TT 630	299.8	8.9	299.5	19.9	1.99E-04
203	TT 680	189.6	-69	219.8	-71	1.97E-04



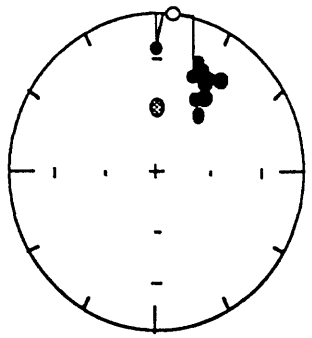
204	nrm	23.8	64.8	47.4	64.7	1.04E-03
204	AF 050	13.5	62.7	35.6	64.8	8.03E-04
204	AF 100	15.1	57.8	33.1	59.9	5.21E-04
204	AF 150	21.4	57.9	39.3	58.8	4.03E-04
204	AF 200	16.5	48	29	50.4	3.47E-04
204	AF 250	17.1	37.2	25.6	39.8	2.60E-04
204	AF 300	23.2	62.4	44.5	62.6	1.95E-04
204	AF 350	23.1	53.6	38.3	54.5	1.50E-04
204	AF 400	53.8	44.1	62.9	39.7	2.18E-04
204	AF 450	81.3	40.4	86.6	32.1	1.74E-04
204	AF 500	72.7	35.3	77.9	28.2	1.64E-04
204	AF 600	87	18.6	88.7	9.8	1.63E-04
204	AF 700	100.3	-5.4	99.4	-15.4	9.89E-05
204	AF 800	69	11.8	70.4	5.5	7.25E-05

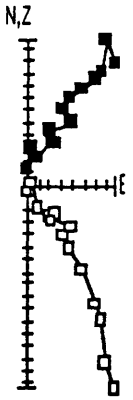


205	nrm	9.8	58.1	28	61.2	1.67E-03
205	AF 025	5.2	50.1	18.4	54.4	1.58E-03
205	AF 075	6.1	41.6	15.8	46.1	1.11E-03
205	AF 100	358.4	39.1	6.8	45	1.02E-03
205	AF 150	356.7	36.6	4.3	42.9	8.50E-04
205	AF 200	357.8	31.8	4.1	37.9	6.00E-04
205	AF 250	354.1	24.3	358.7	31.1	5.23E-04
205	AF 300	348.6	17.7	351.7	25.4	5.97E-04
205	AF 350	354.2	24.4	358.8	31.3	4.70E-04
205	AF 400	354.4	8.7	356.2	15.7	3.83E-04
205	AF 450	351.4	12.5	353.7	19.9	2.83E-04
205	AF 500	348.3	22.6	352.2	30.3	3.20E-04
205	AF 600	12.2	-10.1	10.8	-5.7	2.05E-04
205	AF 700	348.7	-20.7	346.5	-12.6	1.82E-04

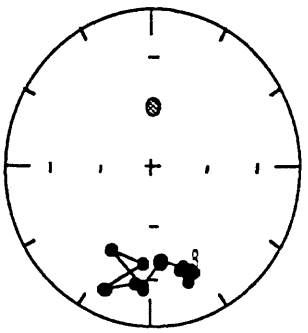


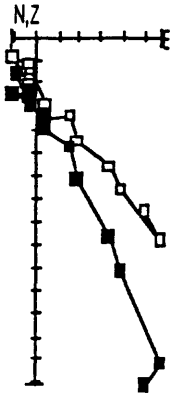
No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
206	nrm	23.5	51.8	37.8	52.7	2.07E-03
206	AF 025	19	44.6	30.1	46.6	1.98E-03
206	AF 075	24.3	42.9	34.7	43.9	1.56E-03
206	AF 100	24.8	41.8	34.8	42.8	1.42E-03
206	AF 150	22.6	35.3	30.6	36.9	1.14E-03
206	AF 200	21.1	31.1	27.9	33.1	9.45E-04
206	AF 250	20.3	27.9	26.3	30.2	8.02E-04
206	AF 300	30.9	27.9	36.7	28.1	7.16E-04
206	AF 350	17.7	24.4	22.9	27.2	5.33E-04
206	AF 400	30.9	29.1	37.1	29.3	4.79E-04
206	AF 450	21.4	31.6	28.4	33.5	5.13E-04
206	AF 500	14.5	33.4	21.9	36.6	2.99E-04
206	AF 600	6.9	-5.7	6.4	-0.5	3.12E-04
206	AF 700	356	17.2	359.3	23.9	1.53E-04



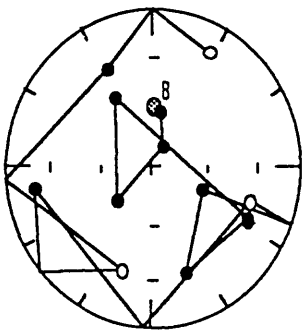


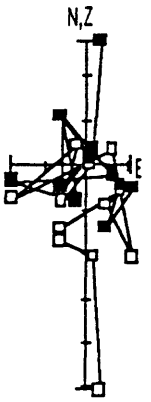
207	nrm	165.4	34	161.5	25.3	1.76E-03
207	AF 025	162.2	38.8	157.9	29.8	1.76E-03
207	AF 075	163.6	40.2	158.9	31.3	1.27E-03
207	AF 100	163.3	40	158.7	31.1	1.09E-03
207	AF 150	168.8	42.8	163	34.5	7.84E-04
207	AF 200	167.3	42.7	161.7	34.2	6.04E-04
207	AF 250	182.7	47	174.2	40.4	5.31E-04
207	AF 300	181.5	47.5	173	40.7	4.48E-04
207	AF 350	190.3	30.5	185.1	25.4	3.29E-04
207	AF 400	218.5	40.8	209	40.5	2.42E-04
207	AF 450	195.5	42.8	186.8	38.4	3.37E-04
207	AF 500	206.8	19.7	203.2	17.8	2.82E-04
207	AF 600	195.5	30.8	189.9	26.6	2.49E-04



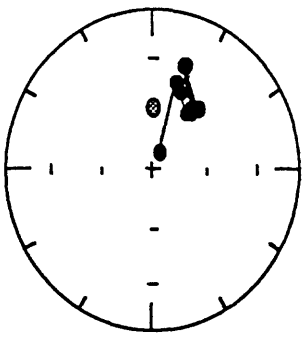


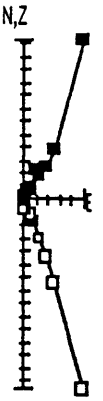
208	TT 100	351.5	53.4	6.5	60.5	5.81E-04
208	TT 200	345.6	71.6	24.7	77.9	2.07E-04
208	TT 300	249.6	58.9	229.4	64	1.89E-04
208	TT 330	326.1	36.4	330.4	47.4	1.90E-04
208	TT 360	115.8	41.8	117.1	29.9	1.06E-04
208	TT 400	166.1	39.4	160.9	30	1.72E-04
208	TT 450	105.1	71.5	112.6	60	2.43E-04
208	TT 500	109.4	-19.2	107.8	-30.7	7.73E-05
208	TT 540	262.7	11.9	260.3	20.7	1.99E-04
208	TT 590	190.9	-28.5	197.5	-32.8	9.35E-05
208	TT 630	330.3	20.8	333	31.5	1.49E-04
208	TT 680	31.3	-20.4	27	-19.2	2.21E-05





No.	Demag	G. Dec.	G. Inc.	S. Dec.	S. Inc.	Intensity
209	nrm	10.4	43.8	22.2	47.7	1.99E-03
209	AF 100	17	52.8	33.3	54.9	7.96E-04
209	AF 150	20	52.8	36.2	54.3	5.51E-04
209	AF 200	19.1	49.3	33.4	51.1	3.90E-04
209	AF 250	12	27.7	18.5	31.8	3.00E-04
209	AF 300	23.2	49.4	37.5	50.4	1.76E-04
209	AF 350	24.6	48.7	38.5	49.4	1.58E-04
209	AF 400	6.9	37.9	16.3	42.6	8.74E-05
209	AF 450	335.9	73.3	19.1	81.2	9.08E-05





210	TT 100	46.5	69.2	72.2	64.1	5.46E-04
210	TT 200	104.2	34.6	106.5	23.3	2.09E-04
210	TT 300	68.5	48	77.7	40.6	1.32E-04
210	TT 330	92.9	28.7	95.6	18.4	7.97E-05
210	TT 360	69.1	31.2	74.2	24	8.25E-05
210	TT 400	89.3	56.9	97.3	46.7	9.66E-05
210	TT 450	116.2	-25.3	115	-37.1	8.86E-05
210	TT 500	135.1	41.3	133.7	29.5	1.57E-04
210	TT 540	148.6	-22.1	151.2	-33	3.73E-05
210	TT 590	97.4	-9.7	95.9	-20.3	8.82E-05
210	TT 630	59.5	-27.5	53.1	-31.9	7.65E-05
210	TT 680	113.4	-8.2	112.8	-20	6.19E-05