

SITE INFORMATION

Site Name Ewecote
Area Trench 2
Context No
Description Iron smelting furnace
Latitude (+ve N) 54.32
Longitude (+ve E) -1.13
Magnetic Var -3.35
Date Sampled 15/7/2003

MAGNETIC MEASUREMENTS

Sample no.	NRM			Field	After partial demag			Pilot?	Comments
	D	I	Int		D	I	Int		
	<i>degs.</i>	<i>degs.</i>	<i>mA m⁻¹</i>	<i>mT</i>	<i>degs.</i>	<i>degs.</i>	<i>mA m⁻¹</i>	Y/N	
1	358.10	56.00	9.53	10	8.30	56.80	6.88		
2	355.30	43.90	193.27	5	353.60	47.10	189.16	Y	
3	3.30	56.00	94.88	7.5	3.40	58.80	54.38		
4	349.90	57.40	71.07	10	359.70	60.50	49.50		
5	16.50	47.30	286.74	7.5	18.00	45.10	281.21		
6	37.90	71.30	94.52	5	33.80	62.20	95.49	Y	x10 atten.
7	16.90	50.70	28.31	10	7.60	50.70	22.27		
8	0.90	61.60	15.73	10	6.60	61.00	13.15		
9	9.50	68.30	5.06	10	7.40	63.90	3.97		
10	313.90	41.80	10.07	5	316.10	43.30	10.50		
11	21.20	59.50	23.26	7.5	18.70	55.80	19.69		
12	312.30	69.00	10.46	5	314.40	59.30	9.47	Y	
13	296.30	61.20	5.38	5	304.90	57.90	4.08		
14	343.90	61.70	27.03	7.5	343.50	59.90	23.68		
15	353.40	74.90	112.67	10	12.30	72.10	75.90		

STATISTICS FOR NRM

Sample no.	NRM				
	D	I	x	y	z
	<i>degs.</i>	<i>degs.</i>			
1	358.10	56.00	0.55889	-0.01854	0.82904
2	355.30	43.90	0.71813	-0.05904	0.69340
3	3.30	56.00	0.55827	0.03219	0.82904
4	349.90	57.40	0.53042	-0.09448	0.84245
5	16.50	47.30	0.65023	0.19261	0.73491
6	37.90	71.30	0.25299	0.19695	0.94721
7	16.90	50.70	0.60603	0.18413	0.77384
8	0.90	61.60	0.47557	0.00747	0.87965
9	9.50	68.30	0.36468	0.06103	0.92913
10	313.90	41.80	0.51691	-0.53715	0.66653
11	21.20	59.50	0.47319	0.18354	0.86163
12	312.30	69.00	0.24119	-0.26506	0.93358
13	296.30	61.20	0.21345	-0.43189	0.87631
14	343.90	61.70	0.45549	-0.13147	0.88048
15	353.40	74.90	0.25878	-0.02994	0.96547

Number = 15
 Sum x = 6.87421
 Sum y = -0.70967
 Sum z = 12.64267
 R = 14.40818
 x bar = 0.47710
 y bar = -0.04925
 z bar = 0.87747

Mean Dec = -5.89
Mean Inc = 61.34
Alpha95 = 8.03

STATISTICS FOR PARTIAL DEMAGNETISATION

Sample no.	Demagnetisation				
	D	I	x	y	z
	<i>degs.</i>	<i>degs.</i>			
1	8.30	56.80	0.54183	0.07904	0.83676
2					
3	3.40	58.80	0.51712	0.03072	0.85536
4	359.70	60.50	0.49242	-0.00258	0.87036
5					
6					
7	7.60	50.70	0.62782	0.08377	0.77384
8	6.60	61.00	0.48160	0.05572	0.87462
9	7.40	63.90	0.43627	0.05666	0.89803
10					
11	18.70	55.80	0.53241	0.18021	0.82708
12					
13					
14	343.50	59.90	0.48086	-0.14244	0.86515
15					

Number = 8
 Sum x = 4.11032
 Sum y = 0.34112
 Sum z = 6.80120
 R = 7.95408
 x bar = 0.51676
 y bar = 0.04289
 z bar = 0.85506

Mean Dec = 4.74
 Mean Inc = 58.77
 Alpha95 = 4.50

Alpha68 = 2.59

CORRECTIONS

Mean Dec = 4.74
Mean Inc = 58.77

Correction for magnetic variation

Mean Dec = 1.39
Mean Inc = 58.77

Correction to Meriden (CVP)

Uncorrected Dec = 1.39
Uncorrected Inc = 58.77
Latitude = 54.32
Longitude = -1.13

Kai = 50.49
Latitude of pole = 75.16
Beta1 = 4.20
Longitude of pole = 174.67
Geomag colat = 52.39
Corrected Inc = 57.01
Beta 2 = 3.71
Corrected Dec = 1.20

FINAL RESULT

Corrected Dec = 1.20
Corrected Inc = 57.01
Alpha95 = 4.50

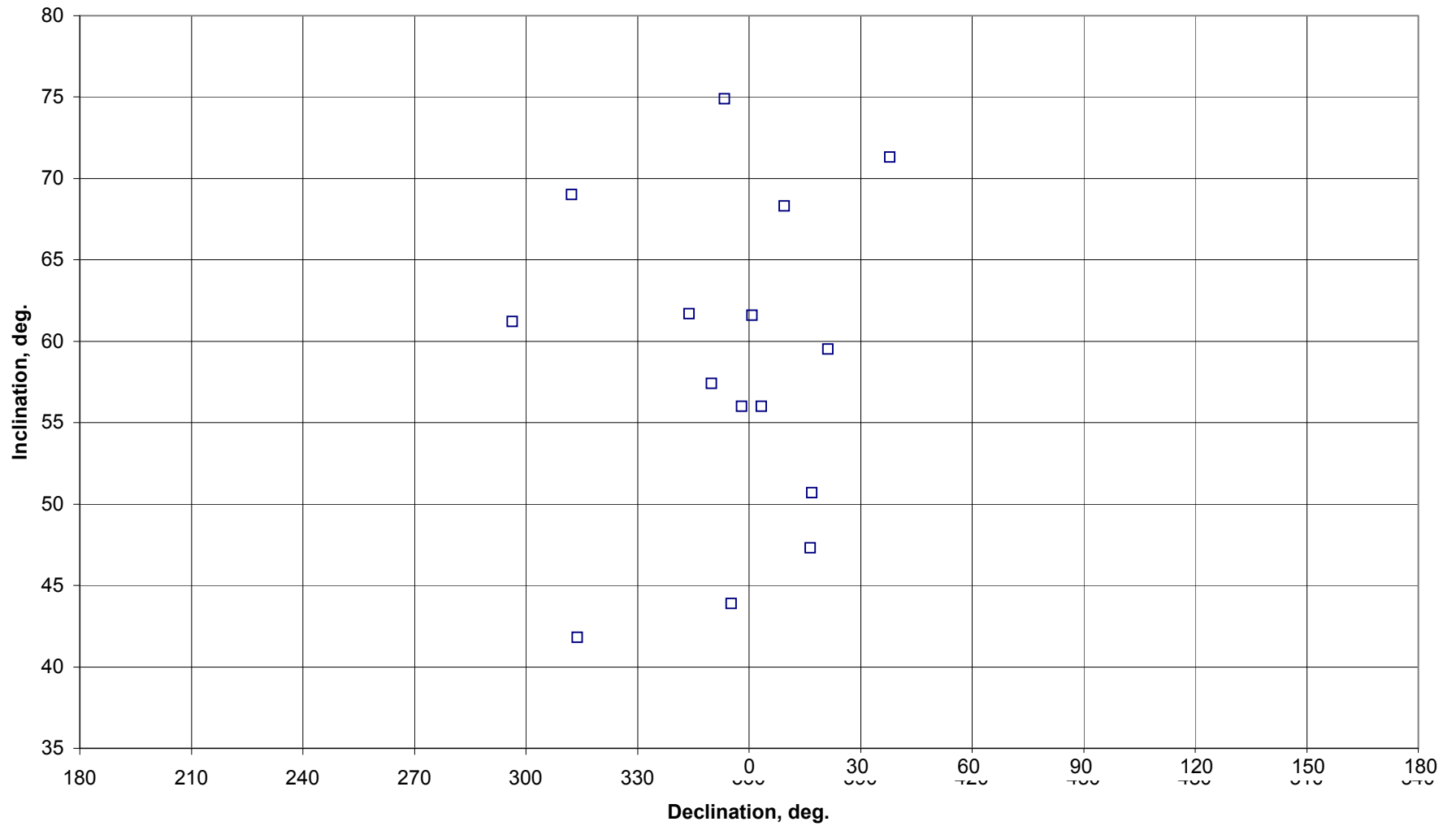
ERROR BARS

Alpha95		Alpha68	
$\delta Dec = \pm$	8.27	$\delta Dec = \pm$	4.75
$\delta Inc = \pm$	4.50	$\delta Inc = \pm$	2.59

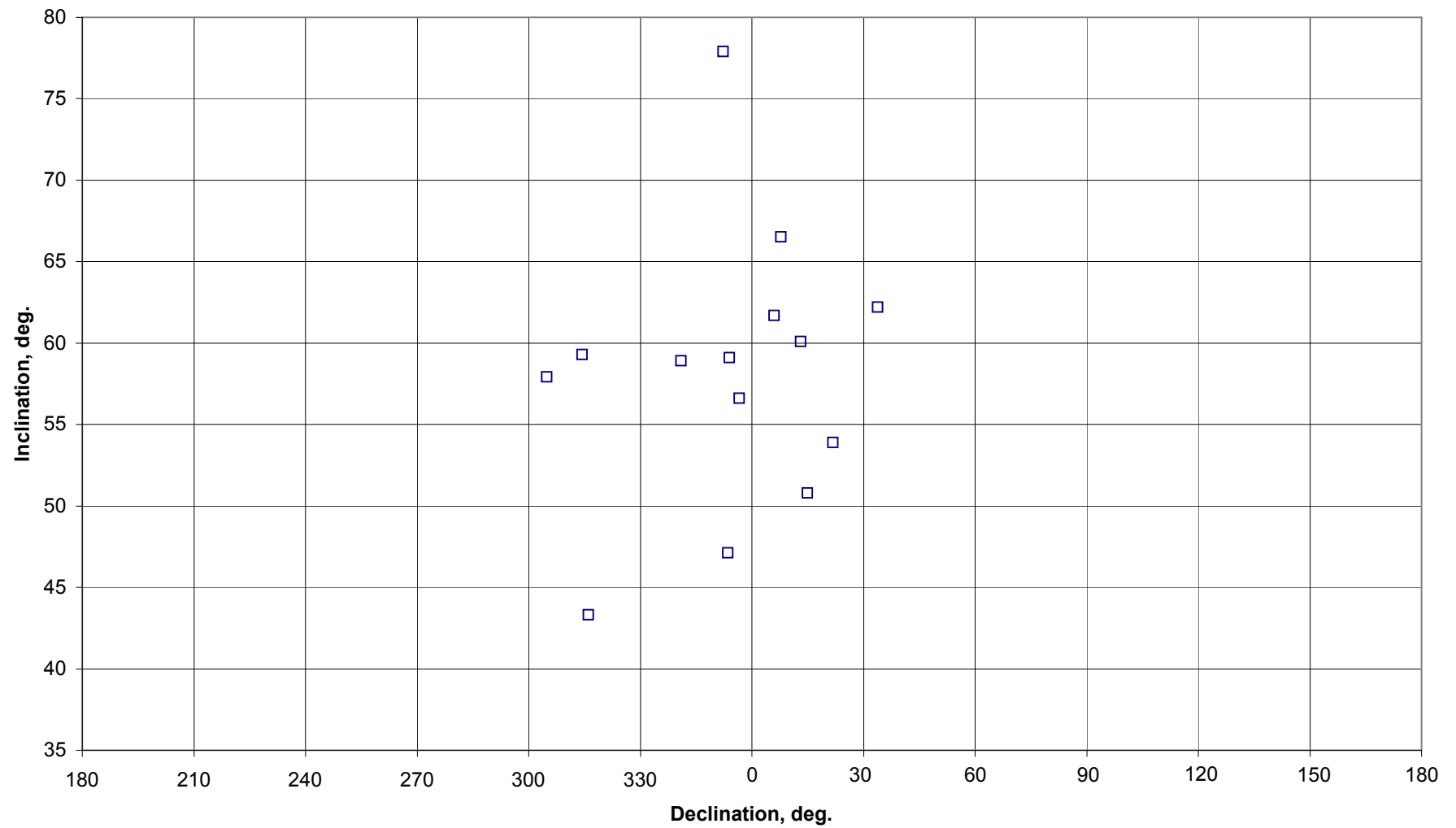
SUMMARY OF PARTIAL DEMAGNETISATION STATISTICAL RESULTS

Demag Field <i>mT</i>	No. of samples	Samples removed	Alpha95 $\pm$ <i>degs.</i>	Mean Corrected	
				Dec <i>degs.</i>	Inc <i>degs.</i>
0	15		8.03	-9.11	59.77
	14	10	7.44	-4.89	60.46
	12	10,13,15	6.98	-0.067	58.13
	11	6,10,13,15	6.9	-2.51	56.74
		2,5,6,7,9 10,12,13,15	5.82	-3.81	57.51
5	15		8.43	-7.34	57.74
	14	5	8.03	-10.24	59.30
	12	5,10,15	7.75	-6.02	58.58
	9	2,5,10	5.92	4.13	57.99
		12,13,15			
7.5	14	1	10.12	-9.14	56.87
	12	10,13	7.78	1.65	57.27
	10	2,10,13,15	8.48	2.56	57.36
	8	2,5,10	7.3	6.07	54.87
		12,13,15			
10	15		9.14	-8.78	55.98
	13	10,13	7.33	0.52	56.63
	11	2,5,10,13	7.31	0.40	59.69
	10	2,5,10	7.8	-0.13	58.53
		13,15			
Final group	15		7.54	-7.19	57.83
	14	10	6.99	-3.34	58.32
	12	10,12,13	5.40	3.87	56.63
	10	5,10,12 13,15	5.24	2.22	56.51
	9	2,5,10,12 13,15	4.99	3.99	57.71
	8	2,5,6,10 12,13,15	4.50	1.20	57.01

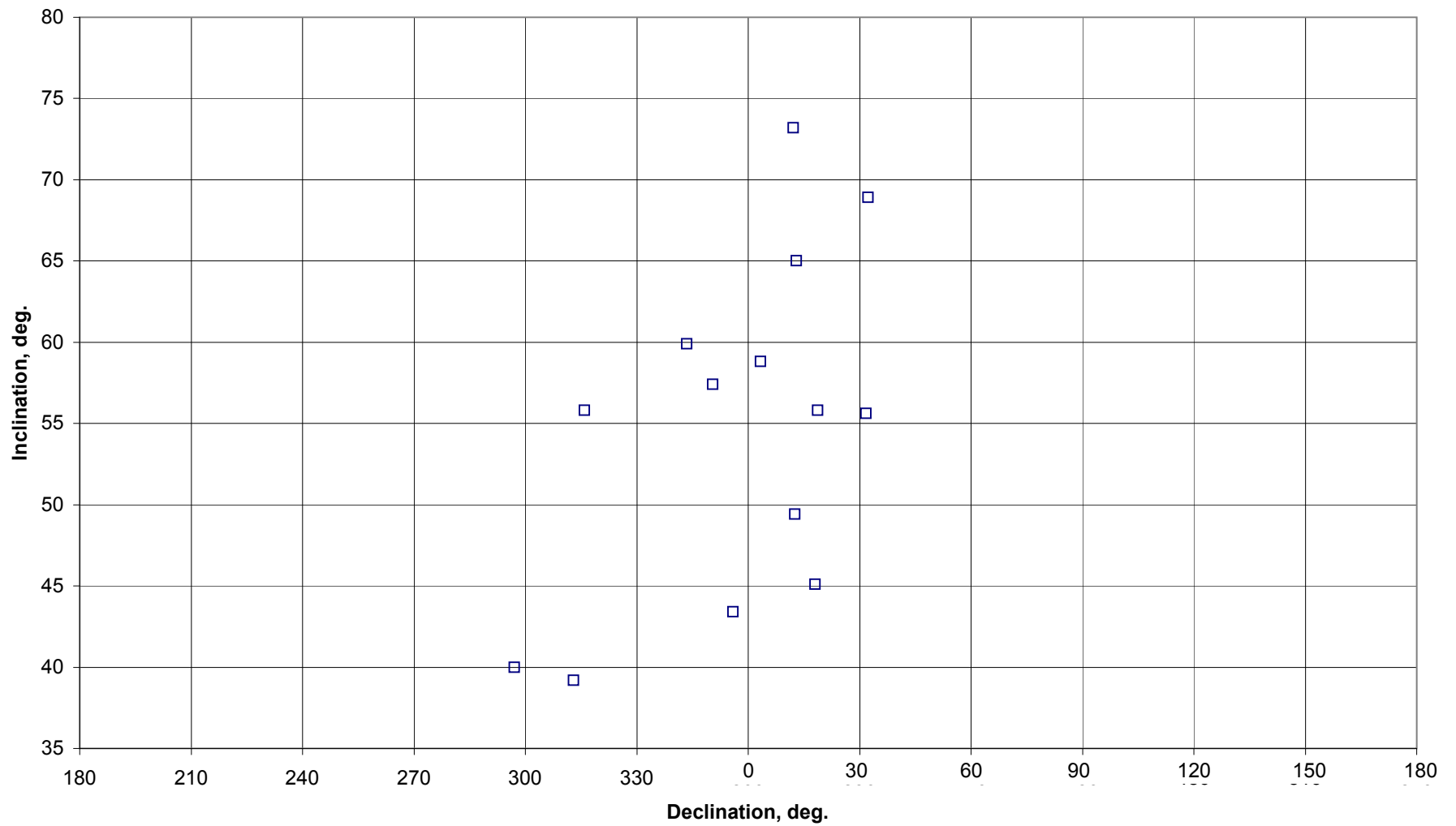
INITIAL SAMPLE SCATTER



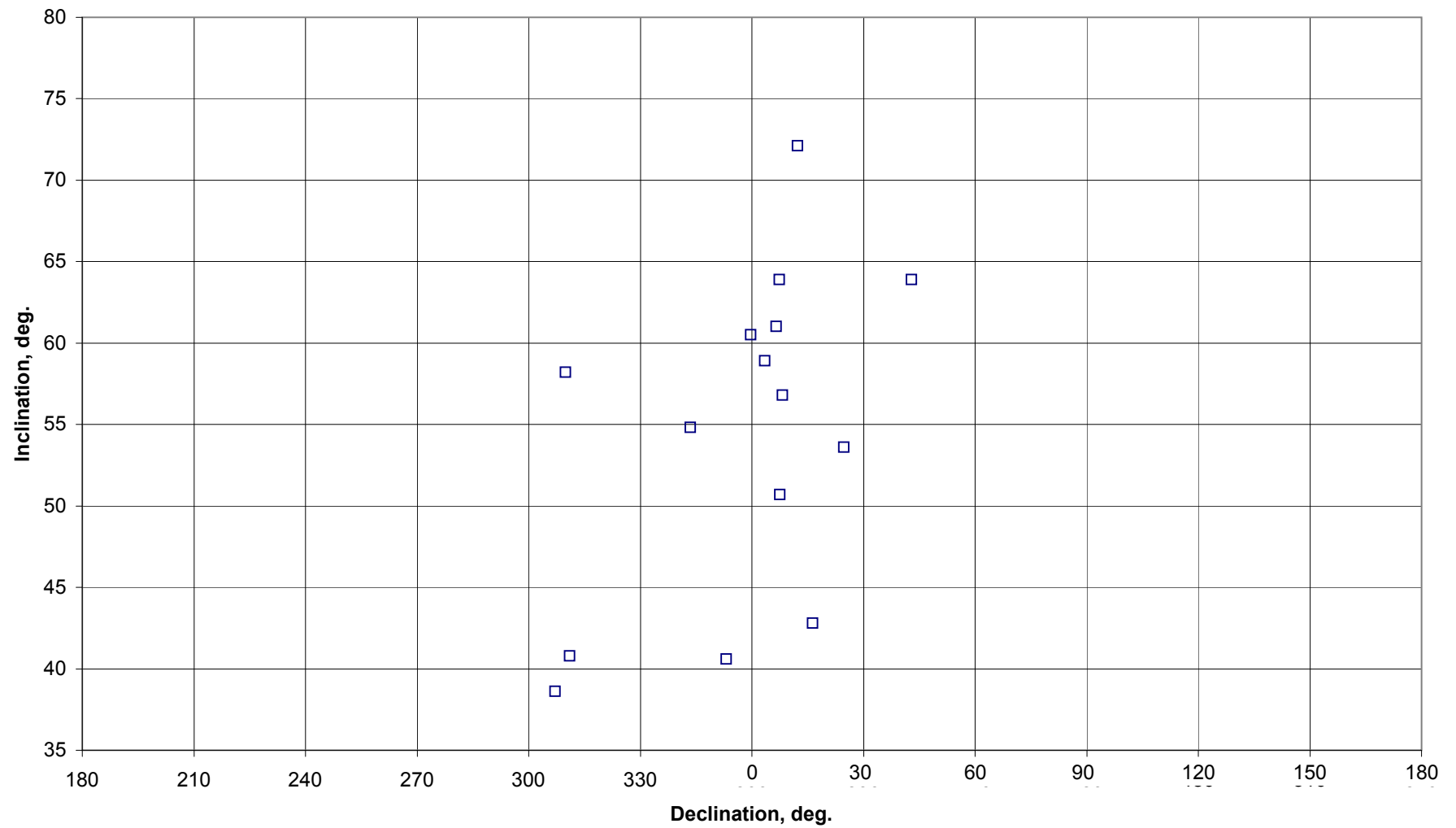
5mT DEMAGNETISED SAMPLE SCATTER



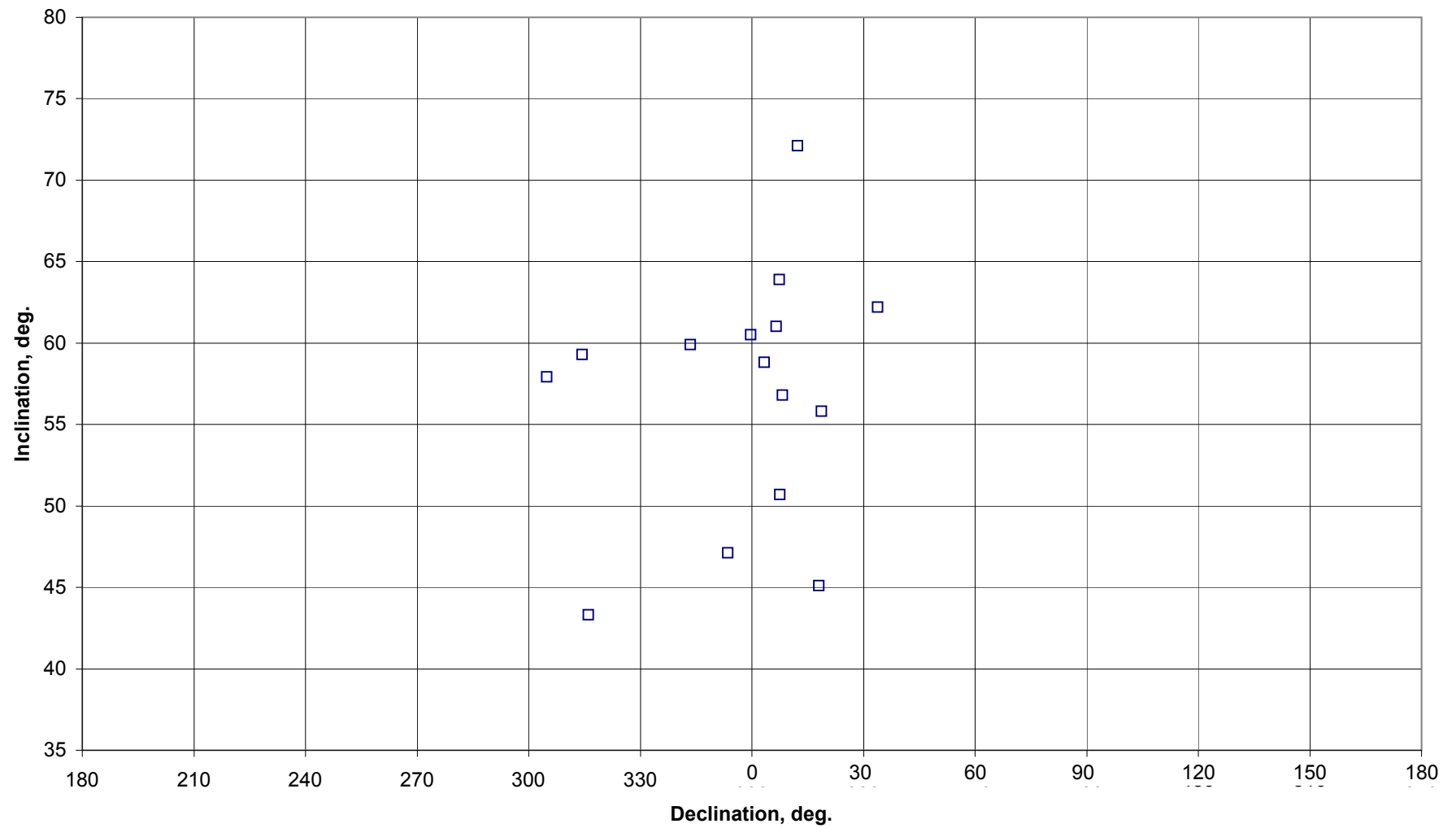
7.5mT DEMAGNETISED SAMPLE SCATTER



10mT DEMAGNETISED SAMPLE SCATTER



FINAL GROUP DEMAGNETISED SAMPLE SCATTER



PILOT STEPPED A.F. DEMAGNETISATION MEASUREMENTS

Sample No. 2

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	185.65	1.00	130.19	-12.84	131.73	354.40	45.20
2.5	189.16	1.02	132.55	-15.15	134.10	353.50	45.10
5.0	175.73	0.95	118.97	-13.24	128.65	353.60	47.10
7.5	163.26	0.88	118.37	-8.34	112.12	356.00	43.40
10.0	150.44	0.81	113.39	-13.50	97.95	353.20	40.60
15.0	110.42	0.59	79.45	-6.72	76.38	355.20	43.80
20.0	82.97	0.45	59.25	-8.08	57.52	352.20	43.90
30.0	48.89	0.26	34.33	-4.99	34.44	351.70	44.80
40.0	33.75	0.18	24.53	-3.08	22.98	352.80	42.90
60.0	20.28	0.11	14.66	-0.69	14.00	357.30	43.70
80.0	15.13	0.08	10.43	-0.78	10.93	355.70	46.30
100.0	13.22	0.07	9.31	-1.38	9.28	351.60	44.60

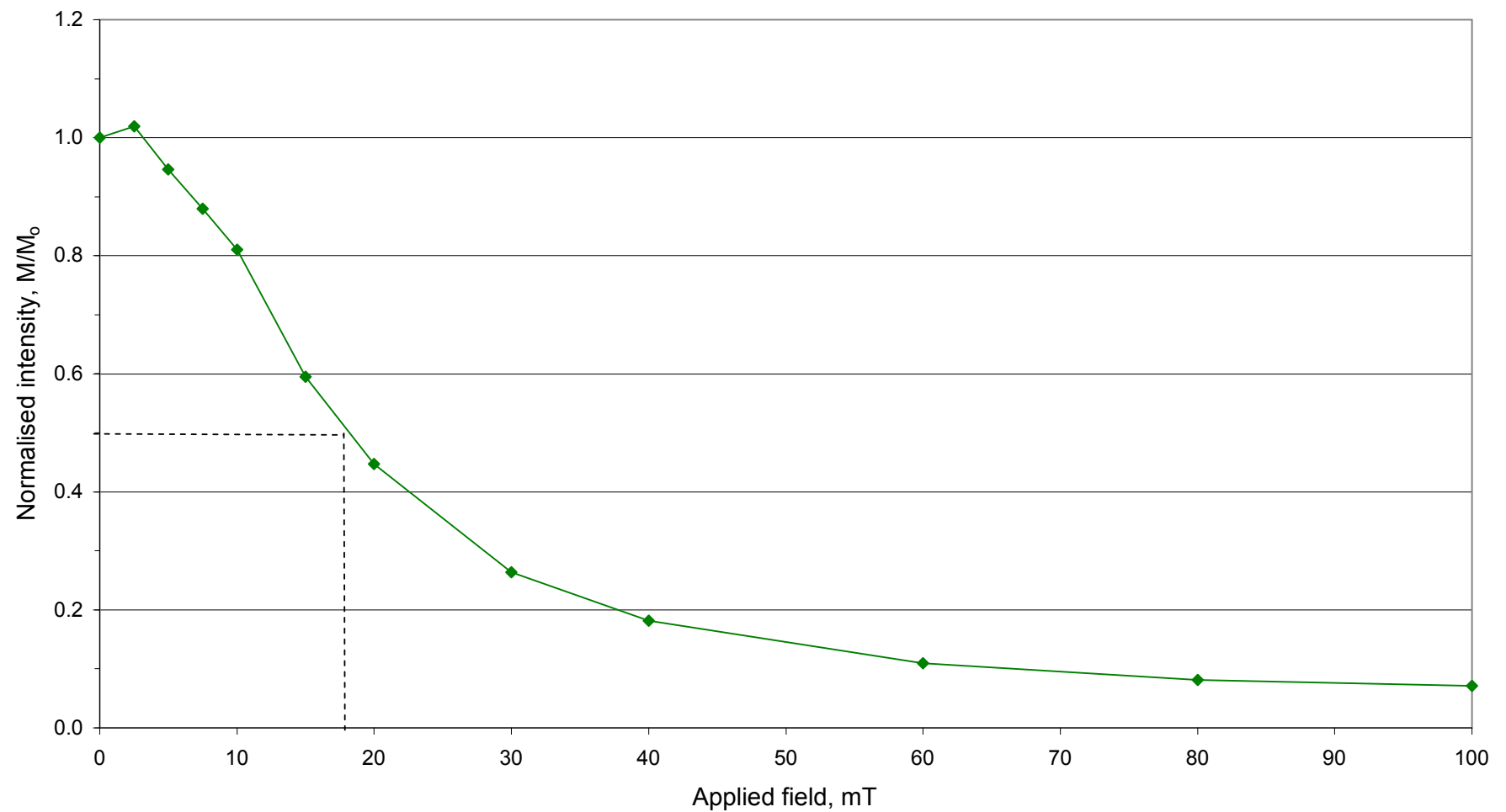
Sample No. 6

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	93.16	1.00	24.17	33.33	83.57	54.10	63.80
2.5	94.94	1.02	30.67	20.99	87.36	34.40	67.00
5.0	95.49	1.03	37.04	24.76	84.46	33.80	62.20
7.5	91.42	0.98	27.82	17.59	85.28	32.30	68.90
10.0	87.16	0.94	28.03	26.10	78.29	43.00	63.90
15.0	73.32	0.79	25.16	13.69	67.50	28.50	67.00
20.0	55.40	0.59	16.80	10.88	51.66	32.90	68.80
30.0	32.49	0.35	9.80	8.66	29.75	41.50	66.30
40.0	20.80	0.22	6.43	5.44	19.02	40.20	66.10
60.0	10.54	0.11	3.06	1.78	9.92	30.20	70.30
80.0	5.10	0.05	1.94	1.32	4.53	34.20	62.70
100.0	2.32	0.02	0.69	0.42	2.18	31.40	69.80

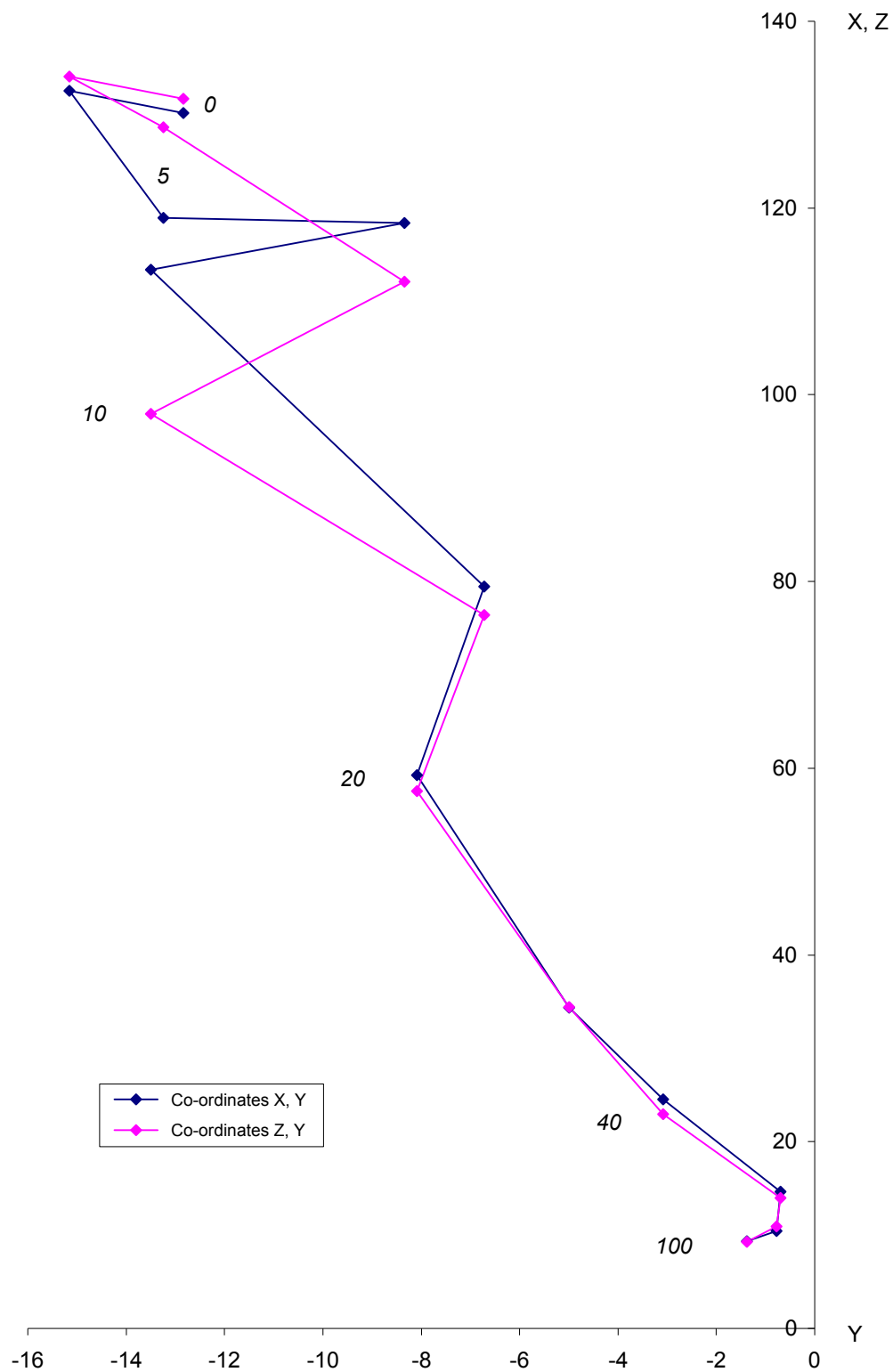
Sample No. 12

Demag Step <i>mT</i>	NRM						
	Intensity <i>mA m⁻¹</i>	Normalised intensity	Co-ordinates			Dec.	Inc.
			X	Y	Z	<i>degs.</i>	<i>degs.</i>
0.0	10.95	1.00	3.01	-2.92	10.11	315.90	67.50
2.5	10.83	0.99	3.70	-2.94	9.75	321.50	64.10
5.0	9.47	0.86	3.38	-3.46	8.14	314.40	59.30
7.5	8.36	0.76	3.38	-3.26	6.91	316.00	55.80
10.0	6.53	0.60	2.21	-2.64	5.56	309.90	58.20
15.0	4.18	0.38	1.02	-2.22	3.39	294.70	54.30
20.0	2.20	0.20	0.31	-1.40	1.67	282.40	49.30
30.0	0.96	0.09	-0.09	-0.77	0.56	263.20	35.90
40.0	0.85	0.08	-0.11	-0.76	0.36	261.60	25.10
60.0	0.88	0.08	0.15	-0.57	0.65	285.10	47.80
80.0	0.63	0.06	0.04	-0.53	0.33	274.60	31.70
100.0	0.67	0.06	0.09	-0.31	0.59	286.60	61.50

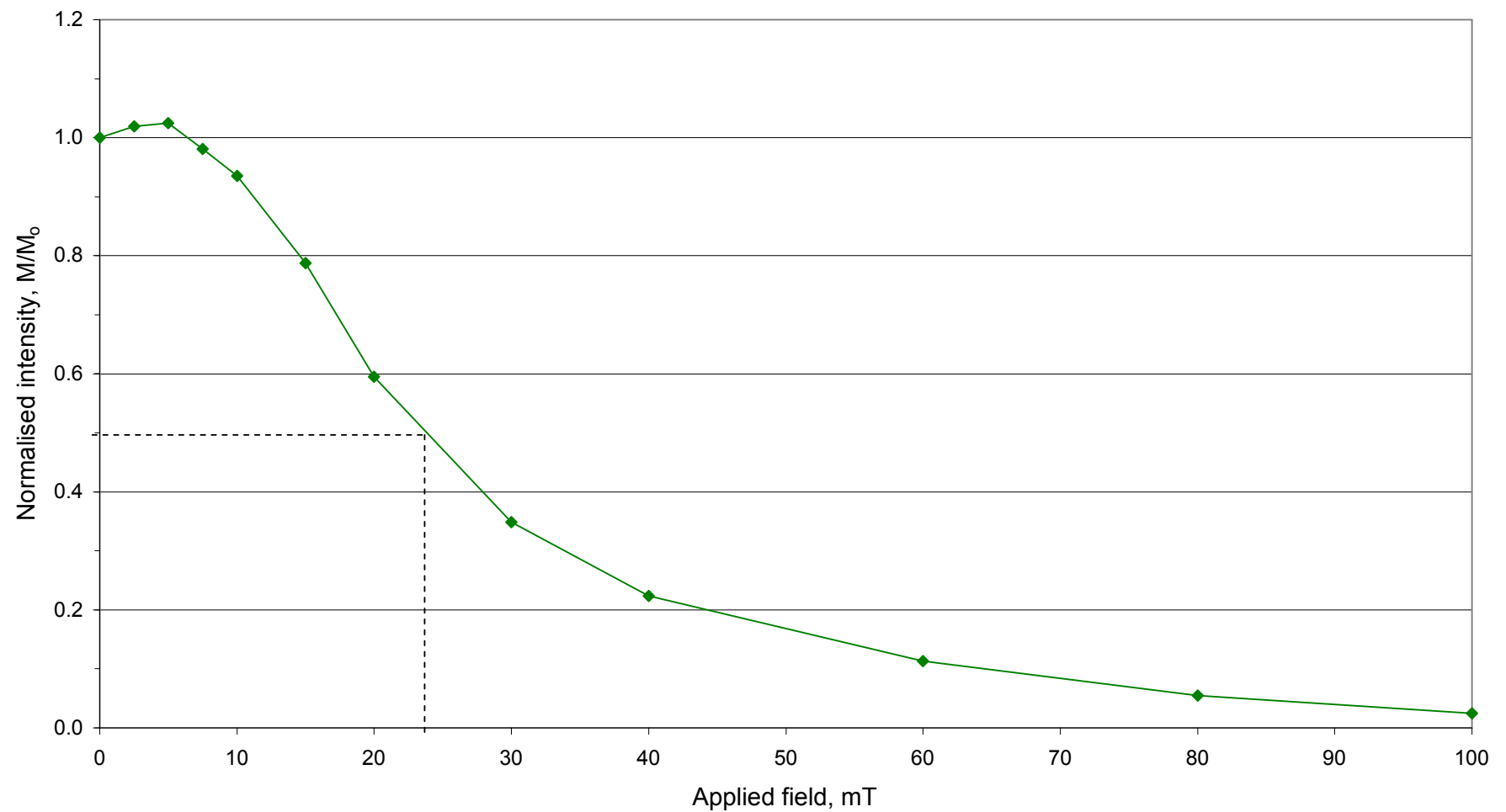
EWECOTE TRENCH 2 - SAMPLE POINT 2 DEMAGNETISATION: INTENSITY SPECTRUM



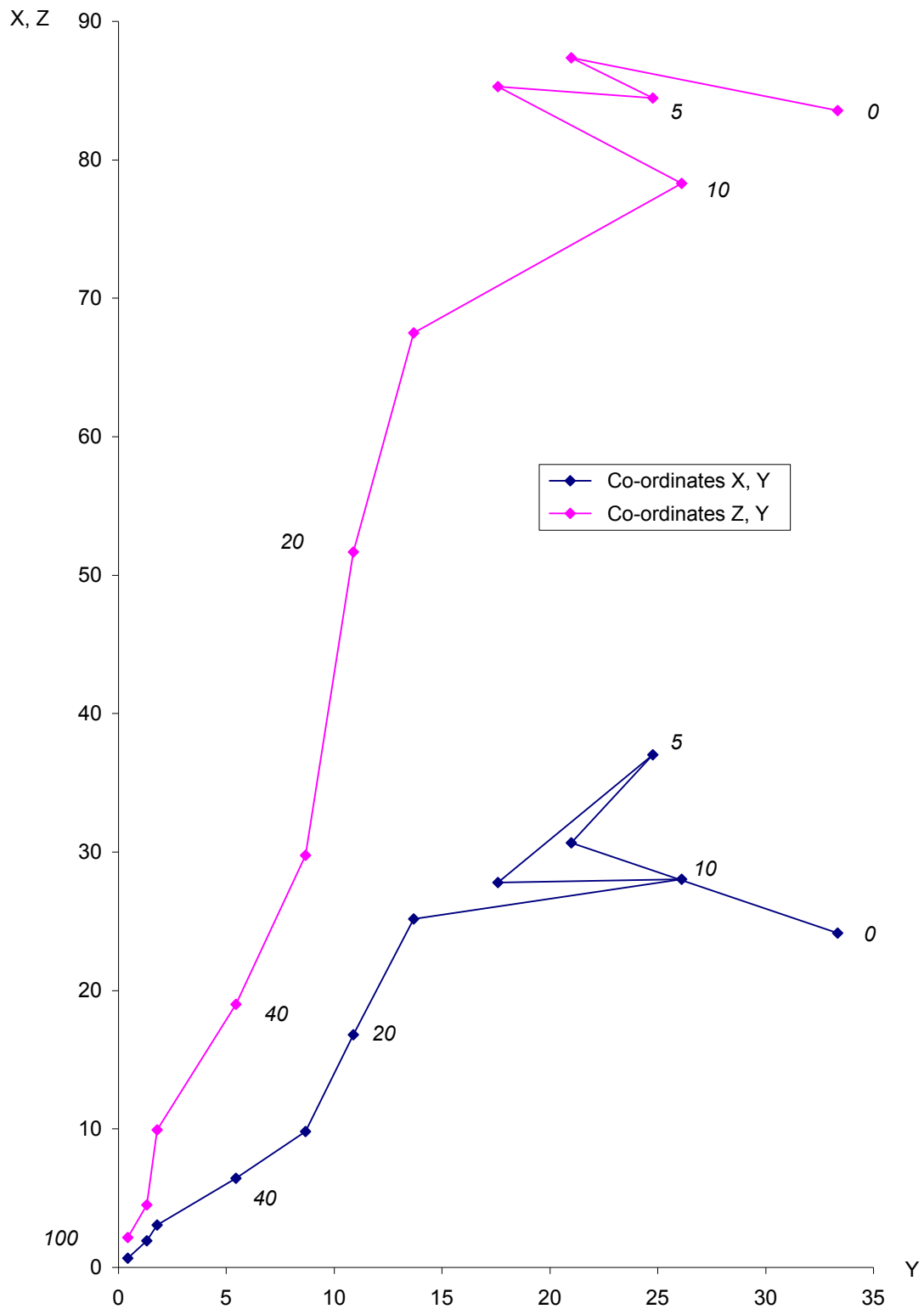
EWECOTE TRENCH 2 - SAMPLE POINT 2 - ZIJDERVELD
PLOT



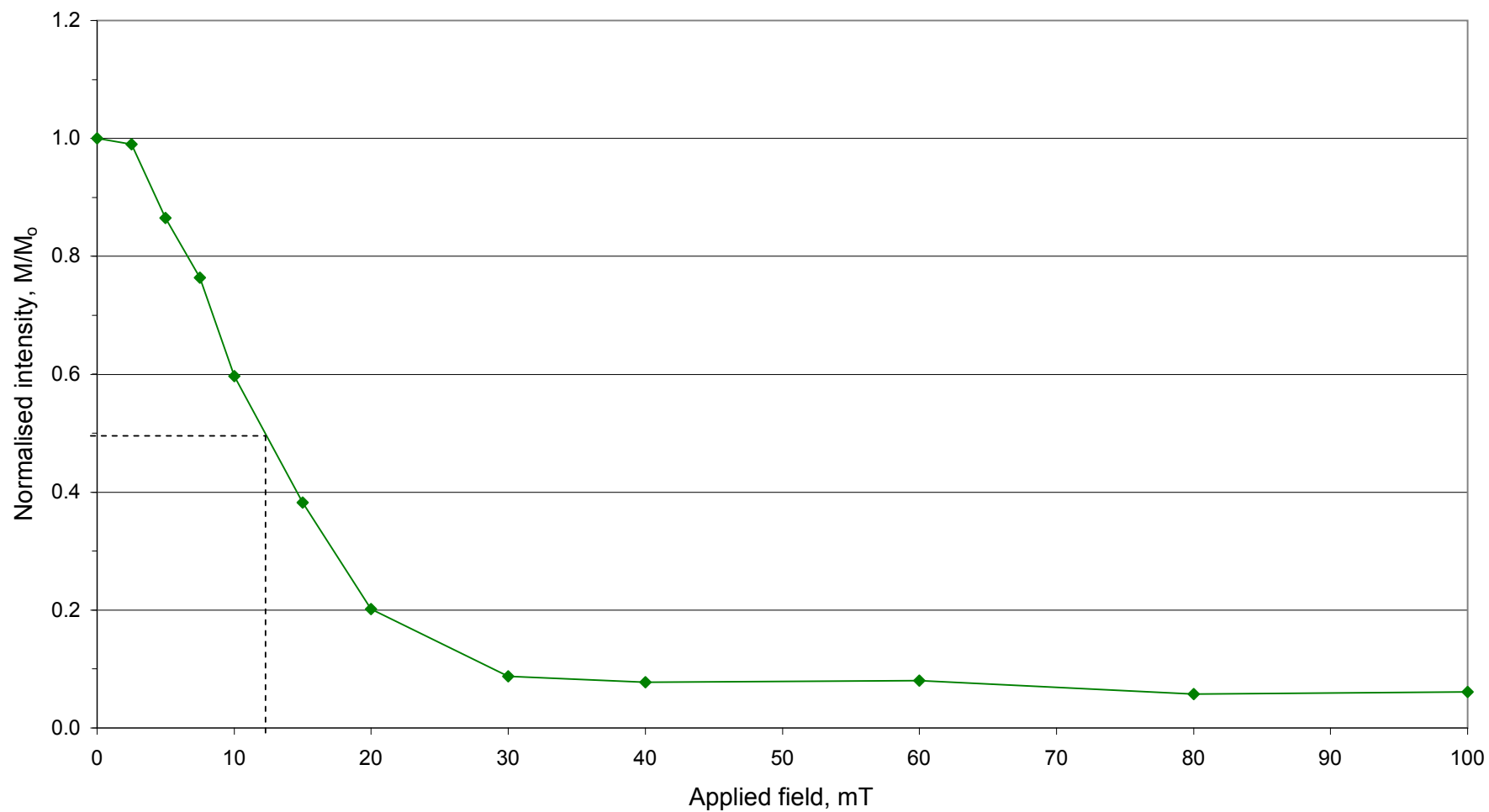
EWECOTE TRENCH 2 - SAMPLE POINT 6 DEMAGNETISATION: INTENSITY SPECTRUM



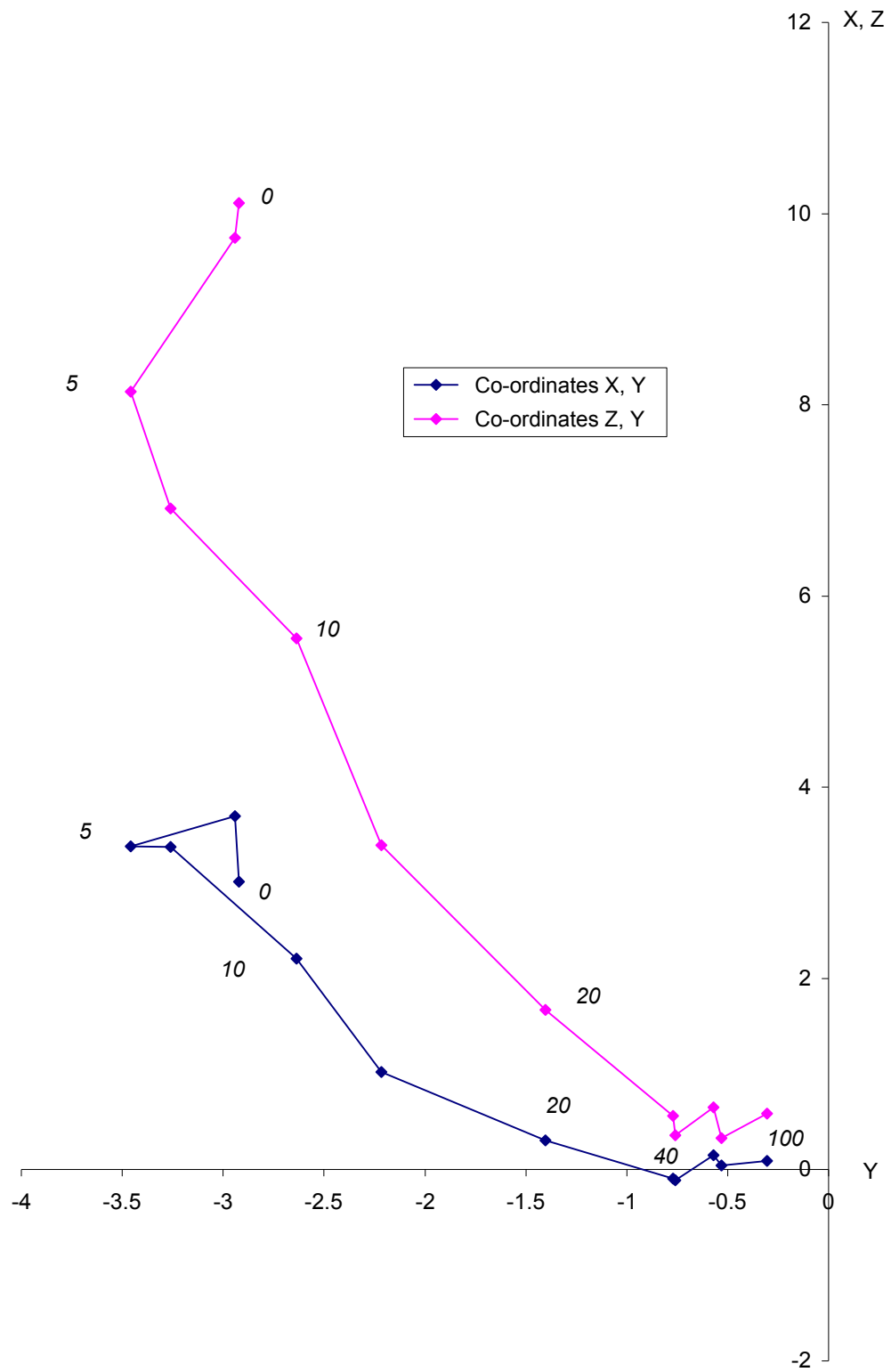
EWECOTE TRENCH 2- SAMPLE POINT 6 - ZIJDERVELD PLOT



EWECOTE TRENCH 2 - SAMPLE POINT 12 DEMAGNETISATION: INTENSITY SPECTRUM



EWECOTE TRENCH 2- SAMPLE POINT 12 - ZIJDERVELD PLOT



STABILITY INDEX

Sample No. 2

Demag Step	NRM				
	D	I	x	y	z
mT	degs.	degs.			
0.0	354.40	45.20	0.70127	-0.06876	0.70957
2.5	353.50	45.10	0.70133	-0.07991	0.70834
5.0	353.60	47.10	0.67648	-0.07588	0.73254
7.5	356.00	43.40	0.72480	-0.05068	0.68709
10.0	353.20	40.60	0.75393	-0.08990	0.65077
15.0	355.20	43.80	0.71923	-0.06040	0.69214
20.0	352.20	43.90	0.71388	-0.09779	0.69340
30.0	351.70	44.80	0.70214	-0.10243	0.70463
40.0	352.80	42.90	0.72677	-0.09181	0.68072
60.0	357.30	43.70	0.72216	-0.03406	0.69088
80.0	355.70	46.30	0.68894	-0.05180	0.72297
100.0	351.60	44.60	0.70439	-0.10401	0.70215

Number	Range	S.I.
3	5	6.0
4	7.5	5.0
5	10	3.9
6	15	5.3
7	20	6.4
8	30	8.1
9	40	9.7
10	60	11.6
11	80	13.2
12	100	14.9 *

Number = 12
 Sum x = 8.53533
 Sum y = -0.90743
 Sum z = 8.37522
 R = 11.99248
 x bar = 0.71172
 y bar = -0.07567
 z bar = 0.69837
 k = 1462
 Mean Dec = -6.07
 Mean Inc = 44.30
 Alpha95 = 1.14
 Theta63 = 2.12
 Range = 100
 S.I. = 14.9

Sample No. 6

Demag Step	NRM				
	D	I	x	y	z
mT	degs.	degs.			
0.0	54.10	63.80	0.25889	0.35764	0.89726
2.5	34.40	67.00	0.32240	0.22075	0.92050
5.0	33.80	62.20	0.38756	0.25945	0.88458
7.5	32.30	68.90	0.30429	0.19237	0.93295
10.0	43.00	63.90	0.32175	0.30004	0.89803
15.0	28.50	67.00	0.34338	0.18644	0.92050
20.0	32.90	68.80	0.30363	0.19643	0.93232
30.0	41.50	66.30	0.30104	0.26634	0.91566
40.0	40.20	66.10	0.30945	0.26150	0.91425
60.0	30.20	70.30	0.29134	0.16957	0.94147
80.0	34.20	62.70	0.37934	0.25780	0.88862
100.0	31.40	69.80	0.29473	0.17990	0.93849

Number	Range	S.I.
3	5	1.3
4	7.5	1.6
5	10	2.1
6	15	2.6
7	20	3.2
8	30	4.1
9	40	5.1
10	60	6.1
11	80	7.0
12	100	7.9 *

Number = 12
 Sum x = 3.81779
 Sum y = 2.84822
 Sum z = 10.98465
 R = 11.97290
 x bar = 0.31887
 y bar = 0.23789
 z bar = 0.91746
 k = 406
 Mean Dec = 36.72
 Mean Inc = 66.56
 Alpha95 = 2.16
 Theta63 = 4.02
 Range = 100
 S.I. = 7.9

Sample No. 12

Demag Step	NRM				
	D	I	x	y	z
<i>mT</i>	<i>degs.</i>	<i>degs.</i>			
0.0	315.90	67.50	0.27482	-0.26631	0.92388
2.5	321.50	64.10	0.34184	-0.27192	0.89956
5.0	314.40	59.30	0.35721	-0.36477	0.85985
7.5	316.00	55.80	0.40433	-0.39046	0.82708
10.0	309.90	58.20	0.33802	-0.40426	0.84989
15.0	294.70	54.30	0.24384	-0.53015	0.81208
20.0	282.40	49.30	0.14003	-0.63689	0.75813
30.0	263.20	35.90	-0.09591	-0.80434	0.58637
40.0	261.60	25.10	-0.13229	-0.89585	0.42420
60.0	285.10	47.80	0.17499	-0.64853	0.74080
80.0	274.60	31.70	0.06823	-0.84807	0.52547
100.0	286.60	61.50	0.13632	-0.45727	0.87882

Number = 12
Sum x = 2.25142
Sum y = -6.51882
Sum z = 9.08615
R = 11.40710
x bar = 0.19737
y bar = -0.57147
z bar = 0.79653

Mean Dec = -70.95
Mean Inc = 52.80
Alpha95 = 10.35

k = 19
Theta63 = 18.81
Range = 100
S.I. = 1.7

Sample No. 12

Number	Range	S.I.
3	5	1.6
4	7.5	1.6
5	10	1.9
6	15	1.8
7	20	1.4
8	30	1.1
9	40	1.0
10	60	1.3
11	80	1.4
12	100	1.7