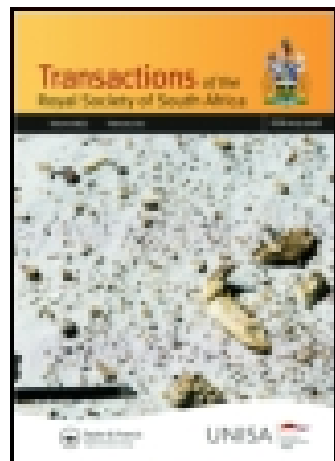


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### TRUE ISOGONICS, ISOCLINALS, AND LINES OF HORIZONTAL INTENSITY FOR THE NORTH-WESTERN PARTS OF THE UNION OF SOUTH AFRICA AND FOR PART OF GREAT NAMAQUALAND FOR THE EPOCH JULY 1, 1908

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TRUE ISOGONICS, ISOCLINALS, AND LINES OF HORIZONTAL INTENSITY FOR THE NORTH-WESTERN PARTS OF THE UNION OF SOUTH AFRICA AND FOR PART OF GREAT NAMAQUALAND FOR THE EPOCH JULY 1, 1908.

By J. C. BEATTIE, D.Sc., Professor of Physics, South African College, Cape Town.

(Read July 16, 1913.)

(With Three Maps, Plates III., IV., V.)

The results used in the preparation of the magnetic charts \* given in the following paper were obtained at various times from 1900 to 1913; the earlier observations in the south-west part of the Cape Province had already been used in preparing magnetic charts for the epoch July 1, 1903; † these have been reduced to the later epoch by using the values obtained at repeat stations at Cape Town, Ceres Road, and Matjesfontein. Some of the observations in the Kenhardt, Carnarvon, Fraserburg, Sutherland, Prince Albert, and Beaufort West districts had also been used, and these were reduced to the new epoch by repeat observations at Fraserburg Road, Beaufort West, Hutchinson, Van Wyk's Vlei, and Kenhardt; the previously used results in the Transvaal and the Free State were reduced by the help of repeat observations at Karree, Warrenton, Mafeking, Klerksdorp, and Orange River. The new results embodied in the present charts lie chiefly in the north-west of the Cape Province, in German South-West Africa, ‡ and in Bushmanland; in addition a number of additional stations were occupied in the Western Transvaal and in British

\* The work has been carried out with the help of grants in and from the Union Government, the London Royal Society, the British and the South African Associations for the Advancement of Science.

† "Report of a Magnetic Survey of South Africa," by J. C. Beattie. London, 1909.

‡ "On Magnetic work in Southern and Central Africa," by J. C. Beattie and J. T. Morrison. Washington, 1913.

Bechuanaland.\* To reduce the new observations to the epoch repeat stations were made at Eendekuil, Hollerivier, Aggennys, and Pella.

In the following table the various stations are arranged in alphabetical order. The number of each station is given in the first column, the name is given in the second, and in the third, fourth, fifth, sixth, and seventh columns are given the latitude, the longitude, the declination, the dip, and the intensity respectively.

The values of the declination, the dip, and the horizontal intensity have been obtained from the actual field results by applying a secular variation correction; in no case has a correction for daily variation been applied. The observations without secular correction are given in the publications already referred to.

The results are shown in three maps, one showing the isogonics, one the isoclinals, and the third the lines of equal horizontal intensity; the method of drawing the isomagnetic lines is that described on page 82 of a "Report of a Magnetic Survey of South Africa."

\* "Further Magnetic Observations in South Africa," by J. C. Beattie, *Transactions of the Royal Society of South Africa*, vol. iii., 1913.

SUMMARY OF RESULTS FOR THE EPOCH, JULY 1, 1908.

No.	Station Name.	Latitude.	Longitude.	Declination (D).	Dip (θ).	Horizontal Intensity (H).
1 <sup>3</sup>	Abelsdam .....	27°37'·1 S.	26°30' E.	22°43'·0 W.	59°35'·2 S.	·18345
2 <sup>1</sup>	Abbasis .....	28 54·0	18 30	—	57 44·2	·18592
3 <sup>2</sup>	Abiekwa Put .....	30 22·0	20 46	26 04·5	59 01·1	·18202
4 <sup>1</sup>	Aggenyns .....	29 12·9	18 49	26 22·7	58 07·5	·18328
5 <sup>1</sup>	Alewynfontein .....	30 26·6	18 36	26 24·3	58 41·8	·18219
6 <sup>3</sup>	Ashton .....	33 50·0	20 04	—	60 18·3	·17678
7 <sup>1</sup>	Augsburg .....	32 10·4	18 53	27 26·0	59 12·8	·18061
8 <sup>1</sup>	Aus. C.P. ....	29 12·9	17 48	26 16·9	57 32·1	·18627
9 <sup>1</sup>	Aus. G.S.W. ....	26 40·3	16 12	25 14·7	55 11·7	·19403
10 <sup>3</sup>	Baviaanskrantz .....	27 23·0	26 47	26 55·2	59 14·2	·18463
11 <sup>3</sup>	Beaufort West .....	32 20·9	22 34	26 26·6	60 20·2	·17745
12 <sup>2</sup>	Beaulieu .....	26 14·5	24 14	22 31·9	57 40·0	·19050
13 <sup>3</sup>	Belleville .....	33 49·0	18 39	—	59 49·4	·17812
14 <sup>2</sup>	Beukesfontein .....	32 55·1	19 43	27 54·8	59 56·2	·17854
15 <sup>3</sup>	Berg River Mouth .....	32 46·5	18 10	27 30·9	59 07·4	·18000
16 <sup>3</sup>	Biesjespoort .....	31 43·8	23 12	24 06·4	59 53·9	·17989
17 <sup>3</sup>	Blaauwbosch .....	30 38·9	22 14	25 52·7	59 30·2	·18061
18 <sup>2</sup>	Blaauwpoort .....	30 39·2	21 42	25 55·7	59 11·9	·18137
19 <sup>2</sup>	Boons .....	25 57·9	27 18	21 17·6	58 22·5	·19025
20 <sup>3</sup>	Boschrand .....	27 45·8	27 12	22 44·8	59 39·0	·18396
21 <sup>1</sup>	Brak Rivier .....	31 15·6	19 30	26 51·6	58 55·1	·18217
22 <sup>3</sup>	Bredasdorp .....	34 32·2	20 03	27 52·9	60 33·7	·17577
23 <sup>3</sup>	Breekkerrie .....	30 06·7	21 35	26 31·7	58 59·1	·18095
24 <sup>2</sup>	Brethby .....	27 50·1	23 31	36 52·4	49 59·5	·20564
25 <sup>3</sup>	Britstown .....	30 35·0	23 33	25 47·5	59 43·6	·17661
26 <sup>2</sup>	Bruwer's Farm .....	26 18·7	24 36	22 50·9	58 04·6	·18985
27 <sup>2</sup>	Bry Paal .....	29 10·0	20 28	25 48·4	58 17·3	·18001
28 <sup>1</sup>	Buchholzbrunn .....	26 41·6	17 04	24 23·3	55 19·5	·19488
29 <sup>2</sup>	Buckwheat .....	26 02·7	25 11	22 45·6	57 35·5	·19080
30 <sup>1</sup>	Bulshoek .....	31 58·7	18 47	27 15·3	59 02·4	·18014
31 <sup>3</sup>	Bushmanskop .....	32 20·8	22 15	26 39·6	60 20·7	·17797
32 <sup>3</sup>	Cape Town (Royal Obs.)	33 56·1	18 29	28 03·6	59 45·4	·17805
33 <sup>1</sup>	Ceres .....	33 22·5	19 15	27 31·0	59 50·2	·17846
34 <sup>1</sup>	Ceres Road .....	33 25·6	19 19	27 39·1	59 53·6	·17896
35 <sup>3</sup>	Connan's Farm .....	28 58·4	21 19	24 12·8	56 54·2	·19166
36 <sup>1</sup>	Dabai Gabis .....	28 19·9	18 40	25 20·4	57 06·7	·18867
37 <sup>1</sup>	Dabonoris .....	28 55·4	18 39	26 15·9	57 34·9	·18638
38 <sup>2</sup>	Dambiesfontein .....	31 24·2	21 18	26 30·2	59 53·9	·17921
39 <sup>3</sup>	Darling .....	33 22·1	18 22	27 40·2	59 33·2	·17915
40 <sup>1</sup>	De Kruis .....	32 35·7	18 44	27 22·7	59 24·8	·18001
41 <sup>3</sup>	De Aar .....	30 40·0	24 02	25 05·1	59 55·0	·17965
42 <sup>3</sup>	De Doorns .....	33 29·0	19 36	—	60 00·1	·17736
43 <sup>2</sup>	De Neus .....	29 11·3	19 39	25 46·8	58 08·9	·18100
44 <sup>1</sup>	Diekdoorn .....	25 30·0	17 58	24 27·6	55 12·5	·19509
45 <sup>2</sup>	Dingle .....	27 48·9	22 59	23 34·6	58 09·2	·18698
46 <sup>1</sup>	Doorn River .....	31 52·1	18 41	27 08·7	59 00·4	·18110
47 <sup>1</sup>	Downes .....	31 30·4	19 55	27 00·1	—	·18114
48 <sup>1</sup>	Draaikraal .....	31 45·3	19 43	27 11·7	59 19·6	·17959
49 <sup>3</sup>	Draghoender .....	29 22·3	22 07	26 32·8	58 50·1	·18287
50 <sup>3</sup>	Drew .....	33 59·5	20 13	27 41·8	60 28·5	·17673
51 <sup>2</sup>	Drooge Grond .....	29 07·3	20 15	25 46·3	58 33·3	·18338

<sup>1</sup> "On Magnetic Work in Southern and Central Africa," 1908-1909, by J. C. Beattie and J. T. Morrison.

<sup>2</sup> "Further Magnetic Observations in South Africa." by J. C. Beattie.

<sup>3</sup> "Report of a Magnetic Survey of South Africa," by J. C. Beattie.

## SUMMARY OF RESULTS—(continued).

No.	Station Name.	Latitude.	Longitude.	Declination (D).	Dip (°).	Horizontal Intensity (H).
52 <sup>1</sup>	Eendekuil .....	32° 41'·2 S.	18° 52' E.	27° 28'·6 W.	59° 12'·7 S.	·17963
53 <sup>1</sup>	Benriet .....	29 11·1	17 50	26 20·9	57 22·8	·18696
54 <sup>2</sup>	Elands Put.....	25 58·4	26 21	22 14·7	58 03·3	·19061
55 <sup>3</sup>	Elim .....	34 35·8	19 46	27 57·1	60 32·7	·17630
56 <sup>2</sup>	Erasmus .....	27 08·0	24 08	23 36·0	58 20·3	·18822
57 <sup>2</sup>	Flatlands .....	27 33·0	22 58	—	58 18·0	·18579
58 <sup>3</sup>	Fraserburg .....	31 55·2	21 31	26 54·5	59 54·5	·17855
59 <sup>3</sup>	Fraserburg Road .....	32 46·0	22 00	26 34·5	60 35·9	·17769
60 <sup>1</sup>	Gabis .....	28 08·5	18 34	25 36·9	56 56·8	·18909
61 <sup>1</sup>	Gansfontein .....	32 43·6	19 42	27 55·0	59 44·2	·17923
62 <sup>1</sup>	Garakanas .....	26 29·4	18 09	24 48·1	55 50·0	·19382
63 <sup>1</sup>	Garub .....	26 36·4	16 56	25 08·5	54 54·0	·19485
64 <sup>1</sup>	Gawachab .....	27 01·8	17 48	26 00·6	56 31·6	·19030
65 <sup>1</sup>	Gemsbokfontein.....	31 22·8	22 58	27 06·6	60 05·2	·17891
66 <sup>2</sup>	Genesa.....	26 35·4	24 10	22 52·2	57 58·3	·18829
67 <sup>1</sup>	Gibeon.....	25 07·2	17 42	24 16·5	54 57·4	·19640
68 <sup>3</sup>	Glenallen .....	29 39·0	22 36	47 16·2	42 19·0	·28140
69 <sup>3</sup>	Glencairn (Simonstown)	34 10·8	18 26	27 46·0	59 48·9	·17819
70 <sup>1</sup>	Gobas .....	26 38·0	18 02	—	56 04·3	·19265
71 <sup>3</sup>	Gordon's Bay.....	34 08·0	18 55	—	60 03·1	·17683
72 <sup>1</sup>	Grauwater .....	30 56·4	19 16	26 46·7	58 45·3	·18245
73 <sup>2</sup>	Grootfontein B. ....	27 39·0	24 00	24 49·7	58 34·2	·18514
74 <sup>3</sup>	Grootfontein C. ....	33 07·6	21 15	27 31·2	60 39·4	·17554
75 <sup>2</sup>	Groot Riet .....	29 17·5	20 46	25 36·2	58 26·9	·18402
76 <sup>1</sup>	Groot Rozybosch.....	29 04·8	18 54	25 58·5	57 43·2	·18689
77 <sup>1</sup>	Gründorn .....	27 25·7	18 15	25 16·5	56 27·6	·18890
78 <sup>2</sup>	Hamburg .....	27 01·4	24 16	23 19·5	58 24·9	·18772
79 <sup>1</sup>	Haribes .....	24 41·5	17 34	24 09·3	54 33·3	·19735
80 <sup>2</sup>	Harrisburg .....	27 09·0	26 24	22 17·7	58 53·5	·18666
81 <sup>2</sup>	Hartebeestfontein .....	26 45·5	26 24	22 22·2	58 44·8	·18699
82 <sup>2</sup>	Henkriesfontein.....	28 57·2	18 08	26 24·2	57 24·2	·18734
83 <sup>3</sup>	Hermanus .....	34 25·3	19 16	27 57·9	60 15·6	·17708
84 <sup>3</sup>	Hermon .....	33 26·7	18 58	27 44·4	59 45·3	·17851
85 <sup>3</sup>	Hex River .....	32 27·0	18 57	27 26·2	59 12·3	·18046
86 <sup>3</sup>	Hoetjes Bay .....	33 01·0	17 57	27 39·4	59 12·7	·17968
87 <sup>2</sup>	Hoezar West .....	30 07·1	20 27	26 08·1	58 39·9	·18314
88 <sup>1</sup>	Hollerivier .....	31 22·0	19 32	27 02·6	59 20·4	·17995
89 <sup>1</sup>	Holoog.....	27 24·0	17 44	25 32·6	56 19·0	·19087
90 <sup>3</sup>	Honey Nest Kloof.....	29 12·2	24 33	24 53·4	59 34·0	·18172
91 <sup>3</sup>	Hopefield .....	33 14·4	18 21	27 33·5	59 24·4	·17913
92 <sup>2</sup>	Howmoed .....	29 19·3	19 33	26 03·2	58 13·7	·18071
93 <sup>3</sup>	Howhoek.....	34 12·7	19 10	27 48·8	60 09·3	·17697
94 <sup>3</sup>	Huguenot .....	33 45·3	19 00	27 44·7	59 53·6	·17840
95 <sup>2</sup>	Hutchinson.....	31 29·6	23 15	26 05·4	60 09·4	·17902
96 <sup>2</sup>	Kadebis .....	26 16·6	24 25	—	57 43·7	·19124
97 <sup>1</sup>	Kamabies .....	30 02·3	18 29	25 59·6	58 41·2	·18187
98 <sup>2</sup>	Karmoe .....	31 44·0	19 18	27 12·9	58 35·8	·18083
99 <sup>1</sup>	Karree .....	28 52·5	26 21	22 29·8	59 51·3	·18094
100 <sup>1</sup>	Karreebosch .....	31 34·5	19 54	27 15·3	59 24·4	·18017
101 <sup>3</sup>	Kathoek .....	34 23·3	20 20	27 49·8	60 40·3	·17573
102 <sup>2</sup>	Keeley .....	26 08·6	24 44	23 18·1	57 30·1	·19357

<sup>1</sup> "On Magnetic Work in Southern and Central Africa," 1908-1909, by J. C. Beattie and J. T. Morrison.

<sup>2</sup> "Further Magnetic Observations in South Africa," by J. C. Beattie.

<sup>3</sup> "Report of a Magnetic Survey of South Africa," by J. C. Beattie.

## SUMMARY OF RESULTS—(continued).

No.	Station Name.	Latitude.	Longitude.	Declination (D).	Dip (#).	Horizontal Intensity (H).
103 <sup>1</sup>	Keetmanshoop .....	26°34'·7 S.	18°04' E.	24°53'·1 W.	—	·19308
104 <sup>2</sup>	Kenhardt .....	29 18·0	21 09	25 45·3	58°43'·9 S.	·18467
105 <sup>1</sup>	Khamis .....	27 51·6	18 35	25 32·2	56 52·3	·18947
106 <sup>2</sup>	Khosis .....	27 52·9	23 16	24 22·3	57 55·1	·18828
107 <sup>3</sup>	Kimberley .....	28 43·0	24 46	—	59 15·1	·18179
108 <sup>3</sup>	Klerksdorp .....	26 52·3	26 38	22 45·4	58 45·7	·18509
109 <sup>2</sup>	Kliparani .....	25 59·4	25 22	22 34·5	57 49·2	·19122
110 <sup>3</sup>	Klipfontein .....	30 42·1	22 24	22 24·9	59 54·2	·17905
111 <sup>1</sup>	Klipfontein .....	29 12·7	17 40	26 09·7	57 35·9	·18656
112 <sup>1</sup>	Koppeskraal .....	31 04·4	19 28	26 49·0	58 45·3	·18258
113 <sup>1</sup>	Korrobib .....	25 51·5	18 10	24 50·5	55 27·4	·19456
114 <sup>2</sup>	Koster .....	25 58·0	26 58	21 29·2	58 13·9	·19004
115 <sup>3</sup>	Krantz Kop .....	30 48·8	20 45	26 15·9	59 04·7	·18243
116 <sup>3</sup>	Kruispad .....	32 56·8	20 33	27 35·0	60 25·0	·17712
117 <sup>1</sup>	Kuibis .....	26 40·7	16 48	24 40·2	55 25·9	·19441
118 <sup>2</sup>	Kumnabis River .....	25 59·5	18 19	24 55·1	55 37·4	·19450
119 <sup>2</sup>	Kuruman .....	27 27·9	23 25	24 11·9	58 22·7	·18625
120 <sup>1</sup>	Kweekfontein .....	29 30·0	18 02	26 21·9	57 39·1	·18573
121 <sup>1</sup>	Kye Charp River .....	25 42·4	18 04	24 39·9	55 20·8	·19493
122 <sup>3</sup>	Laat Rivier .....	29 38·2	21 19	25 44·5	58 51·3	·18357
123 <sup>3</sup>	Ladismith C.P. ....	33 29·0	21 17	27 35·9	60 46·0	·17527
124 <sup>3</sup>	L'Agulhas .....	34 50·0	20 00	27 54·9	60 42·2	·17531
125 <sup>3</sup>	Laingsburg .....	33 12·0	20 52	27 38·2	60 34·4	·17565
126 <sup>1</sup>	Leeuwenfontein .....	33 17·4	19 30	27 56·0	59 50·5	·17846
127 <sup>2</sup>	Leeuw Kolk .....	30 25·3	21 17	25 54·3	59 02·3	·18219
128 <sup>1</sup>	Leeuwriet .....	31 28·3	19 20	27 06·0	59 10·7	·18075
129 <sup>2</sup>	Levves Kolk .....	29 35·5	19 50	25 36·5	58 32·7	·18283
130 <sup>3</sup>	Letjesbosch .....	32 34·0	22 18	—	60 15·5	·17884
131 <sup>2</sup>	Lichtenburg .....	26 10·2	26 06	22 23·0	58 22·4	·18887
132 <sup>1</sup>	Loeriesfontein .....	30 56·9	19 26	26 47·0	58 47·7	·18295
133 <sup>2</sup>	Louw Zyn Kolk .....	30 17·4	21 00	25 47·2	59 09·2	·18150
134 <sup>2</sup>	Mafeking .....	25 52·0	25 39	22 19·2	57 48·9	·19088
135 <sup>2</sup>	Magaliesburg .....	26 00·0	27 37	21 22·3	58 27·6	·18989
136 <sup>3</sup>	Malmesbury .....	33 28·0	18 43	27 41·3	59 44·0	·17799
137 <sup>1</sup>	Maquassi .....	27 20·0	25 59	23 08·6	58 57·6	·18750
138 <sup>3</sup>	Maribogo .....	26 25·1	25 15	22 45·9	57 53·1	·18971
139 <sup>2</sup>	Markson's Hotel .....	25 35·3	26 32	21 41·5	57 52·8	·19193
140 <sup>2</sup>	Marokwen .....	26 07·8	23 44	22 48·2	57 14·7	·19208
141 <sup>2</sup>	Matjesfontein .....	33 14·2	20 36	27 44·0	60 27·7	·17607
142 <sup>2</sup>	Meintjes's Farm .....	26 04·4	25 02	22 33·6	57 59·3	·18968
143 <sup>3</sup>	Merriman .....	31 13·0	23 38	26 29·7	60 38·5	·17785
144 <sup>3</sup>	Middlepost .....	31 54·2	20 14	26 51·5	59 28·9	·18020
145 <sup>3</sup>	Miller's Point .....	34 14·2	18 26	27 50·4	59 54·5	·17827
146 <sup>1</sup>	Modderfontein .....	32 36·8	18 59	27 29·8	59 19·7	·17971
147 <sup>1</sup>	Modder River .....	29 03·0	24 45	21 42·0	59 30·9	·18387
148 <sup>2</sup>	Murraysburg .....	31 56·0	23 43	25 41·1	60 46·1	·17598
149 <sup>2</sup>	Namies .....	29 09·0	19 12	26 17·4	57 46·7	·18586
150 <sup>2</sup>	Nanibies .....	29 51·3	20 05	25 46·2	58 57·1	·18124
151 <sup>3</sup>	Nelspoort .....	32 07·7	23 01	26 52·6	60 54·2	·17338
152 <sup>1</sup>	Nieuwefontein .....	30 36·0	18 41	26 30·8	58 00·0	·18609
153 <sup>1</sup>	O'okiep .....	29 35·5	17 53	26 28·1	57 29·1	·18696

<sup>1</sup> "On Magnetic Work in Southern and Central Africa," 1908-1909, by J. C. Beattie and J. T. Morrison.

<sup>2</sup> "Further Magnetic Observations in South Africa," by J. C. Beattie.

<sup>3</sup> "Report of a Magnetic Survey of South Africa," by J. C. Beattie.

## SUMMARY OF RESULTS—(continued).

No.	Station Name.	Latitude.	Longitude.	Declination (D).	Dip. (θ).	Horizontal Intensity (H).
154 <sup>1</sup>	Oorlogskloof .....	31°30'·9 S.	19°27' E.	27°19'·2 W.	59°09'·0 S.	·18050
155 <sup>1</sup>	Orange River .....	29 38·0	24 16	24 36·2	59 41·2	·18138
156 <sup>2</sup>	Ottoshoop .....	25 44·6	26 09	22 05·6	57 51·5	·19076
157 <sup>3</sup>	Oudemuur .....	31 05·8	20 19	26 42·8	59 20·2	·18114
158 <sup>1</sup>	Ougrabies .....	29 15·5	18 32	26 16·9	57 43·2	·18539
159 <sup>3</sup>	Paardevelei .....	30 36·1	21 54	26 19·2	59 21·0	·18152
160 <sup>3</sup>	Pampoenspoort .....	31 03·5	22 39	26 06·8	59 57·1	·17889
161 <sup>1</sup>	Papekuil .....	32 27·9	19 40	27 31·2	—	·18026
162 <sup>2</sup>	Pella .....	29 02·0	19 08	26 29·4	57 49·4	·18600
163 <sup>3</sup>	Piquetberg .....	32 55·0	18 43	27 23·7	59 34·3	·17902
164 <sup>1</sup>	Plaatklip .....	30 47·8	19 06	26 50·1	58 36·1	·18300
165 <sup>2</sup>	Pofadder .....	29 07·0	19 24	26 24·0	58 13·4	·18471
166 <sup>3</sup>	Potfontein .....	30 12·2	24 07	24 54·0	59 53·7	·17981
167 <sup>1</sup>	Port Nolloth .....	29 15·6	16 51	26 48·3	57 07·0	·18749
168 <sup>3</sup>	Prince Albert .....	33 13·2	22 03	27 40·4	60 59·3	—
169 <sup>3</sup>	Prince Albert Road .....	32 58·7	21 42	27 14·2	60 54·3	·17537
170 <sup>2</sup>	Quaggafontein .....	29 59·1	20 42	26 04·9	58 52·0	·17833
171 <sup>1</sup>	Rahman's Drift .....	28 51·9	18 20	26 21·5	57 39·4	·18572
172 <sup>3</sup>	Rateldraai .....	28 45·7	21 18	24 12·2	58 23·3	·18759
173 <sup>3</sup>	Rateldrift .....	31 31·6	20 18	26 54·6	59 28·5	·18004
174 <sup>2</sup>	Richmond C.P. .....	31 25·7	23 56	25 26·9	60 54·2	·17609
175 <sup>1</sup>	Rietfontein .....	29 52·1	18 12	26 46·6	58 23·2	·18180
176 <sup>3</sup>	Rietpoort .....	31 04·4	20 55	26 16·1	59 32·5	·18089
177 <sup>3</sup>	Rifle Range, Simonstown .....	34 12·0	18 26	27 55·8	59 52·7	·17819
178 <sup>3</sup>	Rivierplaats .....	32 08·5	20 24	26 41·6	59 29·1	·18021
179 <sup>1</sup>	Rivierplaats .....	31 30·1	19 41	27 00·0	58 56·5	·18311
180 <sup>3</sup>	Roadside .....	30 44·3	20 26	26 15·8	58 55·5	·18299
181 <sup>3</sup>	Robertson .....	33 48·8	19 53	27 39·2	60 18·1	·17691
182 <sup>2</sup>	Roodekloof .....	25 49·7	27 14	21 25·8	58 14·2	·19035
183 <sup>3</sup>	Roodepoot .....	30 13·0	23 22	24 32·7	58 36·3	·18098
184 <sup>3</sup>	Rooidam .....	29 50·7	23 12	24 18·1	59 18·5	·18221
185 <sup>3</sup>	Rooiputs .....	29 17·4	21 39	26 18·7	58 54·3	·18019
186 <sup>3</sup>	Rooival .....	32 12·0	21 58	26 40·9	60 04·8	·17840
187 <sup>1</sup>	Rotkuppe .....	26 42·4	17 19	25 04·6	55 09·5	·19676
188 <sup>2</sup>	Rumsey's Farm .....	26 24·3	24 03	22 46·2	58 02·3	·19240
189 <sup>2</sup>	Rustenburg .....	25 40·0	27 15	21 01·7	58 12·3	·19038
190 <sup>2</sup>	Rystkuil .....	32 38·7	22 54	26 06·4	60 28·3	·17772
191 <sup>1</sup>	Sabies .....	29 17·2	17 46	—	57 35·4	—
192 <sup>2</sup>	Sandverhaar .....	26 50·4	17 22	25 22·1	55 52·6	·19222
193 <sup>3</sup>	Schietfontein .....	32 41·7	20 47	27 16·7	60 11·3	·17881
194 <sup>2</sup>	Schulenburg .....	26 25·5	25 58	22 22·0	58 28·3	·18834
195 <sup>1</sup>	Schuurkraal .....	31 57·0	19 46	26 58·6	59 15·7	·18027
196 <sup>1</sup>	Seeheim .....	26 48·5	17 44	25 19·0	56 08·5	·19179
197 <sup>1</sup>	Sesskameelboom .....	24 52·7	17 38	24 14·4	54 39·5	·19723
198 <sup>1</sup>	Shakals Kuppe .....	26 38·2	16 32	24 37·0	55 41·2	·19407
199 <sup>3</sup>	Signal Hill .....	33 55·0	18 24	28 04·5	59 46·0	·17830
200 <sup>3</sup>	Sir Lowry Pass .....	34 07·3	18 55	28 09·1	60 02·9	·17698
201 <sup>1</sup>	Spitzkop .....	26 25·5	18 23	25 01·0	55 49·1	·19361
202 <sup>3</sup>	Stanford .....	34 26·7	19 28	27 54·7	60 18·7	·17692
203 <sup>3</sup>	Steenkampspoort .....	32 06·3	21 44	26 54·1	60 01·5	·17900
204 <sup>3</sup>	Stellenbosch .....	33 56·0	18 50	27 54·2	59 59·9	·17774

<sup>1</sup> "On Magnetic Work in Southern and Central Africa," 1908-1909, by J. C. Beattie and J. T. Morrison.

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<sup>3</sup> "Report of a Magnetic Survey of South Africa," by J. C. Beattie.

SUMMARY OF RESULTS—(continued).

No.	Station Name.	Latitude.	Longitude.	Declination (D).	Dip. (θ).	Horizontal Intensity (H).
205 <sup>1</sup>	Stompiesfontein.....	32°13'·5 S.	19°41' E.	27°13'·4 W.	59°21'·7 S.	·18103
206 <sup>3</sup>	Strandfontein.....	34 05·3	18 34	28 04·0	59 51·8	—
207 <sup>3</sup>	Sutherland.....	32 25·0	20 39	26 54·1	59 55·2	·18078
208 <sup>3</sup>	Swellendam.....	34 02·0	20 27	27 39·7	60 30·5	·17651
209 <sup>2</sup>	Swanswani.....	27 46·6	23 50	23 44·2	58 34·4	·18512
210 <sup>3</sup>	Taungs.....	27 34·8	24 45	23 13·0	58 53·7	·18432
211 <sup>3</sup>	Touws River.....	33 21·0	20 03	28 08·2	60 10·3	·17684
212 <sup>1</sup>	Tsawisis.....	27 28·4	18 00	25 18·8	56 27·1	·19028
213 <sup>1</sup>	Tschaukaib.....	26 34·5	15 37	25 20·2	55 02·7	·19431
214 <sup>3</sup>	Tulbagh Road.....	33 19·3	19 10	27 44·6	59 43·2	·17863
215 <sup>3</sup>	Uitspan Farm.....	31 41·2	21 27	27 01·2	60 12·2	·17722
216 <sup>3</sup>	Upington.....	28 27·7	21 15	26 22·2	58 08·3	·18748
217 <sup>1</sup>	Vaalgras.....	26 05·6	18 30	24 49·1	55 51·0	·19400
218 <sup>1</sup>	Van Rhynsdorp.....	31 29·7	18 44	27 25·8	58 57·0	·18172
219 <sup>3</sup>	Van Wyk's Farm.....	33 49·4	21 12	27 32·3	60 42·9	·17578
220 <sup>2</sup>	Van Wyk's Vlei.....	30 22·3	21 50	26 19·4	59 23·7	·18005
221 <sup>3</sup>	Villiersdorp.....	33 59·5	19 19	27 48·7	60 08·3	·17701
222 <sup>3</sup>	Vryburg.....	26 57·1	24 43	22 06·3	58 37·7	·18783
223 <sup>3</sup>	Warrenton.....	28 06·9	24 52	24 02·5	59 21·9	·18360
224 <sup>2</sup>	Wessels.....	27 23·7	23 40	23 32·7	58 23·5	·18779
225 <sup>1</sup>	Willem's Rivier.....	31 20·6	19 06	27 09·9	59 01·5	·18000
226 <sup>3</sup>	Williston.....	31 20·4	20 55	26 02·1	59 40·7	·18016
227 <sup>1</sup>	Windhoek.....	31 44·4	18 38	27 19·7	58 49·6	·18151
228 <sup>3</sup>	Worcester.....	33 39·0	19 26	27 49·0	60 03·7	·18585
229 <sup>1</sup>	Wortel.....	29 02·0	18 49	26 20·4	57 41·7	·18676
230 <sup>3</sup>	Zak Rivier.....	30 30·9	20 31	26 23·1	58 55·0	·18272
231 <sup>2</sup>	Zand Gat.....	29 11·0	19 43	25 43·2	58 04·0	·18575
232 <sup>2</sup>	Zand Put.....	30 05·7	20 49	26 2·1	59 00·6	·18153
233 <sup>3</sup>	Zeekoegat.....	33 03·0	22 31	27 14·3	61 17·2	·17189
234 <sup>2</sup>	Zeerust.....	25 32·6	25 59	22 57·1	57 52·1	·18999
235 <sup>2</sup>	Zonder Huis.....	29 40·0	20 54	26 00·6	58 42·6	·18283
236 <sup>2</sup>	Zoutpan.....	26 48·7	24 13	23 20·6	—	·18889
237 <sup>2</sup>	Zoutpansdrift.....	33 09·9	19 43	27 46·3	60 04·0	—
238 <sup>3</sup>	Zuurbraak.....	34 00·3	20 39	27 37·6	60 36·4	·17635
239 <sup>3</sup>	Zuurfontein.....	32 51·0	18 35	27 30·1	59 22·4	·17988
240 <sup>3</sup>	Zuurpoort.....	32 02·9	24 08	26 15·5	60 54·5	·17606
241 <sup>2</sup>	Zwartkopje.....	29 29·0	19 39	25 58·8	58 13·8	·18519
242 <sup>1</sup>	J. T. M. 26.....	29 15·8	17 11	26 29·4	57 19·7	·18718
243 <sup>1</sup>	J. C. B. 26.....	30 44·3	19 12	26 29·8	58 43·5	·18347
244 <sup>1</sup>	J. C. B. 27.....	30 36·2	18 51	26 32·6	—	·18286
245 <sup>1</sup>	J. C. B. 30.....	30 15·7	18 28	26 47·8	58 11·9	·18393
246 <sup>1</sup>	J. C. B. 32.....	29 59·0	18 19	26 13·2	—	—
247 <sup>1</sup>	J. C. B. 48.....	28 44·0	18 25	25 59·2	58 33·0	·18423
248 <sup>1</sup>	J. C. B. 49.....	28 34·7	18 33	26 02·5	57 15·8	·18795
249 <sup>1</sup>	J. C. B. 53.....	27 44·6	18 24	25 17·3	56 42·0	·18957
250 <sup>1</sup>	J. C. B. 54.....	27 35·4	18 15	25 22·1	56 36·3	·18963
251 <sup>1</sup>	J. C. B. 62.....	26 47·8	17 14	24 35·5	55 19·6	·19497
252 <sup>1</sup>	J. C. B. 73.....	26 11·6	18 29	24 53·7	56 00·4	·19312
253 <sup>1</sup>	J. C. B. 79.....	25 13·5	17 48	24 26·9	55 02·7	·19601
254 <sup>2</sup>	A.....	26 14·7	23 56·8	23 05·4	57 24·5	·19195
255 <sup>1</sup>	B.....	26 12·0	24 01	23 00·6	57 36·4	·19162

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