MAGNETIC STUDIES IN THE INGLEWOOD DISTRICT

R.P.Bryson R.H.Hopper

March 1937

Introduction

This survey was undertaken as part of the program of geophysical work in the Los Angeles Basin sponsored by the Division of the Geological Sciences of the California Institute of Technology. Previous work has included a seismic survey -1 and gravimetric studies -2, followed by the magnetic work conducted by Sidney Schafer in 1936 -3.

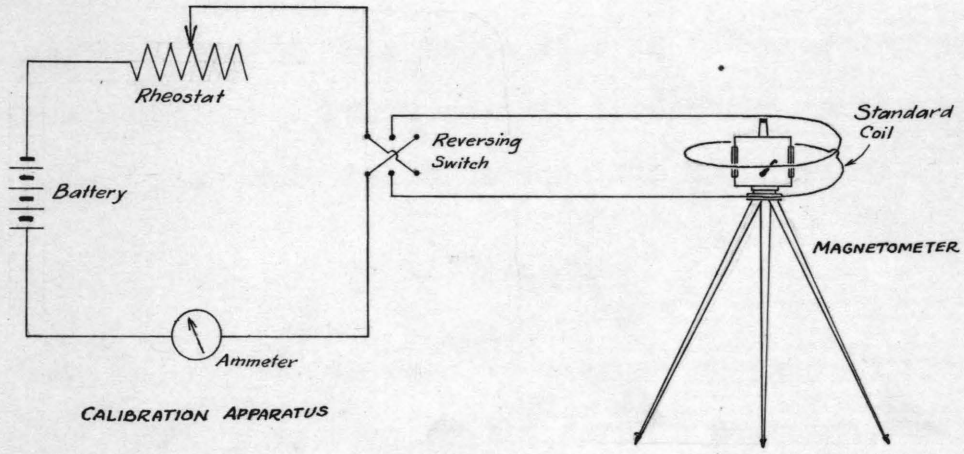
In the survey described in this report measurements of the relative vertical intensity of the earth's magnetic field were made at more than two hundred stations in the western part of the Los Angeles Basin, in the vicinity of Inglewood and the Baldwin Hills. Askania vertical-component magnetometer number 92993 was used in the work. The locations of the stations occupied with the magnetometer are shown on the accompanying map. These stations were in general one-tenth mile apart and were located on traverse lines running in a northeast-southwesterly direction. The observed magnetic readings were corrected for the effects of temperature, diurnal variation and change in latitude and longitude as later described.

\- - -

-1 Gutenberg, B., Wood, H.O., and Buwalda, J.P., "Experiments Testing Seismographic Methods for Determining Crustal Structure", Bull. Seismological Soc. Am.,vol. 22, pp.232-238, (1932).
-Also, results of a seismograph profile across the Los Angeles Basin, presented by Drs. Gutenberg and Buwalda at the 34th annual meeting of the Geol. Soc. of Am., Stanford University, (1935).
-2 Peterson, R.A., "Results of Gravity Measurements in Southern California", Doctorate thesis, Calif. Inst. of Tech., (1935).
-3 Schafer, Sidney, "Experiments Testing the Use of the Magnetometer in Determining Geologic Structure", Thesis presented in partial fulfilment of the requirements for the degree of Master of Science, Calif. Inst. of Tech., (1936).

Calibration of Instrument

The object of this calibration is to determine the variation, in gammas, of the magnetic field strength corresponding to one scale division of the instrument. In the calibration the magnetic field induced by a standard coil and battery is used. The polarity of the magnetic field may be reversed by reversing the direction of the current flowing through the coil. A wiring diagram of the calibration apparatus is given below.



CALIBRATION APPARATUS

The procedure used in the calibration is to place the coil around the magnetometer; then, maintaining a constant current in the coil, to reverse the polarity of the magnetic field, the magnetometer being read before and after the reversal. The procedure is repeated for several different current values to gain accuracy.

If: i = the current flowing through the coil (in milliamps.)
r_1 = the magnetometer reading before the current reversal
r_2 = the magnetometer reading after the current reversal

Then: $e = 4.126 \frac{i}{(r_1 - r_2)}$

Where: e = the scale factor of the magnetometer, in gammas per scale division.

The values of r_1, r_2, and e obtained from five different current settings with the calibration apparatus are given in the table below:

i	r_1	r_2	e
21.0	28.4	24.7	23.8
25.0	29.0	24.4	23.9
30.0	29.3	24.0	23.8
35.0	30.0	23.5	23.8
40.0	30.3	23.0	23.1

From the data of this table 23.8 is taken as the most probable value for $e_{\wedge}$ and has been used throughout in the calculation. One scale division is taken as equal to 23.8 gammas.

Field Procedure

The magnetometer is used to measure changes in intensity of the vertical component of the earth's magnetic field. The range of variation which the instrument will measure directly is limited because of its high sensitivity. In order to bring the intensity within the range of the instrument, an auxiliary magnet is fixed beneath the tripod stage. In this survey the instrument was so adjusted that the free magnet came to rest in a nearly horizontal position at station number 1. (When the magnet is exactly horizontal the scale reading is 20.0 .)

The field procedure at each station consists in taking a magnetometer reading with the magnet in an east-west position and a second reading after rotating the magnet through 180°,

averaging them, noting the time and temperature when the observations were made. These field data are listed in the first six columns of the data sheets at the end of the report, the letter "S" being used to indicate magnetometer readings.

Method of Computation

The magnetometer readings vary with temperature and it is therefore necessary to apply a temperature correction to the average readings. The temperature correction is:

$$C_t = 0.182 (t - 20)$$

where: C_t = the correction in scale divisions

t = the temperature (Centigrade)

This expression gives a positive correction where the temperature is more than 20°C. and a negative correction where it is less than 20°C.

Magnetic readings at a given station also vary with the time of day of the observation, due to a diurnal variation of the earth's magnetic field. In order to correct for this variation, base stations are occupied at intervals of approximately two hours and readings taken, it being assumed that there is a uniform rate of diurnal change during the time between base station readings. In the first column of the data sheets the base stations are marked with an asterisk. Diurnal correction curves (Plate 3) are plotted and the diurnal corrections for intermediate stations are taken from these curves. The average scale values, corrected for temperature and diurnal variation,

is given in scale divisions in the ninth column of the data sheets and in gammas in the tenth column.

A final correction to the magnetic readings is made necessary by broad regional variations in vertical intensity. In the Los Angeles Basin this may be compensated by subtracting eleven gammas per mile of increased latitude and subtracting three gammas per mile of decreased longitude. The regional variation correction for this survey was calculated using station number 31, the most southwesterly station, as a base. The correction to be applied appears in the eleventh column of the data sheets, while in the twelfth column is recorded the completely corrected vertical magnetic intensity in gammas.

Results

The corrected vertical magnetic intensity profiles are plotted (Plates 1 & 2), the horizontal scale for these profiles being the same as that of the map.

Profile A - B, the longest magnetic profile, is shown on Plate 1 with the corresponding topographic profile. The two most southwesterly stations (30 & 31) were abandoned because of excessive interference from the nearby Pacific Electric Railway. The marked variation shown at station 26 was measured on top of the large sand dune, over 100 feet high, immediately inland from the beach.

From station 25 through station 1 to station 46 the magnetic profile shows a gentle upward slope but between stations 46 and

47 there is a sharp drop after which the profile rises again to station 52. This sharp break in the curve in the vicinity of stations 46 & 47 is thought to indicate the presence of a fault. Such a fault, trending in a northwesterly direction, has also been located here by the alignment of epicenters of minor earthquakes recorded at the Seismological Observatory in Pasadena. It should be noted that the profile crosses an electric railway between stations 46 & 47. However, it is apparent that this has had little effect on the magnetic readings, for the slope of the curve determined by stations 47 & 48 is continued for the next four stations.

The next irregularity in the profile is between stations 74 & 81 where large changes in magnetic intensity were measured over short horizontal distances. The main Inglewood fault is thought to be located in this vicinity and to be responsible for these anomalies. It also should be noted that this part of the profile corresponds to a sharp topographic break which may cause beds of differing magnetic properties to be exposed. The short profile C - D (Plate 2) in the same general area shows a broad magnetic low where the fault is crossed. The profile is rather irregular between stations 81 & 96, the irregularities probably being largely controlled by the topography of the Baldwin Hills.

Northwest of station 96 the curve suddenly rises and maintains a value about 150 gammas higher than at station 96, for the remainder of the profile. This rise may be due to a fault

along the north and northeast edges ef the Baldwin Hill, for such a fault has been tentatively located by aligning epicenters of minor earthquakes recorded at the Seismological Observatory in Pasadena. However, the rise may possibly be due to a difference in the magnetic properties of the valley-fill sediments north of the Baldwin Hills, without the necessity of postulating the presence of a fault. This is considered unlikely.

The extension of profile A - B was attempted by means of a series of readings in the Rosedale Cemetery, Westlake Park, Echo Park, and Elysian Park. It was thought that by working very early in the morning, when street car lines and other electrical conductors were least active, reliable magnetic readings might be obtained at these places. Except at Elysian Park , however, the magnetometer scale would not come to rest and only average readings could be taken. The Elysian Park profile is plotted on Plate 2 and the other readings are included on the data sheets.

Profiles E - F, G - H, and I - J are short profiles which were run at right angles to and across the northern edge of the Baldwin Hills in an attempt to extend the anomaly noted at station 96 of profile A - B. Profiles E - F and I - J show definite breaks at stations 125 & 142 respectively (Plate 1). Profile G - H (Plate 2) shows a sharp drop at stations 130 & 133 but the drop is so great and of such short horizontal extent that it is believed to be due to a buried pipe-line or some other extraneous feature.

Profiles K - L, M - N, and O - P were run parallel to profile A - B and opposite the magnetic break between stations 46 & 47 to determine similar breaks to the northwest. A very noticeable magnetic low was recorded at station 159 on profile K - L and a less prominent low was located at station 176 on profile M - N. The indicated fault shown by the breaks in the profile follows a minor topographic depression. Since the magnetic data is corroborated by seismic evidence, the presence of a fault along this approximate line is quite definitely indicated.

Profile O - P is shown on Plate 2. Several anomalies of noticeable magnitude are recorded but their interpretation is left open.

The magnetic survey described in this report has added new evidence to show the existence of three faults in the vicinity of Inglewood and the Baldwin Hills. These faults are indicated with the profiles on the map and also on Plate 1.

DATA SHEETS

Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S, Corrected For Temp. and Diurnal Variation		Lat. & Long. Corr. (−)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
				Saturday, January 2, 1937								
1*	18.3	19.4	18.8	13.6	10:08	-1.2	0.0	17.6	418.5	31	387	On line of main profile, 200'
2	18.8	19.6	19.2	14.0	10:19	-1.1	0.2	18.3	435.5	30	405	SW of Sepulveda Blvd.
3	18.2	18.8	18.5	14.5	10:31	-1.0	0.3	17.8	424.0	28	396	
4	18.7	19.7	19.2	14.9	10:39	-0.9	0.4	18.7	445.0	27	418	
5	18.3	19.0	18.7	15.3	10:45	-0.9	0.5	18.3	435.5	26	409	
6	18.2	18.0	18.1	15.6	10:51	-0.8	0.5	17.8	424.0	25	399	
7	17.7	18.2	18.0	16.1	11:03	-0.7	0.6	17.9	426.0	24	404	
8	17.2	18.1	17.7	16.1	11:11	-0.7	0.6	17.6	418.5	23	395	
9	17.9	18.0	17.9	16.5	11:18	-0.6	0.7	18.0	429.0	21	408	400' SW of Lincoln Blvd.
10*	17.9	18.0	17.9	17.1	11:25	-0.5	0.8	18.2	433.0	20	413	175' SW of Century Blvd.
1*	17.3	17.7	17.5	17.7	11:50	-0.4	0.5	17.6	418.5	31	387	
10*	17.8	18.2	18.0	18.2	12:07	-0.3	0.5	18.2	433.0	20	413	
10*	17.7	18.2	17.9	19.8	12:49	0.0	0.3	18.2	433.0	20	413	
11	18.2	18.9	18.5	20.0	12:59	0.0	0.2	18.7	445.0	19	426	
12	18.0	18.3	18.1	17.6	1:26	-0.4	0.1	17.8	424.0	18	406	
13	18.0	18.6	18.3	18.0	1:32	-0.4	0.1	18.0	429.0	17	412	
14	17.7	17.5	17.6	18.8	1:42	-0.2	0.0	17.4	414.0	16	398	
15	16.3	17.1	16.7	18.4	1:50	-0.3	0.0	16.4	390.5	15	385	
16	17.2	17.6	17.4	18.3	1:56	-0.3	0.0	17.1	407.0	14	393	
17	17.1	17.7	17.4	18.1	2:03	-0.3	0.0	17.1	407.0	13	394	
18	16.4	16.6	16.5	17.9	2:11	-0.4	-0.1	16.0	381.0	11	370	
19	17.1	17.3	17.2	18.0	2:17	-0.4	-0.1	16.7	397.5	10	387	
20	17.0	17.3	17.2	17.9	2:23	-0.4	-0.2	16.6	395.0	9	386	250' SW of Coast Blvd.
21	17.0	17.3	17.1	17.8	2:28	-0.4	-0.2	16.5	393.0	8	385	
22*	15.8	16.0	15.9	17.9	2:35	-0.4	-0.2	15.3	364.0	7	357	175' NE of white house on the
10*	18.6	19.0	18.8	18.8	3:08	-0.2	-0.4	18.2	433.0	20	413	SE corner of Hillcrest and
22*	16.3	16.1	16.2	19.1	3:31	-0.2	-0.7	15.3	364.0	7	357	Imperial Highway
23	16.2	16.8	16.5	18.8	3:42	-0.2	-0.7	15.6	371.5	6	365	210' W of Hillcrest on Acacia
24	17.0	18.0	17.5	18.4	3:49	-0.3	-0.7	16.5	393.0	4	389	
25	17.5	18.0	17.7	17.4	4:00	-0.5	-0.7	16.5	393.0	3	390	This station is located at the
26	22.0	22.0	22.0	17.1	4:09	-0.5	-0.7	20;8	495.5	2	493	crest of steep NE lee slope
29	20.0	20;0	20.0	16.8	4:19	-0.6	-0.7	18.7	445.0	1	444	of sand dune over 100' high.
30	13±5	13±5	13.0	16.8	4:30	-0.6	-0.7	11.7	280.0		280	At the sea shore -- abandon
31	13±5	13±5	13.0	16.8	4:35	-0.6	-0.7	11.7	280.0		280	125' from the shore - abandon
22*	16.8	16.5	16.6	15.5	5:03	-0.6	-0.7	15.3	364.0	7	357	

Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S, Corrected for Temp. and Diurnal Variation		Lat. & Long. Corr. (-)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
				Sunday, January 3, 1937								
1*	20.0	20.8	20.4	11.2	9:22	-1.6	-1.2	17.6	418.5	31	387	
33	22.2	22.3	22.2	12.7	9:39	-1.3	-1.0	19.9	474.0	31	443	On asphalt road metal - abandoned
34	21.0	21.4	21.2	12.9	9:48	-1.3	-0.8	19.1	455.0	32	423	
35	20.7	21.1	20.9	13.6	9:59	-1.2	-0.7	19.0	452.5	33	419	
36	20.8	21.0	20.9	13.5	10:09	-1.2	-0.5	19.2	457.0	35	422	250' NE of Manchester Ave.
37	20.8	21.0	20.9	13.6	10:15	-1.2	-0.4	19.3	459.5	37	422	
38	20.0	20.2	20.1	13.8	10:22	-1.1	-0.3	18.7	445.0	38	407	100' SW of Keanebec St.
39	20.2	20.5	20.3	14.1	10:29	-1.1	-0.2	19.0	452.5	39	413	
40*	19.9	20.7	20.3	14.6	10:35	-1.0	0.0	19.3	459.5	40	419	
1*	17.8	18.8	18.3	15.5	10:46	-0.8	0.1	17.6	418.5	31	387	
41a	18.8	19.4	19.1	16.5	10:59	-0.6	0.2	18.7	445.0	41	404	On SE side of the road
41b	18.9	19.4	19.1	16.1	11:15	-0.7	0.3	18.7	445.0	41	404	On NW side of the road
42	20.0	20.1	20.0	16.1	11:25	-0.7	0.3	19.6	465.5	42	423	
43	19.7	20.0	19.9	16.2	11:33	-0.7	0.3	19.5	464.0	43	421	
44	19.8	20.3	20.0	16.2	11:46	-0.7	0.4	19.7	468.5	44	424	
45	20.2	20.9	20.5	16.0	11:53	-0.7	0.4	20.2	481.0	45	436	
46	20.3	20.9	20.6	15.7	12:01	-0.8	0.5	20.3	483.5	46	437	
40*	19.1	19.6	19.3	17.4	12:16	-0.5	0.5	19.3	459.5	40	419	
40*	19.2	20.0	19.6	17.4	12:55	-0.5	0.2	19.3	459.5	40	419	
47	17.7	18.8	18.2	17.2	1:05	-0.5	0.1	17.8	424.0	47	377	100' SW of bridge over railroad
48	18.6	19.0	18.8	17.2	1:16	-0.5	0.0	18.3	435.5	48	387	125' NE of bridge over railroad
49	19.8	20.0	19.9	17.3	1:22	-0.5	-0.1	19.3	459.5	49	410	
50	20.4	19.7	20.1	17.3	1:28	-0.5	-0.2	19.4	461.5	50	411	
51	21.1	21.9	21.5	17.3	1:34	-0.5	-0.3	20.7	493.0	51	442	
52	21.8	22.4	22.1	17.6	1:41	-0.4	-0.4	21.3	507.0	52	455	150' SW of Centinela Ave.
53	22.0	20.7	21.4	17.8	1:47	-0.4	-0.5	20.5	488.0	53	435	
54	20.0	20.7	20.4	18.0	1:53	-0.4	-0.6	19.4	461.5	54	407	
55	21.2	22.2	21.7	18.0	1:59	-0.4	-0.7	20.6	490.0	55	435	
56	19.7	20.3	20.0	18.0	2:04	-0.4	-0.8	18.8	447.5	56	391	
57	20.2	20.7	20.4	18.1	2:11	-0.3	-0.9	19.2	457.0	57	400	
58	20.8	21.4	21.1	18.2	2:23	-0.3	-1.0	19.8	471.5	58	413	
59	21.2	21.7	21.4	18.2	2:30	-0.3	-1.1	20.0	476.0	59	417	
60	20.7	21.1	20.9	18.0	2:39	-0.4	-1.2	19.3	459.5	60	399	
61*	21.2	21.9	21.5	17.8	2:52	-0.4	-1.3	19.8	471.5	61	410	100' NE of La Brea
40*	20.7	21.6	21.1	17.5	3:08	-0.5	-1.3	19.3	459.5	40	419	

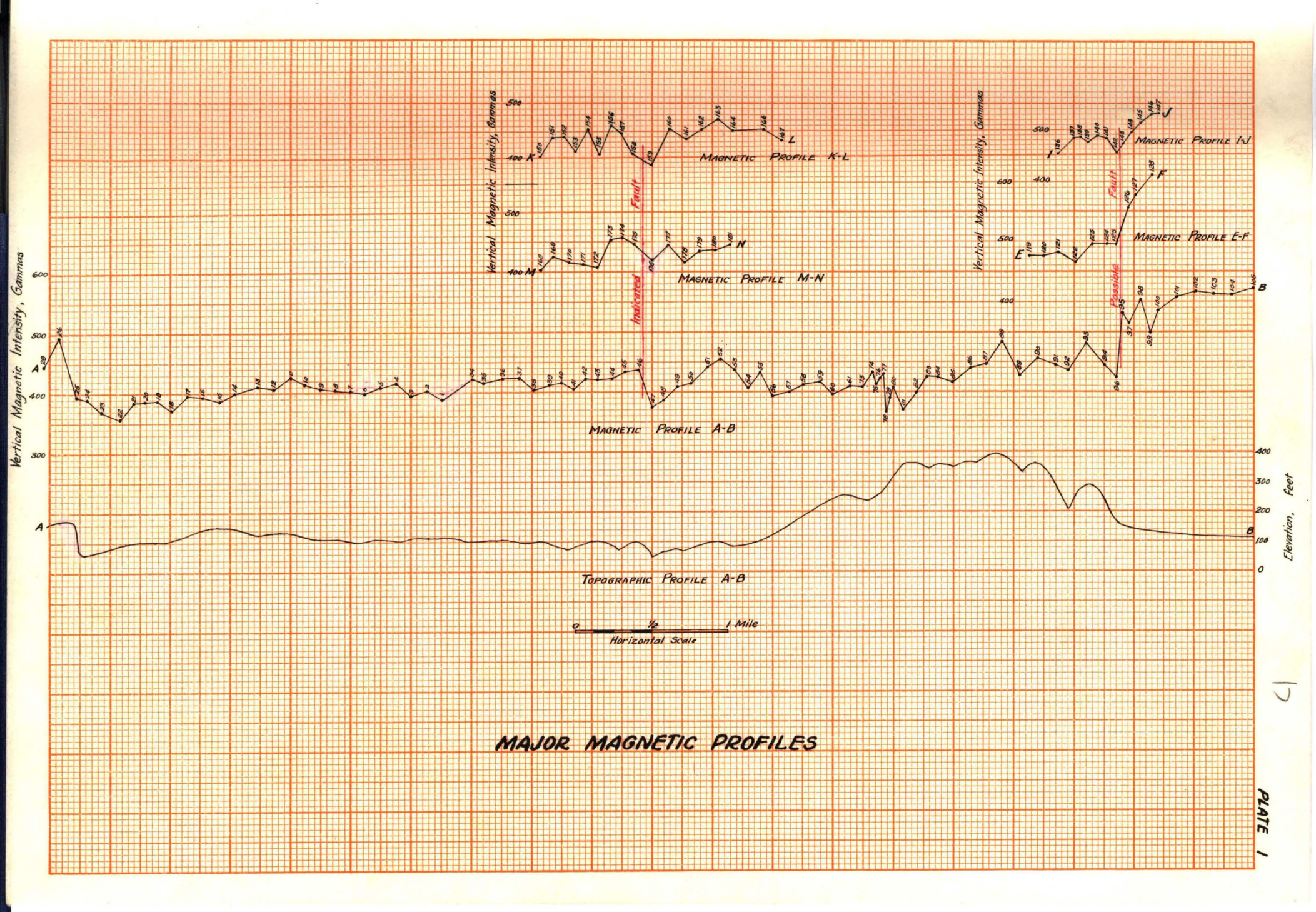
Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S, Corrected For Temp. and Diurnal Variation		Lat. & Long. Corr. (-)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
62	19.2	19.7	19.5	17.3	3:28	-0.5	-1.3	17.7	422.0	62	360	Beginning of line toward La Brea-Overhill intersection
63	18.8	19.7	19.3	17.1	3:35	-0.5	-1.3	17.5	417.0	63	354	
64	19.8	20.6	20.2	17.0	3:47	-0.5	-1.3	18.4	438.0	65	373	
65	15.8	16.8	16.3	16.9	3:53	-0.6	-1.3	14.4	343.0	66	277	200' from oil derrick - abandoned
66	22.7	23.2	22.9	16.5	4:00	-0.6	-1.4	20.9	497.5	67	430	
67	22.8	23.2	23.0	15.4	4:12	-0.8	-1.4	20.8	495.5	68	427	
68	21.4	22.6	22.0	14.2	4:34	-1.1	-1.4	19.5	464.0	67	397	68 to 72 SW from Overhill Dr. on main profile - abandoned
69	21.2	20.9	21.0	13.7	4:45	-1.2	-1.5	18.3	435.5	66	369	
70	22.6	23.1	22.8	13.2	4:52	-1.2	-1.5	20.1	478.0	65	413	
71	22.8	22.5	22.7	12.9	4:59	-1.3	-1.5	19.9	474.0	64	411	
72	22.4	23.8	23.1	12.7	5:06	-1.3	-1.5	20.3	483.5	64	419	
61*	22.6	23.1	22.8	12.0	5:25	-1.5	-1.5	19.8	471.5	61	410	
					Saturday, January 9, 1937							
61*	22.3	23.1	22.7	5.9	10:46	-2.6	-0.3	19.8	471.5	61	410	
73	22.0	22.8	22.4	6.8	10:55	-2.4	-0.3	19.7	468.5	62	406	Continuing NE on main profile
74	22.8	23.9	23.3	7.9	11:01	-2.2	-0.3	20.8	495.5	62	433	
75	22.2	22.8	22.5	8.3	11:05	-2.1	-0.3	20.1	478.0	63	415	75 to 80 are at 125' intervals
76	22.9	22.7	22.8	9.2	11:09	-2.0	-0.3	20.5	488.0	63	425	
77	22.8	23.6	23.1	9.7	11:12	-1.9	-0.3	20.9	497.5	63	434	Base of SW facing slope between 77 and 78 (fault scarp?)
78	20.0	20.2	20.1	10.0	11:17	-1.8	-0.3	18.0	429.0	64	365	
79	21.1	21.9	21.5	10.3	11:22	-1.8	-0.3	19.4	461.5	64	397	
80	22.1	21.9	22.0	10.5	11:26	-1.7	-0.3	20.0	476.0	64	412	At the top of the slope
81	20.3	20.2	20.3	10.9	11:34	-1.7	-0.2	18.4	438.0	65	373	
82	21.2	21.8	21.5	11.1	11:40	-1.6	-0.2	19.7	468.5	66	402	
83	22.8	22.4	22.6	11.0	11:47	-1.6	-0.2	20.8	495.5	67	428	250' SW of Overhill Dr.
84	22.3	22.9	22.6	10.8	11:57	-1.7	-0.2	20.7	493.0	68	425	
85	22.2	22.4	22.3	11.0	12:03	-1.6	-0.2	20.5	488.0	69	419	
86	22.8	23.5	23.2	11.3	12:09	-1.6	-0.2	21.4	509.5	70	439	
87	23.2	24.0	23.6	11.3	12:15	-1.6	-0.2	21.8	519.0	71	448	
88*	24.8	25.7	25.2	11.5	12:21	-1.6	-0.2	23.4	557.0	72	485	200' SE of white painted brick "powder vault?".
61*	21.2	21.8	21.5	11.9	1:01	-1.5	-0.2	19.8	471.5	61	410	
88*	24.8	25.7	25.2	12.1	1:17	-1.4	-0.4	23.4	557.0	72	485	
88*	24.9	25.9	25.4	11.9	1:50	-1.5	-0.5	23.4	557.0	72	485	
89	23.1	23.1	23.1	11.9	1:56	-1.5	-0.5	21.1	502.5	74	428	

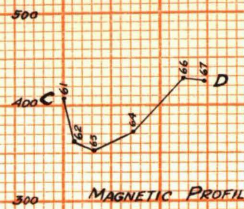
Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S, Corrected For Temp. and Diurnal Variation		Lat. & Long. Corr. (-)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
90	24.2	24.2	24.2	12.2	2:03	-1.4	-0.5	22.3	531.0	75	456	
91	23.2	24.9	24.0	12.0	2:09	-1.5	-0.6	21.9	521.5	76	445	Southedge of 150' valley
92	23.5	23.9	23.7	11.8	2:15	-1.5	-0.6	21.6	514.5	77	437	Bottom
93	25.5	25.8	25.6	12.2	2:22	-1.4	-0.7	23.5	559.5	78	481	Near top of ridge on north edge
94	23.9	24.0	24.0	12.8	2:30	-1.3	-0.7	22.0	524.0	79	445	Backyard of golf club
95	27.5	28.0	27.7	12.9	2:37	-1.3	-0.7	25.7	612.0	81	531	Magnet not steady
96	23.5	23.0	23.3	12.9	2:45	-1.3	-0.8	21.2	505.0	80	425	175' SW of #95
97	26.9	27.2	27.1	12.8	2:55	-1.3	-0.8	25.0	595.0	82	513	Magnet not steady
98	28.4	29.0	28.7	12.8	3:02	-1.3	-0.8	26.6	633.5	83	550	
99	26.2	26.9	26.6	12.3	3:14	-1.4	-0.9	24.3	578.5	84	494	
100*	28.4	28.4	28.4	12.3	3:21	-1.4	-0.9	26.1	621.5	85	536	250' SE of the intersection of
88*	24.8	25.7	25.2	11.8	3:51	-1.5	-0.3	23.4	557.0	72	485	Santa Barbara and Crenshaw
100*	27.3	28.0	27.7	11.4	4:07	-1.6	0.0	26.1	621.5	85	536	
101	28.4	29.2	28.8	10.8	4:19	-1.7	0.0	27.1	645.0	86	559	Magnet not steady at any station
102	28.7	29.7	29.2	10.4	4:24	-1.8	0.0	27.4	652.5	87	565	NE of here
103	28.7	29.2	29.0	10.0	4:29	-1.8	0.1	27.3	650.0	88	562	
104	28.7	29.7	29.2	9.2	4:33	-2.0	0.1	27.3	650.0	89	561	
105	29.7	30.0	29.8	8.5	4:41	-2.1	0.1	27.8	661.5	90	571	200' S of 9th Av. & Rodeo Rd.
100*	27.5	28.8	28.2	7.5	4:56	-2.3	0.2	26.1	621.5	85	536	
					Saturday, January 23, 1937							
100*	26.5	27.0	26.8	7.0	1:55	-2.4	1.7	26.1	621.5	85	536	(1:55 AM)
106	44.-	47.-	45.-	2.0	2:35	-3.3	1.3	43.-	1023.-	118	905	Rosedale Cemetery
107	46.3	47.0	46.6	1.7	2:45	-3.3	1.2	44.5	1060.-	118	942	" "
108	44.1	45.8	44.9	1.2	2:55	-3.4	1.0	42.5	1012.-	118	894	" "
109	19.5	19.7	19.6	0.4	3:15	-3.6	0.8	16.8	400.0	136	264	Westlake Park
110	28.0	28.2	28.1	0.0	3:35	-3.6	0.7	25.2	600.0	136	464	" "
111	32.0	31.5	31.8	-0.3	4:00	-3.7	0.4	28.5	678.5	136	542	" "
112	-0.5	1.2	0.4	-0.7	4:15	-3.8	0.3	-3.1	-73.8	136	-210	" "
100*	29.1	30.7	29.9	-0.8	4:45	-3.8	0.0	26.1	621.5	85	536	
113	18.-	18.-	18.-	-1.4	5:25	-3.9	-0.3	13.8	328.5	148	180	Echo Park
114	31.1	32.1	31.6	-1.1	5:50	-3.8	-0.5	27.3	650.0	161	489	Elysian Park
115	30.5	31.2	30.8	-1.4	6:00	-3.9	-0.5	26.4	628.5	162	466	" "
116	28.8	29.0	28.9	-1.4	6:12	-3.9	-0.6	24.4	580.5	167	415	" "
117	29.2	30.5	29.8	-1.2	6:25	-3.9	-0.7	25.2	600.0	165	435	" "

Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S_1 Corrected for Temp. and Diurnal Variation		Lat. & Long. Corr. (−)	Corrected S_1 Gammas	Remarks
								Scale Divs.	Gammas			
118	29.9	30.0	30.0	-1.1	6:40	-3.8	-0.8	25.4	604.5	158	446	Elysian Park
100*	30.5	31.4	30.9	-1.0	7:10	-3.8	-1.0	26.1	621.5	85	536	
88*	29.8	30.2	30.0	0.8	8:09	-3.5	-3.1	23.4	557.0	72	485	
119	29.3	29.9	29.6	0.5	8:37	-3.5	-2.8	23.3	554.5	76	478	2000' NW of #88, beginning a new profile (E-F)
120	29.1	29.8	29.5	0.8	8:45	-3.5	-2.7	23.3	554.5	77	477	
121	29.1	30.2	29.6	1.8	8:53	-3.3	-2.7	23.6	562.0	78	484	Pebbly, coarse sandstone
122	28.7	29.0	28.9	2.4	9:02	-3.2	-2.6	23.1	549.5	79	470	
123	29.3	30.0	29.7	3.4	9:10	-3.0	-2.6	24.1	574.0	80	494	1/3 way down NE sloping scarp
124	29.3	29.9	29.6	4.1	9:16	-2.9	-2.6	24.1	574.0	81	493	50' NE of scarp base
125	28.9	30.1	29.5	4.8	9:23	-2.8	-2.5	24.2	576.0	81	495	
126	31.7	32.3	32.0	5.4	9:29	-2,7	-2.5	26.8	638.5	82	556	
127	32.4	32.8	32.6	6.2	9:36	-2.5	-2.4	27.7	659.0	82	577	
128	33.7	34.5	34.1	6.7	9:47	-2.4	-2.4	29.3	697.0	83	614	
129	31.0	31.9	31.4	7.1	10:02	-2.3	-2.4	26.7	636.0	86	550	Beginning new, parallel profile
130	26.1	27.1	26.6	7.8	10:11	-2.2	-2.3	22.1	526.0	85	441	(G-H) 1/4 mile to the NW, on
131	30.4	31.1	30.7	8.4	10:18	-2.1	-2.3	26.3	626.0	86	540	a line with the first gully
132	26.2	27.3	26.7	9.2	10:24	-2.0	-2.2	22.5	535.5	85	550	E of La Brea
133	24.4	25.0	24.7	10.1	10:34	-1.8	-2.0	20.9	497.5	83	414	
134	28.5	29.3	28.9	10.3	10:40	-1.8	-2.0	25.1	597.5	83	514	
135*	27.6	27.9	27.8	11.8	10:57	-1.5	-1.8	24.5	583.5	83	500	At the base of the slope - On
88*	26.0	26.3	26.1	12.2	11:30	-1.4	-1.3	23.4	557.0	72	485	the 13th tee.
135*	26.2	26.6	26.4	12.8	12:08	-1.3	-0.6	24.5	583.5	83	500	
135*	26.3	26.7	26.5	14.8	12:39	-0.9	-1.1	24.5	583.5	83	500	
136	24.9	24.9	24.9	14.4	12:54	-1.0	-1.4	22.5	535.5	81	454	Beginning new profile, parallel
137	26.3	26.7	26.5	13.7	1:01	-1.1	-1.5	23.9	569.0	82	487	to La Brea from the ridge E
138	26.7	26.9	26.8	13.3	1:07	-1.2	-1.6	24.0	571.5	83	488	of La Brea av. (I-J)
139	26.6	26.6	26.6	12.9	1:13	-1.3	-1.7	23.6	562.0	84	478	(#137is at base of scarp)
140	27.3	27.0	27.2	12.7	1:18	-1.3	-1.7	24.2	576.0	85	491	
141	27.3	27.3	27.3	12.0	1:24	-1.5	-1.8	24.0	571.5	86	485	
142	26.0	26.0	26.0	11.8	1:30	-1.5	-1.9	22.6	538.0	87	451	138 to 147 are at 265' intervals
143	26.7	27.2	27.0	11.7	1:34	-1.5	-2.0	23.5	559.5	88	471	
144	28.0	28.3	28.2	11.3	1:39	-1.6	-2.1	24.5	583.5	88	495	
145	29.2	29.3	29.3	11.1	1:43	-1.6	-2.2	25.5	607.0	89	518	
146	29.8	30.4	30.1	10.9	1:48	-1.7	-2.3	26.1	621.5	90	531	
147	30.2	30.3	30.3	10.8	1:54	-1.7	-2.5	26.1	621.5	90	531	
135*	28.8	28.8	28.8	11.7	2:14	-1.5	-2.8	24.5	583.5	83	500	

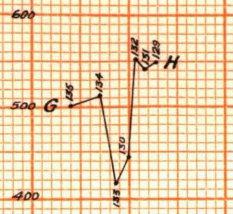
Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Correction	Diurnal Correction	S, Corrected for Temp. and Diurnal Variation		Lat. & Long. Corr. (-)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
				Saturday, February 20, 1937								
1*	20.5	20.8	20.6	12.4	8:29	-1.4	-1.6	17.6	418.5	31	387	
150	20.9	21.7	21.3	13.5	9:04	-1.2	-1.6	18.5	440.0	39	401	Beginning profile K-L
151	22.5	23.2	22.8	14.3	9:13	-1.0	-1.6	20.2	481.0	40	441	
152	22.5	23.0	22.7	15.1	9:18	-0.9	-1.6	20.2	481.0	41	440	
153	21.2	21.8	21.5	15.8	9:25	-0.8	-1.6	19.1	455.0	42	413	
154	22.9	23.8	23.4	16.2	9:32	-0.7	-1.6	21.1	502.5	43	459	
155	21.0	21.7	21.3	16.8	9:39	-0.6	-1.7	19.0	452.5	44	408	
156	23.2	23.9	23.5	17.5	9:47	-0.5	-1.7	21.3	507.0	45	462	
157	22.7	23.2	22.9	18.0	9:55	-0.4	-1.7	20.8	495.5	46	449	
158	20.9	21.3	21.1	18.2	10:04	-0.3	-1.7	19.1	455.0	47	408	Half way down the NE sloping scarp - 450' W of Sepulveda
159	20.0	20.3	20.1	18.8	10:15	-0.2	-1.7	18.2	433.0	48	385	
1*	19.5	19.4	19.4	19.7	10:25	-0.1	-1.7	17.6	418.5	31	387	
160*	23.1	23.2	23.1	20.2	10:42	0.0	-1.7	21.4	509.5	50	459	250' NE of the RR
161	18.1	18.2	18.1	20.1	10:49	0.0	-1.7	16.4	390.5	52	438	
162	23.2	23.1	23.1	20.5	10:56	+0.1	-1.8	21.4	509.5	53	456	
163	23.8	24.1	23.9	20.2	11:04	0.0	-1.8	22.1	526.5	55	471	
164	23.0	23.4	23.2	20.2	11:16	0.0	-1.8	21.4	509.5	56	453	
165	29.3	29.7	29.5	20.0	11:26	0.0	-1.8	27.7	659.0	57	602	In front of golf club house - abandoned
166	23.5	23.5	23.5	20.2	11:35	0.0	-1.9	21.6	514.5	58	456	
167	22.7	22.6	22.6	20.7	11:42	+0.1	-1.9	20.8	595.5	59	436	
160*	23.2	23.1	23.1	21.8	12:10	+0.3	-2.0	21.4	509.5	50	459	
1*	19.2	19.7	19.4	21.8	12:23	+0.3	-2.1	17.6	418.5	31	387	
1*	19.3	20.0	19.6	21.2	12:53	+0.2	-2.2	17.6	418.5	31	387	
168	20.3	20.7	20.5	21.2	1:01	+0.2	-2.2	18.5	440.0	39	401	Beginning profile M-N
169	21.3	21.8	21.5	21.2	1:08	+0.2	-2.2	19.5	464.0	40	424	150' NE of Sepulveda and .8 mi. N of station #1.
170	21.3	21.2	21.2	21.3	1:15	+0.2	-2.2	19.2	457.0	41	416	
171	20.9	21.6	21.2	21.2	1:23	+0.2	-2.3	19.1	455.0	42	413	
172	21.1	21.2	21.1	21.2	1:31	+0.2	-2.3	19.0	452.5	43	409	
173	23.1	22.7	22.9	21.6	1:45	+0.3	-2.3	20.9	497.5	44	453	
174	22.9	23.3	23.1	21.7	1:58	+0.3	-2.3	21.1	502.5	45	457	
175	22.9	23.2	23.0	20.0	2:10	0.0	-2.4	20.6	490.0	46	444	
176	21.9	22.4	22.1	19.8	2:24	0.0	-2.4	19.7	468.5	47	421	250' NE of Manchester - the line crosses about 100' SW of the turn
177	22.9	23.6	23.2	19.9	2:33	0.0	-2.5	20.7	493.0	48	445	
178	22.1	22.2	22.1	20.0	2:40	0.0	-2.5	19.6	465.5	49	417	
179	22.8	22.9	22.8	20.1	2:47	0.0	-2.5	20.3	483.5	50	433	

Station Number	S_1	S_2	Average S	Temp., °C.	Time	Temp. Corr.	Diurnal Correction	S, Corrected for Temp. and Diurnal Variation		Lat. & Long. Corr. (-)	Corrected S, Gammas	Remarks
								Scale Divs.	Gammas			
180	22.9	23.2	23.0	20.2	2:54	0.0	-2.5	20.5	488.0	52	436	
181	23.4	23.8	23.6	20.1	3:02	0.0	-2.5	21.1	502.0	53	449	
1*	20.3	20.3	20.3	19.2	3:19	-0.1	-2.6	17.6	418.5	31	387	
				Saturday, March 6, 1937								
1*	20.4	20.8	20.6	16.1	8:56	-0.7	-2.3	17.6	418.5	31	387	
182*	21.0	21.2	21.1	17.2	9:18	-0.5	-2.2	18.4	438.0	20	418	450'E and 150'S of intersection
1*	19.0	18.6	18.8	23.4	11:00	+0.6	-1.8	17.6	418.5	31	387	of Crenshaw (8th Av.) and
182*	19.1	19.2	19.2	26.2	11:49	+1.1	-1.9	18.4	438.0	20	418	Imperial Highway.
183	19.4	19.4	19.4	27.2	12:01	+1.3	-1.9	18.8	447.5	22	425	Going NE on profile O—P
184	16.9	17.5	17.2	27.2	12:08	+1.3	-1.9	16.6	395.0	24	371	
185	17.8	17.6	17.7	27.2	12:16	+1.3	-1.9	17.1	407.0	25	382	
186	18.2	18.4	18.3	27.0	12:23	+1.3	-1.9	17.7	422.0	26	396	
187	18.0	18.0	18.0	27.1	12:29	+1.3	-1.9	17.4	414.0	28	386	
188	17.4	17.8	17.6	26.7	12:37	+1.2	-1.9	16.9	402.5	29	373	
189	19.0	19.8	19.4	26.1	12:45	+1.1	-1.9	18.6	442.5	31	411	
190	17.2	17.0	17.1	25.8	12:51	+1.1	-1.9	16.3	388.0	32	356	
191	16.7	15.7	16.2	25.4	12:56	+1.0	-1.9	15.3	364.0	33	331	275' SW of intersection of
192	18.1	18.3	18.2	25.2	1:04	+0.9	-1.8	17.3	412.0	34	378	W 103rd St. & Gramercy Pl.
193	18.1	18.2	18.1	25.3	1:12	+0.9	-1.8	17.2	409.5	35	374	100' NE of intersection of
194	18.3	18.9	18.6	25.3	1:19	+0.9	-1.8	17.7	422.0	36	386	St. Andrews & Century Blvd.
182*	19.3	18.9	19.1	25.8	2:00	+1.1	-1.8	18.4	438.0	20	418	
196	19.0	19.0	19.0	24.8	2:07	+0.9	-1.7	18.2	433.0	19	414	Going SW on profile O—P
197	18.0	18.2	18.1	24.7	2:16	+0.9	-1.6	17.4	414.0	18	396	
198	19.3	19.3	19.3	24.1	2:24	+0.7	-1.5	18.5	440.0	17	423	
199	19.4	19.2	19.3	23.9	2:30	+0.7	-1.5	18.5	440.0	15	425	
200	20.0	20.0	20.0	23.8	2:37	+0.7	-1.4	19.3	459.5	14	445	
182*	18.8	19.2	19.0	23.8	2:56	+0.7	-1.3	18.4	438.0	20	418	
1*	20.4	20.8	20.6	16.1	8:56	-0.7	-2.3	17.6	418.5	31	387	
201*	12.0	11.8	11.9	20.1	10:14	0.0	-2.0	9.9	236.0	(+85)	321	#89 of S. Shafer - MS.Thesis, 1936
1*	19.0	18.6	18.8	23.4	11:00	+0.6	-1.8	17.6	418.5	31	387	Latitude - 33° 47' 00.3" N
												Longitude -118° 19' 12.1" W
												San Pedro Hills Quadrangle

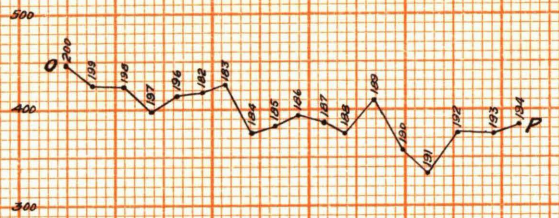

Vertical Magnetic Intensity, Gammas
Magnetic Profile K-L
Magnetic Profile M-N
Magnetic Profile A-B
Magnetic Profile I-J
Magnetic Profile E-F
Fault
Indicated
Possible
Topographic Profile A-B
0 ½ 1 Mile
Horizontal Scale
Elevation, Feet
MAJOR MAGNETIC PROFILES
PLATE 1



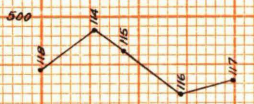
MAGNETIC PROFILE C-D



MAGNETIC PROFILE G-H



MAGNETIC PROFILE O-P



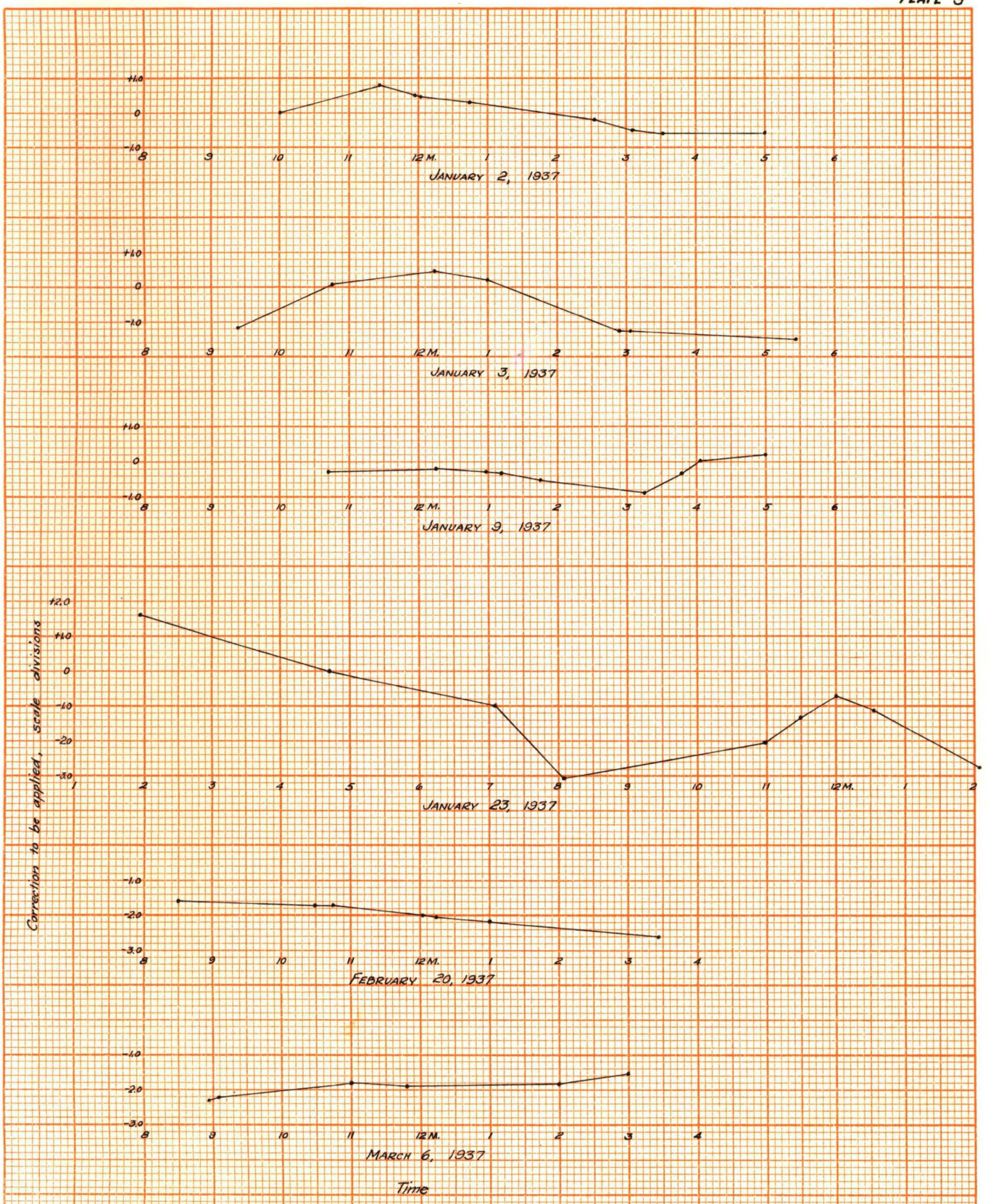
ELYSIAN PARK
MAGNETIC PROFILE

MINOR MAGNETIC PROFILES

18

PLATE 2

PLATE 3



CORRECTION CURVES FOR DIURNAL MAGNETIC VARIATION