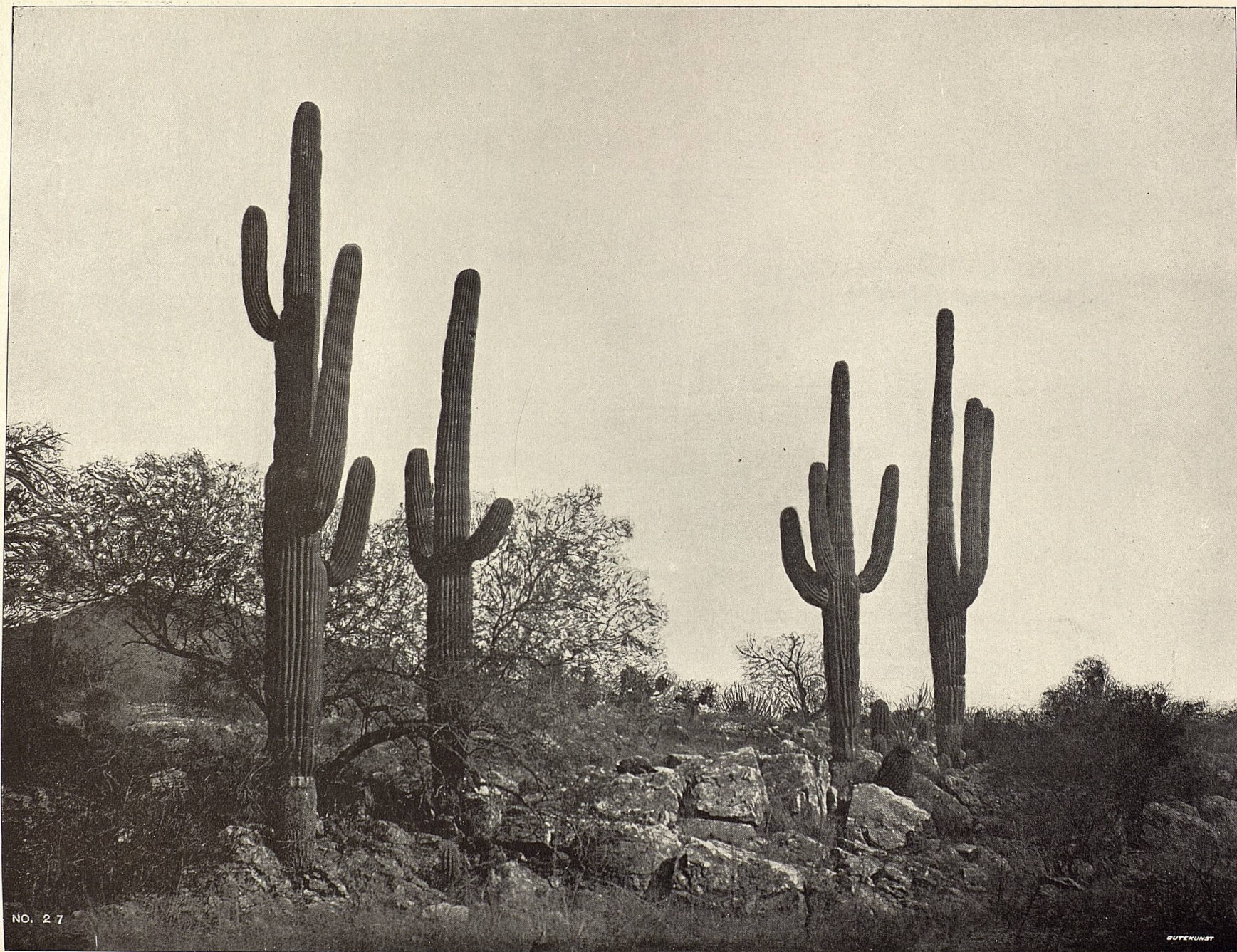




CACTUS GIGANTE EN LAS INMEDIACIONES DE LA SIERRA DEL TULE.

Resumen y discusión.

Pares.			<i>p.</i>	Latitudes.	Δ	Δ^2	$p \Delta^2$	
3	Tauri.	ν	Auriga.....	3	59.15	1.65	2.7225	8.1675
36	Lyncis.	83	Cancr.....	8	60.87	.57	.3249	2.5992
α	Hydra.	δ	Urs. maj.....	10	60.93	.13	.0169	.1690
27	Lyncis.	β	Cancr.....	5	61.19	.39	.1521	.7605
31	Lyncis.	η	Cancr.....	4	59.66	1.14	1.2996	5.1984
19	Camelop.	α	Leporis.....	2	59.88	.92	.8464	1.6928
α	Orionis.	δ	Auriga.....	5	62.34	1.54	2.3716	11.8580
17	Camelop.	δ	Orionis.....	2	61.83	1.03	1.0609	2.1218
51	Auriga.	ε	Gemi.....	2	60.03	.77	.5929	1.1858
β	Urs. maj.	χ	Leonis.....	9	61.24	.44	.1936	1.7424
2	Lyncis.	8	Monoceros.....	5	59.99	.81	.6561	3.2805
30	Urs. maj.	25	Sextantis.....	3	60.65	.15	.0225	.0675
19	Leo min.	η	Leonis.....	7	62.14	1.34	1.7956	12.5692
η	Leonis.	λ	Urs. maj.....	7	60.00	.80	.6400	4.4800
ψ	Urs. maj.	θ	Leonis.....	3	61.26	.46	.2116	.6348
				76				56.5274

Latitud encontrada = $31^{\circ} 47' 0.87''$

VI.

Latitud del Monumento N^o VI actualmente N^o 21.

Método "Talcott."

Instrumentos.

Anteojo cenital.
Cronómetro N^o 750 (tiempo medio).

Personal.

Observador, Felipe Valle.
Ayudante, Agustín Aragón.

Valor angular de las revoluciones del tornillo micrométrico.

ABRIL 11 DE 1892.

 α Ursa minoris (elongación Oeste).

Micrómetro.	Hora cronométrica.	Nivel.		Diferencia. Ángulo horario.	$Z - Z'$.
		oc.	ob.		
<i>R.</i>	<i>h. m. s.</i>			<i>o' "</i>	<i>"</i>
60.0	5 58 18.7	18.2	62.1	1 49 3	144.72
59.5	6 0 2.6	18.1	62.1	2 15 6	179.27
59.0	1 47.8	18.0	62.1	2 41 28	214.24
58.5	3 31.8	18.0	62.1	3 7 32	248.79
58.0	5 21.8	17.9	62.0	3 35 07	285.34
57.5	7 5.0	17.8	62.0	4 0 59	319.60
57.0	8 53.4	17.6	62.1	4 28 8	356.35
56.5	10 38.1	17.6	62.0	4 54 24	390.28
56.0	12 24.7	17.5	62.0	5 21 8	425.62
55.5	14 13.5	16.9	61.6	5 48 24	461.64
55.0	16 1.0	16.9	61.6	6 15 15	497.08
54.5	17 44.6	16.7	61.6	6 41 16	531.39
54.0	19 31.4	16.0	60.9	7 8 06	566.75
53.5	21 15.6	15.7	60.6	7 34 13	601.13
53.0	23 4.3	15.3	60.3	8 1 28	636.96
52.5	24 48.8	15.0	60.1	8 27 39.5	671.37
52.0	26 40.2	14.7	59.9	8 55 35	708.01

VI.—*Latitud del Monumento N^o VI actualmente N^o 21—Continuación.*

Micrómetro.	Hora cronométrica.	Nivel.		Diferencia. Ángulo horario.	Z — Z'.
		oc.	ob.		
<i>R.</i>	<i>h. m. s.</i>			<i>° ' "</i>	<i>"</i>
51.5	6 28 26.8	14.4	59.9	9 22 18.5	743.03
51.0	30 16.0	14.4	59.9	9 49 41	778.86
50.5	31 57.9	14.4	60.0	10 15 14	812.25
50.0	33 46.8	14.3	59.9	10 42 32	847.88
49.5	35 31.8	14.2	59.8	11 8 51	882.17
49.0	37 19.5	14.1	59.9	11 35 51	917.31
48.5	39 7.0	14.1	59.9	12 2 48	952.32
48.0	40 55.4	14.2	60.0	12 29 58	987.56
30.0	48 56.1	11.5	59.0	29 32 56.5	2250.29

Combinación por pares de las observaciones.

Revoluciones combinadas.	Ángulo correspondiente.	Valor de una revolución.	Revoluciones combinadas.	Ángulos.	Valor de una revolución.
	<i>"</i>	<i>"</i>		<i>"</i>	<i>"</i>
60 — 54	420.04	70.007	56.0 — 50.0	419.16	69.860
59.5 — 53.5	419.58	69.930	55.5 — 49.5	417.90	69.650
59.0 — 53.0	420.09	70.015	55.0 — 49.0	417.60	69.600
58.5 — 52.5	419.66	69.943	54.5 — 48.5	418.42	69.737
58.0 — 52.0	419.75	69.958	54.0 — 48.0	419.23	69.872
57.5 — 51.5	420.21	70.035			
57.0 — 51.0	419.35	69.892		R =	<i>"</i>
56.5 — 50.5	418.93	69.822			69.987 ± 0.031

Determinaciones de los días 12 y 16.

h. m. s. *° ' "*
 α Ursa min. AR = 1 18 2.8. δ = 88 43 56.5.

Día 12.

Día 16.

Micrómetro.	Hora cronométrica.	Nivel.		Ángulo.	Z — Z'.	Micrómetro.	Hora cronométrica.	Nivel.		Ángulo.	Z — Z'.
		oc.	ob.					oc.	ob.		
	<i>h. m. s.</i>			<i>° ' "</i>	<i>"</i>		<i>h. m. s.</i>			<i>° ' "</i>	<i>"</i>
50.0	5 20 49.4	20.1	64.3	6 35 35	523.92	43	5 59 16.7	61.1	18.8	7 0 57	9 17.5
49.5	5 22 34.5	20.0	64.3	6 9 14	489.16	44	6 2 46.4	61.1	18.8	7 53 27	10 26.66
49.0	24 16.8	20.0	64.3	5 43 35	455.30	45	6 6 20.5	61.1	18.4	8 47 6	11 37.10
48.5	26 0.6	20.0	64.3	5 17 34	420.93	45.5	6 8 7.4	60.0	18.3	9 13 54	12 12.24
48.0	27 46.3	19.9	64.3	4 51 04	389.92	46	6 9 51.1	61.0	18.3	9 39 54	12 46.29
47.5	29 29.6	19.8	64.3	4 25 10.5	351.64	46.5	6 11 38.8	61.0	18.2	10 6 54	13 21.61
47.0	31 21.0	19.8	64.6	3 57 15	314.67	47.0	6 13 24.5	61.1	18.2	10 33 24	13 56.22
46.5	33 6.8	19.8	64.6	3 30 43.5	279.46	47.5	6 15 9.8	61.1	18.1	10 59 48	14 30.66
46.0	34 51.5	19.8	64.7	3 4 29	244.76	48	6 17 1.4	61.1	18.0	11 27 31.5	15 6.76
45.5	36 38.1	19.5	64.3	2 37 45	209.32	48.5	18 48.3	61.6	18.4	11 54 34.5	15 41.93
45.0	38 22.2	19.3	64.4	2 11 39.5	174.72	49	20 35.4	61.8	18.5	12 21 25.5	16 16.79
44.5	40 5.1	19.3	64.4	1 43 52.0	137.85	49.5	22 20.5	61.8	18.4	12 47 46.5	16 50.93
44.0	41 50.0	19.2	64.3	1 19 34.0	105.60	50	24 7.4	61.8	18.3	13 14 33.0	17 25.57
43.5	43 37.2	19.2	64.3	0 52 42	69.95	50.5	25 58.2	61.9	18.3	13 42 18.0	18 1.40

Determinaciones de los días 12 y 16—Continuación.

Día 12.

Día 16.

Micrómetro.	Hora cronométrica.	Nivel.		Ángulo.	Z - Z'.	Micrómetro.	Hora cronométrica.	Nivel.		Ángulo.	Z - Z'.
		oc.	ob.					oc.	ob.		
	<i>h. m. s.</i>			<i>° ' "</i>	<i>"</i>		<i>h. m. s.</i>			<i>° ' "</i>	<i>"</i>
43.0	5 45 22.9	19.1	64.3	0 26 12	34.78	51	6 27 45.7	61.9	18.2	14 9 18.0	18 36.19
42.5	47 7.8	19.1	64.3	0 6	0.13	51.5	29 31.8	62.0	18.2	14 34 54.0	19 9.12
42.0	48 53.0	19.0	64.4	26 28	35.13	52	31 23.5	61.9	18.0	15 3 54.0	19 46.34
41.5	50 39.3	19.0	64.3	53 7	70.50	52.5	33 10.7	62.0	18.1	15 30 46.5	20 20.76
41.0	52 23.2	19.0	64.3	1 19 10	105.07	53	34 58.8	62.0	18.1	15 57 52.5	20 55.40
40.5	54 7.9	18.8	64.1	1 45 24.5	139.89	53.5	36 50.2	62.0	18.0	16 52 55.5	22 5.50
40.0	55 54.7	18.6	64.0	2 12 11	175.41	54	38 38.5	62.0	18.1	17 47 33.0	23 14.74
39.5	57 39.2	18.4	64.0	2 38 27.5	210.26	54.5	40 30.3	62.1	18.0	18 15 43.5	23 50.31
39.0	59 22.5	18.4	64.0	3 4 17	244.49	55	42 16.3	62.1	18.0	18 42 42.0	24 24.27
38.5	6 1 6.3	18.4	64.1	3 30 18	278.97	55.5	44 8.7	62.1	18.0	19 11 39.0	25 0.63
38.0	2 55.6	18.3	64.0	3 57 42	315.26	56	45 56.3	62.1	18.0	19 39 55.5	25 36.03
37.5	4 38.3	18.3	64.1	4 23 27	349.35	56.5	47 51.8	62.1	18.0	20 7 40.5	26 10.67
37.0	6 25.9	18.2	64.0	4 50 25	385.03	57	49 44.6	62.1	17.9	20 35 48.0	26 45.69
36.5	8 10.2	18.2	64.1	5 16 34	419.60	57.5	51 35.3	62.1	17.9	21 4 21.0	27 21.12
36.0	9 56.9	18.2	64.1	5 43 19	454.95	58	53 27.5	62.1	17.8	21 31 51.0	27 55.14
35.5	11 41.9	18.2	64.1	6 9 8	489.03	58.5	55 21.4	62.1	17.7	21 59 42.0	28 29.47
35.0	13 28.3	18.0	64.0	6 38 18	524.88	59	57 11.1	62.1	17.6	22 28 43.5	29 5.15
34.5	15 13.0	18.0	64.1	7 2 18	559.14	59.5	59 2.2	62.0	17.6	22 57 22.5	29 40.24
34.0	16 59.2	18.0	64.1	7 29 11	594.53	60	7 0 58.0	62.1	17.5	23 25 28.5	30 14.53
						60.5	2 52.3	62.1	17.6	23 54 12.0	30 49.47
						61	4 44.4	62.1	17.5	24 22 58.5	31 24.33
						61.5	6 38.9	62.1	17.5	24 51 42.0	31 59.00
						62	8 33.7	62.0	17.4	25 21 39.0	32 35.01
						62.5	10 28.3	62.1	17.4		
						63	12 27.8	62.1	17.4		

$$R = 69.821'' \pm 0.081$$

$$R = 69.875'' \pm 0.015$$

$$\text{Valor definitivo de una revolución del tornillo micrométrico} = 69.898'' \pm 0.024$$

Observaciones de los pares de estrellas en los días que se expresan.

ABRIL 11 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $31^{\circ} 46'$ +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>		<i>"</i>	<i>"</i>	<i>"</i>
31	10 10 37.4	50.656	17.8	66.3	43 27 19.08						
	10 14 17.3	46.012	13.7	62.2	20 1 8.41	31 44 14.08	2 42.31	2.34	- 0.05	0.06	58.74
33	10 26 15.8	52.087	13.4	62.1	76 16 23.11						
	10 32 13.4	46.044	11.4	60.1	-12 49 31.10	31 43 26.01	3 31.20	1.14	0.12	0.08	58.51
34	10 40 33.1	39.531	15.6	64.3	19 27 38.49						
	10 47 50.3	56.907	22.2	71.3	43 45 58.42	31 36 48.46	10 7.29	3.90	0.18	.....	59.83
36	10 59 27.2	44.688	15.4	64.6	7 55 7 26						
	11 6 35.5	53.074	20.9	70.2	55 28 58.81	31 42 7.04	4 53.09	2.58	0.10	.....	58.81

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

ABRIL 11 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
37	11 15 36.3	60.011	15.2	64.9	6 37 11.00						
	11 23 48.2	40.003	15.0	65.0	57 20 6.95	31 58 38.98	-11 39.38	-0.03	0.24	.....	59.43
39	11 40 3.0	49.409	18.6	68.6	48 22 44.00						
	11 43 29.4	48.807	15.9	65.8	15 10 28.29	31 46 36.15	21.07	1.57	0.01	0.35	58.97
42	12 30 25.2	58.528	15.0	65.7	70 37 3.11						
	12 33 32.0	40.458	16.4	62.1	- 7 24 13.59	31 36 24.76	10 31.53	0.63	0.28	0.06	57.23
43	12 40 7.6	45.253	15.1	11.3	46 1 47.20						
	12 46 43.7	51.763	65.8	69.2	17 39 34.11	31 50 40.66	- 3 44.03	2.10	0.07	.....	58.67
44	12 53 29.3	54.916	15.0	65.7	17 59 22.88						
	13 1 6.4	41.027	18.5	69.2	45 50 41.08	31 55 1.98	- 8 5.42	2.00	0.15	.....	58.41
45	13 9 13.6	50.907	9.9	60.7	67 51 33.41						
	13 17 34.9	47.457	15.7	97.9	- 4 21 42.99	31 44 55.21	2 0.58	2 91	0.05	0.32	58.91
46	13 23 47.8	55.086	16.9	67.8	72 57 4.86						
	13 27 11.2	43.552	11.4	62.2	- 9 36 40.39	31 40 12.24	6 43.11	3.25	0.20	0.13	58.86
48	13 41 42.7	52.105	14.9	65.8	41 37 40.61						
	13 44 30.7	44.979	9.8	60.8	21 47 50.97	31 42 45.79	4 9.05	2.93	0.07	.....	57.84
49	13 49 51.1	46.697	11.5	62.5	54 15 26.75						
	13 55 50.1	52.247	5.9	57.0	9 24 51.94	31 50 9.57	- 3 13.97	3.17	0.06	0.07	58.45
50	14 12 21.5	53.568	12.2	53.5	46 34 52.71						
	14 14 32.2	43 968	14.6	65.9	16 47 54.77	31 41 23.71	5 35.52	-1.37	0.10	.....	57.99
51	14 27 7.1	55.397	18.0	69.1	30 50 31.84						
	14 29 38.3	40.834	23.8	74.9	33 0 17.29	31 55 24.55	- 8 28.98	3.31	0.14	.....	58.76

ABRIL 12 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
28	.....	58.730	16.6	58.5	37 15 42.38						
	.....	40.939	23.0	65.1	26 38 54.19	31 57 18.29	-10 21.78	3.71	0.18	.....	60.04
29	9 30 20.4	52.084	14.7	56.9	31 38 49.82						
	9 35 8.4	44.533	48.3	6.0	31 46 11.76	31 42 30.79	4 23.90	4.45	0.07	.....	59.21
30	9 45 13.6	48.483	56.7	14.3	54 34 19.87						
	9 52 25.1	57.013	53.2	10.7	8 49 43.68	31 42 1.77	4 58.12	-2.02	0.10	.....	58.26
31	10 10 31.1	45.969	60.1	17.5	43 27 19.79						
	10 13 54.0	50.638	60.9	18.0	20 1 8.49	31 44 14.14	2 43.18	0.37	0.05	.....	57.76
33	10 26 42.1	44.286	62.0	18.9	76 16 23.28						
	10 32 12.1	50.410	60.4	17.3	-12 49 31.15	31 43 26.06	3 34.03	0.91	0.12	0.03	59.49

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

ABRIL 12 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>
34	10 40 37.2	57.271	18.5	61.9	19 27 38.57						
	10 47 43.1	39.828	20.8	64.1	43 45 58.51	31 36 48.54	10 9.62	-1.28	0.18	.....	57.06
35	10 50 9.4	45.946	62.3	18.9	1 18 39.90						
	10 57 9.5	50.089	66.6	23.3	62 20 11.48	31 49 25.69	2 24.79	-2.54	0.05	....	58.31
36	10 59 27.2	52.171	66.2	18.7	7 55 7.30						
	11 6 31.8	43.690	66.5	23.0	55 28 59.10	31 42 3.20	4 56.40	-2.45	0.10	.....	57.25
37	11 15 35.0	37.891	61.8	.....	6 37 11.03						
	11 23 42.4	57.847	62.2	18.3	57 20 7.16	31 58 39.09	-11 37.44	-0.14	0.24	.....	61.18
39	11 40 22.3	47.373	64.2	20.0	48 22 44.20						
	11 43 33.3	48.072	62.1	17.8	15 10 28.37	31 46 36.28	0 24.43	-1.23	0.01	.....	59.50
40	11 48 13.4	49.537	62.1	17.7	54 17 45.92						
	11 59 32.2	46.414	60.0	15.2	9 19 54.96	31 48 48.94	-1 49.15	-1.37	0.04	0.12	58.32
41	12 22 13.4	45.120	62.6	17.3	41 57 8.64						
	12 24 19.6	51.355	59.9	14.7	21 29 33.86	31 43 21.35	3 37.91	-1.48	0.06	.....	57.74
42	12 30 21.0	35.011	62.2	16.9	70 37 3.38						
	12 33 49.6	53.156	63.4	18.0	-7 24 13.62	31 36 24.88	10 34.08	0.66	0.28	0.01	59.90
43	12 40 2.4	51.330	69.1	23.8	46 1 47.43						
	12 46 51.9	45.011	68.7	23.0	17 39 34.22	31 50 40.82	-3 40.84	-0.34	0.07	.....	59.57
44	12 53 36.9	41.735	60.4	14.8	17 59 23.00						
	13 1 1.0	55.550	60.5	14.7	45 50 41.31	31 55 2.15	-8 2.82	-0.05	0.15	.....	59.23
45	13 9 57.6	45.750	61.0	15.0	67 51 33.49						
	13 17 42.1	49.359	60.4	14.3	-4 21 43.00	31 44 55.34	2 6.13	-0.37	0.05	0.03	61.16
46	13 23 33.3	41.872	62.7	16.4	72 57 5.15						
	13 27 15.1	53.523	63.9	17.6	-9 36 40.43	31 40 12.86	6 47.19	0.68	0.20	0.03	60.44
48	13 41 36.5	44.758	63.0	16.5	41 37 40.83						
	13 44 38.0	51.996	64.0	17.4	21 47 51.11	31 42 45.97	4 12.96	.....	0.07	.....	58.91
49	13 49 53.9	50.696	64.8	18.3	54 15 27.01						
	13 56 15.8	45.259	68.9	22.3	9 24 51.98	31 50 9.50	-3 10.01	2.29	0.06	0.01	61.71
50	14 12 15.3	43.327	62.9	16.0	46 34 52.96						
	14 14 39.6	52.938	61.5	14.7	16 47 54.89	31 41 23.92	5 35.89	-0.70	0.10	.....	59.21
51	14 27 13.2	41.508	61.7	14.7	30 50 32.03						
	14 29 33.5	55.954	62.0	15.0	33 0 17.49	31 55 24.76	-8 24.88	-0.18	0.14	.....	59.66
52	14 35 29.3	53.501	63.6	16.6	22 26 7.08						
	14 39 44.2	42.303	62.1	15.1	40 54 45.44	31 40 26.26	6 31.36	0.86	0.11	0.02	58.59
53	14 45 26.5	42.978	61.6	14.7	46 33 45.12						
	14 52 11.3	52.417	61.5	14.5	16 49 10.08	31 41 27.60	5 29.88	-0.16	0.10	.....	57.42

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

ABRIL 12 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
54	14 57 27.2	58.658	61.9	14.8	2 30 44.13						
	14 58 54.3	36.612	62.1	15.0	60 37 30.26	31 34 7.20	12 50.19	-0.14	0.28	.....	57.83
55	15 10 4.1	47.817	63.8	16.6	42 34 9.42						
	15 13 35.6	49.500	63.8	16.7	20 57 49.76	31 45 59.59	0 58.82	0.03	0.02	0.26	58.59
56	15 15 42.9	54.691	61.8	14.6	30 0 13.70						
	15 17 24.6	42.042	59.1	12.0	33 18 57.35	31 39 35.52	7 22.07	1.51	0.12	.....	59.23

ABRIL 13 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				La'itud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
29	9 30 28.9	51.767	60.3	20.4	31 38 49.90						
	9 35 10.3	44.209	55.1	15.1	31 46 11.85	31 42 30.88	4 24.15	-3.22	0.07	.....	58.32
30	9 44 43.8	42.929	64.2	24.0	54 34 19.99						
	9 52 31.1	51.440	63.6	23.0	8 40 43.73	31 42 1.86	4 57.46	- .46	0.10	.....	58.96
31	10 10 25.2	45.948	62.1	21.6	43 27 19.92						
	10 13 50.8	50.520	66.3	25.6	20 1 8.56	31 44 14.24	2 39.79	+ 2.38	0.05	.....	56.36
33	10 26 01.9	44.768	58.4	17.0	76 16 23.45						
	.....	50.743	65.8	24.3	-12 49 31.19	31 43 26.13	3 28.83	+ 4.23	0.12	.....	59.31
34	10 40 38.8	57.263	61.7	20.0	19 27 38.65						
	10 47 40.0	39.913	53.3	11.6	43 45 58.60	31 36 48.62	10 6.38	+ 4.81	0.18	.....	59.99
35	10 50 11.9	45.697	62.0	20.3	1 18 39.91						
	10 57 11.6	49.993	56.8	14.9	62 20 11.67	31 49 25.79	2 30.15	+ 3.04	0.05	.....	58.63
37	11 15 36.9	37.763	60.4	18.4	6 37 11.07						
	11 23 46.5	57.888	53.4	11.3	57 20 7.37	31 58 39.22	-11 43.37	+ 4.08	0.23	.....	59.70
41	12 22 16.0	45.320	60.9	18.0	41 57 8.83						
	12 24 21.6	51.470	66.5	23.6	21 29 33.98	31 43 21.41	3 34.91	+ 3.19	0.06	.....	59.57
42	12 30 24.6	39.118	61.1	18.1	70 37 3.65						
	12 33 42.3	57.107	69.4	26.3	-7 24 13.66	31 36 25.00	10 28.72	+ 4.70	0.27	....	58.69
44	12 53 38.5	49.931	62.0	18.8	17 59 23.11						
	13 1 2.3	63.846	56.3	12.9	45 50 41.54	31 55 2.32	- 8 6.33	+ 3.22	0.15	.....	59.16
45	13 9 54.2	45.120	62.2	18.9	67 51 33.98						
	13 17 46.0	48.741	60.2	16.7	-4 21 43.02	31 44 55.48	2 6.55	- 1.23	0.05	.....	60.85
48	13 41 45.5	44.609	62.1	18.2	41 37 41.06						
	13 44 40.9	51.718	68.2	24.4	21 47 51.24	31 42 46.15	4 8.40	3.57	0.07	.....	58.25
49	13 49 52.7	50.963	62.1	18.2	54 15 27.28						
	13 53 3.1	45.512	62.1	18.1	9 24 52.06	31 50 9.67	- 3 10.51	- 0.03	0.06	.....	59.07

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

ABRIL 13 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>
51	14 27 15.2	40.308	61.7	17.6	30 50 32.22						
	14 29 37.6	54.777	62.2	18.3	33 0 17.68	31 55 24.95	8 25.69	— 0.35	0.14	.....	58.77
53	14 45 25.1	43.080	61.7	17.8	46 33 45.37						
	14 52 13.2	52.488	62.1	18.3	16 49 10.20	31 41 27.79	5 28.81	0.27	0.10	.....	56.97
54	14 57 29.0	58.649	61.9	18.1	2 30 44.17						
	14 59 0.1	36.704	58.0	14.3	60 37 30.54	31 34 7.96	12 46.97	2.19	0.28	.....	56.80
55	15 10 17.0	47.480	61.9	18.2	42 34 9.64						
	15 13 37.7	49.121	62.1	18.7	20 57 49.90	31 45 59.77	0 57.35	0.20	0.01	.....	57.33
36	10 59 29.6	52.018	65.8	23.9	7 55 7.34						
	11 6 56.4	43.665	59.0	17.2	55 28 59.40	31 42 3.37	4 51.94	3.85	0.11	.....	59.32
39	11 41 44.8	47.283	64.0	21.8	48 22 44.40						
	11 43 56.4	47.720	69.3	27.0	15 10 28.45	31 46 36.42	0 15.27	3.02	7.57	0.01	58.49
40	11 48 50.0	49.579	62.2	19.9	54 17 46.14						
	11 59 45.7	46.300	69.1	26.6	9 19 52.02	31 48 48.73	1 54.60	3.86	0.06	0.04	58.33
43	12 40 35.5	51.242	61.7	18.5	46 1 47.65						
	12 46 53.5	44.783	68.7	24.5	17 39 34.32	31 50 40.99	3 45.74	3.71	0.14	0.07	58.96
46	13 23 31.8	41.413	61.2	17.5	72 57 5.44						
	13 27 29.9	52.913	68.4	24.7	— 9 36 40.48	31 40 12.48	6 41.92	3.83	0.20	0.01	58.43

Resumen y discusión.

Pares.	φ	Promedios.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	φ	Promedios.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$
28	60.04	60.04			1.26	1.5876	36	58.81		0.35	0.1225		
29	59.21		0.45	0.2025			37	57.25	58.46	1.21	1.4641		
	58.31	58.76	0.45	0.2025	0.02	0.0004		59.32		0.86	0.7396	0.32	0.1024
30	58.26		0.35	0.1225			39	59.43		0.67	0.4489		
	58.96	58.61	0.35	0.1225	0.17	0.0289		61.18		1.08	1.1664	1.32	1.7424
31	58.74		1.13	1.2769			40	59.70	69.10	0.40	0.1600		
	57.74		0.13	0.0169				58.97		0.02	0.0004		
33	56.86	57.61	1.25	1.5625	1.17	1.3689	41	59.50		0.51	0.2601	0.21	0.0441
	58.51		0.59	0.3481				58.49	58.99	0.50	0.2500		
34	59.49		0.39	0.1521			42	58.32		0.01	0.0001		
	59.31	59.10	0.21	0.0441	0.32	0.1024		58.33	58.33	0.00	0.0000	0.45	0.2025
35	59.83		0.87	0.7569			43	57.74		0.91	0.8281		
	57.06		1.90	0.6900	0.18	0.0324		59.57	58.65	0.92	0.8464	0.13	0.0169
35	59.99	58.96	1.03	1.0609			44	57.23		1.38	1.9044		
	58.31		0.16	0.0256				59.90		1.29	1.6641		
35	58.63	58.47	0.16	0.0256	0.31	0.0961	45	58.69	58.61	0.08	0.0064	0.17	0.0289

Resumen y discusión—Continuación.

Pares.	φ	Promedios.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	φ	Promedios.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$
43	"	"	0.40	0.1600			50	"	"	0.61	0.3721		
	58.67		0.50	0.2500				59.21		0.61	0.3721	0.18	0.0324
	59.57		0.11	0.0121	0.29	0.0841	51	59.66		0.60	0.3600		
	58.96	59.07						58.76		0.30	0.0900		
44	58.41		0.52	0.2704				58.77	59.06	0.29	0.0841	0.28	0.0734
	59.23		0.30	0.0900			52	58.59	58.59	.....	.....	0.19	0.0361
	59.16	58.93	0.23	0.0529	0.15	0.0225							
45	58.91		1.40	1.9600			54	57.83		0.51	0.2601		
	61.16		0.85	0.7225				56.80	57.32	0.52	0.2704	1.46	2.1316
	60.85	60.31	0.54	0.2916	1.53	2.3409	53	57.42		0.22	0.0484		
46	58.86		0.38	0.1444				56.97	57.20	0.23	0.0529	1.58	2.4964
	60.44		1.20	1.4400			55	58.59		0.63	0.3969		
	58.43	59.24	0.81	0.6561	0.46	0.2116		57.33	57.96	0.63	0.3969	0.82	0.6724
48	57.84		0.49	0.2401			56	59.23	59.23	.....	.....	0.45	0.2025
	58.91		0.58	0.3364									
	58.25	58.33	0.08	0.0064	0.45	0.2025			58.78		34.8378		14.7889
49	58.45		1.29	1.6641									
	61.71		1.97	3.8809									
	59.07	59.74	0.67	0.4489	0.96	0.9216							

$$\left[\frac{1}{n} \right] = 12.162$$

$$E \delta = \pm 0.24'' \quad \varepsilon \delta = \pm 0.34''$$

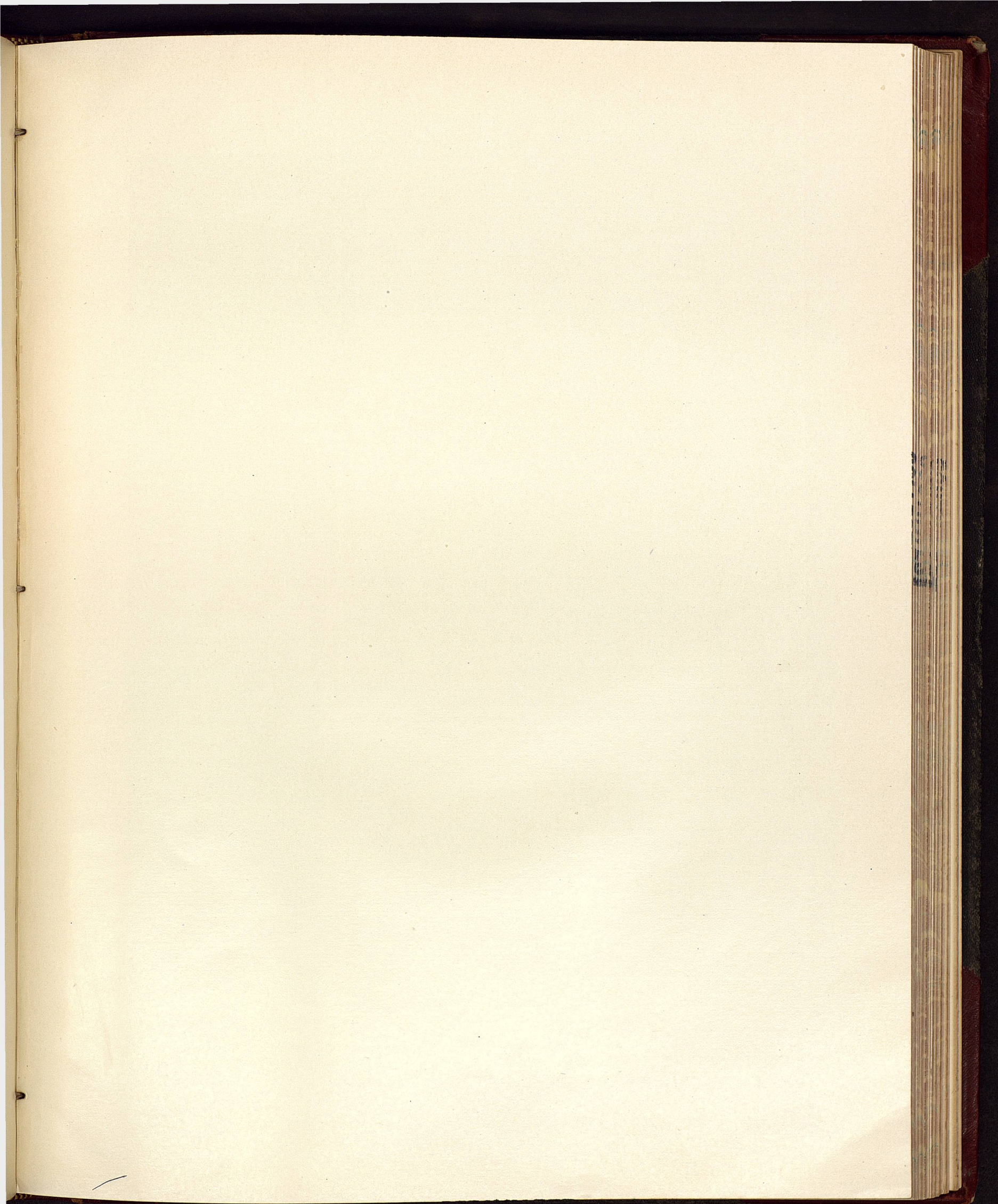
Pesos.

1 observación	=	1.00
2 "	=	1.90
3 "	=	3.00

Resultado final.

Pares.	Latitud 31° 47'	Peso.	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$	Pares.	Latitud 31° 47'	Peso.	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$
28	60.04	1	3.04	1.23	1.5129	1.5129	44	58.93	3	5.79	0.12	0.0144	0.0432
29	58.76	2	3.52	0.05	0.0025	0.0050	45	60.31	3	9.93	1.50	2.2500	6.7500
30	58.61	2	3.22	0.20	0.0400	0.0800	46	59.24	3	6.72	0.43	0.1849	0.5547
31	57.61	3	1.83	1.20	1.4400	4.3200	48	58.33	3	3.99	0.48	0.2304	0.6912
33	59.10	3	6.30	0.29	0.0841	0.2523	49	59.74	3	8.32	0.93	0.8649	2.5947
34	58.96	3	5.88	0.15	0.0225	0.0675	50	58.60	2	3.20	0.21	0.0441	0.0882
35	58.47	2	2.94	0.34	0.1156	0.2312	51	59.06	3	6.18	0.25	0.0625	0.1875
36	58.46	3	4.38	0.35	0.1225	0.3675	52	58.59	1	1.59	0.22	0.0484	0.0484
37	60.10	3	9.30	1.29	1.6641	4.9923	53	57.20	2	0.40	1.61	2.5921	5.1842
39	58.99	3	5.97	0.18	0.0324	0.0972	54	57.32	2	0.64	1.49	2.2201	4.4402
40	58.33	2	2.66	0.48	0.2304	0.4608	55	57.96	2	1.92	0.85	0.7225	1.4450
41	58.65	2	3.30	0.16	0.0256	0.0512	56	59.23	1	2.23	0.42	0.1764	0.1764
42	58.61	3	4.83	0.20	0.0400	0.1200							
43	59.07	3	6.21	0.26	0.0676	0.2028							34.9644

Latitud del punto de observación..... 31° 46' 58.81"
 Reducción al centro del Monumento 21..... + .035
 Latitud del monumento..... 31 46 58 845
 ± 0.10''





NO. 7

AGUAJE DEL MOSQUITO.

VII.

Latitud del extremo Occidental del Paralelo 31° 47'.

Método "Talcott."

Instrumentos:

Anteojo cenital.
Cronómetro N° 750 (tiempo medio).

Personal:

Observador, Felipe Valle.
Ayudante, Valentín Gama.*Valor angular de las revoluciones del micrómetro.*JULIO 8 DE 1892. 8213 B.A.C. $\delta = 86^\circ 42' 41.5''$.

Micrómetro.	Hora cronométrica.	Nivel.		Micrómetro.	Hora cronométrica.	Nivel.		Valor de R.
		oc.	ob.			oc.	ob.	
	<i>h. m. s.</i>				<i>h. m. s.</i>			
67	10 3 22.5	35.7	15.0	48	10 29 9.3	35.9	15.0	
66	4 44.8	36.3	15.6	47	30 32.0	35.9	15.0	
65	6 7.9	36.3	15.6	46	31 52.5	35.9	15.0	
64	7 28.8	36.0	15.2	45	33 12.2	35.9	15.0	
63	8 51.3	35.7	15.0	44	34 33.5	35.9	14.9	
62	10 13.2	35.8	15.0	43	35 56.0	36.0	14.9	
61	11 31.8	35.8	14.9	42	37 16.6	36.0	14.9	
60	12 52.4	35.8	14.9	41	38 38.8	35.9	14.9	
59	14 8.3	35.8	15.0	40	39 59.2	35.9	14.9	
58	15 37.5	35.8	15.0	39	41 19.4	36.0	15.0	
57	16 55.9	35.9	15.0	38	42 39.8	35.9	14.9	
56	18 21.2	35.9	15.0	37	44 3.3	36.0	15.0	
55	19 42.2	35.8	14.9	36	45 23.2	35.9	14.9	
54	21 0.5	36.0	15.0	35	46 43.0	36.0	14.9	
53	22 23.4	36.0	15.0	34	48 4.7	35.9	14.9	
52	23 44.2	36.0	15.0	33	49 25.3	36.0	14.9	
51	25 7.5	36.0	14.9	$\Delta t = - 4 19.0$				
50	26 28.9	35.9	15.0					
49	27 45.6	36.0	15.0					

 $R = 63.975'' \pm 0.021.$ *Observaciones de los pares de estrellas en los días que se expresan.*

JULIO 5 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	re. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>" "</i>			<i>" "</i>
51	14 27 59.9	42.549	0.1	29.2	30 50 47.51	31 55 40.55	- 8 42.04	-0.15	-0.14	-0.09	58.12
	14 29 37.2	57.470	31.2	1.6	33 0 33.55						
52	14 35 29.95	54.627	8.6	38.6	22 26 20.47	31 40 42.06	+ 6 16.99	-1.18	+0.11	.....	57.99
	14 39 32.8	43.852	41.0	10.9	40 55 3.66						
53	14 45 28.6	45.559	39.7	9.6	46 34 4.54	31 41 43.36	5 15.55	-0.15	0.09	.....	58.86
	14 52 7.7	54.578	9.1	39.6	16 49 22.19						
54	14 58 14.8	60.080	6.3	36.8	- 2 30 51.02	31 34 21.43	12 36.85	-2.72	0.28	-0.12	55.72*
	14 59 20.1	38.448	42.2	11.8	60 37 51.85						
55	15 10 15.0	49.717	42.5	12.2	42 34 29.17	31 46 16.51	0 42.58	-0.37	+0.12	.....	58.83
	15 13 33.1	50.937	11.6	42.0	20 58 3.86						
56	15 15 45.5	54.998	41.9	11.4	30 0 30.62	31 39 52.95	7 6.50	-1.15	0.12	.....	58.42
	15 17 28.3	42.802	44.1	13.8	33 19 15.28						

* El resultado del par N° 54 no se tuvo en cuenta al sacar los promedios

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

JULIO 5 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>° ' "</i>	<i>"</i>			<i>"</i>
57	15 20 44.3	41.750	40.4	10.0	15 48 27.60						
	15 25 56.7	58.542	41.2	10.7	45 5 8.10	31 56 47.85	- 9 47.51	-0.38	-0.18	.....	59.78
58	15 27 39.5	54.510	44.9	14.3	- 0 49 17.36						
	15 29 33.6	54.050	48.9	18.4	64 34 25.79	31 52 34.21	- 5 33.78	-2.04	0.12	.....	58.27
59	15 32 9.7	47.766	27.8	-2.5	16 28 35.35						
	15 34 50.2	50.961	39.1	8.8	47 9 17.32	31 48 56.33	- 1 51.78	-5.65	0.05	-0.04	58.81
60	15 41 12.21	53.771	40.6	10.1	7 41 26.24						
	15 44 13.2	45.190	42.0	11.7	55 42 32.48	31 41 59.36	+ 5 0.23	-0.83	0.11	.....	58.87
61	15 49 52.1	52.195	40.7	9.95	20 37 39.00						
	15 51 53.0	49.220	41.7	11.00	42 52 52.21	31 45 15.61	1 44.09	-0.51	0.03	.....	59.21
62	15 56 5.9	56.951	48.3	17.9	55 3 22.65						
	16 3 20.8	41.043	41.8	11.0	8 49 14.25	31 56 18.45	- 9 16.58	-3.35	+0.17	0.20	58.49

JULIO 6 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 46' +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>	<i>R.</i>			<i>° ' "</i>	<i>° ' "</i>					<i>"</i>
50	14 12 19.9	43.803	38.0	14.4	46 35 10.86						
	14 14 40.8	52.927	39.2	15.7	16 48 5.96	31 41 38.41	+ 5 19.23	+ 0.62	+ 0.10	.....	58.37
51	14 27 11.8	43.022	37.0	13.1	30 50 47.53						
	14 29 40.2	57.950	36.0	12.0	33 0 33.64	31 55 40.58	- 8 42.29	+ 0.52	+ 0.15	-0.11	58.78
53	15 45 31.4	44.784	36.1	12.3	46 34 4.65						
	14 52 1.9	53.729	39.1	14.9	16 49 22.28	31 41 43.46	+ 5 12.96	1.39	0.94	.....	57.91
54	14 57 32.1	60.506	38.0	13.7	+ 2 30 51.09						
	14 59 59.2	38.923	35.8	11.3	60 37 51.97	31 34 21.53	-12 35.13	1.70	0.28	.....	58.87
55	15 10 20.0	49.189	36.0	11.7	42 34 29.30						
	15 13 37.1	50.341	38.9	14.4	20 58 3.98	31 46 16.44	0 40.31	1.39	.....	0.01	58.34
56	15 15 40.1	54.852	36.9	12.4	30 0 30.76						
	15 17 35.1	42.711	36.6	12.1	33 19 35.41	31 39 53.08	7 4.78	0.15	0.12	.....	58.14
57	15 20 44.3	41.686	36.6	12.1	15 48 27.71						
	15 26 7.0	58.538	36.0	11.4	48 5 8.25	31 56 47.98	- 9 49.61	0.32	- 0.18	.....	58.52
58	15 28 3.4	44.759	38.6	14.0	- 0 49 17.29						
	15 29 31.0	54.394	38.3	13.7	64 34 25.95	31 52 34.33	- 5 37.11	+ 0.15	- 0.13	.....	57.25
59	15 31 33.8	47.692	31.3	6.7	16 28 35.48						
	15 34 51.6	51.083	27.7	3.0	47 9 17.47	31 48 56.47	- 1 58.64	+ 1.83	0.033	.....	59.62
60	15 40 17.8	53.479	37.7	13.0	7 41 26.34						
	15 45 07.1	44.991	33.3	8.6	55 42 32.66	31 41 59.50	4 56.97	2.20	0.10	.....	58.77
61	15 49 42.3	52.162	37.6	12.9	20 37 39.15						
	15 52 01.0	49.243	37.0	12.2	42 52 52.39	31 45 15.77	1 42.13	0.32	0.03	.....	58.25
62	15 54 20.9	57.473	38.1	13.4	55 3 22.85						
	16 3 25.3	41.460	38.3	13.4	8 49 14.34	31 56 18.59	- 9 20.26	- 0.19	+ 0.10	.....	58.24

Observaciones de los pares de estrellas en los días que se expresan—Continuación.

JULIO 7 DE 1892.

Pares.	Tiempo sidéreo de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 48'. +
			oc.	ob.			m.	n.	r. m.	refr.	
	<i>h. m. s.</i>				<i>° ' "</i>		<i>' "</i>	<i>" "</i>			<i>" "</i>
50	14 12 26.3	44.200	15.1	35.2	46 35 10.97						
	14 14 35.0	53.232	44.0	23.9	16 48 6.05	31 41 38.51	5 16.01	4.40	0.10	.....	59.02
53	14 45 36.1	45.122	35.4	13.9	46 34 4.76						
	14 52 6.6	54.081	37.0	15.2	16 49 22.37	31 41 43.56	5 13.45	0.72	0.09	.....	57.83
54	14 57 41.5	60.680	35.1	13.4	2 30 51.16						
	14 58 18.9	38.993	38.4	16.7	60 37 52.10	31 34 21.63	12 38.77	- 1.65	0.28	.....	59.03
55	15 10 26.14	49.770	33.1	11.3	42 34 29.44						
	15 13 37.0	50.948	33.0	11.0	20 58 4.09	31 46 16.76	0 41.21	- 0.01	-0.01	.....	57.88
56	15 15 39.5	55.510	34.0	12.0	30 0 30.90						
	15 17 33.1	43.300	30.7	15 0	33 19 15.54	31 39 53.22	7 7.20	- 0.62	0.12	.....	59.86
57	15 20 44.5	41.569	35.7	13.7	15 48 27.83						
	15 26 5.4	58.353	39.6	17.6	48 5 8.41	31 56 48.12	- 9 47 30	- 1.95	-0.17	.....	58.69
58	15 27 49.4	45.067	33.95	11.95	-0 49 17.21						
	15 29 9.2	54.637	36.0	14.0	64 34 26.11	31 52 34.45	- 5 34.83	- 1.02	-0.12	.....	58.47
59	15 31 28.0	47.480	17.5	39.5	16 28 35.62						
	15 34 59.9	50.882	42.9	20.9	47 9 17.61	31 48 56.62	- 1 56.93	1.70	-0.03	.....	57.95
60	15 40 52.1	53.269	36.6	14.4	7 41 26.41						
	15 45 13.23	44.636	44.5	22.2	55 42 32.84	31 41 59.64	5 2.05	- 3.92	0.10	.....	57.86
61	15 48 16.3	51.877	35.8	13.5	20 37 39.29						
	15 52 37.6	48.887	40.0	17.7	42 52 52.57	31 45 15.93	1 44.61	- 2.07	0.03	.....	58.49
62	15 54 43.4	57.568	35.5	13.3	55 3 23.05						
	16 2 41.7	41.539	36.0	13.6	8 49 14.42	31 56 18.73	- 9 20.82	0.19	0.20	.....	57.92

Todos los pares observados hasta aquí, en esta estación y en las anteriores, en las que se usó el método "Talcott", fueron tomados de la lista formada por el Sr. Safford, y dada á la Comisión Mexicana por el Sr. T. A. Mosman; dicha lista se incluye en las páginas 208 á 211, y los números que llevan en ella los pares corresponden á los que tienen en los registros anteriores.

Resumen y discusión.

Pares.	φ	Promedios.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	Latitud 31° 46' +	Peso.	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$
50	58.37	"	0.33	0.1089			50	58.70	0.7	6.09	0.20	0.0400	0.0280
	59.02	58.70	0.32	0.1024	0.21	0.0441	51	58.25	1.0	8.25	0.25	0.0625	0.0625
51	58.12		0.13	0.0169			52	57.99	0.4	3.20	0.51	0.2601	0.1014
	58.78		0.53	0.2809			53	58.20	1.0	8.20	0.30	0.0900	0.0900
	57.84	58.25	0.41	0.1681	0.24	0.0576	54	58.95	0.7	6.27	0.45	0.2025	0.1417
52	57.99	.....	.....	.....	0.50	0.2500	55	58.36	1.0	8.36	0.14	0.0196	0.0196
53	58.86		0.66	0.4356			56	58.81	1.0	8.81	0.31	0.0961	0.0961
	57.91		0.29	0.0841			57	59.00	1.0	9.00	0.50	0.2500	0.2500
	57.84	58.20	0.36	0.1296	0.29	0.0841	58	58.00	1.0	8.00	0.50	0.2500	0.2500
54	58.87		0.08	0.0064			59	58.79	1.0	8.79	0.29	0.0841	0.0841
	59.03	58.95	0.08	0.0064	0.46	0.2116	60	58.50	1.0	8.50	0.00	0.0000	0.0000
55	58.84		0.48	0.2304			61	58.65	1.0	8.65	0.15	0.0225	0.0225
	58.35		0.01	0.0001			62	58.22	1.0	8.22	0.28	0.0784	0.0784
	57.89	58.36	0.47	0.2209	0.13	0.0169							Σ 1.2269
56	58.42		0.39	0.1521			Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
	58.14		0.67	0.4489									
	59.86	58.81	1.05	1.1025	0.32	0.1024							
57	58.69		0.31	0.0961									
	58.52		0.48	0.2304			Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
	59.78	59.00	0.78	0.6084	0.51	0.2601							
58	58.27		0.27	0.0729									
	57.25		0.75	0.5625									
	58.47	58.00	0.47	0.2209	0.49	0.2401	Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
59	58.81		0.02	0.0004									
	59.62		0.97	0.9409									
	57.95	58.79	0.84	0.7056	0.30	0.0900							
60	58.87		0.37	0.1369			Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
	58.77		0.27	0.0729									
	57.86	58.50	0.64	0.4096	0.01	0.0001							
61	59.21		0.56	0.3136									
	58.25		0.40	0.1600			Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
	58.50	58.65	0.15	0.0225	0.16	0.0256							
62	58.49		0.27	0.0729									
	58.25		0.03	0.0009									
	57.93	58.22	0.29	0.0841	0.27	0.0729	Latitud del punto de observación.. 31° 46' 58.50" m. Reducción al monumento por 35.7. + 1.16 Latitud del monumento..... 31° 46' 59.66" ± 0.06''						
		58.49		8.2057		1.4555							

$$\left[\frac{1}{n} \right] = 5.330$$

$$E \delta = \pm 0.15''$$

	Pesos.			
1 observación	=	5.4	=	0.41
2 “	=	9.7	=	0.74
3 “	=	13.1	=	1.00

VIII.

Latitud del extremo Oriental del Paralelo 31° 20' (Monumento 53).

Distancias cenitales meridianas combinadas por el método "Talcott."

Instrumentos.

Altazimut de 12 pulgadas.
Cronómetro N° 750 (tiempo medio).

Personal.

Observador, Felipe Valle.
Ayudante, Carlos Cuzcyn.

Fechas.	Estrellas.	δ	Círculo vertical.	Nivel.		Latitud.
				cc.	ob.	
1892.						
Agosto 4..	2377 Gr.....	56 58 37.9	304 50 42.05	105.8	39.6	° ' "
" 4..	χ Ophiuchi.....	9 32 35.4	300 59 32.15	109.9	42.9	31 20 1.43
" 4..	χ Draconis.....	72 41 15.2	320 33 0.85	102.2	32.0	
" 4..	1 Aquilae.....	— 8 19 11.3	318 50 53.30	117.7	47.3	4.84
" 4..	α Lyrae.....	38 41 5.9	286 33 3.00	102.8	32.4	
" 4..	110 Herculis.....	20 26 38.3	290 5 12.2	116.0	45.0	4.95
" 4..	λ Lyrae.....	— 5 2 38.7	315 34 34.45	108.9	37.0	
" 4..	δ Draconis.....	67 28 22.5	315 20 9.90	111.6	39.7	2.98
" 4..	H Sagittaris.....	— 25 7 18.3	335 38 27.85	109.0	36.2	
" 4..	χ Urs. min.....	68 58 18.9	336 49 19.30	171.7	38.9	2.56
" 4..	β Aquilae.....	6 8 17.5	304 23 39.65	109.8	36.3	
" 4..	ψ Cygni.....	52 9 12.3	300 1 18.6	112.3	38.3	19 56.84
" 4..	κ Cephei.....	77 23 11.4	325 14 48.45	109.7	34.3	
" 4..	β Capricorni.....	— 15 7 16.0	325 38 45.80	114.0	38.9	59.01
						31 20 1.81 $\pm$ 0.75
" 5..	3 Herculis.....	31 48 0.3	278 44 45.3	45.0	107.9	
" 5..	ϵ Herculis.....	31 5 12.9	278 57 47.5	43.6	107.0	31 20 5.97
" 5..	β Lyrae.....	43 48 19.7	266 44 33.1	44.0	113.6	
" 5..	ϵ Aquilae.....	14 55 21.8	262 48 20.2	38.8	108.1	2.05
" 5..	λ Aquilae.....	— 5 2 38.6	242 50 36.3	40.0	109.0	
" 5..	δ Draconis.....	67 28 22.7	243 4 48.05	47.0	115.3	1.42
" 5..	h Sagitari.....	25 7 18.4	222 46 40.05	39.7	107.8	
" 5..	d Urs. min.....	88 58 19.22	221 35 34.20	47.9	116.0	0.30
" 5..	β Aquilae.....	6 8 17.7	254 1 22.75	38.9	108.7	
" 5..	ψ Cygni.....	52 9 12.6	258 23 41.95	77.9	117.2	2.32
" 5..	κ Cephei.....	77 23 11.8	233 10 14.7	48.9	116.0	
" 5..	β^2 Capricor.....	— 15 7 15.96	232 46 16.5	40.3	107.4	1.74
" 5..	α Delfini.....	15 31 57.7	263 25 3.65	29.4	98.8	
" 5..	α Cygni.....	44 53 44.5	265 38 58.40	50.9	120.0	0.37
" 5..	1879 12 Y. C.....	80 8 50.1	230 21 38.9	45.0	116.0	
" 5..	α Capricorni.....	— 17 40 31.6	230 14 1.7	37.0	108.3	1.94
" 5..	ν Aquarii.....	— 11 48 24.9	236 5 4.6	37.1	108.4	
" 5..	2277 Br.....	77 41 18.2	232 52 9.85	44.9	116.3	0.06
						31 20 1.80 $\pm$ 0.39

VIII.—*Latitud del extremo Oriental del Paralelo 31° 20' (Monumento 53)—Continuación.*

Fechas.	Estrellas.	δ	Círculo vertical.	Nivel.		Latitud.
				oc.	ob.	
1892.						
Agosto 11..	β Draconis.....	52 23 1.4	300 14 10.15	10.98	42.9	
„ 11..	α Ophiuchi.....	12 38 21.7	297 53 1.35	99.0	32.2	31 20 0.47
„ 11..	μ Herculis.....	27 47 7.1	282 44 25.2	102.0	35.9	
„ 11..	α Herculis.....	37 16 0.8	285 7 22.3	109.0	41.8	0.97
„ 11..	δ Urs. min.....	86 36 56.62	334 27 7.95	109.7	42.3	
„ 11..	μ Sagit.....	— 21 5 18.10	331 35 49.25	105.7	38.6	0.78
„ 11..	χ Draconis.....	72 41 16.86	320 32 1.9	108.2	40.9	
„ 11..	I Aquilae.....	— 8 19 11.00	318 50 7.65	102.3	34.8	1.64
„ 11..	α Lyrae.....	38 41 7.4	286 32 29.7	108.6	40.3	
„ 11..	110 Herculis.....	20 26 39.5	290 4 49.9	104.8	36.0	3.37
„ 11..	R Lyrae.....	43 48 21.2	291 39 40.6	107.0	38.1	
„ 11..	ε Aquilae.....	14 55 22.6	295 35 57.1	107.9	39.0	2.57
„ 11..	λ Aquilae.....	— 5 2 38.2	315 33 37.7	104.8	35.9	
„ 11..	δ Draconis.....	67 28 24.5	315 19 20.45	105.9	36.5	1.45
„ 11..	h Sagitari.....	— 25 7 18.60	335 37 36.05	105.9	35.0	
„ 11..	λ Urs. min.....	25 58 20.98	336 48 31.25	107.0	36.7	2.38
						31 20 1.70 $\pm$ 0.23

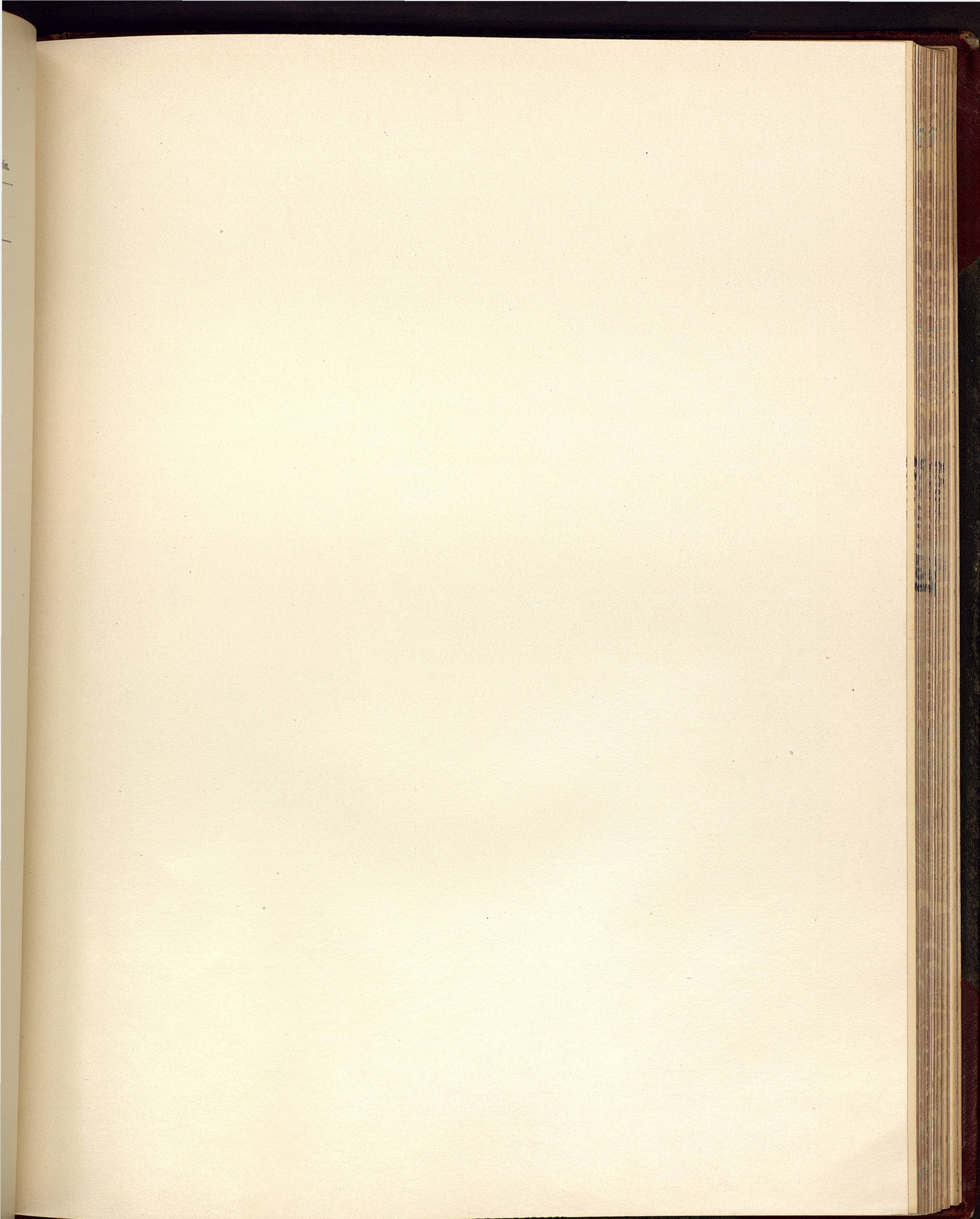
Promedio.

Día 4.....	31° 20' 1.81" $\pm$ 0.75
„ 5.....	1.80 0.39
„ 11.....	1.70 0.23

1.73" $\pm$ 0.19"

Reducción al monumento..... + 0.10

Latitud del monumento 53..... 31° 20' 1.83"





CAMPAMENTO DE LA SECCIÓN MEXICANA, EN SAN BERNARDINO, ARIZONA.

IX.

Latitud del Monumento N^o XIII actualmente N^o 64.

Método "Talcott."

Instrumentos :

Telescopio cenital.
Cronómetro N^o 750 (tiempo medio).

Personal :

Observador, Felipe Valle.

Valor angular de las revoluciones del micrómetro.

SEPTIEMBRE 19 DE 1892. α Ursa min. $R = 1 \ 20 \ 0.5$. $\delta = 83 \ 44 \ 1.3$.

Micrómetro.	Hora cronométrica.	Nivel.		Micrómetro.	Hora cronométrica.	Nivel.		Valor de R.
		oc.	ob.			oc.	ob.	
	<i>h. m. s.</i>				<i>h. m. s.</i>			
41.5	7 33 23.6	12.0	36.4	51.5	8 8 33.4	11.0	35.8	$R = 02.95'' \pm 0.023''$
42.0	35 3.4	11.6	36.0	52.0	10 24.8	11.0	35.8	
42.5	36 49.4	11.1	35.8	52.5	12 12.1	11.0	35.7	
43.0	38 34.5	11.1	35.7	53.0	13 56.5	11.0	35.7	
43.5	40 22.2	11.1	35.7	53.5	15 42.8	11.0	35.8	
44.0	42 5.4	11.4	35.7	54.0	17 30.7	11.0	35.8	
44.5	43 47.0	11.0	35.8	54.5	19 15.3	11.0	35.8	
45.0	45 38.5	11.0	35.8	55.0	21 8.0	11.0	35.8	
45.5	47 22.3	11.0	35.8	55.5	22 55.4	11.0	35.8	
46.0	49 8.5	11.0	35.8	56.0	24 40.6	10.95	35.8	
46.5	50 51.6	10.9	35.7	56.5	26 35.5	10.95	35.75	
47.0	52 41.0	11.0	37.8	57.0	28 33.2	11.0	35.8	
47.5	54 25.8	11.0	35.8	57.5	30 7.8	10.95	35.8	
48.0	56 11.2	11.0	35.8	58.0	31 55.8	10.95	35.8	
48.5	57 58.4	11.0	35.8	58.5	33 50.7	10.95	35.75	
49.0	59 51.0	11.0	35.8	59.0	35 39.5	11.00	35.8	
49.5	8 1 28.5	11.0	35.8	59.5	37 27.5	10.95	35.8	
50.0	3 19.4	11.0	35.8	60.0	39 20.5	10.95	35.8	
50.5	5 3.0	11.0	35.8	41.0	41 7.5	11.0	35.75	
51.0	6 47.1	11.0	35.8	$\Delta t =$	— 5 52.4			

SEPTIEMBRE 15 DE 1892.*

Pares.	Tiempo cronométrico de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $31^{\circ} 20' +$
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>
21	8 9 28.5	44.657	37.4	10.0	10 8 44.82						
	11 26.4	54.791	40.7	13.4	52 42 49.85	31 25 47.33	— 5 54.69	—1.67	+11.71	—0.38	2.82
22	8 14 53.0	43.192	41.0	13.8	11 8 15.65						
	19 57.2	55.315	40.6	13.4	51 45 35.63	31 26 55.64	— 7 4.31	+0.21	+12.10	+0.16	3.80
23	8 28 56.8	50.247	37.8	10.3							
	31 5.5	49.394	30.7	3.4	.....	31 20 21.73	— 0 29.86	—3.50	+13.36	+0.04	1.77
24	8 34 4.0	41.622	39.2	12.0							
	38 26.3	59.762	40.0	12.6	.....	31 30 23.94	—10 34.49	—0.35	+13.54	+0.27	2.91
31	9 49 8.1	39.630	39.0	11.1							
	55 5.6	61.880	41.4	13.7	.....	31 32 49.20	—12 58.75	—1.25	+15.16	+0.34	4.70

IX.—*Latitud del Monumento N° XIII actualmente N° 64*—Continuación.

SEPTIEMBRE 15 DE 1892.*

Pares.	Tiempo cronométrico de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 20' +
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>					<i>° ' "</i>	<i>"</i>	<i>"</i>		<i>"</i>	<i>"</i>
32	10 1 27.0	60.259	39.9	12.1							
	4 32.5	41.013	37.1	9.2	.....	31 31 3.33	-11 13.36	-1.42	+15.31	+0.99	4.85
35	10 49 0.2	39.149	38.9	10.3							
	29.0	60.462	37.7	9.3	.....	31 7 18.00	+12 25.96	-0.55	+15.74	-0.87	-1.17
36	10 58 54.0	46.537	44.05	15.8							
	4 4.0	54.231	43.8	15.3	.....	31 15 17.92	+ 4 20.29	+0.08	+15.83	-0.48	2.74
37	11 10 42.0	57.241	39.5	11.0							
	11 15 17.5	43.408	39.1	10.9	.....	31 27 50.80	- 8 4.16	-0.13	+15.88	+0.21	2.60
38	11 23 4.5	39.054	38.2	10.0							
	11 35 47.1	59.139	39.4	11.0	.....	31 31 29.08	-11 42.98	-0.55	+15.35	0.00	0.90
39	11 39 49.5	41.127	37.6	9.2							
	11 42 34.0	59.218	40.3	12.2	.....	31 30 22.31	-10 33.19	-1.42	+16.04	+0.27	4.01
	= -5 49.3										

* En los cálculos del Sr. Valle, sólo se encuentran las semisumas de las declinaciones, tanto en los cálculos relativos al 15 como en los siguientes, por tal motivo no aparecen en los registros correspondientes.

En la columna encabezada *r. m.*, se encuentran las correcciones aplicadas por el Sr. Valle á cada resultado, además de las de micrómetro, nivel y reducción al meridiano.

SEPTIEMBRE 16 DE 1892.

Pares.	Hora cronométrica de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 19° 20' +
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>					<i>° ' "</i>	<i>"</i>	<i>"</i>		<i>"</i>	<i>"</i>
23		50.025	38.2	16.1							
		49.190	34.0	12.0	.....	31 20 35.20	- 0 29.22	-2.08	.....	+0.03	3.93
25	8 37 33.5	63.075	37.7	15.9							
		38.720	40.6	18.7	.....	31 5 52.09	+14 12.43	-1.42	+ 0.26	-1.12	2.74
26		60.557	34.0	12.0							
		39.230	33.2	11.2	.....	31 32 29.31	-12 26.45	-0.40	.....	+0.31	2.77
27		56.028	33.2	11.2							
		44.498	33.8	11.9	.....	31 13 19.46	+ 6 43.55	-0.33	.....	-0.17	2.51
28		55.170	38.6	16.6							
		43.452	38.4	16.1	.....	31 26 54.56	- 6 50.13	-0.17	.....	+0.14	4.40
31	9 45 1.5	38.706	38.3	15.8							
		61.075	36.9	14.5	.....	31 33 4.52	-13 2.92	+0.67	-0.22	+0.57	2.62
33		44.280	33.0	10.0							
		56.236	34.0	10.8	.....	31 27 1.10	- 6 58.46	-0.45	.....	+0.17	2.36
34		56.330	36.9	13.3							
		43.938	38.1	14.4	.....	31 12 49.87	+ 7 13.37	-0.57	.....	-0.17	2.50

IX.—*Latitud del Monumento No XIII actualmente No 64—Continuación.*

SEPTIEMBRE 16 DE 1892.

Pares.	Hora cronométrica de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $19^{\circ} 20'$ +
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>					<i>° "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>	<i>" "</i>
35		40.308	36.0	12.2							
	10 47 9.0	61.743	35.0	11.0	.....	31 7 33.94	+12 30.23	-0.55	+0.21	-0.54	3.29
36		46.507	38.2	14.2							
		54.176	37.1	13.0	.....	31 15 33.96	+ 4 28.42	-0.60	.....	-0.11	1.67
37		57.124	36.8	12.4							
		43.397	34.0	9.9	.....	31 28 6.88	- 8 0.45	-1.33	.....	+0.26	5.36
38		39.941	37.0	12.9							
		49.947	38.7	14.2	.....	31 31 44.83	-11 44.20	-0.75	.....	+0.28	0.16

m. s.

$$\Delta t = -5 \ 50.6.$$

Sólo una de las estrellas de los pares 25, 31 y 35 se observó fuera del meridiano, á la hora cronométrica indicada.

SEPTIEMBRE 17 DE 1892.

Pares.	Hora cronométrica de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $19^{\circ} 20'$ +
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>	<i>R.</i>				<i>° ' "</i>	<i>' "</i>				<i>" "</i>
15	6 58 42.5	49.011	35.8	12.0							
	7 3 37.4	51.089	37.0	13.1	.....	31 18 49.11	+ 1 12.73	+ 0.57	.....	-0.04	2.37
16 bis	7 6 8.0	39.772	35.2	11.1							
		59.229	36.2	12.0	.....	31 31 22.78	-11 20.99	-0.47	.....	+0.53	1.85
17	7 16 41.9	51.363	13.4	37.9							
	7 23 32.1	50.103	35.8	11.2	.....	31 20 49.03	- 44.10	-1.08	.....	+0.02	3.87
18	7 28 28.6	49.908	12.6	37.5							
		50.046	36.0	11.2	.....	31 19 58.36	+ 4.36	-0.60	.....	0.00	2.12
20 bis	7 51 5.2	50.550	37.9	13.0							
	58 24.9	49.060	39.95	15.0	.....	31 19 12.62	+ 52.15	-1.01	+0.02	-0.04	3.74
21	8 1 37.8	44.361	36.6	11.8							
		54.537	39.7	14.9	.....	31 25 59.22	- 5 56.16	-1.55	-0.11	+0.26	1.66
22	8 6 53.0	44.096	38.2	13.6							
	8 12 13.5	56.189	43.0	18.3	.....	31 27 7.93	- 7 3.25	-2.37	-0.14	+0.28	2.45
23	8 21 6.5	50.779	36.0	11.4							
	8 23 13.0	49.799	38.8	14.1	.....	31 20 35.30	- 0 34.30	+1.88	-0.01	+0.03	2.90
24	8 26 32.4	41.511	37.7	13.0							
	8 30 10.5	59.629	41.2	16.7	.....	31 30 37.70	-10 34.13	-1.80	-0.18	+0.46	2.05
25	8 33 7.0	61.863	38.8	14.0							
	8 39 13.3	37.502	43.0	18.3	.....	31 5 52.21	+14 12.64	-1.63	+0.26	-0.61	2.87
26	8 43 40.8	60.271	37.3	12.7							
		34.748	34.3	9.7	.....	31 32 29.43	-12 25.40	-1.42	+0.22	+0.02	2.85

IX.—*Latitud del Monumento No XIII actualmente No 64*—Continuación.

SEPTIEMBRE 17 DE 1892.

Pares.	Hora cronométrica de la bisección.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 19° 20' +
			oc.	ob.			m.	n.	r. m.	r.	
	<i>h. m. s.</i>	<i>R.</i>				<i>° ' "</i>	<i>' "</i>				<i>"</i>
27	8 50 16.5	55.689	35.7	11.0							
	8 56 43.6	44.131	38.1	13.3	.....	31 13 19.59	+ 6 44.53	-1.18	+0.13	-0.29	2.78
33		43.260	37.3	12.6							
		55.243	38.1	13.2	.....	31 27 1.22	- 6 59.41	-0.35	-0.13	+0.31	1.64
34		56.309	39.4	14.4							
	10 35 51.8	43.951	40.7	15.6	.....	31 12 50.07	+ 7 12.53	-0.62	-0.14	+0.59	2.43
35	10 41 10.0	39.190	10.2	35.1							
	42 44.4	60.573	32.7	7.8	.....	31 7 34.12	+12 28.40	-1.20	+0.22	-0.52	1.02
36	10 51 6.5	46.380	38.0	13.0							
		54.040	37.05	12.1	.....	31 15 34.12	+ 4 28.10	+ 0.47	+0.08	+0.20	2.97
37		57.068	36.5	11.5							
	11 7 28.4	43.270	34.3	9.5	.....	31 28 6.59	- 8 2.93	-1.05	-0.14	+0.34	2.81
38	11 14 38.6	39.753	36.5	11.5							
	26 59.5	59.829	37.6	12.3	.....	31 31 45.04	-11 42.66	- 0.22	-0.47	+0.50	2.19
39	11 31 53.8	41.341	35.7	10.2							
	34 42.3	59.530	36.0	10.9	.....	31 30 38.77	-10 36.62	+0.25	-0.18	-0.05	2.17
40	11 37 31.4	35.937	36.5	11.0							
	11 41 8.6	64.609	36.8	11.2	.....	31 36 48.34	-16 43.52	+0.10	-0.29	+0.50	5.13
41	11 50 14.6	40.157	37.05	16.6							
	12 2 7.6	60.858	36.5	11.0	.....	31 7 58.58	+12 4.54	-1.54	+0.22	-0.50	1.30
42	12 5 17.0	58.417	36.6	11.0							
		40.505	35.95	10.4	.....	31 30 27.48	-10 26.92	+0.30	-0.20	-0.15	0.51

 $\Delta t = -5 \text{ m. } 50.7 \text{ s.}$

Correcciones á las declinaciones medias, de las estrellas de los pares, para obtener las declinaciones aparentes.

Pares.	$\Delta \delta$ Septiembre 15.	$\Delta \delta$ Septiembre 25.	Pares.	$\Delta \delta$ Septiembre 15.	$\Delta \delta$ Septiembre 25.	Pares.	$\Delta \delta$ Septiembre 15.	$\Delta \delta$ Septiembre 25.
15	" 12.36 8.79	" 12.82 9.04	25	" 12.61 14.64	" 13.45 16.07	35	" 15.82 15.67	" 18.28 17.05
16	11.90 8.86		26	15.41 11.35	17.28 12.05	36	15.71 15.95	18.28 17.32
17	11.36 11.38	11.92 12.11	27	11.53 15.62	12.47 17.44	37	15.65 16.10	18.23 17.64
18	12.85 10.29	13.57 10.85	28	15.65 13.02	17.43 14.02	38	16.21 14.88	17.41 17.79
19	10.74 13.41	11.11 14.33	29	15.52 14.14	17.38 15.42	39	16.05 16.02	18.16 18.17
20	13.19 11.58	14.13 12.30	30	23.98 24.71	16.04 17.37	40	16.35 15.53	18.14 18.04
21	8.32 15.10	8.71 16.50	31	14.45 15.88	15.77 17.77	41	14.89 16.89	17.66 18.37
22	8.96 15 25	9.38 16.72	32	15.82 14.79	17.92 16.14	42	13.56 17.39	16.68 18.51
23	14.09 12.62	15.33 13.57	33	14.25 15.75	15.26 18.38	16 bis	9.10 12.67	9.40 13.23
24	13.03 14.04	14.08 15.30	34	15.01 15.64	16.04 18.33	20 bis	9.79 14.48	10.30 15.63

Resultados de las observaciones de los pares que se indican.

Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$
15	" 2.37	" 2.37			0.31	0.0961	25	" 2.74	"	0.06	0.0036		
16 bis	1.85	1.85			0.83	0.6889		2.87	2.80	0.07	0.0049	0.12	0.0144
17	3.87	3.87			1.19	1.4141	26	2.77 2.85	2.81	0.04 0.04	0.0016 0.0016	0.13	0.0169
18	2.12	2.12			0.56	0.3136	27	2.51 2.78	2.64	0.13 0.14	0.0169 0.0196	0.04	0.0016
20 bis	3.74	3.74			1.06	1.1236	28	4.40	4.40			1.72	2.9584
21	2.82 1.66	2.24	0.58 0.58	0.3364 0.3364	0.44	0.1936	31	4.70	3.66	1.04 1.04	1.0816 1.0816	0.98	0.9604
22	3.80 2.45	3.13	0.67 0.68	0.4489 0.4624	0.45	0.2025	32	4.15	4.15			1.47	2.1609
23	1.77 3.93 2.90	2.87	1.10 1.06 0.03	1.2100 1.1236 0.0009	0.19	0.0361	33	2.36 1.64	2.00	0.36 0.36	0.1296 0.1296	0.68	0.4624
24	2.91 2.05	2.48	0.43 0.43	0.1849 0.1849	0.20	0.0400	34	2.50 2.43	2.46	0.04 0.03	0.0016 0.0009	0.22	0.0484

Resultados de la observaciones de las pares que se indican—Continuación.

Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$
35	"	"					38	"	"				
	-1.17		2.22	4.9284				1.40		0.15	0.0225		
	3.29		2.24	5.0176				0.16		1.09	1.1881		
	1.02	1.05	0.03	0.0009	1.63	2.6569	39	2.19	1.25	0.94	0.8836	1.43	2.0449
36	2.74		0.28	0.0784				4.01		0.92	0.8464		
	1.67		0.79	0.6241			40	2.17	3.09	0.92	0.8464	0.41	0.1681
	2.97	2.46	0.51	0.2601	0.22	0.0484	41	5.13				2.45	6.0025
37	2.60		0.10	0.0100				1.30	1.30			1.38	1.9044
	2.81	2.70	0.11	0.0121	0.02	0.0009	42	0.51	0.51			2.17	4.7089
								2.68			21.4801		28.2684

$$\left[\frac{1}{n} \right] = 16.832$$

$$E \delta = \pm 0.42$$

$$\varepsilon \delta = \pm 0.59$$

Pesos.

1 observación..... 0.7

2 "..... 1.0

3 "..... 1.2

Los pares observados para esta determinación, fueron preparados por el Observatorio Astronómico de Tacubaya, y están insertos en las páginas 211 á 214 después de los que se mencionan en la página 163.

Resultado final.

Pares.	Latitud 31° 20' +	Peso.	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$
15	"	0.7	1.66	0.25	0.0625	0.0438
16 bis.	1.85	0.7	1.30	0.77	0.5929	0.4151
17	3.87	0.7	2.71	1.25	1.5625	1.0937
18	2.12	0.7	1.48	0.50	0.2500	0.1750
20	3.74	0.7	2.62	1.12	1.2544	0.8781
21	2.24	1.0	2.24	0.38	0.1444	0.1444
22	3.13	1.0	3.13	0.51	0.2601	0.2601
23	2.87	1.2	3.44	0.25	0.0625	0.0750
24	2.48	1.0	2.48	0.14	0.0196	0.0196
25	2.80	1.0	2.80	0.18	0.0324	0.0324
26	2.81	1.0	2.81	0.19	0.0361	0.0361
27	2.64	1.0	2.64	0.02	0.0004	0.0004
28	4.40	0.7	3.08	1.78	3.1684	2.2179
31	3.66	1.0	3.66	1.04	1.0816	1.0816
32	4.15	0.7	2.91	1.53	2.3409	1.6386
33	2.00	1.0	2.00	0.62	0.3844	0.3844
34	2.46	1.0	2.46	0.16	0.0256	0.0256
35	1.05	1.2	1.26	1.57	2.4649	2.9579
36	2.46	1.2	2.95	0.16	0.0256	0.0307
37	2.70	1.0	2.70	0.08	0.0064	0.0064
38	1.25	1.2	1.50	1.37	1.8769	2.2523
39	3.09	1.0	3.09	0.47	0.2209	0.2209
40	5.13	0.7	3.59	2.51	6.3001	4.4101
41	1.30	0.7	0.91	1.32	1.7424	1.2197
42	0.51	0.7	0.36	2.11	4.4521	3.1165
		22.8	59.78			29.7363

Latitud del punto de observación..... 31° 20' 2.62''
 Reducción al monumento..... — 0.018''

Latitud del monumento N° XIII (actual 64)..... 31° 20' 2.60''
 $\pm 0.14''$

X.

Latitud del Monumento N^o 83.

Método "Talcott" y Distancias cenitales meridianas combinadas por el método "Talcott."

Instrumentos :

Anteojo cenital.
Altazimut de 12 pulgadas.
Cronómetro N^o 756.

Personal :

Observador, Felipe Valle.
Ayudante, Carlos Kurczyn.*Valor angular de las revoluciones del tornillo micrométrico.*

Valor encontrado con las observaciones del 8 de Julio (pág. 161)..... 69.975''

Valor encontrado con las observaciones del 19 de Sepr. (pág. 167)..... 69.95''

Promedio adoptado..... 69.963''

Discusión de las observaciones de los pares.

Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$	Pares.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta^2 \varphi$
36	55.59	"	0.72	0.5184			43	55.56	"	0.13	0.0169		
	54.16	58.87	0.71	0.5041	0.44	0.1936		55.61		0.18	0.0324		
								55.11	55.43	0.32	0.1024	0.12	0.0144
37	55.78		0.35	0.1225			44	57.01		0.51	0.2601		
	55.08	55.43	0.35	0.1225	0.12	0.0144		55.98	56.50	0.52	0.2704	1.19	1.4161
38	53.36		1.26	1.5876			45	56.10		0.49	0.2401		
	55.88	54.62	1.26	1.5876	0.31	0.0961		57.96		1.37	1.8769		
39	54.16	54.16	.....	.....	1.15	1.3225		55.72	56.59	0.87	0.7569	1.28	1.6384
40	57.25		0.44	0.1936			46	54.01		0.59	0.3481		
	56.13	57.69	0.44	0.1936	2.38	5.6644		55.58		0.98	0.9604		
42	54.84		0.65	0.4225				54.21	54.60	0.39	0.1521	0.71	0.5041
	53.54	54.19	0.65	0.4225	1.12	1.2544	47	55.54	55.54	.....	.....	0.23	0.0529
48	54.73		0.83	0.6889			52	54.50		0.01	0.0001		
	53.64		0.26	0.0676				54.48	54.49	0.01	0.0001	0.82	0.672
	53.34	53.90	0.56	0.3136	1.41	1.9881	53	56.69		0.42	0.1764		
49	53.47		0.44	0.1936				55.29		0.98	0.9604		
	54.34	53.91	0.43	0.1849	1.40	1.9600		56.82	56.27	0.55	0.3025	0.96	0.9216
50	57.10		1.54	2.3716			54	56.36		0.16	0.0256		
	54.66		0.90	0.8100				54.38		1.82	2.3124		
	54.93	55.56	0.63	0.3969	0.25	0.0625		57.87	56.20	1.67	2.7889	0.89	0.7921
51	55.67	55.67	.....	.....	0.36	0.1296			55.31		23.2851		

$$\left[\frac{1}{n} \right] = 9.331$$

$$E\delta = + 0.48 \quad \varepsilon\delta = + 0.68$$

Pesos : 1 observación = 1 ; 2 observaciones = 1.5 ; 3 observaciones = 1.8.

Resultado final.

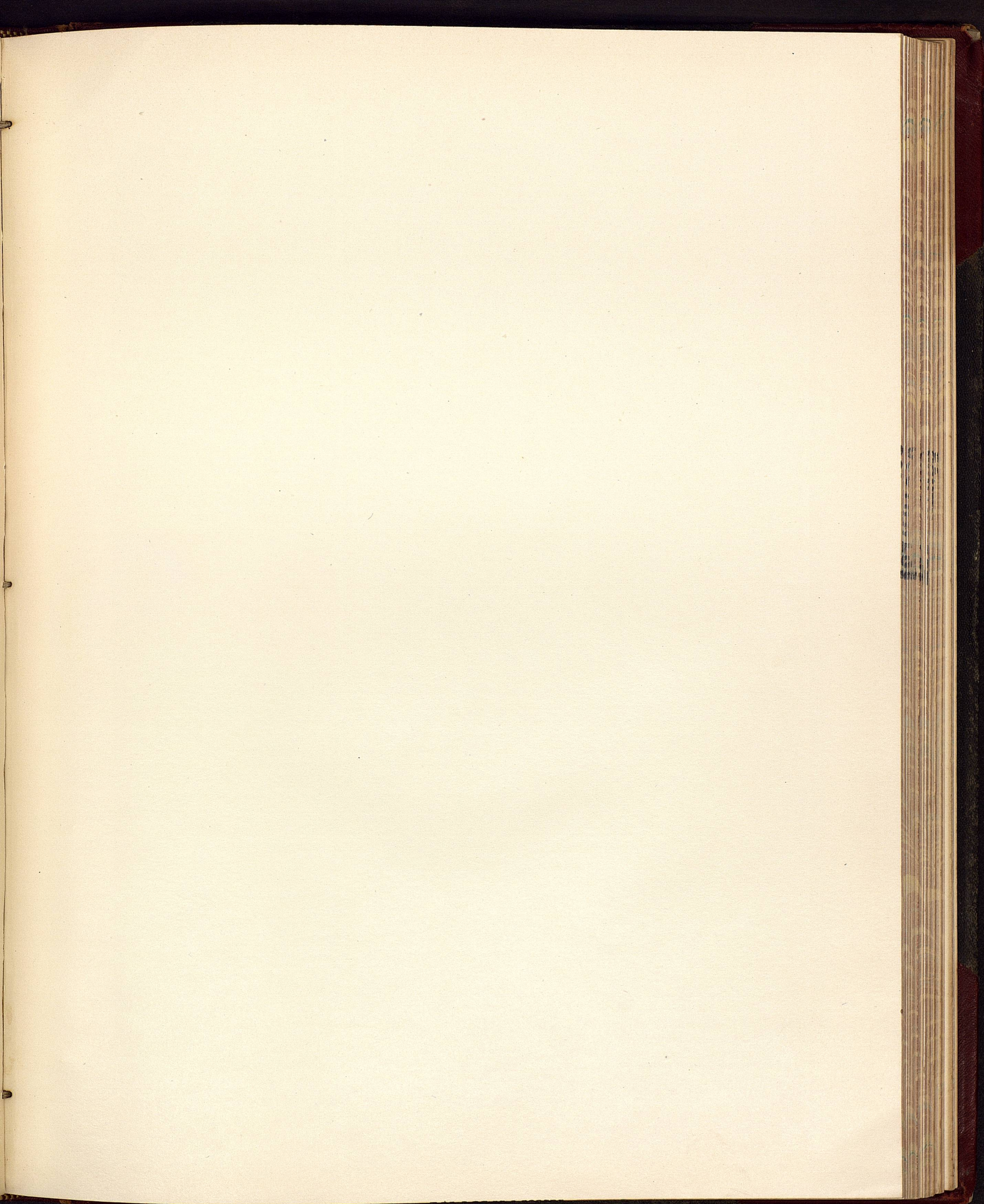
Pares.	Latitud 31° 19' +	Peso.	$p \propto \varphi$	Δ	Δ^2	$p \cdot \Delta^2$
36	54.87	1.5	7.30	0.47	0.2209	0.3313
37	55.43	1.5	8.15	0.09	0.0081	0.0122
38	54.62	1.5	6.93	0.72	0.5184	0.7776
39	54.16	1.0	4.16	1.18	1.3924	1.3924
40	57.69	1.5	11.53	2.35	5.5225	8.2838
42	54.19	1.5	6.28	1.15	1.3225	1.9838
43	55.43	1.8	9.77	0.09	0.0081	0.0146
44	56.50	1.5	9.75	1.16	1.3456	2.0184
45	56.59	1.8	11.86	1.25	1.5625	2.8125
46	54.60	1.8	8.28	0.74	0.5476	0.9857
47	55.54	1.0	5.54	0.20	0.0400	0.0400
48	53.90	1.8	7.02	1.44	2.0736	2.7325
49	53.91	1.5	5.86	1.43	2.0449	3.0674
50	55.56	1.8	10.04	0.22	0.0484	0.0871
51	55.07	1.0	5.67	0.33	0.1089	0.1089
52	54.49	1.5	6.74	0.85	0.7225	1.0837
53	56.27	1.8	11.29	0.93	0.8649	1.5568
54	56.20	1.8	11.16	0.86	0.7896	0.3313
		27.6	147.33			28.6200

Latitud del punto de observación..... 31° 19' 55.34" + 0.05"

Los pares observados para esta determinación, pertenecen á la lista proporcionada por el Observatorio Astronómico de Tacubaya.

Observaciones hechas con el Altazimut de 12 pulgadas.

Fechas.	Pares de estrellas.			Latitud.	Δ	Δ^2
1892.				° ' "	"	
Diciembre 15..	γ	Androme.	β Arietis.....	31 19 55.10	0.25	0.0625
" 15..	γ	Androme.	δ Arietis.....	53.29	2.06	4.2436
" 15..	c	Cassiopea.	δ Ceti.....	52.36	2.99	8.9401
" 15..	β	Persei.	δ Arietis.....	54.95	0.40	0.1600
" 15..	α	Persei.	f Tauri.....	58.67	3.32	11.0224
" 15..	9	H Camelop.	γ Tauri.....	54.34	1.01	1.0201
" 15..	ι	Persei.	δ Tauri.....	55.10	0.25	0.0625
" 15..	53	Eridani.	848 Gr.....	55.09	0.26	0.0676
" 15..	4	Camelop.	π^5 Orionis.....	55.45	0.10	0.0100
" 15..	π^5	Orionis.	10 Camelop.....	55.80	0.45	0.2025
" 15..	ι	Tauri.	η Auriga.....	55.47	0.12	0.0144
" 15..	ε	Leporis.	19 Camelop.....	54.76	0.59	0.3481
" 15..	17	Camelop.	δ Orionis.....	55.78	0.43	0.1849
" 15..		Tauri.	o Auriga.....	55.53	0.18	0.0324
" 15..	130	Tauri.	v Auriga.....	58.70	3.35	11.2225
" 15..	10	Monoceros.	8 Lyncis.....	55.46	0.11	0.0121
" 15..	51	Auriga.	ε Auriga.....	52.48	2.77	7.6729
" 15..	18	Monoceros.	15 Lyncis.....	55.10	0.25	0.0625
" 15..	51	Cephei.	ε Can. maj.....	54.49	0.86	0.7396
" 16..	22	Andromeda.	γ Persei.....	55.21	0.14	0.0196





ANTIGUO MONUMENTO EN LAS INMEDIACIONES DEL RANCHO DE SAN BERNARDINO.

Observaciones hechas con el Altazimut de 12 pulgadas—Continuación.

Fechas.		Pares de estrellas.				Latitud.			Δ	Δ^2
1892.						°	'	"	"	
Diciembre	16..	6	Br.	<i>c</i>	Ceti.....	31	19	55.16	0.19	0.0361
"	16..	12	Ceti.	<i>u</i>	Cassiopea			55.31	0.04	0.0016
"	16..	3	Andromeda.	<i>u</i>	Andro.....			54.18	1.17	1.3689
"	16..	β	Andromeda.	<i>z</i>	Piscium			56.86	1.51	2.2801
"	16..	μ	Piscium.	<i>v</i>	Persei			56.65	1.30	1.6900
"	16..	501	B. A. C.	523	B. A. C.....			57.63	2.28	5.1984
						55.35			± 0.20	56.6754

Latitud obtenida con el anteojo cenital 31° 19' 55.34"

" " " " altazimut 55.35

Promedio 55.345

Reducción al Monumento 83 por 143.0 m..... 4.64

Latitud del Monumento N° 83..... = 31° 19' 59.985"

XI.

Latitud del Monumento XXI actualmente N° 98.

Distancias cenitales meridianas combinadas por el método "Talcott."

Instrumentos.

Altazimut de 12 pulgadas.
Cronómetro N° 756 (tiempo medio).

Personal.

Observador, Felipe Valle.
Ayudante, Carlos Kurczyn.

Fechas.	Estrellas.	δ	Indicación del círculo vertical.	Nivel.		Latitud.
				oc.	ob.	
1893.		° ' "	° ' "			° ' "
Enero 5.....	1925 Safford.....	14 47 41.79	12 32 33.05	115.0	25.8	
" 5.....	1939 "	48 5 22.65	12 45 21.41	123.7	35.0	31 20 3.68
" 5.....	1949 "	42 45 36.39	7 25 40.80	120.8	32.0	
" 5.....	1960 "	19 44 58.55	7 35 23.75	116.0	27.2	6.65
" 5.....	1982 "	40 12 16.66	11 52 23.65	118.8	30.4	
" 5.....	1993 "	23 3 15.93	11 17 5.95	114.1	26.1	4.90
" 5.....	2003 "	20 32 25.88	6 47 54.95	113.7	25.2	
" 5.....	2010 "	41 40 9.96	6 29 12.75	118.8	30.3	6.63
" 5.....	<i>z</i> Cassiopea.....	36 55 23.56	31 35 15.40	118.6	30.3	
" 5.....	δ Ceti.....	0 8 0.85	27 28 6.55	109.0	29.0	1.33
" 5.....	β Persei.....	40 32 47.50	5 12 56.05	120.8	28.4	
" 5.....	δ Arietis.....	19 19 24.60	8 1 0.50	108.8	16.2	3.42
" 5.....	α Persei.....	49 29 2.05	14 8 58.55	132.0	39.0	
" 5.....	<i>f</i> Tauri.....	12 34 15.70	14 46 4.60	109.0	16.0	0.43
" 5.....	9 H Camelop.....	60 47 58.15	25 27 50.55	120.0	27.0	
" 5.....	<i>v</i> Tauri.....	5 41 34.85	21 38 26.75	120.0	25.6	4.25
" 5.....	<i>c</i> Persei.....	47 25 48.1	12 5 52.75	121.2	86.2	
" 5.....	δ Tauri.....	17 17 34.9	10 2 44.85	117.6	22.1	3.45

XI.—*Latitud del Monumento XXI actualmente No 98*—Continuación.

Fechas.	Estrellas.	δ	Indicación del círculo vertical.	Nivel.		Latitud.
				oc.	ob.	
1892.		° ' "	° ' "			° ' "
Enero 5.....	53 Eridani.....	—14 30 49.2	41 50 31.4	114.6	19.4	
" 5.....	848 Gr.....	75 44 60.2	40 24 28.8	129.7	34.2	31 20 0.72
" 5.....	ι Tauri.....	21 26 19.55	5 53 53.45	124.3	27.6	
" 5.....	η Auriga.....	41 5 32.40	5 45 44.90	123.3	26.7	0.26
" 5.....	2 Lyncis.....	59 3 6.28	23 43 8.20	117.1	19.0	
" 5.....	8 Monocetis.....	4 38 53.60	22 41 2.65	125.7	27.8	0.27
" 5.....	10 Monocetis.....	— 4 41 42.70	32 1 30.90	125.0	27.2	
" 5.....	8 Lyncis.....	61 34 37.20	26 14 33.00	117.8	19.9	3.88
" 5.....	18 Monocetis.....	2 31 48.9	24 48 4.25	121.7	24.0	
" 5.....	15 Lyncis.....	58 33 51.9	23 13 54.40	116.0	16.5	—0.45
" 5.....	α Gemino.....	32 7 26.30	356 47 49.4	117.8	19.0	
" 5.....	β Gemino.....	28 17 7.45	359 3 12.9	129.7	28.7	5.13
" 5.....	53 Camelop.....	60 31 0.03	25 12 0.2	118.9	16.3	
" 5.....	27 Monotis.....	+ 3 23 12.69	30 43 0.55	125.9	23.1	1.67
" 5.....	27 Lyncis.....	51 48 55.00	16 29 0.55	125.8	23.0	
" 5.....	β Cancri.....	9 30 58.40	17 49 4.70	125.0	22.7	— 1.80
" 5.....	31 Lyncis.....	43 31 52.7	8 11 59.70	25.8	128.0	
" 5.....	η Cancri.....	20 48 18.5	6 31 57.15	22.1	124.3	1.52
" 5.....	1460 Gr.....	53 5 10.01	17 45 11.85	125.8	23.3	
" 5.....	ϵ Hydra.....	6 48 44.44	20 31 26.70	120.0	18.1	3.57
" 5.....	3 Hydra.....	6 21 13.2	20 58 49.05	121.6	19.9	
" 5.....	1501 Gr.....	54 42 17.17	19 22 18.75	126.0	24.2	— 0.89
" 9.....	μ Ceti.....	9 39 46.45	17 40 42.3	108.7	15.5	
" 9.....	τ Persei.....	52 19 42.71	16 59 53.8	109.0	25.2	4.24
" 9.....	β Persei.....	40 32 47.74	5 13 5.65	119.0	24.0	
" 9.....	ϵ Arietis.....	19 19 24.52	8 1 10.30	110.7	15.6	5.78
" 9.....	α Persei.....	49 29 2.49	14 9 14.85	124.0	28.8	
" 9.....	f Tauri.....	12 34 15.54	14 46 12.50	127.0	31.4	0.26
" 9.....	53 Eridani.....	—14 30 49.84	41 50 44.2	115.0	16.9	
" 9.....	848 Gr.....	75 45 1.24	40 24 49.55	117.7	19.1	2.99
" 9.....	π^5 Orionis.....	2 15 57.59	25 1 15.55	119.0	120.0	
" 9.....	10 Camelop.....	60 17 21.10	24 57 26.20	19.3	20.0	3.67
" 9.....	ι Tauri.....	21 26 19.59	5 54 12.40	117.8	7.4	
" 9.....	η Auriga.....	41 5 32.88	5 45 54.90	125.6	25.0	— 1.27
" 9.....	17 Camelop.....	62 58 51.17	27 38 54.4	123.9	22.6	
" 9.....	δ Orionis.....	— 0 22 39.99	27 42 55.0	117.8	16.4	1.64
" 9.....	130 Tauri.....	17 41 21.33	9 39 7.4	117.2	15.8	
" 9.....	ν Auriga.....	39 7 4.57	3 47 33.25	122.2	20.1	— 2.07
" 9.....	α Orionis.....	7 23 17.47	19 56 58.25	117.0	17.0	
" 9.....	δ Auriga.....	54 16 44.20	18 56 47.50	121.3	21.0	4.93

XI.—*Latitud del Monumento XXI actualmente No 98—Continuación.*

Fechas.	Estrellas.	δ	Indicación del círculo vertical.	Nivel.		Latitud.
				oc.	ob.	
1892.		$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$			$^{\circ}$ $'$ $''$
Enero 9.....	10 Monocetis.....	— 4 41 43.34	32 1 52.85	116.0	15.8	
„ 9.....	8 Lyncis.....	61 34 38.17	26 14 36.60	121.7	21.1	31 20 6.29
„ 9.....	51 Auriga.....	39 29 12.2	4 9 37.1	121.3	21.0	
„ 9.....	ϵ Geminorum	25 14 18.28	2 6 17.55	117.2	16.9	1.94
„ 9.....	63 Auriga	39 29 47.0	4 10 7.95	125.0	25.0	
„ 9.....	δ Geminorum	22 10 49.6	5 9 48.10	115.4	15.9	3.75
„ 9.....	ζ Geminorum	28 0 42.18	359 19 58.1	117.0	17.2	
„ 9.....	ρ Geminorum	31 59 53.95	356 40 23.5	128.1	28.5	1.06
„ 9.....	α Geminorum	32 7 26.55	356 48 4.3	117.9	18.1	
„ 9.....	β Geminorum	28 17 7.49	359 3 29.35	123.0	23.2	2.41
„ 10.....	1863 Safford.....	20 54 4.34	6 26 27.2	108.0	23.0	
„ 10.....	1867 „	41 30 54.21	6 11 16.7	113.0	27.8	2 21
„ 10.....	1906 Safford.....	44 58 15.55	9 38 36.45	110.6	26.0	
„ 10.....	1909 „	17 15 43.31	10 4 47.10	108.2	23.9	3.87
„ 10.....	1925 Safford.....	14 47 41.52	12 32 59.95	106.0	20.4	
„ 10.....	1939 „	48 5 22.62	12 45 34.90	118.8	33.7	8.04
„ 10.....	1949 Safford.....	42 45 36.14	7 25 53.6	168.0	12.0	
„ 10.....	1960 „	19 44 58.58	7 35 39.3	101.8	18.0	2.39
„ 10.....	1982 Safford.....	40 12 16.63	4 52 40.9	115.0	30 0	
„ 10.....	1993 „	23 3 15.75	4 17 24.5	104.0	18.9	2.12
„ 10.....	2003 Safford.....	20 32 25.65	6 48 10.75	103.1	18.0	
„ 10.....	2010 „	41 49 9.96	6 29 30.30	105.0	19.2	1.41
„ 10.....	ν Cassiopea	60 55 30.98	31 35 34.45	111.7	24.8	
„ 10.....	δ Ceti.....	— 0 8 1.20	27 28 13.85	109.0	4.3	0.16
„ 10.....	μ Ceti.....	9 39 46.4	17 40 37.35	111.0	23.2	
„ 10.....	τ Persei.....	52 19 42.8	17 0 1.15	111.9	24.0	3.16
„ 10.....	α Arietis.....	22 57 29.1	30 41 38.35	106.0	20.0	
„ 10.....	θ Ceti.....	65 53 38.0	27 28 13.85	106.0	24.5	— 0.21
„ 12.....	α Geminorum	32 7 26.72	356 48 2.2	118.8	23.9	
„ 12.....	β Geminorum	28 17 7.58	359 3 38.5	117.7	22.0	6.23
„ 12.....	27 Lyncis.....	51 48 56.04	16 29 16.95	117.8	22.0	
„ 12.....	β Cancr.....	9 30 57.62	17 49 31.85	121.0	25.0	6.57
„ 12.....	31 Lyncis.....	43 31 53.44	8 12 19.00	118.9	23.0	
„ 12.....	η Cancr.....	20 48 18.14	6 32 20.85	118.9	22.6	5.71
„ 12.....	1450 Gr.....	53 5 11.01	17 45 29.60	118.9	23.0	
„ 12.....	ϵ Hydra.....	6 48 43.53	20 31 45.15	118.0	22.2	6.30
„ 12.....	3 Hydra.....	6 21 12.16	20 59 17.05	118.8	22.4	
„ 12.....	1501 Gr.....	54 42 18.63	19 22 38.15	118.4	22.0	5.67
„ 12.....	36 Lyncis.....	43 39 29.52	8 19 55.6	118.9	22.8	
„ 12.....	83 Cancr.....	18 9 31.96	9 11 0.8	118.9	22.2	3.43

XI.—*Latitud del Monumento XXI actualmente N° 98*—Continuación.

Fechas.	Estrellas.	δ	Indicación del círculo vertical.	Nivel.		Latitud.
				oc.	ob.	
1892.						
Enero 12.....	χ Urs. maj.	63 31 42.06	28 11 52.1	118.8	22.9	
" 12.....	τ^2 Hydra.	— 0 42 42.41	28 3 2.1	118.9	22.8	31 20 4.68
" 18.....	β Persei.	40 32 48.04	5 13 12.0	115.1	22.9	
" 18.....	δ Arietis.	19 19 24.34	8 0 58.4	125.0	32.3	5.79
" 18.....	α Persei.	49 29 3.16	14 9 20.45	115.0	22.1	
" 18.....	F Tauri.	12 34 15.26	14 46 2.00	123.6	30.0	4.44
" 18.....	ν Persei.	42 14 37.76	6 55 2.35	116.0	22.5	
" 18.....	η Tauri.	23 46 34.42	3 33 51.00	125.0	31.3	3.18
" 18.....	9 H Camelop.	60 48 0.12	6 55 2.35	118.1	24.1	
" 18.....	ν Tauri.	5 41 34.10	3 33 51.00	116.0	22.2	4.41
" 18.....	α Orionis.	7 23 16.84	19 57 0.85	118.0	19.1	
" 18.....	δ Auriga.	54 16 45.84	18 56 56.65	124.1	26.0	0.79
" 18.....	2 Lyncis.	59 3 9.19	23 43 14.3	120.6	22.1	
" 18.....	8 Monoceros.	4 38 52.38	22 41 19.05	123.8	25.1	4.05
" 18.....	10 Monoceros.	— 4 41 44.62	32 1 46.05	121.2	23.0	
" 18.....	8 Lyncis.	61 34 40.16	26 14 42.55	124.1	26.0	2.00
" 18.....	51 Auriga.	59 29 13.18	4 9 34.5	120.9	22.1	
" 18.....	ϵ Geminorum.	25 14 18.46	2 6 12.6	122.0	22.2	4.10
" 18.....	18 Monoceros.	2 31 47.42	24 48 25.85	119.0	19.0	
" 18.....	15 Lyncis.	58 53 54.58	23 33 58.80	125.5	25.6	2.06
" 18.....	51 Cephei.	87 13 4.69	51 52 20.4	124.3	24.4	
" 18.....	ϵ Can. maj.	28 49 34.68	56 8 44.1	125.0	25.0	4.88
" 18.....	63 Auriga.	39 29 47.98	4 10 4.8	126.0	26.1	
" 18.....	δ Geminorum.	22 10 49.6	5 9 40.15	121.7	21.3	4.25
" 18.....	τ Gemino.	28 0 42.52	359 19 52.1	124.2	24.0	
" 18.....	ρ Gemino.	31 59 54.48	356 40 20.3	126.0	25.2	4.98
" 18.....	α^2 Gemino.	32 7 27.08	356 47 52.85	126.0	25.7	
" 18.....	β Gemino.	28 17 7.82	359 3 27.30	121.7	20.9	3.61
" 18.....	4 Navis.	—14 18 17.85	41 38 1.2	122.9	22.0	
" 18.....	1374 Gr.	74 12 17.16	38 51 59.5	126.0	25.1	1.74
" 18.....	53 Camelop.	60 37 4.08	25 17 5.55	126.0	25.2	
" 18.....	27 Monoceros.	3 23 13.82	30 43 19.05	121.6	21.0	3.34
" 18.....	27 Lyncis.	51 48 57.06	16 29 6.0	131.2	30.4	
" 18.....	β Cancri.	9 30 57.08	17 49 26.1	120.3	19.1	2.59
" 18.....	31 Lyncis.	43 31 54.16	8 12 8.1	126.9	25.2	
" 18.....	η Cancri.	20 48 17.96	6 32 10.3	122.4	20.3	2.13
" 18.....	1460 Gr.	53 5 12.14	17 45 20.45	126.0	24.0	
" 18.....	ϵ Hydra.	56 48 43.01	20 31 37.50	129.0	17.0	4.27
" 18.....	3 Hydra.	6 21 11.44	20 59 8.3	118.8	17.0	
" 18.....	1501 Gr.	54 42 19.12	19 22 30.4	128.0	26.3	0.49

Resumen.

Pares.		Promedios de las latitudes con cada par. 31° 20' +	Peso.	Δ	Δ^2	$p \Delta^2$
1863 y 1867 Safford.....		2.21	1	0.80	0.6400	0.6400
1906 „ 1909 „		3.87	1	0.86	0.7396	0.7396
1925 „ 1939		5.86	2	2.85	8.1225	16.2450
1949 „ 1960 „		4.52	2	1.51	2.2881	4.5762
1982 „ 1993 „		3.51	2	0.50	0.2500	0.5000
2003 „ 2010 „		4.02	2	1.01	1.0201	2.0402
α Arietis.	δ Ceti.....	- 0.21	1	3.22	10.3684	10.3684
ι Cassiopea.	δ Ceti.....	0.75	2	2.26	5.1076	10.2152
μ Ceti.	τ Persei.....	3.70	2	0.69	0.4761	0.9522
β Persei.	δ Arietis.....	5.00	3	1.99	3.9601	11.8803
α Persei.	f Tauri.....	1.71	3	1.30	1.6900	5.0700
9 H Camelop.	ν Tauri.....	3.18	1	0.17	0.0289	0.0289
ν Persei.	η Tauri.....	4.33	2	1.32	1.7424	3.4848
ι Persei.	δ Tauri.....	3.45	1	0.44	0.1936	0.1936
53 Eridani.	848 Gr.....	1.85	2	1.16	1.3456	2.6912
π^5 Orionis.	10 Camelop.....	3.67	1	0.66	0.4356	0.4356
ι Tauri.	η Auriga.....	- 0.51	2	3.52	12.3904	24.7803
17 Camelop.	δ Orionis.....	+ 1.64	1	1.37	1.8769	1.8769
3 Tauri.	δ Auriga.....	1.65	1	1.56	2.4336	2.4336
130 Tauri.	ν Auriga.....	- 2.07	1	5.08	25.8064	25.8064
α Orionis.	δ Auriga.....	2.86	2	0.15	0.0225	0.0450
2 Lyncis.	8 Monoceros.....	2.16	2	0.85	0.7225	1.4450
10 Monoceros.	8 Lyncis.....	4.06	3	1.05	1.1025	3.3075
51 Auriga.	ϵ Geminorum.....	3.02	2	0.01	0.0001	0.0002
18 Monoceros.	8 Lyncis.....	0.81	2	2.20	4.8400	9.6800
51 Cephei.	ϵ Can. maj.....	4.88	1	1.87	3.4969	3.4969
63 Auriga.	δ Geminorum.....	4.00	2	0.99	0.9801	1.9602
ι Geminorum.	ρ Geminorum.....	3.02	2	0.01	0.0001	0.0002
α^2 Geminorum.	β Geminorum.....	4.34	4	1.33	1.7689	7.0756
4 Navis.	1374 Gr.....	1.74	1	1.27	1.6129	1.6129
53 Camelop.	27 Monoceros.....	2.26	2	0.75	0.5625	1.1250
27 Lyncis.	β Cancri.....	2.79	3	0.22	0.0484	0.1452
31 Lyncis.	η Cancri.....	3.12	3	0.11	0.0121	0.0363
1460 Gr.	ϵ Hydra.....	4.71	3	1.70	2.8900	8.6700
3 Hydra.	1501 Gr.....	1.76	3	1.25	1.5625	4.6875
36 Lyncis.	83 Cancri.....	3.43	1	0.42	0.1764	0.1764
h Urs. maj.	τ^2 Hydra.....	4.68	1	1.67	2.7889	2.7889
			70			171.3117

Latitud del punto de observación..... 31° 20' 3.01''

Reducción al Monumento..... 0.01

Latitud del Monumento N° 98..... 31° 20' 3.02''

+ 0.175''

XII.

Latitud del Monumento N^o XXIV, actualmente N^o 111.

Método "Talcott."

Instrumentos.

Telescopio Cénital.
Cronómetro N^o 756.

Personal.

Observador, Felipe Valle.
Ayudante, Carlos Kurczyn.

Valor angular de las revoluciones del micrómetro.

FEBRERO 19 DE 1893. α Ursa min. $AR = 1\ 18\ 40.74$ $\delta = 88\ 44\ 31.96$

Micrómetro.	Cronómetro.	Nivel.		Micrómetro.	Cronómetro.	Nivel.		Valor encontrado para R.
		oc.	ob.			oc.	ob.	
R.	<i>h. m. s.</i>			R.	<i>h. m. s.</i>			
28	7 53 32.0	38.0	13.7	55	9 30 57.0	38.7	12.7	$R = 70.083'' \pm 0.028$
29	7 57 20.0	38.0	13.7	56	9 34 31.8	39.1	13.1	
39	8 34 1.5	36.5	11.3	57	9 38 4.0	39.6	13.5	
40	8 37 40.7	36.4	11.3	58	9 41 47.5	40.5	14.2	
41	8 41 12.3	36.7	11.5	59	9 45 17.0	40.6	14.3	
42	8 44 48.0	36.7	11.4	60	9 49 53.5	38.4	12.2	
43	8 48 11.5	36.4	11.0	61	9 52 23.0	38.0	11.6	
44	8 51 58.7	38.1	12.9	62	9 55 49.6	37.2	11.0	
45	8 55 34.5	38.1	13.0	73.0	10 36 23.0	39.4	12.7	
46	8 59 3.0	38.0	12.8	73.174	10 37 11.0	39.5	12.75	
47	9 2 42.6	38.1	12.85	73.343	10 37 44.0	39.5	12.85	
48	9 6 42.6	38.4	13.0	73.478	10 38 20.2	39.5	12.9	
49	9 9 44.0	38.4	13.0	74.000	10 40 15.0	39.5	12.9	
50	9 13 17.8	38.0	12.6	74.120	10 40 47.0	39.5	12.9	
51	9 16 47.0	38.1	12.6	74.248	10 41 14.3	39.5	12.95	
52	9 20 25.0	38.0	12.4	74.410	10 41 50.0	39.5	12.9	
53	9 23 52.3	38.1	12.3					
54	9 27 31.0	38.3	12.3					

 $\Delta t = -2\text{ m. } 4.8\text{ s.}$ FEBRERO 21 DE 1893. α Ursa min. $AR = 1\text{ h. } 18\text{ m. } 39.4\text{ s.}$ $\delta = 88^\circ 44' 31.52''$.

Micrómetro.	Cronómetro.	Nivel.		Micrómetro.	Cronómetro.	Nivel.		Micrómetro.	Cronómetro.	Nivel.	
		oc.	ob.			oc.	ob.			oc.	ob.
	<i>h. m. s.</i>				<i>h. m. s.</i>				<i>h. m. s.</i>		
25	7 48 36	39.9	13.4	42	8 45 38.2	39.5	11.8	59	9 45 58.0	40.2	12.0
26	7 47 22.2	39.6	12.9	43	8 49 3.0	39.0	11.4	60	9 49 32.0	40.0	11.8
27	7 51 3.0	39.5	12.7	44	8 52 37.7	39.0	11.4	61	9 53 6.4	40.0	11.95
28	7 54 51.0	39.7	12.8	45	8 56 13.0	38.7	11.05	62	9 56 42.5	40.0	11.8
29	7 58 34.6	39.5	12.6	46	8 59 36.6	38.4	10.8	63	10 0 26.8	40.0	11.8
30	8 2 10.0	39.4	12.4	47	9 3 8.0	38.1	10.5	64	10 4 3.6	40.0	11.8
31	8 5 49.2	39.4	12.4	48	9 6 46.7	38.2	10.3	65	10 7 46.0	39.95	11.7
32	8 9 28.8	38.3	11.2	49	9 10 27.2	38.1	10.3	66	10 11 21.8	39.4	11.1
33	8 13 10.8	38.4	11.2	50	9 13 49.2	38.2	10.2	67.119	10 15 21.0	38.7	10.3
34	8 16 49.0	38.3	11.1	51	9 17 19.0	38.0	10.1	68	10 18 36.0	38.4	10.1
35	8 20 25.0	38.3	11.0	52	9 20 52.0	38.0	10.1	69	10 22 21.2	38.4	10.0
36	8 24 3.0	38.3	11.0	53	9 24 27.0	37.5	9.6	70	10 26 7.3	38.0	9.6
37	8 27 36.5	38.0	10.6	54	9 28 7.6	39.5	11.6	71	10 29 53.5	37.9	9.25
38	8 31 16.1	38.0	10.6	55	9 31 41.5	39.9	12.0	72	10 33 38.5	37.2	8.4
39	8 34 47.5	38.7	11.2	56	9 35 9.0	40.5	12.6	73.164	10 38 20.0	40.7	11.9
40	8 38 26.7	38.7	11.2	57	9 38 44.0	40.6	12.5	74	10 41 24.7	40.5	11.6
41	8 42 4.2	39.0	11.6	58	9 42 24.0	40.4	12.2				

 $\Delta t = -1\text{ m. } 29.75\text{ s.}$
 $R = 70.084 \pm 0.017.$

XII.—*Latitud del Monumento No XXIV, actualmente No 111—Continuación.*MARZO 3 DE 1893. α Ursa min. $A\alpha = 1 \text{ h. } 18 \text{ m. } 32.8 \text{ s.}$ $\delta = 88^\circ 44' 29.5''$.

Metró- metro.	Cronómetro.	Nivel.		Metró- metro.	Cronómetro.	Nivel.		Metró- metro.	Cronómetro.	Nivel.	
		oc.	ob.			oc.	ob.			oc.	ob.
	<i>h. m. s.</i>				<i>h. m. s.</i>				<i>h. m. s.</i>		
71.937	7 13 6.0	6.9	36.8	55.	8 14 12.0	9.2	39.6	40.000	9 7 30.5	7.95	39.05
.165	15 51.0	9.8	38.7	54.	17 43.0	9.2	39.4	39.0	11 5.5	7.95	39.1
70.827	16 7.3	9.6	39.6	53.	21 17.0	9.1	39.4	38.0	14 38.0	8.60	40.0
.277	19 8.0	9.3	39.3	52.	24 48.5	9.1	39.4	37.784	52 6.0	10.1	42.1
69.648	21 27.0	9.1	39.2	50.858	29 00.0	8.0	38.4	.331	53 55.0	9.95	41.95
.276	22 44.5	9.1	39.1	50	31 52.5	9.0	39.5	37.000	55 14.0	9.1	41.2
68.950	23 59.0	9.0	39.05	49	35 27.0	9.3	39.93	31.738	10 15 32.0	10.9	43.1
.599	25 18.0	8.6	38.7	48	38 59.5	9.3	40.00	.390	16 50.0	10.9	43.1
.273	26 33.0	8.6	33.65	47	42 32.0	9.6	40.3	.061	18 17.5	10.2	42.3
67.883	27 52.0	8.7	38.8	45	49 37.0	9.0	40.0	30.688	19 37.0	9.9	42.1
.538	29 12.0	8.7	38.8	44	53 13.0	8.7	39.6	.355	21 21.1	9.95	42.15
58.000	8 3 36.0	9.3	39.6	43	56 48.0	8.6	39.5	29.964	22 29.8	10.3	42.8
57.000	7 7.0	9.0	39.2	41.981	9 0 21.0	8.5	39.7	.041	23 44.0	10.4	42.9
56.000	10 38.0	9.1	39.2	41.000	3 58.0	8.0	39.2	.316	25 5.0	10.4	42.9

 $\Delta t = -2 \text{ m. } 5.00 \text{ s.}$ $R = 70.060'' \pm 0.018.$

Las observaciones de latitud del día 18 de Febrero, se calcularon con el valor de $R = 70.083$ obtenido el día 19, y las demás observaciones se calcularon con el promedio de los valores de los días 21 de Febrero y 3 de Marzo. $R = 70.047.$

Observaciones de los pares de estrellas.

FEBRERO 18 DE 1893.

Pares.	Hora cronométrica.	Metró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	r. m.	r.	
		<i>R.</i>			<i>o' ' "</i>	<i>o' ' "</i>	<i>' "</i>				<i>"</i>
1		47.872	33.1	16.2	47 25 50.70						
	6 14 48.8	53.029	34.1	16.9	15 8 2.21	31 16 56.45	+ 3 0.71	+0.42	+0.05		57.63
3		37.150	13.8	32.2	34 18 40.22						
	6 28 46.0	60.557	33.2	14.3	27 53 51.12	31 6 15.67	+13 40.22	+0.33	+0.23		56.52
6		44.332	35.0	16.3	9 56 30.14						
	6 36 34.6	52.020	33.0	14.6	52 52 14.40	31 24 22.27	- 4 29.40	+0.93	-0.09		53.71
12		53.370	13.2	32.0	24 7 32.39						
	7 6 34.8	44.253	11.3	30.05	38 21 39.26	31 14 35.83	+ 5 19.47	+0.96	+0.09		56.35
14		45.862	14.1	36.4	62 58 57.79						
		48.949	35.2	15.8	- 0 22 43.15	31 18 7.32	+ 1 48.17	+0.13	0.04		55.66
15		43.418	35.95	16.15	9- 25 3.56						
	7 38 20.0	53.516	33.2	13.3	53 26 50.56	31 25 57.06	- 5 53.85	+1.40	-0.11		54.50
17		49.637	34.0	13.9	17 41 25.77						
		47.888	33.3	13.0	44 56 24.11	31 18 54.94	+ 1 1.04	+0.40	0.02		56.64
31		64.091	12.9	34.5	41 4 33.03						
		33.652	35.6	13.8	22 10 50.27	31 37 41.65	-17 46.63	+0.50	0.30		55.22

Observaciones de los pares de estrellas—Continuación.

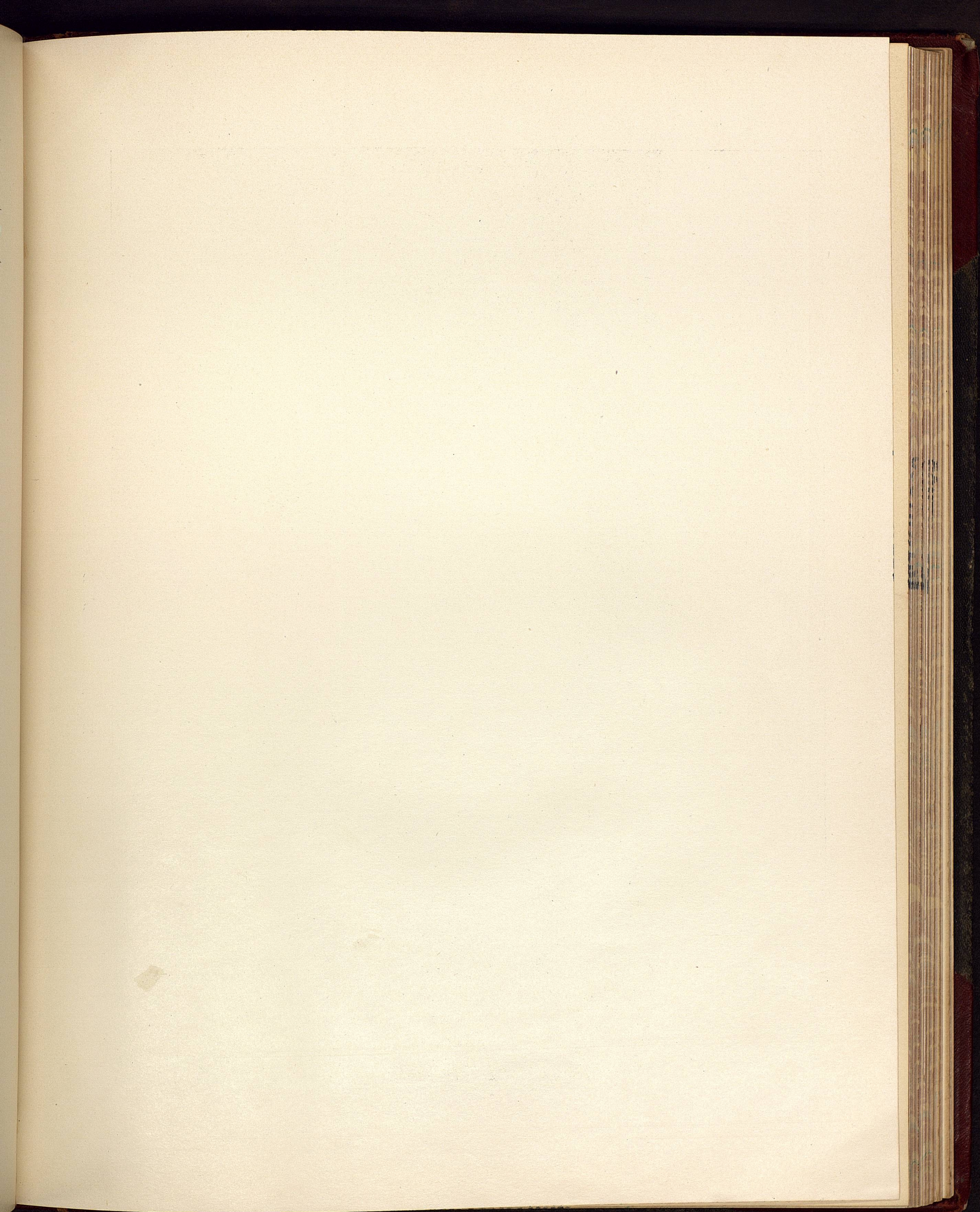
FEBRERO 18 DE 1893.

Pares.	Hora cronométrica.	Micró- metro.	Nivel.		δ	$\frac{1}{2} (\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	r. m.	r.	
33		23.567	35.4	13.9	28 0 44.24	31 39 4.02	-19 8.42	-0.18	0.33		55.27
		56.540	35.9	14.1	35 17 23.79						
38		36.988	34.8	11.3	43 31 58.45						
		60.510	34.9	11.2	18 40 33.50	31 6 15.98	+13 42.50	0.00	0.24		58.72
42	10 31 41.3	28.002	38.0	14.3	74 0 22.78						
	10 39 10.0	66.951	36.6	12.8	-12 5 51.90	30 57 15.44	+22 44.84	-0.73	0.73		60.27
45	11 21 26.5	55.453	37.5	13.3	37 15 20.51						
		43.637	39.6	15.4	25 38 23.72	31 26 52.12	-6 54.05	+1.05	-0.12		59.00
46		51.002	39.95	15.8	63 31 50.25						
		43.240	40.7	16.5	-0 42 48.88	31 24 30.68	-4 31.09	+0.36	0.11		58.95
47		36.262	37.3	13.4	31 38 27.74						
		58.202	36.0	11.9	30 35 55.04	31 7 11.39	+12 48.81	-0.70	+0.22		59.72
47											
51	11 49 7.0	59.537	36.4	12.1	54 33 52.08						
		36.213	37.0	12.0	8 33 24.16	31 33 38.12	-13 37.31	+0.30	0.27		60.84
52		51.688	37.4	13.0	12 29 21.24						
		42.346	38.4	14.0	49 59 50.26	31 14 37.75	+5 27.35	-0.50	0.10		62.72
54		55.266	37.6	13.0	20 22 54.17						
		42.530	37.1	12.4	42 2 12.16	31 12 33.17	+7 26.29	+0.28	+0.13		59.87

En la columna *r. m.* están incluídas las reducciones al meridiano y demás correcciones que hizo el Sr. Valle á los resultados.

FEBRERO 20 DE 1893.

Pares.	Hora cronométrica.	Micró- metro.	Nivel.		δ	$\frac{1}{2} (\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	r. m.	r.	
2		56.400	38.4	11.4	48 8 29.3	31 29 26.75	-9 30.60	0.12	0.18	-0.53	55.98
		40.105	38.9	11.5	14 50 24.						
6		20.609	37.0	9.0	9 56 30.10						
		28.140	39.2	11.1	52 52 14.43	31 24 22.26	-4 23.58	1.08	0.08	-2.37	57.47
8	6 38 34.6	38.560	39.3	10.0	-3 27 4.65						
		40.953	44.4	15.9	66 9 58.43	31 21 26.89	-1 23.80	-2.69	-0.04	-2.14	58.25
10	6 45 53.5	50.882	39.1	10.4	2 15 55.08						
		45.196	42.3	13.7	60 17 26.73	31 16 40.91	+3 17.01	-1.62	-0.07	+0.18	56.41
11		52.556	39.3	10.6	21 26 19.71						
		45.777	39.9	11.2	41 5 35.91	31 15 57.81	+3 57.38	-0.30	0.07	+0.04	55.00
12		52.554	38.2	9.7	24 7 32.39						
		43.470	39.5	10.9	38 21 39.32	31 14 35.86	+5 18.15	-0.63	0.09	0.00	53.47





NO. 40

MANANTIALES DE SAN BERNARDINO.

Observaciones de los pares de estrellas—Continuación.

FEBRERO 20 DE 1893.

Pares.	Hora cronométrica.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19'
			oc.	ob.			m.	n.	r. m.	r.	
38	10 11 58.2	36.967	34.5	10.4	42 31 58.75						
	10 13 48.3	60.300	38.4	14.4	18 40 33.53	31 6 16.14	+13 37.05	1.98	0.25	+0.15	55.57
40		33.001	38.1	14.4	24 53 14.74						
		64.220	37.3	14.0	38 23 3.33	31 38 9.04	-18 13.20	0.30	0.31	-0.82	55.63
42	10 26 26.0	30.000	38.4	14.9	74 0 23.28						
	10 32 16.5	69.910	29.0	4.9	-12 5 52.42	30 57 15.43	+22 49.94	-4.85	0.72	+0.57	61.81
43		53.990	40.0	15.2	29 9 7.17						
		44.189	37.3	13.7	53 19 23.43	31 14 15.30	+ 5 43.20	1.05	0.10	+0.06	59.71
44		45.645	36.8	13.4	54 27 51.31						
		47.165	35.0	11.3	8 10 25.38	31 19 8.35	+ 53.43	0.58	0.02	-1.15	61.23
46	11 19 15.6	51.584	36.4	13.0							
	11 24 48.3	43.774	36.3	12.95	- 0 42 49.04	31 24 30.86	- 4 33.48	-0.04	-0.10	-0.04	57.20
47		37.078	34.9	11.3	31 38 27.93						
	11 33 39.5	58.917	36.5	13.0	30 35 56.23	31 7 11.58	+12 44.74	0.82	0.22	+0.16	57.50
48	11 39 28.5	67.761	36.4	13.1	59 32 33.22						
		28.331	34.9	11.1	3 53 43.59	31 43 8.40	-22 46.50	0.88	0.51	.....	56.39
52	11 59 55.0	51.812	37.5	13.8	12 29 21.21						
		42.553	36.0	12.2	49 59 50.65	31 14 35.93	+ 5 24.22	0.73	0.10	-1.95	59.03
56		34.464	38.2	14.6	19 27 15.29						
	12 43 50.5	62.654	37.0	13.0	43 45 28.95	31 36 22.12	-16 27.13	0.70	-0.29	-0.18	55.22
59		53.197	35.3	11.1	62 19 37.94						
		41.019	37.3	13.0	0 34 26.62	31 27 2.38	- 7 6.44	0.97	0.16	-0.40	56.57
60		53.197	35.3	11.1	62 19 37.94						
		44.274	36.1	11.7	0 30 39.17	31 25 8.56	- 5 12.46	0.35	0.12	-0.30	56.27
62	13 12 15.3	43.092	37.0	12.2	64 54 50.65						
	13 20 34.3	51.605	38.0	13.1	- 2 24 52.14	31 14 59.26	+ 4 58.10	0.46	0.12	+0.03	57.97
63		46.758	36.0	11.3	- 7 14 15.72						
		47.459	36.3	11.7	69 54 57.79	31 20 21.04	+ 24.55	0.18	-0.11	-0.47	56.19
64	1 32 11.5	46.675	36.4	11.4	67 20 4 85						
		49.697	36.4	11.2	- 4 44 25.22	31 17 49.82	+ 2 7.11	0.05	0.06	-0.08	56.96

En las columnas *r. m.* y *r.* están incluidas las correcciones por refracción, reducción al meridiano y demás que hace el Sr. Valle.

Observaciones de los pares de estrellas—Continuación.

FEBRERO 22 DE 1893.

Pares.	Hora crono- métrica de la bisección.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	....	....	
10	6 42 46.0	51.577	34.2	14.05	2 15 55.06	31 16 40.93	+ 3 14.55	1.89	0.07	+0.03	57.47
		46.021	31.0	10.7	60 27 16.80						
11		51.528	38.05	17.7	21 26 19.67	31 15 57.8	+ 3 58.67	1.67	0.07	+0.05	58.26
		44.712	34.9	14.2	41 5 35.93						
12		52.672	37.0	16.2	24 7 32.38	31 14 35.87	+ 5 21.38	0.09	0.09	+0.07	57.50
		43.494	36.85	16.0	38 21 39.36						
14	7 8 48.8	45.7517	35.7	38.3	62 58 58.08	31 18 7.40	+ 1 48.11	1.25	0.04	+0.18	56.98
		48.8533	14.6	17.9	— 0 22 43.29						
15		43.080	35.7	14.3	9 25 3.48	31 25 57.14	— 5 50.66	+ 0.32	— 0.11	— 0.06	66.63
		53.094	35.9	14.6	53 26 50.80						
17		49.3623	35.0	13.5	17 41 25.77	31 18 55.09	+ 1 5.05	0.94	0.02	— 1.87	59.23
		47.5047	37.1	15.15	44 56 24.41						
20		29.9689	37.4	15.1	14 46 56.4	31 45 34.05	— 25 38.86	1.78	0.48	— 1.25	56.20
		73.915	33.7	11.7	48 44 11.69						
21		60.2847	43.6	22.3	69 21 44.99	31 33 35.67	— 13 35.02	— 3.34	0.37	— 0.89	56.79
		37.0163	38.0	15.8	— 6 14 33.65						
23		46.1743	35.7	13.3	56 20 48.51	31 17 10.38	+ 2 48.29	1.18	0.06	+0.03	59.94
		50.9803	38.0	15.7	6 13 32.24						
26		44.4523	36.4	14.1	— 14 18 43.80	31 24 11.05	— 4 14.00	0.53	0.14	— 0.33	57.39
		51.7060	35.3	13.1	77 7 5.89						
42		29.9689	37.6	14.6	74 0 23.77	30 57 15.72	+ 22 43.40	0.67	0.72	— 1.07	59.44
		68.9043	36.2	13.3	— 12 5 52.92						
43		53.9973	38.0	15.1	29 9 7.34	31 14 15.37	+ 5 48.17	— 1.25	0.10	+0.06	62.45
		44.0543	40.6	17.5	33 19 23.40						
45		53.9480	35.95	12.1	37 15 20.27	31 28 52.19	— 6 54.01	0.37	0.12	— 0.32	58.35
		42.1248	36.5	13.0	25 38 24.11						

Telescopio 50" al Oeste del meridiano.

Observaciones de los pares de estrellas—Continuación.

FEBRERO 25 DE 1893.

Pares.	Cronómetro.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	...	....	
9											
11		52.618	35.9	13.3	21 26 19.7						
		45.701	35.9	13.3	41 5 35.7	31 15 57.7	+ 4 2.21	0.00	0.07	+0.05	60.03
12		54.292	35.9	13.3	24 7 32.4						
		45.015	35.7	13.0	38 21 39.4	31 14 35.9	+ 5 24.85	0.12	0.09	+0.05	61.01
14		46.321	36.0	13.0	12 58 58.2						
		49.464	37.7	14.6	- 0 22 43.3	31 18 7.45	+ 1 50.06	0.82	0.04	+0.02	58.39
15	7 6 18.2	43.1693	36.3	13.1	9 25 3.43						
		53.1330	35.9	12.8	53 26 50.96	31 25 57.20	- 5 48.90	0.18	0.10		.....
17		49.4005	35.05	12.1	17 41 25.77						
		47.4980	35.9	12.8	44 56 24.55	31 18 55.16	+ 1 6.62	-0.39	0.02	+0.03	61.42
20		29.9689	35.09	12.8	14 46 56.40						
		73.8495	33.7	11.7	48 44 11.34	31 45 33.87	-25 36.57	0.83	0.48	-1.24	57.37
22		74.4953	35.7	12.6	59 3 15.93						
		21.2455	34.2	13.0	4 38 50.25	31 51 3.09	-31 4.65	-0.27	-0.65	-0.29	57.23
24		35.6687	35.0	11.6	61 34 47.10						
		60.9330	36.0	12.3	0 35 43.35	31 5 15.23	+14 44.68	0.42	0.29	+0.16	60.78
42		28.0270	39.0	14.1	74 0 24.52						
		67.0390	36.9	11.8	12 5 53.70	30 57 15.41	+22 46.08	-1.10	0.73	+0.25	61.37
43		53.915	36.2	11.05	29 9 7.6						
		44.020	35.9	10.2	33 19 23.4	31 14 15.50	+ 5 46.49	0.29	0.10	+0.06	62.44
45		54.831	38.9	12.7	37 15 20.07						
		43.024	39.1	13.0	25 38 24.40	31 26 52.23	- 6 53.45	0.12	0.12	-0.32	58.70
46		51.812	40.8	14.0	63 31 51.75						
		43.980	42.8	16.5	- 0 42 49.15	31 24 31.30	- 4 35.31	0.03	0.11	-0.27	56.76
47		37.224	38.3	12.1	31 38 28.42						
	11 14 58.0	59.081	39.1	13.5	30 35 55.69	31 7 12.06	+12 45.37	0.43	0.22	+0.14	58.32
51		59.710	38.1	12.0	54 33 53.59						
		36.248	38.6	12.0	8 33 23.86	31 33 38.72	-13 41.57	-0.12	-0.31	-0.15	56.57
52		52.052	39.0	12.8	12 29 21.15						
		42.802	37.3	11.05	49 59 51.62	31 14 36.38	+ 5 23.91	0.85	0.10	-0.22	61.30
57		46.3683	38.3	12.3	-15 38 2.07						
		48.5898	36.3	10.4	78 20 34.67	31 21 16.30	- 1 17.79	0.98	0.04	-0.09	59.44
59		54.0123	36.0	10.1	62 19 38.90						
		41.9480	28.0	12.4	0 34 26.15	31 27 2.52	- 7 2.46	+1.08	0.16	-0.68	+ 60.30
60		54.0123	36.0	10.8	62 19 38.90						
		45.1557	35.0	9.8	0 34 26.15	31 25 8.80	- 5 10.13	-0.32	-0.12	-0.07	58.16

Observaciones de los pares de estrellas—Continuación.

FEBRERO 25 DE 1893.

Pares.	Hora cronométrica.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	....	....	
62											
63		46.5328	40.0	15.0	— 7 64 16.38						
		47.2720	36.8	11.6	69 54 59.06	31 20 21.34	— 0 25.88	+1.85	—0.01	0.00	57.30
64		46.2045	37.0	11.6	67 20 5.85						
		49.8910	37.3	11.9	— 4 44 25.89	31 17 49.98	+ 2 9.09	0.12	0.06	+0.02	59.27

FEBRERO 28 DE 1893.

Pares.	Cronómetro.	Micró- metro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	....	....	
21	7 32 32.3	61.444	37.6	15.6	69 21 45.8	° ' "					"
	7 36 36.0	38.080	37.0	15.0	— 6 14 34.0	31 33 35.9	—13 38.14	—0.30	0.37	—0.49	57.34
23	7 43 2.6	46.485	42.7	19.0	56 20 49.13						
	56 8.7	51.348	40.7	17.0	6 13 32.05	31 17 10.59	+ 2 50.29	1.00	0.06	—1.96	59.98
26	8 7 9.8	44.503	35.0	11.1	—14 18 44.37						
	43.0										
29	9 38.3	51.775	34.4	10.5	77 7 6.92	31 24 11.28	— 4 14.64	0.30	— 0.14	—0.05	56.75
	16 22.3	30.118	40.9	17.0	87 13 15.54						
31	20 41.7	66.897	40.6	16.7	—25 16 14.16	30 58 30.69	+21 27.89	0.15	1.40	—1.33	58.80
	.912										
36	35 41.0	64.5997	39.0	15.4	41 4 34.06						
	36 18.0	34.1790	40.7	16.8	22 10 50.57	31 37 42.32	—17 45.18	0.73	0.31	—0.82	57.36
36	9 4 15.5	34.570	38.0	13.0	24 39 20.85						
	6 56.5	43.732	32.0	7.7	37 46 42.04	31 13 1.95	+ 6 54.53	2.83	0.12	+0.08	59.51

MARZO 1 DE 1893.

46	10 44 15.5	45.863	10.95	32.2	63 31 53.08						
	47 41.0	33.662	11.1	36.7	— 0 42 49.31	31 24 31.835	— 4 33.04	0.16	0.10	—0.58	58.48
47	10 51 35.0	58.330	15.4	41.0	31 38 28.81						
	57 34.0	36.538	10.0	35.7	30 35 56.06	31 7 12.43	+12 43.09	2.67	0.22	+0.14	58.55
63		49.9205	11.9	37.2	— 7 14 16.91						
		49.3355	7.0	32.6	69 55 0.08	31 20 21.585	— 20.485	—4.87	— 0.01	0.00	56.22
64		51.247	13.4	39.0	67 20 7.19						
		47.642	12.3	38.0	— 4 44 26.43	31 17 51.38	+ 2 06.18	0.52	0.07	+0.07	58.22

Las observaciones del día 1° las hizo el Sr. D. Valentín Gama.

Discusión.

Nº del par.	Estrellas.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta \varphi^2$	η
1	ϵ Persei.....							
	1302 B. A. C. (S)....	57.63	57.63			0.42	0.1764	1.000
2	1287 B. A. C. (S)....	55.98	55.98			2.07	4.2849	1.000
	1913 Yarnall.....							
3	54 Persei.....	56.52	56.52			1.53	2.3409	1.000
	1966 Yarnall.....							
6	1421 B. A. C. (S)....	53.71	55.59	1.88	3.5344	2.46	6.0516	0.500
	1425 B. A. C. (S)....	57.47		1.88	3.5344			
8	μ Eridani.....	58.22	58.22			0.17	0.0289	1.000
	9 Camelop.....							
10	π^b Orionis.....	56.41	56.94	0.53	0.2809	1.11	1.2321	0.500
	10 Camelop.....	57.47		0.53	0.2809			
11	ι Tauri.....	35.00	57.76	2.76	7.6176	0.29	0.0841	0.333
	η Auriga.....	58.26		0.50	0.2500			
		60.03		2.27	5.1529			
12	2221 Yarnall.....	56.35	58.29	1.94	3.7636	0.24	0.0576	0.333
	μ Auriga.....	57.50		0.79	0.6241			
		61.01		2.72	7.3984			
14	17 Camelop.....	55.66	57.01	1.35	1.8225	1.04	1.0816	0.333
	δ Orionis.....	56.98		0.03	0.0009			
		58.39		1.38	1.9044			
17	130 Tauri.....	56.64	59.10	2.46	5.0516	1.05	1.1025	0.333
	β Auriga.....	59.23		0.13	0.0169			
		61.42		2.32	5.3824			
20	ν Orionis.....	56.20	56.79	0.59	0.3481	1.26	1.5876	0.500
	1963 B. A. C. (S)....	57.37		0.58	0.3364			
21	22 H Camelop.....	56.79	57.06	0.27	0.0729	0.99	0.9801	0.500
	5 Monoceros.....	57.34		0.28	0.0784			
22	2 Lyncis.....	57.23	57.23			0.82	0.6724	1.000
	8 Monocerotis....							
23	2045 B. A. C. (S)....	59.94	59.96	0.02	0.0004	1.91	3.6481	0.500
	1140 10 Yarnall (S)..	59.98		0.02	0.0004			
24	8 Lyncis.....	60.78	60.78			2.73	7.4529	1.000
	P. VI 203.....							
26	2807 Yarnall.....	57.39	57.07	0.32	0.1024	0.98	0.9604	0.500
	24 H Camelop.....	56.75		0.32	0.1024			
29	51 Cephei.....	58.80	58.80			0.75	0.5625	1.000
	P. VI 303.....							
31	64 Auriga.....	55.22	56.29	1.07	1.1449	1.76	3.0976	0.500
	δ Geminorum.....	57.36		1.07	1.1449			

Discusión—Continuación.

Nº del par.	Estrellas.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta \varphi^2$	η
33	ι Geminorum 2504 B. A. C. (S)....	55.27	55.27			2.78	7.7284	1.000
36	K Geminorum 1325 10 Y. C. (S)	59.51	59.51			1.46	2.1316	1.000
38	31 Lyncis 3440 Yarnall	58.72 55.57	57.15	1.57 1.58	2.4649 2.4649	0.90	0.8100	0.500
40	3446 Yarnall Groom 1450.....	55.63	55.63			2.42	5.8564	1.000
42	Groom 1446..... 6 Hydra.....	60.27 61.81	60.72	0.45 1.09	0.2025 1.1881	2.67	7.1289	0.250
		59.44 61.37		1.28 0.65	1.6384 0.4225			
43	ι Cancr. 3834 Yarnall	59.71 62.45	61.53	1.82 0.92	3.3124 0.8464	3.48	12.1104	0.333
		62.44		0.91	0.8281			
44	3952 Yarnall 4016 Yarnall	61.23	61.23			3.18	10.1124	1.000
	38 Lyncis.....	59.00	58.68	0.32	0.1024	0.63	0.3969	0.333
45	4012 Yarnall	58.35 58.70		0.33 0.03	0.1089 0.0004			
46	ι Ursa maj..... τ^2 Hydra.....	58.95 57.20	57.85	1.10 0.65	1.2100 0.4225	0.20	0.0400	0.250
		56.76 58.48		1.09 0.63	1.1881 0.3969			
47	3273 B. A. C. (S).... 4127 Yarnall	59.72 57.50	58.80	1.22 1.00	1.4884 1.0000	0.45	0.2025	0.250
		58.22 58.55		0.28 0.05	0.0784 0.0025			
51	3358 B. A. C. (S) π Leonis.....	60.84 56.57	58.70	2.14 2.13	4.5796 4.5369	0.65	0.4225	0.500
	α Leonis.....	62.70	61.01	1.69	2.8561	2.96	8.7616	0.333
52	4323 Yarnall	59.03 61.30		1.98 0.29	3.9204 0.0841			
54	γ^1 Leonis μ Ursa maj.....	59.87	59.87			1.82	3.3124	1.000
56	3691 B. A. C. (S) 3729 B. A. C. (S)	55.22	55.22			2.83	8.0089	1.000
57	γ Hydra..... Br. 1508.....	59.44	59.44			1.39	1.9321	1.000
59	α Ursa maj..... 4716 Yarnall	56.57 60.30	58.44	1.87 1.86	3.4969 3.4596	0.39	0.1521	0.500

Discusión—Continuación.

Nº del par.	Estrellas.	φ	Promedio.	Δ	Δ^2	$\Delta \varphi$	$\Delta \varphi^2$	η
60	α Ursa maj.....	56.27	57.21	0.94	0.8836	0.84	0.7056	0.500
	4783 Yarnall.....	58.16		0.95	0.9025			
62	Groom 1771.....	58.02	58.02			0.03	0.0009	1.000
	ε Leonis.....							
63	4913 Yarnall.....	56.19	56.57	0.38	0.1444	1.48	2.1904	0.333
	3933 B. A. C. (S)....	57.30		0.73	0.5329			
		56.22		0.35	0.1225			
64	3 Draconis.....	56.96	58.15	1.19	1.4161	0.10	0.0100	0.333
	5053 Yarnall.....	59.27		1.12	1.2544			
		58.22		0.07	0.0049			

$$\begin{aligned} \text{Pro.} &= 58.05 & \sum &= 98.5402 & \sum &= 107.4162 & & 24.247 \\ \mu &= 61 & m &= 23 & e &= 0.5745 & \sqrt{\frac{98.5402}{38}} &= \pm 1.09 & e^2 &= 1.1881 \end{aligned}$$

$$\begin{aligned} E_{\delta}^2 &= 0.455 \times \frac{107.4162}{37} = 1.3209 & E^2 &= \frac{1}{n} \frac{e^2}{m-1} = 0.7786 & E_{\delta}^2 &= 0.5224 & E_{\delta} &= \pm 0.736 \\ e_{\delta} &= \pm 1.04 \end{aligned}$$

Pesos 1	= 0.578	N' 1.0
2	0.879	1.5
3	1.065	1.8
4	1.191	2.1

Resultado final.

Nº del par.	Latitud 31° 19' +	p	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$	Nº del par.	Latitud 31° 19' +	p	$p \cdot \varphi$	Δ	Δ^2	$p \cdot \Delta^2$
1	57.63	1.0	7.63	0.47	0.2209	0.2209	36	59.51	1.0	9.51	1.41	1.9881	1.9881
2	55.98	1.0	5.98	2.12	4.4944	4.4944	38	57.15	1.5	10.73	0.95	0.9025	1.3538
3	56.52	1.0	6.52	1.58	2.4964	2.4964	40	55.63	1.0	5.63	2.47	6.1009	6.1009
6	55.59	1.5	8.39	2.51	6.3001	9.4502	42	60.72	2.1	22.51	2.62	6.8644	13.4152
8	58.22	1.0	8.22	0.12	0.0144	0.0144	43	61.53	1.8	20.75	3.43	11.7649	21.1768
10	56.94	1.5	10.41	1.16	1.3456	2.0184	44	61.23	1.0	11.23	3.13	9.7969	9.7969
11	57.76	1.8	13.97	0.34	0.1156	0.2081	45	58.68	1.8	15.62	0.58	0.3364	0.6055
12	58.29	1.8	14.92	0.19	0.0361	0.0650	46	57.85	2.1	16.49	0.25	0.0625	0.1313
14	57.01	1.8	12.52	1.09	1.1881	2.1386	47	58.50	2.1	16.48	0.40	0.1600	0.3360
17	59.10	1.8	16.38	1.00	1.0000	1.8000	51	58.70	1.5	13.05	0.60	0.3600	0.5400
20	56.79	1.5	10.18	1.31	1.7161	2.5752	52	61.01	1.8	19.82	2.91	8.4581	15.2426
21	57.06	1.5	10.59	1.04	1.0816	1.6224	54	59.87	1.0	9.87	1.77	3.1329	3.1329
22	57.21	1.0	7.21	0.89	0.7921	0.7921	56	55.22	1.0	5.22	2.88	8.2944	8.2944
23	59.96	1.5	14.94	1.86	3.4596	5.1894	57	59.44	1.0	9.44	1.34	1.7956	1.7956
24	60.78	1.0	10.78	2.68	7.1824	7.1824	59	58.44	1.5	12.66	0.34	0.1156	0.1156
26	57.07	1.5	10.61	1.03	1.0609	1.5913	60	57.21	1.5	10.81	0.89	0.7921	0.1881
29	58.80	1.0	8.80	0.70	0.4900	0.4900	62	58.02	1.0	8.02	0.08	0.0064	0.0064
31	56.29	1.5	9.43	1.81	3.2761	4.9141	63	56.57	1.8	11.83	1.53	2.3409	4.2136
33	55.27	1.0	5.27	2.83	8.0089	8.0089	64	58.15	1.8	14.67	0.05	0.0025	0.0045
									54.0	437.19			= 145.7683

Latitud del punto de Observación..... 31° 19' 58.10" $\pm$ 0.18"
 Reducción al Monumento N° 111..... + 0.17"
 Latitud del Monumento..... 31° 19' 58.27"

XIII.

Latitud de Nogales.

Método "Talcott."

Instrumentos.
Telescopio cenital.Personal.
Observador, Felipe Valle.
Ayudante, Carlos Kurczyn.*Valor angular de las revoluciones del micrómetro.*MARZO 25 DE 1893. α Ursa maj. $AR = 1\ 18\ 24.1$ $h. m. s.$ $\delta = 88\ 44\ 23.42$

Micrómetro.	Cronómetro.	Nivel.		Micrómetro.	Cronómetro.	Nivel.	
		oc.	ob.			oc.	ob.
	<i>h. m. s.</i>				<i>h. m. s.</i>		
62	6 9 13	12.3	34.4	49	6 55 27.0	10.9	33.5
61	12 48	12.15	34.3	48	58 57.0	10.9	33.6
60	16 22	12.1	34.4	47	7 2 33.0	9.9	33.7
59	19 54.5	12.1	34.4	46	6 6.0	10.1	33.0
58	23 27.5	11.8	34.05	45	9 39.0	10.3	33.2
57	27 4.7	11.8	34.0	44	13 13.0	10.2	33.1
56	30 36.0	11.3	33.7	43	16 45.0	10.1	33.1
55	34 11.5	11.1	33.6	42	20 19.0	9.85	32.9
54	37 44.0	11.1	33.7	41	23 55.0	9.8	32.9
53	41 16.0	11.0	33.6	40	27 33.0	9.6	32.8
52	44 53.5	11.5	33.7	39	31 4.0	9.6	32.8
51	48 27.0	11.0	33.75	38	34 42.0	9.2	32.4
49.840	52 27.0	10.6	33.1	37	38 18.0	9.0	32.1

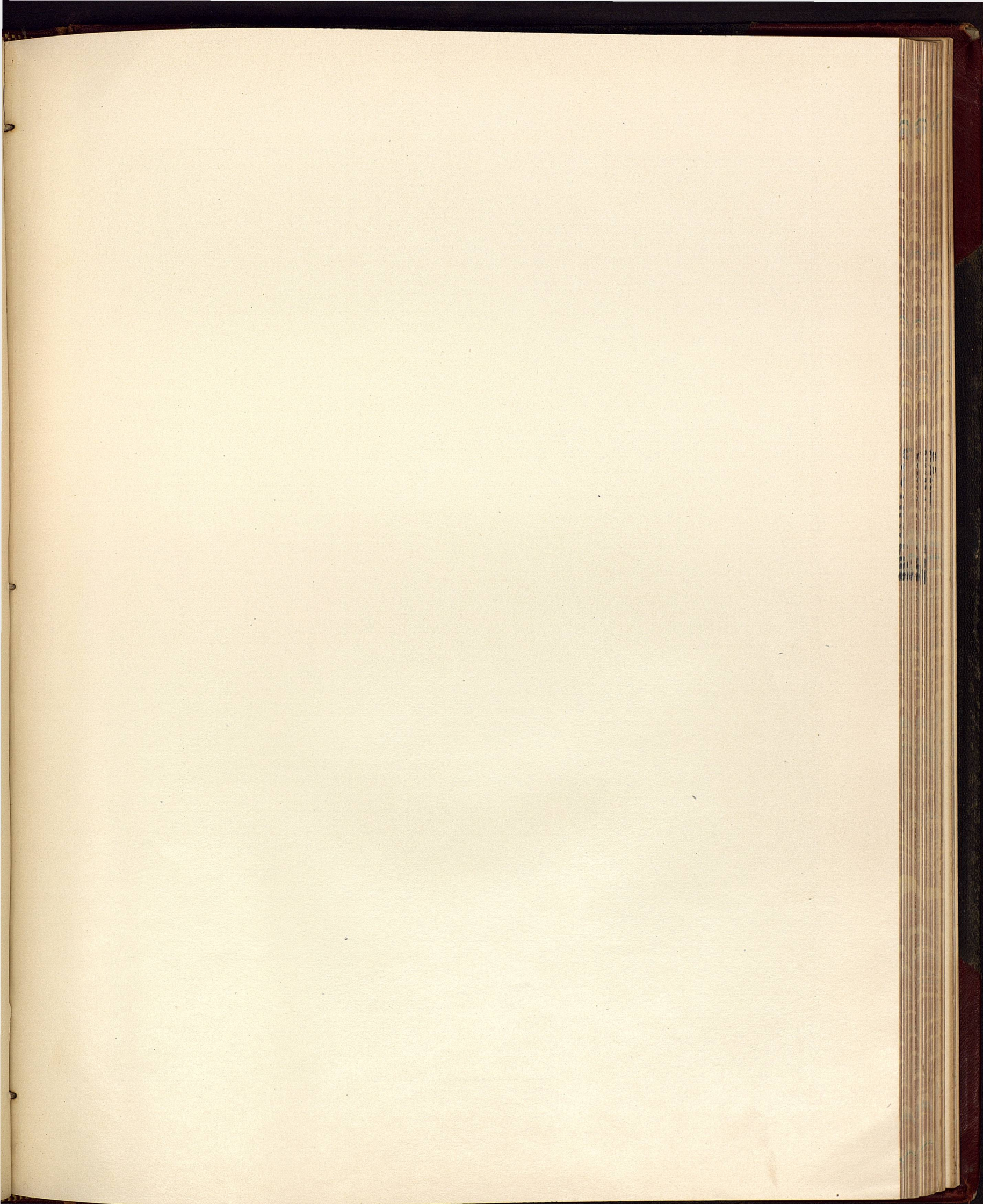
$$\Delta t = + 12\ m. 37.1\ s.$$

$$R = 70.105'' \pm 0.17$$

Observaciones de los pares de estrellas.

ABRIL 20 DE 1893.

Pares.	Cronómetro.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 20' +
			oc.	ob.			m.	n.	....	....	
	<i>h. m. s.</i>				$\circ\ ' \ ''$	$\circ\ ' \ ''$	$\circ\ ' \ ''$				$\circ\ ' \ ''$
1	12 13 5	42.074	10.05	38.65	21 8 10.93						
	17 9	56.281	15.60	44.05	41 15 19.76	31 11 45.35	+ 8 17.96	2.74	0.14	.....	6.19
2	12 21 10	42.099	12.00	40.6	3 54 21.58						
	23 0	57.570	20.9	49.3	58 27 36.95	31 10 59.26	+ 9 2.30	+1.76	+0.17	+0.86	4.35
4	12 49 58	53.551	10.1	39.2	14 42 16.03						
		43.802	11.5	40.7	47 46 33.86	31 14 24.94	+ 5 42.24	-0.73	0.10	+0.01	6.56
5		51.793	40.6	11.3	66 1 7.10						
	12 0 45	46.114	37.2	8.0	- 3 14 15.92	31 23 25.59	- 3 19.06	0.08	0.06	-0.12	6.55
6	13 4 11	57.651	39.7	10.3	23 11 17.23						
		58.872	40.	10.0	39 6 7.68	31 8 42.46	+11 23.91	+0.23	0.19	0.00	6.79
7		39.361									
		37.492	39.5	9.95	12 7 21.79						
		57.237	37.2	7.9	50 14 36.14	31 10 58.97	+ 8 50.92	+0.55	0.10		6.97
		41.520	38.4	8.9							





NO. 19

ANTIGUO MONUMENTO 26, EN NOGALES.

Observaciones de los pares de estrellas—Continuación.

ABRIL 20 DE 1893.

Pares.	Cronómetro.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 20' +
			oc.	ob.			m.	n.	....	....	
	<i>h. m. s.</i>				<i>° ' "</i>	<i>° ' "</i>	<i>' "</i>				<i>"</i>
9		42.022	39.2	9.7	37 35 25.88						
		57.140	31.6	1.9	24 47 10.67	31 11 17.93	+ 8 49.93	- 3.85	0.15	0.00	4.16
10		51.318	31.05	1.4	24 54 59.24						
		49.192	31.1	1.4	37 43 41.36	31 18 50.30	+ 1 14.57	- 0.02	+ 0.02	0.00	4.87
11		48.325	40.0	10.0	20 29 38.46						
		50.180	39.5	9.6	42 12 39.36	31 21 8.91	- 1 5.02	+ 0.23	- 0.02	0.00	4.10
12		57.430	39.4	9.5	34 58 18.49						
		41.163	40.05	10.0	28 0 49.70	31 29 34.10	- 9 29.20	+ 0.29	- 0.16	0.00	5.03
13		53.242	40.15	10.05	18 11 9.81						
		46.847	40.7	10.4	44 21 38.03	31 16 23.92	+ 3 44.16	- 0.23	0.07	0.00	7.92
<i>a</i>	2 11 16	43.728	40.8	10.5	49 57 37.84						
		54.673	40.4	10.1	12 29 45.45	31 13 41.65	+ 6 23.65	- 0.20	0.12	+ 0.07	5.29
<i>b</i>	2 16 26.5	54.002	39.4	9.05	10 36 4.22						
		43.209	39.5	8.85	51 51 27.85	31 13 46.04	+ 6 18.32	+ 0.13	0.12	0.02	4.63
<i>c</i>		44.414	40.9	10.2	32 15 49.67						
		54.712	40.05	9.3	30 12 20.74	31 14 5.21	+ 6 0.97	- 0.44	0.10	0.00	5.84
<i>d</i>		44.011	40.7	9.95	18 45 34.45						
		53.821	41.0	10.1	44 6 0.55	31 25 47.50	- 5 43.86	- 0.11	- 0.10	0.00	3.43
<i>e</i>	2 43 0	53.391	43.7	12.95	16 52 22.83						
		45.177	43.7	12.95	45 38 5.11	31 15 13.97	+ 4 52.83	0.00	0.09	+ 0.26	7.15
<i>f</i>		53.391	41.8	11.0	24 48 23.89						
		45.411	42.8	12.0	37 42 25.52	31 15 24.70	+ 4 39.72	- 0.50	0.08	0.00	4.00
<i>g</i>		52.776	42.05	11.1	14 27 42.96						
		45.556	42.3	11.4	48 3 59.25	31 15 51.10	+ 4 12.73	- 0.14	0.07	0.00	3.76
<i>h</i>		57.929	39.05	7.85	20 57 35.56						
		39.948	41.7	10.4	41 21 37.89	31 9 36.73	+10 30.28	- 1.30	0.18	0.00	5.89
<i>m</i>	3 45 9.0 55 52.5	51.072	43.5	12.2	26 37 47.13						
		49.219	40.3	9.0	35 59 3.28	31 18 25.21	+ 1 4.95	- 0.20	0.03	+35.84	5.77
<i>3'</i>		54.260	42.01	10.2	14 16 31.08						
		43.533	40.4	8.4	48 11 8.12	31 13 49.60	+ 6 16.01	+ 0.82	+ 0.11	+ 0.03	6.57
<i>i</i>		52.797	39.05	7.7	33 18 44.01						
		46.987	39.5	7.0	29 28 11.56	31 23 27.78	- 3 22.25	- 1.60	+ 0.06	- 0.12	3.87
<i>l</i>		49.996	39.05	7.7	43 56 53.26						
		45.916	39.5	7.0	18 48 61.17	31 22 27.27	- 2 23.01	- 0.06	- 0.04	- 0.01	4.16
<i>4'</i>		38.773	40.65	8.0	13 53 57.50						
		57.351	40.05	8.0	49 7 55.79	31 30 56.64	-10 51.21	0.00	- 0.20	0.00	5.23