

XII.

Latitud del Monumento No XXIV, actualmente No 111.
Método "Talcott."

Instrumentos.
Telescopio Zenital.
Cronómetro No 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>			R = 70.083" ± 0.028
28	7 53 32.0	38.0	13.7	55	9 30 57.0	38.7	12.7	
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 43.0	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	74.130	10 40 47.0	39.5	12.9	
51	9 16 47.0	38.1	12.6	74.348	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					

$\Delta t = -2\ m. 4.8\ s.$

FEBRERO 21 DE 1893. α Ursa min. $AR = 1\ h. 18\ m. 39.4\ s.$ $\delta = 88^\circ 44' 31.52''$.

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 43 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	39.05	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				

$\Delta t = -1\ m. 29.75\ s.$
R = 70.034 ± 0.017.

XII.—Latitud del Monumento No XXIV, actualmente No 111—Continuación.

MARZO 3 DE 1893. α Ursa min. $AR = 1\ h. 18\ m. 32.8\ s.$ $\delta = 88^\circ 44' 29.5''$.

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>		
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	33.7	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
.377	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	41.15
.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	38.65	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

$\Delta t = -2\ m. 5.00\ s.$
R = 70.060" ± 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.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $31^\circ 19'$ +	
			oc.	ob.			m.	n.	r. m.	r.		
1		R. 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	+0.38	+0.23		56.52	
6		44.332	35.0	16.3	9 56 30.14							
	6 34 51.8	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		55.06	
15		43.418	35.95	16.15	9 25 3.56							
	7 38 30.0	53.516	33.2	13.3	53 26 50.56	31 25 57.06	- 5 53.85	+1.40	-0.11		54.20	
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		56.61	
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.	Micrómetro.	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							
		56.540	35.9	14.1	35 17 23.79	31 39 4.02	-19 8.42	-0.18	0.33		55.27	
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	66.051	36.6	12.8	-12 5 51.90	30 57 15.44	+22 44.84	-0.73	0.72		60.27	
45		55.458	37.5	13.3	37 15 20.51							
	11 21 26.5	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 31.99	+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 50.25	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 incluidas las reducciones al meridiano y demás correcciones que hizo el Sr. Valle á los resultados.

FEBRERO 20 DE 1893.

Pares.	Hora cronométrica.	Micrómetro.	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							
		40.105	38.9	11.5	14 50 24.	31 29 26.75	-9 30.60	0.12	0.18	-0.53	55.98	
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							
		40.053	44.4	15.9	66 9 58.43	31 21 26.89	-1 23.80	-2.69	-0.04	-2.14	58.22	
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	



MANANTIALES DE SAN BERNARDINO.

NO. 4. 0

Observaciones de los pares de estrellas—Continuación.

FEBRERO 20 DE 1893.

Pares.	Hora cronométrica.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud $31^{\circ} 19'$ +	
			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	60.900	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 13.30	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 43.30	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 2.28	- 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	+ 34.55	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.

Pares.	Hora cronométrica de la bisección.	Micrómetro.	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
11		46.021	31.0	10.7	60 27 16.80	31 15 57.8	+ 3 58.67	1.67	0.07	+0.05			58.35
12		51.528	38.05	17.7	21 26 19.67	31 14 35.87	+ 5 21.38	0.09	0.09	+0.07			57.50
		44.712	34.9	14.2	41 5 35.93	31 18 7.40	+ 1 48.11	1.25	0.04	+0.18			56.98
14	7 8 48.8	52.672	37.0	16.2	24 7 32 38	31 25 57.14	- 5 50.66	+ 0.32	- 0.11	- 0.06			56.63
15		43.494	36.85	16.0	38 21 39.36	31 18 55.09	+ 1 5.05	0.94	0.02	- 1.87			59.23
17		45.7517	35.7	38.3	62 58 58.08	31 45 34.05	- 25 38.86	1.78	0.48	- 1.25			56.20
		48.8533	14.6	17.9	- 0 22 43.29	31 33 35.67	- 13 35.02	- 3.34	0.37	- 0.89			56.79
20		43.080	35.7	14.3	9 25 3.48	31 17 10.38	+ 2 48.29	1.18	0.06	+0.03			59.94
		53.094	35.9	14.6	53 26 50.80	31 24 11.05	- 4 14.00	0.53	0.14	- 0.33			57.39
21		49.3623	35.0	13.5	17 41 25.77	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		47.5047	37.1	15.15	44 56 24.41	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
23		29.9689	37.4	15.1	14 46 56.4	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		73.915	33.7	11.7	48 44 11.69	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
26		60.2847	43.6	22.3	69 21 44.99	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		37.0163	38.0	15.8	- 6 14 33.65	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
28		46.1743	35.7	13.3	56 20 48.51	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		50.9803	38.0	15.7	6 13 32.24	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
30		44.4323	36.4	14.1	- 14 18 43.80	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		51.7060	35.3	13.1	77 7 5.89	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
32		29.9689	37.6	14.6	74 0 23.77	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		68.9043	36.2	13.3	- 12 5 52.92	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
34		53.9973	38.0	15.1	29 9 7.34	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
		44.0543	40.6	17.5	33 19 23.40	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35
36		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	31 28 52.19	- 6 54.01	0.37	0.12	- 0.32			58.35

Telescopio 50" al Oeste del meridiano.

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	31 15 57.7	+ 4 2.21	0.00	0.07	+0.05			60.03	
		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	31 14 35.9	+ 5 24.85	0.12	0.09	+0.05			61.01	
		45.015	35.7	13.0	38 21 39.4	31 18 7.45	+ 1 50.06	0.82	0.04	+0.02			58.39	
14		46.321	36.0	13.0	12 58 58.2	31 18 7.45	+ 1 50.06	0.82	0.04	+0.02			58.39	
		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	31 25 57.20	- 5 48.90	0.18	0.10				.....
		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	31 18 55.16	+ 1 6.62	- 0.39	0.02	+0.03			61.42	
		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	31 45 33.87	- 25 36.57	0.83	0.48	- 1.24			57.37	
		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	33.7	12.6	59 3 15.93	31 51 3.09	- 31 4.65	- 0.27	- 0.65	- 0.29			57.23	
		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	31 5 15.23	+ 14 44.68	0.42	0.29	+0.16			60.78	
		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	30 57 15.41	+ 22 46.68	- 1.10	0.73	+0.25			61.37	
		67.0390	36.9	11.8	12 5 53.70	30 57 15.41	+ 22 46.68	- 1.10	0.73	+0.25			61.37	
43		53.915	36.2	11.05	29 9 7.6	31 14 15.50	+ 5 46.49	0.29	0.10	+0.06			62.44	
		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	31 26 52.23	- 6 53.45	0.12	0.12	- 0.32			58.70	
		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	31 24 31.30	- 4 35.31	0.23	0.11	- 0.27			56.76	
		43.980	42.8	16.5	- 0 42 49.15	31 24 31.30	- 4 35.31	0.23	0.11	- 0.27			56.76	
47		37.224	38.3	12.1	31 38 28.42	31 7 12.06	+ 12 45.37	0.43	0.22	+0.14			58.22	
	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			58.22	
51		59.710	38.1	12.0	54 33 53.59	31 33 38.72	- 13 41.57	- 0.12	- 0.31	- 0.15			56.57	
		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	31 14 36.38	+ 5 23.91	0.85	0.10	- 0.22			61.30	
		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	31 21 16.30	- 1 17.79	0.98	0.04	- 0.09			59.44	
		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	31 27 2.52	- 7 2.46	- 1.08	0.16	- 0.68			+ 60.30	
		41.9480	38.0	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	31 25 8.80	- 5 10.13	- 0.32	- 0.12	- 0.07			58.16	
		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.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +	
			oc.	ob.			m.	n.	...	...
62												
63		46.5328 47.2720	40.0 36.8	15.0 11.6	- 7 64 16.38 09 54 59.06	31 20 21.34	- 0 25.88	+1.85	-0.01	0.00	57.30	
64		46.2045 49.8910	37.0 37.3	11.6 11.9	07 20 5.85 - 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.	Micrómetro.	Nivel.		δ	$\frac{1}{2}(\delta + \delta')$	Correcciones.				Latitud 31° 19' +
			oc.	ob.			m.	n.	...	...
21	7 32 32.3 7 36 36.0	61.444 38.080	37.6 37.0	15.6 15.0	09 21 45.8 - 6 14 31.0	31 33 35.9	-13 38.14	-0.30	0.37	-0.49	57.34
23	7 43 2.6 56 8.7 34.0	46.485 51.348	42.7 40.7	19.0 17.0	56 20 49.13 6 13 32.05	31 17 10.59	+ 2 50.29	1.00	0.06	-1.96	59.98
26	8 7 9.8 43.0 9 38.3	44.508 51.775	35.0 34.4	11.1 10.5	-14 18 44.37 77 7 6.92	31 24 11.28	- 4 14.64	0.30	- 0.14	-0.05	56.75
29	16 22.3 20 41.7 .912	30.118 66.897	40.9 40.6	17.0 16.7	87 13 15.54 -25 16 14.16	30 58 30.69	+21 27.89	0.15	1.40	-1.33	58.80
31	35 41.0 36 18.0	64.5997 34.1790	39.0 40.7	15.4 16.8	41 4 34.06 22 10 50.57	31 37 42.32	-17 45.18	0.73	0.31	-0.82	57.36
36	9 4 15.5 6 56.5	34.570 43.732	38.0 32.0	13.0 7.7	24 39 20.85 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 47 41.0	45.863 33.662	10.95 11.1	32.2 36.7	63 31 53.08 - 0 42 49.31	31 24 31.835	- 4 33.04	0.16	0.10	-0.58	58.48
47	10 51 35.0 57 34.0	58.330 36.538	15.4 10.0	41.0 35.7	31 38 28.81 30 35 56.06	31 7 12.43	+12 43.09	2.67	0.22	+0.14	58.55
63		49.9205 49.3355	11.9 7.0	37.2 32.6	- 7 14 16.91 09 55 0.08	31 20 21.585	- 20.485	-4.87	- 0.01	0.00	56.22
64		51.247 47.642	13.4 12.3	39.0 38.0	07 20 7.19 - 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	c 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^5 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		0.63	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 Lynxis.....	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 Lynxis.....	60.78	60.78			2.73	7.4529	1.000
	P. VI 303.....							
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 Lynx ... 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 59.44 61.37	60.72	0.45 1.09 1.38 0.65	0.2025 1.1881 1.6384 0.4225	2.67	7.1289	0.250
43	ι Cancr. 3834 Yarnall ...	59.71 62.45 62.44	61.53	1.82 0.92 0.91	3.3124 0.8464 0.8281	3.48	12.1104	0.333
44	3952 Yarnall ... 4016 Yarnall ...	61.23	61.23			3.18	10.1124	1.000
45	38 Lycis..... 4012 Yarnall ...	59.00 58.35 58.70	58.68	0.32 0.33 0.02	0.1024 0.1089 0.0004	0.63	0.3969	0.333
46	h Ursa maj..... τ^2 Hydra.....	58.95 57.20 56.76 58.48	57.85	1.10 0.65 1.09 0.63	1.2100 0.4225 1.1881 0.3969	0.20	0.0400	0.250
47	3273 B. A. C. (S).... 4127 Yarnall ...	59.72 57.50 58.22 58.55	58.80	1.22 1.00 0.28 0.05	1.4884 1.0000 0.0784 0.0025	0.45	0.2025	0.250
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
52	α Leonis..... 4323 Yarnall ...	62.70 59.03 61.30	61.01	1.69 1.98 0.29	2.8561 3.9204 0.0841	2.96	8.7616	0.333
54	y^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..... 4783 Yarnall.....	56.27 58.16	57.21	0.94 0.95	0.8836 0.9025	0.84	0.7056	0.500
62	Groom 1771..... ϵ Leonis.....	58.02	58.02			0.03	0.0009	1.000
63	4913 Yarnall..... 3933 B. A. C. (S)....	56.19 57.30 56.22	56.57	0.38 0.73 0.35	0.1444 0.5329 0.1225	1.48	2.1904	0.333
64	3 Draconis..... 5053 Yarnall.....	56.96 59.27 58.22	58.15	1.19 1.12 0.07	1.4161 1.2544 0.0049	0.10	0.0100	0.333

$n = 61$ $m = 23$ $e = 0.5745$ $\sqrt{\frac{98.5402}{38}} = \pm 1.09$ $e^2 = 1.1881$
 $\text{Pro.} = 58.05$ $\Sigma = 98.5402$ $\Sigma^2 = 107.4162$ 24.247
 $E_{\delta}^2 = 0.455 \times \frac{107.4162}{37} = 1.3209$ $E^2 = \frac{1}{n} = 0.7786$ $E_{\delta}^2 = 0.5924$ $E_{\delta} = \pm 0.736$
 $e_{\delta} = \pm 1.04$

Pesos	N°
1	0.578
2	0.879
3	1.065
4	1.191

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	13.4132	
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	0.31	0.1156	0.3081	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"