

IV.

Latitud del Monumento N^o 1 inicial del Paralelo 31° 47'.

Distancias cenitales meridianas.

Estrellas.	Hora cronométrica.		Círculo.	Nivel.		Indicación cenital.	Refracción.	Latitud.
	h. m. s.	m. s.		oc.	ob.			
ξ Ceti.....	7 34 18.3	-29 14.3	236 52 18.86	13.7	115.0	oc = 60.5 ob = 77.5 Barómetro 609.52 T. F. 87.5 T. L. 2.1	31 46 52.26	
ξ Piscium.....	7 36 17.8	14.3	250 23 29.09	17.9	114.2			51.96
β Arietis.....	7 37 20.8	14.3	268 0 47.82	17.9	114.2			53.47
50 Cassiopee.....	7 41 43.7	14.3	319 37 13.73	17.9	114.2			53.84
ν Ceti.....	7 43 19.2	14.3	236 8 41.54	17.9	114.2			52.50
γ Andromeda.....	7 45 21.8	14.3	289 32 27.96	18.6	115.2			52.03
α Arietis.....	7 49 42.2	14.3	270 41 07.68	18.5	115.1			48.32
55 Cassiopee.....	7 54 17.2	14.3	313 44 28.31	18.0	125.0			48.90
μ Fornacis.....	7 56 27.7	14.3	216 31 25 57	20.8	117.6			49.60
4 Ursa min.....	7 58 2.6	14.3	349 43 11.64	18.0	114.7			47 5.58
67 Ceti.....	7 59 54.8	14.3	240 49 8.84	19.3	116.0			53.43
ι Cassiopee.....	8 8 30.7	14.3	314 38 22.97	17.4	114.0			54.08
ξ Ceti.....	8 10 5.55	14.3	255 42 39.38	19.3	116.0			53.96
36 II Cassiopee.....	8 14 12.6	14.3	330 4 2.76	17.0	113.8			54.24
36 ".....	8 15 18.2	14.3	320 8 58.95	17.6	114.1			55.53
Promedio.....								31 46 52.44 ± 0.38

La latitud obtenida con 4 Ursa min. no se consideró en el promedio.
Círculo al Oeste.

Estrellas.	Hora cronométrica.		Círculo.	Nivel.		Indicación cenital.	Refracción.	Latitud.
	h. m. s.	m. s.		oc.	ob.			
η Eridani.....	8 39 3.8	-29 14.3	330 36 31.75	123.8	26.7	oc = 60.5 ob = 77.5 Barómetro 610.51 T. F. 87.3 T. L. 3.1	31 47 0.73	
ρ Persei.....	8 46 27.0	29 14.3	272 52 18.97	28.6	125.5			10.07
β Persei.....	8 48 59.1	29 14.3	270 45 14.87	29.0	125.9			9.29
ς Arietis.....	8 53 27.4	29 14.3	291 58 22.45	123.7	26.8			11.40
ζ Arietis.....	8 56 55.3	29 14.3	290 38 43.47	123.0	26.0			4.49
5140 B.A.C.....	9 1 43.9	29 14.3	218 57 41.88	30.0	127.0			3.75
5140 B.A.C.....	9 2 56.8	29 14.3	218 57 48.53	29.1	126.0			3.54
α Persei.....	9 4 23.5	29 14.3	261 49 5.54	38.9	125.7			6.36
ο Tauri.....	9 7 7.8	29 14.3	302 38 16.48	124.2	27.7			4.64
ε Tauri.....	9 9 39.9	29 14.3	301 55 50.34	123.6	26.9			3.30
φ Tauri.....	9 13 8.8	29 14.3	298 43 16.98	123.6	27.0			5.70
ε Eridani.....	9 16 5.7	29 14.3	321 6 16.32	123.6	27.0			3.13
ς Persei.....	9 23 7.6	29 14.3	263 51 10.76	29.0	125.3			8.56
γ Camelop.....	9 26 54.0	29 14.3	240 18 6.22	29.4	126.0			4.14
Promedio.....								31 47 5.05 ± 0.55

Promedio.
31 46 52.44
31 47 5.05
Reducción al monumento, +0.46
Latitud del Monumento N^o 1, 31 46 59.51

Declinaciones de las estrellas empleadas anteriormente.

Estrellas.	Estrellas.	Estrellas.	Estrellas.
ζ Ceti..... -10 52 18.89	55 Cassio..... 66 1 18.67	ρ Persei..... 38 25 26.08	ξ Tauri..... 9 21 21.58
ξ Piscium... 2 39 11.88	μ Fornacis... -31 14 6.74	β Persei..... 40 32 29.96	φ Tauri..... 12 34 0 94
β Arietis.... 20 16 50.46	67 Ceti..... -6 55 18.13	δ Arietis.... 19 19 8.20	ε Eridani... -9 49 29.55
50 Cassio.... 71 54 9.77	ι Cassiopee 66 55 13.92	ζ Arietis.... 20 38 42.00	δ Persei.... 47 26 41.16
ν Ceti..... -21 36 16.48	ξ ² Ceti..... 7 58 32.05	5140 B.A.C... 60 34 19.15	γ Camelop.. 71 0 9.15
γ Andro.... 41 48 49.82	36 II Cassio.. 72 20 58.78	α Persei.... 49 28 45.76	
α Arietis... 22 57 9.45	η Eridani... -9 19 46.22	ο Tauri..... 8 38 55.51	

V.

Latitud de un punto del Paralelo 31° 47' colocado veinte millas al Oeste del monumento inicial.

Distancias cenitales meridianas combinadas por el método "Talcott."

Fechas.	Estrellas.	Declinaciones.	Tiempo.	Círculo.	Nivel.		Latitud.
					oc.	ob.	
1892.			h. m. s.				
Febrero 13...	ζ Tauri.....	21 4 39.2	5 32 10.05	289 58 12.40	121.4	28.9	
			5 33 34.28	48.35			
			5 34 55.02	59 58.15	125.0	33.0	
" 13...	υ Auriga.....	39 7 9.21	5 42 49 63	286 36 50.75	115.2	23.8	
			43 44.24	2.35	111.9	20.3	
			44 58.34	9.52	115.0	23.8	31 46 59.15
" 13...	36 Lyncis.....	43 39 47.82	9 7 9.67	291 8 34.60	114.3	21.2	
" 13...	83 Cancri.....	18 9 45.90	9 14 13.83	292 53 10.00	125.6	32.3	64.56
" 13...	α Hydra.....	-8 11 27.55	9 23 16.31	319 13 44.47	136.0	32.8	
" 13...	δ Urs. maj.....	70 18 20.51	9 26 9.28	317 46 46.60	113.7	30.6	61.61
" 15...	27 Lyncis.....	51 49 11.2	8 4 47.47	299 19 2.35	106.7	5.6	
			6 9.19	45.18	107.0	5.9	
			7 21.79	20 32.92	107.0	6.5	
" 15...	β Cancri.....	9 31 5.5	8 10 36.92	301 31 24.05	131.2	31.0	
			13 39.12	9.28	121.0	21.0	
			14 56.63	51.65	118.9	19.1	61.19
" 15...	31 Lyncis.....	43 32 8.5	8 17 52.61	291 1 34.25	117.8	18.0	
			19 23.46	30.58	117.7	18.1	
" 15...	31 Cancri.....	20 48 29.5	8 26 4.46	290 14 21.33	118.8	19.0	
			28 2.08	38.75	118.8	19.0	59.35
" 15...	36 Lyncis.....	43 39 48.16	9 6 26.97	291 8 36.45	118.0	16.9	
			8 25.79	55.43	117.8	16.9	
			9 23.46	9 18.03	118.7	17.8	
" 15...	83 Cancri.....	18 9 45.95	9 12 31.36	292 52 57.80	120.8	20.0	
			14 37.20	53 15.60	120.2	19.7	
			16 29.71	54 19.33	120.0	19.2	46 58.98

V.—Latitud de un punto del Paralelo 31° 47' colocado veinte millas al Oeste del monumento inicial—Continuación.

Fechas.	Estrellas.	Declinaciones.	Tiempo.	Círculo.	Nivel.		Latitud.
					oc.	ob.	
1892.		° ' "	<i>h. m. s.</i>	° ' "			° ' "
Febrero 15...	α Hydra.....	- 8 11 27.85	9 22 37.32 23 41.40 23 37.05	319 13 43.03 49.45 58.55	130.8 120.0 130.8	20.0 19.1 20.0	
" 15...	δ Urs. maj.....	70 18 21.05	9 26 28.85 27 48.77 29 47.59	317 46 46.90 48.75 57.33	116.0 117.7 117.7	15.3 17.0 16.9	31 47 0.06
" 16...	α Orionis.....	7 23 12.4	5 45 49.71 46 50.29 49 29.00	303 39 25.20 47.93 13.00	112.9 111.8 112.0	19.8 18.7 19.0	
" 16...	δ Auriga.....	54 16 47.3	5 51 18.10 52 33.27 53 28.56	301 45 21.02 27.77 40.78	116.0 115.3 115.0	23.0 22.4 22.0	47 1 92
" 22...	19 H Camelop.....	70 6 42.2	5 3 37.35 6 20.30	231 56 52.26 51.86	32.7 32.3	120.0 120.0	
" 22...	α Leporis.....	-17 54 6.7	5 27 26.25 29 28.08	229 35 34.85 31.43	30.2 29.0	120.0 118.9	46 50.88
" 22...	α Orionis.....	7 23 12.26	5 45 49.76 47 57.61	254 51 25.90 52 9.07	28.0 28.0	119.7 118.8	
" 22...	δ Auriga.....	54 16 47.96	5 50 33.03 54 0.60	256 46 12.05 45 44.48	34.7 35.0	125.3 125.7	47 2.96
" 23...	17 Camelop.....	62 58 52.38	5 18 5.00 19 6.77	310 27 18.83 16.58	109.0 109.0	25.4 25.3	
" 23...	δ Orionis.....	- 0 22 48.02	5 23 39.14 27 42.50	311 25 36.85 16.45	111.0 110.0	28.0 26.0	47 1.83
" 23...	51 Auriga.....	39 29 17.84	6 31 28.95 34 54.21	271 33 37.05 31 28.78	107.3 109.0	26.4 28.1	
" 23...	ϵ Geminorum....	25 14 21.32	6 37 21.28 38 48.42	272 43 14.65 42 46.04	30.8 28.9	111.3 109.8	47 0.03
" 23...	27 Lynceis.....	51 49 12.6	8 2 0.68 3 12.98	259 13 44.53 24.80	25.8 28.2	113.0 115.3	
" 23...	β Cancri.....	9 31 5.3	8 8 13.10 9 28.71	256 59 47.35 60 07.93	21.8 22.5	109.0 109.7	47 1.19
" 23...	31 Lynceis.....	43 32 9.4	8 16 14.42 18 0.81	267 30 37.80 7.07	29.7 30.0	117.0 117.2	
" 23...	η Cancri.....	20 48 29.7	8 24 13.32 25 29.63	268 16 48.70 17 20.68	21.2 21.3	108.7 109.0	46 59.69
Marzo 1...	α Hydra.....	- 8 11 29.90	9 23 45.37 24 58.77 26 23.87	319 13 42.48 59.50 22.69	117.1 117.8 117.7	27.8 28.3 28.5	

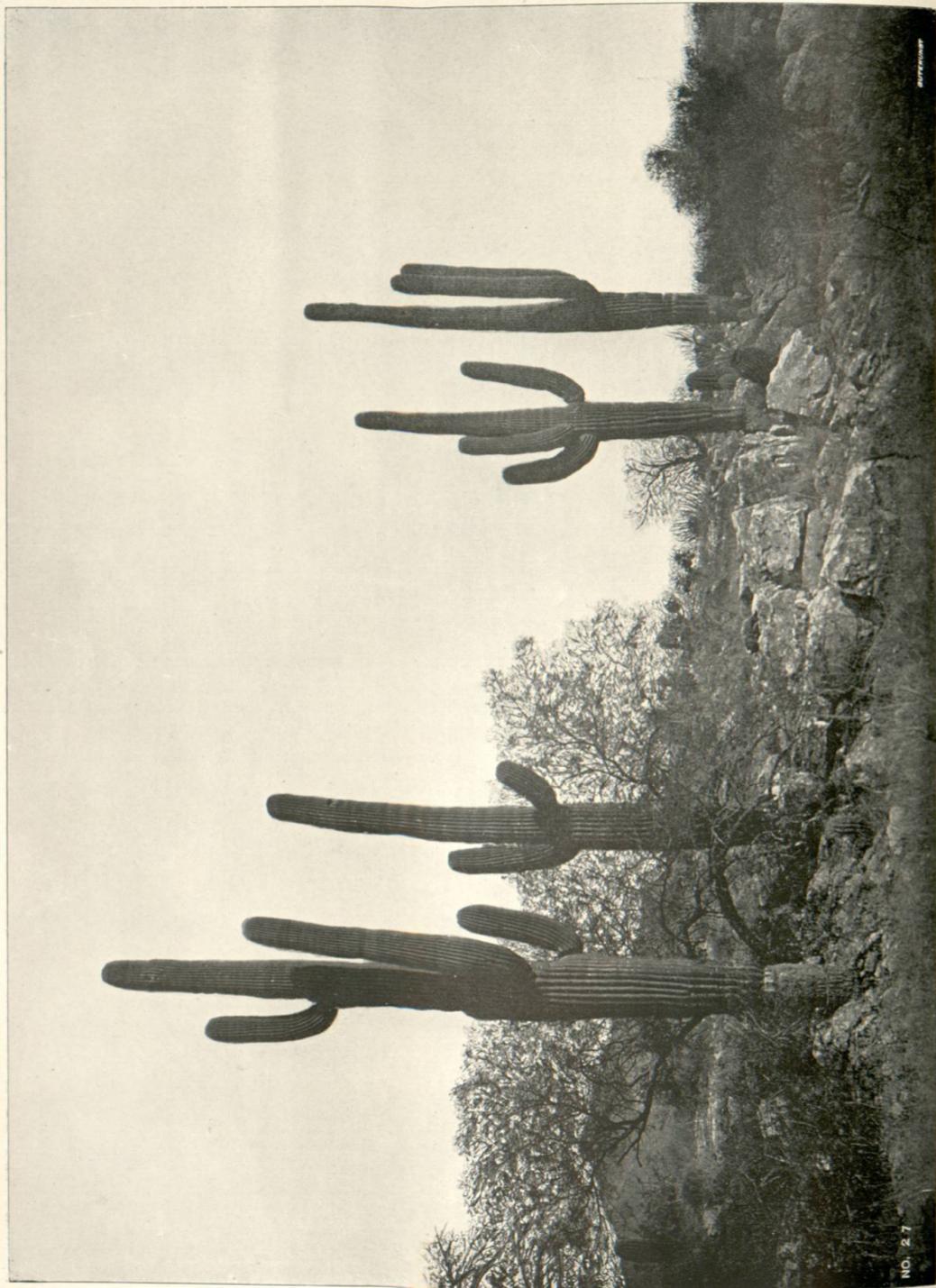


V.—Latitud de un punto del Paralelo 31° 47' colocado veinte millas al Oeste del monumento inicial—Continuación.

Fechas.	Estrellas.	Declinaciones.	Tiempo.	Círculo.	Nivel.		Latitud.
					oc.	ob.	
1892.		° ' "	<i>h. m. s.</i>	° ' "			° ' "
Marzo 1...	δ Urs. maj.....	70 18 25.26	9 28 46.01 30 42.91 32 4.21	317 46 47.35 47 0.70 17.38	120.5 118.9 120.2	31.4 30.0 31.3	31 47 0.96
" 1...	β Urs. maj.....	56 57 38.58	10 32 14.91 53 23.31 55 24.11 56 35.11 57 33.21	304 26 24.88 26 12.80 26 3.62 26 8.49 26 13.15	119.3 120.0 118.9 118.8 118.8	30.9 31.3 30.0 30.0 30.0	
" 1...	χ Leonis.....	7 55 6.67	11 2 16.38 3 9.08 3 52.38 4 56.88 5 43.18	303 7 55.13 8 19.38 8 41.72 9 26.46 10 3.11	119.3 118.8 118.9 118.9 118.9	30.0 29.8 29.9 29.7 29.8	31 47 1.15
" 2...	2 Lynceis.....	59 3 14.78	6 3 16.71 4 26.10 6 1.76 11 56.33 13 36.90	252 5 38.55 23.05 251 59 56.46 42.25 29.48	33.8 33.7 33.7 33.2 33.1	117.7 117.7 117.7 117.6 117.7	
" 2...	8 Monocerotis...	4 38 49.90	6 15 59.39 19 21.44 20 57.30 21 51.35 22 40.08	252 7 50.70 8 2.00 7 38.95 13.95 6 48 80	21.2 20.9 21.2 21.9 21.0	103.7 105.2 105.9 106.3 105.6	46 59.98
" 3...	36 Lynceis.....	43 39 50.90	9 4 19.47 5 59.24 8 26.94 9 38.64	267 22 29.88 55.93 41.88 6.72	36.9 38.0 35.8 26.8	128.0 129.6 127.1 128.0	
" 3...	88 Cancri.....	18 9 46.38	9 12 45.05 14 26.83 16 12.62 17 20.33	265 39 00.10 38 40.87 37 40.07 36 39.01	12.3 14.0 14.7 14.0	103.1 105.1 105.8 105.1	47 1.37
" 3...	α Hydra.....	- 8 11 30.10	9 20 41.44 21 41.80 22 45.67	239 17 51.71 58.94 58.75	23.9 23.9 24.0	115.0 115.0 115.0	
" 3...	δ Urs. maj.....	70 18 25.72	9 24 42.50 26 0.41 27 8.19	240 45 0.35 1.75 44 57.78	26.3 26.6 26.0	117.3 117.6 117.1	47 1.54
" 3...	30 Urs. maj.....	66 6 48.04	10 17 31.65 19 2.30 20 10.59	244 56 31.38 25.25 15.77	25.7 26.0 26.0	118.0 118.2 118.3	
" 3...	25 Sextantis.....	- 3 31 47.54	10 25 43.30 26 56.90 28 15.11	243 54 45.69 53 46.29 52 34.75	22.2 22.6 22.6	114.8 115.0 115.0	31 47 0.65

V.—*Latitud de un punto del Paralelo 31° 47' colocado veinte millas al Oeste del monumento inicial—Continuación.*

Fechas.	Estrellas.	Declinaciones.	Tiempo.	Círculo.	Nivel.		Latitud.
					oc.	ob.	
1892.		° ' "	<i>h. m. s.</i>	° ' "			° ' "
Marzo 3...	β Urs. maj.....	56 57 38.98	10 54 19.79	254 5 27.97	27.0	120.1	
			55 36.90	30.53	25.6	118.8	
			56 36.56	26.21	27.2	120.6	
			57 48.56	19.12	25.8	118.8	
" 3...	χ Leonis.....	7 55 7.02	10 59 42.86	255 24 16.66	21.6	114.8	
			11 0 50.75	8.88	22.0	115.0	
			1 58.34	23 52.06	22.0	115.0	
			2 51.09	27.41	23.0	116.0	31 47 1.35
" 3...	19 Leo min.....	41 34 12.95	9 49 50.22	289 3 9.08	113.7	21.4	
			51 29.39	2 57.64	114.0	21.8	
			52 42.49	3 16.16	114.0	21.9	
			54 23.17	4 18.62	113.7	21.3	
" 3...	η Leonis.....	17 17 18.7	9 58 9.88	293 46 32.38	118.8	26.4	
			59 27.99	45 46.69	117.8	25.5	
			0 53.82	45 21.78	118.8	26.6	
			2 1.10	45 23.59	118.8	26.6	47 1.34
3...	η Leonis.....	17 17 18.68	10 3 22.13	293 45 42.73	118.4	26.2	
			4 15.03	46 9.89	117.8	25.7	
			5 4.43	42.78	117.8	25.4	
			6 3.03	34.59	117.7	25.3	
" 3...	λ Urs. maj.....	43 27 12.66	10 8 39.78	290 56 20.88	115.0	23.0	
			9 33.38	2.96	113.1	21.0	
			10 46.68	55 56.49	114.0	22.0	
			11 52.98	8.99	111.6	19.6	47 0 42
" 3...	φ Urs. maj.....	45 5 0.08	11 7 5.88	265 57 1.70	25.3	118.8	
			8 15.87	56 10.00	25.5	118.8	
			9 42.51	54 57.03	25.7	118.9	
" 3...	θ Leonis.....	16 1 6.46	11 12 24.95	263 28 47.90	23.8	116.8	
			13 32.03	27 46.95	23.0	116.1	
			14 26.68	26 48.90	23.0	116.0	31 47 1.26
" 7...	19 Leonis.....	41 34 12.95	9 50 31.33	289 2 56.43	118.9	20.4	
			51 57.53	5 0.40	118.9	20.5	
			53 5.43	3 24.10	120.7	22.3	
" 7...	η Leonis.....	17 17 18.84	9 8 2.83	293 46 20.53	118.9	21.2	
			6 50.13	45 43.73	118.4	19.9	
			5 48.33	45 27.68	117.7	19.2	2.99
" 7...	η Leonis.....	17 17 18.84	10 2 40.13	264 46 9.13	125.3	26.9	
			3 54.73	45 41.28	122.0	24.0	
			5 6.43	44 52.10	120.3	22.2	
" 7...	λ Urs. maj.....	10 10 36.78	10 11 2.23	267 35 42.93	22.0	220.2	
			11 47.13	35 39.71	19.3	117.7	
			12 45.43	35 19.98	17.8	116.0	46 59.43



CACTUS GIGANTE EN LAS INMEDIACIONES DE LA SIERRA DEL TULE.

NO. 27

Resumen y discusión.

Pares.	p.	Latitudes.	Δ	Δ^2	$p \Delta^2$
5 Tauri. ν Auriga.....	3	59.15	1.65	2.7225	8.1675
36 Lyncis. $\delta\delta$ 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 Geml.....	2	60.03	.77	.5929	1.1858
β Urs. maj. χ Leonis.....	9	61.24	.44	.1936	1.7424
2 Lyncis. δ Monoceros.....	5	59.99	.81	.6561	3.2805
30 Urs. maj. $\delta\delta$ 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.	Personal.
Anteojo cenital.	Observador, Felipe Valle.
Cronómetro N ^o 750 (tiempo medio).	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.		
R.	<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