

PRIMER CATALOGO FUNDAMENTAL CIRCULO MERIDIANO DE SAN JUAN (FIRST SAN JUAN MERIDIAN CIRCLE FUNDAMENTAL CATALOGUE)

J.A. LOPEZ y R.A. CARESTIA

Observatorio Astronómico "Felix Aguilar" Universidad Nacional de San Juan

RESUMEN

Se confeccionó el Primer Catálogo Fundamental del Círculo Meridiano de San Juan, mediante la observación sistemática de 935 estrellas FK4, entre los años 1969 y 1975. El error medio cuadrático promedio resultante para una observación es: $0^{\text{s}}.022$ para ascensión recta y $0^{\text{s}}.47$ para declinación.

KEY WORDS: *Catálogos Estelares - Astrometría - Círculo Meridiano*

INTRODUCCION

En el año 1961 se firma un convenio entre la Universidad Nacional de Córdoba y la Universidad Nacional de Cuyo, para trasladar a la Provincia de San Juan, el Círculo Meridiano Repsold de 190 mm de abertura y 2,25 m de distancia focal, perteneciente al Observatorio Astronómico de Córdoba, hecho que se concreta durante el año 1966.

En enero de 1969, comienzan en forma sistemática los programas de observación de estrellas, utilizando dicho instrumento. A partir de esa fecha y hasta el año 1975, se observaron 427 series Kustner de estrellas FK4, de las cuales 370 series fueron observadas en ascensión recta y 427 series en declinación. La mayoría de ellas, fueron realizadas en las dos posiciones del instrumento, esto es, con freno al este (FE) y con freno al oeste (FW).

Estas observaciones se llevaron a cabo en forma intercalada con las correspondientes al catálogo S.R.S., contando en ambos casos con un subsidio de la Academia de Ciencias de los Estados Unidos de Norteamérica.

RESULTADOS

Los resultados finales de estos programas de observación, son presentados en el "Primer Catálogo Fundamental Círculo Meridiano de San Juan" ("First San Juan Meridian Circle Fundamental Catalogue")

Este catálogo contiene 935 estrellas FK4 y fue compilado utilizando 12530 observaciones individuales para ascensión recta y 14027 observaciones para declinación.

De cada una de las estrellas, el catálogo da la información que se detalla a continuación:

<u>COLUMNA</u>	<u>DENOMINACION</u>	<u>SIGNIFICADO</u>
1	FK4 NUMBER	: Número de estrella dado por el FK4
2	MG	: Magnitud de la estrella
3	R.A.	: Ascensión recta media del FK4 para 1950.0 (en horas y minutos)
4	DECL.	: Declinación media del FK4 para 1950.0 (en grados y minutos)
5	D(R.A.) INS-FK4	: Corrección a la ascensión recta del FK4 en el sistema instrumental (en segundos de tiempo) (*)
6	ME	: Error medio cuadrático de la posición indicada en el catálogo, computado con las desviaciones de las observaciones respecto de la media (en segundos de tiempo), $\epsilon \cos \delta$
7	N	: Número de observaciones en ascensión recta
8	EPOCH 1960+	: Epoca media de las observaciones en asc. recta
9	D(DECL) INS-FK4	: Corrección a la declinación del FK4 en el sistema instrumental (en segundos de arco) (*)
10	ME	Error medio cuadrático de la posición indicada en el catálogo, computado con las desviaciones de las observaciones respecto de la media (en segundos de arco)
11	N	: Número de observaciones en declinación
12	EPOCH 1960+	: Epoca media de las observaciones en declinación

(*) Para el caso de las estrellas polares, se dan las correcciones a la ascensión recta y la declinación (columnas 5 y 9 respectivamente) en forma separada para culminación superior y culminación inferior.

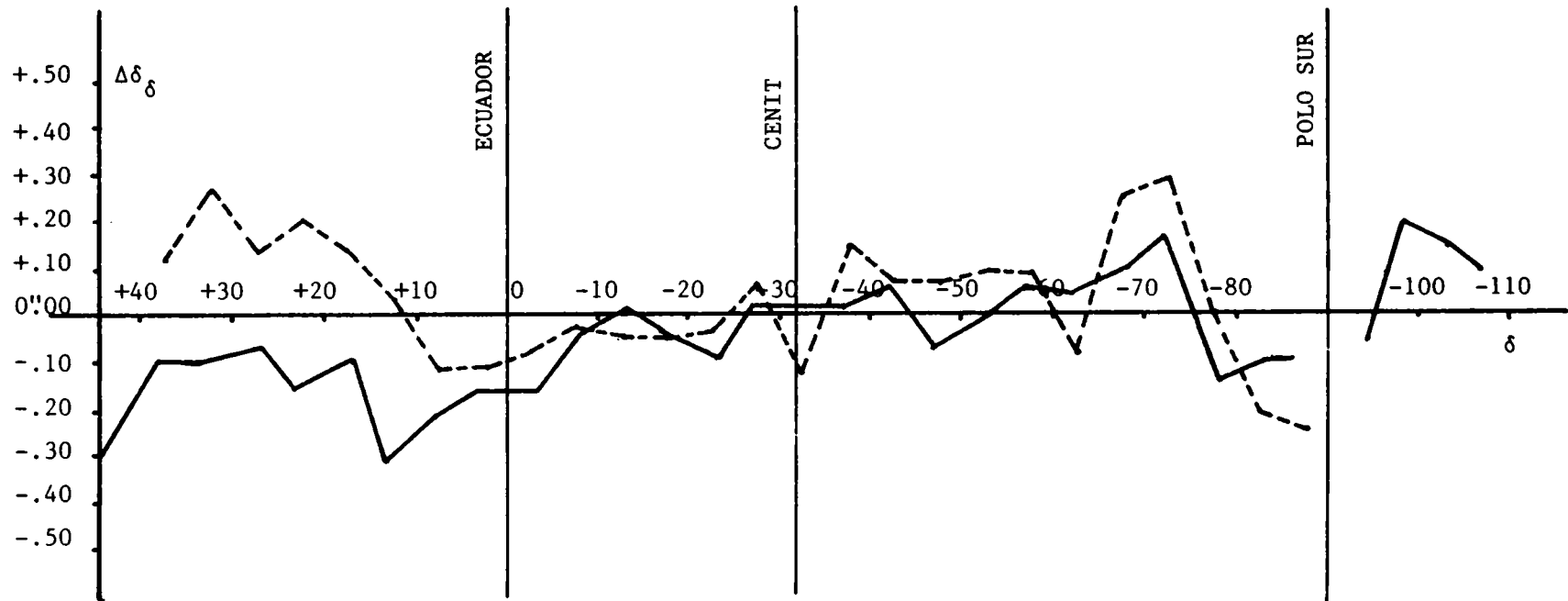
La reducción de los tránsitos de estrellas para la determinación de las ascensiones rectas, se hizo bajo la dirección del Ing. José Augusto López, siguiendo el método quasi-absoluto para reducir observaciones meridianas diferenciales, propuesto por el Dr. Zverev.

Las declinaciones se redujeron bajo la supervisión del Agr. Reinaldo Augusto Carestia, mediante el método expuesto por él mismo, en el "Encuentro Astronómico Latino-Americano", llevado a cabo en Santiago de Chile en enero de 1978.

En ambos casos se contó con la valiosa colaboración del Ing. Aldo Zaragoza, fallecido recientemente, quien trabajó principalmente en la elaboración de los programas de computación de las observaciones, utilizando las computadoras IBM 1130, IBM 360 e IBM 370 del Centro de Cómputos de la Universidad Nacional de San Juan.

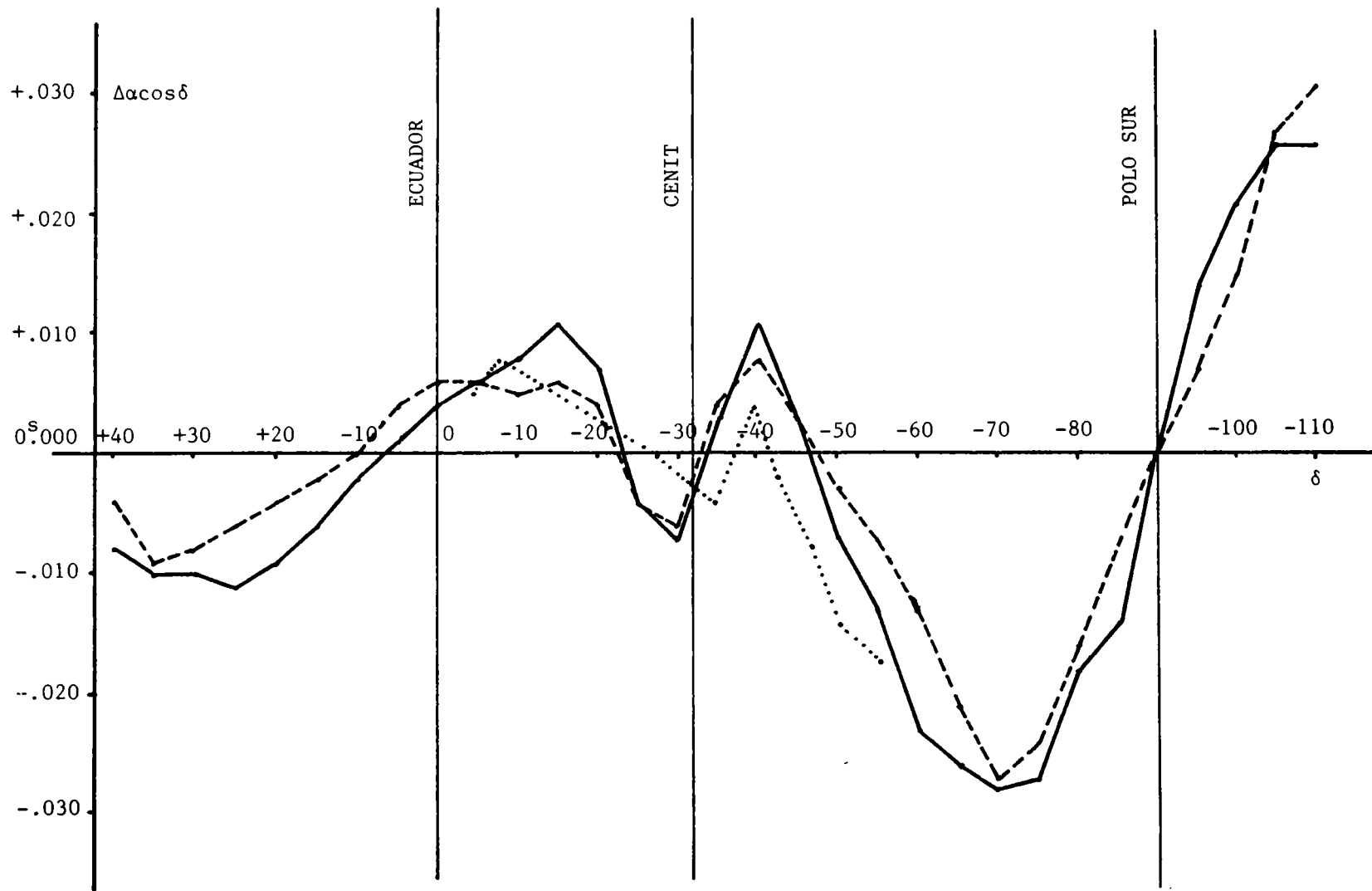
Las diferencias sistemáticas $\Delta \delta$ y $\Delta \alpha \cos \delta$, del FK4, pueden verse en las figuras n°1 y 2 en las cuales se comparan los resultados del "First San Juan Meridian Circle Fundamental Catalogue", el "First Astrolabe Catalogue of San Juan" y el "First Santiago-Pulkovo Fundamental Stars Catalogue".

Este catálogo ha sido enviado al Dr. Wilhem Gliese del Astronomisches Rechen-Institut (Alemania), tanto en impresión preliminar obtenida directamente de la computadora, como así también en tarjetas IBM perforadas, a fin de que sea incluido en los cálculos para la confección del nuevo catálogo fundamental FK5.



— FIRST SAN JUAN FUNDAMENTAL MERIDIAN CIRCLE CATALOGUE
- - - FIRST SANTIAGO-PULKOVO FUNDAMENTAL STARS CATALOGUE

FIGURA N° 1



——— FIRST SAN JUAN FUNDAMENTAL MERIDIAN CIRCLE CATALOGUE
 - - - - FIRST SANTIAGO-PULKOVO FUNDAMENTAL STARS CATALOGUE
 FIRST ASTROLABE CATALOGUE OF SAN JUAN

FIGURA N° 2

EQUIPO DE OBSERVACION

Las personas que en algún momento compusieron el equipo de observación, son las siguientes: R.A. Carestia, J.L. Lobarbo, C.A. Lizana, E. Carrizo, M. Gallego, W.L. Castro, D.W. López, G.G. Gutierrez, D.H. Garay, A. Cruz García, R.E. Orrego, R. Lucero, C. Martinez, R. Jakowczyk, M.A. Montoya, R. Herrera, E.R. Galarza y A. Rocher.

REFERENCIAS

M.S. Zverev : 1970, Soviet Astronomy, 13, 1008.

Carestia-Gallego-Zaragoza: 1978, Publicación del Departamento de Astronomía de la Universidad Nacional de Chile, 3, 275.

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**1

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1	2.1	0 06	+28 49	-0.018	9	7	13.20	+0.21	31	6	13.09
3	3.9	0 07	-46 01	-0.048	4	25	13.59	-0.08	6	25	13.59
5	5.5	0 09	-28 05	-0.013	8	3	13.88	+0.62	1	2	13.88
6	5.1	0 09	-35 25	+0.045	9	11	12.03	-0.17	11	10	12.05
7	2.8	0 11	+14 54	+0.001	5	23	13.49	-0.17	9	24	13.37
10	4.3	0 17	-65 10	-0.052	5	10	10.89	+0.28	12	12	10.91
11	2.9	0 23	-77 32	-0.201	3	38	12.93	+0.03	7	38	12.83
13	6.0	0 27	- 4 14	+0.008	3	26	14.57	-0.51	5	25	14.59
15	4.8	0 29	-49 05	-0.015	10	4	11.65	+0.05	23	3	12.00
18	4.4	0 34	+33 27	-0.044	9	12	14.89	+0.13	14	11	14.89
19	4.5	0 36	+29 02	-0.022	6	11	13.53	+0.06	16	11	13.81
20	3.4	0 37	+30 35	-0.018	15	5	11.01	-0.23	21	5	11.01
23	4.5	0 41	-57 44	-0.046	7	10	11.17	+0.30	10	10	11.03
26	5.9	0 42	-38 42	+0.026	4	21	13.12	-0.21	7	21	13.05
27	4.3	0 45	+24 00	-0.015	5	15	11.72	-0.19	13	14	11.71
30	5.2	0 48	-10 55	-0.006	19	2	14.85	+0.18	1	2	14.85
31	4.9	0 47	-75 12	-0.077	4	19	14.68	-0.27	10	18	14.67
34	5.3	0 53	-69 48	-0.054	3	13	14.68	+0.02	12	12	14.66
35	4.3	0 56	-29 38	+0.005	5	26	13.43	+0.43	6	26	13.55
37	6.1	1 01	+ 1 06	+0.027	7	6	9.85	-0.23	16	6	10.14
39	5.3	1 05	-62 03	-0.072	4	24	13.21	-0.37	10	22	13.25
40	3.6	1 06	-10 27	+0.021	8	6	14.77	-0.01	9	6	14.77
42	2.3	1 07	+35 21	-0.055	4	3	14.85	+0.49	51	3	14.85
43	4.7	1 09	+29 49	-0.010	7	8	14.92	+0.00	23	9	14.91
44	5.9	1 10	-38 07	+0.025	5	18	12.62	-0.10	9	16	12.58
47	3.8	1 22	- 8 26	+0.015	34	2	13.85	+0.50	1	2	13.85
49	3.4	1 26	-43 34	-0.020	4	11	12.84	+0.22	9	10	12.94
53	6.0	1 33	-78 46	-0.222	14	2	14.96	-0.65	22	2	14.96
54	0.6	1 36	-57 29	-0.087	2	2	13.85	-0.30	46	2	13.85
58	5.6	1 40	-37 05	+0.050	29	2	14.77	+0.98	**	1	14.79
60	4.5	1 43	+ 8 54	+0.013	6	10	14.91	+0.00	13	10	14.91
61	5.4	1 43	-25 18	-0.018	7	11	14.67	+0.03	13	10	14.75
62	3.9	1 49	-10 35	+0.011	7	13	10.09	-0.03	10	14	10.20
64	3.5	1 50	+29 20	+0.000	6	15	14.89	-0.23	10	15	14.89
65	4.8	1 51	+ 2 56	+0.002	8	6	10.40	+0.18	14	6	10.40
67	4.4	1 52	-46 33	-0.059	5	5	14.45	-0.06	25	4	14.59
68	3.7	1 54	-51 51	-0.037	4	22	13.43	+0.22	9	21	13.56
69	4.7	1 54	-67 54	-0.031	6	14	10.44	+0.37	13	15	10.52
71	4.1	1 58	-21 19	-0.046	**	1	11.79	-0.40	**	1	11.79
72	3.0	1 57	-61 49	-0.069	4	33	13.00	+0.00	9	32	13.16
73	2.2	2 01	+42 05	-0.021	**	1	14.89	-1.96	**	1	14.89
74	2.2	2 04	+23 14	-0.009	5	18	10.99	+0.10	12	18	10.81
75	3.0	2 07	+34 45	-0.008	5	13	14.87	-0.22	18	14	14.87
78	5.2	2 11	-30 57	-0.041	4	12	12.22	-0.05	11	12	12.22
80	5.7	2 14	- 6 39	+0.018	5	14	11.22	+0.18	11	12	11.39
81	5.6	2 15	+19 40	-0.020	7	2	13.89	-0.53	**	1	13.89
82	3.7	2 15	-51 45	-0.020	5	14	12.47	+0.05	15	16	12.23
84	5.4	2 23	-60 32	-0.054	6	7	14.87	-0.22	14	7	14.87
85	4.3	2 25	+ 8 14	+0.022	7	3	13.83	-0.28	4	3	13.83
88	5.8	2 31	-34 52	+0.000	8	7	10.86	-0.09	12	7	10.86

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**2

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
89	5.3	2 36	+21 45	-0.002	7	12	12.52	-0.23	16	12	12.52
90	5.2	2 33	-79 20	-0.128	6	9	13.09	-0.68	9	10	12.94
94	4.5	2 41	+27 30	+0.011	7	3	14.84	-0.39	21	4	14.84
95	4.2	2 39	-68 29	-0.141	3	4	14.16	-0.80	4	4	14.16
97	4.3	2 42	-14 04	+0.008	1	2	14.81	-0.39	3	2	14.81
98	4.3	2 42	+ 9 54	+0.003	5	13	12.50	-0.57	9	12	12.38
100	3.6	2 47	+27 03	-0.052	32	2	14.87	-0.67	4	2	14.87
101	4.5	2 47	-32 37	-0.034	8	15	13.00	-0.02	11	15	13.00
102	4.8	2 49	-21 13	+0.020	**	1	11.79	-0.36	**	1	11.79
104	4.0	2 54	- 9 06	+0.010	5	19	13.23	-0.06	8	19	13.23
106	3.4	2 56	-40 30	-0.001	7	8	10.89	-0.07	17	7	11.05
107	2.8	3 00	+ 3 54	+0.000	12	5	11.06	+0.19	25	5	11.06
110	5.1	3 02	-59 56	-0.073	12	3	11.19	-0.50	17	3	11.19
111	2.2	3 05	+40 46	-0.017	**	1	14.81	-1.28	**	1	14.81
113	5.5	3 02	-72 06	-0.077	4	24	13.34	-0.32	12	24	13.41
114	4.5	3 09	+19 32	+0.000	5	15	14.22	-0.21	9	15	14.22
116	5.1	3 10	- 1 23	-0.028	**	1	11.79	-0.78	**	1	11.79
118	5.7	3 11	-57 30	+0.007	7	8	13.25	+0.28	17	8	13.25
119	4.3	3 18	-43 16	-0.008	12	3	13.80	-0.43	17	3	13.80
121	3.8	3 22	+ 8 51	-0.001	6	14	14.65	-0.30	10	14	14.65
123	3.7	3 24	+ 9 34	+0.005	4	11	10.41	+0.36	13	12	10.53
125	4.2	3 28	+12 46	-0.001	11	5	11.06	-0.04	22	5	11.06
126	4.8	3 28	-63 07	-0.061	4	23	13.13	+0.26	10	23	13.13
127	3.8	3 31	- 9 38	+0.016	13	2	14.96	-0.40	28	2	14.96
128	5.6	3 31	-50 33	+0.051	7	11	14.86	+0.29	9	11	14.86
130	4.5	3 35	-40 26	+0.018	11	2	14.85	-0.02	0	2	14.85
133	4.9	3 40	-32 06	-0.005	16	2	14.87	+0.07	33	2	14.87
135	3.7	3 41	- 9 56	-0.005	6	15	12.90	-0.08	7	15	12.90
137	5.0	3 42	- 1 19	+0.011	**	1	11.79	-0.80	**	1	11.79
140	4.3	3 45	-23 24	+0.015	5	20	13.16	-0.07	5	20	13.16
141	3.8	3 44	-64 58	-0.063	4	15	10.97	+0.19	11	15	10.97
142	3.8	3 46	+23 54	-0.003	**	1	11.79	-0.06	**	1	11.79
143	4.2	3 48	-36 21	-0.013	5	13	14.09	-0.11	9	12	14.36
146	3.1	3 48	-74 24	-0.125	5	20	10.86	-0.19	11	19	10.86
147	2.9	3 54	+39 52	+0.002	8	10	14.88	-0.09	16	11	14.88
149	3.1	3 56	-13 39	+0.018	35	2	13.94	-0.09	32	2	13.94
150	3.8	3 58	+12 21	-0.007	10	2	14.96	-0.85	3	2	14.96
151	3.9	4 00	+ 5 51	+0.008	4	10	10.41	-0.16	19	10	10.41
153	5.5	4 04	-27 47	-0.007	4	31	12.64	-0.08	7	32	12.55
154	4.1	4 09	- 6 58	+0.012	6	10	13.52	-0.03	11	12	13.20
155	3.8	4 12	-42 25	+0.004	5	18	13.24	+0.38	7	18	13.24
156	3.3	4 14	-62 36	-0.036	4	3	11.19	-0.27	12	3	11.19
157	4.3	4 15	-51 37	-0.004	**	1	11.79	+0.38	**	1	11.79
159	3.8	4 17	+15 31	-0.008	9	8	10.25	-0.19	15	8	10.25
161	5.3	4 18	-20 45	-0.001	7	7	10.86	-0.13	11	7	10.86
163	5.1	4 21	-63 30	-0.096	**	1	11.79	+0.84	**	1	11.79
164	3.6	4 26	+19 04	-0.011	9	7	10.86	-0.05	12	7	10.86
166	5.6	4 21	-80 20	-0.035	5	23	13.00	+0.03	9	22	12.85
167	5.1	4 29	-45 04	-0.032	7	15	13.21	-0.32	11	16	13.14
168	1.0	4 33	+16 25	-0.018	**	1	14.85	-0.67	**	1	14.85

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**3

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
169	4.1	4 34	- 3 27	+0.000	6	6	10.08	-0.01	17	6	10.39
170	3.8	4 34	-30 40	-0.037	10	7	11.24	+0.46	12	7	11.24
171	3.4	4 33	-55 09	-0.073	6	11	13.70	-0.07	10	11	13.70
172	3.9	4 36	-14 24	+0.005	5	21	12.03	+0.40	9	22	12.30
176	4.1	4 43	- 3 21	+0.018	6	5	14.88	-0.20	8	5	14.88
177	5.6	4 44	-71 01	-0.101	12	6	9.96	+0.20	12	6	9.96
180	3.8	4 52	+ 2 22	+0.018	6	7	14.61	-0.32	17	7	14.61
186	3.2	5 03	-22 26	+0.025	**	1	12.97	*****	**	**	*****
187	4.9	5 04	-49 39	+0.010	6	8	13.14	-0.06	8	9	13.34
189	4.7	5 05	-57 32	-0.042	4	7	10.86	+0.39	11	7	10.86
193	0.2	5 13	+45 57	+0.033	**	1	11.79	+0.96	**	1	11.79
196	4.7	5 14	-67 14	+0.015	3	23	11.99	+0.45	7	22	12.04
197	4.9	5 16	-34 57	+0.025	5	9	10.28	+0.28	14	6	10.87
198	5.7	5 17	-27 25	-0.023	11	7	14.89	+0.36	12	7	14.89
199	5.5	5 18	-50 40	+0.029	4	7	10.22	-0.44	12	7	10.22
201	1.7	5 22	+ 6 18	+0.016	**	1	11.79	-0.15	**	1	11.79
206	2.4	5 29	- 0 20	+0.011	8	7	10.86	-0.11	12	7	10.86
207	2.6	5 31	-17 51	+0.007	8	8	11.68	+0.00	12	9	11.60
211	3.0	5 35	+21 07	-0.008	5	9	12.15	-0.08	15	9	12.15
212	3.8	5 33	-62 31	+0.004	**	1	11.79	+0.40	**	1	11.79
214	5.0	5 34	-76 23	-0.170	4	14	11.20	-0.56	18	11	11.50
215	2.7	5 38	-34 06	+0.004	10	11	12.20	+0.24	11	11	12.20
217	3.8	5 42	-22 28	-0.031	13	7	10.07	-0.17	8	4	10.59
219	3.6	5 45	-14 50	+0.013	9	9	10.82	+0.05	13	14	13.66
222	3.9	5 49	-20 53	*****	**	**	*****	+0.05	10	8	15.15
224	0.1	5 52	+ 7 24	-0.015	6	12	12.08	-0.30	8	10	12.67
226	3.7	5 54	-14.11	+0.017	**	1	12.97	-0.02	**	1	12.97
229	4.0	5 58	-42 49	-0.009	**	1	12.97	+0.36	6	9	14.90
230	5.7	6 02	+ 4 10	*****	**	**	*****	-0.04	4	7	15.15
231	6.2	6 03	-45 02	+0.008	**	1	12.97	-0.27	**	1	12.97
232	4.4	6 05	+14 47	+0.006	**	1	14.90	-0.34	**	1	14.91
239	5.1	6 12	-74 44	-0.038	4	15	11.06	-0.03	12	11	11.61
241	3.1	6 20	+22 32	+0.001	6	7	9.96	+0.04	23	3	10.11
243	1.9	6 20	-17 56	+0.011	5	5	11.86	-0.23	18	5	11.86
244	4.4	6 21	+ 4 37	+0.010	5	6	9.96	+0.04	19	5	9.97
245	-0.9	6 23	-52 40	-0.051	6	8	10.33	+0.14	11	12	13.70
246	4.9	6 25	- 4 44	+0.019	**	1	14.92	+0.49	**	1	14.92
249	4.5	6 33	-22 55	+0.002	12	5	9.71	+0.04	35	3	10.11
251	1.9	6 35	+16 27	-0.025	**	1	14.92	-0.68	**	1	14.92
252	3.1	6 36	-43 09	+0.026	10	10	10.22	+0.18	16	6	10.51
258	4.7	6 45	+ 2 28	+0.005	6	10	10.31	-0.45	15	10	10.51
261	3.6	6 49	+34 01	-0.020	12	6	10.58	-0.37	20	4	11.31
262	3.3	6 48	-61 53	-0.046	5	5	10.87	-0.06	26	4	11.31
263	2.8	6 49	-50 33	+0.040	9	9	10.12	+0.29	9	21	13.09
264	5.6	6 44	-80 46	-0.025	3	22	- .93	-0.33	6	30	11.80
266	4.2	6 52	-11 58	*****	**	**	*****	+0.01	11	13	15.16
272	5.3	7 03	-56 40	-0.030	3	8	10.22	+0.18	8	18	13.97
273	1.9	7 06	-26 19	-0.033	**	1	12.12	-0.13	9	8	14.77
278	2.7	7 15	-37 00	+0.013	7	10	10.04	-0.19	10	20	12.19
281	4.0	7 17	-67 52	-0.061	6	8	10.22	+0.49	8	10	13.03

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**4

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
283	2.4	7 22	-29 12	-0.011	8	11	10.38	-0.18	9	13	10.51
285	3.0	7 24	+ 8 23	+0.015	7	11	10.22	-0.38	18	12	10.30
288	4.5	7 32	-22 11	+0.004	7	18	10.23	+0.33	10	23	11.91
289	5.2	7 35	- 4 00	*****	**	**	*****	-0.24	11	7	15.14
293	4.0	7 39	- 9 26	-0.008	7	11	10.40	+0.20	13	13	10.36
295	1.2	7 42	+28 09	-0.018	8	12	10.30	-0.46	10	13	10.36
296	5.2	7 44	+33 32	-0.019	14	6	9.61	-0.02	34	4	10.59
297	3.8	7 42	-72 29	-0.056	4	6	10.10	+0.09	15	4	10.59
301	3.8	7 50	-40 27	*****	**	**	*****	+0.09	12	12	15.16
303	3.6	7 56	-52 51	-0.001	5	16	11.43	-0.28	7	15	11.03
306	2.2	8 02	-39 52	-0.002	5	20	11.40	+0.04	6	39	13.41
308	2.8	8 05	-24 10	-0.001	11	6	13.91	-0.19	8	25	14.93
309	1.9	8 08	-47 11	-0.014	6	17	11.33	-0.21	6	36	13.26
311	5.0	8 11	-15 38	+0.014	3	24	11.46	-0.21	4	46	13.28
312	3.7	8 14	+ 9 20	+0.002	4	21	10.77	-0.36	8	18	10.88
313	4.4	8 17	-36 30	+0.032	6	12	10.30	+0.03	5	33	13.30
315	1.7	8 21	-59 21	-0.053	3	10	11.99	-0.34	20	6	12.19
316	3.9	8 23	- 3 45	+0.011	4	14	10.30	+0.07	11	14	10.30
318	4.2	8 22	-77 19	-0.082	4	14	11.32	-0.01	8	15	11.30
319	3.6	8 25	-65 58	-0.046	5	15	11.52	-0.03	11	15	11.31
320	6.0	8 30	+38 11	-0.003	9	4	14.25	+0.34	30	4	14.25
321	5.5	8 30	+20 37	-0.008	8	5	14.27	+0.08	11	4	14.27
324	4.1	8 36	-42 49	-0.021	10	5	14.27	+0.16	6	15	14.92
327	3.7	8 42	-33 00	+0.004	5	20	11.29	-0.28	6	31	12.74
328	4.2	8 44	+28 57	-0.021	14	5	14.30	-0.02	29	5	14.30
331	5.6	8 43	-78 47	-0.155	3	20	10.85	+0.12	7	19	11.05
332	4.1	8 48	-27 31	-0.018	6	23	11.86	+0.10	6	35	13.03
336	3.9	8 54	-60 27	-0.024	3	36	10.71	+0.15	7	33	10.89
337	4.3	8 56	+12 03	*****	**	**	*****	-0.40	6	2	15.31
342	3.7	9 02	-46 54	*****	**	**	*****	+0.25	15	3	15.32
345	2.2	9 06	-43 14	-0.019	9	8	14.28	-0.14	8	24	14.89
347	3.8	9 12	+ 2 32	+0.001	4	13	11.68	-0.53	11	14	12.06
348	1.8	9 13	-69 31	-0.137	3	33	11.08	-0.10	6	33	11.08
350	6.6	9 16	+17 55	-0.018	8	4	14.27	-0.73	28	6	14.73
351	2.2	9 16	-59 04	-0.042	3	44	11.38	-0.02	4	58	12.14
352	3.3	9 18	+34 36	+0.004	7	12	11.38	-0.70	21	12	11.14
353	2.6	9 21	-54 48	-0.046	4	23	11.21	-0.18	9	26	11.68
354	2.1	9 25	- 8 26	+0.003	3	36	11.57	+0.04	6	37	11.95
356	4.6	9 27	-35 44	-0.014	7	10	11.76	+0.49	8	22	13.44
361	3.0	9 30	-56 49	-0.020	3	24	11.79	+0.18	9	24	11.79
362	5.5	9 31	-72 52	-0.133	3	23	11.56	+0.42	7	33	12.56
364	4.9	9 38	-14 06	+0.000	4	17	11.07	-0.18	6	29	12.57
366	4.9	9 42	-27 32	-0.025	7	8	14.31	+0.08	10	8	14.31
367	3.1	9 43	+24 00	-0.002	7	8	10.19	-0.57	23	8	10.19
370	6.0	9 49	- 4 00	+0.014	7	8	14.30	+0.03	19	7	14.31
373	5.1	9 53	-18 46	+0.002	7	9	14.30	-0.16	8	32	14.98
374	5.1	9 55	+41 18	-0.011	16	4	14.35	+0.00	53	4	14.35
375	3.7	9 55	-54 20	-0.029	5	6	9.26	-0.54	21	7	9.26
376	6.6	9 57	+ 3 37	+0.003	4	12	11.97	-0.21	7	36	13.82
377	5.2	9 57	-35 39	+0.038	8	9	14.30	+0.23	12	10	14.31

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**5

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
378	4.8	9 58	+ 8 17	+0.004	5	9	11.52	+0.12	10	10	11.30
379	3.5	10 05	+17 00	-0.003	4	13	14.30	-0.09	14	12	14.31
380	1.3	10 06	+12 13	-0.006	3	44	10.92	-0.35	7	47	11.00
381	3.8	10 08	-12 06	+0.005	3	36	11.04	+0.16	5	40	11.63
382	4.0	10 13	-41 52	-0.009	7	7	14.30	-0.01	6	29	15.02
385	3.5	10 13	-69 47	-0.090	4	23	12.21	+0.05	9	24	12.09
388	6.1	10 21	- 3 49	-0.001	2	4	9.83	+0.10	10	4	9.83
389	4.0	10 24	-16 35	+0.033	9	4	14.40	+0.03	6	29	15.10
391	4.0	10 23	-73 47	-0.025	2	35	11.51	-0.07	6	35	11.51
392	4.4	10 25	-30 49	-0.024	8	7	11.72	-0.11	12	7	11.72
393	4.0	10 26	-58 29	-0.032	10	4	14.30	+0.10	31	4	14.30
397	3.5	10 30	-61 26	-0.042	9	8	14.40	+0.07	22	9	14.39
399	5.3	10 32	-23 29	+0.000	5	15	10.29	-0.12	12	15	10.56
401	4.1	10 35	-78 21	-0.090	3	15	12.32	-0.64	6	34	13.81
402	4.3	10 37	-55 21	-0.010	4	10	14.39	+0.32	14	10	14.39
404	6.4	10 39	- 1 29	+0.005	8	9	14.32	-0.16	31	8	14.31
405	5.0	10 41	+23 27	-0.008	5	18	11.23	+0.22	9	18	11.23
406	3.0	10 41	-64 08	-0.020	9	6	9.26	-0.22	13	13	12.06
409	5.2	10 47	+10 49	+0.005	5	20	9.44	-0.33	10	23	9.42
410	3.3	10 47	-15 56	+0.002	7	5	14.30	-0.08	13	13	14.82
411	4.6	10 45	-80 17	+0.191	3	32	12.01	+0.27	7	34	12.06
412	3.9	10 51	+34 29	-0.012	6	22	11.47	-0.53	13	24	11.63
414	4.7	10 54	-36 52	-0.008	4	28	12.17	+0.09	6	50	13.48
415	4.5	10 58	-41 57	+0.010	4	7	14.39	+0.11	13	9	14.50
418	4.6	11 02	+ 7 36	+0.014	4	18	11.19	-0.19	10	18	11.19
419	5.0	11 03	-27 01	-0.016	6	13	12.43	-0.40	7	28	13.69
421	4.5	11 09	-22 33	-0.009	5	14	10.95	-0.60	15	13	11.07
422	2.5	11 11	+20 48	-0.007	5	12	14.35	-0.53	11	13	14.35
423	3.4	11 12	+15 42	+0.006	7	9	9.61	-0.69	16	9	9.61
425	3.7	11 16	+33 22	+0.004	8	9	14.38	+0.06	17	12	14.38
426	3.8	11 17	-14 30	*****	**	**	*****	+0.11	10	21	15.22
427	4.1	11 19	+ 6 18	+0.003	14	6	14.44	-0.44	26	7	14.58
428	4.2	11 19	-54 13	-0.073	5	12	14.38	-0.26	11	13	14.38
431	4.1	11 22	-17 25	*****	**	**	*****	+0.30	14	7	15.22
432	5.8	11 28	+43 27	+0.017	11	5	14.40	-0.54	22	6	14.39
434	3.7	11 31	-31 35	-0.037	6	13	14.42	-0.37	9	21	14.70
435	5.4	11 33	-47 22	-0.025	8	4	14.35	+0.45	45	4	14.35
436	3.3	11 33	-62 45	-0.050	4	28	11.74	-0.27	7	36	12.67
438	5.7	11 35	-75 37	-0.004	5	19	12.38	-0.41	10	20	12.22
439	4.8	11 38	-34 28	-0.009	4	45	11.08	+0.01	6	70	12.48
442	3.8	11 43	-66 27	-0.065	3	34	11.56	-0.27	8	34	11.41
443	4.2	11 44	-60 54	-0.026	5	12	11.15	+0.16	10	12	11.15
444	2.2	11 47	+14 51	-0.010	6	15	12.15	-0.71	11	16	12.29
445	3.8	11 48	+ 2 03	+0.001	6	8	10.43	-0.52	18	8	10.43
446	4.7	11 49	-44 54	+0.048	4	24	9.60	+0.22	7	45	12.33
449	5.2	12 01	-42 09	-0.005	6	11	14.45	+0.24	8	22	14.82
450	4.2	12 03	+ 9 01	-0.008	4	18	10.80	-0.12	7	23	11.25
452	2.8	12 06	-50 27	-0.023	3	38	11.13	+0.06	6	46	11.67
453	3.2	12 08	-22 21	-0.005	6	14	11.22	-0.11	5	28	13.24
455	3.0	12 12	-58 28	-0.034	4	24	13.84	-0.36	7	27	13.78

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**6

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
457	2.7	12 13	-17 16	+0.016	**	1	14.46	-0.85	**	1	14.46
459	4.3	12 15	-79 02	-0.010	3	40	11.21	-0.30	5	64	12.61
460	4.0	12 17	- 0 23	-0.007	12	4	14.34	-0.83	25	4	14.34
462	1.5	12 24	-62 49	-0.129	5	6	14.40	-0.22	9	6	14.40
464	4.2	12 25	-49 57	*****	**	**	*****	+0.22	8	18	15.24
465	3.1	12 27	-16 14	*****	**	**	*****	+0.59	**	1	15.48
466	5.7	12 27	+21 10	+0.007	5	16	11.29	-0.05	12	15	11.10
468	1.6	12 28	-56 50	-0.064	4	20	13.14	+0.12	9	17	12.90
469	4.0	12 29	-71 51	-0.084	4	35	11.46	+0.27	12	33	11.29
471	2.8	12 32	-23 07	*****	**	**	*****	-0.27	10	9	15.30
473	5.1	12 33	+18 39	+0.007	4	3	14.27	+0.47	9	3	14.27
474	2.9	12 34	-68 52	-0.061	3	30	11.10	-0.33	8	34	11.62
475	4.7	12 37	- 7 43	+0.000	5	15	14.40	+0.12	11	19	14.65
479	5.7	12 41	-28 03	-0.013	3	33	10.34	-0.16	7	44	11.73
481	1.5	12 45	-59 25	-0.077	4	15	14.40	-0.17	7	14	14.41
482	4.3	12 51	-39 54	-0.036	6	6	14.41	+0.21	9	22	15.05
484	3.6	12 53	+ 3 40	+0.006	17	4	14.30	-0.55	11	4	14.30
487	3.6	12 59	-71 17	-0.125	2	47	11.98	+0.41	6	53	11.91
488	2.9	13 00	+11 14	+0.003	6	18	12.09	-0.53	8	30	13.36
489	4.4	13 04	-49 38	+0.020	5	15	11.53	-0.32	7	16	11.39
490	4.4	13 07	- 5 16	+0.003	3	35	11.35	+0.05	6	34	11.27
491	6.0	13 08	+38 46	-0.002	23	4	14.44	-1.04	21	4	14.44
492	4.3	13 10	+28 08	-0.011	5	21	11.12	-0.31	11	19	11.05
493	4.9	13 12	-67 38	-0.084	3	45	11.95	+0.38	6	58	12.43
495	3.3	13.16	-22 54	-0.015	7	9	10.50	+0.04	9	11	10.57
496	2.9	13 18	-36 27	+0.001	5	24	10.97	-0.07	5	41	12.35
498	1.2	13 23	-10 54	-0.006	3	53	11.53	+0.12	4	68	12.20
501	3.4	13 32	- 0 20	+0.009	7	7	10.46	+0.40	17	6	10.65
503	6.4	13 35	-75 26	-0.108	5	5	14.47	+0.16	11	14	15.02
506	4.3	13 43	-32 47	-0.030	5	26	12.88	+0.16	8	31	13.01
507	4.5	13 45	+17 42	-0.003	16	3	14.31	-0.05	24	4	14.80
508	3.3	13 47	-42 14	-0.009	3	44	11.78	+0.15	5	53	12.10
510	5.1	13 47	-17 53	+0.006	2	3	14.50	-0.42	10	12	15.09
512	3.0	13 52	-47 03	+0.001	4	26	11.65	-0.15	6	39	12.66
513	2.8	13 52	+18 39	-0.005	10	4	14.34	+0.00	20	5	14.34
514	4.6	13 54	-63 27	-0.087	4	25	12.61	+0.12	9	22	12.59
515	5.1	13 56	-24 44	-0.020	5	15	12.41	-0.36	6	26	13.23
517	6.1	13 59	+27 31	-0.004	19	2	14.54	-0.46	23	2	14.54
518	0.8	14 00	-60 08	-0.100	7	17	12.10	-0.08	9	17	12.10
519	3.4	14 04	-26 27	-0.023	**	1	14.35	+0.08	8	2	14.91
520	2.2	14 04	-36 07	+0.002	5	10	13.46	-0.12	15	9	13.48
522	4.8	14 08	+25 20	-0.002	4	32	12.13	-0.22	10	33	11.99
523	4.3	14 10	-10 03	+0.000	4	19	12.95	+0.07	10	22	13.36
525	4.1	14 13	- 5 46	+0.005	4	11	14.43	-0.80	11	12	14.60
526	0.2	14 13	+19 27	-0.007	6	17	12.98	-0.09	9	16	12.90
529	4.4	14 17	-56 09	-0.001	3	41	12.66	+0.40	6	41	12.49
530	5.7	14 21	-67 58	+0.061	4	2	14.57	+0.53	13	2	14.57
532	5.0	14 25	-29 16	+0.025	13	2	14.57	+0.04	18	3	14.87
534	3.7	14 30	+30 35	-0.001	7	7	14.31	-0.57	22	6	14.31
537	2.6	14 32	-41 56	+0.005	4	22	11.68	-0.35	7	22	11.73

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**7

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
539	3.4	14 38	-64 46	-0.047	3	29	12.00	+0.13	9	30	11.99
541	2.8	14 39	-47 10	-0.063	14	5	14.39	-0.59	12	8	14.85
542	3.8	14 42	-78 50	-0.083	3	43	12.37	-0.14	6	48	12.35
544	4.1	14 41	-34 58	-0.002	15	4	14.25	+0.28	4	3	14.25
546	5.2	14 44	-52 10	+0.004	4	7	12.99	+0.21	12	9	13.62
548	2.9	14 48	-15 50	+0.011	6	5	14.39	+0.09	9	9	14.90
551	5.7	14 54	+14 39	-0.001	5	19	10.99	-0.33	11	23	11.51
552	2.8	14 55	-42 56	+0.012	9	8	14.38	+0.27	12	7	14.40
553	3.3	14 56	-41 54	-0.002	4	35	11.32	-0.08	6	41	11.79
555	3.6	15 00	+40 35	+0.001	12	6	13.46	-0.64	21	5	13.24
556	3.4	15 01	-25 05	-0.007	4	31	12.19	+0.04	5	34	12.70
557	4.6	15 02	+27 08	+0.002	5	9	14.30	-0.21	16	9	14.31
558	3.5	15 09	-51 55	-0.027	3	37	11.60	-0.42	7	41	11.54
559	4.6	15 09	-19 36	+0.006	7	11	14.38	-0.19	7	14	14.72
560	3.0	15 14	-68 30	-0.084	5	8	14.44	-0.18	12	8	14.44
562	5.4	15 13	+ 5 07	+0.001	5	14	11.57	-0.06	11	14	11.36
564	2.7	15 14	- 9 12	*****	**	**	*****	-0.12	25	3	15.49
566	3.5	15 19	-36 05	+0.023	3	50	11.49	-0.05	5	52	11.54
567	5.6	15 26	-73 13	-0.055	3	62	11.39	+0.16	6	64	11.39
568	4.4	15 23	+37 33	-0.006	8	15	12.04	+0.05	16	16	11.94
570	5.4	15 23	+15 36	+0.000	3	38	11.73	-0.01	7	43	11.67
572	3.7	15 26	+29 17	-0.072	36	2	14.45	-0.19	6	2	14.45
576	4.1	15 31	+31 32	-0.003	18	3	14.38	+0.33	54	3	14.38
579	3.8	15 34	-27 58	*****	**	**	*****	+0.47	13	4	15.53
582	2.7	15 42	+ 6 35	-0.005	3	36	11.38	-0.16	8	38	11.49
583	3.7	15 44	+15 35	-0.015	4	30	11.39	+0.07	9	30	11.42
584	4.2	15 46	+18 18	-0.025	8	4	14.39	-0.16	38	3	14.38
585	3.6	15 47	- 3 17	+0.013	7	11	14.48	-0.02	21	10	14.48
586	4.1	15 48	-33 29	+0.024	16	2	14.51	-0.37	11	7	15.21
588	3.7	15 48	+ 4 38	-0.001	13	4	14.60	-0.07	19	4	14.60
589	3.0	15 51	-63 17	-0.064	2	54	11.46	-0.07	6	56	11.49
592	3.0	15 56	-25 58	-0.022	5	11	11.20	-0.07	9	13	10.92
593	4.2	15 56	+27 01	-0.011	4	26	10.56	+0.07	13	25	10.34
594	2.5	15 57	-22 29	-0.005	18	4	14.54	-0.42	9	3	14.54
596	4.8	16 03	-45 02	-0.004	4	25	11.39	+0.03	8	27	11.42
597	2.9	16 03	-19 40	-0.004	4	29	12.06	-0.09	8	30	12.07
599	4.3	16 03	-36 40	-0.024	15	4	14.39	+0.05	12	7	14.88
600	5.0	16 10	-54 30	-0.039	3	56	11.62	+0.13	6	58	11.59
602	4.0	16 11	-63 34	-0.029	6	5	14.48	+0.23	51	4	14.48
603	3.0	16 12	- 3 34	*****	**	**	*****	-0.32	45	3	15.53
607	3.1	16 18	-25 28	-0.008	7	11	11.72	-0.24	11	12	11.15
610	4.9	16 23	-69 58	-0.052	3	24	11.57	+0.31	9	24	11.44
611	3.9	16 26	-78 47	-0.135	5	4	14.49	-0.53	48	3	14.45
613	4.5	16 23	+14 09	-0.009	7	5	14.55	-0.34	12	4	14.55
616	1.2	16 26	-26 19	*****	**	**	*****	+0.69	**	1	15.54
618	2.8	16 28	+21 36	-0.012	13	5	14.63	+0.05	25	5	14.63
620	2.9	16 33	-28 07	-0.011	4	31	12.77	+0.11	7	31	12.93
622	2.7	16 34	-10 28	-0.002	7	9	10.27	+0.05	9	9	9.91
624	5.0	16 39	-17 39	+0.008	6	14	14.55	-0.21	11	14	14.69
625	1.8	16 43	-68 56	-0.136	7	4	14.63	-0.37	14	4	14.63

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**8

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
626	3.6	16 41	+39 01	-0.029	9	6	14.52	+1.57	17	3	14.45
631	3.0	16 54	-55 55	-0.094	11	4	14.40	+0.21	13	4	14.40
632	4.1	16 56	-53 05	-0.016	7	9	9.91	+0.01	7	10	9.86
634	3.9	16 58	+31 00	-0.004	7	13	10.72	+0.01	19	12	10.84
635	4.9	17 03	+12 48	+0.001	6	16	12.16	-0.15	8	16	11.83
636	6.2	17 06	+40 35	-0.025	8	4	14.60	+0.04	62	3	14.59
638	3.4	17 09	-43 11	+0.004	5	19	12.36	-0.16	8	21	12.41
641	3.1	17 13	+24 54	-0.015	4	32	10.92	-0.13	9	36	11.04
642	5.6	17 17	-70 04	-0.102	3	25	12.37	+0.24	9	27	12.34
643	3.3	17 13	+36 52	+0.002	14	6	14.52	+0.04	24	7	14.53
644	3.3	17 19	-24 57	-0.019	7	15	10.12	-0.02	7	19	10.72
645	2.8	17 21	-55 29	-0.052	5	10	14.64	+0.11	10	10	14.64
646	4.4	17 24	-29 49	*****	**	**	*****	+0.06	**	1	15.45
648	3.7	17 27	-60 39	-0.071	13	4	14.58	+0.05	20	4	14.58
649	2.8	17 27	-37 15	*****	**	**	*****	+0.24	6	2	15.50
651	2.9	17 28	-49 50	-0.035	4	32	10.55	+0.21	8	29	10.53
652	1.7	17 30	-37 04	*****	**	**	*****	-0.26	11	2	15.50
654	2.0	17 34	-42 58	*****	**	**	*****	-0.22	**	1	15.56
658	3.6	17 35	-15 22	+0.006	6	11	14.61	+0.02	13	11	14.61
660	2.5	17 39	-39 00	+0.009	4	27	12.69	+0.07	9	27	12.61
661	3.5	17 41	-64 42	-0.105	5	14	13.55	-0.13	12	11	13.74
662	5.2	17 40	-51 49	-0.038	**	1	14.52	+0.00	**	1	14.52
666	3.1	17 44	-40 07	-0.002	9	8	14.59	-0.16	10	8	14.59
667	3.4	17 44	+27 45	-0.096	**	1	14.52	+0.41	**	1	14.52
669	3.2	17 46	-37 02	-0.040	7	5	11.56	-0.15	42	3	10.23
672	3.9	17 55	+37 15	+0.000	**	1	11.66	-0.22	**	1	11.66
673	3.5	17 56	- 9 46	+0.010	4	18	11.71	+0.10	11	18	11.42
674	3.8	17 56	+29 15	-0.025	7	15	11.87	+0.24	16	14	11.76
677	3.9	17 58	+ 2 56	+0.019	6	14	11.52	+0.31	14	14	11.29
678	5.6	18 04	-75 54	-0.049	3	32	12.80	-0.24	8	30	12.88
679	3.0	18 03	-30 26	-0.008	4	26	11.08	+0.05	8	32	11.01
682	4.0	18 11	-21 04	-0.003	8	14	14.21	-0.33	11	14	14.21
683	3.1	18 14	-36 47	+0.009	7	15	11.34	-0.08	13	17	11.36
684	5.4	18 14	+42 08	-0.043	9	3	14.63	+1.00	65	3	14.63
686	4.2	18 19	-61 31	+0.002	4	32	11.02	+0.07	7	31	10.94
687	2.8	18 18	-29 51	-0.059	**	1	14.52	+0.19	**	1	14.52
689	1.9	18 21	-34 25	-0.036	6	15	14.45	+0.30	11	14	14.43
691	3.7	18 23	-46 00	-0.017	4	26	12.99	-0.48	7	25	12.50
692	2.9	18 25	-25 27	+0.013	12	2	13.09	-0.26	37	2	13.09
696	4.7	18 26	-14 36	+0.008	3	13	13.48	+0.12	11	11	13.45
697	4.6	18 30	-42 21	-0.002	6	9	13.47	+0.30	14	9	13.15
698	4.1	18 37	-71 28	-0.132	6	9	14.21	+0.31	22	8	14.27
699	0.1	18 35	+38 44	+0.003	8	4	13.68	-0.08	13	3	13.68
704	4.4	18 48	-62 15	-0.021	5	21	11.84	+0.34	10	21	11.45
705	3.4	18 48	+33 18	-0.035	10	7	14.68	-0.43	38	5	14.67
706	2.1	18 52	-26 22	-0.007	5	10	12.53	+0.23	10	10	12.53
708	5.0	18 54	-53 00	-0.003	7	8	12.97	-0.47	10	8	12.97
712	4.2	18 57	+15 00	-0.009	6	6	13.69	-0.09	21	6	13.69
713	3.3	18 57	+32 37	+0.043	**	1	11.66	+0.31	**	1	11.66
716	3.0	19 03	+13 47	+0.001	6	22	13.80	-0.31	9	20	13.72

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

**9

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
717	3.5	19 04	- 4 58	+0.012	7	3	13.60	-0.09	39	3	13.60
718	4.1	19 06	-37 59	+0.010	3	34	12.97	-0.02	7	33	12.89
720	3.0	19 07	-21 06	-0.005	6	4	10.59	-0.25	14	4	10.59
722	5.0	19 15	-19 03	-0.003	5	7	13.94	-0.14	6	7	13.94
725	5.1	19 15	+11 30	+0.000	4	15	10.66	-0.31	13	16	10.53
727	4.5	19 19	-16 03	+0.007	**	1	14.52	-0.43	**	1	14.52
728	4.1	19 20	-40 43	+0.007	5	14	14.48	-0.06	9	13	14.46
730	3.4	19 23	+ 3 01	+0.031	**	1	14.52	-0.68	**	1	14.52
732	3.2	19 29	+27 51	-0.003	6	17	14.26	+0.46	12	21	14.29
736	4.6	19 34	-25 00	-0.018	4	16	10.60	-0.24	6	15	10.61
737	5.0	19 34	- 7 08	+0.005	3	13	14.46	+0.34	12	12	14.44
739	5.5	19 44	-56 29	-0.046	5	21	11.78	+0.07	11	20	11.83
740	5.0	19 42	+37 14	+0.003	6	14	14.08	+0.67	14	13	14.03
743	3.7	19 45	+18 25	-0.010	4	20	14.01	-0.11	8	20	14.02
744	5.5	19 48	-10 54	+0.000	6	9	14.73	+0.06	12	8	14.73
745	0.8	19 48	+ 8 44	+0.009	6	13	11.07	-0.09	10	13	10.99
748	4.1	19 55	-73 03	-0.071	4	26	10.95	+0.04	8	26	10.91
752	3.7	19 57	+19 21	+0.005	5	13	14.70	-0.14	11	12	14.71
753	4.6	20 00	-27 51	-0.015	5	24	13.45	+0.07	6	23	13.39
754	3.6	20 04	-66 19	-0.007	6	15	12.14	-0.18	15	16	12.30
755	4.8	20 04	-53 02	-0.039	4	23	12.44	-0.01	7	22	12.29
756	3.3	20 09	- 0 58	+0.006	3	30	11.97	-0.30	7	31	11.99
760	5.4	20 15	+24 31	-0.020	6	22	12.43	+0.18	12	21	12.28
768	3.9	20 31	+11 08	+0.018	14	2	14.61	-0.13	45	2	14.61
769	3.2	20 34	-47 28	-0.026	18	3	13.64	-0.29	17	2	14.63
774	3.8	20 37	+15 44	-0.015	7	2	14.63	+0.72	20	2	14.63
775	3.6	20 40	-66 23	-0.059	7	8	14.35	-0.63	12	7	14.31
781	3.8	20 45	- 9 41	+0.015	11	2	14.63	+0.31	**	1	14.62
785	3.7	20 51	-58 39	-0.067	4	27	12.56	+0.00	8	27	12.52
786	5.2	20 52	+27 52	-0.005	6	14	12.86	-0.13	13	14	12.86
787	5.2	20 59	-77 13	-0.058	4	13	14.71	-0.25	13	12	14.71
788	4.0	20 55	+40 58	+0.011	8	3	14.72	+0.25	15	4	14.72
794	4.5	21 07	-11 35	+0.015	4	26	13.02	-0.06	6	27	12.93
796	5.8	21 12	-53 28	+0.057	3	13	13.78	+0.02	5	13	13.78
797	3.4	21 11	+30 01	+0.019	6	6	10.41	-0.54	31	7	10.42
800	4.1	21 13	+ 5 02	+0.005	4	17	12.11	+0.00	10	18	12.02
802	4.9	21 18	-41 01	+0.007	5	22	13.35	+0.16	7	22	13.35
804	4.2	21 20	+19 35	-0.005	4	2	14.61	+0.45	27	2	14.61
805	4.3	21 22	-65 36	-0.081	4	26	11.56	+0.49	7	27	11.48
806	3.8	21 24	-22 38	+0.022	7	2	14.81	+0.39	30	2	14.81
808	3.0	21 29	- 5 48	+0.014	5	12	11.12	+0.25	10	12	11.04
810	3.7	21 36	-77 37	-0.180	5	29	11.41	+0.05	9	29	11.22
811	5.0	21 35	+40 11	+0.069	21	2	14.81	-0.12	144	2	14.81
812	3.8	21 37	-16 53	+0.005	20	2	14.83	+0.68	18	2	14.83
814	4.3	21 42	-33 15	-0.020	4	36	11.93	-0.15	6	37	11.87
815	2.5	21 42	+ 9 39	-0.015	16	2	14.83	+0.25	11	2	14.83
818	5.4	21 44	-11 36	+0.026	19	2	14.83	+0.28	26	2	14.83
820	5.5	21 47	-69 52	-0.066	4	31	11.78	+0.45	8	30	11.67
822	3.1	21 51	-37 36	-0.001	8	6	14.66	-0.17	9	6	14.66
823	5.0	21 51	+25 41	+0.000	5	15	12.16	+0.16	15	15	12.09

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*10

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
824	4.5	21 55	-55 14	-0.059	6	15	11.10	+0.04	10	16	11.14
825	4.7	22 00	-57 00	+0.034	5	14	10.62	+0.21	10	14	10.62
826	5.6	21 59	+12 53	-0.001	5	14	14.74	-0.31	12	14	14.74
827	3.1	22 03	- 0 34	-0.017	5	2	10.60	-0.37	16	3	10.65
828	4.3	22 04	-14 07	+0.011	5	11	10.45	-0.02	9	11	10.36
829	2.1	22 05	-47 12	+0.002	8	7	10.42	+0.25	9	7	10.42
833	5.6	22 07	+32 56	-0.020	5	15	13.23	+0.22	14	15	13.23
834	3.7	22 08	+ 5 57	-0.011	10	3	14.77	-0.02	27	3	14.77
838	5.4	22 11	-28 01	-0.020	5	22	11.92	+0.61	9	22	11.87
839	5.1	22 15	-80 41	-0.030	4	28	11.95	+0.16	7	28	11.93
841	2.9	22 15	-60 31	-0.111	7	18	12.41	+0.22	10	18	12.41
843	4.9	22 19	+11 57	-0.019	8	13	12.46	-0.21	11	13	12.46
845	5.4	22 26	-39 23	-0.007	17	3	14.81	+0.52	4	3	14.81
846	4.0	22 26	-43 45	-0.001	19	3	10.65	-0.06	6	3	10.65
849	5.2	22 32	-20 58	-0.016	3	2	13.68	-0.09	30	2	13.68
850	4.1	22 33	- 0 23	+0.010	7	6	10.58	-0.09	19	7	10.42
854	4.2	22 38	-27 18	+0.002	6	15	14.76	-0.22	5	14	14.75
856	2.2	22 40	-47 09	-0.004	7	6	10.57	+0.42	17	7	10.42
857	3.1	22 41	+29 58	-0.024	11	3	14.46	+0.09	16	3	14.46
860	3.6	22 46	-51 35	-0.014	11	3	14.76	+0.03	54	3	14.72
861	4.2	22 47	-13 51	+0.004	5	8	10.87	-0.43	11	7	10.74
862	3.6	22 48	+24 20	-0.007	5	8	13.04	-0.42	17	8	13.04
864	3.8	22 50	- 7 51	+0.003	3	3	10.65	-0.23	3	3	10.65
865	6.1	22 51	-70 20	-0.076	3	30	12.81	+0.34	9	30	12.69
867	1.2	22 55	-29 53	-0.020	13	5	14.84	+0.44	17	5	14.84
868	4.1	22 58	-53 01	-0.046	10	5	14.84	-0.12	15	5	14.84
873	3.8	23 07	-21 27	-0.018	15	3	10.03	-0.63	24	4	10.15
876	5.6	23 14	-62 16	-0.029	5	14	11.40	+0.41	10	14	11.38
877	4.1	23 15	-58 31	-0.022	7	5	14.84	-0.12	12	5	14.84
880	4.6	23 18	+23 28	-0.004	5	12	13.10	-0.64	12	14	12.75
881	4.5	23 23	+23 08	-0.015	13	5	14.70	-0.27	16	4	14.71
883	5.5	23 24	-53 00	+0.021	5	15	11.36	-0.14	10	15	11.34
885	4.6	23 27	+12 29	-0.006	7	13	13.30	-0.60	9	11	13.31
886	4.4	23 30	-38 06	+0.001	6	24	13.90	+0.29	8	22	13.99
888	6.5	23 33	- 7 44	+0.003	5	6	9.85	+0.10	17	7	10.10
889	4.8	23 35	-45 46	+0.017	5	9	9.91	+0.09	21	8	10.00
894	4.6	23 40	-14 49	+0.031	5	20	14.29	+0.01	11	19	14.31
896	4.6	23 46	-28 24	-0.012	12	6	14.84	-0.41	15	6	14.84
897	6.0	23 48	-10 15	+0.014	9	8	10.90	+0.11	7	9	10.62
898	5.2	23 50	+18 51	-0.007	7	12	14.45	-0.34	11	13	14.49
900	5.0	23 56	- 3 50	+0.002	24	2	14.83	-0.17	35	2	14.83
902	4.0	23 57	+ 6 35	+0.009	**	1	13.68	+0.59	**	1	13.68
903	4.7	23 57	-65 51	-0.080	4	18	13.76	-0.17	12	17	13.75
904	4.7	23 59	-77 21	-0.135	4	23	11.65	-0.29	8	23	11.64
916	5.6	1 40	-85 01	-0.269	3	27	10.56	+0.13	10	26	10.55
917	5.8	5 04	-82 32	+0.068	7	9	10.15	-0.54	24	6	10.68
918	5.3	9 04	-85 28	-0.573	3	34	10.09	-0.46	6	48	10.39
919	5.3	12 50	-84 51	-0.298	3	59	11.53	-0.33	7	58	11.28
921	6.1	16 42	-86 17	-0.108	3	48	10.96	-0.04	8	49	10.82
922	5.2	18 26	-87 39	-0.382	**	1	14.52	+0.21	**	1	14.51

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*11

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960
924	4.3	22 41	-81 39	-0.013	3	37	12.29	-0.22	7	39	12.20
925	5.5	23 21	-87 45	-0.548	17	5	10.28	+0.13	19	6	10.31
1001	5.6	0 02	-71 43	-0.110	4	23	13.90	+0.09	9	22	13.75
1002	4.6	0 03	- 5 59	+0.000	4	12	11.94	-0.37	12	12	12.19
1003	6.0	0 04	-23 23	-0.044	11	5	9.89	-0.23	16	6	10.14
1004	4.9	0 12	+19 56	-0.021	10	4	14.74	+0.00	11	4	14.74
1007	6.8	0 18	-17 59	-0.024	16	3	14.72	+0.36	14	3	14.72
1010	5.9	0 23	+ 1 40	+0.012	2	3	10.60	+0.00	8	3	10.60
1011	7.5	0 25	-11 56	+0.001	9	3	10.60	+0.37	9	3	10.60
1013	5.6	0 31	-29 50	-0.027	6	16	14.89	+0.45	8	16	14.89
1014	5.5	0 32	-52 39	+0.026	3	22	12.55	+0.23	10	21	12.38
1015	4.6	0 39	-46 22	+0.005	4	26	14.65	-0.02	8	26	14.65
1016	7.2	0 40	-36 18	+0.058	14	3	10.60	+0.02	38	3	10.60
1017	6.0	0 43	-42 57	+0.001	8	10	14.37	+0.24	11	10	14.37
1019	5.8	0 46	+ 5 01	+0.002	**	1	14.70	-0.02	**	1	14.70
1022	4.9	0 50	- 1 25	-0.007	4	10	14.91	-0.63	12	10	14.91
1023	5.6	0 55	+28 43	-0.003	8	5	9.91	+0.30	24	5	10.00
1024	6.7	0 56	- 6 09	-0.006	6	11	12.86	-0.40	11	10	12.76
1025	6.5	0 59	-16 32	-0.008	9	5	14.83	-0.16	15	5	14.83
1026	5.5	1 00	-31 49	+0.022	9	3	10.60	-0.11	31	3	10.60
1027	6.0	1 00	-57 16	-0.023	3	30	13.32	-0.08	8	28	13.35
1028	5.6	1 02	+14 41	-0.011	5	30	13.48	-0.41	7	28	13.60
1029	6.2	1 04	-24 16	-0.030	10	6	9.85	+0.24	16	6	10.18
1031	5.1	1 06	-41 45	-0.021	6	4	11.09	+0.34	9	5	11.06
1032	4.8	1 09	+20 46	-0.013	7	4	11.09	+0.05	19	3	11.21
1033	5.5	1 11	+ 7 19	-0.012	12	8	12.95	+0.10	14	9	12.72
1034	5.2	1 15	+ 3 21	+0.021	3	28	13.54	-0.16	7	26	13.59
1036	5.8	1 21	-31 12	-0.036	7	14	14.02	+0.08	11	16	13.88
1038	5.8	1 23	-64 38	-0.034	4	11	11.79	+0.02	20	9	11.55
1039	5.6	1 24	+18 59	+0.008	9	3	14.79	-0.12	9	3	14.79
1041	5.6	1 24	-13 19	+0.001	6	12	13.30	-0.21	12	12	13.30
1043	5.1	1 27	-21 53	+0.005	5	12	12.70	+0.01	8	12	12.70
1044	3.9	1 29	-49 20	+0.010	5	19	13.71	-0.05	7	18	13.81
1047	5.4	1 39	+35 00	-0.034	**	1	13.84	+0.29	**	1	13.84
1048	5.2	1 40	-32 35	+0.027	13	4	14.93	+0.05	24	4	14.93
1049	5.2	1 40	- 3 56	-0.006	7	7	14.86	+0.20	9	7	14.86
1050	5.7	1 45	+16 42	+0.012	7	11	10.06	-0.23	17	12	10.20
1051	4.7	1 47	-10 56	+0.019	4	27	13.74	+0.02	8	26	13.73
1055	4.7	2 02	-29 32	-0.050	9	8	10.49	+0.44	10	8	10.49
1056	5.9	2 08	+19 16	-0.014	15	4	13.36	-0.36	16	3	13.19
1057	5.9	2 10	+15 03	+0.001	7	5	14.84	+0.10	40	5	14.84
1058	4.5	2 10	+ 8 37	+0.012	17	2	14.77	-0.33	12	2	14.77
1059	5.6	2 13	+24 49	+0.005	15	2	14.81	-0.10	26	2	14.81
1060	5.8	2 13	-41 24	+0.031	4	21	12.84	+0.07	8	19	12.94
1061	5.8	2 15	+ 1 31	+0.016	5	10	14.91	-0.29	10	10	14.91
1062	6.7	2 15	-36 13	-0.040	**	1	11.79	+0.10	**	1	11.79
1064	5.9	2 20	-17 53	+0.000	4	9	14.85	+0.11	6	9	14.85
1067	6.0	2 23	-73 52	+0.000	**	1	11.79	-0.35	**	1	11.79
1068	5.3	2 25	+29 27	-0.014	13	3	14.83	-0.16	21	3	14.83
1069	6.4	2 28	+17 29	+0.001	26	2	14.96	-0.17	3	2	14.96

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*12

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1070	5.3	2 29	+35 56	-0.051	10	3	14.80	-1.26	108	2	14.81
1071	4.8	2 30	-15 28	+0.029	9	6	14.93	-0.52	31	6	14.93
1072	5.0	2 33	+ 5 23	+0.028	6	16	11.13	-0.27	12	16	11.13
1073	5.9	2 33	+ 6 39	+0.027	12	3	13.88	-0.67	44	2	13.88
1074	5.7	2 34	- 8 03	+0.011	5	8	14.90	-0.34	17	8	14.90
1075	4.0	2 39	-40 04	+0.002	6	10	11.18	-0.01	12	10	11.18
1076	5.2	2 39	-54 46	-0.077	5	22	12.40	-0.40	9	21	12.33
1078	6.8	2 42	-25 42	-0.027	6	8	10.25	-0.62	8	8	10.25
1079	5.4	2 49	+14 53	-0.002	8	9	11.56	-0.11	14	8	12.30
1080	5.2	2 54	- 3 55	+0.009	6	8	10.25	-0.11	7	8	10.25
1081	5.8	2 55	+20 28	+0.000	14	3	14.95	+0.35	6	3	14.95
1083	4.6	2 57	+ 8 43	-0.001	5	10	14.55	-0.26	11	11	14.58
1085	4.1	3 00	-23 49	-0.005	11	3	10.60	-0.17	14	3	10.60
1087	7.1	3 05	-13 57	-0.013	4	34	12.52	-0.15	5	34	12.52
1088	5.6	3 07	+28 53	+0.018	**	1	11.79	-0.09	**	1	11.79
1089	4.9	3 12	-20 52	-0.017	7	10	10.97	-0.15	19	10	10.97
1090	6.8	3 13	-35 45	+0.013	8	11	11.52	+0.21	14	12	11.79
1092	6.8	3 15	-31 32	-0.062	**	1	11.79	-0.64	**	1	11.79
1094	5.1	3 18	+20 58	-0.006	5	13	12.35	+0.20	11	13	12.35
1095	5.5	3 17	-77 34	-0.097	4	24	13.05	-0.06	11	24	13.12
1097	4.8	3 28	- 5 15	+0.025	8	10	11.05	-0.25	9	11	10.95
1100	5.3	3 34	-17 38	+0.040	3	2	14.87	-0.10	10	2	14.87
1103	6.1	3 38	+25 10	+0.004	2	2	13.91	+0.15	11	2	13.91
1104	5.3	3 43	+ 5 54	+0.001	8	6	9.96	-0.69	29	6	9.96
1106	5.9	3 50	+17 11	-0.014	5	11	14.41	-0.32	8	11	14.41
1107	6.5	3 51	- 6 47	+0.007	10	10	10.41	-0.39	15	10	10.41
1108	5.7	3 52	-47 02	-0.024	9	4	14.91	-0.53	23	3	14.93
1109	6.1	3 58	-57 15	-0.075	5	16	10.35	+0.24	11	16	10.35
1112	4.5	4 02	+21 57	+0.004	**	1	11.79	-0.61	**	1	11.79
1114	6.7	4 01	-71 18	-0.111	4	19	13.51	+0.13	8	19	13.51
1115	5.6	4 06	+19 29	-0.020	5	22	12.97	-0.23	8	23	12.97
1119	6.6	4 18	-16 33	+0.015	**	1	11.79	-0.07	**	1	11.79
1121	4.0	4 22	-34 08	-0.010	4	5	14.86	-0.06	25	6	14.86
1123	5.5	4 26	+ 1 16	+0.011	8	10	11.47	+0.08	19	11	11.50
1125	4.7	4 31	+14 44	+0.012	5	12	10.40	-0.38	14	12	10.40
1129	4.5	4 39	-41 57	+0.030	4	24	10.90	+0.18	9	22	11.09
1130	5.0	4 40	-37 14	+0.001	8	7	14.44	-0.05	9	7	14.44
1131	5.8	4 42	- 8 36	+0.012	**	1	14.85	-0.27	**	1	14.85
1132	5.9	4 44	-28 11	-0.018	**	1	14.92	+0.35	**	1	14.92
1133	5.1	4 47	+37 24	-0.040	5	7	14.61	-0.17	26	7	14.61
1138	5.2	4 57	-75 01	-0.104	9	5	10.46	+0.48	19	5	10.46
1139	6.0	5 00	-31 51	-0.007	6	11	13.07	-0.05	13	10	13.49
1141	5.9	5 07	+27 58	-0.006	6	14	11.92	-0.29	16	14	11.92
1142	5.4	5 07	+ 9 46	-0.002	5	15	10.43	-0.26	9	13	10.87
1143	7.1	5 06	-44 53	-0.073	**	1	11.79	+0.30	**	1	11.79
1144	3.3	5 11	-16 16	+0.018	6	13	10.67	+0.19	10	11	10.95
1147	4.6	5 19	- 0 26	+0.000	7	8	10.43	-0.10	17	5	11.23
1149	5.8	5 25	-40 59	+0.026	**	1	11.79	+0.29	**	1	11.79
1151	4.8	5 29	+32 09	+0.020	**	1	11.79	-0.67	**	1	11.79
1152	5.5	5 29	-47 07	-0.001	3	5	9.87	-0.11	2	3	10.11

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*13

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1153	6.7	5 36	-27 14	-0.043	5	12	10.33	+0.15	15	9	10.74
1154	4.5	5 45	-65 45	-0.107	5	7	10.39	-0.39	15	7	10.39
1156	4.3	5 49	-56 11	+0.000	5	13	11.71	-0.26	15	9	12.21
1158	4.5	5 50	+27 36	-0.014	14	4	9.69	+0.18	2	4	9.69
1160	4.3	5 56	-35 17	+0.001	7	12	10.81	+0.16	11	8	11.57
1161	5.2	5 56	+ 0 33	-0.009	**	1	14.92	+0.37	**	1	14.91
1163	4.3	6 01	+23 16	-0.001	7	13	11.29	-0.11	13	10	11.95
1166	5.2	6 09	-68 50	-0.033	**	1	12.97	+0.02	**	1	12.97
1167	6.4	6 12	+36 10	-0.023	16	2	13.94	+0.04	4	2	13.94
1169	5.1	6 14	+12 17	+0.007	6	12	10.51	-0.48	12	15	12.64
1170	5.1	6 17	- 7 48	+0.000	5	14	11.00	+0.01	8	19	13.04
1173	4.0	6 26	+20 15	-0.004	7	8	10.52	+0.10	12	6	11.23
1174	4.5	6 30	+ 7 22	+0.001	7	12	10.75	+0.31	18	9	11.30
1175	5.0	6 31	- 1 11	+0.017	8	5	10.59	+0.18	21	5	10.59
1177	5.8	6 44	+ 8 39	-0.016	**	1	14.92	-0.28	**	1	14.92
1181	5.8	6 58	- 8 20	+0.022	7	5	10.88	+0.01	11	17	13.90
1186	5.0	7 08	- 4 09	+0.010	8	10	10.52	-0.01	12	12	10.46
1189	3.9	7 09	-70 25	*****	**	**	*****	+0.35	15	5	15.18
1192	5.8	7 23	-13 39	*****	**	**	*****	-0.02	15	11	15.16
1193	4.8	7 27	+12 07	+0.000	5	11	10.14	-0.43	19	12	10.22
1194	3.2	7 28	-43 12	+0.001	8	8	10.22	+0.03	8	16	13.82
1197	5.7	7 34	-19 35	*****	**	**	*****	-0.19	19	4	15.19
1202	5.1	7 44	-14 26	*****	**	**	*****	+0.10	13	5	15.18
1203	5.2	7 46	-46 29	+0.011	7	14	11.02	+0.16	11	14	10.80
1204	3.5	7 47	-24 44	*****	**	**	*****	+0.13	10	12	15.16
1208	6.0	7 54	+15 55	*****	**	**	*****	-0.26	16	10	15.23
1210	4.8	7 56	-30 12	-0.015	11	7	10.37	-0.13	17	5	10.88
1211	5.8	7 58	+25 32	-0.013	5	23	11.11	+0.06	13	19	11.36
1212	4.6	7 58	-18 16	*****	**	**	*****	+0.32	14	12	15.24
1214	6.6	8 07	+35 36	-0.015	19	3	14.31	+0.36	21	3	14.31
1216	6.6	8 15	+ 4 22	+0.020	7	8	14.28	-0.30	12	9	14.28
1218	6.3	8 17	-10 01	+0.013	5	11	11.73	-0.04	8	7	12.49
1219	4.9	8 19	-32 54	+0.007	12	3	14.30	-0.10	13	5	14.30
1221	5.6	8 23	-23 53	*****	**	**	*****	+0.03	8	21	15.21
1222	5.9	8 26	+14 23	-0.001	4	21	11.82	-0.27	6	41	13.23
1223	4.2	8 35	+ 5 53	*****	**	**	*****	+0.07	9	10	15.27
1226	4.1	8 39	-46 28	*****	**	**	*****	-0.02	9	14	15.25
1227	3.6	8 39	-52 45	-0.081	11	5	14.27	+0.09	15	4	14.27
1228	4.7	8 40	+21 39	-0.022	14	5	14.30	-0.25	27	5	14.30
1229	6.1	8 43	-20 59	*****	**	**	*****	-0.46	12	11	15.16
1230	5.1	8 47	- 3 15	+0.016	4	4	14.25	+0.02	26	8	14.72
1231	5.9	8 53	-18 03	+0.011	11	5	14.27	+0.33	9	19	15.05
1232	5.6	8 56	+32 37	-0.016	6	5	14.27	+0.25	39	3	14.27
1234	4.4	8 58	-41 03	+0.015	22	3	14.33	+0.17	4	3	14.33
1238	5.1	9 05	+10 52	-0.001	13	5	14.27	-0.31	7	4	14.27
1239	5.2	9 06	+22 15	-0.005	16	4	14.33	-0.40	37	4	14.33
1240	5.8	9 07	-12 09	+0.014	7	12	9.70	+0.28	19	11	9.74
1242	5.8	9 10	-19 33	+0.010	9	11	11.86	+0.03	7	27	13.73
1243	4.9	9 19	-25 45	-0.016	11	5	14.27	-0.15	11	14	14.97
1244	4.6	9 22	+26 24	-0.012	5	22	10.12	-0.36	11	22	10.12

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*14

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1245	5.8	9 23	- 4 54	+0.011	6	10	11.76	+0.18	13	10	11.26
1246	5.1	9 29	+11 31	-0.017	6	15	11.26	-0.18	9	18	11.93
1247	5.1	9 31	-20 54	+0.044	**	1	14.37	-0.21	**	1	14.37
1248	5.6	9 35	-31 57	-0.031	9	10	11.30	+0.22	16	11	11.11
1250	4.1	9 37	- 0 55	-0.024	14	6	9.26	+0.31	13	7	9.26
1252	5.6	9 41	+14 15	-0.002	8	7	9.98	-0.20	16	8	9.89
1254	3.6	9 44	-62 17	-0.025	5	16	12.73	+0.15	8	28	13.86
1255	5.2	9 45	+46 15	-0.021	18	8	9.92	-0.91	42	7	10.02
1256	5.7	9 49	-45 58	-0.060	3	50	11.22	-0.04	5	77	12.26
1257	7.0	9 54	- 7 24	+0.021	5	14	11.59	+0.05	11	14	11.59
1258	5.6	9 58	+32 10	-0.029	4	30	10.87	-0.63	12	28	10.66
1260	5.8	10 02	-24 03	-0.019	3	33	11.76	+0.08	6	57	13.15
1261	4.7	10 03	-12 49	+0.011	4	16	10.55	+0.21	7	17	10.77
1263	5.4	10 15	- 7 49	+0.008	8	7	14.30	-0.20	8	7	14.31
1264	3.4	10 15	-61 05	-0.031	6	8	9.54	+0.17	15	9	9.51
1266	6.5	10 18	+ 2 33	+0.005	8	11	12.67	-0.53	14	11	12.68
1267	5.8	10 20	+34 10	-0.018	16	4	14.25	-0.21	33	3	14.25
1268	4.9	10 20	-41 24	+0.009	6	4	14.35	+0.17	22	4	14.35
1270	5.2	10 27	- 2 29	-0.009	8	2	14.37	-0.40	9	12	15.05
1271	6.9	10 27	+28 50	-0.020	10	6	14.41	+0.07	31	6	14.40
1273	5.1	10 31	-46 45	*****	**	**	*****	-0.01	7	23	15.24
1274	5.8	10 34	-11 58	+0.024	6	8	14.40	+0.24	14	9	14.39
1277	5.7	10 40	-32 27	-0.049	8	9	14.31	-0.28	17	9	14.43
1278	6.2	10 43	+ 6 38	+0.010	8	7	14.29	-0.25	18	7	14.29
1280	6.8	10 44	-25 47	-0.026	18	5	9.26	-0.63	11	12	12.30
1281	5.7	10 48	- 8 38	+0.001	4	20	11.50	-0.26	6	26	12.39
1284	5.0	10 58	+ 3 53	+0.002	5	17	11.25	-0.23	8	22	11.92
1285	7.1	11 00	- 3 15	+0.012	4	5	9.26	+0.02	11	14	12.62
1286	6.1	11 03	-10 49	+0.007	10	8	9.64	+0.31	11	11	11.19
1288	5.8	11 05	-70 36	-0.036	3	31	12.22	+0.04	7	30	12.32
1289	4.0	11 06	-58 42	-0.032	3	35	11.44	-0.03	6	45	12.04
1290	6.4	11 10	-32 10	-0.041	6	25	10.76	+0.00	9	29	10.94
1291	5.6	11 10	-48 50	-0.015	5	26	9.96	-0.20	6	46	12.33
1292	4.5	11 14	- 3 23	+0.009	8	10	14.41	-0.05	7	30	14.95
1294	6.4	11 22	-42 24	+0.013	8	13	14.42	+0.04	9	15	14.63
1295	7.1	11 23	+27 01	-0.008	5	8	14.40	-0.42	19	8	14.39
1296	6.5	11 24	+ 3 17	*****	**	**	*****	-0.39	10	14	15.23
1297	5.1	11 25	+ 3 08	-0.002	5	14	14.42	+0.16	11	18	14.63
1298	6.8	11 27	-27 45	*****	**	**	*****	+0.47	9	18	15.26
1299	4.8	11 34	- 9 32	+0.016	5	16	9.97	-0.05	11	20	10.81
1300	5.4	11 38	+34 29	+0.003	6	16	13.47	-0.01	17	14	13.33
1301	4.9	11 42	-18 04	-0.010	6	7	10.43	+0.24	9	25	13.90
1302	4.2	11 43	+ 6 49	+0.007	4	8	14.40	-0.90	18	10	14.49
1304	4.5	11 45	+20 30	+0.016	4	14	9.93	-0.37	8	15	9.88
1305	5.4	11 46	-26 28	-0.012	3	34	11.41	-0.09	8	43	12.20
1306	5.8	11 48	- 5 03	-0.012	5	14	10.95	+0.33	11	13	11.07
1307	6.4	11 50	+38 05	+0.008	6	17	14.41	-0.54	20	17	14.41
1308	5.4	11 53	+15 56	-0.002	4	36	11.45	+0.11	7	51	12.56
1309	5.1	11 53	-16 52	+0.018	6	20	11.99	-0.07	8	28	12.93
1310	6.3	11 56	+32 33	+0.000	5	30	9.69	-0.13	9	31	9.74

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION) *15

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1311	4.5	11 58	+ 6 54	+0.011	4	28	12.04	-0.48	9	27	11.95
1312	6.2	12 03	-35 25	-0.011	8	6	12.78	-0.27	10	8	13.98
1313	6.3	12 08	+17 05	+0.014	3	18	14.39	+0.18	10	16	14.39
1315	7.0	12 17	- 8 38	+0.008	5	16	13.47	+0.11	9	16	13.47
1317	5.1	12 18	+ 3 35	*****	**	**	*****	-0.58	16	3	15.35
1318	4.7	12 20	+26 07	-0.013	4	36	11.95	-0.18	10	35	11.88
1319	6.3	12 23	-27 28	+0.032	**	1	14.46	+0.27	10	7	15.26
1320	5.6	12 26	-38 46	+0.034	**	1	14.46	+0.02	13	9	15.19
1321	5.7	12 31	-12 33	+0.012	4	10	11.35	-0.44	8	27	14.02
1322	5.4	12 31	+33 31	-0.001	6	8	14.28	+0.06	22	6	14.28
1323	4.7	12 32	+22 54	-0.001	3	11	14.45	-0.40	17	10	14.45
1324	5.9	12 34	- 5 33	+0.009	5	15	11.42	-0.05	14	17	12.12
1325	5.8	12 39	-45 52	+0.002	4	36	11.88	+0.03	7	39	12.03
1326	4.9	12 39	+10 31	-0.019	5	21	12.13	-0.26	9	22	12.29
1328	5.2	12 43	+ 7 57	+0.007	6	11	13.47	-0.48	14	10	13.39
1329	6.2	12 45	-24 35	+0.027	**	1	14.46	-0.39	8	13	15.20
1330	6.6	12 45	+ 3 51	+0.002	5	17	9.48	+0.01	9	18	9.81
1331	5.0	12 48	-33 44	*****	**	**	*****	-0.36	10	13	15.27
1336	5.8	12 57	- 3 33	+0.010	4	17	12.55	-0.20	8	28	13.61
1337	5.1	13 03	+36 04	-0.016	8	11	11.91	-0.55	16	11	11.47
1339	6.0	13 04	+21 25	+0.004	5	24	13.34	-0.58	10	22	13.24
1340	5.9	13 05	-53 12	-0.013	5	21	11.93	+0.56	6	26	12.38
1341	6.4	13 09	-26 17	-0.032	4	22	12.36	-0.09	5	41	13.48
1342	5.3	13 14	-31 15	-0.026	6	17	11.56	+0.62	8	21	12.30
1343	5.8	13 14	-43 43	+0.034	10	4	14.27	-0.46	35	3	14.27
1344	5.0	13 15	+ 5 44	-0.001	3	24	11.71	-0.12	8	25	12.13
1345	4.8	13 16	-18 02	+0.018	7	14	14.40	+0.18	6	14	14.41
1346	5.6	13 18	+40 25	+0.007	14	5	14.39	-0.76	36	5	14.39
1347	4.6	13 19	-60 44	-0.063	3	33	12.12	-0.21	8	36	11.98
1348	5.5	13 24	-12 27	+0.014	10	7	11.72	+0.07	16	8	12.30
1349	5.1	13 26	+14 03	+0.002	3	25	11.61	-0.27	7	40	12.56
1350	7.1	13 26	+31 24	-0.028	4	32	12.25	-0.19	13	31	12.02
1351	4.9	13 32	+ 3 55	+0.007	5	25	11.36	-0.03	7	23	11.23
1354	6.4	13 39	-23 12	-0.010	3	4	14.33	-0.21	11	8	14.76
1356	6.3	13 40	-56 31	+0.029	8	11	11.66	+0.16	16	12	13.47
1357	5.7	13 42	-15 56	+0.013	7	3	14.31	+0.13	8	12	15.00
1358	5.9	13 44	+25 57	+0.002	8	11	13.53	+0.25	21	10	13.45
1359	6.5	13 47	+ 8 39	-0.028	10	6	14.30	-0.41	23	7	14.29
1360	6.2	13 54	+32 17	-0.011	7	4	14.30	-0.82	21	4	14.30
1361	5.8	13 57	-24 46	+0.014	4	18	14.39	-0.02	10	19	14.45
1362	6.3	13 57	- 3 18	+0.026	8	14	11.64	-0.13	10	15	11.62
1363	5.5	14 00	-76 33	-0.065	4	27	13.35	+0.10	11	26	13.32
1364	6.4	14 00	-41 11	+0.035	6	4	12.06	+0.36	10	15	14.46
1366	6.5	14 04	- 8 39	+0.010	9	10	10.50	-0.18	8	15	11.83
1367	7.9	14 04	+38 39	-0.008	30	2	14.51	-0.30	46	2	14.51
1368	5.4	14 06	+44 05	+0.018	16	3	14.36	-0.56	56	3	14.36
1369	5.7	14 16	-18 29	+0.011	9	4	14.27	-0.17	19	4	14.57
1373	4.1	14 18	-37 39	+0.029	5	18	11.14	+0.14	6	22	12.19
1375	5.0	14 22	+ 6 03	-0.014	9	4	14.42	-0.09	8	5	14.67
1376	5.4	14 22	-24 35	*****	**	**	*****	+0.16	21	4	15.31

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION) *16

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1377	4.6	14 23	-45 00	*****	**	**	*****	+0.23	**	1	15.54
1381	6.2	14 34	-12 06	+0.001	6	10	10.50	+0.22	8	16	11.75
1382	5.6	14 39	+11 53	-0.012	3	17	12.39	-0.25	16	18	12.08
1384	6.4	14 43	+33 00	-0.059	15	3	14.38	-0.14	15	3	14.38
1386	5.9	14 47	+38 01	+0.000	5	15	12.08	-0.79	17	16	11.81
1387	5.3	14 48	-15 47	+0.008	4	23	11.57	+0.15	8	27	12.03
1388	6.6	14 51	+ 6 27	+0.015	3	36	12.62	-0.31	7	38	12.58
1389	5.3	14 53	-33 39	-0.019	5	21	12.07	-0.03	7	28	12.75
1390	5.6	14 54	-11 13	+0.007	16	5	14.39	-0.35	17	5	14.58
1392	6.2	14 55	+21 45	-0.023	12	4	14.60	-0.31	17	4	14.60
1394	4.8	14 58	- 8 19	+0.013	4	33	12.83	-0.16	7	30	13.61
1396	5.0	15 05	+25 04	-0.014	4	30	12.10	+0.15	8	31	12.11
1398	4.1	15 08	-48 33	-0.012	8	8	14.44	-0.17	11	8	14.44
1399	4.9	15 12	-31 20	-0.008	5	23	11.42	+0.63	11	24	11.59
1400	5.6	15 16	+20 45	-0.023	7	3	14.25	-0.25	31	3	14.25
1402	3.4	15 18	-40 28	*****	**	**	*****	+0.60	26	3	15.49
1403	4.6	15 20	-36 41	-0.017	7	6	14.55	-0.12	7	7	14.81
1404	6.7	15 20	-26 31	-0.017	2	2	14.45	+0.24	36	3	14.81
1405	6.7	15 20	-14 57	+0.009	4	3	11.30	+0.15	11	3	11.30
1406	6.1	15 21	- 0 51	+0.004	5	25	10.56	-0.28	12	23	10.45
1407	5.9	15 25	-16 33	+0.013	8	7	14.56	+0.25	12	10	14.83
1408	6.4	15 28	+ 8 45	-0.001	12	6	14.55	-0.55	13	11	14.98
1409	4.8	15 31	- 9 54	+0.017	7	9	14.52	+0.37	13	9	14.62
1410	5.5	15 33	-44 14	*****	**	**	*****	-0.43	**	1	15.35
1411	5.4	15 35	-52 13	-0.037	5	3	14.45	+0.11	17	3	14.45
1413	4.9	15 39	-19 31	-0.015	29	2	14.45	+0.01	19	7	15.07
1415	5.0	15 50	-20 01	-0.010	10	4	14.33	-0.43	13	6	14.72
1417	4.6	15 55	-14 08	+0.010	3	23	12.18	+0.05	6	23	12.18
1418	5.0	15 56	-41 36	-0.016	8	5	14.58	-0.12	9	10	15.04
1420	5.5	15 58	- 8 16	+0.006	4	20	11.87	-0.03	9	20	11.87
1421	5.3	16 06	+17 11	-0.007	5	21	11.96	-0.24	10	22	11.94
1422	6.0	16 07	+ 6 31	-0.004	5	25	11.53	-0.67	11	31	11.73
1423	4.9	16 07	+36 37	-0.022	13	7	14.50	+0.52	15	8	14.49
1424	4.7	16 13	-78 34	-0.111	2	50	11.17	+0.32	6	52	11.20
1425	6.5	16 14	+23 15	-0.007	5	11	14.58	+0.04	17	16	14.59
1426	5.7	16 16	-30 47	*****	**	**	*****	+0.32	14	2	15.55
1427	4.8	16 20	+ 1 09	*****	**	**	*****	-0.91	**	1	15.56
1428	6.3	16 21	+32 27	+0.013	6	9	9.91	+0.20	23	10	9.86
1429	5.7	16 22	+ 7 04	*****	**	**	*****	-0.26	**	1	15.54
1430	5.7	16 27	-14 27	+0.018	5	15	10.12	-0.42	7	15	10.21
1431	4.3	16 28	-34 36	-0.008	15	5	14.55	-0.17	12	7	14.97
1433	5.8	16 34	- 2 13	+0.006	4	24	11.44	-0.19	8	26	11.37
1435	3.6	16 45	-58 57	-0.058	11	4	14.40	+0.14	28	4	14.40
1436	6.0	16 45	+ 2 09	+0.023	12	6	14.55	-0.53	32	5	14.55
1437	7.6	16 47	-21 46	*****	**	**	*****	+0.16	**	1	15.56
1439	3.0	16 48	-37 58	+0.010	11	5	14.63	+0.23	18	5	14.81
1440	5.2	16 50	+24 44	-0.038	25	3	14.40	-0.15	23	4	14.40
1443	7.0	16 54	-76 08	-0.129	6	4	14.63	-0.17	12	5	14.81
1444	5.7	16 54	-50 34	+0.011	4	26	10.44	+0.10	12	27	10.32
1445	5.0	16 58	- 4 09	+0.031	4	8	14.50	-0.28	14	8	14.50

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION) *17											FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION) *18												
FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) 1NS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+	FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
1446	5.2	17 00	+33 38	-0.002	12	7	10.07	+0.18	16	8	9.98	1518	6.3	19 50	-61 18	-0.143	4	26	12.90	+0.47	7	26	12.86
1447	6.2	17 04	-26 27	-0.025	5	16	11.12	-0.06	6	16	11.30	1521	4.0	19 54	+34 57	+0.006	**	1	11.66	+0.15	**	1	11.66
1449	6.1	17 05	-17 33	+0.007	7	10	14.56	-0.54	14	10	14.67	1522	5.0	19 55	-15 38	+0.028	7	3	14.58	+0.17	35	3	14.58
1450	5.5	17 07	-10 28	+0.005	3	22	11.66	-0.06	7	21	11.62	1523	4.7	19 59	+27 37	-0.031	5	4	13.85	+0.10	9	4	13.85
1451	6.3	17 09	+ 7 57	+0.011	3	36	11.03	-0.27	8	37	11.17	1524	5.6	20 02	+ 7 08	+0.009	5	19	11.80	-0.31	10	20	11.63
1452	5.5	17 14	-32 36	-0.009	5	21	12.20	-0.12	10	23	12.35	1525	4.8	20 08	+36 41	-0.014	16	3	14.66	+0.45	39	3	14.66
1453	5.7	17 14	+ 1 16	+0.009	26	2	14.57	-0.92	64	2	14.57	1526	4.9	20 12	+15 03	-0.005	4	29	11.95	-0.08	8	29	11.91
1454	5.1	17 18	+18 06	+0.006	5	8	14.56	-0.03	21	8	14.56	1527	4.5	20 15	-12 40	+0.014	8	11	11.99	-0.26	8	11	11.99
1455	5.9	17 22	-80 49	-0.031	2	57	11.43	-0.06	6	58	11.37	1528	6.2	20 15	-47 52	+0.025	15	4	13.85	+0.04	8	4	13.85
1456	5.3	17 19	+32 32	+0.002	5	14	11.00	+0.63	24	13	11.05	1533	5.1	20 27	- 3 03	-0.004	7	14	10.97	-0.21	9	14	10.90
1457	4.2	17 23	-24 08	-0.007	13	5	14.43	-0.19	13	5	14.43	1534	4.0	20 27	+30 12	-0.028	6	19	12.87	+0.44	11	17	12.90
1458	6.3	17 23	- 1 37	*****	**	**	*****	-0.68	**	1	15.56	1535	5.9	20 27	+36 17	-0.018	5	3	13.62	+1.12	22	2	13.14
1460	4.4	17 29	+26 09	+0.001	5	13	11.08	-0.66	23	11	11.40	1536	5.8	20 30	-10 02	+0.017	5	12	10.36	+0.02	12	12	10.28
1463	4.8	17 40	-21 40	-0.019	**	1	11.66	+0.26	32	2	13.61	1537	6.6	20 32	+ 4 44	-0.014	6	9	13.67	+0.25	17	9	13.67
1464	4.4	17 44	-27 49	-0.021	4	3	14.63	-0.11	10	4	14.86	1540	5.5	20 37	-33 37	-0.092	**	1	11.66	+0.17	**	1	11.66
1466	6.7	17 48	+ 9 52	-0.003	6	13	14.61	-0.33	10	13	14.61	1541	4.4	20 44	+15 57	-0.009	**	1	14.81	-0.62	51	2	14.81
1467	6.8	17 52	- 7 44	-0.009	4	5	14.58	-0.32	9	5	14.58	1542	5.1	20 45	-44 10	-0.011	4	32	12.51	-0.26	7	33	12.07
1468	5.4	17 53	+26 03	-0.014	7	11	13.40	-0.03	18	11	13.40	1543	4.6	20 45	- 5 13	+0.025	24	2	14.61	+0.07	55	3	14.58
1469	4.7	17 58	+16 45	-0.031	16	4	13.75	-0.14	42	2	13.06	1545	6.5	20 47	- 0 45	+0.000	9	3	14.81	-0.03	18	3	14.81
1470	6.3	17 58	-17 09	+0.008	7	11	13.93	+0.05	17	10	13.96	1546	4.2	20 49	-27 06	-0.007	6	19	12.96	+0.04	8	19	12.96
1471	3.9	18 03	-50 06	+0.006	4	12	13.98	+0.37	14	12	13.98	1548	5.9	20 55	-16 14	+0.020	7	4	14.65	+0.40	9	4	14.65
1472	6.5	18 07	-13 57	+0.023	6	15	10.70	-0.06	11	16	10.61	1549	5.5	20 56	+22 08	-0.005	11	5	14.75	-0.17	14	4	14.76
1473	4.6	18 08	-45 58	-0.040	**	1	14.52	+0.49	**	1	14.52	1550	4.7	20 58	-32 27	+0.026	37	2	14.69	-0.65	**	1	14.70
1474	5.5	18 13	-56 02	-0.007	5	26	11.97	+0.22	8	24	11.84	1552	4.1	21 03	-17 26	+0.048	25	2	14.69	-0.15	**	1	14.70
1476	4.9	18 18	+ 3 21	-0.013	17	2	14.69	-0.45	**	1	14.70	1553	7.1	21 04	- 0 18	-0.013	4	11	14.70	-0.52	9	11	14.70
1477	4.3	18 18	+36 02	-0.013	7	14	14.29	-0.40	17	13	14.27	1554	5.0	21 09	-70 20	+0.000	5	9	14.70	+0.95	14	9	14.70
1478	5.6	18 23	+ 8 00	-0.007	6	5	11.56	+0.14	21	4	11.30	1555	4.7	21 08	+ 9 56	-0.024	10	5	12.23	+0.14	16	5	12.23
1480	5.4	18 27	- 2 01	+0.009	7	14	11.59	-0.28	15	14	11.22	1556	5.5	21 10	-27 49	-0.010	7	15	11.00	+0.18	6	16	10.90
1481	5.6	18 29	+16 54	+0.003	4	15	14.07	+0.04	12	15	14.07	1559	4.4	21 16	+34 41	+0.001	6	21	10.52	-0.05	18	23	10.52
1482	4.0	18 32	- 8 17	+0.004	3	15	14.14	-0.18	11	14	14.10	1562	5.5	21 21	-13 06	+0.002	6	11	13.45	+0.06	13	11	13.06
1484	5.4	18 34	+ 9 05	+0.020	6	17	11.47	+0.38	12	17	11.35	1563	6.2	21 23	-54 53	-0.095	13	3	14.67	-0.24	18	3	14.67
1485	5.8	18 35	-21 26	-0.002	9	8	14.68	-0.01	23	7	14.68	1564	6.6	21 26	+ 7 59	+0.008	4	29	11.41	-0.60	7	32	11.33
1486	4.7	18 40	- 9 06	+0.005	7	9	9.91	+0.38	12	10	9.86	1565	4.7	21 28	+23 25	-0.004	7	7	14.70	-0.17	15	7	14.70
1488	4.9	18 44	+26 36	-0.017	**	1	11.66	+0.10	**	1	11.66	1566	5.9	21 29	-34 10	-0.038	6	16	12.66	+0.22	8	18	12.38
1489	4.4	18 45	- 4 48	+0.018	3	2	14.73	+0.36	11	2	14.73	1567	5.7	21 30	-45 04	-0.019	10	8	14.71	+0.40	9	8	14.71
1490	5.5	18 45	-43 44	+0.005	3	3	13.96	-0.47	31	3	13.96	1570	5.2	21 35	+19 06	+0.001	9	5	14.65	-0.11	13	5	14.65
1491	4.3	18 45	+18 07	+0.002	10	5	14.63	+0.34	11	5	14.63	1573	5.7	21 45	-47 32	-0.028	5	7	12.98	+0.11	9	7	12.98
1493	6.2	18 48	-22 13	-0.002	**	1	14.74	+0.47	**	1	14.74	1574	5.5	21 45	+ 2 27	+0.000	11	3	14.67	-0.92	21	3	14.67
1499	6.7	19 10	-75 53	-0.036	3	34	12.65	-0.09	8	33	12.55	1576	6.8	21 49	-23 30	-0.019	14	5	12.23	-0.01	9	5	12.23
1500	5.3	19 10	- 8 01	+0.019	11	2	13.68	-0.09	3	2	13.68	1577	5.1	21 51	-13 47	+0.012	5	12	10.72	+0.05	14	12	10.63
1501	5.6	19 16	-35 31	+0.008	5	12	14.44	+0.10	7	11	14.42	1579	6.6	21 54	+21 00	-0.002	6	12	14.72	-0.33	16	12	14.72
1502	4.3	19 19	-44 33	+0.001	4	23	11.79	+0.16	9	23	11.75	1581	4.6	22 03	-39 47	-0.023	5	16	13.86	-0.27	8	16	13.60
1503	5.2	19 23	+11 50	+0.010	8	13	10.68	-0.10	18	13	10.60	1582	6.6	22 12	-16 04	+0.007	9	6	12.40	+0.29	19	7	12.13
1504	5.5	19 24	-54 26	-0.054	4	25	13.78	-0.25	6	24	13.74	1583	4.6	22 12	+39 28	-0.027	13	6	14.84	+0.55	33	6	14.84
1508	4.6	19 27	+24 34	-0.012	7	13	10.68	-0.14	14	13	10.60	1584	5.4	22 19	-21 51	+0.030	6	5	12.30	+0.25	19	4	11.68
1510	4.8	19 30	+34 21	+0.019	8	13	10.60	-0.44	19	15	10.52	1585	4.6	22 23	+ 1 07	-0.001	4	20	13.28	+0.19	9	20	13.43
1511	4.6	19 32	+ 7 16	-0.003	4	23	14.29	+0.37	8	22	14.27	1586	6.4	22 23	+18 11	+0.005	13	2	14.77	+0.09	26	2	14.77
1512	5.4	19 38	-16 25	+0.009	4	32	13.03	-0.43	6	31	12.81	1587	5.7	22 25	-67 45	-0.044	4	15	14.61	+0.29	12	16	14.62
1513	4.4	19 39	+17 22	-0.002	**	1	14.52	-0.18	**	1	14.52	1591	4.8	22 28	-10 56	-0.024	**	1	14.70	+0.30	**	1	14.70
1514	5.1	19 40	-16 15	+0.029	4	3	10.23	+0.17	18	3	10.23	1592	4.4	22 29	-32 36	-0.036	13	4	14.21	-0.20	24	4	14.21

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (UPPER CULMINATION)

*19

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS- K4	ME .01	N	EPOCH 1960+
1595	5.3	22 35	- 4 29	+0.018	**	1	13,85	-0.23	**	1	13.85
1599	5.3	22 48	-39 25	-0.010	5	5	14.13	-0.12	13	5	14.13
1601	5.1	23 01	-35 01	+0.025	10	5	14.84	-0.07	16	5	14.84
1603	4.6	23 04	+ 9 08	-0.001	4	26	12.81	-0.09	6	27	12.87
1605	4.1	23 08	-45 31	-0.017	4	21	13.55	-0.31	9	22	13.54
1606	5.1	23 09	+ 8 27	+0.028	17	5	9.65	-0.19	16	6	9.97
1607	4.4	23 12	- 6 19	+0.019	4	16	14.71	-0.14	11	16	14.71
1608	4.4	23 13	- 9 22	+0.010	11	2	9.80	-0.12	10	3	10.03
1609	5.1	23 16	- 9 53	+0.011	6	6	14.69	-0.17	16	6	14.69
1611	5.8	23 19	-27 16	-0.020	3	5	11.01	-0.42	9	4	10.80
1612	4.2	23 20	-20 22	+0.009	7	10	14.46	-0.22	13	9	14.44
1613	5.4	23 22	+32 07	-0.009	9	10	14.86	+0.54	15	10	14.86
1614	4.4	23 25	+ 6 06	+0.007	11	10	14.86	+0.15	14	9	14.86
1615	6.9	23 27	+15 44	-0.014	9	6	9.85	-0.15	8	5	10.24
1618	5.3	23 38	-32 21	-0.010	19	5	9.65	-0.35	9	7	10.10
1620	4.6	23 39	+ 1 30	-0.006	5	9	12.46	-0.65	9	6	12.79
1621	5.2	23 42	-18 33	-0.003	4	7	10.56	-0.20	12	8	10.69
1623	5.6	23 45	- 3 02	+0.005	5	14	14.38	+0.18	12	14	14.44
1625	5.3	23 50	+10 40	-0.010	**	1	10.55	-0.42	5	2	10.65
1626	6.0	23 52	-40 35	+0.019	6	15	12.40	+0.06	11	15	12.31
1628	6.3	23 54	+22 22	-0.020	4	20	14.12	+0.01	12	19	14.13
1629	4.7	23 55	+24 52	-0.013	3	6	11.15	-0.14	8	5	11.01
1630	4.6	23 59	- 6 18	+0.011	6	2	14.83	+0.12	4	2	14.83
1656	7.7	2 28	-85 57	-0.191	3	37	11.83	+0.33	10	33	11.58
1658	6.7	4 29	-83 01	-0.041	5	12	13.21	+0.21	18	12	13.21
1659	6.2	5 40	-84 49	-0.121	5	8	11.13	+0.00	15	12	13.02
1660	6.7	5 53	-85 56	-0.055	19	4	11.63	+0.08	22	4	11.63
1661	6.4	7 05	-86 57	-0.535	6	9	10.03	+0.08	9	11	10.14
1663	6.7	10 34	-85 50	-0.129	3	38	11.13	-0.48	9	31	11.22
1664	6.2	11 00	-84 19	-0.156	3	48	11.07	-0.15	6	52	11.42
1665	5.6	13 32	-85 32	-0.346	5	19	10.89	-0.21	11	21	10.89
1666	5.6	15 31	-84 18	-0.194	3	68	11.69	-0.02	5	73	11.45
1667	6.3	19 47	-81 29	-0.040	5	13	11.59	-0.40	12	14	11.44
1668	7.0	20 31	-84 35	-0.198	4	27	11.86	-0.04	11	26	11.71
1670	5.7	22 23	-86 13	-0.191	10	6	10.41	+0.72	27	6	10.41

(LOWER CULMINATION)

11	2.9	0 23	-77 32	-0.220	3	60	11.55	+0.14	10	51	11.23
31	4.9	0 47	-75 12	-0.062	10	8	14.37	-0.46	15	7	14.63
53	6.0	1 33	-78 46	-0.328	8	11	14.41	-0.57	17	22	14.86
90	5.2	2 33	-79 20	-0.160	5	23	14.41	-0.77	12	24	14.42
113	5.5	3 02	-72 06	+0.055	10	6	10.42	+0.02	30	8	10.67
146	3.1	3 48	-74 24	-0.110	5	33	10.28	-0.11	12	38	10.25
166	5.6	4 21	-80 20	-0.089	3	48	11.57	+0.07	10	38	11.57
214	5.0	5 34	-76 23	-0.161	4	39	12.07	-0.16	10	41	12.00
239	5.1	6 12	-74 44	-0.057	6	11	10.02	+0.97	15	10	9.76
264	5.6	6 44	-80 46	-0.118	7	15	13.65	-0.65	17	13	13.49

FIRST SAN JUAN MERIDIAN CIRCLE CATALOGUE (LOWER CULMINATION)

*20

FK4 NUMBER	MG	R.A.	DECL.	D(R.A.) INS-FK4	ME .001	N	EPOCH 1960+	D(DECL) INS-FK4	ME .01	N	EPOCH 1960+
297	3.8	7 42	-72 29	+0.073	8	9	10.14	+0.67	22	8	10.35
318	4.2	8 22	-77 19	-0.165	4	32	12.56	+0.42	13	26	12.26
331	5.6	8 43	-78 47	-0.275	5	26	12.14	+0.10	13	22	11.92
362	5.5	9 31	-72 52	-0.314	**	1	10.49	-0.45	141	2	10.14
391	4.0	10 23	-73 47	+0.201	**	1	9.78	+0.32	23	2	10.14
401	4.1	10 35	-78 21	-0.155	4	12	13.30	-0.43	24	12	12.94
411	4.6	10 45	-80 17	+0.095	11	5	10.18	-0.93	17	5	10.40
438	5.7	11 35	-75 37	-0.077	6	22	14.04	-0.35	16	18	14.09
459	4.3	12 15	-79 02	-0.053	5	28	13.35	-0.36	12	23	13.38
469	4.0	12 29	-71 51	-0.074	15	4	11.34	-0.68	40	3	11.18
503	6.4	13 35	-75 26	-0.136	23	3	14.83	+0.14	39	3	14.83
542	3.8	14 42	-78 50	-0.166	12	7	13.85	-0.14	18	9	13.24
567	5.6	15 26	-73 13	-0.274	**	1	10.60	-0.23	**	1	10.60
611	3.9	16 26	-78 47	-0.285	27	2	14.85	+0.10	10	2	14.85
642	5.6	17 17	-70 04	-0.088	**	1	9.89	-0.87	**	1	9.89
678	5.6	18 04	-75 54	+0.004	9	10	10.30	-0.45	15	16	12.87
787	5.2	20 59	-77 13	-0.120	5	17	12.93	-0.37	14	13	13.71
810	3.7	21 36	-77 37	-0.203	3	36	12.08	-0.22	10	38	12.51
839	5.1	22 15	-80 41	-0.110	3	50	10.79	-0.25	7	64	11.73
865	6.1	22 51	-70 20	+0.005	7	13	9.61	-0.71	21	12	9.55
904	4.7	23 59	-77 21	-0.126	3	39	11.12	-0.18	9	50	11.95
916	5.6	1 40	-85 01	-0.179	4	38	12.00	+0.08	8	36	11.74
917	5.8	5 04	-82 32	+0.030	4	26	11.58	-0.41	13	24	11.34
918	5.3	9 04	-85 28	-0.612	4	31	11.42	-0.18	13	28	10.96
919	5.3	12 50	-84 51	-0.206	5	22	10.57	-0.13	13	22	10.56
921	6.1	16 42	-86 17	-0.077	4	22	11.33	-0.16	12	21	11.16
924	4.3	22 41	-81 39	-0.013	4	37	10.73	-0.24	10	43	11.35
925	5.5	23 21	-87 45	-0.286	4	45	10.19	+0.48	6	42	9.85
1001	5.6	0 02	-71 43	-0.015	10	10	9.36	-0.45	23	8	9.35
1095	5.5	3 17	-77 34	-0.097	4	39	11.54	+0.14	12	36	11.21
1114	6.7	4 01	-71 18	-0.102	21	4	10.30	-1.52	54	4	10.30
1138	5.2	4 57	-75 01	-0.154	11	3	10.62	-0.54	20	2	9.64
1288	5.8	11 05	-70 36	-0.066	19	4	10.36	-0.77	79	3	10.32
1363	5.5	14 00	-76 33	-0.143	5	19	14.20	+0.49	17	17	14.38
1424	4.7	16 13	-78 34	-0.192	**	1	12.97	+0.16	**	1	12.97
1443	7.0	16 54	-76 08	-0.155	7	7	14.45	-1.07	40	4	14.11
1455	5.9	17 22	-80 49	-0.018	6	26	11.65	-0.23	12	22	11.85
1499	6.7	19 10	-75 53	-0.024	6	15	10.13	-0.21	13	22	12.37
1554	5.0	21 09	-70 20	+0.044	11	3	9.26	+0.05	46	3	9.26
1656	7.7	2 28	-85 57	-0.150	3	49	12.46	+0.20	8	44	12.03
1658	6.7	4 29	-83 01	-0.049	4	42	11.28	-0.06	7	43	11.19
1659	6.2	5 40	-84 49	-0.088	6	10	10.09	-0.17	17	10	10.09
1660	6.7	5 53	-85 56	-0.349	5	23	10.67	+0.11	10	24	10.61
1661	6.4	7 05	-86 57	-0.630	4	25	12.81	+0.03	13	22	12.29
1663	6.7	10 34	-85 50	-0.372	5	24	12.18	-0.16	14	23	12.15
1664	6.2	11 00	-84 19	-0.239	4	34	11.99	-0.30	10	31	11.77
1665	5.6	13 32	-85 32	-0.746	5	13	14.72	-0.78	15	8	14.89
1666	5.6	15 31	-84 18	-0.092	4	39	11.28	-0.06	11	39	11.36
1667	6.3	19 47	-81 29	-0.053	4	22	11.19	-0.41	11	24	12.43
1668	7.0	20 31	-84 35	-0.219	3	33	11.08	-0.31	7	32	11.04
1670	5.7	22 23	-86 13	-0.205	5	20	11.30	+0.08	14	20	11.05

