

TEMPO SIDERAL, OBLIQUIDADE DA ECLÍPTICA E NUTAÇÃO, 2006  
O HORA TEMPO UNIVERSAL

3 F

DATA	TEMPO SIDERAL			EQ. EQUIN.		OBLIQ. ECLIP.	NUT. OBLIQ.		NUT. LONG.	
	APARENTE	MÉDIO		LONGO	CURTO		PERÍODO		PERÍODO	
	H M S	S	S	S	S	G ' 23 26	"	"	"	"
JAN. 0	6 38	4.863	5.000	-0.137	+0.001	26.973	8.483	-0.111	-2.245	+0.021
1	6 42	1.431	1.555	-0.134	+0.009	27.007	8.491	-0.084	-2.185	+0.152
2	6 45	57.995	58.110	-0.130	+0.015	27.063	8.499	-0.035	-2.125	+0.240
3	6 49	54.556	54.666	-0.126	+0.016	27.130	8.509	+0.024	-2.065	+0.266
4	6 53	51.112	51.221	-0.123	+0.014	27.190	8.519	+0.075	-2.007	+0.226
5	6 57	47.666	47.776	-0.119	+0.008	27.230	8.529	+0.106	-1.949	+0.138
6	7 1	44.218	44.332	-0.116	+0.002	27.245	8.540	+0.111	-1.892	+0.030
7	7 5	40.771	40.887	-0.112	-0.004	27.235	8.552	+0.091	-1.835	-0.069
8	7 9	37.325	37.442	-0.109	-0.008	27.206	8.564	+0.051	-1.780	-0.135
9	7 13	33.883	33.998	-0.106	-0.010	27.170	8.577	+0.003	-1.725	-0.157
10	7 17	30.443	30.553	-0.102	-0.008	27.135	8.591	-0.044	-1.672	-0.133
11	7 21	27.005	27.109	-0.099	-0.004	27.112	8.605	-0.080	-1.619	-0.072
12	7 25	23.569	23.664	-0.096	+0.001	27.105	8.619	-0.099	-1.568	+0.011
13	7 29	20.132	20.219	-0.093	+0.006	27.119	8.634	-0.100	-1.517	+0.098
14	7 33	16.695	16.775	-0.090	+0.011	27.151	8.650	-0.082	-1.468	+0.173
15	7 37	13.257	13.330	-0.087	+0.013	27.198	8.666	-0.050	-1.420	+0.220
16	7 41	9.816	9.885	-0.084	+0.014	27.253	8.682	-0.009	-1.374	+0.231
17	7 45	6.372	6.441	-0.081	+0.012	27.310	8.699	+0.032	-1.328	+0.203
18	7 49	2.926	2.996	-0.079	+0.008	27.362	8.716	+0.067	-1.284	+0.139
19	7 52	59.478	59.551	-0.076	+0.003	27.402	8.734	+0.091	-1.241	+0.047
20	7 56	56.030	56.107	-0.073	-0.004	27.427	8.752	+0.100	-1.200	-0.060
21	8 0	52.581	52.662	-0.071	-0.010	27.435	8.770	+0.091	-1.160	-0.166
22	8 4	49.133	49.218	-0.069	-0.016	27.426	8.789	+0.065	-1.121	-0.256
23	8 8	45.687	45.773	-0.066	-0.019	27.404	8.807	+0.025	-1.084	-0.313
24	8 12	42.244	42.328	-0.064	-0.020	27.375	8.827	-0.022	-1.049	-0.325
25	8 16	38.804	38.884	-0.062	-0.017	27.347	8.846	-0.068	-1.015	-0.283
26	8 20	35.367	35.439	-0.060	-0.012	27.331	8.866	-0.102	-0.982	-0.190
27	8 24	31.933	31.994	-0.058	-0.004	27.338	8.886	-0.114	-0.951	-0.060
28	8 28	28.498	28.550	-0.056	+0.005	27.372	8.906	-0.099	-0.922	+0.079
29	8 32	25.062	25.105	-0.055	+0.012	27.433	8.926	-0.057	-0.894	+0.192
30	8 36	21.623	21.661	-0.053	+0.015	27.510	8.946	+0.001	-0.867	+0.250
31	8 40	18.179	18.216	-0.052	+0.015	27.587	8.967	+0.059	-0.843	+0.240
FEV. 1	8 44	14.731	14.771	-0.050	+0.010	27.648	8.987	+0.101	-0.820	+0.169
2	8 48	11.282	11.327	-0.049	+0.004	27.682	9.008	+0.116	-0.798	+0.065
3	8 52	7.832	7.882	-0.048	-0.002	27.688	9.028	+0.102	-0.778	-0.040
4	8 56	4.384	4.437	-0.047	-0.007	27.670	9.049	+0.065	-0.760	-0.116
5	9 0	0.938	0.993	-0.045	-0.009	27.640	9.070	+0.016	-0.744	-0.146
6	9 3	57.496	57.548	-0.045	-0.008	27.610	9.090	-0.034	-0.729	-0.129
7	9 7	54.055	54.103	-0.044	-0.004	27.589	9.111	-0.074	-0.715	-0.073
8	9 11	50.616	50.659	-0.043	+0.000	27.585	9.131	-0.097	-0.704	+0.007
9	9 15	47.178	47.214	-0.042	+0.006	27.600	9.151	-0.101	-0.694	+0.095
10	9 19	43.738	43.770	-0.042	+0.011	27.632	9.171	-0.088	-0.685	+0.172

DATA	TEMPO SIDERAL		EQ. EQUIN.		OBLIQ. ECLIP.	NUT. PERÍODO	OBLIQ.		NUT. LONG.	
	APARENTE	MÉDIO	LONGO	CURTO			LONGO	CURTO	LONGO	CURTO
	H	M	S	S	S	S	"	"	"	"
0 TU						23 26				
FEV. 10	9 19	43.738	43.770	-0.042	+0.011	27.632	9.171	-0.088	-0.685	+0.172
11	9 23	40.297	40.325	-0.041	+0.014	27.680	9.191	-0.058	-0.678	+0.226
12	9 27	36.854	36.880	-0.041	+0.015	27.737	9.211	-0.020	-0.673	+0.246
13	9 31	33.409	33.436	-0.041	+0.014	27.797	9.231	+0.022	-0.669	+0.227
14	9 35	29.961	29.991	-0.041	+0.010	27.853	9.250	+0.060	-0.666	+0.171
15	9 39	26.511	26.546	-0.041	+0.005	27.899	9.269	+0.087	-0.666	+0.085
16	9 43	23.060	23.102	-0.041	-0.001	27.929	9.288	+0.100	-0.666	-0.020
17	9 47	19.608	19.657	-0.041	-0.008	27.941	9.306	+0.095	-0.668	-0.128
18	9 51	16.158	16.212	-0.041	-0.014	27.937	9.325	+0.074	-0.672	-0.224
19	9 55	12.709	12.768	-0.041	-0.018	27.917	9.342	+0.038	-0.677	-0.293
20	9 59	9.262	9.323	-0.042	-0.020	27.889	9.360	-0.007	-0.683	-0.322
21	10 3	5.818	5.879	-0.042	-0.019	27.859	9.377	-0.052	-0.691	-0.303
22	10 7	2.377	2.434	-0.043	-0.014	27.836	9.394	-0.091	-0.700	-0.234
23	10 10	58.938	58.989	-0.043	-0.008	27.830	9.410	-0.111	-0.710	-0.125
24	10 14	55.501	55.545	-0.044	+0.000	27.849	9.426	-0.108	-0.722	+0.005
25	10 18	52.063	52.100	-0.045	+0.008	27.893	9.441	-0.077	-0.735	+0.127
26	10 22	48.622	48.655	-0.046	+0.013	27.959	9.456	-0.025	-0.748	+0.209
27	10 26	45.178	45.211	-0.047	+0.014	28.032	9.470	+0.035	-0.763	+0.230
28	10 30	41.730	41.766	-0.048	+0.011	28.096	9.484	+0.087	-0.780	+0.184
MAR. 1	10 34	38.278	38.321	-0.049	+0.006	28.137	9.497	+0.115	-0.797	+0.091
2	10 38	34.826	34.877	-0.050	-0.001	28.146	9.510	+0.113	-0.815	-0.017
3	10 42	31.375	31.432	-0.051	-0.007	28.126	9.522	+0.082	-0.834	-0.106
4	10 46	27.926	27.988	-0.052	-0.009	28.088	9.534	+0.034	-0.854	-0.152
5	10 50	24.481	24.543	-0.054	-0.009	28.045	9.545	-0.019	-0.875	-0.144
6	10 54	21.038	21.098	-0.055	-0.006	28.009	9.556	-0.065	-0.897	-0.092
7	10 58	17.597	17.654	-0.056	-0.001	27.988	9.566	-0.094	-0.919	-0.009
8	11 2	14.157	14.209	-0.058	+0.005	27.987	9.575	-0.103	-0.942	+0.084
9	11 6	10.716	10.764	-0.059	+0.010	28.004	9.584	-0.094	-0.966	+0.169
10	11 10	7.273	7.320	-0.061	+0.014	28.037	9.592	-0.067	-0.991	+0.231
11	11 14	3.829	3.875	-0.062	+0.016	28.080	9.599	-0.030	-1.016	+0.260
12	11 18	0.382	0.431	-0.064	+0.015	28.127	9.606	+0.012	-1.041	+0.251
13	11 21	56.933	56.986	-0.065	+0.012	28.172	9.612	+0.051	-1.067	+0.204
14	11 25	53.482	53.541	-0.067	+0.008	28.207	9.617	+0.082	-1.094	+0.124
15	11 29	50.029	50.097	-0.069	+0.001	28.227	9.622	+0.099	-1.121	+0.023
16	11 33	46.576	46.652	-0.070	-0.005	28.230	9.626	+0.099	-1.148	-0.086
17	11 37	43.124	43.207	-0.072	-0.011	28.215	9.630	+0.081	-1.175	-0.187
18	11 41	39.673	39.763	-0.074	-0.016	28.183	9.633	+0.049	-1.203	-0.264
19	11 45	36.224	36.318	-0.075	-0.019	28.142	9.635	+0.006	-1.230	-0.304
20	11 49	32.778	32.873	-0.077	-0.018	28.096	9.636	-0.040	-1.258	-0.299
21	11 53	29.335	29.429	-0.079	-0.015	28.056	9.637	-0.080	-1.286	-0.247
22	11 57	25.894	25.984	-0.080	-0.010	28.029	9.637	-0.105	-1.314	-0.156
23	12 1	22.455	22.540	-0.082	-0.002	28.023	9.637	-0.110	-1.342	-0.040

TEMPO SIDERAL, OBLIQUIDADE DA ECLÍPTICA E NUTAÇÃO, 2006  
O HORA TEMPO UNIVERSAL

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DATA	TEMPO SIDERAL		EQ. EQUIN.		OBLIQ. ECLIP.	NUT. OBLIQ.		NUT. LONG.			
	APARENTE		PERÍODO			PERÍODO		PERÍODO			
	H	M	S	S	LONGO	CURTO	G	'	LONGO	CURTO	
0 TU							23	26			
	H	M	S	S	S	S	"	"	"	"	
MAR. 23	12	1	22.455	22.540	-0.082	-.002	28.023	9.637	-.110	-1.342	-.040
24	12	5	19.016	19.095	-0.084	+0.005	28.041	9.635	-.089	-1.369	+0.077
25	12	9	15.575	15.650	-0.085	+0.010	28.081	9.634	-.046	-1.397	+0.168
26	12	13	12.131	12.206	-0.087	+0.013	28.134	9.631	+0.011	-1.424	+0.209
27	12	17	8.684	8.761	-0.089	+0.011	28.185	9.628	+0.067	-1.451	+0.188
28	12	21	5.233	5.316	-0.090	+0.007	28.220	9.624	+0.106	-1.478	+0.112
29	12	25	1.780	1.872	-0.092	+0.000	28.226	9.620	+0.118	-1.504	+0.006
30	12	28	58.328	58.427	-0.094	-.006	28.201	9.615	+0.099	-1.530	-.096
31	12	32	54.877	54.982	-0.095	-.010	28.150	9.609	+0.056	-1.556	-.161
ABR. 1	12	36	51.431	51.538	-0.097	-.011	28.088	9.603	+0.001	-1.580	-.173
2	12	40	47.987	48.093	-0.098	-.008	28.029	9.596	-.050	-1.605	-.131
3	12	44	44.546	44.649	-0.100	-.003	27.983	9.588	-.087	-1.628	-.049
4	12	48	41.106	41.204	-0.101	+0.003	27.957	9.580	-.104	-1.652	+0.050
5	12	52	37.666	37.759	-0.102	+0.009	27.951	9.572	-.100	-1.674	+0.146
6	12	56	34.225	34.315	-0.104	+0.014	27.963	9.563	-.077	-1.696	+0.222
7	13	0	30.781	30.870	-0.105	+0.016	27.987	9.553	-.042	-1.716	+0.264
8	13	4	27.336	27.425	-0.106	+0.016	28.018	9.543	-.000	-1.736	+0.267
9	13	8	23.887	23.981	-0.107	+0.014	28.047	9.532	+0.041	-1.756	+0.230
10	13	12	20.437	20.536	-0.108	+0.010	28.068	9.521	+0.075	-1.774	+0.159
11	13	16	16.986	17.091	-0.110	+0.004	28.077	9.509	+0.096	-1.791	+0.062
12	13	20	13.533	13.647	-0.111	-.003	28.068	9.497	+0.101	-1.808	-.046
13	13	24	10.081	10.202	-0.111	-.009	28.041	9.484	+0.088	-1.823	-.151
14	13	28	6.631	6.758	-0.112	-.014	27.997	9.471	+0.059	-1.837	-.235
15	13	32	3.182	3.313	-0.113	-.017	27.941	9.457	+0.017	-1.850	-.284
16	13	35	59.737	59.868	-0.114	-.018	27.880	9.443	-.029	-1.862	-.289
17	13	39	56.294	56.424	-0.115	-.015	27.822	9.429	-.071	-1.873	-.247
18	13	43	52.854	52.979	-0.115	-.010	27.777	9.414	-.100	-1.883	-.165
19	13	47	49.415	49.534	-0.116	-.003	27.751	9.399	-.109	-1.892	-.057
20	13	51	45.977	46.090	-0.116	+0.003	27.749	9.384	-.095	-1.899	+0.056
21	13	55	42.538	42.645	-0.117	+0.009	27.768	9.368	-.059	-1.905	+0.148
22	13	59	39.096	39.201	-0.117	+0.012	27.802	9.352	-.008	-1.910	+0.199
23	14	3	35.651	35.756	-0.117	+0.012	27.839	9.336	+0.047	-1.914	+0.193
24	14	7	32.202	32.311	-0.117	+0.008	27.867	9.319	+0.092	-1.916	+0.133
25	14	11	28.751	28.867	-0.117	+0.002	27.871	9.303	+0.115	-1.917	+0.034
26	14	15	25.300	25.422	-0.117	-.004	27.846	9.286	+0.108	-1.917	-.073
27	14	19	21.851	21.977	-0.117	-.010	27.794	9.269	+0.075	-1.915	-.157
28	14	23	18.404	18.533	-0.117	-.012	27.725	9.251	+0.024	-1.912	-.194
29	14	27	14.961	15.088	-0.117	-.011	27.651	9.234	-.031	-1.908	-.173
30	14	31	11.521	11.643	-0.116	-.006	27.588	9.216	-.076	-1.902	-.102
MAIO 1	14	35	8.083	8.199	-0.116	-.000	27.543	9.198	-.101	-1.895	-.003
2	14	39	4.645	4.754	-0.115	+0.006	27.520	9.181	-.105	-1.886	+0.103
3	14	43	1.207	1.310	-0.115	+0.012	27.518	9.163	-.088	-1.876	+0.192

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	APARENTE	MÉDIO	LONGO	CURTO			LONGO	CURTO	LONGO	CURTO	
H 0 TU	H	M	S	S	S	S	G	'	"	"	
							23	26			
							"	"	"	"	
MAIO 1	14	35	8.083	8.199	-0.116	-.000	27.543	9.198	-.101	-1.895	-.003
2	14	39	4.645	4.754	-0.115	+0.006	27.520	9.181	-.105	-1.886	+0.103
3	14	43	1.207	1.310	-0.115	+0.012	27.518	9.163	-.088	-1.876	+0.192
4	14	46	57.766	57.865	-0.114	+0.015	27.532	9.145	-.055	-1.865	+0.251
5	14	50	54.323	54.420	-0.113	+0.016	27.553	9.127	-.014	-1.852	+0.269
6	14	54	50.878	50.976	-0.112	+0.015	27.577	9.109	+0.028	-1.838	+0.246
7	14	58	47.431	47.531	-0.111	+0.011	27.594	9.091	+0.065	-1.822	+0.185
8	15	2	43.982	44.086	-0.110	+0.006	27.601	9.073	+0.091	-1.805	+0.095
9	15	6	40.532	40.642	-0.109	-.001	27.592	9.055	+0.101	-1.787	-.011
10	15	10	37.082	37.197	-0.108	-.007	27.565	9.037	+0.093	-1.767	-.118
11	15	14	33.633	33.752	-0.107	-.013	27.521	9.020	+0.069	-1.746	-.210
12	15	18	30.186	30.308	-0.105	-.017	27.464	9.002	+0.030	-1.724	-.270
13	15	22	26.742	26.863	-0.104	-.018	27.399	8.985	-.016	-1.700	-.287
14	15	26	23.301	23.419	-0.102	-.016	27.336	8.967	-.061	-1.675	-.254
15	15	30	19.862	19.974	-0.101	-.011	27.284	8.950	-.094	-1.648	-.178
16	15	34	16.426	16.529	-0.099	-.004	27.251	8.933	-.109	-1.621	-.070
17	15	38	12.990	13.085	-0.097	+0.003	27.242	8.917	-.100	-1.591	+0.046
18	15	42	9.553	9.640	-0.095	+0.009	27.255	8.900	-.069	-1.561	+0.145
19	15	46	6.114	6.195	-0.094	+0.012	27.286	8.884	-.021	-1.530	+0.204
20	15	50	2.672	2.751	-0.092	+0.013	27.322	8.868	+0.033	-1.497	+0.209
21	15	53	59.226	59.306	-0.089	+0.010	27.352	8.852	+0.080	-1.463	+0.160
22	15	57	55.778	55.861	-0.087	+0.004	27.364	8.837	+0.108	-1.427	+0.069
23	16	1	52.329	52.417	-0.085	-.002	27.350	8.822	+0.111	-1.391	-.040
24	16	5	48.881	48.972	-0.083	-.008	27.310	8.807	+0.086	-1.354	-.135
25	16	9	45.435	45.528	-0.080	-.012	27.250	8.793	+0.042	-1.315	-.191
26	16	13	41.993	42.083	-0.078	-.012	27.181	8.779	-.012	-1.275	-.194
27	16	17	38.554	38.638	-0.076	-.009	27.117	8.765	-.061	-1.234	-.144
28	16	21	35.117	35.194	-0.073	-.003	27.069	8.752	-.094	-1.193	-.054
29	16	25	31.682	31.749	-0.070	+0.003	27.043	8.739	-.106	-1.150	+0.053
30	16	29	28.246	28.304	-0.068	+0.009	27.039	8.727	-.096	-1.106	+0.152
31	16	33	24.809	24.860	-0.065	+0.014	27.054	8.715	-.068	-1.062	+0.226
JUN. 1	16	37	21.369	21.415	-0.062	+0.016	27.081	8.703	-.029	-1.016	+0.260
2	16	41	17.927	17.971	-0.059	+0.015	27.111	8.692	+0.014	-0.970	+0.252
3	16	45	14.482	14.526	-0.056	+0.012	27.139	8.682	+0.054	-0.923	+0.204
4	16	49	11.035	11.081	-0.054	+0.007	27.158	8.672	+0.084	-0.875	+0.122
5	16	53	7.587	7.637	-0.051	+0.001	27.162	8.662	+0.099	-0.826	+0.020
6	16	57	4.139	4.192	-0.048	-.005	27.150	8.653	+0.097	-0.777	-.088
7	17	1	0.691	0.747	-0.044	-.011	27.121	8.644	+0.078	-0.727	-.187
8	17	4	57.246	57.303	-0.041	-.016	27.077	8.636	+0.043	-0.676	-.258
9	17	8	53.802	53.858	-0.038	-.018	27.024	8.629	-.001	-0.625	-.290
10	17	12	50.362	50.413	-0.035	-.017	26.969	8.622	-.047	-0.573	-.273
11	17	16	46.924	46.969	-0.032	-.013	26.923	8.616	-.086	-0.521	-.207

TEMPO SIDERAL, OBLIQUIDADE DA ECLÍPTICA E NUTAÇÃO, 2006  
O HORA TEMPO UNIVERSAL

7 F

DATA	TEMPO SIDERAL		EQ. EQUIN.		OBLIQ. ECLIP.	NUT.	OBLIQ.		NUT. LONG.	
	APARENTE	MÉDIO	LONGO	CURTO			PERÍODO	PERÍODO	PERÍODO	PERÍODO
	H M S	S	S	S	G ' 23 26	"	"	"	"	
JUN.11	17 16	46.924	46.969	-0.032	-.013	26.923	8.616	-.086	-0.521	-.207
12	17 20	43.489	43.524	-0.029	-.006	26.894	8.610	-.108	-0.468	-.103
13	17 24	40.055	40.080	-0.025	+.001	26.889	8.605	-.106	-0.415	+.019
14	17 28	36.621	36.635	-0.022	+.008	26.910	8.600	-.080	-0.362	+.132
15	17 32	33.184	33.190	-0.019	+.013	26.950	8.596	-.033	-0.308	+.207
16	17 36	29.744	29.746	-0.016	+.014	27.000	8.592	+.021	-0.254	+.228
17	17 40	26.300	26.301	-0.012	+.012	27.046	8.589	+.071	-0.199	+.191
18	17 44	22.854	22.856	-0.009	+.007	27.074	8.587	+.103	-0.145	+.107
19	17 48	19.406	19.412	-0.006	-.000	27.079	8.585	+.111	-0.090	-.000
20	17 52	15.959	15.967	-0.002	-.006	27.059	8.584	+.093	-0.036	-.101
21	17 56	12.513	12.522	+0.001	-.010	27.017	8.583	+.054	0.019	-.170
22	18 0	9.071	9.078	+0.005	-.012	26.965	8.583	+.003	0.074	-.191
23	18 4	5.631	5.633	+0.008	-.010	26.915	8.584	-.047	0.129	-.159
24	18 8	2.195	2.189	+0.011	-.005	26.876	8.585	-.086	0.183	-.085
25	18 11	58.759	58.744	+0.015	+.001	26.857	8.587	-.105	0.238	+.015
26	18 15	55.324	55.299	+0.018	+.007	26.861	8.589	-.102	0.292	+.117
27	18 19	51.888	51.855	+0.021	+.012	26.886	8.592	-.079	0.346	+.200
28	18 23	48.450	48.410	+0.024	+.015	26.924	8.595	-.042	0.400	+.249
29	18 27	45.009	44.965	+0.028	+.016	26.970	8.599	+.001	0.454	+.255
30	18 31	41.565	41.521	+0.031	+.013	27.015	8.604	+.042	0.507	+.219
JUL. 1	18 35	38.119	38.076	+0.034	+.009	27.053	8.609	+.076	0.560	+.147
2	18 39	34.672	34.631	+0.037	+.003	27.077	8.615	+.096	0.612	+.049
3	18 43	31.224	31.187	+0.041	-.004	27.086	8.621	+.099	0.664	-.059
4	18 47	27.776	27.742	+0.044	-.010	27.077	8.628	+.085	0.716	-.162
5	18 51	24.330	24.298	+0.047	-.015	27.054	8.635	+.056	0.767	-.245
6	18 55	20.885	20.853	+0.050	-.018	27.019	8.643	+.015	0.817	-.293
7	18 59	17.443	17.408	+0.053	-.018	26.981	8.652	-.031	0.867	-.295
8	19 3	14.005	13.964	+0.056	-.015	26.946	8.661	-.074	0.916	-.247
9	19 7	10.569	10.519	+0.059	-.009	26.925	8.670	-.103	0.964	-.155
10	19 11	7.134	7.074	+0.062	-.002	26.926	8.680	-.110	1.012	-.033
11	19 15	3.700	3.630	+0.065	+.006	26.953	8.690	-.092	1.058	+.091
12	19 19	0.264	0.185	+0.068	+.011	27.004	8.701	-.050	1.104	+.188
13	19 22	56.825	56.741	+0.070	+.014	27.070	8.713	+.005	1.149	+.233
14	19 26	53.382	53.296	+0.073	+.013	27.135	8.724	+.060	1.194	+.215
15	19 30	49.936	49.851	+0.076	+.009	27.185	8.736	+.099	1.237	+.143
16	19 34	46.487	46.407	+0.078	+.002	27.211	8.749	+.113	1.279	+.039
17	19 38	43.039	42.962	+0.081	-.004	27.209	8.762	+.100	1.321	-.066
18	19 42	39.592	39.517	+0.083	-.009	27.185	8.776	+.064	1.361	-.144
19	19 46	36.148	36.073	+0.086	-.011	27.148	8.789	+.014	1.400	-.175
20	19 50	32.706	32.628	+0.088	-.010	27.110	8.803	-.036	1.438	-.156
21	19 54	29.268	29.183	+0.090	-.006	27.082	8.818	-.078	1.475	-.093
22	19 58	25.831	25.739	+0.092	-.000	27.072	8.833	-.101	1.511	-.002

DATA	TEMPO SIDERAL			EQ. EQUIN.		OBLIQ. ECLIP.	NUT.	OBLIQ.		NUT. LONG.	
	APARENTE	MÉDIO	LONGO	PERÍODO CURTO	PERÍODO CURTO			PERÍODO CURTO	PERÍODO CURTO		
H O TU	H M S	S	S	S	S	G ' 23 26	"	"	"	"	
JUL. 22	19 58 25.831	25.739	+0.092	-.000	27.072	8.833	-.101	1.511	-.002		
23	20 2 22.395	22.294	+0.095	+0.006	27.083	8.848	-.104	1.546	+0.098		
24	20 6 18.957	18.850	+0.097	+0.011	27.115	8.863	-.087	1.580	+0.185		
25	20 10 15.518	15.405	+0.099	+0.015	27.162	8.879	-.054	1.612	+0.242		
26	20 14 12.077	11.960	+0.101	+0.016	27.219	8.895	-.012	1.643	+0.260		
27	20 18 8.632	8.516	+0.102	+0.014	27.276	8.911	+0.031	1.673	+0.236		
28	20 22 5.186	5.071	+0.104	+0.011	27.328	8.927	+0.068	1.702	+0.173		
29	20 26 1.737	1.626	+0.106	+0.005	27.368	8.944	+0.092	1.730	+0.081		
30	20 29 58.288	58.182	+0.107	-.002	27.392	8.961	+0.100	1.756	-.026		
31	20 33 54.838	54.737	+0.109	-.008	27.398	8.978	+0.091	1.781	-.133		
AGO. 1	20 37 51.389	51.292	+0.110	-.014	27.389	8.995	+0.066	1.804	-.225		
2	20 41 47.942	47.848	+0.112	-.018	27.368	9.012	+0.029	1.826	-.286		
3	20 45 44.497	44.403	+0.113	-.019	27.340	9.030	-.015	1.847	-.307		
4	20 49 41.056	40.959	+0.114	-.017	27.312	9.047	-.059	1.867	-.280		
5	20 53 37.617	37.514	+0.115	-.013	27.294	9.065	-.093	1.885	-.208		
6	20 57 34.180	34.069	+0.116	-.006	27.294	9.082	-.110	1.902	-.098		
7	21 1 30.744	30.625	+0.117	+0.002	27.318	9.100	-.102	1.917	+0.026		
8	21 5 27.307	27.180	+0.118	+0.008	27.367	9.117	-.069	1.931	+0.139		
9	21 9 23.867	23.735	+0.119	+0.013	27.436	9.135	-.017	1.944	+0.210		
10	21 13 20.424	20.291	+0.120	+0.013	27.510	9.153	+0.041	1.955	+0.220		
11	21 17 16.977	16.846	+0.120	+0.010	27.575	9.170	+0.090	1.965	+0.168		
12	21 21 13.527	13.401	+0.121	+0.004	27.616	9.188	+0.115	1.973	+0.073		
13	21 25 10.076	9.957	+0.121	-.002	27.628	9.205	+0.110	1.981	-.036		
14	21 29 6.626	6.512	+0.122	-.008	27.611	9.222	+0.078	1.986	-.123		
15	21 33 3.179	3.068	+0.122	-.010	27.578	9.240	+0.028	1.991	-.166		
16	21 36 59.735	59.623	+0.122	-.009	27.540	9.257	-.025	1.994	-.155		
17	21 40 56.294	56.178	+0.122	-.006	27.510	9.273	-.070	1.996	-.097		
18	21 44 52.855	52.734	+0.122	-.001	27.498	9.290	-.099	1.996	-.009		
19	21 48 49.417	49.289	+0.122	+0.006	27.505	9.307	-.106	1.996	+0.090		
20	21 52 45.977	45.844	+0.122	+0.011	27.534	9.323	-.093	1.994	+0.180		
21	21 56 42.536	42.400	+0.122	+0.015	27.578	9.339	-.063	1.990	+0.244		
22	22 0 39.093	38.955	+0.121	+0.017	27.633	9.355	-.023	1.986	+0.271		
23	22 4 35.647	35.511	+0.121	+0.016	27.690	9.370	+0.020	1.980	+0.257		
24	22 8 32.199	32.066	+0.121	+0.012	27.743	9.385	+0.059	1.973	+0.202		
25	22 12 28.749	28.621	+0.120	+0.007	27.785	9.400	+0.087	1.964	+0.117		
26	22 16 25.297	25.177	+0.120	+0.001	27.811	9.415	+0.100	1.955	+0.012		
27	22 20 21.845	21.732	+0.119	-.006	27.819	9.429	+0.096	1.945	-.097		
28	22 24 18.394	18.287	+0.118	-.012	27.811	9.443	+0.075	1.933	-.195		
29	22 28 14.944	14.843	+0.117	-.016	27.789	9.456	+0.041	1.920	-.267		
30	22 32 11.496	11.398	+0.117	-.018	27.759	9.469	-.001	1.906	-.302		
31	22 36 8.051	7.953	+0.116	-.018	27.726	9.482	-.045	1.891	-.294		
SET. 1	22 40 4.609	4.509	+0.115	-.015	27.700	9.494	-.082	1.876	-.242		

DATA	TEMPO SIDERAL			EQ. EQUIN. PERÍODO		OBLIQ. ECLIP.	NUT. OBLIQ. PERÍODO		NUT. LONG. PERÍODO		
	APARENTE			LONGO	CURTO	G ' 23 26	LONGO	CURTO	LONGO	CURTO	
H 0 TU	H	M	S	S	S	"	"	"	"	"	
SET. 1	22	40	4.609	4.509	+0.115	-.015	27.700	9.494	-.082	1.876	-.242
2	22	44	1.169	1.064	+0.114	-.009	27.688	9.506	-.105	1.859	-.151
3	22	47	57.730	57.620	+0.113	-.002	27.696	9.517	-.107	1.841	-.037
4	22	51	54.291	54.175	+0.111	+.005	27.728	9.528	-.084	1.822	+.078
5	22	55	50.851	50.730	+0.110	+.010	27.781	9.538	-.040	1.803	+.166
6	22	59	47.407	47.286	+0.109	+.012	27.847	9.548	+.017	1.782	+.202
7	23	3	43.960	43.841	+0.108	+.011	27.910	9.557	+.072	1.761	+.177
8	23	7	40.509	40.396	+0.106	+.006	27.955	9.566	+.110	1.739	+.097
9	23	11	37.056	36.952	+0.105	-.001	27.970	9.574	+.118	1.717	-.010
10	23	15	33.604	33.507	+0.104	-.007	27.953	9.582	+.095	1.694	-.109
11	23	19	30.154	30.062	+0.102	-.010	27.912	9.589	+.048	1.670	-.168
12	23	23	26.708	26.618	+0.101	-.010	27.861	9.595	-.008	1.645	-.170
13	23	27	23.265	23.173	+0.099	-.007	27.814	9.601	-.060	1.620	-.118
14	23	31	19.824	19.729	+0.098	-.002	27.783	9.606	-.095	1.595	-.028
15	23	35	16.385	16.284	+0.096	+.005	27.774	9.611	-.108	1.569	+.077
16	23	39	12.944	12.839	+0.094	+.011	27.785	9.615	-.099	1.543	+.174
17	23	43	9.503	9.395	+0.093	+.015	27.814	9.619	-.072	1.516	+.247
18	23	47	6.058	5.950	+0.091	+.017	27.855	9.622	-.034	1.489	+.284
19	23	51	2.612	2.505	+0.089	+.017	27.899	9.624	+.010	1.462	+.279
20	23	54	59.163	59.061	+0.088	+.014	27.940	9.626	+.050	1.434	+.234
21	23	58	55.712	55.616	+0.086	+.009	27.971	9.627	+.082	1.407	+.155
22	0	2	52.259	52.172	+0.084	+.003	27.987	9.627	+.099	1.379	+.053
23	0	6	48.806	48.727	+0.083	-.003	27.986	9.627	+.099	1.351	-.056
24	0	10	45.354	45.282	+0.081	-.010	27.967	9.626	+.082	1.323	-.158
25	0	14	41.902	41.838	+0.079	-.015	27.933	9.624	+.051	1.296	-.238
26	0	18	38.453	38.393	+0.078	-.017	27.889	9.622	+.010	1.268	-.284
27	0	22	35.007	34.948	+0.076	-.018	27.841	9.619	-.033	1.240	-.289
28	0	26	31.563	31.504	+0.074	-.015	27.798	9.616	-.072	1.213	-.251
29	0	30	28.121	28.059	+0.073	-.011	27.766	9.612	-.098	1.186	-.176
30	0	34	24.681	24.614	+0.071	-.005	27.752	9.607	-.107	1.159	-.075
OUT. 1	0	38	21.241	21.170	+0.069	+.002	27.759	9.602	-.093	1.133	+.032
2	0	42	17.800	17.725	+0.068	+.008	27.787	9.596	-.057	1.107	+.124
3	0	46	14.357	14.281	+0.066	+.011	27.831	9.589	-.005	1.081	+.176
4	0	50	10.911	10.836	+0.065	+.011	27.878	9.582	+.051	1.056	+.173
5	0	54	7.461	7.391	+0.063	+.007	27.915	9.574	+.096	1.031	+.113
6	0	58	4.009	3.947	+0.062	+.001	27.927	9.566	+.118	1.007	+.013
7	1	2	0.556	0.502	+0.060	-.006	27.907	9.556	+.109	0.984	-.093
8	1	5	57.106	57.057	+0.059	-.011	27.858	9.547	+.071	0.961	-.172
9	1	9	53.658	53.613	+0.057	-.012	27.791	9.537	+.015	0.939	-.197
10	1	13	50.214	50.168	+0.056	-.010	27.722	9.526	-.042	0.918	-.160
11	1	17	46.774	46.723	+0.055	-.005	27.666	9.514	-.086	0.898	-.074
12	1	21	43.335	43.279	+0.054	+.002	27.630	9.502	-.108	0.878	+.038

TEMPO SIDERAL, OBLIQUIDADE DA ECLÍPTICA E NUTAÇÃO, 2006  
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DATA	TEMPO SIDERAL			EQ. EQUIN.		OBLIQ.	NUT.	OBLIQ.	NUT. LONG.	
	APARENTE	MÉDIO	LONGO	CURTO	PERÍODO	ECLIP.	PERÍODO	PERÍODO	LONGO	CURTO
	H M S	S	S	S	S	G ' 23 26	" "	" "	" "	" "
OUT. 12	1 21 43.335	43.279	+0.054	+0.002	27.630	9.502	-.108	0.878	+.038	
13	1 25 39.896	39.834	+0.053	+0.009	27.619	9.490	-.106	0.860	+.149	
14	1 29 36.456	36.390	+0.051	+0.014	27.627	9.477	-.083	0.842	+.236	
15	1 33 33.013	32.945	+0.050	+0.018	27.649	9.464	-.046	0.825	+.288	
16	1 37 29.568	29.500	+0.050	+0.018	27.677	9.450	-.002	0.810	+.296	
17	1 41 26.120	26.056	+0.049	+0.016	27.704	9.435	+.040	0.795	+.261	
18	1 45 22.670	22.611	+0.048	+0.012	27.722	9.420	+.074	0.782	+.191	
19	1 49 19.219	19.166	+0.047	+0.006	27.727	9.405	+.095	0.770	+.094	
20	1 53 15.767	15.722	+0.046	-.001	27.714	9.389	+.100	0.758	-.014	
21	1 57 12.316	12.277	+0.046	-.007	27.684	9.373	+.088	0.749	-.119	
22	2 1 8.865	8.832	+0.045	-.013	27.638	9.356	+.060	0.740	-.206	
23	2 5 5.417	5.388	+0.045	-.016	27.581	9.339	+.021	0.733	-.261	
24	2 9 1.971	1.943	+0.044	-.017	27.519	9.322	-.022	0.727	-.275	
25	2 12 58.528	58.499	+0.044	-.015	27.460	9.304	-.063	0.722	-.247	
26	2 16 55.087	55.054	+0.044	-.011	27.411	9.286	-.093	0.719	-.181	
27	2 20 51.648	51.609	+0.044	-.005	27.378	9.267	-.105	0.717	-.088	
28	2 24 48.209	48.165	+0.044	+.001	27.367	9.249	-.097	0.717	+.014	
29	2 28 44.770	44.720	+0.044	+.006	27.376	9.230	-.068	0.718	+.104	
30	2 32 41.329	41.275	+0.044	+.010	27.401	9.211	-.022	0.720	+.161	
31	2 36 37.886	37.831	+0.044	+.010	27.434	9.191	+.032	0.724	+.171	
NOV. 1	2 40 34.439	34.386	+0.045	+.008	27.461	9.172	+.080	0.730	+.127	
2	2 44 30.989	30.942	+0.045	+.002	27.471	9.152	+.111	0.737	+.039	
3	2 48 27.538	27.497	+0.046	-.004	27.453	9.132	+.114	0.746	-.069	
4	2 52 24.088	24.052	+0.046	-.010	27.406	9.112	+.088	0.756	-.164	
5	2 56 20.641	20.608	+0.047	-.013	27.336	9.092	+.039	0.768	-.215	
6	3 0 17.198	17.163	+0.048	-.013	27.256	9.071	-.019	0.781	-.205	
7	3 4 13.759	13.718	+0.049	-.008	27.183	9.051	-.070	0.796	-.135	
8	3 8 10.322	10.274	+0.050	-.002	27.129	9.031	-.103	0.812	-.026	
9	3 12 6.886	6.829	+0.051	+.006	27.100	9.011	-.110	0.830	+.096	
10	3 16 3.449	3.384	+0.052	+.012	27.095	8.990	-.094	0.850	+.202	
11	3 19 60.010	59.940	+0.053	+.017	27.107	8.970	-.060	0.871	+.273	
12	3 23 56.568	56.495	+0.055	+.018	27.129	8.950	-.017	0.894	+.299	
13	3 27 53.124	53.051	+0.056	+.017	27.151	8.929	+.027	0.919	+.279	
14	3 31 49.677	49.606	+0.058	+.013	27.167	8.909	+.065	0.945	+.219	
15	3 35 46.229	46.161	+0.059	+.008	27.172	8.890	+.090	0.972	+.130	
16	3 39 42.779	42.717	+0.061	+.001	27.160	8.870	+.100	1.002	+.024	
17	3 43 39.330	39.272	+0.063	-.005	27.132	8.850	+.092	1.032	-.083	
18	3 47 35.882	35.827	+0.065	-.011	27.087	8.831	+.068	1.064	-.176	
19	3 51 32.435	32.383	+0.067	-.015	27.031	8.812	+.032	1.098	-.240	
20	3 55 28.991	28.938	+0.069	-.016	26.967	8.793	-.011	1.133	-.265	
21	3 59 25.550	25.493	+0.072	-.015	26.905	8.774	-.053	1.170	-.246	
22	4 3 22.111	22.049	+0.074	-.011	26.852	8.756	-.087	1.208	-.186	



DATA	TEMPO SIDERAL		EQ. EQUIN.		OBLIQ. ECLIP.	NUT. OBLIQ.		NUT. LONG.		
	APARENTE	MÉDIO	LONGO	CURTO		PERÍODO		PERÍODO		
	H M S	S	S	S	G ' 23 26	" "	" "	" "		
NOV. 22	4 3	22.111	22.049	+0.074	-.011	26.852	8.756	-.087	1.208	-.186
23	4 7	18.675	18.604	+0.076	-.006	26.815	8.738	-.104	1.248	-.096
24	4 11	15.239	15.160	+0.079	+0.000	26.800	8.720	-.101	1.289	+0.007
25	4 15	11.803	11.715	+0.081	+0.006	26.806	8.703	-.076	1.331	+0.101
26	4 19	8.364	8.270	+0.084	+0.010	26.830	8.686	-.033	1.375	+0.165
27	4 23	4.924	4.826	+0.087	+0.011	26.863	8.669	+0.018	1.420	+0.184
28	4 27	1.480	1.381	+0.090	+0.009	26.895	8.653	+0.067	1.466	+0.150
29	4 30	58.033	57.936	+0.093	+0.004	26.913	8.637	+0.102	1.513	+0.071
30	4 34	54.585	54.492	+0.096	-.002	26.908	8.622	+0.113	1.562	-.034
DEZ. 1	4 38	51.137	51.047	+0.099	-.008	26.876	8.607	+0.097	1.612	-.137
2	4 42	47.691	47.602	+0.102	-.013	26.820	8.593	+0.057	1.663	-.209
3	4 46	44.249	44.158	+0.105	-.014	26.751	8.579	+0.003	1.715	-.226
4	4 50	40.810	40.713	+0.108	-.011	26.682	8.566	-.052	1.768	-.183
5	4 54	37.375	37.269	+0.111	-.005	26.627	8.553	-.092	1.822	-.089
6	4 58	33.941	33.824	+0.115	+0.002	26.596	8.541	-.110	1.877	+0.031
7	5 2	30.507	30.379	+0.118	+0.009	26.590	8.530	-.103	1.933	+0.148
8	5 6	27.071	26.935	+0.122	+0.015	26.606	8.519	-.075	1.990	+0.239
9	5 10	23.633	23.490	+0.125	+0.017	26.636	8.508	-.033	2.048	+0.286
10	5 14	20.192	20.045	+0.129	+0.017	26.671	8.498	+0.012	2.106	+0.285
11	5 18	16.748	16.601	+0.132	+0.015	26.701	8.489	+0.053	2.165	+0.239
12	5 22	13.302	13.156	+0.136	+0.010	26.721	8.481	+0.083	2.224	+0.158
13	5 26	9.855	9.712	+0.140	+0.003	26.727	8.473	+0.098	2.285	+0.056
14	5 30	6.407	6.267	+0.143	-.003	26.716	8.466	+0.096	2.346	-.052
15	5 34	2.960	2.822	+0.147	-.009	26.690	8.459	+0.077	2.407	-.150
16	5 37	59.515	59.378	+0.151	-.014	26.650	8.453	+0.044	2.468	-.224
17	5 41	56.072	55.933	+0.155	-.016	26.602	8.448	+0.003	2.530	-.262
18	5 45	52.631	52.488	+0.159	-.016	26.552	8.443	-.041	2.593	-.257
19	5 49	49.193	49.044	+0.162	-.013	26.510	8.440	-.078	2.655	-.207
20	5 53	45.758	45.599	+0.166	-.007	26.482	8.436	-.101	2.718	-.121
21	5 57	42.324	42.154	+0.170	-.001	26.475	8.434	-.105	2.781	-.015
22	6 1	38.889	38.710	+0.174	+0.005	26.492	8.432	-.085	2.844	+0.090
23	6 5	35.453	35.265	+0.178	+0.010	26.529	8.431	-.046	2.907	+0.168
24	6 9	32.014	31.821	+0.182	+0.012	26.578	8.431	+0.005	2.970	+0.201
25	6 13	28.572	28.376	+0.186	+0.011	26.628	8.431	+0.056	3.033	+0.180
26	6 17	25.127	24.931	+0.189	+0.007	26.666	8.432	+0.095	3.096	+0.109
27	6 21	21.680	21.487	+0.193	+0.000	26.683	8.434	+0.111	3.158	+0.008
28	6 25	18.233	18.042	+0.197	-.006	26.674	8.436	+0.102	3.221	-.099
29	6 29	14.787	14.597	+0.201	-.011	26.643	8.439	+0.068	3.282	-.181
30	6 33	11.344	11.153	+0.205	-.013	26.595	8.443	+0.018	3.344	-.218
31	6 37	7.904	7.708	+0.208	-.012	26.545	8.447	-.035	3.405	-.198
32	6 41	4.468	4.263	+0.212	-.008	26.504	8.452	-.080	3.466	-.126