

Example of day-number technique

To calculate the apparent place of a star at 0^h TT at Greenwich on 2005 January 1 from the mean place for J2005.5 using day numbers.

Step 1. From a fundamental star catalogue, such as the FK5, calculate for epoch and equinox J2005.5 the mean right ascension and declination (α_1 , δ_1), the centennial proper motion (μ_α , μ_δ) and the parallax (π).

Assume the following fictitious values for the calculation:

$$\begin{aligned}\alpha_1 &= 14^{\text{h}} 39^{\text{m}} 58\overset{\text{s}}{.}736 & \delta_1 &= -60^\circ 51' 27\overset{\text{s}}{.}83 & \pi &= 0\overset{\text{s}}{.}752 \\ \mu_\alpha &= -49\overset{\text{s}}{.}535 \text{ per century} & \mu_\delta &= +69\overset{\text{s}}{.}42 \text{ per century}\end{aligned}$$

Step 2. Form the star constants as follows:

$$\begin{aligned}a &= \frac{1}{15}((m/n) + \sin \alpha_1 \tan \delta_1) & a' &= \cos \alpha_1 = -0.766\ 10 \\ &= +0.230\ 27 & \\ b &= \frac{1}{15} \cos \alpha_1 \tan \delta_1 = +0.091\ 60 & b' &= -\sin \alpha_1 = +0.642\ 72 \\ c &= \frac{1}{15} \cos \alpha_1 \sec \delta_1 = -0.104\ 88 & c' &= \tan \epsilon \cos \delta_1 - \sin \alpha_1 \sin \delta_1 \\ & & &= -0.350\ 23 \\ d &= \frac{1}{15} \sin \alpha_1 \sec \delta_1 = -0.087\ 99 & d' &= \cos \alpha_1 \sin \delta_1 = +0.669\ 12\end{aligned}$$

Step 3. Extract the day numbers from pages B24, B34 and B35. In general, linear interpolation is required and second differences may be significant for A and B . The values for 2005 January 1 at 0^h TT are:

$$\begin{aligned}A &= -12\overset{\text{s}}{.}956 & C &= -3\overset{\text{s}}{.}541 & E &= -0\overset{\text{s}}{.}0010 & J &= +0\overset{\text{s}}{.}000\ 18 \\ B &= -7\overset{\text{s}}{.}596 & D &= +20\overset{\text{s}}{.}470 & \tau &= -0.4993 & J' &= -0\overset{\text{s}}{.}0015\end{aligned}$$

Step 4. Extract the values of the Earth's rectangular coordinates from page B44 (the values for J2000.0 are of sufficient accuracy for computing the parallax correction). The values are:

$$X = -0.177 \quad Y = +0.887$$

Step 5. Calculate the corrections for light-deflection, $\Delta\alpha$ and $\Delta\delta$.

For the Sun for 2005 January 1 at 0^h TT, $\alpha_0 = 18^{\text{h}} 46\overset{\text{m}}{.}4$, $\delta_0 = -23^\circ 01'$. Using the formulae on page B17, $\cos(\text{elongation}) = +0.5546$ and the corrections for light-deflection are $\Delta\alpha = -0\overset{\text{s}}{.}001$ and $\Delta\delta = 0\overset{\text{s}}{.}00$.

Step 6. Compute the apparent position as follows:

Mean position 2005.5,	$\alpha_1 = 14^{\text{h}} 39^{\text{m}} 58\overset{\text{s}}{.}736$	$\delta_1 = -60^\circ 51' 27\overset{\text{s}}{.}83$
$Aa + Bb + Cc + Dd + E$	$= -5\overset{\text{s}}{.}110$	$Aa' + Bb' + Cc' + Dd'$
$J \tan^2 \delta_1$	$= +0\overset{\text{s}}{.}001$	$= +19\overset{\text{s}}{.}98$
$\tau \mu_\alpha / 100$	$= +0\overset{\text{s}}{.}247$	$J' \tan \delta_1$
$\pi(dX - cY)$	$= +0\overset{\text{s}}{.}082$	$= mwd; 0\overset{\text{s}}{.}00$
$\Delta\alpha$	$= -0\overset{\text{s}}{.}001$	$\tau \mu_\delta / 100$
<hr/>		
Apparent position	$\alpha = 14^{\text{h}} 39^{\text{m}} 53\overset{\text{s}}{.}954$	$\delta = -60^\circ 51' 08\overset{\text{s}}{.}05$
<hr/>		

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ	
	in Long.	in Obl.		A	B	C	D	E		
	"	"	"	"	"	"	"	"	(0 ⁸ 0001)	
Jan.	0	- 7.403	+ 7.546	26.654	-13.007	-7.546	- 3.212	+20.533	- 10	-0.5021
	1	- 7.413	+ 7.596	26.703	-12.956	-7.596	- 3.541	+20.470	- 10	-0.4993
	2	- 7.454	+ 7.634	26.740	-12.918	-7.634	- 3.869	+20.401	- 10	-0.4966
	3	- 7.513	+ 7.654	26.759	-12.886	-7.654	- 4.196	+20.326	- 10	-0.4938
	4	- 7.569	+ 7.653	26.756	-12.854	-7.653	- 4.522	+20.245	- 10	-0.4911
	5	- 7.598	+ 7.631	26.733	-12.810	-7.631	- 4.847	+20.157	- 10	-0.4884
	6	- 7.578	+ 7.593	26.693	-12.748	-7.593	- 5.170	+20.062	- 10	-0.4856
	7	- 7.491	+ 7.549	26.648	-12.658	-7.549	- 5.493	+19.962	- 10	-0.4829
	8	- 7.332	+ 7.514	26.612	-12.540	-7.514	- 5.814	+19.854	- 10	-0.4802
	9	- 7.121	+ 7.504	26.600	-12.401	-7.504	- 6.133	+19.740	- 10	-0.4774
	10	- 6.892	+ 7.528	26.623	-12.255	-7.528	- 6.451	+19.619	- 10	-0.4747
	11	- 6.692	+ 7.585	26.679	-12.121	-7.585	- 6.766	+19.491	- 9	-0.4719
	12	- 6.559	+ 7.664	26.757	-12.013	-7.664	- 7.079	+19.357	- 9	-0.4692
	13	- 6.506	+ 7.748	26.839	-11.937	-7.748	- 7.390	+19.217	- 9	-0.4665
	14	- 6.525	+ 7.817	26.908	-11.890	-7.817	- 7.697	+19.070	- 9	-0.4637
	15	- 6.588	+ 7.862	26.951	-11.860	-7.862	- 8.002	+18.917	- 9	-0.4610
	16	- 6.662	+ 7.879	26.967	-11.835	-7.879	- 8.303	+18.758	- 9	-0.4582
	17	- 6.720	+ 7.873	26.959	-11.803	-7.873	- 8.602	+18.594	- 9	-0.4555
	18	- 6.745	+ 7.852	26.937	-11.758	-7.852	- 8.897	+18.424	- 9	-0.4528
	19	- 6.727	+ 7.824	26.908	-11.696	-7.824	- 9.190	+18.249	- 9	-0.4500
	20	- 6.669	+ 7.800	26.882	-11.618	-7.800	- 9.479	+18.069	- 9	-0.4473
	21	- 6.577	+ 7.785	26.867	-11.526	-7.785	- 9.765	+17.883	- 9	-0.4446
	22	- 6.464	+ 7.787	26.867	-11.426	-7.787	-10.048	+17.692	- 9	-0.4418
	23	- 6.345	+ 7.806	26.885	-11.324	-7.806	-10.328	+17.496	- 9	-0.4391
	24	- 6.235	+ 7.844	26.922	-11.226	-7.844	-10.605	+17.295	- 9	-0.4363
	25	- 6.149	+ 7.898	26.974	-11.137	-7.898	-10.878	+17.089	- 8	-0.4336
	26	- 6.099	+ 7.962	27.037	-11.062	-7.962	-11.148	+16.878	- 8	-0.4309
	27	- 6.091	+ 8.030	27.103	-11.004	-8.030	-11.415	+16.663	- 8	-0.4281
	28	- 6.125	+ 8.094	27.167	-10.963	-8.094	-11.678	+16.442	- 8	-0.4254
	29	- 6.195	+ 8.148	27.219	-10.935	-8.148	-11.938	+16.217	- 9	-0.4227
	30	- 6.286	+ 8.183	27.253	-10.917	-8.183	-12.194	+15.987	- 9	-0.4199
	31	- 6.381	+ 8.198	27.267	-10.899	-8.198	-12.447	+15.752	- 9	-0.4172
Feb.	1	- 6.456	+ 8.192	27.260	-10.875	-8.192	-12.696	+15.512	- 9	-0.4144
	2	- 6.492	+ 8.169	27.235	-10.834	-8.169	-12.942	+15.267	- 9	-0.4117
	3	- 6.471	+ 8.137	27.202	-10.771	-8.137	-13.183	+15.017	- 9	-0.4090
	4	- 6.386	+ 8.108	27.172	-10.682	-8.108	-13.421	+14.763	- 9	-0.4062
	5	- 6.244	+ 8.097	27.159	-10.571	-8.097	-13.655	+14.504	- 9	-0.4035
	6	- 6.069	+ 8.113	27.174	-10.446	-8.113	-13.885	+14.239	- 8	-0.4008
	7	- 5.899	+ 8.162	27.222	-10.324	-8.162	-14.110	+13.970	- 8	-0.3980
	8	- 5.777	+ 8.239	27.298	-10.220	-8.239	-14.331	+13.697	- 8	-0.3953
	9	- 5.728	+ 8.329	27.386	-10.146	-8.329	-14.546	+13.418	- 8	-0.3925
	10	- 5.759	+ 8.412	27.468	-10.103	-8.412	-14.757	+13.136	- 8	-0.3898
	11	- 5.850	+ 8.474	27.529	-10.085	-8.474	-14.963	+12.849	- 8	-0.3871
	12	- 5.968	+ 8.507	27.560	-10.077	-8.507	-15.163	+12.558	- 8	-0.3843
	13	- 6.078	+ 8.510	27.562	-10.066	-8.510	-15.358	+12.264	- 8	-0.3816
	14	- 6.158	+ 8.493	27.544	-10.043	-8.493	-15.548	+11.967	- 8	-0.3789
	15	- 6.195	+ 8.466	27.515	-10.002	-8.466	-15.733	+11.666	- 9	-0.3761

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

5

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5				Fraction of Year τ
	in Long.	in Obl.		A	B	C	D	
Feb. 15	"	"	"	"	"	"	"	(0 ⁸ 0001)
16	- 6.195	+ 8.466	27.515	- 10.002	- 8.466	- 15.733	+ 11.666	- 9 -0.3761
17	- 6.187	+ 8.439	27.487	- 9.945	- 8.439	- 15.912	+ 11.362	- 9 -0.3734
18	- 6.144	+ 8.421	27.467	- 9.872	- 8.421	- 16.087	+ 11.055	- 8 -0.3706
19	- 6.076	+ 8.416	27.462	- 9.790	- 8.416	- 16.256	+ 10.746	- 8 -0.3679
20	- 5.998	+ 8.430	27.474	- 9.705	- 8.430	- 16.420	+ 10.433	- 8 -0.3652
21	- 5.927	+ 8.461	27.504	- 9.621	- 8.461	- 16.580	+ 10.118	- 8 -0.3624
22	- 5.876	+ 8.509	27.550	- 9.546	- 8.509	- 16.734	+ 9.801	- 8 -0.3597
23	- 5.858	+ 8.568	27.608	- 9.484	- 8.568	- 16.883	+ 9.481	- 8 -0.3569
24	- 5.881	+ 8.632	27.671	- 9.439	- 8.632	- 17.026	+ 9.158	- 8 -0.3542
25	- 5.947	+ 8.694	27.732	- 9.410	- 8.694	- 17.165	+ 8.834	- 8 -0.3515
26	- 6.051	+ 8.746	27.783	- 9.397	- 8.746	- 17.299	+ 8.507	- 8 -0.3487
27	- 6.181	+ 8.781	27.816	- 9.393	- 8.781	- 17.428	+ 8.177	- 9 -0.3460
28	- 6.319	+ 8.795	27.828	- 9.393	- 8.795	- 17.552	+ 7.846	- 9 -0.3433
Mar. 1	- 6.442	+ 8.786	27.818	- 9.387	- 8.786	- 17.670	+ 7.512	- 9 -0.3405
2	- 6.529	+ 8.758	27.789	- 9.367	- 8.758	- 17.784	+ 7.177	- 9 -0.3378
3	- 6.564	+ 8.720	27.750	- 9.326	- 8.720	- 17.892	+ 6.839	- 9 -0.3350
4	- 6.538	+ 8.681	27.710	- 9.261	- 8.681	- 17.995	+ 6.498	- 9 -0.3323
5	- 6.457	+ 8.656	27.683	- 9.174	- 8.656	- 18.093	+ 6.156	- 9 -0.3296
6	- 6.338	+ 8.653	27.679	- 9.072	- 8.653	- 18.186	+ 5.812	- 9 -0.3268
7	- 6.212	+ 8.680	27.705	- 8.967	- 8.680	- 18.272	+ 5.465	- 9 -0.3241
8	- 6.115	+ 8.735	27.759	- 8.873	- 8.735	- 18.353	+ 5.117	- 8 -0.3214
9	- 6.076	+ 8.808	27.830	- 8.803	- 8.808	- 18.429	+ 4.767	- 8 -0.3186
10	- 6.111	+ 8.882	27.903	- 8.762	- 8.882	- 18.498	+ 4.416	- 8 -0.3159
11	- 6.213	+ 8.942	27.962	- 8.747	- 8.942	- 18.561	+ 4.063	- 9 -0.3131
12	- 6.355	+ 8.974	27.993	- 8.749	- 8.974	- 18.618	+ 3.709	- 9 -0.3104
13	- 6.504	+ 8.976	27.993	- 8.754	- 8.976	- 18.669	+ 3.354	- 9 -0.3077
14	- 6.629	+ 8.952	27.968	- 8.748	- 8.952	- 18.714	+ 2.998	- 9 -0.3049
15	- 6.710	+ 8.911	27.926	- 8.726	- 8.911	- 18.753	+ 2.643	- 9 -0.3022
16	- 6.742	+ 8.867	27.880	- 8.684	- 8.867	- 18.786	+ 2.287	- 9 -0.2995
17	- 6.731	+ 8.828	27.840	- 8.624	- 8.828	- 18.813	+ 1.931	- 9 -0.2967
18	- 6.689	+ 8.802	27.813	- 8.553	- 8.802	- 18.834	+ 1.575	- 9 -0.2940
19	- 6.632	+ 8.793	27.803	- 8.475	- 8.793	- 18.849	+ 1.219	- 9 -0.2912
20	- 6.576	+ 8.803	27.812	- 8.398	- 8.803	- 18.859	+ 0.864	- 9 -0.2885
21	- 6.537	+ 8.830	27.837	- 8.328	- 8.830	- 18.863	+ 0.509	- 9 -0.2858
22	- 6.527	+ 8.871	27.876	- 8.269	- 8.871	- 18.862	+ 0.155	- 9 -0.2830
23	- 6.554	+ 8.918	27.922	- 8.225	- 8.918	- 18.855	- 0.199	- 9 -0.2803
24	- 6.623	+ 8.965	27.968	- 8.197	- 8.965	- 18.843	- 0.553	- 9 -0.2775
25	- 6.732	+ 9.004	28.006	- 8.186	- 9.004	- 18.826	- 0.905	- 9 -0.2748
26	- 6.870	+ 9.027	28.028	- 8.186	- 9.027	- 18.803	- 1.257	- 9 -0.2721
27	- 7.020	+ 9.029	28.029	- 8.190	- 9.029	- 18.775	- 1.608	- 10 -0.2693
28	- 7.161	+ 9.008	28.006	- 8.192	- 9.008	- 18.742	- 1.959	- 10 -0.2666
29	- 7.268	+ 8.966	27.963	- 8.180	- 8.966	- 18.703	- 2.308	- 10 -0.2639
30	- 7.323	+ 8.910	27.906	- 8.147	- 8.910	- 18.660	- 2.657	- 10 -0.2611
31	- 7.317	+ 8.852	27.846	- 8.089	- 8.852	- 18.611	- 3.005	- 10 -0.2584
Apr. 1	- 7.146	+ 8.778	27.770	- 7.911	- 8.778	- 18.498	- 3.699	- 10 -0.2529
2	- 7.028	+ 8.780	27.770	- 7.809	- 8.780	- 18.433	- 4.045	- 10 -0.2502

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ	
	in Long.	in Obl.		A	B	C	D	E		
	"	"	"	"	"	"	"	"	(0 ⁸ 0001)	
Apr. 1	- 7.146	+ 8.778	27.770	- 7.911	- 8.778	- 18.498	- 3.699	- 10	- 0.2529	
2	- 7.028	+ 8.780	27.770	- 7.809	- 8.780	- 18.433	- 4.045	- 10	- 0.2502	
3	- 6.929	+ 8.809	27.798	- 7.715	- 8.809	- 18.363	- 4.389	- 10	- 0.2474	
4	- 6.879	+ 8.857	27.845	- 7.641	- 8.857	- 18.287	- 4.733	- 9	- 0.2447	
5	- 6.894	+ 8.912	27.899	- 7.592	- 8.912	- 18.206	- 5.075	- 10	- 0.2420	
6	- 6.973	+ 8.958	27.944	- 7.568	- 8.958	- 18.118	- 5.415	- 10	- 0.2392	
7	- 7.100	+ 8.983	27.967	- 7.564	- 8.983	- 18.026	- 5.754	- 10	- 0.2365	
8	- 7.244	+ 8.978	27.961	- 7.566	- 8.978	- 17.927	- 6.091	- 10	- 0.2337	
9	- 7.375	+ 8.946	27.927	- 7.563	- 8.946	- 17.823	- 6.426	- 10	- 0.2310	
10	- 7.467	+ 8.893	27.873	- 7.545	- 8.893	- 17.713	- 6.758	- 10	- 0.2283	
11	- 7.508	+ 8.831	27.809	- 7.507	- 8.831	- 17.598	- 7.088	- 10	- 0.2255	
12	- 7.499	+ 8.770	27.748	- 7.448	- 8.770	- 17.478	- 7.415	- 10	- 0.2228	
13	- 7.450	+ 8.721	27.698	- 7.374	- 8.721	- 17.352	- 7.740	- 10	- 0.2201	
14	- 7.379	+ 8.689	27.664	- 7.291	- 8.689	- 17.221	- 8.061	- 10	- 0.2173	
15	- 7.302	+ 8.677	27.650	- 7.205	- 8.677	- 17.086	- 8.379	- 10	- 0.2146	
16	- 7.237	+ 8.683	27.655	- 7.125	- 8.683	- 16.945	- 8.695	- 10	- 0.2118	
17	- 7.197	+ 8.703	27.674	- 7.054	- 8.703	- 16.800	- 9.007	- 10	- 0.2091	
18	- 7.193	+ 8.734	27.703	- 6.997	- 8.734	- 16.650	- 9.316	- 10	- 0.2064	
19	- 7.228	+ 8.767	27.735	- 6.956	- 8.767	- 16.496	- 9.621	- 10	- 0.2036	
20	- 7.302	+ 8.795	27.762	- 6.931	- 8.795	- 16.337	- 9.924	- 10	- 0.2009	
21	- 7.408	+ 8.810	27.776	- 6.918	- 8.810	- 16.174	- 10.223	- 10	- 0.1982	
22	- 7.532	+ 8.806	27.770	- 6.913	- 8.806	- 16.007	- 10.518	- 10	- 0.1954	
23	- 7.654	+ 8.779	27.742	- 6.906	- 8.779	- 15.835	- 10.811	- 11	- 0.1927	
24	- 7.750	+ 8.729	27.691	- 6.889	- 8.729	- 15.660	- 11.100	- 11	- 0.1899	
25	- 7.795	+ 8.662	27.623	- 6.853	- 8.662	- 15.480	- 11.386	- 11	- 0.1872	
26	- 7.775	+ 8.590	27.549	- 6.790	- 8.590	- 15.296	- 11.668	- 11	- 0.1845	
27	- 7.691	+ 8.525	27.483	- 6.701	- 8.525	- 15.109	- 11.948	- 11	- 0.1817	
28	- 7.557	+ 8.480	27.437	- 6.593	- 8.480	- 14.917	- 12.224	- 10	- 0.1790	
29	- 7.403	+ 8.464	27.420	- 6.477	- 8.464	- 14.721	- 12.497	- 10	- 0.1762	
30	- 7.265	+ 8.477	27.431	- 6.367	- 8.477	- 14.521	- 12.766	- 10	- 0.1735	
May 1	- 7.171	+ 8.512	27.465	- 6.275	- 8.512	- 14.317	- 13.032	- 10	- 0.1708	
2	- 7.140	+ 8.556	27.508	- 6.208	- 8.556	- 14.108	- 13.295	- 10	- 0.1680	
3	- 7.173	+ 8.596	27.546	- 6.166	- 8.596	- 13.895	- 13.554	- 10	- 0.1653	
4	- 7.256	+ 8.617	27.567	- 6.144	- 8.617	- 13.678	- 13.809	- 10	- 0.1626	
5	- 7.364	+ 8.613	27.561	- 6.132	- 8.613	- 13.457	- 14.060	- 10	- 0.1598	
6	- 7.466	+ 8.582	27.528	- 6.118	- 8.582	- 13.232	- 14.306	- 10	- 0.1571	
7	- 7.538	+ 8.528	27.474	- 6.092	- 8.528	- 13.002	- 14.548	- 10	- 0.1543	
8	- 7.563	+ 8.462	27.406	- 6.047	- 8.462	- 12.769	- 14.786	- 10	- 0.1516	
9	- 7.536	+ 8.395	27.338	- 5.981	- 8.395	- 12.531	- 15.018	- 10	- 0.1489	
10	- 7.464	+ 8.336	27.278	- 5.898	- 8.336	- 12.291	- 15.246	- 10	- 0.1461	
11	- 7.361	+ 8.293	27.233	- 5.802	- 8.293	- 12.046	- 15.469	- 10	- 0.1434	
12	- 7.246	+ 8.270	27.209	- 5.701	- 8.270	- 11.799	- 15.687	- 10	- 0.1407	
13	- 7.137	+ 8.266	27.204	- 5.603	- 8.266	- 11.548	- 15.900	- 10	- 0.1379	
14	- 7.049	+ 8.279	27.216	- 5.513	- 8.279	- 11.294	- 16.108	- 10	- 0.1352	
15	- 6.994	+ 8.305	27.240	- 5.437	- 8.305	- 11.037	- 16.311	- 10	- 0.1324	
16	- 6.978	+ 8.336	27.269	- 5.375	- 8.336	- 10.778	- 16.509	- 10	- 0.1297	
17	- 7.002	+ 8.364	27.297	- 5.330	- 8.364	- 10.516	- 16.701	- 10	- 0.1270	

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

7

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ
	in Long.	in Obl.		A	B	C	D	E	
May 17	"	"	"	"	"	"	"	"	(0 ⁸ 0001)
18	- 7.002	+ 8.364	27.297	- 5.330	- 8.364	- 10.516	- 16.701	- 10	- 0.1270
19	- 7.061	+ 8.383	27.315	- 5.298	- 8.383	- 10.251	- 16.889	- 10	- 0.1242
20	- 7.142	+ 8.387	27.317	- 5.276	- 8.387	- 9.984	- 17.071	- 10	- 0.1215
21	- 7.229	+ 8.369	27.298	- 5.255	- 8.369	- 9.714	- 17.249	- 10	- 0.1188
22	- 7.299	+ 8.329	27.256	- 5.228	- 8.329	- 9.442	- 17.421	- 10	- 0.1160
23	- 7.327	+ 8.269	27.195	- 5.185	- 8.269	- 9.168	- 17.588	- 10	- 0.1133
24	- 7.294	+ 8.198	27.123	- 5.117	- 8.198	- 8.892	- 17.751	- 10	- 0.1105
25	- 7.190	+ 8.130	27.054	- 5.021	- 8.130	- 8.614	- 17.909	- 10	- 0.1078
26	- 7.025	+ 8.079	27.002	- 4.900	- 8.079	- 8.334	- 18.062	- 10	- 0.1051
27	- 6.827	+ 8.057	26.979	- 4.767	- 8.057	- 8.052	- 18.210	- 9	- 0.1023
28	- 6.634	+ 8.068	26.987	- 4.635	- 8.068	- 7.767	- 18.354	- 9	- 0.0996
29	- 6.482	+ 8.105	27.023	- 4.520	- 8.105	- 7.481	- 18.493	- 9	- 0.0969
30	- 6.396	+ 8.155	27.072	- 4.430	- 8.155	- 7.192	- 18.627	- 9	- 0.0941
31	- 6.378	+ 8.204	27.120	- 4.369	- 8.204	- 6.900	- 18.756	- 9	- 0.0914
June 1	- 6.418	+ 8.237	27.151	- 4.329	- 8.237	- 6.607	- 18.880	- 9	- 0.0886
2	- 6.488	+ 8.245	27.159	- 4.302	- 8.245	- 6.311	- 18.999	- 9	- 0.0859
3	- 6.561	+ 8.227	27.139	- 4.276	- 8.227	- 6.013	- 19.112	- 9	- 0.0832
4	- 6.609	+ 8.187	27.098	- 4.241	- 8.187	- 5.714	- 19.219	- 9	- 0.0804
5	- 6.616	+ 8.133	27.042	- 4.189	- 8.133	- 5.412	- 19.321	- 9	- 0.0777
6	- 6.573	+ 8.074	26.983	- 4.117	- 8.074	- 5.109	- 19.417	- 9	- 0.0749
7	- 6.485	+ 8.022	26.929	- 4.027	- 8.022	- 4.804	- 19.507	- 9	- 0.0722
8	- 6.362	+ 7.985	26.890	- 3.923	- 7.985	- 4.498	- 19.591	- 9	- 0.0695
9	- 6.221	+ 7.966	26.870	- 3.812	- 7.966	- 4.191	- 19.669	- 9	- 0.0667
10	- 6.081	+ 7.967	26.870	- 3.701	- 7.967	- 3.882	- 19.741	- 8	- 0.0640
11	- 5.958	+ 7.987	26.889	- 3.598	- 7.987	- 3.573	- 19.807	- 8	- 0.0613
12	- 5.867	+ 8.020	26.921	- 3.507	- 8.020	- 3.263	- 19.867	- 8	- 0.0585
13	- 5.814	+ 8.061	26.960	- 3.431	- 8.061	- 2.952	- 19.921	- 8	- 0.0558
14	- 5.802	+ 8.103	27.001	- 3.371	- 8.103	- 2.641	- 19.970	- 8	- 0.0530
15	- 5.827	+ 8.137	27.034	- 3.326	- 8.137	- 2.330	- 20.012	- 8	- 0.0503
16	- 5.880	+ 8.158	27.054	- 3.292	- 8.158	- 2.018	- 20.049	- 8	- 0.0476
17	- 5.945	+ 8.161	27.055	- 3.263	- 8.161	- 1.706	- 20.080	- 8	- 0.0448
18	- 6.002	+ 8.143	27.036	- 3.231	- 8.143	- 1.394	- 20.105	- 8	- 0.0421
19	- 6.029	+ 8.105	26.996	- 3.187	- 8.105	- 1.082	- 20.125	- 8	- 0.0394
20	- 6.005	+ 8.052	26.942	- 3.122	- 8.052	- 0.770	- 20.139	- 8	- 0.0366
21	- 5.913	+ 7.995	26.884	- 3.031	- 7.995	- 0.459	- 20.148	- 8	- 0.0339
22	- 5.753	+ 7.950	26.838	- 2.913	- 7.950	- 0.147	- 20.151	- 8	- 0.0311
23	- 5.543	+ 7.930	26.816	- 2.774	- 7.930	+ 0.164	- 20.150	- 8	- 0.0284
24	- 5.320	+ 7.943	26.828	- 2.631	- 7.943	+ 0.475	- 20.143	- 7	- 0.0257
25	- 5.127	+ 7.989	26.872	- 2.499	- 7.989	+ 0.786	- 20.131	- 7	- 0.0229
26	- 4.996	+ 8.054	26.937	- 2.392	- 8.054	+ 1.097	- 20.114	- 7	- 0.0202
27	- 4.943	+ 8.124	27.005	- 2.316	- 8.124	+ 1.408	- 20.092	- 7	- 0.0175
28	- 4.958	+ 8.179	27.059	- 2.267	- 8.179	+ 1.719	- 20.064	- 7	- 0.0147
29	- 5.015	+ 8.211	27.089	- 2.235	- 8.211	+ 2.030	- 20.031	- 7	- 0.0120
30	- 5.082	+ 8.214	27.092	- 2.207	- 8.214	+ 2.341	- 19.992	- 7	- 0.0092
July 1	- 5.143	+ 8.158	27.033	- 2.121	- 8.158	+ 2.962	- 19.897	- 7	- 0.0038
2	- 5.108	+ 8.116	26.990	- 2.052	- 8.116	+ 3.271	- 19.841	- 7	- 0.0010

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ	
	in Long.	in Obl.		A	B	C	D	E		
	"	"		"	"	"	"	"	(0 ⁰⁰⁰¹)	
July	1	- 5.143	+ 8.158	27.033	- 2.121	- 8.158	+ 2.962	- 19.897	- 7	- 0.0038
	2	- 5.108	+ 8.116	26.990	- 2.052	- 8.116	+ 3.271	- 19.841	- 7	- 0.0010
	3	- 5.027	+ 8.078	26.951	- 1.965	- 8.078	+ 3.580	- 19.778	- 7	+ 0.0017
	4	- 4.912	+ 8.053	26.924	- 1.865	- 8.053	+ 3.888	- 19.710	- 7	+ 0.0044
	5	- 4.776	+ 8.046	26.916	- 1.756	- 8.046	+ 4.195	- 19.636	- 7	+ 0.0072
	6	- 4.637	+ 8.059	26.927	- 1.645	- 8.059	+ 4.501	- 19.556	- 6	+ 0.0099
	7	- 4.512	+ 8.090	26.957	- 1.541	- 8.090	+ 4.805	- 19.470	- 6	+ 0.0127
	8	- 4.416	+ 8.136	27.002	- 1.448	- 8.136	+ 5.108	- 19.378	- 6	+ 0.0154
	9	- 4.358	+ 8.191	27.056	- 1.370	- 8.191	+ 5.409	- 19.281	- 6	+ 0.0181
	10	- 4.343	+ 8.249	27.112	- 1.309	- 8.249	+ 5.709	- 19.177	- 6	+ 0.0209
	11	- 4.367	+ 8.301	27.163	- 1.264	- 8.301	+ 6.007	- 19.069	- 6	+ 0.0236
	12	- 4.422	+ 8.342	27.202	- 1.231	- 8.342	+ 6.302	- 18.954	- 6	+ 0.0264
	13	- 4.495	+ 8.365	27.225	- 1.205	- 8.365	+ 6.596	- 18.834	- 6	+ 0.0291
	14	- 4.568	+ 8.369	27.227	- 1.179	- 8.369	+ 6.888	- 18.709	- 6	+ 0.0318
	15	- 4.620	+ 8.353	27.210	- 1.145	- 8.353	+ 7.177	- 18.579	- 6	+ 0.0346
	16	- 4.630	+ 8.321	27.177	- 1.094	- 8.321	+ 7.464	- 18.443	- 6	+ 0.0373
	17	- 4.583	+ 8.282	27.136	- 1.020	- 8.282	+ 7.749	- 18.303	- 6	+ 0.0400
	18	- 4.470	+ 8.246	27.099	- 0.921	- 8.246	+ 8.031	- 18.157	- 6	+ 0.0428
	19	- 4.299	+ 8.229	27.081	- 0.798	- 8.229	+ 8.310	- 18.007	- 6	+ 0.0455
	20	- 4.096	+ 8.242	27.092	- 0.662	- 8.242	+ 8.588	- 17.853	- 6	+ 0.0483
	21	- 3.900	+ 8.288	27.138	- 0.529	- 8.288	+ 8.863	- 17.694	- 5	+ 0.0510
	22	- 3.755	+ 8.362	27.210	- 0.417	- 8.362	+ 9.136	- 17.530	- 5	+ 0.0537
	23	- 3.686	+ 8.448	27.295	- 0.334	- 8.448	+ 9.406	- 17.362	- 5	+ 0.0565
	24	- 3.697	+ 8.527	27.372	- 0.284	- 8.527	+ 9.674	- 17.189	- 5	+ 0.0592
	25	- 3.765	+ 8.582	27.426	- 0.256	- 8.582	+ 9.941	- 17.012	- 5	+ 0.0619
	26	- 3.857	+ 8.606	27.449	- 0.238	- 8.606	+ 10.205	- 16.830	- 5	+ 0.0647
	27	- 3.937	+ 8.603	27.445	- 0.215	- 8.603	+ 10.466	- 16.643	- 5	+ 0.0674
	28	- 3.983	+ 8.580	27.420	- 0.178	- 8.580	+ 10.725	- 16.451	- 5	+ 0.0702
	29	- 3.984	+ 8.549	27.388	- 0.124	- 8.549	+ 10.982	- 16.254	- 5	+ 0.0729
	30	- 3.938	+ 8.520	27.357	- 0.050	- 8.520	+ 11.236	- 16.051	- 5	+ 0.0756
Aug.	31	- 3.855	+ 8.501	27.338	+ 0.037	- 8.501	+ 11.486	- 15.844	- 5	+ 0.0784
	1	- 3.751	+ 8.500	27.335	+ 0.134	- 8.500	+ 11.734	- 15.632	- 5	+ 0.0811
	2	- 3.640	+ 8.518	27.352	+ 0.232	- 8.518	+ 11.978	- 15.415	- 5	+ 0.0838
	3	- 3.542	+ 8.554	27.387	+ 0.327	- 8.554	+ 12.219	- 15.194	- 5	+ 0.0866
	4	- 3.469	+ 8.607	27.438	+ 0.410	- 8.607	+ 12.457	- 14.967	- 5	+ 0.0893
	5	- 3.434	+ 8.669	27.499	+ 0.479	- 8.669	+ 12.691	- 14.736	- 5	+ 0.0921
	6	- 3.441	+ 8.734	27.563	+ 0.531	- 8.734	+ 12.921	- 14.500	- 5	+ 0.0948
	7	- 3.489	+ 8.796	27.623	+ 0.567	- 8.796	+ 13.148	- 14.260	- 5	+ 0.0975
	8	- 3.571	+ 8.847	27.673	+ 0.589	- 8.847	+ 13.370	- 14.016	- 5	+ 0.1003
	9	- 3.676	+ 8.881	27.706	+ 0.602	- 8.881	+ 13.589	- 13.767	- 5	+ 0.1030
	10	- 3.785	+ 8.896	27.720	+ 0.614	- 8.896	+ 13.803	- 13.515	- 5	+ 0.1057
	11	- 3.880	+ 8.891	27.713	+ 0.631	- 8.891	+ 14.014	- 13.258	- 5	+ 0.1085
	12	- 3.941	+ 8.869	27.690	+ 0.662	- 8.869	+ 14.220	- 12.998	- 5	+ 0.1112
	13	- 3.951	+ 8.837	27.657	+ 0.712	- 8.837	+ 14.422	- 12.734	- 5	+ 0.1140
	14	- 3.902	+ 8.805	27.624	+ 0.787	- 8.805	+ 14.619	- 12.466	- 5	+ 0.1167
	15	- 3.796	+ 8.785	27.602	+ 0.884	- 8.785	+ 14.812	- 12.195	- 5	+ 0.1194
	16	- 3.649	+ 8.789	27.605	+ 0.997	- 8.789	+ 15.001	- 11.922	- 5	+ 0.1222

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ
	in Long.	in Obl.		A	B	C	D	E	
Aug. 16	- 3.649	+ 8.789	27.605	+ 0.997	- 8.789	+ 15.001	- 11.922	- 5	+0.1222
17	- 3.490	+ 8.823	27.638	+ 1.115	- 8.823	+ 15.186	- 11.645	- 5	+0.1249
18	- 3.360	+ 8.888	27.701	+ 1.222	- 8.888	+ 15.367	- 11.365	- 5	+0.1277
19	- 3.294	+ 8.972	27.784	+ 1.303	- 8.972	+ 15.543	- 11.082	- 5	+0.1304
20	- 3.307	+ 9.057	27.868	+ 1.353	- 9.057	+ 15.716	- 10.797	- 5	+0.1331
21	- 3.391	+ 9.126	27.935	+ 1.374	- 9.126	+ 15.885	- 10.508	- 5	+0.1359
22	- 3.516	+ 9.164	27.972	+ 1.380	- 9.164	+ 16.050	- 10.216	- 5	+0.1386
23	- 3.643	+ 9.169	27.976	+ 1.384	- 9.169	+ 16.210	- 9.921	- 5	+0.1413
24	- 3.739	+ 9.148	27.954	+ 1.400	- 9.148	+ 16.367	- 9.623	- 5	+0.1441
25	- 3.788	+ 9.114	27.918	+ 1.436	- 9.114	+ 16.520	- 9.322	- 5	+0.1468
26	- 3.787	+ 9.078	27.882	+ 1.491	- 9.078	+ 16.668	- 9.018	- 5	+0.1496
27	- 3.745	+ 9.052	27.854	+ 1.563	- 9.052	+ 16.811	- 8.710	- 5	+0.1523
28	- 3.676	+ 9.042	27.843	+ 1.645	- 9.042	+ 16.950	- 8.399	- 5	+0.1550
29	- 3.599	+ 9.051	27.850	+ 1.730	- 9.051	+ 17.084	- 8.085	- 5	+0.1578
30	- 3.530	+ 9.079	27.877	+ 1.813	- 9.079	+ 17.214	- 7.769	- 5	+0.1605
31	- 3.485	+ 9.123	27.919	+ 1.886	- 9.123	+ 17.338	- 7.449	- 5	+0.1632
Sept. 1	- 3.475	+ 9.178	27.973	+ 1.945	- 9.178	+ 17.457	- 7.127	- 5	+0.1660
2	- 3.505	+ 9.238	28.032	+ 1.987	- 9.238	+ 17.571	- 6.802	- 5	+0.1687
3	- 3.578	+ 9.295	28.087	+ 2.013	- 9.295	+ 17.680	- 6.475	- 5	+0.1715
4	- 3.687	+ 9.342	28.133	+ 2.025	- 9.342	+ 17.784	- 6.146	- 5	+0.1742
5	- 3.822	+ 9.373	28.163	+ 2.026	- 9.373	+ 17.882	- 5.814	- 5	+0.1769
6	- 3.965	+ 9.384	28.173	+ 2.024	- 9.384	+ 17.975	- 5.481	- 5	+0.1797
7	- 4.097	+ 9.375	28.162	+ 2.026	- 9.375	+ 18.062	- 5.145	- 6	+0.1824
8	- 4.199	+ 9.347	28.133	+ 2.040	- 9.347	+ 18.144	- 4.808	- 6	+0.1851
9	- 4.255	+ 9.308	28.093	+ 2.073	- 9.308	+ 18.221	- 4.470	- 6	+0.1879
10	- 4.255	+ 9.266	28.050	+ 2.128	- 9.266	+ 18.292	- 4.130	- 6	+0.1906
11	- 4.200	+ 9.232	28.015	+ 2.205	- 9.232	+ 18.357	- 3.789	- 6	+0.1934
12	- 4.101	+ 9.218	27.999	+ 2.299	- 9.218	+ 18.417	- 3.448	- 6	+0.1961
13	- 3.983	+ 9.230	28.010	+ 2.401	- 9.230	+ 18.471	- 3.105	- 5	+0.1988
14	- 3.877	+ 9.271	28.050	+ 2.498	- 9.271	+ 18.521	- 2.762	- 5	+0.2016
15	- 3.816	+ 9.335	28.112	+ 2.577	- 9.335	+ 18.565	- 2.418	- 5	+0.2043
16	- 3.825	+ 9.407	28.183	+ 2.628	- 9.407	+ 18.604	- 2.074	- 5	+0.2070
17	- 3.906	+ 9.470	28.245	+ 2.651	- 9.470	+ 18.638	- 1.729	- 5	+0.2098
18	- 4.041	+ 9.509	28.282	+ 2.652	- 9.509	+ 18.667	- 1.384	- 6	+0.2125
19	- 4.194	+ 9.514	28.287	+ 2.646	- 9.514	+ 18.691	- 1.038	- 6	+0.2153
20	- 4.328	+ 9.489	28.260	+ 2.648	- 9.489	+ 18.711	- 0.691	- 6	+0.2180
21	- 4.417	+ 9.442	28.212	+ 2.667	- 9.442	+ 18.725	- 0.343	- 6	+0.2207
22	- 4.449	+ 9.388	28.157	+ 2.709	- 9.388	+ 18.734	+ 0.005	- 6	+0.2235
23	- 4.431	+ 9.341	28.108	+ 2.771	- 9.341	+ 18.738	+ 0.354	- 6	+0.2262
24	- 4.379	+ 9.308	28.074	+ 2.847	- 9.308	+ 18.736	+ 0.704	- 6	+0.2290
25	- 4.312	+ 9.295	28.060	+ 2.928	- 9.295	+ 18.729	+ 1.054	- 6	+0.2317
26	- 4.249	+ 9.302	28.065	+ 3.008	- 9.302	+ 18.717	+ 1.404	- 6	+0.2344
27	- 4.206	+ 9.326	28.088	+ 3.081	- 9.326	+ 18.699	+ 1.755	- 6	+0.2372
28	- 4.194	+ 9.363	28.124	+ 3.140	- 9.363	+ 18.675	+ 2.105	- 6	+0.2399
29	- 4.223	+ 9.406	28.166	+ 3.184	- 9.406	+ 18.645	+ 2.456	- 6	+0.2426
30	- 4.292	+ 9.448	28.207	+ 3.211	- 9.448	+ 18.610	+ 2.807	- 6	+0.2454
Oct. 1	- 4.400	+ 9.482	28.239	+ 3.223	- 9.482	+ 18.569	+ 3.157	- 6	+0.2481

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year (0 ⁰⁰⁰¹)
	in Long.	in Obl.		A	B	C	D	E	
	"	"		"	"	"	"	"	
Oct.	— 4.400	+ 9.482	28.239	+ 3.223	- 9.482	+ 18.569	+ 3.157	— 6	+ 0.2481
	— 4.535	+ 9.501	28.257	+ 3.224	- 9.501	+ 18.522	+ 3.507	— 6	+ 0.2509
	— 4.683	+ 9.501	28.256	+ 3.220	- 9.501	+ 18.470	+ 3.856	— 6	+ 0.2536
	— 4.824	+ 9.479	28.233	+ 3.219	- 9.479	+ 18.411	+ 4.204	— 7	+ 0.2563
	— 4.937	+ 9.438	28.190	+ 3.229	- 9.438	+ 18.347	+ 4.551	— 7	+ 0.2591
	— 5.006	+ 9.383	28.133	+ 3.256	- 9.383	+ 18.276	+ 4.897	— 7	+ 0.2618
	— 5.018	+ 9.323	28.072	+ 3.306	- 9.323	+ 18.200	+ 5.242	— 7	+ 0.2645
	— 4.974	+ 9.269	28.017	+ 3.379	- 9.269	+ 18.119	+ 5.585	— 7	+ 0.2673
	— 4.884	+ 9.232	27.979	+ 3.469	- 9.232	+ 18.031	+ 5.926	— 7	+ 0.2700
	— 4.769	+ 9.220	27.966	+ 3.570	- 9.220	+ 17.939	+ 6.265	— 7	+ 0.2728
	— 4.660	+ 9.236	27.980	+ 3.668	- 9.236	+ 17.840	+ 6.602	— 6	+ 0.2755
	— 4.586	+ 9.275	28.017	+ 3.752	- 9.275	+ 17.737	+ 6.937	— 6	+ 0.2782
	— 4.570	+ 9.326	28.067	+ 3.814	- 9.326	+ 17.629	+ 7.270	— 6	+ 0.2810
	— 4.621	+ 9.374	28.114	+ 3.848	- 9.374	+ 17.515	+ 7.600	— 6	+ 0.2837
	— 4.728	+ 9.404	28.143	+ 3.860	- 9.404	+ 17.397	+ 7.929	— 7	+ 0.2864
	— 4.866	+ 9.406	28.144	+ 3.861	- 9.406	+ 17.273	+ 8.255	— 7	+ 0.2892
	— 4.998	+ 9.376	28.112	+ 3.863	- 9.376	+ 17.145	+ 8.579	— 7	+ 0.2919
	— 5.093	+ 9.320	28.055	+ 3.880	- 9.320	+ 17.012	+ 8.901	— 7	+ 0.2947
	— 5.132	+ 9.251	27.985	+ 3.919	- 9.251	+ 16.875	+ 9.220	— 7	+ 0.2974
	— 5.113	+ 9.182	27.915	+ 3.982	- 9.182	+ 16.732	+ 9.538	— 7	+ 0.3001
Nov.	— 5.049	+ 9.126	27.857	+ 4.062	- 9.126	+ 16.585	+ 9.854	— 7	+ 0.3029
	— 4.959	+ 9.089	27.819	+ 4.153	- 9.089	+ 16.432	+ 10.167	— 7	+ 0.3056
	— 4.865	+ 9.073	27.802	+ 4.245	- 9.073	+ 16.274	+ 10.478	— 7	+ 0.3084
	— 4.787	+ 9.077	27.804	+ 4.331	- 9.077	+ 16.112	+ 10.786	— 7	+ 0.3111
	— 4.738	+ 9.096	27.822	+ 4.405	- 9.096	+ 15.944	+ 11.092	— 7	+ 0.3138
	— 4.726	+ 9.124	27.849	+ 4.465	- 9.124	+ 15.771	+ 11.395	— 7	+ 0.3166
	— 4.756	+ 9.153	27.877	+ 4.508	- 9.153	+ 15.593	+ 11.695	— 7	+ 0.3193
	— 4.824	+ 9.177	27.899	+ 4.536	- 9.177	+ 15.409	+ 11.992	— 7	+ 0.3220
	— 4.922	+ 9.188	27.909	+ 4.551	- 9.188	+ 15.221	+ 12.285	— 7	+ 0.3248
	— 5.038	+ 9.181	27.901	+ 4.560	- 9.181	+ 15.028	+ 12.576	— 7	+ 0.3275
	— 5.152	+ 9.154	27.872	+ 4.570	- 9.154	+ 14.829	+ 12.862	— 7	+ 0.3303
	— 5.244	+ 9.105	27.823	+ 4.588	- 9.105	+ 14.626	+ 13.146	— 7	+ 0.3330
	— 5.294	+ 9.041	27.757	+ 4.623	- 9.041	+ 14.418	+ 13.425	— 7	+ 0.3357
	— 5.286	+ 8.969	27.683	+ 4.681	- 8.969	+ 14.204	+ 13.700	— 7	+ 0.3385
	— 5.218	+ 8.900	27.614	+ 4.763	- 8.900	+ 13.987	+ 13.970	— 7	+ 0.3412
	— 5.097	+ 8.848	27.560	+ 4.866	- 8.848	+ 13.764	+ 14.237	— 7	+ 0.3439
	— 4.946	+ 8.820	27.531	+ 4.981	- 8.820	+ 13.537	+ 14.498	— 7	+ 0.3467
	— 4.795	+ 8.820	27.530	+ 5.096	- 8.820	+ 13.306	+ 14.755	— 7	+ 0.3494
	— 4.674	+ 8.846	27.554	+ 5.199	- 8.846	+ 13.070	+ 15.008	— 6	+ 0.3522
	— 4.608	+ 8.886	27.593	+ 5.280	- 8.886	+ 12.831	+ 15.255	— 6	+ 0.3549
	— 4.606	+ 8.927	27.633	+ 5.336	- 8.927	+ 12.588	+ 15.498	— 6	+ 0.3576
	— 4.662	+ 8.955	27.659	+ 5.368	- 8.955	+ 12.342	+ 15.735	— 6	+ 0.3604
	— 4.753	+ 8.958	27.661	+ 5.387	- 8.958	+ 12.092	+ 15.968	— 7	+ 0.3631
	— 4.849	+ 8.932	27.634	+ 5.404	- 8.932	+ 11.838	+ 16.196	— 7	+ 0.3658
	— 4.918	+ 8.880	27.580	+ 5.431	- 8.880	+ 11.581	+ 16.420	— 7	+ 0.3686
	— 4.939	+ 8.811	27.510	+ 5.478	- 8.811	+ 11.321	+ 16.639	— 7	+ 0.3713
	— 4.901	+ 8.737	27.435	+ 5.547	- 8.737	+ 11.057	+ 16.853	— 7	+ 0.3741

NUTATION, OBLIQUITY, DAY NUMBERS, 2005

11

FOR 0^h TERRESTRIAL TIME

Date 0 ^h TT	Nutation		Obl. of Ecliptic 23° 26'	Besselian Day Numbers for Mean Equinox J2005.5					Fraction of Year τ (0 ⁰⁰⁰¹)
	in Long.	in Obl.		A	B	C	D	E	
	"	"		"	"	"	"	"	
Nov. 16	- 4.901	+ 8.737	27.435	+ 5.547	- 8.737	+ 11.057	+ 16.853	- 7	+ 0.3741
17	- 4.811	+ 8.672	27.369	+ 5.638	- 8.672	+ 10.790	+ 17.063	- 7	+ 0.3768
18	- 4.685	+ 8.624	27.320	+ 5.743	- 8.624	+ 10.520	+ 17.268	- 6	+ 0.3795
19	- 4.545	+ 8.599	27.293	+ 5.854	- 8.599	+ 10.247	+ 17.469	- 6	+ 0.3823
20	- 4.413	+ 8.594	27.287	+ 5.961	- 8.594	+ 9.970	+ 17.664	- 6	+ 0.3850
21	- 4.307	+ 8.608	27.300	+ 6.058	- 8.608	+ 9.689	+ 17.855	- 6	+ 0.3877
22	- 4.237	+ 8.634	27.324	+ 6.141	- 8.634	+ 9.406	+ 18.040	- 6	+ 0.3905
23	- 4.209	+ 8.664	27.353	+ 6.207	- 8.664	+ 9.119	+ 18.221	- 6	+ 0.3932
24	- 4.221	+ 8.692	27.379	+ 6.257	- 8.692	+ 8.829	+ 18.396	- 6	+ 0.3960
25	- 4.267	+ 8.709	27.396	+ 6.294	- 8.709	+ 8.535	+ 18.566	- 6	+ 0.3987
26	- 4.335	+ 8.712	27.397	+ 6.322	- 8.712	+ 8.239	+ 18.730	- 6	+ 0.4014
27	- 4.408	+ 8.695	27.378	+ 6.347	- 8.695	+ 7.939	+ 18.889	- 6	+ 0.4042
28	- 4.467	+ 8.657	27.340	+ 6.379	- 8.657	+ 7.637	+ 19.042	- 6	+ 0.4069
29	- 4.492	+ 8.602	27.284	+ 6.424	- 8.602	+ 7.332	+ 19.189	- 6	+ 0.4097
30	- 4.463	+ 8.536	27.216	+ 6.490	- 8.536	+ 7.024	+ 19.329	- 6	+ 0.4124
Dec. 1	- 4.371	+ 8.470	27.148	+ 6.581	- 8.470	+ 6.713	+ 19.464	- 6	+ 0.4151
2	- 4.219	+ 8.416	27.093	+ 6.697	- 8.416	+ 6.400	+ 19.593	- 6	+ 0.4179
3	- 4.025	+ 8.386	27.062	+ 6.829	- 8.386	+ 6.085	+ 19.714	- 6	+ 0.4206
4	- 3.821	+ 8.386	27.061	+ 6.965	- 8.386	+ 5.767	+ 19.830	- 5	+ 0.4233
5	- 3.643	+ 8.415	27.089	+ 7.091	- 8.415	+ 5.448	+ 19.939	- 5	+ 0.4261
6	- 3.519	+ 8.463	27.135	+ 7.195	- 8.463	+ 5.127	+ 20.041	- 5	+ 0.4288
7	- 3.463	+ 8.515	27.186	+ 7.272	- 8.515	+ 4.805	+ 20.136	- 5	+ 0.4316
8	- 3.470	+ 8.557	27.227	+ 7.324	- 8.557	+ 4.482	+ 20.225	- 5	+ 0.4343
9	- 3.519	+ 8.576	27.245	+ 7.359	- 8.576	+ 4.157	+ 20.308	- 5	+ 0.4370
10	- 3.581	+ 8.568	27.235	+ 7.390	- 8.568	+ 3.832	+ 20.385	- 5	+ 0.4398
11	- 3.625	+ 8.534	27.200	+ 7.427	- 8.534	+ 3.505	+ 20.455	- 5	+ 0.4425
12	- 3.628	+ 8.481	27.146	+ 7.481	- 8.481	+ 3.178	+ 20.519	- 5	+ 0.4452
13	- 3.578	+ 8.422	27.085	+ 7.556	- 8.422	+ 2.850	+ 20.577	- 5	+ 0.4480
14	- 3.475	+ 8.367	27.029	+ 7.651	- 8.367	+ 2.521	+ 20.630	- 5	+ 0.4507
15	- 3.332	+ 8.327	26.988	+ 7.763	- 8.327	+ 2.192	+ 20.676	- 5	+ 0.4535
16	- 3.168	+ 8.309	26.968	+ 7.883	- 8.309	+ 1.862	+ 20.716	- 4	+ 0.4562
17	- 3.004	+ 8.312	26.970	+ 8.003	- 8.312	+ 1.531	+ 20.750	- 4	+ 0.4589
18	- 2.861	+ 8.335	26.993	+ 8.115	- 8.335	+ 1.199	+ 20.778	- 4	+ 0.4617
19	- 2.752	+ 8.373	27.029	+ 8.213	- 8.373	+ 0.867	+ 20.800	- 4	+ 0.4644
20	- 2.686	+ 8.418	27.073	+ 8.294	- 8.418	+ 0.534	+ 20.816	- 4	+ 0.4671
21	- 2.663	+ 8.463	27.116	+ 8.358	- 8.463	+ 0.201	+ 20.826	- 4	+ 0.4699
22	- 2.678	+ 8.501	27.153	+ 8.407	- 8.501	- 0.132	+ 20.829	- 4	+ 0.4726
23	- 2.720	+ 8.525	27.175	+ 8.445	- 8.525	- 0.466	+ 20.826	- 4	+ 0.4754
24	- 2.775	+ 8.531	27.181	+ 8.479	- 8.531	- 0.800	+ 20.817	- 4	+ 0.4781
25	- 2.824	+ 8.519	27.167	+ 8.514	- 8.519	- 1.134	+ 20.801	- 4	+ 0.4808
26	- 2.847	+ 8.488	27.135	+ 8.559	- 8.488	- 1.469	+ 20.779	- 4	+ 0.4836
27	- 2.828	+ 8.444	27.090	+ 8.622	- 8.444	- 1.803	+ 20.750	- 4	+ 0.4863
28	- 2.750	+ 8.395	27.039	+ 8.708	- 8.395	- 2.137	+ 20.714	- 4	+ 0.4890
29	- 2.610	+ 8.352	26.995	+ 8.818	- 8.352	- 2.471	+ 20.671	- 4	+ 0.4918
30	- 2.417	+ 8.329	26.971	+ 8.950	- 8.329	- 2.804	+ 20.622	- 3	+ 0.4945
31	- 2.198	+ 8.336	26.976	+ 9.092	- 8.336	- 3.136	+ 20.566	- 3	+ 0.4973
32	- 1.989	+ 8.374	27.014	+ 9.230	- 8.374	- 3.467	+ 20.502	- 3	+ 0.5000

J for NORTHERN DECLINATIONS
FOR 0^h TT AND EQUINOX J2005.5

Date	Right Ascension												
	0 ^h 12 ^h	1 ^h 13 ^h	2 ^h 14 ^h	3 ^h 15 ^h	4 ^h 16 ^h	5 ^h 17 ^h	6 ^h 18 ^h	7 ^h 19 ^h	8 ^h 20 ^h	9 ^h 21 ^h	10 ^h 22 ^h	11 ^h 23 ^h	12 ^h 24 ^h
Jan. 0	- 3	- 3	- 2	- 1	0	+ 2	+ 3	+ 3	+ 2	+ 1	0	- 2	- 3
10	- 3	- 4	- 4	- 2	0	+ 2	+ 3	+ 4	+ 4	+ 2	0	- 2	- 3
20	- 4	- 5	- 5	- 4	- 2	+ 1	+ 4	+ 5	+ 5	+ 4	+ 2	- 1	- 4
30	- 3	- 6	- 7	- 6	- 4	0	+ 3	+ 6	+ 7	+ 6	+ 4	0	- 3
Feb. 9	- 2	- 6	- 8	- 8	- 6	- 2	+ 2	+ 6	+ 8	+ 8	+ 6	+ 2	- 2
19	- 1	- 5	- 9	-10	- 8	- 4	+ 1	+ 5	+ 9	+10	+ 8	+ 4	- 1
Mar. 1	+ 2	- 4	- 9	-11	-11	- 7	- 2	+ 4	+ 9	+11	+11	+ 7	+ 2
11	+ 4	- 2	- 8	-12	-13	-10	- 4	+ 2	+ 8	+12	+13	+10	+ 4
21	+ 7	+ 1	- 6	-11	-13	-12	- 7	- 1	+ 6	+11	+13	+12	+ 7
31	+10	+ 4	- 4	-10	-14	-14	-10	- 4	+ 4	+10	+14	+14	+10
Apr. 10	+12	+ 7	- 1	- 8	-13	-15	-12	- 7	+ 1	+ 8	+13	+15	+12
20	+14	+ 9	+ 2	- 6	-12	-15	-14	- 9	- 2	+ 6	+12	+15	+14
30	+14	+11	+ 5	- 3	- 9	-14	-14	-11	- 5	+ 3	+ 9	+14	+14
May 10	+14	+12	+ 7	0	- 7	-12	-14	-12	- 7	0	+ 7	+12	+14
20	+13	+13	+ 9	+ 3	- 4	-10	-13	-13	- 9	- 3	+ 4	+10	+13
30	+11	+12	+10	+ 5	- 1	- 7	-11	-12	-10	- 5	+ 1	+ 7	+11
June 9	+ 9	+11	+10	+ 7	+ 1	- 4	- 9	-11	-10	- 7	- 1	+ 4	+ 9
19	+ 7	+ 9	+10	+ 7	+ 3	- 2	- 7	- 9	-10	- 7	- 3	+ 2	+ 7
29	+ 4	+ 7	+ 9	+ 7	+ 4	0	- 4	- 7	- 9	- 7	- 4	0	+ 4
July 9	+ 2	+ 5	+ 7	+ 7	+ 5	+ 2	- 2	- 5	- 7	- 7	- 5	- 2	+ 2
19	0	+ 3	+ 5	+ 6	+ 5	+ 3	0	- 3	- 5	- 6	- 5	- 3	0
29	- 1	+ 1	+ 3	+ 4	+ 4	+ 3	+ 1	- 1	- 3	- 4	- 4	- 3	- 1
Aug. 8	- 2	0	+ 1	+ 3	+ 3	+ 3	+ 2	0	- 1	- 3	- 3	- 3	- 2
18	- 2	- 1	0	+ 1	+ 2	+ 2	+ 2	+ 1	0	- 1	- 2	- 2	- 2
28	- 2	- 2	- 1	0	+ 1	+ 1	+ 2	+ 2	+ 1	0	- 1	- 1	- 2
Sept. 7	- 1	- 1	- 1	- 1	0	0	+ 1	+ 1	+ 1	+ 1	0	0	- 1
17	0	0	- 1	- 1	- 1	- 1	0	0	+ 1	+ 1	+ 1	+ 1	0
27	+ 1	+ 1	0	- 1	- 2	- 2	- 1	- 1	0	+ 1	+ 2	+ 2	+ 1
Oct. 7	+ 2	+ 2	+ 1	0	- 1	- 2	- 2	- 2	- 1	0	+ 1	+ 2	+ 2
17	+ 3	+ 3	+ 3	+ 2	0	- 2	- 3	- 3	- 3	- 2	0	+ 2	+ 3
27	+ 3	+ 5	+ 5	+ 4	+ 1	- 1	- 3	- 5	- 5	- 4	- 1	+ 1	+ 3
Nov. 6	+ 3	+ 5	+ 6	+ 6	+ 4	0	- 3	- 5	- 6	- 6	- 4	0	+ 3
16	+ 2	+ 5	+ 8	+ 8	+ 6	+ 3	- 2	- 5	- 8	- 8	- 6	- 3	+ 2
26	0	+ 5	+ 9	+10	+ 9	+ 5	0	- 5	- 9	-10	- 9	- 5	0
Dec. 6	- 3	+ 3	+ 9	+12	+12	+ 8	+ 3	- 3	- 9	-12	-12	- 8	- 3
16	- 6	+ 1	+ 8	+13	+14	+11	+ 6	- 1	- 8	-13	-14	-11	- 6
26	- 9	- 2	+ 6	+12	+15	+14	+ 9	+ 2	- 6	-12	-15	-14	- 9
36	-13	- 5	+ 3	+11	+16	+17	+13	+ 5	- 3	-11	-16	-17	-13

The second-order day number *J* is given in this table in units of 0^{000 01}.

The apparent right ascension of a star is given by:

$$\alpha = \alpha_1 + \tau \mu_\alpha / 100 + Aa + Bb + Cc + Dd + E + J \tan^2 \delta_1$$

where the position (α_1, δ_1) and centennial proper motion in right ascension (μ_α) are referred to the mean equator and equinox of J2005.5

J' for NORTHERN DECLINATIONS
FOR 0^h TT AND EQUINOX J2005.5

Date	Right Ascension												
	0 ^h 12 ^h	1 ^h 13 ^h	2 ^h 14 ^h	3 ^h 15 ^h	4 ^h 16 ^h	5 ^h 17 ^h	6 ^h 18 ^h	7 ^h 19 ^h	8 ^h 20 ^h	9 ^h 21 ^h	10 ^h 22 ^h	11 ^h 23 ^h	12 ^h 24 ^h
Jan. 0	-3	-2	-1	0	0	0	-1	-2	-3	-4	-4	-4	-3
10	-5	-3	-2	-1	0	0	-1	-3	-4	-6	-6	-6	-5
20	-7	-5	-3	-1	0	0	-1	-3	-5	-7	-8	-8	-7
30	-10	-8	-6	-3	-1	0	-1	-3	-5	-8	-10	-11	-10
Feb. 9	-13	-11	-8	-5	-2	0	0	-2	-5	-8	-11	-13	-13
19	-15	-14	-11	-7	-3	-1	0	-1	-4	-8	-12	-14	-15
Mar. 1	-17	-17	-14	-10	-6	-2	0	-1	-3	-7	-12	-15	-17
11	-18	-19	-17	-13	-8	-3	-1	0	-2	-6	-11	-16	-18
21	-19	-20	-19	-16	-11	-5	-2	0	-1	-5	-10	-15	-19
31	-18	-21	-21	-18	-13	-8	-3	0	0	-3	-8	-13	-18
Apr. 10	-17	-21	-22	-20	-16	-10	-5	-1	0	-2	-6	-12	-17
20	-15	-20	-22	-21	-18	-13	-7	-2	0	-1	-4	-10	-15
30	-13	-18	-21	-22	-19	-14	-9	-4	-1	0	-3	-7	-13
May 10	-10	-16	-20	-21	-20	-16	-11	-6	-2	0	-1	-5	-10
20	-8	-13	-18	-20	-20	-17	-12	-7	-3	0	0	-3	-8
30	-6	-10	-15	-18	-18	-17	-13	-8	-4	-1	0	-2	-6
June 9	-3	-7	-12	-15	-17	-16	-13	-9	-5	-2	0	-1	-3
19	-2	-5	-9	-12	-15	-15	-13	-10	-6	-3	0	0	-2
29	-1	-3	-6	-10	-12	-13	-12	-10	-6	-3	-1	0	-1
July 9	0	-2	-4	-7	-9	-10	-10	-9	-7	-4	-2	0	0
19	0	-1	-2	-4	-6	-8	-9	-8	-6	-4	-2	-1	0
29	0	0	-1	-2	-4	-6	-7	-7	-6	-4	-3	-1	0
Aug. 8	0	0	0	-1	-2	-3	-4	-5	-5	-4	-3	-1	0
18	-1	0	0	0	-1	-2	-2	-3	-4	-3	-3	-2	-1
28	-2	-1	0	0	0	-1	-2	-2	-3	-3	-2	-2	-2
Sept. 7	-2	-1	-1	0	0	0	0	-1	-1	-2	-2	-2	-2
17	-2	-2	-2	-1	-1	0	0	0	0	-1	-1	-2	-2
27	-2	-3	-3	-2	-2	-1	-1	0	0	0	-1	-1	-2
Oct. 7	-2	-3	-3	-4	-3	-3	-2	-1	0	0	0	-1	-2
17	-1	-3	-4	-5	-5	-5	-4	-2	-1	0	0	0	-1
27	-1	-3	-5	-6	-7	-7	-6	-5	-3	-1	0	0	-1
Nov. 6	-1	-2	-5	-7	-9	-10	-9	-8	-5	-3	-1	0	-1
16	0	-2	-4	-7	-10	-12	-12	-11	-8	-5	-2	0	0
26	0	-1	-4	-7	-11	-14	-15	-14	-12	-8	-4	-1	0
Dec. 6	0	0	-3	-7	-12	-16	-18	-18	-15	-11	-7	-3	0
16	-1	0	-2	-6	-11	-16	-20	-21	-19	-15	-10	-5	-1
26	-2	0	-1	-5	-10	-16	-21	-23	-22	-19	-13	-7	-2
36	-4	-1	0	-3	-9	-15	-21	-25	-26	-23	-17	-10	-4

The second-order day number *J'* is given in this table in units of 0⁰0001.

The apparent declination of a star is given by:

$$\delta = \delta_1 + \tau \mu_\delta / 100 + Aa' + Bb' + Cc' + J' \tan \delta_1$$

where the declination (δ_1) and centennial proper motion in declination (μ_δ) are referred to the mean equator and equinox of J2005.5

SECOND-ORDER DAY NUMBERS, 2005

J for SOUTHERN DECLINATIONS
FOR 0^h TT AND EQUINOX J2005.5

Date	Right Ascension												
	0 ^h 12 ^h	1 ^h 13 ^h	2 ^h 14 ^h	3 ^h 15 ^h	4 ^h 16 ^h	5 ^h 17 ^h	6 ^h 18 ^h	7 ^h 19 ^h	8 ^h 20 ^h	9 ^h 21 ^h	10 ^h 22 ^h	11 ^h 23 ^h	12 ^h 24 ^h
Jan. 0	+ 5	+13	+18	+18	+13	+ 5	- 5	-13	-18	-18	-13	- 5	+ 5
10	+ 1	+ 9	+15	+16	+14	+ 7	- 1	- 9	-15	-16	-14	- 7	+ 1
20	- 2	+ 6	+11	+14	+13	+ 8	+ 2	- 6	-11	-14	-13	- 8	- 2
30	- 3	+ 3	+ 8	+11	+12	+ 9	+ 3	- 3	- 8	-11	-12	- 9	- 3
Feb. 9	- 5	0	+ 5	+ 8	+10	+ 8	+ 5	0	- 5	- 8	-10	- 8	- 5
19	- 5	- 2	+ 2	+ 6	+ 7	+ 7	+ 5	+ 2	- 2	- 6	- 7	- 7	- 5
Mar. 1	- 5	- 3	0	+ 3	+ 5	+ 6	+ 5	+ 3	0	- 3	- 5	- 6	- 5
11	- 4	- 3	- 1	+ 1	+ 3	+ 4	+ 4	+ 3	+ 1	- 1	- 3	- 4	- 4
21	- 3	- 3	- 2	0	+ 1	+ 2	+ 3	+ 3	+ 2	0	- 1	- 2	- 3
31	- 1	- 2	- 2	- 1	0	+ 1	+ 1	+ 2	+ 2	+ 1	0	- 1	- 1
Apr. 10	0	- 1	- 1	- 1	- 1	0	0	+ 1	+ 1	+ 1	+ 1	0	0
20	+ 1	0	0	- 1	- 1	- 1	- 1	0	0	+ 1	+ 1	+ 1	+ 1
30	+ 1	+ 1	+ 1	0	- 1	- 1	- 1	- 1	- 1	0	+ 1	+ 1	+ 1
May 10	+ 1	+ 2	+ 2	+ 1	0	0	- 1	- 2	- 2	- 1	0	0	+ 1
20	+ 1	+ 2	+ 2	+ 2	+ 2	+ 1	- 1	- 2	- 2	- 2	- 2	- 1	+ 1
30	- 1	+ 1	+ 3	+ 3	+ 3	+ 2	+ 1	- 1	- 3	- 3	- 3	- 2	- 1
June 9	- 2	0	+ 2	+ 4	+ 4	+ 4	+ 2	0	- 2	- 4	- 4	- 4	- 2
19	- 4	- 2	+ 1	+ 4	+ 5	+ 5	+ 4	+ 2	- 1	- 4	- 5	- 5	- 4
29	- 6	- 4	0	+ 3	+ 6	+ 7	+ 6	+ 4	0	- 3	- 6	- 7	- 6
July 9	- 8	- 6	- 2	+ 2	+ 6	+ 8	+ 8	+ 6	+ 2	- 2	- 6	- 8	- 8
19	- 9	- 8	- 4	0	+ 5	+ 8	+ 9	+ 8	+ 4	0	- 5	- 8	- 9
29	-10	-10	- 7	- 2	+ 3	+ 8	+10	+10	+ 7	+ 2	- 3	- 8	-10
Aug. 8	-10	-11	- 9	- 5	+ 1	+ 7	+10	+11	+ 9	+ 5	- 1	- 7	-10
18	-10	-12	-11	- 7	- 1	+ 5	+10	+12	+11	+ 7	+ 1	- 5	-10
28	- 8	-12	-12	- 9	- 4	+ 3	+ 8	+12	+12	+ 9	+ 4	- 3	- 8
Sept. 7	- 6	-11	-13	-11	- 7	0	+ 6	+11	+13	+11	+ 7	0	- 6
17	- 4	-10	-13	-12	- 9	- 3	+ 4	+10	+13	+12	+ 9	+ 3	- 4
27	- 1	- 7	-12	-13	-10	- 5	+ 1	+ 7	+12	+13	+10	+ 5	- 1
Oct. 7	+ 2	- 5	-10	-12	-11	- 8	- 2	+ 5	+10	+12	+11	+ 8	+ 2
17	+ 4	- 2	- 8	-11	-12	- 9	- 4	+ 2	+ 8	+11	+12	+ 9	+ 4
27	+ 6	0	- 5	- 9	-11	-10	- 6	0	+ 5	+ 9	+11	+10	+ 6
Nov. 6	+ 7	+ 3	- 2	- 7	- 9	- 9	- 7	- 3	+ 2	+ 7	+ 9	+ 9	+ 7
16	+ 7	+ 4	0	- 4	- 7	- 8	- 7	- 4	0	+ 4	+ 7	+ 8	+ 7
26	+ 7	+ 5	+ 2	- 2	- 5	- 7	- 7	- 5	- 2	+ 2	+ 5	+ 7	+ 7
Dec. 6	+ 6	+ 5	+ 3	0	- 3	- 5	- 6	- 5	- 3	0	+ 3	+ 5	+ 6
16	+ 4	+ 4	+ 3	+ 1	- 1	- 3	- 4	- 4	- 3	- 1	+ 1	+ 3	+ 4
26	+ 3	+ 3	+ 3	+ 2	0	- 2	- 3	- 3	- 3	- 2	0	+ 2	+ 3
36	+ 1	+ 2	+ 2	+ 2	+ 1	0	- 1	- 2	- 2	- 2	- 1	0	+ 1

The second-order day number *J* is given in this table in units of 0⁰000.01.
The apparent right ascension of a star is given by:

$$\alpha = \alpha_1 + \tau \mu_\alpha / 100 + Aa + Bb + Cc + Dd + E + J \tan^2 \delta_1$$

where the position (α_1, δ_1) and centennial proper motion in right ascension (μ_α) are referred to the mean equator and equinox of J2005.5

J' for SOUTHERN DECLINATIONS
FOR 0^h TT AND EQUINOX J2005.5

Date	Right Ascension												
	0 ^h 12 ^h	1 ^h 13 ^h	2 ^h 14 ^h	3 ^h 15 ^h	4 ^h 16 ^h	5 ^h 17 ^h	6 ^h 18 ^h	7 ^h 19 ^h	8 ^h 20 ^h	9 ^h 21 ^h	10 ^h 22 ^h	11 ^h 23 ^h	12 ^h 24 ^h
Jan. 0	0	- 4	-10	-17	-24	-27	-27	-24	-18	-10	- 4	0	0
10	0	- 2	- 7	-13	-19	-23	-25	-23	-18	-11	- 5	- 1	0
20	0	- 1	- 4	-10	-15	-19	-21	-21	-17	-12	- 6	- 2	0
30	0	0	- 2	- 6	-11	-15	-18	-18	-16	-12	- 7	- 3	0
Feb. 9	- 1	0	- 1	- 4	- 7	-11	-13	-14	-13	-11	- 7	- 4	- 1
19	- 2	0	0	- 2	- 4	- 7	-10	-11	-11	-10	- 7	- 4	- 2
Mar. 1	- 2	0	0	- 1	- 2	- 5	- 7	- 8	- 9	- 8	- 6	- 4	- 2
11	- 2	- 1	0	0	- 1	- 2	- 4	- 5	- 6	- 6	- 5	- 4	- 2
21	- 2	- 1	0	0	0	- 1	- 2	- 3	- 4	- 4	- 4	- 3	- 2
31	- 2	- 2	- 1	0	0	0	- 1	- 1	- 2	- 3	- 3	- 3	- 2
Apr. 10	- 2	- 2	- 1	- 1	0	0	0	0	- 1	- 1	- 2	- 2	- 2
20	- 1	- 2	- 2	- 1	- 1	- 1	0	0	0	0	- 1	- 1	- 1
30	- 1	- 1	- 2	- 2	- 2	- 1	- 1	- 1	0	0	0	0	- 1
May 10	0	- 1	- 2	- 2	- 2	- 2	- 2	- 2	- 1	0	0	0	0
20	0	0	- 1	- 2	- 3	- 3	- 3	- 3	- 2	- 1	- 1	0	0
30	0	0	- 1	- 2	- 3	- 4	- 5	- 5	- 4	- 3	- 2	- 1	0
June 9	0	0	0	- 2	- 3	- 5	- 6	- 7	- 6	- 5	- 3	- 2	0
19	- 1	0	0	- 1	- 3	- 5	- 7	- 8	- 8	- 7	- 5	- 3	- 1
29	- 3	- 1	0	- 1	- 2	- 5	- 8	-10	-10	-10	- 8	- 5	- 3
July 9	- 4	- 2	0	0	- 2	- 5	- 8	-11	-12	-12	-10	- 8	- 4
19	- 7	- 3	- 1	0	- 1	- 4	- 7	-11	-13	-14	-13	-10	- 7
29	- 9	- 5	- 2	0	0	- 3	- 6	-10	-14	-15	-15	-13	- 9
Aug. 8	-12	- 8	- 3	- 1	0	- 2	- 5	-10	-14	-16	-17	-15	-12
18	-14	-10	- 5	- 2	0	- 1	- 4	- 8	-13	-16	-18	-17	-14
28	-16	-12	- 7	- 3	0	0	- 2	- 7	-11	-16	-18	-19	-16
Sept. 7	-18	-15	-10	- 5	- 1	0	- 1	- 5	-10	-15	-18	-19	-18
17	-19	-16	-12	- 7	- 3	0	0	- 3	- 8	-13	-17	-19	-19
27	-19	-17	-14	- 9	- 4	- 1	0	- 2	- 6	-10	-15	-18	-19
Oct. 7	-18	-18	-15	-11	- 6	- 2	0	- 1	- 4	- 8	-13	-16	-18
17	-17	-17	-16	-12	- 7	- 3	- 1	0	- 2	- 6	-10	-14	-17
27	-15	-16	-15	-12	- 8	- 4	- 1	0	- 1	- 4	- 8	-12	-15
Nov. 6	-12	-14	-14	-12	- 9	- 5	- 2	0	0	- 2	- 5	- 9	-12
16	- 9	-12	-13	-12	- 9	- 6	- 3	- 1	0	- 1	- 3	- 6	- 9
26	- 7	- 9	-11	-10	- 9	- 6	- 4	- 1	0	0	- 2	- 4	- 7
Dec. 6	- 4	- 7	- 8	- 8	- 8	- 6	- 4	- 2	0	0	- 1	- 2	- 4
16	- 3	- 4	- 6	- 6	- 6	- 5	- 4	- 2	- 1	0	0	- 1	- 3
26	- 1	- 2	- 4	- 4	- 5	- 4	- 4	- 2	- 1	0	0	0	- 1
36	0	- 1	- 2	- 3	- 3	- 3	- 3	- 2	- 1	- 1	0	0	0

The second-order day number *J'* is given in this table in units of 0⁰0001.

The apparent declination of a star is given by:

$$\delta = \delta_1 + \tau \mu_\delta / 100 + Aa' + Bb' + Cc' + J' \tan \delta_1$$

where the declination (δ_1) and centennial proper motion in declination (μ_δ) are referred to the mean equator and equinox of J2005.5