



Astrodienst Ephemeris Tables for the year 2012

tropical geocentric zodiac

contains Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, True Node, Moon's Node, Lilith, Chiron

Programming
Dieter Koch and Alois Treindl
based on Swiss Ephemeris
Code D5EPH

ASTRODIENST EPHEMERIS for the year 2012

geocentric

JANUARY 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	6 40 15	9°35'30	7°7'	19°50'	13°49'	20°7'	0°26'	28°17'	0°51'	28°53'	7°19'	13°D58	12°59'	1°42'	1°54'	S 1
M 2	6 44 12	10°58'39	19° 1'	21°11'	15° 3'	20°21'	0°27'	28°21'	0°52'	28°55'	7°22'	13°D59	12°56'	1°49'	1°57'	M 2
T 3	6 48 9	11°59'48	0°51'	22°33'	16°17'	20°35'	0°29'	28°25'	0°53'	28°57'	7°24'	14° 0'	12°52'	1°55'	2° 0'	T 3
W 4	6 52 5	13° 0'57	12°42'	23°56'	17°30'	20°48'	0°30'	28°28'	0°54'	28°58'	7°26'	14° 2'	12°49'	2° 2'	2° 3'	W 4
T 5	6 56 2	14° 2'05	24°37'	25°20'	18°44'	21° 1'	0°32'	28°32'	0°55'	29° 0'	7°28'	14° 4'	12°46'	2° 9'	2° 6'	T 5
F 6	6 59 58	15° 3'14	6°11'42	26°44'	19°57'	21°13'	0°35'	28°35'	0°57'	29° 2'	7°30'	14° 5'	12°43'	2°15'	2° 9'	F 6
S 7	7 3 55	16° 4'22	18°59'	28°10'	21°10'	21°24'	0°37'	28°38'	0°58'	29° 4'	7°32'	14°R 5'	12°40'	2°22'	2°12'	S 7
S 8	7 7 51	17° 5'30	1°32'	29°36'	22°24'	21°35'	0°40'	28°42'	1° 0'	29° 5'	7°34'	14° 4'	12°37'	2°29'	2°15'	S 8
M 9	7 11 48	18° 6'38	14°22'	1°33'	23°37'	21°46'	0°42'	28°45'	1° 1'	29° 7'	7°36'	14° 0'	12°33'	2°35'	2°18'	M 9
T 10	7 15 45	19° 7'45	27°28'	2°31'	24°50'	21°56'	0°45'	28°48'	1° 3'	29° 9'	7°39'	13°56'	12°30'	2°42'	2°21'	T 10
W11	7 19 41	20° 8'52	10°50'	3°59'	26° 3'	22° 5'	0°49'	28°51'	1° 4'	29°11'	7°41'	13°50'	12°27'	2°49'	2°24'	W11
T 12	7 23 38	21°10'00	24°26'	5°28'	27°16'	22°14'	0°52'	28°53'	1° 6'	29°13'	7°43'	13°43'	12°24'	2°55'	2°27'	T 12
F 13	7 27 34	22°11'06	8°11'13	6°57'	28°29'	22°22'	0°56'	28°56'	1° 7'	29°15'	7°45'	13°37'	12°21'	3° 2'	2°31'	F 13
S 14	7 31 31	23°12'13	22° 8'	8°27'	29°42'	22°29'	0°59'	28°59'	1° 9'	29°17'	7°47'	13°32'	12°17'	3° 9'	2°34'	S 14
S 15	7 35 27	24°13'20	6°10'	9°58'	0°55'	22°36'	1° 3'	29° 1'	1°11'	29°19'	7°49'	13°29'	12°14'	3°15'	2°37'	S 15
M16	7 39 24	25°14'26	20°15'	11°29'	2° 8'	22°42'	1° 7'	29° 4'	1°13'	29°20'	7°51'	13°D27	12°11'	3°22'	2°41'	M16
T 17	7 43 20	26°15'33	4°11'23	13° 0'	3°21'	22°47'	1°12'	29° 6'	1°14'	29°22'	7°53'	13°27'	12° 8'	3°29'	2°44'	T 17
W18	7 47 17	27°16'39	18°32'	14°32'	4°34'	22°52'	1°16'	29° 8'	1°16'	29°24'	7°55'	13°29'	12° 5'	3°35'	2°47'	W18
T 19	7 51 14	28°17'45	2°40'	16° 5'	5°46'	22°56'	1°21'	29°10'	1°18'	29°26'	7°57'	13°30'	12° 2'	3°42'	2°51'	T 19
F 20	7 55 10	29°18'51	16°45'	17°38'	6°59'	23° 0'	1°26'	29°12'	1°20'	29°28'	7°59'	13°R30	11°58'	3°49'	2°54'	F 20
S 21	7 59 7	0°19'57	0°34'46	19°12'	8°12'	23° 2'	1°31'	29°14'	1°22'	29°31'	8° 1'	13°29'	11°55'	3°55'	2°58'	S 21
S 22	8 3 3	1°21'02	14°40'	20°46'	9°24'	23° 4'	1°36'	29°16'	1°24'	29°33'	8° 3'	13°25'	11°52'	4° 2'	3° 1'	S 22
M23	8 7 0	2°22'06	28°22'	22°21'	10°36'	23° 5'	1°42'	29°18'	1°26'	29°35'	8° 5'	13°19'	11°49'	4° 9'	3° 5'	M23
T 24	8 10 56	3°23'10	11°50'	23°56'	11°49'	23°R 6'	1°47'	29°19'	1°29'	29°37'	8° 7'	13°11'	11°46'	4°15'	3° 8'	T 24
W25	8 14 53	4°24'13	25° 2'	25°32'	13° 1'	23° 5'	1°53'	29°21'	1°31'	29°39'	8° 9'	13° 1'	11°43'	4°22'	3°12'	W25
T 26	8 18 49	5°25'15	7°55'	27° 9'	14°13'	23° 4'	1°59'	29°22'	1°33'	29°41'	8°11'	12°52'	11°39'	4°29'	3°16'	T 26
F 27	8 22 46	6°26'16	20°30'	28°46'	15°25'	23° 2'	2° 5'	29°23'	1°35'	29°43'	8°13'	12°42'	11°36'	4°36'	3°19'	F 27
S 28	8 26 43	7°27'16	2°49'	0°24'	16°37'	23° 0'	2°12'	29°25'	1°37'	29°45'	8°15'	12°35'	11°33'	4°42'	3°23'	S 28
S 29	8 30 39	8°28'14	14°54'	2° 2'	17°49'	22°56'	2°18'	29°26'	1°40'	29°47'	8°17'	12°29'	11°30'	4°49'	3°27'	S 29
M30	8 34 36	9°29'12	26°48'	3°41'	19° 1'	22°52'	2°25'	29°27'	1°42'	29°50'	8°19'	12°26'	11°27'	4°56'	3°30'	M30
T 31	8 38 32	10°30'09	8°38'	5°21'	20°13'	22°47'	2°32'	29°27'	1°45'	29°52'	8°21'	12°D25	11°23'	5° 2'	3°34'	T 31

Delta T = 66.60 sec

FEBRUARY 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	8 42 29	11°31'04	20°27'	7°22'	21°24'	22°R41	2°38'	29°28'	1°47'	29°54'	8°23'	12°26'	11°20'	5° 9'	3°38'	W 1
T 2	8 46 25	12°31'58	2°11'22	8°43'	22°36'	22°R35	2°46'	29°29'	1°49'	29°56'	8°25'	12°26'	11°17'	5°16'	3°42'	T 2
F 3	8 50 22	13°32'51	14°28'	10°25'	23°47'	22°27'	2°53'	29°29'	1°52'	29°58'	8°26'	12°R27	11°14'	5°22'	3°46'	F 3
S 4	8 54 18	14°33'42	26°50'	12° 7'	24°58'	22°19'	3° 0'	29°30'	1°55'	0° 0'	8°28'	12°26'	11°11'	5°29'	3°49'	S 4
S 5	8 58 15	15°34'32	9°31'	13°51'	26° 9'	22°10'	3° 8'	29°30'	1°57'	0° 3'	8°30'	12°22'	11° 8'	5°36'	3°53'	S 5
M 6	9 2 12	16°35'21	22°33'	15°35'	27°21'	22° 0'	3°16'	29°30'	2° 0'	0° 5'	8°32'	12°16'	11° 4'	5°42'	3°57'	M 6
T 7	9 6 8	17°36'09	5°12'59	17°19'	28°31'	21°50'	3°24'	29°30'	2° 2'	0° 7'	8°34'	12° 8'	11° 1'	5°49'	4° 1'	T 7
W 8	9 10 5	18°36'55	19°45'	19° 5'	29°42'	21°39'	3°32'	29°R30	2° 5'	0° 9'	8°35'	11°57'	10°58'	5°56'	4° 5'	W 8
T 9	9 14 1	19°37'40	3°11'49	20°51'	0°53'	21°27'	3°40'	29°30'	2° 8'	0°12'	8°37'	11°46'	10°55'	6° 2'	4° 9'	T 9
F 10	9 17 58	20°38'23	18° 5'	22°38'	2° 4'	21°14'	3°48'	29°30'	2°11'	0°14'	8°39'	11°35'	10°52'	6° 9'	4°13'	F 10
S 11	9 21 54	21°39'06	2°12'28	24°26'	3°14'	21° 0'	3°57'	29°30'	2°13'	0°16'	8°41'	11°26'	10°49'	6°16'	4°16'	S 11
S 12	9 25 51	22°39'47	16°51'	26°14'	4°24'	20°46'	4° 5'	29°29'	2°16'	0°18'	8°42'	11°19'	10°45'	6°22'	4°20'	S 12
M13	9 29 47	23°40'28	1°11'11	28° 3'	5°34'	20°31'	4°14'	29°29'	2°19'	0°21'	8°44'	11°14'	10°42'	6°29'	4°24'	M13
T 14	9 33 44	24°41'07	15°23'	29°53'	6°44'	20°15'	4°23'	29°28'	2°22'	0°23'	8°45'	11°12'	10°39'	6°36'	4°28'	T 14
W15	9 37 41	25°41'46	29°27'	1°43'	7°54'	19°59'	4°32'	29°28'	2°25'	0°25'	8°47'	11°D12	10°36'	6°42'	4°32'	W15
T 16	9 41 37	26°42'23	13°12'22	3°33'	9° 4'	19°42'	4°41'	29°27'	2°28'	0°27'	8°49'	11°R12	10°33'	6°49'	4°36'	T 16
F 17	9 45 34	27°42'59	27° 7'	5°24'	10°14'	19°24'	4°50'	29°26'	2°31'	0°30'	8°50'	11°11'	10°29'	6°56'	4°40'	F 17
S 18	9 49 30	28°43'34	1°34'44	7°14'	11°23'	19° 6'	5° 0'	29°25'	2°33'	0°32'	8°52'	11° 9'	10°26'	7° 2'	4°44'	S 18
S 19	9 53 27	29°44'07	24°11'	9° 5'	12°33'	18°47'	5° 9'	29°24'	2°36'	0°34'	8°53'	11° 3'	10°23'	7° 9'	4°48'	S 19
M20	9 57 23	0°44'40	7°22'28	10°56'	13°42'	18°27'	5°19'	29°22'	2°39'	0°37'	8°55'	10°54'	10°20'	7°16'	4°52'	M20
T 21	10 1 20	1°45'10	20°34'	12°46'	14°51'	18° 7'	5°29'	29°21'	2°43'	0°39'	8°56'	10°42'	10°17'	7°22'	4°56'	T 21
W22	10 5 16	2°45'39	3°11'28	14°35'	16° 0'	17°46'	5°39'	29°20'	2°46'	0°41'	8°58'	10°29'	10°14'	7°29'	5° 0'	W22
T 23	10 9 13	3°46'07	16° 8'	16°24'	17° 8'	17°25'	5°49'	29°18'	2°49'	0°43'	8°59'	10°15'	10°10'	7°36'	5° 4'	T 23
F 24	10 13 10	4°46'33	28°34'	18°11'	18°17'	17° 3'	5°59'	29°16'	2°52'	0°46'	9° 0'	10° 1'	10° 7'	7°42'	5° 8'	F 24
S 25	10 17 6	5°46'57	10°47'	19°56'	19°25'	16°41'	6° 9'	29°15'	2°55'	0°48'	9° 2'	9°49'	10° 4'	7°49'	5°12'	S 25
S 26	10 21 3	6°47'19	22°49'	21°39'	20°33'	16°19'	6°19'	29°13'	2°58'	0°50'	9° 3'	9°40'	10° 1'	7°56'	5°16'	S 26
M27	10 24 59	7°47'39	4°11'42	23°19'	21°41'	15°56'	6°30'	29°11'	3° 1'	0°53'	9° 5'	9°34'	9°58'	8° 2'	5°20'	M27
T 28	10 28 56	8°47'58	16°30'	24°56'	22°49'	15°33'	6°40'	29° 9'	3° 4'	0°55'	9° 6'	9°31'	9°54'	8° 9'	5°24'	T 28
W29	10 32 52	9°48'14	28°18'	26°11'	23°57'	15°11'	6°51'	29° 7'	3°11'	0°57'	9° 7'	9°29'	9°51'	8°16'	5°28'	W29

Delta T = 66.63 sec

ASTRODIENST EPHEMERIS for the year 2012

geocentric

MARCH 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	10 36 49	10♈48'29	10♏11	27♋58	25♊4	14°R47	7♂2	29°R4	3♊11	0♈59	9♌8	9°R29	9♋48	8♏22	5♈32	T 1
F 2	10 40 45	11°48'41	22°15	29°21	26°11	14♏23	7°13	29♌2	3°14	1°2	9°10	9♋29	9°45	8°29	5°36	F 2
S 3	10 44 42	12°48'52	4♏36	0♊39	27°18	13°59	7°24	29°0	3°17	1°4	9°11	9°28	9°42	8°36	5°40	S 3
S 4	10 48 38	13°49'00	17°17	1°51	28°25	13°36	7°35	28°57	3°21	1°6	9°12	9°24	9°39	8°42	5°44	S 4
M 5	10 52 35	14°49'06	0♏24	2°57	29°31	13°12	7°46	28°55	3°24	1°8	9°13	9°18	9°35	8°49	5°48	M 5
T 6	10 56 32	15°49'11	13°57	3°55	0♈37	12°48	7°57	28°52	3°27	1°11	9°14	9°10	9°32	8°56	5°52	T 6
W 7	11 0 28	16°49'13	27°57	4°45	1°43	12°25	8°9	28°49	3°30	1°13	9°15	8°59	9°29	9°2	5°56	W 7
T 8	11 4 25	17°49'13	12♏21	5°27	2°49	12°1	8°20	28°46	3°34	1°15	9°16	8°47	9°26	9°9	5°59	T 8
F 9	11 8 21	18°49'11	27°1	6°1	3°55	11°38	8°32	28°44	3°37	1°17	9°17	8°35	9°23	9°16	6°3	F 9
S 10	11 12 18	19°49'08	11♌51	6°26	5°0	11°14	8°43	28°41	3°40	1°19	9°18	8°25	9°20	9°22	6°7	S 10
S 11	11 16 14	20°49'02	26°41	6°42	6°5	10°52	8°55	28°37	3°44	1°22	9°19	8°17	9°16	9°29	6°11	S 11
M12	11 20 11	21°48'55	11♏23	6°R49	7°10	10°29	9°7	28°34	3°47	1°24	9°20	8°12	9°13	9°36	6°15	M12
T 13	11 24 7	22°48'46	25°53	6°47	8°14	10°7	9°19	28°31	3°51	1°26	9°21	8°10	9°10	9°42	6°19	T 13
W14	11 28 4	23°48'36	10♋7	6°37	9°18	9°45	9°31	28°28	3°54	1°28	9°22	8°D10	9°7	9°49	6°23	W14
T 15	11 32 1	24°48'24	24°3	6°19	10°22	9°23	9°43	28°24	3°57	1°30	9°23	8°R10	9°4	9°56	6°27	T 15
F 16	11 35 57	25°48'11	7♌42	5°53	11°25	9°2	9°55	28°21	4°1	1°32	9°24	8°9	9°0	10°2	6°30	F 16
S 17	11 39 54	26°47'55	21°6	5°21	12°29	8°41	10°7	28°17	4°4	1°34	9°24	8°7	8°57	10°9	6°34	S 17
S 18	11 43 50	27°47'38	4♏15	4°42	13°31	8°21	10°20	28°14	4°8	1°36	9°25	8°2	8°54	10°16	6°38	S 18
M19	11 47 47	28°47'19	17°12	3°57	14°34	8°2	10°32	28°10	4°11	1°39	9°26	7°54	8°51	10°22	6°42	M19
T 20	11 51 43	29°46'59	29°57	3°9	15°36	7°42	10°44	28°6	4°14	1°41	9°26	7°44	8°48	10°29	6°45	T 20
W21	11 55 40	0♊46'36	12♋31	2°18	16°38	7°24	10°57	28°3	4°18	1°43	9°27	7°32	8°45	10°36	6°49	W21
T 22	11 59 36	1°46'12	24°55	1°24	17°40	7°6	11°9	27°59	4°21	1°45	9°28	7°20	8°41	10°42	6°53	T 22
F 23	12 3 33	2°45'45	7♊8	0°30	18°41	6°49	11°22	27°55	4°25	1°47	9°28	7°8	8°38	10°49	6°56	F 23
S 24	12 7 30	3°45'16	19°12	29♋36	19°41	6°33	11°35	27°51	4°28	1°49	9°29	6°57	8°35	10°56	7°0	S 24
S 25	12 11 26	4°44'46	1♌8	28°44	20°42	6°17	11°48	27°47	4°32	1°51	9°29	6°49	8°32	11°2	7°4	S 25
M26	12 15 23	5°44'13	12°58	27°54	21°42	6°2	12°0	27°43	4°35	1°53	9°30	6°44	8°29	11°9	7°7	M26
T 27	12 19 19	6°43'38	24°44	27°7	22°41	5°47	12°13	27°39	4°38	1°55	9°30	6°41	8°26	11°15	7°11	T 27
W28	12 23 16	7°43'01	6♏32	26°25	23°40	5°34	12°26	27°35	4°42	1°57	9°31	6°D40	8°22	11°22	7°14	W28
T 29	12 27 12	8°42'22	18°24	25°47	24°39	5°21	12°39	27°30	4°45	1°59	9°31	6°40	8°19	11°29	7°18	T 29
F 30	12 31 9	9°41'40	0♏27	25°14	25°37	5°9	12°52	27°26	4°49	2°0	9°32	6°41	8°16	11°35	7°22	F 30
S 31	12 35 5	10°40'56	12♌44	24♋46	26♌35	4°57	13°8	27°22	4°52	2°2	9°32	6°R42	8♋13	11♌42	7♈25	S 31

Delta T = 66.65 sec

APRIL 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	12 39 2	11°40'10	25♏23	24°R24	27♌32	4°R47	13♌19	27°R18	4°55	2°4	9°32	6°R41	8♋10	11♌49	7♈28	S 1
M 2	12 42 59	12°39'21	8♏26	24♋7	28°28	4°37	13°32	27°13	4°59	2°6	9°33	6♋38	8°6	11°55	7°32	M 2
T 3	12 46 55	13°38'30	21°57	23°57	29°25	4°28	13°45	27°9	5°2	2°8	9°33	6°32	8°3	12°2	7°35	T 3
W 4	12 50 52	14°37'37	5♏58	23°D51	0♏20	4°20	13°59	27°4	5°6	2°10	9°33	6°26	8°0	12°9	7°39	W 4
T 5	12 54 48	15°36'41	20°26	23°52	1°15	4°13	14°12	27°0	5°9	2°12	9°33	6°18	7°57	12°15	7°42	T 5
F 6	12 58 45	16°35'43	5♌16	23°58	2°9	4°6	14°25	26°55	5°12	2°13	9°33	6°10	7°54	12°22	7°45	F 6
S 7	13 2 41	17°34'44	20°21	24°9	3°3	4°0	14°39	26°51	5°16	2°15	9°34	6°3	7°51	12°29	7°48	S 7
S 8	13 6 38	18°33'42	5♏30	24°25	3°56	3°55	14°52	26°46	5°19	2°17	9°34	5°58	7°47	12°35	7°52	S 8
M 9	13 10 34	19°32'38	20°34	24°46	4°49	3°51	15°6	26°42	5°23	2°18	9°34	5°55	7°44	12°42	7°55	M 9
T 10	13 14 31	20°31'33	5♋24	25°11	5°40	3°47	15°20	26°37	5°26	2°20	9°34	5°D54	7°41	12°49	7°58	T 10
W11	13 18 27	21°30'26	19°56	25°41	6°31	3°45	15°33	26°33	5°29	2°22	9°R34	5°54	7°38	12°55	8°1	W11
T 12	13 22 24	22°29'17	4♌4	26°16	7°22	3°43	15°47	26°28	5°33	2°23	9°34	5°56	7°35	13°2	8°4	T 12
F 13	13 26 21	23°28'06	17°50	26°54	8°11	3°41	16°1	26°24	5°36	2°25	9°34	5°R57	7°31	13°9	8°7	F 13
S 14	13 30 17	24°26'54	1♏13	27°36	9°0	3°D41	16°14	26°19	5°39	2°27	9°34	5°57	7°28	13°15	8°10	S 14
S 15	13 34 14	25°25'40	14°16	28°21	9°48	3°41	16°28	26°14	5°42	2°28	9°33	5°55	7°25	13°22	8°13	S 15
M16	13 38 10	26°24'24	27°3	29°11	10°35	3°42	16°42	26°10	5°46	2°30	9°33	5°51	7°22	13°29	8°16	M16
T 17	13 42 7	27°23'06	9♋34	0♊3	11°21	3°44	16°56	26°5	5°49	2°31	9°33	5°46	7°19	13°35	8°19	T 17
W18	13 46 3	28°21'47	21°53	0°58	12°6	3°46	17°10	26°0	5°52	2°33	9°33	5°40	7°16	13°42	8°22	W18
T 19	13 50 0	29°20'26	4♊3	1°57	12°51	3°49	17°24	25°56	5°55	2°34	9°33	5°33	7°12	13°49	8°25	T 19
F 20	13 53 56	0♌19'03	16°4	2°58	13°34	3°53	17°38	25°51	5°59	2°36	9°32	5°27	7°9	13°55	8°28	F 20
S 21	13 57 53	1°17'38	27°59	4°2	14°16	3°58	17°51	25°47	6°2	2°37	9°32	5°21	7°6	14°2	8°30	S 21
S 22	14 1 50	2°16'11	9♌49	5°9	14°58	4°3	18°5	25°42	6°5	2°38	9°32	5°17	7°3	14°9	8°33	S 22
M23	14 5 46	3°14'43	21°37	6°18	15°38	4°9	18°19	25°38	6°8	2°40	9°31	5°14	7°0	14°15	8°36	M23
T 24	14 9 43	4°13'12	3♏24	7°30	16°17	4°15	18°34	25°33	6°11	2°41	9°31	5°D14	6°57	14°22	8°38	T 24
W25	14 13 39	5°11'40	15°13	8°43	16°55	4°22	18°48	25°29	6°14	2°42	9°31	5°14	6°53	14°29	8°41	W25
T 26	14 17 36	6°10'05	27°9	10°0	17°31	4°30	19°2	25°24	6°17	2°44	9°30	5°15	6°50	14°35	8°44	T 26
F 27	14 21 32	7°8'29	9♏14	11°18	18°7	4°39	19°16	25°20	6°21	2°45	9°30	5°17	6°47	14°42	8°46	F 27
S 28	14 25 29	8°6'50	21°32	12°39	18°41	4°48	19°30	25°15	6°24	2°46	9°29	5°19	6°44	14°49	8°48	S 28
S 29	14 29 25	9°5'09	4♏9	14°1	19°13	4°57	19°44	25°11	6°27	2°47	9°29	5°R19	6°41	14°55	8°51	S 29
M30	14 33 22	10°3'27	17♌8	15°26	19°45	5°57	19°58	25°6	6°30	2°48	9°28	5°19	6°37	15°8	8°53	M30

Delta T = 66.67 sec

ASTRODIENST EPHEMERIS for the year 2012

geocentric

MAY 2012

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Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	14 37 19	11°18'42"	0°13'33"	16°53'53"	20°11'14"	5°18'18"	20°18'12"	25°R 2	6°53'33"	2°48'49"	9°R27	5°R18	6°47'34"	15°8'9"	8°48'56"	T 1
W 2	14 41 15	11°59'55"	14°25'	18°21'	20°42'	5°30'	20°26'	24°45'58"	6°35'	2°51'	9°27'	5°16'	6°31'	15°15'	8°58'	W 2
T 3	14 45 12	12°58'06"	28°45'	19°52'	21°9'	5°42'	20°41'	24°53'	6°38'	2°52'	9°26'	5°13'	6°28'	15°22'	9°0'	T 3
F 4	14 49 8	13°56'15"	13°42'29"	21°25'	21°34'	5°54'	20°55'	24°49'	6°41'	2°53'	9°26'	5°10'	6°25'	15°28'	9°2'	F 4
S 5	14 53 5	14°54'22"	28°32'	22°59'	21°57'	6°7'	21°9'	24°45'	6°44'	2°54'	9°25'	5°8'	6°22'	15°35'	9°4'	S 5
S 6	14 57 1	15°52'27"	13°14'45"	24°36'	22°18'	6°21'	21°23'	24°41'	6°47'	2°55'	9°24'	5°6'	6°18'	15°42'	9°6'	S 6
M 7	15 0 58	16°50'31"	28°58'	26°15'	22°37'	6°35'	21°37'	24°37'	6°50'	2°56'	9°23'	5°D 5	6°15'	15°48'	9°8'	M 7
T 8	15 4 54	17°48'33"	14°47'1"	27°55'	22°55'	6°49'	21°52'	24°33'	6°53'	2°57'	9°23'	5°5'	6°12'	15°55'	9°10'	T 8
W 9	15 8 51	18°46'34"	28°47'	29°37'	23°10'	7°4'	22°6'	24°29'	6°55'	2°57'	9°22'	5°6'	6°9'	16°2'	9°12'	W 9
T 10	15 12 48	19°44'34"	13°31'10"	1°18'22"	23°24'	7°20'	22°20'	24°25'	6°58'	2°58'	9°21'	5°7'	6°6'	16°8'	9°14'	T 10
F 11	15 16 44	20°42'32"	27°7'	3°8'	23°35'	7°36'	22°34'	24°21'	7°1'	2°59'	9°20'	5°8'	6°3'	16°15'	9°16'	F 11
S 12	15 20 41	21°40'29"	10°48'38"	4°56'	23°45'	7°52'	22°49'	24°17'	7°4'	3°0'	9°19'	5°9'	5°59'	16°22'	9°18'	S 12
S 13	15 24 37	22°38'24"	23°45'	6°46'	23°52'	8°9'	23°3'	24°13'	7°6'	3°1'	9°18'	5°R 9	5°56'	16°28'	9°19'	S 13
M14	15 28 34	23°36'18"	6°48'30"	8°39'	23°57'	8°26'	23°17'	24°9'	7°9'	3°1'	9°17'	5°9'	5°53'	16°35'	9°21'	M14
T 15	15 32 30	24°34'11"	18°56'	10°33'	23°59'	8°44'	23°31'	24°6'	7°11'	3°2'	9°16'	5°8'	5°50'	16°42'	9°23'	T 15
W16	15 36 27	25°32'03"	1°19'8"	12°29'	23°R59	9°2'	23°45'	24°2'	7°14'	3°3'	9°15'	5°7'	5°47'	16°48'	9°24'	W16
T 17	15 40 23	26°29'53"	13°9'	14°26'	23°57'	9°21'	24°0'	23°59'	7°16'	3°3'	9°14'	5°6'	5°43'	16°55'	9°26'	T 17
F 18	15 44 20	27°27'42"	25°3'	16°26'	23°53'	9°40'	24°14'	23°55'	7°19'	3°4'	9°13'	5°5'	5°40'	17°2'	9°27'	F 18
S 19	15 48 17	28°25'30"	6°48'52"	18°28'	23°46'	9°59'	24°28'	23°52'	7°21'	3°4'	9°12'	5°4'	5°37'	17°8'	9°29'	S 19
S 20	15 52 13	29°23'17"	18°39'	20°31'	23°37'	10°19'	24°42'	23°48'	7°24'	3°5'	9°11'	5°3'	5°34'	17°15'	9°30'	S 20
M21	15 56 10	0°11'21'02"	0°11'27"	22°36'	23°25'	10°39'	24°56'	23°45'	7°26'	3°6'	9°10'	5°D 3	5°31'	17°22'	9°31'	M21
T 22	16 0 6	1°18'46"	12°18'	24°42'	23°11'	11°0'	25°11'	23°42'	7°29'	3°6'	9°9'	5°3'	5°28'	17°28'	9°32'	T 22
W23	16 4 3	2°16'29"	24°14'	26°50'	22°54'	11°20'	25°25'	23°39'	7°31'	3°6'	9°8'	5°3'	5°24'	17°35'	9°34'	W23
T 24	16 7 59	3°14'10"	6°48'17"	28°59'	22°35'	11°42'	25°39'	23°36'	7°33'	3°7'	9°7'	5°3'	5°21'	17°42'	9°35'	T 24
F 25	16 11 56	4°11'50"	18°31'	1°11'10"	22°14'	12°3'	25°53'	23°33'	7°35'	3°7'	9°6'	5°4'	5°18'	17°48'	9°36'	F 25
S 26	16 15 52	5°9'29"	0°48'57"	3°21'	21°51'	12°25'	26°7'	23°30'	7°38'	3°8'	9°5'	5°R 4	5°15'	17°55'	9°37'	S 26
S 27	16 19 49	6°7'06"	13°38'	5°32'	21°25'	12°48'	26°21'	23°27'	7°40'	3°8'	9°3'	5°4'	5°12'	18°1'	9°38'	S 27
M28	16 23 46	7°4'41"	26°38'	7°44'	20°58'	13°10'	26°35'	23°25'	7°42'	3°8'	9°2'	5°3'	5°9'	18°8'	9°39'	M28
T 29	16 27 42	8°2'15"	9°13'49"	9°56'	20°28'	13°33'	26°49'	23°22'	7°44'	3°8'	9°1'	5°D 3	5°5'	18°15'	9°39'	T 29
W30	16 31 39	8°59'48"	23°43'	12°8'	19°57'	13°57'	27°3'	23°19'	7°46'	3°9'	9°0'	5°4'	5°2'	18°21'	9°40'	W30
T 31	16 35 35	9°11'57'19"	7°48'50"	14°11'19"	19°11'24"	14°11'20"	27°18'18"	23°18'17"	7°48'18"	3°9'	8°58'15"	5°4'	4°59'18"	18°28'18"	9°41'18"	T 31

Delta T = 66.70 sec

JUNE 2012

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Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	16 39 32	10°11'54'49"	22°41'19"	16°11'29"	18°R50	14°11'44"	27°18'32"	23°R15	7°50'50"	3°48'9"	8°R57	5°4'	4°47'56"	18°35'35"	9°41'42"	F 1
S 2	16 43 28	11°52'17"	7°11'7"	18°39'	18°11'15"	15°9'	27°45'	23°12'	7°52'	3°9'	8°56'	5°5'	4°53'	18°41'	9°42'	S 2
S 3	16 47 25	12°49'45"	22°7'	20°47'	17°39'	15°33'	27°59'	23°10'	7°54'	3°9'	8°54'	5°5'	4°49'	18°48'	9°43'	S 3
M 4	16 51 21	13°47'11"	7°47'12"	22°54'	17°2'	15°58'	28°13'	23°8'	7°56'	3°9'	8°53'	5°R 5	4°46'	18°55'	9°43'	M 4
T 5	16 55 18	14°44'37"	22°14'	24°59'	16°24'	16°23'	28°27'	23°6'	7°57'	3°R 9	8°52'	5°5'	4°43'	19°1'	9°44'	T 5
W 6	16 59 15	15°42'01"	7°34'4"	27°2'	15°47'	16°48'	28°41'	23°4'	7°59'	3°9'	8°50'	5°4'	4°40'	19°8'	9°44'	W 6
T 7	17 3 11	16°39'25"	21°34'	29°4'	15°9'	17°14'	28°55'	23°2'	8°1'	3°9'	8°49'	5°3'	4°37'	19°15'	9°44'	T 7
F 8	17 7 8	17°36'48"	5°44'40"	1°34'31"	14°31'	17°40'	29°9'	23°1'	8°3'	3°9'	8°48'	5°2'	4°34'	19°21'	9°45'	F 8
S 9	17 11 4	18°34'11"	19°19'	3°0'	13°54'	18°6'	29°23'	22°59'	8°4'	3°9'	8°46'	5°0'	4°30'	19°28'	9°45'	S 9
S 10	17 15 1	19°31'32"	2°48'31"	4°55'	13°18'	18°33'	29°36'	22°57'	8°6'	3°9'	8°45'	4°59'	4°27'	19°35'	9°45'	S 10
M11	17 18 57	20°28'54"	15°19'	6°47'	12°43'	18°59'	29°50'	22°56'	8°7'	3°8'	8°43'	4°D58	4°24'	19°41'	9°45'	M11
T 12	17 22 54	21°26'14"	27°46'	8°37'	12°9'	19°26'	0°11'4"	22°55'	8°9'	3°8'	8°42'	4°58'	4°21'	19°48'	9°R45	T 12
W13	17 26 47	22°23'35"	9°15'57"	10°25'	11°36'	19°54'	0°17'	22°53'	8°10'	3°8'	8°41'	4°59'	4°18'	19°55'	9°45'	W13
T 14	17 30 50	23°20'55"	21°55'	12°10'	11°5'	20°21'	0°31'	22°52'	8°12'	3°8'	8°39'	5°0'	4°14'	20°5'	9°45'	T 14
F 15	17 34 44	24°18'14"	3°48'46"	13°52'	10°35'	20°49'	0°45'	22°51'	8°13'	3°7'	8°38'	5°2'	4°11'	20°8'	9°45'	F 15
S 16	17 38 40	25°15'33"	15°33'	15°33'	10°8'	21°17'	0°58'	22°50'	8°14'	3°7'	8°36'	5°3'	4°8'	20°15'	9°45'	S 16
S 17	17 42 37	26°12'52"	27°20'	17°10'	9°42'	21°45'	1°12'	22°49'	8°16'	3°7'	8°35'	5°4'	4°5'	20°21'	9°45'	S 17
M18	17 46 33	27°10'10"	9°11'12"	18°45'	9°18'	22°13'	1°25'	22°48'	8°17'	3°6'	8°33'	5°R 4	4°2'	20°28'	9°44'	M18
T 19	17 50 30	28°7'28"	21°9'	20°18'	8°57'	22°42'	1°39'	22°48'	8°18'	3°6'	8°32'	5°3'	3°59'	20°34'	9°44'	T 19
W20	17 54 26	29°4'45"	3°48'16"	21°48'	8°38'	23°10'	1°52'	22°47'	8°19'	3°5'	8°30'	5°1'	3°55'	20°41'	9°44'	W20
T 21	17 58 23	0°32'20'2"	15°32'	23°15'	8°21'	23°39'	2°5'	22°47'	8°20'	3°5'	8°29'	4°58'	3°52'	20°48'	9°43'	T 21
F 22	18 2 19	0°59'19"	28°1'	24°40'	8°7'	24°9'	2°19'	22°46'	8°21'	3°4'	8°27'	4°54'	3°49'	20°54'	9°43'	F 22
S 23	18 6 16	1°56'34"	10°42'42"	26°2'	7°54'	24°38'	2°32'	22°46'	8°22'	3°4'	8°26'	4°50'	3°46'	21°1'	9°42'	S 23
S 24	18 10 13	2°53'49"	23°37'	27°22'	7°45'	25°8'	2°45'	22°46'	8°23'	3°3'	8°24'	4°46'	3°43'	21°8'	9°41'	S 24
M25	18 14 9	3°51'04"	6°11'46"	28°39'	7°37'	25°38'	2°58'	22°D46	8°24'	3°3'	8°23'	4°43'	3°40'	21°14'	9°41'	M25
T 26	18 18 6	4°48'18"	20°11'	29°53'	7°32'	26°8'	3°11'	22°46'	8°25'	3°2'	8°21'	4°41'	3°36'	21°21'	9°40'	T 26
W27	18 22 2	5°45'31"	3°48'53"	1°48'4"	7°30'	26°38'	3°24'	22°46'	8°26'	3°1'	8°20'	4°D40	3°33'	21°28'	9°39'	W27
T 28	18 25 59	6°42'44"	17°50'	2°12'	7°D29	27°9'	3°37'	22°46'	8°27'	3°1'	8°18'	4°40'	3°30'	21°34'	9°38'	T 28
F 29	18 29 55	7°39'57"	2°11'4"	3°18'	7°31'	27°39'	3°50'	22°46'	8°27'	3°0'	8°17'	4°41'	3°27'	21°41'	9°37'	F 29
S 30	18 33 52	8°37'09"	16°11'32"	4°48'20"	7°11'36"	28°11'10"	4°11'3"	22°47'	8°28'	2°48'59"	8°15'	4°43'	3°47'24"	21°48'28"	9°36'28"	S 30

Delta T = 66.72 sec

ASTRODIENST EPHEMERIS for the year 2012

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JULY 2012

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Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	18 37 48	9°34'20"	1°11'	5°19'	7°11'42"	28°41'	4°11'16"	22°47'	8°29'	2°58'	8°14'	4°44'	3°20'	21°54'	9°35'	S 1
M 2	18 41 45	10°31'32"	15°57'	6°15'	7°51'	29°12'	4°28'	22°48'	8°29'	2°57'	8°12'	4°43'	3°17'	22°1'	9°34'	M 2
T 3	18 45 42	11°28'43"	0°34'2"	7°7'	8°1'	29°44'	4°41'	22°49'	8°30'	2°57'	8°11'	4°41'	3°14'	22°8'	9°33'	T 3
W 4	18 49 38	12°25'54"	15°21'	7°56'	8°14'	0°15'	4°54'	22°50'	8°30'	2°56'	8°9'	4°37'	3°11'	22°14'	9°32'	W 4
T 5	18 53 35	13°23'05"	29°45'	8°42'	8°29'	0°47'	5°6'	22°50'	8°31'	2°55'	8°8'	4°32'	3°8'	22°21'	9°31'	T 5
F 6	18 57 31	14°20'16"	13°49'	9°24'	8°46'	1°19'	5°19'	22°51'	8°31'	2°54'	8°6'	4°26'	3°5'	22°27'	9°29'	F 6
S 7	19 1 28	15°17'27"	27°29'	10°2'	9°4'	1°51'	5°31'	22°53'	8°31'	2°53'	8°5'	4°20'	3°1'	22°34'	9°28'	S 7
S 8	19 5 24	16°14'38"	10°45'	10°36'	9°25'	2°23'	5°44'	22°54'	8°32'	2°52'	8°3'	4°15'	2°58'	22°41'	9°27'	S 8
M 9	19 9 21	17°11'50"	23°36'	11°6'	9°47'	2°55'	5°56'	22°55'	8°32'	2°51'	8°2'	4°10'	2°55'	22°47'	9°25'	M 9
T 10	19 13 18	18°9'02"	6°9'5'	11°31'	10°11'	3°28'	6°8'	22°56'	8°32'	2°50'	8°0'	4°8'	2°52'	22°54'	9°24'	T 10
W 11	19 17 14	19°6'14"	18°16'	11°53'	10°37'	4°0'	6°20'	22°58'	8°32'	2°49'	7°59'	4°D 7'	2°49'	23°1'	9°22'	W 11
T 12	19 21 11	20°3'27"	0°15'	12°10'	11°4'	4°33'	6°32'	23°0'	8°32'	2°48'	7°57'	4°7'	2°46'	23°7'	9°21'	T 12
F 13	19 25 7	21°0'41"	12°5'	12°22'	11°33'	5°6'	6°44'	23°1'	8°R32'	2°47'	7°56'	4°9'	2°42'	23°14'	9°19'	F 13
S 14	19 29 4	21°57'55"	23°53'	12°30'	12°3'	5°39'	6°56'	23°3'	8°32'	2°46'	7°54'	4°10'	2°39'	23°21'	9°17'	S 14
S 15	19 33 0	22°55'09"	5°11'42"	12°R33'	12°34'	6°13'	7°8'	23°5'	8°32'	2°44'	7°53'	4°R10'	2°36'	23°27'	9°16'	S 15
M 16	19 36 57	23°52'24"	17°38'	12°31'	13°7'	6°46'	7°20'	23°7'	8°32'	2°43'	7°51'	4°9'	2°33'	23°34'	9°14'	M 16
T 17	19 40 53	24°49'40"	29°44'	12°24'	13°41'	7°20'	7°32'	23°9'	8°32'	2°42'	7°50'	4°6'	2°30'	23°41'	9°12'	T 17
W 18	19 44 50	25°46'56"	12°3'	12°12'	14°17'	7°54'	7°43'	23°11'	8°32'	2°41'	7°48'	4°1'	2°26'	23°47'	9°10'	W 18
T 19	19 48 47	26°44'13"	24°35'	11°56'	14°54'	8°28'	7°55'	23°13'	8°32'	2°40'	7°47'	3°54'	2°23'	23°54'	9°8'	T 19
F 20	19 52 43	27°41'30"	7°12'3'	11°35'	15°31'	9°2'	8°6'	23°16'	8°31'	2°38'	7°46'	3°45'	2°20'	24°1'	9°6'	F 20
S 21	19 56 40	28°38'48"	20°24'	11°10'	16°10'	9°36'	8°17'	23°18'	8°31'	2°37'	7°44'	3°36'	2°17'	24°7'	9°4'	S 21
S 22	20 0 36	29°36'05"	3°11'40"	10°40'	16°51'	10°10'	8°29'	23°21'	8°31'	2°36'	7°43'	3°27'	2°14'	24°14'	9°2'	S 22
M 23	20 4 33	0°13'32"	17°8'	10°7'	17°32'	10°45'	8°40'	23°23'	8°30'	2°35'	7°41'	3°19'	2°11'	24°20'	9°0'	M 23
T 24	20 8 29	1°30'42"	0°47'	9°31'	18°14'	11°19'	8°51'	23°26'	8°30'	2°33'	7°40'	3°13'	2°7'	24°27'	8°58'	T 24
W 25	20 12 26	2°28'01"	14°35'	8°52'	18°57'	11°54'	9°2'	23°29'	8°29'	2°32'	7°39'	3°9'	2°4'	24°34'	8°56'	W 25
T 26	20 16 22	3°25'20"	28°33'	8°10'	19°41'	12°29'	9°13'	23°32'	8°29'	2°30'	7°37'	3°D 8'	2°1'	24°40'	8°54'	T 26
F 27	20 20 19	4°22'40"	12°11'38"	7°28'	20°26'	13°4'	9°24'	23°35'	8°28'	2°29'	7°36'	3°8'	1°58'	24°47'	8°52'	F 27
S 28	20 24 16	5°20'00"	26°51'	6°44'	21°11'	13°39'	9°34'	23°38'	8°27'	2°28'	7°35'	3°R 9'	1°55'	24°54'	8°49'	S 28
S 29	20 28 12	6°17'21"	11°11'9"	6°0'	21°58'	14°14'	9°45'	23°41'	8°27'	2°26'	7°33'	3°9'	1°52'	25°0'	8°47'	S 29
M 30	20 32 9	7°14'42"	5°17'	5°17'	22°45'	14°50'	9°55'	23°44'	8°26'	2°25'	7°32'	3°7'	1°48'	25°7'	8°45'	M 30
T 31	20 36 5	8°12'04"	9°35'2"	4°13'36"	23°11'33"	15°25'	10°11'6"	23°48'	8°25'	2°23'	7°31'	3°12'	1°45'	25°14'	8°42'	T 31

Delta T = 66.75 sec

AUGUST 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	20 40 2	9°12'26"	24°38'8"	3°R57'	24°11'22"	16°1'	10°11'16"	23°45'1"	8°R24'	2°R22'	7°R30'	2°R56'	1°42'	25°20'	8°R40'	W 1
T 2	20 43 58	10°6'49"	8°14'5"	3°12'21"	25°12'	16°37'	10°26'	23°54'	8°Y23'	2°H20'	7°28'	2°47'	1°39'	25°27'	8°H38'	T 2
F 3	20 47 55	11°4'13"	22°5'	2°49'	26°2'	17°13'	10°36'	23°58'	8°22'	2°19'	7°27'	2°36'	1°36'	25°34'	8°35'	F 3
S 4	20 51 51	12°1'38"	5°H37'	2°21'	26°53'	17°49'	10°46'	24°2'	8°21'	2°17'	7°26'	2°25'	1°32'	25°40'	8°33'	S 4
S 5	20 55 48	12°59'04"	18°47'	1°59'	27°44'	18°25'	10°56'	24°5'	8°20'	2°16'	7°25'	2°15'	1°29'	25°47'	8°30'	S 5
M 6	20 59 45	13°56'31"	1°Y36'	1°42'	28°37'	19°1'	11°6'	24°9'	8°19'	2°14'	7°24'	2°6'	1°26'	25°54'	8°28'	M 6
T 7	21 3 41	14°53'59"	14°4'	1°31'	29°30'	19°38'	11°16'	24°13'	8°18'	2°13'	7°23'	2°0'	1°23'	26°0'	8°25'	T 7
W 8	21 7 38	15°51'29"	26°15'	1°D26'	0°23'	20°14'	11°25'	24°17'	8°17'	2°11'	7°21'	1°57'	1°20'	26°7'	8°22'	W 8
T 9	21 11 34	16°49'00"	8°B14'	1°28'	1°17'	20°51'	11°35'	24°21'	8°16'	2°10'	7°20'	1°55'	1°17'	26°13'	8°20'	T 9
F 10	21 15 31	17°46'32"	20°4'	1°36'	2°12'	21°27'	11°44'	24°25'	8°15'	2°8'	7°19'	1°D55'	1°13'	26°20'	8°17'	F 10
S 11	21 19 27	18°44'06"	1°H53'	1°52'	3°7'	22°4'	11°53'	24°30'	8°13'	2°7'	7°18'	1°R55'	1°10'	26°27'	8°14'	S 11
S 12	21 23 24	19°41'41"	13°44'	2°14'	4°2'	22°41'	12°2'	24°34'	8°12'	2°5'	7°17'	1°54'	1°7'	26°33'	8°12'	S 12
M 13	21 27 20	20°39'17"	25°44'	2°44'	4°58'	23°18'	12°11'	24°38'	8°11'	2°3'	7°16'	1°52'	1°4'	26°40'	8°9'	M 13
T 14	21 31 17	21°36'55"	7°25'56"	3°20'	5°55'	23°56'	12°20'	24°43'	8°9'	2°2'	7°15'	1°48'	1°1'	26°47'	8°6'	T 14
W 15	21 35 14	22°34'34"	20°24'	4°3'	6°52'	24°33'	12°29'	24°47'	8°8'	2°0'	7°14'	1°41'	0°58'	26°53'	8°4'	W 15
T 16	21 39 10	23°32'15"	3°11'11"	4°54'	7°49'	25°10'	12°37'	24°52'	8°6'	1°59'	7°13'	1°31'	0°54'	27°0'	8°1'	T 16
F 17	21 43 7	24°29'57"	16°17'	5°50'	8°47'	25°48'	12°46'	24°57'	8°5'	1°57'	7°12'	1°20'	0°51'	27°7'	7°58'	F 17
S 18	21 47 3	25°27'40"	29°41'	6°54'	9°46'	26°25'	12°54'	25°1'	8°3'	1°55'	7°12'	1°7'	0°48'	27°13'	7°55'	S 18
S 19	21 51 0	26°25'25"	13°11'21"	8°3'	10°44'	27°3'	13°2'	25°6'	8°2'	1°54'	7°11'	0°55'	0°45'	27°20'	7°52'	S 19
M 20	21 54 56	27°23'11"	27°14'	9°19'	11°44'	27°41'	13°10'	25°11'	8°0'	1°52'	7°10'	0°45'	0°42'	27°27'	7°49'	M 20
T 21	21 58 53	28°20'58"	11°15'	10°40'	12°43'	28°19'	13°18'	25°16'	7°58'	1°50'	7°9'	0°37'	0°38'	27°33'	7°47'	T 21
W 22	22 2 49	29°18'46"	25°21'	12°6'	13°43'	28°57'	13°26'	25°21'	7°57'	1°49'	7°8'	0°31'	0°35'	27°40'	7°44'	W 22
T 23	22 6 46	0°16'36"	9°11'29"	13°37'	14°43'	29°35'	13°33'	25°26'	7°55'	1°47'	7°7'	0°29'	0°32'	27°46'	7°41'	T 23
F 24	22 10 42	1°14'26"	23°37'	15°13'	15°44'	0°11'14"	13°41'	25°31'	7°53'	1°45'	7°7'	0°28'	0°29'	27°53'	7°38'	F 24
S 25	22 14 39	2°12'18"	7°14'44"	16°53'	16°45'	0°52'	13°48'	25°36'	7°51'	1°44'	7°6'	0°28'	0°26'	28°0'	7°35'	S 25
S 26	22 18 36	3°10'11"	21°49'	18°36'	17°46'	1°31'	13°55'	25°42'	7°49'	1°42'	7°5'	0°27'	0°23'	28°6'	7°32'	S 26
M 27	22 22 32	4°8'05"	5°23'51"	20°23'	18°48'	2°9'	14°2'	25°47'	7°48'	1°41'	7°5'	0°25'	0°19'	28°13'	7°29'	M 27
T 28	22 26 29	5°6'01"	19°49'	22°12'	19°50'	2°48'	14°9'	25°52'	7°46'	1°39'	7°4'	0°20'	0°16'	28°20'	7°27'	T 28
W 29	22 30 25	6°3'58"	3°38'39"	24°4'	20°52'	3°27'	14°16'	25°58'	7°44'	1°37'	7°3'	0°12'	0°13'	28°26'	7°24'	W 29
T 30	22 34 22	7°1'56"	17°21'	25°57'	21°54'	4°6'	14°23'	26°3'	7°42'	1°36'	7°3'	0°1'	0°10'	28°33'	7°21'	T 30
F 31	22 38 18	7°19'56"	0°H50'	27°12'52"	22°58'57"	4°11'45"	14°11'29"	26°49'	7°40'	1°34'	7°3'	29°11'49"	0°17'	28°40'	7°18'	F 31

Delta T = 66.77 sec

ASTRODIENST EPHEMERIS for the year 2012

geocentric

SEPTEMBER 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	22 42 15	8♉57°57'	14♋4	29♌48	24♍0	5♎24	14♏35	26♐15	7♑R38	1♒R32	7♒R 2	29♒R37	0♓4	28♓46	7♓R15	S 1
S 2	22 46 11	9°56'00	27° 1	1♉44	25° 4	6° 3	14°41	26°20	7♑36	1♒31	7♒1	29♒25	0° 0	28°53	7♓12	S 2
M 3	22 50 8	10°54'04	9♑40	3°41	26° 7	6°42	14°47	26°26	7°34	1°29	7° 1	29°15	29♎57	29° 0	7° 9	M 3
T 4	22 54 5	11°52'11	22° 3	5°38	27°11	7°22	14°53	26°32	7°32	1°28	7° 0	29° 8	29°54	29° 6	7° 6	T 4
W 5	22 58 1	12°50'19	4♌11	7°35	28°16	8° 1	14°59	26°38	7°29	1°26	7° 0	29° 3	29°51	29°13	7° 3	W 5
T 6	23 1 58	13°48'29	16° 8	9°32	29°20	8°41	15° 4	26°44	7°27	1°24	7° 0	29° 0	29°48	29°19	7° 1	T 6
F 7	23 5 54	14°46'42	27°57	11°28	0♌25	9°21	15° 9	26°50	7°25	1°23	6°59	29°D 0	29°44	29°26	6°58	F 7
S 8	23 9 51	15°44'56	9♏45	13°24	1°30	10° 0	15°14	26°56	7°23	1°21	6°59	29° 0	29°41	29°33	6°55	S 8
S 9	23 13 47	16°43'13	21°36	15°18	2°35	10°40	15°19	27° 2	7°21	1°20	6°59	29°R 0	29°38	29°39	6°52	S 9
M10	23 17 44	17°41'31	3♌37	17°12	3°41	11°20	15°24	27° 8	7°19	1°18	6°58	28°59	29°35	29°46	6°49	M10
T 11	23 21 40	18°39'51	15°51	19° 5	4°46	12° 0	15°29	27°14	7°16	1°16	6°58	28°55	29°32	29°53	6°46	T 11
W12	23 25 37	19°38'14	28°24	20°58	5°52	12°40	15°33	27°20	7°14	1°15	6°58	28°50	29°29	29°59	6°43	W12
T 13	23 29 34	20°36'39	11♌19	22°49	6°58	13°21	15°37	27°27	7°12	1°13	6°58	28°42	29°25	0♏6	6°41	T 13
F 14	23 33 30	21°35'05	24°37	24°39	8° 5	14° 1	15°41	27°33	7°10	1°12	6°58	28°32	29°22	0°13	6°38	F 14
S 15	23 37 27	22°33'34	8♉19	26°28	9°11	14°42	15°45	27°39	7° 7	1°10	6°57	28°21	29°19	0°19	6°35	S 15
S 16	23 41 23	23°32'04	22°20	28°16	10°18	15°22	15°49	27°46	7° 5	1° 9	6°57	28°11	29°16	0°26	6°32	S 16
M17	23 45 20	24°30'36	6♌37	0♌3	11°25	16° 3	15°53	27°52	7° 3	1° 7	6°57	28° 2	29°13	0°33	6°30	M17
T 18	23 49 16	25°29'11	21° 4	1°49	12°32	16°44	15°56	27°59	7° 0	1° 6	6°D57	27°55	29° 9	0°39	6°27	T 18
W19	23 53 13	26°27'47	5♎35	3°34	13°39	17°24	15°59	28° 5	6°58	1° 4	6°57	27°50	29° 6	0°46	6°24	W19
T 20	23 57 9	27°26'25	20° 4	5°17	14°47	18° 5	16° 2	28°12	6°55	1° 3	6°57	27°48	29° 3	0°52	6°22	T 20
F 21	0 1 6	28°25'04	4♌26	7° 0	15°55	18°46	16° 5	28°18	6°53	1° 2	6°57	27°D48	29° 0	0°59	6°19	F 21
S 22	0 5 3	29°23'45	18°40	8°42	17° 2	19°27	16° 7	28°25	6°51	1° 0	6°57	27°49	28°57	1° 6	6°16	S 22
S 23	0 8 59	0♌22'28	2♌43	10°23	18°10	20° 9	16°10	28°32	6°48	0°59	6°58	27°R49	28°54	1°12	6°14	S 23
M24	0 12 56	1°21'13	16°35	12° 3	19°19	20°50	16°12	28°38	6°46	0°57	6°58	27°48	28°50	1°19	6°11	M24
T 25	0 16 52	2°19'59	0♌16	13°41	20°27	21°31	16°14	28°45	6°44	0°56	6°58	27°45	28°47	1°26	6° 9	T 25
W26	0 20 49	3°18'47	13°45	15°19	21°36	22°13	16°16	28°52	6°41	0°55	6°58	27°39	28°44	1°32	6° 6	W26
T 27	0 24 45	4°17'36	27° 3	16°56	22°44	22°54	16°17	28°59	6°39	0°53	6°58	27°32	28°41	1°39	6° 4	T 27
F 28	0 28 42	5°16'28	10♋8	18°32	23°53	23°36	16°19	29° 5	6°36	0°52	6°59	27°23	28°38	1°46	6° 2	F 28
S 29	0 32 38	6°15'21	23° 0	20° 8	25° 2	24°18	16°20	29°12	6°34	0°51	6°59	27°14	28°35	1°52	5°59	S 29
S 30	0 36 35	7♌14'16	5♑39	21♌42	26♌11	24♎59	16♏21	29♌19	6♑31	0♒50	6♓59	27♎5	28♎31	1♏59	5♒57	S 30

Delta T = 66.80 sec

OCTOBER 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	0 40 31	8♌13'13	18♑4	23♌15	27♌21	25♎41	16♏22	29♌26	6°R29	0°R48	7♒0	26°R57	28♎28	2♏6	5°R54	M 1
T 2	0 44 28	9°12'13	0♌17	24°48	28°30	26°23	16°22	29°33	6°Y27	0♒47	7° 0	26♎52	28°25	2°12	5♒52	T 2
W 3	0 48 25	10°11'14	12°19	26°20	29°40	27° 5	16°23	29°40	6°24	0°46	7° 1	26°49	28°22	2°19	5°50	W 3
T 4	0 52 21	11°10'18	24°12	27°50	0♎49	27°47	16°23	29°47	6°22	0°45	7° 1	26°D47	28°19	2°26	5°48	T 4
F 5	0 56 18	12° 9'24	6♏0	29°21	1°59	28°29	16°R23	29°54	6°19	0°44	7° 2	26°48	28°15	2°32	5°46	F 5
S 6	1 0 14	13° 8'32	17°47	0♎50	3° 9	29°12	16°23	0♎1	6°17	0°43	7° 2	26°49	28°12	2°39	5°43	S 6
S 7	1 4 11	14° 7'43	29°38	2°18	4°20	29°54	16°22	0° 8	6°15	0°42	7° 3	26°51	28° 9	2°45	5°41	S 7
M 8	1 8 7	15° 6'55	11♌37	3°46	5°30	0♒37	16°22	0°15	6°12	0°40	7° 3	26°R52	28° 6	2°52	5°39	M 8
T 9	1 12 4	16° 6'10	23°49	5°12	6°40	1°19	16°21	0°22	6°10	0°39	7° 4	26°51	28° 3	2°59	5°37	T 9
W10	1 16 0	17° 5'28	6♌21	6°38	7°51	2° 2	16°20	0°29	6° 7	0°38	7° 5	26°49	28° 0	3° 5	5°35	W10
T 11	1 19 57	18° 4'47	19°16	8° 3	9° 2	2°44	16°19	0°37	6° 5	0°37	7° 5	26°46	27°56	3°12	5°33	T 11
F 12	1 23 54	19° 4'09	2♎36	9°27	10°13	3°27	16°17	0°44	6° 3	0°36	7° 6	26°41	27°53	3°19	5°32	F 12
S 13	1 27 50	20° 3'34	16°23	10°50	11°24	4°10	16°16	0°51	6° 0	0°36	7° 7	26°35	27°50	3°25	5°30	S 13
S 14	1 31 47	21° 3'00	0♌35	12°12	12°35	4°53	16°14	0°58	5°58	0°35	7° 8	26°29	27°47	3°32	5°28	S 14
M15	1 35 43	22° 2'28	15° 8	13°33	13°46	5°36	16°12	1° 5	5°56	0°34	7° 8	26°24	27°44	3°39	5°26	M15
T 16	1 39 40	23° 1'59	29°56	14°53	14°57	6°19	16°10	1°12	5°54	0°33	7° 9	26°21	27°40	3°45	5°24	T 16
W17	1 43 36	24° 1'32	14♎51	16°12	16° 9	7° 2	16° 7	1°20	5°51	0°32	7°10	26°19	27°37	3°52	5°23	W17
T 18	1 47 33	25° 1'06	29°44	17°30	17°20	7°45	16° 5	1°27	5°49	0°31	7°11	26°D18	27°34	3°59	5°21	T 18
F 19	1 51 29	26° 0'43	14♌29	18°46	18°32	8°29	16° 2	1°34	5°47	0°30	7°12	26°19	27°31	4° 5	5°20	F 19
S 20	1 55 26	27° 0'21	29° 0	20° 1	19°43	9°12	15°59	1°41	5°45	0°30	7°13	26°21	27°28	4°12	5°18	S 20
S 21	1 59 23	28° 0'01	13♌3	21°14	20°55	9°56	15°56	1°49	5°42	0°29	7°14	26°22	27°25	4°18	5°17	S 21
M22	2 3 19	28°59'43	27° 7	22°26	22° 7	10°39	15°52	1°56	5°40	0°28	7°15	26°R23	27°21	4°25	5°15	M22
T 23	2 7 16	29°59'26	10♌43	23°36	23°19	11°23	15°49	2° 3	5°38	0°28	7°16	26°22	27°18	4°32	5°14	T 23
W24	2 11 12	0♎59'11	24° 0	24°44	24°31	12° 6	15°45	2°10	5°36	0°27	7°17	26°21	27°15	4°38	5°13	W24
T 25	2 15 9	1°58'58	7♋1	25°49	25°43	12°50	15°41	2°18	5°34	0°27	7°18	26°18	27°12	4°45	5°12	T 25
F 26	2 19 5	2°58'46	19°47	26°53	26°56	13°34	15°37	2°25	5°32	0°26	7°19	26°14	27° 9	4°52	5°10	F 26
S 27	2 23 2	3°58'36	2♑20	27°54	28° 8	14°18	15°32	2°32	5°30	0°25	7°20	26°11	27° 6	4°58	5° 9	S 27
S 28	2 26 58	4°58'28	14°41	28°52	29°21	15° 2	15°28	2°39	5°28	0°25	7°22	26° 7	27° 2	5° 5	5° 8	S 28
M29	2 30 55	5°58'22	26°51	29°46	0♌33	15°46	15°23	2°47	5°26	0°24	7°23	26° 4	26°59	5°12	5° 7	M29
T 30	2 34 52	6°58'18	8♌53	0♒37	1°46	16°30	15°18	2°54	5°24	0°24	7°24	26° 2	26°56	5°18	5° 6	T 30
W31	2 38 48	7♎58'15	20♌48	1♒24	2♌58	17♌14	15♏13	3♎1	5♑22	0♒24	7♓25	26°D 1	26♎53	5♏25	5♒5	W31

Delta T = 66.83 sec

ASTRODIENST EPHEMERIS for the year 2012

geocentric

NOVEMBER 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	2 42 45	8♌58'15	2♊37	2♊7	4♌11	17♊58	15°R 8	3♌8	5°R20	0°R23	7♌27	26♌1	26♌50	5♊32	5°R 4	T 1
F 2	2 46 41	9°58'16	14°24	2°45	5°24	18°43	15♊3	3°16	5°Y18	0°Y23	7°28	26°2	26°46	5°38	5°H 4	F 2
S 3	2 50 38	10°58'20	26°12	3°17	6°37	19°27	14°57	3°23	5°16	0°23	7°29	26°3	26°43	5°45	5°3	S 3
S 4	2 54 34	11°58'26	8♌3	3°43	7°50	20°11	14°52	3°30	5°14	0°22	7°31	26°5	26°40	5°52	5°2	S 4
M 5	2 58 31	12°58'33	20°2	4°2	9°3	20°56	14°46	3°37	5°13	0°22	7°32	26°6	26°37	5°58	5°2	M 5
T 6	3 2 27	13°58'43	2♌14	4°14	10°16	21°41	14°40	3°44	5°11	0°22	7°33	26°7	26°34	6°5	5°1	T 6
W 7	3 6 24	14°58'55	14°42	4°R18	11°30	22°25	14°34	3°52	5°9	0°22	7°35	26°R 7	26°31	6°11	5°1	W 7
T 8	3 10 21	15°59'09	27°31	4°13	12°43	23°10	14°28	3°59	5°8	0°22	7°36	26°7	26°27	6°18	5°0	T 8
F 9	3 14 17	16°59'25	10♌44	3°59	13°56	23°55	14°21	4°6	5°6	0°22	7°38	26°6	26°24	6°25	5°0	F 9
S 10	3 18 14	17°59'42	24°25	3°35	15°10	24°39	14°15	4°13	5°4	0°22	7°39	26°5	26°21	6°31	4°59	S 10
S 11	3 22 10	19° 0'02	8♌33	3°2	16°23	25°24	14°8	4°20	5°3	0°D22	7°41	26°4	26°18	6°38	4°59	S 11
M12	3 26 7	20° 0'24	23°6	2°18	17°37	26°9	14°1	4°27	5°1	0°22	7°42	26°4	26°15	6°45	4°59	M12
T 13	3 30 3	21° 0'48	8♌0	1°24	18°51	26°54	13°54	4°34	5°0	0°22	7°44	26°3	26°12	6°51	4°59	T 13
W14	3 34 0	22° 1'13	23°7	0°22	20°4	27°39	13°47	4°41	4°58	0°22	7°45	26°D 3	26°8	6°58	4°59	W14
T 15	3 37 56	23° 1'40	8♌19	29♌12	21°18	28°25	13°40	4°49	4°57	0°22	7°47	26°3	26°5	7°5	4°D59	T 15
F 16	3 41 53	24° 2'09	23°24	27°56	22°32	29°10	13°33	4°56	4°56	0°22	7°49	26°3	26°2	7°11	4°59	F 16
S 17	3 45 50	25° 2'39	8♌16	26°36	23°46	29°55	13°25	5°3	4°54	0°22	7°50	26°3	25°59	7°18	4°59	S 17
S 18	3 49 46	26° 3'10	22°47	25°15	25°0	0♌40	13°18	5°9	4°53	0°22	7°52	26°R 4	25°56	7°25	4°59	S 18
M19	3 53 43	27° 3'43	6♌54	23°55	26°14	1°26	13°10	5°16	4°52	0°23	7°54	26°3	25°52	7°31	4°59	M19
T 20	3 57 39	28° 4'17	20°36	22°39	27°28	2°11	13°3	5°23	4°51	0°23	7°55	26°3	25°49	7°38	5°0	T 20
W21	4 1 36	29° 4'52	3♌53	21°30	28°42	2°57	12°55	5°30	4°50	0°23	7°57	26°D 3	25°46	7°45	5°0	W21
T 22	4 5 32	0♌5'28	16°47	20°30	29°56	3°42	12°47	5°37	4°49	0°24	7°59	26°4	25°43	7°51	5°0	T 22
F 23	4 9 29	1° 6'05	29°23	19°39	1♌10	4°28	12°39	5°44	4°47	0°24	8°1	26°4	25°40	7°58	5°1	F 23
S 24	4 13 25	2° 6'44	11°Y43	18°59	2°24	5°14	12°31	5°51	4°46	0°24	8°2	26°5	25°37	8°4	5°1	S 24
S 25	4 17 22	3° 7'23	23°51	18°31	3°38	5°59	12°23	5°57	4°46	0°25	8°4	26°5	25°33	8°11	5°2	S 25
M26	4 21 19	4° 8'04	5♌49	18°15	4°53	6°45	12°15	6°4	4°45	0°25	8°6	26°6	25°30	8°18	5°2	M26
T 27	4 25 15	5° 8'46	17°42	18°D10	6°7	7°31	12°7	6°11	4°44	0°26	8°8	26°7	25°27	8°24	5°3	T 27
W28	4 29 12	6° 9'30	29°31	18°16	7°21	8°17	11°59	6°17	4°43	0°26	8°10	26°R 7	25°24	8°31	5°4	W28
T 29	4 33 8	7°10'14	11♌19	18°32	8°36	9°3	11°51	6°24	4°42	0°27	8°12	26°6	25°21	8°38	5°5	T 29
F 30	4 37 5	8♌11'00	23♌8	18♌57	9♌50	9♌49	11♌43	6♌31	4°Y42	0°H28	8♌14	26♌5	25♌18	8♌44	5°H 6	F 30

Delta T = 66.85 sec

DECEMBER 2012

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	4 41 1	9♌11'48	5♌0	19♌30	11♌5	10♌35	11°R35	6♌37	4°R41	0°H28	8♌15	26°R 3	25♌14	8♌51	5°H 7	S 1
S 2	4 44 58	10°12'36	16°56	20°11	12°19	11°21	11♌27	6°44	4°Y40	0°29	8°17	26♌1	25°11	8°58	5°8	S 2
M 3	4 48 54	11°13'26	29°1	20°58	13°34	12°7	11°18	6°50	4°40	0°30	8°19	25°59	25°8	9°4	5°9	M 3
T 4	4 52 51	12°14'17	11♌16	21°52	14°48	12°53	11°10	6°56	4°39	0°30	8°21	25°57	25°5	9°11	5°10	T 4
W 5	4 56 48	13°15'09	23°44	22°50	16°3	13°39	11°2	7°3	4°39	0°31	8°23	25°55	25°2	9°18	5°11	W 5
T 6	5 0 44	14°16'03	6♌30	23°53	17°18	14°25	10°54	7°9	4°38	0°32	8°25	25°54	24°58	9°24	5°12	T 6
F 7	5 4 41	15°16'58	19°35	24°59	18°32	15°11	10°46	7°15	4°38	0°33	8°27	25°D54	24°55	9°31	5°13	F 7
S 8	5 8 37	16°17'54	3♌5	26°9	19°47	15°58	10°38	7°21	4°38	0°34	8°29	25°54	24°52	9°38	5°15	S 8
S 9	5 12 34	17°18'52	16°59	27°22	21°2	16°44	10°30	7°28	4°37	0°35	8°31	25°56	24°49	9°44	5°16	S 9
M10	5 16 30	18°19'51	1♌18	28°37	22°16	17°31	10°22	7°34	4°37	0°36	8°33	25°57	24°46	9°51	5°17	M10
T 11	5 20 27	19°20'51	16°1	29°55	23°31	18°17	10°14	7°40	4°37	0°37	8°35	25°58	24°43	9°57	5°19	T 11
W12	5 24 23	20°21'52	1♌2	1♌14	24°46	19°4	10°6	7°46	4°37	0°38	8°37	25°R58	24°39	10°4	5°20	W12
T 13	5 28 20	21°22'54	16°14	2°35	26°1	19°50	9°58	7°52	4°37	0°39	8°39	25°57	24°36	10°11	5°22	T 13
F 14	5 32 17	22°23'57	1♌27	3°57	27°16	20°37	9°50	7°58	4°D37	0°40	8°41	25°55	24°33	10°17	5°24	F 14
S 15	5 36 13	23°25'00	16°31	5°21	28°31	21°23	9°42	8°3	4°37	0°41	8°43	25°51	24°30	10°24	5°25	S 15
S 16	5 40 10	24°26'04	1♌17	6°46	29°46	22°10	9°34	8°9	4°37	0°42	8°46	25°47	24°27	10°31	5°27	S 16
M17	5 44 6	25°27'09	15°39	8°11	1♌0	22°57	9°27	8°15	4°37	0°43	8°48	25°43	24°24	10°37	5°29	M17
T 18	5 48 3	26°28'14	29°33	9°37	2°15	23°43	9°19	8°21	4°37	0°44	8°50	25°39	24°20	10°44	5°31	T 18
W19	5 51 59	27°29'19	12♌57	11°5	3°30	24°30	9°12	8°26	4°38	0°46	8°52	25°37	24°17	10°51	5°33	W19
T 20	5 55 56	28°30'25	25°55	12°32	4°45	25°17	9°5	8°32	4°38	0°47	8°54	25°D36	24°14	10°57	5°35	T 20
F 21	5 59 52	29°31'30	8°Y29	14°1	6°0	26°4	8°57	8°37	4°38	0°48	8°56	25°36	24°11	11°4	5°37	F 21
S 22	6 3 49	0♌32'36	20°45	15°29	7°15	26°51	8°50	8°43	4°39	0°50	8°58	25°37	24°8	11°11	5°39	S 22
S 23	6 7 46	1°33'42	2♌47	16°59	8°30	27°38	8°43	8°48	4°39	0°51	9°0	25°39	24°4	11°17	5°41	S 23
M24	6 11 42	2°34'49	14°40	18°28	9°45	28°24	8°36	8°53	4°40	0°52	9°2	25°41	24°1	11°24	5°43	M24
T 25	6 15 39	3°35'55	26°27	19°58	11°0	29°11	8°30	8°58	4°40	0°54	9°4	25°R41	23°58	11°31	5°45	T 25
W26	6 19 35	4°37'02	8♌14	21°29	12°15	29°58	8°23	9°3	4°41	0°55	9°7	25°40	23°55	11°37	5°48	W26
T 27	6 23 32	5°38'09	20°3	23°0	13°30	0♌45	8°17	9°8	4°42	0°57	9°9	25°37	23°52	11°44	5°50	T 27
F 28	6 27 28	6°39'17	1♌56	24°31	14°45	1°32	8°10	9°13	4°42	0°58	9°11	25°32	23°49	11°51	5°52	F 28
S 29	6 31 25	7°40'24	13°56	26°2	16°0	2°19	8°4	9°18	4°43	1°0	9°13	25°26	23°45	11°57	5°55	S 29
S 30	6 35 21	8°41'32	26°3	27°34	17°16	3°7	7°58	9°23	4°44	1°1	9°15	25°18	23°42	12°4	5°57	S 30
M31	6 39 18	9♌42'40	8♌19	29♌6	18♌31	3♌54	7♌52	9♌28	4°Y45	1°H 3	9♌17	25♌9	23♌39	12♌11	6°H 0	M31

Delta T = 66.88 sec