



# Astrodienst Ephemeris Tables for the year 2016

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 2016

## geocentric

JANUARY 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	6 40 22	9°58'56	26°42'	29°17'	2°31'	28°33'	23°11'	11°15'	16°35'	7°34'	15°3'	24°D53	25°37'	14°16'	17°28'	F 1
S 2	6 44 18	11° 0'05	8°32'	29°57'	3°16'	29° 7'	23°11'	11°15'	16°35'	7°34'	15° 5'	24°R53	25°33'	14°23'	17°30'	S 2
S 3	6 48 15	12° 1'15	20°20'	0°28'	4°29'	29°40'	23°12'	11°22'	16°35'	7°36'	15° 7'	24°53	25°30'	14°29'	17°32'	S 3
M 4	6 52 11	13° 2'24	21°11'	0°49'	5°42'	0°13'	23°13'	11°28'	16°36'	7°37'	15° 9'	24°51	25°27'	14°36'	17°34'	M 4
T 5	6 56 8	14° 3'34	14°11'	1° 1'	6°55'	0°46'	23°13'	11°34'	16°36'	7°39'	15°11'	24°47	25°24'	14°43'	17°36'	T 5
W 6	7 0 5	15° 4'45	26°25'	1°R 1	8° 8'	1°19'	23°14'	11°41'	16°37'	7°40'	15°13'	24°40	25°21'	14°49'	17°38'	W 6
T 7	7 4 1	16° 5'55	8°56'	0°50'	9°21'	1°52'	23°14'	11°47'	16°37'	7°42'	15°15'	24°31	25°17'	14°56'	17°40'	T 7
F 8	7 7 58	17° 7'05	21°45'	0°27'	10°35'	2°25'	23°R14	11°53'	16°38'	7°43'	15°17'	24°19	25°14'	15° 3'	17°42'	F 8
S 9	7 11 54	18° 8'16	4°54'	29°53'	11°48'	2°57'	23°14'	12° 0'	16°38'	7°45'	15°20'	24° 7'	25°11'	15° 9'	17°44'	S 9
S 10	7 15 51	19° 9'26	18°22'	29° 7'	13° 1'	3°30'	23°14'	12° 6'	16°39'	7°47'	15°22'	23°56	25° 8'	15°16'	17°47'	S 10
M 11	7 19 47	20°10'36	2°55'	28°10'	14°14'	4° 2'	23°14'	12°12'	16°40'	7°48'	15°24'	23°45	25° 5'	15°23'	17°49'	M 11
T 12	7 23 44	21°11'46	16° 1'	27° 5'	15°28'	4°35'	23°13'	12°18'	16°41'	7°50'	15°26'	23°37	25° 2'	15°29'	17°51'	T 12
W 13	7 27 40	22°12'55	0°4'	25°53'	16°41'	5° 7'	23°12'	12°24'	16°42'	7°52'	15°28'	23°32	24°58'	15°36'	17°54'	W 13
T 14	7 31 37	23°14'04	14°12'	24°36'	17°55'	5°39'	23°11'	12°30'	16°43'	7°53'	15°30'	23°30	24°55'	15°43'	17°56'	T 14
F 15	7 35 34	24°15'12	28°21'	23°17'	19° 8'	6°11'	23°10'	12°36'	16°44'	7°55'	15°32'	23°D30	24°52'	15°49'	17°58'	F 15
S 16	7 39 30	25°16'20	12°29'	21°58'	20°22'	6°43'	23° 8'	12°42'	16°45'	7°57'	15°34'	23°31	24°49'	15°56'	18° 1'	S 16
S 17	7 43 27	26°17'26	26°36'	20°42'	21°35'	7°15'	23° 7'	12°48'	16°46'	7°59'	15°36'	23°R31	24°46'	16° 3'	18° 3'	S 17
M 18	7 47 23	27°18'32	10°39'	19°31'	22°49'	7°47'	23° 5'	12°53'	16°47'	8° 0'	15°38'	23°30	24°43'	16° 9'	18° 6'	M 18
T 19	7 51 20	28°19'37	24°39'	18°26'	24° 2'	8°18'	23° 3'	12°59'	16°48'	8° 2'	15°40'	23°27	24°39'	16°16'	18° 9'	T 19
W 20	7 55 16	29°20'41	8°33'	17°28'	25°16'	8°50'	23° 1'	13° 5'	16°49'	8° 4'	15°42'	23°22	24°36'	16°23'	18°11'	W 20
T 21	7 59 13	0°21'45	22°20'	16°40'	26°30'	9°21'	22°58'	13°10'	16°51'	8° 6'	15°44'	23°14	24°33'	16°29'	18°14'	T 21
F 22	8 3 9	1°22'47	5°57'	16° 1'	27°43'	9°52'	22°56'	13°16'	16°52'	8° 8'	15°46'	23° 5'	24°30'	16°36'	18°17'	F 22
S 23	8 7 6	2°23'49	19°22'	15°31'	28°57'	10°24'	22°53'	13°21'	16°53'	8°10'	15°48'	22°56	24°27'	16°43'	18°19'	S 23
S 24	8 11 3	3°24'50	2°32'	15°10'	0°31'	10°55'	22°50'	13°27'	16°55'	8°12'	15°50'	22°47	24°23'	16°49'	18°22'	S 24
M 25	8 14 59	4°25'51	15°26'	14°58'	1°24'	11°25'	22°47'	13°32'	16°56'	8°14'	15°52'	22°40	24°20'	16°56'	18°25'	M 25
T 26	8 18 56	5°26'50	28° 3'	14°D55	2°38'	11°56'	22°44'	13°37'	16°58'	8°16'	15°54'	22°35	24°17'	17° 3'	18°28'	T 26
W 27	8 22 52	6°27'49	10°24'	14°59'	3°52'	12°27'	22°40'	13°43'	16°59'	8°18'	15°56'	22°32	24°14'	17° 9'	18°31'	W 27
T 28	8 26 49	7°28'47	22°31'	15°11'	5° 6'	12°57'	22°37'	13°48'	17° 1'	8°20'	15°58'	22°D31	24°11'	17°16'	18°34'	T 28
F 29	8 30 45	8°29'44	4°18'	15°30'	6°20'	13°28'	22°33'	13°53'	17° 3'	8°22'	16° 0'	22°31	24° 8'	17°22'	18°37'	F 29
S 30	8 34 42	9°30'41	16°18'	15°55'	7°34'	13°58'	22°29'	13°58'	17° 4'	8°24'	16° 2'	22°33	24° 4'	17°29'	18°40'	S 30
S 31	8 38 38	10°31'37	28° 7'	16°32'	8°34'	14°M28	22°25'	14°31'	17°5'	8°26'	16°3'	22°35	24° 1'	17°36'	18°43'	S 31

Delta T = 68.10 sec

FEBRUARY 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	8 42 35	11°32'32	9°M58	17°32'	10°32'	14°M58	22°R20	14°31'	17°10'	8°30'	16° 8'	22°R35	23°58'	17°42'	18°46'	M 1
T 2	8 46 32	12°33'27	21°58'	17°43'	11°16'	15°28'	22°16'	14°12'	17°10'	8°30'	16° 8'	22°35	23°55'	17°49'	18°49'	T 2
W 3	8 50 28	13°34'21	4°12'	18°28'	12°30'	15°57'	22°11'	14°17'	17°12'	8°32'	16°10'	22°33	23°52'	17°56'	18°52'	W 3
T 4	8 54 25	14°35'14	16°43'	19°18'	13°44'	16°27'	22° 6'	14°22'	17°14'	8°34'	16°12'	22°29	23°49'	18° 2'	18°55'	T 4
F 5	8 58 21	15°36'06	29°36'	20°10'	14°58'	16°56'	22° 1'	14°26'	17°16'	8°36'	16°13'	22°23	23°45'	18° 9'	18°58'	F 5
S 6	9 2 18	16°36'57	12°52'	21° 6'	16°12'	17°25'	21°56'	14°31'	17°18'	8°38'	16°15'	22°17	23°42'	18°16'	19° 2'	S 6
S 7	9 6 14	17°37'47	26°32'	22° 5'	17°26'	17°54'	21°51'	14°35'	17°20'	8°41'	16°17'	22°11	23°39'	18°22'	19° 5'	S 7
M 8	9 10 11	18°38'36	10°33'	23° 7'	18°40'	18°23'	21°46'	14°40'	17°22'	8°43'	16°19'	22° 6'	23°36'	18°29'	19° 8'	M 8
T 9	9 14 7	19°39'24	24°52'	24°11'	19°54'	18°51'	21°40'	14°44'	17°24'	8°45'	16°21'	22° 2'	23°33'	18°36'	19°11'	T 9
W 10	9 18 4	20°40'11	9°22'	25°18'	21° 8'	19°20'	21°34'	14°48'	17°26'	8°47'	16°23'	22° 0'	23°29'	18°42'	19°15'	W 10
T 11	9 22 1	21°40'56	23°58'	26°27'	22°22'	19°48'	21°28'	14°52'	17°28'	8°49'	16°24'	21°D59	23°26'	18°49'	19°18'	T 11
F 12	9 25 57	22°41'40	8°Y34	27°37'	23°36'	20°16'	21°22'	14°56'	17°31'	8°52'	16°26'	22° 0'	23°23'	18°56'	19°21'	F 12
S 13	9 29 54	23°42'22	23° 3'	28°50'	24°50'	20°44'	21°16'	15° 0'	17°33'	8°54'	16°28'	22° 2'	23°20'	19° 2'	19°25'	S 13
S 14	9 33 50	24°43'02	7°23'	0°34'	26° 4'	21°11'	21°10'	15° 4'	17°35'	8°56'	16°30'	22° 3'	23°17'	19° 9'	19°28'	S 14
M 15	9 37 47	25°43'41	21°31'	1°20'	27°18'	21°39'	21° 4'	15° 8'	17°38'	8°58'	16°31'	22°R 4	23°14'	19°16'	19°32'	M 15
T 16	9 41 43	26°44'18	5°12'	2°37'	28°33'	22° 6'	20°57'	15°12'	17°40'	9° 0'	16°33'	22° 4'	23°10'	19°22'	19°35'	T 16
W 17	9 45 40	27°44'53	19° 7'	3°56'	29°47'	22°33'	20°50'	15°15'	17°43'	9° 3'	16°35'	22° 2'	23° 7'	19°29'	19°39'	W 17
T 18	9 49 36	28°45'27	2°34'	5°16'	1°31'	23° 0'	20°44'	15°19'	17°45'	9° 5'	16°36'	22° 0'	23° 4'	19°36'	19°42'	T 18
F 19	9 53 33	29°45'59	15°47'	6°38'	2°15'	23°26'	20°37'	15°22'	17°48'	9° 7'	16°38'	21°57	23° 1'	19°42'	19°45'	F 19
S 20	9 57 30	0°46'29	28°46'	8° 1'	3°29'	23°53'	20°30'	15°26'	17°50'	9° 9'	16°40'	21°53	22°58'	19°49'	19°49'	S 20
S 21	10 1 26	1°46'57	11°33'	9°25'	4°43'	24°19'	20°23'	15°29'	17°53'	9°12'	16°41'	21°50	22°55'	19°56'	19°53'	S 21
M 22	10 5 23	2°47'23	24° 6'	10°50'	5°58'	24°45'	20°16'	15°32'	17°55'	9°14'	16°43'	21°47	22°51'	20° 2'	19°56'	M 22
T 23	10 9 19	3°47'48	6°28'	12°16'	7°12'	25°10'	20° 9'	15°35'	17°58'	9°16'	16°44'	21°46	22°48'	20° 9'	20° 0'	T 23
W 24	10 13 16	4°48'12	18°38'	13°44'	8°26'	25°36'	20° 1'	15°38'	18° 1'	9°19'	16°46'	21°D45	22°45'	20°16'	20° 3'	W 24
T 25	10 17 12	5°48'33	0°39'	15°12'	9°40'	26° 1'	19°54'	15°41'	18° 3'	9°21'	16°47'	21°45	22°42'	20°22'	20° 7'	T 25
F 26	10 21 9	6°48'53	12°33'	16°42'	10°54'	26°26'	19°47'	15°44'	18° 6'	9°23'	16°49'	21°46	22°39'	20°29'	20°10'	F 26
S 27	10 25 5	7°49'12	24°22'	18°13'	12° 9'	26°51'	19°39'	15°47'	18° 9'	9°25'	16°50'	21°47	22°35'	20°36'	20°14'	S 27
S 28	10 29 2	8°49'29	6°M11	19°44'	13°23'	27°15'	19°32'	15°50'	18°12'	9°28'	16°52'	21°49	22°32'	20°42'	20°18'	S 28
M 29	10 32 59	9°49'45	18°M 3	21°17'	14°37'	27°M39	19°24'	15°52'	18°Y15	9°30'	16°53'	21°50	22°29'	20°49'	20°21'	M 29

Delta T = 68.15 sec

## ASTRODIENST EPHEMERIS for the year 2016

geocentric

MARCH 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	10 36 55	10♌49'59	0♌2	22♌51	15♌51	28♌3	19♌R16	15♌755	18♌Y17	9♌32	16♌54	21♌M50	22♌M26	20♌56	20♌K25	T 1
W 2	10 40 52	11°50'11	12°13	24°26	17° 5	28°26	19♌M9	15°57	18°20	9°34	16°56	21°R51	22°23	21° 2	20°28	W 2
T 3	10 44 48	12°50'22	24°42	26° 2	18°20	28°50	19° 1	15°59	18°23	9°37	16°57	21°51	22°20	21° 9	20°32	T 3
F 4	10 48 45	13°50'32	7♌31	27°39	19°34	29°13	18°53	16° 1	18°26	9°39	16°59	21°50	22°16	21°16	20°36	F 4
S 5	10 52 41	14°50'40	20°44	29°17	20°48	29°35	18°45	16° 3	18°29	9°41	17° 0	21°49	22°13	21°22	20°39	S 5
S 6	10 56 38	15°50'46	4♌23	0♌56	22° 2	29°58	18°38	16° 5	18°32	9°44	17° 1	21°48	22°10	21°29	20°43	S 6
M 7	11 0 34	16°50'51	18°29	2°37	23°17	0♌20	18°30	16° 7	18°35	9°46	17° 2	21°48	22° 7	21°36	20°47	M 7
T 8	11 4 31	17°50'54	2♌58	4°18	24°31	0°41	18°22	16° 9	18°38	9°48	17° 4	21°47	22° 4	21°42	20°50	T 8
W 9	11 8 27	18°50'55	17°45	6° 1	25°45	1° 3	18°14	16°11	18°41	9°50	17° 5	21°D47	22° 0	21°49	20°54	W 9
T 10	11 12 24	19°50'55	2♌43	7°44	26°59	1°24	18° 6	16°12	18°44	9°53	17° 6	21°47	21°57	21°56	20°58	T 10
F 11	11 16 21	20°50'52	17°43	9°29	28°14	1°44	17°58	16°14	18°48	9°55	17° 7	21°47	21°54	22° 2	21° 1	F 11
S 12	11 20 17	21°50'47	2♌39	11°15	29°28	2° 5	17°51	16°15	18°51	9°57	17° 8	21°R47	21°51	22° 9	21° 5	S 12
S 13	11 24 14	22°50'40	17°21	13° 2	0♌42	2°25	17°43	16°17	18°54	9°59	17° 9	21°47	21°48	22°16	21° 9	S 13
M14	11 28 10	23°50'31	1♌45	14°50	1°56	2°44	17°35	16°18	18°57	10° 2	17°10	21°47	21°45	22°22	21°12	M14
T 15	11 32 7	24°50'20	15°48	16°40	3°11	3° 3	17°27	16°19	19° 0	10° 4	17°11	21°47	21°41	22°29	21°16	T 15
W16	11 36 3	25°50'06	29°28	18°30	4°25	3°22	17°20	16°20	19° 3	10° 6	17°12	21°D47	21°38	22°36	21°20	W16
T 17	11 40 0	26°49'50	12♌47	20°22	5°39	3°40	17°12	16°21	19° 7	10° 8	17°13	21°47	21°35	22°42	21°23	T 17
F 18	11 43 56	27°49'32	25°47	22°15	6°53	3°58	17° 4	16°22	19°10	10°10	17°14	21°48	21°32	22°49	21°27	F 18
S 19	11 47 53	28°49'12	8♌30	24° 9	8° 7	4°16	16°57	16°22	19°13	10°13	17°15	21°48	21°29	22°56	21°31	S 19
S 20	11 51 50	29°48'49	20°58	26° 4	9°22	4°33	16°49	16°23	19°16	10°15	17°16	21°49	21°26	23° 2	21°34	S 20
M21	11 55 46	0♌48'24	3♌14	28° 1	10°36	4°49	16°42	16°23	19°20	10°17	17°17	21°50	21°22	23° 9	21°38	M21
T 22	11 59 43	1°47'57	15°20	29°58	11°50	5° 6	16°34	16°24	19°23	10°19	17°18	21°50	21°19	23°16	21°41	T 22
W23	12 3 39	2°47'28	27°19	1°Y57	13° 4	5°21	16°27	16°24	19°26	10°21	17°19	21°R50	21°16	23°22	21°45	W23
T 24	12 7 36	3°46'57	9♌13	3°57	14°18	5°37	16°20	16°24	19°30	10°23	17°19	21°50	21°13	23°29	21°49	T 24
F 25	12 11 32	4°46'23	21° 4	5°57	15°32	5°51	16°13	16°R24	19°33	10°26	17°20	21°48	21°10	23°36	21°52	F 25
S 26	12 15 29	5°45'48	2♌53	7°58	16°47	6° 6	16° 6	16°24	19°36	10°28	17°21	21°47	21° 6	23°42	21°56	S 26
S 27	12 19 25	6°45'11	14°43	10° 0	18° 1	6°20	15°59	16°24	19°40	10°30	17°22	21°44	21° 3	23°49	21°59	S 27
M28	12 23 22	7°44'32	26°37	12° 2	19°15	6°33	15°52	16°24	19°43	10°32	17°22	21°42	21° 0	23°56	22° 3	M28
T 29	12 27 19	8°43'52	8♌39	14° 5	20°29	6°46	15°45	16°24	19°46	10°34	17°23	21°40	20°57	24° 2	22° 7	T 29
W30	12 31 15	9°43'09	20°50	16° 8	21°43	6°58	15°39	16°23	19°50	10°36	17°23	21°38	20°54	24° 9	22°10	W30
T 31	12 35 12	10°Y42'25	3♌36	18°Y10	22°Y57	7°Y10	15°M32	16°Y23	19°Y53	10°Y38	17°Y24	21°M37	20°M51	24°Y16	22°Y14	T 31

Delta T = 68.19 sec

APRIL 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	12 39 8	11°Y41'39	16♌0	20°Y12	24°Y11	7°Y21	15°R26	16°R22	19°Y57	10°Y40	17°Y25	21°D37	20°M47	24°Y22	22°Y17	F 1
S 2	12 43 5	12°40'51	29° 6	22°14	25°26	7°31	15°M19	16°Y21	20° 0	10°42	17°25	21°M37	20°44	24°29	22°21	S 2
S 3	12 47 1	13°40'01	12♌37	24°14	26°40	7°41	15°13	16°21	20° 3	10°44	17°26	21°39	20°41	24°36	22°24	S 3
M 4	12 50 58	14°39'10	26°35	26°12	27°54	7°51	15° 7	16°20	20° 7	10°46	17°26	21°40	20°38	24°42	22°27	M 4
T 5	12 54 54	15°38'16	10♌59	28° 9	29° 8	8° 0	15° 1	16°19	20°10	10°48	17°26	21°41	20°35	24°49	22°31	T 5
W 6	12 58 51	16°37'21	25°46	0♌4	0°Y22	8° 8	14°55	16°18	20°14	10°50	17°27	21°R41	20°31	24°56	22°34	W 6
T 7	13 2 47	17°36'24	10°Y51	1°56	1°36	8°15	14°50	16°16	20°17	10°52	17°27	21°40	20°28	25° 2	22°38	T 7
F 8	13 6 44	18°35'25	26° 5	3°45	2°50	8°22	14°44	16°15	20°21	10°54	17°27	21°38	20°25	25° 9	22°41	F 8
S 9	13 10 41	19°34'24	11♌17	5°31	4° 4	8°28	14°39	16°14	20°24	10°56	17°28	21°35	20°22	25°16	22°44	S 9
S 10	13 14 37	20°33'21	26°18	7°13	5°18	8°34	14°34	16°12	20°27	10°57	17°28	21°31	20°19	25°22	22°48	S 10
M11	13 18 34	21°32'16	11♌0	8°51	6°33	8°39	14°29	16°11	20°31	10°59	17°28	21°27	20°16	25°29	22°51	M11
T 12	13 22 30	22°31'08	25°17	10°25	7°47	8°43	14°24	16° 9	20°34	11° 1	17°28	21°23	20°12	25°36	22°54	T 12
W13	13 26 27	23°29'58	9♌6	11°55	9° 1	8°47	14°19	16° 7	20°38	11° 3	17°29	21°21	20° 9	25°42	22°58	W13
T 14	13 30 23	24°28'46	22°28	13°19	10°15	8°50	14°14	16° 6	20°41	11° 5	17°29	21°D20	20° 6	25°49	23° 1	T 14
F 15	13 34 20	25°27'32	5♌25	14°39	11°29	8°52	14°10	16° 4	20°45	11° 6	17°29	21°20	20° 3	25°56	23° 4	F 15
S 16	13 38 16	26°26'15	18° 0	15°54	12°43	8°53	14° 6	16° 2	20°48	11° 8	17°29	21°22	20° 0	26° 2	23° 7	S 16
S 17	13 42 13	27°24'56	0♌19	17° 3	13°57	8°54	14° 1	15°59	20°51	11°10	17°29	21°23	19°57	26° 9	23°11	S 17
M18	13 46 10	28°23'35	12°25	18° 7	15°11	8°R54	13°58	15°57	20°55	11°12	17°R29	21°25	19°53	26°16	23°14	M18
T 19	13 50 6	29°22'11	24°22	19° 6	16°25	8°53	13°54	15°55	20°58	11°13	17°29	21°R25	19°50	26°22	23°17	T 19
W20	13 54 3	0♌20'46	6♌13	19°59	17°39	8°52	13°50	15°53	21° 2	11°15	17°29	21°24	19°47	26°29	23°20	W20
T 21	13 57 59	1°19'18	18° 2	20°46	18°53	8°50	13°47	15°50	21° 5	11°17	17°29	21°21	19°44	26°36	23°23	T 21
F 22	14 1 56	2°17'49	29°51	21°28	20° 7	8°47	13°43	15°48	21° 8	11°18	17°29	21°16	19°41	26°42	23°26	F 22
S 23	14 5 52	3°16'18	11♌43	22° 3	21°21	8°43	13°40	15°45	21°12	11°20	17°29	21° 9	19°37	26°49	23°29	S 23
S 24	14 9 49	4°14'44	23°37	22°33	22°35	8°38	13°37	15°42	21°15	11°21	17°29	21° 1	19°34	26°56	23°32	S 24
M25	14 13 45	5°13'10	5♌38	22°57	23°49	8°33	13°35	15°40	21°19	11°23	17°28	20°53	19°31	27° 2	23°35	M25
T 26	14 17 42	6°11'33	17°46	23°15	25° 2	8°27	13°32	15°37	21°22	11°24	17°28	20°45	19°28	27° 9	23°38	T 26
W27	14 21 39	7° 9'55	0♌3	23°28	26°16	8°20	13°30	15°34	21°25	11°26	17°28	20°38	19°25	27°16	23°41	W27
T 28	14 25 35	8° 8'15	12°32	23°35	27°30	8°13	13°28	15°31	21°29	11°27	17°28	20°33	19°22	27°22	23°43	T 28
F 29	14 29 32	9° 6'33	25°16	23°R36	28°44	8° 5	13°26	15°28	21°32	11°29	17°27	20°30	19°18	27°29	23°46	F 29
S 30	14 33 28	10°Y45'1	8♌18	23°Y32	29°Y58	7°Y56	13°M24	15°Y25	21°Y35	11°Y30	17°Y27	20°D29	19°M15	27°Y36	23°Y49	S 30

Delta T = 68.23 sec

# ASTRODIENST EPHEMERIS for the year 2016

## geocentric

MAY 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	14 37 25	11° 3' 06"	21° 41' 41"	23° 22' 22"	18° 12' 12"	7° 46' 46"	13° 22' 22"	15° 21' 21"	21° 38' 38"	11° 32' 32"	17° 27' 27"	20° 30' 30"	19° 12' 12"	27° 42' 42"	23° 52' 52"	S 1
M 2	14 41 21	12° 1' 20"	5° 28' 28"	23° 8' 8"	2° 26' 26"	7° 35' 35"	13° 21' 21"	15° 18' 18"	21° 42' 42"	11° 33' 33"	17° 26' 26"	20° 31' 31"	19° 9' 9"	27° 49' 49"	23° 54' 54"	M 2
T 3	14 45 18	12° 59' 33"	19° 40' 40"	22° 50' 50"	3° 40' 40"	7° 24' 24"	13° 19' 19"	15° 15' 15"	21° 45' 45"	11° 34' 34"	17° 26' 26"	20° 31' 31"	19° 6' 6"	27° 56' 56"	23° 57' 57"	T 3
W 4	14 49 14	13° 57' 44"	4° 15' 15"	22° 27' 27"	4° 54' 54"	7° 12' 12"	13° 18' 18"	15° 11' 11"	21° 48' 48"	11° 36' 36"	17° 25' 25"	20° 31' 31"	19° 3' 3"	28° 2' 2"	24° 0' 0"	W 4
T 5	14 53 11	14° 55' 53"	19° 11' 11"	22° 0' 0"	6° 8' 8"	6° 59' 59"	13° 17' 17"	15° 8' 8"	21° 52' 52"	11° 37' 37"	17° 25' 25"	20° 28' 28"	18° 59' 59"	28° 9' 9"	24° 2' 2"	T 5
F 6	14 57 8	15° 54' 01"	4° 20' 20"	21° 30' 30"	7° 22' 22"	6° 46' 46"	13° 16' 16"	15° 4' 4"	21° 55' 55"	11° 38' 38"	17° 25' 25"	20° 23' 23"	18° 56' 56"	28° 16' 16"	24° 5' 5"	F 6
S 7	15 1 4	16° 52' 08"	19° 33' 33"	20° 58' 58"	8° 35' 35"	6° 32' 32"	13° 16' 16"	15° 1' 1"	21° 58' 58"	11° 39' 39"	17° 24' 24"	20° 15' 15"	18° 53' 53"	28° 22' 22"	24° 7' 7"	S 7
S 8	15 5 1	17° 50' 13"	4° 11' 39"	20° 24' 24"	9° 49' 49"	6° 17' 17"	13° 16' 16"	14° 57' 57"	22° 1' 1"	11° 40' 40"	17° 23' 23"	20° 7' 7"	18° 50' 50"	28° 29' 29"	24° 10' 10"	S 8
M 9	15 8 57	18° 48' 16"	19° 29' 29"	19° 48' 48"	11° 3' 3"	6° 1' 1"	13° 15' 15"	14° 53' 53"	22° 4' 4"	11° 42' 42"	17° 23' 23"	19° 58' 58"	18° 47' 47"	28° 36' 36"	24° 12' 12"	M 9
T 10	15 12 54	19° 46' 17"	3° 56' 56"	19° 12' 12"	12° 17' 17"	5° 45' 45"	13° 15' 15"	14° 50' 50"	22° 7' 7"	11° 43' 43"	17° 22' 22"	19° 50' 50"	18° 43' 43"	28° 42' 42"	24° 15' 15"	T 10
W 11	15 16 50	20° 44' 17"	17° 54' 54"	18° 35' 35"	13° 31' 31"	5° 29' 29"	13° 16' 16"	14° 46' 46"	22° 11' 11"	11° 44' 44"	17° 22' 22"	19° 44' 44"	18° 40' 40"	28° 49' 49"	24° 17' 17"	W 11
T 12	15 20 47	21° 42' 14"	1° 22' 22"	17° 59' 59"	14° 45' 45"	5° 12' 12"	13° 16' 16"	14° 42' 42"	22° 14' 14"	11° 45' 45"	17° 21' 21"	19° 40' 40"	18° 37' 37"	28° 56' 56"	24° 19' 19"	T 12
F 13	15 24 43	22° 40' 10"	14° 22' 22"	17° 24' 24"	15° 58' 58"	4° 54' 54"	13° 16' 16"	14° 38' 38"	22° 17' 17"	11° 46' 46"	17° 20' 20"	19° 38' 38"	18° 34' 34"	29° 2' 2"	24° 22' 22"	F 13
S 14	15 28 40	23° 38' 04"	26° 59' 59"	16° 51' 51"	17° 12' 12"	4° 36' 36"	13° 17' 17"	14° 34' 34"	22° 20' 20"	11° 47' 47"	17° 20' 20"	19° 37' 37"	18° 31' 31"	29° 9' 9"	24° 24' 24"	S 14
S 15	15 32 37	24° 35' 56"	9° 15' 15"	16° 20' 20"	18° 26' 26"	4° 17' 17"	13° 18' 18"	14° 30' 30"	22° 23' 23"	11° 48' 48"	17° 19' 19"	19° 38' 38"	18° 28' 28"	29° 16' 16"	24° 26' 26"	S 15
M 16	15 36 33	25° 33' 47"	21° 18' 18"	15° 52' 52"	19° 40' 40"	3° 58' 58"	13° 19' 19"	14° 26' 26"	22° 26' 26"	11° 49' 49"	17° 18' 18"	19° 38' 38"	18° 24' 24"	29° 22' 22"	24° 28' 28"	M 16
T 17	15 40 30	26° 31' 36"	3° 11' 11"	15° 27' 27"	20° 54' 54"	3° 39' 39"	13° 20' 20"	14° 22' 22"	22° 29' 29"	11° 50' 50"	17° 17' 17"	19° 37' 37"	18° 21' 21"	29° 29' 29"	24° 30' 30"	T 17
W 18	15 44 26	27° 29' 23"	15° 0' 0"	15° 6' 6"	22° 7' 7"	3° 19' 19"	13° 22' 22"	14° 18' 18"	22° 32' 32"	11° 51' 51"	17° 16' 16"	19° 34' 34"	18° 18' 18"	29° 36' 36"	24° 32' 32"	W 18
T 19	15 48 23	28° 27' 08"	26° 48' 48"	14° 48' 48"	23° 21' 21"	2° 59' 59"	13° 24' 24"	14° 14' 14"	22° 35' 35"	11° 51' 51"	17° 16' 16"	19° 29' 29"	18° 15' 15"	29° 43' 43"	24° 34' 34"	T 19
F 20	15 52 19	29° 24' 52"	8° 39' 39"	14° 35' 35"	24° 35' 35"	2° 39' 39"	13° 25' 25"	14° 9' 9"	22° 38' 38"	11° 52' 52"	17° 15' 15"	19° 21' 21"	18° 12' 12"	29° 49' 49"	24° 36' 36"	F 20
S 21	15 56 16	0° 11' 22' 35"	20° 35' 35"	14° 26' 26"	25° 49' 49"	2° 18' 18"	13° 27' 27"	14° 5' 5"	22° 40' 40"	11° 53' 53"	17° 14' 14"	19° 10' 10"	18° 8' 8"	29° 56' 56"	24° 38' 38"	S 21
S 22	16 0 12	1° 20' 16"	2° 37' 37"	14° 21' 21"	27° 3' 3"	1° 57' 57"	13° 29' 29"	14° 1' 1"	22° 43' 43"	11° 54' 54"	17° 13' 13"	18° 58' 58"	18° 5' 5"	0° 11' 11"	24° 40' 40"	S 22
M 23	16 4 9	2° 17' 56"	14° 48' 48"	14° 21' 21"	28° 16' 16"	1° 36' 36"	13° 32' 32"	13° 57' 57"	22° 46' 46"	11° 55' 55"	17° 12' 12"	18° 45' 45"	18° 2' 2"	0° 9' 9"	24° 42' 42"	M 23
T 24	16 8 6	3° 15' 35"	27° 7' 7"	14° 25' 25"	29° 30' 30"	1° 15' 15"	13° 34' 34"	13° 52' 52"	22° 49' 49"	11° 55' 55"	17° 11' 11"	18° 33' 33"	17° 59' 59"	0° 16' 16"	24° 44' 44"	T 24
W 25	16 12 2	4° 13' 12"	9° 37' 37"	14° 34' 34"	0° 11' 44"	0° 54' 54"	13° 37' 37"	13° 48' 48"	22° 52' 52"	11° 56' 56"	17° 10' 10"	18° 22' 22"	17° 56' 56"	0° 23' 23"	24° 46' 46"	W 25
T 26	16 15 59	5° 10' 49"	22° 17' 17"	14° 47' 47"	1° 58' 58"	0° 33' 33"	13° 40' 40"	13° 44' 44"	22° 55' 55"	11° 57' 57"	17° 9' 9"	18° 13' 13"	17° 53' 53"	0° 29' 29"	24° 47' 47"	T 26
F 27	16 19 55	6° 8' 24"	5° 9' 9"	15° 5' 5"	3° 11' 11"	0° 12' 12"	13° 43' 43"	13° 39' 39"	22° 57' 57"	11° 57' 57"	17° 8' 8"	18° 8' 8"	17° 49' 49"	0° 36' 36"	24° 49' 49"	F 27
S 28	16 23 52	7° 5' 59"	18° 15' 15"	15° 27' 27"	4° 25' 25"	29° 15' 15"	13° 46' 46"	13° 35' 35"	23° 0' 0"	11° 58' 58"	17° 7' 7"	18° 4' 4"	17° 46' 46"	0° 43' 43"	24° 51' 51"	S 28
S 29	16 27 48	8° 3' 33"	1° 38' 38"	15° 53' 53"	5° 39' 39"	29° 30' 30"	13° 49' 49"	13° 30' 30"	23° 3' 3"	11° 58' 58"	17° 6' 6"	18° 3' 3"	17° 43' 43"	0° 49' 49"	24° 52' 52"	S 29
M 30	16 31 45	9° 1' 05"	15° 19' 19"	16° 24' 24"	6° 53' 53"	29° 10' 10"	13° 53' 53"	13° 26' 26"	23° 5' 5"	11° 59' 59"	17° 5' 5"	18° 3' 3"	17° 40' 40"	0° 56' 56"	24° 54' 54"	M 30
T 31	16 35 41	9° 11' 58' 37"	29° 19' 19"	16° 59' 59"	8° 11' 11"	28° 14' 14"	13° 56' 56"	13° 22' 22"	23° 8' 8"	11° 59' 59"	17° 4' 4"	18° 3' 3"	17° 37' 37"	1° 11' 11"	24° 55' 55"	T 31

Delta T = 68.27 sec

JUNE 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	16 39 38	10°11'56"09	13°39'39"	17°38'38"	9°11'20"	28°19'29"	14°0'0"	13°17'17"	23°10'10"	12°11'11"	17°3'3"	18°1'1"	17°34'34"	1°11'11"	24°56'56"	W 1
T 2	16 43 35	11°53'39"	28°18'18"	18°20'20"	10°34'34"	28°11'11"	14°4'4"	13°13'13"	23°13'13"	12°0'0"	17°2'2"	17°57'57"	17°30'30"	1°16'16"	24°58'58"	T 2
F 3	16 47 31	12°51'09"	13°8'9"	19°7'7"	11°47'47"	27°49'49"	14°8'8"	13°8'8"	23°15'15"	12°0'0"	17°0'0"	17°51'51"	17°27'27"	1°23'23"	24°59'59"	F 3
S 4	16 51 28	13°48'38"	28°7'7"	19°57'57"	13°1'1"	27°30'30"	14°13'13"	13°4'4"	23°18'18"	12°1'1"	16°59'59"	17°42'42"	17°24'24"	1°29'29"	25°0'0"	S 4
S 5	16 55 24	14°46'06"	13°11'2"	20°51'51"	14°15'15"	27°12'12"	14°17'17"	12°59'59"	23°20'20"	12°1'1"	16°58'58"	17°31'31"	17°21'21"	1°36'36"	25°2'2"	S 5
M 6	16 59 21	15°43'33"	27°46'46"	21°48'48"	15°29'29"	26°53'53"	14°22'22"	12°55'55"	23°23'23"	12°1'1"	16°57'57"	17°20'20"	17°18'18"	1°43'43"	25°3'3"	M 6
T 7	17 3 17	16°40'59"	12°51'51"	22°49'49"	16°42'42"	26°35'35"	14°27'27"	12°50'50"	23°25'25"	12°2'2"	16°56'56"	17°9'9"	17°14'14"	1°49'49"	25°4'4"	T 7
W 8	17 7 14	17°38'24"	26°8'8"	23°53'53"	17°56'56"	26°18'18"	14°32'32"	12°46'46"	23°27'27"	12°2'2"	16°54'54"	17°0'0"	17°11'11"	1°56'56"	25°5'5"	W 8
T 9	17 11 10	18°35'48"	9°39'39"	25°0'0"	19°10'10"	26°2'2"	14°37'37"	12°42'42"	23°30'30"	12°2'2"	16°53'53"	16°54'54"	17°8'8"	2°3'3"	25°6'6"	T 9
F 10	17 15 7	19°33'11"	22°42'42"	26°11'11"	20°24'24"	25°46'46"	14°42'42"	12°37'37"	23°32'32"	12°2'2"	16°52'52"	16°51'51"	17°5'5"	2°10'10"	25°7'7"	F 10
S 11	17 19 4	20°30'33"	5°11'21"	27°25'25"	21°37'37"	25°30'30"	14°47'47"	12°33'33"	23°34'34"	12°2'2"	16°51'51"	16°49'49"	17°2'2"	2°16'16"	25°8'8"	S 11
S 12	17 23 0	21°27'54"	17°40'40"	28°42'42"	22°51'51"	25°16'16"	14°53'53"	12°28'28"	23°36'36"	12°2'2"	16°49'49"	16°49'49"	16°59'59"	2°23'23"	25°9'9"	S 12
M 13	17 26 57	22°25'14"	29°43'43"	0°11'2"2"	24°5'5"	25°2'2"	14°59'59"	12°24'24"	23°39'39"	12°2'2"	16°48'48"	16°49'49"	16°55'55"	2°30'30"	25°9'9"	M 13
T 14	17 30 53	23°22'33"	11°11'33"	1°25'25"	25°19'19"	24°48'48"	15°5'5"	12°20'20"	23°41'41"	12°2'2"	16°47'47"	16°48'48"	16°52'52"	2°36'36"	25°10'10"	T 14
W 15	17 34 50	24°19'51"	23°27'27"	2°52'52"	26°32'32"	24°36'36"	15°11'11"	12°15'15"	23°43'43"	12°2'2"	16°45'45"	16°45'45"	16°49'49"	2°43'43"	25°11'11"	W 15
T 16	17 38 46	25°17'09"	5°11'17"	4°21'21"	27°46'46"	24°24'24"	15°17'17"	12°11'11"	23°45'45"	12°2'2"	16°44'44"	16°40'40"	16°46'46"	2°50'50"	25°11'11"	T 16
F 17	17 42 43	26°14'25"	17°11'11"	5°53'53"	29°0'0"	24°13'13"	15°23'23"	12°7'7"	23°47'47"	12°2'2"	16°43'43"	16°32'32"	16°43'43"	2°56'56"	25°12'12"	F 17
S 18	17 46 39	27°11'41"	29°13'13"	7°28'28"	0°51'3"3"	24°3'3"	15°29'29"	12°3'3"	23°49'49"	12°2'2"	16°41'41"	16°21'21"	16°40'40"	3°3'3"	25°13'13"	S 18
S 19	17 50 36	28°8'56"	11°11'24"	9°6'6"	1°27'27"	23°53'53"	15°36'36"	11°59'59"	23°51'51"	12°2'2"	16°40'40"	16°9'9"	16°36'36"	3°10'10"	25°13'13"	S 19
M 20	17 54 33	29°6'11"	23°47'47"	10°48'48"	2°41'41"	23°45'45"	15°43'43"	11°54'54"	23°53'53"	12°2'2"	16°39'39"	15°56'56"	16°33'33"	3°16'16"	25°14'14"	M 20
T 21	17 58 29	0°53'25"	6°32'22"	12°31'31"	3°54'54"	23°37'37"	15°49'49"	11°50'50"	23°54'54"	12°2'2"	16°37'37"	15°44'44"	16°30'30"	3°23'23"	25°14'14"	T 21
W 22	18 2 26	1°0'38"	19°8'8"	14°18'18"	5°8'8"	23°30'30"	15°56'56"	11°46'46"	23°56'56"	12°1'1"	16°36'36"	15°33'33"	16°27'27"	3°30'30"	25°14'14"	W 22
T 23	18 6 22	1°57'52"	2°26'6"	16°8'8"	6°22'22"	23°24'24"	16°3'3"	11°42'42"	23°58'58"	12°1'1"	16°34'34"	15°25'25"	16°24'24"	3°36'36"	25°14'14"	T 23
F 24	18 10 19	2°55'05"	15°15'15"	18°0'0"	7°36'36"	23°18'18"	16°11'11"	11°38'38"	24°0'0"	12°1'1"	16°33'33"	15°19'19"	16°20'20"	3°43'43"	25°15'15"	F 24
S 25	18 14 15	3°52'18"	28°36'36"	19°55'55"	8°49'49"	23°14'14"	16°18'18"	11°34'34"	24°1'1"	12°0'0"	16°31'31"	15°16'16"	16°17'17"	3°50'50"	25°15'15"	S 25
S 26	18 18 12	4°49'30"	12°11'8"	21°52'52"	10°3'3"	23°10'10"	16°25'25"	11°30'30"	24°3'3"	12°0'0"	16°30'30"	15°D15'	16°14'14"	3°57'57"	25°15'15"	S 26
M 27	18 22 8	5°46'43"	25°53'53"	23°52'52"	11°17'17"	23°7'7"	16°33'33"	11°26'26"	24°4'4"	12°0'0"	16°29'29"	15°15'15"	16°11'11"	4°3'3"	25°R15'	M 27
T 28	18 26 5	6°43'56"	9°15'50"	25°54'54"	12°30'30"	23°5'5"	16°41'41"	11°23'23"	24°6'6"	11°59'59"	16°27'27"	15°R15'	16°8'8"	4°10'10"	25°15'15"	T 28
W 29	18 30 2	7°41'09"	24°0'0"	27°58'58"	13°44'44"	23°4'4"	16°48'48"	11°19'19"	24°7'7"	11°59'59"	16°26'26"	15°14'14"	16°5'5"	4°17'17"	25°15'15"	W 29
T 30	18 33 58	8°38'22"	8°12'22"	0°53'53"	14°58'58"	23°D3'	16°11'56"	11°11'15"	24°11'9"	11°11'58"	16°32'24"	15°11'11"	16°11'11"	4°11'23"	25°11'11"	T 30

# ASTRODIENST EPHEMERIS for the year 2016

## geocentric

JULY 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	18 37 55	9°35'35"	22°52'	2°10'	16°12'	23°4'	17°4'	11°R12	24°Y10	11°R58	16°R23	15°R 6	15°58'	4°30'	25°R15	F 1
S 2	18 41 51	10°32'49"	7°12'27"	4°19'	17°25'	23° 5'	17°13'	11°R 8	24°12'	11°R57	16°R21	14°58'	15°55'	4°37'	25°R14	S 2
S 3	18 45 48	11°30'02"	21°59'	6°28'	18°39'	23° 7'	17°21'	11° 4'	24°13'	11°57'	16°20'	14°49'	15°52'	4°43'	25°14'	S 3
M 4	18 49 44	12°27'16"	6°22'	8°38'	19°53'	23°10'	17°29'	11° 1'	24°14'	11°56'	16°18'	14°39'	15°49'	4°50'	25°14'	M 4
T 5	18 53 41	13°24'29"	20°30'	10°48'	21° 7'	23°14'	17°38'	10°58'	24°15'	11°55'	16°17'	14°30'	15°46'	4°57'	25°13'	T 5
W 6	18 57 37	14°21'43"	4°17'	12°58'	22°20'	23°18'	17°46'	10°54'	24°17'	11°55'	16°15'	14°23'	15°42'	5° 3'	25°13'	W 6
T 7	19 1 34	15°18'56"	17°42'	15° 9'	23°34'	23°24'	17°55'	10°51'	24°18'	11°54'	16°14'	14°17'	15°39'	5°10'	25°13'	T 7
F 8	19 5 31	16°16'10"	0°42'	17°18'	24°48'	23°30'	18° 4'	10°48'	24°19'	11°53'	16°12'	14°14'	15°36'	5°17'	25°12'	F 8
S 9	19 9 27	17°13'23"	13°21'	19°27'	26° 2'	23°37'	18°13'	10°45'	24°20'	11°52'	16°11'	14°D13	15°33'	5°23'	25°11'	S 9
S 10	19 13 24	18°10'36"	25°41'	21°36'	27°15'	23°44'	18°22'	10°41'	24°21'	11°52'	16° 9'	14°14'	15°30'	5°30'	25°11'	S 10
M 11	19 17 20	19° 7'49"	7°46'	23°43'	28°29'	23°53'	18°31'	10°38'	24°22'	11°51'	16° 8'	14°15'	15°26'	5°37'	25°10'	M 11
T 12	19 21 17	20° 5'02"	19°41'	25°49'	29°43'	24° 2'	18°40'	10°36'	24°23'	11°50'	16° 6'	14°R15	15°23'	5°44'	25° 9'	T 12
W 13	19 25 13	21° 2'15"	1°33'	27°53'	0°57'	24°12'	18°50'	10°33'	24°24'	11°49'	16° 5'	14°15'	15°20'	5°50'	25° 9'	W 13
T 14	19 29 10	21°59'28"	13°25'	29°56'	2°10'	24°22'	18°59'	10°30'	24°24'	11°48'	16° 3'	14°12'	15°17'	5°57'	25° 8'	T 14
F 15	19 33 6	22°56'41"	25°22'	1°57'	3°24'	24°33'	19° 9'	10°27'	24°25'	11°47'	16° 2'	14° 8'	15°14'	6° 4'	25° 7'	F 15
S 16	19 37 3	23°53'54"	7°28'	3°57'	4°38'	24°45'	19°18'	10°25'	24°26'	11°46'	16° 1'	14° 1'	15°11'	6°10'	25° 6'	S 16
S 17	19 41 0	24°51'07"	19°47'	5°55'	5°52'	24°58'	19°28'	10°22'	24°26'	11°45'	15°59'	13°54'	15° 7'	6°17'	25° 5'	S 17
M 18	19 44 56	25°48'21"	2°21'	7°52'	7° 5'	25°11'	19°38'	10°20'	24°27'	11°44'	15°58'	13°45'	15° 4'	6°24'	25° 4'	M 18
T 19	19 48 53	26°45'35"	15°10'	9°46'	8°19'	25°25'	19°48'	10°17'	24°28'	11°43'	15°56'	13°37'	15° 1'	6°30'	25° 3'	T 19
W 20	19 52 49	27°42'49"	28°15'	11°39'	9°33'	25°40'	19°58'	10°15'	24°28'	11°42'	15°55'	13°30'	14°58'	6°37'	25° 2'	W 20
T 21	19 56 46	28°40'04"	11°34'	13°30'	10°47'	25°55'	20° 8'	10°13'	24°29'	11°41'	15°53'	13°24'	14°55'	6°44'	25° 0'	T 21
F 22	20 0 42	29°37'19"	25° 7'	15°19'	12° 0'	26°11'	20°18'	10°11'	24°29'	11°40'	15°52'	13°21'	14°52'	6°50'	24°59'	F 22
S 23	20 4 39	0°34'35"	8°50'	17° 6'	13°14'	26°28'	20°28'	10° 9'	24°29'	11°39'	15°50'	13°D20	14°48'	6°57'	24°58'	S 23
S 24	20 8 35	1°31'52"	22°42'	18°52'	14°28'	26°45'	20°39'	10° 7'	24°30'	11°38'	15°49'	13°20'	14°45'	7° 4'	24°57'	S 24
M 25	20 12 32	2°29'10"	6°47'	20°36'	15°41'	27° 2'	20°49'	10° 5'	24°30'	11°37'	15°48'	13°21'	14°42'	7°11'	24°55'	M 25
T 26	20 16 29	3°26'28"	20°47'	22°18'	16°55'	27°20'	21° 0'	10° 3'	24°30'	11°36'	15°46'	13°22'	14°39'	7°17'	24°54'	T 26
W 27	20 20 25	4°23'48"	4°57'	23°58'	18° 9'	27°39'	21°10'	10° 1'	24°30'	11°34'	15°45'	13°R23	14°36'	7°24'	24°52'	W 27
T 28	20 24 22	5°21'08"	19°10'	25°37'	19°23'	27°59'	21°21'	10° 0'	24°30'	11°33'	15°43'	13°22'	14°32'	7°31'	24°51'	T 28
F 29	20 28 18	6°18'30"	3°12'	27°14'	20°36'	28°18'	21°32'	9°58'	24°30'	11°32'	15°42'	13°20'	14°29'	7°37'	24°49'	F 29
S 30	20 32 15	7°15'53"	17°35'	28°49'	21°50'	28°39'	21°42'	9°57'	24°R30	11°31'	15°41'	13°16'	14°26'	7°44'	24°48'	S 30
S 31	20 36 11	8°13'17"	1°40'	0°22'	23° 4'	29°10'	21°53'	9°55'	24°Y30	11°R29	15°R39	13°11'	14°23'	7°51'	24°46'	S 31

Delta T = 68.35 sec

AUGUST 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	20 40 8	9°10'42"	15°36'	1°54'	24°18'	29°12'	22°11'	9°R54	24°R30	11°R28	15°R38	13°R 6	14°20'	7°57'	24°R44	M 1
T 2	20 44 4	10° 8'07"	29°19'	3°23'	25°31'	29°43'	22°15'	9°R53	24°Y30	11°R27	15°R37	13°R 1	14°17'	8° 4'	24°R43	T 2
W 3	20 48 1	11° 5'34"	12°46'	4°51'	26°45'	0°R 6	22°26'	9°52'	24°30'	11°25'	15°35'	12°57'	14°13'	8°11'	24°41'	W 3
T 4	20 51 58	12° 3'02"	25°55'	6°17'	27°59'	0°29'	22°38'	9°51'	24°30'	11°24'	15°34'	12°54'	14°10'	8°18'	24°39'	T 4
F 5	20 55 54	13° 0'30"	8°46'	7°42'	29°13'	0°52'	22°49'	9°50'	24°30'	11°23'	15°33'	12°D53	14° 7'	8°24'	24°37'	F 5
S 6	20 59 51	13°57'59"	21°18'	9° 4'	0°26'	1°16'	23° 0'	9°49'	24°29'	11°21'	15°31'	12°53'	14° 4'	8°31'	24°35'	S 6
S 7	21 3 47	14°55'29"	3°35'	10°25'	1°40'	1°41'	23°11'	9°49'	24°29'	11°20'	15°30'	12°54'	14° 1'	8°38'	24°33'	S 7
M 8	21 7 44	15°53'00"	15°40'	11°43'	2°54'	2° 6'	23°23'	9°48'	24°28'	11°18'	15°29'	12°56'	13°58'	8°44'	24°31'	M 8
T 9	21 11 40	16°50'32"	27°36'	13° 0'	4° 7'	2°31'	23°34'	9°48'	24°28'	11°17'	15°28'	12°58'	13°54'	8°51'	24°29'	T 9
W 10	21 15 37	17°48'04"	9°28'	14°15'	5°21'	2°57'	23°46'	9°47'	24°27'	11°15'	15°27'	12°59'	13°51'	8°58'	24°27'	W 10
T 11	21 19 33	18°45'38"	21°20'	15°27'	6°35'	3°23'	23°58'	9°47'	24°27'	11°14'	15°25'	12°R59	13°48'	9° 4'	24°25'	T 11
F 12	21 23 30	19°43'12"	3°18'	16°38'	7°49'	3°49'	24° 9'	9°47'	24°26'	11°12'	15°24'	12°58'	13°45'	9°11'	24°23'	F 12
S 13	21 27 27	20°40'47"	15°26'	17°46'	9° 2'	4°16'	24°21'	9°D47	24°26'	11°11'	15°23'	12°56'	13°42'	9°18'	24°21'	S 13
S 14	21 31 23	21°38'24"	27°49'	18°51'	10°16'	4°44'	24°33'	9°47'	24°25'	11° 9'	15°22'	12°54'	13°38'	9°24'	24°19'	S 14
M 15	21 35 20	22°36'01"	10°28'	19°55'	11°30'	5°12'	24°45'	9°47'	24°24'	11° 8'	15°21'	12°51'	13°35'	9°31'	24°17'	M 15
T 16	21 39 16	23°33'39"	23°27'	20°55'	12°43'	5°40'	24°56'	9°47'	24°23'	11° 6'	15°20'	12°48'	13°32'	9°38'	24°14'	T 16
W 17	21 43 13	24°31'19"	6°46'	21°53'	13°57'	6° 8'	25° 8'	9°47'	24°23'	11° 5'	15°19'	12°46'	13°29'	9°45'	24°12'	W 17
T 18	21 47 9	25°28'59"	20°25'	22°49'	15°10'	6°37'	25°20'	9°48'	24°22'	11° 3'	15°18'	12°44'	13°26'	9°51'	24°10'	T 18
F 19	21 51 6	26°26'41"	4°20'	23°41'	16°24'	7° 6'	25°32'	9°48'	24°21'	11° 2'	15°17'	12°43'	13°23'	9°58'	24° 7'	F 19
S 20	21 55 2	27°24'25"	18°30'	24°30'	17°38'	7°36'	25°44'	9°49'	24°20'	11° 0'	15°16'	12°D43	13°19'	10° 5'	24° 5'	S 20
S 21	21 58 59	28°22'09"	2°48'	25°16'	18°51'	8° 6'	25°57'	9°50'	24°19'	10°58'	15°15'	12°43'	13°16'	10°11'	24° 3'	S 21
M 22	22 2 56	29°19'56"	17°12'	25°58'	20° 5'	8°36'	26° 9'	9°50'	24°18'	10°57'	15°14'	12°44'	13°13'	10°18'	24° 0'	M 22
T 23	22 6 52	0°17'44"	1°36'	26°37'	21°19'	9° 7'	26°21'	9°51'	24°16'	10°55'	15°13'	12°45'	13°10'	10°25'	23°58'	T 23
W 24	22 10 49	1°15'33"	15°57'	27°12'	22°32'	9°38'	26°33'	9°52'	24°15'	10°54'	15°12'	12°46'	13° 7'	10°31'	23°55'	W 24
T 25	22 14 45	2°13'25"	0°12'	27°42'	23°46'	10° 9'	26°45'	9°53'	24°14'	10°52'	15°11'	12°R46	13° 3'	10°38'	23°53'	T 25
F 26	22 18 42	3°11'18"	14°18'	28° 8'	24°59'	10°41'	26°58'	9°54'	24°13'	10°50'	15°10'	12°46'	13° 0'	10°45'	23°50'	F 26
S 27	22 22 38	4° 9'13"	28°13'	28°30'	26°13'	11°12'	27°10'	9°56'	24°12'	10°49'	15° 9'	12°46'	12°57'	10°52'	23°48'	S 27
S 28	22 26 35	5° 7'11"	11°56'	28°46'	27°26'	11°45'	27°23'	9°57'	24°10'	10°47'	15° 8'	12°45'	12°54'	10°58'	23°45'	S 28
M 29	22 30 31	6° 5'09"	25°27'	28°58'	28°40'	12°17'	27°35'	9°58'	24° 9'	10°45'	15° 7'	12°44'	12°51'	11° 5'	23°42'	M 29
T 30	22 34 28	7° 3'10"	8°43'	29° 4'	29°54'	12°50'	27°47'	10° 0'	24° 8'	10°44'	15° 7'	12°43'	12°48'	11°12'	23°40'	T 30
W 31	22 38 25	8°11'12"	21°46'	29°R 4	1° 7'	13°R23	28°11'	10°R 2	24°Y 6	10°R42	15°R 6	12°R43	12°44'	11°18'	23°R37	W 31

Delta T = 68.39 sec

# ASTRODIENST EPHEMERIS for the year 2016

## geocentric

SEPTEMBER 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	22 42 21	8♍59°16	4♎35	28°R58	2♌21	13♊56	28♎13	10♊3	24°R 5	10°R40	15°R 5	12°R43	12♎41	11♍25	23°R35	T 1
F 2	22 46 18	9°57'22	17°10	28♎47	3°34	14°30	28°25	10° 5	24°Y 3	10°K39	15°Z 4	12°D43	12°38	11°32	23°K32	F 2
S 3	22 50 14	10°55'29	29°32	28°29	4°48	15° 4	28°38	10° 7	24° 2	10°37	15° 4	12♎43	12°35	11°38	23°29	S 3
S 4	22 54 11	11°53'38	11♌42	28° 4	6° 1	15°38	28°50	10° 9	24° 0	10°35	15° 3	12°43	12°32	11°45	23°27	S 4
M 5	22 58 7	12°51'48	23°43	27°34	7°15	16°13	29° 3	10°11	23°58	10°34	15° 2	12°R43	12°29	11°52	23°24	M 5
T 6	23 2 4	13°50'00	5♍38	26°57	8°28	16°47	29°16	10°14	23°57	10°32	15° 2	12°43	12°25	11°59	23°21	T 6
W 7	23 6 0	14°48'14	17°29	26°15	9°42	17°22	29°28	10°16	23°55	10°31	15° 1	12°43	12°22	12° 5	23°18	W 7
T 8	23 9 57	15°46'29	29°21	25°27	10°55	17°57	29°41	10°18	23°53	10°29	15° 1	12°42	12°19	12°12	23°16	T 8
F 9	23 13 53	16°44'45	11♊17	24°34	12° 8	18°33	29°54	10°21	23°51	10°27	15° 0	12°D42	12°16	12°19	23°13	F 9
S 10	23 17 50	17°43'03	23°24	23°38	13°22	19° 8	0♌7	10°23	23°50	10°26	15° 0	12°42	12°13	12°25	23°10	S 10
S 11	23 21 47	18°41'23	5♌44	22°39	14°35	19°44	0°20	10°26	23°48	10°24	14°59	12°42	12° 9	12°32	23° 8	S 11
M12	23 25 43	19°39'44	18°23	21°38	15°49	20°21	0°32	10°29	23°46	10°22	14°59	12°43	12° 6	12°39	23° 5	M12
T 13	23 29 40	20°38'07	1♌23	20°36	17° 2	20°57	0°45	10°32	23°44	10°21	14°58	12°44	12° 3	12°46	23° 2	T 13
W14	23 33 36	21°36'32	14°48	19°36	18°15	21°33	0°58	10°34	23°42	10°19	14°58	12°44	12° 0	12°52	22°59	W14
T 15	23 37 33	22°34'58	28°36	18°38	19°29	22°10	1°11	10°37	23°40	10°18	14°58	12°45	11°57	12°59	22°57	T 15
F 16	23 41 29	23°33'26	12♋48	17°45	20°42	22°47	1°24	10°41	23°38	10°16	14°57	12°R45	11°54	13° 6	22°54	F 16
S 17	23 45 26	24°31'55	27°20	16°56	21°55	23°24	1°37	10°44	23°36	10°14	14°57	12°45	11°50	13°12	22°51	S 17
S 18	23 49 22	25°30'27	12°Y 4	16°14	23° 9	24° 2	1°50	10°47	23°34	10°13	14°57	12°44	11°47	13°19	22°48	S 18
M19	23 53 19	26°29'00	26°56	15°40	24°22	24°39	2° 3	10°50	23°32	10°11	14°56	12°43	11°44	13°26	22°45	M19
T 20	23 57 16	27°27'36	11♌45	15°14	25°35	25°17	2°16	10°54	23°30	10°10	14°56	12°41	11°41	13°32	22°43	T 20
W21	0 1 12	28°26'14	26°26	14°57	26°48	25°55	2°28	10°57	23°28	10° 8	14°56	12°39	11°38	13°39	22°40	W21
T 22	0 5 9	29°24'54	10♍53	14°D50	28° 2	26°33	2°41	11° 1	23°26	10° 7	14°56	12°38	11°34	13°46	22°37	T 22
F 23	0 9 5	0♌23°36	25° 2	14°52	29°15	27°12	2°54	11° 5	23°23	10° 5	14°56	12°D37	11°31	13°53	22°35	F 23
S 24	0 13 2	1°22'21	8♌52	15° 5	0♍28	27°50	3° 7	11° 8	23°21	10° 3	14°56	12°37	11°28	13°59	22°32	S 24
S 25	0 16 58	2°21'08	22°22	15°27	1°41	28°29	3°20	11°12	23°19	10° 2	14°56	12°38	11°25	14° 6	22°29	S 25
M26	0 20 55	3°19'57	5♌35	15°59	2°54	29° 8	3°33	11°16	23°17	10° 0	14°56	12°39	11°22	14°13	22°26	M26
T 27	0 24 51	4°18'49	18°30	16°40	4° 7	29°47	3°46	11°20	23°14	9°59	14°D56	12°41	11°19	14°19	22°24	T 27
W28	0 28 48	5°17'42	1♎12	17°29	5°21	0♌26	3°59	11°24	23°12	9°58	14°56	12°42	11°15	14°26	22°21	W28
T 29	0 32 45	6°16'38	13°41	18°26	6°34	1° 5	4°12	11°28	23°10	9°56	14°56	12°R42	11°12	14°33	22°18	T 29
F 30	0 36 41	7♌15°36	26♎0	19♎31	7♍47	1♌45	4♌25	11♊33	23°Y 8	9°K55	14°Z56	12♎42	11♎9	14♍40	22°K16	F 30

Delta T = 68.44 sec

OCTOBER 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	0 40 38	8♌14°36	8♌9	20♎42	9♍0	2♌25	4♌38	11♊37	23°R 5	9°R53	14°Z56	12°R40	11♎6	14♍46	22°R13	S 1
S 2	0 44 34	9°13'38	20°11	21°59	10°13	3° 5	4°51	11°41	23°Y 3	9°K52	14°56	12♎36	11° 3	14°53	22°K10	S 2
M 3	0 48 31	10°12'42	2♍8	23°21	11°26	3°45	5° 4	11°46	23° 1	9°50	14°56	12°32	11° 0	15° 0	22° 8	M 3
T 4	0 52 27	11°11'47	14° 0	24°47	12°39	4°25	5°17	11°50	22°58	9°49	14°56	12°27	10°56	15° 6	22° 5	T 4
W 5	0 56 24	12°10'55	25°50	26°18	13°52	5° 5	5°30	11°55	22°56	9°48	14°57	12°22	10°53	15°13	22° 3	W 5
T 6	1 0 20	13°10'05	7♊42	27°51	15° 5	5°46	5°43	12° 0	22°53	9°46	14°57	12°17	10°50	15°20	22° 0	T 6
F 7	1 4 17	14° 9'17	19°37	29°28	16°18	6°26	5°56	12° 4	22°51	9°45	14°57	12°13	10°47	15°26	21°58	F 7
S 8	1 8 13	15° 8'30	1♌41	1♌6	17°31	7° 7	6° 9	12° 9	22°49	9°44	14°58	12°11	10°44	15°33	21°55	S 8
S 9	1 12 10	16° 7'45	13°58	2°46	18°44	7°48	6°22	12°14	22°46	9°43	14°58	12°D10	10°40	15°40	21°53	S 9
M10	1 16 7	17° 7'02	26°31	4°28	19°57	8°29	6°35	12°19	22°44	9°41	14°58	12°10	10°37	15°47	21°50	M10
T 11	1 20 3	18° 6'21	9♌26	6°11	21°10	9°10	6°47	12°24	22°41	9°40	14°59	12°11	10°34	15°53	21°48	T 11
W12	1 24 0	19° 5'41	22°45	7°54	22°22	9°51	7° 0	12°29	22°39	9°39	14°59	12°13	10°31	16° 0	21°46	W12
T 13	1 27 56	20° 5'03	6♋32	9°38	23°35	10°33	7°13	12°34	22°36	9°38	15° 0	12°R14	10°28	16° 7	21°43	T 13
F 14	1 31 53	21° 4'27	20°47	11°22	24°48	11°14	7°26	12°40	22°34	9°37	15° 0	12°14	10°25	16°13	21°41	F 14
S 15	1 35 49	22° 3'53	5°Y28	13° 6	26° 1	11°56	7°39	12°45	22°32	9°36	15° 1	12°12	10°21	16°20	21°39	S 15
S 16	1 39 46	23° 3'21	20°28	14°51	27°13	12°38	7°51	12°50	22°29	9°34	15° 1	12° 8	10°18	16°27	21°36	S 16
M17	1 43 42	24° 2'51	5♌40	16°35	28°26	13°20	8° 4	12°56	22°27	9°33	15° 2	12° 3	10°15	16°34	21°34	M17
T 18	1 47 39	25° 2'23	20°53	18°19	29°39	14° 1	8°17	13° 1	22°24	9°32	15° 3	11°56	10°12	16°40	21°32	T 18
W19	1 51 36	26° 1'57	5♍56	20° 2	0♊51	14°44	8°30	13° 7	22°22	9°31	15° 3	11°50	10° 9	16°47	21°30	W19
T 20	1 55 32	27° 1'33	20°42	21°45	2° 4	15°26	8°42	13°12	22°19	9°30	15° 4	11°44	10° 6	16°54	21°28	T 20
F 21	1 59 29	28° 1'12	5♌3	23°28	3°17	16° 8	8°55	13°18	22°17	9°29	15° 5	11°40	10° 2	17° 0	21°26	F 21
S 22	2 3 25	29° 0'53	18°58	25°10	4°29	16°50	9° 7	13°23	22°14	9°28	15° 5	11°37	9°59	17° 7	21°24	S 22
S 23	2 7 22	0♍0°36	2♌28	26°52	5°42	17°33	9°20	13°29	22°12	9°28	15° 6	11°D37	9°56	17°14	21°22	S 23
M24	2 11 18	1° 0'21	15°33	28°33	6°54	18°16	9°32	13°35	22°10	9°27	15° 7	11°38	9°53	17°21	21°20	M24
T 25	2 15 15	2° 0'09	28°17	0♍14	8° 7	18°58	9°45	13°41	22° 7	9°26	15° 8	11°39	9°50	17°27	21°18	T 25
W26	2 19 11	2°59'59	10♎45	1°54	9°19	19°41	9°57	13°47	22° 5	9°25	15° 9	11°R40	9°46	17°34	21°16	W26
T 27	2 23 8	3°59'51	23° 0	3°33	10°32	20°24	10°10	13°53	22° 2	9°24	15°10	11°39	9°43	17°41	21°14	T 27
F 28	2 27 5	4°59'45	5♌6	5°12	11°44	21° 7	10°22	13°59	22° 0	9°23	15°10	11°36	9°40	17°47	21°12	F 28
S 29	2 31 1	5°59'41	17° 5	6°51	12°56	21°50	10°35	14° 5	21°58	9°23	15°11	11°31	9°37	17°54	21°10	S 29
S 30	2 34 58	6°59'40	29° 0	8°29	14° 9	22°33	10°47	14°11	21°55	9°22	15°12	11°23	9°34	18° 1	21° 9	S 30
M31	2 38 54	7♍59°40	10♍52	10♍6	15♊21	23♌16	10♌59	14♊17	21°Y53	9°K21	15°Z13	11♎12	9♎31	18♍8	21°K7	M31

Delta T = 68.48 sec

ASTRODIENST EPHEMERIS for the year 2016  
geocentric

NOVEMBER 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	2 42 51	8♉59'42	22♈44	11♈43	16♈33	24♈0	11♈11	14♈23	21♈51	9♈21	15♈14	11♈1	9♈27	18♈14	21♈5	T 1
W 2	2 46 47	9♏59'46	4♈35	13°20	17°45	24°43	11°24	14°29	21°48	9♈20	15°15	10♈49	9°24	18°21	21♈4	W 2
T 3	2 50 44	10♏59'51	16°29	14°56	18°58	25°27	11°36	14°36	21°46	9°19	15°17	10°38	9°21	18°28	21°2	T 3
F 4	2 54 40	11♏59'59	28°27	16°32	20°10	26°10	11°48	14°42	21°44	9°19	15°18	10°28	9°18	18°34	21°1	F 4
S 5	2 58 37	13° 0'08	10♈32	18° 7	21°22	26°54	12° 0	14°48	21°42	9°18	15°19	10°21	9°15	18°41	20°59	S 5
S 6	3 2 34	14° 0'19	22°47	19°42	22°34	27°38	12°12	14°55	21°39	9°18	15°20	10°16	9°11	18°48	20°58	S 6
M 7	3 6 30	15° 0'31	5♈17	21°16	23°46	28°21	12°24	15° 1	21°37	9°17	15°21	10°14	9° 8	18°55	20°57	M 7
T 8	3 10 27	16° 0'45	18° 5	22°51	24°58	29° 5	12°36	15° 8	21°35	9°17	15°22	10°D13	9° 5	19° 1	20°55	T 8
W 9	3 14 23	17° 1'00	1♈15	24°24	26°10	29°49	12°47	15°14	21°33	9°17	15°24	10°14	9° 2	19° 8	20°54	W 9
T 10	3 18 20	18° 1'16	14°52	25°58	27°22	0♈33	12°59	15°21	21°31	9°16	15°25	10°R14	8°59	19°15	20°53	T 10
F 11	3 22 16	19° 1'34	28°57	27°31	28°34	1°17	13°11	15°27	21°29	9°16	15°26	10°12	8°56	19°21	20°52	F 11
S 12	3 26 13	20° 1'53	13♈31	29° 4	29°45	2° 1	13°22	15°34	21°27	9°16	15°28	10° 9	8°52	19°28	20°51	S 12
S 13	3 30 9	21° 2'14	28°29	0♈36	0♈57	2°46	13°34	15°40	21°25	9°15	15°29	10° 2	8°49	19°35	20°50	S 13
M14	3 34 6	22° 2'37	13♈45	2° 8	2° 9	3°30	13°45	15°47	21°23	9°15	15°30	9°53	8°46	19°42	20°49	M14
T 15	3 38 3	23° 3'01	29° 7	3°40	3°20	4°14	13°57	15°54	21°21	9°15	15°32	9°43	8°43	19°48	20°48	T 15
W16	3 41 59	24° 3'27	14♈24	5°11	4°32	4°58	14° 8	16° 1	21°19	9°15	15°33	9°32	8°40	19°55	20°47	W16
T 17	3 45 56	25° 3'54	29°25	6°43	5°43	5°43	14°19	16° 7	21°17	9°15	15°34	9°22	8°37	20° 2	20°46	T 17
F 18	3 49 52	26° 4'23	14♈8	8°14	6°55	6°27	14°31	16°14	21°15	9°15	15°36	9°14	8°33	20° 8	20°45	F 18
S 19	3 53 49	27° 4'54	28° 1	9°44	8° 6	7°12	14°42	16°21	21°13	9°14	15°37	9° 9	8°30	20°15	20°45	S 19
S 20	3 57 45	28° 5'27	11♈45	11°15	9°17	7°56	14°53	16°28	21°11	9°D14	15°39	9° 6	8°27	20°22	20°44	S 20
M21	4 1 42	29° 6'02	24°53	12°45	10°28	8°41	15° 4	16°35	21° 9	9°14	15°40	9°D 5	8°24	20°29	20°43	M21
T 22	4 5 38	0♈6'38	7♈37	14°15	11°40	9°25	15°15	16°42	21° 8	9°15	15°42	9°R 5	8°21	20°35	20°43	T 22
W23	4 9 35	1° 7'16	20° 1	15°44	12°51	10°10	15°26	16°48	21° 6	9°15	15°44	9° 5	8°17	20°42	20°42	W23
T 24	4 13 32	2° 7'56	2♈10	17°13	14° 2	10°55	15°36	16°55	21° 4	9°15	15°45	9° 3	8°14	20°49	20°42	T 24
F 25	4 17 28	3° 8'37	14° 9	18°42	15°13	11°40	15°47	17° 2	21° 3	9°15	15°47	8°58	8°11	20°55	20°41	F 25
S 26	4 21 25	4° 9'20	26° 2	20°10	16°23	12°24	15°58	17° 9	21° 1	9°15	15°48	8°51	8° 8	21° 2	20°41	S 26
S 27	4 25 21	5°10'04	7♈53	21°38	17°34	13° 9	16° 8	17°16	21° 0	9°15	15°50	8°41	8° 5	21° 9	20°41	S 27
M28	4 29 18	6°10'50	19°44	23° 5	18°45	13°54	16°19	17°23	20°58	9°16	15°52	8°28	8° 2	21°16	20°41	M28
T 29	4 33 14	7°11'37	1♈36	24°32	19°56	14°39	16°29	17°30	20°57	9°16	15°53	8°13	7°58	21°22	20°40	T 29
W30	4 37 11	8♈12'26	13♈32	25♈58	21♈6	15♈24	16♈39	17♈37	20°Y55	9♈16	15°55	7♈58	7♈55	21♈29	20°40	W30

Delta T = 68.52 sec

DECEMBER 2016

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	4 41 7	9♈13'15	25♈32	27♈22	22♈16	16♈9	16♈49	17♈44	20°R54	9♈16	15♈57	7°R43	7♈52	21♈36	20°D40	T 1
F 2	4 45 4	10°14'06	7♈38	28°46	23°27	16°54	16°59	17°51	20°Y52	9°17	15°59	7♈30	7°49	21°42	20°44	F 2
S 3	4 49 1	11°14'58	19°51	0♈9	24°37	17°39	17° 9	17°58	20°51	9°17	16° 0	7°20	7°46	21°49	20°40	S 3
S 4	4 52 57	12°15'51	2♈13	1°31	25°47	18°24	17°19	18° 5	20°50	9°18	16° 2	7°13	7°43	21°56	20°40	S 4
M 5	4 56 54	13°16'44	14°46	2°51	26°57	19° 9	17°29	18°13	20°49	9°18	16° 4	7° 9	7°39	22° 3	20°41	M 5
T 6	5 0 50	14°17'39	27°34	4° 9	28° 7	19°54	17°39	18°20	20°47	9°19	16° 6	7° 8	7°36	22° 9	20°41	T 6
W 7	5 4 47	15°18'34	10♈40	5°25	29°17	20°39	17°48	18°27	20°46	9°19	16° 7	7° 8	7°33	22°16	20°41	W 7
T 8	5 8 43	16°19'30	24° 7	6°39	0♈27	21°25	17°58	18°34	20°45	9°20	16° 9	7° 8	7°30	22°23	20°41	T 8
F 9	5 12 40	17°20'26	8♈0	7°50	1°36	22°10	18° 7	18°41	20°44	9°21	16°11	7° 6	7°27	22°29	20°42	F 9
S 10	5 16 36	18°21'23	22°17	8°58	2°45	22°55	18°16	18°48	20°43	9°21	16°13	7° 3	7°23	22°36	20°42	S 10
S 11	5 20 33	19°22'21	6♈58	10° 3	3°55	23°40	18°25	18°55	20°42	9°22	16°15	6°56	7°20	22°43	20°43	S 11
M12	5 24 30	20°23'20	21°59	11° 3	5° 4	24°25	18°34	19° 2	20°41	9°23	16°17	6°47	7°17	22°50	20°43	M12
T 13	5 28 26	21°24'19	7♈10	11°58	6°13	25°11	18°43	19° 9	20°40	9°23	16°19	6°37	7°14	22°56	20°44	T 13
W14	5 32 23	22°25'19	22°22	12°48	7°22	25°56	18°52	19°16	20°40	9°24	16°21	6°25	7°11	23° 3	20°45	W14
T 15	5 36 19	23°26'19	7♈23	13°32	8°30	26°41	19° 1	19°23	20°39	9°25	16°22	6°15	7° 8	23°10	20°45	T 15
F 16	5 40 16	24°27'21	22° 5	14° 8	9°39	27°26	19° 9	19°31	20°38	9°26	16°24	6° 6	7° 4	23°17	20°46	F 16
S 17	5 44 12	25°28'23	6♈19	14°37	10°47	28°12	19°18	19°38	20°37	9°27	16°26	6° 0	7° 1	23°23	20°47	S 17
S 18	5 48 9	26°29'26	20° 5	14°57	11°55	28°57	19°26	19°45	20°37	9°28	16°28	5°57	6°58	23°30	20°48	S 18
M19	5 52 5	27°30'30	3♈21	15°R 7	13° 3	29°42	19°34	19°52	20°36	9°29	16°30	5°D56	6°55	23°37	20°49	M19
T 20	5 56 2	28°31'35	16°11	15° 6	14°11	0♈28	19°42	19°59	20°36	9°30	16°32	5°56	6°52	23°43	20°50	T 20
W21	5 59 59	29°32'40	28°38	14°55	15°19	1°13	19°50	20° 6	20°35	9°31	16°34	5°R57	6°49	23°50	20°51	W21
T 22	6 3 55	0♈33'46	10♈49	14°31	16°26	1°58	19°58	20°13	20°35	9°32	16°36	5°56	6°45	23°57	20°52	T 22
F 23	6 7 52	1°34'53	22°48	13°56	17°34	2°44	20° 6	20°20	20°35	9°33	16°38	5°54	6°42	24° 4	20°53	F 23
S 24	6 11 48	2°36'01	4♈40	13°10	18°41	3°29	20°13	20°27	20°34	9°34	16°40	5°49	6°39	24°10	20°54	S 24
S 25	6 15 45	3°37'09	16°30	12°12	19°48	4°14	20°21	20°34	20°34	9°35	16°42	5°41	6°36	24°17	20°56	S 25
M26	6 19 41	4°38'18	28°22	11° 6	20°54	4°59	20°28	20°41	20°34	9°36	16°44	5°31	6°33	24°24	20°57	M26
T 27	6 23 38	5°39'28	10♈17	9°52	22° 1	5°45	20°35	20°48	20°34	9°38	16°46	5°20	6°29	24°30	20°58	T 27
W28	6 27 34	6°40'37	22°19	8°32	23° 7	6°30	20°42	20°55	20°33	9°39	16°48	5° 7	6°26	24°37	21° 0	W28
T 29	6 31 31	7°41'48	4♈28	7°11	24°13	7°15	20°49	21° 2	20°D33	9°40	16°50	4°56	6°23	24°44	21° 1	T 29
F 30	6 35 28	8°42'58	16°47	5°49	25°19	8° 1	20°56	21° 8	20°33	9°41	16°52	4°46	6°20	24°51	21° 3	F 30
S 31	6 39 24	9♈44'09	29♈14	4♈30	26♈24	8♈46	21♈2	21♈15	20°Y34	9♈43	16°54	4♈38	6♈17	24♈57	21♈5	S 31

Delta T = 68.55 sec