



Astrodienst Ephemeris Tables for the year 2054

tropical 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 2054

JANUARY 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	6 43 30	10♌46'20	10♋10	18♌57	7♍R39	16♌34	27♌47	10♌2	9♌50	2♍R46	12♌35	9♍R24	10♌37	0♌44	15♌37	T 1	
F 2	6 47 26	11°47'29	23°22	20°35	7♌3	17°17	27°58	10°7	9°51	2♌44	12°36	9♌23	10°33	0°50	15°42	F 2	
S 3	6 51 23	12°48'39	6♌16	22°12	6°28	18°0	28°9	10°12	9°51	2°43	12°36	9°20	10°30	0°57	15°48	S 3	
S 4	6 55 20	13°49'49	18°53	23°50	5°54	18°43	28°20	10°17	9°52	2°42	12°37	9°15	10°27	1°4	15°54	S 4	
M 5	6 59 16	14°50'59	1♌19	25°28	5°21	19°27	28°31	10°22	9°53	2°41	12°38	9°7	10°24	1°11	16°0	M 5	
T 6	7 3 13	15°52'09	13°34	27°6	4°50	20°10	28°42	10°27	9°53	2°40	12°39	8°58	10°21	1°17	16°6	T 6	
W 7	7 7 9	16°53'19	25°40	28°44	4°20	20°53	28°53	10°33	9°53	2°38	12°40	8°47	10°18	1°24	16°12	W 7	
T 8	7 11 6	17°54'29	7♌40	0♌22	3°52	21°36	29°4	10°38	9°54	2°37	12°41	8°37	10°14	1°31	16°17	T 8	
F 9	7 15 2	18°55'40	19°35	1°59	3°26	22°20	29°15	10°43	9°54	2°36	12°42	8°27	10°11	1°37	16°23	F 9	
S 10	7 18 59	19°56'50	1♌25	3°36	3°2	23°3	29°25	10°49	9°54	2°35	12°43	8°19	10°8	1°44	16°29	S 10	
S 11	7 22 56	20°57'59	13°13	5°13	2°41	23°47	29°36	10°55	9°55	2°34	12°45	8°13	10°5	1°51	16°35	S 11	
M12	7 26 52	21°59'09	25°1	6°48	2°21	24°30	29°46	11°0	9°55	2°33	12°46	8°10	10°2	1°57	16°41	M12	
T 13	7 30 49	23°0'17	6♌52	8°23	2°4	25°14	29°57	11°6	9°55	2°32	12°47	8°D9	9°58	2°4	16°47	T 13	
W14	7 34 45	24°1'26	18°49	9°56	1°49	25°57	0♌7	11°12	9°R55	2°31	12°48	8°10	9°55	2°11	16°52	W14	
T 15	7 38 42	25°2'33	0♌55	11°28	1°37	26°41	0°17	11°17	9°55	2°30	12°49	8°11	9°52	2°17	16°58	T 15	
F 16	7 42 38	26°3'40	13°17	12°58	1°27	27°24	0°27	11°23	9°55	2°30	12°50	8°12	9°49	2°24	17°4	F 16	
S 17	7 46 35	27°4'46	25°58	14°25	1°20	28°8	0°37	11°29	9°54	2°29	12°51	8°R13	9°46	2°31	17°10	S 17	
S 18	7 50 31	28°5'52	9♌3	15°50	1°15	28°52	0°47	11°35	9°54	2°28	12°53	8°13	9°43	2°37	17°16	S 18	
M19	7 54 28	29°6'57	22°35	17°11	1°D13	29°36	0°57	11°41	9°54	2°27	12°54	8°10	9°39	2°44	17°21	M19	
T 20	7 58 24	0♌8'01	6♌37	18°28	1°13	0♌19	1°6	11°47	9°54	2°26	12°55	8°6	9°36	2°51	17°27	T 20	
W21	8 2 21	1°9'04	21°7	19°40	1°15	1°3	1°16	11°53	9°53	2°26	12°56	8°1	9°33	2°57	17°33	W21	
T 22	8 6 18	2°10'06	6♌6	20°47	1°20	1°47	1°25	12°0	9°53	2°25	12°58	7°55	9°30	3°4	17°38	T 22	
F 23	8 10 14	3°11'07	21°12	21°48	1°27	2°31	1°34	12°6	9°52	2°24	12°59	7°50	9°27	3°11	17°44	F 23	
S 24	8 14 11	4°12'08	6♌30	22°42	1°37	3°15	1°44	12°12	9°52	2°24	13°0	7°46	9°24	3°17	17°50	S 24	
S 25	8 18 7	5°13'08	21°45	23°27	1°48	3°59	1°53	12°19	9°51	2°23	13°2	7°43	9°20	3°24	17°55	S 25	
M26	8 22 4	6°14'07	6♌45	24°4	2°2	4°43	2°2	12°25	9°51	2°23	13°3	7°D43	9°17	3°31	18°1	M26	
T 27	8 26 0	7°15'05	21°24	24°32	2°18	5°27	2°10	12°31	9°50	2°22	13°4	7°43	9°14	3°37	18°7	T 27	
W28	8 29 57	8°16'03	5♌38	24°49	2°36	6°11	2°19	12°38	9°49	2°21	13°6	7°44	9°11	3°44	18°12	W28	
T 29	8 33 53	9°17'00	19°24	24°R55	2°56	6°55	2°28	12°44	9°48	2°21	13°7	7°46	9°8	3°51	18°18	T 29	
F 30	8 37 50	10°17'57	2♌44	24°50	3°18	7°39	2°36	12°51	9°47	2°21	13°8	7°47	9°4	3°57	18°23	F 30	
S 31	8 41 47	11°18'53	15♌40	24°34	3♌42	8♌24	2°45	12°58	9°47	2♌20	13°10	7°R47	9♌1	4°4	18♌29	S 31	

Delta T = 78.77 sec

FEBRUARY 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	8 45 43	12°19'48	28♌17	24°R7	4♌8	9♌8	2♌53	13♌4	9°R46	2°R20	13♌11	7°R46	8♌58	4♌11	18♌34	S 1	
M 2	8 49 40	13°20'43	10♌36	23°28	4°35	9°52	3°1	13°11	9°45	2♌19	13°13	7°D44	8°55	4°17	18°40	M 2	
T 3	8 53 36	14°21'36	22°44	22°41	5°4	10°36	3°9	13°18	9°43	2°19	13°14	7°41	8°52	4°24	18°45	T 3	
W 4	8 57 33	15°22'29	4♌42	21°44	5°34	11°21	3°17	13°25	9°42	2°19	13°15	7°37	8°49	4°31	18°51	W 4	
T 5	9 1 29	16°23'21	16°34	20°41	6°6	12°5	3°25	13°31	9°41	2°19	13°17	7°33	8°45	4°37	18°56	T 5	
F 6	9 5 26	17°24'12	28°24	19°33	6°40	12°50	3°32	13°38	9°40	2°19	13°18	7°30	8°42	4°44	19°1	F 6	
S 7	9 9 23	18°25'02	10♌12	18°21	7°15	13°34	3°40	13°45	9°39	2°18	13°20	7°27	8°39	4°51	19°7	S 7	
S 8	9 13 19	19°25'51	22°2	17°9	7°51	14°18	3°47	13°52	9°37	2°18	13°21	7°25	8°36	4°57	19°12	S 8	
M 9	9 17 16	20°26'38	3♌55	15°57	8°28	15°3	3°54	13°59	9°36	2°18	13°23	7°D24	8°33	5°4	19°17	M 9	
T 10	9 21 12	21°27'24	15°53	14°49	9°7	15°48	4°1	14°6	9°35	2°18	13°24	7°24	8°30	5°11	19°22	T 10	
W11	9 25 9	22°28'09	27°58	13°45	9°47	16°32	4°8	14°13	9°33	2°D18	13°26	7°25	8°26	5°17	19°27	W11	
T 12	9 29 5	23°28'52	10♌13	12°46	10°28	17°17	4°15	14°20	9°32	2°18	13°27	7°27	8°23	5°24	19°32	T 12	
F 13	9 33 2	24°29'33	22°42	11°54	11°10	18°1	4°21	14°27	9°30	2°18	13°29	7°28	8°20	5°31	19°38	F 13	
S 14	9 36 58	25°30'13	5♌26	11°9	11°53	18°46	4°28	14°34	9°28	2°18	13°30	7°29	8°17	5°37	19°43	S 14	
S 15	9 40 55	26°30'52	18°29	10°33	12°37	19°31	4°34	14°41	9°27	2°18	13°32	7°29	8°14	5°44	19°48	S 15	
M16	9 44 51	27°31'28	1♌55	10°4	13°23	20°16	4°40	14°49	9°25	2°18	13°34	7°R30	8°10	5°51	19°53	M16	
T 17	9 48 48	28°32'03	15°44	9°42	14°9	21°0	4°46	14°56	9°23	2°19	13°35	7°29	8°7	5°57	19°57	T 17	
W18	9 52 45	29°32'36	29°57	9°29	14°56	21°45	4°52	15°3	9°22	2°19	13°37	7°28	8°4	6°4	20°2	W18	
T 19	9 56 41	0♌33'08	14♌32	9°D23	15°44	22°30	4°57	15°10	9°20	2°19	13°38	7°28	8°1	6°11	20°7	T 19	
F 20	10 0 38	1°33'37	29°25	9°24	16°32	23°15	5°3	15°17	9°18	2°19	13°40	7°27	7°58	6°17	20°12	F 20	
S 21	10 4 34	2°34'05	14♌30	9°32	17°22	24°0	5°8	15°25	9°16	2°20	13°41	7°26	7°55	6°24	20°17	S 21	
S 22	10 8 31	3°34'31	29°36	9°46	18°12	24°45	5°13	15°32	9°14	2°20	13°43	7°26	7°51	6°31	20°21	S 22	
M23	10 12 27	4°34'56	14♌36	10°6	19°3	25°29	5°18	15°39	9°12	2°21	13°45	7°D26	7°48	6°37	20°26	M23	
T 24	10 16 24	5°35'18	29°21	10°31	19°55	26°14	5°23	15°46	9°10	2°21	13°46	7°26	7°45	6°44	20°31	T 24	
W25	10 20 20	6°35'40	13♌45	11°1	20°47	26°59	5°28	15°54	9°8	2°21	13°48	7°26	7°42	6°51	20°35	W25	
T 26	10 24 17	7°35'59	27°42	11°37	21°40	27°44	5°33	16°1	9°6	2°22	13°49	7°R26	7°39	6°57	20°40	T 26	
F 27	10 28 14	8°36'18	11♌13	12°16	22°34	28°30	5°37	16°8	9°4	2°22	13°51	7°26	7°35	7°4	20°44	F 27	
S 28	10 32 10	9♌36'35	24♌18	13°0	23♌29	29♌15	5°41	16°16	9°2	2♌23	13°53	7°D26	7°D32	7°41	20°48	S 28	

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ASTRODIENST EPHEMERIS for the year 2054

MARCH 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 36 7	10 ^h 36'50	6 ^h 59	13 ^h 47	24 ^h 23	29 ^h 59	5 ^h 45	16 ^h 23	9 ^h R 0	2 ^h II24	13 ^h 54	7 ^h D26	7 ^h II29	7 ^h 17	20 ^h 53	S 1	
M 2	10 40 3	11 ^h 37'05	19 ^h 21	14 ^h 38	25 ^h 19	0 ^h 45	5 ^h 49	16 ^h 30	8 ^h 58	2 ^h 24	13 ^h 56	7 ^h II26	7 ^h 26	7 ^h 24	20 ^h 57	M 2	
T 3	10 44 0	12 ^h 37'17	1 ^h 27	15 ^h 31	26 ^h 15	1 ^h 30	5 ^h 53	16 ^h 38	8 ^h 55	2 ^h 25	13 ^h 58	7 ^h 26	7 ^h 23	7 ^h 31	21 ^h 1	T 3	
W 4	10 47 56	13 ^h 37'28	13 ^h 23	16 ^h 28	27 ^h 12	2 ^h 15	5 ^h 56	16 ^h 45	8 ^h 53	2 ^h 26	13 ^h 59	7 ^h 27	7 ^h 20	7 ^h 37	21 ^h 5	W 4	
T 5	10 51 53	14 ^h 37'38	25 ^h 13	17 ^h 28	28 ^h 9	3 ^h 1	5 ^h 59	16 ^h 53	8 ^h 51	2 ^h 26	14 ^h 1	7 ^h 28	7 ^h 16	7 ^h 44	21 ^h 9	T 5	
F 6	10 55 49	15 ^h 37'46	7 ^h 00	18 ^h 30	29 ^h 6	3 ^h 46	6 ^h 3	17 ^h 0	8 ^h 49	2 ^h 27	14 ^h 2	7 ^h 29	7 ^h 13	7 ^h 51	21 ^h 14	F 6	
S 7	10 59 46	16 ^h 37'52	18 ^h 49	19 ^h 35	0 ^h 44	4 ^h 31	6 ^h 6	17 ^h 7	8 ^h 46	2 ^h 28	14 ^h 4	7 ^h 29	7 ^h 10	7 ^h 57	21 ^h 17	S 7	
S 8	11 3 43	17 ^h 37'56	0 ^h 43	20 ^h 42	1 ^h 3	5 ^h 16	6 ^h 8	17 ^h 15	8 ^h 44	2 ^h 29	14 ^h 6	7 ^h 30	7 ^h 7	8 ^h 4	21 ^h 21	S 8	
M 9	11 7 39	18 ^h 37'59	12 ^h 43	21 ^h 52	2 ^h 1	6 ^h 2	6 ^h 11	17 ^h 22	8 ^h 42	2 ^h 30	14 ^h 7	7 ^h R30	7 ^h 4	8 ^h 11	21 ^h 25	M 9	
T 10	11 11 36	19 ^h 37'59	24 ^h 53	23 ^h 3	3 ^h 1	6 ^h 47	6 ^h 13	17 ^h 30	8 ^h 39	2 ^h 30	14 ^h 9	7 ^h 29	7 ^h 1	8 ^h 17	21 ^h 29	T 10	
W 11	11 15 32	20 ^h 37'58	7 ^h 13	24 ^h 16	4 ^h 0	7 ^h 32	6 ^h 16	17 ^h 37	8 ^h 37	2 ^h 31	14 ^h 10	7 ^h 28	6 ^h 57	8 ^h 24	21 ^h 33	W 11	
T 12	11 19 29	21 ^h 37'55	19 ^h 44	25 ^h 31	5 ^h 0	8 ^h 18	6 ^h 18	17 ^h 44	8 ^h 34	2 ^h 32	14 ^h 12	7 ^h 26	6 ^h 54	8 ^h 31	21 ^h 37	T 12	
F 13	11 23 25	22 ^h 37'50	2 ^h 29	26 ^h 48	6 ^h 1	9 ^h 3	6 ^h 20	17 ^h 52	8 ^h 32	2 ^h 33	14 ^h 14	7 ^h 24	6 ^h 51	8 ^h 37	21 ^h 40	F 13	
S 14	11 27 22	23 ^h 37'43	15 ^h 27	28 ^h 6	7 ^h 2	9 ^h 49	6 ^h 21	17 ^h 59	8 ^h 29	2 ^h 34	14 ^h 15	7 ^h 22	6 ^h 48	8 ^h 44	21 ^h 44	S 14	
S 15	11 31 18	24 ^h 37'33	28 ^h 40	29 ^h 27	8 ^h 3	10 ^h 34	6 ^h 23	18 ^h 6	8 ^h 27	2 ^h 35	14 ^h 17	7 ^h 20	6 ^h 45	8 ^h 51	21 ^h 47	S 15	
M 16	11 35 15	25 ^h 37'21	12 ^h II 9	0 ^h 48	9 ^h 4	11 ^h 19	6 ^h 24	18 ^h 14	8 ^h 24	2 ^h 37	14 ^h 18	7 ^h 18	6 ^h 41	8 ^h 57	21 ^h 51	M 16	
T 17	11 39 11	26 ^h 37'08	25 ^h 53	2 ^h 11	10 ^h 6	12 ^h 5	6 ^h 25	18 ^h 21	8 ^h 22	2 ^h 38	14 ^h 20	7 ^h D18	6 ^h 38	9 ^h 4	21 ^h 54	T 17	
W 18	11 43 8	27 ^h 36'52	9 ^h 54	3 ^h 36	11 ^h 8	12 ^h 50	6 ^h 26	18 ^h 28	8 ^h 19	2 ^h 39	14 ^h 22	7 ^h 18	6 ^h 35	9 ^h 11	21 ^h 57	W 18	
T 19	11 47 5	28 ^h 36'33	24 ^h 11	5 ^h 2	12 ^h 10	13 ^h 36	6 ^h 27	18 ^h 36	8 ^h 17	2 ^h 40	14 ^h 23	7 ^h 19	6 ^h 32	9 ^h 17	22 ^h 1	T 19	
F 20	11 51 1	29 ^h 36'12	8 ^h 40	6 ^h 30	13 ^h 13	14 ^h 21	6 ^h 27	18 ^h 43	8 ^h 14	2 ^h 41	14 ^h 25	7 ^h 21	6 ^h 29	9 ^h 24	22 ^h 4	F 20	
S 21	11 54 58	0 ^h Y35'49	23 ^h 20	7 ^h 59	14 ^h 16	15 ^h 7	6 ^h 28	18 ^h 50	8 ^h 12	2 ^h 42	14 ^h 26	7 ^h 22	6 ^h 26	9 ^h 31	22 ^h 7	S 21	
S 22	11 58 54	1 ^h 35'24	8 ^h II 3	9 ^h 29	15 ^h 19	15 ^h 53	6 ^h 28	18 ^h 58	8 ^h 9	2 ^h 44	14 ^h 28	7 ^h R23	6 ^h 22	9 ^h 37	22 ^h 10	S 22	
M 23	12 2 51	2 ^h 34'57	22 ^h 45	11 ^h 1	16 ^h 23	16 ^h 38	6 ^h R28	19 ^h 5	8 ^h 6	2 ^h 45	14 ^h 29	7 ^h 22	6 ^h 19	9 ^h 44	22 ^h 13	M 23	
T 24	12 6 47	3 ^h 34'27	7 ^h 18	12 ^h 34	17 ^h 26	17 ^h 24	6 ^h 28	19 ^h 12	8 ^h 4	2 ^h 46	14 ^h 31	7 ^h 20	6 ^h 16	9 ^h 51	22 ^h 16	T 24	
W 25	12 10 44	4 ^h 33'56	21 ^h 36	14 ^h 8	18 ^h 30	18 ^h 9	6 ^h 27	19 ^h 19	8 ^h 1	2 ^h 48	14 ^h 32	7 ^h 17	6 ^h 13	9 ^h 57	22 ^h 18	W 25	
T 26	12 14 40	5 ^h 33'22	5 ^h II 34	15 ^h 44	19 ^h 34	18 ^h 55	6 ^h 27	19 ^h 26	7 ^h 59	2 ^h 49	14 ^h 34	7 ^h 12	6 ^h 10	10 ^h 4	22 ^h 21	T 26	
F 27	12 18 37	6 ^h 32'47	19 ^h 9	17 ^h 21	20 ^h 39	19 ^h 41	6 ^h 26	19 ^h 34	7 ^h 56	2 ^h 50	14 ^h 36	7 ^h 8	6 ^h 7	10 ^h 11	22 ^h 24	F 27	
S 28	12 22 34	7 ^h 32'10	2 ^h 18	19 ^h 0	21 ^h 44	20 ^h 26	6 ^h 25	19 ^h 41	7 ^h 53	2 ^h 52	14 ^h 37	7 ^h 4	6 ^h 3	10 ^h 17	22 ^h 27	S 28	
S 29	12 26 30	8 ^h 31'31	15 ^h 5	20 ^h 40	22 ^h 48	21 ^h 12	6 ^h 24	19 ^h 48	7 ^h 51	2 ^h 53	14 ^h 39	7 ^h 0	6 ^h 0	10 ^h 24	22 ^h 29	S 29	
M 30	12 30 27	9 ^h 30'50	27 ^h 30	22 ^h 21	23 ^h 54	21 ^h 58	6 ^h 23	19 ^h 55	7 ^h 48	2 ^h 55	14 ^h 40	6 ^h 58	5 ^h 57	10 ^h 31	22 ^h 31	M 30	
T 31	12 34 23	10 ^h Y30'08	9 ^h 39	24 ^h 3	24 ^h 59	22 ^h 43	6 ^h 21	20 ^h 3	7 ^h 46	2 ^h II56	14 ^h 42	6 ^h D57	5 ^h II54	10 ^h 37	22 ^h 34	T 31	

Delta T = 78.82 sec

APRIL 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	12 38 20	11 ^h Y29'24	21 ^h 36	25 ^h 47	26 ^h 4	23 ^h 29	6 ^h R20	20 ^h 9	7 ^h R43	2 ^h II58	14 ^h 43	6 ^h II58	5 ^h II51	10 ^h 44	22 ^h 36	W 1	
T 2	12 42 16	12 ^h 28'38	3 ^h 26	27 ^h 33	27 ^h 10	24 ^h 15	6 ^h 18	20 ^h 16	7 ^h 41	2 ^h 59	14 ^h 44	6 ^h 59	5 ^h 47	10 ^h 51	22 ^h 38	T 2	
F 3	12 46 13	13 ^h 27'50	15 ^h 14	29 ^h 19	28 ^h 16	25 ^h 0	6 ^h 16	20 ^h 23	7 ^h 38	3 ^h 1	14 ^h 46	7 ^h 1	5 ^h 44	10 ^h 57	22 ^h 41	F 3	
S 4	12 50 9	14 ^h 27'01	27 ^h 5	1 ^h Y 7	29 ^h 22	25 ^h 46	6 ^h 14	20 ^h 30	7 ^h 35	3 ^h 2	14 ^h 47	7 ^h 2	5 ^h 41	11 ^h 4	22 ^h 43	S 4	
S 5	12 54 6	15 ^h 26'09	9 ^h 3	2 ^h 57	0 ^h 48	26 ^h 32	6 ^h 11	20 ^h 37	7 ^h 33	3 ^h 4	14 ^h 49	7 ^h R 3	5 ^h 38	11 ^h 10	22 ^h 45	S 5	
M 6	12 58 3	16 ^h 25'16	21 ^h 11	4 ^h 48	1 ^h 35	27 ^h 18	6 ^h 9	20 ^h 44	7 ^h 30	3 ^h 6	14 ^h 50	7 ^h 2	5 ^h 35	11 ^h 17	22 ^h 47	M 6	
T 7	13 1 59	17 ^h 24'20	3 ^h Y33	6 ^h 40	2 ^h 41	28 ^h 3	6 ^h 6	20 ^h 51	7 ^h 28	3 ^h 7	14 ^h 52	6 ^h 59	5 ^h 32	11 ^h 24	22 ^h 48	T 7	
W 8	13 5 56	18 ^h 23'23	16 ^h 10	8 ^h 34	3 ^h 48	28 ^h 49	6 ^h 3	20 ^h 58	7 ^h 25	3 ^h 9	14 ^h 53	6 ^h 54	5 ^h 28	11 ^h 30	22 ^h 50	W 8	
T 9	13 9 52	19 ^h 22'24	29 ^h 2	10 ^h 29	4 ^h 55	29 ^h 35	6 ^h 0	21 ^h 5	7 ^h 23	3 ^h 11	14 ^h 54	6 ^h 47	5 ^h 25	11 ^h 37	22 ^h 52	T 9	
F 10	13 13 49	20 ^h 21'23	12 ^h 8	12 ^h 26	6 ^h 2	0 ^h 41	5 ^h 56	21 ^h 12	7 ^h 20	3 ^h 13	14 ^h 56	6 ^h 40	5 ^h 22	11 ^h 44	22 ^h 54	F 10	
S 11	13 17 45	21 ^h 20'19	25 ^h 30	14 ^h 24	7 ^h 9	1 ^h 7	5 ^h 53	21 ^h 18	7 ^h 18	3 ^h 14	14 ^h 57	6 ^h 32	5 ^h 19	11 ^h 50	22 ^h 55	S 11	
S 12	13 21 42	22 ^h 19'14	9 ^h II 3	16 ^h 23	8 ^h 16	1 ^h 52	5 ^h 49	21 ^h 25	7 ^h 15	3 ^h 16	14 ^h 58	6 ^h 25	5 ^h 16	11 ^h 57	22 ^h 57	S 12	
M 13	13 25 38	23 ^h 18'06	22 ^h 47	18 ^h 24	9 ^h 23	2 ^h 38	5 ^h 45	21 ^h 32	7 ^h 13	3 ^h 18	15 ^h 0	6 ^h 20	5 ^h 12	12 ^h 4	22 ^h 58	M 13	
T 14	13 29 35	24 ^h 16'56	6 ^h 40	20 ^h 26	10 ^h 31	3 ^h 24	5 ^h 42	21 ^h 38	7 ^h 10	3 ^h 20	15 ^h 1	6 ^h 16	5 ^h 9	12 ^h 10	22 ^h 59	T 14	
W 15	13 33 32	25 ^h 15'44	20 ^h 41	22 ^h 29	11 ^h 39	4 ^h 10	5 ^h 37	21 ^h 45	7 ^h 8	3 ^h 22	15 ^h 2	6 ^h D15	5 ^h 6	12 ^h 17	23 ^h 0	W 15	
T 16	13 37 28	26 ^h 14'30	4 ^h 48	24 ^h 33</													

ASTRODIENST EPHEMERIS for the year 2054

MAY 2054

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Day	Sid.t	☉	☽	♀	♂	♃	♄	♅	♆	♇	♈	♉	♊	♋	♌	♍	Day
F 1	14 36 36	10♈51'50	23♋10	25♉34	29♊55	16♋21	4♌R11	23♋24	6♌R32	3♍II53	15♋21	5♎II11	4♏II15	14♐4	23♑R9	F 1	
S 2	14 40 33	11°50'06	5♋2	27°26	1♉5	17°7	4♌5	23°30	6♌30	3°55	15°22	5♎R11	4°12	14°10	23♑9	S 2	
S 3	14 44 29	12°48'20	17°3	29°14	2°14	17°53	3°58	23°35	6°28	3°58	15°23	5°11	4°9	14°17	23°9	S 3	
M 4	14 48 26	13°46'33	29°17	0♍II59	3°24	18°38	3°51	23°41	6°26	4°0	15°24	5°8	4°6	14°23	23°8	M 4	
T 5	14 52 23	14°44'44	11♉48	2°41	4°33	19°24	3°45	23°47	6°24	4°2	15°25	5°3	4°3	14°30	23°8	T 5	
W 6	14 56 19	15°42'54	24°39	4°19	5°43	20°9	3°38	23°52	6°22	4°4	15°26	4°55	3°59	14°37	23°8	W 6	
T 7	15 0 16	16°41'02	7♉50	5°53	6°53	20°55	3°31	23°58	6°21	4°6	15°27	4°46	3°56	14°43	23°7	T 7	
F 8	15 4 12	17°39'08	21°20	7°24	8°2	21°41	3°24	24°3	6°19	4°8	15°28	4°34	3°53	14°50	23°6	F 8	
S 9	15 8 9	18°37'13	5♍II6	8°51	9°12	22°26	3°17	24°8	6°17	4°10	15°29	4°23	3°50	14°57	23°6	S 9	
S 10	15 12 5	19°35'16	19°6	10°14	10°22	23°12	3°10	24°14	6°15	4°13	15°29	4°12	3°47	15°3	23°5	S 10	
M11	15 16 2	20°33'18	3♌II14	11°33	11°32	23°57	3°2	24°19	6°14	4°15	15°30	4°3	3°44	15°10	23°4	M11	
T 12	15 19 58	21°31'18	17°25	12°47	12°42	24°42	2°55	24°24	6°12	4°17	15°31	3°57	3°40	15°17	23°3	T 12	
W13	15 23 55	22°29'16	1♊II38	13°58	13°52	25°28	2°48	24°29	6°11	4°19	15°32	3°54	3°37	15°23	23°2	W13	
T 14	15 27 52	23°27'12	15°48	15°4	15°2	26°13	2°40	24°34	6°9	4°21	15°33	3°52	3°34	15°30	23°1	T 14	
F 15	15 31 48	24°25'06	29°55	16°7	16°12	26°59	2°33	24°39	6°8	4°24	15°33	3°52	3°31	15°37	23°0	F 15	
S 16	15 35 45	25°22'58	13♎II57	17°4	17°22	27°44	2°25	24°44	6°6	4°26	15°34	3°52	3°28	15°43	22°59	S 16	
S 17	15 39 41	26°20'49	27°54	17°58	18°33	28°29	2°18	24°48	6°5	4°28	15°35	3°51	3°24	15°50	22°57	S 17	
M18	15 43 38	27°18'37	11♌II46	18°47	19°43	29°15	2°10	24°53	6°4	4°30	15°35	3°47	3°21	15°57	22°56	M18	
T 19	15 47 34	28°16'24	25°29	19°31	20°53	29°59	2°3	24°58	6°2	4°33	15°36	3°40	3°18	16°3	22°55	T 19	
W20	15 51 31	29°14'10	9♍II3	20°11	22°4	0♎II45	1°55	25°2	6°1	4°35	15°37	3°31	3°15	16°10	22°53	W20	
T 21	15 55 27	0♍II11'54	22°25	20°47	23°14	1°30	1°47	25°7	6°0	4°37	15°37	3°19	3°12	16°17	22°52	T 21	
F 22	15 59 24	1°9'37	5♌II33	21°17	24°25	2°15	1°40	25°11	5°59	4°39	15°38	3°6	3°9	16°23	22°50	F 22	
S 23	16 3 21	2°7'18	18°26	21°43	25°35	3°1	1°32	25°15	5°58	4°42	15°38	2°54	3°5	16°30	22°48	S 23	
S 24	16 7 17	3°4'59	1♎II2	22°4	26°46	3°46	1°24	25°20	5°57	4°44	15°39	2°42	3°2	16°37	22°46	S 24	
M25	16 11 14	4°2'38	13°22	22°20	27°57	4°31	1°17	25°24	5°56	4°46	15°40	2°33	2°59	16°43	22°45	M25	
T 26	16 15 10	5°0'16	25°29	22°32	29°7	5°16	1°9	25°28	5°55	4°48	15°40	2°26	2°56	16°50	22°43	T 26	
W27	16 19 7	5°57'53	7♎II25	22°38	0♏II18	6°1	1°2	25°32	5°54	4°51	15°40	2°22	2°53	16°56	22°41	W27	
T 28	16 23 3	6°55'29	19°15	22°R40	1°29	6°46	0°54	25°36	5°53	4°53	15°41	2°21	2°49	17°3	22°39	T 28	
F 29	16 27 0	7°53'04	1♋II3	22°38	2°40	7°31	0°46	25°40	5°52	4°55	15°41	2°20	2°46	17°10	22°36	F 29	
S 30	16 30 56	8°50'38	12°55	22°31	3°51	8°16	0°39	25°43	5°51	4°57	15°42	2°20	2°43	17°16	22°34	S 30	
S 31	16 34 53	9♍II48'11	24♋II57	22♍II19	5♉II2	9♎II0	0♌II31	25♋II47	5♎II51	5♍II0	15♋II42	2♎II19	2♏II40	17♐II23	22♑II32	S 31	

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JUNE 2054

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Day	Sid.t	☉	☽	♀	♂	♃	♄	♅	♆	♇	♈	♉	♊	♋	♌	♍	Day
M 1	16 38 50	10♍II45'43	7♎II13	22°R4	6♉II13	9♎II45	0°R24	25♋II51	5°R50	5♍II2	15♋II42	2°R17	2♎II37	17♐II30	22°R30	M 1	
T 2	16 42 46	11°43'15	19°49	21♍II45	7°24	10°30	0♌II17	25°54	5♎II49	5°4	15°43	2♎II12	2°34	17°36	22♑II27	T 2	
W 3	16 46 43	12°40'46	2♉II47	21°23	8°35	11°15	0°9	25°57	5°49	5°6	15°43	2°5	2°30	17°43	22°25	W 3	
T 4	16 50 39	13°38'16	16°10	20°57	9°46	11°59	0°2	26°1	5°48	5°8	15°43	1°56	2°27	17°50	22°22	T 4	
F 5	16 54 36	14°35'45	29°56	20°29	10°57	12°44	29♍II55	26°4	5°48	5°11	15°44	1°45	2°24	17°56	22°20	F 5	
S 6	16 58 32	15°33'13	14♍II4	19°59	12°8	13°28	29°48	26°7	5°48	5°13	15°44	1°34	2°21	18°3	22°17	S 6	
S 7	17 2 29	16°30'41	28°28	19°27	13°19	14°13	29°40	26°10	5°47	5°15	15°44	1°23	2°18	18°10	22°15	S 7	
M 8	17 6 25	17°28'07	13♌II1	18°54	14°31	14°57	29°33	26°13	5°47	5°17	15°44	1°14	2°15	18°16	22°12	M 8	
T 9	17 10 22	18°25'33	27°37	18°20	15°42	15°42	29°27	26°16	5°47	5°20	15°44	1°8	2°11	18°23	22°9	T 9	
W10	17 14 19	19°22'57	12♎II9	17°47	16°53	16°26	29°20	26°19	5°47	5°22	15°45	1°5	2°8	18°30	22°6	W10	
T 11	17 18 15	20°20'20	26°34	17°14	18°5	17°10	29°13	26°21	5°46	5°24	15°45	1°D4	2°5	18°36	22°3	T 11	
F 12	17 22 12	21°17'42	10♎II47	16°42	19°16	17°55	29°6	26°24	5°46	5°26	15°45	1°4	2°2	18°43	22°0	F 12	
S 13	17 26 8	22°15'04	24°48	16°12	20°27	18°39	29°0	26°27	5°D46	5°28	15°45	1°R4	1°59	18°50	21°58	S 13	
S 14	17 30 5	23°12'24	8♌II36	15°45	21°39	19°23	28°53	26°29	5°46	5°30	15°45	1°3	1°55	18°56	21°55	S 14	
M15	17 34 1	24°9'43	22°12	15°20	22°50	20°7	28°47	26°31	5°46	5°33	15°R45	1°0	1°52	19°3	21°51	M15	
T 16	17 37 58	25°7'01	5♍II36	14°58	24°2	20°51	28°41	26°33	5°47	5°35	15°45	0°55	1°49	19°9	21°48	T 16	
W17	17 41 54	26°4'18	18°48	14°40	25°13	21°35	28°35	26°36	5°47	5°37	15°45	0°47	1°46	19°16	21°45	W17	
T 18	17 45 51	27°1'35	1♌II47	14°25	26°25	22°19	28°29	26°38	5°47	5°39	15°45	0°37	1°43	19°23	21°42	T 18	
F 19	17 49 48	27°58'51	14°35	14°15	27°37	23°2	28°23	26°40	5°47	5°41	15°45	0°26	1°40	19°29	21°39	F 19	
S 20	17 53 44	28°56'06	27°9	14°8	28°48	23°46	28°17	26°41	5°48	5°43	15°45	0°16	1°36	19°36	21°36	S 20	
S 21	17 57 41	29°53'21	9♎II31	14°D7	29°59	24°30	28°12	26°43	5°48	5°45	15°45	0°6	1°33	19°43	21°32	S 21	
M22	18 1 37	0♌II50'35	21°42	14°10	1♍II12	25°13	28°6	26°45	5°49	5°47	15°44	29♎II58	1°30	19°49	21°29	M22	
T 23	18 5 34	1°47'49	3♎II42	14°17	2°23	25°57	28°1	26°46	5°49	5°50	15°44	29°52	1°27	19°56	21°26	T 23	
W24	18 9 30	2°45'03	15°35	14°29	3°35	26°40	27°56	26°48	5°50	5°52	15°44	29°49	1°24	20°3	21°22	W24	
T 25	18 13 27	3°42'17	27°23	14°46	4°47	27°24	27°51	26°49	5°50	5°54	15°44	29°D48	1°21	20°9	21°19	T 25	
F 26	18 17 23	4°39'30	9♋II10	15°8	5°59	28°7	27°46	26°50	5°51	5°56	15°44	29°48	1°17	20°16	21°15	F 26	
S 27	18 21 20	5°36'43	21°2	15°34	7°11	28°50	27°41	26°52	5°52	5°58	15°43	29°49	1°14	20°23	21°12	S 27	
S 28	18 25 17	6°33'57	3♎II3	16°5	8°23	29°33	27°36	26°53	5°52	6°0	15°43	29°R50	1°11	20°29	21°8	S 28	
M29	18 29 13	7°31'10	15°19	16°41	9°35	0♏II16	27°32	26°54	5°53	6°2	15°43	29°50	1°8	20°36	21°5	M29	
T 30	18 33 10	8♌II28'23	27♎II54	17♍II21	10♍II47	0♉II59	27♍II28	26♋II54	5♎II54	6♍II4	15♋II43	29♎II48	1♎II5	20♐II43	21♑II1	T 30	

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ASTRODIENST EPHEMERIS for the year 2054

JULY 2054

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Day	Sid.t	☉	☽	♀	♁	♂	♃	♄	♅	♆	♇	♈	♉	♊	♋	♌	♍	Day
W 1	18 37 6	9 ^h 25'36"	10 ^h 53'	18 ^h 11'	11 ^h 59'	1 ^h 42'	27 ^h R24	26 ^h 55'	5 ^h 55'	6 ^h 11'	15 ^h R42	29 ^h R44	1 ^h 11'	20 ^h 49'	20 ^h R58	W 1		
T 2	18 41 3	10 ^h 22'50"	24 ^h 19'	18 ^h 55'	13 ^h 11'	2 ^h 25'	27 ^h M20	26 ^h 56'	5 ^h 56'	6 ^h 8'	15 ^h 42'	29 ^h Q38	0 ^h 58'	20 ^h 56'	20 ^h 54'	T 2		
F 3	18 44 59	11 ^h 20'04"	8 ^h 11'	19 ^h 48'	14 ^h 23'	3 ^h 8'	27 ^h 16'	26 ^h 56'	5 ^h 57'	6 ^h 9'	15 ^h 41'	29 ^h 31'	0 ^h 55'	21 ^h 2'	20 ^h 51'	F 3		
S 4	18 48 56	12 ^h 17'18"	22 ^h 29'	20 ^h 46'	15 ^h 35'	3 ^h 51'	27 ^h 12'	26 ^h 57'	5 ^h 58'	6 ^h 11'	15 ^h 41'	29 ^h 24'	0 ^h 52'	21 ^h 9'	20 ^h 47'	S 4		
S 5	18 52 53	13 ^h 14'31"	7 ^h 58'	21 ^h 48'	16 ^h 48'	4 ^h 33'	27 ^h 9'	26 ^h 57'	5 ^h 59'	6 ^h 13'	15 ^h 41'	29 ^h 17'	0 ^h 49'	21 ^h 16'	20 ^h 43'	S 5		
M 6	18 56 49	14 ^h 11'45"	22 ^h 0'	22 ^h 55'	18 ^h 0'	5 ^h 16'	27 ^h 5'	26 ^h 57'	6 ^h 0'	6 ^h 15'	15 ^h 40'	29 ^h 12'	0 ^h 46'	21 ^h 22'	20 ^h 40'	M 6		
T 7	19 0 46	15 ^h 8'59"	6 ^h Q58	24 ^h 5'	19 ^h 12'	5 ^h 58'	27 ^h 2'	26 ^h 58'	6 ^h 2'	6 ^h 17'	15 ^h 40'	29 ^h 8'	0 ^h 42'	21 ^h 29'	20 ^h 36'	T 7		
W 8	19 4 42	16 ^h 6'13"	21 ^h 52'	25 ^h 20'	20 ^h 24'	6 ^h 40'	26 ^h 59'	26 ^h R58	6 ^h 3'	6 ^h 19'	15 ^h 39'	29 ^h 6'	0 ^h 39'	21 ^h 36'	20 ^h 33'	W 8		
T 9	19 8 39	17 ^h 3'26"	6 ^h 11'36	26 ^h 39'	21 ^h 37'	7 ^h 23'	26 ^h 57'	26 ^h 57'	6 ^h 4'	6 ^h 21'	15 ^h 39'	29 ^h D 6'	0 ^h 36'	21 ^h 42'	20 ^h 29'	T 9		
F 10	19 12 35	18 ^h 0'40"	21 ^h 4'	28 ^h 1'	22 ^h 49'	8 ^h 5'	26 ^h 54'	26 ^h 57'	6 ^h 6'	6 ^h 22'	15 ^h 38'	29 ^h 7'	0 ^h 33'	21 ^h 49'	20 ^h 25'	F 10		
S 11	19 16 32	18 ^h 57'53"	5 ^h 14'	29 ^h 28'	24 ^h 1'	8 ^h 47'	26 ^h 52'	26 ^h 57'	6 ^h 7'	6 ^h 24'	15 ^h 37'	29 ^h 8'	0 ^h 30'	21 ^h 56'	20 ^h 22'	S 11		
S 12	19 20 28	19 ^h 55'06"	19 ^h 4'	0 ^h 59'	25 ^h 14'	9 ^h 29'	26 ^h 49'	26 ^h 57'	6 ^h 9'	6 ^h 26'	15 ^h 37'	29 ^h R 9'	0 ^h 27'	22 ^h 2'	20 ^h 18'	S 12		
M13	19 24 25	20 ^h 52'19"	2 ^h M35	2 ^h 33'	26 ^h 26'	10 ^h 10'	26 ^h 47'	26 ^h 56'	6 ^h 10'	6 ^h 28'	15 ^h 36'	29 ^h 8'	0 ^h 23'	22 ^h 9'	20 ^h 14'	M13		
T 14	19 28 22	21 ^h 49'32"	15 ^h 48'	4 ^h 11'	27 ^h 39'	10 ^h 52'	26 ^h 45'	26 ^h 56'	6 ^h 12'	6 ^h 29'	15 ^h 36'	29 ^h 6'	0 ^h 20'	22 ^h 16'	20 ^h 11'	T 14		
W15	19 32 18	22 ^h 46'45"	28 ^h 45'	5 ^h 52'	28 ^h 51'	11 ^h 34'	26 ^h 44'	26 ^h 55'	6 ^h 13'	6 ^h 31'	15 ^h 35'	29 ^h 2'	0 ^h 17'	22 ^h 22'	20 ^h 7'	W15		
T 16	19 36 15	23 ^h 43'58"	11 ^h 27'	7 ^h 37'	0 ^h 54'	12 ^h 15'	26 ^h 42'	26 ^h 54'	6 ^h 15'	6 ^h 33'	15 ^h 34'	28 ^h 57'	0 ^h 14'	22 ^h 29'	20 ^h 3'	T 16		
F 17	19 40 11	24 ^h 41'11"	23 ^h 57'	9 ^h 26'	1 ^h 16'	12 ^h 56'	26 ^h 41'	26 ^h 53'	6 ^h 17'	6 ^h 34'	15 ^h 34'	28 ^h 52'	0 ^h 11'	22 ^h 36'	20 ^h 0'	F 17		
S 18	19 44 8	25 ^h 38'24"	6 ^h 31'	11 ^h 17'	2 ^h 29'	13 ^h 38'	26 ^h 40'	26 ^h 52'	6 ^h 19'	6 ^h 36'	15 ^h 33'	28 ^h 46'	0 ^h 7'	22 ^h 42'	19 ^h 56'	S 18		
S 19	19 48 4	26 ^h 35'38"	18 ^h 24'	13 ^h 11'	3 ^h 42'	14 ^h 19'	26 ^h 39'	26 ^h 51'	6 ^h 20'	6 ^h 38'	15 ^h 32'	28 ^h 41'	0 ^h 4'	22 ^h 49'	19 ^h 52'	S 19		
M20	19 52 1	27 ^h 32'52"	0 ^h 24'	15 ^h 8'	4 ^h 54'	15 ^h 0'	26 ^h 38'	26 ^h 50'	6 ^h 22'	6 ^h 39'	15 ^h 31'	28 ^h 37'	0 ^h 1'	22 ^h 55'	19 ^h 49'	M20		
T 21	19 55 57	28 ^h 30'07"	12 ^h 17'	17 ^h 7'	6 ^h 7'	15 ^h 41'	26 ^h 37'	26 ^h 49'	6 ^h 24'	6 ^h 41'	15 ^h 31'	28 ^h 34'	29 ^h Q58	23 ^h 2'	19 ^h 45'	T 21		
W22	19 59 54	29 ^h 27'22"	24 ^h 6'	19 ^h 8'	7 ^h 20'	16 ^h 22'	26 ^h 37'	26 ^h 48'	6 ^h 26'	6 ^h 42'	15 ^h 30'	28 ^h D33	29 ^h 55'	23 ^h 9'	19 ^h 42'	W22		
T 23	20 3 51	0 ^h Q24'38"	5 ^h 45'	21 ^h 11'	8 ^h 33'	17 ^h 2'	26 ^h 36'	26 ^h 46'	6 ^h 28'	6 ^h 44'	15 ^h 29'	28 ^h 33'	29 ^h 52'	23 ^h 15'	19 ^h 38'	T 23		
F 24	20 7 47	1 ^h 21'54"	17 ^h 41'	23 ^h 16'	9 ^h 45'	17 ^h 43'	26 ^h D36	26 ^h 45'	6 ^h 30'	6 ^h 45'	15 ^h 28'	28 ^h 34'	29 ^h 48'	23 ^h 22'	19 ^h 34'	F 24		
S 25	20 11 44	2 ^h 19'11"	29 ^h 34'	25 ^h 21'	10 ^h 58'	18 ^h 24'	26 ^h 36'	26 ^h 43'	6 ^h 32'	6 ^h 47'	15 ^h 27'	28 ^h 36'	29 ^h 45'	23 ^h 29'	19 ^h 31'	S 25		
S 26	20 15 40	3 ^h 16'29"	11 ^h 37'	27 ^h 28'	12 ^h 11'	19 ^h 4'	26 ^h 37'	26 ^h 41'	6 ^h 34'	6 ^h 48'	15 ^h 27'	28 ^h 37'	29 ^h 42'	23 ^h 35'	19 ^h 27'	S 26		
M27	20 19 37	4 ^h 13'48"	23 ^h 52'	29 ^h 34'	13 ^h 24'	19 ^h 44'	26 ^h 37'	26 ^h 40'	6 ^h 37'	6 ^h 49'	15 ^h 26'	28 ^h 39'	29 ^h 39'	23 ^h 42'	19 ^h 24'	M27		
T 28	20 23 33	5 ^h 11'07"	6 ^h 32'	1 ^h Q41	14 ^h 37'	20 ^h 24'	26 ^h 38'	26 ^h 38'	6 ^h 39'	6 ^h 51'	15 ^h 25'	28 ^h R39	29 ^h 36'	23 ^h 49'	19 ^h 20'	T 28		
W29	20 27 30	6 ^h 8'28"	19 ^h 21'	3 ^h 48'	15 ^h 50'	21 ^h 4'	26 ^h 39'	26 ^h 36'	6 ^h 41'	6 ^h 52'	15 ^h 24'	28 ^h 38'	29 ^h 33'	23 ^h 55'	19 ^h 17'	W29		
T 30	20 31 26	7 ^h 5'50"	2 ^h 11'43	5 ^h 55'	17 ^h 3'	21 ^h 44'	26 ^h 40'	26 ^h 33'	6 ^h 43'	6 ^h 54'	15 ^h 23'	28 ^h 37'	29 ^h 29'	24 ^h 2'	19 ^h 14'	T 30		
F 31	20 35 23	8 ^h Q 3'13"	16 ^h 11'31	8 ^h Q 1'	18 ^h 51'	22 ^h 24'	26 ^h 11'41	26 ^h 31'	6 ^h 46'	6 ^h 11'55	15 ^h 22'	28 ^h Q35	29 ^h Q26	24 ^h 22'33	19 ^h 10'	F 31		

Delta T = 78.90 sec

AUGUST 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♁	♂	♃	♄	♅	♆	♇	♈	♉	♊	♋	♌	♍	Day
S 1	20 39 20	9 ^h Q 0'37"	0 ^h 547	10 ^h Q 6'	19 ^h 529	23 ^h 8 4'	26 ^h M42	26 ^h R29	6 ^h 48'	6 ^h 11'56	15 ^h R21	28 ^h R32	29 ^h Q23	24 ^h 22'15	19 ^h R 7'	S 1		
S 2	20 43 16	9 ^h 58'02"	15 ^h 27'	12 ^h 10'	20 ^h 43'	23 ^h 43'	26 ^h 44'	26 ^h 27'	6 ^h 51'	6 ^h 57'	15 ^h 20'	28 ^h Q30	29 ^h 20'	24 ^h 22'	19 ^h 54'	S 2		
M 3	20 47 13	10 ^h 55'28"	0 ^h Q25	14 ^h 13'	21 ^h 56'	24 ^h 22'	26 ^h 46'	26 ^h 24'	6 ^h 53'	6 ^h 59'	15 ^h 19'	28 ^h 28'	29 ^h 17'	24 ^h 29'	19 ^h 0'	M 3		
T 4	20 51 9	11 ^h 52'55"	15 ^h 33'	16 ^h 15'	23 ^h 9'	25 ^h 1'	26 ^h 47'	26 ^h 22'	6 ^h 56'	7 ^h 0'	15 ^h 18'	28 ^h 27'	29 ^h 13'	24 ^h 35'	18 ^h 57'	T 4		
W 5	20 55 6	12 ^h 50'23"	0 ^h 11'42	18 ^h 16'	24 ^h 22'	25 ^h 40'	26 ^h 50'	26 ^h 19'	6 ^h 58'	7 ^h 1'	15 ^h 17'	28 ^h D26	29 ^h 10'	24 ^h 42'	18 ^h 54'	W 5		
T 6	20 59 2	13 ^h 47'51"	15 ^h 43'	20 ^h 15'	25 ^h 36'	26 ^h 19'	26 ^h 52'	26 ^h 16'	7 ^h 1'	7 ^h 2'	15 ^h 16'	28 ^h 27'	29 ^h 7'	24 ^h 48'	18 ^h 51'	T 6		
F 7	21 2 59	14 ^h 45'21"	0 ^h 12'48	22 ^h 13'	26 ^h 49'	26 ^h 58'	26 ^h 54'	26 ^h 14'	7 ^h 3'	7 ^h 3'	15 ^h 15'	28 ^h 28'	29 ^h 4'	24 ^h 55'	18 ^h 48'	F 7		
S 8	21 6 55	15 ^h 42'51"	14 ^h 52'	24 ^h 9'	28 ^h 2'	27 ^h 37'	26 ^h 57'	26 ^h 11'	7 ^h 6'	7 ^h 4'	15 ^h 14'	28 ^h 29'	29 ^h 1'	25 ^h 2'	18 ^h 45'	S 8		
S 9	21 10 52	16 ^h 40'21"	28 ^h 51'	26 ^h 4'	29 ^h 16'	28 ^h 15'	27 ^h 0'	26 ^h 8'	7 ^h 9'	7 ^h 5'	15 ^h 13'	28 ^h 29'	28 ^h 58'	25 ^h 8'	18 ^h 42'	S 9		
M10	21 14 48	17 ^h 37'53"	12 ^h M26	27 ^h 57'	0 ^h Q29	28 ^h 53'	27 ^h 3'	26 ^h 5'	7 ^h 12'	7 ^h 6'	15 ^h 12'	28 ^h R30	28 ^h 54'	25 ^h 15'	18 ^h 39'	M10		
T 11	21 18 45	18 ^h 35'25"	25 ^h 38'	29 ^h 49'	1 ^h 43'	29 ^h 31'	27 ^h 6'	26 ^h 2'	7 ^h 14'	7 ^h 7'	15 ^h 11'	28 ^h 30'	28 ^h 51'	25 ^h 22'	18 ^h 36'	T 11		
W12	21 22 42	19 ^h 32'59"	8 ^h 27'29	1 ^h 11'39	2 ^h 56'	0 ^h 11 9'	27 ^h 9'	25 ^h 58'	7 ^h 17'	7 ^h 8'	15 ^h 10'	28 ^h 29'	28 ^h 48'	25 ^h 28'	18 ^h 33'	W12		
T 13	21 26 38	20 ^h 30'33"	21 ^h 1'	3 ^h 28'	4 ^h 10'	0 ^h 47'	27 ^h 13'	25 ^h 55'	7 ^h 20'	7 ^h 9'	15 ^h 9'	28 ^h 29'	28 ^h 45'	25 ^h 35'	18 ^h 30'	T 13		
F 14	21 30 35	21 ^h 28'08"	3 ^h 31'19	5 ^h 15'	5 ^h 23'	1 ^h 25'	27 ^h 16'	25 ^h 52'	7 ^h 23'	7 ^h 10'	15 ^h 8'	28 ^h 28'	28 ^h 42'	25 ^h 42'	18 ^h 27'	F 14		
S 15	21 34 31	22 ^h 25'44"	15 ^h 26'	7 ^h 1'	6 ^h 37'	2 ^h 2'	27 ^h 20'	25 ^h 48										

ASTRODIENST EPHEMERIS for the year 2054

SEPTEMBER 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♁	♂	♃	♄	♅	♆	♇	♁	♂	♀	♁	♂	Day
T 1	22 41 33	8♎48°34	23♏50	3♌18	27♏33	12♐10	28♎49	24♎R41	8♏20	7♐21	14♎R46	28♎R27	27♏44	27♎41	17♎R47	T 1	
W 2	22 45 29	9°46'38	9♎0	4°38	28°47	12°44	28°56	24♎37	8°23	7°21	14♎45	28♏27	27°41	27°48	17♎45	W 2	
T 3	22 49 26	10°44'44	24° 7	5°56	0♎1	13°17	29° 3	24°33	8°27	7°21	14°44	28°26	27°38	27°54	17°44	T 3	
F 4	22 53 22	11°42'51	9♌2	7°12	1°16	13°51	29°10	24°28	8°30	7°21	14°42	28°25	27°35	28° 1	17°42	F 4	
S 5	22 57 19	12°41'00	23°37	8°26	2°30	14°24	29°17	24°24	8°34	7°21	14°41	28°23	27°32	28° 8	17°41	S 5	
S 6	23 1 15	13°39'11	7♎48	9°39	3°44	14°57	29°24	24°19	8°37	7°22	14°40	28°22	27°29	28°14	17°39	S 6	
M 7	23 5 12	14°37'22	21°31	10°50	4°59	15°29	29°31	24°15	8°41	7°22	14°39	28°20	27°25	28°21	17°38	M 7	
T 8	23 9 9	15°35'36	4♎47	11°59	6°13	16° 2	29°39	24°10	8°44	7°22	14°37	28°19	27°22	28°28	17°37	T 8	
W 9	23 13 5	16°33'51	17°39	13° 6	7°27	16°34	29°46	24° 6	8°48	7°22	14°36	28°D19	27°19	28°34	17°36	W 9	
T 10	23 17 2	17°32'07	0♎9	14°11	8°42	17° 6	29°54	24° 1	8°52	7°R22	14°35	28°19	27°16	28°41	17°35	T 10	
F 11	23 20 58	18°30'25	12°22	15°13	9°56	17°37	0♎2	23°56	8°55	7°22	14°34	28°20	27°13	28°48	17°34	F 11	
S 12	23 24 55	19°28'44	24°23	16°13	11°11	18° 8	0°10	23°52	8°59	7°22	14°32	28°22	27°10	28°54	17°33	S 12	
S 13	23 28 51	20°27'05	6♎15	17°11	12°25	18°39	0°18	23°47	9° 2	7°22	14°31	28°23	27° 6	29° 1	17°32	S 13	
M14	23 32 48	21°25'28	18° 3	18° 5	13°39	19°10	0°26	23°43	9° 6	7°22	14°30	28°25	27° 3	29° 8	17°31	M14	
T 15	23 36 44	22°23'52	29°51	18°57	14°54	19°40	0°34	23°38	9°10	7°21	14°29	28°R25	27° 0	29°14	17°30	T 15	
W16	23 40 41	23°22'18	11♎40	19°45	16° 9	20°11	0°43	23°33	9°13	7°21	14°27	28°24	26°57	29°21	17°30	W16	
T 17	23 44 38	24°20'46	23°34	20°31	17°23	20°40	0°52	23°29	9°17	7°21	14°26	28°22	26°54	29°27	17°29	T 17	
F 18	23 48 34	25°19'15	5♎35	21°12	18°38	21°10	1° 0	23°24	9°21	7°21	14°25	28°19	26°50	29°34	17°29	F 18	
S 19	23 52 31	26°17'47	17°45	21°49	19°52	21°39	1° 9	23°19	9°24	7°20	14°24	28°15	26°47	29°41	17°29	S 19	
S 20	23 56 27	27°16'21	0♎4	22°23	21° 7	22° 8	1°18	23°15	9°28	7°20	14°23	28°10	26°44	29°47	17°28	S 20	
M21	0 0 24	28°14'56	12°35	22°51	22°22	22°36	1°27	23°10	9°32	7°20	14°21	28° 5	26°41	29°54	17°28	M21	
T 22	0 4 20	29°13'34	25°19	23°15	23°36	23° 5	1°36	23° 6	9°36	7°19	14°20	28° 1	26°38	0♎1	17°28	T 22	
W23	0 8 17	0♎12'14	8♐18	23°33	24°51	23°32	1°45	23° 1	9°39	7°19	14°19	27°57	26°35	0° 7	17°D28	W23	
T 24	0 12 13	1°10'57	21°33	23°46	26° 6	24° 0	1°55	22°56	9°43	7°18	14°18	27°56	26°31	0°14	17°28	T 24	
F 25	0 16 10	2° 9'42	5♎6	23°53	27°20	24°27	2° 4	22°52	9°47	7°18	14°17	27°D55	26°28	0°21	17°28	F 25	
S 26	0 20 6	3° 8'28	18°59	23°R53	28°35	24°54	2°14	22°47	9°51	7°18	14°15	27°56	26°25	0°27	17°28	S 26	
S 27	0 24 3	4° 7'18	3♏12	23°46	29°50	25°20	2°24	22°43	9°54	7°17	14°14	27°57	26°22	0°34	17°28	S 27	
M28	0 28 0	5° 6'09	17°43	23°32	1♎5	25°46	2°33	22°38	9°58	7°16	14°13	27°59	26°19	0°41	17°29	M28	
T 29	0 31 56	6° 5'03	2♎28	23°11	2°20	26°12	2°43	22°34	10° 2	7°16	14°12	27°R59	26°15	0°47	17°29	T 29	
W30	0 35 53	7♎3'59	17♎24	22♎43	3♎34	26♐37	2♎53	22♎29	10♎6	7♐15	14♎11	27♎57	26♎12	0♎54	17♎30	W30	

Delta T = 78.95 sec

OCTOBER 2054

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Day	Sid.t	☉	☽	♀	♁	♂	♃	♄	♅	♆	♇	♁	♂	♀	♁	♂	Day
T 1	0 39 49	8♏2	2♎21	22°R 6	4♎49	27♐2	3♎4	22°R25	10♎10	7°R14	14°R10	27°R54	26♎9	1♎1	17♎30	T 1	
F 2	0 43 46	9° 1'57	17°12	21♎23	6° 4	27°26	3°14	22♎21	10°13	7♐14	14♎9	27♎49	26° 6	1° 7	17°31	F 2	
S 3	0 47 42	10° 0'59	1♎48	20°32	7°19	27°50	3°24	22°16	10°17	7°13	14° 7	27°43	26° 3	1°14	17°32	S 3	
S 4	0 51 39	11° 0'03	16° 3	19°36	8°34	28°13	3°34	22°12	10°21	7°12	14° 6	27°36	26° 0	1°20	17°32	S 4	
M 5	0 55 35	11°59'08	29°52	18°33	9°49	28°36	3°45	22° 8	10°25	7°11	14° 5	27°29	25°56	1°27	17°33	M 5	
T 6	0 59 32	12°58'16	13♎13	17°27	11° 4	28°59	3°56	22° 4	10°28	7°11	14° 4	27°24	25°53	1°34	17°34	T 6	
W 7	1 3 29	13°57'26	26° 8	16°17	12°19	29°21	4° 6	22° 0	10°32	7°10	14° 3	27°20	25°50	1°40	17°35	W 7	
T 8	1 7 25	14°56'37	8♎40	15° 7	13°34	29°42	4°17	21°56	10°36	7° 9	14° 2	27°19	25°47	1°47	17°36	T 8	
F 9	1 11 22	15°55'50	20°53	13°58	14°49	0♎4	4°28	21°51	10°40	7° 8	14° 1	27°D18	25°44	1°54	17°38	F 9	
S 10	1 15 18	16°55'05	2♎53	12°51	16° 4	0°24	4°39	21°48	10°44	7° 7	14° 0	27°19	25°41	2° 0	17°39	S 10	
S 11	1 19 15	17°54'21	14°43	11°49	17°19	0°44	4°50	21°44	10°47	7° 6	13°59	27°21	25°37	2° 7	17°40	S 11	
M12	1 23 11	18°53'39	26°31	10°54	18°34	1° 4	5° 1	21°40	10°51	7° 5	13°58	27°R21	25°34	2°14	17°42	M12	
T 13	1 27 8	19°53'00	8♎19	10° 6	19°49	1°23	5°12	21°36	10°55	7° 4	13°57	27°21	25°31	2°20	17°43	T 13	
W14	1 31 4	20°52'22	20°12	9°28	21° 4	1°41	5°23	21°32	10°59	7° 3	13°56	27°18	25°28	2°27	17°45	W14	
T 15	1 35 1	21°51'45	2♎14	9° 0	22°19	1°59	5°35	21°29	11° 2	7° 2	13°55	27°13	25°25	2°34	17°46	T 15	
F 16	1 38 58	22°51'11	14°26	8°43	23°34	2°17	5°46	21°25	11° 6	7° 1	13°54	27° 5	25°21	2°40	17°48	F 16	
S 17	1 42 54	23°50'39	26°50	8°D37	24°49	2°34	5°58	21°21	11°10	7° 0	13°53	26°56	25°18	2°47	17°50	S 17	
S 18	1 46 51	24°50'09	9♎27	8°42	26° 4	2°50	6° 9	21°18	11°14	6°59	13°52	26°45	25°15	2°53	17°52	S 18	
M19	1 50 47	25°49'41	22°17	8°57	27°19	3° 6	6°21	21°15	11°17	6°57	13°52	26°34	25°12	3° 0	17°54	M19	
T 20	1 54 44	26°49'15	5♐18	9°23	28°34	3°21	6°33	21°11	11°21	6°56	13°51	26°25	25° 9	3° 7	17°56	T 20	
W21	1 58 40	27°48'51	18°32	9°59	29°49	3°35	6°44	21° 8	11°25	6°55	13°50	26°17	25° 6	3°13	17°58	W21	
T 22	2 2 37	28°48'30	1♎57	10°43	1♎4	3°49	6°56	21° 5	11°28	6°54	13°49	26°11	25° 2	3°20	18° 0	T 22	
F 23	2 6 33	29°48'11	15°33	11°35	2°19	4° 2	7° 8	21° 2	11°32	6°53	13°48	26° 8	24°59	3°27	18° 2	F 23	
S 24	2 10 30	0♎47'54	29°22	12°35	3°34	4°15	7°20	20°59	11°36	6°51	13°48	26°D 7	24°56	3°33	18° 5	S 24	
S 25	2 14 27	1°47'40	13♏23	13°41	4°49	4°27	7°32	20°56	11°39	6°50	13°47	26° 7	24°53	3°40	18° 7	S 25	
M26	2 18 23	2°47'27	27°36	14°52	6° 5	4°38	7°44	20°53	11°43	6°49	13°46	26°R 8	24°50	3°47	18° 9	M26	
T 27	2 22 20	3°47'17	11♎59	16° 8	7°20	4°48	7°57	20°50	11°46	6°47	13°45	26° 7	24°47	3°53	18°12	T 27	
W28	2 26 16	4°47'09	26°30	17°28	8°35	4°58	8° 9	20°47	11°50	6°46	13°45	26° 4	24°43	4° 0	18°15	W28	
T 29	2 30 13	5°47'04	11♎5	18°52	9°50	5° 7	8°21	20°45	11°54	6°45	13°44	25°58	24°40	4° 7	18°17	T 29	
F 30	2 34 9	6°47'00	25°37	20°19	11° 5	5°15	8°34	20°42	11°57	6°43	13°43	25°49	24°37	4°13	18°20	F 30	
S 31	2 38 6	7♎46'58	9♎59	21♎48	12♎20	5♎23	8♎46	20♎40	12♎1	6♐42	13♎43	25♎38	24♎34	4♎20	18♎23	S 31	

Delta T = 78.97 sec

ASTRODIENST EPHEMERIS for the year 2054

NOVEMBER 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♁	♂	♃	♅	♁	♄	♁	♁	♁	♁	♁	♁	Day
S 1	2 42 2	8♁46'59	24♁ 5	23♁19	13♁36	5♁29	8♁58	20°R38	12♁ 4	6°R40	13°R42	25°R26	24♁31	4♁26	18♁26	S 1	
M 2	2 45 59	9°47'01	7♁49	24°52	14°51	5°35	9°11	20°H35	12° 8	6♁39	13°H41	25°Ω15	24°27	4°33	18°29	M 2	
T 3	2 49 55	10°47'05	21°10	26°26	16° 6	5°40	9°24	20°33	12°11	6°37	13°41	25° 5	24°24	4°40	18°32	T 3	
W 4	2 53 52	11°47'10	4♁ 6	28° 1	17°21	5°45	9°36	20°31	12°15	6°36	13°40	24°57	24°21	4°46	18°35	W 4	
T 5	2 57 49	12°47'18	16°40	29°37	18°36	5°48	9°49	20°29	12°18	6°34	13°40	24°52	24°18	4°53	18°38	T 5	
F 6	3 1 45	13°47'26	28°54	1♁14	19°52	5°51	10° 2	20°27	12°21	6°33	13°39	24°49	24°15	5° 0	18°41	F 6	
S 7	3 5 42	14°47'37	10♁54	2°51	21° 7	5°53	10°14	20°26	12°25	6°31	13°39	24°D48	24°12	5° 6	18°44	S 7	
S 8	3 9 38	15°47'48	22°45	4°28	22°22	5°54	10°27	20°24	12°28	6°30	13°38	24°R48	24° 8	5°13	18°48	S 8	
M 9	3 13 35	16°48'02	4♁33	6° 5	23°37	5°R54	10°40	20°23	12°31	6°28	13°38	24°48	24° 5	5°20	18°51	M 9	
T 10	3 17 31	17°48'16	16°22	7°43	24°52	5°54	10°53	20°21	12°35	6°27	13°37	24°46	24° 2	5°26	18°54	T 10	
W11	3 21 28	18°48'33	28°19	9°20	26° 8	5°52	11° 6	20°20	12°38	6°25	13°37	24°42	23°59	5°33	18°58	W11	
T 12	3 25 24	19°48'50	10°V27	10°57	27°23	5°50	11°19	20°18	12°41	6°23	13°36	24°36	23°56	5°40	19° 1	T 12	
F 13	3 29 21	20°49'10	22°49	12°35	28°38	5°47	11°32	20°17	12°44	6°22	13°36	24°26	23°52	5°46	19° 5	F 13	
S 14	3 33 18	21°49'31	5♁28	14°12	29°53	5°43	11°45	20°16	12°47	6°20	13°36	24°14	23°49	5°53	19° 9	S 14	
S 15	3 37 14	22°49'53	18°23	15°49	1♁ 8	5°38	11°58	20°15	12°51	6°18	13°35	24° 1	23°46	6° 0	19°12	S 15	
M16	3 41 11	23°50'17	1♁34	17°26	2°24	5°32	12°11	20°15	12°54	6°17	13°35	23°47	23°43	6° 6	19°16	M16	
T 17	3 45 7	24°50'43	15° 0	19° 2	3°39	5°25	12°24	20°14	12°57	6°15	13°35	23°35	23°40	6°13	19°20	T 17	
W18	3 49 4	25°51'11	28°37	20°38	4°54	5°18	12°38	20°13	13° 0	6°14	13°35	23°25	23°37	6°20	19°24	W18	
T 19	3 53 0	26°51'40	12♁23	22°15	6° 9	5° 9	12°51	20°13	13° 3	6°12	13°34	23°17	23°33	6°26	19°28	T 19	
F 20	3 56 57	27°52'11	26°16	23°51	7°24	5° 0	13° 4	20°12	13° 6	6°10	13°34	23°13	23°30	6°33	19°32	F 20	
S 21	4 0 53	28°52'44	10♁13	25°26	8°40	4°50	13°17	20°12	13° 9	6° 8	13°34	23°11	23°27	6°39	19°36	S 21	
S 22	4 4 50	29°53'18	24°15	27° 2	9°55	4°39	13°31	20°12	13°12	6° 7	13°34	23°10	23°24	6°46	19°40	S 22	
M23	4 8 47	0♁53'55	8♁19	28°37	11°10	4°27	13°44	20°D12	13°15	6° 5	13°34	23°10	23°21	6°53	19°44	M23	
T 24	4 12 43	1°54'33	22°27	0♁12	12°25	4°14	13°57	20°12	13°17	6° 3	13°34	23° 9	23°18	6°59	19°49	T 24	
W25	4 16 40	2°55'13	6♁35	1°47	13°40	4° 1	14°11	20°12	13°20	6° 2	13°34	23° 6	23°14	7° 6	19°53	W25	
T 26	4 20 36	3°55'54	20°44	3°22	14°56	3°47	14°24	20°12	13°23	6° 0	13°34	22°59	23°11	7°13	19°57	T 26	
F 27	4 24 33	4°56'37	4♁48	4°56	16°11	3°31	14°37	20°12	13°26	5°58	13°D34	22°50	23° 8	7°19	20° 2	F 27	
S 28	4 28 29	5°57'22	18°45	6°31	17°26	3°15	14°51	20°13	13°28	5°57	13°34	22°39	23° 5	7°26	20° 6	S 28	
S 29	4 32 26	6°58'08	2♁29	8° 5	18°41	2°59	15° 4	20°13	13°31	5°55	13°34	22°26	23° 2	7°33	20°10	S 29	
M30	4 36 22	7°58'55	15♁58	9♁39	19♁57	2♁41	15♁18	20°H14	13♁34	5♁53	13°H34	22°Ω13	22°Ω58	7♁39	20♁15	M30	

Delta T = 78.99 sec

DECEMBER 2054

00:00 UT

Day	Sid.t	☉	☽	♀	♁	♂	♃	♅	♁	♄	♁	♁	♁	♁	♁	♁	Day
T 1	4 40 19	8♁59'44	29♁ 7	11♁14	21♁12	2°R23	15♁31	20°H15	13♁36	5°R52	13°H34	22°R 2	22°Ω55	7♁46	20♁19	T 1	
W 2	4 44 16	10° 0'33	11♁57	12°48	22°27	2♁ 5	15°45	20°16	13°39	5°H50	13°34	21°Ω54	22°52	7°53	20°24	W 2	
T 3	4 48 12	11° 1'24	24°27	14°22	23°42	1°45	15°58	20°17	13°41	5°48	13°34	21°47	22°49	7°59	20°29	T 3	
F 4	4 52 9	12° 2'16	6♁41	15°56	24°58	1°25	16°12	20°18	13°44	5°46	13°34	21°44	22°46	8° 6	20°33	F 4	
S 5	4 56 5	13° 3'08	18°41	17°29	26°13	1° 5	16°25	20°19	13°46	5°45	13°34	21°D43	22°43	8°13	20°38	S 5	
S 6	5 0 2	14° 4'01	0♁32	19° 3	27°28	0°44	16°39	20°20	13°48	5°43	13°35	21°43	22°39	8°19	20°43	S 6	
M 7	5 3 58	15° 4'56	12°20	20°37	28°43	0°23	16°53	20°22	13°51	5°41	13°35	21°R44	22°36	8°26	20°48	M 7	
T 8	5 7 55	16° 5'50	24°10	22°11	29°59	0° 1	17° 6	20°23	13°53	5°40	13°35	21°43	22°33	8°32	20°52	T 8	
W 9	5 11 51	17° 6'46	6°V 7	23°45	1♁14	29°H38	17°20	20°25	13°55	5°38	13°35	21°41	22°30	8°39	20°57	W 9	
T 10	5 15 48	18° 7'42	18°17	25°19	2°29	29°16	17°33	20°27	13°57	5°36	13°36	21°37	22°27	8°46	21° 2	T 10	
F 11	5 19 45	19° 8'39	0♁43	26°53	3°44	28°53	17°47	20°28	13°59	5°35	13°36	21°30	22°24	8°52	21° 7	F 11	
S 12	5 23 41	20° 9'37	13°30	28°27	4°59	28°30	18° 0	20°30	14° 1	5°33	13°36	21°21	22°20	8°59	21°12	S 12	
S 13	5 27 38	21°10'35	26°38	0♁ 1	6°15	28° 7	18°14	20°32	14° 3	5°32	13°37	21°11	22°17	9° 6	21°17	S 13	
M14	5 31 34	22°11'34	10♁ 7	1°35	7°30	27°43	18°27	20°35	14° 5	5°30	13°37	21° 0	22°14	9°12	21°22	M14	
T 15	5 35 31	23°12'34	23°55	3° 9	8°45	27°20	18°41	20°37	14° 7	5°28	13°38	20°50	22°11	9°19	21°27	T 15	
W16	5 39 27	24°13'35	7♁58	4°43	10° 0	26°56	18°54	20°39	14° 9	5°27	13°38	20°42	22° 8	9°26	21°32	W16	
T 17	5 43 24	25°14'37	22°12	6°17	11°15	26°33	19° 8	20°42	14°11	5°25	13°39	20°36	22° 4	9°32	21°37	T 17	
F 18	5 47 21	26°15'39	6♁31	7°51	12°30	26° 9	19°22	20°44	14°13	5°24	13°39	20°33	22° 1	9°39	21°42	F 18	
S 19	5 51 17	27°16'42	20°50	9°25	13°46	25°46	19°35	20°47	14°14	5°22	13°40	20°D32	21°58	9°46	21°47	S 19	
S 20	5 55 14	28°17'46	5♁ 7	10°58	15° 1	25°23	19°49	20°50	14°16	5°20	13°40	20°33	21°55	9°52	21°53	S 20	
M21	5 59 10	29°18'51	19°18	12°32	16°16	25° 0	20° 2	20°52	14°18	5°19	13°41	20°34	21°52	9°59	21°58	M21	
T 22	6 3 7	0♁19'56	3♁23	14° 5	17°31	24°37	20°15	20°55	14°19	5°17	13°41	20°R34	21°49	10° 6	22° 3	T 22	
W23	6 7 3	1°21'03	17°21	15°38	18°46	24°15	20°29	20°58	14°21	5°16	13°42	20°33	21°45	10°12	22° 8	W23	
T 24	6 11 0	2°22'10	1♁10	17°10	20° 1	23°53	20°42	21° 1	14°22	5°14	13°43	20°29	21°42	10°19	22°14	T 24	
F 25	6 14 56	3°23'18	14°50	18°42	21°16	23°31	20°56	21° 5	14°24	5°13	13°43	20°24	21°39	10°26	22°19	F 25	
S 26	6 18 53	4°24'26	28°19	20°14	22°31	23°10	21° 9	21° 8	14°25	5°12	13°44	20°16	21°36	10°32	22°24	S 26	
S 27	6 22 50	5°25'36	11♁37	21°44	23°47	22°49	21°23	21°11	14°26	5°10	13°45	20° 8	21°33	10°39	22°30	S 27	
M28	6 26 46	6°26'45	24°42	23°13	25° 2	22°28	21°36	21°15	14°28	5° 9	13°46	20° 0	21°30	10°46	22°35	M28	
T 29	6 30 43	7°27'55	7♁32	24°41	26°17	22° 9	21°49	21°19	14°29	5° 7	13°46	19°53	21°26	10°52	22°40	T 29	
W30	6 34 39	8°29'05	20° 7	26° 8	27°32	21°49	22° 3	21°22	14°30	5° 6	13°47	19°47	21°23	10°59	22°46	W30	
T 31	6 38 36	9♁30'16	2♁28	27♁32	28♁47	21°H31	22♁16	21°H26	14°Ω31	5°H 5	13°H48	19°Ω43	21°Ω20	11°H 6	22♁51	T 31	

Delta T = 79.02 sec