



Astrodienst Ephemeris Tables for the year 1651

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 D5EPX

ASTRODIENST EPHEMERIS for the year 1651
geocentric

JANUARY 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	6 41 57	10°36'47	6°8'16	28°47'47	24°28'21	8°4'4	0°47'45	11°R 6	19°27'22	17°47'43	10°R34	6°R29	5°8'3	12°23'36	19°19'28	S 1
M 2	6 45 53	11°37'56	18°30	0°3'19	25°2	8°29	0°57	11°16	19°25	17°45	10°II33	6°8'29	5°0	12°42	19°28	M 2
T 3	6 49 50	12°39'06	0°II34	1°51	25°43	8°54	1°9	10°56	19°29	17°47	10°32	6°26	4°57	12°49	19°R28	T 3
W 4	6 53 46	13°40'15	12°31	3°24	26°22	9°19	1°20	10°51	19°32	17°49	10°31	6°20	4°54	12°56	19°28	W 4
T 5	6 57 43	14°41'23	24°24	4°58	27°0	9°43	1°32	10°46	19°36	17°52	10°30	6°11	4°51	13°2	19°28	T 5
F 6	7 1 40	15°42'31	6°21'16	6°32	27°37	10°7	1°43	10°41	19°39	17°54	10°29	6°0	4°48	13°9	19°28	F 6
S 7	7 5 36	16°43'39	18°7	8°6	28°12	10°31	1°54	10°36	19°42	17°56	10°28	5°47	4°44	13°16	19°27	S 7
S 8	7 9 33	17°44'46	0°1	9°40	28°46	10°54	2°5	10°31	19°46	17°58	10°27	5°33	4°41	13°23	19°27	S 8
M 9	7 13 29	18°45'53	11°57	11°16	29°18	11°17	2°17	10°26	19°49	18°0	10°26	5°19	4°38	13°29	19°26	M 9
T 10	7 17 26	19°47'00	23°58	12°51	29°49	11°40	2°28	10°22	19°52	18°2	10°25	5°6	4°35	13°36	19°26	T 10
W 11	7 21 22	20°48'06	6°19'5	14°27	0°18'18	12°3	2°39	10°17	19°55	18°4	10°24	4°56	4°32	13°43	19°25	W 11
T 12	7 25 19	21°49'12	18°20	16°4	0°46	12°25	2°50	10°12	19°59	18°6	10°24	4°49	4°28	13°49	19°24	T 12
F 13	7 29 15	22°50'18	0°47	17°41	1°12	12°47	3°0	10°7	20°2	18°8	10°23	4°45	4°25	13°56	19°23	F 13
S 14	7 33 12	23°51'23	13°29	19°19	1°36	13°8	3°11	10°2	20°5	18°10	10°22	4°43	4°22	14°3	19°21	S 14
S 15	7 37 9	24°52'28	26°31	20°57	1°58	13°29	3°22	9°58	20°8	18°11	10°21	4°42	4°19	14°10	19°20	S 15
M 16	7 41 5	25°53'32	9°11'56	22°36	2°18	13°50	3°32	9°53	20°11	18°13	10°20	4°42	4°16	14°16	19°19	M 16
T 17	7 45 2	26°54'36	23°47	24°16	2°36	14°11	3°43	9°48	20°15	18°15	10°20	4°41	4°13	14°23	19°17	T 17
W 18	7 48 58	27°55'40	8°1'6	25°56	2°53	14°31	3°53	9°44	20°18	18°17	10°19	4°38	4°9	14°30	19°15	W 18
T 19	7 52 55	28°56'43	22°50	27°36	3°7	14°51	4°3	9°39	20°21	18°19	10°18	4°32	4°6	14°36	19°13	T 19
F 20	7 56 51	29°57'46	7°3'55	29°17	3°19	15°10	4°13	9°35	20°24	18°21	10°18	4°24	4°3	14°43	19°12	F 20
S 21	8 0 48	0°58'48	23°12	0°59	3°28	15°29	4°23	9°30	20°27	18°23	10°17	4°13	4°0	14°50	19°10	S 21
S 22	8 4 44	1°59'49	8°30	2°42	3°36	15°48	4°33	9°26	20°30	18°24	10°16	4°1	3°57	14°57	19°7	S 22
M 23	8 8 41	3°0'49	23°37	4°25	3°41	16°6	4°43	9°21	20°33	18°26	10°16	3°49	3°54	15°3	19°5	M 23
T 24	8 12 38	4°1'48	8°1'24	6°9	3°44	16°24	4°53	9°17	20°36	18°28	10°15	3°39	3°50	15°10	19°3	T 24
W 25	8 16 34	5°2'46	22°43	7°53	3°R44	16°41	5°3	9°13	20°38	18°30	10°14	3°32	3°47	15°17	19°0	W 25
T 26	8 20 31	6°3'42	6°1'32	9°38	3°42	16°58	5°12	9°9	20°41	18°31	10°14	3°28	3°44	15°23	18°58	T 26
F 27	8 24 27	7°4'37	19°51	11°24	3°37	17°15	5°22	9°5	20°44	18°33	10°13	3°26	3°41	15°30	18°55	F 27
S 28	8 28 24	8°5'31	2°8'44	13°10	3°29	17°31	5°31	9°1	20°47	18°35	10°13	3°26	3°38	15°37	18°52	S 28
S 29	8 32 20	9°6'23	15°14	14°56	3°20	17°46	5°40	8°57	20°50	18°36	10°12	3°26	3°34	15°44	18°50	S 29
M 30	8 36 17	10°7'14	27°26	16°43	3°7	18°1	5°49	8°53	20°52	18°38	10°11	3°25	3°31	15°50	18°47	M 30
T 31	8 40 13	11°8'04	9°11'27	18°31	2°1'52	18°16	5°58	8°54	20°55	18°39	10°11	3°22	3°28	15°57	18°44	T 31

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat
S 1	23s 4	13n37	0s 1	24s15	0s46	13s25	0n 1	1s 6	2n17	19s34	0n48	22n33	0s28	23s 8	0s 5	21s34
M 2	22 59	18 23	1n 4	24 21	0 52	13 3	0 10	1 15	2 18	19 37	0 48	22 34	0 28	23 9	0 5	21 34
T 3	22 53	22 20	2 4	24 27	0 58	12 41	0 19	1 25	2 19	19 39	0 48	22 34	0 28	23 9	0 5	21 34
W 4	22 47	25 18	2 59	24 31	1 4	12 18	0 28	1 33	2 20	19 41	0 48	22 35	0 28	23 9	0 5	21 34
T 5	22 41	27 7	3 45	24 33	1 10	11 56	0 38	1 42	2 20	19 44	0 48	22 35	0 28	23 9	0 5	21 35
F 6	22 34	27 42	4 22	24 35	1 15	11 34	0 48	1 51	2 21	19 46	0 48	22 36	0 28	23 10	0 5	21 35
S 7	22 26	26 59	4 47	24 34	1 20	11 13	0 58	2 0	2 22	19 48	0 48	22 36	0 27	23 10	0 5	21 35
S 8	22 18	25 3	4 59	24 33	1 25	10 51	1 9	2 8	2 23	19 51	0 48	22 37	0 27	23 10	0 5	21 35
M 9	22 10	22 1	4 58	24 30	1 30	10 30	1 19	2 16	2 24	19 53	0 48	22 37	0 27	23 10	0 5	21 35
T 10	22 2	18 2	4 45	24 26	1 34	10 9	1 30	2 24	2 24	19 55	0 48	22 38	0 27	23 11	0 5	21 35
W 11	21 52	13 17	4 18	24 20	1 39	9 48	1 42	2 32	2 25	19 57	0 48	22 38	0 27	23 11	0 5	21 36
T 12	21 43	7 59	3 39	24 13	1 43	9 27	1 53	2 40	2 26	19 59	0 48	22 39	0 27	23 11	0 5	21 36
F 13	21 33	2 16	2 49	24 4	1 46	9 7	2 5	2 48	2 27	20 1	0 48	22 39	0 27	23 12	0 5	21 36
S 14	21 23	3s39	1 50	23 54	1 50	8 47	2 17	2 56	2 28	20 3	0 48	22 40	0 27	23 12	0 5	21 36
S 15	21 12	9 35	0 43	23 42	1 53	8 28	2 29	3 3	2 28	20 5	0 48	22 40	0 27	23 12	0 5	21 36
M 16	21 1	15 16	0s28	23 29	1 55	8 9	2 42	3 11	2 29	20 7	0 48	22 41	0 26	23 12	0 5	21 36
T 17	20 49	20 21	1 39	23 14	1 58	7 51	2 55	3 18	2 30	20 9	0 48	22 41	0 26	23 12	0 5	21 37
W 18	20 37	24 26	2 46	22 58	2 0	7 33	3 8	3 25	2 31	20 11	0 48	22 42	0 26	23 13	0 5	21 37
T 19	20 25	27 2	3 45	22 40	2 2	7 16	3 21	3 32	2 32	20 13	0 48	22 42	0 26	23 13	0 5	21 37
F 20	20 12	27 43	4 29	22 21	2 3	6 59	3 34	3 38	2 33	20 15	0 48	22 43	0 26	23 13	0 5	21 37
S 21	19 59	26 19	4 54	22 0	2 4	6 43	3 48	3 45	2 33	20 17	0 48	22 43	0 26	23 13	0 5	21 37
S 22	19 45	22 59	4 59	21 37	2 4	6 27	4 2	3 51	2 34	20 18	0 48	22 43	0 26	23 14	0 5	21 37
M 23	19 31	18 7	4 42	21 13	2 5	6 12	4 16	3 58	2 35	20 20	0 48	22 44	0 26	23 14	0 5	21 37
T 24	19 17	12 15	4 7	20 47	2 4	5 58	4 29	4 4	2 36	20 22	0 48	22 44	0 25	23 14	0 5	21 37
W 25	19 3	5 55	3 17	20 19	2 4	5 45	4 44	4 10	2 37	20 23	0 48	22 45	0 25	23 14	0 5	21 38
T 26	18 48	0n30	2 17	19 50	2 2	5 33	4 58	4 15	2 38	20 25	0 48	22 45	0 25	23 15	0 5	21 38
F 27	18 32	6 41	1 11	19 20	2 1	5 21	5 12	4 21	2 38	20 27	0 48	22 46	0 25	23 15	0 5	21 38
S 28	18 17	12 23	0 4	18 47	1 58	5 11	5 26	4 26	2 39	20 28	0 48	22 46	0 25	23 15	0 5	21 38
S 29	18 1	17 25	1n 2	18 14	1 55	5 1	5 40	4 31	2 40	20 30	0 48	22 46	0 25	23 15	0 5	21 38
M 30	17 45	21 38	2 3	17 38	1 52	4 53	5 54	4 36	2 41	20 31	0 48	22 47	0 25	23 15	0 5	21 38
T 31	17s28	24n51	2n58	17s 1	1s48	4s45	6n 7	4s41	2n42	20s33	0n48	22n47	0s24	23s16	0s 5	21s38

Julian Day Number = 2324075.5, Delta T = 42.62 sec
Ecliptic obliquity = 23°29'12, Nutation = - 0°00'09, out-of-bounds declination in red
Ayanamsha: Fagan/Bradley = 19°52'08, Lahiri = 18°59'09Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651
geocentric

FEBRUARY 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	8 44 10	12 ²⁸ 8'52	21 ¹¹ 20	20 ²⁸ 18	2°R35	18 ²³ 30	6 ²⁷ 7	8°R45	20 ²⁷ 58	18 ²⁷ 41	10°R11	3°R16	3 ²⁵ 25	16 ²⁵ 4	18°R41	W 1
T 2	8 48 7	13° 9'39	3 ²⁸ 11	22° 6	2 ¹⁸ 15	18°44	6°16	8 ²⁸ 42	21° 0	18°42	10 ¹¹ 10	3 ²⁸ 7	3°22	16°10	18 ²⁷ 37	T 2
F 3	8 52 3	14°10'24	15° 1	23°54	1°53	18°57	6°24	8°38	21° 3	18°44	10°10	2°56	3°19	16°17	18°34	F 3
S 4	8 56 0	15°11'08	26°55	25°41	1°29	19°10	6°33	8°35	21° 5	18°45	10° 9	2°43	3°15	16°24	18°31	S 4
S 5	8 59 56	16°11'50	8 ²⁸ 52	27°28	1° 2	19°22	6°41	8°31	21° 8	18°47	10° 9	2°28	3°12	16°31	18°27	S 5
M 6	9 3 53	17°12'31	20°56	29°15	0°33	19°33	6°49	8°28	21°10	18°48	10° 8	2°14	3° 9	16°37	18°24	M 6
T 7	9 7 49	18°13'10	3 ¹⁷ 7	1 ¹⁸ 1	0° 3	19°44	6°57	8°25	21°13	18°50	10° 8	2° 2	3° 6	16°44	18°20	T 7
W 8	9 11 46	19°13'49	15°25	2°46	29 ²⁸ 31	19°55	7° 5	8°21	21°15	18°51	10° 8	1°51	3° 3	16°51	18°16	W 8
T 9	9 15 42	20°14'25	27°52	4°29	28°57	20° 5	7°13	8°18	21°17	18°52	10° 7	1°44	3° 0	16°58	18°13	T 9
F 10	9 19 39	21°15'01	10 ²⁸ 29	6°10	28°23	20°14	7°21	8°15	21°19	18°54	10° 7	1°39	2°56	17° 4	18° 9	F 10
S 11	9 23 36	22°15'35	23°19	7°48	27°47	20°23	7°28	8°13	21°22	18°55	10° 7	1°37	2°53	17°11	18° 5	S 11
S 12	9 27 32	23°16'08	6 ¹⁸ 23	9°24	27°10	20°31	7°36	8°10	21°24	18°56	10° 7	1°D37	2°50	17°18	18° 1	S 12
M13	9 31 29	24°16'40	19°46	10°56	26°33	20°39	7°43	8° 7	21°26	18°57	10° 6	1°R37	2°47	17°24	17°57	M13
T 14	9 35 25	25°17'10	3 ²⁷ 29	12°25	25°56	20°46	7°50	8° 5	21°28	18°58	10° 6	1°37	2°44	17°31	17°53	T 14
W15	9 39 22	26°17'40	17°33	13°48	25°18	20°52	7°57	8° 2	21°30	19° 0	10° 6	1°35	2°40	17°38	17°48	W15
T 16	9 43 18	27°18'08	1 ²⁸ 59	15° 6	24°41	20°57	8° 4	8° 0	21°32	19° 1	10° 6	1°31	2°37	17°45	17°44	T 16
F 17	9 47 15	28°18'35	16°43	16°18	24° 4	21° 2	8°10	7°57	21°34	19° 2	10° 6	1°24	2°34	17°51	17°40	F 17
S 18	9 51 11	29°19'00	1 ²⁸ 40	17°24	23°28	21° 7	8°17	7°55	21°36	19° 3	10° 6	1°15	2°31	17°58	17°36	S 18
S 19	9 55 8	0 ¹⁸ 19'24	16°41	18°22	22°53	21°10	8°23	7°53	21°38	19° 4	10° 6	1° 6	2°28	18° 5	17°31	S 19
M20	9 59 5	1°19'45	1 ¹⁸ 37	19°12	22°19	21°13	8°30	7°51	21°40	19° 5	10° 5	0°56	2°25	18°11	17°27	M20
T 21	10 3 1	2°20'06	16°18	19°54	21°47	21°15	8°36	7°49	21°41	19° 6	10° 5	0°48	2°21	18°18	17°22	T 21
W22	10 6 58	3°20'24	0 ¹⁷ 38	20°26	21°16	21°17	8°42	7°48	21°43	19° 7	10° 5	0°42	2°18	18°25	17°18	W22
T 23	10 10 54	4°20'40	14°30	20°50	20°47	21°R17	8°47	7°46	21°45	19° 8	10°D 5	0°38	2°15	18°32	17°13	T 23
F 24	10 14 51	5°20'55	27°56	21° 4	20°19	21°17	8°53	7°44	21°46	19° 9	10° 5	0°D37	2°12	18°38	17° 8	F 24
S 25	10 18 47	6°21'07	10 ²⁸ 54	21°R 9	19°54	21°16	8°58	7°43	21°48	19° 9	10° 5	0°37	2° 9	18°45	17° 4	S 25
S 26	10 22 44	7°21'18	23°30	21° 4	19°31	21°15	9° 4	7°42	21°50	19°10	10° 6	0°38	2° 6	18°52	16°59	S 26
M27	10 26 40	8°21'26	5 ¹¹ 47	20°49	19°10	21°13	9° 9	7°40	21°51	19°11	10° 6	0°R39	2° 2	18°58	16°54	M27
T 28	10 30 37	9 ¹⁸ 21'32	17 ¹¹ 50	20 ¹⁸ 26	18 ²⁸ 52	21 ²⁸ 10	9 ²⁷ 14	7 ²⁸ 39	21 ²⁷ 53	19 ²⁷ 12	10 ¹¹ 6	0 ²⁸ 39	1 ²⁸ 59	19 ²⁸ 5	16 ¹⁷ 50	T 28

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat
W 1	17s11	26n56	3n44	16s23	1s44	4s39	6n21	4s46	2n42	20s34	0n49	22n48	0s24	23s16	0s 5	21s38
T 2	16 54	27 47	4 21	15 43	1 39	4 33	6 34	4 50	2 43	20 36	0 49	22 48	0 24	23 16	0 5	21 38
F 3	16 37	27 22	4 46	15 2	1 33	4 29	6 47	4 54	2 44	20 37	0 49	22 48	0 24	23 16	0 5	21 39
S 4	16 19	25 41	4 58	14 20	1 26	4 26	6 59	4 58	2 45	20 39	0 49	22 49	0 24	23 16	0 5	21 39
S 5	16 1	22 52	4 58	13 37	1 19	4 24	7 11	5 2	2 46	20 40	0 49	22 49	0 24	23 16	0 5	21 39
M 6	15 42	19 2	4 44	12 52	1 11	4 23	7 22	5 6	2 46	20 41	0 49	22 49	0 24	23 17	0 5	21 39
T 7	15 24	14 23	4 18	12 7	1 3	4 24	7 33	5 9	2 47	20 43	0 49	22 50	0 24	23 17	0 5	21 39
W 8	15 5	9 7	3 39	11 20	0 53	4 25	7 43	5 12	2 48	20 44	0 49	22 50	0 23	23 17	0 5	21 39
T 9	14 46	3 26	2 49	10 34	0 43	4 28	7 53	5 16	2 49	20 45	0 49	22 50	0 23	23 17	0 5	21 39
F 10	14 27	2s29	1 50	9 47	0 33	4 32	8 1	5 18	2 50	20 46	0 49	22 51	0 23	23 17	0 5	21 39
S 11	14 7	8 24	0 44	8 59	0 21	4 36	8 9	5 21	2 50	20 48	0 49	22 51	0 23	23 17	0 5	21 39
S 12	13 47	14 5	0s25	8 12	0 9	4 42	8 16	5 23	2 51	20 49	0 49	22 51	0 23	23 18	0 5	21 39
M13	13 27	19 14	1 35	7 25	0n 3	4 49	8 22	5 25	2 52	20 50	0 49	22 52	0 23	23 18	0 5	21 39
T 14	13 7	23 31	2 41	6 40	0 17	4 56	8 27	5 27	2 53	20 51	0 49	22 52	0 23	23 18	0 5	21 39
W15	12 47	26 32	3 39	5 55	0 31	5 4	8 31	5 29	2 53	20 52	0 49	22 52	0 22	23 18	0 5	21 39
T 16	12 26	27 53	4 24	5 11	0 45	5 14	8 34	5 30	2 54	20 53	0 49	22 52	0 22	23 18	0 5	21 39
F 17	12 5	27 17	4 54	4 30	1 0	5 23	8 37	5 32	2 55	20 54	0 49	22 53	0 22	23 18	0 5	21 40
S 18	11 44	24 45	5 3	3 51	1 15	5 34	8 38	5 33	2 55	20 55	0 49	22 53	0 22	23 18	0 5	21 40
S 19	11 23	20 30	4 52	3 14	1 30	5 45	8 38	5 33	2 56	20 56	0 50	22 53	0 22	23 19	0 5	21 40
M20	11 1	14 59	4 21	2 41	1 45	5 56	8 37	5 34	2 57	20 57	0 50	22 54	0 22	23 19	0 5	21 40
T 21	10 40	8 41	3 34	2 11	2 0	6 8	8 36	5 34	2 57	20 58	0 50	22 54	0 22	23 19	0 5	21 40
W22	10 18	2 5	2 33	1 44	2 14	6 19	8 33	5 34	2 58	20 59	0 50	22 54	0 21	23 19	0 5	21 40
T 23	9 56	4n25	1 25	1 22	2 28	6 32	8 30	5 34	2 58	20 59	0 50	22 54	0 21	23 19	0 5	21 40
F 24	9 34	10 32	0 14	1 4	2 42	6 44	8 26	5 33	2 59	21 0	0 50	22 54	0 21	23 19	0 5	21 40
S 25	9 12	16 0	0n55	0 51	2 54	6 56	8 21	5 32	2 59	21 1	0 50	22 55	0 21	23 19	0 5	21 40
S 26	8 50	20 37	2 0	0 42	3 6	7 9	8 15	5 31	3 0	21 2	0 50	22 55	0 21	23 19	0 5	21 40
M27	8 27	24 13	2 57	0 38	3 16	7 21	8 9	5 30	3 0	21 3	0 50	22 55	0 21	23 20	0 5	21 40
T 28	8s 5	26n40	3n46	0s40	3n25	7s33	8n 2	5s29	3n 1	21s 3	0n50	22n55	0s21	23s20	0s 5	21s40

Julian Day Number = 2324106.5, Delta T = 42.56 sec
Ecliptic obliquity = 23°29'12, Nutation = - 0°00'08, out-of-bounds declination in red
Ayanamsha: Fagan/Bradley = 19°52'13, Lahiri = 18°59'13Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651
geocentric

MARCH 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
W 1	10 34 34	10♈21'36	29♏44	19°R55	18°R35	21°R 6	9♌19	7°R38	21♑54	19♒12	10♒ 6	0°R37	1♈56	19♓12	16°R45	W 1
T 2	10 38 30	11°21'38	11♓35	19♈16	18♓22	21♏ 1	9°23	7♓37	21°55	19°13	10° 6	0♈32	1°53	19°19	16♏40	T 2
F 3	10 42 27	12°21'38	23°27	18°31	18°11	20°56	9°28	7°37	21°57	19°14	10° 6	0°26	1°50	19°25	16°35	F 3
S 4	10 46 23	13°21'36	5♏23	17°41	18° 2	20°50	9°32	7°36	21°58	19°14	10° 6	0°18	1°46	19°32	16°31	S 4
S 5	10 50 20	14°21'31	17°26	16°46	17°55	20°43	9°36	7°35	21°59	19°15	10° 7	0° 9	1°43	19°39	16°26	S 5
M 6	10 54 16	15°21'25	29°38	15°49	17°52	20°36	9°40	7°35	22° 0	19°15	10° 7	0° 0	1°40	19°45	16°21	M 6
T 7	10 58 13	16°21'16	12♏ 1	14°50	17°D50	20°27	9°44	7°35	22° 1	19°16	10° 7	29°Y52	1°37	19°52	16°16	T 7
W 8	11 2 9	17°21'05	24°34	13°51	17°51	20°18	9°47	7°34	22° 2	19°16	10° 7	29°46	1°34	19°59	16°11	W 8
T 9	11 6 6	18°20'53	7♏19	12°54	17°55	20° 8	9°51	7°D34	22° 3	19°17	10° 8	29°42	1°31	20° 6	16° 6	T 9
F 10	11 10 3	19°20'38	20°15	11°59	18° 0	19°58	9°54	7°34	22° 4	19°17	10° 8	29°39	1°27	20°12	16° 2	F 10
S 11	11 13 59	20°20'22	3♏23	11° 7	18° 8	19°46	9°57	7°35	22° 5	19°18	10° 8	29°D39	1°24	20°19	15°57	S 11
S 12	11 17 56	21°20'04	16°43	10°20	18°19	19°34	10° 0	7°35	22° 6	19°18	10° 9	29°40	1°21	20°26	15°52	S 12
M13	11 21 52	22°19'45	0♏17	9°37	18°31	19°21	10° 3	7°35	22° 7	19°18	10° 9	29°41	1°18	20°33	15°47	M13
T 14	11 25 49	23°19'23	14° 3	9° 0	18°46	19° 7	10° 5	7°36	22° 7	19°19	10°10	29°43	1°15	20°39	15°43	T 14
W15	11 29 45	24°19'00	28° 4	8°28	19° 2	18°53	10° 8	7°36	22° 8	19°19	10°10	29°R43	1°12	20°46	15°38	W15
T 16	11 33 42	25°18'35	12♓17	8° 3	19°21	18°38	10°10	7°37	22° 9	19°19	10°10	29°42	1° 8	20°53	15°33	T 16
F 17	11 37 38	26°18'09	26°41	7°44	19°41	18°22	10°12	7°38	22° 9	19°19	10°11	29°39	1° 5	20°59	15°28	F 17
S 18	11 41 35	27°17'41	11♓13	7°31	20° 3	18° 6	10°14	7°39	22°10	19°19	10°11	29°35	1° 2	21° 6	15°24	S 18
S 19	11 45 32	28°17'10	25°46	7°24	20°28	17°48	10°15	7°40	22°10	19°19	10°12	29°30	0°59	21°13	15°19	S 19
M20	11 49 28	29°16'38	10♈16	7°D23	20°53	17°31	10°17	7°41	22°11	19°20	10°12	29°26	0°56	21°20	15°14	M20
T 21	11 53 25	0°Y16'04	24°35	7°27	21°21	17°12	10°18	7°42	22°11	19°20	10°13	29°22	0°52	21°26	15°10	T 21
W22	11 57 21	1°15'28	8°Y39	7°37	21°50	16°53	10°19	7°43	22°11	19°R20	10°14	29°19	0°49	21°33	15° 5	W22
T 23	12 1 18	2°14'50	22°22	7°53	22°20	16°34	10°20	7°45	22°11	19°20	10°14	29°18	0°46	21°40	15° 1	T 23
F 24	12 5 14	3°14'09	5♈43	8°13	22°52	16°14	10°21	7°46	22°12	19°19	10°15	29°D18	0°43	21°46	14°56	F 24
S 25	12 9 11	4°13'27	18°42	8°39	23°25	15°54	10°21	7°48	22°12	19°19	10°15	29°19	0°40	21°53	14°52	S 25
S 26	12 13 7	5°12'42	1♏20	9° 8	24° 0	15°33	10°22	7°50	22°12	19°19	10°16	29°20	0°37	22° 0	14°48	S 26
M27	12 17 4	6°11'55	13°40	9°42	24°36	15°11	10°R22	7°52	22°R12	19°19	10°17	29°22	0°33	22° 7	14°43	M27
T 28	12 21 1	7°11'06	25°47	10°21	25°13	14°50	10°22	7°54	22°12	19°19	10°17	29°23	0°30	22°13	14°39	T 28
W29	12 24 57	8°10'14	7♓44	11° 3	25°51	14°28	10°21	7°56	22°12	19°19	10°18	29°R24	0°27	22°20	14°35	W29
T 30	12 28 54	9° 9'20	19°37	11°48	26°31	14° 6	10°21	7°58	22°12	19°18	10°19	29°23	0°24	22°27	14°31	T 30
F 31	12 32 50	10°Y 8'24	1♏30	12♈37	27♓12	13♏43	10♒20	8♓ 0	22♒12	19♒18	10♒20	29°Y22	0♓21	22♓34	14♏27	F 31

Day	☉	☽		♊		♋		♌		♍		♎		♏		♐		♑		♒	♓	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
W 1	7s42	27n53	4n24	0s45	3n32	7s45	7n55	5s27	3n 1	21s 4	0n50	22n56	0s20	23s20	0s 5	21s40	1n23	12n14	9s52	11n42	12n10	27n 5	0n30	5s 9									
T 2	7 19	27 48	4 50	0 56	3 37	7 56	7 47	5 25	3 2	21 5	0 50	22 56	0 20	23 20	0 5	21 40	1 23	12 15	9 52	11 41	12 9	27 4	0 32	5 9									
F 3	6 56	26 27	5 5	1 10	3 40	8 8	7 39	5 23	3 2	21 5	0 50	22 56	0 20	23 20	0 5	21 40	1 23	12 15	9 52	11 39	12 8	27 3	0 34	5 9									
S 4	6 33	23 54	5 6	1 29	3 41	8 19	7 30	5 20	3 2	21 6	0 50	22 56	0 20	23 20	0 5	21 40	1 23	12 15	9 51	11 36	12 7	27 2	0 36	5 9									
S 5	6 10	20 17	4 53	1 51	3 40	8 29	7 21	5 17	3 2	21 6	0 50	22 56	0 20	23 20	0 5	21 40	1 23	12 15	9 51	11 33	12 6	27 1	0 38	5 8									
M 6	5 47	15 47	4 27	2 16	3 37	8 39	7 11	5 14	3 3	21 7	0 50	22 56	0 20	23 20	0 6	21 40	1 23	12 16	9 51	11 30	12 5	27 1	0 40	5 8									
T 7	5 24	10 35	3 49	2 43	3 32	8 49	7 2	5 11	3 3	21 7	0 51	22 57	0 20	23 20	0 6	21 40	1 23	12 16	9 51	11 27	12 4	27 0	0 42	5 8									
W 8	5 0	4 53	2 58	3 12	3 26	8 58	6 52	5 8	3 3	21 8	0 51	22 57	0 20	23 20	0 6	21 40	1 23	12 16	9 50	11 25	12 2	26 59	0 44	5 7									
T 9	4 37	1s 6	1 58	3 42	3 17	9 7	6 42	5 4	3 3	21 8	0 51	22 57	0 19	23 20	0 6	21 40	1 23	12 17	9 50	11 23	12 1	26 58	0 46	5 7									
F 10	4 14	7 9	0 51	4 12	3 7	9 15	6 31	5 0	3 3	21 9	0 51	22 57	0 19	23 20	0 6	21 40	1 24	12 17	9 50	11 22	12 0	26 57	0 48	5 7									
S 11	3 50	12 59	0s20	4 42	2 56	9 23	6 21	4 56	3 3	21 9	0 51	22 57	0 19	23 21	0 6	21 40	1 24	12 17	9 50	11 22	11 59	26 56	0 51	5 7									
S 12	3 27	18 20	1 31	5 12	2 43	9 30	6 10	4 51	3 3	21 9	0 51	22 57	0 19	23 21	0 6	21 40	1 24	12 17	9 49	11 23	11 58	26 55	0 53	5 6									
M13	3 3	22 50	2 39	5 40	2 30	9 36	6 0	4 46	3 2	21 10	0 51	22 57	0 19	23 21	0 6	21 40	1 24	12 18	9 49	11 23	11 57	26 55	0 55	5 6									
T 14	2 39	26 8	3 38	6 7	2 15	9 42	5 49	4 41	3 2	21 10	0 51	22 57	0 19	23 21	0 6	21 40	1 24	12 18	9 49	11 24	11 56	26 54	0 57	5 5									
W15	2 16	27 54	4 25	6 33	2 1	9 47	5 38	4 36	3 2	21 10	0 51	22 58	0 19	23 21	0 6	21 40	1 24	12 18	9 49	11 24	11 55	26 53	0 59	5 5									
T 16	1 52	27 51	4 57	6 56	1 46	9 51	5 28	4 31	3 2	21 10	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 19	9 48	11 23	11 54	26 52	1 1	5 5									
F 17	1 28	25 57	5 11	7 17	1 31	9 55	5 17	4 25	3 1	21 11	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 19	9 48	11 22	11 52	26 51	1 4	5 4									
S 18	1 5	22 20	5 5	7 36	1 15	9 59	5 6	4 20	3 1	21 11	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 19	9 48	11 21	11 51	26 50	1 6	5 4									
S 19	0 41	17 20	4 40	7 53	1 0	10 1	4 56	4 14	3 0	21 11	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 20	9 48	11 19	11 50	26 49	1 8	5 3									
M20	0 17	11 23	3 56	8 7	0 46	10 3	4 45	4 7	2 59	21 11	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 20	9 47	11 18	11 49	26 48	1 10	5 3									
T 21	0n 6	4 53	2 58	8 18	0 31	10 5	4 35	4 1	2 59	21 11	0 51	22 58	0 18	23 21	0 6	21 40	1 24	12 20	9 47	11 16	11 48	26 47	1 12	5 3									
W22	0 30	1n44	1 51	8 28	0 17	10 5	4 24	3 55	2 58	21 11	0 52	22 58	0 18	23 21	0 6	21 40	1 24	12 21	9 47	11 15	11 47	26 46	1 14	5 2									
T 23	0 54	8 8	0 38	8 35	0 3	10 5	4 14	3 48	2 57	21 12	0 52	22 58	0 18	23 21	0 6	21 40	1 24	12 21	9 47	11 15	11 46	26 45	1 17	5 2									
F 24	1 17	14 0	0n35	8 39	0s10	10 5	4 4	3 41	2 56	21 12	0 52	22 58	0 17	23 21	0 6	21 40	1 24	12 21	9 46	11 15	11 45	26 44	1 19	5 1									
S 25	1 41	19 6	1 45	8 42	0 23	10 4	3 53	3 34	2 55	21 12	0 52	22 58	0 17	23 21	0 6	21 40	1 24	12 22	9 46	11 15	11 44	26 43	1 21	5 1									
S 26	2 4	23 11	2 47	8 42	0 35	10 2	3 43	3 27	2 54	21 12	0 52	22 58	0 17	23 21	0 6	21 39	1 24	12 22	9 46	11 16	11 42	26 42	1 23	5 0									
M27	2 28	26 8	3 40	8 40	0 46	10 0	3 33	3 20	2 53	21 12	0 52	22 58	0 17	23 21	0 6	21 39	1 24	12 22	9 46	11 16	11 41	26 41	1 25	5 0									
T 28	2 51	27 47	4 22	8 35	0 57	9 57	3 24	3 13	2 52	21 11	0 52	22 58	0 17	23 21	0 6	21 39	1 24	12 22	9 46	11 17	11 40	26 40	1 27	4 59									
W29	3 15	28 8	4 53	8 29	1 8	9 53	3 14	3 6	2 50	21 11	0 52	22 58	0 17	23 21	0 6	21 39	1 24	12 23	9 45	11 17	11 39	26 39	1 29	4 59									
T 30	3 38	27 10	5 10	8 21	1 18	9 49	3 4	2 58	2 49	21 11	0 52	22 58	0 17	23 21	0 6	21 39	1 24	12 23	9 45	11 17	11 38	26 38	1 31	4 58									
F 31	4n 1	24n58	5n15	8s11	1s27	9s44	2n55	2s51	2n47	21s11	0n52	22n58	0s16	23s21	0s 6	21s39	1n24	12n23	9s45	11n16	11n37	26n37	1n33	4s58									

ASTRODIENST EPHEMERIS for the year 1651
geocentric

APRIL 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	12 36 47	11°7'25"	13°28'28"	13°30'30"	27°58'53"	13°R21	10°R19	8°3'3	22°R11	19°R18	10°II20	29°R20	0°8'17"	22°54'40"	14°R23	S 1
S 2	12 40 43	12° 6'25"	25°35'	14°25'	28°36'	12°58'	10°18'	8° 5'	22°11'	19°17'	10°21'	29°17'	0°14'	22°47'	14°19'	S 2
M 3	12 44 40	13° 5'21"	7°10'53"	15°23'	29°20'	12°35'	10°17'	8° 8'	22°11'	19°17'	10°22'	29°15'	0°11'	22°54'	14°15'	M 3
T 4	12 48 36	14° 4'16"	20°25'	16°24'	0°14' 4"	12°12'	10°16'	8°11'	22°10'	19°17'	10°23'	29°12'	0° 8'	23° 0'	14°11'	T 4
W 5	12 52 33	15° 3'09"	3°13'	17°28'	0°50'	11°49'	10°14'	8°13'	22°10'	19°16'	10°24'	29°11'	0° 5'	23° 7'	14° 8'	W 5
T 6	12 56 29	16° 1'59"	16°17'	18°34'	1°36'	11°26'	10°13'	8°16'	22° 9'	19°16'	10°25'	29°10'	0° 2'	23°14'	14° 4'	T 6
F 7	13 0 26	17° 0'47"	29°36'	19°43'	2°23'	11° 3'	10°11'	8°19'	22° 9'	19°15'	10°25'	29°D 9	29°15'58"	23°21'	14° 1'	F 7
S 8	13 4 23	17°59'34"	13°11' 9"	20°54'	3°11'	10°40'	10° 9'	8°22'	22° 8'	19°15'	10°26'	29°10'	29°55'	23°27'	13°57'	S 8
S 9	13 8 19	18°58'18"	26°54'	22° 8'	4° 0'	10°17'	10° 6'	8°26'	22° 8'	19°14'	10°27'	29°10'	29°52'	23°34'	13°54'	S 9
M10	13 12 16	19°57'01"	10°15'50"	23°23'	4°50'	9°55'	10° 4'	8°29'	22° 7'	19°13'	10°28'	29°11'	29°49'	23°41'	13°50'	M10
T 11	13 16 12	20°55'43"	24°54'	24°41'	5°40'	9°33'	10° 1'	8°32'	22° 6'	19°13'	10°29'	29°12'	29°46'	23°47'	13°47'	T 11
W12	13 20 9	21°54'22"	9°3' 3"	26° 0'	6°31'	9°11'	9°58'	8°36'	22° 6'	19°12'	10°30'	29°12'	29°43'	23°54'	13°44'	W12
T 13	13 24 5	22°53'00"	23°16'	27°22'	7°23'	8°49'	9°55'	8°40'	22° 5'	19°12'	10°31'	29°R13	29°39'	24° 1'	13°41'	T 13
F 14	13 28 2	23°51'36"	7°30'30"	28°46'	8°15'	8°28'	9°52'	8°43'	22° 4'	19°11'	10°32'	29°12'	29°36'	24° 8'	13°38'	F 14
S 15	13 31 58	24°50'11"	21°42'	0°11'11"	9° 8'	8° 7'	9°49'	8°47'	22° 3'	19°10'	10°33'	29°12'	29°33'	24°14'	13°35'	S 15
S 16	13 35 55	25°48'44"	5°15'50"	1°39'	10° 2'	7°46'	9°45'	8°51'	22° 2'	19° 9'	10°34'	29°12'	29°30'	24°21'	13°32'	S 16
M17	13 39 52	26°47'15"	19°51'	3° 8'	10°56'	7°27'	9°42'	8°55'	22° 1'	19° 8'	10°35'	29°11'	29°27'	24°28'	13°30'	M17
T 18	13 43 48	27°45'44"	3°14'41"	4°39'	11°50'	7° 7'	9°38'	8°59'	22° 0'	19° 8'	10°36'	29°11'	29°23'	24°35'	13°27'	T 18
W19	13 47 45	28°44'12"	17°19'	6°12'	12°45'	6°48'	9°34'	9° 3'	21°59'	19° 7'	10°37'	29°11'	29°20'	24°41'	13°25'	W19
T 20	13 51 41	29°42'38"	0°14'42"	7°46'	13°41'	6°30'	9°29'	9° 7'	21°58'	19° 6'	10°38'	29°11'	29°17'	24°48'	13°22'	T 20
F 21	13 55 38	0°41'02"	13°48'	9°23'	14°37'	6°12'	9°25'	9°12'	21°57'	19° 5'	10°39'	29°11'	29°14'	24°55'	13°20'	F 21
S 22	13 59 34	1°39'24"	26°38'	11° 1'	15°34'	5°55'	9°21'	9°16'	21°55'	19° 4'	10°41'	29°11'	29°11'	25° 1'	13°18'	S 22
S 23	14 3 31	2°37'44"	9°11'12"	12°41'	16°31'	5°38'	9°16'	9°20'	21°54'	19° 3'	10°42'	29°11'	29° 8'	25° 8'	13°16'	S 23
M24	14 7 27	3°36'03"	21°31'	14°23'	17°28'	5°23'	9°11'	9°25'	21°53'	19° 2'	10°43'	29°10'	29° 4'	25°15'	13°14'	M24
T 25	14 11 24	4°34'19"	3°53'38"	16° 6'	18°26'	5° 8'	9° 6'	9°30'	21°51'	19° 1'	10°44'	29° 9'	29° 1'	25°22'	13°12'	T 25
W26	14 15 21	5°32'33"	15°36'	17°52'	19°24'	4°53'	9° 1'	9°34'	21°50'	19° 0'	10°45'	29° 9'	28°58'	25°28'	13°10'	W26
T 27	14 19 17	6°30'46"	27°30'	19°39'	20°23'	4°40'	8°56'	9°39'	21°48'	18°59'	10°46'	29° 8'	28°55'	25°35'	13° 9'	T 27
F 28	14 23 14	7°28'56"	9°12'23"	21°28'	21°22'	4°27'	8°50'	9°44'	21°47'	18°58'	10°47'	29°D 8	28°52'	25°42'	13° 7'	F 28
S 29	14 27 10	8°27'04"	21°21'	23°19'	22°21'	4°15'	8°45'	9°49'	21°45'	18°57'	10°49'	29° 9'	28°49'	25°49'	13° 6'	S 29
S 30	14 31 7	9°25'11"	3°10'28"	25°11'11"	23°11'21"	4° 3'	8°13'39"	9°54'54"	21°14'44"	18°14'56"	10°11'50"	29°19' 9"	28°14'45"	25°54'55"	13°10' 5"	S 30

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	4n25	21n41	5n 5	7s59	1s36	9s38	2n46	2s44	2n46	21s11	0n52	22n58	0s16	23s21	0s 6	21s39	1n24	12n24	9s45	11n15	11n36	26n36	1n35	4s57			
S 2	4 48	17 27	4 42	7 45	1 44	9 32	2 36	2 36	2 44	21 11	0 52	22 58	0 16	23 21	0 6	21 39	1 24	12 24	9 44	11 15	11 35	26 35	1 38	4 56			
M 3	5 11	12 26	4 6	7 29	1 52	9 26	2 27	2 29	2 43	21 11	0 52	22 58	0 16	23 21	0 6	21 39	1 24	12 24	9 44	11 14	11 34	26 34	1 40	4 56			
T 4	5 34	6 50	3 18	7 12	1 59	9 19	2 18	2 22	2 41	21 10	0 52	22 58	0 16	23 21	0 6	21 39	1 25	12 25	9 44	11 13	11 32	26 33	1 42	4 55			
W 5	5 56	0 50	2 18	6 53	2 5	9 11	2 10	2 15	2 39	21 10	0 52	22 58	0 16	23 21	0 6	21 39	1 25	12 25	9 44	11 12	11 31	26 32	1 43	4 55			
T 6	6 19	5s20	1 11	6 33	2 11	9 3	2 1	2 7	2 37	21 10	0 52	22 58	0 16	23 21	0 6	21 39	1 25	12 25	9 44	11 12	11 30	26 31	1 45	4 54			
F 7	6 42	11 23	0s 2	6 10	2 17	8 54	1 53	2 0	2 35	21 9	0 52	22 58	0 16	23 21	0 6	21 39	1 25	12 26	9 43	11 12	11 29	26 30	1 47	4 53			
S 8	7 4	17 2	1 17	5 47	2 22	8 44	1 44	1 53	2 33	21 9	0 52	22 58	0 15	23 21	0 6	21 39	1 25	12 26	9 43	11 12	11 28	26 29	1 49	4 53			
S 9	7 27	21 54	2 28	5 22	2 26	8 34	1 36	1 46	2 31	21 9	0 52	22 58	0 15	23 21	0 6	21 39	1 25	12 26	9 43	11 12	11 27	26 28	1 51	4 52			
M10	7 49	25 35	3 31	4 55	2 29	8 24	1 28	1 39	2 29	21 8	0 52	22 58	0 15	23 21	0 6	21 38	1 25	12 27	9 43	11 12	11 26	26 27	1 53	4 51			
T 11	8 11	27 45	4 22	4 27	2 33	8 13	1 20	1 33	2 26	21 8	0 53	22 58	0 15	23 21	0 6	21 38	1 25	12 27	9 43	11 13	11 25	26 26	1 55	4 51			
W12	8 33	28 7	4 57	3 58	2 35	8 1	1 12	1 26	2 24	21 7	0 53	22 58	0 15	23 21	0 6	21 38	1 25	12 27	9 42	11 13	11 23	26 24	1 57	4 50			
T 13	8 55	26 39	5 15	3 27	2 37	7 49	1 5	1 20	2 22	21 7	0 53	22 57	0 15	23 21	0 6	21 38	1 25	12 28	9 42	11 13	11 22	26 23	1 58	4 49			
F 14	9 17	23 29	5 13	2 55	2 39	7 36	0 57	1 14	2 19	21 6	0 53	22 57	0 15	23 21	0 6	21 38	1 25	12 28	9 42	11 13	11 21	26 22	2 0	4 49			
S 15	9 38	18 55	4 53	2 22	2 39	7 23	0 50	1 8	2 17	21 6	0 53	22 57	0 15	23 21	0 6	21 38	1 25	12 28	9 42	11 13	11 20	26 21	2 2	4 48			
S 16	10 0	13 20	4 14	1 47	2 40	7 10	0 43	1 2	2 15	21 5	0 53	22 57	0 14	23 21	0 6	21 38	1 25	12 29	9 42	11 13	11 19	26 20	2 4	4 47			
M17	10 21	7 7	3 21	1 12	2 40	6 56	0 36	0 56	2 12	21 5	0 53	22 57	0 14	23 21	0 6	21 38	1 25	12 29	9 41	11 12	11 18	26 19	2 5	4 47			
T 18	10 42	0 37	2 17	0 35	2 39	6 42	0 29	0 51	2 10	21 4	0 53	22 57	0 14	23 21	0 6	21 38	1 25	12 29	9 41	11 12	11 17	26 18	2 7	4 46			
W19	11 3	5n48	1 5	0n 3	2 38	6 27	0 22	0 46	2 7	21 4	0 53	22 57	0 14	23 21	0 6	21 38	1 25	12 30	9 41	11 12	11 16	26 16	2 8	4 45			
T 20	11 24	11 52	0n 8	0 42	2 36	6 11	0 16	0 41	2 4	21 3	0 53	22 56	0 14	23 21	0 6	21 38	1 25	12 30	9 41	11 12	11 15	26 15	2 10	4 45			
F 21	11 44	17 17	1 20	1 22	2 33	5 56	0 9	0 36	2 2	21 2	0 53	22 56	0 14	23 21	0 6	21 37	1 25	12 30	9 41	11 12	11 13	26 14	2 12	4 44			
S 22	12 4	21 49	2 26	2 4	2 31	5 40	0 3	0 32	1 59	21 2	0 53	22 56	0 14	23 21	0 6	21 37	1 25	12 31	9 40	11 12	11 12	26 13	2 13	4 43			
S 23	12 25	25 14	3 24	2 46	2 27	5 23	0s 3	0 28	1 56	21 1	0 53	22 56	0 14	23 21	0 6	21 37	1 25	12 31	9 40	11 12	11 11	26 12	2 14	4 42			
M24	12 44	27 23	4 11	3 29	2 23	5 6	0 9	0 24	1 54	21 0	0 53	22 56	0 14	23 20	0 6	21 37	1 25	12 31	9 40	11 12	11 10	26 10	2 16	4 42			
T 25	13 4	28 12	4 46	4 13	2 19	4 49	0 15	0 21	1 51	20 59	0 53	22 55	0 13	23 20	0 6	21 37	1 25	12 32	9 40	11 12	11 9	26 9	2 17	4 41			
W26	13 24	27 40	5 8	4 58	2 14	4 31	0 21	0 17	1 48	20 59	0 53	22 55	0 13	23 20	0 6	21 37	1 25	12 32	9 40	11 12	11 8	26 8	2 19	4 40			
T 27	13 43	25 52	5 16	5 43	2 8	4 13	0 26	0 14	1 46	20 58	0 53	22 55	0 13	23 20	0 6	21 37	1 25	12 32	9 40	11 11	11 7	26 7	2 20	4 39			
F 28	14 2	22 56	5 11	6 30	2 2	3 55	0 32	0 12	1 43	20 57	0 53	22 55	0 13	23 20	0 6	21 37	1 25	12 32	9 39	11 11	11 5	26 6	2 21	4 39			
S 29	14 21	19 2	4 53	7 17	1 56	3 36	0 37	0 9	1 40	20 56	0 53	22 54	0 13	23 20	0 6	21 37	1 25	12 33	9 39	11 11	11 4	26 4	2 22	4 38			
S 30	14n40	14n19	4n22	8n 4	1s49	3s17	0s42	0s 7	1n38	20s55	0n53	22n54	0s13	23s20	0s 6	21s36	1n25	12n33	9s39	11n12	11n 3	26n 3	2n24	4s37			

ASTRODIENST EPHEMERIS for the year 1651

geocentric

MAY 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	14 35 3	10♌23'15	15♍48	27♍5	24♌21	3°R53	8°R33	9♌59	21°R42	18°R54	10♌51	29°Y10	28°Y42	26♌2	13°R 3	M 1
T 2	14 39 0	11°21'17	28°26	29° 2	25°22	3♌43	8♌27	10° 5	21♌41	18♌53	10°52	29°11	28°39	26° 9	13♍2	T 2
W 3	14 42 56	12°19'18	11♌22	0♌59	26°22	3°34	8°21	10°10	21°39	18°52	10°53	29°12	28°36	26°15	13° 1	W 3
T 4	14 46 53	13°17'16	24°40	2°59	27°23	3°26	8°15	10°15	21°37	18°51	10°55	29°R13	28°33	26°22	13° 0	T 4
F 5	14 50 50	14°15'14	8♍19	5° 0	28°25	3°19	8° 9	10°21	21°36	18°50	10°56	29°13	28°29	26°29	13° 0	F 5
S 6	14 54 46	15°13'09	22°16	7° 3	29°26	3°12	8° 2	10°26	21°34	18°48	10°57	29°12	28°26	26°36	12°59	S 6
S 7	14 58 43	16°11'03	6♌30	9° 8	0°Y28	3° 7	7°56	10°32	21°32	18°47	10°58	29°10	28°23	26°42	12°58	S 7
M 8	15 2 39	17° 8'56	20°54	11°14	1°30	3° 2	7°49	10°37	21°30	18°46	11° 0	29° 8	28°20	26°49	12°58	M 8
T 9	15 6 36	18° 6'47	5♌23	13°21	2°33	2°57	7°42	10°43	21°28	18°44	11° 1	29° 5	28°17	26°56	12°58	T 9
W10	15 10 32	19° 4'37	19°52	15°30	3°36	2°54	7°36	10°49	21°26	18°43	11° 2	29° 3	28°14	27° 2	12°58	W10
T 11	15 14 29	20° 2'26	4♌16	17°39	4°38	2°52	7°29	10°55	21°24	18°42	11° 4	29° 2	28°10	27° 9	12°D58	T 11
F 12	15 18 25	21° 0'14	18°32	19°49	5°42	2°50	7°22	11° 1	21°22	18°40	11° 5	29°D 1	28° 7	27°16	12°58	F 12
S 13	15 22 22	21°58'01	2♌36	22° 0	6°45	2°49	7°15	11° 6	21°20	18°39	11° 6	29° 1	28° 4	27°23	12°58	S 13
S 14	15 26 19	22°55'46	16°27	24°12	7°49	2°D49	7° 8	11°12	21°18	18°38	11° 8	29° 2	28° 1	27°29	12°58	S 14
M15	15 30 15	23°53'30	0°Y 5	26°23	8°53	2°49	7° 0	11°19	21°16	18°36	11° 9	29° 4	27°58	27°36	12°58	M15
T 16	15 34 12	24°51'13	13°30	28°34	9°57	2°50	6°53	11°25	21°14	18°35	11°10	29° 5	27°55	27°43	12°59	T 16
W17	15 38 8	25°48'55	26°43	0♌45	11° 1	2°52	6°46	11°31	21°12	18°33	11°12	29°R 6	27°51	27°50	13° 0	W17
T 18	15 42 5	26°46'36	9♌42	2°55	12° 6	2°55	6°38	11°37	21°10	18°32	11°13	29° 6	27°48	27°56	13° 0	T 18
F 19	15 46 1	27°44'16	22°29	5° 4	13°10	2°59	6°31	11°44	21° 8	18°30	11°14	29° 4	27°45	28° 3	13° 1	F 19
S 20	15 49 58	28°41'54	5♌ 4	7°12	14°15	3° 3	6°23	11°50	21° 6	18°29	11°16	29° 0	27°42	28°10	13° 2	S 20
S 21	15 53 54	29°39'32	17°27	9°19	15°20	3° 8	6°16	11°56	21° 3	18°27	11°17	28°56	27°39	28°16	13° 3	S 21
M22	15 57 51	0♌37'08	29°40	11°23	16°25	3°14	6° 8	12° 3	21° 1	18°26	11°18	28°51	27°35	28°23	13° 4	M22
T 23	16 1 48	1°34'43	11♌43	13°26	17°31	3°20	6° 1	12° 9	20°59	18°24	11°20	28°45	27°32	28°30	13° 6	T 23
W24	16 5 44	2°32'16	23°40	15°26	18°36	3°27	5°53	12°16	20°57	18°23	11°21	28°40	27°29	28°37	13° 7	W24
T 25	16 9 41	3°29'48	5♌33	17°25	19°42	3°35	5°46	12°23	20°54	18°21	11°22	28°35	27°26	28°43	13° 9	T 25
F 26	16 13 37	4°27'19	17°25	19°21	20°48	3°44	5°38	12°29	20°52	18°20	11°24	28°32	27°23	28°50	13°10	F 26
S 27	16 17 34	5°24'48	29°21	21°14	21°54	3°53	5°30	12°36	20°50	18°18	11°25	28°31	27°20	28°57	13°12	S 27
S 28	16 21 30	6°22'17	11♍26	23° 5	23° 0	4° 3	5°23	12°43	20°47	18°17	11°27	28°D31	27°16	29° 4	13°14	S 28
M29	16 25 27	7°19'43	23°45	24°54	24° 6	4°13	5°15	12°50	20°45	18°15	11°28	28°32	27°13	29°10	13°16	M29
T 30	16 29 23	8°17'09	6♌21	26°39	25°13	4°24	5° 7	12°56	20°43	18°13	11°29	28°33	27°10	29°17	13°18	T 30
W31	16 33 20	9♌14'33	19♌20	28♌23	26°Y19	4♌36	5♌ 0	13♌3	20♌40	18♌12	11♌31	28°Y34	27°Y 7	29♌24	13♍20	W31

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	lat
M 1	14n58	8n57	3n38	8n53	1s42	2s58	0s47	0s 6	1n35	20s54	0n53	22n54	0s13	23s20	0s 6	21s36
T 2	15 16	3 6	2 42	9 41	1 34	2 39	0 52	0 4	1 32	20 53	0 53	22 54	0 13	23 20	0 6	21 36
W 3	15 34	3s 1	1 37	10 30	1 25	2 19	0 57	0 3	1 29	20 53	0 53	22 53	0 13	23 20	0 6	21 36
T 4	15 52	9 11	0 25	11 20	1 17	1 59	1 1	0 3	1 27	20 52	0 53	22 53	0 12	23 20	0 6	21 36
F 5	16 9	15 6	0s50	12 9	1 8	1 38	1 6	0 2	1 24	20 51	0 53	22 53	0 12	23 20	0 6	21 36
S 6	16 26	20 22	2 4	12 59	0 58	1 18	1 10	0 2	1 21	20 50	0 53	22 52	0 12	23 19	0 6	21 36
S 7	16 43	24 35	3 11	13 48	0 49	0 57	1 14	0 2	1 19	20 49	0 53	22 52	0 12	23 19	0 6	21 36
M 8	16 59	27 17	4 8	14 37	0 39	0 36	1 18	0 2	1 16	20 48	0 53	22 52	0 12	23 19	0 6	21 35
T 9	17 16	28 11	4 48	15 26	0 28	0 14	1 22	0 3	1 14	20 47	0 52	22 51	0 12	23 19	0 6	21 35
W10	17 32	27 8	5 11	16 14	0 18	0n 7	1 26	0 4	1 11	20 45	0 52	22 51	0 12	23 19	0 6	21 35
T 11	17 47	24 18	5 13	17 1	0 7	0 29	1 29	0 6	1 8	20 44	0 52	22 51	0 12	23 19	0 6	21 35
F 12	18 3	20 0	4 57	17 47	0n 3	0 51	1 33	0 7	1 6	20 43	0 52	22 50	0 12	23 19	0 6	21 35
S 13	18 18	14 39	4 22	18 32	0 14	1 13	1 36	0 9	1 3	20 42	0 52	22 50	0 11	23 19	0 6	21 35
S 14	18 32	8 38	3 33	19 15	0 24	1 35	1 39	0 11	1 1	20 41	0 52	22 49	0 11	23 19	0 6	21 35
M15	18 47	2 18	2 33	19 57	0 34	1 58	1 42	0 14	0 58	20 40	0 52	22 49	0 11	23 18	0 7	21 35
T 16	19 1	4n 3	1 25	20 36	0 44	2 20	1 45	0 17	0 56	20 39	0 52	22 49	0 11	23 18	0 7	21 34
W17	19 15	10 7	0 13	21 14	0 54	2 43	1 48	0 20	0 54	20 38	0 52	22 48	0 11	23 18	0 7	21 34
T 18	19 28	15 40	0n58	21 49	1 4	3 6	1 50	0 23	0 51	20 37	0 52	22 48	0 11	23 18	0 7	21 34
F 19	19 42	20 26	2 5	22 23	1 13	3 29	1 53	0 26	0 49	20 35	0 52	22 47	0 11	23 18	0 7	21 34
S 20	19 55	24 12	3 4	22 53	1 21	3 51	1 55	0 30	0 46	20 34	0 52	22 47	0 11	23 18	0 7	21 34
S 21	20 7	26 46	3 54	23 21	1 29	4 15	1 58	0 34	0 44	20 33	0 52	22 46	0 11	23 18	0 7	21 34
M22	20 19	28 1	4 32	23 46	1 36	4 38	2 0	0 39	0 42	20 32	0 52	22 46	0 11	23 17	0 7	21 34
T 23	20 31	27 54	4 57	24 9	1 43	5 1	2 2	0 43	0 40	20 31	0 51	22 45	0 10	23 17	0 7	21 33
W24	20 43	26 30	5 10	24 29	1 48	5 24	2 4	0 48	0 37	20 29	0 51	22 45	0 10	23 17	0 7	21 33
T 25	20 54	23 54	5 9	24 46	1 54	5 47	2 5	0 53	0 35	20 28	0 51	22 44	0 10	23 17	0 7	21 33
F 26	21 4	20 19	4 54	25 1	1 58	6 10	2 7	0 59	0 33	20 27	0 51	22 44	0 10	23 17	0 7	21 33
S 27	21 15	15 53	4 27	25 13	2 2	6 34	2 9	1 4	0 31	20 26	0 51	22 43	0 10	23 17	0 7	21 33
S 28	21 25	10 48	3 48	25 23	2 5	6 57	2 10	1 10	0 29	20 24	0 51	22 43	0 10	23 17	0 7	21 33
M29	21 35	5 12	2 58	25 30	2 7	7 20	2 11	1 16	0 27	20 23	0 51	22 42	0 10	23 16	0 7	21 33
T 30	21 44	0s44	1 58	25 35	2 8	7 43	2 12	1 22	0 25	20 22	0 51	22 42	0 10	23 16	0 7	21 32
W31	21n53	6s48	0n50	25n37	2n 9	8n 6	2s13	1s29	0n23	20s21	0n51	22n41	0s10	23s16	0s 7	21s32

Julian Day Number = 2324195.5, Delta T = 42.39 sec
 Ecliptic obliquity = 23°29'13", Nutation = - 0°00'09", out-of-bounds declination in red
 Ayanamsha: Fagan/Bradley = 19°52'25", Lahiri = 18°59'25"Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651

geocentric

JUNE 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	16 37 17	10 ^{II} 11'57	2 ^{III} 43	0 [☾] 3	27 ^{VI} 26	4 [♂] 48	4 [♂] R52	13 [☾] 10	20 [♂] R38	18 [♂] R10	11 ^{II} 32	28 [♂] R35	27 ^{VI} 4	29 [☾] 30	13 ^{III} 23	T 1
F 2	16 41 13	11° 9'19	16°32	1°41	28°33	5° 1	4 [♂] 45	13°17	20 [♂] R35	18 [♂] 9	11°34	28 ^{VI} 33	27° 1	29°37	13°25	F 2
S 3	16 45 10	12° 6'40	0 [♂] 47	3°16	29°40	5°14	4°37	13°24	20°33	18° 7	11°35	28°30	26°57	29°44	13°28	S 3
S 4	16 49 6	13° 4'01	15°22	4°48	0 [♂] 47	5°28	4°30	13°31	20°31	18° 5	11°36	28°25	26°54	29°51	13°30	S 4
M 5	16 53 3	14° 1'20	0 [☾] 12	6°17	1°54	5°43	4°22	13°39	20°28	18° 4	11°38	28°19	26°51	29°57	13°33	M 5
T 6	16 56 59	14°58'39	15° 7	7°43	3° 2	5°58	4°15	13°46	20°26	18° 2	11°39	28°12	26°48	0 [♂] 4	13°36	T 6
W 7	17 0 56	15°55'58	0 [☾] 1	9° 7	4° 9	6°13	4° 7	13°53	20°23	18° 1	11°41	28° 5	26°45	0°11	13°39	W 7
T 8	17 4 53	16°53'16	14°43	10°28	5°17	6°30	4° 0	14° 0	20°21	17°59	11°42	28° 0	26°41	0°17	13°42	T 8
F 9	17 8 49	17°50'33	29°10	11°46	6°24	6°46	3°53	14° 7	20°19	17°57	11°43	27°57	26°38	0°24	13°45	F 9
S 10	17 12 46	18°47'50	13 ^{III} 16	13° 0	7°32	7° 3	3°45	14°15	20°16	17°56	11°45	27°D55	26°35	0°31	13°48	S 10
S 11	17 16 42	19°45'07	27° 3	14°12	8°40	7°21	3°38	14°22	20°14	17°54	11°46	27°55	26°32	0°38	13°52	S 11
M12	17 20 39	20°42'24	10 ^{VI} 29	15°21	9°48	7°39	3°31	14°29	20°11	17°52	11°47	27°56	26°29	0°44	13°55	M12
T 13	17 24 35	21°39'40	23°38	16°26	10°56	7°58	3°24	14°37	20° 9	17°51	11°49	27°R57	26°26	0°51	13°59	T 13
W14	17 28 32	22°36'56	6 [♂] 31	17°29	12° 5	8°17	3°17	14°44	20° 6	17°49	11°50	27°57	26°22	0°58	14° 2	W14
T 15	17 32 28	23°34'11	19°12	18°28	13°13	8°36	3°11	14°52	20° 4	17°48	11°52	27°55	26°19	1° 5	14° 6	T 15
F 16	17 36 25	24°31'27	1 ^{II} 41	19°23	14°21	8°56	3° 4	14°59	20° 1	17°46	11°53	27°50	26°16	1°11	14°10	F 16
S 17	17 40 22	25°28'42	14° 0	20°15	15°30	9°17	2°57	15° 7	19°59	17°44	11°54	27°43	26°13	1°18	14°14	S 17
S 18	17 44 18	26°25'57	26°11	21° 4	16°39	9°38	2°51	15°14	19°56	17°43	11°56	27°34	26°10	1°25	14°18	S 18
M19	17 48 15	27°23'11	8 [☾] 15	21°49	17°47	9°59	2°44	15°22	19°54	17°41	11°57	27°23	26° 7	1°31	14°22	M19
T 20	17 52 11	28°20'26	20°13	22°29	18°56	10°21	2°38	15°29	19°52	17°40	11°58	27°12	26° 3	1°38	14°27	T 20
W21	17 56 8	29°17'39	2 [♂] 7	23° 7	20° 5	10°43	2°32	15°37	19°49	17°38	12° 0	27° 1	26° 0	1°45	14°31	W21
T 22	18 0 4	0 [☾] 14'53	13°58	23°40	21°14	11° 6	2°26	15°44	19°47	17°36	12° 1	26°51	25°57	1°52	14°36	T 22
F 23	18 4 1	1°12'05	25°50	24° 8	22°23	11°29	2°20	15°52	19°44	17°35	12° 2	26°44	25°54	1°58	14°40	F 23
S 24	18 7 57	2° 9'18	7 ^{III} 45	24°33	23°32	11°52	2°14	16° 0	19°42	17°33	12° 4	26°39	25°51	2° 5	14°45	S 24
S 25	18 11 54	3° 6'30	19°48	24°53	24°42	12°16	2° 9	16° 7	19°40	17°32	12° 5	26°36	25°47	2°12	14°50	S 25
M26	18 15 51	4° 3'41	2 [♂] 3	25° 9	25°51	12°40	2° 3	16°15	19°37	17°30	12° 6	26°D35	25°44	2°19	14°54	M26
T 27	18 19 47	5° 0'52	14°36	25°20	27° 0	13° 4	1°58	16°23	19°35	17°29	12° 8	26°35	25°41	2°25	14°59	T 27
W28	18 23 44	5°58'03	27°31	25°26	28°10	13°29	1°52	16°30	19°33	17°27	12° 9	26°R35	25°38	2°32	15° 4	W28
T 29	18 27 40	6°55'14	10 ^{III} 52	25°R28	29°19	13°54	1°47	16°38	19°30	17°26	12°10	26°35	25°35	2°39	15° 9	T 29
F 30	18 31 37	7 [☾] 52'24	24 ^{III} 42	25 [☾] 25	0 ^{II} 29	14 [♂] 20	1 [♂] 42	16 [☾] 46	19 [♂] 28	17 [♂] 24	12 ^{II} 11	26°V32	25°V32	2 [♂] 45	15 ^{III} 15	F 30

Day	☉	☾		♀		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
T 1	22n 1	12s47	0s22	25n38	2n 9	8n29	2s14	1s36	0n21	20s19	0n50	22n41	0s10	23s16	0s 7	21s32	1n26	12n42	9s36	10n59	10n27	25n19	2n40	4s12	4s12
F 2	22 10	18 21	1 36	25 36	2 8	8 52	2 15	1 43	0 19	20 18	0 50	22 40	0 9	23 16	0 7	21 32	1 26	12 42	9 36	10 59	10 26	25 18	2 40	4 12	4 12
S 3	22 17	23 3	2 45	25 33	2 6	9 15	2 16	1 50	0 17	20 17	0 50	22 39	0 9	23 16	0 7	21 32	1 26	12 42	9 36	10 58	10 24	25 16	2 39	4 11	4 11
S 4	22 25	26 25	3 45	25 27	2 3	9 38	2 17	1 57	0 15	20 16	0 50	22 39	0 9	23 16	0 7	21 32	1 26	12 42	9 36	10 56	10 23	25 15	2 39	4 10	4 10
M 5	22 32	28 1	4 31	25 20	2 0	10 1	2 17	2 5	0 13	20 14	0 50	22 38	0 9	23 15	0 7	21 32	1 26	12 43	9 36	10 54	10 22	25 13	2 39	4 9	4 9
T 6	22 38	27 35	4 59	25 12	1 56	10 24	2 17	2 12	0 11	20 13	0 50	22 37	0 9	23 15	0 7	21 31	1 26	12 43	9 36	10 51	10 21	25 11	2 38	4 8	4 8
W 7	22 45	25 11	5 7	25 2	1 52	10 46	2 18	2 20	0 9	20 12	0 50	22 37	0 9	23 15	0 7	21 31	1 26	12 43	9 36	10 49	10 20	25 10	2 38	4 8	4 8
T 8	22 50	21 8	4 54	24 50	1 46	11 9	2 18	2 28	0 7	20 11	0 49	22 36	0 9	23 15	0 7	21 31	1 26	12 43	9 36	10 47	10 19	25 8	2 37	4 7	4 7
F 9	22 56	15 54	4 23	24 38	1 40	11 31	2 18	2 36	0 6	20 10	0 49	22 35	0 9	23 15	0 7	21 31	1 26	12 43	9 36	10 46	10 18	25 7	2 37	4 6	4 6
S 10	23 1	9 55	3 36	24 24	1 33	11 53	2 18	2 45	0 4	20 8	0 49	22 35	0 9	23 15	0 7	21 31	1 26	12 44	9 36	10 45	10 16	25 5	2 36	4 5	4 5
S 11	23 5	3 36	2 38	24 9	1 26	12 15	2 18	2 53	0 2	20 7	0 49	22 34	0 9	23 14	0 7	21 31	1 26	12 44	9 36	10 45	10 15	25 4	2 36	4 5	4 5
M12	23 10	2n45	1 32	23 53	1 18	12 36	2 17	3 2	0 1	20 6	0 49	22 33	0 8	23 14	0 7	21 31	1 26	12 44	9 36	10 46	10 14	25 2	2 35	4 4	4 4
T 13	23 13	8 50	0 23	23 37	1 9	12 58	2 17	3 11	0s 1	20 5	0 49	22 33	0 8	23 14	0 7	21 30	1 26	12 44	9 36	10 46	10 13	25 1	2 34	4 3	4 3
W14	23 17	14 26	0n46	23 19	0 59	13 19	2 17	3 20	0 3	20 4	0 48	22 32	0 8	23 14	0 7	21 30	1 26	12 44	9 36	10 46	10 12	24 59	2 34	4 3	4 3
T 15	23 20	19 20	1 51	23 1	0 49	13 40	2 16	3 29	0 4	20 3	0 48	22 31	0 8	23 14	0 7	21 30	1 26	12 44	9 36	10 45	10 11	24 57	2 33	4 2	4 2
F 16	23 22	23 19	2 50	22 43	0 39	14 1	2 15	3 39	0 6	20 2	0 48	22 31	0 8	23 13	0 7	21 30	1 26	12 45	9 36	10 43	10 10	24 56	2 32	4 1	4 1
S 17	23 25	26 10	3 40	22 24	0 27	14 22	2 15	3 48	0 8	20 0	0 48	22 30	0 8	23 13	0 7	21 30	1 26	12 45	9 36	10 41	10 8	24 54	2 31	4 0	4 0
S 18	23 26	27 45	4 19	22 5	0 15	14 42	2 14	3 58	0 9	19 59	0 48	22 29	0 8	23 13	0 7	21 30	1 26	12 45	9 36	10 38	10 7	24 53	2 30	4 0	4 0
M19	23 28	28 0	4 47	21 46	0 3	15 2	2 13	4 8	0 11	19 58	0 48	22 28	0 8	23 13	0 7	21 30	1 26	12 45	9 36	10 34	10 6	24 51	2 29	3 59	3 59
T 20	23 29	26 55	5 1	21 26	0s10	15 22	2 12	4 18	0 12	19 57	0 47	22 27	0 8	23 13	0 7	21 30	1 26	12 45	9 36	10 30	10 5	24 49	2 28	3 58	3 58
W21	23 29	24 37	5 2	21 7	0 24	15 42	2 11	4 28	0 14	19 56	0 47	22 27	0 8	23 13	0 7	21 29	1 26	12 45	9 36	10 26	10 4	24 48	2 27	3 58	3 58
T 22	23 29	21 17	4 50	20 48	0 37	16 1	2 10	4 38	0 15	19 55	0 47	22 26	0 8	23 12	0 7	21 29	1 26	12 46	9 36	10 22	10 3	24 46	2 26	3 57	3 57
F 23	23 29	17 5	4 25	20 29	0 52	16 20	2 9	4 48	0 17	19 54	0 47	22 25	0 7	23 12	0 7	21 29	1 26	12 46	9 36	10 20	10 1	24 44	2 25	3 56	3 56
S 24	23 28	12 13	3 49	20 10	1 7	16 38	2 7	4 59	0 18	19 53	0 47	22 24	0 7	23 12	0 7	21 29	1 25	12 46	9 36	10 18	10 0	24 43	2 24	3 55	3 55
S 25	23 27	6 51	3 2	19 51	1 22	16 57	2 6	5 9	0 20	19 52	0 46	22 23	0 7	23 12	0 7	21 29	1 25	12 46	9 36	10 17	9 59	24 41	2 23	3 55	3 55
M26	23 25	1 7	2 7	19 34	1 37	17 14	2 4	5 20	0 21	19 51	0 46	22 23	0 7	23 12	0 7	21 29	1 25	12 46	9 36	10 16	9 58	24 40	2 21	3 54	3 54
T 27	23 23	4s48	1 3	19 16	1 52	17 32	2 3	5 31	0 22	19 51	0 46	22 22	0 7	23 12	0 7	21 29	1 25	12 46	9 36	10 16	9 57	24 38	2 20	3 53	3 53
W28	23 21	10 41	0s 5	19 0	2 8	17 49	2 1	5 42	0 24	19 50	0 46	22 21	0 7	23 11	0 7	21 29	1 25	12 46	9 36	10 17	9 56	24 36	2 19	3 53	3 53
T 29	23 18	16 18	1 15	18 44	2 23	18 6	2 0	5 53	0 25	19 49	0 46	22 20	0 7	23 11	0 7	21 28	1 25	12 46	9 36	10 16	9 54	24 34	2 18	3 52	3 52
F 30	23n15	21s18	2s23	18n30	2s39	18n22	1s58	6s 4	0s26	19s48	0n45	22n19	0s 7	23s11	0s 7	21s28	1n25	12n47	9s36	10n15	9n53	24n33	2n16	3s51	3s51

ASTRODIENST EPHEMERIS for the year 1651
geocentric

JULY 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	18 35 33	8 ⁵⁴ 49'34	9 ¹ ♂ 1	25°R18	1 ^{II} 39	14 [♂] 46	1°R37	16 [♂] 54	19°R26	17°R23	12 ^{II} 13	26°R27	25°V28	2 [♂] 52	15 [♂] 20	S 1
S 2	18 39 30	9°46'45	23°46	25 [♂] 6	2°48	15°12	1 [♂] 33	17° 1	19 [♂] 24	17 [♂] 21	12°14	26°V19	25°25	2°59	15°25	S 2
M 3	18 43 27	10°43'55	8 [♂] 50	24°49	3°58	15°38	1°28	17° 9	19°21	17°20	12°15	26°10	25°22	3° 6	15°31	M 3
T 4	18 47 23	11°41'05	24° 4	24°28	5° 8	16° 5	1°24	17°17	19°19	17°18	12°16	26° 0	25°19	3°12	15°36	T 4
W 5	18 51 20	12°38'16	9 [♂] 17	24° 4	6°18	16°32	1°20	17°25	19°17	17°17	12°18	25°50	25°16	3°19	15°42	W 5
T 6	18 55 16	13°35'26	24°18	23°35	7°28	17° 0	1°16	17°33	19°15	17°16	12°19	25°41	25°13	3°26	15°48	T 6
F 7	18 59 13	14°32'38	9 [♂] 0	23° 4	8°38	17°28	1°12	17°40	19°13	17°14	12°20	25°35	25° 9	3°32	15°53	F 7
S 8	19 3 9	15°29'49	23°17	22°29	9°49	17°56	1° 8	17°48	19°11	17°13	12°21	25°32	25° 6	3°39	15°59	S 8
S 9	19 7 6	16°27'01	7 [♂] 7	21°52	10°59	18°24	1° 4	17°56	19° 8	17°11	12°22	25°30	25° 3	3°46	16° 5	S 9
M10	19 11 2	17°24'14	20°32	21°13	12° 9	18°53	1° 1	18° 4	19° 6	17°10	12°24	25°30	25° 0	3°53	16°11	M10
T 11	19 14 59	18°21'28	3 [♂] 35	20°34	13°20	19°21	0°58	18°12	19° 4	17° 9	12°25	25°30	24°57	3°59	16°17	T 11
W12	19 18 56	19°18'42	16°19	19°54	14°30	19°51	0°55	18°19	19° 2	17° 7	12°26	25°29	24°53	4° 6	16°24	W12
T 13	19 22 52	20°15'57	28°47	19°14	15°41	20°20	0°52	18°27	19° 0	17° 6	12°27	25°26	24°50	4°13	16°30	T 13
F 14	19 26 49	21°13'12	11 ^{II} 4	18°35	16°51	20°50	0°49	18°35	18°58	17° 5	12°28	25°20	24°47	4°20	16°36	F 14
S 15	19 30 45	22°10'29	23°12	17°58	18° 2	21°20	0°47	18°43	18°56	17° 4	12°29	25°11	24°44	4°26	16°42	S 15
S 16	19 34 42	23° 7'46	5 [♂] 13	17°23	19°13	21°50	0°44	18°51	18°55	17° 2	12°30	24°59	24°41	4°33	16°49	S 16
M17	19 38 38	24° 5'03	17°10	16°51	20°24	22°21	0°42	18°58	18°53	17° 1	12°32	24°46	24°38	4°40	16°55	M17
T 18	19 42 35	25° 2'21	29° 4	16°22	21°35	22°51	0°40	19° 6	18°51	17° 0	12°33	24°32	24°34	4°46	17° 2	T 18
W19	19 46 31	25°59'40	10 [♂] 55	15°58	22°46	23°23	0°38	19°14	18°49	16°59	12°34	24°18	24°31	4°53	17° 9	W19
T 20	19 50 28	26°56'59	22°47	15°39	23°57	23°54	0°37	19°22	18°47	16°58	12°35	24° 6	24°28	5° 0	17°16	T 20
F 21	19 54 25	27°54'19	4 [♂] 40	15°24	25° 8	24°25	0°35	19°29	18°46	16°56	12°36	23°56	24°25	5° 7	17°22	F 21
S 22	19 58 21	28°51'39	16°37	15°15	26°19	24°57	0°34	19°37	18°44	16°55	12°37	23°49	24°22	5°13	17°29	S 22
S 23	20 2 18	29°49'00	28°41	15°D11	27°30	25°29	0°33	19°45	18°42	16°54	12°38	23°45	24°19	5°20	17°36	S 23
M24	20 6 14	0 [♂] 46'21	10 [♂] 56	15°14	28°41	26° 1	0°32	19°53	18°41	16°53	12°39	23°43	24°15	5°27	17°43	M24
T 25	20 10 11	1°43'43	23°27	15°22	29°53	26°34	0°32	20° 0	18°39	16°52	12°40	23°D43	24°12	5°33	17°50	T 25
W26	20 14 7	2°41'05	6 [♂] 18	15°37	1 [♂] 4	27° 7	0°31	20° 8	18°38	16°51	12°41	23°R43	24° 9	5°40	17°57	W26
T 27	20 18 4	3°38'28	19°34	15°58	2°16	27°39	0°31	20°16	18°36	16°50	12°42	23°42	24° 6	5°47	18° 4	T 27
F 28	20 22 0	4°35'52	3 [♂] 18	16°25	3°27	28°13	0°D31	20°23	18°35	16°49	12°43	23°39	24° 3	5°54	18°12	F 28
S 29	20 25 57	5°33'16	17°31	16°59	4°39	28°46	0°31	20°31	18°33	16°48	12°44	23°35	23°59	6° 0	18°19	S 29
S 30	20 29 54	6°30'41	2 [♂] 11	17°39	5°50	29°19	0°31	20°39	18°32	16°47	12°44	23°27	23°56	6° 7	18°26	S 30
M31	20 33 50	7 [♂] 28'07	17 [♂] 14	18 [♂] 25	7 [♂] 2	29 [♂] 53	0 [♂] 31	20 [♂] 46	18 [♂] 30	16 [♂] 46	12 ^{II} 45	23°V18	23°V53	6 [♂] 14	18 [♂] 34	M31

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	23n12	25s13	3s25	18n16	2s54	18n38	1s56	6s15	0s28	19s47	0n45	22n18	0s 7	23s11	0s 7	21s28	1n25	12n47	9s36	10n13	9n52	24n31	2n15	3s51	
S 2	23 8	27 34	4 14	18 3	3 9	18 54	1 54	6 26	0 29	19 47	0 45	22 17	0 7	23 11	0 7	21 28	1 25	12 47	9 36	10 11	9 51	24 29	2 13	3 50	
M 3	23 3	27 58	4 48	17 52	3 24	19 9	1 52	6 38	0 30	19 46	0 45	22 17	0 7	23 11	0 7	21 28	1 25	12 47	9 36	10 7	9 50	24 28	2 12	3 49	
T 4	22 58	26 16	5 1	17 42	3 38	19 23	1 50	6 49	0 31	19 45	0 45	22 16	0 6	23 10	0 7	21 28	1 25	12 47	9 36	10 4	9 49	24 26	2 10	3 49	
W 5	22 53	22 40	4 53	17 33	3 51	19 38	1 48	7 1	0 33	19 45	0 44	22 15	0 6	23 10	0 7	21 28	1 25	12 47	9 36	10 0	9 48	24 24	2 9	3 48	
T 6	22 47	17 36	4 25	17 26	4 3	19 51	1 46	7 13	0 34	19 44	0 44	22 14	0 6	23 10	0 7	21 28	1 25	12 47	9 36	9 57	9 46	24 22	2 7	3 48	
F 7	22 41	11 36	3 39	17 20	4 14	20 5	1 44	7 24	0 35	19 43	0 44	22 13	0 6	23 10	0 7	21 28	1 25	12 47	9 36	9 55	9 45	24 21	2 5	3 47	
S 8	22 35	5 9	2 42	17 15	4 25	20 17	1 42	7 36	0 36	19 43	0 44	22 12	0 6	23 10	0 7	21 27	1 25	12 47	9 37	9 53	9 44	24 19	2 4	3 46	
S 9	22 28	1n22	1 36	17 12	4 33	20 30	1 39	7 48	0 37	19 42	0 43	22 11	0 6	23 10	0 7	21 27	1 25	12 47	9 37	9 53	9 43	24 17	2 2	3 46	
M10	22 21	7 38	0 26	17 11	4 41	20 42	1 37	8 0	0 38	19 42	0 43	22 10	0 6	23 9	0 7	21 27	1 25	12 47	9 37	9 53	9 42	24 15	2 0	3 45	
T 11	22 14	13 24	0n43	17 11	4 47	20 53	1 35	8 12	0 40	19 41	0 43	22 9	0 6	23 9	0 7	21 27	1 25	12 48	9 37	9 53	9 41	24 14	1 58	3 44	
W12	22 6	18 28	1 48	17 12	4 51	21 4	1 32	8 24	0 41	19 41	0 43	22 8	0 6	23 9	0 7	21 27	1 25	12 48	9 37	9 52	9 39	24 12	1 57	3 44	
T 13	21 57	22 38	2 46	17 15	4 54	21 14	1 30	8 36	0 42	19 41	0 43	22 7	0 6	23 9	0 7	21 27	1 25	12 48	9 37	9 51	9 38	24 10	1 55	3 43	
F 14	21 49	25 42	3 36	17 20	4 55	21 24	1 27	8 49	0 43	19 40	0 42	22 6	0 6	23 9	0 7	21 27	1 25	12 48	9 37	9 49	9 37	24 8	1 53	3 43	
S 15	21 39	27 33	4 15	17 25	4 54	21 33	1 24	9 1	0 44	19 40	0 42	22 5	0 5	23 9	0 7	21 27	1 25	12 48	9 37	9 46	9 36	24 7	1 51	3 42	
S 16	21 30	28 5	4 42	17 32	4 51	21 41	1 22	9 13	0 45	19 40	0 42	22 4	0 5	23 8	0 7	21 27	1 25	12 48	9 37	9 42	9 35	24 5	1 49	3 41	
M17	21 20	27 17	4 57	17 40	4 47	21 49	1 19	9 25	0 46	19 40	0 42	22 3	0 5	23 8	0 7	21 27	1 25	12 48	9 37	9 37	9 34	24 3	1 47	3 41	
T 18	21 10	25 15	4 58	17 49	4 42	21 57	1 17	9 38	0 47	19 39	0 41	22 2	0 5	23 8	0 7	21 27	1 25	12 48	9 37	9 32	9 32	24 1	1 45	3 40	
W19	20 59	22 7	4 47	17 59	4 35	22 4	1 14	9 50	0 48	19 39	0 41	22 1	0 5	23 8	0 7	21 27	1 25	12 48	9 37	9 26	9 31	23 59	1 43	3 40	
T 20	20 49	18 6	4 23	18 10	4 26	22 10	1 11	10 3	0 49	19 39	0 41	22 0	0 5	23 8	0 7	21 26	1 25	12 48	9 38	9 22	9 30	23 58	1 41	3 39	
F 21	20 37	13 21	3 48	18 21	4 16	22 15	1 8	10 15	0 50	19 39	0 41	21 59	0 5	23 8	0 7	21 26	1 25	12 48	9 38	9 18	9 29	23 56	1 39	3 39	
S 22	20 26	8 6	3 2	18 33	4 5	22 21	1 6	10 28	0 51	19 39	0 41	21 58	0 5	23 8	0 7	21 26	1 25	12 48	9 38	9 16	9 28	23 54	1 36	3 38	
S 23	20 14	2 29	2 8	18 45	3 53	22 25	1 3	10 41	0 52	19 39	0 40	21 57	0 5	23 7	0 7	21 26	1 25	12 48	9 38	9 14	9 27	23 52	1 34	3 37	
M24	20 1	3s19	1 7	18 58	3 40	22 29	1 0	10 53	0 53	19 39	0 40	21 56	0 5	23 7	0 7	21 26	1 25	12 48	9 38	9 13	9 25	23 50	1 32	3 37	
T 25	19 49	9 6	0 1	19 11	3 27	22 32	0 57	11 6	0 54	19 39	0 40	21 55	0 5	23 7	0 7	21 26	1 25	12 48	9 38	9 13	9 24	23 48	1 30	3 36	
W26	19 36	14 41	1s 6	19 23	3 12	22 35	0 54	11 19	0 55	19 39	0 40	21 54	0 5	23 7	0 7	21 26	1 24	12 48	9 38	9 13	9 23	23 46	1 28	3 36	
T 27	19 23	19 47	2 12	19 36	2 57	22 37	0 51	11 31	0 55	19 39	0 39	21 53	0 4	23 7	0 7	21 26	1 24	12 48	9 38	9 13	9 22	23 45	1 25	3 35	
F 28	19 9	24 1	3 13	19 48	2 42	22 38	0 48	11 44	0 56	19 40	0 39	21 52	0 4	23 7	0 7	21 26	1 24	12 48	9 38	9 12	9 21	23 43	1 23	3 35	
S 29	18 55	26 57	4 4	19 59	2 26	22 39	0 46	11 57	0 57	19 40	0 39	21 51	0 4	23 7	0 7	21 26	1 24	12 48	9 39	9 10	9 20	23 41	1 21	3 34	
S 30	18 41	28 9	4 41	20 10	2 11	22 39	0 43	12 10	0 58	19 40	0 39	21 50	0 4	23 7	0 7	21 26	1 24	12 48	9 39	9 8	9 18	23 39	1 18	3 34	
M31	18n26	27s19	4s59	20n19	1s55	22n38	0s40	12s22	0s59	19s40	0n39	21n49	0s 4	23s 6	0s 7	21s26	1n24	12n48	9s39	9n 4	9n17	23n37	1n16	3s33	

ASTRODIENST EPHEMERIS for the year 1651
geocentric

AUGUST 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
T 1	20 37 47	8♌25'34	2♈31	19♉17	8♊14	0♌27	0♎32	20♏54	18♐R29	16♑R46	12♒46	23♓R 8	23♓Y50	6♈21	18♉41	T 1
W 2	20 41 43	9°23'02	17°51	20°16	9°26	1° 1	0°33	21° 1	18♎28	16♏45	12°47	22♑Y58	23°47	6°27	18°49	W 2
T 3	20 45 40	10°20'30	3♈3	21°20	10°38	1°36	0°34	21° 9	18°27	16°44	12°48	22°49	23°44	6°34	18°56	T 3
F 4	20 49 36	11°18'00	17°55	22°30	11°49	2°10	0°35	21°16	18°26	16°43	12°49	22°43	23°40	6°41	19° 4	F 4
S 5	20 53 33	12°15'31	2♑23	23°46	13° 1	2°45	0°36	21°24	18°24	16°42	12°49	22°39	23°37	6°47	19°12	S 5
S 6	20 57 29	13°13'04	16°22	25° 7	14°14	3°20	0°38	21°31	18°23	16°42	12°50	22°38	23°34	6°54	19°19	S 6
M 7	21 1 26	14°10'38	29°53	26°33	15°26	3°55	0°39	21°39	18°22	16°41	12°51	22°D38	23°31	7° 1	19°27	M 7
T 8	21 5 23	15° 8'13	12♉58	28° 4	16°38	4°30	0°41	21°46	18°21	16°40	12°52	22°R38	23°28	7° 8	19°35	T 8
W 9	21 9 19	16° 5'50	25°41	29°40	17°50	5° 5	0°43	21°53	18°20	16°40	12°52	22°38	23°24	7°14	19°43	W 9
T 10	21 13 16	17° 3'29	8♌6	1♌20	19° 2	5°41	0°45	22° 1	18°19	16°39	12°53	22°36	23°21	7°21	19°51	T 10
F 11	21 17 12	18° 1'09	20°17	3° 3	20°15	6°17	0°48	22° 8	18°19	16°38	12°54	22°31	23°18	7°28	19°59	F 11
S 12	21 21 9	18°58'51	2♉19	4°50	21°27	6°53	0°50	22°15	18°18	16°38	12°55	22°25	23°15	7°34	20° 7	S 12
S 13	21 25 5	19°56'34	14°15	6°40	22°40	7°29	0°53	22°23	18°17	16°37	12°55	22°15	23°12	7°41	20°15	S 13
M14	21 29 2	20°54'19	26° 7	8°32	23°52	8° 5	0°56	22°30	18°16	16°37	12°56	22° 5	23° 9	7°48	20°23	M14
T 15	21 32 58	21°52'05	7♌59	10°27	25° 5	8°42	0°59	22°37	18°16	16°36	12°56	21°53	23° 5	7°55	20°31	T 15
W16	21 36 55	22°49'52	19°51	12°23	26°18	9°19	1° 3	22°44	18°15	16°36	12°57	21°42	23° 2	8° 1	20°39	W16
T 17	21 40 52	23°47'41	1♑46	14°21	27°30	9°55	1° 6	22°51	18°15	16°36	12°58	21°32	22°59	8° 8	20°47	T 17
F 18	21 44 48	24°45'31	13°44	16°20	28°43	10°32	1°10	22°58	18°14	16°35	12°58	21°24	22°56	8°15	20°55	F 18
S 19	21 48 45	25°43'23	25°48	18°19	29°56	11°10	1°13	23° 5	18°14	16°35	12°59	21°18	22°53	8°21	21° 4	S 19
S 20	21 52 41	26°41'16	8♌0	20°19	1♌9	11°47	1°17	23°12	18°13	16°35	12°59	21°15	22°50	8°28	21°12	S 20
M21	21 56 38	27°39'11	20°22	22°18	2°22	12°24	1°22	23°19	18°13	16°34	13° 0	21°D14	22°46	8°35	21°20	M21
T 22	22 0 34	28°37'06	2♌57	24°18	3°35	13° 2	1°26	23°26	18°12	16°34	13° 0	21°15	22°43	8°42	21°29	T 22
W23	22 4 31	29°35'03	15°50	26°17	4°48	13°40	1°30	23°33	18°12	16°34	13° 1	21°16	22°40	8°48	21°37	W23
T 24	22 8 27	0♑33'02	29° 3	28°16	6° 1	14°18	1°35	23°40	18°12	16°34	13° 1	21°R16	22°37	8°55	21°45	T 24
F 25	22 12 24	1°31'02	12♎40	0♑14	7°14	14°56	1°40	23°46	18°12	16°34	13° 1	21°16	22°34	9° 2	21°54	F 25
S 26	22 16 21	2°29'03	26°43	2°11	8°27	15°34	1°45	23°53	18°12	16°34	13° 2	21°13	22°30	9° 9	22° 2	S 26
S 27	22 20 17	3°27'05	11♉10	4° 7	9°40	16°13	1°50	24° 0	18°12	16°33	13° 2	21° 9	22°27	9°15	22°11	S 27
M28	22 24 14	4°25'09	25°59	6° 2	10°53	16°51	1°55	24° 6	18°D12	16°33	13° 3	21° 3	22°24	9°22	22°19	M28
T 29	22 28 10	5°23'15	11♈3	7°56	12° 7	17°30	2° 1	24°13	18°12	16°D33	13° 3	20°56	22°21	9°29	22°28	T 29
W30	22 32 7	6°21'22	26°13	9°49	13°20	18° 9	2° 6	24°19	18°12	16°33	13° 3	20°50	22°18	9°35	22°36	W30
T 31	22 36 3	7♑19'30	11♈19	11♑41	14♌33	18♌48	2♎12	24♉26	18♎12	16♎33	13♒3	20♑Y44	22♑Y15	9♌42	22♑45	T 31

Day	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉
	decl	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat
T 1	18n12	24s27	4s57	20n28	1s39	22n37	0s37	12s35	1s 0	19s41	0n38	21n48	0s 4	23s 6
W 2	17 56	19 51	4 34	20 35	1 23	22 35	0 34	12 48	1 0	19 41	0 38	21 47	0 4	23 6
T 3	17 41	13 59	3 51	20 41	1 8	22 33	0 31	13 0	1 1	19 41	0 38	21 45	0 4	23 6
F 4	17 25	7 26	2 53	20 45	0 52	22 30	0 28	13 13	1 2	19 42	0 38	21 44	0 4	23 6
S 5	17 9	0 40	1 45	20 47	0 37	22 26	0 25	13 26	1 3	19 42	0 37	21 43	0 4	23 6
S 6	16 53	5n56	0 33	20 47	0 23	22 22	0 22	13 39	1 4	19 43	0 37	21 42	0 4	23 6
M 7	16 37	12 3	0n38	20 44	0 9	22 17	0 19	13 51	1 4	19 44	0 37	21 41	0 3	23 6
T 8	16 20	17 27	1 46	20 40	0n 4	22 11	0 16	14 4	1 5	19 44	0 37	21 40	0 3	23 6
W 9	16 3	21 54	2 46	20 32	0 17	22 5	0 13	14 17	1 6	19 45	0 37	21 39	0 3	23 6
T 10	15 45	25 16	3 37	20 22	0 29	21 58	0 10	14 29	1 6	19 45	0 36	21 38	0 3	23 6
F 11	15 28	27 24	4 17	20 10	0 40	21 50	0 7	14 42	1 7	19 46	0 36	21 37	0 3	23 5
S 12	15 10	28 13	4 45	19 55	0 50	21 42	0 5	14 54	1 8	19 47	0 36	21 36	0 3	23 5
S 13	14 52	27 42	5 0	19 37	1 0	21 33	0 2	15 7	1 8	19 48	0 36	21 35	0 3	23 5
M14	14 33	25 55	5 2	19 16	1 9	21 24	0n 1	15 19	1 9	19 48	0 35	21 33	0 3	23 5
T 15	14 15	23 0	4 51	18 53	1 16	21 13	0 4	15 32	1 10	19 49	0 35	21 32	0 3	23 5
W16	13 56	19 7	4 28	18 27	1 23	20 3	0 7	15 44	1 10	19 50	0 35	21 31	0 3	23 5
T 17	13 37	14 29	3 52	17 59	1 29	21 51	0 10	15 57	1 11	19 51	0 35	21 30	0 3	23 5
F 18	13 18	9 17	3 7	17 28	1 34	20 40	0 12	16 9	1 12	19 52	0 35	21 29	0 3	23 5
S 19	12 58	3 41	2 12	16 55	1 38	20 27	0 15	16 21	1 12	19 53	0 34	21 28	0 2	23 5
S 20	12 39	2s 6	1 10	16 21	1 41	20 14	0 18	16 33	1 13	19 54	0 34	21 27	0 2	23 5
M21	12 19	7 54	0 5	15 44	1 44	20 0	0 20	16 45	1 13	19 55	0 34	21 26	0 2	23 5
T 22	11 59	13 30	1s 3	15 6	1 45	19 46	0 23	16 58	1 14	19 56	0 34	21 25	0 2	23 5
W23	11 38	18 39	2 8	14 27	1 46	19 31	0 26	17 10	1 15	19 57	0 34	21 24	0 2	23 5
T 24	11 18	23 4	3 9	13 46	1 46	19 16	0 28	17 21	1 15	19 58	0 33	21 23	0 2	23 5
F 25	10 57	26 21	4 1	13 4	1 46	19 0	0 31	17 33	1 16	20 0	0 33	21 22	0 2	23 5
S 26	10 37	28 7	4 40	12 21	1 45	18 43	0 33	17 45	1 16	20 1	0 33	21 20	0 2	23 5
S 27	10 16	28 3	5 3	11 37	1 43	18 26	0 36	17 57	1 17	20 2	0 33	21 19	0 2	23 5
M28	9 55	26 1	5 7	10 53	1 41	18 9	0 38	18 8	1 17	20 3	0 33	21 18	0 2	23 5
T 29	9 33	22 7	4 49	10 8	1 38	17 51	0 40	18 20	1 18	20 5	0 32	21 17	0 2	23 5
W30	9 12	16 44	4 12	9 22	1 35	17 32	0 43	18 31	1 18	20 6	0 32	21 16	0 1	23 5
T 31	8n50	10s21	3s16	8n36	1n31	17n13	0n45	18s43	1s19	20s 7	0n32	21n15	0s 1	23s 5

Julian Day Number = 2324287.5, Delta T = 42.21 sec
Ecliptic obliquity = 23°29'13, Nutation = - 0°00'05, out-of-bounds declination in red
Ayanamsha: Fagan/Bradley = 19°52'38, Lahiri = 18°59'38Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651

geocentric

SEPTEMBER 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	22 40 0	8 ^m 17'40	26 ^h 12	13 ^m 32	15 ^h 47	19 ^m 27	2 ^h 18	24 ^h 32	18 ^h 12	16 ^h 34	13 ^h 4	20 ^h R40	22 ^h 11	9 ^h 49	22 ^h 54	F 1
S 2	22 43 56	9°15'52	10 ^h 43	15°21	17° 0	20° 6	2°24	24°39	18°12	16°34	13° 4	20 ^h Y38	22° 8	9°56	23° 2	S 2
S 3	22 47 53	10°14'06	24°49	17°10	18°14	20°45	2°30	24°45	18°13	16°34	13° 4	20°D38	22° 5	10° 2	23°11	S 3
M 4	22 51 50	11°12'23	8 ^h 26	18°57	19°28	21°25	2°36	24°51	18°13	16°34	13° 4	20°39	22° 2	10° 9	23°20	M 4
T 5	22 55 46	12°10'41	21°37	20°43	20°41	22° 4	2°43	24°57	18°13	16°34	13° 5	20°40	21°59	10°16	23°28	T 5
W 6	22 59 43	13° 9'01	4 ^h 24	22°28	21°55	22°44	2°50	25° 3	18°14	16°34	13° 5	20°41	21°56	10°22	23°37	W 6
T 7	23 3 39	14° 7'24	16°51	24°11	23° 9	23°24	2°56	25° 9	18°14	16°35	13° 5	20°R42	21°52	10°29	23°46	T 7
F 8	23 7 36	15° 5'48	29° 3	25°54	24°23	24° 4	3° 3	25°15	18°15	16°35	13° 5	20°41	21°49	10°36	23°54	F 8
S 9	23 11 32	16° 4'15	11 ^h 36	27°36	25°36	24°44	3°10	25°21	18°16	16°35	13° 5	20°38	21°46	10°43	24° 3	S 9
S 10	23 15 29	17° 2'44	22°58	29°16	26°50	25°24	3°18	25°27	18°16	16°36	13° 5	20°34	21°43	10°49	24°12	S 10
M11	23 19 25	18° 1'15	4 ^h 49	0 ^h 56	28° 4	26° 5	3°25	25°33	18°17	16°36	13° 5	20°29	21°40	10°56	24°21	M11
T 12	23 23 22	18°59'48	16°41	2°34	29°18	26°45	3°32	25°39	18°18	16°37	13° 5	20°23	21°36	11° 3	24°30	T 12
W13	23 27 19	19°58'23	28°36	4°11	0 ^h 32	27°26	3°40	25°44	18°18	16°37	13°R 5	20°18	21°33	11° 9	24°38	W13
T 14	23 31 15	20°57'00	10 ^h 37	5°48	1°46	28° 7	3°48	25°50	18°19	16°38	13° 5	20°13	21°30	11°16	24°47	T 14
F 15	23 35 12	21°55'39	22°44	7°23	3° 0	28°48	3°56	25°55	18°20	16°38	13° 5	20° 9	21°27	11°23	24°56	F 15
S 16	23 39 8	22°54'20	5 ^h 0	8°57	4°15	29°29	4° 4	26° 1	18°21	16°39	13° 5	20° 6	21°24	11°30	25° 5	S 16
S 17	23 43 5	23°53'03	17°26	10°31	5°29	0 ^h 10	4°12	26° 6	18°22	16°39	13° 5	20°D 6	21°21	11°36	25°14	S 17
M18	23 47 1	24°51'48	0 ^h 3	12° 3	6°43	0°51	4°20	26°11	18°23	16°40	13° 5	20° 6	21°17	11°43	25°22	M18
T 19	23 50 58	25°50'34	12°52	13°34	7°57	1°32	4°29	26°17	18°24	16°41	13° 5	20° 7	21°14	11°50	25°31	T 19
W20	23 54 54	26°49'23	25°56	15° 5	9°12	2°14	4°37	26°22	18°26	16°41	13° 5	20° 9	21°11	11°56	25°40	W20
T 21	23 58 51	27°48'13	9 ^h 16	16°34	10°26	2°55	4°46	26°27	18°27	16°42	13° 5	20°10	21° 8	12° 3	25°49	T 21
F 22	0 2 48	28°47'05	22°53	18° 3	11°40	3°37	4°55	26°32	18°28	16°43	13° 4	20°R11	21° 5	12°10	25°58	F 22
S 23	0 6 44	29°45'59	6 ^h 39	19°30	12°55	4°19	5° 4	26°37	18°29	16°44	13° 4	20°11	21° 2	12°17	26° 6	S 23
S 24	0 10 41	0 ^h 44'55	21° 2	20°56	14° 9	5° 1	5°13	26°41	18°31	16°45	13° 4	20°10	20°58	12°23	26°15	S 24
M25	0 14 37	1°43'52	5 ^h 33	22°22	15°24	5°43	5°22	26°46	18°32	16°45	13° 4	20° 8	20°55	12°30	26°24	M25
T 26	0 18 34	2°42'51	20°13	23°46	16°38	6°25	5°31	26°51	18°34	16°46	13° 3	20° 6	20°52	12°37	26°33	T 26
W27	0 22 30	3°41'52	5 ^h 0	25°10	17°53	7° 7	5°40	26°55	18°35	16°47	13° 3	20° 4	20°49	12°43	26°42	W27
T 28	0 26 27	4°40'54	19°45	26°32	19° 7	7°49	5°50	27° 0	18°37	16°48	13° 3	20° 2	20°46	12°50	26°50	T 28
F 29	0 30 23	5°39'59	4 ^h Y23	27°53	20°22	8°31	5°59	27° 4	18°38	16°49	13° 2	20° 1	20°42	12°57	26°59	F 29
S 30	0 34 20	6 ^h 39'05	18°Y45	29 ^h 13	21 ^h 36	9 ^h 14	6 ^h 9	27 ^h 9	18 ^h 40	16 ^h 50	13 ^h II 2	20°D 0	20°Y39	13 ^h II 4	27 ^h 8	S 30

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	8n29	3s29	2s 8	7n50	1n27	16n53	0n47	18s54	1s19	20s 9	0n32	21n14	0s 1	23s 5	0s 7	21s26	F 1
S 2	8 7	3n26	0 53	7 3	1 23	16 33	0 49	19 5	1 20	20 10	0 32	21 13	0 1	23 5	0 7	21 26	S 2
S 3	7 45	9 59	0n23	6 16	1 18	16 13	0 52	19 16	1 20	20 11	0 31	21 12	0 1	23 5	0 7	21 26	S 3
M 4	7 23	15 51	1 35	5 30	1 13	15 52	0 54	19 27	1 21	20 13	0 31	21 11	0 1	23 5	0 7	21 26	M 4
T 5	7 0	20 47	2 40	4 43	1 7	15 30	0 56	19 38	1 21	20 14	0 31	21 10	0 1	23 5	0 7	21 26	T 5
W 6	6 38	24 36	3 35	3 56	1 1	15 8	0 58	19 48	1 21	20 16	0 31	21 9	0 1	23 5	0 7	21 27	W 6
T 7	6 16	27 8	4 19	3 10	0 56	14 46	1 0	19 59	1 22	20 17	0 31	21 8	0 1	23 5	0 7	21 27	T 7
F 8	5 53	28 18	4 49	2 23	0 49	14 23	1 1	20 9	1 22	20 19	0 30	21 7	0 1	23 5	0 7	21 27	F 8
S 9	5 30	28 7	5 7	1 37	0 43	14 0	1 3	20 19	1 23	20 20	0 30	21 6	0 1	23 5	0 7	21 27	S 9
S 10	5 8	26 38	5 11	0 51	0 36	13 37	1 5	20 30	1 23	20 22	0 30	21 5	0 0	23 5	0 7	21 27	S 10
M11	4 45	23 58	5 2	0 5	0 30	13 13	1 7	20 40	1 23	20 23	0 30	21 4	0 0	23 5	0 7	21 27	M11
T 12	4 22	20 18	4 39	0s40	0 23	12 48	1 8	20 50	1 24	20 25	0 30	21 3	0 0	23 6	0 7	21 27	T 12
W13	3 59	15 48	4 5	1 26	0 16	12 24	1 10	20 59	1 24	20 27	0 30	21 2	0 0	23 6	0 7	21 27	W13
T 14	3 36	10 40	3 19	2 10	0 9	11 59	1 11	21 9	1 24	20 28	0 29	21 1	0 0	23 6	0 7	21 27	T 14
F 15	3 13	5 6	2 24	2 55	0 1	11 33	1 13	21 18	1 25	20 30	0 29	21 0	0 0	23 6	0 7	21 27	F 15
S 16	2 49	0s44	1 22	3 39	0s 6	11 8	1 14	21 28	1 25	20 32	0 29	20 59	0n 0	23 6	0 7	21 27	S 16
S 17	2 26	6 38	0 15	4 22	0 13	10 42	1 16	21 37	1 25	20 33	0 29	20 58	0 0	23 6	0 7	21 28	S 17
M18	2 3	12 22	0s54	5 5	0 21	10 15	1 17	21 46	1 26	20 35	0 29	20 58	0 0	23 6	0 7	21 28	M18
T 19	1 39	17 40	2 2	5 48	0 28	9 49	1 18	21 55	1 26	20 37	0 29	20 57	0 0	23 6	0 7	21 28	T 19
W20	1 16	22 16	3 5	6 30	0 36	9 22	1 19	22 3	1 26	20 38	0 28	20 56	0 0	23 6	0 7	21 28	W20
T 21	0 53	25 49	3 58	7 11	0 43	8 55	1 20	22 12	1 26	20 40	0 28	20 55	0 1	23 6	0 7	21 28	T 21
F 22	0 29	27 58	4 40	7 52	0 51	8 27	1 21	22 20	1 27	20 42	0 28	20 54	0 1	23 6	0 7	21 28	F 22
S 23	0 6	28 25	5 7	8 32	0 58	8 0	1 22	22 28	1 27	20 44	0 28	20 53	0 1	23 7	0 7	21 28	S 23
S 24	0s18	27 1	5 15	9 12	1 5	7 32	1 23	22 36	1 27	20 45	0 28	20 52	0 1	23 7	0 7	21 28	S 24
M25	0 41	23 50	5 4	9 51	1 13	7 4	1 24	22 44	1 27	20 47	0 27	20 52	0 1	23 7	0 7	21 29	M25
T 26	1 5	19 5	4 33	10 29	1 20	6 35	1 25	22 52	1 28	20 49	0 27	20 51	0 1	23 7	0 7	21 29	T 26
W27	1 28	13 10	3 44	11 7	1 27	6 7	1 25	22 59	1 28	20 51	0 27	20 50	0 1	23 7	0 7	21 29	W27
T 28	1 52	6 30	2 39	11 43	1 35	5 38	1 26	23 6	1 28	20 53	0 27	20 49	0 1	23 7	0 7	21 29	T 28
F 29	2 15	0n26	1 25	12 19	1 42	5 9	1 27	23 13	1 28	20 55	0 27	20 48	0 1	23 7	0 7	21 29	F 29
S 30	2s39	7n15	0s 7	12s55	1s49	4n40	1n27	23s20	1s28	20s56	0n27	20n48	0n 1	23s 7	0s 7	21s29	S 30

Julian Day Number = 2324318.5, Delta T = 42.15 sec

Ecliptic obliquity = 23°29'13, Nutation = - 0°00'05, out-of-bounds declination in red

Ayanamsha: Fagan/Bradley = 19°52'42, Lahiri = 18°59'42Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651
geocentric

OCTOBER 1651 GC

00:00 UT

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

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat
S 1	3s 2	13n33	1n10	13s29	1s56	4n11	1n27	23s27	1s28	20s58	0n27	20n47	0n 1	23s 8	0s 7	21s29
M 2	3 26	19 2	2 21	14 2	2 2	3 42	1 28	23 33	1 29	21 0	0 26	20 46	0 2	23 8	0 7	21 30
T 3	3 49	23 24	3 22	14 35	2 9	3 12	1 28	23 39	1 29	21 2	0 26	20 46	0 2	23 8	0 7	21 30
W 4	4 12	26 30	4 11	15 7	2 15	2 43	1 28	23 45	1 29	21 4	0 26	20 45	0 2	23 8	0 7	21 30
T 5	4 35	28 11	4 47	15 37	2 21	2 13	1 28	23 51	1 29	21 6	0 26	20 44	0 2	23 8	0 7	21 30
F 6	4 59	28 26	5 9	16 7	2 27	1 43	1 28	23 57	1 29	21 7	0 26	20 44	0 2	23 8	0 7	21 30
S 7	5 22	27 19	5 17	16 35	2 33	1 13	1 28	24 2	1 29	21 9	0 26	20 43	0 2	23 9	0 7	21 30
S 8	5 45	24 59	5 11	17 2	2 38	0 43	1 28	24 7	1 29	21 11	0 25	20 42	0 2	23 9	0 7	21 31
M 9	6 8	21 35	4 52	17 28	2 43	0 13	1 28	24 12	1 29	21 13	0 25	20 42	0 2	23 9	0 7	21 31
T 10	6 31	17 18	4 20	17 53	2 48	0s17	1 28	24 17	1 30	21 15	0 25	20 41	0 2	23 9	0 7	21 31
W 11	6 54	12 20	3 37	18 16	2 52	0 47	1 28	24 21	1 30	21 17	0 25	20 41	0 2	23 9	0 7	21 31
T 12	7 16	6 51	2 44	18 37	2 56	1 17	1 27	24 25	1 30	21 19	0 25	20 40	0 3	23 9	0 7	21 31
F 13	7 39	1 1	1 42	18 58	2 59	1 47	1 27	24 29	1 30	21 21	0 25	20 40	0 3	23 10	0 7	21 31
S 14	8 2	4s57	0 34	19 16	3 2	2 17	1 27	24 33	1 30	21 23	0 25	20 39	0 3	23 10	0 7	21 32
S 15	8 24	10 50	0s36	19 33	3 5	2 47	1 26	24 36	1 30	21 24	0 24	20 39	0 3	23 10	0 7	21 32
M 16	8 46	16 23	1 46	19 47	3 6	3 17	1 25	24 40	1 30	21 26	0 24	20 38	0 3	23 10	0 7	21 32
T 17	9 9	21 16	2 52	20 0	3 7	3 47	1 25	24 43	1 30	21 28	0 24	20 38	0 3	23 10	0 7	21 32
W 18	9 31	25 8	3 49	20 10	3 7	4 16	1 24	24 45	1 30	21 30	0 24	20 37	0 3	23 11	0 7	21 32
T 19	9 53	27 39	4 34	20 18	3 6	4 46	1 23	24 48	1 30	21 32	0 24	20 37	0 3	23 11	0 7	21 33
F 20	10 14	28 30	5 4	20 23	3 5	5 16	1 22	24 50	1 30	21 34	0 24	20 36	0 3	23 11	0 7	21 33
S 21	10 36	27 33	5 16	20 26	3 2	5 45	1 21	24 52	1 30	21 36	0 24	20 36	0 3	23 11	0 7	21 33
S 22	10 57	24 51	5 10	20 25	2 58	6 15	1 21	24 54	1 30	21 37	0 23	20 36	0 4	23 11	0 7	21 33
M 23	11 19	20 36	4 45	20 21	2 53	6 44	1 19	24 55	1 30	21 39	0 23	20 35	0 4	23 12	0 7	21 33
T 24	11 40	15 10	4 2	20 13	2 46	7 13	1 18	24 56	1 30	21 41	0 23	20 35	0 4	23 12	0 7	21 34
W 25	12 1	8 54	3 4	20 1	2 38	7 42	1 17	24 57	1 30	21 43	0 23	20 35	0 4	23 12	0 7	21 34
T 26	12 21	2 11	1 54	19 45	2 28	8 11	1 16	24 58	1 30	21 45	0 23	20 35	0 4	23 12	0 7	21 34
F 27	12 42	4n35	0 39	19 25	2 16	8 40	1 15	24 58	1 30	21 47	0 23	20 34	0 4	23 13	0 7	21 34
S 28	13 2	11 3	0n39	19 0	2 3	9 9	1 13	24 59	1 29	21 48	0 23	20 34	0 4	23 13	0 7	21 34
S 29	13 22	16 53	1 52	18 31	1 48	9 37	1 12	24 59	1 29	21 50	0 23	20 34	0 4	23 13	0 7	21 35
M 30	13 42	21 46	2 58	17 58	1 31	10 5	1 11	24 58	1 29	21 52	0 22	20 34	0 4	23 13	0 7	21 35
T 31	14s 2	25n25	3n53	17s21	1s13	10s33	1n 9	24s58	1s29	21s54	0n22	20n34	0n 5	23s13	0s 7	21s35

Julian Day Number = 2324348.5, Delta T = 42.09 sec
Ecliptic obliquity = 23°29'14", Nutation = - 0°00'07", out-of-bounds declination in red
Ayanamsha: Fagan/Bradley = 19°52'46", Lahiri = 18°59'46"Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1651
geocentric

NOVEMBER 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	2 40 30	8♉29°14'	20♊19	13°R10	1♉38	2♉39	12♉8	28♉35	19♉55	17♉37	12°R41	19°R56	18°Y58	16♉38	1♉36	W 1
T 2	2 44 26	9°29'27"	2♉52	11♉52	2°53	3°24	12°20	28°36	19°58	17°39	12♊40	19°Y53	18°54	16°45	1°43	T 2
F 3	2 48 23	10°29'41"	15° 8	10°33	4° 9	4°10	12°33	28°37	20° 1	17°41	12°39	19°50	18°51	16°52	1°51	F 3
S 4	2 52 19	11°29'58"	27°12	9°14	5°24	4°55	12°45	28°38	20° 4	17°43	12°38	19°48	18°48	16°58	1°59	S 4
S 5	2 56 16	12°30'17"	9♊ 7	7°59	6°39	5°40	12°58	28°38	20° 7	17°45	12°37	19°D47	18°45	17° 5	2° 6	S 5
M 6	3 0 12	13°30'38"	20°59	6°49	7°55	6°25	13°11	28°39	20°10	17°47	12°36	19°48	18°42	17°12	2°14	M 6
T 7	3 4 9	14°31'00"	2♊52	5°47	9°10	7°11	13°23	28°39	20°13	17°49	12°35	19°49	18°39	17°18	2°21	T 7
W 8	3 8 6	15°31'25"	14°50	4°54	10°25	7°56	13°36	28°39	20°16	17°51	12°34	19°50	18°35	17°25	2°29	W 8
T 9	3 12 2	16°31'51"	27° 0	4°12	11°41	8°42	13°49	28°40	20°19	17°53	12°33	19°52	18°32	17°32	2°36	T 9
F 10	3 15 59	17°32'19"	9♊23	3°41	12°56	9°28	14° 2	28°R40	20°23	17°55	12°32	19°54	18°29	17°39	2°43	F 10
S 11	3 19 55	18°32'49"	22° 5	3°22	14°12	10°13	14°15	28°40	20°26	17°57	12°31	19°R54	18°26	17°45	2°50	S 11
S 12	3 23 52	19°33'21"	5♉ 5	3°D15	15°27	10°59	14°28	28°39	20°29	17°59	12°30	19°53	18°23	17°52	2°58	S 12
M13	3 27 48	20°33'55"	18°25	3°19	16°43	11°45	14°41	28°39	20°32	18° 1	12°29	19°50	18°19	17°59	3° 5	M13
T 14	3 31 45	21°34'30"	2♊ 4	3°34	17°58	12°30	14°54	28°39	20°36	18° 3	12°28	19°46	18°16	18° 5	3°12	T 14
W15	3 35 41	22°35'06"	15°58	3°58	19°13	13°16	15° 7	28°38	20°39	18° 5	12°27	19°41	18°13	18°12	3°19	W15
T 16	3 39 38	23°35'44"	0♉ 4	4°31	20°29	14° 2	15°20	28°38	20°42	18° 7	12°26	19°36	18°10	18°19	3°26	T 16
F 17	3 43 35	24°36'24"	14°17	5°12	21°44	14°48	15°33	28°37	20°45	18° 9	12°24	19°31	18° 7	18°26	3°32	F 17
S 18	3 47 31	25°37'04"	28°33	6° 0	23° 0	15°34	15°46	28°36	20°49	18°11	12°23	19°27	18° 4	18°32	3°39	S 18
S 19	3 51 28	26°37'46"	12♊48	6°54	24°15	16°20	16° 0	28°35	20°52	18°13	12°22	19°24	18° 0	18°39	3°46	S 19
M20	3 55 24	27°38'29"	26°59	7°53	25°31	17° 6	16°13	28°34	20°56	18°16	12°21	19°D23	17°57	18°46	3°53	M20
T 21	3 59 21	28°39'12"	11♊ 5	8°58	26°46	17°53	16°26	28°33	20°59	18°18	12°20	19°24	17°54	18°52	3°59	T 21
W22	4 3 17	29°39'57"	25° 3	10° 6	28° 2	18°39	16°40	28°32	21° 2	18°20	12°19	19°25	17°51	18°59	4° 6	W22
T 23	4 7 14	0♊40'42"	8°Y54	11°18	29°17	19°25	16°53	28°30	21° 6	18°22	12°18	19°27	17°48	19° 6	4°12	T 23
F 24	4 11 10	1°41'29"	22°36	12°33	0♉33	20°11	17° 6	28°29	21° 9	18°24	12°17	19°R27	17°45	19°12	4°18	F 24
S 25	4 15 7	2°42'17"	6♉ 9	13°51	1°48	20°57	17°20	28°27	21°13	18°26	12°15	19°26	17°41	19°19	4°24	S 25
S 26	4 19 4	3°43'05"	19°31	15°11	3° 4	21°44	17°33	28°25	21°16	18°29	12°14	19°22	17°38	19°26	4°31	S 26
M27	4 23 0	4°43'55"	2♊40	16°32	4°19	22°30	17°47	28°23	21°20	18°31	12°13	19°16	17°35	19°33	4°37	M27
T 28	4 26 57	5°44'47"	15°37	17°56	5°35	23°17	18° 0	28°22	21°23	18°33	12°12	19° 9	17°32	19°39	4°43	T 28
W29	4 30 53	6°45'39"	28°18	19°20	6°50	24° 3	18°14	28°19	21°27	18°35	12°11	19° 0	17°29	19°46	4°49	W29
T 30	4 34 50	7♊46'33"	10♉46	20♊46	8♉ 6	24♉49	18♉27	28♉17	21♉31	18♉38	12♊10	18°Y50	17°Y25	19♉53	4♉54	T 30

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
W 1	14s22	27n41	4n34	16s41	0s54	11s 0	1n 8	24s57	1s29	21s55	0n22	20n34	0n 5	23s14	0s 7	21s35	1n20	12n34	9s53	7n48	7n26	20n13	3s30	3s 7	
T 2	14 41	28 28	5 1	15 58	0 34	11 28	1 6	24 55	1 29	21 57	0 22	20 34	0 5	23 14	0 8	21 35	1 20	12 34	9 53	7 47	7 25	20 11	3 33	3 7	
F 3	15 0	27 49	5 14	15 13	0 13	11 55	1 4	24 54	1 29	21 59	0 22	20 33	0 5	23 14	0 8	21 36	1 20	12 33	9 53	7 46	7 24	20 8	3 36	3 7	
S 4	15 19	25 52	5 12	14 29	0n 8	12 22	1 3	24 52	1 29	22 1	0 22	20 33	0 5	23 14	0 8	21 36	1 20	12 33	9 53	7 46	7 23	20 6	3 39	3 7	
S 5	15 37	22 47	4 57	13 46	0 28	12 48	1 1	24 50	1 28	22 2	0 22	20 33	0 5	23 15	0 8	21 36	1 20	12 33	9 53	7 45	7 22	20 4	3 42	3 7	
M 6	15 56	18 47	4 29	13 5	0 47	13 14	0 59	24 48	1 28	22 4	0 22	20 33	0 5	23 15	0 8	21 36	1 20	12 33	9 53	7 45	7 20	20 1	3 45	3 7	
T 7	16 14	14 3	3 50	12 27	1 5	13 40	0 58	24 45	1 28	22 6	0 21	20 33	0 5	23 15	0 8	21 36	1 20	12 33	9 53	7 46	7 19	19 59	3 48	3 7	
W 8	16 31	8 46	3 1	11 54	1 22	14 6	0 56	24 43	1 28	22 7	0 21	20 34	0 5	23 15	0 8	21 37	1 20	12 32	9 53	7 46	7 18	19 56	3 51	3 7	
T 9	16 49	3 4	2 2	11 26	1 36	14 31	0 54	24 40	1 28	22 9	0 21	20 34	0 6	23 16	0 8	21 37	1 20	12 32	9 53	7 47	7 17	19 54	3 54	3 7	
F 10	17 6	2s51	0 57	11 4	1 49	14 56	0 52	24 36	1 28	22 11	0 21	20 34	0 6	23 16	0 8	21 37	1 19	12 32	9 53	7 48	7 16	19 51	3 56	3 7	
S 11	17 23	8 48	0s12	10 47	1 59	15 20	0 50	24 33	1 27	22 12	0 21	20 34	0 6	23 16	0 8	21 37	1 19	12 32	9 53	7 48	7 14	19 49	3 59	3 7	
S 12	17 39	14 32	1 22	10 37	2 8	15 44	0 48	24 29	1 27	22 14	0 21	20 34	0 6	23 16	0 8	21 37	1 19	12 32	9 53	7 47	7 13	19 46	4 2	3 7	
M13	17 56	19 44	2 30	10 32	2 15	16 8	0 46	24 25	1 27	22 16	0 21	20 34	0 6	23 16	0 8	21 38	1 19	12 32	9 53	7 46	7 12	19 44	4 5	3 7	
T 14	18 12	24 3	3 30	10 32	2 20	16 31	0 44	24 20	1 27	22 17	0 21	20 34	0 6	23 17	0 8	21 38	1 19	12 31	9 53	7 45	7 11	19 41	4 8	3 7	
W15	18 27	27 2	4 19	10 37	2 24	16 54	0 42	24 15	1 26	22 19	0 21	20 35	0 6	23 17	0 8	21 38	1 19	12 31	9 53	7 43	7 9	19 39	4 10	3 7	
T 16	18 43	28 22	4 53	10 46	2 26	17 16	0 40	24 10	1 26	22 20	0 20	20 35	0 6	23 17	0 8	21 38	1 19	12 31	9 53	7 41	7 8	19 36	4 13	3 7	
F 17	18 58	27 51	5 10	10 59	2 26	17 38	0 37	24 5	1 26	22 22	0 20	20 35	0 6	23 17	0 8	21 38	1 19	12 31	9 53	7 39	7 7	19 33	4 16	3 7	
S 18	19 12	25 30	5 7	11 15	2 26	17 59	0 35	24 0	1 26	22 23	0 20	20 35	0 7	23 18	0 8	21 39	1 19	12 31	9 53	7 37	7 6	19 31	4 19	3 7	
S 19	19 26	21 34	4 45	11 34	2 25	18 20	0 33	23 54	1 25	22 25	0 20	20 36	0 7	23 18	0 8	21 39	1 19	12 31	9 53	7 36	7 5	19 28	4 21	3 7	
M20	19 40	16 24	4 7	11 56	2 22	18 41	0 31	23 48	1 25	22 26	0 20	20 36	0 7	23 18	0 8	21 39	1 19	12 30	9 54	7 36	7 3	19 26	4 24	3 7	
T 21	19 54	10 24	3 13	12 19	2 19	19 1	0 29	23 41	1 25	22 28	0 20	20 36	0 7	23 18	0 8	21 39	1 19	12 30	9 54	7 36	7 2	19 23	4 26	3 7	
W22	20 7	3 56	2 8	12 44	2 15	19 20	0 26	23 35	1 25	22 29	0 20	20 37	0 7	23 19	0 8	21 40	1 19	12 30	9 54	7 37	7 1	19 21	4 29	3 7	
T 23	20 20	2n40	0 57	13 11	2 10	19 39	0 24	23 28	1 24	22 31	0 20	20 37	0 7	23 19	0 8	21 40	1 19	12 30	9 54	7 37	7 0	19 18	4 32	3 7	
F 24	20 32	9 5	0n17	13 39	2 5	19 57	0 22	23 21	1 24	22 32	0 20	20 38	0 7	23 19	0 8	21 40	1 19	12 30	9 54	7 38	6 59	19 16	4 34	3 7	
S 25	20 45	15 0	1 29	14 7	2 0	20 15	0 19	23 14	1 24	22 34	0 19	20 38	0 7	23 19	0 8	21 40	1 19	12 30	9 54	7 37	6 57	19 13	4 37	3 7	
S 26	20 56	20 8	2 35	14 36	1 54	20 32	0 17	23 6	1 23	22 35	0 19	20 38	0 7	23 20	0 8	21 40	1 19	12 30	9 54	7 36	6 56	19 10	4 39	3 7	
M27	21 8	24 12	3 32	15 6	1 48	20 49	0 15	22 58	1 23	22 36	0 19	20 39	0 8	23 20	0 8	21 41	1 19	12 30	9 54	7 33	6 55	19 8	4 41	3 7	
T 28	21 18	26 57	4 16	15 35	1 41	21 4	0 12	22 50	1 23	22 38	0 19	20 39	0 8	23 20	0 8	21 41	1 19	12 29	9 54	7 31	6 54	19 5	4 44	3 7	
W29	21 29	28 16	4 47	16 5	1 35	21 20	0 10	22 42	1 22	22 39	0 19	20 40	0 8	23 20	0 8	21 41	1 19	12 29	9 53	7 27	6 52	19 3	4 46	3 7	
T 30	21s39	28n 5	5n 3	16s34	1n28	21s35	0n 8	22s33	1s22	22s40	0n19	20n40	0n 8	23s21	0s 8	21s41	1n19	12n29	9s53	7n24	6n51	19n 0	4s49	3s 7	

ASTRODIENST EPHEMERIS for the year 1651
geocentric

DECEMBER 1651 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	4 38 46	8♌47'27	23♋0	22♍13	9♌21	25♌36	18♌41	28°R15	21♌34	18♌40	12°R 9	18°R41	17♌22	19♌59	5♌0	F 1
S 2	4 42 43	9°48'23	5♌2	23°41	10°37	26°22	18°55	28♋13	21°38	18°42	12♌7	18°Y34	17°19	20°6	5°6	S 2
S 3	4 46 40	10°49'20	16°57	25°9	11°52	27°9	19°8	28°10	21°41	18°44	12°6	18°29	17°16	20°13	5°11	S 3
M 4	4 50 36	11°50'18	28°47	26°38	13°7	27°56	19°22	28°8	21°45	18°47	12°5	18°25	17°13	20°20	5°17	M 4
T 5	4 54 33	12°51'18	10♍38	28°8	14°23	28°42	19°36	28°5	21°48	18°49	12°4	18°D24	17°10	20°26	5°22	T 5
W 6	4 58 29	13°52'18	22°35	29°38	15°38	29°29	19°49	28°2	21°52	18°51	12°3	18°24	17°6	20°33	5°27	W 6
T 7	5 2 26	14°53'20	4♌42	1♌8	16°54	0♌15	20°3	27°59	21°56	18°53	12°2	18°25	17°3	20°40	5°33	T 7
F 8	5 6 22	15°54'22	17°6	2°39	18°9	1°2	20°17	27°57	21°59	18°56	12°0	18°R26	17°0	20°46	5°38	F 8
S 9	5 10 19	16°55'26	29°51	4°10	19°25	1°49	20°30	27°53	22°3	18°58	11°59	18°25	16°57	20°53	5°43	S 9
S 10	5 14 15	17°56'31	12♍59	5°42	20°40	2°36	20°44	27°50	22°7	19°0	11°58	18°23	16°54	21°0	5°48	S 10
M 11	5 18 12	18°57'37	26°33	7°13	21°56	3°22	20°58	27°47	22°10	19°2	11°57	18°17	16°51	21°6	5°52	M 11
T 12	5 22 9	19°58'43	10♌32	8°45	23°11	4°9	21°11	27°44	22°14	19°5	11°56	18°9	16°47	21°13	5°57	T 12
W 13	5 26 5	20°59'50	24°52	10°17	24°27	4°56	21°25	27°40	22°17	19°7	11°55	18°0	16°44	21°20	6°2	W 13
T 14	5 30 2	22°0'58	9♌27	11°50	25°42	5°43	21°39	27°37	22°21	19°9	11°54	17°49	16°41	21°27	6°6	T 14
F 15	5 33 58	23°2'06	24°10	13°22	26°58	6°30	21°53	27°33	22°25	19°11	11°52	17°39	16°38	21°33	6°11	F 15
S 16	5 37 55	24°3'15	8♌52	14°55	28°13	7°16	22°6	27°30	22°28	19°14	11°51	17°30	16°35	21°40	6°15	S 16
S 17	5 41 51	25°4'24	23°27	16°27	29°29	8°3	22°20	27°26	22°32	19°16	11°50	17°24	16°31	21°47	6°19	S 17
M 18	5 45 48	26°5'33	7♌49	18°0	0♌44	8°50	22°34	27°22	22°36	19°18	11°49	17°20	16°28	21°53	6°23	M 18
T 19	5 49 44	27°6'41	21°57	19°34	2°0	9°37	22°47	27°18	22°39	19°20	11°48	17°D19	16°25	22°0	6°27	T 19
W 20	5 53 41	28°7'50	5♌48	21°7	3°15	10°24	23°1	27°14	22°43	19°23	11°47	17°19	16°22	22°7	6°31	W 20
T 21	5 57 38	29°8'59	19°24	22°41	4°31	11°11	23°15	27°10	22°46	19°25	11°46	17°R19	16°19	22°13	6°35	T 21
F 22	6 1 34	0♌10'08	2♌46	24°15	5°46	11°58	23°29	27°6	22°50	19°27	11°45	17°18	16°16	22°20	6°38	F 22
S 23	6 5 31	1°11'17	15°56	25°49	7°2	12°45	23°42	27°2	22°54	19°29	11°44	17°15	16°12	22°27	6°42	S 23
S 24	6 9 27	2°12'27	28°55	27°23	8°17	13°32	23°56	26°58	22°57	19°32	11°42	17°9	16°9	22°33	6°45	S 24
M 25	6 13 24	3°13'36	11♌43	28°58	9°33	14°19	24°10	26°54	23°1	19°34	11°41	16°59	16°6	22°40	6°49	M 25
T 26	6 17 20	4°14'45	24°20	0♌33	10°48	15°6	24°23	26°49	23°4	19°36	11°40	16°48	16°3	22°47	6°52	T 26
W 27	6 21 17	5°15'54	6♌47	2°8	12°4	15°52	24°37	26°45	23°8	19°38	11°39	16°34	16°0	22°54	6°55	W 27
T 28	6 25 14	6°17'04	19°5	3°44	13°19	16°39	24°51	26°41	23°12	19°41	11°38	16°19	15°57	23°0	6°58	T 28
F 29	6 29 10	7°18'13	1♌12	5°20	14°34	17°26	25°4	26°36	23°15	19°43	11°37	16°6	15°53	23°7	7°1	F 29
S 30	6 33 7	8°19'23	13°11	6°56	15°50	18°13	25°18	26°32	23°19	19°45	11°36	15°53	15°50	23°14	7°4	S 30
S 31	6 37 3	9♌20'32	25♌3	8♌33	17♌5	19♌0	25♌31	26♌27	23♌22	19♌47	11♌35	15♌44	15♌47	23♌20	7♌6	S 31

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂	♂	♂	♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	decl	decl	decl	lat
F 1	21s49	26n33	5n 6	17s 3	1n21	21s49	0n 5	22s24	1s22	22s41	0n19	20n41	0n 8	23s21	0s 8	21s41	1n19	12n29	9s53	7n20	6n50	18n57	4s51	3s 7
S 2	21 58	23 48	4 54	17 32	1 14	22 2	0 3	22 15	1 21	22 43	0 19	20 42	0 8	23 21	0 8	21 42	1 19	12 29	9 53	7 17	6 49	18 55	4 53	3 7
S 3	22 7	20 4	4 30	18 1	1 6	22 15	0 0	22 5	1 21	22 44	0 19	20 42	0 8	23 21	0 8	21 42	1 19	12 29	9 53	7 15	6 48	18 52	4 55	3 7
M 4	22 15	15 34	3 54	18 29	0 59	22 27	0s 2	21 56	1 20	22 45	0 19	20 43	0 8	23 21	0 8	21 42	1 19	12 29	9 53	7 14	6 46	18 50	4 58	3 7
T 5	22 23	10 30	3 8	18 56	0 52	22 39	0 4	21 46	1 20	22 46	0 18	20 44	0 9	23 22	0 8	21 42	1 19	12 29	9 53	7 14	6 45	18 47	5 0	3 7
W 6	22 31	5 0	2 14	19 23	0 45	22 49	0 7	21 36	1 20	22 47	0 18	20 44	0 9	23 22	0 8	21 42	1 19	12 29	9 53	7 14	6 44	18 44	5 2	3 7
T 7	22 38	0s45	1 13	19 49	0 37	23 0	0 9	21 25	1 19	22 49	0 18	20 45	0 9	23 22	0 8	21 43	1 19	12 28	9 53	7 14	6 43	18 42	5 4	3 7
F 8	22 44	6 37	0 7	20 15	0 30	23 9	0 12	21 15	1 19	22 50	0 18	20 46	0 9	23 22	0 8	21 43	1 19	12 28	9 53	7 14	6 42	18 39	5 6	3 7
S 9	22 51	12 23	1s 1	20 39	0 23	23 18	0 14	21 4	1 18	22 51	0 18	20 46	0 9	23 23	0 8	21 43	1 19	12 28	9 53	7 14	6 40	18 36	5 8	3 7
S 10	22 56	17 47	2 7	21 3	0 15	23 26	0 16	20 53	1 18	22 52	0 18	20 47	0 9	23 23	0 8	21 43	1 19	12 28	9 53	7 13	6 39	18 34	5 10	3 7
M 11	23 2	22 29	3 9	21 25	0 8	23 33	0 19	20 42	1 18	22 53	0 18	20 48	0 9	23 23	0 8	21 43	1 19	12 28	9 53	7 11	6 38	18 31	5 12	3 7
T 12	23 6	26 2	4 1	21 47	0 1	23 40	0 21	20 30	1 17	22 54	0 18	20 49	0 9	23 23	0 8	21 44	1 19	12 28	9 53	7 8	6 37	18 28	5 14	3 7
W 13	23 11	28 2	4 39	22 8	0s 6	23 46	0 23	20 19	1 17	22 55	0 18	20 49	0 9	23 23	0 8	21 44	1 19	12 28	9 53	7 4	6 35	18 26	5 16	3 7
T 14	23 15	28 8	4 59	22 28	0 13	23 51	0 26	20 7	1 16	22 56	0 18	20 50	0 10	23 24	0 8	21 44	1 19	12 28	9 53	7 0	6 34	18 23	5 18	3 7
F 15	23 18	26 15	5 1	22 46	0 20	23 55	0 28	19 54	1 16	22 57	0 18	20 51	0 10	23 24	0 8	21 44	1 19	12 28	9 53	6 56	6 33	18 20	5 19	3 7
S 16	23 21	22 37	4 42	23 4	0 26	23 59	0 30	19 42	1 15	22 58	0 17	20 52	0 10	23 24	0 8	21 44	1 19	12 28	9 53	6 53	6 32	18 18	5 21	3 7
S 17	23 24	17 35	4 5	23 20	0 33	24 2	0 32	19 30	1 15	22 59	0 17	20 53	0 10	23 24	0 8	21 44	1 19	12 28	9 52	6 51	6 31	18 15	5 23	3 7
M 18	23 26	11 38	3 13	23 36	0 39	24 4	0 35	19 17	1 14	22 59	0 17	20 54	0 10	23 25	0 8	21 45	1 19	12 28	9 52	6 49	6 29	18 12	5 25	3 8
T 19	23 27	5 12	2 10	23 50	0 45	24 5	0 37	19 4	1 14	23 0	0 17	20 54	0 10	23 25	0 8	21 45	1 19	12 28	9 52	6 49	6 28	18 10	5 26	3 8
W 20	23 28	1n23	1 1	24 3	0 52	24 6	0 39	18 51	1 13	23 1	0 17	20 55	0 10	23 25	0 8	21 45	1 19	12 28	9 52	6 49	6 27	18 7	5 28	3 8
T 21	23 29	7 47	0n11	24 14	0 58	24 6	0 41	18 37	1 13	23 2	0 17	20 56	0 10	23 25	0 8	21 45	1 19	12 28	9 52	6 49	6 26	18 4	5 29	3 8
F 22	23 29	13 44	1 21	24 25	1 3	24 5	0 43	18 24	1 12	23 3	0 17	20 57	0 11	23 25	0 8	21 45	1 19	12 28	9 52	6 48	6 24	18 2	5 31	3 8
S 23	23 29	18 58	2 25	24 34	1 9	24 3	0 45	18 10	1 12	23 3	0 17	20 58	0 11	23 26	0 8	21 46	1 19	12 27	9 52	6 47	6 23	17 59	5 32	3 8
S 24	23 28	23 13	3 21	24 42	1 14	24 1	0 48	17 56	1 11	23 4	0 17	20 59	0 11	23 26	0 8	21 46	1 19	12 27	9 52	6 45	6 22	17 56	5 34	3 8
M 25	23 27	26 17	4 6	24 48	1 19	23 58	0 50	17 42	1 11	23 5	0 17	21 0	0 11	23 26	0 8	21 46	1 19	12 27	9 52	6 41	6 21	17 53	5 35	3 8
T 26	23 25	27 59	4 37	24 54	1 24	23 54	0 52	17 28	1 10	23 5	0 17	21 1	0 11	23 26	0 8	21 46	1 19	12 27	9 51	6 37	6 20	17 51	5 36	3 8
W 27	23 23	28 14	4 55	24 57	1 29	23 50	0 54	17 13	1 10	23 6	0 17	21 2	0 11	23 26	0 8	21 46	1 19	12 27	9 51	6 31	6 18	17 48	5 38	3 8
T 28	23 20	27 4	4 59	25 0	1 34	23 44	0 55	16 58	1 9	23 7	0 16	21 3	0 11	23 27	0 8	21 46	1 19	12 27	9 51	6 26	6 17	17 45	5 39	3 8
F 29	23 17	24 38	4 50	25 1	1 38	23 38	0 57	16 44	1 9	23 7	0 16	21 4	0 11	23 27	0 8	21 47	1 19	12 27	9 51	6 21	6 16	17 43	5 40	3 8
S 30	23 13	21 9	4 27	25 0	1 42	23 32	0 59	16 29	1 8	23 8	0 16	21 5	0 11	23 27	0 8	21 47	1 19	12 27	9 51	6 16	6 15	17 40	5 41	3 8
S 31	23s 9	16n51	3n53	24s58	1s46	23s24	1s 1	16s14	1s 8	23s 8	0n16	21n 6	0n12	23s27	0s 8	21s47	1n19	12n27	9s51	6n12	6n13	17n37	5s42	3s 8