



# Astrodienst Ephemeris Tables for the year 1647

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 1647  
geocentric

JANUARY 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	6 41 49	10♌34°38'	15♍28	28♌31	29♌24	11°R13	6°R27	11°R12	2♌44	9♌17	6°R35	21°R54	22♌25	29♌53	16°R58	T 1
W 2	6 45 46	11°35'49"	27°55'	29°53'	0♌39	10♌58	6♌20	11♌11	2°47'	9°19'	6♌34	21♌53	22°22'	29°59'	16♌54	W 2
T 3	6 49 42	12°37'00"	10♌11	1♌11	1°55'	10°42'	6°13'	11° 9'	2°50'	9°21'	6°33'	21°51'	22°19'	0♌6	16°50'	T 3
F 4	6 53 39	13°38'10"	22°16'	2°26'	3°10'	10°26'	6° 7'	11° 8'	2°53'	9°23'	6°32'	21°50'	22°16'	0°13'	16°45'	F 4
S 5	6 57 35	14°39'21"	4♌14	3°36'	4°25'	10° 9'	6° 0'	11° 8'	2°56'	9°25'	6°31'	21°49'	22°13'	0°19'	16°41'	S 5
S 6	7 1 32	15°40'32"	16° 6'	4°41'	5°41'	9°51'	5°52'	11° 7'	2°59'	9°27'	6°30'	21°D49	22° 9'	0°26'	16°37'	S 6
M 7	7 5 28	16°41'42"	27°55'	5°40'	6°56'	9°33'	5°45'	11° 6'	3° 2'	9°29'	6°29'	21°49'	22° 6'	0°33'	16°32'	M 7
T 8	7 9 25	17°42'51"	9♌42	6°33'	8°12'	9°14'	5°38'	11° 6'	3° 5'	9°31'	6°28'	21°49'	22° 3'	0°39'	16°28'	T 8
W 9	7 13 21	18°44'00"	21°30'	7°18'	9°27'	8°55'	5°31'	11° 5'	3° 8'	9°33'	6°28'	21°50'	22° 0'	0°46'	16°24'	W 9
T 10	7 17 18	19°45'09"	3♌21	7°54'	10°43'	8°34'	5°23'	11° 5'	3°10'	9°35'	6°27'	21°50'	21°57'	0°53'	16°19'	T 10
F 11	7 21 15	20°46'17"	15°19'	8°21'	11°58'	8°14'	5°16'	11° 5'	3°13'	9°36'	6°26'	21°50'	21°54'	0°59'	16°15'	F 11
S 12	7 25 11	21°47'24"	27°28'	8°37'	13°13'	7°53'	5° 8'	11°D 5'	3°16'	9°38'	6°25'	21°R50	21°50'	1° 6'	16°11'	S 12
S 13	7 29 8	22°48'30"	9♌51	8°R43	14°29'	7°31'	5° 0'	11° 5'	3°19'	9°40'	6°24'	21°50'	21°47'	1°13'	16° 6'	S 13
M14	7 33 4	23°49'35"	22°32'	8°37'	15°44'	7° 9'	4°53'	11° 5'	3°21'	9°42'	6°24'	21°D50	21°44'	1°19'	16° 2'	M14
T 15	7 37 1	24°50'40"	5♌35	8°20'	16°59'	6°46'	4°45'	11° 5'	3°24'	9°44'	6°23'	21°50'	21°41'	1°26'	15°58'	T 15
W16	7 40 57	25°51'43"	19° 3'	7°51'	18°15'	6°24'	4°37'	11° 5'	3°27'	9°45'	6°22'	21°51'	21°38'	1°32'	15°53'	W16
T 17	7 44 54	26°52'46"	2♌59	7°10'	19°30'	6° 0'	4°29'	11° 6'	3°29'	9°47'	6°22'	21°51'	21°34'	1°39'	15°49'	T 17
F 18	7 48 50	27°53'48"	17°21'	6°20'	20°46'	5°37'	4°21'	11° 6'	3°32'	9°49'	6°21'	21°52'	21°31'	1°46'	15°45'	F 18
S 19	7 52 47	28°54'49"	2♌7	5°21'	22° 1'	5°13'	4°13'	11° 7'	3°34'	9°50'	6°20'	21°52'	21°28'	1°52'	15°41'	S 19
S 20	7 56 44	29°55'48"	17°11'	4°14'	23°16'	4°50'	4° 5'	11° 8'	3°37'	9°52'	6°20'	21°R52	21°25'	1°59'	15°37'	S 20
M21	8 0 40	0♌56'47"	2♌26	3° 2'	24°32'	4°26'	3°57'	11° 9'	3°39'	9°54'	6°19'	21°52'	21°22'	2° 6'	15°32'	M21
T 22	8 4 37	1°57'45"	17°40'	1°47'	25°47'	4° 2'	3°49'	11°10'	3°42'	9°55'	6°18'	21°52'	21°19'	2°12'	15°28'	T 22
W23	8 8 33	2°58'42"	2♌44	0°32'	27° 2'	3°38'	3°41'	11°11'	3°44'	9°57'	6°18'	21°51'	21°15'	2°19'	15°24'	W23
T 24	8 12 30	3°59'38"	17°30'	29♌17	28°18'	3°14'	3°33'	11°12'	3°46'	9°58'	6°17'	21°49'	21°12'	2°26'	15°20'	T 24
F 25	8 16 26	5° 0'34"	1♌52	28° 6'	29°33'	2°50'	3°25'	11°14'	3°48'	10° 0'	6°17'	21°47'	21° 9'	2°32'	15°16'	F 25
S 26	8 20 23	6° 1'28"	15°47'	27° 0'	0♌48	2°26'	3°17'	11°15'	3°51'	10° 1'	6°16'	21°46'	21° 6'	2°39'	15°12'	S 26
S 27	8 24 19	7° 2'22"	29°14'	26° 1'	2° 4'	2° 2'	3° 9'	11°17'	3°53'	10° 3'	6°16'	21°45'	21° 3'	2°46'	15° 8'	S 27
M28	8 28 16	8° 3'15"	12♌15	25° 9'	3°19'	1°39'	3° 1'	11°19'	3°55'	10° 4'	6°15'	21°D45	21° 0'	2°52'	15° 4'	M28
T 29	8 32 13	9° 4'07"	24°54'	24°25'	4°34'	1°15'	2°54'	11°20'	3°57'	10° 5'	6°15'	21°46'	20°56'	2°59'	15° 1'	T 29
W30	8 36 9	10° 4'59"	7♌14	23°50'	5°49'	0°52'	2°46'	11°22'	3°59'	10° 7'	6°14'	21°47'	20°53'	3° 6'	14°57'	W30
T 31	8 40 6	11°5'50"	19♌20	23♌23	7♌5	0♌30	2♌38	11♌24	4♌1	10♌8	6♌14	21♌49	20♌50	3♌12	14♌53	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
T 1	23s 4	11s52	4n51	22s 2	1s35	23s30	0s 1	21n12	3n55	19n21	0n40	12n56	2s24	20s36	0n 9	20s23	1n31	10n35	11s 1	21n42	21n37	20s52	14n55	7s33							
W 2	22 59	15 34	4 17	21 38	1 27	23 32	0 4	21 19	3 57	19 23	0 41	12 56	2 23	20 37	0 9	20 24	1 31	10 35	11 1	21 42	21 37	20 52	14 55	7 33							
T 3	22 53	18 32	3 31	21 12	1 18	23 34	0 6	21 25	3 59	19 25	0 41	12 56	2 23	20 37	0 9	20 24	1 31	10 35	11 1	21 42	21 38	20 51	14 56	7 33							
F 4	22 47	20 39	2 37	20 46	1 8	23 35	0 8	21 32	4 2	19 26	0 41	12 56	2 23	20 38	0 9	20 24	1 31	10 35	11 1	21 43	21 38	20 50	14 56	7 33							
S 5	22 41	21 49	1 36	20 19	0 57	23 35	0 11	21 38	4 4	19 28	0 41	12 56	2 22	20 39	0 9	20 24	1 31	10 35	11 1	21 43	21 39	20 50	14 56	7 33							
S 6	22 34	21 59	0 32	19 52	0 45	23 35	0 13	21 45	4 6	19 30	0 41	12 56	2 22	20 39	0 9	20 25	1 31	10 35	11 0	21 43	21 39	20 49	14 57	7 33							
M 7	22 26	21 10	0s34	19 25	0 33	23 34	0 16	21 52	4 8	19 32	0 41	12 56	2 22	20 40	0 9	20 25	1 31	10 35	11 0	21 43	21 40	20 49	14 57	7 34							
T 8	22 19	19 26	1 38	18 58	0 19	23 32	0 18	21 59	4 10	19 34	0 42	12 56	2 22	20 40	0 9	20 25	1 31	10 35	11 0	21 43	21 41	20 48	14 58	7 34							
W 9	22 10	16 51	2 38	18 33	0 4	23 29	0 20	22 6	4 12	19 36	0 42	12 57	2 21	20 41	0 9	20 26	1 31	10 35	11 0	21 43	21 41	20 47	14 58	7 34							
T 10	22 2	13 34	3 31	18 8	0n12	23 26	0 23	22 13	4 13	19 38	0 42	12 57	2 21	20 41	0 9	20 26	1 31	10 35	11 0	21 43	21 42	20 47	14 59	7 34							
F 11	21 53	9 44	4 16	17 45	0 29	23 22	0 25	22 21	4 15	19 40	0 42	12 57	2 21	20 42	0 9	20 26	1 31	10 35	10 59	21 43	21 42	20 46	14 59	7 34							
S 12	21 43	5 27	4 50	17 24	0 46	23 17	0 27	22 28	4 17	19 42	0 42	12 57	2 20	20 42	0 9	20 26	1 31	10 35	10 59	21 43	21 43	20 46	15 0	7 34							
S 13	21 33	0 52	5 11	17 5	1 4	23 11	0 30	22 35	4 18	19 44	0 42	12 58	2 20	20 43	0 9	20 26	1 31	10 35	10 59	21 43	21 43	20 45	15 0	7 34							
M14	21 23	3n51	5 18	16 49	1 23	23 5	0 32	22 42	4 20	19 46	0 43	12 58	2 20	20 44	0 9	20 27	1 31	10 35	10 59	21 43	21 44	20 44	15 1	7 33							
T 15	21 12	8 33	5 9	16 35	1 41	22 58	0 34	22 49	4 21	19 48	0 43	12 58	2 19	20 44	0 9	20 27	1 31	10 35	10 59	21 43	21 44	20 44	15 1	7 33							
W16	21 1	12 59	4 43	16 25	1 59	22 50	0 36	22 56	4 22	19 50	0 43	12 59	2 19	20 45	0 9	20 27	1 31	10 36	10 58	21 43	21 45	20 43	15 2	7 33							
T 17	20 49	16 52	4 0	16 18	2 17	22 42	0 38	23 3	4 23	19 52	0 43	12 59	2 19	20 45	0 9	20 27	1 31	10 36	10 58	21 42	21 45	20 43	15 2	7 33							
F 18	20 37	19 53	3 1	16 15	2 34	22 33	0 41	23 10	4 24	19 54	0 43	13 0	2 19	20 45	0 9	20 28	1 31	10 36	10 58	21 42	21 46	20 42	15 3	7 33							
S 19	20 25	21 40	1 48	16 14	2 49	22 23	0 43	23 17	4 25	19 56	0 43	13 0	2 18	20 46	0 9	20 28	1 31	10 36	10 58	21 42	21 46	20 41	15 4	7 33							
S 20	20 12	21 57	0 26	16 17	3 3	22 12	0 45	23 24	4 26	19 58	0 43	13 1	2 18	20 46	0 9	20 28	1 31	10 36	10 58	21 42	21 47	20 41	15 4	7 33							
M21	19 59	20 36	0n58	16 22	3 14	22 1	0 47	23 30	4 27	20 0	0 44	13 1	2 18	20 47	0 9	20 28	1 31	10 36	10 57	21 42	21 47	20 40	15 5	7 33							
T 22	19 46	17 46	2 19	16 29	3 24	21 50	0 49	23 37	4 28	20 2	0 44	13 2	2 17	20 47	0 9	20 28	1 31	10 36	10 57	21 42	21 48	20 39	15 5	7 33							
W23	19 32	13 45	3 28	16 39	3 31	21 37	0 51	23 43	4 28	20 4	0 44	13 2	2 17	20 48	0 9	20 29	1 31	10 36	10 57	21 43	21 48	20 39	15 6	7 32							
T 24	19 18	8 58	4 22	16 50	3 35	21 24	0 53	23 49	4 29	20 6	0 44	13 3	2 17	20 48	0 9	20 29	1 31	10 37	10 57	21 43	21 49	20 38	15 7	7 32							
F 25	19 3	3 49	4 58	17 2	3 37	21 10	0 54	23 55	4 29	20 8	0 44	13 4	2 16	20 49	0 9	20 29	1 31	10 37	10 56	21 43	21 49	20 37	15 7	7 32							
S 26	18 48	1s22	5 15	17 15	3 36	20 56	0 56	24 1	4 29	20 10	0 44	13 5	2 16	20 49	0 9	20 29	1 31	10 37	10 56	21 43	21 50	20 37	15 8	7 32							
S 27	18 33	6 19	5 14	17 29	3 34	20 41	0 58	24 7	4 29	20 12	0 44	13 5	2 16	20 49	0 9	20 29	1 32	10 37	10 56	21 43	21 50	20 36	15 9	7 32							
M28	18 17	10 49	4 57	17 43	3 29	20 25	1 0	24 12	4 29	20 14	0 44	13 6	2 16	20 50	0 9	20 29	1 32	10 37	10 56	21 43	21 51	20 35	15 9	7 31							
T 29	18 1	14 44	4 26	17 57	3 23	20 9	1 1	24 17	4 29	20 16	0 44	13 7	2 15	20 50	0 9	20 30	1 32	10 37	10 55	21 43	21 51	20 35	15 10	7 31							
W30	17 45	17 54	3 43	18 10	3 15	19 52	1 3	24 22	4 29	20 18	0 45	13 8	2 15	20 51	0 9	20 30	1 32	10 38	10 55	21 43	21 51	20 34	15 11	7 31							
T 31	17s29	20s13	2n50	18s23	3n 7	19s35	1s 5	24n27	4n28	20n20	0n45	13n 9	2s15	20s51	0n 9	20s30	1n32	10n38	10s55	21n43	21n52	20s33	15n11	7s30							

ASTRODIENST EPHEMERIS for the year 1647  
geocentric

FEBRUARY 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	8 44 2	12° 6' 39"	1° 16' 16"	23° 5' 23"	8° 20' 20"	0° 7' 20"	2° 30' 30"	11° 26' 26"	4° 3' 3"	10° 9' 9"	6° 14' 14"	21° 50' 50"	20° 47' 47"	3° 19' 19"	14° 49' 49"	F 1
S 2	8 47 59	13° 7' 28"	13° 7' 28"	22° 54' 54"	9° 35' 35"	29° 45' 45"	2° 22' 22"	11° 29' 29"	4° 5' 5"	10° 11' 11"	6° 13' 13"	21° 51' 51"	20° 44' 44"	3° 25' 25"	14° 46' 46"	S 2
S 3	8 51 55	14° 8' 15"	24° 54' 54"	22° 52' 52"	10° 50' 50"	29° 24' 24"	2° 14' 14"	11° 31' 31"	4° 7' 7"	10° 12' 12"	6° 13' 13"	21° 52' 52"	20° 40' 40"	3° 32' 32"	14° 42' 42"	S 3
M 4	8 55 52	15° 9' 01"	6° 41' 41"	22° 56' 56"	12° 6' 6"	29° 3' 3"	2° 7' 7"	11° 34' 34"	4° 8' 8"	10° 13' 13"	6° 13' 13"	21° 51' 51"	20° 37' 37"	3° 39' 39"	14° 39' 39"	M 4
T 5	8 59 48	16° 9' 46"	18° 30' 30"	23° 8' 8"	13° 21' 21"	28° 42' 42"	1° 59' 59"	11° 36' 36"	4° 10' 10"	10° 14' 14"	6° 12' 12"	21° 49' 49"	20° 34' 34"	3° 45' 45"	14° 35' 35"	T 5
W 6	9 3 45	17° 10' 29"	0° 23' 23"	23° 26' 26"	14° 36' 36"	28° 22' 22"	1° 52' 52"	11° 39' 39"	4° 12' 12"	10° 15' 15"	6° 12' 12"	21° 45' 45"	20° 31' 31"	3° 52' 52"	14° 32' 32"	W 6
T 7	9 7 42	18° 11' 11"	12° 22' 22"	23° 49' 49"	15° 51' 51"	28° 3' 3"	1° 44' 44"	11° 42' 42"	4° 13' 13"	10° 17' 17"	6° 12' 12"	21° 41' 41"	20° 28' 28"	3° 59' 59"	14° 28' 28"	T 7
F 8	9 11 38	19° 11' 52"	24° 29' 29"	24° 19' 19"	17° 7' 7"	27° 44' 44"	1° 37' 37"	11° 44' 44"	4° 15' 15"	10° 18' 18"	6° 11' 11"	21° 36' 36"	20° 25' 25"	4° 5' 5"	14° 25' 25"	F 8
S 9	9 15 35	20° 12' 31"	6° 45' 45"	24° 53' 53"	18° 22' 22"	27° 26' 26"	1° 30' 30"	11° 47' 47"	4° 17' 17"	10° 19' 19"	6° 11' 11"	21° 31' 31"	20° 21' 21"	4° 12' 12"	14° 22' 22"	S 9
S 10	9 19 31	21° 13' 08"	19° 14' 14"	25° 32' 32"	19° 37' 37"	27° 9' 9"	1° 22' 22"	11° 50' 50"	4° 18' 18"	10° 20' 20"	6° 11' 11"	21° 27' 27"	20° 18' 18"	4° 19' 19"	14° 19' 19"	S 10
M 11	9 23 28	22° 13' 43"	1° 57' 57"	26° 15' 15"	20° 52' 52"	26° 52' 52"	1° 15' 15"	11° 54' 54"	4° 19' 19"	10° 21' 21"	6° 11' 11"	21° 23' 23"	20° 15' 15"	4° 25' 25"	14° 16' 16"	M 11
T 12	9 27 24	23° 14' 17"	14° 57' 57"	27° 1' 1'	22° 7' 7"	26° 36' 36"	1° 8' 8"	11° 57' 57"	4° 21' 21"	10° 22' 22"	6° 11' 11"	21° 22' 22"	20° 12' 12"	4° 32' 32"	14° 13' 13"	T 12
W 13	9 31 21	24° 14' 49"	28° 17' 17"	27° 52' 52"	23° 22' 22"	26° 21' 21"	1° 1' 1'	12° 0' 0'	4° 22' 22"	10° 23' 23"	6° 11' 11"	21° 21' 21"	20° 9' 9'	4° 39' 39"	14° 10' 10"	W 13
T 14	9 35 17	25° 15' 19"	11° 11' 11"	28° 46' 46"	24° 38' 38"	26° 6' 6"	0° 55' 55"	12° 4' 4'	4° 23' 23"	10° 24' 24"	6° 10' 10"	21° 22' 22"	20° 5' 5'	4° 45' 45"	14° 7' 7"	T 14
F 15	9 39 14	26° 15' 47"	26° 5' 5'	29° 43' 43"	25° 53' 53"	25° 52' 52"	0° 48' 48"	12° 7' 7'	4° 25' 25"	10° 24' 24"	6° 10' 10"	21° 24' 24"	20° 2' 2'	4° 52' 52"	14° 4' 4'	F 15
S 16	9 43 11	27° 16' 13"	10° 33' 33"	0° 42' 42"	27° 8' 8'	25° 39' 39"	0° 42' 42"	12° 11' 11"	4° 26' 26"	10° 25' 25"	6° 10' 10"	21° 25' 25"	19° 59' 59"	4° 59' 59"	14° 2' 2'	S 16
S 17	9 47 7	28° 16' 38"	25° 21' 21"	1° 44' 44"	28° 23' 23"	25° 27' 27"	0° 35' 35"	12° 15' 15"	4° 27' 27"	10° 26' 26"	6° 10' 10"	21° 25' 25"	19° 56' 56"	5° 5' 5'	13° 59' 59"	S 17
M 18	9 51 4	29° 17' 00"	10° 24' 24"	2° 49' 49"	29° 38' 38"	25° 15' 15"	0° 29' 29"	12° 19' 19"	4° 28' 28"	10° 27' 27"	6° 10' 10"	21° 24' 24"	19° 53' 53"	5° 12' 12"	13° 57' 57"	M 18
T 19	9 55 0	0° 17' 21"	25° 33' 33"	3° 56' 56"	0° 53' 53"	25° 4' 4'	0° 23' 23"	12° 23' 23"	4° 29' 29"	10° 28' 28"	6° 10' 10"	21° 21' 21"	19° 50' 50"	5° 19' 19"	13° 54' 54"	T 19
W 20	9 58 57	1° 17' 40"	10° 39' 39"	5° 5' 5'	2° 8' 8'	24° 55' 55"	0° 17' 17"	12° 27' 27"	4° 30' 30"	10° 28' 28"	6° 10' 10"	21° 16' 16"	19° 46' 46"	5° 25' 25"	13° 52' 52"	W 20
T 21	10 2 53	2° 17' 57"	25° 33' 33"	6° 16' 16"	3° 23' 23"	24° 45' 45"	0° 11' 11"	12° 31' 31"	4° 31' 31"	10° 29' 29"	6° 10' 10"	21° 10' 10"	19° 43' 43"	5° 32' 32"	13° 50' 50"	T 21
F 22	10 6 50	3° 18' 12"	10° 45' 45"	7° 29' 29"	4° 38' 38"	24° 37' 37"	0° 5' 5'	12° 35' 35"	4° 32' 32"	10° 30' 30"	6° 10' 10"	21° 3' 3'	19° 40' 40"	5° 38' 38"	13° 47' 47"	F 22
S 23	10 10 46	4° 18' 26"	24° 11' 11"	8° 44' 44"	5° 53' 53"	24° 29' 29"	29° 59' 59"	12° 39' 39"	4° 33' 33"	10° 30' 30"	6° 10' 10"	20° 57' 57"	19° 37' 37"	5° 45' 45"	13° 45' 45"	S 23
S 24	10 14 43	5° 18' 39"	7° 14' 48"	10° 0' 0'	7° 8' 8'	24° 23' 23"	29° 54' 54"	12° 44' 44"	4° 33' 33"	10° 31' 31"	6° 10' 10"	20° 52' 52"	19° 34' 34"	5° 52' 52"	13° 43' 43"	S 24
M 25	10 18 40	6° 18' 50"	20° 56' 56"	11° 18' 18"	8° 23' 23"	24° 17' 17"	29° 49' 49"	12° 48' 48"	4° 34' 34"	10° 31' 31"	6° 11' 11"	20° 49' 49"	19° 31' 31"	5° 58' 58"	13° 41' 41"	M 25
T 26	10 22 36	7° 18' 59"	3° 37' 37"	12° 38' 38"	9° 38' 38"	24° 11' 11"	29° 44' 44"	12° 53' 53"	4° 35' 35"	10° 32' 32"	6° 11' 11"	20° 47' 47"	19° 27' 27"	6° 5' 5'	13° 40' 40"	T 26
W 27	10 26 33	8° 19' 07"	16° 0' 0'	13° 59' 59"	10° 53' 53"	24° 7' 7'	29° 39' 39"	12° 57' 57"	4° 35' 35"	10° 32' 32"	6° 11' 11"	20° 47' 47"	19° 24' 24"	6° 12' 12"	13° 38' 38"	W 27
T 28	10 30 29	9° 19' 14"	28° 17' 17"	15° 21' 21"	12° 8' 8'	24° 3' 3"	29° 34' 34"	13° 2' 2'	4° 36' 36"	10° 33' 33"	6° 11' 11"	20° 49' 49"	19° 21' 21"	6° 18' 18"	13° 36' 36"	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
F 1	17s12	21s37	1n51	18s36	2n57	19s17	1s 6	24n31	4n28	20n22	0n45	13n10	2s14	20s51	0n 9	20s30	1n32	10n38	10s55	21n43	21n52	20s32	15n12	7s30			
S 2	16 55	22 2	0 48	18 48	2 46	18 58	1 8	24 36	4 27	20 24	0 45	13 11	2 14	20 52	0 9	20 30	1 32	10 38	10 54	21 42	21 53	20 32	15 13	7 30			
S 3	16 37	21 28	0s17	18 59	2 35	18 39	1 9	24 40	4 27	20 26	0 45	13 12	2 14	20 52	0 9	20 30	1 32	10 38	10 54	21 42	21 53	20 31	15 13	7 30			
M 4	16 19	19 57	1 21	19 10	2 24	18 20	1 10	24 43	4 26	20 27	0 45	13 13	2 14	20 52	0 9	20 31	1 32	10 39	10 54	21 42	21 54	20 30	15 14	7 29			
T 5	16 1	17 33	2 22	19 20	2 12	17 59	1 12	24 47	4 25	20 29	0 45	13 14	2 13	20 53	0 9	20 31	1 32	10 39	10 54	21 43	21 54	20 30	15 15	7 29			
W 6	15 43	14 25	3 16	19 28	2 0	17 39	1 13	24 50	4 24	20 31	0 45	13 15	2 13	20 53	0 9	20 31	1 32	10 39	10 53	21 43	21 55	20 29	15 15	7 28			
T 7	15 24	10 40	4 3	19 36	1 48	17 18	1 14	24 53	4 23	20 33	0 45	13 16	2 13	20 53	0 9	20 31	1 32	10 39	10 53	21 44	21 55	20 28	15 16	7 28			
F 8	15 6	6 28	4 39	19 43	1 37	16 56	1 15	24 56	4 22	20 35	0 45	13 17	2 12	20 54	0 9	20 31	1 32	10 39	10 53	21 45	21 56	20 27	15 17	7 28			
S 9	14 47	1 57	5 3	19 48	1 25	16 34	1 17	24 58	4 21	20 36	0 45	13 18	2 12	20 54	0 9	20 31	1 32	10 40	10 53	21 46	21 56	20 27	15 18	7 27			
S 10	14 27	2n43	5 13	19 53	1 13	16 11	1 18	25 1	4 20	20 38	0 45	13 20	2 12	20 54	0 9	20 31	1 32	10 40	10 52	21 46	21 57	20 26	15 18	7 27			
M 11	14 8	7 21	5 8	19 56	1 2	15 48	1 19	25 3	4 18	20 39	0 46	13 21	2 12	20 54	0 9	20 31	1 32	10 40	10 52	21 47	21 57	20 25	15 19	7 26			
T 12	13 48	11 46	4 47	19 58	0 50	15 25	1 20	25 4	4 17	20 41	0 46	13 22	2 11	20 55	0 9	20 31	1 32	10 40	10 52	21 47	21 58	20 24	15 20	7 26			
W 13	13 28	15 44	4 11	19 59	0 39	15 1	1 20	25 6	4 15	20 43	0 46	13 23	2 11	20 55	0 9	20 32	1 32	10 41	10 51	21 47	21 58	20 23	15 21	7 26			
T 14	13 8	18 59	3 19	19 59	0 29	14 37	1 21	25 7	4 14	20 44	0 46	13 25	2 11	20 55	0 9	20 32	1 32	10 41	10 51	21 47	21 59	20 23	15 21	7 25			
F 15	12 47	21 11	2 14	19 57	0 18	14 12	1 22	25 9	4 12	20 46	0 46	13 26	2 10	20 55	0 9	20 32	1 32	10 41	10 51	21 47	21 59	20 22	15 22	7 25			
S 16	12 27	22 5	0 59	19 55	0 8	13 47	1 23	25 9	4 11	20 47	0 46	13 27	2 10	20 56	0 9	20 32	1 32	10 41	10 51	21 47	22 0	20 21	15 23	7 24			
S 17	12 6	21 28	0n21	19 51	0s 2	13 22	1 23	25 10	4 9	20 49	0 46	13 29	2 10	20 56	0 9	20 32	1 32	10 42	10 50	21 47	22 0	20 20	15 24	7 24			
M 18	11 45	19 18	1 42	19 45	0 12	12 56	1 24	25 11	4 7	20 50	0 46	13 30	2 10	20 56	0 9	20 32	1 32	10 42	10 50	21 47	22 1	20 20	15 24	7 23			
T 19	11 23	15 46	2 55	19 39	0 21	12 30	1 24	25 11	4 6	20 51	0 46	13 32	2 9	20 56	0 9	20 32	1 32	10 42	10 50	21 47	22 1	20 19	15 25	7 23			
W 20	11 2	11 13	3 56	19 31	0 30	12 3	1 25	25 11	4 4	20 53	0 46	13 33	2 9	20 56	0 9	20 32	1 33	10 42	10 50	21 48	22 1	20 18	15 26	7 22			
T 21	10 41	6 3	4 40	19 22	0 39	11 37	1 25	25 11	4 2	20 54	0 46	13 35	2 9	20 57	0 9	20 32	1 33	10 43	10 49	21 49	22 2	20 17	15 26	7 22			
F 22	10 19	0 40	5 4	19 11	0 47	11 9	1 26	25 11	4 0	20 55	0 46	13 36	2 9	20 57	0 9	20 32	1 33	10 43	10 49	21 50	22 2	20 16	15 27	7 21			
S 23	9 57	4s36	5 9	19 0	0 55	10 42	1 26	25 10	3 58	20 56	0 46	13 38	2 8	20 57	0 9	20 32	1 33	10 43	10 49	21 51	22 3	20 15	15 28	7 21			
S 24	9 35	9 27	4 57	18 47	1 3	10 14	1 26	25 9	3 56	20 58	0 46	13 39	2 8	20 57	0 9	20 32	1 33	10 43	10 48	21 52	22 3	20 15	15 29	7 20			
M 25	9 13	13 42	4 28	18 32	1 10	9 46	1 26	25 9	3 54	20 59	0 46	13 41	2 8	20 57	0 9	20 32	1 33	10 44	10 48	21 52	22 4	20 14	15 29	7 20			
T 26	8 50	17 12	3 48	18 17	1 17	9 18	1 26	25 8	3 52	21 0	0 46	13 42	2 8	20 57	0 9	20 32	1 33	10 44	10 48	21 52	22 4	20 13	15 30	7 19			
W 27	8 28	19 49	2 57	17 59	1 13	8 50	1 26	25 7	3 50	21 1	0 46	13 44	2 7	20 57	0 9	20 32	1 33	10 44	10 48	21 52	22 5	20 12	15 31	7 18			
T 28	8s 5	21s28	2n 0	17s41	1s29	8s21	1s26	25n 5	3n48	21n 2	0n46	13n46	2s 7	20s58	0n 9	20s32	1n33	10n45	10s47	21n52	22n 5	20s11	15n32	7s18			

# ASTRODIENST EPHEMERIS for the year 1647

## geocentric

MARCH 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	10 34 26	10 <sup>h</sup> 19'18	9 <sup>h</sup> 58	16 <sup>h</sup> 45	13 <sup>h</sup> 23	24°R 0	29°R30	13 <sup>h</sup> 8 7	4 <sup>h</sup> 36	10 <sup>h</sup> 33	6 <sup>h</sup> 11	20 <sup>h</sup> 50	19 <sup>h</sup> 18	6 <sup>h</sup> 25	13°R35	F 1
S 2	10 38 22	11°19'21	21°46	18°11	14°37	23 <sup>h</sup> 58	29 <sup>h</sup> 25	13°12	4°37	10°34	6°12	20°R50	19°15	6°32	13 <sup>h</sup> 33	S 2
S 3	10 42 19	12°19'23	3 <sup>h</sup> 31	19°37	15°52	23°57	29°21	13°17	4°37	10°34	6°12	20°49	19°11	6°38	13°32	S 3
M 4	10 46 15	13°19'22	15°19	21° 5	17° 7	23°D56	29°17	13°22	4°38	10°34	6°12	20°46	19° 8	6°45	13°31	M 4
T 5	10 50 12	14°19'20	27°13	22°34	18°22	23°56	29°13	13°27	4°38	10°35	6°12	20°41	19° 5	6°52	13°29	T 5
W 6	10 54 9	15°19'16	9 <sup>h</sup> 14	24° 4	19°37	23°57	29° 9	13°32	4°38	10°35	6°13	20°33	19° 2	6°58	13°28	W 6
T 7	10 58 5	16°19'10	21°24	25°36	20°52	23°59	29° 6	13°38	4°38	10°35	6°13	20°23	18°59	7° 5	13°27	T 7
F 8	11 2 2	17°19'02	3 <sup>h</sup> 45	27° 9	22° 6	24° 1	29° 2	13°43	4°38	10°35	6°13	20°12	18°56	7°12	13°26	F 8
S 9	11 5 58	18°18'52	16°17	28°43	23°21	24° 4	28°59	13°48	4°38	10°35	6°14	20° 1	18°52	7°18	13°26	S 9
S 10	11 9 55	19°18'39	29° 0	0 <sup>h</sup> 18	24°36	24° 8	28°56	13°54	4°R38	10°36	6°14	19°51	18°49	7°25	13°25	S 10
M 11	11 13 51	20°18'25	11 <sup>h</sup> 55	1°55	25°51	24°12	28°53	14° 0	4°38	10°36	6°15	19°43	18°46	7°32	13°24	M 11
T 12	11 17 48	21°18'08	25° 3	3°32	27° 5	24°17	28°51	14° 5	4°38	10°36	6°15	19°37	18°43	7°38	13°24	T 12
W 13	11 21 44	22°17'50	8 <sup>h</sup> 25	5°11	28°20	24°23	28°48	14°11	4°38	10°R36	6°16	19°34	18°40	7°45	13°23	W 13
T 14	11 25 41	23°17'29	22° 3	6°51	29°35	24°29	28°46	14°17	4°38	10°36	6°16	19°D33	18°37	7°52	13°23	T 14
F 15	11 29 37	24°17'05	5 <sup>h</sup> 57	8°33	0 <sup>h</sup> 49	24°36	28°44	14°23	4°38	10°36	6°17	19°34	18°33	7°58	13°23	F 15
S 16	11 33 34	25°16'40	20° 8	10°15	2° 4	24°44	28°42	14°29	4°37	10°35	6°17	19°R34	18°30	8° 5	13°23	S 16
S 17	11 37 31	26°16'11	4 <sup>h</sup> 25	11°59	3°19	24°52	28°41	14°35	4°37	10°35	6°18	19°33	18°27	8°11	13°D23	S 17
M 18	11 41 27	27°15'41	19°15	13°44	4°33	25° 1	28°39	14°41	4°37	10°35	6°18	19°30	18°24	8°18	13°23	M 18
T 19	11 45 24	28°15'08	4 <sup>h</sup> 4	15°31	5°48	25°10	28°38	14°47	4°36	10°35	6°19	19°25	18°21	8°25	13°23	T 19
W 20	11 49 20	29°14'33	18°53	17°19	7° 2	25°20	28°37	14°53	4°36	10°35	6°19	19°16	18°17	8°31	13°23	W 20
T 21	11 53 17	0 <sup>h</sup> 13'56	3 <sup>h</sup> 36	19° 8	8°17	25°31	28°36	14°59	4°35	10°35	6°20	19° 6	18°14	8°38	13°24	T 21
F 22	11 57 13	1°13'17	18° 2	20°58	9°31	25°42	28°35	15° 5	4°34	10°34	6°21	18°55	18°11	8°45	13°24	F 22
S 23	12 1 10	2°12'36	2 <sup>h</sup> 8	22°50	10°46	25°54	28°35	15°12	4°34	10°34	6°21	18°44	18° 8	8°51	13°25	S 23
S 24	12 5 6	3°11'53	15°47	24°43	12° 0	26° 6	28°34	15°18	4°33	10°34	6°22	18°35	18° 5	8°58	13°25	S 24
M 25	12 9 3	4°11'08	28°59	26°37	13°14	26°18	28°D34	15°25	4°32	10°33	6°23	18°28	18° 2	9° 5	13°26	M 25
T 26	12 13 0	5°10'22	11 <sup>h</sup> 46	28°33	14°29	26°32	28°34	15°31	4°31	10°33	6°24	18°23	17°58	9°11	13°27	T 26
W 27	12 16 56	6° 9'33	24°11	0 <sup>h</sup> 30	15°43	26°45	28°34	15°38	4°30	10°32	6°24	18°21	17°55	9°18	13°28	W 27
T 28	12 20 53	7° 8'43	6 <sup>h</sup> 18	2°28	16°57	26°59	28°35	15°44	4°30	10°32	6°25	18°D21	17°52	9°25	13°29	T 28
F 29	12 24 49	8° 7'51	18°13	4°28	18°12	27°14	28°35	15°51	4°29	10°31	6°26	18°R21	17°49	9°31	13°30	F 29
S 30	12 28 46	9° 6'58	0 <sup>h</sup> 1	6°28	19°26	27°29	28°36	15°58	4°28	10°31	6°27	18°20	17°46	9°38	13°31	S 30
S 31	12 32 42	10 <sup>h</sup> 6'02	11 <sup>h</sup> 48	8 <sup>h</sup> 30	20 <sup>h</sup> 40	27 <sup>h</sup> 45	28 <sup>h</sup> 37	16 <sup>h</sup> 8 4	4 <sup>h</sup> 27	10 <sup>h</sup> 30	6 <sup>h</sup> 27	18 <sup>h</sup> 18	17 <sup>h</sup> 42	9 <sup>h</sup> 45	13 <sup>h</sup> 33	S 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
F 1	7s43	22s 8	0n58	17s21	1s35	7s52	1s26	25n 4	3n46	21n 3	0n46	13n47	2s 7	20s58	0n 9	20s32	1n33	10n45	10s47	21n52	22n 6	20s10	15n32	7s17	
S 2	7 20	21 48	0s 5	17 0	1 41	7 23	1 26	25 2	3 44	21 4	0 46	13 49	2 7	20 58	0 9	20 32	1 33	10 45	10 47	21 52	22 6	20 10	15 33	7 17	
S 3	6 57	20 30	1 8	16 38	1 46	6 54	1 26	25 0	3 42	21 5	0 46	13 51	2 6	20 58	0 9	20 32	1 33	10 46	10 47	21 52	22 6	20 9	15 34	7 16	
M 4	6 34	18 18	2 8	16 14	1 50	6 24	1 25	24 59	3 40	21 5	0 46	13 53	2 6	20 58	0 9	20 32	1 33	10 46	10 46	21 53	22 7	20 8	15 34	7 16	
T 5	6 11	15 19	3 3	15 49	1 55	5 55	1 25	24 56	3 38	21 6	0 46	13 54	2 6	20 58	0 9	20 32	1 33	10 46	10 46	21 53	22 7	20 7	15 35	7 15	
W 6	5 48	11 40	3 50	15 23	1 59	5 25	1 24	24 54	3 36	21 7	0 46	13 56	2 6	20 58	0 9	20 32	1 33	10 47	10 46	21 55	22 8	20 6	15 36	7 14	
T 7	5 24	7 30	4 27	14 56	2 2	4 55	1 24	24 52	3 34	21 8	0 46	13 58	2 5	20 58	0 9	20 32	1 33	10 47	10 46	21 56	22 8	20 5	15 37	7 14	
F 8	5 1	2 58	4 52	14 27	2 5	4 25	1 23	24 50	3 32	21 9	0 46	14 0	2 5	20 58	0 8	20 32	1 33	10 47	10 45	21 58	22 9	20 4	15 37	7 13	
S 9	4 38	1n44	5 4	13 56	2 8	3 55	1 23	24 47	3 30	21 9	0 46	14 2	2 5	20 58	0 8	20 32	1 33	10 47	10 45	21 59	22 9	20 3	15 38	7 12	
S 10	4 14	6 27	5 1	13 25	2 10	3 24	1 22	24 44	3 28	21 10	0 46	14 3	2 5	20 58	0 8	20 32	1 33	10 48	10 45	22 1	22 10	20 3	15 39	7 12	
M11	3 51	10 58	4 42	12 52	2 12	2 54	1 21	24 42	3 26	21 10	0 46	14 5	2 4	20 58	0 8	20 32	1 33	10 48	10 44	22 2	22 10	20 2	15 39	7 11	
T 12	3 27	15 2	4 9	12 18	2 14	2 23	1 20	24 39	3 24	21 11	0 46	14 7	2 4	20 58	0 8	20 32	1 33	10 48	10 44	22 3	22 10	20 1	15 40	7 11	
W13	3 4	18 26	3 21	11 43	2 15	1 53	1 20	24 36	3 22	21 11	0 46	14 9	2 4	20 58	0 8	20 32	1 34	10 49	10 44	22 3	22 11	20 0	15 41	7 10	
T 14	2 40	20 54	2 21	11 6	2 15	1 22	1 19	24 33	3 20	21 12	0 46	14 11	2 4	20 58	0 8	20 32	1 34	10 49	10 44	22 3	22 11	19 59	15 41	7 9	
F 15	2 16	22 9	1 12	10 28	2 15	0 51	1 18	24 29	3 18	21 12	0 46	14 13	2 4	20 58	0 8	20 32	1 34	10 49	10 43	22 3	22 12	19 58	15 42	7 9	
S 16	1 53	22 1	0n 3	9 49	2 15	0 21	1 17	24 26	3 16	21 13	0 46	14 15	2 3	20 58	0 8	20 32	1 34	10 50	10 43	22 3	22 12	19 57	15 43	7 8	
S 17	1 29	20 26	1 19	9 8	2 14	0n10	1 15	24 23	3 14	21 13	0 46	14 17	2 3	20 58	0 8	20 32	1 34	10 50	10 43	22 3	22 13	19 56	15 43	7 7	
M18	1 5	17 28	2 31	8 27	2 13	0 41	1 14	24 19	3 12	21 13	0 46	14 19	2 3	20 58	0 8	20 32	1 34	10 50	10 43	22 4	22 13	19 55	15 44	7 7	
T 19	0 42	13 21	3 33	7 44	2 11	1 11	1 13	24 15	3 10	21 13	0 46	14 21	2 3	20 58	0 8	20 32	1 34	10 51	10 42	22 5	22 14	19 54	15 45	7 6	
W20	0 18	8 24	4 21	7 0	2 9	1 42	1 12	24 12	3 8	21 14	0 46	14 23	2 3	20 58	0 8	20 32	1 34	10 51	10 42	22 6	22 14	19 53	15 45	7 5	
T 21	0n 6	3 1	4 51	6 14	2 6	2 13	1 10	24 8	3 6	21 14	0 46	14 25	2 2	20 57	0 8	20 32	1 34	10 52	10 42	22 7	22 14	19 52	15 46	7 5	
F 22	0 29	2s26	5 2	5 28	2 2	2 43	1 9	24 4	3 4	21 14	0 46	14 27	2 2	20 57	0 8	20 31	1 34	10 52	10 42	22 9	22 15	19 51	15 46	7 4	
S 23	0 53	7 38	4 54	4 40	1 59	3 14	1 7	24 0	3 2	21 14	0 46	14 29	2 2	20 57	0 8	20 31	1 34	10 52	10 41	22 10	22 15	19 50	15 47	7 4	
S 24	1 16	12 18	4 29	3 51	1 54	3 44	1 6	23 55	3 0	21 14	0 46	14 31	2 2	20 57	0 8	20 31	1 34	10 53	10 41	22 12	22 16	19 49	15 48	7 3	
M25	1 40	16 13	3 50	3 1	1 50	4 15	1 4	23 51	2 59	21 14	0 46	14 33	2 2	20 57	0 8	20 31	1 34	10 53	10 41	22 13	22 16	19 48	15 48	7 2	
T 26	2 4	19 15	3 1	2 10	1 44	4 45	1 3	23 47	2 57	21 14	0 46	14 35	2 2	20 57	0 8	20 31	1 34	10 53	10 41	22 13	22 17	19 47	15 49	7 2	
W27	2 27	21 17	2 5	1 18	1 38	5 15	1 1	23 42	2 55	21 14	0 46	14 37	2 1	20 57	0 8	20 31	1 34	10 54	10 40	22 13	22 17	19 46	15 49	7 1	
T 28	2 50	22 17	1 4	0 25	1 32	5 46	0 59	23 38	2 53	21 14	0 46	14 39	2 1	20 56	0 8	20 31	1 34	10 54	10 40	22 14	22 17	19 45	15 50	7 0	
F 29	3 14	22 14	0 1	0n29	1 25	6 16	0 58	23 33	2 51	21 14	0 46	14 41	2 1	20 56	0 8	20 31	1 34	10 54	10 40	22 14	22 18	19 44	15 50	7 0	
S 30	3 37	21 11	1s 2	1 23	1 18	6 45	0 56	23 28	2 49	21 13	0 46	14 43	2 1	20 56	0 8	20 31	1 34	10 55	10 40	22 14	22 18	19 43	15 51	6 59	
S 31	4n 0	19s13	2s 1	2n19	1s10	7n15	0s54	23n23	2n48	21n13	0n46	14n45	2s 1	20s56	0n 8	20s31	1n34	10n55	10s40	22n14	22n19	19s42	15n51	6s58	



ASTRODIENST EPHEMERIS for the year 1647  
geocentric

MAY 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	14 34 55	10°8'20"49	25°58'58	0°11'49	28°50'50	8°14'48	0°13'36	19°52'52	3°R34	9°R59	7°II 0	15°R 7	16°58'4	13°11'11	14°59'59	W 1
T 2	14 38 52	11°18'53	8°57'30	1°31'0	0°II 4	9°14'14	0°42'20	20°0'0	3°R31	9°R58	7°2'2	14°58'58	16°1'1	13°18'18	15°3'3	T 2
F 3	14 42 49	12°16'55	21°19'21	2°9'9	1°17'17	9°41'41	0°48'20	20°7'7	3°29'29	9°56'56	7°3'3	14°47'47	15°58'58	13°24'24	15°8'8	F 3
S 4	14 46 45	13°14'57	4°8'27	2°41'41	2°31'31	10°7'7	0°55'20	20°15'15	3°27'27	9°55'55	7°4'4	14°37'37	15°54'54	13°31'31	15°12'12	S 4
S 5	14 50 42	14°12'56	17°52'52	3°8'8	3°44'44	10°34'34	1°2'2	20°23'23	3°25'25	9°54'54	7°5'5	14°27'27	15°51'51	13°38'38	15°16'16	S 5
M 6	14 54 38	15°10'54	1°11'31	3°30'30	4°57'57	11°1'1	1°9'9	20°31'31	3°22'22	9°52'52	7°7'7	14°19'19	15°48'48	13°44'44	15°21'21	M 6
T 7	14 58 35	16°8'51	15°21'21	3°46'46	6°11'11	11°28'28	1°16'16	20°38'38	3°20'20	9°51'51	7°8'8	14°13'13	15°45'45	13°51'51	15°25'25	T 7
W 8	15 2 31	17°6'46	29°20'20	3°58'58	7°24'24	11°55'55	1°23'23	20°46'46	3°18'18	9°49'49	7°9'9	14°10'10	15°42'42	13°58'58	15°30'30	W 8
T 9	15 6 28	18°4'39	13°52'52	4°5'5	8°37'37	12°22'22	1°31'31	20°54'54	3°15'15	9°48'48	7°11'11	14°D 9	15°39'39	14°4'4	15°34'34	T 9
F 10	15 10 24	19°2'30	27°33'33	4°R 6	9°51'51	12°50'50	1°38'38	21°2'2	3°13'13	9°46'46	7°12'12	14°9'9	15°35'35	14°11'11	15°39'39	F 10
S 11	15 14 21	20°0'20	11°12'42	4°3'3	11°4'4	13°18'18	1°46'46	21°9'9	3°10'10	9°45'45	7°13'13	14°10'10	15°32'32	14°18'18	15°44'44	S 11
S 12	15 18 18	20°58'08	25°51'51	3°55'55	12°17'17	13°46'46	1°53'53	21°17'17	3°8'8	9°43'43	7°14'14	14°R10	15°29'29	14°24'24	15°48'48	S 12
M13	15 22 14	21°55'54	9°11'59	3°43'43	13°30'30	14°14'14	2°1'1	21°25'25	3°6'6	9°42'42	7°16'16	14°9'9	15°26'26	14°31'31	15°53'53	M13
T 14	15 26 11	22°53'38	24°3'3	3°27'27	14°43'43	14°43'43	2°9'9	21°33'33	3°3'3	9°40'40	7°17'17	14°5'5	15°23'23	14°38'38	15°58'58	T 14
W15	15 30 7	23°51'21	8°13'3	3°6'6	15°56'56	15°11'11	2°17'17	21°41'41	3°1'1	9°39'39	7°18'18	14°0'0	15°20'20	14°44'44	16°3'3	W15
T 16	15 34 4	24°49'02	21°54'54	2°43'43	17°9'9	15°40'40	2°26'26	21°48'48	2°58'58	9°37'37	7°20'20	13°53'53	15°16'16	14°51'51	16°8'8	T 16
F 17	15 38 0	25°46'41	5°11'34	2°16'16	18°22'22	16°9'9	2°34'34	21°56'56	2°56'56	9°36'36	7°21'21	13°45'45	15°13'13	14°58'58	16°14'14	F 17
S 18	15 41 57	26°44'20	19°0'0	1°47'47	19°35'35	16°38'38	2°42'42	22°4'4	2°53'53	9°34'34	7°23'23	13°37'37	15°10'10	15°4'4	16°19'19	S 18
S 19	15 45 53	27°41'57	2°10'10	1°15'15	20°48'48	17°8'8	2°51'51	22°12'12	2°51'51	9°33'33	7°24'24	13°30'30	15°7'7	15°11'11	16°24'24	S 19
M20	15 49 40	28°39'32	15°3'3	0°42'42	22°1'1	17°37'37	3°0'0	22°19'19	2°48'48	9°31'31	7°25'25	13°25'25	15°4'4	15°18'18	16°29'29	M20
T 21	15 53 47	29°37'07	27°38'38	0°9'9	23°14'14	18°7'7	3°8'8	22°27'27	2°46'46	9°29'29	7°27'27	13°22'22	15°0'0	15°24'24	16°35'35	T 21
W22	15 57 43	0°11'34'41	9°35'57	29°35'35	24°27'27	18°36'36	3°17'17	22°35'35	2°44'44	9°28'28	7°28'28	13°D21	14°57'57	15°31'31	16°40'40	W22
T 23	16 1 40	1°32'13	22°3'3	29°1'1	25°40'40	19°6'6	3°26'26	22°43'43	2°41'41	9°26'26	7°29'29	13°21'21	14°54'54	15°38'38	16°46'46	T 23
F 24	16 5 36	2°29'45	4°13'3	28°28'28	26°52'52	19°36'36	3°35'35	22°50'50	2°39'39	9°25'25	7°31'31	13°22'22	14°51'51	15°44'44	16°51'51	F 24
S 25	16 9 33	3°27'16	15°51'51	27°56'56	28°5'5	20°7'7	3°45'45	22°58'58	2°36'36	9°23'23	7°32'32	13°24'24	14°48'48	15°51'51	16°57'57	S 25
S 26	16 13 29	4°24'46	27°41'41	27°27'27	29°18'18	20°37'37	3°54'54	23°6'6	2°34'34	9°21'21	7°33'33	13°25'25	14°45'45	15°58'58	17°2'2	S 26
M27	16 17 26	5°22'15	9°13'35	27°0'0	0°53'31	21°7'7	4°3'3	23°13'13	2°31'31	9°20'20	7°35'35	13°R25	14°41'41	16°4'4	17°8'8	M27
T 28	16 21 22	6°19'43	21°39'39	26°35'35	1°43'43	21°38'38	4°13'13	23°21'21	2°29'29	9°18'18	7°36'36	13°24'24	14°38'38	16°11'11	17°14'14	T 28
W29	16 25 19	7°17'10	3°17'57	26°14'14	2°56'56	22°9'9	4°22'22	23°29'29	2°26'26	9°17'17	7°38'38	13°21'21	14°35'35	16°18'18	17°20'20	W29
T 30	16 29 16	8°14'37	16°32'32	25°57'57	4°9'9	22°40'40	4°32'32	23°36'36	2°24'24	9°15'15	7°39'39	13°17'17	14°32'32	16°24'24	17°25'25	T 30
F 31	16 33 12	9°11'20'03	29°17'29	25°43'43	5°52'52	23°11'11	4°12'42	23°44'44	2°17'21	9°13'13	7°40'40	13°12'12	14°29'29	16°11'31	17°31'31	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
W 1	14n57	6s 0	4s47	22n55	2n37	20n14	0n19	20n 1	1n59	20n47	0n44	15n52	1s57	20s46	0n 8	20s25	1n35	11n 6	10s34	22n38	22n31	19s 9	16n 1	6s40					
T 2	15 15	1 15	5 2	23 0	2 33	20 33	0 21	19 52	1 58	20 46	0 44	15 54	1 57	20 46	0 8	20 25	1 35	11 6	10 34	22 39	22 31	19 7	16 1	6 39					
F 3	15 33	3n40	5 2	23 4	2 29	20 51	0 24	19 44	1 57	20 44	0 44	15 56	1 57	20 45	0 8	20 25	1 35	11 7	10 33	22 40	22 32	19 6	16 1	6 39					
S 4	15 51	8 32	4 46	23 4	2 23	21 8	0 26	19 36	1 55	20 43	0 44	15 58	1 57	20 45	0 8	20 24	1 35	11 7	10 33	22 41	22 32	19 5	16 1	6 38					
S 5	16 8	13 7	4 14	23 3	2 16	21 25	0 29	19 27	1 54	20 41	0 44	16 0	1 57	20 44	0 8	20 24	1 35	11 7	10 33	22 42	22 32	19 4	16 1	6 38					
M 6	16 25	17 7	3 27	23 0	2 9	21 41	0 31	19 19	1 53	20 39	0 44	16 2	1 57	20 44	0 8	20 24	1 35	11 8	10 33	22 43	22 33	19 3	16 1	6 37					
T 7	16 42	20 14	2 28	22 54	2 0	21 56	0 34	19 10	1 52	20 38	0 44	16 4	1 56	20 44	0 8	20 24	1 35	11 8	10 33	22 43	22 33	19 2	16 1	6 37					
W 8	16 59	22 10	1 19	22 47	1 50	22 11	0 36	19 1	1 50	20 36	0 44	16 6	1 56	20 43	0 8	20 23	1 35	11 8	10 33	22 44	22 34	19 0	16 1	6 36					
T 9	17 15	22 44	0 4	22 37	1 39	22 25	0 39	18 52	1 49	20 35	0 44	16 9	1 56	20 43	0 8	20 23	1 35	11 8	10 33	22 44	22 34	18 59	16 1	6 36					
F 10	17 31	21 51	1n11	22 25	1 26	22 39	0 41	18 43	1 48	20 33	0 44	16 11	1 56	20 42	0 8	20 23	1 36	11 9	10 33	22 44	22 34	18 58	16 1	6 35					
S 11	17 47	19 35	2 22	22 12	1 13	22 52	0 44	18 34	1 47	20 31	0 44	16 13	1 56	20 42	0 8	20 23	1 36	11 9	10 33	22 44	22 35	18 57	16 1	6 35					
S 12	18 2	16 8	3 25	21 57	0 59	23 4	0 46	18 24	1 45	20 29	0 44	16 15	1 56	20 41	0 8	20 23	1 36	11 9	10 32	22 44	22 35	18 55	16 1	6 34					
M13	18 17	11 46	4 14	21 40	0 44	23 16	0 49	18 15	1 44	20 28	0 44	16 17	1 56	20 41	0 8	20 22	1 36	11 10	10 32	22 44	22 35	18 54	16 1	6 34					
T 14	18 32	6 47	4 49	21 21	0 29	23 27	0 51	18 5	1 43	20 26	0 44	16 19	1 56	20 40	0 8	20 22	1 36	11 10	10 32	22 44	22 36	18 53	16 1	6 33					
W15	18 46	1 29	5 5	21 1	0 13	23 38	0 53	17 56	1 42	20 24	0 44	16 21	1 56	20 40	0 8	20 22	1 36	11 10	10 32	22 45	22 36	18 52	16 1	6 33					
T 16	19 0	3s51	5 4	20 40	0s 4	23 47	0 56	17 46	1 41	20 22	0 44	16 23	1 56	20 40	0 8	20 22	1 36	11 11	10 32	22 46	22 36	18 51	16 1	6 32					
F 17	19 14	8 55	4 45	20 18	0 21	23 56	0 58	17 36	1 39	20 20	0 44	16 25	1 56	20 39	0 8	20 21	1 36	11 11	10 32	22 46	22 37	18 49	16 1	6 32					
S 18	19 28	13 29	4 11	19 55	0 39	24 5	1 0	17 26	1 38	20 18	0 44	16 27	1 56	20 39	0 8	20 21	1 36	11 11	10 32	22 47	22 37	18 48	16 1	6 31					
S 19	19 41	17 18	3 24	19 32	0 56	24 12	1 3	17 16	1 37	20 16	0 44	16 29	1 56	20 38	0 8	20 21	1 36	11 11	10 32	22 48	22 38	18 47	16 0	6 31					
M20	19 54	20 12	2 27	19 8	1 14	24 19	1 5	17 6	1 36	20 14	0 44	16 31	1 56	20 38	0 8	20 21	1 36	11 12	10 32	22 48	22 38	18 46	16 0	6 30					
T 21	20 6	22 4	1 24	18 44	1 31	24 26	1 7	16 56	1 35	20 12	0 44	16 33	1 56	20 37	0 8	20 20	1 36	11 12	10 32	22 49	22 38	18 44	16 0	6 30					
W22	20 19	22 48	0 18	18 20	1 48	24 31	1 9	16 46	1 34	20 10	0 44	16 35	1 56	20 37	0 8	20 20	1 36	11 12	10 32	22 49	22 39	18 43	16 0	6 30					
T 23	20 30	22 27	0s47	17 57	2 4	24 36	1 11	16 35	1 32	20 8	0 44	16 37	1 56	20 36	0 8	20 20	1 36	11 13	10 32	22 49	22 39	18 42	16 0	6 29					
F 24	20 42	21 4	1 50	17 35	2 20	24 40	1 13	16 25	1 31	20 6	0 44	16 39	1 56	20 36	0 8	20 20	1 36	11 13	10 31	22 49	22 39	18 40	15 59	6 29					
S 25	20 53	18 47	2 47	17 13	2 35	24 44	1 15	16 14	1 30	20 3	0 44	16 41	1 56	20 35	0 8	20 19	1 36	11 13	10 31	22 49	22 40	18 39	15 59	6 28					
S 26	21 4	15 42	3 38	16 53	2 49	24 46	1 17	16 3	1 29	20 1	0 44	16 43	1 56	20 35	0 8	20 19	1 36	11 13	10 31	22 48	22 40	18 38	15 59	6 28					
M27	21 14	11 59	4 19	16 34	3 2	24 48	1 19	15 52	1 28	19 59	0 44	16 45	1 56	20 34	0 8	20 19	1 36	11 14	10 31	22 48	22 40	18 37	15 58	6 28					
T 28	21 24	7 45	4 50	16 17	3 14	24 49	1 21	15 41	1 27	19 57	0 44	16 47	1 56	20 34	0 8	20 19	1 36	11 14	10 31	22 49	22 41	18 35	15 58	6 27					
W29	21 34	3 8	5 7	16 2	3 24	24 50	1 23	15 30	1 26	19 54	0 44	16 49	1 56	20 33	0 8	20 18	1 36	11 14	10 31	22 49	22 41	18 34	15 58	6 27					
T 30	21 43	1n43	5 11	15 49	3 34	24 50	1 25	15 19	1 25	19 52	0 43	16 50	1 56	20 33	0 8	20 18	1 36	11 14	10 31	22 49	22 41	18 33	15 57	6 27					
F 31	21n52	6n38	4s59	15n38	3s42	24n49	1n26	15n 8	1n24	19n50	0n43	16n52	1s56	20s32	0n 8	20s18	1n36	11n15	10s31	22n50	22n42	18s31	15n57	6s26					



# ASTRODIENST EPHEMERIS for the year 1647

## geocentric

JUNE 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	16 37 9	10II 9'29	12♂47	25°R34	6♂34	23♂42	4♂52	23♂51	2°R19	9°R12	7II42	13°R 7	14♂25	16♂38	17♂37	S 1
S 2	16 41 5	11° 6'54	26°26	25♂29	7°46	24°14	5° 2	23°59	2♂16	9♂10	7°43	13♂ 2	14°22	16°44	17°43	S 2
M 3	16 45 2	12° 4'18	10II25	25°D28	8°59	24°45	5°12	24° 7	2°14	9° 8	7°44	12°58	14°19	16°51	17°49	M 3
T 4	16 48 58	13° 1'41	24°40	25°31	10°11	25°17	5°22	24°14	2°11	9° 7	7°46	12°55	14°16	16°58	17°55	T 4
W 5	16 52 55	13°59'03	9♂ 4	25°40	11°24	25°48	5°32	24°22	2° 9	9° 5	7°47	12°D54	14°13	17° 4	18° 1	W 5
T 6	16 56 52	14°56'25	23°34	25°52	12°36	26°20	5°43	24°29	2° 7	9° 4	7°49	12°54	14°10	17°11	18° 8	T 6
F 7	17 0 48	15°53'45	8♂ 4	26° 9	13°48	26°52	5°53	24°36	2° 4	9° 2	7°50	12°56	14° 6	17°18	18°14	F 7
S 8	17 4 45	16°51'05	22°29	26°31	15° 1	27°24	6° 4	24°44	2° 2	9° 0	7°51	12°57	14° 3	17°24	18°20	S 8
S 9	17 8 41	17°48'23	6♂47	26°57	16°13	27°57	6°14	24°51	1°59	8°59	7°53	12°58	14° 0	17°31	18°26	S 9
M10	17 12 38	18°45'41	20°54	27°27	17°25	28°29	6°25	24°59	1°57	8°57	7°54	12°R58	13°57	17°38	18°33	M10
T 11	17 16 34	19°42'58	4♂50	28° 2	18°37	29° 2	6°36	25° 6	1°55	8°56	7°55	12°58	13°54	17°44	18°39	T 11
W12	17 20 31	20°40'13	18°33	28°41	19°49	29°34	6°47	25°13	1°52	8°54	7°57	12°56	13°51	17°51	18°45	W12
T 13	17 24 27	21°37'28	2♂ 2	29°24	21° 2	0♂ 7	6°58	25°21	1°50	8°52	7°58	12°53	13°47	17°58	18°52	T 13
F 14	17 28 24	22°34'43	15°18	0II12	22°14	0°40	7° 9	25°28	1°48	8°51	7°59	12°51	13°44	18° 4	18°58	F 14
S 15	17 32 21	23°31'56	28°20	1° 3	23°26	1°13	7°20	25°35	1°46	8°49	8° 1	12°48	13°41	18°11	19° 5	S 15
S 16	17 36 17	24°29'09	11♂ 7	1°58	24°38	1°46	7°31	25°42	1°43	8°48	8° 2	12°45	13°38	18°18	19°11	S 16
M17	17 40 14	25°26'22	23°42	2°58	25°49	2°19	7°42	25°49	1°41	8°46	8° 3	12°44	13°35	18°24	19°18	M17
T 18	17 44 10	26°23'34	6♂ 3	4° 1	27° 1	2°52	7°53	25°56	1°39	8°45	8° 5	12°43	13°31	18°31	19°24	T 18
W19	17 48 7	27°20'46	18°13	5° 8	28°13	3°26	8° 5	26° 3	1°37	8°43	8° 6	12°D43	13°28	18°38	19°31	W19
T 20	17 52 3	28°17'58	0♂14	6°18	29°25	3°59	8°16	26°10	1°35	8°42	8° 7	12°43	13°25	18°44	19°38	T 20
F 21	17 56 0	29°15'10	12° 7	7°32	0♂37	4°33	8°27	26°17	1°33	8°40	8° 9	12°44	13°22	18°51	19°44	F 21
S 22	17 59 56	0♂12'21	23°57	8°50	1°48	5° 6	8°39	26°24	1°30	8°39	8°10	12°46	13°19	18°58	19°51	S 22
S 23	18 3 53	1° 9'33	5♂48	10°12	3° 0	5°40	8°51	26°31	1°28	8°37	8°11	12°47	13°16	19° 4	19°58	S 23
M24	18 7 50	2° 6'44	17°42	11°37	4°12	6°14	9° 2	26°38	1°26	8°36	8°13	12°48	13°12	19°11	20° 5	M24
T 25	18 11 46	3° 3'56	29°45	13° 6	5°23	6°48	9°14	26°45	1°24	8°34	8°14	12°R48	13° 9	19°18	20°11	T 25
W26	18 15 43	4° 1'07	12♂ 2	14°38	6°35	7°22	9°26	26°52	1°22	8°33	8°15	12°48	13° 6	19°24	20°18	W26
T 27	18 19 39	4°58'19	24°37	16°13	7°46	7°56	9°38	26°58	1°20	8°31	8°16	12°47	13° 3	19°31	20°25	T 27
F 28	18 23 36	5°55'31	7♂32	17°52	8°58	8°30	9°49	27° 5	1°19	8°30	8°18	12°47	13° 0	19°38	20°32	F 28
S 29	18 27 32	6°52'43	20°52	19°34	10° 9	9° 5	10° 1	27°12	1°17	8°29	8°19	12°46	12°57	19°44	20°39	S 29
S 30	18 31 29	7♂49'56	4II37	21II19	11♂20	9♂39	10♂13	27♂18	1♂15	8♂27	8II20	12♂45	12♂53	19♂51	20♂45	S 30

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	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	
S 1	22n 1	11n24 4s31	15n29 3s49	24n47	1n28 14n57	1n23 19n47	0n43 16n54	1s56 20s32	0n 8 20s18	1n36 11n15	10s31 22n50	22n42 18s30	15n57 6s26			
S 2	22 9 15 43	3 47 15 22	3 55 24 45	1 30 14 45	1 22 19 45	0 43 16 56	1 56 20 31	0 8 20 18	1 36 11 15	10 31 22 51	22 42 18 29	15 56 6 26				
M 3	22 17 19 16	2 48 15 18	3 59 24 42	1 31 14 34	1 20 19 42	0 43 16 58	1 56 20 31	0 8 20 17	1 36 11 15	10 31 22 51	22 43 18 27	15 56 6 25				
T 4	22 24 21 44	1 38 15 15	4 2 24 38	1 33 14 22	1 19 19 40	0 43 17 0	1 56 20 31	0 8 20 17	1 36 11 16	10 31 22 51	22 43 18 26	15 55 6 25				
W 5	22 31 22 49	0 21 15 15	4 5 24 33	1 34 14 10	1 18 19 37	0 43 17 1	1 56 20 30	0 8 20 17	1 36 11 16	10 31 22 51	22 43 18 25	15 55 6 25				
T 6	22 38 22 23	0n58 15 17	4 6 24 28	1 35 13 58	1 17 19 35	0 43 17 3	1 56 20 30	0 8 20 17	1 36 11 16	10 31 22 51	22 44 18 23	15 54 6 24				
F 7	22 44 20 26	2 14 15 21	4 6 24 22	1 37 13 46	1 16 19 32	0 43 17 5	1 56 20 29	0 8 20 16	1 36 11 16	10 31 22 51	22 44 18 22	15 54 6 24				
S 8	22 50 17 12	3 21 15 27	4 5 24 16	1 38 13 34	1 15 19 30	0 43 17 7	1 56 20 29	0 8 20 16	1 36 11 16	10 31 22 51	22 44 18 21	15 53 6 24				
S 9	22 55 12 58	4 14 15 35	4 2 24 8	1 39 13 22	1 14 19 27	0 43 17 9	1 56 20 28	0 8 20 16	1 36 11 17	10 31 22 51	22 45 18 19	15 53 6 23				
M10	23 0 8 5	4 52 15 45	3 59 24 0	1 40 13 10	1 13 19 24	0 43 17 10	1 56 20 28	0 8 20 16	1 35 11 17	10 31 22 51	22 45 18 18	15 52 6 23				
T 11	23 5 2 50	5 11 15 56	3 55 23 52	1 41 12 58	1 12 19 21	0 43 17 12	1 56 20 27	0 8 20 15	1 35 11 17	10 31 22 51	22 45 18 17	15 52 6 23				
W12	23 9 2s27	5 13 16 9	3 51 23 42	1 42 12 45	1 11 19 19	0 43 17 14	1 56 20 27	0 8 20 15	1 35 11 17	10 31 22 51	22 46 18 15	15 51 6 23				
T 13	23 13 7 33	4 57 16 24	3 45 23 32	1 43 12 33	1 10 19 16	0 43 17 15	1 56 20 26	0 8 20 15	1 35 11 17	10 31 22 52	22 46 18 14	15 50 6 22				
F 14	23 17 12 13	4 26 16 40	3 39 23 21	1 44 12 20	1 9 19 13	0 43 17 17	1 56 20 26	0 8 20 15	1 35 11 18	10 31 22 52	22 46 18 12	15 50 6 22				
S 15	23 20 16 14	3 41 16 57	3 32 23 10	1 45 12 8	1 8 19 10	0 43 17 19	1 56 20 25	0 8 20 15	1 35 11 18	10 31 22 52	22 47 18 11	15 49 6 22				
S 16	23 22 19 25	2 46 17 16	3 24 22 58	1 45 11 55	1 7 19 8	0 43 17 20	1 56 20 25	0 8 20 14	1 35 11 18	10 31 22 52	22 47 18 10	15 48 6 22				
M17	23 24 21 37	1 43 17 35	3 16 22 45	1 46 11 42	1 6 19 5	0 43 17 22	1 56 20 25	0 8 20 14	1 35 11 18	10 31 22 52	22 47 18 8	15 48 6 22				
T 18	23 26 22 44	0 37 17 56	3 7 22 32	1 47 11 29	1 6 19 2	0 43 17 24	1 56 20 24	0 8 20 14	1 35 11 18	10 31 22 53	22 48 18 7	15 47 6 21				
W19	23 27 22 45	0s30 18 17	2 57 22 18	1 47 11 16	1 5 18 59	0 43 17 25	1 56 20 24	0 8 20 14	1 35 11 19	10 31 22 53	22 48 18 5	15 46 6 21				
T 20	23 28 21 42	1 35 18 39	2 47 22 4	1 47 11 3	1 4 18 56	0 43 17 27	1 56 20 23	0 8 20 13	1 35 11 19	10 31 22 52	22 48 18 4	15 46 6 21				
F 21	23 29 19 41	2 36 19 2	2 37 21 49	1 48 10 50	1 3 18 53	0 43 17 28	1 56 20 23	0 8 20 13	1 35 11 19	10 31 22 52	22 49 18 3	15 45 6 21				
S 22	23 29 16 51	3 29 19 25	2 26 21 33	1 48 10 37	1 2 18 50	0 43 17 30	1 56 20 23	0 8 20 13	1 35 11 19	10 31 22 52	22 49 18 1	15 44 6 21				
S 23	23 29 13 20	4 14 19 48	2 15 21 17	1 48 10 24	1 1 18 47	0 43 17 31	1 57 20 22	0 8 20 13	1 35 11 19	10 31 22 52	22 49 18 0	15 43 6 20				
M24	23 28 9 16	4 47 20 11	2 3 21 0	1 48 10 10	1 0 18 44	0 43 17 33	1 57 20 22	0 8 20 13	1 35 11 19	10 31 22 52	22 50 17 58	15 43 6 20				
T 25	23 27 4 49	5 9 20 34	1 52 20 42	1 48 9 57	0 59 18 41	0 43 17 34	1 57 20 21	0 8 20 12	1 35 11 19	10 31 22 52	22 50 17 57	15 42 6 20				
W26	23 25 0 6	5 17 20 57	1 40 20 24	1 48 9 43	0 58 18 37	0 43 17 36	1 57 20 21	0 8 20 12	1 35 11 20	10 31 22 52	22 50 17 55	15 41 6 20				
T 27	23 23 4n44	5 10 21 19	1 27 20 6	1 48 9 30	0 57 18 34	0 43 17 37	1 57 20 21	0 8 20 12	1 35 11 20	10 32 22 52	22 51 17 54	15 40 6 20				
F 28	23 21 9 30	4 48 21 41	1 15 19 47	1 47 9 16	0 56 18 31	0 43 17 39	1 57 20 20	0 8 20 12	1 35 11 20	10 32 22 52	22 51 17 53	15 39 6 20				
S 29	23 18 13 59	4 10 22 2	1 3 19 27	1 47 9 2	0 55 18 28	0 43 17 40	1 57 20 20	0 8 20 12	1 35 11 20	10 32 22 52	22 51 17 51	15 38 6 19				
S 30	23n15	17n53 3s16	22n22 0s50	19n 7 1n47	8n48 0n54	18n25 0n43	17n42 1s57	20s19 0n 8	20s12 1n35	11n20 10s32	22n52 22n52	17s50 15n38	6s19			

Julian Day Number = 2322765.5, Delta T = 45.12 sec  
 Ecliptic obliquity = 23°29'04", Nutation = - 0°00'18", out-of-bounds declination in red  
 Ayanamsha: Fagan/Bradley = 19°49'08", Lahiri = 18°56'09"Greg. Calendar

## ASTRODIENST EPHEMERIS for the year 1647

geocentric

JULY 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
M 1	18 35 25	8 <sup>h</sup> 47'09"	18 <sup>h</sup> 46'	23 <sup>h</sup> 11' 8"	12 <sup>h</sup> 02' 32"	10 <sup>h</sup> 14'	10 <sup>h</sup> 02' 25"	27 <sup>h</sup> 32' 25"	1 <sup>h</sup> 13'	8 <sup>h</sup> 26'	8 <sup>h</sup> 21'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 05' 50"	19 <sup>h</sup> 58' 58"	20 <sup>h</sup> 52' 52"	M 1
T 2	18 39 22	9 <sup>h</sup> 44'22"	3 <sup>h</sup> 01' 16"	24 <sup>h</sup> 59'	13 <sup>h</sup> 43'	10 <sup>h</sup> 48'	10 <sup>h</sup> 38'	27 <sup>h</sup> 31'	1 <sup>h</sup> 11'	8 <sup>h</sup> 25'	8 <sup>h</sup> 23'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 04' 47"	20 <sup>h</sup> 4'	20 <sup>h</sup> 59'	T 2
W 3	18 43 19	10 <sup>h</sup> 41'35"	18 <sup>h</sup> 1'	26 <sup>h</sup> 53'	14 <sup>h</sup> 54'	11 <sup>h</sup> 23'	10 <sup>h</sup> 50'	27 <sup>h</sup> 38'	1 <sup>h</sup> 10'	8 <sup>h</sup> 23'	8 <sup>h</sup> 24'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 04' 44"	20 <sup>h</sup> 11'	21 <sup>h</sup> 6'	W 3
T 4	18 47 15	11 <sup>h</sup> 38'49"	2 <sup>h</sup> 02' 55"	28 <sup>h</sup> 50'	16 <sup>h</sup> 5'	11 <sup>h</sup> 58'	11 <sup>h</sup> 2'	27 <sup>h</sup> 44'	1 <sup>h</sup> 8'	8 <sup>h</sup> 22'	8 <sup>h</sup> 25'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 04' 41"	20 <sup>h</sup> 18'	21 <sup>h</sup> 13'	T 4
F 5	18 51 12	12 <sup>h</sup> 36'02"	17 <sup>h</sup> 49'	0 <sup>h</sup> 54' 49"	17 <sup>h</sup> 16'	12 <sup>h</sup> 33'	11 <sup>h</sup> 14'	27 <sup>h</sup> 50'	1 <sup>h</sup> 6'	8 <sup>h</sup> 21'	8 <sup>h</sup> 26'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 03' 37"	20 <sup>h</sup> 24'	21 <sup>h</sup> 20'	F 5
S 6	18 55 8	13 <sup>h</sup> 33'15"	2 <sup>h</sup> 17' 36"	2 <sup>h</sup> 51'	18 <sup>h</sup> 27'	13 <sup>h</sup> 8'	11 <sup>h</sup> 26'	27 <sup>h</sup> 57'	1 <sup>h</sup> 5'	8 <sup>h</sup> 19'	8 <sup>h</sup> 27'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 03' 34"	20 <sup>h</sup> 31'	21 <sup>h</sup> 27'	S 6
S 7	18 59 5	14 <sup>h</sup> 30'28"	17 <sup>h</sup> 10'	4 <sup>h</sup> 54'	19 <sup>h</sup> 38'	13 <sup>h</sup> 43'	11 <sup>h</sup> 39'	28 <sup>h</sup> 3'	1 <sup>h</sup> 3'	8 <sup>h</sup> 18'	8 <sup>h</sup> 28'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 03' 31"	20 <sup>h</sup> 38'	21 <sup>h</sup> 34'	S 7
M 8	19 3 1	15 <sup>h</sup> 27'41"	1 <sup>h</sup> 12' 27"	6 <sup>h</sup> 59'	20 <sup>h</sup> 49'	14 <sup>h</sup> 18'	11 <sup>h</sup> 51'	28 <sup>h</sup> 9'	1 <sup>h</sup> 1'	8 <sup>h</sup> 17'	8 <sup>h</sup> 30'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 02' 28"	20 <sup>h</sup> 44'	21 <sup>h</sup> 41'	M 8
T 9	19 6 58	16 <sup>h</sup> 24'54"	15 <sup>h</sup> 23'	9 <sup>h</sup> 5'	22 <sup>h</sup> 0'	14 <sup>h</sup> 54'	12 <sup>h</sup> 4'	28 <sup>h</sup> 15'	1 <sup>h</sup> 0'	8 <sup>h</sup> 16'	8 <sup>h</sup> 31'	12 <sup>h</sup> 04' 44"	12 <sup>h</sup> 02' 25"	20 <sup>h</sup> 51'	21 <sup>h</sup> 48'	T 9
W10	19 10 54	17 <sup>h</sup> 22'08"	29 <sup>h</sup> 0'	11 <sup>h</sup> 12'	23 <sup>h</sup> 11'	15 <sup>h</sup> 29'	12 <sup>h</sup> 16'	28 <sup>h</sup> 21'	0 <sup>h</sup> 58'	8 <sup>h</sup> 15'	8 <sup>h</sup> 32'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 02' 22"	20 <sup>h</sup> 58'	21 <sup>h</sup> 55'	W10
T 11	19 14 51	18 <sup>h</sup> 19'21"	12 <sup>h</sup> 11' 17"	13 <sup>h</sup> 20'	24 <sup>h</sup> 21'	16 <sup>h</sup> 5'	12 <sup>h</sup> 28'	28 <sup>h</sup> 27'	0 <sup>h</sup> 57'	8 <sup>h</sup> 13'	8 <sup>h</sup> 33'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 02' 18"	21 <sup>h</sup> 4'	22 <sup>h</sup> 2'	T 11
F 12	19 18 48	19 <sup>h</sup> 16'34"	25 <sup>h</sup> 15'	15 <sup>h</sup> 29'	25 <sup>h</sup> 32'	16 <sup>h</sup> 40'	12 <sup>h</sup> 41'	28 <sup>h</sup> 33'	0 <sup>h</sup> 56'	8 <sup>h</sup> 12'	8 <sup>h</sup> 34'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 02' 15"	21 <sup>h</sup> 11'	22 <sup>h</sup> 9'	F 12
S 13	19 22 44	20 <sup>h</sup> 13'48"	7 <sup>h</sup> 17' 58"	17 <sup>h</sup> 37'	26 <sup>h</sup> 43'	17 <sup>h</sup> 16'	12 <sup>h</sup> 54'	28 <sup>h</sup> 39'	0 <sup>h</sup> 54'	8 <sup>h</sup> 11'	8 <sup>h</sup> 35'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 02' 12"	21 <sup>h</sup> 18'	22 <sup>h</sup> 16'	S 13
S 14	19 26 41	21 <sup>h</sup> 11'02"	20 <sup>h</sup> 27'	19 <sup>h</sup> 46'	27 <sup>h</sup> 53'	17 <sup>h</sup> 52'	13 <sup>h</sup> 6'	28 <sup>h</sup> 44'	0 <sup>h</sup> 53'	8 <sup>h</sup> 10'	8 <sup>h</sup> 36'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 9'	21 <sup>h</sup> 25'	22 <sup>h</sup> 23'	S 14
M15	19 30 37	22 <sup>h</sup> 8'16"	2 <sup>h</sup> 23' 44"	21 <sup>h</sup> 54'	29 <sup>h</sup> 3'	18 <sup>h</sup> 27'	13 <sup>h</sup> 19'	28 <sup>h</sup> 50'	0 <sup>h</sup> 52'	8 <sup>h</sup> 9'	8 <sup>h</sup> 37'	12 <sup>h</sup> 04' 45"	12 <sup>h</sup> 6'	21 <sup>h</sup> 31'	22 <sup>h</sup> 30'	M15
T 16	19 34 34	23 <sup>h</sup> 5'31"	14 <sup>h</sup> 52'	24 <sup>h</sup> 1'	0 <sup>h</sup> 17' 14"	19 <sup>h</sup> 3'	13 <sup>h</sup> 31'	28 <sup>h</sup> 56'	0 <sup>h</sup> 51'	8 <sup>h</sup> 8'	8 <sup>h</sup> 38'	12 <sup>h</sup> 04' 48"	12 <sup>h</sup> 3'	21 <sup>h</sup> 38'	22 <sup>h</sup> 37'	T 16
W17	19 38 30	24 <sup>h</sup> 2'46"	26 <sup>h</sup> 52'	26 <sup>h</sup> 8'	1 <sup>h</sup> 24'	19 <sup>h</sup> 39'	13 <sup>h</sup> 44'	29 <sup>h</sup> 1'	0 <sup>h</sup> 49'	8 <sup>h</sup> 7'	8 <sup>h</sup> 39'	12 <sup>h</sup> 04' 47"	11 <sup>h</sup> 59'	21 <sup>h</sup> 45'	22 <sup>h</sup> 44'	W17
T 18	19 42 27	25 <sup>h</sup> 0'02"	8 <sup>h</sup> 22' 46"	28 <sup>h</sup> 13'	2 <sup>h</sup> 34'	20 <sup>h</sup> 15'	13 <sup>h</sup> 57'	29 <sup>h</sup> 7'	0 <sup>h</sup> 48'	8 <sup>h</sup> 6'	8 <sup>h</sup> 40'	12 <sup>h</sup> 04' 46"	11 <sup>h</sup> 56'	21 <sup>h</sup> 51'	22 <sup>h</sup> 51'	T 18
F 19	19 46 23	25 <sup>h</sup> 57'18"	20 <sup>h</sup> 37'	0 <sup>h</sup> 01' 18"	3 <sup>h</sup> 44'	20 <sup>h</sup> 52'	14 <sup>h</sup> 10'	29 <sup>h</sup> 12'	0 <sup>h</sup> 47'	8 <sup>h</sup> 5'	8 <sup>h</sup> 41'	12 <sup>h</sup> 04' 45"	11 <sup>h</sup> 53'	21 <sup>h</sup> 58'	22 <sup>h</sup> 58'	F 19
S 20	19 50 20	26 <sup>h</sup> 54'36"	2 <sup>h</sup> 17' 27"	2 <sup>h</sup> 21'	4 <sup>h</sup> 55'	21 <sup>h</sup> 28'	14 <sup>h</sup> 22'	29 <sup>h</sup> 18'	0 <sup>h</sup> 46'	8 <sup>h</sup> 4'	8 <sup>h</sup> 42'	12 <sup>h</sup> 04' 43"	11 <sup>h</sup> 50'	22 <sup>h</sup> 5'	23 <sup>h</sup> 5'	S 20
S 21	19 54 17	27 <sup>h</sup> 51'54"	14 <sup>h</sup> 18'	4 <sup>h</sup> 23'	6 <sup>h</sup> 5'	22 <sup>h</sup> 4'	14 <sup>h</sup> 35'	29 <sup>h</sup> 23'	0 <sup>h</sup> 45'	8 <sup>h</sup> 3'	8 <sup>h</sup> 43'	12 <sup>h</sup> 04' 40"	11 <sup>h</sup> 47'	22 <sup>h</sup> 11'	23 <sup>h</sup> 12'	S 21
M22	19 58 13	28 <sup>h</sup> 49'12"	26 <sup>h</sup> 13'	6 <sup>h</sup> 23'	7 <sup>h</sup> 14'	22 <sup>h</sup> 40'	14 <sup>h</sup> 48'	29 <sup>h</sup> 28'	0 <sup>h</sup> 44'	8 <sup>h</sup> 2'	8 <sup>h</sup> 44'	12 <sup>h</sup> 03' 38"	11 <sup>h</sup> 43'	22 <sup>h</sup> 18'	23 <sup>h</sup> 19'	M22
T 23	20 2 10	29 <sup>h</sup> 46'32"	8 <sup>h</sup> 17' 17"	8 <sup>h</sup> 22'	8 <sup>h</sup> 24'	23 <sup>h</sup> 17'	15 <sup>h</sup> 1'	29 <sup>h</sup> 33'	0 <sup>h</sup> 43'	8 <sup>h</sup> 1'	8 <sup>h</sup> 45'	12 <sup>h</sup> 03' 37"	11 <sup>h</sup> 40'	22 <sup>h</sup> 25'	23 <sup>h</sup> 26'	T 23
W24	20 6 6	0 <sup>h</sup> 04'35'3"	20 <sup>h</sup> 33'	10 <sup>h</sup> 19'	9 <sup>h</sup> 34'	23 <sup>h</sup> 54'	15 <sup>h</sup> 14'	29 <sup>h</sup> 38'	0 <sup>h</sup> 43'	8 <sup>h</sup> 1'	8 <sup>h</sup> 46'	12 <sup>h</sup> 03' 35"	11 <sup>h</sup> 37'	22 <sup>h</sup> 31'	23 <sup>h</sup> 33'	W24
T 25	20 10 3	1 <sup>h</sup> 41'15"	3 <sup>h</sup> 8' 4"	12 <sup>h</sup> 15'	10 <sup>h</sup> 44'	24 <sup>h</sup> 30'	15 <sup>h</sup> 27'	29 <sup>h</sup> 43'	0 <sup>h</sup> 42'	8 <sup>h</sup> 0'	8 <sup>h</sup> 47'	12 <sup>h</sup> 03' 35"	11 <sup>h</sup> 34'	22 <sup>h</sup> 38'	23 <sup>h</sup> 40'	T 25
F 26	20 13 59	2 <sup>h</sup> 38'38"	15 <sup>h</sup> 55'	14 <sup>h</sup> 9'	11 <sup>h</sup> 53'	25 <sup>h</sup> 7'	15 <sup>h</sup> 40'	29 <sup>h</sup> 48'	0 <sup>h</sup> 41'	7 <sup>h</sup> 59'	8 <sup>h</sup> 48'	12 <sup>h</sup> 03' 36"	11 <sup>h</sup> 31'	22 <sup>h</sup> 45'	23 <sup>h</sup> 48'	F 26
S 27	20 17 56	3 <sup>h</sup> 36'02"	29 <sup>h</sup> 10'	16 <sup>h</sup> 2'	13 <sup>h</sup> 3'	25 <sup>h</sup> 44'	15 <sup>h</sup> 53'	29 <sup>h</sup> 53'	0 <sup>h</sup> 40'	7 <sup>h</sup> 58'	8 <sup>h</sup> 49'	12 <sup>h</sup> 03' 37"	11 <sup>h</sup> 28'	22 <sup>h</sup> 51'	23 <sup>h</sup> 55'	S 27
S 28	20 21 52	4 <sup>h</sup> 33'27"	12 <sup>h</sup> 11' 51"	17 <sup>h</sup> 52'	14 <sup>h</sup> 12'	26 <sup>h</sup> 21'	16 <sup>h</sup> 6'	29 <sup>h</sup> 58'	0 <sup>h</sup> 40'	7 <sup>h</sup> 58'	8 <sup>h</sup> 50'	12 <sup>h</sup> 03' 38"	11 <sup>h</sup> 24'	22 <sup>h</sup> 58'	24 <sup>h</sup> 2'	S 28
M29	20 25 49	5 <sup>h</sup> 30'54"	26 <sup>h</sup> 58'	19 <sup>h</sup> 42'	15 <sup>h</sup> 22'	26 <sup>h</sup> 58'	16 <sup>h</sup> 19'	0 <sup>h</sup> 11' 2"	0 <sup>h</sup> 39'	7 <sup>h</sup> 57'	8 <sup>h</sup> 50'	12 <sup>h</sup> 03' 39"	11 <sup>h</sup> 21'	23 <sup>h</sup> 5'	24 <sup>h</sup> 8'	M29
T 30	20 29 46	6 <sup>h</sup> 28'22"	11 <sup>h</sup> 03' 11"	21 <sup>h</sup> 29'	16 <sup>h</sup> 31'	27 <sup>h</sup> 35'	16 <sup>h</sup> 32'	0 <sup>h</sup> 7'	0 <sup>h</sup> 38'	7 <sup>h</sup> 56'	8 <sup>h</sup> 51'	12 <sup>h</sup> 03' 40"	11 <sup>h</sup> 18'	23 <sup>h</sup> 11'	24 <sup>h</sup> 15'	T 30
W31	20 33 42	7 <sup>h</sup> 02'55'1"	26 <sup>h</sup> 02' 24"	23 <sup>h</sup> 01' 15"	17 <sup>h</sup> 17' 40"	28 <sup>h</sup> 12'	16 <sup>h</sup> 04' 5"	0 <sup>h</sup> 11' 12"	0 <sup>h</sup> 17' 38"	7 <sup>h</sup> 56'	8 <sup>h</sup> 52'	12 <sup>h</sup> 03' 39"	11 <sup>h</sup> 05' 15"	23 <sup>h</sup> 18' 18"	24 <sup>h</sup> 02' 22"	W31

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
M 1	23n12	20n52	2 s 9	22n40	0s38	18n46	1n46	8n34	0n54	18n21	0n43	17n43	1s57	20s19	0n 8	20s11	1n35	11n20	10s32	22n52	22n52	17s48	15n37	6s19							
T 2	23 8	22 34	0 52	22 57	0 26	18 25	1 45	8 20	0 53	18 18	0 43	17 44	1 57	20 19	0 8	20 11	1 35	11 20	10 32	22 52	22 52	17 47	15 36	6 19							
W 3	23 3	22 45	0n29	23 13	0 14	18 4	1 45	8 6	0 52	18 15	0 43	17 46	1 57	20 18	0 8	20 11	1 35	11 20	10 32	22 52	22 52	17 45	15 35	6 19							
T 4	22 58	21 19	1 50	23 27	0 2	17 42	1 44	7 52	0 51	18 11	0 44	17 47	1 57	20 18	0 8	20 11	1 35	11 20	10 32	22 52	22 53	17 44	15 34	6 19							
F 5	22 53	18 25	3 3	23 38	0n 9	17 19	1 43	7 38	0 50	18 8	0 44	17 49	1 57	20 18	0 8	20 11	1 35	11 21	10 32	22 52	22 53	17 42	15 33	6 19							
S 6	22 48	14 21	4 3	23 47	0 20	16 57	1 42	7 24	0 49	18 5	0 44	17 50	1 57	20 17	0 8	20 11	1 35	11 21	10 32	22 52	22 53	17 41	15 32	6 19							
S 7	22 42	9 28	4 46	23 54	0 31	16 33	1 41	7 9	0 48	18 1	0 44	17 51	1 58	20 17	0 8	20 10	1 35	11 21	10 32	22 52	22 54	17 39	15 31	6 19							
M 8	22 35	4 11	5 11	23 59	0 41	16 10	1 40	6 55	0 47	17 58	0 44	17 52	1 58	20 17	0 8	20 10	1 35	11 21	10 32	22 52	22 54	17 38	15 30	6 19							
T 9	22 28	1s12	5 17	24 1	0 50	15 45	1 39	6 40	0 47	17 54	0 44	17 54	1 58	20 17	0 8	20 10	1 35	11 21	10 32	22 52	22 54	17 36	15 29	6 19							
W10	22 21	6 23	5 5	24 0	0 59	15 21	1 37	6 26	0 46	17 51	0 44	17 55	1 58	20 16	0 7	20 10	1 35	11 21	10 33	22 52	22 55	17 35	15 28	6 19							
T 11	22 14	11 10	4 36	23 56	1 7	14 56	1 36	6 11	0 45	17 47	0 44	17 56	1 58	20 16	0 7	20 10	1 35	11 21	10 33	22 52	22 55	17 33	15 27	6 19							
F 12	22 6	15 19	3 54	23 49	1 15	14 31	1 34	5 57	0 44	17 44	0 44	17 57	1 58	20 16	0 7	20 10	1 35	11 21	10 33	22 52	22 55	17 32	15 26	6 19							
S 13	21 57	18 42	3 1	23 40	1 21	14 5	1 33	5 42	0 43	17 40	0 44	17 58	1 58	20 15	0 7	20 9	1 35	11 21	10 33	22 52	22 55	17 30	15 25	6 19							
S 14	21 49	21 8	2 1	23 28	1 27	13 39	1 31	5 27	0 42	17 37	0 44	18 0	1 58	20 15	0 7	20 9	1 34	11 21	10 33	22 52	22 56	17 29	15 24	6 19							
M15	21 40	22 32	0 55	23 13	1 33	13 13	1 29	5 13	0 41	17 33	0 44	18 1	1 58	20 15	0 7	20 9	1 34	11 21	10 33	22 52	22 56	17 27	15 22	6 19							
T 16	21 30	22 51	0s11	22 56	1 37	12 47	1 27	4 58	0 41	17 30	0 44	18 2	1 59	20 15	0 7	20 9	1 34	11 21	10 33	22 52	22 56	17 26	15 21	6 19							
W17	21 20	22 5	1 17	22 37	1 41	12 20	1 26	4 43	0 40	17 26	0 44	18 3	1 59	20 14	0 7	20 9	1 34	11 21	10 33	22 52	22 57	17 24	15 20	6 19							
T 18	21 10	20 20	2 19	22 15	1 43	11 52	1 23	4 28	0 39	17 22	0 44	18 4	1 59	20 14	0 7	20 9	1 34	11 21	10 33	22 52	22 57	17 23	15 19	6 19							
F 19	21 0	17 43	3 14	21 51	1 46	11 25	1 21	4 13	0 38	17 19	0 44	18 5	1 59	20 14	0 7	20 9	1 34	11 21	10 34	22 52	22 57	17 21	15 18	6 19							
S 20	20 49	14 22	4 1	21 25	1 47	10 57	1 19	3 58	0 37	17 15	0 44	18 6	1 59	20 14	0 7	20 9	1 34	11 21	10 34	22 53	22 57	17 19	15 17	6 19							
S 21	20 38	10 28	4 38	20 57	1 48	10 29	1 17	3 43	0 36	17 11	0 44	18 7	1 59	20 14	0 7	20 9	1 34	11 21	10 34	22 53	22 58	17 18	15 16	6 19							
M22	20 26	6 8	5 3	20 27	1 48	10 1	1 14	3 27	0 36	17 8	0 44	18 8	1 59	20 13	0 7	20 8	1 34	11 21	10 34	22 53	22 58	17 16	15 14	6 19							
T 23	20 14	1 32	5 15	19 56	1 47	9 33	1 12	3 12	0 35	17 4	0 44	18 9	1 59	20 13	0 7	20 8	1 34	11 21	10 34	22 53	22 58	17 15	15 13	6 19							
W24	20 2	3n13	5 13	19 23	1 46	9 4	1 9	2 57	0 34	17 0	0 44	18 10	1 59	20 13	0 7	20 8	1 34	11 21	10 34	22 53	22 59	17 13	15 12	6 19							
T 25	19 49	7 55	4 56	18 49	1 44	8 35	1 7	2 42	0 33	16 56	0 44	18 11	2 0	20 13	0 7	20 8	1 34	11 21	10 34	22 53	22 59	17 12	15 11	6 19							
F 26	19 36	12 25	4 24	18 14	1 42	8 6	1 4	2 26	0 32	16 53	0 44	18 12	2 0	20 13	0 7	20 8	1 34	11 21	10 35	22 53	22 59	17 10	15 9	6 19							
S 27	19 23	16 28	3 37	17 38	1 39	7 37	1 1	2 11	0 32	16 49	0 44	18 13	2 0	20 13	0 7	20 8	1 34	11 21	10 35	22 53	22 59	17 8	15 8	6 19							
S 28	19 10	19 47	2 37	17 1	1 35	7 7	0 58	1 56	0 31	16 45	0 44	18 14	2 0	20 13	0 7	20 8	1 34	11 21	10 35	22 53	23 0	17 7	15 7	6 19							
M29	18 56	22 2	1 25	16 23	1 31	6 38	0 55	1 40	0 30	16 41	0 44	18 14	2 0	20 12	0 7	20 8	1 34	11 21	10 35	22 53	23 0	17 5	15 6	6 19							
T 30	18 41	22 53	0 6	15 44	1 27	6 8	0 52	1 25	0 29	16 37	0 44	18 15	2 0	20 12	0 7	20 8	1 34	11 21	10 35	22 53	23 0	17 4	15 4	6 20							
W31	18n27	22n 8	1n15	15n 5	1n22	5n38	0n49	1n 9	0n28	16n33	0n44	18n16	2s 0	20s12	0n 7	20s 8	1n34	11n21	10s35	22n53	23n 0	17s 2	15n 3	6s20							



ASTRODIENST EPHEMERIS for the year 1647  
geocentric

AUGUST 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	20 37 39	8♌23'21	11♌31	24♌59	18♏49	28♏49	16♌58	0♏16	0°R38	7°R55	8♏53	12°R38	11♏12	23♏25	24♏29	T 1
F 2	20 41 35	9°20'51	26°43	26°42	19°58	29°26	17°11	0°20	0♏37	7♏54	8°54	12♏35	11° 9	23°31	24°36	F 2
S 3	20 45 32	10°18'23	11♏49	28°23	21° 7	0♏ 4	17°24	0°25	0°37	7°54	8°54	12°31	11° 5	23°38	24°43	S 3
S 4	20 49 28	11°15'56	26°41	0♏ 3	22°16	0°41	17°37	0°29	0°36	7°53	8°55	12°27	11° 2	23°45	24°50	S 4
M 5	20 53 25	12°13'29	11♏12	1°41	23°25	1°19	17°50	0°33	0°36	7°53	8°56	12°24	10°59	23°51	24°57	M 5
T 6	20 57 21	13°11'04	25°17	3°18	24°33	1°56	18° 3	0°37	0°36	7°52	8°57	12°21	10°56	23°58	25° 4	T 6
W 7	21 1 18	14° 8'39	8♏56	4°53	25°42	2°34	18°16	0°41	0°36	7°52	8°57	12°D20	10°53	24° 5	25°11	W 7
T 8	21 5 15	15° 6'15	22° 9	6°26	26°50	3°12	18°29	0°45	0°36	7°52	8°58	12°20	10°49	24°11	25°18	T 8
F 9	21 9 11	16° 3'52	5♏ 0	7°58	27°58	3°49	18°42	0°48	0°D36	7°51	8°59	12°21	10°46	24°18	25°24	F 9
S 10	21 13 8	17° 1'31	17°32	9°28	29° 6	4°27	18°55	0°52	0°36	7°51	8°59	12°23	10°43	24°25	25°31	S 10
S 11	21 17 4	17°59'10	29°49	10°57	0♏14	5° 5	19° 8	0°56	0°36	7°51	9° 0	12°25	10°40	24°32	25°38	S 11
M12	21 21 1	18°56'50	11♏54	12°24	1°22	5°43	19°22	0°59	0°36	7°50	9° 0	12°R25	10°37	24°38	25°45	M12
T 13	21 24 57	19°54'32	23°52	13°49	2°30	6°21	19°35	1° 3	0°36	7°50	9° 1	12°25	10°34	24°45	25°51	T 13
W14	21 28 54	20°52'15	5♏45	15°13	3°38	7° 0	19°48	1° 6	0°36	7°50	9° 1	12°22	10°30	24°52	25°58	W14
T 15	21 32 50	21°49'59	17°35	16°35	4°45	7°38	20° 1	1° 9	0°36	7°50	9° 2	12°18	10°27	24°58	26° 5	T 15
F 16	21 36 47	22°47'44	29°25	17°56	5°53	8°16	20°14	1°12	0°37	7°49	9° 2	12°12	10°24	25° 5	26°11	F 16
S 17	21 40 44	23°45'31	11♏16	19°14	7° 0	8°55	20°27	1°15	0°37	7°49	9° 3	12° 5	10°21	25°12	26°18	S 17
S 18	21 44 40	24°43'19	23°11	20°31	8° 7	9°33	20°40	1°18	0°38	7°49	9° 3	11°57	10°18	25°18	26°24	S 18
M19	21 48 37	25°41'09	5♏12	21°46	9°14	10°12	20°53	1°21	0°38	7°49	9° 4	11°49	10°15	25°25	26°31	M19
T 20	21 52 33	26°39'01	17°19	23° 0	10°21	10°50	21° 6	1°24	0°39	7°D49	9° 4	11°42	10°11	25°32	26°38	T 20
W21	21 56 30	27°36'54	29°37	24°11	11°28	11°29	21°19	1°26	0°39	7°49	9° 5	11°37	10° 8	25°38	26°44	W21
T 22	22 0 26	28°34'49	12♏ 9	25°20	12°34	12° 8	21°32	1°29	0°40	7°49	9° 5	11°33	10° 5	25°45	26°50	T 22
F 23	22 4 23	29°32'46	24°57	26°27	13°41	12°46	21°45	1°31	0°40	7°49	9° 5	11°D32	10° 2	25°52	26°57	F 23
S 24	22 8 19	0♏30'45	8♏ 5	27°32	14°47	13°25	21°58	1°33	0°41	7°49	9° 6	11°32	9°59	25°58	27° 3	S 24
S 25	22 12 16	1°28'46	21°37	28°35	15°53	14° 4	22°12	1°36	0°42	7°50	9° 6	11°33	9°55	26° 5	27°10	S 25
M26	22 16 13	2°26'48	5♏34	29°35	16°59	14°43	22°25	1°38	0°43	7°50	9° 6	11°R34	9°52	26°12	27°16	M26
T 27	22 20 9	3°24'53	19°58	0♏32	18° 5	15°23	22°38	1°40	0°44	7°50	9° 7	11°34	9°49	26°18	27°22	T 27
W28	22 24 6	4°23'00	4♏45	1°27	19°10	16° 2	22°51	1°42	0°45	7°50	9° 7	11°32	9°46	26°25	27°28	W28
T 29	22 28 2	5°21'08	19°50	2°18	20°16	16°41	23° 3	1°43	0°46	7°51	9° 7	11°27	9°43	26°32	27°34	T 29
F 30	22 31 59	6°19'18	5♏ 5	3° 7	21°21	17°20	23°16	1°45	0°47	7°51	9° 7	11°21	9°40	26°39	27°41	F 30
S 31	22 35 55	7♏17'30	20♏19	3♏52	22♏26	18♏ 0	23♏29	1♏47	0♏48	7♏51	9♏ 8	11♏13	9♏36	26♏45	27♏47	S 31

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	lat
T 1	18n12	19n48	2n32	14n25	1n17	5n 8	0n46	0n54	0n28	16n29	0n45	18n17	2s 1	20s12	0n 7	20s 8
F 2	17 57	16 3	3 39	13 45	1 11	4 38	0 42	0 38	0 27	16 25	0 45	18 18	2 1	20 12	0 7	20 8
S 3	17 42	11 18	4 30	13 4	1 5	4 8	0 39	0 22	0 26	16 22	0 45	18 18	2 1	20 12	0 7	20 8
S 4	17 26	5 56	5 1	12 23	0 59	3 37	0 36	0 7	0 25	16 18	0 45	18 19	2 1	20 12	0 7	20 8
M 5	17 10	0 22	5 13	11 42	0 52	3 7	0 32	0s 9	0 24	16 14	0 45	18 20	2 1	20 12	0 7	20 8
T 6	16 54	5s 4	5 5	11 1	0 45	2 36	0 28	0 40	0 24	16 10	0 45	18 20	2 1	20 12	0 7	20 8
W 7	16 37	10 4	4 40	10 20	0 38	2 6	0 25	0 24	0 23	16 6	0 45	18 21	2 1	20 12	0 7	20 8
T 8	16 20	14 28	4 1	9 38	0 30	1 35	0 21	0 56	0 22	16 2	0 45	18 22	2 2	20 12	0 7	20 8
F 9	16 3	18 3	3 10	8 57	0 22	1 4	0 17	1 12	0 21	15 58	0 45	18 22	2 2	20 12	0 7	20 8
S 10	15 46	20 43	2 12	8 15	0 14	0 33	0 13	1 27	0 21	15 54	0 45	18 23	2 2	20 12	0 7	20 8
S 11	15 28	22 21	1 8	7 34	0 6	0 3	0 9	1 43	0 20	15 50	0 45	18 24	2 2	20 12	0 7	20 8
M12	15 10	12 54	0 3	6 53	0s 2	0s28	0 5	1 59	0 19	15 46	0 45	18 24	2 2	20 12	0 7	20 8
T 13	14 52	22 23	1s 2	6 12	0 11	0 59	0 1	2 15	0 18	15 41	0 45	18 25	2 2	20 12	0 7	20 8
W14	14 34	20 52	2 4	5 32	0 20	1 30	0s 3	2 31	0 18	15 37	0 45	18 25	2 3	20 12	0 7	20 8
T 15	14 15	18 26	2 59	4 52	0 29	2 0	0 7	2 46	0 17	15 33	0 45	18 26	2 3	20 12	0 7	20 8
F 16	13 57	15 15	3 47	4 12	0 38	2 31	0 12	3 2	0 16	15 29	0 45	18 26	2 3	20 12	0 7	20 8
S 17	13 38	11 26	4 25	3 33	0 47	3 2	0 16	3 18	0 15	15 25	0 46	18 27	2 3	20 12	0 7	20 8
S 18	13 18	7 11	4 52	2 54	0 56	3 32	0 20	3 34	0 15	15 21	0 46	18 27	2 3	20 13	0 7	20 8
M19	12 59	2 37	5 6	2 16	1 6	4 3	0 25	3 50	0 14	15 17	0 46	18 27	2 3	20 13	0 7	20 8
T 20	12 39	2n 5	5 7	1 38	1 15	4 33	0 29	4 6	0 13	15 13	0 46	18 28	2 4	20 13	0 7	20 8
W21	12 19	6 47	4 53	1 1	1 25	5 4	0 34	4 22	0 12	15 9	0 46	18 28	2 4	20 13	0 7	20 8
T 22	11 59	11 17	4 26	0 25	1 34	5 34	0 39	4 37	0 12	15 5	0 46	18 28	2 4	20 13	0 7	20 8
F 23	11 39	15 24	3 44	0s10	1 44	6 4	0 43	4 53	0 11	15 0	0 46	18 29	2 4	20 13	0 7	20 8
S 24	11 19	18 54	2 50	0 45	1 53	6 34	0 48	5 9	0 10	14 56	0 46	18 29	2 4	20 13	0 7	20 8
S 25	10 58	21 28	1 45	1 19	2 3	7 4	0 53	5 25	0 10	14 52	0 46	18 29	2 4	20 14	0 7	20 8
M26	10 37	22 50	0 32	1 51	2 12	7 34	0 58	5 41	0 9	14 48	0 46	18 30	2 5	20 14	0 7	20 8
T 27	10 16	22 44	0n45	2 23	2 21	8 4	1 2	5 56	0 8	14 44	0 46	18 30	2 5	20 14	0 7	20 8
W28	9 55	21 5	2 1	2 53	2 31	8 33	1 7	6 12	0 7	14 40	0 46	18 30	2 5	20 14	0 7	20 9
T 29	9 34	17 54	3 10	3 22	2 40	9 3	1 12	6 28	0 7	14 35	0 47	18 30	2 5	20 14	0 7	20 9
F 30	9 13	13 29	4 7	3 49	2 49	9 32	1 17	6 44	0 6	14 31	0 47	18 30	2 5	20 15	0 7	20 9
S 31	8n51	8n13	4n45	4s15	2s58	10s 1	1s22	7s 0	0n 5	14n27	0n47	18n31	2s 5	20s15	0n 7	20s 9

Julian Day Number = 2322826.5, Delta T = 45.00 sec  
Ecliptic obliquity = 23°29'05, Nutation = - 0°00'15, out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 19°49'17, Lahiri = 18°56'17Greg. Calendar



# ASTRODIENST EPHEMERIS for the year 1647

## geocentric

OCTOBER 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	0 38 8	7♂36'29	12♂36	22°D29	23♂50	8♂57	29♂52	1°R42	1♂45	8♂18	9°R 3	8°R 3	7♂58	0♂13	0♂27	T 1
W 2	0 42 5	8°35'42	26°26	22♂35	24°44	9°39	0♂4	1♂40	1°47	8°19	9♂3	7♂56	7°55	0°19	0°31	W 2
T 3	0 46 2	9°34'58	9♂48	22°52	25°39	10°20	0°15	1°38	1°50	8°20	9° 2	7°52	7°52	0°26	0°35	T 3
F 4	0 49 58	10°34'15	22°42	23°18	26°32	11° 2	0°27	1°36	1°52	8°22	9° 2	7°50	7°48	0°33	0°39	F 4
S 5	0 53 55	11°33'34	5♂13	23°55	27°25	11°44	0°38	1°34	1°55	8°23	9° 1	7°49	7°45	0°39	0°43	S 5
S 6	0 57 51	12°32'55	17°26	24°40	28°17	12°26	0°49	1°32	1°58	8°24	9° 1	7°49	7°42	0°46	0°47	S 6
M 7	1 1 48	13°32'18	29°26	25°33	29° 9	13° 8	1° 1	1°29	2° 0	8°26	9° 0	7°48	7°39	0°53	0°51	M 7
T 8	1 5 44	14°31'42	11♂18	26°33	0♂0	13°50	1°12	1°27	2° 3	8°27	9° 0	7°46	7°36	1° 0	0°54	T 8
W 9	1 9 41	15°31'08	23° 7	27°40	0°50	14°32	1°23	1°24	2° 6	8°29	8°59	7°41	7°32	1° 6	0°58	W 9
T 10	1 13 37	16°30'36	4♂57	28°53	1°40	15°14	1°34	1°21	2° 9	8°30	8°58	7°33	7°29	1°13	1° 1	T 10
F 11	1 17 34	17°30'06	16°53	0♂11	2°29	15°57	1°45	1°19	2°11	8°32	8°58	7°23	7°26	1°20	1° 5	F 11
S 12	1 21 31	18°29'38	28°56	1°34	3°17	16°39	1°55	1°16	2°14	8°34	8°57	7°10	7°23	1°26	1° 8	S 12
S 13	1 25 27	19°29'11	11♂9	3° 0	4° 4	17°21	2° 6	1°13	2°17	8°35	8°56	6°56	7°20	1°33	1°11	S 13
M14	1 29 24	20°28'47	23°32	4°29	4°50	18° 4	2°17	1°10	2°20	8°37	8°56	6°43	7°17	1°40	1°14	M14
T 15	1 33 20	21°28'25	6♂5	6° 1	5°36	18°46	2°27	1° 7	2°23	8°38	8°55	6°31	7°13	1°46	1°17	T 15
W16	1 37 17	22°28'04	18°48	7°35	6°20	19°29	2°38	1° 4	2°26	8°40	8°54	6°20	7°10	1°53	1°20	W16
T 17	1 41 13	23°27'46	1♂42	9°11	7° 4	20°12	2°48	1° 0	2°29	8°42	8°53	6°13	7° 7	2° 0	1°23	T 17
F 18	1 45 10	24°27'31	14°48	10°48	7°47	20°54	2°59	0°57	2°32	8°44	8°53	6° 9	7° 4	2° 6	1°26	F 18
S 19	1 49 6	25°27'17	28° 5	12°26	8°28	21°37	3° 9	0°53	2°35	8°45	8°52	6° 7	7° 1	2°13	1°29	S 19
S 20	1 53 3	26°27'06	11♂35	14° 5	9° 9	22°20	3°19	0°50	2°39	8°47	8°51	6°D 7	6°57	2°20	1°31	S 20
M21	1 57 0	27°26'57	25°19	15°45	9°48	23° 3	3°29	0°46	2°42	8°49	8°50	6°R 7	6°54	2°27	1°34	M21
T 22	2 0 56	28°26'50	9♂19	17°25	10°26	23°46	3°39	0°43	2°45	8°51	8°49	6° 7	6°51	2°33	1°36	T 22
W23	2 4 53	29°26'45	23°34	19° 5	11° 3	24°29	3°49	0°39	2°48	8°53	8°49	6° 5	6°48	2°40	1°38	W23
T 24	2 8 49	0♂26'43	8♂3	20°45	11°39	25°12	3°59	0°35	2°51	8°54	8°48	6° 0	6°45	2°47	1°40	T 24
F 25	2 12 46	1°26'43	22°41	22°25	12°14	25°55	4° 8	0°31	2°55	8°56	8°47	5°53	6°42	2°53	1°43	F 25
S 26	2 16 42	2°26'44	7♂23	24° 6	12°47	26°38	4°18	0°27	2°58	8°58	8°46	5°43	6°38	3° 0	1°44	S 26
S 27	2 20 39	3°26'48	22° 1	25°46	13°18	27°22	4°27	0°23	3° 1	9° 0	8°45	5°33	6°35	3° 7	1°46	S 27
M28	2 24 35	4°26'54	6♂27	27°25	13°49	28° 5	4°36	0°19	3° 5	9° 2	8°44	5°23	6°32	3°13	1°48	M28
T 29	2 28 32	5°27'02	20°36	29° 5	14°17	28°49	4°46	0°15	3° 8	9° 4	8°43	5°15	6°29	3°20	1°50	T 29
W30	2 32 28	6°27'11	4♂21	0♂44	14°44	29°32	4°55	0°10	3°11	9° 6	8°42	5° 8	6°26	3°27	1°51	W30
T 31	2 36 25	7♂27'22	17♂42	2♂23	15♂10	0♂16	5♂4	0♂6	3♂15	9♂8	8♂41	5♂4	6♂23	3♂34	1♂53	T 31

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	lat
T 1	3s 1	11s42	4n 8	3n13	0n15	22s36	3s58	14s45	0s16	12n20	0n50	18n25	2s11	20s27	0n 6	20s15
W 2	3 25	16 9	3 20	3 25	0 31	22 54	4 2	14 59	0 16	12 16	0 51	18 24	2 11	20 27	0 6	20 15
T 3	3 48	19 37	2 22	3 33	0 46	23 12	4 7	15 13	0 17	12 12	0 51	18 24	2 11	20 28	0 6	20 15
F 4	4 12	21 58	1 19	3 35	1 0	23 29	4 11	15 27	0 18	12 8	0 51	18 23	2 11	20 28	0 6	20 15
S 5	4 35	23 9	0 14	3 32	1 12	23 45	4 15	15 40	0 18	12 4	0 51	18 22	2 11	20 29	0 6	20 16
S 6	4 58	23 11	0s51	3 24	1 23	24 2	4 19	15 54	0 19	12 0	0 51	18 22	2 11	20 30	0 6	20 16
M 7	5 21	22 8	1 52	3 11	1 32	24 17	4 23	16 7	0 19	11 56	0 51	18 21	2 11	20 30	0 6	20 16
T 8	5 44	20 6	2 47	2 54	1 40	24 32	4 27	16 20	0 20	11 52	0 52	18 21	2 11	20 31	0 6	20 17
W 9	6 7	17 13	3 35	2 34	1 47	24 47	4 31	16 34	0 21	11 49	0 52	18 20	2 12	20 31	0 6	20 17
T 10	6 30	13 39	4 14	2 9	1 52	25 1	4 35	16 47	0 21	11 45	0 52	18 19	2 12	20 32	0 6	20 17
F 11	6 53	9 30	4 42	1 42	1 56	25 14	4 38	17 0	0 22	11 41	0 52	18 19	2 12	20 32	0 6	20 17
S 12	7 16	4 58	4 57	1 12	1 59	25 27	4 42	17 12	0 23	11 37	0 52	18 18	2 12	20 33	0 6	20 18
S 13	7 38	0 10	4 59	0 39	2 1	25 40	4 45	17 25	0 23	11 34	0 52	18 17	2 12	20 34	0 6	20 18
M14	8 1	4n42	4 48	0 4	2 1	25 52	4 48	17 37	0 24	11 30	0 53	18 17	2 12	20 34	0 6	20 18
T 15	8 23	9 27	4 22	0s32	2 1	26 3	4 51	17 50	0 24	11 26	0 53	18 16	2 12	20 35	0 6	20 19
W16	8 46	13 53	3 43	1 10	2 1	26 14	4 54	18 2	0 25	11 23	0 53	18 15	2 12	20 35	0 6	20 19
T 17	9 8	17 44	2 52	1 49	1 59	26 24	4 57	18 14	0 26	11 19	0 53	18 14	2 12	20 36	0 6	20 19
F 18	9 30	20 47	1 51	2 30	1 57	26 34	4 59	18 26	0 26	11 16	0 53	18 14	2 13	20 37	0 6	20 20
S 19	9 52	22 46	0 43	3 10	1 54	26 43	5 1	18 38	0 27	11 12	0 53	18 13	2 13	20 37	0 6	20 20
S 20	10 13	23 28	0n29	3 52	1 51	26 52	5 4	18 50	0 27	11 8	0 54	18 12	2 13	20 38	0 6	20 20
M21	10 35	22 45	1 40	4 34	1 47	27 0	5 5	19 1	0 28	11 5	0 54	18 11	2 13	20 38	0 6	20 20
T 22	10 57	20 38	2 47	5 16	1 42	27 7	5 7	19 13	0 28	11 2	0 54	18 10	2 13	20 39	0 6	20 21
W23	11 18	17 13	3 44	5 59	1 38	27 14	5 9	19 24	0 29	10 58	0 54	18 9	2 13	20 40	0 6	20 21
T 24	11 39	12 43	4 28	6 41	1 33	27 20	5 10	19 35	0 30	10 55	0 54	18 9	2 13	20 40	0 6	20 21
F 25	12 0	7 26	4 55	7 23	1 27	27 26	5 11	19 46	0 30	10 51	0 55	18 8	2 13	20 41	0 6	20 22
S 26	12 21	1 42	5 3	8 6	1 22	27 31	5 12	19 56	0 31	10 48	0 55	18 7	2 13	20 42	0 6	20 22
S 27	12 41	4s 5	4 51	8 47	1 16	27 36	5 12	20 7	0 31	10 45	0 55	18 6	2 13	20 42	0 6	20 22
M28	13 2	9 36	4 20	9 29	1 10	27 40	5 12	20 17	0 32	10 42	0 55	18 5	2 13	20 43	0 6	20 23
T 29	13 22	14 29	3 34	10 10	1 4	27 43	5 12	20 28	0 32	10 38	0 55	18 4	2 13	20 44	0 6	20 23
W30	13 42	18 30	2 36	10 51	0 58	27 46	5 12	20 38	0 33	10 35	0 56	18 3	2 13	20 44	0 6	20 23
T 31	14s 2	21s24	1n32	11s31	0n51	27s48	5s11	20s47	0s34	10n32	0n56	18n 2	2s13	20s45	0n 6	20s24

Julian Day Number = 2322887.5, Delta T = 44.89 sec  
 Ecliptic obliquity = 23°29'06, Nutation = - 0°00'18, out-of-bounds declination in red  
 Ayanamsha: Fagan/Bradley = 19°49'25, Lahiri = 18°56'26Greg. Calendar

# ASTRODIENST EPHEMERIS for the year 1647

## geocentric

NOVEMBER 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	2 40 22	8♉27°35	0♈38	4♉1	15♈34	0♈59	5♉13	0°R 2	3♈18	9♈10	8°R40	5°D 3	6♉19	3♈40	1♉54	F 1
S 2	2 44 18	9°27'50	13°12	5°40	15°55	1°43	5°21	29♈57	3°22	9°12	8♉39	5°D 3	6°16	3°47	1°56	S 2
S 3	2 48 15	10°28'06	25°27	7°17	16°15	2°27	5°30	29°53	3°25	9°14	8°38	5° 4	6°13	3°54	1°57	S 3
M 4	2 52 11	11°28'23	7♈29	8°55	16°34	3°11	5°38	29°48	3°28	9°16	8°37	5°R 5	6°10	4° 0	1°58	M 4
T 5	2 56 8	12°28'42	19°22	10°32	16°50	3°54	5°47	29°44	3°32	9°18	8°36	5° 5	6° 7	4° 0	1°59	T 5
W 6	3 0 4	13°29'02	1♈13	12° 9	17° 4	4°38	5°55	29°39	3°35	9°20	8°35	5° 3	6° 3	4°14	2° 0	W 6
T 7	3 4 1	14°29'24	13° 5	13°45	17°16	5°22	6° 3	29°35	3°39	9°22	8°34	4°59	6° 0	4°20	2° 1	T 7
F 8	3 7 57	15°29'47	25° 4	15°21	17°25	6° 6	6°11	29°30	3°43	9°24	8°33	4°52	5°57	4°27	2° 1	F 8
S 9	3 11 54	16°30'12	7♉13	16°57	17°33	6°50	6°19	29°25	3°46	9°26	8°32	4°45	5°54	4°34	2° 2	S 9
S 10	3 15 51	17°30'38	19°34	18°32	17°38	7°35	6°27	29°21	3°50	9°29	8°31	4°36	5°51	4°41	2° 2	S 10
M 11	3 19 47	18°31'05	2♈ 9	20° 8	17°41	8°19	6°34	29°16	3°53	9°31	8°30	4°27	5°48	4°47	2° 3	M 11
T 12	3 23 44	19°31'34	14°58	21°42	17°R41	9° 3	6°42	29°11	3°57	9°33	8°29	4°19	5°44	4°54	2° 3	T 12
W 13	3 27 40	20°32'05	28° 2	23°17	17°40	9°47	6°49	29° 6	4° 0	9°35	8°28	4°12	5°41	5° 1	2° 3	W 13
T 14	3 31 37	21°32'37	11♉19	24°52	17°35	10°32	6°57	29° 1	4° 4	9°37	8°27	4° 8	5°38	5° 7	2°R 3	T 14
F 15	3 35 33	22°33'11	24°47	26°26	17°28	11°16	7° 4	28°56	4° 8	9°39	8°26	4° 6	5°35	5°14	2° 3	F 15
S 16	3 39 30	23°33'47	8♉26	28° 0	17°19	12° 1	7°11	28°52	4°11	9°42	8°25	4°D 5	5°32	5°21	2° 3	S 16
S 17	3 43 27	24°34'24	22°14	29°34	17° 7	12°45	7°17	28°47	4°15	9°44	8°24	4° 6	5°29	5°27	2° 3	S 17
M 18	3 47 23	25°35'03	6♉ 9	1♈ 7	16°53	13°30	7°24	28°42	4°19	9°46	8°23	4° 8	5°25	5°34	2° 2	M 18
T 19	3 51 20	26°35'44	20°11	2°41	16°36	14°15	7°30	28°37	4°22	9°48	8°21	4°R 9	5°22	5°41	2° 2	T 19
W 20	3 55 16	27°36'26	4♉20	4°14	16°18	14°59	7°37	28°32	4°26	9°50	8°20	4° 9	5°19	5°48	2° 1	W 20
T 21	3 59 13	28°37'10	18°33	5°47	15°56	15°44	7°43	28°27	4°30	9°53	8°19	4° 7	5°16	5°54	2° 1	T 21
F 22	4 3 9	29°37'55	2♉48	7°20	15°33	16°29	7°49	28°22	4°33	9°55	8°18	4° 4	5°13	6° 1	2° 0	F 22
S 23	4 7 6	0♈38°42	17° 2	8°53	15° 8	17°14	7°55	28°17	4°37	9°57	8°17	3°59	5° 9	6° 8	1°59	S 23
S 24	4 11 2	1°39'31	1♉11	10°26	14°40	17°59	8° 1	28°12	4°41	9°59	8°16	3°54	5° 6	6°14	1°58	S 24
M 25	4 14 59	2°40'21	15°10	11°59	14°11	18°44	8° 6	28° 7	4°44	10° 2	8°15	3°49	5° 3	6°21	1°57	M 25
T 26	4 18 55	3°41'12	28°56	13°32	13°40	19°29	8°12	28° 2	4°48	10° 4	8°13	3°45	5° 0	6°28	1°56	T 26
W 27	4 22 52	4°42'05	12♈24	15° 4	13° 8	20°14	8°17	27°58	4°52	10° 6	8°12	3°42	4°57	6°35	1°55	W 27
T 28	4 26 49	5°42'58	25°34	16°37	12°34	20°59	8°22	27°53	4°55	10° 8	8°11	3°40	4°54	6°41	1°53	T 28
F 29	4 30 45	6°43'53	8♉34	18° 9	12° 0	21°45	8°27	27°48	4°59	10°11	8°10	3°D40	4°50	6°48	1°52	F 29
S 30	4 34 42	7♈44°49	20♉56	19♈41	11♈24	22♈30	8♉32	27♈43	5♈ 3	10♈13	8♉ 9	3♉41	4♉47	6♈55	1♉50	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
F 1	14s21	23s 5	0n24	12s11	0n45	27s50	5s10	20s57	0s34	10n29	0n56	18n 1	2s13	20s46	0n 6	20s24	1n29	11n 4	10s50	23n23	23n20	14s13	12n52	7s 4			
S 2	14 40	23 33	0s44	12 50	0 38	27 51	5 8	21 7	0 35	10 26	0 56	18 0	2 13	20 46	0 6	20 24	1 29	11 4	10 51	23 23	23 20	14 11	12 51	7 5			
S 3	14 59	22 51	1 47	13 28	0 32	27 51	5 7	21 16	0 35	10 23	0 56	17 59	2 14	20 47	0 6	20 25	1 29	11 4	10 51	23 23	23 20	14 9	12 50	7 6			
M 4	15 18	21 6	2 45	14 6	0 25	27 51	5 4	21 25	0 36	10 20	0 57	17 58	2 14	20 48	0 6	20 25	1 29	11 4	10 51	23 23	23 20	14 7	12 50	7 7			
T 5	15 37	18 26	3 35	14 43	0 18	27 50	5 2	21 34	0 36	10 17	0 57	17 57	2 14	20 48	0 6	20 25	1 29	11 4	10 51	23 23	23 21	14 5	12 49	7 7			
W 6	15 55	15 2	4 16	15 20	0 11	27 49	4 59	21 43	0 37	10 14	0 57	17 56	2 14	20 49	0 6	20 26	1 29	11 3	10 51	23 23	23 21	14 3	12 48	7 8			
T 7	16 13	11 3	4 45	15 55	0 5	27 46	4 55	21 51	0 37	10 12	0 57	17 55	2 14	20 50	0 6	20 26	1 29	11 3	10 51	23 23	23 21	14 1	12 47	7 9			
F 8	16 31	6 35	5 3	16 30	0s 2	27 43	4 51	21 59	0 38	10 9	0 57	17 54	2 14	20 50	0 6	20 26	1 29	11 3	10 51	23 24	23 21	13 59	12 46	7 9			
S 9	16 48	1 50	5 7	17 4	0 9	27 40	4 47	22 7	0 38	10 6	0 58	17 53	2 14	20 51	0 6	20 27	1 29	11 3	10 51	23 24	23 21	13 57	12 45	7 10			
S 10	17 5	3n 5	4 57	17 37	0 15	27 35	4 42	22 15	0 39	10 3	0 58	17 52	2 14	20 52	0 6	20 27	1 29	11 3	10 51	23 24	23 21	13 55	12 44	7 11			
M11	17 22	7 59	4 32	18 10	0 22	27 30	4 37	22 23	0 39	10 1	0 58	17 51	2 14	20 52	0 6	20 27	1 29	11 2	10 51	23 25	23 21	13 53	12 44	7 12			
T 12	17 39	12 38	3 54	18 41	0 29	27 24	4 31	22 30	0 40	9 58	0 58	17 50	2 14	20 53	0 6	20 28	1 29	11 2	10 51	23 25	23 22	13 51	12 43	7 12			
W13	17 55	16 48	3 2	19 12	0 35	27 18	4 24	22 38	0 40	9 56	0 59	17 49	2 13	20 54	0 6	20 28	1 29	11 2	10 51	23 25	23 22	13 48	12 42	7 13			
T 14	18 11	20 12	2 0	19 41	0 41	27 10	4 17	22 45	0 41	9 53	0 59	17 48	2 13	20 54	0 6	20 28	1 29	11 2	10 51	23 25	23 22	13 46	12 41	7 14			
F 15	18 27	22 33	0 50	20 10	0 48	27 2	4 9	22 51	0 41	9 51	0 59	17 47	2 13	20 55	0 6	20 29	1 29	11 2	10 51	23 25	23 22	13 44	12 41	7 14			
S 16	18 42	23 37	0n24	20 37	0 54	26 53	4 1	22 58	0 42	9 49	0 59	17 46	2 13	20 56	0 6	20 29	1 29	11 1	10 51	23 25	23 22	13 42	12 40	7 15			
S 17	18 57	23 15	1 37	21 4	1 0	26 43	3 52	23 4	0 42	9 46	0 59	17 45	2 13	20 56	0 6	20 29	1 29	11 1	10 51	23 25	23 22	13 40	12 39	7 16			
M18	19 12	21 26	2 45	21 30	1 6	26 32	3 43	23 10	0 43	9 44	1 0	17 44	2 13	20 57	0 6	20 30	1 29	11 1	10 51	23 25	23 22	13 38	12 39	7 17			
T 19	19 26	18 20	3 45	21 54	1 12	26 20	3 33	23 16	0 43	9 42	1 0	17 43	2 13	20 58	0 6	20 30	1 29	11 1	10 51	23 25	23 23	13 36	12 38	7 17			
W20	19 40	14 8	4 30	22 18	1 17	26 8	3 22	23 22	0 44	9 40	1 0	17 42	2 13	20 59	0 6	20 30	1 29	11 1	10 51	23 25	23 23	13 34	12 38	7 18			
T 21	19 53	9 8	5 0	22 40	1 23	25 54	3 11	23 27	0 44	9 38	1 0	17 41	2 13	20 59	0 6	20 31	1 29	11 1	10 51	23 25	23 23	13 32	12 37	7 19			
F 22	20 7	3 39	5 11	23 1	1 28	25 40	2 59	23 32	0 45	9 35	1 1	17 40	2 13	21 0	0 6	20 31	1 29	11 0	10 51	23 25	23 23	13 30	12 37	7 19			
S 23	20 19	2s 2	5 3	23 21	1 33	25 25	2 47	23 37	0 45	9 33	1 1	17 39	2 13	21 1	0 6	20 32	1 29	11 0	10 51	23 25	23 23	13 28	12 36	7 20			
S 24	20 32	7 34	4 37	23 40	1 38	25 9	2 34	23 42	0 46	9 32	1 1	17 38	2 13	21 1	0 6	20 32	1 29	11 0	10 51	23 26	23 23	13 25	12 36	7 21			
M25	20 44	12 41	3 54	23 58	1 43	24 53	2 21	23 46	0 46	9 30	1 1	17 37	2 13	21 2	0 6	20 32	1 28	11 0	10 51	23 26	23 23	13 23	12 35	7 21			
T 26	20 56	17 3	2 59	24 14	1 47	24 35	2 7	23 50	0 47	9 28	1 2	17 36	2 13	21 3	0 6	20 33	1 28	11 0	10 51	23 26	23 23	13 21	12 35	7 22			
W27	21 7	20 27	1 54	24 30	1 51	24 17	1 53	23 54	0 47	9 26	1 2	17 35	2 13	21 3	0 6	20 33	1 28	11 0	10 51	23 26	23 24	13 19	12 34	7 23			
T 28	21 18	22 40	0 44	24 43	1 55	23 58	1 38	23 58	0 47	9 25	1 2	17 34	2 12	21 4	0 6	20 33	1 28	10 59	10 51	23 26	23 24	13 17	12 34	7 23			
F 29	21 28	23 39	0s26	24 56	1 59	23 39	1 24	24 1	0 48	9 23	1 2	17 33	2 12	21 5	0 6	20 34	1 28	10 59	10 51	23 26	23 24	13 15	12 34	7 24			
S 30	21s39	23s23	1s34	25s 7	2s 3	23s19	1s 8	24s 5	0s48	9n21	1n 3	17n32	2s12	21s 5	0n 6	20s34	1n28	10n59	10s51	23n26	23n24	13s13	12n33	7s25			

# ASTRODIENST EPHEMERIS for the year 1647

## geocentric

DECEMBER 1647 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	4 38 38	8°45'45	3°12	21°13	10°R48	23°15	8°36	27°R38	5°6	10°15	8°R 8	3°42	4°44	7°1	1°R49	S 1
M 2	4 42 35	9°46'42	15°15	22°45	10°12	24° 1	8°41	27°R33	5°10	10°17	8°II 7	3°44	4°41	7° 8	1°R47	M 2
T 3	4 46 31	10°47'40	27°10	24°16	9°36	24°46	8°45	27°29	5°14	10°20	8° 5	3°46	4°38	7°15	1°45	T 3
W 4	4 50 28	11°48'39	9°2	25°48	8°59	25°32	8°49	27°24	5°17	10°22	8° 4	3°R46	4°35	7°22	1°43	W 4
T 5	4 54 25	12°49'38	20°54	27°19	8°24	26°17	8°53	27°19	5°21	10°24	8° 3	3°46	4°31	7°28	1°41	T 5
F 6	4 58 21	13°50'38	2°Y53	28°50	7°48	27° 3	8°57	27°15	5°25	10°26	8° 2	3°45	4°28	7°35	1°39	F 6
S 7	5 2 18	14°51'38	15° 3	0°Z20	7°14	27°48	9° 0	27°10	5°28	10°29	8° 1	3°43	4°25	7°42	1°37	S 7
S 8	5 6 14	15°52'39	27°27	1°49	6°41	28°34	9° 4	27° 6	5°32	10°31	8° 0	3°40	4°22	7°48	1°34	S 8
M 9	5 10 11	16°53'40	10°8	3°19	6° 9	29°20	9° 7	27° 1	5°36	10°33	7°59	3°37	4°19	7°55	1°32	M 9
T 10	5 14 7	17°54'43	23°10	4°47	5°39	0°Z 5	9°10	26°57	5°39	10°35	7°57	3°35	4°15	8° 2	1°29	T 10
W 11	5 18 4	18°55'45	6°II30	6°14	5°10	0°51	9°13	26°52	5°43	10°38	7°56	3°33	4°12	8° 8	1°27	W 11
T 12	5 22 0	19°56'49	20° 9	7°40	4°44	1°37	9°15	26°48	5°47	10°40	7°55	3°32	4° 9	8°15	1°24	T 12
F 13	5 25 57	20°57'53	4°4	9° 5	4°19	2°23	9°18	26°44	5°50	10°42	7°54	3°D32	4° 6	8°22	1°21	F 13
S 14	5 29 54	21°58'58	18°11	10°28	3°57	3° 9	9°20	26°39	5°54	10°44	7°53	3°32	4° 3	8°29	1°19	S 14
S 15	5 33 50	23° 0'03	2°II27	11°50	3°37	3°55	9°22	26°35	5°57	10°47	7°52	3°33	4° 0	8°35	1°16	S 15
M 16	5 37 47	24° 1'09	16°46	13° 9	3°19	4°41	9°24	26°31	6° 1	10°49	7°51	3°34	3°56	8°42	1°13	M 16
T 17	5 41 43	25° 2'16	1°II 6	14°26	3° 4	5°27	9°26	26°27	6° 4	10°51	7°50	3°34	3°53	8°49	1°10	T 17
W 18	5 45 40	26° 3'23	15°23	15°39	2°51	6°13	9°27	26°23	6° 8	10°53	7°49	3°35	3°50	8°55	1° 6	W 18
T 19	5 49 36	27° 4'32	29°33	16°49	2°41	6°59	9°28	26°19	6°11	10°55	7°47	3°R35	3°47	9° 2	1° 3	T 19
F 20	5 53 33	28° 5'40	13°II36	17°55	2°33	7°45	9°30	26°16	6°15	10°58	7°46	3°35	3°44	9° 9	1° 0	F 20
S 21	5 57 29	29° 6'50	27°29	18°56	2°28	8°32	9°31	26°12	6°18	11° 0	7°45	3°34	3°41	9°16	0°57	S 21
S 22	6 1 26	0°Z 8'00	11°II11	19°51	2°25	9°18	9°31	26° 8	6°22	11° 2	7°44	3°34	3°37	9°22	0°53	S 22
M 23	6 5 23	1° 9'11	24°41	20°41	2°D24	10° 4	9°32	26° 5	6°25	11° 4	7°43	3°34	3°34	9°29	0°50	M 23
T 24	6 9 19	2°10'22	7°II59	21°23	2°27	10°51	9°32	26° 1	6°29	11° 6	7°42	3°33	3°31	9°36	0°46	T 24
W 25	6 13 16	3°11'33	21° 3	21°57	2°31	11°37	9°R32	25°58	6°32	11° 8	7°41	3°D33	3°28	9°42	0°42	W 25
T 26	6 17 12	4°12'45	3°Z54	22°22	2°38	12°24	9°32	25°54	6°36	11°11	7°40	3°R33	3°25	9°49	0°39	T 26
F 27	6 21 9	5°13'57	16°31	22°37	2°47	13°10	9°32	25°51	6°39	11°13	7°39	3°33	3°21	9°56	0°35	F 27
S 28	6 25 5	6°15'08	28°54	22°R41	2°58	13°57	9°32	25°48	6°42	11°15	7°38	3°33	3°18	10° 3	0°31	S 28
S 29	6 29 2	7°16'20	11°II 6	22°34	3°12	14°43	9°31	25°45	6°46	11°17	7°37	3°33	3°15	10° 9	0°27	S 29
M 30	6 32 58	8°17'31	23° 7	22°15	3°27	15°30	9°30	25°42	6°49	11°19	7°36	3°32	3°12	10°16	0°23	M 30
T 31	6 36 55	9°Z18'42	5°II 2	21°Z45	3°II45	16°Z16	9°II29	25°Z39	6°II52	11°II21	7°II35	3°Z31	3°Z 9	10°II23	0°II19	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	21s48	22s 0	2s35	25s17	2s 6	22s59	0s53	24s 7	0s49	9n20	1n 3	17n31	2s12	21s 6	0n 6	20s34
M 2	21 58	19 37	3 29	25 25	2 9	22 38	0 38	24 10	0 49	9 18	1 3	17 31	2 12	21 7	0 6	20 35
T 3	22 6	16 26	4 13	25 33	2 11	22 18	0 22	24 12	0 50	9 17	1 3	17 30	2 12	21 7	0 6	20 35
W 4	22 15	12 37	4 46	25 38	2 13	21 57	0 6	24 15	0 50	9 16	1 4	17 29	2 12	21 8	0 6	20 35
T 5	22 23	8 19	5 7	25 42	2 15	21 36	0n 9	24 16	0 50	9 15	1 4	17 28	2 12	21 9	0 6	20 36
F 6	22 30	3 40	5 15	25 45	2 16	21 15	0 25	24 18	0 51	9 13	1 4	17 27	2 11	21 9	0 5	20 36
S 7	22 37	1n11	5 9	25 46	2 17	20 54	0 40	24 19	0 51	9 12	1 5	17 26	2 11	21 10	0 5	20 36
S 8	22 44	6 6	4 49	25 46	2 18	20 34	0 55	24 20	0 52	9 11	1 5	17 25	2 11	21 11	0 5	20 36
M 9	22 50	10 52	4 14	25 44	2 17	20 14	1 10	24 21	0 52	9 10	1 5	17 24	2 11	21 11	0 5	20 37
T 10	22 56	15 17	3 25	25 41	2 17	19 54	1 24	24 21	0 52	9 10	1 5	17 23	2 11	21 12	0 5	20 37
W 11	23 1	19 4	2 24	25 36	2 16	19 35	1 38	24 22	0 53	9 9	1 6	17 23	2 11	21 13	0 5	20 37
T 12	23 6	21 54	1 13	25 29	2 14	19 17	1 52	24 22	0 53	9 8	1 6	17 22	2 10	21 13	0 5	20 38
F 13	23 11	23 28	0n 3	25 21	2 11	19 0	2 5	24 21	0 54	9 7	1 6	17 21	2 10	21 14	0 5	20 38
S 14	23 14	23 34	1 20	25 12	2 8	18 43	2 18	24 21	0 54	9 7	1 6	17 20	2 10	21 15	0 5	20 38
S 15	23 18	22 8	2 33	25 1	2 4	18 28	2 30	24 20	0 54	9 6	1 7	17 19	2 10	21 15	0 5	20 39
M 16	23 21	19 17	3 37	24 49	2 0	18 13	2 42	24 19	0 55	9 6	1 7	17 19	2 10	21 16	0 5	20 39
T 17	23 25	15 16	4 28	24 36	1 54	17 59	2 53	24 17	0 55	9 5	1 7	17 18	2 10	21 16	0 5	20 39
W 18	23 26	10 24	5 1	24 21	1 48	17 46	3 3	24 16	0 55	9 5	1 8	17 17	2 9	21 17	0 5	20 40
T 19	23 27	5 1	5 16	24 5	1 40	17 34	3 13	24 14	0 56	9 5	1 8	17 16	2 9	21 18	0 5	20 40
F 20	23 28	0s35	5 12	23 48	1 32	17 24	3 23	24 11	0 56	9 5	1 8	17 16	2 9	21 18	0 5	20 40
S 21	23 29	6 5	4 50	23 31	1 23	17 14	3 32	24 9	0 56	9 4	1 8	17 15	2 9	21 19	0 5	20 40
S 22	23 29	11 14	4 11	23 12	1 12	17 5	3 40	24 6	0 57	9 4	1 9	17 14	2 9	21 19	0 5	20 41
M 23	23 29	15 45	3 19	22 53	1 1	16 57	3 48	24 3	0 57	9 4	1 9	17 14	2 8	21 20	0 5	20 41
T 24	23 28	19 25	2 17	22 34	0 48	16 51	3 55	23 59	0 57	9 5	1 9	17 13	2 8	21 21	0 5	20 41
W 25	23 27	22 2	1 9	22 15	0 34	16 45	4 2	23 56	0 58	9 5	1 9	17 13	2 8	21 21	0 5	20 42
T 26	23 25	23 28	0s 2	21 56	0 18	16 40	4 8	23 52	0 58	9 5	1 10	17 12	2 8	21 22	0 5	20 42
F 27	23 23	23 38	1 11	21 37	0 2	16 36	4 14	23 48	0 58	9 5	1 10	17 12	2 7	21 22	0 5	20 42
S 28	23 20	22 38	2 16	21 19	0n15	16 33	4 19	23 43	0 58	9 6	1 10	17 11	2 7	21 23	0 5	20 42
S 29	23 17	20 35	3 14	21 3	0 33	16 31	4 24	23 39	0 59	9 6	1 11	17 11	2 7	21 24	0 5	20 43
M 30	23 13	17 38	4 2	20 47	0 52	16 30	4 28	23 34	0 59	9 7	1 11	17 10	2 7	21 24	0 5	20 43
T 31	23s 9	14s 0	4s39	20s33	1n12	16s29	4n32	23s28	0s59	9n 8	1n11	17n10	2s 6	21s25	0n 5	20s43

Julian Day Number = 2322948.5, Delta T = 44.77 sec  
 Ecliptic obliquity = 23°29'05", Nutation = - 0°00'18", out-of-bounds declination in red  
 Ayanamsha: Fagan/Bradley = 19°49'33", Lahiri = 18°56'34"Greg. Calendar