



# Astrodienst Ephemeris Tables for the year 1648

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 1648  
geocentric

JANUARY 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	6 40 52	10 <sup>3</sup> 19'53	16 <sup>1</sup> 54	21 <sup>1</sup> R 3	4 <sup>1</sup> 5 5	17 <sup>3</sup> 3 3	9 <sup>1</sup> R28	25 <sup>1</sup> R36	6 <sup>1</sup> 55	11 <sup>1</sup> 23	7 <sup>1</sup> R34	3 <sup>1</sup> R31	3 <sup>1</sup> 6 6	10 <sup>1</sup> 29	0 <sup>1</sup> R15	W 1
T 2	6 44 48	11 <sup>1</sup> 21'04	28 <sup>1</sup> 45	20 <sup>3</sup> 10	4 <sup>1</sup> 26	17 <sup>1</sup> 50	9 <sup>1</sup> 27	25 <sup>1</sup> 34	6 <sup>1</sup> 59	11 <sup>1</sup> 25	7 <sup>1</sup> 33	3 <sup>1</sup> 30	3 <sup>1</sup> 2	10 <sup>1</sup> 36	0 <sup>1</sup> 11	T 2
F 3	6 48 45	12 <sup>1</sup> 22'14	10 <sup>1</sup> 42	19 <sup>1</sup> 7	4 <sup>1</sup> 50	18 <sup>1</sup> 36	9 <sup>1</sup> 25	25 <sup>1</sup> 31	7 <sup>1</sup> 2	11 <sup>1</sup> 27	7 <sup>1</sup> 32	3 <sup>1</sup> D30	2 <sup>1</sup> 59	10 <sup>1</sup> 43	0 <sup>1</sup> 7	F 3
S 4	6 52 41	13 <sup>1</sup> 23'23	22 <sup>1</sup> 49	17 <sup>1</sup> 57	5 <sup>1</sup> 15	19 <sup>1</sup> 23	9 <sup>1</sup> 23	25 <sup>1</sup> 29	7 <sup>1</sup> 5	11 <sup>1</sup> 29	7 <sup>1</sup> 32	3 <sup>1</sup> 30	2 <sup>1</sup> 56	10 <sup>1</sup> 50	0 <sup>1</sup> 3	S 4
S 5	6 56 38	14 <sup>1</sup> 24'32	5 <sup>1</sup> 10	16 <sup>1</sup> 41	5 <sup>1</sup> 42	20 <sup>1</sup> 10	9 <sup>1</sup> 21	25 <sup>1</sup> 26	7 <sup>1</sup> 8	11 <sup>1</sup> 31	7 <sup>1</sup> 31	3 <sup>1</sup> 31	2 <sup>1</sup> 53	10 <sup>1</sup> 56	29 <sup>1</sup> 59	S 5
M 6	7 0 34	15 <sup>1</sup> 25'41	17 <sup>1</sup> 50	15 <sup>1</sup> 22	6 <sup>1</sup> 11	20 <sup>1</sup> 57	9 <sup>1</sup> 19	25 <sup>1</sup> 24	7 <sup>1</sup> 11	11 <sup>1</sup> 33	7 <sup>1</sup> 30	3 <sup>1</sup> 32	2 <sup>1</sup> 50	11 <sup>1</sup> 3	29 <sup>1</sup> 54	M 6
T 7	7 4 31	16 <sup>1</sup> 26'49	0 <sup>1</sup> 52	14 <sup>1</sup> 2	6 <sup>1</sup> 41	21 <sup>1</sup> 44	9 <sup>1</sup> 17	25 <sup>1</sup> 22	7 <sup>1</sup> 14	11 <sup>1</sup> 35	7 <sup>1</sup> 29	3 <sup>1</sup> 33	2 <sup>1</sup> 47	11 <sup>1</sup> 10	29 <sup>1</sup> 50	T 7
W 8	7 8 27	17 <sup>1</sup> 27'56	14 <sup>1</sup> 19	12 <sup>1</sup> 44	7 <sup>1</sup> 13	22 <sup>1</sup> 30	9 <sup>1</sup> 14	25 <sup>1</sup> 20	7 <sup>1</sup> 17	11 <sup>1</sup> 37	7 <sup>1</sup> 28	3 <sup>1</sup> 34	2 <sup>1</sup> 43	11 <sup>1</sup> 16	29 <sup>1</sup> 46	W 8
T 9	7 12 24	18 <sup>1</sup> 29'03	28 <sup>1</sup> 10	11 <sup>1</sup> 30	7 <sup>1</sup> 46	23 <sup>1</sup> 17	9 <sup>1</sup> 12	25 <sup>1</sup> 18	7 <sup>1</sup> 20	11 <sup>1</sup> 39	7 <sup>1</sup> 27	3 <sup>1</sup> R35	2 <sup>1</sup> 40	11 <sup>1</sup> 23	29 <sup>1</sup> 41	T 9
F 10	7 16 21	19 <sup>1</sup> 30'09	12 <sup>1</sup> 24	10 <sup>1</sup> 22	8 <sup>1</sup> 21	24 <sup>1</sup> 4	9 <sup>1</sup> 9	25 <sup>1</sup> 16	7 <sup>1</sup> 23	11 <sup>1</sup> 41	7 <sup>1</sup> 26	3 <sup>1</sup> 34	2 <sup>1</sup> 37	11 <sup>1</sup> 30	29 <sup>1</sup> 37	F 10
S 11	7 20 17	20 <sup>1</sup> 31'15	26 <sup>1</sup> 56	9 <sup>1</sup> 22	8 <sup>1</sup> 57	24 <sup>1</sup> 51	9 <sup>1</sup> 6	25 <sup>1</sup> 14	7 <sup>1</sup> 26	11 <sup>1</sup> 43	7 <sup>1</sup> 26	3 <sup>1</sup> 33	2 <sup>1</sup> 34	11 <sup>1</sup> 37	29 <sup>1</sup> 33	S 11
S 12	7 24 14	21 <sup>1</sup> 32'21	11 <sup>1</sup> 41	8 <sup>1</sup> 30	9 <sup>1</sup> 34	25 <sup>1</sup> 38	9 <sup>1</sup> 2	25 <sup>1</sup> 12	7 <sup>1</sup> 29	11 <sup>1</sup> 45	7 <sup>1</sup> 25	3 <sup>1</sup> 32	2 <sup>1</sup> 31	11 <sup>1</sup> 43	29 <sup>1</sup> 28	S 12
M13	7 28 10	22 <sup>1</sup> 33'26	26 <sup>1</sup> 31	7 <sup>1</sup> 48	10 <sup>1</sup> 13	26 <sup>1</sup> 25	8 <sup>1</sup> 59	25 <sup>1</sup> 11	7 <sup>1</sup> 32	11 <sup>1</sup> 46	7 <sup>1</sup> 24	3 <sup>1</sup> 29	2 <sup>1</sup> 27	11 <sup>1</sup> 50	29 <sup>1</sup> 24	M13
T 14	7 32 7	23 <sup>1</sup> 34'30	11 <sup>1</sup> 18	7 <sup>1</sup> 15	10 <sup>1</sup> 53	27 <sup>1</sup> 12	8 <sup>1</sup> 55	25 <sup>1</sup> 9	7 <sup>1</sup> 35	11 <sup>1</sup> 48	7 <sup>1</sup> 23	3 <sup>1</sup> 26	2 <sup>1</sup> 24	11 <sup>1</sup> 57	29 <sup>1</sup> 19	T 14
W15	7 36 3	24 <sup>1</sup> 35'34	25 <sup>1</sup> 55	6 <sup>1</sup> 51	11 <sup>1</sup> 34	27 <sup>1</sup> 59	8 <sup>1</sup> 51	25 <sup>1</sup> 8	7 <sup>1</sup> 38	11 <sup>1</sup> 50	7 <sup>1</sup> 22	3 <sup>1</sup> 24	2 <sup>1</sup> 21	12 <sup>1</sup> 3	29 <sup>1</sup> 15	W15
T 16	7 40 0	25 <sup>1</sup> 36'38	10 <sup>1</sup> 17	6 <sup>1</sup> 37	12 <sup>1</sup> 16	28 <sup>1</sup> 46	8 <sup>1</sup> 47	25 <sup>1</sup> 7	7 <sup>1</sup> 40	11 <sup>1</sup> 52	7 <sup>1</sup> 22	3 <sup>1</sup> 22	2 <sup>1</sup> 18	12 <sup>1</sup> 10	29 <sup>1</sup> 10	T 16
F 17	7 43 57	26 <sup>1</sup> 37'41	24 <sup>1</sup> 22	6 <sup>1</sup> D31	12 <sup>1</sup> 59	29 <sup>1</sup> 33	8 <sup>1</sup> 43	25 <sup>1</sup> 6	7 <sup>1</sup> 43	11 <sup>1</sup> 53	7 <sup>1</sup> 21	3 <sup>1</sup> D21	2 <sup>1</sup> 15	12 <sup>1</sup> 17	29 <sup>1</sup> 6	F 17
S 18	7 47 53	27 <sup>1</sup> 38'44	8 <sup>1</sup> 7	6 <sup>1</sup> 34	13 <sup>1</sup> 44	0 <sup>1</sup> 21	8 <sup>1</sup> 39	25 <sup>1</sup> 5	7 <sup>1</sup> 46	11 <sup>1</sup> 55	7 <sup>1</sup> 20	3 <sup>1</sup> 22	2 <sup>1</sup> 12	12 <sup>1</sup> 24	29 <sup>1</sup> 1	S 18
S 19	7 51 50	28 <sup>1</sup> 39'46	21 <sup>1</sup> 35	6 <sup>1</sup> 44	14 <sup>1</sup> 29	1 <sup>1</sup> 8	8 <sup>1</sup> 34	25 <sup>1</sup> 4	7 <sup>1</sup> 49	11 <sup>1</sup> 57	7 <sup>1</sup> 20	3 <sup>1</sup> 23	2 <sup>1</sup> 8	12 <sup>1</sup> 30	28 <sup>1</sup> 57	S 19
M20	7 55 46	29 <sup>1</sup> 40'48	4 <sup>1</sup> 45	7 <sup>1</sup> 2	15 <sup>1</sup> 16	1 <sup>1</sup> 55	8 <sup>1</sup> 30	25 <sup>1</sup> 3	7 <sup>1</sup> 51	11 <sup>1</sup> 59	7 <sup>1</sup> 19	3 <sup>1</sup> 25	2 <sup>1</sup> 5	12 <sup>1</sup> 37	28 <sup>1</sup> 52	M20
T 21	7 59 43	0 <sup>1</sup> 41'50	17 <sup>1</sup> 39	7 <sup>1</sup> 26	16 <sup>1</sup> 3	2 <sup>1</sup> 42	8 <sup>1</sup> 25	25 <sup>1</sup> 3	7 <sup>1</sup> 54	12 <sup>1</sup> 0	7 <sup>1</sup> 18	3 <sup>1</sup> 26	2 <sup>1</sup> 2	12 <sup>1</sup> 44	28 <sup>1</sup> 48	T 21
W22	8 3 39	1 <sup>1</sup> 42'51	0 <sup>1</sup> 21	7 <sup>1</sup> 55	16 <sup>1</sup> 51	3 <sup>1</sup> 29	8 <sup>1</sup> 20	25 <sup>1</sup> 2	7 <sup>1</sup> 56	12 <sup>1</sup> 2	7 <sup>1</sup> 18	3 <sup>1</sup> R27	1 <sup>1</sup> 59	12 <sup>1</sup> 50	28 <sup>1</sup> 43	W22
T 23	8 7 36	2 <sup>1</sup> 43'51	12 <sup>1</sup> 51	8 <sup>1</sup> 31	17 <sup>1</sup> 40	4 <sup>1</sup> 16	8 <sup>1</sup> 15	25 <sup>1</sup> 2	7 <sup>1</sup> 59	12 <sup>1</sup> 4	7 <sup>1</sup> 17	3 <sup>1</sup> 27	1 <sup>1</sup> 56	12 <sup>1</sup> 57	28 <sup>1</sup> 39	T 23
F 24	8 11 32	3 <sup>1</sup> 44'50	25 <sup>1</sup> 11	9 <sup>1</sup> 11	18 <sup>1</sup> 30	5 <sup>1</sup> 4	8 <sup>1</sup> 10	25 <sup>1</sup> 1	8 <sup>1</sup> 1	12 <sup>1</sup> 5	7 <sup>1</sup> 17	3 <sup>1</sup> 25	1 <sup>1</sup> 53	13 <sup>1</sup> 4	28 <sup>1</sup> 34	F 24
S 25	8 15 29	4 <sup>1</sup> 45'48	7 <sup>1</sup> 22	9 <sup>1</sup> 55	19 <sup>1</sup> 21	5 <sup>1</sup> 51	8 <sup>1</sup> 4	25 <sup>1</sup> 1	8 <sup>1</sup> 4	12 <sup>1</sup> 7	7 <sup>1</sup> 16	3 <sup>1</sup> 21	1 <sup>1</sup> 49	13 <sup>1</sup> 11	28 <sup>1</sup> 30	S 25
S 26	8 19 26	5 <sup>1</sup> 46'45	19 <sup>1</sup> 26	10 <sup>1</sup> 44	20 <sup>1</sup> 12	6 <sup>1</sup> 38	7 <sup>1</sup> 58	25 <sup>1</sup> D 1	8 <sup>1</sup> 6	12 <sup>1</sup> 8	7 <sup>1</sup> 15	3 <sup>1</sup> 16	1 <sup>1</sup> 46	13 <sup>1</sup> 17	28 <sup>1</sup> 25	S 26
M27	8 23 22	6 <sup>1</sup> 47'41	1 <sup>1</sup> 24	11 <sup>1</sup> 36	21 <sup>1</sup> 4	7 <sup>1</sup> 25	7 <sup>1</sup> 53	25 <sup>1</sup> 1	8 <sup>1</sup> 8	12 <sup>1</sup> 10	7 <sup>1</sup> 15	3 <sup>1</sup> 10	1 <sup>1</sup> 43	13 <sup>1</sup> 24	28 <sup>1</sup> 21	M27
T 28	8 27 19	7 <sup>1</sup> 48'36	13 <sup>1</sup> 17	12 <sup>1</sup> 32	21 <sup>1</sup> 57	8 <sup>1</sup> 13	7 <sup>1</sup> 47	25 <sup>1</sup> 1	8 <sup>1</sup> 11	12 <sup>1</sup> 11	7 <sup>1</sup> 14	3 <sup>1</sup> 3	1 <sup>1</sup> 40	13 <sup>1</sup> 31	28 <sup>1</sup> 16	T 28
W29	8 31 15	8 <sup>1</sup> 49'30	25 <sup>1</sup> 8	13 <sup>1</sup> 31	22 <sup>1</sup> 50	9 <sup>1</sup> 0	7 <sup>1</sup> 41	25 <sup>1</sup> 1	8 <sup>1</sup> 13	12 <sup>1</sup> 13	7 <sup>1</sup> 14	2 <sup>1</sup> 57	1 <sup>1</sup> 37	13 <sup>1</sup> 37	28 <sup>1</sup> 12	W29
T 30	8 35 12	9 <sup>1</sup> 50'22	6 <sup>1</sup> 59	14 <sup>1</sup> 32	23 <sup>1</sup> 44	9 <sup>1</sup> 47	7 <sup>1</sup> 35	25 <sup>1</sup> 2	8 <sup>1</sup> 15	12 <sup>1</sup> 14	7 <sup>1</sup> 14	2 <sup>1</sup> 51	1 <sup>1</sup> 33	13 <sup>1</sup> 44	28 <sup>1</sup> 8	T 30
F 31	8 39 8	10 <sup>1</sup> 51'13	18 <sup>1</sup> 55	15 <sup>1</sup> 36	24 <sup>1</sup> 39	10 <sup>1</sup> 35	7 <sup>1</sup> 28	25 <sup>1</sup> 2	8 <sup>1</sup> 17	12 <sup>1</sup> 15	7 <sup>1</sup> 13	2 <sup>1</sup> 54	1 <sup>1</sup> 30	13 <sup>1</sup> 51	28 <sup>1</sup> 3	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
W 1	23s 5	9s51	5s 4	20s20	1n31	16s29	4n36	23s23	1s 0	9n 8	1n11	17n 9	2s 6	21s25	0n 5	20s44	1n29	10n57	10s48	23n26	23n27	12s 2	12n38	7s41			
T 2	23 0	5 19	5 16	20 9	1 50	16 30	4 39	23 17	1 0	9 9	1 12	17 9	2 6	21 26	0 5	20 44	1 29	10 57	10 48	23 26	23 27	12 0	12 38	7 41			
F 3	22 54	0 34	5 14	20 0	2 8	16 32	4 41	23 11	1 0	9 10	1 12	17 8	2 6	21 26	0 5	20 44	1 29	10 57	10 47	23 26	23 27	11 58	12 39	7 41			
S 4	22 49	4n16	4 59	19 53	2 25	16 34	4 44	23 5	1 0	9 11	1 12	17 8	2 5	21 27	0 5	20 44	1 29	10 57	10 47	23 26	23 27	11 56	12 39	7 41			
S 5	22 42	9 2	4 30	19 47	2 41	16 36	4 46	22 58	1 1	9 12	1 13	17 8	2 5	21 27	0 5	20 45	1 29	10 57	10 47	23 26	23 27	11 53	12 40	7 42			
M 6	22 35	13 33	3 47	19 43	2 54	16 40	4 47	22 51	1 1	9 13	1 13	17 8	2 5	21 28	0 5	20 45	1 29	10 57	10 47	23 26	23 27	11 51	12 41	7 42			
T 7	22 28	17 35	2 51	19 40	3 6	16 43	4 49	22 44	1 1	9 14	1 13	17 7	2 5	21 28	0 5	20 45	1 29	10 58	10 47	23 26	23 27	11 49	12 41	7 42			
W 8	22 21	20 50	1 45	19 39	3 14	16 48	4 50	22 36	1 1	9 15	1 13	17 7	2 4	21 29	0 5	20 45	1 29	10 58	10 47	23 26	23 27	11 47	12 42	7 42			
T 9	22 12	22 58	0 30	19 39	3 20	16 52	4 50	22 29	1 1	9 16	1 14	17 7	2 4	21 29	0 5	20 46	1 29	10 58	10 46	23 26	23 27	11 44	12 43	7 43			
F 10	22 4	23 43	0n49	19 41	3 24	16 57	4 51	22 21	1 2	9 18	1 14	17 7	2 4	21 30	0 5	20 46	1 29	10 58	10 46	23 26	23 28	11 42	12 43	7 43			
S 11	21 55	22 52	2 6	19 44	3 25	17 3	4 51	22 13	1 2	9 19	1 14	17 7	2 4	21 30	0 5	20 46	1 29	10 58	10 46	23 26	23 28	11 40	12 44	7 43			
S 12	21 45	20 26	3 15	19 49	3 25	17 8	4 51	22 4	1 2	9 21	1 14	17 6	2 3	21 31	0 5	20 46	1 29	10 58	10 46	23 26	23 28	11 37	12 45	7 43			
M13	21 36	16 39	4 12	19 54	3 22	17 14	4 50	21 56	1 2	9 22	1 15	17 6	2 3	21 31	0 5	20 46	1 29	10 58	10 46	23 26	23 28	11 35	12 46	7 43			
T 14	21 25	11 50	4 52	20 0	3 17	17 20	4 50	21 47	1 2	9 24	1 15	17 6	2 3	21 32	0 5	20 47	1 29	10 58	10 45	23 26	23 28	11 33	12 46	7 43			
W15	21 15	6 24	5 12	20 7	3 11	17 27	4 49	21 38	1 3	9 25	1 15	17 6	2 3	21 32	0 5	20 47	1 29	10 58	10 45	23 26	23 28	11 31	12 47	7 43			
T 16	21 4	0 43	5 13	20 15	3 4	17 33	4 47	21 28	1 3	9 27	1 15	17 6	2 2	21 33	0 5	20 47	1 29	10 58	10 45	23 27	23 28	11 28	12 48	7 43			
F 17	20 52	4s54	4 54	20 23	2 56	17 40	4 46	21 18	1 3	9 29	1 16	17 6	2 2	21 33	0 5	20 47	1 29	10 58	10 45	23 27	23 28	11 26	12 49	7 43			
S 18	20 40	10 9	4 19	20 32	2 47	17 47	4 45	21 9	1 3	9 31	1 16	17 6	2 2	21 34	0 5	20 47	1 29	10 58	10 44	23 27	23 28	11 24	12 50	7 43			
S 19	20 28	14 48	3 30	20 41	2 38	17 54	4 43	20 58	1 3	9 33	1 16	17 6	2 1	21 34	0 5	20 48	1 29	10 59	10 44	23 26	23 28	11 21	12 51	7 43			
M20	20 15	18 39	2 31	20 50	2 28	18 1	4 41	20 48	1 3	9 35	1 16	17 6	2 1	21 35	0 5	20 48	1 29	10 59	10 44	23 26	23 28	11 19	12 51	7 43			
T 21	20 2	21 29	1 26	20 59	2 18	18 8	4 39	20 37	1 4	9 37	1 17	17 6	2 1	21 35	0 5	20 48	1 29	10 59	10 44	23 26	23 28	11 17	12 52	7 43			
W22	19 49	23 12	0 17	21 7	2 8	18 15	4 36	20 27	1 4	9 39	1 17	17 7	2 1	21 35	0 5	20 48	1 29	10 59	10 44	23 26	23 28	11 14	12 53	7 43			
T 23	19 35	23 43	0s51	21 16	1 57	18 22	4 34	20 16	1 4	9 41	1 17	17 7	2 0	21 36	0 5	20 48	1 29	10 59	10 43	23 26	23 28	11 12	12 54	7 43			
F 24	19 21	23 3	1 56	21 24	1 46	18 29	4 31	20 4	1 4	9 43	1 17	17 7	2 0	21 36	0 5	20 49	1 29	10 59	10 43	23 26	23 28	11 10	12 55	7 43			
S 25	19 7	21 17	2 55	21 31	1 36	18 36	4 28	19 53	1 4	9 46	1 18	17 7	2 0	21 37	0 5	20 49	1 29	10 59	10 43	23 27	23 28	11 7	12 56	7 43			
S 26	18 52	18 35	3 45	21 38	1 25	18 43	4 25	19 41	1 4	9 48	1 18	17 7	1 59	21 37	0 5	20 49	1 29	10 59	10 43	23 27	23 28	11 5	12 57	7 43			
M27	18 37	15 7	4 25	21 44	1 15	18 49	4 22	19 29	1 4	9 50	1 18	17 8	1 59	21 37	0 5	20 49	1 29	11 0	10 42	23 27	23 28	11 3	12 58	7 43			
T 28	18 21	11 5	4 52	21 49	1 4	18 56	4 19	19 17	1 4	9 53	1 18	17 8	1 59	21 38	0 5	20 49	1 29	11 0	10 42	23 27	23 28	11 0	12 59	7 43			
W29	18 5	6 38	5 8	21 54	0 54	19 2	4 16	19 5	1 4	9 55	1 18	17 8	1 59	21 38	0 5	20 49	1 29	11 0	10 42	23 27	23 29	10 58	13 0	7 43			
T 30	17 49	1 58	5 10	21 58	0 44	19 8	4 12	18 52	1 5	9 58	1 19	17 9	1 58	21 38	0 5	20 50	1 29	11 0	10 42	23 27	23 29	10 56	13 1	7 43			
F 31	17s33	2n49	4s58	22s 0	0n34	19s14	4n 9	18s39	1s 5	10n 0	1n19	17n 9	1s58	21s39	0n 5	20s50	1n29	11n 0	10s41	23n27	23n29	10s53	13n 2	7s42			



## ASTRODIENST EPHEMERIS for the year 1648

geocentric

MARCH 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 37 25	11° 5'04"	22° 8'1	28° 58'	25° 16'	4° 16'	3° 45'	26° 8'	9° 0'	12° 43'	7° 10'	0° 29'	29° 55'	17° 12'	26° 15'	S 1
M 2	10 41 21	12° 5'06"	4° 11'30	0° 42'	26° 22'	5° 3'	3° 37'	26° 12'	9° 1'	12° 44'	7° 10'	0° 28'	29° 52'	17° 19'	26° 13'	M 2
T 3	10 45 18	13° 5'05"	17° 19'	2° 27'	27° 28'	5° 50'	3° 29'	26° 15'	9° 1'	12° 44'	7° 10'	0° 27'	29° 49'	17° 26'	26° 10'	T 3
W 4	10 49 15	14° 5'02"	0° 32'	4° 13'	28° 34'	6° 38'	3° 22'	26° 19'	9° 2'	12° 45'	7° 11'	0° 28'	29° 45'	17° 33'	26° 8'	W 4
T 5	10 53 11	15° 4'57"	14° 11'	6° 0'	29° 41'	7° 25'	3° 14'	26° 23'	9° 2'	12° 45'	7° 11'	0° 27'	29° 42'	17° 39'	26° 6'	T 5
F 6	10 57 8	16° 4'50"	28° 20'	7° 49'	0° 47'	8° 12'	3° 7'	26° 28'	9° 3'	12° 45'	7° 11'	0° 24'	29° 39'	17° 46'	26° 4'	F 6
S 7	11 1 4	17° 4'40"	12° 57'	9° 38'	1° 54'	8° 59'	2° 59'	26° 32'	9° 3'	12° 45'	7° 12'	0° 19'	29° 36'	17° 53'	26° 1'	S 7
S 8	11 5 1	18° 4'28"	27° 58'	11° 29'	3° 0'	9° 47'	2° 52'	26° 36'	9° 4'	12° 46'	7° 12'	0° 11'	29° 33'	17° 59'	26° 0'	S 8
M 9	11 8 57	19° 4'14"	13° 15'	13° 21'	4° 7'	10° 34'	2° 44'	26° 41'	9° 4'	12° 46'	7° 12'	0° 1'	29° 30'	18° 6'	25° 58'	M 9
T 10	11 12 54	20° 3'58"	28° 38'	15° 14'	5° 15'	11° 21'	2° 37'	26° 45'	9° 4'	12° 46'	7° 13'	29° 50'	29° 26'	18° 13'	25° 56'	T 10
W 11	11 16 50	21° 3'40"	13° 53'	17° 8'	6° 22'	12° 8'	2° 30'	26° 50'	9° 4'	12° 46'	7° 13'	29° 39'	29° 23'	18° 20'	25° 54'	W 11
T 12	11 20 47	22° 3'21"	28° 51'	19° 4'	7° 29'	12° 55'	2° 23'	26° 54'	9° 4'	12° 46'	7° 14'	29° 30'	29° 20'	18° 26'	25° 53'	T 12
F 13	11 24 44	23° 2'59"	13° 24'	21° 0'	8° 37'	13° 42'	2° 16'	26° 59'	9° 4'	12° 46'	7° 14'	29° 23'	29° 17'	18° 33'	25° 51'	F 13
S 14	11 28 40	24° 2'36"	27° 27'	22° 58'	9° 45'	14° 29'	2° 9'	27° 4'	9° 4'	12° 46'	7° 15'	29° 19'	29° 14'	18° 40'	25° 50'	S 14
S 15	11 32 37	25° 2'11"	11° 1'	24° 56'	10° 52'	15° 16'	2° 2'	27° 9'	9° 4'	12° 46'	7° 15'	29° 17'	29° 10'	18° 47'	25° 49'	S 15
M 16	11 36 33	26° 1'44"	24° 7'	26° 56'	12° 0'	16° 3'	1° 56'	27° 14'	9° 4'	12° 46'	7° 16'	29° 16'	29° 7'	18° 53'	25° 47'	M 16
T 17	11 40 30	27° 1'15"	6° 34'	28° 56'	13° 9'	16° 50'	1° 49'	27° 19'	9° 4'	12° 46'	7° 16'	29° 16'	29° 4'	19° 0'	25° 46'	T 17
W 18	11 44 26	28° 0'45"	19° 13'	0° 57'	14° 17'	17° 37'	1° 43'	27° 24'	9° 4'	12° 46'	7° 17'	29° 15'	29° 1'	19° 7'	25° 45'	W 18
T 19	11 48 23	29° 0'13"	1° 22'	2° 58'	15° 25'	18° 24'	1° 36'	27° 29'	9° 3'	12° 46'	7° 17'	29° 13'	28° 58'	19° 13'	25° 44'	T 19
F 20	11 52 19	29° 59'39"	13° 22'	5° 0'	16° 34'	19° 11'	1° 30'	27° 35'	9° 3'	12° 46'	7° 18'	29° 7'	28° 55'	19° 20'	25° 44'	F 20
S 21	11 56 16	0° 59'03"	25° 16'	7° 2'	17° 42'	19° 58'	1° 24'	27° 40'	9° 3'	12° 46'	7° 19'	28° 58'	28° 51'	19° 27'	25° 43'	S 21
S 22	12 0 13	1° 58'26"	7° 7'	9° 4'	18° 51'	20° 45'	1° 18'	27° 45'	9° 2'	12° 45'	7° 19'	28° 47'	28° 48'	19° 34'	25° 42'	S 22
M 23	12 4 9	2° 57'46"	18° 59'	11° 6'	20° 0'	21° 32'	1° 12'	27° 51'	9° 2'	12° 45'	7° 20'	28° 34'	28° 45'	19° 40'	25° 42'	M 23
T 24	12 8 6	3° 57'04"	0° 51'	13° 7'	21° 9'	22° 19'	1° 7'	27° 56'	9° 1'	12° 45'	7° 21'	28° 19'	28° 42'	19° 47'	25° 42'	T 24
W 25	12 12 2	4° 56'20"	12° 46'	15° 7'	22° 18'	23° 5'	1° 1'	28° 2'	9° 1'	12° 44'	7° 21'	28° 5'	28° 39'	19° 54'	25° 41'	W 25
T 26	12 15 59	5° 55'34"	24° 46'	17° 6'	23° 27'	23° 52'	0° 56'	28° 8'	9° 0'	12° 44'	7° 22'	27° 51'	28° 35'	20° 0'	25° 41'	T 26
F 27	12 19 55	6° 54'46"	6° 50'	19° 3'	24° 36'	24° 39'	0° 51'	28° 14'	8° 59'	12° 44'	7° 23'	27° 40'	28° 32'	20° 7'	25° 41'	F 27
S 28	12 23 52	7° 53'56"	19° 2'	20° 58'	25° 45'	25° 26'	0° 45'	28° 20'	8° 59'	12° 43'	7° 23'	27° 32'	28° 29'	20° 14'	25° 41'	S 28
S 29	12 27 48	8° 53'04"	1° 23'	22° 51'	26° 55'	26° 12'	0° 40'	28° 26'	8° 58'	12° 43'	7° 24'	27° 27'	28° 26'	20° 21'	25° 41'	S 29
M 30	12 31 45	9° 52'09"	13° 57'	24° 41'	28° 4'	26° 59'	0° 36'	28° 32'	8° 57'	12° 42'	7° 25'	27° 25'	28° 23'	20° 27'	25° 42'	M 30
T 31	12 35 42	10° 51'12"	26° 46'	26° 58'	29° 13'	27° 46'	0° 31'	28° 38'	8° 56'	12° 42'	7° 26'	27° 24'	28° 22'	20° 34'	25° 42'	T 31

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	7s25	15n16	3 s 9	13s53	2s10	19s18	1n51	10s57	1s 3	11n26	1n22	17n33	1s50	21s46	0n 5	20s52	1n31
M 2	7 2	18 54	2 13	13 16	2 10	19 11	1 46	10 39	1 3	11 29	1 23	17 34	1 50	21 46	0 5	20 52	1 31
T 3	6 40	21 44	1 9	12 38	2 9	19 3	1 41	10 22	1 3	11 32	1 23	17 35	1 49	21 46	0 5	20 52	1 31
W 4	6 16	23 29	0n 0	11 58	2 8	18 55	1 36	10 4	1 3	11 34	1 23	17 36	1 49	21 46	0 5	20 52	1 31
T 5	5 53	23 55	1 12	11 17	2 7	18 46	1 31	9 47	1 3	11 37	1 23	17 37	1 49	21 46	0 5	20 52	1 31
F 6	5 30	22 51	2 22	10 35	2 5	18 37	1 27	9 29	1 3	11 40	1 23	17 38	1 49	21 46	0 5	20 52	1 31
S 7	5 7	20 13	3 25	9 51	2 2	18 27	1 22	9 11	1 2	11 43	1 23	17 40	1 48	21 46	0 5	20 52	1 31
S 8	4 43	16 11	4 15	9 7	1 59	18 17	1 17	8 53	1 2	11 45	1 23	17 41	1 48	21 46	0 5	20 52	1 31
M 9	4 20	11 1	4 48	8 20	1 56	18 6	1 12	8 35	1 2	11 48	1 23	17 42	1 48	21 46	0 5	20 52	1 31
T 10	3 57	5 8	5 0	7 33	1 52	17 54	1 7	8 17	1 2	11 51	1 23	17 43	1 48	21 46	0 5	20 52	1 31
W 11	3 33	1s 1	4 51	6 44	1 47	17 43	1 2	7 58	1 2	11 53	1 23	17 45	1 47	21 46	0 5	20 52	1 31
T 12	3 9	7 0	4 22	5 54	1 42	17 30	0 58	7 40	1 1	11 56	1 23	17 46	1 47	21 46	0 5	20 52	1 31
F 13	2 46	12 26	3 37	5 3	1 37	17 17	0 53	7 22	1 1	11 58	1 22	17 47	1 47	21 46	0 5	20 52	1 31
S 14	2 22	17 2	2 40	4 11	1 31	17 4	0 48	7 3	1 1	12 1	1 22	17 49	1 47	21 46	0 5	20 52	1 31
S 15	1 59	20 34	1 35	3 18	1 24	16 50	0 44	6 45	1 1	12 3	1 22	17 50	1 46	21 46	0 5	20 52	1 31
M 16	1 35	22 54	0 27	2 24	1 17	16 36	0 39	6 26	1 1	12 5	1 22	17 51	1 46	21 46	0 5	20 52	1 31
T 17	1 11	23 58	0s40	1 29	1 9	16 21	0 34	6 8	1 0	12 8	1 22	17 53	1 46	21 46	0 5	20 52	1 31
W 18	0 48	23 49	1 43	0 33	1 1	16 6	0 30	5 49	1 0	12 10	1 22	17 54	1 46	21 46	0 5	20 52	1 31
T 19	0 24	22 30	2 41	0n23	0 52	15 50	0 26	5 31	1 0	12 12	1 22	17 55	1 46	21 46	0 5	20 52	1 32
F 20	0 0	20 12	3 30	1 20	0 43	15 34	0 21	5 12	0 59	12 14	1 22	17 57	1 45	21 46	0 5	20 51	1 32
S 21	0n24	17 2	4 10	2 18	0 33	15 17	0 17	4 53	0 59	12 16	1 22	17 58	1 45	21 46	0 5	20 51	1 32
S 22	0 47	13 13	4 39	3 15	0 23	15 0	0 12	4 35	0 59	12 18	1 22	18 0	1 45	21 46	0 5	20 51	1 32
M 23	1 11	8 54	4 55	4 13	0 12	14 43	0 8	4 16	0 59	12 20	1 22	18 1	1 45	21 46	0 5	20 51	1 32
T 24	1 34	4 14	4 59	5 10	0 1	14 25	0 4	3 57	0 58	12 22	1 22	18 3	1 44	21 46	0 5	20 51	1 32
W 25	1 58	0n36	4 50	6 7	0n10	14 7	0s 0	3 38	0 58	12 24	1 22	18 4	1 44	21 46	0 5	20 51	1 32
T 26	2 21	5 27	4 28	7 4	0 22	13 48	0 4	3 19	0 58	12 26	1 22	18 5	1 44	21 46	0 5	20 51	1 32
F 27	2 45	10 9	3 53	7 59	0 33	13 29	0 8	3 0	0 57	12 28	1 22	18 7	1 44	21 46	0 5	20 51	1 32
S 28	3 8	14 30	3 8	8 54	0 45	13 9	0 12	2 42	0 57	12 30	1 21	18 8	1 44	21 46	0 5	20 51	1 32
S 29	3 32	18 19	2 13	9 47	0 57	12 49	0 16	2 23	0 57	12 31	1 21	18 10	1 43	21 45	0 5	20 51	1 32
M 30	3 55	21 21	1 11	10 38	1 8	12 29	0 20	2 4	0 56	12 33	1 21	18 11	1 43	21 45	0 5	20 51	1 32
T 31	4n18	23n23	0s 3	11n28	1n20	12s 8	0s24	1s45	0s56	12n34	1n21	18n13	1s43	21s45	0n 5	20s50	1n32

Julian Day Number = 2323039.5, Delta T = 44.60 sec

Ecliptic obliquity = 23°29'07", Nutation = - 0°00'17", out-of-bounds declination in red

Ayanamsha: Fagan/Bradley = 19°49'46", Lahiri = 18°56'46"Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

APRIL 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	12 39 38	11°50'13	9°55	28°11	0°23	28°32	0°27	28°44	8°55	12°R41	7°II27	27°R24	28°II16	20°41	25°42	W 1
T 2	12 43 35	12°49'11	23°27	29°50	1°33	29°19	0°22	28°50	8°54	12°41	7°28	27°II24	28°13	20°47	25°43	T 2
F 3	12 47 31	13°48'07	7°24	1°25	2°42	0°18	0°18	28°56	8°53	12°40	7°28	27°22	28°10	20°54	25°44	F 3
S 4	12 51 28	14°47'01	21°47	2°56	3°52	0°52	0°14	29° 2	8°52	12°39	7°29	27°18	28° 7	21° 1	25°44	S 4
S 5	12 55 24	15°45'52	6°34	4°22	5° 2	1°38	0°11	29° 9	8°51	12°39	7°30	27°11	28° 4	21° 8	25°45	S 5
M 6	12 59 21	16°44'42	21°37	5°43	6°12	2°24	0° 7	29°15	8°50	12°38	7°31	27° 2	28° 1	21°14	25°46	M 6
T 7	13 3 17	17°43'28	6°50	6°58	7°22	3°11	0° 4	29°22	8°49	12°37	7°32	26°52	27°57	21°21	25°47	T 7
W 8	13 7 14	18°42'13	22° 1	8° 9	8°32	3°57	0° 0	29°28	8°47	12°36	7°33	26°42	27°54	21°28	25°49	W 8
T 9	13 11 10	19°40'56	7°11	9°14	9°42	4°43	29°25	29°35	8°46	12°36	7°34	26°33	27°51	21°35	25°50	T 9
F 10	13 15 7	20°39'37	21°37	10°13	10°52	5°30	29°54	29°41	8°45	12°35	7°35	26°27	27°48	21°41	25°51	F 10
S 11	13 19 4	21°38'17	5°48	11° 6	12° 3	6°16	29°52	29°48	8°43	12°34	7°36	26°22	27°45	21°48	25°53	S 11
S 12	13 23 0	22°36'54	19°29	11°54	13°13	7° 2	29°49	29°55	8°42	12°33	7°37	26°21	27°41	21°55	25°54	S 12
M13	13 26 57	23°35'30	2°42	12°36	14°23	7°48	29°47	0°II 2	8°40	12°32	7°38	26°D21	27°38	22° 1	25°56	M13
T 14	13 30 53	24°34'04	15°30	13°12	15°34	8°34	29°44	0° 8	8°39	12°31	7°39	26°21	27°35	22° 8	25°58	T 14
W15	13 34 50	25°32'37	27°57	13°41	16°44	9°20	29°42	0°15	8°37	12°30	7°40	26°R22	27°32	22°15	26° 0	W15
T 16	13 38 46	26°31'08	10°7	14° 5	17°55	10° 6	29°41	0°22	8°36	12°29	7°41	26°21	27°29	22°22	26° 2	T 16
F 17	13 42 43	27°29'37	22° 7	14°23	19° 6	10°52	29°39	0°29	8°34	12°28	7°42	26°17	27°26	22°28	26° 4	F 17
S 18	13 46 40	28°28'05	4°11	14°35	20°16	11°38	29°38	0°36	8°33	12°27	7°43	26°12	27°22	22°35	26° 6	S 18
S 19	13 50 36	29°26'30	15°51	14°41	21°27	12°24	29°36	0°43	8°31	12°26	7°44	26° 4	27°19	22°42	26° 8	S 19
M20	13 54 33	0°24'54	27°42	14°R41	22°38	13°10	29°35	0°50	8°29	12°25	7°46	25°55	27°16	22°49	26°11	M20
T 21	13 58 29	1°23'17	9°13	14°36	23°49	13°56	29°34	0°58	8°27	12°24	7°47	25°45	27°13	22°55	26°13	T 21
W22	14 2 26	2°21'37	21°38	14°26	24°59	14°41	29°34	1° 5	8°26	12°23	7°48	25°34	27°10	23° 2	26°16	W22
T 23	14 6 22	3°19'56	3°46	14°11	26°10	15°27	29°33	1°12	8°24	12°22	7°49	25°25	27° 7	23° 9	26°18	T 23
F 24	14 10 19	4°18'13	16° 2	13°51	27°21	16°13	29°33	1°19	8°22	12°21	7°50	25°17	27° 3	23°15	26°21	F 24
S 25	14 14 15	5°16'29	28°27	13°27	28°32	16°58	29°D32	1°26	8°20	12°19	7°51	25°11	27° 0	23°22	26°24	S 25
S 26	14 18 12	6°14'42	11°II 2	12°59	29°43	17°44	29°33	1°34	8°18	12°18	7°53	25° 8	26°57	23°29	26°27	S 26
M27	14 22 8	7°12'54	23°49	12°28	0°15	18°29	29°33	1°41	8°16	12°17	7°54	25°D 7	26°54	23°36	26°30	M27
T 28	14 26 5	8°11'04	6°50	11°55	2° 5	19°15	29°33	1°48	8°14	12°16	7°55	25° 8	26°51	23°42	26°33	T 28
W29	14 30 2	9° 9'11	20° 5	11°19	3°17	20° 0	29°34	1°56	8°12	12°14	7°56	25° 9	26°47	23°49	26°37	W29
T 30	14 33 58	10° 7'17	3°23	10°42	4°19	20°16	29°D34	2°II 3	8°10	12°13	7°II57	25°R10	26°II44	23°45	26°40	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	decl lat	decl lat	decl lat
W 1	4n41	24n12	1n 6	12n16	1n31	11s47	0s27	1s26	0s56	12n36	1n21	18n14	1s43	21s45	0n 5	20s50
T 2	5 4	23 38	2 13	13 1	1 42	11 26	0 31	1 7	0 55	12 37	1 21	18 16	1 43	21 45	0 5	20 50
F 3	5 27	21 36	3 15	13 45	1 52	11 4	0 34	0 48	0 55	12 39	1 21	18 18	1 42	21 45	0 5	20 50
S 4	5 50	18 9	4 6	14 26	2 2	10 42	0 38	0 30	0 55	12 40	1 21	18 19	1 42	21 45	0 5	20 50
S 5	6 13	13 30	4 43	15 4	2 12	10 19	0 41	0 11	0 54	12 41	1 20	18 21	1 42	21 44	0 5	20 50
M 6	6 36	7 56	5 1	15 39	2 20	9 57	0 45	0n 8	0 54	12 42	1 20	18 22	1 42	21 44	0 5	20 50
T 7	6 58	1 50	4 57	16 12	2 28	9 34	0 48	0 27	0 54	12 43	1 20	18 24	1 42	21 44	0 5	20 50
W 8	7 21	4s22	4 33	16 42	2 35	9 10	0 51	0 46	0 53	12 44	1 20	18 25	1 42	21 44	0 5	20 50
T 9	7 43	10 15	3 51	17 9	2 42	8 47	0 54	1 4	0 53	12 45	1 20	18 27	1 41	21 44	0 5	20 49
F 10	8 5	15 25	2 53	17 33	2 47	8 23	0 57	1 23	0 52	12 46	1 20	18 28	1 41	21 43	0 5	20 49
S 11	8 27	19 33	1 47	17 54	2 51	7 59	1 0	1 42	0 52	12 47	1 20	18 30	1 41	21 43	0 5	20 49
S 12	8 49	22 28	0 36	18 12	2 54	7 34	1 3	2 0	0 52	12 48	1 19	18 32	1 41	21 43	0 5	20 49
M13	9 11	24 1	0s34	18 27	2 57	7 10	1 6	2 19	0 51	12 49	1 19	18 33	1 41	21 43	0 5	20 49
T 14	9 32	24 15	1 40	18 39	2 58	6 45	1 8	2 38	0 51	12 49	1 19	18 35	1 41	21 43	0 5	20 49
W15	9 54	23 14	2 40	18 48	2 57	6 20	1 11	2 56	0 50	12 50	1 19	18 36	1 40	21 42	0 5	20 48
T 16	10 15	21 8	3 31	18 54	2 56	5 55	1 13	3 15	0 50	12 50	1 19	18 38	1 40	21 42	0 5	20 48
F 17	10 36	18 9	4 13	18 57	2 53	5 29	1 16	3 33	0 49	12 51	1 19	18 40	1 40	21 42	0 5	20 48
S 18	10 57	14 26	4 42	18 56	2 49	5 4	1 18	3 52	0 49	12 51	1 19	18 41	1 40	21 42	0 5	20 48
S 19	11 18	10 12	5 0	18 53	2 44	4 38	1 20	4 10	0 48	12 51	1 18	18 43	1 40	21 41	0 5	20 48
M20	11 38	5 34	5 4	18 47	2 38	4 12	1 23	4 28	0 48	12 52	1 18	18 44	1 40	21 41	0 5	20 48
T 21	11 59	0 43	4 56	18 38	2 30	3 45	1 25	4 46	0 48	12 52	1 18	18 46	1 39	21 41	0 5	20 47
W22	12 19	4n13	4 34	18 26	2 20	3 19	1 27	5 5	0 47	12 52	1 18	18 48	1 39	21 41	0 5	20 47
T 23	12 39	9 2	4 0	18 11	2 10	2 53	1 29	5 23	0 47	12 52	1 18	18 49	1 39	21 40	0 5	20 47
F 24	12 59	13 34	3 14	17 54	1 58	2 26	1 30	5 41	0 46	12 52	1 18	18 51	1 39	21 40	0 5	20 47
S 25	13 18	17 36	2 18	17 35	1 45	1 59	1 32	5 59	0 46	12 52	1 17	18 52	1 39	21 40	0 5	20 47
S 26	13 38	20 54	1 15	17 13	1 32	1 33	1 34	6 17	0 45	12 52	1 17	18 54	1 39	21 39	0 5	20 47
M27	13 57	23 13	0 7	16 50	1 17	1 6	1 35	6 34	0 45	12 51	1 17	18 56	1 39	21 39	0 5	20 46
T 28	14 16	24 21	1n 3	16 24	1 1	0 39	1 37	6 52	0 44	12 51	1 17	18 57	1 39	21 39	0 5	20 46
W29	14 34	24 8	2 11	15 58	0 45	0 12	1 38	7 10	0 44	12 51	1 17	18 59	1 38	21 38	0 5	20 46
T 30	14n53	22n30	3n13	15n30	0n28	0n15	1s40	7n27	0s43	12n50	1n17	19n 0	1s38	21s38	0n 5	20s46

Julian Day Number = 2323070.5, Delta T = 44.54 sec  
Ecliptic obliquity = 23°29'07, Nutation = - 0°00'18, out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 19°49'50, Lahiri = 18°56'51Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

MAY 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	14 37 55	11♌ 5'21	17♏31	10°R 5	5°Y39	21°Y31	29♊35	2♊11	8°R 8	12°R12	7♊59	25°R10	26♊41	24♋ 2	26♌43	F 1
S 2	14 41 51	12° 3'23	1♏42	9♌28	6°50	22°16	29°37	2°18	8♌ 6	12♌11	8° 0	25♊ 8	26°38	24° 9	26°47	S 2
S 3	14 45 48	13° 1'22	16°10	8°51	8° 1	23° 2	29°38	2°26	8° 4	12° 9	8° 1	25° 5	26°35	24°16	26°50	S 3
M 4	14 49 44	13°59'20	0♌53	8°16	9°13	23°47	29°39	2°33	8° 1	12° 8	8° 2	25° 0	26°32	24°23	26°54	M 4
T 5	14 53 41	14°57'16	15°43	7°42	10°24	24°32	29°41	2°41	7°59	12° 6	8° 4	24°54	26°28	24°29	26°58	T 5
W 6	14 57 37	15°55'10	0♏34	7°11	11°35	25°17	29°43	2°48	7°57	12° 5	8° 5	24°48	26°25	24°36	27° 2	W 6
T 7	15 1 34	16°53'03	15°16	6°43	12°47	26° 2	29°45	2°56	7°55	12° 4	8° 6	24°43	26°22	24°43	27° 6	T 7
F 8	15 5 31	17°50'54	29°43	6°18	13°58	26°47	29°47	3° 4	7°52	12° 2	8° 8	24°40	26°19	24°50	27°10	F 8
S 9	15 9 27	18°48'44	13♌48	5°57	15°10	27°32	29°49	3°11	7°50	12° 1	8° 9	24°38	26°16	24°56	27°14	S 9
S 10	15 13 24	19°46'33	27°29	5°40	16°21	28°17	29°52	3°19	7°48	11°59	8°10	24°D37	26°13	25° 3	27°18	S 10
M 11	15 17 20	20°44'20	10♌45	5°27	17°33	29° 1	29°55	3°27	7°46	11°58	8°12	24°38	26° 9	25°10	27°22	M 11
T 12	15 21 17	21°42'06	23°37	5°19	18°44	29°46	29°58	3°34	7°43	11°56	8°13	24°39	26° 6	25°16	27°27	T 12
W 13	15 25 13	22°39'51	6♌ 8	5°D15	19°56	0♌31	0♏ 1	3°42	7°41	11°55	8°14	24°41	26° 3	25°23	27°31	W 13
T 14	15 29 10	23°37'34	18°22	5°15	21° 7	1°16	0° 4	3°50	7°38	11°53	8°16	24°R42	26° 0	25°30	27°35	T 14
F 15	15 33 6	24°35'17	0♋24	5°20	22°19	2° 0	0° 7	3°58	7°36	11°52	8°17	24°42	25°57	25°37	27°40	F 15
S 16	15 37 3	25°32'58	12°19	5°30	23°31	2°45	0°11	4° 5	7°34	11°50	8°18	24°41	25°53	25°43	27°45	S 16
S 17	15 41 0	26°30'39	24°11	5°44	24°42	3°29	0°15	4°13	7°31	11°49	8°20	24°38	25°50	25°50	27°49	S 17
M 18	15 44 56	27°28'18	6°Y 5	6° 3	25°54	4°14	0°18	4°21	7°29	11°47	8°21	24°35	25°47	25°57	27°54	M 18
T 19	15 48 53	28°25'56	18° 4	6°26	27° 6	4°58	0°23	4°29	7°26	11°46	8°22	24°30	25°44	26° 4	27°59	T 19
W 20	15 52 49	29°23'33	0♌10	6°53	28°18	5°42	0°27	4°36	7°24	11°44	8°24	24°26	25°41	26°10	28° 4	W 20
T 21	15 56 46	0♏21'09	12°27	7°24	29°29	6°27	0°31	4°44	7°22	11°42	8°25	24°22	25°38	26°17	28° 9	T 21
F 22	16 0 42	1°18'44	24°56	8° 0	0♌41	7°11	0°36	4°52	7°19	11°41	8°26	24°19	25°34	26°24	28°14	F 22
S 23	16 4 39	2°16'18	7♊38	8°39	1°53	7°55	0°40	5° 0	7°17	11°39	8°28	24°17	25°31	26°30	28°19	S 23
S 24	16 8 35	3°13'51	20°32	9°22	3° 5	8°39	0°45	5° 8	7°14	11°38	8°29	24°D16	25°28	26°37	28°25	S 24
M 25	16 12 32	4°11'23	3♌40	10° 9	4°17	9°23	0°50	5°15	7°12	11°36	8°30	24°17	25°25	26°44	28°30	M 25
T 26	16 16 29	5° 8'54	17° 1	11° 0	5°29	10° 7	0°55	5°23	7° 9	11°35	8°32	24°18	25°22	26°51	28°35	T 26
W 27	16 20 25	6° 6'23	0♌34	11°54	6°41	10°51	1° 1	5°31	7° 7	11°33	8°33	24°19	25°19	26°57	28°41	W 27
T 28	16 24 22	7° 3'51	14°20	12°52	7°53	11°35	1° 6	5°39	7° 4	11°31	8°35	24°20	25°15	27° 4	28°46	T 28
F 29	16 28 18	8° 1'18	28°18	13°53	9° 5	12°19	1°12	5°47	7° 2	11°30	8°36	24°21	25°12	27°11	28°52	F 29
S 30	16 32 15	8°58'43	12♏26	14°57	10°17	13° 3	1°17	5°55	6°59	11°28	8°37	24°R21	25° 9	27°17	28°57	S 30
S 31	16 36 11	9♊56'07	26♏43	16♌ 4	11♌29	13♌47	1♏23	6♊ 2	6♌57	11♌26	8♊39	24♊20	25♊ 6	27♋24	29♌ 3	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	15n11	19n30	4n 5	15n 2	0n11	0n42	1s41	7n45	0s43	12n50	1n16	19n 2	1s38	21s38	0n 5	20s46	1n33	11n28	10s20	23n24	23n27	7s 5	14n11	6s47	
S 2	15 29	15 18	4 44	14 34	0s 7	1 10	1 42	8 2	0 42	12 49	1 16	19 4	1 38	21 37	0 5	20 45	1 33	11 28	10 20	23 24	23 27	7 3	14 11	6 46	
S 3	15 47	10 9	5 5	14 6	0 24	1 37	1 43	8 19	0 42	12 49	1 16	19 5	1 38	21 37	0 5	20 45	1 33	11 29	10 20	23 24	23 26	7 0	14 12	6 46	
M 4	16 4	4 21	5 8	13 38	0 41	2 4	1 44	8 37	0 41	12 48	1 16	19 7	1 38	21 37	0 5	20 45	1 33	11 29	10 20	23 23	23 26	6 57	14 11	6 45	
T 5	16 21	1s45	4 49	13 11	0 58	2 31	1 45	8 54	0 41	12 47	1 16	19 8	1 38	21 36	0 5	20 45	1 33	11 29	10 20	23 23	23 26	6 55	14 11	6 44	
W 6	16 38	7 46	4 11	12 46	1 15	2 58	1 46	9 11	0 40	12 46	1 15	19 10	1 38	21 36	0 5	20 45	1 33	11 30	10 20	23 23	23 26	6 52	14 11	6 44	
T 7	16 55	13 18	3 17	12 22	1 30	3 26	1 46	9 28	0 40	12 45	1 15	19 11	1 37	21 36	0 5	20 44	1 33	11 30	10 20	23 23	23 26	6 49	14 11	6 43	
F 8	17 11	17 59	2 11	11 59	1 46	3 53	1 47	9 44	0 39	12 44	1 15	19 13	1 37	21 35	0 5	20 44	1 33	11 30	10 19	23 23	23 26	6 47	14 11	6 42	
S 9	17 27	21 32	0 59	11 39	2 0	4 20	1 47	10 1	0 38	12 43	1 15	19 15	1 37	21 35	0 5	20 44	1 33	11 31	10 19	23 23	23 26	6 44	14 11	6 42	
S 10	17 43	23 43	0s16	11 20	2 14	4 47	1 48	10 18	0 38	12 42	1 15	19 16	1 37	21 35	0 5	20 44	1 33	11 31	10 19	23 23	23 26	6 41	14 11	6 41	
M 11	17 58	24 30	1 27	11 4	2 26	5 14	1 48	10 34	0 37	12 41	1 15	19 18	1 37	21 34	0 5	20 44	1 33	11 31	10 19	23 23	23 26	6 39	14 11	6 40	
T 12	18 13	23 54	2 32	10 50	2 38	5 41	1 49	10 50	0 37	12 40	1 14	19 19	1 37	21 34	0 4	20 43	1 33	11 32	10 19	23 23	23 26	6 36	14 11	6 40	
W 13	18 28	22 7	3 27	10 39	2 48	6 8	1 49	11 7	0 36	12 39	1 14	19 21	1 37	21 34	0 4	20 43	1 33	11 32	10 19	23 23	23 26	6 33	14 10	6 39	
T 14	18 43	19 21	4 12	10 30	2 58	6 35	1 49	11 23	0 36	12 38	1 14	19 22	1 37	21 33	0 4	20 43	1 33	11 32	10 19	23 23	23 25	6 31	14 10	6 38	
F 15	18 57	15 47	4 45	10 24	3 7	7 1	1 49	11 39	0 35	12 36	1 14	19 24	1 37	21 33	0 4	20 43	1 33	11 32	10 19	23 23	23 25	6 28	14 10	6 38	
S 16	19 11	11 39	5 6	10 20	3 14	7 28	1 49	11 55	0 34	12 35	1 14	19 25	1 37	21 32	0 4	20 43	1 33	11 33	10 19	23 23	23 25	6 25	14 10	6 37	
S 17	19 25	7 6	5 13	10 18	3 21	7 54	1 49	12 10	0 34	12 33	1 14	19 27	1 37	21 32	0 4	20 42	1 33	11 33	10 19	23 23	23 25	6 23	14 9	6 37	
M 18	19 38	2 16	5 6	10 19	3 26	8 20	1 48	12 26	0 33	12 32	1 13	19 28	1 36	21 32	0 4	20 42	1 33	11 33	10 18	23 22	23 25	6 20	14 9	6 36	
T 19	19 51	2n40	4 47	10 22	3 30	8 47	1 48	12 41	0 33	12 30	1 13	19 30	1 36	21 31	0 4	20 42	1 33	11 34	10 18	23 22	23 25	6 17	14 9	6 35	
W 20	20 4	7 35	4 14	10 28	3 34	9 13	1 48	12 57	0 32	12 28	1 13	19 31	1 36	21 31	0 4	20 42	1 33	11 34	10 18	23 22	23 25	6 15	14 8	6 35	
T 21	20 16	12 16	3 30	10 36	3 36	9 38	1 47	13 12	0 32	12 27	1 13	19 33	1 36	21 30	0 4	20 42	1 33	11 34	10 18	23 22	23 25	6 12	14 8	6 34	
F 22	20 28	16 32	2 34	10 46	3 38	10 4	1 47	13 27	0 31	12 25	1 13	19 34	1 36	21 30	0 4	20 41	1 33	11 34	10 18	23 22	23 25	6 9	14 7	6 34	
S 23	20 39	20 8	1 30	10 57	3 39	10 29	1 46	13 42	0 30	12 23	1 13	19 36	1 36	21 30	0 4	20 41	1 33	11 35	10 18	23 22	23 25	6 7	14 7	6 33	
S 24	20 51	22 48	0 21	11 11	3 39	10 55	1 46	13 57	0 30	12 21	1 12	19 37	1 36	21 29	0 4	20 41	1 33	11 35	10 18	23 22	23 24	6 4	14 6	6 33	
M 25	21 1	24 18	0n52	11 27	3 38	11 20	1 45	14 11	0 29	12 19	1 12	19 39	1 36	21 29	0 4	20 41	1 33	11 35	10 18	23 22	23 24	6 1	14 6	6 32	
T 26	21 12	24 25	2 2	11 44	3 36	11 44	1 44	14 26	0 28	12 17	1 12	19 40	1 36	21 28	0 4	20 40	1 33	11 35	10 18	23 22	23 24	5 58	14 5	6 31	
W 27	21 22	23 6	3 7	12 3	3 33	12 9	1 43	14 40	0 28	12 15	1 12	19 42	1 36	21 28	0 4	20 40	1 33	11 36	10 18	23 22	23 24	5 56	14 5	6 31	
T 28	21 32	20 25	4 2	12 23	3 30	12 33	1 42	14 54	0 27	12 13	1 12	19 43	1 36	21 28	0 4	20 40	1 33	11 36	10 18	23 22	23 24	5 53	14 4	6 30	
F 29	21 41	16 31	4 44	12 45	3 26	12 57	1 41	15 8	0 27	12 11	1 12	19 44	1 36	21 27	0 4	20 40	1 33	11 36	10 18	23 22	23 24	5 50	14 4	6 30	
S 30	21 50	11 40	5 9	13 8	3 22	13 21	1 40	15 22	0 26	12 9	1 11	19 46	1 36	21 27	0 4	20 40	1 33	11 36	10 18	23 22	23 24	5 48	14 3	6 29	
S 31	21n59	6n 8	5n15	13n33	3s16	13n44	1s39	15n36	0s25	12n 7	1n11	19n47	1s36	21s26	0n 4	20s39	1n33	11n37	10s18	23n22	23n24	5s45	14n 3	6s29	



ASTRODIENST EPHEMERIS for the year 1648  
geocentric

JUNE 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	16 40 8	10II53'30	11♂ 6	17♂15	12♂41	14♂30	1♯29	6II10	6°R54	11°R25	8II40	24°R19	25II 3	27♂31	29♂ 9	M 1
T 2	16 44 4	11°50'52	25°31	18°29	13°53	15°14	1°36	6°18	6♂52	11♂23	8°42	24II18	24°59	27°38	29°15	T 2
W 3	16 48 1	12°48'12	9♂54	19°46	15° 5	15°57	1°42	6°26	6°49	11°22	8°43	24°17	24°56	27°44	29°20	W 3
T 4	16 51 58	13°45'32	24°10	21° 6	16°17	16°41	1°48	6°33	6°47	11°20	8°44	24°15	24°53	27°51	29°26	T 4
F 5	16 55 54	14°42'51	8♂14	22°28	17°29	17°24	1°55	6°41	6°45	11°18	8°46	24°15	24°50	27°58	29°32	F 5
S 6	16 59 51	15°40'09	22° 2	23°54	18°42	18° 8	2° 2	6°49	6°42	11°17	8°47	24°D14	24°47	28° 5	29°38	S 6
S 7	17 3 47	16°37'27	5♂32	25°23	19°54	18°51	2° 9	6°57	6°40	11°15	8°48	24°14	24°44	28°11	29°45	S 7
M 8	17 7 44	17°34'44	18°41	26°55	21° 6	19°34	2°16	7° 4	6°37	11°13	8°50	24°15	24°40	28°18	29°51	M 8
T 9	17 11 40	18°32'01	1♂31	28°29	22°18	20°17	2°23	7°12	6°35	11°12	8°51	24°15	24°37	28°25	29°57	T 9
W10	17 15 37	19°29'17	14° 2	0II 7	23°31	21° 1	2°30	7°20	6°32	11°10	8°52	24°16	24°34	28°31	0♂ 3	W10
T 11	17 19 34	20°26'32	26°18	1°47	24°43	21°44	2°37	7°28	6°30	11° 9	8°54	24°16	24°31	28°38	0° 9	T 11
F 12	17 23 30	21°23'48	8♂23	3°30	25°55	22°27	2°45	7°35	6°28	11° 7	8°55	24°17	24°28	28°45	0°16	F 12
S 13	17 27 27	22°21'03	20°19	5°16	27° 8	23°10	2°52	7°43	6°25	11° 6	8°57	24°R17	24°24	28°52	0°22	S 13
S 14	17 31 23	23°18'17	2°Y13	7° 4	28°20	23°53	3° 0	7°51	6°23	11° 4	8°58	24°17	24°21	28°58	0°29	S 14
M15	17 35 20	24°15'32	14° 8	8°56	29°32	24°35	3° 8	7°58	6°21	11° 2	8°59	24°D17	24°18	29° 5	0°35	M15
T 16	17 39 16	25°12'46	26° 8	10°50	0II45	25°18	3°16	8° 6	6°18	11° 1	9° 1	24°17	24°15	29°12	0°42	T 16
W17	17 43 13	26°10'00	8♂19	12°46	1°57	26° 1	3°24	8°13	6°16	10°59	9° 2	24°17	24°12	29°19	0°48	W17
T 18	17 47 9	27° 7'14	20°43	14°45	3°10	26°44	3°32	8°21	6°14	10°58	9° 3	24°17	24° 9	29°25	0°55	T 18
F 19	17 51 6	28° 4'28	3II22	16°46	4°22	27°26	3°41	8°28	6°12	10°56	9° 5	24°17	24° 5	29°32	1° 2	F 19
S 20	17 55 3	29° 1'42	16°19	18°49	5°35	28° 9	3°49	8°36	6° 9	10°55	9° 6	24°18	24° 2	29°39	1° 8	S 20
S 21	17 58 59	29°58'56	29°34	20°53	6°48	28°51	3°58	8°43	6° 7	10°53	9° 7	24°R18	23°59	29°45	1°15	S 21
M22	18 2 56	0♂56'09	13♂ 5	23° 0	8° 0	29°34	4° 6	8°51	6° 5	10°52	9° 8	24°17	23°56	29°52	1°22	M22
T 23	18 6 52	1°53'22	26°52	25° 8	9°13	0II16	4°15	8°58	6° 3	10°50	9°10	24°17	23°53	29°59	1°29	T 23
W24	18 10 49	2°50'35	10♂51	27°17	10°25	0°58	4°24	9° 6	6° 1	10°49	9°11	24°16	23°50	0°Y 6	1°36	W24
T 25	18 14 45	3°47'48	25° 0	29°27	11°38	1°41	4°33	9°13	5°59	10°47	9°12	24°15	23°46	0°12	1°43	T 25
F 26	18 18 42	4°45'00	9♯14	1♂37	12°51	2°23	4°42	9°21	5°57	10°46	9°14	24°14	23°43	0°19	1°50	F 26
S 27	18 22 38	5°42'11	23°30	3°48	14° 3	3° 5	4°51	9°28	5°54	10°44	9°15	24°13	23°40	0°26	1°57	S 27
S 28	18 26 35	6°39'23	7♂45	5°58	15°16	3°47	5° 1	9°35	5°52	10°43	9°16	24°D13	23°37	0°32	2° 4	S 28
M29	18 30 32	7°36'34	21°57	8° 8	16°29	4°29	5°10	9°42	5°50	10°41	9°17	24°13	23°34	0°39	2°11	M29
T 30	18 34 28	8♂33'44	6♂ 3	10♂18	17II42	5II11	5♯20	9II50	5♂49	10♂40	9II19	24II14	23II30	0°Y46	2♂18	T 30

Day	☉	☽		♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	decl	decl	decl	decl	lat
M 1	22n 7	0n14	5n 2	13n58	3s10	14n 7	1s38	15n50	0s25	12n 4	1n11	19n49	1s35	21s26	0n 4	20s39	1n33	11n37	10s18	23n22	23n24	5s42	14n 2	6s28	
T 2	22 15	5s41	4 30	14 25	3 4	14 30	1 37	16 3	0 24	12 2	1 11	19 50	1 35	21 26	0 4	20 39	1 33	11 37	10 18	23 22	23 23	5 40	14 1	6 28	
W 3	22 23	11 19	3 41	14 52	2 57	14 53	1 35	16 16	0 23	12 0	1 11	19 51	1 35	21 25	0 4	20 39	1 33	11 37	10 18	23 22	23 23	5 37	14 0	6 27	
T 4	22 30	16 17	2 39	15 21	2 49	15 15	1 34	16 29	0 23	11 57	1 11	19 53	1 35	21 25	0 4	20 38	1 33	11 38	10 18	23 22	23 23	5 34	14 0	6 27	
F 5	22 36	20 17	1 27	15 50	2 41	15 36	1 32	16 42	0 22	11 55	1 11	19 54	1 35	21 24	0 4	20 38	1 33	11 38	10 18	23 22	23 23	5 31	13 59	6 26	
S 6	22 43	23 3	0 12	16 20	2 32	15 58	1 31	16 55	0 22	11 52	1 10	19 55	1 35	21 24	0 4	20 38	1 33	11 38	10 18	23 22	23 23	5 29	13 58	6 26	
S 7	22 49	24 24	1s 2	16 50	2 23	16 19	1 29	17 8	0 21	11 49	1 10	19 57	1 35	21 24	0 4	20 38	1 33	11 38	10 18	23 22	23 23	5 26	13 57	6 25	
M 8	22 54	24 21	2 11	17 20	2 14	16 40	1 28	17 20	0 20	11 47	1 10	19 58	1 35	21 23	0 4	20 38	1 33	11 38	10 18	23 22	23 23	5 23	13 57	6 25	
T 9	22 59	22 59	3 12	17 51	2 4	17 0	1 26	17 32	0 20	11 44	1 10	19 59	1 35	21 23	0 4	20 37	1 33	11 39	10 18	23 22	23 23	5 20	13 56	6 25	
W10	23 4	20 30	4 2	18 22	1 53	17 20	1 24	17 44	0 19	11 41	1 10	20 1	1 35	21 22	0 4	20 37	1 33	11 39	10 18	23 22	23 22	5 18	13 55	6 24	
T 11	23 8	17 9	4 40	18 53	1 43	17 39	1 22	17 56	0 18	11 39	1 10	20 2	1 35	21 22	0 4	20 37	1 33	11 39	10 18	23 22	23 22	5 15	13 54	6 24	
F 12	23 12	13 9	5 5	19 23	1 32	17 58	1 21	18 8	0 18	11 36	1 9	20 3	1 35	21 22	0 4	20 37	1 33	11 39	10 18	23 22	23 22	5 12	13 53	6 23	
S 13	23 16	8 41	5 16	19 54	1 21	18 17	1 19	18 20	0 17	11 33	1 9	20 5	1 35	21 21	0 4	20 37	1 33	11 39	10 18	23 22	23 22	5 9	13 52	6 23	
S 14	23 19	3 55	5 14	20 24	1 9	18 35	1 17	18 31	0 16	11 30	1 9	20 6	1 35	21 21	0 4	20 36	1 33	11 40	10 18	23 22	23 22	5 7	13 51	6 22	
M15	23 22	1n 0	4 58	20 53	0 58	18 52	1 15	18 42	0 16	11 27	1 9	20 7	1 35	21 20	0 4	20 36	1 33	11 40	10 18	23 22	23 22	5 4	13 50	6 22	
T 16	23 24	5 56	4 29	21 21	0 46	19 10	1 13	18 53	0 15	11 24	1 9	20 8	1 35	21 20	0 4	20 36	1 33	11 40	10 18	23 22	23 22	5 1	13 49	6 22	
W17	23 26	10 42	3 48	21 48	0 35	19 26	1 11	19 4	0 14	11 21	1 9	20 9	1 35	21 20	0 4	20 36	1 33	11 40	10 18	23 22	23 21	4 58	13 48	6 21	
T 18	23 27	15 9	2 56	22 13	0 23	19 42	1 9	19 15	0 14	11 18	1 9	20 11	1 35	21 19	0 4	20 36	1 33	11 40	10 18	23 22	23 21	4 56	13 47	6 21	
F 19	23 28	19 1	1 53	22 38	0 12	19 58	1 6	19 25	0 13	11 15	1 9	20 12	1 35	21 19	0 4	20 35	1 33	11 40	10 18	23 22	23 21	4 53	13 46	6 21	
S 20	23 29	22 3	0 44	23 0	0 1	20 13	1 4	19 35	0 12	11 11	1 8	20 13	1 35	21 19	0 4	20 35	1 33	11 41	10 18	23 22	23 21	4 50	13 45	6 20	
S 21	23 29	23 58	0n29	23 21	0n10	20 28	1 2	19 45	0 11	11 8	1 8	20 14	1 35	21 18	0 4	20 35	1 33	11 41	10 18	23 22	23 21	4 47	13 44	6 20	
M22	23 29	24 32	1 42	23 39	0 21	20 42	1 0	19 55	0 11	11 5	1 8	20 15	1 35	21 18	0 4	20 35	1 33	11 41	10 18	23 22	23 21	4 45	13 43	6 20	
T 23	23 28	23 37	2 51	23 55	0 31	20 56	0 58	20 5	0 10	11 1	1 8	20 16	1 35	21 17	0 4	20 35	1 33	11 41	10 18	23 22	23 21	4 42	13 42	6 19	
W24	23 27	21 14	3 50	24 9	0 41	21 9	0 55	20 14	0 9	10 58	1 8	20 18	1 35	21 17	0 4	20 34	1 33	11 41	10 18	23 22	23 20	4 39	13 41	6 19	
T 25	23 26	17 33	4 36	24 20	0 50	21 21	0 53	20 24	0 9	10 55	1 8	20 19	1 35	21 17	0 4	20 34	1 33	11 41	10 18	23 22	23 20	4 36	13 40	6 19	
F 26	23 24	12 50	5 5	24 28	0 59	21 33	0 51	20 33	0 8	10 51	1 8	20 20	1 35	21 16	0 4	20 34	1 33	11 41	10 18	23 22	23 20	4 34	13 38	6 18	
S 27	23 22	7 25	5 16	24 33	1 8	21 44	0 48	20 42	0 7	10 48	1 8	20 21	1 35	21 16	0 4	20 34	1 33	11 42	10 18	23 22	23 20	4 31	13 37	6 18	
S 28	23 19	1 37	5 7	24 36	1 15	21 55	0 46	20 50	0 7	10 44	1 7	20 22	1 35	21 16	0 4	20 34	1 33	11 42	10 18	23 22	23 20	4 28	13 36	6 18	
M29	23 16	4s14	4 40	24 36	1 22	22 5	0 43	20 59	0 6	10 41	1 7	20 23	1 35	21 15	0 4	20 34	1 33	11 42	10 18	23 22	23 20	4 25	13 35	6 17	
T 30	23n12	9s51	3n56	24n33	1n28	22n14	0s41	21n 7	0s 5	10n37	1n 7	20n24	1s35	21s15	0n 4	20s33	1n33	11n42	10s18	23n22	23n20	4s23	13n34	6s17	

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

JULY 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
W 1	18 38 25	9°30'55	20♌ 1	12°27	18♊55	5♈53	5♍29	9♎57	5°R47	10°R39	9♏20	24♑15	23♒27	0°Y53	2♌25	W 1
T 2	18 42 21	10°28'05	3♊49	14°35	20° 7	6°35	5°39	10° 4	5♋45	10♌37	9°21	24°16	23°24	0°59	2°32	T 2
F 3	18 46 18	11°25'16	17°26	16°42	21°20	7°16	5°49	10°11	5°43	10°36	9°22	24°17	23°21	1° 6	2°39	F 3
S 4	18 50 14	12°22'26	0♈51	18°47	22°33	7°58	5°58	10°18	5°41	10°35	9°23	24°R17	23°18	1°13	2°46	S 4
S 5	18 54 11	13°19'37	14° 1	20°51	23°46	8°40	6° 8	10°25	5°39	10°33	9°25	24°16	23°15	1°20	2°54	S 5
M 6	18 58 7	14°16'48	26°56	22°54	24°59	9°21	6°18	10°32	5°37	10°32	9°26	24°14	23°11	1°26	3° 1	M 6
T 7	19 2 4	15°13'59	9♋37	24°55	26°12	10° 3	6°29	10°39	5°36	10°31	9°27	24°11	23° 8	1°33	3° 8	T 7
W 8	19 6 1	16°11'10	22° 3	26°54	27°25	10°44	6°39	10°46	5°34	10°30	9°28	24° 8	23° 5	1°40	3°16	W 8
T 9	19 9 57	17° 8'22	4♈17	28°51	28°38	11°25	6°49	10°53	5°32	10°28	9°29	24° 5	23° 2	1°46	3°23	T 9
F 10	19 13 54	18° 5'35	16°20	0♌47	29°51	12° 7	6°59	10°59	5°31	10°27	9°30	24° 1	22°59	1°53	3°30	F 10
S 11	19 17 50	19° 2'48	28°16	2°41	1♈ 4	12°48	7°10	11° 6	5°29	10°26	9°31	23°59	22°56	2° 0	3°38	S 11
S 12	19 21 47	20° 0'01	10♑ 9	4°33	2°17	13°29	7°20	11°13	5°28	10°25	9°33	23°57	22°52	2° 7	3°45	S 12
M13	19 25 43	20°57'16	22° 3	6°23	3°30	14°10	7°31	11°20	5°26	10°24	9°34	23°D57	22°49	2°13	3°52	M13
T 14	19 29 40	21°54'31	4♌ 4	8°12	4°44	14°51	7°42	11°26	5°25	10°23	9°35	23°57	22°46	2°20	4° 0	T 14
W15	19 33 36	22°51'47	16°14	9°58	5°57	15°32	7°53	11°33	5°23	10°21	9°36	23°59	22°43	2°27	4° 7	W15
T 16	19 37 33	23°49'03	28°40	11°43	7°10	16°13	8° 3	11°39	5°22	10°20	9°37	24° 0	22°40	2°33	4°15	T 16
F 17	19 41 30	24°46'21	11♊25	13°26	8°23	16°54	8°14	11°46	5°21	10°19	9°38	24° 2	22°36	2°40	4°22	F 17
S 18	19 45 26	25°43'39	24°32	15° 7	9°37	17°35	8°25	11°52	5°19	10°18	9°39	24°R 2	22°33	2°47	4°30	S 18
S 19	19 49 23	26°40'59	8♈ 1	16°47	10°50	18°16	8°36	11°58	5°18	10°17	9°40	24° 2	22°30	2°54	4°37	S 19
M20	19 53 19	27°38'19	21°54	18°24	12° 3	18°56	8°48	12° 5	5°17	10°16	9°41	23°59	22°27	3° 0	4°45	M20
T 21	19 57 16	28°35'39	6♌ 6	20° 0	13°17	19°37	8°59	12°11	5°16	10°15	9°42	23°56	22°24	3° 7	4°52	T 21
W22	20 1 12	29°33'01	20°32	21°34	14°30	20°18	9°10	12°17	5°15	10°14	9°43	23°51	22°21	3°14	5° 0	W22
T 23	20 5 9	0♌30'23	5♍ 8	23° 7	15°44	20°58	9°21	12°23	5°14	10°14	9°44	23°45	22°17	3°21	5° 7	T 23
F 24	20 9 6	1°27'45	19°46	24°37	16°57	21°39	9°33	12°29	5°13	10°13	9°45	23°40	22°14	3°27	5°15	F 24
S 25	20 13 2	2°25'08	4♌19	26° 6	18°11	22°19	9°44	12°35	5°12	10°12	9°46	23°36	22°11	3°34	5°23	S 25
S 26	20 16 59	3°22'32	18°43	27°32	19°24	22°59	9°56	12°41	5°11	10°11	9°47	23°34	22° 8	3°41	5°30	S 26
M27	20 20 55	4°19'56	2♌54	28°57	20°38	23°39	10° 7	12°47	5°10	10°10	9°47	23°D33	22° 5	3°47	5°38	M27
T 28	20 24 52	5°17'21	16°50	0♍20	21°51	24°20	10°19	12°53	5° 9	10° 9	9°48	23°33	22° 2	3°54	5°45	T 28
W29	20 28 48	6°14'46	0♊32	1°41	23° 5	25° 0	10°31	12°59	5° 8	10° 9	9°49	23°34	21°58	4° 1	5°53	W29
T 30	20 32 45	7°12'12	13°59	3° 0	24°19	25°40	10°42	13° 4	5° 7	10° 8	9°50	23°36	21°55	4° 8	6° 1	T 30
F 31	20 36 41	8♌ 9'40	27♊12	4♍17	25♈32	26♊20	10♍54	13♊10	5♋ 7	10♌ 7	9♏51	23°R36	21♑52	4°Y14	6♌ 8	F 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	decl	decl	decl	decl	decl	decl	decl	decl	decl	lat
W 1	23n 9	14s55	2n58	24n27	1n33	22n23	0s38	21n15	0s 4	10n33	1n 7	20n25	1s35	21s15	0n 4	20s33	1n33	11n42	10s18	23n22	23n19	4s20	13n32	6s17										
T 2	23 4	19 9	1 51	24 19	1 38	22 31	0 36	21 23	0 4	10 30	1 7	20 26	1 35	21 14	0 4	20 33	1 33	11 42	10 18	23 22	23 19	4 17	13 31	6 17										
F 3	23 0	22 16	0 38	24 8	1 42	22 39	0 33	21 31	0 3	10 26	1 7	20 27	1 35	21 14	0 4	20 33	1 33	11 42	10 18	23 22	23 19	4 14	13 30	6 16										
S 4	22 54	24 5	0s36	23 54	1 45	22 46	0 31	21 38	0 2	10 22	1 7	20 28	1 35	21 14	0 4	20 33	1 33	11 42	10 18	23 22	23 19	4 11	13 28	6 16										
S 5	22 49	24 31	1 47	23 38	1 48	22 52	0 28	21 46	0 2	10 19	1 7	20 29	1 35	21 13	0 4	20 33	1 33	11 42	10 19	23 22	23 19	4 9	13 27	6 16										
M 6	22 43	23 36	2 50	23 20	1 49	22 58	0 26	21 53	0 1	10 15	1 7	20 30	1 35	21 13	0 4	20 33	1 33	11 42	10 19	23 22	23 19	4 6	13 25	6 16										
T 7	22 37	21 28	3 44	23 0	1 50	23 3	0 23	22 0	0 0	10 11	1 6	20 31	1 35	21 13	0 4	20 32	1 33	11 43	10 19	23 21	23 18	4 3	13 24	6 15										
W 8	22 30	18 23	4 26	22 38	1 51	23 7	0 21	22 6	0n 1	10 7	1 6	20 32	1 35	21 13	0 4	20 32	1 33	11 43	10 19	23 21	23 18	4 0	13 23	6 15										
T 9	22 23	14 32	4 55	22 14	1 50	23 11	0 18	22 13	0 1	10 3	1 6	20 33	1 35	21 12	0 4	20 32	1 32	11 43	10 19	23 21	23 18	3 57	13 21	6 15										
F 10	22 16	10 10	5 11	21 48	1 49	23 14	0 16	22 19	0 2	9 59	1 6	20 34	1 35	21 12	0 4	20 32	1 32	11 43	10 19	23 21	23 18	3 55	13 20	6 15										
S 11	22 8	5 28	5 13	21 21	1 48	23 16	0 13	22 25	0 3	9 55	1 6	20 35	1 35	21 12	0 4	20 32	1 32	11 43	10 19	23 21	23 18	3 52	13 18	6 15										
S 12	22 0	0 35	5 1	20 52	1 45	23 17	0 10	22 31	0 3	9 51	1 6	20 36	1 35	21 12	0 4	20 32	1 32	11 43	10 19	23 21	23 18	3 49	13 17	6 14										
M13	21 51	4n19	4 37	20 22	1 42	23 18	0 8	22 37	0 4	9 47	1 6	20 37	1 35	21 11	0 4	20 32	1 32	11 43	10 19	23 21	23 17	3 46	13 15	6 14										
T 14	21 42	9 8	4 0	19 51	1 39	23 19	0 5	22 42	0 5	9 43	1 6	20 37	1 35	21 11	0 4	20 31	1 32	11 43	10 19	23 21	23 17	3 43	13 14	6 14										
W15	21 33	13 39	3 12	19 19	1 35	23 18	0 3	22 48	0 6	9 39	1 6	20 38	1 35	21 11	0 4	20 31	1 32	11 43	10 20	23 21	23 17	3 41	13 12	6 14										
T 16	21 23	17 43	2 14	18 45	1 31	23 17	0 0	22 53	0 6	9 35	1 6	20 39	1 35	21 11	0 4	20 31	1 32	11 43	10 20	23 21	23 17	3 38	13 11	6 14										
F 17	21 13	21 4	1 8	18 11	1 26	23 15	0n 2	22 58	0 7	9 31	1 6	20 40	1 35	21 10	0 4	20 31	1 32	11 43	10 20	23 21	23 17	3 35	13 9	6 14										
S 18	21 2	23 25	0n 3	17 37	1 20	23 13	0 5	23 2	0 8	9 26	1 6	20 41	1 35	21 10	0 4	20 31	1 32	11 43	10 20	23 21	23 17	3 32	13 7	6 13										
S 19	20 52	24 30	1 16	17 1	1 15	23 10	0 7	23 7	0 9	9 22	1 5	20 41	1 35	21 10	0 4	20 31	1 32	11 43	10 20	23 21	23 16	3 29	13 6	6 13										
M20	20 40	24 6	2 26	16 25	1 8	23 6	0 10	23 11	0 9	9 18	1 5	20 42	1 36	21 10	0 4	20 31	1 32	11 43	10 20	23 21	23 16	3 27	13 4	6 13										
T 21	20 29	22 9	3 29	15 49	1 2	23 1	0 12	23 15	0 10	9 14	1 5	20 43	1 36	21 10	0 4	20 31	1 32	11 43	10 20	23 21	23 16	3 24	13 3	6 13										
W22	20 17	18 46	4 20	15 12	0 55	22 56	0 15	23 19	0 11	9 9	1 5	20 44	1 36	21 9	0 4	20 31	1 32	11 43	10 20	23 21	23 16	3 21	13 1	6 13										
T 23	20 5	14 12	4 54	14 35	0 47	22 50	0 17	23 22	0 12	9 5	1 5	20 45	1 36	21 9	0 4	20 31	1 32	11 43	10 21	23 20	23 16	3 18	12 59	6 13										
F 24	19 52	8 48	5 9	13 58	0 40	22 44	0 20	23 26	0 12	9 1	1 5	20 45	1 36	21 9	0 4	20 31	1 32	11 43	10 21	23 20	23 15	3 15	12 58	6 13										
S 25	19 39	2 56	5 5	13 20	0 31	22 37	0 22	23 29	0 13	8 56	1 5	20 46	1 36	21 9	0 4	20 30	1 32	11 43	10 21	23 20	23 15	3 12	12 56	6 13										
S 26	19 26	3s 1	4 41	12 43	0 23	22 29	0 24	23 32	0 14	8 52	1 5	20 47	1 36	21 9	0 4	20 30	1 32	11 43	10 21	23 20	23 15	3 10	12 54	6 13										
M27	19 13	8 44	4 0	12 5	0 14	22 20	0 27	23 35	0 15	8 47	1 5	20 47	1 36	21 9	0 4	20 30	1 32	11 43	10 21	23 20	23 15	3 7	12 52	6 13										
T 28	18 59	13 56	3 6	11 28	0 5	22 11	0 29	23 37	0 15	8 43	1 5	20 48	1 36	21 8	0 4	20 30	1 32	11 43	10 21	23 20	23 15	3 4	12 51	6 13										
W29	18 45	18 19	2 2	10 50	0s 4	22 1	0 31	23 40	0 16	8 38	1 5	20 49	1 36	21 8	0 4	20 30	1 32	11 43	10 21	23 20	23 14	3 1	12 49	6 13										
T 30	18 30	21 40	0 52	10 10	0 13	21 51	0 33	23 42	0 17	8 34	1 5	20 49	1 36	21 8	0 4	20 30	1 32	11 43	10 21	23 20	23 14	2 58	12 47	6 13										
F 31	18n16	23s47	0s20	9n36	0s23	21n40	0n36	23n44	0n18	8n29	1n 5	20n50	1s36	21s 8	0n 4	20s30	1n31	11n43	10s22	23n20	23n14	2s55	12n45	6s12										



ASTRODIENST EPHEMERIS for the year 1648  
geocentric

AUGUST 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	20 40 38	9♌ 7°07	10♋14	5♊32	26♊46	26♊59	11♊ 6	13♊15	5°R 6	10°R 7	9♊52	23°R35	21♊49	4♊21	6♌16	S 1
S 2	20 44 35	10° 4'36	23° 3	6°45	28° 0	27°39	11°18	13°21	5♊ 5	10♊ 6	9°52	23♊31	21°46	4°28	6°23	S 2
M 3	20 48 31	11° 2'06	5♋41	7°56	29°13	28°19	11°30	13°26	5° 5	10° 5	9°53	23°26	21°42	4°34	6°31	M 3
T 4	20 52 28	11°59'37	18° 8	9° 4	0♌27	28°59	11°42	13°32	5° 4	10° 5	9°54	23°18	21°39	4°41	6°39	T 4
W 5	20 56 24	12°57'09	0♈25	10°10	1°41	29°38	11°54	13°37	5° 4	10° 4	9°55	23° 9	21°36	4°48	6°46	W 5
T 6	21 0 21	13°54'42	12°32	11°13	2°55	0♉18	12° 6	13°42	5° 4	10° 4	9°55	23° 0	21°33	4°55	6°54	T 6
F 7	21 4 17	14°52'16	24°32	12°14	4° 9	0°57	12°18	13°47	5° 3	10° 3	9°56	22°51	21°30	5° 1	7° 1	F 7
S 8	21 8 14	15°49'52	6♊26	13°13	5°23	1°37	12°30	13°52	5° 3	10° 3	9°57	22°43	21°27	5° 8	7° 9	S 8
S 9	21 12 10	16°47'29	18°17	14° 8	6°37	2°16	12°43	13°57	5° 3	10° 2	9°57	22°37	21°23	5°15	7°16	S 9
M10	21 16 7	17°45'08	0♊10	15° 0	7°51	2°55	12°55	14° 2	5° 2	10° 2	9°58	22°33	21°20	5°22	7°24	M10
T 11	21 20 3	18°42'48	12° 8	15°50	9° 5	3°34	13° 7	14° 7	5° 2	10° 2	9°58	22°32	21°17	5°28	7°31	T 11
W12	21 24 0	19°40'30	24°16	16°36	10°19	4°14	13°19	14°11	5° 2	10° 1	9°59	22°D31	21°14	5°35	7°39	W12
T 13	21 27 57	20°38'14	6♊40	17°18	11°33	4°53	13°32	14°16	5°D 2	10° 1	10° 0	22°32	21°11	5°42	7°47	T 13
F 14	21 31 53	21°35'59	19°24	17°57	12°47	5°32	13°44	14°20	5° 2	10° 1	10° 0	22°R33	21° 8	5°48	7°54	F 14
S 15	21 35 50	22°33'46	2♉32	18°32	14° 1	6°11	13°57	14°25	5° 2	10° 1	10° 1	22°32	21° 4	5°55	8° 1	S 15
S 16	21 39 46	23°31'35	16° 7	19° 3	15°15	6°49	14° 9	14°29	5° 2	10° 0	10° 1	22°30	21° 1	6° 2	8° 9	S 16
M17	21 43 43	24°29'25	0♌10	19°30	16°29	7°28	14°22	14°34	5° 3	10° 0	10° 2	22°26	20°58	6° 9	8°16	M17
T 18	21 47 39	25°27'17	14°39	19°51	17°43	8° 7	14°34	14°38	5° 3	10° 0	10° 2	22°19	20°55	6°15	8°24	T 18
W19	21 51 36	26°25'10	29°27	20° 9	18°57	8°46	14°47	14°42	5° 3	10° 0	10° 3	22°10	20°52	6°22	8°31	W19
T 20	21 55 33	27°23'05	14♊27	20°20	20°12	9°24	15° 0	14°46	5° 3	10° 0	10° 3	22° 0	20°48	6°29	8°39	T 20
F 21	21 59 29	28°21'01	29°29	20°27	21°26	10° 3	15°12	14°50	5° 4	10° 0	10° 4	21°51	20°45	6°35	8°46	F 21
S 22	22 3 26	29°18'58	14♌24	20°R28	22°40	10°41	15°25	14°54	5° 4	10°D 0	10° 4	21°43	20°42	6°42	8°53	S 22
S 23	22 7 22	0♊16'57	29° 4	20°23	23°55	11°19	15°38	14°58	5° 5	10° 0	10° 4	21°37	20°39	6°49	9° 1	S 23
M24	22 11 19	1°14'57	13♊23	20°12	25° 9	11°58	15°50	15° 1	5° 5	10° 0	10° 5	21°34	20°36	6°56	9° 8	M24
T 25	22 15 15	2°12'59	27°21	19°55	26°23	12°36	16° 3	15° 5	5° 6	10° 0	10° 5	21°D32	20°33	7° 2	9°15	T 25
W26	22 19 12	3°11'02	10♊57	19°32	27°38	13°14	16°16	15° 8	5° 6	10° 0	10° 5	21°33	20°29	7° 9	9°23	W26
T 27	22 23 8	4° 9'07	24°13	19° 3	28°52	13°52	16°29	15°12	5° 7	10° 0	10° 6	21°R33	20°26	7°16	9°30	T 27
F 28	22 27 5	5° 7'12	7♋12	18°27	0♊ 6	14°30	16°41	15°15	5° 8	10° 1	10° 6	21°32	20°23	7°22	9°37	F 28
S 29	22 31 1	6° 5'20	19°56	17°46	1°21	15° 8	16°54	15°18	5° 9	10° 1	10° 6	21°29	20°20	7°29	9°44	S 29
S 30	22 34 58	7° 3'29	2♋28	17° 0	2°35	15°46	17° 7	15°21	5° 9	10° 1	10° 6	21°23	20°17	7°36	9°51	S 30
M31	22 38 55	8♊1'39	14♋50	16♊ 9	3♊50	16♉23	17♊20	15♊24	5♊10	10♊ 1	10♊ 7	21♊14	20♊14	7♊43	9♌58	M31

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl
S 1	18n 1	24s34	1s29	9n 0	0s33	21n28	0n38	23n46	0n19	8n25	1n 5	20n51	1s36	21s 8	0n 4	20s30
S 2	17 45	24 1	2 32	8 23	0 43	21 15	0 40	23 47	0 19	8 20	1 5	20 51	1 36	21 8	0 4	20 30
M 3	17 30	22 14	3 27	7 48	0 53	21 2	0 42	23 49	0 20	8 16	1 5	20 52	1 36	21 8	0 4	20 30
T 4	17 14	19 24	4 11	7 12	1 3	20 49	0 44	23 50	0 21	8 11	1 4	20 52	1 36	21 8	0 4	20 30
W 5	16 58	15 45	4 42	6 38	1 14	20 34	0 46	23 51	0 22	8 6	1 4	20 53	1 37	21 8	0 4	20 30
T 6	16 41	11 30	5 1	6 4	1 25	20 20	0 48	23 52	0 22	8 2	1 4	20 53	1 37	21 8	0 4	20 30
F 7	16 24	6 51	5 6	5 31	1 35	20 4	0 50	23 52	0 23	7 57	1 4	20 54	1 37	21 7	0 3	20 30
S 8	16 7	1 59	4 57	4 59	1 46	19 48	0 52	23 53	0 24	7 52	1 4	20 54	1 37	21 7	0 3	20 30
S 9	15 50	2n56	4 36	4 27	1 57	19 32	0 54	23 53	0 25	7 47	1 4	20 55	1 37	21 7	0 3	20 30
M10	15 32	7 46	4 3	3 57	2 8	19 15	0 56	23 53	0 26	7 43	1 4	20 55	1 37	21 7	0 3	20 30
T 11	15 15	12 21	3 19	3 28	2 19	18 57	0 58	23 53	0 26	7 38	1 4	20 56	1 37	21 7	0 3	20 30
W12	14 57	16 32	2 25	3 0	2 29	18 39	0 59	23 52	0 27	7 33	1 4	20 56	1 37	21 7	0 3	20 30
T 13	14 38	20 5	1 24	2 34	2 40	18 20	1 1	23 52	0 28	7 28	1 4	20 57	1 37	21 7	0 3	20 30
F 14	14 20	22 47	0 17	2 9	2 51	18 1	1 3	23 51	0 29	7 24	1 4	20 57	1 37	21 7	0 3	20 30
S 15	14 1	24 21	0n53	1 46	3 1	17 41	1 4	23 50	0 30	7 19	1 4	20 58	1 37	21 7	0 3	20 30
S 16	13 42	24 32	2 2	1 25	3 11	17 20	1 6	23 49	0 30	7 14	1 4	20 58	1 37	21 7	0 3	20 30
M17	13 23	23 11	3 6	1 5	3 21	17 0	1 7	23 48	0 31	7 9	1 4	20 59	1 38	21 7	0 3	20 30
T 18	13 4	20 18	4 0	0 48	3 31	16 38	1 9	23 46	0 32	7 4	1 4	20 59	1 38	21 8	0 3	20 30
W19	12 44	16 3	4 40	0 33	3 40	16 17	1 10	23 44	0 33	6 59	1 4	20 59	1 38	21 8	0 3	20 30
T 20	12 24	10 45	5 0	0 20	3 48	15 54	1 11	23 43	0 34	6 54	1 4	21 0	1 38	21 8	0 3	20 30
F 21	12 4	4 47	5 0	0 10	3 56	15 32	1 13	23 41	0 34	6 49	1 4	21 0	1 38	21 8	0 3	20 30
S 22	11 44	1s23	4 40	0 3	4 4	15 9	1 14	23 38	0 35	6 44	1 4	21 0	1 38	21 8	0 3	20 30
S 23	11 24	7 24	4 1	0s 1	4 10	14 45	1 15	23 36	0 36	6 40	1 4	21 1	1 38	21 8	0 3	20 30
M24	11 3	12 54	3 8	0 2	4 16	14 21	1 16	23 33	0 37	6 35	1 4	21 1	1 38	21 8	0 3	20 30
T 25	10 42	17 35	2 5	0n 1	4 20	13 57	1 17	23 31	0 38	6 30	1 4	21 1	1 38	21 8	0 3	20 30
W26	10 21	21 12	0 56	0 7	4 23	13 32	1 18	23 28	0 38	6 25	1 4	21 2	1 38	21 8	0 3	20 30
T 27	10 0	23 36	0s14	0 17	4 25	13 7	1 19	23 25	0 39	6 20	1 4	21 2	1 38	21 8	0 3	20 31
F 28	9 39	24 39	1 22	0 30	4 26	12 42	1 20	23 21	0 40	6 15	1 4	21 2	1 39	21 9	0 3	20 31
S 29	9 18	24 23	2 24	0 47	4 24	12 16	1 21	23 18	0 41	6 10	1 4	21 2	1 39	21 9	0 3	20 31
S 30	8 56	22 52	3 18	1 8	4 21	11 50	1 21	23 15	0 42	6 5	1 4	21 3	1 39	21 9	0 3	20 31
M31	8n35	20s16	4s 2	1n32	4s16	11n24	1n22	23n11	0n43	6n 0	1n 4	21n 3	1s39	21s 9	0n 3	20s31

Julian Day Number = 2323192.5, Delta T = 44.30 sec  
Ecliptic obliquity = 23°29'07, Nutation = - 0°00'16, out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 19°50'07, Lahiri = 18°57'07Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

SEPTEMBER 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	22 42 51	8♍59°51	27♋4	15°R14	5♍4	17♍1	17♍33	15♍27	5♍11	10♍2	10♍7	21°R 3	20♍10	7♍49	10♍6	T 1
W 2	22 46 48	9°58'04	9♋10	14♍16	6°19	17°38	17°46	15°30	5°12	10°2	10°7	20♍50	20°7	7°56	10°13	W 2
T 3	22 50 44	10°56'20	21°11	13°17	7°33	18°16	17°59	15°33	5°13	10°3	10°7	20°37	20°4	8°3	10°20	T 3
F 4	22 54 41	11°54'37	3♍6	12°17	8°48	18°53	18°12	15°35	5°14	10°3	10°7	20°23	20°1	8°9	10°27	F 4
S 5	22 58 37	12°52'56	14°58	11°17	10°2	19°31	18°25	15°38	5°15	10°3	10°7	20°11	19°58	8°16	10°33	S 5
S 6	23 2 34	13°51'17	26°48	10°20	11°17	20°8	18°38	15°40	5°17	10°4	10°7	20°1	19°54	8°23	10°40	S 6
M 7	23 6 30	14°49'40	8♋40	9°26	12°31	20°45	18°50	15°42	5°18	10°4	10°7	19°54	19°51	8°30	10°47	M 7
T 8	23 10 27	15°48'06	20°37	8°37	13°46	21°22	19°3	15°45	5°19	10°5	10°7	19°50	19°48	8°36	10°54	T 8
W 9	23 14 24	16°46'33	2♍43	7°54	15°1	21°59	19°16	15°47	5°20	10°6	10°R 7	19°48	19°45	8°43	11°1	W 9
T 10	23 18 20	17°45'03	15°4	7°19	16°15	22°36	19°29	15°49	5°22	10°6	10°7	19°48	19°42	8°50	11°8	T 10
F 11	23 22 17	18°43'35	27°43	6°51	17°30	23°13	19°42	15°51	5°23	10°7	10°7	19°48	19°39	8°56	11°14	F 11
S 12	23 26 13	19°42'09	10♋47	6°32	18°45	23°50	19°55	15°52	5°25	10°8	10°7	19°47	19°35	9°3	11°21	S 12
S 13	23 30 10	20°40'45	24°19	6°D23	20°0	24°26	20°8	15°54	5°26	10°8	10°7	19°44	19°32	9°10	11°27	S 13
M14	23 34 6	21°39'24	8♍20	6°23	21°14	25°3	20°21	15°56	5°28	10°9	10°7	19°39	19°29	9°17	11°34	M14
T 15	23 38 3	22°38'05	22°51	6°33	22°29	25°40	20°34	15°57	5°29	10°10	10°7	19°31	19°26	9°23	11°41	T 15
W16	23 41 59	23°36'47	7♍46	6°53	23°44	26°16	20°47	15°58	5°31	10°11	10°7	19°21	19°23	9°30	11°47	W16
T 17	23 45 56	24°35'32	22°58	7°22	24°59	26°52	21°0	16°0	5°33	10°11	10°7	19°10	19°19	9°37	11°53	T 17
F 18	23 49 53	25°34'19	8♍16	8°0	26°13	27°28	21°13	16°1	5°35	10°12	10°7	18°59	19°16	9°43	12°0	F 18
S 19	23 53 49	26°33'07	23°29	8°47	27°28	28°5	21°26	16°2	5°36	10°13	10°6	18°49	19°13	9°50	12°6	S 19
S 20	23 57 46	27°31'58	8♍26	9°41	28°43	28°41	21°39	16°3	5°38	10°14	10°6	18°42	19°10	9°57	12°12	S 20
M21	0 1 42	28°30'50	23°0	10°44	29°58	29°17	21°52	16°3	5°40	10°15	10°6	18°38	19°7	10°4	12°19	M21
T 22	0 5 39	29°29'45	7♍7	11°53	1♍13	29°52	22°5	16°4	5°42	10°16	10°6	18°36	19°4	10°10	12°25	T 22
W23	0 9 35	0♍28'41	20°48	13°8	2°28	0♍28	22°18	16°5	5°44	10°17	10°5	18°D36	19°0	10°17	12°31	W23
T 24	0 13 32	1°27'38	4♋3	14°29	3°42	1°4	22°31	16°5	5°46	10°18	10°5	18°R36	18°57	10°24	12°37	T 24
F 25	0 17 28	2°26'38	16°57	15°54	4°57	1°39	22°44	16°6	5°48	10°19	10°5	18°35	18°54	10°30	12°43	F 25
S 26	0 21 25	3°25'39	29°33	17°24	6°12	2°15	22°57	16°6	5°50	10°20	10°4	18°32	18°51	10°37	12°49	S 26
S 27	0 25 22	4°24'42	11♋55	18°57	7°27	2°50	23°9	16°6	5°53	10°22	10°4	18°27	18°48	10°44	12°54	S 27
M28	0 29 18	5°23'47	24°7	20°33	8°42	3°25	23°22	16°R 6	5°55	10°23	10°4	18°19	18°45	10°51	13°0	M28
T 29	0 33 15	6°22'54	6♋10	22°12	9°57	4°1	23°35	16°6	5°57	10°24	10°3	18°8	18°41	10°57	13°6	T 29
W30	0 37 11	7♍22'02	18♋9	23♍52	11♍12	4♍36	23♍48	16♍6	5♍59	10♍25	10♍3	17♍56	18♍38	11♍4	13♍12	W30

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	8n13	16s48	4s34	1n59	4s10	10n57	1n22	23n 7	0n43	5n55	1n 4	21n 3	1s39	21s 9	0n 3	20s31	1n30	11n40	10s27	23n11	23n 7	1s24	11n42	6s16			
W 2	7 51	12 41	4 54	2 30	4 1	10 30	1 23	23 3	0 44	5 50	1 4	21 3	1 39	21 9	0 3	20 31	1 30	11 40	10 27	23 10	23 7	1 21	11 40	6 16			
T 3	7 29	8 5	5 0	3 2	3 50	10 3	1 23	22 59	0 45	5 44	1 4	21 3	1 39	21 10	0 3	20 31	1 30	11 39	10 28	23 9	23 7	1 18	11 38	6 17			
F 4	7 6	3 14	4 53	3 37	3 38	9 35	1 24	22 54	0 46	5 39	1 4	21 4	1 39	21 10	0 3	20 31	1 30	11 39	10 28	23 8	23 7	1 15	11 36	6 17			
S 5	6 44	1n43	4 33	4 13	3 23	9 7	1 24	22 50	0 47	5 34	1 4	21 4	1 39	21 10	0 3	20 31	1 30	11 39	10 28	23 7	23 6	1 12	11 34	6 17			
S 6	6 22	6 36	4 1	4 49	3 8	8 39	1 24	22 45	0 48	5 29	1 4	21 4	1 40	21 10	0 3	20 32	1 29	11 39	10 28	23 7	23 6	1 9	11 32	6 17			
M 7	5 59	11 17	3 19	5 25	2 50	8 11	1 25	22 41	0 48	5 24	1 4	21 4	1 40	21 11	0 3	20 32	1 29	11 39	10 28	23 6	23 6	1 6	11 30	6 18			
T 8	5 37	15 34	2 28	6 0	2 32	7 42	1 25	22 36	0 49	5 19	1 4	21 4	1 40	21 11	0 3	20 32	1 29	11 39	10 28	23 6	23 6	1 4	11 28	6 18			
W 9	5 14	19 17	1 29	6 34	2 13	7 13	1 25	22 31	0 50	5 14	1 4	21 4	1 40	21 11	0 3	20 32	1 29	11 38	10 29	23 6	23 5	1 1	11 26	6 18			
T 10	4 51	22 14	0 25	7 5	1 54	6 44	1 25	22 25	0 51	5 9	1 4	21 4	1 40	21 11	0 3	20 32	1 29	11 38	10 29	23 6	23 5	0 58	11 24	6 19			
F 11	4 28	24 10	0n42	7 34	1 34	6 15	1 25	22 20	0 52	5 4	1 4	21 4	1 40	21 12	0 3	20 32	1 29	11 38	10 29	23 6	23 5	0 55	11 22	6 19			
S 12	4 5	24 51	1 48	7 59	1 14	5 46	1 25	22 15	0 53	4 59	1 4	21 4	1 40	21 12	0 3	20 32	1 29	11 38	10 29	23 5	23 5	0 52	11 19	6 19			
S 13	3 42	24 6	2 51	8 20	0 55	5 16	1 25	22 9	0 54	4 54	1 4	21 5	1 40	21 12	0 3	20 33	1 29	11 38	10 29	23 5	23 4	0 49	11 17	6 20			
M14	3 19	21 51	3 46	8 38	0 36	4 46	1 24	22 3	0 54	4 49	1 4	21 5	1 40	21 12	0 3	20 33	1 29	11 37	10 30	23 5	23 4	0 46	11 15	6 20			
T 15	2 56	18 9	4 29	8 51	0 18	4 16	1 24	21 57	0 55	4 44	1 4	21 5	1 41	21 13	0 3	20 33	1 29	11 37	10 30	23 4	23 4	0 43	11 13	6 20			
W16	2 32	13 13	4 54	9 0	0 1	3 46	1 24	21 51	0 56	4 38	1 4	21 5	1 41	21 13	0 3	20 33	1 29	11 37	10 30	23 3	23 4	0 40	11 11	6 21			
T 17	2 9	7 23	5 0	9 4	0n16	3 16	1 23	21 45	0 57	4 33	1 4	21 5	1 41	21 13	0 3	20 33	1 29	11 37	10 30	23 3	23 3	0 37	11 9	6 21			
F 18	1 46	1 3	4 44	9 4	0 31	2 46	1 23	21 39	0 58	4 28	1 4	21 5	1 41	21 14	0 3	20 33	1 29	11 37	10 30	23 2	23 3	0 34	11 7	6 21			
S 19	1 22	5s18	4 8	8 59	0 44	2 16	1 22	21 33	0 59	4 23	1 4	21 5	1 41	21 14	0 3	20 34	1 29	11 36	10 30	23 1	23 3	0 32	11 5	6 22			
S 20	0 59	11 16	3 15	8 50	0 57	1 45	1 21	21 26	1 0	4 18	1 4	21 5	1 41	21 14	0 3	20 34	1 29	11 36	10 31	23 0	23 3	0 29	11 3	6 22			
M21	0 36	16 27	2 11	8 36	1 8	1 15	1 21	21 20	1 1	4 13	1 4	21 5	1 41	21 15	0 3	20 34	1 29	11 36	10 31	23 0	23 2	0 26	11 1	6 23			
T 22	0 12	20 33	1 0	8 19	1 18	0 44	1 20	21 13	1 1	4 8	1 4	21 5	1 41	21 15	0 3	20 34	1 29	11 36	10 31	23 0	23 2	0 23	10 59	6 23			
W23	0s11	23 22	0s12	7 58	1 27	0 14	1 19	21 6	1 2	4 3	1 5	21 5	1 41	21 15	0 3	20 34	1 29	11 36	10 31	23 0	23 2	0 20	10 57	6 23			
T 24	0 35	24 46	1 21	7 34	1 34	0s17	1 18	20 59	1 3	3 58	1 5	21 4	1 41	21 16	0 3	20 35	1 28	11 35	10 31	23 0	23 2	0 17	10 55	6 24			
F 25	0 58	24 47	2 24	7 7	1 40	0 47	1 17	20 52	1 4	3 53	1 5	21 4	1 42	21 16	0 3	20 35	1 28	11 35	10 32	23 0	23 1	0 14	10 53	6 24			
S 26	1 22	23 31	3 19	6 36	1 45	1 18	1 16	20 45	1 5	3 48	1 5	21 4	1 42	21 16	0 3	20 35	1 28	11 35	10 32	22 59	23 1	0 11	10 51	6 25			
S 27	1 45	21 8	4 3	6 3	1 49	1 49	1 15	20 38	1 6	3 43	1 5	21 4	1 42	21 17	0 3	20 35	1 28	11 35	10 32	22 59	23 1	0 8	10 48	6 25			
M28	2 9	17 50	4 35	5 28	1 52	2 19	1 14	20 31	1 7	3 38	1 5	21 4	1 42	21 17	0 3	20 36	1 28	11 34	10 32	22 58	23 0	0 5	10 46	6 26			
T 29	2 32	13 49	4 55	4 51	1 54	2 50	1 13	20 23	1 8	3 33	1 5	21 4	1 42	21 18	0 3	20 36	1 28	11 34	10 32	22 57	23 0	0 2	10 44	6 26			
W30	2s56	9s19	5s 1	4n12	1n55	3s20	1n12	20n16	1n 9	3n28	1n 5	21n 4	1s42	21s18	0n 3	20s36	1n28	11n34	10s32	22n56	23n 0	0n 1	10n42	6s27			

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

OCTOBER 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
T 1	0 41 8	8♂21'13	0♀ 4	25♎34	12♏27	5♌10	24♎1	16°R 5	6♊ 2	10♊26	10°R 2	17°R43	18♏35	11♀11	13♌17	T 1
F 2	0 45 4	9°20'25	11°56	27°17	13°42	5°45	24°13	16♏ 5	6° 4	10°28	10♏ 2	17♏30	18°32	11°17	13°23	F 2
S 3	0 49 1	10°19'40	23°48	29° 1	14°57	6°20	24°26	16° 4	6° 6	10°29	10° 1	17°18	18°29	11°24	13°28	S 3
S 4	0 52 57	11°18'56	5♌40	0♏46	16°12	6°55	24°39	16° 4	6° 9	10°30	10° 1	17° 9	18°25	11°31	13°33	S 4
M 5	0 56 54	12°18'15	17°35	2°31	17°27	7°29	24°52	16° 3	6°11	10°32	10° 0	17° 2	18°22	11°38	13°39	M 5
T 6	1 0 50	13°17'36	29°35	4°16	18°42	8° 4	25° 4	16° 2	6°14	10°33	10° 0	16°58	18°19	11°44	13°44	T 6
W 7	1 4 47	14°17'00	11♏44	6° 1	19°57	8°38	25°17	16° 1	6°16	10°35	9°59	16°D56	18°16	11°51	13°49	W 7
T 8	1 8 44	15°16'26	24° 5	7°46	21°12	9°12	25°30	16° 0	6°19	10°36	9°59	16°57	18°13	11°58	13°54	T 8
F 9	1 12 40	16°15'54	6♏43	9°31	22°26	9°46	25°42	15°59	6°22	10°38	9°58	16°57	18°10	12° 4	13°59	F 9
S 10	1 16 37	17°15'24	19°42	11°15	23°41	10°20	25°55	15°58	6°24	10°39	9°57	16°R58	18° 6	12°11	14° 4	S 10
S 11	1 20 33	18°14'57	3♌ 7	12°59	24°57	10°54	26° 7	15°56	6°27	10°41	9°57	16°56	18° 3	12°18	14° 9	S 11
M12	1 24 30	19°14'32	16°59	14°43	26°12	11°28	26°20	15°55	6°30	10°42	9°56	16°53	18° 0	12°25	14°14	M12
T 13	1 28 26	20°14'09	1♎19	16°26	27°27	12° 1	26°32	15°53	6°33	10°44	9°55	16°48	17°57	12°31	14°19	T 13
W14	1 32 23	21°13'49	16° 6	18° 9	28°42	12°35	26°44	15°51	6°35	10°45	9°55	16°41	17°54	12°38	14°23	W14
T 15	1 36 19	22°13'31	1♏12	19°51	29°57	13° 8	26°57	15°50	6°38	10°47	9°54	16°32	17°51	12°45	14°28	T 15
F 16	1 40 16	23°13'14	16°28	21°32	1♌12	13°41	27° 9	15°48	6°41	10°49	9°53	16°24	17°47	12°51	14°32	F 16
S 17	1 44 13	24°13'00	1♌45	23°13	2°27	14°14	27°21	15°46	6°44	10°50	9°52	16°17	17°44	12°58	14°37	S 17
S 18	1 48 9	25°12'48	16°50	24°53	3°42	14°47	27°34	15°43	6°47	10°52	9°52	16°11	17°41	13° 5	14°41	S 18
M19	1 52 6	26°12'38	1♊35	26°33	4°57	15°20	27°46	15°41	6°50	10°54	9°51	16° 8	17°38	13°12	14°45	M19
T 20	1 56 2	27°12'30	15°54	28°12	6°12	15°53	27°58	15°39	6°53	10°55	9°50	16°D 7	17°35	13°18	14°49	T 20
W21	1 59 59	28°12'23	29°44	29°51	7°27	16°25	28°10	15°36	6°56	10°57	9°49	16° 8	17°31	13°25	14°53	W21
T 22	2 3 55	29°12'18	13♏ 7	1♌29	8°42	16°58	28°22	15°34	6°59	10°59	9°49	16° 9	17°28	13°32	14°57	T 22
F 23	2 7 52	0♌12'15	26° 5	3° 7	9°57	17°30	28°34	15°31	7° 2	11° 1	9°48	16°R10	17°25	13°38	15° 1	F 23
S 24	2 11 48	1°12'13	8♏42	4°44	11°12	18° 2	28°46	15°28	7° 5	11° 3	9°47	16°10	17°22	13°45	15° 5	S 24
S 25	2 15 45	2°12'13	21° 1	6°20	12°27	18°34	28°58	15°26	7° 9	11° 4	9°46	16° 8	17°19	13°52	15° 8	S 25
M26	2 19 42	3°12'15	3♌ 9	7°56	13°42	19° 6	29°10	15°23	7°12	11° 6	9°45	16° 4	17°16	13°58	15°12	M26
T 27	2 23 38	4°12'18	15° 7	9°32	14°57	19°37	29°21	15°20	7°15	11° 8	9°44	15°58	17°12	14° 5	15°15	T 27
W28	2 27 35	5°12'23	27° 1	11° 7	16°12	20° 9	29°33	15°17	7°18	11°10	9°43	15°51	17° 9	14°12	15°19	W28
T 29	2 31 31	6°12'29	8♀53	12°42	17°27	20°40	29°45	15°13	7°21	11°12	9°42	15°43	17° 6	14°19	15°22	T 29
F 30	2 35 28	7°12'38	20°54	14°16	18°42	21°11	29°56	15°10	7°25	11°14	9°41	15°36	17° 3	14°25	15°25	F 30
S 31	2 39 24	8♌12'48	2♏39	15♌50	19♌57	21♌42	0♏ 8	15♏ 7	7♊28	11♊16	9♏40	15♏29	17♏ 0	14♀32	15♌28	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
T 1	3s19	4s28	4s54	3n32	1n55	3s51	1n10	20n 8	1n10	3n23	1n 5	21n 4	1s42	21s19	0n 3	20s36	1n28	11n34	10s33	22n55	23n 0	0n 3	10n40	6s27	
F 2	3 43	0n31	4 35	2 50	1 55	4 21	1 9	20 1	1 11	3 18	1 5	21 4	1 42	21 19	0 3	20 36	1 28	11 34	10 33	22 54	22 59	0 6	10 38	6 28	
S 3	4 6	5 29	4 3	2 8	1 54	4 51	1 8	19 53	1 12	3 13	1 5	21 3	1 42	21 19	0 3	20 37	1 28	11 33	10 33	22 53	22 59	0 9	10 36	6 28	
S 4	4 29	10 17	3 21	1 24	1 52	5 22	1 6	19 45	1 12	3 8	1 5	21 3	1 43	21 20	0 3	20 37	1 28	11 33	10 33	22 52	22 59	0 12	10 35	6 29	
M 5	4 52	14 43	2 30	0 40	1 49	5 52	1 5	19 37	1 13	3 3	1 5	21 3	1 43	21 20	0 3	20 37	1 28	11 33	10 33	22 51	22 59	0 15	10 33	6 29	
T 6	5 15	18 37	1 31	0s 4	1 46	6 22	1 3	19 29	1 14	2 58	1 5	21 3	1 43	21 21	0 3	20 37	1 28	11 33	10 33	22 51	22 58	0 18	10 31	6 30	
W 7	5 39	21 47	0 28	0 49	1 43	6 52	1 2	19 21	1 15	2 53	1 5	21 3	1 43	21 21	0 3	20 38	1 28	11 32	10 33	22 51	22 58	0 21	10 29	6 30	
T 8	6 2	23 59	0n38	1 34	1 39	7 21	1 0	19 13	1 16	2 48	1 5	21 3	1 43	21 22	0 3	20 38	1 28	11 32	10 34	22 51	22 58	0 24	10 27	6 31	
F 9	6 25	25 2	1 44	2 20	1 34	7 51	0 58	19 5	1 17	2 43	1 6	21 2	1 43	21 22	0 3	20 38	1 28	11 32	10 34	22 51	22 57	0 27	10 25	6 31	
S 10	6 47	24 46	2 46	3 5	1 30	8 20	0 57	18 56	1 18	2 38	1 6	21 2	1 43	21 23	0 3	20 38	1 28	11 32	10 34	22 51	22 57	0 30	10 23	6 32	
S 11	7 10	23 5	3 41	3 50	1 25	8 50	0 55	18 48	1 19	2 33	1 6	21 2	1 43	21 23	0 3	20 39	1 28	11 32	10 34	22 51	22 57	0 33	10 21	6 32	
M12	7 33	19 59	4 25	4 35	1 19	9 19	0 53	18 40	1 20	2 28	1 6	21 2	1 43	21 23	0 3	20 39	1 28	11 31	10 34	22 50	22 57	0 36	10 19	6 33	
T 13	7 55	15 36	4 55	5 20	1 14	9 47	0 51	18 31	1 21	2 23	1 6	21 1	1 43	21 24	0 3	20 39	1 28	11 31	10 34	22 50	22 56	0 39	10 17	6 33	
W14	8 18	10 11	5 5	6 5	1 8	10 16	0 49	18 23	1 22	2 18	1 6	21 1	1 43	21 24	0 3	20 39	1 28	11 31	10 34	22 49	22 56	0 42	10 16	6 34	
T 15	8 40	4 3	4 56	6 49	1 2	10 44	0 47	18 14	1 23	2 14	1 6	21 1	1 44	21 25	0 3	20 40	1 27	11 31	10 35	22 48	22 56	0 45	10 14	6 34	
F 16	9 2	2s25	4 25	7 33	0 56	11 12	0 45	18 6	1 24	2 9	1 6	21 1	1 44	21 25	0 3	20 40	1 27	11 30	10 35	22 47	22 55	0 48	10 12	6 35	
S 17	9 24	8 44	3 35	8 16	0 50	11 40	0 43	17 57	1 25	2 4	1 6	21 0	1 44	21 26	0 3	20 40	1 27	11 30	10 35	22 47	22 55	0 50	10 10	6 36	
S 18	9 46	14 29	2 31	8 59	0 44	12 8	0 41	17 48	1 26	1 59	1 6	21 0	1 44	21 26	0 3	20 41	1 27	11 30	10 35	22 46	22 55	0 53	10 8	6 36	
M19	10 8	19 15	1 18	9 41	0 37	12 35	0 39	17 39	1 27	1 55	1 7	21 0	1 44	21 27	0 3	20 41	1 27	11 30	10 35	22 46	22 55	0 56	10 7	6 37	
T 20	10 30	22 43	0 1	10 23	0 31	13 2	0 37	17 31	1 28	1 50	1 7	20 59	1 44	21 27	0 3	20 41	1 27	11 29	10 35	22 46	22 54	0 59	10 5	6 37	
W21	10 51	24 42	1s13	11 4	0 24	13 29	0 35	17 22	1 29	1 45	1 7	20 59	1 44	21 28	0 3	20 41	1 27	11 29	10 35	22 46	22 54	1 2	10 3	6 38	
T 22	11 13	25 10	2 20	11 45	0 17	13 55	0 32	17 13	1 30	1 40	1 7	20 59	1 44	21 29	0 3	20 42	1 27	11 29	10 35	22 46	22 54	1 5	10 1	6 38	
F 23	11 34	24 14	3 19	12 25	0 11	14 21	0 30	17 4	1 31	1 36	1 7	20 58	1 44	21 29	0 3	20 42	1 27	11 29	10 36	22 46	22 53	1 8	10 0	6 39	
S 24	11 55	22 4	4 6	13 4	0 4	14 47	0 28	16 55	1 32	1 31	1 7	20 58	1 44	21 30	0 3	20 42	1 27	11 29	10 36	22 46	22 53	1 11	9 58	6 40	
S 25	12 16	18 56	4 40	13 42	0s 3	15 12	0 26	16 46	1 33	1 26	1 7	20 58	1 44	21 30	0 3	20 43	1 27	11 28	10 36	22 46	22 53	1 14	9 56	6 40	
M26	12 36	15 3	5 1	14 20	0 10	15 37	0 23	16 37	1 34	1 22	1 7	20 57	1 44	21 31	0 3	20 43	1 27	11 28	10 36	22 45	22 52	1 17	9 55	6 41	
T 27	12 57	10 37	5 9	14 57	0 16	16 1	0 21	16 28	1 36	1 17	1 7	20 57	1 44	21 31	0 3	20 43	1 27	11 28	10 36	22 45	22 52	1 20	9 53	6 42	
W28	13 17	5 49	5 3	15 34	0 23	16 25	0 19	16 19	1 37	1 13	1 8	20 56	1 44	21 32	0 3	20 43	1 27	11 28	10 36	22 44	22 52	1 23	9 52	6 42	
T 29	13 37	0 50	4 44	16 9	0 30	16 49	0 16	16 10	1 38	1 8	1 8	20 56	1 44	21 32	0 3	20 44	1 27	11 27	10 36	22 43	22 52	1 26	9 50	6 43	
F 30	13 57	4n12	4 13	16 44	0 36	17 12	0 14	16 1	1 39	1 4	1 8	20 56	1 45	21 33	0 3	20 44	1 27	11 27	10 36	22 42	22 51	1 29	9 49	6 44	
S 31	14s16	9n 6	3s31	17s18	0s43	17s35	0n11	15n52	1n40	0n59	1n 8	20n55	1s45	21s33	0n 3	20s44	1n27	11n27	10s36	22n42	22n51	1n32	9n47	6s44	

ASTRODIENST EPHEMERIS for the year 1648  
geocentric

NOVEMBER 1648 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 43 21	9♍12'59	14♌37	17♍24	21♍13	22♍13	0♏19	15°R 3	7♏31	11♏18	9°R39	15°R23	16♏56	14♏39	15♏21	S 1
M 2	2 47 17	10°13'13	26°40	18°57	22°28	22°44	0°30	15♏0	7°35	11°20	9♏39	15♏20	16°53	14°45	15°34	M 2
T 3	2 51 14	11°13'29	8♏15	20°30	23°43	23°14	0°42	14°56	7°38	11°22	9°38	15°18	16°50	14°52	15°37	T 3
W 4	2 55 11	12°13'46	21°10	22° 2	24°58	23°44	0°53	14°52	7°41	11°24	9°37	15°D18	16°47	14°59	15°40	W 4
T 5	2 59 7	13°14'05	3♏40	23°34	26°13	24°15	1° 4	14°49	7°45	11°26	9°36	15°19	16°44	15° 6	15°42	T 5
F 6	3 3 4	14°14'27	16°25	25° 6	27°28	24°44	1°15	14°45	7°48	11°28	9°35	15°21	16°41	15°12	15°45	F 6
S 7	3 7 0	15°14'50	29°27	26°38	28°43	25°14	1°26	14°41	7°52	11°30	9°33	15°23	16°37	15°19	15°47	S 7
S 8	3 10 57	16°15'15	12♏49	28° 9	29°58	25°44	1°37	14°37	7°55	11°32	9°32	15°R23	16°34	15°26	15°50	S 8
M 9	3 14 53	17°15'42	26°32	29°40	1♏13	26°13	1°48	14°33	7°59	11°34	9°31	15°23	16°31	15°32	15°52	M 9
T 10	3 18 50	18°16'11	10♏39	1♏10	2°28	26°42	1°59	14°29	8° 2	11°36	9°30	15°22	16°28	15°39	15°54	T 10
W11	3 22 46	19°16'42	25° 7	2°41	3°43	27°11	2°10	14°25	8° 6	11°38	9°29	15°19	16°25	15°46	15°56	W11
T 12	3 26 43	20°17'15	9♏53	4°10	4°58	27°40	2°20	14°20	8° 9	11°41	9°28	15°15	16°22	15°52	15°58	T 12
F 13	3 30 40	21°17'49	24°50	5°40	6°13	28° 9	2°31	14°16	8°13	11°43	9°27	15°12	16°18	15°59	15°59	F 13
S 14	3 34 36	22°18'25	9♏52	7° 9	7°28	28°37	2°41	14°12	8°16	11°45	9°26	15° 9	16°15	16° 6	16° 1	S 14
S 15	3 38 33	23°19'03	24°48	8°38	8°43	29° 5	2°52	14° 7	8°20	11°47	9°25	15° 7	16°12	16°13	16° 3	S 15
M16	3 42 29	24°19'42	9♏31	10° 6	9°58	29°33	3° 2	14° 3	8°23	11°49	9°24	15°D 6	16° 9	16°19	16° 4	M16
T 17	3 46 26	25°20'23	23°52	11°34	11°14	0♏1	3°12	13°58	8°27	11°51	9°23	15° 6	16° 6	16°26	16° 5	T 17
W18	3 50 22	26°21'05	7♏30	13° 2	12°29	0°29	3°22	13°54	8°31	11°54	9°22	15° 7	16° 2	16°33	16° 7	W18
T 19	3 54 19	27°21'48	21°20	14°28	13°44	0°56	3°32	13°49	8°34	11°56	9°21	15° 8	15°59	16°39	16° 8	T 19
F 20	3 58 15	28°22'32	4♏26	15°54	14°59	1°23	3°42	13°44	8°38	11°58	9°19	15°10	15°56	16°46	16° 9	F 20
S 21	4 2 12	29°23'17	17° 8	17°20	16°14	1°50	3°52	13°40	8°42	12° 0	9°18	15°11	15°53	16°53	16°10	S 21
S 22	4 6 9	0♏24'03	29°31	18°44	17°29	2°16	4° 1	13°35	8°45	12° 2	9°17	15°R11	15°50	17° 0	16°11	S 22
M23	4 10 5	1°24'51	11♏39	20° 8	18°44	2°42	4°11	13°30	8°49	12° 5	9°16	15°11	15°47	17° 6	16°11	M23
T 24	4 14 2	2°25'39	23°38	21°30	19°59	3° 8	4°20	13°25	8°53	12° 7	9°15	15°10	15°43	17°13	16°12	T 24
W25	4 17 58	3°26'28	5♏30	22°52	21°14	3°34	4°30	13°21	8°56	12° 9	9°14	15° 8	15°40	17°20	16°12	W25
T 26	4 21 55	4°27'18	17°21	24°11	22°29	3°59	4°39	13°16	9° 0	12°11	9°13	15° 7	15°37	17°26	16°13	T 26
F 27	4 25 51	5°28'09	29°14	25°29	23°44	4°25	4°48	13°11	9° 4	12°14	9°11	15° 5	15°34	17°33	16°13	F 27
S 28	4 29 48	6°29'01	11♏12	26°46	24°59	4°50	4°57	13° 6	9° 7	12°16	9°10	15° 4	15°31	17°40	16°13	S 28
S 29	4 33 44	7°29'54	23°17	28° 0	26°14	5°14	5° 6	13° 1	9°11	12°18	9° 9	15° 3	15°28	17°46	16°R13	S 29
M30	4 37 41	8♏30'48	5♏32	29♏11	27♏29	5♏39	5♏15	12♏56	9♏15	12♏20	9♏8	15♏2	15♏24	17♏53	16♏13	M30

Day	☉	☾		♊		♋		♌		♍		♎		♏		♐		♑	♒	♓	♈	♉	♊	♋
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	decl	decl	decl	lat		
S 1	14s36	13n43	2s39	17s51	0s49	17s57	0n 9	15n43	1n41	0n55	1n 8	20n55	1s45	21s34	0n 2	20s45	1n27	11n27	10s36	22n41	22n51	1n35	9n46	6s45
M 2	14 55	17 50	1 40	18 23	0 55	18 19	0 7	15 34	1 42	0 50	1 8	20 54	1 45	21 35	0 2	20 45	1 27	11 27	10 37	22 41	22 50	1 38	9 44	6 45
T 3	15 14	21 14	0 35	18 54	1 2	18 40	0 4	15 25	1 43	0 46	1 8	20 54	1 45	21 35	0 2	20 45	1 27	11 26	10 37	22 40	22 50	1 41	9 43	6 46
W 4	15 32	23 43	0n32	19 24	1 8	19 1	0 2	15 16	1 44	0 42	1 8	20 53	1 45	21 36	0 2	20 46	1 27	11 26	10 37	22 40	22 50	1 44	9 41	6 47
T 5	15 51	25 5	1 39	19 54	1 14	19 21	0s 1	15 7	1 46	0 37	1 9	20 53	1 45	21 36	0 2	20 46	1 27	11 26	10 37	22 41	22 49	1 47	9 40	6 47
F 6	16 9	25 9	2 42	20 22	1 20	19 41	0 3	14 59	1 47	0 33	1 9	20 53	1 45	21 37	0 2	20 46	1 27	11 26	10 37	22 41	22 49	1 50	9 39	6 48
S 7	16 26	23 52	3 39	20 49	1 25	20 0	0 6	14 50	1 48	0 29	1 9	20 52	1 45	21 37	0 2	20 46	1 27	11 26	10 37	22 41	22 49	1 52	9 37	6 49
S 8	16 44	21 13	4 25	21 16	1 31	20 19	0 8	14 41	1 49	0 25	1 9	20 52	1 45	21 38	0 2	20 47	1 27	11 25	10 37	22 41	22 48	1 55	9 36	6 49
M 9	17 1	17 20	4 57	21 41	1 36	20 37	0 11	14 32	1 50	0 20	1 9	20 51	1 45	21 38	0 2	20 47	1 27	11 25	10 37	22 41	22 48	1 58	9 35	6 50
T 10	17 18	12 24	5 13	22 5	1 42	20 55	0 13	14 23	1 51	0 16	1 9	20 51	1 45	21 39	0 2	20 47	1 27	11 25	10 37	22 41	22 48	2 1	9 33	6 51
W11	17 35	6 40	5 9	22 29	1 47	21 12	0 16	14 14	1 53	0 12	1 10	20 50	1 45	21 40	0 2	20 48	1 27	11 25	10 37	22 40	22 47	2 4	9 32	6 51
T 12	17 51	0 27	4 46	22 51	1 51	21 28	0 18	14 5	1 54	0 8	1 10	20 50	1 45	21 40	0 2	20 48	1 27	11 25	10 37	22 40	22 47	2 7	9 31	6 52
F 13	18 7	5s53	4 2	23 12	1 56	21 44	0 21	13 56	1 55	0 4	1 10	20 49	1 45	21 41	0 2	20 48	1 27	11 24	10 37	22 40	22 47	2 10	9 30	6 53
S 14	18 23	11 55	3 2	23 31	2 0	21 59	0 23	13 47	1 56	0 0	1 10	20 49	1 45	21 41	0 2	20 49	1 27	11 24	10 37	22 39	22 46	2 13	9 29	6 53
S 15	18 38	17 14	1 50	23 50	2 4	22 13	0 26	13 39	1 57	0s 4	1 10	20 48	1 45	21 42	0 2	20 49	1 26	11 24	10 37	22 39	22 46	2 16	9 28	6 54
M16	18 53	21 25	0 31	24 7	2 8	22 27	0 28	13 30	1 59	0 8	1 10	20 48	1 45	21 43	0 2	20 49	1 26	11 24	10 37	22 39	22 46	2 19	9 27	6 55
T 17	19 8	24 9	0s48	24 23	2 12	22 40	0 30	13 21	2 0	0 12	1 11	20 47	1 45	21 43	0 2	20 50	1 26	11 24	10 37	22 39	22 45	2 22	9 26	6 56
W18	19 22	25 17	2 2	24 38	2 15	22 53	0 33	13 13	2 1	0 16	1 11	20 47	1 45	21 44	0 2	20 50	1 26	11 24	10 37	22 39	22 45	2 25	9 25	6 56
T 19	19 37	24 52	3 7	24 51	2 18	23 5	0 35	13 4	2 2	0 19	1 11	20 46	1 45	21 44	0 2	20 50	1 26	11 23	10 37	22 39	22 45	2 28	9 24	6 57
F 20	19 50	23 4	4 0	25 3	2 20	23 16	0 38	12 56	2 4	0 23	1 11	20 46	1 45	21 45	0 2	20 50	1 26	11 23	10 37	22 39	22 44	2 31	9 23	6 58
S 21	20 4	20 10	4 39	25 14	2 22	23 26	0 40	12 47	2 5	0 27	1 11	20 45	1 45	21 45	0 2	20 51	1 26	11 23	10 37	22 40	22 44	2 34	9 22	6 58
S 22	20 16	16 25	5 5	25 24	2 24	23 36	0 42	12 39	2 6	0 31	1 11	20 45	1 45	21 46	0 2	20 51	1 26	11 23	10 37	22 40	22 44	2 37	9 21	6 59
M23	20 29	12 4	5 16	25 31	2 25	23 45	0 45	12 31	2 8	0 34	1 12	20 44	1 45	21 47	0 2	20 51	1 26	11 23	10 37	22 40	22 43	2 40	9 20	7 0
T 24	20 41	7 19	5 13	25 38	2 26	23 53	0 47	12 23	2 9	0 38	1 12	20 43	1 45	21 47	0 2	20 52	1 26	11 23	10 37	22 39	22 43	2 43	9 19	7 0
W25	20 53	2 21	4 57	25 43	2 26	24 1	0 49	12 14	2 10	0 41	1 12	20 43	1 45	21 48	0 2	20 52	1 26	11 22	10 37	22 39	22 43	2 46	9 18	7 1
T 26	21 4	2n42	4 28	25 47	2 25	24 8	0 52	12 6	2 12	0 45	1 12	20 42	1 44	21 48	0 2	20 52	1 26	11 22	10 37	22 39	22 42	2 49	9 18	7 2
F 27	21 15	7 40	3 47	25 49	2 24	24 14	0 54	11 58	2 13	0 48	1 12	20 42	1 44	21 49	0 2	20 53	1 26	11 22	10 37	22 39	22 42	2 52	9 17	7 2
S 28	21 26	12 25	2 57	25 49	2 23	24 19	0 56	11 51	2 14	0 52	1 13	20 41	1 44	21 49	0 2	20 53	1 26	11 22	10 37	22 39	22 42	2 55	9 16	7 3
S 29	21 36	16 44	1 58	25 48	2 20	24 24	0 58	11 43	2 16	0 55	1 13	20 41	1 44	21 50	0 2	20 53	1 26	11 22	10 37	22 39	22 41	2 58	9 16	7 4
M30	21s46	20n24	0s53	25s46	2s17	24s28	1s 0	11n35	2n17	0s58	1n13	20n40	1s44	21s51	0n 2	20s54	1n26	11n22	10s37	22n39	22n41	3n 1	9n15	7s 4

