



Astrodienst Ephemeris Tables for the year 1699

tropical geocentric zodiac

contains Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, True Node, Moon's Node, Lilith, Chiron

Programming
Dieter Koch and Alois Treindl
based on Swiss Ephemeris
Code D5EPH

ASTRODIENST EPHEMERIS for the year 1699

geocentric

JANUARY 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	6 43 26	10 ³⁵ 57'58	6 ³ 27	22 ³ 46	17 ³ 37	17 ³ 27	15 ³ 13	18 ³ 2	4 ^R 1	0 ^Y 36	9 ^R 8	6 ^R 29	6 ^Δ 40	15 ³ 46	13 ^R 19	T 1
F 2	6 47 22	11 ⁰ 59'10	18 ⁰ 29	24 ⁰ 23	17 ⁰ 56	18 ⁰ 14	15 ⁰ 25	18 ⁰ 8	3 ^Δ 58	0 ⁰ 37	9 ^Δ 7	6 ^Δ 14	6 ⁰ 37	15 ⁰ 52	13 ^Δ 19	F 2
S 3	6 51 19	13 ⁰ 0'21	0 ³ 37	26 ⁰ 1	18 ⁰ 14	19 ⁰ 1	15 ⁰ 38	18 ⁰ 15	3 ⁰ 56	0 ⁰ 38	9 ⁰ 6	6 ⁰ 0	6 ⁰ 34	15 ⁰ 59	13 ⁰ 18	S 3
S 4	6 55 15	14 ⁰ 1'32	12 ⁰ 52	27 ⁰ 38	18 ⁰ 29	19 ⁰ 48	15 ⁰ 51	18 ⁰ 21	3 ⁰ 53	0 ⁰ 38	9 ⁰ 4	5 ⁰ 48	6 ⁰ 31	16 ⁰ 6	13 ⁰ 17	S 4
M 5	6 59 12	15 ⁰ 2'43	25 ⁰ 16	29 ⁰ 14	18 ⁰ 42	20 ⁰ 35	16 ⁰ 4	18 ⁰ 27	3 ⁰ 51	0 ⁰ 39	9 ⁰ 3	5 ⁰ 40	6 ⁰ 27	16 ⁰ 12	13 ⁰ 16	M 5
T 6	7 3 9	16 ⁰ 3'53	7 ³ 50	0 ³ 50	18 ⁰ 53	21 ⁰ 22	16 ⁰ 16	18 ⁰ 34	3 ⁰ 48	0 ⁰ 40	9 ⁰ 2	5 ⁰ 34	6 ⁰ 24	16 ⁰ 19	13 ⁰ 15	T 6
W 7	7 7 5	17 ⁰ 5'03	20 ⁰ 36	2 ⁰ 25	19 ⁰ 1	22 ⁰ 10	16 ⁰ 29	18 ⁰ 40	3 ⁰ 46	0 ⁰ 41	9 ⁰ 1	5 ⁰ 31	6 ⁰ 21	16 ⁰ 26	13 ⁰ 14	W 7
T 8	7 11 2	18 ⁰ 6'12	3 ^Y 38	3 ⁰ 58	19 ⁰ 7	22 ⁰ 57	16 ⁰ 42	18 ⁰ 47	3 ⁰ 43	0 ⁰ 42	8 ⁰ 59	5 ⁰ D30	6 ⁰ 18	16 ⁰ 33	13 ⁰ 12	T 8
F 9	7 14 58	19 ⁰ 7'20	16 ⁰ 58	5 ⁰ 30	19 ⁰ 11	23 ⁰ 44	16 ⁰ 54	18 ⁰ 54	3 ⁰ 41	0 ⁰ 43	8 ⁰ 58	5 ⁰ R30	6 ⁰ 15	16 ⁰ 39	13 ⁰ 11	F 9
S 10	7 18 55	20 ⁰ 8'28	0 ³ 40	7 ⁰ 0	19 ⁰ R13	24 ⁰ 31	17 ⁰ 6	19 ⁰ 0	3 ⁰ 38	0 ⁰ 44	8 ⁰ 57	5 ⁰ 30	6 ⁰ 12	16 ⁰ 46	13 ⁰ 10	S 10
S 11	7 22 51	21 ⁰ 9'35	14 ⁰ 45	8 ⁰ 28	19 ⁰ 11	25 ⁰ 18	17 ⁰ 19	19 ⁰ 7	3 ⁰ 36	0 ⁰ 45	8 ⁰ 55	5 ⁰ 28	6 ⁰ 8	16 ⁰ 53	13 ⁰ 8	S 11
M 12	7 26 48	22 ⁰ 10'41	29 ⁰ 12	9 ⁰ 52	19 ⁰ 8	26 ⁰ 5	17 ⁰ 31	19 ⁰ 13	3 ⁰ 33	0 ⁰ 46	8 ⁰ 54	5 ⁰ 24	6 ⁰ 5	16 ⁰ 59	13 ⁰ 6	M 12
T 13	7 30 44	23 ⁰ 11'46	13 ^{II} 59	11 ⁰ 14	19 ⁰ 2	26 ⁰ 52	17 ⁰ 43	19 ⁰ 20	3 ⁰ 31	0 ⁰ 47	8 ⁰ 53	5 ⁰ 16	6 ⁰ 2	17 ⁰ 6	13 ⁰ 4	T 13
W 14	7 34 41	24 ⁰ 12'51	29 ⁰ 1	12 ⁰ 32	18 ⁰ 53	27 ⁰ 39	17 ⁰ 56	19 ⁰ 27	3 ⁰ 29	0 ⁰ 48	8 ⁰ 51	5 ⁰ 7	5 ⁰ 59	17 ⁰ 13	13 ⁰ 2	W 14
T 15	7 38 38	25 ⁰ 13'54	14 ^Δ 7	13 ⁰ 45	18 ⁰ 42	28 ⁰ 26	18 ⁰ 8	19 ⁰ 34	3 ⁰ 26	0 ⁰ 49	8 ⁰ 50	4 ⁰ 56	5 ⁰ 56	17 ⁰ 20	13 ⁰ 0	T 15
F 16	7 42 34	26 ⁰ 14'58	29 ⁰ 8	14 ⁰ 52	18 ⁰ 28	29 ⁰ 13	18 ⁰ 20	19 ⁰ 41	3 ⁰ 24	0 ⁰ 51	8 ⁰ 49	4 ⁰ 45	5 ⁰ 52	17 ⁰ 26	12 ⁰ 58	F 16
S 17	7 46 31	27 ⁰ 16'00	13 ^Δ 54	15 ⁰ 54	18 ⁰ 12	0 ^Δ 0	18 ⁰ 32	19 ⁰ 47	3 ⁰ 22	0 ⁰ 52	8 ⁰ 47	4 ⁰ 36	5 ⁰ 49	17 ⁰ 33	12 ⁰ 56	S 17
S 18	7 50 27	28 ⁰ 17'02	28 ⁰ 17	16 ⁰ 49	17 ⁰ 53	0 ⁰ 47	18 ⁰ 44	19 ⁰ 54	3 ⁰ 19	0 ⁰ 53	8 ⁰ 46	4 ⁰ 29	5 ⁰ 46	17 ⁰ 40	12 ⁰ 53	S 18
M 19	7 54 24	29 ⁰ 18'03	12 ^Δ 13	17 ⁰ 36	17 ⁰ 32	1 ⁰ 34	18 ⁰ 56	20 ⁰ 1	3 ⁰ 17	0 ⁰ 54	8 ⁰ 44	4 ⁰ 24	5 ⁰ 43	17 ⁰ 46	12 ⁰ 51	M 19
T 20	7 58 20	0 ³ 19'03	25 ⁰ 39	18 ⁰ 14	17 ⁰ 9	2 ⁰ 21	19 ⁰ 8	20 ⁰ 8	3 ⁰ 15	0 ⁰ 56	8 ⁰ 43	4 ⁰ 22	5 ⁰ 40	17 ⁰ 53	12 ⁰ 48	T 20
W 21	8 2 17	1 ⁰ 20'03	8 ^Δ 39	18 ⁰ 43	16 ⁰ 43	3 ⁰ 8	19 ⁰ 19	20 ⁰ 15	3 ⁰ 13	0 ⁰ 57	8 ⁰ 42	4 ⁰ D22	5 ⁰ 37	18 ⁰ 0	12 ⁰ 46	W 21
T 22	8 6 13	2 ⁰ 21'02	21 ⁰ 15	19 ⁰ 1	16 ⁰ 16	3 ⁰ 55	19 ⁰ 31	20 ⁰ 22	3 ⁰ 10	0 ⁰ 58	8 ⁰ 40	4 ⁰ 22	5 ⁰ 33	18 ⁰ 7	12 ⁰ 43	T 22
F 23	8 10 10	3 ⁰ 22'01	3 ^Δ 31	19 ⁰ R 9	15 ⁰ 46	4 ⁰ 42	19 ⁰ 43	20 ⁰ 29	3 ⁰ 8	1 ⁰ 0	8 ⁰ 39	4 ⁰ R23	5 ⁰ 30	18 ⁰ 13	12 ⁰ 40	F 23
S 24	8 14 7	4 ⁰ 22'59	15 ⁰ 34	19 ⁰ 5	15 ⁰ 15	5 ⁰ 29	19 ⁰ 54	20 ⁰ 36	3 ⁰ 6	1 ⁰ 1	8 ⁰ 38	4 ⁰ 22	5 ⁰ 27	18 ⁰ 20	12 ⁰ 37	S 24
S 25	8 18 3	5 ⁰ 23'56	27 ⁰ 28	18 ⁰ 51	14 ⁰ 42	6 ⁰ 16	20 ⁰ 6	20 ⁰ 43	3 ⁰ 4	1 ⁰ 3	8 ⁰ 36	4 ⁰ 19	5 ⁰ 24	18 ⁰ 27	12 ⁰ 34	S 25
M 26	8 22 0	6 ⁰ 24'53	9 ^Δ 18	18 ⁰ 25	14 ⁰ 9	7 ⁰ 3	20 ⁰ 17	20 ⁰ 50	3 ⁰ 2	1 ⁰ 4	8 ⁰ 35	4 ⁰ 14	5 ⁰ 21	18 ⁰ 33	12 ⁰ 31	M 26
T 27	8 25 56	7 ⁰ 25'49	21 ⁰ 8	17 ⁰ 48	13 ⁰ 33	7 ⁰ 49	20 ⁰ 28	20 ⁰ 57	3 ⁰ 0	1 ⁰ 5	8 ⁰ 33	4 ⁰ 6	5 ⁰ 18	18 ⁰ 40	12 ⁰ 27	T 27
W 28	8 29 53	8 ⁰ 26'43	3 ^Δ 3	17 ⁰ 1	12 ⁰ 57	8 ⁰ 36	20 ⁰ 39	21 ⁰ 4	2 ⁰ 58	1 ⁰ 7	8 ⁰ 32	3 ⁰ 57	5 ⁰ 14	18 ⁰ 47	12 ⁰ 24	W 28
T 29	8 33 49	9 ⁰ 27'37	15 ⁰ 5	16 ⁰ 6	12 ⁰ 21	9 ⁰ 23	20 ⁰ 50	21 ⁰ 12	2 ⁰ 56	1 ⁰ 9	8 ⁰ 30	3 ⁰ 46	5 ⁰ 11	18 ⁰ 54	12 ⁰ 21	T 29
F 30	8 37 46	10 ⁰ 28'30	27 ⁰ 15	15 ⁰ 3	11 ⁰ 44	10 ⁰ 10	21 ⁰ 2	21 ⁰ 19	2 ⁰ 54	1 ⁰ 10	8 ⁰ 29	3 ⁰ 35	5 ⁰ 8	19 ⁰ 0	12 ⁰ 17	F 30
S 31	8 41 43	11 ⁰ 29'22	9 ^Δ 35	13 ^Δ 56	11 ^Δ 7	10 ^Δ 57	21 ^Δ 12	21 ^Δ 26	2 ^Δ 52	1 ^Y 12	8 ^Δ 28	3 ^Δ 25	5 ^Δ 5	19 ^Δ 7	12 ^Δ 14	S 31

Delta T = 14.64 sec

Greg. Calendar

FEBRUARY 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	8 45 39	12 ³⁰ 13	22 ³ 5	12 ^R 44	10 ^R 30	11 ^Δ 43	21 ^Δ 23	21 ^Δ 33	2 ^R 50	1 ^Y 13	8 ^R 26	3 ^R 17	5 ^Δ 2	19 ^Δ 14	12 ^R 10	S 1
M 2	8 49 36	13 ⁰ 31'02	4 ^Δ 46	11 ^Δ 32	9 ^Δ 53	12 ⁰ 30	21 ⁰ 34	21 ⁰ 40	2 ^Δ 49	1 ⁰ 15	8 ^Δ 25	3 ^Δ 10	4 ⁰ 58	19 ⁰ 20	12 ^Δ 6	M 2
T 3	8 53 32	14 ⁰ 31'50	17 ⁰ 37	10 ⁰ 20	9 ⁰ 17	13 ⁰ 17	21 ⁰ 45	21 ⁰ 47	2 ⁰ 47	1 ⁰ 17	8 ⁰ 23	3 ⁰ 7	4 ⁰ 55	19 ⁰ 27	12 ⁰ 2	T 3
W 4	8 57 29	15 ⁰ 32'36	0 ^Y 40	9 ⁰ 11	8 ⁰ 42	14 ⁰ 4	21 ⁰ 55	21 ⁰ 55	2 ⁰ 45	1 ⁰ 18	8 ⁰ 22	3 ⁰ D 6	4 ⁰ 52	19 ⁰ 34	11 ⁰ 58	W 4
T 5	9 1 25	16 ⁰ 33'21	13 ⁰ 56	8 ⁰ 6	8 ⁰ 7	14 ⁰ 50	22 ⁰ 6	22 ⁰ 2	2 ⁰ 43	1 ⁰ 20	8 ⁰ 21	3 ⁰ 6	4 ⁰ 49	19 ⁰ 41	11 ⁰ 54	T 5
F 6	9 5 22	17 ⁰ 34'05	27 ⁰ 24	7 ⁰ 7	7 ⁰ 35	15 ⁰ 37	22 ⁰ 16	22 ⁰ 9	2 ⁰ 42	1 ⁰ 22	8 ⁰ 19	3 ⁰ 7	4 ⁰ 46	19 ⁰ 47	11 ⁰ 50	F 6
S 7	9 9 18	18 ⁰ 34'47	11 ^Δ 7	6 ⁰ 14	7 ⁰ 3	16 ⁰ 24	22 ⁰ 26	22 ⁰ 16	2 ⁰ 40	1 ⁰ 24	8 ⁰ 18	3 ⁰ 8	4 ⁰ 43	19 ⁰ 54	11 ⁰ 46	S 7
S 8	9 13 15	19 ⁰ 35'27	25 ⁰ 5	5 ⁰ 28	6 ⁰ 33	17 ⁰ 10	22 ⁰ 37	22 ⁰ 24	2 ⁰ 39	1 ⁰ 25	8 ⁰ 16	3 ⁰ R 8	4 ⁰ 39	20 ⁰ 1	11 ⁰ 42	S 8
M 9	9 17 11	20 ⁰ 36'05	9 ^Δ 18	4 ⁰ 50	6 ⁰ 6	17 ⁰ 57	22 ⁰ 47	22 ⁰ 31	2 ⁰ 37	1 ⁰ 27	8 ⁰ 15	3 ⁰ 7	4 ⁰ 36	20 ⁰ 8	11 ⁰ 38	M 9
T 10	9 21 8	21 ⁰ 36'42	23 ⁰ 43	4 ⁰ 20	5 ⁰ 40	18 ⁰ 43	22 ⁰ 57	22 ⁰ 38	2 ⁰ 36	1 ⁰ 29	8 ⁰ 14	3 ⁰ 3	4 ⁰ 33	20 ⁰ 14	11 ⁰ 34	T 10
W 11	9 25 5	22 ⁰ 37'16	8 ^Δ 18	3 ⁰ 58	5 ⁰ 16	19 ⁰ 30	23 ⁰ 6	22 ⁰ 45	2 ⁰ 34	1 ⁰ 31	8 ⁰ 12	2 ⁰ 58	4 ⁰ 30	20 ⁰ 21	11 ⁰ 29	W 11
T 12	9 29 1	23 ⁰ 37'50	22 ⁰ 57	3 ⁰ 44	4 ⁰ 55	20 ⁰ 16	23 ⁰ 16	22 ⁰ 53	2 ⁰ 33	1 ⁰ 33	8 ⁰ 11	2 ⁰ 52	4 ⁰ 27	20 ⁰ 28	11 ⁰ 25	T 12
F 13	9 32 58	24 ⁰ 38'21	7 ^Δ 33	3 ⁰ D37	4 ⁰ 35	21 ⁰ 3	23 ⁰ 26	23 ⁰ 0	2 ⁰ 32	1 ⁰ 35	8 ⁰ 10	2 ⁰ 46	4 ⁰ 24	20 ⁰ 34	11 ⁰ 21	F 13
S 14	9 36 54	25 ⁰ 38'51	21 ⁰ 59	3 ⁰ 37	4 ⁰ 19	21 ⁰ 49	23 ⁰ 35	23 ⁰ 7	2 ⁰ 30	1 ⁰ 37	8 ⁰ 8	2 ⁰ 41	4 ⁰ 20	20 ⁰ 41	11 ⁰ 16	S 14
S 15	9 40 51	26 ⁰ 39'19	6 ^Δ 9	3 ⁰ 44	4 ⁰ 4	22 ⁰ 35	23 ⁰ 45	23 ⁰ 14	2 ⁰ 29	1 ⁰ 38	8 ⁰ 7	2 ⁰ 36	4 ⁰ 17	20 ⁰ 48	11 ⁰ 12	S 15
M 16	9 44 47	27 ⁰ 39'45	19 ⁰ 57	3 ⁰ 57	3 ⁰ 52	23 ⁰ 22	23 ⁰ 54	23 ⁰ 21	2 ⁰ 28	1 ⁰ 40	8 ⁰ 6	2 ⁰ 34	4 ⁰ 14	20 ⁰ 55	11 ⁰ 7	M 16
T 17	9 48 44	28 ⁰ 40'10	3 ^Δ 22	4 ⁰ 16	3 ⁰ 43	24 ⁰ 8	24 ⁰ 3	23 ⁰ 29	2 ⁰ 27	1 ⁰ 42	8 ⁰ 4	2 ⁰ D33	4 ⁰ 11	21 ⁰ 1	11 ⁰ 2	T 17
W 18	9 52 40	29 ⁰ 40'34	16 ⁰ 24	4 ⁰ 41	3 ⁰ 36	24 ⁰ 54	24 ⁰ 12	23 ⁰ 36	2 ⁰ 26	1 ⁰ 44	8 ⁰ 3	2 ⁰ 34	4 ⁰ 8	21 ⁰ 8	10 ⁰ 58	W 18
T 19	9 56 37	0 ^Δ 40'56	29 ⁰ 4	5 ⁰ 11	3 ⁰ 32	25 ⁰ 40	24 ⁰ 21	23 ⁰ 43	2 ⁰ 25	1 ⁰ 46	8 ⁰ 2	2 ⁰ 36	4 ⁰ 4	21 ⁰ 15	10 ⁰ 53	T 19
F 20	10 0 34	1 ⁰ 41'16	11 ^Δ 25	5 ⁰ 45	3 ⁰ D30	26 ⁰ 26	24 ⁰ 30	23 ⁰ 50	2 ⁰ 24	1 ⁰ 48	8 ⁰ 0	2 ⁰ 37	4 ⁰ 1	21 ⁰ 21	10 ⁰ 48	F 20
S 21	10 4 30	2 ⁰ 41'35	23 ⁰ 32	6 ⁰ 25	3 ⁰ 30	27 ⁰ 13	24 ⁰ 39	23 ⁰ 57	2 ⁰ 23	1 ⁰ 50	7 ⁰ 59	2 ⁰ 39	3 ⁰ 58	21 ⁰ 28	10 ⁰ 44	S 21
S 22	10 8 27	3 ⁰ 41'53	5 ^Δ 29	7 ⁰ 8	3 ⁰ 33	27 ⁰ 59	24 ⁰ 47	24 ⁰ 5	2 ⁰ 22	1 ⁰ 52	7 ⁰ 58	2 ⁰ R39	3 ⁰ 55	21 ⁰ 35	10 ⁰ 39	S 22
M 23	10 12 23	4 ⁰ 42'09	17 ⁰ 21	7 ⁰ 54	3 ⁰ 39	28 ⁰ 45	24 ⁰ 56	24 ⁰ 12	2 ⁰ 21	1 ⁰ 55	7 ⁰ 57	2 ⁰ 38	3 ⁰ 52	21 ⁰ 42	10 ⁰ 34	M 23
T 24	10 16 20	5 ⁰ 42'24	29 ⁰ 13	8 ⁰ 45	3 ⁰ 46	29 ⁰ 31	25 ⁰ 4	24 ⁰ 19	2 ⁰ 20	1 ⁰ 57	7 ⁰ 55	2 ⁰ 36	3 ⁰ 49	21 ⁰ 48	10 ⁰ 29	T 24
W 25	10 20 16	6 ⁰ 42'37	11 ^Δ 10	9 ⁰ 38	3 ⁰ 56	0 ^Y 17	25 ⁰ 12	24 ⁰ 26	2 ⁰ 20	1 ⁰ 59	7 ⁰ 54	2 ⁰ 33	3 ⁰ 45	21 ⁰ 55	10 ⁰ 25	W 25
T 26	10 24 13	7 ⁰ 42'49	23 ⁰ 15	10 ⁰ 35	4 ⁰ 8	1 ⁰ 3	25 ⁰ 21	24 ⁰ 33	2 ⁰ 19	2 ⁰ 1	7 ⁰ 53	2 ⁰ 29	3 ⁰ 42	22 ⁰ 2	10 ⁰ 20	T 26
F 27	10 28 9	8 ⁰ 42'59	5 ^Δ 32	11 ⁰ 34	4 ⁰ 22	1 ⁰ 49	25 ⁰ 29	24 ⁰ 40	2 ⁰ 18	2 ⁰ 3	7 ⁰ 52	2 ⁰ 25	3 ⁰ 39	22 ⁰ 8	10 ⁰ 15	F 27
S 28	10 32 6	9 ^Δ 43'07	18 ^Δ 2	12 ^Δ 36	4 ^Δ 39	2 ^Y 35	25 ^Δ 36	24 ^Δ 47	2 ^Δ 18	2 ^Y 5	7 ^Δ 51	2 ^Δ 21	3 ^Δ 36	22 ^Δ 15	10 ^Δ 10	S 28

ASTRODIENST EPHEMERIS for the year 1699

geocentric

MARCH 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 36 3	10°43'14	0°47	13°41	4°57	3°21	25°44	24°55	2°R17	2°V 7	7°R50	2°R18	3°A33	22°A22	10°R 5	S 1
M 2	10 39 59	11°43'18	13°47	14°48	5°17	4° 6	25°52	25° 2	2°A17	2° 9	7°A48	2°A16	3°29	22°29	10°R 0	M 2
T 3	10 43 56	12°43'21	27° 1	15°57	5°39	4°52	25°59	25° 9	2°16	2°11	7°47	2°D15	3°26	22°35	9°56	T 3
W 4	10 47 52	13°43'22	10°V29	17° 8	6° 3	5°38	26° 6	25°16	2°16	2°14	7°46	2°15	3°23	22°42	9°51	W 4
T 5	10 51 49	14°43'20	24° 8	18°21	6°28	6°24	26°13	25°23	2°16	2°16	7°45	2°16	3°20	22°49	9°46	T 5
F 6	10 55 45	15°43'17	7°B58	19°36	6°55	7° 9	26°20	25°30	2°15	2°18	7°44	2°17	3°17	22°56	9°41	F 6
S 7	10 59 42	16°43'11	21°57	20°52	7°24	7°55	26°27	25°36	2°15	2°20	7°43	2°18	3°14	23° 2	9°36	S 7
S 8	11 3 38	17°43'04	6°II 2	22°10	7°54	8°40	26°34	25°43	2°15	2°22	7°42	2°19	3°10	23° 9	9°32	S 8
M 9	11 7 35	18°42'54	20°12	23°30	8°26	9°26	26°40	25°50	2°15	2°25	7°41	2°R19	3° 7	23°16	9°27	M 9
T 10	11 11 32	19°42'41	4°B26	24°52	8°59	10°11	26°47	25°57	2°D15	2°27	7°40	2°19	3° 4	23°22	9°22	T 10
W11	11 15 28	20°42'27	18°40	26°15	9°33	10°57	26°53	26° 4	2°15	2°29	7°39	2°18	3° 1	23°29	9°18	W11
T 12	11 19 25	21°42'10	2°A52	27°39	10° 9	11°42	26°59	26°11	2°15	2°31	7°38	2°17	2°58	23°36	9°13	T 12
F 13	11 23 21	22°41'51	16°58	29° 5	10°46	12°28	27° 5	26°17	2°15	2°34	7°37	2°16	2°55	23°43	9° 8	F 13
S 14	11 27 18	23°41'29	0°B54	0°K33	11°25	13°13	27°11	26°24	2°15	2°36	7°36	2°14	2°51	23°49	9° 4	S 14
S 15	11 31 14	24°41'06	14°38	2° 1	12° 4	13°58	27°16	26°31	2°15	2°38	7°35	2°14	2°48	23°56	8°59	S 15
M16	11 35 11	25°40'40	28° 7	3°32	12°45	14°43	27°22	26°38	2°16	2°40	7°34	2°D13	2°45	24° 3	8°55	M16
T 17	11 39 7	26°40'12	11°A18	5° 3	13°26	15°28	27°27	26°44	2°16	2°43	7°33	2°14	2°42	24° 9	8°50	T 17
W18	11 43 4	27°39'43	24°12	6°36	14° 9	16°14	27°32	26°51	2°16	2°45	7°33	2°14	2°39	24°16	8°46	W18
T 19	11 47 0	28°39'11	6°B49	8°10	14°53	16°59	27°37	26°57	2°17	2°47	7°32	2°14	2°35	24°23	8°41	T 19
F 20	11 50 57	29°38'38	19°10	9°46	15°37	17°44	27°42	27° 4	2°17	2°49	7°31	2°15	2°32	24°30	8°37	F 20
S 21	11 54 54	0°V38'02	1°A18	11°23	16°23	18°29	27°46	27°10	2°18	2°52	7°30	2°15	2°29	24°36	8°33	S 21
S 22	11 58 50	1°37'25	13°17	13° 1	17°10	19°14	27°51	27°17	2°19	2°54	7°30	2°15	2°26	24°43	8°29	S 22
M23	12 2 47	2°36'47	25°11	14°41	17°57	19°58	27°55	27°23	2°19	2°56	7°29	2°15	2°23	24°50	8°24	M23
T 24	12 6 43	3°36'06	7°B 5	16°22	18°45	20°43	27°59	27°29	2°20	2°58	7°28	2°15	2°20	24°56	8°20	T 24
W25	12 10 40	4°35'24	19° 2	18° 4	19°34	21°28	28° 3	27°36	2°21	3° 1	7°27	2°15	2°16	25° 3	8°16	W25
T 26	12 14 36	5°34'40	1°A 8	19°48	20°24	22°13	28° 7	27°42	2°21	3° 3	7°27	2°15	2°13	25°10	8°12	T 26
F 27	12 18 33	6°33'54	13°27	21°33	21°14	22°58	28°10	27°48	2°22	3° 5	7°26	2°16	2°10	25°17	8° 8	F 27
S 28	12 22 29	7°33'06	26° 2	23°19	22° 5	23°42	28°14	27°54	2°23	3° 8	7°26	2°16	2° 7	25°23	8° 5	S 28
S 29	12 26 26	8°32'16	8°K56	25° 7	22°57	24°27	28°17	28° 0	2°24	3°10	7°25	2°17	2° 4	25°30	8° 1	S 29
M30	12 30 23	9°31'24	22°10	26°56	23°50	25°11	28°20	28° 6	2°25	3°12	7°24	2°17	2° 0	25°37	7°57	M30
T 31	12 34 19	10°V30'30	5°V44	28°K47	24°A43	25°V56	28°A23	28°A12	2°A26	3°V14	7°A24	2°R17	1°A57	25°A44	7°B54	T 31

Delta T = 14.58 sec

Greg. Calendar

APRIL 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	12 38 16	11°V29'35	19°V37	0°V39	25°A36	26°V40	28°A26	28°A18	2°A27	3°V17	7°R23	2°R17	1°A54	25°A50	7°R50	W 1
T 2	12 42 12	12°28'37	3°B44	2°33	26°31	27°25	28°28	28°24	2°29	3°19	7°A23	2°A16	1°51	25°57	7°B47	T 2
F 3	12 46 9	13°27'37	18° 3	4°28	27°25	28° 9	28°30	28°30	2°30	3°21	7°23	2°15	1°48	26° 4	7°43	F 3
S 4	12 50 5	14°26'35	2°II27	6°24	28°21	28°53	28°33	28°36	2°31	3°23	7°22	2°13	1°45	26°10	7°40	S 4
S 5	12 54 2	15°25'31	16°52	8°22	29°16	29°38	28°34	28°42	2°33	3°26	7°22	2°12	1°41	26°17	7°37	S 5
M 6	12 57 58	16°24'24	1°B14	10°21	0°K13	0°B22	28°36	28°47	2°34	3°28	7°21	2°11	1°38	26°24	7°34	M 6
T 7	13 1 55	17°23'15	15°28	12°21	1° 9	1° 6	28°38	28°53	2°35	3°30	7°21	2°D10	1°35	26°31	7°31	T 7
W 8	13 5 52	18°22'04	29°33	14°23	2° 7	1°50	28°39	28°58	2°37	3°32	7°21	2°11	1°32	26°37	7°28	W 8
T 9	13 9 48	19°20'51	13°B27	16°26	3° 4	2°34	28°40	29° 4	2°38	3°34	7°20	2°12	1°29	26°44	7°25	T 9
F 10	13 13 45	20°19'35	27° 9	18°30	4° 2	3°18	28°41	29° 9	2°40	3°37	7°20	2°13	1°26	26°51	7°22	F 10
S 11	13 17 41	21°18'17	10°B39	20°35	5° 1	4° 2	28°42	29°15	2°42	3°39	7°20	2°14	1°22	26°58	7°20	S 11
S 12	13 21 38	22°16'56	23°56	22°41	6° 0	4°46	28°43	29°20	2°43	3°41	7°20	2°15	1°19	27° 4	7°17	S 12
M13	13 25 34	23°15'34	7°A 0	24°48	6°59	5°30	28°43	29°25	2°45	3°43	7°20	2°R15	1°16	27°11	7°15	M13
T 14	13 29 31	24°14'09	19°52	26°55	7°58	6°14	28°44	29°30	2°47	3°45	7°19	2°14	1°13	27°18	7°12	T 14
W15	13 33 27	25°12'43	2°B31	29° 2	8°58	6°57	28°R44	29°36	2°48	3°47	7°19	2°12	1°10	27°24	7°10	W15
T 16	13 37 24	26°11'15	14°57	1°B10	9°59	7°41	28°44	29°41	2°50	3°50	7°19	2° 9	1° 6	27°31	7° 8	T 16
F 17	13 41 20	27° 9'45	27°12	3°17	10°59	8°25	28°43	29°46	2°52	3°52	7°19	2° 5	1° 3	27°38	7° 6	F 17
S 18	13 45 17	28° 8'13	9°A18	5°24	12° 0	9° 8	28°43	29°51	2°54	3°54	7°19	2° 1	1° 0	27°45	7° 4	S 18
S 19	13 49 14	29° 6'39	21°16	7°30	13° 2	9°52	28°42	29°55	2°56	3°56	7°D19	1°56	0°57	27°51	7° 2	S 19
M20	13 53 10	0°B 5'04	3°B10	9°35	14° 3	10°35	28°41	0°K 0	2°58	3°58	7°19	1°53	0°54	27°58	7° 1	M20
T 21	13 57 7	1° 3'27	15° 3	11°38	15° 5	11°19	28°40	0° 5	3° 0	4° 0	7°19	1°50	0°51	28° 5	6°59	T 21
W22	14 1 3	2° 1'49	26°59	13°40	16° 7	12° 2	28°39	0° 9	3° 2	4° 2	7°19	1°D49	0°47	28°11	6°57	W22
T 23	14 5 0	3° 0'09	9°A 3	15°39	17°10	12°46	28°38	0°14	3° 5	4° 4	7°19	1°49	0°44	28°18	6°56	T 23
F 24	14 8 56	3°58'27	21°20	17°37	18°12	13°29	28°36	0°19	3° 7	4° 6	7°19	1°50	0°41	28°25	6°55	F 24
S 25	14 12 53	4°56'44	3°K54	19°31	19°15	14°12	28°34	0°23	3° 9	4° 8	7°19	1°52	0°38	28°32	6°54	S 25
S 26	14 16 49	5°55'00	16°50	21°23	20°18	14°55	28°32	0°27	3°11	4°10	7°20	1°53	0°35	28°38	6°53	S 26
M27	14 20 46	6°53'13	0°V10	23°12	21°22	15°39	28°30	0°32	3°14	4°12	7°20	1°R54	0°31	28°45	6°52	M27
T 28	14 24 43	7°51'26	13°55	24°57	22°26	16°22	28°28	0°36	3°16	4°14	7°20	1°54	0°28	28°52	6°51	T 28
W29	14 28 39	8°49'36	28° 5	26°39	23°29	17° 5	28°25	0°40	3°18	4°16	7°20	1°51	0°25	28°59	6°50	W29
T 30	14 32 36	9°B47'45	12°B35	28°B18	24°K34	17°B48	28°A23	0°K44	3°A21	4°V18	7°A21	1°A47	0°A22	29°A 5	6°B50	T 30

Delta T = 14.55 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1699

geocentric

MAY 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	14 36 32	10 ⁸ 45'52	27 ⁸ 20	29 ⁸ 53	25 ⁸ 38	18 ⁸ 31	28 ⁸ R20	0 ⁸ 48	3 ⁸ 23	4 ⁸ 20	7 ⁸ 21	1 ⁸ R42	0 ⁸ 19	29 ⁸ 12	6 ⁸ R49	F 1
S 2	14 40 29	11 ⁸ 43'58	12 ⁸ 12	1 ⁸ 24	26 ⁸ 42	19 ⁸ 14	28 ⁸ 17	0 ⁸ 52	3 ⁸ 26	4 ⁸ 22	7 ⁸ 21	1 ⁸ 36	0 ⁸ 16	29 ⁸ 19	6 ⁸ 49	S 2
S 3	14 44 25	12 ⁸ 42'02	27 ⁸ 2	2 ⁸ 51	27 ⁸ 47	19 ⁸ 56	28 ⁸ 14	0 ⁸ 55	3 ⁸ 28	4 ⁸ 24	7 ⁸ 22	1 ⁸ 30	0 ⁸ 12	29 ⁸ 25	6 ⁸ 48	S 3
M 4	14 48 22	13 ⁸ 40'04	11 ⁸ 34	4 ⁸ 14	28 ⁸ 52	20 ⁸ 39	28 ⁸ 10	0 ⁸ 59	3 ⁸ 31	4 ⁸ 26	7 ⁸ 22	1 ⁸ 26	0 ⁸ 9	29 ⁸ 32	6 ⁸ 48	M 4
T 5	14 52 18	14 ⁸ 38'04	26 ⁸ 9	5 ⁸ 33	29 ⁸ 57	21 ⁸ 22	28 ⁸ 7	1 ⁸ 3	3 ⁸ 34	4 ⁸ 28	7 ⁸ 22	1 ⁸ 22	0 ⁸ 6	29 ⁸ 39	6 ⁸ D48	T 5
W 6	14 56 15	15 ⁸ 36'02	10 ⁸ 21	6 ⁸ 49	1 ⁸ Y 2	22 ⁸ 5	28 ⁸ 3	1 ⁸ 6	3 ⁸ 36	4 ⁸ 29	7 ⁸ 23	1 ⁸ D21	0 ⁸ 3	29 ⁸ 46	6 ⁸ 48	W 6
T 7	15 0 12	16 ⁸ 33'58	24 ⁸ 5	8 ⁸ 0	2 ⁸ 8	22 ⁸ 47	27 ⁸ 59	1 ⁸ 10	3 ⁸ 39	4 ⁸ 31	7 ⁸ 23	1 ⁸ 21	29 ⁸ 59	29 ⁸ 52	6 ⁸ 49	T 7
F 8	15 4 8	17 ⁸ 31'53	7 ⁸ 35	9 ⁸ 6	3 ⁸ 13	23 ⁸ 30	27 ⁸ 55	1 ⁸ 13	3 ⁸ 42	4 ⁸ 33	7 ⁸ 24	1 ⁸ 22	29 ⁸ 57	29 ⁸ 59	6 ⁸ 49	F 8
S 9	15 8 5	18 ⁸ 29'45	20 ⁸ 47	10 ⁸ 9	4 ⁸ 19	24 ⁸ 13	27 ⁸ 51	1 ⁸ 16	3 ⁸ 44	4 ⁸ 35	7 ⁸ 24	1 ⁸ 23	29 ⁸ 53	0 ⁸ 6	6 ⁸ 49	S 9
S 10	15 12 1	19 ⁸ 27'36	3 ⁸ 44	11 ⁸ 7	5 ⁸ 25	24 ⁸ 55	27 ⁸ 46	1 ⁸ 20	3 ⁸ 47	4 ⁸ 37	7 ⁸ 25	1 ⁸ R24	29 ⁸ 50	0 ⁸ 12	6 ⁸ 50	S 10
M 11	15 15 58	20 ⁸ 25'25	16 ⁸ 28	12 ⁸ 1	6 ⁸ 31	25 ⁸ 37	27 ⁸ 42	1 ⁸ 23	3 ⁸ 50	4 ⁸ 38	7 ⁸ 25	1 ⁸ 22	29 ⁸ 47	0 ⁸ 19	6 ⁸ 51	M 11
T 12	15 19 54	21 ⁸ 23'12	29 ⁸ 0	12 ⁸ 50	7 ⁸ 37	26 ⁸ 20	27 ⁸ 37	1 ⁸ 26	3 ⁸ 53	4 ⁸ 40	7 ⁸ 26	1 ⁸ 19	29 ⁸ 44	0 ⁸ 26	6 ⁸ 51	T 12
W 13	15 23 51	22 ⁸ 20'58	11 ⁸ 23	13 ⁸ 35	8 ⁸ 43	27 ⁸ 2	27 ⁸ 32	1 ⁸ 29	3 ⁸ 56	4 ⁸ 42	7 ⁸ 27	1 ⁸ 14	29 ⁸ 41	0 ⁸ 33	6 ⁸ 52	W 13
T 14	15 27 47	23 ⁸ 18'43	23 ⁸ 37	14 ⁸ 15	9 ⁸ 50	27 ⁸ 45	27 ⁸ 27	1 ⁸ 31	3 ⁸ 59	4 ⁸ 43	7 ⁸ 27	1 ⁸ 6	29 ⁸ 37	0 ⁸ 39	6 ⁸ 53	T 14
F 15	15 31 44	24 ⁸ 16'26	5 ⁸ 43	14 ⁸ 51	10 ⁸ 57	28 ⁸ 27	27 ⁸ 22	1 ⁸ 34	4 ⁸ 2	4 ⁸ 45	7 ⁸ 28	0 ⁸ 57	29 ⁸ 34	0 ⁸ 46	6 ⁸ 54	F 15
S 16	15 35 41	25 ⁸ 14'08	17 ⁸ 43	15 ⁸ 22	12 ⁸ 3	29 ⁸ 9	27 ⁸ 17	1 ⁸ 37	4 ⁸ 5	4 ⁸ 47	7 ⁸ 29	0 ⁸ 46	29 ⁸ 31	0 ⁸ 53	6 ⁸ 56	S 16
S 17	15 39 37	26 ⁸ 11'48	29 ⁸ 38	15 ⁸ 48	13 ⁸ 10	29 ⁸ 51	27 ⁸ 11	1 ⁸ 39	4 ⁸ 8	4 ⁸ 48	7 ⁸ 29	0 ⁸ 36	29 ⁸ 28	1 ⁸ 0	6 ⁸ 57	S 17
M 18	15 43 34	27 ⁸ 9'28	11 ⁸ 31	16 ⁸ 9	14 ⁸ 17	0 ⁸ 33	27 ⁸ 6	1 ⁸ 42	4 ⁸ 11	4 ⁸ 50	7 ⁸ 30	0 ⁸ 27	29 ⁸ 25	1 ⁸ 6	6 ⁸ 58	M 18
T 19	15 47 30	28 ⁸ 7'06	23 ⁸ 23	16 ⁸ 26	15 ⁸ 24	1 ⁸ 15	27 ⁸ 0	1 ⁸ 44	4 ⁸ 14	4 ⁸ 51	7 ⁸ 31	0 ⁸ 20	29 ⁸ 22	1 ⁸ 13	7 ⁸ 0	T 19
W 20	15 51 27	29 ⁸ 4'43	5 ⁸ 48	16 ⁸ 37	16 ⁸ 32	1 ⁸ 57	26 ⁸ 54	1 ⁸ 47	4 ⁸ 17	4 ⁸ 53	7 ⁸ 32	0 ⁸ 15	29 ⁸ 18	1 ⁸ 20	7 ⁸ 2	W 20
T 21	15 55 23	0 ⁸ II 2'20	17 ⁸ 21	16 ⁸ 44	17 ⁸ 39	2 ⁸ 39	26 ⁸ 48	1 ⁸ 49	4 ⁸ 20	4 ⁸ 54	7 ⁸ 33	0 ⁸ 12	29 ⁸ 15	1 ⁸ 26	7 ⁸ 4	T 21
F 22	15 59 20	0 ⁸ 59'55	29 ⁸ 35	16 ⁸ R47	18 ⁸ 47	3 ⁸ 21	26 ⁸ 42	1 ⁸ 51	4 ⁸ 23	4 ⁸ 56	7 ⁸ 33	0 ⁸ D11	29 ⁸ 12	1 ⁸ 33	7 ⁸ 5	F 22
S 23	16 3 16	1 ⁸ 57'29	12 ⁸ 36	16 ⁸ 44	19 ⁸ 54	4 ⁸ 3	26 ⁸ 36	1 ⁸ 53	4 ⁸ 26	4 ⁸ 57	7 ⁸ 34	0 ⁸ 11	29 ⁸ 9	1 ⁸ 40	7 ⁸ 7	S 23
S 24	16 7 13	2 ⁸ 55'03	24 ⁸ 58	16 ⁸ 38	21 ⁸ 2	4 ⁸ 45	26 ⁸ 29	1 ⁸ 55	4 ⁸ 29	4 ⁸ 59	7 ⁸ 35	0 ⁸ R12	29 ⁸ 6	1 ⁸ 47	7 ⁸ 10	S 24
M 25	16 11 10	3 ⁸ 52'35	8 ⁸ Y16	16 ⁸ 27	22 ⁸ 10	5 ⁸ 27	26 ⁸ 23	1 ⁸ 57	4 ⁸ 33	5 ⁸ 0	7 ⁸ 36	0 ⁸ 12	29 ⁸ 3	1 ⁸ 53	7 ⁸ 12	M 25
T 26	16 15 6	4 ⁸ 50'07	22 ⁸ 2	16 ⁸ 11	23 ⁸ 18	6 ⁸ 8	26 ⁸ 16	1 ⁸ 58	4 ⁸ 36	5 ⁸ 1	7 ⁸ 37	0 ⁸ 10	28 ⁸ 59	2 ⁸ 0	7 ⁸ 14	T 26
W 27	16 19 3	5 ⁸ 47'38	6 ⁸ 31	15 ⁸ 53	24 ⁸ 26	6 ⁸ 50	26 ⁸ 10	2 ⁸ 0	4 ⁸ 39	5 ⁸ 3	7 ⁸ 38	0 ⁸ 6	28 ⁸ 56	2 ⁸ 7	7 ⁸ 17	W 27
T 28	16 22 59	6 ⁸ 45'08	20 ⁸ 57	15 ⁸ 30	25 ⁸ 34	7 ⁸ 32	26 ⁸ 3	2 ⁸ 1	4 ⁸ 42	5 ⁸ 4	7 ⁸ 39	29 ⁸ 59	28 ⁸ 53	2 ⁸ 14	7 ⁸ 19	T 28
F 29	16 26 56	7 ⁸ 42'37	5 ⁸ II57	15 ⁸ 5	26 ⁸ 42	8 ⁸ 13	25 ⁸ 56	2 ⁸ 3	4 ⁸ 46	5 ⁸ 5	7 ⁸ 40	29 ⁸ 50	28 ⁸ 50	2 ⁸ 20	7 ⁸ 22	F 29
S 30	16 30 52	8 ⁸ 40'06	21 ⁸ 8	14 ⁸ 37	27 ⁸ 51	8 ⁸ 55	25 ⁸ 49	2 ⁸ 4	4 ⁸ 49	5 ⁸ 6	7 ⁸ 41	29 ⁸ 41	28 ⁸ 47	2 ⁸ 27	7 ⁸ 25	S 30
S 31	16 34 49	9 ⁸ II37'33	6 ⁸ 19	14 ⁸ II 7	28 ⁸ Y59	9 ⁸ II36	25 ⁸ 42	2 ⁸ 36	4 ⁸ 52	5 ⁸ Y 8	7 ⁸ 42	29 ⁸ 31	28 ⁸ 43	2 ⁸ 34	7 ⁸ 28	S 31

Delta T = 14.52 sec

Greg. Calendar

JUNE 1699 GC

00:00 UT

Day	Sid.t	☉	☾	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	16 38 45	10 ^{II} 34'59	21 [☾] 20	13 ^R 35	0 ⁸ 8	10 ^{II} 18	25 ^R 35	2 [☾] 7	4 [☾] 56	5 [♀] 9	7 [♂] 43	29 ^R 22	28 [☾] 40	2 [☾] 40	7 [☾] 31	M 1
T 2	16 42 42	11 [°] 32'24	6 [♂] 2	13 ^{II} 2	1 [°] 16	10 [°] 59	25 [☾] 28	2 [°] 8	4 [°] 59	5 [°] 10	7 [°] 44	29 [☾] 16	28 [°] 37	2 [°] 47	7 [°] 34	T 2
W 3	16 46 39	12 [°] 29'48	20 [°] 21	12 [°] 28	2 [°] 25	11 [°] 41	25 [°] 21	2 [°] 9	5 [°] 3	5 [°] 11	7 [°] 45	29 [°] 12	28 [°] 34	2 [°] 54	7 [°] 37	W 3
T 4	16 50 35	13 [°] 27'11	4 [☾] 13	11 [°] 55	3 [°] 34	12 [°] 22	25 [°] 13	2 [°] 9	5 [°] 6	5 [°] 12	7 [°] 46	29 [°] 11	28 [°] 31	3 [°] 1	7 [°] 40	T 4
F 5	16 54 32	14 [°] 24'32	17 [°] 41	11 [°] 22	4 [°] 43	13 [°] 3	25 [°] 6	2 [°] 10	5 [°] 9	5 [°] 13	7 [°] 48	29 [°] D10	28 [°] 28	3 [°] 7	7 [°] 44	F 5
S 6	16 58 28	15 [°] 21'53	0 [☾] 47	10 [°] 50	5 [°] 52	13 [°] 44	24 [°] 59	2 [°] 11	5 [°] 13	5 [°] 14	7 [°] 49	29 [°] R10	28 [°] 24	3 [°] 14	7 [°] 47	S 6
S 7	17 2 25	16 [°] 19'12	13 [°] 33	10 [°] 20	7 [°] 1	14 [°] 26	24 [°] 51	2 [°] 11	5 [°] 16	5 [°] 15	7 [°] 50	29 [°] 10	28 [°] 21	3 [°] 21	7 [°] 51	S 7
M 8	17 6 21	17 [°] 16'31	26 [°] 4	9 [°] 53	8 [°] 10	15 [°] 7	24 [°] 44	2 [°] 12	5 [°] 20	5 [°] 16	7 [°] 51	29 [°] 7	28 [°] 18	3 [°] 27	7 [°] 55	M 8
T 9	17 10 18	18 [°] 13'48	8 [♂] 24	9 [°] 27	9 [°] 19	15 [°] 48	24 [°] 36	2 [°] 12	5 [°] 23	5 [°] 17	7 [°] 52	29 [°] 2	28 [°] 15	3 [°] 34	7 [°] 58	T 9
W 10	17 14 14	19 [°] 11'05	20 [°] 34	9 [°] 5	10 [°] 28	16 [°] 29	24 [°] 28	2 [°] 12	5 [°] 27	5 [°] 18	7 [°] 54	28 [°] 54	28 [°] 12	3 [°] 41	8 [°] 2	W 10
T 11	17 18 11	20 [°] 8'21	2 [☾] 37	8 [°] 47	11 [°] 38	17 [°] 10	24 [°] 21	2 [°] 13	5 [°] 30	5 [°] 19	7 [°] 55	28 [°] 44	28 [°] 9	3 [°] 48	8 [°] 6	T 11
F 12	17 22 8	21 [°] 5'37	14 [°] 36	8 [°] 32	12 [°] 47	17 [°] 51	24 [°] 13	2 [°] R13	5 [°] 34	5 [°] 20	7 [°] 56	28 [°] 31	28 [°] 5	3 [°] 54	8 [°] 10	F 12
S 13	17 26 4	22 [°] 2'52	26 [°] 31	8 [°] 21	13 [°] 57	18 [°] 32	24 [°] 6	2 [°] 13	5 [°] 37	5 [°] 21	7 [°] 58	28 [°] 17	28 [°] 2	4 [°] 1	8 [°] 15	S 13
S 14	17 30 1	23 [°] 0'06	8 [☾] 24	8 [°] 15	15 [°] 6	19 [°] 13	23 [°] 58	2 [°] 13	5 [°] 41	5 [°] 22	7 [°] 59	28 [°] 4	27 [°] 59	4 [°] 8	8 [°] 19	S 14
M 15	17 33 57	23 [°] 57'20	20 [°] 16	8 [°] D13	16 [°] 16	19 [°] 53	23 [°] 50	2 [°] 12	5 [°] 44	5 [°] 23	8 [°] 0	27 [°] 51	27 [°] 56	4 [°] 15	8 [°] 23	M 15
T 16	17 37 54	24 [°] 54'33	2 [☾] 10	8 [°] 16	17 [°] 26	20 [°] 34	23 [°] 43	2 [°] 12	5 [°] 48	5 [°] 23	8 [°] 2	27 [°] 41	27 [°] 53	4 [°] 21	8 [°] 28	T 16
W 17	17 41 50	25 [°] 51'47	14 [°] 7	8 [°] 23	18 [°] 35	21 [°] 15	23 [°] 35	2 [°] 12	5 [°] 52	5 [°] 24	8 [°] 3	27 [°] 33	27 [°] 49	4 [°] 28	8 [°] 33	W 17
T 18	17 45 47	26 [°] 49'00	26 [°] 10	8 [°] 35	19 [°] 45	21 [°] 56	23 [°] 27	2 [°] 11	5 [°] 55	5 [°] 25	8 [°] 4	27 [°] 28	27 [°] 46	4 [°] 35	8 [°] 37	T 18
F 19	17 49 43	27 [°] 46'13	8 [♂] 25	8 [°] 51	20 [°] 55	22 [°] 36	23 [°] 20	2 [°] 10	5 [°] 59	5 [°] 25	8 [°] 6	27 [°] 26	27 [°] 43	4 [°] 41	8 [°] 42	F 19
S 20	17 53 40	28 [°] 43'25	20 [°] 54	9 [°] 13	22 [°] 5	23 [°] 17	23 [°] 12	2 [°] 10	6 [°] 2	5 [°] 26	8 [°] 7	27 [°] 25	27 [°] 40	4 [°] 48	8 [°] 47	S 20
S 21	17 57 37	29 [°] 40'38	3 [♀] 43	9 [°] 39	23 [°] 15	23 [°] 57	23 [°] 4	2 [°] 9	6 [°] 6	5 [°] 27	8 [°] 9	27 [°] 25	27 [°] 37	4 [°] 55	8 [°] 52	S 21
M 22	18 1 33	0 [☾] 37'51	16 [°] 56	10 [°] 9	24 [°] 25	24 [°] 38	22 [°] 57	2 [°] 8	6 [°] 10	5 [°] 27	8 [°] 10	27 [°] 25	27 [°] 34	5 [°] 2	8 [°] 57	M 22
T 23	18 5 30	1 [°] 35'04	0 ⁸ 36	10 [°] 45	25 [°] 36	25 [°] 19	22 [°] 49	2 [°] 7	6 [°] 13	5 [°] 28	8 [°] 12	27 [°] 22	27 [°] 30	5 [°] 8	9 [°] 2	T 23
W 24	18 9 26	2 [°] 32'16	14 [°] 45	11 [°] 24	26 [°] 46	25 [°] 59	22 [°] 42	2 [°] 6	6 [°] 17	5 [°] 28	8 [°] 13	27 [°] 18	27 [°] 27	5 [°] 15	9 [°] 7	W 24
T 25	18 13 23	3 [°] 29'29	29 [°] 22	12 [°] 9	27 [°] 56	26 [°] 39	22 [°] 34	2 [°] 5	6 [°] 20	5 [°] 29	8 [°] 15	27 [°] 11	27 [°] 24	5 [°] 22	9 [°] 13	T 25
F 26	18 17 19	4 [°] 26'42	14 ^{II} 22	12 [°] 58	29 [°] 7	27 [°] 20	22 [°] 27	2 [°] 3	6 [°] 24	5 [°] 29	8 [°] 16	27 [°] 2	27 [°] 21	5 [°] 29	9 [°] 18	F 26
S 27	18 21 16	5 [°] 23'56	29 [°] 38	13 [°] 51	0 ^{II} 17	28 [°] 0	22 [°] 20	2 [°] 2	6 [°] 28	5 [°] 29	8 [°] 18	26 [°] 51	27 [°] 18	5 [°] 35	9 [°] 23	S 27
S 28	18 25 12	6 [°] 21'09	14 [☾] 57	14 [°] 48	1 [°] 28	28 [°] 40	22 [°] 12	2 [°] 0	6 [°] 31	5 [°] 30	8 [°] 19	26 [°] 41	27 [°] 15	5 [°] 42	9 [°] 29	S 28
M 29	18 29 9	7 [°] 18'22	0 [♂] 8	15 [°] 50	2 [°] 38	29 [°] 21	22 [°] 5	1 [°] 59	6 [°] 35	5 [°] 30	8 [°] 21	26 [°] 32	27 [°] 11	5 [°] 49	9 [°] 35	M 29
T 30	18 33 6	8 [°] 15'34	15 [♂] 2	16 ^{II} 56	3 ^{II} 49	0 [☾] 1	21 [☾] 58	1 [☾] 57	6 [☾] 39	5 [♀] 30	8 [♂] 22	26 [☾] 24	27 [☾] 8	5 [☾] 55	9 [☾] 40	T 30

ASTRODIENST EPHEMERIS for the year 1699

geocentric

JULY 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	18 37 2	9 ⁵² 12'47	29 ⁰² 32	18 ^{II} 6	4 ^{II} 59	0 ⁵⁴ 1	21 ⁰ R51	1 ⁰ R55	6 ⁵⁴ 2	5 ^Y 31	8 ⁰ 24	26 ⁰ R20	27 ⁰ 5	6 ⁵ 2	9 ⁰ 46	W 1
T 2	18 40 59	10 ⁰ 9'59	13 ⁰ 33	19 ⁰ 20	6 ⁰ 10	1 ⁰ 21	21 ⁰ 44	1 ⁰ 54	6 ⁰ 46	5 ⁰ 31	8 ⁰ 26	26 ⁰ 18	27 ⁰ 2	6 ⁰ 9	9 ⁰ 52	T 2
F 3	18 44 55	11 ⁰ 7'11	27 ⁰ 7	20 ⁰ 39	7 ⁰ 21	2 ⁰ 1	21 ⁰ 37	1 ⁰ 52	6 ⁰ 49	5 ⁰ 31	8 ⁰ 27	26 ⁰ D17	26 ⁰ 59	6 ⁰ 16	9 ⁰ 58	F 3
S 4	18 48 52	12 ⁰ 4'23	10 ⁰ 14	22 ⁰ 1	8 ⁰ 32	2 ⁰ 41	21 ⁰ 30	1 ⁰ 50	6 ⁰ 53	5 ⁰ 31	8 ⁰ 29	26 ⁰ R17	26 ⁰ 55	6 ⁰ 22	10 ⁰ 4	S 4
S 5	18 52 48	13 ⁰ 1'35	22 ⁰ 59	23 ⁰ 27	9 ⁰ 43	3 ⁰ 21	21 ⁰ 24	1 ⁰ 47	6 ⁰ 57	5 ⁰ 31	8 ⁰ 31	26 ⁰ 17	26 ⁰ 52	6 ⁰ 29	10 ⁰ 10	S 5
M 6	18 56 45	13 ⁰ 58'46	5 ⁰ 26	24 ⁰ 57	10 ⁰ 54	4 ⁰ 1	21 ⁰ 17	1 ⁰ 45	7 ⁰ 0	5 ⁰ 31	8 ⁰ 32	26 ⁰ 15	26 ⁰ 49	6 ⁰ 36	10 ⁰ 16	M 6
T 7	19 0 41	14 ⁰ 55'58	17 ⁰ 39	26 ⁰ 31	12 ⁰ 5	4 ⁰ 41	21 ⁰ 11	1 ⁰ 43	7 ⁰ 4	5 ⁰ 32	8 ⁰ 34	26 ⁰ 11	26 ⁰ 46	6 ⁰ 42	10 ⁰ 23	T 7
W 8	19 4 38	15 ⁰ 53'10	29 ⁰ 43	28 ⁰ 9	13 ⁰ 16	5 ⁰ 21	21 ⁰ 4	1 ⁰ 41	7 ⁰ 7	5 ⁰ 32	8 ⁰ 36	26 ⁰ 4	26 ⁰ 43	6 ⁰ 49	10 ⁰ 29	W 8
T 9	19 8 35	16 ⁰ 50'21	11 ⁰ 40	29 ⁰ 50	14 ⁰ 27	6 ⁰ 1	20 ⁰ 58	1 ⁰ 38	7 ⁰ 11	5 ⁰ R32	8 ⁰ 37	25 ⁰ 55	26 ⁰ 40	6 ⁰ 56	10 ⁰ 35	T 9
F 10	19 12 31	17 ⁰ 47'33	23 ⁰ 34	1 ⁰ 34	15 ⁰ 38	6 ⁰ 41	20 ⁰ 52	1 ⁰ 36	7 ⁰ 15	5 ⁰ 32	8 ⁰ 39	25 ⁰ 44	26 ⁰ 36	7 ⁰ 3	10 ⁰ 42	F 10
S 11	19 16 28	18 ⁰ 44'46	5 ⁰ 26	3 ⁰ 22	16 ⁰ 49	7 ⁰ 20	20 ⁰ 46	1 ⁰ 33	7 ⁰ 18	5 ⁰ 31	8 ⁰ 41	25 ⁰ 32	26 ⁰ 33	7 ⁰ 9	10 ⁰ 48	S 11
S 12	19 20 24	19 ⁰ 41'58	17 ⁰ 19	5 ⁰ 13	18 ⁰ 0	8 ⁰ 0	20 ⁰ 40	1 ⁰ 30	7 ⁰ 22	5 ⁰ 31	8 ⁰ 42	25 ⁰ 20	26 ⁰ 30	7 ⁰ 16	10 ⁰ 55	S 12
M13	19 24 21	20 ⁰ 39'11	29 ⁰ 14	7 ⁰ 7	19 ⁰ 12	8 ⁰ 40	20 ⁰ 34	1 ⁰ 27	7 ⁰ 25	5 ⁰ 31	8 ⁰ 44	25 ⁰ 9	26 ⁰ 27	7 ⁰ 23	11 ⁰ 2	M13
T 14	19 28 17	21 ⁰ 36'24	11 ⁰ 12	9 ⁰ 3	20 ⁰ 23	9 ⁰ 20	20 ⁰ 29	1 ⁰ 25	7 ⁰ 29	5 ⁰ 31	8 ⁰ 46	24 ⁰ 59	26 ⁰ 24	7 ⁰ 30	11 ⁰ 8	T 14
W15	19 32 14	22 ⁰ 33'38	23 ⁰ 16	11 ⁰ 2	21 ⁰ 35	9 ⁰ 59	20 ⁰ 23	1 ⁰ 22	7 ⁰ 32	5 ⁰ 31	8 ⁰ 47	24 ⁰ 53	26 ⁰ 21	7 ⁰ 36	11 ⁰ 15	W15
T 16	19 36 10	23 ⁰ 30'53	5 ⁰ 26	13 ⁰ 3	22 ⁰ 46	10 ⁰ 39	20 ⁰ 18	1 ⁰ 19	7 ⁰ 36	5 ⁰ 31	8 ⁰ 49	24 ⁰ 48	26 ⁰ 17	7 ⁰ 43	11 ⁰ 22	T 16
F 17	19 40 7	24 ⁰ 28'08	17 ⁰ 47	15 ⁰ 6	23 ⁰ 58	11 ⁰ 18	20 ⁰ 12	1 ⁰ 16	7 ⁰ 39	5 ⁰ 30	8 ⁰ 51	24 ⁰ 47	26 ⁰ 14	7 ⁰ 50	11 ⁰ 29	F 17
S 18	19 44 4	25 ⁰ 25'24	0 ⁰ 21	17 ⁰ 10	25 ⁰ 9	11 ⁰ 58	20 ⁰ 7	1 ⁰ 12	7 ⁰ 43	5 ⁰ 30	8 ⁰ 53	24 ⁰ D46	26 ⁰ 11	7 ⁰ 56	11 ⁰ 36	S 18
S 19	19 48 0	26 ⁰ 22'40	13 ⁰ 11	19 ⁰ 16	26 ⁰ 21	12 ⁰ 37	20 ⁰ 2	1 ⁰ 9	7 ⁰ 46	5 ⁰ 30	8 ⁰ 54	24 ⁰ 47	26 ⁰ 8	8 ⁰ 3	11 ⁰ 43	S 19
M20	19 51 57	27 ⁰ 19'58	26 ⁰ 22	21 ⁰ 22	27 ⁰ 33	13 ⁰ 17	19 ⁰ 58	1 ⁰ 6	7 ⁰ 50	5 ⁰ 29	8 ⁰ 56	24 ⁰ R48	26 ⁰ 5	8 ⁰ 10	11 ⁰ 50	M20
T 21	19 55 53	28 ⁰ 17'17	9 ⁰ 57	23 ⁰ 29	28 ⁰ 44	13 ⁰ 56	19 ⁰ 53	1 ⁰ 2	7 ⁰ 53	5 ⁰ 29	8 ⁰ 58	24 ⁰ 47	26 ⁰ 1	8 ⁰ 17	11 ⁰ 57	T 21
W22	19 59 50	29 ⁰ 14'36	23 ⁰ 57	25 ⁰ 36	29 ⁰ 56	14 ⁰ 36	19 ⁰ 49	0 ⁰ 59	7 ⁰ 57	5 ⁰ 29	9 ⁰ 0	24 ⁰ 45	25 ⁰ 58	8 ⁰ 23	12 ⁰ 5	W22
T 23	20 3 46	0 ⁰ 11'57	8 ⁰ 12	27 ⁰ 43	1 ⁰ 58	15 ⁰ 15	19 ⁰ 44	0 ⁰ 56	8 ⁰ 0	5 ⁰ 28	9 ⁰ 1	24 ⁰ 40	25 ⁰ 55	8 ⁰ 30	12 ⁰ 12	T 23
F 24	20 7 43	1 ⁰ 9'19	23 ⁰ 10	29 ⁰ 49	2 ⁰ 20	15 ⁰ 54	19 ⁰ 40	0 ⁰ 52	8 ⁰ 4	5 ⁰ 28	9 ⁰ 3	24 ⁰ 34	25 ⁰ 52	8 ⁰ 37	12 ⁰ 19	F 24
S 25	20 11 39	2 ⁰ 6'42	8 ⁰ 14	1 ⁰ 55	3 ⁰ 32	16 ⁰ 33	19 ⁰ 36	0 ⁰ 48	8 ⁰ 7	5 ⁰ 27	9 ⁰ 5	24 ⁰ 26	25 ⁰ 49	8 ⁰ 43	12 ⁰ 27	S 25
S 26	20 15 36	3 ⁰ 4'05	23 ⁰ 24	4 ⁰ 1	4 ⁰ 44	17 ⁰ 13	19 ⁰ 32	0 ⁰ 45	8 ⁰ 10	5 ⁰ 27	9 ⁰ 7	24 ⁰ 19	25 ⁰ 46	8 ⁰ 50	12 ⁰ 34	S 26
M27	20 19 33	4 ⁰ 1'30	8 ⁰ 32	6 ⁰ 5	5 ⁰ 56	17 ⁰ 52	19 ⁰ 29	0 ⁰ 41	8 ⁰ 14	5 ⁰ 26	9 ⁰ 9	24 ⁰ 12	25 ⁰ 42	8 ⁰ 57	12 ⁰ 42	M27
T 28	20 23 29	4 ⁰ 58'55	23 ⁰ 26	8 ⁰ 8	7 ⁰ 8	18 ⁰ 31	19 ⁰ 25	0 ⁰ 37	8 ⁰ 17	5 ⁰ 25	9 ⁰ 10	24 ⁰ 7	25 ⁰ 39	9 ⁰ 4	12 ⁰ 49	T 28
W29	20 27 26	5 ⁰ 56'21	7 ⁰ 19	10 ⁰ 10	8 ⁰ 21	19 ⁰ 10	19 ⁰ 22	0 ⁰ 33	8 ⁰ 20	5 ⁰ 25	9 ⁰ 12	24 ⁰ 4	25 ⁰ 36	9 ⁰ 10	12 ⁰ 57	W29
T 30	20 31 22	6 ⁰ 53'48	22 ⁰ 7	12 ⁰ 11	9 ⁰ 33	19 ⁰ 49	19 ⁰ 19	0 ⁰ 29	8 ⁰ 24	5 ⁰ 24	9 ⁰ 14	24 ⁰ D 2	25 ⁰ 33	9 ⁰ 17	13 ⁰ 4	T 30
F 31	20 35 19	7 ⁰ 51'15	5 ⁰ 46	14 ⁰ 11	10 ⁰ 45	20 ⁰ 28	19 ⁰ 16	0 ⁰ 25	8 ⁰ 27	5 ⁰ 23	9 ⁰ 16	24 ⁰ 3	25 ⁰ 30	9 ⁰ 24	13 ⁰ 12	F 31

Delta T = 14.46 sec

Greg. Calendar

AUGUST 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	20 39 15	8♂48'44	18♂59	16♂ 9	11♂57	21♂ 7	19♂R13	0♂R21	8♂30	5♂R23	9♂18	24♂ 4	25♂26	9♂30	13♂20	S 1
S 2	20 43 12	9♂46'13	1♂47	18° 5	13°10	21°46	19♂10	0♂17	8°34	5♂Y22	9°19	24° 5	25°23	9°37	13°28	S 2
M 3	20 47 8	10°43'42	14°16	20° 0	14°22	22°25	19° 8	0°13	8°37	5°21	9°21	24°R 5	25°20	9°44	13°36	M 3
T 4	20 51 5	11°41'13	26°29	21°54	15°35	23° 4	19° 6	0° 9	8°40	5°20	9°23	24° 4	25°17	9°51	13°43	T 4
W 5	20 55 2	12°38'44	8♂31	23°46	16°47	23°43	19° 4	0° 5	8°43	5°20	9°25	24° 1	25°14	9°57	13°51	W 5
T 6	20 58 58	13°36'17	20°26	25°37	18° 0	24°22	19° 2	0° 1	8°46	5°19	9°27	23°56	25°11	10° 4	13°59	T 6
F 7	21 2 55	14°33'50	2♂19	27°26	19°12	25° 1	19° 0	29♂56	8°49	5°18	9°28	23°50	25° 7	10°11	14° 7	F 7
S 8	21 6 51	15°31'24	14°11	29°13	20°25	25°40	18°59	29°52	8°52	5°17	9°30	23°44	25° 4	10°18	14°15	S 8
S 9	21 10 48	16°29'00	26° 6	0♂59	21°38	26°18	18°57	29°48	8°55	5°16	9°32	23°37	25° 1	10°24	14°24	S 9
M10	21 14 44	17°26'36	8♂ 7	2°44	22°51	26°57	18°56	29°43	8°59	5°15	9°34	23°30	24°58	10°31	14°32	M10
T 11	21 18 41	18°24'14	20°13	4°27	24° 3	27°36	18°55	29°39	9° 2	5°14	9°36	23°25	24°55	10°38	14°40	T 11
W12	21 22 37	19°21'53	2♂28	6° 9	25°16	28°14	18°55	29°35	9° 4	5°13	9°37	23°22	24°52	10°44	14°48	W12
T 13	21 26 34	20°19'33	14°51	7°49	26°29	28°53	18°54	29°30	9° 7	5°12	9°39	23°20	24°48	10°51	14°56	T 13
F 14	21 30 31	21°17'15	27°26	9°27	27°42	29°32	18°54	29°26	9°10	5°11	9°41	23°D20	24°45	10°58	15° 5	F 14
S 15	21 34 27	22°14'58	10♂Y12	11° 5	28°55	0♂10	18°53	29°21	9°13	5°10	9°43	23°21	24°42	11° 5	15°13	S 15
S 16	21 38 24	23°12'43	23°13	12°40	0♂ 8	0°49	18°D53	29°17	9°16	5° 9	9°44	23°22	24°39	11°11	15°21	S 16
M17	21 42 20	24°10'29	6♂31	14°15	1°21	1°27	18°54	29°12	9°19	5° 8	9°46	23°24	24°36	11°18	15°30	M17
T 18	21 46 17	25° 8'18	20° 6	15°48	2°35	2° 6	18°54	29° 8	9°22	5° 6	9°48	23°R25	24°32	11°25	15°38	T 18
W19	21 50 13	26° 6'08	4♂ 1	17°19	3°48	2°44	18°55	29° 3	9°24	5° 5	9°50	23°25	24°29	11°31	15°46	W19
T 20	21 54 10	27° 4'00	18°14	18°50	5° 1	3°23	18°55	28°59	9°27	5° 4	9°51	23°23	24°26	11°38	15°55	T 20
F 21	21 58 6	28° 1'53	2♂44	20°18	6°14	4° 1	18°56	28°54	9°30	5° 3	9°53	23°21	24°23	11°45	16° 3	F 21
S 22	22 2 3	28°59'49	17°27	21°46	7°28	4°39	18°57	28°50	9°33	5° 1	9°55	23°18	24°20	11°52	16°12	S 22
S 23	22 6 0	29°57'46	2♂16	23°11	8°41	5°18	18°59	28°45	9°35	5° 0	9°56	23°15	24°17	11°58	16°20	S 23
M24	22 9 56	0♂55'45	17° 4	24°36	9°55	5°56	19° 0	28°40	9°38	4°59	9°58	23°12	24°13	12° 5	16°29	M24
T 25	22 13 53	1°53'46	1♂44	25°59	11° 8	6°34	19° 2	28°36	9°40	4°58	10° 0	23°10	24°10	12°12	16°37	T 25
W26	22 17 49	2°51'48	16° 9	27°20	12°22	7°13	19° 4	28°31	9°43	4°56	10° 2	23° 9	24° 7	12°18	16°46	W26
T 27	22 21 46	3°49'52	0♂12	28°40	13°35	7°51	19° 6	28°27	9°45	4°55	10° 3	23°D 9	24° 4	12°25	16°55	T 27
F 28	22 25 42	4°47'57	13°52	29°58	14°49	8°29	19° 8	28°22	9°48	4°54	10° 5	23° 9	24° 1	12°32	17° 3	F 28
S 29	22 29 39	5°46'03	27° 8	1♂14	16° 3	9° 7	19°10	28°18	9°50	4°52	10° 7	23°11	23°58	12°39	17°12	S 29
S 30	22 33 35	6°44'12	0♂ 0	2°29	17°16	9°45	19°13	28°13	9°52	4°51	10° 8	23°12	23°54	12°45	17°21	S 30
M31	22 37 32	7♂42'21	22♂132	3♂42	18♂130	10♂123	19♂16	28♂ 9	9♂55	4♂Y49	10♂10	23♂13	23♂51	12♂52	17♂29	M31

ASTRODIENST EPHEMERIS for the year 1699

geocentric

SEPTEMBER 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	22 41 29	8 ^h 40'33	4 ^h 48	4 ^h 53	19 ^h 44	11 ^h 1	19 ^h 19	28 ^h R 5	9 ^h 57	4 ^h R48	10 ^h 11	23 ^h R14	23 ^h 48	12 ^h 59	17 ^h 38	T 1
W 2	22 45 25	9 ^h 38'45	16 ^h 51	6 ^h 3	20 ^h 58	11 ^h 39	19 ^h 22	28 ^h 0	9 ^h 59	4 ^h Y46	10 ^h 13	23 ^h 14	23 ^h 45	13 ^h 5	17 ^h 47	W 2
T 3	22 49 22	10 ^h 36'59	28 ^h 47	7 ^h 10	22 ^h 12	12 ^h 17	19 ^h 25	27 ^h 56	10 ^h 1	4 ^h 45	10 ^h 15	23 ^h 13	23 ^h 42	13 ^h 12	17 ^h 55	T 3
F 4	22 53 18	11 ^h 35'15	10 ^h 39	8 ^h 15	23 ^h 26	12 ^h 55	19 ^h 29	27 ^h 51	10 ^h 4	4 ^h 43	10 ^h 16	23 ^h 12	23 ^h 38	13 ^h 19	18 ^h 4	F 4
S 5	22 57 15	12 ^h 33'33	22 ^h 33	9 ^h 17	24 ^h 40	13 ^h 33	19 ^h 32	27 ^h 47	10 ^h 6	4 ^h 42	10 ^h 18	23 ^h 10	23 ^h 35	13 ^h 26	18 ^h 13	S 5
S 6	23 1 11	13 ^h 31'51	4 ^h 31	10 ^h 18	25 ^h 54	14 ^h 11	19 ^h 36	27 ^h 43	10 ^h 8	4 ^h 40	10 ^h 19	23 ^h 9	23 ^h 32	13 ^h 32	18 ^h 22	S 6
M 7	23 5 8	14 ^h 30'12	16 ^h 37	11 ^h 15	27 ^h 8	14 ^h 49	19 ^h 40	27 ^h 39	10 ^h 10	4 ^h 39	10 ^h 21	23 ^h 8	23 ^h 29	13 ^h 39	18 ^h 30	M 7
T 8	23 9 4	15 ^h 28'34	28 ^h 53	12 ^h 10	28 ^h 22	15 ^h 27	19 ^h 44	27 ^h 34	10 ^h 12	4 ^h 37	10 ^h 22	23 ^h 7	23 ^h 26	13 ^h 46	18 ^h 39	T 8
W 9	23 13 1	16 ^h 26'58	11 ^h 21	13 ^h 2	29 ^h 36	16 ^h 5	19 ^h 49	27 ^h 30	10 ^h 14	4 ^h 36	10 ^h 24	23 ^h 6	23 ^h 23	13 ^h 52	18 ^h 48	W 9
T 10	23 16 57	17 ^h 25'24	24 ^h 2	13 ^h 51	0 ^h 50	16 ^h 42	19 ^h 53	27 ^h 26	10 ^h 16	4 ^h 34	10 ^h 25	23 ^h D 6	23 ^h 19	13 ^h 59	18 ^h 57	T 10
F 11	23 20 54	18 ^h 23'52	6 ^h Y57	14 ^h 36	2 ^h 4	17 ^h 20	19 ^h 58	27 ^h 22	10 ^h 17	4 ^h 33	10 ^h 27	23 ^h 6	23 ^h 16	14 ^h 6	19 ^h 5	F 11
S 12	23 24 51	19 ^h 22'22	20 ^h 5	15 ^h 18	3 ^h 18	17 ^h 58	20 ^h 3	27 ^h 18	10 ^h 19	4 ^h 31	10 ^h 28	23 ^h 6	23 ^h 13	14 ^h 13	19 ^h 14	S 12
S 13	23 28 47	20 ^h 20'53	3 ^h 8 27	15 ^h 56	4 ^h 32	18 ^h 35	20 ^h 8	27 ^h 14	10 ^h 21	4 ^h 29	10 ^h 30	23 ^h 7	23 ^h 10	14 ^h 19	19 ^h 23	S 13
M14	23 32 44	21 ^h 19'27	17 ^h 1	16 ^h 30	5 ^h 47	19 ^h 13	20 ^h 13	27 ^h 10	10 ^h 23	4 ^h 28	10 ^h 31	23 ^h 7	23 ^h 7	14 ^h 26	19 ^h 32	M14
T 15	23 36 40	22 ^h 18'04	0 ^h II48	16 ^h 59	7 ^h 1	19 ^h 51	20 ^h 18	27 ^h 6	10 ^h 24	4 ^h 26	10 ^h 33	23 ^h 7	23 ^h 3	14 ^h 33	19 ^h 41	T 15
W16	23 40 37	23 ^h 16'42	14 ^h 46	17 ^h 23	8 ^h 15	20 ^h 28	20 ^h 24	27 ^h 2	10 ^h 26	4 ^h 25	10 ^h 34	23 ^h 7	23 ^h 0	14 ^h 39	19 ^h 49	W16
T 17	23 44 33	24 ^h 15'23	28 ^h 54	17 ^h 42	9 ^h 30	21 ^h 6	20 ^h 29	26 ^h 58	10 ^h 28	4 ^h 23	10 ^h 36	23 ^h 7	22 ^h 57	14 ^h 46	19 ^h 58	T 17
F 18	23 48 30	25 ^h 14'06	13 ^h 51	17 ^h 55	10 ^h 44	21 ^h 43	20 ^h 35	26 ^h 55	10 ^h 29	4 ^h 21	10 ^h 37	23 ^h 7	22 ^h 54	14 ^h 53	20 ^h 7	F 18
S 19	23 52 26	26 ^h 12'52	27 ^h 31	18 ^h 2	11 ^h 59	22 ^h 21	20 ^h 41	26 ^h 51	10 ^h 31	4 ^h 20	10 ^h 38	23 ^h 7	22 ^h 51	15 ^h 0	20 ^h 16	S 19
S 20	23 56 23	27 ^h 11'39	11 ^h 54	18 ^h R 3	13 ^h 13	22 ^h 58	20 ^h 47	26 ^h 47	10 ^h 32	4 ^h 18	10 ^h 40	23 ^h 8	22 ^h 48	15 ^h 6	20 ^h 24	S 20
M21	0 0 20	28 ^h 10'29	26 ^h 15	17 ^h 57	14 ^h 28	23 ^h 36	20 ^h 54	26 ^h 44	10 ^h 33	4 ^h 16	10 ^h 41	23 ^h 8	22 ^h 44	15 ^h 13	20 ^h 33	M21
T 22	0 4 16	29 ^h 9'21	10 ^h 30	17 ^h 44	15 ^h 42	24 ^h 13	21 ^h 0	26 ^h 40	10 ^h 35	4 ^h 15	10 ^h 42	23 ^h 9	22 ^h 41	15 ^h 20	20 ^h 42	T 22
W23	0 8 13	0 ^h 8 15	24 ^h 33	17 ^h 24	16 ^h 57	24 ^h 51	21 ^h 7	26 ^h 37	10 ^h 36	4 ^h 13	10 ^h 43	23 ^h R 9	22 ^h 38	15 ^h 26	20 ^h 51	W23
T 24	0 12 9	1 ^h 7'11	8 ^h 21	16 ^h 56	18 ^h 12	25 ^h 28	21 ^h 13	26 ^h 34	10 ^h 37	4 ^h 11	10 ^h 45	23 ^h 8	22 ^h 35	15 ^h 33	20 ^h 59	T 24
F 25	0 16 6	2 ^h 6'09	21 ^h 52	16 ^h 21	19 ^h 26	26 ^h 5	21 ^h 20	26 ^h 30	10 ^h 38	4 ^h 10	10 ^h 46	23 ^h 8	22 ^h 32	15 ^h 40	21 ^h 8	F 25
S 26	0 20 2	3 ^h 5'09	5 ^h 3 3	15 ^h 38	20 ^h 41	26 ^h 43	21 ^h 27	26 ^h 27	10 ^h 39	4 ^h 8	10 ^h 47	23 ^h 7	22 ^h 29	15 ^h 47	21 ^h 17	S 26
S 27	0 23 59	4 ^h 4'11	17 ^h 54	14 ^h 49	21 ^h 56	27 ^h 20	21 ^h 35	26 ^h 24	10 ^h 40	4 ^h 6	10 ^h 48	23 ^h 5	22 ^h 25	15 ^h 53	21 ^h 25	S 27
M28	0 27 55	5 ^h 3'15	0 ^h Y27	13 ^h 52	23 ^h 10	27 ^h 57	21 ^h 42	26 ^h 21	10 ^h 42	4 ^h 5	10 ^h 50	23 ^h 4	22 ^h 22	16 ^h 0	21 ^h 34	M28
T 29	0 31 52	6 ^h 2'21	12 ^h 44	12 ^h 51	24 ^h 25	28 ^h 34	21 ^h 49	26 ^h 18	10 ^h 42	4 ^h 3	10 ^h 51	23 ^h 2	22 ^h 19	16 ^h 7	21 ^h 43	T 29
W30	0 35 49	7 ^h 1 28	24 ^h Y48	11 ^h 45	25 ^h 40	29 ^h 12	21 ^h Y57	26 ^h 15	10 ^h 43	4 ^h Y 1	10 ^h 52	23 ^h 1 1	22 ^h 16	16 ^h 13	21 ^h 51	W30

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Greg. Calendar

OCTOBER 1699 GC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	0 39 45	8♂ 0'37	6♂45	10°R36	26♂55	29♂49	22♂ 5	26°R12	10♂44	4°R 0	10♂53	23°D 1	22♂13	16♂20	22♂ 0	T 1
F 2	0 43 42	8°59'49	18°37	9♂26	28°10	0♂26	22°13	26♂10	10°45	3°Y58	10°54	23♂ 1	22° 9	16°27	22° 9	F 2
S 3	0 47 38	9°59'01	0♂31	8°16	29°25	1° 3	22°21	26° 7	10°46	3°56	10°55	23° 2	22° 6	16°33	22°17	S 3
S 4	0 51 35	10°58'16	12°30	7° 9	0♂39	1°40	22°29	26° 5	10°47	3°55	10°56	23° 3	22° 3	16°40	22°26	S 4
M 5	0 55 31	11°57'33	24°39	6° 6	1°54	2°17	22°37	26° 2	10°47	3°53	10°57	23° 5	22° 0	16°47	22°34	M 5
T 6	0 59 28	12°56'51	7♂ 2	5°10	3° 9	2°54	22°46	26° 0	10°48	3°51	10°58	23° 6	21°57	16°54	22°43	T 6
W 7	1 3 24	13°56'11	19°42	4°22	4°24	3°31	22°54	25°57	10°48	3°50	10°59	23°R 7	21°54	17° 0	22°51	W 7
T 8	1 7 21	14°55'33	2°Y39	3°42	5°39	4° 8	23° 3	25°55	10°49	3°48	11° 0	23° 7	21°50	17° 7	23° 0	T 8
F 9	1 11 17	15°54'57	15°56	3°13	6°54	4°45	23°12	25°53	10°49	3°46	11° 1	23° 5	21°47	17°14	23° 8	F 9
S 10	1 15 14	16°54'23	29°30	2°55	8° 9	5°21	23°21	25°51	10°50	3°45	11° 2	23° 3	21°44	17°20	23°16	S 10
S 11	1 19 11	17°53'52	13♂19	2°D47	9°24	5°58	23°30	25°49	10°50	3°43	11° 3	22°59	21°41	17°27	23°25	S 11
M12	1 23 7	18°53'22	27°20	2°51	10°39	6°35	23°39	25°47	10°50	3°42	11° 4	22°56	21°38	17°34	23°33	M12
T 13	1 27 4	19°52'55	11♂29	3° 5	11°54	7°12	23°48	25°46	10°50	3°40	11° 5	22°52	21°34	17°41	23°41	T 13
W14	1 31 0	20°52'30	25°42	3°30	13° 9	7°49	23°57	25°44	10°51	3°38	11° 5	22°49	21°31	17°47	23°50	W14
T 15	1 34 57	21°52'08	9♂57	4° 4	14°24	8°25	24° 7	25°42	10°51	3°37	11° 6	22°47	21°28	17°54	23°58	T 15
F 16	1 38 53	22°51'47	24° 9	4°48	15°40	9° 2	24°17	25°41	10°51	3°35	11° 7	22°D46	21°25	18° 1	24° 6	F 16
S 17	1 42 50	23°51'30	8♂16	5°39	16°55	9°38	24°26	25°40	10°R51	3°34	11° 8	22°47	21°22	18° 7	24°14	S 17
S 18	1 46 46	24°51'14	22°18	6°38	18°10	10°15	24°36	25°38	10°51	3°32	11° 8	22°49	21°19	18°14	24°22	S 18
M19	1 50 43	25°51'00	6♂13	7°43	19°25	10°52	24°46	25°37	10°51	3°31	11° 9	22°50	21°15	18°21	24°30	M19
T 20	1 54 40	26°50'49	20° 0	8°54	20°40	11°28	24°56	25°36	10°50	3°29	11°10	22°R51	21°12	18°28	24°38	T 20
W21	1 58 36	27°50'40	3♂36	10° 9	21°55	12° 5	25° 7	25°35	10°50	3°28	11°10	22°50	21° 9	18°34	24°46	W21
T 22	2 2 33	28°50'33	17° 2	11°29	23°11	12°41	25°17	25°34	10°50	3°26	11°11	22°48	21° 6	18°41	24°54	T 22
F 23	2 6 29	29°50'28	0♂14	12°53	24°26	13°17	25°27	25°34	10°50	3°25	11°11	22°44	21° 3	18°48	25° 2	F 23
S 24	2 10 26	0♂50'25	13°12	14°19	25°41	13°54	25°38	25°33	10°49	3°23	11°12	22°38	21° 0	18°54	25°10	S 24
S 25	2 14 22	1°50'24	25°55	15°48	26°56	14°30	25°48	25°32	10°49	3°22	11°12	22°31	20°56	19° 1	25°18	S 25
M26	2 18 19	2°50'25	8♂23	17°19	28°12	15° 6	25°59	25°32	10°48	3°21	11°13	22°24	20°53	19° 8	25°26	M26
T 27	2 22 15	3°50'27	20°38	18°52	29°27	15°43	26°10	25°32	10°48	3°19	11°13	22°17	20°50	19°14	25°33	T 27
W28	2 26 12	4°50'32	2♂41	20°26	0♂42	16°19	26°21	25°31	10°47	3°18	11°14	22°11	20°47	19°21	25°41	W28
T 29	2 30 9	5°50'38	14°36	22° 1	1°58	16°55	26°32	25°31	10°47	3°16	11°14	22° 6	20°44	19°28	25°48	T 29
F 30	2 34 5	6°50'45	26°27	23°37	3°13	17°31	26°43	25°D31	10°46	3°15	11°15	22° 4	20°40	19°35	25°56	F 30
S 31	2 38 2	7♂50'54	8♂19	25♂14	4♂28	18♂ 7	26♂54	25♂31	10♂45	3°Y14	11♂15	22°D 3	20♂37	19♂41	26♂ 3	S 31

ASTRODIENST EPHEMERIS for the year 1699

geocentric

NOVEMBER 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 41 58	8♂51'05	20♂16	26♂51	5♂44	18♂43	27♂5	25♂31	10♂R44	3♂R13	11♂15	22♂4	20♂34	19♂48	26♂11	S 1
M 2	2 45 55	9°51'17	2♂24	28°28	6°59	19°19	27°17	25°32	10♂44	3♂Y11	11°16	22°5	20°31	19°55	26°18	M 2
T 3	2 49 51	10°51'30	14°48	0♂6	8°14	19°55	27°28	25°32	10°43	3°10	11°16	22°6	20°28	20°1	26°26	T 3
W 4	2 53 48	11°51'46	27°32	1°43	9°30	20°31	27°40	25°33	10°42	3°9	11°16	22°R 6	20°25	20°8	26°33	W 4
T 5	2 57 44	12°52'02	10♂39	3°21	10°45	21°7	27°51	25°33	10°41	3°8	11°16	22°5	20°21	20°15	26°40	T 5
F 6	3 1 41	13°52'21	24°11	4°58	12°0	21°43	28°3	25°34	10°40	3°6	11°17	22°1	20°18	20°22	26°47	F 6
S 7	3 5 38	14°52'41	8♂6	6°36	13°16	22°18	28°15	25°35	10°39	3°5	11°17	21°54	20°15	20°28	26°54	S 7
S 8	3 9 34	15°53'02	22°22	8°13	14°31	22°54	28°26	25°36	10°37	3°4	11°17	21°46	20°12	20°35	27°1	S 8
M 9	3 13 31	16°53'26	6♂53	9°50	15°46	23°30	28°38	25°37	10°36	3°3	11°17	21°37	20°9	20°42	27°8	M 9
T 10	3 17 27	17°53'51	21°31	11°27	17°2	24°6	28°50	25°38	10°35	3°2	11°17	21°28	20°6	20°48	27°15	T 10
W 11	3 21 24	18°54'18	6♂10	13°4	18°17	24°41	29°2	25°39	10°34	3°1	11°17	21°20	20°2	20°55	27°22	W 11
T 12	3 25 20	19°54'47	20°42	14°40	19°32	25°17	29°15	25°40	10°32	3°0	11°R17	21°15	19°59	21°2	27°28	T 12
F 13	3 29 17	20°55'17	5♂4	16°16	20°48	25°52	29°27	25°42	10°31	2°59	11°17	21°11	19°56	21°8	27°35	F 13
S 14	3 33 13	21°55'50	19°11	17°52	22°3	26°28	29°39	25°43	10°30	2°58	11°17	21°D10	19°53	21°15	27°42	S 14
S 15	3 37 10	22°56'24	3♂4	19°28	23°19	27°3	29°51	25°45	10°28	2°57	11°17	21°10	19°50	21°22	27°48	S 15
M 16	3 41 7	23°57'00	16°43	21°4	24°34	27°38	0♂4	25°47	10°27	2°56	11°17	21°R11	19°46	21°29	27°54	M 16
T 17	3 45 3	24°57'38	0♂8	22°39	25°50	28°14	0°16	25°48	10°25	2°55	11°17	21°11	19°43	21°35	28°1	T 17
W 18	3 49 0	25°58'18	13°20	24°14	27°5	28°49	0°29	25°50	10°23	2°54	11°17	21°9	19°40	21°42	28°7	W 18
T 19	3 52 56	26°58'59	26°22	25°49	28°20	29°24	0°41	25°52	10°22	2°53	11°16	21°4	19°37	21°49	28°13	T 19
F 20	3 56 53	27°59'41	9♂13	27°24	29°36	29°59	0°54	25°55	10°20	2°53	11°16	20°56	19°34	21°55	28°19	F 20
S 21	4 0 49	29°0'26	21°53	28°59	0♂51	0♂34	1°7	25°57	10°18	2°52	11°16	20°45	19°31	22°2	28°25	S 21
S 22	4 4 46	0♂1'11	4♂22	0♂33	2°7	1°9	1°20	25°59	10°17	2°51	11°16	20°33	19°27	22°9	28°31	S 22
M 23	4 8 42	1°1'58	16°40	2°8	3°22	1°44	1°33	26°2	10°15	2°50	11°15	20°19	19°24	22°15	28°37	M 23
T 24	4 12 39	2°2'47	28°49	3°42	4°38	2°19	1°45	26°4	10°13	2°50	11°15	20°6	19°21	22°22	28°43	T 24
W 25	4 16 36	3°3'36	10♂48	5°16	5°53	2°54	1°58	26°7	10°11	2°49	11°15	19°54	19°18	22°29	28°49	W 25
T 26	4 20 32	4°4'26	22°41	6°50	7°9	3°29	2°11	26°9	10°9	2°49	11°14	19°44	19°15	22°36	28°54	T 26
F 27	4 24 29	5°5'18	4♂30	8°24	8°24	4°4	2°24	26°12	10°7	2°48	11°14	19°38	19°12	22°42	29°0	F 27
S 28	4 28 25	6°6'10	16°19	9°58	9°39	4°38	2°38	26°15	10°5	2°47	11°13	19°33	19°8	22°49	29°5	S 28
S 29	4 32 22	7°7'03	28°13	11°32	10°55	5°13	2°51	26°18	10°3	2°47	11°13	19°32	19°5	22°56	29°10	S 29
M 30	4 36 18	8♂7'57	10♂17	13♂6	12♂10	5♂48	3♂4	26♂21	10♂2	2♂46	11♂13	19°D31	19♂2	23♂2	29♂16	M 30

Delta T = 14.35 sec

Greg. Calendar

DECEMBER 1699 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	4 40 15	9♂8'52	22♂37	14♂40	13♂26	6♂22	3♂17	26♂24	9♂R59	2♂R46	11♂R12	19♂R32	18♂59	23♂9	29♂21	T 1
W 2	4 44 11	10°9'47	5♂18	16°14	14°41	6°57	3°30	26°28	9♂57	2♂Y45	11♂11	19♂31	18°56	23°16	29°26	W 2
T 3	4 48 8	11°10'43	18°24	17°48	15°57	7°31	3°44	26°31	9°55	2°45	11°11	19°28	18°52	23°22	29°31	T 3
F 4	4 52 5	12°11'40	1♂59	19°21	17°12	8°5	3°57	26°35	9°52	2°45	11°10	19°23	18°49	23°29	29°36	F 4
S 5	4 56 1	13°12'38	16°3	20°55	18°28	8°39	4°11	26°38	9°50	2°44	11°10	19°15	18°46	23°36	29°40	S 5
S 6	4 59 58	14°13'37	0♂33	22°29	19°43	9°14	4°24	26°42	9°48	2°44	11°9	19°4	18°43	23°43	29°45	S 6
M 7	5 3 54	15°14'36	15°25	24°3	20°58	9°48	4°38	26°46	9°46	2°44	11°8	18°52	18°40	23°49	29°50	M 7
T 8	5 7 51	16°15'36	0♂28	25°37	22°14	10°22	4°51	26°49	9°43	2°44	11°8	18°40	18°37	23°56	29°54	T 8
W 9	5 11 47	17°16'37	15°33	27°11	23°29	10°56	5°5	26°53	9°41	2°44	11°7	18°30	18°33	24°3	29°58	W 9
T 10	5 15 44	18°17'39	0♂30	28°45	24°45	11°30	5°18	26°57	9°39	2°43	11°6	18°21	18°30	24°9	0♂3	T 10
F 11	5 19 40	19°18'42	15°12	0♂19	26°0	12°3	5°32	27°1	9°36	2°43	11°6	18°16	18°27	24°16	0°7	F 11
S 12	5 23 37	20°19'46	29°32	1°53	27°16	12°37	5°45	27°5	9°34	2°43	11°5	18°14	18°24	24°23	0°11	S 12
S 13	5 27 34	21°20'51	13♂30	3°27	28°31	13°11	5°59	27°10	9°32	2°43	11°4	18°13	18°21	24°29	0°15	S 13
M 14	5 31 30	22°21'56	27°7	5°0	29°46	13°44	6°13	27°14	9°29	2°D43	11°3	18°13	18°18	24°36	0°19	M 14
T 15	5 35 27	23°23'03	10♂23	6°34	1♂2	14°18	6°27	27°18	9°27	2°43	11°2	18°12	18°14	24°43	0°22	T 15
W 16	5 39 23	24°24'10	23°22	8°7	2°17	14°51	6°40	27°23	9°24	2°43	11°1	18°9	18°11	24°50	0°26	W 16
T 17	5 43 20	25°25'18	6♂7	9°40	3°33	15°25	6°54	27°27	9°22	2°43	11°1	18°4	18°8	24°56	0°29	T 17
F 18	5 47 16	26°26'27	18°40	11°12	4°48	15°58	7°8	27°32	9°19	2°43	11°0	17°55	18°5	25°3	0°33	F 18
S 19	5 51 13	27°27'36	1♂3	12°44	6°3	16°31	7°22	27°37	9°17	2°44	10°59	17°44	18°2	25°10	0°36	S 19
S 20	5 55 9	28°28'46	13°18	14°16	7°19	17°4	7°36	27°42	9°14	2°44	10°58	17°30	17°58	25°16	0°39	S 20
M 21	5 59 6	29°29'57	25°25	15°46	8°34	17°37	7°49	27°47	9°12	2°44	10°57	17°16	17°55	25°23	0°42	M 21
T 22	6 3 3	0♂31'07	7♂25	17°16	9°50	18°10	8°3	27°51	9°9	2°44	10°56	17°1	17°52	25°30	0°45	T 22
W 23	6 6 59	1°32'18	19°29	18°44	11°5	18°43	8°17	27°56	9°7	2°45	10°55	16°48	17°49	25°36	0°48	W 23
T 24	6 10 56	2°33'30	1♂10	20°10	12°21	19°16	8°31	28°2	9°4	2°45	10°54	16°37	17°46	25°43	0°51	T 24
F 25	6 14 52	3°34'41	12°58	21°35	13°36	19°48	8°45	28°7	9°1	2°45	10°53	16°29	17°43	25°50	0°53	F 25
S 26	6 18 49	4°35'52	24°47	22°58	14°51	20°21	8°59	28°12	8°59	2°46	10°52	16°24	17°39	25°56	0°56	S 26
S 27	6 22 45	5°37'03	6♂40	24°18	16°7	20°53	9°13	28°17	8°56	2°46	10°50	16°22	17°36	26°3	0°58	S 27
M 28	6 26 42	6°38'14	18°42	25°35	17°22	21°25	9°27	28°23	8°54	2°47	10°49	16°D22	17°33	26°10	1°0	M 28
T 29	6 30 38	7°39'24	0♂Y58	26°48	18°37	21°58	9°41	28°28	8°51	2°47	10°48	16°22	17°30	26°17	1°2	T 29
W 30	6 34 35	8°40'35	13°33	27°57	19°53	22°30	9°55	28°34	8°48	2°48	10°47	16°R22	17°27	26°23	1°4	W 30
T 31	6 38 32	9♂41'45	26♂Y33	29♂1	21♂8	23♂2	10♂9	28♂39	8♂46	2♂Y48	10♂46	16♂21	17♂23	26♂30	1♂6	T 31

Delta T = 14.32 sec

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