



Astrodienst Ephemeris Tables for the year 1689

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 1689
geocentric

JANUARY 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
S 1	6 45 5	11 ³ 23'48	7 ⁸ 24	18 ⁷ 23	10 ⁸ 33	0 ⁷ 35	2 ⁸ 58	5 ¹¹ 28	19°R 9	8 ¹ 39	24°R16	20°R39	20 ¹ 3	28 ² 57	23°R30	S 1
S 2	6 49 2	12°24'58	21°42	19°26	11°48	1°16	3°11	5°32	19 ⁸ 8	8°41	24 ² 15	20 ¹ 37	20° 0	29° 3	23 ⁸ 28	S 2
M 3	6 52 58	13°26'07	6 ¹¹ 4	20°31	13° 2	1°58	3°25	5°36	19° 6	8°42	24°13	20°31	19°57	29°10	23°26	M 3
T 4	6 56 55	14°27'16	20°24	21°38	14°16	2°39	3°39	5°40	19° 5	8°44	24°12	20°22	19°54	29°17	23°24	T 4
W 5	7 0 51	15°28'25	4 ² 38	22°48	15°30	3°20	3°53	5°44	19° 4	8°45	24°11	20°11	19°51	29°23	23°22	W 5
T 6	7 4 48	16°29'33	18°40	24° 0	16°44	4° 1	4° 7	5°48	19° 3	8°47	24°10	19°58	19°47	29°30	23°21	T 6
F 7	7 8 45	17°30'41	2 ² 24	25°14	17°59	4°42	4°21	5°52	19° 2	8°48	24° 8	19°45	19°44	29°37	23°19	F 7
S 8	7 12 41	18°31'48	15°47	26°30	19°13	5°24	4°35	5°55	19° 1	8°50	24° 7	19°33	19°41	29°43	23°18	S 8
S 9	7 16 38	19°32'55	28°48	27°47	20°27	6° 5	4°49	5°59	19° 0	8°51	24° 6	19°23	19°38	29°50	23°16	S 9
M10	7 20 34	20°34'02	11 ¹¹ 27	29° 5	21°41	6°46	5° 3	6° 2	18°59	8°53	24° 4	19°16	19°35	29°57	23°15	M10
T 11	7 24 31	21°35'08	23°46	0 ² 25	22°55	7°28	5°17	6° 6	18°59	8°55	24° 3	19°12	19°32	0 ¹¹ 3	23°13	T 11
W12	7 28 27	22°36'15	5 ² 50	1°46	24° 8	8° 9	5°31	6° 9	18°58	8°56	24° 2	19°10	19°28	0°10	23°12	W12
T 13	7 32 24	23°37'21	17°43	3° 8	25°22	8°50	5°45	6°12	18°57	8°58	24° 0	19°10	19°25	0°17	23°11	T 13
F 14	7 36 20	24°38'26	29°31	4°31	26°36	9°32	5°59	6°15	18°57	9° 0	23°59	19°10	19°22	0°23	23°10	F 14
S 15	7 40 17	25°39'32	11 ¹¹ 19	5°55	27°50	10°13	6°13	6°19	18°56	9° 2	23°58	19° 9	19°19	0°30	23° 9	S 15
S 16	7 44 14	26°40'36	23°14	7°20	29° 4	10°55	6°28	6°22	18°55	9° 3	23°56	19° 6	19°16	0°37	23° 8	S 16
M17	7 48 10	27°41'41	5 ² 19	8°45	0 ¹ 17	11°36	6°42	6°24	18°55	9° 5	23°55	19° 1	19°12	0°43	23° 7	M17
T 18	7 52 7	28°42'45	17°39	10°12	1°31	12°18	6°56	6°27	18°54	9° 7	23°54	18°53	19° 9	0°50	23° 6	T 18
W19	7 56 3	29°43'48	0 ² 17	11°39	2°45	12°59	7°10	6°30	18°54	9° 9	23°52	18°42	19° 6	0°56	23° 5	W19
T 20	8 0 0	0 ² 44'51	13°14	13° 7	3°58	13°41	7°25	6°32	18°54	9°11	23°51	18°30	19° 3	1° 3	23° 4	T 20
F 21	8 3 56	1°45'53	26°30	14°36	5°12	14°23	7°39	6°35	18°53	9°13	23°50	18°17	19° 0	1°10	23° 4	F 21
S 22	8 7 53	2°46'55	10 ² 3	16° 6	6°25	15° 4	7°53	6°37	18°53	9°15	23°48	18° 4	18°57	1°16	23° 3	S 22
S 23	8 11 49	3°47'55	23°50	17°36	7°39	15°46	8° 7	6°40	18°53	9°17	23°47	17°53	18°53	1°23	23° 2	S 23
M24	8 15 46	4°48'54	7 ¹ 47	19° 7	8°52	16°28	8°22	6°42	18°53	9°18	23°46	17°45	18°50	1°30	23° 2	M24
T 25	8 19 43	5°49'52	21°50	20°39	10° 5	17° 9	8°36	6°44	18°53	9°20	23°44	17°40	18°47	1°36	23° 2	T 25
W26	8 23 39	6°50'48	5 ¹ 57	22°11	11°18	17°51	8°50	6°46	18°D53	9°22	23°43	17°37	18°44	1°43	23° 1	W26
T 27	8 27 36	7°51'43	20° 4	23°44	12°32	18°33	9° 5	6°48	18°53	9°24	23°42	17°D37	18°41	1°50	23° 1	T 27
F 28	8 31 32	8°52'37	4 ¹ 10	25°18	13°45	19°15	9°19	6°50	18°53	9°26	23°41	17°R37	18°38	1°56	23° 1	F 28
S 29	8 35 29	9°53'30	18°15	26°53	14°58	19°56	9°33	6°51	18°53	9°28	23°39	17°37	18°34	2° 3	23° 1	S 29
S 30	8 39 25	10°54'21	2 ¹¹ 17	28°28	16°11	20°38	9°47	6°53	18°53	9°30	23°38	17°35	18°31	2°10	23°D 1	S 30
M31	8 43 22	11 ² 55'11	16 ¹¹ 16	0 ² 4	17 ¹ 24	21 ² 20	10 ² 2	6 ¹¹ 54	18 ² 54	9 ¹ 33	23 ² 37	17 ¹ 31	18 ¹ 28	2 ¹¹ 16	23 ² 1	M31

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	decl	decl	decl	decl	decl	decl	decl	decl	decl	decl
S 1	23s 0	15n23	1n27	21s12	1n47	19s18	1s44	20s 4	0n15	20s 4	0s33	11s 7	2n23	17n16	0s17	9s12	0s56	23n44	2n28	8n 5	7n51	11s52	15n 8	3s40										
S 2	22 54	20 44	2 36	21 26	1 38	18 57	1 44	20 13	0 14	20 1	0 33	11 8	2 23	17 16	0 17	9 12	0 56	23 44	2 28	8 4	7 50	11 55	15 8	3 40										
M 3	22 48	24 53	3 35	21 39	1 29	18 36	1 44	20 22	0 14	19 58	0 34	11 9	2 23	17 15	0 17	9 11	0 56	23 44	2 28	8 2	7 49	11 58	15 7	3 39										
T 4	22 42	27 28	4 21	21 53	1 20	18 14	1 44	20 31	0 13	19 55	0 34	11 11	2 24	17 15	0 17	9 11	0 56	23 45	2 28	7 58	7 48	12 1	15 7	3 39										
W 5	22 35	28 13	4 49	22 6	1 12	17 52	1 43	20 39	0 12	19 52	0 34	11 12	2 24	17 15	0 17	9 10	0 56	23 45	2 28	7 54	7 46	12 5	15 7	3 39										
T 6	22 28	27 8	5 0	22 18	1 3	17 29	1 43	20 48	0 12	19 48	0 34	11 13	2 24	17 15	0 17	9 9	0 56	23 45	2 29	7 49	7 45	12 8	15 6	3 39										
F 7	22 20	24 25	4 53	22 30	0 54	17 6	1 42	20 56	0 11	19 45	0 34	11 14	2 24	17 14	0 17	9 9	0 56	23 46	2 29	7 44	7 44	12 11	15 6	3 39										
S 8	22 12	20 25	4 30	22 41	0 45	16 42	1 42	21 4	0 10	19 42	0 34	11 15	2 24	17 14	0 17	9 8	0 56	23 46	2 29	7 40	7 43	12 14	15 6	3 39										
S 9	22 3	15 33	3 53	22 51	0 36	16 18	1 41	21 12	0 10	19 39	0 34	11 16	2 25	17 14	0 17	9 8	0 56	23 46	2 29	7 36	7 42	12 17	15 5	3 39										
M10	21 54	10 8	3 5	23 1	0 28	15 53	1 40	21 20	0 9	19 35	0 34	11 17	2 25	17 14	0 17	9 7	0 56	23 47	2 29	7 33	7 40	12 20	15 5	3 39										
T 11	21 45	4 28	2 10	23 9	0 20	15 28	1 40	21 27	0 8	19 32	0 34	11 18	2 25	17 13	0 17	9 6	0 56	23 47	2 29	7 32	7 39	12 24	15 5	3 39										
W12	21 35	1s15	1 10	23 17	0 11	15 3	1 39	21 35	0 8	19 29	0 34	11 19	2 25	17 13	0 17	9 6	0 56	23 47	2 29	7 31	7 38	12 27	15 5	3 38										
T 13	21 25	6 51	0 8	23 24	0 3	14 37	1 38	21 42	0 7	19 25	0 34	11 19	2 26	17 13	0 17	9 5	0 56	23 48	2 29	7 31	7 37	12 30	15 5	3 38										
F 14	21 14	12 10	0s55	23 29	0s 5	14 11	1 37	21 49	0 6	19 22	0 34	11 20	2 26	17 13	0 17	9 4	0 56	23 48	2 29	7 31	7 36	12 33	15 4	3 38										
S 15	21 3	17 4	1 55	23 33	0 13	13 45	1 36	21 56	0 5	19 18	0 34	11 21	2 26	17 13	0 17	9 4	0 56	23 48	2 29	7 31	7 34	12 36	15 4	3 38										
S 16	20 51	21 21	2 50	23 37	0 20	13 18	1 34	22 3	0 5	19 15	0 34	11 22	2 26	17 13	0 17	9 3	0 56	23 48	2 29	7 30	7 33	12 39	15 4	3 38										
M17	20 40	24 48	3 39	23 39	0 27	12 50	1 33	22 9	0 4	19 11	0 34	11 22	2 26	17 13	0 17	9 2	0 56	23 49	2 29	7 28	7 32	12 43	15 4	3 38										
T 18	20 27	27 11	4 18	23 40	0 35	12 23	1 32	22 15	0 3	19 8	0 35	11 23	2 27	17 12	0 17	9 2	0 56	23 49	2 29	7 25	7 31	12 46	15 4	3 38										
W19	20 15	28 14	4 46	23 40	0 42	11 55	1 30	22 21	0 3	19 4	0 35	11 24	2 27	17 12	0 17	9 1	0 56	23 49	2 29	7 21	7 30	12 49	15 4	3 38										
T 20	20 2	27 47	4 59	23 38	0 48	11 27	1 29	22 27	0 2	19 1	0 35	11 24	2 27	17 12	0 17	9 0	0 56	23 50	2 30	7 16	7 28	12 52	15 4	3 37										
F 21	19 48	25 46	4 58	23 35	0 55	10 58	1 27	22 33	0 1	18 57	0 35	11 25	2 27	17 12	0 17	8 59	0 56	23 50	2 30	7 11	7 27	12 55	15 4	3 37										
S 22	19 34	22 14	4 39	23 31	1 1	10 30	1 25	22 38	0 0	18 53	0 35	11 26	2 28	17 12	0 17	8 59	0 56	23 50	2 30	7 6	7 26	12 58	15 4	3 37										
S 23	19 20	17 26	4 4	23 26	1 7	10 1	1 23	22 44	0s 0	18 50	0 35	11 26	2 28	17 12	0 17	8 58	0 56	23 50	2 30	7 2	7 25	13 1	15 4	3 37										
M24	19 6	11 40	3 14	23 19	1 13	9 31	1 22	22 49	0 1	18 46	0 35	11 27	2 28	17 12	0 17	8 57	0 56	23 51	2 30	6 59	7 24	13 4	15 4	3 37										
T 25	18 51	5 16	2 12	23 11	1 18	9 2	1 20	22 54	0 2	18 42	0 35	11 27	2 28	17 12	0 17	8 57	0 56	23 51	2 30	6 57	7 22	13 8	15 4	3 37										
W26	18 36	1n25	1 2	23 2	1 24	8 32	1 18	22 58	0 3	18 39	0 35	11 27	2 29	17 12	0 17	8 56	0 56	23 51	2 30	6 56	7 21	13 11	15 4	3 37										
T 27	18 20	8 3	0n13	22 51	1 29	8 2	1 16	23 3	0 3	18 35	0 35	11 28	2 29	17 12	0 16	8 55	0 56	23 52	2 30	6 56	7 20	13 14	15 4	3 36										
F 28	18 4	14 18	1 27	22 39	1 34	7 32	1 13	23 7	0 4	18 31	0 35	11 28	2 29	17 12	0 16	8 54	0 56	23 52	2 30	6 56	7 19	13 17	15 4	3 36										
S 29	17 48	19 47	2 35	22 25	1 38	7 2	1 11	23 11	0 5	18 28	0 35	11 29	2 29	17 12	0 16	8 53	0 56	23 52	2 30	6 56	7 17	13 20	15 4	3 36										
S 30	17 32	24 9	3 34	22 10	1 42	6 31	1 9	23 15	0 6	18 24	0 35	11 29	2 30	17 12	0 16	8 53	0 56	23 52	2 30	6 55	7 16	13 23	15 4	3 36										
M31	17s15	27n 5	4n20	21s54	1s46	6s 0	1s 6	23s19	0s 7	18s20	0s36	11s29	2n30	17n13	0s16	8s52	0s56	23n53	2n30	6n53	7n15	13s26	15n 5	3s36										

ASTRODIENST EPHEMERIS for the year 1689

geocentric

FEBRUARY 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	8 47 18	12 ⁵⁵ 59	0 ⁵⁸ 9	1 ⁴⁴ 1	18 ³⁶ 36	22 ²⁷ 2	10 ¹⁶ 16	6 ⁵⁶ 56	18 ⁵⁴ 54	9 ³⁵ 35	23 ³⁶ 36	17 ²⁴ 24	18 ²⁵ 25	2 ²³ 23	23 ¹⁸ 18	T 1	
W 2	8 51 15	13 ⁵⁶ 46	13 ⁵⁵ 5	3 ¹⁸ 18	19 ⁴⁹ 49	22 ⁴⁴ 44	10 ³⁰ 30	6 ⁵⁷ 57	18 ⁵⁴ 54	9 ³⁷ 37	23 ³⁴ 34	17 ¹⁴ 14	18 ²² 22	2 ³⁰ 30	23 ¹ 1	W 2	
T 3	8 55 12	14 ⁵⁷ 31	27 ³⁰ 1	4 ⁵⁶ 56	21 ² 2	23 ²⁶ 26	10 ⁴⁵ 45	6 ⁵⁸ 58	18 ⁵⁵ 55	9 ³⁹ 39	23 ³³ 33	17 ³ 3	18 ¹⁸ 18	2 ³⁶ 36	23 ¹ 1	T 3	
F 4	8 59 8	15 ⁵⁸ 15	10 ⁴⁵ 51	6 ³⁵ 35	22 ¹⁴ 14	24 ⁷ 7	10 ⁵⁹ 59	6 ⁵⁹ 59	18 ⁵⁵ 55	9 ⁴¹ 41	23 ³² 32	16 ⁵² 52	18 ¹⁵ 15	2 ⁴³ 43	23 ² 2	F 4	
S 5	9 3 5	16 ⁵⁸ 58	23 ⁵⁷ 7	8 ¹⁵ 15	23 ²⁷ 27	24 ⁴⁹ 49	11 ¹³ 13	7 ⁰ 0	18 ⁵⁶ 56	9 ⁴³ 43	23 ³¹ 31	16 ⁴² 42	18 ¹² 12	2 ⁵⁰ 50	23 ² 2	S 5	
S 6	9 7 1	17 ⁵⁹ 39	6 ⁴⁶ 46	9 ⁵⁶ 56	24 ³⁹ 39	25 ³¹ 31	11 ²⁷ 27	7 ¹ 1	18 ⁵⁶ 56	9 ⁴⁵ 45	23 ²⁹ 29	16 ³⁴ 34	18 ⁹ 9	2 ⁵⁶ 56	23 ³ 3	S 6	
M 7	9 10 58	19 ⁰ 19	19 ¹⁷ 17	11 ³⁷ 37	25 ⁵² 52	26 ¹³ 13	11 ⁴² 42	7 ² 2	18 ⁵⁷ 57	9 ⁴⁷ 47	23 ²⁸ 28	16 ²⁷ 27	18 ⁶ 6	3 ³ 3	23 ³ 3	M 7	
T 8	9 14 54	20 ⁰ 57	1 ³³ 33	13 ²⁰ 20	27 ⁴ 4	26 ⁵⁵ 55	11 ⁵⁶ 56	7 ² 2	18 ⁵⁷ 57	9 ⁵⁰ 50	23 ²⁷ 27	16 ²⁴ 24	18 ³ 3	3 ⁹ 9	23 ⁴ 4	T 8	
W 9	9 18 51	21 ¹ 34	13 ³⁶ 36	15 ³ 3	28 ¹⁶ 16	27 ³⁸ 38	12 ¹⁰ 10	7 ³ 3	18 ⁵⁸ 58	9 ⁵² 52	23 ²⁶ 26	16 ²³ 23	17 ⁵⁹ 59	3 ¹⁶ 16	23 ⁴ 4	W 9	
T 10	9 22 47	22 ² 10	25 ²⁹ 29	16 ⁴⁷ 47	29 ²⁸ 28	28 ²⁰ 20	12 ²⁴ 24	7 ³ 3	18 ⁵⁹ 59	9 ⁵⁴ 54	23 ²⁵ 25	16 ²³ 23	17 ⁵⁶ 56	3 ²³ 23	23 ⁵ 5	T 10	
F 11	9 26 44	23 ² 45	7 ¹⁸ 18	18 ³² 32	0 ⁴⁰ 40	29 ² 2	12 ³⁹ 39	7 ⁴ 4	19 ⁰ 0	9 ⁵⁶ 56	23 ²⁴ 24	16 ²⁴ 24	17 ⁵³ 53	3 ²⁹ 29	23 ⁶ 6	F 11	
S 12	9 30 41	24 ³ 19	19 ⁶ 6	20 ¹⁸ 18	1 ⁵² 52	29 ⁴⁴ 44	12 ⁵³ 53	7 ⁴ 4	19 ¹ 1	9 ⁵⁸ 58	23 ²³ 23	16 ²⁵ 25	17 ⁵⁰ 50	3 ³⁶ 36	23 ⁷ 7	S 12	
S 13	9 34 37	25 ³ 51	1 ²⁷ 27	22 ⁵ 5	3 ⁴ 4	0 ²⁶ 26	13 ⁷ 7	7 ⁴ 4	19 ² 2	10 ⁰ 0	23 ²¹ 21	16 ²⁵ 25	17 ⁴⁷ 47	3 ⁴³ 43	23 ⁸ 8	S 13	
M14	9 38 34	26 ⁴ 22	13 ⁶ 6	23 ⁵² 52	4 ¹⁶ 16	1 ⁸ 8	13 ²¹ 21	7 ⁴ 4	19 ³ 3	10 ³ 3	23 ²⁰ 20	16 ²³ 23	17 ⁴⁴ 44	3 ⁴⁹ 49	23 ⁹ 9	M14	
T 15	9 42 30	27 ⁴ 52	25 ²⁷ 27	25 ⁴¹ 41	5 ²⁸ 28	1 ⁵⁰ 50	13 ³⁵ 35	7 ⁴ 4	19 ⁴ 4	10 ⁵ 5	23 ¹⁹ 19	16 ¹⁹ 19	17 ⁴⁰ 40	3 ⁵⁶ 56	23 ¹⁰ 10	T 15	
W16	9 46 27	28 ⁵ 20	8 ³⁸ 38	27 ³⁰ 30	6 ³⁹ 39	2 ³³ 33	13 ⁴⁹ 49	7 ⁴ 4	19 ⁵ 5	10 ⁷ 7	23 ¹⁸ 18	16 ¹³ 13	17 ³⁷ 37	4 ³ 3	23 ¹¹ 11	W16	
T 17	9 50 23	29 ⁵ 47	21 ¹² 12	29 ²¹ 21	7 ⁵¹ 51	3 ¹⁵ 15	14 ³ 3	7 ⁴ 4	19 ⁶ 6	10 ⁹ 9	23 ¹⁷ 17	16 ⁶ 6	17 ³⁴ 34	4 ⁹ 9	23 ¹² 12	T 17	
F 18	9 54 20	0 ⁶ 13	4 ³⁹ 39	1 ¹² 12	9 ² 2	3 ⁵⁷ 57	14 ¹⁸ 18	7 ³ 3	19 ⁷ 7	10 ¹² 12	23 ¹⁶ 16	15 ⁵⁸ 58	17 ³¹ 31	4 ¹⁶ 16	23 ¹⁴ 14	F 18	
S 19	9 58 17	1 ⁶ 37	18 ²⁸ 28	3 ⁴ 4	10 ¹³ 13	4 ³⁹ 39	14 ³² 32	7 ³ 3	19 ⁸ 8	10 ¹⁴ 14	23 ¹⁵ 15	15 ⁵⁰ 50	17 ²⁸ 28	4 ²³ 23	23 ¹⁵ 15	S 19	
S 20	10 2 13	2 ⁶ 59	2 ³⁷ 37	4 ⁵⁶ 56	11 ²⁴ 24	5 ²² 22	14 ⁴⁶ 46	7 ² 2	19 ¹⁰ 10	10 ¹⁶ 16	23 ¹⁴ 14	15 ⁴³ 43	17 ²⁴ 24	4 ²⁹ 29	23 ¹⁶ 16	S 20	
M21	10 6 10	3 ⁷ 19	17 ⁰ 0	6 ⁵⁰ 50	12 ³⁵ 35	6 ⁴ 4	15 ⁰ 0	7 ¹ 1	19 ¹¹ 11	10 ¹⁸ 18	23 ¹³ 13	15 ³⁸ 38	17 ²¹ 21	4 ³⁶ 36	23 ¹⁸ 18	M21	
T 22	10 10 6	4 ⁷ 38	1 ³⁰ 30	8 ⁴⁴ 44	13 ⁴⁶ 46	6 ⁴⁶ 46	15 ¹⁴ 14	7 ¹ 1	19 ¹² 12	10 ²¹ 21	23 ¹² 12	15 ³⁵ 35	17 ¹⁸ 18	4 ⁴³ 43	23 ²⁰ 20	T 22	
W23	10 14 3	5 ⁷ 55	16 ³ 3	10 ³⁸ 38	14 ⁵⁷ 57	7 ²⁹ 29	15 ²⁷ 27	7 ⁰ 0	19 ¹⁴ 14	10 ²³ 23	23 ¹¹ 11	15 ³³ 33	17 ¹⁵ 15	4 ⁴⁹ 49	23 ²¹ 21	W23	
T 24	10 17 59	6 ⁸ 09	0 ³³ 33	12 ³³ 33	16 ⁸ 8	8 ¹¹ 11	15 ⁴¹ 41	6 ⁵⁹ 59	19 ¹⁵ 15	10 ²⁵ 25	23 ¹⁰ 10	15 ³⁵ 35	17 ¹² 12	4 ⁵⁶ 56	23 ²³ 23	T 24	
F 25	10 21 56	7 ⁸ 22	14 ⁵⁶ 56	14 ²⁸ 28	17 ¹⁹ 19	8 ⁵³ 53	15 ⁵⁵ 55	6 ⁵⁸ 58	19 ¹⁷ 17	10 ²⁸ 28	23 ⁹ 9	15 ³⁷ 37	17 ⁹ 9	5 ³ 3	23 ²⁵ 25	F 25	
S 26	10 25 52	8 ⁸ 32	29 ⁸ 8	16 ²³ 23	18 ²⁹ 29	9 ³⁶ 36	16 ⁹ 9	6 ⁵⁶ 56	19 ¹⁸ 18	10 ³⁰ 30	23 ⁸ 8	15 ³⁸ 38	17 ⁵ 5	5 ⁹ 9	23 ²⁷ 27	S 26	
S 27	10 29 49	9 ⁸ 41	13 ¹¹ 11	18 ¹⁸ 18	19 ³⁹ 39	10 ¹⁸ 18	16 ²³ 23	6 ⁵⁵ 55	19 ²⁰ 20	10 ³² 32	23 ⁸ 8	15 ³⁸ 38	17 ² 2	5 ¹⁶ 16	23 ²⁸ 28	S 27	
M28	10 33 45	10 ⁸ 47	26 ¹¹ 11	20 ¹³ 13	20 ⁵⁰ 50	11 ²⁸ 28	16 ³⁷ 37	6 ⁵⁴ 54	19 ²² 22	10 ³⁴ 34	23 ⁷ 7	15 ³⁷ 37	16 ⁵⁹ 59	5 ²² 22	23 ³⁰ 30	M28	

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	16s58	28n19	4n50	21s36	1s49	5s30	1s 4	23s22	0s 7	18s16	0s36	11s29	2n30	17n13	0s16	8s51	0s56	23n53	2n30	6n50	7n14	13s29	15n 5	3s36			
W 2	16 40	27 46	5 3	21 17	1 53	4 59	1 1	23 25	0 8	18 13	0 36	11 29	2 30	17 13	0 16	8 50	0 56	23 53	2 30	6 47	7 13	13 33	15 5	3 35			
T 3	16 23	25 34	4 58	20 56	1 56	4 28	0 59	23 28	0 9	18 9	0 36	11 30	2 31	17 13	0 16	8 50	0 56	23 53	2 30	6 43	7 11	13 36	15 5	3 35			
F 4	16 5	21 59	4 38	20 34	1 58	3 57	0 56	23 31	0 10	18 5	0 36	11 30	2 31	17 13	0 16	8 49	0 56	23 54	2 30	6 38	7 10	13 39	15 5	3 35			
S 5	15 46	17 22	4 2	20 10	2 0	3 25	0 53	23 34	0 11	18 1	0 36	11 30	2 31	17 13	0 16	8 48	0 56	23 54	2 30	6 35	7 9	13 42	15 6	3 35			
S 6	15 28	12 4	3 15	19 45	2 2	2 54	0 50	23 36	0 12	17 57	0 36	11 30	2 31	17 13	0 16	8 47	0 56	23 54	2 30	6 31	7 8	13 45	15 6	3 35			
M 7	15 9	6 23	2 20	19 18	2 4	2 22	0 48	23 38	0 12	17 53	0 36	11 30	2 32	17 14	0 16	8 46	0 56	23 54	2 30	6 29	7 7	13 48	15 6	3 35			
T 8	14 50	0 35	1 19	18 50	2 5	1 51	0 45	23 40	0 13	17 49	0 36	11 30	2 32	17 14	0 16	8 45	0 56	23 55	2 30	6 28	7 5	13 51	15 7	3 35			
W 9	14 31	5s 9	0 15	18 21	2 5	1 20	0 42	23 42	0 14	17 46	0 36	11 30	2 32	17 14	0 16	8 45	0 56	23 55	2 31	6 27	7 4	13 54	15 7	3 34			
T 10	14 11	10 38	0s49	17 50	2 5	0 48	0 39	23 43	0 15	17 42	0 36	11 30	2 32	17 14	0 16	8 44	0 56	23 55	2 31	6 27	7 3	13 57	15 7	3 34			
F 11	13 52	15 42	1 50	17 17	2 5	0 16	0 35	23 45	0 16	17 38	0 37	11 30	2 33	17 14	0 16	8 43	0 56	23 55	2 31	6 28	7 2	14 0	15 8	3 34			
S 12	13 32	20 12	2 47	16 43	2 5	0n15	0 32	23 46	0 17	17 34	0 37	11 29	2 33	17 15	0 16	8 42	0 56	23 56	2 31	6 28	7 1	14 3	15 8	3 34			
S 13	13 11	23 56	3 37	16 7	2 3	0 47	0 29	23 46	0 18	17 30	0 37	11 29	2 33	17 15	0 16	8 41	0 56	23 56	2 31	6 28	6 59	14 6	15 8	3 34			
M14	12 51	26 40	4 18	15 30	2 2	1 18	0 26	23 47	0 18	17 26	0 37	11 29	2 33	17 15	0 16	8 40	0 56	23 56	2 31	6 27	6 58	14 10	15 9	3 34			
T 15	12 30	28 12	4 48	14 52	2 0	1 50	0 22	23 47	0 19	17 22	0 37	11 29	2 33	17 16	0 16	8 40	0 56	23 56	2 31	6 26	6 57	14 13	15 9	3 34			
W16	12 10	28 18	5 5	14 12	1 57	2 21	0 19	23 48	0 20	17 18	0 37	11 28	2 34	17 16	0 16	8 39	0 56	23 57	2 31	6 24	6 56	14 16	15 10	3 33			
T 17	11 49	26 51	5 7	13 30	1 54	2 53	0 15	23 48	0 21	17 14	0 37	11 28	2 34	17 16	0 16	8 38	0 56	23 57	2 31	6 21	6 54	14 19	15 10	3 33			
F 18	11 27	23 51	4 52	12 47	1 50	3 24	0 12	23 47	0 22	17 10	0 37	11 28	2 34	17 17	0 16	8 37	0 56	23 57	2 31	6 18	6 53	14 22	15 10	3 33			
S 19	11 6	19 26	4 20	12 3	1 46	3 56	0 8	23 47	0 23	17 6	0 37	11 27	2 34	17 17	0 16	8 36	0 56	23 57	2 31	6 15	6 52	14 25	15 11	3 33			
S 20	10 44	13 51	3 31	11 17	1 42	4 27	0 5	23 46	0 24	17 2	0 38	11 27	2 35	17 17	0 16	8 35	0 56	23 57	2 31	6 12	6 51	14 28	15 11	3 33			
M21	10 23	7 26	2 29	10 31	1 36	4 58	0 1	23 45	0 25	16 58	0 38	11 26	2 35	17 18	0 16	8 35	0 56	23 58	2 31	6 10	6 50	14 31	15 12	3 33			
T 22	10 1	0 33	1 16	9 42	1 30	5 29	0n 3	23 44	0 26	16 54	0 38	11 26	2 35	17 18	0 16	8 34	0 56	23 58	2 31	6 9	6 48	14 34	15 12	3 32			
W23	9 39	6n22	0n 3	8 53	1 24	6 0	0 7	23 43	0 27	16 50	0 38	11 25	2 35	17 19	0 16	8 33	0 56	23 58	2 31	6 9	6 47	14 37	15 13	3 32			
T 24	9 17	12 57	1 21	8 3	1 17	6 31	0 10	23 41	0 28	16 46	0 38	11 25	2 36	17 19	0 16	8 32	0 56	23 58	2 31	6 9	6 46	14 40	15 14	3 32			
F 25	8 54	18 47	2 33	7 11	1 9	7 2	0 14	23 39	0 29	16 42	0 38	11 24	2 36	17 19	0 16	8 31	0 56	23 58	2 31	6 9	6 45	14 43	15 14	3 32			
S 26	8 32	23 30	3 35	6 19	1 1	7 32	0 18	23 37	0 29	16 38	0 38	11 24	2 36	17 20	0 16	8 30	0 56	23 58	2 31	6 10	6 43	14 46	15 15	3 32			
S 27	8 9	26 46	4 23	5 26	0 52	8 3	0 22	23 35	0 30	16 34	0 38	11 23	2 36	17 20	0 16	8 29	0 56	23 59	2 31	6 10	6 42	14 49	15 15	3 32			
M28	7s47	28n22	4n55	4s32	0s42	8n33	0n26	23s33	0s31	16s30	0s38	11s22	2n37	17n21	0s16	8s29	0s56	23n59	2n31	6n 9	6n41	14s52	15n16	3s32			

ASTRODIENST EPHEMERIS for the year 1689

geocentric

MARCH 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	10 37 42	11° 8'51	10° 32	22° 7	22° 0	11° 43	16° 50	6° 52	19° 23	10° 37	23° 6	15° 34	16° 56	5° 29	23° 32	T 1	
W 2	10 41 39	12° 8'53	23° 55	23° 59	23° 10	12° 26	17° 4	6° 51	19° 25	10° 39	23° 5	15° 30	16° 53	5° 36	23° 35	W 2	
T 3	10 45 35	13° 8'53	7° 52	25° 51	24° 20	13° 8	17° 17	6° 49	19° 27	10° 41	23° 4	15° 25	16° 50	5° 42	23° 37	T 3	
F 4	10 49 32	14° 8'51	20° 2	27° 40	25° 29	13° 50	17° 31	6° 47	19° 29	10° 43	23° 4	15° 19	16° 46	5° 49	23° 39	F 4	
S 5	10 53 28	15° 8'47	2° 46	29° 27	26° 39	14° 33	17° 45	6° 45	19° 31	10° 46	23° 3	15° 14	16° 43	5° 56	23° 41	S 5	
S 6	10 57 25	16° 8'40	15° 16	1° 12	27° 48	15° 16	17° 58	6° 43	19° 32	10° 48	23° 2	15° 10	16° 40	6° 2	23° 44	S 6	
M 7	11 1 21	17° 8'32	27° 35	2° 53	28° 57	15° 58	18° 11	6° 41	19° 34	10° 50	23° 1	15° 7	16° 37	6° 9	23° 46	M 7	
T 8	11 5 18	18° 8'21	9° 42	4° 31	0° 8	16° 41	18° 25	6° 39	19° 36	10° 53	23° 1	15° 0	16° 34	6° 16	23° 48	T 8	
W 9	11 9 14	19° 8'09	21° 40	6° 4	1° 15	17° 23	18° 38	6° 37	19° 39	10° 55	23° 0	15° 6	16° 30	6° 22	23° 51	W 9	
T 10	11 13 11	20° 7'55	3° 31	7° 33	2° 24	18° 6	18° 51	6° 34	19° 41	10° 57	22° 59	15° 7	16° 27	6° 29	23° 53	T 10	
F 11	11 17 8	21° 7'39	15° 20	8° 56	3° 33	18° 49	19° 5	6° 32	19° 43	10° 59	22° 59	15° 9	16° 24	6° 36	23° 56	F 11	
S 12	11 21 4	22° 7'22	27° 9	10° 14	4° 41	19° 31	19° 18	6° 29	19° 45	11° 2	22° 58	15° 10	16° 21	6° 42	23° 59	S 12	
S 13	11 25 1	23° 7'02	9° 3	11° 25	5° 49	20° 14	19° 31	6° 27	19° 47	11° 4	22° 58	15° 12	16° 18	6° 49	24° 2	S 13	
M14	11 28 57	24° 6'41	21° 7	12° 31	6° 57	20° 57	19° 44	6° 24	19° 49	11° 6	22° 57	15° 12	16° 15	6° 56	24° 4	M14	
T 15	11 32 54	25° 6'19	3° 27	13° 29	8° 5	21° 39	19° 57	6° 21	19° 52	11° 8	22° 57	15° 12	16° 11	7° 2	24° 7	T 15	
W16	11 36 50	26° 5'54	16° 5	14° 20	9° 13	22° 22	20° 10	6° 18	19° 54	11° 10	22° 56	15° 11	16° 8	7° 9	24° 10	W16	
T 17	11 40 47	27° 5'28	29° 6	15° 4	10° 20	23° 5	20° 23	6° 16	19° 56	11° 13	22° 56	15° 9	16° 5	7° 16	24° 13	T 17	
F 18	11 44 43	28° 5'00	12° 33	15° 40	11° 28	23° 47	20° 36	6° 12	19° 59	11° 15	22° 55	15° 7	16° 2	7° 22	24° 16	F 18	
S 19	11 48 40	29° 4'30	26° 26	16° 8	12° 35	24° 30	20° 49	6° 9	20° 1	11° 17	22° 55	15° 5	15° 59	7° 29	24° 19	S 19	
S 20	11 52 37	0° 3'58	10° 44	16° 29	13° 42	25° 13	21° 1	6° 6	20° 4	11° 19	22° 54	15° 3	15° 55	7° 36	24° 22	S 20	
M21	11 56 33	1° 3'24	25° 21	16° 41	14° 49	25° 56	21° 14	6° 3	20° 6	11° 21	22° 54	15° 1	15° 52	7° 42	24° 25	M21	
T 22	12 0 30	2° 2'48	10° 13	16° 46	15° 55	26° 38	21° 26	6° 0	20° 9	11° 24	22° 54	15° 0	15° 49	7° 49	24° 29	T 22	
W23	12 4 26	3° 2'10	25° 10	16° 44	17° 2	27° 21	21° 39	5° 56	20° 12	11° 26	22° 53	15° 1	15° 46	7° 56	24° 32	W23	
T 24	12 8 23	4° 1'29	10° 5	16° 34	18° 8	28° 4	21° 51	5° 53	20° 14	11° 28	22° 53	15° 2	15° 43	8° 2	24° 35	T 24	
F 25	12 12 19	5° 0'47	24° 51	16° 18	19° 14	28° 47	22° 4	5° 49	20° 17	11° 30	22° 53	15° 2	15° 40	8° 9	24° 39	F 25	
S 26	12 16 16	6° 0'02	9° 21	15° 55	20° 19	29° 30	22° 16	5° 46	20° 20	11° 32	22° 52	15° 3	15° 36	8° 15	24° 42	S 26	
S 27	12 20 12	6° 59'15	23° 33	15° 26	21° 25	0° 12	22° 28	5° 42	20° 22	11° 34	22° 52	15° 4	15° 33	8° 22	24° 45	S 27	
M28	12 24 9	7° 58'26	7° 24	14° 51	22° 30	0° 55	22° 40	5° 38	20° 25	11° 36	22° 52	15° 4	15° 30	8° 29	24° 49	M28	
T 29	12 28 6	8° 57'34	20° 54	14° 13	23° 35	1° 38	22° 52	5° 35	20° 28	11° 39	22° 52	15° 4	15° 27	8° 35	24° 52	T 29	
W30	12 32 2	9° 56'40	4° 5	13° 31	24° 39	2° 21	23° 4	5° 31	20° 31	11° 41	22° 52	15° 3	15° 24	8° 42	24° 56	W30	
T 31	12 35 59	10° 55'44	16° 59	12° 46	25° 44	3° 4	23° 16	5° 27	20° 34	11° 43	22° 51	15° 3	15° 21	8° 49	25° 0	T 31	

Day	☉	☾		♀		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
T 1	7s24	28n13	5n10	3s38	0s32	9n 3	0n30	23s30	0s32	16s26	0s39	11s22	2n37	17n21	0s16	8s28	0s56	23n59	2n31	6n 8	6n40	14s55	15n17	3s31					
W 2	7 1	26 25	5 8	2 43	0 21	9 33	0 34	23 27	0 33	16 22	0 39	11 21	2 37	17 22	0 16	8 27	0 56	23 59	2 31	6 7	6 39	14 58	15 17	3 31					
T 3	6 38	23 12	4 50	1 49	0 10	10 2	0 38	23 24	0 34	16 18	0 39	11 20	2 37	17 22	0 16	8 26	0 56	23 59	2 31	6 5	6 37	15 1	15 18	3 31					
F 4	6 15	18 53	4 17	0 54	0n 2	10 32	0 42	23 21	0 35	16 14	0 39	11 19	2 37	17 23	0 16	8 25	0 56	23 59	2 31	6 3	6 36	15 4	15 19	3 31					
S 5	5 52	13 47	3 31	0 0	0 14	11 1	0 46	23 17	0 36	16 10	0 39	11 19	2 38	17 23	0 16	8 24	0 56	24 0	2 31	6 1	6 35	15 7	15 19	3 31					
S 6	5 29	8 13	2 36	0n53	0 26	11 30	0 50	23 13	0 37	16 6	0 39	11 18	2 38	17 24	0 16	8 23	0 56	24 0	2 31	5 59	6 34	15 10	15 20	3 31					
M 7	5 5	2 25	1 35	1 45	0 39	11 58	0 54	23 10	0 38	16 2	0 39	11 17	2 38	17 24	0 16	8 23	0 56	24 0	2 31	5 58	6 32	15 13	15 21	3 31					
T 8	4 42	3s24	0 30	2 36	0 52	12 27	0 59	23 5	0 39	15 58	0 40	11 16	2 38	17 25	0 16	8 22	0 56	24 0	2 31	5 57	6 31	15 16	15 21	3 31					
W 9	4 18	9 1	0s36	3 25	1 5	12 55	1 3	23 1	0 40	15 54	0 40	11 15	2 38	17 26	0 16	8 21	0 56	24 0	2 31	5 57	6 30	15 19	15 22	3 30					
T 10	3 55	14 17	1 40	4 12	1 18	13 22	1 7	22 56	0 41	15 50	0 40	11 14	2 39	17 26	0 16	8 20	0 56	24 0	2 31	5 58	6 29	15 22	15 23	3 30					
F 11	3 31	19 0	2 39	4 57	1 32	13 50	1 11	22 52	0 42	15 46	0 40	11 13	2 39	17 27	0 16	8 19	0 56	24 0	2 31	5 59	6 28	15 25	15 24	3 30					
S 12	3 8	22 59	3 31	5 40	1 44	14 17	1 15	22 46	0 43	15 42	0 40	11 12	2 39	17 27	0 16	8 18	0 56	24 0	2 31	5 59	6 26	15 28	15 24	3 30					
S 13	2 44	26 3	4 15	6 19	1 57	14 44	1 19	22 41	0 44	15 38	0 40	11 11	2 39	17 28	0 16	8 17	0 56	24 1	2 31	6 0	6 25	15 31	15 25	3 30					
M14	2 21	27 59	4 48	6 56	2 9	15 10	1 23	22 36	0 45	15 34	0 40	11 10	2 39	17 29	0 15	8 17	0 56	24 1	2 31	6 0	6 24	15 34	15 26	3 30					
T 15	1 57	28 35	5 9	7 30	2 21	15 37	1 28	22 30	0 47	15 30	0 40	11 9	2 40	17 29	0 15	8 16	0 56	24 1	2 31	6 0	6 23	15 37	15 27	3 30					
W16	1 33	27 44	5 16	8 0	2 32	16 2	1 32	22 24	0 48	15 26	0 41	11 8	2 40	17 30	0 15	8 15	0 56	24 1	2 31	5 59	6 21	15 40	15 28	3 30					
T 17	1 10	25 22	5 7	8 26	2 43	16 28	1 36	22 18	0 49	15 22	0 41	11 7	2 40	17 31	0 15	8 14	0 56	24 1	2 31	5 59	6 20	15 43	15 28	3 30					
F 18	0 46	21 33	4 41	8 49	2 52	16 53	1 40	22 12	0 50	15 18	0 41	11 6	2 40	17 31	0 15	8 13	0 56	24 1	2 31	5 58	6 19	15 46	15 29	3 29					
S 19	0 22	16 27	3 57	9 8	3 0	17 18	1 44	22 5	0 51	15 14	0 41	11 4	2 40	17 32	0 15	8 12	0 56	24 1	2 31	5 57	6 18	15 49	15 30	3 29					
S 20	0n 2	10 19	2 59	9 23	3 8	17 42	1 48	21 59	0 52	15 10	0 41	11 3	2 40	17 33	0 15	8 12	0 56	24 1	2 31	5 56	6 17	15 52	15 31	3 29					
M21	0 25	3 29	1 47	9 33	3 14	18 6	1 52	21 52	0 53	15 6	0 41	11 2	2 41	17 33	0 15	8 11	0 56	24 1	2 31	5 56	6 15	15 55	15 32	3 29					
T 22	0 49	3n39	0 27	9 40	3 19	18 30	1 57	21 45	0 54	15 2	0 42	11 1	2 41	17 34	0 15	8 10	0 56	24 1	2 31	5 55	6 14	15 58	15 33	3 29					
W23	1 13	10 37	0n56	9 42	3 22	18 53	2 1	21 38	0 55	14 58	0 42	11 0	2 41	17 35	0 15	8 9	0 56	24 1	2 31	5 56	6 13	16 1	15 33	3 29					
T 24	1 36	17 0	2 15	9 40	3 24	19 15	2 5	21 30	0 56	14 54	0 42	10 58	2 41	17 35	0 15	8 8	0 56	24 1	2 31	5 56	6 12	16 4	15 34	3 29					
F 25	2 0	22 18	3 23	9 33	3 24	19 38	2 9	21 23	0 57	14 51	0 42	10 57	2 41	17 36	0 15	8 8	0 56	24 2	2 31	5 56	6 10	16 7	15 35	3 29					
S 26	2 23	26 8	4 18	9 23	3 23	19 59	2 13	21 15	0 58	14 47	0 42	10 56	2 41	17 37	0 15	8 7	0 56	24 2	2 31	5 56	6 9	16 10	15 36	3 29					
S 27	2 47	28 14	4 55	9 9	3 20	20 21	2 17	21 7	0 59	14 43	0 42	10 54	2 41	17 38	0 15	8 6	0 56	24 2	2 31	5 57	6 8	16 13	15 37	3 29					
M28	3 10	28 31	5 15	8 51	3 15	20 41	2 20	20 58	1 1	14 39	0 43	10 53	2 42	17 38	0 15	8 5	0 56	24 2	2 31	5 57	6 7	16 16	15 38	3 29					
T 29	3 33	27 3	5 16	8 30	3 8	21 2	2 24	20 50	1 2	14 35	0 43	10 52	2 42	17 39	0 15	8 5	0 56	24 2	2 31	5 57	6 6	16 19	15 39	3 28					
W30	3 57	24 7	5 0	8 6	3 0	21 22	2 28	20 42	1 3	14 32	0 43	10 50	2 42	17 40	0 15	8 4	0 56	24 2	2 31	5 56	6 4	16 22	15 40	3 28					
T 31	4n20	20n 3	4n30	7n40	2n50	21n41	2n32	20s33	1s 4	14s28	0s43	10s49	2n42	17n41	0s15	8s 3	0s56	24n 2	2n31	5n56	6n 3	16s24	15n41	3s28					

ASTRODIENST EPHEMERIS for the year 1689
geocentric

APRIL 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	12 39 55	11°54'45	29°37	11°R59	26°48	3°47	23°28	5°R23	20°36	11°45	22°R51	15°R 2	15°Y17	8°M55	25°R 3	F 1
S 2	12 43 52	12°53'44	12°12	11°Y12	27°52	4°29	23°40	5°M19	20°39	11°47	22°S51	15°Y 2	15°14	9° 2	25° 7	S 2
S 3	12 47 48	13°52'40	24°16	10°24	28°55	5°12	23°51	5°15	20°42	11°49	22°51	15° 2	15°11	9° 9	25°11	S 3
M 4	12 51 45	14°51'35	6°20	9°38	29°58	5°55	24° 3	5°11	20°45	11°51	22°51	15° 2	15° 8	9°15	25°15	M 4
T 5	12 55 41	15°50'27	18°18	8°53	1°II 1	6°38	24°14	5° 7	20°48	11°53	22°D51	15° 2	15° 5	9°22	25°18	T 5
W 6	12 59 38	16°49'18	0°M10	8°11	2° 4	7°21	24°26	5° 3	20°51	11°55	22°51	15° 2	15° 1	9°29	25°22	W 6
T 7	13 3 35	17°48'06	11°59	7°32	3° 6	8° 4	24°37	4°58	20°54	11°57	22°51	15° 2	14°58	9°35	25°26	T 7
F 8	13 7 31	18°46'53	23°48	6°57	4° 8	8°46	24°48	4°54	20°57	11°58	22°51	15° 1	14°55	9°42	25°30	F 8
S 9	13 11 28	19°45'38	5°X39	6°26	5°10	9°29	24°59	4°50	21° 0	12° 0	22°51	15° 1	14°52	9°49	25°34	S 9
S 10	13 15 24	20°44'21	17°35	6° 0	6°11	10°12	25°10	4°45	21° 4	12° 2	22°51	15° 0	14°49	9°55	25°38	S 10
M11	13 19 21	21°43'02	29°40	5°39	7°12	10°55	25°21	4°41	21° 7	12° 4	22°52	14°59	14°46	10° 2	25°42	M11
T 12	13 23 17	22°41'42	11°Z59	5°23	8°12	11°38	25°32	4°37	21°10	12° 6	22°52	14°59	14°42	10° 9	25°46	T 12
W13	13 27 14	23°40'20	24°34	5°11	9°12	12°21	25°43	4°32	21°13	12° 8	22°52	14°D59	14°39	10°15	25°50	W13
T 14	13 31 10	24°38'56	7°30	5° 5	10°12	13° 4	25°53	4°28	21°16	12°10	22°52	14°59	14°36	10°22	25°54	T 14
F 15	13 35 7	25°37'31	20°50	5°D 5	11°11	13°47	26° 4	4°23	21°19	12°11	22°52	15° 0	14°33	10°29	25°59	F 15
S 16	13 39 4	26°36'03	4°X36	5° 9	12°10	14°29	26°14	4°19	21°23	12°13	22°53	15° 0	14°30	10°35	26° 3	S 16
S 17	13 43 0	27°34'34	18°49	5°18	13° 9	15°12	26°24	4°14	21°26	12°15	22°53	15° 1	14°27	10°42	26° 7	S 17
M18	13 46 57	28°33'04	3°Y27	5°32	14° 7	15°55	26°34	4°10	21°29	12°17	22°53	15° 2	14°23	10°49	26°11	M18
T 19	13 50 53	29°31'31	18°23	5°51	15° 4	16°38	26°45	4° 5	21°32	12°18	22°54	15°R 2	14°20	10°55	26°15	T 19
W20	13 54 50	0°Z29'57	3°Z32	6°14	16° 1	17°21	26°54	4° 1	21°36	12°20	22°54	15° 2	14°17	11° 2	26°20	W20
T 21	13 58 46	1°28'21	18°44	6°42	16°58	18° 3	27° 4	3°56	21°39	12°22	22°54	15° 0	14°14	11° 9	26°24	T 21
F 22	14 2 43	2°26'43	3°II49	7°14	17°54	18°46	27°14	3°52	21°42	12°23	22°55	14°58	14°11	11°15	26°28	F 22
S 23	14 6 39	3°25'04	18°38	7°49	18°49	19°29	27°24	3°47	21°46	12°25	22°55	14°56	14° 7	11°22	26°33	S 23
S 24	14 10 36	4°23'22	3°S 5	8°29	19°44	20°12	27°33	3°43	21°49	12°26	22°56	14°54	14° 4	11°29	26°37	S 24
M25	14 14 33	5°21'38	17° 7	9°13	20°39	20°55	27°42	3°38	21°53	12°28	22°56	14°52	14° 1	11°35	26°42	M25
T 26	14 18 29	6°19'52	0°Z42	10° 0	21°33	21°37	27°52	3°34	21°56	12°30	22°57	14°D51	13°58	11°42	26°46	T 26
W27	14 22 26	7°18'04	13°51	10°50	22°26	22°20	28° 1	3°29	21°59	12°31	22°57	14°51	13°55	11°49	26°51	W27
T 28	14 26 22	8°16'13	26°38	11°44	23°18	23° 3	28°10	3°24	22° 3	12°33	22°58	14°52	13°52	11°55	26°55	T 28
F 29	14 30 19	9°14'21	9°M 7	12°40	24°10	23°45	28°19	3°20	22° 6	12°34	22°59	14°54	13°48	12° 2	27° 0	F 29
S 30	14 34 15	10°12'27	21°M20	13°Y40	25°II 1	24°28	28°27	3°M15	22°X10	12°X35	22°S59	14°Y55	13°Y45	12°M 9	27°X 4	S 30

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
F 1	4n43	15n 9	3n46	7n11	2n39	22n 0	2n36	20s24	1s 5	14s24	0s43	10s48	2n42	17n41	0s15	8s 2	0s56	24n 2	2n31	5n56	6n 2	16s27	15n42	3s28			
S 2	5 6	9 44	2 53	6 41	2 27	22 18	2 39	20 15	1 6	14 20	0 43	10 46	2 42	17 42	0 15	8 1	0 56	24 2	2 31	5 56	6 1	16 30	15 43	3 28			
S 3	5 29	4 1	1 53	6 10	2 13	22 36	2 43	20 5	1 7	14 17	0 44	10 45	2 42	17 43	0 15	8 1	0 56	24 2	2 31	5 56	5 59	16 33	15 44	3 28			
M 4	5 52	1s47	0 48	5 38	1 59	22 54	2 47	19 56	1 9	14 13	0 44	10 43	2 42	17 44	0 15	8 0	0 56	24 2	2 31	5 56	5 58	16 36	15 44	3 28			
T 5	6 15	7 28	0s18	5 7	1 43	23 10	2 50	19 46	1 10	14 9	0 44	10 42	2 42	17 45	0 15	7 59	0 56	24 2	2 31	5 56	5 57	16 39	15 45	3 28			
W 6	6 37	12 51	1 23	4 36	1 28	23 27	2 53	19 37	1 11	14 6	0 44	10 40	2 43	17 45	0 15	7 59	0 56	24 2	2 31	5 56	5 56	16 42	15 46	3 28			
T 7	7 0	17 45	2 24	4 5	1 11	23 42	2 57	19 27	1 12	14 2	0 44	10 39	2 43	17 46	0 15	7 58	0 56	24 2	2 31	5 56	5 55	16 45	15 47	3 28			
F 8	7 22	21 58	3 19	3 36	0 55	23 58	3 0	19 16	1 13	13 59	0 44	10 37	2 43	17 47	0 15	7 57	0 56	24 2	2 31	5 56	5 53	16 48	15 48	3 28			
S 9	7 45	25 19	4 6	3 9	0 38	24 12	3 3	19 6	1 14	13 55	0 45	10 36	2 43	17 48	0 15	7 56	0 56	24 2	2 31	5 55	5 52	16 51	15 49	3 28			
S 10	8 7	27 35	4 42	2 43	0 22	24 26	3 6	18 56	1 16	13 52	0 45	10 34	2 43	17 49	0 15	7 56	0 57	24 2	2 31	5 55	5 51	16 53	15 50	3 28			
M11	8 29	28 35	5 6	2 20	0 6	24 40	3 10	18 45	1 17	13 48	0 45	10 33	2 43	17 50	0 15	7 55	0 57	24 2	2 31	5 55	5 50	16 56	15 51	3 28			
T 12	8 51	28 12	5 17	1 59	0s10	24 53	3 12	18 34	1 18	13 45	0 45	10 31	2 43	17 50	0 15	7 54	0 57	24 2	2 31	5 55	5 48	16 59	15 52	3 28			
W13	9 12	26 23	5 13	1 41	0 25	25 5	3 15	18 23	1 19	13 41	0 45	10 30	2 43	17 51	0 15	7 54	0 57	24 2	2 31	5 55	5 47	17 2	15 53	3 28			
T 14	9 34	23 9	4 53	1 25	0 40	25 17	3 18	18 12	1 20	13 38	0 46	10 28	2 43	17 52	0 15	7 53	0 57	24 2	2 31	5 55	5 46	17 5	15 54	3 28			
F 15	9 55	18 38	4 17	1 11	0 54	25 28	3 21	18 1	1 21	13 34	0 46	10 27	2 43	17 53	0 15	7 52	0 57	24 2	2 31	5 55	5 45	17 8	15 55	3 28			
S 16	10 17	13 2	3 26	1 1	1 8	25 39	3 23	17 50	1 23	13 31	0 46	10 25	2 43	17 54	0 15	7 52	0 57	24 2	2 31	5 55	5 43	17 11	15 56	3 28			
S 17	10 38	6 35	2 20	0 53	1 21	25 49	3 26	17 38	1 24	13 28	0 46	10 24	2 43	17 55	0 15	7 51	0 57	24 2	2 31	5 56	5 42	17 14	15 57	3 28			
M18	10 59	0n24	1 4	0 47	1 33	25 59	3 28	17 27	1 25	13 24	0 46	10 22	2 43	17 56	0 15	7 50	0 57	24 1	2 31	5 56	5 41	17 16	15 58	3 28			
T 19	11 19	7 30	0n19	0 44	1 44	26 8	3 31	17 15	1 26	13 21	0 47	10 21	2 43	17 56	0 15	7 50	0 57	24 1	2 31	5 56	5 40	17 19	15 59	3 28			
W20	11 40	14 18	1 41	0 44	1 55	26 16	3 33	17 3	1 27	13 18	0 47	10 19	2 43	17 57	0 15	7 49	0 57	24 1	2 31	5 56	5 38	17 22	16 0	3 28			
T 21	12 0	20 15	2 56	0 46	2 4	26 24	3 35	16 51	1 29	13 15	0 47	10 18	2 43	17 58	0 15	7 49	0 57	24 1	2 31	5 55	5 37	17 25	16 1	3 28			
F 22	12 21	24 51	3 58	0 50	2 13	26 32	3 37	16 39	1 30	13 12	0 47	10 16	2 43	17 59	0 15	7 48	0 57	24 1	2 31	5 55	5 36	17 28	16 2	3 27			
S 23	12 41	27 42	4 43	0 57	2 22	26 38	3 39	16 27	1 31	13 8	0 47	10 15	2 43	18 0	0 15	7 47	0 57	24 1	2 31	5 54	5 35	17 31	16 3	3 27			
S 24	13 0	28 36	5 9	1 5	2 29	26 45	3 40	16 14	1 32	13 5	0 48	10 13	2 43	18 1	0 15	7 47	0 57	24 1	2 31	5 53	5 34	17 33	16 4	3 27			
M25	13 20	27 36	5 15	1 16	2 36	26 50	3 42	16 2	1 33	13 2	0 48	10 12	2 43	18 2	0 15	7 46	0 57	24 1	2 31	5 52	5 32	17 36	16 5	3 28			
T 26	13 39	24 59	5 4	1 29	2 42	26 55	3 43	15 49	1 35	12 59	0 48	10 10	2 43	18 3	0 15	7 46	0 57	24 1	2 31	5 52	5 31	17 39	16 6	3 28			
W27	13 58	21 6	4 36	1 44	2 47	27 0	3 44	15 36	1 36	12 56	0 48	10 9	2 43	18 4	0 15	7 45	0 57	24 1	2 31	5 52	5 30	17 42	16 7	3 28			
T 28	14 17	16 21	3 56	2 1	2 51	27 4	3 45	15 23	1 37	12 54	0 49	10 7	2 43	18 4	0 15	7 45	0 57	24 1	2 31	5 52	5 29	17 45	16 8	3 28			
F 29	14 36	11 1	3 5	2 20	2 55	27 7	3 46	15 10	1 38	12 51	0 49	10 6	2 43	18 5	0 15	7 44	0 57	24 1	2 31	5 53	5 27	17 48	16 9	3 28			
S 30	14n54	5n22	2n 6	2n40	2s58	27n10	3n47	14s57	1s40	12s48	0s49	10s 4	2n43	18n 6	0s15	7s44	0s57	24n 0	2n31	5n53	5n26	17s50	16n10	3s28			

ASTRODIENST EPHEMERIS for the year 1689

geocentric

MAY 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	14 38 12	11°10'31	3°23	14°43	25°52	25°10	28°36	3°R11	22°13	12°37	23°0	14°57	13°42	12°15	27°8	9	S 1
M 2	14 42 8	12° 8'33	15°18	15°48	26°42	25°53	28°44	3°M 6	22°17	12°38	23° 0	14°R57	13°39	12°22	27°13		M 2
T 3	14 46 5	13° 6'33	27° 9	16°57	27°31	26°36	28°53	3° 2	22°20	12°40	23° 1	14°57	13°36	12°29	27°18		T 3
W 4	14 50 1	14° 4'32	8°M57	18° 8	28°19	27°18	29° 1	2°58	22°23	12°41	23° 2	14°54	13°32	12°35	27°22		W 4
T 5	14 53 58	15° 2'29	20°46	19°21	29° 6	28° 1	29° 9	2°53	22°27	12°42	23° 3	14°51	13°29	12°42	27°27		T 5
F 6	14 57 55	16° 0'24	2°A38	20°37	29°53	28°43	29°17	2°49	22°30	12°43	23° 3	14°46	13°26	12°49	27°31		F 6
S 7	15 1 51	16°58'18	14°34	21°55	0°39	29°26	29°25	2°44	22°34	12°45	23° 4	14°41	13°23	12°55	27°36		S 7
S 8	15 5 48	17°56'11	26°36	23°16	1°23	0°H 8	29°32	2°40	22°37	12°46	23° 5	14°35	13°20	13° 2	27°41		S 8
M 9	15 9 44	18°54'02	8°A47	24°39	2° 7	0°50	29°40	2°36	22°41	12°47	23° 6	14°29	13°17	13° 9	27°45		M 9
T 10	15 13 41	19°51'52	21° 9	26° 5	2°50	1°33	29°47	2°32	22°44	12°48	23° 7	14°25	13°13	13°15	27°50		T 10
W11	15 17 37	20°49'41	3°A45	27°32	3°32	2°15	29°54	2°27	22°48	12°49	23° 7	14°22	13°10	13°22	27°55		W11
T 12	15 21 34	21°47'28	16°39	29° 2	4°13	2°57	0°H 2	2°23	22°51	12°50	23° 8	14°D21	13° 7	13°29	27°59		T 12
F 13	15 25 31	22°45'14	29°53	0°B34	4°52	3°40	0° 8	2°19	22°55	12°52	23° 9	14°21	13° 4	13°35	28° 0		F 13
S 14	15 29 27	23°43'00	13°A30	2° 9	5°31	4°22	0°15	2°15	22°58	12°53	23°10	14°22	13° 1	13°42	28° 9		S 14
S 15	15 33 24	24°40'44	27°32	3°45	6° 8	5° 4	0°22	2°11	23° 2	12°54	23°11	14°23	12°58	13°49	28°13		S 15
M16	15 37 20	25°38'26	11°V58	5°24	6°44	5°46	0°28	2° 7	23° 5	12°55	23°12	14°R24	12°54	13°55	28°18		M16
T 17	15 41 17	26°36'08	26°45	7° 5	7°19	6°28	0°35	2° 3	23° 9	12°55	23°13	14°23	12°51	14° 2	28°23		T 17
W18	15 45 13	27°33'49	11°B50	8°49	7°53	7°10	0°41	1°59	23°12	12°56	23°14	14°21	12°48	14° 9	28°27		W18
T 19	15 49 10	28°31'29	27° 2	10°34	8°25	7°52	0°47	1°55	23°16	12°57	23°15	14°17	12°45	14°15	28°32		T 19
F 20	15 53 6	29°29'07	12°H12	12°22	8°56	8°34	0°53	1°52	23°19	12°58	23°16	14°11	12°42	14°22	28°37		F 20
S 21	15 57 3	0°H26'45	27°10	14°12	9°25	9°16	0°58	1°48	23°23	12°59	23°17	14° 4	12°38	14°29	28°42		S 21
S 22	16 1 0	1°24'20	11°B48	16° 4	9°53	9°58	1° 4	1°44	23°26	13° 0	23°18	13°57	12°35	14°35	28°46		S 22
M23	16 4 56	2°21'55	26° 0	17°58	10°19	10°40	1° 9	1°41	23°30	13° 1	23°20	13°51	12°32	14°42	28°51		M23
T 24	16 8 53	3°19'28	9°A42	19°54	10°44	11°22	1°14	1°37	23°33	13° 1	23°21	13°47	12°29	14°49	28°56		T 24
W25	16 12 49	4°16'59	22°56	21°52	11° 7	12° 3	1°19	1°34	23°37	13° 2	23°22	13°44	12°26	14°55	29° 0		W25
T 26	16 16 46	5°14'30	5°M44	23°53	11°28	12°45	1°24	1°30	23°40	13° 3	23°23	13°D44	12°23	15° 2	29° 5		T 26
F 27	16 20 42	6°11'58	18°10	25°55	11°47	13°26	1°29	1°27	23°44	13° 3	23°24	13°44	12°19	15° 9	29°10		F 27
S 28	16 24 39	7° 9'26	0°A20	27°59	12° 4	14° 8	1°33	1°24	23°47	13° 4	23°25	13°45	12°16	15°15	29°14		S 28
S 29	16 28 35	8° 6'52	12°18	0°H 5	12°20	14°49	1°38	1°20	23°50	13° 4	23°27	13°R46	12°13	15°22	29°19		S 29
M30	16 32 32	9° 4'17	24° 9	2°12	12°33	15°30	1°42	1°17	23°54	13° 5	23°28	13°45	12°10	15°29	29°24		M30
T 31	16 36 29	10°H 1'41	5°M57	4°H21	12°34	16°H12	1°46	1°M14	23°57	13°H 5	23°29	13°V43	12°V 7	15°M35	29°H28		T 31

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	15n13	0s23	1n 3	3n 2	3s 1	27n13	3n48	14s44	1s41	12s45	0s49	10s 3	2n43	18n 7	0s15	7s43	0s57
M 2	15 30	6 4	0s 2	3 26	3 2	27 14	3 48	14 31	1 42	12 42	0 49	10 1	2 43	18 8	0 15	7 43	0 57
T 3	15 48	11 30	1 6	3 51	3 3	27 16	3 48	14 17	1 43	12 40	0 50	10 0	2 43	18 9	0 15	7 42	0 57
W 4	16 5	16 32	2 8	4 17	3 4	27 17	3 48	14 4	1 45	12 37	0 50	9 58	2 43	18 10	0 15	7 42	0 57
T 5	16 23	20 56	3 4	4 45	3 3	27 17	3 48	13 50	1 46	12 34	0 50	9 57	2 43	18 11	0 15	7 41	0 57
F 6	16 39	24 30	3 52	5 15	3 2	27 17	3 48	13 37	1 47	12 32	0 50	9 56	2 42	18 12	0 15	7 41	0 57
S 7	16 56	27 3	4 30	5 45	3 1	27 16	3 47	13 23	1 48	12 29	0 51	9 54	2 42	18 12	0 15	7 40	0 57
S 8	17 12	28 23	4 56	6 17	2 59	27 15	3 47	13 9	1 50	12 27	0 51	9 53	2 42	18 13	0 15	7 40	0 57
M 9	17 28	28 21	5 10	6 50	2 56	27 14	3 46	12 55	1 51	12 24	0 51	9 51	2 42	18 14	0 15	7 39	0 57
T 10	17 44	26 54	5 9	7 24	2 53	27 12	3 45	12 41	1 52	12 22	0 51	9 50	2 42	18 15	0 15	7 39	0 58
W11	18 0	24 6	4 54	7 59	2 49	27 9	3 43	12 27	1 53	12 20	0 52	9 49	2 42	18 16	0 15	7 39	0 58
T 12	18 15	20 3	4 23	8 35	2 44	27 6	3 42	12 13	1 54	12 17	0 52	9 47	2 42	18 17	0 15	7 38	0 58
F 13	18 30	14 56	3 38	9 12	2 39	27 3	3 40	11 59	1 56	12 15	0 52	9 46	2 42	18 18	0 15	7 38	0 58
S 14	18 44	8 58	2 40	9 50	2 34	26 59	3 38	11 44	1 57	12 13	0 52	9 45	2 42	18 19	0 15	7 38	0 58
S 15	18 58	2 22	1 30	10 29	2 28	26 55	3 35	11 30	1 58	12 11	0 53	9 44	2 41	18 20	0 15	7 37	0 58
M16	19 12	4n32	0 13	11 8	2 21	26 51	3 33	11 16	1 59	12 9	0 53	9 42	2 41	18 21	0 15	7 37	0 58
T 17	19 26	11 22	0 17	11 48	2 14	26 46	3 30	11 1	2 1	12 7	0 53	9 41	2 41	18 21	0 15	7 37	0 58
W18	19 39	17 41	2 23	12 28	2 6	26 41	3 26	10 47	2 2	12 5	0 53	9 40	2 41	18 22	0 15	7 36	0 58
T 19	19 52	22 56	3 30	13 9	1 58	26 35	3 23	10 32	2 3	12 3	0 54	9 39	2 41	18 23	0 15	7 36	0 58
F 20	20 5	26 37	4 22	13 50	1 50	26 30	3 19	10 17	2 4	12 1	0 54	9 38	2 41	18 24	0 15	7 36	0 58
S 21	20 17	28 22	4 55	14 31	1 41	26 23	3 15	10 3	2 6	11 59	0 54	9 36	2 41	18 25	0 15	7 35	0 58
S 22	20 29	28 4	5 8	15 12	1 32	26 17	3 11	9 48	2 7	11 58	0 54	9 35	2 40	18 26	0 15	7 35	0 58
M23	20 40	25 55	5 1	15 54	1 22	26 10	3 6	9 33	2 8	11 56	0 55	9 34	2 40	18 27	0 15	7 35	0 58
T 24	20 51	22 18	4 37	16 35	1 12	26 3	3 1	9 19	2 9	11 54	0 55	9 33	2 40	18 28	0 15	7 35	0 58
W25	21 2	17 40	3 59	17 16	1 2	25 56	2 55	9 4	2 11	11 53	0 55	9 32	2 40	18 28	0 15	7 34	0 58
T 26	21 13	12 22	3 10	17 56	0 52	25 48	2 49	8 49	2 12	11 51	0 55	9 31	2 40	18 29	0 15	7 34	0 58
F 27	21 23	6 44	2 13	18 36	0 41	25 40	2 43	8 34	2 13	11 50	0 56	9 30	2 40	18 30	0 15	7 34	0 58
S 28	21 33	0 58	1 12	19 15	0 31	25 32	2 37	8 19	2 14	11 49	0 56	9 29	2 39	18 31	0 15	7 34	0 58
S 29	21 42	4s45	0 8	19 53	0 20	25 24	2 30	8 4	2 15	11 47	0 56	9 28	2 39	18 32	0 15	7 34	0 58
M30	21 51	10 14	0s56	20 30	0 9	25 15	2 23	7 49	2 17	11 46	0 57	9 27	2 39	18 33	0 15	7 33	0 58
T 31	22n 0	15s21	1s56	21n 5	0n 2	25n 6	2n15	7s34	2s18	11s45	0s57	9s27	2n39	18n34	0s15	7s33	0s58

Julian Day Number = 2338075.5, Delta T = 18.74 sec

Ecliptic obliquity = 23°28'56, Nutation = - 0°00'05, out-of-bounds declination in red

Ayanamsha: Fagan/Bradley = 20°24'13, Lahiri = 19°31'14Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1689

geocentric

JUNE 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	16 40 25	10 ^{II} 59'04	17 ^{III} 45	6 ^{II} 31	12 ^{III} 53	16 ^{II} 53	1 ^{II} 49	1°R11	24 ^{II} 8 1	13 ^{II} 6	23 ^{III} 30	13°R38	12 ^{II} 4	15 ^{III} 42	29 ^{II} 33	W 1
T 2	16 44 22	11°56'26	29°37	8°41	13° 0	17°34	1°53	1 ^{III} 8	24° 4	13° 6	23°32	13°Y31	12° 0	15°49	29°38	T 2
F 3	16 48 18	12°53'47	11 ^{II} 34	10°53	13° 5	18°15	1°57	1° 6	24° 7	13° 7	23°33	13°21	11°57	15°55	29°42	F 3
S 4	16 52 15	13°51'07	23°39	13° 5	13° 7	18°56	2° 0	1° 3	24°11	13° 7	23°34	13°11	11°54	16° 2	29°47	S 4
S 5	16 56 11	14°48'27	5 ^{II} 51	15°17	13°R 8	19°37	2° 3	1° 0	24°14	13° 7	23°35	12°59	11°51	16° 9	29°51	S 5
M 6	17 0 8	15°45'46	18°14	17°29	13° 5	20°17	2° 6	0°58	24°17	13° 8	23°37	12°49	11°48	16°15	29°56	M 6
T 7	17 4 4	16°43'04	0 ^{II} 47	19°40	13° 1	20°58	2° 8	0°55	24°21	13° 8	23°38	12°40	11°44	16°22	0 ^{II} 1	T 7
W 8	17 8 1	17°40'22	13°32	21°51	12°54	21°39	2°11	0°53	24°24	13° 8	23°40	12°33	11°41	16°29	0° 5	W 8
T 9	17 11 58	18°37'39	26°30	24° 1	12°44	22°19	2°13	0°50	24°27	13° 9	23°41	12°28	11°38	16°35	0°10	T 9
F 10	17 15 54	19°34'56	9 ^{II} 45	26°10	12°32	23° 0	2°15	0°48	24°30	13° 9	23°42	12°26	11°35	16°42	0°14	F 10
S 11	17 19 51	20°32'12	23°17	28°17	12°18	23°40	2°17	0°46	24°34	13° 9	23°44	12°D26	11°32	16°49	0°19	S 11
S 12	17 23 47	21°29'29	7 ^{II} 9	0 ^{II} 23	12° 2	24°20	2°19	0°44	24°37	13° 9	23°45	12°R26	11°29	16°55	0°23	S 12
M13	17 27 44	22°26'45	21°21	2°28	11°43	25° 0	2°21	0°42	24°40	13° 9	23°47	12°26	11°25	17° 2	0°28	M13
T 14	17 31 40	23°24'00	5 ^{II} 53	4°30	11°22	25°40	2°22	0°40	24°43	13° 9	23°48	12°24	11°22	17° 9	0°32	T 14
W15	17 35 37	24°21'16	20°41	6°31	10°58	26°20	2°23	0°38	24°46	13°R 9	23°50	12°20	11°19	17°15	0°37	W15
T 16	17 39 33	25°18'31	5 ^{II} 39	8°30	10°33	27° 0	2°24	0°37	24°50	13° 9	23°51	12°13	11°16	17°22	0°41	T 16
F 17	17 43 30	26°15'47	20°38	10°26	10° 6	27°39	2°25	0°35	24°53	13° 9	23°52	12° 4	11°13	17°29	0°45	F 17
S 18	17 47 27	27°13'01	5 ^{II} 31	12°21	9°37	28°19	2°26	0°33	24°56	13° 9	23°54	11°54	11°10	17°35	0°50	S 18
S 19	17 51 23	28°10'16	20° 6	14°13	9° 6	28°58	2°26	0°32	24°59	13° 9	23°55	11°43	11° 6	17°42	0°54	S 19
M20	17 55 20	29° 7'30	4 ^{II} 19	16° 3	8°33	29°38	2°26	0°31	25° 2	13° 9	23°57	11°34	11° 3	17°49	0°58	M20
T 21	17 59 16	0 ^{II} 43	18° 4	17°51	7°59	0°Y17	2°R26	0°29	25° 5	13° 9	23°59	11°26	11° 0	17°55	1° 3	T 21
W22	18 3 13	1° 1'56	1 ^{II} 21	19°37	7°25	0°56	2°26	0°28	25° 8	13° 8	24° 0	11°21	10°57	18° 2	1° 7	W22
T 23	18 7 9	1°59'08	14°12	21°21	6°49	1°34	2°26	0°27	25°11	13° 8	24° 2	11°18	10°54	18° 9	1°11	T 23
F 24	18 11 6	2°56'20	26°40	23° 2	6°12	2°13	2°25	0°26	25°14	13° 8	24° 3	11°17	10°50	18°15	1°15	F 24
S 25	18 15 3	3°53'32	8 ^{II} 51	24°41	5°35	2°52	2°25	0°25	25°17	13° 8	24° 5	11°17	10°47	18°22	1°20	S 25
S 26	18 18 59	4°50'43	20°48	26°18	4°57	3°30	2°24	0°25	25°20	13° 7	24° 6	11°16	10°44	18°29	1°24	S 26
M27	18 22 56	5°47'53	2 ^{III} 39	27°53	4°20	4° 8	2°23	0°24	25°23	13° 7	24° 8	11°15	10°41	18°35	1°28	M27
T 28	18 26 52	6°45'04	14°27	29°25	3°42	4°46	2°21	0°23	25°25	13° 6	24° 9	11°12	10°38	18°42	1°32	T 28
W29	18 30 49	7°42'14	26°18	0 ^{II} 56	3° 5	5°24	2°20	0°23	25°28	13° 6	24°11	11° 6	10°35	18°49	1°36	W29
T 30	18 34 45	8 ^{II} 39'24	8 ^{II} 14	2 ^{II} 24	2 ^{II} 29	6°Y 2	2 ^{II} 18	0 ^{III} 23	25°31	13 ^{II} 6	24 ^{II} 13	10°Y57	10°Y31	18 ^{III} 55	1 ^{II} 40	T 30

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	
W 1	22n 8	19s54	2s52	21n38	0n12	24n57	2n 7	7s19	2s19	11s44	0s57	9s26	2n39	18n34	0s15	7s33
T 2	22 16	23 41	3 40	22 10	0 23	24 48	1 58	7 4	2 20	11 43	0 57	9 25	2 38	18 35	0 15	7 33
F 3	22 23	26 29	4 19	22 40	0 33	24 39	1 49	6 49	2 21	11 42	0 58	9 24	2 38	18 36	0 15	7 33
S 4	22 30	28 6	4 46	23 7	0 43	24 29	1 40	6 34	2 23	11 41	0 58	9 23	2 38	18 37	0 14	7 33
S 5	22 37	28 22	5 1	23 32	0 52	24 20	1 30	6 19	2 24	11 40	0 58	9 23	2 38	18 38	0 14	7 33
M 6	22 43	27 13	5 2	23 54	1 1	24 10	1 20	6 4	2 25	11 39	0 58	9 22	2 38	18 39	0 14	7 33
T 7	22 49	24 43	4 49	24 14	1 10	23 59	1 9	5 50	2 26	11 39	0 59	9 21	2 37	18 39	0 14	7 32
W 8	22 55	20 57	4 21	24 31	1 17	23 49	0 58	5 35	2 27	11 38	0 59	9 21	2 37	18 40	0 14	7 32
T 9	23 0	16 8	3 39	24 45	1 25	23 39	0 47	5 20	2 29	11 37	0 59	9 20	2 37	18 41	0 14	7 32
F 10	23 4	10 28	2 45	24 57	1 31	23 28	0 35	5 5	2 30	11 37	1 0	9 20	2 37	18 42	0 14	7 32
S 11	23 9	4 12	1 40	25 5	1 37	23 17	0 23	4 50	2 31	11 37	1 0	9 19	2 36	18 43	0 14	7 32
S 12	23 13	2n25	0 28	25 11	1 42	23 6	0 10	4 35	2 32	11 36	1 0	9 19	2 36	18 43	0 14	7 32
M13	23 16	9 4	0n47	25 14	1 47	22 55	0s 3	4 20	2 33	11 36	1 0	9 18	2 36	18 44	0 14	7 32
T 14	23 19	15 24	2 1	25 15	1 50	22 44	0 16	4 5	2 34	11 36	1 1	9 18	2 36	18 45	0 14	7 32
W15	23 22	20 58	3 8	25 12	1 53	22 32	0 29	3 50	2 36	11 35	1 1	9 17	2 35	18 46	0 14	7 32
T 16	23 24	25 16	4 3	25 8	1 56	22 21	0 43	3 35	2 37	11 35	1 1	9 17	2 35	18 46	0 14	7 32
F 17	23 26	27 49	4 41	25 1	1 57	22 9	0 57	3 21	2 38	11 35	1 2	9 17	2 35	18 47	0 14	7 32
S 18	23 27	28 21	5 0	24 52	1 58	21 57	1 11	3 6	2 39	11 35	1 2	9 16	2 35	18 48	0 14	7 33
S 19	23 28	26 53	4 58	24 40	1 58	21 45	1 25	2 51	2 40	11 36	1 2	9 16	2 34	18 49	0 14	7 33
M20	23 29	23 43	4 38	24 27	1 57	21 33	1 39	2 37	2 41	11 36	1 2	9 16	2 34	18 49	0 14	7 33
T 21	23 29	19 17	4 3	24 12	1 56	21 21	1 54	2 22	2 42	11 36	1 3	9 16	2 34	18 50	0 14	7 33
W22	23 29	14 2	3 15	23 55	1 54	21 9	2 8	2 8	2 43	11 36	1 3	9 15	2 34	18 51	0 14	7 33
T 23	23 28	8 21	2 18	23 37	1 51	20 57	2 22	1 53	2 45	11 37	1 3	9 15	2 33	18 52	0 14	7 33
F 24	23 27	2 30	1 17	23 17	1 48	20 45	2 36	1 39	2 46	11 37	1 4	9 15	2 33	18 52	0 14	7 33
S 25	23 25	3s19	0 13	22 56	1 44	20 33	2 49	1 25	2 47	11 38	1 4	9 15	2 33	18 53	0 14	7 33
S 26	23 24	8 55	0s50	22 33	1 39	20 21	3 3	1 10	2 48	11 38	1 4	9 15	2 33	18 54	0 14	7 34
M27	23 21	14 9	1 51	22 9	1 34	20 9	3 16	0 56	2 49	11 39	1 4	9 15	2 32	18 54	0 14	7 34
T 28	23 19	18 51	2 46	21 45	1 28	19 58	3 28	0 42	2 50	11 40	1 5	9 15	2 32	18 55	0 14	7 34
W29	23 15	22 50	3 34	21 19	1 22	19 46	3 41	0 28	2 51	11 41	1 5	9 15	2 32	18 56	0 14	7 34
T 30	23n12	25s53	4s13	20n53	1n15	19n35	3s52	0s14	2s52	11s41	1s 5	9s15	2n32	18n56	0s14	7s34

Julian Day Number = 2338106.5, Delta T = 18.69 sec

Ecliptic obliquity = 23°28'55, Nutation = - 0°00'04, out-of-bounds declination in red

Ayanamsha: Fagan/Bradley = 20°24'17, Lahiri = 19°31'18Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1689

geocentric

JULY 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	18 38 42	9°36'34	20°19	3°49	1°R54	6°40	2°R16	0°R22	25°34	13°R 5	24°14	10°R46	10°Y28	19°M 2	1°II44	F 1
S 2	18 42 38	10°33'44	2°35	5°12	1°59	7°17	2°H14	0°M22	25°36	13°H 5	24°16	10°Y33	10°25	19° 9	1°48	S 2
S 3	18 46 35	11°30'54	15° 1	6°33	0°47	7°54	2°12	0°D22	25°39	13° 4	24°17	10°20	10°22	19°15	1°52	S 3
M 4	18 50 32	12°28'05	27°40	7°52	0°15	8°31	2° 9	0°22	25°42	13° 3	24°19	10° 7	10°19	19°22	1°56	M 4
T 5	18 54 28	13°25'15	10°30	9° 8	29°II45	9° 8	2° 7	0°22	25°44	13° 3	24°21	9°56	10°16	19°29	2° 0	T 5
W 6	18 58 25	14°22'26	23°31	10°21	29°18	9°45	2° 4	0°23	25°47	13° 2	24°22	9°48	10°12	19°35	2° 4	W 6
T 7	19 2 21	15°19'37	6°44	11°32	28°52	10°21	2° 1	0°23	25°50	13° 1	24°24	9°42	10° 9	19°42	2° 7	T 7
F 8	19 6 18	16°16'49	20° 8	12°41	28°28	10°58	1°58	0°23	25°52	13° 1	24°26	9°39	10° 6	19°49	2°11	F 8
S 9	19 10 14	17°14'01	3°Y45	13°46	28° 6	11°34	1°54	0°24	25°55	13° 0	24°27	9°38	10° 3	19°55	2°15	S 9
S 10	19 14 11	18°11'13	17°35	14°49	27°47	12°10	1°51	0°24	25°57	12°59	24°29	9°38	10° 0	20° 2	2°19	S 10
M 11	19 18 7	19° 8'27	1°39	15°49	27°30	12°45	1°47	0°25	25°59	12°59	24°31	9°38	9°56	20° 9	2°22	M 11
T 12	19 22 4	20° 5'41	15°56	16°46	27°15	13°21	1°43	0°26	26° 2	12°58	24°32	9°36	9°53	20°16	2°26	T 12
W 13	19 26 1	21° 2'56	0°II25	17°40	27° 3	13°56	1°39	0°27	26° 4	12°57	24°34	9°32	9°50	20°22	2°29	W 13
T 14	19 29 57	22° 0'12	15° 1	18°30	26°53	14°31	1°35	0°28	26° 6	12°56	24°35	9°25	9°47	20°29	2°33	T 14
F 15	19 33 54	22°57'28	29°39	19°17	26°45	15° 6	1°30	0°29	26° 9	12°55	24°37	9°16	9°44	20°36	2°36	F 15
S 16	19 37 50	23°54'45	14°51	20° 1	26°40	15°40	1°26	0°30	26°11	12°54	24°39	9° 5	9°41	20°42	2°40	S 16
S 17	19 41 47	24°52'03	28°31	20°41	26°38	16°14	1°21	0°31	26°13	12°53	24°40	8°54	9°37	20°49	2°43	S 17
M 18	19 45 43	25°49'21	12°32	21°17	26°D37	16°48	1°16	0°33	26°15	12°52	24°42	8°44	9°34	20°56	2°46	M 18
T 19	19 49 40	26°46'40	26°11	21°49	26°39	17°22	1°11	0°34	26°17	12°51	24°44	8°36	9°31	21° 2	2°50	T 19
W 20	19 53 36	27°43'59	9°M25	22°17	26°43	17°55	1° 6	0°36	26°20	12°50	24°45	8°30	9°28	21° 9	2°53	W 20
T 21	19 57 33	28°41'19	22°15	22°41	26°49	18°28	1° 0	0°38	26°22	12°49	24°47	8°27	9°25	21°16	2°56	T 21
F 22	20 1 30	29°38'39	4°44	23° 0	26°58	19° 1	0°55	0°39	26°24	12°48	24°49	8°D26	9°22	21°22	2°59	F 22
S 23	20 5 26	0°L35'59	16°56	23°14	27° 8	19°34	0°49	0°41	26°26	12°47	24°50	8°26	9°18	21°29	3° 2	S 23
S 24	20 9 23	1°33'20	28°55	23°24	27°21	20° 6	0°43	0°43	26°27	12°46	24°52	8°R27	9°15	21°36	3° 5	S 24
M 25	20 13 19	2°30'42	10°M47	23°R29	27°36	20°38	0°37	0°45	26°29	12°45	24°54	8°26	9°12	21°42	3° 8	M 25
T 26	20 17 16	3°28'04	23°29	27°52	21°10	21°10	0°31	0°47	26°31	12°44	24°55	8°24	9° 9	21°49	3°11	T 26
W 27	20 21 12	4°25'27	4°M30	23°23	28°11	21°41	0°25	0°50	26°33	12°42	24°57	8°20	9° 6	21°56	3°14	W 27
T 28	20 25 9	5°22'51	16°30	23°12	28°31	22°12	0°18	0°52	26°35	12°41	24°59	8°14	9° 2	22° 2	3°17	T 28
F 29	20 29 5	6°20'15	28°42	22°56	28°53	22°43	0°12	0°54	26°36	12°40	25° 0	8° 5	8°59	22° 9	3°20	F 29
S 30	20 33 2	7°17'40	11°3	22°35	29°17	23°13	0° 5	0°57	26°38	12°39	25° 2	7°56	8°56	22°16	3°22	S 30
S 31	20 36 59	8°L15'06	23°348	22°L 9	29°II42	23°Y43	29°59	1°M 0	26°40	12°H37	25°3	7°Y45	8°Y53	22°M22	3°II25	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	23n 8	27s48	4s41	20n26	1n 8	19n25	4s 4	0s 0	2s53	11s42	1s 6	9s16	2n31	18n57	0s14	7s35	1s 0	23n49	2n33	4n16	4n 9	20s36	17n 1	3s36	
S 2	23 4	28 24	4 57	19 58	1 0	19 14	4 14	0n14	2 54	11 43	1 6	9 16	2 31	18 58	0 14	7 35	1 0	23 49	2 33	4 11	4 8	20 38	17 2	3 36	
S 3	22 59	27 35	4 59	19 30	0 52	19 4	4 24	0 28	2 55	11 44	1 6	9 16	2 31	18 58	0 14	7 35	1 0	23 48	2 33	4 6	4 7	20 41	17 2	3 36	
M 4	22 54	25 20	4 46	19 2	0 43	18 55	4 34	0 41	2 56	11 46	1 6	9 16	2 30	18 59	0 14	7 35	1 0	23 48	2 33	4 1	4 5	20 43	17 3	3 37	
T 5	22 48	21 47	4 19	18 33	0 34	18 46	4 43	0 55	2 57	11 47	1 7	9 17	2 30	19 0	0 14	7 36	1 0	23 48	2 33	3 57	4 4	20 46	17 3	3 37	
W 6	22 42	17 8	3 38	18 4	0 24	18 38	4 51	1 8	2 58	11 48	1 7	9 17	2 30	19 0	0 14	7 36	1 0	23 48	2 33	3 53	4 3	20 48	17 4	3 37	
T 7	22 36	11 36	2 44	17 35	0 14	18 30	4 59	1 22	2 59	11 49	1 7	9 17	2 30	19 1	0 14	7 36	1 0	23 47	2 33	3 51	4 2	20 51	17 4	3 37	
F 8	22 29	5 28	1 41	17 5	0 4	18 23	5 6	1 35	3 0	11 51	1 8	9 18	2 29	19 1	0 14	7 36	1 0	23 47	2 33	3 50	4 0	20 53	17 5	3 38	
S 9	22 22	1n 1	0 31	16 36	0s 7	18 16	5 12	1 48	3 1	11 52	1 8	9 18	2 29	19 2	0 14	7 37	1 0	23 47	2 33	3 50	3 59	20 56	17 5	3 38	
S 10	22 15	7 34	0n42	16 7	0 18	18 10	5 18	2 1	3 2	11 54	1 8	9 19	2 29	19 3	0 14	7 37	1 0	23 47	2 33	3 49	3 58	20 58	17 6	3 38	
M 11	22 7	13 51	1 54	15 39	0 30	18 4	5 23	2 14	3 3	11 55	1 8	9 19	2 29	19 3	0 14	7 37	1 0	23 46	2 33	3 49	3 57	21 1	17 6	3 38	
T 12	21 59	19 30	2 59	15 10	0 42	17 59	5 28	2 27	3 4	11 57	1 9	9 20	2 28	19 4	0 14	7 38	1 0	23 46	2 34	3 49	3 55	21 3	17 7	3 39	
W 13	21 50	24 6	3 54	14 43	0 54	17 55	5 32	2 40	3 5	11 59	1 9	9 20	2 28	19 4	0 14	7 38	1 0	23 46	2 34	3 47	3 54	21 6	17 7	3 39	
T 14	21 41	27 11	4 35	14 15	1 6	17 51	5 35	2 53	3 6	12 1	1 9	9 21	2 28	19 5	0 14	7 39	1 0	23 46	2 34	3 44	3 53	21 8	17 7	3 39	
F 15	21 31	28 26	4 57	13 49	1 19	17 48	5 38	3 5	3 7	12 2	1 9	9 21	2 28	19 5	0 14	7 39	1 0	23 45	2 34	3 41	3 52	21 11	17 8	3 39	
S 16	21 22	27 42	5 0	13 23	1 32	17 46	5 41	3 18	3 7	12 4	1 10	9 22	2 27	19 6	0 14	7 39	1 0	23 45	2 34	3 36	3 50	21 13	17 8	3 40	
S 17	21 12	25 8	4 44	12 58	1 45	17 44	5 43	3 30	3 8	12 6	1 10	9 23	2 27	19 6	0 14	7 40	1 0	23 45	2 34	3 32	3 49	21 16	17 9	3 40	
M 18	21 1	21 5	4 11	12 34	1 58	17 42	5 44	3 42	3 9	12 8	1 10	9 24	2 27	19 7	0 14	7 40	1 0	23 45	2 34	3 28	3 48	21 18	17 9	3 40	
T 19	20 50	16 1	3 24	12 11	2 12	17 41	5 45	3 54	3 10	12 10	1 10	9 24	2 26	19 7	0 14	7 40	1 0	23 45	2 34	3 25	3 47	21 21	17 9	3 41	
W 20	20 39	10 20	2 28	11 49	2 25	17 41	5 46	4 6	3 11	12 12	1 11	9 25	2 26	19 8	0 14	7 41	1 0	23 44	2 34	3 23	3 45	21 23	17 10	3 41	
T 21	20 28	4 23	1 25	11 29	2 38	17 41	5 46	4 18	3 12	12 15	1 11	9 26	2 26	19 8	0 14	7 41	1 0	23 44	2 34	3 21	3 44	21 25	17 10	3 41	
F 22	20 16	1s35	0 20	11 11	2 51	17 41	5 46	4 30	3 12	12 17	1 11	9 27	2 26	19 9	0 14	7 42	1 0	23 44	2 34	3 21	3 43	21 28	17 10	3 42	
S 23	20 3	7 21	0s45	10 54	3 4	17 42	5 45	4 41	3 13	12 19	1 11	9 28	2 25	19 9	0 14	7 42	1 0	23 44	2 34	3 21	3 42	21 30	17 10	3 42	
S 24	19 51	12 46	1 47	10 38	3 17	17 43	5 44	4 52	3 14	12 21	1 12	9 29	2 25	19 10	0 14	7 43	1 1	23 43	2 34	3 21	3 40	21 33	17 11	3 42	
M 25	19 38	17 40	2 43	10 25	3 30	17 45	5 43	5 4	3 15	12 24	1 12	9 30	2 25	19 10	0 14	7 43	1 1	23 43	2 34	3 21	3 39	21 35	17 11	3 42	
T 26	19 25	21 53	3 33	10 14	3 42	17 46	5 42	5 15	3 16	12 26	1 12	9 31	2 25	19 11	0 14	7 44	1 1	23 43	2 34	3 20	3 38	21 37	17 11	3 43	
W 27	19 11	25 13	4 13	10 5	3 53	17 49	5 40	5 26	3 16	12 28	1 12	9 32	2 24	19 11	0 14	7 44	1 1	23 43	2 35	3 19	3 37	21 40	17 11	3 43	
T 28	18 57	27 29	4 43	9 58	4 4	17 51	5 38	5 37	3 17	12 31	1 13	9 33	2 24	19 11	0 14	7 45	1 1	23 42	2 35	3 16	3 35	21 42	17 12	3 43	
F 29	18 43	28 28	5 0	9 53	4 14	17 53	5 35	5 47	3 18	12 33	1 13	9 34	2 24	19 12	0 14	7 45	1 1	23 42	2 35	3 13	3 34	21 45	17 12	3 43	
S 30	18 29	28 3	5 3	9 51	4 23	17 56	5 33	5 58	3 18	12 36	1 13	9 35	2 24	19 12	0 14	7 46	1 1	23 42	2 35	3 9	3 33	21 47	17 12	3 44	
S 31	18n14	26s11	4s52	9n52	4s31	17n59	5s30	6n 8	3s19	12s38	1s13	9s36	2n23	19n13	0s14	7s46	1s 1	23n42	2n35	3n 5	3n32	21s49	17n12	3s44	

ASTRODIENST EPHEMERIS for the year 1689

geocentric

AUGUST 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	20 40 55	9♏12'33	6♊44	21°R39	0♈9	24°V13	29°R52	1♏2	26♌41	12°R36	25♈5	7°R35	8°V50	22♏29	3♏28	M 1
T 2	20 44 52	10°10'01	19°54	21♏3	0°37	24°42	29♊45	1°5	26°43	12°R35	25°7	7°V26	8°47	22°36	3°30	T 2
W 3	20 48 48	11°7'30	3♏17	20°24	1°7	25°11	29°38	1°8	26°44	12°33	25°8	7°20	8°43	22°43	3°33	W 3
T 4	20 52 45	12°5'00	16°52	19°42	1°39	25°39	29°31	1°11	26°46	12°32	25°10	7°16	8°40	22°49	3°35	T 4
F 5	20 56 41	13°2'31	0°V36	18°56	2°12	26°7	29°24	1°14	26°47	12°31	25°11	7°14	8°37	22°56	3°38	F 5
S 6	21 0 38	14°0'04	14°28	18°8	2°46	26°35	29°16	1°17	26°48	12°29	25°13	7°D14	8°34	23°3	3°40	S 6
S 7	21 4 34	14°57'38	28°28	17°19	3°21	27°2	29°9	1°20	26°50	12°28	25°15	7°15	8°31	23°9	3°42	S 7
M 8	21 8 31	15°55'14	12♌33	16°30	3°58	27°29	29°2	1°24	26°51	12°27	25°16	7°R16	8°28	23°16	3°44	M 8
T 9	21 12 28	16°52'51	26°44	15°41	4°36	27°56	28°54	1°27	26°52	12°25	25°18	7°15	8°24	23°23	3°47	T 9
W10	21 16 24	17°50'30	10♏58	14°53	5°15	28°22	28°46	1°30	26°53	12°24	25°19	7°13	8°21	23°29	3°49	W10
T 11	21 20 21	18°48'10	25°13	14°8	5°55	28°47	28°39	1°34	26°54	12°22	25°21	7°9	8°18	23°36	3°51	T 11
F 12	21 24 17	19°45'52	9♈25	13°27	6°36	29°12	28°31	1°38	26°55	12°21	25°22	7°3	8°15	23°43	3°53	F 12
S 13	21 28 14	20°43'36	23°31	12°49	7°19	29°37	28°23	1°41	26°56	12°19	25°24	6°56	8°12	23°49	3°55	S 13
S 14	21 32 10	21°41'21	7♏26	12°17	8°2	0♈1	28°16	1°45	26°57	12°18	25°25	6°48	8°8	23°56	3°56	S 14
M15	21 36 7	22°39'08	21°5	11°50	8°46	0°25	28°8	1°49	26°58	12°16	25°27	6°42	8°5	24°3	3°58	M15
T 16	21 40 4	23°36'55	4♏28	11°30	9°31	0°48	28°0	1°53	26°59	12°15	25°28	6°36	8°2	24°9	4°0	T 16
W17	21 44 0	24°34'45	17°30	11°17	10°17	1°10	27°52	1°57	27°0	12°13	25°30	6°33	7°59	24°16	4°2	W17
T 18	21 47 57	25°32'35	0♏13	11°D11	11°4	1°32	27°44	2°1	27°1	12°12	25°31	6°31	7°56	24°23	4°3	T 18
F 19	21 51 53	26°30'27	12°39	11°13	11°51	1°54	27°36	2°5	27°1	12°10	25°33	6°D31	7°53	24°29	4°5	F 19
S 20	21 55 50	27°28'20	24°49	11°23	12°40	2°14	27°28	2°10	27°2	12°8	25°34	6°32	7°49	24°36	4°6	S 20
S 21	21 59 46	28°26'14	6♏48	11°40	13°29	2°35	27°20	2°14	27°3	12°7	25°36	6°34	7°46	24°43	4°8	S 21
M22	22 3 43	29°24'10	18°41	12°6	14°19	2°55	27°13	2°19	27°3	12°5	25°37	6°35	7°43	24°50	4°9	M22
T 23	22 7 39	0♏22'07	0♏26	12°39	15°9	3°14	27°5	2°23	27°4	12°4	25°39	6°R35	7°40	24°56	4°10	T 23
W24	22 11 36	1°20'06	12°26	13°21	16°1	3°32	26°57	2°28	27°4	12°2	25°40	6°35	7°37	25°3	4°11	W24
T 25	22 15 32	2°18'06	24°28	14°9	16°52	3°50	26°49	2°32	27°4	12°0	25°41	6°33	7°34	25°10	4°12	T 25
F 26	22 19 29	3°16'07	6♌43	15°6	17°45	4°7	26°41	2°37	27°5	11°59	25°43	6°29	7°30	25°16	4°14	F 26
S 27	22 23 26	4°14'10	19°14	16°9	18°38	4°24	26°33	2°42	27°5	11°57	25°44	6°24	7°27	25°23	4°15	S 27
S 28	22 27 22	5°12'14	2♊3	17°19	19°32	4°40	26°26	2°47	27°5	11°55	25°45	6°19	7°24	25°30	4°15	S 28
M29	22 31 19	6°10'20	15°12	18°35	20°26	4°55	26°18	2°52	27°6	11°54	25°47	6°14	7°21	25°36	4°16	M29
T 30	22 35 15	7°8'27	28°40	19°57	21°21	5°10	26°10	2°57	27°6	11°52	25°48	6°10	7°18	25°43	4°17	T 30
W31	22 39 12	8♏6'36	12♏25	21♏24	22♏17	5♌24	26♊3	3♏2	27♌6	11♏51	25♈49	6°V7	7°V14	25♏50	4♏18	W31

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	lat
M 1	17n59	22s55	4s26	9n55	4s38	18n 2	5s27	6n18	3s20	12s41	1s13	9s37	2n23	19n13	0s14	7s47
T 2	17 44	18 26	3 45	10 1	4 44	18 6	5 23	6 29	3 20	12 44	1 14	9 38	2 23	19 13	0 14	7 47
W 3	17 28	12 59	2 51	10 9	4 48	18 9	5 20	6 38	3 21	12 46	1 14	9 40	2 23	19 14	0 14	7 48
T 4	17 12	6 50	1 47	10 20	4 50	18 12	5 16	6 48	3 22	12 49	1 14	9 41	2 22	19 14	0 15	7 48
F 5	16 56	0 18	0 36	10 34	4 51	18 15	5 12	6 58	3 22	12 52	1 14	9 42	2 22	19 14	0 15	7 49
S 6	16 39	6n19	0n39	10 49	4 50	18 19	5 8	7 7	3 23	12 54	1 14	9 44	2 22	19 15	0 15	7 49
S 7	16 23	12 41	1 52	11 6	4 47	18 22	5 4	7 17	3 23	12 57	1 15	9 45	2 22	19 15	0 15	7 50
M 8	16 6	18 28	2 58	11 26	4 42	18 25	5 0	7 26	3 24	13 0	1 15	9 46	2 21	19 15	0 15	7 51
T 9	15 48	23 15	3 54	11 46	4 36	18 29	4 56	7 35	3 24	13 3	1 15	9 48	2 21	19 15	0 15	7 51
W10	15 31	26 41	4 36	12 8	4 27	18 32	4 51	7 43	3 25	13 6	1 15	9 49	2 21	19 16	0 15	7 52
T 11	15 13	28 24	5 1	12 31	4 17	18 35	4 47	7 52	3 25	13 8	1 15	9 51	2 21	19 16	0 15	7 52
F 12	14 55	28 15	5 7	12 54	4 5	18 38	4 42	8 0	3 26	13 11	1 15	9 52	2 20	19 16	0 15	7 53
S 13	14 37	26 16	4 55	13 17	3 52	18 40	4 37	8 9	3 26	13 14	1 15	9 54	2 20	19 16	0 15	7 53
S 14	14 18	22 43	4 25	13 40	3 38	18 43	4 32	8 17	3 26	13 17	1 16	9 55	2 20	19 17	0 15	7 54
M15	13 59	17 58	3 41	14 2	3 22	18 45	4 27	8 24	3 27	13 20	1 16	9 57	2 20	19 17	0 15	7 55
T 16	13 40	12 27	2 45	14 23	3 5	18 47	4 22	8 32	3 27	13 23	1 16	9 58	2 19	19 17	0 15	7 55
W17	13 21	6 30	1 41	14 43	2 48	18 49	4 17	8 40	3 27	13 25	1 16	10 0	2 19	19 17	0 15	7 56
T 18	13 2	0 26	0 34	15 2	2 31	18 50	4 12	8 47	3 28	13 28	1 16	10 1	2 19	19 17	0 15	7 57
F 19	12 42	5s31	0s33	15 19	2 13	18 52	4 6	8 54	3 28	13 31	1 16	10 3	2 19	19 17	0 15	7 57
S 20	12 22	11 9	1 38	15 34	1 55	18 53	4 1	9 1	3 28	13 34	1 16	10 5	2 18	19 18	0 15	7 58
S 21	12 2	16 17	2 37	15 46	1 37	18 53	3 56	9 8	3 28	13 37	1 16	10 6	2 18	19 18	0 15	7 58
M22	11 42	20 46	3 29	15 56	1 19	18 54	3 50	9 14	3 29	13 39	1 16	10 8	2 18	19 18	0 15	7 59
T 23	11 22	24 25	4 12	16 4	1 1	18 54	3 45	9 20	3 29	13 42	1 17	10 10	2 18	19 18	0 15	8 0
W24	11 1	27 2	4 45	16 8	0 44	18 53	3 39	9 27	3 29	13 45	1 17	10 12	2 18	19 18	0 15	8 0
T 25	10 40	28 27	5 5	16 10	0 28	18 53	3 34	9 33	3 29	13 48	1 17	10 13	2 17	19 18	0 15	8 1
F 26	10 19	28 30	5 12	16 9	0 12	18 52	3 28	9 38	3 29	13 51	1 17	10 15	2 17	19 18	0 15	8 2
S 27	9 58	27 7	5 4	16 4	0n 3	18 50	3 23	9 44	3 29	13 53	1 17	10 17	2 17	19 18	0 15	8 2
S 28	9 37	24 18	4 41	15 57	0 17	18 49	3 17	9 49	3 29	13 56	1 17	10 19	2 17	19 18	0 15	8 3
M29	9 16	20 11	4 3	15 46	0 30	18 46	3 11	9 54	3 29	13 59	1 17	10 21	2 17	19 18	0 15	8 3
T 30	8 54	14 56	3 11	15 31	0 42	18 44	3 6	9 59	3 29	14 1	1 17	10 23	2 16	19 18	0 15	8 4
W31	8n33	8s51	2s 6	15n14	0n53	18n41	3s 0	10n 4	3s28	14s 4	1s17	10s25	2n16	19n18	0s15	8s 5

Julian Day Number = 2338167.5, Delta T = 18.61 sec
 Ecliptic obliquity = 23°28'56", Nutation = - 0°00'01", out-of-bounds declination in red
 Ayanamsha: Fagan/Bradley = 20°24'26", Lahiri = 19°31'26"Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1689

geocentric

SEPTEMBER 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	22 43 8	9 ^h 4'46"	26 ^h 25'	22 ^h 56'	23 ^h 13'	5 ^h 37'	25 ^h 55'	3 ^h 7'	27 ^h 6'	11 ^h 49'	25 ^h 51'	6 ^h 6'	7 ^h 11'	25 ^h 56'	4 ^h 18'	T 1
F 2	22 47 5	10 ^h 2'58"	10 ^h 36'	24 ^h 32'	24 ^h 9'	5 ^h 50'	25 ^h 48'	3 ^h 12'	27 ^h 6'	11 ^h 47'	25 ^h 52'	6 ^h 5'	7 ^h 8'	26 ^h 3'	4 ^h 19'	F 2
S 3	22 51 1	11 ^h 1'13"	24 ^h 53'	26 ^h 12'	25 ^h 6'	6 ^h 2'	25 ^h 40'	3 ^h 17'	27 ^h 6'	11 ^h 46'	25 ^h 53'	6 ^h 6'	7 ^h 5'	26 ^h 10'	4 ^h 20'	S 3
S 4	22 54 58	11 ^h 59'29"	9 ^h 13'	27 ^h 55'	26 ^h 4'	6 ^h 13'	25 ^h 33'	3 ^h 22'	27 ^h 6'	11 ^h 44'	25 ^h 54'	6 ^h 8'	7 ^h 2'	26 ^h 16'	4 ^h 20'	S 4
M 5	22 58 55	12 ^h 57'48"	23 ^h 31'	29 ^h 41'	27 ^h 2'	6 ^h 23'	25 ^h 26'	3 ^h 28'	27 ^h 6'	11 ^h 42'	25 ^h 56'	6 ^h 9'	6 ^h 59'	26 ^h 23'	4 ^h 20'	M 5
T 6	23 2 51	13 ^h 56'09"	7 ^h 11'46"	1 ^h 28'	28 ^h 0'	6 ^h 32'	25 ^h 19'	3 ^h 33'	27 ^h 5'	11 ^h 41'	25 ^h 57'	6 ^h 10'	6 ^h 55'	26 ^h 30'	4 ^h 21'	T 6
W 7	23 6 48	14 ^h 54'32"	21 ^h 55'	3 ^h 18'	28 ^h 59'	6 ^h 41'	25 ^h 12'	3 ^h 39'	27 ^h 5'	11 ^h 39'	25 ^h 58'	6 ^h 10'	6 ^h 52'	26 ^h 37'	4 ^h 21'	W 7
T 8	23 10 44	15 ^h 52'57"	5 ^h 58'	5 ^h 9'	29 ^h 58'	6 ^h 49'	25 ^h 5'	3 ^h 44'	27 ^h 5'	11 ^h 37'	25 ^h 59'	6 ^h 9'	6 ^h 49'	26 ^h 43'	4 ^h 21'	T 8
F 9	23 14 41	16 ^h 51'24"	19 ^h 48'	7 ^h 1'	0 ^h 58'	6 ^h 56'	24 ^h 58'	3 ^h 50'	27 ^h 4'	11 ^h 36'	26 ^h 0'	6 ^h 7'	6 ^h 46'	26 ^h 50'	4 ^h 21'	F 9
S 10	23 18 37	17 ^h 49'53"	3 ^h 29'	8 ^h 53'	1 ^h 58'	7 ^h 2'	24 ^h 51'	3 ^h 56'	27 ^h 4'	11 ^h 34'	26 ^h 1'	6 ^h 5'	6 ^h 43'	26 ^h 57'	4 ^h 21'	S 10
S 11	23 22 34	18 ^h 48'25"	16 ^h 57'	10 ^h 46'	2 ^h 58'	7 ^h 8'	24 ^h 45'	4 ^h 1'	27 ^h 4'	11 ^h 32'	26 ^h 3'	6 ^h 2'	6 ^h 40'	27 ^h 3'	4 ^h 21'	S 11
M 12	23 26 30	19 ^h 46'58"	0 ^h 11'	12 ^h 39'	3 ^h 59'	7 ^h 12'	24 ^h 38'	4 ^h 7'	27 ^h 3'	11 ^h 31'	26 ^h 4'	6 ^h 0'	6 ^h 36'	27 ^h 10'	4 ^h 21'	M 12
T 13	23 30 27	20 ^h 45'34"	13 ^h 11'	14 ^h 32'	5 ^h 1'	7 ^h 16'	24 ^h 32'	4 ^h 13'	27 ^h 2'	11 ^h 29'	26 ^h 5'	5 ^h 58'	6 ^h 33'	27 ^h 17'	4 ^h 21'	T 13
W 14	23 34 24	21 ^h 44'11"	25 ^h 56'	16 ^h 25'	6 ^h 2'	7 ^h 19'	24 ^h 26'	4 ^h 19'	27 ^h 2'	11 ^h 28'	26 ^h 6'	5 ^h 57'	6 ^h 30'	27 ^h 23'	4 ^h 21'	W 14
T 15	23 38 20	22 ^h 42'51"	8 ^h 26'	18 ^h 17'	7 ^h 4'	7 ^h 20'	24 ^h 20'	4 ^h 25'	27 ^h 1'	11 ^h 26'	26 ^h 7'	5 ^h 57'	6 ^h 27'	27 ^h 30'	4 ^h 20'	T 15
F 16	23 42 17	23 ^h 41'32"	20 ^h 44'	20 ^h 9'	8 ^h 6'	7 ^h 21'	24 ^h 14'	4 ^h 31'	27 ^h 0'	11 ^h 24'	26 ^h 8'	5 ^h 57'	6 ^h 24'	27 ^h 37'	4 ^h 20'	F 16
S 17	23 46 13	24 ^h 40'15"	2 ^h 50'	22 ^h 0'	9 ^h 9'	7 ^h 22'	24 ^h 8'	4 ^h 37'	27 ^h 0'	11 ^h 23'	26 ^h 9'	5 ^h 58'	6 ^h 20'	27 ^h 43'	4 ^h 19'	S 17
S 18	23 50 10	25 ^h 39'00"	14 ^h 47'	23 ^h 50'	10 ^h 12'	7 ^h 21'	24 ^h 2'	4 ^h 43'	26 ^h 59'	11 ^h 21'	26 ^h 10'	5 ^h 59'	6 ^h 17'	27 ^h 50'	4 ^h 19'	S 18
M 19	23 54 6	26 ^h 37'47"	26 ^h 38'	25 ^h 40'	11 ^h 15'	7 ^h 19'	23 ^h 57'	4 ^h 49'	26 ^h 58'	11 ^h 20'	26 ^h 11'	6 ^h 0'	6 ^h 14'	27 ^h 57'	4 ^h 18'	M 19
T 20	23 58 3	27 ^h 36'35"	8 ^h 29'	27 ^h 29'	12 ^h 19'	7 ^h 17'	23 ^h 51'	4 ^h 55'	26 ^h 57'	11 ^h 18'	26 ^h 12'	6 ^h 1'	6 ^h 11'	28 ^h 4'	4 ^h 18'	T 20
W 21	0 1 59	28 ^h 35'26"	20 ^h 22'	29 ^h 16'	13 ^h 22'	7 ^h 13'	23 ^h 46'	5 ^h 1'	26 ^h 56'	11 ^h 16'	26 ^h 12'	6 ^h 1'	6 ^h 8'	28 ^h 10'	4 ^h 17'	W 21
T 22	0 5 56	29 ^h 34'18"	2 ^h 23'	1 ^h 3'	14 ^h 27'	7 ^h 9'	23 ^h 41'	5 ^h 8'	26 ^h 55'	11 ^h 15'	26 ^h 13'	6 ^h 2'	6 ^h 5'	28 ^h 17'	4 ^h 16'	T 22
F 23	0 9 53	0 ^h 33'12"	14 ^h 36'	2 ^h 50'	15 ^h 31'	7 ^h 4'	23 ^h 36'	5 ^h 14'	26 ^h 54'	11 ^h 13'	26 ^h 14'	6 ^h 1'	6 ^h 1'	28 ^h 24'	4 ^h 15'	F 23
S 24	0 13 49	1 ^h 32'08"	27 ^h 6'	4 ^h 35'	16 ^h 36'	6 ^h 58'	23 ^h 32'	5 ^h 20'	26 ^h 53'	11 ^h 12'	26 ^h 15'	6 ^h 1'	5 ^h 58'	28 ^h 30'	4 ^h 14'	S 24
S 25	0 17 46	2 ^h 31'05"	9 ^h 27'	6 ^h 19'	17 ^h 40'	6 ^h 51'	23 ^h 27'	5 ^h 27'	26 ^h 52'	11 ^h 10'	26 ^h 16'	6 ^h 1'	5 ^h 55'	28 ^h 37'	4 ^h 13'	S 25
M 26	0 21 42	3 ^h 30'04"	23 ^h 10'	8 ^h 3'	18 ^h 46'	6 ^h 43'	23 ^h 23'	5 ^h 33'	26 ^h 51'	11 ^h 9'	26 ^h 17'	6 ^h 0'	5 ^h 52'	28 ^h 44'	4 ^h 12'	M 26
T 27	0 25 39	4 ^h 29'05"	6 ^h 47'	9 ^h 45'	19 ^h 51'	6 ^h 34'	23 ^h 19'	5 ^h 40'	26 ^h 50'	11 ^h 7'	26 ^h 17'	6 ^h 0'	5 ^h 49'	28 ^h 50'	4 ^h 11'	T 27
W 28	0 29 35	5 ^h 28'08"	20 ^h 47'	11 ^h 27'	20 ^h 57'	6 ^h 25'	23 ^h 15'	5 ^h 46'	26 ^h 48'	11 ^h 6'	26 ^h 18'	6 ^h 0'	5 ^h 45'	28 ^h 57'	4 ^h 10'	W 28
T 29	0 33 32	6 ^h 27'13"	5 ^h 8'	13 ^h 8'	22 ^h 3'	6 ^h 15'	23 ^h 11'	5 ^h 53'	26 ^h 47'	11 ^h 4'	26 ^h 19'	6 ^h 0'	5 ^h 42'	29 ^h 4'	4 ^h 8'	T 29
F 30	0 37 28	7 ^h 26'20"	19 ^h 43'	14 ^h 48'	23 ^h 9'	6 ^h 4'	23 ^h 7'	5 ^h 59'	26 ^h 46'	11 ^h 3'	26 ^h 20'	6 ^h 0'	5 ^h 39'	29 ^h 10'	4 ^h 7'	F 30

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
T 1	8n11	2s14	0s53	14n54	1n 3	18n37	2s54	10n 9	3s28	14s 6	1s17	10s26	2n16	19n18	0s15	8s 5	1s 1	23n36	2n38	2n25	2n51	23s 2	17n11	3s56					
F 2	7 49	4n35	0n25	14 30	1 13	18 33	2 48	10 13	3 28	14 9	1 17	10 28	2 16	19 18	0 15	8 6	1 1	23 36	2 38	2 25	2 50	23 4	17 10	3 56					
S 3	7 27	11 13	1 41	14 4	1 21	18 29	2 43	10 17	3 28	14 12	1 17	10 30	2 16	19 18	0 15	8 7	1 1	23 36	2 38	2 26	2 49	23 7	17 10	3 57					
S 4	7 5	17 18	2 52	13 35	1 27	18 24	2 37	10 21	3 27	14 14	1 17	10 32	2 15	19 18	0 15	8 7	1 1	23 36	2 38	2 26	2 48	23 9	17 10	3 57					
M 5	6 42	22 26	3 52	13 4	1 33	18 19	2 31	10 25	3 27	14 16	1 17	10 34	2 15	19 18	0 15	8 8	1 1	23 36	2 38	2 27	2 46	23 11	17 10	3 57					
T 6	6 20	26 12	4 37	12 30	1 38	18 13	2 26	10 28	3 26	14 19	1 17	10 36	2 15	19 18	0 15	8 9	1 1	23 35	2 39	2 27	2 45	23 13	17 9	3 58					
W 7	5 57	28 19	5 5	11 54	1 42	18 7	2 20	10 32	3 26	14 21	1 17	10 38	2 15	19 18	0 15	8 9	1 1	23 35	2 39	2 27	2 44	23 15	17 9	3 58					
T 8	5 35	28 35	5 15	11 16	1 45	18 0	2 14	10 35	3 25	14 24	1 17	10 40	2 15	19 18	0 15	8 10	1 1	23 35	2 39	2 27	2 43	23 17	17 9	3 59					
F 9	5 12	27 4	5 6	10 37	1 47	17 53	2 9	10 38	3 25	14 26	1 17	10 42	2 14	19 18	0 15	8 10	1 1	23 35	2 39	2 26	2 41	23 19	17 8	3 59					
S 10	4 49	23 57	4 40	9 56	1 49	17 45	2 3	10 40	3 24	14 28	1 17	10 45	2 14	19 18	0 15	8 11	1 1	23 35	2 39	2 25	2 40	23 22	17 8	3 59					
S 11	4 26	19 34	3 58	9 13	1 49	17 37	1 57	10 43	3 23	14 30	1 17	10 47	2 14	19 18	0 15	8 12	1 1	23 35	2 39	2 24	2 39	23 24	17 7	4 0					
M 12	4 3	14 19	3 5	8 30	1 49	17 29	1 52	10 45	3 23	14 32	1 17	10 49	2 14	19 18	0 15	8 12	1 1	23 35	2 39	2 23	2 38	23 26	17 7	4 0					
T 13	3 40	8 30	2 3	7 46	1 48	17 20	1 46	10 47	3 22	14 35	1 17	10 51	2 14	19 18	0 15	8 13	1 1	23 35	2 39	2 22	2 36	23 28	17 7	4 0					
W 14	3 17	2 28	0 55	7 0	1 47	17 10	1 41	10 49	3 21	14 37	1 17	10 53	2 14	19 18	0 15	8 14	1 2	23 35	2 40	2 22	2 35	23 30	17 6	4 1					
T 15	2 54	3s34	0s14	6 15	1 45	17 0	1 35	10 50	3 20	14 39	1 17	10 55	2 13	19 17	0 15	8 14	1 2	23 35	2 40	2 22	2 34	23 32	17 6	4 1					
F 16	2 31	9 21	1 21	5 28	1 42	16 50	1 30	10 51	3 19	14 40	1 17	10 57	2 13	19 17	0 15	8 15	1 2	23 35	2 40	2 22	2 33	23 34	17 5	4 2					
S 17	2 7	14 43	2 23	4 42	1 39	16 39	1 24	10 52	3 18	14 42	1 17	10 59	2 13	19 17	0 15	8 15	1 2	23 34	2 40	2 23	2 31	23 36	17 5	4 2					
S 18	1 44	19 28	3 19	3 55	1 35	16 27	1 19	10 53	3 17	14 44	1 17	11 2	2 13	19 17	0 15	8 16	1 2	23 34	2 40	2 23	2 30	23 38	17 4	4 2					
M 19	1 21	23 25	4 5	3 7	1 31	16 15	1 14	10 54	3 15	14 46	1 17	11 4	2 13	19 17	0 15	8 17	1 2	23 34	2 40	2 23	2 29	23 40	17 4	4 3					
T 20	0 57	26 23	4 41	2 20	1 27	16 3	1 8	10 54	3 14	14 48	1 16	11 6	2 13	19 16	0 15	8 17	1 2	23 34	2 40	2 24	2 28	23 43	17 3	4 3					
W 21	0 34	28 12	5 5	1 33	1 22	15 50	1 3	10 55	3 13	14 49	1 16	11 8	2 13	19 16	0 15	8 18	1 2	23 34	2 40	2 24	2 26	23 45	17 3	4 3					
T 22	0 10	28 44	5 16	0 46	1 17	15 36	0 58	10 55	3 11	14 51	1 16	11 10	2 12	19 16	0 15	8 18	1 2	23 34	2 41	2 24	2 25	23 47	17 2	4 4					
F 23	0s13	27 52	5 14	0s 2	1 12	15 22	0 53	10 54	3 10	14 52	1 16	11 13	2 12	19 16	0 15	8 19	1 2	23 34	2 41	2 24	2 24	23 49	17 2	4 4					
S 24	0 37	25 37	4 56	0 48	1 6	15 8	0 48	10 54	3 8	14 54	1 16	11 15	2 12	19 16	0 15	8 20	1 1	23 34	2 41	2 24	2 23	23 51	17 1	4 5					
S 25	1 0	22 1	4 23	1 35	1 1	14 53	0 43	10 53	3 6	14 55	1 16	11 17	2 12	19 15	0 15	8 20	1 1	23 34	2 41	2 23	2 21	23 53	17 1	4 5					
M 26	1 24	17 13	3 36	2 21	0 55	14 38	0 38	10 53	3 4	14 57	1 16	11 19	2 12	19 15	0 15	8 21	1 1	23 34	2 41	2 23	2 20	23 55	17 0	4 5					
T 27	1 47	11 26	2 35	3 8	0 49	14 22	0 33	10 52	3 3	14 58	1 16	11 22	2 12	19 15	0 15	8 21	1 1	23 34	2 41	2 23	2 19	23 57	17 0	4 6					
W 28	2 11	4 56	1 23	3 53	0 42	14 6	0 28	10 50	3 1	15 0	1 16	11 24	2 12	19 14	0 15	8 22	1 1	23 34	2 41	2 23	2 17	23 59	16 59	4 6					
T 29	2 34	1n58	0 5	4 39	0 36	13 50	0 23	10 49	2 59	15 9	1 16	11 26	2 12	19 14	0 15	8 22	1 1	23 34	2 41	2 23	2 16	24 1	16 58	4 6					
F 30	2s57	8n54	1n15	5s23	0n29	13n32	0s18	10n47	2s56	15s 1	1s16	11s28	2n11	19n14	0s15	8s23	1s 1	23n34	2n42	2n23	2n15	24s 3	16n58	4s 6					

ASTRODIENST EPHEMERIS for the year 1689
geocentric

OCTOBER 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
S 1	0 41 25	8♌25'29	4♋28	16♌27	24♏15	5°R52	23°R 4	6♌ 6	26°R44	11°R 1	26♌20	6°R 0	5°Y36	29♌17	4°R 6	S 1
S 2	0 45 22	9°24'40	19°15	18° 5	25°22	5♋39	23≈ 0	6°13	26♋43	11♋ 0	26°21	5°Y59	5°33	29°24	4♌ 4	S 2
M 3	0 49 18	10°23'53	3♌56	19°43	26°29	5°26	22°57	6°19	26°41	10°59	26°22	5°59	5°30	29°31	4° 3	M 3
T 4	0 53 15	11°23'09	18°27	21°20	27°36	5°11	22°54	6°26	26°40	10°57	26°22	5°59	5°26	29°37	4° 1	T 4
W 5	0 57 11	12°22'28	2♌43	22°56	28°43	4°57	22°52	6°33	26°38	10°56	26°23	5°58	5°23	29°44	3°59	W 5
T 6	1 1 8	13°21'49	16°42	24°31	29°51	4°41	22°49	6°40	26°37	10°55	26°23	5°D58	5°20	29°51	3°58	T 6
F 7	1 5 4	14°21'12	0♏23	26° 6	0♐58	4°25	22°47	6°46	26°35	10°53	26°24	5°58	5°17	29°57	3°56	F 7
S 8	1 9 1	15°20'37	13°46	27°40	2° 6	4° 8	22°45	6°53	26°33	10°52	26°24	5°59	5°14	0♌ 4	3°54	S 8
S 9	1 12 57	16°20'05	26°53	29°13	3°14	3°51	22°43	7° 0	26°32	10°51	26°25	6° 0	5°11	0°11	3°52	S 9
M10	1 16 54	17°19'34	9♐44	0♌46	4°23	3°33	22°41	7° 7	26°30	10°49	26°25	6° 1	5° 7	0°17	3°50	M10
T 11	1 20 51	18°19'06	22°22	2°18	5°31	3°14	22°40	7°14	26°28	10°48	26°26	6° 2	5° 4	0°24	3°48	T 11
W12	1 24 47	19°18'40	4♌49	3°49	6°40	2°56	22°38	7°21	26°26	10°47	26°26	6°R 2	5° 1	0°31	3°46	W12
T 13	1 28 44	20°18'17	17° 5	5°20	7°49	2°36	22°37	7°28	26°24	10°46	26°26	6° 2	4°58	0°38	3°44	T 13
F 14	1 32 40	21°17'55	29°11	6°50	8°58	2°17	22°36	7°35	26°22	10°45	26°27	6° 1	4°55	0°44	3°41	F 14
S 15	1 36 37	22°17'35	11♌11	8°19	10° 7	1°57	22°35	7°42	26°21	10°44	26°27	5°59	4°51	0°51	3°39	S 15
S 16	1 40 33	23°17'18	23° 5	9°48	11°16	1°37	22°35	7°49	26°19	10°42	26°27	5°56	4°48	0°58	3°37	S 16
M17	1 44 30	24°17'02	4♌55	11°16	12°26	1°17	22°35	7°56	26°17	10°41	26°28	5°53	4°45	1° 4	3°34	M17
T 18	1 48 26	25°16'48	16°45	12°43	13°35	0°56	22°D35	8° 3	26°15	10°40	26°28	5°50	4°42	1°11	3°32	T 18
W19	1 52 23	26°16'36	28°38	14°10	14°45	0°36	22°35	8°10	26°12	10°39	26°28	5°47	4°39	1°18	3°29	W19
T 20	1 56 20	27°16'26	10♌37	15°36	15°55	0°15	22°35	8°17	26°10	10°38	26°28	5°45	4°36	1°24	3°27	T 20
F 21	2 0 16	28°16'17	22°47	17° 1	17° 5	29°Y55	22°35	8°24	26° 8	10°37	26°29	5°D44	4°32	1°31	3°24	F 21
S 22	2 4 13	29°16'10	5≈12	18°25	18°15	29°34	22°36	8°31	26° 6	10°36	26°29	5°44	4°29	1°38	3°22	S 22
S 23	2 8 9	0♌16'05	17°56	19°49	19°26	29°14	22°37	8°39	26° 4	10°35	26°29	5°45	4°26	1°45	3°19	S 23
M24	2 12 6	1°16'01	1♋ 4	21°12	20°36	28°54	22°38	8°46	26° 2	10°34	26°29	5°47	4°23	1°51	3°16	M24
T 25	2 16 2	2°15'59	14°38	22°34	21°47	28°34	22°40	8°53	25°59	10°33	26°29	5°48	4°20	1°58	3°13	T 25
W26	2 19 59	3°15'58	28°40	23°54	22°58	28°14	22°41	9° 0	25°57	10°33	26°29	5°R50	4°17	2° 5	3°11	W26
T 27	2 23 55	4°16'00	13°Y 8	25°14	24° 9	27°55	22°43	9° 7	25°55	10°32	26°R29	5°49	4°13	2°11	3° 8	T 27
F 28	2 27 52	5°16'03	27°58	26°33	25°20	27°36	22°45	9°14	25°53	10°31	26°29	5°48	4°10	2°18	3° 5	F 28
S 29	2 31 48	6°16'08	13♋ 3	27°50	26°31	27°17	22°47	9°22	25°50	10°30	26°29	5°45	4° 7	2°25	3° 2	S 29
S 30	2 35 45	7°16'14	28°14	29° 6	27°42	26°59	22°49	9°29	25°48	10°30	26°29	5°41	4° 4	2°31	2°59	S 30
M31	2 39 42	8♌16'23	13♌20	0♌21	28♐53	26°Y42	22≈52	9♌36	25♋46	10♋29	26♌29	5°Y36	4°Y 1	2♌38	2♌56	M31

Day	☉	☾		♊		♋		♌		♍		♎		♏		♐		♑		♒		♓		♈	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	3s21	15n25	2n32	6s 8	0n23	13n15	0s13	10n46	2s54	15s 3	1s15	11s31	2n11	19n13	0s15	8s24	1s 1	23n34	2n42	2n23	2n14	24s 5	16n57	4s 7	
S 2	3 44	21 3	3 38	6 52	0 16	12 57	0 9	10 44	2 52	15 3	1 15	11 33	2 11	19 13	0 15	8 24	1 1	23 34	2 42	2 23	2 12	24 7	16 57	4 8	
M 3	4 7	25 23	4 29	7 35	0 9	12 39	0 4	10 41	2 49	15 4	1 15	11 35	2 11	19 13	0 15	8 25	1 1	23 34	2 42	2 23	2 11	24 9	16 56	4 8	
T 4	4 31	28 0	5 2	8 18	0 2	12 20	0n 0	10 39	2 47	15 5	1 15	11 38	2 11	19 12	0 15	8 25	1 1	23 34	2 42	2 23	2 10	24 11	16 55	4 8	
W 5	4 54	28 44	5 17	9 0	0s 5	12 1	0 5	10 37	2 44	15 6	1 15	11 40	2 11	19 12	0 15	8 26	1 1	23 34	2 42	2 22	2 9	24 13	16 55	4 9	
T 6	5 17	27 35	5 12	9 42	0 12	11 41	0 9	10 34	2 42	15 7	1 15	11 42	2 11	19 12	0 15	8 26	1 1	23 34	2 42	2 22	2 7	24 15	16 54	4 9	
F 7	5 40	24 48	4 49	10 23	0 19	11 21	0 13	10 31	2 39	15 7	1 15	11 45	2 11	19 11	0 15	8 27	1 1	23 34	2 42	2 23	2 6	24 17	16 53	4 9	
S 8	6 3	20 43	4 11	11 4	0 26	11 1	0 18	10 28	2 36	15 8	1 15	11 47	2 11	19 11	0 15	8 27	1 1	23 34	2 43	2 23	2 5	24 19	16 53	4 10	
S 9	6 26	15 43	3 20	11 44	0 33	10 40	0 22	10 25	2 33	15 8	1 14	11 49	2 10	19 11	0 15	8 28	1 1	23 34	2 43	2 23	2 4	24 21	16 52	4 10	
M10	6 49	10 6	2 21	12 23	0 40	10 19	0 26	10 22	2 30	15 9	1 14	11 52	2 10	19 10	0 15	8 28	1 1	23 34	2 43	2 24	2 2	24 23	16 51	4 10	
T 11	7 12	4 11	1 15	13 1	0 46	9 58	0 30	10 19	2 27	15 9	1 14	11 54	2 10	19 10	0 15	8 28	1 1	23 34	2 43	2 24	2 1	24 25	16 51	4 11	
W12	7 34	1s49	0 7	13 39	0 53	9 36	0 34	10 15	2 24	15 10	1 14	11 56	2 10	19 9	0 15	8 29	1 1	23 34	2 43	2 24	2 0	24 27	16 50	4 11	
T 13	7 57	7 39	1s 1	14 16	1 0	9 14	0 37	10 12	2 21	15 10	1 14	11 59	2 10	19 9	0 15	8 29	1 1	23 34	2 43	2 24	1 59	24 28	16 49	4 11	
F 14	8 19	13 9	2 5	14 52	1 7	8 52	0 41	10 8	2 18	15 10	1 14	12 1	2 10	19 8	0 15	8 30	1 1	23 35	2 43	2 24	1 57	24 30	16 48	4 12	
S 15	8 42	18 6	3 2	15 28	1 13	8 29	0 45	10 4	2 14	15 10	1 14	12 3	2 10	19 8	0 15	8 30	1 1	23 35	2 44	2 23	1 56	24 32	16 48	4 12	
S 16	9 4	22 18	3 51	16 2	1 20	8 6	0 48	10 1	2 11	15 10	1 13	12 5	2 10	19 7	0 15	8 31	1 1	23 35	2 44	2 22	1 55	24 34	16 47	4 12	
M17	9 26	25 35	4 30	16 36	1 26	7 42	0 52	9 57	2 7	15 10	1 13	12 8	2 10	19 7	0 15	8 31	1 1	23 35	2 44	2 21	1 53	24 36	16 46	4 13	
T 18	9 48	27 45	4 58	17 9	1 33	7 19	0 55	9 53	2 4	15 10	1 13	12 10	2 10	19 7	0 15	8 31	1 1	23 35	2 44	2 19	1 52	24 38	16 46	4 13	
W19	10 10	28 41	5 12	17 41	1 39	6 55	0 59	9 49	2 0	15 10	1 13	12 12	2 10	19 6	0 15	8 32	1 1	23 35	2 44	2 18	1 51	24 40	16 45	4 13	
T 20	10 31	28 16	5 14	18 12	1 45	6 31	1 2	9 46	1 57	15 9	1 13	12 15	2 10	19 6	0 15	8 32	1 1	23 35	2 44	2 17	1 50	24 42	16 44	4 13	
F 21	10 53	26 30	5 1	18 43	1 51	6 6	1 5	9 42	1 53	15 9	1 13	12 17	2 10	19 5	0 15	8 33	1 1	23 35	2 44	2 17	1 48	24 44	16 43	4 14	
S 22	11 14	23 26	4 34	19 12	1 56	5 42	1 8	9 38	1 49	15 9	1 12	12 19	2 10	19 5	0 15	8 33	1 1	23 35	2 45	2 17	1 47	24 45	16 42	4 14	
S 23	11 35	19 11	3 53	19 40	2 2	5 17	1 11	9 34	1 46	15 8	1 12	12 22	2 9	19 4	0 15	8 33	1 1	23 35	2 45	2 17	1 46	24 47	16 42	4 14	
M24	11 56	13 54	2 59	20 8	2 7	4 52	1 14	9 31	1 42	15 8	1 12	12 24	2 9	19 4	0 15	8 34	1 1	23 35	2 45	2 18	1 45	24 49	16 41	4 15	
T 25	12 17	7 48	1 54	20 34	2 16	4 26	1 16	9 27	1 38	15 7	1 12	12 26	2 9	19 3	0 15	8 34	1 1	23 36	2 45	2 19	1 43	24 51	16 40	4 15	
W26	12 38	1 8	0 39	20 59	2 17	4 1	1 19	9 24	1 34	15 7	1 12	12 29	2 9	19 2	0 15	8 34	1 1	23 36	2 45	2 19	1 42	24 53	16 39	4 15	
T 27	12 58	5n48	0n40	21 23	2 21	3 35	1 22	9 21	1 30	15 6	1 12	12 31	2 9	19 2	0 15	8 34	1 1	23 36	2 45	2 19	1 41	24 55	16 38	4 15	
F 28	13 18	12 37	1 58	21 46	2 25	3 9	1 24	9 17	1 27	15 5	1 12	12 33	2 9	19 1	0 15	8 35	1 1	23 36	2 45	2 18	1 40	24 57	16 38	4 16	
S 29	13 38	18 48	3 10	22 8	2 29	2 43	1 27	9 14	1 23	15 4	1 11	12 36	2 9	19 1	0 15	8 35	1 1	23 36	2 46	2 17	1 38	24 58	16 37	4 16	
S 30	13 58	23 50	4 8	22 28	2 32	2 16	1 29	9 11	1 19	15 3	1 11	12 38	2 9	19 0	0 15	8 35	1 1	23 36	2 46	2 16	1 37	25 0	16 36	4 16	
M31	14s17	27n13	4n49	22s47	2s35	1n50	1n31	9n 8	1s15	15s 2	1s11	12s40	2n 9	19n 0	0s15	8s36	1s 1	23n36	2n46	2n14	1n36	25s 2	16n35	4s16	

ASTRODIENST EPHEMERIS for the year 1689

geocentric

NOVEMBER 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	2 43 38	9♍16'34	28♏13	1♊34	0♈5	26°R24	22°54	9♍43	25°R43	10°R28	26°R29	5°R32	3°V57	2♊45	2°R53	T 1
W 2	2 47 35	10°16'47	12♏45	2°45	1°16	26°V 8	22°57	9°50	25♈41	10°R27	26♏29	5°V28	3°54	2°52	2♏50	W 2
T 3	2 51 31	11°17'02	26°53	3°54	2°28	25°52	23° 0	9°58	25°39	10°27	26°28	5°25	3°51	2°58	2°47	T 3
F 4	2 55 28	12°17'19	10♏35	5° 0	3°40	25°36	23° 4	10° 5	25°36	10°26	26°28	5°D24	3°48	3° 5	2°43	F 4
S 5	2 59 24	13°17'38	23°53	6° 4	4°52	25°22	23° 7	10°12	25°34	10°26	26°28	5°25	3°45	3°12	2°40	S 5
S 6	3 3 21	14°17'59	6♏48	7° 5	6° 4	25° 8	23°11	10°19	25°31	10°25	26°28	5°26	3°42	3°18	2°37	S 6
M 7	3 7 18	15°18'22	19°26	8° 3	7°16	24°54	23°15	10°26	25°29	10°25	26°28	5°28	3°38	3°25	2°34	M 7
T 8	3 11 14	16°18'47	1♏48	8°57	8°28	24°41	23°19	10°34	25°26	10°24	26°27	5°R29	3°35	3°32	2°30	T 8
W 9	3 15 11	17°19'14	14° 0	9°47	9°41	24°29	23°23	10°41	25°24	10°24	26°27	5°28	3°32	3°38	2°27	W 9
T 10	3 19 7	18°19'42	26° 3	10°32	10°53	24°18	23°27	10°48	25°21	10°23	26°27	5°26	3°29	3°45	2°24	T 10
F 11	3 23 4	19°20'12	8♏ 0	11°12	12° 6	24° 8	23°32	10°55	25°19	10°23	26°26	5°21	3°26	3°52	2°20	F 11
S 12	3 27 0	20°20'44	19°53	11°46	13°18	23°58	23°37	11° 2	25°16	10°23	26°26	5°15	3°23	3°59	2°17	S 12
S 13	3 30 57	21°21'18	1♊45	12°13	14°31	23°49	23°42	11° 9	25°14	10°23	26°25	5° 6	3°19	4° 5	2°14	S 13
M14	3 34 53	22°21'53	13°35	12°33	15°44	23°41	23°47	11°16	25°11	10°22	26°25	4°57	3°16	4°12	2°10	M14
T 15	3 38 50	23°22'29	25°27	12°45	16°56	23°34	23°52	11°24	25° 9	10°22	26°24	4°47	3°13	4°19	2° 7	T 15
W16	3 42 47	24°23'07	7♏22	12°R48	18° 9	23°28	23°58	11°31	25° 6	10°22	26°24	4°38	3°10	4°25	2° 3	W16
T 17	3 46 43	25°23'46	19°23	12°42	19°22	23°22	24° 3	11°38	25° 4	10°22	26°23	4°30	3° 7	4°32	2° 0	T 17
F 18	3 50 40	26°24'26	1♏32	12°25	20°35	23°17	24° 9	11°45	25° 1	10°22	26°23	4°25	3° 3	4°39	1°56	F 18
S 19	3 54 36	27°25'08	13°54	11°58	21°49	23°14	24°15	11°52	24°59	10°21	26°22	4°22	3° 0	4°46	1°43	S 19
S 20	3 58 33	28°25'50	26°32	11°20	23° 2	23°10	24°22	11°59	24°56	10°21	26°22	4°D20	2°57	4°52	1°49	S 20
M21	4 2 29	29°26'34	9♏31	10°31	24°15	23° 8	24°28	12° 6	24°54	10°D21	26°21	4°21	2°54	4°59	1°46	M21
T 22	4 6 26	0♊27'18	22°55	9°32	25°28	23° 7	24°35	12°13	24°51	10°21	26°21	4°22	2°51	5° 6	1°42	T 22
W23	4 10 22	1°28'04	6°V46	8°24	26°42	23°D 6	24°41	12°20	24°49	10°21	26°20	4°R22	2°48	5°12	1°39	W23
T 24	4 14 19	2°28'50	21° 6	7° 9	27°55	23° 6	24°48	12°27	24°46	10°22	26°19	4°21	2°44	5°19	1°35	T 24
F 25	4 18 16	3°29'38	5♏53	5°49	29° 9	23° 7	24°55	12°34	24°44	10°22	26°18	4°17	2°41	5°26	1°32	F 25
S 26	4 22 12	4°30'27	21° 1	4°27	0♏22	23° 9	25° 2	12°40	24°41	10°22	26°18	4°11	2°38	5°33	1°28	S 26
S 27	4 26 9	5°31'16	6♏20	3° 5	1°36	23°12	25°10	12°47	24°39	10°22	26°17	4° 3	2°35	5°39	1°25	S 27
M28	4 30 5	6°32'07	21°41	1°45	2°49	23°15	25°17	12°54	24°36	10°22	26°16	3°53	2°32	5°46	1°21	M28
T 29	4 34 2	7°33'00	6♏51	0°32	4° 3	23°19	25°25	13° 1	24°34	10°23	26°15	3°43	2°29	5°53	1°18	T 29
W30	4 37 58	8♊33'53	21♏41	29♏26	5♏17	23°V24	25°53	13♏ 8	24♏31	10°R23	26♏15	3°V35	2°V25	5♊59	1♏14	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	14s37	28n37	5n 9	23s 5	2s38	1n23	1n33	9n 6	1s11	15s 1	1s11	12s43	2n 9	18n59	0s15	8s36	1s 1	23n37	2n46	2n12	1n35	25s 4	16n34	4s17			
W 2	14 56	28 0	5 9	23 22	2 40	0 57	1 35	9 3	1 8	15 0	1 11	12 45	2 9	18 59	0 15	8 36	1 1	23 37	2 46	2 10	1 33	25 6	16 34	4 17			
T 3	15 15	25 34	4 50	23 37	2 42	0 30	1 37	9 1	1 4	14 59	1 11	12 47	2 9	18 58	0 15	8 36	1 1	23 37	2 46	2 9	1 32	25 7	16 33	4 17			
F 4	15 33	21 42	4 15	23 51	2 43	0 3	1 39	8 59	1 0	14 58	1 10	12 49	2 9	18 58	0 15	8 36	1 1	23 37	2 46	2 9	1 31	25 9	16 32	4 17			
S 5	15 51	16 50	3 27	24 3	2 44	0s24	1 41	8 57	0 57	14 56	1 10	12 52	2 9	18 57	0 15	8 37	1 1	23 37	2 47	2 9	1 30	25 11	16 31	4 18			
S 6	16 9	11 21	2 30	24 13	2 43	0 51	1 42	8 55	0 53	14 55	1 10	12 54	2 9	18 56	0 15	8 37	1 1	23 37	2 47	2 10	1 28	25 13	16 30	4 18			
M 7	16 27	5 31	1 26	24 22	2 43	1 18	1 44	8 54	0 49	14 54	1 10	12 56	2 9	18 56	0 15	8 37	1 1	23 38	2 47	2 10	1 27	25 14	16 30	4 18			
T 8	16 45	0s25	0 20	24 29	2 41	1 45	1 45	8 52	0 46	14 52	1 10	12 58	2 9	18 55	0 15	8 37	1 1	23 38	2 47	2 11	1 26	25 16	16 29	4 18			
W 9	17 2	6 14	0s46	24 34	2 39	2 13	1 46	8 51	0 42	14 51	1 10	13 1	2 9	18 55	0 15	8 37	1 1	23 38	2 47	2 11	1 24	25 18	16 28	4 18			
T 10	17 19	11 46	1 49	24 38	2 35	2 40	1 48	8 50	0 39	14 49	1 9	13 3	2 9	18 54	0 15	8 37	1 1	23 38	2 47	2 10	1 23	25 20	16 27	4 19			
F 11	17 36	16 50	2 47	24 39	2 31	3 7	1 49	8 50	0 35	14 47	1 9	13 5	2 9	18 53	0 15	8 37	1 1	23 38	2 47	2 8	1 22	25 21	16 26	4 19			
S 12	17 52	21 13	3 36	24 38	2 25	3 35	1 50	8 49	0 32	14 46	1 9	13 7	2 9	18 53	0 15	8 38	1 1	23 39	2 47	2 5	1 21	25 23	16 25	4 19			
S 13	18 8	24 44	4 17	24 36	2 19	4 2	1 51	8 49	0 29	14 44	1 9	13 9	2 9	18 52	0 15	8 38	1 1	23 39	2 48	2 2	1 19	25 25	16 25	4 19			
M14	18 24	27 12	4 46	24 30	2 11	4 29	1 52	8 49	0 25	14 42	1 9	13 12	2 9	18 52	0 15	8 38	1 1	23 39	2 48	1 58	1 18	25 27	16 24	4 19			
T 15	18 39	28 26	5 2	24 23	2 2	4 56	1 52	8 50	0 22	14 40	1 9	13 14	2 9	18 51	0 15	8 38	1 1	23 39	2 48	1 54	1 17	25 28	16 23	4 19			
W16	18 54	28 22	5 6	24 12	1 51	5 24	1 53	8 50	0 19	14 38	1 9	13 16	2 9	18 50	0 15	8 38	1 1	23 40	2 48	1 51	1 16	25 30	16 22	4 20			
T 17	19 9	26 58	4 56	23 59	1 39	5 51	1 54	8 51	0 16	14 36	1 8	13 18	2 9	18 50	0 14	8 38	1 1	23 40	2 48	1 48	1 14	25 32	16 21	4 20			
F 18	19 23	24 17	4 33	23 44	1 25	6 18	1 54	8 52	0 13	14 34	1 8	13 20	2 9	18 49	0 14	8 38	1 1	23 40	2 48	1 45	1 13	25 33	16 20	4 20			
S 19	19 37	20 28	3 57	23 25	1 10	6 45	1 54	8 54	0 10	14 32	1 8	13 22	2 9	18 49	0 14	8 38	1 1	23 40	2 48	1 44	1 12	25 35	16 20	4 20			
S 20	19 51	15 39	3 8	23 3	0 53	7 12	1 55	8 55	0 7	14 30	1 8	13 24	2 9	18 48	0 14	8 38	1 1	23 40	2 49	1 44	1 11	25 37	16 19	4 20			
M21	20 4	10 0	2 9	22 38	0 35	7 38	1 55	8 57	0 4	14 27	1 8	13 26	2 9	18 47	0 14	8 38	1 1	23 41	2 49	1 44	1 9	25 38	16 18	4 20			
T 22	20 17	3 45	1 1	22 10	0 15	8 5	1 55	8 59	0 1	14 25	1 8	13 29	2 9	18 47	0 14	8 38	1 1	23 41	2 49	1 44	1 8	25 40	16 17	4 20			
W23	20 29	2n53	0n13	21 40	0n 5	8 31	1 55	9 1	0n 2	14 23	1 7	13 31	2 9	18 46	0 14	8 38	1 0	23 41	2 49	1 44	1 7	25 42	16 16	4 21			
T 24	20 42	9 37	1 28	21 8	0 25	8 58	1 55	9 4	0 5	14 20	1 7	13 33	2 9	18 46	0 14	8 38	1 0	23 41	2 49	1 44	1 5	25 43	16 16	4 21			
F 25	20 53	16 1	2 40	20 34	0 46	9 24	1 55	9 7	0 7	14 18	1 7	13 35	2 9	18 45	0 14	8 38	1 0	23 42	2 49	1 42	1 4	25 45	16 15	4 21			
S 26	21 5	21 36	3 42	20 0	1 5	9 50	1 55	9 10	0 10	14 15	1 7	13 37	2 10	18 45	0 14	8 38	1 0	23 42	2 49	1 40	1 3	25 46	16 14	4 21			
S 27	21 16	25 49	4 29	19 26	1 24	10 16	1 54	9 13	0 12	14 12	1 7	13 39	2 10	18 44	0 14	8 37	1 0	23 42	2 49	1 37	1 2	25 48	16 13	4 21			
M28	21 26	28 9	4 56	18 53	1 42	10 41	1 54	9 17	0 15	14 10	1 7	13 41	2 10	18 43	0 14	8 37	1 0	23 43	2 50	1 33	1 0	25 50	16 12	4 21			
T 29	21 37	28 21	5 3	18 23	1 57	11 7	1 53	9 21	0 17	14 7	1 7	13 43	2 10	18 43	0 14	8 37	1 0	23 43	2 50	1 29	0 59	25 51	16 12	4 21			
W30	21s46	26n29	4n48	17s56	2n11	11s32	1n53	9n25	0n20	14s 4	1s 6	13s45	2n10	18n42	0s14	8s37	1s 0	23n43	2n50	1n25	0n58	25s53	16n11	4s21			

ASTRODIENST EPHEMERIS for the year 1689
geocentric

DECEMBER 1689 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
T 1	4 41 55	9♌34'48	6♏ 3	28°R30	6♏31	23°V29	25°A41	13♏14	24°R29	10♌23	26°R14	3°R28	2°V22	6♌ 6	1°R11	T 1
F 2	4 45 51	10°35'44	19°55	27♏44	7°45	23°36	25°49	13°21	24♌27	10°24	26♏13	3°V24	2°19	6°13	1♏ 8	F 2
S 3	4 49 48	11°36'41	3♏18	27°10	8°59	23°43	25°57	13°28	24°24	10°24	26°12	3°22	2°16	6°19	1° 4	S 3
S 4	4 53 45	12°37'39	16°14	26°47	10°13	23°50	26° 5	13°34	24°22	10°24	26°11	3°D22	2°13	6°26	1° 1	S 4
M 5	4 57 41	13°38'39	28°47	26°36	11°27	23°58	26°14	13°41	24°20	10°25	26°10	3°R22	2° 9	6°33	0°57	M 5
T 6	5 1 38	14°39'40	11♏ 4	26°D34	12°41	24° 7	26°23	13°47	24°17	10°25	26° 9	3°22	2° 6	6°40	0°54	T 6
W 7	5 5 34	15°40'41	23° 7	26°43	13°55	24°17	26°32	13°54	24°15	10°26	26° 8	3°20	2° 3	6°46	0°51	W 7
T 8	5 9 31	16°41'44	5♏ 3	27° 1	15° 9	24°27	26°40	14° 0	24°13	10°26	26° 7	3°15	2° 0	6°53	0°47	T 8
F 9	5 13 27	17°42'48	16°54	27°28	16°23	24°38	26°50	14° 7	24°10	10°27	26° 6	3° 8	1°57	7° 0	0°44	F 9
S 10	5 17 24	18°43'53	28°44	28° 2	17°37	24°50	26°59	14°13	24° 8	10°28	26° 5	2°58	1°54	7° 6	0°41	S 10
S 11	5 21 20	19°44'58	10♌35	28°42	18°52	25° 2	27° 8	14°19	24° 6	10°28	26° 4	2°45	1°50	7°13	0°37	S 11
M12	5 25 17	20°46'05	22°28	29°29	20° 6	25°15	27°18	14°26	24° 4	10°29	26° 3	2°30	1°47	7°20	0°34	M12
T 13	5 29 14	21°47'11	4♏25	0♌20	21°20	25°28	27°27	14°32	24° 2	10°30	26° 2	2°15	1°44	7°27	0°31	T 13
W14	5 33 10	22°48'19	16°27	1°17	22°35	25°42	27°37	14°38	23°59	10°31	26° 1	2° 1	1°41	7°33	0°28	W14
T 15	5 37 7	23°49'27	28°35	2°17	23°49	25°57	27°47	14°44	23°57	10°31	26° 0	1°49	1°38	7°40	0°24	T 15
F 16	5 41 3	24°50'35	10♏51	3°21	25° 3	26°12	27°57	14°50	23°55	10°32	25°59	1°39	1°35	7°47	0°21	F 16
S 17	5 45 0	25°51'43	23°17	4°28	26°18	26°27	28° 7	14°56	23°53	10°33	25°58	1°33	1°31	7°53	0°18	S 17
S 18	5 48 56	26°52'52	5♌57	5°38	27°32	26°43	28°17	15° 2	23°51	10°34	25°57	1°30	1°28	8° 0	0°15	S 18
M19	5 52 53	27°54'01	18°52	6°50	28°47	27° 0	28°28	15° 8	23°49	10°35	25°56	1°28	1°25	8° 7	0°12	M19
T 20	5 56 50	28°55'09	2°V 8	8° 5	0♌ 1	27°17	28°38	15°14	23°47	10°36	25°55	1°28	1°22	8°14	0° 9	T 20
W21	6 0 46	29°56'18	15°47	9°21	1°16	27°35	28°49	15°20	23°45	10°37	25°53	1°28	1°19	8°20	0° 6	W21
T 22	6 4 43	0♏57'27	29°52	10°39	2°30	27°53	29° 0	15°26	23°44	10°38	25°52	1°26	1°15	8°27	0° 4	T 22
F 23	6 8 39	1°58'36	14♌22	11°58	3°45	28°12	29°10	15°31	23°42	10°39	25°51	1°22	1°12	8°34	0° 1	F 23
S 24	6 12 36	2°59'45	29°14	13°19	5° 0	28°31	29°21	15°37	23°40	10°40	25°50	1°15	1° 9	8°40	29♌58	S 24
S 25	6 16 32	4° 0'54	14♏23	14°41	6°14	28°50	29°32	15°43	23°38	10°41	25°49	1° 5	1° 6	8°47	29°55	S 25
M26	6 20 29	5° 2'03	29°38	16° 4	7°29	29°10	29°44	15°48	23°37	10°42	25°47	0°53	1° 3	8°54	29°52	M26
T 27	6 24 25	6° 3'12	14♏48	17°28	8°44	29°30	29°55	15°54	23°35	10°44	25°46	0°41	1° 0	9° 1	29°50	T 27
W28	6 28 22	7° 4'21	29°43	18°52	9°58	29°51	0♌ 6	15°59	23°33	10°45	25°45	0°30	0°56	9° 7	29°47	W28
T 29	6 32 19	8° 5'30	14♏13	20°18	11°13	0♌12	0°18	16° 4	23°32	10°46	25°44	0°22	0°53	9°14	29°45	T 29
F 30	6 36 15	9° 6'39	28°15	21°44	12°28	0°33	0°29	16°10	23°30	10°47	25°42	0°16	0°50	9°21	29°42	F 30
S 31	6 40 12	10♏ 7'49	11♏47	23♌11	13♌42	0♌55	0♌41	16♏15	23♌29	10♌49	25♏41	0°V13	0°V47	9♌27	29♌40	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	21s56	22n55	4n16	17s33	2n22	11s57	1n52	9n29	0n22	14s 1	1s 6	13s47	2n10	18n42	0s14	8s37	1s 0	23n43	2n50	1n23	0n57	25s55	16n10	4s21	
F 2	22 5	18 11	3 29	17 14	2 31	12 22	1 51	9 33	0 24	13 59	1 6	13 49	2 10	18 41	0 14	8 37	1 0	23 44	2 50	1 21	0 55	25 56	16 9	4 21	
S 3	22 13	12 41	2 33	17 0	2 38	12 46	1 50	9 38	0 26	13 56	1 6	13 50	2 10	18 40	0 14	8 37	1 0	23 44	2 50	1 20	0 54	25 58	16 9	4 21	
S 4	22 21	6 49	1 30	16 50	2 43	13 10	1 50	9 43	0 29	13 53	1 6	13 52	2 10	18 40	0 14	8 36	1 0	23 44	2 50	1 20	0 53	25 59	16 8	4 21	
M 5	22 29	0 51	0 24	16 45	2 46	13 34	1 49	9 48	0 31	13 50	1 6	13 54	2 10	18 39	0 14	8 36	1 0	23 45	2 50	1 20	0 52	26 1	16 7	4 21	
T 6	22 36	5s 0	0s41	16 43	2 47	13 58	1 48	9 53	0 33	13 46	1 6	13 56	2 10	18 39	0 14	8 36	1 0	23 45	2 51	1 20	0 50	26 2	16 7	4 21	
W 7	22 43	10 36	1 43	16 46	2 46	14 21	1 46	9 58	0 35	13 43	1 6	13 58	2 10	18 38	0 14	8 36	1 0	23 45	2 51	1 20	0 49	26 4	16 6	4 21	
T 8	22 49	15 44	2 39	16 52	2 44	14 44	1 45	10 4	0 37	13 40	1 5	14 0	2 10	18 38	0 14	8 36	1 0	23 45	2 51	1 18	0 48	26 5	16 5	4 21	
F 9	22 55	20 15	3 29	17 0	2 42	15 6	1 44	10 9	0 38	13 37	1 5	14 2	2 10	18 37	0 14	8 35	1 0	23 46	2 51	1 15	0 47	26 7	16 5	4 21	
S 10	23 0	23 57	4 9	17 12	2 38	15 29	1 43	10 15	0 40	13 34	1 5	14 3	2 11	18 37	0 14	8 35	1 0	23 46	2 51	1 11	0 45	26 8	16 4	4 21	
S 11	23 5	26 39	4 38	17 25	2 33	15 50	1 41	10 22	0 42	13 30	1 5	14 5	2 11	18 36	0 14	8 35	1 0	23 46	2 51	1 6	0 44	26 10	16 3	4 21	
M12	23 10	28 11	4 55	17 40	2 28	16 12	1 40	10 28	0 44	13 27	1 5	14 7	2 11	18 36	0 14	8 34	1 0	23 47	2 51	1 0	0 43	26 12	16 3	4 21	
T 13	23 14	28 24	4 59	17 57	2 22	16 33	1 38	10 34	0 45	13 23	1 5	14 9	2 11	18 35	0 14	8 34	1 0	23 47	2 51	0 54	0 41	26 13	16 2	4 21	
W14	23 17	27 16	4 50	18 15	2 15	16 53	1 37	10 41	0 47	13 20	1 5	14 10	2 11	18 35	0 14	8 34	1 0	23 47	2 51	0 48	0 40	26 15	16 1	4 21	
T 15	23 20	24 51	4 28	18 34	2 8	17 14	1 35	10 48	0 49	13 16	1 5	14 12	2 11	18 34	0 14	8 34	1 0	23 48	2 52	0 43	0 39	26 16	16 1	4 21	
F 16	23 23	21 17	3 53	18 53	2 1	17 33	1 33	10 55	0 50	13 13	1 4	14 14	2 11	18 34	0 14	8 33	1 0	23 48	2 52	0 40	0 38	26 17	16 0	4 21	
S 17	23 25	16 43	3 7	19 13	1 53	17 53	1 31	11 2	0 52	13 9	1 4	14 15	2 11	18 33	0 14	8 33	1 0	23 48	2 52	0 37	0 36	26 19	15 59	4 21	
S 18	23 27	11 22	2 10	19 33	1 46	18 11	1 30	11 9	0 53	13 6	1 4	14 17	2 11	18 33	0 14	8 32	1 0	23 49	2 52	0 36	0 35	26 20	15 59	4 21	
M19	23 28	5 25	1 6	19 53	1 38	18 30	1 28	11 16	0 55	13 2	1 4	14 19	2 12	18 32	0 14	8 32	1 0	23 49	2 52	0 35	0 34	26 22	15 58	4 21	
T 20	23 29	0n54	0n 3	20 13	1 30	18 48	1 26	11 24	0 56	12 58	1 4	14 20	2 12	18 32	0 14	8 32	1 0	23 49	2 52	0 35	0 33	26 23	15 58	4 21	
W21	23 29	7 22	1 15	20 33	1 22	19 5	1 24	11 31	0 57	12 54	1 4	14 22	2 12	18 31	0 14	8 31	1 0	23 50	2 52	0 35	0 31	26 25	15 57	4 21	
T 22	23 29	13 41	2 24	20 52	1 13	19 22	1 22	11 39	0 59	12 50	1 4	14 23	2 12	18 31	0 14	8 31	1 0	23 50	2 52	0 34	0 30	26 26	15 57	4 21	
F 23	23 28	19 27	3 25	21 11	1 5	19 38	1 20	11 47	1 0	12 47	1 4	14 25	2 12	18 30	0 14	8 30	1 0	23 50	2 52	0 33	0 29	26 28	15 56	4 21	
S 24	23 27	24 10	4 15	21 29	0 57	19 54	1 18	11 55	1 1	12 43	1 4	14 26	2 12	18 30	0 14	8 30	1 0	23 51	2 53	0 30	0 28	26 29	15 56	4 21	
S 25	23 25	27 19	4 47	21 47	0 49	20 9	1 15	12 3	1 2	12 39	1 3	14 28	2 12	18 29	0 14	8 30	1 0	23 51	2 53	0 26	0 26	26 30	15 55	4 21	
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S 31	23s 6	8n38	1n36	23s16	0n 2	21s28	1n 1	12n53	1n 9	12s14	1s 3	14s36	2n13	18n27	0s14	8s27	1s 0	23n53	2n53	0n 5	0n19	26s39	15n52	4s20	