



Astrodienst Ephemeris Tables for the year 1680

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 1680

geocentric

JANUARY 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	6 41 52	10°34'09	29°14'14	29°3'9	28°18'59	20°34'47	0°52'52	4°R27	12°10'9	19°12'12	12°R30	14°R29	14°10'10	22°12'39	12°10'52	M 1
T 2	6 45 48	11°35'21	12°31'18	0°24'24	29°37'21	21°34'05	0°54'48	4°22'22	12°10'10	19°14'12	12°28'28	14°15'15	14°7'7	22°46'46	12°52'52	T 2
W 3	6 49 45	12°36'32	25°38'38	1°36'08	0°15'15	22°21'05	0°55'41	4°17'12	12°10'10	19°15'12	12°27'27	14°1'1	14°4'4	22°52'52	12°53'53	W 3
T 4	6 53 41	13°37'43	9°10'10	2°43'05	2°3'8	0°55'05	0°57'41	4°12'12	12°11'11	19°17'12	12°26'26	13°49'49	14°1'1	22°59'59	12°54'54	T 4
F 5	6 57 38	14°38'54	22°53'53	3°45'13	1°36'36	23°55'55	0°59'41	4°8'8	12°12'12	19°19'12	12°25'25	13°40'40	13°58'58	23°6'6	12°54'54	F 5
S 6	7 1 35	15°40'04	6°43'43	4°40'40	2°19'19	24°42'42	1°1'1	4°3'3	12°12'12	19°21'12	12°23'23	13°33'33	13°54'54	23°12'12	12°55'55	S 6
S 7	7 5 31	16°41'13	20°39'39	5°27'27	3°2'2	25°29'29	1°4'4	3°58'58	12°13'13	19°23'12	12°22'22	13°30'30	13°51'51	23°19'19	12°56'56	S 7
M 8	7 9 28	17°42'22	4°39'39	6°7'7	3°46'46	26°16'16	1°6'6	3°53'53	12°14'14	19°25'12	12°21'21	13°28'28	13°48'48	23°26'26	12°57'57	M 8
T 9	7 13 24	18°43'30	18°41'41	6°38'38	4°32'32	27°3'3	1°9'9	3°48'48	12°15'15	19°27'12	12°20'20	13°28'28	13°45'45	23°32'32	12°58'58	T 9
W10	7 17 21	19°44'38	2°47'47	6°59'59	5°18'18	27°50'50	1°12'12	3°44'44	12°16'16	19°29'12	12°18'18	13°28'28	13°42'42	23°39'39	12°59'59	W10
T 11	7 21 17	20°45'45	16°54'54	7°R9	6°5'5	28°37'37	1°15'15	3°39'39	12°17'17	19°31'12	12°17'17	13°26'26	13°38'38	23°46'46	13°0'0	T 11
F 12	7 25 14	21°46'51	1°11'11	7°8'8	6°53'53	29°24'24	1°18'18	3°34'34	12°18'18	19°33'12	12°16'16	13°21'21	13°35'35	23°52'52	13°1'1	F 12
S 13	7 29 10	22°47'56	15°8'8	6°55'55	7°42'42	0°11'11	1°22'22	3°30'30	12°19'19	19°35'12	12°15'15	13°14'14	13°32'32	23°59'59	13°2'2	S 13
S 14	7 33 7	23°49'01	29°8'8	6°31'31	8°32'32	0°58'58	1°26'26	3°25'25	12°21'21	19°38'12	12°13'13	13°4'4	13°29'29	24°5'5	13°3'3	S 14
M15	7 37 4	24°50'04	12°58'58	5°55'55	9°23'23	1°45'45	1°30'30	3°21'21	12°22'22	19°40'12	12°12'12	12°51'51	13°26'26	24°12'12	13°4'4	M15
T 16	7 41 0	25°51'08	26°35'35	5°9'9	10°14'14	2°33'33	1°34'34	3°17'17	12°23'23	19°42'12	12°11'11	12°39'39	13°23'23	24°19'19	13°6'6	T 16
W17	7 44 57	26°52'10	9°12'12	4°12'12	11°6'6	3°20'20	1°38'38	3°12'12	12°24'24	19°44'12	12°10'10	12°26'26	13°19'19	24°25'25	13°7'7	W17
T 18	7 48 53	27°53'12	22°55'55	3°8'8	11°59'59	4°7'7	1°43'43	3°8'8	12°26'26	19°46'12	12°8'8	12°16'16	13°16'16	24°32'32	13°8'8	T 18
F 19	7 52 50	28°54'13	5°13'13	1°58'58	12°52'52	4°54'54	1°47'47	3°4'4	12°27'27	19°48'12	12°7'7	12°8'8	13°13'13	24°39'39	13°10'10	F 19
S 20	7 56 46	29°55'13	17°58'58	0°43'43	13°47'47	5°42'42	1°52'52	3°0'0	12°29'29	19°50'12	12°6'6	12°2'2	13°10'10	24°45'45	13°11'11	S 20
S 21	8 0 43	0°56'13	0°5'5	29°32'27	14°41'41	6°29'29	1°57'57	2°56'56	12°30'30	19°53'12	12°5'5	12°0'0	13°7'7	24°52'52	13°13'13	S 21
M22	8 4 40	1°57'12	12°1'1	28°11'11	15°37'37	7°16'16	2°3'3	2°52'52	12°32'32	19°55'12	12°4'4	11°D59	13°4'4	24°59'59	13°14'14	M22
T 23	8 8 36	2°58'10	23°50'50	26°58'58	16°33'33	8°3'3	2°8'8	2°48'48	12°34'34	19°57'12	12°2'2	11°59'59	13°0'0	25°5'5	13°16'16	T 23
W24	8 12 33	3°59'08	5°13'13	25°49'49	17°29'29	8°51'51	2°14'14	2°44'44	12°35'35	19°59'12	12°1'1	12°R0	12°57'57	25°12'12	13°18'18	W24
T 25	8 16 29	5°0'05	17°30'30	24°47'47	18°26'26	9°38'38	2°19'19	2°40'40	12°37'37	20°1'1	12°0'0	11°59'59	12°54'54	25°19'19	13°20'20	T 25
F 26	8 20 26	6°1'02	29°32'32	23°52'52	19°24'24	10°26'26	2°25'25	2°36'36	12°39'39	20°4'4	11°59'59	11°56'56	12°51'51	25°25'25	13°21'21	F 26
S 27	8 24 22	7°1'58	11°49'49	23°4'4	20°22'22	11°13'13	2°31'31	2°32'32	12°40'40	20°6'6	11°58'58	11°51'51	12°48'48	25°32'32	13°23'23	S 27
S 28	8 28 19	8°2'52	24°24'24	22°26'26	21°21'21	12°0'0	2°38'38	2°29'29	12°42'42	20°8'8	11°57'57	11°43'43	12°44'44	25°39'39	13°25'25	S 28
M29	8 32 15	9°3'47	7°32'32	21°56'56	22°20'20	12°48'48	2°44'44	2°25'25	12°44'44	20°10'10	11°56'56	11°33'33	12°41'41	25°45'45	13°27'27	M29
T 30	8 36 12	10°4'40	20°39'39	21°34'34	23°19'19	13°35'35	2°51'51	2°22'22	12°46'46	20°13'13	11°54'54	11°22'22	12°38'38	25°52'52	13°29'29	T 30
W31	8 40 9	11°5'32	4°18'18	21°32'32	24°19'19	14°22'22	2°58'58	2°19'19	12°48'48	20°15'15	11°53'53	11°11'11	12°35'35	25°58'58	13°31'31	W31

Delta T = 23.66 sec

Greg. Calendar

FEBRUARY 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	8 44 5	12°6'22	18°15'15	21°D16	25°19'19	15°10'10	3°8'4	2°R15	12°10'50	20°17'17	11°R52	11°R 2	12°12'32	26°12'12	13°33'33	T 1
F 2	8 48 2	13°7'12	2°12'25	21°31'18	26°20'20	15°57'57	3°12'12	2°12'12	12°52'52	20°19'19	11°51'51	10°12'54	12°29'29	26°12'12	13°36'36	F 2
S 3	8 51 58	14°8'00	16°42'42	21°27'27	27°21'21	16°45'45	3°19'19	2°9'9	12°54'54	20°22'22	11°50'50	10°49'49	12°25'25	26°18'18	13°38'38	S 3
S 4	8 55 55	15°8'47	1°10'3	21°43'43	28°22'22	17°32'32	3°26'26	2°6'6	12°56'56	20°24'24	11°49'49	10°46'46	12°22'22	26°25'25	13°40'40	S 4
M 5	8 59 51	16°9'32	15°22'22	22°5'5	29°24'24	18°20'20	3°34'34	2°3'3	12°59'59	20°26'26	11°48'48	10°D46	12°19'19	26°32'32	13°42'42	M 5
T 6	9 3 48	17°10'15	29°37'37	22°33'33	0°26'26	19°7'7	3°41'41	2°1'1	13°1'1	20°28'28	11°47'47	10°47'47	12°16'16	26°38'38	13°45'45	T 6
W 7	9 7 44	18°10'57	13°45'45	23°6'6	1°28'28	19°54'54	3°49'49	1°58'58	13°3'3	20°31'31	11°46'46	10°R48	12°13'13	26°45'45	13°47'47	W 7
T 8	9 11 41	19°11'38	27°47'47	23°44'44	2°31'31	20°42'42	3°57'57	1°55'55	13°5'5	20°33'33	11°45'45	10°47'47	12°10'10	26°52'52	13°50'50	T 8
F 9	9 15 37	20°12'16	11°11'40	24°26'26	3°34'34	21°29'29	4°5'5	1°53'53	13°8'8	20°35'35	11°44'44	10°45'45	12°6'6	26°58'58	13°52'52	F 9
S 10	9 19 34	21°12'53	25°24'24	25°12'12	4°37'37	22°17'17	4°14'14	1°51'51	13°10'10	20°37'37	11°43'43	10°41'41	12°3'3	27°5'5	13°55'55	S 10
S 11	9 23 31	22°13'28	8°58'58	26°1'1	5°41'41	23°4'4	4°22'22	1°48'48	13°13'13	20°40'40	11°42'42	10°35'35	12°0'0	27°12'12	13°57'57	S 11
M12	9 27 27	23°14'01	22°22'22	26°54'54	6°45'45	23°52'52	4°31'31	1°46'46	13°15'15	20°42'42	11°41'41	10°27'27	11°57'57	27°18'18	14°0'0	M12
T 13	9 31 24	24°14'33	5°12'33	27°50'50	7°49'49	24°39'39	4°40'40	1°44'44	13°18'18	20°44'44	11°40'40	10°18'18	11°54'54	27°25'25	14°2'2	T 13
W14	9 35 20	25°15'03	18°30'30	28°49'49	8°53'53	25°26'26	4°48'48	1°42'42	13°20'20	20°47'47	11°40'40	10°10'10	11°50'50	27°32'32	14°5'5	W14
T 15	9 39 17	26°15'32	1°13'13	29°51'51	9°58'58	26°14'14	4°57'57	1°40'40	13°23'23	20°49'49	11°39'39	10°3'3	11°47'47	27°38'38	14°8'8	T 15
F 16	9 43 13	27°15'58	13°41'41	0°55'55	11°3'3	27°1'1	5°6'6	1°39'39	13°25'25	20°51'51	11°38'38	9°58'58	11°44'44	27°45'45	14°10'10	F 16
S 17	9 47 10	28°16'23	25°56'56	2°2'2	12°8'8	27°49'49	5°16'16	1°37'37	13°28'28	20°53'53	11°37'37	9°55'55	11°41'41	27°52'52	14°13'13	S 17
S 18	9 51 6	29°16'47	7°12'12	3°10'10	13°14'14	28°36'36	5°25'25	1°35'35	13°31'31	20°56'56	11°36'36	9°D53	11°38'38	27°58'58	14°16'16	S 18
M19	9 55 3	0°17'09	19°53'53	4°21'21	14°19'19	29°23'23	5°34'34	1°34'34	13°33'33	20°58'58	11°35'35	9°54'54	11°35'35	28°5'5	14°19'19	M19
T 20	9 59 0	1°17'30	1°14'42	5°34'34	15°25'25	0°11'11	5°44'44	1°33'33	13°36'36	21°0'0	11°35'35	9°55'55	11°31'31	28°11'11	14°22'22	T 20
W21	10 2 56	2°17'49	13°30'30	6°48'48	16°31'31	0°58'58	5°54'54	1°32'32	13°39'39	21°2'2	11°34'34	9°57'57	11°28'28	28°18'18	14°25'25	W21
T 22	10 6 53	3°18'07	25°22'22	8°4'4	17°37'37	1°45'45	6°4'4	1°30'30	13°41'41	21°5'5	11°33'33	9°59'59	11°25'25	28°25'25	14°28'28	T 22
F 23	10 10 49	4°18'24	7°12'24	9°22'22	18°43'43	2°33'33	6°14'14	1°29'29	13°44'44	21°7'7	11°33'33	9°R59	11°22'22	28°31'31	14°31'31	F 23
S 24	10 14 46	5°18'38	19°40'40	10°41'41	19°50'50	3°20'20	6°24'24	1°29'29	13°47'47	21°9'9	11°32'32	9°58'58	11°19'19	28°38'38	14°34'34	S 24
S 25	10 18 42	6°18'52	2°31'14	12°1'1	20°57'57	4°8'8	6°34'34	1°28'28	13°50'50	21°11'11	11°31'31	9°55'55	11°15'15	28°45'45	14°37'37	S 25
M26	10 22 39	7°19'04	15°11'11	13°24'24	22°4'4	4°55'55	6°44'44	1°27'27	13°53'53	21°14'14	11°31'31	9°51'51	11°12'12	28°51'51	14°40'40	M26
T 27	10 26 35	8°19'14	28°33'33	14°47'47	23°11'11	5°42'42	6°55'55	1°27'27	13°56'56	21°16'16	11°30'30	9°46'46	11°9'9	28°58'58	14°43'43	T 27
W28	10 30 32	9°19'23	12°12'12	16°12'12	24°18'18	6°29'29	7°5'5	1°26'26	13°59'59	21°18'18	11°29'29	9°41'41	11°6'6	29°5'5	14°46'46	W28
T 29	10 34 29	10°19'29	26°33'33	17°38'38	25°23'23	7°11'11	7°16'16	1°26'26	14°10'10	21°21'21	11°29'29	9°12'12	11°3'3	29°11'11	14°49'49	T 29

ASTRODIENST EPHEMERIS for the year 1680

geocentric

MARCH 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	10 38 25	11°19'34	11°18'0	19°55'5	26°33'3	8°14'4	7°26'2	1°26'2	14°19'5	21°22'2	11°28'2	9°23'3	11°18'0	29°18'1	14°19'5	F 1
S 2	10 42 22	12°19'38	25°42'	20°34'	27°41'	8°51'	7°37'	1°26'2	14°19'5	21°25'	11°28'2	9°23'3	10°56'	29°25'	14°56'	S 2
S 3	10 46 18	13°19'39	10°19'29	22°4'	28°49'	9°38'	7°48'	1°26'2	14°11'	21°27'	11°27'	9°23'3	10°53'	29°31'	14°59'	S 3
M 4	10 50 15	14°19'38	25°15'	23°35'	29°57'	10°26'	7°59'	1°26'	14°14'	21°29'	11°27'	9°31'	10°50'	29°38'	15°2'	M 4
T 5	10 54 11	15°19'35	9°53'3	25°7'	1°13'	11°13'	8°10'	1°26'	14°17'	21°31'	11°26'	9°33'	10°47'	29°45'	15°6'	T 5
W 6	10 58 8	16°19'29	24°18'	26°40'	2°13'	12°0'	8°22'	1°27'	14°20'	21°33'	11°26'	9°34'	10°44'	29°51'	15°9'	W 6
T 7	11 2 4	17°19'22	8°12'27	28°15'	3°21'	12°47'	8°33'	1°27'	14°23'	21°35'	11°25'	9°35'	10°41'	29°58'	15°12'	T 7
F 8	11 6 1	18°19'12	22°19'	29°51'	4°30'	13°34'	8°44'	1°28'	14°26'	21°37'	11°25'	9°35'	10°37'	0°11'	15°16'	F 8
S 9	11 9 58	19°19'00	5°55'5	1°18'28	5°38'	14°21'	8°56'	1°28'	14°30'	21°39'	11°25'	9°34'	10°34'	0°11'	15°19'	S 9
S 10	11 13 54	20°18'46	19°14'	3°6'	6°47'	15°8'	9°8'	1°29'	14°33'	21°41'	11°24'	9°33'	10°31'	0°18'	15°23'	S 10
M 11	11 17 51	21°18'30	2°17'4	4°45'	7°56'	15°56'	9°19'	1°30'	14°36'	21°43'	11°24'	9°30'	10°28'	0°24'	15°26'	M 11
T 12	11 21 47	22°18'11	15°6'	6°26'	9°5'	16°43'	9°31'	1°31'	14°39'	21°45'	11°24'	9°28'	10°25'	0°31'	15°30'	T 12
W 13	11 25 44	23°17'50	27°42'	8°8'	10°14'	17°30'	9°43'	1°32'	14°42'	21°48'	11°23'	9°25'	10°21'	0°38'	15°33'	W 13
T 14	11 29 40	24°17'27	10°19'5	9°51'	11°23'	18°17'	9°55'	1°34'	14°46'	21°50'	11°23'	9°23'	10°18'	0°44'	15°37'	T 14
F 15	11 33 37	25°17'02	22°18'	11°35'	12°32'	19°3'	10°7'	1°35'	14°49'	21°52'	11°23'	9°22'	10°15'	0°51'	15°40'	F 15
S 16	11 37 33	26°16'34	4°12'22	13°21'	13°41'	19°50'	10°19'	1°36'	14°52'	21°53'	11°23'	9°21'	10°12'	0°58'	15°44'	S 16
S 17	11 41 30	27°16'05	16°18'	15°8'	14°51'	20°37'	10°31'	1°38'	14°56'	21°55'	11°22'	9°21'	10°9'	1°4'	15°47'	S 17
M 18	11 45 26	28°15'34	28°10'	16°56'	16°0'	21°24'	10°43'	1°40'	14°59'	21°57'	11°22'	9°22'	10°6'	1°11'	15°51'	M 18
T 19	11 49 23	29°15'01	9°18'58	18°45'	17°10'	22°11'	10°55'	1°42'	15°2'	21°59'	11°22'	9°23'	10°2'	1°18'	15°54'	T 19
W 20	11 53 20	0°14'26	21°47'	20°36'	18°19'	22°58'	11°8'	1°43'	15°6'	22°1'	11°22'	9°24'	9°59'	1°24'	15°58'	W 20
T 21	11 57 16	1°13'49	3°14'40	22°28'	19°29'	23°45'	11°20'	1°45'	15°9'	22°3'	11°22'	9°24'	9°56'	1°31'	16°2'	T 21
F 22	12 1 13	2°13'11	15°41'	24°22'	20°39'	24°31'	11°33'	1°48'	15°12'	22°5'	11°22'	9°25'	9°53'	1°38'	16°5'	F 22
S 23	12 5 9	3°12'30	27°55'	26°16'	21°49'	25°18'	11°45'	1°50'	15°16'	22°7'	11°22'	9°25'	9°50'	1°44'	16°9'	S 23
S 24	12 9 6	4°11'48	10°32'27	28°12'	22°59'	26°5'	11°58'	1°52'	15°19'	22°9'	11°22'	9°25'	9°47'	1°51'	16°13'	S 24
M 25	12 13 2	5°11'04	23°19'	0°19'9	24°9'	26°51'	12°11'	1°55'	15°22'	22°10'	11°22'	9°25'	9°43'	1°58'	16°16'	M 25
T 26	12 16 59	6°10'19	6°36'36	2°8'	25°19'	27°38'	12°23'	1°57'	15°26'	22°12'	11°22'	9°25'	9°40'	2°4'	16°20'	T 26
W 27	12 20 55	7°9'31	20°20'	4°8'	26°29'	28°25'	12°36'	2°0'	15°29'	22°14'	11°22'	9°25'	9°37'	2°11'	16°24'	W 27
T 28	12 24 52	8°8'42	4°30'30	6°8'	27°40'	29°11'	12°49'	2°3'	15°33'	22°16'	11°22'	9°24'	9°34'	2°18'	16°27'	T 28
F 29	12 28 49	9°7'50	19°4'	8°10'	28°50'	29°58'	13°2'	2°5'	15°36'	22°17'	11°22'	9°24'	9°31'	2°24'	16°31'	F 29
S 30	12 32 45	10°6'57	3°19'57	10°13'	0°18'0	0°19'44	13°15'	2°8'	15°39'	22°19'	11°22'	9°24'	9°27'	2°31'	16°35'	S 30
S 31	12 36 42	11°19'6'02	19°19'1	12°19'17	1°18'11	1°19'31	13°18'28	2°11'1	15°19'43	22°21'1	11°22'2	9°24'2	9°24'2	2°31'38	16°19'38	S 31

Delta T = 23.57 sec

Greg. Calendar

APRIL 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	12 40 38	12°19'505	4°8'8	14°19'21	2°18'21	2°19'17	13°34'1	2°15'15	15°19'46	22°22'22	11°22'22	9°24'2	9°24'2	2°18'44	16°19'42	M 1
T 2	12 44 35	13°4'05	19°8'	16°26'	3°32'	3°4'	13°54'	2°18'	15°50'	22°24'	11°23'	9°24'2	9°18'	2°51'	16°46'	T 2
W 3	12 48 31	14°3'04	3°11'54	18°31'	4°43'	3°50'	14°8'	2°21'	15°53'	22°26'	11°23'	9°23'	9°15'	2°58'	16°50'	W 3
T 4	12 52 28	15°2'00	18°20'	20°37'	5°53'	4°36'	14°21'	2°25'	15°57'	22°27'	11°23'	9°23'	9°12'	3°4'	16°53'	T 4
F 5	12 56 24	16°0'54	2°22'22	22°42'	7°4'	5°22'	14°34'	2°28'	16°0'	22°29'	11°23'	9°22'	9°8'	3°11'	16°57'	F 5
S 6	13 0 21	16°59'45	16°1'	24°46'	8°15'	6°9'	14°48'	2°32'	16°4'	22°30'	11°24'	9°22'	9°5'	3°18'	17°1'	S 6
S 7	13 4 18	17°58'34	29°15'	26°50'	9°25'	6°55'	15°1'	2°36'	16°7'	22°32'	11°24'	9°22'	9°2'	3°24'	17°4'	S 7
M 8	13 8 14	18°57'21	12°9'	28°53'	10°36'	7°41'	15°14'	2°39'	16°10'	22°33'	11°24'	9°23'	8°59'	3°31'	17°8'	M 8
T 9	13 12 11	19°56'06	24°45'	0°18'54	11°47'	8°27'	15°28'	2°43'	16°14'	22°35'	11°25'	9°24'	8°56'	3°37'	17°12'	T 9
W 10	13 16 7	20°54'48	7°19'6	2°54'	12°58'	9°13'	15°41'	2°47'	16°17'	22°36'	11°25'	9°25'	8°52'	3°44'	17°16'	W 10
T 11	13 20 4	21°53'28	19°15'	4°52'	14°9'	9°59'	15°55'	2°51'	16°21'	22°37'	11°25'	9°26'	8°49'	3°51'	17°19'	T 11
F 12	13 24 0	22°52'06	1°16'16	6°47'	15°20'	10°45'	16°9'	2°56'	16°24'	22°39'	11°26'	9°27'	8°46'	3°57'	17°23'	F 12
S 13	13 27 57	23°50'42	13°10'	8°39'	16°31'	11°31'	16°22'	3°0'	16°28'	22°40'	11°26'	9°27'	8°43'	4°4'	17°27'	S 13
S 14	13 31 53	24°49'16	25°0'	10°28'	17°42'	12°17'	16°36'	3°4'	16°31'	22°41'	11°27'	9°26'	8°40'	4°11'	17°30'	S 14
M 15	13 35 50	25°47'48	6°18'49	12°14'	18°54'	13°3'	16°50'	3°9'	16°34'	22°43'	11°27'	9°25'	8°37'	4°17'	17°34'	M 15
T 16	13 39 46	26°46'19	18°38'	13°56'	20°5'	13°49'	17°3'	3°13'	16°38'	22°44'	11°28'	9°23'	8°33'	4°24'	17°38'	T 16
W 17	13 43 43	27°44'47	0°18'30	15°35'	21°16'	14°34'	17°17'	3°18'	16°41'	22°45'	11°28'	9°20'	8°30'	4°31'	17°41'	W 17
T 18	13 47 40	28°43'14	12°38'	17°9'	22°27'	15°20'	17°31'	3°23'	16°45'	22°46'	11°29'	9°17'	8°27'	4°37'	17°45'	T 18
F 19	13 51 36	29°41'39	24°33'	18°40'	23°39'	16°6'	17°45'	3°27'	16°48'	22°47'	11°30'	9°14'	8°24'	4°44'	17°49'	F 19
S 20	13 55 33	0°40'03	6°34'49	20°6'	24°50'	16°51'	17°59'	3°32'	16°51'	22°49'	11°30'	9°11'	8°21'	4°51'	17°53'	S 20
S 21	13 59 29	1°38'24	19°19'	21°27'	26°1'	17°37'	18°12'	3°37'	16°55'	22°50'	11°31'	9°10'	8°18'	4°57'	17°56'	S 21
M 22	14 3 26	2°36'45	2°18'8	22°44'	27°13'	18°23'	18°26'	3°42'	16°58'	22°51'	11°32'	9°10'	8°14'	5°4'	18°0'	M 22
T 23	14 7 22	3°35'03	15°18'	23°57'	28°24'	19°8'	18°40'	3°47'	17°1'	22°52'	11°32'	9°10'	8°11'	5°11'	18°3'	T 23
W 24	14 11 19	4°33'20	28°53'	25°5'	29°36'	19°54'	18°54'	3°52'	17°5'	22°53'	11°33'	9°11'	8°8'	5°17'	18°7'	W 24
T 25	14 15 15	5°31'36	12°18'53	26°7'	0°19'47	20°39'	19°8'	3°58'	17°8'	22°54'	11°34'	9°12'	8°5'	5°24'	18°11'	T 25
F 26	14 19 12	6°29'50	27°19'	27°5'	1°59'	21°24'	19°22'	4°3'	17°11'	22°55'	11°34'	9°13'	8°2'	5°31'	18°14'	F 26
S 27	14 23 9	7°28'03	12°19'7	27°58'	3°11'	22°10'	19°36'	4°8'	17°14'	22°56'	11°35'	9°14'	7°58'	5°37'	18°18'	S 27
S 28	14 27 5	8°26'14	27°12'	28°46'	4°22'	22°55'	19°50'	4°14'	17°18'	22°57'	11°36'	9°13'	7°55'	5°44'	18°21'	S 28
M 29	14 31 2	9°24'23	12°18'25	29°29'	5°34'	23°40'	20°4'	4°19'	17°21'	22°57'	11°37'	9°10'	7°52'	5°51'	18°25'	M 29
T 30	14 34 58	10°22'31	27°18'37	0°11'7	6°19'46	24°19'25	20°18'18	4°25'1	17°19'24	22°58'1	11°38'1	9°11'1	7°53'1	5°52'1	18°28'1	T 30

Delta T = 23.52 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1680
geocentric

MAY 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	14 38 55	11♌20'37	12♌38	0♌40	7♌57	25♌10	20♌32	4♌31	17♌27	22♌59	11♌38	9°R 2	7♌46	6♌4	18♌32	W 1
T 2	14 42 51	12°18'41	27°18	1° 7	9° 9	25°55	20°47	4°36	17°31	23° 0	11°39	8♌58	7°43	6°11	18°35	T 2
F 3	14 46 48	13°16'43	11♌33	1°29	10°21	26°40	21° 1	4°42	17°34	23° 1	11°40	8°54	7°39	6°17	18°39	F 3
S 4	14 50 44	14°14'43	25°20	1°46	11°33	27°25	21°15	4°48	17°37	23° 1	11°41	8°51	7°36	6°24	18°42	S 4
S 5	14 54 41	15°12'42	8♌39	1°58	12°44	28°10	21°29	4°54	17°40	23° 2	11°42	8°49	7°33	6°31	18°46	S 5
M 6	14 58 38	16°10'38	21°32	2° 5	13°56	28°55	21°43	5° 0	17°43	23° 3	11°43	8°D49	7°30	6°37	18°49	M 6
T 7	15 2 34	17° 8'33	4♌3	2°R 7	15° 8	29°40	21°57	5° 6	17°46	23° 3	11°44	8°50	7°27	6°44	18°53	T 7
W 8	15 6 31	18° 6'26	16°18	2° 3	16°20	0♌25	22°11	5°12	17°50	23° 4	11°45	8°52	7°24	6°51	18°56	W 8
T 9	15 10 27	19° 4'17	28°20	1°55	17°32	1° 9	22°25	5°18	17°53	23° 4	11°46	8°53	7°20	6°57	18°59	T 9
F 10	15 14 24	20° 2'06	10♌13	1°43	18°44	1°54	22°39	5°25	17°56	23° 5	11°47	8°R54	7°17	7° 4	19° 3	F 10
S 11	15 18 20	20°59'54	22° 2	1°26	19°56	2°39	22°54	5°31	17°59	23° 5	11°48	8°53	7°14	7°11	19° 6	S 11
S 12	15 22 17	21°57'40	3♌50	1° 6	21° 7	3°23	23° 8	5°37	18° 2	23° 6	11°49	8°50	7°11	7°17	19° 9	S 12
M13	15 26 13	22°55'25	15°39	0°42	22°19	4° 8	23°22	5°44	18° 5	23° 6	11°50	8°45	7° 8	7°24	19°12	M13
T 14	15 30 10	23°53'08	27°32	0°15	23°31	4°52	23°36	5°50	18° 8	23° 7	11°51	8°38	7° 4	7°31	19°16	T 14
W15	15 34 7	24°50'50	9♌31	29♌45	24°43	5°37	23°50	5°57	18°10	23° 7	11°52	8°30	7° 1	7°37	19°19	W15
T 16	15 38 3	25°48'31	21°36	29°13	25°56	6°21	24° 4	6° 3	18°13	23° 7	11°53	8°21	6°58	7°44	19°22	T 16
F 17	15 42 0	26°46'11	3♌50	28°40	27° 8	7° 5	24°18	6°10	18°16	23° 7	11°55	8°13	6°55	7°51	19°25	F 17
S 18	15 45 56	27°43'49	16°15	28° 6	28°20	7°49	24°33	6°16	18°19	23° 8	11°56	8° 5	6°52	7°57	19°28	S 18
S 19	15 49 53	28°41'27	28°51	27°32	29°32	8°33	24°47	6°23	18°22	23° 8	11°57	7°59	6°49	8° 4	19°31	S 19
M20	15 53 49	29°39'03	11♌43	26°58	0♌44	9°18	25° 1	6°30	18°25	23° 8	11°58	7°56	6°45	8°11	19°34	M20
T 21	15 57 46	0♌36'38	24°51	26°25	1°56	10° 2	25°15	6°37	18°27	23° 8	11°59	7°D54	6°42	8°17	19°37	T 21
W22	16 1 42	1°34'13	8♌19	25°53	3° 8	10°46	25°29	6°44	18°30	23° 8	12° 1	7°54	6°39	8°24	19°40	W22
T 23	16 5 39	2°31'46	22° 8	25°24	4°20	11°30	25°43	6°50	18°33	23° 8	12° 2	7°55	6°36	8°31	19°43	T 23
F 24	16 9 36	3°29'19	6♌20	24°56	5°33	12°14	25°57	6°57	18°36	23° 9	12° 3	7°R56	6°33	8°37	19°46	F 24
S 25	16 13 32	4°26'51	20°54	24°32	6°45	12°57	26°11	7° 4	18°38	23°R 9	12° 4	7°55	6°29	8°44	19°49	S 25
S 26	16 17 29	5°24'22	5♌46	24°11	7°57	13°41	26°25	7°11	18°41	23° 9	12° 6	7°52	6°26	8°51	19°52	S 26
M27	16 21 25	6°21'53	20°50	23°54	9°10	14°25	26°39	7°18	18°43	23° 8	12° 7	7°47	6°23	8°57	19°55	M27
T 28	16 25 22	7°19'22	5♌57	23°40	10°22	15° 9	26°53	7°26	18°46	23° 8	12° 8	7°40	6°20	9° 4	19°58	T 28
W29	16 29 18	8°16'50	20°57	23°31	11°34	15°52	27° 7	7°33	18°48	23° 8	12°10	7°31	6°17	9°11	20° 0	W29
T 30	16 33 15	9°14'18	5♌41	23°26	12°47	16°36	27°21	7°40	18°51	23° 8	12°11	7°22	6°14	9°17	20° 3	T 30
F 31	16 37 11	10♌11'44	20♌2	23°D25	13♌59	17♌19	27♌35	7♌47	18♌53	23°8 8	12♌12	7♌13	6♌10	9♌24	20♌6	F 31

Delta T = 23.47 sec

Greg. Calendar

JUNE 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	16 41 8	11♌9'09	3♌55	23♌28	15♌11	18♌3	27♌49	7♌54	18♌56	23°R 8	12♌14	7°R 6	6♌7	9♌31	20♌8	S 1
S 2	16 45 5	12° 6'33	17°18	23°37	16°24	18°46	28° 3	8° 2	18°58	23°8 8	12°15	7♌2	6° 4	9°37	20°11	S 2
M 3	16 49 1	13° 3'56	0♌15	23°49	17°36	19°29	28°17	8° 9	19° 0	23° 7	12°16	6°59	6° 1	9°44	20°14	M 3
T 4	16 52 58	14° 1'18	12°48	24° 6	18°49	20°13	28°31	8°16	19° 3	23° 7	12°18	6°D58	5°58	9°51	20°16	T 4
W 5	16 56 54	14°58'39	25° 2	24°28	20° 1	20°56	28°45	8°24	19° 5	23° 7	12°19	6°58	5°55	9°57	20°19	W 5
T 6	17 0 51	15°55'58	7♌2	24°54	21°13	21°39	28°58	8°31	19° 7	23° 6	12°20	6°R59	5°51	10° 4	20°21	T 6
F 7	17 4 47	16°53'17	18°53	25°24	22°26	22°22	29°12	8°39	19° 9	23° 6	12°22	6°58	5°48	10°11	20°24	F 7
S 8	17 8 44	17°50'35	0♌41	25°59	23°38	23° 5	29°26	8°46	19°12	23° 5	12°23	6°56	5°45	10°17	20°26	S 8
S 9	17 12 40	18°47'52	12°30	26°38	24°51	23°48	29°40	8°54	19°14	23° 5	12°25	6°51	5°42	10°24	20°28	S 9
M10	17 16 37	19°45'08	24°22	27°21	26° 3	24°31	29°53	9° 1	19°16	23° 5	12°26	6°43	5°39	10°31	20°30	M10
T 11	17 20 34	20°42'23	6♌22	28° 8	27°16	25°14	0♌7	9° 9	19°18	23° 4	12°28	6°33	5°35	10°37	20°33	T 11
W12	17 24 30	21°39'38	18°30	28°59	28°29	25°57	0°20	9°16	19°20	23° 3	12°29	6°21	5°32	10°44	20°35	W12
T 13	17 28 27	22°36'53	0♌47	29°53	29°41	26°40	0°34	9°24	19°22	23° 3	12°31	6° 8	5°29	10°51	20°37	T 13
F 14	17 32 23	23°34'07	13°16	0♌52	0♌54	27°22	0°48	9°31	19°24	23° 2	12°32	5°56	5°26	10°57	20°39	F 14
S 15	17 36 20	24°31'20	25°55	1°55	2° 7	28° 5	1° 1	9°39	19°26	23° 2	12°34	5°45	5°23	11° 4	20°41	S 15
S 16	17 40 16	25°28'33	8♌45	3° 1	3°19	28°48	1°15	9°47	19°27	23° 1	12°35	5°36	5°20	11°11	20°43	S 16
M17	17 44 13	26°25'46	21°47	4°11	4°32	29°30	1°28	9°54	19°29	23° 0	12°37	5°29	5°16	11°17	20°45	M17
T 18	17 48 9	27°22'59	5♌2	5°24	5°45	0♌12	1°41	10° 2	19°31	23° 0	12°38	5°26	5°13	11°24	20°47	T 18
W19	17 52 6	28°20'12	18°32	6°41	6°57	0°55	1°55	10°10	19°33	22°59	12°40	5°24	5°10	11°31	20°49	W19
T 20	17 56 3	29°17'24	2♌17	8° 2	8°10	1°37	2° 8	10°18	19°34	22°58	12°41	5°24	5° 7	11°37	20°51	T 20
F 21	17 59 59	0♌14'37	16°19	9°26	9°23	2°20	2°21	10°25	19°36	22°57	12°43	5°24	5° 4	11°44	20°53	F 21
S 22	18 3 56	1°11'50	0♌38	10°54	10°36	3° 2	2°34	10°33	19°38	22°56	12°44	5°23	5° 1	11°51	20°54	S 22
S 23	18 7 52	2° 9'03	15°11	12°25	11°49	3°44	2°48	10°41	19°39	22°56	12°46	5°19	4°57	11°57	20°56	S 23
M24	18 11 49	3° 6'16	29°55	13°59	13° 1	4°26	3° 1	10°49	19°41	22°55	12°47	5°13	4°54	12° 4	20°58	M24
T 25	18 15 45	4° 3'29	14♌44	15°36	14°14	5° 8	3°14	10°56	19°42	22°54	12°49	5° 4	4°51	12°11	20°59	T 25
W26	18 19 42	5° 0'42	29°28	17°17	15°27	5°50	3°27	11° 4	19°44	22°53	12°50	4°53	4°48	12°17	21° 1	W26
T 27	18 23 38	5°57'55	14♌1	19° 1	16°40	6°32	3°40	11°12	19°45	22°52	12°52	4°42	4°45	12°24	21° 2	T 27
F 28	18 27 35	6°55'08	28°15	20°49	17°53	7°14	3°53	11°20	19°46	22°51	12°53	4°31	4°41	12°31	21° 4	F 28
S 29	18 31 32	7°52'20	12♌5	22°39	19° 6	7°56	4° 5	11°27	19°48	22°50	12°55	4°22	4°38	12°37	21° 5	S 29
S 30	18 35 28	8♌49'33	25♌29	24♌32	20♌19	8♌38	4♌18	11♌35	19♌49	22°8 49	12♌57	4♌15	4♌35	12♌44	21♌7	S 30

Delta T = 23.42 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1680
geocentric

JULY 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	18 39 25	9 ⁵⁶ 46'45	8 ¹¹ 26	26 ¹¹ 27	21 ¹¹ 32	9 ¹¹ 19	4 ¹¹ 31	11 ⁵⁶ 43	19 ¹¹ 50	22 ¹¹ 48	12 ⁵⁶ 58	4 ¹¹ R11	4 ¹¹ 32	12 ¹¹ 51	21 ¹¹ 7	M 1
T 2	18 43 21	10 ⁵⁶ 43'57	21 ¹¹ 1	28 ⁵⁶ 25	22 ⁵⁶ 45	10 ⁵⁶ 1	4 ⁵⁶ 44	11 ⁵⁶ 51	19 ⁵⁶ 51	22 ⁵⁶ 47	13 ⁵⁶ 0	4 ⁵⁶ 9	4 ⁵⁶ 29	12 ⁵⁶ 57	21 ⁵⁶ 9	T 2
W 3	18 47 18	11 ⁵⁶ 41'09	3 ⁵⁶ 16	0 ⁵⁶ 26	23 ⁵⁶ 58	10 ⁵⁶ 43	4 ⁵⁶ 56	11 ⁵⁶ 59	19 ⁵⁶ 52	22 ⁵⁶ 45	13 ⁵⁶ 1	4 ⁵⁶ D 8	4 ⁵⁶ 26	13 ⁵⁶ 4	21 ⁵⁶ 10	W 3
T 4	18 51 14	12 ⁵⁶ 38'21	15 ⁵⁶ 17	2 ⁵⁶ 28	25 ⁵⁶ 11	11 ⁵⁶ 24	5 ⁵⁶ 9	12 ⁵⁶ 7	19 ⁵⁶ 53	22 ⁵⁶ 44	13 ⁵⁶ 3	4 ⁵⁶ R 8	4 ⁵⁶ 22	13 ⁵⁶ 11	21 ⁵⁶ 12	T 4
F 5	18 55 11	13 ⁵⁶ 35'32	27 ⁵⁶ 10	4 ⁵⁶ 32	26 ⁵⁶ 25	12 ⁵⁶ 5	5 ⁵⁶ 21	12 ⁵⁶ 14	19 ⁵⁶ 54	22 ⁵⁶ 43	13 ⁵⁶ 4	4 ⁵⁶ 8	4 ⁵⁶ 19	13 ⁵⁶ 18	21 ⁵⁶ 13	F 5
S 6	18 59 7	14 ⁵⁶ 32'44	8 ¹¹ 59	6 ⁵⁶ 38	27 ⁵⁶ 38	12 ⁵⁶ 47	5 ⁵⁶ 34	12 ⁵⁶ 22	19 ⁵⁶ 55	22 ⁵⁶ 42	13 ⁵⁶ 6	4 ⁵⁶ 6	4 ⁵⁶ 16	13 ⁵⁶ 24	21 ⁵⁶ 14	S 6
S 7	19 3 4	15 ⁵⁶ 29'56	20 ⁵⁶ 50	8 ⁵⁶ 45	28 ⁵⁶ 51	13 ⁵⁶ 28	5 ⁵⁶ 46	12 ⁵⁶ 30	19 ⁵⁶ 56	22 ⁵⁶ 41	13 ⁵⁶ 7	4 ⁵⁶ 1	4 ⁵⁶ 13	13 ⁵⁶ 31	21 ⁵⁶ 15	S 7
M 8	19 7 1	16 ⁵⁶ 27'08	2 ⁵⁶ 47	10 ⁵⁶ 53	0 ⁵⁶ 4	14 ⁵⁶ 9	5 ⁵⁶ 58	12 ⁵⁶ 38	19 ⁵⁶ 57	22 ⁵⁶ 40	13 ⁵⁶ 9	3 ⁵⁶ 54	4 ⁵⁶ 10	13 ⁵⁶ 38	21 ⁵⁶ 16	M 8
T 9	19 10 57	17 ⁵⁶ 24'19	14 ⁵⁶ 53	13 ⁵⁶ 2	1 ⁵⁶ 17	14 ⁵⁶ 51	6 ⁵⁶ 10	12 ⁵⁶ 46	19 ⁵⁶ 58	22 ⁵⁶ 38	13 ⁵⁶ 11	3 ⁵⁶ 45	4 ⁵⁶ 7	13 ⁵⁶ 44	21 ⁵⁶ 16	T 9
W10	19 14 54	18 ⁵⁶ 21'32	27 ⁵⁶ 11	15 ⁵⁶ 11	2 ⁵⁶ 30	15 ⁵⁶ 32	6 ⁵⁶ 23	12 ⁵⁶ 53	19 ⁵⁶ 58	22 ⁵⁶ 37	13 ⁵⁶ 12	3 ⁵⁶ 33	4 ⁵⁶ 3	13 ⁵⁶ 51	21 ⁵⁶ 17	W10
T 11	19 18 50	19 ⁵⁶ 18'44	9 ⁵⁶ 42	17 ⁵⁶ 19	3 ⁵⁶ 44	16 ⁵⁶ 13	6 ⁵⁶ 35	13 ⁵⁶ 1	19 ⁵⁶ 59	22 ⁵⁶ 36	13 ⁵⁶ 14	3 ⁵⁶ 21	4 ⁵⁶ 0	13 ⁵⁶ 58	21 ⁵⁶ 18	T 11
F 12	19 22 47	20 ⁵⁶ 15'57	22 ⁵⁶ 27	19 ⁵⁶ 28	4 ⁵⁶ 57	16 ⁵⁶ 54	6 ⁵⁶ 47	13 ⁵⁶ 9	20 ⁵⁶ 0	22 ⁵⁶ 34	13 ⁵⁶ 15	3 ⁵⁶ 9	3 ⁵⁶ 57	14 ⁵⁶ 4	21 ⁵⁶ 19	F 12
S 13	19 26 43	21 ⁵⁶ 13'10	5 ⁵⁶ 25	21 ⁵⁶ 36	6 ⁵⁶ 10	17 ⁵⁶ 35	6 ⁵⁶ 59	13 ⁵⁶ 17	20 ⁵⁶ 0	22 ⁵⁶ 33	13 ⁵⁶ 17	2 ⁵⁶ 58	3 ⁵⁶ 54	14 ⁵⁶ 11	21 ⁵⁶ 19	S 13
S 14	19 30 40	22 ⁵⁶ 10'24	18 ⁵⁶ 35	23 ⁵⁶ 44	7 ⁵⁶ 24	18 ⁵⁶ 16	7 ⁵⁶ 10	13 ⁵⁶ 25	20 ⁵⁶ 1	22 ⁵⁶ 32	13 ⁵⁶ 18	2 ⁵⁶ 49	3 ⁵⁶ 51	14 ⁵⁶ 18	21 ⁵⁶ 20	S 14
M15	19 34 37	23 ⁵⁶ 7'38	1 ⁵⁶ 57	25 ⁵⁶ 50	8 ⁵⁶ 37	18 ⁵⁶ 57	7 ⁵⁶ 22	13 ⁵⁶ 32	20 ⁵⁶ 2	22 ⁵⁶ 30	13 ⁵⁶ 20	2 ⁵⁶ 43	3 ⁵⁶ 47	14 ⁵⁶ 24	21 ⁵⁶ 21	M15
T 16	19 38 33	24 ⁵⁶ 4'53	15 ⁵⁶ 29	27 ⁵⁶ 55	9 ⁵⁶ 50	19 ⁵⁶ 38	7 ⁵⁶ 34	13 ⁵⁶ 40	20 ⁵⁶ 2	22 ⁵⁶ 29	13 ⁵⁶ 21	2 ⁵⁶ 40	3 ⁵⁶ 44	14 ⁵⁶ 31	21 ⁵⁶ 21	T 16
W17	19 42 30	25 ⁵⁶ 2'08	29 ⁵⁶ 10	29 ⁵⁶ 59	11 ⁵⁶ 4	20 ⁵⁶ 18	7 ⁵⁶ 46	13 ⁵⁶ 48	20 ⁵⁶ 2	22 ⁵⁶ 28	13 ⁵⁶ 23	2 ⁵⁶ D39	3 ⁵⁶ 41	14 ⁵⁶ 38	21 ⁵⁶ 22	W17
T 18	19 46 26	25 ⁵⁶ 59'25	13 ⁵⁶ 7	2 ⁵⁶ 3	12 ⁵⁶ 17	20 ⁵⁶ 59	7 ⁵⁶ 57	13 ⁵⁶ 55	20 ⁵⁶ 3	22 ⁵⁶ 26	13 ⁵⁶ 24	2 ⁵⁶ 39	3 ⁵⁶ 38	14 ⁵⁶ 44	21 ⁵⁶ 22	T 18
F 19	19 50 23	26 ⁵⁶ 56'42	27 ⁵⁶ 3	4 ⁵⁶ 4	13 ⁵⁶ 31	21 ⁵⁶ 40	8 ⁵⁶ 9	14 ⁵⁶ 3	20 ⁵⁶ 3	22 ⁵⁶ 25	13 ⁵⁶ 26	2 ⁵⁶ R39	3 ⁵⁶ 35	14 ⁵⁶ 51	21 ⁵⁶ 22	F 19
S 20	19 54 19	27 ⁵⁶ 54'01	11 ⁵⁶ 13	6 ⁵⁶ 4	14 ⁵⁶ 44	22 ⁵⁶ 20	8 ⁵⁶ 20	14 ⁵⁶ 11	20 ⁵⁶ 3	22 ⁵⁶ 23	13 ⁵⁶ 27	2 ⁵⁶ 39	3 ⁵⁶ 32	14 ⁵⁶ 58	21 ⁵⁶ 23	S 20
S 21	19 58 16	28 ⁵⁶ 51'20	25 ⁵⁶ 30	8 ⁵⁶ 3	15 ⁵⁶ 58	23 ⁵⁶ 1	8 ⁵⁶ 31	14 ⁵⁶ 18	20 ⁵⁶ 4	22 ⁵⁶ 22	13 ⁵⁶ 29	2 ⁵⁶ 36	3 ⁵⁶ 28	15 ⁵⁶ 4	21 ⁵⁶ 23	S 21
M22	20 2 12	29 ⁵⁶ 48'41	9 ⁵⁶ 11	17 ⁵⁶ 11	23 ⁵⁶ 41	8 ⁵⁶ 42	14 ⁵⁶ 26	20 ⁵⁶ 4	22 ⁵⁶ 20	13 ⁵⁶ 30	2 ⁵⁶ 31	3 ⁵⁶ 25	15 ⁵⁶ 11	21 ⁵⁶ 23	M22	
T 23	20 6 9	0 ⁵⁶ 46'02	24 ⁵⁶ 17	11 ⁵⁶ 55	18 ⁵⁶ 25	24 ⁵⁶ 21	8 ⁵⁶ 53	14 ⁵⁶ 34	20 ⁵⁶ 4	22 ⁵⁶ 19	13 ⁵⁶ 32	2 ⁵⁶ 24	3 ⁵⁶ 22	15 ⁵⁶ 18	21 ⁵⁶ 23	T 23
W24	20 10 6	1 ⁵⁶ 43'25	8 ⁵⁶ 36	13 ⁵⁶ 48	19 ⁵⁶ 39	25 ⁵⁶ 2	9 ⁵⁶ 4	14 ⁵⁶ 41	20 ⁵⁶ 4	22 ⁵⁶ 17	13 ⁵⁶ 33	2 ⁵⁶ 15	3 ⁵⁶ 19	15 ⁵⁶ 24	21 ⁵⁶ 23	W24
T 25	20 14 2	2 ⁵⁶ 40'48	15 ⁵⁶ 40	20 ⁵⁶ 52	25 ⁵⁶ 42	9 ⁵⁶ 15	14 ⁵⁶ 49	20 ⁵⁶ R 4	22 ⁵⁶ 16	13 ⁵⁶ 35	2 ⁵⁶ 6	3 ⁵⁶ 16	15 ⁵⁶ 31	21 ⁵⁶ R23	T 25	
F 26	20 17 59	3 ⁵⁶ 38'13	6 ⁵⁶ 42	17 ⁵⁶ 30	22 ⁵⁶ 6	26 ⁵⁶ 22	9 ⁵⁶ 26	14 ⁵⁶ 57	20 ⁵⁶ 4	22 ⁵⁶ 14	13 ⁵⁶ 36	1 ⁵⁶ 57	3 ⁵⁶ 13	15 ⁵⁶ 38	21 ⁵⁶ 23	F 26
S 27	20 21 55	4 ⁵⁶ 35'38	20 ⁵⁶ 18	19 ⁵⁶ 19	23 ⁵⁶ 20	27 ⁵⁶ 2	9 ⁵⁶ 37	15 ⁵⁶ 4	20 ⁵⁶ 4	22 ⁵⁶ 13	13 ⁵⁶ 38	1 ⁵⁶ 49	3 ⁵⁶ 9	15 ⁵⁶ 44	21 ⁵⁶ 23	S 27
S 28	20 25 52	5 ⁵⁶ 33'04	3 ⁵⁶ 11	21 ⁵⁶ 6	24 ⁵⁶ 33	27 ⁵⁶ 42	9 ⁵⁶ 48	15 ⁵⁶ 12	20 ⁵⁶ 4	22 ⁵⁶ 11	13 ⁵⁶ 39	1 ⁵⁶ 43	3 ⁵⁶ 6	15 ⁵⁶ 51	21 ⁵⁶ 23	S 28
M29	20 29 48	6 ⁵⁶ 30'38	16 ⁵⁶ 25	22 ⁵⁶ 51	25 ⁵⁶ 47	28 ⁵⁶ 22	9 ⁵⁶ 58	15 ⁵⁶ 19	20 ⁵⁶ 4	22 ⁵⁶ 10	13 ⁵⁶ 41	1 ⁵⁶ 40	3 ⁵⁶ 3	15 ⁵⁶ 58	21 ⁵⁶ 23	M29
T 30	20 33 45	7 ⁵⁶ 27'58	28 ⁵⁶ 57	24 ⁵⁶ 35	27 ⁵⁶ 1	29 ⁵⁶ 2	10 ⁵⁶ 9	15 ⁵⁶ 27	20 ⁵⁶ 3	22 ⁵⁶ 8	13 ⁵⁶ 42	1 ⁵⁶ D39	3 ⁵⁶ 0	16 ⁵⁶ 4	21 ⁵⁶ 22	T 30
W31	20 37 41	8 ⁵⁶ 25'26	11 ⁵⁶ 12	26 ⁵⁶ 17	28 ⁵⁶ 15	29 ⁵⁶ 11	10 ⁵⁶ 19	15 ⁵⁶ 34	20 ⁵⁶ 3	22 ⁵⁶ 7	13 ⁵⁶ 44	1 ⁵⁶ 39	2 ⁵⁶ 57	16 ⁵⁶ 11	21 ⁵⁶ 22	W31

Delta T = 23.38 sec

Greg. Calendar

AUGUST 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	20 41 38	9 ⁵⁶ 22'55	23 ⁵⁶ 14	27 ⁵⁶ 18	29 ⁵⁶ 28	0 ⁵⁶ 22	10 ⁵⁶ 11	15 ⁵⁶ 41	20 ⁵⁶ R 3	22 ⁵⁶ R 5	13 ⁵⁶ 45	1 ⁵⁶ 40	2 ⁵⁶ 53	16 ⁵⁶ 18	21 ⁵⁶ R22	T 1
F 2	20 45 34	10 ⁵⁶ 20'24	5 ⁵⁶ 18	29 ⁵⁶ 37	0 ⁵⁶ 42	1 ⁵⁶ 2	10 ⁵⁶ 39	15 ⁵⁶ 49	20 ⁵⁶ Y 2	22 ⁵⁶ ≈ 4	13 ⁵⁶ 47	1 ⁵⁶ R41	2 ⁵⁶ 50	16 ⁵⁶ 25	21 ⁵⁶ Y21	F 2
S 3	20 49 31	11 ⁵⁶ 17'55	16 ⁵⁶ 59	1 ⁵⁶ 14	1 ⁵⁶ 56	1 ⁵⁶ 42	10 ⁵⁶ 49	15 ⁵⁶ 56	20 ⁵⁶ 2	22 ⁵⁶ 2	13 ⁵⁶ 48	1 ⁵⁶ 41	2 ⁵⁶ 47	16 ⁵⁶ 31	21 ⁵⁶ 21	S 3
S 4	20 53 28	12 ⁵⁶ 15'26	28 ⁵⁶ 51	2 ⁵⁶ 50	3 ⁵⁶ 10	2 ⁵⁶ 21	10 ⁵⁶ 59	16 ⁵⁶ 3	20 ⁵⁶ 2	22 ⁵⁶ 0	13 ⁵⁶ 49	1 ⁵⁶ 39	2 ⁵⁶ 44	16 ⁵⁶ 38	21 ⁵⁶ 20	S 4
M 5	20 57 24	13 ⁵⁶ 12'58	10 ⁵⁶ 51	4 ⁵⁶ 24	4 ⁵⁶ 24	3 ⁵⁶ 1	11 ⁵⁶ 9	16 ⁵⁶ 11	20 ⁵⁶ 1	21 ⁵⁶ 59	13 ⁵⁶ 51	1 ⁵⁶ 36	2 ⁵⁶ 41	16 ⁵⁶ 45	21 ⁵⁶ 19	M 5
T 6	21 1 21	14 ⁵⁶ 10'32	23 ⁵⁶ 1	5 ⁵⁶ 56	5 ⁵⁶ 38	3 ⁵⁶ 40	11 ⁵⁶ 19	16 ⁵⁶ 18	20 ⁵⁶ 0	21 ⁵⁶ 57	13 ⁵⁶ 52	1 ⁵⁶ 31	2 ⁵⁶ 38	16 ⁵⁶ 51	21 ⁵⁶ 19	T 6
W 7	21 5 17	15 ⁵⁶ 8'06	5 ⁵⁶ 26	7 ⁵⁶ 27	6 ⁵⁶ 52	4 ⁵⁶ 20	11 ⁵⁶ 28	16 ⁵⁶ 25	20 ⁵⁶ 0	21 ⁵⁶ 55	13 ⁵⁶ 54	1 ⁵⁶ 24	2 ⁵⁶ 34	16 ⁵⁶ 58	21 ⁵⁶ 18	W 7
T 8	21 9 14	16 ⁵⁶ 5'41	18 ⁵⁶ 8	8 ⁵⁶ 57	8 ⁵⁶ 6	4 ⁵⁶ 59	11 ⁵⁶ 38	16 ⁵⁶ 32	19 ⁵⁶ 59	21 ⁵⁶ 54	13 ⁵⁶ 55	1 ⁵⁶ 16	2 ⁵⁶ 31	17 ⁵⁶ 5	21 ⁵⁶ 17	T 8
F 9	21 13 10	17 ⁵⁶ 3'17	1 ⁵⁶ 7	10 ⁵⁶ 25	9 ⁵⁶ 20	5 ⁵⁶ 38	11 ⁵⁶ 47	16 ⁵⁶ 39	19 ⁵⁶ 59	21 ⁵⁶ 52	13 ⁵⁶ 56	1 ⁵⁶ 8	2 ⁵⁶ 28	17 ⁵⁶ 11	21 ⁵⁶ 17	F 9
S 10	21 17 7	18 ⁵⁶ 0'55	14 ⁵⁶ 24	11 ⁵⁶ 51	10 ⁵⁶ 34	6 ⁵⁶ 18	11 ⁵⁶ 56	16 ⁵⁶ 46	19 ⁵⁶ 58	21 ⁵⁶ 51	13 ⁵⁶ 58	1 ⁵⁶ 2	2 ⁵⁶ 25	17 ⁵⁶ 18	21 ⁵⁶ 16	S 10
S 11	21 21 3	18 ⁵⁶ 58'33	27 ⁵⁶ 56	13 ⁵⁶ 15	11 ⁵⁶ 48	6 ⁵⁶ 57	12 ⁵⁶ 5	16 ⁵⁶ 54	19 ⁵⁶ 57	21 ⁵⁶ 49	13 ⁵⁶ 59	0 ⁵⁶ 56	2 ⁵⁶ 22	17 ⁵⁶ 25	21 ⁵⁶ 15	S 11
M12	21 25 0	19 ⁵⁶ 56'13	11 ⁵⁶ 42	14 ⁵⁶ 38	13 ⁵⁶ 2	7 ⁵⁶ 36	12 ⁵⁶ 14	17 ⁵⁶ 1	19 ⁵⁶ 56	21 ⁵⁶ 47	14 ⁵⁶ 0	0 ⁵⁶ 53	2 ⁵⁶ 18	17 ⁵⁶ 31	21 ⁵⁶ 14	M12
T 13	21 28 57	20 ⁵⁶ 53'55	25 ⁵⁶ 38	15 ⁵⁶ 59	14 ⁵⁶ 16	8 ⁵⁶ 15	12 ⁵⁶ 23	17 ⁵⁶ 8	19 ⁵⁶ 55	21 ⁵⁶ 46	14 ⁵⁶ 2	0 ⁵⁶ D51	2 ⁵⁶ 15	17 ⁵⁶ 38	21 ⁵⁶ 13	T 13
W14	21 32 53	21 ⁵⁶ 51'38	9 ⁵⁶ 7	17 ⁵⁶ 18	15 ⁵⁶ 30	8 ⁵⁶ 54	12 ⁵⁶ 32	17 ⁵⁶ 14	19 ⁵⁶ 54	21 ⁵⁶ 44	14 ⁵⁶ 3	0 ⁵⁶ 51	2 ⁵⁶ 12	17 ⁵⁶ 45	21 ⁵⁶ 12	W14
T 15	21 36 50	22 ⁵⁶ 49'22	23 ⁵⁶ 1	18 ⁵⁶ 36	16 ⁵⁶ 44	9 ⁵⁶ 33	12 ⁵⁶ 41	17 ⁵⁶ 21	19 ⁵⁶ 53	21 ⁵⁶ 42	14 ⁵⁶ 4	0 ⁵⁶ 53	2 ⁵⁶ 9	17 ⁵⁶ 51	21 ⁵⁶ 11	T 15
F 16	21 40 46	23 ⁵⁶ 47'09	8 ⁵⁶ 2	19 ⁵⁶ 51	17 ⁵⁶ 59	10 ⁵⁶ 12	12 ⁵⁶ 49	17 ⁵⁶ 28	19 ⁵⁶ 52	21 ⁵⁶ 41	14 ⁵⁶ 5	0 ⁵⁶ 54	2 ⁵⁶ 6	17 ⁵⁶ 58	21 ⁵⁶ 9	F 16
S 17	21 44 43	24 ⁵⁶ 44'57	22 ⁵⁶ 14	21 ⁵⁶ 5	19 ⁵⁶ 13	10 ⁵⁶ 50	12 ⁵⁶ 57	17 ⁵⁶ 35	19 ⁵⁶ 51	21 ⁵⁶ 39	14 ⁵⁶ 7	0 ⁵⁶ R55	2 ⁵⁶ 3	18 ⁵⁶ 5	21 ⁵⁶ 8	S 17
S 18	21 48 39	25 ⁵⁶ 42'47	6 ⁵⁶ 11	22 ⁵⁶ 17	20 ⁵⁶ 27	11 ⁵⁶ 29	13 ⁵⁶ 6	17 ⁵⁶ 42	19 ⁵⁶ 50	21 ⁵⁶ 37	14 ⁵⁶ 8	0 ⁵⁶ 54	1 ⁵⁶ 59	18 ⁵⁶ 11	21 ⁵⁶ 7	S 18
M19	21 52 36	26 ⁵⁶ 40'38	20 ⁵⁶ 31	23 ⁵⁶ 27	21 ⁵⁶ 41	12 ⁵⁶ 8	13 ⁵⁶ 14	17 ⁵⁶ 48	19 ⁵⁶ 49	21 ⁵⁶ 36	14 ⁵⁶ 9	0 ⁵⁶ 52	1 ⁵⁶ 56	18 ⁵⁶ 18	21 ⁵⁶ 6	M19
T 20	21 56 32	27 ⁵⁶ 38'32	4 ⁵⁶ 33	24 ⁵⁶ 34	22 ⁵⁶ 56	12 ⁵⁶ 46	13 ⁵⁶ 22	17 ⁵⁶ 55	19 ⁵⁶ 48	21 ⁵⁶ 34	14 ⁵⁶ 10	0 ⁵⁶ 49	1 ⁵⁶ 53	18 ⁵⁶ 25	21 ⁵⁶ 4	T 20
W21	22 0 29	28 ⁵⁶ 36'27	18 ⁵⁶ 27	25 ⁵⁶ 40	24 ⁵⁶ 10	13 ⁵⁶ 25	13 ⁵⁶ 29	18 ⁵⁶ 2	19 ⁵⁶ 47	21 ⁵⁶ 33	14 ⁵⁶ 11	0 ⁵⁶ 45	1 ⁵⁶ 50	18 ⁵⁶ 32	21 ⁵⁶ 3	W21
T 22	22 4 26	29 ⁵⁶ 34'24	2 ⁵⁶ 10	26 ⁵⁶ 43	25 ⁵⁶ 24	14 ⁵⁶ 3	13 ⁵⁶ 37	18 ⁵⁶ 8	19 ⁵⁶ 45	21 ⁵⁶ 31	14 ⁵⁶ 13	0 ⁵⁶ 40	1 ⁵⁶ 47	18 ⁵⁶ 38	21 ⁵⁶ 1	T 22
F 23	22 8 22	0 ⁵⁶ 32'23	15 ⁵⁶ 39	27 ⁵⁶ 43	26 ⁵⁶ 39	14 ⁵⁶ 42	13 ⁵⁶ 45	18 ⁵⁶ 15	19 ⁵⁶ 44	21 ⁵⁶ 29	14 ⁵⁶ 14	0 ⁵⁶ 35	1 ⁵⁶ 44	18 ⁵⁶ 45	21 ⁵⁶ 0	F 23
S 24	22 12 19	1 ⁵⁶ 30'23	28 ⁵⁶ 54	28 ⁵⁶ 41	27 ⁵⁶ 53	15 ⁵⁶ 20	13 ⁵⁶ 52	18 ⁵⁶ 21	19 ⁵⁶ 43	21 ⁵⁶ 28	14 ⁵⁶ 15	0 ⁵⁶ 31	1 ⁵⁶ 40	18 ⁵⁶ 52	20 ⁵⁶ 58	S 24
S 25	22 16 15	2 ⁵⁶ 28'25	11 ⁵⁶ 11	29 ⁵⁶ 37	29 ⁵⁶ 7	15 ⁵⁶ 58	13 ⁵⁶ 59	18 ⁵⁶ 28	19 ⁵⁶ 41	21 ⁵⁶ 26	14 ⁵⁶ 16	0 ⁵⁶ 29	1 ⁵⁶ 37	18 ⁵⁶ 58	20 ⁵⁶ 57	S 25
M26	22 20 12	3 ⁵⁶ 26'28	24 ⁵⁶ 32	0 ⁵⁶ 29	0 ⁵⁶ 11	16 ⁵⁶ 37	14 ⁵⁶ 6	18 ⁵⁶ 34	19 ⁵⁶ 40	21 ⁵⁶ 24	14 ⁵⁶ 17	0 ⁵⁶ D27	1 ⁵⁶ 34	19 ⁵⁶ 5	20 ⁵⁶ 55	M26
T 27	22 24 8	4 ⁵⁶ 24'33	6 ⁵⁶ 57	1 ⁵⁶ 18	1 ⁵⁶ 36	17 ⁵⁶ 15	14 ⁵⁶ 13	18 ⁵⁶ 40	19 ⁵⁶ 38	21 ⁵⁶ 23	14 ⁵⁶ 18	0 ⁵⁶ 27	1 ⁵⁶ 31	19 ⁵⁶ 12	20 ⁵⁶ 53	T 27
W28	22 28 5	5 ⁵⁶ 22'40	19 ⁵⁶ 9	2 ⁵⁶ 4	2 ⁵⁶ 51	17 ⁵⁶ 53	14 ⁵⁶ 20	18 ⁵⁶ 46	19 ⁵⁶ 37	21 ⁵⁶ 21	14 ⁵⁶ 19	0 ⁵⁶ 28	1 ⁵⁶ 28	19 ⁵⁶ 18	20 ⁵⁶ 51	W28
T 29	22 32 1	6 ⁵⁶ 20'48	1 ⁵⁶ 11	9 ⁵⁶ 27	4 ⁵⁶ 5	18 ⁵⁶ 31	14 ⁵⁶ 27	18 ⁵⁶ 52	19 ⁵⁶ 35	21 ⁵⁶ 20	14 ⁵⁶ 20	0 ⁵⁶ 30	1 ⁵⁶ 24	19 ⁵⁶ 25	20 ⁵⁶ 50	T 29
F 30	22 35 58	7 ⁵⁶ 18'57	13 ⁵⁶ 2	3 ⁵⁶ 25	5 ⁵⁶ 20	19 ⁵⁶ 9	14 ⁵⁶ 33	18 ⁵⁶ 59	19 ⁵⁶ 34	21 ⁵⁶ 18	14 ⁵⁶ 21	0 ⁵⁶ 32	1 ⁵⁶ 21	19 ⁵⁶ 32	20 ⁵⁶ 48	F 30
S 31	22 39 55	8 ⁵⁶ 17'08	24 ⁵⁶ 11	4 ⁵⁶ 0	6 ⁵⁶ 11	19 ⁵⁶ 34	14 ⁵⁶ 40	19 ⁵⁶ 5	19 ⁵⁶ Y32	21 ⁵⁶ ≈ 17	14 ⁵⁶ 22	0 ⁵⁶ 33	1 ⁵⁶ 18	19 ⁵⁶ 11	20 ⁵⁶ Y46	S 31

ASTRODIENST EPHEMERIS for the year 1680

geocentric

SEPTEMBER 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	22 43 51	9♐15'21	6♌46	4♊30	7♎49	20♌24	14♐46	19♌11	19°R30	21°R15	14♌23	0°R34	1♊15	19♐45	20°R44	S 1
M 2	22 47 48	10°13'35	18°45	4°56	9° 3	21° 2	14°52	19°16	19°Y29	21°≈14	14°24	0♊33	1° 12	19°52	20°Y42	M 2
T 3	22 51 44	11°11'51	0♌56	5°17	10°18	21°40	14°58	19°22	19°27	21°12	14°25	0°32	1° 9	19°58	20°40	T 3
W 4	22 55 41	12°10'08	13°22	5°32	11°32	22°17	15° 3	19°28	19°25	21°11	14°26	0°30	1° 5	20° 5	20°38	W 4
T 5	22 59 37	13° 8'27	26° 8	5°43	12°47	22°55	15° 9	19°34	19°23	21° 9	14°27	0°28	1° 2	20°12	20°36	T 5
F 6	23 3 34	14° 6'47	9♌14	5°R47	14° 1	23°32	15°14	19°39	19°22	21° 8	14°28	0°26	0°59	20°19	20°34	F 6
S 7	23 7 30	15° 5'09	22°43	5°45	15°16	24° 9	15°19	19°45	19°20	21° 6	14°29	0°23	0°56	20°25	20°31	S 7
S 8	23 11 27	16° 3'33	6♌34	5°37	16°31	24°47	15°24	19°50	19°18	21° 5	14°30	0°22	0°53	20°32	20°29	S 8
M 9	23 15 24	17° 1'58	20°42	5°22	17°45	25°24	15°29	19°56	19°16	21° 3	14°31	0°21	0°50	20°39	20°27	M 9
T 10	23 19 20	18° 0'26	5°Y 4	5° 0	19° 0	26° 1	15°34	20° 1	19°14	21° 2	14°31	0°D21	0°46	20°45	20°25	T 10
W11	23 23 17	18°58'55	19°36	4°31	20°15	26°38	15°38	20° 6	19°12	21° 0	14°32	0°21	0°43	20°52	20°22	W11
T 12	23 27 13	19°57'27	4♌10	3°56	21°29	27°15	15°43	20°12	19°10	20°59	14°33	0°22	0°40	20°59	20°20	T 12
F 13	23 31 10	20°56'00	18°42	3°14	22°44	27°52	15°47	20°17	19° 8	20°58	14°34	0°23	0°37	21° 5	20°18	F 13
S 14	23 35 6	21°54'36	3♐ 7	2°25	23°59	28°29	15°51	20°22	19° 6	20°56	14°34	0°24	0°34	21°12	20°15	S 14
S 15	23 39 3	22°53'15	17°22	1°31	25°13	29° 5	15°55	20°27	19° 4	20°55	14°35	0°R24	0°30	21°19	20°13	S 15
M16	23 42 59	23°51'55	1♌24	0°33	26°28	29°42	15°58	20°32	19° 2	20°54	14°36	0°24	0°27	21°25	20°10	M16
T 17	23 46 56	24°50'38	15°12	29♐30	27°43	0♊18	16° 2	20°37	18°59	20°52	14°37	0°24	0°24	21°32	20° 8	T 17
W18	23 50 52	25°49'23	28°45	28°25	28°58	0°55	16° 5	20°41	18°57	20°51	14°37	0°23	0°21	21°39	20° 5	W18
T 19	23 54 49	26°48'11	12♌ 4	27°20	0♊12	1°31	16° 8	20°46	18°55	20°50	14°38	0°23	0°18	21°46	20° 3	T 19
F 20	23 58 46	27°47'00	25° 9	26°14	1°27	2° 8	16°11	20°50	18°53	20°49	14°38	0°22	0°15	21°52	20° 0	F 20
S 21	0 2 42	28°45'52	8♐ 0	25°11	2°42	2°44	16°14	20°55	18°51	20°47	14°39	0°22	0°11	21°59	19°58	S 21
S 22	0 6 39	29°44'45	20°37	24°12	3°57	3°20	16°16	20°59	18°48	20°46	14°40	0°22	0° 8	22° 6	19°55	S 22
M23	0 10 35	0♊43'41	3♊ 3	23°19	5°12	3°56	16°18	21° 4	18°46	20°45	14°40	0°22	0° 5	22°12	19°52	M23
T 24	0 14 32	1°42'39	15°17	22°33	6°26	4°32	16°20	21° 8	18°44	20°44	14°41	0°22	0° 2	22°19	19°50	T 24
W25	0 18 28	2°41'39	27°21	21°55	7°41	5° 8	16°22	21°12	18°41	20°43	14°41	0°22	29♐59	22°26	19°47	W25
T 26	0 22 25	3°40'41	9♐18	21°26	8°56	5°44	16°24	21°16	18°39	20°42	14°42	0°22	29°55	22°32	19°44	T 26
F 27	0 26 21	4°39'44	21°10	21° 7	10°11	6°20	16°25	21°20	18°37	20°40	14°42	0°21	29°52	22°39	19°41	F 27
S 28	0 30 18	5°38'50	3♌ 0	20°D58	11°26	6°55	16°27	21°24	18°34	20°39	14°42	0°20	29°49	22°46	19°39	S 28
S 29	0 34 15	6°37'57	14°51	21° 0	12°41	7°31	16°28	21°28	18°32	20°38	14°43	0°20	29°46	22°52	19°36	S 29
M30	0 38 11	7♊37'06	26♌49	21♐12	13♊56	8♊ 6	16♐29	21♌31	18°Y30	20°≈37	14♌43	0♊19	29♐43	22♐59	19°Y33	M30

Delta T = 23.28 sec

Greg. Calendar

OCTOBER 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	0 42 8	8♊36'18	8♌57	21♐35	15♊11	8♊42	16♐30	21♌35	18°R27	20°R36	14♌44	0°D19	29♐40	23♐ 6	19°R30	T 1
W 2	0 46 4	9°35'30	21°20	22° 7	16°25	9°17	16°30	21°38	18°Y25	20°≈35	14°44	0♊19	29°36	23°13	19°Y28	W 2
T 3	0 50 1	10°34'45	4♌ 2	22°48	17°40	9°52	16°30	21°42	18°22	20°35	14°44	0°20	29°33	23°19	19°25	T 3
F 4	0 53 57	11°34'01	17° 7	23°38	18°55	10°27	16°R30	21°45	18°20	20°34	14°44	0°21	29°30	23°26	19°22	F 4
S 5	0 57 54	12°33'20	0♌38	24°36	20°10	11° 2	16°30	21°48	18°18	20°33	14°45	0°22	29°27	23°33	19°19	S 5
S 6	1 1 50	13°32'40	14°34	25°41	21°25	11°37	16°30	21°51	18°15	20°32	14°45	0°23	29°24	23°39	19°16	S 6
M 7	1 5 47	14°32'01	28°55	26°51	22°40	12°12	16°30	21°54	18°13	20°31	14°45	0°R23	29°21	23°46	19°13	M 7
T 8	1 9 43	15°31'25	13°Y36	28° 8	23°55	12°46	16°29	21°57	18°10	20°30	14°45	0°23	29°17	23°53	19°11	T 8
W 9	1 13 40	16°30'51	28°31	29°29	25°10	13°21	16°28	22° 0	18° 8	20°30	14°45	0°22	29°14	23°59	19° 8	W 9
T 10	1 17 37	17°30'19	13♌32	0♊54	26°25	13°55	16°27	22° 3	18° 5	20°29	14°46	0°20	29°11	24° 6	19° 5	T 10
F 11	1 21 33	18°29'49	28°30	2°22	27°40	14°30	16°26	22° 5	18° 3	20°28	14°46	0°18	29° 8	24°13	19° 2	F 11
S 12	1 25 30	19°29'22	13♐16	3°54	28°55	15° 4	16°24	22° 8	18° 1	20°28	14°46	0°15	29° 5	24°19	18°59	S 12
S 13	1 29 26	20°28'57	27°46	5°27	0♐ 9	15°38	16°22	22°10	17°58	20°27	14°46	0°13	29° 1	24°26	18°56	S 13
M14	1 33 23	21°28'34	11♌54	7° 3	1°24	16°12	16°21	22°12	17°56	20°26	14°46	0°12	28°58	24°33	18°53	M14
T 15	1 37 19	22°28'14	25°40	8°40	2°39	16°46	16°18	22°15	17°53	20°26	14°R46	0°D12	28°55	24°40	18°50	T 15
W16	1 41 16	23°27'56	9♊ 4	10°19	3°54	17°20	16°16	22°17	17°51	20°25	14°46	0°13	28°52	24°46	18°48	W16
T 17	1 45 12	24°27'40	22° 8	11°58	5° 9	17°54	16°14	22°19	17°48	20°25	14°46	0°14	28°49	24°53	18°45	T 17
F 18	1 49 9	25°27'26	4♐55	13°38	6°24	18°27	16°11	22°20	17°46	20°24	14°46	0°16	28°46	25° 0	18°42	F 18
S 19	1 53 6	26°27'15	17°27	15°18	7°39	19° 1	16° 8	22°22	17°44	20°24	14°46	0°17	28°42	25° 6	18°39	S 19
S 20	1 57 2	27°27'05	29°47	16°59	8°54	19°34	16° 5	22°24	17°41	20°23	14°46	0°R18	28°39	25°13	18°36	S 20
M21	2 0 59	28°26'58	11♊57	18°40	10° 9	20° 7	16° 2	22°25	17°39	20°23	14°45	0°17	28°36	25°20	18°33	M21
T 22	2 4 55	29°26'53	24° 0	20°21	11°24	20°41	15°58	22°27	17°36	20°23	14°45	0°15	28°33	25°26	18°31	T 22
W23	2 8 52	0♐26'50	5♐57	22° 2	12°39	21°14	15°55	22°28	17°34	20°22	14°45	0°11	28°30	25°33	18°28	W23
T 24	2 12 48	1°26'48	17°50	23°42	13°54	21°46	15°51	22°29	17°32	20°22	14°45	0° 6	28°26	25°40	18°25	T 24
F 25	2 16 45	2°26'49	29°40	25°23	15° 9	22°19	15°47	22°30	17°29	20°22	14°45	0° 0	28°23	25°47	18°22	F 25
S 26	2 20 41	3°26'51	11♌30	27° 3	16°24	22°52	15°43	22°31	17°27	20°22	14°44	29♐54	28°20	25°53	18°19	S 26
S 27	2 24 38	4°26'56	23°23	28°43	17°39	23°24	15°38	22°32	17°25	20°21	14°44	29°48	28°17	26° 0	18°17	S 27
M28	2 28 35	5°27'01	5♌20	0♐22	18°54	23°57	15°34	22°33	17°22	20°21	14°44	29°43	28°14	26° 7	18°14	M28
T 29	2 32 31	6°27'09	17°27	2° 1	20° 9	24°29	15°29	22°33	17°20	20°21	14°43	29°39	28°11	26°13	18°11	T 29
W30	2 36 28	7°27'18	29°46	3°40	21°24	25° 1	15°24	22°34	17°18	20°21	14°43	29°38	28° 7	26°20	18° 9	W30
T 31	2 40 24	8♐27'29	12≈21	5♐18	22♐39	25♊33	15♐19	22♌34	17°Y16	20°≈21	14♌43	29°D37	28♐ 4	26♐27	18°Y 6	T 31

Delta T = 23.23 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1680
geocentric

NOVEMBER 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	2 44 21	9♐27°41	25♏19	6♏56	23♐54	26♏5	15°R14	22♏35	17°R13	20°D21	14°R42	29♐38	28♐1	26♐33	18°R3	F 1
S 2	2 48 17	10°27'54	8♏41	8°34	25°9	26°36	15°II8	22°35	17°Y11	20°21	14°42	29°40	27°58	26°40	18°Y1	S 2
S 3	2 52 14	11°28'09	22°31	10°11	26°24	27°8	15°3	22°R35	17°9	20°21	14°41	29°R41	27°55	26°47	17°58	S 3
M 4	2 56 10	12°28'26	6°Y49	11°48	27°39	27°39	14°57	22°35	17°7	20°21	14°41	29°41	27°52	26°54	17°56	M 4
T 5	3 0 7	13°28'44	21°33	13°24	28°54	28°10	14°51	22°35	17°5	20°21	14°40	29°39	27°48	27°0	17°53	T 5
W 6	3 4 4	14°29'04	6♏38	15°0	0♏9	28°41	14°45	22°34	17°3	20°22	14°40	29°35	27°45	27°7	17°51	W 6
T 7	3 8 0	15°29'25	21°55	16°36	1°24	29°12	14°39	22°34	17°1	20°22	14°39	29°29	27°42	27°14	17°48	T 7
F 8	3 11 57	16°29'49	7♐12	18°11	2°38	29°43	14°32	22°33	16°59	20°22	14°39	29°22	27°39	27°20	17°46	F 8
S 9	3 15 53	17°30'14	22°20	19°47	3°53	0♐13	14°26	22°33	16°57	20°22	14°38	29°15	27°36	27°27	17°43	S 9
S 10	3 19 50	18°30'41	7♏8	21°21	5°8	0°44	14°19	22°32	16°55	20°23	14°38	29°8	27°32	27°34	17°41	S 10
M 11	3 23 46	19°31'09	21°31	22°56	6°23	1°14	14°13	22°31	16°53	20°23	14°37	29°3	27°29	27°41	17°38	M 11
T 12	3 27 43	20°31'40	5♏25	24°30	7°38	1°44	14°6	22°30	16°51	20°23	14°36	28°59	27°26	27°47	17°36	T 12
W 13	3 31 39	21°32'12	18°52	26°4	8°53	2°14	13°59	22°29	16°49	20°24	14°36	28°D58	27°23	27°54	17°34	W 13
T 14	3 35 36	22°32'46	1♐52	27°38	10°8	2°44	13°52	22°28	16°47	20°24	14°35	28°58	27°20	28°1	17°32	T 14
F 15	3 39 33	23°33'22	14°31	29°12	11°23	3°13	13°44	22°27	16°45	20°25	14°34	28°59	27°17	28°7	17°29	F 15
S 16	3 43 29	24°34'00	26°53	0♏46	12°38	3°42	13°37	22°25	16°43	20°25	14°33	29°R0	27°13	28°14	17°27	S 16
S 17	3 47 26	25°34'39	9♏2	2°19	13°53	4°12	13°30	22°24	16°42	20°26	14°33	29°0	27°10	28°21	17°25	S 17
M 18	3 51 22	26°35'20	21°2	3°52	15°8	4°41	13°22	22°22	16°40	20°26	14°32	28°57	27°7	28°27	17°23	M 18
T 19	3 55 19	27°36'03	2♐56	5°25	16°23	5°9	13°15	22°21	16°38	20°27	14°31	28°52	27°4	28°34	17°21	T 19
W 20	3 59 15	28°36'47	14°47	6°58	17°38	5°38	13°7	22°19	16°37	20°27	14°30	28°44	27°1	28°41	17°19	W 20
T 21	4 3 12	29°37'32	26°38	8°31	18°53	6°6	12°59	22°17	16°35	20°28	14°30	28°33	26°58	28°48	17°17	T 21
F 22	4 7 8	0♏38'19	8♏29	10°3	20°8	6°34	12°51	22°15	16°33	20°29	14°29	28°21	26°54	28°54	17°15	F 22
S 23	4 11 5	1°39'07	20°23	11°36	21°23	7°2	12°44	22°13	16°32	20°30	14°28	28°8	26°51	29°1	17°13	S 23
S 24	4 15 2	2°39'57	2♏20	13°8	22°37	7°30	12°36	22°10	16°30	20°30	14°27	27°56	26°48	29°8	17°12	S 24
M 25	4 18 58	3°40'47	14°22	14°40	23°52	7°57	12°28	22°8	16°29	20°31	14°26	27°44	26°45	29°14	17°10	M 25
T 26	4 22 55	4°41'38	26°32	16°12	25°7	8°25	12°20	22°6	16°28	20°32	14°25	27°36	26°42	29°21	17°8	T 26
W 27	4 26 51	5°42'31	8♏52	17°44	26°22	8°52	12°11	22°3	16°26	20°33	14°24	27°30	26°38	29°28	17°6	W 27
T 28	4 30 48	6°43'24	21°26	19°16	27°37	9°18	12°3	22°0	16°25	20°34	14°23	27°26	26°35	29°35	17°5	T 28
F 29	4 34 44	7°44'18	4♏17	20°47	28°52	9°45	11°55	21°58	16°24	20°35	14°22	27°D25	26°32	29°41	17°3	F 29
S 30	4 38 41	8♏45'13	17♏30	22♏19	0♏7	10♐11	11°II47	21°55	16°Y22	20°36	14°21	27°Y25	26°Y29	29°Y48	17°Y2	S 30

Delta T = 23.19 sec

Greg. Calendar

DECEMBER 1680 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	4 42 37	9♐46°08	1°Y7	23♏50	1♏22	10♐37	11°R39	21°R52	16°R21	20°38	14°R20	27°R25	26♐26	29♐55	17°R0	S 1
M 2	4 46 34	10°47'04	15°12	25°20	2°36	11°3	11°II31	21°49	16°Y20	20°38	14°21	27°Y24	26°23	0♏1	16°Y59	M 2
T 3	4 50 31	11°48'01	29°44	26°51	3°51	11°28	11°23	21°46	16°19	20°39	14°18	27°21	26°19	0°8	16°57	T 3
W 4	4 54 27	12°48'59	14♏40	28°20	5°6	11°54	11°14	21°42	16°18	20°40	14°17	27°15	26°16	0°15	16°56	W 4
T 5	4 58 24	13°49'57	29°53	29°50	6°21	12°19	11°6	21°39	16°17	20°41	14°16	27°6	26°13	0°21	16°55	T 5
F 6	5 2 20	14°50'57	15♐13	1♏19	7°36	12°43	10°58	21°36	16°16	20°42	14°15	26°55	26°10	0°28	16°54	F 6
S 7	5 6 17	15°51'57	0♏28	2°47	8°51	13°8	10°50	21°32	16°15	20°43	14°14	26°44	26°7	0°35	16°52	S 7
S 8	5 10 13	16°52'58	15°28	4°14	10°5	13°32	10°42	21°29	16°14	20°45	14°13	26°33	26°4	0°42	16°51	S 8
M 9	5 14 10	17°54'00	0♏3	5°40	11°20	13°56	10°34	21°25	16°13	20°46	14°12	26°24	26°0	0°48	16°50	M 9
T 10	5 18 6	18°55'03	14°9	7°4	12°35	14°19	10°26	21°21	16°13	20°47	14°11	26°17	25°57	0°55	16°49	T 10
W 11	5 22 3	19°56'06	27°45	8°28	13°50	14°43	10°18	21°18	16°12	20°48	14°9	26°14	25°54	1°2	16°48	W 11
T 12	5 26 0	20°57'11	10♐51	9°49	15°4	15°6	10°10	21°14	16°11	20°50	14°8	26°12	25°51	1°8	16°47	T 12
F 13	5 29 56	21°58'16	23°32	11°9	16°19	15°28	10°2	21°10	16°11	20°51	14°7	26°12	25°48	1°15	16°47	F 13
S 14	5 33 53	22°59'23	5♏53	12°26	17°34	15°51	9°54	21°6	16°10	20°52	14°6	26°12	25°44	1°22	16°46	S 14
S 15	5 37 49	24°0'30	17°59	13°40	18°48	16°12	9°47	21°2	16°10	20°54	14°5	26°10	25°41	1°29	16°45	S 15
M 16	5 41 46	25°1'38	29°55	14°51	20°3	16°34	9°39	20°58	16°9	20°55	14°4	26°7	25°38	1°35	16°44	M 16
T 17	5 45 42	26°2'46	11♐45	15°58	21°18	16°55	9°31	20°53	16°9	20°57	14°2	26°0	25°35	1°42	16°44	T 17
W 18	5 49 39	27°3'56	23°34	17°1	22°33	17°16	9°24	20°49	16°8	20°58	14°1	25°51	25°32	1°49	16°43	W 18
T 19	5 53 35	28°5'06	5♏25	17°58	23°47	17°37	9°16	20°45	16°8	21°0	14°0	25°39	25°29	1°55	16°43	T 19
F 20	5 57 32	29°6'16	17°19	18°50	25°2	17°57	9°9	20°40	16°8	21°1	13°59	25°24	25°25	2°2	16°42	F 20
S 21	6 1 29	0♏7'27	29°19	19°35	26°16	18°17	9°2	20°36	16°8	21°3	13°58	25°9	25°22	2°9	16°42	S 21
S 22	6 5 25	1°8'38	11♏25	20°12	27°31	18°36	8°55	20°32	16°7	21°5	13°56	24°54	25°19	2°16	16°42	S 22
M 23	6 9 22	2°9'49	23°38	20°41	28°46	18°55	8°48	20°27	16°7	21°6	13°55	24°41	25°16	2°22	16°41	M 23
T 24	6 13 18	3°11'00	5♏59	21°0	0♏0	19°14	8°41	20°22	16°D7	21°8	13°54	24°30	25°13	2°29	16°41	T 24
W 25	6 17 15	4°12'11	18°29	21°R9	1°15	19°32	8°35	20°18	16°7	21°9	13°53	24°23	25°10	2°36	16°41	W 25
T 26	6 21 11	5°13'22	1♐10	21°7	2°29	19°49	8°28	20°13	16°7	21°11	13°51	24°18	25°6	2°42	16°41	T 26
F 27	6 25 8	6°14'33	14°5	20°53	3°44	20°7	8°22	20°8	16°7	21°13	13°50	24°16	25°3	2°49	16°D41	F 27
S 28	6 29 4	7°15'44	27°16	20°27	4°58	20°24	8°15	20°4	16°8	21°15	13°49	24°D16	25°0	2°56	16°41	S 28
S 29	6 33 1	8°16'54	10°Y47	19°50	6°13	20°40	8°9	19°59	16°8	21°16	13°48	24°R16	24°57	3°3	16°41	S 29
M 30	6 36 58	9°18'04	24°39	19°2	7°27	20°56	8°3	19°54	16°8	21°18	13°46	24°15	24°54	3°9	16°41	M 30
T 31	6 40 54	10°19'14	8♏53	18°3	8♏41	21°Y11	7°II57	19°54	16°Y8	21°20	13°45	24°Y12	24°Y50	3°Y16	16°Y41	T 31

Delta T = 23.14 sec

Greg. Calendar