



Astrodienst Ephemeris Tables for the year 1687

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 1687
geocentric

JANUARY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	6 43 3	10°52'30	5°39	29°30	2°46	15°28	11°35	12°22	10°41	4°17	21°33	0°20	28°46	7°28	12°41	W 1
T 2	6 46 59	11°53'39	17°30	29°58	4° 2	16° 6	11°48	12°25	10°40	4°19	21°32	0°12	28°43	7°35	12°40	T 2
F 3	6 50 56	12°54'48	29°22	0°17	5°17	16°44	12° 0	12°27	10°40	4°20	21°31	0° 4	28°39	7°41	12°38	F 3
S 4	6 54 52	13°55'57	11°17	0°26	6°33	17°23	12°13	12°28	10°39	4°22	21°29	29°58	28°36	7°48	12°37	S 4
S 5	6 58 49	14°57'06	23°18	0°23	7°48	18° 1	12°25	12°30	10°38	4°24	21°28	29°53	28°33	7°55	12°36	S 5
M 6	7 2 45	15°58'15	5°30	0° 8	9° 4	18°39	12°38	12°32	10°37	4°25	21°27	29°51	28°30	8° 1	12°35	M 6
T 7	7 6 42	16°59'24	17°56	29°42	10°19	19°17	12°50	12°33	10°37	4°27	21°25	29°50	28°27	8° 8	12°34	T 7
W 8	7 10 39	18° 0'32	0°42	29° 4	11°35	19°55	13° 2	12°35	10°36	4°29	21°24	29°51	28°23	8°15	12°33	W 8
T 9	7 14 35	19° 1'41	13°52	28°15	12°50	20°33	13°14	12°36	10°36	4°30	21°23	29°52	28°20	8°22	12°33	T 9
F 10	7 18 32	20° 2'50	27°29	27°16	14° 5	21°11	13°27	12°38	10°35	4°32	21°21	29°53	28°17	8°28	12°32	F 10
S 11	7 22 28	21° 3'58	11°35	26°10	15°21	21°49	13°39	12°39	10°35	4°34	21°20	29°52	28°14	8°35	12°31	S 11
S 12	7 26 25	22° 5'06	26° 9	24°57	16°36	22°28	13°51	12°40	10°35	4°36	21°19	29°49	28°11	8°42	12°31	S 12
M 13	7 30 21	23° 6'14	11°36	23°40	17°52	23° 6	14° 3	12°41	10°34	4°37	21°17	29°44	28° 8	8°48	12°30	M 13
T 14	7 34 18	24° 7'22	26°19	22°22	19° 7	23°44	14°14	12°42	10°34	4°39	21°16	29°37	28° 4	8°55	12°30	T 14
W 15	7 38 15	25° 8'28	11°38	21° 5	20°23	24°22	14°26	12°42	10°34	4°41	21°15	29°28	28° 1	9° 2	12°29	W 15
T 16	7 42 11	26° 9'34	26°50	19°51	21°38	25° 0	14°38	12°43	10°34	4°43	21°13	29°19	27°58	9° 9	12°29	T 16
F 17	7 46 8	27°10'39	11°45	18°42	22°53	25°38	14°50	12°43	10°34	4°45	21°12	29°11	27°55	9°15	12°29	F 17
S 18	7 50 4	28°11'43	26°17	17°40	24° 9	26°16	15° 1	12°44	10°34	4°47	21°11	29° 5	27°52	9°22	12°28	S 18
S 19	7 54 1	29°12'45	10°22	16°45	25°24	26°54	15°13	12°44	10°34	4°49	21°10	29° 1	27°49	9°29	12°28	S 19
M 20	7 57 57	0°13'47	23°58	15°59	26°40	27°32	15°24	12°44	10°34	4°51	21° 8	28°59	27°45	9°35	12°28	M 20
T 21	8 1 54	1°14'48	7° 8	15°22	27°55	28°10	15°36	12°44	10°34	4°52	21° 7	28°59	27°42	9°42	12°28	T 21
W 22	8 5 50	2°15'47	19°56	14°55	29°10	28°48	15°47	12°44	10°34	4°54	21° 6	29° 0	27°39	9°49	12°28	W 22
T 23	8 9 47	3°16'46	21°25	14°36	0°26	29°26	15°58	12°44	10°34	4°56	21° 4	29°R 0	27°36	9°56	12°28	T 23
F 24	8 13 44	4°17'43	14°41	14°25	1°41	0°27	16° 9	12°44	10°34	4°58	21° 3	28°58	27°33	10° 2	12°28	F 24
S 25	8 17 40	5°18'39	26°46	14°D23	2°56	0°41	16°20	12°44	10°35	5° 1	21° 2	28°55	27°29	10° 9	12°29	S 25
S 26	8 21 37	6°19'34	8°45	14°29	4°12	1°19	16°31	12°43	10°35	5° 3	21° 1	28°48	27°26	10°16	12°29	S 26
M 27	8 25 33	7°20'27	20°40	14°41	5°27	1°57	16°42	12°43	10°36	5° 5	20°59	28°39	27°23	10°22	12°29	M 27
T 28	8 29 30	8°21'20	2°32	15° 1	6°42	2°35	16°53	12°42	10°36	5° 7	20°58	28°27	27°20	10°29	12°30	T 28
W 29	8 33 26	9°22'11	14°24	15°26	7°58	3°13	17° 3	12°41	10°37	5° 9	20°57	28°13	27°17	10°36	12°30	W 29
T 30	8 37 23	10°23'01	26°17	15°57	9°13	3°51	17°14	12°40	10°37	5°11	20°56	27°59	27°14	10°43	12°31	T 30
F 31	8 41 19	11°23'50	8°13	16°33	10°28	4°29	17°24	12°39	10°38	5°13	20°54	27°46	27°10	10°49	12°32	F 31

Delta T = 19.88 sec

Greg. Calendar

FEBRUARY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	8 45 16	12°24'38	20°12	17°34	11°44	5°27	17°35	12°R38	10°39	5°15	20°R53	27°R34	27° 7	10°56	12°32	S 1
S 2	8 49 13	13°25'25	2°17	17°59	12°59	5°44	17°45	12°37	10°39	5°17	20°52	27°R25	27° 4	11° 3	12°33	S 2
M 3	8 53 9	14°26'11	14°30	18°47	14°14	6°22	17°55	12°36	10°40	5°19	20°51	27°18	27° 1	11°10	12°34	M 3
T 4	8 57 6	15°26'56	26°56	19°40	15°29	7° 0	18° 5	12°34	10°41	5°22	20°50	27°15	26°58	11°16	12°35	T 4
W 5	9 1 2	16°27'39	9°38	20°35	16°45	7°37	18°15	12°33	10°42	5°24	20°48	27°14	26°55	11°23	12°36	W 5
T 6	9 4 59	17°28'22	22°40	21°34	18° 0	8°15	18°25	12°31	10°43	5°26	20°47	27°13	26°51	11°30	12°37	T 6
F 7	9 8 55	18°29'04	6°27	22°35	19°15	8°53	18°35	12°30	10°44	5°28	20°46	27°13	26°48	11°36	12°38	F 7
S 8	9 12 52	19°29'45	20° 1	23°39	20°30	9°30	18°45	12°28	10°45	5°30	20°45	27°12	26°45	11°43	12°39	S 8
S 9	9 16 48	20°30'24	4°23	24°45	21°45	10° 8	18°54	12°26	10°46	5°33	20°44	27° 8	26°42	11°50	12°40	S 9
M 10	9 20 45	21°31'02	19°11	25°53	23° 1	10°46	19° 4	12°24	10°47	5°35	20°43	27° 1	26°39	11°57	12°42	M 10
T 11	9 24 42	22°31'39	4°19	27° 4	24°16	11°23	19°13	12°22	10°48	5°37	20°42	26°52	26°35	12° 3	12°43	T 11
W 12	9 28 38	23°32'15	19°39	28°16	25°31	12° 1	19°22	12°20	10°50	5°39	20°41	26°41	26°32	12°10	12°44	W 12
T 13	9 32 35	24°32'49	4°57	29°30	26°46	12°39	19°31	12°17	10°51	5°41	20°39	26°29	26°29	12°17	12°46	T 13
F 14	9 36 31	25°33'21	20° 4	0°46	28° 1	13°16	19°40	12°15	10°52	5°44	20°38	26°18	26°26	12°23	12°47	F 14
S 15	9 40 28	26°33'52	4°49	2° 3	29°16	13°54	19°49	12°12	10°54	5°46	20°37	26° 9	26°23	12°30	12°49	S 15
S 16	9 44 24	27°34'20	19° 6	3°22	0°31	14°31	19°58	12°10	10°55	5°48	20°36	26° 3	26°20	12°37	12°51	S 16
M 17	9 48 21	28°34'47	2°53	4°42	1°46	15° 8	20° 6	12° 7	10°57	5°50	20°35	25°59	26°16	12°44	12°52	M 17
T 18	9 52 17	29°35'12	16°10	6° 3	3° 2	15°46	20°15	12° 4	10°58	5°53	20°34	25°58	26°13	12°50	12°54	T 18
W 19	9 56 14	0°35'35	29° 1	7°26	4°17	16°23	20°23	12° 2	11° 0	5°55	20°33	25°58	26°10	12°57	12°56	W 19
T 20	10 0 11	1°35'56	11°30	8°50	5°32	17° 1	20°31	11°59	11° 2	5°57	20°32	25°58	26° 7	13° 4	12°58	T 20
F 21	10 4 7	2°36'15	23°43	10°15	6°47	17°38	20°39	11°56	11° 3	6° 0	20°32	25°56	26° 4	13°10	13° 0	F 21
S 22	10 8 4	3°36'32	5°45	11°42	8° 2	18°15	20°47	11°53	11° 5	6° 2	20°31	25°53	26° 1	13°17	13° 2	S 22
S 23	10 12 0	4°36'48	17°39	13°10	9°17	18°52	20°55	11°50	11° 7	6° 4	20°30	25°46	25°57	13°24	13° 4	S 23
M 24	10 15 57	5°37'01	29°30	14°38	10°32	19°30	21° 3	11°46	11° 9	6° 6	20°29	25°37	25°54	13°31	13° 6	M 24
T 25	10 19 53	6°37'12	11°21	16° 8	11°47	20° 7	21°10	11°43	11°11	6° 9	20°28	25°25	25°51	13°37	13° 8	T 25
W 26	10 23 50	7°37'21	23°14	17°39	13° 1	20°44	21°18	11°40	11°12	6°11	20°27	25°11	25°48	13°44	13°11	W 26
T 27	10 27 46	8°37'28	5°11	19°12	14°16	21°21	21°25	11°36	11°14	6°13	20°26	24°57	25°45	13°51	13°13	T 27
F 28	10 31 43	9°37'34	17°13	20°45	15°31	21°58	21°32	11°33	11°16	6°16	20°26	24°43	25°41	13°58	13°15	F 28

Delta T = 19.84 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1687

geocentric

MARCH 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 35 40	10°37'37"	29°12'20"	22°59'19"	16°46'46"	22°35'35"	21°39'39"	11°R29	11°18'18"	6°18'18"	20°R25	24°R31	25°38'38"	14°14'4	13°18'18"	S 1
S 2	10 39 36	11°37'39"	11°35'35"	23°55'18"	18°1'23"	23°12'21"	21°46'46"	11°25'25"	11°21'21"	6°20'20"	20°24'24"	24°21'21"	25°35'35"	14°11'11"	13°20'20"	S 2
M 3	10 43 33	12°37'39"	23°59'23"	25°32'19"	19°16'23"	23°49'21"	21°53'21"	11°22'11"	11°23'23"	6°22'22"	20°23'23"	24°15'15"	25°32'25"	14°18'18"	13°23'23"	M 3
T 4	10 47 29	13°37'37"	6°11'33"	27°9'20"	20°31'24"	24°26'21"	21°59'11"	11°18'11"	11°25'25"	6°25'25"	20°23'23"	24°11'11"	25°29'29"	14°24'24"	13°25'25"	T 4
W 5	10 51 26	14°37'34"	19°21'28"	28°48'21"	21°45'25"	25°3'22"	22°6'11"	11°14'11"	11°27'27"	6°27'27"	20°22'22"	24°D10	25°26'26"	14°31'31"	13°28'28"	W 5
T 6	10 55 22	15°37'29"	2°25'00"	0°28'23"	23°0'25"	25°40'22"	22°12'11"	11°10'11"	11°29'29"	6°29'29"	20°21'21"	24°10'10"	25°22'22"	14°38'38"	13°31'31"	T 6
F 7	10 59 19	16°37'22"	15°47'2°	9'24"	24°15'26"	26°17'22"	22°18'11"	11°6'11"	11°32'32"	6°31'31"	20°20'20"	24°R10	25°19'19"	14°45'45"	13°33'33"	F 7
S 8	11 3 15	17°37'14"	29°32'3°	52'25"	25°30'26"	26°54'22"	22°24'11"	11°2'11"	11°34'34"	6°34'34"	20°20'20"	24°9'9"	25°16'16"	14°51'51"	13°36'36"	S 8
S 9	11 7 12	18°37'04"	13°34'10"	5°35'26"	26°44'27"	27°30'22"	22°30'10"	10°58'10"	11°36'36"	6°36'36"	20°19'19"	24°7'7"	25°13'13"	14°58'58"	13°39'39"	S 9
M10	11 11 9	19°36'52"	28°11'7"	20'27"	27°59'28"	28°7'22"	22°35'10"	10°54'10"	11°39'39"	6°38'38"	20°19'19"	24°2'2"	25°10'10"	15°5'5"	13°42'42"	M10
T 11	11 15 5	20°36'39"	13°38'0"	9°6'29"	29°14'28"	28°44'22"	22°41'10"	10°50'10"	11°41'41"	6°40'40"	20°18'18"	23°55'25"	25°7'7"	15°11'11"	13°45'45"	T 11
W12	11 19 2	21°36'24"	28°2'10"	53'10"	0°28'29"	29°20'22"	22°46'10"	10°45'10"	11°44'44"	6°43'43"	20°18'18"	23°46'25"	25°3'3"	15°18'18"	13°48'48"	W12
T 13	11 22 58	22°36'07"	13°7'12"	41'1°	43'29"	57'29"	22°51'10"	10°41'10"	11°46'46"	6°45'45"	20°17'17"	23°36'25"	25°0'0"	15°25'25"	13°51'51"	T 13
F 14	11 26 55	23°35'48"	28°6'14"	31'2°	58'2°	0°33'22"	22°56'10"	10°37'10"	11°49'49"	6°47'47"	20°17'17"	23°27'24"	24°57'57"	15°32'32"	13°54'54"	F 14
S 15	11 30 51	24°35'26"	12°29'48"	16°22'4°	12'1°	10'23"	23°1'10"	10°32'10"	11°51'51"	6°49'49"	20°16'16"	23°19'23"	24°54'54"	15°38'38"	13°57'57"	S 15
S 16	11 34 48	25°35'03"	27°8'18"	14'5°	27'1°	46'23"	23°6'10"	10°28'10"	11°54'54"	6°51'51"	20°16'16"	23°14'24"	24°51'51"	15°45'45"	14°0'0"	S 16
M17	11 38 44	26°34'38"	11°8'0"	20°7'6°	41'2°	23'23"	23°10'10"	10°24'10"	11°56'56"	6°54'54"	20°15'15"	23°11'24"	24°47'47"	15°52'52"	14°3'3"	M17
T 18	11 42 41	27°34'10"	24°23'22"	1'7°	56'2°	59'23"	23°15'10"	10°19'10"	11°59'59"	6°56'56"	20°15'15"	23°D11	24°44'44"	15°58'58"	14°6'6"	T 18
W19	11 46 37	28°33'40"	7°11'23"	57'9°	10'3°	35'23"	23°19'10"	10°15'10"	12°2'2"	6°58'58"	20°14'14"	23°11'24"	24°41'41"	16°5'5"	14°10'10"	W19
T 20	11 50 34	29°33'08"	19°26'25"	54'10"	25'10"	25'4°	23°23'10"	10°10'10"	12°5'7°	7°0'20"	20°14'14"	23°12'24"	24°38'38"	16°12'12"	14°13'13"	T 20
F 21	11 54 31	0°32'33"	2°52'11"	39'1°	39'4°	47'23"	23°26'10"	10°6'10"	12°7'7°	7°2'20"	20°14'14"	23°R13	24°35'35"	16°19'19"	14°16'16"	F 21
S 22	11 58 27	1°31'57"	14°15'29"	51'2°	54'5°	23'23"	23°30'10"	10°1'10"	12°10'10"	7°4'20"	20°13'13"	23°12'24"	24°32'32"	16°25'25"	14°20'20"	S 22
S 23	12 2 24	2°31'17"	26°10'1°	51'14°	8'5°	59'23"	23°33'10"	9°56'10"	12°13'13"	7°6'20"	20°13'13"	23°9'24"	24°28'28"	16°32'32"	14°23'23"	S 23
M24	12 6 20	3°30'36"	8°1'3°	52'15"	22'6°	35'23"	23°37'10"	9°52'10"	12°16'16"	7°8'20"	20°13'13"	23°4'24"	24°25'25"	16°39'39"	14°27'27"	M24
T 25	12 10 17	4°29'52"	19°53'5°	54'16"	37'7°	11'23"	23°40'10"	9°47'10"	12°19'19"	7°11'20"	20°13'13"	22°56'24"	24°22'22"	16°46'46"	14°30'30"	T 25
W26	12 14 13	5°29'06"	1°49'7°	57'17"	51'7°	47'23"	23°43'10"	9°43'10"	12°22'22"	7°13'20"	20°12'12"	22°48'24"	24°19'19"	16°52'52"	14°34'34"	W26
T 27	12 18 10	6°28'18"	13°50'10°	0'19°	5'8°	22'23"	23°45'10"	9°38'10"	12°25'25"	7°15'20"	20°12'12"	22°39'24"	24°16'16"	16°59'59"	14°37'37"	T 27
F 28	12 22 6	7°27'27"	26°0'12°	4'20°	19'8°	58'23"	23°48'10"	9°33'10"	12°28'28"	7°17'20"	20°12'12"	22°30'24"	24°12'12"	17°6'6"	14°41'41"	F 28
S 29	12 26 3	8°26'34"	8°20'14°	7'21°	34'9°	33'23"	23°50'10"	9°29'10"	12°31'31"	7°19'20"	20°12'12"	22°23'24"	24°9'9"	17°12'12"	14°44'44"	S 29
S 30	12 30 0	9°25'40"	20°49'16°	11'22°	48'10°	9'23°	23°52'10"	9°24'10"	12°34'34"	7°21'20"	20°12'12"	22°17'24"	24°6'6"	17°19'19"	14°48'48"	S 30
M31	12 33 56	10°24'43"	3°11'30"	18°14'24°	2°2°	44'23°	23°54'10"	9°19'10"	12°37'37"	7°23'20"	20°12'12"	22°13'24"	24°3'3"	17°26'26"	14°52'52"	M31

Delta T = 19.80 sec

Greg. Calendar

APRIL 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	12 37 53	11°23'44"	16°11'21"	20°17'17"	25°16'25"	11°55'11"	23°58'23"	9°10'10"	12°43'43"	7°27'27"	20°12'12"	22°12'22"	23°57'57"	17°39'39"	14°59'59"	T 1
W 2	12 41 49	12°22'44"	29°25'22"	19'26"	30'11"	55'23"	58'23"	9°10'10"	12°43'43"	7°27'27"	20°12'12"	22°12'22"	23°57'57"	17°39'39"	14°59'59"	W 2
T 3	12 45 46	13°21'42"	12°21'42"	24°19'27"	44'21"	30'12°	30'59'	9°5'9"	12°46'46"	7°29'29"	20°D12	22°13'22"	23°53'53"	17°46'46"	15°3'3"	T 3
F 4	12 49 42	14°20'38"	26°13'26"	18'28"	58'13°	5'24°	1'24°	9°1'9"	12°49'49"	7°31'31"	20°12'12"	22°14'22"	23°50'50"	17°53'53"	15°7'7"	F 4
S 5	12 53 39	15°19'32"	10°3'0"	28°14'0°	13'40'	24°2°	8°56'	12°52'	12°52'	7°32'	20°12'	22°R15	23°47'	17°59'	15°11'	S 5
S 6	12 57 35	16°18'25"	24°1'16°	8'0°	9'1°	27'14°	24°3°	8°52'	12°55'	7°34'	20°12'	22°15'	23°44'	18°6'	15°15'	S 6
M 7	13 1 32	17°17'16"	8°21'18°	2°0°	2°41°	45'24°	24°3°	8°47'	12°59'	7°36'	20°12'	22°14'	23°41'	18°13'	15°19'	M 7
T 8	13 5 29	18°16'05"	22°47'3°	48'3°	54'15°	25'24°	24°4°	8°42'	13°2'	7°38'	20°12'	22°11'	23°38'	18°20'	15°23'	T 8
W 9	13 9 25	19°14'53"	7°24'5°	33'5°	8'15°	59'24°	24°4°	8°38'	13°5'	7°40'	20°12'	22°6'	23°34'	18°26'	15°26'	W 9
T 10	13 13 22	20°13'38"	22°3'7°	15'6°	22'16°	34'24°	24°R 4	8°33'	13°8'	7°42'	20°12'	22°2'	23°31'	18°33'	15°30'	T 10
F 11	13 17 18	21°12'22"	6°38'8°	52'7°	36'17°	8'24°	24°4°	8°29'	13°12'	7°43'	20°13'	21°57'	23°28'	18°40'	15°34'	F 11
S 12	13 21 15	22°11'04"	21°2'10°	25'8°	50'17°	43'24°	24°4°	8°24'	13°15'	7°45'	20°13'	21°53'	23°25'	18°47'	15°39'	S 12
S 13	13 25 11	23°9'43"	5°8'11°	54'10°	4'18°	17'24°	24°3°	8°20'	13°18'	7°47'	20°13'	21°51'	23°22'	18°53'	15°43'	S 13
M14	13 29 8	24°8'21"	18°53'13°	18'13°	11°4'	18°51'	24°3°	8°15'	13°22'	7°49'	20°13'	21°D50	23°18'	19°0'	15°47'	M14
T 15	13 33 4	25°6'57"	2°11'14°	37'12°	31'19°	25'24°	24°2°	8°11'	13°25'	7°50'	20°14'	21°50'	23°15'	19°7'	15°51'	T 15
W16	13 37 1	26°5'31"	15°14'15°	52'13°	45'19°	59'24°	24°1°	8°7'	13°28'	7°52'	20°14'	21°51'	23°12'	19°13'	15°55'	W16
T 17	13 40 58	27°4'03"	27°52'17°	1'14°	59'20°	32'24°	24°0°	8°3'	13°32'	7°54'	20°14'	21°53'	23°9'	19°20'	15°59'	T 17
F 18	13 44 54	28°2'32"	10°52'18°	5'16°	13'21°	6'23°	23°58'	7°58'	13°35'	7°55'	20°15'	21°55'	23°6'	19°27'	16°3'3"	F 18
S 19	13 48 51	29°1'00"	22°19'19°	4'17°	26'21°	39'23°	23°57'	7°54'	13°38'	7°57'	20°15'	21°56'	23°3'	19°34'	16°7'7"	S 19
S 20	13 52 47	29°59'25"	4°16'19°	58'18°	40'22°	13'23°	23°55'	7°50'	13°42'	7°59'	20°16'	21°R56	22°59'	19°40'	16°11'	S 20
M21	13 56 44	0°57'48"	16°9'20°	46'19°	53'22°	46'23°	23°53'	7°46'	13°45'	8°0'	20°16'	21°55'	22°56'	19°47'	16°16'	M21
T 22	14 0 40	1°56'09"	28°3'21°	29'21°	7'23°	19'23°	23°51'	7°42'	13°49'	8°2'	20°16'	21°53'	22°53'	19°54'	16°20'	T 22
W23	14 4 37	2°54'28"	10°0'22°	6'22°	20'23°	52'23°	23°49'	7°38'	13°52'	8°3'	20°17'	21°51'	22°50'	20°1'1"	16°24'	W23
T 24	14 8 33	3°52'45"	22°6'22°	38'23°	34'24°	25'23°	23°46'	7°34'	13°55'	8°5'	20°17'	21°48'	22°47'	20°7'7"	16°28'	T 24
F 25	14 12 30	4°51'00"	4°23'23°	4'24°	47'24°	57'23°	23°44'	7°30'	13°59'	8°6'	20°18'	21°45'	22°43'	20°14'	16°33'	F 25
S 26	14 16 27	5°49'13"	16°53'23°	24'26°	1'25°	30'23°	23°41'	7°26'	14°2'	8°7'	20°19'	21°43'	22°40'	20°21'	16°37'	S 26
S 27	14 20 23	6°47'24"	29°38'23°	39'27°	14'26°	2'23°	23°38'	7°22'	14°6'	8°9'	20°19'	21°41'	22°37'	20°27'	16°41'	S 27
M28	14 24 20	7°45'33"	12°37'23°	49'28°	34'26°	35'23°	23°35'	7°19'	14°9'	8°10'	20°20'	21°40'	22°34'	20°34'	16°45'	M28
T 29	14 28 16	8°43'41"	25°52'23°	53'29°	41'27°	6'23°	23°31'	7°15'	14°13'	8°12'	20°20'	21°D40	22°31'	20°41'	16°50'	T 29
W30	14 32 13	9°41'47"	9°19'23°	52'0°	54'27°	38'23°	23°28'	7°12'	14°16'	8°13'	20°21'	21°41'	22°28'	20°48'	16°54'	W30

ASTRODIENST EPHEMERIS for the year 1687

geocentric

MAY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	14 36 9	10♂39'51	23♂ 0	23°R46	2♂ 7	28♂10	23°R24	7°R 8	14♂20	8♂14	20♂22	21♂42	22♂24	20♂54	16♂58	T 1
F 2	14 40 6	11°37'54	6♂51	23♂35	3°21	28°42	23♂20	7♂ 5	14°23	8°15	20°22	21°42	22°21	21° 1	17° 3	F 2
S 3	14 44 2	12°35'56	20°51	23°19	4°34	29°13	23°16	7° 1	14°27	8°17	20°23	21°43	22°18	21° 8	17° 7	S 3
S 4	14 47 59	13°33'56	4♂59	22°59	5°47	29°44	23°12	6°58	14°30	8°18	20°24	21°44	22°15	21°14	17°11	S 4
M 5	14 51 56	14°31'56	19°12	22°36	7° 0	0♂15	23° 8	6°55	14°34	8°19	20°25	21°R44	22°12	21°21	17°16	M 5
T 6	14 55 52	15°29'53	3♂28	22° 9	8°13	0°46	23° 3	6°52	14°37	8°20	20°25	21°43	22° 9	21°28	17°20	T 6
W 7	14 59 49	16°27'50	17°43	21°39	9°26	1°16	22°58	6°49	14°41	8°21	20°26	21°43	22° 5	21°35	17°24	W 7
T 8	15 3 45	17°25'45	1°56	21° 7	10°39	1°47	22°54	6°46	14°44	8°22	20°27	21°42	22° 2	21°41	17°29	T 8
F 9	15 7 42	18°23'38	16° 2	20°33	11°52	2°17	22°49	6°43	14°47	8°24	20°28	21°42	21°59	21°48	17°33	F 9
S 10	15 11 38	19°21'31	29°58	19°58	13° 5	2°47	22°44	6°40	14°51	8°25	20°29	21°42	21°56	21°55	17°37	S 10
S 11	15 15 35	20°19'22	13♂41	19°23	14°18	3°17	22°38	6°37	14°54	8°26	20°30	21°42	21°53	22° 2	17°42	S 11
M12	15 19 31	21°17'12	27° 8	18°47	15°31	3°46	22°33	6°35	14°58	8°27	20°31	21°42	21°49	22° 8	17°46	M12
T 13	15 23 28	22°15'00	10♂18	18°13	16°44	4°15	22°27	6°32	15° 1	8°27	20°32	21°42	21°46	22°15	17°50	T 13
W14	15 27 25	23°12'47	23°10	17°39	17°57	4°44	22°22	6°30	15° 5	8°28	20°33	21°42	21°43	22°22	17°55	W14
T 15	15 31 21	24°10'32	5♂45	17° 8	19°10	5°13	22°16	6°27	15° 8	8°29	20°34	21°41	21°40	22°28	17°59	T 15
F 16	15 35 18	25° 8'16	18° 4	16°39	20°22	5°42	22°10	6°25	15°12	8°30	20°35	21°41	21°37	22°35	18° 3	F 16
S 17	15 39 14	26° 5'58	0♂12	16°13	21°35	6°10	22° 4	6°23	15°15	8°31	20°36	21°41	21°34	22°42	18° 8	S 17
S 18	15 43 11	27° 3'39	12°10	15°50	22°48	6°38	21°58	6°21	15°19	8°32	20°37	21°40	21°30	22°49	18°12	S 18
M19	15 47 7	28° 1'18	24° 4	15°30	24° 1	7° 5	21°51	6°19	15°22	8°32	20°38	21°D40	21°27	22°55	18°16	M19
T 20	15 51 4	28°58'55	5♂58	15°15	25°13	7°33	21°45	6°17	15°25	8°33	20°39	21°40	21°24	23° 2	18°20	T 20
W21	15 55 0	29°56'31	17°56	15° 3	26°26	8° 0	21°38	6°15	15°29	8°34	20°40	21°40	21°21	23° 9	18°25	W21
T 22	15 58 57	0♂54'06	0♂ 4	14°56	27°38	8°27	21°32	6°13	15°32	8°35	20°41	21°41	21°18	23°16	18°29	T 22
F 23	16 2 54	1°51'39	12°24	14°D53	28°51	8°53	21°25	6°11	15°36	8°35	20°42	21°42	21°15	23°22	18°33	F 23
S 24	16 6 50	2°49'11	25° 1	14°55	0♂ 3	9°19	21°18	6°10	15°39	8°36	20°43	21°43	21°11	23°29	18°37	S 24
S 25	16 10 47	3°46'41	7♂56	15° 1	1°16	9°45	21°11	6° 8	15°42	8°36	20°44	21°44	21° 8	23°36	18°42	S 25
M26	16 14 43	4°44'11	21°12	15°12	2°28	10°11	21° 4	6° 7	15°46	8°37	20°46	21°R44	21° 5	23°42	18°46	M26
T 27	16 18 40	5°41'39	4♂47	15°27	3°40	10°36	20°57	6° 6	15°49	8°37	20°47	21°44	21° 2	23°49	18°50	T 27
W28	16 22 36	6°39'06	18°41	15°46	4°53	11° 1	20°50	6° 5	15°52	8°38	20°48	21°43	20°59	23°56	18°54	W28
T 29	16 26 33	7°36'33	2♂49	16°10	6° 5	11°26	20°43	6° 4	15°56	8°38	20°49	21°41	20°55	24° 3	18°59	T 29
F 30	16 30 29	8°33'58	17° 7	16°38	7°17	11°50	20°36	6° 3	15°59	8°39	20°50	21°39	20°52	24° 9	19° 3	F 30
S 31	16 34 26	9♂31'23	1♂31	17♂11	8♂29	12♂14	20♂28	6♂ 2	16♂ 2	8♂39	20♂52	21♂37	20♂49	24♂16	19♂ 7	S 31

Delta T = 19.72 sec

Greg. Calendar

JUNE 1687 GC

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Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	16 38 23	10♂28'47	15♂55	17♂47	9♂41	12♂37	20°R21	6°R 1	16♂ 5	8♂39	20♂53	21°R35	20♂46	24♂23	19♂11	S 1
M 2	16 42 19	11°26'10	0♂16	18°28	10°53	13° 0	20♂13	6♂ 0	16° 9	8°40	20°54	21♂34	20°43	24°29	19°15	M 2
T 3	16 46 16	12°23'33	14°29	19°13	12° 5	13°23	20° 6	6° 0	16°12	8°40	20°56	21°D33	20°40	24°36	19°19	T 3
W 4	16 50 12	13°20'55	28°34	20° 1	13°17	13°45	19°58	5°59	16°15	8°40	20°57	21°34	20°36	24°43	19°23	W 4
T 5	16 54 9	14°18'17	12°57	20°53	14°29	14° 7	19°51	5°59	16°18	8°40	20°58	21°35	20°33	24°50	19°27	T 5
F 6	16 58 5	15°15'38	26° 9	21°49	15°41	14°28	19°43	5°59	16°21	8°41	21° 0	21°37	20°30	24°56	19°31	F 6
S 7	17 2 2	16°12'59	9♂39	22°48	16°53	14°49	19°36	5°58	16°25	8°41	21° 1	21°38	20°27	25° 3	19°35	S 7
S 8	17 5 58	17°10'19	22°56	23°51	18° 5	15° 9	19°28	5°D58	16°28	8°41	21° 2	21°R38	20°24	25°10	19°39	S 8
M 9	17 9 55	18° 7'38	6♂ 0	24°58	19°17	15°29	19°20	5°58	16°31	8°41	21° 4	21°38	20°21	25°17	19°43	M 9
T 10	17 13 52	19° 4'58	18°52	26° 7	20°28	15°49	19°13	5°59	16°34	8°41	21° 5	21°35	20°17	25°23	19°47	T 10
W11	17 17 48	20° 2'16	1♂30	27°21	21°40	16° 8	19° 5	5°59	16°37	8°R41	21° 7	21°32	20°14	25°30	19°51	W11
T 12	17 21 45	20°59'34	13°56	28°37	22°52	16°26	18°57	5°59	16°40	8°41	21° 8	21°28	20°11	25°37	19°55	T 12
F 13	17 25 41	21°56'51	26°10	29°57	24° 3	16°44	18°50	6° 0	16°43	8°41	21° 9	21°22	20° 8	25°43	19°59	F 13
S 14	17 29 38	22°54'08	8♂14	1♂20	25°15	17° 2	18°42	6° 0	16°46	8°41	21°11	21°17	20° 5	25°50	20° 3	S 14
S 15	17 33 34	23°51'23	20°12	2°46	26°26	17°19	18°34	6° 1	16°49	8°41	21°12	21°13	20° 1	25°57	20° 7	S 15
M16	17 37 31	24°48'39	2♂ 4	4°15	27°38	17°35	18°27	6° 1	16°52	8°41	21°14	21° 9	19°58	26° 4	20°10	M16
T 17	17 41 28	25°45'53	13°57	5°48	28°49	17°51	18°19	6° 2	16°55	8°40	21°15	21° 7	19°55	26°10	20°14	T 17
W18	17 45 24	26°43'07	25°54	7°23	0♂ 1	18° 6	18°12	6° 3	16°57	8°40	21°17	21°D 6	19°52	26°17	20°18	W18
T 19	17 49 21	27°40'20	8♂ 0	9° 2	1°12	18°21	18° 4	6° 4	17° 0	8°40	21°18	21° 7	19°49	26°24	20°22	T 19
F 20	17 53 17	28°37'32	20°19	10°44	2°23	18°35	17°57	6° 5	17° 3	8°40	21°20	21° 8	19°46	26°31	20°25	F 20
S 21	17 57 14	29°34'44	2♂57	12°29	3°34	18°48	17°49	6° 7	17° 6	8°39	21°21	21° 9	19°42	26°37	20°29	S 21
S 22	18 1 10	0♂31'55	15°57	14°16	4°45	19° 1	17°42	6° 8	17° 9	8°39	21°23	21°R10	19°39	26°44	20°32	S 22
M23	18 5 7	1°29'06	29°21	16° 7	5°56	19°13	17°35	6° 9	17°11	8°39	21°24	21°10	19°36	26°51	20°36	M23
T 24	18 9 3	2°26'17	13♂10	18° 0	7° 7	19°25	17°28	6°11	17°14	8°38	21°26	21° 8	19°33	26°57	20°39	T 24
W25	18 13 0	3°23'28	27°23	19°56	8°18	19°36	17°20	6°13	17°17	8°38	21°28	21° 5	19°30	27° 4	20°43	W25
T 26	18 16 57	4°20'38	11♂56	21°54	9°29	19°46	17°13	6°14	17°19	8°37	21°29	20°59	19°27	27°11	20°46	T 26
F 27	18 20 53	5°17'48	26°41	23°54	10°40	19°56	17° 6	6°16	17°22	8°37	21°31	20°53	19°23	27°18	20°50	F 27
S 28	18 24 50	6°14'59	11♂31	25°57	11°50	20° 5	17° 0	6°18	17°25	8°36	21°32	20°46	19°20	27°24	20°53	S 28
S 29	18 28 46	7°12'09	26°18	28° 1	13° 1	20°13	16°53	6°20	17°27	8°36	21°34	20°40	19°17	27°31	20°57	S 29
M30	18 32 43	8♂ 9'19	10♂55	0♂ 7	14♂12	20♂20	16♂46	6♂22	17♂30	8♂35	21♂35	20♂36	19♂14	27♂38	21♂ 0	M30

Delta T = 19.68 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1687

geocentric

JULY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	18 36 39	9°56'30"	25°17'	2°15'	15°22'	20°27'	16°R39	6°24'	17°32'	8°R35	21°37'	20°R33	19°11'	27°44'	21°R 3	T 1
W 2	18 40 36	10° 3'41"	9°Y21	4°23'	16°32'	20°33'	16°X33	6°27'	17°34'	8°X34	21°39'	20°D32	19° 7'	27°51'	21° 6'	W 2
T 3	18 44 32	11° 0'53"	23° 5'	6°32'	17°43'	20°39'	16°27'	6°29'	17°37'	8°33'	21°40'	20°R33	19° 4'	27°58'	21°10'	T 3
F 4	18 48 29	11°58'05"	6°B33	8°42'	18°53'	20°43'	16°20'	6°32'	17°39'	8°33'	21°42'	20°34'	19° 1'	28° 5'	21°13'	F 4
S 5	18 52 26	12°55'17"	19°43'	10°52'	20° 3'	20°47'	16°14'	6°34'	17°42'	8°32'	21°43'	20°R35	18°58'	28°11'	21°16'	S 5
S 6	18 56 22	13°52'30"	2°II40	13° 2'	21°14'	20°50'	16° 8'	6°37'	17°44'	8°31'	21°45'	20°34'	18°55'	28°18'	21°19'	S 6
M 7	19 0 19	14°49'43"	15°24'	15°11'	22°24'	20°52'	16° 2'	6°40'	17°46'	8°30'	21°47'	20°31'	18°52'	28°25'	21°22'	M 7
T 8	19 4 15	15°46'57"	27°57'	17°20'	23°34'	20°54'	15°56'	6°42'	17°48'	8°30'	21°48'	20°26'	18°48'	28°32'	21°25'	T 8
W 9	19 8 12	16°44'11"	10°E20	19°28'	24°44'	20°R54	15°51'	6°45'	17°50'	8°29'	21°50'	20°18'	18°45'	28°38'	21°28'	W 9
T 10	19 12 8	17°41'26"	22°34'	21°35'	25°53'	20°54'	15°45'	6°48'	17°53'	8°28'	21°52'	20° 9'	18°42'	28°45'	21°31'	T 10
F 11	19 16 5	18°38'40"	4°Q40	23°40'	27° 3'	20°53'	15°40'	6°52'	17°55'	8°27'	21°53'	19°58'	18°39'	28°52'	21°34'	F 11
S 12	19 20 1	19°35'55"	16°39'	25°45'	28°13'	20°52'	15°34'	6°55'	17°57'	8°26'	21°55'	19°47'	18°36'	28°58'	21°36'	S 12
S 13	19 23 58	20°33'10"	28°33'	27°48'	29°23'	20°49'	15°29'	6°58'	17°59'	8°25'	21°56'	19°37'	18°33'	29° 5'	21°39'	S 13
M14	19 27 55	21°30'26"	10°P24	29°49'	0°M32	20°46'	15°24'	7° 1'	18° 1'	8°24'	21°58'	19°28'	18°29'	29°12'	21°42'	M14
T 15	19 31 51	22°27'42"	22°15'	1°Q49	1°42'	20°42'	15°20'	7° 5'	18° 3'	8°23'	22° 0'	19°22'	18°26'	29°19'	21°44'	T 15
W16	19 35 48	23°24'58"	4°A10	3°47'	2°51'	20°37'	15°15'	7° 8'	18° 5'	8°22'	22° 1'	19°18'	18°23'	29°25'	21°47'	W16
T 17	19 39 44	24°22'14"	16°14'	5°44'	4° 0'	20°32'	15°10'	7°12'	18° 6'	8°21'	22° 3'	19°16'	18°20'	29°32'	21°50'	T 17
F 18	19 43 41	25°19'30"	28°30'	7°38'	5° 9'	20°26'	15° 6'	7°16'	18° 8'	8°20'	22° 5'	19°D16	18°17'	29°39'	21°52'	F 18
S 19	19 47 37	26°16'47"	11°M 5	9°32'	6°18'	20°19'	15° 2'	7°20'	18°10'	8°19'	22° 6'	19°16'	18°13'	29°45'	21°54'	S 19
S 20	19 51 34	27°14'05"	24° 2'	11°23'	7°27'	20°11'	14°58'	7°23'	18°12'	8°18'	22° 8'	19°R16	18°10'	29°52'	21°57'	S 20
M21	19 55 30	28°11'22"	7°X26	13°13'	8°36'	20° 3'	14°54'	7°27'	18°13'	8°17'	22° 9'	19°15'	18° 7'	29°59'	21°59'	M21
T 22	19 59 27	29° 8'41"	21°19'	15° 0'	9°45'	19°54'	14°50'	7°32'	18°15'	8°15'	22°11'	19°11'	18° 4'	0°M 6	22° 1'	T 22
W23	20 3 24	0°Q 6'00"	5°Z41	16°47'	10°54'	19°45'	14°47'	7°36'	18°17'	8°14'	22°13'	19° 5'	18° 1'	0°12'	22° 4'	W23
T 24	20 7 20	1° 3'19"	20°27'	18°31'	12° 2'	19°34'	14°43'	7°40'	18°18'	8°13'	22°14'	18°57'	17°58'	0°19'	22° 6'	T 24
F 25	20 11 17	2° 0'39"	5°A30	20°14'	13°11'	19°24'	14°40'	7°44'	18°20'	8°12'	22°16'	18°47'	17°54'	0°26'	22° 8'	F 25
S 26	20 15 13	2°58'00"	20°41'	21°55'	14°19'	19°12'	14°37'	7°48'	18°21'	8°10'	22°18'	18°37'	17°51'	0°33'	22°10'	S 26
S 27	20 19 10	3°55'22"	5°X50	23°34'	15°27'	19° 0'	14°34'	7°53'	18°22'	8° 9'	22°19'	18°28'	17°48'	0°39'	22°12'	S 27
M28	20 23 6	4°52'45"	20°45'	25°12'	16°35'	18°48'	14°32'	7°57'	18°24'	8° 8'	22°21'	18°20'	17°45'	0°46'	22°14'	M28
T 29	20 27 3	5°50'09"	5°Y21	26°48'	17°43'	18°35'	14°29'	8° 2'	18°25'	8° 7'	22°22'	18°15'	17°42'	0°53'	22°16'	T 29
W30	20 30 59	6°47'34"	19°33'	28°22'	18°51'	18°21'	14°27'	8° 7'	18°26'	8° 5'	22°24'	18°12'	17°39'	0°59'	22°18'	W30
T 31	20 34 56	7°Q45'00"	3°B20	29°Q55	19°M59	18°X 7	14°X25	8°A11	18°B28	8°X 4	22°B26	18°D11	17°B35	1°M 6	22°B20	T 31

Delta T = 19.63 sec

Greg. Calendar

AUGUST 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	20 38 53	8°Q42'28"	16°B43	1°M26	21°M 6	17°R53	14°R23	8°A16	18°B29	8°R 3	22°B27	18°R11	17°B32	1°M13	22°B21	F 1
S 2	20 42 49	9°39'57"	29°45'	2°55'	22°14'	17°X38	14°X21	8°21'	18°30'	8°X 1	22°29'	18°B11	17°29'	1°20'	22°23'	S 2
S 3	20 46 46	10°37'27"	12°II29	4°22'	23°21'	17°23'	14°20'	8°26'	18°31'	8° 0'	22°30'	18° 9'	17°26'	1°26'	22°25'	S 3
M 4	20 50 42	11°34'59"	25° 0'	5°48'	24°28'	17° 8'	14°18'	8°31'	18°32'	7°58'	22°32'	18° 5'	17°23'	1°33'	22°26'	M 4
T 5	20 54 39	12°32'32"	7°E19	7°12'	25°35'	16°53'	14°17'	8°36'	18°33'	7°57'	22°33'	17°58'	17°19'	1°40'	22°28'	T 5
W 6	20 58 35	13°30'06"	19°29'	8°34'	26°42'	16°37'	14°16'	8°41'	18°34'	7°55'	22°35'	17°48'	17°16'	1°46'	22°29'	W 6
T 7	21 2 32	14°27'42"	1°Q33	9°54'	27°49'	16°21'	14°15'	8°46'	18°35'	7°54'	22°36'	17°36'	17°13'	1°53'	22°31'	T 7
F 8	21 6 29	15°25'19"	13°31'	11°13'	28°56'	16° 5'	14°14'	8°52'	18°36'	7°52'	22°38'	17°22'	17°10'	2° 0'	22°32'	F 8
S 9	21 10 25	16°22'57"	25°25'	12°29'	0°A 2	15°49'	14°14'	8°57'	18°36'	7°51'	22°40'	17° 8'	17° 7'	2° 7'	22°33'	S 9
S 10	21 14 22	17°20'36"	7°M17	13°44'	1° 9'	15°33'	14°14'	9° 2'	18°37'	7°49'	22°41'	16°55'	17° 4'	2°13'	22°34'	S 10
M11	21 18 18	18°18'16"	19° 7'	14°57'	2°15'	15°17'	14°D14	9° 8'	18°38'	7°48'	22°43'	16°43'	17° 0'	2°20'	22°36'	M11
T 12	21 22 15	19°15'57"	0°A59	16° 7'	3°21'	15° 2'	14°14'	9°13'	18°39'	7°46'	22°44'	16°34'	16°57'	2°27'	22°37'	T 12
W13	21 26 11	20°13'40"	12°55'	17°15'	4°27'	14°46'	14°14'	9°19'	18°39'	7°45'	22°46'	16°28'	16°54'	2°33'	22°38'	W13
T 14	21 30 8	21°11'24"	24°58'	18°21'	5°32'	14°31'	14°15'	9°25'	18°40'	7°43'	22°47'	16°25'	16°51'	2°40'	22°39'	T 14
F 15	21 34 4	22° 9'08"	7°M13	19°25'	6°38'	14°15'	14°15'	9°30'	18°40'	7°42'	22°48'	16°23'	16°48'	2°47'	22°39'	F 15
S 16	21 38 1	23° 6'54"	19°45'	20°26'	7°43'	14° 1'	14°16'	9°36'	18°41'	7°40'	22°50'	16°23'	16°45'	2°54'	22°40'	S 16
S 17	21 41 57	24° 4'42"	2°X38	21°24'	8°48'	13°46'	14°17'	9°42'	18°41'	7°39'	22°51'	16°23'	16°41'	3° 0'	22°41'	S 17
M18	21 45 54	25° 2'30"	15°56'	22°20'	9°53'	13°32'	14°18'	9°48'	18°41'	7°37'	22°53'	16°22'	16°38'	3° 7'	22°42'	M18
T 19	21 49 51	26° 0'20"	29°44'	23°13'	10°58'	13°18'	14°20'	9°54'	18°42'	7°35'	22°54'	16°19'	16°35'	3°14'	22°42'	T 19
W20	21 53 47	26°58'10"	14°Z 1	24° 3'	12° 3'	13° 5'	14°21'	10° 0'	18°42'	7°34'	22°56'	16°13'	16°32'	3°21'	22°43'	W20
T 21	21 57 44	27°56'03"	28°46'	24°49'	13° 7'	12°52'	14°23'	10° 6'	18°42'	7°32'	22°57'	16° 5'	16°29'	3°27'	22°43'	T 21
F 22	22 1 40	28°53'56"	13°X52	25°32'	14°11'	12°40'	14°25'	10°12'	18°42'	7°31'	22°58'	15°55'	16°25'	3°34'	22°44'	F 22
S 23	22 5 37	29°51'51"	29°11'	26°11'	15°15'	12°28'	14°27'	10°18'	18°42'	7°29'	23° 0'	15°44'	16°22'	3°41'	22°44'	S 23
S 24	22 9 33	0°M49'47"	14°X30	26°47'	16°19'	12°17'	14°30'	10°24'	18°R42	7°27'	23° 1'	15°34'	16°19'	3°47'	22°45'	S 24
M25	22 13 30	1°47'45"	29°39'	27°18'	17°22'	12° 7'	14°32'	10°30'	18°42'	7°26'	23° 2'	15°26'	16°16'	3°54'	22°45'	M25
T 26	22 17 26	2°45'45"	14°Y29	27°44'	18°25'	11°57'	14°35'	10°37'	18°42'	7°24'	23° 4'	15°21'	16°13'	4° 1'	22°45'	T 26
W27	22 21 23	3°43'46"	28°52'	28° 6'	19°28'	11°48'	14°38'	10°43'	18°42'	7°22'	23° 5'	15°18'	16°10'	4° 8'	22°45'	W27
T 28	22 25 20	4°41'50"	12°B47	28°24'	20°31'	11°39'	14°41'	10°49'	18°42'	7°21'	23° 6'	15°D17	16° 6'	4°14'	22°45'	T 28
F 29	22 29 16	5°39'56"	26°15'	28°35'	21°33'	11°31'	14°44'	10°56'	18°42'	7°19'	23° 8'	15°17'	16° 3'	4°21'	22°45'	F 29
S 30	22 33 13	6°38'03"	9°II18	28°42'	22°36'	11°24'	14°47'	11° 2'	18°42'	7°17'	23° 9'	15°R17	16° 0'	4°28'	22°45'	S 30
S 31	22 37 9	7°M36'13"	21°II59	28°R42	23°A37	11°X18	14°X51	11°A 9	18°B41	7°X16	23°B10	15°B16	15°B57	4°M34	22°B45	S 31

Delta T = 19.59 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1687

geocentric

SEPTEMBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	22 41 6	8 ^h 34'25"	4 ^h 24'	28°R36	24 ^h 39'	11°R12	14 ^h 55'	11 ^h 15'	18°R41	7°R14	23 ^h 11'	15°R13	15 ^h 54'	4 ^h 41'	22°R45	M 1
T 2	22 45 2	9°32'38"	16°36'	28 ^h 24'	25°40'	11 ^h 7'	14°59'	11°22'	18 ^h 40'	7 ^h 12'	23°12'	15 ^h 8'	15°51'	4°48'	22 ^h 45'	T 2
W 3	22 48 59	10°30'54"	28°38'	28° 6'	26°41'	11° 3'	15° 3'	11°28'	18°40'	7°11'	23°14'	15° 0'	15°47'	4°55'	22°44'	W 3
T 4	22 52 55	11°29'11"	10 ^h 35'	27°41'	27°42'	11° 0'	15° 7'	11°35'	18°39'	7° 9'	23°15'	14°49'	15°44'	5° 1'	22°44'	T 4
F 5	22 56 52	12°27'31"	22°28'	27°10'	28°43'	10°57'	15°11'	11°42'	18°39'	7° 8'	23°16'	14°38'	15°41'	5° 8'	22°43'	F 5
S 6	23 0 49	13°25'52"	4 ^h 20'	26°32'	29°43'	10°55'	15°16'	11°48'	18°38'	7° 6'	23°17'	14°26'	15°38'	5°15'	22°43'	S 6
S 7	23 4 45	14°24'15"	16°12'	25°48'	0 ^h 42'	10°54'	15°21'	11°55'	18°38'	7° 4'	23°18'	14°15'	15°35'	5°21'	22°42'	S 7
M 8	23 8 42	15°22'40"	28° 5'	24°59'	1°42'	10°D54	15°26'	12° 2'	18°37'	7° 3'	23°19'	14° 5'	15°31'	5°28'	22°42'	M 8
T 9	23 12 38	16°21'07"	10 ^h 1'	24° 5'	2°41'	10°55'	15°31'	12° 9'	18°36'	7° 1'	23°20'	13°57'	15°28'	5°35'	22°41'	T 9
W10	23 16 35	17°19'36"	22° 2'	23° 7'	3°40'	10°56'	15°36'	12°16'	18°35'	6°59'	23°22'	13°52'	15°25'	5°42'	22°40'	W10
T 11	23 20 31	18°18'06"	4 ^h 11'	22° 6'	4°38'	10°59'	15°41'	12°23'	18°35'	6°58'	23°23'	13°50'	15°22'	5°48'	22°39'	T 11
F 12	23 24 28	19°16'38"	16°31'	21° 3'	5°36'	11° 2'	15°47'	12°29'	18°34'	6°56'	23°24'	13°D50	15°19'	5°55'	22°38'	F 12
S 13	23 28 24	20°15'12"	29° 5'	20° 0'	6°33'	11° 6'	15°53'	12°36'	18°33'	6°55'	23°25'	13°50'	15°16'	6° 2'	22°37'	S 13
S 14	23 32 21	21°13'48"	11 ^h 58'	18°58'	7°30'	11°11'	15°59'	12°43'	18°32'	6°53'	23°26'	13°51'	15°12'	6° 8'	22°36'	S 14
M15	23 36 18	22°12'25"	25°12'	17°59'	8°27'	11°16'	16° 5'	12°50'	18°31'	6°51'	23°27'	13°R52	15° 9'	6°15'	22°35'	M15
T 16	23 40 14	23°11'04"	8 ^h 51'	17° 4'	9°23'	11°23'	16°11'	12°57'	18°30'	6°50'	23°27'	13°50'	15° 6'	6°22'	22°34'	T 16
W17	23 44 11	24° 9'45"	22°57'	16°15'	10°18'	11°30'	16°17'	13° 5'	18°28'	6°48'	23°28'	13°47'	15° 3'	6°29'	22°33'	W17
T 18	23 48 7	25° 8'27"	7 ^h 29'	15°33'	11°13'	11°38'	16°24'	13°12'	18°27'	6°47'	23°29'	13°42'	15° 0'	6°35'	22°32'	T 18
F 19	23 52 4	26° 7'11"	22°23'	14°59'	12° 8'	11°46'	16°30'	13°19'	18°26'	6°45'	23°30'	13°36'	14°56'	6°42'	22°30'	F 19
S 20	23 56 0	27° 5'57"	7 ^h 32'	14°34'	13° 2'	11°56'	16°37'	13°26'	18°25'	6°44'	23°31'	13°29'	14°53'	6°49'	22°29'	S 20
S 21	23 59 57	28° 4'44"	22°46'	14°18'	13°55'	12° 6'	16°44'	13°33'	18°23'	6°42'	23°32'	13°22'	14°50'	6°55'	22°27'	S 21
M22	0 3 53	29° 3'34"	7 ^h 54'	14°D13	14°48'	12°17'	16°51'	13°40'	18°22'	6°41'	23°33'	13°16'	14°47'	7° 2'	22°26'	M22
T 23	0 7 50	0 ^h 2'25"	22°47'	14°17'	15°40'	12°28'	16°58'	13°47'	18°21'	6°39'	23°33'	13°13'	14°44'	7° 9'	22°24'	T 23
W24	0 11 47	1° 1'19"	7 ^h 18'	14°32'	16°32'	12°40'	17° 6'	13°54'	18°19'	6°38'	23°34'	13°D11	14°41'	7°16'	22°23'	W24
T 25	0 15 43	2° 0'15"	21°21'	14°57'	17°23'	12°53'	17°13'	14° 2'	18°18'	6°36'	23°35'	13°11'	14°37'	7°22'	22°21'	T 25
F 26	0 19 40	2°59'14"	4 ^h 57'	15°31'	18°13'	13° 7'	17°21'	14° 9'	18°16'	6°35'	23°36'	13°12'	14°34'	7°29'	22°19'	F 26
S 27	0 23 36	3°58'14"	18° 6'	16°14'	19° 3'	13°21'	17°29'	14°16'	18°15'	6°33'	23°36'	13°14'	14°31'	7°36'	22°17'	S 27
S 28	0 27 33	4°57'17"	0 ^h 51'	17° 6'	19°51'	13°36'	17°37'	14°23'	18°13'	6°32'	23°37'	13°R15	14°28'	7°42'	22°16'	S 28
M29	0 31 29	5°56'23"	13°17'	18° 5'	20°40'	13°51'	17°45'	14°31'	18°12'	6°31'	23°38'	13°15'	14°25'	7°49'	22°14'	M29
T 30	0 35 26	6 ^h 55'30"	25 ^h 28'	19 ^h 11'	21 ^h 27'	14 ^h 7'	17 ^h 53'	14 ^h 38'	18 ^h 10'	6 ^h 29'	23 ^h 38'	13 ^h 13'	14 ^h 22'	7 ^h 56'	22 ^h 12'	T 30

Delta T = 19.55 sec

Greg. Calendar

OCTOBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	0 39 22	7 ^h 54'40"	7 ^h 28'	20 ^h 24'	22 ^h 13'	14 ^h 24'	18 ^h 1'	14 ^h 45'	18°R 8'	6°R28	23 ^h 39'	13°R10	14 ^h 18'	8 ^h 3'	22°R10	W 1
T 2	0 43 19	8°53'53"	19°23'	21°42'	22°59'	14°42'	18°10'	14°53'	18 ^h 6'	6 ^h 26'	23°40'	13 ^h 5'	14°15'	8° 9'	22 ^h 8'	T 2
F 3	0 47 16	9°53'07"	1 ^h 14'	23° 4'	23°44'	14°59'	18°18'	15° 0'	18° 5'	6°25'	23°40'	12°59'	14°12'	8°16'	22° 5'	F 3
S 4	0 51 12	10°52'24"	13° 5'	24°31'	24°27'	15°18'	18°27'	15° 7'	18° 3'	6°24'	23°41'	12°53'	14° 9'	8°23'	22° 3'	S 4
S 5	0 55 9	11°51'43"	24°59'	26° 2'	25°10'	15°37'	18°36'	15°15'	18° 1'	6°23'	23°41'	12°47'	14° 6'	8°29'	22° 1'	S 5
M 6	0 59 5	12°51'03"	6 ^h 58'	27°35'	25°52'	15°57'	18°45'	15°22'	17°59'	6°21'	23°42'	12°42'	14° 2'	8°36'	21°59'	M 6
T 7	1 3 2	13°50'27"	19° 3'	29°11'	26°33'	16°17'	18°54'	15°29'	17°57'	6°20'	23°42'	12°39'	13°59'	8°43'	21°56'	T 7
W 8	1 6 58	14°49'52"	1 ^h 16'	0 ^h 49'	27°13'	16°37'	19° 3'	15°37'	17°55'	6°19'	23°43'	12°37'	13°56'	8°49'	21°54'	W 8
T 9	1 10 55	15°49'19"	13°38'	2°29'	27°51'	16°59'	19°12'	15°44'	17°53'	6°18'	23°43'	12°D36	13°53'	8°56'	21°52'	T 9
F 10	1 14 51	16°48'48"	26°11'	4° 9'	28°28'	17°20'	19°22'	15°51'	17°51'	6°17'	23°43'	12°37'	13°50'	9° 3'	21°49'	F 10
S 11	1 18 48	17°48'19"	8 ^h 57'	5°51'	29° 5'	17°43'	19°31'	15°59'	17°49'	6°15'	23°44'	12°38'	13°47'	9°10'	21°47'	S 11
S 12	1 22 44	18°47'52"	21°58'	7°33'	29°39'	18° 5'	19°41'	16° 6'	17°47'	6°14'	23°44'	12°40'	13°43'	9°16'	21°44'	S 12
M13	1 26 41	19°47'26"	5 ^h 16'	9°16'	0 ^h 13'	18°29'	19°51'	16°13'	17°45'	6°13'	23°44'	12°41'	13°40'	9°23'	21°42'	M13
T 14	1 30 38	20°47'03"	18°52'	10°59'	0°45'	18°52'	20° 1'	16°21'	17°43'	6°12'	23°45'	12°R42	13°37'	9°30'	21°39'	T 14
W15	1 34 34	21°46'41"	2 ^h 49'	12°41'	1°16'	19°16'	20°11'	16°28'	17°41'	6°11'	23°45'	12°41'	13°34'	9°36'	21°36'	W15
T 16	1 38 31	22°46'21"	17° 5'	14°24'	1°45'	19°41'	20°21'	16°35'	17°39'	6°10'	23°45'	12°40'	13°31'	9°43'	21°33'	T 16
F 17	1 42 27	23°46'02"	1 ^h 38'	16° 7'	2°13'	20° 6'	20°31'	16°42'	17°36'	6° 9'	23°45'	12°38'	13°28'	9°50'	21°31'	F 17
S 18	1 46 24	24°45'45"	16°24'	17°50'	2°39'	20°31'	20°41'	16°50'	17°34'	6° 8'	23°46'	12°36'	13°24'	9°57'	21°28'	S 18
S 19	1 50 20	25°45'30"	1 ^h 16'	19°32'	3° 3'	20°57'	20°52'	16°57'	17°32'	6° 7'	23°46'	12°34'	13°21'	10° 3'	21°25'	S 19
M20	1 54 17	26°45'17"	16° 7'	21°14'	3°25'	21°23'	21° 2'	17° 4'	17°30'	6° 6'	23°46'	12°32'	13°18'	10°10'	21°22'	M20
T 21	1 58 13	27°45'05"	0 ^h 49'	22°55'	3°46'	21°50'	21°13'	17°12'	17°27'	6° 5'	23°46'	12°31'	13°15'	10°17'	21°19'	T 21
W22	2 2 10	28°44'56"	15°14'	24°36'	4° 5'	22°17'	21°24'	17°19'	17°25'	6° 5'	23°46'	12°D30	13°12'	10°23'	21°16'	W22
T 23	2 6 7	29°44'49"	29°18'	26°16'	4°22'	22°44'	21°34'	17°26'	17°23'	6° 4'	23°46'	12°31'	13° 8'	10°30'	21°13'	T 23
F 24	2 10 3	0 ^h 44'44"	12 ^h 57'	27°56'	4°36'	23°12'	21°45'	17°33'	17°20'	6° 3'	23°46'	12°32'	13° 5'	10°37'	21°10'	F 24
S 25	2 14 0	1°44'41"	26°12'	29°36'	4°49'	23°40'	21°56'	17°40'	17°18'	6° 2'	23°R46	12°33'	13° 2'	10°44'	21° 7'	S 25
S 26	2 17 56	2°44'40"	9 ^h 3'	1 ^h 15'	5° 0'	24° 8'	22° 7'	17°48'	17°15'	6° 1'	23°46'	12°34'	12°59'	10°50'	21° 4'	S 26
M27	2 21 53	3°44'42"	21°33'	2°54'	5° 8'	24°37'	22°18'	17°55'	17°13'	6° 1'	23°46'	12°34'	12°56'	10°57'	21° 1'	M27
T 28	2 25 49	4°44'45"	3 ^h 24'	4°32'	5°15'	25° 6'	22°30'	18° 2'	17°11'	6° 0'	23°46'	12°R35	12°53'	11° 4'	20°58'	T 28
W29	2 29 46	5°44'51"	15°49'	6°10'	5°19'	25°35'	22°41'	18° 9'	17° 8'	5°59'	23°46'	12°35'	12°49'	11°10'	20°55'	W29
T 30	2 33 42	6°44'58"	27°43'	7°47'	5°R20	26° 5'	22°52'	18°16'	17° 6'	5°59'	23°46'	12°34'	12°46'	11°17'	20°52'	T 30
F 31	2 37 39	7 ^h 45'08"	9 ^h 34'	9 ^h 24'	5 ^h 20'	26 ^h 35'	23 ^h 4'	18 ^h 23'	17 ^h 3'	5 ^h 58'	23 ^h 46'	12 ^h 34'	12 ^h 43'	11 ^h 24'	20 ^h 49'	F 31

Delta T = 19.51 sec

Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1687
geocentric

NOVEMBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 41 36	8♈45'20	21♏26	11♈0	5°R17	27°5	23°16	18°30	17°R 1	5°R58	23°R46	12°R33	12♈40	11♏30	20°R46	S 1
S 2	2 45 32	9°45'34	3♏23	12°36	5♏11	27°35	23°27	18°37	16♏58	5♏57	23°45	12♏32	12°37	11°37	20♏42	S 2
M 3	2 49 29	10°45'50	15°28	14°12	5° 3	28° 6	23°39	18°44	16°56	5°57	23°45	12°32	12°33	11°44	20°39	M 3
T 4	2 53 25	11°46'07	27°43	15°47	4°53	28°37	23°51	18°51	16°53	5°56	23°45	12°32	12°30	11°51	20°36	T 4
W 5	2 57 22	12°46'27	10♈11	17°22	4°40	29° 8	24° 3	18°58	16°51	5°56	23°45	12°32	12°27	11°57	20°33	W 5
T 6	3 1 18	13°46'48	22°51	18°57	4°25	29°40	24°15	19° 5	16°48	5°55	23°44	12°32	12°24	12° 4	20°30	T 6
F 7	3 5 15	14°47'11	5♏45	20°31	4° 7	0♏12	24°27	19°12	16°46	5°55	23°44	12°32	12°21	12°11	20°26	F 7
S 8	3 9 11	15°47'36	18°53	22° 5	3°47	0°44	24°39	19°19	16°43	5°55	23°44	12°32	12°18	12°17	20°23	S 8
S 9	3 13 8	16°48'02	2♏14	23°38	3°25	1°16	24°51	19°26	16°41	5°54	23°43	12°31	12°14	12°24	20°20	S 9
M10	3 17 5	17°48'30	15°47	25°12	3° 1	1°48	25° 3	19°32	16°38	5°54	23°43	12°31	12°11	12°31	20°16	M10
T 11	3 21 1	18°48'59	29°33	26°45	2°35	2°21	25°16	19°39	16°36	5°54	23°42	12°30	12° 8	12°38	20°13	T 11
W12	3 24 58	19°49'29	13♏30	28°18	2° 7	2°54	25°28	19°46	16°33	5°54	23°42	12°D30	12° 5	12°44	20°10	W12
T 13	3 28 54	20°50'00	27°37	29°50	1°37	3°27	25°41	19°52	16°31	5°54	23°42	12°30	12° 2	12°51	20° 7	T 13
F 14	3 32 51	21°50'33	11♏53	1♏23	1° 5	4° 1	25°53	19°59	16°28	5°53	23°41	12°30	11°59	12°58	20° 3	F 14
S 15	3 36 47	22°51'07	26°14	2°55	0°32	4°34	26° 6	20° 6	16°26	5°53	23°41	12°31	11°55	13° 4	20° 0	S 15
S 16	3 40 44	23°51'42	10♏38	4°27	29♈58	5° 8	26°18	20°12	16°23	5°53	23°40	12°32	11°52	13°11	19°57	S 16
M17	3 44 40	24°52'18	25° 0	5°58	29°23	5°42	26°31	20°19	16°21	5°D53	23°39	12°33	11°49	13°18	19°53	M17
T 18	3 48 37	25°52'56	9♏16	7°30	28°47	6°16	26°44	20°25	16°19	5°53	23°39	12°R33	11°46	13°24	19°50	T 18
W19	3 52 34	26°53'35	23°22	9° 1	28°11	6°50	26°57	20°32	16°16	5°53	23°38	12°33	11°43	13°31	19°47	W19
T 20	3 56 30	27°54'16	7♏13	10°32	27°34	7°25	27° 9	20°38	16°14	5°53	23°38	12°32	11°39	13°38	19°44	T 20
F 21	4 0 27	28°54'57	20°45	12° 3	26°58	7°59	27°22	20°44	16°11	5°54	23°37	12°30	11°36	13°45	19°40	F 21
S 22	4 4 23	29°55'41	3♏58	13°33	26°22	8°34	27°35	20°50	16° 9	5°54	23°36	12°28	11°33	13°51	19°37	S 22
S 23	4 8 20	0♏56'26	16°50	15° 3	25°46	9° 9	27°48	20°57	16° 6	5°54	23°36	12°25	11°30	13°58	19°34	S 23
M24	4 12 16	1°57'12	29°23	16°33	25°11	9°44	28° 1	21° 3	16° 4	5°54	23°35	12°22	11°27	14° 5	19°31	M24
T 25	4 16 13	2°58'00	11♏29	18° 2	24°37	10°19	28°14	21° 9	16° 2	5°54	23°34	12°20	11°24	14°11	19°28	T 25
W26	4 20 10	3°58'49	23°43	19°32	24° 5	10°55	28°28	21°15	15°59	5°55	23°33	12°18	11°20	14°18	19°24	W26
T 27	4 24 6	4°59'40	5♏38	21° 0	23°34	11°30	28°41	21°21	15°57	5°55	23°33	12°D18	11°17	14°25	19°21	T 27
F 28	4 28 3	6° 0'32	17°29	22°28	23° 4	12° 6	28°54	21°27	15°55	5°55	23°32	12°18	11°14	14°31	19°18	F 28
S 29	4 31 59	7° 1'25	29°21	23°56	22°37	12°42	29° 7	21°33	15°52	5°56	23°31	12°20	11°11	14°38	19°15	S 29
S 30	4 35 56	8♏2'20	11♏19	25♏22	22♈11	13♏17	29♏21	21♏39	15♏50	5♏56	23♏30	12♏22	11♏ 8	14♏45	19♏12	S 30

Delta T = 19.47 sec

Greg. Calendar

DECEMBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	4 39 52	9♏3'16	23♏28	26♏48	21°R47	13♏53	29♏34	21♏44	15°R48	5♏57	23°R29	12♏23	11♏ 5	14♏52	19°R 9	M 1
T 2	4 43 49	10° 4'13	5♈50	28°13	21♈26	14°30	29°47	21°50	15♏46	5°57	23°28	12°24	11° 1	14°58	19♏ 6	T 2
W 3	4 47 45	11° 5'12	18°30	29°37	21° 7	15° 6	0♏ 1	21°56	15°43	5°58	23°27	12°R24	10°58	15° 5	19° 3	W 3
T 4	4 51 42	12° 6'12	1♏28	1♏ 0	20°50	15°42	0°14	22° 1	15°41	5°58	23°27	12°23	10°55	15°12	19° 0	T 4
F 5	4 55 39	13° 7'12	14°45	2°21	20°36	16°19	0°28	22° 7	15°39	5°59	23°26	12°20	10°52	15°18	18°57	F 5
S 6	4 59 35	14° 8'14	28°19	3°40	20°24	16°55	0°41	22°12	15°37	6° 0	23°25	12°16	10°49	15°25	18°54	S 6
S 7	5 3 32	15° 9'16	12♏ 8	4°57	20°15	17°32	0°55	22°18	15°35	6° 0	23°24	12°10	10°45	15°32	18°51	S 7
M 8	5 7 28	16°10'19	26° 8	6°11	20° 8	18° 9	1° 9	22°23	15°33	6° 1	23°23	12° 5	10°42	15°38	18°48	M 8
T 9	5 11 25	17°11'23	10♏16	7°23	20° 3	18°46	1°22	22°28	15°31	6° 2	23°22	12° 0	10°39	15°45	18°46	T 9
W10	5 15 21	18°12'27	24°27	8°31	20°D 1	19°23	1°36	22°33	15°29	6° 2	23°21	11°56	10°36	15°52	18°43	W10
T 11	5 19 18	19°13'32	8♏39	9°36	20° 2	20° 0	1°50	22°38	15°27	6° 3	23°20	11°54	10°33	15°59	18°40	T 11
F 12	5 23 14	20°14'36	22°49	10°36	20° 5	20°38	2° 3	22°43	15°25	6° 4	23°19	11°D53	10°30	16° 5	18°37	F 12
S 13	5 27 11	21°15'41	6♏54	11°31	20°10	21°15	2°17	22°48	15°23	6° 5	23°17	11°54	10°26	16°12	18°35	S 13
S 14	5 31 8	22°16'47	20°55	12°20	20°18	21°52	2°31	22°53	15°21	6° 6	23°16	11°56	10°23	16°19	18°32	S 14
M15	5 35 4	23°17'53	4♏50	13° 3	20°27	22°30	2°45	22°58	15°19	6° 7	23°15	11°R57	10°20	16°25	18°30	M15
T 16	5 39 1	24°18'59	18°37	13°38	20°39	23° 7	2°58	23° 3	15°18	6° 8	23°14	11°57	10°17	16°32	18°27	T 16
W17	5 42 57	25°20'05	2♏15	14° 4	20°54	23°45	3°12	23° 7	15°16	6° 9	23°13	11°55	10°14	16°39	18°25	W17
T 18	5 46 54	26°21'12	15°43	14°22	21°10	24°23	3°26	23°12	15°14	6°10	23°12	11°51	10°11	16°45	18°22	T 18
F 19	5 50 50	27°22'19	28°58	14°R29	21°28	25° 1	3°40	23°17	15°12	6°11	23°11	11°45	10° 7	16°52	18°20	F 19
S 20	5 54 47	28°23'27	11♏58	14°25	21°49	25°38	3°54	23°21	15°11	6°12	23°10	11°36	10° 4	16°59	18°18	S 20
S 21	5 58 43	29°24'35	24°43	14°10	22°11	26°16	4° 7	23°25	15° 9	6°13	23° 8	11°27	10° 1	17° 6	18°15	S 21
M22	6 2 40	0♏25'43	7♏12	13°43	22°35	26°54	4°21	23°30	15° 8	6°14	23° 7	11°18	9°58	17°12	18°13	M22
T 23	6 6 37	1°26'52	19°27	13° 4	23° 1	27°32	4°35	23°34	15° 6	6°15	23° 6	11°10	9°55	17°19	18°11	T 23
W24	6 10 33	2°28'01	1♏30	12°14	23°29	28°10	4°49	23°38	15° 5	6°17	23° 5	11° 3	9°51	17°26	18° 9	W24
T 25	6 14 30	3°29'11	13°25	11°13	23°58	28°49	5° 3	23°42	15° 3	6°18	23° 4	10°58	9°48	17°32	18° 7	T 25
F 26	6 18 26	4°30'21	25°15	10° 4	24°29	29°27	5°17	23°46	15° 2	6°19	23° 2	10°56	9°45	17°39	18° 5	F 26
S 27	6 22 23	5°31'31	7♏ 6	8°49	25° 2	0♏ 5	5°31	23°49	15° 0	6°20	23° 1	10°D55	9°42	17°46	18° 3	S 27
S 28	6 26 19	6°32'42	19° 2	7°29	25°36	0°43	5°45	23°53	14°59	6°22	23° 0	10°56	9°39	17°52	18° 1	S 28
M29	6 30 16	7°33'53	1♈10	6° 7	26°11	1°22	5°58	23°57	14°58	6°23	22°59	10°57	9°36	17°59	17°59	M29
T 30	6 34 12	8°35'05	13°34	4°47	26°48	2° 0	6°12	24° 0	14°57	6°24	22°57	10°R57	9°32	18° 6	17°57	T 30
W31	6 38 9	9♏36'16	26♈18	3♏30	27♈26	2♏39	6♏26	24♏ 4	14♏55	6♏26	22♏56	10♏56	9♏29	18♏12	17♏55	W31

Delta T = 19.43 sec

Greg. Calendar