



# Astrodienst Ephemeris Tables for the year 1868

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 1868

geocentric

JANUARY 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	6 39 45	9°35'42"	15°11'	26°34'	3°47'	10°13'	4°46'	1°32'	10°R53	12°V17	14°R16	6°M29	8°M 5	22°Z24	22°K24	W 1
T 2	6 43 41	10°55'35"	27°26'	28° 5'	5° 2'	10°59'	4°58'	1°38'	10°Z51	12°18'	14°R16	6°30'	8° 2'	22°31'	22°25'	T 2
F 3	6 47 38	11°56'45"	9°V58	29°36'	6°17'	11°45'	5° 9'	1°44'	10°48'	12°18'	14°15'	6°R31	7°58'	22°38'	22°27'	F 3
S 4	6 51 34	12°57'54"	22°53'	1°Z 8'	7°32'	12°31'	5°20'	1°50'	10°45'	12°18'	14°15'	6°30'	7°55'	22°44'	22°28'	S 4
S 5	6 55 31	13°59'04"	6°B16	2°40'	8°46'	13°17'	5°32'	1°56'	10°43'	12°19'	14°14'	6°28'	7°52'	22°51'	22°30'	S 5
M 6	6 59 27	15° 0'12"	20° 8'	4°12'	10° 1'	14° 3'	5°44'	2° 2'	10°40'	12°19'	14°14'	6°23'	7°49'	22°58'	22°32'	M 6
T 7	7 3 24	16° 1'21"	4°II29	5°45'	11°16'	14°50'	5°55'	2° 7'	10°38'	12°20'	14°13'	6°17'	7°46'	23° 5'	22°34'	T 7
W 8	7 7 21	17° 2'29"	19°18'	7°18'	12°30'	15°36'	6° 7'	2°13'	10°35'	12°20'	14°13'	6° 9'	7°43'	23°11'	22°36'	W 8
T 9	7 11 17	18° 3'37"	4°Z26	8°52'	13°45'	16°22'	6°19'	2°19'	10°32'	12°21'	14°12'	6° 1'	7°39'	23°18'	22°38'	T 9
F 10	7 15 14	19° 4'44"	19°45'	10°26'	15° 0'	17° 8'	6°31'	2°25'	10°30'	12°21'	14°12'	5°54'	7°36'	23°25'	22°40'	F 10
S 11	7 19 10	20° 5'51"	5°Z 3'	12° 0'	16°14'	17°55'	6°43'	2°30'	10°27'	12°22'	14°12'	5°49'	7°33'	23°31'	22°42'	S 11
S 12	7 23 7	21° 6'58"	20° 9'	13°35'	17°29'	18°41'	6°55'	2°36'	10°25'	12°23'	14°11'	5°46'	7°30'	23°38'	22°44'	S 12
M13	7 27 3	22° 8'04"	4°M55	15°11'	18°43'	19°27'	7° 7'	2°41'	10°22'	12°23'	14°11'	5°D45	7°27'	23°45'	22°46'	M13
T 14	7 31 0	23° 9'11"	19°16'	16°47'	19°58'	20°14'	7°20'	2°47'	10°20'	12°24'	14°11'	5°45'	7°24'	23°51'	22°48'	T 14
W15	7 34 56	24°10'17"	3°Z 9'	18°23'	21°12'	21° 0'	7°32'	2°52'	10°17'	12°25'	14°10'	5°47'	7°20'	23°58'	22°51'	W15
T 16	7 38 53	25°11'22"	16°36'	20° 0'	22°27'	21°47'	7°45'	2°57'	10°15'	12°25'	14°10'	5°48'	7°17'	24° 5'	22°53'	T 16
F 17	7 42 50	26°12'28"	29°39'	21°38'	23°41'	22°33'	7°57'	3° 2'	10°12'	12°26'	14°10'	5°R48	7°14'	24°11'	22°55'	F 17
S 18	7 46 46	27°13'33"	12°M21	23°16'	24°55'	23°20'	8°10'	3° 8'	10°10'	12°27'	14°10'	5°47'	7°11'	24°18'	22°57'	S 18
S 19	7 50 43	28°14'38"	24°46'	24°54'	26°10'	24° 6'	8°23'	3°13'	10° 7'	12°28'	14° 9'	5°44'	7° 8'	24°25'	23° 0'	S 19
M20	7 54 39	29°15'43"	6°Z58	26°34'	27°24'	24°53'	8°35'	3°18'	10° 5'	12°29'	14° 9'	5°39'	7° 4'	24°31'	23° 2'	M20
T 21	7 58 36	0°16'47"	19° 1'	28°13'	28°38'	25°40'	8°48'	3°23'	10° 3'	12°30'	14° 9'	5°33'	7° 1'	24°38'	23° 5'	T 21
W22	8 2 32	1°17'51"	0°Z57	29°54'	29°53'	26°26'	9° 1'	3°28'	10° 0'	12°31'	14° 9'	5°27'	6°58'	24°45'	23° 7'	W22
T 23	8 6 29	2°18'54"	12°49'	1°Z35	1°K 7'	27°13'	9°14'	3°32'	9°58'	12°32'	14° 9'	5°20'	6°55'	24°51'	23°10'	T 23
F 24	8 10 25	3°19'56"	24°38'	3°16'	2°21'	28° 0'	9°27'	3°37'	9°55'	12°33'	14° 9'	5°14'	6°52'	24°58'	23°13'	F 24
S 25	8 14 22	4°20'58"	6°Z28	4°58'	3°35'	28°47'	9°40'	3°42'	9°53'	12°34'	14° 9'	5° 9'	6°49'	25° 5'	23°15'	S 25
S 26	8 18 19	5°21'59"	18°19'	6°41'	4°49'	29°33'	9°54'	3°46'	9°51'	12°35'	14° 8'	5° 6'	6°45'	25°11'	23°18'	S 26
M27	8 22 15	6°22'58"	0°K13	8°25'	6° 3'	0°Z20	10° 7'	3°51'	9°49'	12°36'	14° 8'	5°D 5'	6°42'	25°18'	23°21'	M27
T 28	8 26 12	7°23'57"	12°13'	10° 9'	7°17'	1° 7'	10°20'	3°55'	9°46'	12°37'	14°D 8'	5° 5'	6°39'	25°25'	23°23'	T 28
W29	8 30 8	8°24'54"	24°21'	11°53'	8°31'	1°54'	10°34'	4° 0'	9°44'	12°39'	14° 8'	5° 6'	6°36'	25°32'	23°26'	W29
T 30	8 34 5	9°25'51"	6°V41	13°39'	9°45'	2°41'	10°47'	4° 4'	9°42'	12°40'	14° 8'	5° 8'	6°33'	25°38'	23°29'	T 30
F 31	8 38 1	10°26'46"	19°V17	15°Z24	10°K59	3°Z28	11°K 0'	4°Z 8'	9°Z40	12°V41	14°R 8'	5°M10	6°M29	25°Z45	23°K32	F 31

Delta T = 4.88 sec

FEBRUARY 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	8 41 58	11°27'39"	2°B10	17°10'	12°K13	4°Z15	11°K14	4°Z12	9°R38	12°V42	14°R 9'	5°M11	6°M26	25°Z52	23°K35	S 1
S 2	8 45 54	12°28'32"	15°26'	18°57'	13°27'	5° 2'	11°28'	4°16'	9°Z36	12°44'	14° 9'	5°R11	6°23'	25°58'	23°38'	S 2
M 3	8 49 51	13°29'23"	29° 7'	20°44'	14°41'	5°48'	11°41'	4°20'	9°34'	12°45'	14° 9'	5°10'	6°20'	26° 5'	23°41'	M 3
T 4	8 53 48	14°30'12"	13°II14	22°31'	15°54'	6°35'	11°55'	4°24'	9°32'	12°46'	14° 9'	5° 9'	6°17'	26°12'	23°44'	T 4
W 5	8 57 44	15°31'01"	27°45'	24°19'	17° 8'	7°22'	12° 9'	4°28'	9°30'	12°48'	14° 9'	5° 6'	6°14'	26°18'	23°47'	W 5
T 6	9 1 41	16°31'47"	12°Z37	26° 6'	18°22'	8° 9'	12°22'	4°31'	9°28'	12°49'	14° 9'	5° 4'	6°10'	26°25'	23°50'	T 6
F 7	9 5 37	17°32'33"	27°43'	27°54'	19°35'	8°57'	12°36'	4°35'	9°26'	12°51'	14° 9'	5° 1'	6° 7'	26°32'	23°53'	F 7
S 8	9 9 34	18°33'16"	12°Z54	29°41'	20°49'	9°44'	12°50'	4°39'	9°24'	12°52'	14°10'	5° 0'	6° 4'	26°38'	23°56'	S 8
S 9	9 13 30	19°33'59"	28° 1'	1°K28	22° 2'	10°31'	13° 4'	4°42'	9°22'	12°54'	14°10'	4°D59	6° 1'	26°45'	23°59'	S 9
M10	9 17 27	20°34'40"	12°M53	3°13'	23°15'	11°18'	13°18'	4°45'	9°20'	12°55'	14°10'	4°59'	5°58'	26°52'	24° 2'	M10
T 11	9 21 23	21°35'20"	27°25'	4°58'	24°29'	12° 5'	13°32'	4°49'	9°19'	12°57'	14°10'	5° 0'	5°55'	26°58'	24° 6'	T 11
W12	9 25 20	22°35'58"	11°Z31	6°41'	25°42'	12°52'	13°46'	4°52'	9°17'	12°58'	14°11'	5° 1'	5°51'	27° 5'	24° 9'	W12
T 13	9 29 17	23°36'36"	25°10'	8°23'	26°55'	13°39'	14° 0'	4°55'	9°15'	13° 0'	14°11'	5° 2'	5°48'	27°12'	24°12'	T 13
F 14	9 33 13	24°37'12"	8°M22	10° 2'	28° 8'	14°26'	14°14'	4°58'	9°14'	13° 1'	14°11'	5° 3'	5°45'	27°18'	24°15'	F 14
S 15	9 37 10	25°37'47"	21°10'	11°38'	29°21'	15°13'	14°28'	5° 1'	9°12'	13° 3'	14°12'	5°R 3'	5°42'	27°25'	24°19'	S 15
S 16	9 41 6	26°38'21"	3°Z38	13°11'	0°V34	16° 1'	14°42'	5° 4'	9°11'	13° 5'	14°12'	5° 3'	5°39'	27°32'	24°22'	S 16
M17	9 45 3	27°38'54"	15°49'	14°40'	1°47'	16°48'	14°57'	5° 6'	9° 9'	13° 6'	14°13'	5° 3'	5°35'	27°38'	24°25'	M17
T 18	9 48 59	28°39'26"	27°49'	16° 5'	3° 0'	17°35'	15°11'	5° 9'	9° 8'	13° 8'	14°13'	5° 2'	5°32'	27°45'	24°29'	T 18
W19	9 52 56	29°39'56"	9°Z41	17°24'	4°13'	18°22'	15°25'	5°11'	9° 6'	13°10'	14°13'	5° 1'	5°29'	27°52'	24°32'	W19
T 20	9 56 52	0°K40'24"	21°30'	18°38'	5°26'	19° 9'	15°39'	5°14'	9° 5'	13°12'	14°14'	5° 0'	5°26'	27°58'	24°36'	T 20
F 21	10 0 49	1°40'52"	3°Z19	19°45'	6°38'	19°57'	15°54'	5°16'	9° 4'	13°13'	14°14'	5° 0'	5°23'	28° 5'	24°39'	F 21
S 22	10 4 46	2°41'17"	15°10'	20°45'	7°51'	20°44'	16° 8'	5°18'	9° 2'	13°15'	14°15'	5° 0'	5°20'	28°12'	24°42'	S 22
S 23	10 8 42	3°41'42"	27° 6'	21°37'	9° 3'	21°31'	16°22'	5°20'	9° 1'	13°17'	14°15'	4°59'	5°16'	28°18'	24°46'	S 23
M24	10 12 39	4°42'04"	9°K10	22°20'	10°16'	22°18'	16°37'	5°22'	9° 0'	13°19'	14°16'	4°59'	5°13'	28°25'	24°49'	M24
T 25	10 16 35	5°42'25"	21°22'	22°55'	11°28'	23° 6'	16°51'	5°24'	8°59'	13°21'	14°17'	4°59'	5°10'	28°32'	24°53'	T 25
W26	10 20 32	6°42'44"	3°V45	23°21'	12°40'	23°53'	17° 6'	5°26'	8°58'	13°23'	14°17'	4°59'	5° 7'	28°38'	24°56'	W26
T 27	10 24 28	7°43'01"	16°20'	23°37'	13°53'	24°40'	17°20'	5°28'	8°57'	13°25'	14°18'	4°59'	5° 4'	28°45'	25° 0'	T 27
F 28	10 28 25	8°43'16"	29° 9'	23°R44	15° 5'	25°27'	17°34'	5°30'	8°56'	13°27'	14°18'	4°59'	5° 1'	28°52'	25° 4'	F 28
S 29	10 32 21	9°K43'29"	12°B12	23°K41	16°V17	26°Z15	17°K49	5°Z31	8°Z55	13°V29	14°R19	4°M58	4°M57	28°Z58	25°K 7'	S 29

Delta T = 4.77 sec

## ASTRODIENST EPHEMERIS for the year 1868

geocentric

MARCH 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 36 18	10°43'40	25°32	23°R28	17°Y29	27°22	18°K 3	5°A33	8°R54	13°Y30	14°B20	4°R58	4°M54	29°Z 5	25°K11	S 1
M 2	10 40 15	11°43'49	9°II10	23°K 7	18°41	27°49	18°18	5°34	8°B53	13°32	14°20	4°D58	4°51	29°12	25°14	M 2
T 3	10 44 11	12°43'56	23° 6	22°37	19°52	28°36	18°32	5°35	8°53	13°34	14°21	4°M58	4°48	29°18	25°18	T 3
W 4	10 48 8	13°44'01	7°B19	22° 0	21° 4	29°24	18°47	5°36	8°52	13°36	14°22	4°58	4°45	29°25	25°22	W 4
T 5	10 52 4	14°44'03	21°48	21°16	22°16	0°K11	19° 1	5°37	8°51	13°39	14°23	4°59	4°41	29°32	25°25	T 5
F 6	10 56 1	15°44'04	6°B30	20°26	23°27	0°58	19°16	5°38	8°51	13°41	14°23	5° 0	4°38	29°38	25°29	F 6
S 7	10 59 57	16°44'02	21°18	19°32	24°39	1°45	19°30	5°39	8°50	13°43	14°24	5° 0	4°35	29°45	25°32	S 7
S 8	11 3 54	17°43'58	6°M 6	18°34	25°50	2°32	19°45	5°40	8°50	13°45	14°25	5°R 1	4°32	29°52	25°36	S 8
M 9	11 7 50	18°43'52	20°47	17°36	27° 1	3°20	19°59	5°41	8°49	13°47	14°26	5° 0	4°29	29°58	25°40	M 9
T 10	11 11 47	19°43'44	5°A14	16°36	28°12	4° 7	20°14	5°41	8°49	13°49	14°27	4°59	4°26	0°A 5	25°43	T 10
W11	11 15 44	20°43'35	19°21	15°38	29°23	4°54	20°29	5°41	8°48	13°51	14°28	4°57	4°22	0°12	25°47	W11
T 12	11 19 40	21°43'23	3°M 5	14°42	0°B34	5°41	20°43	5°42	8°48	13°53	14°28	4°55	4°19	0°18	25°51	T 12
F 13	11 23 37	22°43'10	16°24	13°50	1°44	6°28	20°58	5°42	8°48	13°55	14°29	4°53	4°16	0°25	25°54	F 13
S 14	11 27 33	23°42'55	29°18	13° 1	2°55	7°16	21°12	5°42	8°48	13°57	14°30	4°50	4°13	0°32	25°58	S 14
S 15	11 31 30	24°42'39	11°A51	12°17	4° 6	8° 3	21°27	5°R42	8°48	14° 0	14°31	4°49	4°10	0°38	26° 2	S 15
M16	11 35 26	25°42'20	24° 6	11°39	5°16	8°50	21°41	5°42	8°47	14° 2	14°32	4°D48	4° 6	0°45	26° 5	M16
T 17	11 39 23	26°42'00	6°B 7	11° 6	6°26	9°37	21°56	5°42	8°D47	14° 4	14°33	4°49	4° 3	0°52	26° 9	T 17
W18	11 43 19	27°41'39	17°59	10°40	7°36	10°24	22°10	5°42	8°48	14° 6	14°34	4°50	4° 0	0°58	26°13	W18
T 19	11 47 16	28°41'15	29°48	10°19	8°46	11°11	22°25	5°41	8°48	14° 8	14°35	4°51	3°57	1° 5	26°16	T 19
F 20	11 51 12	29°40'50	11°A37	10° 5	9°56	11°59	22°39	5°41	8°48	14°11	14°36	4°53	3°54	1°12	26°20	F 20
S 21	11 55 9	0°Y40'22	23°32	9°57	11° 6	12°46	22°54	5°40	8°48	14°13	14°37	4°55	3°51	1°19	26°24	S 21
S 22	11 59 6	1°39'53	5°K34	9°D55	12°16	13°33	23° 8	5°40	8°48	14°15	14°38	4°R55	3°47	1°25	26°27	S 22
M23	12 3 2	2°39'22	17°49	9°58	13°25	14°20	23°22	5°39	8°49	14°17	14°39	4°54	3°44	1°32	26°31	M23
T 24	12 6 59	3°38'49	0°Y16	10° 8	14°35	15° 7	23°37	5°38	8°49	14°19	14°40	4°52	3°41	1°38	26°35	T 24
W25	12 10 55	4°38'14	12°58	10°22	15°44	15°54	23°51	5°37	8°49	14°22	14°41	4°49	3°38	1°45	26°38	W25
T 26	12 14 52	5°37'37	25°54	10°42	16°53	16°41	24° 6	5°36	8°50	14°24	14°42	4°44	3°35	1°52	26°42	T 26
F 27	12 18 48	6°36'57	9°B 4	11° 6	18° 2	17°28	24°20	5°35	8°50	14°26	14°43	4°39	3°32	1°58	26°46	F 27
S 28	12 22 45	7°36'16	22°28	11°36	19°11	18°15	24°34	5°33	8°51	14°28	14°44	4°34	3°28	2° 5	26°49	S 28
S 29	12 26 41	8°35'32	6°II 4	12° 9	20°19	19° 2	24°49	5°32	8°52	14°31	14°46	4°29	3°25	2°12	26°53	S 29
M30	12 30 38	9°34'46	19°51	12°46	21°28	19°49	25° 3	5°31	8°52	14°33	14°47	4°26	3°22	2°18	26°56	M30
T 31	12 34 35	10°Y33'58	3°B48	13°K28	22°B36	20°K36	25°K17	5°A29	8°B53	14°Y35	14°B48	4°M24	3°M19	2°A25	27°K 0	T 31

Delta T = 4.66 sec

APRIL 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	12 38 31	11°Y33'07	17°B53	14°K13	23°B44	21°K23	25°K32	5°R27	8°B54	14°Y37	14°B49	4°D24	3°M16	2°A32	27°K 4	W 1
T 2	12 42 28	12°32'14	2°B 6	15° 1	24°52	22°10	25°46	5°A26	8°55	14°40	14°50	4°M25	3°12	2°38	27° 7	T 2
F 3	12 46 24	13°31'19	16°24	15°53	26° 0	22°57	26° 0	5°24	8°55	14°42	14°51	4°27	3° 9	2°45	27°11	F 3
S 4	12 50 21	14°30'21	0°M46	16°48	27° 8	23°43	26°14	5°22	8°56	14°44	14°53	4°R28	3° 6	2°52	27°14	S 4
S 5	12 54 17	15°29'21	15° 7	17°46	28°15	24°30	26°28	5°20	8°57	14°47	14°54	4°27	3° 3	2°58	27°18	S 5
M 6	12 58 14	16°28'19	29°23	18°47	29°23	25°17	26°42	5°18	8°58	14°49	14°55	4°25	3° 0	3° 5	27°21	M 6
T 7	13 2 10	17°27'14	13°A31	19°50	0°II30	26° 4	26°56	5°16	9° 0	14°51	14°56	4°21	2°57	3°12	27°25	T 7
W 8	13 6 7	18°26'08	27°24	20°56	1°37	26°50	27°10	5°13	9° 1	14°53	14°57	4°15	2°53	3°18	27°28	W 8
T 9	13 10 4	19°24'59	11°M 0	22° 4	2°43	27°37	27°24	5°11	9° 2	14°56	14°59	4° 7	2°50	3°25	27°32	T 9
F 10	13 14 0	20°23'49	24°15	23°15	3°50	28°24	27°38	5° 9	9° 3	14°58	15° 0	3°59	2°47	3°32	27°35	F 10
S 11	13 17 57	21°22'37	7°A 9	24°28	4°56	29°10	27°52	5° 6	9° 5	15° 0	15° 1	3°52	2°44	3°38	27°39	S 11
S 12	13 21 53	22°21'23	19°44	25°43	6° 2	29°57	28° 6	5° 3	9° 6	15° 2	15° 2	3°45	2°41	3°45	27°42	S 12
M13	13 25 50	23°20'08	2°B 0	27° 1	7° 8	0°Y44	28°20	5° 1	9° 7	15° 5	15° 4	3°41	2°37	3°52	27°46	M13
T 14	13 29 46	24°18'50	14° 3	28°20	8°13	1°30	28°34	4°58	9° 9	15° 7	15° 5	3°39	2°34	3°58	27°49	T 14
W15	13 33 43	25°17'31	25°56	29°41	9°19	2°17	28°48	4°55	9°10	15° 9	15° 6	3°D38	2°31	4° 5	27°52	W15
T 16	13 37 39	26°16'10	7°A45	1°Y 4	10°24	3° 3	29° 1	4°52	9°12	15°11	15° 7	3°38	2°28	4°12	27°56	T 16
F 17	13 41 36	27°14'48	19°36	2°30	11°29	3°50	29°15	4°49	9°13	15°14	15° 9	3°40	2°25	4°18	27°59	F 17
S 18	13 45 32	28°13'24	1°K32	3°57	12°34	4°36	29°29	4°46	9°15	15°16	15°10	3°R40	2°22	4°25	28° 2	S 18
S 19	13 49 29	29°11'58	13°40	5°25	13°38	5°22	29°42	4°43	9°17	15°18	15°11	3°40	2°18	4°32	28° 5	S 19
M20	13 53 26	0°B10'30	26° 2	6°56	14°42	6° 9	29°56	4°40	9°18	15°20	15°13	3°37	2°15	4°38	28° 9	M20
T 21	13 57 22	1° 9'01	8°Y43	8°29	15°46	6°55	0°Y 9	4°36	9°20	15°22	15°14	3°32	2°12	4°45	28°12	T 21
W22	14 1 19	2° 7'29	21°42	10° 3	16°50	7°41	0°23	4°33	9°22	15°25	15°15	3°25	2° 9	4°52	28°15	W22
T 23	14 5 15	3° 5'56	5°B 0	11°39	17°53	8°28	0°36	4°30	9°24	15°27	15°17	3°16	2° 6	4°58	28°18	T 23
F 24	14 9 12	4° 4'22	18°36	13°17	18°56	9°14	0°49	4°26	9°26	15°29	15°18	3° 6	2° 3	5° 5	28°21	F 24
S 25	14 13 8	5° 2'45	2°II26	14°56	19°59	10° 0	1° 3	4°23	9°28	15°31	15°19	2°56	1°59	5°12	28°25	S 25
S 26	14 17 5	6° 1'06	16°27	16°38	21° 2	10°46	1°16	4°19	9°30	15°33	15°21	2°47	1°56	5°18	28°28	S 26
M27	14 21 1	6°59'26	0°B34	18°21	22° 4	11°32	1°29	4°15	9°32	15°36	15°22	2°40	1°53	5°25	28°31	M27
T 28	14 24 58	7°57'43	14°43	20° 5	23° 6	12°18	1°42	4°12	9°34	15°38	15°23	2°36	1°50	5°32	28°34	T 28
W29	14 28 55	8°55'58	28°53	21°52	24° 7	13° 4	1°55	4° 8	9°36	15°40	15°25	2°34	1°47	5°38	28°37	W29
T 30	14 32 51	9°B54'11	13°B 2	23°Y40	25°II 8	13°Y50	2°Y 8	4°A 4	9°B38	15°Y42	15°B26	2°D33	1°M43	5°A45	28°K40	T 30

Delta T = 4.55 sec

## ASTRODIENST EPHEMERIS for the year 1868

geocentric

MAY 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	14 36 48	10♌52'22	27♏ 7	25♊31	26♋ 9	14♊36	2♊21	4°R 0	9♌41	15♊44	15♌27	2°R34	1♏40	5♌52	28♋43	F 1
S 2	14 40 44	11°50'31	11♏ 8	27°23	27°10	15°22	2°34	3♌56	9°43	15°46	15°29	2♏33	1°37	5°58	28°45	S 2
S 3	14 44 41	12°48'38	25° 5	29°16	28°10	16° 8	2°47	3°52	9°45	15°48	15°30	2°32	1°34	6° 5	28°48	S 3
M 4	14 48 37	13°46'43	8♌55	1♌12	29° 9	16°54	2°59	3°48	9°47	15°50	15°31	2°27	1°31	6°12	28°51	M 4
T 5	14 52 34	14°44'46	22°37	3° 9	0♌ 9	17°39	3°12	3°44	9°50	15°52	15°33	2°20	1°28	6°18	28°54	T 5
W 6	14 56 30	15°42'48	6♏ 8	5° 8	1° 7	18°25	3°24	3°40	9°52	15°54	15°34	2°11	1°24	6°25	28°57	W 6
T 7	15 0 27	16°40'47	19°25	7° 9	2° 6	19°11	3°37	3°36	9°55	15°56	15°36	1°59	1°21	6°32	28°59	T 7
F 8	15 4 24	17°38'46	2♌27	9°12	3° 4	19°56	3°49	3°32	9°57	15°58	15°37	1°47	1°18	6°38	29° 2	F 8
S 9	15 8 20	18°36'42	15°12	11°16	4° 1	20°42	4° 2	3°28	10° 0	16° 0	15°38	1°35	1°15	6°45	29° 5	S 9
S 10	15 12 17	19°34'38	27°41	13°21	4°58	21°27	4°14	3°23	10° 2	16° 2	15°40	1°24	1°12	6°52	29° 7	S 10
M 11	15 16 13	20°32'31	9♌55	15°28	5°55	22°13	4°26	3°19	10° 5	16° 4	15°41	1°16	1° 9	6°58	29°10	M 11
T 12	15 20 10	21°30'24	21°56	17°36	6°51	22°58	4°38	3°15	10° 8	16° 6	15°42	1°11	1° 5	7° 5	29°13	T 12
W 13	15 24 6	22°28'15	3♌49	19°45	7°46	23°44	4°50	3°10	10°10	16° 8	15°44	1° 7	1° 2	7°12	29°15	W 13
T 14	15 28 3	23°26'05	15°37	21°55	8°41	24°29	5° 2	3° 6	10°13	16°10	15°45	1° 6	0°59	7°18	29°18	T 14
F 15	15 31 59	24°23'54	27°28	24° 6	9°36	25°14	5°14	3° 2	10°16	16°12	15°46	1° 6	0°56	7°25	29°20	F 15
S 16	15 35 56	25°21'42	9♌25	26°17	10°30	26° 0	5°26	2°57	10°19	16°14	15°48	1° 6	0°53	7°32	29°22	S 16
S 17	15 39 53	26°19'28	21°34	28°29	11°23	26°45	5°37	2°53	10°21	16°16	15°49	1° 5	0°49	7°38	29°25	S 17
M 18	15 43 49	27°17'13	4♊ 0	0♏40	12°16	27°30	5°49	2°48	10°24	16°17	15°50	1° 2	0°46	7°45	29°27	M 18
T 19	15 47 46	28°14'57	16°48	2°51	13° 8	28°15	6° 1	2°44	10°27	16°19	15°52	0°56	0°43	7°52	29°29	T 19
W 20	15 51 42	29°12'40	29°59	5° 1	13°59	29° 0	6°12	2°39	10°30	16°21	15°53	0°48	0°40	7°58	29°31	W 20
T 21	15 55 39	0♏10'22	13♌34	7°11	14°50	29°45	6°23	2°35	10°33	16°23	15°54	0°37	0°37	8° 5	29°34	T 21
F 22	15 59 35	1° 8'03	27°30	9°19	15°40	0♌30	6°35	2°31	10°36	16°25	15°56	0°25	0°34	8°11	29°36	F 22
S 23	16 3 32	2° 5'42	11♏45	11°26	16°29	1°15	6°46	2°26	10°39	16°26	15°57	0°14	0°30	8°18	29°38	S 23
S 24	16 7 28	3° 3'21	26°12	13°31	17°18	2° 0	6°57	2°22	10°42	16°28	15°58	0° 3	0°27	8°25	29°40	S 24
M 25	16 11 25	4° 0'58	10♌44	15°34	18° 6	2°45	7° 8	2°17	10°45	16°30	16° 0	29♏55	0°24	8°31	29°42	M 25
T 26	16 15 22	4°58'33	25°15	17°35	18°52	3°29	7°19	2°13	10°48	16°31	16° 1	29°49	0°21	8°38	29°44	T 26
W 27	16 19 18	5°56'07	9♏40	19°34	19°39	4°14	7°29	2° 8	10°51	16°33	16° 2	29°46	0°18	8°45	29°46	W 27
T 28	16 23 15	6°53'40	23°56	21°31	20°24	4°59	7°40	2° 4	10°54	16°35	16° 4	29°45	0°15	8°51	29°48	T 28
F 29	16 27 11	7°51'11	8♏ 1	23°25	21° 8	5°43	7°50	1°59	10°58	16°36	16° 5	29°45	0°11	8°58	29°49	F 29
S 30	16 31 8	8°48'41	21°54	25°17	21°51	6°28	8° 1	1°55	11° 1	16°38	16° 6	29°45	0° 8	9° 5	29°51	S 30
S 31	16 35 4	9♏46'10	5♌36	27♏ 6	22♌34	7♌12	8♊11	1♌50	11♌ 4	16♊39	16♌ 7	29♏43	0♏ 5	9♌11	29♌53	S 31

Delta T = 4.44 sec

JUNE 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	16 39 1	10♏43'37	19♌ 6	28♏53	23♌15	7♌56	8♊21	1°R46	11♌ 7	16♊41	16♌ 9	29°R39	0♏ 2	9♌18	29♌55	M 1
T 2	16 42 57	11°41'03	2♏25	0♌37	23°55	8°41	8°31	1♌42	11°10	16°42	16°10	29♏31	29♏59	9°25	29°56	T 2
W 3	16 46 54	12°38'28	15°33	2°18	24°34	9°25	8°41	1°37	11°14	16°44	16°11	29°22	29°55	9°31	29°58	W 3
T 4	16 50 51	13°35'51	28°29	3°56	25°12	10° 9	8°51	1°33	11°17	16°45	16°12	29°10	29°52	9°38	29°59	T 4
F 5	16 54 47	14°33'14	11♌12	5°32	25°49	10°53	9° 1	1°29	11°20	16°47	16°14	28°58	29°49	9°45	0♊ 1	F 5
S 6	16 58 44	15°30'36	23°43	7° 4	26°25	11°38	9°11	1°24	11°24	16°48	16°15	28°46	29°46	9°51	0° 2	S 6
S 7	17 2 40	16°27'58	6♌ 0	8°34	26°59	12°22	9°20	1°20	11°27	16°49	16°16	28°35	29°43	9°58	0° 4	S 7
M 8	17 6 37	17°25'18	18° 7	10° 1	27°32	13° 6	9°30	1°16	11°30	16°51	16°17	28°27	29°40	10° 5	0° 5	M 8
T 9	17 10 33	18°22'38	0♌ 4	11°26	28° 3	13°49	9°39	1°12	11°34	16°52	16°18	28°21	29°36	10°11	0° 6	T 9
W 10	17 14 30	19°19'57	11°54	12°47	28°33	14°33	9°48	1° 8	11°37	16°53	16°20	28°17	29°33	10°18	0° 8	W 10
T 11	17 18 26	20°17'16	23°42	14° 5	29° 2	15°17	9°57	1° 4	11°41	16°55	16°21	28°D16	29°30	10°25	0° 9	T 11
F 12	17 22 23	21°14'34	5♌31	15°21	29°29	16° 1	10° 6	0°59	11°44	16°56	16°22	28°16	29°27	10°31	0°10	F 12
S 13	17 26 20	22°11'52	17°27	16°33	29°55	16°45	10°15	0°55	11°48	16°57	16°23	28°R16	29°24	10°38	0°11	S 13
S 14	17 30 16	23° 9'10	29°36	17°42	0♏18	17°28	10°23	0°51	11°51	16°58	16°24	28°16	29°20	10°45	0°12	S 14
M 15	17 34 13	24° 6'27	12♊ 3	18°48	0°40	18°12	10°32	0°48	11°54	16°59	16°25	28°15	29°17	10°51	0°13	M 15
T 16	17 38 9	25° 3'44	24°51	19°51	1° 1	18°55	10°40	0°44	11°58	17° 0	16°26	28°11	29°14	10°58	0°14	T 16
W 17	17 42 6	26° 1'00	8♌ 5	20°51	1°19	19°39	10°49	0°40	12° 2	17° 1	16°27	28° 5	29°11	11° 4	0°15	W 17
T 18	17 46 2	26°58'17	21°47	21°47	1°36	20°22	10°57	0°36	12° 5	17° 3	16°28	27°58	29° 8	11°11	0°16	T 18
F 19	17 49 59	27°55'33	5♏54	22°39	1°50	21° 6	11° 5	0°32	12° 9	17° 4	16°30	27°49	29° 5	11°18	0°16	F 19
S 20	17 53 55	28°52'49	20°25	23°28	2° 3	21°49	11°13	0°29	12°12	17° 5	16°31	27°39	29° 1	11°24	0°17	S 20
S 21	17 57 52	29°50'04	5♌11	24°14	2°14	22°32	11°20	0°25	12°16	17° 6	16°32	27°31	28°58	11°31	0°18	S 21
M 22	18 1 49	0♌47'19	20° 5	24°55	2°22	23°15	11°28	0°21	12°19	17° 6	16°33	27°25	28°55	11°38	0°19	M 22
T 23	18 5 45	1°44'34	4♏59	25°33	2°28	23°58	11°35	0°18	12°23	17° 7	16°34	27°20	28°52	11°44	0°19	T 23
W 24	18 9 42	2°41'48	19°45	26° 6	2°32	24°41	11°42	0°15	12°26	17° 8	16°35	27°19	28°49	11°51	0°20	W 24
T 25	18 13 38	3°39'02	4♏16	26°36	2°R34	25°24	11°50	0°11	12°30	17° 9	16°36	27°D19	28°46	11°58	0°20	T 25
F 26	18 17 35	4°36'15	18°31	27° 1	2°34	26° 7	11°57	0° 8	12°34	17°10	16°37	27°19	28°42	12° 4	0°20	F 26
S 27	18 21 31	5°33'27	2♌27	27°22	2°31	26°50	12° 3	0° 5	12°37	17°11	16°38	27°R20	28°39	12°11	0°21	S 27
S 28	18 25 28	6°30'39	16° 4	27°38	2°25	27°33	12°10	0° 2	12°41	17°11	16°39	27°20	28°36	12°18	0°21	S 28
M 29	18 29 24	7°27'50	29°24	27°50	2°18	28°15	12°16	29♏58	12°45	17°12	16°40	27°18	28°33	12°24	0°21	M 29
T 30	18 33 21	8♌25'02	12♏29	27♌57	2♏ 8	28♌58	12♊23	29♏55	12♌48	17♊13	16♌40	27♏13	28♏30	12♌31	0♊22	T 30

Delta T = 4.33 sec

## ASTRODIENST EPHEMERIS for the year 1868

geocentric

JULY 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	18 37 18	9°22'13"	25°11'19"	27°R59	1°R55	29°R41	12°V29	29°R53	12°S52	17°V13	16°R41	27°R 7	28°R26	12°R38	0°V22	W 1
T 2	18 41 14	10°19'23"	7°R57	27°S57	1°R40	0°I23	12°35	29°R50	12°55	17°14	16°42	27°R 0	28°23	12°44	0°22	T 2
F 3	18 45 11	11°16'34"	20°22	27°50	1°23	1° 6	12°41	29°47	12°59	17°15	16°43	26°52	28°20	12°51	0°R22	F 3
S 4	18 49 7	12°13'44"	2°R38	27°39	1° 3	1°48	12°46	29°44	13° 3	17°15	16°44	26°44	28°17	12°58	0°22	S 4
S 5	18 53 4	13°10'55"	14°43	27°23	0°41	2°30	12°52	29°42	13° 6	17°16	16°45	26°37	28°14	13° 4	0°22	S 5
M 6	18 57 0	14° 8'05"	26°41	27° 3	0°17	3°12	12°57	29°39	13°10	17°16	16°46	26°31	28°11	13°11	0°22	M 6
T 7	19 0 57	15° 5'16"	8°R33	26°39	29°S51	3°55	13° 3	29°36	13°14	17°17	16°46	26°28	28° 7	13°18	0°21	T 7
W 8	19 4 54	16° 2'27"	20°21	26°11	29°23	4°37	13° 8	29°34	13°17	17°17	16°47	26°26	28° 4	13°24	0°21	W 8
T 9	19 8 50	16°59'38"	2°R 8	25°40	28°54	5°19	13°12	29°32	13°21	17°18	16°48	26°D26	28° 1	13°31	0°21	T 9
F 10	19 12 47	17°56'50"	13°58	25° 6	28°22	6° 1	13°17	29°30	13°24	17°18	16°49	26°27	27°58	13°37	0°20	F 10
S 11	19 16 43	18°54'02"	25°55	24°30	27°49	6°43	13°22	29°27	13°28	17°18	16°49	26°29	27°55	13°44	0°20	S 11
S 12	19 20 40	19°51'15"	8°V 4	23°51	27°15	7°24	13°26	29°25	13°32	17°19	16°50	26°30	27°52	13°51	0°20	S 12
M13	19 24 36	20°48'28"	20°29	23°12	26°40	8° 6	13°30	29°23	13°35	17°19	16°51	26°R31	27°48	13°57	0°19	M13
T 14	19 28 33	21°45'41"	3°R15	22°32	26° 4	8°48	13°34	29°22	13°39	17°19	16°51	26°30	27°45	14° 4	0°19	T 14
W15	19 32 29	22°42'56"	16°26	21°52	25°27	9°29	13°38	29°20	13°43	17°19	16°52	26°28	27°42	14°11	0°18	W15
T 16	19 36 26	23°40'11"	0°I 5	21°14	24°49	10°11	13°41	29°18	13°46	17°19	16°53	26°25	27°39	14°17	0°17	T 16
F 17	19 40 22	24°37'27"	14°12	20°36	24°12	10°52	13°45	29°16	13°50	17°20	16°53	26°20	27°36	14°24	0°17	F 17
S 18	19 44 19	25°34'44"	28°44	20° 1	23°35	11°34	13°48	29°15	13°53	17°20	16°54	26°16	27°32	14°31	0°16	S 18
S 19	19 48 16	26°32'01"	13°S37	19°29	22°58	12°15	13°51	29°13	13°57	17°20	16°55	26°12	27°29	14°37	0°15	S 19
M20	19 52 12	27°29'19"	28°42	19° 0	22°21	12°56	13°54	29°12	14° 1	17°20	16°55	26° 9	27°26	14°44	0°14	M20
T 21	19 56 9	28°26'37"	13°R51	18°36	21°45	13°38	13°57	29°11	14° 4	17°R20	16°56	26° 7	27°23	14°51	0°13	T 21
W22	20 0 5	29°23'56"	28°54	18°16	21°11	14°19	13°59	29°10	14° 8	17°20	16°56	26°D 7	27°20	14°57	0°12	W22
T 23	20 4 2	0°R21'15"	13°R43	18° 0	20°37	15° 0	14° 1	29° 9	14°11	17°20	16°57	26° 7	27°17	15° 4	0°11	T 23
F 24	20 7 58	1°18'35"	28°13	17°50	20° 5	15°41	14° 4	29° 8	14°15	17°20	16°57	26° 9	27°13	15°11	0°10	F 24
S 25	20 11 55	2°15'55"	12°R19	17°D46	19°34	16°22	14° 5	29° 7	14°18	17°19	16°58	26°10	27°10	15°17	0° 9	S 25
S 26	20 15 52	3°13'16"	26° 2	17°48	19° 5	17° 2	14° 7	29° 6	14°22	17°19	16°58	26°11	27° 7	15°24	0° 8	S 26
M27	20 19 48	4°10'37"	9°R21	17°55	18°38	17°43	14° 9	29° 5	14°25	17°19	16°59	26°R11	27° 4	15°30	0° 7	M27
T 28	20 23 45	5° 7'58"	22°20	18° 9	18°12	18°24	14°10	29° 5	14°29	17°19	16°59	26°10	27° 1	15°37	0° 5	T 28
W29	20 27 41	6° 5'20"	5°R 1	18°29	17°49	19° 4	14°11	29° 4	14°32	17°19	16°59	26° 8	26°58	15°44	0° 4	W29
T 30	20 31 38	7° 2'43"	17°26	18°55	17°28	19°45	14°12	29° 4	14°36	17°18	17° 0	26° 6	26°54	15°50	0° 3	T 30
F 31	20 35 34	8°R 0'06"	29°R39	19°S27	17°S10	20°I25	14°V13	29°R 4	14°S39	17°V18	17°R 0	26°R 3	26°R51	15°R57	0°V 1	F 31

Delta T = 4.22 sec

AUGUST 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	20 39 31	8°R57'31"	11°R43	20°S 6	16°R53	21°I 6	14°V13	29°R 3	14°S42	17°R18	17°R 0	26°R 0	26°R48	16°R 4	29°R59	S 1
S 2	20 43 27	9°54'55"	23°39	20°51	16°S39	21°46	14°14	29°D 3	14°46	17°V17	17° 1	25°R58	26°45	16°10	29°R58	S 2
M 3	20 47 24	10°52'21"	5°R30	21°42	16°27	22°26	14°R14	29°R 3	14°49	17°17	17° 1	25°56	26°42	16°17	29°57	M 3
T 4	20 51 21	11°49'48"	17°19	22°39	16°18	23° 6	14°14	29° 3	14°52	17°16	17° 1	25°56	26°38	16°24	29°55	T 4
W 5	20 55 17	12°47'16"	29° 6	23°42	16°11	23°46	14°14	29° 4	14°56	17°16	17° 2	25°D55	26°35	16°30	29°54	W 5
T 6	20 59 14	13°44'45"	10°R56	24°51	16° 7	24°26	14°13	29° 4	14°59	17°15	17° 2	25°56	26°32	16°37	29°52	T 6
F 7	21 3 10	14°42'15"	22°50	26° 6	16°D 5	25° 6	14°13	29° 4	15° 2	17°15	17° 2	25°57	26°29	16°44	29°50	F 7
S 8	21 7 7	15°39'46"	4°V51	27°26	16° 5	25°46	14°12	29° 5	15° 6	17°14	17° 2	25°58	26°26	16°50	29°48	S 8
S 9	21 11 3	16°37'19"	17° 4	28°51	16° 8	26°26	14°11	29° 5	15° 9	17°14	17° 2	25°59	26°23	16°57	29°47	S 9
M10	21 15 0	17°34'53"	29°31	0°R21	16°12	27° 5	14° 9	29° 6	15°12	17°13	17° 3	25°59	26°19	17° 4	29°45	M10
T 11	21 18 56	18°32'28"	12°R16	1°55	16°19	27°45	14° 8	29° 7	15°15	17°12	17° 3	26° 0	26°16	17°10	29°43	T 11
W12	21 22 53	19°30'05"	25°23	3°34	16°29	28°25	14° 6	29° 8	15°18	17°12	17° 3	26°R 0	26°13	17°17	29°41	W12
T 13	21 26 49	20°27'44"	8°I55	5°16	16°40	29° 4	14° 5	29° 9	15°22	17°11	17° 3	26° 0	26°10	17°23	29°39	T 13
F 14	21 30 46	21°25'24"	22°52	7° 3	16°53	29°43	14° 3	29°10	15°25	17°10	17° 3	25°59	26° 7	17°30	29°37	F 14
S 15	21 34 43	22°23'06"	7°S15	8°52	17° 9	0°S23	14° 0	29°11	15°28	17° 9	17° 3	25°59	26° 4	17°37	29°35	S 15
S 16	21 38 39	23°20'49"	22° 0	10°44	17°26	1° 2	13°58	29°12	15°31	17° 9	17° 3	25°58	26° 0	17°43	29°33	S 16
M17	21 42 36	24°18'34"	7°R 2	12°38	17°45	1°41	13°55	29°14	15°34	17° 8	17°R 3	25°58	25°57	17°50	29°31	M17
T 18	21 46 32	25°16'20"	22°12	14°34	18° 6	2°20	13°53	29°15	15°37	17° 7	17° 3	25°58	25°54	17°57	29°28	T 18
W19	21 50 29	26°14'07"	7°R21	16°31	18°29	2°59	13°50	29°17	15°40	17° 6	17° 3	25°58	25°51	18° 3	29°26	W19
T 20	21 54 25	27°11'56"	22°20	18°30	18°54	3°38	13°46	29°18	15°43	17° 5	17° 3	25°58	25°48	18°10	29°24	T 20
F 21	21 58 22	28° 9'46"	7°R 2	20°29	19°20	4°16	13°43	29°20	15°46	17° 4	17° 3	25°58	25°44	18°17	29°22	F 21
S 22	22 2 18	29° 7'38"	21°20	22°29	19°48	4°55	13°39	29°22	15°49	17° 3	17° 3	25°58	25°41	18°23	29°20	S 22
S 23	22 6 15	0°R 5'31"	5°R12	24°29	20°17	5°34	13°36	29°24	15°51	17° 2	17° 3	25°57	25°38	18°30	29°17	S 23
M24	22 10 12	1° 3'25"	18°38	26°29	20°47	6°12	13°32	29°26	15°54	17° 1	17° 2	25°57	25°35	18°37	29°15	M24
T 25	22 14 8	2° 1'20"	1°R38	28°28	21°20	6°51	13°28	29°28	15°57	17° 0	17° 2	25°D57	25°32	18°43	29°12	T 25
W26	22 18 5	2°59'16"	14°17	0°R27	21°53	7°29	13°23	29°30	16° 0	16°59	17° 2	25°57	25°29	18°50	29°10	W26
T 27	22 22 1	3°57'14"	26°37	2°26	22°28	8° 7	13°19	29°32	16° 3	16°58	17° 2	25°58	25°25	18°57	29° 8	T 27
F 28	22 25 58	4°55'13"	8°R44	4°23	23° 4	8°45	13°14	29°35	16° 5	16°57	17° 2	25°58	25°22	19° 3	29° 5	F 28
S 29	22 29 54	5°53'14"	20°40	6°20	23°41	9°23	13° 9	29°37	16° 8	16°56	17° 1	25°59	25°19	19°10	29° 3	S 29
S 30	22 33 51	6°51'16"	2°R31	8°15	24°19	10° 1	13° 5	29°40	16°10	16°55	17° 1	26° 0	25°16	19°16	29° 0	S 30
M31	22 37 47	7°R49'19"	14°R18	10°R10	24°S59	10°S39	12°V59	29°R42	16°S13	16°V53	17°R 1	26°R 1	25°R13	19°R23	28°R58	M31

Delta T = 4.10 sec

## ASTRODIENST EPHEMERIS for the year 1868

geocentric

SEPTEMBER 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	22 41 44	8 <sup>h</sup> 47'25"	26 <sup>h</sup> 36'	12 <sup>h</sup> 3	25 <sup>h</sup> 40'	11 <sup>h</sup> 17'	12 <sup>h</sup> 54'	29 <sup>h</sup> 45'	16 <sup>h</sup> 16'	16 <sup>h</sup> 52'	17 <sup>h</sup> 1	26 <sup>h</sup> 1	25 <sup>h</sup> 10'	19 <sup>h</sup> 30'	28 <sup>h</sup> 55'	T 1
W 2	22 45 41	9 <sup>h</sup> 45'31"	7 <sup>h</sup> 57'	13 <sup>h</sup> 56'	26 <sup>h</sup> 22'	11 <sup>h</sup> 54'	12 <sup>h</sup> 49'	29 <sup>h</sup> 48'	16 <sup>h</sup> 18'	16 <sup>h</sup> 51'	17 <sup>h</sup> 0	26 <sup>h</sup> 1	25 <sup>h</sup> 6'	19 <sup>h</sup> 36'	28 <sup>h</sup> 53'	W 2
T 3	22 49 37	10 <sup>h</sup> 43'40"	19 <sup>h</sup> 53'	15 <sup>h</sup> 47'	27 <sup>h</sup> 4	12 <sup>h</sup> 32'	12 <sup>h</sup> 43'	29 <sup>h</sup> 51'	16 <sup>h</sup> 21'	16 <sup>h</sup> 50'	17 <sup>h</sup> 0	26 <sup>h</sup> 0	25 <sup>h</sup> 3	19 <sup>h</sup> 43'	28 <sup>h</sup> 50'	T 3
F 4	22 53 34	11 <sup>h</sup> 41'50"	17 <sup>h</sup> 56'	17 <sup>h</sup> 37'	27 <sup>h</sup> 48'	13 <sup>h</sup> 9'	12 <sup>h</sup> 37'	29 <sup>h</sup> 54'	16 <sup>h</sup> 23'	16 <sup>h</sup> 48'	16 <sup>h</sup> 59'	25 <sup>h</sup> 58'	25 <sup>h</sup> 0	19 <sup>h</sup> 50'	28 <sup>h</sup> 47'	F 4
S 5	22 57 30	12 <sup>h</sup> 40'02"	14 <sup>h</sup> 8'	19 <sup>h</sup> 26'	28 <sup>h</sup> 33'	13 <sup>h</sup> 47'	12 <sup>h</sup> 31'	29 <sup>h</sup> 57'	16 <sup>h</sup> 25'	16 <sup>h</sup> 47'	16 <sup>h</sup> 59'	25 <sup>h</sup> 56'	24 <sup>h</sup> 57'	19 <sup>h</sup> 56'	28 <sup>h</sup> 45'	S 5
S 6	23 1 27	13 <sup>h</sup> 38'15"	26 <sup>h</sup> 31'	21 <sup>h</sup> 13'	29 <sup>h</sup> 18'	14 <sup>h</sup> 24'	12 <sup>h</sup> 25'	0 <sup>h</sup> 0	16 <sup>h</sup> 28'	16 <sup>h</sup> 46'	16 <sup>h</sup> 59'	25 <sup>h</sup> 53'	24 <sup>h</sup> 54'	20 <sup>h</sup> 3	28 <sup>h</sup> 42'	S 6
M 7	23 5 23	14 <sup>h</sup> 36'31"	9 <sup>h</sup> 8'	23 <sup>h</sup> 0	0 <sup>h</sup> 5	15 <sup>h</sup> 1	12 <sup>h</sup> 19'	0 <sup>h</sup> 3	16 <sup>h</sup> 30'	16 <sup>h</sup> 44'	16 <sup>h</sup> 58'	25 <sup>h</sup> 51'	24 <sup>h</sup> 50'	20 <sup>h</sup> 10'	28 <sup>h</sup> 39'	M 7
T 8	23 9 20	15 <sup>h</sup> 34'49"	21 <sup>h</sup> 58'	24 <sup>h</sup> 45'	0 <sup>h</sup> 52'	15 <sup>h</sup> 38'	12 <sup>h</sup> 13'	0 <sup>h</sup> 7	16 <sup>h</sup> 32'	16 <sup>h</sup> 43'	16 <sup>h</sup> 58'	25 <sup>h</sup> 48'	24 <sup>h</sup> 47'	20 <sup>h</sup> 16'	28 <sup>h</sup> 37'	T 8
W 9	23 13 16	16 <sup>h</sup> 33'09"	5 <sup>h</sup> 11'	26 <sup>h</sup> 29'	1 <sup>h</sup> 41'	16 <sup>h</sup> 15'	12 <sup>h</sup> 6'	0 <sup>h</sup> 10	16 <sup>h</sup> 35'	16 <sup>h</sup> 42'	16 <sup>h</sup> 57'	25 <sup>h</sup> 47'	24 <sup>h</sup> 44'	20 <sup>h</sup> 23'	28 <sup>h</sup> 34'	W 9
T 10	23 17 13	17 <sup>h</sup> 31'31"	18 <sup>h</sup> 32'	28 <sup>h</sup> 12'	2 <sup>h</sup> 30'	16 <sup>h</sup> 52'	12 <sup>h</sup> 0	0 <sup>h</sup> 14	16 <sup>h</sup> 37'	16 <sup>h</sup> 40'	16 <sup>h</sup> 57'	25 <sup>h</sup> 47'	24 <sup>h</sup> 41'	20 <sup>h</sup> 30'	28 <sup>h</sup> 31'	T 10
F 11	23 21 10	18 <sup>h</sup> 29'56"	2 <sup>h</sup> 20'	29 <sup>h</sup> 54'	3 <sup>h</sup> 19'	17 <sup>h</sup> 29'	11 <sup>h</sup> 53'	0 <sup>h</sup> 17	16 <sup>h</sup> 39'	16 <sup>h</sup> 39'	16 <sup>h</sup> 56'	25 <sup>h</sup> 47'	24 <sup>h</sup> 38'	20 <sup>h</sup> 36'	28 <sup>h</sup> 29'	F 11
S 12	23 25 6	19 <sup>h</sup> 28'22"	16 <sup>h</sup> 28'	1 <sup>h</sup> 35'	4 <sup>h</sup> 10'	18 <sup>h</sup> 6'	11 <sup>h</sup> 46'	0 <sup>h</sup> 21	16 <sup>h</sup> 41'	16 <sup>h</sup> 37'	16 <sup>h</sup> 56'	25 <sup>h</sup> 48'	24 <sup>h</sup> 35'	20 <sup>h</sup> 43'	28 <sup>h</sup> 26'	S 12
S 13	23 29 3	20 <sup>h</sup> 26'51"	0 <sup>h</sup> 56'	3 <sup>h</sup> 15'	5 <sup>h</sup> 1	18 <sup>h</sup> 42'	11 <sup>h</sup> 39'	0 <sup>h</sup> 25	16 <sup>h</sup> 43'	16 <sup>h</sup> 36'	16 <sup>h</sup> 55'	25 <sup>h</sup> 50'	24 <sup>h</sup> 31'	20 <sup>h</sup> 49'	28 <sup>h</sup> 23'	S 13
M14	23 32 59	21 <sup>h</sup> 25'22"	15 <sup>h</sup> 40'	4 <sup>h</sup> 54'	5 <sup>h</sup> 53'	19 <sup>h</sup> 19'	11 <sup>h</sup> 32'	0 <sup>h</sup> 29	16 <sup>h</sup> 45'	16 <sup>h</sup> 34'	16 <sup>h</sup> 55'	25 <sup>h</sup> 51'	24 <sup>h</sup> 28'	20 <sup>h</sup> 56'	28 <sup>h</sup> 20'	M14
T 15	23 36 56	22 <sup>h</sup> 23'55"	0 <sup>h</sup> 36'	6 <sup>h</sup> 31'	6 <sup>h</sup> 46'	19 <sup>h</sup> 55'	11 <sup>h</sup> 25'	0 <sup>h</sup> 33	16 <sup>h</sup> 47'	16 <sup>h</sup> 33'	16 <sup>h</sup> 54'	25 <sup>h</sup> 51'	24 <sup>h</sup> 25'	21 <sup>h</sup> 3	28 <sup>h</sup> 18'	T 15
W16	23 40 52	23 <sup>h</sup> 22'30"	15 <sup>h</sup> 37'	8 <sup>h</sup> 8'	7 <sup>h</sup> 39'	20 <sup>h</sup> 31'	11 <sup>h</sup> 18'	0 <sup>h</sup> 37	16 <sup>h</sup> 49'	16 <sup>h</sup> 32'	16 <sup>h</sup> 54'	25 <sup>h</sup> 50'	24 <sup>h</sup> 22'	21 <sup>h</sup> 9'	28 <sup>h</sup> 15'	W16
T 17	23 44 49	24 <sup>h</sup> 21'07"	0 <sup>h</sup> 32'	9 <sup>h</sup> 44'	8 <sup>h</sup> 33'	21 <sup>h</sup> 7'	11 <sup>h</sup> 11'	0 <sup>h</sup> 41	16 <sup>h</sup> 51'	16 <sup>h</sup> 30'	16 <sup>h</sup> 53'	25 <sup>h</sup> 47'	24 <sup>h</sup> 19'	21 <sup>h</sup> 16'	28 <sup>h</sup> 12'	T 17
F 18	23 48 45	25 <sup>h</sup> 19'45"	15 <sup>h</sup> 15'	11 <sup>h</sup> 18'	9 <sup>h</sup> 27'	21 <sup>h</sup> 43'	11 <sup>h</sup> 3	0 <sup>h</sup> 45	16 <sup>h</sup> 53'	16 <sup>h</sup> 28'	16 <sup>h</sup> 52'	25 <sup>h</sup> 44'	24 <sup>h</sup> 15'	21 <sup>h</sup> 23'	28 <sup>h</sup> 9'	F 18
S 19	23 52 42	26 <sup>h</sup> 18'26"	29 <sup>h</sup> 39'	12 <sup>h</sup> 52'	10 <sup>h</sup> 22'	22 <sup>h</sup> 19'	10 <sup>h</sup> 56'	0 <sup>h</sup> 49	16 <sup>h</sup> 54'	16 <sup>h</sup> 27'	16 <sup>h</sup> 52'	25 <sup>h</sup> 39'	24 <sup>h</sup> 12'	21 <sup>h</sup> 29'	28 <sup>h</sup> 6'	S 19
S 20	23 56 38	27 <sup>h</sup> 17'08"	13 <sup>h</sup> 37'	14 <sup>h</sup> 24'	11 <sup>h</sup> 18'	22 <sup>h</sup> 55'	10 <sup>h</sup> 48'	0 <sup>h</sup> 53	16 <sup>h</sup> 56'	16 <sup>h</sup> 25'	16 <sup>h</sup> 51'	25 <sup>h</sup> 35'	24 <sup>h</sup> 9'	21 <sup>h</sup> 36'	28 <sup>h</sup> 4	S 20
M21	0 0 35	28 <sup>h</sup> 15'52"	27 <sup>h</sup> 9'	15 <sup>h</sup> 56'	12 <sup>h</sup> 14'	23 <sup>h</sup> 31'	10 <sup>h</sup> 40'	0 <sup>h</sup> 58	16 <sup>h</sup> 58'	16 <sup>h</sup> 24'	16 <sup>h</sup> 50'	25 <sup>h</sup> 31'	24 <sup>h</sup> 6'	21 <sup>h</sup> 43'	28 <sup>h</sup> 1	M21
T 22	0 4 32	29 <sup>h</sup> 14'38"	10 <sup>h</sup> 14'	17 <sup>h</sup> 27'	13 <sup>h</sup> 11'	24 <sup>h</sup> 6'	10 <sup>h</sup> 33'	1 <sup>h</sup> 2	17 <sup>h</sup> 0	16 <sup>h</sup> 22'	16 <sup>h</sup> 50'	25 <sup>h</sup> 28'	24 <sup>h</sup> 3	21 <sup>h</sup> 49'	27 <sup>h</sup> 58'	T 22
W23	0 8 28	0 <sup>h</sup> 13'26"	22 <sup>h</sup> 55'	18 <sup>h</sup> 56'	14 <sup>h</sup> 8'	24 <sup>h</sup> 42'	10 <sup>h</sup> 25'	1 <sup>h</sup> 7	17 <sup>h</sup> 1	16 <sup>h</sup> 21'	16 <sup>h</sup> 49'	25 <sup>h</sup> 26'	24 <sup>h</sup> 0	21 <sup>h</sup> 56'	27 <sup>h</sup> 55'	W23
T 24	0 12 25	1 <sup>h</sup> 12'15"	5 <sup>h</sup> 15'	20 <sup>h</sup> 25'	15 <sup>h</sup> 5	25 <sup>h</sup> 17'	10 <sup>h</sup> 17'	1 <sup>h</sup> 11	17 <sup>h</sup> 3	16 <sup>h</sup> 19'	16 <sup>h</sup> 48'	25 <sup>h</sup> 26'	23 <sup>h</sup> 56'	22 <sup>h</sup> 3	27 <sup>h</sup> 53'	T 24
F 25	0 16 21	2 <sup>h</sup> 11'07"	17 <sup>h</sup> 20'	21 <sup>h</sup> 53'	16 <sup>h</sup> 4	25 <sup>h</sup> 52'	10 <sup>h</sup> 9'	1 <sup>h</sup> 16	17 <sup>h</sup> 4	16 <sup>h</sup> 17'	16 <sup>h</sup> 47'	25 <sup>h</sup> 27'	23 <sup>h</sup> 53'	22 <sup>h</sup> 9'	27 <sup>h</sup> 50'	F 25
S 26	0 20 18	3 <sup>h</sup> 9'59"	29 <sup>h</sup> 14'	23 <sup>h</sup> 19'	17 <sup>h</sup> 2	26 <sup>h</sup> 27'	10 <sup>h</sup> 1	1 <sup>h</sup> 21	17 <sup>h</sup> 6	16 <sup>h</sup> 16'	16 <sup>h</sup> 47'	25 <sup>h</sup> 28'	23 <sup>h</sup> 50'	22 <sup>h</sup> 16'	27 <sup>h</sup> 47'	S 26
S 27	0 24 14	4 <sup>h</sup> 8'54"	11 <sup>h</sup> 33'	24 <sup>h</sup> 45'	18 <sup>h</sup> 1	27 <sup>h</sup> 2	9 <sup>h</sup> 53'	1 <sup>h</sup> 26	17 <sup>h</sup> 7	16 <sup>h</sup> 14'	16 <sup>h</sup> 46'	25 <sup>h</sup> 30'	23 <sup>h</sup> 47'	22 <sup>h</sup> 22'	27 <sup>h</sup> 44'	S 27
M28	0 28 11	5 <sup>h</sup> 7'51"	22 <sup>h</sup> 50'	26 <sup>h</sup> 10'	19 <sup>h</sup> 1	27 <sup>h</sup> 37'	9 <sup>h</sup> 45'	1 <sup>h</sup> 31	17 <sup>h</sup> 8	16 <sup>h</sup> 13'	16 <sup>h</sup> 45'	25 <sup>h</sup> 31'	23 <sup>h</sup> 44'	22 <sup>h</sup> 29'	27 <sup>h</sup> 41'	M28
T 29	0 32 7	6 <sup>h</sup> 6'49"	4 <sup>h</sup> 40'	27 <sup>h</sup> 33'	20 <sup>h</sup> 1	28 <sup>h</sup> 12'	9 <sup>h</sup> 37'	1 <sup>h</sup> 35	17 <sup>h</sup> 10	16 <sup>h</sup> 11'	16 <sup>h</sup> 44'	25 <sup>h</sup> 30'	23 <sup>h</sup> 41'	22 <sup>h</sup> 36'	27 <sup>h</sup> 39'	T 29
W30	0 36 4	7 <sup>h</sup> 5'49"	16 <sup>h</sup> 37'	28 <sup>h</sup> 56'	21 <sup>h</sup> 1	28 <sup>h</sup> 46'	9 <sup>h</sup> 29'	1 <sup>h</sup> 40	17 <sup>h</sup> 11	16 <sup>h</sup> 9'	16 <sup>h</sup> 44'	25 <sup>h</sup> 28'	23 <sup>h</sup> 37'	22 <sup>h</sup> 42'	27 <sup>h</sup> 36'	W30

Delta T = 3.99 sec

OCTOBER 1868

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	0 40 1	8 <sup>h</sup> 4'51	28 <sup>h</sup> 42	0 <sup>h</sup> 17	22 <sup>h</sup> 2	29 <sup>h</sup> 21	9 <sup>h</sup> 21	1 <sup>h</sup> 46	17 <sup>h</sup> 12	16 <sup>h</sup> 8	16 <sup>h</sup> 43	25 <sup>h</sup> 18	23 <sup>h</sup> 34	22 <sup>h</sup> 49	27 <sup>h</sup> 33	T 1
F 2	0 43 57	9 <sup>h</sup> 3'55	10 <sup>h</sup> 58	1 <sup>h</sup> 37	23 <sup>h</sup> 3	29 <sup>h</sup> 55	9 <sup>h</sup> 13	1 <sup>h</sup> 51	17 <sup>h</sup> 13	16 <sup>h</sup> 6	16 <sup>h</sup> 42	25 <sup>h</sup> 18	23 <sup>h</sup> 31	22 <sup>h</sup> 56	27 <sup>h</sup> 31	F 2
S 3	0 47 54	10 <sup>h</sup> 3'01	23 <sup>h</sup> 26	2 <sup>h</sup> 56	24 <sup>h</sup> 4	0 <sup>h</sup> 29	9 <sup>h</sup> 5	1 <sup>h</sup> 56	17 <sup>h</sup> 14	16 <sup>h</sup> 4	16 <sup>h</sup> 41	25 <sup>h</sup> 10	23 <sup>h</sup> 28	23 <sup>h</sup> 2	27 <sup>h</sup> 28	S 3
S 4	0 51 50	11 <sup>h</sup> 2'09	6 <sup>h</sup> 8	4 <sup>h</sup> 14	25 <sup>h</sup> 6	1 <sup>h</sup> 3	8 <sup>h</sup> 57	2 <sup>h</sup> 1	17 <sup>h</sup> 16	16 <sup>h</sup> 3	16 <sup>h</sup> 40	25 <sup>h</sup> 2	23 <sup>h</sup> 25	23 <sup>h</sup> 9	27 <sup>h</sup> 25	S 4
M 5	0 55 47	12 <sup>h</sup> 1'20	18 <sup>h</sup> 59	5 <sup>h</sup> 30	26 <sup>h</sup> 8	1 <sup>h</sup> 37	8 <sup>h</sup> 49	2 <sup>h</sup> 7	17 <sup>h</sup> 17	16 <sup>h</sup> 1	16 <sup>h</sup> 39	24 <sup>h</sup> 54	23 <sup>h</sup> 21	23 <sup>h</sup> 16	27 <sup>h</sup> 22	M 5
T 6	0 59 43	13 <sup>h</sup> 0'32	2 <sup>h</sup> 11	6 <sup>h</sup> 45	27 <sup>h</sup> 11	2 <sup>h</sup> 11	8 <sup>h</sup> 41	2 <sup>h</sup> 12	17 <sup>h</sup> 17	15 <sup>h</sup> 59	16 <sup>h</sup> 38	24 <sup>h</sup> 46	23 <sup>h</sup> 18	23 <sup>h</sup> 22	27 <sup>h</sup> 20	T 6
W 7	1 3 40	13 <sup>h</sup> 59'47	15 <sup>h</sup> 23	7 <sup>h</sup> 59	28 <sup>h</sup> 14	2 <sup>h</sup> 44	8 <sup>h</sup> 33	2 <sup>h</sup> 17	17 <sup>h</sup> 18	15 <sup>h</sup> 58	16 <sup>h</sup> 37	24 <sup>h</sup> 41	23 <sup>h</sup> 15	23 <sup>h</sup> 29	27 <sup>h</sup> 17	W 7
T 8	1 7 36	14 <sup>h</sup> 59'05	28 <sup>h</sup> 54	9 <sup>h</sup> 10	29 <sup>h</sup> 17	3 <sup>h</sup> 18	8 <sup>h</sup> 25	2 <sup>h</sup> 23	17 <sup>h</sup> 19	15 <sup>h</sup> 56	16 <sup>h</sup> 36	24 <sup>h</sup> 38	23 <sup>h</sup> 12	23 <sup>h</sup> 36	27 <sup>h</sup> 15	T 8
F 9	1 11 33	15 <sup>h</sup> 58'25	12 <sup>h</sup> 38	10 <sup>h</sup> 21	0 <sup>h</sup> 21	3 <sup>h</sup> 51	8 <sup>h</sup> 17	2 <sup>h</sup> 28	17 <sup>h</sup> 20	15 <sup>h</sup> 54	16 <sup>h</sup> 36	24 <sup>h</sup> D36	23 <sup>h</sup> 9	23 <sup>h</sup> 42	27 <sup>h</sup> 12	F 9
S 10	1 15 30	16 <sup>h</sup> 57'47	26 <sup>h</sup> 36	11 <sup>h</sup> 29	1 <sup>h</sup> 25	4 <sup>h</sup> 24	8 <sup>h</sup> 9	2 <sup>h</sup> 34	17 <sup>h</sup> 21	15 <sup>h</sup> 53	16 <sup>h</sup> 35	24 <sup>h</sup> 37	23 <sup>h</sup> 6	23 <sup>h</sup> 49	27 <sup>h</sup> 9	S 10
S 11	1 19 26	17 <sup>h</sup> 57'11	10 <sup>h</sup> 47	12 <sup>h</sup> 35	2 <sup>h</sup> 29	4 <sup>h</sup> 58	8 <sup>h</sup> 1	2 <sup>h</sup> 40	17 <sup>h</sup> 21	15 <sup>h</sup> 51	16 <sup>h</sup> 34	24 <sup>h</sup> 38	23 <sup>h</sup> 2	23 <sup>h</sup> 56	27 <sup>h</sup> 7	S 11
M12	1 23 23	18 <sup>h</sup> 56'38	25 <sup>h</sup> 10	13 <sup>h</sup> 39	3 <sup>h</sup> 33	5 <sup>h</sup> 30	7 <sup>h</sup> 53	2 <sup>h</sup> 45	17 <sup>h</sup> 22	15 <sup>h</sup> 49	16 <sup>h</sup> 33	24 <sup>h</sup> R38	22 <sup>h</sup> 59	24 <sup>h</sup> 2	27 <sup>h</sup> 4	M12
T 13	1 27 19	19 <sup>h</sup> 56'07	9 <sup>h</sup> 43	14 <sup>h</sup> 41	4 <sup>h</sup> 38	6 <sup>h</sup> 3	7 <sup>h</sup> 45	2 <sup>h</sup> 51	17 <sup>h</sup> 23	15 <sup>h</sup> 48	16 <sup>h</sup> 32	24 <sup>h</sup> 37	22 <sup>h</sup> 56	24 <sup>h</sup> 9	27 <sup>h</sup> 2	T 13
W14	1 31 16	20 <sup>h</sup> 55'38	24 <sup>h</sup> 21	15 <sup>h</sup> 39	5 <sup>h</sup> 43	6 <sup>h</sup> 36	7 <sup>h</sup> 38	2 <sup>h</sup> 57	17 <sup>h</sup> 23	15 <sup>h</sup> 46	16 <sup>h</sup> 31	24 <sup>h</sup> 34	22 <sup>h</sup> 53	24 <sup>h</sup> 15	26 <sup>h</sup> 59	W14
T 15	1 35 12	21 <sup>h</sup> 55'11	8 <sup>h</sup> 58	16 <sup>h</sup> 36	6 <sup>h</sup> 48	7 <sup>h</sup> 8	7 <sup>h</sup> 30	3 <sup>h</sup> 3	17 <sup>h</sup> 24	15 <sup>h</sup> 44	16 <sup>h</sup> 30	24 <sup>h</sup> 28	22 <sup>h</sup> 50	24 <sup>h</sup> 22	26 <sup>h</sup> 57	T 15
F 16	1 39 9	22 <sup>h</sup> 54'47	23 <sup>h</sup> 27	17 <sup>h</sup> 28	7 <sup>h</sup> 54	7 <sup>h</sup> 40	7 <sup>h</sup> 23	3 <sup>h</sup> 9	17 <sup>h</sup> 24	15 <sup>h</sup> 43	16 <sup>h</sup> 29	24 <sup>h</sup> 20	22 <sup>h</sup> 46	24 <sup>h</sup> 29	26 <sup>h</sup> 54	F 16
S 17	1 43 5	23 <sup>h</sup> 54'24	7 <sup>h</sup> 43	18 <sup>h</sup> 18	9 <sup>h</sup> 0	8 <sup>h</sup> 12	7 <sup>h</sup> 15	3 <sup>h</sup> 15	17 <sup>h</sup> 24	15 <sup>h</sup> 41	16 <sup>h</sup> 28	24 <sup>h</sup> 10	22 <sup>h</sup> 43	24 <sup>h</sup> 35	26 <sup>h</sup> 52	S 17
S 18	1 47 2	24 <sup>h</sup> 54'04	21 <sup>h</sup> 38	19 <sup>h</sup> 3	10 <sup>h</sup> 6	8 <sup>h</sup> 44	7 <sup>h</sup> 8	3 <sup>h</sup> 21	17 <sup>h</sup> 25	15 <sup>h</sup> 39	16 <sup>h</sup> 27	24 <sup>h</sup> 0	22 <sup>h</sup> 40	24 <sup>h</sup> 42	26 <sup>h</sup> 50	S 18
M19	1 50 58	25 <sup>h</sup> 53'45	5 <sup>h</sup> 10	19 <sup>h</sup> 45	11 <sup>h</sup> 12	9 <sup>h</sup> 16	7 <sup>h</sup> 1	3 <sup>h</sup> 27	17 <sup>h</sup> 25	15 <sup>h</sup> 38	16 <sup>h</sup> 26	23 <sup>h</sup> 51	22 <sup>h</sup> 37	24 <sup>h</sup> 49	26 <sup>h</sup> 47	M19
T 20	1 54 55	26 <sup>h</sup> 53'28	18 <sup>h</sup> 16	20 <sup>h</sup> 21	12 <sup>h</sup> 19	9 <sup>h</sup> 48	6 <sup>h</sup> 53	3 <sup>h</sup> 33	17 <sup>h</sup> 25	15 <sup>h</sup> 36	16 <sup>h</sup> 25	23 <sup>h</sup> 43	22 <sup>h</sup> 34	24 <sup>h</sup> 55	26 <sup>h</sup> 45	T 20
W21	1 58 52	27 <sup>h</sup> 53'13	0 <sup>h</sup> 59	20 <sup>h</sup> 53	13 <sup>h</sup> 26	10 <sup>h</sup> 19	6 <sup>h</sup> 46	3 <sup>h</sup> 39	17 <sup>h</sup> 25	15 <sup>h</sup> 34	16 <sup>h</sup> 24	23 <sup>h</sup> 37	22 <sup>h</sup> 31	25 <sup>h</sup> 2	26 <sup>h</sup> 43	W21
T 22	2 2 48	28 <sup>h</sup> 53'00	13 <sup>h</sup> 21	21 <sup>h</sup> 18	14 <sup>h</sup> 33	10 <sup>h</sup> 50	6 <sup>h</sup> 40	3 <sup>h</sup> 46	17 <sup>h</sup> 25	15 <sup>h</sup> 33	16 <sup>h</sup> 22	23 <sup>h</sup> 33	22 <sup>h</sup> 27	25 <sup>h</sup> 9	26 <sup>h</sup> 40	T 22
F 23	2 6 45	29 <sup>h</sup> 52'48	25 <sup>h</sup> 27	21 <sup>h</sup> 38	15 <sup>h</sup> 40	11 <sup>h</sup> 21	6 <sup>h</sup> 33	3 <sup>h</sup> 52	17 <sup>h</sup> R25	15 <sup>h</sup> 31	16 <sup>h</sup> 21	23 <sup>h</sup> D32	22 <sup>h</sup> 24	25 <sup>h</sup> 15	26 <sup>h</sup> 38	F 23
S 24	2 10 41	0 <sup>h</sup> 52'39	7 <sup>h</sup> 42	21 <sup>h</sup> 50	16 <sup>h</sup> 47	11 <sup>h</sup> 52	6 <sup>h</sup> 26	3 <sup>h</sup> 58	17 <sup>h</sup> 25	15 <sup>h</sup> 30	16 <sup>h</sup> 20	23 <sup>h</sup> 32	22 <sup>h</sup> 21	25 <sup>h</sup> 22	26 <sup>h</sup> 36	S 24
S 25	2 14 38	1 <sup>h</sup> 52'30	19 <sup>h</sup> 10	21 <sup>h</sup> R56	17 <sup>h</sup> 55	12 <sup>h</sup> 23	6 <sup>h</sup> 20	4 <sup>h</sup> 5	17 <sup>h</sup> 25	15 <sup>h</sup> 28	16 <sup>h</sup> 19	23 <sup>h</sup> R33	22 <sup>h</sup> 18	25 <sup>h</sup> 29	26 <sup>h</sup> 34	S 25
M26	2 18 34	2 <sup>h</sup> 52'24	0 <sup>h</sup> 58	21 <sup>h</sup> 53	19 <sup>h</sup> 3	12 <sup>h</sup> 53	6 <sup>h</sup> 13	4 <sup>h</sup> 11	17 <sup>h</sup> 25	15 <sup>h</sup> 26	16 <sup>h</sup> 18	23 <sup>h</sup> 32	22 <sup>h</sup> 15	25 <sup>h</sup> 35	26 <sup>h</sup> 32	M26
T 27	2 22 31	3 <sup>h</sup> 52'19	12 <sup>h</sup> 50	21 <sup>h</sup> 41	20 <sup>h</sup> 11	13 <sup>h</sup> 23	6 <sup>h</sup> 7	4 <sup>h</sup> 17	17 <sup>h</sup> 25	15 <sup>h</sup> 25	16 <sup>h</sup> 17	23 <sup>h</sup> 31	22 <sup>h</sup> 12	25 <sup>h</sup> 42	26 <sup>h</sup> 30	T 27
W28	2 26 27	4 <sup>h</sup> 52'16	24 <sup>h</sup> 52	21 <sup>h</sup> 21	21 <sup>h</sup> 19	13 <sup>h</sup> 53	6 <sup>h</sup> 1	4 <sup>h</sup> 24	17 <sup>h</sup> 25	15 <sup>h</sup> 23	16 <sup>h</sup> 16	23 <sup>h</sup> 26	22 <sup>h</sup> 8	25 <sup>h</sup> 48	26 <sup>h</sup> 28	W28
T 29	2 30 24	5 <sup>h</sup> 52'14	7 <sup>h</sup> 6	20 <sup>h</sup> 51	22 <sup>h</sup> 28	14 <sup>h</sup> 23	5 <sup>h</sup> 55	4 <sup>h</sup> 30	17 <sup>h</sup> 25	15 <sup>h</sup> 22	16 <sup>h</sup> 15	23 <sup>h</sup> 19	22 <sup>h</sup> 5	25 <sup>h</sup> 55	26 <sup>h</sup> 26	T 29
F 30	2 34 21	6 <sup>h</sup> 52'14	19 <sup>h</sup> 35	20 <sup>h</sup> 11	23 <sup>h</sup> 36	14 <sup>h</sup> 53	5 <sup>h</sup> 49	4 <sup>h</sup> 37	17 <sup>h</sup> 24	15 <sup>h</sup> 20	16 <sup>h</sup> 14	23 <sup>h</sup> 10	22 <sup>h</sup> 2	26 <sup>h</sup> 2	26 <sup>h</sup> 24	F 30
S 31	2 38 17	7 <sup>h</sup> 52'17	2 <sup>h</sup> 21	19 <sup>h</sup> M23	24 <sup>h</sup> M45	15 <sup>h</sup> 22	5 <sup>h</sup> Y43	4 <sup>h</sup> Y44	17 <sup>h</sup> 24	15 <sup>h</sup> Y19	16 <sup>h</sup> Y13	22 <sup>h</sup> Y58	21 <sup>h</sup> Y59	26 <sup>h</sup> Y8	26 <sup>h</sup> Y22	S 31

## ASTRODIENST EPHEMERIS for the year 1868

geocentric

NOVEMBER 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 42 14	8♂52'21	15♂22	18°R25	25♂54	15♂51	5°R38	4♂50	17°R23	15°R17	16°R12	22°R45	21♂56	26♂15	26°R20	S 1
M 2	2 46 10	9°52'26	28°38	17♂20	27° 3	16°20	5°Y32	4°57	17♂23	15°Y16	16♂10	22♂33	21°52	26°22	26°R18	M 2
T 3	2 50 7	10°52'34	12♂7	16° 8	28°13	16°49	5°27	5° 4	17°22	15°14	16° 9	22°21	21°49	26°28	26°16	T 3
W 4	2 54 3	11°52'44	25°46	14°52	29°22	17°18	5°22	5°10	17°22	15°13	16° 8	22°12	21°46	26°35	26°15	W 4
T 5	2 58 0	12°52'56	9♂32	13°33	0♂32	17°46	5°17	5°17	17°21	15°11	16° 7	22° 6	21°43	26°42	26°13	T 5
F 6	3 1 56	13°53'10	23°26	12°14	1°42	18°14	5°12	5°24	17°20	15°10	16° 6	22° 2	21°40	26°48	26°11	F 6
S 7	3 5 53	14°53'26	7♂24	10°58	2°52	18°42	5° 8	5°31	17°20	15° 8	16° 5	22° 1	21°37	26°55	26°10	S 7
S 8	3 9 50	15°53'44	21°28	9°46	4° 2	19° 9	5° 4	5°37	17°19	15° 7	16° 4	22° 1	21°33	27° 2	26° 8	S 8
M 9	3 13 46	16°54'04	5♂35	8°42	5°12	19°37	4°59	5°44	17°18	15° 6	16° 3	22° 1	21°30	27° 8	26° 7	M 9
T 10	3 17 43	17°54'26	19°46	7°47	6°23	20° 4	4°55	5°51	17°17	15° 4	16° 1	21°59	21°27	27°15	26° 5	T 10
W11	3 21 39	18°54'50	3♂59	7° 2	7°33	20°31	4°52	5°58	17°16	15° 3	16° 0	21°54	21°24	27°21	26° 4	W11
T 12	3 25 36	19°55'15	18° 9	6°28	8°44	20°57	4°48	6° 5	17°15	15° 2	15°59	21°47	21°21	27°28	26° 2	T 12
F 13	3 29 32	20°55'43	2♂14	6° 7	9°55	21°23	4°45	6°12	17°14	15° 0	15°58	21°36	21°18	27°35	26° 1	F 13
S 14	3 33 29	21°56'12	16° 9	5°D56	11° 6	21°49	4°41	6°19	17°13	14°59	15°57	21°24	21°14	27°41	26° 0	S 14
S 15	3 37 25	22°56'43	29°48	5°58	12°17	22°15	4°38	6°26	17°12	14°58	15°56	21°11	21°11	27°48	25°58	S 15
M16	3 41 22	23°57'16	13♂9	6° 9	13°28	22°41	4°36	6°33	17°10	14°57	15°55	20°58	21° 8	27°55	25°57	M16
T 17	3 45 19	24°57'50	26° 9	6°31	14°40	23° 6	4°33	6°40	17° 9	14°55	15°54	20°47	21° 5	28° 1	25°56	T 17
W18	3 49 15	25°58'25	8♂39	7° 2	15°51	23°30	4°31	6°47	17° 8	14°54	15°52	20°38	21° 2	28° 8	25°55	W18
T 19	3 53 12	26°59'02	21°10	7°41	17° 3	23°55	4°28	6°54	17° 7	14°53	15°51	20°33	20°58	28°15	25°54	T 19
F 20	3 57 8	27°59'40	3♂16	8°27	18°14	24°19	4°26	7° 1	17° 5	14°52	15°50	20°30	20°55	28°21	25°53	F 20
S 21	4 1 5	29° 0'19	15°10	9°20	19°26	24°43	4°25	7° 8	17° 4	14°51	15°49	20°29	20°52	28°28	25°52	S 21
S 22	4 5 1	0♂0'59	26°58	10°19	20°38	25° 7	4°23	7°15	17° 2	14°50	15°48	20°29	20°49	28°35	25°51	S 22
M23	4 8 58	1° 1'40	8♂46	11°22	21°50	25°30	4°22	7°22	17° 1	14°49	15°47	20°29	20°46	28°41	25°51	M23
T 24	4 12 54	2° 2'22	20°40	12°30	23° 2	25°53	4°20	7°29	16°59	14°48	15°46	20°27	20°43	28°48	25°50	T 24
W25	4 16 51	3° 3'06	2°Y43	13°41	24°14	26°15	4°19	7°36	16°57	14°47	15°45	20°24	20°39	28°55	25°49	W25
T 26	4 20 48	4° 3'50	15° 2	14°55	25°26	26°37	4°19	7°43	16°56	14°46	15°44	20°17	20°36	29° 1	25°49	T 26
F 27	4 24 44	5° 4'36	27°39	16°13	26°38	26°59	4°18	7°51	16°54	14°45	15°43	20° 8	20°33	29° 8	25°48	F 27
S 28	4 28 41	6° 5'22	10♂37	17°32	27°51	27°20	4°18	7°58	16°52	14°44	15°42	19°57	20°30	29°14	25°47	S 28
S 29	4 32 37	7° 6'10	23°56	18°54	29° 3	27°42	4°D18	8° 5	16°51	14°43	15°41	19°45	20°27	29°21	25°47	S 29
M30	4 36 34	8♂6'59	7♂35	20♂17	0♂16	28♂2	4°Y18	8♂12	16♂49	14°Y42	15♂40	19♂33	20♂23	29♂28	25♂47	M30

Delta T = 3.77 sec

DECEMBER 1868

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	4 40 30	9♂7'49	21♂29	21♂41	1♂29	28♂23	4°Y18	8♂19	16°R47	14°R41	15°R39	19°R22	20♂20	29♂34	25°R46	T 1
W 2	4 44 27	10° 8'40	5♂35	23° 7	2°41	28°42	4°19	8°26	16♂45	14°Y41	15♂38	19♂13	20°17	29°41	25°R46	W 2
T 3	4 48 23	11° 9'33	10♂33	24°34	3°54	29° 2	4°19	8°33	16°43	14°40	15°37	19° 7	20°14	29°48	25°46	T 3
F 4	4 52 20	12°10'27	4♂3	26° 2	5° 7	29°21	4°20	8°40	16°41	14°39	15°36	19° 4	20°11	29°54	25°46	F 4
S 5	4 56 17	13°11'21	18°17	27°30	6°20	29°40	4°21	8°47	16°39	14°38	15°35	19°D 3	20° 8	0♂1	25°45	S 5
S 6	5 0 13	14°12'18	2♂27	28°59	7°33	29°58	4°23	8°55	16°37	14°38	15°34	19° 3	20° 4	0° 8	25°45	S 6
M 7	5 4 10	15°13'15	16°33	0♂29	8°46	0♂16	4°24	9° 2	16°35	14°37	15°33	19°R 4	20° 1	0°14	25°D45	M 7
T 8	5 8 6	16°14'14	0♂33	1°59	9°59	0°33	4°26	9° 9	16°33	14°36	15°32	19° 3	19°58	0°21	25°45	T 8
W 9	5 12 3	17°15'13	14°26	3°29	11°12	0°50	4°28	9°16	16°31	14°36	15°31	19° 0	19°55	0°28	25°46	W 9
T 10	5 15 59	18°16'14	28°13	5° 0	12°26	1° 6	4°30	9°23	16°28	14°35	15°30	18°54	19°52	0°34	25°46	T 10
F 11	5 19 56	19°17'16	11♂51	6°31	13°39	1°22	4°32	9°30	16°26	14°35	15°29	18°46	19°49	0°41	25°46	F 11
S 12	5 23 52	20°18'20	25°18	8° 3	14°52	1°37	4°35	9°37	16°24	14°34	15°28	18°36	19°45	0°48	25°46	S 12
S 13	5 27 49	21°19'23	8♂33	9°34	16° 6	1°52	4°38	9°44	16°22	14°34	15°27	18°25	19°42	0°54	25°47	S 13
M14	5 31 46	22°20'28	21°34	11° 6	17°19	2° 6	4°41	9°51	16°19	14°34	15°26	18°15	19°39	1° 1	25°47	M14
T 15	5 35 42	23°21'34	4♂20	12°38	18°33	2°20	4°44	9°58	16°17	14°33	15°25	18° 6	19°36	1° 7	25°47	T 15
W16	5 39 39	24°22'40	16°49	14°10	19°47	2°33	4°47	10° 5	16°15	14°33	15°25	17°59	19°33	1°14	25°48	W16
T 17	5 43 35	25°23'46	29° 4	15°43	21° 0	2°46	4°51	10°12	16°12	14°32	15°24	17°54	19°29	1°21	25°48	T 17
F 18	5 47 32	26°24'53	11♂7	17°16	22°14	2°58	4°54	10°19	16°10	14°32	15°23	17°52	19°26	1°27	25°49	F 18
S 19	5 51 28	27°26'00	23° 0	18°48	23°28	3°10	4°58	10°26	16° 8	14°32	15°22	17°D52	19°23	1°34	25°50	S 19
S 20	5 55 25	28°27'08	4♂48	20°21	24°42	3°21	5° 2	10°33	16° 5	14°32	15°21	17°53	19°20	1°41	25°50	S 20
M21	5 59 22	29°28'15	16°35	21°55	25°55	3°31	5° 7	10°40	16° 3	14°32	15°21	17°54	19°17	1°47	25°51	M21
T 22	6 3 18	0♂29'23	28°27	23°28	27° 9	3°41	5°11	10°47	16° 0	14°31	15°20	17°R55	19°14	1°54	25°52	T 22
W23	6 7 15	1°30'31	10°Y30	25° 2	28°23	3°50	5°16	10°53	15°58	14°31	15°19	17°55	19°10	2° 1	25°53	W23
T 24	6 11 11	2°31'39	22°47	26°35	29°37	3°58	5°21	11° 0	15°55	14°31	15°18	17°52	19° 7	2° 7	25°54	T 24
F 25	6 15 8	3°32'47	5♂25	28°10	0♂51	4° 6	5°26	11° 7	15°53	14°D31	15°18	17°48	19° 4	2°14	25°55	F 25
S 26	6 19 4	4°33'55	18°26	29°44	2° 5	4°13	5°31	11°14	15°50	14°31	15°17	17°42	19° 1	2°21	25°56	S 26
S 27	6 23 1	5°35'03	1♂52	1♂19	3°19	4°20	5°37	11°20	15°48	14°31	15°16	17°35	18°58	2°27	25°57	S 27
M28	6 26 57	6°36'11	15°42	2°53	4°33	4°26	5°42	11°27	15°45	14°31	15°16	17°28	18°55	2°34	25°58	M28
T 29	6 30 54	7°37'19	29°54	4°29	5°47	4°31	5°48	11°34	15°43	14°31	15°15	17°21	18°51	2°41	26° 0	T 29
W30	6 34 51	8°38'28	14♂24	6° 4	7° 1	4°35	5°54	11°40	15°40	14°32	15°14	17°16	18°48	2°47	26° 1	W30
T 31	6 38 47	9♂39'36	29♂3	7♂40	8♂16	4♂39	6°Y 0	11♂47	15♂37	14°Y32	15♂14	17♂13	18♂45	2♂54	26♂2	T 31

Delta T = 3.66 sec