



# Astrodienst Ephemeris Tables for the year 1451

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 1451

## geocentric

JANUARY 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	7 15 17	19°20'38	24°23	29°D45	4°49	4°35	11°349	6°34	19°R19	0°R13	5°R 5	2°R 0	2°51	5°41	9°R43	F 1
S 2	7 19 13	20°21'46	6°23	29°46	5°57	5°15	12° 3	6°34	19°17	0°13	5° 3	1°58	2°47	5°48	9°140	S 2
S 3	7 23 10	21°22'53	18°31	29°54	7° 4	5°55	12°17	6°35	19°14	0°13	5° 2	1°57	2°44	5°55	9°38	S 3
M 4	7 27 6	22°24'00	0°49	0°10	8°11	6°35	12°31	6°35	19°12	0°12	5° 1	1°D57	2°41	6° 2	9°35	M 4
T 5	7 31 3	23°25'06	13°18	0°33	9°17	7°15	12°45	6°35	19° 9	0°12	4°59	1°57	2°38	6° 8	9°33	T 5
W 6	7 34 59	24°26'11	25°58	1° 2	10°24	7°55	12°59	6°35	19° 6	0°12	4°58	1°57	2°35	6°15	9°30	W 6
T 7	7 38 56	25°27'15	8°51	1°36	11°30	8°35	13°13	6°R35	19° 4	0°11	4°57	1°58	2°32	6°22	9°28	T 7
F 8	7 42 52	26°28'17	21°59	2°16	12°36	9°15	13°27	6°35	19° 1	0°11	4°55	1°59	2°28	6°28	9°26	F 8
S 9	7 46 49	27°29'19	5°21	3° 0	13°42	9°55	13°40	6°35	18°59	0°10	4°54	1°59	2°25	6°35	9°24	S 9
S 10	7 50 46	28°30'20	18°59	3°48	14°47	10°35	13°54	6°35	18°56	0° 9	4°52	1°59	2°22	6°42	9°22	S 10
M 11	7 54 42	29°31'19	2°53	4°40	15°52	11°15	14° 8	6°35	18°53	0° 9	4°51	2°R 0	2°19	6°48	9°20	M 11
T 12	7 58 39	0°32'18	17° 2	5°35	16°57	11°55	14°22	6°34	18°51	0° 8	4°50	1°59	2°16	6°55	9°18	T 12
W 13	8 2 35	1°33'15	1°12	6°34	18° 2	12°35	14°36	6°33	18°48	0° 8	4°48	1°D59	2°13	7° 2	9°16	W 13
T 14	8 6 32	2°34'11	16° 0	7°36	19° 6	13°15	14°49	6°33	18°46	0° 7	4°47	1°59	2° 9	7° 9	9°14	T 14
F 15	8 10 28	3°35'05	0°40	8°40	20°10	13°55	15° 3	6°32	18°43	0° 6	4°45	2° 0	2° 6	7°15	9°13	F 15
S 16	8 14 25	4°35'58	15°19	9°46	21°13	14°35	15°17	6°31	18°41	0° 5	4°44	2° 0	2° 3	7°22	9°11	S 16
S 17	8 18 21	5°36'50	29°52	10°55	22°17	15°15	15°30	6°30	18°38	0° 5	4°43	2°R 0	2° 0	7°29	9° 9	S 17
M 18	8 22 18	6°37'41	14°13	12° 5	23°19	15°55	15°44	6°29	18°36	0° 4	4°41	2° 0	1°57	7°35	9° 8	M 18
T 19	8 26 15	7°38'31	28°15	13°18	24°22	16°35	15°57	6°28	18°33	0° 3	4°40	1°59	1°53	7°42	9° 7	T 19
W 20	8 30 11	8°39'19	11°55	14°32	25°24	17°15	16°11	6°26	18°31	0° 2	4°38	1°59	1°50	7°49	9° 5	W 20
T 21	8 34 8	9°40'06	25°13	15°47	26°26	17°55	16°24	6°25	18°29	0° 1	4°37	1°58	1°47	7°55	9° 4	T 21
F 22	8 38 4	10°40'53	8° 7	17° 5	27°27	18°35	16°38	6°23	18°26	0° 0	4°36	1°57	1°44	8° 2	9° 3	F 22
S 23	8 42 1	11°41'38	20°41	18°23	28°28	19°15	16°51	6°22	18°24	29°59	4°34	1°56	1°41	8° 9	9° 2	S 23
S 24	8 45 57	12°42'22	2°57	19°43	29°29	19°55	17° 5	6°20	18°22	29°58	4°33	1°55	1°38	8°15	9° 1	S 24
M 25	8 49 54	13°43'05	15° 0	21° 5	0°Y29	20°35	17°18	6°18	18°19	29°57	4°31	1°D55	1°34	8°22	9° 0	M 25
T 26	8 53 50	14°43'47	26°55	22°27	1°28	21°15	17°31	6°16	18°17	29°56	4°30	1°55	1°31	8°29	8°59	T 26
W 27	8 57 47	15°44'28	8°45	23°51	2°27	21°55	17°44	6°14	18°15	29°55	4°29	1°56	1°28	8°36	8°58	W 27
T 28	9 1 44	16°45'07	20°36	25°15	3°26	22°35	17°58	6°12	18°13	29°54	4°27	1°57	1°25	8°42	8°57	T 28
F 29	9 5 40	17°45'46	2°33	26°41	4°24	23°15	18°11	6°10	18°10	29°53	4°26	1°59	1°22	8°49	8°57	F 29
S 30	9 9 37	18°46'23	14°38	28° 8	5°22	23°55	18°24	6° 7	18° 8	29°52	4°25	2° 0	1°19	8°56	8°56	S 30
S 31	9 13 33	19°46'58	26°56	29°36	6°Y19	24°Y35	18°37	6° 5	18° 6	29°51	4°23	2°R 1	1°15	9° 2	8°56	S 31

Delta T = 06m28s

Julian Calendar 1 Jan. 1451 == Greg. Calendar 10 Jan. 1451

FEBRUARY 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	9 17 30	20°47'33	9°28	1°5 5	7°Y16	25°Y15	18°350	6°R 2	18°R 4	29°R50	4°R22	2°R 1	1°12	9° 9	8°R55	M 1
T 2	9 21 26	21°48'05	22°15	2°35	8°12	25°55	19° 3	6° 0	18° 2	29°R48	4°R21	2° 0	1° 9	9°16	8°R55	T 2
W 3	9 25 23	22°48'36	5°18	4° 6	9° 7	26°35	19°16	5°57	18° 0	29°47	4°19	1°57	1° 6	9°22	8°55	W 3
T 4	9 29 19	23°49'05	18°36	5°38	10° 2	27°15	19°28	5°54	17°58	29°46	4°18	1°54	1° 3	9°29	8°55	T 4
F 5	9 33 16	24°49'33	2°Y 8	7°11	10°56	27°55	19°41	5°51	17°56	29°45	4°17	1°51	0°59	9°36	8°D55	F 5
S 6	9 37 13	25°49'59	15°52	8°45	11°50	28°35	19°54	5°49	17°54	29°43	4°15	1°47	0°56	9°43	8°55	S 6
S 7	9 41 9	26°50'22	29°45	10°19	12°43	29°15	20° 6	5°45	17°52	29°42	4°14	1°44	0°53	9°49	8°55	S 7
M 8	9 45 6	27°50'44	13°46	11°55	13°35	29°55	20°19	5°42	17°50	29°41	4°13	1°43	0°50	9°56	8°55	M 8
T 9	9 49 2	28°51'04	27°52	13°32	14°26	0°Y35	20°31	5°39	17°49	29°39	4°11	1°D42	0°47	10° 3	8°55	T 9
W 10	9 52 59	29°51'22	12°11	15°10	15°17	1°15	20°44	5°36	17°47	29°38	4°10	1°42	0°44	10° 9	8°56	W 10
T 11	9 56 55	0°51'37	26°16	16°48	16° 7	1°55	20°56	5°33	17°45	29°37	4° 9	1°44	0°40	10°16	8°56	T 11
F 12	10 0 52	1°51'51	10°29	18°28	16°56	2°34	21° 9	5°29	17°43	29°35	4° 8	1°45	0°37	10°23	8°57	F 12
S 13	10 4 48	2°52'03	24°39	20° 9	17°44	3°14	21°21	5°26	17°42	29°34	4° 7	1°R46	0°34	10°29	8°57	S 13
S 14	10 8 45	3°52'12	8°44	21°51	18°31	3°54	21°33	5°22	17°40	29°32	4° 5	1°46	0°31	10°36	8°58	S 14
M 15	10 12 42	4°52'19	22°39	23°34	19°17	4°34	21°45	5°18	17°39	29°31	4° 4	1°45	0°28	10°43	8°59	M 15
T 16	10 16 38	5°52'25	6°23	25°18	20° 2	5°14	21°57	5°15	17°37	29°29	4° 3	1°41	0°24	10°49	9° 0	T 16
W 17	10 20 35	6°52'28	19°51	27° 3	20°47	5°54	22° 9	5°11	17°36	29°28	4° 2	1°36	0°21	10°56	9° 0	W 17
T 18	10 24 31	7°52'30	3° 1	28°49	21°30	6°33	22°21	5° 7	17°34	29°26	4° 1	1°30	0°18	11° 3	9° 1	T 18
F 19	10 28 28	8°52'30	15°53	0°Y36	22°12	7°13	22°33	5° 3	17°33	29°25	4° 0	1°24	0°15	11°10	9° 3	F 19
S 20	10 32 24	9°52'28	28°27	2°24	22°53	7°53	22°44	4°59	17°32	29°23	3°58	1°17	0°12	11°16	9° 4	S 20
S 21	10 36 21	10°52'24	10°45	4°14	23°33	8°32	22°56	4°55	17°30	29°22	3°57	1°12	0° 9	11°23	9° 5	S 21
M 22	10 40 17	11°52'19	22°49	6° 4	24°11	9°12	23° 7	4°51	17°29	29°20	3°56	1° 8	0° 5	11°30	9° 6	M 22
T 23	10 44 14	12°52'12	4°45	7°56	24°49	9°52	23°19	4°47	17°28	29°19	3°55	1° 6	0° 2	11°36	9° 8	T 23
W 24	10 48 11	13°52'04	16°35	9°49	25°25	10°32	23°30	4°43	17°27	29°17	3°54	1°D 6	29°59	11°43	9° 9	W 24
T 25	10 52 7	14°51'53	28°27	11°43	26° 0	11°11	23°41	4°39	17°26	29°16	3°53	1° 7	29°56	11°50	9°11	T 25
F 26	10 56 4	15°51'41	10°34	13°38	26°33	11°51	23°53	4°35	17°25	29°14	3°52	1° 8	29°53	11°56	9°12	F 26
S 27	11 0 0	16°51'27	22°31	15°34	27° 5	12°30	24° 4	4°30	17°24	29°12	3°51	1° 9	29°50	12° 3	9°14	S 27
S 28	11 3 57	17°51'12	4°54	17°31	27°Y35	13°R10	24°R15	4°26	17°23	29°11	3°50	1°R10	29°46	12°10	9°16	S 28

Delta T = 06m27s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1451

## geocentric

MARCH 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	11 7 53	18°50'54	17°36'36	19°32'29	28°4'4	13°8'50	24°32'26	4°R22	17°R22	29°R 9	3°R49	1°R 8	29°34'3	12°31'16	9°11'18	M 1
T 2	11 11 50	19°50'35	0°38'38	21°28'28	28°31'4	14°29'29	24°36'4	4°17'17	17°21'21	29°R 8	3°R48	1°R 5	29°40'12	12°23'23	9°20'20	T 2
W 3	11 15 46	20°50'13	14°1'23	23°28'28	28°56'15	15°9'24	24°47'4	4°13'17	17°20'29	29°6'3	3°47'0	0°59'29	29°37'12	12°30'30	9°22'22	W 3
T 4	11 19 43	21°49'50	27°44'25	25°28'29	29°20'15	15°48'24	24°58'4	8°17'20	17°20'29	29°4'3	3°47'0	0°51'29	29°34'12	12°36'36	9°24'24	T 4
F 5	11 23 40	22°49'24	11°44'27	27°29'29	29°42'16	16°28'25	25°8'4	4°17'19	17°19'29	29°3'3	3°46'0	0°43'29	29°30'12	12°43'30	9°26'26	F 5
S 6	11 27 36	23°48'56	25°56'29	30'08	29°30'2	17°7'25	25°19'3	59'17	17°18'29	29°1'3	3°45'0	0°34'29	29°27'12	12°50'30	9°28'28	S 6
S 7	11 31 33	24°48'27	10°15'1	1°31'0	0°20'17	17°47'25	25°29'3	55'17	17°18'28	28°59'3	3°44'0	0°26'29	29°24'12	12°57'30	9°30'30	S 7
M 8	11 35 29	25°47'55	24°35'3	3°32'0	0°36'18	18°26'25	25°39'3	50'17	17°17'28	28°58'3	3°43'0	0°20'29	29°21'13	13°3'3	9°33'30	M 8
T 9	11 39 26	26°47'20	8°15'5	5°32'0	0°50'19	19°6'25	25°49'3	45'17	17°17'28	28°56'3	3°43'0	0°17'29	29°18'13	13°10'3	9°35'30	T 9
W10	11 43 22	27°46'43	23°4'7	7°32'1	2°19	19°45'25	25°59'3	41'17	17°16'28	28°54'3	3°42'0	0°D15	29°15'13	13°17'3	9°38'30	W10
T 11	11 47 19	28°46'04	7°9'9	9°31'1	1°11'20	20°25'26	26°9'3	36'17	17°16'28	28°53'3	3°41'0	0°15'29	29°11'13	13°23'3	9°40'30	T 11
F 12	11 51 15	29°45'23	21°5'11	1°28'19	1°19'21	21°4'26	26°19'3	31'17	17°16'28	28°51'3	3°40'0	0°16'29	29°8'13	13°30'3	9°43'30	F 12
S 13	11 55 12	0°44'39	4°53'13	23'13	1°24'21	21°44'26	26°28'3	27'17	17°16'28	28°49'3	3°40'0	0°R16	29°5'13	13°37'3	9°46'30	S 13
S 14	11 59 9	1°43'52	18°32'15	17'12	22°23'26	26°38'3	22'17	15'17	17°15'28	28°48'3	3°39'0	0°15'29	29°2'13	13°43'3	9°48'30	S 14
M15	12 3 5	2°43'04	2°1'17	7'1	1°R27	23°2'26	26°47'3	18'17	17°15'28	28°46'3	3°38'0	0°11'28	29°59'13	13°50'3	9°51'30	M15
T 16	12 7 2	3°42'13	15°20'18	55'12	23°42'26	26°57'3	13'17	15'17	17°15'28	28°44'3	3°38'0	0°4'28	28°56'13	13°57'3	9°54'30	T 16
W17	12 10 58	4°41'20	28°27'20	39'12	24°21'27	6'3	8'17	D15	17°15'28	28°43'3	3°37'29	355	28°52'14	14°3'3	9°57'30	W17
T 18	12 14 55	5°40'24	11°22'22	20'13	25°0'27	15'3	4'17	15'28	17°15'28	28°41'3	3°37'29	44	28°49'14	14°10'3	10°0'30	T 18
F 19	12 18 51	6°39'27	24°2'23	56'1	3'25	40'27	24'2	59'17	17°15'28	28°40'3	3°36'29	32	28°46'14	14°17'3	10°3'30	F 19
S 20	12 22 48	7°38'28	6°29'25	28'0	51'26	19'27	33'2	54'17	17°15'28	28°38'3	3°36'29	20	28°43'14	14°23'3	10°7'30	S 20
S 21	12 26 44	8°37'27	18°42'26	55'0	36'26	58'27	41'2	50'17	17°15'28	28°36'3	3°35'29	10	28°40'14	14°30'3	10°10'30	S 21
M22	12 30 41	9°36'24	0°44'28	17'0	19'27	37'27	50'2	45'17	17°16'28	28°35'3	3°35'29	1'28	28°36'14	14°37'3	10°13'30	M22
T 23	12 34 37	10°35'19	12°38'29	34'0	0'28	16'27	58'2	40'17	17°16'28	28°33'3	3°34'28	55	28°33'14	14°43'3	10°16'30	T 23
W24	12 38 34	11°34'13	24°28'0	46'29	38'29	56'28	6'2	36'17	17°16'28	28°31'3	3°34'28	52	28°30'14	14°50'3	10°20'30	W24
T 25	12 42 31	12°33'04	6°19'1	51'29	14'29	35'28	15'2	31'17	17°17'28	28°30'3	3°34'28	50	28°27'14	14°57'3	10°23'30	T 25
F 26	12 46 27	13°31'54	18°14'2	51'28	48'0	14'28	23'2	27'17	17°17'28	28°28'3	3°33'28	D50	28°24'15	15°4'3	10°27'30	F 26
S 27	12 50 24	14°30'42	0°21'3	45'28	20'0	53'28	30'2	22'17	17°18'28	28°27'3	3°33'28	R50	28°21'15	15°10'3	10°31'30	S 27
S 28	12 54 20	15°29'29	12°45'4	33'27	50'1	32'28	38'2	18'17	17°18'28	28°25'3	3°33'28	50	28°17'15	15°17'3	10°34'30	S 28
M29	12 58 17	16°28'13	25°29'5	15'27	19'2	11'28	46'2	13'17	17°19'28	28°24'3	3°32'28	47	28°14'15	15°24'3	10°38'30	M29
T 30	13 2 13	17°26'56	8°38'5	51'26	46'2	50'28	53'2	9'17	17°20'28	28°22'3	3°32'28	42	28°11'15	15°30'3	10°42'30	T 30
W31	13 6 10	18°25'37	22°13'6	20'26	11'26	29'3	0'2	4'17	17°20'28	28°20'3	3°32'28	34	28°8'15	15°37'3	10°45'30	W31

Delta T = 06m27s

Julian Calendar 1 March 1451 == Greg. Calendar 10 March 1451

APRIL 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	13 10 6	19°24'16	6°14'6	43'25	36'25	8'4	29	38'2	2°R 0	17°21	28°R19	3°R32	28°R24	28°35	15°44	T 1
F 2	13 14 3	20°22'53	20°36	7'0	24	59'4	47'29	15'1	17°22	28°R17	3°R32	28°R13	28°1	15°50	10°53	F 2
S 3	13 18 0	21°21'28	5°13'7	11'7	24	22'5	27'2	51'1	17°23	28°R16	3°32	28°1	27°58	15°57	10°57	S 3
S 4	13 21 56	22°20'02	19°59'7	R16	23°44'6	6'29	28'2	47'1	17°24	28°14	3°31	27°51	27°55	16°4	11°1	S 4
M 5	13 25 53	23°18'33	4°14'4	14'7	23°7	6°44	29°35	43'1	17°25	28°13	3°31	27°43	27°52	16°10	11°5	M 5
T 6	13 29 49	24°17'02	19°21'7	8'22	29'7	23'29	29°41	39'1	17°26	28°11	3°31	27°37	27°49	16°17	11°10	T 6
W 7	13 33 46	25°15'29	3°56'6	55'21	51'8	2'29	29°47	35'1	17°27	28°10	3°D31	27°34	27°46	16°24	11°14	W 7
T 8	13 37 42	26°13'54	17°56'6	38'21	14'8	41'29	29°54	31'1	17°28	28°9	3°31	27°33	27°42	16°30	11°18	T 8
F 9	13 41 39	27°12'17	1°49'6	16'20	38'9	20'29	29°59	27'1	17°29	28°7	3°31	27°33	27°39	16°37	11°22	F 9
S 10	13 45 35	28°10'37	15°26'5	50'20	3'9	59'29	0°5	23'1	17°30	28°6	3°31	27°32	27°36	16°44	11°27	S 10
S 11	13 49 32	29°8'55	28°49'5	20'19	29'10	38'0	11'0	19'1	17°32	28°4	3°31	27°30	27°33	16°50	11°31	S 11
M12	13 53 29	0°8'7	11°11'5	47'18	56'11	17'0	16'0	15'1	17°33	28°3	3°32	27°26	27°30	16°57	11°35	M12
T 13	13 57 25	1°5'26	24°56'4	12'18	25'11	56'0	22'0	12'1	17°34	28°2	3°32	27°18	27°27	17°4	11°40	T 13
W14	14 1 22	2°3'38	7°43'3	34'17	56'12	34'12	34'0	27'8	17°36	28°0	3°32	27°8	27°23	17°10	11°44	W14
T 15	14 5 18	3°1'48	20°19'2	56'17	29'13	13'0	32'0	4'1	17°37	27°59	3°32	26°55	27°20	17°17	11°49	T 15
F 16	14 9 15	3°59'56	2°17'1	4'13	52'0	36'0	36'0	1'1	17°39	27°58	3°32	26°42	27°17	17°24	11°54	F 16
S 17	14 13 11	4°58'03	14°59'1	39'16	41'14	31'0	41'0	57'1	17°40	27°57	3°33	26°29	27°14	17°30	11°58	S 17
S 18	14 17 8	5°56'08	27°4'1	2'16	20'15	9'0	46'0	54'1	17°42	27°55	3°33	26°17	27°11	17°37	12°3	S 18
M19	14 21 4	6°54'12	9°1'0	26'16	1'15	48'0	50'0	51'1	17°44	27°54	3°33	26°7	27°7	17°44	12°8	M19
T 20	14 25 1	7°52'14	20°53'29	52'15	45'16	27'0	54'0	47'1	17°45	27°53	3°33	25°59	27°4	17°50	12°12	T 20
W21	14 28 58	8°50'14	2°41'29	21'15	32'17	5'0	58'0	44'1	17°47	27°52	3°34	25°55	27°1	17°57	12°17	W21
T 22	14 32 54	9°48'13	14°30'28	53'15	20'17	44'1	2'0	41'1	17°49	27°51	3°34	25°53	26°58	18°4	12°22	T 22
F 23	14 36 51	10°46'11	26°25'28	29'15	12'18	23'1	5'0	38'1	17°51	27°50	3°35	25°D52	26°55	18°11	12°27	F 23
S 24	14 40 47	11°44'08	8°31'28	9'15	5'19	1'0	35'1	35'1	17°53	27°48	3°35	25°R52	26°52	18°17	12°32	S 24
S 25	14 44 44	12°42'03	20°52'27	53'15	1'19	40'1	12'0	32'1	17°55	27°47	3°36	25°52	26°48	18°24	12°37	S 25
M26	14 48 40	13°39'56	3°35'27	41'15	D0'20	19'1	15'0	29'1	17°57	27°46	3°36	25°51	26°45	18°31	12°41	M26
T 27	14 52 37	14°37'49	16°43'27	33'15	1'20	57'1	18'0	27'1	17°59	27°45	3°37	25°47	26°42	18°37	12°46	T 27
W28	14 56 33	15°35'40	0°20'27	D31'15	4'21	36'1	20'0	24'1	18°1	27°44	3°37	25°41	26°39	18°44	12°51	W28
T 29	15 0 30	16°33'30	14°25'27	33'15	9'22	14'1	23'0	22'1	18°3	27°43	3°38	25°32	26°36	18°51	12°57	T 29
F 30	15 4 27	17°31'18	28°57'27	39'15	17'22	53'1	25'0	19'1	18°5	27°42	3°38	25°33	26°33	18°57	13°2	F 30

Delta T = 06m27s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1451

## geocentric

MAY 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	15 8 23	18829°06	13849	27°50	15°27	23°31	18°27	0°R17	18°7	27°R41	3°Ω39	25°R12	26°Ω29	19°Ω4	13°II 7	S 1
S 2	15 12 20	19°26'52	28°52	28° 6	15°39	24°10	1°29	0°Ω15	18°10	27°R41	3°39	25°Ω3	26°26	19°11	13°12	S 2
M 3	15 16 16	20°24'37	13°II58	28°26	15°53	24°48	1°31	0°12	18°12	27°40	3°40	24°56	26°23	19°17	13°17	M 3
T 4	15 20 13	21°22'20	28°56	28°50	16° 9	25°27	1°33	0°10	18°14	27°39	3°41	24°51	26°20	19°24	13°22	T 4
W 5	15 24 9	22°20'01	13°Ω39	29°19	16°27	26° 5	1°34	0° 8	18°17	27°38	3°42	24°49	26°17	19°31	13°27	W 5
T 6	15 28 6	23°17'41	28° 2	29°51	16°46	26°44	1°35	0° 6	18°19	27°37	3°42	24°D48	26°13	19°37	13°33	T 6
F 7	15 32 2	24°15'20	12°Ω3	0°Ω28	17° 8	27°22	1°36	0° 5	18°22	27°37	3°43	24°49	26°10	19°44	13°38	F 7
S 8	15 35 59	25°12'57	25°41	1° 8	17°31	28° 1	1°37	0° 3	18°24	27°36	3°44	24°R49	26° 7	19°51	13°43	S 8
S 9	15 39 56	26°10'32	9°R0	1°53	17°56	28°39	1°38	0° 1	18°27	27°35	3°45	24°49	26° 4	19°57	13°48	S 9
M10	15 43 52	27° 8'06	22° 0	2°41	18°22	29°18	1°38	29°R59	18°29	27°34	3°46	24°46	26° 1	20° 4	13°54	M10
T 11	15 47 49	28° 5'38	4°Ω45	3°32	18°50	29°56	1°38	29°58	18°32	27°34	3°46	24°41	25°58	20°11	13°59	T 11
W12	15 51 45	29° 3'09	17°16	4°27	19°20	0°Ω34	1°R38	29°57	18°34	27°33	3°47	24°34	25°54	20°17	14° 4	W12
T 13	15 55 42	0°II 0'39	29°37	5°25	19°51	1°13	1°38	29°56	18°37	27°33	3°48	24°25	25°51	20°24	14°10	T 13
F 14	15 59 38	0°58'07	11°R48	6°27	20°23	1°51	1°38	29°55	18°40	27°32	3°49	24°15	25°48	20°31	14°15	F 14
S 15	16 3 35	1°55'35	23°52	7°32	20°57	2°29	1°37	29°54	18°43	27°32	3°50	24° 5	25°45	20°37	14°21	S 15
S 16	16 7 31	2°53'01	5°Ω49	8°40	21°32	3° 8	1°37	29°53	18°45	27°31	3°51	23°56	25°42	20°44	14°26	S 16
M17	16 11 28	3°50'26	17°41	9°51	22° 8	3°46	1°36	29°52	18°48	27°31	3°52	23°49	25°39	20°51	14°31	M17
T 18	16 15 25	4°47'51	29°30	11° 5	22°46	4°24	1°35	29°51	18°51	27°30	3°53	23°44	25°35	20°57	14°37	T 18
W19	16 19 21	5°45'14	11°Ω18	12°22	23°24	5° 3	1°33	29°51	18°54	27°30	3°54	23°41	25°32	21° 4	14°42	W19
T 20	16 23 18	6°42'37	23° 9	13°41	24° 4	5°41	1°32	29°50	18°57	27°29	3°55	23°D40	25°29	21°11	14°48	T 20
F 21	16 27 14	7°39'59	5°Ω5	15° 4	24°45	6°19	1°30	29°50	19° 0	27°29	3°56	23°41	25°26	21°17	14°53	F 21
S 22	16 31 11	8°37'21	17°12	16°30	25°26	6°57	1°28	29°49	19° 3	27°29	3°57	23°42	25°23	21°24	14°59	S 22
S 23	16 35 7	9°34'42	29°33	17°58	26° 9	7°36	1°26	29°49	19° 6	27°28	3°59	23°43	25°19	21°31	15° 4	S 23
M24	16 39 4	10°32'02	12°Ω14	19°29	26°53	8°14	1°24	29°49	19° 9	27°28	4° 0	23°R44	25°16	21°37	15°10	M24
T 25	16 43 0	11°29'22	25°19	21° 3	27°37	8°52	1°22	29°D49	19°12	27°28	4° 1	23°43	25°13	21°44	15°15	T 25
W26	16 46 57	12°26'41	8°Y51	22°40	28°23	9°30	1°19	29°49	19°15	27°28	4° 2	23°40	25°10	21°51	15°21	W26
T 27	16 50 54	13°24'00	22°51	24°20	29° 9	10° 9	1°16	29°49	19°18	27°28	4° 3	23°36	25° 7	21°57	15°26	T 27
F 28	16 54 50	14°21'18	7°Ω19	26° 2	29°56	10°47	1°13	29°50	19°21	27°28	4° 5	23°31	25° 4	22° 4	15°32	F 28
S 29	16 58 47	15°18'37	22°10	27°47	0°Ω44	11°25	1°10	29°50	19°24	27°28	4° 6	23°25	25° 0	22°11	15°37	S 29
S 30	17 2 43	16°15'54	7°II17	29°34	1°33	12° 3	1° 7	29°50	19°27	27°27	4° 7	23°20	24°57	22°17	15°43	S 30
M31	17 6 40	17°II13'12	22°II31	1°II24	2°Ω22	12°Ω41	1°Ω4	29°R51	19°Ω31	27°D27	4°Ω8	23°Ω16	24°Ω54	22°Ω24	15°II48	M31

Delta T = 06m27s

Julian Calendar 1 May 1451 == Greg. Calendar 10 May 1451

JUNE 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	17 10 36	18°II10'28	7°Ω41	3°II17	3°Ω12	13°Ω19	1°R 0	29°R52	19°Ω34	27°R27	4°Ω10	23°R13	24°Ω51	22°Ω31	15°II54	T 1
W 2	17 14 33	19° 7'44	22°38	5°12	4° 3	13°58	0°Ω56	29°52	19°37	27°28	4°11	23°D13	24°48	22°37	15°59	W 2
T 3	17 18 29	20° 5'00	7°Ω15	7°10	4°54	14°36	0°52	29°53	19°40	27°28	4°12	23°Ω13	24°45	22°44	16° 5	T 3
F 4	17 22 26	21° 2'14	21°28	9°10	5°46	15°14	0°48	29°54	19°44	27°28	4°14	23°15	24°41	22°51	16°10	F 4
S 5	17 26 23	21°59'28	5°R15	11°12	6°39	15°52	0°44	29°55	19°47	27°28	4°15	23°16	24°38	22°57	16°16	S 5
S 6	17 30 19	22°56'41	18°37	13°16	7°32	16°30	0°39	29°57	19°50	27°28	4°16	23°R17	24°35	23° 4	16°21	S 6
M 7	17 34 16	23°53'54	1°Ω37	15°21	8°25	17° 8	0°34	29°58	19°54	27°28	4°18	23°17	24°32	23°11	16°27	M 7
T 8	17 38 12	24°51'05	14°17	17°29	9°19	17°46	0°30	29°59	19°57	27°28	4°19	23°15	24°29	23°17	16°32	T 8
W 9	17 42 9	25°48'17	26°42	19°37	10°14	18°25	0°25	0°Ω1	20° 1	27°29	4°21	23°13	24°25	23°24	16°38	W 9
T 10	17 46 5	26°45'28	8°R53	21°47	11° 9	19° 3	0°19	0° 2	20° 4	27°29	4°22	23° 9	24°22	23°31	16°43	T 10
F 11	17 50 2	27°42'38	20°56	23°57	12° 5	19°41	0°14	0° 4	20° 8	27°29	4°24	23° 5	24°19	23°37	16°49	F 11
S 12	17 53 58	28°39'48	2°Ω51	26° 8	13° 1	20°19	0° 9	0° 6	20°11	27°30	4°25	23° 1	24°16	23°44	16°54	S 12
S 13	17 57 55	29°36'58	14°42	28°18	13°57	20°57	0° 3	0° 8	20°14	27°30	4°27	22°57	24°13	23°51	17° 0	S 13
M14	18 1 52	0°Ω34'08	26°31	0°Ω29	14°54	21°35	29°Ω57	0°10	20°18	27°31	4°28	22°54	24°10	23°57	17° 5	M14
T 15	18 5 48	1°31'17	8°Ω21	2°40	15°52	22°13	29°52	0°12	20°22	27°31	4°30	22°52	24° 6	24° 4	17°11	T 15
W16	18 9 45	2°28'27	20°12	4°50	16°50	22°51	29°46	0°14	20°25	27°32	4°31	22°D52	24° 3	24°11	17°16	W16
T 17	18 13 41	3°25'37	2°Ω8	6°59	17°48	23°29	29°40	0°16	20°29	27°32	4°33	22°52	24° 0	24°17	17°21	T 17
F 18	18 17 38	4°22'46	14°11	9° 7	18°46	24° 7	29°33	0°18	20°32	27°33	4°34	22°53	23°57	24°24	17°27	F 18
S 19	18 21 34	5°19'56	26°25	11°13	19°45	24°45	29°27	0°21	20°36	27°33	4°36	22°54	23°54	24°31	17°32	S 19
S 20	18 25 31	6°17'06	8°Ω52	13°19	20°45	25°23	29°21	0°23	20°39	27°34	4°38	22°56	23°51	24°37	17°37	S 20
M21	18 29 28	7°14'17	21°35	15°23	21°45	26° 1	29°14	0°26	20°43	27°35	4°39	22°57	23°47	24°44	17°43	M21
T 22	18 33 24	8°11'27	4°Y39	17°25	22°45	26°39	29° 7	0°29	20°46	27°35	4°41	22°R57	23°44	24°51	17°48	T 22
W23	18 37 21	9° 8'39	18° 6	19°26	23°45	27°17	29° 0	0°31	20°50	27°36	4°42	22°57	23°41	24°57	17°53	W23
T 24	18 41 17	10° 5'50	1°Ω58	21°25	24°46	27°55	28°54	0°34	20°54	27°37	4°44	22°56	23°38	25° 4	17°59	T 24
F 25	18 45 14	11° 3'03	16°14	23°22	25°47	28°33	28°47	0°37	20°57	27°38	4°46	22°55	23°35	25°11	18° 4	F 25
S 26	18 49 10	12° 0'16	0°II53	25°17	26°48	29°11	28°40	0°40	21° 1	27°38	4°47	22°54	23°31	25°17	18° 9	S 26
S 27	18 53 7	12°57'29	15°48	27°11	27°50	29°50	28°32	0°44	21° 5	27°39	4°49	22°53	23°28	25°24	18°14	S 27
M28	18 57 3	13°54'43	0°Ω54	29° 2	28°51	0°Ω28	28°25	0°47	21° 8	27°40	4°51	22°52	23°25	25°31	18°20	M28
T 29	19 1 0	14°51'58	16° 2	0°Ω52	29°54	1° 6	28°18	0°50	21°12	27°41	4°53	22°D51	23°22	25°37	18°25	T 29
W30	19 4 57	15°Ω49'12	1°Ω1	2°Ω40	0°II56	1°Ω44	28°Ω10	0°Ω54	21°Ω16	27°R42	4°Ω54	22°Ω51	23°Ω19	25°Ω44	18°II30	W30

Delta T = 06m27s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1451  
geocentric

JULY 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	19 8 53	16 <sup>5</sup> 46'27	15 <sup>5</sup> 44	4 <sup>5</sup> 26	1 <sup>11</sup> 59	2 <sup>5</sup> 22	28° R 3	0 <sup>5</sup> 57	21 <sup>5</sup> 19	27 <sup>17</sup> 43	4 <sup>5</sup> 56	22 <sup>5</sup> 52	23 <sup>5</sup> 16	25 <sup>5</sup> 51	18 <sup>11</sup> 35	T 1
F 2	19 12 50	17°43'43	0 <sup>17</sup> 6	6°10	3° 2	3° 0	27 <sup>5</sup> 55	1° 1	21°23	27°44	4°58	22°52	23°12	25°57	18°40	F 2
S 3	19 16 46	18°40'58	14° 2	7°52	4° 5	3°38	27°48	1° 4	21°27	27°45	4°59	22°53	23° 9	26° 4	18°45	S 3
S 4	19 20 43	19°38'14	27°31	9°33	5° 8	4°16	27°40	1° 8	21°30	27°46	5° 1	22°53	23° 6	26°11	18°50	S 4
M 5	19 24 39	20°35'30	10 <sup>5</sup> 35	11°11	6°12	4°54	27°33	1°12	21°34	27°47	5° 3	22°53	23° 3	26°17	18°55	M 5
T 6	19 28 36	21°32'46	23°17	12°48	7°16	5°32	27°25	1°16	21°38	27°48	5° 5	22°R53	23° 0	26°24	19° 0	T 6
W 7	19 32 32	22°30'03	5 <sup>11</sup> 40	14°23	8°20	6°10	27°17	1°20	21°41	27°49	5° 6	22°D53	22°57	26°31	19° 5	W 7
T 8	19 36 29	23°27'20	17°49	15°56	9°24	6°48	27°10	1°24	21°45	27°50	5° 8	22°53	22°53	26°37	19°10	T 8
F 9	19 40 26	24°24'38	29°47	17°27	10°28	7°26	27° 2	1°28	21°49	27°52	5°10	22°53	22°50	26°44	19°15	F 9
S 10	19 44 22	25°21'56	11 <sup>5</sup> 38	18°56	11°33	8° 4	26°54	1°32	21°52	27°53	5°12	22°54	22°47	26°51	19°20	S 10
S 11	19 48 19	26°19'14	23°27	20°23	12°38	8°42	26°46	1°37	21°56	27°54	5°13	22°54	22°44	26°57	19°24	S 11
M12	19 52 15	27°16'34	5 <sup>5</sup> 16	21°49	13°43	9°20	26°38	1°41	22° 0	27°55	5°15	22°54	22°41	27° 4	19°29	M12
T 13	19 56 12	28°13'54	17° 9	23°12	14°48	9°58	26°31	1°45	22° 3	27°57	5°17	22°R54	22°37	27°11	19°34	T 13
W14	20 0 8	29°11'15	29° 7	24°34	15°54	10°36	26°23	1°50	22° 7	27°58	5°19	22°54	22°34	27°17	19°39	W14
T 15	20 4 5	0 <sup>5</sup> 8'36	11 <sup>5</sup> 13	25°53	17° 0	11°14	26°15	1°55	22°11	27°59	5°21	22°54	22°31	27°24	19°43	T 15
F 16	20 8 1	1° 5'59	23°29	27°11	18° 5	11°52	26° 7	1°59	22°14	28° 1	5°22	22°53	22°28	27°31	19°48	F 16
S 17	20 11 58	2° 3'22	5 <sup>5</sup> 56	28°26	19°12	12°30	26° 0	2° 4	22°18	28° 2	5°24	22°52	22°25	27°37	19°52	S 17
S 18	20 15 55	3° 0'47	18°36	29°39	20°18	13° 8	25°52	2° 9	22°21	28° 4	5°26	22°51	22°22	27°44	19°57	S 18
M19	20 19 51	3°58'12	1 <sup>5</sup> 31	0 <sup>17</sup> 50	21°24	13°46	25°44	2°14	22°25	28° 5	5°28	22°50	22°18	27°51	20° 1	M19
T 20	20 23 48	4°55'39	14°41	1°58	22°31	14°24	25°37	2°19	22°29	28° 6	5°29	22°49	22°15	27°57	20° 6	T 20
W21	20 27 44	5°53'07	28° 9	3° 4	23°37	15° 2	25°29	2°24	22°32	28° 8	5°31	22°48	22°12	28° 4	20°10	W21
T 22	20 31 41	6°50'37	11 <sup>5</sup> 55	4° 8	24°44	15°40	25°22	2°29	22°36	28° 9	5°33	22°D48	22° 9	28°11	20°14	T 22
F 23	20 35 37	7°48'08	25°59	5° 9	25°51	16°19	25°14	2°34	22°39	28°11	5°35	22°48	22° 6	28°17	20°19	F 23
S 24	20 39 34	8°45'41	10 <sup>11</sup> 21	6° 7	26°59	16°57	25° 7	2°39	22°43	28°13	5°37	22°49	22° 2	28°24	20°23	S 24
S 25	20 43 30	9°43'15	24°57	7° 3	28° 6	17°35	25° 0	2°44	22°47	28°14	5°38	22°51	21°59	28°31	20°27	S 25
M26	20 47 27	10°40'50	9 <sup>5</sup> 43	7°55	29°14	18°13	24°52	2°50	22°50	28°16	5°40	22°52	21°56	28°37	20°31	M26
T 27	20 51 24	11°38'27	24°34	8°44	0 <sup>5</sup> 21	18°51	24°45	2°55	22°54	28°17	5°42	22°R52	21°53	28°44	20°35	T 27
W28	20 55 20	12°36'05	9 <sup>5</sup> 21	9°30	1°29	19°29	24°38	3° 1	22°57	28°19	5°44	22°51	21°50	28°50	20°40	W28
T 29	20 59 17	13°33'44	23°58	10°13	2°37	20° 7	24°31	3° 6	23° 1	28°21	5°46	22°50	21°47	28°57	20°44	T 29
F 30	21 3 13	14°31'25	8 <sup>11</sup> 17	10°52	3°45	20°45	24°24	3°12	23° 4	28°23	5°47	22°47	21°43	29° 4	20°48	F 30
S 31	21 7 10	15 <sup>5</sup> 29'06	22 <sup>17</sup> 15	11 <sup>17</sup> 27	4 <sup>5</sup> 53	21 <sup>5</sup> 23	24 <sup>5</sup> 17	3 <sup>5</sup> 18	23 <sup>5</sup> 8	28 <sup>17</sup> 24	5 <sup>5</sup> 49	22 <sup>5</sup> 44	21 <sup>5</sup> 40	29 <sup>5</sup> 10	20 <sup>11</sup> 51	S 31

Delta T = 06m27s

Julian Calendar 1 July 1451 == Greg. Calendar 10 July 1451

AUGUST 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	21 11 6	16 <sup>5</sup> 26'49	5 <sup>5</sup> 48	11 <sup>17</sup> 58	6 <sup>5</sup> 2	22 <sup>5</sup> 2	24°R11	3 <sup>5</sup> 23	23 <sup>5</sup> 11	28 <sup>17</sup> 26	5 <sup>5</sup> 51	22°R41	21 <sup>5</sup> 37	29 <sup>5</sup> 17	20 <sup>11</sup> 55	S 1
M 2	21 15 3	17°24'33	18°57	12°24	7°10	22°40	24 <sup>5</sup> 4	3°29	23°15	28°28	5°53	22 <sup>5</sup> 38	21°34	29°24	20°59	M 2
T 3	21 18 59	18°22'18	1 <sup>11</sup> 42	12°46	8°19	23°18	23°58	3°35	23°18	28°30	5°54	22°36	21°31	29°30	21° 3	T 3
W 4	21 22 56	19°20'04	14° 6	13° 3	9°28	23°56	23°51	3°41	23°21	28°31	5°56	22°D35	21°28	29°37	21° 6	W 4
T 5	21 26 53	20°17'51	26°15	13°15	10°37	24°34	23°45	3°47	23°25	28°33	5°58	22°35	21°24	29°44	21°10	T 5
F 6	21 30 49	21°15'40	8 <sup>5</sup> 12	13°22	11°46	25°12	23°39	3°53	23°28	28°35	6° 0	22°36	21°21	29°50	21°14	F 6
S 7	21 34 46	22°13'30	20° 2	13°R23	12°55	25°50	23°33	3°59	23°32	28°37	6° 1	22°37	21°18	29°57	21°17	S 7
S 8	21 38 42	23°11'21	1 <sup>5</sup> 51	13°19	14° 4	26°29	23°27	4° 5	23°35	28°39	6° 3	22°39	21°15	0 <sup>5</sup> 4	21°21	S 8
M 9	21 42 39	24° 9'14	13°42	13° 8	15°13	27° 7	23°21	4°11	23°38	28°41	6° 5	22°40	21°12	0°10	21°24	M 9
T 10	21 46 35	25° 7'07	25°40	12°52	16°23	27°45	23°16	4°17	23°41	28°43	6° 7	22°R41	21° 8	0°17	21°27	T 10
W11	21 50 32	26° 5'03	7 <sup>5</sup> 47	12°30	17°32	28°23	23°10	4°23	23°45	28°45	6° 8	22°39	21° 5	0°24	21°31	W11
T 12	21 54 28	27° 2'59	20° 6	12° 2	18°42	29° 1	23° 5	4°30	23°48	28°46	6°10	22°37	21° 2	0°30	21°34	T 12
F 13	21 58 25	28° 0'57	2 <sup>5</sup> 38	11°28	19°52	29°40	23° 0	4°36	23°51	28°48	6°12	22°33	20°59	0°37	21°37	F 13
S 14	22 2 22	28°58'57	15°24	10°48	21° 2	0 <sup>17</sup> 18	22°55	4°42	23°54	28°50	6°13	22°27	20°56	0°44	21°40	S 14
S 15	22 6 18	29°56'59	28°25	10° 3	22°12	0°56	22°50	4°49	23°57	28°52	6°15	22°21	20°53	0°50	21°43	S 15
M16	22 10 15	0 <sup>17</sup> 55'02	11 <sup>5</sup> 38	9°14	23°22	1°34	22°46	4°55	24° 1	28°54	6°17	22°15	20°49	0°57	21°46	M16
T 17	22 14 11	1°53'07	25° 5	8°21	24°32	2°13	22°41	5° 2	24° 4	28°56	6°18	22° 9	20°46	1° 4	21°49	T 17
W18	22 18 8	2°51'15	8 <sup>5</sup> 43	7°25	25°43	2°51	22°37	5° 8	24° 7	28°59	6°20	22° 5	20°43	1°10	21°52	W18
T 19	22 22 4	3°49'24	22°33	6°27	26°53	3°29	22°33	5°15	24°10	29° 1	6°22	22° 3	20°40	1°17	21°54	T 19
F 20	22 26 1	4°47'35	6 <sup>11</sup> 32	5°29	28° 4	4° 8	22°29	5°21	24°13	29° 3	6°23	22°D 2	20°37	1°24	21°57	F 20
S 21	22 29 57	5°45'49	20°41	4°30	29°15	4°46	22°25	5°28	24°16	29° 5	6°25	22° 3	20°34	1°30	22° 0	S 21
S 22	22 33 54	6°44'04	4 <sup>5</sup> 58	3°34	0 <sup>5</sup> 26	5°24	22°21	5°35	24°19	29° 7	6°26	22° 4	20°30	1°37	22° 2	S 22
M23	22 37 51	7°42'22	19°21	2°41	1°36	6° 3	22°18	5°42	24°22	29° 9	6°28	22°R 5	20°27	1°44	22° 5	M23
T 24	22 41 47	8°40'42	3 <sup>5</sup> 47	1°53	2°48	6°41	22°15	5°48	24°24	29°11	6°30	22° 4	20°24	1°50	22° 7	T 24
W25	22 45 44	9°39'04	18°11	1°10	3°59	7°19	22°12	5°55	24°27	29°13	6°31	22° 2	20°21	1°57	22°10	W25
T 26	22 49 40	10°37'27	2 <sup>17</sup> 28	0°33	5°10	7°58	22° 9	6° 2	24°30	29°15	6°33	21°57	20°18	2° 3	22°12	T 26
F 27	22 53 37	11°35'53	16°33	0° 5	6°21	8°36	22° 6	6° 9	24°33	29°17	6°34	21°50	20°14	2°10	22°14	F 27
S 28	22 57 33	12°34'20	0 <sup>5</sup> 22	29 <sup>5</sup> 45	7°33	9°15	22° 3	6°16	24°36	29°20	6°36	21°42	20°11	2°17	22°16	S 28
S 29	23 1 30	13°32'49	13°51	29°33	8°44	9°53	22° 1	6°23	24°38	29°22	6°37	21°33	20° 8	2°23	22°18	S 29
M30	23 5 26	14°31'20	26°57	29°D31	9°56	10°32	21°59	6°30	24°41	29°24	6°39	21°25	20° 5	2°30	22°20	M30
T 31	23 9 23	15 <sup>17</sup> 29'52	9 <sup>11</sup> 42	29 <sup>5</sup> 48	11 <sup>5</sup> 7	11 <sup>17</sup> 10	21 <sup>5</sup> 57	6 <sup>5</sup> 37	24 <sup>5</sup> 44	29 <sup>17</sup> 26	6 <sup>5</sup> 40	21 <sup>5</sup> 38	20 <sup>5</sup> 2	2 <sup>5</sup> 37	22 <sup>11</sup> 22	T 31

Delta T = 06m27s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1451

## geocentric

SEPTEMBER 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	23 13 20	16 <sup>11</sup> 28'27	22 <sup>11</sup> 7	29 <sup>11</sup> 55	12 <sup>11</sup> 19	11 <sup>11</sup> 48	21 <sup>11</sup> R55	6 <sup>11</sup> 44	24 <sup>11</sup> 46	29 <sup>11</sup> 28	6 <sup>11</sup> 42	21 <sup>11</sup> R13	19 <sup>11</sup> 59	2 <sup>11</sup> 43	22 <sup>11</sup> 24	W 1
T 2	23 17 16	17 <sup>11</sup> 27'03	4 <sup>11</sup> 16	0 <sup>11</sup> 21	13 <sup>11</sup> 31	12 <sup>11</sup> 27	21 <sup>11</sup> 54	6 <sup>11</sup> 51	24 <sup>11</sup> 49	29 <sup>11</sup> 30	6 <sup>11</sup> 43	21 <sup>11</sup> 10	19 <sup>11</sup> 55	2 <sup>11</sup> 50	22 <sup>11</sup> 26	T 2
F 3	23 21 13	18 <sup>11</sup> 25'41	16 <sup>11</sup> 13	0 <sup>11</sup> 56	14 <sup>11</sup> 43	13 <sup>11</sup> 5	21 <sup>11</sup> 52	6 <sup>11</sup> 58	24 <sup>11</sup> 51	29 <sup>11</sup> 33	6 <sup>11</sup> 44	21 <sup>11</sup> D 9	19 <sup>11</sup> 52	2 <sup>11</sup> 57	22 <sup>11</sup> 27	F 3
S 4	23 25 9	19 <sup>11</sup> 24'20	28 <sup>11</sup> 3	1 <sup>11</sup> 40	15 <sup>11</sup> 55	13 <sup>11</sup> 44	21 <sup>11</sup> 51	7 <sup>11</sup> 5	24 <sup>11</sup> 54	29 <sup>11</sup> 35	6 <sup>11</sup> 46	21 <sup>11</sup> 9	19 <sup>11</sup> 49	3 <sup>11</sup> 3	22 <sup>11</sup> 29	S 4
S 5	23 29 6	20 <sup>11</sup> 23'02	9 <sup>11</sup> 52	2 <sup>11</sup> 32	17 <sup>11</sup> 7	14 <sup>11</sup> 23	21 <sup>11</sup> 50	7 <sup>11</sup> 12	24 <sup>11</sup> 56	29 <sup>11</sup> 37	6 <sup>11</sup> 47	21 <sup>11</sup> 10	19 <sup>11</sup> 46	3 <sup>11</sup> 10	22 <sup>11</sup> 30	S 5
M 6	23 33 2	21 <sup>11</sup> 21'45	21 <sup>11</sup> 45	3 <sup>11</sup> 32	18 <sup>11</sup> 19	15 <sup>11</sup> 1	21 <sup>11</sup> 49	7 <sup>11</sup> 19	24 <sup>11</sup> 59	29 <sup>11</sup> 39	6 <sup>11</sup> 49	21 <sup>11</sup> R10	19 <sup>11</sup> 43	3 <sup>11</sup> 17	22 <sup>11</sup> 32	M 6
T 7	23 36 59	22 <sup>11</sup> 20'29	3 <sup>11</sup> 46	4 <sup>11</sup> 39	19 <sup>11</sup> 31	15 <sup>11</sup> 40	21 <sup>11</sup> 49	7 <sup>11</sup> 26	25 <sup>11</sup> 1	29 <sup>11</sup> 41	6 <sup>11</sup> 50	21 <sup>11</sup> 9	19 <sup>11</sup> 40	3 <sup>11</sup> 23	22 <sup>11</sup> 33	T 7
W 8	23 40 55	23 <sup>11</sup> 19'16	16 <sup>11</sup> 0	5 <sup>11</sup> 52	20 <sup>11</sup> 44	16 <sup>11</sup> 18	21 <sup>11</sup> 48	7 <sup>11</sup> 33	25 <sup>11</sup> 4	29 <sup>11</sup> 44	6 <sup>11</sup> 51	21 <sup>11</sup> 6	19 <sup>11</sup> 36	3 <sup>11</sup> 30	22 <sup>11</sup> 34	W 8
T 9	23 44 52	24 <sup>11</sup> 18'04	28 <sup>11</sup> 31	7 <sup>11</sup> 11	21 <sup>11</sup> 56	16 <sup>11</sup> 57	21 <sup>11</sup> 48	7 <sup>11</sup> 41	25 <sup>11</sup> 6	29 <sup>11</sup> 46	6 <sup>11</sup> 53	21 <sup>11</sup> 1	19 <sup>11</sup> 33	3 <sup>11</sup> 37	22 <sup>11</sup> 36	T 9
F 10	23 48 49	25 <sup>11</sup> 16'54	11 <sup>11</sup> 19	8 <sup>11</sup> 36	23 <sup>11</sup> 9	17 <sup>11</sup> 35	21 <sup>11</sup> D48	7 <sup>11</sup> 48	25 <sup>11</sup> 8	29 <sup>11</sup> 48	6 <sup>11</sup> 54	20 <sup>11</sup> 53	19 <sup>11</sup> 30	3 <sup>11</sup> 43	22 <sup>11</sup> 37	F 10
S 11	23 52 45	26 <sup>11</sup> 15'47	24 <sup>11</sup> 26	10 <sup>11</sup> 4	24 <sup>11</sup> 21	18 <sup>11</sup> 14	21 <sup>11</sup> 48	7 <sup>11</sup> 55	25 <sup>11</sup> 10	29 <sup>11</sup> 50	6 <sup>11</sup> 55	20 <sup>11</sup> 43	19 <sup>11</sup> 27	3 <sup>11</sup> 50	22 <sup>11</sup> 38	S 11
S 12	23 56 42	27 <sup>11</sup> 14'41	7 <sup>11</sup> 50	11 <sup>11</sup> 37	25 <sup>11</sup> 34	18 <sup>11</sup> 53	21 <sup>11</sup> 49	8 <sup>11</sup> 2	25 <sup>11</sup> 12	29 <sup>11</sup> 53	6 <sup>11</sup> 56	20 <sup>11</sup> 32	19 <sup>11</sup> 24	3 <sup>11</sup> 57	22 <sup>11</sup> 39	S 12
M13	0 0 38	28 <sup>11</sup> 13'37	21 <sup>11</sup> 30	13 <sup>11</sup> 13	26 <sup>11</sup> 47	19 <sup>11</sup> 31	21 <sup>11</sup> 49	8 <sup>11</sup> 9	25 <sup>11</sup> 15	29 <sup>11</sup> 55	6 <sup>11</sup> 58	20 <sup>11</sup> 21	19 <sup>11</sup> 20	4 <sup>11</sup> 3	22 <sup>11</sup> 39	M13
T 14	0 4 35	29 <sup>11</sup> 12'35	5 <sup>11</sup> 8	14 <sup>11</sup> 51	27 <sup>11</sup> 59	20 <sup>11</sup> 10	21 <sup>11</sup> 50	8 <sup>11</sup> 17	25 <sup>11</sup> 17	29 <sup>11</sup> 57	6 <sup>11</sup> 59	20 <sup>11</sup> 11	19 <sup>11</sup> 17	4 <sup>11</sup> 10	22 <sup>11</sup> 40	T 14
W15	0 8 31	0 <sup>11</sup> 11'36	19 <sup>11</sup> 20	16 <sup>11</sup> 32	29 <sup>11</sup> 12	20 <sup>11</sup> 49	21 <sup>11</sup> 51	8 <sup>11</sup> 24	25 <sup>11</sup> 19	29 <sup>11</sup> 59	7 <sup>11</sup> 0	20 <sup>11</sup> 3	19 <sup>11</sup> 14	4 <sup>11</sup> 16	22 <sup>11</sup> 41	W15
T 16	0 12 28	1 <sup>11</sup> 10'39	3 <sup>11</sup> 23	18 <sup>11</sup> 14	0 <sup>11</sup> 25	21 <sup>11</sup> 27	21 <sup>11</sup> 52	8 <sup>11</sup> 31	25 <sup>11</sup> 21	0 <sup>11</sup> 2	7 <sup>11</sup> 1	19 <sup>11</sup> 58	19 <sup>11</sup> 11	4 <sup>11</sup> 23	22 <sup>11</sup> 42	T 16
F 17	0 16 24	2 <sup>11</sup> 9'45	17 <sup>11</sup> 30	19 <sup>11</sup> 58	1 <sup>11</sup> 38	22 <sup>11</sup> 6	21 <sup>11</sup> 54	8 <sup>11</sup> 39	25 <sup>11</sup> 23	0 <sup>11</sup> 4	7 <sup>11</sup> 2	19 <sup>11</sup> 55	19 <sup>11</sup> 8	4 <sup>11</sup> 30	22 <sup>11</sup> 42	F 17
S 18	0 20 21	3 <sup>11</sup> 8'53	1 <sup>11</sup> 36	21 <sup>11</sup> 43	2 <sup>11</sup> 51	22 <sup>11</sup> 45	21 <sup>11</sup> 55	8 <sup>11</sup> 46	25 <sup>11</sup> 24	0 <sup>11</sup> 6	7 <sup>11</sup> 4	19 <sup>11</sup> D54	19 <sup>11</sup> 5	4 <sup>11</sup> 36	22 <sup>11</sup> 43	S 18
S 19	0 24 18	4 <sup>11</sup> 8'03	15 <sup>11</sup> 42	23 <sup>11</sup> 29	4 <sup>11</sup> 5	23 <sup>11</sup> 24	21 <sup>11</sup> 57	8 <sup>11</sup> 53	25 <sup>11</sup> 26	0 <sup>11</sup> 8	7 <sup>11</sup> 5	19 <sup>11</sup> R55	19 <sup>11</sup> 1	4 <sup>11</sup> 43	22 <sup>11</sup> 43	S 19
M20	0 28 14	5 <sup>11</sup> 7'15	29 <sup>11</sup> 47	25 <sup>11</sup> 15	5 <sup>11</sup> 18	24 <sup>11</sup> 2	21 <sup>11</sup> 59	9 <sup>11</sup> 0	25 <sup>11</sup> 28	0 <sup>11</sup> 10	7 <sup>11</sup> 6	19 <sup>11</sup> 54	18 <sup>11</sup> 58	4 <sup>11</sup> 50	22 <sup>11</sup> 43	M20
T 21	0 32 11	6 <sup>11</sup> 6'30	13 <sup>11</sup> 49	27 <sup>11</sup> 1	6 <sup>11</sup> 31	24 <sup>11</sup> 41	22 <sup>11</sup> 1	9 <sup>11</sup> 8	25 <sup>11</sup> 30	0 <sup>11</sup> 13	7 <sup>11</sup> 7	19 <sup>11</sup> 52	18 <sup>11</sup> 55	4 <sup>11</sup> 56	22 <sup>11</sup> 44	T 21
W22	0 36 7	7 <sup>11</sup> 5'47	27 <sup>11</sup> 48	28 <sup>11</sup> 47	7 <sup>11</sup> 44	25 <sup>11</sup> 20	22 <sup>11</sup> 3	9 <sup>11</sup> 15	25 <sup>11</sup> 32	0 <sup>11</sup> 15	7 <sup>11</sup> 8	19 <sup>11</sup> 48	18 <sup>11</sup> 52	5 <sup>11</sup> 3	22 <sup>11</sup> 44	W22
T 23	0 40 4	8 <sup>11</sup> 5'07	11 <sup>11</sup> 39	0 <sup>11</sup> 34	8 <sup>11</sup> 58	25 <sup>11</sup> 59	22 <sup>11</sup> 6	9 <sup>11</sup> 22	25 <sup>11</sup> 33	0 <sup>11</sup> 17	7 <sup>11</sup> 9	19 <sup>11</sup> 41	18 <sup>11</sup> 49	5 <sup>11</sup> 10	22 <sup>11</sup> R44	T 23
F 24	0 44 0	9 <sup>11</sup> 4'28	25 <sup>11</sup> 21	2 <sup>11</sup> 20	10 <sup>11</sup> 11	26 <sup>11</sup> 38	22 <sup>11</sup> 9	9 <sup>11</sup> 30	25 <sup>11</sup> 35	0 <sup>11</sup> 19	7 <sup>11</sup> 10	19 <sup>11</sup> 31	18 <sup>11</sup> 45	5 <sup>11</sup> 16	22 <sup>11</sup> 44	F 24
S 25	0 47 57	10 <sup>11</sup> 3'52	8 <sup>11</sup> 51	4 <sup>11</sup> 6	11 <sup>11</sup> 25	27 <sup>11</sup> 17	22 <sup>11</sup> 12	9 <sup>11</sup> 37	25 <sup>11</sup> 36	0 <sup>11</sup> 22	7 <sup>11</sup> 11	19 <sup>11</sup> 18	18 <sup>11</sup> 42	5 <sup>11</sup> 23	22 <sup>11</sup> 44	S 25
S 26	0 51 53	11 <sup>11</sup> 3'18	22 <sup>11</sup> 5	5 <sup>11</sup> 51	12 <sup>11</sup> 39	27 <sup>11</sup> 55	22 <sup>11</sup> 15	9 <sup>11</sup> 44	25 <sup>11</sup> 38	0 <sup>11</sup> 24	7 <sup>11</sup> 12	19 <sup>11</sup> 5	18 <sup>11</sup> 39	5 <sup>11</sup> 30	22 <sup>11</sup> 43	S 26
M27	0 55 50	12 <sup>11</sup> 2'46	5 <sup>11</sup> 11	7 <sup>11</sup> 36	13 <sup>11</sup> 52	28 <sup>11</sup> 34	22 <sup>11</sup> 18	9 <sup>11</sup> 52	25 <sup>11</sup> 39	0 <sup>11</sup> 26	7 <sup>11</sup> 13	18 <sup>11</sup> 53	18 <sup>11</sup> 36	5 <sup>11</sup> 36	22 <sup>11</sup> 43	M27
T 28	0 59 46	13 <sup>11</sup> 2'15	17 <sup>11</sup> 40	9 <sup>11</sup> 20	15 <sup>11</sup> 6	29 <sup>11</sup> 13	22 <sup>11</sup> 21	9 <sup>11</sup> 59	25 <sup>11</sup> 41	0 <sup>11</sup> 28	7 <sup>11</sup> 14	18 <sup>11</sup> 41	18 <sup>11</sup> 33	5 <sup>11</sup> 43	22 <sup>11</sup> 43	T 28
W29	1 3 43	14 <sup>11</sup> 1'47	0 <sup>11</sup> 1	11 <sup>11</sup> 4	16 <sup>11</sup> 20	29 <sup>11</sup> 52	22 <sup>11</sup> 25	10 <sup>11</sup> 6	25 <sup>11</sup> 42	0 <sup>11</sup> 30	7 <sup>11</sup> 15	18 <sup>11</sup> 32	18 <sup>11</sup> 30	5 <sup>11</sup> 50	22 <sup>11</sup> 42	W29
T 30	1 7 40	15 <sup>11</sup> 1'21	12 <sup>11</sup> 8	12 <sup>11</sup> 47	17 <sup>11</sup> 34	0 <sup>11</sup> 31	22 <sup>11</sup> 29	10 <sup>11</sup> 14	25 <sup>11</sup> 43	0 <sup>11</sup> 33	7 <sup>11</sup> 15	18 <sup>11</sup> 26	18 <sup>11</sup> 26	5 <sup>11</sup> 56	22 <sup>11</sup> 42	T 30

Delta T = 06m26s

Julian Calendar 1 Sept. 1451 == Greg. Calendar 10 Sept. 1451

OCTOBER 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	1 11 36	16♌ 0°56	24♌ 4	14♌30	18♏48	1♌10	22♎33	10♌21	25♎45	0♌35	7♏16	18°R23	18♎23	6♎3	22°R41	F 1
S 2	1 15 33	17° 0°34	5♎53	16°12	20° 2	1°49	22°37	10°28	25°46	0°37	7°17	18♎21	18°20	6° 9	22♏41	S 2
S 3	1 19 29	18° 0°13	17°41	17°53	21°16	2°28	22°42	10°35	25°47	0°39	7°18	18°21	18°17	6°16	22°40	S 3
M 4	1 23 26	18°59'53	29°33	19°34	22°30	3° 7	22°46	10°43	25°48	0°41	7°19	18°21	18°14	6°23	22°39	M 4
T 5	1 27 22	19°59'36	11♌35	21°14	23°44	3°46	22°51	10°50	25°49	0°43	7°19	18°20	18°11	6°29	22°38	T 5
W 6	1 31 19	20°59'20	23°52	22°53	24°58	4°25	22°56	10°57	25°50	0°45	7°20	18°17	18° 7	6°36	22°37	W 6
T 7	1 35 15	21°59'06	6♌28	24°32	26°12	5° 4	23° 1	11° 5	25°51	0°48	7°21	18°11	18° 4	6°43	22°36	T 7
F 8	1 39 12	22°58'54	19°26	26°11	27°26	5°44	23° 6	11°12	25°52	0°50	7°21	18° 2	18° 1	6°49	22°35	F 8
S 9	1 43 9	23°58'43	2♌48	27°48	28°41	6°23	23°12	11°19	25°53	0°52	7°22	17°51	17°58	6°56	22°34	S 9
S 10	1 47 5	24°58'35	16°32	29°25	29°55	7° 2	23°17	11°26	25°54	0°54	7°23	17°39	17°55	7° 3	22°32	S 10
M11	1 51 2	25°58'28	0♌36	1♌11	1♌ 9	7°41	23°23	11°33	25°54	0°56	7°23	17°27	17°51	7° 9	22°31	M11
T 12	1 54 58	26°58'23	14°54	2°38	2°24	8°20	23°29	11°40	25°55	0°58	7°24	17°16	17°48	7°16	22°29	T 12
W13	1 58 55	27°58'21	29°20	4°14	3°38	8°59	23°35	11°48	25°56	1° 0	7°24	17° 7	17°45	7°23	22°28	W13
T 14	2 2 51	28°58'20	13♏48	5°49	4°53	9°39	23°41	11°55	25°56	1° 2	7°25	17° 0	17°42	7°29	22°26	T 14
F 15	2 6 48	29°58'22	28°13	7°24	6° 7	10°18	23°48	12° 2	25°57	1° 4	7°25	16°57	17°39	7°36	22°24	F 15
S 16	2 10 44	0♌58'26	12♎31	8°58	7°22	10°57	23°54	12° 9	25°57	1° 6	7°26	16°D56	17°36	7°43	22°23	S 16
S 17	2 14 41	1°58'32	26°39	10°32	8°36	11°37	24° 1	12°16	25°58	1° 8	7°26	16°R56	17°32	7°49	22°21	S 17
M18	2 18 38	2°58'40	10♏38	12° 5	9°51	12°16	24° 8	12°23	25°58	1°10	7°26	16°56	17°29	7°56	22°19	M18
T 19	2 22 34	3°58'51	24°26	13°38	11° 6	12°55	24°15	12°30	25°58	1°12	7°27	16°54	17°26	8° 2	22°17	T 19
W20	2 26 31	4°59'03	8♏25	15°11	12°20	13°55	24°22	12°37	25°59	1°14	7°27	16°50	17°23	8° 9	22°15	W20
T 21	2 30 27	5°59'17	21°33	16°43	13°35	14°14	24°30	12°44	25°59	1°16	7°27	16°44	17°20	8°16	22°13	T 21
F 22	2 34 24	6°59'34	4♌50	18°15	14°50	14°53	24°37	12°51	25°59	1°18	7°28	16°34	17°17	8°22	22°10	F 22
S 23	2 38 20	7°59'52	17°56	19°46	16° 5	15°33	24°45	12°58	25°59	1°20	7°28	16°23	17°13	8°29	22° 8	S 23
S 24	2 42 17	9° 0'12	0♌49	21°17	17°20	16°12	24°53	13° 5	25°R59	1°22	7°28	16°10	17°10	8°36	22° 6	S 24
M25	2 46 13	10° 0'34	13°29	22°48	18°35	16°52	25° 1	13°11	25°59	1°23	7°28	15°58	17° 7	8°42	22° 3	M25
T 26	2 50 10	11° 0'58	25°56	24°18	19°50	17°31	25° 9	13°18	25°59	1°25	7°28	15°47	17° 4	8°49	22° 1	T 26
W27	2 54 7	12° 1'24	8♌ 9	25°48	21° 5	18°11	25°17	13°25	25°59	1°27	7°29	15°39	17° 1	8°56	21°58	W27
T 28	2 58 3	13° 1'51	20°10	27°18	22°20	18°51	25°26	13°32	25°58	1°29	7°29	15°33	16°57	9° 2	21°56	T 28
F 29	3 2 0	14° 2'19	2♎ 3	28°47	23°35	19°30	25°34	13°38	25°58	1°31	7°29	15°29	16°54	9° 9	21°53	F 29
S 30	3 5 56	15° 2'49	13°50	0♌16	24°50	20°10	25°43	13°45	25°58	1°32	7°29	15°D28	16°51	9°16	21°50	S 30
S 31	3 9 53	16♌ 3'21	25♎37	1♌44	26♌ 5	20♌49	25♎52	13♌52	25♎58	1♌34	7°R29	15♎29	16♎48	9♎22	21♏47	S 31

# ASTRODIENST EPHEMERIS for the year 1451

## geocentric

NOVEMBER 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	3 13 49	17♈ 3'53	7♈27	3♈12	27♈20	21♈29	26♈1	13♈58	25°R57	1♈36	7°R29	15♈29	16♈45	9♈29	21°R44	M 1
T 2	3 17 46	18° 4'27	19°27	4°39	28°35	22° 9	26°10	14° 5	25°57	1°37	7°R29	15°R30	16°42	9°36	21°R41	T 2
W 3	3 21 42	19° 5'02	1♈41	6° 6	29°50	22°48	26°19	14°11	25°56	1°39	7°29	15°29	16°38	9°42	21°38	W 3
T 4	3 25 39	20° 5'38	14°16	7°32	1♈5	23°28	26°28	14°17	25°55	1°41	7°29	15°26	16°35	9°49	21°35	T 4
F 5	3 29 36	21° 6'16	27°15	8°58	2°20	24° 8	26°38	14°24	25°55	1°42	7°28	15°21	16°32	9°55	21°32	F 5
S 6	3 33 32	22° 6'55	10°V40	10°22	3°35	24°47	26°47	14°30	25°54	1°44	7°28	15°14	16°29	10° 2	21°29	S 6
S 7	3 37 29	23° 7'35	24°33	11°46	4°51	25°27	26°57	14°36	25°53	1°46	7°28	15° 5	16°26	10° 9	21°26	S 7
M 8	3 41 25	24° 8'16	8♈51	13° 9	6° 6	26° 7	27° 7	14°43	25°53	1°47	7°28	14°56	16°22	10°15	21°23	M 8
T 9	3 45 22	25° 8'58	23°28	14°31	7°21	26°47	27°17	14°49	25°52	1°49	7°28	14°48	16°19	10°22	21°19	T 9
W10	3 49 18	26° 9'42	8♈18	15°52	8°36	27°27	27°27	14°55	25°51	1°50	7°27	14°42	16°16	10°29	21°16	W10
T 11	3 53 15	27°10'28	23°12	17°11	9°51	28° 7	27°37	15° 1	25°50	1°52	7°27	14°38	16°13	10°35	21°13	T 11
F 12	3 57 11	28°11'15	8♈3	18°29	11° 7	28°46	27°48	15° 7	25°49	1°53	7°27	14°D36	16°10	10°42	21° 9	F 12
S 13	4 1 8	29°12'03	22°42	19°44	12°22	29°26	27°58	15°13	25°48	1°54	7°26	14°36	16° 7	10°49	21° 6	S 13
S 14	4 5 5	0♈12'53	7♈6	20°58	13°37	0♈6	28° 8	15°19	25°47	1°56	7°26	14°37	16° 3	10°55	21° 2	S 14
M15	4 9 1	1°13'44	21°13	22° 9	14°53	0°46	28°19	15°25	25°46	1°57	7°26	14°38	16° 0	11° 2	20°59	M15
T 16	4 12 58	2°14'36	5♈1	23°18	16° 8	1°26	28°30	15°31	25°44	1°58	7°25	14°R39	15°57	11° 9	20°55	T 16
W17	4 16 54	3°15'30	18°32	24°23	17°23	2° 6	28°41	15°36	25°43	2° 0	7°25	14°38	15°54	11°15	20°52	W17
T 18	4 20 51	4°16'25	1♈46	25°24	18°39	2°46	28°52	15°42	25°42	2° 1	7°24	14°35	15°51	11°22	20°48	T 18
F 19	4 24 47	5°17'22	14°45	26°21	19°54	3°26	29° 3	15°48	25°41	2° 2	7°24	14°30	15°48	11°29	20°44	F 19
S 20	4 28 44	6°18'20	27°30	27°14	21°10	4° 6	29°14	15°53	25°39	2° 3	7°23	14°23	15°44	11°35	20°40	S 20
S 21	4 32 40	7°19'19	10♈3	28° 0	22°25	4°47	29°25	15°59	25°38	2° 5	7°23	14°16	15°41	11°42	20°37	S 21
M22	4 36 37	8°20'19	22°25	28°41	23°40	5°27	29°37	16° 4	25°36	2° 6	7°22	14° 9	15°38	11°48	20°33	M22
T 23	4 40 34	9°21'21	4♈37	29°14	24°56	6° 7	29°48	16° 9	25°35	2° 7	7°22	14° 3	15°35	11°55	20°29	T 23
W24	4 44 30	10°22'23	16°39	29°40	26°11	6°47	29°59	16°15	25°33	2° 8	7°21	13°59	15°32	12° 2	20°25	W24
T 25	4 48 27	11°23'26	28°34	29°56	27°27	7°27	0♈11	16°20	25°31	2° 9	7°20	13°56	15°28	12° 8	20°21	T 25
F 26	4 52 23	12°24'30	10♈23	0°R 3	28°42	8° 7	0°23	16°25	25°30	2°10	7°20	13°D54	15°25	12°15	20°18	F 26
S 27	4 56 20	13°25'34	22°10	29°59	29°57	8°48	0°35	16°30	25°28	2°11	7°19	13°55	15°22	12°22	20°14	S 27
S 28	5 0 16	14°26'39	3♈56	29°45	1♈13	9°28	0°47	16°35	25°26	2°12	7°18	13°56	15°19	12°28	20°10	S 28
M29	5 4 13	15°27'45	15°46	29°19	2°28	10° 8	0°59	16°40	25°25	2°13	7°17	13°58	15°16	12°35	20° 6	M29
T 30	5 8 9	16♈28'50	27♈45	28♈41	3♈44	10♈49	1♈11	16♈45	25°23	2♈14	7°R17	14°30	15°13	12°34	20°II 2	T 30

Delta T = 06m26s

Julian Calendar 1 Nov. 1451 == Greg. Calendar 10 Nov. 1451

DECEMBER 1451 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	5 12 6	17♈29'57	9♈57	27°R53	4♈59	11♈29	1♈23	16♈50	25°R21	2♈15	7°R16	14♈1	15♈9	12♈48	19°R58	W 1
T 2	5 16 3	18°31'03	22°27	26♈53	6°15	12° 9	1°35	16°54	25°R19	2°16	7°R15	14°R 1	15° 6	12°55	19°R54	T 2
F 3	5 19 59	19°32'10	5°V20	25°45	7°30	12°50	1°48	16°59	25°17	2°16	7°14	14° 0	15° 3	13° 2	19°50	F 3
S 4	5 23 56	20°33'17	18°38	24°29	8°46	13°30	2° 0	17° 3	25°15	2°17	7°13	13°58	15° 0	13° 8	19°46	S 4
S 5	5 27 52	21°34'24	2♈25	23° 8	10° 1	14°10	2°12	17° 8	25°13	2°18	7°12	13°55	14°57	13°15	19°42	S 5
M 6	5 31 49	22°35'32	16°40	21°46	11°17	14°51	2°25	17°12	25°11	2°19	7°11	13°52	14°54	13°21	19°39	M 6
T 7	5 35 45	23°36'40	1♈11	20°24	12°32	15°31	2°38	17°16	25° 9	2°19	7°10	13°49	14°50	13°28	19°35	T 7
W 8	5 39 42	24°37'48	16°20	19° 5	13°47	16°12	2°50	17°21	25° 7	2°20	7°10	13°47	14°47	13°35	19°31	W 8
T 9	5 43 39	25°38'57	1♈29	17°52	15° 3	16°52	3° 3	17°25	25° 5	2°20	7° 9	13°45	14°44	13°41	19°27	T 9
F 10	5 47 35	26°40'05	16°40	16°47	16°18	17°33	3°16	17°29	25° 2	2°21	7° 8	13°D45	14°41	13°48	19°23	F 10
S 11	5 51 32	27°41'15	1♈43	15°51	17°34	18°13	3°29	17°33	25° 0	2°22	7° 7	13°46	14°38	13°55	19°19	S 11
S 12	5 55 28	28°42'24	16°29	15° 5	18°49	18°54	3°42	17°37	24°58	2°22	7° 5	13°47	14°34	14° 1	19°15	S 12
M13	5 59 25	29°43'34	0♈53	14°30	20° 5	19°35	3°55	17°40	24°56	2°23	7° 4	13°48	14°31	14° 8	19° 1	M13
T 14	6 3 21	0♈44'44	14°54	14° 5	21°20	20°15	4° 8	17°44	24°53	2°23	7° 3	13°49	14°28	14°15	19° 7	T 14
W15	6 7 18	1°45'55	28°30	13°50	22°36	20°56	4°21	17°48	24°51	2°23	7° 2	13°R49	14°25	14°21	19° 4	W15
T 16	6 11 14	2°47'06	11♈42	13°D46	23°51	21°37	4°34	17°51	24°49	2°24	7° 1	13°49	14°22	14°28	19° 0	T 16
F 17	6 15 11	3°48'17	24°34	13°50	25° 7	22°17	4°47	17°55	24°46	2°24	7° 0	13°48	14°19	14°35	18°56	F 17
S 18	6 19 8	4°49'29	7♈8	14° 3	26°22	22°58	5° 1	17°58	24°44	2°24	6°59	13°47	14°15	14°41	18°52	S 18
S 19	6 23 4	5°50'41	19°27	14°24	27°38	23°39	5°14	18° 1	24°42	2°25	6°58	13°46	14°12	14°48	18°49	S 19
M20	6 27 1	6°51'53	1♈35	14°51	28°53	24°20	5°28	18° 4	24°39	2°25	6°57	13°45	14° 9	14°55	18°45	M20
T 21	6 30 57	7°53'05	13°34	15°25	0♈9	25° 0	5°41	18° 7	24°37	2°25	6°55	13°44	14° 6	15° 1	18°41	T 21
W22	6 34 54	8°54'17	25°27	16° 5	1°24	25°41	5°55	18°10	24°34	2°25	6°54	13°44	14° 3	15° 8	18°38	W22
T 23	6 38 50	9°55'29	7♈16	16°50	2°40	26°22	6° 8	18°13	24°32	2°25	6°53	13°44	14° 0	15°14	18°34	T 23
F 24	6 42 47	10°56'40	19° 4	17°39	3°55	27° 3	6°22	18°16	24°29	2°25	6°52	13°D44	13°56	15°21	18°31	F 24
S 25	6 46 43	11°57'52	0♈51	18°33	5°11	27°44	6°36	18°19	24°27	2°26	6°50	13°44	13°53	15°28	18°27	S 25
S 26	6 50 40	12°59'03	12°41	19°30	6°26	28°25	6°49	18°21	24°24	2°R26	6°49	13°44	13°50	15°34	18°24	S 26
M27	6 54 37	14° 0'13	24°36	20°31	7°41	29° 6	7° 3	18°24	24°22	2°26	6°48	13°R44	13°47	15°41	18°20	M27
T 28	6 58 33	15° 1'23	6♈39	21°34	8°57	29°47	7°17	18°26	24°19	2°25	6°47	13°44	13°44	15°48	18°17	T 28
W29	7 2 30	16° 2'32	18°53	22°40	10°12	0♈28	7°31	18°28	24°16	2°25	6°45	13°43	13°40	15°54	18°13	W29
T 30	7 6 26	17° 3'40	1°V23	23°48	11°28	1° 9	7°45	18°30	24°14	2°25	6°44	13°43	13°37	16° 1	18°10	T 30
F 31	7 10 23	18♈4'48	14°V11	24♈59	12♈43	1♈50	7♈58	18♈32	24°R11	2♈25	6°R43	13°D43	13♈34	16♈8	18°II 7	F 31

Delta T = 06m26s

Julian Calendar