



Astrodienst Ephemeris Tables for the year 1416

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 1416

geocentric

JANUARY 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	7 13 13	18°50'01	25°23	4°25	26°56	26°4	26°45	18°R46	23°3	11°R28	20°R10	21°R 7	19°49	21°21	14°38	W 1
T 2	7 17 10	19°51'09	7°31	5°58	27°20	26°35	26°59	18°41	23° 6	11°26	20°II 9	21° 3	19°46	21°28	14°44	T 2
F 3	7 21 6	20°52'16	19°47	7°30	27°41	27° 5	27°13	18°36	23° 9	11°25	20° 8	20°58	19°42	21°35	14°50	F 3
S 4	7 25 3	21°53'22	2°15	8°58	28° 1	27°35	27°28	18°31	23°12	11°23	20° 7	20°52	19°39	21°41	14°56	S 4
S 5	7 29 0	22°54'27	14°55	10°24	28°18	28° 5	27°42	18°26	23°16	11°21	20° 6	20°47	19°36	21°48	15° 2	S 5
M 6	7 32 56	23°55'31	27°49	11°47	28°34	28°35	27°56	18°21	23°19	11°20	20° 5	20°43	19°33	21°55	15° 8	M 6
T 7	7 36 53	24°56'34	10°59	13° 5	28°47	29° 5	28°10	18°17	23°22	11°18	20° 4	20°40	19°30	22° 1	15°14	T 7
W 8	7 40 49	25°57'36	24°26	14°19	28°58	29°35	28°25	18°12	23°25	11°16	20° 3	20°D39	19°27	22° 8	15°20	W 8
T 9	7 44 46	26°58'37	8°13	15°27	29° 7	0°14	28°39	18° 7	23°28	11°15	20° 2	20°40	19°23	22°15	15°25	T 9
F 10	7 48 42	27°59'37	22°19	16°29	29°13	0°33	28°53	18° 2	23°31	11°13	20° 1	20°41	19°20	22°21	15°31	F 10
S 11	7 52 39	29° 0'36	6°II44	17°23	29°17	1° 2	29° 7	17°57	23°34	11°12	20° 0	20°43	19°17	22°28	15°37	S 11
S 12	7 56 35	0° 1'34	21°26	18°10	29°R19	1°31	29°21	17°52	23°38	11°10	19°59	20°R43	19°14	22°34	15°42	S 12
M13	8 0 32	1° 2'30	6°19	18°48	29°18	2° 0	29°36	17°47	23°41	11° 8	19°59	20°42	19°11	22°41	15°48	M13
T 14	8 4 29	2° 3'25	21°17	19°16	29°14	2°29	29°50	17°43	23°44	11° 7	19°58	20°39	19° 8	22°48	15°53	T 14
W15	8 8 25	3° 4'19	6°12	19°34	29° 8	2°57	0° 4	17°38	23°48	11° 5	19°57	20°34	19° 4	22°54	15°59	W15
T 16	8 12 22	4° 5'12	20°54	19°R41	29° 0	3°25	0°18	17°33	23°51	11° 4	19°56	20°28	19° 1	23° 1	16° 4	T 16
F 17	8 16 18	5° 6'04	5°17	19°37	28°49	3°54	0°33	17°29	23°54	11° 2	19°55	20°20	18°58	23° 8	16° 9	F 17
S 18	8 20 15	6° 6'54	19°14	19°22	28°35	4°21	0°47	17°24	23°57	11° 1	19°54	20°13	18°55	23°14	16°14	S 18
S 19	8 24 11	7° 7'44	2°44	18°56	28°19	4°49	1° 1	17°20	24° 1	10°59	19°54	20° 7	18°52	23°21	16°20	S 19
M20	8 28 8	8° 8'33	15°47	18°20	28° 1	5°17	1°15	17°15	24° 4	10°58	19°53	20° 2	18°48	23°28	16°25	M20
T 21	8 32 4	9° 9'21	28°25	17°34	27°40	5°44	1°30	17°11	24° 8	10°56	19°52	19°59	18°45	23°34	16°30	T 21
W22	8 36 1	10°10'08	10°42	16°39	27°17	6°11	1°44	17° 6	24°11	10°55	19°51	19°D59	18°42	23°41	16°35	W22
T 23	8 39 58	11°10'53	22°44	15°38	26°51	6°38	1°58	17° 2	24°14	10°53	19°51	19°59	18°39	23°48	16°40	T 23
F 24	8 43 54	12°11'38	4°35	14°32	26°24	7° 4	2°12	16°58	24°18	10°52	19°50	20° 0	18°36	23°54	16°45	F 24
S 25	8 47 51	13°12'22	16°21	13°23	25°55	7°31	2°26	16°54	24°21	10°51	19°49	20°R 1	18°33	24° 1	16°49	S 25
S 26	8 51 47	14°13'04	28° 8	12°12	25°24	7°57	2°40	16°50	24°25	10°49	19°49	20° 1	18°29	24° 8	16°54	S 26
M27	8 55 44	15°13'46	9°59	11° 2	24°51	8°23	2°54	16°45	24°28	10°48	19°48	19°59	18°26	24°14	16°59	M27
T 28	8 59 40	16°14'26	21°57	9°55	24°17	8°49	3° 9	16°42	24°31	10°47	19°48	19°54	18°23	24°21	17° 3	T 28
W29	9 3 37	17°15'04	4° 6	8°51	23°42	9°14	3°23	16°38	24°35	10°45	19°47	19°47	18°20	24°27	17° 8	W29
T 30	9 7 33	18°15'41	16°28	7°53	23° 6	9°39	3°37	16°34	24°38	10°44	19°46	19°37	18°17	24°34	17°12	T 30
F 31	9 11 30	19°16'17	29° 2	7° 0	22°29	10°14	3°51	16°30	24°42	10°43	19°II46	19°26	18°14	24°41	17°17	F 31

Delta T = 07m27s

Julian Calendar 1 Jan. 1416 == Greg. Calendar 10 Jan. 1416

FEBRUARY 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	9 15 27	20°16'51	11°49	6°R15	21°R52	10°129	4° 5	16°R26	24°45	10°R41	19°R45	19°R14	18°10	24°47	17°21	S 1
S 2	9 19 23	21°17'23	24°48	5°37	21°15	10°54	4°19	16°23	24°49	10°40	19°II45	19° 4	18° 7	24°54	17°25	S 2
M 3	9 23 20	22°17'54	7°59	5° 7	20°37	11°18	4°33	16°19	24°52	10°39	19°44	18°54	18° 4	25° 1	17°29	M 3
T 4	9 27 16	23°18'22	21°22	4°44	20° 0	11°42	4°47	16°16	24°56	10°38	19°44	18°48	18° 1	25° 7	17°33	T 4
W 5	9 31 13	24°18'49	4°56	4°29	19°24	12° 5	5° 0	16°12	24°59	10°37	19°43	18°44	17°58	25°14	17°37	W 5
T 6	9 35 9	25°19'14	18°41	4°21	18°48	12°28	5°14	16° 9	25° 2	10°36	19°43	18°42	17°54	25°21	17°41	T 6
F 7	9 39 6	26°19'37	2°II38	4°D20	18°13	12°51	5°28	16° 6	25° 6	10°35	19°43	18°D42	17°51	25°27	17°45	F 7
S 8	9 43 2	27°19'58	16°46	4°25	17°40	13°14	5°42	16° 3	25° 9	10°33	19°42	18°R42	17°48	25°34	17°49	S 8
S 9	9 46 59	28°20'17	1°6	4°37	17° 8	13°37	5°56	16° 0	25°13	10°32	19°42	18°42	17°45	25°41	17°52	S 9
M10	9 50 56	29°20'33	15°34	4°55	16°38	13°59	6° 9	15°57	25°16	10°31	19°42	18°39	17°42	25°47	17°56	M10
T 11	9 54 52	0°20'48	0°6	5°18	16° 9	14°20	6°23	15°54	25°20	10°30	19°41	18°34	17°39	25°54	17°59	T 11
W12	9 58 49	1°21'01	14°38	5°47	15°43	14°42	6°37	15°51	25°23	10°29	19°41	18°26	17°35	26° 1	18° 3	W12
T 13	10 2 45	2°21'12	29° 3	6°20	15°18	15° 3	6°50	15°49	25°27	10°29	19°41	18°15	17°32	26° 7	18° 6	T 13
F 14	10 6 42	3°21'21	13°14	6°57	14°56	15°24	7° 4	15°46	25°30	10°28	19°41	18° 4	17°29	26°14	18° 9	F 14
S 15	10 10 38	4°21'28	27° 5	7°39	14°36	15°44	7°17	15°44	25°33	10°27	19°40	17°52	17°26	26°20	18°13	S 15
S 16	10 14 35	5°21'33	10°33	8°24	14°18	16° 4	7°31	15°41	25°37	10°26	19°40	17°41	17°23	26°27	18°16	S 16
M17	10 18 31	6°21'37	23°36	9°13	14° 3	16°24	7°44	15°39	25°40	10°25	19°40	17°32	17°19	26°34	18°19	M17
T 18	10 22 28	7°21'39	6°17	10° 6	13°51	16°43	7°57	15°37	25°44	10°24	19°40	17°26	17°16	26°40	18°21	T 18
W19	10 26 25	8°21'39	18°37	11° 1	13°41	17° 2	8°11	15°35	25°47	10°24	19°40	17°22	17°13	26°47	18°24	W19
T 20	10 30 21	9°21'38	0°41	11°59	13°33	17°20	8°24	15°33	25°51	10°23	19°40	17°21	17°10	26°54	18°27	T 20
F 21	10 34 18	10°21'35	12°34	13° 0	13°28	17°38	8°37	15°31	25°54	10°22	19°39	17°21	17° 7	27° 0	18°30	F 21
S 22	10 38 14	11°21'31	24°22	14° 4	13°25	17°56	8°50	15°29	25°57	10°22	19°39	17°21	17° 4	27° 7	18°32	S 22
S 23	10 42 11	12°21'25	6°30	15°10	13°D25	18°13	9° 3	15°28	26° 1	10°21	19°39	17°20	17° 0	27°14	18°35	S 23
M24	10 46 7	13°21'17	18° 4	16°18	13°27	18°30	9°16	15°26	26° 4	10°20	19°D39	17°17	16°57	27°20	18°37	M24
T 25	10 50 4	14°21'07	0° 7	17°28	13°32	18°47	9°29	15°25	26° 7	10°20	19°39	17°11	16°54	27°27	18°39	T 25
W26	10 54 0	15°20'55	12°25	18°41	13°39	19° 2	9°42	15°24	26°11	10°19	19°39	17° 2	16°51	27°34	18°42	W26
T 27	10 57 57	16°20'42	24°58	19°55	13°48	19°18	9°55	15°22	26°14	10°19	19°39	16°51	16°48	27°40	18°44	T 27
F 28	11 1 54	17°20'26	7°49	21°11	13°59	19°33	10° 8	15°21	26°17	10°18	19°40	16°38	16°45	27°47	18°46	F 28
S 29	11 5 50	18°20'09	20°46	22°29	14°12	19°147	10°21	15°20	26°21	10°18	19°II40	16°25	16°41	27°53	18°48	S 29

Delta T = 07m27s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1416

geocentric

MARCH 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	11 9 47	19°19'49	4°19'19	23°48'48	14°28'28	20°11'1	10°33'33	15°R19	26°24'24	10°R17	19°11'40	16°R12	16°38'38	28°0'0	18°49'49	S 1
M 2	11 13 43	20°19'27	17°54'54	25°10'10	14°45'45	20°15'15	10°46'46	15°E19	26°27'27	10°E17	19°40'40	16°1'1	16°35'35	28°7'7	18°51'51	M 2
T 3	11 17 40	21°19'04	18°40'40	26°32'32	15°5'5	20°27'27	10°59'59	15°18'18	26°30'30	10°17'17	19°40'40	15°53'53	16°32'32	28°13'13	18°53'53	T 3
W 4	11 21 36	22°18'38	15°32'32	27°57'57	15°26'26	20°40'40	11°11'11	15°18'18	26°33'33	10°16'16	19°40'40	15°47'47	16°29'29	28°20'20	18°54'54	W 4
T 5	11 25 33	23°18'09	29°30'30	29°23'23	15°49'49	20°52'52	11°23'23	15°17'17	26°37'37	10°16'16	19°41'41	15°45'45	16°25'25	28°27'27	18°56'56	T 5
F 6	11 29 29	24°17'39	13°11'32	0°15'50	16°13'13	21°3'3	11°36'36	15°17'17	26°40'40	10°16'16	19°41'41	15°D44	16°22'22	28°33'33	18°57'57	F 6
S 7	11 33 26	25°17'06	27°37'37	2°19'19	16°40'40	21°14'14	11°48'48	15°17'17	26°43'43	10°16'16	19°41'41	15°R44	16°19'19	28°40'40	18°59'59	S 7
S 8	11 37 23	26°16'31	11°54'44	3°49'49	17°8'8	21°24'24	12°0'0	15°D17	26°46'46	10°15'15	19°41'41	15°44'44	16°16'16	28°47'47	19°0'0	S 8
M 9	11 41 19	27°15'53	25°53'53	5°21'21	17°37'37	21°33'33	12°12'12	15°17'17	26°49'49	10°15'15	19°42'42	15°41'41	16°13'13	28°53'53	19°1'1	M 9
T 10	11 45 16	28°15'13	10°11'1	6°54'54	18°8'8	21°42'42	12°24'24	15°17'17	26°52'52	10°15'15	19°42'42	15°36'36	16°10'10	29°0'0	19°2'2	T 10
W 11	11 49 12	29°14'31	24°6'6	8°28'28	18°41'41	21°51'51	12°36'36	15°17'17	26°55'55	10°15'15	19°42'42	15°28'28	16°6'6	29°7'7	19°3'3	W 11
T 12	11 53 9	0°13'46	8°11'3	10°4'4	19°15'15	21°59'59	12°48'48	15°17'17	26°58'58	10°15'15	19°43'43	15°18'18	16°3'3	29°13'13	19°3'3	T 12
F 13	11 57 5	1°12'59	21°50'50	11°42'42	19°50'50	22°6'6	13°0'0	15°18'18	27°1'1	10°D15	19°43'43	15°6'6	16°0'0	29°20'20	19°4'4	F 13
S 14	12 1 2	2°12'10	5°22'22	13°20'20	20°26'26	22°12'12	13°12'12	15°18'18	27°4'4	10°15'15	19°43'43	14°54'54	15°57'57	29°27'27	19°5'5	S 14
S 15	12 4 58	3°11'19	18°36'36	15°1'1	21°4'4	22°18'18	13°23'23	15°19'19	27°7'7	10°15'15	19°44'44	14°43'43	15°54'54	29°33'33	19°5'5	S 15
M 16	12 8 55	4°10'25	1°11'31	16°42'42	21°43'43	22°23'23	13°35'35	15°20'20	27°10'10	10°15'15	19°44'44	14°34'34	15°51'51	29°40'40	19°6'6	M 16
T 17	12 12 51	5°9'30	14°6'6	18°25'25	22°23'23	22°28'28	13°46'46	15°21'21	27°13'13	10°15'15	19°45'45	14°28'28	15°47'47	29°46'46	19°6'6	T 17
W 18	12 16 48	6°8'34	26°24'24	20°9'9	23°4'4	22°32'32	13°57'57	15°22'22	27°16'16	10°16'16	19°45'45	14°24'24	15°44'44	29°53'53	19°6'6	W 18
T 19	12 20 45	7°7'35	8°28'28	21°55'55	23°46'46	22°35'35	14°9'9	15°23'23	27°19'19	10°16'16	19°46'46	14°22'22	15°41'41	29°59'59	19°6'6	T 19
F 20	12 24 41	8°6'34	20°22'22	23°43'43	24°29'29	22°37'37	14°20'20	15°24'24	27°22'22	10°16'16	19°46'46	14°D22	15°38'38	0°13'13	19°R 6	F 20
S 21	12 28 38	9°5'32	2°11'11	25°31'31	25°14'14	22°39'39	14°31'31	15°26'26	27°25'25	10°16'16	19°47'47	14°23'23	15°35'35	0°13'13	19°6'6	S 21
S 22	12 32 34	10°4'28	14°1'1	27°22'22	25°59'59	22°40'40	14°42'42	15°27'27	27°27'27	10°17'17	19°48'48	14°R23	15°31'31	0°20'20	19°6'6	S 22
M 23	12 36 31	11°3'22	25°56'56	29°13'13	26°45'45	22°R41	14°53'53	15°29'29	27°30'30	10°17'17	19°48'48	14°22'22	15°28'28	0°26'26	19°6'6	M 23
T 24	12 40 27	12°2'15	8°2'2	1°1'6	27°31'31	22°40'40	15°4'4	15°30'30	27°33'33	10°17'17	19°49'49	14°18'18	15°25'25	0°33'33	19°6'6	T 24
W 25	12 44 24	13°1'05	20°23'23	3°1'1	28°19'19	22°39'39	15°14'14	15°32'32	27°35'35	10°18'18	19°49'49	14°13'13	15°22'22	0°40'40	19°5'5	W 25
T 26	12 48 20	13°59'54	3°1'3	4°57'57	29°8'8	22°37'37	15°25'25	15°34'34	27°38'38	10°18'18	19°50'50	14°5'5	15°19'19	0°46'46	19°5'5	T 26
F 27	12 52 17	14°58'40	16°5'5	6°55'55	29°57'57	22°34'34	15°35'35	15°36'36	27°41'41	10°19'19	19°51'51	13°56'56	15°16'16	0°53'53	19°4'4	F 27
S 28	12 56 14	15°57'25	29°28'28	8°54'54	0°14'47	22°31'31	15°46'46	15°38'38	27°43'43	10°19'19	19°52'52	13°46'46	15°12'12	1°0'0	19°4'4	S 28
S 29	13 0 10	16°56'08	13°10'10	10°54'54	1°37'37	22°26'26	15°56'56	15°40'40	27°46'46	10°20'20	19°52'52	13°36'36	15°9'9	1°6'6	19°3'3	S 29
M 30	13 4 7	17°54'50	27°10'10	12°56'56	2°29'29	22°21'21	16°6'6	15°43'43	27°48'48	10°20'20	19°53'53	13°28'28	15°6'6	1°13'13	19°2'2	M 30
T 31	13 8 3	18°53'29	11°11'11	14°11'11	3°11'21	22°16'16	16°16'16	15°45'45	27°51'51	10°21'21	19°54'54	13°22'22	15°3'3	1°20'20	19°1'1	T 31

Delta T = 07m27s

Julian Calendar 1 March 1416 == Greg. Calendar 10 March 1416

APRIL 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	13 12 0	19°52'06	25°39'39	17°13'13	4°13'13	22°R 9	16°26'26	15°E48	27°55'53	10°E21	19°11'55	13°R18	15°0'0	1°E26	19°R 0	W 1
T 2	13 15 56	20°50'41	10°11'0	19°9'9	5°6'6	22°M 2	16°36'36	15°50'50	27°56'56	10°22'22	19°55'55	13°D17	14°56'56	1°33'33	18°57'59	T 2
F 3	13 19 53	21°49'14	24°19'19	21°15'15	6°0'0	21°54'54	16°46'46	15°53'53	27°58'58	10°23'23	19°56'56	13°17'17	14°53'53	1°40'40	18°57'57	F 3
S 4	13 23 49	22°47'44	8°34'34	23°22'22	6°54'54	21°45'45	16°55'55	15°56'56	28°0'0	10°24'24	19°57'57	13°18'18	14°50'50	1°46'46	18°56'56	S 4
S 5	13 27 46	23°46'13	22°43'43	25°30'30	7°49'49	21°35'35	17°5'5	15°59'59	28°3'3	10°24'24	19°58'58	13°R19	14°47'47	1°53'53	18°55'55	S 5
M 6	13 31 43	24°44'39	6°14'44	27°38'38	8°44'44	21°25'25	17°14'14	16°2'2	28°5'5	10°25'25	19°59'59	13°18'18	14°44'44	1°59'59	18°53'53	M 6
T 7	13 35 39	25°43'03	20°37'37	29°46'46	9°40'40	21°14'14	17°23'23	16°5'5	28°7'7	10°26'26	20°0'0	13°15'15	14°41'41	2°6'6	18°52'52	T 7
W 8	13 39 36	26°41'24	4°11'24	18°55'55	10°36'36	21°2'2	17°32'32	16°8'8	28°9'9	10°27'27	20°1'1	13°11'11	14°37'37	2°13'13	18°50'50	W 8
T 9	13 43 32	27°39'44	17°53'4	2'11'33	20°50'50	17°41'41	16°11'11	28°12'12	10°28'28	20°2'2	13°5'5	14°34'34	2°19'19	18°48'48	T 9	
F 10	13 47 29	28°38'01	1°11'3	6'10'10	12°30'30	20°36'36	17°50'50	16°15'15	28°14'14	10°29'29	20°2'2	12°57'57	14°31'31	2°26'26	18°46'46	F 10
S 11	13 51 25	29°36'17	14°21'14	8°16'16	13°28'28	20°23'23	17°59'59	16°18'18	28°16'16	10°30'30	20°3'3	12°50'50	14°28'28	2°33'33	18°45'45	S 11
S 12	13 55 22	0°34'31	27°14'14	10°21'21	14°26'26	20°8'8	18°7'7	16°22'22	28°18'18	10°30'30	20°4'4	12°43'43	14°25'25	2°39'39	18°43'43	S 12
M 13	13 59 18	1°32'43	9°11'52	12°24'24	15°24'24	19°53'53	18°16'16	16°25'25	28°20'20	10°31'31	20°5'5	12°37'37	14°22'22	2°46'46	18°40'40	M 13
T 14	14 3 15	2°30'53	22°16'16	14°26'26	16°23'23	19°37'37	18°24'24	16°29'29	28°22'22	10°33'33	20°6'6	12°33'33	14°18'18	2°53'53	18°38'38	T 14
W 15	14 7 11	3°29'02	4°11'27	16°25'25	17°22'22	19°21'21	18°32'32	16°33'33	28°24'24	10°34'34	20°7'7	12°31'31	14°15'15	2°59'59	18°36'36	W 15
T 16	14 11 8	4°27'09	16°27'27	18°22'22	18°22'22	19°4'4	18°40'40	16°37'37	28°25'25	10°35'35	20°9'9	12°D31	14°12'12	3°6'6	18°34'34	T 16
F 17	14 15 5	5°25'14	28°20'20	20°16'16	19°22'22	18°46'46	18°48'48	16°41'41	28°27'27	10°36'36	20°10'10	12°32'32	14°9'9	3°13'13	18°31'31	F 17
S 18	14 19 1	6°23'18	10°11'9	22°8'8	20°22'22	18°28'28	18°56'56	16°45'45	28°29'29	10°37'37	20°11'11	12°34'34	14°6'6	3°19'19	18°29'29	S 18
S 19	14 22 58	7°21'21	21°58'58	23°56'56	21°23'23	18°9'9	19°4'4	16°49'49	28°31'31	10°38'38	20°12'12	12°35'35	14°2'2	3°26'26	18°26'26	S 19
M 20	14 26 54	8°19'22	3°54'54	25°41'41	22°23'23	17°50'50	19°11'11	16°54'54	28°32'32	10°39'39	20°13'13	12°R36	13°59'59	3°33'33	18°24'24	M 20
T 21	14 30 51	9°17'22	16°0'0	27°23'23	23°25'25	17°31'31	19°18'18	16°58'58	28°34'34	10°41'41	20°14'14	12°36'36	13°56'56	3°39'39	18°21'21	T 21
W 22	14 34 47	10°15'20	28°21'21	29°2'2	24°26'26	17°11'11	19°26'26	17°3'3	28°36'36	10°42'42	20°15'15	12°35'35	13°53'53	3°46'46	18°19'19	W 22
T 23	14 38 44	11°13'17	11°13'17	0°11'37	25°28'28	16°51'51	19°33'33	17°7'7	28°37'37	10°43'43	20°16'16	12°32'32	13°50'50	3°53'53	18°16'16	T 23
F 24	14 42 40	12°11'12	24°6'6	2°8'8	26°30'30	16°30'30	19°40'40	17°12'12	28°39'39	10°44'44	20°17'17	12°28'28	13°47'47	3°59'59	18°13'13	F 24
S 25	14 46 37	13°9'07	7°13'35	3°36'36	27°32'32	16°10'10	19°46'46	17°16'16	28°40'40	10°46'46	20°19'19	12°24'24	13°43'43	4°6'6	18°10'10	S 25
S 26	14 50 34	14°7'00	21°28'28	5°0'0	28°35'54	15°49'49	19°53'53	17°21'21	28°42'42	10°47'47	20°20'20	12°19'19	13°40'40	4°13'13	18°7'7	S 26
M 27	14 54 30	15°4'51	5°43'43	6°20'20	29°38'38	15°27'27	19°59'59	17°26'26	28°43'43	10°49'49	20°21'21	12°16'16	13°37'37	4°19'19	18°4'4	M 27
T 28	14 58 27	16°2'42	20°15'15	7°36'36	0°14'41	15°6'6	20°6'6	17°31'31	28°44'44	10°50'50	20°22'22	12°13'13	13°34'34	4°26'26	18°1'1	T 28
W 29	15 2 23	17°0'30	4°11'57	8°49'49	1°44'44	14°44'44	20°12'12	17°36'36	28°46'46	10°51'51	20°23'23	12°D13	13°31'31	4°33'33	17°58'58	W 29
T 30	15 6 20	17°58'18	19°11'43	9°11'57	2°14'44	14°11'23	20°11'18	17°54'54	28°44'47	10°53'53	20°11'25	12°11'12	13°28'28	4°33'39	17°54'54	T 30

ASTRODIENST EPHEMERIS for the year 1416

geocentric

MAY 1416 JC

00:00 UT

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

Delta T = 07m27s

Julian Calendar 1 May 1416 == Greg. Calendar 10 May 1416

JUNE 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	17 12 30	18°II 36'53	27°R 31	11°R 25	8°R 9	6°R 31	21°57	20°58	29°R 2	11°51	21°II 8	12°R 5	11°M 46	8°R 12	15°R 52	M 1
T 2	17 16 26	19°34'07	11°M 25	11°II 0	9°17	6°M 28	21°R 57	21° 5	29°R 1	11°53	21°10	12°M 5	11°43	8°19	15°M 48	T 2
W 3	17 20 23	20°31'21	24°56	10°38	10°26	6°26	21°57	21°12	29° 1	11°55	21°11	12°D 5	11°39	8°26	15°44	W 3
T 4	17 24 19	21°28'34	8°M 5	10°19	11°34	6°24	21°57	21°19	29° 1	11°57	21°13	12° 5	11°36	8°32	15°40	T 4
F 5	17 28 16	22°25'46	20°53	10° 4	12°43	6°D 24	21°56	21°26	29° 0	12° 0	21°14	12° 6	11°33	8°39	15°36	F 5
S 6	17 32 12	23°22'58	3°M 25	9°54	13°52	6°24	21°55	21°33	28°59	12° 2	21°16	12° 7	11°30	8°46	15°32	S 6
S 7	17 36 9	24°20'09	15°43	9°47	15° 0	6°25	21°55	21°40	28°59	12° 4	21°17	12° 8	11°27	8°52	15°28	S 7
M 8	17 40 6	25°17'20	27°50	9°D 45	16° 9	6°27	21°53	21°48	28°58	12° 6	21°18	12° 9	11°24	8°59	15°24	M 8
T 9	17 44 2	26°14'30	9°M 48	9°48	17°18	6°30	21°52	21°55	28°58	12° 8	21°20	12°R 9	11°20	9° 6	15°20	T 9
W 10	17 47 59	27°11'40	21°42	9°56	18°27	6°33	21°51	22° 2	28°57	12°10	21°21	12° 9	11°17	9°12	15°16	W 10
T 11	17 51 55	28° 8'50	3°R 32	10° 8	19°37	6°37	21°49	22°10	28°56	12°12	21°23	12° 8	11°14	9°19	15°12	T 11
F 12	17 55 52	29° 6'00	15°21	10°26	20°46	6°42	21°47	22°17	28°55	12°15	21°24	12° 6	11°11	9°26	15° 8	F 12
S 13	17 59 48	0°R 3'10	27°10	10°48	21°55	6°48	21°45	22°24	28°55	12°17	21°26	12° 4	11° 8	9°32	15° 4	S 13
S 14	18 3 45	1° 0'19	9°M 4	11°15	23° 5	6°55	21°43	22°32	28°54	12°19	21°27	12° 1	11° 5	9°39	15° 0	S 14
M 15	18 7 41	1°57'29	21° 3	11°47	24°14	7° 2	21°40	22°39	28°53	12°21	21°28	11°58	11° 1	9°45	14°57	M 15
T 16	18 11 38	2°54'39	3°H 12	12°23	25°24	7°10	21°38	22°47	28°52	12°23	21°30	11°55	10°58	9°52	14°53	T 16
W 17	18 15 35	3°51'49	15°33	13° 5	26°33	7°19	21°35	22°54	28°51	12°26	21°31	11°53	10°55	9°59	14°49	W 17
T 18	18 19 31	4°48'59	28°10	13°51	27°43	7°28	21°32	23° 2	28°50	12°28	21°33	11°52	10°52	10° 5	14°46	T 18
F 19	18 23 28	5°46'10	11°V 7	14°41	28°53	7°38	21°29	23° 9	28°49	12°30	21°34	11°D 52	10°49	10°12	14°42	F 19
S 20	18 27 24	6°43'21	24°26	15°37	0°II 3	7°49	21°25	23°17	28°47	12°32	21°36	11°53	10°45	10°19	14°38	S 20
S 21	18 31 21	7°40'33	8°R 10	16°37	1°13	8° 1	21°22	23°24	28°46	12°34	21°37	11°55	10°42	10°25	14°35	S 21
M 22	18 35 17	8°37'45	22°20	17°41	2°23	8°13	21°18	23°32	28°45	12°37	21°38	11°56	10°39	10°32	14°31	M 22
T 23	18 39 14	9°34'57	6°II 55	18°50	3°33	8°26	21°14	23°39	28°44	12°39	21°40	11°R 57	10°36	10°39	14°28	T 23
W 24	18 43 10	10°32'10	21°51	20° 3	4°43	8°40	21°10	23°47	28°42	12°41	21°41	11°57	10°33	10°45	14°24	W 24
T 25	18 47 7	11°29'24	7°R 0	21°20	5°53	8°54	21° 6	23°55	28°41	12°43	21°42	11°55	10°30	10°52	14°21	T 25
F 26	18 51 4	12°26'37	22°13	22°42	7° 4	9° 9	21° 1	24° 2	28°40	12°46	21°44	11°52	10°26	10°59	14°18	F 26
S 27	18 55 0	13°23'51	7°R 21	24° 7	8°14	9°24	20°57	24°10	28°38	12°48	21°45	11°48	10°23	11° 5	14°14	S 27
S 28	18 58 57	14°21'05	22°14	25°37	9°25	9°40	20°52	24°18	28°37	12°50	21°47	11°43	10°20	11°12	14°11	S 28
M 29	19 2 53	15°18'19	6°M 45	27°11	10°35	9°57	20°47	24°25	28°35	12°52	21°48	11°39	10°17	11°19	14° 8	M 29
T 30	19 6 50	16°15'34	20°M 49	28°II 48	11°II 46	10°M 14	20°42	24°33	28°34	12°54	21°II 49	11°M 36	10°M 14	11°R 25	14°M 5	T 30

Delta T = 07m27s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1416
geocentric

JULY 1416 JC

00:00 UT

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

Delta T = 07m27s

Julian Calendar 1 July 1416 == Greg. Calendar 10 July 1416

AUGUST 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	21 13 0	16°15'33'37"	21°11'32"	1°14'	19°58'	23°11'39"	17°R 1	28°40'	27°R29	14° 2'	22°11'26"	9°D43	8°32'	14°35'59"	13°R 4	S 1
S 2	21 16 56	17°51'21"	3°40'	2°57'	21°10'	24°10'	16°53'	28°47'	27°27'	14° 4'	22°27'	9°R44	8°29'	15° 6'	13°R 3	S 2
M 3	21 20 53	18°49'06"	15°37'	4°40'	22°23'	24°42'	16°45'	28°55'	27°24'	14° 6'	22°28'	9°44'	8°26'	15°12'	13° 3'	M 3
T 4	21 24 49	19°46'53"	27°27'	6°20'	23°36'	25°14'	16°37'	29° 2'	27°22'	14° 8'	22°29'	9°42'	8°23'	15°19'	13° 2'	T 4
W 5	21 28 46	20°44'41"	9°35'15"	8° 0'	24°48'	25°47'	16°29'	29°10'	27°20'	14°10'	22°29'	9°38'	8°19'	15°26'	13° 2'	W 5
T 6	21 32 42	21°42'31"	21° 4'	9°38'	26° 1'	26°19'	16°21'	29°17'	27°17'	14°12'	22°30'	9°32'	8°16'	15°32'	13° 2'	T 6
F 7	21 36 39	22°40'21"	2°55'59"	11°14'	27°14'	26°52'	16°14'	29°24'	27°15'	14°14'	22°31'	9°23'	8°13'	15°39'	13° 2'	F 7
S 8	21 40 35	23°38'13"	15° 1'	12°50'	28°27'	27°25'	16° 6'	29°32'	27°12'	14°16'	22°32'	9°12'	8°10'	15°46'	13°D 2	S 8
S 9	21 44 32	24°36'07"	27°12'	14°24'	29°40'	27°59'	15°58'	29°39'	27°10'	14°17'	22°33'	8°59'	8° 7'	15°52'	13° 2'	S 9
M10	21 48 29	25°34'02"	9°33'	15°56'	0°12'53"	28°33'	15°50'	29°46'	27° 8'	14°19'	22°33'	8°46'	8° 3'	15°59'	13° 2'	M10
T 11	21 52 25	26°31'58"	22° 3'	17°27'	2° 6'	29° 7'	15°43'	29°54'	27° 5'	14°21'	22°34'	8°34'	8° 0'	16° 6'	13° 2'	T 11
W12	21 56 22	27°29'57"	4°14'45"	18°57'	3°19'	29°41'	15°35'	0°12'1	27° 3'	14°23'	22°35'	8°23'	7°57'	16°12'	13° 2'	W12
T 13	22 0 18	28°27'57"	17°37'	20°26'	4°32'	0°15'15"	15°28'	0° 8'	27° 0'	14°24'	22°36'	8°15'	7°54'	16°19'	13° 3'	T 13
F 14	22 4 15	29°25'59"	0°13'42"	21°53'	5°45'	0°50'	15°20'	0°15'	26°58'	14°26'	22°36'	8°10'	7°51'	16°26'	13° 3'	F 14
S 15	22 8 11	0°14'24'03"	14° 1'	23°19'	6°59'	1°25'	15°13'	0°22'	26°56'	14°28'	22°37'	8° 8'	7°48'	16°32'	13° 4'	S 15
S 16	22 12 8	1°22'09"	27°35'	24°43'	8°12'	2° 0'	15° 6'	0°29'	26°53'	14°29'	22°38'	8° 7'	7°44'	16°39'	13° 5'	S 16
M17	22 16 4	2°20'17"	11°12'25"	26° 6'	9°25'	2°36'	14°59'	0°36'	26°51'	14°31'	22°38'	8° 7'	7°41'	16°46'	13° 5'	M17
T 18	22 20 1	3°18'28"	25°34'	27°27'	10°39'	3°11'	14°51'	0°43'	26°49'	14°33'	22°39'	8° 6'	7°38'	16°52'	13° 6'	T 18
W19	22 23 58	4°16'40"	9°55'59"	28°47'	11°52'	3°47'	14°44'	0°50'	26°46'	14°34'	22°39'	8° 4'	7°35'	16°59'	13° 7'	W19
T 20	22 27 54	5°14'54"	24°38'	0°12'6"	13° 6'	4°23'	14°38'	0°57'	26°44'	14°36'	22°40'	7°59'	7°32'	17° 6'	13° 8'	T 20
F 21	22 31 51	6°13'11"	9°12'27"	1°23'	14°20'	5° 0'	14°31'	1° 4'	26°41'	14°37'	22°40'	7°51'	7°29'	17°12'	13° 9'	F 21
S 22	22 35 47	7°11'29"	24°17'	2°38'	15°33'	5°36'	14°24'	1°11'	26°39'	14°39'	22°41'	7°41'	7°25'	17°19'	13°11'	S 22
S 23	22 39 44	8° 9'49"	9°11'	3°52'	16°47'	6°13'	14°17'	1°18'	26°37'	14°40'	22°41'	7°30'	7°22'	17°26'	13°12'	S 23
M24	22 43 40	9° 8'11"	23°29'	5° 3'	18° 1'	6°50'	14°11'	1°24'	26°34'	14°42'	22°42'	7°18'	7°19'	17°32'	13°13'	M24
T 25	22 47 37	10° 6'34"	7°12'36"	6°13'	19°14'	7°27'	14° 5'	1°31'	26°32'	14°43'	22°42'	7° 8'	7°16'	17°39'	13°15'	T 25
W26	22 51 33	11° 4'59"	21°17'	7°21'	20°28'	8° 4'	13°58'	1°38'	26°30'	14°45'	22°43'	6°59'	7°13'	17°46'	13°16'	W26
T 27	22 55 30	12° 3'26"	4°11'31"	8°27'	21°42'	8°42'	13°52'	1°44'	26°28'	14°46'	22°43'	6°54'	7° 9'	17°52'	13°18'	T 27
F 28	22 59 27	13° 1'55"	17°20'	9°30'	22°56'	9°20'	13°46'	1°51'	26°25'	14°47'	22°44'	6°51'	7° 6'	17°59'	13°20'	F 28
S 29	23 3 23	14° 0'26"	29°47'	10°32'	24°10'	9°58'	13°41'	1°57'	26°23'	14°49'	22°44'	6°50'	7° 3'	18° 6'	13°22'	S 29
S 30	23 7 20	14°58'58"	11°17'56"	11°30'	25°24'	10°36'	13°35'	2° 3'	26°21'	14°50'	22°44'	6°50'	7° 0'	18°12'	13°24'	S 30
M31	23 11 16	15°07'32"	23°17'53"	12°12'26"	26°13'38"	11°17'14"	13°32'29"	2°12'10"	26°19'19"	14°51'10"	22°45'10"	6°49'19"	6°57'17"	18°19'19"	13°26'16"	M31

Delta T = 07m26s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1416

geocentric

SEPTEMBER 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	23 15 13	16 ¹¹ 56'07	5 ³ 44	13 ²⁰ 20	27 ⁰ 52	11 ¹ 53	13 ⁰ R24	2 ⁰ 16	26 ⁰ R16	14 ⁰ 53	22 ⁰ 45	6 ⁰ R48	6 ⁰ 54	18 ⁰ 26	13 ⁰ 28	T 1
W 2	23 19 9	17 ⁰ 54'44	17 ⁰ 33	14 ⁰ 10	29 ⁰ 6	12 ⁰ 32	13 ⁰ 19	2 ⁰ 22	26 ⁰ 14	14 ⁰ 54	22 ⁰ 45	6 ⁰ 45	6 ⁰ 50	18 ⁰ 33	13 ⁰ 30	W 2
T 3	23 23 6	18 ⁰ 53'23	29 ⁰ 25	14 ⁰ 56	0 ⁰ 20	13 ⁰ 10	13 ⁰ 14	2 ⁰ 29	26 ⁰ 12	14 ⁰ 55	22 ⁰ 45	6 ⁰ 39	6 ⁰ 47	18 ⁰ 39	13 ⁰ 32	T 3
F 4	23 27 2	19 ⁰ 52'04	11 ⁰ 25	15 ⁰ 39	1 ⁰ 34	13 ⁰ 50	13 ⁰ 9	2 ⁰ 35	26 ⁰ 10	14 ⁰ 56	22 ⁰ 46	6 ⁰ 30	6 ⁰ 44	18 ⁰ 46	13 ⁰ 35	F 4
S 5	23 30 59	20 ⁰ 50'46	23 ⁰ 35	16 ⁰ 19	2 ⁰ 49	14 ⁰ 29	13 ⁰ 4	2 ⁰ 41	26 ⁰ 8	14 ⁰ 57	22 ⁰ 46	6 ⁰ 19	6 ⁰ 41	18 ⁰ 53	13 ⁰ 37	S 5
S 6	23 34 56	21 ⁰ 49'30	5 ⁰ 57	16 ⁰ 54	4 ⁰ 3	15 ⁰ 8	13 ⁰ 0	2 ⁰ 47	26 ⁰ 6	14 ⁰ 58	22 ⁰ 46	6 ⁰ 7	6 ⁰ 38	18 ⁰ 59	13 ⁰ 39	S 6
M 7	23 38 52	22 ⁰ 48'16	18 ⁰ 33	17 ⁰ 24	5 ⁰ 17	15 ⁰ 48	12 ⁰ 55	2 ⁰ 53	26 ⁰ 4	15 ⁰ 0	22 ⁰ 46	5 ⁰ 54	6 ⁰ 34	19 ⁰ 6	13 ⁰ 42	M 7
T 8	23 42 49	23 ⁰ 47'05	1 ⁰ 21	17 ⁰ 50	6 ⁰ 32	16 ⁰ 27	12 ⁰ 51	2 ⁰ 58	26 ⁰ 2	15 ⁰ 1	22 ⁰ 46	5 ⁰ 42	6 ⁰ 31	19 ⁰ 13	13 ⁰ 45	T 8
W 9	23 46 45	24 ⁰ 45'55	14 ⁰ 22	18 ⁰ 10	7 ⁰ 46	17 ⁰ 7	12 ⁰ 47	3 ⁰ 4	26 ⁰ 0	15 ⁰ 2	22 ⁰ 47	5 ⁰ 32	6 ⁰ 28	19 ⁰ 19	13 ⁰ 48	W 9
T 10	23 50 42	25 ⁰ 44'47	27 ⁰ 35	18 ⁰ 24	9 ⁰ 0	17 ⁰ 47	12 ⁰ 43	3 ⁰ 10	25 ⁰ 58	15 ⁰ 3	22 ⁰ 47	5 ⁰ 24	6 ⁰ 25	19 ⁰ 26	13 ⁰ 50	T 10
F 11	23 54 38	26 ⁰ 43'42	10 ⁰ 58	18 ⁰ 33	10 ⁰ 15	18 ⁰ 27	12 ⁰ 39	3 ⁰ 16	25 ⁰ 56	15 ⁰ 4	22 ⁰ 47	5 ⁰ 19	6 ⁰ 22	19 ⁰ 33	13 ⁰ 53	F 11
S 12	23 58 35	27 ⁰ 42'39	24 ⁰ 31	18 ⁰ R35	11 ⁰ 29	19 ⁰ 7	12 ⁰ 36	3 ⁰ 21	25 ⁰ 54	15 ⁰ 5	22 ⁰ 47	5 ⁰ 17	6 ⁰ 19	19 ⁰ 39	13 ⁰ 56	S 12
S 13	0 2 31	28 ⁰ 41'38	8 ⁰ 14	18 ⁰ 30	12 ⁰ 44	19 ⁰ 48	12 ⁰ 33	3 ⁰ 27	25 ⁰ 52	15 ⁰ 5	22 ⁰ 47	5 ⁰ D16	6 ⁰ 15	19 ⁰ 46	13 ⁰ 59	S 13
M14	0 6 28	29 ⁰ 40'39	22 ⁰ 7	18 ⁰ 17	13 ⁰ 58	20 ⁰ 28	12 ⁰ 29	3 ⁰ 32	25 ⁰ 50	15 ⁰ 6	22 ⁰ R47	5 ⁰ 17	6 ⁰ 12	19 ⁰ 53	14 ⁰ 2	M14
T 15	0 10 24	0 ⁰ 39'43	6 ⁰ 50	17 ⁰ 58	15 ⁰ 13	21 ⁰ 9	12 ⁰ 27	3 ⁰ 38	25 ⁰ 48	15 ⁰ 7	22 ⁰ 47	5 ⁰ R17	6 ⁰ 9	19 ⁰ 59	14 ⁰ 6	T 15
W16	0 14 21	1 ⁰ 38'50	20 ⁰ 22	17 ⁰ 30	16 ⁰ 28	21 ⁰ 50	12 ⁰ 24	3 ⁰ 43	25 ⁰ 46	15 ⁰ 8	22 ⁰ 47	5 ⁰ 15	6 ⁰ 6	20 ⁰ 6	14 ⁰ 9	W16
T 17	0 18 18	2 ⁰ 37'59	4 ⁰ 41	16 ⁰ 55	17 ⁰ 42	22 ⁰ 31	12 ⁰ 21	3 ⁰ 48	25 ⁰ 44	15 ⁰ 9	22 ⁰ 47	5 ⁰ 11	6 ⁰ 3	20 ⁰ 13	14 ⁰ 12	T 17
F 18	0 22 14	3 ⁰ 37'09	19 ⁰ 6	16 ⁰ 11	18 ⁰ 57	23 ⁰ 12	12 ⁰ 19	3 ⁰ 53	25 ⁰ 43	15 ⁰ 9	22 ⁰ 47	5 ⁰ 5	6 ⁰ 0	20 ⁰ 19	14 ⁰ 16	F 18
S 19	0 26 11	4 ⁰ 36'23	3 ⁰ 20	15 ⁰ 21	20 ⁰ 12	23 ⁰ 53	12 ⁰ 17	3 ⁰ 58	25 ⁰ 41	15 ⁰ 10	22 ⁰ 47	4 ⁰ 57	5 ⁰ 56	20 ⁰ 26	14 ⁰ 19	S 19
S 20	0 30 7	5 ⁰ 35'38	17 ⁰ 49	14 ⁰ 24	21 ⁰ 27	24 ⁰ 35	12 ⁰ 15	4 ⁰ 4	25 ⁰ 39	15 ⁰ 11	22 ⁰ 46	4 ⁰ 47	5 ⁰ 53	20 ⁰ 33	14 ⁰ 23	S 20
M21	0 34 4	6 ⁰ 34'56	1 ⁰ 57	13 ⁰ 21	22 ⁰ 41	25 ⁰ 16	12 ⁰ 13	4 ⁰ 8	25 ⁰ 38	15 ⁰ 11	22 ⁰ 46	4 ⁰ 38	5 ⁰ 50	20 ⁰ 39	14 ⁰ 27	M21
T 22	0 38 0	7 ⁰ 34'15	15 ⁰ 47	12 ⁰ 13	23 ⁰ 56	25 ⁰ 58	12 ⁰ 11	4 ⁰ 13	25 ⁰ 36	15 ⁰ 12	22 ⁰ 46	4 ⁰ 29	5 ⁰ 47	20 ⁰ 46	14 ⁰ 30	T 22
W23	0 41 57	8 ⁰ 33'37	29 ⁰ 18	11 ⁰ 3	25 ⁰ 11	26 ⁰ 39	12 ⁰ 10	4 ⁰ 18	25 ⁰ 35	15 ⁰ 13	22 ⁰ 46	4 ⁰ 22	5 ⁰ 44	20 ⁰ 53	14 ⁰ 34	W23
T 24	0 45 53	9 ⁰ 33'01	12 ⁰ 26	9 ⁰ 51	26 ⁰ 26	27 ⁰ 21	12 ⁰ 9	4 ⁰ 23	25 ⁰ 33	15 ⁰ 13	22 ⁰ 46	4 ⁰ 17	5 ⁰ 40	21 ⁰ 0	14 ⁰ 38	T 24
F 25	0 49 50	10 ⁰ 32'26	25 ⁰ 12	8 ⁰ 40	27 ⁰ 41	28 ⁰ 3	12 ⁰ 8	4 ⁰ 27	25 ⁰ 32	15 ⁰ 14	22 ⁰ 45	4 ⁰ 15	5 ⁰ 37	21 ⁰ 6	14 ⁰ 42	F 25
S 26	0 53 47	11 ⁰ 31'54	7 ⁰ 39	7 ⁰ 31	28 ⁰ 56	28 ⁰ 45	12 ⁰ 7	4 ⁰ 32	25 ⁰ 30	15 ⁰ 14	22 ⁰ 45	4 ⁰ D14	5 ⁰ 34	21 ⁰ 13	14 ⁰ 46	S 26
S 27	0 57 43	12 ⁰ 31'23	19 ⁰ 49	6 ⁰ 28	0 ⁰ 11	29 ⁰ 28	12 ⁰ 6	4 ⁰ 36	25 ⁰ 29	15 ⁰ 15	22 ⁰ 45	4 ⁰ 15	5 ⁰ 31	21 ⁰ 20	14 ⁰ 50	S 27
M28	1 1 40	13 ⁰ 30'54	1 ⁰ 47	5 ⁰ 31	1 ⁰ 26	0 ⁰ 10	12 ⁰ 6	4 ⁰ 41	25 ⁰ 27	15 ⁰ 15	22 ⁰ 45	4 ⁰ 17	5 ⁰ 28	21 ⁰ 26	14 ⁰ 55	M28
T 29	1 5 36	14 ⁰ 30'27	13 ⁰ 39	4 ⁰ 42	2 ⁰ 41	0 ⁰ 52	12 ⁰ D 6	4 ⁰ 45	25 ⁰ 26	15 ⁰ 15	22 ⁰ 44	4 ⁰ R17	5 ⁰ 25	21 ⁰ 33	14 ⁰ 59	T 29
W30	1 9 33	15 ⁰ 30'02	25 ⁰ 30	4 ⁰ 2	3 ⁰ 56	1 ⁰ 35	12 ⁰ 6	4 ⁰ 49	25 ⁰ 25	15 ⁰ 16	22 ⁰ 44	4 ⁰ 17	5 ⁰ 21	21 ⁰ 34	15 ⁰ 3	W30

Delta T = 07m26s

Julian Calendar 1 Sept. 1416 == Greg. Calendar 10 Sept. 1416

OCTOBER 1416 JC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	1 13 29	16♂29'39	7♂24	3°R34	5♂11	2♂17	12♂6	4♂53	25°R23	15♂16	22°R44	4°R14	5♂18	21♂46	15♂7	T 1
F 2	1 17 26	17°29'17	19°26	3♂16	6°26	3°0	12°7	4°57	25♂22	15°16	22♂43	4♂10	5°15	21°53	15°12	F 2
S 3	1 21 22	18°28'57	1♂41	3°D 9	7°41	3°43	12°7	5°1	25°21	15°17	22°43	4°3	5°12	22°0	15°16	S 3
S 4	1 25 19	19°28'39	14°11	3°14	8°56	4°26	12°8	5°5	25°20	15°17	22°42	3°56	5°9	22°6	15°21	S 4
M 5	1 29 16	20°28'22	26°58	3°29	10°11	5°9	12°9	5°9	25°19	15°17	22°42	3°48	5°5	22°13	15°26	M 5
T 6	1 33 12	21°28'08	10°Y 3	3°55	11°26	5°52	12°10	5°12	25°18	15°17	22°41	3°40	5°2	22°20	15°30	T 6
W 7	1 37 9	22°27'55	23°25	4°30	12°41	6°35	12°12	5°16	25°17	15°17	22°41	3°34	4°59	22°26	15°35	W 7
T 8	1 41 5	23°27'45	7♂1	5°14	13°56	7°18	12°13	5°19	25°16	15°17	22°40	3°29	4°56	22°33	15°40	T 8
F 9	1 45 2	24°27'37	20°50	6°5	15°12	8°2	12°15	5°22	25°15	15°17	22°40	3°27	4°53	22°40	15°45	F 9
S 10	1 48 58	25°27'30	4♂48	7°4	16°27	8°45	12°17	5°26	25°14	15°R17	22°39	3°D26	4°50	22°46	15°50	S 10
S 11	1 52 55	26°27'26	18°52	8°9	17°42	9°29	12°20	5°29	25°14	15°17	22°39	3°27	4°46	22°53	15°55	S 11
M12	1 56 51	27°27'24	3♂0	9°20	18°57	10°12	12°22	5°32	25°13	15°17	22°38	3°28	4°43	23°0	16°0	M12
T 13	2 0 48	28°27'25	17°10	10°35	20°12	10°56	12°25	5°35	25°12	15°17	22°38	3°30	4°40	23°7	16°5	T 13
W14	2 4 45	29°27'27	1♂20	11°54	21°28	11°40	12°27	5°38	25°11	15°17	22°37	3°R30	4°37	23°13	16°10	W14
T 15	2 8 41	0♂27'32	15°28	13°17	22°43	12°23	12°30	5°40	25°11	15°17	22°36	3°29	4°34	23°20	16°15	T 15
F 16	2 12 38	1°27'39	29°33	14°42	23°58	13°7	12°34	5°43	25°10	15°17	22°36	3°27	4°31	23°27	16°20	F 16
S 17	2 16 34	2°27'48	13♂32	16°10	25°14	13°51	12°37	5°46	25°10	15°16	22°35	3°23	4°27	23°33	16°26	S 17
S 18	2 20 31	3°27'59	27°22	17°40	26°29	14°35	12°41	5°48	25°9	15°16	22°34	3°18	4°24	23°40	16°31	S 18
M19	2 24 27	4°28'12	11♂2	19°12	27°44	15°19	12°44	5°50	25°9	15°16	22°33	3°13	4°21	23°47	16°36	M19
T 20	2 28 24	5°28'26	24°28	20°44	29°0	16°4	12°48	5°52	25°9	15°16	22°33	3°9	4°18	23°53	16°42	T 20
W21	2 32 20	6°28'43	7♂38	22°18	0♂15	16°48	12°53	5°55	25°8	15°15	22°32	3°6	4°15	24°0	16°47	W21
T 22	2 36 17	7°29'02	20°32	23°53	1°30	17°32	12°57	5°57	25°8	15°15	22°31	3°4	4°11	24°7	16°53	T 22
F 23	2 40 13	8°29'22	3♂9	25°28	2°46	18°16	13°1	5°58	25°8	15°14	22°30	3°D 3	4°8	24°13	16°58	F 23
S 24	2 44 10	9°29'44	15°30	27°4	4°1	19°1	13°6	6°0	25°8	15°14	22°30	3°4	4°5	24°20	17°4	S 24
S 25	2 48 7	10°30'08	27°38	28°40	5°17	19°45	13°11	6°2	25°8	15°13	22°29	3°5	4°2	24°27	17°10	S 25
M26	2 52 3	11°30'33	9♂37	0♂16	6°32	20°30	13°16	6°3	25°D 8	15°13	22°28	3°7	3°59	24°34	17°15	M26
T 27	2 56 0	12°30'59	21°29	1°52	7°47	21°15	13°21	6°5	25°8	15°12	22°27	3°9	3°56	24°40	17°21	T 27
W28	2 59 56	13°31'27	3♂19	3°29	9°3	21°59	13°27	6°6	25°8	15°12	22°26	3°10	3°52	24°47	17°27	W28
T 29	3 3 53	14°31'56	15°12	5°5	10°18	22°44	13°32	6°7	25°8	15°11	22°25	3°R10	3°49	24°54	17°33	T 29
F 30	3 7 49	15°32'27	27°14	6°41	11°34	23°29	13°38	6°9	25°8	15°10	22°24	3°10	3°46	25°0	17°39	F 30
S 31	3 11 46	16♂32'59	9♂28	8♂18	12♂49	24♂13	13♂44	6♂10	25♂8	15♂10	22♂23	3♂8	3♂43	25♂7	17♂44	S 31

ASTRODIENST EPHEMERIS for the year 1416

geocentric

NOVEMBER 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	3 15 42	17 ^h 33'32"	21 ^h 59'	9 ^h 54'	14 ^h 5	24 ^h 58'	13 ^h 50'	6 ^h 10'	25 ^h 8'	15 ^h 9'	22 ^h 22'	3 ^h 6'	3 ^h 40'	25 ^h 14'	17 ^h 50'	S 1
M 2	3 19 39	18 ^h 34'06"	4 ^h 50'	11 ^h 30'	15 ^h 20'	25 ^h 43'	13 ^h 57'	6 ^h 11'	25 ^h 9'	15 ^h 8'	22 ^h 21'	3 ^h 4'	3 ^h 37'	25 ^h 20'	17 ^h 56'	M 2
T 3	3 23 36	19 ^h 34'42"	18 ^h 3'	13 ^h 5'	16 ^h 35'	26 ^h 28'	14 ^h 3'	6 ^h 12'	25 ^h 9'	15 ^h 7'	22 ^h 20'	3 ^h 2'	3 ^h 33'	25 ^h 27'	18 ^h 2'	T 3
W 4	3 27 32	20 ^h 35'19"	18 ^h 39'	14 ^h 41'	17 ^h 51'	27 ^h 13'	14 ^h 10'	6 ^h 12'	25 ^h 9'	15 ^h 7'	22 ^h 20'	3 ^h 1'	3 ^h 30'	25 ^h 34'	18 ^h 8'	W 4
T 5	3 31 29	21 ^h 35'57"	15 ^h 35'	16 ^h 17'	19 ^h 6'	27 ^h 58'	14 ^h 16'	6 ^h 13'	25 ^h 10'	15 ^h 6'	22 ^h 19'	3 ^h 0'	3 ^h 27'	25 ^h 40'	18 ^h 14'	T 5
F 6	3 35 25	22 ^h 36'37"	29 ^h 48'	17 ^h 52'	20 ^h 22'	28 ^h 43'	14 ^h 23'	6 ^h 13'	25 ^h 10'	15 ^h 5'	22 ^h 18'	2 ^h 59'	3 ^h 24'	25 ^h 47'	18 ^h 21'	F 6
S 7	3 39 22	23 ^h 37'18"	14 ^h 15'	19 ^h 27'	21 ^h 37'	29 ^h 28'	14 ^h 30'	6 ^h 13'	25 ^h 11'	15 ^h 4'	22 ^h 16'	2 ^h 59'	3 ^h 21'	25 ^h 54'	18 ^h 27'	S 7
S 8	3 43 18	24 ^h 38'01"	28 ^h 48'	21 ^h 2'	22 ^h 53'	0 ^h 13'	14 ^h 38'	6 ^h 14'	25 ^h 12'	15 ^h 3'	22 ^h 15'	3 ^h 0'	3 ^h 17'	26 ^h 1'	18 ^h 33'	S 8
M 9	3 47 15	25 ^h 38'46"	13 ^h 22'	22 ^h 37'	24 ^h 8'	0 ^h 58'	14 ^h 45'	6 ^h 14'	25 ^h 12'	15 ^h 2'	22 ^h 14'	3 ^h 1'	3 ^h 14'	26 ^h 7'	18 ^h 39'	M 9
T 10	3 51 11	26 ^h 39'32"	27 ^h 53'	24 ^h 12'	25 ^h 24'	1 ^h 44'	14 ^h 53'	6 ^h 13'	25 ^h 13'	15 ^h 1'	22 ^h 13'	3 ^h 1'	3 ^h 11'	26 ^h 14'	18 ^h 45'	T 10
W 11	3 55 8	27 ^h 40'19"	12 ^h 14'	25 ^h 46'	26 ^h 39'	2 ^h 29'	15 ^h 0'	6 ^h 13'	25 ^h 14'	15 ^h 0'	22 ^h 12'	3 ^h 2'	3 ^h 8'	26 ^h 21'	18 ^h 51'	W 11
T 12	3 59 5	28 ^h 41'08"	26 ^h 25'	27 ^h 21'	27 ^h 55'	3 ^h 14'	15 ^h 8'	6 ^h 13'	25 ^h 15'	14 ^h 59'	22 ^h 11'	3 ^h 2'	3 ^h 5'	26 ^h 27'	18 ^h 58'	T 12
F 13	4 3 1	29 ^h 41'58"	10 ^h 21'	28 ^h 55'	29 ^h 10'	3 ^h 59'	15 ^h 16'	6 ^h 12'	25 ^h 15'	14 ^h 58'	22 ^h 10'	3 ^h 2'	3 ^h 2'	26 ^h 34'	19 ^h 4'	F 13
S 14	4 6 58	0 ^h 42'50"	24 ^h 4'	0 ^h 30'	4 ^h 45'	15 ^h 24'	15 ^h 24'	6 ^h 12'	25 ^h 16'	14 ^h 57'	22 ^h 9'	3 ^h 2'	2 ^h 58'	26 ^h 41'	19 ^h 10'	S 14
S 15	4 10 54	1 ^h 43'43"	7 ^h 32'	2 ^h 4'	1 ^h 41'	5 ^h 30'	15 ^h 33'	6 ^h 11'	25 ^h 17'	14 ^h 56'	22 ^h 8'	3 ^h 1'	2 ^h 55'	26 ^h 47'	19 ^h 17'	S 15
M 16	4 14 51	2 ^h 44'38"	20 ^h 46'	3 ^h 38'	2 ^h 57'	6 ^h 15'	15 ^h 41'	6 ^h 10'	25 ^h 18'	14 ^h 55'	22 ^h 7'	3 ^h 0'	2 ^h 52'	26 ^h 54'	19 ^h 23'	M 16
T 17	4 18 47	3 ^h 45'34"	3 ^h 46'	5 ^h 12'	4 ^h 12'	7 ^h 1'	15 ^h 50'	6 ^h 9'	25 ^h 19'	14 ^h 53'	22 ^h 6'	3 ^h 1'	2 ^h 49'	27 ^h 1'	19 ^h 29'	T 17
W 18	4 22 44	4 ^h 46'31"	16 ^h 33'	6 ^h 47'	5 ^h 28'	7 ^h 46'	15 ^h 59'	6 ^h 8'	25 ^h 21'	14 ^h 52'	22 ^h 5'	3 ^h 1'	2 ^h 46'	27 ^h 8'	19 ^h 36'	W 18
T 19	4 26 40	5 ^h 47'30"	29 ^h 7'	8 ^h 21'	6 ^h 43'	8 ^h 32'	16 ^h 7'	6 ^h 7'	25 ^h 22'	14 ^h 51'	22 ^h 3'	3 ^h 1'	2 ^h 43'	27 ^h 14'	19 ^h 42'	T 19
F 20	4 30 37	6 ^h 48'29"	11 ^h 30'	9 ^h 55'	7 ^h 59'	9 ^h 17'	16 ^h 16'	6 ^h 6'	25 ^h 23'	14 ^h 50'	22 ^h 2'	3 ^h 1'	2 ^h 39'	27 ^h 21'	19 ^h 48'	F 20
S 21	4 34 34	7 ^h 49'29"	23 ^h 42'	11 ^h 29'	9 ^h 14'	10 ^h 2'	16 ^h 26'	6 ^h 5'	25 ^h 24'	14 ^h 49'	22 ^h 1'	3 ^h 1'	2 ^h 36'	27 ^h 28'	19 ^h 55'	S 21
S 22	4 38 30	8 ^h 50'31"	5 ^h 34'	13 ^h 4'	10 ^h 30'	10 ^h 48'	16 ^h 35'	6 ^h 3'	25 ^h 26'	14 ^h 47'	22 ^h 0'	3 ^h 1'	2 ^h 33'	27 ^h 34'	20 ^h 1'	S 22
M 23	4 42 27	9 ^h 51'33"	17 ^h 40'	14 ^h 38'	11 ^h 45'	11 ^h 34'	16 ^h 44'	6 ^h 2'	25 ^h 27'	14 ^h 46'	21 ^h 59'	3 ^h 0'	2 ^h 30'	27 ^h 41'	20 ^h 8'	M 23
T 24	4 46 23	10 ^h 52'35"	29 ^h 32'	16 ^h 12'	13 ^h 1'	12 ^h 19'	16 ^h 54'	6 ^h 0'	25 ^h 28'	14 ^h 45'	21 ^h 58'	2 ^h 59'	2 ^h 27'	27 ^h 48'	20 ^h 14'	T 24
W 25	4 50 20	11 ^h 53'39"	11 ^h 21'	17 ^h 47'	14 ^h 16'	13 ^h 5'	17 ^h 4'	5 ^h 58'	25 ^h 30'	14 ^h 43'	21 ^h 56'	2 ^h 57'	2 ^h 23'	27 ^h 54'	20 ^h 21'	W 25
T 26	4 54 16	12 ^h 54'42"	23 ^h 14'	19 ^h 21'	15 ^h 32'	13 ^h 50'	17 ^h 13'	5 ^h 56'	25 ^h 31'	14 ^h 42'	21 ^h 55'	2 ^h 56'	2 ^h 20'	28 ^h 1'	20 ^h 27'	T 26
F 27	4 58 13	13 ^h 55'47"	5 ^h 13'	20 ^h 56'	16 ^h 47'	14 ^h 36'	17 ^h 23'	5 ^h 54'	25 ^h 33'	14 ^h 41'	21 ^h 54'	2 ^h 56'	2 ^h 17'	28 ^h 8'	20 ^h 34'	F 27
S 28	5 2 10	14 ^h 56'51"	17 ^h 23'	22 ^h 31'	18 ^h 3'	15 ^h 21'	17 ^h 33'	5 ^h 52'	25 ^h 34'	14 ^h 39'	21 ^h 53'	2 ^h 56'	2 ^h 14'	28 ^h 15'	20 ^h 40'	S 28
S 29	5 6 6	15 ^h 57'56"	29 ^h 49'	24 ^h 5'	19 ^h 18'	16 ^h 7'	17 ^h 43'	5 ^h 50'	25 ^h 36'	14 ^h 38'	21 ^h 52'	2 ^h 56'	2 ^h 11'	28 ^h 21'	20 ^h 46'	S 29
M 30	5 10 3	16 ^h 59'02"	12 ^h 36'	25 ^h 40'	20 ^h 34'	16 ^h 55'	17 ^h 54'	5 ^h 48'	25 ^h 38'	14 ^h 36'	21 ^h 51'	2 ^h 57'	2 ^h 8'	28 ^h 28'	20 ^h 53'	M 30

Delta T = 07m26s

Julian Calendar 1 Nov. 1416 == Greg. Calendar 10 Nov. 1416

DECEMBER 1416 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	5 13 59	18 ^h 0'08	25 ^h 46	27 ^h 15	21 ^h 49	17 ^h 38	18 ^h 4	5 ^h R45	25 ^h 40	14 ^h R35	21 ^h R49	2 ^h 58	2 ^h 4	28 ^h 35	20 ^h 59	T 1
W 2	5 17 56	19 ^h 1'14	9 ^h 22	28 ^h 50	23 ^h 5	18 ^h 24	18 ^h 15	5 ^h L43	25 ^h 41	14 ^h 33	21 ^h 48	2 ^h 59	2 ^h 1	28 ^h 41	21 ^h 6	W 2
T 3	5 21 52	20 ^h 2'20	23 ^h 25	0 ^h 25	24 ^h 20	19 ^h 9	18 ^h 25	5 ^h 40	25 ^h 43	14 ^h 32	21 ^h 47	3 ^h 0	1 ^h 58	28 ^h 48	21 ^h 12	T 3
F 4	5 25 49	21 ^h 3'27	7 ^h 52	2 ^h 0	25 ^h 36	19 ^h 55	18 ^h 36	5 ^h 37	25 ^h 45	14 ^h 30	21 ^h 46	3 ^h R0	1 ^h 55	28 ^h 55	21 ^h 19	F 4
S 5	5 29 45	22 ^h 4'35	22 ^h 39	3 ^h 35	26 ^h 51	20 ^h 40	18 ^h 47	5 ^h 35	25 ^h 47	14 ^h 29	21 ^h 45	3 ^h 0	1 ^h 52	29 ^h 1	21 ^h 25	S 5
S 6	5 33 42	23 ^h 5'42	7 ^h 38	5 ^h 10	28 ^h 6	21 ^h 26	18 ^h 58	5 ^h 32	25 ^h 49	14 ^h 27	21 ^h 43	2 ^h 58	1 ^h 49	29 ^h 8	21 ^h 32	S 6
M 7	5 37 39	24 ^h 6'51	22 ^h 40	6 ^h 44	29 ^h 22	22 ^h 12	19 ^h 9	5 ^h 29	25 ^h 51	14 ^h 26	21 ^h 42	2 ^h 55	1 ^h 45	29 ^h 15	21 ^h 38	M 7
T 8	5 41 35	25 ^h 7'59	7 ^h 38	8 ^h 19	0 ^h 37	22 ^h 57	19 ^h 20	5 ^h 26	25 ^h 53	14 ^h 24	21 ^h 41	2 ^h 52	1 ^h 42	29 ^h 22	21 ^h 45	T 8
W 9	5 45 32	26 ^h 9'08	22 ^h 22	9 ^h 53	1 ^h 53	23 ^h 43	19 ^h 31	5 ^h 23	25 ^h 55	14 ^h 22	21 ^h 40	2 ^h 49	1 ^h 39	29 ^h 28	21 ^h 51	W 9
T 10	5 49 28	27 ^h 10'18	6 ^h 47	11 ^h 27	3 ^h 8	24 ^h 28	19 ^h 43	5 ^h 19	25 ^h 57	14 ^h 21	21 ^h 39	2 ^h 47	1 ^h 36	29 ^h 35	21 ^h 58	T 10
F 11	5 53 25	28 ^h 11'28	20 ^h 49	13 ^h 1	4 ^h 24	25 ^h 14	19 ^h 54	5 ^h 16	25 ^h 59	14 ^h 19	21 ^h 37	2 ^h 45	1 ^h 33	29 ^h 42	22 ^h 4	F 11
S 12	5 57 21	29 ^h 12'39	4 ^h 29	14 ^h 33	5 ^h 39	26 ^h 0	20 ^h 6	5 ^h 12	26 ^h 2	14 ^h 18	21 ^h 36	2 ^h D45	1 ^h 29	29 ^h 48	22 ^h 11	S 12
S 13	6 1 18	0 ^h 13'50	17 ^h 47	16 ^h 5	6 ^h 55	26 ^h 45	20 ^h 17	5 ^h 9	26 ^h 4	14 ^h 16	21 ^h 35	2 ^h 46	1 ^h 26	29 ^h 55	22 ^h 17	S 13
M 14	6 5 14	1 ^h 15'01	0 ^h 45	17 ^h 36	8 ^h 10	27 ^h 31	20 ^h 29	5 ^h 5	26 ^h 6	14 ^h 14	21 ^h 34	2 ^h 48	1 ^h 23	0 ^h 55	22 ^h 24	M 14
T 15	6 9 11	2 ^h 16'13	13 ^h 27	19 ^h 6	9 ^h 25	28 ^h 16	20 ^h 41	5 ^h 2	26 ^h 8	14 ^h 13	21 ^h 33	2 ^h 50	1 ^h 20	0 ^h 8	22 ^h 30	T 15
W 16	6 13 8	3 ^h 17'25	25 ^h 55	20 ^h 34	10 ^h 41	29 ^h 2	20 ^h 53	4 ^h 58	26 ^h 11	14 ^h 11	21 ^h 32	2 ^h 51	1 ^h 17	0 ^h 15	22 ^h 36	W 16
T 17	6 17 4	4 ^h 18'37	8 ^h 12	22 ^h 0	11 ^h 56	29 ^h 47	21 ^h 5	4 ^h 54	26 ^h 13	14 ^h 9	21 ^h 30	2 ^h R51	1 ^h 14	0 ^h 22	22 ^h 43	T 17
F 18	6 21 1	5 ^h 19'50	20 ^h 20	23 ^h 24	13 ^h 12	0 ^h 33	21 ^h 17	4 ^h 50	26 ^h 16	14 ^h 8	21 ^h 29	2 ^h 49	1 ^h 10	0 ^h 29	22 ^h 49	F 18
S 19	6 24 57	6 ^h 21'02	2 ^h 21	24 ^h 45	14 ^h 27	1 ^h 18	21 ^h 29	4 ^h 46	26 ^h 18	14 ^h 6	21 ^h 28	2 ^h 46	1 ^h 7	0 ^h 35	22 ^h 56	S 19
S 20	6 28 54	7 ^h 22'15	14 ^h 17	26 ^h 3	15 ^h 43	2 ^h 4	21 ^h 42	4 ^h 42	26 ^h 21	14 ^h 4	21 ^h 27	2 ^h 41	1 ^h 4	0 ^h 42	23 ^h 2	S 20
M 21	6 32 50	8 ^h 23'27	26 ^h 10	27 ^h 17	16 ^h 58	2 ^h 49	21 ^h 54	4 ^h 38	26 ^h 23	14 ^h 3	21 ^h 26	2 ^h 35	1 ^h 1	0 ^h 49	23 ^h 8	M 21
T 22	6 36 47	9 ^h 24'38	8 ^h 50	28 ^h 27	18 ^h 13	3 ^h 35	22 ^h 6	4 ^h 34	26 ^h 26	14 ^h 1	21 ^h 25	2 ^h 27	0 ^h 58	0 ^h 55	23 ^h 15	T 22
W 23	6 40 43	10 ^h 25'50	19 ^h 51	29 ^h 31	19 ^h 29	4 ^h 20	22 ^h 19	4 ^h 30	26 ^h 28	13 ^h 59	21 ^h 23	2 ^h 20	0 ^h 54	1 ^h 2	23 ^h 21	W 23
T 24	6 44 40	11 ^h 27'01	1 ^h 45	0 ^h 30	20 ^h 44	5 ^h 6	22 ^h 31	4 ^h 25	26 ^h 31	13 ^h 58	21 ^h 22	2 ^h 13	0 ^h 51	1 ^h 9	23 ^h 27	T 24
F 25	6 48 37	12 ^h 28'11	13 ^h 44	1 ^h 22	21 ^h 59	5 ^h 51	22 ^h 44	4 ^h 21	26 ^h 34	13 ^h 56	21 ^h 21	2 ^h 8	0 ^h 48	1 ^h 15	23 ^h 33	F 25
S 26	6 52 33	13 ^h 29'21	25 ^h 52	2 ^h 6	23 ^h 15	6 ^h 37	22 ^h 57	4 ^h 17	26 ^h 36	13 ^h 54	21 ^h 20	2 ^h 4	0 ^h 45	1 ^h 22	23 ^h 40	S 26
S 27	6 56 30	14 ^h 30'30	8 ^h Y13	2 ^h 42	24 ^h 30	7 ^h 22	23 ^h 10	4 ^h 12	26 ^h 39	13 ^h 52	21 ^h 19	2 ^h 2	0 ^h 42	1 ^h 29	23 ^h 46	S 27
M 28	7 0 26	15 ^h 31'38	20 ^h 52	3 ^h 8	25 ^h 46	8 ^h 8	23 ^h 23	4 ^h 8	26 ^h 42	13 ^h 51	21 ^h 18	2 ^h D2	0 ^h 39	1 ^h 36	23 ^h 52	M 28
T 29	7 4 23	16 ^h 32'46	3 ^h 53	3 ^h 24	27 ^h 1	8 ^h 53	23 ^h 35	4 ^h 3	26 ^h 45	13 ^h 49	21 ^h 17	2 ^h 3	0 ^h 35	1 ^h 42	23 ^h 58	T 29
W 30	7 8 19	17 ^h 33'53	17 ^h 20	3 ^h R29	28 ^h 16	9 ^h 38	23 ^h 48	3 ^h 59	26 ^h 48	13 ^h 47	21 ^h 16	2 ^h 4	0 ^h 32	1 ^h 49	24 ^h 4	W 30
T 31	7 12 16	18 ^h 34'59	1 ^h 11	3 ^h 23	29 ^h 31	10 ^h 34	24 ^h 52	3 ^h L54	26 ^h 51	13 ^h 46	21 ^h 15	2 ^h R5	0 ^h 329	1 ^h 56	24 ^h 10	T 31