



# Astrodienst Ephemeris Tables for the year 1441

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 1441

## geocentric

JANUARY 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	7 16 55	19°34'11	25°49'	19°32'	2°47'	9°15'	2°23'	12°25'	3°R 6	8°R 4	20°R15	15°R 9	16°14	18°38	16°47	S 1
M 2	7 20 51	20°47'16	9°59'	21°13'	4° 2	10° 1	2°35'	12°25'	3°II 5	8°II 3	20°13	15° 8	16°10	18°44	16°48	M 2
T 3	7 24 48	21°48'21	24° 7	22°54'	5°18'	10°47'	2°48'	12°25'	3° 3	8° 2	20°12	15° 5	16° 7	18°51	16°48	T 3
W 4	7 28 45	22°49'25	8°II11	24°35'	6°33'	11°33'	3° 1	12°D24	3° 2	8° 1	20°11	15° 2	16° 4	18°58	16°49	W 4
T 5	7 32 41	23°50'27	22° 7	26°17'	7°48'	12°19'	3°14'	12°24'	3° 1	8° 0	20° 9	14°59	16° 1	19° 4	16°50	T 5
F 6	7 36 38	24°51'29	5°52'	27°59'	9° 3	13° 5	3°26'	12°25'	2°59'	7°59'	20° 8	14°56	15°58	19°11	16°51	F 6
S 7	7 40 34	25°52'30	19°23'	29°42'	10°18'	13°52'	3°39'	12°25'	2°58'	7°58'	20° 7	14°54	15°54	19°18	16°53	S 7
S 8	7 44 31	26°53'30	2°138	1°26	11°33'	14°38'	3°52'	12°25'	2°57'	7°57'	20° 5	14°52	15°51	19°25	16°54	S 8
M 9	7 48 27	27°54'29	15°35'	3°10'	12°48'	15°24'	4° 5	12°26'	2°56'	7°55'	20° 4	14°D52	15°48	19°31	16°55	M 9
T 10	7 52 24	28°55'28	28°16'	4°54'	14° 4	16°10'	4°18'	12°26'	2°54'	7°54'	20° 3	14°52	15°45	19°38	16°56	T 10
W11	7 56 20	29°56'25	10°II40	6°39'	15°19'	16°57'	4°32'	12°27'	2°53'	7°53'	20° 1	14°53	15°42	19°45	16°58	W11
T 12	8 0 17	0°57'22	22°51'	8°24'	16°34'	17°43'	4°45'	12°28'	2°52'	7°52'	20° 0	14°55	15°39	19°51	16°59	T 12
F 13	8 4 14	1°58'18	4°51'	10°10'	17°49'	18°30'	4°58'	12°29'	2°51'	7°51'	19°59	14°56	15°35	19°58	17° 1	F 13
S 14	8 8 10	2°59'13	16°44'	11°56'	19° 4	19°16'	5°11'	12°30'	2°50'	7°49'	19°58	14°57	15°32	20° 5	17° 2	S 14
S 15	8 12 7	4° 0'07	28°36'	13°42'	20°19'	20° 2	5°25'	12°31'	2°50'	7°48'	19°56	14°58	15°29	20°11	17° 4	S 15
M16	8 16 3	5° 1'01	10°II30	15°27'	21°34'	20°49'	5°38'	12°32'	2°49'	7°47'	19°55	14°R58	15°26	20°18	17° 5	M16
T 17	8 20 0	6° 1'53	22°32'	17°13'	22°49'	21°36'	5°52'	12°33'	2°48'	7°45'	19°54	14°57	15°23	20°25	17° 7	T 17
W18	8 23 56	7° 2'45	4°27'47	18°58'	24° 4	22°22'	6° 5	12°35'	2°47'	7°44'	19°52	14°56	15°20	20°32	17° 9	W18
T 19	8 27 53	8° 3'36	17°17'	20°42'	25°19'	23° 9	6°19'	12°36'	2°47'	7°43'	19°51	14°55	15°16	20°38	17°10	T 19
F 20	8 31 49	9° 4'26	0°3 6	22°26'	26°34'	23°55'	6°33'	12°38'	2°46'	7°41'	19°50	14°55	15°13	20°45	17°12	F 20
S 21	8 35 46	10° 5'15	13°16'	24° 8	27°48'	24°42'	6°46'	12°40'	2°45'	7°40'	19°49	14°54	15°10	20°52	17°14	S 21
S 22	8 39 43	11° 6'02	26°47'	25°49'	29° 3	25°29'	7° 0	12°42'	2°45'	7°38'	19°48	14°53	15° 7	20°58	17°16	S 22
M23	8 43 39	12° 6'49	10°II38	27°28'	0°II18	26°15'	7°14'	12°44'	2°44'	7°37'	19°46	14°D53	15° 4	21° 5	17°18	M23
T 24	8 47 36	13° 7'34	24°46'	29° 4	1°33'	27° 2	7°28'	12°46'	2°44'	7°35'	19°45	14°53	15° 0	21°12	17°20	T 24
W25	8 51 32	14° 8'18	9°II 6	0°II37	2°48'	27°49'	7°42'	12°48'	2°44'	7°34'	19°44	14°53	14°57	21°19	17°22	W25
T 26	8 55 29	15° 9'00	23°34'	2° 7	4° 3	28°35'	7°56'	12°51'	2°43'	7°32'	19°43	14°R53	14°54	21°25	17°24	T 26
F 27	8 59 25	16° 9'40	8°II 3	3°32'	5°17'	29°22'	8°10'	12°53'	2°43'	7°31'	19°42	14°53	14°51	21°32	17°27	F 27
S 28	9 3 22	17°10'19	22°29'	4°53'	6°32'	0°II 9	8°24'	12°56'	2°43'	7°29'	19°40	14°53	14°48	21°39	17°29	S 28
S 29	9 7 18	18°10'55	6°II 8	6° 8	7°47'	0°56'	8°38'	12°58'	2°43'	7°28'	19°39	14°53	14°45	21°45	17°31	S 29
M30	9 11 15	19°11'31	20°48'	7°16'	9° 1	1°43'	8°52'	13° 1	2°43'	7°26'	19°38	14°D53	14°41	21°52	17°33	M30
T 31	9 15 12	20°12'04	4°II54	8°II18	10°II16	2°II29	9°II 6	13°II 4	2°D43	7°II25	19°37	14°II53	14°II38	21°II59	17°II36	T 31

Delta T = 06m45s

Julian Calendar 1 Jan. 1441 == Greg. Calendar 10 Jan. 1441

FEBRUARY 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	9 19 8	21°12'35	18°II38	9°II12	11°II31	3°II16	9°II20	13°II 7	2°II43	7°R23	19°R36	14°II54	14°II35	22°II 6	17°II38	W 1
T 2	9 23 5	22°13'05	2°59	9°58'	12°45'	4° 3	9°34'	13°10'	2°43'	7°II21	19°35	14°54	14°32	22°12	17°41	T 2
F 3	9 27 1	23°13'33	15°27'	10°35'	14° 0	4°50'	9°49'	13°13'	2°43'	7°20'	19°34	14°55	14°29	22°19	17°43	F 3
S 4	9 30 58	24°13'59	28°31'	11° 3	15°14'	5°37'	10° 3	13°16'	2°43'	7°18'	19°33	14°56	14°26	22°26	17°46	S 4
S 5	9 34 54	25°14'23	11°II23	11°21'	16°29'	6°24'	10°17'	13°20'	2°43'	7°17'	19°32	14°R56	14°22	22°32	17°48	S 5
M 6	9 38 51	26°14'46	24° 1	11°R29	17°43'	7°11'	10°31'	13°23'	2°43'	7°15'	19°31	14°56	14°19	22°39	17°51	M 6
T 7	9 42 47	27°15'06	6°II28	11°27'	18°58'	7°58'	10°46'	13°27'	2°44'	7°13'	19°30	14°55	14°16	22°46	17°54	T 7
W 8	9 46 44	28°15'25	18°44'	11°15'	20°12'	8°45'	11° 0	13°30'	2°44'	7°12'	19°29	14°54	14°13	22°53	17°56	W 8
T 9	9 50 41	29°15'43	0°II50	10°54'	21°26'	9°31'	11°14'	13°34'	2°45'	7°10'	19°28	14°52	14°10	22°59	17°59	T 9
F 10	9 54 37	0°II15'58	12°49'	10°23'	22°41'	10°18'	11°29'	13°38'	2°45'	7° 8	19°27	14°49	14° 6	23° 6	18° 2	F 10
S 11	9 58 34	1°16'12	24°42'	9°45'	23°55'	11° 5	11°43'	13°42'	2°46'	7° 7	19°26	14°47	14° 3	23°13	18° 5	S 11
S 12	10 2 30	2°16'25	6°II34	8°59'	25° 9	11°52'	11°57'	13°46'	2°46'	7° 5	19°25	14°45	14° 0	23°19	18° 8	S 12
M13	10 6 27	3°16'36	0°II28	8° 8	26°23'	12°39'	12°12'	13°50'	2°47'	7° 3	19°24	14°43	13°57	23°26	18°10	M13
T 14	10 10 23	4°16'45	0°II28	7°11'	27°37'	13°26'	12°26'	13°54'	2°48'	7° 2	19°23	14°D42	13°54	23°33	18°13	T 14
W15	10 14 20	5°16'53	12°39'	6°12'	28°52'	14°13'	12°41'	13°59'	2°48'	7° 0	19°22	14°42	13°51	23°40	18°16	W15
T 16	10 18 16	6°17'00	25° 6	5°10'	0°II 6	15° 0	12°55'	14° 3	2°49'	6°58'	19°21	14°43	13°47	23°46	18°19	T 16
F 17	10 22 13	7°17'04	7°II53	4° 9	1°20'	15°47'	13°10'	14° 8	2°50'	6°57'	19°20	14°45	13°44	23°53	18°22	F 17
S 18	10 26 9	8°17'07	21° 3	3° 8	2°34'	16°34'	13°24'	14°12'	2°51'	6°55'	19°20	14°46	13°41	24° 0	18°26	S 18
S 19	10 30 6	9°17'09	4°II39	2°10'	3°48'	17°21'	13°39'	14°17'	2°52'	6°53'	19°19	14°48	13°38	24° 6	18°29	S 19
M20	10 34 3	10°17'08	18°40'	1°15'	5° 2	18° 9	13°53'	14°22'	2°53'	6°52'	19°18	14°R48	13°35	24°13	18°32	M20
T 21	10 37 59	11°17'06	3°II 5	0°25'	6°15'	18°56'	14° 8	14°26'	2°54'	6°50'	19°17	14°47	13°32	24°20	18°35	T 21
W22	10 41 56	12°17'02	17°48'	29°II40	7°29'	19°43'	14°22'	14°31'	2°55'	6°48'	19°16	14°44	13°28	24°27	18°38	W22
T 23	10 45 52	13°16'56	2°II43	29° 1	8°43'	20°30'	14°37'	14°36'	2°56'	6°47'	19°16	14°41	13°25	24°33	18°41	T 23
F 24	10 49 49	14°16'47	17°40'	28°27'	9°57'	21°17'	14°51'	14°41'	2°57'	6°45'	19°15	14°37	13°22	24°40	18°45	F 24
S 25	10 53 45	15°16'37	2°II32	28° 1	11°11'	22° 4	15° 6	14°47'	2°59'	6°43'	19°14	14°32	13°19	24°47	18°48	S 25
S 26	10 57 42	16°16'24	17°10'	27°40'	12°24'	22°51'	15°20'	14°52'	3° 0	6°42'	19°14	14°29	13°16	24°53	18°51	S 26
M27	11 1 38	17°16'09	1°II30	27°26'	13°38'	23°38'	15°35'	14°57'	3° 1	6°40'	19°13	14°26	13°12	25° 0	18°55	M27
T 28	11 5 35	18°II15'52	15°II29	27°II18	14°II52	24°II25	15°II49	15°II 3	3°II 3	6°II38	19°II13	14°D25	13°II 9	25°II 7	18°II58	T 28

Delta T = 06m45s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1441

## geocentric

MARCH 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	11 9 32	19°15'33	29°11'7	27°D17	16°V 5	25°12	16°H 4	15°B 8	3°II 4	6°R37	19°R12	14°J25	13°J 6	25°14	19°V 2	W 1
T 2	11 13 28	20°15'11	12°25	27°21	17°19	25°59	16°18	15°14	3° 6	6°35	19°11	14°27	13° 3	25°20	19° 5	T 2
F 3	11 17 25	21°14'47	25°25	27°31	18°32	26°46	16°33	15°19	3° 7	6°34	19°11	14°28	13° 0	25°27	19° 8	F 3
S 4	11 21 21	22°14'20	8°J10	27°46	19°45	27°33	16°47	15°25	3° 9	6°32	19°10	14°R30	12°57	25°34	19°12	S 4
S 5	11 25 18	23°13'51	20°41	28° 7	20°59	28°20	17° 2	15°31	3°11	6°30	19°10	14°30	12°53	25°40	19°15	S 5
M 6	11 29 14	24°13'20	3°M 2	28°32	22°12	29° 7	17°16	15°36	3°12	6°29	19° 9	14°28	12°50	25°47	19°19	M 6
T 7	11 33 11	25°12'47	15°15	29° 3	23°25	29°54	17°31	15°42	3°14	6°27	19° 9	14°24	12°47	25°54	19°23	T 7
W 8	11 37 7	26°12'12	27°20	29°37	24°38	0°H41	17°45	15°48	3°16	6°26	19° 9	14°18	12°44	26° 1	19°26	W 8
T 9	11 41 4	27°11'35	9°J19	0°H15	25°51	1°28	17°59	15°54	3°18	6°24	19° 8	14°11	12°41	26° 7	19°30	T 9
F 10	11 45 1	28°10'55	21°14	0°58	27° 4	2°15	18°14	16° 0	3°19	6°23	19° 8	14° 2	12°37	26°14	19°33	F 10
S 11	11 48 57	29°10'14	3°M 7	1°44	28°17	3° 2	18°28	16° 6	3°21	6°21	19° 8	13°54	12°34	26°21	19°37	S 11
S 12	11 52 54	0°V 9'31	14°59	2°33	29°30	3°49	18°43	16°13	3°23	6°20	19° 7	13°46	12°31	26°27	19°41	S 12
M13	11 56 50	1° 8'46	26°53	3°26	0°B43	4°36	18°57	16°19	3°25	6°18	19° 7	13°39	12°28	26°34	19°44	M13
T 14	12 0 47	2° 7'59	8°J53	4°22	1°56	5°22	19°11	16°25	3°27	6°17	19° 7	13°34	12°25	26°41	19°48	T 14
W15	12 4 43	3° 7'10	21° 2	5°20	3° 9	6° 9	19°26	16°31	3°29	6°15	19° 6	13°31	12°22	26°48	19°52	W15
T 16	12 8 40	4° 6'20	3°J25	6°22	4°21	6°56	19°40	16°38	3°32	6°14	19° 6	13°D30	12°18	26°54	19°55	T 16
F 17	12 12 36	5° 5'27	16° 6	7°26	5°34	7°43	19°54	16°44	3°34	6°12	19° 6	13°31	12°15	27° 1	19°59	F 17
S 18	12 16 33	6° 4'33	29°10	8°32	6°47	8°30	20° 8	16°51	3°36	6°11	19° 6	13°32	12°12	27° 8	20° 3	S 18
S 19	12 20 29	7° 3'37	12°41	9°41	7°59	9°17	20°23	16°57	3°38	6° 9	19° 6	13°R32	12° 9	27°14	20° 6	S 19
M20	12 24 26	8° 2'40	26°40	10°52	9°12	10° 4	20°37	17° 4	3°41	6° 8	19° 6	13°32	12° 6	27°21	20°10	M20
T 21	12 28 23	9° 1'40	11°H 6	12° 6	10°24	10°50	20°51	17°11	3°43	6° 7	19° 6	13°29	12° 3	27°28	20°14	T 21
W22	12 32 19	10° 0'39	25°58	13°21	11°37	11°37	21° 5	17°18	3°45	6° 5	19° 5	13°24	11°59	27°35	20°18	W22
T 23	12 36 16	10°59'35	11°V 6	14°39	12°49	12°24	21°19	17°24	3°48	6° 4	19° 5	13°16	11°56	27°41	20°22	T 23
F 24	12 40 12	11°58'30	26°22	15°58	14° 1	13°11	21°33	17°31	3°50	6° 3	19°D 5	13° 8	11°53	27°48	20°25	F 24
S 25	12 44 9	12°57'22	11°B34	17°19	15°13	13°57	21°47	17°38	3°53	6° 1	19° 5	12°59	11°50	27°55	20°29	S 25
S 26	12 48 5	13°56'12	26°33	18°43	16°25	14°44	22° 1	17°45	3°55	6° 0	19° 6	12°50	11°47	28° 1	20°33	S 26
M27	12 52 2	14°55'00	11°II 9	20° 8	17°37	15°31	22°15	17°52	3°58	5°59	19° 6	12°44	11°43	28° 8	20°37	M27
T 28	12 55 58	15°53'46	25°19	21°34	18°49	16°18	22°29	17°59	4° 0	5°58	19° 6	12°40	11°40	28°15	20°41	T 28
W29	12 59 55	16°52'30	9°J 2	23° 3	20° 1	17° 4	22°43	18° 6	4° 3	5°57	19° 6	12°38	11°37	28°22	20°44	W29
T 30	13 3 52	17°51'11	22°19	24°33	21°13	17°51	22°57	18°13	4° 6	5°55	19° 6	12°D38	11°34	28°28	20°48	T 30
F 31	13 7 48	18°V49'50	5°J13	26°H 5	22°B25	18°H37	23°H10	18°B20	4°II 8	5°M54	19°J 6	12°J39	11°J31	28°J35	20°V52	F 31

Delta T = 06m45s

Julian Calendar 1 March 1441 == Greg. Calendar 10 March 1441

APRIL 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	13 11 45	19°V48'27	17°J47	27°H39	23°B36	19°H24	23°H24	18°B27	4°II11	5°R53	19°J 6	12°R39	11°J28	28°J42	20°V56	S 1
S 2	13 15 41	20°47'01	0°M 8	29°15	24°48	20°10	23°38	18°35	4°14	5°M52	19° 7	12°J37	11°24	28°49	21° 0	S 2
M 3	13 19 38	21°45'33	12°17	0°V52	26° 0	20°57	23°52	18°42	4°17	5°51	19° 7	12°33	11°21	28°55	21° 4	M 3
T 4	13 23 34	22°44'03	24°19	2°30	27°11	21°43	24° 5	18°49	4°19	5°50	19° 7	12°27	11°18	29° 2	21° 7	T 4
W 5	13 27 31	23°42'32	6°J16	4°11	28°22	22°30	24°19	18°57	4°22	5°49	19° 7	12°18	11°15	29° 9	21°11	W 5
T 6	13 31 27	24°40'58	18° 9	5°53	29°34	23°16	24°32	19° 4	4°25	5°48	19° 8	12° 6	11°12	29°15	21°15	T 6
F 7	13 35 24	25°39'22	0°M 2	7°37	0°II45	24° 2	24°46	19°11	4°28	5°47	19° 8	11°53	11° 8	29°22	21°19	F 7
S 8	13 39 21	26°37'44	11°55	9°22	1°56	24°49	24°59	19°19	4°31	5°46	19° 8	11°40	11° 5	29°29	21°23	S 8
S 9	13 43 17	27°36'05	23°49	11°10	3° 7	25°35	25°12	19°26	4°34	5°45	19° 9	11°27	11° 2	29°36	21°26	S 9
M10	13 47 14	28°34'24	5°J47	12°59	4°18	26°21	25°26	19°34	4°37	5°44	19° 9	11°16	10°59	29°42	21°30	M10
T 11	13 51 10	29°32'41	17°50	14°49	5°29	27° 8	25°39	19°41	4°40	5°43	19°10	11° 7	10°56	29°49	21°34	T 11
W12	13 55 7	0°B30'57	0°J 1	16°42	6°39	27°54	25°52	19°49	4°43	5°43	19°10	11° 1	10°53	29°56	21°38	W12
T 13	13 59 3	1°29'11	12°25	18°36	7°50	28°40	26° 5	19°56	4°46	5°42	19°11	10°58	10°49	0°M 2	21°42	T 13
F 14	14 3 0	2°27'23	25° 4	20°32	9° 1	29°26	26°18	20° 4	4°49	5°41	19°11	10°56	10°46	0° 9	21°45	F 14
S 15	14 6 56	3°25'34	8°J 3	22°29	10°11	0°V12	26°31	20°11	4°52	5°40	19°12	10°56	10°43	0°16	21°49	S 15
S 16	14 10 53	4°23'44	21°26	24°29	11°22	0°58	26°44	20°19	4°55	5°40	19°12	10°56	10°40	0°23	21°53	S 16
M17	14 14 50	5°21'52	5°H16	26°29	12°32	1°44	26°57	20°27	4°59	5°39	19°13	10°55	10°37	0°29	21°57	M17
T 18	14 18 46	6°19'58	19°35	28°32	13°42	2°30	27°10	20°34	5° 2	5°38	19°13	10°51	10°34	0°36	22° 1	T 18
W19	14 22 43	7°18'04	4°V19	0°B36	14°52	3°16	27°23	20°42	5° 5	5°38	19°14	10°44	10°30	0°43	22° 4	W19
T 20	14 26 39	8°16'07	19°24	2°41	16° 2	4° 2	27°35	20°50	5° 8	5°37	19°15	10°36	10°27	0°50	22° 8	T 20
F 21	14 30 36	9°14'09	4°B42	4°48	17°12	4°48	27°48	20°57	5°12	5°37	19°15	10°25	10°24	0°56	22°12	F 21
S 22	14 34 32	10°12'10	20° 0	6°56	18°22	5°34	28° 1	21° 5	5°15	5°36	19°16	10°14	10°21	1° 3	22°15	S 22
S 23	14 38 29	11°10'09	5°II 8	9° 5	19°32	6°20	28°13	21°13	5°18	5°36	19°17	10° 4	10°18	1°10	22°19	S 23
M24	14 42 25	12° 8'06	19°55	11°15	20°41	7° 6	28°25	21°21	5°21	5°35	19°18	9°55	10°14	1°16	22°23	M24
T 25	14 46 22	13° 6'02	4°J15	13°25	21°51	7°51	28°38	21°28	5°25	5°35	19°18	9°50	10°11	1°23	22°26	T 25
W26	14 50 19	14° 3'56	18° 7	15°36	23° 0	8°37	28°50	21°36	5°28	5°34	19°19	9°47	10° 8	1°30	22°30	W26
T 27	14 54 15	15° 1'48	1°J29	17°47	24°10	9°23	29° 2	21°44	5°31	5°34	19°20	9°45	10° 5	1°37	22°34	T 27
F 28	14 58 12	15°59'38	14°25	19°58	25°19	10° 8	29°14	21°52	5°35	5°34	19°21	9°45	10° 2	1°43	22°37	F 28
S 29	15 2 8	16°57'26	26°59	22° 8	26°28	10°54	29°26	21°59	5°38	5°33	19°22	9°45	9°59	1°50	22°41	S 29
S 30	15 6 5	17°J55'13	9°M17	24°B18	27°II37	11°V39	29°H38	22°B 7	5°II42	5°M33	19°J23	9°J44	9°J55	1°M57	22°V44	S 30

Delta T = 06m45s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1441

## geocentric

MAY 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	15 10 1	18°52'57	21°11'21	26°8'26	28°11'46	12°27'25	29°18'50	22°28'15	5°11'45	5°R33	19°25'23	9°R40	9°25'52	2°11'3	22°27'48	M 1
T 2	15 13 58	19°50'41	3°11'18	28°34	29°54	13°10	0°17'2	22°23	5°48	5°11'32	19°24	9°24'34	9°49	2°10	22°51	T 2
W 3	15 17 54	20°48'22	15°11	0°11'40	1°3	13°55	0°14	22°31	5°52	5°32	19°25	9°25	9°46	2°17	22°55	W 3
T 4	15 21 51	21°46'02	27°3	2°44	2°11	14°41	0°25	22°39	5°55	5°32	19°26	9°13	9°43	2°24	22°58	T 4
F 5	15 25 47	22°43'41	8°11'55	4°46	3°20	15°26	0°37	22°46	5°59	5°32	19°27	9°0	9°40	2°30	23°2	F 5
S 6	15 29 44	23°41'19	20°51	6°46	4°28	16°11	0°48	22°54	6°2	5°32	19°28	8°47	9°36	2°37	23°5	S 6
S 7	15 33 41	24°38'55	2°11'50	8°44	5°36	16°56	0°59	23°2	6°6	5°32	19°29	8°34	9°33	2°44	23°9	S 7
M 8	15 37 37	25°36'30	14°55	10°39	6°44	17°41	1°11	23°10	6°9	5°D32	19°30	8°23	9°30	2°51	23°12	M 8
T 9	15 41 34	26°34'04	27°7	12°32	7°52	18°26	1°22	23°18	6°13	5°32	19°31	8°15	9°27	2°57	23°15	T 9
W10	15 45 30	27°31'36	9°27'27	14°22	8°59	19°11	1°33	23°25	6°16	5°32	19°33	8°9	9°24	3°4	23°19	W10
T 11	15 49 27	28°29'08	21°58	16°10	10°7	19°56	1°44	23°33	6°20	5°32	19°34	8°5	9°20	3°11	23°22	T 11
F 12	15 53 23	29°26'39	4°11'43	17°55	11°14	20°41	1°54	23°41	6°23	5°32	19°35	8°D4	9°17	3°17	23°25	F 12
S 13	15 57 20	0°11'24'09	17°44	19°36	12°21	21°26	2°5	23°49	6°27	5°32	19°36	8°4	9°14	3°24	23°29	S 13
S 14	16 1 17	1°21'38	1°11'5	21°15	13°28	22°11	2°16	23°57	6°30	5°32	19°37	8°R5	9°11	3°31	23°32	S 14
M15	16 5 13	2°19'07	14°49	22°51	14°35	22°56	2°26	24°4	6°34	5°33	19°38	8°4	9°8	3°38	23°35	M15
T 16	16 9 10	3°16'35	28°56	24°25	15°41	23°40	2°37	24°12	6°37	5°33	19°39	8°2	9°5	3°44	23°38	T 16
W17	16 13 6	4°14'01	13°11'27	25°55	16°48	24°25	2°47	24°20	6°41	5°33	19°41	7°57	9°1	3°51	23°41	W17
T 18	16 17 3	5°11'28	28°17	27°22	17°54	25°9	2°57	24°28	6°44	5°33	19°42	7°50	8°58	3°58	23°44	T 18
F 19	16 20 59	6°8'53	13°11'20	28°46	19°0	25°54	3°7	24°35	6°48	5°34	19°43	7°42	8°55	4°4	23°47	F 19
S 20	16 24 56	7°6'18	28°26	0°57	20°6	26°38	3°17	24°43	6°51	5°34	19°44	7°33	8°52	4°11	23°51	S 20
S 21	16 28 52	8°3'42	13°11'27	1°25	21°12	27°23	3°27	24°51	6°55	5°35	19°46	7°24	8°49	4°18	23°54	S 21
M22	16 32 49	9°1'05	28°12	2°40	22°18	28°7	3°37	24°58	6°59	5°35	19°47	7°17	8°46	4°25	23°56	M22
T 23	16 36 46	9°58'28	12°21'24	3°52	23°23	28°51	3°47	25°6	7°2	5°36	19°48	7°13	8°42	4°31	23°59	T 23
W24	16 40 42	10°55'49	26°29	5°0	24°28	29°36	3°56	25°14	7°6	5°36	19°50	7°10	8°39	4°38	24°2	W24
T 25	16 44 39	11°53'09	9°11'56	6°5	25°33	0°11'20	4°6	25°21	7°9	5°37	19°51	7°D10	8°36	4°45	24°5	T 25
F 26	16 48 35	12°50'29	22°57	7°7	26°38	1°4	4°15	25°29	7°13	5°37	19°52	7°10	8°33	4°52	24°8	F 26
S 27	16 52 32	13°47'47	5°11'35	8°5	27°43	1°48	4°24	25°37	7°16	5°38	19°54	7°11	8°30	4°58	24°11	S 27
S 28	16 56 28	14°45'04	17°54	8°59	28°47	2°32	4°33	25°44	7°20	5°38	19°55	7°R12	8°26	5°5	24°14	S 28
M29	17 0 25	15°42'20	0°11'0	9°50	29°51	3°16	4°42	25°52	7°23	5°39	19°56	7°10	8°23	5°12	24°16	M29
T 30	17 4 21	16°39'36	11°57	10°38	0°11'55	4°0	4°51	25°59	7°27	5°40	19°58	7°7	8°20	5°18	24°19	T 30
W31	17 8 18	17°11'36'51	23°11'50	11°21	1°11'59	4°11'44	4°11'59	26°11'7	7°11'30	5°11'40	19°59	7°11'2	8°11'17	5°11'25	24°11'22	W31

Delta T = 06m45s

Julian Calendar 1 May 1441 == Greg. Calendar 10 May 1441

JUNE 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	17 12 15	18°11'34'05	5°11'42	12°21'0	3°11'2	5°11'27	5°11'8	26°11'14	7°11'34	5°11'41	20°11'1	6°R55	8°11'14	5°11'32	24°11'24	T 1
F 2	17 16 11	19°31'18	17°36	12°36	4°5	6°11	5°16	26°22	7°37	5°42	20°2	6°11'47	8°11	5°39	24°27	F 2
S 3	17 20 8	20°28'31	29°36	13°7	5°8	6°55	5°25	26°29	7°41	5°43	20°4	6°38	8°7	5°45	24°29	S 3
S 4	17 24 4	21°25'43	11°11'43	13°34	6°11	7°38	5°33	26°36	7°44	5°44	20°5	6°30	8°4	5°52	24°32	S 4
M 5	17 28 1	22°22'55	23°59	13°57	7°13	8°22	5°41	26°44	7°48	5°44	20°6	6°23	8°1	5°59	24°34	M 5
T 6	17 31 57	23°20'06	6°11'24	14°15	8°15	9°5	5°48	26°51	7°51	5°45	20°8	6°18	7°58	6°6	24°36	T 6
W 7	17 35 54	24°17'18	18°59	14°28	9°17	9°48	5°56	26°58	7°55	5°46	20°9	6°14	7°55	6°12	24°39	W 7
T 8	17 39 50	25°14'29	1°11'46	14°38	10°18	10°32	6°4	27°5	7°58	5°47	20°11	6°D13	7°52	6°19	24°41	T 8
F 9	17 43 47	26°11'39	14°45	14°R42	11°19	11°15	6°11	27°13	8°1	5°48	20°13	6°13	7°48	6°26	24°43	F 9
S 10	17 47 44	27°8'50	27°58	14°42	12°20	11°58	6°18	27°20	8°5	5°49	20°14	6°14	7°45	6°32	24°46	S 10
S 11	17 51 40	28°6'01	11°11'26	14°37	13°20	12°41	6°25	27°27	8°8	5°50	20°16	6°16	7°42	6°39	24°48	S 11
M12	17 55 37	29°3'12	25°11	14°28	14°20	13°24	6°32	27°34	8°12	5°51	20°17	6°R17	7°39	6°46	24°50	M12
T 13	17 59 33	0°0'23	9°11'13	14°15	15°20	14°7	6°39	27°41	8°15	5°53	20°19	6°16	7°36	6°53	24°52	T 13
W14	18 3 30	0°57'34	23°31	13°57	16°19	14°50	6°46	27°48	8°18	5°54	20°20	6°15	7°32	6°59	24°54	W14
T 15	18 7 26	1°54'45	8°11'2	13°35	17°18	15°33	6°52	27°55	8°22	5°55	20°22	6°12	7°29	7°6	24°56	T 15
F 16	18 11 23	2°51'57	22°43	13°10	18°17	16°15	6°59	28°2	8°25	5°56	20°23	6°7	7°26	7°13	24°58	F 16
S 17	18 15 19	3°49'09	7°11'27	12°41	19°15	16°58	7°5	28°9	8°28	5°57	20°25	6°3	7°23	7°19	25°0	S 17
S 18	18 19 16	4°46'21	22°6	12°10	20°13	17°41	7°11	28°16	8°32	5°59	20°27	5°58	7°20	7°26	25°2	S 18
M19	18 23 13	5°43'33	6°11'34	11°36	21°10	18°23	7°17	28°23	8°35	6°0	20°28	5°55	7°17	7°33	25°3	M19
T 20	18 27 9	6°40'46	20°45	11°0	22°7	19°6	7°22	28°29	8°38	6°1	20°30	5°53	7°13	7°40	25°5	T 20
W21	18 31 6	7°37'58	4°11'34	10°23	23°4	19°48	7°28	28°36	8°41	6°2	20°31	5°D52	7°10	7°46	25°7	W21
T 22	18 35 2	8°35'10	17°59	9°45	24°0	20°30	7°33	28°43	8°44	6°4	20°33	5°52	7°7	7°53	25°8	T 22
F 23	18 38 59	9°32'22	1°11'1	9°7	24°55	21°13	7°39	28°49	8°48	6°5	20°35	5°54	7°4	8°0	25°10	F 23
S 24	18 42 55	10°29'34	13°42	8°29	25°50	21°55	7°44	28°56	8°51	6°7	20°36	5°55	7°1	8°7	25°12	S 24
S 25	18 46 52	11°26'47	26°4	7°53	26°45	22°37	7°48	29°2	8°54	6°8	20°38	5°57	6°58	8°13	25°13	S 25
M26	18 50 48	12°23'59	8°11'12	7°19	27°39	23°19	7°53	29°9	8°57	6°9	20°40	5°R57	6°54	8°20	25°14	M26
T 27	18 54 45	13°21'11	20°11	6°47	28°32	24°1	7°58	29°15	9°0	6°11	20°41	5°57	6°51	8°27	25°16	T 27
W28	18 58 42	14°18'23	2°11'4	6°18	29°25	24°43	8°2	29°21	9°3	6°12	20°43	5°56	6°48	8°33	25°17	W28
T 29	19 2 38	15°15'36	13°58	5°53	0°11'17	25°24	8°6	29°28	9°6	6°14	20°44	5°54	6°45	8°40	25°18	T 29
F 30	19 6 35	16°12'48	25°11'55	5°32	1°11'9	26°11'6	8°11'10	29°11'34	9°11'9	6°11'16	20°46	5°11'52	6°11'42	8°11'47	25°11'20	F 30

Delta T = 06m45s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1441

## geocentric

JULY 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	19 10 31	17°10'01	7°59	5°R15	2°00	26°48	8°Y14	29°840	9°II12	6°17	20°548	5°R49	6°Ω38	8°M54	25°Y21	S 1
S 2	19 14 28	18° 7'14	20°14	5°54	2°50	27°29	8°17	29°46	9°15	6°19	20°49	5°Ω46	6°35	9° 0	25°22	S 2
M 3	19 18 24	19° 4'28	2°340	4°57	3°40	28°11	8°21	29°52	9°18	6°20	20°51	5°44	6°32	9° 7	25°23	M 3
T 4	19 22 21	20° 1'42	15°20	4°D56	4°29	28°52	8°24	29°58	9°21	6°22	20°53	5°42	6°29	9°14	25°24	T 4
W 5	19 26 17	20°58'57	28°14	5° 0	5°17	29°33	8°27	0°II 4	9°24	6°24	20°54	5°41	6°26	9°21	25°25	W 5
T 6	19 30 14	21°56'12	11°22	5°11	6° 4	0°II15	8°30	0°10	9°27	6°25	20°56	5°D41	6°23	9°27	25°26	T 6
F 7	19 34 11	22°53'28	24°43	5°27	6°51	0°56	8°33	0°16	9°29	6°27	20°58	5°42	6°19	9°34	25°27	F 7
S 8	19 38 7	23°50'44	8°18	5°49	7°36	1°37	8°35	0°21	9°32	6°29	20°59	5°43	6°16	9°41	25°27	S 8
S 9	19 42 4	24°48'02	22° 4	6°17	8°21	2°18	8°38	0°27	9°35	6°31	21° 1	5°44	6°13	9°47	25°28	S 9
M10	19 46 0	25°45'20	6°Y 1	6°51	9° 5	2°59	8°40	0°33	9°38	6°32	21° 3	5°44	6°10	9°54	25°29	M10
T 11	19 49 57	26°42'40	20° 6	7°30	9°48	3°40	8°42	0°38	9°40	6°34	21° 4	5°45	6° 7	10° 1	25°30	T 11
W12	19 53 53	27°40'00	4°B19	8°16	10°30	4°20	8°43	0°44	9°43	6°36	21° 6	5°R45	6° 3	10° 8	25°30	W12
T 13	19 57 50	28°37'22	18°37	9° 8	11°11	5° 1	8°45	0°49	9°46	6°38	21° 8	5°44	6° 0	10°14	25°31	T 13
F 14	20 1 46	29°34'45	2°II56	10° 5	11°51	5°41	8°46	0°54	9°48	6°40	21° 9	5°44	5°57	10°21	25°31	F 14
S 15	20 5 43	0°Ω32'09	17°14	11° 8	12°30	6°22	8°47	1° 0	9°51	6°41	21°11	5°43	5°54	10°28	25°31	S 15
S 16	20 9 40	1°29'35	1°526	12°16	13° 8	7° 2	8°48	1° 5	9°53	6°43	21°12	5°43	5°51	10°34	25°32	S 16
M17	20 13 36	2°27'01	15°28	13°30	13°45	7°43	8°49	1°10	9°56	6°45	21°14	5°42	5°48	10°41	25°32	M17
T 18	20 17 33	3°24'28	29°17	14°49	14°20	8°23	8°50	1°15	9°58	6°47	21°16	5°D42	5°44	10°48	25°32	T 18
W19	20 21 29	4°21'57	12°Ω50	16°13	14°55	9° 3	8°50	1°20	10° 0	6°49	21°17	5°42	5°41	10°55	25°32	W19
T 20	20 25 26	5°19'26	26° 4	17°42	15°28	9°43	8°R50	1°25	10° 3	6°51	21°19	5°R42	5°38	11° 1	25°33	T 20
F 21	20 29 22	6°16'56	9°11 0	19°15	15°59	10°23	8°50	1°29	10° 5	6°53	21°21	5°42	5°35	11° 8	25°R33	F 21
S 22	20 33 19	7°14'27	21°38	20°53	16°29	11° 3	8°50	1°34	10° 7	6°55	21°22	5°42	5°32	11°15	25°33	S 22
S 23	20 37 15	8°11'59	4°Ω 0	22°34	16°58	11°43	8°49	1°39	10°10	6°57	21°24	5°42	5°29	11°22	25°33	S 23
M24	20 41 12	9° 9'32	16° 9	24°19	17°25	12°22	8°49	1°43	10°12	6°59	21°25	5°42	5°25	11°28	25°32	M24
T 25	20 45 9	10° 7'06	28° 8	26° 8	17°51	13° 2	8°48	1°48	10°14	7° 1	21°27	5°41	5°22	11°35	25°32	T 25
W26	20 49 5	11° 4'41	10°M 2	27°59	18°15	13°41	8°47	1°52	10°16	7° 3	21°28	5°D41	5°19	11°42	25°32	W26
T 27	20 53 2	12° 2'17	21°56	29°53	18°37	14°21	8°46	1°56	10°18	7° 5	21°30	5°41	5°16	11°48	25°32	T 27
F 28	20 56 58	12°59'53	3°Z54	1°Ω49	18°57	15° 0	8°44	2° 1	10°20	7° 7	21°32	5°42	5°13	11°55	25°31	F 28
S 29	21 0 55	13°57'31	16° 0	3°47	19°16	15°39	8°43	2° 5	10°22	7° 9	21°33	5°42	5° 9	12° 2	25°31	S 29
S 30	21 4 51	14°55'10	28°18	5°46	19°33	16°18	8°41	2° 9	10°24	7°11	21°35	5°43	5° 6	12° 9	25°31	S 30
M31	21 8 48	15°Ω52'50	10°Z52	7°Ω47	19°148	16°II57	8°Y39	2°II13	10°II26	7°13	21°36	5°Ω44	5°Ω 3	12°M15	25°Y30	M31

Delta T = 06m44s

Julian Calendar 1 July 1441 == Greg. Calendar 10 July 1441

AUGUST 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	21 12 44	16°Ω50'32	23°Z44	9°Ω47	20°11 0	17°II36	8°R37	2°II16	10°II28	7°15	21°538	5°Ω45	5°Ω 0	12°M22	25°R29	T 1
W 2	21 16 41	17°48'14	6°556	11°49	20°11	18°15	8°Y34	2°20	10°30	7°18	21°39	5°R45	4°57	12°29	25°Y29	W 2
T 3	21 20 38	18°45'58	20°56	13°50	20°20	18°54	8°32	2°24	10°32	7°20	21°41	5°45	4°54	12°36	25°28	T 3
F 4	21 24 34	19°43'43	4°K13	15°51	20°26	19°32	8°29	2°27	10°33	7°22	21°42	5°44	4°50	12°42	25°27	F 4
S 5	21 28 31	20°41'30	18°15	17°52	20°31	20°11	8°26	2°31	10°35	7°24	21°44	5°42	4°47	12°49	25°27	S 5
S 6	21 32 27	21°39'18	2°Y27	19°52	20°R32	20°49	8°23	2°34	10°37	7°26	21°45	5°40	4°44	12°56	25°26	S 6
M 7	21 36 24	22°37'08	16°46	21°51	20°32	21°28	8°19	2°38	10°38	7°28	21°47	5°38	4°41	13° 2	25°25	M 7
T 8	21 40 20	23°34'59	1°B 6	23°50	20°30	22° 6	8°16	2°41	10°40	7°30	21°48	5°36	4°38	13° 9	25°24	T 8
W 9	21 44 17	24°32'53	15°24	25°48	20°25	22°44	8°12	2°44	10°41	7°33	21°50	5°35	4°35	13°16	25°23	W 9
T 10	21 48 13	25°30'48	29°37	27°44	20°17	23°22	8° 8	2°47	10°43	7°35	21°51	5°D35	4°31	13°23	25°22	T 10
F 11	21 52 10	26°28'46	13°II43	29°40	20° 7	24° 0	8° 4	2°50	10°44	7°37	21°52	5°36	4°28	13°29	25°21	F 11
S 12	21 56 7	27°26'45	27°39	1°11 34	19°55	24°37	8° 0	2°53	10°46	7°39	21°54	5°37	4°25	13°36	25°20	S 12
S 13	22 0 3	28°24'46	11°526	3°27	19°41	25°15	7°56	2°55	10°47	7°41	21°55	5°39	4°22	13°43	25°18	S 13
M14	22 4 0	29°22'50	25° 1	5°19	19°24	25°53	7°51	2°58	10°48	7°44	21°57	5°40	4°19	13°49	25°17	M14
T 15	22 7 56	0°11 20'54	8°Ω24	7°10	19° 5	26°30	7°46	3° 0	10°50	7°46	21°58	5°R40	4°15	13°56	25°16	T 15
W16	22 11 53	1°19'01	21°35	8°59	18°44	27° 7	7°41	3° 3	10°51	7°48	21°59	5°39	4°12	14° 3	25°14	W16
T 17	22 15 49	2°17'09	4°11 32	10°47	18°21	27°45	7°36	3° 5	10°52	7°50	22° 1	5°37	4° 9	14°10	25°13	T 17
F 18	22 19 46	3°15'19	17°15	12°34	17°55	28°22	7°31	3° 7	10°53	7°52	22° 2	5°33	4° 6	14°16	25°11	F 18
S 19	22 23 42	4°13'31	29°45	14°20	17°28	28°59	7°25	3° 9	10°54	7°55	22° 3	5°29	4° 3	14°23	25°10	S 19
S 20	22 27 39	5°11'45	12°Ω 2	16° 5	16°59	29°36	7°20	3°11	10°55	7°57	22° 4	5°24	4° 0	14°30	25° 8	S 20
M21	22 31 36	6°10'00	24° 8	17°48	16°28	0°512	7°14	3°13	10°56	7°59	22° 6	5°19	3°56	14°37	25° 7	M21
T 22	22 35 32	7° 8'16	6°M 6	19°30	15°55	0°49	7° 8	3°15	10°57	8° 1	22° 7	5°14	3°53	14°43	25° 5	T 22
W23	22 39 29	8° 6'34	17°59	21°11	15°22	1°25	7° 2	3°17	10°58	8° 4	22° 8	5°11	3°50	14°50	25° 3	W23
T 24	22 43 25	9° 4'54	29°51	22°51	14°47	2° 2	6°56	3°18	10°59	8° 6	22° 9	5° 9	3°47	14°57	25° 2	T 24
F 25	22 47 22	10° 3'16	11°Z47	24°30	14°11	2°38	6°50	3°20	10°59	8° 8	22°11	5°D 9	3°44	15° 3	25° 0	F 25
S 26	22 51 18	11° 1'39	23°51	26° 7	13°35	3°14	6°43	3°21	11° 0	8°10	22°12	5° 9	3°40	15°10	24°58	S 26
S 27	22 55 15	12° 0'03	6°Z 9	27°44	12°58	3°50	6°37	3°22	11° 1	8°13	22°13	5°11	3°37	15°17	24°56	S 27
M28	22 59 11	12°58'30	18°45	29°19	12°21	4°26	6°30	3°23	11° 1	8°15	22°14	5°13	3°34	15°24	24°54	M28
T 29	23 3 8	13°56'58	1°Z42	0°Ω54	11°44	5° 1	6°23	3°24	11° 2	8°17	22°15	5°R13	3°31	15°30	24°52	T 29
W30	23 7 5	14°55'27	15° 3	2°27	11° 7	5°37	6°16	3°25	11° 2	8°19	22°16	5°13	3°28	15°37	24°50	W30
T 31	23 11 1	15°11 53'59	28°Z49	3°Ω59	10°11 31	6°512	6°Y 9	3°II26	11°II 3	8°11	22°17	5°Ω11	3°Ω25	15°M44	24°Y48	T 31

Delta T = 06m44s

Julian Calendar

# ASTRODIENST EPHEMERIS for the year 1441

## geocentric

SEPTEMBER 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	23 14 58	16 <sup>h</sup> 52'32"	12 <sup>h</sup> 58'	5 <sup>h</sup> 30'	9 <sup>h</sup> R55	6 <sup>h</sup> 548	6 <sup>h</sup> R 2	3 <sup>h</sup> II27	11 <sup>h</sup> II 3	8 <sup>h</sup> mp24	22 <sup>h</sup> 518	5 <sup>h</sup> R 7	3 <sup>h</sup> Ω21	15 <sup>h</sup> ml50	24 <sup>h</sup> R46	F 1
S 2	23 18 54	17 <sup>h</sup> 51'07"	27°26'	7° 0'	9 <sup>h</sup> mp21	7°23'	5 <sup>h</sup> Y55	3°27'	11° 3'	8°26'	22°20'	5 <sup>h</sup> Ω 1	3°18'	15°57'	24 <sup>h</sup> Y44	S 2
S 3	23 22 51	18°49'44"	12 <sup>h</sup> Y 7	8°29'	8°47'	7°58'	5°47'	3°28'	11° 4'	8°28'	22°21'	4°55'	3°15'	16° 4'	24°41'	S 3
M 4	23 26 47	19°48'24"	26°53'	9°57'	8°16'	8°33'	5°40'	3°28'	11° 4'	8°30'	22°22'	4°48'	3°12'	16°11'	24°39'	M 4
T 5	23 30 44	20°47'05"	11 <sup>h</sup> 36'	11°24'	9° 7'	9° 7'	5°32'	3°29'	11° 4'	8°32'	22°23'	4°42'	3° 9'	16°17'	24°37'	T 5
W 6	23 34 40	21°45'49"	26°10'	12°50'	7°17'	9°42'	5°25'	3°29'	11° 4'	8°35'	22°23'	4°37'	3° 6'	16°24'	24°35'	W 6
T 7	23 38 37	22°44'35"	10 <sup>h</sup> II30	14°15'	6°50'	10°17'	5°17'	3°R29	11° 4'	8°37'	22°24'	4°35'	3° 2'	16°31'	24°32'	T 7
F 8	23 42 33	23°43'24"	24°33'	15°38'	6°26'	10°51'	5° 9'	3°29'	11°R 4	8°39'	22°25'	4°D34	2°59'	16°37'	24°30'	F 8
S 9	23 46 30	24°42'15"	8 <sup>h</sup> 519	17° 1'	6° 3'	11°25'	5° 2'	3°28'	11° 4'	8°41'	22°26'	4°35'	2°56'	16°44'	24°27'	S 9
S 10	23 50 27	25°41'08"	21°49'	18°22'	5°43'	11°59'	4°54'	3°28'	11° 4'	8°43'	22°27'	4°36'	2°53'	16°51'	24°25'	S 10
M 11	23 54 23	26°40'03"	5 <sup>h</sup> Ω 3	19°42'	5°25'	12°33'	4°46'	3°28'	11° 4'	8°45'	22°28'	4°R37	2°50'	16°58'	24°22'	M 11
T 12	23 58 20	27°39'01"	18° 4'	21° 1'	5°10'	13° 6'	4°38'	3°27'	11° 4'	8°48'	22°29'	4°36'	2°46'	17° 4'	24°20'	T 12
W 13	0 2 16	28°38'01"	0 <sup>h</sup> mp53	22°18'	4°57'	13°40'	4°30'	3°27'	11° 3'	8°50'	22°30'	4°32'	2°43'	17°11'	24°17'	W 13
T 14	0 6 13	29°37'03"	13°31'	23°34'	4°46'	14°13'	4°22'	3°26'	11° 3'	8°52'	22°30'	4°27'	2°40'	17°18'	24°15'	T 14
F 15	0 10 9	0 <sup>h</sup> 36'07"	25°58'	24°49'	4°38'	14°46'	4°14'	3°25'	11° 3'	8°54'	22°31'	4°19'	2°37'	17°24'	24°12'	F 15
S 16	0 14 6	1°35'13"	8 <sup>h</sup> Ω16	26° 2'	4°32'	15°19'	4° 6'	3°24'	11° 2'	8°56'	22°32'	4° 9'	2°34'	17°31'	24°10'	S 16
S 17	0 18 2	2°34'21"	20°25'	27°13'	4°28'	15°52'	3°58'	3°23'	11° 2'	8°58'	22°33'	3°57'	2°31'	17°38'	24° 7'	S 17
M 18	0 21 59	3°33'31"	2 <sup>h</sup> ml26	28°23'	4°D27	16°25'	3°50'	3°22'	11° 1'	9° 0'	22°33'	3°46'	2°27'	17°45'	24° 4'	M 18
T 19	0 25 56	4°32'44"	14°21'	29°30'	4°29'	16°57'	3°42'	3°21'	11° 1'	9° 2'	22°34'	3°35'	2°24'	17°51'	24° 1'	T 19
W 20	0 29 52	5°31'58"	26°12'	0 <sup>h</sup> ml36	4°33'	17°29'	3°33'	3°19'	11° 0'	9° 4'	22°35'	3°27'	2°21'	17°58'	23°59'	W 20
T 21	0 33 49	6°31'14"	8 <sup>h</sup> Y 2	1°39'	4°39'	18° 1'	3°25'	3°18'	11° 0'	9° 6'	22°35'	3°20'	2°18'	18° 5'	23°56'	T 21
F 22	0 37 45	7°30'32"	19°55'	2°40'	4°47'	18°33'	3°17'	3°16'	10°59'	9° 8'	22°36'	3°16'	2°15'	18°12'	23°53'	F 22
S 23	0 41 42	8°29'52"	1 <sup>h</sup> 356	3°39'	4°57'	19° 5'	3° 9'	3°14'	10°58'	9°10'	22°37'	3°15'	2°12'	18°18'	23°50'	S 23
S 24	0 45 38	9°29'13"	14°10'	4°34'	5°10'	19°36'	3° 1'	3°13'	10°57'	9°12'	22°37'	3°D14	2° 8'	18°25'	23°48'	S 24
M 25	0 49 35	10°28'37"	26°41'	5°26'	5°24'	20° 8'	2°53'	3°11'	10°56'	9°14'	22°38'	3°R15	2° 5'	18°32'	23°45'	M 25
T 26	0 53 31	11°28'02"	9 <sup>h</sup> 35	6°15'	5°41'	20°39'	2°46'	3° 9'	10°56'	9°16'	22°38'	3°15'	2° 2'	18°38'	23°42'	T 26
W 27	0 57 28	12°27'29"	22°57'	7° 0'	6° 0'	21°10'	2°38'	3° 7'	10°55'	9°18'	22°39'	3°13'	1°59'	18°45'	23°39'	W 27
T 28	1 1 25	13°26'57"	6 <sup>h</sup> Y47	7°41'	6°20'	21°40'	2°30'	3° 4'	10°54'	9°20'	22°39'	3° 9'	1°56'	18°52'	23°36'	T 28
F 29	1 5 21	14°26'28"	21° 5'	8°18'	6°43'	22°11'	2°22'	3° 2'	10°53'	9°22'	22°39'	3° 3'	1°52'	18°59'	23°33'	F 29
S 30	1 9 18	15°26'00"	5 <sup>h</sup> Y49	8 <sup>h</sup> ml49	7 <sup>h</sup> mp 7	22°541	2°Y15	3 <sup>h</sup> II 0	10 <sup>h</sup> II51	9 <sup>h</sup> mp24	22°540	2°Ω54	1°Ω49	19 <sup>h</sup> ml 5	23°Y30	S 30

Delta T = 06m44s

Julian Calendar 1 Sept. 1441 == Greg. Calendar 10 Sept. 1441

OCTOBER 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	1 13 14	16 <sup>h</sup> 25'35"	20 <sup>h</sup> Y50	9 <sup>h</sup> ml15	7 <sup>h</sup> mp33	23°511	2°R 7	2°R57	10°R50	9 <sup>h</sup> mp26	22°540	2°R43	1°Ω46	19 <sup>h</sup> ml12	23°R27	S 1
M 2	1 17 11	17°25'11"	6 <sup>h</sup> Y 0	9°35'	8° 0'	23°41'	1°Y59	2°II54	10°II49	9°28'	22°41'	2°Ω33	1°43'	19°19'	23°Y25	M 2
T 3	1 21 7	18°24'50"	21° 7'	9°48'	8°30'	24°10'	1°52'	2°52'	10°48'	9°29'	22°41'	2°23'	1°40'	19°25'	23°22'	T 3
W 4	1 25 4	19°24'31"	6 <sup>h</sup> II 3	9°R54	9° 1'	24°40'	1°45'	2°49'	10°47'	9°31'	22°41'	2°15'	1°37'	19°32'	23°19'	W 4
T 5	1 29 0	20°24'14"	20°38'	9°53'	9°33'	25° 9'	1°37'	2°46'	10°45'	9°33'	22°42'	2° 9'	1°33'	19°39'	23°16'	T 5
F 6	1 32 57	21°24'00"	4 <sup>h</sup> 551	9°43'	10° 7'	25°38'	1°30'	2°43'	10°44'	9°35'	22°42'	2° 7'	1°30'	19°46'	23°13'	F 6
S 7	1 36 54	22°23'47"	18°39'	9°25'	10°42'	26° 6'	1°23'	2°40'	10°43'	9°37'	22°42'	2°D 6	1°27'	19°52'	23°10'	S 7
S 8	1 40 50	23°23'38"	2°Ω 3	8°58'	11°18'	26°35'	1°16'	2°37'	10°41'	9°38'	22°42'	2°R 6	1°24'	19°59'	23° 7'	S 8
M 9	1 44 47	24°23'30"	15° 8'	8°21'	11°56'	27° 3'	1° 9'	2°34'	10°40'	9°40'	22°42'	2° 5'	1°21'	20° 6'	23° 4'	M 9
T 10	1 48 43	25°23'25"	27°55'	7°36'	12°35'	27°31'	1° 3'	2°30'	10°38'	9°42'	22°43'	2° 3'	1°17'	20°12'	23° 1'	T 10
W 11	1 52 40	26°23'21"	10 <sup>h</sup> mp28	6°42'	13°16'	27°58'	0°56'	2°27'	10°36'	9°43'	22°43'	1°59'	1°14'	20°19'	22°58'	W 11
T 12	1 56 36	27°23'20"	22°51'	5°40'	13°57'	28°25'	0°50'	2°23'	10°35'	9°45'	22°43'	1°51'	1°11'	20°26'	22°55'	T 12
F 13	2 0 33	28°23'21"	5 <sup>h</sup> Ω 4	4°32'	14°40'	28°52'	0°43'	2°20'	10°33'	9°47'	22°43'	1°40'	1° 8'	20°33'	22°52'	F 13
S 14	2 4 29	29°23'24"	17°10'	3°18'	15°24'	29°19'	0°37'	2°16'	10°31'	9°48'	22°43'	1°27'	1° 5'	20°39'	22°49'	S 14
S 15	2 8 26	0 <sup>h</sup> ml23'29	29°11'	2° 1'	16° 8'	29°46'	0°31'	2°12'	10°30'	9°50'	22°R43	1°12'	1° 2'	20°46'	22°46'	S 15
M 16	2 12 22	1°23'36"	11 <sup>h</sup> ml 7	0°43'	16°54'	0°Ω12	0°25'	2° 8'	10°28'	9°51'	22°43'	0°57'	0°58'	20°53'	22°43'	M 16
T 17	2 16 19	2°23'44"	22°59'	29°227	17°41'	0°38'	0°20'	2° 5'	10°26'	9°53'	22°43'	0°43'	0°55'	20°59'	22°41'	T 17
W 18	2 20 16	3°23'55"	4 <sup>h</sup> Y49	28°14'	18°28'	1° 3'	0°14'	2° 1'	10°24'	9°54'	22°43'	0°31'	0°52'	21° 6'	22°38'	W 18
T 19	2 24 12	4°24'07"	16°39'	27° 8'	19°17'	1°28'	0° 9'	1°57'	10°22'	9°56'	22°43'	0°22'	0°49'	21°13'	22°35'	T 19
F 20	2 28 9	5°24'21"	28°32'	26°10'	20° 6'	1°53'	0° 3'	1°52'	10°20'	9°57'	22°43'	0°16'	0°46'	21°20'	22°32'	F 20
S 21	2 32 5	6°24'36"	10 <sup>h</sup> 332	25°21'	20°56'	2°18'	29 <sup>h</sup> Y58	1°48'	10°18'	9°59'	22°42'	0°12'	0°43'	21°26'	22°29'	S 21
S 22	2 36 2	7°24'53"	22°43'	24°44'	21°47'	2°42'	29°54'	1°44'	10°16'	10° 0'	22°42'	0°11'	0°39'	21°33'	22°26'	S 22
M 23	2 39 58	8°25'12"	5 <sup>h</sup> Ω10	24°18'	22°39'	3° 6'	29°49'	1°40'	10°14'	10° 2'	22°42'	0°11'	0°36'	21°40'	22°23'	M 23
T 24	2 43 55	9°25'32"	17°58'	24° 3'	23°31'	3°29'	29°44'	1°35'	10°12'	10° 3'	22°42'	0°11'	0°33'	21°46'	22°21'	T 24
W 25	2 47 51	10°25'53"	1 <sup>h</sup> Y11	24°D 0	24°24'	3°53'	29°40'	1°31'	10°10'	10° 4'	22°42'	0° 9'	0°30'	21°53'	22°18'	W 25
T 26	2 51 48	11°26'16"	14°54'	24° 9'	25°18'	4°15'	29°36'	1°27'	10° 8'	10° 5'	22°41'	0° 6'	0°27'	22° 0'	22°15'	T 26
F 27	2 55 45	12°26'40"	29° 8'	24°27'	26°12'	4°38'	29°32'	1°22'	10° 6'	10° 7'	22°41'	29°559	0°23'	22° 7'	22°12'	F 27
S 28	2 59 41	13°27'05"	13 <sup>h</sup> Y50	24°56'	27° 7'	5° 0'	29°28'	1°18'	10° 4'	10° 8'	22°41'	29°51'	0°20'	22°13'	22°10'	S 28
S 29	3 3 38	14°27'32"	28°55'	25°32'	28° 3'	5°22'	29°24'	1°13'	10° 2'	10° 9'	22°40'	29°40'	0°17'	22°20'	22° 7'	S 29
M 30	3 7 34	15°28'01"	14 <sup>h</sup> Y14	26°17'	28°59'	5°43'	29°21'	1° 8'	9°59'	10°10'	22°40'	29°29'	0°14'	22°27'	22° 4'	M 30
T 31	3 11 31	16 <sup>h</sup> ml28'31	29°Y35	27°29	29 <sup>h</sup> mp56	6°Ω 4	29 <sup>h</sup> Y18	1 <sup>h</sup> II 4	9 <sup>h</sup> II57	10 <sup>h</sup> mp11	22°540	29°519	0°Ω11	22 <sup>h</sup> ml33	22°Y 2	T 31

Delta T = 06m44s

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1441  
geocentric

NOVEMBER 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	3 15 27	17 <sup>11</sup> 29'03	14 <sup>11</sup> 47	28 <sup>21</sup> 6	0 <sup>0</sup> 54	6 <sup>0</sup> 24	29 <sup>0</sup> 15	0 <sup>0</sup> 59	9 <sup>0</sup> 55	10 <sup>10</sup> 13	22 <sup>0</sup> 39	29 <sup>0</sup> 11	0 <sup>0</sup> 8	22 <sup>0</sup> 40	21 <sup>0</sup> 59	W 1
T 2	3 19 24	18 <sup>0</sup> 29'37	29 <sup>0</sup> 40	29 <sup>0</sup> 9	1 <sup>0</sup> 52	6 <sup>0</sup> 44	29 <sup>0</sup> 12	0 <sup>0</sup> 54	9 <sup>0</sup> 53	10 <sup>10</sup> 14	22 <sup>0</sup> 39	29 <sup>0</sup> 5	0 <sup>0</sup> 4	22 <sup>0</sup> 47	21 <sup>0</sup> 57	T 2
F 3	3 23 20	19 <sup>0</sup> 30'12	14 <sup>0</sup> 57	0 <sup>0</sup> 17	2 <sup>0</sup> 50	7 <sup>0</sup> 4	29 <sup>0</sup> 9	0 <sup>0</sup> 49	9 <sup>0</sup> 50	10 <sup>10</sup> 15	22 <sup>0</sup> 38	29 <sup>0</sup> 2	0 <sup>0</sup> 1	22 <sup>0</sup> 54	21 <sup>0</sup> 54	F 3
S 4	3 27 17	20 <sup>0</sup> 30'49	28 <sup>0</sup> 7	1 <sup>0</sup> 29	3 <sup>0</sup> 49	7 <sup>0</sup> 23	29 <sup>0</sup> 7	0 <sup>0</sup> 45	9 <sup>0</sup> 48	10 <sup>10</sup> 16	22 <sup>0</sup> 38	29 <sup>0</sup> D 1	29 <sup>0</sup> 58	23 <sup>0</sup> 0	21 <sup>0</sup> 51	S 4
S 5	3 31 14	21 <sup>0</sup> 31'28	11 <sup>0</sup> 38	2 <sup>0</sup> 44	4 <sup>0</sup> 49	7 <sup>0</sup> 42	29 <sup>0</sup> 5	0 <sup>0</sup> 40	9 <sup>0</sup> 45	10 <sup>10</sup> 17	22 <sup>0</sup> 37	29 <sup>0</sup> 1	29 <sup>0</sup> 55	23 <sup>0</sup> 7	21 <sup>0</sup> 49	S 5
M 6	3 35 10	22 <sup>0</sup> 32'08	24 <sup>0</sup> 44	4 <sup>0</sup> 2	5 <sup>0</sup> 49	8 <sup>0</sup> 0	29 <sup>0</sup> 3	0 <sup>0</sup> 35	9 <sup>0</sup> 43	10 <sup>10</sup> 18	22 <sup>0</sup> 37	29 <sup>0</sup> R 2	29 <sup>0</sup> 52	23 <sup>0</sup> 14	21 <sup>0</sup> 47	M 6
T 7	3 39 7	23 <sup>0</sup> 32'50	7 <sup>0</sup> 28	5 <sup>0</sup> 22	6 <sup>0</sup> 49	8 <sup>0</sup> 18	29 <sup>0</sup> 1	0 <sup>0</sup> 30	9 <sup>0</sup> 41	10 <sup>10</sup> 19	22 <sup>0</sup> 36	29 <sup>0</sup> 1	29 <sup>0</sup> 49	23 <sup>0</sup> 20	21 <sup>0</sup> 44	T 7
W 8	3 43 3	24 <sup>0</sup> 33'34	19 <sup>0</sup> 55	6 <sup>0</sup> 44	7 <sup>0</sup> 50	8 <sup>0</sup> 36	28 <sup>0</sup> 59	0 <sup>0</sup> 25	9 <sup>0</sup> 38	10 <sup>10</sup> 19	22 <sup>0</sup> 36	28 <sup>0</sup> 57	29 <sup>0</sup> 45	23 <sup>0</sup> 27	21 <sup>0</sup> 42	W 8
T 9	3 47 0	25 <sup>0</sup> 34'20	2 <sup>0</sup> 10	8 <sup>0</sup> 9	8 <sup>0</sup> 52	8 <sup>0</sup> 52	28 <sup>0</sup> 58	0 <sup>0</sup> 20	9 <sup>0</sup> 36	10 <sup>10</sup> 20	22 <sup>0</sup> 35	28 <sup>0</sup> 52	29 <sup>0</sup> 42	23 <sup>0</sup> 34	21 <sup>0</sup> 39	T 9
F 10	3 50 56	26 <sup>0</sup> 35'06	14 <sup>0</sup> 14	9 <sup>0</sup> 34	9 <sup>0</sup> 53	9 <sup>0</sup> 9	28 <sup>0</sup> 57	0 <sup>0</sup> 15	9 <sup>0</sup> 33	10 <sup>10</sup> 21	22 <sup>0</sup> 34	28 <sup>0</sup> 43	29 <sup>0</sup> 39	23 <sup>0</sup> 41	21 <sup>0</sup> 37	F 10
S 11	3 54 53	27 <sup>0</sup> 35'55	26 <sup>0</sup> 12	11 <sup>0</sup> 1	10 <sup>0</sup> 55	9 <sup>0</sup> 25	28 <sup>0</sup> 56	0 <sup>0</sup> 10	9 <sup>0</sup> 31	10 <sup>10</sup> 22	22 <sup>0</sup> 34	28 <sup>0</sup> 33	29 <sup>0</sup> 36	23 <sup>0</sup> 47	21 <sup>0</sup> 35	S 11
S 12	3 58 49	28 <sup>0</sup> 36'45	8 <sup>0</sup> 16	12 <sup>0</sup> 29	11 <sup>0</sup> 58	9 <sup>0</sup> 40	28 <sup>0</sup> 55	0 <sup>0</sup> 5	9 <sup>0</sup> 28	10 <sup>10</sup> 23	22 <sup>0</sup> 33	28 <sup>0</sup> 21	29 <sup>0</sup> 33	23 <sup>0</sup> 54	21 <sup>0</sup> 33	S 12
M13	4 2 46	29 <sup>0</sup> 37'36	19 <sup>0</sup> 58	13 <sup>0</sup> 58	13 <sup>0</sup> 1	9 <sup>0</sup> 55	28 <sup>0</sup> 54	0 <sup>0</sup> 0	9 <sup>0</sup> 26	10 <sup>10</sup> 23	22 <sup>0</sup> 32	28 <sup>0</sup> 8	29 <sup>0</sup> 29	24 <sup>0</sup> 1	21 <sup>0</sup> 31	M13
T 14	4 6 43	0 <sup>0</sup> 38'28	1 <sup>0</sup> 49	15 <sup>0</sup> 28	14 <sup>0</sup> 4	10 <sup>0</sup> 9	28 <sup>0</sup> 54	29 <sup>0</sup> 56	9 <sup>0</sup> 23	10 <sup>10</sup> 24	22 <sup>0</sup> 32	27 <sup>0</sup> 57	29 <sup>0</sup> 26	24 <sup>0</sup> 7	21 <sup>0</sup> 28	T 14
W15	4 10 39	1 <sup>0</sup> 39'22	13 <sup>0</sup> 41	16 <sup>0</sup> 58	15 <sup>0</sup> 8	10 <sup>0</sup> 23	28 <sup>0</sup> D54	29 <sup>0</sup> 51	9 <sup>0</sup> 21	10 <sup>10</sup> 25	22 <sup>0</sup> 31	27 <sup>0</sup> 47	29 <sup>0</sup> 23	24 <sup>0</sup> 14	21 <sup>0</sup> 26	W15
T 16	4 14 36	2 <sup>0</sup> 40'16	25 <sup>0</sup> 36	18 <sup>0</sup> 29	16 <sup>0</sup> 12	10 <sup>0</sup> 36	28 <sup>0</sup> 54	29 <sup>0</sup> 46	9 <sup>0</sup> 18	10 <sup>10</sup> 25	22 <sup>0</sup> 30	27 <sup>0</sup> 40	29 <sup>0</sup> 20	24 <sup>0</sup> 21	21 <sup>0</sup> 24	T 16
F 17	4 18 32	3 <sup>0</sup> 41'12	7 <sup>0</sup> 34	20 <sup>0</sup> 0	17 <sup>0</sup> 16	10 <sup>0</sup> 49	28 <sup>0</sup> 54	29 <sup>0</sup> 41	9 <sup>0</sup> 16	10 <sup>10</sup> 26	22 <sup>0</sup> 29	27 <sup>0</sup> 35	29 <sup>0</sup> 17	24 <sup>0</sup> 28	21 <sup>0</sup> 22	F 17
S 18	4 22 29	4 <sup>0</sup> 42'09	19 <sup>0</sup> 39	21 <sup>0</sup> 31	18 <sup>0</sup> 20	11 <sup>0</sup> 1	28 <sup>0</sup> 54	29 <sup>0</sup> 36	9 <sup>0</sup> 13	10 <sup>10</sup> 27	22 <sup>0</sup> 29	27 <sup>0</sup> 32	29 <sup>0</sup> 14	24 <sup>0</sup> 34	21 <sup>0</sup> 20	S 18
S 19	4 26 25	5 <sup>0</sup> 43'06	1 <sup>0</sup> 55	23 <sup>0</sup> 3	19 <sup>0</sup> 25	11 <sup>0</sup> 12	28 <sup>0</sup> 55	29 <sup>0</sup> 31	9 <sup>0</sup> 11	10 <sup>10</sup> 27	22 <sup>0</sup> 28	27 <sup>0</sup> D32	29 <sup>0</sup> 10	24 <sup>0</sup> 41	21 <sup>0</sup> 18	S 19
M20	4 30 22	6 <sup>0</sup> 44'04	14 <sup>0</sup> 23	24 <sup>0</sup> 35	20 <sup>0</sup> 30	11 <sup>0</sup> 23	28 <sup>0</sup> 56	29 <sup>0</sup> 26	9 <sup>0</sup> 8	10 <sup>10</sup> 28	22 <sup>0</sup> 27	27 <sup>0</sup> 33	29 <sup>0</sup> 7	24 <sup>0</sup> 48	21 <sup>0</sup> 17	M20
T 21	4 34 18	7 <sup>0</sup> 45'03	27 <sup>0</sup> 9	26 <sup>0</sup> 8	21 <sup>0</sup> 36	11 <sup>0</sup> 33	28 <sup>0</sup> 57	29 <sup>0</sup> 21	9 <sup>0</sup> 6	10 <sup>10</sup> 28	22 <sup>0</sup> 26	27 <sup>0</sup> 34	29 <sup>0</sup> 4	24 <sup>0</sup> 54	21 <sup>0</sup> 15	T 21
W22	4 38 15	8 <sup>0</sup> 46'03	10 <sup>0</sup> 17	27 <sup>0</sup> 40	22 <sup>0</sup> 41	11 <sup>0</sup> 43	28 <sup>0</sup> 58	29 <sup>0</sup> 16	9 <sup>0</sup> 3	10 <sup>10</sup> 28	22 <sup>0</sup> 25	27 <sup>0</sup> R35	29 <sup>0</sup> 1	25 <sup>0</sup> 1	21 <sup>0</sup> 13	W22
T 23	4 42 12	9 <sup>0</sup> 47'03	23 <sup>0</sup> 50	29 <sup>0</sup> 12	23 <sup>0</sup> 47	11 <sup>0</sup> 51	29 <sup>0</sup> 0	29 <sup>0</sup> 11	9 <sup>0</sup> 1	10 <sup>10</sup> 29	22 <sup>0</sup> 24	27 <sup>0</sup> 34	28 <sup>0</sup> 58	25 <sup>0</sup> 8	21 <sup>0</sup> 11	T 23
F 24	4 46 8	10 <sup>0</sup> 48'03	7 <sup>0</sup> 50	0 <sup>0</sup> 45	24 <sup>0</sup> 53	12 <sup>0</sup> 0	29 <sup>0</sup> 2	29 <sup>0</sup> 7	8 <sup>0</sup> 58	10 <sup>10</sup> 29	22 <sup>0</sup> 23	27 <sup>0</sup> 31	28 <sup>0</sup> 55	25 <sup>0</sup> 14	21 <sup>0</sup> 10	F 24
S 25	4 50 5	11 <sup>0</sup> 49'05	22 <sup>0</sup> 17	2 <sup>0</sup> 18	26 <sup>0</sup> 0	12 <sup>0</sup> 7	29 <sup>0</sup> 4	29 <sup>0</sup> 2	8 <sup>0</sup> 55	10 <sup>10</sup> 30	22 <sup>0</sup> 22	27 <sup>0</sup> 26	28 <sup>0</sup> 51	25 <sup>0</sup> 21	21 <sup>0</sup> 8	S 25
S 26	4 54 1	12 <sup>0</sup> 50'06	7 <sup>0</sup> 8	3 <sup>0</sup> 51	27 <sup>0</sup> 7	12 <sup>0</sup> 14	29 <sup>0</sup> 6	28 <sup>0</sup> 57	8 <sup>0</sup> 53	10 <sup>10</sup> 30	22 <sup>0</sup> 21	27 <sup>0</sup> 19	28 <sup>0</sup> 48	25 <sup>0</sup> 28	21 <sup>0</sup> 6	S 26
M27	4 57 58	13 <sup>0</sup> 51'09	22 <sup>0</sup> 16	5 <sup>0</sup> 24	28 <sup>0</sup> 13	12 <sup>0</sup> 20	29 <sup>0</sup> 8	28 <sup>0</sup> 52	8 <sup>0</sup> 50	10 <sup>10</sup> 30	22 <sup>0</sup> 20	27 <sup>0</sup> 12	28 <sup>0</sup> 45	25 <sup>0</sup> 35	21 <sup>0</sup> 5	M27
T 28	5 1 54	14 <sup>0</sup> 52'12	7 <sup>0</sup> 12	6 <sup>0</sup> 57	29 <sup>0</sup> 21	12 <sup>0</sup> 26	29 <sup>0</sup> 11	28 <sup>0</sup> 48	8 <sup>0</sup> 48	10 <sup>10</sup> 30	22 <sup>0</sup> 19	27 <sup>0</sup> 6	28 <sup>0</sup> 42	25 <sup>0</sup> 41	21 <sup>0</sup> 3	T 28
W29	5 5 51	15 <sup>0</sup> 53'15	22 <sup>0</sup> 44	8 <sup>0</sup> 30	0 <sup>0</sup> 18	12 <sup>0</sup> 31	29 <sup>0</sup> 13	28 <sup>0</sup> 43	8 <sup>0</sup> 45	10 <sup>10</sup> 30	22 <sup>0</sup> 18	27 <sup>0</sup> 1	28 <sup>0</sup> 39	25 <sup>0</sup> 48	21 <sup>0</sup> 2	W29
T 30	5 9 47	16 <sup>0</sup> 54'20	7 <sup>0</sup> 43	10 <sup>0</sup> 4	1 <sup>0</sup> 16	12 <sup>0</sup> 35	29 <sup>0</sup> 16	28 <sup>0</sup> 39	8 <sup>0</sup> 43	10 <sup>10</sup> 31	22 <sup>0</sup> 17	26 <sup>0</sup> 57	28 <sup>0</sup> 35	25 <sup>0</sup> 15	21 <sup>0</sup> 1	T 30

Delta T = 06m44s

Julian Calendar 1 Nov. 1441 == Greg. Calendar 10 Nov. 1441

DECEMBER 1441 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	5 13 44	17 <sup>11</sup> 55'25	22 <sup>0</sup> 21	11 <sup>0</sup> 37	2 <sup>0</sup> 14	12 <sup>0</sup> 38	29 <sup>0</sup> 19	28 <sup>0</sup> R34	8 <sup>0</sup> R40	10 <sup>10</sup> 31	22 <sup>0</sup> R16	26 <sup>0</sup> D56	28 <sup>0</sup> 32	26 <sup>0</sup> 1	20 <sup>0</sup> R59	F 1
S 2	5 17 41	18 <sup>0</sup> 56'31	6 <sup>0</sup> 32	13 <sup>0</sup> 11	3 <sup>0</sup> 51	12 <sup>0</sup> 41	29 <sup>0</sup> 23	28 <sup>0</sup> 30	8 <sup>0</sup> 38	10 <sup>10</sup> 31	22 <sup>0</sup> 15	26 <sup>0</sup> 56	28 <sup>0</sup> 29	26 <sup>0</sup> 8	20 <sup>0</sup> Y58	S 2
S 3	5 21 37	19 <sup>0</sup> 57'37	20 <sup>0</sup> 14	14 <sup>0</sup> 45	5 <sup>0</sup> 0	12 <sup>0</sup> 43	29 <sup>0</sup> 26	28 <sup>0</sup> 25	8 <sup>0</sup> 35	10 <sup>10</sup> 31	22 <sup>0</sup> 14	26 <sup>0</sup> 57	28 <sup>0</sup> 26	26 <sup>0</sup> 15	20 <sup>0</sup> 57	S 3
M 4	5 25 34	20 <sup>0</sup> 58'45	3 <sup>0</sup> 29	16 <sup>0</sup> 19	6 <sup>0</sup> 8	12 <sup>0</sup> 44	29 <sup>0</sup> 30	28 <sup>0</sup> 21	8 <sup>0</sup> 33	10 <sup>10</sup> R31	22 <sup>0</sup> 13	26 <sup>0</sup> 59	28 <sup>0</sup> 23	26 <sup>0</sup> 22	20 <sup>0</sup> 56	M 4
T 5	5 29 30	21 <sup>0</sup> 59'53	16 <sup>0</sup> 20	17 <sup>0</sup> 53	7 <sup>0</sup> 17	12 <sup>0</sup> R44	29 <sup>0</sup> 34	28 <sup>0</sup> 16	8 <sup>0</sup> 30	10 <sup>10</sup> 31	22 <sup>0</sup> 12	27 <sup>0</sup> R 0	28 <sup>0</sup> 20	26 <sup>0</sup> 28	20 <sup>0</sup> 55	T 5
W 6	5 33 27	23 <sup>0</sup> 1'02	28 <sup>0</sup> 50	19 <sup>0</sup> 27	8 <sup>0</sup> 25	12 <sup>0</sup> 44	29 <sup>0</sup> 38	28 <sup>0</sup> 12	8 <sup>0</sup> 28	10 <sup>10</sup> 31	22 <sup>0</sup> 11	27 <sup>0</sup> 0	28 <sup>0</sup> 16	26 <sup>0</sup> 35	20 <sup>0</sup> 54	W 6
T 7	5 37 23	24 <sup>0</sup> 2'11	11 <sup>0</sup> 12	21 <sup>0</sup> 2	9 <sup>0</sup> 34	12 <sup>0</sup> 43	29 <sup>0</sup> 42	28 <sup>0</sup> 8	8 <sup>0</sup> 25	10 <sup>10</sup> 31	22 <sup>0</sup> 10	26 <sup>0</sup> 58	28 <sup>0</sup> 13	26 <sup>0</sup> 42	20 <sup>0</sup> 53	T 7
F 8	5 41 20	25 <sup>0</sup> 3'21	23 <sup>0</sup> 5	22 <sup>0</sup> 37	10 <sup>0</sup> 43	12 <sup>0</sup> 41	29 <sup>0</sup> 47	28 <sup>0</sup> 4	8 <sup>0</sup> 23	10 <sup>10</sup> 31	22 <sup>0</sup> 9	26 <sup>0</sup> 55	28 <sup>0</sup> 10	26 <sup>0</sup> 48	20 <sup>0</sup> 52	F 8
S 9	5 45 17	26 <sup>0</sup> 4'32	5 <sup>0</sup> 10	24 <sup>0</sup> 12	11 <sup>0</sup> 53	12 <sup>0</sup> 38	29 <sup>0</sup> 51	28 <sup>0</sup> 0	8 <sup>0</sup> 21	10 <sup>10</sup> 30	22 <sup>0</sup> 7	26 <sup>0</sup> 51	28 <sup>0</sup> 7	26 <sup>0</sup> 55	20 <sup>0</sup> 51	S 9
S 10	5 49 13	27 <sup>0</sup> 5'43	16 <sup>0</sup> 51	25 <sup>0</sup> 47	13 <sup>0</sup> 2	12 <sup>0</sup> 34	29 <sup>0</sup> 56	27 <sup>0</sup> 56	8 <sup>0</sup> 18	10 <sup>10</sup> 30	22 <sup>0</sup> 6	26 <sup>0</sup> 46	28 <sup>0</sup> 4	27 <sup>0</sup> 2	20 <sup>0</sup> 50	S 10
M11	5 53 10	28 <sup>0</sup> 6'54	28 <sup>0</sup> 42	27 <sup>0</sup> 23	14 <sup>0</sup> 12	12 <sup>0</sup> 30	0 <sup>0</sup> Y 1	27 <sup>0</sup> 52	8 <sup>0</sup> 16	10 <sup>10</sup> 30	22 <sup>0</sup> 5	26 <sup>0</sup> 40	28 <sup>0</sup> 1	27 <sup>0</sup> 8	20 <sup>0</sup> 50	M11
T 12	5 57 6	29 <sup>0</sup> 8'06	10 <sup>0</sup> 14	28 <sup>0</sup> 58	15 <sup>0</sup> 21	12 <sup>0</sup> 24	0 <sup>0</sup> 6	27 <sup>0</sup> 48	8 <sup>0</sup> 14	10 <sup>10</sup> 30	22 <sup>0</sup> 4	26 <sup>0</sup> 35	27 <sup>0</sup> 57	27 <sup>0</sup> 15	20 <sup>0</sup> 49	T 12
W13	6 1 3	0 <sup>0</sup> 31'18	22 <sup>0</sup> 30	0 <sup>0</sup> 35	16 <sup>0</sup> 31	12 <sup>0</sup> 18	0 <sup>0</sup> 12	27 <sup>0</sup> 44	8 <sup>0</sup> 11	10 <sup>10</sup> 29	22 <sup>0</sup> 3	26 <sup>0</sup> 31	27 <sup>0</sup> 54	27 <sup>0</sup> 22	20 <sup>0</sup> 48	W13
T 14	6 4 59	1 <sup>0</sup> 10'31	4 <sup>0</sup> 33	2 <sup>0</sup> 11	17 <sup>0</sup> 41	12 <sup>0</sup> 11	0 <sup>0</sup> 17	27 <sup>0</sup> 41	8 <sup>0</sup> 9	10 <sup>10</sup> 29	22 <sup>0</sup> 1	26 <sup>0</sup> 27	27 <sup>0</sup> 51	27 <sup>0</sup> 29	20 <sup>0</sup> 48	T 14
F 15	6 8 56	2 <sup>0</sup> 11'43	16 <sup>0</sup> 42	3 <sup>0</sup> 48	18 <sup>0</sup> 51	12 <sup>0</sup> 3	0 <sup>0</sup> 23	27 <sup>0</sup> 37	8 <sup>0</sup> 7	10 <sup>10</sup> 29	22 <sup>0</sup> 0	26 <sup>0</sup> 26	27 <sup>0</sup> 48	27 <sup>0</sup> 35	20 <sup>0</sup> 47	F 15
S 16	6 12 52	3 <sup>0</sup> 12'55	29 <sup>0</sup> 0	5 <sup>0</sup> 25	20 <sup>0</sup> 1	11 <sup>0</sup> 55	0 <sup>0</sup> 29	27 <sup>0</sup> 33	8 <sup>0</sup> 4	10 <sup>10</sup> 28	21 <sup>0</sup> 59	26 <sup>0</sup> D25	27 <sup>0</sup> 45	27 <sup>0</sup> 42	20 <sup>0</sup> 47	S 16
S 17	6 16 49	4 <sup>0</sup> 14'08	11 <sup>0</sup> 29	7 <sup>0</sup> 2	21 <sup>0</sup> 12	11 <sup>0</sup> 45	0 <sup>0</sup> 35	27 <sup>0</sup> 30	8 <sup>0</sup> 2	10 <sup>10</sup> 28	21 <sup>0</sup> 58	26 <sup>0</sup> 26	27 <sup>0</sup> 41	27 <sup>0</sup> 49	20 <sup>0</sup> 46	S 17
M18	6 20 46	5 <sup>0</sup> 15'20	24 <sup>0</sup> 10	8 <sup>0</sup> 40	22 <sup>0</sup> 22	11 <sup>0</sup> 35	0 <sup>0</sup> 41	27 <sup>0</sup> 27	8 <sup>0</sup> 0	10 <sup>10</sup> 27	21 <sup>0</sup> 56	26 <sup>0</sup> 27	27 <sup>0</sup> 38	27 <sup>0</sup> 55	20 <sup>0</sup> 46	M18
T 19	6 24 42	6 <sup>0</sup> 16'31	7 <sup>0</sup> 15	5 <sup>0</sup> 18	23 <sup>0</sup> 33	11 <sup>0</sup> 24	0 <sup>0</sup> 48	27 <sup>0</sup> 23	7 <sup>0</sup> 58	10 <sup>10</sup> 27	21 <sup>0</sup> 55	26 <sup>0</sup> 29	27 <sup>0</sup> 35	28 <sup>0</sup> 2	20 <sup>0</sup> 46	T 19
W20	6 28 39	7 <sup>0</sup> 17'43	20 <sup>0</sup> 17	11 <sup>0</sup> 57	24 <sup>0</sup> 43	11 <sup>0</sup> 12	0 <sup>0</sup> 54	27 <sup>0</sup> 20	7 <sup>0</sup> 56	10 <sup>10</sup> 26	21 <sup>0</sup> 54	26 <sup>0</sup> 30	27 <sup>0</sup> 32	28 <sup>0</sup> 9	20 <sup>0</sup> 46	W20
T 21	6 32 35	8 <sup>0</sup> 18'53	3 <sup>0</sup> Y47	13 <sup>0</sup> 36	25 <sup>0</sup> 54	10 <sup>0</sup> 59	1 <sup>0</sup> 1	27 <sup>0</sup> 17	7 <sup>0</sup> 54	10 <sup>10</sup> 26	21 <sup>0</sup> 53	26 <sup>0</sup> R31	27 <sup>0</sup> 29	28 <sup>0</sup> 16	20 <sup>0</sup> 46	T 21
F 22	6 36 32	9 <sup>0</sup> 20'04	17 <sup>0</sup> 38	15 <sup>0</sup> 15	27 <sup>0</sup> 5	10 <sup>0</sup> 46	1 <sup>0</sup> 8	27 <sup>0</sup> 14	7 <sup>0</sup> 51	10 <sup>10</sup> 25	21 <sup>0</sup> 51	26 <sup>0</sup> 31	27 <sup>0</sup> 26	28 <sup>0</sup> 22	20 <sup>0</sup> 45	F 22
S 23	6 40 28	10 <sup>0</sup> 21'14	1 <sup>0</sup> 49	16 <sup>0</sup> 54	28 <sup>0</sup> 16	10 <sup>0</sup> 32	1 <sup>0</sup> 15	27 <sup>0</sup> 11	7 <sup>0</sup> 49	10 <sup>10</sup> 25	21 <sup>0</sup> 50	26 <sup>0</sup> 30	27 <sup>0</sup> 22	28 <sup>0</sup> 29	20 <sup>0</sup> D45	S 23
S 24	6 44 25	11 <sup>0</sup> 22'23	16 <sup>0</sup> 17	18 <sup>0</sup> 34	29 <sup>0</sup> 27	10 <sup>0</sup> 17	1 <sup>0</sup> 23	27 <sup>0</sup> 8	7 <sup>0</sup> 47	10 <sup>10</sup> 24	21 <sup>0</sup> 49	26 <sup>0</sup> 28	27 <sup>0</sup> 19	28 <sup>0</sup> 36	20 <sup>0</sup> 46	S 24
M25	6 48 21	12 <sup>0</sup> 23'32	1 <sup>0</sup> 11	20 <sup>0</sup> 14	0 <sup>0</sup> 138	10 <sup>0</sup> 1	1 <sup>0</sup> 30	27 <sup>0</sup> 5	7 <sup>0</sup> 45	10 <sup>10</sup> 23	21 <sup>0</sup> 47	26 <sup>0</sup> 27	27 <sup>0</sup> 16	28 <sup>0</sup> 42	20 <sup>0</sup> 46	M25
T 26	6 52 18	13 <sup>0</sup> 24'40	15 <sup>0</sup> 53	21 <sup>0</sup> 55	1 <sup>0</sup> 50	9 <sup>0</sup> 45	1 <sup>0</sup> 38	27 <sup>0</sup> 3	7 <sup>0</sup> 43	10 <sup>10</sup> 23	21 <sup>0</sup> 46	26 <sup>0</sup> 25	27 <sup>0</sup> 13	28 <sup>0</sup> 49	20 <sup>0</sup> 46	T 26
W27	6 56 15	14 <sup>0</sup> 25'48	0 <sup>0</sup> 547	23 <sup>0</sup> 35	3 <sup>0</sup> 1	9 <sup>0</sup> 28	1 <sup>0</sup> 45	27 <sup>0</sup> 0	7 <sup>0</sup> 42	10 <sup>10</sup> 22	21 <sup>0</sup> 45	26 <sup>0</sup> 24	27 <sup>0</sup> 10	28 <sup>0</sup> 56	20 <sup>0</sup> 46	W27
T 28	7 0 11	15 <sup>0</sup> 26'55	15 <sup>0</sup> 33	25 <sup>0</sup> 16	4 <sup>0</sup> 12	9 <sup>0</sup> 10	1 <sup>0</sup> 53	26 <sup>0</sup> 58	7 <sup>0</sup> 40	10 <sup>10</sup> 21	21 <sup>0</sup> 43	26 <sup>0</sup> 23	27 <sup>0</sup> 7	29 <sup>0</sup> 2	20 <sup>0</sup> 46	T 28
F 29	7 4 8	16 <sup>0</sup> 28'02	0 <sup>0</sup> 15	26 <sup>0</sup> 57	5 <sup>0</sup> 24	8 <sup>0</sup> 52	2 <sup>0</sup> 1	26 <sup>0</sup> 56	7 <sup>0</sup> 38	10 <sup>10</sup> 20	21 <sup>0</sup> 42	26 <sup>0</sup> D23	27 <sup>0</sup> 3	29 <sup>0</sup> 9	20 <sup>0</sup> 47	F 29
S 30	7 8 4	17 <sup>0</sup> 29'08	14 <sup>0</sup> 17	28 <sup>0</sup> 37	6 <sup>0</sup> 36	8 <sup>0</sup> 33	2 <sup>0</sup> 9	26 <sup>0</sup> 53	7 <sup>0</sup> 36	10 <sup>10</sup> 19	21 <sup>0</sup> 41	26 <sup>0</sup> 23	27 <sup>0</sup> 0	29 <sup>0</sup> 16	20 <sup>0</sup> 47	S 30
S 31	7 12 1	18 <sup>0</sup> 30'14	28 <sup>0</sup> 15	0 <sup>0</sup> 18	7 <sup>0</sup> 147	8 <sup>0</sup> 13	2 <sup>0</sup> Y18	26 <sup>0</sup> 51	7 <sup>0</sup> 34	10 <sup>10</sup> 19	21 <sup>0</sup> 39	26 <sup>0</sup> 24	26 <sup>0</sup> 57	29 <sup>0</sup> 123	20 <sup>0</sup> Y48	S 31