



Astrodienst Ephemeris Tables for the year 1581

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 1581

geocentric

JANUARY 1581 JC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	Day	
S 1	7 21 13	20°34'14"	23°11' 8"	9°31' 31"	5°24' 24"	28°59' 59"	1°27' 27"	16°22' 22"	13°46' 46"	14°21' 21"	1°52' 52"	7°34' 34"	8°25' 25"	15°27' 27"	2°50' 50"	S 1	
M 2	7 25 10	21°49'22"	6°17' 59"	10°17' 17"	6°32' 32"	29°5' 5"	1°41' 41"	16°9' 9"	13°49' 49"	14°20' 20"	1°53' 53"	7°32' 32"	8°22' 22"	15°34' 34"	2°51' 51"	M 2	
T 3	7 29 6	22°50'29"	21°18' 18"	10°55' 55"	7°40' 40"	29°12' 12"	1°54' 54"	16°15' 15"	13°52' 52"	14°18' 18"	1°53' 53"	7°30' 30"	8°18' 18"	15°41' 41"	2°53' 53"	T 3	
W 4	7 33 3	23°51'36"	6°30' 0"	11°24' 24"	8°48' 48"	29°19' 19"	2°8' 8"	16°22' 22"	13°56' 56"	14°16' 16"	1°54' 54"	7°28' 28"	8°15' 15"	15°47' 47"	2°55' 55"	W 4	
T 5	7 36 59	24°52'42"	21°0' 0"	11°42' 42"	9°57' 57"	29°27' 27"	2°21' 21"	16°29' 29"	13°59' 59"	14°15' 15"	1°55' 55"	7°27' 27"	8°12' 12"	15°54' 54"	2°56' 56"	T 5	
F 6	7 40 56	25°53'48"	6°8' 8"	11°R50	11°5' 5"	29°36' 36"	2°34' 34"	16°36' 36"	14°2' 2"	14°13' 13"	1°56' 56"	7°D27	8°9' 9"	16°1' 1"	2°58' 58"	F 6	
S 7	7 44 53	26°54'53"	21°15' 15"	11°46' 46"	12°14' 14"	29°46' 46"	2°47' 47"	16°43' 43"	14°6' 6"	14°11' 11"	1°56' 56"	7°27' 27"	8°6' 6"	16°7' 7"	3°0' 0"	S 7	
S 8	7 48 49	27°55'56"	6°13' 13"	11°31' 31"	13°23' 23"	29°56' 56"	3°1' 1"	16°50' 50"	14°9' 9"	14°10' 10"	1°57' 57"	7°28' 28"	8°3' 3"	16°14' 14"	3°2' 2"	S 8	
M 9	7 52 46	28°56'59"	20°55' 55"	11°4' 4"	14°32' 32"	0°11' 7"	3°14' 14"	16°57' 57"	14°12' 12"	14°8' 8"	1°58' 58"	7°29' 29"	7°59' 59"	16°21' 21"	3°4' 4"	M 9	
T 10	7 56 42	29°58'00"	5°14' 14"	10°27' 27"	15°41' 41"	0°18' 18"	3°27' 27"	17°4' 4"	14°16' 16"	14°6' 6"	1°58' 58"	7°29' 29"	7°56' 56"	16°27' 27"	3°6' 6"	T 10	
W 11	8 0 39	0°59'00"	19°10' 10"	9°39' 39"	16°50' 50"	0°30' 30"	3°40' 40"	17°11' 11"	14°19' 19"	14°5' 5"	1°59' 59"	7°30' 30"	7°53' 53"	16°34' 34"	3°8' 8"	W 11	
T 12	8 4 35	2°0'00"	2°18' 18"	8°42' 42"	17°59' 59"	0°42' 42"	3°53' 53"	17°18' 18"	14°23' 23"	14°3' 3"	2°0' 0"	7°R30	7°50' 50"	16°41' 41"	3°10' 10"	T 12	
F 13	8 8 32	3°0'57"	15°50' 50"	7°38' 38"	19°9' 9"	0°55' 55"	4°6' 6"	17°25' 25"	14°26' 26"	14°2' 2"	2°1' 1"	7°30' 30"	7°47' 47"	16°47' 47"	3°12' 12"	F 13	
S 14	8 12 28	4°1'54"	28°39' 39"	6°28' 28"	20°18' 18"	1°9' 9"	4°19' 19"	17°32' 32"	14°30' 30"	14°0' 0"	2°2' 2"	7°30' 30"	7°44' 44"	16°54' 54"	3°15' 15"	S 14	
S 15	8 16 25	5°2'49"	11°11' 11"	5°15' 15"	21°28' 28"	1°23' 23"	4°32' 32"	17°39' 39"	14°33' 33"	13°58' 58"	2°3' 3"	7°29' 29"	7°40' 40"	17°1' 1"	3°17' 17"	S 15	
M 16	8 20 22	6°3'44"	23°28' 28"	4°0' 0"	22°38' 38"	1°37' 37"	4°45' 45"	17°46' 46"	14°36' 36"	13°57' 57"	2°4' 4"	7°29' 29"	7°37' 37"	17°7' 7"	3°19' 19"	M 16	
T 17	8 24 18	7°4'36"	5°35' 35"	2°47' 47"	23°48' 48"	1°52' 52"	4°57' 57"	17°53' 53"	14°40' 40"	13°55' 55"	2°4' 4"	7°D29	7°34' 34"	17°14' 14"	3°21' 21"	T 17	
W 18	8 28 15	8°5'28"	8°5'28"	17°34' 34"	1°36' 36"	24°58' 58"	2°8' 8"	5°10' 10"	18°1' 1"	14°43' 43"	13°54' 54"	2°5' 5"	7°29' 29"	7°31' 31"	17°20' 20"	3°24' 24"	W 18
T 19	8 32 11	9°6'18"	29°27' 27"	0°30' 30"	26°8' 8"	2°24' 24"	5°23' 23"	18°8' 8"	14°47' 47"	13°52' 52"	2°6' 6"	7°29' 29"	7°28' 28"	17°27' 27"	3°26' 26"	T 19	
F 20	8 36 8	10°7'07"	11°16' 16"	29°30' 30"	27°18' 18"	2°40' 40"	5°35' 35"	18°15' 15"	14°50' 50"	13°51' 51"	2°7' 7"	7°R29	7°24' 24"	17°34' 34"	3°29' 29"	F 20	
S 21	8 40 4	11°7'55"	23°4' 4"	28°37' 37"	28°28' 28"	2°57' 57"	5°48' 48"	18°22' 22"	14°54' 54"	13°49' 49"	2°8' 8"	7°29' 29"	7°21' 21"	17°40' 40"	3°31' 31"	S 21	
S 22	8 44 1	12°8'42"	4°17' 53"	27°51' 51"	29°39' 39"	3°15' 15"	6°0' 0"	18°29' 29"	14°57' 57"	13°48' 48"	2°9' 9"	7°28' 28"	7°18' 18"	17°47' 47"	3°34' 34"	S 22	
M 23	8 47 58	13°9'27"	16°44' 44"	27°14' 14"	0°49' 49"	3°33' 33"	6°13' 13"	18°36' 36"	15°1' 1"	13°46' 46"	2°10' 10"	7°28' 28"	7°15' 15"	17°54' 54"	3°36' 36"	M 23	
T 24	8 51 54	14°10'11"	28°41' 41"	26°45' 45"	2°0' 0"	3°51' 51"	6°25' 25"	18°44' 44"	15°4' 4"	13°45' 45"	2°11' 11"	7°27' 27"	7°12' 12"	18°0' 0"	3°39' 39"	T 24	
W 25	8 55 51	15°10'54"	10°47' 47"	26°24' 24"	3°11' 11"	4°9' 9"	6°37' 37"	18°51' 51"	15°8' 8"	13°44' 44"	2°12' 12"	7°26' 26"	7°9' 9"	18°7' 7"	3°42' 42"	W 25	
T 26	8 59 47	16°11'36"	23°5' 5"	26°11' 11"	4°21' 21"	4°28' 28"	6°50' 50"	18°58' 58"	15°11' 11"	13°42' 42"	2°14' 14"	7°25' 25"	7°5' 5"	18°14' 14"	3°44' 44"	T 26	
F 27	9 3 44	17°12'17"	5°11' 38"	26°D 6"	5°32' 32"	4°48' 48"	7°2' 2"	19°5' 5"	15°15' 15"	13°41' 41"	2°15' 15"	7°24' 24"	7°2' 2"	18°20' 20"	3°47' 47"	F 27	
S 28	9 7 40	18°12'56"	18°30' 30"	26°8' 8"	6°43' 43"	5°8' 8"	7°14' 14"	19°13' 13"	15°18' 18"	13°39' 39"	2°16' 16"	7°D24	6°59' 59"	18°27' 27"	3°50' 50"	S 28	
S 29	9 11 37	19°13'35"	1°45' 45"	26°17' 17"	7°54' 54"	5°28' 28"	7°26' 26"	19°20' 20"	15°22' 22"	13°38' 38"	2°17' 17"	7°24' 24"	6°56' 56"	18°34' 34"	3°53' 53"	S 29	
M 30	9 15 33	20°14'12"	15°24' 24"	26°33' 33"	9°5' 5"	5°48' 48"	7°38' 38"	19°27' 27"	15°25' 25"	13°37' 37"	2°18' 18"	7°25' 25"	6°53' 53"	18°40' 40"	3°56' 56"	M 30	
T 31	9 19 30	21°14'49"	29°13' 30"	26°35' 44"	10°16' 16"	6°11' 9"	7°50' 50"	19°34' 34"	15°29' 29"	13°36' 36"	2°19' 19"	7°26' 26"	6°50' 50"	18°47' 47"	3°59' 59"	T 31	

Delta T = 118.23 sec

Julian Calendar 1 Jan. 1581 == Greg. Calendar 11 Jan. 1581

FEBRUARY 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	9 23 27	22°15'24	14°3' 1	27°32' 1	11°32' 8	6°11' 30	8°3' 1	19°41' 1	15°32' 2	13°R34	2°19' 20	7°27' 2	6°46' 2	18°15' 4	4°19' 1	W 1
T 2	9 27 23	23°15'57	28°54' 2	27°53' 2	12°39' 3	6°52' 3	8°13' 3	19°49' 3	15°35' 3	13°33' 3	2°21' 3	7°28' 3	6°43' 3	19°0' 3	4°4' 3	T 2
F 3	9 31 20	24°16'29	14°2' 2	28°29' 2	13°50' 2	7°14' 2	8°25' 2	19°56' 2	15°39' 2	13°32' 2	2°23' 2	7°R28	6°40' 2	19°7' 2	4°7' 2	F 3
S 4	9 35 16	25°17'00	29°16' 2	29°10' 2	15°2' 2	7°36' 2	8°36' 2	20°3' 2	15°42' 2	13°31' 2	2°24' 2	7°27' 2	6°37' 2	19°14' 2	4°10' 2	S 4
S 5	9 39 13	26°17'29	14°16' 2	29°55' 2	16°13' 2	7°59' 2	8°48' 2	20°10' 2	15°46' 2	13°30' 2	2°25' 2	7°25' 2	6°34' 2	19°20' 2	4°13' 2	S 5
M 6	9 43 9	27°17'56	29°24' 2	0°44' 2	17°25' 2	8°22' 2	8°59' 2	20°18' 2	15°49' 2	13°28' 2	2°26' 2	7°23' 2	6°30' 2	19°27' 2	4°17' 2	M 6
T 7	9 47 6	28°18'21	14°17' 0	1°36' 0	18°36' 0	8°45' 0	9°11' 0	20°25' 0	15°53' 0	13°27' 0	2°28' 0	7°20' 0	6°27' 0	19°33' 0	4°20' 0	T 7
W 8	9 51 2	29°18'44	28°10' 2	2°31' 2	19°48' 2	9°8' 2	9°22' 2	20°32' 2	15°56' 2	13°26' 2	2°29' 2	7°17' 2	6°24' 2	19°40' 2	4°23' 2	W 8
T 9	9 54 59	0°19'05	11°18' 5	3°29' 5	21°0' 0	9°32' 0	9°33' 0	20°39' 0	16°0' 0	13°25' 0	2°30' 0	7°15' 0	6°21' 0	19°47' 0	4°26' 0	T 9
F 10	9 58 56	1°19'25	25°6' 6	4°30' 6	22°11' 6	9°56' 6	9°44' 6	20°46' 6	16°3' 6	13°24' 6	2°31' 6	7°14' 6	6°18' 6	19°53' 6	4°29' 6	F 10
S 11	10 2 52	2°19'42	7°11' 5	5°33' 5	23°23' 5	10°20' 5	9°55' 5	20°53' 5	16°6' 5	13°23' 5	2°33' 5	7°D14	6°15' 5	20°0' 5	4°32' 5	S 11
S 12	10 6 49	3°19'57	20°24' 2	6°39' 2	24°35' 2	10°45' 2	10°6' 2	21°1' 2	16°10' 2	13°22' 2	2°34' 2	7°15' 2	6°11' 2	20°7' 2	4°36' 2	S 12
M 13	10 10 45	4°20'11	2°36' 6	7°47' 6	25°47' 6	11°10' 6	10°16' 6	21°8' 6	16°13' 6	13°21' 6	2°35' 6	7°17' 6	6°8' 6	20°13' 6	4°39' 6	M 13
T 14	10 14 42	5°20'22	14°35' 2	8°57' 2	26°59' 2	11°35' 2	10°27' 2	21°15' 2	16°16' 2	13°20' 2	2°37' 2	7°18' 2	6°5' 2	20°20' 2	4°42' 2	T 14
W 15	10 18 38	6°20'31	26°27' 2	10°9' 2	28°11' 2	12°0' 2	10°38' 2	21°22' 2	16°20' 2	13°19' 2	2°38' 2	7°20' 2	6°2' 2	20°27' 2	4°46' 2	W 15
T 16	10 22 35	7°20'38	8°11' 1	11°22' 1	29°23' 1	12°26' 1	10°48' 1	21°29' 1	16°23' 1	13°18' 1	2°39' 1	7°R20	5°59' 1	20°33' 1	4°49' 1	T 16
F 17	10 26 31	8°20'43	20°1' 1	12°38' 1	0°35' 1	12°52' 1	10°59' 1	21°36' 1	16°26' 1	13°18' 1	2°41' 1	7°20' 1	5°56' 1	20°40' 1	4°52' 1	F 17
S 18	10 30 28	9°20'46	1°17' 5	13°55' 5	1°47' 5	13°18' 5	11°9' 5	21°43' 5	16°30' 5	13°17' 5	2°42' 5	7°17' 5	5°52' 5	20°47' 5	4°56' 5	S 18
S 19	10 34 25	10°20'47	13°44' 4	15°14' 4	2°59' 4	13°44' 4	11°19' 4	21°50' 4	16°33' 4	13°16' 4	2°43' 4	7°13' 4	5°49' 4	20°53' 4	4°59' 4	S 19
M 20	10 38 21	11°20'46	25°43' 4	16°35' 4	4°11' 4	14°10' 4	11°29' 4	21°57' 4	16°36' 4	13°15' 4	2°45' 4	7°7' 4	5°46' 4	21°0' 4	5°3' 4	M 20
T 21	10 42 18	12°20'44	7°15' 5	17°57' 5	5°23' 5	14°37' 5	11°39' 5	22°4' 5	16°39' 5	13°15' 5	2°46' 5	7°1' 5	5°43' 5	21°7' 5	5°6' 5	T 21
W 22	10 46 14	13°20'39	20°6' 6	19°20' 6	6°35' 6	15°4' 6	11°49' 6	22°11' 6	16°43' 6	13°14' 6	2°47' 6	6°54' 6	5°40' 6	21°13' 6	5°9' 6	W 22
T 23	10 50 11	14°20'33	2°11' 3	20°45' 3	7°48' 3	15°31' 3	11°59' 3	22°18' 3	16°46' 3	13°13' 3	2°49' 3	6°48' 3	5°36' 3	21°20' 3	5°13' 3	T 23
F 24	10 54 7	15°20'25	15°13' 3	22°11' 3	9°0' 3	15°58' 3	12°8' 3	22°24' 3	16°49' 3	13°13' 3	2°50' 3	6°43' 3	5°33' 3	21°26' 3	5°16' 3	F 24
S 25	10 58 4	16°20'15	28°7' 7	23°38' 7	10°12' 7	16°26' 7	12°18' 7	22°31' 7	16°52' 7	13°12' 7	2°52' 7	6°40' 7	5°30' 7	21°33' 7	5°20' 7	S 25
S 26	11 2 0	17°20'04	11°17' 1	25°7' 1	11°25' 1	16°54' 1	12°27' 1	22°38' 1	16°55' 1	13°11' 1	2°53' 1	6°38' 1	5°27' 1	21°40' 1	5°24' 1	S 26
M 27	11 5 57	18°19'51	24°50' 2	26°37' 2	12°37' 2	17°21' 2	12°36' 2	22°45' 2	16°58' 2	13°11' 2	2°55' 2	6°D38	5°24' 2	21°46' 2	5°27' 2	M 27
T 28	11 9 53	19°19'36	8°34' 2	28°9' 2	13°49' 2	17°11' 2	12°34' 2	22°52' 2	17°1' 2	13°10' 2	2°19' 2	6°39' 2	5°21' 2	21°15' 2	5°19' 2	T 28

ASTRODIENST EPHEMERIS for the year 1581
geocentric

MARCH 1581 JC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	11 13 50	20♌19'20	22♌56	29♌42	15♌2	18♌18	12♌55	22♌58	17♌4	13°R10	2♌57	6♌40	5♌17	22♌0	5♌34	W 1
T 2	11 17 47	21°19'02	7♌31	1♌16	16°14	18°46	13°3	23°5	17°7	13♌10	2°59	6°R41	5°14	22°6	5°38	T 2
F 3	11 21 43	22°18'42	22°22	2°51	17°27	19°15	13°12	23°12	17°10	13°9	3°0	6°40	5°11	22°13	5°41	F 3
S 4	11 25 40	23°18'20	7♌24	4°28	18°39	19°43	13°21	23°18	17°13	13°9	3°2	6°37	5°8	22°20	5°45	S 4
S 5	11 29 36	24°17'56	22°28	6°5	19°52	20°12	13°29	23°25	17°16	13°8	3°3	6°32	5°5	22°26	5°49	S 5
M 6	11 33 33	25°17'30	7♌25	7°45	21°5	20°41	13°38	23°31	17°19	13°8	3°5	6°25	5°2	22°33	5°52	M 6
T 7	11 37 29	26°17'02	22°6	9°25	22°17	21°10	13°46	23°38	17°22	13°8	3°6	6°17	4°58	22°40	5°56	T 7
W 8	11 41 26	27°16'32	6♌23	11°7	23°30	21°40	13°54	23°44	17°25	13°8	3°8	6°9	4°55	22°46	6°0	W 8
T 9	11 45 22	28°15'59	20°14	12°50	24°42	22°9	14°2	23°51	17°28	13°7	3°9	6°2	4°52	22°53	6°3	T 9
F 10	11 49 19	29°15'24	3♌35	14°34	25°55	22°39	14°10	23°57	17°31	13°7	3°10	5°56	4°49	23°0	6°7	F 10
S 11	11 53 16	0♌14'47	16°30	16°19	27°8	23°9	14°18	24°3	17°34	13°7	3°12	5°53	4°46	23°6	6°11	S 11
S 12	11 57 12	1°14'08	29°1	18°6	28°20	23°39	14°25	24°10	17°36	13°7	3°13	5°D52	4°42	23°13	6°14	S 12
M13	12 1 9	2°13'26	11♌13	19°55	29°33	24°9	14°33	24°16	17°39	13°7	3°15	5°53	4°39	23°20	6°18	M13
T 14	12 5 5	3°12'42	23°11	21°44	0♌46	24°39	14°40	24°22	17°42	13°D 7	3°16	5°54	4°36	23°26	6°22	T 14
W15	12 9 2	4°11'56	5♌1	23°35	1°58	25°9	14°47	24°28	17°44	13°7	3°18	5°R54	4°33	23°33	6°25	W15
T 16	12 12 58	5°11'07	16°47	25°28	3°11	25°40	14°54	24°34	17°47	13°7	3°19	5°54	4°30	23°40	6°29	T 16
F 17	12 16 55	6°10'16	28°35	27°21	4°24	26°10	15°1	24°40	17°50	13°7	3°21	5°51	4°27	23°46	6°33	F 17
S 18	12 20 51	7°9'23	10♌27	29°17	5°37	26°41	15°8	24°46	17°52	13°7	3°22	5°46	4°23	23°53	6°37	S 18
S 19	12 24 48	8°8'27	22°27	1♌13	6°49	27°12	15°14	24°52	17°55	13°7	3°24	5°38	4°20	23°59	6°40	S 19
M20	12 28 45	9°7'30	4♌37	3°11	8°2	27°43	15°21	24°58	17°57	13°7	3°25	5°28	4°17	24°6	6°44	M20
T 21	12 32 41	10°6'30	16°58	5°10	9°15	28°14	15°27	25°4	18°0	13°8	3°27	5°16	4°14	24°13	6°48	T 21
W22	12 36 38	11°5'28	29°30	7°10	10°28	28°45	15°33	25°10	18°2	13°8	3°28	5°4	4°11	24°19	6°51	W22
T 23	12 40 34	12°4'25	12♌13	9°12	11°41	29°16	15°39	25°15	18°4	13°8	3°30	4°53	4°7	24°26	6°55	T 23
F 24	12 44 31	13°3'19	25°9	11°15	12°54	29°47	15°45	25°21	18°7	13°8	3°31	4°43	4°4	24°33	6°59	F 24
S 25	12 48 27	14°2'12	8♌16	13°18	14°6	0♌19	15°51	25°27	18°9	13°9	3°32	4°36	4°1	24°39	7°2	S 25
S 26	12 52 24	15°1'03	21°36	15°23	15°19	0°50	15°56	25°32	18°11	13°9	3°34	4°31	3°58	24°46	7°6	S 26
M27	12 56 20	15°59'52	5♌9	17°28	16°32	1°22	16°1	25°38	18°14	13°10	3°35	4°29	3°55	24°53	7°10	M27
T 28	13 0 17	16°58'39	18°56	19°34	17°45	1°54	16°7	25°43	18°16	13°10	3°37	4°D29	3°52	24°59	7°13	T 28
W29	13 4 14	17°57'25	2♌58	21°41	18°58	2°25	16°12	25°49	18°18	13°10	3°38	4°R29	3°48	25°6	7°17	W29
T 30	13 8 10	18°56'09	17°14	23°47	20°11	2°57	16°16	25°54	18°20	13°11	3°40	4°29	3°45	25°13	7°21	T 30
F 31	13 12 7	19°54'52	1♌44	25°54	21°24	3♌29	16°21	25°59	18°22	13♌11	3°41	4°26	3°42	25°19	7°24	F 31

Delta T = 117.95 sec

Julian Calendar 1 March 1581 == Greg. Calendar 11 March 1581

APRIL 1581 JC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	13 16 3	20♌53'32	16♌23	28♌0	22♌37	4♌2	16♌26	26♌4	18♌24	13♌12	3°42	4°R21	3°39	25°26	7°28	S 1
S 2	13 20 0	21°52'11	1♌7	0♌5	23°50	4°34	16°30	26°9	18°26	13°13	3°44	4°14	3°36	25°33	7°31	S 2
M 3	13 23 56	22°50'48	15°46	2°9	25°3	5°6	16°34	26°14	18°28	13°13	3°45	4°4	3°33	25°39	7°35	M 3
T 4	13 27 53	23°49'23	0♌15	4°12	26°16	5°38	16°38	26°19	18°30	13°14	3°47	3°52	3°29	25°46	7°39	T 4
W 5	13 31 49	24°47'56	14°26	6°14	27°29	6°11	16°42	26°24	18°32	13°15	3°48	3°41	3°26	25°53	7°42	W 5
T 6	13 35 46	25°46'27	28°13	8°13	28°42	6°43	16°45	26°29	18°34	13°15	3°49	3°30	3°23	25°59	7°46	T 6
F 7	13 39 43	26°44'56	11♌35	10°10	29°55	7°16	16°49	26°34	18°36	13°16	3°51	3°21	3°20	26°6	7°49	F 7
S 8	13 43 39	27°43'23	24°32	12°5	1♌8	7°49	16°52	26°38	18°37	13°17	3°52	3°16	3°17	26°13	7°53	S 8
S 9	13 47 36	28°41'48	7♌5	13°57	2°21	8°22	16°55	26°43	18°39	13°18	3°54	3°12	3°13	26°19	7°56	S 9
M10	13 51 32	29°40'10	19°19	15°45	3°34	8°54	16°58	26°48	18°41	13°19	3°55	3°11	3°10	26°26	8°0	M10
T 11	13 55 29	0♌38'31	1♌19	17°31	4°47	9°27	17°1	26°52	18°42	13°20	3°56	3°11	3°7	26°33	8°3	T 11
W12	13 59 25	1°36'50	13°11	19°12	6°0	10°0	17°3	26°56	18°44	13°20	3°58	3°10	3°4	26°39	8°7	W12
T 13	14 3 22	2°35'06	24°59	20°50	7°13	10°34	17°6	27°1	18°45	13°21	3°59	3°9	3°1	26°46	8°10	T 13
F 14	14 7 18	3°33'20	6♌48	22°25	8°26	11°7	17°8	27°5	18°47	13°22	4°0	3°6	2°58	26°53	8°14	F 14
S 15	14 11 15	4°31'32	18°45	23°55	9°39	11°40	17°10	27°9	18°48	13°23	4°2	3°0	2°54	26°59	8°17	S 15
S 16	14 15 11	5°29'43	0♌52	25°21	10°52	12°13	17°12	27°13	18°50	13°24	4°3	2°52	2°51	27°6	8°20	S 16
M17	14 19 8	6°27'51	13°11	26°43	12°5	12°47	17°13	27°17	18°51	13°25	4°4	2°41	2°48	27°12	8°24	M17
T 18	14 23 5	7°25'57	25°46	28°0	13°18	13°20	17°15	27°21	18°52	13°27	4°5	2°29	2°45	27°19	8°27	T 18
W19	14 27 1	8°24'02	8♌35	29°14	14°31	13°54	17°16	27°25	18°54	13°28	4°7	2°16	2°42	27°26	8°30	W19
T 20	14 30 58	9°22'06	21°39	0♌23	15°44	14°27	17°17	27°29	18°55	13°29	4°8	2°3	2°39	27°32	8°34	T 20
F 21	14 34 54	10°20'07	4♌56	1°27	16°57	15°1	17°18	27°32	18°56	13°30	4°9	1°53	2°35	27°39	8°37	F 21
S 22	14 38 51	11°18'07	18°25	2°27	18°10	15°34	17°18	27°36	18°57	13°31	4°10	1°44	2°32	27°46	8°40	S 22
S 23	14 42 47	12°16'06	2♌3	3°22	19°23	16°8	17°19	27°40	18°58	13°33	4°12	1°39	2°29	27°52	8°43	S 23
M24	14 46 44	13°14'03	15°49	4°13	20°36	16°42	17°19	27°43	18°59	13°34	4°13	1°36	2°26	27°59	8°47	M24
T 25	14 50 41	14°11'59	29°44	4°58	21°49	17°16	17°R19	27°46	19°0	13°35	4°14	1°D36	2°23	28°6	8°50	T 25
W26	14 54 37	15°9'54	13♌45	5°39	23°2	17°50	17°19	27°50	19°1	13°36	4°15	1°R36	2°19	28°12	8°53	W26
T 27	14 58 34	16°7'47	27°53	6°15	24°15	18°24	17°19	27°53	19°2	13°38	4°16	1°35	2°16	28°19	8°56	T 27
F 28	15 2 30	17°5'39	12♌7	6°47	25°28	18°58	17°19	27°56	19°3	13°39	4°17	1°33	2°13	28°26	8°59	F 28
S 29	15 6 27	18°3'30	26°25	7°13	26°41	19°32	17°18	27°59	19°3	13°41	4°19	1°29	2°10	28°32	9°2	S 29
S 30	15 10 23	19♌1'20	10♌43	7♌34	27°55	20♌6	17♌17	28♌2	19♌4	13♌42	4°20	1°22	2°2	28°39	9°5	S 30

Delta T = 117.80 sec

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1581

geocentric

MAY 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	15 14 20	19°59'08	24°57	7°11	29°8	20°40	17°16	28°5	19°5	13°43	4°21	1°13	2°4	28°46	9°8	M 1
T 2	15 18 16	20°56'56	9°1	8°2	0°21	21°14	17°15	28°7	19°5	13°45	4°22	1°2	2°0	28°52	9°11	T 2
W 3	15 22 13	21°54'42	22°52	8°9	1°34	21°49	17°13	28°10	19°6	13°46	4°23	0°51	1°57	28°59	9°14	W 3
T 4	15 26 9	22°52'26	6°11	8°11	2°47	22°23	17°12	28°13	19°7	13°48	4°24	0°41	1°54	29°6	9°17	T 4
F 5	15 30 6	23°50'09	19°37	8°8	4°0	22°58	17°10	28°15	19°7	13°49	4°25	0°33	1°51	29°12	9°20	F 5
S 6	15 34 3	24°47'51	2°27	8°0	5°13	23°32	17°8	28°17	19°7	13°51	4°26	0°27	1°48	29°19	9°23	S 6
S 7	15 37 59	25°45'31	14°58	7°48	6°27	24°7	17°6	28°20	19°8	13°53	4°27	0°24	1°45	29°26	9°26	S 7
M 8	15 41 56	26°43'10	27°12	7°32	7°40	24°41	17°4	28°22	19°8	13°54	4°28	0°22	1°41	29°32	9°28	M 8
T 9	15 45 52	27°40'47	9°13	7°13	8°53	25°16	17°1	28°24	19°8	13°56	4°29	0°23	1°38	29°39	9°31	T 9
W10	15 49 49	28°38'23	21°5	6°49	10°6	25°50	16°58	28°26	19°9	13°58	4°30	0°23	1°35	29°46	9°34	W10
T 11	15 53 45	29°35'57	2°54	6°23	11°19	26°25	16°55	28°28	19°9	13°59	4°31	0°24	1°32	29°52	9°36	T 11
F 12	15 57 42	0°33'30	14°46	5°55	12°32	27°0	16°52	28°30	19°9	14°1	4°32	0°22	1°29	29°59	9°39	F 12
S 13	16 1 39	1°31'01	26°45	5°24	13°45	27°35	16°49	28°31	19°9	14°3	4°33	0°19	1°25	0°6	9°42	S 13
S 14	16 5 35	2°28'31	8°56	4°51	14°59	28°10	16°46	28°33	19°9	14°4	4°34	0°14	1°22	0°12	9°44	S 14
M15	16 9 32	3°26'00	21°25	4°18	16°12	28°45	16°42	28°34	19°9	14°6	4°34	0°7	1°19	0°19	9°47	M15
T 16	16 13 28	4°23'27	4°7	3°44	17°25	29°20	16°38	28°36	19°9	14°8	4°35	29°58	1°16	0°26	9°49	T 16
W17	16 17 25	5°20'54	17°11	3°11	18°38	29°55	16°35	28°37	19°9	14°10	4°36	29°48	1°13	0°32	9°52	W17
T 18	16 21 21	6°18'19	0°33	2°38	19°51	0°130	16°30	28°38	19°9	14°12	4°37	29°40	1°10	0°39	9°54	T 18
F 19	16 25 18	7°15'43	14°13	2°7	21°5	1°5	16°26	28°40	19°9	14°13	4°38	29°32	1°6	0°46	9°56	F 19
S 20	16 29 14	8°13'07	28°5	1°37	22°18	1°40	16°22	28°41	19°8	14°15	4°38	29°26	1°3	0°52	9°59	S 20
S 21	16 33 11	9°10'30	12°8	1°10	23°31	2°15	16°17	28°42	19°8	14°17	4°39	29°23	1°0	0°59	10°1	S 21
M22	16 37 8	10°7'52	26°18	0°46	24°44	2°50	16°12	28°42	19°8	14°19	4°40	29°22	0°57	1°6	10°3	M22
T 23	16 41 4	11°5'13	10°30	0°24	25°58	3°26	16°8	28°43	19°7	14°21	4°41	29°22	0°54	1°12	10°5	T 23
W24	16 45 1	12°2'33	24°43	0°7	27°11	4°1	16°3	28°44	19°7	14°23	4°41	29°23	0°51	1°19	10°7	W24
T 25	16 48 57	12°59'54	8°55	29°53	28°24	4°36	15°57	28°44	19°6	14°25	4°42	29°24	0°47	1°26	10°9	T 25
F 26	16 52 54	13°57'13	23°4	29°43	29°37	5°12	15°52	28°45	19°6	14°27	4°43	29°24	0°44	1°32	10°11	F 26
S 27	16 56 50	14°54'32	7°7	29°38	0°151	5°47	15°47	28°45	19°5	14°29	4°43	29°22	0°41	1°39	10°13	S 27
S 28	17 0 47	15°51'51	21°5	29°D36	2°4	6°23	15°41	28°45	19°5	14°31	4°44	29°18	0°38	1°46	10°15	S 28
M29	17 4 43	16°49'10	4°54	29°40	3°17	6°58	15°35	28°45	19°4	14°33	4°45	29°12	0°35	1°52	10°17	M29
T 30	17 8 40	17°46'28	18°32	29°48	4°31	7°34	15°29	28°R46	19°3	14°35	4°45	29°6	0°31	1°59	10°19	T 30
W31	17 12 37	18°43'45	1°15	0°11	5°11	8°9	15°23	28°45	19°2	14°37	4°46	28°59	0°28	2°6	10°21	W31

Delta T = 117.66 sec

Julian Calendar 1 May 1581 == Greg. Calendar 11 May 1581

JUNE 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	17 16 33	19°41'03	15°11	0°11	6°11	8°14	15°R17	28°R45	19°R 2	14°39	4°46	28°R53	0°25	2°12	10°23	T 1
F 2	17 20 30	20°38'19	28°2	0°39	8°11	9°21	15°11	28°45	19°1	14°41	4°47	28°34	0°22	2°19	10°25	F 2
S 3	17 24 26	21°35'35	10°39	1°5	9°24	9°56	15°5	28°45	19°0	14°43	4°47	28°45	0°19	2°26	10°26	S 3
S 4	17 28 23	22°32'51	23°2	1°36	10°37	10°32	14°58	28°44	18°59	14°45	4°48	28°D43	0°16	2°32	10°28	S 4
M 5	17 32 19	23°30'06	5°11	2°11	11°51	11°8	14°51	28°44	18°58	14°47	4°48	28°43	0°12	2°39	10°29	M 5
T 6	17 36 16	24°27'20	17°9	2°51	13°4	11°44	14°45	28°43	18°57	14°49	4°49	28°45	0°9	2°46	10°31	T 6
W 7	17 40 12	25°24'34	29°1	3°34	14°18	12°20	14°38	28°42	18°56	14°52	4°49	28°46	0°6	2°52	10°32	W 7
T 8	17 44 9	26°21'47	10°50	4°22	15°31	12°56	14°31	28°42	18°55	14°54	4°49	28°48	0°3	2°59	10°34	T 8
F 9	17 48 6	27°18'59	22°42	5°15	16°45	13°32	14°24	28°41	18°53	14°56	4°50	28°R49	29°59	3°6	10°35	F 9
S 10	17 52 2	28°16'11	4°42	6°11	17°58	14°8	14°17	28°40	18°52	14°58	4°50	28°49	29°56	3°12	10°37	S 10
S 11	17 55 59	29°13'22	16°54	7°11	19°11	14°44	14°10	28°38	18°51	15°0	4°50	28°47	29°53	3°19	10°38	S 11
M12	17 59 55	0°13'33	29°22	8°16	20°25	15°20	14°3	28°37	18°50	15°2	4°51	28°45	29°50	3°26	10°39	M12
T 13	18 3 52	1°7'44	12°10	9°24	21°38	15°56	13°55	28°36	18°48	15°4	4°51	28°41	29°47	3°32	10°40	T 13
W14	18 7 48	2°4'54	25°21	10°36	22°52	16°32	13°48	28°35	18°47	15°7	4°51	28°37	29°44	3°39	10°41	W14
T 15	18 11 45	3°2'04	8°55	11°52	24°5	17°8	13°41	28°33	18°46	15°9	4°51	28°34	29°41	3°46	10°42	T 15
F 16	18 15 41	3°59'14	22°50	13°12	25°19	17°45	13°33	28°31	18°44	15°11	4°52	28°30	29°37	3°52	10°44	F 16
S 17	18 19 38	4°56'23	7°4	14°35	26°32	18°21	13°26	28°30	18°43	15°13	4°52	28°28	29°34	3°59	10°44	S 17
S 18	18 23 35	5°53'33	21°31	16°2	27°46	18°57	13°18	28°28	18°41	15°15	4°52	28°D27	29°31	4°6	10°45	S 18
M19	18 27 31	6°50'43	6°6	17°33	29°0	19°34	13°10	28°26	18°40	15°18	4°52	28°27	29°28	4°12	10°46	M19
T 20	18 31 28	7°47'53	20°43	19°8	0°13	20°10	13°3	28°24	18°38	15°20	4°52	28°28	29°25	4°19	10°47	T 20
W21	18 35 24	8°45'03	5°17	20°46	1°27	20°47	12°55	28°22	18°36	15°22	4°52	28°29	29°22	4°26	10°48	W21
T 22	18 39 21	9°42'13	19°43	22°27	2°40	21°23	12°47	28°20	18°35	15°24	4°53	28°30	29°18	4°32	10°49	T 22
F 23	18 43 17	10°39'24	3°57	24°12	3°54	22°0	12°40	28°18	18°33	15°26	4°53	28°31	29°15	4°39	10°49	F 23
S 24	18 47 14	11°36'35	17°58	26°0	5°8	22°36	12°32	28°16	18°31	15°29	4°53	28°R31	29°12	4°46	10°50	S 24
S 25	18 51 10	12°33'47	1°44	27°50	6°21	23°13	12°24	28°13	18°29	15°31	4°R53	28°30	29°9	4°52	10°50	S 25
M26	18 55 7	13°30'59	15°15	29°44	7°35	23°49	12°17	28°11	18°28	15°33	4°53	28°29	29°6	4°59	10°51	M26
T 27	18 59 4	14°28'12	28°32	1°41	8°49	24°26	12°9	28°8	18°26	15°35	4°53	28°27	29°2	5°6	10°51	T 27
W28	19 3 0	15°25'26	11°33	3°40	10°2	25°3	12°1	28°5	18°24	15°38	4°53	28°25	28°59	5°12	10°52	W28
T 29	19 6 57	16°22'40	24°21	5°41	11°16	25°40	11°53	28°3	18°22	15°40	4°52	28°24	28°56	5°19	10°52	T 29
F 30	19 10 53	17°19'54	6°55	7°43	12°30	26°16	11°46	28°0	18°20	15°42	4°52	28°22	28°53	5°26	10°52	F 30

Delta T = 117.51 sec

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1581
geocentric

JULY 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	19 14 50	18 ⁵ 17'09	19 ⁵ 17	9 ⁵ 48	13 ⁵ 44	26 ⁰ 53	11 ⁰ R38	27 ⁰ R57	18 ⁰ R18	15 ⁵ 44	4 ⁰ R52	28 ⁰ R22	28 ⁰ 50	5 ⁰ 32	10 ⁰ Y53	S 1
S 2	19 18 46	19 ⁰ 14'24	1 ⁰ 28	11 ⁰ 54	14 ⁰ 57	27 ⁰ 30	11 ⁰ 30	27 ⁰ 54	18 ⁰ 16	15 ⁰ 47	4 ⁰ Y52	28 ⁰ D22	28 ⁰ 47	5 ⁰ 39	10 ⁰ 53	S 2
M 3	19 22 43	20 ⁰ 11'40	13 ⁰ 29	14 ⁰ 1	16 ⁰ 11	28 ⁰ 7	11 ⁰ 23	27 ⁰ 51	18 ⁰ 14	15 ⁰ 49	4 ⁰ 52	28 ⁰ 32	28 ⁰ 43	5 ⁰ 46	10 ⁰ 53	M 3
T 4	19 26 40	21 ⁰ 8'56	25 ⁰ 23	16 ⁰ 8	17 ⁰ 25	28 ⁰ 44	11 ⁰ 15	27 ⁰ 48	18 ⁰ 12	15 ⁰ 51	4 ⁰ 52	28 ⁰ 23	28 ⁰ 40	5 ⁰ 52	10 ⁰ 53	T 4
W 5	19 30 36	22 ⁰ 6'12	7 ⁰ 13	18 ⁰ 16	18 ⁰ 39	29 ⁰ 21	11 ⁰ 8	27 ⁰ 45	18 ⁰ 10	15 ⁰ 53	4 ⁰ 52	28 ⁰ 23	28 ⁰ 37	5 ⁰ 59	10 ⁰ R53	W 5
T 6	19 34 33	23 ⁰ 3'28	19 ⁰ 2	20 ⁰ 24	19 ⁰ 53	29 ⁰ 58	11 ⁰ 0	27 ⁰ 42	18 ⁰ 8	15 ⁰ 55	4 ⁰ 51	28 ⁰ 24	28 ⁰ 34	6 ⁰ 6	10 ⁰ 53	T 6
F 7	19 38 29	24 ⁰ 0'45	0 ⁰ 54	22 ⁰ 32	21 ⁰ 7	0 ⁰ 35	10 ⁰ 53	27 ⁰ 38	18 ⁰ 6	15 ⁰ 58	4 ⁰ 51	28 ⁰ 24	28 ⁰ 31	6 ⁰ 12	10 ⁰ 53	F 7
S 8	19 42 26	24 ⁰ 58'03	12 ⁰ 53	24 ⁰ 39	22 ⁰ 21	1 ⁰ 12	10 ⁰ 46	27 ⁰ 35	18 ⁰ 4	16 ⁰ 0	4 ⁰ 51	28 ⁰ 25	28 ⁰ 28	6 ⁰ 19	10 ⁰ 53	S 8
S 9	19 46 22	25 ⁰ 55'21	25 ⁰ 3	26 ⁰ 45	23 ⁰ 34	1 ⁰ 49	10 ⁰ 39	27 ⁰ 31	18 ⁰ 2	16 ⁰ 2	4 ⁰ 51	28 ⁰ R25	28 ⁰ 24	6 ⁰ 26	10 ⁰ 52	S 9
M10	19 50 19	26 ⁰ 52'39	7 ⁰ 30	28 ⁰ 51	24 ⁰ 48	2 ⁰ 27	10 ⁰ 31	27 ⁰ 28	18 ⁰ 0	16 ⁰ 4	4 ⁰ 50	28 ⁰ 25	28 ⁰ 21	6 ⁰ 32	10 ⁰ 52	M10
T 11	19 54 15	27 ⁰ 49'57	20 ⁰ 16	0 ⁰ 56	26 ⁰ 2	3 ⁰ 4	10 ⁰ 24	27 ⁰ 24	17 ⁰ 57	16 ⁰ 6	4 ⁰ 50	28 ⁰ 25	28 ⁰ 18	6 ⁰ 39	10 ⁰ 52	T 11
W12	19 58 12	28 ⁰ 47'17	3 ⁰ 25	3 ⁰ 0	27 ⁰ 16	3 ⁰ 41	10 ⁰ 17	27 ⁰ 21	17 ⁰ 55	16 ⁰ 9	4 ⁰ 50	28 ⁰ D25	28 ⁰ 15	6 ⁰ 46	10 ⁰ 51	W12
T 13	20 2 9	29 ⁰ 44'36	17 ⁰ 0	5 ⁰ 2	28 ⁰ 30	4 ⁰ 18	10 ⁰ 10	27 ⁰ 17	17 ⁰ 53	16 ⁰ 11	4 ⁰ 49	28 ⁰ 25	28 ⁰ 12	6 ⁰ 53	10 ⁰ 51	T 13
F 14	20 6 5	0 ⁰ 41'57	1 ⁰ 1	7 ⁰ 3	29 ⁰ 44	4 ⁰ 56	10 ⁰ 4	27 ⁰ 13	17 ⁰ 51	16 ⁰ 13	4 ⁰ 49	28 ⁰ 25	28 ⁰ 8	6 ⁰ 59	10 ⁰ 50	F 14
S 15	20 10 2	1 ⁰ 39'18	15 ⁰ 25	9 ⁰ 2	0 ⁰ 58	5 ⁰ 33	9 ⁰ 57	27 ⁰ 10	17 ⁰ 49	16 ⁰ 15	4 ⁰ 48	28 ⁰ 25	28 ⁰ 5	7 ⁰ 6	10 ⁰ 50	S 15
S 16	20 13 58	2 ⁰ 36'40	0 ⁰ 9	11 ⁰ 0	2 ⁰ 12	6 ⁰ 10	9 ⁰ 50	27 ⁰ 6	17 ⁰ 46	16 ⁰ 17	4 ⁰ 48	28 ⁰ R25	28 ⁰ 2	7 ⁰ 13	10 ⁰ 49	S 16
M17	20 17 55	3 ⁰ 34'02	15 ⁰ 5	12 ⁰ 57	3 ⁰ 26	6 ⁰ 48	9 ⁰ 44	27 ⁰ 2	17 ⁰ 44	16 ⁰ 19	4 ⁰ 47	28 ⁰ 25	27 ⁰ 59	7 ⁰ 19	10 ⁰ 49	M17
T 18	20 21 51	4 ⁰ 31'26	0 ⁰ 6	14 ⁰ 52	4 ⁰ 40	7 ⁰ 25	9 ⁰ 37	26 ⁰ 58	17 ⁰ 42	16 ⁰ 22	4 ⁰ 47	28 ⁰ 25	27 ⁰ 56	7 ⁰ 26	10 ⁰ 48	T 18
W19	20 25 48	5 ⁰ 28'50	15 ⁰ 3	16 ⁰ 45	5 ⁰ 54	8 ⁰ 3	9 ⁰ 31	26 ⁰ 54	17 ⁰ 39	16 ⁰ 24	4 ⁰ 47	28 ⁰ 24	27 ⁰ 53	7 ⁰ 33	10 ⁰ 47	W19
T 20	20 29 44	6 ⁰ 26'16	29 ⁰ 48	18 ⁰ 37	7 ⁰ 8	8 ⁰ 41	9 ⁰ 25	26 ⁰ 50	17 ⁰ 37	16 ⁰ 26	4 ⁰ 46	28 ⁰ 23	27 ⁰ 49	7 ⁰ 39	10 ⁰ 46	T 20
F 21	20 33 41	7 ⁰ 23'43	14 ⁰ Y16	20 ⁰ 27	8 ⁰ 22	9 ⁰ 18	9 ⁰ 19	26 ⁰ 46	17 ⁰ 35	16 ⁰ 28	4 ⁰ 45	28 ⁰ 22	27 ⁰ 46	7 ⁰ 46	10 ⁰ 46	F 21
S 22	20 37 38	8 ⁰ 21'11	28 ⁰ 24	22 ⁰ 16	9 ⁰ 36	9 ⁰ 56	9 ⁰ 13	26 ⁰ 41	17 ⁰ 32	16 ⁰ 30	4 ⁰ 45	28 ⁰ 22	27 ⁰ 43	7 ⁰ 53	10 ⁰ 45	S 22
S 23	20 41 34	9 ⁰ 18'41	12 ⁰ 9	24 ⁰ 3	10 ⁰ 50	10 ⁰ 33	9 ⁰ 7	26 ⁰ 37	17 ⁰ 30	16 ⁰ 32	4 ⁰ 44	28 ⁰ D22	27 ⁰ 40	7 ⁰ 59	10 ⁰ 44	S 23
M24	20 45 31	10 ⁰ 16'12	25 ⁰ 32	25 ⁰ 48	12 ⁰ 4	11 ⁰ 11	9 ⁰ 2	26 ⁰ 33	17 ⁰ 28	16 ⁰ 34	4 ⁰ 44	28 ⁰ 22	27 ⁰ 37	8 ⁰ 6	10 ⁰ 43	M24
T 25	20 49 27	11 ⁰ 13'45	8 ⁰ 35	27 ⁰ 32	13 ⁰ 19	11 ⁰ 49	8 ⁰ 56	26 ⁰ 29	17 ⁰ 25	16 ⁰ 36	4 ⁰ 43	28 ⁰ 23	27 ⁰ 34	8 ⁰ 13	10 ⁰ 42	T 25
W26	20 53 24	12 ⁰ 11'19	21 ⁰ 20	29 ⁰ 15	14 ⁰ 33	12 ⁰ 27	8 ⁰ 51	26 ⁰ 25	17 ⁰ 23	16 ⁰ 38	4 ⁰ 43	28 ⁰ 24	27 ⁰ 30	8 ⁰ 19	10 ⁰ 41	W26
T 27	20 57 20	13 ⁰ 8'55	3 ⁰ 50	0 ⁰ 55	15 ⁰ 47	13 ⁰ 5	8 ⁰ 46	26 ⁰ 20	17 ⁰ 21	16 ⁰ 40	4 ⁰ 42	28 ⁰ 25	27 ⁰ 27	8 ⁰ 26	10 ⁰ 39	T 27
F 28	21 1 17	14 ⁰ 6'31	16 ⁰ 8	2 ⁰ 35	17 ⁰ 1	13 ⁰ 43	8 ⁰ 41	26 ⁰ 16	17 ⁰ 18	16 ⁰ 42	4 ⁰ 41	28 ⁰ 26	27 ⁰ 24	8 ⁰ 33	10 ⁰ 38	F 28
S 29	21 5 13	15 ⁰ 4'10	28 ⁰ 15	4 ⁰ 13	18 ⁰ 15	14 ⁰ 21	8 ⁰ 36	26 ⁰ 11	17 ⁰ 16	16 ⁰ 44	4 ⁰ 41	28 ⁰ R26	27 ⁰ 21	8 ⁰ 39	10 ⁰ 37	S 29
S 30	21 9 10	16 ⁰ 1'49	10 ⁰ 15	5 ⁰ 49	19 ⁰ 29	14 ⁰ 59	8 ⁰ 31	26 ⁰ 7	17 ⁰ 13	16 ⁰ 46	4 ⁰ 40	28 ⁰ 26	27 ⁰ 18	8 ⁰ 46	10 ⁰ 36	S 30
M31	21 13 7	16 ⁰ 59'30	22 ⁰ 9	7 ⁰ 24	20 ⁰ 44	15 ⁰ 37	8 ⁰ 26	26 ⁰ 3	17 ⁰ 11	16 ⁰ 48	4 ⁰ Y39	28 ⁰ 25	27 ⁰ 14	8 ⁰ 53	10 ⁰ Y34	M31

Delta T = 117.37 sec

Julian Calendar 1 July 1581 == Greg. Calendar 11 July 1581

AUGUST 1581 JC

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	21 17 3	17 ⁰ 57'12	4 ⁰⁰ 0	8 ⁰⁰ 57	21 ⁰⁰ 58	16 ⁰⁰ 15	8 ⁰ R22	25 ⁰ R58	17 ⁰ R 9	16 ⁰ 50	4 ⁰ R38	28 ⁰ R22	27 ⁰ 31	8 ⁰⁰ 59	10 ⁰ R33	T 1
W 2	21 21 0	18 ⁰ 54'55	15 ⁰ 49	10 ⁰ 29	23 ⁰ 12	16 ⁰ 53	8 ⁰ 18	25 ⁰ 54	17 ⁰ 6	16 ⁰ 52	4 ⁰ Y38	28 ⁰ 19	27 ⁰ 8	9 ⁰ 6	10 ⁰ Y31	W 2
T 3	21 24 56	19 ⁰ 52'39	27 ⁰ 38	12 ⁰ 0	24 ⁰ 26	17 ⁰ 31	8 ⁰ 14	25 ⁰ 49	17 ⁰ 4	16 ⁰ 54	4 ⁰ 37	28 ⁰ 16	27 ⁰ 5	9 ⁰ 13	10 ⁰ 30	T 3
F 4	21 28 53	20 ⁰ 50'25	9 ⁰ 32	13 ⁰ 28	25 ⁰ 41	18 ⁰ 9	8 ⁰ 10	25 ⁰ 45	17 ⁰ 1	16 ⁰ 56	4 ⁰ 36	28 ⁰ 12	27 ⁰ 2	9 ⁰ 19	10 ⁰ 28	F 4
S 5	21 32 49	21 ⁰ 48'12	21 ⁰ 32	14 ⁰ 56	26 ⁰ 55	18 ⁰ 47	8 ⁰ 6	25 ⁰ 40	16 ⁰ 59	16 ⁰ 58	4 ⁰ 35	28 ⁰ 9	26 ⁰ 59	9 ⁰ 26	10 ⁰ 27	S 5
S 6	21 36 46	22 ⁰ 46'00	3 ⁰⁰ 41	16 ⁰ 22	28 ⁰ 9	19 ⁰ 26	8 ⁰ 2	25 ⁰ 36	16 ⁰ 57	17 ⁰ 0	4 ⁰ 34	28 ⁰ 7	26 ⁰ 55	9 ⁰ 33	10 ⁰ 25	S 6
M 7	21 40 42	23 ⁰ 43'49	16 ⁰ 5	17 ⁰ 46	29 ⁰ 23	20 ⁰ 4	7 ⁰ 59	25 ⁰ 31	16 ⁰ 54	17 ⁰ 2	4 ⁰ 34	28 ⁰ 6	26 ⁰ 52	9 ⁰ 39	10 ⁰ 23	M 7
T 8	21 44 39	24 ⁰ 41'39	28 ⁰ 47	19 ⁰ 8	0 ⁰⁰ 38	20 ⁰ 42	7 ⁰ 56	25 ⁰ 27	16 ⁰ 52	17 ⁰ 4	4 ⁰ 33	28 ⁰ D 5	26 ⁰ 49	9 ⁰ 46	10 ⁰ 22	T 8
W 9	21 48 36	25 ⁰ 39'31	11 ⁰ 50	20 ⁰ 29	1 ⁰ 52	21 ⁰ 21	7 ⁰ 53	25 ⁰ 22	16 ⁰ 50	17 ⁰ 6	4 ⁰ 32	28 ⁰ 6	26 ⁰ 46	9 ⁰ 53	10 ⁰ 20	W 9
T 10	21 52 32	26 ⁰ 37'24	25 ⁰ 18	21 ⁰ 49	3 ⁰ 6	21 ⁰ 59	7 ⁰ 50	25 ⁰ 18	16 ⁰ 47	17 ⁰ 7	4 ⁰ 31	28 ⁰ 8	26 ⁰ 43	10 ⁰ 0	10 ⁰ 18	T 10
F 11	21 56 29	27 ⁰ 35'19	9 ⁰ 33	23 ⁰ 6	4 ⁰ 21	22 ⁰ 38	7 ⁰ 47	25 ⁰ 13	16 ⁰ 45	17 ⁰ 9	4 ⁰ 30	28 ⁰ 9	26 ⁰ 40	10 ⁰ 6	10 ⁰ 16	F 11
S 12	22 0 25	28 ⁰ 33'15	23 ⁰ 35	24 ⁰ 22	5 ⁰ 35	23 ⁰ 16	7 ⁰ 45	25 ⁰ 9	16 ⁰ 43	17 ⁰ 11	4 ⁰ 29	28 ⁰ R10	26 ⁰ 36	10 ⁰ 13	10 ⁰ 14	S 12
S 13	22 4 22	29 ⁰ 31'12	8 ⁰⁰ 21	25 ⁰ 36	6 ⁰ 49	23 ⁰ 55	7 ⁰ 42	25 ⁰ 4	16 ⁰ 40	17 ⁰ 13	4 ⁰ 28	28 ⁰ 10	26 ⁰ 33	10 ⁰ 20	10 ⁰ 12	S 13
M14	22 8 18	0 ⁰⁰ 29'10	23 ⁰ 26	26 ⁰ 49	8 ⁰ 4	24 ⁰ 33	7 ⁰ 40	25 ⁰ 0	16 ⁰ 38	17 ⁰ 15	4 ⁰ 27	28 ⁰ 8	26 ⁰ 30	10 ⁰ 26	10 ⁰ 10	M14
T 15	22 12 15	1 ⁰ 27'10	8 ⁰ 40	27 ⁰ 59	9 ⁰ 18	25 ⁰ 12	7 ⁰ 38	24 ⁰ 55	16 ⁰ 36	17 ⁰ 16	4 ⁰ 26	28 ⁰ 5	26 ⁰ 27	10 ⁰ 33	10 ⁰ 8	T 15
W16	22 16 11	2 ⁰ 25'12	23 ⁰ 54	29 ⁰ 7	10 ⁰ 32	25 ⁰ 51	7 ⁰ 37	24 ⁰ 51	16 ⁰ 33	17 ⁰ 18	4 ⁰ 26	28 ⁰ 0	26 ⁰ 24	10 ⁰ 40	10 ⁰ 6	W16
T 17	22 20 8	3 ⁰ 23'15	8 ⁰ Y58	0 ⁰ 13	11 ⁰ 47	26 ⁰ 29	7 ⁰ 35	24 ⁰ 46	16 ⁰ 31	17 ⁰ 20	4 ⁰ 25	27 ⁰ 55	26 ⁰ 20	10 ⁰ 46	10 ⁰ 4	T 17
F 18	22 24 5	4 ⁰ 21'21	23 ⁰ 42	1 ⁰ 17	13 ⁰ 1	27 ⁰ 8	7 ⁰ 34	24 ⁰ 42	16 ⁰ 29	17 ⁰ 21	4 ⁰ 24	27 ⁰ 50	26 ⁰ 17	10 ⁰ 53	10 ⁰ 2	F 18
S 19	22 28 1	5 ⁰ 19'28	8 ⁰ R 2	2 ⁰ 18	14 ⁰ 16	27 ⁰ 47	7 ⁰ 32	24 ⁰ 37	16 ⁰ 27	17 ⁰ 23	4 ⁰ 23	27 ⁰ 46	26 ⁰ 14	11 ⁰ 0	10 ⁰ 0	S 19
S 20	22 31 58	6 ⁰ 17'37	21 ⁰ 53	3 ⁰ 17	15 ⁰ 30	28 ⁰ 26	7 ⁰ 31	24 ⁰ 33	16 ⁰ 24	17 ⁰ 25	4 ⁰ 22	27 ⁰ 44	26 ⁰ 11	11 ⁰ 6	9 ⁰ 58	S 20
M21	22 35 54	7 ⁰ 15'49	5 ⁰ 18	4 ⁰ 13	16 ⁰ 44	29 ⁰ 5	7 ⁰ 31	24 ⁰ 28	16 ⁰ 22	17 ⁰ 26	4 ⁰ 21	27 ⁰ D43	26 ⁰ 8	11 ⁰ 13	9 ⁰ 56	M21
T 22	22 39 51	8 ⁰ 14'03	18 ⁰ 17	5 ⁰ 7	17 ⁰ 59	29 ⁰ 44	7 ⁰ 30	24 ⁰ 24	16 ⁰ 20	17 ⁰ 28	4 ⁰ 20	27 ⁰ 43	26 ⁰ 5	11 ⁰ 20	9 ⁰ 53	T 22
W23	22 43 47	9 ⁰ 12'18	0 ⁰ 54	5 ⁰ 57	19 ⁰ 13	0 ⁰ 23	7 ⁰ 30	24 ⁰ 20	16 ⁰ 18	17 ⁰ 29	4 ⁰ 18	27 ⁰ 45	26 ⁰ 1	11 ⁰ 26	9 ⁰ 51	W23
T 24	22 47 44	10 ⁰ 10'36	13 ⁰ 14	6 ⁰ 44	20 ⁰ 28	1 ⁰ 2	7 ⁰ 29	24 ⁰ 16	16 ⁰ 16	17 ⁰ 31	4 ⁰ 17	27 ⁰ 46	25 ⁰ 58	11 ⁰ 33	9 ⁰ 49	T 24
F 25	22 51 40	11 ⁰ 8'56	25 ⁰ 21	7 ⁰ 28	21 ⁰ 42	1 ⁰ 41	7 ⁰ D29	24 ⁰ 11	16 ⁰ 14	17 ⁰ 32	4 ⁰ 16	27 ⁰ R47	25 ⁰ 55	11 ⁰ 40	9 ⁰ 46	F 25
S 26	22 55 37	12 ⁰ 7'18	7 ⁰ L19	8 ⁰ 8	22 ⁰ 56	2 ⁰ 20	7 ⁰ 29	24 ⁰ 7	16 ⁰ 12	17 ⁰ 34	4 ⁰ 15	27 ⁰ 46	25 ⁰ 52	11 ⁰ 46	9 ⁰ 44	S 26
S 27	22 59 34	13 ⁰ 5'41	19 ⁰ 11	8 ⁰ 44	24 ⁰ 11	2 ⁰ 59	7 ⁰ 30	24 ⁰ 3	16 ⁰ 9	17 ⁰ 35	4 ⁰ 14	27 ⁰ 44	25 ⁰ 49	11 ⁰ 53	9 ⁰ 41	S 27
M28	23 3 30	14 ⁰ 4'07	1 ⁰⁰ 1	9 ⁰ 15	25 ⁰ 25	3 ⁰ 39	7 ⁰ 30	23 ⁰ 59	16 ⁰ 7	17 ⁰ 37	4 ⁰ 13	27 ⁰ 39	25 ⁰ 46	12 ⁰ 0	9 ⁰ 39	M28
T 29	23 7 27	15 ⁰ 2'35	12 ⁰ 50	9 ⁰ 42	26 ⁰ 40	4 ⁰ 18	7 ⁰ 31	23 ⁰ 55	16 ⁰ 5	17 ⁰ 38	4 ⁰ 12	27 ⁰ 33	25 ⁰ 42	12 ⁰ 7	9 ⁰ 36	T 29
W30	23 11 23	16 ⁰ 1'04	24 ⁰ 41	10 ⁰ 4	27 ⁰ 54	4 ⁰ 57	7 ⁰ 32	23 ⁰ 51	16 ⁰ 3	17 ⁰ 39	4 ⁰ 11	27 ⁰ 24	25 ⁰ 39	12 ⁰ 13	9 ⁰ 34	W30
T 31	23 15 20	16 ⁰⁰ 59'35	6 ⁰ 13	10 ⁰ 11	29 ⁰⁰ 9	5 ⁰ 13	7 ⁰ 33	23 ⁰⁰ 47	16 ⁰⁰ 2	17 ⁰⁰ 41	4 ⁰ Y10	27 ⁰ 31	25 ⁰⁰ 36	12 ⁰⁰ 20	9 ⁰ Y31	T 31

ASTRODIENST EPHEMERIS for the year 1581

geocentric

SEPTEMBER 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	23 19 16	17 ^h 58 ^m 08 ^s	18 ^h 33 ^m	10 ^h 32 ^m	0 ^h 23 ^m	6 ^h 16 ^m	7 ^h 34 ^m	23°R43	16°R 0	17 ^h 42 ^m	4°R 9	27°R 5	25 ^h 33 ^m	12 ^h 27 ^m	9°R29	F 1
S 2	23 23 13	18°56'43"	0 ^h 38 ^m	10°R38	1°38	6°55	7°36	23 ^h 39 ^m	15 ^h 58 ^m	17°43	4°Y 8	26 ^h 36 ^m	25°30	12°33	9°Y26	S 2
S 3	23 27 9	19°55'20"	12°52	10°36	2°52	7°35	7°38	23°35	15°56	17°44	4° 6	26°49	25°26	12°40	9°24	S 3
M 4	23 31 6	20°53'59"	25°18	10°29	4° 7	8°14	7°40	23°31	15°54	17°46	4° 5	26°43	25°23	12°47	9°21	M 4
T 5	23 35 2	21°52'39"	7 ^h 58 ^m	10°14	5°21	8°54	7°42	23°28	15°52	17°47	4° 4	26°40	25°20	12°53	9°18	T 5
W 6	23 38 59	22°51'21"	20°57	9°52	6°36	9°34	7°44	23°24	15°50	17°48	4° 3	26°D39	25°17	13° 0	9°16	W 6
T 7	23 42 56	23°50'05"	4 ^h 31 ^m	9°23	7°50	10°13	7°46	23°20	15°49	17°49	4° 2	26°39	25°14	13° 7	9°13	T 7
F 8	23 46 52	24°48'51"	18° 1	8°47	9° 4	10°53	7°49	23°17	15°47	17°50	4° 1	26°40	25°11	13°13	9°10	F 8
S 9	23 50 49	25°47'38"	2 ^h 11 ^m	8° 4	10°19	11°33	7°52	23°13	15°45	17°51	4° 0	26°R40	25° 7	13°20	9° 7	S 9
S 10	23 54 45	26°46'27"	16°46	7°14	11°33	12°13	7°55	23°10	15°44	17°52	3°58	26°39	25° 4	13°27	9° 5	S 10
M 11	23 58 42	27°45'17"	1 ^h 42 ^m	6°18	12°48	12°53	7°58	23° 7	15°42	17°53	3°57	26°35	25° 1	13°33	9° 2	M 11
T 12	0 2 38	28°44'10"	16°54	5°18	14° 2	13°32	8° 1	23° 3	15°41	17°54	3°56	26°28	24°58	13°40	8°59	T 12
W 13	0 6 35	29°43'04"	2 ^h Y10	4°13	15°17	14°12	8° 5	23° 0	15°39	17°55	3°55	26°20	24°55	13°47	8°56	W 13
T 14	0 10 31	0 ^h 42 ^m 00	17°20	3° 5	16°31	14°52	8° 9	22°57	15°38	17°56	3°54	26°10	24°51	13°54	8°54	T 14
F 15	0 14 28	1°40'59"	2 ^h 14	1°57	17°46	15°32	8°13	22°54	15°36	17°57	3°53	26° 1	24°48	14° 0	8°51	F 15
S 16	0 18 25	2°40'00"	16°44	0°50	19° 0	16°13	8°17	22°51	15°35	17°58	3°51	25°52	24°45	14° 7	8°48	S 16
S 17	0 22 21	3°39'03"	0 ^h 45 ^m	29 ^h 45 ^m	20°15	16°53	8°21	22°48	15°33	17°59	3°50	25°46	24°42	14°14	8°45	S 17
M 18	0 26 18	4°38'09"	14°15	28°44	21°29	17°33	8°25	22°46	15°32	18° 0	3°49	25°42	24°39	14°20	8°42	M 18
T 19	0 30 14	5°37'17"	27°17	27°50	22°44	18°13	8°30	22°43	15°31	18° 0	3°48	25°40	24°36	14°27	8°40	T 19
W 20	0 34 11	6°36'27"	9 ^h 55 ^m	27° 3	23°58	18°53	8°35	22°40	15°30	18° 1	3°47	25°D40	24°32	14°34	8°37	W 20
T 21	0 38 7	7°35'40"	26°34	26°26	25°12	19°34	8°40	22°38	15°28	18° 2	3°46	25°R40	24°29	14°40	8°34	T 21
F 22	0 42 4	8°34'55"	4 ^h 16 ^m	25°57	26°27	20°14	8°45	22°35	15°27	18° 3	3°44	25°40	24°26	14°47	8°31	F 22
S 23	0 46 0	9°34'12"	16°10	25°40	27°41	20°55	8°50	22°33	15°26	18° 3	3°43	25°38	24°23	14°54	8°28	S 23
S 24	0 49 57	10°33'31"	27°59	25°D33	28°56	21°35	8°56	22°31	15°25	18° 4	3°42	25°34	24°20	15° 0	8°25	S 24
M 25	0 53 54	11°32'53"	9 ^h 48 ^m	25°37	0 ^h 10 ^m	22°16	9° 1	22°28	15°24	18° 4	3°41	25°26	24°17	15° 7	8°23	M 25
T 26	0 57 50	12°32'17"	21°38	25°52	1°25	22°56	9° 7	22°26	15°23	18° 5	3°40	25°16	24°13	15°14	8°20	T 26
W 27	1 1 47	13°31'43"	3 ^h 43 ^m	26°16	2°39	23°37	9°13	22°24	15°22	18° 5	3°39	25° 4	24°10	15°21	8°17	W 27
T 28	1 5 43	14°31'11"	15°34	26°51	3°54	24°18	9°19	22°22	15°21	18° 6	3°37	24°50	24° 7	15°27	8°14	T 28
F 29	1 9 40	15°30'41"	27°43	27°34	5° 8	24°58	9°26	22°20	15°20	18° 6	3°36	24°36	24° 4	15°34	8°11	F 29
S 30	1 13 36	16°30'13"	9 ^h 59 ^m	28 ^h 26 ^m	6 ^h 23 ^m	25°39	9°32	22°19	15°20	18° 7	3°Y35	24°R23	24°R 1	15°41	8°Y 9	S 30

Delta T = 117.07 sec

Julian Calendar 1 Sept. 1581 == Greg. Calendar 11 Sept. 1581

OCTOBER 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	1 17 33	17 ^h 49'47"	22 ^h 25'	29 ^h 25'	7 ^h 37'	26 ^h 20'	9 ^h 39'	22°R17	15°R19	18 ^h 58' 7	3°R34	24°R11	23 ^h 57'	15 ^h 47'	8°R 6	S 1	
M 2	1 21 29	18°29'24"	5 ^h 47' 0	0 ^h 31'	8°51'	27° 1'	9°45'	22 ^h 16'	15 ^h 18'	18° 8'	3 ^h Y33	24 ^h 8' 2	23°54'	15°54'	8 ^h Y 3	M 2	
T 3	1 25 26	19°29'02"	17°48'	1°43'	10° 6'	27°42'	9°52'	22°14'	15°18'	18° 8'	3°32'	23°57'	23°51'	16° 1'	8° 0'	T 3	
W 4	1 29 23	20°28'41"	0 ^h 49'	2°59'	11°20'	28°23'	9°59'	22°13'	15°17'	18° 8'	3°31'	23°54'	23°48'	16° 7'	7°57'	W 4	
T 5	1 33 19	21°28'23"	14° 7'	4°20'	12°35'	29° 4'	10° 7'	22°12'	15°17'	18° 8'	3°29'	23°53'	23°45'	16°14'	7°55'	T 5	
F 6	1 37 16	22°28'06"	27°43'	5°45'	13°49'	29°45'	10°14'	22°10'	15°16'	18° 9'	3°28'	23°53'	23°42'	16°21'	7°52'	F 6	
S 7	1 41 12	23°27'51"	11 ^h 40'	7°13'	15° 4'	0 ^h 26'	10°22'	22° 9'	15°16'	18° 9'	3°27'	23°52'	23°38'	16°27'	7°49'	S 7	
S 8	1 45 9	24°27'38"	25°58'	8°43'	16°18'	1° 7'	10°29'	22° 8'	15°15'	18° 9'	3°26'	23°50'	23°35'	16°34'	7°47'	S 8	
M 9	1 49 5	25°27'26"	10 ^h 36'	10°16'	17°32'	1°48'	10°37'	22° 8'	15°15'	18° 9'	3°25'	23°45'	23°32'	16°41'	7°44'	M 9	
T 10	1 53 2	26°27'16"	25°29'	11°50'	18°47'	2°30'	10°45'	22° 7'	15°15'	18° 9'	3°24'	23°38'	23°29'	16°48'	7°41'	T 10	
W 11	1 56 58	27°27'08"	10 ^h Y30'	13°26'	20° 1'	3°11'	10°53'	22° 6'	15°14'	18°R 9'	3°23'	23°28'	23°26'	16°54'	7°39'	W 11	
T 12	2 0 55	28°27'01"	25°30'	15° 3'	21°15'	3°52'	11° 1'	22° 6'	15°14'	18° 9'	3°22'	23°16'	23°23'	17° 1'	7°36'	T 12	
F 13	2 4 52	29°26'57"	10 ^h Y19'	16°40'	22°30'	4°34'	11°10'	22° 5'	15°14'	18° 9'	3°21'	23° 4'	23°19'	17° 8'	7°33'	F 13	
S 14	2 8 48	0 ^h 26'54"	24°48'	18°18'	23°44'	5°15'	11°18'	22° 5'	15°14'	18° 9'	3°20'	22°54'	23°16'	17°14'	7°31'	S 14	
S 15	2 12 45	1°26'54"	8 ^h 51'	19°57'	24°59'	5°57'	11°27'	22° 5'	15°D14'	18° 9'	3°19'	22°46'	23°13'	17°21'	7°28'	S 15	
M 16	2 16 41	2°26'56"	22°26'	21°36'	26°13'	6°38'	11°36'	22° 5'	15°14'	18° 9'	3°18'	22°40'	23°10'	17°28'	7°26'	M 16	
T 17	2 20 38	3°27'00"	5 ^h 53'	23°15'	27°27'	7°20'	11°44'	22°D 5'	15°14'	18° 9'	3°17'	22°37'	23° 7'	17°34'	7°23'	T 17	
W 18	2 24 34	4°27'06"	18°15'	24°54'	28°42'	8° 1'	11°54'	22° 5'	15°14'	18° 8'	3°16'	22°D36'	23° 3'	17°41'	7°21'	W 18	
T 19	2 28 31	5°27'14"	0 ^h 36'	26°33'	29°56'	8°43'	12° 3'	22° 5'	15°14'	18° 8'	3°15'	22°R36'	23° 0'	17°48'	7°18'	T 19	
F 20	2 32 27	6°27'25"	12°40'	28°12'	1 ^h 47'	9°25'	12°12'	22° 5'	15°14'	18° 8'	3°14'	22°36'	22°57'	17°54'	7°16'	F 20	
S 21	2 36 24	7°27'37"	24°35'	29°51'	2°25'	10° 7'	12°21'	22° 5'	15°15'	18° 8'	3°13'	22°34'	22°54'	18° 1'	7°14'	S 21	
S 22	2 40 21	8°27'51"	6 ^h 25'	1 ^h 29'	3°39'	10°49'	12°31'	22° 6'	15°15'	18° 7'	3°12'	22°31'	22°51'	18° 8'	7°11'	S 22	
M 23	2 44 17	9°28'08"	18°14'	3° 8'	4°53'	11°31'	12°41'	22° 7'	15°15'	18° 7'	3°11'	22°25'	22°48'	18°15'	7° 9'	M 23	
T 24	2 48 14	10°28'26"	0 ^h 47'	4°46'	6° 7'	12°13'	12°50'	22° 7'	15°16'	18° 6'	3°10'	22°16'	22°44'	18°21'	7° 7'	T 24	
W 25	2 52 10	11°28'46"	12° 7'	6°23'	7°22'	12°55'	13° 0'	22° 8'	15°16'	18° 6'	3° 9'	22° 5'	22°41'	18°28'	7° 5'	W 25	
T 26	2 56 7	12°29'08"	24°17'	8° 1'	8°36'	13°37'	13°10'	22° 9'	15°17'	18° 5'	3° 8'	21°52'	22°38'	18°35'	7° 2'	T 26	
F 27	3 0 3	13°29'32"	6 ^h 38'	9°38'	9°50'	14°19'	13°20'	22°10'	15°17'	18° 5'	3° 8'	21°39'	22°35'	18°41'	7° 0'	F 27	
S 28	3 4 0	14°29'58"	19° 9'	11°15'	11° 5'	15° 1'	13°30'	22°11'	15°18'	18° 4'	3° 7'	21°26'	22°32'	18°48'	6°58'	S 28	
S 29	3 7 56	15°30'26"	1 ^h 47'	12°52'	12°19'	15°43'	13°41'	22°12'	15°19'	18° 4'	3° 6'	21°16'	22°28'	18°55'	6°56'	S 29	
M 30	3 11 53	16°30'55"	14°46'	14°28'	13°33'	16°25'	13°51'	22°14'	15°19'	18° 3'	3° 5'	21° 8'	22°25'	19° 1'	6°54'	M 30	
T 31	3 15 50	17 ^h 31'25"	27 ^h 47'	16 ^h 4'	14 ^h 47'	17 ^h 8'	14 ^h 8' 2	22 ^h 15'	15 ^h 20'	18 ^h 3'	3 ^h Y 4	21 ^h 8' 3	22 ^h 8' 22	19 ^h 48'	6 ^h Y52'	T 31	

Delta T = 116.93 sec

Julian Calendar

ASTRODIENST EPHEMERIS for the year 1581
geocentric

NOVEMBER 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	3 19 46	18 ¹¹ 31'57	11 ¹³ 7	17 ¹¹ 39	16 ¹⁷ 2	17 ¹¹ 50	14 ¹³ 13	22 ¹¹ 17	15 ¹¹ 21	18°R 2	3°R 3	21°R 0	22 ¹³ 19	19 ¹¹ 15	6°R50	W 1
T 2	3 23 43	19°32'31	24°34	19°15	17°16	18°33	14°23	22°18	15°22	18°1	3°Y 3	21°D 0	22°16	19°22	6°Y48	T 2
F 3	3 27 39	20°33'05	8 ¹¹ 14	20°50	18°30	19°15	14°34	22°20	15°23	18° 1	3° 2	21°1	22°13	19°28	6°46	F 3
S 4	3 31 36	21°33'41	22° 6	22°25	19°44	19°58	14°45	22°22	15°24	18° 0	3° 1	21°R 1	22° 9	19°35	6°45	S 4
S 5	3 35 32	22°34'18	6 ¹¹ 13	24° 0	20°58	20°40	14°56	22°24	15°25	17°59	3° 1	21° 0	22° 6	19°42	6°43	S 5
M 6	3 39 29	23°34'55	20°32	25°34	22°13	21°23	15° 7	22°26	15°26	17°58	3° 0	20°57	22° 3	19°48	6°41	M 6
T 7	3 43 25	24°35'35	5°Y 1	27° 9	23°27	22° 5	15°19	22°28	15°27	17°57	2°59	20°52	22° 0	19°55	6°39	T 7
W 8	3 47 22	25°36'15	19°36	28°43	24°41	22°48	15°30	22°30	15°28	17°56	2°59	20°44	21°57	20° 2	6°38	W 8
T 9	3 51 19	26°36'56	4 ¹¹ 10	0 ¹¹ 17	25°55	23°31	15°41	22°32	15°29	17°56	2°58	20°36	21°54	20° 8	6°36	T 9
F 10	3 55 15	27°37'39	18°37	1°51	27° 9	24°14	15°53	22°35	15°31	17°55	2°57	20°27	21°50	20°15	6°35	F 10
S 11	3 59 12	28°38'23	2 ¹¹ 50	3°25	28°23	24°57	16° 5	22°37	15°32	17°54	2°57	20°18	21°47	20°22	6°33	S 11
S 12	4 3 8	29°39'09	16°43	4°58	29°37	25°39	16°16	22°40	15°33	17°53	2°56	20°12	21°44	20°29	6°32	S 12
M13	4 7 5	0 ¹¹ 39'56	0 ¹¹ 13	6°32	0 ¹¹ 51	26°22	16°28	22°43	15°35	17°52	2°56	20° 8	21°41	20°35	6°30	M13
T 14	4 11 1	1°40'44	13°20	8° 5	2° 5	27° 5	16°40	22°46	15°36	17°51	2°55	20° 6	21°38	20°42	6°29	T 14
W15	4 14 58	2°41'34	26° 3	9°39	3°19	27°48	16°52	22°48	15°38	17°50	2°55	20°D 6	21°34	20°49	6°28	W15
T 16	4 18 54	3°42'25	8 ¹¹ 27	11°12	4°33	28°32	17° 4	22°51	15°39	17°48	2°54	20° 7	21°31	20°55	6°26	T 16
F 17	4 22 51	4°43'17	20°35	12°45	5°47	29°15	17°16	22°55	15°41	17°47	2°54	20° 8	21°28	21° 2	6°25	F 17
S 18	4 26 48	5°44'11	2 ¹¹ 32	14°19	7° 1	29°58	17°28	22°58	15°42	17°46	2°53	20°R 9	21°25	21° 9	6°24	S 18
S 19	4 30 44	6°45'06	14°24	15°52	8°15	0 ¹¹ 41	17°40	23° 1	15°44	17°45	2°53	20° 9	21°22	21°16	6°23	S 19
M20	4 34 41	7°46'02	26°15	17°25	9°29	1°24	17°53	23° 4	15°46	17°44	2°52	20° 7	21°19	21°22	6°22	M20
T 21	4 38 37	8°47'00	8 ¹¹ 10	18°58	10°43	2° 8	18° 5	23° 8	15°48	17°43	2°52	20° 3	21°15	21°29	6°21	T 21
W22	4 42 34	9°47'58	20°13	20°31	11°57	2°51	18°18	23°11	15°49	17°41	2°52	19°57	21°12	21°36	6°20	W22
T 23	4 46 30	10°48'58	2 ¹¹ 29	22° 4	13°11	3°35	18°30	23°15	15°51	17°40	2°51	19°51	21° 9	21°42	6°19	T 23
F 24	4 50 27	11°50'00	14°59	23°37	14°24	4°18	18°43	23°19	15°53	17°39	2°51	19°43	21° 6	21°49	6°19	F 24
S 25	4 54 23	12°51'02	27°45	25° 9	15°38	5° 2	18°56	23°23	15°55	17°37	2°51	19°36	21° 3	21°56	6°18	S 25
S 26	4 58 20	13°52'05	10 ¹¹ 46	26°42	16°52	5°45	19° 8	23°27	15°57	17°36	2°50	19°31	21° 0	22° 2	6°17	S 26
M27	5 2 17	14°53'09	24° 2	28°14	18° 6	6°29	19°21	23°31	15°59	17°35	2°50	19°26	20°56	22° 9	6°16	M27
T 28	5 6 13	15°54'14	7 ¹¹ 31	29°47	19°19	7°13	19°34	23°35	16° 1	17°33	2°50	19°24	20°53	22°16	6°16	T 28
W29	5 10 10	16°55'19	21°12	1 ¹¹ 18	20°33	7°57	19°47	23°39	16° 3	17°32	2°50	19°D23	20°50	22°23	6°15	W29
T 30	5 14 6	17°56'25	5 ¹¹ 2	2 ¹¹ 50	21°47	8°40	20°3	23°43	16° 6	17°31	2°Y50	19°24	20°47	22°29	6°Y15	T 30

Delta T = 116.78 sec

Julian Calendar 1 Nov. 1581 == Greg. Calendar 11 Nov. 1581

DECEMBER 1581 JC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	5 18 3	18 ¹¹ 57'31	18 ¹¹ 59	4 ¹¹ 21	23 ³ 0	9 ¹¹ 24	20 ³ 13	23 ⁴⁷	16 ⁸	17 ²⁹ R	2 ⁴⁹ R	19 ²⁶	20 ³⁴	22 ³⁶	6 ¹⁵ R	F 1
S 2	5 21 59	19°58'38	3 ¹¹ 2	5°51	24°14	10° 8	20°26	23°52	16°10	17 ²⁸	2 ⁴⁹ Y	19°27	20°40	22°43	6 ¹⁴ Y	S 2
S 3	5 25 56	20°59'45	17°10	7°21	25°28	10°52	20°40	23°56	16°12	17°26	2°49	19°R28	20°37	22°49	6°14	S 3
M 4	5 29 52	22° 0'52	1 ^Y 20	8°50	26°41	11°36	20°53	24° 1	16°15	17°25	2°49	19°R28	20°34	22°56	6°14	M 4
T 5	5 33 49	23° 1'59	15°31	10°17	27°55	12°20	21° 6	24° 5	16°17	17°23	2°49	19°26	20°31	23° 3	6°13	T 5
W 6	5 37 46	24° 3'07	29°41	11°44	29° 8	13° 4	21°19	24°10	16°20	17°22	2°49	19°23	20°28	23°10	6°13	W 6
T 7	5 41 42	25° 4'14	13 ⁸ 46	13° 9	0 ²¹	13°48	21°33	24°15	16°22	17°20	2°D49	19°20	20°25	23°16	6°D13	T 7
F 8	5 45 39	26° 5'22	27°43	14°32	1°35	14°32	21°46	24°20	16°24	17°19	2°49	19°16	20°21	23°23	6°13	F 8
S 9	5 49 35	27° 6'30	11 ¹¹ 28	15°52	2°48	15°16	22° 0	24°25	16°27	17°17	2°49	19°13	20°18	23°30	6°13	S 9
S 10	5 53 32	28° 7'39	24°59	17°11	4° 1	16° 1	22°13	24°30	16°30	17°16	2°49	19°10	20°15	23°36	6°13	S 10
M11	5 57 28	29° 8'48	8°13	18°26	5°14	16°45	22°27	24°35	16°32	17°14	2°49	19° 9	20°12	23°43	6°14	M11
T 12	6 1 25	0 ³ 9'57	21° 9	19°38	6°28	17°29	22°40	24°40	16°35	17°12	2°49	19°D 9	20° 9	23°50	6°14	T 12
W13	6 5 22	1°11'06	3 ¹¹ 27	20°45	7°41	18°14	22°54	24°45	16°37	17°11	2°49	19° 9	20° 6	23°57	6°14	W13
T 14	6 9 18	2°12'16	16°10	21°48	8°54	18°58	23° 8	24°51	16°40	17° 9	2°49	19°11	20° 2	24° 3	6°15	T 14
F 15	6 13 15	3°13'26	28°18	22°46	10° 7	19°43	23°22	24°56	16°43	17° 7	2°50	19°12	19°59	24°10	6°15	F 15
S 16	6 17 11	4°14'36	10 ¹¹ 17	23°37	11°20	20°27	23°35	25° 1	16°46	17° 6	2°50	19°13	19°56	24°17	6°15	S 16
S 17	6 21 8	5°15'46	22°10	24°20	12°32	21°12	23°49	25° 7	16°48	17° 4	2°50	19°14	19°53	24°23	6°16	S 17
M18	6 25 4	6°16'57	4 ¹¹ 2	24°56	13°45	21°56	24° 3	25°12	16°51	17° 2	2°50	19°R15	19°50	24°30	6°17	M18
T 19	6 29 1	7°18'08	15°57	25°23	14°58	22°41	24°17	25°18	16°54	17° 1	2°50	19°15	19°46	24°37	6°17	T 19
W20	6 32 57	8°19'20	28° 0	25°40	16°11	23°26	24°31	25°24	16°57	16°59	2°51	19°14	19°43	24°43	6°18	W20
T 21	6 36 54	9°20'31	10 ¹¹ 17	25°R46	17°23	24°10	24°45	25°29	17° 0	16°57	2°51	19°13	19°40	24°50	6°19	T 21
F 22	6 40 51	10°21'43	22°50	25°41	18°36	24°55	24°59	25°35	17° 3	16°56	2°51	19°12	19°37	24°57	6°19	F 22
S 23	6 44 47	11°22'54	5 ¹¹ 42	25°24	19°48	25°40	25°13	25°41	17° 6	16°54	2°52	19°10	19°34	25° 4	6°20	S 23
S 24	6 48 44	12°24'06	18°55	24°55	21° 1	26°25	25°27	25°47	17° 9	16°52	2°52	19°10	19°31	25°10	6°21	S 24
M25	6 52 40	13°25'18	2°32	24°15	22°13	27°10	25°41	25°53	17°12	16°51	2°53	19° 9	19°27	25°17	6°22	M25
T 26	6 56 37	14°26'29	16°21	23°24	23°26	27°55	25°55	25°59	17°15	16°49	2°53	19°D 9	19°24	25°24	6°23	T 26
W27	7 0 33	15°27'40	0 ²⁹	22°23	24°38	28°40	26° 9	26° 5	17°18	16°47	2°53	19° 9	19°21	25°30	6°24	W27
T 28	7 4 30	16°28'50	14°49	21°14	25°50	29°25	26°23	26°11	17°21	16°46	2°54	19° 9	19°18	25°37	6°26	T 28
F 29	7 8 26	17°30'00	29°15	20° 0	27° 2	0 ¹¹ 10	26°37	26°17	17°24	16°44	2°54	19° 9	19°15	25°44	6°27	F 29
S 30	7 12 23	18°31'10	13 ¹¹ 42	18°42	28°14	0°55	26°51	26°24	17°27	16°42	2°55	19° 9	19°12	25°51	6°28	S 30
S 31	7 16 20	19°32'18	28 ¹¹ 5	17°32	29°26	1°34	27°3	26°30	17°30	16°41	2°Y55	19°R 9	19°3	25°57	6°Y29	S 31

Delta T = 116.64 sec

Julian Calendar