



Astrodienst Ephemeris Tables for the year 2188

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 2188
geocentric

JANUARY 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	6 41 42	10 ³ 13'46	5 ⁵ 58	7 ⁹ R29	24 ²⁸ 13	16 ²⁸ 28	0 ¹ 5	23 ² 0	5 ⁹ R 3	25 ¹ 33	5 ⁹ R48	29 ⁹ R36	28 ¹¹ 57	22 ¹ 52	0 ⁹ R28	T 1
W 2	6 45 39	11 ¹ 14'56	18 ¹ 17	6 ³ 10	25 ² 23	17 ¹ 15	0 ¹ 17	23 ³ 3	5 ⁸ 2	25 ² 34	5 ⁹ 46	29 ¹¹ 35	28 ⁵ 54	22 ² 59	0 ⁹ 24	W 2
T 3	6 49 36	12 ¹ 16'06	0 ¹ 25	4 ⁵ 56	26 ² 32	18 ² 2	0 ² 28	23 ³ 6	5 ⁹ 2	25 ² 35	5 ⁹ 45	29 ² 33	28 ⁵ 51	23 ³ 5	0 ² 20	T 3
F 4	6 53 32	13 ¹ 17'15	12 ² 23	3 ⁴ 49	27 ² 42	18 ² 50	0 ³ 40	23 ³ 9	5 ⁹ 1	25 ² 36	5 ⁹ 44	29 ³ 31	28 ⁴ 47	23 ³ 12	0 ² 17	F 4
S 5	6 57 29	14 ¹ 18'24	24 ² 16	2 ⁵ 50	28 ² 51	19 ² 37	0 ⁴ 52	23 ³ 12	5 ⁹ 1	25 ² 37	5 ⁹ 43	29 ⁴ 29	28 ⁴ 44	23 ³ 19	0 ² 13	S 5
S 6	7 1 25	15 ¹ 19'34	6 ⁶ 8	2 ⁶ 1	29 ² 59	20 ² 24	1 ⁵ 5	23 ³ 15	5 ⁹ 0	25 ² 38	5 ⁹ 42	29 ⁵ 28	28 ⁴ 41	23 ³ 26	0 ² 9	S 6
M 7	7 5 22	16 ¹ 20'43	18 ² 4	1 ⁶ 23	1 ¹ 9	21 ² 11	1 ⁶ 17	23 ³ 17	5 ⁹ 0	25 ² 39	5 ⁹ 40	29 ⁶ D28	28 ⁴ 38	23 ³ 32	0 ² 6	M 7
T 8	7 9 18	17 ¹ 21'51	0 ⁷ 8	0 ⁷ 54	2 ² 17	21 ² 58	1 ⁷ 29	23 ³ 20	5 ⁹ 0	25 ² 40	5 ⁹ 39	29 ⁷ 28	28 ⁴ 35	23 ³ 39	0 ² 2	T 8
W 9	7 13 15	18 ² 23'00	12 ² 23	0 ⁸ 36	3 ² 26	22 ² 45	1 ⁸ 41	23 ³ 23	4 ⁹ 59	25 ² 41	5 ⁹ 38	29 ⁸ 30	28 ⁴ 32	23 ³ 46	29 ¹¹ 58	W 9
T 10	7 17 11	19 ² 24'08	24 ² 56	0 ⁹ D28	4 ³ 34	23 ² 33	1 ⁹ 54	23 ³ 25	4 ⁹ 59	25 ² 43	5 ⁹ 36	29 ⁹ 31	28 ⁴ 28	23 ³ 52	29 ² 55	T 10
F 11	7 21 8	20 ² 25'16	7 ¹¹ 49	0 ¹⁰ 28	5 ⁴ 42	24 ² 20	2 ¹⁰ 6	23 ³ 27	4 ⁹ 59	25 ² 44	5 ⁹ 35	29 ¹⁰ 33	28 ⁴ 25	23 ³ 59	29 ² 51	F 11
S 12	7 25 4	21 ² 26'23	21 ² 6	0 ¹¹ 38	6 ⁵ 50	25 ² 7	2 ¹¹ 19	23 ³ 30	4 ⁹ 59	25 ² 45	5 ⁹ 34	29 ¹¹ 34	28 ⁴ 22	24 ² 6	29 ² 48	S 12
S 13	7 29 1	22 ² 27'31	4 ¹² 47	0 ¹² 54	7 ⁶ 58	25 ² 54	2 ¹² 32	23 ³ 32	4 ¹⁰ D59	25 ² 46	5 ⁹ 33	29 ¹² R34	28 ⁴ 19	24 ² 13	29 ² 44	S 13
M14	7 32 58	23 ² 28'37	18 ² 50	1 ¹³ 19	9 ⁷ 6	26 ² 41	2 ¹³ 44	23 ³ 34	4 ¹⁰ 59	25 ² 47	5 ⁹ 31	29 ¹³ 33	28 ⁴ 16	24 ² 19	29 ² 41	M14
T 15	7 36 54	24 ² 29'44	3 ¹³ 12	1 ¹⁴ 49	10 ⁷ 13	27 ² 29	2 ¹⁴ 57	23 ³ 36	4 ¹⁰ 59	25 ² 49	5 ⁹ 30	29 ¹⁴ 30	28 ⁴ 13	24 ² 26	29 ² 37	T 15
W16	7 40 51	25 ² 30'50	17 ² 47	2 ¹⁵ 26	11 ⁷ 20	28 ² 16	3 ¹⁵ 10	23 ³ 38	4 ¹⁰ 59	25 ² 50	5 ⁹ 29	29 ¹⁵ 27	28 ⁴ 9	24 ² 33	29 ² 34	W16
T 17	7 44 47	26 ² 31'56	2 ¹⁶ 29	3 ¹⁶ 7	12 ⁷ 27	29 ² 3	3 ¹⁶ 23	23 ³ 39	4 ¹⁰ 59	25 ² 51	5 ⁹ 27	29 ¹⁶ 23	28 ⁴ 6	24 ² 40	29 ² 31	T 17
F 18	7 48 44	27 ² 33'02	17 ² 10	3 ¹⁷ 54	13 ⁷ 33	29 ² 50	3 ¹⁷ 36	23 ³ 41	4 ¹⁰ 59	25 ² 53	5 ⁹ 26	29 ¹⁷ 19	28 ⁴ 3	24 ² 46	29 ² 27	F 18
S 19	7 52 40	28 ² 34'07	1 ¹⁸ 43	4 ¹⁸ 44	14 ⁷ 40	0 ¹⁸ 37	3 ¹⁸ 49	23 ³ 42	5 ¹⁰ 0	25 ² 54	5 ⁹ 25	29 ¹⁸ 16	28 ⁴ 0	24 ² 53	29 ² 24	S 19
S 20	7 56 37	29 ² 35'13	16 ² 5	5 ¹⁹ 39	15 ⁷ 46	1 ¹⁹ 25	4 ¹⁹ 2	23 ³ 44	5 ¹⁰ 0	25 ² 56	5 ⁹ 23	29 ¹⁹ 14	27 ² 57	25 ² 0	29 ² 21	S 20
M21	8 0 34	0 ²⁹ 36'18	0 ¹⁹ 11	6 ²⁰ 37	16 ⁷ 52	2 ²⁰ 12	4 ²⁰ 16	23 ³ 45	5 ¹⁰ 0	25 ² 57	5 ⁹ 22	29 ²⁰ D13	27 ² 53	25 ² 6	29 ² 18	M21
T 22	8 4 30	1 ³⁰ 37'23	14 ² 1	7 ²¹ 38	17 ⁷ 58	2 ²¹ 59	4 ²¹ 29	23 ³ 46	5 ¹⁰ 1	25 ² 59	5 ⁹ 21	29 ²¹ 13	27 ² 50	25 ² 13	29 ² 15	T 22
W23	8 8 27	2 ³¹ 38'28	27 ² 34	8 ²² 42	19 ⁷ 3	3 ²² 46	4 ²² 42	23 ³ 48	5 ¹⁰ 1	26 ² 0	5 ⁹ 19	29 ²² 15	27 ² 47	25 ² 20	29 ² 12	W23
T 24	8 12 23	3 ³² 39'32	10 ²³ 53	9 ²³ 48	20 ⁷ 8	4 ²³ 33	4 ²³ 56	23 ³ 49	5 ¹⁰ 2	26 ² 2	5 ⁹ 18	29 ²³ 16	27 ² 44	25 ² 27	29 ² 9	T 24
F 25	8 16 20	4 ³³ 40'36	23 ² 57	10 ²⁴ 56	21 ⁷ 13	5 ²⁴ 21	5 ²⁴ 9	23 ³ 49	5 ¹⁰ 3	26 ² 3	5 ⁹ 17	29 ²⁴ R18	27 ² 41	25 ² 33	29 ² 6	F 25
S 26	8 20 16	5 ³⁴ 41'40	6 ²⁴ 49	12 ²⁵ 7	22 ⁷ 18	6 ²⁵ 8	5 ²⁵ 23	23 ³ 50	5 ¹⁰ 3	26 ² 5	5 ⁹ 15	29 ²⁵ 17	27 ² 38	25 ² 40	29 ² 3	S 26
S 27	8 24 13	6 ³⁵ 42'43	19 ² 30	13 ²⁶ 20	23 ⁷ 22	6 ²⁶ 55	5 ²⁶ 36	23 ³ 51	5 ¹⁰ 4	26 ² 6	5 ⁹ 14	29 ²⁶ 15	27 ² 34	25 ² 47	29 ² 0	S 27
M28	8 28 9	7 ³⁶ 43'46	2 ²⁷ 30	14 ²⁷ 34	24 ⁷ 26	7 ²⁷ 42	5 ²⁷ 50	23 ³ 51	5 ¹⁰ 5	26 ² 8	5 ⁹ 13	29 ²⁷ 12	27 ² 31	25 ² 54	28 ² 57	M28
T 29	8 32 6	8 ³⁷ 44'47	14 ²⁸ 20	15 ²⁸ 50	25 ⁷ 30	8 ²⁸ 29	6 ²⁸ 3	23 ³ 52	5 ¹⁰ 5	26 ² 10	5 ⁹ 11	29 ²⁸ 6	27 ² 28	26 ² 0	28 ² 55	T 29
W30	8 36 3	9 ³⁸ 45'48	26 ²⁸ 31	17 ²⁹ 7	26 ⁷ 33	9 ²⁹ 16	6 ²⁹ 17	23 ³ 52	5 ¹⁰ 6	26 ² 11	5 ⁹ 10	28 ²⁹ 58	27 ² 25	26 ² 7	28 ² 52	W30
T 31	8 39 59	10 ³⁹ 46'48	8 ²⁹ 34	18 ³⁰ 26	27 ⁷ 36	10 ³⁰ 3	6 ³⁰ 31	23 ³ 52	5 ¹⁰ 7	26 ² 13	5 ⁹ 8	28 ³⁰ 50	27 ² 22	26 ² 14	28 ² 50	T 31

Delta T = 151.72 sec

FEBRUARY 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	8 43 56	11 ³ 47'46	20 ⁸ 31	19 ⁸ 46	28 ⁸ 38	10 ⁸ 51	6 ⁸ 45	23 ⁴ 53	5 ¹¹ 8	26 ² 15	5 ⁹ R 7	28 ³⁰ R41	27 ³⁰ 19	26 ² 20	28 ³⁰ R47	F 1
S 2	8 47 52	12 ³ 48'44	2 ⁹ 23	21 ⁹ 7	29 ⁸ 41	11 ⁹ 38	6 ⁹ 59	23 ⁴ R53	5 ¹¹ 9	26 ² 17	5 ⁹ 46	28 ³¹ 34	27 ³¹ 15	26 ² 27	28 ³¹ 45	S 2
S 3	8 51 49	13 ³ 49'40	14 ⁹ 14	22 ⁹ 29	0 ⁹ 43	12 ⁹ 25	7 ¹⁰ 12	23 ⁴ 53	5 ¹¹ 10	26 ² 18	5 ⁹ 4	28 ³² 28	27 ³² 12	26 ² 34	28 ³² 42	S 3
M 4	8 55 45	14 ³ 50'36	26 ⁹ 7	23 ⁹ 52	1 ¹⁰ 44	13 ¹⁰ 12	7 ¹⁰ 26	23 ⁴ 52	5 ¹¹ 11	26 ² 20	5 ⁹ 3	28 ³³ 23	27 ³³ 9	26 ² 41	28 ³³ 40	M 4
T 5	8 59 42	15 ³ 51'30	8 ¹⁰ 8	25 ¹⁰ 17	2 ¹⁰ 45	13 ¹⁰ 59	7 ¹⁰ 40	23 ⁴ 52	5 ¹¹ 12	26 ² 22	5 ⁹ 2	28 ³⁴ 21	27 ³⁴ 6	26 ² 47	28 ³⁴ 38	T 5
W 6	9 3 38	16 ³ 52'22	20 ¹⁰ 18	26 ¹⁰ 42	3 ¹⁰ 46	14 ¹⁰ 46	7 ¹⁰ 54	23 ⁴ 52	5 ¹¹ 14	26 ² 24	5 ⁹ 0	28 ³⁵ D21	27 ³⁵ 3	26 ² 54	28 ³⁵ 36	W 6
T 7	9 7 35	17 ³ 53'14	2 ¹¹ 46	28 ¹⁰ 8	4 ¹⁰ 46	15 ¹⁰ 33	8 ¹¹ 8	23 ⁴ 51	5 ¹¹ 15	26 ² 26	4 ⁹ 59	28 ³⁶ 22	26 ² 59	27 ³⁶ 1	28 ³⁶ 34	T 7
F 8	9 11 32	18 ³ 54'04	15 ¹¹ 35	29 ¹⁰ 35	5 ¹⁰ 46	16 ¹⁰ 20	8 ¹¹ 23	23 ⁴ 51	5 ¹¹ 16	26 ² 28	4 ⁹ 58	28 ³⁷ 23	26 ² 56	27 ³⁷ 7	28 ³⁷ 32	F 8
S 9	9 15 28	19 ³ 54'52	28 ¹¹ 49	1 ¹² 38	6 ¹¹ 45	17 ¹¹ 7	8 ¹¹ 37	23 ⁴ 50	5 ¹¹ 18	26 ² 29	4 ⁹ 57	28 ³⁸ R24	26 ² 53	27 ³⁸ 14	28 ³⁸ 30	S 9
S 10	9 19 25	20 ³ 55'40	12 ¹² 32	2 ¹² 32	7 ¹¹ 44	17 ¹¹ 54	8 ¹¹ 51	23 ⁴ 49	5 ¹¹ 19	26 ² 31	4 ⁹ 55	28 ³⁹ 23	26 ² 50	27 ³⁹ 21	28 ³⁹ 28	S 10
M11	9 23 21	21 ³ 56'26	26 ¹² 42	4 ¹² 2	8 ¹² 42	18 ¹² 41	9 ¹² 5	23 ⁴ 48	5 ¹¹ 20	26 ² 33	4 ⁹ 54	28 ⁴⁰ 20	26 ² 47	27 ⁴⁰ 28	28 ⁴⁰ 26	M11
T 12	9 27 18	22 ³ 57'10	11 ¹³ 19	5 ¹³ 33	9 ¹² 40	19 ¹² 28	9 ¹² 19	23 ⁴ 47	5 ¹¹ 22	26 ² 35	4 ⁹ 53	28 ⁴¹ 14	26 ² 44	27 ⁴¹ 34	28 ⁴¹ 24	T 12
W13	9 31 14	23 ³ 57'53	26 ¹³ 15	7 ¹³ 4	10 ¹³ 37	20 ¹³ 14	9 ¹³ 33	23 ⁴ 46	5 ¹¹ 23	26 ² 37	4 ⁹ 51	28 ⁴² 6	26 ² 40	27 ⁴² 41	28 ⁴² 23	W13
T 14	9 35 11	24 ³ 58'35	11 ¹⁴ 22	8 ¹³ 36	11 ¹³ 34	21 ¹³ 1	9 ¹³ 48	23 ⁴ 45	5 ¹¹ 25	26 ² 39	4 ⁹ 50	27 ⁴³ 58	26 ² 37	27 ⁴³ 48	28 ⁴³ 21	T 14
F 15	9 39 7	25 ³ 59'15	26 ¹⁴ 30	10 ¹⁴ 10	12 ¹⁴ 30	21 ¹⁴ 48	10 ¹⁴ 2	23 ⁴ 43	5 ¹¹ 27	26 ² 41	4 ⁹ 49	27 ⁴⁴ 48	26 ² 34	27 ⁴⁴ 55	28 ⁴⁴ 20	F 15
S 16	9 43 4	26 ³ 59'54	11 ¹⁵ 29	11 ¹⁴ 43	13 ¹⁴ 25	22 ¹⁴ 35	10 ¹⁴ 16	23 ⁴ 42	5 ¹¹ 28	26 ² 43	4 ⁹ 48	27 ⁴⁵ 40	26 ² 31	28 ⁴⁵ 1	28 ⁴⁵ 18	S 16
S 17	9 47 1	28 ⁴ 0'33	26 ¹⁵ 10	13 ¹⁵ 18	14 ¹⁴ 20	23 ¹⁴ 22	10 ¹⁴ 31	23 ⁴ 40	5 ¹¹ 30	26 ² 45	4 ⁹ 46	27 ⁴⁶ 34	26 ² 28	28 ⁴⁶ 8	28 ⁴⁶ 17	S 17
M18	9 50 57	29 ⁴ 1'10	10 ¹⁶ 18	14 ¹⁵ 54	15 ¹⁴ 14	24 ¹⁴ 8	10 ¹⁴ 45	23 ⁴ 39	5 ¹¹ 32	26 ² 47	4 ⁹ 45	27 ⁴⁷ 30	26 ² 25	28 ⁴⁷ 15	28 ⁴⁷ 16	M18
T 19	9 54 54	0 ¹⁶ 1'46	24 ¹⁶ 22	16 ¹⁵ 31	16 ¹⁵ 8	24 ¹⁵ 55	10 ¹⁵ 59	23 ⁴ 37	5 ¹¹ 34	26 ² 49	4 ⁹ 44	27 ⁴⁸ D29	26 ² 21	28 ⁴⁸ 21	28 ⁴⁸ 15	T 19
W20	9 58 50	1 ¹⁶ 2'20	7 ¹⁷ 53	18 ¹⁶ 8	17 ¹⁶ 1	25 ¹⁶ 42	11 ¹⁶ 14	23 ⁴ 35	5 ¹¹ 36	26 ² 52	4 ⁹ 43	27 ⁴⁹ 29	26 ² 18	28 ⁴⁹ 28	28 ⁴⁹ 14	W20
T 21	10 2 47	2 ¹⁶ 2'54	21 ¹⁷ 1	19 ¹⁶ 46	17 ¹⁶ 53	26 ¹⁶ 28	11 ¹⁶ 28	23 ⁴ 33	5 ¹¹ 37	26 ² 54	4 ⁹ 42	27 ⁵⁰ R29	26 ² 15	28 ⁵⁰ 35	28 ⁵⁰ 13	T 21
F 22	10 6 43	3 ¹⁶ 3'26	3 ¹⁸ 52	21 ¹⁷ 25	18 ¹⁷ 44	27 ¹⁶ 15	11 ¹⁶ 42	23 ⁴ 31	5 ¹¹ 39	26 ² 56	4 ⁹ 40	27 ⁵¹ 29	26 ² 12	28 ⁵¹ 42	28 ⁵¹ 12	F 22
S 23	10 10 40	4 ¹⁶ 3'58	16 ¹⁸ 27	23 ¹⁷ 6	19 ¹⁷ 35	28 ¹⁷ 2	11 ¹⁶ 57	23 ⁴ 29	5 ¹¹ 41	26 ² 58	4 ⁹ 39	27 ⁵² 27	26 ² 9	28 ⁵² 48	28 ⁵² 11	S 23
S 24	10 14 36	5 ¹⁶ 4'27	28 ¹⁸ 51	24 ¹⁷ 47	20 ¹⁷ 25	28 ¹⁷ 48	12 ¹⁷ 11	23 ⁴ 27	5 ¹¹ 43	27 ² 0	4 ⁹ 38	27 ⁵³ 23	26 ² 5	28 ⁵³ 55	28 ⁵³ 10	S 24
M25	10 18 33	6 ¹⁶ 4'56	11 ¹⁹ 6	26 ¹⁸ 29	21 ¹⁷ 14	29 ¹⁷ 35	12 ¹⁷ 26	23 ⁴ 24	5 ¹¹ 45	27 ² 2	4 ⁹ 37	27 ⁵⁴ 16	26 ² 2	29 ² 2	28 ⁵⁴ 9	M25
T 26	10 22 30	7 ¹⁶ 5'23	23 ¹⁹ 13	28 ¹⁸ 12	22 ¹⁷ 2	0 ¹⁸ 41	12 ¹⁷ 40	23 ⁴ 22	5 ¹¹ 48	27 ² 4	4 ⁹ 36	27 ⁵⁵ 6	25 ² 59	29 ² 9	28 ⁵⁵ 9	T 26
W27	10 26 26	8 ¹⁶ 5'48	5 ¹⁹ 14	29 ¹⁸ 55	22 ¹⁷ 49	1 ¹⁸ 8	12 ¹⁷ 55	23 ⁴ 20	5 ¹¹ 50	27 ² 6	4 ⁹ 35	26 ² 53	25 ² 56	29 ² 15	28 ⁵⁶ 8	W27
T 28	10 30 23	9 ¹⁶ 6'11	17 ¹⁹ 11	1 ¹⁹ 40	23 ¹⁷ 36	1 ¹⁸ 54	13 ¹⁷ 9	23 ⁴ 17	5 ¹¹ 52	27 ² 9	4 ⁹ 34	26 ² 40	25 ² 53	29 ² 22	28 ⁵⁷ 8	T 28
F 29	10 34 19	10 ¹⁶ 6'33	29 ¹⁹ 5	3 ¹⁹ 26	24 ¹⁷ 21	2 ¹⁸ 41	13 ¹⁷ 24	23 ⁴ 14	5 ¹¹ 54	27 ² 11	4 ⁹ 33	26 ² 45	25 ² 50	29 ² 29	28 ⁵⁸ 8	F 29

ASTRODIENST EPHEMERIS for the year 2188

geocentric

MARCH 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 38 16	11° 6'53	10° 56'	5° 13'	25° 6'	3° 27'	13° 38'	23° R11	5° 56'	27° 13'	4° R32	26° R12	25° II46	29° 35'	28° R 7	S 1
S 2	10 42 12	12° 7'11	22° 48'	7° 1'	25° 49'	4° 14'	13° 53'	23° 9'	5° 59'	27° 15'	4° 30'	26° II 1	25° 43'	29° 42'	28° II 7	S 2
M 3	10 46 9	13° 7'27	4° 41'	8° 50'	26° 31'	5° 0'	14° 7'	23° 6'	6° 1'	27° 17'	4° 29'	25° 52'	25° 40'	29° 49'	28° D 7	M 3
T 4	10 50 5	14° 7'42	16° 41'	10° 40'	27° 12'	5° 46'	14° 22'	23° 3'	6° 3'	27° 20'	4° 28'	25° 47'	25° 37'	29° 56'	28° 7	T 4
W 5	10 54 2	15° 7'54	28° 50'	12° 30'	27° 52'	6° 32'	14° 36'	23° 0'	6° 6'	27° 22'	4° 27'	25° 44'	25° 34'	0° 2'	28° 7	W 5
T 6	10 57 58	16° 8'04	11° 13'	14° 22'	28° 31'	7° 19'	14° 51'	22° 56'	6° 8'	27° 24'	4° 27'	25° 43'	25° 31'	0° 9'	28° 7	T 6
F 7	11 1 55	17° 8'13	23° 56'	16° 15'	29° 9'	8° 5'	15° 5'	22° 53'	6° 11'	27° 26'	4° 26'	25° 43'	25° 27'	0° 16'	28° 8	F 7
S 8	11 5 52	18° 8'19	7° 3'	18° 9'	29° 45'	8° 51'	15° 20'	22° 50'	6° 13'	27° 29'	4° 25'	25° 43'	25° 24'	0° 22'	28° 8	S 8
S 9	11 9 48	19° 8'23	20° 38'	20° 3'	0° 20'	9° 37'	15° 34'	22° 46'	6° 16'	27° 31'	4° 24'	25° 41'	25° 21'	0° 29'	28° 8	S 9
M10	11 13 45	20° 8'25	4° 42'	21° 59'	0° 53'	10° 23'	15° 49'	22° 43'	6° 19'	27° 33'	4° 23'	25° 37'	25° 18'	0° 36'	28° 9	M10
T 11	11 17 41	21° 8'25	19° 17'	23° 55'	1° 25'	11° 9'	16° 3'	22° 39'	6° 21'	27° 35'	4° 22'	25° 30'	25° 15'	0° 43'	28° 9	T 11
W12	11 21 38	22° 8'23	4° 16'	25° 52'	1° 55'	11° 55'	16° 18'	22° 36'	6° 24'	27° 38'	4° 21'	25° 20'	25° 11'	0° 49'	28° 10	W12
T 13	11 25 34	23° 8'18	19° 32'	27° 50'	2° 24'	12° 41'	16° 32'	22° 32'	6° 27'	27° 40'	4° 20'	25° 9'	25° 8'	0° 56'	28° 11	T 13
F 14	11 29 31	24° 8'12	4° 54'	29° 47'	2° 51'	13° 27'	16° 47'	22° 28'	6° 29'	27° 42'	4° 19'	24° 58'	25° 5'	1° 3'	28° 12	F 14
S 15	11 33 27	25° 8'04	20° 9'	1° 45'	3° 16'	14° 13'	17° 1'	22° 24'	6° 32'	27° 45'	4° 19'	24° 47'	25° 2'	1° 10'	28° 13	S 15
S 16	11 37 24	26° 7'54	5° 9'	3° 44'	3° 40'	14° 59'	17° 16'	22° 21'	6° 35'	27° 47'	4° 18'	24° 39'	24° 59'	1° 16'	28° 14	S 16
M17	11 41 21	27° 7'42	19° 43'	5° 42'	4° 2'	15° 44'	17° 30'	22° 17'	6° 38'	27° 49'	4° 17'	24° 33'	24° 56'	1° 23'	28° 15	M17
T 18	11 45 17	28° 7'29	3° 50'	7° 39'	4° 22'	16° 30'	17° 44'	22° 13'	6° 41'	27° 51'	4° 16'	24° 30'	24° 52'	1° 30'	28° 16	T 18
W19	11 49 14	29° 7'14	17° 28'	9° 36'	4° 40'	17° 16'	17° 59'	22° 9'	6° 43'	27° 54'	4° 16'	24° 29'	24° 49'	1° 36'	28° 17	W19
T 20	11 53 7	0° 6'59	0° 39'	11° 31'	4° 56'	18° 1'	18° 13'	22° 5'	6° 46'	27° 56'	4° 15'	24° 29'	24° 46'	1° 43'	28° 18	T 20
F 21	11 57 7	1° 6'39	13° 27'	13° 26'	5° 9'	18° 47'	18° 28'	22° 0'	6° 49'	27° 58'	4° 14'	24° 29'	24° 43'	1° 50'	28° 20	F 21
S 22	12 1 3	2° 6'19	25° 57'	15° 18'	5° 21'	19° 33'	18° 42'	21° 56'	6° 52'	28° 0'	4° 14'	24° 27'	24° 40'	1° 57'	28° 21	S 22
S 23	12 5 0	3° 5'57	8° 13'	17° 8'	5° 31'	20° 18'	18° 56'	21° 52'	6° 55'	28° 3'	4° 13'	24° 23'	24° 36'	2° 3'	28° 23	S 23
M24	12 8 56	4° 5'34	20° 19'	18° 55'	5° 38'	21° 4'	19° 10'	21° 48'	6° 58'	28° 5'	4° 13'	24° 15'	24° 33'	2° 10'	28° 25	M24
T 25	12 12 53	5° 5'08	2° 17'	20° 39'	5° 43'	21° 49'	19° 25'	21° 43'	7° 1'	28° 7'	4° 12'	24° 5'	24° 30'	2° 17'	28° 26	T 25
W26	12 16 50	6° 4'41	14° 12'	22° 20'	5° 45'	22° 34'	19° 39'	21° 39'	7° 4'	28° 10'	4° 12'	23° 53'	24° 27'	2° 23'	28° 28	W26
T 27	12 20 46	7° 4'12	26° 4'	23° 56'	5° R46	23° 20'	19° 53'	21° 35'	7° 7'	28° 12'	4° 11'	23° 39'	24° 24'	2° 30'	28° 30	T 27
F 28	12 24 43	8° 3'40	7° 56'	25° 28'	5° 43'	24° 5'	20° 7'	21° 30'	7° 10'	28° 14'	4° 10'	23° 25'	24° 21'	2° 37'	28° 32	F 28
S 29	12 28 39	9° 3'07	19° 49'	26° 55'	5° 39'	24° 50'	20° 21'	21° 26'	7° 14'	28° 16'	4° 10'	23° 11'	24° 17'	2° 44'	28° 34	S 29
S 30	12 32 36	10° 2'32	1° 43'	28° 17'	5° 32'	25° 35'	20° 36'	21° 21'	7° 17'	28° 19'	4° 10'	23° 0'	24° 14'	2° 50'	28° 36	S 30
M31	12 36 32	11° 1'54	13° 42'	29° 33'	5° 22'	26° 21'	20° 50'	21° 17'	7° 20'	28° 21'	4° 9'	22° II51	24° II11	2° 57'	28° II38	M31

Delta T = 151.87 sec

APRIL 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	12 40 29	12° 1'14	25° 46'	0° 43'	5° R10	27° 6'	21° 4'	21° R12	7° 23'	28° 23'	4° R 9	22° R45	24° II 8	3° 4'	28° II41	T 1
W 2	12 44 25	13° 0'33	8° II 4	1° 47'	4° 55'	27° 51'	21° 18'	21° 8'	7° 26'	28° 25'	4° 8'	22° II42	24° 5'	3° 11'	28° 43	W 2
T 3	12 48 22	13° 59'49	20° 26'	2° 45'	4° 38'	28° 36'	21° 32'	21° 3'	7° 29'	28° 27'	4° 8'	22° D41	24° 2	3° 17'	28° 45	T 3
F 4	12 52 19	14° 59'02	3° 8'	3° 36'	4° 19'	29° 21'	21° 46'	20° 58'	7° 33'	28° 30'	4° 8'	22° 41'	23° 58'	3° 24'	28° 48	F 4
S 5	12 56 15	15° 58'14	16° 11'	4° 20'	3° 57'	0° 8'	21° 59'	20° 54'	7° 36'	28° 32'	4° 7'	22° R42	23° 55'	3° 31'	28° 50	S 5
S 6	13 0 12	16° 57'23	29° 38'	4° 57'	3° 33'	0° 51'	22° 13'	20° 49'	7° 39'	28° 34'	4° 7'	22° 41'	23° 52'	3° 37'	28° 53	S 6
M 7	13 4 8	17° 56'29	13° 42'	5° 27'	3° 7'	1° 35'	22° 27'	20° 45'	7° 43'	28° 36'	4° 7'	22° 38'	23° 49'	3° 44'	28° 56	M 7
T 8	13 8 5	18° 55'34	27° 53'	5° 50'	2° 39'	2° 20'	22° 41'	20° 40'	7° 46'	28° 38'	4° 7'	22° 33'	23° 46'	3° 51'	28° 58	T 8
W 9	13 12 1	19° 54'36	12° 40'	6° 6'	2° 9'	3° 5'	22° 55'	20° 35'	7° 49'	28° 41'	4° 7'	22° 26'	23° 42'	3° 58'	29° 1	W 9
T 10	13 15 58	20° 53'35	27° 46'	6° 16'	1° 37'	3° 49'	23° 8'	20° 31'	7° 53'	28° 43'	4° 6'	22° 17'	23° 39'	4° 4'	29° 4	T 10
F 11	13 19 54	21° 52'33	13° 3'	6° R18	1° 4'	4° 34'	23° 22'	20° 26'	7° 56'	28° 45'	4° 6'	22° 8'	23° 36'	4° 11'	29° 7	F 11
S 12	13 23 51	22° 51'28	28° 18'	6° 14'	0° 29'	5° 19'	23° 36'	20° 21'	7° 59'	28° 47'	4° 6'	22° 0'	23° 33'	4° 18'	29° 10	S 12
S 13	13 27 47	23° 50'22	13° 22'	6° 4'	29° 53'	6° 3'	23° 49'	20° 17'	8° 3'	28° 49'	4° 6'	21° 53'	23° 30'	4° 24'	29° 13	S 13
M14	13 31 44	24° 49'14	28° 5'	5° 47'	29° 17'	6° 48'	24° 3'	20° 12'	8° 6'	28° 51'	4° 6'	21° 48'	23° 27'	4° 31'	29° 17	M14
T 15	13 35 41	25° 48'04	12° 21'	5° 25'	28° 39'	7° 32'	24° 16'	20° 7'	8° 9'	28° 53'	4° 6'	21° 46'	23° 23'	4° 38'	29° 20	T 15
W16	13 39 37	26° 46'52	26° 9'	4° 58'	28° 2'	8° 16'	24° 29'	20° 3'	8° 13'	28° 55'	4° D 6	21° D46	23° 20'	4° 45'	29° 23	W16
T 17	13 43 34	27° 45'38	9° 28'	4° 27'	27° 24'	9° 1'	24° 43'	19° 58'	8° 16'	28° 57'	4° 6'	21° 46'	23° 17'	4° 51'	29° 27	T 17
F 18	13 47 30	28° 44'23	22° 22'	3° 52'	26° 46'	9° 45'	24° 56'	19° 54'	8° 20'	28° 59'	4° 6'	21° 47'	23° 14'	4° 58'	29° 30	F 18
S 19	13 51 27	29° 43'06	4° 55'	3° 13'	26° 8'	10° 29'	25° 9'	19° 49'	8° 23'	29° 1'	4° 6'	21° R47	23° 11'	5° 5'	29° 34	S 19
S 20	13 55 23	0° 41'48	17° 11'	2° 33'	25° 32'	11° 13'	25° 22'	19° 45'	8° 26'	29° 4'	4° 6'	21° 46'	23° 8'	5° 12'	29° 37	S 20
M21	13 59 20	1° 40'27	29° 14'	1° 51'	24° 56'	11° 58'	25° 35'	19° 40'	8° 30'	29° 6'	4° 6'	21° 42'	23° 4'	5° 18'	29° 41	M21
T 22	14 3 17	2° 39'05	11° 10'	1° 8'	24° 21'	12° 42'	25° 48'	19° 36'	8° 33'	29° 7'	4° 6'	21° 36'	23° 1	5° 25'	29° 44	T 22
W23	14 7 13	3° 37'41	23° 2'	0° 26'	23° 47'	13° 26'	26° 1'	19° 31'	8° 37'	29° 9'	4° 7'	21° 29'	22° 58'	5° 32'	29° 48	W23
T 24	14 11 10	4° 36'16	4° 53'	29° 44'	23° 15'	14° 10'	26° 14'	19° 27'	8° 40'	29° 11'	4° 7'	21° 20'	22° 55'	5° 38'	29° 52	T 24
F 25	14 15 6	5° 34'48	16° 46'	29° 4'	22° 45'	14° 54'	26° 27'	19° 22'	8° 44'	29° 13'	4° 7'	21° 11'	22° 52'	5° 45'	29° 56	F 25
S 26	14 19 3	6° 33'19	28° 42'	28° 26'	22° 16'	15° 37'	26° 40'	19° 18'	8° 47'	29° 15'	4° 7'	21° 3'	22° 48'	5° 52'	29° 59	S 26
S 27	14 22 59	7° 31'48	10° 43'	27° 51'	21° 49'	16° 21'	26° 53'	19° 14'	8° 50'	29° 17'	4° 8'	20° 56'	22° 45'	5° 59'	0° 4	S 27
M28	14 26 56	8° 30'15	22° 50'	27° 19'	21° 24'	17° 5'	27° 5'	19° 9'	8° 54'	29° 19'	4° 8'	20° 50'	22° 42'	6° 5'	0° 8	M28
T 29	14 30 52	9° 28'41	5° II 6	26° 51'	21° 2'	17° 49'	27° 18'	19° 5'	8° 57'	29° 21'	4° 8'	20° 47'	22° 39'	6° 12'	0° 12	T 29
W30	14 34 49	10° 27'04	17° II31	26° 28'	20° 42'	18° 32'	27° 30'	19° 1'	9° 8'	29° 23'	4° 9'	20° D46	22° II36	6° 19'	0° 16	W30

Delta T = 151.95 sec

ASTRODIENST EPHEMERIS for the year 2188

geocentric

MAY 2188

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	14 38 45	11♂25'26	0♂ 9	26°R 8	20°R24	19♂16	27♂43	18°R57	9♂ 4	29♂25	4♂ 9	20♂46	22♂33	6♂25	0♂20	T 1
F 2	14 42 42	12°23'45	13° 0	25°Y53	20°Y 8	20° 0	27°55	18♂53	9° 8	29°26	4° 9	20°47	22°29	6°32	0°24	F 2
S 3	14 46 39	13°22'03	26° 8	25°43	19°55	20°43	28° 7	18°49	9°11	29°28	4°10	20°49	22°26	6°39	0°29	S 3
S 4	14 50 35	14°20'18	9♂35	25°38	19°44	21°27	28°20	18°45	9°15	29°30	4°10	20°R50	22°23	6°46	0°33	S 4
M 5	14 54 32	15°18'31	23°23	25°D38	19°36	22°10	28°32	18°41	9°18	29°32	4°11	20°50	22°20	6°52	0°38	M 5
T 6	14 58 28	16°16'42	7♂33	25°42	19°30	22°53	28°44	18°37	9°22	29°33	4°11	20°48	22°17	6°59	0°42	T 6
W 7	15 2 25	17°14'52	22° 2	25°52	19°26	23°37	28°56	18°33	9°25	29°35	4°12	20°45	22°13	7° 6	0°47	W 7
T 8	15 6 21	18°12'59	6♂48	26° 6	19°D25	24°20	29° 8	18°30	9°28	29°37	4°12	20°41	22°10	7°12	0°51	T 8
F 9	15 10 18	19°11'04	21°44	26°24	19°26	25° 3	29°19	18°26	9°32	29°38	4°13	20°36	22° 7	7°19	0°56	F 9
S 10	15 14 14	20° 9'07	6♂42	26°47	19°30	25°46	29°31	18°22	9°35	29°40	4°13	20°32	22° 4	7°26	1° 0	S 10
S 11	15 18 11	21° 7'09	21°33	27°14	19°35	26°29	29°43	18°19	9°39	29°41	4°14	20°29	22° 1	7°33	1° 5	S 11
M12	15 22 8	22° 5'10	6♂ 9	27°45	19°43	27°13	29°54	18°15	9°42	29°43	4°15	20°27	21°58	7°39	1°10	M12
T 13	15 26 4	23° 3'08	20°23	28°21	19°54	27°56	0♂ 6	18°12	9°45	29°45	4°15	20°D26	21°54	7°46	1°14	T 13
W14	15 30 1	24° 1'06	4♂14	29° 0	20° 6	28°38	0°17	18° 9	9°49	29°46	4°16	20°27	21°51	7°53	1°19	W14
T 15	15 33 57	24°59'02	17°38	29°43	20°20	29°21	0°28	18° 5	9°52	29°48	4°17	20°28	21°48	7°59	1°24	T 15
F 16	15 37 54	25°56'56	0♂38	0♂30	20°37	0♂ 4	0°39	18° 2	9°56	29°49	4°18	20°29	21°45	8° 6	1°29	F 16
S 17	15 41 50	26°54'50	13°16	1°20	20°55	0°47	0°50	17°59	9°59	29°51	4°18	20°31	21°42	8°13	1°34	S 17
S 18	15 45 47	27°52'42	25°35	2°13	21°15	1°30	1° 1	17°56	10° 2	29°52	4°19	20°R31	21°39	8°20	1°39	S 18
M19	15 49 44	28°50'33	7♂41	3°10	21°37	2°12	1°12	17°53	10° 6	29°53	4°20	20°31	21°35	8°26	1°44	M19
T 20	15 53 40	29°48'22	19°38	4°10	22° 1	2°55	1°23	17°50	10° 9	29°55	4°21	20°30	21°32	8°33	1°49	T 20
W21	15 57 37	0♂46'11	1°Y31	5°13	22°26	3°38	1°34	17°47	10°12	29°56	4°22	20°28	21°29	8°40	1°54	W21
T 22	16 1 33	1°43'58	13°22	6°19	22°53	4°20	1°44	17°45	10°15	29°57	4°23	20°25	21°26	8°47	1°59	T 22
F 23	16 5 30	2°41'44	25°17	7°27	23°22	5° 3	1°55	17°42	10°19	29°59	4°23	20°22	21°23	8°53	2° 4	F 23
S 24	16 9 26	3°39'29	7♂18	8°39	23°52	5°45	2° 5	17°40	10°22	29°59	4°24	20°20	21°19	9° 0	2° 9	S 24
S 25	16 13 23	4°37'13	19°27	9°53	24°23	6°28	2°15	17°37	10°25	0♂ 1	4°25	20°17	21°16	9° 7	2°15	S 25
M26	16 17 19	5°34'56	1♂46	11°10	24°56	7°10	2°25	17°35	10°28	0° 2	4°26	20°16	21°13	9°13	2°20	M26
T 27	16 21 16	6°32'37	14°17	12°30	25°30	7°52	2°35	17°33	10°32	0° 3	4°27	20°D15	21°10	9°20	2°25	T 27
W28	16 25 12	7°30'17	27° 1	13°52	26° 5	8°35	2°45	17°30	10°35	0° 5	4°28	20°15	21° 7	9°27	2°31	W28
T 29	16 29 9	8°27'56	9♂57	15°16	26°42	9°17	2°55	17°28	10°38	0° 6	4°29	20°16	21° 4	9°34	2°36	T 29
F 30	16 33 6	9°25'34	23° 7	16°44	27°20	9°59	3° 5	17°26	10°41	0° 7	4°30	20°17	21° 0	9°40	2°41	F 30
S 31	16 37 2	10♂23'10	6♂31	18♂13	27°Y59	10♂41	3°Y14	17♂24	10♂44	0♂ 8	4♂31	20♂18	20♂57	9♂47	2♂47	S 31

Delta T = 152.02 sec

JUNE 2188

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	16 40 59	11♂20'44	20♂ 9	19♂46	28°Y38	11♂23	3°Y24	17°R23	10♂47	0♂ 9	4♂33	20♂18	20♂54	9♂54	2♂52	S 1
M 2	16 44 55	12°18'18	4♂ 1	21°20	29°20	12° 5	3°33	17♂21	10°50	0°10	4°34	20°19	20°51	10° 0	2°57	M 2
T 3	16 48 52	13°15'50	18° 6	22°57	0♂ 2	12°47	3°42	17°19	10°53	0°11	4°35	20°R19	20°48	10° 7	3° 3	T 3
W 4	16 52 48	14°13'20	2♂23	24°37	0°44	13°29	3°51	17°18	10°56	0°12	4°36	20°19	20°45	10°14	3° 8	W 4
T 5	16 56 45	15°10'49	16°49	26°19	1°28	14°11	4° 0	17°16	10°59	0°13	4°37	20°18	20°41	10°21	3°14	T 5
F 6	17 0 42	16° 8'17	1♂20	28° 4	2°13	14°53	4° 9	17°15	11° 2	0°14	4°38	20°18	20°38	10°27	3°19	F 6
S 7	17 4 38	17° 5'43	15°51	29°50	2°59	15°34	4°17	17°14	11° 5	0°14	4°40	20°17	20°35	10°34	3°25	S 7
S 8	17 8 35	18° 3'09	0♂17	1♂40	3°45	16°16	4°26	17°13	11° 8	0°15	4°41	20°17	20°32	10°41	3°30	S 8
M 9	17 12 31	19° 0'34	14°33	3°31	4°33	16°58	4°34	17°12	11°11	0°16	4°42	20°D17	20°29	10°47	3°36	M 9
T 10	17 16 28	19°57'58	28°33	5°25	5°21	17°39	4°43	17°11	11°14	0°17	4°43	20°R17	20°25	10°54	3°42	T 10
W11	17 20 24	20°55'21	12♂14	7°22	6° 9	18°21	4°51	17°10	11°17	0°17	4°45	20°17	20°22	11° 1	3°47	W11
T 12	17 24 21	21°52'43	25°35	9°20	6°59	19° 3	4°59	17° 9	11°20	0°18	4°46	20°17	20°19	11° 8	3°53	T 12
F 13	17 28 17	22°50'04	8♂34	11°21	7°49	19°44	5° 7	17° 8	11°22	0°19	4°47	20°17	20°16	11°14	3°59	F 13
S 14	17 32 14	23°47'25	21°14	13°24	8°40	20°25	5°14	17° 8	11°25	0°19	4°48	20°16	20°13	11°21	4° 4	S 14
S 15	17 36 11	24°44'46	3♂36	15°28	9°32	21° 7	5°22	17° 7	11°28	0°20	4°50	20°16	20°10	11°28	4°10	S 15
M16	17 40 7	25°42'06	15°44	17°34	10°24	21°48	5°29	17° 7	11°31	0°21	4°51	20°16	20° 6	11°34	4°15	M16
T 17	17 44 4	26°39'25	27°43	19°42	11°16	22°30	5°37	17° 7	11°33	0°21	4°52	20°D15	20° 3	11°41	4°21	T 17
W18	17 48 0	27°36'44	9♂37	21°51	12°10	23°11	5°44	17° 7	11°36	0°22	4°54	20°16	20° 0	11°48	4°27	W18
T 19	17 51 57	28°34'03	21°29	24° 1	13° 4	23°52	5°51	17°D 7	11°39	0°22	4°55	20°16	19°57	11°55	4°33	T 19
F 20	17 55 53	29°31'21	3♂26	26°12	13°58	24°33	5°57	17° 7	11°41	0°22	4°57	20°17	19°54	12° 1	4°38	F 20
S 21	17 59 50	0♂28'39	15°31	28°24	14°53	25°14	6° 4	17° 7	11°44	0°23	4°58	20°18	19°51	12° 8	4°44	S 21
S 22	18 3 46	1°25'57	27°47	0♂36	15°48	25°55	6°11	17° 7	11°46	0°23	5° 0	20°19	19°47	12°15	4°50	S 22
M23	18 7 43	2°23'15	10♂17	2°47	16°44	26°36	6°17	17° 7	11°49	0°23	5° 1	20°20	19°44	12°21	4°55	M23
T 24	18 11 40	3°20'32	23° 3	4°59	17°40	27°17	6°23	17° 8	11°51	0°24	5° 2	20°R20	19°41	12°28	5° 1	T 24
W25	18 15 36	4°17'49	6♂ 7	7°10	18°37	27°58	6°29	17° 8	11°54	0°24	5° 4	20°19	19°38	12°35	5° 7	W25
T 26	18 19 33	5°15'05	19°26	9°20	19°34	28°39	6°35	17° 9	11°56	0°24	5° 5	20°18	19°35	12°42	5°13	T 26
F 27	18 23 29	6°12'21	3♂ 2	11°29	20°32	29°20	6°41	17°10	11°58	0°24	5° 7	20°16	19°31	12°48	5°18	F 27
S 28	18 27 26	7° 9'37	16°50	13°37	21°30	0♂ 1	6°46	17°11	12° 1	0°25	5° 8	20°14	19°28	12°55	5°24	S 28
S 29	18 31 22	8° 6'52	0♂49	15°43	22°28	0°42	6°52	17°12	12° 3	0°25	5°10	20°12	19°25	13° 2	5°30	S 29
M30	18 35 19	9♂ 4'06	14♂56	17♂48	23♂27	1♂22	6°Y57	17♂13	12♂ 5	0°Y25	5♂12	20♂10	19♂22	13°Y 8	5♂36	M30

Delta T = 152.10 sec

ASTRODIENST EPHEMERIS for the year 2188

geocentric

JULY 2188

00:00 UT

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

Delta T = 152.17 sec

AUGUST 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	20 41 29	9♌36'15	22♌33	6♍43	27♏12	22♏43	8°R 7	18♎36	12♏55	0°R11	6♌ 4	19♏ 8	17♏40	16♏43	8♏33	F 1
S 2	20 45 25	10°33'38	6♌21	7°36	28°18	23°23	8♏ 6	18°40	12°55	0♏10	6° 6	19° 9	17°37	16°50	8°39	S 2
S 3	20 49 22	11°31'01	19°57	8°25	29°25	24° 2	8° 5	18°44	12°56	0°10	6° 8	19°R10	17°34	16°56	8°44	S 3
M 4	20 53 18	12°28'24	3♌22	9°12	0♌32	24°41	8° 3	18°49	12°57	0° 9	6° 9	19° 9	17°31	17° 3	8°49	M 4
T 5	20 57 15	13°25'48	16°35	9°54	1°39	25°20	8° 2	18°53	12°57	0° 8	6°11	19° 6	17°28	17°10	8°54	T 5
W 6	21 1 12	14°23'13	29°37	10°33	2°47	26° 0	8° 0	18°57	12°58	0° 7	6°13	19° 0	17°24	17°17	8°59	W 6
T 7	21 5 8	15°20'39	12♌27	11° 8	3°54	26°39	7°58	19° 2	12°59	0° 6	6°14	18°53	17°21	17°23	9° 4	T 7
F 8	21 9 5	16°18'06	25° 4	11°39	5° 2	27°18	7°56	19° 6	12°59	0° 4	6°16	18°43	17°18	17°30	9° 9	F 8
S 9	21 13 1	17°15'34	7♌30	12° 6	6° 9	27°57	7°53	19°11	13° 0	0° 3	6°18	18°33	17°15	17°37	9°14	S 9
S 10	21 16 58	18°13'02	19°44	12°28	7°17	28°36	7°51	19°15	13° 0	0° 2	6°19	18°22	17°12	17°43	9°19	S 10
M11	21 20 54	19°10'32	1°47	12°46	8°25	29°15	7°48	19°20	13° 0	0° 1	6°21	18°13	17° 9	17°50	9°24	M11
T 12	21 24 51	20° 8'03	13°43	12°59	9°33	29°54	7°45	19°25	13° 1	29♌59	6°23	18° 5	17° 5	17°57	9°29	T 12
W13	21 28 47	21° 5'36	25°35	13° 6	10°42	0♌33	7°42	19°30	13° 1	29°59	6°24	17°59	17° 2	18° 4	9°33	W13
T 14	21 32 44	22° 3'10	7♌25	13°R 9	11°50	1°12	7°39	19°35	13° 1	29°58	6°26	17°56	16°59	18°10	9°38	T 14
F 15	21 36 41	23° 0'45	19°20	13° 6	12°58	1°51	7°35	19°40	13° 1	29°56	6°28	17°D55	16°56	18°17	9°43	F 15
S 16	21 40 37	23°58'22	1♏24	12°58	14° 7	2°30	7°32	19°45	13° 1	29°55	6°29	17°55	16°53	18°24	9°48	S 16
S 17	21 44 34	24°56'00	13°42	12°44	15°16	3° 9	7°28	19°50	13° 1	29°54	6°31	17°R56	16°49	18°30	9°52	S 17
M18	21 48 30	25°53'40	26°20	12°25	16°25	3°48	7°24	19°55	13°R 1	29°53	6°33	17°55	16°46	18°37	9°57	M18
T 19	21 52 27	26°51'21	9♌21	12° 0	17°34	4°26	7°20	20° 0	13° 1	29°51	6°34	17°53	16°43	18°44	10° 1	T 19
W20	21 56 23	27°49'04	22°49	11°30	18°43	5° 5	7°15	20° 6	13° 1	29°50	6°36	17°49	16°40	18°50	10° 6	W20
T 21	22 0 20	28°46'48	6♌44	10°55	19°52	5°44	7°11	20°11	13° 1	29°49	6°37	17°43	16°37	18°57	10°10	T 21
F 22	22 4 16	29°44'33	21° 4	10°15	21° 2	6°23	7° 6	20°16	13° 1	29°47	6°39	17°34	16°34	19° 4	10°15	F 22
S 23	22 8 13	0♍42'20	5♍43	9°31	22°11	7° 1	7° 1	20°22	13° 1	29°46	6°41	17°23	16°30	19°11	10°19	S 23
S 24	22 12 10	1°40'09	20°34	8°43	23°21	7°40	6°56	20°28	13° 0	29°44	6°42	17°13	16°27	19°17	10°23	S 24
M25	22 16 6	2°37'58	5♌28	7°52	24°30	8°18	6°51	20°33	13° 0	29°43	6°44	17° 3	16°24	19°24	10°28	M25
T 26	22 20 3	3°35'49	20°17	6°59	25°40	8°57	6°45	20°39	13° 0	29°42	6°45	16°55	16°21	19°31	10°32	T 26
W27	22 23 59	4°33'41	4♌54	6° 6	26°50	9°35	6°40	20°45	12°59	29°40	6°47	16°50	16°18	19°37	10°36	W27
T 28	22 27 56	5°31'34	19°13	5°12	28° 0	10°14	6°34	20°50	12°59	29°39	6°48	16°48	16°14	19°44	10°40	T 28
F 29	22 31 52	6°29'29	3♌14	4°19	29°10	10°52	6°28	20°56	12°58	29°37	6°50	16°D47	16°11	19°51	10°44	F 29
S 30	22 35 49	7°27'25	16°55	3°28	0♌21	11°31	6°22	21° 2	12°58	29°36	6°51	16°R47	16° 8	19°57	10°48	S 30
S 31	22 39 45	8♍25'22	0♌19	2♍41	1♌31	12♌ 9	6♏16	21♎ 8	12♏57	29♌34	6♌53	16♏46	16♏ 5	20♏ 4	10♏52	S 31

Delta T = 152.25 sec

ASTRODIENST EPHEMERIS for the year 2188

geocentric

SEPTEMBER 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	22 43 42	9 ^h 23'20"	13 ^h 27'	1°R59	2 ^h 41'	12 ^h 47'	6°R10	21 ^h 14'	12°R56	29°R33	6 ^h 54'	16°R44	16 ^h 2	20°Y11	10 ^h 56'	M 1
T 2	22 47 39	10°21'19"	26°21'	1 ^h 21'	3°52'	13°26'	6°Y 3	21°20'	12 ^h 56'	29°Y31	6°56'	16 ^h 40'	15°59'	20°18'	10°59'	T 2
W 3	22 51 35	11°19'20"	9 ^h 4	0°50'	5° 2	14° 4	5°57'	21°26'	12°55'	29°30'	6°57'	16°32'	15°55'	20°24'	11° 3	W 3
T 4	22 55 32	12°17'23"	21°36'	0°26'	6°13'	14°42'	5°50'	21°33'	12°54'	29°28'	6°59'	16°22'	15°52'	20°31'	11° 7	T 4
F 5	22 59 28	13°15'27"	3 ^h 58'	0°10'	7°24'	15°20'	5°43'	21°39'	12°53'	29°26'	7° 0	16° 9	15°49'	20°38'	11°10'	F 5
S 6	23 3 25	14°13'32"	16°12'	0°D 2	8°35'	15°58'	5°37'	21°45'	12°52'	29°25'	7° 1	15°56'	15°46'	20°44'	11°14'	S 6
S 7	23 7 21	15°11'39"	28°17'	0° 2	9°46'	16°36'	5°30'	21°51'	12°51'	29°23'	7° 3	15°42'	15°43'	20°51'	11°17'	S 7
M 8	23 11 18	16° 9'48"	10°Y15	0°11'	10°57'	17°15'	5°23'	21°58'	12°50'	29°22'	7° 4	15°29'	15°40'	20°58'	11°21'	M 8
T 9	23 15 14	17° 7'59"	22° 7	0°29'	12° 8	17°53'	5°15'	22° 4	12°49'	29°20'	7° 6	15°18'	15°36'	21° 4	11°24'	T 9
W10	23 19 11	18° 6'12"	3 ^h 57'	0°55'	13°19'	18°31'	5° 8	22°11'	12°48'	29°18'	7° 7	15°10'	15°33'	21°11'	11°27'	W10
T 11	23 23 7	19° 4'26"	15°46'	1°30'	14°31'	19° 9	5° 1	22°17'	12°47'	29°17'	7° 8	15° 5	15°30'	21°18'	11°31'	T 11
F 12	23 27 4	20° 2'43"	27°39'	2°14'	15°42'	19°47'	4°53'	22°24'	12°46'	29°15'	7°10'	15° 3	15°27'	21°24'	11°34'	F 12
S 13	23 31 1	21° 1'02"	9 ^h 41'	3° 5	16°54'	20°24'	4°46'	22°30'	12°45'	29°14'	7°11'	15° 2	15°24'	21°31'	11°37'	S 13
S 14	23 34 57	21°59'23"	21°56'	4° 4	18° 5	21° 2	4°38'	22°37'	12°43'	29°12'	7°12'	15° 2	15°20'	21°38'	11°40'	S 14
M15	23 38 54	22°57'45"	4 ^h 31'	5°10'	19°17'	21°40'	4°30'	22°43'	12°42'	29°10'	7°14'	15° 1	15°17'	21°45'	11°43'	M15
T 16	23 42 50	23°56'10"	17°30'	6°23'	20°29'	22°18'	4°23'	22°50'	12°41'	29° 9	7°15'	15° 0	15°14'	21°51'	11°46'	T 16
W17	23 46 47	24°54'38"	0 ^h 56'	7°41'	21°41'	22°56'	4°15'	22°57'	12°39'	29° 7	7°16'	14°56'	15°11'	21°58'	11°49'	W17
T 18	23 50 43	25°53'07"	14°52'	9° 6	22°53'	23°34'	4° 7	23° 4	12°38'	29° 5	7°17'	14°49'	15° 8	22° 5	11°51'	T 18
F 19	23 54 40	26°51'38"	29°17'	10°35'	24° 5	24°11'	3°59'	23°10'	12°36'	29° 4	7°18'	14°40'	15° 5	22°11'	11°54'	F 19
S 20	23 58 36	27°50'11"	14 ^h 7'	12° 8	25°17'	24°49'	3°51'	23°17'	12°35'	29° 2	7°20'	14°30'	15° 1	22°18'	11°57'	S 20
S 21	0 2 33	28°48'47"	29°13'	13°45'	26°29'	25°27'	3°43'	23°24'	12°33'	29° 0	7°21'	14°19'	14°58'	22°25'	11°59'	S 21
M22	0 6 30	29°47'24"	14 ^h 26'	15°25'	27°42'	26° 4	3°35'	23°31'	12°32'	28°59'	7°22'	14° 9	14°55'	22°31'	12° 2	M22
T 23	0 10 26	0 ^h 46'02"	29°35'	17° 7	28°54'	26°42'	3°27'	23°38'	12°30'	28°57'	7°23'	14° 1	14°52'	22°38'	12° 4	T 23
W24	0 14 23	1°44'43"	14 ^h 30'	18°52'	0 ^h 7'	27°19'	3°19'	23°45'	12°28'	28°55'	7°24'	13°55'	14°49'	22°45'	12° 6	W24
T 25	0 18 19	2°43'26"	29° 4	20°38'	1°19'	27°57'	3°11'	23°52'	12°27'	28°54'	7°25'	13°53'	14°46'	22°52'	12° 8	T 25
F 26	0 22 16	3°42'10"	13 ^h 15'	22°26'	2°32'	28°34'	3° 3	23°59'	12°25'	28°52'	7°26'	13°D52	14°42'	22°58'	12°11'	F 26
S 27	0 26 12	4°40'56"	27° 0	24°15'	3°44'	29°12'	2°55'	24° 6	12°23'	28°50'	7°27'	13°52'	14°39'	23° 5	12°13'	S 27
S 28	0 30 9	5°39'44"	10 ^h 22'	26° 4	4°57'	29°49'	2°47'	24°13'	12°21'	28°49'	7°28'	13°R52	14°36'	23°12'	12°15'	S 28
M29	0 34 5	6°38'33"	23°24'	27°53'	6°10'	0 ^h 27'	2°39'	24°20'	12°20'	28°47'	7°29'	13°51'	14°33'	23°18'	12°17'	M29
T 30	0 38 2	7 ^h 37'24"	6 ^h 8'	29 ^h 43'	7 ^h 23'	1 ^h 4	2°Y31	24 ^h 27'	12 ^h 18'	28 ^h 45'	7 ^h 30'	13 ^h 47'	14 ^h 30'	23°Y25	12 ^h 18'	T 30

Delta T = 152.33 sec

OCTOBER 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	0 41 59	8 ^h 36'17"	18 ^h 38'	1 ^h 33'	8 ^h 36'	1 ^h 41'	2°R23	24 ^h 34'	12°R16	28°R44	7 ^h 31'	13°R41	14 ^h 26'	23°Y32	12 ^h 56'	W 1
T 2	0 45 55	9°35'11"	0 ^h 57'	3°22'	9°49'	2°19'	2°Y15	24°41'	12 ^h 14'	28 ^h 42'	7°32'	13 ^h 33'	14°23'	23°38'	12°22'	T 2
F 3	0 49 52	10°34'07"	13° 7	5°11'	11° 2	2°56'	2° 7	24°48'	12°12'	28°41'	7°33'	13°22'	14°20'	23°45'	12°23'	F 3
S 4	0 53 48	11°33'05"	25°10'	7° 0	12°15'	3°33'	2° 0	24°55'	12°10'	28°39'	7°34'	13°10'	14°17'	23°52'	12°25'	S 4
S 5	0 57 45	12°32'05"	7°Y 7	8°48'	13°28'	4°10'	1°52'	25° 3	12° 8	28°37'	7°35'	12°59'	14°14'	23°58'	12°26'	S 5
M 6	1 1 41	13°31'07"	19° 0	10°35'	14°41'	4°47'	1°44'	25°10'	12° 6	28°36'	7°36'	12°48'	14°11'	24° 5	12°28'	M 6
T 7	1 5 38	14°30'11"	0 ^h 51'	12°22'	15°55'	5°25'	1°37'	25°17'	12° 4	28°34'	7°37'	12°39'	14° 7	24°12'	12°29'	T 7
W 8	1 9 34	15°29'17"	12°40'	14° 8	17° 8	6° 2	1°29'	25°24'	12° 2	28°33'	7°37'	12°32'	14° 4	24°19'	12°30'	W 8
T 9	1 13 31	16°28'26"	24°31'	15°53'	18°22'	6°39'	1°22'	25°31'	11°59'	28°31'	7°38'	12°28'	14° 1	24°25'	12°31'	T 9
F 10	1 17 27	17°27'36"	6 ^h 26'	17°38'	19°35'	7°16'	1°14'	25°39'	11°57'	28°30'	7°39'	12°26'	13°58'	24°32'	12°32'	F 10
S 11	1 21 24	18°26'49"	18°30'	19°22'	20°49'	7°53'	1° 7	25°46'	11°55'	28°28'	7°40'	12°D26	13°55'	24°39'	12°33'	S 11
S 12	1 25 21	19°26'04"	0 ^h 45'	21° 5	22° 2	8°30'	1° 0	25°53'	11°53'	28°26'	7°40'	12°27'	13°51'	24°45'	12°34'	S 12
M13	1 29 17	20°25'22"	13°18'	22°47'	23°16'	9° 6	0°52'	26° 1	11°51'	28°25'	7°41'	12°R28	13°48'	24°52'	12°35'	M13
T 14	1 33 14	21°24'42"	26°12'	24°29'	24°30'	9°43'	0°45'	26° 8	11°48'	28°23'	7°42'	12°R28	13°45'	24°59'	12°36'	T 14
W15	1 37 10	22°24'04"	9 ^h 32'	26° 9	25°44'	10°20'	0°38'	26°15'	11°46'	28°22'	7°42'	12°26'	13°42'	25° 5	12°36'	W15
T 16	1 41 7	23°23'28"	23°20'	27°50'	26°58'	10°57'	0°32'	26°22'	11°44'	28°20'	7°43'	12°23'	13°39'	25°12'	12°37'	T 16
F 17	1 45 3	24°22'55"	7 ^h 37'	29°29'	28°11'	11°34'	0°25'	26°30'	11°41'	28°19'	7°43'	12°18'	13°36'	25°19'	12°37'	F 17
S 18	1 49 0	25°22'23"	22°21'	1 ^h 8'	29°25'	12°10'	0°18'	26°37'	11°39'	28°18'	7°44'	12°11'	13°32'	25°25'	12°37'	S 18
S 19	1 52 56	26°21'54"	7 ^h 25'	2°46'	0 ^h 39'	12°47'	0°12'	26°44'	11°37'	28°16'	7°44'	12° 4	13°29'	25°32'	12°38'	S 19
M20	1 56 53	27°21'27"	22°41'	4°23'	1°54'	13°24'	0° 6	26°52'	11°34'	28°15'	7°45'	11°57'	13°26'	25°39'	12°38'	M20
T 21	2 0 50	28°21'03"	7 ^h 57'	6° 0	3° 8	14° 0	29 ^h 59'	26°59'	11°32'	28°13'	7°45'	11°52'	13°23'	25°45'	12°R38	T 21
W22	2 4 46	29°20'40"	23° 4	7°36'	4°22'	14°37'	29°53'	27° 6	11°30'	28°12'	7°46'	11°48'	13°20'	25°52'	12°38'	W22
T 23	2 8 43	0 ^h 20'19"	7 ^h 52'	9°11'	5°36'	15°13'	29°47'	27°14'	11°27'	28°11'	7°46'	11°D47	13°17'	25°59'	12°38'	T 23
F 24	2 12 39	1°20'00"	22°16'	10°46'	6°50'	15°50'	29°42'	27°21'	11°25'	28° 9	7°47'	11°47'	13°13'	26° 6	12°38'	F 24
S 25	2 16 36	2°19'43"	6 ^h 31'	12°21'	8° 5	16°26'	29°36'	27°28'	11°22'	28° 8	7°47'	11°48'	13°10'	26°12'	12°37'	S 25
S 26	2 20 32	3°19'27"	19°42'	13°54'	9°19'	17° 3	29°31'	27°35'	11°20'	28° 7	7°47'	11°50'	13° 7	26°19'	12°37'	S 26
M27	2 24 29	4°19'13"	2 ^h 47'	15°27'	10°33'	17°39'	29°26'	27°43'	11°18'	28° 5	7°48'	11°R51	13° 4	26°26'	12°37'	M27
T 28	2 28 25	5°19'01"	15°30'	17° 0	11°48'	18°15'	29°20'	27°50'	11°15'	28° 4	7°48'	11°50'	13° 1	26°32'	12°36'	T 28
W29	2 32 22	6°18'50"	27°56'	18°32'	13° 2	18°52'	29°16'	27°57'	11°13'	28° 3	7°48'	11°48'	12°57'	26°39'	12°36'	W29
T 30	2 36 19	7°18'41"	10 ^h 9'	20° 4	14°17'	19°28'	29°11'	28° 4	11°10'	28° 2	7°49'	11°44'	12°54'	26°46'	12°35'	T 30
F 31	2 40 15	8 ^h 18'33"	22 ^h 11'	21 ^h 35'	15 ^h 31'	20 ^h 4	29 ^h 6'	28 ^h 12'	11 ^h 8'	28 ^h 1	7 ^h 49'	11 ^h 39'	12 ^h 51'	26 ^h Y52	12 ^h 34'	F 31

Delta T = 152.40 sec

ASTRODIENST EPHEMERIS for the year 2188
geocentric

NOVEMBER 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 44 12	9♉18'28	4♊ 7	23♊ 5	16♊46	20♊40	29°R 2	28♊19	11°R 5	27°R59	7♊49	11°R33	12♊48	26♊59	12°R33	S 1
S 2	2 48 8	10°18'24	15°59	24°35	18° 0	21°16	28♊58	28°26	11♊ 3	27♊58	7°49	11♊27	12°45	27° 6	12♊32	S 2
M 3	2 52 5	11°18'22	27°50	26° 5	19°15	21°52	28°54	28°33	11° 0	27°57	7°49	11°22	12°42	27°12	12°31	M 3
T 4	2 56 1	12°18'21	9♊41	27°34	20°29	22°28	28°50	28°40	10°58	27°56	7°49	11°17	12°38	27°19	12°30	T 4
W 5	2 59 58	13°18'23	21°34	29° 2	21°44	23° 4	28°46	28°48	10°55	27°55	7°50	11°14	12°35	27°26	12°29	W 5
T 6	3 3 54	14°18'26	3♊31	0♊30	22°59	23°40	28°43	28°55	10°53	27°54	7°50	11°13	12°32	27°32	12°28	T 6
F 7	3 7 51	15°18'32	15°34	1°58	24°14	24°16	28°39	29° 2	10°50	27°53	7°50	11°D12	12°29	27°39	12°26	F 7
S 8	3 11 48	16°18'39	27°46	3°24	25°28	24°52	28°36	29° 9	10°48	27°52	7°R50	11°13	12°26	27°46	12°25	S 8
S 9	3 15 44	17°18'48	10♊10	4°51	26°43	25°28	28°33	29°16	10°46	27°51	7°50	11°15	12°23	27°53	12°23	S 9
M10	3 19 41	18°19'00	22°47	6°16	27°58	26° 3	28°31	29°23	10°43	27°50	7°50	11°17	12°19	27°59	12°22	M10
T 11	3 23 37	19°19'13	5♊42	7°41	29°13	26°39	28°28	29°30	10°41	27°49	7°49	11°18	12°16	28° 6	12°20	T 11
W12	3 27 34	20°19'29	18°58	9° 5	0♊28	27°15	28°26	29°37	10°38	27°48	7°49	11°R18	12°13	28°13	12°18	W12
T 13	3 31 30	21°19'46	2♊38	10°28	1°43	27°50	28°24	29°44	10°36	27°48	7°49	11°18	12°10	28°19	12°17	T 13
F 14	3 35 27	22°20'05	16°41	11°51	2°58	28°26	28°22	29°51	10°33	27°47	7°49	11°17	12° 7	28°26	12°15	F 14
S 15	3 39 23	23°20'26	1♊ 8	13°12	4°13	29° 1	28°20	29°58	10°31	27°46	7°49	11°15	12° 3	28°33	12°13	S 15
S 16	3 43 20	24°20'50	15°54	14°33	5°28	29°37	28°19	0♊ 5	10°29	27°45	7°49	11°13	12° 0	28°39	12°11	S 16
M17	3 47 17	25°21'15	0♊55	15°52	6°43	0♊12	28°17	0°12	10°26	27°45	7°48	11°10	11°57	28°46	12° 9	M17
T 18	3 51 13	26°21'42	16° 1	17°10	7°58	0°47	28°16	0°19	10°24	27°44	7°48	11° 9	11°54	28°53	12° 6	T 18
W19	3 55 10	27°22'10	1♊ 3	18°27	9°13	1°23	28°16	0°25	10°22	27°43	7°48	11° 8	11°51	28°59	12° 4	W19
T 20	3 59 6	28°22'40	15°53	19°42	10°28	1°58	28°15	0°32	10°19	27°43	7°48	11°D 8	11°48	29° 6	12° 2	T 20
F 21	4 3 3	29°23'12	0♊34	20°54	11°43	2°33	28°14	0°39	10°17	27°42	7°47	11° 8	11°44	29°13	11°59	F 21
S 22	4 6 59	0♊37'45	14°30	22° 5	12°59	3° 8	28°14	0°46	10°15	27°41	7°47	11° 9	11°41	29°19	11°57	S 22
S 23	4 10 56	1°24'19	28° 9	23°14	14°14	3°43	28°D14	0°52	10°12	27°41	7°47	11°10	11°38	29°26	11°54	S 23
M24	4 14 53	2°24'55	11♊22	24°19	15°29	4°18	28°14	0°59	10°10	27°40	7°46	11°11	11°35	29°33	11°52	M24
T 25	4 18 49	3°25'32	24°11	25°22	16°44	4°53	28°15	1° 5	10° 8	27°40	7°46	11°11	11°32	29°39	11°49	T 25
W26	4 22 46	4°26'09	6♊39	26°21	17°59	5°28	28°15	1°12	10° 6	27°40	7°45	11°R11	11°29	29°46	11°46	W26
T 27	4 26 42	5°26'48	18°51	27°16	19°14	6° 3	28°16	1°18	10° 4	27°39	7°45	11°11	11°25	29°53	11°43	T 27
F 28	4 30 39	6°27'28	0♊52	28° 6	20°30	6°38	28°17	1°25	10° 1	27°39	7°44	11°11	11°22	29°59	11°40	F 28
S 29	4 34 35	7°28'09	12°45	28°52	21°45	7°12	28°18	1°31	9°59	27°38	7°44	11°10	11°19	0♊ 6	11°37	S 29
S 30	4 38 32	8♊28'51	24♊35	29♊31	23♊ 0	7♊47	28♊20	1♊38	9♊57	27♊38	7♊43	11♊10	11♊16	0♊13	11♊34	S 30

Delta T = 152.48 sec

DECEMBER 2188

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	4 42 28	9♊29'34	6♊25	0♊ 4	24♊15	8♊22	28♊22	1♊44	9°R55	27°R38	7°R42	11°R10	11♊13	0♊19	11°R31	M 1
T 2	4 46 25	10°30'19	18°18	0°29	25°31	8°56	28°23	1°50	9♊53	27♊38	7♊42	11°D 9	11° 9	0°26	11♊28	T 2
W 3	4 50 22	11°31'04	0♊18	0°46	26°46	9°31	28°25	1°56	9°51	27°37	7°41	11°D 9	11° 6	0°33	11°25	W 3
T 4	4 54 18	12°31'51	12°25	0°R55	28° 1	10° 5	28°28	2° 3	9°49	27°37	7°41	11°R 9	11° 3	0°40	11°22	T 4
F 5	4 58 15	13°32'39	24°42	0°53	29°17	10°39	28°30	2° 9	9°47	27°37	7°40	11° 9	11° 0	0°46	11°18	F 5
S 6	5 2 11	14°33'28	7♊10	0°41	0♊32	11°13	28°33	2°15	9°45	27°37	7°39	11° 9	10°57	0°53	11°15	S 6
S 7	5 6 8	15°34'18	19°50	0°18	1°47	11°48	28°36	2°21	9°43	27°37	7°38	11° 9	10°54	1° 0	11°12	S 7
M 8	5 10 4	16°35'10	2♊43	29♊44	3° 3	12°22	28°39	2°27	9°42	27°D37	7°38	11° 8	10°50	1° 6	11° 8	M 8
T 9	5 14 1	17°36'03	15°50	28°58	4°18	12°56	28°42	2°32	9°40	27°37	7°37	11° 7	10°47	1°13	11° 5	T 9
W10	5 17 57	18°36'57	29°13	28° 2	5°34	13°30	28°45	2°38	9°38	27°37	7°36	11° 7	10°44	1°20	11° 1	W10
T 11	5 21 54	19°37'52	12♊51	26°57	6°49	14° 4	28°49	2°44	9°36	27°37	7°35	11° 6	10°41	1°26	10°58	T 11
F 12	5 25 51	20°38'48	26°46	25°43	8° 4	14°37	28°53	2°50	9°35	27°37	7°35	11°D 6	10°38	1°33	10°54	F 12
S 13	5 29 47	21°39'46	10♊56	24°24	9°20	15°11	28°57	2°55	9°33	27°37	7°34	11° 7	10°35	1°40	10°50	S 13
S 14	5 33 44	22°40'45	25°20	23° 1	10°35	15°45	29° 1	3° 1	9°31	27°38	7°33	11° 8	10°31	1°46	10°47	S 14
M15	5 37 40	23°41'45	9♊54	21°39	11°51	16°18	29° 5	3° 7	9°30	27°38	7°32	11° 9	10°28	1°53	10°43	M15
T 16	5 41 37	24°42'46	24°35	20°18	13° 6	16°52	29°10	3°12	9°28	27°38	7°31	11° 9	10°25	2° 0	10°39	T 16
W17	5 45 33	25°43'48	9♊17	19° 3	14°21	17°25	29°15	3°17	9°27	27°38	7°30	11°R10	10°22	2° 6	10°35	W17
T 18	5 49 30	26°44'51	23°52	17°54	15°37	17°59	29°20	3°23	9°25	27°39	7°29	11°10	10°19	2°13	10°32	T 18
F 19	5 53 26	27°45'55	8♊14	16°55	16°52	18°32	29°25	3°28	9°24	27°39	7°28	11° 8	10°15	2°20	10°28	F 19
S 20	5 57 23	28°46'59	22°17	16° 6	18° 8	19° 5	29°30	3°33	9°22	27°39	7°27	11° 6	10°12	2°26	10°24	S 20
S 21	6 1 20	29°48'04	5♊59	15°27	19°23	19°38	29°36	3°38	9°21	27°40	7°26	11° 4	10° 9	2°33	10°20	S 21
M22	6 5 16	0♊49'09	19°17	15° 0	20°39	20°11	29°41	3°43	9°20	27°40	7°25	11° 1	10° 6	2°40	10°16	M22
T 23	6 9 13	1°50'15	2♊11	14°43	21°54	20°44	29°47	3°48	9°19	27°41	7°24	10°58	10° 3	2°46	10°12	T 23
W24	6 13 9	2°51'21	14°44	14°D37	23°10	21°17	29°53	3°53	9°17	27°41	7°23	10°56	10° 0	2°53	10° 8	W24
T 25	6 17 6	3°52'26	27° 0	14°41	24°25	21°49	29°59	3°58	9°16	27°42	7°22	10°55	9°56	3° 0	10° 4	T 25
F 26	6 21 2	4°53'32	9♊ 1	14°54	25°41	22°22	0♊ 6	4° 3	9°15	27°42	7°21	10°D54	9°53	3° 6	10° 0	F 26
S 27	6 24 59	5°54'39	20°54	15°15	26°56	22°54	0°12	4° 7	9°14	27°43	7°20	10°55	9°50	3°13	9°56	S 27
S 28	6 28 55	6°55'45	2♊43	15°43	28°12	23°27	0°19	4°12	9°13	27°44	7°19	10°57	9°47	3°20	9°52	S 28
M29	6 32 52	7°56'52	14°34	16°19	29°27	23°59	0°26	4°16	9°12	27°44	7°17	10°59	9°44	3°26	9°48	M29
T 30	6 36 49	8°57'58	26°30	17° 0	0♊43	24°31	0°33	4°21	9°11	27°45	7°16	11° 0	9°41	3°33	9°44	T 30
W31	6 40 45	9♊59'05	8♊35	17♊47	1♊58	25♊ 3	0♊40	4♊25	9♊10	27♊46	7♊15	11°R 1	9♊37	3♊40	9♊40	W31

Delta T = 152.55 sec