

# SWISS EPHEMERIS for the year 1980

## JANUARY 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
T 1	6 39 15	9♂42'54	23II 9	27♂57	11♂24	13♂58	10°R12	26♂59	24♂3	20♂55	21♂36	0°R28	1♂54	19♂26	9°R18
W 2	6 43 11	10°44'02	6♂15	29°29	12°38	14° 8	10♂11	27° 0	24° 6	20°58	21°37	0♂19	1°51	19°32	9♂17
T 3	6 47 8	11°45'10	19° 6	1♂1	13°52	14°18	10° 9	27° 0	24° 9	21° 0	21°38	0°11	1°47	19°39	9°16
F 4	6 51 5	12°46'18	1♂40	2°34	15° 6	14°27	10° 8	27° 1	24°11	21° 2	21°39	0° 5	1°44	19°46	9°15
S 5	6 55 1	13°47'27	14° 0	4° 7	16°19	14°35	10° 6	27° 1	24°14	21° 4	21°40	0° 1	1°41	19°52	9°14
S 6	6 58 58	14°48'35	26° 6	5°40	17°33	14°42	10° 4	27° 1	24°17	21° 6	21°40	0°D 0	1°38	19°59	9°13
M 7	7 2 54	15°49'43	8♂2	7°13	18°47	14°49	10° 2	27°R 1	24°19	21° 8	21°41	0° 0	1°35	20° 5	9°12
T 8	7 6 51	16°50'52	19°52	8°47	20° 1	14°56	10° 0	27° 1	24°22	21°10	21°42	0° 1	1°32	20°12	9°12
W 9	7 10 47	17°52'00	1♂39	10°22	21°14	15° 1	9°57	27° 1	24°25	21°12	21°42	0° 3	1°28	20°19	9°11
T 10	7 14 44	18°53'09	13°30	11°57	22°28	15° 6	9°55	27° 1	24°27	21°14	21°43	0°R 4	1°25	20°25	9°10
F 11	7 18 40	19°54'18	25°29	13°32	23°42	15°10	9°52	27° 0	24°30	21°16	21°43	0° 4	1°22	20°32	9°10
S 12	7 22 37	20°55'26	7♂42	15° 8	24°55	15°14	9°49	27° 0	24°32	21°19	21°44	0° 3	1°19	20°39	9° 9
S 13	7 26 34	21°56'35	20°13	16°44	26° 9	15°17	9°46	26°59	24°35	21°21	21°44	29♂59	1°16	20°45	9° 9
M14	7 30 30	22°57'44	3♂7	18°20	27°22	15°19	9°42	26°58	24°37	21°23	21°44	29°54	1°12	20°52	9° 9
T 15	7 34 27	23°58'52	16°23	19°57	28°36	15°20	9°39	26°58	24°39	21°25	21°45	29°49	1° 9	20°59	9° 8
W16	7 38 23	25° 0'00	0♂5	21°35	29°49	15°R21	9°35	26°57	24°42	21°27	21°45	29°42	1° 6	21° 5	9° 8
T 17	7 42 20	26° 1'08	14° 9	23°13	1♂2	15°21	9°31	26°56	24°44	21°28	21°45	29°37	1° 3	21°12	9° 8
F 18	7 46 16	27° 2'16	28°32	24°51	2°16	15°20	9°27	26°54	24°46	21°30	21°46	29°33	1° 0	21°19	9° 8
S 19	7 50 13	28° 3'23	13♂8	26°30	3°29	15°18	9°22	26°53	24°48	21°32	21°46	29°30	0°57	21°25	9°D 8
S 20	7 54 9	29° 4'29	27°50	28°10	4°42	15°15	9°18	26°52	24°51	21°34	21°46	29°D29	0°53	21°32	9° 8
M21	7 58 6	0♂5'34	12♂30	29°50	5°55	15°12	9°13	26°50	24°53	21°36	21°46	29°30	0°50	21°39	9° 8
T 22	8 2 3	1° 6'39	27° 4	1♂31	7° 8	15° 8	9° 9	26°49	24°55	21°38	21°46	29°31	0°47	21°45	9° 8
W23	8 5 59	2° 7'42	11♂27	3°12	8°21	15° 3	9° 4	26°47	24°57	21°40	21°46	29°32	0°44	21°52	9° 8
T 24	8 9 56	3° 8'45	25°37	4°54	9°34	14°57	8°58	26°45	24°59	21°42	21°47	29°34	0°41	21°59	9° 8
F 25	8 13 52	4° 9'47	9♂31	6°37	10°47	14°51	8°53	26°44	25° 1	21°43	21°R47	29°R34	0°38	22° 5	9° 9
S 26	8 17 49	5°10'47	23°10	8°20	12° 0	14°44	8°48	26°42	25° 2	21°45	21°47	29°32	0°34	22°12	9° 9
S 27	8 21 45	6°11'46	6II34	10° 3	13°12	14°36	8°42	26°39	25° 4	21°47	21°46	29°30	0°31	22°19	9°10
M28	8 25 42	7°12'45	19°44	11°47	14°25	14°27	8°36	26°37	25° 6	21°49	21°46	29°27	0°28	22°25	9°10
T 29	8 29 38	8°13'42	2♂39	13°32	15°37	14°17	8°31	26°35	25° 8	21°50	21°46	29°24	0°25	22°32	9°11
W30	8 33 35	9°14'38	15°22	15°17	16°50	14° 7	8°25	26°33	25° 9	21°52	21°46	29°20	0°22	22°39	9°11
T 31	8 37 32	10♂15'33	27♂52	17♂3	18♂2	13♂56	8♂18	26♂30	25♂11	21♂54	21♂46	29♂18	0♂18	22♂45	9♂12

Delta T = 50.54 sec.

## FEBRUARY 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
F 1	8 41 28	11♂16'27	10♂11	18♂48	19♂14	13°R44	8°R12	26°R28	25♂12	21♂55	21°R46	29°R16	0♂15	22♂52	9♂13
S 2	8 45 25	12°17'20	22°19	20°34	20°27	13♂31	8♂6	26♂25	25°14	21°57	21♂45	29♂15	0°12	22°58	9°13
S 3	8 49 21	13°18'12	4♂18	22°21	21°39	13°17	7°59	26°22	25°15	21°59	21°45	29°D14	0° 9	23° 5	9°14
M 4	8 53 18	14°19'03	16°11	24° 7	22°51	13° 3	7°53	26°19	25°17	22° 0	21°45	29°15	0° 6	23°12	9°15
T 5	8 57 14	15°19'53	28° 0	25°53	24° 3	12°48	7°46	26°16	25°18	22° 2	21°44	29°16	0° 3	23°18	9°16
W 6	9 1 11	16°20'41	9♂48	27°39	25°15	12°33	7°39	26°13	25°19	22° 3	21°44	29°18	29♂59	23°25	9°17
T 7	9 5 7	17°21'29	21°39	29°25	26°26	12°16	7°32	26°10	25°21	22° 5	21°43	29°19	29°56	23°32	9°18
F 8	9 9 4	18°22'16	31♂38	1♂9	27°38	11°59	7°25	26° 7	25°22	22° 6	21°43	29°20	29°53	23°38	9°20
S 9	9 13 1	19°23'02	15°48	2°53	28°50	11°41	7°18	26° 4	25°23	22° 8	21°42	29°R20	29°50	23°45	9°21
S 10	9 16 57	20°23'47	28°15	4°35	0♂1	11°23	7°11	26° 1	25°24	22° 9	21°42	29°20	29°47	23°52	9°22
M11	9 20 54	21°24'31	11♂3	6°16	1°12	11° 4	7° 3	25°57	25°25	22°10	21°41	29°20	29°44	23°58	9°23
T 12	9 24 50	22°25'14	24°15	7°54	2°24	10°44	6°56	25°54	25°26	22°12	21°41	29°19	29°40	24° 5	9°25
W13	9 28 47	23°25'56	7♂54	9°30	3°35	10°24	6°49	25°50	25°27	22°13	21°40	29°18	29°37	24°12	9°26
T 14	9 32 43	24°26'37	22° 0	11° 2	4°46	10° 4	6°41	25°47	25°28	22°14	21°39	29°18	29°34	24°18	9°28
F 15	9 36 40	25°27'17	6♂30	12°31	5°57	9°42	6°33	25°43	25°29	22°16	21°39	29°17	29°31	24°25	9°29
S 16	9 40 36	26°27'55	21°19	13°55	7° 8	9°21	6°26	25°39	25°29	22°17	21°38	29°17	29°28	24°32	9°31
S 17	9 44 33	27°28'31	6♂20	15°14	8°18	8°59	6°18	25°35	25°30	22°18	21°37	29°D17	29°24	24°38	9°32
M18	9 48 30	28°29'06	21°25	16°28	9°29	8°36	6°10	25°31	25°31	22°19	21°36	29°17	29°21	24°45	9°34
T 19	9 52 26	29°29'40	6♂24	17°34	10°39	8°13	6° 3	25°27	25°31	22°20	21°35	29°R17	29°18	24°52	9°36
W20	9 56 23	0♂30'11	21°11	18°34	11°50	7°50	5°55	25°23	25°32	22°22	21°35	29°17	29°15	24°58	9°38
T 21	10 0 19	1°30'41	5♂38	19°26	13° 0	7°27	5°47	25°19	25°32	22°23	21°34	29°17	29°12	25° 5	9°40
F 22	10 4 16	2°31'09	19°43	20°10	14°10	7° 4	5°39	25°15	25°33	22°24	21°33	29°17	29° 9	25°12	9°42
S 23	10 8 12	3°31'35	3II24	20°44	15°20	6°40	5°31	25°11	25°33	22°25	21°32	29°D16	29° 5	25°18	9°44
S 24	10 12 9	4°32'00	16°43	21° 9	16°30	6°16	5°23	25° 7	25°33	22°26	21°31	29°17	29° 2	25°25	9°46
M25	10 16 5	5°32'22	29°42	21°25	17°39	5°52	5°15	25° 2	25°34	22°27	21°30	29°17	28°59	25°32	9°48
T 26	10 20 2	6°32'42	12♂22	21°R30	18°49	5°29	5° 7	24°58	25°34	22°28	21°29	29°18	28°56	25°38	9°50
W27	10 23 58	7°33'01	24°48	21°26	19°58	5° 5	5° 0	24°54	25°34	22°29	21°28	29°19	28°53	25°45	9°52
T 28	10 27 55	8°33'17	7♂1	21°12	21° 7	4°41	4°52	24°49	25°34	22°29	21°27	29°19	28°49	25°52	9°54
F 29	10 31 52	9♂33'32	19♂6	20♂49	22♂16	4♂17	4♂44	24♂45	25°R34	22♂30	21♂26	29♂20	28♂46	25♂58	9♂57

Delta T = 50.61 sec.

created from Swiss Ephemeris, Copyright Astrodienst AG [11.2.2014]

# SWISS EPHEMERIS for the year 1980

## MARCH 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
S 1	10 35 48	10 <sup>h</sup> 33'44	1 <sup>m</sup> 3	20°R17	23°V25	3°R54	4°R36	24°R40	25°R34	22°V31	21°R24	29°R20	28°L43	26°V5	9°R59
S 2	10 39 45	11°33'55	12°55	19°H37	24°34	3°M31	4°M28	24°M36	25°M34	22°32	21°A23	29°L20	28°40	26°12	10° 1
M 3	10 43 41	12°34'04	24°45	18°51	25°42	3° 8	4°21	24°31	25°34	22°33	21°22	29°19	28°37	26°18	10° 4
T 4	10 47 38	13°34'11	6°A34	17°59	26°51	2°45	4°13	24°26	25°34	22°33	21°21	29°17	28°34	26°25	10° 6
W 5	10 51 34	14°34'17	18°24	17° 2	27°59	2°22	4° 5	24°22	25°34	22°34	21°20	29°15	28°30	26°32	10° 9
T 6	10 55 31	15°34'21	0°M19	16° 3	29° 7	2° 0	3°58	24°17	25°33	22°35	21°18	29°12	28°27	26°38	10°11
F 7	10 59 27	16°34'23	12°20	15° 2	0°B14	1°39	3°50	24°12	25°33	22°35	21°17	29° 9	28°24	26°45	10°14
S 8	11 3 24	17°34'23	24°31	14° 1	1°22	1°17	3°42	24° 8	25°33	22°36	21°16	29° 7	28°21	26°52	10°16
S 9	11 7 21	18°34'22	6°A57	13° 2	2°29	0°57	3°35	24° 3	25°32	22°36	21°14	29° 6	28°18	26°58	10°19
M10	11 11 17	19°34'20	19°40	12° 5	3°36	0°36	3°28	23°58	25°32	22°37	21°13	29°D 5	28°15	27° 5	10°22
T11	11 15 14	20°34'15	2°B44	11°11	4°43	0°17	3°20	23°54	25°31	22°37	21°12	29° 6	28°11	27°12	10°25
W12	11 19 10	21°34'10	16°13	10°23	5°50	29°L57	3°13	23°49	25°31	22°38	21°10	29° 7	28° 8	27°18	10°27
T13	11 23 7	22°34'02	0°A 9	9°39	6°57	29°39	3° 6	23°44	25°30	22°38	21° 9	29° 9	28° 5	27°25	10°30
F14	11 27 3	23°33'53	14°31	9° 1	8° 3	29°21	2°59	23°39	25°29	22°39	21° 7	29°10	28° 2	27°32	10°33
S15	11 31 0	24°33'42	29°16	8°29	9° 9	29° 4	2°52	23°35	25°28	22°39	21° 6	29°R10	27°59	27°38	10°36
S16	11 34 56	25°33'29	14°H20	8° 4	10°15	28°47	2°45	23°30	25°28	22°39	21° 5	29°10	27°55	27°45	10°39
M17	11 38 53	26°33'14	29°34	7°45	11°21	28°31	2°39	23°25	25°27	22°40	21° 3	29° 8	27°52	27°52	10°42
T18	11 42 50	27°32'57	14°V48	7°32	12°26	28°16	2°32	23°20	25°26	22°40	21° 2	29° 4	27°49	27°58	10°45
W19	11 46 46	28°32'38	29°52	7°25	13°31	28° 1	2°26	23°16	25°25	22°40	21° 0	29° 0	27°46	28° 5	10°48
T20	11 50 43	29°32'16	14°B37	7°D25	14°36	27°47	2°19	23°11	25°24	22°40	20°58	28°56	27°43	28°11	10°51
F21	11 54 39	0°V31'53	28°57	7°30	15°40	27°34	2°13	23° 6	25°23	22°40	20°57	28°52	27°40	28°18	10°54
S22	11 58 36	1°31'27	12°H49	7°41	16°45	27°22	2° 7	23° 2	25°22	22°40	20°55	28°49	27°36	28°25	10°58
S23	12 2 32	2°30'59	26°13	7°58	17°49	27°11	2° 1	22°57	25°21	22°41	20°54	28°48	27°33	28°31	11° 1
M24	12 6 29	3°30'29	9°B11	8°19	18°52	27° 0	1°55	22°52	25°19	22°41	20°52	28°D48	27°30	28°38	11° 4
T25	12 10 25	4°29'57	21°47	8°45	19°56	26°50	1°49	22°48	25°18	22°41	20°51	28°49	27°27	28°45	11° 7
W26	12 14 22	5°29'22	4°L 5	9°16	20°59	26°41	1°44	22°43	25°17	22°41	20°49	28°50	27°24	28°51	11°11
T27	12 18 19	6°28'44	16°10	9°51	22° 2	26°33	1°38	22°39	25°16	22°40	20°47	28°52	27°21	28°58	11°14
F28	12 22 15	7°28'05	28° 5	10°30	23° 4	26°25	1°33	22°34	25°14	22°40	20°46	28°R53	27°17	29° 5	11°17
S29	12 26 12	8°27'23	9°M56	11°13	24° 6	26°18	1°28	22°30	25°13	22°40	20°44	28°52	27°14	29°11	11°21
S30	12 30 8	9°26'39	21°44	11°59	25° 8	26°13	1°23	22°25	25°11	22°40	20°43	28°49	27°11	29°18	11°24
M31	12 34 5	10°V25'53	3°A32	12°H49	26°B 9	26°L 7	1°M18	22°M21	25°M10	22°A40	20°A41	28°L45	27°L 8	29°M25	11°B28

Delta T = 50.68 sec.

## APRIL 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
T 1	12 38 1	11°V25'05	15°A24	13°H42	27°B10	26°R 3	1°R14	22°R16	25°R 8	22°R40	20°R39	28°R38	27°L 5	29°M31	11°B31
W 2	12 41 58	12°24'15	27°20	14°38	28°11	25°L59	1°M 9	22°M12	25°M 7	22°A39	20°A38	28°L31	27° 1	29°38	11°35
T 3	12 45 54	13°23'23	9°M21	15°37	29°11	25°56	1° 5	22° 8	25° 5	22°39	20°36	28°22	26°58	29°45	11°38
F 4	12 49 51	14°22'29	21°31	16°39	0°H11	25°54	1° 1	22° 4	25° 3	22°39	20°34	28°14	26°55	29°51	11°42
S 5	12 53 47	15°21'33	3°A50	17°43	1°10	25°53	0°57	21°59	25° 2	22°38	20°33	28° 6	26°52	29°58	11°45
S 6	12 57 44	16°20'35	16°20	18°50	2° 9	25°D52	0°53	21°55	25° 0	22°38	20°31	28° 0	26°49	0°A 5	11°49
M 7	13 1 41	17°19'36	29° 5	19°59	3° 7	25°52	0°49	21°51	24°58	22°38	20°29	27°56	26°46	0°11	11°53
T 8	13 5 37	18°18'34	12°B 7	21°11	4° 5	25°53	0°46	21°47	24°56	22°37	20°27	27°55	26°42	0°18	11°56
W 9	13 9 34	19°17'31	25°28	22°25	5° 3	25°55	0°42	21°43	24°54	22°37	20°26	27°D55	26°39	0°25	12° 0
T10	13 13 30	20°16'27	9°A12	23°40	6° 0	25°57	0°39	21°39	24°53	22°36	20°24	27°55	26°36	0°31	12° 4
F11	13 17 27	21°15'20	23°20	24°58	6°56	26° 0	0°36	21°36	24°51	22°36	20°22	27°R56	26°33	0°38	12° 7
S12	13 21 23	22°14'12	7°H50	26°18	7°52	26° 4	0°34	21°32	24°49	22°35	20°21	27°56	26°30	0°45	12°11
S13	13 25 20	23°13'02	22°41	27°40	8°48	26° 8	0°31	21°28	24°47	22°35	20°19	27°54	26°26	0°51	12°15
M14	13 29 16	24°11'50	7°V46	29° 3	9°42	26°13	0°29	21°24	24°45	22°34	20°17	27°49	26°23	0°58	12°18
T15	13 33 13	25°10'36	22°57	0°V29	10°37	26°19	0°26	21°21	24°43	22°33	20°16	27°42	26°20	1° 5	12°22
W16	13 37 10	26° 9'21	8°B 3	1°56	11°30	26°25	0°24	21°17	24°41	22°33	20°14	27°33	26°17	1°11	12°26
T17	13 41 6	27° 8'03	22°54	3°25	12°24	26°32	0°23	21°14	24°38	22°32	20°12	27°24	26°14	1°18	12°30
F18	13 45 3	28° 6'43	7°H23	4°56	13°16	26°40	0°21	21°11	24°36	22°31	20°11	27°15	26°11	1°25	12°34
S19	13 48 59	29° 5'22	21°23	6°28	14° 8	26°48	0°19	21° 7	24°34	22°30	20° 9	27° 8	26° 7	1°32	12°37
S20	13 52 56	0°B 3'58	4°B54	8° 3	14°59	26°57	0°18	21° 4	24°32	22°29	20° 7	27° 3	26° 4	1°38	12°41
M21	13 56 52	1° 2'31	17°57	9°39	15°49	27° 6	0°17	21° 1	24°30	22°29	20° 6	27° 0	26° 1	1°45	12°45
T22	14 0 49	2° 1'03	0°L35	11°16	16°39	27°16	0°16	20°58	24°28	22°28	20° 4	27°D 0	25°58	1°52	12°49
W23	14 4 45	2°59'32	12°53	12°56	17°27	27°27	0°16	20°55	24°25	22°27	20° 2	27° 0	25°55	1°58	12°53
T24	14 8 42	3°58'00	24°56	14°37	18°15	27°38	0°15	20°52	24°23	22°26	20° 1	27°R 0	25°52	2° 5	12°57
F25	14 12 39	4°56'25	6°M49	16°19	19° 3	27°50	0°15	20°50	24°21	22°25	19°59	27° 0	25°48	2°12	13° 1
S26	14 16 35	5°54'48	18°37	18° 4	19°49	28° 2	0°D14	20°47	24°18	22°24	19°57	26°58	25°45	2°18	13° 5
S27	14 20 32	6°53'08	0°A25	19°50	20°34	28°15	0°14	20°45	24°16	22°23	19°56	26°53	25°42	2°25	13° 8
M28	14 24 28	7°51'27	12°16	21°38	21°19	28°28	0°15	20°42	24°14	22°22	19°54	26°46	25°39	2°32	13°12
T29	14 28 25	8°49'44	24°12	23°28	22° 2	28°42	0°15	20°40	24°11	22°21	19°53	26°36	25°36	2°38	13°16
W30	14 32 21	9°B48'00	6°M16	25°V19	22°H44	28°L56	0°M16	20°M37	24°M 9	22°A20	19°A51	26°L24	25°L32	2°A45	13°B20

Delta T = 50.76 sec.

created from Swiss Ephemeris, Copyright Astrodienst AG [11.2.2014]

# SWISS EPHEMERIS for the year 1980

MAY 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
T 1	14 36 18	10°46'13	18°29	27°12	23°26	29°11	0°16	20°R35	24°R 6	22°R19	19°R50	26°R11	25°R29	24°R52	13°R24
F 2	14 40 14	11°44'25	0°21	29° 7	24° 6	29°26	0°17	20°R33	24°R 4	22°R18	19°R48	25°R58	25°R26	2°58	13°28
S 3	14 44 11	12°42'35	13°24	18° 4	24°45	29°42	0°19	20°R31	24° 2	22°17	19°47	25°46	25°23	3° 5	13°32
S 4	14 48 7	13°40'43	26° 8	3° 2	25°23	29°58	0°20	20°R29	23°59	22°15	19°45	25°37	25°20	3°12	13°36
M 5	14 52 4	14°38'50	9°3 3	5° 2	26° 0	0°15	0°21	20°R27	23°57	22°14	19°44	25°30	25°17	3°18	13°40
T 6	14 56 1	15°36'56	22°11	7° 4	26°35	0°32	0°23	20°R26	23°54	22°13	19°42	25°26	25°13	3°25	13°44
W 7	14 59 57	16°35'00	5°35	9° 7	27° 9	0°50	0°25	20°R24	23°52	22°12	19°41	25°24	25°10	3°32	13°48
T 8	15 3 54	17°33'03	19°14	11°12	27°42	1° 7	0°27	20°R22	23°49	22°11	19°39	25°24	25° 7	3°38	13°52
F 9	15 7 50	18°31'04	3°12	13°18	28°13	1°26	0°29	20°R21	23°47	22° 9	19°38	25°24	25° 4	3°45	13°55
S 10	15 11 47	19°29'04	17°27	15°25	28°43	1°45	0°31	20°R20	23°44	22° 8	19°36	25°23	25° 1	3°52	13°59
S 11	15 15 43	20°27'03	1°59	17°34	29°11	2° 4	0°34	20°R18	23°42	22° 7	19°35	25°19	24°57	3°58	14° 3
M 12	15 19 40	21°25'00	16°45	19°43	29°38	2°23	0°37	20°R17	23°39	22° 5	19°33	25°13	24°54	4° 5	14° 7
T 13	15 23 36	22°22'57	18°37	21°54	0°3 3	2°43	0°40	20°R16	23°37	22° 4	19°32	25° 5	24°51	4°12	14°11
W 14	15 27 33	23°20'51	16°27	24° 4	0°27	3° 3	0°43	20°R15	23°34	22° 3	19°31	24°54	24°48	4°18	14°15
T 15	15 31 30	24°18'45	1°11	26°16	0°48	3°24	0°46	20°R15	23°32	22° 1	19°29	24°43	24°45	4°25	14°19
F 16	15 35 26	25°16'36	15°31	28°27	1° 8	3°45	0°49	20°R14	23°29	22° 0	19°28	24°32	24°42	4°32	14°23
S 17	15 39 23	26°14'27	29°30	0°11	38	1°26	0°53	20°R13	23°27	21°59	19°27	24°22	24°38	4°38	14°27
S 18	15 43 19	27°12'16	13°3 3	2°48	1°42	4°28	0°57	20°R12	23°24	21°57	19°26	24°15	24°35	4°45	14°31
M 19	15 47 16	28°10'03	26° 8	4°57	1°56	4°50	1° 1	20°R12	23°22	21°56	19°24	24°10	24°32	4°52	14°34
T 20	15 51 12	29° 7'48	8°49	7° 6	2° 8	5°13	1° 5	20°R12	23°19	21°54	19°23	24° 8	24°29	4°58	14°38
W 21	15 55 9	0°11'53	21° 9	9°13	2°18	5°35	1° 9	20°R12	23°17	21°53	19°22	24° 8	24°26	5° 5	14°42
T 22	15 59 6	1° 3'14	3°14	11°18	2°26	5°58	1°13	20°R12	23°14	21°51	19°21	24° 8	24°23	5°12	14°46
F 23	16 3 2	2° 0'54	15° 8	13°22	2°31	6°22	1°18	20°R12	23°12	21°50	19°20	24° 7	24°19	5°18	14°50
S 24	16 6 59	2°58'33	26°57	15°24	2°34	6°45	1°23	20°R12	23° 9	21°48	19°19	24° 5	24°16	5°25	14°53
S 25	16 10 55	3°56'11	8°47	17°23	2°R35	7° 9	1°27	20°R12	23° 7	21°47	19°18	24° 1	24°13	5°32	14°57
M 26	16 14 52	4°53'47	20°41	19°20	2°34	7°33	1°32	20°R12	23° 4	21°45	19°17	23°54	24°10	5°38	15° 1
T 27	16 18 48	5°51'22	2°43	21°15	2°30	7°58	1°38	20°R13	23° 2	21°44	19°15	23°44	24° 7	5°45	15° 5
W 28	16 22 45	6°48'55	14°56	23° 7	2°23	8°23	1°43	20°R13	22°59	21°42	19°14	23°33	24° 3	5°52	15° 8
T 29	16 26 41	7°46'27	27°21	24°56	2°14	8°48	1°48	20°R14	22°57	21°41	19°14	23°20	24° 0	5°59	15°12
F 30	16 30 38	8°43'58	9°59	26°43	2° 3	9°13	1°54	20°R15	22°55	21°39	19°13	23° 8	23°57	6° 5	15°16
S 31	16 34 34	9°41'28	22°49	28°12	27	1°49	2°00	20°R15	22°52	21°38	19°12	22°57	23°54	6°12	15°20

Delta T = 50.83 sec.

JUNE 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
S 1	16 38 31	10°38'57	5°52	0°5 8	1°R33	10°15	2°12	20°R16	22°R50	21°R36	19°R11	22°R47	23°R51	6°19	15°R23
M 2	16 42 28	11°36'25	19° 7	1°46	1°15	10°31	2°12	20°R17	22°R47	21°R34	19°R10	22°R41	23°48	6°25	15°27
T 3	16 46 24	12°33'53	2°32	3°22	0°54	10°57	2°18	20°R18	22°45	21°33	19° 9	22°37	23°44	6°32	15°30
W 4	16 50 21	13°31'19	16° 8	4°54	0°31	11°24	2°24	20°R20	22°43	21°31	19° 8	22°35	23°41	6°39	15°34
T 5	16 54 17	14°28'45	29°54	6°24	0° 6	11°51	2°31	20°R21	22°41	21°30	19° 7	22°D35	23°38	6°45	15°38
F 6	16 58 14	15°26'10	13°52	7°50	29°R39	12°18	2°37	20°R22	22°38	21°28	19° 7	22°R36	23°35	6°52	15°41
S 7	17 2 10	16°23'34	27°59	9°14	29°10	12°45	2°44	20°R24	22°36	21°26	19° 6	22°35	23°32	6°59	15°45
S 8	17 6 7	17°20'58	12°17	10°35	28°40	13°12	2°51	20°R26	22°34	21°25	19° 5	22°33	23°29	7° 5	15°48
M 9	17 10 3	18°18'22	26°42	11°52	28° 7	13°40	2°58	20°R27	22°32	21°23	19° 5	22°28	23°25	7°12	15°52
T 10	17 14 0	19°15'45	11°8 9	13° 7	27°34	14° 8	3° 5	20°R29	22°29	21°22	19° 4	22°21	23°22	7°19	15°55
W 11	17 17 57	20°13'07	25°35	14°18	26°59	14°36	3°12	20°R31	22°27	21°20	19° 3	22°13	23°19	7°25	15°59
T 12	17 21 53	21°10'29	9°15	15°26	26°23	15° 5	3°20	20°R33	22°25	21°18	19° 3	22° 3	23°16	7°32	16° 2
F 13	17 25 50	22° 7'50	23°57	16°31	25°47	15°33	3°27	20°R35	22°23	21°17	19° 2	21°54	23°13	7°39	16° 5
S 14	17 29 46	23° 5'11	7°42	17°32	25° 9	16° 2	3°35	20°R37	22°21	21°15	19° 2	21°46	23° 9	7°45	16° 9
S 15	17 33 43	24° 2'30	21° 5	18°30	24°32	16°31	3°43	20°R40	22°19	21°13	19° 1	21°40	23° 6	7°52	16°12
M 16	17 37 39	24°59'49	4°10	19°24	23°54	17° 1	3°51	20°R42	22°17	21°12	19° 1	21°36	23° 3	7°59	16°15
T 17	17 41 36	25°57'07	16°45	20°15	23°17	17°30	3°59	20°R45	22°15	21°10	19° 0	21°D35	23° 0	8° 6	16°18
W 18	17 45 33	26°54'25	29° 6	21° 2	22°40	18° 0	4° 7	20°R47	22°13	21° 9	19° 0	21°35	22°57	8°12	16°22
T 19	17 49 29	27°51'41	11°11	21°46	22° 4	18°29	4°15	20°R50	22°11	21° 7	19° 0	21°36	22°54	8°19	16°25
F 20	17 53 26	28°48'57	23° 7	22°25	21°28	19° 0	4°23	20°R53	22° 9	21° 5	18°59	21°R37	22°50	8°26	16°28
S 21	17 57 22	29°46'12	4°58	23° 0	20°54	19°30	4°32	20°R56	22° 8	21° 4	18°59	21°37	22°47	8°32	16°31
S 22	18 1 19	0°43'27	16°50	23°32	20°20	20° 0	4°41	20°R59	22° 6	21° 2	18°59	21°35	22°44	8°39	16°34
M 23	18 5 15	1°40'40	28°47	23°59	19°49	20°31	4°49	21° 2	22° 4	21° 1	18°59	21°31	22°41	8°46	16°37
T 24	18 9 12	2°37'54	10°15	24°21	19°19	21° 1	4°58	21° 5	22° 2	20°59	18°58	21°26	22°38	8°52	16°40
W 25	18 13 8	3°35'06	23°12	24°39	18°50	21°32	5° 7	21° 8	22° 1	20°57	18°58	21°19	22°35	8°59	16°43
T 26	18 17 5	4°32'19	5°47	24°53	18°24	22° 3	5°16	21°11	21°59	20°56	18°58	21°11	22°31	9° 6	16°46
F 27	18 21 2	5°29'30	18°39	25° 2	18° 0	22°35	5°25	21°15	21°58	20°54	18°58	21° 3	22°28	9°12	16°49
S 28	18 24 58	6°26'42	1°47	25°R 7	17°37	23° 6	5°34	21°18	21°56	20°53	18°58	20°56	22°25	9°19	16°52
S 29	18 28 55	7°23'53	15°11	25° 6	17°17	23°38	5°44	21°22	21°54	20°51	18°D58	20°50	22°22	9°26	16°55
M 30	18 32 51	8°21'05	28°49	25°2 2	17°11	24°10	5°53	21°26	21°53	20°50	18°D58	20°47	22°19	9°32	16°58

Delta T = 50.90 sec.

created from Swiss Ephemeris, Copyright Astrodienst AG [11.2.2014]

# SWISS EPHEMERIS for the year 1980

JULY 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
T 1	18 36 48	9°18'16"	12°38'38"	24°R52	16°R45	24°41'	6°12'	21°29'	21°R52	20°R48	18°58'	20°R45	22°15'	9°39'	17°0'
W 2	18 40 44	10°15'27"	26°36'	24°39'	16°II32	25°13'	6°12'	21°33'	21°M50	20°R47	18°58'	20°D45	22°12'	9°46'	17°3'
T 3	18 44 41	11°12'38"	10°41'	24°21'	16°21'	25°45'	6°22'	21°37'	21°49'	20°45'	18°58'	20°R46	22°9'	9°52'	17°6'
F 4	18 48 37	12°9'50"	24°49'	23°59'	16°13'	26°18'	6°32'	21°41'	21°47'	20°44'	18°59'	20°47'	22°6'	9°59'	17°8'
S 5	18 52 34	13°7'01"	9°0'	23°33'	16°8'	26°50'	6°42'	21°45'	21°46'	20°42'	18°59'	20°R48	22°3'	10°6'	17°11'
S 6	18 56 31	14°4'13"	23°12'	23°4'	16°4'	27°23'	6°52'	21°49'	21°45'	20°41'	18°59'	20°47'	22°0'	10°13'	17°13'
M 7	19 0 27	15°1'26"	7°8'23"	22°32'	16°D3	27°56'	7°2'	21°54'	21°44'	20°39'	18°59'	20°46'	21°56'	10°19'	17°16'
T 8	19 4 24	15°58'39"	21°29'	21°58'	16°5'	28°29'	7°12'	21°58'	21°43'	20°38'	18°59'	20°42'	21°53'	10°26'	17°18'
W 9	19 8 20	16°55'52"	5°II30	21°21'	16°8'	29°2'	7°22'	22°2'	21°42'	20°36'	19°0'	20°38'	21°50'	10°33'	17°21'
T 10	19 12 17	17°53'06"	19°20'	20°44'	16°14'	29°35'	7°32'	22°7'	21°41'	20°35'	19°0'	20°33'	21°47'	10°39'	17°23'
F 11	19 16 13	18°50'20"	2°58'58"	20°5'	16°23'	0°48'	7°43'	22°11'	21°40'	20°34'	19°1'	20°28'	21°44'	10°46'	17°26'
S 12	19 20 10	19°47'34"	16°21'	19°27'	16°33'	0°42'	7°53'	22°16'	21°39'	20°32'	19°1'	20°24'	21°41'	10°53'	17°28'
S 13	19 24 6	20°44'49"	29°26'	18°49'	16°45'	1°16'	8°4'	22°21'	21°38'	20°31'	19°1'	20°21'	21°37'	10°59'	17°30'
M14	19 28 3	21°42'04"	12°14'	18°12'	16°59'	1°49'	8°14'	22°26'	21°37'	20°30'	19°2'	20°20'	21°34'	11°6'	17°32'
T 15	19 32 0	22°39'19"	24°46'	17°37'	17°16'	2°23'	8°25'	22°30'	21°36'	20°28'	19°2'	20°D19	21°31'	11°13'	17°34'
W16	19 35 56	23°36'34"	7°12'2	17°5'	17°34'	2°57'	8°36'	22°35'	21°35'	20°27'	19°3'	20°20'	21°28'	11°19'	17°36'
T 17	19 39 53	24°33'49"	19°6'	16°36'	17°54'	3°32'	8°47'	22°40'	21°35'	20°26'	19°4'	20°22'	21°25'	11°26'	17°39'
F 18	19 43 49	25°31'04"	1°12'6"	16°10'	18°15'	4°6'	8°58'	22°45'	21°34'	20°24'	19°4'	20°24'	21°21'	11°33'	17°41'
S 19	19 47 46	26°28'20"	12°54'	15°49'	18°39'	4°40'	9°9'	22°51'	21°33'	20°23'	19°5'	20°25'	21°18'	11°40'	17°42'
S 20	19 51 42	27°25'36"	24°46'	15°32'	19°4'	5°15'	9°20'	22°56'	21°33'	20°22'	19°6'	20°R26	21°15'	11°46'	17°44'
M21	19 55 39	28°22'52"	6°M43	15°20'	19°30'	5°50'	9°31'	23°1'	21°32'	20°21'	19°6'	20°25'	21°12'	11°53'	17°46'
T 22	19 59 35	29°20'09"	18°50'	15°14'	19°58'	6°24'	9°42'	23°6'	21°32'	20°20'	19°7'	20°24'	21°9'	12°0'	17°48'
W23	20 3 32	0°17'25"	1°12'12"	15°D12	20°28'	6°59'	9°54'	23°12'	21°31'	20°18'	19°8'	20°22'	21°6'	12°6'	17°50'
T 24	20 7 29	1°14'43"	13°51'	15°17'	20°59'	7°35'	10°5'	23°17'	21°31'	20°17'	19°9'	20°20'	21°2'	12°13'	17°51'
F 25	20 11 25	2°12'00"	26°50'	15°28'	21°32'	8°10'	10°16'	23°23'	21°31'	20°16'	19°10'	20°17'	20°59'	12°20'	17°53'
S 26	20 15 22	3°9'18"	10°31'11"	15°44'	22°5'	8°45'	10°28'	23°28'	21°30'	20°15'	19°10'	20°15'	20°56'	12°26'	17°55'
S 27	20 19 18	4°6'37"	23°52'	16°6'	22°40'	9°20'	10°39'	23°34'	21°30'	20°14'	19°11'	20°13'	20°53'	12°33'	17°56'
M28	20 23 15	5°3'57"	7°32'52"	16°35'	23°17'	9°56'	10°51'	23°40'	21°30'	20°13'	19°12'	20°12'	20°50'	12°40'	17°58'
T 29	20 27 11	6°1'17"	22°6'	17°10'	23°54'	10°32'	11°3'	23°46'	21°30'	20°12'	19°13'	20°D11	20°47'	12°46'	17°59'
W30	20 31 8	6°58'38"	6°31'	17°50'	24°33'	11°7'	11°14'	23°51'	21°D30	20°11'	19°14'	20°12'	20°43'	12°53'	18°1'
T 31	20 35 4	7°55'59"	21°11'0	18°37'	25°II13	11°43'	11°26'	23°57'	21°M30	20°10'	19°15'	20°R13	20°40'	13°0'	18°2'

Delta T = 50.97 sec.

AUGUST 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
F 1	20 39 1	8°15'32"	5°Y30	19°29'	25°II53	12°19'	11°38'	24°12'3	21°M30	20°R9	19°16'	20°R14	20°R37	13°13'	18°3'
S 2	20 42 58	9°50'46"	19°55'	20°27'	26°35'	12°55'	11°50'	24°9'	21°30'	20°R8	19°18'	20°14'	20°34'	13°13'	18°4'
S 3	20 46 54	10°48'11"	4°B12	21°31'	27°18'	13°32'	12°2'	24°15'	21°30'	20°7'	19°19'	20°15'	20°31'	13°20'	18°5'
M 4	20 50 51	11°45'38"	18°18'	22°41'	28°2'	14°8'	12°14'	24°21'	21°30'	20°6'	19°20'	20°R15	20°27'	13°27'	18°7'
T 5	20 54 47	12°43'06"	2°II13	23°56'	28°47'	14°44'	12°26'	24°27'	21°31'	20°6'	19°21'	20°14'	20°24'	13°33'	18°8'
W 6	20 58 44	13°40'35"	15°53'	25°16'	29°32'	15°21'	12°38'	24°34'	21°31'	20°5'	19°22'	20°14'	20°21'	13°40'	18°9'
T 7	21 2 40	14°38'05"	29°20'	26°41'	0°519	15°58'	12°50'	24°40'	21°31'	20°4'	19°24'	20°13'	20°18'	13°47'	18°10'
F 8	21 6 37	15°35'37"	12°33'33"	28°11'	1°6'	16°34'	13°2'	24°46'	21°32'	20°3'	19°25'	20°13'	20°15'	13°53'	18°10'
S 9	21 10 33	16°33'10"	25°31'	29°46'	1°54'	17°11'	13°14'	24°53'	21°32'	20°3'	19°26'	20°12'	20°12'	14°0'	18°11'
S 10	21 14 30	17°30'44"	8°12'16"	1°12'25"	2°43'	17°48'	13°27'	24°59'	21°33'	20°2'	19°28'	20°12'	20°8'	14°7'	18°12'
M11	21 18 27	18°28'19"	20°47'	3°7'	3°32'	18°25'	13°39'	25°5'	21°33'	20°1'	19°29'	20°D12	20°5'	14°13'	18°13'
T 12	21 22 23	19°25'55"	3°12'7"	4°53'	4°22'	19°3'	13°51'	25°12'	21°34'	20°1'	19°30'	20°12'	20°2'	14°20'	18°13'
W13	21 26 20	20°23'33"	15°15'	6°43'	5°13'	19°40'	14°4'	25°18'	21°35'	20°0'	19°32'	20°R12	19°59'	14°27'	18°14'
T 14	21 30 16	21°21'11"	27°15'	8°35'	6°5'	20°17'	14°16'	25°25'	21°35'	19°59'	19°33'	20°12'	19°56'	14°34'	18°14'
F 15	21 34 13	22°18'51"	9°12'9"	10°29'	6°57'	20°55'	14°28'	25°32'	21°36'	19°59'	19°35'	20°12'	19°53'	14°40'	18°15'
S 16	21 38 9	23°16'31"	20°59'	12°26'	7°50'	21°33'	14°41'	25°38'	21°37'	19°58'	19°36'	20°11'	19°49'	14°47'	18°15'
S 17	21 42 6	24°14'13"	2°M51	14°24'	8°43'	22°10'	14°53'	25°45'	21°38'	19°58'	19°38'	20°11'	19°46'	14°54'	18°16'
M18	21 46 2	25°11'56"	14°47'	16°23'	9°37'	22°48'	15°6'	25°52'	21°39'	19°57'	19°39'	20°11'	19°43'	15°0'	18°16'
T 19	21 49 59	26°9'40"	26°53'	18°23'	10°32'	23°26'	15°19'	25°59'	21°40'	19°57'	19°41'	20°D11	19°40'	15°7'	18°16'
W20	21 53 56	27°7'25"	9°12'12"	20°24'	11°27'	24°4'	15°31'	26°5'	21°41'	19°56'	19°42'	20°11'	19°37'	15°14'	18°16'
T 21	21 57 52	28°5'11"	21°50'	22°25'	12°22'	24°42'	15°44'	26°12'	21°42'	19°56'	19°44'	20°11'	19°33'	15°20'	18°17'
F 22	22 1 49	29°2'58"	4°32'49"	24°26'	13°18'	25°20'	15°57'	26°19'	21°43'	19°56'	19°46'	20°12'	19°30'	15°27'	18°17'
S 23	22 5 45	0°12'07"	18°12'	26°26'	14°15'	25°59'	16°9'	26°26'	21°44'	19°55'	19°47'	20°13'	19°27'	15°34'	18°R17
S 24	22 9 42	0°58'36"	2°12'1	28°26'	15°12'	26°37'	16°22'	26°33'	21°46'	19°55'	19°49'	20°14'	19°24'	15°41'	18°17'
M25	22 13 38	1°56'27"	16°14'	0°12'26"	16°9'	27°16'	16°35'	26°40'	21°47'	19°55'	19°51'	20°R14	19°21'	15°47'	18°17'
T 26	22 17 35	2°54'20"	0°12'47"	2°25'	17°7'	27°54'	16°47'	26°47'	21°48'	19°55'	19°53'	20°14'	19°18'	15°54'	18°16'
W27	22 21 31	3°52'14"	15°35'	4°22'	18°6'	28°33'	17°0'	26°54'	21°50'	19°55'	19°55'	20°13'	19°14'	16°1'	18°16'
T 28	22 25 28	4°50'09"	0°Y31	6°19'	19°4'	29°12'	17°13'	27°1'	21°51'	19°54'	19°56'	20°12'	19°11'	16°7'	18°16'
F 29	22 29 25	5°48'06"	15°25'	8°15'	20°4'	29°51'	17°26'	27°8'	21°52'	19°54'	19°58'	20°10'	19°8'	16°14'	18°15'
S 30	22 33 21	6°46'05"	0°12'12"	10°10'	21°3'	0°M30	17°39'	27°15'	21°54'	19°54'	20°0'	20°8'	19°5'	16°21'	18°15'
S 31	22 37 18	7°44'06"	14°B43	12°12'3	22°32'3	1°M9	17°52'	27°22'	21°M56	19°54'	20°2'	20°R6	19°R2	16°27'	18°15'

Delta T = 51.04 sec.

created from Swiss Ephemeris, Copyright Astrodienst AG [11.2.2014]

# SWISS EPHEMERIS for the year 1980

## SEPTEMBER 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
M 1	22 41 14	8 <sup>h</sup> 42'09"	28 <sup>h</sup> 56'	13 <sup>h</sup> 55'	23 <sup>h</sup> 3'	1 <sup>h</sup> 48'	18 <sup>h</sup> 4'	27 <sup>h</sup> 30'	21 <sup>h</sup> 57'	19 <sup>h</sup> D54	20 <sup>h</sup> 4'	20 <sup>h</sup> R 5	18 <sup>h</sup> 58'	16 <sup>h</sup> 34'	18 <sup>h</sup> R14
T 2	22 45 11	9 <sup>h</sup> 40'14"	12 <sup>h</sup> 48'	15 <sup>h</sup> 46'	24 <sup>h</sup> 4'	2 <sup>h</sup> 27'	18 <sup>h</sup> 17'	27 <sup>h</sup> 37'	21 <sup>h</sup> 59'	19 <sup>h</sup> 54'	20 <sup>h</sup> 6'	20 <sup>h</sup> D 5	18 <sup>h</sup> 55'	16 <sup>h</sup> 41'	18 <sup>h</sup> 14
W 3	22 49 7	10 <sup>h</sup> 38'21"	26 <sup>h</sup> 19'	17 <sup>h</sup> 36'	25 <sup>h</sup> 5'	3 <sup>h</sup> 6'	18 <sup>h</sup> 30'	27 <sup>h</sup> 44'	22 <sup>h</sup> 1'	19 <sup>h</sup> 54'	20 <sup>h</sup> 8'	20 <sup>h</sup> R 6	18 <sup>h</sup> 52'	16 <sup>h</sup> 48'	18 <sup>h</sup> 13
T 4	22 53 4	11 <sup>h</sup> 36'30"	9 <sup>h</sup> 30'	19 <sup>h</sup> 25'	26 <sup>h</sup> 7'	3 <sup>h</sup> 46'	18 <sup>h</sup> 43'	27 <sup>h</sup> 51'	22 <sup>h</sup> 2'	19 <sup>h</sup> 54'	20 <sup>h</sup> 10'	20 <sup>h</sup> 7'	18 <sup>h</sup> 49'	16 <sup>h</sup> 54'	18 <sup>h</sup> 12
F 5	22 57 0	12 <sup>h</sup> 34'41"	22 <sup>h</sup> 24'	21 <sup>h</sup> 12'	27 <sup>h</sup> 9'	4 <sup>h</sup> 25'	18 <sup>h</sup> 56'	27 <sup>h</sup> 59'	22 <sup>h</sup> 4'	19 <sup>h</sup> 54'	20 <sup>h</sup> 12'	20 <sup>h</sup> 8'	18 <sup>h</sup> 46'	17 <sup>h</sup> 1'	18 <sup>h</sup> 11
S 6	23 0 57	13 <sup>h</sup> 32'53"	5 <sup>h</sup> 6'	22 <sup>h</sup> 58'	28 <sup>h</sup> 11'	5 <sup>h</sup> 5'	19 <sup>h</sup> 9'	28 <sup>h</sup> 6'	22 <sup>h</sup> 6'	19 <sup>h</sup> 55'	20 <sup>h</sup> 14'	20 <sup>h</sup> 10'	18 <sup>h</sup> 43'	17 <sup>h</sup> 8'	18 <sup>h</sup> 11
S 7	23 4 53	14 <sup>h</sup> 31'08"	17 <sup>h</sup> 29'	24 <sup>h</sup> 44'	29 <sup>h</sup> 13'	5 <sup>h</sup> 45'	19 <sup>h</sup> 22'	28 <sup>h</sup> 13'	22 <sup>h</sup> 8'	19 <sup>h</sup> 55'	20 <sup>h</sup> 16'	20 <sup>h</sup> R10	18 <sup>h</sup> 39'	17 <sup>h</sup> 14'	18 <sup>h</sup> 10
M 8	23 8 50	15 <sup>h</sup> 29'24"	29 <sup>h</sup> 44'	26 <sup>h</sup> 27'	0 <sup>h</sup> 16'	6 <sup>h</sup> 24'	19 <sup>h</sup> 35'	28 <sup>h</sup> 20'	22 <sup>h</sup> 10'	19 <sup>h</sup> 55'	20 <sup>h</sup> 18'	20 <sup>h</sup> 10'	18 <sup>h</sup> 36'	17 <sup>h</sup> 21'	18 <sup>h</sup> 9
T 9	23 12 47	16 <sup>h</sup> 27'43"	11 <sup>h</sup> 51'	28 <sup>h</sup> 10'	1 <sup>h</sup> 19'	7 <sup>h</sup> 4'	19 <sup>h</sup> 48'	28 <sup>h</sup> 28'	22 <sup>h</sup> 12'	19 <sup>h</sup> 55'	20 <sup>h</sup> 20'	20 <sup>h</sup> 8'	18 <sup>h</sup> 33'	17 <sup>h</sup> 28'	18 <sup>h</sup> 8
W10	23 16 43	17 <sup>h</sup> 26'03"	23 <sup>h</sup> 51'	29 <sup>h</sup> 52'	2 <sup>h</sup> 22'	7 <sup>h</sup> 44'	20 <sup>h</sup> 1'	28 <sup>h</sup> 35'	22 <sup>h</sup> 14'	19 <sup>h</sup> 56'	20 <sup>h</sup> 22'	20 <sup>h</sup> 5'	18 <sup>h</sup> 30'	17 <sup>h</sup> 34'	18 <sup>h</sup> 7
T 11	23 20 40	18 <sup>h</sup> 24'24"	5 <sup>h</sup> 46'	1 <sup>h</sup> 32'	3 <sup>h</sup> 26'	8 <sup>h</sup> 24'	20 <sup>h</sup> 14'	28 <sup>h</sup> 42'	22 <sup>h</sup> 16'	19 <sup>h</sup> 56'	20 <sup>h</sup> 24'	20 <sup>h</sup> 1'	18 <sup>h</sup> 27'	17 <sup>h</sup> 41'	18 <sup>h</sup> 6
F 12	23 24 36	19 <sup>h</sup> 22'48"	17 <sup>h</sup> 37'	3 <sup>h</sup> 11'	4 <sup>h</sup> 30'	9 <sup>h</sup> 5'	20 <sup>h</sup> 27'	28 <sup>h</sup> 50'	22 <sup>h</sup> 18'	19 <sup>h</sup> 56'	20 <sup>h</sup> 26'	19 <sup>h</sup> 56'	18 <sup>h</sup> 24'	17 <sup>h</sup> 48'	18 <sup>h</sup> 5
S 13	23 28 33	20 <sup>h</sup> 21'13"	29 <sup>h</sup> 28'	4 <sup>h</sup> 49'	5 <sup>h</sup> 34'	9 <sup>h</sup> 45'	20 <sup>h</sup> 40'	28 <sup>h</sup> 57'	22 <sup>h</sup> 20'	19 <sup>h</sup> 57'	20 <sup>h</sup> 28'	19 <sup>h</sup> 51'	18 <sup>h</sup> 20'	17 <sup>h</sup> 55'	18 <sup>h</sup> 3
S 14	23 32 29	21 <sup>h</sup> 19'40"	11 <sup>h</sup> 19'	6 <sup>h</sup> 27'	6 <sup>h</sup> 38'	10 <sup>h</sup> 25'	20 <sup>h</sup> 53'	29 <sup>h</sup> 5'	22 <sup>h</sup> 23'	19 <sup>h</sup> 57'	20 <sup>h</sup> 30'	19 <sup>h</sup> 46'	18 <sup>h</sup> 17'	18 <sup>h</sup> 1'	18 <sup>h</sup> 2
M15	23 36 26	22 <sup>h</sup> 18'09"	23 <sup>h</sup> 15'	8 <sup>h</sup> 3'	7 <sup>h</sup> 43'	11 <sup>h</sup> 6'	21 <sup>h</sup> 6'	29 <sup>h</sup> 12'	22 <sup>h</sup> 25'	19 <sup>h</sup> 57'	20 <sup>h</sup> 32'	19 <sup>h</sup> 41'	18 <sup>h</sup> 14'	18 <sup>h</sup> 8'	18 <sup>h</sup> 1
T 16	23 40 22	23 <sup>h</sup> 16'40"	5 <sup>h</sup> 19'	9 <sup>h</sup> 37'	8 <sup>h</sup> 48'	11 <sup>h</sup> 46'	21 <sup>h</sup> 19'	29 <sup>h</sup> 19'	22 <sup>h</sup> 27'	19 <sup>h</sup> 58'	20 <sup>h</sup> 35'	19 <sup>h</sup> 38'	18 <sup>h</sup> 11'	18 <sup>h</sup> 15'	17 <sup>h</sup> 59
W17	23 44 19	24 <sup>h</sup> 15'12"	17 <sup>h</sup> 35'	11 <sup>h</sup> 11'	9 <sup>h</sup> 53'	12 <sup>h</sup> 27'	21 <sup>h</sup> 32'	29 <sup>h</sup> 27'	22 <sup>h</sup> 29'	19 <sup>h</sup> 58'	20 <sup>h</sup> 37'	19 <sup>h</sup> 37'	18 <sup>h</sup> 8'	18 <sup>h</sup> 21'	17 <sup>h</sup> 58
T 18	23 48 16	25 <sup>h</sup> 13'45"	0 <sup>h</sup> 38'	12 <sup>h</sup> 44'	10 <sup>h</sup> 58'	13 <sup>h</sup> 7'	21 <sup>h</sup> 45'	29 <sup>h</sup> 34'	22 <sup>h</sup> 32'	19 <sup>h</sup> 59'	20 <sup>h</sup> 39'	19 <sup>h</sup> D37	18 <sup>h</sup> 4'	18 <sup>h</sup> 28'	17 <sup>h</sup> 57
F 19	23 52 12	26 <sup>h</sup> 12'21"	13 <sup>h</sup> 1'	14 <sup>h</sup> 16'	12 <sup>h</sup> 4'	13 <sup>h</sup> 48'	21 <sup>h</sup> 58'	29 <sup>h</sup> 42'	22 <sup>h</sup> 34'	20 <sup>h</sup> 0'	20 <sup>h</sup> 41'	19 <sup>h</sup> 37'	18 <sup>h</sup> 1'	18 <sup>h</sup> 35'	17 <sup>h</sup> 55
S 20	23 56 9	27 <sup>h</sup> 10'58"	26 <sup>h</sup> 19'	15 <sup>h</sup> 47'	13 <sup>h</sup> 10'	14 <sup>h</sup> 29'	22 <sup>h</sup> 11'	29 <sup>h</sup> 49'	22 <sup>h</sup> 37'	20 <sup>h</sup> 0'	20 <sup>h</sup> 43'	19 <sup>h</sup> 39'	17 <sup>h</sup> 58'	18 <sup>h</sup> 42'	17 <sup>h</sup> 53
S 21	0 0 5	28 <sup>h</sup> 9'37"	10 <sup>h</sup> 4'	17 <sup>h</sup> 17'	14 <sup>h</sup> 16'	15 <sup>h</sup> 10'	22 <sup>h</sup> 24'	29 <sup>h</sup> 57'	22 <sup>h</sup> 39'	20 <sup>h</sup> 1'	20 <sup>h</sup> 46'	19 <sup>h</sup> 40'	17 <sup>h</sup> 55'	18 <sup>h</sup> 48'	17 <sup>h</sup> 52
M22	0 4 2	29 <sup>h</sup> 8'17"	24 <sup>h</sup> 17'	18 <sup>h</sup> 45'	15 <sup>h</sup> 22'	15 <sup>h</sup> 51'	22 <sup>h</sup> 37'	0 <sup>h</sup> 4'	22 <sup>h</sup> 42'	20 <sup>h</sup> 1'	20 <sup>h</sup> 48'	19 <sup>h</sup> R40	17 <sup>h</sup> 52'	18 <sup>h</sup> 55'	17 <sup>h</sup> 50
T23	0 7 58	0 <sup>h</sup> 6'59"	8 <sup>h</sup> 56'	20 <sup>h</sup> 13'	16 <sup>h</sup> 29'	16 <sup>h</sup> 32'	22 <sup>h</sup> 50'	0 <sup>h</sup> 12'	22 <sup>h</sup> 44'	20 <sup>h</sup> 2'	20 <sup>h</sup> 50'	19 <sup>h</sup> 39'	17 <sup>h</sup> 49'	19 <sup>h</sup> 2'	17 <sup>h</sup> 48
W24	0 11 55	1 <sup>h</sup> 5'43"	23 <sup>h</sup> 55'	21 <sup>h</sup> 39'	17 <sup>h</sup> 35'	17 <sup>h</sup> 13'	23 <sup>h</sup> 3'	0 <sup>h</sup> 19'	22 <sup>h</sup> 47'	20 <sup>h</sup> 3'	20 <sup>h</sup> 52'	19 <sup>h</sup> 36'	17 <sup>h</sup> 45'	19 <sup>h</sup> 8'	17 <sup>h</sup> 47
T25	0 15 51	2 <sup>h</sup> 4'29"	9 <sup>h</sup> 8'	23 <sup>h</sup> 5'	18 <sup>h</sup> 42'	17 <sup>h</sup> 55'	23 <sup>h</sup> 16'	0 <sup>h</sup> 26'	22 <sup>h</sup> 50'	20 <sup>h</sup> 4'	20 <sup>h</sup> 55'	19 <sup>h</sup> 31'	17 <sup>h</sup> 42'	19 <sup>h</sup> 15'	17 <sup>h</sup> 45
F 26	0 19 48	3 <sup>h</sup> 3'17"	24 <sup>h</sup> 23'	24 <sup>h</sup> 29'	19 <sup>h</sup> 50'	18 <sup>h</sup> 36'	23 <sup>h</sup> 29'	0 <sup>h</sup> 34'	22 <sup>h</sup> 52'	20 <sup>h</sup> 4'	20 <sup>h</sup> 57'	19 <sup>h</sup> 24'	17 <sup>h</sup> 39'	19 <sup>h</sup> 22'	17 <sup>h</sup> 43
S 27	0 23 45	4 <sup>h</sup> 2'07"	9 <sup>h</sup> 30'	25 <sup>h</sup> 53'	20 <sup>h</sup> 57'	19 <sup>h</sup> 17'	23 <sup>h</sup> 41'	0 <sup>h</sup> 41'	22 <sup>h</sup> 55'	20 <sup>h</sup> 5'	20 <sup>h</sup> 59'	19 <sup>h</sup> 18'	17 <sup>h</sup> 36'	19 <sup>h</sup> 28'	17 <sup>h</sup> 41
S 28	0 27 41	5 <sup>h</sup> 0'59"	24 <sup>h</sup> 20'	27 <sup>h</sup> 15'	22 <sup>h</sup> 4'	19 <sup>h</sup> 59'	23 <sup>h</sup> 54'	0 <sup>h</sup> 49'	22 <sup>h</sup> 58'	20 <sup>h</sup> 6'	21 <sup>h</sup> 2'	19 <sup>h</sup> 12'	17 <sup>h</sup> 33'	19 <sup>h</sup> 35'	17 <sup>h</sup> 39
M29	0 31 38	5 <sup>h</sup> 59'54"	8 <sup>h</sup> 46'	28 <sup>h</sup> 36'	23 <sup>h</sup> 12'	20 <sup>h</sup> 40'	24 <sup>h</sup> 7'	0 <sup>h</sup> 56'	23 <sup>h</sup> 1'	20 <sup>h</sup> 7'	21 <sup>h</sup> 4'	19 <sup>h</sup> 7'	17 <sup>h</sup> 29'	19 <sup>h</sup> 42'	17 <sup>h</sup> 37
T 30	0 35 34	6 <sup>h</sup> 58'51"	22 <sup>h</sup> 45'	29 <sup>h</sup> 56'	24 <sup>h</sup> 20'	21 <sup>h</sup> 22'	24 <sup>h</sup> 20'	1 <sup>h</sup> 4'	23 <sup>h</sup> 3'	20 <sup>h</sup> 8'	21 <sup>h</sup> 6'	19 <sup>h</sup> 4'	17 <sup>h</sup> 26'	19 <sup>h</sup> 49'	17 <sup>h</sup> 35

Delta T = 51.11 sec.

## OCTOBER 1980

00:00 UT

Day	Sid.t	☉	☾	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
W 1	0 39 31	7 <sup>h</sup> 57'50	6 <sup>h</sup> 56'16	1 <sup>h</sup> 14'14	25 <sup>h</sup> 28'28	22 <sup>h</sup> 4'4	24 <sup>h</sup> 33'33	1 <sup>h</sup> 11'11	23 <sup>h</sup> 6'6	20 <sup>h</sup> 9'9	21 <sup>h</sup> 9'9	19 <sup>h</sup> D 3	17 <sup>h</sup> 23'23	19 <sup>h</sup> 55'55	17 <sup>h</sup> R33
T 2	0 43 27	8 <sup>h</sup> 56'51	19 <sup>h</sup> 23'23	2 <sup>h</sup> 32'32	26 <sup>h</sup> 37'37	22 <sup>h</sup> 46'46	24 <sup>h</sup> 46'46	1 <sup>h</sup> 18'18	23 <sup>h</sup> 9'9	20 <sup>h</sup> 10'10	21 <sup>h</sup> 11'11	19 <sup>h</sup> 4'4	17 <sup>h</sup> 20'20	20 <sup>h</sup> 2'2	17 <sup>h</sup> 31'31
F 3	0 47 24	9 <sup>h</sup> 55'55	2 <sup>h</sup> 8'8	3 <sup>h</sup> 47'47	27 <sup>h</sup> 45'45	23 <sup>h</sup> 28'28	24 <sup>h</sup> 58'58	1 <sup>h</sup> 26'26	23 <sup>h</sup> 12'12	20 <sup>h</sup> 11'11	21 <sup>h</sup> 13'13	19 <sup>h</sup> 5'5	17 <sup>h</sup> 17'17	20 <sup>h</sup> 9'9	17 <sup>h</sup> 29'29
S 4	0 51 20	10 <sup>h</sup> 55'01	14 <sup>h</sup> 35'35	5 <sup>h</sup> 2'2	28 <sup>h</sup> 54'54	24 <sup>h</sup> 10'10	25 <sup>h</sup> 11'11	1 <sup>h</sup> 33'33	23 <sup>h</sup> 15'15	20 <sup>h</sup> 12'12	21 <sup>h</sup> 16'16	19 <sup>h</sup> R 6	17 <sup>h</sup> 14'14	20 <sup>h</sup> 15'15	17 <sup>h</sup> 26'26
S 5	0 55 17	11 <sup>h</sup> 54'10	26 <sup>h</sup> 49'49	6 <sup>h</sup> 15'15	0 <sup>h</sup> 3'3	24 <sup>h</sup> 52'52	25 <sup>h</sup> 24'24	1 <sup>h</sup> 41'41	23 <sup>h</sup> 18'18	20 <sup>h</sup> 13'13	21 <sup>h</sup> 18'18	19 <sup>h</sup> 5'5	17 <sup>h</sup> 10'10	20 <sup>h</sup> 22'22	17 <sup>h</sup> 24'24
M 6	0 59 14	12 <sup>h</sup> 53'20	8 <sup>h</sup> 53'53	7 <sup>h</sup> 26'26	1 <sup>h</sup> 12'12	25 <sup>h</sup> 34'34	25 <sup>h</sup> 37'37	1 <sup>h</sup> 48'48	23 <sup>h</sup> 21'21	20 <sup>h</sup> 14'14	21 <sup>h</sup> 20'20	19 <sup>h</sup> 3'3	17 <sup>h</sup> 7'7	20 <sup>h</sup> 29'29	17 <sup>h</sup> 22'22
T 7	1 3 10	13 <sup>h</sup> 52'33	20 <sup>h</sup> 50'50	8 <sup>h</sup> 35'35	2 <sup>h</sup> 21'21	26 <sup>h</sup> 16'16	25 <sup>h</sup> 49'49	1 <sup>h</sup> 55'55	23 <sup>h</sup> 24'24	20 <sup>h</sup> 15'15	21 <sup>h</sup> 23'23	18 <sup>h</sup> 59'59	17 <sup>h</sup> 4'4	20 <sup>h</sup> 36'36	17 <sup>h</sup> 19'19
W 8	1 7 7	14 <sup>h</sup> 51'48	2 <sup>h</sup> 43'43	9 <sup>h</sup> 43'43	3 <sup>h</sup> 30'30	26 <sup>h</sup> 58'58	26 <sup>h</sup> 2'2	2 <sup>h</sup> 3'3	23 <sup>h</sup> 27'27	20 <sup>h</sup> 16'16	21 <sup>h</sup> 25'25	18 <sup>h</sup> 51'51	17 <sup>h</sup> 1'1	20 <sup>h</sup> 42'42	17 <sup>h</sup> 17'17
T 9	1 11 3	15 <sup>h</sup> 51'05	14 <sup>h</sup> 34'34	10 <sup>h</sup> 48'48	4 <sup>h</sup> 39'39	27 <sup>h</sup> 41'41	26 <sup>h</sup> 15'15	2 <sup>h</sup> 10'10	23 <sup>h</sup> 30'30	20 <sup>h</sup> 18'18	21 <sup>h</sup> 28'28	18 <sup>h</sup> 42'42	16 <sup>h</sup> 58'58	20 <sup>h</sup> 49'49	17 <sup>h</sup> 15'15
F 10	1 15 0	16 <sup>h</sup> 50'24	26 <sup>h</sup> 25'25	11 <sup>h</sup> 51'51	5 <sup>h</sup> 49'49	28 <sup>h</sup> 23'23	26 <sup>h</sup> 27'27	2 <sup>h</sup> 17'17	23 <sup>h</sup> 34'34	20 <sup>h</sup> 19'19	21 <sup>h</sup> 30'30	18 <sup>h</sup> 31'31	16 <sup>h</sup> 55'55	20 <sup>h</sup> 56'56	17 <sup>h</sup> 12'12
S 11	1 18 56	17 <sup>h</sup> 49'45	8 <sup>h</sup> 17'17	12 <sup>h</sup> 52'52	6 <sup>h</sup> 59'59	29 <sup>h</sup> 6'6	26 <sup>h</sup> 40'40	2 <sup>h</sup> 25'25	23 <sup>h</sup> 37'37	20 <sup>h</sup> 20'20	21 <sup>h</sup> 32'32	18 <sup>h</sup> 19'19	16 <sup>h</sup> 51'51	21 <sup>h</sup> 2'2	17 <sup>h</sup> 10'10
S 12	1 22 53	18 <sup>h</sup> 49'08	20 <sup>h</sup> 12'12	13 <sup>h</sup> 50'50	8 <sup>h</sup> 9'9	29 <sup>h</sup> 49'49	26 <sup>h</sup> 52'52	2 <sup>h</sup> 32'32	23 <sup>h</sup> 40'40	20 <sup>h</sup> 21'21	21 <sup>h</sup> 35'35	18 <sup>h</sup> 8'8	16 <sup>h</sup> 48'48	21 <sup>h</sup> 9'9	17 <sup>h</sup> 7'7
M13	1 26 49	19 <sup>h</sup> 48'33	2 <sup>h</sup> 12'12	14 <sup>h</sup> 45'45	9 <sup>h</sup> 19'19	0 <sup>h</sup> 31'31	27 <sup>h</sup> 5'5	2 <sup>h</sup> 39'39	23 <sup>h</sup> 43'43	20 <sup>h</sup> 23'23	21 <sup>h</sup> 37'37	17 <sup>h</sup> 58'58	16 <sup>h</sup> 45'45	21 <sup>h</sup> 16'16	17 <sup>h</sup> 5'5
T 14	1 30 46	20 <sup>h</sup> 48'00	14 <sup>h</sup> 18'18	15 <sup>h</sup> 37'37	10 <sup>h</sup> 29'29	1 <sup>h</sup> 14'14	27 <sup>h</sup> 17'17	2 <sup>h</sup> 46'46	23 <sup>h</sup> 46'46	20 <sup>h</sup> 24'24	21 <sup>h</sup> 40'40	17 <sup>h</sup> 49'49	16 <sup>h</sup> 42'42	21 <sup>h</sup> 22'22	17 <sup>h</sup> 2'2
W15	1 34 42	21 <sup>h</sup> 47'28	26 <sup>h</sup> 35'35	16 <sup>h</sup> 25'25	11 <sup>h</sup> 39'39	1 <sup>h</sup> 57'57	27 <sup>h</sup> 30'30	2 <sup>h</sup> 54'54	23 <sup>h</sup> 50'50	20 <sup>h</sup> 25'25	21 <sup>h</sup> 42'42	17 <sup>h</sup> 44'44	16 <sup>h</sup> 39'39	21 <sup>h</sup> 29'29	16 <sup>h</sup> 59'59
T 16	1 38 39	22 <sup>h</sup> 46'59	9 <sup>h</sup> 3'3	17 <sup>h</sup> 10'10	12 <sup>h</sup> 50'50	2 <sup>h</sup> 40'40	27 <sup>h</sup> 42'42	3 <sup>h</sup> 1'1	23 <sup>h</sup> 53'53	20 <sup>h</sup> 27'27	21 <sup>h</sup> 44'44	17 <sup>h</sup> 41'41	16 <sup>h</sup> 35'35	21 <sup>h</sup> 36'36	16 <sup>h</sup> 57'57
F 17	1 42 36	23 <sup>h</sup> 46'31	21 <sup>h</sup> 53'53	17 <sup>h</sup> 50'50	14 <sup>h</sup> 0'0	3 <sup>h</sup> 23'23	27 <sup>h</sup> 54'54	3 <sup>h</sup> 8'8	23 <sup>h</sup> 56'56	20 <sup>h</sup> 28'28	21 <sup>h</sup> 47'47	17 <sup>h</sup> D40	16 <sup>h</sup> 32'32	21 <sup>h</sup> 43'43	16 <sup>h</sup> 54'54
S 18	1 46 32	24 <sup>h</sup> 46'05	5 <sup>h</sup> 2'2	18 <sup>h</sup> 25'25	15 <sup>h</sup> 11'11	4 <sup>h</sup> 6'6	28 <sup>h</sup> 7'7	3 <sup>h</sup> 15'15	24 <sup>h</sup> 0'0	20 <sup>h</sup> 30'30	21 <sup>h</sup> 49'49	17 <sup>h</sup> 40'40	16 <sup>h</sup> 29'29	21 <sup>h</sup> 49'49	16 <sup>h</sup> 51'51
S 19	1 50 29	25 <sup>h</sup> 45'41	18 <sup>h</sup> 37'37	18 <sup>h</sup> 56'56	16 <sup>h</sup> 22'22	4 <sup>h</sup> 49'49	28 <sup>h</sup> 19'19	3 <sup>h</sup> 22'22	24 <sup>h</sup> 3'3	20 <sup>h</sup> 31'31	21 <sup>h</sup> 52'52	17 <sup>h</sup> R40	16 <sup>h</sup> 26'26	21 <sup>h</sup> 56'56	16 <sup>h</sup> 48'48
M20	1 54 25	26 <sup>h</sup> 45'18	2 <sup>h</sup> 39'39	19 <sup>h</sup> 21'21	17 <sup>h</sup> 33'33	5 <sup>h</sup> 32'32	28 <sup>h</sup> 31'31	3 <sup>h</sup> 29'29	24 <sup>h</sup> 6'6	20 <sup>h</sup> 33'33	21 <sup>h</sup> 54'54	17 <sup>h</sup> 40'40	16 <sup>h</sup> 23'23	22 <sup>h</sup> 3'3	16 <sup>h</sup> 46'46
T 21	1 58 22	27 <sup>h</sup> 44'57	17 <sup>h</sup> 9'9	19 <sup>h</sup> 39'39	18 <sup>h</sup> 44'44	6 <sup>h</sup> 16'16	28 <sup>h</sup> 43'43	3 <sup>h</sup> 36'36	24 <sup>h</sup> 10'10	20 <sup>h</sup> 34'34	21 <sup>h</sup> 56'56	17 <sup>h</sup> 37'37	16 <sup>h</sup> 20'20	22 <sup>h</sup> 9'9	16 <sup>h</sup> 43'43
W22	2 2 18	28 <sup>h</sup> 44'38	2 <sup>h</sup> 4'4	19 <sup>h</sup> 51'51	19 <sup>h</sup> 55'55	6 <sup>h</sup> 59'59	28 <sup>h</sup> 55'55	3 <sup>h</sup> 43'43	24 <sup>h</sup> 13'13	20 <sup>h</sup> 36'36	21 <sup>h</sup> 59'59	17 <sup>h</sup> 31'31	16 <sup>h</sup> 16'16	22 <sup>h</sup> 16'16	16 <sup>h</sup> 40'40
T 23	2 6 15	29 <sup>h</sup> 44'20	17 <sup>h</sup> 16'16	19 <sup>h</sup> R55	21 <sup>h</sup> 6'6	7 <sup>h</sup> 42'42	29 <sup>h</sup> 7'7	3 <sup>h</sup> 50'50	24 <sup>h</sup> 17'17	20 <sup>h</sup> 37'37	22 <sup>h</sup> 1'1	17 <sup>h</sup> 23'23	16 <sup>h</sup> 13'13	22 <sup>h</sup> 23'23	16 <sup>h</sup> 37'37
F 24	2 10 11	0 <sup>h</sup> 44'05	2 <sup>h</sup> 37'37	19 <sup>h</sup> 52'52	22 <sup>h</sup> 17'17	8 <sup>h</sup> 26'26	29 <sup>h</sup> 19'19	3 <sup>h</sup> 57'57	24 <sup>h</sup> 20'20	20 <sup>h</sup> 39'39	22 <sup>h</sup> 3'3	17 <sup>h</sup> 13'13	16 <sup>h</sup> 10'10	22 <sup>h</sup> 30'30	16 <sup>h</sup> 34'34
S 25	2 14 8	1 <sup>h</sup> 43'52	17 <sup>h</sup> 54'54	19 <sup>h</sup> 40'40	23 <sup>h</sup> 29'29	9 <sup>h</sup> 10'10	29 <sup>h</sup> 31'31	4 <sup>h</sup> 4'4	24 <sup>h</sup> 24'24	20 <sup>h</sup> 40'40	22 <sup>h</sup> 6'6	17 <sup>h</sup> 2'2	16 <sup>h</sup> 7'7	22 <sup>h</sup> 36'36	16 <sup>h</sup> 31'31
S 26	2 18 5	2 <sup>h</sup> 43'40	2 <sup>h</sup> 11'56	19 <sup>h</sup> 20'20	24 <sup>h</sup> 41'41	9 <sup>h</sup> 53'53	29 <sup>h</sup> 43'43	4 <sup>h</sup> 11'11	24 <sup>h</sup> 27'27	20 <sup>h</sup> 42'42	22 <sup>h</sup> 8'8	16 <sup>h</sup> 52'52	16 <sup>h</sup> 4'4	22 <sup>h</sup> 43'43	16 <sup>h</sup> 29'29
M27	2 22 1	3 <sup>h</sup> 43'31	17 <sup>h</sup> 35'35	18 <sup>h</sup> 50'50	25 <sup>h</sup> 52'52	10 <sup>h</sup> 37'37	29 <sup>h</sup> 55'55	4 <sup>h</sup> 18'18	24 <sup>h</sup> 31'31	20 <sup>h</sup> 44'44	22 <sup>h</sup> 11'11	16 <sup>h</sup> 43'43	16 <sup>h</sup> 1'1	22 <sup>h</sup> 50'50	16 <sup>h</sup> 26'26
T 28	2 25 58	4 <sup>h</sup> 43'24	1 <sup>h</sup> 54'45	18 <sup>h</sup> 11'11	27 <sup>h</sup> 4'4	11 <sup>h</sup> 21'21	0 <sup>h</sup> 11'21	4 <sup>h</sup> 24'24	24 <sup>h</sup> 34'34	20 <sup>h</sup> 45'45	22 <sup>h</sup> 13'13	16 <sup>h</sup> 37'37	15 <sup>h</sup> 57'57	22 <sup>h</sup> 56'56	16 <sup>h</sup> 23'23
W29	2 29 54	5 <sup>h</sup> 43'19	15 <sup>h</sup> 24'24	17 <sup>h</sup> 23'23	28 <sup>h</sup> 16'16	12 <sup>h</sup> 5'5	0 <sup>h</sup> 19'19	4 <sup>h</sup> 31'31	24 <sup>h</sup> 38'38	20 <sup>h</sup> 47'47	22 <sup>h</sup> 15'15	16 <sup>h</sup> 33'33	15 <sup>h</sup> 54'54	23 <sup>h</sup> 3'3	16 <sup>h</sup> 20'20
T 30	2 33 51	6 <sup>h</sup> 43'17	28 <sup>h</sup> 35'35	16 <sup>h</sup> 27'27	29 <sup>h</sup> 28'28	12 <sup>h</sup> 48'48	0 <sup>h</sup> 30'30	4 <sup>h</sup> 38'38	24 <sup>h</sup> 41'41	20 <sup>h</sup> 49'49	22 <sup>h</sup> 18'18	16 <sup>h</sup> 32'32	15 <sup>h</sup> 51'51	23 <sup>h</sup> 10'10	16 <sup>h</sup> 17'17
F 31	2 37 47	7 <sup>h</sup> 43'16	11 <sup>h</sup> 20'20	15 <sup>h</sup> 11'22	0 <sup>h</sup> 40'40	13 <sup>h</sup> 32'32	0 <sup>h</sup> 42'42	4 <sup>h</sup> 45'45	24 <sup>h</sup> 45'45	20 <sup>h</sup> 51'51	22 <sup>h</sup> 20'20	16 <sup>h</sup> 32'32	15 <sup>h</sup> 48'48	23 <sup>h</sup> 17'17	16 <sup>h</sup> 14'14

# SWISS EPHEMERIS for the year 1980

NOVEMBER 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
S 1	2 41 44	8♈43'18	23♈44	14°R12	1♈52	14♈16	0♈53	4♈51	24♈49	20♈52	22♈22	16°R32	15♈45	23♈23	16°R11
S 2	2 45 40	9°43'21	5♈54	12♈56	3° 5	15° 1	1° 5	4°58	24°52	20°54	22°25	16♈31	15°41	23°30	16♈ 8
M 3	2 49 37	10°43'27	17°52	11°39	4°17	15°45	1°16	5° 4	24°56	20°56	22°27	16°27	15°38	23°37	16° 5
T 4	2 53 34	11°43'35	29°45	10°20	5°30	16°29	1°28	5°11	25° 0	20°58	22°29	16°21	15°35	23°43	16° 2
W 5	2 57 30	12°43'45	11♈35	9° 4	6°42	17°13	1°39	5°17	25° 3	21° 0	22°31	16°12	15°32	23°50	15°59
T 6	3 1 27	13°43'57	23°25	7°53	7°55	17°58	1°50	5°24	25° 7	21° 2	22°34	16° 0	15°29	23°57	15°56
F 7	3 5 23	14°44'10	5♈18	6°49	9° 8	18°42	2° 1	5°30	25°11	21° 3	22°36	15°46	15°26	24° 4	15°53
S 8	3 9 20	15°44'26	17°15	5°53	10°21	19°27	2°12	5°36	25°14	21° 5	22°38	15°31	15°22	24°10	15°50
S 9	3 13 16	16°44'43	29°17	5° 8	11°33	20°11	2°23	5°43	25°18	21° 7	22°41	15°16	15°19	24°17	15°47
M10	3 17 13	17°45'02	11♈25	4°34	12°46	20°56	2°34	5°49	25°22	21° 9	22°43	15° 3	15°16	24°24	15°44
T 11	3 21 9	18°45'23	23°41	4°11	14° 0	21°41	2°45	5°55	25°25	21°11	22°45	14°52	15°13	24°30	15°41
W12	3 25 6	19°45'45	6♈ 6	4°D 0	15°13	22°26	2°56	6° 1	25°29	21°13	22°47	14°44	15°10	24°37	15°38
T 13	3 29 3	20°46'09	18°42	4° 1	16°26	23°11	3° 6	6° 7	25°33	21°15	22°49	14°39	15° 6	24°44	15°35
F 14	3 32 59	21°46'34	1♈32	4°12	17°39	23°55	3°17	6°13	25°36	21°17	22°52	14°37	15° 3	24°51	15°32
S 15	3 36 56	22°47'01	14°39	4°33	18°52	24°40	3°27	6°19	25°40	21°19	22°54	14°37	15° 0	24°57	15°29
S 16	3 40 52	23°47'28	28° 6	5° 4	20° 6	25°25	3°38	6°25	25°44	21°21	22°56	14°37	14°57	25° 4	15°26
M17	3 44 49	24°47'57	11♈56	5°43	21°19	26°11	3°48	6°31	25°48	21°23	22°58	14°36	14°54	25°11	15°23
T 18	3 48 45	25°48'27	26°10	6°30	22°33	26°56	3°58	6°36	25°51	21°25	23° 0	14°33	14°51	25°17	15°20
W19	3 52 42	26°48'59	10♈47	7°23	23°46	27°41	4° 8	6°42	25°55	21°28	23° 2	14°28	14°47	25°24	15°17
T 20	3 56 38	27°49'31	25°42	8°22	25° 0	28°26	4°18	6°48	25°59	21°30	23° 4	14°19	14°44	25°31	15°14
F 21	4 0 35	28°50'05	10♈49	9°26	26°14	29°11	4°28	6°53	26° 3	21°32	23° 6	14° 9	14°41	25°38	15°11
S 22	4 4 32	29°50'41	25°57	10°34	27°27	29°57	4°38	6°59	26° 6	21°34	23° 8	13°58	14°38	25°44	15° 8
S 23	4 8 28	0♈51'18	10♈56	11°46	28°41	0♈42	4°48	7° 4	26°10	21°36	23°10	13°47	14°35	25°51	15° 5
M24	4 12 25	1°51'56	25°37	13° 2	29°55	1°28	4°57	7° 9	26°14	21°38	23°12	13°38	14°32	25°58	15° 2
T 25	4 16 21	2°52'36	9♈52	14°20	1♈ 9	2°13	5° 7	7°15	26°17	21°40	23°14	13°31	14°28	26° 4	14°59
W26	4 20 18	3°53'18	23°38	15°40	2°23	2°59	5°16	7°20	26°21	21°43	23°16	13°27	14°25	26°11	14°56
T 27	4 24 14	4°54'01	6♈56	17° 3	3°37	3°44	5°26	7°25	26°25	21°45	23°18	13°26	14°22	26°18	14°54
F 28	4 28 11	5°54'45	19°47	18°27	4°51	4°30	5°35	7°30	26°29	21°47	23°20	13°D25	14°19	26°25	14°51
S 29	4 32 7	6°55'31	2♈15	19°52	6° 5	5°16	5°44	7°35	26°32	21°49	23°22	13°R26	14°16	26°31	14°48
S 30	4 36 4	7♈56'19	14♈26	21♈19	7♈19	6♈ 2	5♈53	7♈40	26♈36	21♈51	23♈24	13♈26	14♈12	26♈38	14♈45

Delta T = 51.25 sec.

DECEMBER 1980

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
M 1	4 40 1	8♈57'07	26♈25	22♈47	8♈34	6♈47	6♈ 2	7♈45	26♈40	21♈54	23♈26	13°R24	14♈ 9	26♈45	14°R43
T 2	4 43 57	9°57'58	8♈17	24°16	9°48	7°33	6°11	7°49	26°43	21°56	23°27	13♈20	14° 6	26°51	14♈40
W 3	4 47 54	10°58'50	20° 7	25°45	11° 2	8°19	6°19	7°54	26°47	21°58	23°29	13°13	14° 3	26°58	14°37
T 4	4 51 50	11°59'43	1♈59	27°15	12°16	9° 5	6°28	7°59	26°51	22° 0	23°31	13° 4	14° 0	27° 5	14°35
F 5	4 55 47	13° 0'37	13°55	28°45	13°31	9°51	6°36	8° 3	26°54	22° 2	23°33	12°53	13°57	27°12	14°32
S 6	4 59 43	14° 1'33	25°58	0♈16	14°45	10°37	6°44	8° 7	26°58	22° 5	23°34	12°42	13°53	27°18	14°30
S 7	5 3 40	15° 2'29	8♈10	1°47	16° 0	11°24	6°53	8°12	27° 1	22° 7	23°36	12°30	13°50	27°25	14°27
M 8	5 7 36	16° 3'27	20°31	3°19	17°14	12°10	7° 1	8°16	27° 5	22° 9	23°38	12°19	13°47	27°32	14°25
T 9	5 11 33	17° 4'26	3♈ 3	4°51	18°29	12°56	7° 8	8°20	27° 8	22°11	23°39	12°11	13°44	27°38	14°22
W10	5 15 30	18° 5'25	15°44	6°23	19°43	13°42	7°16	8°24	27°12	22°14	23°41	12° 5	13°41	27°45	14°20
T 11	5 19 26	19° 6'25	28°36	7°55	20°58	14°29	7°24	8°28	27°16	22°16	23°43	12° 2	13°38	27°52	14°17
F 12	5 23 23	20° 7'26	11♈39	9°27	22°12	15°15	7°31	8°32	27°19	22°18	23°44	12°D 1	13°34	27°59	14°15
S 13	5 27 19	21° 8'28	24°56	11° 0	23°27	16° 1	7°39	8°36	27°23	22°21	23°46	12° 1	13°31	28° 5	14°13
S 14	5 31 16	22° 9'30	8♈27	12°32	24°41	16°48	7°46	8°40	27°26	22°23	23°47	12° 2	13°28	28°12	14°11
M15	5 35 12	23°10'32	22°13	14° 5	25°56	17°34	7°53	8°43	27°30	22°25	23°49	12°R 3	13°25	28°19	14° 8
T 16	5 39 9	24°11'35	6♈16	15°38	27°11	18°21	8° 0	8°47	27°33	22°27	23°50	12° 2	13°22	28°25	14° 6
W17	5 43 5	25°12'38	20°34	17°11	28°26	19° 7	8° 7	8°50	27°36	22°30	23°52	12° 0	13°18	28°32	14° 4
T 18	5 47 2	26°13'41	5♈ 6	18°44	29°40	19°54	8°13	8°54	27°40	22°32	23°53	11°55	13°15	28°39	14° 2
F 19	5 50 59	27°14'45	19°47	20°17	0♈55	20°41	8°20	8°57	27°43	22°34	23°54	11°49	13°12	28°46	14° 0
S 20	5 54 55	28°15'49	4♈30	21°51	2°10	21°27	8°26	9° 0	27°47	22°36	23°56	11°42	13° 9	28°52	13°58
S 21	5 58 52	29°16'54	19° 8	23°25	3°25	22°14	8°32	9° 3	27°50	22°39	23°57	11°35	13° 6	28°59	13°56
M22	6 2 48	0♈17'59	3♈33	24°58	4°39	23° 1	8°39	9° 6	27°53	22°41	23°58	11°29	13° 3	29° 6	13°54
T 23	6 6 45	1°19'05	17°39	26°32	5°54	23°48	8°44	9° 9	27°56	22°43	23°59	11°24	12°59	29°13	13°52
W24	6 10 41	2°20'11	1♈23	28° 7	7° 9	24°34	8°50	9°12	28° 0	22°45	24° 1	11°22	12°56	29°19	13°51
T 25	6 14 38	3°21'17	14°41	29°41	8°24	25°21	8°56	9°14	28° 3	22°48	24° 2	11°D22	12°53	29°26	13°49
F 26	6 18 34	4°22'24	27°36	1♈16	9°39	26° 8	9° 1	9°17	28° 6	22°50	24° 3	11°23	12°50	29°33	13°47
S 27	6 22 31	5°23'32	10♈ 9	2°51	10°54	26°55	9° 6	9°19	28° 9	22°52	24° 4	11°24	12°47	29°39	13°46
S 28	6 26 28	6°24'40	22°25	4°26	12° 9	27°42	9°12	9°22	28°12	22°54	24° 5	11°26	12°44	29°46	13°44
M29	6 30 24	7°25'48	4♈27	6° 1	13°23	28°29	9°17	9°24	28°16	22°57	24° 6	11°R27	12°40	29°53	13°43
T 30	6 34 21	8°26'57	16°22	7°37	14°38	29°16	9°21	9°26	28°19	22°59	24° 7	11°27	12°37	0♈ 0	13°41
W31	6 38 17	9♈28'07	28♈13	9♈13	15♈53	0♈ 3	9♈26	9♈28	28♈22	23♈ 1	24♈ 8	11♈25	12♈34	0♈ 6	13♈40

Delta T = 51.31 sec.

created from Swiss Ephemeris, Copyright Astrodienst AG [11.2.2014]