

SWISS EPHEMERIS for the year 1687  
heliocentric

JANUARY 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
W 1	6 43 3	10 <sup>5</sup> 29'29	10 <sup>5</sup> 56	7 <sup>8</sup> 49	21 <sup>7</sup> 48	15 <sup>2</sup> 26	6 <sup>7</sup> 25	6 <sup>2</sup> 29	13 <sup>8</sup> 10	5 <sup>7</sup> 48	21 <sup>1</sup> 17	15 <sup>8</sup> 45
T 2	6 46 59	11 <sup>0</sup> 53'39	11 <sup>0</sup> 59	13 <sup>0</sup> 48	23 <sup>2</sup> 23	15 <sup>5</sup> 54	6 <sup>0</sup> 30	6 <sup>0</sup> 31	13 <sup>0</sup> 11	5 <sup>0</sup> 48	21 <sup>0</sup> 17	15 <sup>0</sup> 45
F 3	6 50 56	12 <sup>0</sup> 54'48	13 <sup>0</sup> 2	19 <sup>0</sup> 53	24 <sup>5</sup> 58	16 <sup>0</sup> 21	6 <sup>0</sup> 35	6 <sup>0</sup> 33	13 <sup>0</sup> 12	5 <sup>0</sup> 49	21 <sup>0</sup> 18	15 <sup>0</sup> 46
S 4	6 54 52	13 <sup>0</sup> 55'57	14 <sup>0</sup> 4	26 <sup>0</sup> 3	26 <sup>0</sup> 33	16 <sup>0</sup> 49	6 <sup>0</sup> 39	6 <sup>0</sup> 35	13 <sup>0</sup> 13	5 <sup>0</sup> 49	21 <sup>0</sup> 18	15 <sup>0</sup> 47
S 5	6 58 49	14 <sup>0</sup> 57'05	15 <sup>0</sup> 6	2 <sup>II</sup> 18	28 <sup>0</sup> 8	17 <sup>0</sup> 17	6 <sup>0</sup> 44	6 <sup>0</sup> 37	13 <sup>0</sup> 13	5 <sup>0</sup> 50	21 <sup>0</sup> 18	15 <sup>0</sup> 48
M 6	7 2 45	15 <sup>0</sup> 58'14	16 <sup>0</sup> 7	8 <sup>0</sup> 36	29 <sup>0</sup> 43	17 <sup>0</sup> 45	6 <sup>0</sup> 49	6 <sup>0</sup> 39	13 <sup>0</sup> 14	5 <sup>0</sup> 50	21 <sup>0</sup> 18	15 <sup>0</sup> 49
T 7	7 6 42	16 <sup>0</sup> 59'23	17 <sup>0</sup> 9	14 <sup>0</sup> 55	1 <sup>III</sup> 18	18 <sup>0</sup> 13	6 <sup>0</sup> 54	6 <sup>0</sup> 41	13 <sup>0</sup> 15	5 <sup>0</sup> 50	21 <sup>0</sup> 18	15 <sup>0</sup> 50
W 8	7 10 39	18 <sup>0</sup> 0'32	18 <sup>0</sup> 9	21 <sup>0</sup> 14	2 <sup>5</sup> 53	18 <sup>0</sup> 41	6 <sup>0</sup> 58	6 <sup>0</sup> 43	13 <sup>0</sup> 15	5 <sup>0</sup> 51	21 <sup>0</sup> 19	15 <sup>0</sup> 50
T 9	7 14 35	19 <sup>0</sup> 1'41	19 <sup>0</sup> 10	27 <sup>0</sup> 31	4 <sup>2</sup> 28	19 <sup>0</sup> 9	7 <sup>0</sup> 3	6 <sup>0</sup> 45	13 <sup>0</sup> 16	5 <sup>0</sup> 51	21 <sup>0</sup> 19	15 <sup>0</sup> 51
F 10	7 18 32	20 <sup>0</sup> 2'49	20 <sup>0</sup> 10	3 <sup>III</sup> 45	6 <sup>0</sup> 2	19 <sup>0</sup> 37	7 <sup>0</sup> 8	6 <sup>0</sup> 47	13 <sup>0</sup> 17	5 <sup>0</sup> 51	21 <sup>0</sup> 19	15 <sup>0</sup> 52
S 11	7 22 28	21 <sup>0</sup> 3'58	21 <sup>0</sup> 9	9 <sup>0</sup> 55	7 <sup>0</sup> 37	20 <sup>0</sup> 5	7 <sup>0</sup> 13	6 <sup>0</sup> 49	13 <sup>0</sup> 17	5 <sup>0</sup> 52	21 <sup>0</sup> 19	15 <sup>0</sup> 53
S 12	7 26 25	22 <sup>0</sup> 5'06	22 <sup>0</sup> 9	15 <sup>0</sup> 59	9 <sup>0</sup> 12	20 <sup>0</sup> 34	7 <sup>0</sup> 17	6 <sup>0</sup> 51	13 <sup>0</sup> 18	5 <sup>0</sup> 52	21 <sup>0</sup> 20	15 <sup>0</sup> 54
M13	7 30 21	23 <sup>0</sup> 6'14	23 <sup>0</sup> 8	21 <sup>0</sup> 57	10 <sup>0</sup> 47	21 <sup>0</sup> 2	7 <sup>0</sup> 22	6 <sup>0</sup> 53	13 <sup>0</sup> 19	5 <sup>0</sup> 52	21 <sup>0</sup> 20	15 <sup>0</sup> 54
T 14	7 34 18	24 <sup>0</sup> 7'21	24 <sup>0</sup> 7	27 <sup>0</sup> 46	12 <sup>0</sup> 22	21 <sup>0</sup> 30	7 <sup>0</sup> 27	6 <sup>0</sup> 55	13 <sup>0</sup> 19	5 <sup>0</sup> 53	21 <sup>0</sup> 20	15 <sup>0</sup> 55
W15	7 38 15	25 <sup>0</sup> 8'28	25 <sup>0</sup> 6	3 <sup>III</sup> 27	13 <sup>0</sup> 57	21 <sup>0</sup> 58	7 <sup>0</sup> 32	6 <sup>0</sup> 57	13 <sup>0</sup> 20	5 <sup>0</sup> 53	21 <sup>0</sup> 20	15 <sup>0</sup> 56
T 16	7 42 11	26 <sup>0</sup> 9'34	26 <sup>0</sup> 5	8 <sup>0</sup> 59	15 <sup>0</sup> 31	22 <sup>0</sup> 27	7 <sup>0</sup> 36	6 <sup>0</sup> 59	13 <sup>0</sup> 21	5 <sup>0</sup> 54	21 <sup>0</sup> 20	15 <sup>0</sup> 57
F 17	7 46 8	27 <sup>0</sup> 10'38	27 <sup>0</sup> 5	14 <sup>0</sup> 22	17 <sup>0</sup> 6	22 <sup>0</sup> 55	7 <sup>0</sup> 41	7 <sup>0</sup> 1	13 <sup>0</sup> 21	5 <sup>0</sup> 54	21 <sup>0</sup> 21	15 <sup>0</sup> 58
S 18	7 50 4	28 <sup>0</sup> 11'42	28 <sup>0</sup> 4	19 <sup>0</sup> 34	18 <sup>0</sup> 41	23 <sup>0</sup> 23	7 <sup>0</sup> 46	7 <sup>0</sup> 3	13 <sup>0</sup> 22	5 <sup>0</sup> 54	21 <sup>0</sup> 21	15 <sup>0</sup> 58
S 19	7 54 1	29 <sup>0</sup> 12'45	29 <sup>0</sup> 5	24 <sup>0</sup> 38	20 <sup>0</sup> 16	23 <sup>0</sup> 52	7 <sup>0</sup> 51	7 <sup>0</sup> 5	13 <sup>0</sup> 23	5 <sup>0</sup> 55	21 <sup>0</sup> 21	15 <sup>0</sup> 59
M20	7 57 57	0 <sup>0</sup> 13'47	0 <sup>0</sup> 5	29 <sup>0</sup> 31	21 <sup>0</sup> 51	24 <sup>0</sup> 20	7 <sup>0</sup> 55	7 <sup>0</sup> 7	13 <sup>0</sup> 23	5 <sup>0</sup> 55	21 <sup>0</sup> 21	16 <sup>0</sup> 0
T 21	8 1 54	1 <sup>0</sup> 14'47	1 <sup>0</sup> 6	4 <sup>III</sup> 16	23 <sup>0</sup> 26	24 <sup>0</sup> 49	8 <sup>0</sup> 0	7 <sup>0</sup> 9	13 <sup>0</sup> 24	5 <sup>0</sup> 55	21 <sup>0</sup> 21	16 <sup>0</sup> 1
W22	8 5 50	2 <sup>0</sup> 15'47	2 <sup>0</sup> 7	8 <sup>0</sup> 51	25 <sup>0</sup> 0	25 <sup>0</sup> 17	8 <sup>0</sup> 5	7 <sup>0</sup> 11	13 <sup>0</sup> 25	5 <sup>0</sup> 56	21 <sup>0</sup> 22	16 <sup>0</sup> 2
T 23	8 9 47	3 <sup>0</sup> 16'45	3 <sup>0</sup> 9	13 <sup>0</sup> 17	26 <sup>0</sup> 35	25 <sup>0</sup> 46	8 <sup>0</sup> 10	7 <sup>0</sup> 13	13 <sup>0</sup> 25	5 <sup>0</sup> 56	21 <sup>0</sup> 22	16 <sup>0</sup> 3
F 24	8 13 43	4 <sup>0</sup> 17'42	4 <sup>0</sup> 11	17 <sup>0</sup> 35	28 <sup>0</sup> 10	26 <sup>0</sup> 14	8 <sup>0</sup> 14	7 <sup>0</sup> 15	13 <sup>0</sup> 26	5 <sup>0</sup> 56	21 <sup>0</sup> 22	16 <sup>0</sup> 3
S 25	8 17 40	5 <sup>0</sup> 18'38	5 <sup>0</sup> 13	21 <sup>0</sup> 45	29 <sup>0</sup> 45	26 <sup>0</sup> 43	8 <sup>0</sup> 19	7 <sup>0</sup> 17	13 <sup>0</sup> 27	5 <sup>0</sup> 57	21 <sup>0</sup> 22	16 <sup>0</sup> 4
S 26	8 21 37	6 <sup>0</sup> 19'33	6 <sup>0</sup> 15	25 <sup>0</sup> 47	1 <sup>III</sup> 20	27 <sup>0</sup> 11	8 <sup>0</sup> 24	7 <sup>0</sup> 19	13 <sup>0</sup> 27	5 <sup>0</sup> 57	21 <sup>0</sup> 23	16 <sup>0</sup> 5
M27	8 25 33	7 <sup>0</sup> 20'27	7 <sup>0</sup> 18	29 <sup>0</sup> 42	2 <sup>5</sup> 54	27 <sup>0</sup> 40	8 <sup>0</sup> 29	7 <sup>0</sup> 21	13 <sup>0</sup> 28	5 <sup>0</sup> 58	21 <sup>0</sup> 23	16 <sup>0</sup> 6
T 28	8 29 30	8 <sup>0</sup> 21'19	8 <sup>0</sup> 20	3 <sup>III</sup> 30	4 <sup>2</sup> 29	28 <sup>0</sup> 9	8 <sup>0</sup> 33	7 <sup>0</sup> 23	13 <sup>0</sup> 29	5 <sup>0</sup> 58	21 <sup>0</sup> 23	16 <sup>0</sup> 7
W29	8 33 26	9 <sup>0</sup> 22'11	9 <sup>0</sup> 23	7 <sup>0</sup> 12	6 <sup>0</sup> 4	28 <sup>0</sup> 38	8 <sup>0</sup> 38	7 <sup>0</sup> 25	13 <sup>0</sup> 29	5 <sup>0</sup> 58	21 <sup>0</sup> 23	16 <sup>0</sup> 7
T 30	8 37 23	10 <sup>0</sup> 23'01	10 <sup>0</sup> 26	10 <sup>0</sup> 48	7 <sup>0</sup> 39	29 <sup>0</sup> 7	8 <sup>0</sup> 43	7 <sup>0</sup> 27	13 <sup>0</sup> 30	5 <sup>0</sup> 59	21 <sup>0</sup> 23	16 <sup>0</sup> 8
F 31	8 41 19	11 <sup>0</sup> 23'50	11 <sup>0</sup> 28	14 <sup>0</sup> 19	9 <sup>0</sup> 14	29 <sup>0</sup> 35	8 <sup>0</sup> 48	7 <sup>0</sup> 29	13 <sup>0</sup> 31	5 <sup>0</sup> 59	21 <sup>0</sup> 24	16 <sup>0</sup> 9

Delta T = 9.69 sec. Greg. Calendar

FEBRUARY 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
S 1	8 45 16	12 <sup>0</sup> 24'38	12 <sup>0</sup> 30	17 <sup>0</sup> 44	10 <sup>0</sup> 49	0 <sup>III</sup> 4	8 <sup>0</sup> 52	7 <sup>0</sup> 31	13 <sup>0</sup> 31	5 <sup>0</sup> 59	21 <sup>0</sup> 24	16 <sup>0</sup> 10
S 2	8 49 13	13 <sup>0</sup> 25'25	13 <sup>0</sup> 32	21 <sup>0</sup> 5	12 <sup>0</sup> 24	0 <sup>0</sup> 33	8 <sup>0</sup> 57	7 <sup>0</sup> 33	13 <sup>0</sup> 32	6 <sup>0</sup> 0	21 <sup>0</sup> 24	16 <sup>0</sup> 11
M 3	8 53 9	14 <sup>0</sup> 26'11	14 <sup>0</sup> 34	24 <sup>0</sup> 21	13 <sup>0</sup> 58	1 <sup>0</sup> 2	9 <sup>0</sup> 2	7 <sup>0</sup> 35	13 <sup>0</sup> 33	6 <sup>0</sup> 0	21 <sup>0</sup> 24	16 <sup>0</sup> 12
T 4	8 57 6	15 <sup>0</sup> 26'55	15 <sup>0</sup> 36	27 <sup>0</sup> 33	15 <sup>0</sup> 33	1 <sup>0</sup> 31	9 <sup>0</sup> 7	7 <sup>0</sup> 37	13 <sup>0</sup> 33	6 <sup>0</sup> 0	21 <sup>0</sup> 25	16 <sup>0</sup> 12
W 5	9 1 2	16 <sup>0</sup> 27'39	16 <sup>0</sup> 37	0 <sup>III</sup> 42	17 <sup>0</sup> 8	2 <sup>0</sup> 0	9 <sup>0</sup> 11	7 <sup>0</sup> 39	13 <sup>0</sup> 34	6 <sup>0</sup> 1	21 <sup>0</sup> 25	16 <sup>0</sup> 13
T 6	9 4 59	17 <sup>0</sup> 28'22	17 <sup>0</sup> 37	3 <sup>0</sup> 47	18 <sup>0</sup> 43	2 <sup>0</sup> 29	9 <sup>0</sup> 16	7 <sup>0</sup> 41	13 <sup>0</sup> 35	6 <sup>0</sup> 1	21 <sup>0</sup> 25	16 <sup>0</sup> 14
F 7	9 8 55	18 <sup>0</sup> 29'03	18 <sup>0</sup> 37	6 <sup>0</sup> 49	20 <sup>0</sup> 18	2 <sup>0</sup> 59	9 <sup>0</sup> 21	7 <sup>0</sup> 43	13 <sup>0</sup> 35	6 <sup>0</sup> 2	21 <sup>0</sup> 25	16 <sup>0</sup> 15
S 8	9 12 52	19 <sup>0</sup> 29'44	19 <sup>0</sup> 37	9 <sup>0</sup> 48	21 <sup>0</sup> 53	3 <sup>0</sup> 28	9 <sup>0</sup> 26	7 <sup>0</sup> 45	13 <sup>0</sup> 36	6 <sup>0</sup> 2	21 <sup>0</sup> 25	16 <sup>0</sup> 16
S 9	9 16 48	20 <sup>0</sup> 30'24	20 <sup>0</sup> 37	12 <sup>0</sup> 45	23 <sup>0</sup> 28	3 <sup>0</sup> 57	9 <sup>0</sup> 30	7 <sup>0</sup> 47	13 <sup>0</sup> 37	6 <sup>0</sup> 2	21 <sup>0</sup> 26	16 <sup>0</sup> 16
M10	9 20 45	21 <sup>0</sup> 31'02	21 <sup>0</sup> 36	15 <sup>0</sup> 40	25 <sup>0</sup> 3	4 <sup>0</sup> 26	9 <sup>0</sup> 35	7 <sup>0</sup> 49	13 <sup>0</sup> 37	6 <sup>0</sup> 3	21 <sup>0</sup> 26	16 <sup>0</sup> 17
T 11	9 24 42	22 <sup>0</sup> 31'39	22 <sup>0</sup> 34	18 <sup>0</sup> 32	26 <sup>0</sup> 38	4 <sup>0</sup> 56	9 <sup>0</sup> 40	7 <sup>0</sup> 51	13 <sup>0</sup> 38	6 <sup>0</sup> 3	21 <sup>0</sup> 26	16 <sup>0</sup> 18
W12	9 28 38	23 <sup>0</sup> 32'15	23 <sup>0</sup> 33	21 <sup>0</sup> 23	28 <sup>0</sup> 13	5 <sup>0</sup> 25	9 <sup>0</sup> 45	7 <sup>0</sup> 53	13 <sup>0</sup> 39	6 <sup>0</sup> 3	21 <sup>0</sup> 26	16 <sup>0</sup> 19
T 13	9 32 35	24 <sup>0</sup> 32'48	24 <sup>0</sup> 31	24 <sup>0</sup> 12	29 <sup>0</sup> 48	5 <sup>0</sup> 55	9 <sup>0</sup> 49	7 <sup>0</sup> 55	13 <sup>0</sup> 39	6 <sup>0</sup> 4	21 <sup>0</sup> 26	16 <sup>0</sup> 20
F 14	9 36 31	25 <sup>0</sup> 33'21	25 <sup>0</sup> 30	27 <sup>0</sup> 0	1 <sup>III</sup> 23	6 <sup>0</sup> 24	9 <sup>0</sup> 54	7 <sup>0</sup> 57	13 <sup>0</sup> 40	6 <sup>0</sup> 4	21 <sup>0</sup> 27	16 <sup>0</sup> 21
S 15	9 40 28	26 <sup>0</sup> 33'51	26 <sup>0</sup> 29	29 <sup>0</sup> 47	2 <sup>5</sup> 58	6 <sup>0</sup> 53	9 <sup>0</sup> 59	7 <sup>0</sup> 59	13 <sup>0</sup> 41	6 <sup>0</sup> 4	21 <sup>0</sup> 27	16 <sup>0</sup> 21
S 16	9 44 24	27 <sup>0</sup> 34'20	27 <sup>0</sup> 28	2 <sup>7</sup> 33	4 <sup>0</sup> 33	7 <sup>0</sup> 23	10 <sup>0</sup> 4	8 <sup>0</sup> 1	13 <sup>0</sup> 41	6 <sup>0</sup> 5	21 <sup>0</sup> 27	16 <sup>0</sup> 22
M17	9 48 21	28 <sup>0</sup> 34'47	28 <sup>0</sup> 27	5 <sup>0</sup> 18	6 <sup>0</sup> 9	7 <sup>0</sup> 53	10 <sup>0</sup> 9	8 <sup>0</sup> 3	13 <sup>0</sup> 42	6 <sup>0</sup> 5	21 <sup>0</sup> 27	16 <sup>0</sup> 23
T 18	9 52 17	29 <sup>0</sup> 35'12	29 <sup>0</sup> 27	8 <sup>0</sup> 3	7 <sup>0</sup> 44	8 <sup>0</sup> 22	10 <sup>0</sup> 13	8 <sup>0</sup> 5	13 <sup>0</sup> 43	6 <sup>0</sup> 6	21 <sup>0</sup> 28	16 <sup>0</sup> 24
W19	9 56 14	0 <sup>III</sup> 35'35	0 <sup>III</sup> 27	10 <sup>0</sup> 48	9 <sup>0</sup> 19	8 <sup>0</sup> 52	10 <sup>0</sup> 18	8 <sup>0</sup> 7	13 <sup>0</sup> 43	6 <sup>0</sup> 6	21 <sup>0</sup> 28	16 <sup>0</sup> 25
T 20	10 0 11	1 <sup>0</sup> 35'56	1 <sup>0</sup> 27	13 <sup>0</sup> 32	10 <sup>0</sup> 54	9 <sup>0</sup> 22	10 <sup>0</sup> 23	8 <sup>0</sup> 9	13 <sup>0</sup> 44	6 <sup>0</sup> 6	21 <sup>0</sup> 28	16 <sup>0</sup> 26
F 21	10 4 7	2 <sup>0</sup> 36'15	2 <sup>0</sup> 28	16 <sup>0</sup> 17	12 <sup>0</sup> 29	9 <sup>0</sup> 51	10 <sup>0</sup> 28	8 <sup>0</sup> 11	13 <sup>0</sup> 45	6 <sup>0</sup> 7	21 <sup>0</sup> 28	16 <sup>0</sup> 26
S 22	10 8 4	3 <sup>0</sup> 36'32	3 <sup>0</sup> 29	19 <sup>0</sup> 2	14 <sup>0</sup> 4	10 <sup>0</sup> 21	10 <sup>0</sup> 32	8 <sup>0</sup> 13	13 <sup>0</sup> 46	6 <sup>0</sup> 7	21 <sup>0</sup> 28	16 <sup>0</sup> 27
S 23	10 12 0	4 <sup>0</sup> 36'47	4 <sup>0</sup> 30	21 <sup>0</sup> 48	15 <sup>0</sup> 40	10 <sup>0</sup> 51	10 <sup>0</sup> 37	8 <sup>0</sup> 15	13 <sup>0</sup> 46	6 <sup>0</sup> 7	21 <sup>0</sup> 29	16 <sup>0</sup> 28
M24	10 15 57	5 <sup>0</sup> 37'00	5 <sup>0</sup> 31	24 <sup>0</sup> 35	17 <sup>0</sup> 15	11 <sup>0</sup> 21	10 <sup>0</sup> 42	8 <sup>0</sup> 17	13 <sup>0</sup> 47	6 <sup>0</sup> 8	21 <sup>0</sup> 29	16 <sup>0</sup> 29
T 25	10 19 53	6 <sup>0</sup> 37'11	6 <sup>0</sup> 33	27 <sup>0</sup> 22	18 <sup>0</sup> 50	11 <sup>0</sup> 51	10 <sup>0</sup> 47	8 <sup>0</sup> 19	13 <sup>0</sup> 48	6 <sup>0</sup> 8	21 <sup>0</sup> 29	16 <sup>0</sup> 30
W26	10 23 50	7 <sup>0</sup> 37'21	7 <sup>0</sup> 35	0 <sup>III</sup> 11	20 <sup>0</sup> 26	12 <sup>0</sup> 21	10 <sup>0</sup> 51	8 <sup>0</sup> 20	13 <sup>0</sup> 48	6 <sup>0</sup> 8	21 <sup>0</sup> 29	16 <sup>0</sup> 30
T 27	10 27 46	8 <sup>0</sup> 37'28	8 <sup>0</sup> 37	3 <sup>0</sup> 1	22 <sup>0</sup> 1	12 <sup>0</sup> 51	10 <sup>0</sup> 56	8 <sup>0</sup> 22	13 <sup>0</sup> 49	6 <sup>0</sup> 9	21 <sup>0</sup> 29	16 <sup>0</sup> 31
F 28	10 31 43	9 <sup>0</sup> 37'33	9 <sup>0</sup> 39	5 <sup>0</sup> 53	23 <sup>0</sup> 36	13 <sup>0</sup> 21	11 <sup>0</sup> 1	8 <sup>0</sup> 24	13 <sup>0</sup> 50	6 <sup>0</sup> 9	21 <sup>0</sup> 30	16 <sup>0</sup> 32

Delta T =

SWISS EPHEMERIS for the year 1687  
heliocentric

MARCH 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♁	♂	♄	♃	♅	♁	♆	♁	♁
S 1	10 35 39	10 <sup>h</sup> 37'37"	10 <sup>h</sup> 41'	8 <sup>h</sup> 34'	25 <sup>h</sup> 12'	13 <sup>h</sup> 51'	11 <sup>h</sup> 7'	8 <sup>h</sup> 26'	13 <sup>h</sup> 50'	6 <sup>h</sup> 10'	21 <sup>h</sup> 30'	16 <sup>h</sup> 33'
S 2	10 39 36	11°37'38"	11°42'	11°43'	26°47'	14°22'	11°11'	8°28'	13°51'	6°10'	21°30'	16°34'
M 3	10 43 33	12°37'38"	12°44'	14°41'	28°22'	14°52'	11°15'	8°30'	13°52'	6°10'	21°30'	16°35'
T 4	10 47 29	13°37'37"	13°45'	17°42'	29°58'	15°22'	11°20'	8°32'	13°52'	6°11'	21°31'	16°35'
W 5	10 51 26	14°37'33"	14°46'	20°46'	1 <sup>h</sup> Y33	15°53'	11°25'	8°34'	13°53'	6°11'	21°31'	16°36'
T 6	10 55 22	15°37'28"	15°46'	23°53'	3° 9'	16°23'	11°30'	8°36'	13°54'	6°11'	21°31'	16°37'
F 7	10 59 19	16°37'22"	16°46'	27° 3'	4°44'	16°53'	11°34'	8°38'	13°54'	6°12'	21°31'	16°38'
S 8	11 3 15	17°37'13"	17°46'	0 <sup>h</sup> 17'	6°20'	17°24'	11°39'	8°40'	13°55'	6°12'	21°31'	16°39'
S 9	11 7 12	18°37'04"	18°45'	3°35'	7°56'	17°55'	11°44'	8°42'	13°56'	6°12'	21°32'	16°39'
M10	11 11 8	19°36'52"	19°43'	6°57'	9°31'	18°25'	11°49'	8°44'	13°56'	6°13'	21°32'	16°40'
T 11	11 15 5	20°36'39"	20°42'	10°24'	11° 7'	18°56'	11°54'	8°46'	13°57'	6°13'	21°32'	16°41'
W12	11 19 2	21°36'24"	21°40'	13°56'	12°42'	19°26'	11°58'	8°48'	13°58'	6°14'	21°32'	16°42'
T 13	11 22 58	22°36'06"	22°37'	17°33'	14°18'	19°57'	12° 3'	8°50'	13°58'	6°14'	21°32'	16°43'
F 14	11 26 55	23°35'47"	23°35'	21°16'	15°54'	20°28'	12° 8'	8°52'	13°59'	6°14'	21°33'	16°44'
S 15	11 30 51	24°35'26"	24°33'	25° 5'	17°30'	20°59'	12°13'	8°54'	14° 0'	6°15'	21°33'	16°44'
S 16	11 34 48	25°35'03"	25°31'	29° 0'	19° 5'	21°30'	12°17'	8°56'	14° 0'	6°15'	21°33'	16°45'
M17	11 38 44	26°34'37"	26°29'	3 <sup>h</sup> 2'	20°41'	22° 1'	12°22'	8°58'	14° 1'	6°15'	21°33'	16°46'
T 18	11 42 41	27°34'10"	27°27'	7°11'	22°17'	22°32'	12°27'	9° 0'	14° 2'	6°16'	21°34'	16°47'
W19	11 46 37	28°33'40"	28°25'	11°28'	23°53'	23° 3'	12°32'	9° 2'	14° 2'	6°16'	21°34'	16°48'
T 20	11 50 34	29°33'07"	29°24'	15°53'	25°29'	23°34'	12°37'	9° 4'	14° 3'	6°16'	21°34'	16°49'
F 21	11 54 31	0 <sup>h</sup> 32'33"	0 <sup>h</sup> 23'	20°26'	27° 5'	24° 5'	12°41'	9° 6'	14° 4'	6°17'	21°34'	16°49'
S 22	11 58 27	1°31'56"	1°23'	25° 7'	28°41'	24°36'	12°46'	9° 8'	14° 4'	6°17'	21°34'	16°50'
S 23	12 2 24	2°31'17"	2°23'	29°58'	0 <sup>h</sup> 16'	25° 8'	12°51'	9°10'	14° 5'	6°18'	21°35'	16°51'
M24	12 6 20	3°30'35"	3°23'	4 <sup>h</sup> Y57	1°52'	25°39'	12°56'	9°12'	14° 6'	6°18'	21°35'	16°52'
T 25	12 10 17	4°29'52"	4°23'	10° 5'	3°28'	26°10'	13° 1'	9°14'	14° 6'	6°18'	21°35'	16°53'
W26	12 14 13	5°29'05"	5°24'	15°23'	5° 5'	26°42'	13° 5'	9°16'	14° 7'	6°19'	21°35'	16°53'
T 27	12 18 10	6°28'17"	6°25'	20°49'	6°41'	27°13'	13°10'	9°18'	14° 8'	6°19'	21°36'	16°54'
F 28	12 22 6	7°27'27"	7°26'	26°25'	8°17'	27°45'	13°15'	9°20'	14° 8'	6°19'	21°36'	16°55'
S 29	12 26 3	8°26'34"	8°27'	2 <sup>h</sup> 8'	9°53'	28°17'	13°20'	9°22'	14° 9'	6°20'	21°36'	16°56'
S 30	12 30 0	9°25'39"	9°27'	8° 0'	11°29'	28°48'	13°24'	9°24'	14°10'	6°20'	21°36'	16°57'
MB1	12 33 56	10 <sup>h</sup> 24'43"	10 <sup>h</sup> 28'	13 <sup>h</sup> Y59	13 <sup>h</sup> 5'	29 <sup>h</sup> M20	13 <sup>h</sup> 29'	9 <sup>h</sup> 26'	14 <sup>h</sup> Y10	6 <sup>h</sup> 20'	21 <sup>h</sup> 36'	16 <sup>h</sup> 58'

Delta T = 9.68 sec.

Greg. Calendar

APRIL 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♁	♂	♄	♃	♅	♁	♆	♁	♁
T 1	12 37 53	11 <sup>h</sup> 23'44"	11 <sup>h</sup> 29'	20 <sup>h</sup> 4'	14 <sup>h</sup> Y41	29 <sup>h</sup> M52	13 <sup>h</sup> 34'	9 <sup>h</sup> 28'	14 <sup>h</sup> Y11	6 <sup>h</sup> 21'	21 <sup>h</sup> 37'	16 <sup>h</sup> 58'
W 2	12 41 49	12°22'44"	12°29'	26°15'	16°18'	0 <sup>h</sup> 24'	13°39'	9°30'	14°12'	6°21'	21°37'	16°59'
T 3	12 45 46	13°21'42"	13°29'	2 <sup>h</sup> II30	17°54'	0°55'	13°44'	9°32'	14°12'	6°22'	21°37'	17° 0'
F 4	12 49 42	14°20'38"	14°29'	8°48'	19°30'	1°27'	13°48'	9°34'	14°13'	6°22'	21°37'	17° 1'
S 5	12 53 39	15°19'32"	15°28'	15° 7'	21° 6'	1°59'	13°53'	9°36'	14°14'	6°22'	21°37'	17° 2'
S 6	12 57 35	16°18'25"	16°27'	21°26'	22°43'	2°31'	13°58'	9°38'	14°14'	6°23'	21°38'	17° 3'
M 7	13 1 32	17°17'16"	17°25'	27°43'	24°19'	3° 4'	14° 3'	9°40'	14°15'	6°23'	21°38'	17° 3'
T 8	13 5 29	18°16'05"	18°23'	3 <sup>h</sup> Y57	25°56'	3°36'	14° 8'	9°42'	14°16'	6°23'	21°38'	17° 4'
W 9	13 9 25	19°14'52"	19°20'	10° 7'	27°32'	4° 8'	14°12'	9°44'	14°16'	6°24'	21°38'	17° 5'
T 10	13 13 22	20°13'38"	20°18'	16°11'	29° 9'	4°40'	14°17'	9°46'	14°17'	6°24'	21°39'	17° 6'
F 11	13 17 18	21°12'21"	21°14'	22° 8'	0 <sup>h</sup> II45	5°12'	14°22'	9°48'	14°18'	6°24'	21°39'	17° 7'
S 12	13 21 15	22°11'03"	22°11'	27°57'	2°22'	5°45'	14°27'	9°50'	14°18'	6°25'	21°39'	17° 8'
S 13	13 25 11	23° 9'43"	23° 8'	3 <sup>h</sup> Y38	3°58'	6°17'	14°32'	9°52'	14°19'	6°25'	21°39'	17° 8'
M14	13 29 8	24° 8'21"	24° 5'	9° 9'	5°35'	6°50'	14°36'	9°54'	14°20'	6°26'	21°39'	17° 9'
T 15	13 33 4	25° 6'57"	25° 2'	14°32'	7°11'	7°22'	14°41'	9°56'	14°21'	6°26'	21°40'	17°10'
W16	13 37 1	26° 5'31"	25°59'	19°44'	8°48'	7°55'	14°46'	9°58'	14°21'	6°26'	21°40'	17°11'
T 17	13 40 58	27° 4'02"	26°56'	24°47'	10°25'	8°28'	14°51'	9°59'	14°22'	6°27'	21°40'	17°12'
F 18	13 44 54	28° 2'32"	27°54'	29°41'	12° 1'	9° 0'	14°56'	10° 1'	14°23'	6°27'	21°40'	17°13'
S 19	13 48 51	29° 0'59"	28°52'	4 <sup>h</sup> Y25	13°38'	9°33'	15° 0'	10° 3'	14°23'	6°27'	21°40'	17°13'
S 20	13 52 47	29°59'25"	29°50'	8°59'	15°15'	10° 6'	15° 5'	10° 5'	14°24'	6°28'	21°41'	17°14'
M21	13 56 44	0 <sup>h</sup> M57'48"	0 <sup>h</sup> M49'	13°25'	16°52'	10°39'	15°10'	10° 7'	14°25'	6°28'	21°41'	17°15'
T 22	14 0 40	1°56'09"	1°48'	17°43'	18°29'	11°12'	15°15'	10° 9'	14°25'	6°28'	21°41'	17°16'
W23	14 4 37	2°54'28"	2°47'	21°53'	20° 5'	11°45'	15°20'	10°11'	14°26'	6°29'	21°41'	17°17'
T 24	14 8 33	3°52'44"	3°47'	25°55'	21°42'	12°18'	15°24'	10°13'	14°27'	6°29'	21°42'	17°17'
F 25	14 12 30	4°50'59"	4°46'	29°50'	23°19'	12°51'	15°29'	10°15'	14°27'	6°30'	21°42'	17°18'
S 26	14 16 26	5°49'12"	5°46'	3 <sup>h</sup> Y38	24°56'	13°24'	15°34'	10°17'	14°28'	6°30'	21°42'	17°19'
S 27	14 20 23	6°47'23"	6°46'	7°19'	26°33'	13°57'	15°39'	10°19'	14°29'	6°30'	21°42'	17°20'
M28	14 24 20	7°45'32"	7°46'	10°55'	28°10'	14°31'	15°44'	10°21'	14°29'	6°31'	21°42'	17°21'
T 29	14 28 16	8°43'40"	8°46'	14°26'	29°47'	15° 4'	15°48'	10°23'	14°30'	6°31'	21°43'	17°22'
W30	14 32 13	9 <sup>h</sup> M41'46"	9 <sup>h</sup> M46'	17 <sup>h</sup> Y51	1 <sup>h</sup> Y24	15 <sup>h</sup> Y38	15 <sup>h</sup> Y53	10 <sup>h</sup> Y25	14 <sup>h</sup> Y31	6 <sup>h</sup> Y31	21 <sup>h</sup> Y43	17 <sup>h</sup> Y22

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SWISS EPHEMERIS for the year 1687  
heliocentric

MAY 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♃
T 1	14 36 9	10M39'51	10M46	21♁11	3♄2	16♁11	15♁58	10♁27	14♁31	6♁32	21♁43	17♁23
F 2	14 40 6	11°37'54	11°45	24°27	4°39	16°45	16° 3	10°29	14°32	6°32	21°43	17°24
S 3	14 44 2	12°35'56	12°44	27°40	6°16	17°18	16° 8	10°31	14°33	6°32	21°43	17°25
S 4	14 47 59	13°33'56	13°42	0M48	7°53	17°52	16°12	10°33	14°33	6°33	21°44	17°26
M 5	14 51 56	14°31'55	14°40	3°53	9°30	18°25	16°17	10°35	14°34	6°33	21°44	17°27
T 6	14 55 52	15°29'53	15°38	6°55	11° 7	18°59	16°22	10°37	14°35	6°34	21°44	17°27
W 7	14 59 49	16°27'49	16°35	9°54	12°45	19°33	16°27	10°39	14°35	6°34	21°44	17°28
T 8	15 3 45	17°25'44	17°32	12°51	14°22	20° 7	16°32	10°41	14°36	6°34	21°45	17°29
F 9	15 7 42	18°23'38	18°28	15°45	15°59	20°41	16°37	10°43	14°37	6°35	21°45	17°30
S 10	15 11 38	19°21'30	19°24	18°38	17°37	21°15	16°41	10°45	14°37	6°35	21°45	17°31
S 11	15 15 35	20°19'22	20°20	21°28	19°14	21°49	16°46	10°47	14°38	6°35	21°45	17°32
M12	15 19 31	21°17'11	21°16	24°17	20°51	22°23	16°51	10°49	14°39	6°36	21°45	17°32
T 13	15 23 28	22°15'00	22°12	27° 5	22°29	22°57	16°56	10°51	14°39	6°36	21°46	17°33
W14	15 27 25	23°12'46	23° 8	29°52	24° 6	23°31	17° 1	10°53	14°40	6°36	21°46	17°34
T 15	15 31 21	24°10'32	24° 5	2♁38	25°44	24° 6	17° 5	10°55	14°41	6°37	21°46	17°35
F 16	15 35 18	25° 8'16	25° 1	5°23	27°21	24°40	17°10	10°57	14°41	6°37	21°46	17°36
S 17	15 39 14	26° 5'58	25°58	8° 8	28°58	25°14	17°15	10°59	14°42	6°38	21°47	17°37
S 18	15 43 11	27° 3'38	26°55	10°53	0♁36	25°49	17°20	11° 1	14°43	6°38	21°47	17°37
M19	15 47 7	28° 1'18	27°52	13°37	2°13	26°23	17°25	11° 3	14°43	6°38	21°47	17°38
T 20	15 51 4	28°58'55	28°50	16°22	3°51	26°58	17°30	11° 5	14°44	6°39	21°47	17°39
W21	15 55 0	29°56'31	29°48	19° 8	5°28	27°32	17°34	11° 7	14°45	6°39	21°47	17°40
T 22	15 58 57	0♁54'06	0♁46	21°53	7° 6	28° 7	17°39	11° 9	14°45	6°39	21°48	17°41
F 23	16 2 54	1°51'39	1°45	24°40	8°43	28°42	17°44	11°11	14°46	6°40	21°48	17°42
S 24	16 6 50	2°49'10	2°44	27°28	10°21	29°16	17°49	11°13	14°47	6°40	21°48	17°42
S 25	16 10 47	3°46'41	3°43	0♁16	11°59	29°51	17°54	11°15	14°47	6°40	21°48	17°43
M26	16 14 43	4°44'10	4°42	3° 7	13°36	0♁26	17°58	11°17	14°48	6°41	21°48	17°44
T 27	16 18 40	5°41'38	5°41	5°59	15°14	1° 1	18° 3	11°18	14°49	6°41	21°49	17°45
W28	16 22 36	6°39'06	6°41	8°53	16°51	1°36	18° 8	11°20	14°50	6°42	21°49	17°46
T 29	16 26 33	7°36'32	7°40	11°49	18°29	2°11	18°13	11°22	14°50	6°42	21°49	17°47
F 30	16 30 29	8°33'58	8°39	14°47	20° 6	2°46	18°18	11°24	14°51	6°42	21°49	17°47
S 31	16 34 26	9♁31'22	9♁38	17♁48	21♁44	3♁21	18♁23	11♁26	14♁52	6♁43	21♁50	17♁48

Delta T = 9.68 sec.

Greg. Calendar

JUNE 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♃
S 1	16 38 23	10♁28'46	10♁36	20♁52	23♁21	3♁57	18♁27	11♁28	14♁52	6♁43	21♁50	17♁49
M 2	16 42 19	11°26'10	11°34	23°59	24°59	4°32	18°32	11°30	14°53	6°43	21°50	17°50
T 3	16 46 16	12°23'32	12°32	27° 9	26°37	5° 7	18°37	11°32	14°54	6°44	21°50	17°51
W 4	16 50 12	13°20'55	13°29	0♁23	28°14	5°43	18°42	11°34	14°54	6°44	21°50	17°52
T 5	16 54 9	14°18'16	14°26	3°41	29°52	6°18	18°47	11°36	14°55	6°44	21°51	17°52
F 6	16 58 5	15°15'37	15°22	7° 3	1♁29	6°53	18°52	11°38	14°56	6°45	21°51	17°53
S 7	17 2 2	16°12'58	16°18	10°30	3° 7	7°29	18°56	11°40	14°56	6°45	21°51	17°54
S 8	17 5 58	17°10'18	17°14	14° 3	4°44	8° 5	19° 1	11°42	14°57	6°46	21°51	17°55
M 9	17 9 55	18° 7'38	18° 9	17°40	6°22	8°40	19° 6	11°44	14°58	6°46	21°52	17°56
T 10	17 13 52	19° 4'57	19° 5	21°23	7°59	9°16	19°11	11°46	14°58	6°46	21°52	17°57
W11	17 17 48	20° 2'16	20° 0	25°12	9°37	9°52	19°16	11°48	14°59	6°47	21°52	17°58
T 12	17 21 45	20°59'34	20°56	29° 8	11°14	10°27	19°21	11°50	15° 0	6°47	21°52	17°58
F 13	17 25 41	21°56'51	21°52	3♁10	12°51	11° 3	19°25	11°52	15° 0	6°47	21°52	17°59
S 14	17 29 38	22°54'07	22°48	7°20	14°29	11°39	19°30	11°54	15° 1	6°48	21°53	18° 0
S 15	17 33 34	23°51'23	23°44	11°37	16° 6	12°15	19°35	11°56	15° 2	6°48	21°53	18° 1
M16	17 37 31	24°48'38	24°40	16° 2	17°44	12°51	19°40	11°58	15° 2	6°48	21°53	18° 2
T 17	17 41 27	25°45'52	25°37	20°35	19°21	13°27	19°45	12° 0	15° 3	6°49	21°53	18° 3
W18	17 45 24	26°43'06	26°34	25°17	20°58	14° 3	19°50	12° 2	15° 4	6°49	21°53	18° 3
T 19	17 49 21	27°40'19	27°31	0♁7	22°35	14°39	19°54	12° 4	15° 4	6°50	21°54	18° 4
F 20	17 53 17	28°37'32	28°29	5° 7	24°13	15°15	19°59	12° 6	15° 5	6°50	21°54	18° 5
S 21	17 57 14	29°34'44	29°27	10°15	25°50	15°52	20° 4	12° 8	15° 6	6°50	21°54	18° 6
S 22	18 1 10	0♁31'55	0♁26	15°33	27°27	16°28	20° 9	12°10	15° 6	6°51	21°54	18° 7
M23	18 5 7	1°29'06	1°25	21° 0	29° 4	17° 4	20°14	12°12	15° 7	6°51	21°55	18° 8
T 24	18 9 3	2°26'17	2°23	26°35	0♁41	17°41	20°19	12°14	15° 8	6°51	21°55	18° 8
W25	18 13 0	3°23'27	3°23	2♁19	2°18	18°17	20°24	12°16	15° 8	6°52	21°55	18° 9
T 26	18 16 56	4°20'38	4°22	8°11	3°55	18°53	20°28	12°18	15° 9	6°52	21°55	18°10
F 27	18 20 53	5°17'48	5°21	14°10	5°32	19°30	20°33	12°20	15°10	6°52	21°55	18°11
S 28	18 24 50	6°14'58	6°20	20°16	7° 9	20° 6	20°38	12°22	15°10	6°53	21°56	18°12
S 29	18 28 46	7°12'09	7°18	26°27	8°46	20°43	20°43	12°24	15°11	6°53	21°56	18°13
M30	18 32 43	8♁ 9'19	8♁17	2II42	10♁23	21♁20	20♁48	12♁26	15♁12	6♁54	21♁56	18♁13

Delta T = 9.69 sec.

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SWISS EPHEMERIS for the year 1687  
heliocentric

JULY 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
T 1	18 36 39	9♁ 6'30	9♁15	9♁ 0	12♁ 0	21♁56	20♁53	12♁27	15♁12	6♁54	21♁56	18♁14
W 2	18 40 36	10° 3'41	10°12	15°19	13°37	22°33	20°57	12°29	15°13	6°54	21°57	18°15
T 3	18 44 32	11° 0'52	11° 9	21°38	15°13	23°10	21° 2	12°31	15°14	6°55	21°57	18°16
F 4	18 48 29	11°58'04	12° 6	27°55	16°50	23°47	21° 7	12°33	15°15	6°55	21°57	18°17
S 5	18 52 26	12°55'17	13° 2	4♁ 9	18°27	24°23	21°12	12°35	15°15	6°55	21°57	18°18
S 6	18 56 22	13°52'30	13°58	10°18	20° 3	25° 0	21°17	12°37	15°16	6°56	21°57	18°19
M 7	19 0 19	14°49'43	14°54	16°22	21°40	25°37	21°22	12°39	15°17	6°56	21°58	18°19
T 8	19 4 15	15°46'57	15°50	22°19	23°16	26°14	21°27	12°41	15°17	6°56	21°58	18°20
W 9	19 8 12	16°44'11	16°45	28° 8	24°53	26°51	21°31	12°43	15°18	6°57	21°58	18°21
T 10	19 12 8	17°41'25	17°41	3♁48	26°29	27°28	21°36	12°45	15°19	6°57	21°58	18°22
F 11	19 16 5	18°38'40	18°36	9°20	28° 6	28° 5	21°41	12°47	15°19	6°58	21°58	18°23
S 12	19 20 1	19°35'55	19°32	14°42	29°42	28°42	21°46	12°49	15°20	6°58	21°59	18°24
S 13	19 23 58	20°33'10	20°28	19°54	1♁.18	29°20	21°51	12°51	15°21	6°58	21°59	18°24
M14	19 27 55	21°30'26	21°24	24°57	2°54	29°57	21°56	12°53	15°21	6°59	21°59	18°25
T 15	19 31 51	22°27'41	22°20	29°50	4°31	0♁34	22° 1	12°55	15°22	6°59	21°59	18°26
W16	19 35 48	23°24'57	23°16	4♁33	6° 7	1°11	22° 5	12°57	15°23	6°59	22° 0	18°27
T 17	19 39 44	24°22'13	24°13	9° 8	7°43	1°48	22°10	12°59	15°23	7° 0	22° 0	18°28
F 18	19 43 41	25°19'30	25°11	13°34	9°19	2°26	22°15	13° 1	15°24	7° 0	22° 0	18°29
S 19	19 47 37	26°16'47	26° 8	17°51	10°55	3° 3	22°20	13° 3	15°25	7° 0	22° 0	18°29
S 20	19 51 34	27°14'04	27° 6	22° 1	12°31	3°40	22°25	13° 5	15°25	7° 1	22° 0	18°30
M21	19 55 30	28°11'22	28° 5	26° 2	14° 7	4°18	22°30	13° 7	15°26	7° 1	22° 1	18°31
T 22	19 59 27	29° 8'40	29° 4	29°57	15°43	4°55	22°35	13° 9	15°27	7° 2	22° 1	18°32
W23	20 3 24	0♁ 5'59	0♁ 3	3♁45	17°19	5°33	22°39	13°11	15°27	7° 2	22° 1	18°33
T 24	20 7 20	1° 3'19	1° 2	7°26	18°54	6°10	22°44	13°13	15°28	7° 2	22° 1	18°34
F 25	20 11 17	2° 0'39	2° 1	11° 2	20°30	6°48	22°49	13°15	15°29	7° 3	22° 2	18°35
S 26	20 15 13	2°58'00	3° 0	14°32	22° 6	7°25	22°54	13°17	15°29	7° 3	22° 2	18°35
S 27	20 19 10	3°55'21	4° 0	17°57	23°41	8° 3	22°59	13°19	15°30	7° 3	22° 2	18°36
M28	20 23 6	4°52'44	4°59	21°18	25°17	8°41	23° 4	13°21	15°31	7° 4	22° 2	18°37
T 29	20 27 3	5°50'08	5°57	24°34	26°53	9°18	23° 9	13°23	15°31	7° 4	22° 2	18°38
W30	20 30 59	6°47'33	6°56	27°46	28°28	9°56	23°13	13°25	15°32	7° 4	22° 3	18°39
T 31	20 34 56	7♁45'00	7♁54	0♁54	0♁ 4	10♁34	23♁18	13♁26	15♁33	7♁ 5	22♁ 3	18♁40

Delta T = 9.70 sec. Greg. Calendar

AUGUST 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
F 1	20 38 53	8♁42'27	8♁51	3♁59	1♁39	11♁11	23♁23	13♁28	15♁33	7♁ 5	22♁ 3	18♁40
S 2	20 42 49	9°39'56	9°48	7° 1	3°14	11°49	23°28	13°30	15°34	7° 6	22° 3	18°41
S 3	20 46 46	10°37'27	10°45	10° 0	4°50	12°27	23°33	13°32	15°35	7° 6	22° 3	18°42
M 4	20 50 42	11°34'59	11°42	12°56	6°25	13° 5	23°38	13°34	15°35	7° 6	22° 4	18°43
T 5	20 54 39	12°32'32	12°38	15°51	8° 1	13°42	23°43	13°36	15°36	7° 7	22° 4	18°44
W 6	20 58 35	13°30'06	13°34	18°43	9°36	14°20	23°48	13°38	15°37	7° 7	22° 4	18°45
T 7	21 2 32	14°27'41	14°30	21°34	11°11	14°58	23°52	13°40	15°37	7° 7	22° 4	18°46
F 8	21 6 28	15°25'18	15°26	24°23	12°46	15°36	23°57	13°42	15°38	7° 8	22° 5	18°46
S 9	21 10 25	16°22'56	16°22	27°11	14°21	16°14	24° 2	13°44	15°39	7° 8	22° 5	18°47
S 10	21 14 22	17°20'35	17°17	29°57	15°57	16°52	24° 7	13°46	15°40	7° 8	22° 5	18°48
M11	21 18 18	18°18'16	18°14	2♁43	17°32	17°30	24°12	13°48	15°40	7° 9	22° 5	18°49
T 12	21 22 15	19°15'57	19°10	5°29	19° 7	18° 8	24°17	13°50	15°41	7° 9	22° 5	18°50
W13	21 26 11	20°13'39	20° 6	8°14	20°42	18°45	24°22	13°52	15°42	7°10	22° 6	18°51
T 14	21 30 8	21°11'23	21° 3	10°58	22°17	19°23	24°27	13°54	15°42	7°10	22° 6	18°51
F 15	21 34 4	22° 9'08	22° 0	13°43	23°52	20° 1	24°31	13°56	15°43	7°10	22° 6	18°52
S 16	21 38 1	23° 6'54	22°58	16°28	25°27	20°39	24°36	13°58	15°44	7°11	22° 6	18°53
S 17	21 41 57	24° 4'41	23°56	19°13	27° 2	21°17	24°41	14° 0	15°44	7°11	22° 7	18°54
M18	21 45 54	25° 2'30	24°54	21°59	28°37	21°55	24°46	14° 2	15°45	7°11	22° 7	18°55
T 19	21 49 51	26° 0'19	25°53	24°45	0♁12	22°33	24°51	14° 4	15°46	7°12	22° 7	18°56
W20	21 53 47	26°58'10	26°53	27°33	1°47	23°11	24°56	14° 6	15°46	7°12	22° 7	18°57
T 21	21 57 44	27°56'02	27°52	0♁22	3°22	23°49	25° 1	14° 8	15°47	7°13	22° 7	18°57
F 22	22 1 40	28°53'56	28°52	3°12	4°57	24°28	25° 6	14°10	15°48	7°13	22° 8	18°58
S 23	22 5 37	29°51'50	29°52	6° 4	6°31	25° 6	25°10	14°12	15°48	7°13	22° 8	18°59
S 24	22 9 33	0♁49'47	0♁52	8°58	8° 6	25°44	25°15	14°14	15°49	7°14	22° 8	19° 0
M25	22 13 30	1°47'45	1°52	11°54	9°41	26°22	25°20	14°16	15°50	7°14	22° 8	19° 1
T 26	22 17 26	2°45'44	2°51	14°53	11°16	27° 0	25°25	14°18	15°50	7°14	22° 8	19° 2
W27	22 21 23	3°43'46	3°51	17°54	12°51	27°38	25°30	14°19	15°51	7°15	22° 9	19° 2
T 28	22 25 20	4°41'50	4°50	20°58	14°26	28°16	25°35	14°21	15°52	7°15	22° 9	19° 3
F 29	22 29 16	5°39'55	5°48	24° 5	16° 0	28°54	25°40	14°23	15°52	7°15	22° 9	19° 4
S 30	22 33 13	6°38'03	6°47	27°15	17°35	29°32	25°45	14°25	15°53	7°16	22° 9	19° 5
S 31	22 37 9	7♁36'13	7♁45	0♁29	19♁10	0♁10	25♁50	14♁27	15♁54	7♁16	22♁10	19♁ 6

Delta T = 9.71 sec. Greg. Calendar created from Swiss Ephemeris, Copyright Astrodienst AG [13.11.2015]

SWISS EPHEMERIS for the year 1687  
heliocentric

SEPTEMBER 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
M 1	22 41 6	8°34'24	8°43	3°47	20°45	0°48	25°54	14°29	15°54	7°16	22°10	19° 7
T 2	22 45 2	9°32'38	9°40	7°10	22°20	1°26	25°59	14°31	15°55	7°17	22°10	19° 8
W 3	22 48 59	10°30'54	10°37	10°37	23°55	2° 4	26° 4	14°33	15°56	7°17	22°10	19° 8
T 4	22 52 55	11°29'11	11°34	14° 9	25°29	2°42	26° 9	14°35	15°56	7°18	22°10	19° 9
F 5	22 56 52	12°27'31	12°31	17°47	27° 4	3°21	26°14	14°37	15°57	7°18	22°11	19°10
S 6	23 0 49	13°25'52	13°27	21°30	28°39	3°59	26°19	14°39	15°58	7°18	22°11	19°11
S 7	23 4 45	14°24'15	14°24	25°19	0°14	4°37	26°24	14°41	15°58	7°19	22°11	19°12
M 8	23 8 42	15°22'40	15°21	29°15	1°49	5°15	26°29	14°43	15°59	7°19	22°11	19°13
T 9	23 12 38	16°21'07	16°17	3°18	3°23	5°53	26°34	14°45	16° 0	7°19	22°12	19°13
W10	23 16 35	17°19'35	17°14	7°27	4°58	6°31	26°38	14°47	16° 0	7°20	22°12	19°14
T 11	23 20 31	18°18'06	18°12	11°45	6°33	7° 9	26°43	14°49	16° 1	7°20	22°12	19°15
F 12	23 24 28	19°16'38	19° 9	16°10	8° 8	7°47	26°48	14°51	16° 2	7°20	22°12	19°16
S 13	23 28 24	20°15'12	20° 7	20°43	9°43	8°25	26°53	14°53	16° 2	7°21	22°12	19°17
S 14	23 32 21	21°13'47	21° 5	25°25	11°18	9° 3	26°58	14°55	16° 3	7°21	22°13	19°18
M15	23 36 18	22°12'25	22° 4	0°16	12°53	9°41	27° 3	14°57	16° 4	7°22	22°13	19°19
T 16	23 40 14	23°11'04	23° 3	5°16	14°28	10°19	27° 8	14°59	16° 4	7°22	22°13	19°19
W17	23 44 11	24° 9'44	24° 2	10°25	16° 2	10°57	27°13	15° 1	16° 5	7°22	22°13	19°20
T 18	23 48 7	25° 8'27	25° 2	15°43	17°37	11°35	27°18	15° 3	16° 6	7°23	22°13	19°21
F 19	23 52 4	26° 7'11	26° 3	21°10	19°12	12°13	27°22	15° 5	16° 7	7°23	22°14	19°22
S 20	23 56 0	27° 5'56	27° 3	26°46	20°47	12°51	27°27	15° 7	16° 7	7°23	22°14	19°23
S 21	23 59 57	28° 4'44	28° 4	2°30	22°22	13°29	27°32	15° 8	16° 8	7°24	22°14	19°24
M22	0 3 53	29° 3'33	29° 5	8°22	23°57	14° 6	27°37	15°10	16° 9	7°24	22°14	19°25
T 23	0 7 50	0°16'25	0°16	14°22	25°32	14°44	27°42	15°12	16° 9	7°24	22°15	19°25
W24	0 11 46	1° 1'19	1° 6	20°27	27° 7	15°22	27°47	15°14	16°10	7°25	22°15	19°26
T 25	0 15 43	2° 0'15	2° 7	26°38	28°42	16° 0	27°52	15°16	16°11	7°25	22°15	19°27
F 26	0 19 40	2°59'13	3° 7	2°53	0°17	16°38	27°57	15°18	16°11	7°26	22°15	19°28
S 27	0 23 36	3°58'14	4° 7	9°11	1°52	17°16	28° 2	15°20	16°12	7°26	22°15	19°29
S 28	0 27 33	4°57'17	5° 6	15°30	3°27	17°53	28° 7	15°22	16°13	7°26	22°16	19°30
M29	0 31 29	5°56'22	6° 5	21°49	5° 3	18°31	28°12	15°24	16°13	7°27	22°16	19°31
T 30	0 35 26	6°55'30	7°14	28°11	6°38	19°11	28°16	15°26	16°14	7°27	22°16	19°31

Delta T = 9.71 sec.

Greg. Calendar

OCTOBER 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♂
W 1	0 39 22	7°54'40	8°13	4°20	8°13	19°47	28°21	15°28	16°15	7°27	22°16	19°32
T 2	0 43 19	8°53'52	9° 1	10°30	9°48	20°24	28°26	15°30	16°15	7°28	22°17	19°33
F 3	0 47 16	9°53'07	9°59	16°33	11°23	21° 2	28°31	15°32	16°16	7°28	22°17	19°34
S 4	0 51 12	10°52'23	10°57	22°30	12°58	21°40	28°36	15°34	16°17	7°28	22°17	19°35
S 5	0 55 9	11°51'42	11°54	28°18	14°34	22°17	28°41	15°36	16°17	7°29	22°17	19°36
M 6	0 59 5	12°51'03	12°52	3°59	16° 9	22°55	28°46	15°38	16°18	7°29	22°17	19°37
T 7	1 3 2	13°50'26	13°50	9°30	17°44	23°32	28°51	15°40	16°19	7°30	22°18	19°37
W 8	1 6 58	14°49'51	14°47	14°51	19°19	24°10	28°56	15°42	16°19	7°30	22°18	19°38
T 9	1 10 55	15°49'18	15°45	20° 3	20°55	24°47	29° 1	15°44	16°20	7°30	22°18	19°39
F 10	1 14 51	16°48'47	16°43	25° 6	22°30	25°25	29° 6	15°46	16°21	7°31	22°18	19°40
S 11	1 18 48	17°48'18	17°41	29°58	24° 5	26° 2	29°10	15°48	16°21	7°31	22°18	19°41
S 12	1 22 44	18°47'51	18°40	4°42	25°41	26°40	29°15	15°50	16°22	7°31	22°19	19°42
M13	1 26 41	19°47'26	19°39	9°16	27°16	27°17	29°20	15°52	16°23	7°32	22°19	19°42
T 14	1 30 38	20°47'02	20°38	13°42	28°52	27°54	29°25	15°53	16°23	7°32	22°19	19°43
W15	1 34 34	21°46'40	21°38	17°59	0°27	28°32	29°30	15°55	16°24	7°32	22°19	19°44
T 16	1 38 31	22°46'20	22°39	22° 8	2° 3	29° 9	29°35	15°57	16°25	7°33	22°20	19°45
F 17	1 42 27	23°46'02	23°39	26°10	3°38	29°46	29°40	15°59	16°25	7°33	22°20	19°46
S 18	1 46 24	24°45'45	24°41	0°4	5°14	0°23	29°45	16° 1	16°26	7°34	22°20	19°47
S 19	1 50 20	25°45'30	25°42	3°52	6°49	1° 1	29°50	16° 3	16°27	7°34	22°20	19°48
M20	1 54 17	26°45'16	26°44	7°33	8°25	1°38	29°55	16° 5	16°27	7°34	22°20	19°48
T 21	1 58 13	27°45'05	27°46	11° 9	10° 1	2°15	29°59	16° 7	16°28	7°35	22°21	19°49
W22	2 2 10	28°44'56	28°47	14°39	11°36	2°52	0° 5	16° 9	16°29	7°35	22°21	19°50
T 23	2 6 7	29°44'48	29°49	18° 4	13°12	3°29	0° 9	16°11	16°29	7°35	22°21	19°51
F 24	2 10 3	0°44'43	0°51	21°24	14°48	4° 6	0°14	16°13	16°30	7°36	22°21	19°52
S 25	2 14 0	1°44'40	1°52	24°40	16°23	4°43	0°19	16°15	16°31	7°36	22°21	19°53
S 26	2 17 56	2°44'40	2°53	27°52	17°59	5°20	0°24	16°17	16°32	7°36	22°22	19°54
M27	2 21 53	3°44'41	3°54	1°11	0	19°35	5°57	0°29	16°19	7°37	22°22	19°54
T 28	2 25 49	4°44'45	4°54	4° 5	21°11	6°34	0°34	16°21	16°33	7°37	22°22	19°55
W29	2 29 46	5°44'50	5°54	7° 6	22°46	7°10	0°39	16°23	16°34	7°38	22°22	19°56
T 30	2 33 42	6°44'58	6°54	10° 5	24°22	7°47	0°44	16°25	16°34	7°38	22°23	19°57
F 31	2 37 39	7°45'08	7°53	13°11	2	25°58	8°24	0°49	16°27	7°38	22°23	19°58

Delta T = 9.72 sec.

Greg. Calendar

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SWISS EPHEMERIS for the year 1687  
heliocentric

NOVEMBER 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♁
S 1	2 41 36	8♃45'20	8♃52	15♁56	27♃34	9♃ 1	0♃54	16♁29	16♃36	7♃39	22♁23	19♃59
S 2	2 45 32	9°45'33	9°51	18°49	29°10	9°37	0°59	16°31	16°36	7°39	22°23	20° 0
M 3	2 49 29	10°45'49	10°50	21°39	0♃46	10°14	1° 4	16°33	16°37	7°39	22°23	20° 0
T 4	2 53 25	11°46'07	11°48	24°28	2°22	10°50	1° 9	16°34	16°38	7°40	22°24	20° 1
W 5	2 57 22	12°46'26	12°47	27°16	3°58	11°27	1°14	16°36	16°38	7°40	22°24	20° 2
T 6	3 1 18	13°46'48	13°45	0♃ 3	5°34	12° 3	1°18	16°38	16°39	7°40	22°24	20° 3
F 7	3 5 15	14°47'11	14°44	2°49	7°10	12°40	1°23	16°40	16°40	7°41	22°24	20° 4
S 8	3 9 11	15°47'35	15°43	5°34	8°46	13°16	1°28	16°42	16°40	7°41	22°25	20° 5
S 9	3 13 8	16°48'02	16°42	8°19	10°22	13°52	1°33	16°44	16°41	7°42	22°25	20° 6
M10	3 17 5	17°48'29	17°41	11° 3	11°58	14°29	1°38	16°46	16°42	7°42	22°25	20° 7
T 11	3 21 1	18°48'58	18°41	13°48	13°35	15° 5	1°43	16°48	16°42	7°42	22°25	20° 7
W12	3 24 58	19°49'28	19°41	16°33	15°11	15°41	1°48	16°50	16°43	7°43	22°25	20° 8
T 13	3 28 54	20°50'00	20°41	19°18	16°47	16°17	1°53	16°52	16°44	7°43	22°26	20° 9
F 14	3 32 51	21°50'33	21°43	22° 4	18°23	16°53	1°58	16°54	16°44	7°43	22°26	20°10
S 15	3 36 47	22°51'06	22°44	24°51	20° 0	17°29	2° 3	16°56	16°45	7°44	22°26	20°11
S 16	3 40 44	23°51'42	23°46	27°38	21°36	18° 5	2° 8	16°58	16°46	7°44	22°26	20°12
M17	3 44 40	24°52'18	24°48	0♃27	23°12	18°41	2°13	17° 0	16°46	7°45	22°27	20°13
T 18	3 48 37	25°52'56	25°50	3°18	24°49	19°17	2°18	17° 2	16°47	7°45	22°27	20°13
W19	3 52 34	26°53'35	26°53	6°10	26°25	19°53	2°23	17° 4	16°48	7°45	22°27	20°14
T 20	3 56 30	27°54'15	27°56	9° 4	28° 2	20°29	2°28	17° 6	16°48	7°46	22°27	20°15
F 21	4 0 27	28°54'57	28°58	12° 0	29°38	21° 4	2°33	17° 8	16°49	7°46	22°27	20°16
S 22	4 4 23	29°55'41	0♁ 1	14°58	1♁15	21°40	2°37	17°10	16°50	7°46	22°28	20°17
S 23	4 8 20	0♁56'25	1° 3	17°59	2°51	22°16	2°42	17°12	16°50	7°47	22°28	20°18
M24	4 12 16	1°57'12	2° 5	21° 3	4°28	22°51	2°47	17°14	16°51	7°47	22°28	20°19
T 25	4 16 13	2°58'00	3° 7	24°11	6° 4	23°27	2°52	17°15	16°52	7°47	22°28	20°19
W26	4 20 10	3°58'49	4° 8	27°21	7°41	24° 2	2°57	17°17	16°52	7°48	22°28	20°20
T 27	4 24 6	4°59'39	5° 9	0♁35	9°18	24°38	3° 2	17°19	16°53	7°48	22°29	20°21
F 28	4 28 3	6° 0'31	6°10	3°54	10°54	25°13	3° 7	17°21	16°54	7°49	22°29	20°22
S 29	4 31 59	7° 1'25	7°10	7°16	12°31	25°48	3°12	17°23	16°55	7°49	22°29	20°23
S 30	4 35 56	8♁ 2'20	8♁10	10♁44	14♁ 8	26♃24	3♃17	17♁25	16♃55	7♃49	22♁29	20♃24

Delta T = 9.72 sec.

Greg. Calendar

DECEMBER 1687 GC

00:00 UT

Day	Sid.t	Terra	☾	♃	♄	♅	♆	♁	♂	♆	♁	♁
M 1	4 39 52	9♁ 3'16	9♁10	14♁16	15♁45	26♃59	3♃22	17♁27	16♃56	7♃50	22♁30	20♃25
T 2	4 43 49	10° 4'13	10° 9	17°54	17°21	27°34	3°27	17°29	16°57	7°50	22°30	20°26
W 3	4 47 45	11° 5'11	11° 9	21°37	18°58	28° 9	3°32	17°31	16°57	7°50	22°30	20°26
T 4	4 51 42	12° 6'11	12° 8	25°27	20°35	28°44	3°37	17°33	16°58	7°51	22°30	20°27
F 5	4 55 38	13° 7'12	13° 7	29°23	22°12	29°19	3°42	17°35	16°59	7°51	22°30	20°28
S 6	4 59 35	14° 8'13	14° 6	3♃25	23°49	29°54	3°47	17°37	16°59	7°51	22°31	20°29
S 7	5 3 32	15° 9'16	15° 5	7°35	25°26	0♃29	3°52	17°39	17° 0	7°52	22°31	20°30
M 8	5 7 28	16°10'19	16° 5	11°53	27° 3	1° 4	3°57	17°41	17° 1	7°52	22°31	20°31
T 9	5 11 25	17°11'23	17° 4	16°18	28°40	1°39	4° 2	17°43	17° 1	7°53	22°31	20°32
W10	5 15 21	18°12'27	18° 5	20°52	0♃17	2°13	4° 7	17°45	17° 2	7°53	22°32	20°32
T 11	5 19 18	19°13'31	19° 5	25°34	1°54	2°48	4°12	17°47	17° 3	7°53	22°32	20°33
F 12	5 23 14	20°14'36	20° 6	0♃25	3°31	3°23	4°16	17°49	17° 3	7°54	22°32	20°34
S 13	5 27 11	21°15'41	21° 7	5°25	5° 8	3°57	4°21	17°51	17° 4	7°54	22°32	20°35
S 14	5 31 8	22°16'46	22° 9	10°35	6°46	4°32	4°26	17°53	17° 5	7°54	22°32	20°36
M15	5 35 4	23°17'52	23°11	15°53	8°23	5° 6	4°31	17°54	17° 5	7°55	22°33	20°37
T 16	5 39 1	24°18'58	24°14	21°20	10° 0	5°40	4°36	17°56	17° 6	7°55	22°33	20°38
W17	5 42 57	25°20'05	25°17	26°56	11°37	6°15	4°41	17°58	17° 7	7°55	22°33	20°39
T 18	5 46 54	26°21'12	26°20	2♃41	13°14	6°49	4°46	18° 0	17° 7	7°56	22°33	20°39
F 19	5 50 50	27°22'19	27°23	8°33	14°52	7°23	4°51	18° 2	17° 8	7°56	22°34	20°40
S 20	5 54 47	28°23'27	28°26	14°33	16°29	7°57	4°56	18° 4	17° 9	7°57	22°34	20°41
S 21	5 58 43	29°24'35	29°28	20°39	18° 6	8°32	5° 1	18° 6	17° 9	7°57	22°34	20°42
M22	6 2 40	0♃25'43	0♃31	26°50	19°44	9° 6	5° 6	18° 8	17°10	7°57	22°34	20°43
T 23	6 6 37	1°26'52	1°34	3♁ 5	21°21	9°40	5°11	18°10	17°11	7°58	22°34	20°44
W24	6 10 33	2°28'01	2°36	9°23	22°58	10°14	5°16	18°12	17°11	7°58	22°35	20°45
T 25	6 14 30	3°29'11	3°38	15°42	24°36	10°47	5°21	18°14	17°12	7°58	22°35	20°45
F 26	6 18 26	4°30'21	4°40	22° 1	26°13	11°21	5°26	18°16	17°13	7°59	22°35	20°46
S 27	6 22 23	5°31'31	5°41	28°18	27°51	11°55	5°31	18°18	17°13	7°59	22°35	20°47
S 28	6 26 19	6°32'42	6°42	4♃32	29°28	12°29	5°36	18°20	17°14	7°59	22°35	20°48
M29	6 30 16	7°33'53	7°42	10°41	1♁ 6	13° 2	5°41	18°22	17°15	8° 0	22°36	20°49
T 30	6 34 12	8°35'04	8°43	16°44	2°43	13°36	5°46	18°24	17°16	8° 0	22°36	20°50
W31	6 38 9	9♃36'16	9♃42	22♃41	4♁21	14♃10	5♃51	18♁26	17♃16	8♃ 1	22♁36	20♃51

Delta T = 9.71 sec.

Greg. Calendar

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