



# Astrodienst Ephemeris Tables for the year 1687

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 D5EPX

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

JANUARY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	6 43 3	10°52'30	5°23'39	29°30'30	2°34'46	15°18'28	11°35'35	12°22'22	10°R41	4°17'17	21°R33	0°R20	28°B46	7°28'28	12°R41	W 1
T 2	6 46 59	11°53'39	17°30'22	29°58'00	4°2'2	16°6'6	11°48'48	12°25'25	10°B40	4°19'19	21°B32	0°II12	28°43'43	7°35'35	12°B40	T 2
F 3	6 50 56	12°54'48	29°22'00	0°17'17	5°17'17	16°44'44	12°0'0	12°27'27	10°40'40	4°20'20	21°31'31	0°4'4	28°39'39	7°41'41	12°38'38	F 3
S 4	6 54 52	13°55'57	11°17'17	0°R26	6°33'33	17°23'23	12°13'13	12°28'28	10°39'39	4°22'22	21°29'29	29°B58	28°36'36	7°48'48	12°37'37	S 4
S 5	6 58 49	14°57'06	23°18'18	0°23'23	7°48'48	18°1'1	12°25'25	12°30'30	10°38'38	4°24'24	21°28'28	29°53'53	28°33'33	7°55'55	12°36'36	S 5
M 6	7 2 45	15°58'15	5°23'30	0°8'8	9°4'4	18°39'39	12°38'38	12°32'32	10°37'37	4°25'25	21°27'27	29°51'51	28°30'30	8°1'1	12°35'35	M 6
T 7	7 6 42	16°59'24	17°56'56	29°34'42	10°19'19	19°17'17	12°50'50	12°33'33	10°37'37	4°27'27	21°25'25	29°D50	28°27'27	8°8'8	12°34'34	T 7
W 8	7 10 39	18°0'32	0°11'42	29°4'4	11°35'35	19°55'55	13°2'2	12°35'35	10°36'36	4°29'29	21°24'24	29°51'51	28°23'23	8°15'15	12°33'33	W 8
T 9	7 14 35	19°1'41	13°52'52	28°15'15	12°50'50	20°33'33	13°14'14	12°36'36	10°36'36	4°30'30	21°23'23	29°52'52	28°20'20	8°22'22	12°33'33	T 9
F 10	7 18 32	20°2'50	27°29'29	27°16'16	14°5'5	21°11'11	13°27'27	12°38'38	10°35'35	4°32'32	21°21'21	29°R53	28°17'17	8°28'28	12°32'32	F 10
S 11	7 22 28	21°3'58	11°17'35	26°10'10	15°21'21	21°49'49	13°39'39	12°39'39	10°35'35	4°34'34	21°20'20	29°52'52	28°14'14	8°35'35	12°31'31	S 11
S 12	7 26 25	22°5'06	26°9'9	24°57'57	16°36'36	22°28'28	13°51'51	12°40'40	10°35'35	4°36'36	21°19'19	29°49'49	28°11'11	8°42'42	12°31'31	S 12
M13	7 30 21	23°6'14	11°17'30	23°40'40	17°52'52	23°6'6	14°3'3	12°41'41	10°34'34	4°37'37	21°17'17	29°44'44	28°8'8	8°48'48	12°30'30	M13
T14	7 34 18	24°7'22	26°19'19	22°22'22	19°7'7	23°44'44	14°14'14	12°42'42	10°34'34	4°39'39	21°16'16	29°37'37	28°4'4	8°55'55	12°30'30	T14
W15	7 38 15	25°8'28	11°18'38	21°5'5	20°23'23	24°22'22	14°26'26	12°42'42	10°34'34	4°41'41	21°15'15	29°28'28	28°1'1	9°2'2	12°29'29	W15
T16	7 42 11	26°9'34	26°50'50	19°51'51	21°38'38	25°0'0	14°38'38	12°43'43	10°34'34	4°43'43	21°13'13	29°19'19	27°58'58	9°9'9	12°29'29	T16
F17	7 46 8	27°10'39	11°18'45	18°42'42	22°53'53	25°38'38	14°50'50	12°43'43	10°34'34	4°45'45	21°12'12	29°11'11	27°55'55	9°15'15	12°29'29	F17
S18	7 50 4	28°11'43	26°17'17	17°40'40	24°9'9	26°16'16	15°1'1	12°44'44	10°D34	4°47'47	21°11'11	29°5'5	27°52'52	9°22'22	12°28'28	S18
S19	7 54 1	29°12'45	10°17'52	16°45'45	25°24'24	26°54'54	15°13'13	12°44'44	10°34'34	4°49'49	21°10'10	29°1'1	27°49'49	9°29'29	12°28'28	S19
M20	7 57 57	0°13'47	23°58'58	15°59'59	26°40'40	27°32'32	15°24'24	12°44'44	10°34'34	4°51'51	21°8'8	28°59'59	27°45'45	9°35'35	12°28'28	M20
T21	8 1 54	1°14'48	7°8'8	15°22'22	27°55'55	28°10'10	15°36'36	12°R44	10°34'34	4°52'52	21°7'7	28°D59	27°42'42	9°42'42	12°D28	T21
W22	8 5 50	2°15'47	19°56'56	14°55'55	29°10'10	28°48'48	15°47'47	12°44'44	10°34'34	4°54'54	21°6'6	29°0'0	27°39'39	9°49'49	12°28'28	W22
T23	8 9 47	3°16'46	2°11'25	14°36'36	0°26'26	29°26'26	15°58'58	12°44'44	10°34'34	4°56'56	21°4'4	29°R0'0	27°36'36	9°56'56	12°28'28	T23
F24	8 13 44	4°17'43	14°41'41	14°25'25	1°41'41	0°17'17	16°9'9	12°44'44	10°34'34	4°58'58	21°3'3	28°58'58	27°33'33	10°2'2	12°28'28	F24
S25	8 17 40	5°18'39	26°46'46	14°D23	2°56'56	0°41'41	16°20'20	12°44'44	10°35'35	5°1'1	21°2'2	28°55'55	27°29'29	10°9'9	12°29'29	S25
S26	8 21 37	6°19'34	8°24'45	14°29'29	4°12'12	1°19'19	16°31'31	12°43'43	10°35'35	5°3'3	21°1'1	28°48'48	27°26'26	10°16'16	12°29'29	S26
M27	8 25 33	7°20'27	20°40'40	14°41'41	5°27'27	1°57'57	16°42'42	12°43'43	10°36'36	5°5'5	20°59'59	28°39'39	27°23'23	10°22'22	12°29'29	M27
T28	8 29 30	8°21'20	2°21'32	15°1'1	6°42'42	2°35'35	16°53'53	12°42'42	10°36'36	5°7'7	20°58'58	28°27'27	27°20'20	10°29'29	12°30'30	T28
W29	8 33 26	9°22'11	14°24'24	15°26'26	7°58'58	3°13'13	17°3'3	12°41'41	10°37'37	5°9'9	20°57'57	28°13'13	27°17'17	10°36'36	12°30'30	W29
T30	8 37 23	10°23'01	26°17'17	15°57'57	9°13'13	3°51'51	17°14'14	12°40'40	10°37'37	5°11'11	20°56'56	27°59'59	27°14'14	10°43'43	12°31'31	T30
F31	8 41 19	11°23'50	8°17'13	16°33'33	10°28'28	4°17'17	17°24'24	12°39'39	10°B38	5°13'13	20°B54	27°B46	27°B10	10°49'49	12°B32	F31

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	lat
W 1	23s 2	23n25	4n41	20s35	0s18	23s39	0s12	15s44	0n48	21s38	0n35	2s40	2n26	14n41	0s23	10s43
T 2	22 57	20 23	5 1	20 14	0 2	23 40	0 14	15 55	0 48	21 40	0 35	2 40	2 26	14 41	0 23	10 42
F 3	22 51	16 31	5 8	19 53	0n14	23 39	0 17	16 7	0 47	21 41	0 35	2 41	2 26	14 41	0 23	10 42
S 4	22 45	12 0	5 2	19 34	0 32	23 38	0 19	16 18	0 47	21 43	0 35	2 41	2 27	14 41	0 23	10 41
S 5	22 38	7 0	4 43	19 17	0 50	23 37	0 22	16 29	0 46	21 45	0 35	2 42	2 27	14 40	0 23	10 40
M 6	22 31	1 39	4 11	19 2	1 9	23 34	0 24	16 40	0 46	21 46	0 35	2 42	2 27	14 40	0 23	10 40
T 7	22 24	3s52	3 26	18 49	1 28	23 31	0 26	16 51	0 45	21 48	0 35	2 42	2 27	14 40	0 23	10 39
W 8	22 16	9 23	2 31	18 38	1 47	23 27	0 28	17 2	0 45	21 50	0 35	2 43	2 28	14 40	0 23	10 39
T 9	22 8	14 40	1 25	18 30	2 5	23 22	0 31	17 12	0 44	21 51	0 35	2 43	2 28	14 40	0 23	10 38
F 10	21 59	19 25	0 13	18 24	2 23	23 17	0 33	17 23	0 44	21 53	0 35	2 43	2 28	14 40	0 23	10 37
S 11	21 50	23 15	1s 3	18 21	2 39	23 11	0 35	17 33	0 43	21 54	0 35	2 43	2 29	14 40	0 23	10 37
S 12	21 40	25 42	2 16	18 20	2 53	23 4	0 37	17 44	0 43	21 56	0 35	2 44	2 29	14 40	0 23	10 36
M13	21 30	26 23	3 22	18 21	3 6	22 56	0 39	17 54	0 42	21 57	0 35	2 44	2 29	14 39	0 23	10 35
T14	21 19	25 6	4 15	18 24	3 16	22 48	0 42	18 4	0 42	21 58	0 35	2 44	2 29	14 39	0 23	10 35
W15	21 9	21 58	4 50	18 29	3 23	22 39	0 44	18 14	0 41	22 0	0 35	2 44	2 30	14 39	0 23	10 34
T16	20 57	17 21	5 5	18 35	3 38	22 29	0 46	18 23	0 40	22 1	0 35	2 44	2 30	14 39	0 23	10 33
F17	20 46	11 45	4 58	18 42	3 31	22 19	0 48	18 33	0 41	22 3	0 35	2 44	2 30	14 39	0 23	10 33
S18	20 34	5 38	4 31	18 50	3 31	22 8	0 50	18 42	0 40	22 4	0 35	2 44	2 31	14 39	0 23	10 32
S19	20 21	0n36	3 49	18 59	3 29	21 56	0 52	18 52	0 39	22 5	0 35	2 43	2 31	14 39	0 23	10 31
M20	20 8	6 36	2 56	19 8	3 25	21 44	0 53	19 1	0 38	22 6	0 35	2 43	2 31	14 39	0 23	10 30
T21	19 55	12 7	1 54	19 18	3 19	21 31	0 55	19 10	0 38	22 8	0 35	2 43	2 31	14 40	0 23	10 30
W22	19 41	16 59	0 48	19 27	3 12	21 17	0 57	19 19	0 37	22 9	0 35	2 43	2 32	14 40	0 23	10 29
T23	19 27	20 59	0n18	19 37	3 4	21 3	0 59	19 28	0 37	22 10	0 34	2 42	2 32	14 40	0 23	10 28
F24	19 13	23 58	1 23	19 47	2 55	20 48	1 1	19 37	0 36	22 11	0 34	2 42	2 32	14 40	0 23	10 27
S25	18 58	25 48	2 22	19 57	2 46	20 33	1 2	19 45	0 35	22 12	0 34	2 42	2 33	14 40	0 22	10 27
S26	18 43	26 26	3 14	20 7	2 36	20 17	1 4	19 54	0 35	22 14	0 34	2 41	2 33	14 40	0 22	10 26
M27	18 28	25 49	3 58	20 16	2 25	20 0	1 5	20 2	0 34	22 15	0 34	2 41	2 33	14 40	0 22	10 25
T28	18 12	24 1	4 31	20 25	2 14	19 42	1 7	20 10	0 34	22 16	0 34	2 40	2 33	14 40	0 22	10 24
W29	17 56	21 11	4 52	20 33	2 3	19 25	1 8	20 18	0 33	22 17	0 34	2 40	2 34	14 41	0 22	10 24
T30	17 40	17 29	5 0	20 41	1 52	19 6	1 10	20 26	0 32	22 18	0 34	2 39	2 34	14 41	0 22	10 23
F31	17s23	13n 4	4n56	20s47	1n41	18s47	1s11	20s33	0n32	22s19	0n34	2s38	2n34	14n41	0s22	10s22

Julian Day Number = 2337224.5, Delta T = 19.88 sec  
Ecliptic obliquity = 23°28'52, Nutation = - 0°00'14, out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 20°22'16, Lahiri = 19°29'17Greg. Calendar

# ASTRODIENST EPHEMERIS for the year 1687

## geocentric

FEBRUARY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	8 45 16	12 <sup>22</sup> 43'38	20 <sup>11</sup> 12	17 <sup>3</sup> 14	11 <sup>22</sup> 44	5 <sup>27</sup> 6	17 <sup>27</sup> 35	12 <sup>2</sup> R38	10 <sup>8</sup> 39	5 <sup>11</sup> 15	20 <sup>2</sup> R53	27 <sup>2</sup> R34	27 <sup>8</sup> 7	10 <sup>2</sup> 56	12 <sup>8</sup> 32	S 1
S 2	8 49 13	13 <sup>25</sup> 25	2 <sup>2</sup> 17	17 <sup>59</sup>	12 <sup>59</sup>	5 <sup>44</sup>	17 <sup>45</sup>	12 <sup>2</sup> 37	10 <sup>39</sup>	5 <sup>17</sup>	20 <sup>2</sup> 52	27 <sup>8</sup> 25	27 <sup>2</sup> 4	11 <sup>2</sup> 3	12 <sup>2</sup> 33	S 2
M 3	8 53 9	14 <sup>26</sup> 11	14 <sup>30</sup>	18 <sup>47</sup>	14 <sup>14</sup>	6 <sup>22</sup>	17 <sup>55</sup>	12 <sup>36</sup>	10 <sup>40</sup>	5 <sup>19</sup>	20 <sup>51</sup>	27 <sup>18</sup>	27 <sup>1</sup>	11 <sup>10</sup>	12 <sup>34</sup>	M 3
T 4	8 57 6	15 <sup>26</sup> 56	26 <sup>56</sup>	19 <sup>40</sup>	15 <sup>29</sup>	7 <sup>2</sup> 0	18 <sup>5</sup>	12 <sup>34</sup>	10 <sup>41</sup>	5 <sup>22</sup>	20 <sup>50</sup>	27 <sup>15</sup>	26 <sup>58</sup>	11 <sup>16</sup>	12 <sup>35</sup>	T 4
W 5	9 1 2	16 <sup>27</sup> 39	9 <sup>11</sup> 38	20 <sup>35</sup>	16 <sup>45</sup>	7 <sup>37</sup>	18 <sup>15</sup>	12 <sup>33</sup>	10 <sup>42</sup>	5 <sup>24</sup>	20 <sup>48</sup>	27 <sup>14</sup>	26 <sup>55</sup>	11 <sup>23</sup>	12 <sup>36</sup>	W 5
T 6	9 4 59	17 <sup>28</sup> 22	22 <sup>40</sup>	21 <sup>34</sup>	18 <sup>2</sup> 0	8 <sup>15</sup>	18 <sup>25</sup>	12 <sup>31</sup>	10 <sup>43</sup>	5 <sup>26</sup>	20 <sup>47</sup>	27 <sup>13</sup>	26 <sup>51</sup>	11 <sup>30</sup>	12 <sup>37</sup>	T 6
F 7	9 8 55	18 <sup>29</sup> 04	6 <sup>27</sup> 7	22 <sup>35</sup>	19 <sup>15</sup>	8 <sup>53</sup>	18 <sup>35</sup>	12 <sup>30</sup>	10 <sup>44</sup>	5 <sup>28</sup>	20 <sup>46</sup>	27 <sup>13</sup>	26 <sup>48</sup>	11 <sup>36</sup>	12 <sup>38</sup>	F 7
S 8	9 12 52	19 <sup>29</sup> 45	20 <sup>2</sup> 1	23 <sup>39</sup>	20 <sup>30</sup>	9 <sup>30</sup>	18 <sup>45</sup>	12 <sup>28</sup>	10 <sup>45</sup>	5 <sup>30</sup>	20 <sup>45</sup>	27 <sup>12</sup>	26 <sup>45</sup>	11 <sup>43</sup>	12 <sup>39</sup>	S 8
S 9	9 16 48	20 <sup>30</sup> 24	4 <sup>3</sup> 23	24 <sup>45</sup>	21 <sup>45</sup>	10 <sup>2</sup> 8	18 <sup>54</sup>	12 <sup>26</sup>	10 <sup>46</sup>	5 <sup>33</sup>	20 <sup>44</sup>	27 <sup>2</sup> 8	26 <sup>42</sup>	11 <sup>50</sup>	12 <sup>40</sup>	S 9
M10	9 20 45	21 <sup>31</sup> 02	19 <sup>11</sup>	25 <sup>53</sup>	23 <sup>1</sup>	10 <sup>46</sup>	19 <sup>4</sup>	12 <sup>24</sup>	10 <sup>47</sup>	5 <sup>35</sup>	20 <sup>43</sup>	27 <sup>1</sup>	26 <sup>39</sup>	11 <sup>57</sup>	12 <sup>42</sup>	M10
T 11	9 24 42	22 <sup>31</sup> 39	4 <sup>2</sup> 19	27 <sup>2</sup> 4	24 <sup>16</sup>	11 <sup>23</sup>	19 <sup>13</sup>	12 <sup>22</sup>	10 <sup>48</sup>	5 <sup>37</sup>	20 <sup>42</sup>	26 <sup>52</sup>	26 <sup>35</sup>	12 <sup>2</sup> 3	12 <sup>43</sup>	T 11
W12	9 28 38	23 <sup>32</sup> 15	19 <sup>39</sup>	28 <sup>16</sup>	25 <sup>31</sup>	12 <sup>2</sup> 1	19 <sup>22</sup>	12 <sup>20</sup>	10 <sup>50</sup>	5 <sup>39</sup>	20 <sup>41</sup>	26 <sup>41</sup>	26 <sup>32</sup>	12 <sup>10</sup>	12 <sup>44</sup>	W12
T 13	9 32 35	24 <sup>32</sup> 49	4 <sup>1</sup> 57	29 <sup>30</sup>	26 <sup>46</sup>	12 <sup>39</sup>	19 <sup>31</sup>	12 <sup>17</sup>	10 <sup>51</sup>	5 <sup>41</sup>	20 <sup>39</sup>	26 <sup>29</sup>	26 <sup>29</sup>	12 <sup>17</sup>	12 <sup>46</sup>	T 13
F 14	9 36 31	25 <sup>33</sup> 21	20 <sup>4</sup>	0 <sup>2</sup> 46	28 <sup>1</sup>	13 <sup>16</sup>	19 <sup>40</sup>	12 <sup>15</sup>	10 <sup>52</sup>	5 <sup>44</sup>	20 <sup>38</sup>	26 <sup>18</sup>	26 <sup>26</sup>	12 <sup>23</sup>	12 <sup>47</sup>	F 14
S 15	9 40 28	26 <sup>33</sup> 52	4 <sup>1</sup> 49	2 <sup>2</sup> 3	29 <sup>16</sup>	13 <sup>54</sup>	19 <sup>49</sup>	12 <sup>12</sup>	10 <sup>54</sup>	5 <sup>46</sup>	20 <sup>37</sup>	26 <sup>2</sup> 9	26 <sup>23</sup>	12 <sup>30</sup>	12 <sup>49</sup>	S 15
S 16	9 44 24	27 <sup>34</sup> 20	19 <sup>2</sup> 6	3 <sup>22</sup>	0 <sup>1</sup> 31	14 <sup>31</sup>	19 <sup>58</sup>	12 <sup>10</sup>	10 <sup>55</sup>	5 <sup>48</sup>	20 <sup>36</sup>	26 <sup>2</sup> 3	26 <sup>20</sup>	12 <sup>37</sup>	12 <sup>51</sup>	S 16
M17	9 48 21	28 <sup>34</sup> 47	2 <sup>8</sup> 53	4 <sup>42</sup>	1 <sup>46</sup>	15 <sup>2</sup> 8	20 <sup>2</sup> 6	12 <sup>2</sup> 7	10 <sup>57</sup>	5 <sup>50</sup>	20 <sup>35</sup>	25 <sup>59</sup>	26 <sup>16</sup>	12 <sup>44</sup>	12 <sup>52</sup>	M17
T 18	9 52 17	29 <sup>35</sup> 12	16 <sup>10</sup>	6 <sup>2</sup> 3	3 <sup>2</sup>	15 <sup>46</sup>	20 <sup>15</sup>	12 <sup>2</sup> 4	10 <sup>58</sup>	5 <sup>53</sup>	20 <sup>34</sup>	25 <sup>58</sup>	26 <sup>13</sup>	12 <sup>50</sup>	12 <sup>54</sup>	T 18
W19	9 56 14	0 <sup>1</sup> 35'35	29 <sup>1</sup>	7 <sup>26</sup>	4 <sup>17</sup>	16 <sup>23</sup>	20 <sup>23</sup>	12 <sup>2</sup> 2	11 <sup>2</sup> 0	5 <sup>55</sup>	20 <sup>33</sup>	25 <sup>58</sup>	26 <sup>10</sup>	12 <sup>57</sup>	12 <sup>56</sup>	W19
T 20	10 0 11	1 <sup>35</sup> 56	11 <sup>11</sup> 30	8 <sup>50</sup>	5 <sup>32</sup>	17 <sup>1</sup>	20 <sup>31</sup>	11 <sup>59</sup>	11 <sup>2</sup> 2	5 <sup>57</sup>	20 <sup>32</sup>	25 <sup>58</sup>	26 <sup>2</sup> 7	13 <sup>2</sup> 4	12 <sup>58</sup>	T 20
F 21	10 4 7	2 <sup>36</sup> 15	23 <sup>43</sup>	10 <sup>15</sup>	6 <sup>47</sup>	17 <sup>38</sup>	20 <sup>39</sup>	11 <sup>56</sup>	11 <sup>2</sup> 3	6 <sup>2</sup> 0	20 <sup>32</sup>	25 <sup>56</sup>	26 <sup>2</sup> 4	13 <sup>10</sup>	13 <sup>2</sup> 0	F 21
S 22	10 8 4	3 <sup>36</sup> 32	5 <sup>2</sup> 45	11 <sup>42</sup>	8 <sup>2</sup>	18 <sup>15</sup>	20 <sup>47</sup>	11 <sup>53</sup>	11 <sup>2</sup> 5	6 <sup>2</sup> 2	20 <sup>31</sup>	25 <sup>53</sup>	26 <sup>2</sup> 1	13 <sup>17</sup>	13 <sup>2</sup> 2	S 22
S 23	10 12 0	4 <sup>36</sup> 48	17 <sup>39</sup>	13 <sup>10</sup>	9 <sup>17</sup>	18 <sup>52</sup>	20 <sup>55</sup>	11 <sup>50</sup>	11 <sup>2</sup> 7	6 <sup>2</sup> 4	20 <sup>30</sup>	25 <sup>46</sup>	25 <sup>57</sup>	13 <sup>24</sup>	13 <sup>2</sup> 4	S 23
M24	10 15 57	5 <sup>37</sup> 01	29 <sup>30</sup>	14 <sup>38</sup>	10 <sup>32</sup>	19 <sup>30</sup>	21 <sup>2</sup> 3	11 <sup>46</sup>	11 <sup>2</sup> 9	6 <sup>2</sup> 6	20 <sup>29</sup>	25 <sup>37</sup>	25 <sup>54</sup>	13 <sup>31</sup>	13 <sup>2</sup> 6	M24
T 25	10 19 53	6 <sup>37</sup> 12	11 <sup>2</sup> 21	16 <sup>2</sup> 8	11 <sup>47</sup>	20 <sup>2</sup> 7	21 <sup>10</sup>	11 <sup>43</sup>	11 <sup>11</sup>	6 <sup>2</sup> 9	20 <sup>28</sup>	25 <sup>25</sup>	25 <sup>51</sup>	13 <sup>37</sup>	13 <sup>2</sup> 8	T 25
W26	10 23 50	7 <sup>37</sup> 21	23 <sup>14</sup>	17 <sup>39</sup>	13 <sup>2</sup> 1	20 <sup>44</sup>	21 <sup>18</sup>	11 <sup>40</sup>	11 <sup>12</sup>	6 <sup>11</sup>	20 <sup>27</sup>	25 <sup>11</sup>	25 <sup>48</sup>	13 <sup>44</sup>	13 <sup>11</sup>	W26
T 27	10 27 46	8 <sup>37</sup> 28	5 <sup>11</sup> 11	19 <sup>12</sup>	14 <sup>16</sup>	21 <sup>21</sup>	21 <sup>25</sup>	11 <sup>36</sup>	11 <sup>14</sup>	6 <sup>13</sup>	20 <sup>26</sup>	24 <sup>57</sup>	25 <sup>45</sup>	13 <sup>51</sup>	13 <sup>13</sup>	T 27
F 28	10 31 43	9 <sup>1</sup> 37'34	17 <sup>11</sup> 13	20 <sup>2</sup> 45	15 <sup>1</sup> 31	21 <sup>2</sup> 58	21 <sup>2</sup> 32	11 <sup>2</sup> 33	11 <sup>1</sup> 16	6 <sup>1</sup> 16	20 <sup>2</sup> 26	24 <sup>2</sup> 43	25 <sup>2</sup> 41	13 <sup>2</sup> 58	13 <sup>2</sup> 15	F 28

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	17s 7	8n 9	4n38	20s54	1n29	18s28	1s12	20s41	0n31	22s20	0n34	2s38	2n34	14n41	0s22	10s21	0s49	23n31	1n40	19n39	19n33	22n16	13n23	2s21			
S 2	16 49	2 52	4 7	20 59	1 18	18 8	1 14	20 48	0 30	22 21	0 34	2 37	2 35	14 42	0 22	10 21	0 49	23 31	1 41	19 37	19 32	22 14	13 23	2 21			
M 3	16 32	2s34	3 25	21 3	1 7	17 47	1 15	20 56	0 29	22 22	0 34	2 36	2 35	14 42	0 22	10 20	0 49	23 31	1 41	19 36	19 32	22 13	13 23	2 21			
T 4	16 14	8 1	2 33	21 6	0 57	17 26	1 16	21 3	0 29	22 23	0 34	2 36	2 35	14 42	0 22	10 19	0 49	23 31	1 41	19 35	19 31	22 11	13 24	2 21			
W 5	15 56	13 17	1 32	21 9	0 46	17 4	1 17	21 10	0 28	22 23	0 34	2 35	2 36	14 43	0 22	10 18	0 49	23 32	1 41	19 34	19 30	22 9	13 24	2 21			
T 6	15 37	18 5	0 24	21 10	0 36	16 42	1 18	21 16	0 27	22 24	0 34	2 34	2 36	14 43	0 22	10 17	0 49	23 32	1 41	19 34	19 29	22 8	13 25	2 21			
F 7	15 19	22 8	0s47	21 10	0 26	16 20	1 19	21 23	0 26	22 25	0 34	2 33	2 36	14 43	0 22	10 17	0 49	23 32	1 41	19 34	19 29	22 6	13 25	2 21			
S 8	15 0	25 3	1 57	21 9	0 16	15 57	1 20	21 30	0 26	22 26	0 34	2 32	2 36	14 44	0 22	10 16	0 49	23 32	1 41	19 34	19 28	22 4	13 25	2 21			
S 9	14 41	26 27	3 3	21 7	0 6	15 33	1 21	21 36	0 25	22 27	0 34	2 31	2 37	14 44	0 22	10 15	0 49	23 32	1 41	19 33	19 27	22 3	13 26	2 21			
M10	14 21	26 2	3 58	21 4	0s 3	15 10	1 22	21 42	0 24	22 28	0 34	2 30	2 37	14 44	0 22	10 14	0 49	23 33	1 41	19 32	19 26	22 1	13 26	2 21			
T 11	14 2	23 42	4 37	20 59	0 12	14 45	1 23	21 48	0 23	22 28	0 34	2 29	2 37	14 45	0 22	10 13	0 49	23 33	1 41	19 29	19 26	21 59	13 27	2 21			
W12	13 42	19 39	4 58	20 53	0 21	14 21	1 23	21 54	0 23	22 29	0 34	2 28	2 37	14 45	0 22	10 12	0 49	23 33	1 41	19 27	19 25	21 57	13 27	2 21			
T 13	13 22	14 18	4 57	20 47	0 30	13 56	1 24	22 0	0 22	22 30	0 34	2 27	2 38	14 46	0 22	10 12	0 49	23 33	1 41	19 24	19 24	21 56	13 28	2 21			
F 14	13 1	8 9	4 35	20 38	0 38	13 30	1 24	22 5	0 21	22 31	0 34	2 26	2 38	14 46	0 22	10 11	0 49	23 33	1 41	19 22	19 23	21 54	13 28	2 21			
S 15	12 41	1 41	3 55	20 29	0 46	13 4	1 25	22 11	0 20	22 31	0 34	2 24	2 38	14 46	0 22	10 10	0 49	23 34	1 41	19 19	19 23	21 52	13 29	2 21			
S 16	12 20	4n42	3 1	20 18	0 53	12 38	1 25	22 16	0 19	22 32	0 34	2 23	2 38	14 47	0 22	10 9	0 49	23 34	1 41	19 18	19 22	21 51	13 29	2 21			
M17	11 59	10 38	1 59	20 6	1 1	12 12	1 26	22 21	0 18	22 33	0 34	2 22	2 38	14 47	0 22	10 8	0 49	23 34	1 41	19 17	19 21	21 49	13 30	2 21			
T 18	11 38	15 53	0 52	19 53	1 8	11 45	1 26	22 26	0 17	22 33	0 34	2 21	2 39	14 48	0 22	10 8	0 49	23 34	1 41	19 17	19 20	21 47	13 30	2 20			
W19	11 17	20 14	0n16	19 39	1 14	11 18	1 26	22 31	0 17	22 34	0 34	2 19	2 39	14 48	0 22	10 7	0 49	23 34	1 41	19 17	19 20	21 45	13 31	2 20			
T 20	10 55	23 33	1 21	19 23	1 21	10 50	1 26	22 35	0 16	22 34	0 34	2 18	2 39	14 49	0 22	10 6	0 49	23 35	1 41	19 17	19 19	21 43	13 32	2 20			
F 21	10 34	25 41	2 21	19 6	1 27	10 23	1 26	22 40	0 15	22 35	0 34	2 17	2 39	14 50	0 22	10 5	0 49	23 35	1 41	19 16	19 18	21 42	13 32	2 20			
S 22	10 12	26 35	3 13	18 47	1 32	9 55	1 27	22 44	0 14	22 35	0 34	2 15	2 40	14 50	0 22	10 4	0 49	23 35	1 41	19 16	19 17	21 40	13 33	2 20			
S 23	9 50	26 14	3 57	18 27	1 38	9 26	1 26	22 48	0 13	22 36	0 34	2 14	2 40	14 51	0 22	10 3	0 49	23 35	1 41	19 14	19 17	21 38	13 34	2 20			
M24	9 28	24 41	4 30	18 6	1 43	8 58	1 26	22 52	0 12	22 37	0 34	2 12	2 40	14 51	0 22	10 3	0 49	23 35	1 41	19 12	19 16	21 36	13 34	2 20			
T 25	9 6	22 4	4 51	17 44	1 47	8 29	1 26	22 56	0 11	22 37	0 34	2 11	2 40	14 52	0 22	10 2	0 49	23 35	1 41	19 9	19 15	21 35	13 35	2 20			
W26	8 43	18 30	5 0	17 20	1 51	8 0	1 26	22 59	0 10	22 38	0 34	2 9	2 40	14 53	0 22	10 1	0 49	23 36	1 42	19 6	19 14	21 33	13 36	2 20			
T 27	8 21	14 12	4 55	16 55	1 55	7 31	1 26	23 3	0 9	22 38	0 34	2 8	2 41	14 53	0 22	10 0	0 49	23 36	1 42	19 2	19 14	21 31	13 36	2 20			
F 28	7s58	9n19	4n37	16s29	1s59	7s 2	1s25	23s 6	0n 8	22s38	0n34	2s 6	2n41	14n54	0s22	9s59	0s49	23n36	1n42	18n59	19n13	21n29	13n37	2s20			

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

MARCH 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	10 35 40	10♈37°37'	29♏20	22♈19	16♈46	22♈35	21♈39	11°R29	11♈18	6♈18	20°R25	24°R31	25♈38	14♏4	13♈18	S 1
S 2	10 39 36	11°37'39	11♏35	23°55	18° 1	23°12	21°46	11♏25	11°21	6°20	20♏24	24♈21	25°35	14°11	13°20	S 2
M 3	10 43 33	12°37'39	23°59	25°32	19°16	23°49	21°53	11°22	11°23	6°22	20°23	24°15	25°32	14°18	13°23	M 3
T 4	10 47 29	13°37'37	6♏33	27° 9	20°31	24°26	21°59	11°18	11°25	6°25	20°23	24°11	25°29	14°24	13°25	T 4
W 5	10 51 26	14°37'34	19°21	28°48	21°45	25° 3	22° 6	11°14	11°27	6°27	20°22	24°D10	25°26	14°31	13°28	W 5
T 6	10 55 22	15°37'29	2♈25	0♈28	23° 0	25°40	22°12	11°10	11°29	6°29	20°21	24°10	25°22	14°38	13°31	T 6
F 7	10 59 19	16°37'22	15°47	2° 9	24°15	26°17	22°18	11° 6	11°32	6°31	20°20	24°R10	25°19	14°45	13°33	F 7
S 8	11 3 15	17°37'14	29°32	3°52	25°30	26°54	22°24	11° 2	11°34	6°34	20°20	24° 9	25°16	14°51	13°36	S 8
S 9	11 7 12	18°37'04	13♏40	5°35	26°44	27°30	22°30	10°58	11°36	6°36	20°19	24° 7	25°13	14°58	13°39	S 9
M10	11 11 9	19°36'52	28°11	7°20	27°59	28° 7	22°35	10°54	11°39	6°38	20°19	24° 2	25°10	15° 5	13°42	M10
T 11	11 15 5	20°36'39	13♏0	9° 6	29°14	28°44	22°41	10°50	11°41	6°40	20°18	23°55	25° 7	15°11	13°45	T 11
W12	11 19 2	21°36'24	28° 2	10°53	0♈28	29°20	22°46	10°45	11°44	6°43	20°18	23°46	25° 3	15°18	13°48	W12
T 13	11 22 58	22°36'07	13♈7	12°41	1°43	29°57	22°51	10°41	11°46	6°45	20°17	23°36	25° 0	15°25	13°51	T 13
F 14	11 26 55	23°35'48	28° 6	14°31	2°58	0♈33	22°56	10°37	11°49	6°47	20°17	23°27	24°57	15°32	13°54	F 14
S 15	11 30 51	24°35'26	12♈48	16°22	4°12	1°10	23° 1	10°32	11°51	6°49	20°16	23°19	24°54	15°38	13°57	S 15
S 16	11 34 48	25°35'03	27° 8	18°14	5°27	1°46	23° 6	10°28	11°54	6°51	20°16	23°14	24°51	15°45	14° 0	S 16
M17	11 38 44	26°34'38	11♈0	20° 7	6°41	2°23	23°10	10°24	11°56	6°54	20°15	23°11	24°47	15°52	14° 3	M17
T 18	11 42 41	27°34'10	24°23	22° 1	7°56	2°59	23°15	10°19	11°59	6°56	20°15	23°D11	24°44	15°58	14° 6	T 18
W19	11 46 37	28°33'40	7♏21	23°57	9°10	3°35	23°19	10°15	12° 2	6°58	20°14	23°11	24°41	16° 5	14°10	W19
T 20	11 50 34	29°33'08	19°56	25°54	10°25	4°11	23°23	10°10	12° 5	7° 0	20°14	23°12	24°38	16°12	14°13	T 20
F 21	11 54 31	0♈32'33	2♈12	27°52	11°39	4°47	23°26	10° 6	12° 7	7° 2	20°14	23°R13	24°35	16°19	14°16	F 21
S 22	11 58 27	1°31'57	14°15	29°51	12°54	5°23	23°30	10° 1	12°10	7° 4	20°13	23°12	24°32	16°25	14°20	S 22
S 23	12 2 24	2°31'17	26°10	1♈51	14° 8	5°59	23°33	9°56	12°13	7° 6	20°13	23° 9	24°28	16°32	14°23	S 23
M24	12 6 20	3°30'36	8♏1	3°52	15°22	6°35	23°37	9°52	12°16	7° 8	20°13	23° 4	24°25	16°39	14°27	M24
T 25	12 10 17	4°29'52	19°53	5°54	16°37	7°11	23°40	9°47	12°19	7°11	20°13	22°56	24°22	16°46	14°30	T 25
W26	12 14 13	5°29'06	1♏49	7°57	17°51	7°47	23°43	9°43	12°22	7°13	20°12	22°48	24°19	16°52	14°34	W26
T 27	12 18 10	6°28'18	13°50	10° 0	19° 5	8°22	23°45	9°38	12°25	7°15	20°12	22°39	24°16	16°59	14°37	T 27
F 28	12 22 6	7°27'27	26° 0	12° 4	20°19	8°58	23°48	9°33	12°28	7°17	20°12	22°30	24°12	17° 6	14°41	F 28
S 29	12 26 3	8°26'34	8♏20	14° 7	21°34	9°33	23°50	9°29	12°31	7°19	20°12	22°23	24° 9	17°12	14°44	S 29
S 30	12 30 0	9°25'40	20°49	16°11	22°48	10° 9	23°52	9°24	12°34	7°21	20°12	22°17	24° 6	17°19	14°48	S 30
M31	12 33 56	10♈24'43	3♏30	18♈14	24♈2	10♈44	23♈54	9♏19	12♈37	7♈23	20♏12	22♈13	24♈3	17♏26	14♈52	M31

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	7s36	4n 2	4n 7	16s 1	2s 2	6s32	1s25	23s 9	0n 7	22s39	0n34	2s 5	2n41	14n54	0s22	9s58	0s49	23n36	1n42	18n56	19n12	21n27	13n38	2s20	
S 2	7 13	1s27	3 25	15 32	2 4	6 3	1 25	23 12	0 6	22 39	0 34	2 3	2 41	14 55	0 22	9 58	0 49	23 36	1 42	18 54	19 11	21 25	13 39	2 20	
M 3	6 50	6 57	2 33	15 1	2 7	5 33	1 24	23 15	0 5	22 40	0 34	2 2	2 41	14 56	0 22	9 57	0 49	23 36	1 42	18 52	19 11	21 24	13 40	2 20	
T 4	6 27	12 17	1 32	14 30	2 9	5 3	1 23	23 18	0 4	22 40	0 34	2 0	2 42	14 56	0 22	9 56	0 49	23 37	1 42	18 51	19 10	21 22	13 40	2 20	
W 5	6 4	17 11	0 26	13 57	2 10	4 33	1 23	23 21	0 3	22 41	0 34	1 58	2 42	14 57	0 21	9 55	0 49	23 37	1 42	18 51	19 9	21 20	13 41	2 20	
T 6	5 41	21 24	0s44	13 22	2 11	4 2	1 22	23 23	0 2	22 41	0 34	1 57	2 42	14 58	0 21	9 54	0 49	23 37	1 42	18 51	19 8	21 18	13 42	2 20	
F 7	5 17	24 35	1 52	12 47	2 12	3 32	1 21	23 25	0 1	22 41	0 34	1 55	2 42	14 59	0 21	9 53	0 49	23 37	1 42	18 51	19 8	21 16	13 43	2 20	
S 8	4 54	26 25	2 56	12 10	2 12	3 1	1 20	23 27	0s 1	22 42	0 34	1 53	2 42	14 59	0 21	9 53	0 49	23 37	1 42	18 51	19 7	21 14	13 44	2 20	
S 9	4 31	26 37	3 51	11 31	2 12	2 31	1 20	23 29	0 2	22 42	0 34	1 51	2 42	15 0	0 21	9 52	0 49	23 37	1 42	18 50	19 6	21 13	13 45	2 20	
M10	4 7	25 1	4 33	10 52	2 11	2 0	1 19	23 31	0 3	22 42	0 34	1 50	2 42	15 1	0 21	9 51	0 49	23 37	1 42	18 49	19 5	21 11	13 45	2 20	
T 11	3 44	21 42	4 58	10 11	2 10	1 30	1 18	23 33	0 4	22 43	0 34	1 48	2 43	15 2	0 21	9 50	0 49	23 37	1 42	18 47	19 5	21 9	13 46	2 20	
W12	3 20	16 54	5 2	9 29	2 8	0 59	1 16	23 34	0 5	22 43	0 34	1 46	2 43	15 2	0 21	9 49	0 49	23 38	1 42	18 45	19 4	21 7	13 47	2 20	
T 13	2 56	11 3	4 46	8 45	2 6	0 28	1 15	23 35	0 6	22 43	0 34	1 44	2 43	15 3	0 21	9 49	0 49	23 38	1 42	18 42	19 3	21 5	13 48	2 20	
F 14	2 33	4 35	4 10	8 0	2 4	0n 3	1 14	23 36	0 8	22 43	0 34	1 43	2 43	15 4	0 21	9 48	0 49	23 38	1 42	18 40	19 2	21 3	13 49	2 20	
S 15	2 9	2n 2	3 18	7 15	2 0	0 34	1 13	23 37	0 9	22 44	0 34	1 41	2 43	15 5	0 21	9 47	0 49	23 38	1 42	18 38	19 2	21 1	13 50	2 19	
S 16	1 45	8 22	2 15	6 27	1 57	1 4	1 11	23 38	0 10	22 44	0 34	1 39	2 43	15 6	0 21	9 46	0 49	23 38	1 42	18 37	19 1	20 59	13 51	2 19	
M17	1 22	14 8	1 5	5 39	1 53	1 35	1 10	23 39	0 11	22 44	0 34	1 37	2 43	15 7	0 21	9 45	0 49	23 38	1 42	18 36	19 0	20 57	13 52	2 19	
T 18	0 58	19 0	0n 7	4 49	1 48	2 6	1 9	23 40	0 13	22 44	0 34	1 35	2 43	15 7	0 21	9 45	0 49	23 38	1 42	18 36	18 59	20 55	13 53	2 19	
W19	0 34	22 49	1 15	3 59	1 43	2 37	1 7	23 40	0 14	22 44	0 34	1 33	2 43	15 8	0 21	9 44	0 49	23 38	1 42	18 36	18 58	20 54	13 54	2 19	
T 20	0 11	25 24	2 18	3 7	1 37	3 7	1 6	23 40	0 15	22 45	0 34	1 32	2 44	15 9	0 21	9 43	0 49	23 38	1 42	18 36	18 58	20 52	13 55	2 19	
F 21	0n13	26 41	3 14	2 14	1 31	3 38	1 4	23 40	0 17	22 45	0 34	1 30	2 44	15 10	0 21	9 42	0 49	23 38	1 42	18 37	18 57	20 50	13 56	2 19	
S 22	0 37	26 41	3 59	1 21	1 24	4 9	1 2	23 40	0 18	22 45	0 34	1 28	2 44	15 11	0 21	9 41	0 49	23 38	1 42	18 36	18 56	20 48	13 57	2 19	
S 23	1 0	25 26	4 34	0 26	1 17	4 39	1 1	23 40	0 19	22 45	0 34	1 26	2 44	15 12	0 21	9 41	0 49	23 38	1 42	18 36	18 55	20 46	13 58	2 19	
M24	1 24	23 4	4 56	0n29	1 9	5 9	0 59	23 40	0 21	22 45	0 34	1 24	2 44	15 13	0 21	9 40	0 49	23 39	1 42	18 34	18 55	20 44	13 59	2 19	
T 25	1 47	19 43	5 6	1 25	1 1	5 40	0 57	23 39	0 22	22 46	0 34	1 22	2 44	15 13	0 21	9 39	0 49	23 39	1 42	18 32	18 54	20 42	14 0	2 19	
W26	2 11	15 33	5 3	2 22	0 52	6 10	0 55	23 39	0 24	22 46	0 34	1 20	2 44	15 14	0 21	9 38	0 49	23 39	1 42	18 30	18 53	20 40	14 1	2 19	
T 27	2 34	10 46	4 46	3 19	0 42	6 40	0 53	23 38	0 25	22 46	0 34	1 19	2 44	15 15	0 21	9 38	0 49	23 39	1 42	18 28	18 52	20 38	14 2	2 19	
F 28	2 58	5 31	4 16	4 16	0 33	7 10	0 52	23 37	0 27	22 46	0 34	1 17	2 44	15 16	0 21	9 37	0 49	23 39	1 42	18 26	18 51	20 36	14 3	2 19	
S 29	3 21	0s 2	3 34	5 14	0 12	7 39	0 50	23 36	0 28	22 46	0 34	1 15	2 44	15 17	0 21	9 36	0 49	23 39	1 42	18 24	18 51	20 34	14 4	2 19	
S 30	3 45	5 39	2 41	6 11	0 23	8 9	0 48	23 35	0 30	22 46	0 34	1 13	2 44	15 18	0 21	9 35	0 49	23 39	1 42	18 22	18 50	20 32	14 5	2 19	
M31	4n 8	11s 9	1n40	7n 9	0s 1	8n38	0s46	23s34	0s31	22s46	0n34	1s11	2n44	15n19	0s21	9s35	0s49	23n39	1n42	18n21	18n49	20n30	14n 6	2s19	

# ASTRODIENST EPHEMERIS for the year 1687

## geocentric

APRIL 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
T 1	12 37 53	11°23'44	16°11'21	20°17'17	25°16'16	11°20'20	23°56'56	9°15'15	12°40'40	7°25'25	20°12'12	22°12'12	24°00'00	17°23'23	14°56'56	T 1
W 2	12 41 49	12°22'44	29°25'25	22°19'19	26°30'30	11°55'55	23°58'58	9°10'10	12°43'43	7°27'27	20°12'12	22°12'12	23°57'57	17°39'39	14°59'59	W 2
T 3	12 45 46	13°21'42	12°42'42	24°19'19	27°44'44	12°30'30	23°59'59	9°05'05	12°46'46	7°29'29	20°12'12	22°13'13	23°53'53	17°46'46	15°03'03	T 3
F 4	12 49 42	14°20'38	26°13'13	26°18'18	28°58'58	13°05'05	24°01'01	9°01'01	12°49'49	7°31'31	20°12'12	22°14'14	23°50'50	17°53'53	15°07'07	F 4
S 5	12 53 39	15°19'32	10°03'03	28°14'14	0°13'13	13°40'40	24°02'02	8°56'56	12°52'52	7°32'32	20°12'12	22°15'15	23°47'47	17°59'59	15°11'11	S 5
S 6	12 57 35	16°18'25	24°01'01	0°08'08	1°27'27	14°15'15	24°03'03	8°52'52	12°55'55	7°34'34	20°12'12	22°15'15	23°44'44	18°06'06	15°15'15	S 6
M 7	13 01 32	17°17'16	8°18'18	2°00'00	2°41'41	14°50'50	24°03'03	8°47'47	12°59'59	7°36'36	20°12'12	22°14'14	23°41'41	18°13'13	15°19'19	M 7
T 8	13 05 29	18°16'05	22°47'47	3°48'48	3°54'54	15°25'25	24°04'04	8°42'42	13°02'02	7°38'38	20°12'12	22°11'11	23°38'38	18°20'20	15°23'23	T 8
W 9	13 09 25	19°14'53	7°14'53	5°33'33	5°08'08	15°59'59	24°04'04	8°38'38	13°05'05	7°40'40	20°12'12	22°06'06	23°34'34	18°26'26	15°26'26	W 9
T 10	13 13 22	20°13'38	22°03'03	7°15'15	6°22'22	16°34'34	24°04'04	8°33'33	13°08'08	7°42'42	20°12'12	22°02'02	23°31'31	18°33'33	15°30'30	T 10
F 11	13 17 18	21°12'22	6°13'38	8°52'52	7°36'36	17°08'08	24°04'04	8°29'29	13°12'12	7°43'43	20°13'13	21°57'57	23°28'28	18°40'40	15°34'34	F 11
S 12	13 21 15	22°11'04	21°02'02	10°25'25	8°50'50	17°43'43	24°04'04	8°24'24	13°15'15	7°45'45	20°13'13	21°53'53	23°25'25	18°47'47	15°39'39	S 12
S 13	13 25 11	23°09'43	5°08'08	11°54'54	10°04'04	18°17'17	24°03'03	8°20'20	13°18'18	7°47'47	20°13'13	21°51'51	23°22'22	18°53'53	15°43'43	S 13
M14	13 29 08	24°08'21	18°53'53	13°18'18	11°18'18	18°51'51	24°03'03	8°15'15	13°22'22	7°49'49	20°13'13	21°50'50	23°18'18	19°00'00	15°47'47	M14
T 15	13 33 04	25°06'57	2°11'11	14°37'37	12°31'31	19°25'25	24°02'02	8°11'11	13°25'25	7°50'50	20°14'14	21°50'50	23°15'15	19°07'07	15°51'51	T 15
W16	13 37 01	26°05'31	15°14'14	15°52'52	13°45'45	19°59'59	24°01'01	8°07'07	13°28'28	7°52'52	20°14'14	21°51'51	23°12'12	19°13'13	15°55'55	W16
T 17	13 40 58	27°04'03	27°52'52	17°01'01	14°59'59	20°32'32	24°00'00	8°03'03	13°32'32	7°54'54	20°14'14	21°53'53	23°09'09	19°20'20	15°59'59	T 17
F 18	13 44 54	28°02'32	10°02'32	18°05'05	16°13'13	21°06'06	23°58'58	7°58'58	13°35'35	7°55'55	20°15'15	21°55'55	23°06'06	19°27'27	16°03'03	F 18
S 19	13 48 51	29°01'00	22°19'19	19°04'04	17°26'26	21°39'39	23°57'57	7°54'54	13°38'38	7°57'57	20°15'15	21°56'56	23°03'03	19°34'34	16°07'07	S 19
S 20	13 52 47	29°59'25	4°02'16	19°58'58	18°40'40	22°13'13	23°55'55	7°50'50	13°42'42	7°59'59	20°16'16	21°56'56	22°59'59	19°40'40	16°11'11	S 20
M21	13 56 44	0°57'48	16°09'09	20°46'46	19°53'53	22°46'46	23°53'53	7°46'46	13°45'45	8°00'00	20°16'16	21°55'55	22°56'56	19°47'47	16°16'16	M21
T 22	14 00 40	1°56'09	28°03'03	21°29'29	21°07'07	23°19'19	23°51'51	7°42'42	13°49'49	8°02'02	20°16'16	21°53'53	22°53'53	19°54'54	16°20'20	T 22
W23	14 04 37	2°54'28	10°06'06	22°06'06	22°20'20	23°52'52	23°49'49	7°38'38	13°52'52	8°03'03	20°17'17	21°51'51	22°50'50	20°01'01	16°24'24	W23
T 24	14 08 33	3°52'45	22°06'06	22°38'38	23°34'34	24°25'25	23°46'46	7°34'34	13°55'55	8°05'05	20°17'17	21°48'48	22°47'47	20°07'07	16°28'28	T 24
F 25	14 12 30	4°51'00	4°23'23	23°04'04	24°47'47	24°57'57	23°44'44	7°30'30	13°59'59	8°06'06	20°18'18	21°45'45	22°43'43	20°14'14	16°33'33	F 25
S 26	14 16 27	5°49'13	16°53'53	23°24'24	26°01'01	25°30'30	23°41'41	7°26'26	14°02'02	8°07'07	20°19'19	21°43'43	22°40'40	20°21'21	16°37'37	S 26
S 27	14 20 23	6°47'24	29°38'38	23°39'39	27°14'14	26°02'02	23°38'38	7°22'22	14°06'06	8°09'09	20°19'19	21°41'41	22°37'37	20°27'27	16°41'41	S 27
M28	14 24 20	7°45'33	12°13'37	23°49'49	28°28'28	26°34'34	23°35'35	7°19'19	14°09'09	8°10'10	20°20'20	21°40'40	22°34'34	20°34'34	16°45'45	M28
T 29	14 28 16	8°43'41	25°52'52	23°53'53	29°41'41	27°06'06	23°31'31	7°15'15	14°13'13	8°12'12	20°20'20	21°40'40	22°31'31	20°41'41	16°50'50	T 29
W30	14 32 13	9°41'47	9°19'19	23°52'52	0°11'54	27°03'38	23°28'28	7°12'12	14°16'16	8°13'13	20°21'21	21°41'41	22°28'28	20°48'48	16°54'54	W30

Day	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
T 1	4n31	16s15	0n32	8n 5	0n10	9n 7	0s43	23s32	0s33	22s46	0n34	1s 9	2n44	15n20	0s21	9s34
W 2	4 54	20 42	0s39	9 2	0 21	9 36	0 41	23 31	0 34	22 46	0 34	1 7	2 44	15 21	0 21	9 33
T 3	5 17	24 10	1 49	9 57	0 33	10 5	0 39	23 29	0 36	22 46	0 34	1 6	2 44	15 22	0 21	9 33
F 4	5 40	26 20	2 54	10 51	0 44	10 33	0 37	23 28	0 37	22 46	0 34	1 4	2 44	15 23	0 21	9 32
S 5	6 3	26 56	3 51	11 44	0 55	11 1	0 35	23 26	0 39	22 47	0 34	1 2	2 44	15 24	0 21	9 31
S 6	6 25	25 51	4 34	12 35	1 7	11 29	0 32	23 24	0 41	22 47	0 34	1 0	2 44	15 25	0 21	9 31
M 7	6 48	23 5	5 2	13 24	1 18	11 57	0 30	23 22	0 42	22 47	0 34	0 58	2 44	15 26	0 21	9 30
T 8	7 10	18 50	5 11	14 12	1 28	12 25	0 28	23 19	0 44	22 47	0 34	0 57	2 44	15 27	0 21	9 29
W 9	7 33	13 27	5 0	14 57	1 39	12 52	0 25	23 17	0 46	22 47	0 34	0 55	2 44	15 28	0 21	9 29
T 10	7 55	7 17	4 30	15 40	1 49	13 18	0 23	23 14	0 48	22 47	0 34	0 53	2 44	15 29	0 21	9 28
F 11	8 17	0 46	3 42	16 21	1 58	13 45	0 21	23 12	0 49	22 47	0 34	0 51	2 44	15 30	0 21	9 27
S 12	8 39	5n44	2 40	16 59	2 7	14 11	0 18	23 9	0 51	22 47	0 34	0 50	2 44	15 31	0 21	9 27
S 13	9 1	11 50	1 30	17 35	2 15	14 37	0 16	23 7	0 53	22 47	0 34	0 48	2 44	15 32	0 21	9 26
M14	9 23	17 13	0 16	18 7	2 23	15 2	0 13	23 4	0 55	22 47	0 34	0 46	2 44	15 33	0 21	9 25
T 15	9 44	21 35	0n57	18 38	2 29	15 27	0 11	23 1	0 57	22 47	0 34	0 45	2 44	15 34	0 21	9 25
W16	10 6	24 44	2 5	19 5	2 35	15 52	0 8	22 58	0 59	22 47	0 34	0 43	2 44	15 35	0 21	9 24
T 17	10 27	26 33	3 5	19 30	2 40	16 16	0 6	22 55	1 1	22 47	0 34	0 41	2 44	15 36	0 21	9 24
F 18	10 48	27 0	3 55	19 52	2 44	16 40	0 3	22 51	1 3	22 47	0 34	0 40	2 44	15 37	0 21	9 23
S 19	11 9	26 8	4 34	20 12	2 47	17 4	0 0	22 48	1 5	22 47	0 34	0 38	2 43	15 38	0 21	9 22
S 20	11 29	24 4	5 0	20 28	2 49	17 27	0n 2	22 45	1 7	22 46	0 34	0 37	2 43	15 39	0 21	9 22
M21	11 50	21 0	5 13	20 42	2 50	17 49	0 5	22 41	1 9	22 46	0 34	0 35	2 43	15 40	0 21	9 21
T 22	12 10	17 3	5 13	20 53	2 49	18 11	0 7	22 38	1 11	22 46	0 34	0 34	2 43	15 41	0 21	9 21
W23	12 30	12 26	4 59	21 2	2 48	18 33	0 10	22 34	1 13	22 46	0 34	0 32	2 43	15 42	0 21	9 20
T 24	12 50	7 18	4 32	21 8	2 46	18 54	0 13	22 30	1 15	22 46	0 34	0 31	2 43	15 43	0 21	9 20
F 25	13 10	1 48	3 52	21 11	2 42	19 15	0 15	22 26	1 17	22 46	0 34	0 29	2 43	15 44	0 21	9 19
S 26	13 29	3s52	3 0	21 11	2 37	19 35	0 18	22 23	1 19	22 46	0 34	0 28	2 43	15 45	0 21	9 19
S 27	13 48	9 31	1 59	21 9	2 31	19 55	0 20	22 19	1 22	22 46	0 34	0 27	2 43	15 46	0 21	9 18
M28	14 7	14 52	0 50	21 4	2 23	20 14	0 23	22 15	1 24	22 46	0 34	0 25	2 42	15 47	0 21	9 18
T 29	14 26	19 38	0s23	20 57	2 15	20 32	0 26	22 11	1 26	22 46	0 34	0 24	2 42	15 48	0 21	9 17
W30	14n45	23s28	1s36	20n47	2n 5	20n50	0n28	22s 7	1s28	22s45	0n34	0s23	2n42	15n49	0s21	9s17

Julian Day Number = 2337314.5, Delta T = 19.76 sec  
 Ecliptic obliquity = 23°28'54, Nutation = - 0°00'14, out-of-bounds declination in red  
 Ayanamsha: Fagan/Bradley = 20°22'29, Lahiri = 19°29'29Greg. Calendar

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

MAY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
T 1	14 36 9	10♈39'51	23♊0	23°R46	2♊7	28♌10	23°R24	7°R 8	14♈20	8♈14	20♉22	21♈42	22♈24	20♌54	16♌58	T 1
F 2	14 40 6	11°37'54	6♌51	23♈35	3°21	28°42	23♊20	7♌5	14°23	8°15	20°22	21°42	22°21	21°1	17°3	F 2
S 3	14 44 2	12°35'56	20°51	23°19	4°34	29°13	23°16	7°1	14°27	8°17	20°23	21°43	22°18	21°8	17°7	S 3
S 4	14 47 59	13°33'56	4♌59	22°59	5°47	29°44	23°12	6°58	14°30	8°18	20°24	21°44	22°15	21°14	17°11	S 4
M 5	14 51 56	14°31'56	19°12	22°36	7°0	0♌15	23°8	6°55	14°34	8°19	20°25	21°R44	22°12	21°21	17°16	M 5
T 6	14 55 52	15°29'53	3♈28	22°9	8°13	0°46	23°3	6°52	14°37	8°20	20°25	21°43	22°9	21°28	17°20	T 6
W 7	14 59 49	16°27'50	17°43	21°39	9°26	1°16	22°58	6°49	14°41	8°21	20°26	21°43	22°5	21°35	17°24	W 7
T 8	15 3 45	17°25'45	1°56	21°7	10°39	1°47	22°54	6°46	14°44	8°22	20°27	21°42	22°2	21°41	17°29	T 8
F 9	15 7 42	18°23'38	16°2	20°33	11°52	2°17	22°49	6°43	14°47	8°24	20°28	21°42	21°59	21°48	17°33	F 9
S 10	15 11 38	19°21'31	29°58	19°58	13°5	2°47	22°44	6°40	14°51	8°25	20°29	21°42	21°56	21°55	17°37	S 10
S 11	15 15 35	20°19'22	13♈41	19°23	14°18	3°17	22°38	6°37	14°54	8°26	20°30	21°42	21°53	22°2	17°42	S 11
M12	15 19 31	21°17'12	27°8	18°47	15°31	3°46	22°33	6°35	14°58	8°27	20°31	21°42	21°49	22°8	17°46	M12
T 13	15 23 28	22°15'00	10♊18	18°13	16°44	4°15	22°27	6°32	15°1	8°27	20°32	21°42	21°46	22°15	17°50	T 13
W14	15 27 25	23°12'47	23°10	17°39	17°57	4°44	22°22	6°30	15°5	8°28	20°33	21°42	21°43	22°22	17°55	W14
T 15	15 31 21	24°10'32	5♌45	17°8	19°10	5°13	22°16	6°27	15°8	8°29	20°34	21°41	21°40	22°28	17°59	T 15
F 16	15 35 18	25°8'16	18°4	16°39	20°22	5°42	22°10	6°25	15°12	8°30	20°35	21°41	21°37	22°35	18°3	F 16
S 17	15 39 14	26°5'58	0♌12	16°13	21°35	6°10	22°4	6°23	15°15	8°31	20°36	21°41	21°34	22°42	18°8	S 17
S 18	15 43 11	27°3'39	12°10	15°50	22°48	6°38	21°58	6°21	15°19	8°32	20°37	21°40	21°30	22°49	18°12	S 18
M19	15 47 7	28°1'18	24°4	15°30	24°1	7°5	21°51	6°19	15°22	8°32	20°38	21°D40	21°27	22°55	18°16	M19
T 20	15 51 4	28°58'55	5♈58	15°15	25°13	7°33	21°45	6°17	15°25	8°33	20°39	21°40	21°24	23°2	18°20	T 20
W21	15 55 0	29°56'31	17°56	15°3	26°26	8°0	21°38	6°15	15°29	8°34	20°40	21°40	21°21	23°9	18°25	W21
T 22	15 58 57	0♊54'06	0♌4	14°56	27°38	8°27	21°32	6°13	15°32	8°35	20°41	21°41	21°18	23°16	18°29	T 22
F 23	16 2 54	1°51'39	12°24	14°D53	28°51	8°53	21°25	6°11	15°36	8°35	20°42	21°42	21°15	23°22	18°33	F 23
S 24	16 6 50	2°49'11	25°1	14°55	0♌3	9°19	21°18	6°10	15°39	8°36	20°43	21°43	21°11	23°29	18°37	S 24
S 25	16 10 47	3°46'41	7♌56	15°1	1°16	9°45	21°11	6°8	15°42	8°36	20°44	21°44	21°8	23°36	18°42	S 25
M26	16 14 43	4°44'11	21°12	15°12	2°28	10°11	21°4	6°7	15°46	8°37	20°46	21°R44	21°5	23°42	18°46	M26
T 27	16 18 40	5°41'39	4♊47	15°27	3°40	10°36	20°57	6°6	15°49	8°37	20°47	21°44	21°2	23°49	18°50	T 27
W28	16 22 36	6°39'06	18°41	15°46	4°53	11°1	20°50	6°5	15°52	8°38	20°48	21°43	20°59	23°56	18°54	W28
T 29	16 26 33	7°36'33	2♌49	16°10	6°5	11°26	20°43	6°4	15°56	8°38	20°49	21°41	20°55	24°3	18°59	T 29
F 30	16 30 29	8°33'58	17°7	16°38	7°17	11°50	20°36	6°3	15°59	8°39	20°50	21°39	20°52	24°9	19°3	F 30
S 31	16 34 26	9♊31'23	1♌31	17♌11	8♌29	12♌14	20♊28	6♌2	16♌2	8♈39	20♉52	21♈37	20♈49	24♌16	19♌7	S 31

Day	☉	☾		♊		♋		♌		♍		♎		♏		♐		♑		♒	♓	♈	♉	♊	♋	♌
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	decl	decl	decl	lat	decl	lat
T 1	15n 3	26s 2	2s45	20n35	1n54	21n 8	0n31	22s 3	1s31	22s45	0n34	0s21	2n42	15n50	0s21	9s16	0s50	23n38	1n43	18n13	18n24	19n25	14n41	2s21		
F 2	15 21	27 3	3 45	20 21	1 42	21 25	0 33	21 59	1 33	22 45	0 34	0 20	2 42	15 51	0 21	9 16	0 50	23 38	1 43	18 13	18 23	19 23	14 42	2 21		
S 3	15 39	26 20	4 32	20 4	1 29	21 41	0 36	21 54	1 35	22 45	0 34	0 19	2 42	15 52	0 21	9 15	0 50	23 38	1 43	18 14	18 23	19 21	14 44	2 21		
S 4	15 56	23 57	5 3	19 45	1 15	21 57	0 39	21 50	1 38	22 45	0 34	0 18	2 42	15 53	0 21	9 15	0 50	23 38	1 43	18 14	18 22	19 19	14 45	2 21		
M 5	16 14	20 5	5 16	19 25	1 0	22 12	0 41	21 46	1 40	22 45	0 34	0 17	2 41	15 54	0 21	9 15	0 50	23 38	1 43	18 14	18 21	19 16	14 46	2 21		
T 6	16 31	15 4	5 10	19 3	0 44	22 26	0 44	21 42	1 43	22 44	0 34	0 16	2 41	15 56	0 21	9 14	0 50	23 38	1 43	18 14	18 20	19 14	14 47	2 21		
W 7	16 47	9 13	4 45	18 39	0 27	22 40	0 46	21 37	1 45	22 44	0 33	0 15	2 41	15 57	0 20	9 14	0 50	23 38	1 43	18 14	18 19	19 12	14 48	2 21		
T 8	17 4	2 56	4 2	18 14	0 10	22 53	0 49	21 33	1 48	22 44	0 33	0 14	2 41	15 58	0 20	9 13	0 50	23 37	1 43	18 13	18 19	19 10	14 49	2 21		
F 9	17 20	3n29	3 5	17 49	0s 7	23 6	0 51	21 29	1 50	22 44	0 33	0 13	2 41	15 59	0 20	9 13	0 51	23 37	1 43	18 13	18 18	19 8	14 50	2 21		
S 10	17 36	9 39	1 57	17 22	0 24	23 18	0 54	21 24	1 53	22 44	0 33	0 12	2 40	16 0	0 20	9 13	0 51	23 37	1 43	18 13	18 17	19 5	14 51	2 21		
S 11	17 52	15 16	0 44	16 56	0 42	23 29	0 56	21 20	1 56	22 43	0 33	0 11	2 40	16 1	0 20	9 12	0 51	23 37	1 43	18 13	18 16	19 3	14 53	2 21		
M12	18 7	20 3	0n30	16 30	0 59	23 40	0 58	21 16	1 58	22 43	0 33	0 10	2 40	16 2	0 20	9 12	0 51	23 37	1 43	18 13	18 15	19 1	14 54	2 21		
T 13	18 22	23 42	1 41	16 4	1 16	23 50	1 1	21 11	2 1	22 43	0 33	0 9	2 40	16 3	0 20	9 12	0 51	23 37	1 43	18 13	18 14	18 59	14 55	2 22		
W14	18 37	26 4	2 46	15 39	1 33	23 59	1 3	21 7	2 4	22 43	0 33	0 8	2 40	16 4	0 20	9 11	0 51	23 37	1 43	18 13	18 14	18 56	14 56	2 22		
T 15	18 51	27 2	3 40	15 14	1 49	24 7	1 5	21 3	2 7	22 42	0 33	0 8	2 40	16 5	0 20	9 11	0 51	23 37	1 44	18 13	18 13	18 54	14 57	2 22		
F 16	19 5	26 37	4 24	14 52	2 4	24 15	1 8	20 58	2 9	22 42	0 33	0 7	2 39	16 6	0 20	9 11	0 51	23 37	1 44	18 13	18 12	18 52	14 58	2 22		
S 17	19 19	24 56	4 55	14 30	2 19	24 22	1 10	20 54	2 12	22 42	0 33	0 6	2 39	16 7	0 20	9 11	0 51	23 36	1 44	18 13	18 11	18 50	14 59	2 22		
S 18	19 32	22 10	5 12	14 11	2 32	24 29	1 12	20 50	2 15	22 42	0 33	0 5	2 39	16 8	0 20	9 10	0 51	23 36	1 44	18 13	18 10	18 47	15 0	2 22		
M19	19 45	18 29	5 16	13 53	2 45	24 35	1 14	20 46	2 18	22 41	0 33	0 5	2 39	16 9	0 20	9 10	0 51	23 36	1 44	18 13	18 9	18 45	15 1	2 22		
T 20	19 58	14 5	5 7	13 38	2 56	24 40	1 16	20 41	2 21	22 41	0 33	0 4	2 39	16 10	0 20	9 10	0 51	23 36	1 44	18 13	18 8	18 43	15 2	2 22		
W21	20 10	9 8	4 44	13 24	3 7	24 44	1 18	20 37	2 24	22 41	0 33	0 4	2 38	16 11	0 20	9 10	0 51	23 36	1 44	18 13	18 8	18 41	15 3	2 22		
T 22	20 23	3 46	4 8	13 13	3 16	24 48	1 20	20 33	2 27	22 40	0 32	0 3	2 38	16 12	0 20	9 9	0 51	23 36	1 44	18 13	18 7	18 38	15 4	2 23		
F 23	20 34	1s50	3 21	13 5	3 24	24 51	1 22	20 29	2 30	22 40	0 32	0 3	2 38	16 13	0 20	9 9	0 51	23 36	1 44	18 13	18 6	18 36	15 6	2 23		
S 24	20 46	7 29	2 22	12 58	3 31	24 53	1 24	20 25	2 33	22 40	0 32	0 2	2 38	16 14	0 20	9 9	0 51	23 35	1 44	18 14	18 5	18 34	15 7	2 23		
S 25	20 57	12 59	1 16	12 54	3 37	24 54	1 26	20 21	2 37	22 39	0 32	0 2	2 37	16 15	0 20	9 9	0 51	23 35	1 44	18 14	18 4	18 31	15 8	2 23		
M26	21 7	18 3	0 3	12 53	3 42	24 55	1 28	20 17	2 40	22 39	0 32	0 2	2 37	16 16	0 20	9 9	0 51	23 35	1 44	18 14	18 4	18 29	15 9	2 23		
T 27	21 18	22 18	1s12	12 53	3 46	24 55	1 30	20 13	2 43	22 38	0 32	0 1	2 37	16 17	0 20	9 9	0 51	23 35	1 44	18 14	18 3	18 27	15 10	2 23		
W28	21 27	25 23	2 23	12 56	3 49	24 55	1 31	20 10	2 46	22 38	0 32	0 1	2 37	16 18	0 20	9 8	0 51	23 35	1 44	18 13	18 2	18 25	15 11	2 23		
T 29	21 37	26 55	3 28	13 2	3 50	24 53	1 33	20 6	2 50	22 38	0 32	0 1	2 37	16 19	0 20	9 8	0 51	23 35	1 44	18 13	18 1	18 22	15 12	2 23		
F 30	21 46	26 41	4 20	13 9	3 51	24 51	1 34	20 2	2 53	22 37	0 32	0 1	2 36	16 20	0 20	9 8	0 51	23 35	1 44	18 13	18 0	18 20	15 13	2 24		
S 31	21n55	24s40	4s56	13n18	3s51	24n48	1n36	19s59	2s56	22s37	0n32	0s 1	2n36	16n20	0s20	9s 8	0s51	23n34	1n44	18n12	17n59	18n18	15n14	2s24		





ASTRODIENST EPHEMERIS for the year 1687  
geocentric

JULY 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	Day
T 1	18 36 39	9°56' 630	25°17' 17	2°15' 15	15°22' 20	20°27' 16	16°39' 16	6°24' 6	17°32' 17	8°35' 8	21°37' 21	20°33' 20	19°11' 19	27°44' 27	21°3' 21	T 1
W 2	18 40 36	10° 3'41	9°21' 21	4°23' 16	16°32' 20	20°33' 16	16°33' 16	6°27' 6	17°34' 17	8°34' 8	21°39' 21	20°32' 20	19° 7' 19	27°51' 27	21° 6' 21	W 2
T 3	18 44 32	11° 0'53	23° 5' 6	6°32' 17	17°43' 20	20°39' 16	16°27' 6	6°29' 6	17°37' 17	8°33' 8	21°40' 21	20°33' 20	19° 4' 19	27°58' 27	21°10' 21	T 3
F 4	18 48 29	11°58'05	6°33' 8	8°42' 18	18°53' 20	20°43' 16	16°20' 6	6°32' 6	17°39' 17	8°33' 8	21°42' 21	20°34' 20	19° 1' 19	28° 5' 28	21°13' 21	F 4
S 5	18 52 26	12°55'17	19°43' 19	10°52' 20	20° 3' 20	20°47' 16	16°14' 6	6°34' 6	17°42' 17	8°32' 8	21°43' 21	20°35' 20	18°58' 18	28°11' 28	21°16' 21	S 5
S 6	18 56 22	13°52'30	2°11'40	13° 2' 21	21°14' 20	20°50' 16	16° 8' 6	6°37' 6	17°44' 17	8°31' 8	21°45' 21	20°34' 20	18°55' 18	28°18' 28	21°19' 21	S 6
M 7	19 0 19	14°49'43	15°24' 15	15°11' 22	22°24' 20	20°52' 16	16° 2' 6	6°40' 6	17°46' 17	8°30' 8	21°47' 21	20°31' 20	18°52' 18	28°25' 28	21°22' 21	M 7
T 8	19 4 15	15°46'57	27°57' 17	20° 3' 23	23°34' 20	20°54' 15	15°56' 6	6°42' 6	17°48' 17	8°30' 8	21°48' 21	20°26' 18	18°48' 18	28°32' 28	21°25' 21	T 8
W 9	19 8 12	16°44'11	10°20'50	19°28' 24	24°44' 20	20°54' 15	15°51' 6	6°45' 6	17°50' 17	8°29' 8	21°50' 21	20°18' 18	18°45' 18	28°38' 28	21°28' 21	W 9
T 10	19 12 8	17°41'26	22°34' 21	21°35' 25	25°53' 20	20°54' 15	15°45' 6	6°48' 6	17°53' 17	8°28' 8	21°52' 21	20° 9' 19	18°42' 18	28°45' 28	21°31' 21	T 10
F 11	19 16 5	18°38'40	4°40' 23	23°40' 27	27° 3' 20	20°53' 15	15°40' 6	6°52' 6	17°55' 17	8°27' 8	21°53' 21	19°58' 19	18°39' 18	28°52' 28	21°34' 21	F 11
S 12	19 20 1	19°35'55	16°39' 25	25°45' 28	28°13' 20	20°52' 15	15°34' 6	6°55' 6	17°57' 17	8°26' 8	21°55' 21	19°47' 19	18°36' 18	28°58' 28	21°36' 21	S 12
S 13	19 23 58	20°33'10	28°33' 27	27°48' 29	29°23' 20	20°49' 15	15°29' 6	6°58' 6	17°59' 17	8°25' 8	21°56' 21	19°37' 19	18°33' 18	29° 5' 29	21°39' 21	S 13
M14	19 27 55	21°30'26	10°17'42	29°49' 0	29°33' 20	20°46' 15	15°24' 6	7° 1' 7	18° 1' 18	8°24' 8	21°58' 21	19°28' 19	18°29' 18	29°12' 29	21°42' 21	M14
T 15	19 31 51	22°27'42	22°15' 1	1°49' 1	1°42' 20	20°42' 15	15°20' 6	7° 5' 7	18° 3' 18	8°23' 8	22° 0' 22	19°22' 19	18°26' 18	29°19' 29	21°44' 21	T 15
W16	19 35 48	23°24'58	4°10' 3	3°47' 2	2°51' 20	20°37' 15	15°15' 6	7° 8' 7	18° 5' 18	8°22' 8	22° 1' 22	19°18' 19	18°23' 18	29°25' 29	21°47' 21	W16
T 17	19 39 44	24°22'14	16°14' 5	5°44' 4	4° 0' 20	20°32' 15	15°10' 6	7°12' 7	18° 6' 18	8°21' 8	22° 3' 22	19°16' 19	18°20' 18	29°32' 29	21°50' 21	T 17
F 18	19 43 41	25°19'30	28°30' 7	7°38' 5	5° 9' 20	20°26' 15	15° 6' 6	7°16' 7	18° 8' 18	8°20' 8	22° 5' 22	19°16' 19	18°17' 18	29°39' 29	21°52' 21	F 18
S 19	19 47 37	26°16'47	11°15' 5	9°32' 6	6°18' 20	20°19' 15	15° 2' 6	7°20' 7	18°10' 18	8°19' 8	22° 6' 22	19°16' 19	18°13' 18	29°45' 29	21°54' 21	S 19
S 20	19 51 34	27°14'05	24° 2' 11	11°23' 7	7°27' 20	20°11' 14	14°58' 7	7°23' 7	18°12' 18	8°18' 8	22° 8' 22	19°16' 19	18°10' 18	29°52' 29	21°57' 21	S 20
M21	19 55 30	28°11'22	7°26' 13	13°13' 8	8°36' 20	20° 3' 14	14°54' 7	7°27' 7	18°13' 18	8°17' 8	22° 9' 22	19°15' 19	18° 7' 17	29°59' 29	21°59' 21	M21
T 22	19 59 27	29° 8'41	21°19' 15	15° 0' 9	9°45' 19	19°54' 14	14°50' 7	7°32' 7	18°15' 18	8°15' 8	22°11' 22	19°11' 19	18° 4' 17	0°17' 6	22° 1' 22	T 22
W23	20 3 24	0°16'00	5°34' 16	4°47' 10	10°54' 19	19°45' 14	14°47' 7	7°36' 7	18°17' 18	8°14' 8	22°13' 22	19° 5' 19	18° 1' 17	0°12' 6	22° 4' 22	W23
T 24	20 7 20	1° 3'19	20°27' 18	18°31' 12	12° 2' 19	19°34' 14	14°43' 7	7°40' 7	18°18' 18	8°13' 8	22°14' 22	18°57' 18	17°58' 17	0°19' 6	22° 6' 22	T 24
F 25	20 11 17	2° 0'39	5°30' 20	14°13' 11	11°19' 19	19°24' 14	14°40' 7	7°44' 7	18°20' 18	8°12' 8	22°16' 22	18°47' 18	17°54' 17	0°26' 6	22° 8' 22	F 25
S 26	20 15 13	2°58'00	20°41' 21	21°55' 14	14°19' 19	19°12' 14	14°37' 7	7°48' 7	18°21' 18	8°10' 8	22°18' 22	18°37' 18	17°51' 17	0°33' 6	22°10' 22	S 26
S 27	20 19 10	3°55'22	5°50' 23	23°34' 15	15°27' 19	19° 0' 14	14°34' 7	7°53' 7	18°22' 18	8° 9' 8	22°19' 22	18°28' 18	17°48' 17	0°39' 6	22°12' 22	S 27
M28	20 23 6	4°52'45	20°45' 25	12°16' 35	18°48' 18	18°48' 14	14°32' 7	7°57' 7	18°24' 18	8° 8' 8	22°21' 22	18°20' 18	17°45' 17	0°46' 6	22°14' 22	M28
T 29	20 27 3	5°50'09	5°21' 26	48°17	17°43	18°35	14°29	8° 2	18°25	8° 7	22°22	18°15	17°42	0°53	22°16	T 29
W30	20 30 59	6°47'34	19°33' 28	22°18' 51	18°51' 18	18°21' 14	14°27' 7	8° 7' 7	18°26' 18	8° 5' 8	22°24' 22	18°12' 18	17°39' 17	0°59' 6	22°18' 22	W30
T 31	20 34 56	7°45'00	3°20' 29	55°29	59°19	7°18	25°14	8°11	18°28	8° 4	22°26	18°D11	17°35	1°6	22°20	T 31

Day	☉	☾		♊		♋		♌		♍		♎		♏		♐		♑		♒	♓	♈	♉	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	decl	decl	lat	lat
T 1	23n10	5s45	4s13	24n 9	0n41	17n57	1n46	19s24	4s58	22s22	0n27	0s17	2n29	16n46	0s20	9s11	0s53	23n29	1n45	17n55	17n33	17n 3	15n39	2s29
W 2	23 6	0n36	3 23	24 15	0 51	17 35	1 45	19 26	5 3	22 21	0 27	0 18	2 28	16 47	0 20	9 11	0 53	23 28	1 45	17 55	17 32	17 0	15 40	2 29
T 3	23 1	6 47	2 22	24 19	1 0	17 12	1 44	19 29	5 7	22 21	0 27	0 19	2 28	16 47	0 20	9 11	0 53	23 28	1 46	17 55	17 31	16 58	15 41	2 29
F 4	22 56	12 33	1 15	24 19	1 8	16 49	1 43	19 31	5 11	22 20	0 27	0 20	2 28	16 48	0 20	9 12	0 53	23 28	1 46	17 55	17 30	16 55	15 41	2 30
S 5	22 51	17 37	0 5	24 17	1 15	16 26	1 42	19 34	5 15	22 20	0 27	0 21	2 28	16 49	0 20	9 12	0 53	23 28	1 46	17 56	17 29	16 53	15 42	2 30
S 6	22 45	21 47	1n 4	24 12	1 22	16 2	1 40	19 37	5 20	22 19	0 26	0 23	2 27	16 49	0 20	9 12	0 53	23 28	1 46	17 55	17 29	16 50	15 42	2 30
M 7	22 39	24 49	2 9	24 4	1 28	15 38	1 39	19 40	5 24	22 19	0 26	0 24	2 27	16 50	0 20	9 13	0 53	23 27	1 46	17 55	17 28	16 48	15 43	2 30
T 8	22 33	26 34	3 6	23 54	1 33	15 13	1 37	19 44	5 28	22 18	0 26	0 25	2 27	16 50	0 21	9 13	0 53	23 27	1 46	17 53	17 27	16 45	15 43	2 31
W 9	22 26	26 58	3 54	23 41	1 38	14 48	1 36	19 47	5 32	22 18	0 26	0 27	2 27	16 51	0 21	9 13	0 53	23 27	1 46	17 51	17 26	16 43	15 44	2 31
T 10	22 19	26 1	4 30	23 25	1 41	14 23	1 34	19 51	5 36	22 18	0 26	0 28	2 26	16 52	0 21	9 14	0 53	23 27	1 46	17 49	17 25	16 40	15 45	2 31
F 11	22 11	23 52	4 53	23 7	1 44	13 57	1 32	19 56	5 40	22 17	0 26	0 29	2 26	16 52	0 21	9 14	0 53	23 27	1 46	17 46	17 24	16 38	15 45	2 31
S 12	22 3	20 41	5 3	22 47	1 47	13 31	1 30	20 0	5 44	22 17	0 25	0 31	2 26	16 53	0 21	9 14	0 53	23 26	1 46	17 43	17 23	16 35	15 46	2 31
S 13	21 54	16 41	5 0	22 24	1 48	13 5	1 28	20 4	5 48	22 16	0 25	0 32	2 26	16 53	0 21	9 15	0 53	23 26	1 46	17 40	17 22	16 33	15 46	2 32
M14	21 46	12 3	4 44	22 0	1 49	12 38	1 26	20 9	5 52	22 16	0 25	0 34	2 26	16 54	0 21	9 15	0 53	23 26	1 46	17 38	17 22	16 30	15 46	2 32
T 15	21 36	6 59	4 15	21 34	1 49	12 12	1 24	20 14	5 56	22 16	0 25	0 35	2 25	16 54	0 21	9 16	0 53	23 26	1 46	17 36	17 21	16 28	15 47	2 32
W16	21 27	1 38	3 36	21 6	1 49	11 44	1 21	20 19	6 0	22 15	0 25	0 37	2 25	16 55	0 21	9 16	0 53	23 26	1 46	17 35	17 20	16 25	15 47	2 32
T 17	21 17	3s50	2 46	20 36	1 47	11 17	1 19	20 24	6 4	22 15	0 24	0 39	2 25	16 55	0 21	9 16	0 53	23 25	1 46	17 34	17 19	16 23	15 48	2 33
F 18	21 7	9 17	1 48	20 6	1 46	10 49	1 16	20 30	6 7	22 15	0 24	0 40	2 25	16 56	0 21	9 17	0 53	23 25	1 46	17 34	17 18	16 20	15 48	2 33
S 19	20 56	14 29	0 43	19 33	1 43	10 21	1 14	20 35	6 11	22 14	0 24	0 42	2 24	16 56	0 21	9 17	0 53	23 25	1 47	17 34	17 17	16 17	15 49	2 33
S 20	20 45	19 13	0s25	19 0	1 40	9 53	1 11	20 41	6 14	22 14	0 24	0 44	2 24	16 57	0 21	9 18	0 53	23 25	1 47	17 34	17 16	16 15	15 49	2 33
M21	20 34	23 9	1 35	18 26	1 37	9 25	1 8	20 47	6 18	22 14	0 24	0 46	2 24	16 57	0 21	9 18	0 53	23 25	1 47	17 34	17 15	16 12	15 49	2 34
T 22	20 22	25 53	2 41	17 51	1 33	8 56	1 5	20 53	6 21	22 14	0 24	0 47	2 24	16 58	0 21	9 19	0 53	23 24	1 47	17 33	17 15	16 10	15 50	2 34
W23	20 10	27 1	3 40	17 14	1 28	8 27	1 2	20 59	6 24	22 13	0 23	0 49	2 24	16 58	0 21	9 19	0 53	23 24	1 47	17 32	17 14	16 7	15 50	2 34
T 24	19 58	26 17	4 25	16 38	1 24	7 58	0 59	21 5	6 27	22 13	0 23	0 51	2 23	16 59	0 21	9 20	0 53	23 24	1 47	17 29	17 13	16 5	15 50	2 34
F 25	19 45	23 40	4 53	16 0	1 18	7 29	0 56	21 11	6 30	22 13	0 23	0 53	2 23	16 59	0 21	9 20	0 53	23 24	1 47	17 27	17 12	16 2	15 51	2 35
S 26	19 32	19 22	5 1	15 22	1 12	7 0	0 53	21 17	6 32	22 13	0 23	0 55	2 23	16 59	0 21	9 21	0 53	23 24	1 47	17 24	17 11	15 59	15 51	2 35
S 27	19 18	13 51	4 48	14 44	1 6	6 30	0 49	21 24	6 35	22 13	0 23	0 57	2 23	17 0	0 21	9 21	0 53	23 23	1 47	17 21	17 10	15 57	15 51	2 35
M28	19 5	7 34	4 15	14 5	1 0	6 1	0 46	21 30	6 37	22 13	0 22	0 59	2 23	17 0	0 21	9 22	0 53	23 23	1 47	17 19	17 9	15 54	15 51	2 35
T 29	18 51	1 1	3 26	13 26	0 53	5 31	0 43	21 36	6 39	22 13	0 22	1 1	2 22	17 1	0 21	9 22	0 53	23 23	1 47	17 18	17 8	15 52	15 52	2 36
W30	18 36	5n25	2 25	12 47	0 46	5 1	0 39	21 42	6 42	22 13	0 22	1 3	2 22	17 1	0 21	9 23	0 53	23 23	1 47	17 17	17 7	15 49	15 52	2 36
T 31	18n22	11n26	1s18	12n 7	0n38	4n31	0n35	21s49	6s43	22s12	0n22	1s 5	2n22	17n 1	0s21	9s23	0s53	23n23	1n47	17n17	17n 7	15n46	15n52	2s36



ASTRODIENST EPHEMERIS for the year 1687  
geocentric

AUGUST 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
F 1	20 38 53	8♂42'28	16♂43	1♂26	21♂6	17°R53	14°R23	8♂16	18♂29	8°R 3	22♂27	18°R11	17♂32	1♂13	22♂21	F 1
S 2	20 42 49	9°39'57	29°45	2°55	22°14	17°38	14°21	8°21	18°30	8°R 1	22°29	18♂11	17°29	1°20	22°23	S 2
S 3	20 46 46	10°37'27	12♂29	4°22	23°21	17°23	14°20	8°26	18°31	8° 0	22°30	18° 9	17°26	1°26	22°25	S 3
M 4	20 50 42	11°34'59	25° 0	5°48	24°28	17° 8	14°18	8°31	18°32	7°58	22°32	18° 5	17°23	1°33	22°26	M 4
T 5	20 54 39	12°32'32	7♂19	7°12	25°35	16°53	14°17	8°36	18°33	7°57	22°33	17°58	17°19	1°40	22°28	T 5
W 6	20 58 35	13°30'06	19°29	8°34	26°42	16°37	14°16	8°41	18°34	7°55	22°35	17°48	17°16	1°46	22°29	W 6
T 7	21 2 32	14°27'42	1♂33	9°54	27°49	16°21	14°15	8°46	18°35	7°54	22°36	17°36	17°13	1°53	22°31	T 7
F 8	21 6 29	15°25'19	13°31	11°13	28°56	16° 5	14°14	8°52	18°36	7°52	22°38	17°22	17°10	2° 0	22°32	F 8
S 9	21 10 25	16°22'57	25°25	12°29	0♂ 2	15°49	14°14	8°57	18°36	7°51	22°40	17° 8	17° 7	2° 7	22°33	S 9
S 10	21 14 22	17°20'36	7♂17	13°44	1° 9	15°33	14°14	9° 2	18°37	7°49	22°41	16°55	17° 4	2°13	22°34	S 10
M 11	21 18 18	18°18'16	19° 7	14°57	2°15	15°17	14°D14	9° 8	18°38	7°48	22°43	16°43	17° 0	2°20	22°36	M 11
T 12	21 22 15	19°15'57	0♂59	16° 7	3°21	15° 2	14°14	9°13	18°39	7°46	22°44	16°34	16°57	2°27	22°37	T 12
W 13	21 26 11	20°13'40	12°55	17°15	4°27	14°46	14°14	9°19	18°39	7°45	22°46	16°28	16°54	2°33	22°38	W 13
T 14	21 30 8	21°11'24	24°58	18°21	5°32	14°31	14°15	9°25	18°40	7°43	22°47	16°25	16°51	2°40	22°39	T 14
F 15	21 34 4	22° 9'08	7♂13	19°25	6°38	14°15	14°15	9°30	18°40	7°42	22°48	16°23	16°48	2°47	22°39	F 15
S 16	21 38 1	23° 6'54	19°45	20°26	7°43	14° 1	14°16	9°36	18°41	7°40	22°50	16°23	16°45	2°54	22°40	S 16
S 17	21 41 57	24° 4'42	2♂38	21°24	8°48	13°46	14°17	9°42	18°41	7°39	22°51	16°23	16°41	3° 0	22°41	S 17
M 18	21 45 54	25° 2'30	15°56	22°20	9°53	13°32	14°18	9°48	18°41	7°37	22°53	16°22	16°38	3° 7	22°42	M 18
T 19	21 49 51	26° 0'20	29°44	23°13	10°58	13°18	14°20	9°54	18°42	7°35	22°54	16°19	16°35	3°14	22°42	T 19
W 20	21 53 47	26°58'10	14♂1	24° 3	12° 3	13° 5	14°21	10° 0	18°42	7°34	22°56	16°13	16°32	3°21	22°43	W 20
T 21	21 57 44	27°56'03	28°46	24°49	13° 7	12°52	14°23	10° 6	18°42	7°32	22°57	16° 5	16°29	3°27	22°43	T 21
F 22	22 1 40	28°53'56	13♂52	25°32	14°11	12°40	14°25	10°12	18°42	7°31	22°58	15°55	16°25	3°34	22°44	F 22
S 23	22 5 37	29°51'51	29°11	26°11	15°15	12°28	14°27	10°18	18°42	7°29	23° 0	15°44	16°22	3°41	22°44	S 23
S 24	22 9 33	0♂49'47	14♂30	26°47	16°19	12°17	14°30	10°24	18°R42	7°27	23° 1	15°34	16°19	3°47	22°45	S 24
M 25	22 13 30	1°47'45	29°39	27°18	17°22	12° 7	14°32	10°30	18°42	7°26	23° 2	15°26	16°16	3°54	22°45	M 25
T 26	22 17 26	2°45'45	14°Y29	27°44	18°25	11°57	14°35	10°37	18°42	7°24	23° 4	15°21	16°13	4° 1	22°45	T 26
W 27	22 21 23	3°43'46	28°52	28° 6	19°28	11°48	14°38	10°43	18°42	7°22	23° 5	15°18	16°10	4° 8	22°45	W 27
T 28	22 25 20	4°41'50	12♂47	28°24	20°31	11°39	14°41	10°49	18°42	7°21	23° 6	15°D17	16° 6	4°14	22°R45	T 28
F 29	22 29 16	5°39'56	26°15	28°35	21°33	11°31	14°44	10°56	18°42	7°19	23° 8	15°17	16° 3	4°21	22°45	F 29
S 30	22 33 13	6°38'03	9♂18	28°42	22°36	11°24	14°47	11° 2	18°42	7°17	23° 9	15°R17	16° 0	4°28	22°45	S 30
S 31	22 37 9	7♂36'13	21♂59	28°R42	23♂37	11♂18	14♂51	11♂ 9	18♂41	7♂16	23♂10	15♂16	15♂57	4♂34	22♂45	S 31

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
F 1	18n 7	16n44	0s 8	11n27	0n30	4n 1	0n32	21s55	6s45	22s12	0n22	1s 7	2n22	17n 2	0s21	9s24	0s54	23n22	1n47	17n17	17n 6	15n44	15n52	2s36			
S 2	17 52	21 7	1n 1	10 48	0 22	3 31	0 28	22 1	6 47	22 12	0 21	1 9	2 22	17 2	0 21	9 24	0 54	23 22	1 48	17 17	17 5	15 41	15 52	2 37			
S 3	17 36	24 24	2 5	10 8	0 14	3 1	0 24	22 7	6 48	22 12	0 21	1 11	2 21	17 2	0 21	9 25	0 54	23 22	1 48	17 16	17 4	15 38	15 53	2 37			
M 4	17 20	26 24	3 1	9 29	0 5	2 30	0 20	22 13	6 49	22 12	0 21	1 13	2 21	17 2	0 21	9 25	0 54	23 22	1 48	17 15	17 3	15 36	15 53	2 37			
T 5	17 4	27 5	3 48	8 50	0s 4	2 0	0 16	22 19	6 50	22 12	0 21	1 15	2 21	17 3	0 21	9 26	0 54	23 22	1 48	17 13	17 2	15 33	15 53	2 37			
W 6	16 48	26 25	4 24	8 10	0 13	1 29	0 12	22 24	6 51	22 13	0 21	1 17	2 21	17 3	0 21	9 27	0 54	23 22	1 48	17 10	17 1	15 31	15 53	2 38			
T 7	16 31	24 32	4 48	7 32	0 22	0 59	0 7	22 30	6 51	22 13	0 21	1 20	2 21	17 3	0 21	9 27	0 54	23 21	1 48	17 7	17 0	15 28	15 53	2 38			
F 8	16 14	21 33	4 59	6 53	0 31	0 28	0 3	22 35	6 52	22 13	0 20	1 22	2 21	17 3	0 21	9 28	0 54	23 21	1 48	17 3	16 59	15 25	15 53	2 38			
S 9	15 57	17 43	4 56	6 15	0 41	0s 2	0s 1	22 40	6 52	22 13	0 20	1 24	2 20	17 4	0 21	9 28	0 54	23 21	1 48	16 59	16 58	15 23	15 53	2 38			
S 10	15 40	13 12	4 41	5 38	0 51	0 33	0 6	22 45	6 52	22 13	0 20	1 26	2 20	17 4	0 21	9 29	0 54	23 21	1 48	16 55	16 58	15 20	15 53	2 39			
M11	15 22	8 12	4 14	5 1	1 1	1 3	0 10	22 49	6 52	22 13	0 20	1 29	2 20	17 4	0 21	9 29	0 54	23 21	1 48	16 52	16 57	15 17	15 53	2 39			
T 12	15 4	2 54	3 35	4 24	1 11	1 34	0 15	22 54	6 51	22 13	0 20	1 31	2 20	17 4	0 21	9 30	0 54	23 21	1 48	16 49	16 56	15 15	15 53	2 39			
W13	14 46	2s33	2 47	3 48	1 21	2 4	0 20	22 58	6 51	22 14	0 19	1 33	2 20	17 4	0 21	9 31	0 54	23 20	1 48	16 47	16 55	15 12	15 53	2 40			
T 14	14 28	7 58	1 51	3 13	1 31	2 35	0 24	23 2	6 50	22 14	0 19	1 36	2 20	17 4	0 21	9 31	0 54	23 20	1 49	16 46	16 54	15 9	15 53	2 40			
F 15	14 9	13 11	0 48	2 39	1 41	3 5	0 29	23 5	6 49	22 14	0 19	1 38	2 19	17 5	0 21	9 32	0 54	23 20	1 49	16 46	16 53	15 7	15 53	2 40			
S 16	13 50	17 59	0s18	2 6	1 51	3 35	0 34	23 9	6 48	22 14	0 19	1 41	2 19	17 5	0 21	9 32	0 54	23 20	1 49	16 46	16 52	15 4	15 53	2 40			
S 17	13 31	22 6	1 25	1 33	2 1	4 6	0 39	23 12	6 46	22 15	0 19	1 43	2 19	17 5	0 21	9 33	0 54	23 20	1 49	16 46	16 51	15 1	15 53	2 41			
M18	13 12	25 13	2 29	1 2	2 12	4 36	0 44	23 14	6 45	22 15	0 19	1 45	2 19	17 5	0 21	9 34	0 54	23 20	1 49	16 46	16 50	14 59	15 53	2 41			
T 19	12 52	26 57	3 28	0 32	2 22	5 6	0 49	23 17	6 43	22 15	0 18	1 48	2 19	17 5	0 21	9 34	0 54	23 19	1 49	16 45	16 49	14 56	15 53	2 41			
W20	12 33	26 58	4 15	0 3	2 32	5 36	0 54	23 19	6 41	22 16	0 18	1 50	2 19	17 5	0 21	9 35	0 54	23 19	1 49	16 43	16 49	14 53	15 53	2 41			
T 21	12 13	25 8	4 48	0s25	2 42	6 6	0 59	23 20	6 39	22 16	0 18	1 53	2 19	17 5	0 21	9 35	0 54	23 19	1 49	16 41	16 48	14 50	15 53	2 42			
F 22	11 53	21 29	5 1	0 51	2 52	6 36	1 4	23 22	6 36	22 16	0 18	1 55	2 18	17 5	0 21	9 36	0 54	23 19	1 49	16 38	16 47	14 48	15 53	2 42			
S 23	11 32	16 21	4 53	1 15	3 1	7 5	1 10	23 23	6 34	22 17	0 18	1 58	2 18	17 5	0 21	9 37	0 54	23 19	1 49	16 35	16 46	14 45	15 52	2 42			
S 24	11 12	10 10	4 24	1 38	3 11	7 35	1 15	23 24	6 31	22 17	0 18	2 0	2 18	17 5	0 21	9 37	0 54	23 19	1 49	16 32	16 45	14 42	15 52	2 43			
M25	10 51	3 27	3 37	1 58	3 20	8 4	1 20	23 24	6 29	22 18	0 17	2 3	2 18	17 5	0 21	9 38	0 54	23 19	1 50	16 30	16 44	14 40	15 52	2 43			
T 26	10 30	3n20	2 35	2 17	3 28	8 33	1 26	23 24	6 26	22 18	0 17	2 5	2 18	17 5	0 21	9 39	0 54	23 18	1 50	16 28	16 43	14 37	15 52	2 43			
W27	10 9	9 45	1 26	2 33	3 37	9 2	1 31	23 24	6 23	22 19	0 17	2 8	2 18	17 5	0 21	9 39	0 54	23 18	1 50	16 27	16 42	14 34	15 51	2 43			
T 28	9 48	15 30	0 13	2 47	3 44	9 31	1 37	23 23	6 20	22 19	0 17	2 11	2 18	17 5	0 21	9 40	0 54	23 18	1 50	16 27	16 41	14 31	15 51	2 44			
F 29	9 27	20 17	0n58	2 59	3 51	10 0	1 42	23 23	6 16	22 20	0 17	2 13	2 18	17 5	0 21	9 40	0 54	23 18	1 50	16 27	16 40	14 29	15 51	2 44			
S 30	9 6	23 55	2 4	3 7	3 58	10 28	1 48	23 21	6 13	22 20	0 17	2 16	2 18	17 5	0 21	9 41	0 54	23 18	1 50	16 27	16 39	14 26	15 51	2 44			
S 31	8n44	26n16	3n 2	3s12	4s 4	10s56	1s53	23s20	6s 9	22s21	0n16	2s19	2n17	17n 5	0s21	9s42	0s54	23n18	1n50	16n27	16n38	14n23	15n50	2s44			

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

SEPTEMBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♂	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
M 1	22 41 6	8♐34'25	4♌24	28°R36	24♊39	11°R12	14♊55	11♊15	18°R41	7°R14	23♏11	15°R13	15♊54	4♐41	22°R45	M 1
T 2	22 45 2	9°32'38	16°36	28♐24	25°40	11♊7	14°59	11°22	18♊40	7♐12	23°12	15♊8	15°51	4°48	22♊45	T 2
W 3	22 48 59	10°30'54	28°38	28° 6	26°41	11° 3	15° 3	11°28	18°40	7°11	23°14	15° 0	15°47	4°55	22°44	W 3
T 4	22 52 55	11°29'11	10♊35	27°41	27°42	11° 0	15° 7	11°35	18°39	7° 9	23°15	14°49	15°44	5° 1	22°44	T 4
F 5	22 56 52	12°27'31	22°28	27°10	28°43	10°57	15°11	11°42	18°39	7° 8	23°16	14°38	15°41	5° 8	22°43	F 5
S 6	23 0 49	13°25'52	4♐20	26°32	29°43	10°55	15°16	11°48	18°38	7° 6	23°17	14°26	15°38	5°15	22°43	S 6
S 7	23 4 45	14°24'15	16°12	25°48	0♐42	10°54	15°21	11°55	18°38	7° 4	23°18	14°15	15°35	5°21	22°42	S 7
M 8	23 8 42	15°22'40	28° 5	24°59	1°42	10°D54	15°26	12° 2	18°37	7° 3	23°19	14° 5	15°31	5°28	22°42	M 8
T 9	23 12 38	16°21'07	10♊1	24° 5	2°41	10°55	15°31	12° 9	18°36	7° 1	23°20	13°57	15°28	5°35	22°41	T 9
W10	23 16 35	17°19'36	22° 2	23° 7	3°40	10°56	15°36	12°16	18°35	6°59	23°22	13°52	15°25	5°42	22°40	W10
T 11	23 20 31	18°18'06	4♐11	22° 6	4°38	10°59	15°41	12°23	18°35	6°58	23°23	13°50	15°22	5°48	22°39	T 11
F 12	23 24 28	19°16'38	16°31	21° 3	5°36	11° 2	15°47	12°29	18°34	6°56	23°24	13°D50	15°19	5°55	22°38	F 12
S 13	23 28 24	20°15'12	29° 5	20° 0	6°33	11° 6	15°53	12°36	18°33	6°55	23°25	13°50	15°16	6° 2	22°37	S 13
S 14	23 32 21	21°13'48	11♊58	18°58	7°30	11°11	15°59	12°43	18°32	6°53	23°26	13°51	15°12	6° 8	22°36	S 14
M15	23 36 18	22°12'25	25°12	17°59	8°27	11°16	16° 5	12°50	18°31	6°51	23°27	13°R52	15° 9	6°15	22°35	M15
T 16	23 40 14	23°11'04	8♊51	17° 4	9°23	11°23	16°11	12°57	18°30	6°50	23°27	13°50	15° 6	6°22	22°34	T 16
W17	23 44 11	24° 9'45	22°57	16°15	10°18	11°30	16°17	13° 5	18°28	6°48	23°28	13°47	15° 3	6°29	22°33	W17
T 18	23 48 7	25° 8'27	7♊29	15°33	11°13	11°38	16°24	13°12	18°27	6°47	23°29	13°42	15° 0	6°35	22°32	T 18
F 19	23 52 4	26° 7'11	22°23	14°59	12° 8	11°46	16°30	13°19	18°26	6°45	23°30	13°36	14°56	6°42	22°30	F 19
S 20	23 56 0	27° 5'57	7♐32	14°34	13° 2	11°56	16°37	13°26	18°25	6°44	23°31	13°29	14°53	6°49	22°29	S 20
S 21	23 59 57	28° 4'44	22°46	14°18	13°55	12° 6	16°44	13°33	18°23	6°42	23°32	13°22	14°50	6°55	22°27	S 21
M22	0 3 53	29° 3'34	7♐54	14°D13	14°48	12°17	16°51	13°40	18°22	6°41	23°33	13°16	14°47	7° 2	22°26	M22
T 23	0 7 50	0♊2'25	22°47	14°17	15°40	12°28	16°58	13°47	18°21	6°39	23°33	13°13	14°44	7° 9	22°24	T 23
W24	0 11 47	1° 1'19	7♊18	14°32	16°32	12°40	17° 6	13°54	18°19	6°38	23°34	13°D11	14°41	7°16	22°23	W24
T 25	0 15 43	2° 0'15	21°21	14°57	17°23	12°53	17°13	14° 2	18°18	6°36	23°35	13°11	14°37	7°22	22°21	T 25
F 26	0 19 40	2°59'14	4♐57	15°31	18°13	13° 7	17°21	14° 9	18°16	6°35	23°36	13°12	14°34	7°29	22°19	F 26
S 27	0 23 36	3°58'14	18° 6	16°14	19° 3	13°21	17°29	14°16	18°15	6°33	23°36	13°14	14°31	7°36	22°17	S 27
S 28	0 27 33	4°57'17	0♊51	17° 6	19°51	13°36	17°37	14°23	18°13	6°32	23°37	13°R15	14°28	7°42	22°16	S 28
M29	0 31 29	5°56'23	13°17	18° 5	20°40	13°51	17°45	14°31	18°12	6°31	23°38	13°15	14°25	7°49	22°14	M29
T 30	0 35 26	6♊55'30	25♊28	19♐11	21♐27	14♊7	17♊53	14♊38	18♊10	6♐29	23♊38	13♊13	14♊22	7♐56	22♊12	T 30

Day	☉	☾		♂		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
M 1	8n22	27n14	3n50	3s14	4s 8	11s24	1s59	23s18	6s 6	22s21	0n16	2s21	2n17	17n 5	0s21	9s42	0s54	23n18	1n50	16n26	16n38	14n20	15n50	2s45			
T 2	8 0	26 51	4 26	3 13	4 12	11 52	2 4	23 16	6 2	22 22	0 16	2 24	2 17	17 4	0 21	9 43	0 54	23 18	1 50	16 24	16 37	14 18	15 50	2 45			
W 3	7 38	25 13	4 51	3 8	4 15	12 20	2 10	23 14	5 59	22 23	0 16	2 27	2 17	17 4	0 21	9 44	0 54	23 18	1 50	16 22	16 36	14 15	15 49	2 45			
T 4	7 16	22 27	5 2	2 59	4 16	12 47	2 16	23 11	5 55	22 23	0 16	2 29	2 17	17 4	0 21	9 44	0 54	23 17	1 50	16 19	16 35	14 12	15 49	2 46			
F 5	6 54	18 46	5 0	2 47	4 16	13 14	2 21	23 8	5 51	22 24	0 16	2 32	2 17	17 4	0 21	9 45	0 54	23 17	1 51	16 15	16 34	14 9	15 49	2 46			
S 6	6 31	14 21	4 45	2 30	4 14	13 41	2 27	23 4	5 47	22 25	0 15	2 35	2 17	17 4	0 21	9 45	0 54	23 17	1 51	16 12	16 33	14 7	15 48	2 46			
S 7	6 9	9 25	4 18	2 9	4 10	14 8	2 33	23 1	5 43	22 25	0 15	2 37	2 17	17 4	0 21	9 46	0 54	23 17	1 51	16 8	16 32	14 4	15 48	2 46			
M 8	5 46	4 7	3 39	1 45	4 5	14 34	2 39	22 57	5 39	22 26	0 15	2 40	2 17	17 3	0 21	9 47	0 54	23 17	1 51	16 6	16 31	14 1	15 47	2 47			
T 9	5 24	1s22	2 51	1 17	3 58	15 0	2 44	22 53	5 35	22 27	0 15	2 43	2 17	17 3	0 21	9 47	0 54	23 17	1 51	16 3	16 30	13 58	15 47	2 47			
W10	5 1	6 50	1 54	0 45	3 48	15 25	2 50	22 48	5 31	22 27	0 15	2 46	2 16	17 3	0 21	9 48	0 54	23 17	1 51	16 2	16 29	13 55	15 47	2 47			
T 11	4 38	12 8	0 51	0 11	3 37	15 51	2 56	22 44	5 26	22 28	0 15	2 48	2 16	17 3	0 21	9 48	0 54	23 17	1 51	16 1	16 28	13 53	15 46	2 47			
F 12	4 15	17 2	0s14	0n26	3 24	16 16	3 2	22 39	5 22	22 29	0 14	2 51	2 16	17 3	0 21	9 49	0 54	23 17	1 51	16 1	16 27	13 50	15 46	2 48			
S 13	3 52	21 19	1 21	1 4	3 9	16 40	3 7	22 34	5 18	22 30	0 14	2 54	2 16	17 2	0 21	9 50	0 54	23 17	1 51	16 1	16 26	13 47	15 45	2 48			
S 14	3 29	24 40	2 25	1 43	2 53	17 5	3 13	22 28	5 14	22 30	0 14	2 57	2 16	17 2	0 21	9 50	0 54	23 17	1 52	16 2	16 26	13 44	15 45	2 48			
M15	3 6	26 47	3 24	2 23	2 35	17 29	3 19	22 23	5 9	22 31	0 14	2 59	2 16	17 2	0 21	9 51	0 54	23 17	1 52	16 2	16 25	13 41	15 44	2 49			
T 16	2 43	27 23	4 12	3 1	2 16	17 52	3 25	22 17	5 5	22 32	0 14	3 2	2 16	17 1	0 21	9 51	0 54	23 16	1 52	16 1	16 24	13 39	15 43	2 49			
W17	2 19	26 15	4 48	3 38	1 57	18 16	3 30	22 10	5 1	22 33	0 14	3 5	2 16	17 1	0 21	9 52	0 54	23 16	1 52	16 0	16 23	13 36	15 43	2 49			
T 18	1 56	23 21	5 6	4 13	1 37	18 38	3 36	22 4	4 56	22 34	0 14	3 8	2 16	17 1	0 21	9 53	0 54	23 16	1 52	15 59	16 22	13 33	15 42	2 49			
F 19	1 33	18 52	5 4	4 45	1 17	19 1	3 41	21 58	4 52	22 34	0 13	3 11	2 16	17 0	0 21	9 53	0 54	23 16	1 52	15 57	16 21	13 30	15 42	2 50			
S 20	1 9	13 6	4 41	5 13	0 57	19 23	3 47	21 51	4 48	22 35	0 13	3 13	2 16	17 0	0 21	9 54	0 54	23 16	1 52	15 55	16 20	13 27	15 41	2 50			
S 21	0 46	6 32	3 58	5 37	0 37	19 45	3 53	21 44	4 43	22 36	0 13	3 16	2 16	17 0	0 21	9 54	0 54	23 16	1 52	15 53	16 19	13 25	15 40	2 50			
M22	0 22	0n24	2 59	5 56	0 19	20 6	3 58	21 36	4 39	22 37	0 13	3 19	2 16	16 59	0 21	9 55	0 54	23 16	1 52	15 51	16 18	13 22	15 40	2 50			
T 23	0s 1	7 12	1 48	6 11	0 1	20 27	4 4	21 29	4 35	22 38	0 13	3 22	2 16	16 59	0 21	9 55	0 54	23 16	1 52	15 50	16 17	13 19	15 39	2 51			
W24	0 24	13 28	0 32	6 21	0n16	20 47	4 9	21 21	4 31	22 39	0 13	3 25	2 16	16 58	0 21	9 56	0 54	23 16	1 53	15 49	16 16	13 16	15 39	2 51			
T 25	0 48	18 51	0n44	6 26	0 32	21 7	4 14	21 14	4 26	22 40	0 13	3 28	2 16	16 58	0 21	9 56	0 54	23 16	1 53	15 50	16 15	13 13	15 38	2 51			
F 26	1 11	23 3	1 55	6 25	0 46	21 26	4 20	21 6	4 22	22 40	0 12	3 30	2 16	16 58	0 21	9 57	0 54	23 16	1 53	15 50	16 14	13 10	15 37	2 51			
S 27	1 35	25 54	2 58	6 21	0 59	21 45	4 25	20 58	4 18	22 41	0 12	3 33	2 16	16 57	0 21	9 58	0 54	23 16	1 53	15 50	16 13	13 8	15 36	2 52			
S 28	1 58	27 19	3 50	6 11	1 10	22 4	4 30	20 49	4 14	22 42	0 12	3 36	2 16	16 57	0 21	9 58	0 54	23 16	1 53	15 51	16 12	13 5	15 36	2 52			
M29	2 22	27 17	4 30	5 57	1 21	22 22	4 35	20 41	4 10	22 43	0 12	3 39	2 16	16 56	0 21	9 59	0 54	23 16	1 53	15 51	16 11	13 2	15 35	2 52			
T 30	2s45	25n56	4n56	5n40	1n30	22s40	4s40	20s32	4s 5	22s44	0n12	3s42	2n16	16n56	0s21	9s59	0s54	23n16	1n53	15n50	16n11	12n59	15n34	2s52			

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

OCTOBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
W 1	0 39 22	7♌54'40	7♏28	20♊24	22♊13	14♌24	18♌1	14♌45	18♌8	6♌28	23♌39	13♌10	14♌18	8♊3	22♌10	W 1
T 2	0 43 19	8°53'53	19°23	21°42	22°59	14°42	18°10	14°53	18♌6	6♌26	23°40	13♌5	14°15	8°9	22♌8	T 2
F 3	0 47 16	9°53'07	1♊14	23°4	23°44	14°59	18°18	15°0	18°5	6°25	23°40	12°59	14°12	8°16	22°5	F 3
S 4	0 51 12	10°52'24	13°5	24°31	24°27	15°18	18°27	15°7	18°3	6°24	23°41	12°53	14°9	8°23	22°3	S 4
S 5	0 55 9	11°51'43	24°59	26°2	25°10	15°37	18°36	15°15	18°1	6°23	23°41	12°47	14°6	8°29	22°1	S 5
M 6	0 59 5	12°51'03	6♌58	27°35	25°52	15°57	18°45	15°22	17°59	6°21	23°42	12°42	14°2	8°36	21°59	M 6
T 7	1 3 2	13°50'27	19°3	29°11	26°33	16°17	18°54	15°29	17°57	6°20	23°42	12°39	13°59	8°43	21°56	T 7
W 8	1 6 58	14°49'52	1♊16	0♌49	27°13	16°37	19°3	15°37	17°55	6°19	23°43	12°37	13°56	8°49	21°54	W 8
T 9	1 10 55	15°49'19	13°38	2°29	27°51	16°59	19°12	15°44	17°53	6°18	23°43	12°D36	13°53	8°56	21°52	T 9
F 10	1 14 51	16°48'48	26°11	4°9	28°28	17°20	19°22	15°51	17°51	6°17	23°43	12°37	13°50	9°3	21°49	F 10
S 11	1 18 48	17°48'19	8♌57	5°51	29°5	17°43	19°31	15°59	17°49	6°15	23°44	12°38	13°47	9°10	21°47	S 11
S 12	1 22 44	18°47'52	21°58	7°33	29°39	18°5	19°41	16°6	17°47	6°14	23°44	12°40	13°43	9°16	21°44	S 12
M13	1 26 41	19°47'26	5♌16	9°16	0♌13	18°29	19°51	16°13	17°45	6°13	23°44	12°41	13°40	9°23	21°42	M13
T 14	1 30 38	20°47'03	18°52	10°59	0°45	18°52	20°1	16°21	17°43	6°12	23°45	12°R42	13°37	9°30	21°39	T 14
W15	1 34 34	21°46'41	2♌49	12°41	1°16	19°16	20°11	16°28	17°41	6°11	23°45	12°41	13°34	9°36	21°36	W15
T 16	1 38 31	22°46'21	17°5	14°24	1°45	19°41	20°21	16°35	17°39	6°10	23°45	12°40	13°31	9°43	21°33	T 16
F 17	1 42 27	23°46'02	1♊38	16°7	2°13	20°6	20°31	16°42	17°36	6°9	23°45	12°38	13°28	9°50	21°31	F 17
S 18	1 46 24	24°45'45	16°24	17°50	2°39	20°31	20°41	16°50	17°34	6°8	23°46	12°36	13°24	9°57	21°28	S 18
S 19	1 50 20	25°45'30	1♊16	19°32	3°3	20°57	20°52	16°57	17°32	6°7	23°46	12°34	13°21	10°3	21°25	S 19
M20	1 54 17	26°45'17	16°7	21°14	3°25	21°23	21°2	17°4	17°30	6°6	23°46	12°32	13°18	10°10	21°22	M20
T 21	1 58 13	27°45'05	0♌49	22°55	3°46	21°50	21°13	17°12	17°27	6°5	23°46	12°31	13°15	10°17	21°19	T 21
W22	2 2 10	28°44'56	15°14	24°36	4°5	22°17	21°24	17°19	17°25	6°5	23°46	12°D30	13°12	10°23	21°16	W22
T 23	2 6 7	29°44'49	29°18	26°16	4°22	22°44	21°34	17°26	17°23	6°4	23°46	12°31	13°8	10°30	21°13	T 23
F 24	2 10 3	0♌44'44	12♊57	27°56	4°36	23°12	21°45	17°33	17°20	6°3	23°46	12°32	13°5	10°37	21°10	F 24
S 25	2 14 0	1°44'41	26°12	29°36	4°49	23°40	21°56	17°40	17°18	6°2	23°R46	12°33	13°2	10°44	21°7	S 25
S 26	2 17 56	2°44'40	9♌3	1♊15	5°0	24°8	22°7	17°48	17°15	6°1	23°46	12°34	12°59	10°50	21°4	S 26
M27	2 21 53	3°44'42	21°33	2°54	5°8	24°37	22°18	17°55	17°13	6°1	23°46	12°34	12°56	10°57	21°1	M27
T 28	2 25 49	4°44'45	3♌47	4°32	5°15	25°6	22°30	18°2	17°11	6°0	23°46	12°R35	12°53	11°4	20°58	T 28
W29	2 29 46	5°44'51	15°49	6°10	5°19	25°35	22°41	18°9	17°8	5°59	23°46	12°35	12°49	11°10	20°55	W29
T 30	2 33 42	6°44'58	27°43	7°47	5°R20	26°5	22°52	18°16	17°6	5°59	23°46	12°34	12°46	11°17	20°52	T 30
F 31	2 37 39	7♊45'08	9♊34	9♊24	5♌20	26°35	23♌4	18♌23	17♌3	5°58	23°46	12♌34	12♌43	11♊24	20♌49	F 31

Day	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂
	decl	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat	decl lat
W 1	3s 9	23n25 5n 9	5n18 1n37	22s57 4s45	20s23 4s 1	22s45 0n12	3s45 2n15	16n55 0s21	10s 0 0s54	23n16 1n53	15n49 16n10	12n56 15n34	2s53				
T 2	3 32	19 55 5 9	4 53 1 43	23 13 4 50	20 14 3 57	22 46 0 12	3 47 2 15	16 55 0 21	10 0 0 54	23 16 1 53	15 48 16 9	12 53 15 33	2 53				
F 3	3 55	15 39 4 56	4 25 1 48	23 29 4 55	20 5 3 53	22 47 0 11	3 50 2 15	16 54 0 21	10 1 0 54	23 16 1 54	15 46 16 8	12 50 15 32	2 53				
S 4	4 19	10 48 4 29	3 54 1 52	23 45 4 59	19 55 3 49	22 48 0 11	3 53 2 15	16 54 0 21	10 1 0 54	23 16 1 54	15 44 16 7	12 47 15 31	2 53				
S 5	4 42	5 32 3 51	3 20 1 55	24 0 5 4	19 46 3 45	22 48 0 11	3 56 2 15	16 53 0 21	10 1 0 54	23 16 1 54	15 42 16 6	12 45 15 30	2 54				
M 6	5 5	0 2 3 3	2 45 1 57	24 15 5 8	19 36 3 41	22 49 0 11	3 59 2 15	16 53 0 21	10 2 0 54	23 16 1 54	15 41 16 5	12 42 15 30	2 54				
T 7	5 28	5s32 2 5	2 8 1 58	24 29 5 12	19 26 3 37	22 50 0 11	4 1 2 15	16 52 0 21	10 2 0 54	23 16 1 54	15 40 16 4	12 39 15 29	2 54				
W 8	5 51	10 58 1 2	1 29 1 58	24 42 5 17	19 16 3 33	22 51 0 11	4 4 2 15	16 52 0 21	10 3 0 54	23 16 1 54	15 39 16 3	12 36 15 28	2 54				
T 9	6 14	16 3 0s 6	0 48 1 57	24 55 5 20	19 6 3 30	22 52 0 11	4 7 2 15	16 51 0 21	10 3 0 54	23 16 1 54	15 39 16 2	12 33 15 27	2 54				
F 10	6 37	20 32 1 14	0 7 1 56	25 7 5 24	18 56 3 26	22 53 0 10	4 10 2 15	16 51 0 21	10 4 0 54	23 16 1 54	15 39 16 1	12 30 15 26	2 55				
S 11	7 0	24 8 2 20	0s35 1 54	25 19 5 28	18 45 3 22	22 54 0 10	4 13 2 16	16 50 0 21	10 4 0 54	23 16 1 54	15 39 16 0	12 27 15 26	2 55				
S 12	7 23	26 34 3 20	1 18 1 51	25 30 5 31	18 35 3 18	22 55 0 10	4 15 2 16	16 49 0 21	10 4 0 54	23 16 1 55	15 40 15 59	12 24 15 25	2 55				
M13	7 45	27 33 4 10	2 2 1 48	25 41 5 34	18 24 3 15	22 56 0 10	4 18 2 16	16 49 0 21	10 5 0 54	23 16 1 55	15 40 15 58	12 21 15 24	2 55				
T 14	8 8	26 55 4 48	2 45 1 44	25 51 5 38	18 13 3 11	22 56 0 10	4 21 2 16	16 48 0 21	10 5 0 54	23 17 1 55	15 41 15 57	12 19 15 23	2 56				
W15	8 30	24 36 5 10	3 29 1 40	26 0 5 40	18 2 3 7	22 57 0 10	4 24 2 16	16 48 0 21	10 6 0 54	23 17 1 55	15 40 15 56	12 16 15 22	2 56				
T 16	8 52	20 44 5 14	4 13 1 36	26 8 5 43	17 51 3 4	22 58 0 10	4 27 2 16	16 47 0 21	10 6 0 54	23 17 1 55	15 40 15 55	12 13 15 21	2 56				
F 17	9 14	15 33 4 58	4 57 1 31	26 16 5 45	17 39 3 0	22 59 0 10	4 29 2 16	16 46 0 21	10 6 0 54	23 17 1 55	15 39 15 54	12 10 15 20	2 56				
S 18	9 36	9 24 4 22	5 41 1 26	26 24 5 47	17 28 2 57	23 0 0 9	4 32 2 16	16 46 0 21	10 7 0 54	23 17 1 55	15 39 15 53	12 7 15 19	2 56				
S 19	9 58	2 41 3 28	6 25 1 20	26 30 5 49	17 16 2 53	23 1 0 9	4 35 2 16	16 45 0 21	10 7 0 54	23 17 1 55	15 38 15 52	12 4 15 18	2 57				
M20	10 20	4n11 2 21	7 9 1 14	26 36 5 50	17 4 2 50	23 2 0 9	4 38 2 16	16 45 0 21	10 7 0 54	23 17 1 56	15 38 15 52	12 1 15 17	2 57				
T 21	10 42	10 46 1 4	7 52 1 9	26 42 5 52	16 52 2 46	23 2 0 9	4 40 2 16	16 44 0 21	10 8 0 54	23 17 1 56	15 37 15 51	11 58 15 17	2 57				
W22	11 3	16 40 0n15	8 35 1 3	26 46 5 52	16 40 2 43	23 3 0 9	4 43 2 16	16 43 0 21	10 8 0 54	23 17 1 56	15 37 15 50	11 55 15 16	2 57				
T 23	11 24	21 32 1 32	9 17 0 56	26 50 5 53	16 28 2 40	23 4 0 9	4 46 2 16	16 43 0 21	10 8 0 54	23 17 1 56	15 37 15 49	11 52 15 15	2 57				
F 24	11 45	25 3 2 41	9 59 0 50	26 53 5 53	16 16 2 36	23 5 0 9	4 48 2 16	16 42 0 21	10 9 0 54	23 17 1 56	15 38 15 48	11 49 15 14	2 57				
S 25	12 6	27 4 3 39	10 40 0 44	26 55 5 53	16 4 2 33	23 6 0 9	4 51 2 16	16 41 0 21	10 9 0 54	23 18 1 56	15 38 15 47	11 46 15 13	2 58				
S 26	12 27	27 34 4 24	11 21 0 37	26 56 5 52	15 51 2 30	23 6 0 8	4 54 2 16	16 41 0 21	10 9 0 54	23 18 1 56	15 38 15 46	11 43 15 12	2 58				
M27	12 47	27 37 4 56	12 1 0 30	26 57 5 51	15 38 2 27	23 7 0 8	4 56 2 16	16 40 0 21	10 9 0 54	23 18 1 56	15 38 15 45	11 40 15 11	2 58				
T 28	13 8	24 25 5 13	12 41 0 24	26 56 5 49	15 26 2 23	23 8 0 8	4 59 2 16	16 39 0 21	10 10 0 54	23 18 1 56	15 38 15 44	11 37 15 10	2 58				
W29	13 28	21 9 5 16	13 20 0 17	26 55 5 47	15 13 2 20	23 9 0 8	5 2 2 16	16 39 0 21	10 10 0 54	23 18 1 57	15 38 15 43	11 34 15 9	2 58				
T 30	13 48	17 4 5 6	13 58 0 10	26 53 5 45	15 0 2 17	23 9 0 8	5 4 2 16	16 38 0 21	10 10 0 54	23 18 1 57	15 38 15 42	11 32 15 8	2 58				
F 31	14s 7	12n21 4n43	14s35 0n 4	26s49 5s41	14s47 2s14	23s10 0n 8	5s 7 2n16	16n37 0s21	10s10 0s54	23n18 1n57	15n38 15n41	11n29 15n 7	2s59				

Julian Day Number = 2337497.5, Delta T = 19.51 sec  
Ecliptic obliquity = 23°28'55", Nutation = - 0°00'12", out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 2

ASTRODIENST EPHEMERIS for the year 1687  
geocentric

NOVEMBER 1687 GC

00:00 UT

Day	Sid.t	☉	☽	♀	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	♂	Day
S 1	2 41 36	8♑45°20	21♐26	11♑0	5°R17	27°≈ 5	23♊16	18♑30	17°R 1	5°R58	23°R46	12°R33	12♑40	11♐30	20°R46	S 1
S 2	2 45 32	9°45'34	3♑23	12°36	5♊11	27°35	23°27	18°37	16♑58	5♊57	23°≈45	12♑32	12°37	11°37	20♑42	S 2
M 3	2 49 29	10°45'50	15°28	14°12	5° 3	28° 6	23°39	18°44	16°56	5°57	23°45	12°32	12°33	11°44	20°39	M 3
T 4	2 53 25	11°46'07	27°43	15°47	4°53	28°37	23°51	18°51	16°53	5°56	23°45	12°32	12°30	11°51	20°36	T 4
W 5	2 57 22	12°46'27	10♑11	17°22	4°40	29° 8	24° 3	18°58	16°51	5°56	23°45	12°32	12°27	11°57	20°33	W 5
T 6	3 1 18	13°46'48	22°51	18°57	4°25	29°40	24°15	19° 5	16°48	5°55	23°44	12°32	12°24	12° 4	20°30	T 6
F 7	3 5 15	14°47'11	5♊45	20°31	4° 7	0♊12	24°27	19°12	16°46	5°55	23°44	12°32	12°21	12°11	20°26	F 7
S 8	3 9 11	15°47'36	18°53	22° 5	3°47	0°44	24°39	19°19	16°43	5°55	23°44	12°32	12°18	12°17	20°23	S 8
S 9	3 13 8	16°48'02	2♑14	23°38	3°25	1°16	24°51	19°26	16°41	5°54	23°43	12°31	12°14	12°24	20°20	S 9
M10	3 17 5	17°48'30	15°47	25°12	3° 1	1°48	25° 3	19°32	16°38	5°54	23°43	12°31	12°11	12°31	20°16	M10
T 11	3 21 1	18°48'59	29°33	26°45	2°35	2°21	25°16	19°39	16°36	5°54	23°42	12°30	12° 8	12°38	20°13	T 11
W12	3 24 58	19°49'29	13≈30	28°18	2° 7	2°54	25°28	19°46	16°33	5°54	23°42	12°D30	12° 5	12°44	20°10	W12
T 13	3 28 54	20°50'00	27°37	29°50	1°37	3°27	25°41	19°52	16°31	5°54	23°42	12°30	12° 2	12°51	20° 7	T 13
F 14	3 32 51	21°50'33	11♊53	1♊23	1° 5	4° 1	25°53	19°59	16°28	5°53	23°41	12°30	11°59	12°58	20° 3	F 14
S 15	3 36 47	22°51'07	26°14	2°55	0°32	4°34	26° 6	20° 6	16°26	5°53	23°41	12°31	11°55	13° 4	20° 0	S 15
S 16	3 40 44	23°51'42	10♑38	4°27	29♑58	5° 8	26°18	20°12	16°23	5°53	23°40	12°32	11°52	13°11	19°57	S 16
M17	3 44 40	24°52'18	25° 0	5°58	29°23	5°42	26°31	20°19	16°21	5°D53	23°39	12°33	11°49	13°18	19°53	M17
T 18	3 48 37	25°52'56	9♑16	7°30	28°47	6°16	26°44	20°25	16°19	5°53	23°39	12°R33	11°46	13°24	19°50	T 18
W19	3 52 34	26°53'35	23°22	9° 1	28°11	6°50	26°57	20°32	16°16	5°53	23°38	12°33	11°43	13°31	19°47	W19
T 20	3 56 30	27°54'16	7♑13	10°32	27°34	7°25	27° 9	20°38	16°14	5°53	23°38	12°32	11°39	13°38	19°44	T 20
F 21	4 0 27	28°54'57	20°45	12° 3	26°58	7°59	27°22	20°44	16°11	5°54	23°37	12°30	11°36	13°45	19°40	F 21
S 22	4 4 23	29°55'41	3♑58	13°33	26°22	8°34	27°35	20°50	16° 9	5°54	23°36	12°28	11°33	13°51	19°37	S 22
S 23	4 8 20	0♊56°26	16°50	15° 3	25°46	9° 9	27°48	20°57	16° 6	5°54	23°36	12°25	11°30	13°58	19°34	S 23
M24	4 12 16	1°57'12	29°23	16°33	25°11	9°44	28° 1	21° 3	16° 4	5°54	23°35	12°22	11°27	14° 5	19°31	M24
T 25	4 16 13	2°58'00	11♑39	18° 2	24°37	10°19	28°14	21° 9	16° 2	5°54	23°34	12°20	11°24	14°11	19°28	T 25
W26	4 20 10	3°58'49	23°43	19°32	24° 5	10°55	28°28	21°15	15°59	5°55	23°33	12°18	11°20	14°18	19°24	W26
T 27	4 24 6	4°59'40	5♐38	21° 0	23°34	11°30	28°41	21°21	15°57	5°55	23°33	12°D18	11°17	14°25	19°21	T 27
F 28	4 28 3	6° 0'32	17°29	22°28	23° 4	12° 6	28°54	21°27	15°55	5°55	23°32	12°18	11°14	14°31	19°18	F 28
S 29	4 31 59	7° 1'25	29°21	23°56	22°37	12°42	29° 7	21°33	15°52	5°56	23°31	12°20	11°11	14°38	19°15	S 29
S 30	4 35 56	8♊2°20	11♑19	25♊22	22♑11	13♊17	29♊21	21♑39	15♑50	5♊56	23°≈30	12♑22	11♑ 8	14♐45	19♑12	S 30

Day	☉	☾		♀		♀		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂		♂	
	decl	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat	decl	lat
S 1	14s27	7n11	4n 7	15s12	0s 3	26s45	5s38	14s34	2s11	23s11	0n 8	5s10	2n17	16n37	0s21	10s10	0s54	23n18	1n57	15n38	15n40	11n26	15n 6	2s59							
S 2	14 46	1 43	3 21	15 48	0 10	26 40	5 34	14 20	2 8	23 12	0 8	5 12	2 17	16 36	0 21	10 11	0 54	23 19	1 57	15 38	15 39	11 23	15 5	2 59							
M 3	15 5	3s53	2 25	16 23	0 16	26 34	5 29	14 7	2 5	23 12	0 8	5 15	2 17	16 35	0 21	10 11	0 54	23 19	1 57	15 38	15 38	11 20	15 4	2 59							
T 4	15 24	9 25	1 21	16 58	0 23	26 27	5 23	13 53	2 2	23 13	0 7	5 17	2 17	16 34	0 21	10 11	0 54	23 19	1 57	15 38	15 37	11 17	15 3	2 59							
W 5	15 42	14 41	0 13	17 31	0 30	26 18	5 17	13 40	2 0	23 14	0 7	5 20	2 17	16 34	0 21	10 11	0 54	23 19	1 57	15 38	15 36	11 14	15 2	2 59							
T 6	16 0	19 26	0s57	18 4	0 36	26 9	5 11	13 26	1 57	23 14	0 7	5 22	2 17	16 33	0 21	10 11	0 54	23 19	1 58	15 38	15 35	11 11	15 1	2 59							
F 7	16 18	23 22	2 5	18 36	0 42	25 58	5 3	13 12	1 54	23 15	0 7	5 25	2 17	16 32	0 21	10 11	0 54	23 19	1 58	15 38	15 34	11 8	15 0	3 0							
S 8	16 36	26 8	3 8	19 6	0 49	25 46	4 55	12 58	1 51	23 15	0 7	5 27	2 17	16 32	0 21	10 11	0 54	23 20	1 58	15 37	15 33	11 5	14 59	3 0							
S 9	16 53	27 30	4 2	19 36	0 55	25 34	4 47	12 44	1 49	23 16	0 7	5 30	2 17	16 31	0 21	10 11	0 54	23 20	1 58	15 37	15 32	11 2	14 58	3 0							
M10	17 10	27 14	4 43	20 5	1 1	25 20	4 37	12 30	1 46	23 17	0 7	5 32	2 17	16 30	0 21	10 12	0 54	23 20	1 58	15 37	15 31	10 59	14 57	3 0							
T 11	17 27	25 19	5 9	20 33	1 7	25 5	4 27	12 16	1 43	23 17	0 7	5 35	2 18	16 29	0 21	10 12	0 53	23 20	1 58	15 37	15 30	10 56	14 56	3 0							
W12	17 44	21 51	5 17	21 0	1 13	24 48	4 17	12 1	1 41	23 18	0 7	5 37	2 18	16 29	0 21	10 12	0 53	23 20	1 58	15 37	15 29	10 53	14 55	3 0							
T 13	18 0	17 6	5 6	21 26	1 19	24 31	4 5	11 47	1 38	23 18	0 6	5 39	2 18	16 28	0 21	10 12	0 53	23 21	1 58	15 37	15 28	10 50	14 54	3 0							
F 14	18 16	11 22	4 36	21 51	1 24	24 13	3 53	11 32	1 36	23 19	0 6	5 42	2 18	16 27	0 21	10 12	0 53	23 21	1 58	15 37	15 27	10 47	14 53	3 0							
S 15	18 31	5 0	3 49	22 15	1 30	23 54	3 41	11 18	1 33	23 19	0 6	5 44	2 18	16 27	0 21	10 12	0 53	23 21	1 59	15 37	15 26	10 44	14 52	3 0							
S 16	18 46	1n39	2 48	22 38	1 35	23 34	3 28	11 3	1 31	23 20	0 6	5 47	2 18	16 26	0 21	10 12	0 53	23 21	1 59	15 38	15 25	10 41	14 51	3 1							
M17	19 1	8 13	1 36	22 59	1 40	23 13	3 14	10 48	1 28	23 20	0 6	5 49	2 18	16 25	0 21	10 12	0 53	23 21	1 59	15 38	15 24	10 38	14 51	3 1							
T 18	19 16	14 19	0 18	23 20	1 45	22 51	3 0	10 33	1 26	23 21	0 6	5 51	2 18	16 25	0 21	10 12	0 53	23 22	1 59	15 38	15 23	10 35	14 50	3 1							
W19	19 30	19 36	0n59	23 39	1 50	22 29	2 46	10 18	1 23	23 21	0 6	5 53	2 19	16 24	0 21	10 12	0 53	23 22	1 59	15 38	15 22	10 32	14 49	3 1							
T 20	19 44	23 43	2 12	23 57	1 54	22 6	2 31	10 3	1 21	23 21	0 6	5 56	2 19	16 23	0 21	10 12	0 53	23 22	1 59	15 38	15 21	10 29	14 48	3 1							
F 21	19 57	26 25	3 16	24 14	1 58	21 43	2 16	9 48	1 19	23 22	0 6	5 58	2 19	16 23	0 21	10 12	0 53	23 22	1 59	15 37	15 20	10 26	14 47	3 1							
S 22	20 10	27 32	4 7	24 29	2 2	21 20	2 1	9 33	1 16	23 22	0 5	6 0	2 19	16 22	0 21	10 11	0 53	23 22	1 59	15 36	15 20	10 23	14 46	3 1							
S 23	20 23	27 7	4 44	24 43	2 6	20 56	1 45	9 18	1 14	23 22	0 5	6 2	2 19	16 21	0 21	10 11	0 53	23 23	1 59	15 35	15 19	10 19	14 45	3 1							
M24	20 35	25 19	5 7	24 56	2 9	20 33	1 30	9 2	1 12	23 23	0 5	6 4	2 19	16 20	0 21	10 11	0 53	23 23	2 0	15 35	15 18	10 16	14 44	3 1							
T 25	20 47	22 21	5 15	25 8	2 12	20 9	1 14	8 47	1 10	23 23	0 5	6 7	2 19	16 20	0 21	10 11	0 53	23 23	2 0	15 34	15 17	10 13	14 43	3 1							
W26	20 59	18 29	5 9	25 18	2 15	19 46	0 58	8 32	1 7	23 23	0 5	6 9	2 20	16 19	0 21	10 11	0 53	23 23	2 0	15 33	15 16	10 10	14 42	3 1							
T 27	21 10	13 57	4 49	25 27	2 17	19 23	0 43	8 16	1 5	23 24	0 5	6 11	2 20	16 18	0 21	10 11	0 53	23 24	2 0	15 33	15 15	10 7	14 41	3 1							
F 28	21 21	8 54	4 18	25 34	2 19	19 1	0 28	8 1	1 3	23 24	0 5	6 13	2 20	16 18	0 21	10 11	0 53	23 24	2 0	15 33	15 14	10 4	14 40	3 1							
S 29	21 31	3 33	3 35	25 41	2 20	18 39	0 12	7 45	1 1	23 24	0 5	6 15	2 20	16 17	0 21	10 11	0 53	23 24	2 0	15 34	15 13	10 1	14 40	3 1							
S 30	21s41	2s 0	2n43	25s45	2s21	18s18	0n 2	7s29	0s59	23s24	0n 5	6s17	2n20	16n17	0s21	10s10	0s53	23n24	2n 0	15n34	15n12	9n58	14n39	3s 1							

Julian Day Number = 2337528.5, Delta T = 19.47 sec  
Ecliptic obliquity = 23°28'55", Nutation = - 0°00'13", out-of-bounds declination in red  
Ayanamsha: Fagan/Bradley = 20°22'58", Lahiri = 19°29'58"Greg. Calendar

