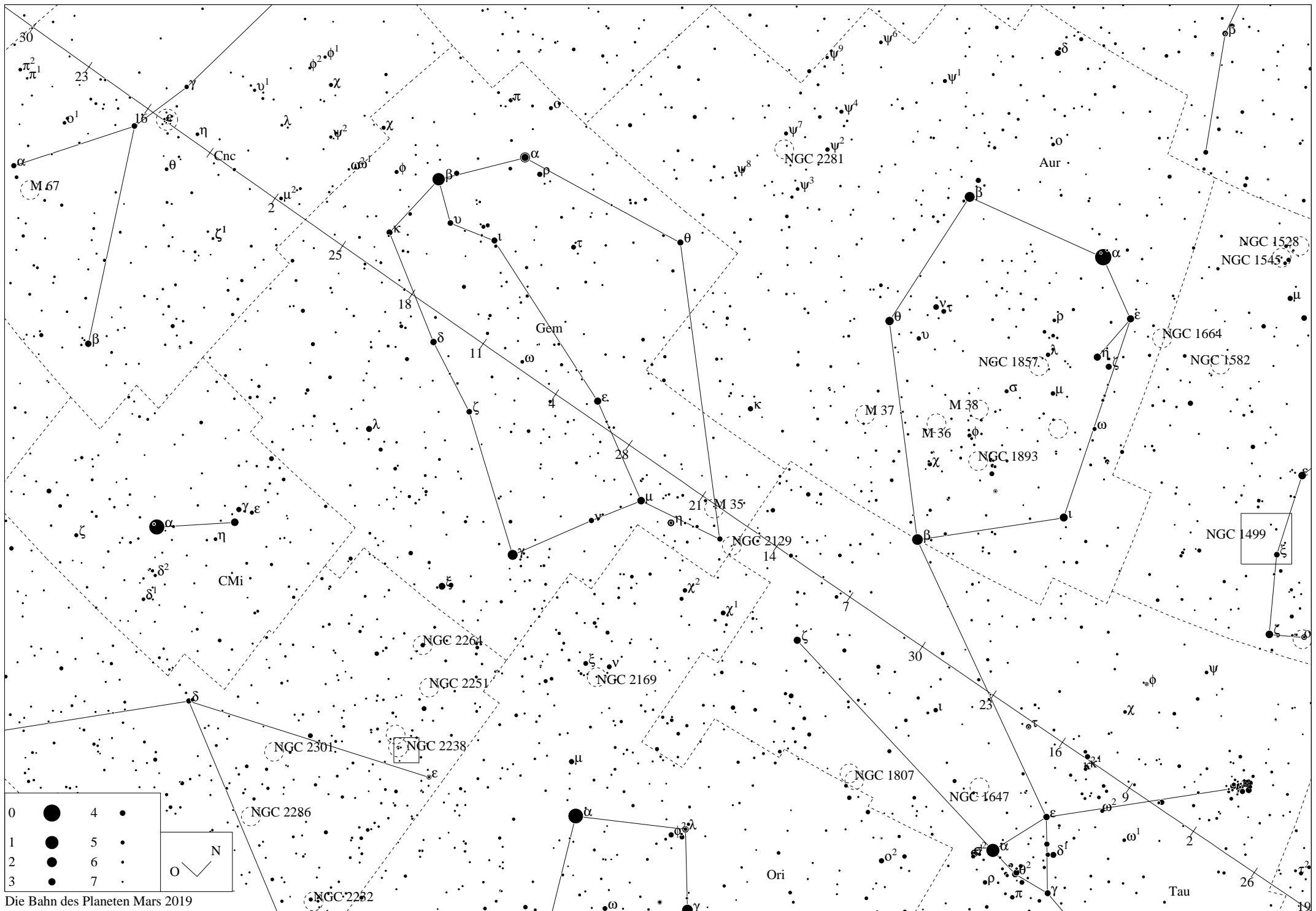
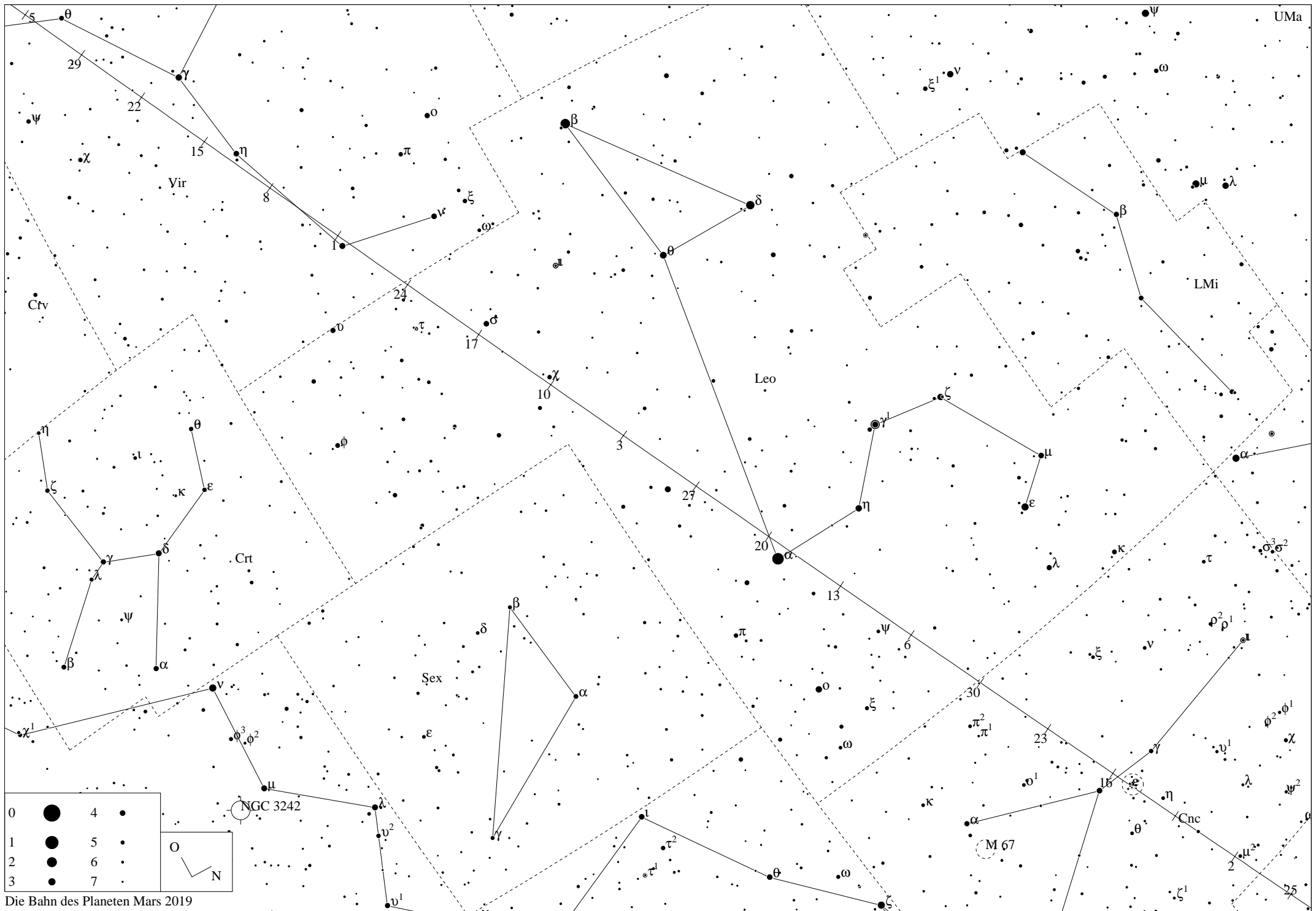


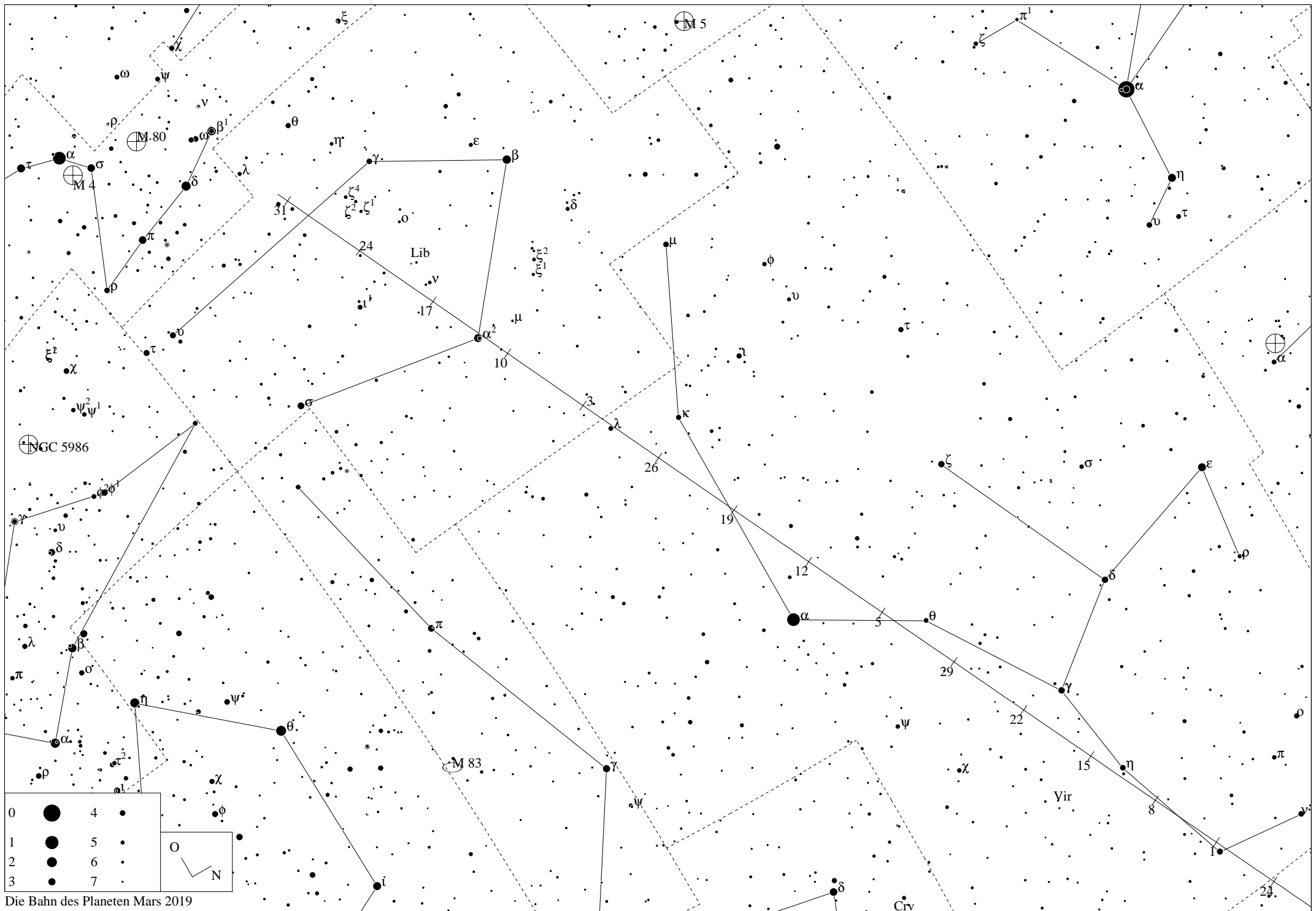
Die Bahn des Planeten Mars 2019



Die Bahn des Planeten Mars 2019



Die Bahn des Planeten Mars 2019



Die Bahn des Planeten Mars 2019

EPHEMERIDE 2019 – MARS

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
-----	---	-----	-	-----	---	-----	-----	-----	-----	-----	-----	-----
1 Jan 2019	23h59m16.54s	-00 24' 16.7"	1.4535	1.2611	0.5	79.7	41.7	-14.87	289.29	101.37	64.8	Psc
2 Jan 2019	00h01m42.36s	-00 06' 59.4"	1.4547	1.2695	0.5	79.3	41.6	-14.86	289.78	101.44	64.8	Psc
3 Jan 2019	00h04m08.32s	+00 10' 17.6"	1.4559	1.2780	0.5	79.0	41.5	-14.84	290.27	101.51	64.8	Psc
4 Jan 2019	00h06m34.42s	+00 27' 34.3"	1.4571	1.2864	0.5	78.6	41.4	-14.82	290.76	101.58	64.8	Psc
5 Jan 2019	00h09m00.66s	+00 44' 50.5"	1.4583	1.2949	0.5	78.3	41.3	-14.80	291.25	101.65	64.9	Psc
6 Jan 2019	00h11m27.05s	+01 02' 06.0"	1.4595	1.3034	0.5	77.9	41.2	-14.78	291.74	101.71	64.9	Psc
7 Jan 2019	00h13m53.58s	+01 19' 20.7"	1.4607	1.3119	0.5	77.6	41.1	-14.76	292.23	101.77	65.0	Psc
8 Jan 2019	00h16m20.26s	+01 36' 34.6"	1.4619	1.3204	0.6	77.2	41.0	-14.74	292.71	101.83	65.0	Psc
9 Jan 2019	00h18m47.09s	+01 53' 47.4"	1.4632	1.3289	0.6	76.9	40.9	-14.72	293.20	101.88	65.0	Psc
10 Jan 2019	00h21m14.06s	+02 10' 59.0"	1.4644	1.3374	0.6	76.6	40.8	-14.69	293.69	101.93	65.1	Psc
11 Jan 2019	00h23m41.19s	+02 28' 09.2"	1.4656	1.3459	0.6	76.2	40.7	-14.67	294.17	101.97	65.1	Psc
12 Jan 2019	00h26m08.46s	+02 45' 18.1"	1.4668	1.3545	0.6	75.9	40.6	-14.64	294.65	102.01	65.2	Psc
13 Jan 2019	00h28m35.88s	+03 02' 25.2"	1.4681	1.3630	0.6	75.5	40.4	-14.61	295.14	102.04	65.3	Psc
14 Jan 2019	00h31m03.45s	+03 19' 30.7"	1.4693	1.3716	0.6	75.2	40.3	-14.58	295.62	102.07	65.3	Psc
15 Jan 2019	00h33m31.17s	+03 36' 34.2"	1.4706	1.3802	0.7	74.8	40.2	-14.55	296.10	102.10	65.4	Psc
16 Jan 2019	00h35m59.05s	+03 53' 35.7"	1.4718	1.3887	0.7	74.5	40.1	-14.52	296.58	102.12	65.4	Psc
17 Jan 2019	00h38m27.07s	+04 10' 35.0"	1.4731	1.3973	0.7	74.2	40.0	-14.48	297.06	102.13	65.5	Psc
18 Jan 2019	00h40m55.24s	+04 27' 32.0"	1.4744	1.4059	0.7	73.8	39.9	-14.45	297.53	102.15	65.6	Psc
19 Jan 2019	00h43m23.56s	+04 44' 26.5"	1.4756	1.4145	0.7	73.5	39.7	-14.41	298.01	102.16	65.6	Psc
20 Jan 2019	00h45m52.03s	+05 01' 18.3"	1.4769	1.4231	0.7	73.1	39.6	-14.38	298.48	102.16	65.7	Psc
21 Jan 2019	00h48m20.67s	+05 18' 07.4"	1.4781	1.4317	0.7	72.8	39.5	-14.34	298.96	102.17	65.8	Psc
22 Jan 2019	00h50m49.46s	+05 34' 53.6"	1.4794	1.4403	0.8	72.5	39.4	-14.30	299.43	102.17	65.9	Psc
23 Jan 2019	00h53m18.41s	+05 51' 36.8"	1.4807	1.4489	0.8	72.1	39.2	-14.26	299.90	102.17	65.9	Psc
24 Jan 2019	00h55m47.54s	+06 08' 16.9"	1.4820	1.4575	0.8	71.8	39.1	-14.22	300.37	102.17	66.0	Psc
25 Jan 2019	00h58m16.84s	+06 24' 53.7"	1.4833	1.4662	0.8	71.4	39.0	-14.18	300.83	102.17	66.1	Psc
26 Jan 2019	01h00m46.32s	+06 41' 27.2"	1.4845	1.4748	0.8	71.1	38.9	-14.14	301.30	102.17	66.2	Psc
27 Jan 2019	01h03m16.00s	+06 57' 57.3"	1.4858	1.4834	0.8	70.8	38.7	-14.10	301.76	102.17	66.3	Psc
28 Jan 2019	01h05m45.87s	+07 14' 23.8"	1.4871	1.4921	0.8	70.4	38.6	-14.05	302.23	102.18	66.4	Psc
29 Jan 2019	01h08m15.94s	+07 30' 46.6"	1.4884	1.5007	0.8	70.1	38.5	-14.01	302.69	102.18	66.5	Psc
30 Jan 2019	01h10m46.22s	+07 47' 05.6"	1.4897	1.5094	0.9	69.7	38.3	-13.96	303.14	102.18	66.6	Psc
31 Jan 2019	01h13m16.71s	+08 03' 20.8"	1.4910	1.5180	0.9	69.4	38.2	-13.92	303.60	102.18	66.7	Psc
1 Feb 2019	01h15m47.42s	+08 19' 31.9"	1.4923	1.5267	0.9	69.1	38.1	-13.87	304.06	102.18	66.8	Psc
2 Feb 2019	01h18m18.34s	+08 35' 39.0"	1.4936	1.5353	0.9	68.7	37.9	-13.82	304.51	102.17	66.9	Psc
3 Feb 2019	01h20m49.49s	+08 51' 41.8"	1.4949	1.5440	0.9	68.4	37.8	-13.77	304.96	102.17	67.0	Psc
4 Feb 2019	01h23m20.87s	+09 07' 40.2"	1.4962	1.5526	0.9	68.1	37.7	-13.72	305.41	102.16	67.1	Psc
5 Feb 2019	01h25m52.47s	+09 23' 34.2"	1.4975	1.5612	0.9	67.7	37.5	-13.67	305.86	102.16	67.2	Psc
6 Feb 2019	01h28m24.31s	+09 39' 23.6"	1.4988	1.5699	0.9	67.4	37.4	-13.62	306.30	102.14	67.3	Psc
7 Feb 2019	01h30m56.37s	+09 55' 08.2"	1.5001	1.5785	0.9	67.0	37.3	-13.57	306.75	102.13	67.5	Psc
8 Feb 2019	01h33m28.68s	+10 10' 48.0"	1.5014	1.5872	1.0	66.7	37.1	-13.51	307.19	102.12	67.6	Psc
9 Feb 2019	01h36m01.21s	+10 26' 22.8"	1.5027	1.5958	1.0	66.4	37.0	-13.46	307.63	102.10	67.7	Psc
10 Feb 2019	01h38m33.98s	+10 41' 52.5"	1.5040	1.6044	1.0	66.0	36.8	-13.41	308.07	102.08	67.8	Psc
11 Feb 2019	01h41m06.99s	+10 57' 16.9"	1.5053	1.6131	1.0	65.7	36.7	-13.35	308.50	102.06	68.0	Psc
12 Feb 2019	01h43m40.24s	+11 12' 36.0"	1.5066	1.6217	1.0	65.4	36.6	-13.30	308.93	102.03	68.1	Psc
13 Feb 2019	01h46m13.72s	+11 27' 49.5"	1.5079	1.6303	1.0	65.0	36.4	-13.24	309.37	102.00	68.2	Psc
14 Feb 2019	01h48m47.44s	+11 42' 57.5"	1.5092	1.6389	1.0	64.7	36.3	-13.18	309.79	101.97	68.4	Ari
15 Feb 2019	01h51m21.40s	+11 57' 59.6"	1.5105	1.6475	1.0	64.4	36.1	-13.13	310.22	101.93	68.5	Ari
16 Feb 2019	01h53m55.60s	+12 12' 55.8"	1.5118	1.6561	1.0	64.0	36.0	-13.07	310.64	101.90	68.6	Ari
17 Feb 2019	01h56m30.03s	+12 27' 46.0"	1.5131	1.6646	1.1	63.7	35.8	-13.01	311.07	101.86	68.8	Ari
18 Feb 2019	01h59m04.71s	+12 42' 30.1"	1.5144	1.6732	1.1	63.4	35.7	-12.95	311.49	101.82	68.9	Ari
19 Feb 2019	02h01m39.63s	+12 57' 07.8"	1.5158	1.6818	1.1	63.0	35.5	-12.90	311.90	101.78	69.1	Ari
20 Feb 2019	02h04m14.80s	+13 11' 39.2"	1.5171	1.6903	1.1	62.7	35.4	-12.84	312.32	101.73	69.2	Ari
21 Feb 2019	02h06m50.21s	+13 26' 04.1"	1.5184	1.6989	1.1	62.4	35.2	-12.78	312.73	101.69	69.4	Ari
22 Feb 2019	02h09m25.88s	+13 40' 22.3"	1.5197	1.7074	1.1	62.0	35.1	-12.72	313.14	101.65	69.6	Ari
23 Feb 2019	02h12m01.81s	+13 54' 33.8"	1.5210	1.7159	1.1	61.7	34.9	-12.66	313.55	101.61	69.7	Ari
24 Feb 2019	02h14m37.40s	+14 08' 38.6"	1.5223	1.7244	1.1	61.4	34.8	-12.60	313.95	101.57	69.9	Ari
25 Feb 2019	02h17m14.46s	+14 22' 36.4"	1.5236	1.7330	1.1	61.0	34.6	-12.54	314.36	101.54	70.1	Ari
26 Feb 2019	02h19m51.19s	+14 36' 27.2"	1.5249	1.7415	1.2	60.7	34.5	-12.48	314.76	101.50	70.2	Ari
27 Feb 2019	02h22m28.20s	+14 50' 11.0"	1.5262	1.7499	1.2	60.4	34.3	-12.43	315.15	101.46	70.4	Ari
28 Feb 2019	02h25m05.48s	+15 03' 47.5"	1.5275	1.7584	1.2	60.0	34.2	-12.37	315.55	101.43	70.6	Ari
1 Mar 2019	02h27m43.05s	+15 17' 16.8"	1.5288	1.7669	1.2	59.7	34.0	-12.31	315.94	101.39	70.7	Ari
2 Mar 2019	02h30m20.90s	+15 30' 38.6"	1.5301	1.7753	1.2	59.4	33.9	-12.25	316.33	101.35	70.9	Ari
3 Mar 2019	02h32m59.03s	+15 43' 53.0"	1.5314	1.7838	1.2	59.0	33.7	-12.19	316.72	101.32	71.1	Ari
4 Mar 2019	02h35m37.46s	+15 56' 59.7"	1.5327	1.7922	1.2	58.7	33.6	-12.13	317.11	101.28	71.3	Ari
5 Mar 2019	02h38m16.16s	+16 09' 58.8"	1.5339	1.8006	1.2	58.4	33.4	-12.07	317.49	101.24	71.5	Ari
6 Mar 2019	02h40m55.16s	+16 22' 50.0"	1.5352	1.8090	1.2	58.0	33.2	-12.01	317.87	101.20	71.7	Ari
7 Mar 2019	02h43m34.44s	+16 35' 33.3"	1.5365	1.8174	1.2	57.7	33.1	-11.95	318.24	101.16	71.9	Ari
8 Mar 2019	02h46m14.00s	+16 48' 08.6"	1.5378	1.8257	1.2	57.4	32.9	-11.90	318.62	101.12	72.0	Ari
9 Mar 2019	02h48m53.86s	+17 00' 35.7"	1.5391	1.8341	1.3	57.1	32.8	-11.84	318.99	101.07	72.2	Ari
10 Mar 2019	02h51m33.99s	+17 12' 54.6"	1.5404	1.8424	1.3	56.7	32.6	-11.78	319.36	101.03	72.4	Ari
11 Mar 2019	02h54m14.41s	+17 25' 05.2"	1.5416	1.8507	1.3	56.4	32.5	-11.72	319.73	100.98	72.6	Ari
12 Mar 2019	02h56m55.10s	+17 37' 07.3"	1.5429	1.8590	1.3	56.1	32.3	-11.67	320.09	100.93	72.8	Ari
13 Mar 2019	02h59m36.07s	+17 49' 00.8"	1.5442	1.8672	1.3	55.7	32.1	-11.61	320.45	100.88	73.0	Ari
14 Mar 2019	03h02m17.31s	+18 00' 45.6"	1.5455	1.8755	1.3	55.4	32.0	-11.56	320.81	100.83	73.3	Ari
15 Mar 2019	03h04m58.83s	+18 12' 21.6"	1.5467	1.8837	1.3	55.1	31.8	-11.50	321.17	100.77	73.5	Ari

EPHEMERIDE 2019 – MARS

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
-----	---	-----	-	-----	---	-----	-----	-----	-----	-----	-----	-----
16 Mar 2019	03h07m40.61s	+18 23' 48.8"	1.5480	1.8919	1.3	54.7	31.6	-11.45	321.52	100.72	73.7	Ari
17 Mar 2019	03h10m22.65s	+18 35' 06.9"	1.5493	1.9000	1.3	54.4	31.5	-11.40	321.87	100.66	73.9	Ari
18 Mar 2019	03h13m04.96s	+18 46' 15.9"	1.5505	1.9082	1.3	54.1	31.3	-11.34	322.22	100.60	74.1	Ari
19 Mar 2019	03h15m47.53s	+18 57' 15.7"	1.5518	1.9163	1.3	53.8	31.2	-11.29	322.57	100.54	74.3	Ari
20 Mar 2019	03h18m30.35s	+19 08' 06.2"	1.5530	1.9244	1.4	53.4	31.0	-11.24	322.91	100.48	74.5	Ari
21 Mar 2019	03h21m13.44s	+19 18' 47.3"	1.5543	1.9325	1.4	53.1	30.8	-11.19	323.25	100.42	74.8	Ari
22 Mar 2019	03h23m56.77s	+19 29' 18.9"	1.5555	1.9406	1.4	52.8	30.7	-11.14	323.59	100.37	75.0	Ari
23 Mar 2019	03h26m40.37s	+19 39' 41.0"	1.5567	1.9486	1.4	52.5	30.5	-11.09	323.93	100.31	75.2	Ari
24 Mar 2019	03h29m24.23s	+19 49' 53.4"	1.5580	1.9566	1.4	52.1	30.3	-11.05	324.26	100.26	75.4	Tau
25 Mar 2019	03h32m08.34s	+19 59' 56.2"	1.5592	1.9646	1.4	51.8	30.2	-11.00	324.59	100.20	75.7	Tau
26 Mar 2019	03h34m52.71s	+20 09' 49.1"	1.5605	1.9726	1.4	51.5	30.0	-10.96	324.92	100.15	75.9	Tau
27 Mar 2019	03h37m37.34s	+20 19' 32.2"	1.5617	1.9805	1.4	51.1	29.8	-10.91	325.25	100.10	76.1	Tau
28 Mar 2019	03h40m22.22s	+20 29' 05.4"	1.5629	1.9885	1.4	50.8	29.7	-10.87	325.57	100.05	76.4	Tau
29 Mar 2019	03h43m07.36s	+20 38' 28.6"	1.5641	1.9964	1.4	50.5	29.5	-10.83	325.89	100.00	76.6	Tau
30 Mar 2019	03h45m52.76s	+20 47' 41.6"	1.5653	2.0042	1.4	50.2	29.3	-10.79	326.21	99.95	76.9	Tau
31 Mar 2019	03h48m38.40s	+20 56' 44.6"	1.5665	2.0121	1.4	49.8	29.2	-10.75	326.53	99.90	77.1	Tau
1 Apr 2019	03h51m24.29s	+21 05' 37.3"	1.5677	2.0199	1.4	49.5	29.0	-10.71	326.84	99.85	77.4	Tau
2 Apr 2019	03h54m10.34s	+21 14' 19.8"	1.5689	2.0277	1.5	49.2	28.8	-10.68	327.16	99.80	77.6	Tau
3 Apr 2019	03h56m56.80s	+21 22' 51.8"	1.5701	2.0354	1.5	48.9	28.7	-10.64	327.47	99.75	77.8	Tau
4 Apr 2019	03h59m43.41s	+21 31' 13.5"	1.5713	2.0432	1.5	48.5	28.5	-10.61	327.77	99.70	78.1	Tau
5 Apr 2019	04h02m30.25s	+21 39' 24.6"	1.5725	2.0509	1.5	48.2	28.3	-10.58	328.08	99.65	78.3	Tau
6 Apr 2019	04h05m17.31s	+21 47' 25.1"	1.5737	2.0585	1.5	47.9	28.1	-10.55	328.38	99.60	78.6	Tau
7 Apr 2019	04h08m04.60s	+21 55' 15.0"	1.5749	2.0662	1.5	47.6	28.0	-10.52	328.68	99.55	78.9	Tau
8 Apr 2019	04h10m52.09s	+22 02' 54.2"	1.5761	2.0738	1.5	47.2	27.8	-10.49	328.98	99.50	79.1	Tau
9 Apr 2019	04h13m39.80s	+22 10' 22.6"	1.5772	2.0814	1.5	46.9	27.6	-10.47	329.28	99.44	79.4	Tau
10 Apr 2019	04h16m27.70s	+22 17' 40.1"	1.5784	2.0889	1.5	46.6	27.5	-10.44	329.57	99.39	79.6	Tau
11 Apr 2019	04h19m15.79s	+22 24' 46.7"	1.5795	2.0964	1.5	46.3	27.3	-10.42	329.86	99.33	79.9	Tau
12 Apr 2019	04h22m04.07s	+22 31' 42.3"	1.5807	2.1039	1.5	45.9	27.1	-10.40	330.15	99.27	80.2	Tau
13 Apr 2019	04h24m52.52s	+22 38' 26.9"	1.5818	2.1113	1.5	45.6	26.9	-10.38	330.44	99.21	80.4	Tau
14 Apr 2019	04h27m41.14s	+22 45' 00.3"	1.5830	2.1187	1.5	45.3	26.8	-10.37	330.73	99.15	80.7	Tau
15 Apr 2019	04h30m29.92s	+22 51' 22.6"	1.5841	2.1261	1.5	45.0	26.6	-10.35	331.01	99.09	80.9	Tau
16 Apr 2019	04h33m18.85s	+22 57' 33.6"	1.5853	2.1334	1.5	44.7	26.4	-10.34	331.30	99.03	81.2	Tau
17 Apr 2019	04h36m07.93s	+23 03' 33.3"	1.5864	2.1407	1.6	44.3	26.2	-10.33	331.58	98.97	81.5	Tau
18 Apr 2019	04h38m57.16s	+23 09' 21.8"	1.5875	2.1480	1.6	44.0	26.1	-10.32	331.86	98.91	81.8	Tau
19 Apr 2019	04h41m46.51s	+23 14' 58.8"	1.5886	2.1552	1.6	43.7	25.9	-10.31	332.13	98.85	82.0	Tau
20 Apr 2019	04h44m36.00s	+23 20' 24.4"	1.5897	2.1624	1.6	43.4	25.7	-10.31	332.41	98.79	82.3	Tau
21 Apr 2019	04h47m25.62s	+23 25' 38.6"	1.5908	2.1696	1.6	43.1	25.5	-10.31	332.68	98.74	82.6	Tau
22 Apr 2019	04h50m15.35s	+23 30' 41.3"	1.5919	2.1767	1.6	42.7	25.4	-10.30	332.96	98.68	82.9	Tau
23 Apr 2019	04h53m05.21s	+23 35' 32.6"	1.5930	2.1838	1.6	42.4	25.2	-10.31	333.23	98.63	83.1	Tau
24 Apr 2019	04h55m55.17s	+23 40' 12.2"	1.5941	2.1908	1.6	42.1	25.0	-10.31	333.50	98.58	83.4	Tau
25 Apr 2019	04h58m45.25s	+23 44' 40.3"	1.5952	2.1978	1.6	41.8	24.8	-10.32	333.76	98.53	83.7	Tau
26 Apr 2019	05h01m35.42s	+23 48' 56.9"	1.5962	2.2048	1.6	41.4	24.7	-10.32	334.03	98.48	84.0	Tau
27 Apr 2019	05h04m25.69s	+23 53' 01.8"	1.5973	2.2118	1.6	41.1	24.5	-10.33	334.30	98.43	84.2	Tau
28 Apr 2019	05h07m16.05s	+23 56' 55.1"	1.5984	2.2187	1.6	40.8	24.3	-10.35	334.56	98.38	84.5	Tau
29 Apr 2019	05h10m06.50s	+24 00' 36.7"	1.5994	2.2255	1.6	40.5	24.1	-10.36	334.82	98.34	84.8	Tau
30 Apr 2019	05h12m57.02s	+24 04' 06.7"	1.6005	2.2324	1.6	40.2	23.9	-10.38	335.08	98.29	85.1	Tau
1 Mai 2019	05h15m47.60s	+24 07' 24.9"	1.6015	2.2392	1.6	39.8	23.8	-10.40	335.34	98.24	85.4	Tau
2 Mai 2019	05h18m38.25s	+24 10' 31.5"	1.6025	2.2459	1.6	39.5	23.6	-10.42	335.60	98.20	85.7	Tau
3 Mai 2019	05h21m28.95s	+24 13' 26.3"	1.6036	2.2526	1.6	39.2	23.4	-10.44	335.86	98.15	85.9	Tau
4 Mai 2019	05h24m19.70s	+24 16' 09.4"	1.6046	2.2593	1.6	38.9	23.2	-10.47	336.11	98.10	86.2	Tau
5 Mai 2019	05h27m10.48s	+24 18' 40.7"	1.6056	2.2659	1.7	38.6	23.1	-10.50	336.37	98.06	86.5	Tau
6 Mai 2019	05h30m01.29s	+24 21' 00.3"	1.6066	2.2725	1.7	38.2	22.9	-10.53	336.62	98.01	86.8	Tau
7 Mai 2019	05h32m52.12s	+24 23' 08.1"	1.6076	2.2790	1.7	37.9	22.7	-10.56	336.88	97.96	87.1	Tau
8 Mai 2019	05h35m42.95s	+24 25' 04.1"	1.6086	2.2855	1.7	37.6	22.5	-10.60	337.13	97.92	87.4	Tau
9 Mai 2019	05h38m33.77s	+24 26' 48.3"	1.6096	2.2919	1.7	37.3	22.3	-10.64	337.38	97.87	87.6	Tau
10 Mai 2019	05h41m24.59s	+24 28' 20.7"	1.6106	2.2983	1.7	37.0	22.1	-10.68	337.63	97.81	87.9	Tau
11 Mai 2019	05h44m15.38s	+24 29' 41.3"	1.6115	2.3047	1.7	36.7	22.0	-10.72	337.89	97.76	88.2	Tau
12 Mai 2019	05h47m06.13s	+24 30' 50.1"	1.6125	2.3110	1.7	36.3	21.8	-10.77	338.14	97.71	88.5	Tau
13 Mai 2019	05h49m56.84s	+24 31' 47.2"	1.6135	2.3173	1.7	36.0	21.6	-10.82	338.38	97.66	88.8	Tau
14 Mai 2019	05h52m47.50s	+24 32' 32.4"	1.6144	2.3235	1.7	35.7	21.4	-10.87	338.63	97.61	89.1	Tau
15 Mai 2019	05h55m38.09s	+24 33' 05.9"	1.6154	2.3297	1.7	35.4	21.2	-10.92	338.88	97.55	89.4	Tau
16 Mai 2019	05h58m28.61s	+24 33' 27.6"	1.6163	2.3358	1.7	35.1	21.1	-10.98	339.13	97.50	89.6	Tau
17 Mai 2019	06h01m19.06s	+24 33' 37.6"	1.6172	2.3419	1.7	34.7	20.9	-11.04	339.38	97.45	89.9	Gem
18 Mai 2019	06h04m09.42s	+24 33' 35.8"	1.6181	2.3479	1.7	34.4	20.7	-11.10	339.63	97.40	90.2	Gem
19 Mai 2019	06h06m59.69s	+24 33' 22.3"	1.6191	2.3539	1.7	34.1	20.5	-11.16	339.87	97.35	90.5	Gem
20 Mai 2019	06h09m49.87s	+24 32' 57.2"	1.6200	2.3599	1.7	33.8	20.3	-11.23	340.12	97.31	90.8	Gem
21 Mai 2019	06h12m39.94s	+24 32' 20.4"	1.6209	2.3658	1.7	33.5	20.1	-11.30	340.37	97.26	91.1	Gem
22 Mai 2019	06h15m29.90s	+24 31' 32.0"	1.6218	2.3716	1.7	33.2	20.0	-11.37	340.62	97.22	91.4	Gem
23 Mai 2019	06h18m19.75s	+24 30' 32.0"	1.6226	2.3775	1.7	32.8	19.8	-11.44	340.86	97.18	91.6	Gem
24 Mai 2019	06h21m09.48s	+24 29' 20.4"	1.6235	2.3832	1.7	32.5	19.6	-11.52	341.11	97.14	91.9	Gem
25 Mai 2019	06h23m59.09s	+24 27' 57.3"	1.6244	2.3889	1.7	32.2	19.4	-11.60	341.36	97.10	92.2	Gem
26 Mai 2019	06h26m48.56s	+24 26' 22.7"	1.6252	2.3946	1.7	31.9	19.2	-11.68	341.61	97.06	92.5	Gem
27 Mai 2019	06h29m37.89s	+24 24' 36.7"	1.6261	2.4002	1.7	31.6	19.0	-11.77	341.86	97.02	92.8	Gem
28 Mai 2019	06h32m27.08s	+24 22' 39.2"	1.6269	2.4058	1.7	31.3	18.9	-11.85	342.10	96.99	93.1	Gem

EPHEMERIDE 2019 – MARS

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
-----	---	-----	-	-----	---	-----	-----	-----	-----	-----	-----	-----
29 Mai 2019	06h35m16.12s	+24 20' 30.3"	1.6278	2.4113	1.7	30.9	18.7	-11.94	342.35	96.95	93.3	Gem
30 Mai 2019	06h38m05.00s	+24 18' 10.1"	1.6286	2.4168	1.8	30.6	18.5	-12.03	342.60	96.92	93.6	Gem
31 Mai 2019	06h40m53.72s	+24 15' 38.6"	1.6294	2.4222	1.8	30.3	18.3	-12.13	342.85	96.88	93.9	Gem
1 Jun 2019	06h43m42.26s	+24 12' 55.8"	1.6302	2.4276	1.8	30.0	18.1	-12.22	343.10	96.85	94.2	Gem
2 Jun 2019	06h46m30.62s	+24 10' 01.9"	1.6310	2.4329	1.8	29.7	17.9	-12.32	343.35	96.82	94.5	Gem
3 Jun 2019	06h49m18.80s	+24 06' 56.8"	1.6318	2.4382	1.8	29.4	17.7	-12.43	343.60	96.78	94.7	Gem
4 Jun 2019	06h52m06.78s	+24 03' 40.5"	1.6326	2.4434	1.8	29.0	17.6	-12.53	343.85	96.75	95.0	Gem
5 Jun 2019	06h54m54.56s	+24 00' 13.2"	1.6334	2.4486	1.8	28.7	17.4	-12.64	344.11	96.71	95.3	Gem
6 Jun 2019	06h57m42.13s	+23 56' 34.9"	1.6342	2.4537	1.8	28.4	17.2	-12.75	344.36	96.68	95.6	Gem
7 Jun 2019	07h00m29.47s	+23 52' 45.6"	1.6349	2.4588	1.8	28.1	17.0	-12.86	344.61	96.64	95.8	Gem
8 Jun 2019	07h03m16.59s	+23 48' 45.5"	1.6357	2.4638	1.8	27.8	16.8	-12.97	344.87	96.61	96.1	Gem
9 Jun 2019	07h06m03.47s	+23 44' 34.5"	1.6364	2.4687	1.8	27.5	16.6	-13.09	345.12	96.57	96.4	Gem
10 Jun 2019	07h08m50.11s	+23 40' 12.7"	1.6372	2.4736	1.8	27.1	16.4	-13.21	345.38	96.53	96.6	Gem
11 Jun 2019	07h11m36.50s	+23 35' 40.2"	1.6379	2.4785	1.8	26.8	16.2	-13.33	345.64	96.49	96.9	Gem
12 Jun 2019	07h14m22.63s	+23 30' 57.1"	1.6386	2.4833	1.8	26.5	16.1	-13.45	345.90	96.45	97.2	Gem
13 Jun 2019	07h17m08.50s	+23 26' 03.4"	1.6393	2.4880	1.8	26.2	15.9	-13.58	346.16	96.42	97.4	Gem
14 Jun 2019	07h19m54.10s	+23 20' 59.2"	1.6400	2.4927	1.8	25.9	15.7	-13.70	346.42	96.38	97.7	Gem
15 Jun 2019	07h22m39.43s	+23 15' 44.5"	1.6407	2.4973	1.8	25.6	15.5	-13.83	346.69	96.35	98.0	Gem
16 Jun 2019	07h25m24.48s	+23 10' 19.4"	1.6414	2.5019	1.8	25.3	15.3	-13.97	346.95	96.31	98.2	Gem
17 Jun 2019	07h28m09.26s	+23 04' 44.0"	1.6421	2.5064	1.8	24.9	15.1	-14.10	347.22	96.28	98.5	Gem
18 Jun 2019	07h30m53.76s	+22 58' 58.4"	1.6427	2.5109	1.8	24.6	14.9	-14.24	347.48	96.25	98.7	Gem
19 Jun 2019	07h33m37.98s	+22 53' 02.6"	1.6434	2.5153	1.8	24.3	14.7	-14.38	347.75	96.22	99.0	Gem
20 Jun 2019	07h36m21.91s	+22 46' 56.8"	1.6440	2.5197	1.8	24.0	14.6	-14.52	348.02	96.19	99.3	Gem
21 Jun 2019	07h39m05.56s	+22 40' 40.8"	1.6447	2.5240	1.8	23.7	14.4	-14.66	348.30	96.17	99.5	Gem
22 Jun 2019	07h41m48.91s	+22 34' 15.0"	1.6453	2.5282	1.8	23.4	14.2	-14.80	348.57	96.14	99.8	Gem
23 Jun 2019	07h44m31.98s	+22 27' 39.3"	1.6459	2.5324	1.8	23.0	14.0	-14.95	348.85	96.12	100.0	Gem
24 Jun 2019	07h47m14.75s	+22 20' 53.7"	1.6466	2.5366	1.8	22.7	13.8	-15.10	349.12	96.10	100.3	Gem
25 Jun 2019	07h49m57.23s	+22 13' 58.5"	1.6472	2.5407	1.8	22.4	13.6	-15.25	349.40	96.08	100.5	Gem
26 Jun 2019	07h52m39.41s	+22 06' 53.6"	1.6478	2.5447	1.8	22.1	13.4	-15.40	349.68	96.06	100.7	Gem
27 Jun 2019	07h55m21.29s	+21 59' 39.1"	1.6483	2.5487	1.8	21.8	13.2	-15.56	349.97	96.04	101.0	Gem
28 Jun 2019	07h58m02.87s	+21 52' 15.1"	1.6489	2.5526	1.8	21.5	13.0	-15.72	350.25	96.02	101.2	Gem
29 Jun 2019	08h00m44.14s	+21 44' 41.8"	1.6495	2.5564	1.8	21.1	12.8	-15.88	350.54	96.01	101.5	Cnc
30 Jun 2019	08h03m25.11s	+21 36' 59.1"	1.6500	2.5602	1.8	20.8	12.7	-16.04	350.83	95.99	101.7	Cnc
1 Jul 2019	08h06m05.77s	+21 29' 07.1"	1.6506	2.5640	1.8	20.5	12.5	-16.20	351.12	95.97	101.9	Cnc
2 Jul 2019	08h08m46.12s	+21 21' 06.0"	1.6511	2.5677	1.8	20.2	12.3	-16.36	351.41	95.96	102.2	Cnc
3 Jul 2019	08h11m26.15s	+21 12' 55.9"	1.6517	2.5713	1.8	19.9	12.1	-16.53	351.71	95.94	102.4	Cnc
4 Jul 2019	08h14m05.86s	+21 04' 36.7"	1.6522	2.5749	1.8	19.6	11.9	-16.69	352.00	95.92	102.6	Cnc
5 Jul 2019	08h16m45.25s	+20 56' 08.7"	1.6527	2.5784	1.8	19.2	11.7	-16.86	352.30	95.90	102.9	Cnc
6 Jul 2019	08h19m24.31s	+20 47' 31.8"	1.6532	2.5818	1.8	18.9	11.5	-17.03	352.60	95.89	103.1	Cnc
7 Jul 2019	08h22m03.05s	+20 38' 46.2"	1.6537	2.5852	1.8	18.6	11.3	-17.20	352.91	95.87	103.3	Cnc
8 Jul 2019	08h24m41.45s	+20 29' 52.0"	1.6542	2.5885	1.8	18.3	11.1	-17.38	353.21	95.85	103.5	Cnc
9 Jul 2019	08h27m19.52s	+20 20' 49.3"	1.6547	2.5918	1.8	18.0	10.9	-17.55	353.52	95.83	103.8	Cnc
10 Jul 2019	08h29m57.25s	+20 11' 38.1"	1.6551	2.5950	1.8	17.7	10.7	-17.73	353.83	95.81	104.0	Cnc
11 Jul 2019	08h32m34.65s	+20 02' 18.6"	1.6556	2.5981	1.8	17.3	10.5	-17.91	354.15	95.79	104.2	Cnc
12 Jul 2019	08h35m11.71s	+19 52' 50.9"	1.6560	2.6012	1.8	17.0	10.4	-18.08	354.46	95.77	104.4	Cnc
13 Jul 2019	08h37m48.44s	+19 43' 15.0"	1.6565	2.6042	1.8	16.7	10.2	-18.26	354.78	95.75	104.6	Cnc
14 Jul 2019	08h40m24.83s	+19 33' 31.0"	1.6569	2.6072	1.8	16.4	10.0	-18.45	355.11	95.74	104.8	Cnc
15 Jul 2019	08h43m00.89s	+19 23' 39.0"	1.6573	2.6101	1.8	16.1	9.8	-18.63	355.43	95.72	105.0	Cnc
16 Jul 2019	08h45m36.62s	+19 13' 39.1"	1.6577	2.6129	1.8	15.7	9.6	-18.81	355.76	95.71	105.2	Cnc
17 Jul 2019	08h48m12.01s	+19 03' 31.4"	1.6581	2.6157	1.8	15.4	9.4	-19.00	356.09	95.70	105.4	Cnc
18 Jul 2019	08h50m47.09s	+18 53' 16.0"	1.6585	2.6184	1.8	15.1	9.2	-19.18	356.42	95.69	105.6	Cnc
19 Jul 2019	08h53m21.84s	+18 42' 53.0"	1.6589	2.6211	1.8	14.8	9.0	-19.37	356.75	95.68	105.8	Cnc
20 Jul 2019	08h55m56.26s	+18 32' 22.4"	1.6593	2.6237	1.8	14.5	8.8	-19.55	357.09	95.67	106.0	Cnc
21 Jul 2019	08h58m30.37s	+18 21' 44.4"	1.6596	2.6262	1.8	14.2	8.6	-19.74	357.43	95.67	106.2	Cnc
22 Jul 2019	09h01m04.16s	+18 10' 59.0"	1.6600	2.6287	1.8	13.8	8.4	-19.93	357.78	95.66	106.4	Cnc
23 Jul 2019	09h03m37.64s	+18 00' 06.3"	1.6603	2.6311	1.8	13.5	8.2	-20.12	358.12	95.66	106.6	Cnc
24 Jul 2019	09h06m10.81s	+17 49' 06.4"	1.6606	2.6335	1.8	13.2	8.0	-20.31	358.47	95.66	106.8	Cnc
25 Jul 2019	09h08m43.67s	+17 37' 59.4"	1.6610	2.6357	1.8	12.9	7.8	-20.50	358.82	95.66	107.0	Cnc
26 Jul 2019	09h11m16.23s	+17 26' 45.5"	1.6613	2.6380	1.8	12.6	7.6	-20.69	359.18	95.66	107.2	Cnc
27 Jul 2019	09h13m48.48s	+17 15' 24.6"	1.6616	2.6401	1.8	12.2	7.4	-20.89	359.54	95.66	107.3	Cnc
28 Jul 2019	09h16m20.43s	+17 03' 56.8"	1.6619	2.6422	1.8	11.9	7.3	-21.08	359.90	95.66	107.5	Cnc
29 Jul 2019	09h18m52.09s	+16 52' 22.4"	1.6621	2.6443	1.8	11.6	7.1	-21.27	0.26	95.66	107.7	Cnc
30 Jul 2019	09h21m23.44s	+16 40' 41.3"	1.6624	2.6463	1.8	11.3	6.9	-21.47	0.63	95.67	107.9	Cnc
31 Jul 2019	09h23m54.50s	+16 28' 53.6"	1.6627	2.6482	1.8	11.0	6.7	-21.66	1.00	95.67	108.0	Leo
1 Aug 2019	09h26m25.27s	+16 16' 59.5"	1.6629	2.6500	1.8	10.6	6.5	-21.86	1.37	95.67	108.2	Leo
2 Aug 2019	09h28m55.74s	+16 04' 59.0"	1.6632	2.6518	1.8	10.3	6.3	-22.05	1.74	95.67	108.4	Leo
3 Aug 2019	09h31m25.92s	+15 52' 52.3"	1.6634	2.6535	1.8	10.0	6.1	-22.25	2.12	95.67	108.5	Leo
4 Aug 2019	09h33m55.81s	+15 40' 39.4"	1.6636	2.6552	1.8	9.7	5.9	-22.44	2.51	95.67	108.7	Leo
5 Aug 2019	09h36m25.41s	+15 28' 20.5"	1.6639	2.6568	1.8	9.4	5.7	-22.64	2.89	95.67	108.8	Leo
6 Aug 2019	09h38m54.72s	+15 15' 55.6"	1.6641	2.6583	1.8	9.0	5.5	-22.83	3.28	95.67	109.0	Leo
7 Aug 2019	09h41m23.74s	+15 03' 24.9"	1.6643	2.6597	1.8	8.7	5.3	-23.03	3.67	95.67	109.1	Leo
8 Aug 2019	09h43m52.48s	+14 50' 48.4"	1.6644	2.6611	1.8	8.4	5.1	-23.22	4.06	95.67	109.3	Leo
9 Aug 2019	09h46m20.94s	+14 38' 06.3"	1.6646	2.6624	1.8	8.1	4.9	-23.42	4.46	95.67	109.4	Leo
10 Aug 2019	09h48m49.12s	+14 25' 18.6"	1.6648	2.6637	1.8	7.8	4.7	-23.61	4.86	95.67	109.6	Leo

EPHEMERIDE 2019 – MARS

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
-----	---	-----	-	-----	---	-----	-----	-----	-----	-----	-----	-----
11 Aug 2019	09h51m17.03s	+14 12' 25.4"	1.6649	2.6649	1.8	7.4	4.5	-23.81	5.27	95.67	109.7	Leo
12 Aug 2019	09h53m44.68s	+13 59' 26.8"	1.6651	2.6660	1.8	7.1	4.3	-24.00	5.67	95.68	109.9	Leo
13 Aug 2019	09h56m12.06s	+13 46' 22.9"	1.6652	2.6671	1.8	6.8	4.1	-24.20	6.08	95.68	110.0	Leo
14 Aug 2019	09h58m39.19s	+13 33' 13.9"	1.6653	2.6681	1.8	6.5	3.9	-24.39	6.50	95.69	110.1	Leo
15 Aug 2019	10h01m06.07s	+13 19' 59.7"	1.6655	2.6690	1.8	6.2	3.7	-24.58	6.92	95.70	110.3	Leo
16 Aug 2019	10h03m32.70s	+13 06' 40.5"	1.6656	2.6699	1.8	5.8	3.5	-24.78	7.34	95.71	110.4	Leo
17 Aug 2019	10h05m59.09s	+12 53' 16.3"	1.6657	2.6707	1.8	5.5	3.3	-24.97	7.76	95.72	110.5	Leo
18 Aug 2019	10h08m25.25s	+12 39' 47.3"	1.6657	2.6715	1.8	5.2	3.2	-25.16	8.18	95.73	110.7	Leo
19 Aug 2019	10h10m51.19s	+12 26' 13.5"	1.6658	2.6721	1.8	4.9	3.0	-25.35	8.61	95.74	110.8	Leo
20 Aug 2019	10h13m16.90s	+12 12' 35.0"	1.6659	2.6728	1.8	4.6	2.8	-25.54	9.05	95.76	110.9	Leo
21 Aug 2019	10h15m42.39s	+11 58' 51.9"	1.6659	2.6733	1.8	4.2	2.6	-25.73	9.48	95.77	111.0	Leo
22 Aug 2019	10h18m07.68s	+11 45' 04.3"	1.6660	2.6738	1.8	3.9	2.4	-25.92	9.92	95.79	111.1	Leo
23 Aug 2019	10h20m32.76s	+11 31' 12.3"	1.6660	2.6742	1.8	3.6	2.2	-26.11	10.36	95.81	111.3	Leo
24 Aug 2019	10h22m57.64s	+11 17' 15.9"	1.6660	2.6746	1.8	3.3	2.0	-26.30	10.81	95.83	111.4	Leo
25 Aug 2019	10h25m22.33s	+11 03' 15.3"	1.6661	2.6749	1.8	3.0	1.8	-26.49	11.26	95.85	111.5	Leo
26 Aug 2019	10h27m46.83s	+10 49' 10.5"	1.6661	2.6751	1.8	2.7	1.6	-26.67	11.71	95.87	111.6	Leo
27 Aug 2019	10h30m11.14s	+10 35' 01.7"	1.6661	2.6752	1.7	2.4	1.5	-26.86	12.16	95.89	111.7	Leo
28 Aug 2019	10h32m45.27s	+10 20' 48.8"	1.6660	2.6753	1.7	2.1	1.3	-27.04	12.62	95.91	111.8	Leo
29 Aug 2019	10h34m59.23s	+10 06' 32.1"	1.6660	2.6754	1.7	1.8	1.1	-27.23	13.08	95.93	111.9	Leo
30 Aug 2019	10h37m23.02s	+09 52' 11.5"	1.6660	2.6753	1.7	1.6	1.0	-27.41	13.54	95.95	112.0	Leo
31 Aug 2019	10h39m46.64s	+09 37' 47.3"	1.6659	2.6752	1.7	1.4	0.8	-27.59	14.01	95.97	112.1	Leo
1 Sep 2019	10h42m10.09s	+09 23' 19.5"	1.6659	2.6750	1.7	1.2	0.7	-27.77	14.48	95.99	112.2	Leo
2 Sep 2019	10h44m33.37s	+09 08' 48.2"	1.6658	2.6748	1.7	1.1	0.7	-27.95	14.95	96.01	112.2	Leo
3 Sep 2019	10h46m56.50s	+08 54' 13.5"	1.6657	2.6744	1.7	1.1	0.7	-28.13	15.43	96.03	112.3	Leo
4 Sep 2019	10h49m19.48s	+08 39' 35.6"	1.6657	2.6740	1.7	1.2	0.7	-28.30	15.90	96.04	112.4	Leo
5 Sep 2019	10h51m42.30s	+08 24' 54.4"	1.6656	2.6736	1.7	1.4	0.8	-28.48	16.39	96.06	112.5	Leo
6 Sep 2019	10h54m04.98s	+08 10' 10.1"	1.6655	2.6731	1.7	1.6	1.0	-28.65	16.87	96.08	112.6	Leo
7 Sep 2019	10h56m27.52s	+07 55' 22.9"	1.6654	2.6725	1.7	1.9	1.1	-28.82	17.36	96.10	112.6	Leo
8 Sep 2019	10h58m49.93s	+07 40' 32.7"	1.6652	2.6718	1.7	2.1	1.3	-28.99	17.85	96.12	112.7	Leo
9 Sep 2019	11h01m12.22s	+07 25' 39.6"	1.6651	2.6711	1.7	2.4	1.5	-29.16	18.34	96.14	112.8	Leo
10 Sep 2019	11h03m34.38s	+07 10' 43.9"	1.6650	2.6703	1.7	2.7	1.6	-29.32	18.83	96.16	112.9	Leo
11 Sep 2019	11h05m56.43s	+06 55' 45.5"	1.6648	2.6695	1.7	3.0	1.8	-29.49	19.33	96.18	112.9	Leo
12 Sep 2019	11h08m18.37s	+06 40' 44.5"	1.6646	2.6686	1.8	3.3	2.0	-29.65	19.83	96.20	113.0	Leo
13 Sep 2019	11h10m40.22s	+06 25' 41.0"	1.6645	2.6676	1.8	3.7	2.2	-29.82	20.33	96.23	113.0	Leo
14 Sep 2019	11h13m01.98s	+06 10' 35.2"	1.6643	2.6665	1.8	4.0	2.4	-29.98	20.84	96.26	113.1	Leo
15 Sep 2019	11h15m23.65s	+05 55' 27.0"	1.6641	2.6654	1.8	4.3	2.6	-30.13	21.35	96.28	113.2	Leo
16 Sep 2019	11h17m45.24s	+05 40' 16.5"	1.6639	2.6642	1.8	4.6	2.8	-30.29	21.86	96.31	113.2	Leo
17 Sep 2019	11h20m06.77s	+05 25' 03.9"	1.6637	2.6630	1.8	5.0	3.0	-30.45	22.37	96.34	113.3	Leo
18 Sep 2019	11h22m28.23s	+05 09' 49.3"	1.6634	2.6617	1.8	5.3	3.2	-30.60	22.89	96.38	113.3	Leo
19 Sep 2019	11h24m49.64s	+04 54' 32.7"	1.6632	2.6603	1.8	5.6	3.4	-30.75	23.40	96.41	113.4	Leo
20 Sep 2019	11h27m11.00s	+04 39' 14.1"	1.6630	2.6588	1.8	5.9	3.6	-30.90	23.92	96.44	113.4	Leo
21 Sep 2019	11h29m32.32s	+04 23' 53.7"	1.6627	2.6573	1.8	6.3	3.8	-31.05	24.45	96.48	113.4	Leo
22 Sep 2019	11h31m53.60s	+04 08' 31.6"	1.6625	2.6558	1.8	6.6	4.0	-31.19	24.97	96.52	113.5	Leo
23 Sep 2019	11h34m14.86s	+03 53' 07.9"	1.6622	2.6541	1.8	6.9	4.2	-31.33	25.50	96.55	113.5	Leo
24 Sep 2019	11h36m36.09s	+03 37' 42.6"	1.6619	2.6524	1.8	7.3	4.4	-31.48	26.03	96.59	113.5	Leo
25 Sep 2019	11h38m57.31s	+03 22' 15.8"	1.6616	2.6506	1.8	7.6	4.6	-31.61	26.56	96.63	113.6	Vir
26 Sep 2019	11h41m18.51s	+03 06' 47.6"	1.6613	2.6488	1.8	7.9	4.8	-31.75	27.09	96.66	113.6	Vir
27 Sep 2019	11h43m39.71s	+02 51' 18.2"	1.6610	2.6469	1.8	8.3	5.0	-31.89	27.62	96.70	113.6	Vir
28 Sep 2019	11h46m00.91s	+02 35' 47.6"	1.6607	2.6449	1.8	8.6	5.2	-32.02	28.16	96.73	113.6	Vir
29 Sep 2019	11h48m22.11s	+02 20' 15.9"	1.6603	2.6429	1.8	8.9	5.4	-32.15	28.70	96.77	113.7	Vir
30 Sep 2019	11h50m43.31s	+02 04' 43.3"	1.6600	2.6407	1.8	9.3	5.6	-32.28	29.23	96.80	113.7	Vir
1 Okt 2019	11h53m04.53s	+01 49' 09.8"	1.6597	2.6386	1.8	9.6	5.8	-32.41	29.78	96.83	113.7	Vir
2 Okt 2019	11h55m25.76s	+01 33' 35.5"	1.6593	2.6363	1.8	10.0	6.0	-32.53	30.32	96.87	113.7	Vir
3 Okt 2019	11h57m47.01s	+01 18' 00.6"	1.6589	2.6340	1.8	10.3	6.2	-32.65	30.86	96.90	113.7	Vir
4 Okt 2019	12h00m08.29s	+01 02' 25.1"	1.6586	2.6316	1.8	10.6	6.4	-32.77	31.41	96.93	113.7	Vir
5 Okt 2019	12h02m29.60s	+00 46' 49.1"	1.6582	2.6292	1.8	11.0	6.6	-32.89	31.96	96.96	113.7	Vir
6 Okt 2019	12h04m50.95s	+00 31' 12.8"	1.6578	2.6267	1.8	11.3	6.8	-33.00	32.50	97.00	113.7	Vir
7 Okt 2019	12h07m12.35s	+00 15' 36.2"	1.6574	2.6241	1.8	11.7	7.0	-33.12	33.05	97.03	113.7	Vir
8 Okt 2019	12h09m33.80s	-00 00' 00.6"	1.6569	2.6214	1.8	12.0	7.2	-33.23	33.60	97.06	113.7	Vir
9 Okt 2019	12h11m55.31s	-00 15' 37.5"	1.6565	2.6187	1.8	12.3	7.4	-33.34	34.16	97.10	113.7	Vir
10 Okt 2019	12h14m16.89s	-00 31' 14.4"	1.6561	2.6160	1.8	12.7	7.6	-33.44	34.71	97.14	113.7	Vir
11 Okt 2019	12h16m38.54s	-00 46' 51.2"	1.6556	2.6131	1.8	13.0	7.8	-33.55	35.26	97.17	113.7	Vir
12 Okt 2019	12h19m00.27s	-01 02' 27.9"	1.6552	2.6102	1.8	13.4	8.0	-33.65	35.82	97.21	113.7	Vir
13 Okt 2019	12h21m22.10s	-01 18' 04.4"	1.6547	2.6073	1.8	13.7	8.2	-33.75	36.37	97.25	113.7	Vir
14 Okt 2019	12h23m44.02s	-01 33' 40.5"	1.6542	2.6042	1.8	14.0	8.4	-33.84	36.93	97.29	113.6	Vir
15 Okt 2019	12h26m06.05s	-01 49' 16.1"	1.6538	2.6012	1.8	14.4	8.6	-33.94	37.48	97.34	113.6	Vir
16 Okt 2019	12h28m28.19s	-02 04' 51.3"	1.6533	2.5980	1.8	14.7	8.8	-34.03	38.04	97.38	113.6	Vir
17 Okt 2019	12h30m50.45s	-02 20' 25.9"	1.6528	2.5948	1.8	15.1	9.0	-34.12	38.60	97.43	113.6	Vir
18 Okt 2019	12h33m12.83s	-02 35' 59.8"	1.6522	2.5915	1.8	15.4	9.2	-34.21	39.16	97.47	113.5	Vir
19 Okt 2019	12h35m35.36s	-02 51' 32.9"	1.6517	2.5882	1.8	15.8	9.4	-34.29	39.72	97.52	113.5	Vir
20 Okt 2019	12h37m58.02s	-03 07' 05.1"	1.6512	2.5848	1.8	16.1	9.6	-34.37	40.27	97.57	113.5	Vir
21 Okt 2019	12h40m20.84s	-03 22' 36.4"	1.6507	2.5813	1.8	16.5	9.8	-34.45	40.83	97.62	113.4	Vir
22 Okt 2019	12h42m43.81s	-03 38' 06.6"	1.6501	2.5778	1.8	16.8	10.0	-34.53	41.39	97.67	113.4	Vir
23 Okt 2019	12h45m06.94s	-03 53' 35.7"	1.6496	2.5742	1.8	17.1	10.2	-34.61	41.95	97.71	113.3	Vir

EPHEMERIDE 2019 – MARS

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
-----	---	-----	-	-----	---	-----	-----	-----	-----	-----	-----	-----
24 Okt 2019	12h47m30.23s	-04 09' 03.6"	1.6490	2.5705	1.8	17.5	10.4	-34.68	42.51	97.76	113.3	Vir
25 Okt 2019	12h49m53.70s	-04 24' 30.1"	1.6484	2.5668	1.8	17.8	10.7	-34.75	43.07	97.81	113.2	Vir
26 Okt 2019	12h52m17.34s	-04 39' 55.1"	1.6478	2.5630	1.8	18.2	10.9	-34.82	43.62	97.86	113.2	Vir
27 Okt 2019	12h54m41.17s	-04 55' 18.6"	1.6472	2.5592	1.8	18.5	11.1	-34.89	44.18	97.90	113.1	Vir
28 Okt 2019	12h57m05.17s	-05 10' 40.3"	1.6466	2.5553	1.8	18.9	11.3	-34.95	44.74	97.95	113.1	Vir
29 Okt 2019	12h59m29.37s	-05 26' 00.3"	1.6460	2.5513	1.8	19.2	11.5	-35.01	45.29	97.99	113.0	Vir
30 Okt 2019	13h01m53.76s	-05 41' 18.4"	1.6454	2.5473	1.8	19.6	11.7	-35.07	45.85	98.03	113.0	Vir
31 Okt 2019	13h04m18.34s	-05 56' 34.4"	1.6448	2.5432	1.8	19.9	11.9	-35.13	46.41	98.08	112.9	Vir
1 Nov 2019	13h06m43.13s	-06 11' 48.3"	1.6441	2.5390	1.8	20.3	12.1	-35.18	46.96	98.12	112.8	Vir
2 Nov 2019	13h09m08.13s	-06 27' 00.0"	1.6435	2.5348	1.8	20.6	12.3	-35.24	47.51	98.16	112.8	Vir
3 Nov 2019	13h11m33.34s	-06 42' 09.3"	1.6428	2.5305	1.8	21.0	12.5	-35.29	48.07	98.20	112.7	Vir
4 Nov 2019	13h13m58.77s	-06 57' 16.2"	1.6421	2.5262	1.8	21.3	12.7	-35.33	48.62	98.24	112.6	Vir
5 Nov 2019	13h16m24.42s	-07 12' 20.5"	1.6415	2.5218	1.8	21.7	12.9	-35.38	49.17	98.29	112.5	Vir
6 Nov 2019	13h18m51.31s	-07 27' 22.2"	1.6408	2.5173	1.8	22.0	13.1	-35.42	49.72	98.33	112.5	Vir
7 Nov 2019	13h21m16.43s	-07 42' 21.1"	1.6401	2.5128	1.8	22.4	13.3	-35.47	50.27	98.38	112.4	Vir
8 Nov 2019	13h23m42.80s	-07 57' 17.1"	1.6394	2.5082	1.8	22.7	13.5	-35.51	50.81	98.42	112.3	Vir
9 Nov 2019	13h26m09.43s	-08 12' 10.3"	1.6387	2.5036	1.8	23.1	13.7	-35.54	51.36	98.47	112.2	Vir
10 Nov 2019	13h28m34.31s	-08 27' 00.3"	1.6380	2.4989	1.8	23.4	13.9	-35.58	51.90	98.51	112.1	Vir
11 Nov 2019	13h31m03.46s	-08 41' 47.2"	1.6372	2.4942	1.8	23.8	14.1	-35.61	52.45	98.56	112.0	Vir
12 Nov 2019	13h33m30.88s	-08 56' 30.9"	1.6365	2.4894	1.8	24.1	14.3	-35.64	52.99	98.61	111.9	Vir
13 Nov 2019	13h35m58.58s	-09 11' 11.3"	1.6358	2.4845	1.8	24.5	14.5	-35.67	53.53	98.66	111.8	Vir
14 Nov 2019	13h38m26.57s	-09 25' 48.1"	1.6350	2.4796	1.8	24.8	14.7	-35.70	54.06	98.72	111.7	Vir
15 Nov 2019	13h40m54.85s	-09 40' 21.5"	1.6342	2.4747	1.8	25.2	14.9	-35.72	54.60	98.77	111.6	Vir
16 Nov 2019	13h43m23.43s	-09 54' 51.2"	1.6335	2.4696	1.8	25.5	15.1	-35.74	55.13	98.82	111.5	Vir
17 Nov 2019	13h45m52.31s	-10 09' 17.2"	1.6327	2.4645	1.7	25.9	15.3	-35.76	55.67	98.88	111.4	Vir
18 Nov 2019	13h48m21.51s	-10 23' 39.3"	1.6319	2.4594	1.7	26.2	15.5	-35.78	56.20	98.93	111.3	Vir
19 Nov 2019	13h50m51.03s	-10 37' 57.5"	1.6311	2.4542	1.7	26.6	15.7	-35.80	56.72	98.99	111.2	Vir
20 Nov 2019	13h53m20.87s	-10 52' 11.6"	1.6303	2.4490	1.7	26.9	15.9	-35.81	57.25	99.04	111.1	Vir
21 Nov 2019	13h55m51.03s	-11 06' 21.6"	1.6295	2.4437	1.7	27.3	16.1	-35.83	57.77	99.10	110.9	Vir
22 Nov 2019	13h58m21.52s	-11 20' 27.3"	1.6287	2.4383	1.7	27.6	16.3	-35.84	58.29	99.15	110.8	Vir
23 Nov 2019	14h00m52.35s	-11 34' 28.6"	1.6279	2.4329	1.7	28.0	16.5	-35.85	58.81	99.21	110.7	Vir
24 Nov 2019	14h03m23.51s	-11 48' 25.3"	1.6270	2.4275	1.7	28.3	16.7	-35.85	59.33	99.26	110.6	Vir
25 Nov 2019	14h05m55.02s	-12 02' 17.4"	1.6262	2.4219	1.7	28.7	16.9	-35.86	59.84	99.31	110.4	Vir
26 Nov 2019	14h08m26.86s	-12 16' 04.7"	1.6253	2.4164	1.7	29.0	17.1	-35.86	60.35	99.36	110.3	Vir
27 Nov 2019	14h10m59.05s	-12 29' 47.1"	1.6245	2.4107	1.7	29.4	17.3	-35.86	60.86	99.41	110.2	Vir
28 Nov 2019	14h13m31.58s	-12 43' 24.5"	1.6236	2.4051	1.7	29.7	17.5	-35.86	61.36	99.46	110.0	Vir
29 Nov 2019	14h16m04.46s	-12 56' 56.8"	1.6227	2.3993	1.7	30.1	17.7	-35.86	61.86	99.50	109.9	Vir
30 Nov 2019	14h18m37.69s	-13 10' 23.8"	1.6218	2.3935	1.7	30.4	17.9	-35.86	62.36	99.55	109.7	Vir
1 Dez 2019	14h21m11.28s	-13 23' 45.4"	1.6210	2.3877	1.7	30.8	18.1	-35.85	62.86	99.60	109.6	Vir
2 Dez 2019	14h23m45.23s	-13 37' 01.4"	1.6201	2.3818	1.7	31.1	18.3	-35.85	63.35	99.64	109.4	Lib
3 Dez 2019	14h26m19.54s	-13 50' 11.9"	1.6192	2.3759	1.7	31.5	18.5	-35.84	63.84	99.69	109.3	Lib
4 Dez 2019	14h28m54.21s	-14 03' 16.6"	1.6182	2.3699	1.7	31.8	18.7	-35.83	64.33	99.74	109.1	Lib
5 Dez 2019	14h31m29.26s	-14 16' 15.5"	1.6173	2.3639	1.7	32.2	18.9	-35.81	64.82	99.78	109.0	Lib
6 Dez 2019	14h34m04.68s	-14 29' 08.5"	1.6164	2.3578	1.7	32.5	19.1	-35.80	65.30	99.83	108.8	Lib
7 Dez 2019	14h36m40.48s	-14 41' 55.3"	1.6155	2.3517	1.7	32.9	19.3	-35.78	65.78	99.88	108.7	Lib
8 Dez 2019	14h39m16.66s	-14 54' 36.0"	1.6145	2.3455	1.7	33.2	19.5	-35.77	66.25	99.93	108.5	Lib
9 Dez 2019	14h41m53.24s	-15 07' 10.4"	1.6136	2.3393	1.7	33.6	19.7	-35.75	66.72	99.98	108.3	Lib
10 Dez 2019	14h44m30.20s	-15 19' 38.4"	1.6126	2.3330	1.7	33.9	19.9	-35.73	67.19	100.03	108.2	Lib
11 Dez 2019	14h47m07.56s	-15 31' 59.9"	1.6116	2.3267	1.7	34.3	20.1	-35.71	67.66	100.08	108.0	Lib
12 Dez 2019	14h49m45.31s	-15 44' 14.8"	1.6107	2.3203	1.7	34.6	20.3	-35.68	68.12	100.14	107.8	Lib
13 Dez 2019	14h52m23.48s	-15 56' 23.0"	1.6097	2.3139	1.7	35.0	20.5	-35.66	68.57	100.19	107.6	Lib
14 Dez 2019	14h55m02.05s	-16 08' 24.4"	1.6087	2.3075	1.7	35.3	20.7	-35.63	69.03	100.25	107.5	Lib
15 Dez 2019	14h57m41.03s	-16 20' 18.8"	1.6077	2.3010	1.7	35.7	20.9	-35.60	69.48	100.30	107.3	Lib
16 Dez 2019	15h00m20.43s	-16 32' 06.2"	1.6067	2.2945	1.7	36.0	21.1	-35.57	69.93	100.36	107.1	Lib
17 Dez 2019	15h03m00.24s	-16 43' 46.4"	1.6057	2.2879	1.6	36.4	21.3	-35.54	70.37	100.42	106.9	Lib
18 Dez 2019	15h05m40.48s	-16 55' 19.4"	1.6047	2.2813	1.6	36.7	21.5	-35.51	70.81	100.48	106.7	Lib
19 Dez 2019	15h08m21.13s	-17 06' 45.0"	1.6037	2.2747	1.6	37.1	21.7	-35.48	71.24	100.53	106.5	Lib
20 Dez 2019	15h11m02.20s	-17 18' 03.1"	1.6026	2.2680	1.6	37.4	21.9	-35.44	71.68	100.59	106.3	Lib
21 Dez 2019	15h13m43.69s	-17 29' 13.5"	1.6016	2.2612	1.6	37.8	22.1	-35.40	72.10	100.65	106.1	Lib
22 Dez 2019	15h16m25.60s	-17 40' 16.2"	1.6006	2.2544	1.6	38.1	22.3	-35.36	72.53	100.70	105.9	Lib
23 Dez 2019	15h19m07.93s	-17 51' 11.0"	1.5995	2.2476	1.6	38.5	22.5	-35.33	72.95	100.75	105.7	Lib
24 Dez 2019	15h21m50.67s	-18 01' 57.9"	1.5985	2.2407	1.6	38.8	22.7	-35.28	73.36	100.80	105.5	Lib
25 Dez 2019	15h24m33.83s	-18 12' 36.5"	1.5974	2.2338	1.6	39.2	22.9	-35.24	73.78	100.85	105.3	Lib
26 Dez 2019	15h27m17.40s	-18 23' 07.0"	1.5963	2.2269	1.6	39.5	23.1	-35.20	74.19	100.90	105.1	Lib
27 Dez 2019	15h30m01.38s	-18 33' 29.0"	1.5953	2.2199	1.6	39.9	23.3	-35.15	74.59	100.95	104.9	Lib
28 Dez 2019	15h32m45.76s	-18 43' 42.6"	1.5942	2.2129	1.6	40.2	23.5	-35.11	74.99	100.99	104.7	Lib
29 Dez 2019	15h35m30.55s	-18 53' 47.5"	1.5931	2.2058	1.6	40.6	23.7	-35.06	75.39	101.04	104.5	Lib
30 Dez 2019	15h38m15.75s	-19 03' 43.7"	1.5920	2.1987	1.6	40.9	23.9	-35.01	75.78	101.08	104.2	Lib
31 Dez 2019	15h41m01.35s	-19 13' 31.1"	1.5909	2.1916	1.6	41.3	24.1	-34.96	76.17	101.13	104.0	Lib
1 Jan 2020	15h43m47.36s	-19 23' 09.5"	1.5898	2.1844	1.6	41.6	24.3	-34.90	76.56	101.18	103.8	Lib