



Die Bahn des Planeten Neptun 2019

EPHEMERIDE 2019 – NEPTUN

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
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1 Jan 2019	23h01m53.00s	-07 15' 29.2"	29.939	30.359	7.9	63.8	1.7	-28.63	297.83	3.11	66.6	Aqr
2 Jan 2019	23h01m57.60s	-07 14' 59.2"	29.939	30.375	7.9	62.8	1.7	-29.15	298.75	3.19	66.6	Aqr
3 Jan 2019	23h02m02.32s	-07 14' 28.6"	29.939	30.390	7.9	61.8	1.7	-29.66	299.68	3.26	66.6	Aqr
4 Jan 2019	23h02m07.15s	-07 13' 57.3"	29.939	30.406	7.9	60.8	1.6	-30.17	300.62	3.34	66.7	Aqr
5 Jan 2019	23h02m12.08s	-07 13' 25.4"	29.939	30.421	7.9	59.8	1.6	-30.67	301.56	3.41	66.7	Aqr
6 Jan 2019	23h02m17.13s	-07 12' 52.8"	29.939	30.436	7.9	58.8	1.6	-31.16	302.52	3.48	66.7	Aqr
7 Jan 2019	23h02m22.28s	-07 12' 19.6"	29.939	30.450	7.9	57.8	1.6	-31.65	303.48	3.55	66.8	Aqr
8 Jan 2019	23h02m27.53s	-07 11' 45.7"	29.939	30.465	7.9	56.8	1.6	-32.14	304.45	3.62	66.8	Aqr
9 Jan 2019	23h02m32.89s	-07 11' 11.2"	29.939	30.480	7.9	55.8	1.6	-32.62	305.43	3.69	66.8	Aqr
10 Jan 2019	23h02m38.35s	-07 10' 36.1"	29.939	30.494	7.9	54.9	1.5	-33.09	306.42	3.76	66.8	Aqr
11 Jan 2019	23h02m43.90s	-07 10' 00.4"	29.938	30.508	7.9	53.9	1.5	-33.56	307.42	3.83	66.8	Aqr
12 Jan 2019	23h02m49.56s	-07 09' 24.1"	29.938	30.522	7.9	52.9	1.5	-34.01	308.42	3.89	66.9	Aqr
13 Jan 2019	23h02m55.32s	-07 08' 47.2"	29.938	30.536	7.9	51.9	1.5	-34.47	309.44	3.96	66.9	Aqr
14 Jan 2019	23h03m01.17s	-07 08' 09.7"	29.938	30.549	7.9	50.9	1.5	-34.91	310.47	4.02	66.9	Aqr
15 Jan 2019	23h03m07.11s	-07 07' 31.7"	29.938	30.563	7.9	49.9	1.4	-35.35	311.50	4.08	66.9	Aqr
16 Jan 2019	23h03m13.15s	-07 06' 53.1"	29.938	30.576	7.9	48.9	1.4	-35.78	312.55	4.14	67.0	Aqr
17 Jan 2019	23h03m19.27s	-07 06' 14.0"	29.938	30.589	7.9	47.9	1.4	-36.20	313.60	4.21	67.0	Aqr
18 Jan 2019	23h03m25.49s	-07 05' 34.3"	29.938	30.602	7.9	46.9	1.4	-36.62	314.67	4.26	67.0	Aqr
19 Jan 2019	23h03m31.79s	-07 04' 54.1"	29.938	30.614	7.9	45.9	1.4	-37.02	315.75	4.32	67.0	Aqr
20 Jan 2019	23h03m38.19s	-07 04' 13.4"	29.938	30.627	7.9	44.9	1.3	-37.42	316.83	4.38	67.0	Aqr
21 Jan 2019	23h03m44.66s	-07 03' 32.1"	29.938	30.639	7.9	44.0	1.3	-37.81	317.93	4.44	67.0	Aqr
22 Jan 2019	23h03m51.22s	-07 02' 50.4"	29.938	30.651	7.9	43.0	1.3	-38.19	319.03	4.49	67.1	Aqr
23 Jan 2019	23h03m57.86s	-07 02' 08.2"	29.938	30.663	7.9	42.0	1.3	-38.57	320.15	4.55	67.1	Aqr
24 Jan 2019	23h04m04.58s	-07 01' 25.5"	29.938	30.674	7.9	41.0	1.2	-38.93	321.28	4.60	67.1	Aqr
25 Jan 2019	23h04m11.38s	-07 00' 42.4"	29.938	30.686	7.9	40.0	1.2	-39.28	322.41	4.65	67.1	Aqr
26 Jan 2019	23h04m18.25s	-06 59' 58.7"	29.938	30.697	7.9	39.0	1.2	-39.63	323.56	4.70	67.1	Aqr
27 Jan 2019	23h04m25.20s	-06 59' 14.7"	29.938	30.708	7.9	38.0	1.2	-39.96	324.72	4.75	67.1	Aqr
28 Jan 2019	23h04m32.23s	-06 58' 30.2"	29.938	30.718	7.9	37.1	1.1	-40.28	325.89	4.80	67.1	Aqr
29 Jan 2019	23h04m39.33s	-06 57' 45.2"	29.938	30.729	7.9	36.1	1.1	-40.60	327.06	4.85	67.2	Aqr
30 Jan 2019	23h04m46.50s	-06 56' 59.9"	29.938	30.739	7.9	35.1	1.1	-40.90	328.25	4.90	67.2	Aqr
31 Jan 2019	23h04m53.73s	-06 56' 14.1"	29.938	30.749	8.0	34.1	1.1	-41.19	329.45	4.94	67.2	Aqr
1 Feb 2019	23h05m01.04s	-06 55' 27.9"	29.938	30.759	8.0	33.1	1.0	-41.48	330.65	4.99	67.2	Aqr
2 Feb 2019	23h05m08.41s	-06 54' 41.4"	29.938	30.768	8.0	32.1	1.0	-41.75	331.87	5.03	67.2	Aqr
3 Feb 2019	23h05m15.85s	-06 53' 54.4"	29.938	30.777	8.0	31.2	1.0	-42.01	333.09	5.07	67.2	Aqr
4 Feb 2019	23h05m23.34s	-06 53' 07.2"	29.938	30.786	8.0	30.2	0.9	-42.25	334.33	5.11	67.2	Aqr
5 Feb 2019	23h05m30.90s	-06 52' 19.5"	29.938	30.795	8.0	29.2	0.9	-42.49	335.57	5.15	67.2	Aqr
6 Feb 2019	23h05m38.51s	-06 51' 31.5"	29.938	30.803	8.0	28.2	0.9	-42.71	336.82	5.19	67.3	Aqr
7 Feb 2019	23h05m46.18s	-06 50' 43.2"	29.938	30.812	8.0	27.2	0.9	-42.93	338.08	5.23	67.3	Aqr
8 Feb 2019	23h05m53.91s	-06 49' 54.6"	29.938	30.819	8.0	26.3	0.8	-43.13	339.34	5.26	67.3	Aqr
9 Feb 2019	23h06m01.69s	-06 49' 05.7"	29.938	30.827	8.0	25.3	0.8	-43.32	340.62	5.30	67.3	Aqr
10 Feb 2019	23h06m09.51s	-06 48' 16.5"	29.938	30.835	8.0	24.3	0.8	-43.49	341.90	5.33	67.3	Aqr
11 Feb 2019	23h06m17.39s	-06 47' 27.0"	29.938	30.842	8.0	23.3	0.7	-43.65	343.18	5.36	67.3	Aqr
12 Feb 2019	23h06m25.31s	-06 46' 37.2"	29.938	30.849	8.0	22.4	0.7	-43.80	344.48	5.39	67.3	Aqr
13 Feb 2019	23h06m33.27s	-06 45' 47.2"	29.938	30.855	8.0	21.4	0.7	-43.94	345.78	5.42	67.3	Aqr
14 Feb 2019	23h06m41.28s	-06 44' 56.9"	29.938	30.861	8.0	20.4	0.7	-44.06	347.08	5.45	67.3	Aqr
15 Feb 2019	23h06m49.33s	-06 44' 06.4"	29.938	30.867	8.0	19.4	0.6	-44.17	348.39	5.48	67.4	Aqr
16 Feb 2019	23h06m57.42s	-06 43' 15.7"	29.938	30.873	8.0	18.5	0.6	-44.27	349.70	5.50	67.4	Aqr
17 Feb 2019	23h07m05.54s	-06 42' 24.8"	29.938	30.879	8.0	17.5	0.6	-44.36	351.02	5.52	67.4	Aqr
18 Feb 2019	23h07m13.69s	-06 41' 33.7"	29.938	30.884	8.0	16.5	0.5	-44.43	352.34	5.55	67.4	Aqr
19 Feb 2019	23h07m21.88s	-06 40' 42.5"	29.938	30.889	8.0	15.5	0.5	-44.48	353.66	5.57	67.4	Aqr
20 Feb 2019	23h07m30.10s	-06 39' 51.0"	29.938	30.894	8.0	14.6	0.5	-44.53	354.98	5.59	67.4	Aqr
21 Feb 2019	23h07m38.35s	-06 38' 59.4"	29.938	30.898	8.0	13.6	0.4	-44.56	356.31	5.61	67.4	Aqr
22 Feb 2019	23h07m46.63s	-06 38' 07.7"	29.938	30.902	8.0	12.6	0.4	-44.58	357.63	5.62	67.4	Aqr
23 Feb 2019	23h07m54.93s	-06 37' 15.8"	29.938	30.906	8.0	11.7	0.4	-44.58	358.96	5.64	67.4	Aqr
24 Feb 2019	23h08m03.26s	-06 36' 23.7"	29.938	30.909	8.0	10.7	0.4	-44.57	0.29	5.66	67.4	Aqr
25 Feb 2019	23h08m11.61s	-06 35' 31.6"	29.938	30.913	8.0	9.7	0.3	-44.54	1.61	5.67	67.5	Aqr
26 Feb 2019	23h08m19.98s	-06 34' 39.4"	29.938	30.916	8.0	8.8	0.3	-44.51	2.94	5.68	67.5	Aqr
27 Feb 2019	23h08m28.37s	-06 33' 47.1"	29.938	30.918	8.0	7.8	0.3	-44.45	4.26	5.69	67.5	Aqr
28 Feb 2019	23h08m36.77s	-06 32' 54.7"	29.938	30.921	8.0	6.9	0.2	-44.39	5.58	5.70	67.5	Aqr
1 Mar 2019	23h08m45.19s	-06 32' 02.2"	29.938	30.923	8.0	5.9	0.2	-44.31	6.89	5.71	67.5	Aqr
2 Mar 2019	23h08m53.62s	-06 31' 09.7"	29.938	30.925	8.0	5.0	0.2	-44.22	8.21	5.72	67.5	Aqr
3 Mar 2019	23h09m02.06s	-06 30' 17.1"	29.938	30.926	8.0	4.0	0.1	-44.11	9.52	5.72	67.5	Aqr
4 Mar 2019	23h09m10.51s	-06 29' 24.5"	29.938	30.928	8.0	3.1	0.1	-44.00	10.82	5.73	67.5	Aqr
5 Mar 2019	23h09m18.97s	-06 28' 31.9"	29.938	30.929	8.0	2.2	0.1	-43.87	12.12	5.73	67.5	Aqr
6 Mar 2019	23h09m27.43s	-06 27' 39.3"	29.938	30.929	8.0	1.4	0.0	-43.72	13.41	5.73	67.5	Aqr
7 Mar 2019	23h09m35.90s	-06 26' 46.7"	29.938	30.930	8.0	1.0	0.0	-43.57	14.70	5.73	67.6	Aqr
8 Mar 2019	23h09m44.36s	-06 25' 54.1"	29.938	30.930	8.0	1.3	0.0	-43.40	15.98	5.73	67.6	Aqr
9 Mar 2019	23h09m52.82s	-06 25' 01.6"	29.938	30.930	8.0	2.1	0.1	-43.21	17.25	5.73	67.6	Aqr
10 Mar 2019	23h10m01.28s	-06 24' 09.1"	29.938	30.929	8.0	3.0	0.1	-43.02	18.52	5.73	67.6	Aqr
11 Mar 2019	23h10m09.73s	-06 23' 16.7"	29.938	30.928	8.0	3.9	0.1	-42.81	19.78	5.72	67.6	Aqr
12 Mar 2019	23h10m18.18s	-06 22' 24.3"	29.938	30.927	8.0	4.9	0.2	-42.59	21.03	5.72	67.6	Aqr
13 Mar 2019	23h10m26.61s	-06 21' 32.0"	29.938	30.926	8.0	5.8	0.2	-42.36	22.27	5.71	67.6	Aqr
14 Mar 2019	23h10m35.04s	-06 20' 39.9"	29.938	30.924	8.0	6.8	0.2	-42.12	23.51	5.70	67.6	Aqr
15 Mar 2019	23h10m43.45s	-06 19' 47.8"	29.937	30.923	8.0	7.7	0.3	-41.87	24.73	5.69	67.6	Aqr

EPHEMERIDE 2019 – NEPTUN

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
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16 Mar 2019	23h10m51.84s	-06 18' 55.8"	29.937	30.920	8.0	8.7	0.3	-41.60	25.95	5.68	67.6	Aqr
17 Mar 2019	23h11m00.22s	-06 18' 04.0"	29.937	30.918	8.0	9.6	0.3	-41.33	27.15	5.66	67.7	Aqr
18 Mar 2019	23h11m08.57s	-06 17' 12.4"	29.937	30.915	8.0	10.6	0.3	-41.04	28.35	5.65	67.7	Aqr
19 Mar 2019	23h11m16.91s	-06 16' 20.9"	29.937	30.912	8.0	11.5	0.4	-40.74	29.54	5.63	67.7	Aqr
20 Mar 2019	23h11m25.22s	-06 15' 29.5"	29.937	30.909	8.0	12.5	0.4	-40.44	30.72	5.62	67.7	Aqr
21 Mar 2019	23h11m33.51s	-06 14' 38.4"	29.937	30.905	8.0	13.4	0.4	-40.12	31.88	5.60	67.7	Aqr
22 Mar 2019	23h11m41.77s	-06 13' 47.4"	29.937	30.901	8.0	14.4	0.5	-39.79	33.04	5.58	67.7	Aqr
23 Mar 2019	23h11m50.01s	-06 12' 56.6"	29.937	30.897	8.0	15.3	0.5	-39.45	34.19	5.56	67.7	Aqr
24 Mar 2019	23h11m58.22s	-06 12' 06.1"	29.937	30.893	8.0	16.3	0.5	-39.10	35.32	5.54	67.7	Aqr
25 Mar 2019	23h12m06.39s	-06 11' 15.7"	29.937	30.888	8.0	17.2	0.6	-38.75	36.45	5.52	67.7	Aqr
26 Mar 2019	23h12m14.53s	-06 10' 25.6"	29.937	30.883	8.0	18.2	0.6	-38.38	37.57	5.49	67.8	Aqr
27 Mar 2019	23h12m22.64s	-06 09' 35.7"	29.937	30.878	8.0	19.1	0.6	-38.01	38.67	5.47	67.8	Aqr
28 Mar 2019	23h12m30.71s	-06 08' 46.1"	29.937	30.872	8.0	20.1	0.7	-37.62	39.77	5.44	67.8	Aqr
29 Mar 2019	23h12m38.75s	-06 07' 56.8"	29.937	30.867	8.0	21.1	0.7	-37.23	40.85	5.42	67.8	Aqr
30 Mar 2019	23h12m46.74s	-06 07' 07.7"	29.937	30.861	8.0	22.0	0.7	-36.83	41.93	5.39	67.8	Aqr
31 Mar 2019	23h12m54.69s	-06 06' 18.9"	29.937	30.854	8.0	23.0	0.7	-36.42	42.99	5.36	67.8	Aqr
1 Apr 2019	23h13m02.60s	-06 05' 30.4"	29.937	30.848	8.0	23.9	0.8	-36.00	44.05	5.33	67.8	Aqr
2 Apr 2019	23h13m10.47s	-06 04' 42.3"	29.937	30.841	8.0	24.9	0.8	-35.58	45.09	5.30	67.8	Aqr
3 Apr 2019	23h13m18.28s	-06 03' 54.4"	29.937	30.834	8.0	25.8	0.8	-35.15	46.13	5.26	67.9	Aqr
4 Apr 2019	23h13m26.05s	-06 03' 06.9"	29.937	30.827	8.0	26.8	0.9	-34.71	47.15	5.23	67.9	Aqr
5 Apr 2019	23h13m33.76s	-06 02' 19.7"	29.937	30.819	8.0	27.7	0.9	-34.26	48.17	5.19	67.9	Aqr
6 Apr 2019	23h13m41.43s	-06 01' 32.9"	29.937	30.811	8.0	28.7	0.9	-33.81	49.17	5.16	67.9	Aqr
7 Apr 2019	23h13m49.03s	-06 00' 46.5"	29.937	30.803	8.0	29.6	0.9	-33.35	50.17	5.12	67.9	Aqr
8 Apr 2019	23h13m56.58s	-06 00' 00.4"	29.937	30.795	8.0	30.6	1.0	-32.88	51.16	5.08	67.9	Aqr
9 Apr 2019	23h14m04.08s	-05 59' 14.7"	29.937	30.786	8.0	31.5	1.0	-32.41	52.14	5.04	67.9	Aqr
10 Apr 2019	23h14m11.51s	-05 58' 29.4"	29.937	30.777	8.0	32.5	1.0	-31.93	53.11	5.00	68.0	Aqr
11 Apr 2019	23h14m18.88s	-05 57' 44.6"	29.937	30.768	8.0	33.4	1.1	-31.45	54.07	4.95	68.0	Aqr
12 Apr 2019	23h14m26.19s	-05 57' 00.1"	29.937	30.759	8.0	34.4	1.1	-30.96	55.02	4.91	68.0	Aqr
13 Apr 2019	23h14m33.44s	-05 56' 16.1"	29.937	30.750	8.0	35.3	1.1	-30.46	55.96	4.86	68.0	Aqr
14 Apr 2019	23h14m40.62s	-05 55' 32.5"	29.937	30.740	7.9	36.3	1.1	-29.96	56.90	4.82	68.0	Aqr
15 Apr 2019	23h14m47.73s	-05 54' 49.4"	29.937	30.730	7.9	37.2	1.2	-29.45	57.82	4.77	68.1	Aqr
16 Apr 2019	23h14m54.77s	-05 54' 06.7"	29.937	30.720	7.9	38.1	1.2	-28.94	58.74	4.72	68.1	Aqr
17 Apr 2019	23h15m01.74s	-05 53' 24.5"	29.937	30.709	7.9	39.1	1.2	-28.42	59.65	4.67	68.1	Aqr
18 Apr 2019	23h15m08.64s	-05 52' 42.8"	29.937	30.699	7.9	40.0	1.2	-27.90	60.56	4.62	68.1	Aqr
19 Apr 2019	23h15m15.47s	-05 52' 01.6"	29.937	30.688	7.9	41.0	1.3	-27.38	61.45	4.57	68.1	Aqr
20 Apr 2019	23h15m22.22s	-05 51' 20.8"	29.937	30.677	7.9	41.9	1.3	-26.85	62.34	4.52	68.2	Aqr
21 Apr 2019	23h15m28.90s	-05 50' 40.6"	29.937	30.665	7.9	42.9	1.3	-26.31	63.22	4.47	68.2	Aqr
22 Apr 2019	23h15m35.50s	-05 50' 00.8"	29.937	30.654	7.9	43.8	1.3	-25.77	64.10	4.42	68.2	Aqr
23 Apr 2019	23h15m42.02s	-05 49' 21.6"	29.937	30.642	7.9	44.8	1.4	-25.23	64.97	4.36	68.2	Aqr
24 Apr 2019	23h15m48.47s	-05 48' 42.9"	29.937	30.630	7.9	45.7	1.4	-24.69	65.83	4.31	68.2	Aqr
25 Apr 2019	23h15m54.83s	-05 48' 04.7"	29.937	30.618	7.9	46.7	1.4	-24.14	66.69	4.25	68.3	Aqr
26 Apr 2019	23h16m01.11s	-05 47' 27.1"	29.937	30.606	7.9	47.6	1.4	-23.58	67.54	4.19	68.3	Aqr
27 Apr 2019	23h16m07.31s	-05 46' 50.0"	29.937	30.593	7.9	48.6	1.4	-23.03	68.38	4.14	68.3	Aqr
28 Apr 2019	23h16m13.42s	-05 46' 13.5"	29.937	30.581	7.9	49.5	1.5	-22.46	69.22	4.08	68.3	Aqr
29 Apr 2019	23h16m19.44s	-05 45' 37.6"	29.937	30.568	7.9	50.4	1.5	-21.90	70.06	4.02	68.4	Aqr
30 Apr 2019	23h16m25.38s	-05 45' 02.2"	29.937	30.555	7.9	51.4	1.5	-21.34	70.89	3.96	68.4	Aqr
1 Mai 2019	23h16m31.22s	-05 44' 27.4"	29.937	30.542	7.9	52.3	1.5	-20.77	71.71	3.89	68.4	Aqr
2 Mai 2019	23h16m36.98s	-05 43' 53.2"	29.937	30.528	7.9	53.3	1.5	-20.19	72.53	3.83	68.5	Aqr
3 Mai 2019	23h16m42.64s	-05 43' 19.7"	29.937	30.515	7.9	54.2	1.6	-19.62	73.34	3.77	68.5	Aqr
4 Mai 2019	23h16m48.21s	-05 42' 46.7"	29.937	30.501	7.9	55.2	1.6	-19.04	74.15	3.70	68.5	Aqr
5 Mai 2019	23h16m53.69s	-05 42' 14.3"	29.937	30.487	7.9	56.1	1.6	-18.46	74.96	3.64	68.6	Aqr
6 Mai 2019	23h16m59.07s	-05 41' 42.6"	29.937	30.473	7.9	57.1	1.6	-17.88	75.76	3.57	68.6	Aqr
7 Mai 2019	23h17m04.35s	-05 41' 11.5"	29.937	30.459	7.9	58.0	1.6	-17.30	76.56	3.51	68.6	Aqr
8 Mai 2019	23h17m09.54s	-05 40' 41.1"	29.937	30.445	7.9	58.9	1.7	-16.71	77.35	3.44	68.7	Aqr
9 Mai 2019	23h17m14.62s	-05 40' 11.3"	29.937	30.430	7.9	59.9	1.7	-16.12	78.15	3.37	68.7	Aqr
10 Mai 2019	23h17m19.60s	-05 39' 42.1"	29.937	30.416	7.9	60.8	1.7	-15.53	78.93	3.30	68.8	Aqr
11 Mai 2019	23h17m24.49s	-05 39' 13.6"	29.937	30.401	7.9	61.8	1.7	-14.94	79.72	3.23	68.8	Aqr
12 Mai 2019	23h17m29.27s	-05 38' 45.8"	29.937	30.386	7.9	62.7	1.7	-14.35	80.50	3.16	68.8	Aqr
13 Mai 2019	23h17m33.94s	-05 38' 18.6"	29.937	30.371	7.9	63.7	1.7	-13.76	81.28	3.09	68.9	Aqr
14 Mai 2019	23h17m38.51s	-05 37' 52.2"	29.937	30.356	7.9	64.6	1.7	-13.16	82.06	3.02	68.9	Aqr
15 Mai 2019	23h17m42.98s	-05 37' 26.4"	29.937	30.341	7.9	65.6	1.8	-12.56	82.83	2.94	69.0	Aqr
16 Mai 2019	23h17m47.34s	-05 37' 01.3"	29.937	30.325	7.9	66.5	1.8	-11.97	83.60	2.87	69.1	Aqr
17 Mai 2019	23h17m51.60s	-05 36' 36.8"	29.937	30.310	7.9	67.5	1.8	-11.37	84.38	2.80	69.1	Aqr
18 Mai 2019	23h17m55.75s	-05 36' 13.1"	29.936	30.294	7.9	68.4	1.8	-10.77	85.14	2.73	69.2	Aqr
19 Mai 2019	23h17m59.79s	-05 35' 50.1"	29.936	30.278	7.9	69.3	1.8	-10.17	85.91	2.65	69.2	Aqr
20 Mai 2019	23h18m03.72s	-05 35' 27.8"	29.936	30.263	7.9	70.3	1.8	-9.57	86.68	2.58	69.3	Aqr
21 Mai 2019	23h18m07.54s	-05 35' 06.1"	29.936	30.247	7.9	71.2	1.8	-8.96	87.44	2.50	69.4	Aqr
22 Mai 2019	23h18m11.25s	-05 34' 45.2"	29.936	30.231	7.9	72.2	1.8	-8.36	88.21	2.43	69.5	Aqr
23 Mai 2019	23h18m14.86s	-05 34' 25.1"	29.936	30.215	7.9	73.1	1.9	-7.76	88.97	2.35	69.6	Aqr
24 Mai 2019	23h18m18.35s	-05 34' 05.6"	29.936	30.198	7.9	74.1	1.9	-7.16	89.73	2.27	69.6	Aqr
25 Mai 2019	23h18m21.72s	-05 33' 46.8"	29.936	30.182	7.9	75.0	1.9	-6.55	90.49	2.20	69.7	Aqr
26 Mai 2019	23h18m24.99s	-05 33' 28.8"	29.936	30.166	7.9	76.0	1.9	-5.95	91.25	2.12	69.8	Aqr
27 Mai 2019	23h18m28.14s	-05 33' 11.6"	29.936	30.150	7.9	76.9	1.9	-5.35	92.01	2.04	70.0	Aqr
28 Mai 2019	23h18m31.17s	-05 32' 55.0"	29.936	30.133	7.9	77.9	1.9	-4.74	92.78	1.96	70.1	Aqr

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Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
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29 Mai 2019	23h18m34.09s	-05 32' 39.2"	29.936	30.117	7.9	78.8	1.9	-4.14	93.54	1.88	70.2	Aqr
30 Mai 2019	23h18m36.90s	-05 32' 24.2"	29.936	30.100	7.9	79.7	1.9	-3.54	94.30	1.80	70.4	Aqr
31 Mai 2019	23h18m39.58s	-05 32' 09.9"	29.936	30.084	7.9	80.7	1.9	-2.94	95.06	1.72	70.5	Aqr
1 Jun 2019	23h18m42.15s	-05 31' 56.3"	29.936	30.067	7.9	81.6	1.9	-2.34	95.82	1.64	70.7	Aqr
2 Jun 2019	23h18m44.60s	-05 31' 43.5"	29.936	30.050	7.9	82.6	1.9	-1.74	96.59	1.56	70.9	Aqr
3 Jun 2019	23h18m46.93s	-05 31' 31.5"	29.936	30.033	7.9	83.5	1.9	-1.14	97.35	1.48	71.1	Aqr
4 Jun 2019	23h18m49.15s	-05 31' 20.2"	29.936	30.017	7.9	84.5	1.9	-0.54	98.12	1.40	71.3	Aqr
5 Jun 2019	23h18m51.24s	-05 31' 09.7"	29.936	30.000	7.9	85.4	1.9	0.06	98.88	1.32	71.6	Aqr
6 Jun 2019	23h18m53.22s	-05 31' 00.0"	29.936	29.983	7.9	86.4	1.9	0.66	99.65	1.24	71.9	Aqr
7 Jun 2019	23h18m55.07s	-05 30' 51.0"	29.936	29.966	7.9	87.3	1.9	1.25	100.42	1.16	72.2	Aqr
8 Jun 2019	23h18m56.80s	-05 30' 42.8"	29.936	29.949	7.9	88.3	1.9	1.85	101.19	1.07	72.6	Aqr
9 Jun 2019	23h18m58.42s	-05 30' 35.4"	29.936	29.933	7.9	89.2	1.9	2.44	101.97	0.99	73.1	Aqr
10 Jun 2019	23h18m59.91s	-05 30' 28.7"	29.936	29.916	7.9	90.2	1.9	3.03	102.74	0.91	73.6	Aqr
11 Jun 2019	23h19m01.28s	-05 30' 22.8"	29.936	29.899	7.9	91.1	1.9	3.62	103.52	0.83	74.3	Aqr
12 Jun 2019	23h19m02.53s	-05 30' 17.7"	29.936	29.882	7.9	92.1	1.9	4.21	104.30	0.75	75.1	Aqr
13 Jun 2019	23h19m03.67s	-05 30' 13.3"	29.936	29.865	7.9	93.0	1.9	4.80	105.09	0.67	76.0	Aqr
14 Jun 2019	23h19m04.68s	-05 30' 09.7"	29.936	29.848	7.9	94.0	1.9	5.38	105.87	0.59	77.3	Aqr
15 Jun 2019	23h19m05.57s	-05 30' 06.9"	29.936	29.832	7.9	94.9	1.9	5.96	106.66	0.51	78.9	Aqr
16 Jun 2019	23h19m06.34s	-05 30' 04.8"	29.936	29.815	7.9	95.9	1.9	6.54	107.46	0.43	81.1	Aqr
17 Jun 2019	23h19m06.99s	-05 30' 03.5"	29.936	29.798	7.9	96.8	1.9	7.12	108.25	0.35	84.4	Aqr
18 Jun 2019	23h19m07.52s	-05 30' 03.0"	29.936	29.781	7.9	97.8	1.9	7.69	109.05	0.27	89.6	Aqr
19 Jun 2019	23h19m07.93s	-05 30' 03.2"	29.936	29.765	7.9	98.7	1.9	8.26	109.85	0.20	98.7	Aqr
20 Jun 2019	23h19m08.22s	-05 30' 04.2"	29.936	29.748	7.9	99.7	1.9	8.83	110.66	0.13	117.4	Aqr
21 Jun 2019	23h19m08.39s	-05 30' 05.9"	29.936	29.732	7.9	100.6	1.9	9.40	111.47	0.10	155.2	Aqr
22 Jun 2019	23h19m08.44s	-05 30' 08.4"	29.936	29.715	7.9	101.6	1.9	9.96	112.29	0.13	194.6	Aqr
23 Jun 2019	23h19m08.37s	-05 30' 11.7"	29.936	29.699	7.9	102.6	1.9	10.52	113.10	0.19	214.7	Aqr
24 Jun 2019	23h19m08.18s	-05 30' 15.7"	29.936	29.682	7.9	103.5	1.9	11.08	113.93	0.26	224.3	Aqr
25 Jun 2019	23h19m07.87s	-05 30' 20.5"	29.936	29.666	7.9	104.5	1.9	11.63	114.76	0.34	229.7	Aqr
26 Jun 2019	23h19m07.44s	-05 30' 26.0"	29.936	29.649	7.9	105.4	1.9	12.18	115.59	0.42	233.1	Aqr
27 Jun 2019	23h19m06.89s	-05 30' 32.3"	29.936	29.633	7.9	106.4	1.9	12.73	116.43	0.50	235.4	Aqr
28 Jun 2019	23h19m06.23s	-05 30' 39.3"	29.936	29.617	7.9	107.3	1.9	13.27	117.27	0.58	237.1	Aqr
29 Jun 2019	23h19m05.44s	-05 30' 47.1"	29.936	29.601	7.9	108.3	1.8	13.81	118.12	0.65	238.4	Aqr
30 Jun 2019	23h19m04.54s	-05 30' 55.6"	29.936	29.585	7.9	109.3	1.8	14.34	118.97	0.73	239.4	Aqr
1 Jul 2019	23h19m03.51s	-05 31' 04.8"	29.936	29.569	7.9	110.2	1.8	14.87	119.83	0.81	240.2	Aqr
2 Jul 2019	23h19m02.37s	-05 31' 14.8"	29.936	29.554	7.9	111.2	1.8	15.40	120.69	0.89	240.8	Aqr
3 Jul 2019	23h19m01.11s	-05 31' 25.5"	29.936	29.538	7.9	112.1	1.8	15.92	121.57	0.97	241.4	Aqr
4 Jul 2019	23h18m59.74s	-05 31' 36.9"	29.936	29.522	7.9	113.1	1.8	16.43	122.44	1.05	241.8	Aqr
5 Jul 2019	23h18m58.25s	-05 31' 49.1"	29.936	29.507	7.9	114.0	1.8	16.94	123.32	1.13	242.2	Aqr
6 Jul 2019	23h18m56.64s	-05 32' 02.0"	29.936	29.492	7.9	115.0	1.8	17.45	124.21	1.21	242.6	Aqr
7 Jul 2019	23h18m54.92s	-05 32' 15.6"	29.936	29.476	7.9	116.0	1.7	17.95	125.11	1.28	242.9	Aqr
8 Jul 2019	23h18m53.09s	-05 32' 29.9"	29.936	29.461	7.9	116.9	1.7	18.44	126.01	1.36	243.1	Aqr
9 Jul 2019	23h18m51.14s	-05 32' 44.9"	29.936	29.446	7.9	117.9	1.7	18.93	126.92	1.43	243.4	Aqr
10 Jul 2019	23h18m49.08s	-05 33' 00.6"	29.936	29.432	7.9	118.9	1.7	19.42	127.83	1.51	243.6	Aqr
11 Jul 2019	23h18m46.92s	-05 33' 17.0"	29.936	29.417	7.9	119.8	1.7	19.89	128.75	1.58	243.8	Aqr
12 Jul 2019	23h18m44.64s	-05 33' 34.0"	29.936	29.403	7.9	120.8	1.7	20.37	129.68	1.66	243.9	Aqr
13 Jul 2019	23h18m42.25s	-05 33' 51.8"	29.936	29.388	7.9	121.8	1.7	20.83	130.61	1.73	244.1	Aqr
14 Jul 2019	23h18m39.76s	-05 34' 10.1"	29.936	29.374	7.9	122.7	1.6	21.29	131.56	1.80	244.2	Aqr
15 Jul 2019	23h18m37.16s	-05 34' 29.2"	29.936	29.360	7.8	123.7	1.6	21.74	132.51	1.87	244.4	Aqr
16 Jul 2019	23h18m34.46s	-05 34' 48.9"	29.936	29.346	7.8	124.6	1.6	22.19	133.46	1.95	244.5	Aqr
17 Jul 2019	23h18m31.65s	-05 35' 09.2"	29.936	29.332	7.8	125.6	1.6	22.62	134.43	2.02	244.6	Aqr
18 Jul 2019	23h18m28.73s	-05 35' 30.2"	29.936	29.319	7.8	126.6	1.6	23.05	135.40	2.09	244.7	Aqr
19 Jul 2019	23h18m25.72s	-05 35' 51.8"	29.936	29.305	7.8	127.5	1.5	23.48	136.38	2.15	244.8	Aqr
20 Jul 2019	23h18m22.60s	-05 36' 14.1"	29.935	29.292	7.8	128.5	1.5	23.89	137.36	2.22	244.9	Aqr
21 Jul 2019	23h18m19.38s	-05 36' 36.9"	29.935	29.279	7.8	129.5	1.5	24.30	138.36	2.29	245.0	Aqr
22 Jul 2019	23h18m16.06s	-05 37' 00.4"	29.935	29.266	7.8	130.5	1.5	24.70	139.36	2.36	245.1	Aqr
23 Jul 2019	23h18m12.65s	-05 37' 24.4"	29.935	29.254	7.8	131.4	1.5	25.09	140.37	2.42	245.2	Aqr
24 Jul 2019	23h18m09.13s	-05 37' 49.0"	29.935	29.241	7.8	132.4	1.4	25.47	141.38	2.49	245.3	Aqr
25 Jul 2019	23h18m05.52s	-05 38' 14.3"	29.935	29.229	7.8	133.4	1.4	25.85	142.41	2.55	245.3	Aqr
26 Jul 2019	23h18m01.82s	-05 38' 40.1"	29.935	29.217	7.8	134.3	1.4	26.21	143.44	2.62	245.4	Aqr
27 Jul 2019	23h17m58.02s	-05 39' 06.4"	29.935	29.205	7.8	135.3	1.4	26.57	144.48	2.68	245.5	Aqr
28 Jul 2019	23h17m54.13s	-05 39' 33.3"	29.935	29.193	7.8	136.3	1.3	26.92	145.52	2.74	245.5	Aqr
29 Jul 2019	23h17m50.14s	-05 40' 00.8"	29.935	29.182	7.8	137.3	1.3	27.25	146.58	2.80	245.6	Aqr
30 Jul 2019	23h17m46.07s	-05 40' 28.8"	29.935	29.170	7.8	138.2	1.3	27.58	147.64	2.86	245.6	Aqr
31 Jul 2019	23h17m41.91s	-05 40' 57.3"	29.935	29.159	7.8	139.2	1.3	27.90	148.71	2.92	245.7	Aqr
1 Aug 2019	23h17m37.67s	-05 41' 26.4"	29.935	29.149	7.8	140.2	1.2	28.21	149.78	2.98	245.7	Aqr
2 Aug 2019	23h17m33.34s	-05 41' 55.9"	29.935	29.138	7.8	141.2	1.2	28.51	150.87	3.03	245.8	Aqr
3 Aug 2019	23h17m28.92s	-05 42' 26.0"	29.935	29.128	7.8	142.1	1.2	28.80	151.96	3.09	245.8	Aqr
4 Aug 2019	23h17m24.43s	-05 42' 56.5"	29.935	29.117	7.8	143.1	1.2	29.07	153.06	3.14	245.9	Aqr
5 Aug 2019	23h17m19.85s	-05 43' 27.5"	29.935	29.108	7.8	144.1	1.1	29.34	154.16	3.19	245.9	Aqr
6 Aug 2019	23h17m15.20s	-05 43' 59.0"	29.935	29.098	7.8	145.1	1.1	29.60	155.27	3.25	246.0	Aqr
7 Aug 2019	23h17m10.47s	-05 44' 30.9"	29.935	29.089	7.8	146.0	1.1	29.84	156.39	3.30	246.0	Aqr
8 Aug 2019	23h17m05.67s	-05 45' 03.2"	29.935	29.079	7.8	147.0	1.1	30.08	157.51	3.34	246.1	Aqr
9 Aug 2019	23h17m00.80s	-05 45' 36.0"	29.935	29.070	7.8	148.0	1.0	30.30	158.64	3.39	246.1	Aqr
10 Aug 2019	23h16m55.86s	-05 46' 09.1"	29.935	29.062	7.8	149.0	1.0	30.51	159.77	3.44	246.1	Aqr

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Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
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11 Aug 2019	23h16m50.84s	-05 46' 42.7"	29.935	29.053	7.8	150.0	1.0	30.71	160.91	3.48	246.2	Aqr
12 Aug 2019	23h16m45.77s	-05 47' 16.6"	29.935	29.045	7.8	150.9	0.9	30.90	162.06	3.53	246.2	Aqr
13 Aug 2019	23h16m40.63s	-05 47' 50.9"	29.935	29.037	7.8	151.9	0.9	31.07	163.21	3.57	246.2	Aqr
14 Aug 2019	23h16m35.42s	-05 48' 25.6"	29.935	29.030	7.8	152.9	0.9	31.24	164.37	3.61	246.3	Aqr
15 Aug 2019	23h16m30.16s	-05 49' 00.6"	29.935	29.022	7.8	153.9	0.9	31.39	165.53	3.65	246.3	Aqr
16 Aug 2019	23h16m24.83s	-05 49' 35.9"	29.935	29.015	7.8	154.9	0.8	31.53	166.69	3.69	246.3	Aqr
17 Aug 2019	23h16m19.45s	-05 50' 11.6"	29.935	29.008	7.8	155.9	0.8	31.66	167.86	3.73	246.4	Aqr
18 Aug 2019	23h16m14.01s	-05 50' 47.6"	29.935	29.002	7.8	156.8	0.8	31.77	169.03	3.76	246.4	Aqr
19 Aug 2019	23h16m08.52s	-05 51' 23.8"	29.935	28.995	7.8	157.8	0.7	31.87	170.20	3.80	246.4	Aqr
20 Aug 2019	23h16m02.98s	-05 52' 00.4"	29.935	28.989	7.8	158.8	0.7	31.96	171.38	3.83	246.5	Aqr
21 Aug 2019	23h15m57.39s	-05 52' 37.2"	29.935	28.983	7.8	159.8	0.7	32.04	172.56	3.86	246.5	Aqr
22 Aug 2019	23h15m51.75s	-05 53' 14.3"	29.935	28.978	7.8	160.8	0.6	32.10	173.75	3.89	246.5	Aqr
23 Aug 2019	23h15m46.07s	-05 53' 51.6"	29.935	28.973	7.8	161.8	0.6	32.15	174.93	3.92	246.6	Aqr
24 Aug 2019	23h15m40.34s	-05 54' 29.2"	29.935	28.968	7.8	162.8	0.6	32.19	176.12	3.95	246.6	Aqr
25 Aug 2019	23h15m34.57s	-05 55' 06.9"	29.935	28.963	7.8	163.8	0.5	32.22	177.30	3.97	246.6	Aqr
26 Aug 2019	23h15m28.76s	-05 55' 44.9"	29.935	28.959	7.8	164.7	0.5	32.23	178.49	4.00	246.6	Aqr
27 Aug 2019	23h15m22.92s	-05 56' 23.1"	29.935	28.954	7.8	165.7	0.5	32.23	179.68	4.02	246.7	Aqr
28 Aug 2019	23h15m17.04s	-05 57' 01.4"	29.935	28.951	7.8	166.7	0.4	32.22	180.87	4.04	246.7	Aqr
29 Aug 2019	23h15m11.13s	-05 57' 39.9"	29.935	28.947	7.8	167.7	0.4	32.19	182.05	4.06	246.7	Aqr
30 Aug 2019	23h15m05.18s	-05 58' 18.5"	29.935	28.944	7.8	168.7	0.4	32.15	183.24	4.08	246.7	Aqr
31 Aug 2019	23h14m59.21s	-05 58' 57.3"	29.935	28.941	7.8	169.7	0.3	32.10	184.42	4.10	246.8	Aqr
1 Sep 2019	23h14m53.22s	-05 59' 36.2"	29.935	28.938	7.8	170.7	0.3	32.03	185.61	4.11	246.8	Aqr
2 Sep 2019	23h14m47.20s	-06 00' 15.2"	29.935	28.936	7.8	171.7	0.3	31.95	186.79	4.13	246.8	Aqr
3 Sep 2019	23h14m41.16s	-06 00' 54.2"	29.935	28.934	7.8	172.6	0.2	31.86	187.97	4.14	246.8	Aqr
4 Sep 2019	23h14m35.11s	-06 01' 33.4"	29.935	28.932	7.8	173.6	0.2	31.76	189.15	4.15	246.9	Aqr
5 Sep 2019	23h14m29.04s	-06 02' 12.5"	29.935	28.931	7.8	174.6	0.2	31.64	190.32	4.16	246.9	Aqr
6 Sep 2019	23h14m22.95s	-06 02' 51.8"	29.935	28.929	7.8	175.6	0.1	31.51	191.49	4.17	246.9	Aqr
7 Sep 2019	23h14m16.86s	-06 03' 31.0"	29.935	28.929	7.8	176.5	0.1	31.37	192.66	4.17	246.9	Aqr
8 Sep 2019	23h14m10.76s	-06 04' 10.2"	29.935	28.928	7.8	177.5	0.1	31.22	193.82	4.17	247.0	Aqr
9 Sep 2019	23h14m04.65s	-06 04' 49.5"	29.935	28.928	7.8	178.3	0.1	31.05	194.98	4.18	247.0	Aqr
10 Sep 2019	23h13m58.54s	-06 05' 28.7"	29.935	28.928	7.8	178.9	0.0	30.88	196.13	4.18	247.0	Aqr
11 Sep 2019	23h13m52.42s	-06 06' 07.8"	29.935	28.928	7.8	178.7	0.0	30.69	197.28	4.18	247.0	Aqr
12 Sep 2019	23h13m46.31s	-06 06' 47.0"	29.935	28.929	7.8	178.0	0.1	30.48	198.43	4.17	247.1	Aqr
13 Sep 2019	23h13m40.20s	-06 07' 26.0"	29.935	28.929	7.8	177.1	0.1	30.27	199.57	4.17	247.1	Aqr
14 Sep 2019	23h13m34.10s	-06 08' 05.0"	29.935	28.931	7.8	176.1	0.1	30.05	200.70	4.16	247.1	Aqr
15 Sep 2019	23h13m28.00s	-06 08' 43.8"	29.935	28.932	7.8	175.2	0.2	29.81	201.83	4.16	247.1	Aqr
16 Sep 2019	23h13m21.91s	-06 09' 22.6"	29.935	28.934	7.8	174.2	0.2	29.56	202.95	4.15	247.2	Aqr
17 Sep 2019	23h13m15.84s	-06 10' 01.2"	29.935	28.936	7.8	173.2	0.2	29.30	204.07	4.14	247.2	Aqr
18 Sep 2019	23h13m09.78s	-06 10' 39.7"	29.935	28.938	7.8	172.2	0.3	29.03	205.17	4.13	247.2	Aqr
19 Sep 2019	23h13m03.73s	-06 11' 18.1"	29.935	28.941	7.8	171.2	0.3	28.75	206.28	4.11	247.2	Aqr
20 Sep 2019	23h12m57.71s	-06 11' 56.2"	29.935	28.944	7.8	170.2	0.3	28.46	207.37	4.10	247.3	Aqr
21 Sep 2019	23h12m51.71s	-06 12' 34.2"	29.935	28.947	7.8	169.2	0.4	28.16	208.46	4.08	247.3	Aqr
22 Sep 2019	23h12m45.73s	-06 13' 12.0"	29.934	28.951	7.8	168.2	0.4	27.85	209.54	4.06	247.3	Aqr
23 Sep 2019	23h12m39.77s	-06 13' 49.6"	29.934	28.955	7.8	167.2	0.4	27.52	210.62	4.04	247.3	Aqr
24 Sep 2019	23h12m33.85s	-06 14' 27.0"	29.934	28.959	7.8	166.2	0.5	27.19	211.68	4.02	247.4	Aqr
25 Sep 2019	23h12m27.95s	-06 15' 04.1"	29.934	28.963	7.8	165.2	0.5	26.85	212.74	4.00	247.4	Aqr
26 Sep 2019	23h12m22.09s	-06 15' 41.0"	29.934	28.968	7.8	164.2	0.5	26.50	213.80	3.97	247.4	Aqr
27 Sep 2019	23h12m16.26s	-06 16' 17.6"	29.934	28.973	7.8	163.2	0.6	26.14	214.84	3.95	247.4	Aqr
28 Sep 2019	23h12m10.47s	-06 16' 53.9"	29.934	28.978	7.8	162.2	0.6	25.77	215.88	3.92	247.5	Aqr
29 Sep 2019	23h12m04.72s	-06 17' 29.9"	29.934	28.984	7.8	161.2	0.6	25.39	216.91	3.89	247.5	Aqr
30 Sep 2019	23h11m59.02s	-06 18' 05.6"	29.934	28.990	7.8	160.2	0.6	25.00	217.94	3.86	247.5	Aqr
1 Okt 2019	23h11m53.36s	-06 18' 41.0"	29.934	28.996	7.8	159.2	0.7	24.61	218.95	3.83	247.5	Aqr
2 Okt 2019	23h11m47.75s	-06 19' 16.0"	29.934	29.003	7.8	158.2	0.7	24.20	219.96	3.79	247.6	Aqr
3 Okt 2019	23h11m42.19s	-06 19' 50.7"	29.934	29.009	7.8	157.2	0.7	23.79	220.96	3.76	247.6	Aqr
4 Okt 2019	23h11m36.68s	-06 20' 24.9"	29.934	29.016	7.8	156.2	0.8	23.37	221.95	3.72	247.6	Aqr
5 Okt 2019	23h11m31.22s	-06 20' 58.8"	29.934	29.024	7.8	155.2	0.8	22.94	222.94	3.68	247.6	Aqr
6 Okt 2019	23h11m25.83s	-06 21' 32.3"	29.934	29.031	7.8	154.2	0.8	22.51	223.92	3.64	247.7	Aqr
7 Okt 2019	23h11m20.49s	-06 22' 05.4"	29.934	29.039	7.8	153.1	0.9	22.06	224.89	3.60	247.7	Aqr
8 Okt 2019	23h11m15.21s	-06 22' 38.1"	29.934	29.047	7.8	152.1	0.9	21.61	225.85	3.55	247.7	Aqr
9 Okt 2019	23h11m10.00s	-06 23' 10.3"	29.934	29.055	7.8	151.1	0.9	21.16	226.81	3.51	247.8	Aqr
10 Okt 2019	23h11m04.85s	-06 23' 42.1"	29.934	29.064	7.8	150.1	1.0	20.69	227.76	3.46	247.8	Aqr
11 Okt 2019	23h10m59.77s	-06 24' 13.4"	29.934	29.073	7.8	149.1	1.0	20.22	228.70	3.42	247.8	Aqr
12 Okt 2019	23h10m54.75s	-06 24' 44.3"	29.934	29.082	7.8	148.1	1.0	19.74	229.64	3.37	247.8	Aqr
13 Okt 2019	23h10m49.81s	-06 25' 14.6"	29.934	29.091	7.8	147.1	1.0	19.26	230.57	3.32	247.9	Aqr
14 Okt 2019	23h10m44.94s	-06 25' 44.5"	29.934	29.101	7.8	146.1	1.1	18.77	231.49	3.27	247.9	Aqr
15 Okt 2019	23h10m40.14s	-06 26' 13.8"	29.934	29.111	7.8	145.1	1.1	18.28	232.40	3.22	247.9	Aqr
16 Okt 2019	23h10m35.43s	-06 26' 42.6"	29.934	29.121	7.8	144.1	1.1	17.77	233.31	3.16	248.0	Aqr
17 Okt 2019	23h10m30.79s	-06 27' 10.9"	29.934	29.132	7.8	143.0	1.1	17.27	234.22	3.11	248.0	Aqr
18 Okt 2019	23h10m26.22s	-06 27' 38.7"	29.934	29.142	7.8	142.0	1.2	16.76	235.11	3.05	248.1	Aqr
19 Okt 2019	23h10m21.75s	-06 28' 05.9"	29.934	29.153	7.8	141.0	1.2	16.24	236.00	2.99	248.1	Aqr
20 Okt 2019	23h10m17.35s	-06 28' 32.6"	29.934	29.164	7.8	140.0	1.2	15.72	236.89	2.94	248.1	Aqr
21 Okt 2019	23h10m13.04s	-06 28' 58.6"	29.934	29.176	7.8	139.0	1.3	15.19	237.76	2.88	248.2	Aqr
22 Okt 2019	23h10m08.82s	-06 29' 24.1"	29.934	29.187	7.8	138.0	1.3	14.66	238.64	2.82	248.2	Aqr
23 Okt 2019	23h10m04.69s	-06 29' 49.0"	29.934	29.199	7.8	137.0	1.3	14.12	239.51	2.75	248.3	Aqr

EPHEMERIDE 2019 – NEPTUN

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	Stb
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24 Okt 2019	23h10m00.64s	-06 30' 13.3"	29.934	29.211	7.8	136.0	1.3	13.58	240.37	2.69	248.3	Aqr
25 Okt 2019	23h09m56.70s	-06 30' 37.0"	29.934	29.223	7.8	134.9	1.3	13.04	241.22	2.63	248.4	Aqr
26 Okt 2019	23h09m52.84s	-06 31' 00.0"	29.934	29.236	7.8	133.9	1.4	12.49	242.07	2.56	248.4	Aqr
27 Okt 2019	23h09m49.09s	-06 31' 22.5"	29.934	29.248	7.8	132.9	1.4	11.94	242.92	2.49	248.5	Aqr
28 Okt 2019	23h09m45.43s	-06 31' 44.2"	29.934	29.261	7.8	131.9	1.4	11.38	243.76	2.42	248.5	Aqr
29 Okt 2019	23h09m41.87s	-06 32' 05.3"	29.934	29.274	7.8	130.9	1.4	10.82	244.60	2.36	248.6	Aqr
30 Okt 2019	23h09m38.41s	-06 32' 25.8"	29.934	29.287	7.8	129.9	1.5	10.26	245.43	2.28	248.6	Aqr
31 Okt 2019	23h09m35.06s	-06 32' 45.5"	29.934	29.301	7.8	128.9	1.5	9.69	246.26	2.21	248.7	Aqr
1 Nov 2019	23h09m31.81s	-06 33' 04.6"	29.934	29.315	7.8	127.8	1.5	9.12	247.08	2.14	248.8	Aqr
2 Nov 2019	23h09m28.67s	-06 33' 23.0"	29.934	29.328	7.8	126.8	1.5	8.55	247.90	2.07	248.9	Aqr
3 Nov 2019	23h09m25.64s	-06 33' 40.7"	29.934	29.342	7.8	125.8	1.5	7.97	248.72	1.99	248.9	Aqr
4 Nov 2019	23h09m22.71s	-06 33' 57.7"	29.934	29.357	7.8	124.8	1.6	7.39	249.53	1.92	249.0	Aqr
5 Nov 2019	23h09m19.89s	-06 34' 13.9"	29.934	29.371	7.9	123.8	1.6	6.81	250.34	1.84	249.1	Aqr
6 Nov 2019	23h09m17.19s	-06 34' 29.5"	29.934	29.386	7.9	122.8	1.6	6.23	251.15	1.77	249.2	Aqr
7 Nov 2019	23h09m14.60s	-06 34' 44.3"	29.934	29.400	7.9	121.8	1.6	5.64	251.95	1.69	249.3	Aqr
8 Nov 2019	23h09m12.12s	-06 34' 58.4"	29.934	29.415	7.9	120.7	1.6	5.05	252.75	1.61	249.5	Aqr
9 Nov 2019	23h09m09.75s	-06 35' 11.7"	29.934	29.430	7.9	119.7	1.6	4.46	253.55	1.53	249.6	Aqr
10 Nov 2019	23h09m07.50s	-06 35' 24.3"	29.934	29.445	7.9	118.7	1.7	3.87	254.34	1.46	249.8	Aqr
11 Nov 2019	23h09m05.37s	-06 35' 36.2"	29.934	29.461	7.9	117.7	1.7	3.27	255.13	1.38	249.9	Aqr
12 Nov 2019	23h09m03.35s	-06 35' 47.3"	29.934	29.476	7.9	116.7	1.7	2.68	255.92	1.30	250.1	Aqr
13 Nov 2019	23h09m01.45s	-06 35' 57.7"	29.934	29.492	7.9	115.7	1.7	2.08	256.71	1.22	250.3	Aqr
14 Nov 2019	23h08m59.67s	-06 36' 07.2"	29.934	29.507	7.9	114.7	1.7	1.48	257.49	1.13	250.6	Aqr
15 Nov 2019	23h08m58.01s	-06 36' 16.1"	29.934	29.523	7.9	113.6	1.7	0.88	258.27	1.05	250.9	Aqr
16 Nov 2019	23h08m56.47s	-06 36' 24.1"	29.934	29.539	7.9	112.6	1.7	0.28	259.05	0.97	251.2	Aqr
17 Nov 2019	23h08m55.05s	-06 36' 31.4"	29.934	29.555	7.9	111.6	1.8	-0.32	259.83	0.89	251.6	Aqr
18 Nov 2019	23h08m53.75s	-06 36' 37.9"	29.934	29.571	7.9	110.6	1.8	-0.93	260.61	0.81	252.0	Aqr
19 Nov 2019	23h08m52.57s	-06 36' 43.6"	29.934	29.588	7.9	109.6	1.8	-1.53	261.39	0.72	252.6	Aqr
20 Nov 2019	23h08m51.52s	-06 36' 48.5"	29.934	29.604	7.9	108.6	1.8	-2.13	262.16	0.64	253.3	Aqr
21 Nov 2019	23h08m50.59s	-06 36' 52.7"	29.934	29.620	7.9	107.6	1.8	-2.74	262.94	0.55	254.3	Aqr
22 Nov 2019	23h08m49.79s	-06 36' 56.0"	29.934	29.637	7.9	106.6	1.8	-3.35	263.71	0.47	255.6	Aqr
23 Nov 2019	23h08m49.11s	-06 36' 58.6"	29.934	29.654	7.9	105.5	1.8	-3.95	264.49	0.38	257.5	Aqr
24 Nov 2019	23h08m48.56s	-06 37' 00.3"	29.934	29.671	7.9	104.5	1.8	-4.56	265.26	0.30	260.4	Aqr
25 Nov 2019	23h08m48.14s	-06 37' 01.2"	29.933	29.687	7.9	103.5	1.8	-5.17	266.03	0.22	265.7	Aqr
26 Nov 2019	23h08m47.85s	-06 37' 01.4"	29.933	29.704	7.9	102.5	1.8	-5.78	266.81	0.14	277.4	Aqr
27 Nov 2019	23h08m47.68s	-06 37' 00.7"	29.933	29.721	7.9	101.5	1.9	-6.38	267.58	0.07	313.4	Aqr
28 Nov 2019	23h08m47.64s	-06 36' 59.2"	29.933	29.738	7.9	100.5	1.9	-6.99	268.35	0.09	17.2	Aqr
29 Nov 2019	23h08m47.73s	-06 36' 56.9"	29.933	29.755	7.9	99.5	1.9	-7.60	269.13	0.16	42.0	Aqr
30 Nov 2019	23h08m47.95s	-06 36' 53.8"	29.933	29.772	7.9	98.5	1.9	-8.20	269.90	0.24	50.9	Aqr
1 Dez 2019	23h08m48.30s	-06 36' 49.8"	29.933	29.790	7.9	97.4	1.9	-8.81	270.68	0.33	55.2	Aqr
2 Dez 2019	23h08m48.77s	-06 36' 45.1"	29.933	29.807	7.9	96.4	1.9	-9.41	271.46	0.41	57.8	Aqr
3 Dez 2019	23h08m49.38s	-06 36' 39.5"	29.933	29.824	7.9	95.4	1.9	-10.02	272.24	0.50	59.4	Aqr
4 Dez 2019	23h08m50.12s	-06 36' 33.2"	29.933	29.841	7.9	94.4	1.9	-10.62	273.02	0.59	60.6	Aqr
5 Dez 2019	23h08m50.98s	-06 36' 26.0"	29.933	29.859	7.9	93.4	1.9	-11.22	273.80	0.67	61.5	Aqr
6 Dez 2019	23h08m51.97s	-06 36' 18.0"	29.933	29.876	7.9	92.4	1.9	-11.83	274.58	0.76	62.2	Aqr
7 Dez 2019	23h08m53.09s	-06 36' 09.2"	29.933	29.893	7.9	91.4	1.9	-12.43	275.36	0.85	62.7	Aqr
8 Dez 2019	23h08m54.34s	-06 35' 59.6"	29.933	29.911	7.9	90.4	1.9	-13.03	276.15	0.93	63.1	Aqr
9 Dez 2019	23h08m55.72s	-06 35' 49.2"	29.933	29.928	7.9	89.4	1.9	-13.62	276.94	1.02	63.5	Aqr
10 Dez 2019	23h08m57.23s	-06 35' 38.0"	29.933	29.945	7.9	88.4	1.9	-14.22	277.73	1.11	63.8	Aqr
11 Dez 2019	23h08m58.86s	-06 35' 26.0"	29.933	29.963	7.9	87.3	1.9	-14.82	278.53	1.19	64.1	Aqr
12 Dez 2019	23h09m00.62s	-06 35' 13.2"	29.933	29.980	7.9	86.3	1.9	-15.41	279.33	1.28	64.3	Aqr
13 Dez 2019	23h09m02.51s	-06 34' 59.6"	29.933	29.997	7.9	85.3	1.9	-16.00	280.13	1.37	64.5	Aqr
14 Dez 2019	23h09m04.52s	-06 34' 45.3"	29.933	30.015	7.9	84.3	1.9	-16.59	280.93	1.45	64.7	Aqr
15 Dez 2019	23h09m06.66s	-06 34' 30.1"	29.933	30.032	7.9	83.3	1.9	-17.18	281.74	1.54	64.8	Aqr
16 Dez 2019	23h09m08.93s	-06 34' 14.1"	29.933	30.049	7.9	82.3	1.9	-17.76	282.55	1.62	65.0	Aqr
17 Dez 2019	23h09m11.32s	-06 33' 57.4"	29.933	30.066	7.9	81.3	1.9	-18.34	283.37	1.71	65.1	Aqr
18 Dez 2019	23h09m13.83s	-06 33' 39.9"	29.933	30.083	7.9	80.3	1.9	-18.92	284.18	1.79	65.2	Aqr
19 Dez 2019	23h09m16.48s	-06 33' 21.6"	29.933	30.100	7.9	79.3	1.9	-19.50	285.01	1.88	65.3	Aqr
20 Dez 2019	23h09m19.24s	-06 33' 02.6"	29.933	30.117	7.9	78.3	1.8	-20.08	285.84	1.96	65.4	Aqr
21 Dez 2019	23h09m22.13s	-06 32' 42.8"	29.933	30.134	7.9	77.3	1.8	-20.65	286.67	2.04	65.5	Aqr
22 Dez 2019	23h09m25.15s	-06 32' 22.2"	29.933	30.151	7.9	76.3	1.8	-21.22	287.51	2.13	65.6	Aqr
23 Dez 2019	23h09m28.28s	-06 32' 00.8"	29.933	30.168	7.9	75.3	1.8	-21.78	288.35	2.21	65.7	Aqr
24 Dez 2019	23h09m31.54s	-06 31' 38.7"	29.933	30.185	7.9	74.3	1.8	-22.34	289.19	2.29	65.8	Aqr
25 Dez 2019	23h09m34.92s	-06 31' 15.9"	29.933	30.201	7.9	73.3	1.8	-22.90	290.05	2.37	65.8	Aqr
26 Dez 2019	23h09m38.42s	-06 30' 52.3"	29.933	30.218	7.9	72.3	1.8	-23.46	290.91	2.46	65.9	Aqr
27 Dez 2019	23h09m42.04s	-06 30' 27.9"	29.933	30.234	7.9	71.3	1.8	-24.01	291.77	2.54	65.9	Aqr
28 Dez 2019	23h09m45.78s	-06 30' 02.9"	29.933	30.251	7.9	70.3	1.8	-24.56	292.64	2.62	66.0	Aqr
29 Dez 2019	23h09m49.64s	-06 29' 37.1"	29.933	30.267	7.9	69.3	1.8	-25.10	293.52	2.70	66.0	Aqr
30 Dez 2019	23h09m53.62s	-06 29' 10.5"	29.933	30.283	7.9	68.3	1.7	-25.64	294.40	2.78	66.1	Aqr
31 Dez 2019	23h09m57.71s	-06 28' 43.3"	29.933	30.299	7.9	67.3	1.7	-26.18	295.29	2.85	66.1	Aqr
1 Jan 2020	23h10m01.91s	-06 28' 15.3"	29.933	30.315	7.9	66.3	1.7	-26.71	296.18	2.93	66.2	Aqr