



Mars 2019

Datum	α	δ	b	Δ (AE)	E	mv	φ	\varnothing	k	q (")	l	r
1.01.	0:00	-0.3	-0.3	1.261	80 O	0.5	41.7	7.42	0.873	0.94	41.7	1.454
4.01.	0:07	0.6	-0.2	1.286	79 O	0.5	41.4	7.28	0.875	0.91	43.4	1.457
7.01.	0:14	1.4	-0.2	1.312	78 O	0.5	41.1	7.14	0.877	0.88	45.1	1.461
10.01.	0:22	2.3	-0.1	1.337	77 O	0.6	40.8	7.00	0.879	0.85	46.8	1.464
13.01.	0:29	3.2	0.0	1.363	76 O	0.6	40.4	6.87	0.881	0.82	48.5	1.468
16.01.	0:37	4.0	0.0	1.388	75 O	0.7	40.1	6.74	0.882	0.79	50.2	1.472
19.01.	0:44	4.9	0.1	1.414	74 O	0.7	39.7	6.62	0.884	0.76	51.8	1.476
22.01.	0:51	5.7	0.1	1.440	72 O	0.8	39.4	6.50	0.887	0.74	53.5	1.480
25.01.	0:59	6.5	0.2	1.466	71 O	0.8	39.0	6.38	0.889	0.71	55.2	1.483
28.01.	1:06	7.3	0.2	1.492	70 O	0.8	38.6	6.27	0.891	0.69	56.8	1.487
31.01.	1:14	8.2	0.3	1.518	69 O	0.9	38.2	6.17	0.893	0.66	58.4	1.491
3.02.	1:21	9.0	0.3	1.544	68 O	0.9	37.8	6.06	0.895	0.64	60.1	1.495
6.02.	1:29	9.8	0.4	1.570	67 O	0.9	37.4	5.96	0.897	0.61	61.7	1.499
9.02.	1:37	10.5	0.4	1.596	66 O	1.0	37.0	5.87	0.899	0.59	63.3	1.503
12.02.	1:44	11.3	0.5	1.621	65 O	1.0	36.6	5.77	0.902	0.57	64.9	1.507
15.02.	1:52	12.1	0.5	1.647	64 O	1.0	36.1	5.68	0.904	0.55	66.5	1.511
18.02.	2:00	12.8	0.5	1.673	63 O	1.1	35.7	5.59	0.906	0.52	68.1	1.515
21.02.	2:07	13.5	0.6	1.699	62 O	1.1	35.2	5.51	0.908	0.50	69.7	1.519
24.02.	2:15	14.2	0.6	1.724	61 O	1.1	34.8	5.43	0.911	0.49	71.2	1.522
27.02.	2:23	14.9	0.6	1.750	60 O	1.2	34.3	5.35	0.913	0.47	72.8	1.526
2.03.	2:31	15.6	0.7	1.775	59 O	1.2	33.9	5.27	0.915	0.45	74.4	1.530
5.03.	2:39	16.3	0.7	1.801	58 O	1.2	33.4	5.20	0.917	0.43	75.9	1.534
8.03.	2:47	16.9	0.7	1.826	57 O	1.2	32.9	5.13	0.920	0.41	77.4	1.538
11.03.	2:55	17.5	0.8	1.851	56 O	1.3	32.5	5.06	0.922	0.40	79.0	1.542
14.03.	3:03	18.1	0.8	1.875	55 O	1.3	32.0	4.99	0.924	0.38	80.5	1.546
17.03.	3:11	18.7	0.8	1.900	54 O	1.3	31.5	4.93	0.926	0.36	82.0	1.549
20.03.	3:19	19.2	0.8	1.924	53 O	1.4	31.0	4.86	0.929	0.35	83.5	1.553
23.03.	3:27	19.7	0.9	1.949	52 O	1.4	30.5	4.80	0.931	0.33	85.0	1.557
26.03.	3:36	20.2	0.9	1.973	51 O	1.4	30.0	4.74	0.933	0.32	86.5	1.561
29.03.	3:44	20.7	0.9	1.996	51 O	1.4	29.5	4.69	0.935	0.30	88.0	1.564
1.04.	3:52	21.2	0.9	2.020	50 O	1.4	29.0	4.63	0.937	0.29	89.5	1.568
4.04.	4:00	21.6	0.9	2.043	49 O	1.5	28.5	4.58	0.939	0.28	91.0	1.572
7.04.	4:09	22.0	1.0	2.066	48 O	1.5	28.0	4.53	0.942	0.26	92.4	1.575
10.04.	4:17	22.3	1.0	2.089	47 O	1.5	27.5	4.48	0.944	0.25	93.9	1.579
13.04.	4:26	22.7	1.0	2.111	46 O	1.5	26.9	4.43	0.946	0.24	95.4	1.582
16.04.	4:34	23.0	1.0	2.133	45 O	1.5	26.4	4.39	0.948	0.23	96.8	1.585
19.04.	4:42	23.3	1.0	2.155	44 O	1.6	25.9	4.34	0.950	0.22	98.2	1.589
22.04.	4:51	23.5	1.0	2.177	43 O	1.6	25.4	4.30	0.952	0.21	99.7	1.592
25.04.	4:59	23.8	1.0	2.198	42 O	1.6	24.8	4.26	0.954	0.20	101.1	1.595
28.04.	5:08	24.0	1.1	2.219	41 O	1.6	24.3	4.22	0.956	0.19	102.5	1.598



Datum	α	δ	b	Δ (AE)	E	mv	φ	\emptyset	k	q (")	l	r
1.05.	5:16	24.1	1.1	2.239	40 O	1.6	23.8	4.18	0.958	0.18	104.0	1.602
4.05.	5:25	24.3	1.1	2.259	39 O	1.6	23.2	4.14	0.959	0.17	105.4	1.605
7.05.	5:34	24.4	1.1	2.279	38 O	1.7	22.7	4.11	0.961	0.16	106.8	1.608
10.05.	5:42	24.5	1.1	2.298	37 O	1.7	22.1	4.07	0.963	0.15	108.2	1.611
13.05.	5:51	24.5	1.1	2.317	36 O	1.7	21.6	4.04	0.965	0.14	109.6	1.614
16.05.	5:59	24.6	1.1	2.336	35 O	1.7	21.1	4.01	0.967	0.13	111.0	1.616
19.05.	6:08	24.6	1.1	2.354	34 O	1.7	20.5	3.98	0.968	0.13	112.4	1.619
22.05.	6:16	24.5	1.1	2.372	33 O	1.7	20.0	3.95	0.970	0.12	113.8	1.622
25.05.	6:25	24.5	1.1	2.389	32 O	1.7	19.4	3.92	0.972	0.11	115.1	1.624
28.05.	6:33	24.4	1.1	2.406	31 O	1.7	18.9	3.89	0.973	0.10	116.5	1.627
31.05.	6:42	24.2	1.2	2.422	30 O	1.8	18.3	3.86	0.975	0.10	117.9	1.629
3.06.	6:50	24.1	1.2	2.438	29 O	1.8	17.7	3.84	0.976	0.09	119.3	1.632
6.06.	6:58	23.9	1.2	2.454	28 O	1.8	17.2	3.81	0.978	0.09	120.6	1.634
9.06.	7:07	23.7	1.2	2.469	27 O	1.8	16.6	3.79	0.979	0.08	122.0	1.636
12.06.	7:15	23.5	1.2	2.483	27 O	1.8	16.1	3.77	0.980	0.07	123.3	1.639
15.06.	7:23	23.2	1.2	2.497	26 O	1.8	15.5	3.75	0.982	0.07	124.7	1.641
18.06.	7:32	22.9	1.2	2.511	25 O	1.8	14.9	3.73	0.983	0.06	126.0	1.643
21.06.	7:40	22.6	1.2	2.524	24 O	1.8	14.4	3.71	0.984	0.06	127.4	1.645
24.06.	7:48	22.3	1.2	2.537	23 O	1.8	13.8	3.69	0.986	0.05	128.7	1.647
27.06.	7:56	21.9	1.2	2.549	22 O	1.8	13.2	3.67	0.987	0.05	130.1	1.648
30.06.	8:04	21.6	1.2	2.560	21 O	1.8	12.7	3.66	0.988	0.04	131.4	1.650
3.07.	8:12	21.2	1.2	2.571	20 O	1.8	12.1	3.64	0.989	0.04	132.7	1.652
6.07.	8:20	20.7	1.2	2.582	19 O	1.8	11.5	3.63	0.990	0.04	134.1	1.653
9.07.	8:28	20.3	1.2	2.592	18 O	1.8	10.9	3.61	0.991	0.03	135.4	1.655
12.07.	8:36	19.8	1.2	2.601	17 O	1.8	10.4	3.60	0.992	0.03	136.7	1.656
15.07.	8:44	19.3	1.2	2.610	16 O	1.8	9.8	3.59	0.993	0.03	138.0	1.657
18.07.	8:51	18.8	1.2	2.618	15 O	1.8	9.2	3.57	0.994	0.02	139.4	1.659
21.07.	8:59	18.3	1.2	2.626	14 O	1.8	8.6	3.56	0.994	0.02	140.7	1.660
24.07.	9:07	17.7	1.2	2.633	13 O	1.8	8.0	3.55	0.995	0.02	142.0	1.661
27.07.	9:14	17.2	1.2	2.640	12 O	1.8	7.4	3.55	0.996	0.01	143.3	1.662
30.07.	9:22	16.6	1.2	2.646	11 O	1.8	6.9	3.54	0.996	0.01	144.6	1.662
2.08.	9:30	16.0	1.2	2.652	10 O	1.8	6.3	3.53	0.997	0.01	146.0	1.663
5.08.	9:37	15.4	1.1	2.657	9 O	1.8	5.7	3.52	0.998	0.01	147.3	1.664
8.08.	9:44	14.8	1.1	2.661	8 O	1.8	5.1	3.52	0.998	0.01	148.6	1.664
11.08.	9:52	14.1	1.1	2.665	7 O	1.8	4.5	3.51	0.998	0.01	149.9	1.665
14.08.	9:59	13.5	1.1	2.668	6 O	1.8	3.9	3.51	0.999	0.00	151.2	1.665
17.08.	10:07	12.8	1.1	2.671	6 O	1.8	3.4	3.50	0.999	0.00	152.5	1.666
20.08.	10:14	12.1	1.1	2.673	5 O	1.8	2.8	3.50	0.999	0.00	153.8	1.666
23.08.	10:21	11.4	1.1	2.674	4 O	1.8	2.2	3.50	1.000	0.00	155.1	1.666
26.08.	10:28	10.7	1.1	2.675	3 O	1.8	1.6	3.50	1.000	0.00	156.4	1.666
29.08.	10:36	10.0	1.1	2.675	2 O	1.7	1.1	3.50	1.000	0.00	157.8	1.666



Datum	α	δ	b	Δ (AE)	E	mv	φ	\emptyset	k	q (")	l	r
1.09.	10:43	9.3	1.1	2.675	1 O	1.7	0.7	3.50	1.000	0.00	159.1	1.666
4.09.	10:50	8.6	1.1	2.674	1 W	1.7	0.7	3.50	1.000	0.00	160.4	1.666
7.09.	10:57	7.8	1.1	2.672	2 W	1.7	1.1	3.50	1.000	0.00	161.7	1.665
10.09.	11:04	7.1	1.1	2.670	3 W	1.7	1.6	3.51	1.000	0.00	163.0	1.665
13.09.	11:11	6.3	1.0	2.668	4 W	1.8	2.2	3.51	1.000	0.00	164.3	1.664
16.09.	11:18	5.6	1.0	2.664	5 W	1.8	2.8	3.51	0.999	0.00	165.6	1.664
19.09.	11:25	4.8	1.0	2.660	6 W	1.8	3.4	3.52	0.999	0.00	166.9	1.663
22.09.	11:32	4.0	1.0	2.656	7 W	1.8	4.0	3.52	0.999	0.00	168.3	1.662
25.09.	11:39	3.3	1.0	2.651	8 W	1.8	4.6	3.53	0.998	0.01	169.6	1.662
28.09.	11:47	2.5	1.0	2.645	9 W	1.8	5.2	3.54	0.998	0.01	170.9	1.661
1.10.	11:54	1.7	1.0	2.638	10 W	1.8	5.8	3.55	0.997	0.01	172.2	1.660
4.10.	12:01	0.9	1.0	2.631	11 W	1.8	6.4	3.56	0.997	0.01	173.5	1.658
7.10.	12:08	0.2	1.0	2.624	12 W	1.8	7.0	3.57	0.996	0.01	174.8	1.657
10.10.	12:15	-0.6	0.9	2.616	13 W	1.8	7.6	3.58	0.996	0.02	176.2	1.656
13.10.	12:22	-1.4	0.9	2.607	14 W	1.8	8.2	3.59	0.995	0.02	177.5	1.655
16.10.	12:29	-2.2	0.9	2.598	15 W	1.8	8.8	3.60	0.994	0.02	178.8	1.653
19.10.	12:36	-3.0	0.9	2.588	16 W	1.8	9.4	3.62	0.993	0.02	180.2	1.652
22.10.	12:43	-3.7	0.9	2.578	17 W	1.8	10.0	3.63	0.992	0.03	181.5	1.650
25.10.	12:50	-4.5	0.9	2.567	18 W	1.8	10.7	3.65	0.991	0.03	182.8	1.648
28.10.	12:58	-5.3	0.9	2.555	19 W	1.8	11.3	3.66	0.990	0.04	184.2	1.647
31.10.	13:05	-6.0	0.8	2.543	20 W	1.8	11.9	3.68	0.989	0.04	185.5	1.645
3.11.	13:12	-6.8	0.8	2.530	21 W	1.8	12.5	3.70	0.988	0.04	186.9	1.643
6.11.	13:19	-7.6	0.8	2.517	22 W	1.8	13.1	3.72	0.987	0.05	188.2	1.641
9.11.	13:27	-8.3	0.8	2.504	23 W	1.8	13.7	3.74	0.986	0.05	189.6	1.639
12.11.	13:34	-9.0	0.8	2.489	24 W	1.8	14.3	3.76	0.984	0.06	190.9	1.636
15.11.	13:41	-9.8	0.7	2.475	25 W	1.8	14.9	3.78	0.983	0.06	192.3	1.634
18.11.	13:49	-10.5	0.7	2.459	26 W	1.7	15.5	3.81	0.982	0.07	193.6	1.632
21.11.	13:56	-11.2	0.7	2.444	27 W	1.7	16.1	3.83	0.980	0.08	195.0	1.629
24.11.	14:04	-11.9	0.7	2.427	28 W	1.7	16.7	3.86	0.979	0.08	196.4	1.627
27.11.	14:12	-12.6	0.7	2.411	29 W	1.7	17.3	3.88	0.977	0.09	197.7	1.624
30.11.	14:19	-13.3	0.6	2.393	30 W	1.7	17.9	3.91	0.976	0.10	199.1	1.622
3.12.	14:27	-13.9	0.6	2.376	31 W	1.7	18.5	3.94	0.974	0.10	200.5	1.619
6.12.	14:35	-14.6	0.6	2.358	33 W	1.7	19.1	3.97	0.972	0.11	201.9	1.616
9.12.	14:43	-15.2	0.6	2.339	34 W	1.7	19.7	4.00	0.971	0.12	203.3	1.613
12.12.	14:50	-15.8	0.5	2.320	35 W	1.7	20.3	4.03	0.969	0.13	204.7	1.611
15.12.	14:58	-16.4	0.5	2.301	36 W	1.7	20.9	4.07	0.967	0.13	206.1	1.608
18.12.	15:06	-17.0	0.5	2.281	37 W	1.6	21.5	4.10	0.965	0.14	207.5	1.605
21.12.	15:14	-17.6	0.5	2.261	38 W	1.6	22.1	4.14	0.963	0.15	208.9	1.602
24.12.	15:23	-18.1	0.4	2.241	39 W	1.6	22.7	4.18	0.961	0.16	210.3	1.598
27.12.	15:31	-18.6	0.4	2.220	40 W	1.6	23.3	4.22	0.959	0.17	211.8	1.595
30.12.	15:39	-19.1	0.4	2.199	41 W	1.6	23.9	4.26	0.957	0.18	213.2	1.592

Die Ephemeriden gelten für 0 Uhr Weltzeit.

Geozentrische Koordinaten:

α und δ : Rektaszension und Deklination zum Äquinoktium des Datums. b: ekliptikale Breite; Δ : Abstand von der Erde.
E: Elongation (Winkel zwischen Planet und Sonnenmitte); mv: visuelle Helligkeit; φ : Phasenwinkel

Physische Ephemeriden (für Beobachtungen am Teleskop):

\emptyset : scheinbarer Durchmesser;
k: beleuchteter Teil; q: Phasendefekt (Beleuchtungsdefekt)

Heliozentrische Koordinaten:

l: Länge zum Äquinoktium des Datums; r: Abstand von der Sonne.