

Efemeriden van de planetoïden vermeld in de Hemelkalender 2023

Tabellenhoofd

RA: rechte klimming (h m s)
Dekl.: Deklinatie (° ' ")
Delta: Afstand van de Aarde in AE
RZon: Afstand van de Zon in AE
Elong: Elongatie, hoekafstand van de Zon aan de hemel
Phase: Fasehoek in ° (hoek Zon-planetoïde-Aarde)
Mag: Visuele magnitude
"/min - PA: schijnbare beweging - boogseconden per minuut, in richting van positiehoek

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1 Ceres

1 uur UTC (J2000)

Osculerende baanelementen

T 2023 Mar 1.0000 TT

MA 18.072689°

q 2.5490787 ω 73.469680°

a 2.7671916 Ω 80.260078°

e 0.0788210 i 10.586335°

Datum	RA	Dekl.	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jan 1	12 29 31.83	9 47 3.3	2.236	2.550	97.0	22.5	8.2	0.49	93.1
2023 Jan 2	12 30 25.16	9 46 24.3	2.223	2.550	97.8	22.5	8.2	0.48	92.5
2023 Jan 3	12 31 17.42	9 45 54.3	2.211	2.550	98.6	22.4	8.2	0.47	91.9
2023 Jan 4	12 32 8.61	9 45 33.4	2.198	2.551	99.4	22.4	8.1	0.46	91.2
2023 Jan 5	12 32 58.70	9 45 21.7	2.186	2.551	100.2	22.3	8.1	0.45	90.6
2023 Jan 6	12 33 47.68	9 45 19.2	2.173	2.551	101.0	22.2	8.1	0.44	89.8
2023 Jan 7	12 34 35.53	9 45 26.0	2.161	2.551	101.8	22.2	8.1	0.43	89.1
2023 Jan 8	12 35 22.23	9 45 42.1	2.149	2.551	102.6	22.1	8.1	0.42	88.2
2023 Jan 9	12 36 7.76	9 46 7.7	2.136	2.551	103.5	22.0	8.1	0.41	87.4
2023 Jan 10	12 36 52.10	9 46 42.9	2.124	2.551	104.3	21.9	8.1	0.40	86.5
2023 Jan 11	12 37 35.24	9 47 27.5	2.112	2.551	105.1	21.8	8.0	0.39	85.5
2023 Jan 12	12 38 17.15	9 48 21.8	2.100	2.551	105.9	21.8	8.0	0.38	84.5
2023 Jan 13	12 38 57.81	9 49 25.8	2.087	2.552	106.8	21.7	8.0	0.37	83.4
2023 Jan 14	12 39 37.20	9 50 39.6	2.075	2.552	107.6	21.6	8.0	0.36	82.2
2023 Jan 15	12 40 15.31	9 52 3.1	2.063	2.552	108.5	21.4	8.0	0.34	80.9
2023 Jan 16	12 40 52.10	9 53 36.5	2.052	2.552	109.3	21.3	8.0	0.33	79.6
2023 Jan 17	12 41 27.57	9 55 19.7	2.040	2.552	110.2	21.2	8.0	0.32	78.1
2023 Jan 18	12 42 1.69	9 57 12.8	2.028	2.552	111.1	21.1	7.9	0.31	76.6
2023 Jan 19	12 42 34.43	9 59 15.9	2.016	2.552	111.9	21.0	7.9	0.30	74.9
2023 Jan 20	12 43 5.78	10 1 28.8	2.005	2.553	112.8	20.8	7.9	0.29	73.1

2023	Jan	21	12	43	35.72	10	3	51.7	1.993	2.553	113.7	20.7	7.9	0.28	71.1
2023	Jan	22	12	44	4.23	10	6	24.4	1.982	2.553	114.6	20.5	7.9	0.27	69.0
2023	Jan	23	12	44	31.29	10	9	7.0	1.970	2.553	115.5	20.4	7.8	0.26	66.7
2023	Jan	24	12	44	56.90	10	11	59.4	1.959	2.553	116.4	20.2	7.8	0.25	64.2
2023	Jan	25	12	45	21.02	10	15	1.5	1.948	2.553	117.3	20.0	7.8	0.24	61.5
2023	Jan	26	12	45	43.65	10	18	13.3	1.937	2.554	118.2	19.9	7.8	0.23	58.7
2023	Jan	27	12	46	4.77	10	21	34.6	1.926	2.554	119.1	19.7	7.8	0.22	55.6
2023	Jan	28	12	46	24.38	10	25	5.4	1.915	2.554	120.0	19.5	7.8	0.22	52.2
2023	Jan	29	12	46	42.45	10	28	45.6	1.905	2.554	120.9	19.3	7.7	0.21	48.6
2023	Jan	30	12	46	58.98	10	32	35.0	1.894	2.554	121.8	19.1	7.7	0.20	44.8
2023	Jan	31	12	47	13.96	10	36	33.7	1.884	2.555	122.7	18.9	7.7	0.20	40.7
2023	Feb	1	12	47	27.36	10	40	41.3	1.873	2.555	123.7	18.7	7.7	0.19	36.4
2023	Feb	2	12	47	39.18	10	44	57.9	1.863	2.555	124.6	18.5	7.7	0.19	31.9
2023	Feb	3	12	47	49.40	10	49	23.2	1.853	2.555	125.6	18.3	7.7	0.19	27.2
2023	Feb	4	12	47	58.03	10	53	57.2	1.843	2.555	126.5	18.1	7.6	0.19	22.5
2023	Feb	5	12	48	5.04	10	58	39.7	1.833	2.556	127.5	17.8	7.6	0.18	17.6
2023	Feb	6	12	48	10.42	11	3	30.5	1.824	2.556	128.4	17.6	7.6	0.19	12.8
2023	Feb	7	12	48	14.17	11	8	29.4	1.814	2.556	129.4	17.4	7.6	0.19	8.1
2023	Feb	8	12	48	16.28	11	13	36.3	1.805	2.556	130.3	17.1	7.6	0.19	3.5
2023	Feb	9	12	48	16.73	11	18	50.9	1.796	2.556	131.3	16.9	7.5	0.20	359.0
2023	Feb	10	12	48	15.53	11	24	13.1	1.787	2.557	132.3	16.6	7.5	0.20	354.8
2023	Feb	11	12	48	12.67	11	29	42.5	1.778	2.557	133.2	16.3	7.5	0.21	350.7
2023	Feb	12	12	48	8.14	11	35	19.1	1.769	2.557	134.2	16.1	7.5	0.21	346.9
2023	Feb	13	12	48	1.93	11	41	2.4	1.761	2.557	135.2	15.8	7.5	0.22	343.4
2023	Feb	14	12	47	54.06	11	46	52.3	1.752	2.558	136.2	15.5	7.4	0.23	340.1
2023	Feb	15	12	47	44.51	11	52	48.4	1.744	2.558	137.1	15.2	7.4	0.24	337.0
2023	Feb	16	12	47	33.29	11	58	50.4	1.736	2.558	138.1	14.9	7.4	0.25	334.1
2023	Feb	17	12	47	20.40	12	4	58.0	1.728	2.558	139.1	14.6	7.4	0.26	331.5
2023	Feb	18	12	47	5.84	12	11	10.9	1.721	2.559	140.1	14.3	7.4	0.27	329.0
2023	Feb	19	12	46	49.64	12	17	28.5	1.714	2.559	141.1	14.0	7.3	0.28	326.7

2023	Feb	20	12	46	31.79	12	23	50.7	1.706	2.559	142.0	13.7	7.3	0.29	324.6
2023	Feb	21	12	46	12.32	12	30	16.8	1.699	2.559	143.0	13.4	7.3	0.30	322.6
2023	Feb	22	12	45	51.24	12	36	46.5	1.693	2.560	144.0	13.1	7.3	0.31	320.7
2023	Feb	23	12	45	28.57	12	43	19.3	1.686	2.560	145.0	12.8	7.3	0.32	319.0
2023	Feb	24	12	45	4.33	12	49	54.8	1.680	2.560	146.0	12.5	7.2	0.33	317.3
2023	Feb	25	12	44	38.55	12	56	32.4	1.674	2.561	146.9	12.2	7.2	0.34	315.8
2023	Feb	26	12	44	11.26	13	3	11.8	1.668	2.561	147.9	11.9	7.2	0.35	314.3
2023	Feb	27	12	43	42.47	13	9	52.4	1.662	2.561	148.8	11.5	7.2	0.36	312.9
2023	Feb	28	12	43	12.23	13	16	33.7	1.657	2.561	149.8	11.2	7.2	0.37	311.6
2023	Mar	1	12	42	40.55	13	23	15.3	1.651	2.562	150.7	10.9	7.1	0.38	310.4
2023	Mar	2	12	42	7.48	13	29	56.7	1.646	2.562	151.7	10.6	7.1	0.39	309.2
2023	Mar	3	12	41	33.05	13	36	37.3	1.642	2.562	152.6	10.3	7.1	0.40	308.0
2023	Mar	4	12	40	57.29	13	43	16.7	1.637	2.563	153.5	10.0	7.1	0.41	306.9
2023	Mar	5	12	40	20.25	13	49	54.3	1.633	2.563	154.3	9.6	7.1	0.42	305.9
2023	Mar	6	12	39	41.95	13	56	29.7	1.629	2.563	155.2	9.3	7.1	0.42	304.8
2023	Mar	7	12	39	2.45	14	3	2.3	1.625	2.564	156.0	9.0	7.0	0.43	303.8
2023	Mar	8	12	38	21.79	14	9	31.6	1.622	2.564	156.9	8.8	7.0	0.44	302.9
2023	Mar	9	12	37	40.00	14	15	57.1	1.618	2.564	157.6	8.5	7.0	0.45	301.9
2023	Mar	10	12	36	57.15	14	22	18.4	1.615	2.565	158.4	8.2	7.0	0.45	301.0
2023	Mar	11	12	36	13.27	14	28	34.8	1.612	2.565	159.1	7.9	7.0	0.46	300.1
2023	Mar	12	12	35	28.41	14	34	45.9	1.610	2.565	159.8	7.7	7.0	0.46	299.2
2023	Mar	13	12	34	42.63	14	40	51.3	1.608	2.565	160.4	7.5	6.9	0.47	298.4
2023	Mar	14	12	33	55.99	14	46	50.2	1.606	2.566	161.0	7.3	6.9	0.47	297.5
2023	Mar	15	12	33	8.53	14	52	42.4	1.604	2.566	161.5	7.1	6.9	0.48	296.7
2023	Mar	16	12	32	20.32	14	58	27.2	1.602	2.567	161.9	6.9	6.9	0.48	295.8
2023	Mar	17	12	31	31.42	15	4	4.1	1.601	2.567	162.3	6.8	6.9	0.48	295.0
2023	Mar	18	12	30	41.89	15	9	32.8	1.600	2.567	162.6	6.6	6.9	0.49	294.2
2023	Mar	19	12	29	51.79	15	14	52.5	1.600	2.568	162.9	6.6	6.9	0.49	293.4
2023	Mar	20	12	29	1.19	15	20	2.9	1.599	2.568	163.0	6.5	6.9	0.49	292.6
2023	Mar	21	12	28	10.17	15	25	3.6	1.599	2.568	163.1	6.5	6.9	0.49	291.8
2023	Mar	22	12	27	18.78	15	29	53.9	1.599	2.569	163.1	6.5	6.9	0.49	290.9

2023 Mar 23	12 26	27.10	15 34	33.5	1.600	2.569	163.0	6.5	6.9	0.49	290.1
2023 Mar 24	12 25	35.21	15 39	2.0	1.600	2.569	162.8	6.6	6.9	0.49	289.3
2023 Mar 25	12 24	43.17	15 43	19.0	1.601	2.570	162.6	6.7	6.9	0.49	288.5
2023 Mar 26	12 23	51.05	15 47	24.1	1.602	2.570	162.2	6.8	6.9	0.49	287.6
2023 Mar 27	12 22	58.93	15 51	16.9	1.604	2.570	161.8	6.9	6.9	0.48	286.8
2023 Mar 28	12 22	6.87	15 54	57.2	1.605	2.571	161.4	7.1	6.9	0.48	285.9
2023 Mar 29	12 21	14.93	15 58	24.7	1.607	2.571	160.9	7.3	6.9	0.48	285.0
2023 Mar 30	12 20	23.20	16 1	39.1	1.610	2.572	160.3	7.5	7.0	0.47	284.2
2023 Mar 31	12 19	31.72	16 4	40.1	1.612	2.572	159.7	7.8	7.0	0.47	283.3
2023 Apr 1	12 18	40.57	16 7	27.7	1.615	2.572	159.0	8.0	7.0	0.46	282.3
2023 Apr 2	12 17	49.82	16 10	1.5	1.618	2.573	158.3	8.3	7.0	0.46	281.4
2023 Apr 3	12 16	59.51	16 12	21.4	1.621	2.573	157.5	8.5	7.0	0.45	280.4
2023 Apr 4	12 16	9.71	16 14	27.2	1.624	2.574	156.8	8.8	7.0	0.44	279.5
2023 Apr 5	12 15	20.49	16 16	18.9	1.628	2.574	156.0	9.1	7.1	0.44	278.4
2023 Apr 6	12 14	31.89	16 17	56.4	1.632	2.574	155.1	9.4	7.1	0.43	277.4
2023 Apr 7	12 13	43.97	16 19	19.5	1.636	2.575	154.3	9.7	7.1	0.42	276.3
2023 Apr 8	12 12	56.79	16 20	28.2	1.641	2.575	153.4	10.0	7.1	0.42	275.2
2023 Apr 9	12 12	10.40	16 21	22.5	1.646	2.576	152.5	10.3	7.1	0.41	274.1
2023 Apr 10	12 11	24.84	16 22	2.4	1.650	2.576	151.6	10.6	7.1	0.40	272.9
2023 Apr 11	12 10	40.17	16 22	27.7	1.656	2.577	150.7	11.0	7.2	0.39	271.6
2023 Apr 12	12 9	56.44	16 22	38.6	1.661	2.577	149.8	11.3	7.2	0.38	270.3
2023 Apr 13	12 9	13.68	16 22	35.0	1.667	2.577	148.9	11.6	7.2	0.37	269.0
2023 Apr 14	12 8	31.96	16 22	17.0	1.672	2.578	147.9	11.9	7.2	0.36	267.6
2023 Apr 15	12 7	51.30	16 21	44.5	1.679	2.578	147.0	12.2	7.2	0.36	266.1
2023 Apr 16	12 7	11.76	16 20	57.7	1.685	2.579	146.1	12.5	7.3	0.35	264.5
2023 Apr 17	12 6	33.38	16 19	56.6	1.691	2.579	145.1	12.9	7.3	0.34	262.8
2023 Apr 18	12 5	56.19	16 18	41.2	1.698	2.580	144.2	13.2	7.3	0.33	261.1
2023 Apr 19	12 5	20.23	16 17	11.7	1.705	2.580	143.2	13.5	7.3	0.32	259.2
2023 Apr 20	12 4	45.55	16 15	28.1	1.712	2.580	142.2	13.8	7.3	0.31	257.3
2023 Apr 21	12 4	12.16	16 13	30.6	1.719	2.581	141.3	14.1	7.4	0.30	255.2
2023 Apr 22	12 3	40.10	16 11	19.3	1.727	2.581	140.3	14.4	7.4	0.29	253.0

2023 Apr 23	12	3	9.40	16	8	54.4	1.734	2.582	139.4	14.7	7.4	0.28	250.7
2023 Apr 24	12	2	40.09	16	6	16.0	1.742	2.582	138.4	15.0	7.4	0.27	248.2
2023 Apr 25	12	2	12.17	16	3	24.4	1.750	2.583	137.5	15.3	7.4	0.26	245.6
2023 Apr 26	12	1	45.68	16	0	19.7	1.759	2.583	136.5	15.5	7.5	0.26	242.8
2023 Apr 27	12	1	20.63	15	57	2.2	1.767	2.584	135.6	15.8	7.5	0.25	239.8
2023 Apr 28	12	0	57.04	15	53	32.0	1.776	2.584	134.6	16.1	7.5	0.24	236.7
2023 Apr 29	12	0	34.90	15	49	49.3	1.785	2.585	133.7	16.4	7.5	0.24	233.5
2023 Apr 30	12	0	14.24	15	45	54.5	1.793	2.585	132.8	16.6	7.5	0.23	230.0
2023 May 1	11	59	55.07	15	41	47.6	1.803	2.586	131.8	16.9	7.6	0.23	226.5
2023 May 2	11	59	37.38	15	37	29.1	1.812	2.586	130.9	17.1	7.6	0.22	222.8
2023 May 3	11	59	21.19	15	32	59.0	1.821	2.587	130.0	17.4	7.6	0.22	219.0
2023 May 4	11	59	6.49	15	28	17.6	1.831	2.587	129.0	17.6	7.6	0.22	215.1
2023 May 5	11	58	53.28	15	23	25.2	1.840	2.588	128.1	17.8	7.6	0.21	211.2
2023 May 6	11	58	41.57	15	18	22.0	1.850	2.588	127.2	18.1	7.7	0.21	207.2
2023 May 7	11	58	31.35	15	13	8.2	1.860	2.589	126.3	18.3	7.7	0.21	203.2
2023 May 8	11	58	22.62	15	7	44.1	1.870	2.589	125.4	18.5	7.7	0.21	199.3
2023 May 9	11	58	15.38	15	2	9.8	1.881	2.590	124.5	18.7	7.7	0.22	195.5
2023 May 10	11	58	9.63	14	56	25.7	1.891	2.590	123.6	18.9	7.7	0.22	191.8
2023 May 11	11	58	5.35	14	50	31.8	1.901	2.591	122.7	19.1	7.8	0.22	188.1
2023 May 12	11	58	2.54	14	44	28.3	1.912	2.591	121.8	19.3	7.8	0.23	184.6
2023 May 13	11	58	1.21	14	38	15.6	1.923	2.592	121.0	19.5	7.8	0.23	181.3
2023 May 14	11	58	1.34	14	31	53.7	1.934	2.592	120.1	19.7	7.8	0.24	178.1
2023 May 15	11	58	2.93	14	25	23.0	1.945	2.593	119.2	19.9	7.8	0.24	175.1
2023 May 16	11	58	5.97	14	18	43.4	1.956	2.593	118.4	20.1	7.9	0.25	172.3
2023 May 17	11	58	10.45	14	11	55.3	1.967	2.594	117.5	20.2	7.9	0.26	169.6
2023 May 18	11	58	16.37	14	4	58.9	1.978	2.594	116.6	20.4	7.9	0.27	167.1
2023 May 19	11	58	23.71	13	57	54.3	1.990	2.595	115.8	20.5	7.9	0.27	164.7
2023 May 20	11	58	32.47	13	50	41.7	2.001	2.595	114.9	20.7	7.9	0.28	162.5
2023 May 21	11	58	42.62	13	43	21.3	2.013	2.596	114.1	20.8	7.9	0.29	160.4
2023 May 22	11	58	54.17	13	35	53.4	2.024	2.596	113.3	21.0	8.0	0.30	158.4
2023 May 23	11	59	7.09	13	28	18.0	2.036	2.597	112.4	21.1	8.0	0.31	156.6

2023	May	24	11	59	21.38	13	20	35.5	2.048	2.597	111.6	21.2	8.0	0.32	154.9
2023	May	25	11	59	37.00	13	12	46.0	2.060	2.598	110.8	21.4	8.0	0.33	153.3
2023	May	26	11	59	53.96	13	4	49.6	2.072	2.599	110.0	21.5	8.0	0.33	151.8
2023	May	27	12	0	12.22	12	56	46.6	2.084	2.599	109.2	21.6	8.0	0.34	150.4
2023	May	28	12	0	31.78	12	48	37.2	2.096	2.600	108.4	21.7	8.1	0.35	149.0
2023	May	29	12	0	52.62	12	40	21.6	2.108	2.600	107.6	21.8	8.1	0.36	147.8
2023	May	30	12	1	14.71	12	31	59.8	2.120	2.601	106.8	21.9	8.1	0.37	146.6
2023	May	31	12	1	38.04	12	23	32.2	2.133	2.601	106.0	22.0	8.1	0.38	145.5
2023	Jun	1	12	2	2.60	12	14	58.8	2.145	2.602	105.2	22.1	8.1	0.39	144.5
2023	Jun	2	12	2	28.36	12	6	19.8	2.157	2.602	104.4	22.2	8.1	0.40	143.5
2023	Jun	3	12	2	55.30	11	57	35.5	2.170	2.603	103.7	22.2	8.2	0.41	142.5
2023	Jun	4	12	3	23.42	11	48	45.9	2.182	2.604	102.9	22.3	8.2	0.42	141.6
2023	Jun	5	12	3	52.68	11	39	51.1	2.195	2.604	102.1	22.4	8.2	0.43	140.8
2023	Jun	6	12	4	23.07	11	30	51.4	2.207	2.605	101.4	22.5	8.2	0.43	140.0
2023	Jun	7	12	4	54.59	11	21	46.9	2.220	2.605	100.6	22.5	8.2	0.44	139.2
2023	Jun	8	12	5	27.20	11	12	37.6	2.233	2.606	99.9	22.6	8.2	0.45	138.5
2023	Jun	9	12	6	0.90	11	3	23.7	2.245	2.606	99.1	22.6	8.2	0.46	137.8
2023	Jun	10	12	6	35.66	10	54	5.3	2.258	2.607	98.4	22.7	8.3	0.47	137.2
2023	Jun	11	12	7	11.49	10	44	42.5	2.271	2.608	97.6	22.7	8.3	0.48	136.5
2023	Jun	12	12	7	48.36	10	35	15.4	2.284	2.608	96.9	22.7	8.3	0.49	135.9
2023	Jun	13	12	8	26.25	10	25	44.2	2.297	2.609	96.2	22.8	8.3	0.50	135.3
2023	Jun	14	12	9	5.17	10	16	8.8	2.310	2.609	95.4	22.8	8.3	0.50	134.8
2023	Jun	15	12	9	45.08	10	6	29.5	2.322	2.610	94.7	22.8	8.3	0.51	134.2
2023	Jun	16	12	10	25.98	9	56	46.3	2.335	2.611	94.0	22.8	8.3	0.52	133.7
2023	Jun	17	12	11	7.85	9	46	59.3	2.348	2.611	93.3	22.9	8.4	0.53	133.2
2023	Jun	18	12	11	50.68	9	37	8.7	2.361	2.612	92.6	22.9	8.4	0.54	132.8
2023	Jun	19	12	12	34.45	9	27	14.5	2.374	2.612	91.8	22.9	8.4	0.54	132.3
2023	Jun	20	12	13	19.14	9	17	16.9	2.387	2.613	91.1	22.9	8.4	0.55	131.9
2023	Jun	21	12	14	4.75	9	7	15.9	2.400	2.614	90.4	22.9	8.4	0.56	131.5
2023	Jun	22	12	14	51.25	8	57	11.7	2.413	2.614	89.7	22.9	8.4	0.57	131.1
2023	Jun	23	12	15	38.64	8	47	4.3	2.426	2.615	89.0	22.9	8.4	0.57	130.7

2023	Jun	24	12	16	26.89	8	36	53.9	2.439	2.616	88.4	22.9	8.4	0.58	130.3
2023	Jun	25	12	17	15.98	8	26	40.6	2.452	2.616	87.7	22.8	8.5	0.59	129.9
2023	Jun	26	12	18	5.92	8	16	24.5	2.465	2.617	87.0	22.8	8.5	0.60	129.6
2023	Jun	27	12	18	56.67	8	6	5.6	2.478	2.617	86.3	22.8	8.5	0.60	129.2
2023	Jun	28	12	19	48.23	7	55	44.1	2.491	2.618	85.6	22.8	8.5	0.61	128.9
2023	Jun	29	12	20	40.57	7	45	20.1	2.504	2.619	84.9	22.7	8.5	0.62	128.6
2023	Jun	30	12	21	33.70	7	34	53.6	2.517	2.619	84.3	22.7	8.5	0.62	128.3
2023	Jul	1	12	22	27.58	7	24	24.8	2.530	2.620	83.6	22.7	8.5	0.63	128.0
2023	Jul	2	12	23	22.21	7	13	53.7	2.543	2.621	82.9	22.6	8.5	0.64	127.7
2023	Jul	3	12	24	17.58	7	3	20.4	2.556	2.621	82.3	22.6	8.5	0.64	127.4
2023	Jul	4	12	25	13.67	6	52	45.0	2.569	2.622	81.6	22.6	8.6	0.65	127.1
2023	Jul	5	12	26	10.46	6	42	7.6	2.582	2.622	81.0	22.5	8.6	0.65	126.9
2023	Jul	6	12	27	7.96	6	31	28.1	2.595	2.623	80.3	22.5	8.6	0.66	126.6
2023	Jul	7	12	28	6.15	6	20	46.8	2.608	2.624	79.7	22.4	8.6	0.67	126.4
2023	Jul	8	12	29	5.02	6	10	3.6	2.621	2.624	79.0	22.4	8.6	0.67	126.1
2023	Jul	9	12	30	4.56	5	59	18.5	2.634	2.625	78.4	22.3	8.6	0.68	125.9
2023	Jul	10	12	31	4.76	5	48	31.7	2.647	2.626	77.7	22.2	8.6	0.68	125.6
2023	Jul	11	12	32	5.62	5	37	43.2	2.660	2.626	77.1	22.2	8.6	0.69	125.4
2023	Jul	12	12	33	7.12	5	26	53.0	2.673	2.627	76.4	22.1	8.6	0.69	125.2
2023	Jul	13	12	34	9.26	5	16	1.2	2.685	2.628	75.8	22.0	8.6	0.70	125.0
2023	Jul	14	12	35	12.03	5	5	7.9	2.698	2.628	75.2	22.0	8.6	0.70	124.8
2023	Jul	15	12	36	15.41	4	54	13.2	2.711	2.629	74.5	21.9	8.7	0.71	124.6
2023	Jul	16	12	37	19.41	4	43	17.0	2.723	2.630	73.9	21.8	8.7	0.72	124.3
2023	Jul	17	12	38	24.00	4	32	19.4	2.736	2.630	73.3	21.7	8.7	0.72	124.1
2023	Jul	18	12	39	29.19	4	21	20.6	2.749	2.631	72.6	21.6	8.7	0.73	124.0
2023	Jul	19	12	40	34.95	4	10	20.6	2.761	2.632	72.0	21.6	8.7	0.73	123.8
2023	Jul	20	12	41	41.29	3	59	19.4	2.774	2.632	71.4	21.5	8.7	0.74	123.6

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Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jan 1	8	49	48.83	9	42	19.3	1.533	2.418	147.0	12.8	9.2	0.44	304.9
2023 Jan 2	8	49	8.01	9	49	19.1	1.528	2.420	148.2	12.4	9.1	0.46	304.7
2023 Jan 3	8	48	25.72	9	56	30.7	1.524	2.422	149.4	11.9	9.1	0.47	304.5
2023 Jan 4	8	47	41.99	10	3	53.8	1.519	2.425	150.6	11.5	9.1	0.49	304.4
2023 Jan 5	8	46	56.86	10	11	28.2	1.515	2.427	151.8	11.0	9.1	0.50	304.2
2023 Jan 6	8	46	10.39	10	19	13.7	1.511	2.429	153.0	10.6	9.1	0.52	304.1
2023 Jan 7	8	45	22.61	10	27	9.8	1.508	2.431	154.2	10.1	9.0	0.53	304.0
2023 Jan 8	8	44	33.59	10	35	16.3	1.505	2.434	155.4	9.7	9.0	0.54	303.9
2023 Jan 9	8	43	43.38	10	43	32.9	1.502	2.436	156.7	9.2	9.0	0.55	303.8
2023 Jan 10	8	42	52.02	10	51	59.1	1.499	2.438	157.9	8.7	9.0	0.57	303.8
2023 Jan 11	8	41	59.58	11	0	34.6	1.496	2.440	159.1	8.3	9.0	0.58	303.7
2023 Jan 12	8	41	6.11	11	9	19.1	1.494	2.442	160.3	7.8	8.9	0.59	303.7
2023 Jan 13	8	40	11.69	11	18	12.1	1.492	2.445	161.5	7.3	8.9	0.60	303.6
2023 Jan 14	8	39	16.36	11	27	13.1	1.490	2.447	162.7	6.9	8.9	0.60	303.6
2023 Jan 15	8	38	20.21	11	36	21.8	1.489	2.449	163.9	6.4	8.9	0.61	303.6
2023 Jan 16	8	37	23.30	11	45	37.6	1.487	2.451	165.1	5.9	8.8	0.62	303.6
2023 Jan 17	8	36	25.70	11	55	0.2	1.487	2.453	166.3	5.4	8.8	0.63	303.6
2023 Jan 18	8	35	27.49	12	4	29.0	1.486	2.456	167.5	5.0	8.8	0.63	303.7
2023 Jan 19	8	34	28.74	12	14	3.5	1.486	2.458	168.6	4.5	8.8	0.64	303.7
2023 Jan 20	8	33	29.53	12	23	43.3	1.486	2.460	169.7	4.1	8.8	0.64	303.8
2023 Jan 21	8	32	29.94	12	33	27.7	1.486	2.462	170.8	3.7	8.7	0.65	303.8
2023 Jan 22	8	31	30.06	12	43	16.3	1.486	2.465	171.8	3.3	8.7	0.65	303.9

2023	Jan	23	8	30	29.97	12	53	8.5	1.487	2.467	172.7	2.9	8.7	0.65	304.0
2023	Jan	24	8	29	29.75	13	3	3.7	1.488	2.469	173.5	2.6	8.7	0.65	304.1
2023	Jan	25	8	28	29.49	13	13	1.5	1.490	2.471	174.1	2.4	8.7	0.65	304.2
2023	Jan	26	8	27	29.28	13	23	1.1	1.492	2.473	174.4	2.2	8.7	0.65	304.4
2023	Jan	27	8	26	29.19	13	33	2.1	1.494	2.475	174.5	2.2	8.7	0.65	304.5
2023	Jan	28	8	25	29.30	13	43	4.0	1.496	2.478	174.2	2.3	8.7	0.65	304.7
2023	Jan	29	8	24	29.70	13	53	6.2	1.499	2.480	173.7	2.5	8.7	0.65	304.8
2023	Jan	30	8	23	30.47	14	3	8.1	1.501	2.482	173.0	2.8	8.7	0.64	305.0
2023	Jan	31	8	22	31.67	14	13	9.3	1.505	2.484	172.2	3.1	8.7	0.64	305.2
2023	Feb	1	8	21	33.39	14	23	9.2	1.508	2.486	171.2	3.5	8.8	0.64	305.4
2023	Feb	2	8	20	35.70	14	33	7.4	1.512	2.489	170.2	3.9	8.8	0.63	305.6
2023	Feb	3	8	19	38.67	14	43	3.4	1.516	2.491	169.1	4.3	8.8	0.62	305.9
2023	Feb	4	8	18	42.37	14	52	56.8	1.520	2.493	168.0	4.7	8.9	0.62	306.1
2023	Feb	5	8	17	46.87	15	2	47.0	1.525	2.495	166.8	5.2	8.9	0.61	306.4
2023	Feb	6	8	16	52.23	15	12	33.7	1.530	2.497	165.7	5.6	8.9	0.60	306.7
2023	Feb	7	8	15	58.52	15	22	16.4	1.535	2.499	164.5	6.1	9.0	0.59	307.0
2023	Feb	8	8	15	5.80	15	31	54.8	1.541	2.501	163.3	6.5	9.0	0.58	307.4
2023	Feb	9	8	14	14.13	15	41	28.5	1.546	2.504	162.1	7.0	9.0	0.57	307.7
2023	Feb	10	8	13	23.56	15	50	57.1	1.552	2.506	160.9	7.4	9.1	0.56	308.1
2023	Feb	11	8	12	34.17	16	0	20.3	1.559	2.508	159.7	7.8	9.1	0.55	308.5
2023	Feb	12	8	11	45.99	16	9	37.7	1.565	2.510	158.5	8.3	9.1	0.54	309.0
2023	Feb	13	8	10	59.09	16	18	49.0	1.572	2.512	157.3	8.7	9.1	0.53	309.5
2023	Feb	14	8	10	13.50	16	27	54.0	1.579	2.514	156.2	9.1	9.2	0.52	310.0
2023	Feb	15	8	9	29.29	16	36	52.3	1.587	2.516	155.0	9.6	9.2	0.51	310.5
2023	Feb	16	8	8	46.50	16	45	43.7	1.594	2.518	153.8	10.0	9.2	0.49	311.1
2023	Feb	17	8	8	5.18	16	54	27.9	1.602	2.521	152.6	10.4	9.3	0.48	311.8
2023	Feb	18	8	7	25.36	17	3	4.7	1.610	2.523	151.4	10.8	9.3	0.47	312.5
2023	Feb	19	8	6	47.09	17	11	33.9	1.619	2.525	150.2	11.2	9.3	0.45	313.3
2023	Feb	20	8	6	10.40	17	19	55.2	1.627	2.527	149.1	11.6	9.3	0.44	314.1
2023	Feb	21	8	5	35.34	17	28	8.5	1.636	2.529	147.9	12.0	9.4	0.43	315.0
2023	Feb	22	8	5	1.93	17	36	13.5	1.645	2.531	146.8	12.4	9.4	0.41	315.9

2023 Feb 23	8	4	30.21	17	44	10.2	1.654	2.533	145.6	12.7	9.4	0.40	317.0
2023 Feb 24	8	4	0.19	17	51	58.3	1.664	2.535	144.5	13.1	9.5	0.38	318.1
2023 Feb 25	8	3	31.90	17	59	37.8	1.674	2.537	143.3	13.5	9.5	0.37	319.3
2023 Feb 26	8	3	5.35	18	7	8.5	1.684	2.539	142.2	13.8	9.5	0.35	320.7
2023 Feb 27	8	2	40.57	18	14	30.4	1.694	2.542	141.1	14.2	9.5	0.34	322.1
2023 Feb 28	8	2	17.56	18	21	43.3	1.704	2.544	140.0	14.5	9.6	0.33	323.7
2023 Mar 1	8	1	56.32	18	28	47.3	1.715	2.546	138.9	14.8	9.6	0.31	325.4
2023 Mar 2	8	1	36.88	18	35	42.2	1.725	2.548	137.8	15.1	9.6	0.30	327.3
2023 Mar 3	8	1	19.22	18	42	28.0	1.736	2.550	136.7	15.5	9.7	0.29	329.3
2023 Mar 4	8	1	3.36	18	49	4.7	1.747	2.552	135.6	15.8	9.7	0.27	331.6
2023 Mar 5	8	0	49.30	18	55	32.2	1.759	2.554	134.5	16.1	9.7	0.26	334.0
2023 Mar 6	8	0	37.03	19	1	50.7	1.770	2.556	133.5	16.4	9.7	0.25	336.7
2023 Mar 7	8	0	26.55	19	8	0.0	1.782	2.558	132.4	16.6	9.8	0.24	339.6
2023 Mar 8	8	0	17.85	19	14	0.2	1.794	2.560	131.4	16.9	9.8	0.23	342.7
2023 Mar 9	8	0	10.93	19	19	51.3	1.806	2.562	130.3	17.2	9.8	0.22	346.2
2023 Mar 10	8	0	5.79	19	25	33.3	1.818	2.564	129.3	17.4	9.8	0.21	349.9
2023 Mar 11	8	0	2.42	19	31	6.3	1.830	2.566	128.3	17.7	9.9	0.20	353.9
2023 Mar 12	8	0	0.80	19	36	30.2	1.842	2.568	127.2	17.9	9.9	0.20	358.1
2023 Mar 13	8	0	0.93	19	41	45.2	1.855	2.570	126.2	18.2	9.9	0.19	2.6
2023 Mar 14	8	0	2.79	19	46	51.2	1.868	2.572	125.2	18.4	9.9	0.19	7.3
2023 Mar 15	8	0	6.38	19	51	48.3	1.880	2.574	124.2	18.6	9.9	0.18	12.1
2023 Mar 16	8	0	11.69	19	56	36.5	1.893	2.576	123.2	18.8	10.0	0.18	17.0
2023 Mar 17	8	0	18.71	20	1	15.9	1.906	2.578	122.2	19.0	10.0	0.18	22.0
2023 Mar 18	8	0	27.42	20	5	46.5	1.920	2.580	121.3	19.2	10.0	0.18	26.8
2023 Mar 19	8	0	37.81	20	10	8.3	1.933	2.582	120.3	19.4	10.0	0.19	31.6
2023 Mar 20	8	0	49.86	20	14	21.5	1.946	2.584	119.3	19.6	10.1	0.19	36.1
2023 Mar 21	8	1	3.57	20	18	26.0	1.960	2.586	118.4	19.8	10.1	0.19	40.4
2023 Mar 22	8	1	18.92	20	22	21.9	1.974	2.588	117.4	20.0	10.1	0.20	44.5
2023 Mar 23	8	1	35.88	20	26	9.3	1.987	2.590	116.5	20.1	10.1	0.21	48.2
2023 Mar 24	8	1	54.44	20	29	48.2	2.001	2.592	115.6	20.3	10.2	0.21	51.7
2023 Mar 25	8	2	14.58	20	33	18.6	2.015	2.594	114.6	20.4	10.2	0.22	54.9

2023 Mar 26	8	2	36.28	20	36	40.7	2.029	2.596	113.7	20.6	10.2	0.23	57.9
2023 Mar 27	8	2	59.52	20	39	54.5	2.043	2.598	112.8	20.7	10.2	0.24	60.6
2023 Mar 28	8	3	24.26	20	43	0.1	2.058	2.600	111.9	20.9	10.2	0.25	63.1
2023 Mar 29	8	3	50.50	20	45	57.6	2.072	2.602	111.0	21.0	10.3	0.26	65.4
2023 Mar 30	8	4	18.20	20	48	46.9	2.086	2.604	110.1	21.1	10.3	0.27	67.5
2023 Mar 31	8	4	47.34	20	51	28.3	2.101	2.606	109.2	21.2	10.3	0.27	69.4
2023 Apr 1	8	5	17.90	20	54	1.7	2.115	2.608	108.3	21.3	10.3	0.28	71.2
2023 Apr 2	8	5	49.85	20	56	27.3	2.130	2.610	107.5	21.4	10.3	0.29	72.8
2023 Apr 3	8	6	23.17	20	58	45.1	2.144	2.612	106.6	21.5	10.4	0.30	74.3
2023 Apr 4	8	6	57.84	21	0	55.2	2.159	2.614	105.7	21.6	10.4	0.31	75.7
2023 Apr 5	8	7	33.82	21	2	57.7	2.174	2.615	104.9	21.7	10.4	0.32	77.0
2023 Apr 6	8	8	11.11	21	4	52.6	2.188	2.617	104.0	21.8	10.4	0.33	78.2
2023 Apr 7	8	8	49.67	21	6	40.1	2.203	2.619	103.2	21.8	10.4	0.34	79.3
2023 Apr 8	8	9	29.47	21	8	20.1	2.218	2.621	102.3	21.9	10.5	0.35	80.3
2023 Apr 9	8	10	10.51	21	9	52.7	2.233	2.623	101.5	22.0	10.5	0.36	81.3
2023 Apr 10	8	10	52.76	21	11	18.1	2.248	2.625	100.7	22.0	10.5	0.37	82.2
2023 Apr 11	8	11	36.20	21	12	36.3	2.263	2.627	99.9	22.1	10.5	0.38	83.1
2023 Apr 12	8	12	20.80	21	13	47.3	2.278	2.629	99.0	22.1	10.5	0.39	83.9
2023 Apr 13	8	13	6.55	21	14	51.2	2.293	2.631	98.2	22.2	10.5	0.40	84.7
2023 Apr 14	8	13	53.42	21	15	48.0	2.308	2.633	97.4	22.2	10.6	0.41	85.4
2023 Apr 15	8	14	41.41	21	16	37.9	2.323	2.634	96.6	22.2	10.6	0.42	86.1
2023 Apr 16	8	15	30.49	21	17	20.8	2.338	2.636	95.8	22.2	10.6	0.43	86.7
2023 Apr 17	8	16	20.63	21	17	56.8	2.353	2.638	95.0	22.3	10.6	0.44	87.4
2023 Apr 18	8	17	11.83	21	18	25.9	2.368	2.640	94.2	22.3	10.6	0.44	88.0
2023 Apr 19	8	18	4.06	21	18	48.3	2.384	2.642	93.5	22.3	10.6	0.45	88.5
2023 Apr 20	8	18	57.31	21	19	3.9	2.399	2.644	92.7	22.3	10.7	0.46	89.1
2023 Apr 21	8	19	51.55	21	19	12.9	2.414	2.646	91.9	22.3	10.7	0.47	89.6
2023 Apr 22	8	20	46.75	21	19	15.2	2.429	2.647	91.1	22.3	10.7	0.48	90.1
2023 Apr 23	8	21	42.91	21	19	10.9	2.444	2.649	90.4	22.3	10.7	0.49	90.5
2023 Apr 24	8	22	40.00	21	19	0.2	2.459	2.651	89.6	22.3	10.7	0.49	91.0
2023 Apr 25	8	23	38.00	21	18	42.9	2.475	2.653	88.9	22.3	10.7	0.50	91.4

2023 Apr 26	8 24	36.89	21 18	19.3	2.490	2.655	88.1	22.3	10.7	0.51	91.9
2023 Apr 27	8 25	36.64	21 17	49.3	2.505	2.656	87.4	22.2	10.8	0.52	92.3
2023 Apr 28	8 26	37.24	21 17	13.1	2.520	2.658	86.6	22.2	10.8	0.52	92.6
2023 Apr 29	8 27	38.67	21 16	30.6	2.535	2.660	85.9	22.2	10.8	0.53	93.0
2023 Apr 30	8 28	40.90	21 15	42.0	2.550	2.662	85.2	22.1	10.8	0.54	93.4
2023 May 1	8 29	43.92	21 14	47.3	2.565	2.664	84.4	22.1	10.8	0.55	93.7
2023 May 2	8 30	47.71	21 13	46.5	2.580	2.665	83.7	22.1	10.8	0.55	94.1
2023 May 3	8 31	52.25	21 12	39.7	2.595	2.667	83.0	22.0	10.8	0.56	94.4
2023 May 4	8 32	57.53	21 11	27.0	2.611	2.669	82.3	22.0	10.8	0.57	94.7
2023 May 5	8 34	3.51	21 10	8.4	2.625	2.671	81.6	21.9	10.9	0.57	95.0
2023 May 6	8 35	10.20	21 8	44.0	2.640	2.672	80.8	21.9	10.9	0.58	95.3
2023 May 7	8 36	17.57	21 7	13.8	2.655	2.674	80.1	21.8	10.9	0.58	95.6
2023 May 8	8 37	25.60	21 5	37.8	2.670	2.676	79.4	21.8	10.9	0.59	95.9
2023 May 9	8 38	34.29	21 3	56.2	2.685	2.678	78.7	21.7	10.9	0.60	96.2
2023 May 10	8 39	43.62	21 2	8.9	2.700	2.679	78.0	21.6	10.9	0.60	96.4
2023 May 11	8 40	53.57	21 0	16.0	2.715	2.681	77.3	21.6	10.9	0.61	96.7
2023 May 12	8 42	4.13	20 58	17.6	2.730	2.683	76.7	21.5	10.9	0.61	97.0
2023 May 13	8 43	15.30	20 56	13.6	2.744	2.685	76.0	21.4	11.0	0.62	97.2
2023 May 14	8 44	27.05	20 54	4.1	2.759	2.686	75.3	21.3	11.0	0.63	97.5
2023 May 15	8 45	39.37	20 51	49.2	2.774	2.688	74.6	21.3	11.0	0.63	97.7
2023 May 16	8 46	52.26	20 49	28.9	2.788	2.690	73.9	21.2	11.0	0.64	97.9
2023 May 17	8 48	5.70	20 47	3.2	2.803	2.691	73.2	21.1	11.0	0.64	98.2
2023 May 18	8 49	19.67	20 44	32.1	2.817	2.693	72.6	21.0	11.0	0.65	98.4
2023 May 19	8 50	34.17	20 41	55.8	2.832	2.695	71.9	20.9	11.0	0.65	98.6
2023 May 20	8 51	49.18	20 39	14.2	2.846	2.697	71.2	20.8	11.0	0.66	98.8
2023 May 21	8 53	4.69	20 36	27.5	2.860	2.698	70.6	20.7	11.0	0.66	99.0
2023 May 22	8 54	20.68	20 33	35.6	2.875	2.700	69.9	20.6	11.0	0.67	99.3
2023 May 23	8 55	37.13	20 30	38.6	2.889	2.702	69.2	20.5	11.0	0.67	99.5
2023 May 24	8 56	54.05	20 27	36.5	2.903	2.703	68.6	20.4	11.1	0.68	99.7
2023 May 25	8 58	11.41	20 24	29.4	2.917	2.705	67.9	20.3	11.1	0.68	99.9

2023	May	26	8	59	29.20	20	21	17.4	2.931	2.706	67.3	20.2	11.1	0.68	100.1
2023	May	27	9	0	47.40	20	18	0.5	2.945	2.708	66.6	20.1	11.1	0.69	100.2
2023	May	28	9	2	6.01	20	14	38.8	2.959	2.710	66.0	20.0	11.1	0.69	100.4
2023	May	29	9	3	25.02	20	11	12.2	2.973	2.711	65.3	19.9	11.1	0.70	100.6
2023	May	30	9	4	44.41	20	7	40.9	2.987	2.713	64.7	19.7	11.1	0.70	100.8
2023	May	31	9	6	4.16	20	4	4.9	3.000	2.715	64.1	19.6	11.1	0.70	101.0
2023	Jun	1	9	7	24.28	20	0	24.3	3.014	2.716	63.4	19.5	11.1	0.71	101.1
2023	Jun	2	9	8	44.74	19	56	39.0	3.028	2.718	62.8	19.4	11.1	0.71	101.3
2023	Jun	3	9	10	5.55	19	52	49.2	3.041	2.719	62.2	19.3	11.1	0.72	101.5
2023	Jun	4	9	11	26.68	19	48	54.9	3.055	2.721	61.5	19.1	11.1	0.72	101.7
2023	Jun	5	9	12	48.13	19	44	56.1	3.068	2.723	60.9	19.0	11.1	0.72	101.8
2023	Jun	6	9	14	9.90	19	40	52.9	3.081	2.724	60.3	18.9	11.2	0.73	102.0
2023	Jun	7	9	15	31.97	19	36	45.2	3.094	2.726	59.6	18.7	11.2	0.73	102.1
2023	Jun	8	9	16	54.34	19	32	33.3	3.107	2.727	59.0	18.6	11.2	0.73	102.3
2023	Jun	9	9	18	17.00	19	28	17.0	3.120	2.729	58.4	18.5	11.2	0.74	102.4
2023	Jun	10	9	19	39.94	19	23	56.4	3.133	2.731	57.8	18.3	11.2	0.74	102.6
2023	Jun	11	9	21	3.16	19	19	31.6	3.146	2.732	57.2	18.2	11.2	0.74	102.7
2023	Jun	12	9	22	26.65	19	15	2.5	3.159	2.734	56.5	18.1	11.2	0.75	102.9
2023	Jun	13	9	23	50.41	19	10	29.3	3.172	2.735	55.9	17.9	11.2	0.75	103.0
2023	Jun	14	9	25	14.42	19	5	51.9	3.184	2.737	55.3	17.8	11.2	0.75	103.2
2023	Jun	15	9	26	38.69	19	1	10.4	3.197	2.738	54.7	17.6	11.2	0.76	103.3
2023	Jun	16	9	28	3.20	18	56	24.9	3.209	2.740	54.1	17.5	11.2	0.76	103.5
2023	Jun	17	9	29	27.94	18	51	35.4	3.222	2.741	53.5	17.3	11.2	0.76	103.6
2023	Jun	18	9	30	52.91	18	46	41.8	3.234	2.743	52.9	17.2	11.2	0.76	103.7
2023	Jun	19	9	32	18.10	18	41	44.4	3.246	2.744	52.3	17.0	11.2	0.77	103.9
2023	Jun	20	9	33	43.50	18	36	43.1	3.258	2.746	51.7	16.9	11.2	0.77	104.0
2023	Jun	21	9	35	9.10	18	31	38.0	3.270	2.747	51.1	16.7	11.2	0.77	104.1
2023	Jun	22	9	36	34.90	18	26	29.1	3.282	2.749	50.5	16.6	11.2	0.77	104.3
2023	Jun	23	9	38	0.89	18	21	16.5	3.294	2.750	49.9	16.4	11.2	0.78	104.4
2023	Jun	24	9	39	27.06	18	16	0.2	3.305	2.752	49.3	16.3	11.2	0.78	104.5
2023	Jun	25	9	40	53.41	18	10	40.2	3.317	2.753	48.7	16.1	11.2	0.78	104.6

2023	Jun	26	9	42	19.93	18	5	16.7	3.328	2.755	48.1	15.9	11.2	0.78	104.8
2023	Jun	27	9	43	46.60	17	59	49.7	3.340	2.756	47.5	15.8	11.3	0.79	104.9
2023	Jun	28	9	45	13.43	17	54	19.2	3.351	2.758	46.9	15.6	11.3	0.79	105.0
2023	Jun	29	9	46	40.41	17	48	45.3	3.362	2.759	46.3	15.4	11.3	0.79	105.1
2023	Jun	30	9	48	7.53	17	43	8.0	3.373	2.761	45.7	15.3	11.3	0.79	105.2
2023	Jul	1	9	49	34.79	17	37	27.4	3.384	2.762	45.1	15.1	11.3	0.80	105.3
2023	Jul	2	9	51	2.17	17	31	43.5	3.395	2.763	44.5	14.9	11.3	0.80	105.4
2023	Jul	3	9	52	29.69	17	25	56.4	3.405	2.765	43.9	14.8	11.3	0.80	105.5
2023	Jul	4	9	53	57.33	17	20	6.0	3.416	2.766	43.3	14.6	11.3	0.80	105.7
2023	Jul	5	9	55	25.09	17	14	12.5	3.427	2.768	42.8	14.4	11.3	0.80	105.8
2023	Jul	6	9	56	52.96	17	8	15.9	3.437	2.769	42.2	14.3	11.3	0.81	105.9
2023	Jul	7	9	58	20.95	17	2	16.2	3.447	2.770	41.6	14.1	11.3	0.81	106.0
2023	Jul	8	9	59	49.05	16	56	13.4	3.457	2.772	41.0	13.9	11.3	0.81	106.1
2023	Jul	9	10	1	17.26	16	50	7.6	3.468	2.773	40.4	13.8	11.3	0.81	106.2
2023	Jul	10	10	2	45.58	16	43	58.8	3.477	2.775	39.9	13.6	11.3	0.81	106.3
2023	Jul	11	10	4	13.99	16	37	47.1	3.487	2.776	39.3	13.4	11.3	0.81	106.4
2023	Jul	12	10	5	42.51	16	31	32.4	3.497	2.777	38.7	13.2	11.3	0.82	106.5
2023	Jul	13	10	7	11.12	16	25	14.9	3.507	2.779	38.1	13.1	11.3	0.82	106.5
2023	Jul	14	10	8	39.82	16	18	54.5	3.516	2.780	37.5	12.9	11.3	0.82	106.6
2023	Jul	15	10	10	8.61	16	12	31.4	3.526	2.781	37.0	12.7	11.3	0.82	106.7
2023	Jul	16	10	11	37.49	16	6	5.6	3.535	2.783	36.4	12.5	11.3	0.82	106.8
2023	Jul	17	10	13	6.44	15	59	37.1	3.544	2.784	35.8	12.3	11.3	0.82	106.9
2023	Jul	18	10	14	35.47	15	53	6.0	3.553	2.785	35.2	12.2	11.3	0.83	107.0
2023	Jul	19	10	16	4.56	15	46	32.2	3.562	2.787	34.7	12.0	11.3	0.83	107.1
2023	Jul	20	10	17	33.73	15	39	56.0	3.571	2.788	34.1	11.8	11.3	0.83	107.1

2 Pallas

1 uur UTC (J2000)

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T 2023 Mar 1.0000 TT

MA 358.704483°

q 2.1323829

ω 310.865053°

a 2.7696463

Ω 172.918201°

e 0.2300883

i 34.926939°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jan 1	6	55	31.07	-32	0	43.5	1.445	2.163	124.9	21.9	7.7	0.42	287.3
2023 Jan 2	6	54	39.55	-31	57	3.3	1.442	2.163	125.0	21.9	7.6	0.43	289.9
2023 Jan 3	6	53	47.83	-31	52	48.5	1.440	2.162	125.2	21.8	7.6	0.44	292.4
2023 Jan 4	6	52	56.00	-31	47	59.0	1.437	2.161	125.4	21.8	7.6	0.45	294.9
2023 Jan 5	6	52	4.13	-31	42	34.9	1.434	2.160	125.6	21.7	7.6	0.46	297.3
2023 Jan 6	6	51	12.31	-31	36	36.0	1.432	2.159	125.7	21.7	7.6	0.47	299.6
2023 Jan 7	6	50	20.61	-31	30	2.5	1.430	2.158	125.8	21.7	7.6	0.48	301.9
2023 Jan 8	6	49	29.14	-31	22	54.4	1.428	2.157	126.0	21.7	7.6	0.49	304.1
2023 Jan 9	6	48	37.95	-31	15	11.7	1.426	2.156	126.1	21.6	7.6	0.50	306.3
2023 Jan 10	6	47	47.15	-31	6	54.6	1.424	2.156	126.2	21.6	7.6	0.51	308.4
2023 Jan 11	6	46	56.80	-30	58	3.3	1.422	2.155	126.2	21.6	7.6	0.52	310.4
2023 Jan 12	6	46	7.00	-30	48	37.9	1.421	2.154	126.3	21.6	7.6	0.53	312.4
2023 Jan 13	6	45	17.82	-30	38	38.6	1.419	2.153	126.4	21.6	7.6	0.54	314.4
2023 Jan 14	6	44	29.34	-30	28	5.8	1.418	2.152	126.4	21.6	7.6	0.55	316.3
2023 Jan 15	6	43	41.63	-30	16	59.6	1.417	2.152	126.4	21.6	7.6	0.56	318.1
2023 Jan 16	6	42	54.79	-30	5	20.5	1.416	2.151	126.4	21.6	7.6	0.57	319.9
2023 Jan 17	6	42	8.89	-29	53	8.8	1.415	2.150	126.4	21.6	7.6	0.59	321.7
2023 Jan 18	6	41	23.99	-29	40	24.9	1.414	2.149	126.4	21.6	7.6	0.60	323.5
2023 Jan 19	6	40	40.18	-29	27	9.2	1.414	2.149	126.4	21.6	7.6	0.61	325.2
2023 Jan 20	6	39	57.54	-29	13	22.3	1.414	2.148	126.3	21.7	7.6	0.62	326.8
2023 Jan 21	6	39	16.13	-28	59	4.6	1.413	2.147	126.3	21.7	7.6	0.63	328.5
2023 Jan 22	6	38	36.02	-28	44	16.9	1.413	2.147	126.2	21.7	7.6	0.64	330.1

2023	Jan	23	6	37	57.29	-28	28	59.6	1.414	2.146	126.1	21.8	7.6	0.65	331.7
2023	Jan	24	6	37	19.99	-28	13	13.5	1.414	2.146	126.0	21.8	7.6	0.66	333.3
2023	Jan	25	6	36	44.19	-27	56	59.4	1.414	2.145	125.9	21.8	7.6	0.67	334.8
2023	Jan	26	6	36	9.94	-27	40	17.9	1.415	2.144	125.7	21.9	7.6	0.68	336.4
2023	Jan	27	6	35	37.29	-27	23	9.9	1.416	2.144	125.6	21.9	7.6	0.69	337.8
2023	Jan	28	6	35	6.30	-27	5	36.1	1.417	2.143	125.4	22.0	7.6	0.70	339.3
2023	Jan	29	6	34	36.99	-26	47	37.5	1.418	2.143	125.2	22.1	7.6	0.71	340.8
2023	Jan	30	6	34	9.42	-26	29	14.7	1.419	2.142	125.0	22.1	7.6	0.72	342.2
2023	Jan	31	6	33	43.62	-26	10	28.7	1.420	2.142	124.8	22.2	7.6	0.73	343.6
2023	Feb	1	6	33	19.62	-25	51	20.3	1.422	2.141	124.6	22.3	7.6	0.74	345.0
2023	Feb	2	6	32	57.44	-25	31	50.4	1.424	2.141	124.4	22.3	7.6	0.75	346.3
2023	Feb	3	6	32	37.13	-25	11	59.7	1.426	2.140	124.1	22.4	7.6	0.76	347.6
2023	Feb	4	6	32	18.70	-24	51	49.3	1.428	2.140	123.9	22.5	7.6	0.76	349.0
2023	Feb	5	6	32	2.17	-24	31	19.8	1.430	2.139	123.6	22.6	7.6	0.77	350.3
2023	Feb	6	6	31	47.56	-24	10	32.3	1.432	2.139	123.3	22.7	7.6	0.78	351.6
2023	Feb	7	6	31	34.90	-23	49	27.5	1.435	2.138	123.0	22.8	7.6	0.79	352.8
2023	Feb	8	6	31	24.19	-23	28	6.4	1.437	2.138	122.7	22.8	7.6	0.80	354.1
2023	Feb	9	6	31	15.44	-23	6	29.7	1.440	2.137	122.4	22.9	7.7	0.80	355.3
2023	Feb	10	6	31	8.68	-22	44	38.5	1.443	2.137	122.0	23.0	7.7	0.81	356.5
2023	Feb	11	6	31	3.90	-22	22	33.4	1.446	2.137	121.7	23.1	7.7	0.82	357.7
2023	Feb	12	6	31	1.11	-22	0	15.5	1.450	2.136	121.3	23.2	7.7	0.83	358.9
2023	Feb	13	6	31	0.33	-21	37	45.5	1.453	2.136	121.0	23.4	7.7	0.83	0.1
2023	Feb	14	6	31	1.55	-21	15	4.3	1.457	2.136	120.6	23.5	7.7	0.84	1.3
2023	Feb	15	6	31	4.78	-20	52	12.8	1.461	2.135	120.2	23.6	7.7	0.85	2.5
2023	Feb	16	6	31	10.02	-20	29	11.8	1.465	2.135	119.8	23.7	7.7	0.85	3.6
2023	Feb	17	6	31	17.27	-20	6	2.2	1.469	2.135	119.4	23.8	7.7	0.86	4.8
2023	Feb	18	6	31	26.54	-19	42	44.8	1.473	2.135	119.0	23.9	7.7	0.87	5.9
2023	Feb	19	6	31	37.82	-19	19	20.5	1.478	2.134	118.5	24.0	7.7	0.87	7.0
2023	Feb	20	6	31	51.11	-18	55	50.2	1.482	2.134	118.1	24.1	7.7	0.88	8.2
2023	Feb	21	6	32	6.40	-18	32	14.8	1.487	2.134	117.6	24.2	7.8	0.88	9.3
2023	Feb	22	6	32	23.68	-18	8	35.0	1.492	2.134	117.2	24.4	7.8	0.89	10.4

2023 Feb 23	6 32	42.95	-17 44	51.7	1.497	2.133	116.7	24.5	7.8	0.89	11.5
2023 Feb 24	6 33	4.18	-17 21	5.9	1.502	2.133	116.3	24.6	7.8	0.90	12.6
2023 Feb 25	6 33	27.37	-16 57	18.2	1.508	2.133	115.8	24.7	7.8	0.90	13.6
2023 Feb 26	6 33	52.50	-16 33	29.4	1.513	2.133	115.3	24.8	7.8	0.91	14.7
2023 Feb 27	6 34	19.54	-16 9	40.4	1.519	2.133	114.8	24.9	7.8	0.91	15.8
2023 Feb 28	6 34	48.47	-15 45	51.8	1.525	2.133	114.3	25.0	7.8	0.92	16.8
2023 Mar 1	6 35	19.29	-15 22	4.4	1.531	2.133	113.8	25.1	7.8	0.92	17.8
2023 Mar 2	6 35	51.95	-14 58	18.8	1.537	2.133	113.3	25.3	7.9	0.92	18.9
2023 Mar 3	6 36	26.45	-14 34	35.7	1.543	2.133	112.8	25.4	7.9	0.93	19.9
2023 Mar 4	6 37	2.76	-14 10	55.7	1.549	2.132	112.3	25.5	7.9	0.93	20.9
2023 Mar 5	6 37	40.85	-13 47	19.5	1.556	2.132	111.8	25.6	7.9	0.94	21.9
2023 Mar 6	6 38	20.71	-13 23	47.6	1.562	2.132	111.2	25.7	7.9	0.94	22.9
2023 Mar 7	6 39	2.30	-13 0	20.7	1.569	2.132	110.7	25.8	7.9	0.94	23.8
2023 Mar 8	6 39	45.61	-12 36	59.2	1.576	2.132	110.2	25.9	7.9	0.95	24.8
2023 Mar 9	6 40	30.61	-12 13	43.6	1.583	2.132	109.6	26.0	7.9	0.95	25.8
2023 Mar 10	6 41	17.28	-11 50	34.6	1.590	2.132	109.1	26.1	8.0	0.95	26.7
2023 Mar 11	6 42	5.60	-11 27	32.5	1.598	2.133	108.5	26.2	8.0	0.96	27.7
2023 Mar 12	6 42	55.53	-11 4	37.9	1.605	2.133	108.0	26.3	8.0	0.96	28.6
2023 Mar 13	6 43	47.07	-10 41	51.1	1.613	2.133	107.4	26.4	8.0	0.96	29.5
2023 Mar 14	6 44	40.18	-10 19	12.7	1.620	2.133	106.9	26.5	8.0	0.96	30.4
2023 Mar 15	6 45	34.85	- 9 56	43.1	1.628	2.133	106.3	26.6	8.0	0.97	31.3
2023 Mar 16	6 46	31.06	- 9 34	22.6	1.636	2.133	105.8	26.7	8.0	0.97	32.2
2023 Mar 17	6 47	28.78	- 9 12	11.7	1.644	2.133	105.2	26.7	8.1	0.97	33.1
2023 Mar 18	6 48	28.00	- 8 50	10.7	1.652	2.133	104.6	26.8	8.1	0.98	34.0
2023 Mar 19	6 49	28.68	- 8 28	20.1	1.661	2.133	104.1	26.9	8.1	0.98	34.9
2023 Mar 20	6 50	30.83	- 8 6	40.3	1.669	2.134	103.5	27.0	8.1	0.98	35.8
2023 Mar 21	6 51	34.40	- 7 45	11.5	1.678	2.134	102.9	27.1	8.1	0.98	36.7
2023 Mar 22	6 52	39.37	- 7 23	54.2	1.686	2.134	102.3	27.1	8.1	0.99	37.5
2023 Mar 23	6 53	45.74	- 7 2	48.6	1.695	2.134	101.8	27.2	8.1	0.99	38.4
2023 Mar 24	6 54	53.46	- 6 41	55.2	1.704	2.135	101.2	27.3	8.1	0.99	39.2
2023 Mar 25	6 56	2.51	- 6 21	14.1	1.713	2.135	100.6	27.3	8.2	0.99	40.1

2023 Mar 26	6 57	12.87	- 6 0	45.7	1.722	2.135	100.0	27.4	8.2	0.99	40.9
2023 Mar 27	6 58	24.52	- 5 40	30.2	1.731	2.135	99.5	27.4	8.2	1.00	41.7
2023 Mar 28	6 59	37.42	- 5 20	27.9	1.740	2.136	98.9	27.5	8.2	1.00	42.6
2023 Mar 29	7 0	51.55	- 5 0	38.9	1.750	2.136	98.3	27.5	8.2	1.00	43.4
2023 Mar 30	7 2	6.88	- 4 41	3.5	1.759	2.136	97.7	27.6	8.2	1.00	44.2
2023 Mar 31	7 3	23.39	- 4 21	41.8	1.769	2.137	97.2	27.6	8.2	1.00	45.0
2023 Apr 1	7 4	41.06	- 4 2	34.0	1.778	2.137	96.6	27.7	8.3	1.00	45.7
2023 Apr 2	7 5	59.85	- 3 43	40.3	1.788	2.137	96.0	27.7	8.3	1.01	46.5
2023 Apr 3	7 7	19.75	- 3 25	0.7	1.798	2.138	95.4	27.7	8.3	1.01	47.3
2023 Apr 4	7 8	40.73	- 3 6	35.4	1.808	2.138	94.8	27.8	8.3	1.01	48.0
2023 Apr 5	7 10	2.76	- 2 48	24.6	1.818	2.139	94.3	27.8	8.3	1.01	48.8
2023 Apr 6	7 11	25.83	- 2 30	28.2	1.828	2.139	93.7	27.8	8.3	1.01	49.5
2023 Apr 7	7 12	49.92	- 2 12	46.4	1.838	2.140	93.1	27.8	8.3	1.01	50.3
2023 Apr 8	7 14	14.99	- 1 55	19.3	1.848	2.140	92.5	27.9	8.3	1.01	51.0
2023 Apr 9	7 15	41.04	- 1 38	6.8	1.858	2.140	91.9	27.9	8.4	1.02	51.7
2023 Apr 10	7 17	8.03	- 1 21	9.2	1.869	2.141	91.4	27.9	8.4	1.02	52.4
2023 Apr 11	7 18	35.96	- 1 4	26.3	1.879	2.141	90.8	27.9	8.4	1.02	53.1
2023 Apr 12	7 20	4.80	- 0 47	58.4	1.889	2.142	90.2	27.9	8.4	1.02	53.8
2023 Apr 13	7 21	34.54	- 0 31	45.3	1.900	2.143	89.6	27.9	8.4	1.02	54.5
2023 Apr 14	7 23	5.15	- 0 15	47.2	1.911	2.143	89.1	27.9	8.4	1.02	55.2
2023 Apr 15	7 24	36.63	- 0 0	4.1	1.921	2.144	88.5	27.9	8.4	1.02	55.8
2023 Apr 16	7 26	8.95	0 15	23.9	1.932	2.144	87.9	27.9	8.4	1.02	56.5
2023 Apr 17	7 27	42.09	0 30	36.9	1.943	2.145	87.3	27.9	8.5	1.03	57.2
2023 Apr 18	7 29	16.05	0 45	34.8	1.954	2.145	86.8	27.8	8.5	1.03	57.8
2023 Apr 19	7 30	50.80	1 0	17.5	1.965	2.146	86.2	27.8	8.5	1.03	58.5
2023 Apr 20	7 32	26.32	1 14	45.2	1.976	2.147	85.6	27.8	8.5	1.03	59.1
2023 Apr 21	7 34	2.60	1 28	57.7	1.987	2.147	85.0	27.8	8.5	1.03	59.8
2023 Apr 22	7 35	39.61	1 42	55.0	1.998	2.148	84.5	27.8	8.5	1.03	60.4
2023 Apr 23	7 37	17.34	1 56	37.3	2.009	2.149	83.9	27.7	8.5	1.03	61.0
2023 Apr 24	7 38	55.77	2 10	4.4	2.020	2.149	83.3	27.7	8.5	1.03	61.6
2023 Apr 25	7 40	34.87	2 23	16.4	2.031	2.150	82.8	27.6	8.6	1.03	62.2

2023 Apr 26	7 42	14.63	2 36	13.5	2.042	2.151	82.2	27.6	8.6	1.04	62.8
2023 Apr 27	7 43	55.03	2 48	55.6	2.054	2.152	81.6	27.6	8.6	1.04	63.4
2023 Apr 28	7 45	36.05	3 1	22.7	2.065	2.152	81.1	27.5	8.6	1.04	64.0
2023 Apr 29	7 47	17.68	3 13	35.0	2.076	2.153	80.5	27.5	8.6	1.04	64.6
2023 Apr 30	7 48	59.88	3 25	32.5	2.088	2.154	80.0	27.4	8.6	1.04	65.2
2023 May 1	7 50	42.66	3 37	15.3	2.099	2.155	79.4	27.4	8.6	1.04	65.7
2023 May 2	7 52	25.98	3 48	43.5	2.111	2.156	78.8	27.3	8.6	1.04	66.3
2023 May 3	7 54	9.84	3 59	57.1	2.122	2.156	78.3	27.2	8.6	1.04	66.8
2023 May 4	7 55	54.21	4 10	56.3	2.134	2.157	77.7	27.2	8.7	1.04	67.4
2023 May 5	7 57	39.09	4 21	41.1	2.145	2.158	77.2	27.1	8.7	1.04	67.9
2023 May 6	7 59	24.45	4 32	11.6	2.157	2.159	76.6	27.0	8.7	1.04	68.5
2023 May 7	8 1	10.29	4 42	28.0	2.168	2.160	76.1	27.0	8.7	1.04	69.0
2023 May 8	8 2	56.58	4 52	30.2	2.180	2.161	75.5	26.9	8.7	1.04	69.5
2023 May 9	8 4	43.33	5 2	18.5	2.191	2.162	75.0	26.8	8.7	1.04	70.0
2023 May 10	8 6	30.51	5 11	52.8	2.203	2.162	74.4	26.7	8.7	1.05	70.5
2023 May 11	8 8	18.11	5 21	13.4	2.215	2.163	73.9	26.6	8.7	1.05	71.0
2023 May 12	8 10	6.13	5 30	20.2	2.226	2.164	73.3	26.5	8.7	1.05	71.5
2023 May 13	8 11	54.55	5 39	13.4	2.238	2.165	72.8	26.5	8.7	1.05	72.0
2023 May 14	8 13	43.36	5 47	53.0	2.250	2.166	72.2	26.4	8.8	1.05	72.5
2023 May 15	8 15	32.55	5 56	19.2	2.261	2.167	71.7	26.3	8.8	1.05	73.0
2023 May 16	8 17	22.11	6 4	32.0	2.273	2.168	71.1	26.2	8.8	1.05	73.5
2023 May 17	8 19	12.04	6 12	31.5	2.285	2.169	70.6	26.1	8.8	1.05	73.9
2023 May 18	8 21	2.30	6 20	17.8	2.297	2.170	70.0	26.0	8.8	1.05	74.4
2023 May 19	8 22	52.90	6 27	50.9	2.308	2.171	69.5	25.9	8.8	1.05	74.9
2023 May 20	8 24	43.83	6 35	11.1	2.320	2.172	68.9	25.8	8.8	1.05	75.3
2023 May 21	8 26	35.06	6 42	18.4	2.332	2.173	68.4	25.7	8.8	1.05	75.8
2023 May 22	8 28	26.59	6 49	12.9	2.343	2.175	67.9	25.5	8.8	1.05	76.2
2023 May 23	8 30	18.41	6 55	54.8	2.355	2.176	67.3	25.4	8.8	1.05	76.7
2023 May 24	8 32	10.50	7 2	24.1	2.367	2.177	66.8	25.3	8.8	1.05	77.1
2023 May 25	8 34	2.85	7 8	40.9	2.379	2.178	66.3	25.2	8.9	1.05	77.5

2023 May 26	8 35 55.44	7 14 45.5	2.390	2.179	65.7	25.1	8.9	1.05	77.9
2023 May 27	8 37 48.27	7 20 37.9	2.402	2.180	65.2	24.9	8.9	1.05	78.4
2023 May 28	8 39 41.33	7 26 18.2	2.414	2.181	64.6	24.8	8.9	1.05	78.8
2023 May 29	8 41 34.60	7 31 46.6	2.425	2.182	64.1	24.7	8.9	1.05	79.2
2023 May 30	8 43 28.08	7 37 3.1	2.437	2.184	63.6	24.6	8.9	1.05	79.6
2023 May 31	8 45 21.75	7 42 8.1	2.449	2.185	63.1	24.4	8.9	1.06	80.0

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MA 155.548581°

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Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Mar 1	14	54	34.86	-22	4	23.4	2.381	2.902	112.1	18.4	10.8	0.10	126.1
2023 Mar 2	14	54	44.05	-22	6	0.7	2.368	2.903	113.0	18.3	10.8	0.09	128.7
2023 Mar 3	14	54	51.77	-22	7	31.5	2.356	2.904	114.0	18.2	10.7	0.08	132.1
2023 Mar 4	14	54	57.99	-22	8	55.6	2.343	2.904	115.0	18.0	10.7	0.07	136.7
2023 Mar 5	14	55	2.72	-22	10	13.0	2.331	2.905	115.9	17.9	10.7	0.06	143.3
2023 Mar 6	14	55	5.94	-22	11	23.7	2.319	2.906	116.9	17.7	10.7	0.05	153.1
2023 Mar 7	14	55	7.63	-22	12	27.4	2.307	2.906	117.9	17.6	10.7	0.04	167.9
2023 Mar 8	14	55	7.80	-22	13	24.2	2.295	2.907	118.9	17.4	10.7	0.03	189.0
2023 Mar 9	14	55	6.43	-22	14	14.0	2.283	2.908	119.9	17.2	10.6	0.03	212.9
2023 Mar 10	14	55	3.51	-22	14	56.6	2.271	2.908	120.9	17.0	10.6	0.04	232.8
2023 Mar 11	14	54	59.03	-22	15	32.0	2.259	2.909	121.9	16.8	10.6	0.05	246.5
2023 Mar 12	14	54	53.00	-22	16	0.0	2.248	2.910	122.9	16.7	10.6	0.06	255.6
2023 Mar 13	14	54	45.39	-22	16	20.6	2.236	2.910	123.9	16.5	10.6	0.07	261.8
2023 Mar 14	14	54	36.21	-22	16	33.7	2.225	2.911	124.9	16.3	10.6	0.09	266.2
2023 Mar 15	14	54	25.46	-22	16	39.2	2.214	2.912	126.0	16.0	10.5	0.10	269.4
2023 Mar 16	14	54	13.12	-22	16	36.9	2.203	2.912	127.0	15.8	10.5	0.11	272.0
2023 Mar 17	14	53	59.20	-22	16	26.7	2.192	2.913	128.1	15.6	10.5	0.13	274.0
2023 Mar 18	14	53	43.69	-22	16	8.7	2.182	2.913	129.1	15.4	10.5	0.14	275.6
2023 Mar 19	14	53	26.60	-22	15	42.6	2.171	2.914	130.1	15.1	10.5	0.15	276.9
2023 Mar 20	14	53	7.94	-22	15	8.4	2.161	2.914	131.2	14.9	10.4	0.17	278.1
2023 Mar 21	14	52	47.70	-22	14	26.0	2.150	2.915	132.3	14.6	10.4	0.18	279.1
2023 Mar 22	14	52	25.90	-22	13	35.3	2.140	2.916	133.3	14.4	10.4	0.20	279.9

2023 Mar 23	14 52	2.55	-22 12	36.3	2.131	2.916	134.4	14.1	10.4	0.21	280.7
2023 Mar 24	14 51	37.67	-22 11	29.0	2.121	2.917	135.5	13.9	10.4	0.22	281.4
2023 Mar 25	14 51	11.26	-22 10	13.2	2.111	2.917	136.6	13.6	10.4	0.24	282.0
2023 Mar 26	14 50	43.34	-22 8	49.0	2.102	2.918	137.7	13.3	10.3	0.25	282.5
2023 Mar 27	14 50	13.94	-22 7	16.2	2.093	2.918	138.8	13.0	10.3	0.26	283.0
2023 Mar 28	14 49	43.07	-22 5	34.9	2.084	2.919	139.9	12.7	10.3	0.28	283.5
2023 Mar 29	14 49	10.76	-22 3	45.0	2.075	2.919	141.0	12.4	10.3	0.29	284.0
2023 Mar 30	14 48	37.03	-22 1	46.6	2.067	2.920	142.1	12.1	10.3	0.30	284.4
2023 Mar 31	14 48	1.89	-21 59	39.5	2.059	2.920	143.2	11.8	10.2	0.32	284.8
2023 Apr 1	14 47	25.38	-21 57	23.7	2.051	2.921	144.3	11.5	10.2	0.33	285.1
2023 Apr 2	14 46	47.53	-21 54	59.4	2.043	2.921	145.4	11.2	10.2	0.34	285.5
2023 Apr 3	14 46	8.36	-21 52	26.4	2.035	2.922	146.6	10.9	10.2	0.35	285.8
2023 Apr 4	14 45	27.91	-21 49	44.7	2.028	2.922	147.7	10.5	10.2	0.37	286.2
2023 Apr 5	14 44	46.20	-21 46	54.5	2.021	2.923	148.8	10.2	10.1	0.38	286.5
2023 Apr 6	14 44	3.28	-21 43	55.6	2.014	2.923	150.0	9.9	10.1	0.39	286.8
2023 Apr 7	14 43	19.16	-21 40	48.2	2.007	2.923	151.1	9.5	10.1	0.40	287.1
2023 Apr 8	14 42	33.90	-21 37	32.2	2.001	2.924	152.2	9.2	10.1	0.41	287.4
2023 Apr 9	14 41	47.53	-21 34	7.7	1.995	2.924	153.4	8.8	10.0	0.42	287.7
2023 Apr 10	14 41	0.08	-21 30	34.8	1.989	2.925	154.5	8.5	10.0	0.43	288.0
2023 Apr 11	14 40	11.60	-21 26	53.5	1.983	2.925	155.7	8.1	10.0	0.44	288.2
2023 Apr 12	14 39	22.13	-21 23	4.0	1.977	2.925	156.8	7.7	10.0	0.45	288.5
2023 Apr 13	14 38	31.72	-21 19	6.2	1.972	2.926	158.0	7.4	10.0	0.46	288.8
2023 Apr 14	14 37	40.41	-21 15	0.3	1.967	2.926	159.1	7.0	9.9	0.47	289.1
2023 Apr 15	14 36	48.25	-21 10	46.4	1.963	2.927	160.3	6.6	9.9	0.48	289.3
2023 Apr 16	14 35	55.30	-21 6	24.7	1.958	2.927	161.4	6.3	9.9	0.49	289.6
2023 Apr 17	14 35	1.60	-21 1	55.3	1.954	2.927	162.6	5.9	9.9	0.49	289.9
2023 Apr 18	14 34	7.22	-20 57	18.4	1.951	2.928	163.7	5.5	9.9	0.50	290.1
2023 Apr 19	14 33	12.20	-20 52	34.1	1.947	2.928	164.8	5.1	9.8	0.51	290.4
2023 Apr 20	14 32	16.62	-20 47	42.8	1.944	2.928	166.0	4.8	9.8	0.51	290.6
2023 Apr 21	14 31	20.53	-20 42	44.6	1.941	2.929	167.1	4.4	9.8	0.52	290.9
2023 Apr 22	14 30	23.98	-20 37	39.8	1.938	2.929	168.2	4.0	9.8	0.52	291.1

2023 Apr 23	14 29	27.06	-20 32	28.6	1.936	2.929	169.2	3.7	9.7	0.53	291.4
2023 Apr 24	14 28	29.80	-20 27	11.3	1.934	2.930	170.2	3.3	9.7	0.53	291.7
2023 Apr 25	14 27	32.29	-20 21	48.2	1.932	2.930	171.2	3.0	9.7	0.54	291.9
2023 Apr 26	14 26	34.57	-20 16	19.5	1.930	2.930	172.2	2.7	9.7	0.54	292.2
2023 Apr 27	14 25	36.72	-20 10	45.6	1.929	2.930	173.0	2.4	9.6	0.54	292.4
2023 Apr 28	14 24	38.79	-20 5	6.8	1.928	2.931	173.7	2.2	9.6	0.54	292.7
2023 Apr 29	14 23	40.85	-19 59	23.4	1.928	2.931	174.2	2.0	9.6	0.54	292.9
2023 Apr 30	14 22	42.95	-19 53	35.6	1.927	2.931	174.5	1.9	9.6	0.55	293.2
2023 May 1	14 21	45.16	-19 47	43.9	1.927	2.931	174.6	1.9	9.6	0.55	293.5
2023 May 2	14 20	47.53	-19 41	48.6	1.927	2.932	174.4	1.9	9.6	0.55	293.7
2023 May 3	14 19	50.13	-19 35	49.9	1.928	2.932	173.9	2.1	9.6	0.54	294.0
2023 May 4	14 18	53.01	-19 29	48.3	1.929	2.932	173.3	2.3	9.6	0.54	294.3
2023 May 5	14 17	56.22	-19 23	44.0	1.930	2.932	172.5	2.6	9.7	0.54	294.5
2023 May 6	14 16	59.83	-19 17	37.5	1.931	2.933	171.6	2.9	9.7	0.54	294.8
2023 May 7	14 16	3.88	-19 11	29.0	1.933	2.933	170.7	3.2	9.7	0.54	295.1
2023 May 8	14 15	8.43	-19 5	18.9	1.935	2.933	169.6	3.5	9.7	0.53	295.4
2023 May 9	14 14	13.53	-18 59	7.6	1.937	2.933	168.6	3.9	9.8	0.53	295.6
2023 May 10	14 13	19.23	-18 52	55.4	1.940	2.933	167.5	4.3	9.8	0.52	295.9
2023 May 11	14 12	25.59	-18 46	42.6	1.942	2.933	166.4	4.6	9.8	0.52	296.2
2023 May 12	14 11	32.65	-18 40	29.7	1.945	2.934	165.3	5.0	9.8	0.51	296.5
2023 May 13	14 10	40.46	-18 34	16.9	1.949	2.934	164.2	5.4	9.8	0.51	296.8
2023 May 14	14 9	49.07	-18 28	4.7	1.952	2.934	163.1	5.7	9.9	0.50	297.1
2023 May 15	14 8	58.53	-18 21	53.4	1.956	2.934	162.0	6.1	9.9	0.49	297.5
2023 May 16	14 8	8.88	-18 15	43.4	1.960	2.934	160.8	6.5	9.9	0.49	297.8
2023 May 17	14 7	20.17	-18 9	35.1	1.965	2.934	159.7	6.9	9.9	0.48	298.1
2023 May 18	14 6	32.45	-18 3	28.8	1.970	2.934	158.6	7.2	10.0	0.47	298.5
2023 May 19	14 5	45.76	-17 57	24.9	1.975	2.935	157.4	7.6	10.0	0.46	298.8
2023 May 20	14 5	0.13	-17 51	23.8	1.980	2.935	156.3	8.0	10.0	0.45	299.2
2023 May 21	14 4	15.60	-17 45	25.7	1.985	2.935	155.2	8.3	10.0	0.44	299.6
2023 May 22	14 3	32.22	-17 39	31.1	1.991	2.935	154.0	8.7	10.0	0.43	300.0
2023 May 23	14 2	50.01	-17 33	40.2	1.997	2.935	152.9	9.0	10.1	0.42	300.4

2023	May	24	14	2	9.00	-17	27	53.4	2.003	2.935	151.8	9.4	10.1	0.41	300.8
2023	May	25	14	1	29.23	-17	22	11.0	2.010	2.935	150.7	9.7	10.1	0.40	301.3
2023	May	26	14	0	50.71	-17	16	33.2	2.017	2.935	149.5	10.1	10.1	0.39	301.7
2023	May	27	14	0	13.48	-17	11	0.4	2.024	2.935	148.4	10.4	10.2	0.38	302.2
2023	May	28	13	59	37.55	-17	5	32.7	2.031	2.935	147.3	10.7	10.2	0.37	302.7
2023	May	29	13	59	2.95	-17	0	10.5	2.038	2.935	146.2	11.1	10.2	0.36	303.3
2023	May	30	13	58	29.69	-16	54	53.9	2.046	2.935	145.1	11.4	10.2	0.35	303.9
2023	May	31	13	57	57.79	-16	49	43.2	2.054	2.935	144.0	11.7	10.2	0.33	304.5
2023	Jun	1	13	57	27.26	-16	44	38.7	2.062	2.935	142.9	12.0	10.3	0.32	305.1
2023	Jun	2	13	56	58.12	-16	39	40.4	2.070	2.935	141.9	12.3	10.3	0.31	305.8
2023	Jun	3	13	56	30.38	-16	34	48.5	2.079	2.935	140.8	12.6	10.3	0.30	306.6
2023	Jun	4	13	56	4.03	-16	30	3.3	2.087	2.935	139.7	12.9	10.3	0.29	307.4
2023	Jun	5	13	55	39.10	-16	25	24.9	2.096	2.935	138.6	13.2	10.3	0.27	308.3
2023	Jun	6	13	55	15.59	-16	20	53.4	2.105	2.935	137.6	13.5	10.4	0.26	309.2
2023	Jun	7	13	54	53.50	-16	16	29.0	2.114	2.935	136.5	13.8	10.4	0.25	310.3
2023	Jun	8	13	54	32.84	-16	12	11.8	2.124	2.935	135.5	14.0	10.4	0.24	311.4
2023	Jun	9	13	54	13.61	-16	8	1.9	2.134	2.935	134.4	14.3	10.4	0.22	312.7
2023	Jun	10	13	53	55.81	-16	3	59.4	2.143	2.935	133.4	14.6	10.4	0.21	314.1
2023	Jun	11	13	53	39.46	-16	0	4.5	2.153	2.935	132.3	14.8	10.5	0.20	315.7
2023	Jun	12	13	53	24.55	-15	56	17.3	2.163	2.935	131.3	15.1	10.5	0.19	317.5
2023	Jun	13	13	53	11.09	-15	52	37.8	2.174	2.935	130.3	15.3	10.5	0.17	319.5
2023	Jun	14	13	52	59.07	-15	49	6.2	2.184	2.934	129.3	15.5	10.5	0.16	321.9
2023	Jun	15	13	52	48.49	-15	45	42.5	2.195	2.934	128.3	15.8	10.5	0.15	324.5
2023	Jun	16	13	52	39.36	-15	42	26.8	2.205	2.934	127.3	16.0	10.5	0.14	327.7
2023	Jun	17	13	52	31.67	-15	39	19.2	2.216	2.934	126.3	16.2	10.6	0.13	331.3
2023	Jun	18	13	52	25.42	-15	36	19.8	2.227	2.934	125.3	16.4	10.6	0.12	335.5
2023	Jun	19	13	52	20.61	-15	33	28.4	2.239	2.934	124.3	16.6	10.6	0.11	340.5
2023	Jun	20	13	52	17.22	-15	30	45.3	2.250	2.934	123.3	16.8	10.6	0.10	346.3
2023	Jun	21	13	52	15.25	-15	28	10.4	2.261	2.933	122.3	17.0	10.6	0.09	353.1
2023	Jun	22	13	52	14.69	-15	25	43.7	2.273	2.933	121.4	17.2	10.6	0.09	0.9
2023	Jun	23	13	52	15.54	-15	23	25.3	2.285	2.933	120.4	17.4	10.7	0.08	9.5

2023	Jun	24	13	52	17.78	-15	21	15.0	2.296	2.933	119.5	17.6	10.7	0.08	18.6
2023	Jun	25	13	52	21.40	-15	19	12.9	2.308	2.933	118.5	17.7	10.7	0.08	27.9
2023	Jun	26	13	52	26.39	-15	17	19.0	2.320	2.933	117.6	17.9	10.7	0.08	36.8
2023	Jun	27	13	52	32.74	-15	15	33.2	2.332	2.932	116.6	18.1	10.7	0.09	45.0
2023	Jun	28	13	52	40.44	-15	13	55.5	2.345	2.932	115.7	18.2	10.7	0.09	52.3
2023	Jun	29	13	52	49.47	-15	12	25.7	2.357	2.932	114.8	18.3	10.8	0.10	58.6
2023	Jun	30	13	52	59.82	-15	11	4.0	2.369	2.932	113.9	18.5	10.8	0.11	64.0
2023	Jul	1	13	53	11.48	-15	9	50.2	2.382	2.931	112.9	18.6	10.8	0.12	68.6
2023	Jul	2	13	53	24.43	-15	8	44.1	2.394	2.931	112.0	18.8	10.8	0.13	72.5
2023	Jul	3	13	53	38.65	-15	7	45.9	2.407	2.931	111.1	18.9	10.8	0.14	75.8
2023	Jul	4	13	53	54.14	-15	6	55.3	2.419	2.931	110.2	19.0	10.8	0.15	78.7
2023	Jul	5	13	54	10.88	-15	6	12.4	2.432	2.930	109.3	19.1	10.9	0.16	81.1
2023	Jul	6	13	54	28.85	-15	5	36.9	2.445	2.930	108.5	19.2	10.9	0.17	83.3
2023	Jul	7	13	54	48.04	-15	5	9.0	2.458	2.930	107.6	19.3	10.9	0.18	85.2
2023	Jul	8	13	55	8.45	-15	4	48.4	2.471	2.930	106.7	19.4	10.9	0.19	86.8
2023	Jul	9	13	55	30.06	-15	4	35.2	2.484	2.929	105.8	19.5	10.9	0.20	88.3
2023	Jul	10	13	55	52.85	-15	4	29.2	2.497	2.929	105.0	19.6	10.9	0.21	89.6
2023	Jul	11	13	56	16.83	-15	4	30.5	2.510	2.929	104.1	19.7	10.9	0.22	90.8
2023	Jul	12	13	56	41.96	-15	4	38.8	2.523	2.928	103.2	19.8	11.0	0.23	91.8
2023	Jul	13	13	57	8.26	-15	4	54.2	2.536	2.928	102.4	19.8	11.0	0.24	92.8
2023	Jul	14	13	57	35.69	-15	5	16.5	2.549	2.928	101.6	19.9	11.0	0.25	93.6
2023	Jul	15	13	58	4.25	-15	5	45.8	2.563	2.927	100.7	20.0	11.0	0.26	94.4
2023	Jul	16	13	58	33.93	-15	6	21.8	2.576	2.927	99.9	20.0	11.0	0.27	95.1
2023	Jul	17	13	59	4.71	-15	7	4.5	2.589	2.927	99.0	20.1	11.0	0.28	95.8
2023	Jul	18	13	59	36.59	-15	7	53.8	2.603	2.926	98.2	20.1	11.0	0.29	96.4
2023	Jul	19	14	0	9.54	-15	8	49.7	2.616	2.926	97.4	20.1	11.0	0.30	96.9
2023	Jul	20	14	0	43.56	-15	9	51.9	2.629	2.925	96.6	20.2	11.1	0.31	97.5
2023	Jul	21	14	1	18.63	-15	11	0.5	2.643	2.925	95.8	20.2	11.1	0.32	97.9
2023	Jul	22	14	1	54.73	-15	12	15.2	2.656	2.925	94.9	20.3	11.1	0.33	98.4
2023	Jul	23	14	2	31.86	-15	13	36.1	2.670	2.924	94.1	20.3	11.1	0.34	98.8

2023	Jul	24	14	3	10.00	-15	15	2.9	2.683	2.924	93.3	20.3	11.1	0.35	99.1
2023	Jul	25	14	3	49.13	-15	16	35.6	2.697	2.923	92.5	20.3	11.1	0.36	99.5
2023	Jul	26	14	4	29.24	-15	18	14.1	2.710	2.923	91.7	20.3	11.1	0.37	99.8
2023	Jul	27	14	5	10.33	-15	19	58.2	2.723	2.923	91.0	20.3	11.1	0.38	100.1
2023	Jul	28	14	5	52.36	-15	21	47.8	2.737	2.922	90.2	20.3	11.1	0.38	100.4
2023	Jul	29	14	6	35.34	-15	23	42.9	2.750	2.922	89.4	20.3	11.2	0.39	100.6

16 Psyche

1 uur UTC (J2000)

Osculerende baanelementen

T 2023 Mar 1.0000 TT

MA 204.605763°

q 2.5319575

ω 229.329862°

a 2.9241391

Ω 150.030673°

e 0.1341186

i 3.096796°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Apr 1	15	37	15.82	-15	23	34.4	2.490	3.273	134.9	12.5	11.4	0.17	298.6
2023 Apr 2	15	36	58.69	-15	21	22.5	2.479	3.272	136.0	12.3	11.4	0.18	297.5
2023 Apr 3	15	36	40.28	-15	19	6.6	2.469	3.272	137.0	12.0	11.4	0.19	296.6
2023 Apr 4	15	36	20.61	-15	16	46.9	2.458	3.271	138.1	11.8	11.4	0.20	295.7
2023 Apr 5	15	35	59.68	-15	14	23.4	2.448	3.271	139.2	11.5	11.4	0.21	295.0
2023 Apr 6	15	35	37.50	-15	11	56.1	2.438	3.270	140.2	11.3	11.3	0.22	294.3
2023 Apr 7	15	35	14.10	-15	9	25.0	2.428	3.270	141.3	11.0	11.3	0.23	293.7
2023 Apr 8	15	34	49.47	-15	6	50.3	2.418	3.269	142.4	10.8	11.3	0.24	293.2
2023 Apr 9	15	34	23.64	-15	4	12.0	2.409	3.268	143.5	10.5	11.3	0.25	292.7
2023 Apr 10	15	33	56.61	-15	1	30.2	2.400	3.268	144.6	10.2	11.3	0.27	292.2
2023 Apr 11	15	33	28.41	-14	58	45.0	2.391	3.267	145.7	10.0	11.2	0.28	291.8
2023 Apr 12	15	32	59.06	-14	55	56.3	2.382	3.267	146.8	9.7	11.2	0.29	291.4
2023 Apr 13	15	32	28.56	-14	53	4.3	2.373	3.266	147.9	9.4	11.2	0.30	291.1
2023 Apr 14	15	31	56.94	-14	50	9.2	2.365	3.265	149.0	9.1	11.2	0.31	290.8
2023 Apr 15	15	31	24.23	-14	47	10.9	2.357	3.265	150.1	8.8	11.2	0.32	290.4
2023 Apr 16	15	30	50.44	-14	44	9.5	2.349	3.264	151.2	8.5	11.1	0.33	290.2
2023 Apr 17	15	30	15.61	-14	41	5.3	2.342	3.264	152.3	8.2	11.1	0.34	289.9
2023 Apr 18	15	29	39.75	-14	37	58.3	2.334	3.263	153.4	7.9	11.1	0.34	289.6
2023 Apr 19	15	29	2.91	-14	34	48.6	2.327	3.262	154.5	7.6	11.1	0.35	289.4
2023 Apr 20	15	28	25.11	-14	31	36.5	2.320	3.262	155.6	7.3	11.1	0.36	289.2
2023 Apr 21	15	27	46.39	-14	28	21.9	2.314	3.261	156.8	7.0	11.0	0.37	289.0
2023 Apr 22	15	27	6.78	-14	25	5.1	2.308	3.261	157.9	6.7	11.0	0.38	288.8

2023 Apr 23	15 26	26.32	-14 21	46.2	2.302	3.260	159.0	6.3	11.0	0.39	288.6
2023 Apr 24	15 25	45.04	-14 18	25.3	2.296	3.259	160.1	6.0	11.0	0.39	288.4
2023 Apr 25	15 25	2.99	-14 15	2.7	2.290	3.259	161.2	5.7	11.0	0.40	288.3
2023 Apr 26	15 24	20.20	-14 11	38.5	2.285	3.258	162.4	5.4	10.9	0.41	288.1
2023 Apr 27	15 23	36.72	-14 8	12.8	2.280	3.257	163.5	5.0	10.9	0.41	287.9
2023 Apr 28	15 22	52.58	-14 4	45.8	2.275	3.257	164.6	4.7	10.9	0.42	287.8
2023 Apr 29	15 22	7.82	-14 1	17.7	2.271	3.256	165.7	4.4	10.9	0.42	287.7
2023 Apr 30	15 21	22.49	-13 57	48.6	2.267	3.256	166.8	4.0	10.8	0.43	287.5
2023 May 1	15 20	36.63	-13 54	18.7	2.263	3.255	167.9	3.7	10.8	0.43	287.4
2023 May 2	15 19	50.28	-13 50	48.2	2.260	3.254	169.0	3.4	10.8	0.44	287.3
2023 May 3	15 19	3.48	-13 47	17.3	2.256	3.254	170.0	3.1	10.8	0.44	287.1
2023 May 4	15 18	16.29	-13 43	46.0	2.253	3.253	171.1	2.8	10.8	0.44	287.0
2023 May 5	15 17	28.74	-13 40	14.7	2.251	3.252	172.1	2.5	10.7	0.45	286.9
2023 May 6	15 16	40.87	-13 36	43.4	2.248	3.252	173.0	2.2	10.7	0.45	286.8
2023 May 7	15 15	52.73	-13 33	12.4	2.246	3.251	173.9	1.9	10.7	0.45	286.7
2023 May 8	15 15	4.36	-13 29	41.8	2.244	3.250	174.6	1.7	10.7	0.45	286.6
2023 May 9	15 14	15.82	-13 26	11.8	2.243	3.250	175.2	1.5	10.7	0.45	286.5
2023 May 10	15 13	27.13	-13 22	42.6	2.241	3.249	175.5	1.4	10.6	0.46	286.4
2023 May 11	15 12	38.36	-13 19	14.4	2.241	3.248	175.6	1.4	10.6	0.46	286.2
2023 May 12	15 11	49.53	-13 15	47.4	2.240	3.248	175.3	1.5	10.6	0.46	286.1
2023 May 13	15 11	0.71	-13 12	21.7	2.239	3.247	174.8	1.6	10.7	0.46	286.0
2023 May 14	15 10	11.93	-13 8	57.7	2.239	3.246	174.1	1.8	10.7	0.45	285.9
2023 May 15	15 9	23.25	-13 5	35.4	2.240	3.245	173.3	2.1	10.7	0.45	285.8
2023 May 16	15 8	34.72	-13 2	15.1	2.240	3.245	172.3	2.4	10.7	0.45	285.7
2023 May 17	15 7	46.37	-12 58	57.0	2.241	3.244	171.4	2.7	10.7	0.45	285.6
2023 May 18	15 6	58.26	-12 55	41.3	2.242	3.243	170.3	3.0	10.8	0.45	285.5
2023 May 19	15 6	10.45	-12 52	28.2	2.243	3.243	169.3	3.3	10.8	0.44	285.4
2023 May 20	15 5	22.96	-12 49	17.9	2.245	3.242	168.2	3.7	10.8	0.44	285.3
2023 May 21	15 4	35.86	-12 46	10.7	2.247	3.241	167.1	4.0	10.8	0.44	285.1
2023 May 22	15 3	49.18	-12 43	6.6	2.249	3.240	166.0	4.3	10.8	0.43	285.0
2023 May 23	15 3	2.98	-12 40	6.0	2.251	3.240	164.9	4.7	10.9	0.43	284.9

2023	May	24	15	2	17.29	-12	37	8.9	2.254	3.239	163.8	5.0	10.9	0.42	284.8
2023	May	25	15	1	32.15	-12	34	15.6	2.257	3.238	162.7	5.3	10.9	0.42	284.6
2023	May	26	15	0	47.61	-12	31	26.2	2.261	3.238	161.6	5.7	10.9	0.41	284.5
2023	May	27	15	0	3.71	-12	28	40.9	2.264	3.237	160.5	6.0	10.9	0.40	284.3
2023	May	28	14	59	20.48	-12	25	59.9	2.268	3.236	159.4	6.3	11.0	0.40	284.2
2023	May	29	14	58	37.97	-12	23	23.2	2.272	3.235	158.3	6.7	11.0	0.39	284.0
2023	May	30	14	57	56.20	-12	20	51.1	2.276	3.235	157.2	7.0	11.0	0.38	283.9
2023	May	31	14	57	15.21	-12	18	23.6	2.281	3.234	156.1	7.3	11.0	0.38	283.7
2023	Jun	1	14	56	35.03	-12	16	1.0	2.286	3.233	155.0	7.6	11.0	0.37	283.5
2023	Jun	2	14	55	55.69	-12	13	43.3	2.291	3.232	153.9	7.9	11.0	0.36	283.3
2023	Jun	3	14	55	17.22	-12	11	30.6	2.296	3.232	152.8	8.3	11.1	0.35	283.1
2023	Jun	4	14	54	39.65	-12	9	23.1	2.302	3.231	151.7	8.6	11.1	0.34	282.9
2023	Jun	5	14	54	3.01	-12	7	20.8	2.308	3.230	150.6	8.9	11.1	0.33	282.7
2023	Jun	6	14	53	27.31	-12	5	23.9	2.314	3.229	149.5	9.2	11.1	0.32	282.5
2023	Jun	7	14	52	52.59	-12	3	32.4	2.320	3.229	148.4	9.5	11.1	0.32	282.2
2023	Jun	8	14	52	18.86	-12	1	46.5	2.327	3.228	147.3	9.8	11.2	0.31	282.0
2023	Jun	9	14	51	46.16	-12	0	6.1	2.334	3.227	146.2	10.1	11.2	0.30	281.7
2023	Jun	10	14	51	14.49	-11	58	31.5	2.341	3.226	145.1	10.4	11.2	0.29	281.4
2023	Jun	11	14	50	43.89	-11	57	2.7	2.348	3.225	144.1	10.6	11.2	0.28	281.0
2023	Jun	12	14	50	14.38	-11	55	39.8	2.355	3.225	143.0	10.9	11.2	0.27	280.7
2023	Jun	13	14	49	45.97	-11	54	22.8	2.363	3.224	141.9	11.2	11.2	0.26	280.3
2023	Jun	14	14	49	18.69	-11	53	11.9	2.371	3.223	140.9	11.5	11.3	0.24	279.8
2023	Jun	15	14	48	52.55	-11	52	7.0	2.379	3.222	139.8	11.7	11.3	0.23	279.3
2023	Jun	16	14	48	27.57	-11	51	8.3	2.387	3.222	138.8	12.0	11.3	0.22	278.8
2023	Jun	17	14	48	3.76	-11	50	15.8	2.396	3.221	137.7	12.3	11.3	0.21	278.2
2023	Jun	18	14	47	41.15	-11	49	29.6	2.404	3.220	136.7	12.5	11.3	0.20	277.6
2023	Jun	19	14	47	19.73	-11	48	49.6	2.413	3.219	135.6	12.7	11.3	0.19	276.9
2023	Jun	20	14	46	59.53	-11	48	16.0	2.422	3.218	134.6	13.0	11.4	0.18	276.1
2023	Jun	21	14	46	40.56	-11	47	48.6	2.431	3.217	133.6	13.2	11.4	0.17	275.1
2023	Jun	22	14	46	22.81	-11	47	27.6	2.441	3.217	132.6	13.5	11.4	0.15	274.1
2023	Jun	23	14	46	6.31	-11	47	13.0	2.450	3.216	131.6	13.7	11.4	0.14	272.8

2023	Jun	24	14	45	51.04	-11	47	4.6	2.460	3.215	130.5	13.9	11.4	0.13	271.4
2023	Jun	25	14	45	37.03	-11	47	2.6	2.470	3.214	129.5	14.1	11.4	0.12	269.7
2023	Jun	26	14	45	24.27	-11	47	6.9	2.480	3.213	128.5	14.3	11.5	0.11	267.6
2023	Jun	27	14	45	12.76	-11	47	17.5	2.490	3.213	127.6	14.5	11.5	0.10	265.1
2023	Jun	28	14	45	2.51	-11	47	34.3	2.501	3.212	126.6	14.7	11.5	0.09	262.0
2023	Jun	29	14	44	53.51	-11	47	57.4	2.511	3.211	125.6	14.9	11.5	0.08	258.0
2023	Jun	30	14	44	45.77	-11	48	26.6	2.522	3.210	124.6	15.1	11.5	0.07	252.8
2023	Jul	1	14	44	39.27	-11	49	2.0	2.532	3.209	123.6	15.3	11.5	0.06	245.9
2023	Jul	2	14	44	34.03	-11	49	43.4	2.543	3.208	122.7	15.5	11.5	0.05	236.7
2023	Jul	3	14	44	30.03	-11	50	30.9	2.554	3.207	121.7	15.6	11.6	0.04	224.4
2023	Jul	4	14	44	27.28	-11	51	24.3	2.565	3.207	120.8	15.8	11.6	0.04	209.0
2023	Jul	5	14	44	25.76	-11	52	23.7	2.577	3.206	119.8	16.0	11.6	0.04	191.9
2023	Jul	6	14	44	25.47	-11	53	29.0	2.588	3.205	118.9	16.1	11.6	0.04	175.9
2023	Jul	7	14	44	26.42	-11	54	40.1	2.600	3.204	117.9	16.3	11.6	0.05	162.8
2023	Jul	8	14	44	28.59	-11	55	57.0	2.611	3.203	117.0	16.4	11.6	0.06	152.9
2023	Jul	9	14	44	31.98	-11	57	19.6	2.623	3.202	116.1	16.6	11.6	0.06	145.5
2023	Jul	10	14	44	36.59	-11	58	47.9	2.635	3.201	115.1	16.7	11.7	0.07	140.0
2023	Jul	11	14	44	42.41	-12	0	21.9	2.646	3.201	114.2	16.8	11.7	0.08	135.7
2023	Jul	12	14	44	49.44	-12	2	1.4	2.658	3.200	113.3	17.0	11.7	0.09	132.4
2023	Jul	13	14	44	57.68	-12	3	46.4	2.670	3.199	112.4	17.1	11.7	0.10	129.7
2023	Jul	14	14	45	7.12	-12	5	36.9	2.683	3.198	111.5	17.2	11.7	0.11	127.6
2023	Jul	15	14	45	17.75	-12	7	32.8	2.695	3.197	110.6	17.3	11.7	0.12	125.8
2023	Jul	16	14	45	29.57	-12	9	34.0	2.707	3.196	109.7	17.4	11.7	0.14	124.2
2023	Jul	17	14	45	42.57	-12	11	40.5	2.720	3.195	108.8	17.5	11.8	0.15	122.9
2023	Jul	18	14	45	56.74	-12	13	52.2	2.732	3.194	107.9	17.6	11.8	0.16	121.8
2023	Jul	19	14	46	12.08	-12	16	8.9	2.745	3.193	107.0	17.7	11.8	0.17	120.8
2023	Jul	20	14	46	28.57	-12	18	30.7	2.757	3.193	106.1	17.8	11.8	0.18	120.0
2023	Jul	21	14	46	46.21	-12	20	57.4	2.770	3.192	105.3	17.9	11.8	0.19	119.2
2023	Jul	22	14	47	4.98	-12	23	29.0	2.782	3.191	104.4	18.0	11.8	0.20	118.5
2023	Jul	23	14	47	24.88	-12	26	5.3	2.795	3.190	103.5	18.0	11.8	0.21	117.9
2023	Jul	24	14	47	45.90	-12	28	46.3	2.808	3.189	102.7	18.1	11.8	0.22	117.3

2023	Jul	25	14	48	8.02	-12	31	31.8	2.821	3.188	101.8	18.2	11.9	0.23	116.8
2023	Jul	26	14	48	31.24	-12	34	21.9	2.834	3.187	101.0	18.2	11.9	0.24	116.3
2023	Jul	27	14	48	55.55	-12	37	16.3	2.846	3.186	100.1	18.3	11.9	0.25	115.9
2023	Jul	28	14	49	20.92	-12	40	15.0	2.859	3.185	99.3	18.3	11.9	0.26	115.5
2023	Jul	29	14	49	47.36	-12	43	17.9	2.872	3.184	98.5	18.4	11.9	0.27	115.1
2023	Jul	30	14	50	14.84	-12	46	25.0	2.885	3.183	97.6	18.4	11.9	0.28	114.8

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Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 May 1	18	25	3.61	-16	29	11.4	2.715	3.381	123.8	14.3	12.2	0.05	302.0
2023 May 2	18	24	57.96	-16	28	27.4	2.704	3.381	124.8	14.2	12.2	0.06	295.5
2023 May 3	18	24	51.05	-16	27	45.2	2.692	3.382	125.7	14.0	12.2	0.07	290.8
2023 May 4	18	24	42.86	-16	27	5.0	2.681	3.382	126.7	13.8	12.2	0.08	287.2
2023 May 5	18	24	33.41	-16	26	26.7	2.670	3.383	127.7	13.6	12.2	0.09	284.4
2023 May 6	18	24	22.70	-16	25	50.4	2.660	3.383	128.7	13.4	12.1	0.10	282.2
2023 May 7	18	24	10.72	-16	25	16.1	2.649	3.384	129.7	13.3	12.1	0.11	280.4
2023 May 8	18	23	57.48	-16	24	44.0	2.638	3.384	130.7	13.1	12.1	0.12	278.9
2023 May 9	18	23	42.98	-16	24	13.9	2.628	3.385	131.8	12.9	12.1	0.13	277.6
2023 May 10	18	23	27.23	-16	23	46.0	2.618	3.385	132.8	12.6	12.1	0.15	276.5
2023 May 11	18	23	10.23	-16	23	20.3	2.608	3.386	133.8	12.4	12.1	0.16	275.5
2023 May 12	18	22	51.98	-16	22	56.8	2.598	3.386	134.8	12.2	12.0	0.17	274.7
2023 May 13	18	22	32.50	-16	22	35.6	2.588	3.387	135.8	12.0	12.0	0.18	274.0
2023 May 14	18	22	11.79	-16	22	16.6	2.579	3.387	136.9	11.8	12.0	0.19	273.3
2023 May 15	18	21	49.86	-16	22	0.0	2.570	3.388	137.9	11.5	12.0	0.20	272.7
2023 May 16	18	21	26.72	-16	21	45.8	2.561	3.388	138.9	11.3	12.0	0.21	272.2
2023 May 17	18	21	2.38	-16	21	33.9	2.552	3.389	140.0	11.1	12.0	0.22	271.7
2023 May 18	18	20	36.87	-16	21	24.4	2.543	3.390	141.0	10.8	11.9	0.23	271.3
2023 May 19	18	20	10.19	-16	21	17.4	2.535	3.390	142.1	10.6	11.9	0.24	270.8
2023 May 20	18	19	42.37	-16	21	12.9	2.526	3.391	143.1	10.3	11.9	0.25	270.5
2023 May 21	18	19	13.42	-16	21	10.8	2.518	3.391	144.2	10.1	11.9	0.26	270.1
2023 May 22	18	18	43.37	-16	21	11.3	2.510	3.392	145.2	9.8	11.9	0.27	269.8

2023	May	23	18	18	12.23	-16	21	14.3	2.503	3.392	146.3	9.5	11.9	0.28	269.5
2023	May	24	18	17	40.04	-16	21	19.7	2.496	3.393	147.4	9.3	11.8	0.29	269.2
2023	May	25	18	17	6.80	-16	21	27.8	2.488	3.393	148.4	9.0	11.8	0.30	268.9
2023	May	26	18	16	32.56	-16	21	38.3	2.482	3.393	149.5	8.7	11.8	0.31	268.6
2023	May	27	18	15	57.33	-16	21	51.4	2.475	3.394	150.6	8.4	11.8	0.32	268.4
2023	May	28	18	15	21.15	-16	22	7.1	2.469	3.394	151.6	8.2	11.8	0.32	268.2
2023	May	29	18	14	44.04	-16	22	25.2	2.462	3.395	152.7	7.9	11.8	0.33	267.9
2023	May	30	18	14	6.03	-16	22	45.9	2.456	3.395	153.8	7.6	11.7	0.34	267.7
2023	May	31	18	13	27.15	-16	23	9.1	2.451	3.396	154.9	7.3	11.7	0.35	267.5
2023	Jun	1	18	12	47.43	-16	23	34.8	2.445	3.396	155.9	7.0	11.7	0.36	267.3
2023	Jun	2	18	12	6.90	-16	24	3.0	2.440	3.397	157.0	6.7	11.7	0.36	267.1
2023	Jun	3	18	11	25.60	-16	24	33.7	2.435	3.397	158.1	6.4	11.7	0.37	267.0
2023	Jun	4	18	10	43.55	-16	25	6.8	2.431	3.398	159.1	6.1	11.7	0.38	266.8
2023	Jun	5	18	10	0.79	-16	25	42.4	2.426	3.398	160.2	5.8	11.6	0.38	266.6
2023	Jun	6	18	9	17.36	-16	26	20.4	2.422	3.399	161.2	5.5	11.6	0.39	266.4
2023	Jun	7	18	8	33.28	-16	27	0.8	2.418	3.399	162.3	5.2	11.6	0.39	266.3
2023	Jun	8	18	7	48.59	-16	27	43.6	2.415	3.400	163.3	4.9	11.6	0.40	266.1
2023	Jun	9	18	7	3.33	-16	28	28.8	2.412	3.400	164.4	4.6	11.6	0.40	266.0
2023	Jun	10	18	6	17.54	-16	29	16.3	2.409	3.400	165.4	4.3	11.5	0.41	265.8
2023	Jun	11	18	5	31.25	-16	30	6.2	2.406	3.401	166.4	4.0	11.5	0.41	265.6
2023	Jun	12	18	4	44.51	-16	30	58.4	2.403	3.401	167.4	3.7	11.5	0.42	265.5
2023	Jun	13	18	3	57.35	-16	31	52.9	2.401	3.402	168.3	3.5	11.5	0.42	265.3
2023	Jun	14	18	3	9.82	-16	32	49.8	2.399	3.402	169.2	3.2	11.5	0.42	265.2
2023	Jun	15	18	2	21.96	-16	33	48.9	2.398	3.403	170.1	2.9	11.5	0.43	265.0
2023	Jun	16	18	1	33.82	-16	34	50.3	2.396	3.403	170.9	2.7	11.4	0.43	264.9
2023	Jun	17	18	0	45.45	-16	35	53.9	2.395	3.404	171.6	2.5	11.4	0.43	264.7
2023	Jun	18	17	59	56.88	-16	36	59.8	2.395	3.404	172.2	2.3	11.4	0.43	264.5
2023	Jun	19	17	59	8.17	-16	38	7.8	2.394	3.404	172.7	2.2	11.4	0.43	264.4
2023	Jun	20	17	58	19.37	-16	39	18.1	2.394	3.405	173.1	2.1	11.4	0.43	264.2
2023	Jun	21	17	57	30.51	-16	40	30.5	2.394	3.405	173.2	2.0	11.4	0.43	264.0
2023	Jun	22	17	56	41.65	-16	41	45.0	2.394	3.406	173.2	2.0	11.4	0.43	263.9

2023	Jun	23	17	55	52.83	-16	43	1.6	2.395	3.406	173.0	2.1	11.4	0.43	263.7
2023	Jun	24	17	55	4.09	-16	44	20.2	2.396	3.406	172.6	2.2	11.4	0.43	263.5
2023	Jun	25	17	54	15.50	-16	45	40.9	2.397	3.407	172.1	2.4	11.4	0.43	263.3
2023	Jun	26	17	53	27.07	-16	47	3.6	2.399	3.407	171.4	2.6	11.4	0.43	263.1
2023	Jun	27	17	52	38.87	-16	48	28.3	2.401	3.408	170.6	2.8	11.4	0.43	262.9
2023	Jun	28	17	51	50.94	-16	49	54.9	2.403	3.408	169.8	3.0	11.5	0.42	262.7
2023	Jun	29	17	51	3.32	-16	51	23.4	2.405	3.408	168.9	3.3	11.5	0.42	262.5
2023	Jun	30	17	50	16.04	-16	52	53.8	2.408	3.409	168.0	3.5	11.5	0.42	262.3
2023	Jul	1	17	49	29.16	-16	54	26.0	2.411	3.409	167.1	3.8	11.5	0.42	262.1
2023	Jul	2	17	48	42.70	-16	56	0.0	2.414	3.410	166.1	4.1	11.5	0.41	261.9
2023	Jul	3	17	47	56.72	-16	57	35.9	2.418	3.410	165.1	4.4	11.6	0.41	261.6
2023	Jul	4	17	47	11.23	-16	59	13.5	2.421	3.410	164.1	4.7	11.6	0.40	261.4
2023	Jul	5	17	46	26.30	-17	0	52.8	2.425	3.411	163.0	5.0	11.6	0.40	261.1
2023	Jul	6	17	45	41.94	-17	2	33.8	2.430	3.411	162.0	5.3	11.6	0.39	260.8
2023	Jul	7	17	44	58.19	-17	4	16.5	2.434	3.412	161.0	5.6	11.6	0.39	260.6
2023	Jul	8	17	44	15.09	-17	6	0.8	2.439	3.412	159.9	5.9	11.7	0.38	260.3
2023	Jul	9	17	43	32.68	-17	7	46.8	2.444	3.412	158.9	6.2	11.7	0.38	260.0
2023	Jul	10	17	42	50.99	-17	9	34.4	2.450	3.413	157.8	6.5	11.7	0.37	259.6
2023	Jul	11	17	42	10.05	-17	11	23.6	2.455	3.413	156.7	6.8	11.7	0.36	259.3
2023	Jul	12	17	41	29.90	-17	13	14.5	2.461	3.413	155.7	7.0	11.7	0.36	258.9
2023	Jul	13	17	40	50.58	-17	15	6.8	2.467	3.414	154.6	7.3	11.8	0.35	258.5
2023	Jul	14	17	40	12.11	-17	17	0.8	2.474	3.414	153.5	7.6	11.8	0.34	258.1
2023	Jul	15	17	39	34.52	-17	18	56.2	2.481	3.414	152.5	7.9	11.8	0.33	257.7
2023	Jul	16	17	38	57.85	-17	20	53.1	2.487	3.415	151.4	8.2	11.8	0.33	257.2
2023	Jul	17	17	38	22.13	-17	22	51.6	2.495	3.415	150.3	8.5	11.8	0.32	256.7
2023	Jul	18	17	37	47.38	-17	24	51.5	2.502	3.416	149.3	8.7	11.8	0.31	256.2
2023	Jul	19	17	37	13.63	-17	26	52.8	2.510	3.416	148.2	9.0	11.9	0.30	255.6
2023	Jul	20	17	36	40.91	-17	28	55.5	2.518	3.416	147.2	9.3	11.9	0.29	255.0
2023	Jul	21	17	36	9.23	-17	30	59.6	2.526	3.417	146.1	9.5	11.9	0.28	254.4
2023	Jul	22	17	35	38.63	-17	33	5.0	2.534	3.417	145.1	9.8	11.9	0.28	253.7
2023	Jul	23	17	35	9.11	-17	35	11.7	2.543	3.417	144.0	10.1	11.9	0.27	252.9

2023	Jul	24	17	34	40.71	-17	37	19.7	2.551	3.418	143.0	10.3	12.0	0.26	252.1
2023	Jul	25	17	34	13.43	-17	39	29.0	2.560	3.418	141.9	10.6	12.0	0.25	251.2
2023	Jul	26	17	33	47.30	-17	41	39.5	2.570	3.418	140.9	10.8	12.0	0.24	250.3
2023	Jul	27	17	33	22.32	-17	43	51.2	2.579	3.419	139.8	11.0	12.0	0.23	249.2
2023	Jul	28	17	32	58.52	-17	46	4.0	2.589	3.419	138.8	11.3	12.0	0.22	248.1
2023	Jul	29	17	32	35.89	-17	48	17.9	2.598	3.419	137.8	11.5	12.0	0.21	246.9
2023	Jul	30	17	32	14.46	-17	50	32.9	2.608	3.419	136.8	11.7	12.1	0.20	245.5
2023	Jul	31	17	31	54.23	-17	52	49.0	2.619	3.420	135.7	12.0	12.1	0.19	244.0
2023	Aug	1	17	31	35.20	-17	55	6.1	2.629	3.420	134.7	12.2	12.1	0.18	242.4
2023	Aug	2	17	31	17.39	-17	57	24.1	2.640	3.420	133.7	12.4	12.1	0.17	240.6
2023	Aug	3	17	31	0.81	-17	59	43.1	2.650	3.421	132.7	12.6	12.1	0.16	238.5
2023	Aug	4	17	30	45.44	-18	2	3.1	2.661	3.421	131.7	12.8	12.1	0.16	236.3
2023	Aug	5	17	30	31.31	-18	4	23.9	2.672	3.421	130.7	13.0	12.2	0.15	233.8
2023	Aug	6	17	30	18.41	-18	6	45.5	2.683	3.422	129.7	13.2	12.2	0.14	230.9
2023	Aug	7	17	30	6.76	-18	9	8.0	2.695	3.422	128.7	13.4	12.2	0.13	227.7
2023	Aug	8	17	29	56.35	-18	11	31.4	2.706	3.422	127.7	13.6	12.2	0.12	224.1
2023	Aug	9	17	29	47.19	-18	13	55.4	2.718	3.422	126.7	13.7	12.2	0.12	220.1
2023	Aug	10	17	29	39.29	-18	16	20.3	2.730	3.423	125.8	13.9	12.2	0.11	215.5
2023	Aug	11	17	29	32.64	-18	18	45.8	2.742	3.423	124.8	14.1	12.3	0.10	210.4
2023	Aug	12	17	29	27.25	-18	21	12.0	2.754	3.423	123.8	14.2	12.3	0.10	204.8
2023	Aug	13	17	29	23.13	-18	23	38.9	2.766	3.424	122.8	14.4	12.3	0.10	198.7
2023	Aug	14	17	29	20.26	-18	26	6.3	2.779	3.424	121.9	14.6	12.3	0.09	192.1
2023	Aug	15	17	29	18.65	-18	28	34.3	2.791	3.424	120.9	14.7	12.3	0.09	185.3
2023	Aug	16	17	29	18.30	-18	31	2.8	2.804	3.424	120.0	14.8	12.3	0.09	178.4
2023	Aug	17	17	29	19.21	-18	33	31.8	2.817	3.425	119.0	15.0	12.3	0.09	171.7
2023	Aug	18	17	29	21.37	-18	36	1.2	2.830	3.425	118.1	15.1	12.4	0.10	165.2
2023	Aug	19	17	29	24.78	-18	38	31.0	2.843	3.425	117.1	15.2	12.4	0.10	159.1
2023	Aug	20	17	29	29.43	-18	41	1.1	2.856	3.425	116.2	15.4	12.4	0.10	153.5
2023	Aug	21	17	29	35.33	-18	43	31.5	2.869	3.426	115.3	15.5	12.4	0.11	148.4
2023	Aug	22	17	29	42.45	-18	46	2.1	2.883	3.426	114.3	15.6	12.4	0.11	143.9
2023	Aug	23	17	29	50.81	-18	48	33.0	2.896	3.426	113.4	15.7	12.4	0.12	139.8

2023 Aug 24	17 30	0.38	-18 51	4.0	2.910	3.426	112.5	15.8	12.4	0.13	136.3
2023 Aug 25	17 30	11.16	-18 53	35.0	2.923	3.427	111.6	15.9	12.5	0.14	133.1
2023 Aug 26	17 30	23.14	-18 56	6.1	2.937	3.427	110.7	16.0	12.5	0.14	130.2
2023 Aug 27	17 30	36.32	-18 58	37.3	2.951	3.427	109.8	16.1	12.5	0.15	127.7
2023 Aug 28	17 30	50.67	-19 1	8.3	2.965	3.427	108.9	16.2	12.5	0.16	125.5
2023 Aug 29	17 31	6.20	-19 3	39.3	2.979	3.428	108.0	16.3	12.5	0.17	123.4

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Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 May 1	19	35	9.88	-27	0	24.6	2.328	2.820	108.9	19.8	10.5	0.23	72.3
2023 May 2	19	35	36.21	-26	58	30.0	2.314	2.818	109.7	19.7	10.4	0.22	71.6
2023 May 3	19	36	1.13	-26	56	36.6	2.299	2.816	110.6	19.6	10.4	0.21	70.8
2023 May 4	19	36	24.62	-26	54	44.6	2.285	2.815	111.5	19.5	10.4	0.20	69.9
2023 May 5	19	36	46.66	-26	52	53.9	2.270	2.813	112.3	19.4	10.4	0.19	68.9
2023 May 6	19	37	7.24	-26	51	4.6	2.256	2.811	113.2	19.2	10.4	0.18	67.7
2023 May 7	19	37	26.34	-26	49	16.6	2.242	2.809	114.1	19.1	10.3	0.16	66.4
2023 May 8	19	37	43.94	-26	47	29.9	2.228	2.808	115.0	19.0	10.3	0.15	64.8
2023 May 9	19	38	0.03	-26	45	44.7	2.214	2.806	115.9	18.9	10.3	0.14	63.0
2023 May 10	19	38	14.60	-26	44	0.9	2.200	2.804	116.8	18.7	10.3	0.13	60.8
2023 May 11	19	38	27.61	-26	42	18.5	2.186	2.802	117.7	18.6	10.3	0.12	58.2
2023 May 12	19	38	39.06	-26	40	37.5	2.172	2.800	118.6	18.5	10.3	0.11	54.9
2023 May 13	19	38	48.93	-26	38	57.9	2.159	2.799	119.6	18.3	10.2	0.10	50.9
2023 May 14	19	38	57.19	-26	37	19.8	2.145	2.797	120.5	18.1	10.2	0.09	45.8
2023 May 15	19	39	3.85	-26	35	43.1	2.132	2.795	121.4	18.0	10.2	0.08	39.2
2023 May 16	19	39	8.87	-26	34	7.7	2.119	2.793	122.4	17.8	10.2	0.07	30.8
2023 May 17	19	39	12.26	-26	32	33.8	2.105	2.792	123.3	17.6	10.1	0.06	20.2
2023 May 18	19	39	13.99	-26	31	1.2	2.092	2.790	124.3	17.4	10.1	0.06	7.4
2023 May 19	19	39	14.05	-26	29	29.9	2.079	2.788	125.2	17.2	10.1	0.06	353.5
2023 May 20	19	39	12.45	-26	28	0.0	2.067	2.786	126.2	17.0	10.1	0.06	339.8
2023 May 21	19	39	9.16	-26	26	31.3	2.054	2.784	127.1	16.8	10.1	0.06	327.8
2023 May 22	19	39	4.19	-26	25	3.7	2.041	2.783	128.1	16.6	10.0	0.07	318.0

2023	May	23	19	38	57.52	-26	23	37.4	2.029	2.781	129.1	16.4	10.0	0.08	310.4
2023	May	24	19	38	49.16	-26	22	12.1	2.017	2.779	130.1	16.2	10.0	0.09	304.4
2023	May	25	19	38	39.10	-26	20	47.8	2.005	2.777	131.1	16.0	10.0	0.10	299.7
2023	May	26	19	38	27.35	-26	19	24.5	1.993	2.775	132.1	15.7	10.0	0.12	296.0
2023	May	27	19	38	13.88	-26	18	2.0	1.981	2.774	133.1	15.5	9.9	0.13	293.1
2023	May	28	19	37	58.72	-26	16	40.4	1.970	2.772	134.1	15.2	9.9	0.14	290.7
2023	May	29	19	37	41.86	-26	15	19.4	1.958	2.770	135.1	15.0	9.9	0.15	288.7
2023	May	30	19	37	23.30	-26	13	59.1	1.947	2.768	136.1	14.7	9.9	0.17	287.0
2023	May	31	19	37	3.05	-26	12	39.3	1.936	2.766	137.1	14.4	9.8	0.18	285.6
2023	Jun	1	19	36	41.11	-26	11	20.0	1.925	2.764	138.2	14.2	9.8	0.19	284.5
2023	Jun	2	19	36	17.48	-26	10	0.9	1.914	2.763	139.2	13.9	9.8	0.21	283.5
2023	Jun	3	19	35	52.18	-26	8	42.1	1.904	2.761	140.3	13.6	9.8	0.22	282.6
2023	Jun	4	19	35	25.21	-26	7	23.4	1.893	2.759	141.3	13.3	9.7	0.24	281.9
2023	Jun	5	19	34	56.58	-26	6	4.7	1.883	2.757	142.4	13.0	9.7	0.25	281.2
2023	Jun	6	19	34	26.30	-26	4	46.0	1.873	2.755	143.4	12.7	9.7	0.26	280.7
2023	Jun	7	19	33	54.38	-26	3	26.9	1.864	2.753	144.5	12.4	9.7	0.28	280.2
2023	Jun	8	19	33	20.83	-26	2	7.6	1.854	2.752	145.6	12.0	9.6	0.29	279.7
2023	Jun	9	19	32	45.66	-26	0	47.8	1.845	2.750	146.6	11.7	9.6	0.30	279.4
2023	Jun	10	19	32	8.90	-25	59	27.3	1.836	2.748	147.7	11.4	9.6	0.32	279.1
2023	Jun	11	19	31	30.56	-25	58	6.2	1.827	2.746	148.8	11.0	9.6	0.33	278.8
2023	Jun	12	19	30	50.66	-25	56	44.2	1.818	2.744	149.9	10.7	9.5	0.34	278.5
2023	Jun	13	19	30	9.23	-25	55	21.2	1.809	2.742	151.0	10.3	9.5	0.35	278.3
2023	Jun	14	19	29	26.30	-25	53	57.1	1.801	2.740	152.1	10.0	9.5	0.37	278.2
2023	Jun	15	19	28	41.90	-25	52	31.8	1.793	2.738	153.2	9.6	9.5	0.38	278.0
2023	Jun	16	19	27	56.06	-25	51	5.0	1.785	2.737	154.3	9.3	9.4	0.39	277.9
2023	Jun	17	19	27	8.82	-25	49	36.6	1.778	2.735	155.5	8.9	9.4	0.40	277.8
2023	Jun	18	19	26	20.22	-25	48	6.5	1.771	2.733	156.6	8.5	9.4	0.41	277.8
2023	Jun	19	19	25	30.30	-25	46	34.6	1.763	2.731	157.7	8.1	9.4	0.42	277.7
2023	Jun	20	19	24	39.12	-25	45	0.7	1.757	2.729	158.8	7.7	9.3	0.43	277.7
2023	Jun	21	19	23	46.70	-25	43	24.7	1.750	2.727	160.0	7.3	9.3	0.44	277.7
2023	Jun	22	19	22	53.12	-25	41	46.4	1.744	2.725	161.1	6.9	9.3	0.45	277.7

2023	Jun	23	19	21	58.41	-25	40	5.6	1.738	2.723	162.3	6.5	9.3	0.46	277.8
2023	Jun	24	19	21	2.63	-25	38	22.4	1.732	2.721	163.4	6.1	9.2	0.47	277.8
2023	Jun	25	19	20	5.84	-25	36	36.4	1.726	2.720	164.5	5.7	9.2	0.48	277.9
2023	Jun	26	19	19	8.10	-25	34	47.7	1.721	2.718	165.7	5.3	9.2	0.49	278.0
2023	Jun	27	19	18	9.46	-25	32	56.1	1.716	2.716	166.8	4.9	9.1	0.50	278.1
2023	Jun	28	19	17	9.98	-25	31	1.5	1.711	2.714	168.0	4.5	9.1	0.50	278.2
2023	Jun	29	19	16	9.72	-25	29	3.9	1.707	2.712	169.1	4.1	9.1	0.51	278.3
2023	Jun	30	19	15	8.76	-25	27	3.0	1.703	2.710	170.3	3.6	9.0	0.52	278.4
2023	Jul	1	19	14	7.14	-25	24	58.8	1.699	2.708	171.4	3.2	9.0	0.52	278.5
2023	Jul	2	19	13	4.94	-25	22	51.3	1.695	2.706	172.5	2.8	9.0	0.53	278.7
2023	Jul	3	19	12	2.22	-25	20	40.4	1.692	2.704	173.6	2.4	8.9	0.53	278.8
2023	Jul	4	19	10	59.04	-25	18	26.1	1.688	2.702	174.7	2.0	8.9	0.53	279.0
2023	Jul	5	19	9	55.48	-25	16	8.2	1.686	2.700	175.7	1.6	8.9	0.54	279.2
2023	Jul	6	19	8	51.58	-25	13	46.9	1.683	2.699	176.6	1.3	8.8	0.54	279.4
2023	Jul	7	19	7	47.43	-25	11	21.9	1.681	2.697	177.2	1.1	8.8	0.54	279.5
2023	Jul	8	19	6	43.09	-25	8	53.4	1.679	2.695	177.4	1.0	8.8	0.55	279.8
2023	Jul	9	19	5	38.63	-25	6	21.4	1.677	2.693	177.1	1.1	8.8	0.55	280.0
2023	Jul	10	19	4	34.13	-25	3	45.7	1.675	2.691	176.4	1.4	8.8	0.55	280.2
2023	Jul	11	19	3	29.65	-25	1	6.5	1.674	2.689	175.5	1.7	8.9	0.55	280.4
2023	Jul	12	19	2	25.28	-24	58	23.8	1.673	2.687	174.5	2.1	8.9	0.55	280.7
2023	Jul	13	19	1	21.08	-24	55	37.6	1.673	2.685	173.4	2.5	8.9	0.55	280.9
2023	Jul	14	19	0	17.13	-24	52	47.9	1.672	2.683	172.3	2.9	8.9	0.54	281.2
2023	Jul	15	18	59	13.51	-24	49	54.8	1.672	2.681	171.2	3.3	9.0	0.54	281.4
2023	Jul	16	18	58	10.30	-24	46	58.3	1.672	2.679	170.0	3.8	9.0	0.54	281.7
2023	Jul	17	18	57	7.56	-24	43	58.6	1.673	2.677	168.9	4.2	9.0	0.53	282.0
2023	Jul	18	18	56	5.37	-24	40	55.7	1.673	2.675	167.7	4.6	9.0	0.53	282.3
2023	Jul	19	18	55	3.80	-24	37	49.6	1.674	2.673	166.6	5.1	9.1	0.53	282.7
2023	Jul	20	18	54	2.92	-24	34	40.5	1.676	2.671	165.4	5.5	9.1	0.52	283.0
2023	Jul	21	18	53	2.81	-24	31	28.4	1.677	2.669	164.2	5.9	9.1	0.51	283.4
2023	Jul	22	18	52	3.52	-24	28	13.6	1.679	2.667	163.1	6.4	9.1	0.51	283.7
2023	Jul	23	18	51	5.13	-24	24	56.0	1.681	2.666	161.9	6.8	9.1	0.50	284.1

2023	Jul	24	18	50	7.70	-24	21	35.8	1.683	2.664	160.8	7.2	9.2	0.49	284.5
2023	Jul	25	18	49	11.29	-24	18	13.2	1.686	2.662	159.6	7.6	9.2	0.49	284.9
2023	Jul	26	18	48	15.95	-24	14	48.2	1.689	2.660	158.4	8.1	9.2	0.48	285.4
2023	Jul	27	18	47	21.74	-24	11	20.9	1.692	2.658	157.3	8.5	9.2	0.47	285.8
2023	Jul	28	18	46	28.72	-24	7	51.6	1.695	2.656	156.1	8.9	9.2	0.46	286.3
2023	Jul	29	18	45	36.93	-24	4	20.4	1.698	2.654	155.0	9.3	9.3	0.45	286.8
2023	Jul	30	18	44	46.43	-24	0	47.4	1.702	2.652	153.9	9.7	9.3	0.44	287.4
2023	Jul	31	18	43	57.25	-23	57	12.7	1.706	2.650	152.7	10.1	9.3	0.43	288.0
2023	Aug	1	18	43	9.43	-23	53	36.5	1.711	2.648	151.6	10.5	9.3	0.42	288.6
2023	Aug	2	18	42	23.03	-23	49	58.9	1.715	2.646	150.5	10.9	9.3	0.41	289.2
2023	Aug	3	18	41	38.06	-23	46	20.0	1.720	2.644	149.4	11.3	9.4	0.40	289.9
2023	Aug	4	18	40	54.58	-23	42	40.1	1.725	2.642	148.2	11.7	9.4	0.39	290.6
2023	Aug	5	18	40	12.61	-23	38	59.3	1.730	2.640	147.1	12.0	9.4	0.37	291.3
2023	Aug	6	18	39	32.18	-23	35	17.6	1.735	2.638	146.0	12.4	9.4	0.36	292.2
2023	Aug	7	18	38	53.33	-23	31	35.3	1.741	2.636	144.9	12.8	9.4	0.35	293.0
2023	Aug	8	18	38	16.09	-23	27	52.5	1.746	2.634	143.8	13.1	9.5	0.34	294.0
2023	Aug	9	18	37	40.48	-23	24	9.2	1.752	2.632	142.7	13.5	9.5	0.32	295.0
2023	Aug	10	18	37	6.54	-23	20	25.6	1.759	2.630	141.7	13.8	9.5	0.31	296.1
2023	Aug	11	18	36	34.29	-23	16	41.9	1.765	2.628	140.6	14.2	9.5	0.30	297.4
2023	Aug	12	18	36	3.76	-23	12	58.1	1.771	2.626	139.5	14.5	9.5	0.29	298.7
2023	Aug	13	18	35	34.95	-23	9	14.4	1.778	2.624	138.4	14.8	9.6	0.27	300.1
2023	Aug	14	18	35	7.91	-23	5	30.8	1.785	2.622	137.4	15.2	9.6	0.26	301.8
2023	Aug	15	18	34	42.63	-23	1	47.5	1.792	2.620	136.3	15.5	9.6	0.25	303.5
2023	Aug	16	18	34	19.14	-22	58	4.5	1.800	2.618	135.3	15.8	9.6	0.24	305.5
2023	Aug	17	18	33	57.45	-22	54	22.0	1.807	2.616	134.2	16.1	9.6	0.22	307.7
2023	Aug	18	18	33	37.57	-22	50	39.9	1.815	2.614	133.2	16.4	9.6	0.21	310.2
2023	Aug	19	18	33	19.50	-22	46	58.4	1.822	2.612	132.2	16.7	9.7	0.20	313.0
2023	Aug	20	18	33	3.26	-22	43	17.6	1.830	2.610	131.2	17.0	9.7	0.19	316.1
2023	Aug	21	18	32	48.85	-22	39	37.4	1.838	2.608	130.1	17.3	9.7	0.18	319.6
2023	Aug	22	18	32	36.26	-22	35	58.0	1.847	2.606	129.1	17.5	9.7	0.17	323.6
2023	Aug	23	18	32	25.50	-22	32	19.3	1.855	2.604	128.1	17.8	9.7	0.16	328.0

2023 Aug 24	18 32	16.57	-22 28	41.5	1.864	2.602	127.1	18.0	9.7	0.15	332.9
2023 Aug 25	18 32	9.45	-22 25	4.6	1.872	2.600	126.1	18.3	9.8	0.14	338.4
2023 Aug 26	18 32	4.16	-22 21	28.5	1.881	2.598	125.2	18.5	9.8	0.14	344.2
2023 Aug 27	18 32	0.67	-22 17	53.3	1.890	2.596	124.2	18.8	9.8	0.13	350.5
2023 Aug 28	18 31	58.98	-22 14	19.1	1.899	2.594	123.2	19.0	9.8	0.13	357.1
2023 Aug 29	18 31	59.08	-22 10	45.8	1.908	2.592	122.3	19.2	9.8	0.13	3.7
2023 Aug 30	18 32	0.96	-22 7	13.4	1.917	2.590	121.3	19.5	9.8	0.13	10.3
2023 Aug 31	18 32	4.60	-22 3	42.0	1.927	2.588	120.3	19.7	9.9	0.14	16.6
2023 Sep 1	18 32	10.00	-22 0	11.6	1.936	2.586	119.4	19.9	9.9	0.14	22.6
2023 Sep 2	18 32	17.13	-21 56	42.1	1.946	2.584	118.5	20.1	9.9	0.15	28.1
2023 Sep 3	18 32	25.99	-21 53	13.5	1.956	2.582	117.5	20.3	9.9	0.15	33.1
2023 Sep 4	18 32	36.57	-21 49	45.9	1.965	2.580	116.6	20.5	9.9	0.16	37.6
2023 Sep 5	18 32	48.86	-21 46	19.2	1.975	2.578	115.7	20.6	9.9	0.17	41.6
2023 Sep 6	18 33	2.83	-21 42	53.3	1.985	2.576	114.8	20.8	9.9	0.18	45.2
2023 Sep 7	18 33	18.50	-21 39	28.3	1.995	2.574	113.9	21.0	10.0	0.19	48.4
2023 Sep 8	18 33	35.83	-21 36	4.1	2.005	2.572	113.0	21.1	10.0	0.20	51.2
2023 Sep 9	18 33	54.82	-21 32	40.6	2.016	2.570	112.1	21.3	10.0	0.21	53.7
2023 Sep 10	18 34	15.45	-21 29	17.9	2.026	2.568	111.2	21.5	10.0	0.22	55.9
2023 Sep 11	18 34	37.71	-21 25	55.8	2.036	2.566	110.3	21.6	10.0	0.23	57.9
2023 Sep 12	18 35	1.59	-21 22	34.4	2.047	2.564	109.4	21.7	10.0	0.25	59.7
2023 Sep 13	18 35	27.06	-21 19	13.5	2.057	2.562	108.6	21.9	10.0	0.26	61.3
2023 Sep 14	18 35	54.12	-21 15	53.0	2.068	2.560	107.7	22.0	10.1	0.27	62.8
2023 Sep 15	18 36	22.75	-21 12	33.1	2.078	2.558	106.8	22.1	10.1	0.28	64.1
2023 Sep 16	18 36	52.93	-21 9	13.4	2.089	2.556	106.0	22.2	10.1	0.29	65.3
2023 Sep 17	18 37	24.64	-21 5	54.1	2.100	2.554	105.1	22.3	10.1	0.30	66.3
2023 Sep 18	18 37	57.87	-21 2	34.9	2.110	2.552	104.3	22.4	10.1	0.32	67.3
2023 Sep 19	18 38	32.59	-20 59	15.9	2.121	2.550	103.5	22.5	10.1	0.33	68.2
2023 Sep 20	18 39	8.78	-20 55	57.0	2.132	2.548	102.6	22.6	10.1	0.34	69.0
2023 Sep 21	18 39	46.44	-20 52	38.0	2.143	2.546	101.8	22.7	10.1	0.35	69.7
2023 Sep 22	18 40	25.52	-20 49	18.9	2.154	2.544	101.0	22.8	10.2	0.36	70.4

2023	Sep	23	18	41	6.03	-20	45	59.7	2.165	2.542	100.2	22.9	10.2	0.38	71.0
2023	Sep	24	18	41	47.93	-20	42	40.1	2.176	2.540	99.4	22.9	10.2	0.39	71.5
2023	Sep	25	18	42	31.20	-20	39	20.3	2.187	2.538	98.5	23.0	10.2	0.40	72.0
2023	Sep	26	18	43	15.82	-20	36	0.0	2.198	2.536	97.7	23.1	10.2	0.41	72.5
2023	Sep	27	18	44	1.77	-20	32	39.1	2.209	2.534	96.9	23.1	10.2	0.42	72.9
2023	Sep	28	18	44	49.03	-20	29	17.7	2.220	2.532	96.2	23.2	10.2	0.43	73.3

511 Davida

1 uur UTC (J2000)

Osculerende baanelementen

T 2023 Jul 1.0000 TT

MA 241.685474°

q 2.5641012 ω 337.106580°

a 3.1613040 Ω 107.581666°

e 0.1889103 i 15.943504°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jul 1	21	38	55.09	-22	11	35.8	2.695	3.520	138.4	11.1	12.0	0.26	212.1
2023 Jul 2	21	38	38.18	-22	17	40.8	2.685	3.519	139.4	10.8	12.0	0.27	213.4
2023 Jul 3	21	38	20.12	-22	23	50.9	2.674	3.518	140.4	10.6	12.0	0.28	214.7
2023 Jul 4	21	38	0.92	-22	30	5.9	2.664	3.516	141.4	10.4	12.0	0.29	216.0
2023 Jul 5	21	37	40.58	-22	36	25.8	2.654	3.515	142.4	10.2	12.0	0.29	217.1
2023 Jul 6	21	37	19.11	-22	42	50.2	2.644	3.514	143.5	9.9	12.0	0.30	218.2
2023 Jul 7	21	36	56.52	-22	49	19.2	2.635	3.512	144.5	9.7	11.9	0.31	219.3
2023 Jul 8	21	36	32.82	-22	55	52.3	2.626	3.511	145.5	9.4	11.9	0.32	220.3
2023 Jul 9	21	36	8.01	-23	2	29.6	2.617	3.510	146.5	9.2	11.9	0.33	221.3
2023 Jul 10	21	35	42.10	-23	9	10.6	2.608	3.508	147.6	8.9	11.9	0.33	222.2
2023 Jul 11	21	35	15.11	-23	15	55.3	2.599	3.507	148.6	8.7	11.9	0.34	223.0
2023 Jul 12	21	34	47.05	-23	22	43.4	2.591	3.506	149.6	8.4	11.8	0.35	223.9
2023 Jul 13	21	34	17.93	-23	29	34.5	2.583	3.504	150.7	8.2	11.8	0.36	224.7
2023 Jul 14	21	33	47.78	-23	36	28.6	2.575	3.503	151.7	7.9	11.8	0.36	225.4
2023 Jul 15	21	33	16.61	-23	43	25.3	2.567	3.502	152.7	7.6	11.8	0.37	226.1
2023 Jul 16	21	32	44.44	-23	50	24.3	2.560	3.500	153.7	7.4	11.8	0.38	226.8
2023 Jul 17	21	32	11.30	-23	57	25.4	2.553	3.499	154.8	7.1	11.7	0.38	227.5
2023 Jul 18	21	31	37.20	-24	4	28.3	2.546	3.498	155.8	6.9	11.7	0.39	228.2
2023 Jul 19	21	31	2.18	-24	11	32.6	2.539	3.496	156.8	6.6	11.7	0.40	228.8
2023 Jul 20	21	30	26.25	-24	18	38.1	2.533	3.495	157.8	6.3	11.7	0.40	229.4
2023 Jul 21	21	29	49.46	-24	25	44.5	2.527	3.494	158.8	6.0	11.7	0.41	230.0
2023 Jul 22	21	29	11.82	-24	32	51.5	2.521	3.492	159.7	5.8	11.7	0.41	230.6

2023	Jul	23	21	28	33.36	-24	39	58.7	2.516	3.491	160.7	5.5	11.6	0.42	231.1
2023	Jul	24	21	27	54.13	-24	47	5.9	2.510	3.489	161.7	5.3	11.6	0.42	231.6
2023	Jul	25	21	27	14.14	-24	54	12.7	2.505	3.488	162.6	5.0	11.6	0.43	232.2
2023	Jul	26	21	26	33.43	-25	1	18.9	2.501	3.487	163.5	4.7	11.6	0.43	232.7
2023	Jul	27	21	25	52.05	-25	8	24.0	2.496	3.485	164.4	4.5	11.6	0.43	233.2
2023	Jul	28	21	25	10.01	-25	15	27.8	2.492	3.484	165.2	4.3	11.5	0.44	233.6
2023	Jul	29	21	24	27.36	-25	22	30.1	2.488	3.482	166.0	4.0	11.5	0.44	234.1
2023	Jul	30	21	23	44.14	-25	29	30.4	2.485	3.481	166.8	3.8	11.5	0.44	234.6
2023	Jul	31	21	23	0.37	-25	36	28.5	2.482	3.480	167.5	3.6	11.5	0.45	235.0
2023	Aug	1	21	22	16.11	-25	43	24.1	2.479	3.478	168.1	3.4	11.5	0.45	235.4
2023	Aug	2	21	21	31.37	-25	50	16.8	2.476	3.477	168.7	3.3	11.5	0.45	235.9
2023	Aug	3	21	20	46.21	-25	57	6.5	2.473	3.475	169.2	3.2	11.5	0.45	236.3
2023	Aug	4	21	20	0.66	-26	3	52.8	2.471	3.474	169.5	3.0	11.4	0.45	236.7
2023	Aug	5	21	19	14.75	-26	10	35.4	2.470	3.473	169.7	3.0	11.4	0.45	237.1
2023	Aug	6	21	18	28.54	-26	17	14.1	2.468	3.471	169.9	2.9	11.4	0.45	237.5
2023	Aug	7	21	17	42.05	-26	23	48.6	2.467	3.470	169.8	3.0	11.4	0.45	237.9
2023	Aug	8	21	16	55.34	-26	30	18.5	2.466	3.468	169.7	3.0	11.4	0.45	238.3
2023	Aug	9	21	16	8.44	-26	36	43.7	2.465	3.467	169.4	3.1	11.4	0.45	238.7
2023	Aug	10	21	15	21.41	-26	43	3.8	2.465	3.465	169.1	3.2	11.4	0.45	239.1
2023	Aug	11	21	14	34.29	-26	49	18.6	2.465	3.464	168.6	3.3	11.5	0.45	239.5
2023	Aug	12	21	13	47.12	-26	55	27.9	2.465	3.463	168.0	3.5	11.5	0.45	239.9
2023	Aug	13	21	12	59.96	-27	1	31.3	2.465	3.461	167.3	3.7	11.5	0.45	240.2
2023	Aug	14	21	12	12.85	-27	7	28.6	2.466	3.460	166.6	3.9	11.5	0.44	240.6
2023	Aug	15	21	11	25.83	-27	13	19.6	2.467	3.458	165.8	4.1	11.5	0.44	241.0
2023	Aug	16	21	10	38.97	-27	19	4.1	2.468	3.457	165.0	4.3	11.5	0.44	241.3
2023	Aug	17	21	9	52.30	-27	24	41.9	2.470	3.455	164.2	4.6	11.5	0.43	241.7
2023	Aug	18	21	9	5.87	-27	30	12.7	2.472	3.454	163.3	4.8	11.5	0.43	242.0
2023	Aug	19	21	8	19.73	-27	35	36.4	2.474	3.452	162.3	5.1	11.6	0.42	242.4
2023	Aug	20	21	7	33.92	-27	40	52.8	2.477	3.451	161.4	5.4	11.6	0.42	242.7
2023	Aug	21	21	6	48.50	-27	46	1.7	2.479	3.449	160.4	5.6	11.6	0.41	243.0
2023	Aug	22	21	6	3.51	-27	51	3.0	2.482	3.448	159.4	5.9	11.6	0.41	243.4

2023 Aug 23	21	5	19.00	-27	55	56.5	2.486	3.447	158.4	6.2	11.6	0.40	243.7
2023 Aug 24	21	4	35.00	-28	0	42.1	2.489	3.445	157.4	6.5	11.6	0.40	244.1
2023 Aug 25	21	3	51.56	-28	5	19.7	2.493	3.444	156.4	6.7	11.6	0.39	244.4
2023 Aug 26	21	3	8.72	-28	9	49.2	2.497	3.442	155.4	7.0	11.7	0.38	244.7
2023 Aug 27	21	2	26.52	-28	14	10.6	2.502	3.441	154.4	7.3	11.7	0.37	245.1
2023 Aug 28	21	1	45.00	-28	18	23.6	2.506	3.439	153.3	7.6	11.7	0.37	245.4
2023 Aug 29	21	1	4.20	-28	22	28.3	2.511	3.438	152.3	7.8	11.7	0.36	245.7
2023 Aug 30	21	0	24.15	-28	26	24.7	2.516	3.436	151.3	8.1	11.7	0.35	246.1
2023 Aug 31	20	59	44.89	-28	30	12.6	2.522	3.435	150.2	8.4	11.7	0.34	246.4
2023 Sep 1	20	59	6.45	-28	33	52.0	2.527	3.433	149.2	8.7	11.8	0.33	246.7
2023 Sep 2	20	58	28.86	-28	37	23.0	2.533	3.432	148.1	8.9	11.8	0.33	247.1
2023 Sep 3	20	57	52.15	-28	40	45.5	2.539	3.430	147.1	9.2	11.8	0.32	247.4
2023 Sep 4	20	57	16.36	-28	43	59.4	2.545	3.429	146.0	9.5	11.8	0.31	247.8
2023 Sep 5	20	56	41.52	-28	47	4.8	2.552	3.427	145.0	9.7	11.8	0.30	248.1
2023 Sep 6	20	56	7.66	-28	50	1.7	2.559	3.426	143.9	10.0	11.8	0.29	248.5
2023 Sep 7	20	55	34.81	-28	52	50.1	2.566	3.424	142.9	10.2	11.8	0.28	248.9
2023 Sep 8	20	55	2.99	-28	55	29.9	2.573	3.423	141.9	10.5	11.9	0.27	249.3
2023 Sep 9	20	54	32.24	-28	58	1.2	2.580	3.421	140.8	10.7	11.9	0.26	249.6
2023 Sep 10	20	54	2.59	-29	0	24.0	2.588	3.420	139.8	11.0	11.9	0.25	250.0
2023 Sep 11	20	53	34.05	-29	2	38.4	2.596	3.418	138.7	11.2	11.9	0.24	250.5
2023 Sep 12	20	53	6.66	-29	4	44.4	2.604	3.416	137.7	11.4	11.9	0.23	250.9
2023 Sep 13	20	52	40.44	-29	6	41.9	2.612	3.415	136.7	11.7	11.9	0.22	251.3
2023 Sep 14	20	52	15.40	-29	8	31.2	2.621	3.413	135.6	11.9	11.9	0.21	251.8
2023 Sep 15	20	51	51.58	-29	10	12.2	2.629	3.412	134.6	12.1	12.0	0.20	252.3
2023 Sep 16	20	51	28.98	-29	11	44.9	2.638	3.410	133.6	12.3	12.0	0.18	252.9
2023 Sep 17	20	51	7.62	-29	13	9.6	2.647	3.409	132.6	12.5	12.0	0.17	253.5
2023 Sep 18	20	50	47.53	-29	14	26.1	2.656	3.407	131.6	12.8	12.0	0.16	254.1
2023 Sep 19	20	50	28.72	-29	15	34.7	2.666	3.406	130.5	13.0	12.0	0.15	254.8
2023 Sep 20	20	50	11.19	-29	16	35.4	2.675	3.404	129.5	13.2	12.0	0.14	255.6
2023 Sep 21	20	49	54.97	-29	17	28.2	2.685	3.403	128.5	13.3	12.0	0.13	256.5
2023 Sep 22	20	49	40.05	-29	18	13.3	2.695	3.401	127.5	13.5	12.1	0.12	257.5

2023	Sep	23	20	49	26.44	-29	18	50.8	2.705	3.399	126.5	13.7	12.1	0.11	258.7
2023	Sep	24	20	49	14.16	-29	19	20.7	2.715	3.398	125.5	13.9	12.1	0.09	260.2
2023	Sep	25	20	49	3.21	-29	19	43.2	2.726	3.396	124.5	14.1	12.1	0.08	262.0
2023	Sep	26	20	48	53.59	-29	19	58.4	2.736	3.395	123.6	14.3	12.1	0.07	264.4
2023	Sep	27	20	48	45.30	-29	20	6.4	2.747	3.393	122.6	14.4	12.1	0.06	267.5
2023	Sep	28	20	48	38.34	-29	20	7.2	2.757	3.392	121.6	14.6	12.1	0.05	271.9
2023	Sep	29	20	48	32.72	-29	20	1.0	2.768	3.390	120.6	14.7	12.2	0.04	278.5
2023	Sep	30	20	48	28.43	-29	19	47.9	2.779	3.389	119.7	14.9	12.2	0.03	289.3
2023	Oct	1	20	48	25.47	-29	19	27.9	2.790	3.387	118.7	15.0	12.2	0.02	308.0
2023	Oct	2	20	48	23.84	-29	19	1.2	2.802	3.385	117.7	15.2	12.2	0.02	337.4
2023	Oct	3	20	48	23.54	-29	18	27.9	2.813	3.384	116.8	15.3	12.2	0.02	7.6
2023	Oct	4	20	48	24.58	-29	17	48.0	2.824	3.382	115.8	15.4	12.2	0.03	27.3
2023	Oct	5	20	48	26.93	-29	17	1.7	2.836	3.381	114.9	15.6	12.2	0.04	38.6
2023	Oct	6	20	48	30.62	-29	16	9.0	2.848	3.379	113.9	15.7	12.2	0.05	45.5
2023	Oct	7	20	48	35.63	-29	15	9.9	2.859	3.377	113.0	15.8	12.3	0.06	50.1
2023	Oct	8	20	48	41.95	-29	14	4.7	2.871	3.376	112.0	15.9	12.3	0.07	53.2
2023	Oct	9	20	48	49.60	-29	12	53.3	2.883	3.374	111.1	16.0	12.3	0.08	55.6
2023	Oct	10	20	48	58.55	-29	11	35.9	2.895	3.373	110.2	16.1	12.3	0.09	57.4
2023	Oct	11	20	49	8.81	-29	10	12.5	2.907	3.371	109.3	16.2	12.3	0.10	58.9
2023	Oct	12	20	49	20.36	-29	8	43.2	2.919	3.369	108.3	16.3	12.3	0.11	60.0
2023	Oct	13	20	49	33.21	-29	7	8.2	2.932	3.368	107.4	16.4	12.3	0.12	61.0
2023	Oct	14	20	49	47.35	-29	5	27.4	2.944	3.366	106.5	16.5	12.3	0.13	61.8
2023	Oct	15	20	50	2.76	-29	3	40.9	2.956	3.365	105.6	16.6	12.3	0.15	62.6
2023	Oct	16	20	50	19.43	-29	1	48.9	2.969	3.363	104.7	16.7	12.4	0.16	63.2
2023	Oct	17	20	50	37.37	-28	59	51.4	2.981	3.361	103.8	16.7	12.4	0.17	63.7
2023	Oct	18	20	50	56.55	-28	57	48.5	2.994	3.360	102.9	16.8	12.4	0.18	64.2
2023	Oct	19	20	51	16.97	-28	55	40.3	3.006	3.358	102.0	16.9	12.4	0.19	64.6
2023	Oct	20	20	51	38.62	-28	53	26.8	3.019	3.356	101.1	16.9	12.4	0.20	65.0
2023	Oct	21	20	52	1.47	-28	51	8.2	3.032	3.355	100.2	17.0	12.4	0.21	65.4
2023	Oct	22	20	52	25.53	-28	48	44.5	3.044	3.353	99.3	17.0	12.4	0.22	65.7
2023	Oct	23	20	52	50.76	-28	46	15.7	3.057	3.352	98.5	17.1	12.4	0.23	66.0

2023	Oct	24	20	53	17.17	-28	43	42.0	3.070	3.350	97.6	17.1	12.4	0.24	66.3
2023	Oct	25	20	53	44.74	-28	41	3.4	3.083	3.348	96.7	17.2	12.4	0.25	66.5
2023	Oct	26	20	54	13.44	-28	38	20.1	3.096	3.347	95.9	17.2	12.5	0.26	66.7
2023	Oct	27	20	54	43.27	-28	35	31.9	3.108	3.345	95.0	17.2	12.5	0.27	66.9
2023	Oct	28	20	55	14.22	-28	32	39.2	3.121	3.343	94.1	17.2	12.5	0.28	67.1
2023	Oct	29	20	55	46.26	-28	29	41.8	3.134	3.342	93.3	17.3	12.5	0.29	67.3

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T 2023 Aug 1.0000 TT

MA 67.556028°

q 2.7912611

ω 312.484353°

a 3.1399879

Ω 283.173444°

e 0.1110599

i 3.831796°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jul 1	21	39	39.75	-11	31	26.6	2.201	3.009	135.2	13.8	10.5	0.15	272.5
2023 Jul 2	21	39	22.08	-11	31	19.0	2.192	3.010	136.3	13.5	10.5	0.17	270.9
2023 Jul 3	21	39	3.14	-11	31	17.7	2.184	3.011	137.3	13.2	10.5	0.18	269.6
2023 Jul 4	21	38	42.96	-11	31	22.8	2.176	3.012	138.3	13.0	10.4	0.19	268.4
2023 Jul 5	21	38	21.52	-11	31	34.2	2.168	3.013	139.4	12.7	10.4	0.20	267.4
2023 Jul 6	21	37	58.86	-11	31	51.9	2.161	3.014	140.4	12.4	10.4	0.21	266.5
2023 Jul 7	21	37	34.97	-11	32	15.9	2.153	3.015	141.4	12.1	10.4	0.22	265.7
2023 Jul 8	21	37	9.87	-11	32	46.1	2.146	3.016	142.5	11.8	10.4	0.23	265.0
2023 Jul 9	21	36	43.58	-11	33	22.4	2.139	3.018	143.5	11.6	10.4	0.24	264.3
2023 Jul 10	21	36	16.11	-11	34	4.9	2.132	3.019	144.6	11.3	10.3	0.25	263.7
2023 Jul 11	21	35	47.48	-11	34	53.3	2.125	3.020	145.7	10.9	10.3	0.27	263.2
2023 Jul 12	21	35	17.71	-11	35	47.8	2.119	3.021	146.7	10.6	10.3	0.28	262.7
2023 Jul 13	21	34	46.82	-11	36	48.1	2.113	3.022	147.8	10.3	10.3	0.29	262.2
2023 Jul 14	21	34	14.84	-11	37	54.2	2.107	3.023	148.9	10.0	10.3	0.30	261.8
2023 Jul 15	21	33	41.78	-11	39	6.0	2.101	3.024	150.0	9.7	10.2	0.31	261.4
2023 Jul 16	21	33	7.69	-11	40	23.4	2.095	3.025	151.0	9.4	10.2	0.32	261.0
2023 Jul 17	21	32	32.58	-11	41	46.2	2.090	3.026	152.1	9.0	10.2	0.33	260.7
2023 Jul 18	21	31	56.50	-11	43	14.4	2.085	3.027	153.2	8.7	10.2	0.33	260.4
2023 Jul 19	21	31	19.46	-11	44	47.7	2.080	3.028	154.3	8.4	10.2	0.34	260.1
2023 Jul 20	21	30	41.51	-11	46	26.0	2.075	3.029	155.4	8.0	10.2	0.35	259.9
2023 Jul 21	21	30	2.68	-11	48	9.3	2.071	3.030	156.5	7.7	10.1	0.36	259.6
2023 Jul 22	21	29	23.01	-11	49	57.2	2.067	3.031	157.6	7.3	10.1	0.37	259.4

2023	Jul	23	21	28	42.54	-11	51	49.7	2.063	3.032	158.7	7.0	10.1	0.38	259.2
2023	Jul	24	21	28	1.30	-11	53	46.6	2.059	3.033	159.9	6.6	10.1	0.38	259.0
2023	Jul	25	21	27	19.33	-11	55	47.6	2.056	3.034	161.0	6.3	10.1	0.39	258.8
2023	Jul	26	21	26	36.69	-11	57	52.7	2.053	3.036	162.1	5.9	10.0	0.40	258.6
2023	Jul	27	21	25	53.40	-12	0	1.6	2.050	3.037	163.2	5.5	10.0	0.40	258.4
2023	Jul	28	21	25	9.51	-12	2	14.2	2.048	3.038	164.3	5.2	10.0	0.41	258.3
2023	Jul	29	21	24	25.06	-12	4	30.1	2.045	3.039	165.4	4.8	10.0	0.41	258.1
2023	Jul	30	21	23	40.10	-12	6	49.4	2.043	3.040	166.5	4.5	10.0	0.42	258.0
2023	Jul	31	21	22	54.67	-12	9	11.7	2.041	3.041	167.6	4.1	9.9	0.42	257.9
2023	Aug	1	21	22	8.82	-12	11	36.9	2.040	3.042	168.7	3.7	9.9	0.42	257.8
2023	Aug	2	21	21	22.58	-12	14	4.7	2.039	3.043	169.8	3.4	9.9	0.43	257.6
2023	Aug	3	21	20	36.01	-12	16	35.1	2.038	3.044	170.9	3.0	9.9	0.43	257.5
2023	Aug	4	21	19	49.14	-12	19	7.7	2.037	3.045	172.0	2.7	9.8	0.43	257.4
2023	Aug	5	21	19	2.02	-12	21	42.5	2.037	3.046	173.0	2.3	9.8	0.44	257.3
2023	Aug	6	21	18	14.70	-12	24	19.2	2.037	3.047	174.0	2.0	9.8	0.44	257.2
2023	Aug	7	21	17	27.22	-12	26	57.7	2.037	3.048	175.0	1.7	9.8	0.44	257.1
2023	Aug	8	21	16	39.64	-12	29	37.7	2.037	3.049	175.8	1.4	9.8	0.44	257.0
2023	Aug	9	21	15	52.00	-12	32	19.0	2.038	3.050	176.4	1.2	9.7	0.44	256.9
2023	Aug	10	21	15	4.35	-12	35	1.4	2.039	3.052	176.8	1.1	9.7	0.44	256.8
2023	Aug	11	21	14	16.74	-12	37	44.8	2.040	3.053	176.7	1.1	9.7	0.44	256.8
2023	Aug	12	21	13	29.23	-12	40	28.8	2.042	3.054	176.3	1.2	9.8	0.44	256.7
2023	Aug	13	21	12	41.87	-12	43	13.4	2.043	3.055	175.6	1.5	9.8	0.44	256.6
2023	Aug	14	21	11	54.70	-12	45	58.2	2.046	3.056	174.7	1.8	9.8	0.43	256.5
2023	Aug	15	21	11	7.79	-12	48	43.1	2.048	3.057	173.7	2.1	9.8	0.43	256.5
2023	Aug	16	21	10	21.17	-12	51	27.9	2.051	3.058	172.7	2.4	9.9	0.43	256.4
2023	Aug	17	21	9	34.90	-12	54	12.3	2.054	3.059	171.7	2.7	9.9	0.43	256.3
2023	Aug	18	21	8	49.03	-12	56	56.2	2.057	3.060	170.6	3.1	9.9	0.42	256.2
2023	Aug	19	21	8	3.60	-12	59	39.3	2.060	3.061	169.5	3.4	9.9	0.42	256.2
2023	Aug	20	21	7	18.68	-13	2	21.4	2.064	3.062	168.4	3.8	10.0	0.41	256.1
2023	Aug	21	21	6	34.30	-13	5	2.4	2.068	3.063	167.3	4.2	10.0	0.41	256.0
2023	Aug	22	21	5	50.50	-13	7	42.0	2.073	3.064	166.2	4.5	10.0	0.40	256.0

2023 Aug 23	21	5	7.34	-13	10	20.2	2.077	3.066	165.1	4.9	10.0	0.40	255.9
2023 Aug 24	21	4	24.86	-13	12	56.6	2.082	3.067	164.0	5.2	10.1	0.39	255.8
2023 Aug 25	21	3	43.10	-13	15	31.1	2.087	3.068	162.9	5.6	10.1	0.38	255.7
2023 Aug 26	21	3	2.09	-13	18	3.6	2.093	3.069	161.7	5.9	10.1	0.38	255.7
2023 Aug 27	21	2	21.88	-13	20	33.9	2.098	3.070	160.6	6.3	10.1	0.37	255.6
2023 Aug 28	21	1	42.50	-13	23	1.8	2.104	3.071	159.5	6.6	10.2	0.36	255.5
2023 Aug 29	21	1	3.99	-13	25	27.3	2.110	3.072	158.4	7.0	10.2	0.35	255.4
2023 Aug 30	21	0	26.37	-13	27	50.1	2.117	3.073	157.3	7.3	10.2	0.34	255.4
2023 Aug 31	20	59	49.69	-13	30	10.2	2.123	3.074	156.2	7.6	10.2	0.34	255.3
2023 Sep 1	20	59	13.96	-13	32	27.5	2.130	3.075	155.1	7.9	10.2	0.33	255.2
2023 Sep 2	20	58	39.23	-13	34	41.7	2.137	3.076	154.0	8.3	10.3	0.32	255.1
2023 Sep 3	20	58	5.51	-13	36	52.9	2.145	3.077	152.9	8.6	10.3	0.31	255.0
2023 Sep 4	20	57	32.83	-13	39	1.0	2.153	3.079	151.8	8.9	10.3	0.30	254.9
2023 Sep 5	20	57	1.23	-13	41	5.7	2.160	3.080	150.7	9.2	10.3	0.29	254.8
2023 Sep 6	20	56	30.72	-13	43	7.0	2.169	3.081	149.6	9.5	10.4	0.28	254.7
2023 Sep 7	20	56	1.33	-13	45	4.9	2.177	3.082	148.5	9.8	10.4	0.27	254.5
2023 Sep 8	20	55	33.10	-13	46	59.2	2.185	3.083	147.4	10.1	10.4	0.26	254.4
2023 Sep 9	20	55	6.03	-13	48	49.8	2.194	3.084	146.4	10.4	10.4	0.25	254.3
2023 Sep 10	20	54	40.15	-13	50	36.6	2.203	3.085	145.3	10.7	10.4	0.24	254.1
2023 Sep 11	20	54	15.49	-13	52	19.6	2.213	3.086	144.2	11.0	10.5	0.22	253.9
2023 Sep 12	20	53	52.05	-13	53	58.6	2.222	3.087	143.1	11.3	10.5	0.21	253.7
2023 Sep 13	20	53	29.87	-13	55	33.5	2.232	3.088	142.1	11.6	10.5	0.20	253.5
2023 Sep 14	20	53	8.95	-13	57	4.4	2.242	3.089	141.0	11.8	10.5	0.19	253.3
2023 Sep 15	20	52	49.31	-13	58	31.1	2.252	3.090	140.0	12.1	10.5	0.18	253.0
2023 Sep 16	20	52	30.96	-13	59	53.5	2.262	3.092	138.9	12.3	10.6	0.17	252.7
2023 Sep 17	20	52	13.92	-14	1	11.6	2.272	3.093	137.9	12.6	10.6	0.15	252.3
2023 Sep 18	20	51	58.19	-14	2	25.3	2.283	3.094	136.8	12.8	10.6	0.14	251.9
2023 Sep 19	20	51	43.78	-14	3	34.6	2.294	3.095	135.8	13.1	10.6	0.13	251.5
2023 Sep 20	20	51	30.70	-14	4	39.4	2.305	3.096	134.8	13.3	10.6	0.12	250.9
2023 Sep 21	20	51	18.96	-14	5	39.7	2.316	3.097	133.8	13.5	10.7	0.11	250.2
2023 Sep 22	20	51	8.56	-14	6	35.4	2.328	3.098	132.7	13.8	10.7	0.09	249.3

2023	Sep	23	20	50	59.50	-14	7	26.5	2.339	3.099	131.7	14.0	10.7	0.08	248.2
2023	Sep	24	20	50	51.77	-14	8	13.0	2.351	3.100	130.7	14.2	10.7	0.07	246.7
2023	Sep	25	20	50	45.39	-14	8	54.8	2.363	3.101	129.7	14.4	10.7	0.06	244.6
2023	Sep	26	20	50	40.35	-14	9	31.9	2.375	3.102	128.7	14.6	10.8	0.04	241.3
2023	Sep	27	20	50	36.64	-14	10	4.3	2.387	3.103	127.7	14.8	10.8	0.03	235.8
2023	Sep	28	20	50	34.26	-14	10	32.0	2.399	3.105	126.7	15.0	10.8	0.02	224.5
2023	Sep	29	20	50	33.20	-14	10	55.0	2.412	3.106	125.7	15.2	10.8	0.01	195.4
2023	Sep	30	20	50	33.47	-14	11	13.3	2.425	3.107	124.8	15.4	10.8	0.01	139.8
2023	Oct	1	20	50	35.04	-14	11	26.8	2.437	3.108	123.8	15.5	10.8	0.02	109.0
2023	Oct	2	20	50	37.93	-14	11	35.7	2.450	3.109	122.8	15.7	10.9	0.03	97.1
2023	Oct	3	20	50	42.12	-14	11	39.8	2.463	3.110	121.9	15.9	10.9	0.04	91.4
2023	Oct	4	20	50	47.60	-14	11	39.1	2.476	3.111	120.9	16.0	10.9	0.05	88.0
2023	Oct	5	20	50	54.38	-14	11	33.7	2.490	3.112	119.9	16.2	10.9	0.07	85.9
2023	Oct	6	20	51	2.44	-14	11	23.5	2.503	3.113	119.0	16.3	10.9	0.08	84.3
2023	Oct	7	20	51	11.78	-14	11	8.6	2.517	3.114	118.0	16.5	11.0	0.09	83.2
2023	Oct	8	20	51	22.39	-14	10	48.8	2.530	3.115	117.1	16.6	11.0	0.10	82.3
2023	Oct	9	20	51	34.27	-14	10	24.3	2.544	3.116	116.2	16.7	11.0	0.11	81.6
2023	Oct	10	20	51	47.40	-14	9	54.9	2.558	3.118	115.2	16.8	11.0	0.12	81.0
2023	Oct	11	20	52	1.78	-14	9	20.7	2.572	3.119	114.3	17.0	11.0	0.14	80.5
2023	Oct	12	20	52	17.39	-14	8	41.7	2.586	3.120	113.4	17.1	11.0	0.15	80.0
2023	Oct	13	20	52	34.23	-14	7	57.8	2.600	3.121	112.5	17.2	11.1	0.16	79.7
2023	Oct	14	20	52	52.28	-14	7	9.1	2.614	3.122	111.6	17.3	11.1	0.17	79.3
2023	Oct	15	20	53	11.54	-14	6	15.6	2.629	3.123	110.6	17.4	11.1	0.18	79.0
2023	Oct	16	20	53	32.00	-14	5	17.2	2.643	3.124	109.7	17.5	11.1	0.19	78.8
2023	Oct	17	20	53	53.63	-14	4	13.9	2.657	3.125	108.8	17.6	11.1	0.20	78.5
2023	Oct	18	20	54	16.44	-14	3	5.8	2.672	3.126	107.9	17.7	11.1	0.21	78.3
2023	Oct	19	20	54	40.40	-14	1	52.8	2.687	3.127	107.1	17.7	11.1	0.22	78.1
2023	Oct	20	20	55	5.49	-14	0	35.0	2.701	3.128	106.2	17.8	11.2	0.23	77.9
2023	Oct	21	20	55	31.72	-13	59	12.4	2.716	3.129	105.3	17.9	11.2	0.25	77.7
2023	Oct	22	20	55	59.05	-13	57	44.9	2.731	3.131	104.4	17.9	11.2	0.26	77.5
2023	Oct	23	20	56	27.48	-13	56	12.7	2.746	3.132	103.5	18.0	11.2	0.27	77.3

2023	Oct	24	20	56	56.99	-13	54	35.6	2.761	3.133	102.7	18.1	11.2	0.28	77.2
2023	Oct	25	20	57	27.56	-13	52	53.8	2.776	3.134	101.8	18.1	11.2	0.29	77.0
2023	Oct	26	20	57	59.17	-13	51	7.2	2.791	3.135	100.9	18.1	11.2	0.30	76.9
2023	Oct	27	20	58	31.82	-13	49	15.9	2.806	3.136	100.1	18.2	11.3	0.30	76.8
2023	Oct	28	20	59	5.48	-13	47	19.9	2.821	3.137	99.2	18.2	11.3	0.31	76.6
2023	Oct	29	20	59	40.14	-13	45	19.2	2.836	3.138	98.4	18.3	11.3	0.32	76.5

8 Flora

1 uur UTC (J2000)

Osculerende baanelementen

T 2023 Aug 1.0000 TT

MA 304.298961°

q 1.8567009

ω 285.609094°

a 2.2010821

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e 0.1564599

i 5.889203°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Jul 1	22	46	17.73	-11	32	50.3	1.403	2.104	120.0	24.7	10.1	0.33	96.6
2023 Jul 2	22	46	52.88	-11	33	57.4	1.392	2.102	120.8	24.5	10.1	0.31	98.2
2023 Jul 3	22	47	26.55	-11	35	16.4	1.381	2.100	121.6	24.3	10.0	0.30	100.0
2023 Jul 4	22	47	58.69	-11	36	47.5	1.370	2.099	122.5	24.1	10.0	0.29	101.9
2023 Jul 5	22	48	29.30	-11	38	30.9	1.359	2.097	123.3	23.9	10.0	0.28	104.0
2023 Jul 6	22	48	58.34	-11	40	26.6	1.348	2.095	124.2	23.7	10.0	0.27	106.4
2023 Jul 7	22	49	25.79	-11	42	34.9	1.337	2.093	125.0	23.4	9.9	0.25	109.0
2023 Jul 8	22	49	51.61	-11	44	56.0	1.327	2.091	125.9	23.2	9.9	0.24	111.9
2023 Jul 9	22	50	15.79	-11	47	29.9	1.316	2.090	126.7	22.9	9.9	0.23	115.1
2023 Jul 10	22	50	38.30	-11	50	16.8	1.306	2.088	127.6	22.7	9.9	0.22	118.6
2023 Jul 11	22	50	59.10	-11	53	16.8	1.295	2.086	128.5	22.4	9.8	0.21	122.5
2023 Jul 12	22	51	18.19	-11	56	30.1	1.285	2.084	129.4	22.1	9.8	0.21	126.8
2023 Jul 13	22	51	35.53	-11	59	56.7	1.275	2.082	130.3	21.9	9.8	0.20	131.5
2023 Jul 14	22	51	51.11	-12	3	36.7	1.265	2.081	131.2	21.6	9.8	0.19	136.5
2023 Jul 15	22	52	4.90	-12	7	30.1	1.255	2.079	132.1	21.3	9.7	0.19	141.8
2023 Jul 16	22	52	16.89	-12	11	37.0	1.246	2.077	133.0	21.0	9.7	0.19	147.4
2023 Jul 17	22	52	27.06	-12	15	57.4	1.236	2.075	134.0	20.6	9.7	0.18	153.1
2023 Jul 18	22	52	35.39	-12	20	31.2	1.227	2.073	134.9	20.3	9.6	0.18	158.9
2023 Jul 19	22	52	41.87	-12	25	18.5	1.218	2.072	135.9	20.0	9.6	0.19	164.6
2023 Jul 20	22	52	46.49	-12	30	19.2	1.208	2.070	136.8	19.6	9.6	0.19	170.1
2023 Jul 21	22	52	49.23	-12	35	33.3	1.200	2.068	137.8	19.3	9.5	0.20	175.3
2023 Jul 22	22	52	50.10	-12	41	0.6	1.191	2.066	138.7	18.9	9.5	0.21	180.2

2023	Jul	23	22	52	49.07	-12	46	40.9	1.182	2.065	139.7	18.6	9.5	0.21	184.8
2023	Jul	24	22	52	46.16	-12	52	34.3	1.174	2.063	140.7	18.2	9.5	0.22	188.9
2023	Jul	25	22	52	41.34	-12	58	40.5	1.165	2.061	141.7	17.8	9.4	0.23	192.8
2023	Jul	26	22	52	34.63	-13	4	59.4	1.157	2.059	142.7	17.4	9.4	0.25	196.2
2023	Jul	27	22	52	26.01	-13	11	30.6	1.149	2.057	143.7	17.0	9.4	0.26	199.4
2023	Jul	28	22	52	15.50	-13	18	14.1	1.141	2.056	144.7	16.6	9.3	0.27	202.2
2023	Jul	29	22	52	3.09	-13	25	9.6	1.134	2.054	145.7	16.2	9.3	0.29	204.8
2023	Jul	30	22	51	48.79	-13	32	16.7	1.126	2.052	146.8	15.7	9.3	0.30	207.2
2023	Jul	31	22	51	32.60	-13	39	35.3	1.119	2.050	147.8	15.3	9.2	0.31	209.3
2023	Aug	1	22	51	14.54	-13	47	5.0	1.112	2.049	148.8	14.9	9.2	0.33	211.3
2023	Aug	2	22	50	54.61	-13	54	45.5	1.105	2.047	149.9	14.4	9.2	0.34	213.1
2023	Aug	3	22	50	32.81	-14	2	36.5	1.098	2.045	150.9	14.0	9.2	0.36	214.8
2023	Aug	4	22	50	9.16	-14	10	37.6	1.091	2.043	152.0	13.5	9.1	0.37	216.3
2023	Aug	5	22	49	43.68	-14	18	48.4	1.085	2.042	153.0	13.0	9.1	0.39	217.7
2023	Aug	6	22	49	16.38	-14	27	8.6	1.079	2.040	154.1	12.6	9.1	0.40	219.1
2023	Aug	7	22	48	47.28	-14	35	37.6	1.073	2.038	155.1	12.1	9.0	0.41	220.3
2023	Aug	8	22	48	16.40	-14	44	15.0	1.067	2.037	156.2	11.6	9.0	0.43	221.5
2023	Aug	9	22	47	43.79	-14	53	0.3	1.062	2.035	157.3	11.1	9.0	0.44	222.5
2023	Aug	10	22	47	9.46	-15	1	52.9	1.056	2.033	158.3	10.6	8.9	0.45	223.5
2023	Aug	11	22	46	33.47	-15	10	52.2	1.051	2.031	159.4	10.1	8.9	0.47	224.5
2023	Aug	12	22	45	55.84	-15	19	57.6	1.046	2.030	160.4	9.6	8.9	0.48	225.4
2023	Aug	13	22	45	16.64	-15	29	8.4	1.041	2.028	161.5	9.1	8.8	0.49	226.2
2023	Aug	14	22	44	35.92	-15	38	24.0	1.037	2.026	162.5	8.6	8.8	0.50	227.0
2023	Aug	15	22	43	53.72	-15	47	43.6	1.033	2.025	163.6	8.1	8.8	0.51	227.8
2023	Aug	16	22	43	10.12	-15	57	6.5	1.028	2.023	164.6	7.6	8.7	0.52	228.5
2023	Aug	17	22	42	25.17	-16	6	32.0	1.025	2.021	165.6	7.2	8.7	0.53	229.2
2023	Aug	18	22	41	38.95	-16	15	59.3	1.021	2.019	166.6	6.7	8.7	0.54	229.9
2023	Aug	19	22	40	51.53	-16	25	27.6	1.018	2.018	167.5	6.2	8.6	0.55	230.5
2023	Aug	20	22	40	2.98	-16	34	56.1	1.014	2.016	168.4	5.8	8.6	0.56	231.2
2023	Aug	21	22	39	13.38	-16	44	23.9	1.012	2.014	169.2	5.4	8.6	0.56	231.8
2023	Aug	22	22	38	22.81	-16	53	50.4	1.009	2.013	170.0	5.0	8.6	0.57	232.3

2023	Aug	23	22	37	31.37	-17	3	14.6	1.006	2.011	170.7	4.7	8.5	0.57	232.9
2023	Aug	24	22	36	39.12	-17	12	35.8	1.004	2.009	171.2	4.4	8.5	0.58	233.4
2023	Aug	25	22	35	46.18	-17	21	53.2	1.002	2.008	171.6	4.2	8.5	0.58	233.9
2023	Aug	26	22	34	52.61	-17	31	5.9	1.000	2.006	171.9	4.1	8.5	0.58	234.5
2023	Aug	27	22	33	58.52	-17	40	13.3	0.999	2.005	172.0	4.0	8.5	0.58	235.0
2023	Aug	28	22	33	4.00	-17	49	14.4	0.998	2.003	171.9	4.1	8.5	0.58	235.5
2023	Aug	29	22	32	9.13	-17	58	8.7	0.997	2.001	171.6	4.2	8.5	0.58	235.9
2023	Aug	30	22	31	14.02	-18	6	55.4	0.996	2.000	171.2	4.5	8.5	0.58	236.4
2023	Aug	31	22	30	18.74	-18	15	33.7	0.995	1.998	170.6	4.7	8.5	0.58	236.9
2023	Sep	1	22	29	23.40	-18	24	3.1	0.995	1.996	169.9	5.1	8.5	0.57	237.4
2023	Sep	2	22	28	28.08	-18	32	22.9	0.995	1.995	169.1	5.5	8.5	0.57	237.8
2023	Sep	3	22	27	32.88	-18	40	32.4	0.995	1.993	168.3	5.9	8.6	0.57	238.3
2023	Sep	4	22	26	37.89	-18	48	30.9	0.995	1.992	167.3	6.4	8.6	0.56	238.7
2023	Sep	5	22	25	43.22	-18	56	18.0	0.996	1.990	166.4	6.8	8.6	0.55	239.2
2023	Sep	6	22	24	48.95	-19	3	53.0	0.997	1.988	165.4	7.3	8.6	0.55	239.6
2023	Sep	7	22	23	55.19	-19	11	15.3	0.998	1.987	164.4	7.8	8.6	0.54	240.1
2023	Sep	8	22	23	2.03	-19	18	24.3	0.999	1.985	163.3	8.4	8.7	0.53	240.5
2023	Sep	9	22	22	9.57	-19	25	19.6	1.000	1.984	162.3	8.9	8.7	0.52	241.0
2023	Sep	10	22	21	17.92	-19	32	0.6	1.002	1.982	161.2	9.4	8.7	0.51	241.5
2023	Sep	11	22	20	27.16	-19	38	26.9	1.004	1.981	160.1	9.9	8.7	0.49	241.9
2023	Sep	12	22	19	37.40	-19	44	38.0	1.006	1.979	159.1	10.5	8.8	0.48	242.4
2023	Sep	13	22	18	48.71	-19	50	33.6	1.008	1.978	158.0	11.0	8.8	0.47	242.9
2023	Sep	14	22	18	1.20	-19	56	13.2	1.011	1.976	156.9	11.5	8.8	0.45	243.4
2023	Sep	15	22	17	14.95	-20	1	36.6	1.014	1.975	155.8	12.1	8.8	0.44	243.9
2023	Sep	16	22	16	30.04	-20	6	43.4	1.017	1.973	154.7	12.6	8.9	0.42	244.4
2023	Sep	17	22	15	46.55	-20	11	33.4	1.020	1.971	153.6	13.1	8.9	0.41	244.9
2023	Sep	18	22	15	4.56	-20	16	6.4	1.023	1.970	152.5	13.6	8.9	0.39	245.5
2023	Sep	19	22	14	24.15	-20	20	22.1	1.027	1.968	151.4	14.1	8.9	0.37	246.1
2023	Sep	20	22	13	45.38	-20	24	20.5	1.030	1.967	150.3	14.7	9.0	0.36	246.7
2023	Sep	21	22	13	8.32	-20	28	1.4	1.034	1.965	149.2	15.2	9.0	0.34	247.4
2023	Sep	22	22	12	33.02	-20	31	24.8	1.038	1.964	148.1	15.7	9.0	0.32	248.1

2023	Sep	23	22	11	59.54	-20	34	30.5	1.043	1.963	147.1	16.1	9.0	0.30	248.8
2023	Sep	24	22	11	27.94	-20	37	18.6	1.047	1.961	146.0	16.6	9.1	0.28	249.7
2023	Sep	25	22	10	58.25	-20	39	49.1	1.052	1.960	144.9	17.1	9.1	0.26	250.6
2023	Sep	26	22	10	30.51	-20	42	2.1	1.057	1.958	143.9	17.6	9.1	0.24	251.7
2023	Sep	27	22	10	4.76	-20	43	57.6	1.062	1.957	142.8	18.0	9.1	0.22	252.9
2023	Sep	28	22	9	41.03	-20	45	35.7	1.067	1.955	141.8	18.5	9.1	0.20	254.3
2023	Sep	29	22	9	19.35	-20	46	56.6	1.072	1.954	140.8	18.9	9.2	0.18	256.0
2023	Sep	30	22	8	59.74	-20	48	0.3	1.078	1.952	139.7	19.4	9.2	0.16	258.0
2023	Oct	1	22	8	42.22	-20	48	47.0	1.083	1.951	138.7	19.8	9.2	0.14	260.6
2023	Oct	2	22	8	26.81	-20	49	16.9	1.089	1.950	137.7	20.2	9.2	0.12	263.9
2023	Oct	3	22	8	13.53	-20	49	30.1	1.095	1.948	136.7	20.6	9.3	0.11	268.4
2023	Oct	4	22	8	2.40	-20	49	26.6	1.101	1.947	135.7	21.0	9.3	0.09	274.8
2023	Oct	5	22	7	53.43	-20	49	6.8	1.107	1.945	134.7	21.4	9.3	0.07	284.3
2023	Oct	6	22	7	46.63	-20	48	30.6	1.114	1.944	133.7	21.8	9.3	0.06	299.0
2023	Oct	7	22	7	42.01	-20	47	38.3	1.120	1.943	132.8	22.2	9.4	0.05	320.7
2023	Oct	8	22	7	39.58	-20	46	30.1	1.127	1.941	131.8	22.6	9.4	0.05	346.3
2023	Oct	9	22	7	39.34	-20	45	6.1	1.133	1.940	130.8	22.9	9.4	0.06	7.6
2023	Oct	10	22	7	41.30	-20	43	26.5	1.140	1.939	129.9	23.3	9.4	0.07	21.8
2023	Oct	11	22	7	45.46	-20	41	31.4	1.147	1.937	128.9	23.6	9.4	0.09	31.0
2023	Oct	12	22	7	51.81	-20	39	21.2	1.154	1.936	128.0	24.0	9.5	0.11	37.2
2023	Oct	13	22	8	0.35	-20	36	55.8	1.162	1.935	127.1	24.3	9.5	0.13	41.5
2023	Oct	14	22	8	11.07	-20	34	15.6	1.169	1.933	126.2	24.6	9.5	0.14	44.7
2023	Oct	15	22	8	23.96	-20	31	20.8	1.176	1.932	125.3	24.9	9.5	0.16	47.2
2023	Oct	16	22	8	39.01	-20	28	11.5	1.184	1.931	124.4	25.2	9.6	0.18	49.1
2023	Oct	17	22	8	56.21	-20	24	47.9	1.191	1.930	123.5	25.5	9.6	0.20	50.6
2023	Oct	18	22	9	15.54	-20	21	10.3	1.199	1.928	122.6	25.8	9.6	0.22	51.9
2023	Oct	19	22	9	36.98	-20	17	18.9	1.207	1.927	121.7	26.1	9.6	0.24	53.0
2023	Oct	20	22	10	0.50	-20	13	13.9	1.215	1.926	120.8	26.4	9.6	0.26	53.9
2023	Oct	21	22	10	26.10	-20	8	55.5	1.223	1.925	120.0	26.6	9.7	0.28	54.7
2023	Oct	22	22	10	53.74	-20	4	24.0	1.231	1.923	119.1	26.9	9.7	0.30	55.4
2023	Oct	23	22	11	23.39	-19	59	39.5	1.239	1.922	118.3	27.1	9.7	0.32	56.1

2023 Oct 24	22 11	55.03	-19 54	42.3	1.247	1.921	117.5	27.4	9.7	0.34	56.6
2023 Oct 25	22 12	28.63	-19 49	32.7	1.256	1.920	116.6	27.6	9.7	0.36	57.1
2023 Oct 26	22 13	4.15	-19 44	10.8	1.264	1.918	115.8	27.8	9.8	0.38	57.5
2023 Oct 27	22 13	41.57	-19 38	36.9	1.272	1.917	115.0	28.0	9.8	0.39	57.9
2023 Oct 28	22 14	20.85	-19 32	51.2	1.281	1.916	114.2	28.2	9.8	0.41	58.3
2023 Oct 29	22 15	1.97	-19 26	53.9	1.289	1.915	113.4	28.4	9.8	0.43	58.6
2023 Oct 30	22 15	44.89	-19 20	45.2	1.298	1.914	112.6	28.6	9.8	0.45	58.9
2023 Oct 31	22 16	29.59	-19 14	25.2	1.307	1.913	111.8	28.8	9.9	0.46	59.1
2023 Nov 1	22 17	16.03	-19 7	54.1	1.315	1.912	111.0	29.0	9.9	0.48	59.4
2023 Nov 2	22 18	4.20	-19 1	12.1	1.324	1.910	110.3	29.2	9.9	0.50	59.6
2023 Nov 3	22 18	54.06	-18 54	19.4	1.333	1.909	109.5	29.3	9.9	0.51	59.8
2023 Nov 4	22 19	45.58	-18 47	16.0	1.342	1.908	108.8	29.5	9.9	0.53	60.0
2023 Nov 5	22 20	38.75	-18 40	2.2	1.351	1.907	108.0	29.6	9.9	0.54	60.2
2023 Nov 6	22 21	33.53	-18 32	38.1	1.360	1.906	107.3	29.8	10.0	0.56	60.4
2023 Nov 7	22 22	29.90	-18 25	3.8	1.369	1.905	106.5	29.9	10.0	0.57	60.5
2023 Nov 8	22 23	27.82	-18 17	19.5	1.378	1.904	105.8	30.1	10.0	0.59	60.7
2023 Nov 9	22 24	27.29	-18 9	25.2	1.387	1.903	105.1	30.2	10.0	0.60	60.8
2023 Nov 10	22 25	28.26	-18 1	21.2	1.396	1.902	104.3	30.3	10.0	0.62	61.0
2023 Nov 11	22 26	30.72	-17 53	7.5	1.406	1.901	103.6	30.4	10.0	0.63	61.1
2023 Nov 12	22 27	34.63	-17 44	44.3	1.415	1.900	102.9	30.5	10.1	0.65	61.2
2023 Nov 13	22 28	39.97	-17 36	11.8	1.424	1.899	102.2	30.6	10.1	0.66	61.3
2023 Nov 14	22 29	46.71	-17 27	30.0	1.434	1.898	101.5	30.7	10.1	0.68	61.4
2023 Nov 15	22 30	54.82	-17 18	39.1	1.443	1.897	100.8	30.8	10.1	0.69	61.5
2023 Nov 16	22 32	4.29	-17 9	39.3	1.452	1.896	100.1	30.9	10.1	0.70	61.6
2023 Nov 17	22 33	15.07	-17 0	30.6	1.462	1.895	99.5	31.0	10.1	0.72	61.6
2023 Nov 18	22 34	27.15	-16 51	13.2	1.471	1.894	98.8	31.1	10.2	0.73	61.7
2023 Nov 19	22 35	40.49	-16 41	47.3	1.481	1.893	98.1	31.1	10.2	0.74	61.8
2023 Nov 20	22 36	55.06	-16 32	13.0	1.490	1.892	97.5	31.2	10.2	0.75	61.9
2023 Nov 21	22 38	10.84	-16 22	30.5	1.500	1.891	96.8	31.3	10.2	0.77	61.9
2023 Nov 22	22 39	27.79	-16 12	39.8	1.509	1.890	96.1	31.3	10.2	0.78	62.0

2023	Nov	23	22	40	45.89	-16	2	41.2	1.519	1.889	95.5	31.4	10.2	0.79	62.0
2023	Nov	24	22	42	5.11	-15	52	34.9	1.528	1.888	94.9	31.4	10.2	0.80	62.1
2023	Nov	25	22	43	25.42	-15	42	20.8	1.538	1.887	94.2	31.4	10.3	0.81	62.1
2023	Nov	26	22	44	46.80	-15	31	59.2	1.547	1.887	93.6	31.5	10.3	0.82	62.2
2023	Nov	27	22	46	9.22	-15	21	30.1	1.557	1.886	92.9	31.5	10.3	0.83	62.2
2023	Nov	28	22	47	32.67	-15	10	53.8	1.567	1.885	92.3	31.5	10.3	0.84	62.2

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Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Nov 1	6	12	19.01	33	19	7.7	2.078	2.767	124.8	17.1	11.0	0.08	220.5
2023 Nov 2	6	12	11.00	33	17	22.2	2.068	2.769	125.8	16.9	11.0	0.10	226.4
2023 Nov 3	6	12	1.07	33	15	33.3	2.059	2.770	126.8	16.7	11.0	0.11	231.0
2023 Nov 4	6	11	49.23	33	13	40.9	2.050	2.771	127.8	16.4	10.9	0.12	234.6
2023 Nov 5	6	11	35.47	33	11	44.7	2.041	2.773	128.9	16.2	10.9	0.13	237.4
2023 Nov 6	6	11	19.79	33	9	44.7	2.032	2.774	129.9	15.9	10.9	0.15	239.7
2023 Nov 7	6	11	2.21	33	7	40.7	2.023	2.775	131.0	15.6	10.9	0.16	241.6
2023 Nov 8	6	10	42.72	33	5	32.7	2.014	2.777	132.0	15.4	10.9	0.18	243.1
2023 Nov 9	6	10	21.34	33	3	20.3	2.006	2.778	133.1	15.1	10.8	0.19	244.4
2023 Nov 10	6	9	58.08	33	1	3.6	1.997	2.779	134.1	14.8	10.8	0.21	245.5
2023 Nov 11	6	9	32.95	32	58	42.2	1.989	2.781	135.2	14.5	10.8	0.22	246.3
2023 Nov 12	6	9	5.96	32	56	16.2	1.981	2.782	136.3	14.2	10.8	0.23	247.1
2023 Nov 13	6	8	37.14	32	53	45.2	1.974	2.784	137.4	13.9	10.8	0.25	247.7
2023 Nov 14	6	8	6.51	32	51	9.2	1.966	2.785	138.4	13.6	10.8	0.26	248.2
2023 Nov 15	6	7	34.10	32	48	28.1	1.959	2.786	139.5	13.3	10.7	0.28	248.7
2023 Nov 16	6	6	59.93	32	45	41.5	1.952	2.788	140.6	13.0	10.7	0.29	249.0
2023 Nov 17	6	6	24.03	32	42	49.5	1.945	2.789	141.7	12.7	10.7	0.30	249.3
2023 Nov 18	6	5	46.44	32	39	51.9	1.938	2.791	142.9	12.4	10.7	0.32	249.6
2023 Nov 19	6	5	7.20	32	36	48.4	1.931	2.792	144.0	12.0	10.7	0.33	249.8
2023 Nov 20	6	4	26.33	32	33	39.1	1.925	2.793	145.1	11.7	10.6	0.34	249.9
2023 Nov 21	6	3	43.90	32	30	23.7	1.919	2.795	146.2	11.3	10.6	0.36	250.0
2023 Nov 22	6	2	59.93	32	27	2.1	1.913	2.796	147.3	11.0	10.6	0.37	250.1

2023	Nov	23	6	2	14.47	32	23	34.2	1.908	2.797	148.5	10.6	10.6	0.38	250.2
2023	Nov	24	6	1	27.57	32	19	59.9	1.902	2.799	149.6	10.3	10.6	0.39	250.2
2023	Nov	25	6	0	39.28	32	16	19.1	1.897	2.800	150.8	9.9	10.6	0.41	250.2
2023	Nov	26	5	59	49.64	32	12	31.7	1.892	2.802	151.9	9.5	10.5	0.42	250.1
2023	Nov	27	5	58	58.70	32	8	37.6	1.888	2.803	153.1	9.2	10.5	0.43	250.1
2023	Nov	28	5	58	6.52	32	4	36.7	1.883	2.805	154.2	8.8	10.5	0.44	250.0
2023	Nov	29	5	57	13.15	32	0	28.9	1.879	2.806	155.3	8.4	10.5	0.45	249.9
2023	Nov	30	5	56	18.64	31	56	14.3	1.875	2.807	156.5	8.1	10.5	0.46	249.8
2023	Dec	1	5	55	23.07	31	51	52.6	1.872	2.809	157.6	7.7	10.4	0.47	249.6
2023	Dec	2	5	54	26.48	31	47	24.0	1.868	2.810	158.8	7.3	10.4	0.48	249.5
2023	Dec	3	5	53	28.93	31	42	48.3	1.865	2.812	159.9	6.9	10.4	0.49	249.3
2023	Dec	4	5	52	30.51	31	38	5.6	1.862	2.813	161.1	6.5	10.4	0.49	249.2
2023	Dec	5	5	51	31.27	31	33	15.9	1.860	2.815	162.2	6.1	10.4	0.50	249.0
2023	Dec	6	5	50	31.28	31	28	19.2	1.858	2.816	163.3	5.8	10.3	0.51	248.7
2023	Dec	7	5	49	30.62	31	23	15.5	1.856	2.817	164.4	5.4	10.3	0.52	248.5
2023	Dec	8	5	48	29.35	31	18	4.9	1.854	2.819	165.5	5.0	10.3	0.52	248.3
2023	Dec	9	5	47	27.56	31	12	47.5	1.853	2.820	166.6	4.6	10.3	0.53	248.0
2023	Dec	10	5	46	25.32	31	7	23.3	1.852	2.822	167.6	4.3	10.3	0.53	247.8
2023	Dec	11	5	45	22.71	31	1	52.4	1.851	2.823	168.6	3.9	10.2	0.54	247.5
2023	Dec	12	5	44	19.81	30	56	15.0	1.851	2.825	169.6	3.6	10.2	0.54	247.2
2023	Dec	13	5	43	16.70	30	50	31.2	1.850	2.826	170.5	3.3	10.2	0.54	246.9
2023	Dec	14	5	42	13.46	30	44	41.2	1.850	2.827	171.3	3.0	10.2	0.55	246.6
2023	Dec	15	5	41	10.17	30	38	45.1	1.851	2.829	171.9	2.8	10.2	0.55	246.3
2023	Dec	16	5	40	6.91	30	32	43.1	1.852	2.830	172.5	2.6	10.2	0.55	245.9
2023	Dec	17	5	39	3.77	30	26	35.5	1.853	2.832	172.8	2.5	10.2	0.55	245.6
2023	Dec	18	5	38	0.82	30	20	22.4	1.854	2.833	173.0	2.4	10.2	0.55	245.2
2023	Dec	19	5	36	58.15	30	14	4.1	1.856	2.835	172.9	2.4	10.2	0.55	244.8
2023	Dec	20	5	35	55.82	30	7	40.8	1.858	2.836	172.7	2.5	10.2	0.55	244.4
2023	Dec	21	5	34	53.92	30	1	12.8	1.860	2.838	172.2	2.7	10.2	0.55	244.0
2023	Dec	22	5	33	52.51	29	54	40.4	1.862	2.839	171.6	2.9	10.2	0.55	243.6
2023	Dec	23	5	32	51.67	29	48	3.8	1.865	2.841	170.8	3.2	10.2	0.54	243.2

2023	Dec	24	5	31	51.46	29	41	23.2	1.868	2.842	170.0	3.5	10.2	0.54	242.7
2023	Dec	25	5	30	51.95	29	34	39.1	1.872	2.844	169.0	3.8	10.3	0.54	242.3
2023	Dec	26	5	29	53.20	29	27	51.6	1.876	2.845	168.1	4.1	10.3	0.53	241.8
2023	Dec	27	5	28	55.28	29	21	1.2	1.880	2.847	167.0	4.4	10.3	0.53	241.3
2023	Dec	28	5	27	58.24	29	14	8.0	1.884	2.848	166.0	4.8	10.3	0.52	240.8
2023	Dec	29	5	27	2.14	29	7	12.4	1.889	2.849	164.9	5.2	10.4	0.52	240.2
2023	Dec	30	5	26	7.04	29	0	14.8	1.893	2.851	163.8	5.5	10.4	0.51	239.7
2023	Dec	31	5	25	12.99	28	53	15.3	1.899	2.852	162.7	5.9	10.4	0.50	239.1
2024	Jan	1	5	24	20.06	28	46	14.4	1.904	2.854	161.6	6.3	10.4	0.50	238.5
2024	Jan	2	5	23	28.27	28	39	12.4	1.910	2.855	160.4	6.6	10.5	0.49	237.9
2024	Jan	3	5	22	37.70	28	32	9.6	1.916	2.857	159.3	7.0	10.5	0.48	237.3
2024	Jan	4	5	21	48.38	28	25	6.2	1.922	2.858	158.2	7.4	10.5	0.47	236.6
2024	Jan	5	5	21	0.36	28	18	2.7	1.929	2.860	157.0	7.7	10.5	0.46	235.9
2024	Jan	6	5	20	13.69	28	10	59.3	1.936	2.861	155.9	8.1	10.6	0.46	235.2
2024	Jan	7	5	19	28.39	28	3	56.3	1.943	2.863	154.7	8.4	10.6	0.45	234.4
2024	Jan	8	5	18	44.53	27	56	54.1	1.950	2.864	153.6	8.8	10.6	0.44	233.6
2024	Jan	9	5	18	2.12	27	49	52.9	1.958	2.866	152.4	9.1	10.6	0.43	232.7
2024	Jan	10	5	17	21.20	27	42	53.0	1.966	2.867	151.3	9.5	10.7	0.42	231.8
2024	Jan	11	5	16	41.82	27	35	54.7	1.974	2.869	150.1	9.8	10.7	0.41	230.9
2024	Jan	12	5	16	3.99	27	28	58.4	1.982	2.870	149.0	10.2	10.7	0.40	229.9
2024	Jan	13	5	15	27.76	27	22	4.1	1.991	2.872	147.9	10.5	10.7	0.39	228.8
2024	Jan	14	5	14	53.13	27	15	12.3	2.000	2.873	146.7	10.8	10.8	0.37	227.7
2024	Jan	15	5	14	20.14	27	8	23.2	2.009	2.875	145.6	11.1	10.8	0.36	226.5
2024	Jan	16	5	13	48.80	27	1	36.9	2.018	2.876	144.5	11.5	10.8	0.35	225.2
2024	Jan	17	5	13	19.12	26	54	53.7	2.028	2.878	143.3	11.8	10.8	0.34	223.8
2024	Jan	18	5	12	51.12	26	48	13.9	2.038	2.879	142.2	12.1	10.9	0.33	222.4
2024	Jan	19	5	12	24.81	26	41	37.5	2.048	2.881	141.1	12.4	10.9	0.32	220.9
2024	Jan	20	5	12	0.20	26	35	4.9	2.058	2.882	140.0	12.7	10.9	0.31	219.2
2024	Jan	21	5	11	37.29	26	28	36.1	2.069	2.884	138.9	13.0	10.9	0.30	217.4
2024	Jan	22	5	11	16.07	26	22	11.3	2.079	2.885	137.8	13.2	10.9	0.29	215.6
2024	Jan	23	5	10	56.56	26	15	50.6	2.090	2.887	136.7	13.5	11.0	0.28	213.5

2024 Jan 24	5	10	38.75	26	9	34.3	2.101	2.888	135.6	13.8	11.0	0.27	211.4
2024 Jan 25	5	10	22.65	26	3	22.3	2.113	2.890	134.6	14.0	11.0	0.26	209.1
2024 Jan 26	5	10	8.23	25	57	14.9	2.124	2.891	133.5	14.3	11.0	0.25	206.6
2024 Jan 27	5	9	55.52	25	51	12.1	2.136	2.893	132.4	14.5	11.1	0.24	204.0
2024 Jan 28	5	9	44.49	25	45	14.1	2.148	2.895	131.4	14.8	11.1	0.23	201.1
2024 Jan 29	5	9	35.14	25	39	20.8	2.160	2.896	130.3	15.0	11.1	0.23	198.1
2024 Jan 30	5	9	27.47	25	33	32.4	2.172	2.898	129.3	15.3	11.1	0.22	195.0
2024 Jan 31	5	9	21.47	25	27	49.0	2.184	2.899	128.2	15.5	11.1	0.21	191.6
2024 Feb 1	5	9	17.12	25	22	10.6	2.197	2.901	127.2	15.7	11.2	0.21	188.1
2024 Feb 2	5	9	14.43	25	16	37.1	2.209	2.902	126.2	15.9	11.2	0.20	184.4
2024 Feb 3	5	9	13.38	25	11	8.8	2.222	2.904	125.1	16.1	11.2	0.20	180.6
2024 Feb 4	5	9	13.95	25	5	45.6	2.235	2.905	124.1	16.3	11.2	0.20	176.6
2024 Feb 5	5	9	16.15	25	0	27.5	2.248	2.907	123.1	16.5	11.2	0.20	172.6
2024 Feb 6	5	9	19.96	24	55	14.5	2.262	2.908	122.1	16.7	11.3	0.19	168.6
2024 Feb 7	5	9	25.36	24	50	6.7	2.275	2.910	121.1	16.9	11.3	0.19	164.5
2024 Feb 8	5	9	32.35	24	45	4.0	2.288	2.911	120.1	17.0	11.3	0.20	160.5
2024 Feb 9	5	9	40.92	24	40	6.4	2.302	2.913	119.1	17.2	11.3	0.20	156.6
2024 Feb 10	5	9	51.04	24	35	13.9	2.316	2.914	118.2	17.4	11.3	0.20	152.8
2024 Feb 11	5	10	2.71	24	30	26.5	2.330	2.916	117.2	17.5	11.4	0.20	149.2
2024 Feb 12	5	10	15.90	24	25	44.1	2.344	2.917	116.2	17.7	11.4	0.21	145.7
2024 Feb 13	5	10	30.61	24	21	6.6	2.358	2.919	115.3	17.8	11.4	0.21	142.5
2024 Feb 14	5	10	46.81	24	16	34.1	2.372	2.921	114.3	17.9	11.4	0.22	139.4
2024 Feb 15	5	11	4.48	24	12	6.5	2.386	2.922	113.4	18.1	11.4	0.22	136.5
2024 Feb 16	5	11	23.60	24	7	43.6	2.401	2.924	112.4	18.2	11.5	0.23	133.8
2024 Feb 17	5	11	44.15	24	3	25.5	2.415	2.925	111.5	18.3	11.5	0.24	131.3
2024 Feb 18	5	12	6.12	23	59	12.0	2.430	2.927	110.5	18.4	11.5	0.25	129.0
2024 Feb 19	5	12	29.47	23	55	3.1	2.444	2.928	109.6	18.5	11.5	0.25	126.8
2024 Feb 20	5	12	54.19	23	50	58.7	2.459	2.930	108.7	18.6	11.5	0.26	124.8
2024 Feb 21	5	13	20.26	23	46	58.6	2.474	2.931	107.8	18.7	11.5	0.27	122.9
2024 Feb 22	5	13	47.65	23	43	2.9	2.489	2.933	106.9	18.8	11.6	0.28	121.2
2024 Feb 23	5	14	16.35	23	39	11.4	2.504	2.934	106.0	18.9	11.6	0.29	119.6

2024 Feb 24	5 14 46.33	23 35 24.0	2.519	2.936	105.1	19.0	11.6	0.29	118.2
2024 Feb 25	5 15 17.58	23 31 40.6	2.534	2.937	104.2	19.1	11.6	0.30	116.8
2024 Feb 26	5 15 50.07	23 28 1.2	2.549	2.939	103.3	19.1	11.6	0.31	115.5
2024 Feb 27	5 16 23.79	23 24 25.6	2.564	2.941	102.4	19.2	11.6	0.32	114.3
2024 Feb 28	5 16 58.71	23 20 53.8	2.579	2.942	101.5	19.3	11.7	0.33	113.2
2024 Feb 29	5 17 34.82	23 17 25.6	2.595	2.944	100.7	19.3	11.7	0.34	112.2

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MA 190.805767°

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e 0.0896712 i 7.143048°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Sep 1	5	42	55.30	19	0	12.5	2.691	2.568	72.1	22.0	8.5	0.68	88.2
2023 Sep 2	5	44	12.58	19	0	46.0	2.679	2.568	72.8	22.0	8.5	0.67	88.3
2023 Sep 3	5	45	29.18	19	1	16.9	2.666	2.568	73.5	22.1	8.4	0.66	88.4
2023 Sep 4	5	46	45.07	19	1	45.1	2.654	2.569	74.1	22.2	8.4	0.66	88.6
2023 Sep 5	5	48	0.24	19	2	10.7	2.642	2.569	74.8	22.3	8.4	0.65	88.7
2023 Sep 6	5	49	14.67	19	2	33.7	2.629	2.569	75.5	22.3	8.4	0.65	88.8
2023 Sep 7	5	50	28.36	19	2	54.4	2.617	2.569	76.1	22.4	8.4	0.64	88.9
2023 Sep 8	5	51	41.27	19	3	12.6	2.604	2.569	76.8	22.5	8.4	0.63	89.0
2023 Sep 9	5	52	53.40	19	3	28.6	2.592	2.569	77.5	22.5	8.4	0.62	89.2
2023 Sep 10	5	54	4.73	19	3	42.3	2.579	2.570	78.2	22.6	8.4	0.62	89.3
2023 Sep 11	5	55	15.25	19	3	53.8	2.566	2.570	78.9	22.6	8.4	0.61	89.4
2023 Sep 12	5	56	24.93	19	4	3.3	2.554	2.570	79.6	22.7	8.4	0.60	89.5
2023 Sep 13	5	57	33.76	19	4	10.8	2.541	2.570	80.3	22.7	8.4	0.60	89.6
2023 Sep 14	5	58	41.72	19	4	16.4	2.528	2.570	81.0	22.7	8.3	0.59	89.7
2023 Sep 15	5	59	48.79	19	4	20.2	2.515	2.570	81.7	22.8	8.3	0.58	89.8
2023 Sep 16	6	0	54.97	19	4	22.2	2.502	2.571	82.4	22.8	8.3	0.57	89.9
2023 Sep 17	6	2	0.22	19	4	22.6	2.489	2.571	83.1	22.8	8.3	0.56	90.0
2023 Sep 18	6	3	4.55	19	4	21.4	2.477	2.571	83.8	22.9	8.3	0.56	90.1
2023 Sep 19	6	4	7.92	19	4	18.8	2.464	2.571	84.6	22.9	8.3	0.55	90.2
2023 Sep 20	6	5	10.32	19	4	14.9	2.451	2.571	85.3	22.9	8.3	0.54	90.3
2023 Sep 21	6	6	11.75	19	4	9.7	2.438	2.571	86.0	22.9	8.3	0.53	90.4
2023 Sep 22	6	7	12.17	19	4	3.3	2.425	2.571	86.8	22.9	8.3	0.52	90.5

2023 Sep 23	6 8	11.57	19 3	55.8	2.412	2.571	87.5	23.0	8.3	0.51	90.5
2023 Sep 24	6 9	9.95	19 3	47.4	2.399	2.572	88.3	23.0	8.2	0.50	90.6
2023 Sep 25	6 10	7.28	19 3	38.1	2.386	2.572	89.0	23.0	8.2	0.49	90.7
2023 Sep 26	6 11	3.55	19 3	28.0	2.373	2.572	89.8	22.9	8.2	0.49	90.8
2023 Sep 27	6 11	58.74	19 3	17.3	2.359	2.572	90.5	22.9	8.2	0.48	90.8
2023 Sep 28	6 12	52.83	19 3	5.9	2.346	2.572	91.3	22.9	8.2	0.47	90.9
2023 Sep 29	6 13	45.81	19 2	54.0	2.333	2.572	92.0	22.9	8.2	0.46	90.9
2023 Sep 30	6 14	37.66	19 2	41.8	2.320	2.572	92.8	22.9	8.2	0.45	91.0
2023 Oct 1	6 15	28.36	19 2	29.2	2.307	2.572	93.6	22.9	8.2	0.44	91.0
2023 Oct 2	6 16	17.88	19 2	16.4	2.294	2.572	94.4	22.8	8.1	0.43	91.1
2023 Oct 3	6 17	6.22	19 2	3.5	2.281	2.572	95.2	22.8	8.1	0.42	91.1
2023 Oct 4	6 17	53.34	19 1	50.6	2.268	2.573	96.0	22.8	8.1	0.41	91.1
2023 Oct 5	6 18	39.22	19 1	37.8	2.255	2.573	96.8	22.7	8.1	0.39	91.1
2023 Oct 6	6 19	23.84	19 1	25.1	2.242	2.573	97.6	22.7	8.1	0.38	91.1
2023 Oct 7	6 20	7.19	19 1	12.8	2.229	2.573	98.4	22.6	8.1	0.37	91.2
2023 Oct 8	6 20	49.22	19 1	0.8	2.216	2.573	99.2	22.5	8.1	0.36	91.1
2023 Oct 9	6 21	29.94	19 0	49.4	2.203	2.573	100.0	22.5	8.0	0.35	91.1
2023 Oct 10	6 22	9.30	19 0	38.6	2.190	2.573	100.9	22.4	8.0	0.34	91.1
2023 Oct 11	6 22	47.29	19 0	28.5	2.177	2.573	101.7	22.3	8.0	0.32	91.0
2023 Oct 12	6 23	23.89	19 0	19.2	2.165	2.573	102.5	22.3	8.0	0.31	91.0
2023 Oct 13	6 23	59.07	19 0	10.9	2.152	2.573	103.4	22.2	8.0	0.30	90.9
2023 Oct 14	6 24	32.81	19 0	3.7	2.139	2.573	104.2	22.1	8.0	0.29	90.8
2023 Oct 15	6 25	5.10	18 59	57.6	2.126	2.573	105.1	22.0	8.0	0.27	90.7
2023 Oct 16	6 25	35.91	18 59	52.9	2.113	2.573	106.0	21.9	7.9	0.26	90.6
2023 Oct 17	6 26	5.21	18 59	49.5	2.101	2.573	106.8	21.8	7.9	0.25	90.4
2023 Oct 18	6 26	33.00	18 59	47.6	2.088	2.573	107.7	21.6	7.9	0.24	90.2
2023 Oct 19	6 26	59.25	18 59	47.3	2.076	2.573	108.6	21.5	7.9	0.22	89.9
2023 Oct 20	6 27	23.95	18 59	48.8	2.063	2.573	109.5	21.4	7.9	0.21	89.6
2023 Oct 21	6 27	47.07	18 59	52.1	2.051	2.573	110.4	21.3	7.9	0.19	89.2
2023 Oct 22	6 28	8.59	18 59	57.3	2.038	2.573	111.3	21.1	7.8	0.18	88.8
2023 Oct 23	6 28	28.51	19 0	4.5	2.026	2.573	112.2	21.0	7.8	0.17	88.2

2023 Oct 24	6 28	46.80	19 0	13.9	2.014	2.573	113.1	20.8	7.8	0.15	87.6
2023 Oct 25	6 29	3.45	19 0	25.4	2.002	2.573	114.1	20.7	7.8	0.14	86.8
2023 Oct 26	6 29	18.44	19 0	39.3	1.990	2.573	115.0	20.5	7.8	0.12	85.7
2023 Oct 27	6 29	31.75	19 0	55.5	1.978	2.573	115.9	20.3	7.7	0.11	84.4
2023 Oct 28	6 29	43.37	19 1	14.2	1.966	2.573	116.9	20.1	7.7	0.09	82.5
2023 Oct 29	6 29	53.27	19 1	35.5	1.954	2.573	117.9	20.0	7.7	0.08	80.0
2023 Oct 30	6 30	1.45	19 1	59.3	1.943	2.573	118.8	19.8	7.7	0.07	76.3
2023 Oct 31	6 30	7.87	19 2	25.9	1.931	2.573	119.8	19.6	7.7	0.05	70.4
2023 Nov 1	6 30	12.52	19 2	55.2	1.920	2.573	120.8	19.4	7.6	0.04	60.0
2023 Nov 2	6 30	15.39	19 3	27.3	1.908	2.573	121.8	19.1	7.6	0.03	39.7
2023 Nov 3	6 30	16.46	19 4	2.4	1.897	2.573	122.7	18.9	7.6	0.02	3.4
2023 Nov 4	6 30	15.71	19 4	40.4	1.886	2.573	123.7	18.7	7.6	0.03	329.1
2023 Nov 5	6 30	13.13	19 5	21.5	1.875	2.573	124.8	18.5	7.6	0.04	310.6
2023 Nov 6	6 30	8.70	19 6	5.7	1.864	2.573	125.8	18.2	7.5	0.05	301.1
2023 Nov 7	6 30	2.41	19 6	53.1	1.853	2.573	126.8	18.0	7.5	0.07	295.5
2023 Nov 8	6 29	54.25	19 7	43.6	1.843	2.573	127.8	17.7	7.5	0.09	292.0
2023 Nov 9	6 29	44.21	19 8	37.5	1.832	2.573	128.9	17.4	7.5	0.10	289.6
2023 Nov 10	6 29	32.29	19 9	34.6	1.822	2.572	129.9	17.2	7.5	0.12	287.9
2023 Nov 11	6 29	18.48	19 10	35.1	1.812	2.572	131.0	16.9	7.4	0.13	286.6
2023 Nov 12	6 29	2.77	19 11	39.0	1.802	2.572	132.0	16.6	7.4	0.15	285.5
2023 Nov 13	6 28	45.17	19 12	46.3	1.792	2.572	133.1	16.3	7.4	0.17	284.7
2023 Nov 14	6 28	25.68	19 13	57.0	1.783	2.572	134.2	16.0	7.4	0.18	284.0
2023 Nov 15	6 28	4.29	19 15	11.2	1.773	2.572	135.3	15.7	7.4	0.20	283.5
2023 Nov 16	6 27	41.02	19 16	28.8	1.764	2.572	136.4	15.4	7.3	0.22	283.0
2023 Nov 17	6 27	15.88	19 17	49.9	1.755	2.572	137.5	15.1	7.3	0.23	282.6
2023 Nov 18	6 26	48.87	19 19	14.4	1.746	2.572	138.6	14.7	7.3	0.25	282.3
2023 Nov 19	6 26	20.01	19 20	42.3	1.737	2.572	139.7	14.4	7.3	0.26	282.0
2023 Nov 20	6 25	49.32	19 22	13.7	1.728	2.572	140.8	14.0	7.2	0.28	281.7
2023 Nov 21	6 25	16.80	19 23	48.4	1.720	2.571	142.0	13.7	7.2	0.30	281.5
2023 Nov 22	6 24	42.49	19 25	26.4	1.712	2.571	143.1	13.3	7.2	0.31	281.3
2023 Nov 23	6 24	6.41	19 27	7.7	1.704	2.571	144.3	13.0	7.2	0.33	281.1

2023 Nov 24	6 23 28.57	19 28 52.2	1.696	2.571	145.4	12.6	7.1	0.34	281.0
2023 Nov 25	6 22 48.99	19 30 39.9	1.689	2.571	146.6	12.2	7.1	0.36	280.8
2023 Nov 26	6 22 7.72	19 32 30.6	1.682	2.571	147.7	11.8	7.1	0.37	280.7
2023 Nov 27	6 21 24.76	19 34 24.4	1.674	2.571	148.9	11.4	7.1	0.39	280.5
2023 Nov 28	6 20 40.16	19 36 21.1	1.668	2.570	150.1	11.0	7.0	0.40	280.4
2023 Nov 29	6 19 53.95	19 38 20.6	1.661	2.570	151.3	10.6	7.0	0.41	280.3
2023 Nov 30	6 19 6.15	19 40 22.9	1.655	2.570	152.5	10.2	7.0	0.43	280.2
2023 Dec 1	6 18 16.81	19 42 27.9	1.649	2.570	153.7	9.8	7.0	0.44	280.1
2023 Dec 2	6 17 25.97	19 44 35.4	1.643	2.570	154.9	9.4	6.9	0.45	280.0
2023 Dec 3	6 16 33.67	19 46 45.5	1.637	2.570	156.1	8.9	6.9	0.47	279.9
2023 Dec 4	6 15 39.95	19 48 57.9	1.632	2.570	157.3	8.5	6.9	0.48	279.9
2023 Dec 5	6 14 44.88	19 51 12.5	1.627	2.569	158.5	8.1	6.9	0.49	279.8
2023 Dec 6	6 13 48.50	19 53 29.4	1.622	2.569	159.8	7.6	6.8	0.50	279.7
2023 Dec 7	6 12 50.86	19 55 48.3	1.617	2.569	161.0	7.2	6.8	0.51	279.7
2023 Dec 8	6 11 52.04	19 58 9.2	1.613	2.569	162.2	6.7	6.8	0.52	279.6
2023 Dec 9	6 10 52.08	20 0 31.8	1.609	2.569	163.4	6.3	6.8	0.53	279.6
2023 Dec 10	6 9 51.06	20 2 56.2	1.605	2.568	164.7	5.8	6.7	0.54	279.5
2023 Dec 11	6 8 49.05	20 5 22.2	1.602	2.568	165.9	5.4	6.7	0.55	279.5
2023 Dec 12	6 7 46.12	20 7 49.7	1.599	2.568	167.1	4.9	6.7	0.56	279.4
2023 Dec 13	6 6 42.34	20 10 18.5	1.596	2.568	168.4	4.4	6.7	0.56	279.4
2023 Dec 14	6 5 37.79	20 12 48.6	1.593	2.568	169.6	4.0	6.6	0.57	279.4
2023 Dec 15	6 4 32.56	20 15 19.9	1.591	2.567	170.8	3.5	6.6	0.57	279.3
2023 Dec 16	6 3 26.71	20 17 52.1	1.589	2.567	172.0	3.1	6.6	0.58	279.3
2023 Dec 17	6 2 20.35	20 20 25.2	1.587	2.567	173.2	2.6	6.5	0.58	279.3
2023 Dec 18	6 1 13.55	20 22 59.1	1.586	2.567	174.3	2.2	6.5	0.59	279.3
2023 Dec 19	6 0 6.39	20 25 33.7	1.585	2.567	175.4	1.8	6.5	0.59	279.3
2023 Dec 20	5 58 58.96	20 28 8.9	1.584	2.566	176.3	1.4	6.4	0.59	279.3
2023 Dec 21	5 57 51.35	20 30 44.5	1.583	2.566	176.9	1.2	6.4	0.59	279.3
2023 Dec 22	5 56 43.63	20 33 20.5	1.583	2.566	177.1	1.1	6.4	0.59	279.3
2023 Dec 23	5 55 35.90	20 35 56.7	1.583	2.566	176.7	1.3	6.4	0.59	279.3
2023 Dec 24	5 54 28.22	20 38 33.1	1.583	2.565	176.0	1.5	6.4	0.59	279.4

2023	Dec	25	5	53	20.70	20	41	9.6	1.584	2.565	175.0	1.9	6.5	0.59	279.4
2023	Dec	26	5	52	13.39	20	43	46.0	1.585	2.565	173.9	2.3	6.5	0.59	279.4
2023	Dec	27	5	51	6.40	20	46	22.5	1.586	2.565	172.8	2.8	6.5	0.58	279.5
2023	Dec	28	5	49	59.79	20	48	58.8	1.587	2.564	171.6	3.2	6.6	0.58	279.5
2023	Dec	29	5	48	53.64	20	51	34.9	1.589	2.564	170.4	3.7	6.6	0.58	279.6
2023	Dec	30	5	47	48.04	20	54	10.9	1.591	2.564	169.1	4.1	6.6	0.57	279.7

9 Metis

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T 2023 Dec 1.0000 TT

MA 6.553192°

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i 5.578143°

Datum	h	m	s	o	'	"	delta	RSun	Elong	Phase	Mag	"/min	PA
2023 Oct 1	6	1	35.32	22	38	10.7	1.727	2.098	96.9	28.3	10.4	0.65	83.3
2023 Oct 2	6	2	50.68	22	40	14.0	1.716	2.098	97.6	28.2	10.4	0.64	83.2
2023 Oct 3	6	4	4.80	22	42	17.1	1.705	2.098	98.3	28.2	10.3	0.63	83.1
2023 Oct 4	6	5	17.67	22	44	19.9	1.693	2.097	99.0	28.1	10.3	0.62	83.0
2023 Oct 5	6	6	29.25	22	46	22.7	1.682	2.097	99.7	28.0	10.3	0.61	82.9
2023 Oct 6	6	7	39.51	22	48	25.6	1.671	2.097	100.4	28.0	10.3	0.60	82.7
2023 Oct 7	6	8	48.43	22	50	28.7	1.660	2.097	101.2	27.9	10.3	0.58	82.6
2023 Oct 8	6	9	55.96	22	52	32.2	1.648	2.096	101.9	27.8	10.2	0.57	82.4
2023 Oct 9	6	11	2.09	22	54	36.2	1.637	2.096	102.6	27.7	10.2	0.56	82.2
2023 Oct 10	6	12	6.79	22	56	40.9	1.626	2.096	103.4	27.6	10.2	0.55	81.9
2023 Oct 11	6	13	10.01	22	58	46.5	1.615	2.096	104.1	27.5	10.2	0.54	81.7
2023 Oct 12	6	14	11.74	23	0	53.0	1.604	2.095	104.9	27.4	10.2	0.52	81.4
2023 Oct 13	6	15	11.93	23	3	0.7	1.593	2.095	105.6	27.3	10.2	0.51	81.1
2023 Oct 14	6	16	10.57	23	5	9.7	1.582	2.095	106.4	27.2	10.1	0.50	80.8
2023 Oct 15	6	17	7.63	23	7	20.2	1.571	2.095	107.2	27.1	10.1	0.48	80.4
2023 Oct 16	6	18	3.06	23	9	32.2	1.560	2.095	107.9	26.9	10.1	0.47	80.0
2023 Oct 17	6	18	56.85	23	11	46.0	1.550	2.094	108.7	26.8	10.1	0.46	79.5
2023 Oct 18	6	19	48.97	23	14	1.8	1.539	2.094	109.5	26.6	10.1	0.44	79.0
2023 Oct 19	6	20	39.39	23	16	19.6	1.528	2.094	110.3	26.5	10.0	0.43	78.5
2023 Oct 20	6	21	28.08	23	18	39.6	1.518	2.094	111.1	26.3	10.0	0.41	77.9
2023 Oct 21	6	22	15.01	23	21	1.9	1.507	2.094	111.9	26.2	10.0	0.40	77.2
2023 Oct 22	6	23	0.16	23	23	26.7	1.497	2.094	112.8	26.0	10.0	0.38	76.5

2023 Oct 23	6 23	43.50	23 25	54.1	1.486	2.094	113.6	25.8	10.0	0.37	75.7
2023 Oct 24	6 24	25.01	23 28	24.3	1.476	2.094	114.4	25.6	9.9	0.36	74.8
2023 Oct 25	6 25	4.66	23 30	57.3	1.466	2.093	115.3	25.4	9.9	0.34	73.8
2023 Oct 26	6 25	42.43	23 33	33.3	1.455	2.093	116.1	25.2	9.9	0.33	72.7
2023 Oct 27	6 26	18.27	23 36	12.4	1.445	2.093	117.0	25.0	9.9	0.31	71.5
2023 Oct 28	6 26	52.18	23 38	54.8	1.435	2.093	117.9	24.8	9.9	0.30	70.1
2023 Oct 29	6 27	24.11	23 41	40.4	1.425	2.093	118.7	24.6	9.8	0.28	68.5
2023 Oct 30	6 27	54.04	23 44	29.4	1.416	2.093	119.6	24.4	9.8	0.27	66.7
2023 Oct 31	6 28	21.93	23 47	21.9	1.406	2.093	120.5	24.1	9.8	0.25	64.7
2023 Nov 1	6 28	47.76	23 50	18.0	1.396	2.093	121.4	23.9	9.8	0.24	62.4
2023 Nov 2	6 29	11.49	23 53	17.7	1.387	2.093	122.3	23.6	9.7	0.22	59.7
2023 Nov 3	6 29	33.09	23 56	21.2	1.377	2.093	123.3	23.4	9.7	0.21	56.6
2023 Nov 4	6 29	52.54	23 59	28.5	1.368	2.093	124.2	23.1	9.7	0.19	53.0
2023 Nov 5	6 30	9.80	24 2	39.6	1.359	2.093	125.1	22.8	9.7	0.18	48.9
2023 Nov 6	6 30	24.85	24 5	54.6	1.349	2.093	126.1	22.5	9.7	0.17	44.1
2023 Nov 7	6 30	37.67	24 9	13.7	1.340	2.093	127.0	22.2	9.6	0.16	38.5
2023 Nov 8	6 30	48.22	24 12	36.6	1.332	2.093	128.0	21.9	9.6	0.15	32.1
2023 Nov 9	6 30	56.49	24 16	3.6	1.323	2.093	129.0	21.6	9.6	0.14	25.0
2023 Nov 10	6 31	2.45	24 19	34.6	1.314	2.093	130.0	21.3	9.6	0.14	17.1
2023 Nov 11	6 31	6.10	24 23	9.7	1.306	2.093	131.0	20.9	9.5	0.13	8.8
2023 Nov 12	6 31	7.40	24 26	48.6	1.297	2.093	132.0	20.6	9.5	0.14	0.4
2023 Nov 13	6 31	6.36	24 30	31.6	1.289	2.093	133.0	20.2	9.5	0.14	352.3
2023 Nov 14	6 31	2.95	24 34	18.5	1.281	2.093	134.0	19.9	9.5	0.15	344.7
2023 Nov 15	6 30	57.17	24 38	9.2	1.273	2.093	135.0	19.5	9.4	0.15	337.8
2023 Nov 16	6 30	49.03	24 42	3.7	1.265	2.093	136.1	19.1	9.4	0.16	331.7
2023 Nov 17	6 30	38.51	24 46	1.9	1.258	2.093	137.1	18.8	9.4	0.18	326.4
2023 Nov 18	6 30	25.62	24 50	3.7	1.250	2.093	138.2	18.4	9.4	0.19	321.8
2023 Nov 19	6 30	10.37	24 54	8.9	1.243	2.093	139.2	18.0	9.3	0.20	317.8
2023 Nov 20	6 29	52.76	24 58	17.4	1.236	2.094	140.3	17.5	9.3	0.22	314.4
2023 Nov 21	6 29	32.80	25 2	29.1	1.229	2.094	141.4	17.1	9.3	0.24	311.4
2023 Nov 22	6 29	10.51	25 6	43.8	1.222	2.094	142.5	16.7	9.3	0.25	308.8

2023	Nov	23	6	28	45.91	25	11	1.4	1.215	2.094	143.6	16.3	9.2	0.27	306.5
2023	Nov	24	6	28	19.01	25	15	21.5	1.209	2.094	144.7	15.8	9.2	0.28	304.5
2023	Nov	25	6	27	49.83	25	19	44.0	1.203	2.094	145.8	15.4	9.2	0.30	302.7
2023	Nov	26	6	27	18.39	25	24	8.7	1.197	2.094	146.9	14.9	9.1	0.32	301.1
2023	Nov	27	6	26	44.72	25	28	35.3	1.191	2.095	148.1	14.4	9.1	0.33	299.6
2023	Nov	28	6	26	8.84	25	33	3.6	1.185	2.095	149.2	14.0	9.1	0.35	298.3
2023	Nov	29	6	25	30.79	25	37	33.3	1.180	2.095	150.4	13.5	9.1	0.37	297.1
2023	Nov	30	6	24	50.60	25	42	4.2	1.175	2.095	151.5	13.0	9.0	0.38	296.0
2023	Dec	1	6	24	8.31	25	46	35.9	1.170	2.095	152.7	12.5	9.0	0.40	294.9
2023	Dec	2	6	23	23.97	25	51	8.2	1.165	2.095	153.9	12.0	9.0	0.41	294.0
2023	Dec	3	6	22	37.62	25	55	40.7	1.160	2.096	155.0	11.5	9.0	0.43	293.1
2023	Dec	4	6	21	49.31	26	0	13.2	1.156	2.096	156.2	10.9	8.9	0.44	292.3
2023	Dec	5	6	20	59.11	26	4	45.3	1.152	2.096	157.4	10.4	8.9	0.45	291.5
2023	Dec	6	6	20	7.08	26	9	16.7	1.148	2.096	158.6	9.9	8.9	0.47	290.8
2023	Dec	7	6	19	13.29	26	13	47.1	1.144	2.097	159.8	9.3	8.8	0.48	290.1
2023	Dec	8	6	18	17.82	26	18	16.1	1.141	2.097	161.0	8.8	8.8	0.49	289.5
2023	Dec	9	6	17	20.73	26	22	43.4	1.137	2.097	162.2	8.3	8.8	0.50	288.9
2023	Dec	10	6	16	22.13	26	27	8.6	1.135	2.097	163.4	7.7	8.8	0.52	288.3
2023	Dec	11	6	15	22.08	26	31	31.5	1.132	2.098	164.6	7.2	8.7	0.53	287.8
2023	Dec	12	6	14	20.70	26	35	51.7	1.129	2.098	165.8	6.6	8.7	0.54	287.3
2023	Dec	13	6	13	18.09	26	40	8.9	1.127	2.098	167.0	6.0	8.7	0.54	286.8
2023	Dec	14	6	12	14.33	26	44	22.8	1.125	2.099	168.2	5.5	8.6	0.55	286.3
2023	Dec	15	6	11	9.55	26	48	33.0	1.124	2.099	169.4	5.0	8.6	0.56	285.9
2023	Dec	16	6	10	3.86	26	52	39.3	1.122	2.099	170.6	4.4	8.6	0.56	285.4
2023	Dec	17	6	8	57.36	26	56	41.4	1.121	2.100	171.7	3.9	8.5	0.57	285.0
2023	Dec	18	6	7	50.18	27	0	39.1	1.120	2.100	172.8	3.4	8.5	0.57	284.6
2023	Dec	19	6	6	42.44	27	4	31.9	1.119	2.100	173.8	2.9	8.5	0.58	284.2
2023	Dec	20	6	5	34.24	27	8	19.9	1.119	2.101	174.8	2.5	8.4	0.58	283.9
2023	Dec	21	6	4	25.71	27	12	2.6	1.119	2.101	175.5	2.1	8.4	0.58	283.5
2023	Dec	22	6	3	16.96	27	15	40.0	1.119	2.101	176.0	1.9	8.4	0.58	283.2
2023	Dec	23	6	2	8.11	27	19	11.8	1.119	2.102	176.1	1.8	8.4	0.58	282.8

2023	Dec	24	6	0	59.28	27	22	37.8	1.120	2.102	175.8	2.0	8.4	0.58	282.5
2023	Dec	25	5	59	50.57	27	25	58.0	1.121	2.102	175.2	2.2	8.4	0.57	282.2
2023	Dec	26	5	58	42.11	27	29	12.3	1.122	2.103	174.4	2.6	8.5	0.57	281.9
2023	Dec	27	5	57	34.00	27	32	20.5	1.123	2.103	173.4	3.1	8.5	0.57	281.6
2023	Dec	28	5	56	26.35	27	35	22.5	1.125	2.104	172.3	3.6	8.5	0.56	281.3
2023	Dec	29	5	55	19.28	27	38	18.3	1.127	2.104	171.2	4.1	8.6	0.56	281.0
2023	Dec	30	5	54	12.90	27	41	7.9	1.129	2.105	170.1	4.6	8.6	0.55	280.8
2023	Dec	31	5	53	7.31	27	43	51.2	1.132	2.105	168.9	5.2	8.6	0.54	280.5
2024	Jan	1	5	52	2.62	27	46	28.3	1.134	2.105	167.7	5.7	8.7	0.53	280.2
2024	Jan	2	5	50	58.93	27	48	59.2	1.137	2.106	166.5	6.3	8.7	0.52	280.0
2024	Jan	3	5	49	56.36	27	51	24.0	1.140	2.106	165.3	6.8	8.7	0.51	279.8
2024	Jan	4	5	48	54.99	27	53	42.6	1.144	2.107	164.1	7.3	8.8	0.50	279.6
2024	Jan	5	5	47	54.93	27	55	55.2	1.148	2.107	162.9	7.9	8.8	0.49	279.4
2024	Jan	6	5	46	56.26	27	58	2.0	1.151	2.108	161.7	8.4	8.8	0.48	279.2
2024	Jan	7	5	45	59.10	28	0	2.9	1.156	2.108	160.5	9.0	8.9	0.46	279.0
2024	Jan	8	5	45	3.51	28	1	58.2	1.160	2.109	159.3	9.5	8.9	0.45	278.8
2024	Jan	9	5	44	9.59	28	3	47.9	1.165	2.109	158.1	10.0	8.9	0.44	278.7
2024	Jan	10	5	43	17.43	28	5	32.3	1.170	2.110	156.9	10.5	8.9	0.42	278.5
2024	Jan	11	5	42	27.09	28	7	11.5	1.175	2.110	155.7	11.0	9.0	0.41	278.4
2024	Jan	12	5	41	38.66	28	8	45.7	1.180	2.111	154.6	11.5	9.0	0.39	278.3
2024	Jan	13	5	40	52.20	28	10	15.1	1.186	2.111	153.4	12.0	9.0	0.37	278.2
2024	Jan	14	5	40	7.78	28	11	39.8	1.191	2.112	152.2	12.5	9.1	0.36	278.2
2024	Jan	15	5	39	25.46	28	13	0.1	1.197	2.112	151.1	13.0	9.1	0.34	278.2
2024	Jan	16	5	38	45.28	28	14	16.1	1.204	2.113	149.9	13.5	9.1	0.32	278.1
2024	Jan	17	5	38	7.31	28	15	28.0	1.210	2.114	148.8	14.0	9.2	0.30	278.2
2024	Jan	18	5	37	31.56	28	16	36.0	1.217	2.114	147.6	14.4	9.2	0.28	278.2
2024	Jan	19	5	36	58.09	28	17	40.4	1.224	2.115	146.5	14.9	9.2	0.27	278.3
2024	Jan	20	5	36	26.92	28	18	41.3	1.231	2.115	145.4	15.3	9.2	0.25	278.5
2024	Jan	21	5	35	58.07	28	19	38.8	1.238	2.116	144.3	15.8	9.3	0.23	278.7
2024	Jan	22	5	35	31.57	28	20	33.2	1.245	2.117	143.2	16.2	9.3	0.21	279.0
2024	Jan	23	5	35	7.43	28	21	24.6	1.253	2.117	142.1	16.6	9.3	0.19	279.4

2024 Jan 24	5 34	45.67	28 22	13.2	1.260	2.118	141.0	17.0	9.4	0.17	279.9
2024 Jan 25	5 34	26.29	28 22	59.2	1.268	2.118	139.9	17.4	9.4	0.15	280.6
2024 Jan 26	5 34	9.30	28 23	42.7	1.277	2.119	138.8	17.8	9.4	0.13	281.5
2024 Jan 27	5 33	54.71	28 24	23.9	1.285	2.120	137.8	18.2	9.4	0.11	282.8
2024 Jan 28	5 33	42.52	28 25	2.9	1.293	2.120	136.7	18.6	9.5	0.09	284.7
2024 Jan 29	5 33	32.73	28 25	39.8	1.302	2.121	135.7	18.9	9.5	0.07	287.6
2024 Jan 30	5 33	25.33	28 26	14.8	1.311	2.122	134.6	19.3	9.5	0.05	292.7
2024 Jan 31	5 33	20.33	28 26	48.0	1.320	2.122	133.6	19.6	9.5	0.04	302.8
2024 Feb 1	5 33	17.72	28 27	19.5	1.329	2.123	132.6	20.0	9.6	0.02	328.7
2024 Feb 2	5 33	17.49	28 27	49.4	1.338	2.124	131.6	20.3	9.6	0.02	23.5
2024 Feb 3	5 33	19.63	28 28	17.8	1.347	2.124	130.6	20.6	9.6	0.03	57.7
2024 Feb 4	5 33	24.13	28 28	44.8	1.357	2.125	129.6	20.9	9.6	0.05	70.6
2024 Feb 5	5 33	30.97	28 29	10.5	1.366	2.126	128.6	21.2	9.7	0.07	76.7
2024 Feb 6	5 33	40.15	28 29	34.9	1.376	2.127	127.6	21.5	9.7	0.09	80.1
2024 Feb 7	5 33	51.65	28 29	58.2	1.386	2.127	126.7	21.8	9.7	0.10	82.3
2024 Feb 8	5 34	5.46	28 30	20.3	1.396	2.128	125.7	22.1	9.7	0.12	83.8
2024 Feb 9	5 34	21.55	28 30	41.4	1.406	2.129	124.8	22.4	9.8	0.14	84.8
2024 Feb 10	5 34	39.92	28 31	1.4	1.416	2.129	123.8	22.6	9.8	0.16	85.7
2024 Feb 11	5 35	0.53	28 31	20.4	1.427	2.130	122.9	22.9	9.8	0.18	86.3
2024 Feb 12	5 35	23.37	28 31	38.5	1.437	2.131	122.0	23.1	9.8	0.19	86.8
2024 Feb 13	5 35	48.40	28 31	55.5	1.448	2.132	121.0	23.4	9.9	0.21	87.2
2024 Feb 14	5 36	15.61	28 32	11.6	1.458	2.132	120.1	23.6	9.9	0.23	87.6
2024 Feb 15	5 36	44.97	28 32	26.8	1.469	2.133	119.2	23.8	9.9	0.25	87.9
2024 Feb 16	5 37	16.43	28 32	40.9	1.480	2.134	118.4	24.0	9.9	0.26	88.2
2024 Feb 17	5 37	49.97	28 32	54.1	1.491	2.135	117.5	24.2	10.0	0.28	88.4
2024 Feb 18	5 38	25.55	28 33	6.2	1.502	2.136	116.6	24.4	10.0	0.30	88.6
2024 Feb 19	5 39	3.14	28 33	17.3	1.513	2.136	115.7	24.6	10.0	0.31	88.8
2024 Feb 20	5 39	42.71	28 33	27.3	1.524	2.137	114.9	24.8	10.0	0.33	89.0
2024 Feb 21	5 40	24.22	28 33	36.2	1.535	2.138	114.0	25.0	10.1	0.34	89.2
2024 Feb 22	5 41	7.65	28 33	43.9	1.547	2.139	113.2	25.2	10.1	0.36	89.3

2024 Feb 23	5 41	52.94	28 33	50.4	1.558	2.140	112.3	25.3	10.1	0.37	89.4
2024 Feb 24	5 42	40.08	28 33	55.6	1.570	2.140	111.5	25.5	10.1	0.39	89.6
2024 Feb 25	5 43	29.04	28 33	59.5	1.581	2.141	110.7	25.6	10.1	0.40	89.7
2024 Feb 26	5 44	19.77	28 34	2.1	1.593	2.142	109.9	25.8	10.2	0.42	89.8
2024 Feb 27	5 45	12.25	28 34	3.1	1.604	2.143	109.1	25.9	10.2	0.43	90.0
2024 Feb 28	5 46	6.44	28 34	2.7	1.616	2.144	108.3	26.0	10.2	0.45	90.1