

Date			SUN			Apparent			Apparent			Visual		
Oh TT			Apparent			Declination			Distance			Diameter		
R.A.			Declination			au			arc sec					
y	m	d	h	m	s	d	m	s	au	arc	sec			
2022	12	31	18	40	19.38	-23	06	52.6	0.9833616	1951.8				
2023	1	1	18	44	44.51	-23	02	23.2	0.9833368	1951.8				
2023	1	2	18	49	09.32	-22	57	26.2	0.9833176	1951.9				
2023	1	3	18	53	33.78	-22	52	01.8	0.9833043	1951.9				
2023	1	4	18	57	57.87	-22	46	10.1	0.9832970	1951.9				
2023	1	5	19	02	21.56	-22	39	51.4	0.9832959	1951.9				
2023	1	6	19	06	44.83	-22	33	05.8	0.9833010	1951.9				
2023	1	7	19	11	07.64	-22	25	53.5	0.9833125	1951.9				
2023	1	8	19	15	29.98	-22	18	14.8	0.9833303	1951.8				
2023	1	9	19	19	51.81	-22	10	09.8	0.9833543	1951.8				
2023	1	10	19	24	13.12	-22	01	38.7	0.9833846	1951.7				
2023	1	11	19	28	33.89	-21	52	41.9	0.9834209	1951.6				
2023	1	12	19	32	54.09	-21	43	19.5	0.9834632	1951.6				
2023	1	13	19	37	13.71	-21	33	31.7	0.9835113	1951.5				
2023	1	14	19	41	32.72	-21	23	19.0	0.9835650	1951.4				
2023	1	15	19	45	51.11	-21	12	41.4	0.9836239	1951.2				
2023	1	16	19	50	08.87	-21	01	39.4	0.9836879	1951.1				
2023	1	17	19	54	25.97	-20	50	13.1	0.9837567	1951.0				
2023	1	18	19	58	42.40	-20	38	23.0	0.9838298	1950.8				
2023	1	19	20	02	58.15	-20	26	09.3	0.9839070	1950.7				
2023	1	20	20	07	13.18	-20	13	32.4	0.9839879	1950.5				
2023	1	21	20	11	27.49	-20	00	32.6	0.9840723	1950.4				
2023	1	22	20	15	41.04	-19	47	10.3	0.9841600	1950.2				
2023	1	23	20	19	53.83	-19	33	25.9	0.9842509	1950.0				
2023	1	24	20	24	05.82	-19	19	19.8	0.9843451	1949.8				
2023	1	25	20	28	17.02	-19	04	52.3	0.9844427	1949.6				
2023	1	26	20	32	27.41	-18	50	03.7	0.9845439	1949.4				
2023	1	27	20	36	36.98	-18	34	54.6	0.9846490	1949.2				
2023	1	28	20	40	45.72	-18	19	25.3	0.9847584	1949.0				
2023	1	29	20	44	53.65	-18	03	36.2	0.9848722	1948.8				
2023	1	30	20	49	00.74	-17	47	27.6	0.9849907	1948.5				
2023	1	31	20	53	07.00	-17	31	00.1	0.9851141	1948.3				
2023	2	1	20	57	12.44	-17	14	14.1	0.9852426	1948.0				
2023	2	2	21	01	17.04	-16	57	09.8	0.9853764	1947.8				
2023	2	3	21	05	20.82	-16	39	47.8	0.9855155	1947.5				
2023	2	4	21	09	23.77	-16	22	08.4	0.9856601	1947.2				
2023	2	5	21	13	25.91	-16	04	12.1	0.9858102	1946.9				
2023	2	6	21	17	27.24	-15	45	59.2	0.9859658	1946.6				
2023	2	7	21	21	27.76	-15	27	30.1	0.9861268	1946.3				
2023	2	8	21	25	27.48	-15	08	45.3	0.9862932	1946.0				
2023	2	9	21	29	26.42	-14	49	45.0	0.9864649	1945.6				
2023	2	10	21	33	24.58	-14	30	29.8	0.9866417	1945.3				
2023	2	11	21	37	21.98	-14	10	59.9	0.9868234	1944.9				
2023	2	12	21	41	18.62	-13	51	15.9	0.9870098	1944.5				
2023	2	13	21	45	14.53	-13	31	18.0	0.9872006	1944.2				
2023	2	14	21	49	09.70	-13	11	06.6	0.9873954	1943.8				
2023	2	15	21	53	04.17	-12	50	42.3	0.9875940	1943.4				
2023	2	16	21	56	57.92	-12	30	05.3	0.9877958	1943.0				
2023	2	17	22	00	50.98	-12	09	16.2	0.9880006	1942.6				
2023	2	18	22	04	43.35	-11	48	15.4	0.9882079	1942.2				
2023	2	19	22	08	35.03	-11	27	03.2	0.9884174	1941.8				

Date		SUN					
0h TT		Apparent			Apparent		
y m d		R.A.			Distance		
		Declination			Visual		
		h m s			Diameter		
		d m s			arc sec		
2023	2 20	22 12	26.03	-11 05	40.2	0.9886288	1941.4
2023	2 21	22 16	16.37	-10 44	06.7	0.9888421	1940.9
2023	2 22	22 20	06.05	-10 22	23.2	0.9890571	1940.5
2023	2 23	22 23	55.09	-10 00	30.2	0.9892740	1940.1
2023	2 24	22 27	43.50	-9 38	28.1	0.9894929	1939.7
2023	2 25	22 31	31.29	-9 16	17.2	0.9897140	1939.2
2023	2 26	22 35	18.49	-8 53	58.1	0.9899375	1938.8
2023	2 27	22 39	05.10	-8 31	31.0	0.9901637	1938.4
2023	2 28	22 42	51.14	-8 08	56.6	0.9903927	1937.9
2023	3 1	22 46	36.64	-7 46	15.1	0.9906247	1937.5
2023	3 2	22 50	21.60	-7 23	27.0	0.9908599	1937.0
2023	3 3	22 54	06.05	-7 00	32.6	0.9910984	1936.5
2023	3 4	22 57	50.01	-6 37	32.5	0.9913403	1936.1
2023	3 5	23 01	33.50	-6 14	26.8	0.9915857	1935.6
2023	3 6	23 05	16.54	-5 51	16.0	0.9918347	1935.1
2023	3 7	23 08	59.15	-5 28	00.6	0.9920872	1934.6
2023	3 8	23 12	41.35	-5 04	40.7	0.9923433	1934.1
2023	3 9	23 16	23.17	-4 41	16.9	0.9926029	1933.6
2023	3 10	23 20	04.63	-4 17	49.4	0.9928659	1933.1
2023	3 11	23 23	45.76	-3 54	18.6	0.9931322	1932.6
2023	3 12	23 27	26.58	-3 30	44.9	0.9934014	1932.0
2023	3 13	23 31	07.11	-3 07	08.5	0.9936735	1931.5
2023	3 14	23 34	47.38	-2 43	29.9	0.9939480	1931.0
2023	3 15	23 38	27.40	-2 19	49.4	0.9942246	1930.4
2023	3 16	23 42	07.21	-1 56	07.4	0.9945029	1929.9
2023	3 17	23 45	46.80	-1 32	24.2	0.9947825	1929.4
2023	3 18	23 49	26.21	-1 08	40.3	0.9950629	1928.8
2023	3 19	23 53	05.45	-0 44	56.0	0.9953437	1928.3
2023	3 20	23 56	44.54	-0 21	11.7	0.9956247	1927.7
2023	3 21	0 00	23.49	0 02	32.2	0.9959055	1927.2
2023	3 22	0 04	02.31	0 26	15.2	0.9961858	1926.6
2023	3 23	0 07	41.04	0 49	57.1	0.9964657	1926.1
2023	3 24	0 11	19.69	1 13	37.4	0.9967452	1925.6
2023	3 25	0 14	58.26	1 37	15.7	0.9970243	1925.0
2023	3 26	0 18	36.79	2 00	51.7	0.9973032	1924.5
2023	3 27	0 22	15.29	2 24	25.0	0.9975821	1923.9
2023	3 28	0 25	53.78	2 47	55.2	0.9978610	1923.4
2023	3 29	0 29	32.27	3 11	21.8	0.9981403	1922.9
2023	3 30	0 33	10.79	3 34	44.7	0.9984200	1922.3
2023	3 31	0 36	49.35	3 58	03.4	0.9987004	1921.8
2023	4 1	0 40	27.97	4 21	17.6	0.9989814	1921.2
2023	4 2	0 44	06.67	4 44	26.8	0.9992634	1920.7
2023	4 3	0 47	45.49	5 07	30.9	0.9995463	1920.2
2023	4 4	0 51	24.42	5 30	29.4	0.9998303	1919.6
2023	4 5	0 55	03.51	5 53	22.1	1.0001154	1919.1
2023	4 6	0 58	42.76	6 16	08.6	1.0004017	1918.5
2023	4 7	1 02	22.21	6 38	48.6	1.0006891	1918.0
2023	4 8	1 06	01.88	7 01	21.8	1.0009776	1917.4
2023	4 9	1 09	41.78	7 23	47.8	1.0012669	1916.9
2023	4 10	1 13	21.95	7 46	06.5	1.0015570	1916.3

Date			SUN			Apparent			Apparent			Visual		
Oh TT			Apparent			Declination			Distance			Diameter		
y	m	d	R.A.			d m s			au			arc sec		
2023	4	11	1	17	02.39	8	08	17.5	1.0018476			1915.8		
2023	4	12	1	20	43.13	8	30	20.3	1.0021383			1915.2		
2023	4	13	1	24	24.19	8	52	14.8	1.0024288			1914.6		
2023	4	14	1	28	05.58	9	14	00.6	1.0027186			1914.1		
2023	4	15	1	31	47.31	9	35	37.3	1.0030074			1913.5		
2023	4	16	1	35	29.40	9	57	04.6	1.0032946			1913.0		
2023	4	17	1	39	11.87	10	18	22.0	1.0035799			1912.4		
2023	4	18	1	42	54.72	10	39	29.3	1.0038630			1911.9		
2023	4	19	1	46	37.97	11	00	26.1	1.0041435			1911.4		
2023	4	20	1	50	21.63	11	21	12.1	1.0044213			1910.8		
2023	4	21	1	54	05.71	11	41	46.8	1.0046963			1910.3		
2023	4	22	1	57	50.22	12	02	10.0	1.0049684			1909.8		
2023	4	23	2	01	35.17	12	22	21.2	1.0052378			1909.3		
2023	4	24	2	05	20.57	12	42	20.1	1.0055044			1908.8		
2023	4	25	2	09	06.42	13	02	06.5	1.0057684			1908.3		
2023	4	26	2	12	52.74	13	21	39.8	1.0060301			1907.8		
2023	4	27	2	16	39.53	13	40	59.8	1.0062894			1907.3		
2023	4	28	2	20	26.80	14	00	06.2	1.0065467			1906.8		
2023	4	29	2	24	14.56	14	18	58.6	1.0068020			1906.3		
2023	4	30	2	28	02.82	14	37	36.8	1.0070555			1905.8		
2023	5	1	2	31	51.58	14	56	00.3	1.0073074			1905.4		
2023	5	2	2	35	40.86	15	14	08.9	1.0075578			1904.9		
2023	5	3	2	39	30.67	15	32	02.3	1.0078068			1904.4		
2023	5	4	2	43	21.02	15	49	40.2	1.0080547			1904.0		
2023	5	5	2	47	11.91	16	07	02.3	1.0083014			1903.5		
2023	5	6	2	51	03.36	16	24	08.4	1.0085470			1903.0		
2023	5	7	2	54	55.38	16	40	58.1	1.0087915			1902.6		
2023	5	8	2	58	47.97	16	57	31.2	1.0090348			1902.1		
2023	5	9	3	02	41.14	17	13	47.4	1.0092767			1901.6		
2023	5	10	3	06	34.89	17	29	46.5	1.0095170			1901.2		
2023	5	11	3	10	29.23	17	45	28.1	1.0097554			1900.7		
2023	5	12	3	14	24.16	18	00	52.0	1.0099914			1900.3		
2023	5	13	3	18	19.67	18	15	57.8	1.0102247			1899.9		
2023	5	14	3	22	15.78	18	30	45.2	1.0104548			1899.4		
2023	5	15	3	26	12.47	18	45	14.0	1.0106814			1899.0		
2023	5	16	3	30	09.74	18	59	23.8	1.0109041			1898.6		
2023	5	17	3	34	07.60	19	13	14.3	1.0111225			1898.2		
2023	5	18	3	38	06.03	19	26	45.3	1.0113365			1897.8		
2023	5	19	3	42	05.03	19	39	56.5	1.0115458			1897.4		
2023	5	20	3	46	04.58	19	52	47.6	1.0117503			1897.0		
2023	5	21	3	50	04.68	20	05	18.3	1.0119501			1896.6		
2023	5	22	3	54	05.32	20	17	28.4	1.0121451			1896.3		
2023	5	23	3	58	06.47	20	29	17.6	1.0123354			1895.9		
2023	5	24	4	02	08.13	20	40	45.7	1.0125212			1895.6		
2023	5	25	4	06	10.28	20	51	52.3	1.0127025			1895.2		
2023	5	26	4	10	12.91	21	02	37.3	1.0128795			1894.9		
2023	5	27	4	14	16.01	21	13	00.4	1.0130523			1894.6		
2023	5	28	4	18	19.57	21	23	01.5	1.0132212			1894.2		
2023	5	29	4	22	23.57	21	32	40.2	1.0133864			1893.9		
2023	5	30	4	26	28.00	21	41	56.5	1.0135480			1893.6		
2023	5	31	4	30	32.84	21	50	50.1	1.0137063			1893.3		

Date			SUN Apparent R.A.			Apparent Declination			Apparent Distance	Visual Diameter
Oh	TT		h	m	s	d	m	s	au	arc sec
y	m	d								
2023	6	1	4	34	38.10	21	59	20.8	1.0138614	1893.0
2023	6	2	4	38	43.74	22	07	28.6	1.0140135	1892.8
2023	6	3	4	42	49.77	22	15	13.1	1.0141629	1892.5
2023	6	4	4	46	56.16	22	22	34.4	1.0143095	1892.2
2023	6	5	4	51	02.91	22	29	32.3	1.0144536	1891.9
2023	6	6	4	55	10.00	22	36	06.6	1.0145950	1891.7
2023	6	7	4	59	17.41	22	42	17.2	1.0147335	1891.4
2023	6	8	5	03	25.13	22	48	04.0	1.0148691	1891.2
2023	6	9	5	07	33.14	22	53	26.8	1.0150012	1890.9
2023	6	10	5	11	41.41	22	58	25.5	1.0151297	1890.7
2023	6	11	5	15	49.94	23	03	00.0	1.0152541	1890.5
2023	6	12	5	19	58.71	23	07	10.1	1.0153741	1890.2
2023	6	13	5	24	07.68	23	10	55.8	1.0154892	1890.0
2023	6	14	5	28	16.85	23	14	17.0	1.0155992	1889.8
2023	6	15	5	32	26.18	23	17	13.6	1.0157038	1889.6
2023	6	16	5	36	35.65	23	19	45.5	1.0158027	1889.4
2023	6	17	5	40	45.23	23	21	52.7	1.0158959	1889.3
2023	6	18	5	44	54.90	23	23	35.1	1.0159833	1889.1
2023	6	19	5	49	04.62	23	24	52.8	1.0160647	1888.9
2023	6	20	5	53	14.36	23	25	45.6	1.0161403	1888.8
2023	6	21	5	57	24.10	23	26	13.5	1.0162101	1888.7
2023	6	22	6	01	33.81	23	26	16.7	1.0162742	1888.6
2023	6	23	6	05	43.47	23	25	55.0	1.0163327	1888.4
2023	6	24	6	09	53.04	23	25	08.4	1.0163858	1888.3
2023	6	25	6	14	02.50	23	23	57.1	1.0164336	1888.3
2023	6	26	6	18	11.83	23	22	21.0	1.0164764	1888.2
2023	6	27	6	22	21.00	23	20	20.3	1.0165144	1888.1
2023	6	28	6	26	29.99	23	17	54.9	1.0165478	1888.0
2023	6	29	6	30	38.79	23	15	04.9	1.0165769	1888.0
2023	6	30	6	34	47.36	23	11	50.5	1.0166019	1887.9
2023	7	1	6	38	55.70	23	08	11.8	1.0166232	1887.9
2023	7	2	6	43	03.79	23	04	08.8	1.0166410	1887.9
2023	7	3	6	47	11.59	22	59	41.8	1.0166554	1887.8
2023	7	4	6	51	19.10	22	54	50.7	1.0166666	1887.8
2023	7	5	6	55	26.31	22	49	35.8	1.0166746	1887.8
2023	7	6	6	59	33.18	22	43	57.1	1.0166793	1887.8
2023	7	7	7	03	39.71	22	37	54.7	1.0166805	1887.8
2023	7	8	7	07	45.89	22	31	28.9	1.0166780	1887.8
2023	7	9	7	11	51.70	22	24	39.6	1.0166714	1887.8
2023	7	10	7	15	57.12	22	17	27.1	1.0166603	1887.8
2023	7	11	7	20	02.14	22	09	51.4	1.0166445	1887.9
2023	7	12	7	24	06.75	22	01	52.9	1.0166236	1887.9
2023	7	13	7	28	10.92	21	53	31.6	1.0165974	1888.0
2023	7	14	7	32	14.64	21	44	47.8	1.0165656	1888.0
2023	7	15	7	36	17.89	21	35	41.7	1.0165281	1888.1
2023	7	16	7	40	20.65	21	26	13.4	1.0164847	1888.2
2023	7	17	7	44	22.91	21	16	23.3	1.0164355	1888.3
2023	7	18	7	48	24.65	21	06	11.4	1.0163802	1888.4
2023	7	19	7	52	25.84	20	55	38.1	1.0163190	1888.5
2023	7	20	7	56	26.48	20	44	43.7	1.0162519	1888.6

Date			SUN			Apparent			Apparent			Visual		
Oh TT			Apparent			Declination			Distance			Diameter		
y	m	d	R.A.			d m s			au			arc sec		
2023	7	21	8	00	26.56	20	33	28.2	1.0161790			1888.7		
2023	7	22	8	04	26.06	20	21	52.1	1.0161005			1888.9		
2023	7	23	8	08	24.97	20	09	55.4	1.0160165			1889.0		
2023	7	24	8	12	23.29	19	57	38.6	1.0159271			1889.2		
2023	7	25	8	16	21.01	19	45	01.9	1.0158328			1889.4		
2023	7	26	8	20	18.11	19	32	05.5	1.0157335			1889.6		
2023	7	27	8	24	14.61	19	18	49.7	1.0156298			1889.8		
2023	7	28	8	28	10.48	19	05	14.9	1.0155219			1890.0		
2023	7	29	8	32	05.75	18	51	21.2	1.0154101			1890.2		
2023	7	30	8	36	00.39	18	37	09.0	1.0152947			1890.4		
2023	7	31	8	39	54.41	18	22	38.7	1.0151761			1890.6		
2023	8	1	8	43	47.82	18	07	50.3	1.0150546			1890.8		
2023	8	2	8	47	40.61	17	52	44.3	1.0149302			1891.1		
2023	8	3	8	51	32.79	17	37	20.9	1.0148032			1891.3		
2023	8	4	8	55	24.36	17	21	40.4	1.0146734			1891.5		
2023	8	5	8	59	15.35	17	05	43.0	1.0145408			1891.8		
2023	8	6	9	03	05.74	16	49	28.9	1.0144050			1892.0		
2023	8	7	9	06	55.56	16	32	58.4	1.0142658			1892.3		
2023	8	8	9	10	44.80	16	16	11.8	1.0141229			1892.6		
2023	8	9	9	14	33.48	15	59	09.5	1.0139761			1892.8		
2023	8	10	9	18	21.59	15	41	51.7	1.0138250			1893.1		
2023	8	11	9	22	09.15	15	24	18.7	1.0136694			1893.4		
2023	8	12	9	25	56.16	15	06	30.8	1.0135092			1893.7		
2023	8	13	9	29	42.61	14	48	28.4	1.0133442			1894.0		
2023	8	14	9	33	28.52	14	30	11.8	1.0131744			1894.3		
2023	8	15	9	37	13.88	14	11	41.3	1.0129995			1894.7		
2023	8	16	9	40	58.71	13	52	57.2	1.0128197			1895.0		
2023	8	17	9	44	43.01	13	33	59.9	1.0126349			1895.3		
2023	8	18	9	48	26.79	13	14	49.7	1.0124452			1895.7		
2023	8	19	9	52	10.06	12	55	26.9	1.0122507			1896.1		
2023	8	20	9	55	52.82	12	35	51.8	1.0120515			1896.4		
2023	8	21	9	59	35.08	12	16	04.8	1.0118478			1896.8		
2023	8	22	10	03	16.87	11	56	06.3	1.0116398			1897.2		
2023	8	23	10	06	58.18	11	35	56.5	1.0114277			1897.6		
2023	8	24	10	10	39.04	11	15	35.7	1.0112119			1898.0		
2023	8	25	10	14	19.45	10	55	04.4	1.0109926			1898.4		
2023	8	26	10	17	59.44	10	34	22.8	1.0107703			1898.8		
2023	8	27	10	21	39.00	10	13	31.4	1.0105452			1899.3		
2023	8	28	10	25	18.17	9	52	30.3	1.0103179			1899.7		
2023	8	29	10	28	56.94	9	31	20.0	1.0100886			1900.1		
2023	8	30	10	32	35.35	9	10	00.7	1.0098578			1900.6		
2023	8	31	10	36	13.41	8	48	32.7	1.0096256			1901.0		
2023	9	1	10	39	51.15	8	26	56.4	1.0093921			1901.4		
2023	9	2	10	43	28.58	8	05	11.9	1.0091575			1901.9		
2023	9	3	10	47	05.73	7	43	19.6	1.0089215			1902.3		
2023	9	4	10	50	42.63	7	21	19.7	1.0086839			1902.8		
2023	9	5	10	54	19.29	6	59	12.6	1.0084447			1903.2		
2023	9	6	10	57	55.73	6	36	58.5	1.0082035			1903.7		
2023	9	7	11	01	31.97	6	14	37.7	1.0079601			1904.1		
2023	9	8	11	05	08.04	5	52	10.6	1.0077143			1904.6		
2023	9	9	11	08	43.93	5	29	37.6	1.0074659			1905.1		

Date		SUN Apparent R.A.			Apparent Declination			Apparent Distance	Visual Diameter	
Oh TT		R.A.			Declination			Distance	Diameter	
y	m	d	h	m	s	d	m	s	au	arc sec
2023	9	10	11	12	19.68	5	06	58.9	1.0072147	1905.5
2023	9	11	11	15	55.29	4	44	14.9	1.0069606	1906.0
2023	9	12	11	19	30.79	4	21	26.0	1.0067035	1906.5
2023	9	13	11	23	06.18	3	58	32.4	1.0064434	1907.0
2023	9	14	11	26	41.50	3	35	34.6	1.0061802	1907.5
2023	9	15	11	30	16.74	3	12	32.9	1.0059139	1908.0
2023	9	16	11	33	51.94	2	49	27.5	1.0056446	1908.5
2023	9	17	11	37	27.10	2	26	19.0	1.0053723	1909.0
2023	9	18	11	41	02.26	2	03	07.6	1.0050972	1909.6
2023	9	19	11	44	37.42	1	39	53.6	1.0048194	1910.1
2023	9	20	11	48	12.61	1	16	37.5	1.0045392	1910.6
2023	9	21	11	51	47.83	0	53	19.6	1.0042568	1911.2
2023	9	22	11	55	23.12	0	30	00.3	1.0039726	1911.7
2023	9	23	11	58	58.49	0	06	39.8	1.0036868	1912.2
2023	9	24	12	02	33.95	-0	16	41.4	1.0033999	1912.8
2023	9	25	12	06	09.53	-0	40	02.9	1.0031124	1913.3
2023	9	26	12	09	45.25	-1	03	24.5	1.0028245	1913.9
2023	9	27	12	13	21.12	-1	26	45.8	1.0025369	1914.4
2023	9	28	12	16	57.18	-1	50	06.5	1.0022497	1915.0
2023	9	29	12	20	33.44	-2	13	26.3	1.0019632	1915.5
2023	9	30	12	24	09.94	-2	36	44.8	1.0016777	1916.1
2023	10	1	12	27	46.70	-3	00	01.8	1.0013932	1916.6
2023	10	2	12	31	23.75	-3	23	17.1	1.0011096	1917.2
2023	10	3	12	35	01.11	-3	46	30.2	1.0008268	1917.7
2023	10	4	12	38	38.81	-4	09	40.8	1.0005447	1918.2
2023	10	5	12	42	16.86	-4	32	48.6	1.0002630	1918.8
2023	10	6	12	45	55.29	-4	55	53.2	0.9999815	1919.3
2023	10	7	12	49	34.11	-5	18	54.3	0.9997002	1919.9
2023	10	8	12	53	13.35	-5	41	51.5	0.9994187	1920.4
2023	10	9	12	56	53.01	-6	04	44.4	0.9991369	1920.9
2023	10	10	13	00	33.13	-6	27	32.6	0.9988548	1921.5
2023	10	11	13	04	13.71	-6	50	15.8	0.9985722	1922.0
2023	10	12	13	07	54.78	-7	12	53.5	0.9982891	1922.6
2023	10	13	13	11	36.34	-7	35	25.4	0.9980053	1923.1
2023	10	14	13	15	18.43	-7	57	51.1	0.9977208	1923.7
2023	10	15	13	19	01.05	-8	20	10.2	0.9974357	1924.2
2023	10	16	13	22	44.23	-8	42	22.3	0.9971500	1924.8
2023	10	17	13	26	27.97	-9	04	27.0	0.9968638	1925.3
2023	10	18	13	30	12.29	-9	26	23.9	0.9965773	1925.9
2023	10	19	13	33	57.21	-9	48	12.5	0.9962906	1926.4
2023	10	20	13	37	42.74	-10	09	52.5	0.9960040	1927.0
2023	10	21	13	41	28.89	-10	31	23.5	0.9957180	1927.5
2023	10	22	13	45	15.67	-10	52	45.0	0.9954327	1928.1
2023	10	23	13	49	03.09	-11	13	56.6	0.9951487	1928.6
2023	10	24	13	52	51.17	-11	34	58.0	0.9948664	1929.2
2023	10	25	13	56	39.93	-11	55	48.8	0.9945862	1929.7
2023	10	26	14	00	29.38	-12	16	28.5	0.9943084	1930.3
2023	10	27	14	04	19.54	-12	36	56.7	0.9940336	1930.8
2023	10	28	14	08	10.43	-12	57	13.3	0.9937618	1931.3
2023	10	29	14	12	02.07	-13	17	17.7	0.9934934	1931.9
2023	10	30	14	15	54.48	-13	37	09.7	0.9932283	1932.4

Date			SUN			Apparent		Apparent		Visual	
0h TT			Apparent			Declination		Distance		Diameter	
R.A.			Declination		au		arc sec				
y	m	d	h	m	s	d	m	s			
2023	10	31	14	19	47.66	-13	56	48.8	0.9929667		1932.9
2023	11	1	14	23	41.64	-14	16	14.7	0.9927083		1933.4
2023	11	2	14	27	36.43	-14	35	27.0	0.9924531		1933.9
2023	11	3	14	31	32.03	-14	54	25.3	0.9922010		1934.4
2023	11	4	14	35	28.46	-15	13	09.2	0.9919517		1934.9
2023	11	5	14	39	25.72	-15	31	38.3	0.9917051		1935.3
2023	11	6	14	43	23.82	-15	49	52.1	0.9914610		1935.8
2023	11	7	14	47	22.76	-16	07	50.3	0.9912192		1936.3
2023	11	8	14	51	22.56	-16	25	32.4	0.9909797		1936.8
2023	11	9	14	55	23.21	-16	42	58.0	0.9907423		1937.2
2023	11	10	14	59	24.72	-17	00	06.7	0.9905068		1937.7
2023	11	11	15	03	27.10	-17	16	58.1	0.9902732		1938.1
2023	11	12	15	07	30.33	-17	33	31.8	0.9900413		1938.6
2023	11	13	15	11	34.42	-17	49	47.3	0.9898112		1939.0
2023	11	14	15	15	39.37	-18	05	44.3	0.9895827		1939.5
2023	11	15	15	19	45.17	-18	21	22.3	0.9893559		1939.9
2023	11	16	15	23	51.81	-18	36	40.9	0.9891310		1940.4
2023	11	17	15	27	59.29	-18	51	39.8	0.9889082		1940.8
2023	11	18	15	32	07.59	-19	06	18.5	0.9886876		1941.2
2023	11	19	15	36	16.70	-19	20	36.6	0.9884697		1941.7
2023	11	20	15	40	26.61	-19	34	33.7	0.9882547		1942.1
2023	11	21	15	44	37.32	-19	48	09.5	0.9880431		1942.5
2023	11	22	15	48	48.80	-20	01	23.6	0.9878353		1942.9
2023	11	23	15	53	01.07	-20	14	15.6	0.9876317		1943.3
2023	11	24	15	57	14.10	-20	26	45.2	0.9874326		1943.7
2023	11	25	16	01	27.90	-20	38	52.1	0.9872384		1944.1
2023	11	26	16	05	42.45	-20	50	36.1	0.9870493		1944.5
2023	11	27	16	09	57.75	-21	01	56.7	0.9868655		1944.8
2023	11	28	16	14	13.78	-21	12	53.7	0.9866871		1945.2
2023	11	29	16	18	30.52	-21	23	26.7	0.9865141		1945.5
2023	11	30	16	22	47.97	-21	33	35.6	0.9863464		1945.9
2023	12	1	16	27	06.10	-21	43	20.0	0.9861840		1946.2
2023	12	2	16	31	24.91	-21	52	39.6	0.9860266		1946.5
2023	12	3	16	35	44.36	-22	01	34.1	0.9858743		1946.8
2023	12	4	16	40	04.43	-22	10	03.2	0.9857267		1947.1
2023	12	5	16	44	25.12	-22	18	06.7	0.9855838		1947.4
2023	12	6	16	48	46.38	-22	25	44.3	0.9854453		1947.6
2023	12	7	16	53	08.21	-22	32	55.7	0.9853110		1947.9
2023	12	8	16	57	30.57	-22	39	40.7	0.9851808		1948.2
2023	12	9	17	01	53.43	-22	45	59.1	0.9850544		1948.4
2023	12	10	17	06	16.78	-22	51	50.7	0.9849318		1948.7
2023	12	11	17	10	40.57	-22	57	15.2	0.9848127		1948.9
2023	12	12	17	15	04.77	-23	02	12.5	0.9846969		1949.1
2023	12	13	17	19	29.36	-23	06	42.4	0.9845844		1949.3
2023	12	14	17	23	54.28	-23	10	44.8	0.9844752		1949.6
2023	12	15	17	28	19.52	-23	14	19.4	0.9843693		1949.8
2023	12	16	17	32	45.01	-23	17	26.3	0.9842668		1950.0
2023	12	17	17	37	10.73	-23	20	05.2	0.9841680		1950.2
2023	12	18	17	41	36.63	-23	22	16.0	0.9840730		1950.4
2023	12	19	17	46	02.69	-23	23	58.7	0.9839824		1950.5
2023	12	20	17	50	28.86	-23	25	13.3	0.9838964		1950.7

Date	SUN	Apparent	Apparent	Apparent	Visual
0h TT	Apparent	Declination	Distance	Diameter	
y m d	R.A.		au	arc sec	
	h m s	d m s			
2023 12 21	17 54 55.12	-23 25 59.5	0.9838153	1950.9	
2023 12 22	17 59 21.44	-23 26 17.6	0.9837397	1951.0	
2023 12 23	18 03 47.77	-23 26 07.4	0.9836696	1951.2	
2023 12 24	18 08 14.11	-23 25 28.9	0.9836056	1951.3	
2023 12 25	18 12 40.40	-23 24 22.3	0.9835476	1951.4	
2023 12 26	18 17 06.63	-23 22 47.5	0.9834960	1951.5	
2023 12 27	18 21 32.75	-23 20 44.6	0.9834507	1951.6	
2023 12 28	18 25 58.75	-23 18 13.6	0.9834117	1951.7	
2023 12 29	18 30 24.59	-23 15 14.7	0.9833792	1951.7	
2023 12 30	18 34 50.23	-23 11 47.8	0.9833528	1951.8	
2023 12 31	18 39 15.65	-23 07 53.1	0.9833326	1951.8	
2024 1 1	18 43 40.82	-23 03 30.7	0.9833183	1951.8	

Date			MOON			Page 1	
Oh TT			Apparent			Solar	
y m d			R.A.			Separation	
			Declination			Diameter	
			km			arc sec	
			degrees				
2022	12	31	1 19 29.63	6 24 27.7	384716.940	1863.8	101.5
2023	1	1	2 06 36.65	12 02 57.6	389543.817	1840.7	113.4
2023	1	2	2 54 33.77	17 04 20.9	393811.724	1820.7	124.9
2023	1	3	3 44 01.68	21 17 09.6	397453.013	1804.0	136.3
2023	1	4	4 35 17.25	24 30 30.2	400456.546	1790.5	147.4
2023	1	5	5 28 07.49	26 34 55.5	402840.480	1779.9	158.3
2023	1	6	6 21 49.34	27 23 59.0	404627.078	1772.1	168.7
2023	1	7	7 15 19.91	26 55 48.0	405822.917	1766.8	-175.4
2023	1	8	8 07 35.65	25 13 40.3	406406.801	1764.3	-167.7
2023	1	9	8 57 51.48	22 25 16.1	406326.606	1764.6	-157.4
2023	1	10	9 45 50.88	18 40 52.6	405505.158	1768.2	-146.7
2023	1	11	10 31 45.36	14 11 35.9	403854.242	1775.4	-135.9
2023	1	12	11 16 08.27	9 08 11.5	401295.024	1786.8	-125.0
2023	1	13	11 59 47.99	3 40 44.2	397782.726	1802.5	-114.0
2023	1	14	12 43 43.55	-2 00 55.9	393333.000	1822.9	-102.7
2023	1	15	13 29 02.28	-7 46 12.3	388047.055	1847.8	-91.1
2023	1	16	14 16 57.78	-13 22 13.1	382131.694	1876.4	-79.1
2023	1	17	15 08 44.64	-18 32 08.1	375909.146	1907.4	-66.7
2023	1	18	16 05 24.25	-22 53 50.2	369809.980	1938.9	-53.9
2023	1	19	17 07 16.96	-26 00 29.4	364342.186	1968.0	-40.6
2023	1	20	18 13 27.09	-27 25 03.2	360032.340	1991.5	-26.9
2023	1	21	19 21 31.38	-26 49 09.1	357343.257	2006.5	-13.3
2023	1	22	20 28 24.66	-24 11 49.9	356585.223	2010.8	5.3
2023	1	23	21 31 40.79	-19 51 00.6	357848.324	2003.7	16.9
2023	1	24	22 30 20.91	-14 16 21.7	360981.667	1986.3	30.6
2023	1	25	23 24 43.89	-7 59 51.9	365628.144	1961.1	44.2
2023	1	26	0 15 51.34	-1 29 35.9	371300.437	1931.1	57.3
2023	1	27	1 04 58.50	4 52 13.7	377470.450	1899.5	70.1
2023	1	28	1 53 18.19	10 48 38.0	383646.555	1869.0	82.4
2023	1	29	2 41 52.96	16 06 16.1	389425.032	1841.2	94.2
2023	1	30	3 31 29.63	20 33 56.1	394514.081	1817.5	105.8
2023	1	31	4 22 33.60	24 01 45.8	398735.680	1798.2	117.0
2023	2	1	5 15 03.19	26 21 17.6	402012.451	1783.6	128.0
2023	2	2	6 08 27.98	27 26 24.3	404345.830	1773.3	138.9
2023	2	3	7 01 55.33	27 14 36.2	405790.363	1767.0	149.6
2023	2	4	7 54 25.90	25 47 52.1	406427.643	1764.2	160.2
2023	2	5	8 45 11.76	23 12 28.8	406342.735	1764.6	170.2
2023	2	6	9 33 48.71	19 37 51.4	405605.502	1767.8	-174.5
2023	2	7	10 20 18.95	15 15 02.5	404258.873	1773.7	-165.8
2023	2	8	11 05 06.88	10 15 27.3	402315.495	1782.2	-155.2
2023	2	9	11 48 52.86	4 50 16.1	399763.449	1793.6	-144.3
2023	2	10	12 32 28.22	-0 49 37.9	396580.535	1808.0	-133.1
2023	2	11	13 16 52.23	-6 33 08.1	392755.640	1825.6	-121.7
2023	2	12	14 03 10.14	-12 07 59.8	388314.595	1846.5	-110.1
2023	2	13	14 52 29.76	-17 19 38.3	383346.887	1870.4	-98.2
2023	2	14	15 45 52.87	-21 49 58.1	378028.511	1896.7	-85.9
2023	2	15	16 43 57.18	-25 17 02.2	372634.952	1924.2	-73.2
2023	2	16	17 46 29.12	-27 16 54.4	367537.244	1950.9	-60.1
2023	2	17	18 52 02.35	-27 28 56.9	363174.414	1974.3	-46.7
2023	2	18	19 58 10.53	-25 43 23.9	359999.201	1991.7	-32.9
2023	2	19	21 02 22.92	-22 06 31.5	358402.278	2000.6	-19.1

						Page 2	
Date		MOON				Solar	
Oh TT		Apparent		Apparent		Separation	
y m d		R.A.		Declination		Diameter	
		h m s		d m s		arc sec	
				km		degrees	
2023	2	20	22 03 03.91	-16 59 20.0	358631.684	1999.3	-6.3
2023	2	21	22 59 52.33	-10 51 06.1	360732.557	1987.7	10.7
2023	2	22	23 53 22.76	-4 12 24.4	364529.495	1967.0	23.9
2023	2	23	0 44 36.97	2 29 21.8	369658.280	1939.7	37.2
2023	2	24	1 34 42.76	8 51 42.6	375634.153	1908.8	50.1
2023	2	25	2 24 41.79	14 36 53.8	381932.665	1877.3	62.5
2023	2	26	3 15 21.91	19 31 00.5	388061.100	1847.7	74.5
2023	2	27	4 07 10.88	23 23 02.3	393608.430	1821.7	86.2
2023	2	28	5 00 11.02	26 04 30.8	398271.839	1800.3	97.4
2023	3	1	5 53 57.55	27 29 47.8	401863.729	1784.2	108.5
2023	3	2	6 47 44.23	27 36 46.2	404304.828	1773.5	119.4
2023	3	3	7 40 36.97	26 27 19.4	405608.404	1767.8	130.1
2023	3	4	8 31 50.47	24 07 08.5	405859.204	1766.7	140.9
2023	3	5	9 21 00.11	20 44 46.9	405189.686	1769.6	151.7
2023	3	6	10 08 05.51	16 30 30.6	403755.667	1775.9	162.4
2023	3	7	10 53 27.37	11 35 20.8	401713.438	1784.9	172.8
2023	3	8	11 37 41.85	6 10 35.1	399200.719	1796.1	-173.7
2023	3	9	12 21 35.63	0 27 44.3	396323.922	1809.2	-163.2
2023	3	10	13 06 02.60	-5 21 08.8	393153.866	1823.8	-151.8
2023	3	11	13 52 01.46	-11 02 57.4	389731.200	1839.8	-140.2
2023	3	12	14 40 32.45	-16 22 48.2	386081.261	1857.2	-128.3
2023	3	13	15 32 30.36	-21 03 23.7	382236.274	1875.9	-116.2
2023	3	14	16 28 30.81	-24 44 57.1	378260.975	1895.6	-103.8
2023	3	15	17 28 29.82	-27 06 32.7	374276.152	1915.8	-91.2
2023	3	16	18 31 26.28	-27 49 39.5	370473.534	1935.4	-78.2
2023	3	17	19 35 26.64	-26 43 27.2	367115.304	1953.1	-65.0
2023	3	18	20 38 22.32	-23 49 04.4	364512.972	1967.1	-51.5
2023	3	19	21 38 38.59	-19 20 02.7	362984.476	1975.3	-37.8
2023	3	20	22 35 40.29	-13 38 48.6	362795.323	1976.4	-24.1
2023	3	21	23 29 45.45	-7 11 56.2	364097.599	1969.3	-10.5
2023	3	22	0 21 43.87	-0 26 17.5	366885.237	1954.3	4.5
2023	3	23	1 12 37.14	6 13 15.6	370980.801	1932.8	17.1
2023	3	24	2 03 24.87	12 24 58.3	376058.145	1906.7	29.9
2023	3	25	2 54 55.20	17 50 34.2	381692.467	1878.5	42.5
2023	3	26	3 47 36.81	22 15 17.8	387421.829	1850.7	54.6
2023	3	27	4 41 32.37	25 28 02.4	392804.735	1825.4	66.3
2023	3	28	5 36 15.91	27 21 42.7	397464.262	1804.0	77.7
2023	3	29	6 30 58.63	27 53 45.1	401115.838	1787.6	88.8
2023	3	30	7 24 43.34	27 06 13.2	403580.143	1776.6	99.8
2023	3	31	8 16 42.37	25 05 07.7	404784.301	1771.4	110.6
2023	4	1	9 06 30.14	21 59 08.7	404754.444	1771.5	121.4
2023	4	2	9 54 06.57	17 58 14.9	403601.895	1776.6	132.3
2023	4	3	10 39 53.29	13 12 49.7	401504.414	1785.8	143.3
2023	4	4	11 24 27.44	7 53 24.0	398683.571	1798.5	154.5
2023	4	5	12 08 36.31	2 10 51.5	395379.599	1813.5	165.9
2023	4	6	12 53 13.83	-3 42 58.1	391825.793	1829.9	177.1
2023	4	7	13 39 18.04	-9 34 38.3	388225.510	1846.9	-170.4
2023	4	8	14 27 47.74	-15 08 26.4	384735.502	1863.7	-158.4
2023	4	9	15 19 35.53	-20 06 02.0	381459.094	1879.7	-146.1
2023	4	10	16 15 14.55	-24 06 47.3	378451.214	1894.6	-133.6

Date		MOON			Page 3		
0h TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	
d		h m s	d m s	km	arc sec	degrees	
2023	4	11	17 14 39.36	-26 49 32.0	375734.716	1908.3	-120.9
2023	4	12	18 16 50.07	-27 56 10.7	373324.366	1920.6	-108.0
2023	4	13	19 19 57.66	-27 16 27.5	371252.359	1931.4	-95.0
2023	4	14	20 21 59.37	-24 51 18.9	369588.054	1940.1	-81.9
2023	4	15	21 21 24.46	-20 52 36.5	368445.213	1946.1	-68.6
2023	4	16	22 17 38.62	-15 39 38.4	367972.429	1948.6	-55.3
2023	4	17	23 10 58.89	-9 35 05.6	368326.633	1946.7	-41.9
2023	4	18	0 02 14.24	-3 02 16.5	369634.716	1939.8	-28.6
2023	4	19	0 52 26.88	3 36 12.1	371952.985	1927.7	-15.3
2023	4	20	1 42 39.30	9 58 56.2	375236.217	1910.9	-2.3
2023	4	21	2 33 44.77	15 46 05.4	379325.762	1890.2	10.5
2023	4	22	3 26 18.55	20 39 54.4	383960.103	1867.4	22.9
2023	4	23	4 20 29.16	24 25 34.2	388804.264	1844.2	35.0
2023	4	24	5 15 52.64	26 52 25.9	393489.760	1822.2	46.7
2023	4	25	6 11 35.71	27 55 13.3	397656.011	1803.1	58.1
2023	4	26	7 06 30.82	27 34 35.8	400986.426	1788.1	69.3
2023	4	27	7 59 37.96	25 56 25.3	403235.717	1778.2	80.3
2023	4	28	8 50 21.77	23 09 58.7	404247.776	1773.7	91.2
2023	4	29	9 38 37.08	19 25 56.0	403964.894	1775.0	102.1
2023	4	30	10 24 44.67	14 54 55.5	402429.451	1781.7	113.0
2023	5	1	11 09 23.43	9 47 02.7	399778.744	1793.5	124.1
2023	5	2	11 53 23.57	4 12 09.0	396233.084	1809.6	135.4
2023	5	3	12 37 42.50	-1 39 19.8	392076.835	1828.8	146.9
2023	5	4	13 23 22.32	-7 35 17.6	387632.415	1849.7	158.8
2023	5	5	14 11 27.02	-13 20 51.1	383228.343	1871.0	170.9
2023	5	6	15 02 56.15	-18 37 30.0	379164.478	1891.1	-176.4
2023	5	7	15 58 31.43	-23 03 10.3	375679.853	1908.6	-163.8
2023	5	8	16 58 15.12	-26 14 02.7	372929.938	1922.7	-150.8
2023	5	9	18 01 09.00	-27 48 50.4	370979.250	1932.8	-137.7
2023	5	10	19 05 15.02	-27 34 44.7	369811.841	1938.9	-124.5
2023	5	11	20 08 13.22	-25 31 49.7	369356.844	1941.3	-111.2
2023	5	12	21 08 16.40	-21 52 38.4	369521.679	1940.4	-98.0
2023	5	13	22 04 41.52	-16 57 33.2	370223.335	1936.7	-84.8
2023	5	14	22 57 44.61	-11 09 27.8	371409.205	1930.5	-71.6
2023	5	15	23 48 18.00	-4 50 32.7	373062.533	1922.0	-58.6
2023	5	16	0 37 29.13	1 38 43.4	375192.085	1911.1	-45.7
2023	5	17	1 26 26.92	7 59 17.9	377809.933	1897.8	-32.9
2023	5	18	2 16 12.98	13 53 02.3	380904.288	1882.4	-20.4
2023	5	19	3 07 33.64	19 02 32.8	384415.292	1865.2	-8.2
2023	5	20	4 00 50.64	23 11 42.2	388220.498	1846.9	4.8
2023	5	21	4 55 52.18	26 07 04.7	392133.636	1828.5	16.3
2023	5	22	5 51 50.51	27 39 52.0	395916.555	1811.0	27.8
2023	5	23	6 47 32.95	27 47 31.9	399301.096	1795.7	39.1
2023	5	24	7 41 44.99	26 34 02.1	402016.279	1783.6	50.3
2023	5	25	8 33 33.90	24 08 18.2	403816.277	1775.6	61.3
2023	5	26	9 22 40.51	20 41 44.5	404505.921	1772.6	72.1
2023	5	27	10 09 17.44	16 26 00.7	403961.829	1775.0	83.0
2023	5	28	10 54 00.42	11 31 51.3	402148.294	1783.0	93.9
2023	5	29	11 37 39.64	6 08 58.5	399127.373	1796.5	105.0
2023	5	30	12 21 14.21	0 26 42.5	395062.450	1815.0	116.3
2023	5	31	13 05 49.34	-5 24 47.4	390213.828	1837.5	127.9

Date			MOON			Page 4					
0h TT			Apparent			Solar					
R.A.			Declination			Separation					
y	m	d	h	m	s	d	m	s	km	arc sec	degrees
2023	6	1	13	52	34.52	-11	13	05.5	384924.406	1862.8	139.8
2023	6	2	14	42	39.40	-16	41	59.4	379593.452	1888.9	152.1
2023	6	3	15	37	02.97	-21	30	31.0	374637.984	1913.9	164.7
2023	6	4	16	36	11.91	-25	13	31.3	370444.496	1935.6	176.2
2023	6	5	17	39	31.40	-27	25	16.5	367318.540	1952.0	-168.0
2023	6	6	18	45	09.69	-27	46	26.4	365443.731	1962.1	-154.6
2023	6	7	19	50	25.65	-26	11	25.6	364862.156	1965.2	-141.1
2023	6	8	20	52	54.55	-22	50	43.3	365482.906	1961.8	-127.5
2023	6	9	21	51	21.16	-18	06	19.0	367116.202	1953.1	-114.0
2023	6	10	22	45	45.36	-12	24	17.9	369522.061	1940.4	-100.7
2023	6	11	23	36	56.55	-6	09	28.5	372458.941	1925.1	-87.6
2023	6	12	0	26	05.82	0	16	37.9	375720.338	1908.4	-74.7
2023	6	13	1	14	28.20	6	35	32.6	379153.157	1891.1	-62.1
2023	6	14	2	03	12.86	12	30	44.0	382657.749	1873.8	-49.7
2023	6	15	2	53	16.00	17	46	38.5	386173.766	1856.7	-37.6
2023	6	16	3	45	12.82	22	08	21.4	389658.120	1840.1	-25.7
2023	6	17	4	39	07.93	25	22	18.0	393061.680	1824.2	-14.2
2023	6	18	5	34	28.94	27	17	56.3	396310.374	1809.2	-4.6
2023	6	19	6	30	10.78	27	49	54.0	399294.562	1795.7	10.3
2023	6	20	7	24	54.58	26	59	17.9	401868.333	1784.2	21.0
2023	6	21	8	17	33.51	24	53	15.9	403858.257	1775.4	31.9
2023	6	22	9	07	31.43	21	42	50.4	405079.604	1770.1	42.8
2023	6	23	9	54	46.87	17	40	24.8	405357.305	1768.9	53.6
2023	6	24	10	39	46.23	12	57	50.9	404548.971	1772.4	64.4
2023	6	25	11	23	14.31	7	45	42.7	402567.680	1781.1	75.3
2023	6	26	12	06	07.16	2	13	28.4	399402.708	1795.2	86.3
2023	6	27	12	49	28.29	-3	29	38.1	395136.510	1814.6	97.6
2023	6	28	13	34	27.19	-9	13	17.9	389955.910	1838.7	109.2
2023	6	29	14	22	17.29	-14	44	30.0	384154.602	1866.5	121.1
2023	6	30	15	14	09.80	-19	45	52.5	378123.120	1896.3	133.4
2023	7	1	16	10	57.71	-23	54	48.7	372322.132	1925.8	146.2
2023	7	2	17	12	47.07	-26	44	46.3	367236.665	1952.5	159.2
2023	7	3	18	18	26.09	-27	50	35.3	363313.706	1973.6	171.9
2023	7	4	19	25	24.32	-26	57	11.9	360893.533	1986.8	-171.3
2023	7	5	20	30	46.23	-24	06	43.6	360152.440	1990.9	-158.1
2023	7	6	21	32	26.29	-19	38	01.2	361075.783	1985.8	-144.3
2023	7	7	22	29	44.23	-13	59	17.1	363471.619	1972.7	-130.6
2023	7	8	23	23	09.57	-7	39	56.0	367020.152	1953.6	-117.0
2023	7	9	0	13	48.37	-1	05	52.7	371341.471	1930.9	-103.8
2023	7	10	1	02	57.73	5	21	37.0	376060.904	1906.7	-91.0
2023	7	11	1	51	51.56	11	25	06.6	380857.038	1882.6	-78.4
2023	7	12	2	41	32.54	16	49	36.7	385486.656	1860.0	-66.3
2023	7	13	3	32	44.91	21	21	32.8	389788.315	1839.5	-54.4
2023	7	14	4	25	46.06	24	48	34.8	393670.126	1821.4	-42.7
2023	7	15	5	20	19.16	27	00	32.0	397088.365	1805.7	-31.4
2023	7	16	6	15	33.34	27	51	06.6	400022.961	1792.4	-20.3
2023	7	17	7	10	16.67	27	19	30.0	402454.851	1781.6	-9.8
2023	7	18	8	03	19.23	25	30	47.0	404348.846	1773.3	5.6
2023	7	19	8	53	54.32	22	34	39.8	405644.335	1767.6	14.4
2023	7	20	9	41	47.66	18	43	15.8	406254.735	1765.0	24.8

Date			MOON			Page 5					
Oh TT			Apparent			Solar					
R.A.			Declination			Separation					
y	m	d	h	m	s	d	m	s	km	arc sec	degrees
2023	7	21	10	27	14.43	14	09	03.7	406075.360	1765.7	35.5
2023	7	22	11	10	50.81	9	03	39.2	404998.359	1770.4	46.3
2023	7	23	11	53	26.25	3	37	26.7	402932.845	1779.5	57.2
2023	7	24	12	35	58.60	-1	59	57.5	399827.983	1793.3	68.2
2023	7	25	13	19	32.10	-7	38	50.3	395696.776	1812.0	79.4
2023	7	26	14	05	16.17	-13	08	04.4	390638.005	1835.5	90.9
2023	7	27	14	54	22.32	-18	13	36.6	384853.160	1863.1	102.8
2023	7	28	15	47	54.80	-22	37	03.3	378654.077	1893.6	115.0
2023	7	29	16	46	30.05	-25	55	20.2	372455.763	1925.1	127.8
2023	7	30	17	49	46.14	-27	43	04.8	366748.469	1955.1	140.9
2023	7	31	18	56	00.96	-27	38	59.8	362045.348	1980.5	154.4
2023	8	1	20	02	32.09	-25	34	26.2	358808.795	1998.3	167.9
2023	8	2	21	06	42.76	-21	38	20.9	357369.192	2006.4	-174.2
2023	8	3	22	07	03.54	-16	14	33.7	357859.429	2003.6	-161.9
2023	8	4	23	03	25.26	-9	54	00.0	360188.825	1990.7	-148.1
2023	8	5	23	56	33.74	-3	07	25.9	364067.035	1969.5	-134.3
2023	8	6	0	47	39.09	3	38	27.8	369068.518	1942.8	-120.9
2023	8	7	1	37	54.84	10	02	00.7	374713.992	1913.5	-107.9
2023	8	8	2	28	26.14	15	45	48.9	380544.614	1884.2	-95.4
2023	8	9	3	20	01.47	20	35	35.9	386173.930	1856.7	-83.2
2023	8	10	4	13	04.77	24	19	27.9	391313.896	1832.3	-71.4
2023	8	11	5	07	28.66	26	48	03.1	395778.711	1811.7	-59.9
2023	8	12	6	02	33.33	27	55	30.1	399473.002	1794.9	-48.6
2023	8	13	6	57	16.34	27	40	40.8	402370.853	1782.0	-37.6
2023	8	14	7	50	32.19	26	07	39.8	404490.926	1772.6	-26.7
2023	8	15	8	41	32.58	23	24	58.4	405871.820	1766.6	-16.1
2023	8	16	9	29	57.45	19	43	54.0	406550.824	1763.7	-6.4
2023	8	17	10	15	54.71	15	16	42.5	406548.535	1763.7	7.7
2023	8	18	10	59	53.60	10	15	23.7	405861.062	1766.7	17.7
2023	8	19	11	42	37.14	4	51	09.4	404460.669	1772.8	28.4
2023	8	20	12	24	56.99	-0	45	31.6	402304.815	1782.3	39.3
2023	8	21	13	07	50.76	-6	24	22.6	399352.556	1795.5	50.4
2023	8	22	13	52	20.67	-11	54	27.6	395586.511	1812.5	61.6
2023	8	23	14	39	31.53	-17	03	05.4	391037.851	1833.6	73.2
2023	8	24	15	30	24.88	-21	34	40.7	385811.086	1858.5	85.0
2023	8	25	16	25	45.62	-25	10	02.4	380104.425	1886.4	97.2
2023	8	26	17	25	39.48	-27	27	13.1	374220.308	1916.0	109.8
2023	8	27	18	29	09.82	-28	05	04.2	368559.460	1945.5	122.8
2023	8	28	19	34	16.57	-26	49	36.5	363591.906	1972.0	136.3
2023	8	29	20	38	35.06	-23	40	07.4	359801.651	1992.8	150.1
2023	8	30	21	40	14.23	-18	50	50.2	357609.737	2005.0	164.0
2023	8	31	22	38	30.45	-12	47	07.0	357292.038	2006.8	176.0
2023	9	1	23	33	41.64	-5	59	19.5	358917.128	1997.7	-166.4
2023	9	2	0	26	42.10	1	02	22.9	362327.347	1978.9	-152.7
2023	9	3	1	18	38.89	7	51	05.3	367170.611	1952.8	-139.1
2023	9	4	2	10	35.75	14	04	15.5	372970.145	1922.5	-126.0
2023	9	5	3	03	22.09	19	23	42.4	379207.335	1890.8	-113.3
2023	9	6	3	57	23.81	23	35	13.9	385394.615	1860.5	-101.0
2023	9	7	4	52	36.04	26	28	34.5	391125.694	1833.2	-89.2
2023	9	8	5	48	21.93	27	57	53.6	396101.067	1810.2	-77.7
2023	9	9	6	43	42.01	28	02	23.1	400133.032	1792.0	-66.5

Date			MOON			Apparent			Apparent			Apparent			Visual			Page 6		
0h TT			Apparent			Declination			Distance			Diameter			Solar					
y	m	d	R.A.			d m s			km			arc sec			Separation					
			h	m	s	d	m	s											degrees	
2023	9	10	7	37	33.02	26	46	20.3	403136.302	1778.6	-55.5									
2023	9	11	8	29	07.67	24	18	10.7	405109.747	1769.9	-44.6									
2023	9	12	9	18	05.64	20	48	49.6	406113.413	1765.6	-33.8									
2023	9	13	10	04	33.72	16	30	07.2	406243.988	1765.0	-23.0									
2023	9	14	10	48	59.30	11	33	47.0	405611.234	1767.8	-12.3									
2023	9	15	11	32	03.12	6	11	03.4	404317.796	1773.4	-3.0									
2023	9	16	12	14	33.82	0	32	48.5	402444.602	1781.7	10.4									
2023	9	17	12	57	25.05	-5	10	02.8	400043.851	1792.4	21.4									
2023	9	18	13	41	33.77	-10	45	56.1	397140.813	1805.5	32.6									
2023	9	19	14	27	58.31	-16	01	54.4	393744.678	1821.0	44.0									
2023	9	20	15	17	33.58	-20	42	55.9	389867.304	1839.1	55.7									
2023	9	21	16	11	00.78	-24	31	31.3	385547.349	1859.7	67.6									
2023	9	22	17	08	30.49	-27	08	22.0	380875.931	1882.6	79.8									
2023	9	23	18	09	24.52	-28	14	45.9	376018.638	1906.9	92.4									
2023	9	24	19	12	11.72	-27	36	58.7	371227.666	1931.5	105.2									
2023	9	25	20	14	52.47	-25	10	51.9	366837.249	1954.6	118.5									
2023	9	26	21	15	43.45	-21	04	02.3	363236.644	1974.0	132.1									
2023	9	27	22	13	51.92	-15	34	22.9	360819.063	1987.2	145.9									
2023	9	28	23	09	20.57	-9	06	23.7	359912.861	1992.2	159.9									
2023	9	29	0	02	51.26	-2	07	31.8	360711.030	1987.8	173.8									
2023	9	30	0	55	24.55	4	54	33.0	363220.915	1974.1	-171.9									
2023	10	1	1	48	03.03	11	33	50.4	367252.216	1952.4	-158.3									
2023	10	2	2	41	38.39	17	27	16.7	372447.449	1925.2	-145.1									
2023	10	3	3	36	39.81	22	15	41.7	378343.179	1895.2	-132.3									
2023	10	4	4	33	04.04	25	44	44.8	384441.764	1865.1	-120.0									
2023	10	5	5	30	11.88	27	45	55.5	390275.326	1837.2	-108.0									
2023	10	6	6	26	57.29	28	17	17.6	395451.766	1813.2	-96.5									
2023	10	7	7	22	08.70	27	23	14.7	399680.825	1794.0	-85.3									
2023	10	8	8	14	52.19	25	12	57.1	402783.076	1780.2	-74.2									
2023	10	9	9	04	44.52	21	58	06.5	404686.226	1771.8	-63.3									
2023	10	10	9	51	52.84	17	50	56.3	405412.702	1768.6	-52.5									
2023	10	11	10	36	46.71	13	03	04.6	405061.409	1770.2	-41.7									
2023	10	12	11	20	09.32	7	45	20.9	403785.679	1775.7	-30.8									
2023	10	13	12	02	51.31	2	08	09.6	401769.164	1784.7	-19.7									
2023	10	14	12	45	47.44	-3	37	50.2	399201.583	1796.1	-8.5									
2023	10	15	13	29	54.75	-9	20	58.4	396256.816	1809.5	2.9									
2023	10	16	14	16	10.53	-14	47	49.8	393076.277	1824.1	14.4									
2023	10	17	15	05	27.60	-19	42	42.8	389760.469	1839.6	26.2									
2023	10	18	15	58	24.43	-23	47	36.4	386370.771	1855.8	38.1									
2023	10	19	16	55	09.44	-26	43	10.6	382941.836	1872.4	50.3									
2023	10	20	17	55	04.77	-28	11	20.7	379502.656	1889.4	62.7									
2023	10	21	18	56	43.41	-27	59	16.6	376102.112	1906.5	75.3									
2023	10	22	19	58	12.42	-26	03	09.5	372832.977	1923.2	88.1									
2023	10	23	20	57	54.00	-22	29	28.4	369847.472	1938.7	101.2									
2023	10	24	21	54	57.36	-17	33	09.8	367357.809	1951.8	114.4									
2023	10	25	22	49	24.15	-11	34	21.9	365617.324	1961.1	127.9									
2023	10	26	23	41	54.65	-4	55	45.1	364882.111	1965.1	141.5									
2023	10	27	0	33	29.52	1	58	56.2	365359.424	1962.5	155.1									
2023	10	28	1	25	14.76	8	45	36.6	367155.441	1952.9	168.7									
2023	10	29	2	18	09.54	15	00	30.5	370237.915	1936.6	-177.7									
2023	10	30	3	12	53.97	20	21	17.1	374425.836	1915.0	-164.8									

Date Oh TT y m d	MOON		Apparent Declination d m s	Apparent Distance km	Visual Diameter arc sec	Page 7 Solar Separation degrees
	Apparent R.A.					
	h m s					
2023 10 31	4 09	35.88	24 28 43.5	379409.150	1889.8	-152.1
2023 11 1	5 07	41.41	27 08 59.5	384791.551	1863.4	-139.8
2023 11 2	6 05	58.70	28 15 45.7	390143.531	1837.8	-127.8
2023 11 3	7 02	59.69	27 51 01.4	395053.236	1815.0	-116.2
2023 11 4	7 57	30.62	26 03 42.0	399167.106	1796.3	-105.0
2023 11 5	8 48	53.07	23 06 38.5	402217.343	1782.7	-93.9
2023 11 6	9 37	06.96	19 13 34.4	404036.872	1774.6	-83.0
2023 11 7	10 22	41.17	14 37 10.5	404563.880	1772.3	-72.2
2023 11 8	11 06	21.87	9 28 31.9	403838.082	1775.5	-61.4
2023 11 9	11 49	04.00	3 57 32.5	401990.139	1783.7	-50.4
2023 11 10	12 31	46.86	-1 46 09.4	399225.003	1796.0	-39.3
2023 11 11	13 15	32.17	-7 32 03.0	395799.623	1811.6	-28.0
2023 11 12	14 01	22.35	-13 07 36.4	391995.905	1829.2	-16.5
2023 11 13	14 50	16.34	-18 17 20.4	388090.899	1847.6	-5.1
2023 11 14	15 42	59.90	-22 42 28.5	384327.736	1865.6	7.9
2023 11 15	16 39	48.36	-26 01 53.3	380892.244	1882.5	20.0
2023 11 16	17 40	06.75	-27 55 05.7	377900.350	1897.4	32.5
2023 11 17	18 42	22.70	-28 07 06.9	375399.789	1910.0	45.2
2023 11 18	19 44	29.72	-26 33 11.8	373386.292	1920.3	58.1
2023 11 19	20 44	34.60	-23 20 18.8	371830.338	1928.4	71.0
2023 11 20	21 41	36.10	-18 44 27.0	370707.250	1934.2	84.1
2023 11 21	22 35	32.34	-13 06 04.6	370022.190	1937.8	97.2
2023 11 22	23 27	04.83	-6 46 39.5	369822.695	1938.8	110.3
2023 11 23	0 17	17.91	-0 07 13.1	370194.440	1936.9	123.5
2023 11 24	1 07	23.32	6 31 39.5	371240.350	1931.4	136.6
2023 11 25	1 58	29.28	12 49 20.9	373047.817	1922.1	149.6
2023 11 26	2 51	30.14	18 25 04.1	375652.671	1908.7	162.4
2023 11 27	3 46	53.31	22 58 41.2	379010.021	1891.8	174.3
2023 11 28	4 44	25.37	26 12 49.1	382980.298	1872.2	-171.5
2023 11 29	5 43	06.06	27 55 52.1	387334.116	1851.2	-159.7
2023 11 30	6 41	21.64	28 04 39.9	391774.037	1830.2	-148.0
2023 12 1	7 37	36.87	26 44 54.7	395967.199	1810.8	-136.5
2023 12 2	8 30	47.11	24 08 48.5	399581.590	1794.4	-125.3
2023 12 3	9 20	31.93	20 31 17.6	402319.973	1782.2	-114.3
2023 12 4	10 07	09.22	16 06 54.2	403947.858	1775.0	-103.4
2023 12 5	10 51	21.64	11 08 13.6	404314.212	1773.4	-92.6
2023 12 6	11 34	04.82	5 45 47.4	403364.822	1777.6	-81.8
2023 12 7	12 16	20.68	0 08 49.9	401148.688	1787.4	-70.9
2023 12 8	12 59	14.65	-5 33 29.6	397817.367	1802.4	-59.8
2023 12 9	13 43	54.56	-11 10 41.3	393616.559	1821.6	-48.5
2023 12 10	14 31	28.20	-16 29 27.4	388868.696	1843.9	-36.9
2023 12 11	15 22	55.96	-21 12 32.7	383945.436	1867.5	-25.0
2023 12 12	16 18	54.66	-24 58 36.5	379230.447	1890.7	-13.0
2023 12 13	17 19	12.90	-27 24 17.5	375075.666	1911.7	4.3
2023 12 14	18 22	31.16	-28 09 21.1	371758.043	1928.7	14.1
2023 12 15	19 26	32.25	-27 03 27.3	369446.503	1940.8	27.0
2023 12 16	20 28	51.49	-24 10 27.3	368188.536	1947.4	40.1
2023 12 17	21 27	53.53	-19 46 49.3	367921.026	1948.8	53.4
2023 12 18	22 23	14.35	-14 15 50.5	368502.377	1945.8	66.7
2023 12 19	23 15	26.98	-8 01 57.0	369756.050	1939.2	79.8
2023 12 20	0 05	35.72	-1 27 44.2	371512.961	1930.0	92.9

Date	MOON	Apparent	Apparent	Apparent	Visual	Solar
0h TT	Apparent	Declination	Distance	Diameter	Separation	
y m d	R.A.	d m s	km	arc sec	degrees	
	h m s					
2023 12 21	0 54 56.02	5 06 34.6	373641.962	1919.0	105.8	
2023 12 22	1 44 42.19	11 22 22.6	376062.651	1906.7	118.5	
2023 12 23	2 35 58.28	17 01 40.1	378740.118	1893.2	131.1	
2023 12 24	3 29 27.61	21 46 41.8	381665.669	1878.7	143.4	
2023 12 25	4 25 19.48	25 20 44.4	384830.190	1863.2	155.5	
2023 12 26	5 22 58.15	27 30 21.1	388197.658	1847.0	167.1	
2023 12 27	6 21 05.25	28 08 22.0	391685.452	1830.6	175.2	
2023 12 28	7 18 02.89	27 15 59.0	395155.768	1814.5	-167.6	
2023 12 29	8 12 27.82	25 02 16.3	398419.463	1799.7	-156.7	
2023 12 30	9 03 35.83	21 41 15.5	401250.778	1787.0	-145.7	
2023 12 31	9 51 25.24	17 28 22.1	403409.622	1777.4	-134.8	
2024 1 1	10 36 26.32	12 37 53.6	404667.506	1771.9	-124.0	

Date			MERCURY			Page 1														
Oh TT			Apparent			Apparent			Visual			Solar								
y m d			R.A.			Declination			Distance			Diameter			Separation			Mag.		
			h m s			d m s			au			arc sec			degrees					
2022	12	31	19	43	36.26	-20	44	54.9	0.769989	8.7	14.9	0.8								
2023	1	1	19	41	38.98	-20	30	21.3	0.749148	9.0	13.4	1.3								
2023	1	2	19	38	52.14	-20	17	19.0	0.730179	9.2	11.9	1.8								
2023	1	3	19	35	18.05	-20	05	55.2	0.713401	9.4	10.1	2.4								
2023	1	4	19	31	01.11	-19	56	14.2	0.699103	9.6	8.2	3.1								
2023	1	5	19	26	07.78	-19	48	16.8	0.687532	9.8	6.2	3.9								
2023	1	6	19	20	46.53	-19	42	01.5	0.678871	9.9	4.3	4.7								
2023	1	7	19	15	07.30	-19	37	25.0	0.673229	10.0	3.0	5.3								
2023	1	8	19	09	20.94	-19	34	22.8	0.670634	10.0	-3.1	5.3								
2023	1	9	19	03	38.42	-19	32	50.2	0.671033	10.0	-4.6	4.6								
2023	1	10	18	58	10.06	-19	32	42.6	0.674297	10.0	-6.6	3.9								
2023	1	11	18	53	04.89	-19	33	55.3	0.680235	9.9	-8.6	3.2								
2023	1	12	18	48	30.23	-19	36	23.5	0.688609	9.8	-10.6	2.6								
2023	1	13	18	44	31.45	-19	40	01.9	0.699150	9.6	-12.5	2.0								
2023	1	14	18	41	12.04	-19	44	44.2	0.711577	9.5	-14.2	1.6								
2023	1	15	18	38	33.77	-19	50	23.7	0.725609	9.3	-15.8	1.2								
2023	1	16	18	36	36.99	-19	56	52.4	0.740975	9.1	-17.2	0.9								
2023	1	17	18	35	20.93	-20	04	01.9	0.757423	8.9	-18.5	0.7								
2023	1	18	18	34	44.03	-20	11	43.3	0.774722	8.7	-19.7	0.5								
2023	1	19	18	34	44.19	-20	19	47.3	0.792669	8.5	-20.7	0.3								
2023	1	20	18	35	18.98	-20	28	04.9	0.811083	8.3	-21.5	0.2								
2023	1	21	18	36	25.85	-20	36	27.3	0.829809	8.1	-22.3	0.1								
2023	1	22	18	38	02.20	-20	44	46.1	0.848713	7.9	-22.9	0.0								
2023	1	23	18	40	05.54	-20	52	53.3	0.867683	7.8	-23.4	-0.0								
2023	1	24	18	42	33.46	-21	00	41.7	0.886624	7.6	-23.9	-0.1								
2023	1	25	18	45	23.72	-21	08	04.6	0.905457	7.4	-24.2	-0.1								
2023	1	26	18	48	34.25	-21	14	55.9	0.924118	7.3	-24.5	-0.1								
2023	1	27	18	52	03.16	-21	21	10.0	0.942553	7.1	-24.7	-0.1								
2023	1	28	18	55	48.73	-21	26	42.1	0.960719	7.0	-24.8	-0.1								
2023	1	29	18	59	49.38	-21	31	27.7	0.978582	6.9	-24.9	-0.2								
2023	1	30	19	04	03.70	-21	35	23.0	0.996114	6.8	-25.0	-0.2								
2023	1	31	19	08	30.41	-21	38	24.5	1.013292	6.6	-25.0	-0.2								
2023	2	1	19	13	08.35	-21	40	29.1	1.030102	6.5	-24.9	-0.2								
2023	2	2	19	17	56.50	-21	41	34.0	1.046529	6.4	-24.8	-0.2								
2023	2	3	19	22	53.92	-21	41	36.8	1.062565	6.3	-24.7	-0.2								
2023	2	4	19	27	59.75	-21	40	35.4	1.078203	6.2	-24.5	-0.2								
2023	2	5	19	33	13.25	-21	38	27.8	1.093439	6.2	-24.3	-0.1								
2023	2	6	19	38	33.74	-21	35	12.4	1.108271	6.1	-24.1	-0.1								
2023	2	7	19	44	00.58	-21	30	47.7	1.122697	6.0	-23.9	-0.1								
2023	2	8	19	49	33.23	-21	25	12.4	1.136718	5.9	-23.6	-0.1								
2023	2	9	19	55	11.18	-21	18	25.3	1.150336	5.9	-23.3	-0.1								
2023	2	10	20	00	53.99	-21	10	25.4	1.163550	5.8	-23.0	-0.1								
2023	2	11	20	06	41.23	-21	01	11.8	1.176364	5.7	-22.6	-0.2								
2023	2	12	20	12	32.54	-20	50	43.8	1.188779	5.7	-22.3	-0.2								
2023	2	13	20	18	27.58	-20	39	00.6	1.200799	5.6	-21.9	-0.2								
2023	2	14	20	24	26.05	-20	26	01.7	1.212425	5.6	-21.5	-0.2								
2023	2	15	20	30	27.68	-20	11	46.5	1.223658	5.5	-21.1	-0.2								
2023	2	16	20	36	32.22	-19	56	14.7	1.234502	5.5	-20.7	-0.2								
2023	2	17	20	42	39.44	-19	39	25.9	1.244958	5.4	-20.2	-0.2								
2023	2	18	20	48	49.14	-19	21	19.8	1.255025	5.4	-19.8	-0.2								
2023	2	19	20	55	01.15	-19	01	56.1	1.264706	5.3	-19.3	-0.2								

MERCURY										Page 2		
Date			Apparent			Apparent		Visual		Solar		
Oh TT			R.A.			Declination		Diameter		Separation Mag.		
y	m	d	h	m	s	d	m	s	arc	sec	degrees	
2023	2	20	21	01	15.30	-18	41	14.6	1.274000	5.3	-18.8	-0.3
2023	2	21	21	07	31.46	-18	19	15.1	1.282906	5.2	-18.3	-0.3
2023	2	22	21	13	49.52	-17	55	57.5	1.291423	5.2	-17.7	-0.3
2023	2	23	21	20	09.37	-17	31	21.8	1.299548	5.2	-17.2	-0.3
2023	2	24	21	26	30.94	-17	05	27.7	1.307279	5.1	-16.6	-0.4
2023	2	25	21	32	54.17	-16	38	15.4	1.314611	5.1	-16.1	-0.4
2023	2	26	21	39	19.01	-16	09	44.7	1.321538	5.1	-15.5	-0.4
2023	2	27	21	45	45.42	-15	39	55.7	1.328054	5.1	-14.9	-0.5
2023	2	28	21	52	13.39	-15	08	48.5	1.334151	5.0	-14.2	-0.5
2023	3	1	21	58	42.91	-14	36	23.1	1.339818	5.0	-13.6	-0.5
2023	3	2	22	05	13.99	-14	02	39.6	1.345044	5.0	-12.9	-0.6
2023	3	3	22	11	46.63	-13	27	38.3	1.349815	5.0	-12.2	-0.7
2023	3	4	22	18	20.88	-12	51	19.4	1.354116	5.0	-11.5	-0.7
2023	3	5	22	24	56.77	-12	13	43.1	1.357929	5.0	-10.8	-0.8
2023	3	6	22	31	34.35	-11	34	49.7	1.361234	4.9	-10.1	-0.8
2023	3	7	22	38	13.66	-10	54	39.7	1.364010	4.9	-9.4	-0.9
2023	3	8	22	44	54.79	-10	13	13.7	1.366231	4.9	-8.6	-1.0
2023	3	9	22	51	37.78	-9	30	32.2	1.367869	4.9	-7.8	-1.1
2023	3	10	22	58	22.72	-8	46	36.1	1.368893	4.9	-7.0	-1.2
2023	3	11	23	05	09.66	-8	01	26.4	1.369271	4.9	-6.2	-1.3
2023	3	12	23	11	58.68	-7	15	04.3	1.368966	4.9	-5.4	-1.4
2023	3	13	23	18	49.83	-6	27	31.3	1.367936	4.9	-4.5	-1.5
2023	3	14	23	25	43.15	-5	38	49.2	1.366141	4.9	-3.7	-1.6
2023	3	15	23	32	38.68	-4	49	00.2	1.363532	4.9	-2.9	-1.7
2023	3	16	23	39	36.41	-3	58	06.8	1.360062	4.9	-2.1	-1.8
2023	3	17	23	46	36.33	-3	06	12.3	1.355679	5.0	-1.6	-1.9
2023	3	18	23	53	38.35	-2	13	20.2	1.350330	5.0	1.5	-2.0
2023	3	19	0	00	42.39	-1	19	35.1	1.343961	5.0	2.0	-2.0
2023	3	20	0	07	48.26	-0	25	01.9	1.336517	5.0	2.8	-1.9
2023	3	21	0	14	55.74	0	30	13.3	1.327946	5.1	3.7	-1.8
2023	3	22	0	22	04.51	1	26	03.7	1.318196	5.1	4.6	-1.8
2023	3	23	0	29	14.19	2	22	21.5	1.307221	5.1	5.6	-1.7
2023	3	24	0	36	24.27	3	18	57.7	1.294983	5.2	6.6	-1.6
2023	3	25	0	43	34.15	4	15	42.4	1.281452	5.3	7.6	-1.6
2023	3	26	0	50	43.10	5	12	24.8	1.266608	5.3	8.6	-1.5
2023	3	27	0	57	50.28	6	08	52.7	1.250449	5.4	9.6	-1.4
2023	3	28	1	04	54.73	7	04	53.6	1.232984	5.5	10.6	-1.4
2023	3	29	1	11	55.37	8	00	13.8	1.214244	5.5	11.6	-1.3
2023	3	30	1	18	51.01	8	54	39.4	1.194277	5.6	12.5	-1.2
2023	3	31	1	25	40.40	9	47	56.3	1.173153	5.7	13.4	-1.2
2023	4	1	1	32	22.18	10	39	50.4	1.150958	5.8	14.3	-1.1
2023	4	2	1	38	54.98	11	30	08.0	1.127798	6.0	15.1	-1.1
2023	4	3	1	45	17.39	12	18	36.1	1.103794	6.1	15.9	-1.0
2023	4	4	1	51	28.01	13	05	02.5	1.079077	6.2	16.6	-0.9
2023	4	5	1	57	25.46	13	49	16.1	1.053790	6.4	17.3	-0.8
2023	4	6	2	03	08.41	14	31	07.0	1.028078	6.5	17.8	-0.7
2023	4	7	2	08	35.60	15	10	26.7	1.002090	6.7	18.3	-0.7
2023	4	8	2	13	45.85	15	47	07.7	0.975972	6.9	18.8	-0.5
2023	4	9	2	18	38.03	16	21	03.8	0.949866	7.1	19.1	-0.4
2023	4	10	2	23	11.14	16	52	09.8	0.923907	7.3	19.3	-0.3

Date		MERCURY			Page 3		
0h TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	Mag.
d		h m s	d m s	au	arc sec	degrees	
2023	4	27 24.24	17 20 21.7	0.898221	7.5	19.4	-0.2
2023	4	31 16.50	17 45 35.9	0.872927	7.7	19.5	-0.0
2023	4	34 47.19	18 07 49.7	0.848135	7.9	19.4	0.2
2023	4	37 55.65	18 27 00.9	0.823944	8.2	19.3	0.3
2023	4	40 41.38	18 43 07.8	0.800444	8.4	19.0	0.5
2023	4	43 03.97	18 56 08.8	0.777720	8.7	18.6	0.7
2023	4	45 03.13	19 06 03.1	0.755846	8.9	18.2	0.9
2023	4	46 38.75	19 12 50.0	0.734891	9.2	17.6	1.2
2023	4	47 50.85	19 16 29.5	0.714916	9.4	16.9	1.4
2023	4	48 39.66	19 17 02.2	0.695979	9.7	16.1	1.7
2023	4	49 05.59	19 14 29.2	0.678131	9.9	15.2	2.0
2023	4	49 09.29	19 08 53.0	0.661419	10.2	14.2	2.4
2023	4	48 51.62	19 00 17.1	0.645884	10.4	13.2	2.7
2023	4	48 13.74	18 48 46.7	0.631565	10.7	12.0	3.1
2023	4	47 17.01	18 34 28.6	0.618493	10.9	10.7	3.5
2023	4	46 03.11	18 17 31.7	0.606696	11.1	9.4	3.9
2023	4	44 33.92	17 58 07.0	0.596195	11.3	8.0	4.4
2023	4	42 51.56	17 36 27.9	0.587006	11.5	6.5	4.8
2023	4	40 58.36	17 12 50.0	0.579140	11.6	5.0	5.4
2023	4	38 56.78	16 47 31.3	0.572598	11.8	3.4	5.9
2023	5	36 49.39	16 20 51.3	0.567379	11.9	1.9	6.5
2023	5	34 38.80	15 53 11.5	0.563470	11.9	-0.7	6.9
2023	5	32 27.62	15 24 54.3	0.560854	12.0	-1.7	6.5
2023	5	30 18.38	14 56 22.6	0.559508	12.0	-3.3	6.0
2023	5	28 13.50	14 27 59.4	0.559402	12.0	-4.9	5.5
2023	5	26 15.20	14 00 07.1	0.560499	12.0	-6.4	5.0
2023	5	24 25.53	13 33 06.7	0.562759	12.0	-8.0	4.6
2023	5	22 46.29	13 07 18.0	0.566139	11.9	-9.5	4.2
2023	5	21 19.01	12 42 58.3	0.570590	11.8	-11.0	3.8
2023	5	20 05.01	12 20 23.0	0.576063	11.7	-12.4	3.5
2023	5	19 05.33	11 59 44.9	0.582507	11.6	-13.7	3.1
2023	5	18 20.77	11 41 14.5	0.589873	11.4	-14.9	2.9
2023	5	17 51.92	11 24 59.7	0.598108	11.3	-16.1	2.6
2023	5	17 39.18	11 11 06.4	0.607165	11.1	-17.2	2.4
2023	5	17 42.76	10 59 38.3	0.616994	10.9	-18.3	2.1
2023	5	18 02.74	10 50 37.4	0.627551	10.7	-19.2	2.0
2023	5	18 39.08	10 44 03.8	0.638791	10.5	-20.1	1.8
2023	5	19 31.62	10 39 56.6	0.650676	10.3	-20.9	1.6
2023	5	20 40.16	10 38 13.5	0.663165	10.1	-21.6	1.5
2023	5	22 04.41	10 38 51.4	0.676224	10.0	-22.2	1.3
2023	5	23 44.07	10 41 46.3	0.689820	9.8	-22.8	1.2
2023	5	25 38.79	10 46 53.8	0.703922	9.6	-23.3	1.1
2023	5	27 48.24	10 54 09.1	0.718503	9.4	-23.7	1.0
2023	5	30 12.08	11 03 26.7	0.733535	9.2	-24.1	0.9
2023	5	32 49.97	11 14 41.4	0.748995	9.0	-24.4	0.8
2023	5	35 41.61	11 27 47.4	0.764859	8.8	-24.6	0.7
2023	5	38 46.70	11 42 39.2	0.781107	8.6	-24.7	0.6
2023	5	42 04.99	11 59 10.8	0.797718	8.4	-24.8	0.5
2023	5	45 36.25	12 17 16.6	0.814673	8.3	-24.9	0.5
2023	5	49 20.28	12 36 50.8	0.831952	8.1	-24.9	0.4
2023	5	53 16.93	12 57 47.6	0.849536	7.9	-24.8	0.3

MERCURY										Page 4
Date			Apparent	Apparent	Apparent	Visual	Solar			
0h TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	6	1	2 57 26.07	13 20 01.3	0.867406	7.8	-24.7	0.2		
2023	6	2	3 01 47.62	13 43 26.1	0.885543	7.6	-24.5	0.2		
2023	6	3	3 06 21.54	14 07 56.1	0.903926	7.4	-24.3	0.1		
2023	6	4	3 11 07.80	14 33 25.5	0.922532	7.3	-24.0	0.1		
2023	6	5	3 16 06.44	14 59 48.5	0.941338	7.1	-23.7	-0.0		
2023	6	6	3 21 17.51	15 26 58.9	0.960318	7.0	-23.3	-0.1		
2023	6	7	3 26 41.09	15 54 50.5	0.979442	6.9	-22.8	-0.1		
2023	6	8	3 32 17.29	16 23 17.0	0.998678	6.7	-22.4	-0.2		
2023	6	9	3 38 06.24	16 52 11.5	1.017990	6.6	-21.8	-0.3		
2023	6	10	3 44 08.09	17 21 27.3	1.037339	6.5	-21.3	-0.3		
2023	6	11	3 50 23.02	17 50 57.0	1.056678	6.4	-20.7	-0.4		
2023	6	12	3 56 51.18	18 20 32.9	1.075958	6.3	-20.0	-0.5		
2023	6	13	4 03 32.74	18 50 07.0	1.095123	6.1	-19.3	-0.5		
2023	6	14	4 10 27.84	19 19 30.7	1.114109	6.0	-18.5	-0.6		
2023	6	15	4 17 36.60	19 48 34.9	1.132848	5.9	-17.7	-0.7		
2023	6	16	4 24 59.09	20 17 10.0	1.151264	5.8	-16.9	-0.8		
2023	6	17	4 32 35.30	20 45 05.7	1.169274	5.8	-16.0	-0.8		
2023	6	18	4 40 25.15	21 12 11.5	1.186789	5.7	-15.1	-0.9		
2023	6	19	4 48 28.47	21 38 16.1	1.203714	5.6	-14.1	-1.0		
2023	6	20	4 56 44.95	22 03 07.9	1.219949	5.5	-13.1	-1.1		
2023	6	21	5 05 14.15	22 26 35.1	1.235392	5.4	-12.0	-1.2		
2023	6	22	5 13 55.45	22 48 25.5	1.249939	5.4	-11.0	-1.3		
2023	6	23	5 22 48.09	23 08 27.2	1.263486	5.3	-9.9	-1.4		
2023	6	24	5 31 51.09	23 26 28.8	1.275936	5.3	-8.7	-1.5		
2023	6	25	5 41 03.34	23 42 19.1	1.287196	5.2	-7.6	-1.6		
2023	6	26	5 50 23.51	23 55 48.2	1.297187	5.2	-6.4	-1.7		
2023	6	27	5 59 50.16	24 06 47.3	1.305840	5.2	-5.2	-1.8		
2023	6	28	6 09 21.70	24 15 09.0	1.313104	5.1	-4.0	-2.0		
2023	6	29	6 18 56.49	24 20 47.6	1.318945	5.1	-2.9	-2.1		
2023	6	30	6 28 32.82	24 23 39.4	1.323349	5.1	-1.9	-2.3		
2023	7	1	6 38 08.98	24 23 42.5	1.326318	5.1	-1.3	-2.3		
2023	7	2	6 47 43.33	24 20 56.9	1.327875	5.1	1.7	-2.3		
2023	7	3	6 57 14.30	24 15 24.4	1.328058	5.1	2.6	-2.1		
2023	7	4	7 06 40.42	24 07 08.5	1.326919	5.1	3.7	-1.9		
2023	7	5	7 16 00.39	23 56 13.9	1.324521	5.1	4.8	-1.8		
2023	7	6	7 25 13.05	23 42 46.9	1.320937	5.1	6.0	-1.6		
2023	7	7	7 34 17.41	23 26 54.3	1.316244	5.1	7.1	-1.5		
2023	7	8	7 43 12.64	23 08 43.9	1.310522	5.1	8.2	-1.4		
2023	7	9	7 51 58.07	22 48 23.8	1.303854	5.2	9.3	-1.3		
2023	7	10	8 00 33.18	22 26 02.5	1.296321	5.2	10.3	-1.2		
2023	7	11	8 08 57.58	22 01 48.5	1.288000	5.2	11.3	-1.1		
2023	7	12	8 17 11.00	21 35 50.4	1.278966	5.3	12.3	-1.0		
2023	7	13	8 25 13.26	21 08 16.5	1.269290	5.3	13.3	-0.9		
2023	7	14	8 33 04.28	20 39 15.1	1.259037	5.3	14.2	-0.8		
2023	7	15	8 40 44.04	20 08 54.1	1.248267	5.4	15.1	-0.7		
2023	7	16	8 48 12.57	19 37 21.0	1.237037	5.4	16.0	-0.6		
2023	7	17	8 55 29.98	19 04 43.0	1.225396	5.5	16.8	-0.6		
2023	7	18	9 02 36.37	18 31 07.1	1.213389	5.5	17.6	-0.5		
2023	7	19	9 09 31.90	17 56 39.9	1.201058	5.6	18.4	-0.5		
2023	7	20	9 16 16.72	17 21 27.6	1.188439	5.7	19.2	-0.4		

Date		MERCURY			Page 5			
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	Mag.	
y	m	R.A.	Declination	Distance	Diameter	Separation		
d		h m s	d m s	au	arc sec	degrees		
2023	7	21	9 22 51.01	16 45 36.1	1.175564	5.7	19.9	-0.4
2023	7	22	9 29 14.94	16 09 11.1	1.162463	5.8	20.6	-0.3
2023	7	23	9 35 28.70	15 32 17.8	1.149161	5.9	21.2	-0.3
2023	7	24	9 41 32.44	14 55 01.5	1.135681	5.9	21.8	-0.2
2023	7	25	9 47 26.33	14 17 27.0	1.122042	6.0	22.4	-0.2
2023	7	26	9 53 10.51	13 39 39.0	1.108263	6.1	23.0	-0.2
2023	7	27	9 58 45.11	13 01 42.0	1.094359	6.1	23.5	-0.1
2023	7	28	10 04 10.24	12 23 40.6	1.080344	6.2	24.0	-0.1
2023	7	29	10 09 25.98	11 45 38.8	1.066230	6.3	24.5	-0.1
2023	7	30	10 14 32.40	11 07 41.0	1.052029	6.4	24.9	-0.0
2023	7	31	10 19 29.55	10 29 51.2	1.037751	6.5	25.3	0.0
2023	8	1	10 24 17.42	9 52 13.6	1.023404	6.6	25.7	0.0
2023	8	2	10 28 56.01	9 14 52.2	1.008998	6.7	26.0	0.1
2023	8	3	10 33 25.28	8 37 51.1	0.994541	6.8	26.3	0.1
2023	8	4	10 37 45.14	8 01 14.4	0.980040	6.9	26.6	0.1
2023	8	5	10 41 55.49	7 25 06.3	0.965504	7.0	26.8	0.1
2023	8	6	10 45 56.19	6 49 30.9	0.950940	7.1	27.0	0.2
2023	8	7	10 49 47.06	6 14 32.8	0.936357	7.2	27.2	0.2
2023	8	8	10 53 27.88	5 40 16.6	0.921762	7.3	27.3	0.2
2023	8	9	10 56 58.37	5 06 46.9	0.907167	7.4	27.4	0.2
2023	8	10	11 00 18.24	4 34 09.0	0.892582	7.5	27.4	0.3
2023	8	11	11 03 27.12	4 02 28.1	0.878019	7.7	27.4	0.3
2023	8	12	11 06 24.61	3 31 49.9	0.863492	7.8	27.3	0.3
2023	8	13	11 09 10.26	3 02 20.4	0.849017	7.9	27.2	0.4
2023	8	14	11 11 43.58	2 34 06.0	0.834612	8.1	27.0	0.4
2023	8	15	11 14 04.00	2 07 13.5	0.820299	8.2	26.8	0.4
2023	8	16	11 16 10.95	1 41 50.4	0.806101	8.3	26.5	0.5
2023	8	17	11 18 03.78	1 18 04.3	0.792045	8.5	26.1	0.5
2023	8	18	11 19 41.81	0 56 03.6	0.778164	8.6	25.7	0.6
2023	8	19	11 21 04.35	0 35 57.3	0.764494	8.8	25.2	0.7
2023	8	20	11 22 10.65	0 17 54.6	0.751075	9.0	24.7	0.8
2023	8	21	11 22 59.99	0 02 05.4	0.737954	9.1	24.0	0.8
2023	8	22	11 23 31.64	-0 11 19.8	0.725184	9.3	23.3	0.9
2023	8	23	11 23 44.89	-0 22 10.6	0.712824	9.4	22.5	1.1
2023	8	24	11 23 39.12	-0 30 16.0	0.700940	9.6	21.6	1.2
2023	8	25	11 23 13.77	-0 35 25.3	0.689607	9.8	20.6	1.4
2023	8	26	11 22 28.47	-0 37 28.2	0.678905	9.9	19.6	1.5
2023	8	27	11 21 22.98	-0 36 14.9	0.668925	10.1	18.4	1.7
2023	8	28	11 19 57.36	-0 31 37.1	0.659765	10.2	17.1	2.0
2023	8	29	11 18 11.94	-0 23 28.3	0.651529	10.3	15.8	2.2
2023	8	30	11 16 07.43	-0 11 44.4	0.644330	10.4	14.3	2.5
2023	8	31	11 13 44.97	0 03 35.3	0.638284	10.5	12.8	2.9
2023	9	1	11 11 06.19	0 22 27.7	0.633512	10.6	11.2	3.3
2023	9	2	11 08 13.22	0 44 44.7	0.630137	10.7	9.6	3.7
2023	9	3	11 05 08.74	1 10 13.3	0.628280	10.7	7.9	4.2
2023	9	4	11 01 55.94	1 38 34.7	0.628057	10.7	6.4	4.6
2023	9	5	10 58 38.49	2 09 24.9	0.629576	10.7	4.9	5.1
2023	9	6	10 55 20.49	2 42 14.2	0.632934	10.6	4.0	5.4
2023	9	7	10 52 06.29	3 16 28.5	0.638212	10.5	-3.8	5.4
2023	9	8	10 49 00.46	3 51 30.2	0.645472	10.4	-4.5	5.1
2023	9	9	10 46 07.53	4 26 39.4	0.654754	10.3	-5.7	4.6

				MERCURY				Page 6	
Date			Apparent	Apparent	Apparent	Visual	Solar		
0h TT			R.A.	Declination	Distance	Diameter	Separation	Mag.	
y	m	d	h m s	d m s	au	arc sec	degrees		
2023	9	10	10 43 31.92	5 01 15.3	0.666074	10.1	-7.2	4.0	
2023	9	11	10 41 17.74	5 34 38.0	0.679423	9.9	-8.7	3.5	
2023	9	12	10 39 28.68	6 06 09.3	0.694764	9.7	-10.1	2.9	
2023	9	13	10 38 07.88	6 35 14.6	0.712036	9.5	-11.5	2.4	
2023	9	14	10 37 17.87	7 01 22.8	0.731148	9.2	-12.8	1.9	
2023	9	15	10 37 00.55	7 24 07.8	0.751988	8.9	-13.9	1.5	
2023	9	16	10 37 17.12	7 43 08.0	0.774418	8.7	-14.9	1.1	
2023	9	17	10 38 08.14	7 58 06.8	0.798281	8.4	-15.8	0.7	
2023	9	18	10 39 33.54	8 08 52.1	0.823399	8.2	-16.5	0.4	
2023	9	19	10 41 32.69	8 15 16.7	0.849580	7.9	-17.0	0.2	
2023	9	20	10 44 04.45	8 17 17.2	0.876617	7.7	-17.4	-0.1	
2023	9	21	10 47 07.25	8 14 54.3	0.904298	7.4	-17.7	-0.3	
2023	9	22	10 50 39.16	8 08 12.2	0.932404	7.2	-17.8	-0.4	
2023	9	23	10 54 37.98	7 57 18.1	0.960719	7.0	-17.8	-0.6	
2023	9	24	10 59 01.30	7 42 22.3	0.989030	6.8	-17.7	-0.7	
2023	9	25	11 03 46.61	7 23 37.1	1.017135	6.6	-17.5	-0.8	
2023	9	26	11 08 51.36	7 01 16.9	1.044848	6.4	-17.2	-0.8	
2023	9	27	11 14 13.03	6 35 37.5	1.072000	6.3	-16.8	-0.9	
2023	9	28	11 19 49.18	6 06 55.6	1.098441	6.1	-16.3	-0.9	
2023	9	29	11 25 37.51	5 35 28.6	1.124046	6.0	-15.8	-1.0	
2023	9	30	11 31 35.90	5 01 33.8	1.148711	5.9	-15.2	-1.0	
2023	10	1	11 37 42.42	4 25 28.4	1.172356	5.7	-14.5	-1.0	
2023	10	2	11 43 55.35	3 47 29.1	1.194919	5.6	-13.9	-1.1	
2023	10	3	11 50 13.18	3 07 51.8	1.216362	5.5	-13.2	-1.1	
2023	10	4	11 56 34.60	2 26 51.4	1.236659	5.4	-12.4	-1.1	
2023	10	5	12 02 58.52	1 44 41.8	1.255803	5.4	-11.7	-1.1	
2023	10	6	12 09 24.00	1 01 35.8	1.273797	5.3	-10.9	-1.2	
2023	10	7	12 15 50.28	0 17 44.9	1.290654	5.2	-10.1	-1.2	
2023	10	8	12 22 16.75	-0 26 40.2	1.306396	5.2	-9.3	-1.2	
2023	10	9	12 28 42.93	-1 11 30.1	1.321048	5.1	-8.6	-1.2	
2023	10	10	12 35 08.45	-1 56 36.4	1.334642	5.0	-7.8	-1.3	
2023	10	11	12 41 33.03	-2 41 51.5	1.347210	5.0	-7.0	-1.3	
2023	10	12	12 47 56.48	-3 27 08.6	1.358789	5.0	-6.2	-1.3	
2023	10	13	12 54 18.67	-4 12 21.9	1.369413	4.9	-5.5	-1.4	
2023	10	14	13 00 39.53	-4 57 25.9	1.379117	4.9	-4.7	-1.4	
2023	10	15	13 06 59.04	-5 42 16.0	1.387937	4.8	-4.0	-1.4	
2023	10	16	13 13 17.20	-6 26 48.0	1.395905	4.8	-3.3	-1.5	
2023	10	17	13 19 34.07	-7 10 58.2	1.403054	4.8	-2.5	-1.5	
2023	10	18	13 25 49.70	-7 54 43.3	1.409413	4.8	-1.9	-1.6	
2023	10	19	13 32 04.18	-8 38 00.3	1.415012	4.8	-1.3	-1.6	
2023	10	20	13 38 17.61	-9 20 46.5	1.419878	4.7	-0.8	-1.6	
2023	10	21	13 44 30.09	-10 02 59.6	1.424035	4.7	0.9	-1.6	
2023	10	22	13 50 41.73	-10 44 37.3	1.427506	4.7	1.3	-1.5	
2023	10	23	13 56 52.66	-11 25 37.7	1.430313	4.7	1.9	-1.4	
2023	10	24	14 03 03.00	-12 05 58.9	1.432475	4.7	2.5	-1.3	
2023	10	25	14 09 12.87	-12 45 39.1	1.434010	4.7	3.2	-1.2	
2023	10	26	14 15 22.40	-13 24 36.9	1.434934	4.7	3.8	-1.2	
2023	10	27	14 21 31.71	-14 02 50.7	1.435261	4.7	4.4	-1.1	
2023	10	28	14 27 40.93	-14 40 19.2	1.435003	4.7	5.0	-1.0	
2023	10	29	14 33 50.18	-15 17 01.0	1.434172	4.7	5.6	-1.0	
2023	10	30	14 39 59.56	-15 52 54.8	1.432777	4.7	6.2	-0.9	

MERCURY					Page 7			
Date			Apparent	Apparent	Apparent	Visual	Solar	
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.
y	m	d	h m s	d m s	au	arc sec	degrees	
2023	10	31	14 46 09.19	-16 27 59.4	1.430827	4.7	6.8	-0.9
2023	11	1	14 52 19.14	-17 02 13.5	1.428327	4.7	7.4	-0.8
2023	11	2	14 58 29.53	-17 35 35.9	1.425284	4.7	8.0	-0.8
2023	11	3	15 04 40.41	-18 08 05.3	1.421702	4.7	8.6	-0.7
2023	11	4	15 10 51.86	-18 39 40.5	1.417582	4.7	9.1	-0.7
2023	11	5	15 17 03.93	-19 10 20.3	1.412929	4.8	9.7	-0.6
2023	11	6	15 23 16.67	-19 40 03.4	1.407741	4.8	10.2	-0.6
2023	11	7	15 29 30.12	-20 08 48.5	1.402019	4.8	10.8	-0.6
2023	11	8	15 35 44.28	-20 36 34.4	1.395762	4.8	11.3	-0.6
2023	11	9	15 41 59.16	-21 03 19.7	1.388968	4.8	11.8	-0.5
2023	11	10	15 48 14.76	-21 29 03.1	1.381633	4.9	12.4	-0.5
2023	11	11	15 54 31.03	-21 53 43.3	1.373754	4.9	12.9	-0.5
2023	11	12	16 00 47.92	-22 17 19.0	1.365325	4.9	13.4	-0.5
2023	11	13	16 07 05.36	-22 39 48.6	1.356342	5.0	13.9	-0.5
2023	11	14	16 13 23.25	-23 01 11.0	1.346798	5.0	14.4	-0.4
2023	11	15	16 19 41.47	-23 21 24.6	1.336687	5.0	14.9	-0.4
2023	11	16	16 25 59.84	-23 40 28.1	1.326000	5.1	15.3	-0.4
2023	11	17	16 32 18.18	-23 58 19.9	1.314729	5.1	15.8	-0.4
2023	11	18	16 38 36.26	-24 14 58.8	1.302867	5.2	16.3	-0.4
2023	11	19	16 44 53.81	-24 30 23.3	1.290404	5.2	16.7	-0.4
2023	11	20	16 51 10.52	-24 44 32.0	1.277331	5.3	17.2	-0.4
2023	11	21	16 57 26.04	-24 57 23.5	1.263639	5.3	17.6	-0.4
2023	11	22	17 03 39.93	-25 08 56.6	1.249319	5.4	18.0	-0.4
2023	11	23	17 09 51.74	-25 19 09.9	1.234361	5.5	18.4	-0.4
2023	11	24	17 16 00.92	-25 28 02.4	1.218759	5.5	18.8	-0.4
2023	11	25	17 22 06.84	-25 35 32.9	1.202503	5.6	19.2	-0.4
2023	11	26	17 28 08.81	-25 41 40.5	1.185587	5.7	19.5	-0.4
2023	11	27	17 34 06.00	-25 46 24.5	1.168007	5.8	19.9	-0.4
2023	11	28	17 39 57.50	-25 49 44.3	1.149760	5.9	20.2	-0.4
2023	11	29	17 45 42.27	-25 51 39.5	1.130846	6.0	20.4	-0.5
2023	11	30	17 51 19.10	-25 52 09.9	1.111268	6.1	20.7	-0.5
2023	12	1	17 56 46.65	-25 51 15.8	1.091037	6.2	20.9	-0.5
2023	12	2	18 02 03.40	-25 48 57.6	1.070166	6.3	21.1	-0.5
2023	12	3	18 07 07.61	-25 45 16.2	1.048678	6.4	21.2	-0.5
2023	12	4	18 11 57.35	-25 40 13.1	1.026604	6.6	21.3	-0.5
2023	12	5	18 16 30.43	-25 33 50.0	1.003987	6.7	21.3	-0.5
2023	12	6	18 20 44.41	-25 26 09.5	0.980884	6.9	21.2	-0.4
2023	12	7	18 24 36.58	-25 17 14.3	0.957367	7.0	21.1	-0.4
2023	12	8	18 28 03.99	-25 07 08.3	0.933527	7.2	20.8	-0.4
2023	12	9	18 31 03.38	-24 55 55.5	0.909478	7.4	20.5	-0.3
2023	12	10	18 33 31.31	-24 43 40.5	0.885358	7.6	20.0	-0.2
2023	12	11	18 35 24.14	-24 30 28.7	0.861335	7.8	19.4	-0.1
2023	12	12	18 36 38.22	-24 16 25.4	0.837605	8.0	18.7	0.0
2023	12	13	18 37 09.95	-24 01 36.3	0.814398	8.3	17.8	0.2
2023	12	14	18 36 56.09	-23 46 07.1	0.791975	8.5	16.7	0.5
2023	12	15	18 35 54.02	-23 30 03.4	0.770629	8.7	15.5	0.8
2023	12	16	18 34 02.09	-23 13 30.4	0.750676	9.0	14.1	1.2
2023	12	17	18 31 20.03	-22 56 33.6	0.732448	9.2	12.5	1.6
2023	12	18	18 27 49.37	-22 39 18.9	0.716282	9.4	10.7	2.2
2023	12	19	18 23 33.79	-22 21 53.0	0.702502	9.6	8.7	2.9
2023	12	20	18 18 39.27	-22 04 25.0	0.691401	9.7	6.6	3.7

Date	MERCURY	Apparent	Apparent	Apparent	Visual	Solar	
0h TT	Apparent	Declination	Distance	Diameter	Separation	Mag.	
y m d	R.A.	d m s	au	arc sec	degrees		
	h m s						
2023 12 21	18 13 14.04	-21 47 06.7	0.683218	9.9	4.5	4.6	
2023 12 22	18 07 28.25	-21 30 13.3	0.678122	9.9	2.7	5.4	
2023 12 23	18 01 33.35	-21 14 03.4	0.676199	10.0	-2.3	5.6	
2023 12 24	17 55 41.17	-20 58 58.0	0.677442	9.9	-3.8	4.9	
2023 12 25	17 50 03.11	-20 45 19.0	0.681756	9.9	-5.9	4.1	
2023 12 26	17 44 49.26	-20 33 26.6	0.688966	9.8	-8.0	3.3	
2023 12 27	17 40 07.87	-20 23 38.0	0.698831	9.6	-10.0	2.6	
2023 12 28	17 36 04.99	-20 16 05.1	0.711068	9.5	-12.0	2.0	
2023 12 29	17 32 44.53	-20 10 54.2	0.725368	9.3	-13.7	1.5	
2023 12 30	17 30 08.39	-20 08 05.7	0.741415	9.1	-15.3	1.1	
2023 12 31	17 28 16.84	-20 07 35.0	0.758899	8.9	-16.8	0.8	
2024 1 1	17 27 08.87	-20 09 13.0	0.777530	8.7	-18.0	0.5	

Date		VENUS			Apparent	Visual	Page 1					
Oh TT		Apparent			Distance	Diameter	Solar					
y m d		R.A.			Declination	arc sec	Separation	Mag.				
		h m s	d m s		au		degrees					
2022	12	31	19	53	37.43	-22	15	29.2	1.610398	10.4	16.9	-3.9
2023	1	1	19	58	56.89	-22	02	13.6	1.607519	10.4	17.2	-3.9
2023	1	2	20	04	15.25	-21	48	18.5	1.604603	10.4	17.4	-3.9
2023	1	3	20	09	32.49	-21	33	44.6	1.601651	10.4	17.6	-3.9
2023	1	4	20	14	48.57	-21	18	32.3	1.598664	10.4	17.9	-3.9
2023	1	5	20	20	03.46	-21	02	42.4	1.595641	10.5	18.1	-3.9
2023	1	6	20	25	17.14	-20	46	15.5	1.592582	10.5	18.3	-3.9
2023	1	7	20	30	29.58	-20	29	12.2	1.589488	10.5	18.6	-3.9
2023	1	8	20	35	40.75	-20	11	33.2	1.586359	10.5	18.8	-3.9
2023	1	9	20	40	50.66	-19	53	19.2	1.583194	10.5	19.0	-3.9
2023	1	10	20	45	59.27	-19	34	30.8	1.579994	10.6	19.3	-3.9
2023	1	11	20	51	06.58	-19	15	08.7	1.576758	10.6	19.5	-3.9
2023	1	12	20	56	12.57	-18	55	13.7	1.573487	10.6	19.7	-3.9
2023	1	13	21	01	17.25	-18	34	46.5	1.570181	10.6	19.9	-3.9
2023	1	14	21	06	20.61	-18	13	47.7	1.566838	10.7	20.2	-3.9
2023	1	15	21	11	22.64	-17	52	18.1	1.563459	10.7	20.4	-3.9
2023	1	16	21	16	23.36	-17	30	18.4	1.560044	10.7	20.6	-3.9
2023	1	17	21	21	22.77	-17	07	49.5	1.556592	10.7	20.9	-3.9
2023	1	18	21	26	20.87	-16	44	52.0	1.553103	10.7	21.1	-3.9
2023	1	19	21	31	17.66	-16	21	26.7	1.549577	10.8	21.3	-3.9
2023	1	20	21	36	13.17	-15	57	34.5	1.546013	10.8	21.6	-3.9
2023	1	21	21	41	07.38	-15	33	16.0	1.542411	10.8	21.8	-3.9
2023	1	22	21	46	00.32	-15	08	32.2	1.538770	10.8	22.0	-3.9
2023	1	23	21	50	51.98	-14	43	23.9	1.535090	10.9	22.2	-3.9
2023	1	24	21	55	42.39	-14	17	51.7	1.531371	10.9	22.5	-3.9
2023	1	25	22	00	31.56	-13	51	56.6	1.527613	10.9	22.7	-3.9
2023	1	26	22	05	19.50	-13	25	39.2	1.523816	11.0	22.9	-3.9
2023	1	27	22	10	06.25	-12	59	00.6	1.519979	11.0	23.2	-3.9
2023	1	28	22	14	51.82	-12	32	01.3	1.516105	11.0	23.4	-3.9
2023	1	29	22	19	36.24	-12	04	42.2	1.512191	11.0	23.6	-3.9
2023	1	30	22	24	19.54	-11	37	04.2	1.508239	11.1	23.8	-3.9
2023	1	31	22	29	01.74	-11	09	08.0	1.504248	11.1	24.1	-3.9
2023	2	1	22	33	42.88	-10	40	54.4	1.500220	11.1	24.3	-3.9
2023	2	2	22	38	22.98	-10	12	24.2	1.496153	11.2	24.5	-3.9
2023	2	3	22	43	02.07	-9	43	38.2	1.492048	11.2	24.7	-3.9
2023	2	4	22	47	40.20	-9	14	37.2	1.487906	11.2	25.0	-3.9
2023	2	5	22	52	17.38	-8	45	21.9	1.483725	11.2	25.2	-3.9
2023	2	6	22	56	53.66	-8	15	53.2	1.479506	11.3	25.4	-3.9
2023	2	7	23	01	29.07	-7	46	11.8	1.475250	11.3	25.6	-3.9
2023	2	8	23	06	03.66	-7	16	18.3	1.470956	11.3	25.9	-3.9
2023	2	9	23	10	37.46	-6	46	13.7	1.466624	11.4	26.1	-3.9
2023	2	10	23	15	10.50	-6	15	58.6	1.462254	11.4	26.3	-3.9
2023	2	11	23	19	42.84	-5	45	33.8	1.457845	11.4	26.5	-3.9
2023	2	12	23	24	14.52	-5	15	00.0	1.453398	11.5	26.8	-3.9
2023	2	13	23	28	45.57	-4	44	17.9	1.448913	11.5	27.0	-3.9
2023	2	14	23	33	16.04	-4	13	28.3	1.444388	11.6	27.2	-3.9
2023	2	15	23	37	45.96	-3	42	31.9	1.439825	11.6	27.4	-3.9
2023	2	16	23	42	15.39	-3	11	29.5	1.435221	11.6	27.7	-3.9
2023	2	17	23	46	44.36	-2	40	21.7	1.430578	11.7	27.9	-3.9
2023	2	18	23	51	12.90	-2	09	09.5	1.425894	11.7	28.1	-3.9
2023	2	19	23	55	41.06	-1	37	53.4	1.421168	11.7	28.3	-3.9

Date		VENUS			Page 2		
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	Mag.
y	m	R.A.	Declination	Distance	Diameter	Separation	
d		h m s	d m s	au	arc sec	degrees	
2023	2	0 00 08.87	-1 06 34.3	1.416402	11.8	28.5	-3.9
2023	2	0 04 36.37	-0 35 13.0	1.411594	11.8	28.8	-3.9
2023	2	0 09 03.60	-0 03 50.1	1.406743	11.9	29.0	-3.9
2023	2	0 13 30.60	0 27 33.5	1.401851	11.9	29.2	-3.9
2023	2	0 17 57.41	0 58 57.1	1.396916	11.9	29.4	-3.9
2023	2	0 22 24.06	1 30 20.0	1.391939	12.0	29.6	-3.9
2023	2	0 26 50.61	2 01 41.5	1.386920	12.0	29.9	-3.9
2023	2	0 31 17.08	2 33 00.7	1.381859	12.1	30.1	-3.9
2023	2	0 35 43.52	3 04 16.9	1.376756	12.1	30.3	-3.9
2023	3	0 40 09.96	3 35 29.4	1.371612	12.2	30.5	-3.9
2023	3	0 44 36.44	4 06 37.5	1.366426	12.2	30.7	-3.9
2023	3	0 49 03.00	4 37 40.5	1.361198	12.3	31.0	-3.9
2023	3	0 53 29.68	5 08 37.5	1.355930	12.3	31.2	-3.9
2023	3	0 57 56.51	5 39 27.8	1.350620	12.4	31.4	-3.9
2023	3	1 02 23.53	6 10 10.9	1.345270	12.4	31.6	-3.9
2023	3	1 06 50.79	6 40 45.8	1.339878	12.5	31.8	-3.9
2023	3	1 11 18.32	7 11 12.0	1.334447	12.5	32.0	-3.9
2023	3	1 15 46.15	7 41 28.7	1.328974	12.6	32.2	-3.9
2023	3	1 20 14.33	8 11 35.1	1.323461	12.6	32.5	-3.9
2023	3	1 24 42.90	8 41 30.7	1.317908	12.7	32.7	-3.9
2023	3	1 29 11.89	9 11 14.7	1.312314	12.7	32.9	-3.9
2023	3	1 33 41.34	9 40 46.4	1.306680	12.8	33.1	-3.9
2023	3	1 38 11.28	10 10 05.2	1.301006	12.8	33.3	-3.9
2023	3	1 42 41.75	10 39 10.2	1.295291	12.9	33.5	-4.0
2023	3	1 47 12.77	11 08 00.8	1.289534	12.9	33.7	-4.0
2023	3	1 51 44.39	11 36 36.3	1.283737	13.0	33.9	-4.0
2023	3	1 56 16.61	12 04 56.0	1.277899	13.1	34.2	-4.0
2023	3	2 00 49.47	12 32 59.1	1.272019	13.1	34.4	-4.0
2023	3	2 05 22.99	13 00 44.9	1.266096	13.2	34.6	-4.0
2023	3	2 09 57.21	13 28 12.7	1.260132	13.2	34.8	-4.0
2023	3	2 14 32.12	13 55 21.7	1.254125	13.3	35.0	-4.0
2023	3	2 19 07.77	14 22 11.2	1.248075	13.4	35.2	-4.0
2023	3	2 23 44.17	14 48 40.4	1.241983	13.4	35.4	-4.0
2023	3	2 28 21.33	15 14 48.7	1.235847	13.5	35.6	-4.0
2023	3	2 32 59.26	15 40 35.4	1.229670	13.6	35.8	-4.0
2023	3	2 37 37.98	16 05 59.6	1.223450	13.6	36.0	-4.0
2023	3	2 42 17.49	16 31 00.8	1.217188	13.7	36.2	-4.0
2023	3	2 46 57.80	16 55 38.1	1.210885	13.8	36.4	-4.0
2023	3	2 51 38.92	17 19 50.9	1.204540	13.9	36.6	-4.0
2023	3	2 56 20.85	17 43 38.5	1.198154	13.9	36.8	-4.0
2023	4	3 01 03.59	18 07 00.1	1.191728	14.0	37.0	-4.0
2023	4	3 05 47.15	18 29 55.2	1.185261	14.1	37.2	-4.0
2023	4	3 10 31.52	18 52 23.0	1.178754	14.2	37.4	-4.0
2023	4	3 15 16.69	19 14 22.9	1.172208	14.2	37.6	-4.0
2023	4	3 20 02.68	19 35 54.3	1.165622	14.3	37.8	-4.0
2023	4	3 24 49.47	19 56 56.5	1.158999	14.4	38.0	-4.0
2023	4	3 29 37.05	20 17 28.9	1.152336	14.5	38.2	-4.0
2023	4	3 34 25.42	20 37 30.8	1.145637	14.6	38.4	-4.0
2023	4	3 39 14.56	20 57 01.9	1.138899	14.7	38.6	-4.0
2023	4	3 44 04.46	21 16 01.3	1.132125	14.7	38.8	-4.1

Date			VENUS Apparent R.A.			Apparent Declination		Apparent Distance	Visual Diameter	Solar Separation	Mag.	
Oh	TT		h	m	s	d	m	au	arc sec	degrees		
y	m	d										
2023	4	11	3	48	55.10	21	34	28.7	1.125314	14.8	38.9	-4.1
2023	4	12	3	53	46.47	21	52	23.5	1.118467	14.9	39.1	-4.1
2023	4	13	3	58	38.53	22	09	45.0	1.111583	15.0	39.3	-4.1
2023	4	14	4	03	31.27	22	26	32.9	1.104663	15.1	39.5	-4.1
2023	4	15	4	08	24.64	22	42	46.5	1.097707	15.2	39.7	-4.1
2023	4	16	4	13	18.63	22	58	25.4	1.090714	15.3	39.9	-4.1
2023	4	17	4	18	13.18	23	13	29.0	1.083686	15.4	40.0	-4.1
2023	4	18	4	23	08.28	23	27	56.9	1.076621	15.5	40.2	-4.1
2023	4	19	4	28	03.87	23	41	48.7	1.069520	15.6	40.4	-4.1
2023	4	20	4	32	59.91	23	55	03.9	1.062383	15.7	40.6	-4.1
2023	4	21	4	37	56.35	24	07	42.2	1.055211	15.8	40.7	-4.1
2023	4	22	4	42	53.15	24	19	43.0	1.048002	15.9	40.9	-4.1
2023	4	23	4	47	50.24	24	31	06.2	1.040759	16.0	41.1	-4.1
2023	4	24	4	52	47.56	24	41	51.4	1.033480	16.1	41.2	-4.1
2023	4	25	4	57	45.05	24	51	58.2	1.026167	16.3	41.4	-4.1
2023	4	26	5	02	42.64	25	01	26.4	1.018820	16.4	41.6	-4.1
2023	4	27	5	07	40.28	25	10	15.8	1.011440	16.5	41.7	-4.1
2023	4	28	5	12	37.89	25	18	26.1	1.004028	16.6	41.9	-4.1
2023	4	29	5	17	35.40	25	25	57.2	0.996583	16.7	42.0	-4.2
2023	4	30	5	22	32.74	25	32	48.9	0.989107	16.9	42.2	-4.2
2023	5	1	5	27	29.85	25	39	01.0	0.981600	17.0	42.3	-4.2
2023	5	2	5	32	26.65	25	44	33.6	0.974063	17.1	42.5	-4.2
2023	5	3	5	37	23.07	25	49	26.5	0.966498	17.3	42.6	-4.2
2023	5	4	5	42	19.04	25	53	39.7	0.958904	17.4	42.8	-4.2
2023	5	5	5	47	14.47	25	57	13.3	0.951282	17.5	42.9	-4.2
2023	5	6	5	52	09.32	26	00	07.3	0.943634	17.7	43.1	-4.2
2023	5	7	5	57	03.48	26	02	21.8	0.935961	17.8	43.2	-4.2
2023	5	8	6	01	56.91	26	03	56.9	0.928263	18.0	43.3	-4.2
2023	5	9	6	06	49.51	26	04	52.8	0.920540	18.1	43.5	-4.2
2023	5	10	6	11	41.22	26	05	09.7	0.912794	18.3	43.6	-4.2
2023	5	11	6	16	31.96	26	04	47.7	0.905026	18.4	43.7	-4.2
2023	5	12	6	21	21.65	26	03	47.1	0.897235	18.6	43.8	-4.2
2023	5	13	6	26	10.22	26	02	08.2	0.889423	18.8	44.0	-4.2
2023	5	14	6	30	57.60	25	59	51.1	0.881589	18.9	44.1	-4.3
2023	5	15	6	35	43.72	25	56	56.3	0.873735	19.1	44.2	-4.3
2023	5	16	6	40	28.49	25	53	24.0	0.865860	19.3	44.3	-4.3
2023	5	17	6	45	11.85	25	49	14.6	0.857966	19.5	44.4	-4.3
2023	5	18	6	49	53.72	25	44	28.6	0.850052	19.6	44.5	-4.3
2023	5	19	6	54	34.02	25	39	06.2	0.842119	19.8	44.6	-4.3
2023	5	20	6	59	12.67	25	33	08.2	0.834168	20.0	44.7	-4.3
2023	5	21	7	03	49.60	25	26	34.8	0.826200	20.2	44.7	-4.3
2023	5	22	7	08	24.71	25	19	26.7	0.818214	20.4	44.8	-4.3
2023	5	23	7	12	57.94	25	11	44.3	0.810212	20.6	44.9	-4.3
2023	5	24	7	17	29.21	25	03	28.4	0.802195	20.8	45.0	-4.3
2023	5	25	7	21	58.43	24	54	39.4	0.794163	21.0	45.0	-4.3
2023	5	26	7	26	25.53	24	45	17.9	0.786118	21.2	45.1	-4.4
2023	5	27	7	30	50.43	24	35	24.7	0.778061	21.4	45.2	-4.4
2023	5	28	7	35	13.07	24	25	00.4	0.769992	21.7	45.2	-4.4
2023	5	29	7	39	33.36	24	14	05.6	0.761914	21.9	45.3	-4.4
2023	5	30	7	43	51.24	24	02	41.1	0.753826	22.1	45.3	-4.4
2023	5	31	7	48	06.64	23	50	47.7	0.745730	22.4	45.3	-4.4

Date			VENUS			Page 4		
0h TT			Apparent	Apparent	Apparent	Visual	Solar	
y	m	d	R.A.	Declination	Distance	Diameter	Separation	Mag.
			h m s	d m s	au	arc sec	degrees	
2023	6	1	7 52 19.48	23 38 26.0	0.737629	22.6	45.4	-4.4
2023	6	2	7 56 29.71	23 25 36.8	0.729522	22.9	45.4	-4.4
2023	6	3	8 00 37.25	23 12 20.9	0.721412	23.1	45.4	-4.4
2023	6	4	8 04 42.04	22 58 39.2	0.713299	23.4	45.4	-4.4
2023	6	5	8 08 44.01	22 44 32.4	0.705187	23.7	45.4	-4.4
2023	6	6	8 12 43.11	22 30 01.4	0.697075	23.9	45.4	-4.4
2023	6	7	8 16 39.27	22 15 07.0	0.688965	24.2	45.4	-4.5
2023	6	8	8 20 32.42	21 59 50.1	0.680859	24.5	45.4	-4.5
2023	6	9	8 24 22.51	21 44 11.4	0.672759	24.8	45.3	-4.5
2023	6	10	8 28 09.47	21 28 11.8	0.664665	25.1	45.3	-4.5
2023	6	11	8 31 53.25	21 11 52.1	0.656578	25.4	45.2	-4.5
2023	6	12	8 35 33.78	20 55 13.2	0.648500	25.7	45.2	-4.5
2023	6	13	8 39 10.99	20 38 16.1	0.640433	26.1	45.1	-4.5
2023	6	14	8 42 44.82	20 21 01.4	0.632376	26.4	45.0	-4.5
2023	6	15	8 46 15.20	20 03 30.4	0.624332	26.7	44.9	-4.5
2023	6	16	8 49 42.04	19 45 43.7	0.616302	27.1	44.8	-4.5
2023	6	17	8 53 05.27	19 27 42.5	0.608288	27.4	44.7	-4.5
2023	6	18	8 56 24.80	19 09 27.6	0.600290	27.8	44.6	-4.6
2023	6	19	8 59 40.54	18 51 00.2	0.592310	28.2	44.5	-4.6
2023	6	20	9 02 52.40	18 32 21.2	0.584351	28.6	44.3	-4.6
2023	6	21	9 06 00.28	18 13 31.7	0.576414	29.0	44.2	-4.6
2023	6	22	9 09 04.08	17 54 32.6	0.568501	29.4	44.0	-4.6
2023	6	23	9 12 03.70	17 35 25.2	0.560614	29.8	43.8	-4.6
2023	6	24	9 14 59.03	17 16 10.5	0.552755	30.2	43.6	-4.6
2023	6	25	9 17 49.96	16 56 49.6	0.544927	30.6	43.4	-4.6
2023	6	26	9 20 36.38	16 37 23.7	0.537132	31.1	43.2	-4.6
2023	6	27	9 23 18.15	16 17 53.8	0.529373	31.5	43.0	-4.6
2023	6	28	9 25 55.17	15 58 21.3	0.521652	32.0	42.7	-4.6
2023	6	29	9 28 27.29	15 38 47.3	0.513973	32.5	42.4	-4.6
2023	6	30	9 30 54.39	15 19 13.1	0.506338	33.0	42.1	-4.7
2023	7	1	9 33 16.33	14 59 39.9	0.498752	33.5	41.8	-4.7
2023	7	2	9 35 32.97	14 40 09.0	0.491216	34.0	41.5	-4.7
2023	7	3	9 37 44.16	14 20 41.8	0.483736	34.5	41.2	-4.7
2023	7	4	9 39 49.75	14 01 19.5	0.476314	35.0	40.8	-4.7
2023	7	5	9 41 49.58	13 42 03.6	0.468954	35.6	40.4	-4.7
2023	7	6	9 43 43.51	13 22 55.3	0.461661	36.1	40.0	-4.7
2023	7	7	9 45 31.38	13 03 56.1	0.454438	36.7	39.6	-4.7
2023	7	8	9 47 13.01	12 45 07.4	0.447289	37.3	39.1	-4.7
2023	7	9	9 48 48.26	12 26 30.4	0.440219	37.9	38.6	-4.7
2023	7	10	9 50 16.94	12 08 06.8	0.433231	38.5	38.1	-4.7
2023	7	11	9 51 38.89	11 49 58.0	0.426329	39.1	37.6	-4.7
2023	7	12	9 52 53.92	11 32 05.7	0.419520	39.8	37.0	-4.7
2023	7	13	9 54 01.83	11 14 31.4	0.412806	40.4	36.4	-4.7
2023	7	14	9 55 02.45	10 57 16.8	0.406193	41.1	35.8	-4.7
2023	7	15	9 55 55.57	10 40 23.8	0.399686	41.8	35.2	-4.7
2023	7	16	9 56 41.00	10 23 54.0	0.393291	42.4	34.5	-4.7
2023	7	17	9 57 18.55	10 07 49.4	0.387014	43.1	33.8	-4.7
2023	7	18	9 57 48.02	9 52 11.9	0.380859	43.8	33.0	-4.7
2023	7	19	9 58 09.22	9 37 03.4	0.374835	44.5	32.3	-4.6
2023	7	20	9 58 21.99	9 22 25.9	0.368947	45.2	31.5	-4.6

Date			VENUS			Page 5				
Oh TT			Apparent	Apparent	Apparent	Visual	Solar			
			R.A.	Declination	Distance	Diameter	Separation			
y	m	d	h m s	d m s	au	arc sec	degrees			
							Mag.			
2023	7	21	9 58	26.17	9 08	21.4	0.363202	45.9	30.6	-4.6
2023	7	22	9 58	21.59	8 54	51.9	0.357607	46.7	29.8	-4.6
2023	7	23	9 58	08.14	8 41	59.6	0.352171	47.4	28.9	-4.6
2023	7	24	9 57	45.71	8 29	46.4	0.346900	48.1	27.9	-4.6
2023	7	25	9 57	14.22	8 18	14.4	0.341803	48.8	27.0	-4.5
2023	7	26	9 56	33.64	8 07	25.7	0.336888	49.5	26.0	-4.5
2023	7	27	9 55	43.95	7 57	22.1	0.332163	50.2	24.9	-4.5
2023	7	28	9 54	45.18	7 48	05.5	0.327637	50.9	23.8	-4.5
2023	7	29	9 53	37.43	7 39	37.8	0.323319	51.6	22.7	-4.4
2023	7	30	9 52	20.84	7 32	00.5	0.319217	52.3	21.6	-4.4
2023	7	31	9 50	55.59	7 25	15.3	0.315341	52.9	20.5	-4.4
2023	8	1	9 49	21.96	7 19	23.3	0.311699	53.5	19.3	-4.3
2023	8	2	9 47	40.28	7 14	25.5	0.308299	54.1	18.1	-4.3
2023	8	3	9 45	50.94	7 10	22.8	0.305149	54.7	16.9	-4.2
2023	8	4	9 43	54.42	7 07	15.5	0.302257	55.2	15.6	-4.2
2023	8	5	9 41	51.25	7 05	03.7	0.299630	55.7	14.4	-4.1
2023	8	6	9 39	42.06	7 03	47.3	0.297275	56.1	13.2	-4.1
2023	8	7	9 37	27.50	7 03	25.7	0.295196	56.5	12.1	-4.0
2023	8	8	9 35	08.28	7 03	58.1	0.293400	56.9	11.0	-4.1
2023	8	9	9 32	45.20	7 05	23.4	0.291890	57.2	9.9	-4.1
2023	8	10	9 30	19.05	7 07	40.1	0.290670	57.4	9.1	-4.1
2023	8	11	9 27	50.68	7 10	46.3	0.289743	57.6	8.3	-4.1
2023	8	12	9 25	20.99	7 14	39.9	0.289110	57.7	7.9	-4.1
2023	8	13	9 22	50.85	7 19	18.6	0.288774	57.8	7.7	-4.1
2023	8	14	9 20	21.17	7 24	39.7	0.288733	57.8	-7.8	-4.1
2023	8	15	9 17	52.87	7 30	40.1	0.288987	57.7	-8.2	-4.1
2023	8	16	9 15	26.83	7 37	16.9	0.289536	57.6	-8.9	-4.1
2023	8	17	9 13	03.92	7 44	26.6	0.290375	57.5	-9.7	-4.1
2023	8	18	9 10	44.99	7 52	05.9	0.291503	57.2	-10.7	-4.1
2023	8	19	9 08	30.82	8 00	11.2	0.292914	57.0	-11.8	-4.1
2023	8	20	9 06	22.18	8 08	38.9	0.294605	56.6	-13.0	-4.1
2023	8	21	9 04	19.76	8 17	25.5	0.296570	56.3	-14.2	-4.2
2023	8	22	9 02	24.20	8 26	27.3	0.298803	55.9	-15.4	-4.2
2023	8	23	9 00	36.07	8 35	40.9	0.301297	55.4	-16.6	-4.3
2023	8	24	8 58	55.89	8 45	02.8	0.304046	54.9	-17.8	-4.3
2023	8	25	8 57	24.11	8 54	29.8	0.307042	54.4	-19.0	-4.3
2023	8	26	8 56	01.09	9 03	58.6	0.310278	53.8	-20.2	-4.4
2023	8	27	8 54	47.17	9 13	26.2	0.313745	53.2	-21.4	-4.4
2023	8	28	8 53	42.59	9 22	49.7	0.317435	52.6	-22.6	-4.5
2023	8	29	8 52	47.55	9 32	06.2	0.321341	51.9	-23.7	-4.5
2023	8	30	8 52	02.18	9 41	13.2	0.325453	51.3	-24.8	-4.5
2023	8	31	8 51	26.58	9 50	08.2	0.329763	50.6	-25.9	-4.6
2023	9	1	8 51	00.79	9 58	48.8	0.334263	49.9	-26.9	-4.6
2023	9	2	8 50	44.78	10 07	12.9	0.338943	49.2	-27.9	-4.6
2023	9	3	8 50	38.50	10 15	18.4	0.343796	48.5	-28.9	-4.6
2023	9	4	8 50	41.86	10 23	03.7	0.348812	47.8	-29.8	-4.7
2023	9	5	8 50	54.73	10 30	27.1	0.353983	47.1	-30.7	-4.7
2023	9	6	8 51	16.92	10 37	27.1	0.359302	46.4	-31.5	-4.7
2023	9	7	8 51	48.27	10 44	02.5	0.364760	45.8	-32.4	-4.7
2023	9	8	8 52	28.54	10 50	12.2	0.370350	45.1	-33.2	-4.7
2023	9	9	8 53	17.52	10 55	55.2	0.376066	44.4	-33.9	-4.7

Date			VENUS			Apparent	Visual	Solar				
0h TT			Apparent			Distance	Diameter	Separation	Mag.			
y	m	d	R.A.			Declination	arc sec	degrees				
			h	m	s	d	m	s				
2023	9	10	8	54	14.97	11	01	10.4	0.381899	43.7	-34.7	-4.7
2023	9	11	8	55	20.63	11	05	57.2	0.387844	43.0	-35.4	-4.7
2023	9	12	8	56	34.25	11	10	14.8	0.393895	42.4	-36.0	-4.7
2023	9	13	8	57	55.57	11	14	02.6	0.400046	41.7	-36.7	-4.7
2023	9	14	8	59	24.34	11	17	19.9	0.406291	41.1	-37.3	-4.8
2023	9	15	9	01	00.28	11	20	06.4	0.412625	40.4	-37.9	-4.8
2023	9	16	9	02	43.16	11	22	21.6	0.419043	39.8	-38.4	-4.8
2023	9	17	9	04	32.70	11	24	05.1	0.425542	39.2	-38.9	-4.8
2023	9	18	9	06	28.67	11	25	16.7	0.432115	38.6	-39.4	-4.8
2023	9	19	9	08	30.82	11	25	55.9	0.438760	38.0	-39.9	-4.8
2023	9	20	9	10	38.90	11	26	02.7	0.445471	37.5	-40.4	-4.8
2023	9	21	9	12	52.70	11	25	36.8	0.452247	36.9	-40.8	-4.8
2023	9	22	9	15	11.97	11	24	38.0	0.459083	36.4	-41.2	-4.7
2023	9	23	9	17	36.49	11	23	06.3	0.465976	35.8	-41.6	-4.7
2023	9	24	9	20	06.07	11	21	01.6	0.472923	35.3	-42.0	-4.7
2023	9	25	9	22	40.49	11	18	23.7	0.479921	34.8	-42.3	-4.7
2023	9	26	9	25	19.55	11	15	12.5	0.486967	34.3	-42.7	-4.7
2023	9	27	9	28	03.06	11	11	28.2	0.494058	33.8	-43.0	-4.7
2023	9	28	9	30	50.85	11	07	10.5	0.501192	33.3	-43.3	-4.7
2023	9	29	9	33	42.73	11	02	19.4	0.508365	32.8	-43.6	-4.7
2023	9	30	9	36	38.54	10	56	55.1	0.515576	32.4	-43.8	-4.7
2023	10	1	9	39	38.10	10	50	57.5	0.522822	31.9	-44.1	-4.7
2023	10	2	9	42	41.27	10	44	26.7	0.530099	31.5	-44.3	-4.7
2023	10	3	9	45	47.87	10	37	23.0	0.537405	31.1	-44.5	-4.7
2023	10	4	9	48	57.75	10	29	46.5	0.544738	30.6	-44.7	-4.7
2023	10	5	9	52	10.75	10	21	37.4	0.552096	30.2	-44.9	-4.7
2023	10	6	9	55	26.73	10	12	56.1	0.559476	29.8	-45.1	-4.7
2023	10	7	9	58	45.53	10	03	42.8	0.566876	29.4	-45.2	-4.7
2023	10	8	10	02	07.03	9	53	57.9	0.574295	29.1	-45.4	-4.6
2023	10	9	10	05	31.10	9	43	41.7	0.581731	28.7	-45.5	-4.6
2023	10	10	10	08	57.60	9	32	54.6	0.589182	28.3	-45.6	-4.6
2023	10	11	10	12	26.42	9	21	37.0	0.596646	28.0	-45.8	-4.6
2023	10	12	10	15	57.44	9	09	49.4	0.604123	27.6	-45.9	-4.6
2023	10	13	10	19	30.56	8	57	32.0	0.611611	27.3	-46.0	-4.6
2023	10	14	10	23	05.67	8	44	45.4	0.619108	27.0	-46.0	-4.6
2023	10	15	10	26	42.68	8	31	30.1	0.626613	26.6	-46.1	-4.6
2023	10	16	10	30	21.50	8	17	46.6	0.634126	26.3	-46.2	-4.6
2023	10	17	10	34	02.04	8	03	35.2	0.641645	26.0	-46.2	-4.6
2023	10	18	10	37	44.22	7	48	56.6	0.649170	25.7	-46.3	-4.6
2023	10	19	10	41	27.96	7	33	51.2	0.656700	25.4	-46.3	-4.5
2023	10	20	10	45	13.20	7	18	19.6	0.664233	25.1	-46.4	-4.5
2023	10	21	10	48	59.86	7	02	22.3	0.671770	24.8	-46.4	-4.5
2023	10	22	10	52	47.88	6	45	59.9	0.679309	24.6	-46.4	-4.5
2023	10	23	10	56	37.22	6	29	12.8	0.686851	24.3	-46.4	-4.5
2023	10	24	11	00	27.80	6	12	01.7	0.694394	24.0	-46.4	-4.5
2023	10	25	11	04	19.60	5	54	27.0	0.701937	23.8	-46.4	-4.5
2023	10	26	11	08	12.56	5	36	29.2	0.709480	23.5	-46.4	-4.5
2023	10	27	11	12	06.66	5	18	09.0	0.717023	23.3	-46.4	-4.5
2023	10	28	11	16	01.85	4	59	26.8	0.724563	23.0	-46.4	-4.5
2023	10	29	11	19	58.11	4	40	23.2	0.732100	22.8	-46.3	-4.5
2023	10	30	11	23	55.39	4	20	58.8	0.739634	22.6	-46.3	-4.5

VENUS					Page 7		
Date	Apparent	Apparent	Apparent	Visual	Solar		
Oh TT	R.A.	Declination	Distance	Diameter	Separation	Mag.	
y m d	h m s	d m s	au	arc sec	degrees		
2023 10 31	11 27 53.69	4 01 14.2	0.747163	22.3	-46.3	-4.4	
2023 11 1	11 31 52.95	3 41 10.1	0.754686	22.1	-46.2	-4.4	
2023 11 2	11 35 53.16	3 20 47.1	0.762202	21.9	-46.2	-4.4	
2023 11 3	11 39 54.28	3 00 05.9	0.769710	21.7	-46.1	-4.4	
2023 11 4	11 43 56.30	2 39 07.2	0.777210	21.5	-46.0	-4.4	
2023 11 5	11 47 59.19	2 17 51.7	0.784700	21.3	-46.0	-4.4	
2023 11 6	11 52 02.92	1 56 20.1	0.792180	21.1	-45.9	-4.4	
2023 11 7	11 56 07.49	1 34 33.1	0.799648	20.9	-45.8	-4.4	
2023 11 8	12 00 12.87	1 12 31.5	0.807105	20.7	-45.8	-4.4	
2023 11 9	12 04 19.06	0 50 15.9	0.814550	20.5	-45.7	-4.4	
2023 11 10	12 08 26.04	0 27 47.2	0.821981	20.3	-45.6	-4.4	
2023 11 11	12 12 33.82	0 05 06.0	0.829399	20.1	-45.5	-4.4	
2023 11 12	12 16 42.37	-0 17 46.8	0.836803	19.9	-45.4	-4.3	
2023 11 13	12 20 51.69	-0 40 50.6	0.844192	19.8	-45.3	-4.3	
2023 11 14	12 25 01.79	-1 04 04.6	0.851566	19.6	-45.2	-4.3	
2023 11 15	12 29 12.66	-1 27 28.0	0.858925	19.4	-45.1	-4.3	
2023 11 16	12 33 24.31	-1 51 00.1	0.866269	19.3	-45.0	-4.3	
2023 11 17	12 37 36.72	-2 14 40.1	0.873597	19.1	-44.9	-4.3	
2023 11 18	12 41 49.91	-2 38 27.2	0.880910	18.9	-44.7	-4.3	
2023 11 19	12 46 03.88	-3 02 20.6	0.888207	18.8	-44.6	-4.3	
2023 11 20	12 50 18.64	-3 26 19.7	0.895487	18.6	-44.5	-4.3	
2023 11 21	12 54 34.19	-3 50 23.7	0.902752	18.5	-44.4	-4.3	
2023 11 22	12 58 50.57	-4 14 31.8	0.910000	18.3	-44.3	-4.3	
2023 11 23	13 03 07.77	-4 38 43.4	0.917232	18.2	-44.1	-4.3	
2023 11 24	13 07 25.83	-5 02 57.6	0.924446	18.1	-44.0	-4.3	
2023 11 25	13 11 44.75	-5 27 13.7	0.931644	17.9	-43.9	-4.3	
2023 11 26	13 16 04.56	-5 51 31.1	0.938824	17.8	-43.7	-4.2	
2023 11 27	13 20 25.27	-6 15 49.0	0.945986	17.6	-43.6	-4.2	
2023 11 28	13 24 46.91	-6 40 06.6	0.953129	17.5	-43.4	-4.2	
2023 11 29	13 29 09.48	-7 04 23.1	0.960253	17.4	-43.3	-4.2	
2023 11 30	13 33 33.01	-7 28 37.7	0.967356	17.3	-43.1	-4.2	
2023 12 1	13 37 57.50	-7 52 49.6	0.974440	17.1	-43.0	-4.2	
2023 12 2	13 42 22.98	-8 16 58.1	0.981502	17.0	-42.8	-4.2	
2023 12 3	13 46 49.46	-8 41 02.2	0.988542	16.9	-42.7	-4.2	
2023 12 4	13 51 16.96	-9 05 01.2	0.995560	16.8	-42.5	-4.2	
2023 12 5	13 55 45.48	-9 28 54.3	1.002555	16.6	-42.4	-4.2	
2023 12 6	14 00 15.05	-9 52 40.6	1.009527	16.5	-42.2	-4.2	
2023 12 7	14 04 45.69	-10 16 19.2	1.016475	16.4	-42.0	-4.2	
2023 12 8	14 09 17.40	-10 39 49.4	1.023399	16.3	-41.9	-4.2	
2023 12 9	14 13 50.20	-11 03 10.4	1.030298	16.2	-41.7	-4.2	
2023 12 10	14 18 24.10	-11 26 21.2	1.037173	16.1	-41.5	-4.2	
2023 12 11	14 22 59.13	-11 49 21.1	1.044022	16.0	-41.4	-4.1	
2023 12 12	14 27 35.28	-12 12 09.2	1.050845	15.9	-41.2	-4.1	
2023 12 13	14 32 12.57	-12 34 44.8	1.057643	15.8	-41.0	-4.1	
2023 12 14	14 36 51.02	-12 57 06.9	1.064415	15.7	-40.8	-4.1	
2023 12 15	14 41 30.61	-13 19 14.7	1.071162	15.6	-40.7	-4.1	
2023 12 16	14 46 11.37	-13 41 07.4	1.077882	15.5	-40.5	-4.1	
2023 12 17	14 50 53.30	-14 02 44.1	1.084577	15.4	-40.3	-4.1	
2023 12 18	14 55 36.41	-14 24 04.1	1.091246	15.3	-40.1	-4.1	
2023 12 19	15 00 20.70	-14 45 06.5	1.097889	15.2	-40.0	-4.1	
2023 12 20	15 05 06.20	-15 05 50.6	1.104508	15.1	-39.8	-4.1	

Date	VENUS			Apparent	Visual	Page 8	
0h TT	Apparent			Distance	Diameter	Solar	Mag.
y m d	R.A.			au	arc sec	Separation	degrees
	h m s	d m s	d m s				
2023 12 21	15 09 52.91	-15 26 15.6		1.111101	15.0	-39.6	-4.1
2023 12 22	15 14 40.84	-15 46 20.7		1.117668	14.9	-39.4	-4.1
2023 12 23	15 19 30.00	-16 06 05.1		1.124210	14.8	-39.2	-4.1
2023 12 24	15 24 20.39	-16 25 28.0		1.130727	14.8	-39.0	-4.1
2023 12 25	15 29 12.02	-16 44 28.8		1.137217	14.7	-38.8	-4.1
2023 12 26	15 34 04.89	-17 03 06.7		1.143682	14.6	-38.6	-4.1
2023 12 27	15 38 59.00	-17 21 20.8		1.150120	14.5	-38.4	-4.1
2023 12 28	15 43 54.34	-17 39 10.4		1.156531	14.4	-38.3	-4.1
2023 12 29	15 48 50.91	-17 56 34.7		1.162916	14.4	-38.1	-4.1
2023 12 30	15 53 48.70	-18 13 33.1		1.169273	14.3	-37.9	-4.0
2023 12 31	15 58 47.70	-18 30 04.6		1.175602	14.2	-37.7	-4.0
2024 1 1	16 03 47.90	-18 46 08.6		1.181902	14.1	-37.5	-4.0

Date			MARS			Page 1											
Oh TT			Apparent			Apparent			Visual			Solar					
y m d			R.A.			Declination			Diameter			Separation			Mag.		
			h m s			d m s			arc sec			degrees					
2022	12	31	4	28	18.01	24	36	23.7	0.632655	14.8	149.8	-1.2					
2023	1	1	4	27	34.31	24	35	18.0	0.638414	14.7	148.7	-1.2					
2023	1	2	4	26	54.24	24	34	15.7	0.644324	14.5	147.5	-1.2					
2023	1	3	4	26	17.80	24	33	17.3	0.650381	14.4	146.3	-1.2					
2023	1	4	4	25	44.99	24	32	22.8	0.656582	14.3	145.2	-1.1					
2023	1	5	4	25	15.79	24	31	32.6	0.662923	14.1	144.1	-1.1					
2023	1	6	4	24	50.20	24	30	46.9	0.669401	14.0	143.0	-1.1					
2023	1	7	4	24	28.18	24	30	05.9	0.676012	13.9	141.9	-1.0					
2023	1	8	4	24	09.72	24	29	29.7	0.682753	13.7	140.8	-1.0					
2023	1	9	4	23	54.79	24	28	58.5	0.689622	13.6	139.7	-1.0					
2023	1	10	4	23	43.35	24	28	32.4	0.696615	13.4	138.6	-0.9					
2023	1	11	4	23	35.38	24	28	11.4	0.703728	13.3	137.6	-0.9					
2023	1	12	4	23	30.84	24	27	55.6	0.710960	13.2	136.6	-0.9					
2023	1	13	4	23	29.68	24	27	45.1	0.718306	13.0	135.5	-0.8					
2023	1	14	4	23	31.88	24	27	39.9	0.725764	12.9	134.5	-0.8					
2023	1	15	4	23	37.39	24	27	40.0	0.733332	12.8	133.5	-0.8					
2023	1	16	4	23	46.18	24	27	45.4	0.741006	12.6	132.6	-0.7					
2023	1	17	4	23	58.20	24	27	56.1	0.748783	12.5	131.6	-0.7					
2023	1	18	4	24	13.41	24	28	12.2	0.756661	12.4	130.6	-0.7					
2023	1	19	4	24	31.78	24	28	33.5	0.764637	12.2	129.7	-0.6					
2023	1	20	4	24	53.24	24	29	00.0	0.772708	12.1	128.8	-0.6					
2023	1	21	4	25	17.77	24	29	31.7	0.780870	12.0	127.8	-0.6					
2023	1	22	4	25	45.30	24	30	08.4	0.789122	11.9	126.9	-0.6					
2023	1	23	4	26	15.79	24	30	50.0	0.797459	11.7	126.0	-0.5					
2023	1	24	4	26	49.19	24	31	36.3	0.805878	11.6	125.1	-0.5					
2023	1	25	4	27	25.44	24	32	27.3	0.814377	11.5	124.3	-0.5					
2023	1	26	4	28	04.48	24	33	22.7	0.822952	11.4	123.4	-0.4					
2023	1	27	4	28	46.28	24	34	22.3	0.831601	11.3	122.5	-0.4					
2023	1	28	4	29	30.76	24	35	26.0	0.840320	11.1	121.7	-0.4					
2023	1	29	4	30	17.86	24	36	33.5	0.849107	11.0	120.8	-0.3					
2023	1	30	4	31	07.53	24	37	44.7	0.857959	10.9	120.0	-0.3					
2023	1	31	4	31	59.72	24	38	59.3	0.866874	10.8	119.2	-0.3					
2023	2	1	4	32	54.35	24	40	17.2	0.875850	10.7	118.4	-0.3					
2023	2	2	4	33	51.37	24	41	38.0	0.884884	10.6	117.6	-0.2					
2023	2	3	4	34	50.73	24	43	01.7	0.893974	10.5	116.8	-0.2					
2023	2	4	4	35	52.37	24	44	27.8	0.903118	10.4	116.0	-0.2					
2023	2	5	4	36	56.23	24	45	56.3	0.912315	10.3	115.3	-0.2					
2023	2	6	4	38	02.27	24	47	26.9	0.921562	10.2	114.5	-0.1					
2023	2	7	4	39	10.44	24	48	59.3	0.930858	10.1	113.8	-0.1					
2023	2	8	4	40	20.68	24	50	33.4	0.940201	10.0	113.0	-0.1					
2023	2	9	4	41	32.94	24	52	08.9	0.949589	9.9	112.3	-0.0					
2023	2	10	4	42	47.20	24	53	45.5	0.959021	9.8	111.5	-0.0					
2023	2	11	4	44	03.40	24	55	23.1	0.968495	9.7	110.8	0.0					
2023	2	12	4	45	21.51	24	57	01.5	0.978010	9.6	110.1	0.0					
2023	2	13	4	46	41.48	24	58	40.4	0.987564	9.5	109.4	0.1					
2023	2	14	4	48	03.28	25	00	19.7	0.997155	9.4	108.7	0.1					
2023	2	15	4	49	26.87	25	01	59.2	1.006783	9.3	108.0	0.1					
2023	2	16	4	50	52.22	25	03	38.6	1.016445	9.2	107.3	0.1					
2023	2	17	4	52	19.28	25	05	17.8	1.026141	9.1	106.6	0.2					
2023	2	18	4	53	48.03	25	06	56.6	1.035867	9.0	106.0	0.2					
2023	2	19	4	55	18.43	25	08	34.7	1.045623	9.0	105.3	0.2					

Date		MARS			Page 2		
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	Mag.
d		h m s	d m s	au	arc sec	degrees	
2023	2	4 56 50.44	25 10 12.0	1.055406	8.9	104.6	0.2
2023	2	4 58 24.03	25 11 48.2	1.065215	8.8	104.0	0.2
2023	2	4 59 59.16	25 13 23.1	1.075048	8.7	103.3	0.3
2023	2	5 01 35.81	25 14 56.4	1.084902	8.6	102.7	0.3
2023	2	5 03 13.92	25 16 28.1	1.094776	8.6	102.1	0.3
2023	2	5 04 53.48	25 17 57.8	1.104669	8.5	101.4	0.3
2023	2	5 06 34.44	25 19 25.4	1.114579	8.4	100.8	0.4
2023	2	5 08 16.76	25 20 50.7	1.124503	8.3	100.2	0.4
2023	2	5 10 00.41	25 22 13.5	1.134442	8.3	99.6	0.4
2023	3	5 11 45.35	25 23 33.6	1.144393	8.2	99.0	0.4
2023	3	5 13 31.55	25 24 50.8	1.154356	8.1	98.4	0.4
2023	3	5 15 18.97	25 26 05.0	1.164328	8.0	97.8	0.5
2023	3	5 17 07.57	25 27 15.8	1.174310	8.0	97.2	0.5
2023	3	5 18 57.33	25 28 23.2	1.184300	7.9	96.6	0.5
2023	3	5 20 48.21	25 29 27.0	1.194297	7.8	96.0	0.5
2023	3	5 22 40.19	25 30 27.0	1.204301	7.8	95.4	0.5
2023	3	5 24 33.24	25 31 23.0	1.214310	7.7	94.9	0.6
2023	3	5 26 27.33	25 32 14.9	1.224323	7.6	94.3	0.6
2023	3	5 28 22.44	25 33 02.5	1.234340	7.6	93.7	0.6
2023	3	5 30 18.55	25 33 45.7	1.244361	7.5	93.2	0.6
2023	3	5 32 15.63	25 34 24.3	1.254383	7.5	92.6	0.6
2023	3	5 34 13.67	25 34 58.2	1.264407	7.4	92.0	0.7
2023	3	5 36 12.63	25 35 27.3	1.274432	7.3	91.5	0.7
2023	3	5 38 12.51	25 35 51.4	1.284456	7.3	91.0	0.7
2023	3	5 40 13.28	25 36 10.5	1.294480	7.2	90.4	0.7
2023	3	5 42 14.92	25 36 24.3	1.304501	7.2	89.9	0.7
2023	3	5 44 17.41	25 36 32.9	1.314520	7.1	89.3	0.7
2023	3	5 46 20.72	25 36 35.9	1.324534	7.1	88.8	0.8
2023	3	5 48 24.85	25 36 33.4	1.334543	7.0	88.3	0.8
2023	3	5 50 29.77	25 36 25.1	1.344545	7.0	87.8	0.8
2023	3	5 52 35.47	25 36 10.9	1.354539	6.9	87.2	0.8
2023	3	5 54 41.91	25 35 50.7	1.364524	6.9	86.7	0.8
2023	3	5 56 49.10	25 35 24.4	1.374499	6.8	86.2	0.8
2023	3	5 58 56.99	25 34 52.0	1.384461	6.8	85.7	0.9
2023	3	6 01 05.58	25 34 13.1	1.394411	6.7	85.2	0.9
2023	3	6 03 14.84	25 33 27.9	1.404347	6.7	84.7	0.9
2023	3	6 05 24.73	25 32 36.2	1.414269	6.6	84.2	0.9
2023	3	6 07 35.25	25 31 37.9	1.424175	6.6	83.7	0.9
2023	3	6 09 46.36	25 30 32.9	1.434064	6.5	83.2	0.9
2023	3	6 11 58.05	25 29 21.0	1.443937	6.5	82.7	1.0
2023	4	6 14 10.30	25 28 02.4	1.453792	6.4	82.2	1.0
2023	4	6 16 23.08	25 26 36.7	1.463629	6.4	81.7	1.0
2023	4	6 18 36.37	25 25 04.0	1.473447	6.4	81.2	1.0
2023	4	6 20 50.16	25 23 24.2	1.483245	6.3	80.7	1.0
2023	4	6 23 04.43	25 21 37.1	1.493024	6.3	80.3	1.0
2023	4	6 25 19.17	25 19 42.8	1.502783	6.2	79.8	1.0
2023	4	6 27 34.35	25 17 41.2	1.512522	6.2	79.3	1.1
2023	4	6 29 49.98	25 15 32.1	1.522239	6.2	78.9	1.1
2023	4	6 32 06.02	25 13 15.6	1.531935	6.1	78.4	1.1
2023	4	6 34 22.48	25 10 51.6	1.541610	6.1	77.9	1.1

Date		MARS			Page 3		
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	Mag.
d		h m s	d m s	au	arc sec	degrees	
2023	4	6 36 39.34	25 08 20.1	1.551262	6.0	77.5	1.1
2023	4	6 38 56.58	25 05 41.0	1.560892	6.0	77.0	1.1
2023	4	6 41 14.19	25 02 54.3	1.570499	6.0	76.5	1.1
2023	4	6 43 32.16	24 59 59.9	1.580082	5.9	76.1	1.1
2023	4	6 45 50.48	24 56 57.8	1.589641	5.9	75.6	1.2
2023	4	6 48 09.13	24 53 47.9	1.599175	5.9	75.2	1.2
2023	4	6 50 28.11	24 50 30.2	1.608682	5.8	74.7	1.2
2023	4	6 52 47.40	24 47 04.5	1.618163	5.8	74.3	1.2
2023	4	6 55 06.99	24 43 30.9	1.627616	5.8	73.8	1.2
2023	4	6 57 26.87	24 39 49.4	1.637039	5.7	73.4	1.2
2023	4	6 59 47.04	24 35 59.8	1.646433	5.7	72.9	1.2
2023	4	7 02 07.47	24 32 02.2	1.655796	5.7	72.5	1.2
2023	4	7 04 28.16	24 27 56.6	1.665128	5.6	72.1	1.2
2023	4	7 06 49.08	24 23 42.9	1.674427	5.6	71.6	1.3
2023	4	7 09 10.22	24 19 21.2	1.683693	5.6	71.2	1.3
2023	4	7 11 31.56	24 14 51.4	1.692926	5.5	70.8	1.3
2023	4	7 13 53.10	24 10 13.4	1.702125	5.5	70.3	1.3
2023	4	7 16 14.81	24 05 27.4	1.711289	5.5	69.9	1.3
2023	4	7 18 36.68	24 00 33.3	1.720418	5.4	69.5	1.3
2023	4	7 20 58.71	23 55 31.0	1.729512	5.4	69.0	1.3
2023	5	7 23 20.87	23 50 20.7	1.738570	5.4	68.6	1.3
2023	5	7 25 43.15	23 45 02.2	1.747592	5.4	68.2	1.3
2023	5	7 28 05.55	23 39 35.5	1.756578	5.3	67.8	1.4
2023	5	7 30 28.06	23 34 00.8	1.765527	5.3	67.4	1.4
2023	5	7 32 50.67	23 28 17.9	1.774440	5.3	67.0	1.4
2023	5	7 35 13.37	23 22 26.9	1.783317	5.3	66.5	1.4
2023	5	7 37 36.16	23 16 27.8	1.792156	5.2	66.1	1.4
2023	5	7 39 59.02	23 10 20.6	1.800959	5.2	65.7	1.4
2023	5	7 42 21.95	23 04 05.4	1.809724	5.2	65.3	1.4
2023	5	7 44 44.94	22 57 42.1	1.818452	5.2	64.9	1.4
2023	5	7 47 07.98	22 51 10.9	1.827143	5.1	64.5	1.4
2023	5	7 49 31.08	22 44 31.6	1.835796	5.1	64.1	1.4
2023	5	7 51 54.21	22 37 44.3	1.844410	5.1	63.7	1.4
2023	5	7 54 17.38	22 30 49.1	1.852985	5.1	63.3	1.5
2023	5	7 56 40.58	22 23 45.8	1.861520	5.0	62.9	1.5
2023	5	7 59 03.82	22 16 34.5	1.870015	5.0	62.5	1.5
2023	5	8 01 27.07	22 09 15.2	1.878469	5.0	62.1	1.5
2023	5	8 03 50.35	22 01 48.0	1.886881	5.0	61.7	1.5
2023	5	8 06 13.64	21 54 12.8	1.895251	4.9	61.3	1.5
2023	5	8 08 36.94	21 46 29.8	1.903577	4.9	60.9	1.5
2023	5	8 11 00.23	21 38 38.9	1.911859	4.9	60.5	1.5
2023	5	8 13 23.52	21 30 40.1	1.920097	4.9	60.1	1.5
2023	5	8 15 46.78	21 22 33.7	1.928289	4.9	59.7	1.5
2023	5	8 18 10.02	21 14 19.5	1.936437	4.8	59.3	1.5
2023	5	8 20 33.22	21 05 57.6	1.944538	4.8	58.9	1.5
2023	5	8 22 56.37	20 57 28.0	1.952593	4.8	58.6	1.5
2023	5	8 25 19.48	20 48 50.9	1.960602	4.8	58.2	1.5
2023	5	8 27 42.52	20 40 06.3	1.968563	4.8	57.8	1.6
2023	5	8 30 05.51	20 31 14.1	1.976478	4.7	57.4	1.6
2023	5	8 32 28.42	20 22 14.4	1.984346	4.7	57.0	1.6
2023	5	8 34 51.27	20 13 07.4	1.992166	4.7	56.6	1.6

MARS										Page 4
Date			Apparent	Apparent	Apparent	Visual	Solar			
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	6	1	8 37 14.04	20 03 52.9	1.999940	4.7	56.3	1.6		
2023	6	2	8 39 36.73	19 54 31.2	2.007666	4.7	55.9	1.6		
2023	6	3	8 41 59.34	19 45 02.2	2.015344	4.6	55.5	1.6		
2023	6	4	8 44 21.87	19 35 25.9	2.022976	4.6	55.1	1.6		
2023	6	5	8 46 44.32	19 25 42.6	2.030560	4.6	54.8	1.6		
2023	6	6	8 49 06.67	19 15 52.1	2.038098	4.6	54.4	1.6		
2023	6	7	8 51 28.94	19 05 54.7	2.045588	4.6	54.0	1.6		
2023	6	8	8 53 51.12	18 55 50.2	2.053031	4.6	53.6	1.6		
2023	6	9	8 56 13.20	18 45 38.8	2.060427	4.5	53.3	1.6		
2023	6	10	8 58 35.18	18 35 20.5	2.067775	4.5	52.9	1.6		
2023	6	11	9 00 57.08	18 24 55.3	2.075074	4.5	52.5	1.6		
2023	6	12	9 03 18.89	18 14 23.3	2.082326	4.5	52.2	1.6		
2023	6	13	9 05 40.61	18 03 44.5	2.089528	4.5	51.8	1.6		
2023	6	14	9 08 02.24	17 52 58.9	2.096680	4.5	51.4	1.7		
2023	6	15	9 10 23.78	17 42 06.6	2.103782	4.5	51.1	1.7		
2023	6	16	9 12 45.24	17 31 07.7	2.110833	4.4	50.7	1.7		
2023	6	17	9 15 06.61	17 20 02.2	2.117833	4.4	50.3	1.7		
2023	6	18	9 17 27.88	17 08 50.2	2.124780	4.4	50.0	1.7		
2023	6	19	9 19 49.06	16 57 31.7	2.131676	4.4	49.6	1.7		
2023	6	20	9 22 10.14	16 46 06.9	2.138518	4.4	49.2	1.7		
2023	6	21	9 24 31.13	16 34 35.9	2.145307	4.4	48.9	1.7		
2023	6	22	9 26 52.00	16 22 58.6	2.152043	4.4	48.5	1.7		
2023	6	23	9 29 12.77	16 11 15.1	2.158725	4.3	48.2	1.7		
2023	6	24	9 31 33.44	15 59 25.6	2.165353	4.3	47.8	1.7		
2023	6	25	9 33 53.99	15 47 30.1	2.171927	4.3	47.5	1.7		
2023	6	26	9 36 14.44	15 35 28.6	2.178447	4.3	47.1	1.7		
2023	6	27	9 38 34.78	15 23 21.2	2.184912	4.3	46.7	1.7		
2023	6	28	9 40 55.01	15 11 08.1	2.191323	4.3	46.4	1.7		
2023	6	29	9 43 15.14	14 58 49.2	2.197680	4.3	46.0	1.7		
2023	6	30	9 45 35.17	14 46 24.6	2.203983	4.2	45.7	1.7		
2023	7	1	9 47 55.09	14 33 54.5	2.210231	4.2	45.3	1.7		
2023	7	2	9 50 14.91	14 21 18.8	2.216426	4.2	45.0	1.7		
2023	7	3	9 52 34.63	14 08 37.7	2.222567	4.2	44.6	1.7		
2023	7	4	9 54 54.25	13 55 51.3	2.228655	4.2	44.3	1.7		
2023	7	5	9 57 13.77	13 42 59.6	2.234689	4.2	43.9	1.7		
2023	7	6	9 59 33.20	13 30 02.7	2.240670	4.2	43.6	1.7		
2023	7	7	10 01 52.53	13 17 00.6	2.246597	4.2	43.2	1.7		
2023	7	8	10 04 11.78	13 03 53.5	2.252472	4.2	42.9	1.7		
2023	7	9	10 06 30.95	12 50 41.2	2.258292	4.1	42.5	1.7		
2023	7	10	10 08 50.04	12 37 23.9	2.264058	4.1	42.2	1.7		
2023	7	11	10 11 09.06	12 24 01.6	2.269770	4.1	41.8	1.7		
2023	7	12	10 13 28.02	12 10 34.5	2.275427	4.1	41.5	1.7		
2023	7	13	10 15 46.92	11 57 02.5	2.281029	4.1	41.2	1.7		
2023	7	14	10 18 05.76	11 43 25.7	2.286574	4.1	40.8	1.8		
2023	7	15	10 20 24.55	11 29 44.2	2.292064	4.1	40.5	1.8		
2023	7	16	10 22 43.28	11 15 58.1	2.297496	4.1	40.1	1.8		
2023	7	17	10 25 01.95	11 02 07.6	2.302872	4.1	39.8	1.8		
2023	7	18	10 27 20.57	10 48 12.5	2.308190	4.1	39.4	1.8		
2023	7	19	10 29 39.15	10 34 13.2	2.313450	4.0	39.1	1.8		
2023	7	20	10 31 57.67	10 20 09.5	2.318653	4.0	38.8	1.8		

Date			MARS			Page 5														
Oh TT			Apparent			Apparent			Visual			Solar								
y m d			R.A.			Declination			Distance			Diameter			Separation			Mag.		
			h m s			d m s			au			arc sec			degrees					
2023	7	21	10	34	16.14	10	06	01.7	2.323797	4.0	38.4	1.8								
2023	7	22	10	36	34.57	9	51	49.7	2.328883	4.0	38.1	1.8								
2023	7	23	10	38	52.96	9	37	33.8	2.333911	4.0	37.7	1.8								
2023	7	24	10	41	11.31	9	23	13.8	2.338881	4.0	37.4	1.8								
2023	7	25	10	43	29.63	9	08	50.0	2.343791	4.0	37.1	1.8								
2023	7	26	10	45	47.91	8	54	22.5	2.348644	4.0	36.7	1.8								
2023	7	27	10	48	06.17	8	39	51.2	2.353438	4.0	36.4	1.8								
2023	7	28	10	50	24.41	8	25	16.3	2.358174	4.0	36.1	1.8								
2023	7	29	10	52	42.63	8	10	37.8	2.362852	4.0	35.7	1.8								
2023	7	30	10	55	00.83	7	55	55.9	2.367472	4.0	35.4	1.8								
2023	7	31	10	57	19.02	7	41	10.7	2.372036	3.9	35.1	1.8								
2023	8	1	10	59	37.21	7	26	22.2	2.376542	3.9	34.7	1.8								
2023	8	2	11	01	55.39	7	11	30.5	2.380991	3.9	34.4	1.8								
2023	8	3	11	04	13.57	6	56	35.7	2.385384	3.9	34.1	1.8								
2023	8	4	11	06	31.75	6	41	37.8	2.389720	3.9	33.7	1.8								
2023	8	5	11	08	49.95	6	26	37.0	2.394000	3.9	33.4	1.8								
2023	8	6	11	11	08.18	6	11	33.2	2.398224	3.9	33.1	1.8								
2023	8	7	11	13	26.44	5	56	26.5	2.402390	3.9	32.7	1.8								
2023	8	8	11	15	44.74	5	41	17.0	2.406500	3.9	32.4	1.8								
2023	8	9	11	18	03.09	5	26	04.7	2.410552	3.9	32.1	1.8								
2023	8	10	11	20	21.49	5	10	49.7	2.414547	3.9	31.7	1.8								
2023	8	11	11	22	39.96	4	55	32.1	2.418483	3.9	31.4	1.8								
2023	8	12	11	24	58.48	4	40	12.0	2.422361	3.9	31.1	1.8								
2023	8	13	11	27	17.08	4	24	49.6	2.426180	3.9	30.7	1.8								
2023	8	14	11	29	35.74	4	09	24.7	2.429940	3.9	30.4	1.8								
2023	8	15	11	31	54.48	3	53	57.7	2.433641	3.8	30.1	1.8								
2023	8	16	11	34	13.29	3	38	28.5	2.437283	3.8	29.8	1.8								
2023	8	17	11	36	32.19	3	22	57.3	2.440865	3.8	29.4	1.8								
2023	8	18	11	38	51.18	3	07	24.1	2.444387	3.8	29.1	1.8								
2023	8	19	11	41	10.26	2	51	49.0	2.447849	3.8	28.8	1.8								
2023	8	20	11	43	29.44	2	36	12.2	2.451251	3.8	28.4	1.8								
2023	8	21	11	45	48.73	2	20	33.7	2.454593	3.8	28.1	1.8								
2023	8	22	11	48	08.12	2	04	53.6	2.457875	3.8	27.8	1.8								
2023	8	23	11	50	27.63	1	49	12.0	2.461098	3.8	27.5	1.8								
2023	8	24	11	52	47.26	1	33	29.0	2.464261	3.8	27.1	1.8								
2023	8	25	11	55	07.02	1	17	44.7	2.467364	3.8	26.8	1.8								
2023	8	26	11	57	26.91	1	01	59.2	2.470408	3.8	26.5	1.8								
2023	8	27	11	59	46.94	0	46	12.6	2.473394	3.8	26.2	1.8								
2023	8	28	12	02	07.11	0	30	25.0	2.476321	3.8	25.8	1.8								
2023	8	29	12	04	27.42	0	14	36.5	2.479189	3.8	25.5	1.8								
2023	8	30	12	06	47.88	-0	01	12.8	2.482001	3.8	25.2	1.8								
2023	8	31	12	09	08.50	-0	17	02.9	2.484755	3.8	24.9	1.8								
2023	9	1	12	11	29.28	-0	32	53.5	2.487452	3.8	24.5	1.8								
2023	9	2	12	13	50.24	-0	48	44.7	2.490092	3.8	24.2	1.7								
2023	9	3	12	16	11.39	-1	04	36.5	2.492676	3.8	23.9	1.7								
2023	9	4	12	18	32.74	-1	20	28.6	2.495203	3.8	23.6	1.7								
2023	9	5	12	20	54.29	-1	36	21.2	2.497673	3.7	23.2	1.7								
2023	9	6	12	23	16.06	-1	52	14.0	2.500085	3.7	22.9	1.7								
2023	9	7	12	25	38.05	-2	08	07.0	2.502440	3.7	22.6	1.7								
2023	9	8	12	28	00.26	-2	24	00.0	2.504738	3.7	22.3	1.7								
2023	9	9	12	30	22.71	-2	39	53.1	2.506977	3.7	22.0	1.7								

MARS										Page 6		
Date			Apparent			Apparent			Visual		Solar	
Oh TT			R.A.			Declination			Diameter		Separation Mag.	
y	m	d	h	m	s	d	m	s	arc	sec	degrees	
2023	9	10	12	32	45.39	-2	55	46.0	2.509159	3.7	21.6	1.7
2023	9	11	12	35	08.32	-3	11	38.7	2.511282	3.7	21.3	1.7
2023	9	12	12	37	31.50	-3	27	31.1	2.513347	3.7	21.0	1.7
2023	9	13	12	39	54.93	-3	43	23.0	2.515353	3.7	20.7	1.7
2023	9	14	12	42	18.62	-3	59	14.3	2.517300	3.7	20.4	1.7
2023	9	15	12	44	42.58	-4	15	05.0	2.519188	3.7	20.0	1.7
2023	9	16	12	47	06.81	-4	30	54.9	2.521018	3.7	19.7	1.7
2023	9	17	12	49	31.32	-4	46	43.9	2.522789	3.7	19.4	1.7
2023	9	18	12	51	56.12	-5	02	31.9	2.524500	3.7	19.1	1.7
2023	9	19	12	54	21.22	-5	18	18.8	2.526154	3.7	18.8	1.7
2023	9	20	12	56	46.61	-5	34	04.4	2.527748	3.7	18.4	1.7
2023	9	21	12	59	12.31	-5	49	48.7	2.529285	3.7	18.1	1.7
2023	9	22	13	01	38.31	-6	05	31.6	2.530763	3.7	17.8	1.7
2023	9	23	13	04	04.64	-6	21	12.9	2.532184	3.7	17.5	1.7
2023	9	24	13	06	31.28	-6	36	52.4	2.533547	3.7	17.2	1.7
2023	9	25	13	08	58.25	-6	52	30.2	2.534854	3.7	16.8	1.7
2023	9	26	13	11	25.54	-7	08	05.9	2.536104	3.7	16.5	1.7
2023	9	27	13	13	53.18	-7	23	39.6	2.537299	3.7	16.2	1.7
2023	9	28	13	16	21.15	-7	39	11.1	2.538438	3.7	15.9	1.7
2023	9	29	13	18	49.48	-7	54	40.4	2.539523	3.7	15.6	1.7
2023	9	30	13	21	18.17	-8	10	07.2	2.540553	3.7	15.3	1.7
2023	10	1	13	23	47.23	-8	25	31.5	2.541528	3.7	14.9	1.7
2023	10	2	13	26	16.68	-8	40	53.3	2.542450	3.7	14.6	1.7
2023	10	3	13	28	46.53	-8	56	12.5	2.543317	3.7	14.3	1.7
2023	10	4	13	31	16.77	-9	11	28.8	2.544130	3.7	14.0	1.7
2023	10	5	13	33	47.42	-9	26	42.3	2.544889	3.7	13.7	1.7
2023	10	6	13	36	18.48	-9	41	52.7	2.545593	3.7	13.4	1.6
2023	10	7	13	38	49.97	-9	57	00.0	2.546243	3.7	13.1	1.6
2023	10	8	13	41	21.87	-10	12	04.0	2.546839	3.7	12.7	1.6
2023	10	9	13	43	54.21	-10	27	04.6	2.547379	3.7	12.4	1.6
2023	10	10	13	46	26.98	-10	42	01.7	2.547865	3.7	12.1	1.6
2023	10	11	13	49	00.19	-10	56	55.0	2.548296	3.7	11.8	1.6
2023	10	12	13	51	33.85	-11	11	44.6	2.548671	3.7	11.5	1.6
2023	10	13	13	54	07.96	-11	26	30.2	2.548992	3.7	11.2	1.6
2023	10	14	13	56	42.53	-11	41	11.7	2.549259	3.7	10.9	1.6
2023	10	15	13	59	17.57	-11	55	49.0	2.549470	3.7	10.5	1.6
2023	10	16	14	01	53.08	-12	10	21.9	2.549627	3.7	10.2	1.6
2023	10	17	14	04	29.07	-12	24	50.3	2.549729	3.7	9.9	1.6
2023	10	18	14	07	05.54	-12	39	14.1	2.549776	3.7	9.6	1.6
2023	10	19	14	09	42.50	-12	53	33.0	2.549770	3.7	9.3	1.6
2023	10	20	14	12	19.94	-13	07	47.1	2.549710	3.7	9.0	1.6
2023	10	21	14	14	57.88	-13	21	56.0	2.549597	3.7	8.7	1.6
2023	10	22	14	17	36.30	-13	35	59.7	2.549432	3.7	8.4	1.6
2023	10	23	14	20	15.23	-13	49	58.1	2.549214	3.7	8.0	1.6
2023	10	24	14	22	54.65	-14	03	50.8	2.548945	3.7	7.7	1.6
2023	10	25	14	25	34.58	-14	17	37.9	2.548625	3.7	7.4	1.6
2023	10	26	14	28	15.02	-14	31	19.1	2.548254	3.7	7.1	1.6
2023	10	27	14	30	55.97	-14	44	54.4	2.547834	3.7	6.8	1.6
2023	10	28	14	33	37.46	-14	58	23.5	2.547365	3.7	6.5	1.5
2023	10	29	14	36	19.48	-15	11	46.5	2.546847	3.7	6.2	1.5
2023	10	30	14	39	02.05	-15	25	03.1	2.546280	3.7	5.9	1.5

Date			MARS			Apparent	Visual	Page 7				
0h TT			Apparent			Distance	Diameter	Solar	Mag.			
y	m	d	R.A.			Declination	arc sec	Separation	degrees			
			h	m	s	d	m	s				
2023	10	31	14	41	45.16	-15	38	13.2	2.545666	3.7	5.6	1.5
2023	11	1	14	44	28.83	-15	51	16.7	2.545003	3.7	5.3	1.5
2023	11	2	14	47	13.05	-16	04	13.5	2.544291	3.7	5.0	1.5
2023	11	3	14	49	57.83	-16	17	03.4	2.543532	3.7	4.6	1.5
2023	11	4	14	52	43.17	-16	29	46.2	2.542725	3.7	4.3	1.5
2023	11	5	14	55	29.08	-16	42	21.8	2.541870	3.7	4.0	1.5
2023	11	6	14	58	15.56	-16	54	50.0	2.540967	3.7	3.7	1.5
2023	11	7	15	01	02.61	-17	07	10.6	2.540016	3.7	3.4	1.5
2023	11	8	15	03	50.23	-17	19	23.6	2.539017	3.7	3.1	1.5
2023	11	9	15	06	38.43	-17	31	28.7	2.537970	3.7	2.8	1.5
2023	11	10	15	09	27.22	-17	43	25.8	2.536876	3.7	2.5	1.5
2023	11	11	15	12	16.58	-17	55	14.7	2.535734	3.7	2.2	1.5
2023	11	12	15	15	06.53	-18	06	55.3	2.534544	3.7	1.9	1.5
2023	11	13	15	17	57.06	-18	18	27.4	2.533307	3.7	1.6	1.5
2023	11	14	15	20	48.18	-18	29	50.8	2.532023	3.7	1.3	1.5
2023	11	15	15	23	39.88	-18	41	05.5	2.530692	3.7	1.0	1.4
2023	11	16	15	26	32.17	-18	52	11.1	2.529315	3.7	0.7	1.4
2023	11	17	15	29	25.03	-19	03	07.7	2.527891	3.7	0.4	1.4
2023	11	18	15	32	18.47	-19	13	54.9	2.526423	3.7	0.1	1.4
2023	11	19	15	35	12.49	-19	24	32.6	2.524909	3.7	-0.3	1.4
2023	11	20	15	38	07.07	-19	35	00.8	2.523351	3.7	-0.5	1.4
2023	11	21	15	41	02.22	-19	45	19.1	2.521750	3.7	-0.8	1.4
2023	11	22	15	43	57.94	-19	55	27.4	2.520106	3.7	-1.1	1.4
2023	11	23	15	46	54.23	-20	05	25.6	2.518420	3.7	-1.4	1.4
2023	11	24	15	49	51.10	-20	15	13.5	2.516692	3.7	-1.7	1.4
2023	11	25	15	52	48.53	-20	24	51.1	2.514924	3.7	-2.0	1.4
2023	11	26	15	55	46.54	-20	34	18.0	2.513116	3.7	-2.3	1.4
2023	11	27	15	58	45.12	-20	43	34.4	2.511268	3.7	-2.6	1.4
2023	11	28	16	01	44.27	-20	52	39.9	2.509381	3.7	-2.9	1.4
2023	11	29	16	04	43.99	-21	01	34.4	2.507454	3.7	-3.2	1.4
2023	11	30	16	07	44.28	-21	10	17.8	2.505489	3.7	-3.5	1.4
2023	12	1	16	10	45.12	-21	18	50.0	2.503486	3.7	-3.8	1.4
2023	12	2	16	13	46.52	-21	27	10.8	2.501444	3.7	-4.1	1.4
2023	12	3	16	16	48.48	-21	35	20.0	2.499364	3.7	-4.4	1.4
2023	12	4	16	19	50.99	-21	43	17.5	2.497246	3.8	-4.7	1.4
2023	12	5	16	22	54.04	-21	51	03.2	2.495089	3.8	-5.0	1.4
2023	12	6	16	25	57.63	-21	58	36.8	2.492896	3.8	-5.3	1.4
2023	12	7	16	29	01.75	-22	05	58.2	2.490664	3.8	-5.6	1.4
2023	12	8	16	32	06.41	-22	13	07.3	2.488395	3.8	-5.9	1.4
2023	12	9	16	35	11.59	-22	20	04.0	2.486089	3.8	-6.2	1.4
2023	12	10	16	38	17.29	-22	26	48.0	2.483746	3.8	-6.5	1.4
2023	12	11	16	41	23.50	-22	33	19.4	2.481366	3.8	-6.8	1.4
2023	12	12	16	44	30.21	-22	39	37.9	2.478949	3.8	-7.1	1.4
2023	12	13	16	47	37.41	-22	45	43.4	2.476496	3.8	-7.3	1.4
2023	12	14	16	50	45.09	-22	51	35.7	2.474007	3.8	-7.6	1.4
2023	12	15	16	53	53.24	-22	57	14.9	2.471483	3.8	-7.9	1.4
2023	12	16	16	57	01.84	-23	02	40.6	2.468924	3.8	-8.2	1.4
2023	12	17	17	00	10.88	-23	07	52.8	2.466330	3.8	-8.5	1.4
2023	12	18	17	03	20.36	-23	12	51.4	2.463703	3.8	-8.8	1.4
2023	12	19	17	06	30.25	-23	17	36.2	2.461044	3.8	-9.1	1.4
2023	12	20	17	09	40.55	-23	22	07.1	2.458352	3.8	-9.4	1.4

Date	MARS	Apparent	Apparent	Apparent	Visual	Solar	
0h TT	Apparent	Declination	Distance	Diameter	Separation	Mag.	
y m d	R.A.	d m s	au	arc sec	degrees		
2023 12 21	17 12 51.26	-23 26 24.0	2.455630	3.8	-9.6	1.4	
2023 12 22	17 16 02.36	-23 30 26.8	2.452877	3.8	-9.9	1.4	
2023 12 23	17 19 13.85	-23 34 15.5	2.450095	3.8	-10.2	1.4	
2023 12 24	17 22 25.72	-23 37 49.8	2.447283	3.8	-10.5	1.4	
2023 12 25	17 25 37.95	-23 41 09.8	2.444444	3.8	-10.8	1.4	
2023 12 26	17 28 50.54	-23 44 15.4	2.441576	3.8	-11.1	1.4	
2023 12 27	17 32 03.48	-23 47 06.4	2.438682	3.8	-11.3	1.4	
2023 12 28	17 35 16.75	-23 49 42.9	2.435760	3.8	-11.6	1.4	
2023 12 29	17 38 30.34	-23 52 04.6	2.432811	3.8	-11.9	1.4	
2023 12 30	17 41 44.24	-23 54 11.6	2.429837	3.9	-12.2	1.4	
2023 12 31	17 44 58.43	-23 56 03.7	2.426836	3.9	-12.5	1.4	
2024 1 1	17 48 12.91	-23 57 40.9	2.423809	3.9	-12.7	1.4	

Date			JUPITER			Page 1														
Oh TT			Apparent			Apparent			Visual			Solar								
y m d			R.A.			Declination			Distance			Diameter			Separation			Mag.		
			h m s			d m s			au			arc sec			degrees					
2022	12	31	0	05	59.64	-0	45	26.8	4.994661	39.5	81.8	-2.4								
2023	1	1	0	06	25.51	-0	42	22.5	5.010377	39.3	80.9	-2.4								
2023	1	2	0	06	51.96	-0	39	14.4	5.026053	39.2	80.0	-2.4								
2023	1	3	0	07	19.00	-0	36	02.7	5.041687	39.1	79.1	-2.4								
2023	1	4	0	07	46.62	-0	32	47.4	5.057274	39.0	78.2	-2.4								
2023	1	5	0	08	14.81	-0	29	28.5	5.072812	38.9	77.3	-2.3								
2023	1	6	0	08	43.56	-0	26	06.2	5.088298	38.7	76.5	-2.3								
2023	1	7	0	09	12.86	-0	22	40.4	5.103728	38.6	75.6	-2.3								
2023	1	8	0	09	42.71	-0	19	11.2	5.119098	38.5	74.7	-2.3								
2023	1	9	0	10	13.09	-0	15	38.7	5.134407	38.4	73.8	-2.3								
2023	1	10	0	10	44.01	-0	12	02.9	5.149650	38.3	72.9	-2.3								
2023	1	11	0	11	15.45	-0	08	23.9	5.164825	38.2	72.1	-2.3								
2023	1	12	0	11	47.41	-0	04	41.7	5.179929	38.1	71.2	-2.3								
2023	1	13	0	12	19.88	-0	00	56.3	5.194958	37.9	70.3	-2.3								
2023	1	14	0	12	52.85	0	02	52.2	5.209909	37.8	69.5	-2.3								
2023	1	15	0	13	26.33	0	06	43.7	5.224779	37.7	68.6	-2.3								
2023	1	16	0	14	00.31	0	10	38.3	5.239566	37.6	67.7	-2.3								
2023	1	17	0	14	34.78	0	14	35.9	5.254266	37.5	66.9	-2.3								
2023	1	18	0	15	09.73	0	18	36.4	5.268875	37.4	66.0	-2.3								
2023	1	19	0	15	45.17	0	22	39.9	5.283391	37.3	65.1	-2.3								
2023	1	20	0	16	21.07	0	26	46.2	5.297810	37.2	64.3	-2.3								
2023	1	21	0	16	57.44	0	30	55.4	5.312128	37.1	63.4	-2.2								
2023	1	22	0	17	34.27	0	35	07.3	5.326344	37.0	62.6	-2.2								
2023	1	23	0	18	11.54	0	39	21.8	5.340452	36.9	61.7	-2.2								
2023	1	24	0	18	49.24	0	43	39.0	5.354451	36.8	60.9	-2.2								
2023	1	25	0	19	27.37	0	47	58.7	5.368336	36.7	60.1	-2.2								
2023	1	26	0	20	05.93	0	52	21.0	5.382106	36.6	59.2	-2.2								
2023	1	27	0	20	44.90	0	56	45.7	5.395758	36.5	58.4	-2.2								
2023	1	28	0	21	24.29	1	01	12.8	5.409288	36.4	57.5	-2.2								
2023	1	29	0	22	04.08	1	05	42.3	5.422696	36.4	56.7	-2.2								
2023	1	30	0	22	44.27	1	10	14.2	5.435978	36.3	55.9	-2.2								
2023	1	31	0	23	24.85	1	14	48.3	5.449133	36.2	55.0	-2.2								
2023	2	1	0	24	05.82	1	19	24.6	5.462158	36.1	54.2	-2.2								
2023	2	2	0	24	47.16	1	24	03.2	5.475051	36.0	53.4	-2.2								
2023	2	3	0	25	28.87	1	28	43.8	5.487810	35.9	52.6	-2.2								
2023	2	4	0	26	10.94	1	33	26.4	5.500434	35.8	51.8	-2.2								
2023	2	5	0	26	53.37	1	38	11.1	5.512919	35.8	50.9	-2.2								
2023	2	6	0	27	36.14	1	42	57.7	5.525266	35.7	50.1	-2.2								
2023	2	7	0	28	19.25	1	47	46.3	5.537470	35.6	49.3	-2.2								
2023	2	8	0	29	02.70	1	52	36.7	5.549531	35.5	48.5	-2.2								
2023	2	9	0	29	46.49	1	57	28.9	5.561447	35.4	47.7	-2.2								
2023	2	10	0	30	30.59	2	02	22.9	5.573216	35.4	46.9	-2.2								
2023	2	11	0	31	15.03	2	07	18.7	5.584835	35.3	46.0	-2.2								
2023	2	12	0	31	59.78	2	12	16.2	5.596303	35.2	45.2	-2.1								
2023	2	13	0	32	44.84	2	17	15.4	5.607619	35.2	44.4	-2.1								
2023	2	14	0	33	30.21	2	22	16.2	5.618779	35.1	43.6	-2.1								
2023	2	15	0	34	15.89	2	27	18.7	5.629782	35.0	42.8	-2.1								
2023	2	16	0	35	01.87	2	32	22.7	5.640626	35.0	42.0	-2.1								
2023	2	17	0	35	48.14	2	37	28.3	5.651309	34.9	41.2	-2.1								
2023	2	18	0	36	34.69	2	42	35.3	5.661828	34.8	40.4	-2.1								
2023	2	19	0	37	21.52	2	47	43.7	5.672182	34.8	39.6	-2.1								

Date		JUPITER			Page 2		
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	Mag.
d		h m s	d m s	au	arc sec	degrees	
2023	2	0 38 08.61	2 52 53.5	5.682369	34.7	38.8	-2.1
2023	2	0 38 55.97	2 58 04.6	5.692386	34.6	38.0	-2.1
2023	2	0 39 43.58	3 03 16.9	5.702231	34.6	37.3	-2.1
2023	2	0 40 31.45	3 08 30.4	5.711904	34.5	36.5	-2.1
2023	2	0 41 19.56	3 13 45.2	5.721403	34.5	35.7	-2.1
2023	2	0 42 07.92	3 19 01.0	5.730726	34.4	34.9	-2.1
2023	2	0 42 56.51	3 24 18.0	5.739872	34.3	34.1	-2.1
2023	2	0 43 45.34	3 29 35.9	5.748841	34.3	33.3	-2.1
2023	2	0 44 34.39	3 34 54.9	5.757630	34.2	32.5	-2.1
2023	3	0 45 23.66	3 40 14.9	5.766240	34.2	31.8	-2.1
2023	3	0 46 13.14	3 45 35.7	5.774669	34.1	31.0	-2.1
2023	3	0 47 02.83	3 50 57.4	5.782916	34.1	30.2	-2.1
2023	3	0 47 52.71	3 56 19.9	5.790980	34.0	29.4	-2.1
2023	3	0 48 42.79	4 01 43.1	5.798861	34.0	28.7	-2.1
2023	3	0 49 33.06	4 07 07.1	5.806558	34.0	27.9	-2.1
2023	3	0 50 23.52	4 12 31.7	5.814070	33.9	27.1	-2.1
2023	3	0 51 14.15	4 17 57.0	5.821396	33.9	26.3	-2.1
2023	3	0 52 04.96	4 23 22.9	5.828536	33.8	25.6	-2.1
2023	3	0 52 55.95	4 28 49.4	5.835488	33.8	24.8	-2.1
2023	3	0 53 47.11	4 34 16.4	5.842252	33.7	24.0	-2.1
2023	3	0 54 38.44	4 39 43.9	5.848827	33.7	23.3	-2.1
2023	3	0 55 29.93	4 45 12.0	5.855211	33.7	22.5	-2.1
2023	3	0 56 21.58	4 50 40.6	5.861405	33.6	21.7	-2.1
2023	3	0 57 13.39	4 56 09.5	5.867406	33.6	21.0	-2.1
2023	3	0 58 05.34	5 01 38.9	5.873214	33.6	20.2	-2.1
2023	3	0 58 57.45	5 07 08.6	5.878829	33.5	19.5	-2.1
2023	3	0 59 49.68	5 12 38.7	5.884247	33.5	18.7	-2.1
2023	3	1 00 42.05	5 18 08.9	5.889470	33.5	17.9	-2.1
2023	3	1 01 34.55	5 23 39.4	5.894496	33.4	17.2	-2.1
2023	3	1 02 27.16	5 29 10.1	5.899323	33.4	16.4	-2.1
2023	3	1 03 19.90	5 34 40.8	5.903951	33.4	15.7	-2.1
2023	3	1 04 12.75	5 40 11.7	5.908380	33.4	14.9	-2.1
2023	3	1 05 05.70	5 45 42.6	5.912609	33.3	14.2	-2.1
2023	3	1 05 58.77	5 51 13.5	5.916637	33.3	13.4	-2.1
2023	3	1 06 51.93	5 56 44.4	5.920465	33.3	12.7	-2.1
2023	3	1 07 45.19	6 02 15.3	5.924092	33.3	11.9	-2.1
2023	3	1 08 38.54	6 07 46.1	5.927519	33.3	11.2	-2.1
2023	3	1 09 31.97	6 13 16.8	5.930745	33.2	10.4	-2.0
2023	3	1 10 25.49	6 18 47.2	5.933770	33.2	9.7	-2.0
2023	3	1 11 19.07	6 24 17.5	5.936595	33.2	8.9	-2.0
2023	4	1 12 12.72	6 29 47.5	5.939219	33.2	8.2	-2.0
2023	4	1 13 06.43	6 35 17.2	5.941643	33.2	7.4	-2.0
2023	4	1 14 00.21	6 40 46.5	5.943866	33.2	6.7	-2.0
2023	4	1 14 54.03	6 46 15.5	5.945889	33.2	6.0	-2.0
2023	4	1 15 47.92	6 51 44.1	5.947713	33.1	5.2	-2.0
2023	4	1 16 41.85	6 57 12.3	5.949336	33.1	4.5	-2.0
2023	4	1 17 35.83	7 02 40.1	5.950759	33.1	3.8	-2.0
2023	4	1 18 29.85	7 08 07.4	5.951982	33.1	3.1	-2.0
2023	4	1 19 23.92	7 13 34.2	5.953005	33.1	2.4	-2.0
2023	4	1 20 18.02	7 19 00.5	5.953828	33.1	1.8	-2.0

JUPITER										Page 3
Date			Apparent	Apparent	Apparent	Visual	Solar			
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	4	11	1 21 12.17	7 24 26.4	5.954451	33.1	1.3	-2.1		
2023	4	12	1 22 06.34	7 29 51.6	5.954874	33.1	-1.1	-2.1		
2023	4	13	1 23 00.53	7 35 16.3	5.955096	33.1	-1.3	-2.0		
2023	4	14	1 23 54.75	7 40 40.4	5.955118	33.1	-1.9	-2.0		
2023	4	15	1 24 48.98	7 46 03.8	5.954938	33.1	-2.5	-2.0		
2023	4	16	1 25 43.21	7 51 26.4	5.954558	33.1	-3.2	-2.0		
2023	4	17	1 26 37.45	7 56 48.3	5.953976	33.1	-3.9	-2.0		
2023	4	18	1 27 31.69	8 02 09.4	5.953193	33.1	-4.6	-2.0		
2023	4	19	1 28 25.92	8 07 29.7	5.952208	33.1	-5.3	-2.0		
2023	4	20	1 29 20.15	8 12 49.2	5.951023	33.1	-6.1	-2.0		
2023	4	21	1 30 14.36	8 18 07.8	5.949637	33.1	-6.8	-2.0		
2023	4	22	1 31 08.57	8 23 25.5	5.948051	33.1	-7.5	-2.0		
2023	4	23	1 32 02.75	8 28 42.3	5.946265	33.2	-8.2	-2.0		
2023	4	24	1 32 56.91	8 33 58.1	5.944281	33.2	-9.0	-2.0		
2023	4	25	1 33 51.03	8 39 12.9	5.942098	33.2	-9.7	-2.0		
2023	4	26	1 34 45.11	8 44 26.7	5.939718	33.2	-10.4	-2.0		
2023	4	27	1 35 39.16	8 49 39.4	5.937142	33.2	-11.2	-2.0		
2023	4	28	1 36 33.15	8 54 51.0	5.934370	33.2	-11.9	-2.0		
2023	4	29	1 37 27.09	9 00 01.5	5.931403	33.2	-12.6	-2.0		
2023	4	30	1 38 20.98	9 05 10.8	5.928242	33.3	-13.4	-2.0		
2023	5	1	1 39 14.80	9 10 18.9	5.924888	33.3	-14.1	-2.0		
2023	5	2	1 40 08.56	9 15 25.8	5.921341	33.3	-14.8	-2.0		
2023	5	3	1 41 02.25	9 20 31.4	5.917603	33.3	-15.6	-2.0		
2023	5	4	1 41 55.87	9 25 35.8	5.913675	33.3	-16.3	-2.0		
2023	5	5	1 42 49.42	9 30 39.0	5.909557	33.4	-17.0	-2.1		
2023	5	6	1 43 42.89	9 35 40.8	5.905249	33.4	-17.7	-2.1		
2023	5	7	1 44 36.29	9 40 41.4	5.900754	33.4	-18.5	-2.1		
2023	5	8	1 45 29.61	9 45 40.6	5.896071	33.4	-19.2	-2.1		
2023	5	9	1 46 22.83	9 50 38.5	5.891200	33.5	-19.9	-2.1		
2023	5	10	1 47 15.97	9 55 35.0	5.886144	33.5	-20.7	-2.1		
2023	5	11	1 48 09.01	10 00 30.2	5.880901	33.5	-21.4	-2.1		
2023	5	12	1 49 01.94	10 05 23.9	5.875472	33.6	-22.1	-2.1		
2023	5	13	1 49 54.76	10 10 16.1	5.869858	33.6	-22.9	-2.1		
2023	5	14	1 50 47.46	10 15 06.8	5.864060	33.6	-23.6	-2.1		
2023	5	15	1 51 40.05	10 19 56.0	5.858077	33.7	-24.3	-2.1		
2023	5	16	1 52 32.51	10 24 43.6	5.851912	33.7	-25.1	-2.1		
2023	5	17	1 53 24.85	10 29 29.7	5.845564	33.7	-25.8	-2.1		
2023	5	18	1 54 17.05	10 34 14.1	5.839034	33.8	-26.6	-2.1		
2023	5	19	1 55 09.12	10 38 56.9	5.832324	33.8	-27.3	-2.1		
2023	5	20	1 56 01.05	10 43 38.1	5.825435	33.8	-28.0	-2.1		
2023	5	21	1 56 52.83	10 48 17.6	5.818368	33.9	-28.8	-2.1		
2023	5	22	1 57 44.46	10 52 55.4	5.811125	33.9	-29.5	-2.1		
2023	5	23	1 58 35.93	10 57 31.5	5.803706	34.0	-30.2	-2.1		
2023	5	24	1 59 27.23	11 02 05.8	5.796114	34.0	-31.0	-2.1		
2023	5	25	2 00 18.35	11 06 38.2	5.788350	34.1	-31.7	-2.1		
2023	5	26	2 01 09.30	11 11 08.9	5.780415	34.1	-32.5	-2.1		
2023	5	27	2 02 00.07	11 15 37.7	5.772310	34.2	-33.2	-2.1		
2023	5	28	2 02 50.64	11 20 04.6	5.764039	34.2	-33.9	-2.1		
2023	5	29	2 03 41.02	11 24 29.7	5.755601	34.3	-34.7	-2.1		
2023	5	30	2 04 31.21	11 28 52.8	5.746999	34.3	-35.4	-2.1		
2023	5	31	2 05 21.20	11 33 14.0	5.738234	34.4	-36.2	-2.1		

JUPITER										Page 4
Date			Apparent	Apparent	Apparent	Visual	Solar			
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	6	1	2 06 10.98	11 37 33.2	5.729308	34.4	-36.9	-2.1		
2023	6	2	2 07 00.56	11 41 50.5	5.720221	34.5	-37.6	-2.1		
2023	6	3	2 07 49.93	11 46 05.9	5.710977	34.5	-38.4	-2.1		
2023	6	4	2 08 39.08	11 50 19.2	5.701575	34.6	-39.1	-2.1		
2023	6	5	2 09 28.01	11 54 30.6	5.692017	34.6	-39.9	-2.1		
2023	6	6	2 10 16.72	11 58 40.0	5.682305	34.7	-40.6	-2.1		
2023	6	7	2 11 05.19	12 02 47.4	5.672440	34.8	-41.4	-2.1		
2023	6	8	2 11 53.42	12 06 52.7	5.662423	34.8	-42.1	-2.1		
2023	6	9	2 12 41.40	12 10 55.9	5.652254	34.9	-42.9	-2.1		
2023	6	10	2 13 29.13	12 14 57.0	5.641935	34.9	-43.6	-2.1		
2023	6	11	2 14 16.60	12 18 55.9	5.631468	35.0	-44.4	-2.1		
2023	6	12	2 15 03.80	12 22 52.7	5.620854	35.1	-45.1	-2.1		
2023	6	13	2 15 50.74	12 26 47.3	5.610093	35.1	-45.9	-2.1		
2023	6	14	2 16 37.41	12 30 39.6	5.599189	35.2	-46.6	-2.1		
2023	6	15	2 17 23.80	12 34 29.8	5.588142	35.3	-47.4	-2.1		
2023	6	16	2 18 09.90	12 38 17.7	5.576954	35.4	-48.1	-2.1		
2023	6	17	2 18 55.70	12 42 03.3	5.565628	35.4	-48.9	-2.2		
2023	6	18	2 19 41.21	12 45 46.7	5.554164	35.5	-49.7	-2.2		
2023	6	19	2 20 26.41	12 49 27.7	5.542567	35.6	-50.4	-2.2		
2023	6	20	2 21 11.29	12 53 06.4	5.530836	35.6	-51.2	-2.2		
2023	6	21	2 21 55.85	12 56 42.7	5.518975	35.7	-51.9	-2.2		
2023	6	22	2 22 40.08	13 00 16.7	5.506986	35.8	-52.7	-2.2		
2023	6	23	2 23 23.97	13 03 48.2	5.494872	35.9	-53.5	-2.2		
2023	6	24	2 24 07.51	13 07 17.2	5.482633	36.0	-54.2	-2.2		
2023	6	25	2 24 50.71	13 10 43.8	5.470274	36.0	-55.0	-2.2		
2023	6	26	2 25 33.55	13 14 08.0	5.457795	36.1	-55.8	-2.2		
2023	6	27	2 26 16.04	13 17 29.6	5.445200	36.2	-56.6	-2.2		
2023	6	28	2 26 58.15	13 20 48.8	5.432490	36.3	-57.3	-2.2		
2023	6	29	2 27 39.90	13 24 05.4	5.419669	36.4	-58.1	-2.2		
2023	6	30	2 28 21.28	13 27 19.5	5.406737	36.5	-58.9	-2.2		
2023	7	1	2 29 02.28	13 30 31.1	5.393698	36.6	-59.7	-2.2		
2023	7	2	2 29 42.89	13 33 40.2	5.380554	36.6	-60.4	-2.2		
2023	7	3	2 30 23.11	13 36 46.8	5.367306	36.7	-61.2	-2.2		
2023	7	4	2 31 02.93	13 39 50.8	5.353957	36.8	-62.0	-2.2		
2023	7	5	2 31 42.33	13 42 52.3	5.340508	36.9	-62.8	-2.2		
2023	7	6	2 32 21.32	13 45 51.1	5.326962	37.0	-63.6	-2.2		
2023	7	7	2 32 59.89	13 48 47.3	5.313320	37.1	-64.4	-2.2		
2023	7	8	2 33 38.02	13 51 40.8	5.299584	37.2	-65.2	-2.2		
2023	7	9	2 34 15.71	13 54 31.6	5.285757	37.3	-66.0	-2.3		
2023	7	10	2 34 52.97	13 57 19.7	5.271841	37.4	-66.8	-2.3		
2023	7	11	2 35 29.77	14 00 05.1	5.257838	37.5	-67.6	-2.3		
2023	7	12	2 36 06.11	14 02 47.8	5.243750	37.6	-68.4	-2.3		
2023	7	13	2 36 41.99	14 05 27.8	5.229580	37.7	-69.2	-2.3		
2023	7	14	2 37 17.40	14 08 04.9	5.215331	37.8	-70.0	-2.3		
2023	7	15	2 37 52.33	14 10 39.3	5.201006	37.9	-70.8	-2.3		
2023	7	16	2 38 26.76	14 13 10.9	5.186607	38.0	-71.6	-2.3		
2023	7	17	2 39 00.69	14 15 39.7	5.172138	38.1	-72.4	-2.3		
2023	7	18	2 39 34.12	14 18 05.6	5.157602	38.2	-73.2	-2.3		
2023	7	19	2 40 07.02	14 20 28.6	5.143001	38.3	-74.0	-2.3		
2023	7	20	2 40 39.40	14 22 48.7	5.128339	38.4	-74.8	-2.3		

Date		JUPITER			Apparent	Visual	Page 5			
Oh TT		Apparent			Distance	Diameter	Solar			
y	m	d	R.A.			arc sec	Separation	Mag.		
			h	m	s		degrees			
			d	m	s	au				
2023	7	21	2	41	11.25	14 25 05.9	5.113619	38.6	-75.7	-2.3
2023	7	22	2	41	42.56	14 27 20.2	5.098845	38.7	-76.5	-2.3
2023	7	23	2	42	13.32	14 29 31.5	5.084018	38.8	-77.3	-2.3
2023	7	24	2	42	43.52	14 31 39.8	5.069144	38.9	-78.1	-2.3
2023	7	25	2	43	13.17	14 33 45.2	5.054224	39.0	-79.0	-2.3
2023	7	26	2	43	42.26	14 35 47.6	5.039262	39.1	-79.8	-2.4
2023	7	27	2	44	10.78	14 37 46.9	5.024262	39.2	-80.6	-2.4
2023	7	28	2	44	38.72	14 39 43.4	5.009226	39.4	-81.5	-2.4
2023	7	29	2	45	06.08	14 41 36.8	4.994159	39.5	-82.3	-2.4
2023	7	30	2	45	32.85	14 43 27.2	4.979062	39.6	-83.1	-2.4
2023	7	31	2	45	59.03	14 45 14.7	4.963938	39.7	-84.0	-2.4
2023	8	1	2	46	24.59	14 46 59.1	4.948792	39.8	-84.8	-2.4
2023	8	2	2	46	49.54	14 48 40.4	4.933625	40.0	-85.7	-2.4
2023	8	3	2	47	13.87	14 50 18.7	4.918442	40.1	-86.5	-2.4
2023	8	4	2	47	37.57	14 51 53.9	4.903243	40.2	-87.4	-2.4
2023	8	5	2	48	00.63	14 53 25.9	4.888033	40.3	-88.3	-2.4
2023	8	6	2	48	23.05	14 54 54.8	4.872815	40.5	-89.1	-2.4
2023	8	7	2	48	44.82	14 56 20.5	4.857592	40.6	-90.0	-2.4
2023	8	8	2	49	05.93	14 57 43.1	4.842367	40.7	-90.9	-2.4
2023	8	9	2	49	26.39	14 59 02.5	4.827144	40.8	-91.7	-2.4
2023	8	10	2	49	46.17	15 00 18.7	4.811927	41.0	-92.6	-2.5
2023	8	11	2	50	05.27	15 01 31.7	4.796720	41.1	-93.5	-2.5
2023	8	12	2	50	23.68	15 02 41.5	4.781526	41.2	-94.4	-2.5
2023	8	13	2	50	41.40	15 03 48.0	4.766349	41.4	-95.3	-2.5
2023	8	14	2	50	58.41	15 04 51.3	4.751193	41.5	-96.2	-2.5
2023	8	15	2	51	14.71	15 05 51.3	4.736063	41.6	-97.0	-2.5
2023	8	16	2	51	30.29	15 06 48.0	4.720963	41.8	-97.9	-2.5
2023	8	17	2	51	45.14	15 07 41.4	4.705897	41.9	-98.8	-2.5
2023	8	18	2	51	59.26	15 08 31.4	4.690869	42.0	-99.7	-2.5
2023	8	19	2	52	12.65	15 09 18.1	4.675883	42.2	-100.7	-2.5
2023	8	20	2	52	25.29	15 10 01.4	4.660944	42.3	-101.6	-2.5
2023	8	21	2	52	37.19	15 10 41.4	4.646056	42.4	-102.5	-2.5
2023	8	22	2	52	48.34	15 11 18.0	4.631224	42.6	-103.4	-2.5
2023	8	23	2	52	58.75	15 11 51.3	4.616450	42.7	-104.3	-2.5
2023	8	24	2	53	08.39	15 12 21.3	4.601741	42.8	-105.2	-2.5
2023	8	25	2	53	17.28	15 12 47.9	4.587099	43.0	-106.2	-2.6
2023	8	26	2	53	25.41	15 13 11.1	4.572530	43.1	-107.1	-2.6
2023	8	27	2	53	32.77	15 13 31.0	4.558036	43.3	-108.0	-2.6
2023	8	28	2	53	39.35	15 13 47.6	4.543623	43.4	-109.0	-2.6
2023	8	29	2	53	45.17	15 14 00.9	4.529294	43.5	-109.9	-2.6
2023	8	30	2	53	50.19	15 14 10.7	4.515053	43.7	-110.9	-2.6
2023	8	31	2	53	54.44	15 14 17.2	4.500903	43.8	-111.8	-2.6
2023	9	1	2	53	57.90	15 14 20.3	4.486850	43.9	-112.8	-2.6
2023	9	2	2	54	00.57	15 14 19.9	4.472896	44.1	-113.7	-2.6
2023	9	3	2	54	02.45	15 14 16.1	4.459045	44.2	-114.7	-2.6
2023	9	4	2	54	03.54	15 14 09.0	4.445303	44.3	-115.6	-2.6
2023	9	5	2	54	03.84	15 13 58.4	4.431673	44.5	-116.6	-2.6
2023	9	6	2	54	03.34	15 13 44.4	4.418160	44.6	-117.6	-2.6
2023	9	7	2	54	02.05	15 13 27.1	4.404768	44.8	-118.6	-2.6
2023	9	8	2	53	59.95	15 13 06.3	4.391503	44.9	-119.5	-2.7
2023	9	9	2	53	57.06	15 12 42.2	4.378368	45.0	-120.5	-2.7

Date		JUPITER			Page 6			
0h TT		Apparent	Apparent	Apparent	Visual	Solar		
y	m	R.A.	Declination	Distance	Diameter	Separation	Mag.	
d		h m s	d m s	au	arc sec	degrees		
2023	9	10	2 53 53.36	15 12 14.6	4.365370	45.2	-121.5	-2.7
2023	9	11	2 53 48.85	15 11 43.6	4.352511	45.3	-122.5	-2.7
2023	9	12	2 53 43.54	15 11 09.2	4.339798	45.4	-123.5	-2.7
2023	9	13	2 53 37.43	15 10 31.4	4.327235	45.6	-124.5	-2.7
2023	9	14	2 53 30.51	15 09 50.3	4.314827	45.7	-125.5	-2.7
2023	9	15	2 53 22.81	15 09 05.7	4.302579	45.8	-126.5	-2.7
2023	9	16	2 53 14.30	15 08 17.8	4.290495	45.9	-127.5	-2.7
2023	9	17	2 53 05.01	15 07 26.5	4.278581	46.1	-128.5	-2.7
2023	9	18	2 52 54.94	15 06 31.9	4.266841	46.2	-129.5	-2.7
2023	9	19	2 52 44.10	15 05 34.1	4.255280	46.3	-130.6	-2.7
2023	9	20	2 52 32.49	15 04 33.0	4.243902	46.5	-131.6	-2.7
2023	9	21	2 52 20.11	15 03 28.7	4.232711	46.6	-132.6	-2.7
2023	9	22	2 52 06.99	15 02 21.2	4.221713	46.7	-133.7	-2.7
2023	9	23	2 51 53.11	15 01 10.7	4.210912	46.8	-134.7	-2.8
2023	9	24	2 51 38.50	14 59 57.0	4.200311	46.9	-135.7	-2.8
2023	9	25	2 51 23.15	14 58 40.2	4.189915	47.1	-136.8	-2.8
2023	9	26	2 51 07.07	14 57 20.4	4.179727	47.2	-137.8	-2.8
2023	9	27	2 50 50.28	14 55 57.6	4.169752	47.3	-138.9	-2.8
2023	9	28	2 50 32.78	14 54 31.7	4.159993	47.4	-139.9	-2.8
2023	9	29	2 50 14.58	14 53 02.9	4.150454	47.5	-141.0	-2.8
2023	9	30	2 49 55.70	14 51 31.2	4.141138	47.6	-142.0	-2.8
2023	10	1	2 49 36.14	14 49 56.6	4.132050	47.7	-143.1	-2.8
2023	10	2	2 49 15.93	14 48 19.2	4.123194	47.8	-144.2	-2.8
2023	10	3	2 48 55.07	14 46 39.0	4.114572	47.9	-145.2	-2.8
2023	10	4	2 48 33.57	14 44 56.1	4.106190	48.0	-146.3	-2.8
2023	10	5	2 48 11.44	14 43 10.5	4.098052	48.1	-147.4	-2.8
2023	10	6	2 47 48.70	14 41 22.4	4.090160	48.2	-148.5	-2.8
2023	10	7	2 47 25.35	14 39 31.6	4.082520	48.3	-149.6	-2.8
2023	10	8	2 47 01.42	14 37 38.3	4.075136	48.4	-150.6	-2.8
2023	10	9	2 46 36.92	14 35 42.6	4.068010	48.5	-151.7	-2.8
2023	10	10	2 46 11.86	14 33 44.5	4.061147	48.5	-152.8	-2.8
2023	10	11	2 45 46.26	14 31 44.1	4.054551	48.6	-153.9	-2.9
2023	10	12	2 45 20.14	14 29 41.4	4.048224	48.7	-155.0	-2.9
2023	10	13	2 44 53.52	14 27 36.5	4.042171	48.8	-156.1	-2.9
2023	10	14	2 44 26.42	14 25 29.5	4.036395	48.8	-157.2	-2.9
2023	10	15	2 43 58.86	14 23 20.6	4.030899	48.9	-158.3	-2.9
2023	10	16	2 43 30.86	14 21 09.7	4.025686	49.0	-159.4	-2.9
2023	10	17	2 43 02.45	14 18 57.1	4.020759	49.0	-160.5	-2.9
2023	10	18	2 42 33.65	14 16 42.8	4.016120	49.1	-161.7	-2.9
2023	10	19	2 42 04.48	14 14 26.9	4.011772	49.1	-162.8	-2.9
2023	10	20	2 41 34.95	14 12 09.5	4.007717	49.2	-163.9	-2.9
2023	10	21	2 41 05.10	14 09 50.7	4.003958	49.2	-165.0	-2.9
2023	10	22	2 40 34.95	14 07 30.7	4.000495	49.3	-166.1	-2.9
2023	10	23	2 40 04.51	14 05 09.4	3.997331	49.3	-167.2	-2.9
2023	10	24	2 39 33.81	14 02 47.0	3.994467	49.4	-168.4	-2.9
2023	10	25	2 39 02.87	14 00 23.7	3.991904	49.4	-169.5	-2.9
2023	10	26	2 38 31.71	13 57 59.4	3.989643	49.4	-170.6	-2.9
2023	10	27	2 38 00.37	13 55 34.3	3.987686	49.4	-171.7	-2.9
2023	10	28	2 37 28.86	13 53 08.5	3.986034	49.5	-172.8	-2.9
2023	10	29	2 36 57.22	13 50 42.1	3.984686	49.5	-173.9	-2.9
2023	10	30	2 36 25.46	13 48 15.3	3.983646	49.5	-175.0	-2.9

					Page 7		
JUPITER					Solar		
Date	Apparent	Apparent	Apparent	Visual	Separation	Mag.	
Oh TT	R.A.	Declination	Distance	Diameter	degrees		
y m d	h m s	d m s	au	arc sec			
2023 10 31	2 35 53.60	13 45 48.1	3.982912	49.5	-176.1	-2.9	
2023 11 1	2 35 21.68	13 43 20.7	3.982487	49.5	-177.1	-2.9	
2023 11 2	2 34 49.71	13 40 53.2	3.982370	49.5	-178.0	-2.9	
2023 11 3	2 34 17.71	13 38 25.6	3.982563	49.5	-178.6	-2.9	
2023 11 4	2 33 45.71	13 35 58.1	3.983067	49.5	178.3	-2.9	
2023 11 5	2 33 13.73	13 33 30.8	3.983881	49.5	177.5	-2.9	
2023 11 6	2 32 41.80	13 31 03.8	3.985006	49.5	176.5	-2.9	
2023 11 7	2 32 09.94	13 28 37.3	3.986442	49.5	175.5	-2.9	
2023 11 8	2 31 38.17	13 26 11.3	3.988190	49.4	174.4	-2.9	
2023 11 9	2 31 06.53	13 23 45.9	3.990247	49.4	173.3	-2.9	
2023 11 10	2 30 35.04	13 21 21.4	3.992616	49.4	172.1	-2.9	
2023 11 11	2 30 03.72	13 18 57.7	3.995294	49.3	171.0	-2.9	
2023 11 12	2 29 32.61	13 16 35.2	3.998281	49.3	169.9	-2.9	
2023 11 13	2 29 01.72	13 14 13.8	4.001576	49.3	168.8	-2.9	
2023 11 14	2 28 31.08	13 11 53.8	4.005178	49.2	167.6	-2.9	
2023 11 15	2 28 00.72	13 09 35.2	4.009085	49.2	166.5	-2.9	
2023 11 16	2 27 30.66	13 07 18.2	4.013295	49.1	165.4	-2.9	
2023 11 17	2 27 00.92	13 05 02.9	4.017807	49.1	164.3	-2.9	
2023 11 18	2 26 31.53	13 02 49.4	4.022619	49.0	163.1	-2.9	
2023 11 19	2 26 02.50	13 00 37.9	4.027728	48.9	162.0	-2.9	
2023 11 20	2 25 33.86	12 58 28.3	4.033131	48.9	160.9	-2.9	
2023 11 21	2 25 05.62	12 56 20.9	4.038826	48.8	159.7	-2.9	
2023 11 22	2 24 37.81	12 54 15.7	4.044810	48.7	158.6	-2.9	
2023 11 23	2 24 10.44	12 52 12.7	4.051080	48.7	157.5	-2.9	
2023 11 24	2 23 43.55	12 50 12.2	4.057634	48.6	156.4	-2.9	
2023 11 25	2 23 17.14	12 48 14.3	4.064468	48.5	155.3	-2.8	
2023 11 26	2 22 51.24	12 46 18.9	4.071579	48.4	154.1	-2.8	
2023 11 27	2 22 25.86	12 44 26.2	4.078964	48.3	153.0	-2.8	
2023 11 28	2 22 01.02	12 42 36.4	4.086621	48.2	151.9	-2.8	
2023 11 29	2 21 36.74	12 40 49.5	4.094547	48.1	150.8	-2.8	
2023 11 30	2 21 13.02	12 39 05.5	4.102737	48.1	149.7	-2.8	
2023 12 1	2 20 49.89	12 37 24.5	4.111190	48.0	148.6	-2.8	
2023 12 2	2 20 27.35	12 35 46.7	4.119902	47.9	147.5	-2.8	
2023 12 3	2 20 05.43	12 34 12.0	4.128870	47.7	146.4	-2.8	
2023 12 4	2 19 44.12	12 32 40.6	4.138090	47.6	145.3	-2.8	
2023 12 5	2 19 23.46	12 31 12.5	4.147559	47.5	144.2	-2.8	
2023 12 6	2 19 03.45	12 29 47.8	4.157273	47.4	143.1	-2.8	
2023 12 7	2 18 44.11	12 28 26.6	4.167229	47.3	142.0	-2.8	
2023 12 8	2 18 25.45	12 27 09.0	4.177422	47.2	140.9	-2.8	
2023 12 9	2 18 07.48	12 25 54.9	4.187849	47.1	139.8	-2.8	
2023 12 10	2 17 50.23	12 24 44.6	4.198505	47.0	138.7	-2.8	
2023 12 11	2 17 33.69	12 23 38.0	4.209387	46.8	137.6	-2.8	
2023 12 12	2 17 17.88	12 22 35.2	4.220490	46.7	136.5	-2.7	
2023 12 13	2 17 02.82	12 21 36.4	4.231809	46.6	135.4	-2.7	
2023 12 14	2 16 48.50	12 20 41.4	4.243340	46.5	134.4	-2.7	
2023 12 15	2 16 34.94	12 19 50.5	4.255078	46.3	133.3	-2.7	
2023 12 16	2 16 22.14	12 19 03.5	4.267018	46.2	132.2	-2.7	
2023 12 17	2 16 10.10	12 18 20.6	4.279155	46.1	131.2	-2.7	
2023 12 18	2 15 58.84	12 17 41.7	4.291484	45.9	130.1	-2.7	
2023 12 19	2 15 48.35	12 17 06.8	4.303999	45.8	129.0	-2.7	
2023 12 20	2 15 38.65	12 16 36.1	4.316697	45.7	128.0	-2.7	

Date		JUPITER			Apparent	Visual	Page 8	
0h TT		Apparent			Distance	Diameter	Solar	Separation Mag.
y m d		R.A.			au	arc sec	degrees	
		h m s	d m s					
2023	12 21	2 15 29.74	12 16 09.4	4.329571	45.5	126.9	-2.7	
2023	12 22	2 15 21.63	12 15 46.9	4.342617	45.4	125.9	-2.7	
2023	12 23	2 15 14.31	12 15 28.5	4.355830	45.3	124.8	-2.7	
2023	12 24	2 15 07.80	12 15 14.3	4.369205	45.1	123.8	-2.7	
2023	12 25	2 15 02.08	12 15 04.3	4.382738	45.0	122.7	-2.7	
2023	12 26	2 14 57.17	12 14 58.4	4.396423	44.8	121.7	-2.6	
2023	12 27	2 14 53.06	12 14 56.7	4.410257	44.7	120.7	-2.6	
2023	12 28	2 14 49.76	12 14 59.2	4.424234	44.6	119.6	-2.6	
2023	12 29	2 14 47.25	12 15 05.8	4.438351	44.4	118.6	-2.6	
2023	12 30	2 14 45.54	12 15 16.5	4.452602	44.3	117.6	-2.6	
2023	12 31	2 14 44.63	12 15 31.4	4.466984	44.1	116.6	-2.6	
2024	1 1	2 14 44.53	12 15 50.4	4.481491	44.0	115.5	-2.6	

Date		SATURN			Apparent	Visual	Page 1					
Oh TT		Apparent			Distance	Diameter	Solar	Mag.				
y m d		R.A.			Declination	arc sec	Separation	degrees				
		h m s	d m s		au							
2022	12	31	21	40	23.1	-15	14	51.0	10.531278	15.8	43.1	0.8
2023	1	1	21	40	46.4	-15	12	53.4	10.542477	15.8	42.2	0.8
2023	1	2	21	41	09.9	-15	10	54.6	10.553477	15.7	41.2	0.8
2023	1	3	21	41	33.7	-15	08	54.7	10.564277	15.7	40.3	0.8
2023	1	4	21	41	57.6	-15	06	53.7	10.574873	15.7	39.4	0.8
2023	1	5	21	42	21.7	-15	04	51.7	10.585265	15.7	38.5	0.8
2023	1	6	21	42	46.0	-15	02	48.6	10.595448	15.7	37.6	0.8
2023	1	7	21	43	10.5	-15	00	44.5	10.605422	15.7	36.7	0.8
2023	1	8	21	43	35.2	-14	58	39.5	10.615184	15.7	35.7	0.8
2023	1	9	21	44	00.1	-14	56	33.5	10.624732	15.6	34.8	0.8
2023	1	10	21	44	25.1	-14	54	26.5	10.634064	15.6	33.9	0.8
2023	1	11	21	44	50.3	-14	52	18.6	10.643177	15.6	33.0	0.8
2023	1	12	21	45	15.6	-14	50	09.8	10.652070	15.6	32.1	0.8
2023	1	13	21	45	41.1	-14	48	00.1	10.660740	15.6	31.2	0.8
2023	1	14	21	46	06.7	-14	45	49.5	10.669185	15.6	30.3	0.8
2023	1	15	21	46	32.5	-14	43	38.1	10.677404	15.6	29.4	0.8
2023	1	16	21	46	58.5	-14	41	25.7	10.685393	15.6	28.5	0.8
2023	1	17	21	47	24.6	-14	39	12.5	10.693152	15.5	27.6	0.8
2023	1	18	21	47	50.8	-14	36	58.5	10.700677	15.5	26.7	0.8
2023	1	19	21	48	17.2	-14	34	43.7	10.707966	15.5	25.7	0.8
2023	1	20	21	48	43.6	-14	32	28.1	10.715018	15.5	24.8	0.8
2023	1	21	21	49	10.3	-14	30	11.8	10.721830	15.5	23.9	0.8
2023	1	22	21	49	37.0	-14	27	54.8	10.728401	15.5	23.0	0.8
2023	1	23	21	50	03.8	-14	25	37.2	10.734729	15.5	22.1	0.8
2023	1	24	21	50	30.8	-14	23	18.9	10.740813	15.5	21.2	0.8
2023	1	25	21	50	57.8	-14	21	00.0	10.746650	15.5	20.3	0.8
2023	1	26	21	51	24.9	-14	18	40.5	10.752240	15.5	19.4	0.8
2023	1	27	21	51	52.1	-14	16	20.3	10.757583	15.4	18.5	0.8
2023	1	28	21	52	19.4	-14	13	59.6	10.762676	15.4	17.6	0.8
2023	1	29	21	52	46.8	-14	11	38.3	10.767520	15.4	16.7	0.8
2023	1	30	21	53	14.3	-14	09	16.5	10.772114	15.4	15.9	0.8
2023	1	31	21	53	41.8	-14	06	54.2	10.776457	15.4	15.0	0.8
2023	2	1	21	54	09.4	-14	04	31.4	10.780549	15.4	14.1	0.8
2023	2	2	21	54	37.1	-14	02	08.2	10.784388	15.4	13.2	0.8
2023	2	3	21	55	04.8	-13	59	44.6	10.787975	15.4	12.3	0.8
2023	2	4	21	55	32.6	-13	57	20.6	10.791309	15.4	11.4	0.8
2023	2	5	21	56	00.4	-13	54	56.2	10.794389	15.4	10.5	0.8
2023	2	6	21	56	28.3	-13	52	31.5	10.797215	15.4	9.6	0.8
2023	2	7	21	56	56.2	-13	50	06.4	10.799787	15.4	8.7	0.8
2023	2	8	21	57	24.2	-13	47	41.1	10.802104	15.4	7.8	0.8
2023	2	9	21	57	52.2	-13	45	15.5	10.804165	15.4	7.0	0.8
2023	2	10	21	58	20.2	-13	42	49.5	10.805970	15.4	6.1	0.8
2023	2	11	21	58	48.2	-13	40	23.4	10.807519	15.4	5.2	0.8
2023	2	12	21	59	16.3	-13	37	57.0	10.808811	15.4	4.4	0.8
2023	2	13	21	59	44.3	-13	35	30.3	10.809845	15.4	3.5	0.8
2023	2	14	22	00	12.4	-13	33	03.5	10.810622	15.4	2.7	0.8
2023	2	15	22	00	40.5	-13	30	36.5	10.811141	15.4	2.0	0.8
2023	2	16	22	01	08.6	-13	28	09.3	10.811401	15.4	1.4	0.8
2023	2	17	22	01	36.8	-13	25	42.0	10.811402	15.4	-1.3	0.8
2023	2	18	22	02	04.9	-13	23	14.7	10.811144	15.4	-1.7	0.8
2023	2	19	22	02	32.9	-13	20	47.4	10.810627	15.4	-2.4	0.8

					Page 2			
SATURN					Solar			
Date		Apparent	Apparent	Apparent	Visual	Separation	Mag.	
Oh TT		R.A.	Declination	Distance	Diameter	degrees		
y	m	d	h	m	s	arc sec		
2023	2	20	22 03 01.0	-13 18 20.0	10.809850	15.4	-3.2	0.8
2023	2	21	22 03 29.1	-13 15 52.7	10.808814	15.4	-4.0	0.8
2023	2	22	22 03 57.1	-13 13 25.4	10.807519	15.4	-4.9	0.8
2023	2	23	22 04 25.1	-13 10 58.2	10.805966	15.4	-5.7	0.8
2023	2	24	22 04 53.0	-13 08 31.0	10.804156	15.4	-6.6	0.9
2023	2	25	22 05 20.9	-13 06 03.9	10.802090	15.4	-7.5	0.9
2023	2	26	22 05 48.8	-13 03 37.0	10.799767	15.4	-8.3	0.9
2023	2	27	22 06 16.6	-13 01 10.1	10.797191	15.4	-9.2	0.9
2023	2	28	22 06 44.4	-12 58 43.5	10.794360	15.4	-10.1	0.9
2023	3	1	22 07 12.1	-12 56 17.1	10.791278	15.4	-11.0	0.9
2023	3	2	22 07 39.8	-12 53 50.9	10.787943	15.4	-11.9	0.9
2023	3	3	22 08 07.4	-12 51 25.0	10.784359	15.4	-12.7	0.9
2023	3	4	22 08 34.9	-12 48 59.5	10.780525	15.4	-13.6	0.9
2023	3	5	22 09 02.4	-12 46 34.2	10.776443	15.4	-14.5	0.9
2023	3	6	22 09 29.7	-12 44 09.3	10.772114	15.4	-15.4	0.9
2023	3	7	22 09 57.0	-12 41 44.7	10.767540	15.4	-16.3	0.9
2023	3	8	22 10 24.2	-12 39 20.6	10.762720	15.4	-17.1	0.9
2023	3	9	22 10 51.3	-12 36 56.8	10.757657	15.4	-18.0	0.9
2023	3	10	22 11 18.4	-12 34 33.5	10.752351	15.5	-18.9	0.9
2023	3	11	22 11 45.3	-12 32 10.6	10.746804	15.5	-19.8	0.9
2023	3	12	22 12 12.1	-12 29 48.1	10.741017	15.5	-20.7	0.9
2023	3	13	22 12 38.8	-12 27 26.1	10.734991	15.5	-21.5	0.9
2023	3	14	22 13 05.5	-12 25 04.7	10.728726	15.5	-22.4	0.9
2023	3	15	22 13 32.0	-12 22 43.7	10.722224	15.5	-23.3	0.9
2023	3	16	22 13 58.4	-12 20 23.4	10.715486	15.5	-24.2	0.9
2023	3	17	22 14 24.7	-12 18 03.6	10.708514	15.5	-25.1	0.9
2023	3	18	22 14 50.9	-12 15 44.5	10.701309	15.5	-25.9	0.9
2023	3	19	22 15 16.9	-12 13 26.1	10.693871	15.5	-26.8	1.0
2023	3	20	22 15 42.8	-12 11 08.4	10.686203	15.6	-27.7	1.0
2023	3	21	22 16 08.5	-12 08 51.4	10.678307	15.6	-28.6	1.0
2023	3	22	22 16 34.1	-12 06 35.1	10.670184	15.6	-29.5	1.0
2023	3	23	22 16 59.6	-12 04 19.6	10.661837	15.6	-30.4	1.0
2023	3	24	22 17 24.9	-12 02 04.9	10.653268	15.6	-31.2	1.0
2023	3	25	22 17 50.1	-11 59 51.0	10.644479	15.6	-32.1	1.0
2023	3	26	22 18 15.1	-11 57 37.9	10.635473	15.6	-33.0	1.0
2023	3	27	22 18 39.9	-11 55 25.7	10.626251	15.6	-33.9	1.0
2023	3	28	22 19 04.6	-11 53 14.3	10.616818	15.7	-34.8	1.0
2023	3	29	22 19 29.1	-11 51 04.0	10.607174	15.7	-35.7	1.0
2023	3	30	22 19 53.5	-11 48 54.5	10.597324	15.7	-36.5	1.0
2023	3	31	22 20 17.6	-11 46 46.1	10.587268	15.7	-37.4	1.0
2023	4	1	22 20 41.6	-11 44 38.7	10.577010	15.7	-38.3	1.0
2023	4	2	22 21 05.4	-11 42 32.3	10.566552	15.7	-39.2	1.0
2023	4	3	22 21 29.0	-11 40 27.0	10.555897	15.7	-40.1	1.0
2023	4	4	22 21 52.4	-11 38 22.7	10.545047	15.8	-40.9	1.0
2023	4	5	22 22 15.6	-11 36 19.6	10.534004	15.8	-41.8	1.0
2023	4	6	22 22 38.6	-11 34 17.5	10.522772	15.8	-42.7	1.0
2023	4	7	22 23 01.4	-11 32 16.6	10.511352	15.8	-43.6	1.0
2023	4	8	22 23 24.1	-11 30 16.8	10.499747	15.8	-44.5	1.0
2023	4	9	22 23 46.5	-11 28 18.1	10.487960	15.8	-45.4	1.0
2023	4	10	22 24 08.7	-11 26 20.7	10.475992	15.9	-46.3	1.0

SATURN										Page 3		
Date			Apparent			Apparent			Visual		Solar	
Oh TT			R.A.			Declination			Diameter		Separation Mag.	
y	m	d	h	m	s	d	m	s	arc	sec	degrees	
2023	4	11	22	24	30.6	-11	24	24.4	10.463847	15.9	-47.1	1.0
2023	4	12	22	24	52.4	-11	22	29.4	10.451526	15.9	-48.0	1.0
2023	4	13	22	25	14.0	-11	20	35.7	10.439032	15.9	-48.9	1.0
2023	4	14	22	25	35.3	-11	18	43.3	10.426368	15.9	-49.8	1.0
2023	4	15	22	25	56.4	-11	16	52.3	10.413536	16.0	-50.7	1.0
2023	4	16	22	26	17.2	-11	15	02.6	10.400539	16.0	-51.6	1.0
2023	4	17	22	26	37.8	-11	13	14.3	10.387380	16.0	-52.5	1.0
2023	4	18	22	26	58.2	-11	11	27.4	10.374063	16.0	-53.4	1.0
2023	4	19	22	27	18.3	-11	09	42.0	10.360589	16.0	-54.3	1.0
2023	4	20	22	27	38.1	-11	07	58.0	10.346964	16.1	-55.1	1.0
2023	4	21	22	27	57.8	-11	06	15.4	10.333190	16.1	-56.0	1.0
2023	4	22	22	28	17.1	-11	04	34.4	10.319271	16.1	-56.9	1.0
2023	4	23	22	28	36.2	-11	02	54.8	10.305210	16.1	-57.8	1.0
2023	4	24	22	28	55.1	-11	01	16.8	10.291012	16.1	-58.7	1.0
2023	4	25	22	29	13.6	-10	59	40.4	10.276680	16.2	-59.6	1.0
2023	4	26	22	29	31.9	-10	58	05.6	10.262217	16.2	-60.5	1.0
2023	4	27	22	29	49.9	-10	56	32.4	10.247627	16.2	-61.4	1.0
2023	4	28	22	30	07.7	-10	55	00.9	10.232915	16.2	-62.3	1.0
2023	4	29	22	30	25.1	-10	53	31.1	10.218082	16.3	-63.2	1.0
2023	4	30	22	30	42.3	-10	52	02.9	10.203134	16.3	-64.1	1.0
2023	5	1	22	30	59.2	-10	50	36.5	10.188074	16.3	-65.0	1.0
2023	5	2	22	31	15.8	-10	49	11.8	10.172906	16.3	-65.9	1.0
2023	5	3	22	31	32.1	-10	47	48.8	10.157632	16.4	-66.8	1.0
2023	5	4	22	31	48.1	-10	46	27.5	10.142257	16.4	-67.7	1.0
2023	5	5	22	32	03.9	-10	45	08.0	10.126784	16.4	-68.6	1.0
2023	5	6	22	32	19.3	-10	43	50.2	10.111216	16.4	-69.5	1.0
2023	5	7	22	32	34.4	-10	42	34.2	10.095557	16.5	-70.4	1.0
2023	5	8	22	32	49.2	-10	41	20.0	10.079810	16.5	-71.3	1.0
2023	5	9	22	33	03.7	-10	40	07.7	10.063980	16.5	-72.2	1.0
2023	5	10	22	33	18.0	-10	38	57.2	10.048068	16.5	-73.1	1.0
2023	5	11	22	33	31.9	-10	37	48.6	10.032079	16.6	-74.0	1.0
2023	5	12	22	33	45.4	-10	36	41.9	10.016016	16.6	-74.9	1.0
2023	5	13	22	33	58.7	-10	35	37.2	9.999883	16.6	-75.8	1.0
2023	5	14	22	34	11.6	-10	34	34.4	9.983684	16.6	-76.7	1.0
2023	5	15	22	34	24.2	-10	33	33.6	9.967423	16.7	-77.6	1.0
2023	5	16	22	34	36.5	-10	32	34.7	9.951104	16.7	-78.6	1.0
2023	5	17	22	34	48.4	-10	31	37.9	9.934731	16.7	-79.5	1.0
2023	5	18	22	35	00.0	-10	30	43.0	9.918309	16.8	-80.4	1.0
2023	5	19	22	35	11.3	-10	29	50.1	9.901842	16.8	-81.3	1.0
2023	5	20	22	35	22.2	-10	28	59.3	9.885334	16.8	-82.2	1.0
2023	5	21	22	35	32.8	-10	28	10.5	9.868790	16.8	-83.1	1.0
2023	5	22	22	35	43.1	-10	27	23.7	9.852215	16.9	-84.0	1.0
2023	5	23	22	35	53.0	-10	26	39.1	9.835613	16.9	-85.0	1.0
2023	5	24	22	36	02.5	-10	25	56.6	9.818989	16.9	-85.9	1.0
2023	5	25	22	36	11.7	-10	25	16.2	9.802347	17.0	-86.8	1.0
2023	5	26	22	36	20.6	-10	24	37.9	9.785691	17.0	-87.7	1.0
2023	5	27	22	36	29.1	-10	24	01.8	9.769027	17.0	-88.7	1.0
2023	5	28	22	36	37.2	-10	23	27.8	9.752357	17.0	-89.6	1.0
2023	5	29	22	36	45.0	-10	22	56.0	9.735688	17.1	-90.5	1.0
2023	5	30	22	36	52.4	-10	22	26.3	9.719023	17.1	-91.4	1.0
2023	5	31	22	36	59.5	-10	21	58.8	9.702366	17.1	-92.4	1.0

SATURN										Page 4
Date			Apparent	Apparent	Apparent	Visual	Solar			
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	6	1	22 37 06.2	-10 21 33.4	9.685721	17.2	-93.3	1.0		
2023	6	2	22 37 12.5	-10 21 10.1	9.669093	17.2	-94.2	1.0		
2023	6	3	22 37 18.5	-10 20 49.0	9.652487	17.2	-95.2	1.0		
2023	6	4	22 37 24.1	-10 20 30.0	9.635904	17.2	-96.1	0.9		
2023	6	5	22 37 29.4	-10 20 13.3	9.619351	17.3	-97.0	0.9		
2023	6	6	22 37 34.3	-10 19 58.7	9.602831	17.3	-98.0	0.9		
2023	6	7	22 37 38.8	-10 19 46.3	9.586348	17.3	-98.9	0.9		
2023	6	8	22 37 43.0	-10 19 36.1	9.569905	17.4	-99.8	0.9		
2023	6	9	22 37 46.8	-10 19 28.1	9.553508	17.4	-100.8	0.9		
2023	6	10	22 37 50.2	-10 19 22.4	9.537161	17.4	-101.7	0.9		
2023	6	11	22 37 53.2	-10 19 18.9	9.520867	17.5	-102.7	0.9		
2023	6	12	22 37 55.9	-10 19 17.7	9.504632	17.5	-103.6	0.9		
2023	6	13	22 37 58.2	-10 19 18.6	9.488461	17.5	-104.6	0.9		
2023	6	14	22 38 00.1	-10 19 21.7	9.472357	17.5	-105.5	0.9		
2023	6	15	22 38 01.6	-10 19 27.1	9.456327	17.6	-106.5	0.9		
2023	6	16	22 38 02.8	-10 19 34.6	9.440374	17.6	-107.4	0.9		
2023	6	17	22 38 03.6	-10 19 44.4	9.424503	17.6	-108.4	0.9		
2023	6	18	22 38 04.0	-10 19 56.4	9.408721	17.7	-109.3	0.9		
2023	6	19	22 38 04.1	-10 20 10.6	9.393030	17.7	-110.3	0.9		
2023	6	20	22 38 03.7	-10 20 27.0	9.377437	17.7	-111.2	0.9		
2023	6	21	22 38 03.0	-10 20 45.6	9.361945	17.8	-112.2	0.9		
2023	6	22	22 38 02.0	-10 21 06.5	9.346560	17.8	-113.2	0.9		
2023	6	23	22 38 00.5	-10 21 29.5	9.331286	17.8	-114.1	0.9		
2023	6	24	22 37 58.7	-10 21 54.7	9.316128	17.8	-115.1	0.9		
2023	6	25	22 37 56.5	-10 22 22.1	9.301090	17.9	-116.0	0.8		
2023	6	26	22 37 53.9	-10 22 51.6	9.286177	17.9	-117.0	0.8		
2023	6	27	22 37 51.0	-10 23 23.3	9.271393	17.9	-118.0	0.8		
2023	6	28	22 37 47.7	-10 23 57.0	9.256742	18.0	-118.9	0.8		
2023	6	29	22 37 44.0	-10 24 32.8	9.242228	18.0	-119.9	0.8		
2023	6	30	22 37 40.0	-10 25 10.7	9.227856	18.0	-120.9	0.8		
2023	7	1	22 37 35.7	-10 25 50.6	9.213630	18.0	-121.9	0.8		
2023	7	2	22 37 30.9	-10 26 32.6	9.199553	18.1	-122.8	0.8		
2023	7	3	22 37 25.9	-10 27 16.5	9.185629	18.1	-123.8	0.8		
2023	7	4	22 37 20.5	-10 28 02.5	9.171863	18.1	-124.8	0.8		
2023	7	5	22 37 14.7	-10 28 50.5	9.158257	18.1	-125.8	0.8		
2023	7	6	22 37 08.5	-10 29 40.5	9.144817	18.2	-126.8	0.8		
2023	7	7	22 37 02.1	-10 30 32.5	9.131545	18.2	-127.7	0.8		
2023	7	8	22 36 55.2	-10 31 26.4	9.118447	18.2	-128.7	0.8		
2023	7	9	22 36 48.1	-10 32 22.2	9.105525	18.3	-129.7	0.8		
2023	7	10	22 36 40.5	-10 33 20.0	9.092785	18.3	-130.7	0.8		
2023	7	11	22 36 32.7	-10 34 19.6	9.080231	18.3	-131.7	0.8		
2023	7	12	22 36 24.5	-10 35 21.0	9.067867	18.3	-132.7	0.7		
2023	7	13	22 36 16.0	-10 36 24.3	9.055698	18.4	-133.7	0.7		
2023	7	14	22 36 07.2	-10 37 29.3	9.043727	18.4	-134.7	0.7		
2023	7	15	22 35 58.0	-10 38 36.1	9.031959	18.4	-135.6	0.7		
2023	7	16	22 35 48.6	-10 39 44.7	9.020398	18.4	-136.6	0.7		
2023	7	17	22 35 38.8	-10 40 54.9	9.009048	18.4	-137.6	0.7		
2023	7	18	22 35 28.7	-10 42 06.9	8.997914	18.5	-138.6	0.7		
2023	7	19	22 35 18.3	-10 43 20.5	8.986998	18.5	-139.6	0.7		
2023	7	20	22 35 07.6	-10 44 35.8	8.976306	18.5	-140.6	0.7		

SATURN										Page 5		
Date			Apparent			Apparent		Apparent		Visual	Solar	
Oh TT			R.A.			Declination		Distance		Diameter	Separation Mag.	
y	m	d	h	m	s	d	m	s	au	arc sec	degrees	
2023	7	21	22	34	56.6	-10	45	52.6	8.965840	18.5	-141.6	0.7
2023	7	22	22	34	45.3	-10	47	11.0	8.955604	18.6	-142.7	0.7
2023	7	23	22	34	33.7	-10	48	30.8	8.945602	18.6	-143.7	0.7
2023	7	24	22	34	21.9	-10	49	52.1	8.935836	18.6	-144.7	0.7
2023	7	25	22	34	09.7	-10	51	14.8	8.926311	18.6	-145.7	0.7
2023	7	26	22	33	57.3	-10	52	38.9	8.917029	18.6	-146.7	0.7
2023	7	27	22	33	44.7	-10	54	04.3	8.907993	18.7	-147.7	0.6
2023	7	28	22	33	31.8	-10	55	30.9	8.899206	18.7	-148.7	0.6
2023	7	29	22	33	18.7	-10	56	58.7	8.890670	18.7	-149.7	0.6
2023	7	30	22	33	05.3	-10	58	27.7	8.882389	18.7	-150.7	0.6
2023	7	31	22	32	51.7	-10	59	57.9	8.874365	18.7	-151.7	0.6
2023	8	1	22	32	37.8	-11	01	29.2	8.866599	18.7	-152.8	0.6
2023	8	2	22	32	23.8	-11	03	01.6	8.859095	18.8	-153.8	0.6
2023	8	3	22	32	09.5	-11	04	35.1	8.851854	18.8	-154.8	0.6
2023	8	4	22	31	55.0	-11	06	09.6	8.844880	18.8	-155.8	0.6
2023	8	5	22	31	40.3	-11	07	45.0	8.838174	18.8	-156.8	0.6
2023	8	6	22	31	25.4	-11	09	21.3	8.831740	18.8	-157.9	0.6
2023	8	7	22	31	10.3	-11	10	58.4	8.825580	18.8	-158.9	0.6
2023	8	8	22	30	55.0	-11	12	36.4	8.819696	18.8	-159.9	0.6
2023	8	9	22	30	39.6	-11	14	15.1	8.814092	18.9	-160.9	0.6
2023	8	10	22	30	23.9	-11	15	54.5	8.808768	18.9	-161.9	0.5
2023	8	11	22	30	08.2	-11	17	34.5	8.803729	18.9	-163.0	0.5
2023	8	12	22	29	52.3	-11	19	15.2	8.798975	18.9	-164.0	0.5
2023	8	13	22	29	36.2	-11	20	56.4	8.794510	18.9	-165.0	0.5
2023	8	14	22	29	20.0	-11	22	38.2	8.790334	18.9	-166.0	0.5
2023	8	15	22	29	03.7	-11	24	20.4	8.786451	18.9	-167.1	0.5
2023	8	16	22	28	47.2	-11	26	03.1	8.782861	18.9	-168.1	0.5
2023	8	17	22	28	30.6	-11	27	46.1	8.779565	18.9	-169.1	0.5
2023	8	18	22	28	14.0	-11	29	29.4	8.776566	18.9	-170.1	0.5
2023	8	19	22	27	57.2	-11	31	13.0	8.773865	18.9	-171.1	0.5
2023	8	20	22	27	40.4	-11	32	56.7	8.771462	18.9	-172.2	0.5
2023	8	21	22	27	23.4	-11	34	40.6	8.769358	19.0	-173.2	0.5
2023	8	22	22	27	06.5	-11	36	24.5	8.767555	19.0	-174.2	0.5
2023	8	23	22	26	49.4	-11	38	08.4	8.766051	19.0	-175.1	0.5
2023	8	24	22	26	32.3	-11	39	52.2	8.764849	19.0	-176.1	0.5
2023	8	25	22	26	15.2	-11	41	35.9	8.763948	19.0	-177.0	0.5
2023	8	26	22	25	58.1	-11	43	19.5	8.763348	19.0	-177.7	0.4
2023	8	27	22	25	40.9	-11	45	02.9	8.763049	19.0	-178.2	0.4
2023	8	28	22	25	23.8	-11	46	46.0	8.763050	19.0	178.1	0.4
2023	8	29	22	25	06.6	-11	48	28.8	8.763353	19.0	177.5	0.4
2023	8	30	22	24	49.4	-11	50	11.3	8.763955	19.0	176.7	0.4
2023	8	31	22	24	32.3	-11	51	53.4	8.764858	19.0	175.8	0.4
2023	9	1	22	24	15.1	-11	53	35.1	8.766060	19.0	174.8	0.4
2023	9	2	22	23	58.0	-11	55	16.3	8.767562	19.0	173.9	0.4
2023	9	3	22	23	41.0	-11	56	57.0	8.769363	19.0	172.9	0.4
2023	9	4	22	23	24.0	-11	58	37.0	8.771463	18.9	171.8	0.4
2023	9	5	22	23	07.0	-12	00	16.4	8.773862	18.9	170.8	0.4
2023	9	6	22	22	50.1	-12	01	55.0	8.776560	18.9	169.8	0.4
2023	9	7	22	22	33.3	-12	03	32.9	8.779555	18.9	168.8	0.4
2023	9	8	22	22	16.6	-12	05	10.1	8.782848	18.9	167.7	0.4
2023	9	9	22	22	00.0	-12	06	46.4	8.786437	18.9	166.7	0.4

Date		SATURN			Apparent	Visual	Page 6			
0h TT		Apparent			Distance	Diameter	Solar	Mag.		
y	m	d	R.A.			au	arc sec	Separation	degrees	
			h	m	s					
			d	m	s					
2023	9	10	22	21	43.4	-12 08 21.8	8.790322	18.9	165.7	0.4
2023	9	11	22	21	27.0	-12 09 56.3	8.794501	18.9	164.6	0.4
2023	9	12	22	21	10.7	-12 11 29.8	8.798974	18.9	163.6	0.4
2023	9	13	22	20	54.6	-12 13 02.3	8.803739	18.9	162.6	0.4
2023	9	14	22	20	38.5	-12 14 33.8	8.808794	18.9	161.5	0.4
2023	9	15	22	20	22.6	-12 16 04.1	8.814137	18.9	160.5	0.4
2023	9	16	22	20	06.9	-12 17 33.2	8.819767	18.8	159.4	0.4
2023	9	17	22	19	51.3	-12 19 01.1	8.825682	18.8	158.4	0.4
2023	9	18	22	19	35.9	-12 20 27.8	8.831879	18.8	157.4	0.4
2023	9	19	22	19	20.7	-12 21 53.0	8.838357	18.8	156.3	0.5
2023	9	20	22	19	05.7	-12 23 16.9	8.845112	18.8	155.3	0.5
2023	9	21	22	18	50.9	-12 24 39.4	8.852141	18.8	154.2	0.5
2023	9	22	22	18	36.3	-12 26 00.4	8.859443	18.8	153.2	0.5
2023	9	23	22	18	21.9	-12 27 20.0	8.867014	18.7	152.2	0.5
2023	9	24	22	18	07.8	-12 28 38.0	8.874851	18.7	151.1	0.5
2023	9	25	22	17	53.8	-12 29 54.5	8.882951	18.7	150.1	0.5
2023	9	26	22	17	40.1	-12 31 09.5	8.891311	18.7	149.1	0.5
2023	9	27	22	17	26.7	-12 32 22.8	8.899928	18.7	148.0	0.5
2023	9	28	22	17	13.5	-12 33 34.6	8.908799	18.7	147.0	0.5
2023	9	29	22	17	00.5	-12 34 44.6	8.917921	18.6	145.9	0.5
2023	9	30	22	16	47.8	-12 35 53.0	8.927290	18.6	144.9	0.5
2023	10	1	22	16	35.4	-12 36 59.6	8.936904	18.6	143.9	0.5
2023	10	2	22	16	23.2	-12 38 04.4	8.946760	18.6	142.8	0.5
2023	10	3	22	16	11.4	-12 39 07.4	8.956855	18.6	141.8	0.5
2023	10	4	22	15	59.8	-12 40 08.5	8.967186	18.5	140.8	0.5
2023	10	5	22	15	48.5	-12 41 07.8	8.977750	18.5	139.7	0.5
2023	10	6	22	15	37.5	-12 42 05.3	8.988544	18.5	138.7	0.5
2023	10	7	22	15	26.8	-12 43 00.9	8.999563	18.5	137.7	0.5
2023	10	8	22	15	16.4	-12 43 54.6	9.010805	18.4	136.7	0.5
2023	10	9	22	15	06.4	-12 44 46.3	9.022266	18.4	135.6	0.5
2023	10	10	22	14	56.6	-12 45 36.1	9.033942	18.4	134.6	0.6
2023	10	11	22	14	47.2	-12 46 23.9	9.045829	18.4	133.6	0.6
2023	10	12	22	14	38.1	-12 47 09.7	9.057923	18.3	132.5	0.6
2023	10	13	22	14	29.4	-12 47 53.4	9.070221	18.3	131.5	0.6
2023	10	14	22	14	21.0	-12 48 35.0	9.082717	18.3	130.5	0.6
2023	10	15	22	14	12.9	-12 49 14.6	9.095408	18.3	129.5	0.6
2023	10	16	22	14	05.2	-12 49 52.0	9.108288	18.2	128.4	0.6
2023	10	17	22	13	57.9	-12 50 27.3	9.121355	18.2	127.4	0.6
2023	10	18	22	13	50.9	-12 51 00.4	9.134601	18.2	126.4	0.6
2023	10	19	22	13	44.3	-12 51 31.3	9.148024	18.2	125.4	0.6
2023	10	20	22	13	38.0	-12 52 00.1	9.161618	18.1	124.4	0.6
2023	10	21	22	13	32.2	-12 52 26.7	9.175378	18.1	123.3	0.6
2023	10	22	22	13	26.7	-12 52 51.1	9.189299	18.1	122.3	0.6
2023	10	23	22	13	21.5	-12 53 13.3	9.203377	18.1	121.3	0.6
2023	10	24	22	13	16.8	-12 53 33.3	9.217607	18.0	120.3	0.6
2023	10	25	22	13	12.4	-12 53 51.2	9.231983	18.0	119.3	0.6
2023	10	26	22	13	08.4	-12 54 06.8	9.246502	18.0	118.3	0.6
2023	10	27	22	13	04.8	-12 54 20.2	9.261158	17.9	117.3	0.6
2023	10	28	22	13	01.6	-12 54 31.4	9.275948	17.9	116.2	0.6
2023	10	29	22	12	58.7	-12 54 40.3	9.290866	17.9	115.2	0.6
2023	10	30	22	12	56.3	-12 54 47.0	9.305908	17.9	114.2	0.7

SATURN					Page 7		
Date	Apparent	Apparent	Apparent	Visual	Solar		
Oh TT	R.A.	Declination	Distance	Diameter	Separation	Mag.	
y m d	h m s	d m s	au	arc sec	degrees		
2023 10 31	22 12 54.2	-12 54 51.4	9.321071	17.8	113.2	0.7	
2023 11 1	22 12 52.6	-12 54 53.5	9.336349	17.8	112.2	0.7	
2023 11 2	22 12 51.3	-12 54 53.5	9.351738	17.8	111.2	0.7	
2023 11 3	22 12 50.4	-12 54 51.2	9.367233	17.7	110.2	0.7	
2023 11 4	22 12 49.9	-12 54 46.6	9.382830	17.7	109.2	0.7	
2023 11 5	22 12 49.9	-12 54 39.9	9.398524	17.7	108.2	0.7	
2023 11 6	22 12 50.2	-12 54 30.9	9.414310	17.7	107.2	0.7	
2023 11 7	22 12 50.9	-12 54 19.7	9.430184	17.6	106.2	0.7	
2023 11 8	22 12 52.0	-12 54 06.2	9.446140	17.6	105.2	0.7	
2023 11 9	22 12 53.5	-12 53 50.4	9.462174	17.6	104.2	0.7	
2023 11 10	22 12 55.4	-12 53 32.5	9.478280	17.5	103.2	0.7	
2023 11 11	22 12 57.7	-12 53 12.2	9.494454	17.5	102.2	0.7	
2023 11 12	22 13 00.4	-12 52 49.7	9.510690	17.5	101.2	0.7	
2023 11 13	22 13 03.5	-12 52 24.9	9.526982	17.4	100.2	0.7	
2023 11 14	22 13 07.0	-12 51 57.8	9.543327	17.4	99.3	0.7	
2023 11 15	22 13 11.0	-12 51 28.5	9.559717	17.4	98.3	0.7	
2023 11 16	22 13 15.3	-12 50 57.0	9.576149	17.4	97.3	0.7	
2023 11 17	22 13 20.0	-12 50 23.2	9.592616	17.3	96.3	0.7	
2023 11 18	22 13 25.1	-12 49 47.2	9.609114	17.3	95.3	0.7	
2023 11 19	22 13 30.6	-12 49 09.1	9.625637	17.3	94.3	0.7	
2023 11 20	22 13 36.5	-12 48 28.7	9.642179	17.2	93.3	0.8	
2023 11 21	22 13 42.8	-12 47 46.2	9.658737	17.2	92.4	0.8	
2023 11 22	22 13 49.5	-12 47 01.6	9.675305	17.2	91.4	0.8	
2023 11 23	22 13 56.5	-12 46 14.8	9.691878	17.1	90.4	0.8	
2023 11 24	22 14 04.0	-12 45 25.9	9.708452	17.1	89.4	0.8	
2023 11 25	22 14 11.8	-12 44 34.8	9.725021	17.1	88.4	0.8	
2023 11 26	22 14 20.0	-12 43 41.5	9.741582	17.1	87.5	0.8	
2023 11 27	22 14 28.6	-12 42 46.2	9.758131	17.0	86.5	0.8	
2023 11 28	22 14 37.6	-12 41 48.7	9.774662	17.0	85.5	0.8	
2023 11 29	22 14 47.0	-12 40 49.2	9.791172	17.0	84.6	0.8	
2023 11 30	22 14 56.7	-12 39 47.6	9.807655	16.9	83.6	0.8	
2023 12 1	22 15 06.8	-12 38 44.0	9.824109	16.9	82.6	0.8	
2023 12 2	22 15 17.2	-12 37 38.4	9.840527	16.9	81.7	0.8	
2023 12 3	22 15 28.0	-12 36 30.7	9.856907	16.9	80.7	0.8	
2023 12 4	22 15 39.2	-12 35 21.1	9.873242	16.8	79.7	0.8	
2023 12 5	22 15 50.8	-12 34 09.5	9.889529	16.8	78.8	0.8	
2023 12 6	22 16 02.7	-12 32 55.9	9.905763	16.8	77.8	0.8	
2023 12 7	22 16 14.9	-12 31 40.3	9.921940	16.8	76.8	0.8	
2023 12 8	22 16 27.5	-12 30 22.8	9.938054	16.7	75.9	0.8	
2023 12 9	22 16 40.5	-12 29 03.3	9.954102	16.7	74.9	0.8	
2023 12 10	22 16 53.8	-12 27 41.9	9.970078	16.7	74.0	0.8	
2023 12 11	22 17 07.4	-12 26 18.5	9.985978	16.6	73.0	0.8	
2023 12 12	22 17 21.4	-12 24 53.2	10.001798	16.6	72.1	0.8	
2023 12 13	22 17 35.7	-12 23 26.0	10.017531	16.6	71.1	0.8	
2023 12 14	22 17 50.4	-12 21 56.9	10.033175	16.6	70.1	0.8	
2023 12 15	22 18 05.4	-12 20 26.0	10.048724	16.5	69.2	0.8	
2023 12 16	22 18 20.7	-12 18 53.3	10.064174	16.5	68.2	0.9	
2023 12 17	22 18 36.4	-12 17 18.9	10.079521	16.5	67.3	0.9	
2023 12 18	22 18 52.3	-12 15 42.6	10.094759	16.5	66.4	0.9	
2023 12 19	22 19 08.6	-12 14 04.7	10.109885	16.4	65.4	0.9	
2023 12 20	22 19 25.2	-12 12 25.0	10.124896	16.4	64.5	0.9	

Date	SATURN			Apparent	Visual	Page 8	
0h TT	Apparent			Distance	Diameter	Solar	Mag.
y m d	R.A.			au	arc sec	Separation	degrees
	h m s	d m s					
2023 12 21	22 19 42.1	-12 10 43.5	10.139787	16.4	63.5	0.9	
2023 12 22	22 19 59.2	-12 09 00.4	10.154554	16.4	62.6	0.9	
2023 12 23	22 20 16.7	-12 07 15.6	10.169194	16.3	61.6	0.9	
2023 12 24	22 20 34.5	-12 05 29.1	10.183705	16.3	60.7	0.9	
2023 12 25	22 20 52.6	-12 03 41.0	10.198081	16.3	59.8	0.9	
2023 12 26	22 21 10.9	-12 01 51.3	10.212320	16.3	58.8	0.9	
2023 12 27	22 21 29.6	-12 00 00.0	10.226419	16.3	57.9	0.9	
2023 12 28	22 21 48.5	-11 58 07.1	10.240375	16.2	57.0	0.9	
2023 12 29	22 22 07.6	-11 56 12.8	10.254183	16.2	56.0	0.9	
2023 12 30	22 22 27.1	-11 54 16.9	10.267841	16.2	55.1	0.9	
2023 12 31	22 22 46.8	-11 52 19.5	10.281345	16.2	54.2	0.9	
2024 1 1	22 23 06.8	-11 50 20.7	10.294693	16.1	53.2	0.9	

Date		URANUS		Apparent	Apparent	Apparent	Visual	Page 1	Solar
Oh TT		Apparent		Declination	Distance	Diameter	Separation	Mag.	
y	m	d	R.A.	d	m	s	arc	degrees	
			h	m	s	au	sec		
2022	12	31	2 51 14.5	16 02 32	19.07744	3.7	125.9	5.7	
2023	1	1	2 51 10.0	16 02 13	19.09141	3.7	124.9	5.7	
2023	1	2	2 51 05.6	16 01 56	19.10555	3.7	123.8	5.7	
2023	1	3	2 51 01.4	16 01 39	19.11987	3.7	122.8	5.7	
2023	1	4	2 50 57.5	16 01 23	19.13434	3.7	121.8	5.7	
2023	1	5	2 50 53.7	16 01 08	19.14898	3.7	120.7	5.7	
2023	1	6	2 50 50.1	16 00 54	19.16378	3.7	119.7	5.7	
2023	1	7	2 50 46.7	16 00 40	19.17872	3.7	118.7	5.7	
2023	1	8	2 50 43.5	16 00 28	19.19381	3.7	117.6	5.7	
2023	1	9	2 50 40.5	16 00 16	19.20905	3.7	116.6	5.7	
2023	1	10	2 50 37.7	16 00 06	19.22441	3.7	115.6	5.7	
2023	1	11	2 50 35.1	15 59 56	19.23992	3.7	114.5	5.7	
2023	1	12	2 50 32.7	15 59 47	19.25555	3.7	113.5	5.7	
2023	1	13	2 50 30.5	15 59 39	19.27130	3.7	112.5	5.7	
2023	1	14	2 50 28.5	15 59 31	19.28717	3.7	111.4	5.7	
2023	1	15	2 50 26.7	15 59 25	19.30315	3.7	110.4	5.7	
2023	1	16	2 50 25.1	15 59 20	19.31924	3.6	109.4	5.7	
2023	1	17	2 50 23.7	15 59 15	19.33543	3.6	108.4	5.7	
2023	1	18	2 50 22.5	15 59 11	19.35172	3.6	107.3	5.7	
2023	1	19	2 50 21.5	15 59 09	19.36810	3.6	106.3	5.7	
2023	1	20	2 50 20.8	15 59 07	19.38457	3.6	105.3	5.7	
2023	1	21	2 50 20.3	15 59 06	19.40112	3.6	104.3	5.7	
2023	1	22	2 50 19.9	15 59 07	19.41775	3.6	103.3	5.7	
2023	1	23	2 50 19.8	15 59 08	19.43444	3.6	102.2	5.7	
2023	1	24	2 50 19.9	15 59 10	19.45120	3.6	101.2	5.7	
2023	1	25	2 50 20.2	15 59 13	19.46802	3.6	100.2	5.7	
2023	1	26	2 50 20.7	15 59 17	19.48488	3.6	99.2	5.7	
2023	1	27	2 50 21.4	15 59 21	19.50180	3.6	98.2	5.7	
2023	1	28	2 50 22.3	15 59 27	19.51876	3.6	97.2	5.7	
2023	1	29	2 50 23.4	15 59 34	19.53575	3.6	96.2	5.7	
2023	1	30	2 50 24.8	15 59 41	19.55277	3.6	95.2	5.7	
2023	1	31	2 50 26.3	15 59 50	19.56982	3.6	94.1	5.7	
2023	2	1	2 50 28.1	15 59 59	19.58689	3.6	93.1	5.7	
2023	2	2	2 50 30.1	16 00 10	19.60397	3.6	92.1	5.7	
2023	2	3	2 50 32.3	16 00 21	19.62107	3.6	91.1	5.7	
2023	2	4	2 50 34.6	16 00 33	19.63817	3.6	90.1	5.7	
2023	2	5	2 50 37.2	16 00 47	19.65527	3.6	89.1	5.8	
2023	2	6	2 50 40.0	16 01 01	19.67236	3.6	88.1	5.8	
2023	2	7	2 50 43.0	16 01 15	19.68944	3.6	87.1	5.8	
2023	2	8	2 50 46.3	16 01 31	19.70651	3.6	86.1	5.8	
2023	2	9	2 50 49.7	16 01 48	19.72356	3.6	85.1	5.8	
2023	2	10	2 50 53.3	16 02 05	19.74059	3.6	84.1	5.8	
2023	2	11	2 50 57.1	16 02 24	19.75758	3.6	83.1	5.8	
2023	2	12	2 51 01.1	16 02 43	19.77455	3.6	82.1	5.8	
2023	2	13	2 51 05.3	16 03 03	19.79147	3.6	81.1	5.8	
2023	2	14	2 51 09.8	16 03 24	19.80835	3.6	80.1	5.8	
2023	2	15	2 51 14.4	16 03 46	19.82518	3.6	79.2	5.8	
2023	2	16	2 51 19.2	16 04 09	19.84196	3.6	78.2	5.8	
2023	2	17	2 51 24.3	16 04 33	19.85867	3.5	77.2	5.8	
2023	2	18	2 51 29.5	16 04 57	19.87533	3.5	76.2	5.8	
2023	2	19	2 51 34.9	16 05 23	19.89191	3.5	75.2	5.8	

Date			URANUS			Page 2		
Oh TT			Apparent	Apparent	Apparent	Visual	Solar	
y	m	d	R.A.	Declination	Distance	Diameter	Separation Mag.	
			h m s	d m s	au	arc sec	degrees	
2023	2	20	2 51 40.5	16 05 49	19.90842	3.5	74.2	5.8
2023	2	21	2 51 46.3	16 06 16	19.92485	3.5	73.2	5.8
2023	2	22	2 51 52.3	16 06 44	19.94119	3.5	72.2	5.8
2023	2	23	2 51 58.5	16 07 13	19.95745	3.5	71.3	5.8
2023	2	24	2 52 04.8	16 07 42	19.97360	3.5	70.3	5.8
2023	2	25	2 52 11.4	16 08 12	19.98966	3.5	69.3	5.8
2023	2	26	2 52 18.1	16 08 43	20.00562	3.5	68.3	5.8
2023	2	27	2 52 25.0	16 09 15	20.02146	3.5	67.4	5.8
2023	2	28	2 52 32.1	16 09 48	20.03719	3.5	66.4	5.8
2023	3	1	2 52 39.4	16 10 21	20.05281	3.5	65.4	5.8
2023	3	2	2 52 46.9	16 10 55	20.06830	3.5	64.4	5.8
2023	3	3	2 52 54.5	16 11 30	20.08367	3.5	63.5	5.8
2023	3	4	2 53 02.3	16 12 05	20.09891	3.5	62.5	5.8
2023	3	5	2 53 10.3	16 12 41	20.11401	3.5	61.5	5.8
2023	3	6	2 53 18.4	16 13 18	20.12898	3.5	60.6	5.8
2023	3	7	2 53 26.7	16 13 56	20.14380	3.5	59.6	5.8
2023	3	8	2 53 35.2	16 14 34	20.15849	3.5	58.6	5.8
2023	3	9	2 53 43.8	16 15 13	20.17302	3.5	57.7	5.8
2023	3	10	2 53 52.6	16 15 53	20.18740	3.5	56.7	5.8
2023	3	11	2 54 01.5	16 16 33	20.20163	3.5	55.7	5.8
2023	3	12	2 54 10.6	16 17 14	20.21569	3.5	54.8	5.8
2023	3	13	2 54 19.9	16 17 55	20.22959	3.5	53.8	5.8
2023	3	14	2 54 29.3	16 18 37	20.24333	3.5	52.9	5.8
2023	3	15	2 54 38.9	16 19 20	20.25690	3.5	51.9	5.8
2023	3	16	2 54 48.6	16 20 03	20.27029	3.5	50.9	5.8
2023	3	17	2 54 58.5	16 20 47	20.28350	3.5	50.0	5.8
2023	3	18	2 55 08.5	16 21 32	20.29654	3.5	49.0	5.8
2023	3	19	2 55 18.7	16 22 17	20.30938	3.5	48.1	5.8
2023	3	20	2 55 29.0	16 23 03	20.32204	3.5	47.1	5.8
2023	3	21	2 55 39.4	16 23 49	20.33451	3.5	46.2	5.8
2023	3	22	2 55 49.9	16 24 35	20.34678	3.5	45.2	5.8
2023	3	23	2 56 00.6	16 25 23	20.35884	3.5	44.3	5.8
2023	3	24	2 56 11.5	16 26 10	20.37071	3.5	43.3	5.8
2023	3	25	2 56 22.4	16 26 58	20.38237	3.5	42.4	5.8
2023	3	26	2 56 33.5	16 27 47	20.39382	3.5	41.4	5.8
2023	3	27	2 56 44.7	16 28 36	20.40506	3.5	40.5	5.8
2023	3	28	2 56 56.0	16 29 26	20.41608	3.5	39.6	5.8
2023	3	29	2 57 07.5	16 30 16	20.42689	3.5	38.6	5.8
2023	3	30	2 57 19.0	16 31 06	20.43748	3.4	37.7	5.8
2023	3	31	2 57 30.7	16 31 57	20.44784	3.4	36.7	5.8
2023	4	1	2 57 42.5	16 32 49	20.45798	3.4	35.8	5.8
2023	4	2	2 57 54.4	16 33 40	20.46790	3.4	34.9	5.8
2023	4	3	2 58 06.3	16 34 32	20.47759	3.4	33.9	5.8
2023	4	4	2 58 18.4	16 35 25	20.48704	3.4	33.0	5.8
2023	4	5	2 58 30.6	16 36 18	20.49627	3.4	32.1	5.8
2023	4	6	2 58 42.9	16 37 11	20.50526	3.4	31.1	5.8
2023	4	7	2 58 55.2	16 38 04	20.51401	3.4	30.2	5.8
2023	4	8	2 59 07.7	16 38 58	20.52253	3.4	29.3	5.8
2023	4	9	2 59 20.2	16 39 52	20.53081	3.4	28.3	5.8
2023	4	10	2 59 32.9	16 40 46	20.53884	3.4	27.4	5.8

Date			URANUS		Apparent	Apparent	Apparent	Visual	Solar	
Oh TT			Apparent		Declination	Distance	Diameter	Separation	Mag.	
y	m	d	R.A.		d m s	au	arc sec	degrees		
2023	4	11	2	59	45.6	16 41 41	20.54663	3.4	26.5	5.8
2023	4	12	2	59	58.4	16 42 36	20.55418	3.4	25.5	5.8
2023	4	13	3	00	11.3	16 43 31	20.56148	3.4	24.6	5.8
2023	4	14	3	00	24.3	16 44 26	20.56853	3.4	23.7	5.8
2023	4	15	3	00	37.3	16 45 22	20.57532	3.4	22.8	5.8
2023	4	16	3	00	50.5	16 46 18	20.58187	3.4	21.8	5.8
2023	4	17	3	01	03.6	16 47 14	20.58816	3.4	20.9	5.8
2023	4	18	3	01	16.9	16 48 10	20.59419	3.4	20.0	5.8
2023	4	19	3	01	30.2	16 49 07	20.59996	3.4	19.1	5.8
2023	4	20	3	01	43.5	16 50 03	20.60547	3.4	18.1	5.8
2023	4	21	3	01	57.0	16 51 00	20.61072	3.4	17.2	5.8
2023	4	22	3	02	10.4	16 51 57	20.61571	3.4	16.3	5.8
2023	4	23	3	02	24.0	16 52 54	20.62044	3.4	15.4	5.9
2023	4	24	3	02	37.6	16 53 51	20.62489	3.4	14.5	5.9
2023	4	25	3	02	51.2	16 54 48	20.62909	3.4	13.5	5.9
2023	4	26	3	03	04.9	16 55 46	20.63302	3.4	12.6	5.9
2023	4	27	3	03	18.6	16 56 43	20.63668	3.4	11.7	5.9
2023	4	28	3	03	32.3	16 57 41	20.64007	3.4	10.8	5.9
2023	4	29	3	03	46.1	16 58 39	20.64320	3.4	9.9	5.9
2023	4	30	3	03	59.9	16 59 36	20.64606	3.4	9.0	5.9
2023	5	1	3	04	13.8	17 00 34	20.64865	3.4	8.1	5.9
2023	5	2	3	04	27.6	17 01 32	20.65097	3.4	7.1	5.9
2023	5	3	3	04	41.5	17 02 29	20.65303	3.4	6.2	5.9
2023	5	4	3	04	55.4	17 03 27	20.65481	3.4	5.3	5.9
2023	5	5	3	05	09.3	17 04 25	20.65633	3.4	4.4	5.9
2023	5	6	3	05	23.3	17 05 22	20.65758	3.4	3.5	5.9
2023	5	7	3	05	37.2	17 06 20	20.65856	3.4	2.6	5.9
2023	5	8	3	05	51.2	17 07 18	20.65928	3.4	1.7	5.9
2023	5	9	3	06	05.2	17 08 15	20.65972	3.4	0.8	5.9
2023	5	10	3	06	19.2	17 09 13	20.65990	3.4	-0.3	5.9
2023	5	11	3	06	33.2	17 10 10	20.65980	3.4	-1.1	5.9
2023	5	12	3	06	47.2	17 11 08	20.65944	3.4	-2.0	5.9
2023	5	13	3	07	01.2	17 12 05	20.65881	3.4	-2.9	5.9
2023	5	14	3	07	15.2	17 13 02	20.65791	3.4	-3.8	5.9
2023	5	15	3	07	29.1	17 13 59	20.65673	3.4	-4.7	5.9
2023	5	16	3	07	43.1	17 14 56	20.65529	3.4	-5.6	5.9
2023	5	17	3	07	57.0	17 15 53	20.65358	3.4	-6.5	5.9
2023	5	18	3	08	11.0	17 16 49	20.65160	3.4	-7.4	5.9
2023	5	19	3	08	24.9	17 17 46	20.64936	3.4	-8.3	5.9
2023	5	20	3	08	38.8	17 18 42	20.64684	3.4	-9.2	5.9
2023	5	21	3	08	52.7	17 19 38	20.64406	3.4	-10.1	5.9
2023	5	22	3	09	06.5	17 20 34	20.64101	3.4	-11.0	5.9
2023	5	23	3	09	20.4	17 21 30	20.63770	3.4	-11.9	5.9
2023	5	24	3	09	34.1	17 22 25	20.63412	3.4	-12.9	5.9
2023	5	25	3	09	47.9	17 23 21	20.63028	3.4	-13.8	5.9
2023	5	26	3	10	01.6	17 24 16	20.62618	3.4	-14.7	5.9
2023	5	27	3	10	15.3	17 25 10	20.62182	3.4	-15.6	5.8
2023	5	28	3	10	28.9	17 26 05	20.61720	3.4	-16.5	5.8
2023	5	29	3	10	42.4	17 26 59	20.61232	3.4	-17.4	5.8
2023	5	30	3	10	56.0	17 27 53	20.60719	3.4	-18.3	5.8
2023	5	31	3	11	09.4	17 28 47	20.60180	3.4	-19.2	5.8

Date		URANUS			Apparent		Apparent		Visual		Page 4 Solar	
Oh TT		Apparent			Declination		Distance		Diameter		Separation Mag.	
y	m	d	R.A.			d m s		au	arc sec	degrees		
2023	6	1	3	11	22.8	17	29	40	20.59617	3.4	-20.1	5.8
2023	6	2	3	11	36.2	17	30	33	20.59028	3.4	-21.0	5.8
2023	6	3	3	11	49.5	17	31	26	20.58414	3.4	-21.9	5.8
2023	6	4	3	12	02.8	17	32	18	20.57776	3.4	-22.8	5.8
2023	6	5	3	12	15.9	17	33	10	20.57113	3.4	-23.7	5.8
2023	6	6	3	12	29.1	17	34	02	20.56425	3.4	-24.6	5.8
2023	6	7	3	12	42.1	17	34	54	20.55713	3.4	-25.5	5.8
2023	6	8	3	12	55.1	17	35	45	20.54977	3.4	-26.4	5.8
2023	6	9	3	13	08.0	17	36	36	20.54218	3.4	-27.3	5.8
2023	6	10	3	13	20.8	17	37	26	20.53434	3.4	-28.2	5.8
2023	6	11	3	13	33.6	17	38	16	20.52626	3.4	-29.1	5.8
2023	6	12	3	13	46.2	17	39	06	20.51795	3.4	-30.0	5.8
2023	6	13	3	13	58.8	17	39	55	20.50941	3.4	-30.9	5.8
2023	6	14	3	14	11.3	17	40	43	20.50063	3.4	-31.8	5.8
2023	6	15	3	14	23.7	17	41	32	20.49163	3.4	-32.7	5.8
2023	6	16	3	14	36.0	17	42	20	20.48240	3.4	-33.6	5.8
2023	6	17	3	14	48.2	17	43	07	20.47294	3.4	-34.5	5.8
2023	6	18	3	15	00.3	17	43	54	20.46326	3.4	-35.4	5.8
2023	6	19	3	15	12.4	17	44	41	20.45336	3.4	-36.3	5.8
2023	6	20	3	15	24.3	17	45	27	20.44324	3.4	-37.3	5.8
2023	6	21	3	15	36.1	17	46	13	20.43290	3.4	-38.2	5.8
2023	6	22	3	15	47.8	17	46	58	20.42236	3.5	-39.1	5.8
2023	6	23	3	15	59.4	17	47	43	20.41160	3.5	-40.0	5.8
2023	6	24	3	16	10.9	17	48	27	20.40064	3.5	-40.9	5.8
2023	6	25	3	16	22.2	17	49	11	20.38947	3.5	-41.8	5.8
2023	6	26	3	16	33.5	17	49	54	20.37811	3.5	-42.7	5.8
2023	6	27	3	16	44.6	17	50	36	20.36655	3.5	-43.6	5.8
2023	6	28	3	16	55.6	17	51	18	20.35479	3.5	-44.5	5.8
2023	6	29	3	17	06.5	17	52	00	20.34284	3.5	-45.4	5.8
2023	6	30	3	17	17.3	17	52	41	20.33071	3.5	-46.3	5.8
2023	7	1	3	17	27.9	17	53	22	20.31839	3.5	-47.2	5.8
2023	7	2	3	17	38.4	17	54	02	20.30588	3.5	-48.2	5.8
2023	7	3	3	17	48.8	17	54	41	20.29320	3.5	-49.1	5.8
2023	7	4	3	17	59.1	17	55	20	20.28034	3.5	-50.0	5.8
2023	7	5	3	18	09.2	17	55	58	20.26731	3.5	-50.9	5.8
2023	7	6	3	18	19.1	17	56	36	20.25411	3.5	-51.8	5.8
2023	7	7	3	18	29.0	17	57	13	20.24074	3.5	-52.7	5.8
2023	7	8	3	18	38.7	17	57	50	20.22721	3.5	-53.6	5.8
2023	7	9	3	18	48.2	17	58	26	20.21352	3.5	-54.5	5.8
2023	7	10	3	18	57.6	17	59	01	20.19966	3.5	-55.5	5.8
2023	7	11	3	19	06.8	17	59	36	20.18565	3.5	-56.4	5.8
2023	7	12	3	19	15.9	18	00	10	20.17149	3.5	-57.3	5.8
2023	7	13	3	19	24.9	18	00	44	20.15718	3.5	-58.2	5.8
2023	7	14	3	19	33.7	18	01	17	20.14272	3.5	-59.1	5.8
2023	7	15	3	19	42.3	18	01	49	20.12813	3.5	-60.0	5.8
2023	7	16	3	19	50.8	18	02	21	20.11339	3.5	-61.0	5.8
2023	7	17	3	19	59.1	18	02	52	20.09852	3.5	-61.9	5.8
2023	7	18	3	20	07.3	18	03	22	20.08352	3.5	-62.8	5.8
2023	7	19	3	20	15.2	18	03	52	20.06840	3.5	-63.7	5.8
2023	7	20	3	20	23.1	18	04	21	20.05315	3.5	-64.6	5.8

					Page 5							
URANUS					Solar							
Date		Apparent	Apparent	Apparent	Visual	Separation	Mag.					
Oh TT		R.A.	Declination	Distance	Diameter	degrees						
y	m	d	h	m	s	arc	sec					
2023	7	21	3	20	30.7	18	04	50	20.03779	3.5	-65.6	5.8
2023	7	22	3	20	38.2	18	05	17	20.02231	3.5	-66.5	5.8
2023	7	23	3	20	45.5	18	05	44	20.00673	3.5	-67.4	5.8
2023	7	24	3	20	52.6	18	06	11	19.99104	3.5	-68.3	5.8
2023	7	25	3	20	59.5	18	06	36	19.97525	3.5	-69.3	5.8
2023	7	26	3	21	06.3	18	07	01	19.95936	3.5	-70.2	5.8
2023	7	27	3	21	12.9	18	07	26	19.94338	3.5	-71.1	5.8
2023	7	28	3	21	19.3	18	07	49	19.92732	3.5	-72.1	5.8
2023	7	29	3	21	25.6	18	08	12	19.91117	3.5	-73.0	5.8
2023	7	30	3	21	31.7	18	08	34	19.89494	3.5	-73.9	5.8
2023	7	31	3	21	37.6	18	08	56	19.87863	3.5	-74.8	5.8
2023	8	1	3	21	43.3	18	09	17	19.86226	3.5	-75.8	5.8
2023	8	2	3	21	48.8	18	09	37	19.84581	3.6	-76.7	5.8
2023	8	3	3	21	54.1	18	09	56	19.82931	3.6	-77.6	5.8
2023	8	4	3	21	59.2	18	10	15	19.81274	3.6	-78.6	5.8
2023	8	5	3	22	04.2	18	10	33	19.79612	3.6	-79.5	5.8
2023	8	6	3	22	08.9	18	10	50	19.77944	3.6	-80.5	5.8
2023	8	7	3	22	13.5	18	11	07	19.76272	3.6	-81.4	5.8
2023	8	8	3	22	17.8	18	11	23	19.74596	3.6	-82.3	5.8
2023	8	9	3	22	22.0	18	11	38	19.72915	3.6	-83.3	5.8
2023	8	10	3	22	26.0	18	11	52	19.71232	3.6	-84.2	5.8
2023	8	11	3	22	29.8	18	12	06	19.69545	3.6	-85.2	5.8
2023	8	12	3	22	33.3	18	12	18	19.67855	3.6	-86.1	5.8
2023	8	13	3	22	36.7	18	12	31	19.66164	3.6	-87.1	5.7
2023	8	14	3	22	39.9	18	12	42	19.64471	3.6	-88.0	5.7
2023	8	15	3	22	42.9	18	12	53	19.62777	3.6	-88.9	5.7
2023	8	16	3	22	45.7	18	13	02	19.61083	3.6	-89.9	5.7
2023	8	17	3	22	48.3	18	13	12	19.59388	3.6	-90.8	5.7
2023	8	18	3	22	50.6	18	13	20	19.57694	3.6	-91.8	5.7
2023	8	19	3	22	52.8	18	13	27	19.56001	3.6	-92.8	5.7
2023	8	20	3	22	54.8	18	13	34	19.54309	3.6	-93.7	5.7
2023	8	21	3	22	56.5	18	13	40	19.52619	3.6	-94.7	5.7
2023	8	22	3	22	58.1	18	13	46	19.50931	3.6	-95.6	5.7
2023	8	23	3	22	59.4	18	13	50	19.49247	3.6	-96.6	5.7
2023	8	24	3	23	00.6	18	13	54	19.47566	3.6	-97.5	5.7
2023	8	25	3	23	01.5	18	13	57	19.45889	3.6	-98.5	5.7
2023	8	26	3	23	02.3	18	13	59	19.44216	3.6	-99.5	5.7
2023	8	27	3	23	02.8	18	14	01	19.42548	3.6	-100.4	5.7
2023	8	28	3	23	03.2	18	14	01	19.40885	3.6	-101.4	5.7
2023	8	29	3	23	03.3	18	14	01	19.39228	3.6	-102.3	5.7
2023	8	30	3	23	03.2	18	14	01	19.37577	3.6	-103.3	5.7
2023	8	31	3	23	02.9	18	13	59	19.35933	3.6	-104.3	5.7
2023	9	1	3	23	02.4	18	13	57	19.34296	3.6	-105.3	5.7
2023	9	2	3	23	01.7	18	13	54	19.32666	3.6	-106.2	5.7
2023	9	3	3	23	00.9	18	13	50	19.31044	3.6	-107.2	5.7
2023	9	4	3	22	59.8	18	13	46	19.29431	3.7	-108.2	5.7
2023	9	5	3	22	58.5	18	13	40	19.27827	3.7	-109.1	5.7
2023	9	6	3	22	57.0	18	13	34	19.26231	3.7	-110.1	5.7
2023	9	7	3	22	55.3	18	13	28	19.24646	3.7	-111.1	5.7
2023	9	8	3	22	53.4	18	13	20	19.23071	3.7	-112.1	5.7
2023	9	9	3	22	51.3	18	13	12	19.21506	3.7	-113.0	5.7

Date			URANUS			Page 6		
0h TT			Apparent	Apparent	Apparent	Visual	Solar	
y	m	d	R.A.	Declination	Distance	Diameter	Separation	Mag.
			h m s	d m s	au	arc sec	degrees	
2023	9	10	3 22 49.0	18 13 03	19.19953	3.7	-114.0	5.7
2023	9	11	3 22 46.5	18 12 54	19.18412	3.7	-115.0	5.7
2023	9	12	3 22 43.8	18 12 43	19.16883	3.7	-116.0	5.7
2023	9	13	3 22 40.9	18 12 32	19.15367	3.7	-117.0	5.7
2023	9	14	3 22 37.8	18 12 20	19.13864	3.7	-118.0	5.7
2023	9	15	3 22 34.5	18 12 08	19.12375	3.7	-119.0	5.7
2023	9	16	3 22 31.0	18 11 54	19.10900	3.7	-119.9	5.7
2023	9	17	3 22 27.3	18 11 40	19.09440	3.7	-120.9	5.7
2023	9	18	3 22 23.5	18 11 25	19.07995	3.7	-121.9	5.7
2023	9	19	3 22 19.4	18 11 10	19.06566	3.7	-122.9	5.7
2023	9	20	3 22 15.2	18 10 54	19.05153	3.7	-123.9	5.7
2023	9	21	3 22 10.7	18 10 37	19.03756	3.7	-124.9	5.7
2023	9	22	3 22 06.1	18 10 19	19.02377	3.7	-125.9	5.7
2023	9	23	3 22 01.4	18 10 01	19.01015	3.7	-126.9	5.7
2023	9	24	3 21 56.4	18 09 43	18.99671	3.7	-127.9	5.7
2023	9	25	3 21 51.3	18 09 23	18.98346	3.7	-128.9	5.7
2023	9	26	3 21 45.9	18 09 03	18.97039	3.7	-129.9	5.7
2023	9	27	3 21 40.4	18 08 42	18.95751	3.7	-130.9	5.7
2023	9	28	3 21 34.8	18 08 21	18.94483	3.7	-131.9	5.7
2023	9	29	3 21 28.9	18 07 59	18.93235	3.7	-132.9	5.7
2023	9	30	3 21 22.9	18 07 36	18.92007	3.7	-133.9	5.7
2023	10	1	3 21 16.8	18 07 13	18.90799	3.7	-134.9	5.7
2023	10	2	3 21 10.4	18 06 49	18.89612	3.7	-135.9	5.7
2023	10	3	3 21 03.9	18 06 24	18.88447	3.7	-136.9	5.7
2023	10	4	3 20 57.3	18 05 59	18.87304	3.7	-138.0	5.7
2023	10	5	3 20 50.5	18 05 34	18.86183	3.7	-139.0	5.7
2023	10	6	3 20 43.6	18 05 07	18.85084	3.7	-140.0	5.7
2023	10	7	3 20 36.5	18 04 41	18.84008	3.7	-141.0	5.7
2023	10	8	3 20 29.2	18 04 13	18.82956	3.7	-142.0	5.7
2023	10	9	3 20 21.8	18 03 45	18.81927	3.7	-143.0	5.7
2023	10	10	3 20 14.3	18 03 17	18.80922	3.7	-144.0	5.6
2023	10	11	3 20 06.6	18 02 48	18.79942	3.7	-145.1	5.6
2023	10	12	3 19 58.8	18 02 18	18.78987	3.8	-146.1	5.6
2023	10	13	3 19 50.9	18 01 48	18.78057	3.8	-147.1	5.6
2023	10	14	3 19 42.8	18 01 18	18.77153	3.8	-148.1	5.6
2023	10	15	3 19 34.6	18 00 47	18.76274	3.8	-149.2	5.6
2023	10	16	3 19 26.3	18 00 15	18.75422	3.8	-150.2	5.6
2023	10	17	3 19 17.8	17 59 43	18.74596	3.8	-151.2	5.6
2023	10	18	3 19 09.3	17 59 11	18.73797	3.8	-152.2	5.6
2023	10	19	3 19 00.6	17 58 38	18.73026	3.8	-153.3	5.6
2023	10	20	3 18 51.9	17 58 05	18.72282	3.8	-154.3	5.6
2023	10	21	3 18 43.0	17 57 31	18.71565	3.8	-155.3	5.6
2023	10	22	3 18 34.1	17 56 57	18.70877	3.8	-156.4	5.6
2023	10	23	3 18 25.0	17 56 23	18.70216	3.8	-157.4	5.6
2023	10	24	3 18 15.9	17 55 48	18.69584	3.8	-158.4	5.6
2023	10	25	3 18 06.6	17 55 13	18.68980	3.8	-159.5	5.6
2023	10	26	3 17 57.3	17 54 38	18.68406	3.8	-160.5	5.6
2023	10	27	3 17 47.9	17 54 02	18.67860	3.8	-161.5	5.6
2023	10	28	3 17 38.4	17 53 26	18.67343	3.8	-162.6	5.6
2023	10	29	3 17 28.9	17 52 50	18.66855	3.8	-163.6	5.6
2023	10	30	3 17 19.3	17 52 13	18.66397	3.8	-164.6	5.6

Date			URANUS			Page 7														
0h TT			Apparent			Apparent			Visual			Solar								
y m d			R.A.			Declination			Distance			Diameter			Separation			Mag.		
			h m s			d m s			au			arc sec			degrees					
2023	10	31	3	17	09.6	17	51	37	18.65968	3.8	-165.7	5.6								
2023	11	1	3	16	59.9	17	50	59	18.65569	3.8	-166.7	5.6								
2023	11	2	3	16	50.1	17	50	22	18.65200	3.8	-167.7	5.6								
2023	11	3	3	16	40.2	17	49	45	18.64861	3.8	-168.8	5.6								
2023	11	4	3	16	30.4	17	49	07	18.64552	3.8	-169.8	5.6								
2023	11	5	3	16	20.4	17	48	29	18.64273	3.8	-170.9	5.6								
2023	11	6	3	16	10.5	17	47	51	18.64026	3.8	-171.9	5.6								
2023	11	7	3	16	00.5	17	47	13	18.63808	3.8	-173.0	5.6								
2023	11	8	3	15	50.4	17	46	35	18.63622	3.8	-174.0	5.6								
2023	11	9	3	15	40.3	17	45	56	18.63467	3.8	-175.0	5.6								
2023	11	10	3	15	30.3	17	45	18	18.63342	3.8	-176.1	5.6								
2023	11	11	3	15	20.1	17	44	39	18.63249	3.8	-177.1	5.6								
2023	11	12	3	15	10.0	17	44	00	18.63187	3.8	-178.2	5.6								
2023	11	13	3	14	59.9	17	43	21	18.63156	3.8	-179.2	5.6								
2023	11	14	3	14	49.8	17	42	42	18.63156	3.8	179.6	5.6								
2023	11	15	3	14	39.7	17	42	04	18.63188	3.8	178.6	5.6								
2023	11	16	3	14	29.6	17	41	25	18.63251	3.8	177.6	5.6								
2023	11	17	3	14	19.5	17	40	46	18.63345	3.8	176.5	5.6								
2023	11	18	3	14	09.4	17	40	08	18.63470	3.8	175.5	5.6								
2023	11	19	3	13	59.3	17	39	29	18.63627	3.8	174.5	5.6								
2023	11	20	3	13	49.3	17	38	50	18.63814	3.8	173.4	5.6								
2023	11	21	3	13	39.3	17	38	12	18.64033	3.8	172.4	5.6								
2023	11	22	3	13	29.3	17	37	34	18.64282	3.8	171.3	5.6								
2023	11	23	3	13	19.4	17	36	55	18.64563	3.8	170.3	5.6								
2023	11	24	3	13	09.5	17	36	17	18.64873	3.8	169.2	5.6								
2023	11	25	3	12	59.6	17	35	39	18.65215	3.8	168.2	5.6								
2023	11	26	3	12	49.8	17	35	02	18.65587	3.8	167.1	5.6								
2023	11	27	3	12	40.1	17	34	24	18.65989	3.8	166.1	5.6								
2023	11	28	3	12	30.4	17	33	47	18.66421	3.8	165.0	5.6								
2023	11	29	3	12	20.8	17	33	10	18.66883	3.8	163.9	5.6								
2023	11	30	3	12	11.3	17	32	33	18.67375	3.8	162.9	5.6								
2023	12	1	3	12	01.8	17	31	57	18.67897	3.8	161.8	5.6								
2023	12	2	3	11	52.4	17	31	20	18.68449	3.8	160.8	5.6								
2023	12	3	3	11	43.1	17	30	44	18.69030	3.8	159.7	5.6								
2023	12	4	3	11	33.8	17	30	09	18.69640	3.8	158.7	5.6								
2023	12	5	3	11	24.7	17	29	33	18.70279	3.8	157.6	5.6								
2023	12	6	3	11	15.6	17	28	59	18.70948	3.8	156.6	5.6								
2023	12	7	3	11	06.6	17	28	24	18.71645	3.8	155.5	5.6								
2023	12	8	3	10	57.8	17	27	50	18.72370	3.8	154.5	5.6								
2023	12	9	3	10	49.0	17	27	16	18.73124	3.8	153.4	5.6								
2023	12	10	3	10	40.3	17	26	42	18.73906	3.8	152.4	5.6								
2023	12	11	3	10	31.8	17	26	09	18.74716	3.8	151.3	5.6								
2023	12	12	3	10	23.4	17	25	37	18.75553	3.8	150.3	5.6								
2023	12	13	3	10	15.1	17	25	05	18.76418	3.8	149.2	5.6								
2023	12	14	3	10	06.9	17	24	33	18.77310	3.8	148.2	5.6								
2023	12	15	3	09	58.9	17	24	02	18.78228	3.8	147.1	5.6								
2023	12	16	3	09	50.9	17	23	32	18.79172	3.8	146.1	5.6								
2023	12	17	3	09	43.2	17	23	02	18.80143	3.7	145.0	5.6								
2023	12	18	3	09	35.5	17	22	33	18.81139	3.7	144.0	5.6								
2023	12	19	3	09	28.0	17	22	04	18.82160	3.7	142.9	5.6								
2023	12	20	3	09	20.6	17	21	36	18.83206	3.7	141.9	5.7								

Date	URANUS	Apparent	Apparent	Visual	Solar	
0h TT	Apparent	Declination	Distance	Diameter	Separation	Mag.
y m d	R.A.	d m s	au	arc sec	degrees	
2023 12 21	3 09 13.4	17 21 08	18.84276	3.7	140.8	5.7
2023 12 22	3 09 06.4	17 20 41	18.85370	3.7	139.8	5.7
2023 12 23	3 08 59.4	17 20 14	18.86488	3.7	138.7	5.7
2023 12 24	3 08 52.7	17 19 48	18.87629	3.7	137.7	5.7
2023 12 25	3 08 46.1	17 19 23	18.88792	3.7	136.6	5.7
2023 12 26	3 08 39.7	17 18 58	18.89979	3.7	135.6	5.7
2023 12 27	3 08 33.4	17 18 35	18.91187	3.7	134.6	5.7
2023 12 28	3 08 27.3	17 18 11	18.92417	3.7	133.5	5.7
2023 12 29	3 08 21.4	17 17 49	18.93668	3.7	132.5	5.7
2023 12 30	3 08 15.7	17 17 27	18.94940	3.7	131.4	5.7
2023 12 31	3 08 10.1	17 17 06	18.96232	3.7	130.4	5.7
2024 1 1	3 08 04.7	17 16 45	18.97545	3.7	129.3	5.7

Date		NEPTUNE			Apparent		Apparent		Visual		Page 1	
Oh TT		Apparent			Declination		Distance		Diameter		Solar	
y m d		R.A.			d m s		au		arc sec		Separation Mag.	
		h m s									degrees	
2022	12	31	23	35	38.3	-3	55	34	30.1754	2.3	73.6	7.9
2023	1	1	23	35	41.7	-3	55	10	30.1920	2.3	72.6	7.9
2023	1	2	23	35	45.3	-3	54	46	30.2085	2.3	71.6	7.9
2023	1	3	23	35	48.9	-3	54	20	30.2249	2.3	70.6	7.9
2023	1	4	23	35	52.7	-3	53	54	30.2413	2.3	69.6	7.9
2023	1	5	23	35	56.6	-3	53	27	30.2575	2.3	68.6	7.9
2023	1	6	23	36	00.6	-3	52	59	30.2736	2.3	67.6	7.9
2023	1	7	23	36	04.7	-3	52	31	30.2896	2.3	66.6	7.9
2023	1	8	23	36	08.9	-3	52	01	30.3054	2.3	65.6	7.9
2023	1	9	23	36	13.2	-3	51	32	30.3212	2.3	64.6	7.9
2023	1	10	23	36	17.7	-3	51	01	30.3368	2.3	63.6	7.9
2023	1	11	23	36	22.2	-3	50	30	30.3523	2.2	62.6	7.9
2023	1	12	23	36	26.9	-3	49	58	30.3676	2.2	61.6	7.9
2023	1	13	23	36	31.7	-3	49	26	30.3828	2.2	60.6	7.9
2023	1	14	23	36	36.5	-3	48	52	30.3979	2.2	59.6	7.9
2023	1	15	23	36	41.5	-3	48	18	30.4128	2.2	58.6	7.9
2023	1	16	23	36	46.6	-3	47	44	30.4276	2.2	57.6	7.9
2023	1	17	23	36	51.8	-3	47	09	30.4422	2.2	56.6	7.9
2023	1	18	23	36	57.1	-3	46	33	30.4566	2.2	55.6	7.9
2023	1	19	23	37	02.5	-3	45	56	30.4709	2.2	54.6	7.9
2023	1	20	23	37	08.0	-3	45	19	30.4850	2.2	53.6	7.9
2023	1	21	23	37	13.6	-3	44	42	30.4989	2.2	52.6	7.9
2023	1	22	23	37	19.3	-3	44	03	30.5127	2.2	51.7	7.9
2023	1	23	23	37	25.1	-3	43	24	30.5263	2.2	50.7	7.9
2023	1	24	23	37	31.0	-3	42	45	30.5396	2.2	49.7	7.9
2023	1	25	23	37	36.9	-3	42	05	30.5528	2.2	48.7	7.9
2023	1	26	23	37	43.0	-3	41	24	30.5658	2.2	47.7	7.9
2023	1	27	23	37	49.1	-3	40	43	30.5786	2.2	46.7	7.9
2023	1	28	23	37	55.4	-3	40	02	30.5912	2.2	45.7	7.9
2023	1	29	23	38	01.7	-3	39	20	30.6035	2.2	44.7	7.9
2023	1	30	23	38	08.1	-3	38	37	30.6157	2.2	43.7	7.9
2023	1	31	23	38	14.6	-3	37	54	30.6277	2.2	42.8	7.9
2023	2	1	23	38	21.2	-3	37	10	30.6394	2.2	41.8	7.9
2023	2	2	23	38	27.8	-3	36	26	30.6509	2.2	40.8	7.9
2023	2	3	23	38	34.5	-3	35	41	30.6622	2.2	39.8	7.9
2023	2	4	23	38	41.4	-3	34	56	30.6733	2.2	38.8	7.9
2023	2	5	23	38	48.2	-3	34	10	30.6841	2.2	37.8	7.9
2023	2	6	23	38	55.2	-3	33	24	30.6947	2.2	36.9	7.9
2023	2	7	23	39	02.2	-3	32	38	30.7051	2.2	35.9	7.9
2023	2	8	23	39	09.3	-3	31	51	30.7152	2.2	34.9	7.9
2023	2	9	23	39	16.4	-3	31	04	30.7251	2.2	33.9	7.9
2023	2	10	23	39	23.7	-3	30	17	30.7348	2.2	32.9	7.9
2023	2	11	23	39	30.9	-3	29	29	30.7442	2.2	32.0	7.9
2023	2	12	23	39	38.3	-3	28	40	30.7534	2.2	31.0	7.9
2023	2	13	23	39	45.7	-3	27	52	30.7623	2.2	30.0	7.9
2023	2	14	23	39	53.2	-3	27	02	30.7710	2.2	29.0	7.9
2023	2	15	23	40	00.7	-3	26	13	30.7794	2.2	28.1	8.0
2023	2	16	23	40	08.3	-3	25	23	30.7876	2.2	27.1	8.0
2023	2	17	23	40	16.0	-3	24	33	30.7955	2.2	26.1	8.0
2023	2	18	23	40	23.7	-3	23	43	30.8031	2.2	25.1	8.0
2023	2	19	23	40	31.4	-3	22	52	30.8105	2.2	24.2	8.0

Date		NEPTUNE			Page 2		
Oh TT		Apparent	Apparent	Apparent	Visual	Solar	
y	m	R.A.	Declination	Distance	Diameter	Separation	
d		h m s	d m s	au	arc sec	degrees	
						Mag.	
2023	2	23 40 39.2	-3 22 01	30.8176	2.2	23.2	8.0
2023	2	23 40 47.0	-3 21 10	30.8244	2.2	22.2	8.0
2023	2	23 40 54.9	-3 20 18	30.8310	2.2	21.2	8.0
2023	2	23 41 02.8	-3 19 27	30.8373	2.2	20.3	8.0
2023	2	23 41 10.8	-3 18 35	30.8433	2.2	19.3	8.0
2023	2	23 41 18.8	-3 17 43	30.8491	2.2	18.3	8.0
2023	2	23 41 26.9	-3 16 50	30.8545	2.2	17.4	8.0
2023	2	23 41 34.9	-3 15 58	30.8597	2.2	16.4	8.0
2023	2	23 41 43.0	-3 15 05	30.8647	2.2	15.4	8.0
2023	3	23 41 51.2	-3 14 12	30.8693	2.2	14.5	8.0
2023	3	23 41 59.4	-3 13 19	30.8737	2.2	13.5	8.0
2023	3	23 42 07.6	-3 12 26	30.8777	2.2	12.5	8.0
2023	3	23 42 15.8	-3 11 33	30.8815	2.2	11.6	8.0
2023	3	23 42 24.0	-3 10 39	30.8851	2.2	10.6	8.0
2023	3	23 42 32.3	-3 09 46	30.8883	2.2	9.7	8.0
2023	3	23 42 40.6	-3 08 52	30.8912	2.2	8.7	8.0
2023	3	23 42 48.9	-3 07 59	30.8939	2.2	7.8	8.0
2023	3	23 42 57.2	-3 07 05	30.8963	2.2	6.8	8.0
2023	3	23 43 05.5	-3 06 11	30.8984	2.2	5.9	8.0
2023	3	23 43 13.9	-3 05 18	30.9002	2.2	4.9	8.0
2023	3	23 43 22.2	-3 04 24	30.9018	2.2	4.0	8.0
2023	3	23 43 30.6	-3 03 30	30.9030	2.2	3.1	8.0
2023	3	23 43 39.0	-3 02 36	30.9040	2.2	2.2	8.0
2023	3	23 43 47.4	-3 01 42	30.9047	2.2	1.5	8.0
2023	3	23 43 55.8	-3 00 48	30.9051	2.2	-1.2	8.0
2023	3	23 44 04.2	-2 59 54	30.9052	2.2	-1.5	8.0
2023	3	23 44 12.6	-2 59 01	30.9050	2.2	-2.3	8.0
2023	3	23 44 20.9	-2 58 07	30.9045	2.2	-3.1	8.0
2023	3	23 44 29.3	-2 57 13	30.9038	2.2	-4.0	8.0
2023	3	23 44 37.7	-2 56 20	30.9027	2.2	-4.9	8.0
2023	3	23 44 46.0	-2 55 26	30.9014	2.2	-5.9	8.0
2023	3	23 44 54.4	-2 54 33	30.8998	2.2	-6.8	8.0
2023	3	23 45 02.7	-2 53 40	30.8979	2.2	-7.8	8.0
2023	3	23 45 11.1	-2 52 46	30.8957	2.2	-8.7	8.0
2023	3	23 45 19.4	-2 51 53	30.8933	2.2	-9.6	8.0
2023	3	23 45 27.7	-2 51 01	30.8905	2.2	-10.6	8.0
2023	3	23 45 35.9	-2 50 08	30.8875	2.2	-11.5	8.0
2023	3	23 45 44.2	-2 49 15	30.8842	2.2	-12.5	8.0
2023	3	23 45 52.4	-2 48 23	30.8806	2.2	-13.4	8.0
2023	3	23 46 00.6	-2 47 31	30.8768	2.2	-14.4	8.0
2023	4	23 46 08.8	-2 46 39	30.8727	2.2	-15.3	8.0
2023	4	23 46 17.0	-2 45 47	30.8683	2.2	-16.3	8.0
2023	4	23 46 25.1	-2 44 56	30.8636	2.2	-17.2	8.0
2023	4	23 46 33.2	-2 44 05	30.8587	2.2	-18.2	8.0
2023	4	23 46 41.2	-2 43 14	30.8535	2.2	-19.1	8.0
2023	4	23 46 49.2	-2 42 23	30.8480	2.2	-20.1	8.0
2023	4	23 46 57.2	-2 41 33	30.8423	2.2	-21.0	8.0
2023	4	23 47 05.1	-2 40 43	30.8363	2.2	-22.0	8.0
2023	4	23 47 13.0	-2 39 53	30.8300	2.2	-22.9	8.0
2023	4	23 47 20.9	-2 39 04	30.8235	2.2	-23.8	8.0

					NEPTUNE				Page 3	
Date			Apparent	Apparent	Apparent	Visual	Solar			
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.		
y	m	d	h m s	d m s	au	arc sec	degrees			
2023	4	11	23 47 28.7	-2 38 15	30.8167	2.2	-24.8	8.0		
2023	4	12	23 47 36.5	-2 37 26	30.8097	2.2	-25.7	8.0		
2023	4	13	23 47 44.2	-2 36 37	30.8024	2.2	-26.7	8.0		
2023	4	14	23 47 51.9	-2 35 49	30.7948	2.2	-27.6	8.0		
2023	4	15	23 47 59.5	-2 35 01	30.7871	2.2	-28.6	8.0		
2023	4	16	23 48 07.1	-2 34 14	30.7790	2.2	-29.5	8.0		
2023	4	17	23 48 14.6	-2 33 27	30.7707	2.2	-30.5	7.9		
2023	4	18	23 48 22.0	-2 32 40	30.7622	2.2	-31.4	7.9		
2023	4	19	23 48 29.4	-2 31 54	30.7534	2.2	-32.4	7.9		
2023	4	20	23 48 36.7	-2 31 08	30.7444	2.2	-33.3	7.9		
2023	4	21	23 48 44.0	-2 30 23	30.7352	2.2	-34.2	7.9		
2023	4	22	23 48 51.2	-2 29 38	30.7257	2.2	-35.2	7.9		
2023	4	23	23 48 58.4	-2 28 54	30.7160	2.2	-36.1	7.9		
2023	4	24	23 49 05.5	-2 28 10	30.7060	2.2	-37.1	7.9		
2023	4	25	23 49 12.5	-2 27 26	30.6958	2.2	-38.0	7.9		
2023	4	26	23 49 19.5	-2 26 43	30.6855	2.2	-39.0	7.9		
2023	4	27	23 49 26.4	-2 26 00	30.6748	2.2	-39.9	7.9		
2023	4	28	23 49 33.2	-2 25 18	30.6640	2.2	-40.8	7.9		
2023	4	29	23 49 39.9	-2 24 37	30.6530	2.2	-41.8	7.9		
2023	4	30	23 49 46.6	-2 23 56	30.6417	2.2	-42.7	7.9		
2023	5	1	23 49 53.1	-2 23 15	30.6303	2.2	-43.7	7.9		
2023	5	2	23 49 59.6	-2 22 35	30.6186	2.2	-44.6	7.9		
2023	5	3	23 50 06.1	-2 21 56	30.6068	2.2	-45.5	7.9		
2023	5	4	23 50 12.4	-2 21 17	30.5948	2.2	-46.5	7.9		
2023	5	5	23 50 18.7	-2 20 39	30.5825	2.2	-47.4	7.9		
2023	5	6	23 50 24.9	-2 20 01	30.5701	2.2	-48.4	7.9		
2023	5	7	23 50 31.0	-2 19 24	30.5575	2.2	-49.3	7.9		
2023	5	8	23 50 37.0	-2 18 47	30.5447	2.2	-50.2	7.9		
2023	5	9	23 50 42.9	-2 18 11	30.5317	2.2	-51.2	7.9		
2023	5	10	23 50 48.8	-2 17 36	30.5186	2.2	-52.1	7.9		
2023	5	11	23 50 54.6	-2 17 01	30.5053	2.2	-53.1	7.9		
2023	5	12	23 51 00.2	-2 16 27	30.4918	2.2	-54.0	7.9		
2023	5	13	23 51 05.8	-2 15 53	30.4781	2.2	-54.9	7.9		
2023	5	14	23 51 11.3	-2 15 20	30.4643	2.2	-55.9	7.9		
2023	5	15	23 51 16.7	-2 14 48	30.4503	2.2	-56.8	7.9		
2023	5	16	23 51 22.0	-2 14 16	30.4362	2.2	-57.8	7.9		
2023	5	17	23 51 27.2	-2 13 45	30.4219	2.2	-58.7	7.9		
2023	5	18	23 51 32.3	-2 13 15	30.4075	2.2	-59.7	7.9		
2023	5	19	23 51 37.3	-2 12 45	30.3929	2.2	-60.6	7.9		
2023	5	20	23 51 42.2	-2 12 16	30.3782	2.2	-61.5	7.9		
2023	5	21	23 51 47.0	-2 11 47	30.3633	2.2	-62.5	7.9		
2023	5	22	23 51 51.7	-2 11 20	30.3484	2.3	-63.4	7.9		
2023	5	23	23 51 56.3	-2 10 53	30.3333	2.3	-64.4	7.9		
2023	5	24	23 52 00.8	-2 10 26	30.3180	2.3	-65.3	7.9		
2023	5	25	23 52 05.2	-2 10 01	30.3027	2.3	-66.2	7.9		
2023	5	26	23 52 09.5	-2 09 36	30.2872	2.3	-67.2	7.9		
2023	5	27	23 52 13.6	-2 09 12	30.2717	2.3	-68.1	7.9		
2023	5	28	23 52 17.7	-2 08 48	30.2560	2.3	-69.1	7.9		
2023	5	29	23 52 21.7	-2 08 25	30.2402	2.3	-70.0	7.9		
2023	5	30	23 52 25.5	-2 08 03	30.2244	2.3	-71.0	7.9		
2023	5	31	23 52 29.3	-2 07 42	30.2084	2.3	-71.9	7.9		

Date		NEPTUNE			Apparent		Apparent		Visual		Page 4 Solar	
Oh TT		Apparent			Declination		Distance		Diameter		Separation Mag.	
y	m	d	R.A.			d	m	s	au	arc sec	degrees	
2023	6	1	23	52	32.9	-2	07	21	30.1924	2.3	-72.8	7.9
2023	6	2	23	52	36.4	-2	07	02	30.1763	2.3	-73.8	7.9
2023	6	3	23	52	39.8	-2	06	43	30.1601	2.3	-74.7	7.9
2023	6	4	23	52	43.1	-2	06	24	30.1438	2.3	-75.7	7.9
2023	6	5	23	52	46.3	-2	06	06	30.1275	2.3	-76.6	7.9
2023	6	6	23	52	49.4	-2	05	49	30.1111	2.3	-77.5	7.9
2023	6	7	23	52	52.4	-2	05	33	30.0946	2.3	-78.5	7.9
2023	6	8	23	52	55.3	-2	05	18	30.0781	2.3	-79.4	7.9
2023	6	9	23	52	58.0	-2	05	03	30.0615	2.3	-80.4	7.9
2023	6	10	23	53	00.6	-2	04	49	30.0449	2.3	-81.3	7.9
2023	6	11	23	53	03.1	-2	04	36	30.0283	2.3	-82.3	7.9
2023	6	12	23	53	05.5	-2	04	24	30.0116	2.3	-83.2	7.9
2023	6	13	23	53	07.8	-2	04	12	29.9948	2.3	-84.2	7.9
2023	6	14	23	53	09.9	-2	04	02	29.9780	2.3	-85.1	7.9
2023	6	15	23	53	12.0	-2	03	52	29.9613	2.3	-86.1	7.9
2023	6	16	23	53	13.9	-2	03	42	29.9444	2.3	-87.0	7.9
2023	6	17	23	53	15.7	-2	03	34	29.9276	2.3	-87.9	7.9
2023	6	18	23	53	17.4	-2	03	26	29.9108	2.3	-88.9	7.9
2023	6	19	23	53	18.9	-2	03	19	29.8939	2.3	-89.8	7.9
2023	6	20	23	53	20.4	-2	03	13	29.8771	2.3	-90.8	7.9
2023	6	21	23	53	21.7	-2	03	08	29.8602	2.3	-91.7	7.9
2023	6	22	23	53	22.9	-2	03	03	29.8434	2.3	-92.7	7.9
2023	6	23	23	53	24.0	-2	02	59	29.8266	2.3	-93.6	7.9
2023	6	24	23	53	24.9	-2	02	56	29.8098	2.3	-94.6	7.9
2023	6	25	23	53	25.8	-2	02	54	29.7930	2.3	-95.5	7.9
2023	6	26	23	53	26.5	-2	02	53	29.7763	2.3	-96.5	7.9
2023	6	27	23	53	27.1	-2	02	52	29.7595	2.3	-97.4	7.9
2023	6	28	23	53	27.5	-2	02	52	29.7429	2.3	-98.4	7.9
2023	6	29	23	53	27.9	-2	02	53	29.7262	2.3	-99.3	7.9
2023	6	30	23	53	28.1	-2	02	55	29.7097	2.3	-100.3	7.9
2023	7	1	23	53	28.2	-2	02	57	29.6931	2.3	-101.3	7.9
2023	7	2	23	53	28.2	-2	03	01	29.6766	2.3	-102.2	7.9
2023	7	3	23	53	28.1	-2	03	05	29.6602	2.3	-103.2	7.9
2023	7	4	23	53	27.9	-2	03	09	29.6439	2.3	-104.1	7.9
2023	7	5	23	53	27.6	-2	03	15	29.6276	2.3	-105.1	7.9
2023	7	6	23	53	27.1	-2	03	21	29.6114	2.3	-106.0	7.9
2023	7	7	23	53	26.5	-2	03	28	29.5953	2.3	-107.0	7.9
2023	7	8	23	53	25.8	-2	03	36	29.5792	2.3	-107.9	7.9
2023	7	9	23	53	25.0	-2	03	44	29.5632	2.3	-108.9	7.9
2023	7	10	23	53	24.0	-2	03	54	29.5474	2.3	-109.9	7.9
2023	7	11	23	53	22.9	-2	04	04	29.5316	2.3	-110.8	7.9
2023	7	12	23	53	21.8	-2	04	15	29.5159	2.3	-111.8	7.9
2023	7	13	23	53	20.5	-2	04	26	29.5004	2.3	-112.7	7.9
2023	7	14	23	53	19.1	-2	04	38	29.4849	2.3	-113.7	7.9
2023	7	15	23	53	17.5	-2	04	51	29.4695	2.3	-114.6	7.9
2023	7	16	23	53	15.9	-2	05	05	29.4543	2.3	-115.6	7.9
2023	7	17	23	53	14.2	-2	05	19	29.4392	2.3	-116.6	7.9
2023	7	18	23	53	12.3	-2	05	34	29.4242	2.3	-117.5	7.9
2023	7	19	23	53	10.3	-2	05	50	29.4094	2.3	-118.5	7.9
2023	7	20	23	53	08.2	-2	06	07	29.3947	2.3	-119.5	7.9

NEPTUNE

Date			Apparent	Apparent	Apparent	Visual	Solar	
Oh TT			R.A.	Declination	Distance	Diameter	Separation	Mag.
y	m	d	h m s	d m s	au	arc sec	degrees	
2023	7	21	23 53 06.0	-2 06 24	29.3801	2.3	-120.4	7.8
2023	7	22	23 53 03.7	-2 06 42	29.3657	2.3	-121.4	7.8
2023	7	23	23 53 01.3	-2 07 01	29.3515	2.3	-122.4	7.8
2023	7	24	23 52 58.8	-2 07 20	29.3374	2.3	-123.3	7.8
2023	7	25	23 52 56.1	-2 07 40	29.3234	2.3	-124.3	7.8
2023	7	26	23 52 53.4	-2 08 01	29.3096	2.3	-125.3	7.8
2023	7	27	23 52 50.5	-2 08 22	29.2960	2.3	-126.2	7.8
2023	7	28	23 52 47.6	-2 08 44	29.2826	2.3	-127.2	7.8
2023	7	29	23 52 44.5	-2 09 06	29.2693	2.3	-128.2	7.8
2023	7	30	23 52 41.4	-2 09 30	29.2562	2.3	-129.1	7.8
2023	7	31	23 52 38.2	-2 09 53	29.2433	2.3	-130.1	7.8
2023	8	1	23 52 34.8	-2 10 18	29.2306	2.3	-131.1	7.8
2023	8	2	23 52 31.4	-2 10 43	29.2181	2.3	-132.0	7.8
2023	8	3	23 52 27.9	-2 11 08	29.2057	2.3	-133.0	7.8
2023	8	4	23 52 24.2	-2 11 34	29.1936	2.3	-134.0	7.8
2023	8	5	23 52 20.5	-2 12 01	29.1817	2.3	-135.0	7.8
2023	8	6	23 52 16.7	-2 12 29	29.1699	2.3	-135.9	7.8
2023	8	7	23 52 12.8	-2 12 56	29.1584	2.3	-136.9	7.8
2023	8	8	23 52 08.8	-2 13 25	29.1471	2.3	-137.9	7.8
2023	8	9	23 52 04.7	-2 13 54	29.1360	2.3	-138.9	7.8
2023	8	10	23 52 00.5	-2 14 23	29.1251	2.3	-139.8	7.8
2023	8	11	23 51 56.3	-2 14 53	29.1145	2.3	-140.8	7.8
2023	8	12	23 51 51.9	-2 15 24	29.1040	2.3	-141.8	7.8
2023	8	13	23 51 47.5	-2 15 55	29.0938	2.3	-142.8	7.8
2023	8	14	23 51 43.0	-2 16 26	29.0839	2.3	-143.8	7.8
2023	8	15	23 51 38.4	-2 16 58	29.0741	2.3	-144.7	7.8
2023	8	16	23 51 33.8	-2 17 31	29.0646	2.3	-145.7	7.8
2023	8	17	23 51 29.0	-2 18 04	29.0554	2.4	-146.7	7.8
2023	8	18	23 51 24.2	-2 18 37	29.0464	2.4	-147.7	7.8
2023	8	19	23 51 19.3	-2 19 11	29.0376	2.4	-148.7	7.8
2023	8	20	23 51 14.4	-2 19 45	29.0291	2.4	-149.7	7.8
2023	8	21	23 51 09.3	-2 20 19	29.0209	2.4	-150.6	7.8
2023	8	22	23 51 04.2	-2 20 54	29.0129	2.4	-151.6	7.8
2023	8	23	23 50 59.1	-2 21 30	29.0052	2.4	-152.6	7.8
2023	8	24	23 50 53.9	-2 22 05	28.9977	2.4	-153.6	7.8
2023	8	25	23 50 48.6	-2 22 41	28.9905	2.4	-154.6	7.8
2023	8	26	23 50 43.3	-2 23 18	28.9836	2.4	-155.6	7.8
2023	8	27	23 50 37.9	-2 23 54	28.9769	2.4	-156.6	7.8
2023	8	28	23 50 32.5	-2 24 31	28.9705	2.4	-157.6	7.8
2023	8	29	23 50 27.0	-2 25 08	28.9644	2.4	-158.5	7.8
2023	8	30	23 50 21.5	-2 25 46	28.9586	2.4	-159.5	7.8
2023	8	31	23 50 15.9	-2 26 24	28.9530	2.4	-160.5	7.8
2023	9	1	23 50 10.3	-2 27 02	28.9477	2.4	-161.5	7.8
2023	9	2	23 50 04.6	-2 27 40	28.9427	2.4	-162.5	7.8
2023	9	3	23 49 58.9	-2 28 18	28.9379	2.4	-163.5	7.8
2023	9	4	23 49 53.1	-2 28 57	28.9335	2.4	-164.5	7.8
2023	9	5	23 49 47.3	-2 29 36	28.9293	2.4	-165.5	7.8
2023	9	6	23 49 41.5	-2 30 15	28.9254	2.4	-166.5	7.8
2023	9	7	23 49 35.6	-2 30 54	28.9219	2.4	-167.5	7.8
2023	9	8	23 49 29.7	-2 31 34	28.9186	2.4	-168.4	7.8
2023	9	9	23 49 23.8	-2 32 13	28.9155	2.4	-169.4	7.8

Date			NEPTUNE			Apparent		Apparent	Visual	Page 6	
Oh TT			Apparent			Declination		Distance	Diameter	Solar	
y m d			R.A.			d m s		au	arc sec	Separation	Mag.
			h m s						degrees		
2023	9	10	23	49	17.9	-2	32 53	28.9128	2.4	-170.4	7.8
2023	9	11	23	49	11.9	-2	33 32	28.9104	2.4	-171.4	7.8
2023	9	12	23	49	05.9	-2	34 12	28.9083	2.4	-172.4	7.8
2023	9	13	23	48	59.9	-2	34 52	28.9064	2.4	-173.4	7.8
2023	9	14	23	48	53.9	-2	35 32	28.9049	2.4	-174.4	7.8
2023	9	15	23	48	47.8	-2	36 12	28.9037	2.4	-175.3	7.8
2023	9	16	23	48	41.7	-2	36 52	28.9028	2.4	-176.3	7.8
2023	9	17	23	48	35.7	-2	37 32	28.9021	2.4	-177.2	7.8
2023	9	18	23	48	29.6	-2	38 12	28.9018	2.4	-178.0	7.8
2023	9	19	23	48	23.5	-2	38 52	28.9018	2.4	-178.6	7.8
2023	9	20	23	48	17.4	-2	39 32	28.9020	2.4	178.6	7.8
2023	9	21	23	48	11.3	-2	40 12	28.9026	2.4	178.0	7.8
2023	9	22	23	48	05.3	-2	40 52	28.9035	2.4	177.2	7.8
2023	9	23	23	47	59.2	-2	41 32	28.9046	2.4	176.2	7.8
2023	9	24	23	47	53.1	-2	42 11	28.9061	2.4	175.3	7.8
2023	9	25	23	47	47.1	-2	42 51	28.9079	2.4	174.3	7.8
2023	9	26	23	47	41.0	-2	43 30	28.9099	2.4	173.3	7.8
2023	9	27	23	47	35.0	-2	44 09	28.9123	2.4	172.3	7.8
2023	9	28	23	47	29.0	-2	44 49	28.9149	2.4	171.3	7.8
2023	9	29	23	47	23.0	-2	45 28	28.9179	2.4	170.3	7.8
2023	9	30	23	47	17.0	-2	46 06	28.9211	2.4	169.3	7.8
2023	10	1	23	47	11.1	-2	46 45	28.9247	2.4	168.3	7.8
2023	10	2	23	47	05.1	-2	47 23	28.9285	2.4	167.3	7.8
2023	10	3	23	46	59.2	-2	48 01	28.9326	2.4	166.3	7.8
2023	10	4	23	46	53.4	-2	48 39	28.9371	2.4	165.3	7.8
2023	10	5	23	46	47.5	-2	49 17	28.9418	2.4	164.3	7.8
2023	10	6	23	46	41.7	-2	49 54	28.9468	2.4	163.3	7.8
2023	10	7	23	46	36.0	-2	50 31	28.9521	2.4	162.3	7.8
2023	10	8	23	46	30.3	-2	51 08	28.9576	2.4	161.3	7.8
2023	10	9	23	46	24.6	-2	51 44	28.9635	2.4	160.3	7.8
2023	10	10	23	46	18.9	-2	52 20	28.9697	2.4	159.3	7.8
2023	10	11	23	46	13.3	-2	52 56	28.9761	2.4	158.2	7.8
2023	10	12	23	46	07.8	-2	53 31	28.9828	2.4	157.2	7.8
2023	10	13	23	46	02.3	-2	54 06	28.9898	2.4	156.2	7.8
2023	10	14	23	45	56.8	-2	54 41	28.9971	2.4	155.2	7.8
2023	10	15	23	45	51.4	-2	55 15	29.0046	2.4	154.2	7.8
2023	10	16	23	45	46.1	-2	55 49	29.0125	2.4	153.2	7.8
2023	10	17	23	45	40.8	-2	56 22	29.0206	2.4	152.2	7.8
2023	10	18	23	45	35.6	-2	56 55	29.0289	2.4	151.1	7.8
2023	10	19	23	45	30.5	-2	57 27	29.0376	2.4	150.1	7.8
2023	10	20	23	45	25.4	-2	57 59	29.0465	2.4	149.1	7.8
2023	10	21	23	45	20.4	-2	58 30	29.0556	2.4	148.1	7.8
2023	10	22	23	45	15.5	-2	59 01	29.0650	2.3	147.1	7.8
2023	10	23	23	45	10.7	-2	59 31	29.0747	2.3	146.1	7.8
2023	10	24	23	45	05.9	-3	00 01	29.0846	2.3	145.1	7.8
2023	10	25	23	45	01.2	-3	00 31	29.0948	2.3	144.0	7.8
2023	10	26	23	44	56.5	-3	00 59	29.1052	2.3	143.0	7.8
2023	10	27	23	44	52.0	-3	01 28	29.1158	2.3	142.0	7.8
2023	10	28	23	44	47.5	-3	01 55	29.1267	2.3	141.0	7.8
2023	10	29	23	44	43.1	-3	02 22	29.1379	2.3	140.0	7.8
2023	10	30	23	44	38.8	-3	02 49	29.1492	2.3	139.0	7.8

Date			NEPTUNE			Page 7				
0h TT			Apparent			Apparent				
y m d			R.A.			Declination				
			h m s			d m s				
						Distance				
						Visual				
						Diameter				
						arc sec				
						Separation				
						degrees				
						Mag.				
2023	10	31	23 44	34.6	-3 03	15	29.1608	2.3	137.9	7.8
2023	11	1	23 44	30.5	-3 03	40	29.1726	2.3	136.9	7.8
2023	11	2	23 44	26.5	-3 04	04	29.1846	2.3	135.9	7.8
2023	11	3	23 44	22.5	-3 04	28	29.1969	2.3	134.9	7.8
2023	11	4	23 44	18.7	-3 04	52	29.2093	2.3	133.9	7.8
2023	11	5	23 44	14.9	-3 05	14	29.2220	2.3	132.8	7.8
2023	11	6	23 44	11.3	-3 05	36	29.2349	2.3	131.8	7.8
2023	11	7	23 44	07.7	-3 05	58	29.2480	2.3	130.8	7.8
2023	11	8	23 44	04.3	-3 06	18	29.2612	2.3	129.8	7.8
2023	11	9	23 44	00.9	-3 06	38	29.2747	2.3	128.8	7.8
2023	11	10	23 43	57.6	-3 06	58	29.2884	2.3	127.8	7.8
2023	11	11	23 43	54.5	-3 07	16	29.3023	2.3	126.7	7.8
2023	11	12	23 43	51.5	-3 07	34	29.3163	2.3	125.7	7.8
2023	11	13	23 43	48.5	-3 07	51	29.3305	2.3	124.7	7.8
2023	11	14	23 43	45.7	-3 08	08	29.3449	2.3	123.7	7.8
2023	11	15	23 43	43.0	-3 08	23	29.3595	2.3	122.7	7.8
2023	11	16	23 43	40.4	-3 08	38	29.3742	2.3	121.6	7.8
2023	11	17	23 43	37.9	-3 08	52	29.3891	2.3	120.6	7.8
2023	11	18	23 43	35.6	-3 09	05	29.4041	2.3	119.6	7.9
2023	11	19	23 43	33.3	-3 09	18	29.4193	2.3	118.6	7.9
2023	11	20	23 43	31.2	-3 09	30	29.4347	2.3	117.6	7.9
2023	11	21	23 43	29.2	-3 09	41	29.4501	2.3	116.6	7.9
2023	11	22	23 43	27.2	-3 09	51	29.4658	2.3	115.5	7.9
2023	11	23	23 43	25.5	-3 10	00	29.4815	2.3	114.5	7.9
2023	11	24	23 43	23.8	-3 10	09	29.4974	2.3	113.5	7.9
2023	11	25	23 43	22.2	-3 10	17	29.5133	2.3	112.5	7.9
2023	11	26	23 43	20.8	-3 10	24	29.5294	2.3	111.5	7.9
2023	11	27	23 43	19.5	-3 10	30	29.5456	2.3	110.4	7.9
2023	11	28	23 43	18.3	-3 10	36	29.5619	2.3	109.4	7.9
2023	11	29	23 43	17.3	-3 10	40	29.5784	2.3	108.4	7.9
2023	11	30	23 43	16.4	-3 10	44	29.5949	2.3	107.4	7.9
2023	12	1	23 43	15.5	-3 10	47	29.6115	2.3	106.4	7.9
2023	12	2	23 43	14.9	-3 10	49	29.6282	2.3	105.4	7.9
2023	12	3	23 43	14.3	-3 10	51	29.6449	2.3	104.4	7.9
2023	12	4	23 43	13.9	-3 10	51	29.6618	2.3	103.3	7.9
2023	12	5	23 43	13.6	-3 10	51	29.6787	2.3	102.3	7.9
2023	12	6	23 43	13.4	-3 10	50	29.6957	2.3	101.3	7.9
2023	12	7	23 43	13.3	-3 10	48	29.7127	2.3	100.3	7.9
2023	12	8	23 43	13.4	-3 10	45	29.7298	2.3	99.3	7.9
2023	12	9	23 43	13.6	-3 10	42	29.7469	2.3	98.3	7.9
2023	12	10	23 43	13.9	-3 10	37	29.7641	2.3	97.2	7.9
2023	12	11	23 43	14.3	-3 10	32	29.7814	2.3	96.2	7.9
2023	12	12	23 43	14.9	-3 10	26	29.7986	2.3	95.2	7.9
2023	12	13	23 43	15.6	-3 10	19	29.8159	2.3	94.2	7.9
2023	12	14	23 43	16.5	-3 10	11	29.8332	2.3	93.2	7.9
2023	12	15	23 43	17.5	-3 10	02	29.8506	2.3	92.2	7.9
2023	12	16	23 43	18.6	-3 09	53	29.8679	2.3	91.2	7.9
2023	12	17	23 43	19.8	-3 09	43	29.8853	2.3	90.2	7.9
2023	12	18	23 43	21.2	-3 09	32	29.9026	2.3	89.1	7.9
2023	12	19	23 43	22.6	-3 09	20	29.9200	2.3	88.1	7.9
2023	12	20	23 43	24.2	-3 09	07	29.9373	2.3	87.1	7.9

Date	NEPTUNE	Apparent	Apparent	Visual	Solar	Page 8
0h TT	Apparent	Declination	Distance	Diameter	Separation	Mag.
y m d	R.A.	d m s	au	arc sec	degrees	
2023 12 21	23 43 26.0	-3 08 53	29.9546	2.3	86.1	7.9
2023 12 22	23 43 27.8	-3 08 39	29.9719	2.3	85.1	7.9
2023 12 23	23 43 29.8	-3 08 24	29.9891	2.3	84.1	7.9
2023 12 24	23 43 31.9	-3 08 08	30.0064	2.3	83.1	7.9
2023 12 25	23 43 34.2	-3 07 51	30.0236	2.3	82.1	7.9
2023 12 26	23 43 36.6	-3 07 34	30.0407	2.3	81.1	7.9
2023 12 27	23 43 39.1	-3 07 15	30.0578	2.3	80.1	7.9
2023 12 28	23 43 41.7	-3 06 56	30.0749	2.3	79.1	7.9
2023 12 29	23 43 44.4	-3 06 36	30.0919	2.3	78.1	7.9
2023 12 30	23 43 47.3	-3 06 15	30.1088	2.3	77.1	7.9
2023 12 31	23 43 50.3	-3 05 54	30.1257	2.3	76.0	7.9
2024 1 1	23 43 53.3	-3 05 31	30.1425	2.3	75.0	7.9