

Venus\_2014

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF VENUS (0 hr U.T.) - 2014  
(Compiled by: Jeffrey D. Beish, A.L.P.O.)

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Jan-01	16.6E	19:53	-18.2	0.280	216.2	-2.5	-1.6	0.040	70.3	350.3	60.1	-4.2	328.9	133.8
2014-Jan-02	15.2E	19:51	-18.0	0.277	217.8	-2.8	-1.6	0.033	68.7	350.5	60.6	-4.1	329.9	219.1
2014-Jan-03	13.9E	19:49	-17.9	0.275	219.4	-3.0	-1.7	0.028	66.6	350.7	61.1	-4.0	331.0	304.4
2014-Jan-04	12.5E	19:47	-17.7	0.273	221.1	-3.3	-1.7	0.022	64.1	350.9	61.6	-3.9	332.0	29.6
2014-Jan-05	11.1E	19:45	-17.5	0.271	222.7	-3.5	-1.8	0.018	60.8	351.1	62.0	-3.9	332.9	114.8
2014-Jan-06	9.7E	19:42	-17.4	0.270	224.3	-3.8	-1.8	0.013	56.6	351.3	62.4	-3.8	333.8	200.0
2014-Jan-07	8.4E	19:40	-17.2	0.268	225.9	-4.0	-1.9	0.010	50.9	351.5	62.7	-3.7	334.8	285.1
2014-Jan-08	7.2E	19:37	-17.1	0.267	227.5	-4.2	-1.9	0.007	43.1	351.7	62.9	-3.6	335.7	10.2
2014-Jan-09	6.2E	19:35	-17.0	0.267	229.2	-4.5	-2.0	0.005	32.4	352.0	63.1	-3.6	336.5	95.3
2014-Jan-10	5.5E	19:32	-16.8	0.266	230.8	-4.7	-2.0	0.004	18.1	352.2	63.2	-3.5	337.4	180.4
2014-Jan-11	5.1E	19:29	-16.7	0.266	232.4	-4.9	-2.1	0.004	0.7	352.5	63.2	-3.5	338.3	265.5
2014-Jan-12	5.3W	19:27	-16.6	0.266	234.0	-5.1	-2.1	0.004	343.0	352.7	63.2	-3.5	339.1	350.6
2014-Jan-13	6.0W	19:24	-16.5	0.267	235.7	-5.3	-2.2	0.005	327.9	353.0	63.0	-3.6	340.0	75.7
2014-Jan-14	7.0W	19:21	-16.4	0.268	237.3	-5.4	-2.2	0.007	316.4	353.2	62.9	-3.6	340.9	160.8
2014-Jan-15	8.1W	19:19	-16.3	0.269	238.9	-5.6	-2.3	0.009	308.1	353.4	62.6	-3.7	341.8	246.0
2014-Jan-16	9.4W	19:16	-16.2	0.270	240.5	-5.8	-2.3	0.013	301.9	353.7	62.3	-3.8	342.7	331.1
2014-Jan-17	10.8W	19:14	-16.1	0.272	242.1	-5.9	-2.3	0.017	297.3	353.9	61.9	-3.8	343.6	56.2
2014-Jan-18	12.1W	19:12	-16.0	0.274	243.8	-6.0	-2.4	0.021	293.8	354.1	61.5	-3.9	344.5	141.4
2014-Jan-19	13.5W	19:09	-16.0	0.276	245.4	-6.1	-2.4	0.026	291.0	354.3	61.0	-4.0	345.5	226.6
2014-Jan-20	14.9W	19:07	-15.9	0.278	247.0	-6.2	-2.4	0.032	288.8	354.5	60.4	-4.1	346.5	311.8
2014-Jan-21	16.3W	19:06	-15.9	0.281	248.6	-6.3	-2.5	0.038	287.0	354.7	59.8	-4.1	347.5	37.1
2014-Jan-22	17.6W	19:04	-15.8	0.284	250.3	-6.4	-2.5	0.045	285.4	354.8	59.2	-4.2	348.6	122.4
2014-Jan-23	18.9W	19:02	-15.8	0.287	251.9	-6.5	-2.5	0.052	284.1	355.0	58.5	-4.3	349.7	207.7
2014-Jan-24	20.2W	19:01	-15.8	0.291	253.5	-6.5	-2.5	0.060	283.0	355.1	57.8	-4.3	350.8	293.1
2014-Jan-25	21.5W	18:59	-15.8	0.295	255.1	-6.6	-2.6	0.068	282.0	355.2	57.1	-4.4	352.0	18.5
2014-Jan-26	22.7W	18:58	-15.8	0.299	256.8	-6.6	-2.6	0.076	281.1	355.4	56.3	-4.4	353.2	104.0
2014-Jan-27	23.9W	18:57	-15.8	0.303	258.4	-6.6	-2.6	0.084	280.2	355.4	55.6	-4.4	354.5	189.4
2014-Jan-28	25.0W	18:57	-15.8	0.307	260.0	-6.6	-2.6	0.093	279.5	355.5	54.8	-4.5	355.8	275.0
2014-Jan-29	26.2W	18:56	-15.8	0.312	261.6	-6.6	-2.6	0.102	278.8	355.6	54.0	-4.5	357.1	0.5
2014-Jan-30	27.2W	18:56	-15.8	0.316	263.3	-6.6	-2.6	0.111	278.2	355.6	53.2	-4.6	358.5	86.2
2014-Jan-31	28.3W	18:56	-15.8	0.321	264.9	-6.6	-2.6	0.120	277.6	355.6	52.4	-4.6	359.9	171.8
Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Feb-01	29.2W	18:56	-15.9	0.326	266.5	-6.6	-2.6	0.129	277.0	355.6	51.6	-4.6	1.4	257.5
2014-Feb-02	30.2W	18:56	-15.9	0.331	268.1	-6.5	-2.6	0.138	276.4	355.6	50.7	-4.6	2.9	343.3
2014-Feb-03	31.1W	18:56	-15.9	0.337	269.8	-6.5	-2.6	0.147	275.9	355.6	49.9	-4.7	4.4	69.0
2014-Feb-04	32.0W	18:56	-16.0	0.342	271.4	-6.5	-2.6	0.157	275.4	355.6	49.1	-4.7	6.0	154.8
2014-Feb-05	32.8W	18:57	-16.0	0.348	273.0	-6.4	-2.6	0.166	274.9	355.5	48.3	-4.7	7.6	240.7

Venus_2014														
2014-Feb-06	33.6W	18:58	-16.0	0.354	274.6	-6.4	-2.6	0.175	274.4	355.4	47.5	-4.7	9.3	326.6
2014-Feb-07	34.4W	18:59	-16.1	0.360	276.3	-6.3	-2.6	0.184	273.9	355.3	46.8	-4.7	11.0	52.5
2014-Feb-08	35.1W	19:00	-16.1	0.366	277.9	-6.2	-2.6	0.193	273.4	355.2	46.0	-4.7	12.7	138.5
2014-Feb-09	35.8W	19:01	-16.2	0.372	279.5	-6.2	-2.6	0.202	273.0	355.1	45.2	-4.7	14.5	224.5
2014-Feb-10	36.5W	19:02	-16.2	0.378	281.1	-6.1	-2.6	0.211	272.5	355.0	44.5	-4.7	16.3	310.5
2014-Feb-11	37.2W	19:04	-16.3	0.384	282.8	-6.0	-2.6	0.220	272.1	354.9	43.8	-4.7	18.1	36.6
2014-Feb-12	37.8W	19:05	-16.3	0.391	284.4	-5.9	-2.6	0.229	271.6	354.7	43.0	-4.7	20.0	122.7
2014-Feb-13	38.3W	19:07	-16.3	0.397	286.0	-5.8	-2.5	0.238	271.2	354.5	42.3	-4.7	21.9	208.8
2014-Feb-14	38.9W	19:09	-16.4	0.404	287.6	-5.8	-2.5	0.247	270.7	354.4	41.6	-4.7	23.8	294.9
2014-Feb-15	39.4W	19:11	-16.4	0.411	289.3	-5.7	-2.5	0.255	270.3	354.2	41.0	-4.7	25.8	21.1
2014-Feb-16	39.9W	19:13	-16.5	0.417	290.9	-5.6	-2.5	0.264	269.8	354.0	40.3	-4.7	27.7	107.3
2014-Feb-17	40.4W	19:15	-16.5	0.424	292.5	-5.5	-2.4	0.272	269.4	353.8	39.6	-4.7	29.7	193.5
2014-Feb-18	40.8W	19:17	-16.5	0.431	294.1	-5.4	-2.4	0.280	268.9	353.6	39.0	-4.7	31.8	279.8
2014-Feb-19	41.3W	19:20	-16.6	0.438	295.7	-5.3	-2.4	0.288	268.5	353.3	38.4	-4.7	33.8	6.1
2014-Feb-20	41.7W	19:22	-16.6	0.445	297.4	-5.2	-2.3	0.296	268.0	353.1	37.8	-4.7	35.9	92.4
2014-Feb-21	42.0W	19:25	-16.6	0.452	299.0	-5.1	-2.3	0.304	267.6	352.9	37.2	-4.7	38.0	178.7
2014-Feb-22	42.4W	19:28	-16.6	0.459	300.6	-5.0	-2.3	0.312	267.1	352.6	36.6	-4.7	40.1	265.1
2014-Feb-23	42.7W	19:30	-16.6	0.467	302.2	-4.9	-2.2	0.320	266.7	352.4	36.0	-4.7	42.2	351.4
2014-Feb-24	43.1W	19:33	-16.6	0.474	303.8	-4.8	-2.2	0.327	266.2	352.1	35.5	-4.7	44.4	77.8
2014-Feb-25	43.4W	19:36	-16.6	0.481	305.5	-4.7	-2.1	0.334	265.8	351.8	35.0	-4.7	46.6	164.2
2014-Feb-26	43.7W	19:39	-16.6	0.488	307.1	-4.6	-2.1	0.342	265.3	351.6	34.4	-4.7	48.8	250.6
2014-Feb-27	43.9W	19:42	-16.6	0.496	308.7	-4.5	-2.1	0.349	264.9	351.3	33.9	-4.7	51.0	337.1
2014-Feb-28	44.2W	19:45	-16.6	0.503	310.3	-4.4	-2.0	0.356	264.4	351.0	33.4	-4.7	53.2	63.5

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,	(v)	o	o
2014-Mar-01	44.4W	19:48	-16.6	0.511	311.9	-4.3	-2.0	0.363	264.0	350.7	32.9	-4.7	55.4	150.0
2014-Mar-02	44.6W	19:52	-16.6	0.518	313.5	-4.2	-1.9	0.370	263.6	350.4	32.5	-4.7	57.7	236.5
2014-Mar-03	44.8W	19:55	-16.5	0.526	315.2	-4.1	-1.9	0.377	263.1	350.1	32.0	-4.6	60.0	323.0
2014-Mar-04	45.0W	19:58	-16.5	0.533	316.8	-4.0	-1.8	0.384	262.7	349.8	31.5	-4.6	62.3	49.5
2014-Mar-05	45.2W	20:02	-16.4	0.541	318.4	-3.9	-1.8	0.390	262.2	349.5	31.1	-4.6	64.6	136.0
2014-Mar-06	45.4W	20:05	-16.4	0.548	320.0	-3.8	-1.7	0.397	261.8	349.2	30.7	-4.6	66.9	222.6
2014-Mar-07	45.5W	20:09	-16.3	0.556	321.6	-3.7	-1.6	0.403	261.3	348.9	30.3	-4.6	69.2	309.1
2014-Mar-08	45.7W	20:12	-16.3	0.563	323.2	-3.6	-1.6	0.410	260.9	348.6	29.8	-4.6	71.5	35.7
2014-Mar-09	45.8W	20:16	-16.2	0.571	324.8	-3.5	-1.5	0.416	260.5	348.3	29.4	-4.6	73.9	122.3
2014-Mar-10	45.9W	20:20	-16.1	0.579	326.4	-3.4	-1.5	0.422	260.0	348.0	29.1	-4.6	76.2	208.9
2014-Mar-11	46.0W	20:23	-16.0	0.587	328.1	-3.3	-1.4	0.428	259.6	347.7	28.7	-4.6	78.6	295.5
2014-Mar-12	46.1W	20:27	-15.9	0.594	329.7	-3.2	-1.3	0.434	259.2	347.4	28.3	-4.6	81.0	22.1
2014-Mar-13	46.2W	20:31	-15.8	0.602	331.3	-3.1	-1.3	0.440	258.8	347.1	27.9	-4.5	83.4	108.7
2014-Mar-14	46.3W	20:35	-15.7	0.610	332.9	-3.0	-1.2	0.446	258.3	346.8	27.6	-4.5	85.8	195.3
2014-Mar-15	46.3W	20:38	-15.6	0.617	334.5	-2.9	-1.1	0.452	257.9	346.5	27.2	-4.5	88.2	282.0
2014-Mar-16	46.4W	20:42	-15.4	0.625	336.1	-2.9	-1.1	0.458	257.5	346.2	26.9	-4.5	90.6	8.6
2014-Mar-17	46.4W	20:46	-15.3	0.633	337.7	-2.8	-1.0	0.464	257.1	345.9	26.6	-4.5	93.0	95.3
2014-Mar-18	46.5W	20:50	-15.2	0.641	339.3	-2.7	-0.9	0.469	256.7	345.6	26.3	-4.5	95.5	181.9

Venus_2014														
2014-Mar-19	46.5W	20:54	-15.0	0.649	340.9	-2.6	-0.9	0.475	256.3	345.3	25.9	-4.5	97.9	268.6
2014-Mar-20	46.5W	20:58	-14.8	0.656	342.5	-2.5	-0.8	0.480	255.9	345.0	25.6	-4.5	100.3	355.3
2014-Mar-21	46.5W	21:02	-14.7	0.664	344.1	-2.4	-0.7	0.486	255.5	344.7	25.3	-4.5	102.8	81.9
2014-Mar-22	46.6W	21:06	-14.5	0.672	345.7	-2.3	-0.7	0.491	255.1	344.4	25.0	-4.4	105.3	168.6
2014-Mar-23	46.6W	21:10	-14.3	0.680	347.3	-2.2	-0.6	0.496	254.7	344.1	24.7	-4.4	107.7	255.3
2014-Mar-24	46.6W	21:14	-14.1	0.688	348.9	-2.1	-0.5	0.501	254.3	343.8	24.5	-4.4	110.2	342.0
2014-Mar-25	46.5W	21:18	-13.9	0.695	350.5	-2.0	-0.4	0.507	253.9	343.5	24.2	-4.4	112.7	68.8
2014-Mar-26	46.5W	21:22	-13.7	0.703	352.1	-2.0	-0.4	0.512	253.6	343.2	23.9	-4.4	115.2	155.5
2014-Mar-27	46.5W	21:26	-13.5	0.711	353.7	-1.9	-0.3	0.517	253.2	343.0	23.7	-4.4	117.7	242.2
2014-Mar-28	46.5W	21:30	-13.3	0.719	355.3	-1.8	-0.2	0.522	252.8	342.7	23.4	-4.4	120.2	328.9
2014-Mar-29	46.4W	21:35	-13.0	0.727	356.9	-1.7	-0.1	0.527	252.5	342.4	23.1	-4.4	122.7	55.7
2014-Mar-30	46.4W	21:39	-12.8	0.735	358.5	-1.6	-0.1	0.532	252.1	342.2	22.9	-4.4	125.2	142.4
2014-Mar-31	46.3W	21:43	-12.6	0.742	.1	-1.6	0.0	0.537	251.8	341.9	22.7	-4.3	127.7	229.2

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yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Apr-01	46.3W	21:47	-12.3	0.750	1.7	-1.5	0.1	0.541	251.5	341.7	22.4	-4.3	130.2	315.9
2014-Apr-02	46.2W	21:51	-12.0	0.758	3.3	-1.4	0.2	0.546	251.1	341.4	22.2	-4.3	132.8	42.7
2014-Apr-03	46.2W	21:55	-11.8	0.766	4.9	-1.3	0.2	0.551	250.8	341.2	22.0	-4.3	135.3	129.4
2014-Apr-04	46.1W	21:59	-11.5	0.774	6.5	-1.3	0.3	0.555	250.5	341.0	21.7	-4.3	137.8	216.2
2014-Apr-05	46.0W	22:04	-11.2	0.782	8.0	-1.2	0.4	0.560	250.2	340.7	21.5	-4.3	140.4	302.9
2014-Apr-06	46.0W	22:08	-10.9	0.789	9.6	-1.1	0.4	0.565	249.9	340.5	21.3	-4.3	142.9	29.7
2014-Apr-07	45.9W	22:12	-10.7	0.797	11.2	-1.0	0.5	0.569	249.6	340.3	21.1	-4.3	145.5	116.5
2014-Apr-08	45.8W	22:16	-10.4	0.805	12.8	-1.0	0.6	0.574	249.3	340.1	20.9	-4.3	148.0	203.3
2014-Apr-09	45.7W	22:20	-10.1	0.813	14.4	-0.9	0.7	0.578	249.1	339.9	20.7	-4.2	150.6	290.1
2014-Apr-10	45.6W	22:24	-9.7	0.821	16.0	-0.8	0.7	0.583	248.8	339.7	20.5	-4.2	153.1	16.8
2014-Apr-11	45.5W	22:29	-9.4	0.828	17.6	-0.8	0.8	0.587	248.5	339.5	20.3	-4.2	155.7	103.6
2014-Apr-12	45.4W	22:33	-9.1	0.836	19.2	-0.7	0.9	0.591	248.3	339.3	20.1	-4.2	158.2	190.4
2014-Apr-13	45.3W	22:37	-8.8	0.844	20.8	-0.7	0.9	0.596	248.0	339.1	19.9	-4.2	160.8	277.2
2014-Apr-14	45.2W	22:41	-8.4	0.852	22.3	-0.6	1.0	0.600	247.8	339.0	19.8	-4.2	163.4	4.0
2014-Apr-15	45.1W	22:45	-8.1	0.859	23.9	-0.5	1.1	0.604	247.6	338.8	19.6	-4.2	166.0	90.8
2014-Apr-16	45.0W	22:50	-7.8	0.867	25.5	-0.5	1.1	0.608	247.4	338.6	19.4	-4.2	168.5	177.6
2014-Apr-17	44.9W	22:54	-7.4	0.875	27.1	-0.4	1.2	0.612	247.2	338.5	19.2	-4.2	171.1	264.4
2014-Apr-18	44.7W	22:58	-7.1	0.883	28.7	-0.4	1.3	0.617	247.0	338.4	19.1	-4.2	173.7	351.3
2014-Apr-19	44.6W	23:02	-6.7	0.890	30.3	-0.3	1.3	0.621	246.8	338.2	18.9	-4.2	176.3	78.1
2014-Apr-20	44.5W	23:07	-6.3	0.898	31.8	-0.3	1.4	0.625	246.6	338.1	18.7	-4.1	178.9	164.9
2014-Apr-21	44.4W	23:11	-6.0	0.906	33.4	-0.2	1.5	0.629	246.4	338.0	18.6	-4.1	181.5	251.7
2014-Apr-22	44.2W	23:15	-5.6	0.913	35.0	-0.2	1.5	0.633	246.3	337.9	18.4	-4.1	184.0	338.5
2014-Apr-23	44.1W	23:19	-5.2	0.921	36.6	-0.1	1.6	0.637	246.1	337.8	18.3	-4.1	186.6	65.3
2014-Apr-24	43.9W	23:23	-4.8	0.929	38.2	-0.1	1.6	0.641	246.0	337.7	18.1	-4.1	189.2	152.2
2014-Apr-25	43.8W	23:28	-4.5	0.936	39.8	0.0	1.7	0.645	245.8	337.6	18.0	-4.1	191.8	239.0
2014-Apr-26	43.7W	23:32	-4.1	0.944	41.3	0.0	1.7	0.648	245.7	337.5	17.8	-4.1	194.4	325.8
2014-Apr-27	43.5W	23:36	-3.7	0.951	42.9	0.1	1.8	0.652	245.6	337.4	17.7	-4.1	197.0	52.7
2014-Apr-28	43.4W	23:40	-3.3	0.959	44.5	0.1	1.8	0.656	245.5	337.4	17.5	-4.1	199.7	139.5

2014-Apr-29	43.2w	23:45	-2.9	0.967	46.1	0.2	1.9	0.660	245.4	337.3	17.4	-4.1	202.3	226.3
2014-Apr-30	43.1w	23:49	-2.5	0.974	47.7	0.2	2.0	0.664	245.3	337.3	17.3	-4.1	204.9	313.2

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Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mmm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-May-01	42.9w	23:53	-2.1	0.982	49.3	0.2	2.0	0.667	245.2	337.2	17.1	-4.1	207.5	40.0
2014-May-02	42.7w	23:57	-1.7	0.989	50.8	0.3	2.0	0.671	245.1	337.2	17.0	-4.0	210.1	126.9
2014-May-03	42.6w	00:01	-1.3	0.997	52.4	0.3	2.1	0.675	245.1	337.2	16.9	-4.0	212.7	213.7
2014-May-04	42.4w	00:06	-0.9	1.004	54.0	0.3	2.1	0.678	245.0	337.2	16.8	-4.0	215.3	300.6
2014-May-05	42.2w	00:10	-0.5	1.012	55.6	0.4	2.2	0.682	245.0	337.2	16.6	-4.0	217.9	27.4
2014-May-06	42.1w	00:14	0.0	1.019	57.2	0.4	2.2	0.686	244.9	337.2	16.5	-4.0	220.6	114.3
2014-May-07	41.9w	00:18	0.4	1.026	58.7	0.4	2.3	0.689	244.9	337.2	16.4	-4.0	223.2	201.1
2014-May-08	41.7w	00:23	0.8	1.034	60.3	0.5	2.3	0.693	244.9	337.2	16.3	-4.0	225.8	288.0
2014-May-09	41.6w	00:27	1.2	1.041	61.9	0.5	2.3	0.696	244.9	337.2	16.2	-4.0	228.4	14.8
2014-May-10	41.4w	00:31	1.6	1.048	63.5	0.5	2.4	0.700	244.9	337.3	16.0	-4.0	231.1	101.7
2014-May-11	41.2w	00:35	2.0	1.056	65.1	0.5	2.4	0.703	244.9	337.3	15.9	-4.0	233.7	188.5
2014-May-12	41.0w	00:40	2.5	1.063	66.6	0.6	2.4	0.707	245.0	337.4	15.8	-4.0	236.3	275.4
2014-May-13	40.8w	00:44	2.9	1.070	68.2	0.6	2.4	0.710	245.0	337.4	15.7	-4.0	238.9	2.2
2014-May-14	40.7w	00:48	3.3	1.078	69.8	0.6	2.5	0.714	245.0	337.5	15.6	-4.0	241.6	89.1
2014-May-15	40.5w	00:53	3.7	1.085	71.4	0.6	2.5	0.717	245.1	337.6	15.5	-3.9	244.2	176.0
2014-May-16	40.3w	00:57	4.1	1.092	73.0	0.6	2.5	0.720	245.2	337.7	15.4	-3.9	246.8	262.8
2014-May-17	40.1w	01:01	4.6	1.099	74.5	0.7	2.5	0.724	245.2	337.7	15.3	-3.9	249.5	349.7
2014-May-18	39.9w	01:06	5.0	1.107	76.1	0.7	2.6	0.727	245.3	337.9	15.2	-3.9	252.1	76.6
2014-May-19	39.7w	01:10	5.4	1.114	77.7	0.7	2.6	0.730	245.4	338.0	15.1	-3.9	254.8	163.4
2014-May-20	39.5w	01:14	5.8	1.121	79.3	0.7	2.6	0.734	245.5	338.1	15.0	-3.9	257.4	250.3
2014-May-21	39.3w	01:19	6.3	1.128	80.9	0.7	2.6	0.737	245.6	338.2	14.9	-3.9	260.0	337.2
2014-May-22	39.1w	01:23	6.7	1.135	82.5	0.7	2.6	0.740	245.8	338.4	14.8	-3.9	262.7	64.0
2014-May-23	38.9w	01:27	7.1	1.142	84.0	0.7	2.6	0.743	245.9	338.5	14.7	-3.9	265.3	150.9
2014-May-24	38.7w	01:32	7.5	1.149	85.6	0.7	2.6	0.747	246.0	338.7	14.6	-3.9	268.0	237.8
2014-May-25	38.5w	01:36	7.9	1.156	87.2	0.8	2.6	0.750	246.2	338.8	14.5	-3.9	270.6	324.7
2014-May-26	38.3w	01:40	8.3	1.163	88.8	0.8	2.6	0.753	246.4	339.0	14.5	-3.9	273.3	51.5
2014-May-27	38.1w	01:45	8.7	1.170	90.4	0.8	2.6	0.756	246.5	339.2	14.4	-3.9	275.9	138.4
2014-May-28	37.9w	01:49	9.2	1.177	92.0	0.8	2.6	0.759	246.7	339.4	14.3	-3.9	278.5	225.3
2014-May-29	37.7w	01:54	9.6	1.184	93.5	0.8	2.6	0.762	246.9	339.5	14.2	-3.9	281.2	312.2
2014-May-30	37.5w	01:58	10.0	1.191	95.1	0.8	2.6	0.765	247.1	339.8	14.1	-3.9	283.8	39.0
2014-May-31	37.3w	02:03	10.4	1.197	96.7	0.8	2.6	0.768	247.4	340.0	14.0	-3.9	286.5	125.9

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mmm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Jun-01	37.1w	02:07	10.8	1.204	98.3	0.8	2.6	0.771	247.6	340.2	14.0	-3.9	289.1	212.8
2014-Jun-02	36.9w	02:12	11.2	1.211	99.9	0.8	2.6	0.774	247.8	340.4	13.9	-3.8	291.8	299.7
2014-Jun-03	36.6w	02:16	11.5	1.218	101.5	0.8	2.6	0.777	248.1	340.7	13.8	-3.8	294.4	26.6
2014-Jun-04	36.4w	02:21	11.9	1.224	103.1	0.8	2.6	0.780	248.3	340.9	13.7	-3.8	297.1	113.4
2014-Jun-05	36.2w	02:25	12.3	1.231	104.6	0.8	2.6	0.783	248.6	341.2	13.7	-3.8	299.8	200.3

Venus_2014														
2014-Jun-06	36.0w	02:30	12.7	1.238	106.2	0.8	2.5	0.786	248.9	341.4	13.6	-3.8	302.4	287.2
2014-Jun-07	35.8w	02:34	13.1	1.244	107.8	0.8	2.5	0.789	249.1	341.7	13.5	-3.8	305.1	14.1
2014-Jun-08	35.6w	02:39	13.4	1.251	109.4	0.8	2.5	0.792	249.4	342.0	13.4	-3.8	307.7	101.0
2014-Jun-09	35.3w	02:43	13.8	1.257	111.0	0.8	2.5	0.795	249.7	342.2	13.4	-3.8	310.4	187.9
2014-Jun-10	35.1w	02:48	14.2	1.264	112.6	0.7	2.4	0.798	250.1	342.5	13.3	-3.8	313.0	274.8
2014-Jun-11	34.9w	02:53	14.5	1.270	114.2	0.7	2.4	0.801	250.4	342.8	13.2	-3.8	315.7	1.7
2014-Jun-12	34.7w	02:57	14.9	1.277	115.8	0.7	2.4	0.804	250.7	343.2	13.2	-3.8	318.4	88.5
2014-Jun-13	34.4w	03:02	15.2	1.283	117.3	0.7	2.3	0.806	251.1	343.5	13.1	-3.8	321.0	175.4
2014-Jun-14	34.2w	03:07	15.6	1.289	118.9	0.7	2.3	0.809	251.4	343.8	13.0	-3.8	323.7	262.3
2014-Jun-15	34.0w	03:11	15.9	1.296	120.5	0.7	2.3	0.812	251.8	344.1	13.0	-3.8	326.3	349.2
2014-Jun-16	33.8w	03:16	16.2	1.302	122.1	0.7	2.2	0.815	252.2	344.5	12.9	-3.8	329.0	76.1
2014-Jun-17	33.5w	03:21	16.6	1.308	123.7	0.7	2.2	0.818	252.5	344.8	12.9	-3.8	331.7	163.0
2014-Jun-18	33.3w	03:26	16.9	1.314	125.3	0.7	2.2	0.820	252.9	345.2	12.8	-3.8	334.3	249.9
2014-Jun-19	33.1w	03:30	17.2	1.321	126.9	0.6	2.1	0.823	253.3	345.5	12.7	-3.8	337.0	336.8
2014-Jun-20	32.8w	03:35	17.5	1.327	128.5	0.6	2.1	0.826	253.7	345.9	12.7	-3.8	339.7	63.7
2014-Jun-21	32.6w	03:40	17.8	1.333	130.1	0.6	2.0	0.828	254.2	346.3	12.6	-3.8	342.3	150.6
2014-Jun-22	32.4w	03:45	18.1	1.339	131.7	0.6	2.0	0.831	254.6	346.7	12.6	-3.8	345.0	237.5
2014-Jun-23	32.1w	03:50	18.4	1.345	133.3	0.6	1.9	0.834	255.0	347.1	12.5	-3.8	347.7	324.4
2014-Jun-24	31.9w	03:55	18.7	1.351	134.8	0.6	1.9	0.836	255.5	347.5	12.5	-3.8	350.3	51.3
2014-Jun-25	31.7w	04:00	18.9	1.357	136.4	0.6	1.8	0.839	255.9	347.9	12.4	-3.8	353.0	138.2
2014-Jun-26	31.4w	04:04	19.2	1.363	138.0	0.5	1.8	0.841	256.4	348.3	12.3	-3.8	355.7	225.1
2014-Jun-27	31.2w	04:09	19.5	1.369	139.6	0.5	1.7	0.844	256.8	348.7	12.3	-3.8	358.4	312.0
2014-Jun-28	31.0w	04:14	19.7	1.374	141.2	0.5	1.7	0.846	257.3	349.1	12.2	-3.8	1.0	38.9
2014-Jun-29	30.7w	04:19	19.9	1.380	142.8	0.5	1.6	0.849	257.8	349.6	12.2	-3.8	3.7	125.8
2014-Jun-30	30.5w	04:24	20.2	1.386	144.4	0.5	1.5	0.851	258.3	350.0	12.1	-3.8	6.4	212.7

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mmm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Jul-01	30.2w	04:29	20.4	1.392	146.0	0.4	1.5	0.854	258.8	350.4	12.1	-3.7	9.1	299.6
2014-Jul-02	30.0w	04:34	20.6	1.397	147.6	0.4	1.4	0.856	259.3	350.9	12.0	-3.7	11.7	26.5
2014-Jul-03	29.7w	04:39	20.8	1.403	149.2	0.4	1.4	0.859	259.8	351.3	12.0	-3.7	14.4	113.4
2014-Jul-04	29.5w	04:44	21.0	1.408	150.8	0.4	1.3	0.861	260.3	351.8	11.9	-3.7	17.1	200.3
2014-Jul-05	29.3w	04:49	21.2	1.414	152.4	0.4	1.2	0.864	260.9	352.3	11.9	-3.7	19.8	287.2
2014-Jul-06	29.0w	04:54	21.4	1.419	154.0	0.3	1.2	0.866	261.4	352.7	11.9	-3.7	22.4	14.1
2014-Jul-07	28.8w	05:00	21.5	1.425	155.6	0.3	1.1	0.869	261.9	353.2	11.8	-3.7	25.1	101.1
2014-Jul-08	28.5w	05:05	21.7	1.430	157.2	0.3	1.0	0.871	262.5	353.7	11.8	-3.7	27.8	188.0
2014-Jul-09	28.3w	05:10	21.8	1.435	158.8	0.3	1.0	0.873	263.0	354.2	11.7	-3.7	30.5	274.9
2014-Jul-10	28.0w	05:15	22.0	1.441	160.4	0.3	0.9	0.876	263.6	354.7	11.7	-3.7	33.2	1.8
2014-Jul-11	27.8w	05:20	22.1	1.446	162.0	0.2	0.8	0.878	264.2	355.1	11.6	-3.7	35.8	88.7
2014-Jul-12	27.5w	05:25	22.2	1.451	163.6	0.2	0.7	0.880	264.7	355.6	11.6	-3.7	38.5	175.6
2014-Jul-13	27.3w	05:30	22.3	1.456	165.2	0.2	0.7	0.882	265.3	356.1	11.5	-3.7	41.2	262.5
2014-Jul-14	27.0w	05:36	22.4	1.461	166.8	0.2	0.6	0.885	265.9	356.6	11.5	-3.7	43.9	349.4
2014-Jul-15	26.8w	05:41	22.5	1.467	168.4	0.1	0.5	0.887	266.5	357.1	11.5	-3.7	46.6	76.3
2014-Jul-16	26.5w	05:46	22.6	1.472	170.0	0.1	0.5	0.889	267.0	357.6	11.4	-3.7	49.3	163.3

Venus_2014														
2014-Jul-17	26.3W	05:51	22.7	1.477	171.6	0.1	0.4	0.891	267.6	358.1	11.4	-3.7	51.9	250.2
2014-Jul-18	26.0W	05:56	22.7	1.482	173.2	0.1	0.3	0.893	268.2	358.6	11.4	-3.7	54.6	337.1
2014-Jul-19	25.8W	06:02	22.8	1.486	174.8	0.1	0.2	0.895	268.8	359.1	11.3	-3.7	57.3	64.0
2014-Jul-20	25.5W	06:07	22.8	1.491	176.4	0.0	0.2	0.898	269.4	359.7	11.3	-3.7	60.0	150.9
2014-Jul-21	25.3W	06:12	22.8	1.496	178.0	0.0	0.1	0.900	270.0	0.2	11.2	-3.7	62.7	237.9
2014-Jul-22	25.0W	06:17	22.8	1.501	179.6	0.0	0.0	0.902	270.6	0.7	11.2	-3.7	65.4	324.8
2014-Jul-23	24.8W	06:23	22.8	1.505	181.2	0.0	-0.1	0.904	271.2	1.2	11.2	-3.7	68.1	51.7
2014-Jul-24	24.5W	06:28	22.8	1.510	182.8	-0.1	-0.1	0.906	271.8	1.7	11.1	-3.7	70.8	138.6
2014-Jul-25	24.3W	06:33	22.8	1.515	184.5	-0.1	-0.2	0.908	272.4	2.2	11.1	-3.7	73.5	225.5
2014-Jul-26	24.0W	06:38	22.8	1.519	186.1	-0.1	-0.3	0.910	273.1	2.7	11.1	-3.7	76.1	312.5
2014-Jul-27	23.7W	06:44	22.7	1.524	187.7	-0.1	-0.4	0.912	273.7	3.2	11.0	-3.7	78.8	39.4
2014-Jul-28	23.5W	06:49	22.7	1.528	189.3	-0.1	-0.4	0.914	274.3	3.7	11.0	-3.7	81.5	126.3
2014-Jul-29	23.2W	06:54	22.6	1.533	190.9	-0.2	-0.5	0.916	274.9	4.2	11.0	-3.7	84.2	213.2
2014-Jul-30	23.0W	06:59	22.5	1.537	192.5	-0.2	-0.6	0.918	275.5	4.7	10.9	-3.7	86.9	300.2
2014-Jul-31	22.7W	07:05	22.5	1.541	194.1	-0.2	-0.6	0.920	276.1	5.2	10.9	-3.7	89.6	27.1

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mmm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,	(v)	o	o
2014-Aug-01	22.5W	07:10	22.4	1.545	195.7	-0.2	-0.7	0.921	276.7	5.7	10.9	-3.7	92.3	114.0
2014-Aug-02	22.2W	07:15	22.3	1.550	197.3	-0.2	-0.8	0.923	277.3	6.2	10.9	-3.7	95.0	200.9
2014-Aug-03	21.9W	07:20	22.1	1.554	198.9	-0.3	-0.9	0.925	277.9	6.7	10.8	-3.7	97.7	287.9
2014-Aug-04	21.7W	07:26	22.0	1.558	200.6	-0.3	-0.9	0.927	278.5	7.2	10.8	-3.7	100.4	14.8
2014-Aug-05	21.4W	07:31	21.9	1.562	202.2	-0.3	-1.0	0.929	279.1	7.7	10.8	-3.7	103.1	101.7
2014-Aug-06	21.2W	07:36	21.7	1.566	203.8	-0.3	-1.1	0.930	279.7	8.1	10.7	-3.7	105.8	188.7
2014-Aug-07	20.9W	07:41	21.6	1.570	205.4	-0.3	-1.1	0.932	280.3	8.6	10.7	-3.7	108.5	275.6
2014-Aug-08	20.7W	07:46	21.4	1.574	207.0	-0.3	-1.2	0.934	280.9	9.1	10.7	-3.7	111.2	2.5
2014-Aug-09	20.4W	07:52	21.2	1.578	208.6	-0.4	-1.3	0.936	281.5	9.5	10.7	-3.7	113.9	89.4
2014-Aug-10	20.1W	07:57	21.0	1.581	210.2	-0.4	-1.3	0.937	282.1	10.0	10.6	-3.7	116.6	176.4
2014-Aug-11	19.9W	08:02	20.8	1.585	211.9	-0.4	-1.4	0.939	282.6	10.4	10.6	-3.7	119.3	263.3
2014-Aug-12	19.6W	08:07	20.6	1.589	213.5	-0.4	-1.5	0.941	283.2	10.9	10.6	-3.7	122.0	350.2
2014-Aug-13	19.3W	08:12	20.4	1.592	215.1	-0.4	-1.5	0.942	283.8	11.3	10.6	-3.7	124.7	77.2
2014-Aug-14	19.1W	08:17	20.2	1.596	216.7	-0.4	-1.6	0.944	284.4	11.8	10.5	-3.7	127.4	164.1
2014-Aug-15	18.8W	08:22	19.9	1.599	218.3	-0.4	-1.6	0.945	284.9	12.2	10.5	-3.7	130.1	251.1
2014-Aug-16	18.6W	08:27	19.7	1.603	219.9	-0.5	-1.7	0.947	285.5	12.6	10.5	-3.7	132.8	338.0
2014-Aug-17	18.3W	08:33	19.4	1.606	221.6	-0.5	-1.7	0.948	286.0	13.0	10.5	-3.7	135.5	64.9
2014-Aug-18	18.0W	08:38	19.1	1.610	223.2	-0.5	-1.8	0.950	286.6	13.4	10.4	-3.7	138.2	151.9
2014-Aug-19	17.8W	08:43	18.9	1.613	224.8	-0.5	-1.9	0.951	287.1	13.8	10.4	-3.7	140.9	238.8
2014-Aug-20	17.5W	08:48	18.6	1.616	226.4	-0.5	-1.9	0.953	287.7	14.2	10.4	-3.7	143.7	325.7
2014-Aug-21	17.2W	08:53	18.3	1.620	228.0	-0.5	-2.0	0.954	288.2	14.6	10.4	-3.7	146.4	52.7
2014-Aug-22	17.0W	08:58	18.0	1.623	229.7	-0.5	-2.0	0.956	288.7	15.0	10.4	-3.7	149.1	139.6
2014-Aug-23	16.7W	09:03	17.7	1.626	231.3	-0.5	-2.1	0.957	289.3	15.4	10.3	-3.7	151.8	226.6
2014-Aug-24	16.5W	09:08	17.3	1.629	232.9	-0.5	-2.1	0.959	289.8	15.7	10.3	-3.7	154.5	313.5
2014-Aug-25	16.2W	09:13	17.0	1.632	234.5	-0.5	-2.1	0.960	290.3	16.1	10.3	-3.7	157.2	40.5
2014-Aug-26	15.9W	09:18	16.7	1.635	236.1	-0.6	-2.2	0.961	290.8	16.4	10.3	-3.7	159.9	127.4

Venus_2014														
2014-Aug-27	15.7w	09:23	16.3	1.638	237.8	-0.6	-2.2	0.963	291.3	16.8	10.3	-3.7	162.6	214.3
2014-Aug-28	15.4w	09:27	16.0	1.641	239.4	-0.6	-2.3	0.964	291.8	17.1	10.3	-3.7	165.3	301.3
2014-Aug-29	15.1w	09:32	15.6	1.643	241.0	-0.6	-2.3	0.965	292.3	17.4	10.2	-3.8	168.1	28.2
2014-Aug-30	14.9w	09:37	15.2	1.646	242.6	-0.6	-2.3	0.966	292.7	17.7	10.2	-3.8	170.8	115.2
2014-Aug-31	14.6w	09:42	14.9	1.649	244.3	-0.6	-2.4	0.968	293.2	18.0	10.2	-3.8	173.5	202.1

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Sep-01	14.4w	09:47	14.5	1.651	245.9	-0.6	-2.4	0.969	293.7	18.3	10.2	-3.8	176.2	289.1
2014-Sep-02	14.1w	09:52	14.1	1.654	247.5	-0.6	-2.4	0.970	294.1	18.6	10.2	-3.8	178.9	16.0
2014-Sep-03	13.8w	09:57	13.7	1.656	249.1	-0.6	-2.5	0.971	294.6	18.9	10.2	-3.8	181.6	103.0
2014-Sep-04	13.6w	10:01	13.3	1.659	250.8	-0.6	-2.5	0.972	295.1	19.2	10.1	-3.8	184.3	189.9
2014-Sep-05	13.3w	10:06	12.9	1.661	252.4	-0.6	-2.5	0.973	295.5	19.4	10.1	-3.8	187.1	276.9
2014-Sep-06	13.0w	10:11	12.5	1.664	254.0	-0.6	-2.5	0.974	295.9	19.7	10.1	-3.8	189.8	3.8
2014-Sep-07	12.8w	10:16	12.0	1.666	255.6	-0.6	-2.6	0.975	296.4	19.9	10.1	-3.8	192.5	90.8
2014-Sep-08	12.5w	10:20	11.6	1.668	257.3	-0.6	-2.6	0.976	296.8	20.1	10.1	-3.8	195.2	177.7
2014-Sep-09	12.2w	10:25	11.2	1.670	258.9	-0.6	-2.6	0.977	297.2	20.4	10.1	-3.8	197.9	264.7
2014-Sep-10	12.0w	10:30	10.8	1.673	260.5	-0.6	-2.6	0.978	297.6	20.6	10.1	-3.8	200.7	351.6
2014-Sep-11	11.7w	10:35	10.3	1.675	262.1	-0.6	-2.6	0.979	298.1	20.8	10.0	-3.8	203.4	78.6
2014-Sep-12	11.5w	10:39	9.9	1.677	263.8	-0.6	-2.6	0.980	298.5	21.0	10.0	-3.8	206.1	165.5
2014-Sep-13	11.2w	10:44	9.4	1.679	265.4	-0.6	-2.6	0.981	298.9	21.1	10.0	-3.8	208.8	252.5
2014-Sep-14	10.9w	10:49	9.0	1.681	267.0	-0.6	-2.6	0.982	299.3	21.3	10.0	-3.8	211.5	339.4
2014-Sep-15	10.7w	10:53	8.5	1.682	268.6	-0.5	-2.6	0.983	299.7	21.5	10.0	-3.8	214.3	66.4
2014-Sep-16	10.4w	10:58	8.0	1.684	270.3	-0.5	-2.6	0.984	300.1	21.6	10.0	-3.8	217.0	153.3
2014-Sep-17	10.1w	11:03	7.6	1.686	271.9	-0.5	-2.6	0.985	300.4	21.8	10.0	-3.8	219.7	240.3
2014-Sep-18	9.9w	11:07	7.1	1.688	273.5	-0.5	-2.6	0.985	300.8	21.9	10.0	-3.8	222.4	327.2
2014-Sep-19	9.6w	11:12	6.6	1.690	275.1	-0.5	-2.6	0.986	301.2	22.1	10.0	-3.8	225.2	54.2
2014-Sep-20	9.4w	11:17	6.2	1.691	276.8	-0.5	-2.6	0.987	301.6	22.2	9.9	-3.8	227.9	141.1
2014-Sep-21	9.1w	11:21	5.7	1.693	278.4	-0.5	-2.6	0.988	302.0	22.3	9.9	-3.8	230.6	228.1
2014-Sep-22	8.8w	11:26	5.2	1.694	280.0	-0.5	-2.6	0.988	302.4	22.4	9.9	-3.8	233.3	315.1
2014-Sep-23	8.6w	11:30	4.7	1.696	281.6	-0.5	-2.6	0.989	302.8	22.5	9.9	-3.8	236.0	42.0
2014-Sep-24	8.3w	11:35	4.2	1.697	283.3	-0.5	-2.6	0.990	303.2	22.5	9.9	-3.8	238.8	129.0
2014-Sep-25	8.0w	11:40	3.7	1.698	284.9	-0.4	-2.5	0.990	303.5	22.6	9.9	-3.8	241.5	215.9
2014-Sep-26	7.8w	11:44	3.2	1.700	286.5	-0.4	-2.5	0.991	303.9	22.7	9.9	-3.8	244.2	302.9
2014-Sep-27	7.5w	11:49	2.7	1.701	288.1	-0.4	-2.5	0.992	304.3	22.7	9.9	-3.8	247.0	29.9
2014-Sep-28	7.3w	11:53	2.2	1.702	289.7	-0.4	-2.5	0.992	304.8	22.8	9.9	-3.8	249.7	116.8
2014-Sep-29	7.0w	11:58	1.7	1.703	291.4	-0.4	-2.5	0.993	305.2	22.8	9.9	-3.8	252.4	203.8
2014-Sep-30	6.7w	12:02	1.2	1.705	293.0	-0.4	-2.4	0.993	305.6	22.8	9.9	-3.8	255.1	290.7

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Oct-01	6.5w	12:07	0.7	1.706	294.6	-0.3	-2.4	0.994	306.1	22.8	9.9	-3.8	257.9	17.7
2014-Oct-02	6.2w	12:12	0.2	1.707	296.2	-0.3	-2.4	0.994	306.5	22.8	9.9	-3.8	260.6	104.7
2014-Oct-03	6.0w	12:16	-0.3	1.708	297.9	-0.3	-2.3	0.995	307.0	22.8	9.9	-3.8	263.3	191.6

Venus_2014														
2014-Oct-04	5.7W	12:21	-0.8	1.708	299.5	-0.3	-2.3	0.995	307.5	22.8	9.8	-3.8	266.0	278.6
2014-Oct-05	5.5W	12:25	-1.3	1.709	301.1	-0.3	-2.3	0.996	308.1	22.8	9.8	-3.8	268.8	5.5
2014-Oct-06	5.2W	12:30	-1.8	1.710	302.7	-0.2	-2.2	0.996	308.7	22.8	9.8	-3.9	271.5	92.5
2014-Oct-07	4.9W	12:34	-2.3	1.711	304.3	-0.2	-2.2	0.996	309.3	22.7	9.8	-3.9	274.2	179.5
2014-Oct-08	4.7W	12:39	-2.8	1.712	306.0	-0.2	-2.1	0.997	310.0	22.7	9.8	-3.9	277.0	266.4
2014-Oct-09	4.4W	12:44	-3.3	1.712	307.6	-0.2	-2.1	0.997	310.7	22.6	9.8	-3.9	279.7	353.4
2014-Oct-10	4.2W	12:48	-3.8	1.713	309.2	-0.2	-2.0	0.997	311.5	22.5	9.8	-3.9	282.4	80.3
2014-Oct-11	3.9W	12:53	-4.3	1.714	310.8	-0.1	-2.0	0.998	312.4	22.4	9.8	-3.9	285.2	167.3
2014-Oct-12	3.7W	12:57	-4.8	1.714	312.4	-0.1	-1.9	0.998	313.5	22.3	9.8	-3.9	287.9	254.3
2014-Oct-13	3.4W	13:02	-5.3	1.715	314.0	-0.1	-1.9	0.998	314.6	22.2	9.8	-3.9	290.6	341.2
2014-Oct-14	3.2W	13:07	-5.8	1.715	315.6	-0.1	-1.8	0.999	316.0	22.1	9.8	-3.9	293.4	68.2
2014-Oct-15	2.9W	13:11	-6.2	1.715	317.3	0.0	-1.8	0.999	317.5	22.0	9.8	-3.9	296.1	155.2
2014-Oct-16	2.7W	13:16	-6.7	1.716	318.9	0.0	-1.7	0.999	319.3	21.9	9.8	-3.9	298.8	242.1
2014-Oct-17	2.5W	13:20	-7.2	1.716	320.5	0.0	-1.7	0.999	321.5	21.7	9.8	-3.9	301.5	329.1
2014-Oct-18	2.2W	13:25	-7.7	1.716	322.1	0.0	-1.6	0.999	324.2	21.6	9.8	-3.9	304.3	56.1
2014-Oct-19	2.0W	13:30	-8.2	1.716	323.7	0.1	-1.6	0.999	327.4	21.4	9.8	-3.9	307.0	143.0
2014-Oct-20	1.8W	13:34	-8.7	1.717	325.3	0.1	-1.5	1.000	331.5	21.2	9.8	-3.9	309.7	230.0
2014-Oct-21	1.6W	13:39	-9.1	1.717	326.9	0.1	-1.4	1.000	336.7	21.1	9.8	-3.9	312.5	317.0
2014-Oct-22	1.4W	13:44	-9.6	1.717	328.5	0.1	-1.4	1.000	343.4	20.9	9.8	-3.9	315.2	43.9
2014-Oct-23	1.2W	13:49	-10.1	1.717	330.1	0.2	-1.3	1.000	352.0	20.7	9.8	-3.9	317.9	130.9
2014-Oct-24	1.1W	13:53	-10.6	1.717	331.8	0.2	-1.2	1.000	2.9	20.5	9.8	-3.9	320.7	217.9
2014-Oct-25	1.0W	13:58	-11.0	1.717	333.4	0.2	-1.2	1.000	16.0	20.3	9.8	-3.9	323.4	304.8
2014-Oct-26	1.0E	14:03	-11.5	1.717	335.0	0.2	-1.1	1.000	30.4	20.0	9.8	-3.9	326.1	31.8
2014-Oct-27	1.1E	14:08	-11.9	1.716	336.6	0.3	-1.0	1.000	44.2	19.8	9.8	-3.9	328.9	118.8
2014-Oct-28	1.2E	14:12	-12.4	1.716	338.2	0.3	-1.0	1.000	56.0	19.5	9.8	-3.9	331.6	205.7
2014-Oct-29	1.3E	14:17	-12.8	1.716	339.8	0.3	-0.9	1.000	65.6	19.3	9.8	-3.9	334.4	292.7
2014-Oct-30	1.5E	14:22	-13.3	1.716	341.4	0.4	-0.8	1.000	72.9	19.0	9.8	-3.9	337.1	19.7
2014-Oct-31	1.7E	14:27	-13.7	1.715	343.0	0.4	-0.8	1.000	78.6	18.8	9.8	-3.9	339.8	106.6

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Nov-01	1.9E	14:32	-14.1	1.715	344.6	0.4	-0.7	0.999	83.0	18.5	9.8	-3.9	342.6	193.6
2014-Nov-02	2.1E	14:37	-14.5	1.714	346.2	0.4	-0.6	0.999	86.4	18.2	9.8	-3.9	345.3	280.6
2014-Nov-03	2.3E	14:41	-14.9	1.714	347.8	0.5	-0.6	0.999	89.2	17.9	9.8	-3.9	348.0	7.5
2014-Nov-04	2.6E	14:46	-15.4	1.713	349.4	0.5	-0.5	0.999	91.3	17.6	9.8	-3.9	350.8	94.5
2014-Nov-05	2.8E	14:51	-15.8	1.713	351.0	0.5	-0.4	0.999	93.1	17.2	9.8	-3.9	353.5	181.5
2014-Nov-06	3.0E	14:56	-16.2	1.712	352.6	0.6	-0.3	0.999	94.5	16.9	9.8	-3.9	356.2	268.4
2014-Nov-07	3.3E	15:01	-16.5	1.711	354.2	0.6	-0.3	0.998	95.7	16.6	9.8	-3.9	359.0	355.4
2014-Nov-08	3.5E	15:06	-16.9	1.711	355.8	0.6	-0.2	0.998	96.6	16.2	9.8	-3.9	1.7	82.4
2014-Nov-09	3.8E	15:11	-17.3	1.710	357.4	0.6	-0.1	0.998	97.4	15.9	9.8	-3.9	4.4	169.3
2014-Nov-10	4.0E	15:16	-17.7	1.709	359.0	0.7	0.0	0.998	98.1	15.5	9.8	-3.9	7.2	256.3
2014-Nov-11	4.3E	15:21	-18.0	1.708	.6	0.7	0.0	0.997	98.6	15.1	9.8	-3.9	9.9	343.3
2014-Nov-12	4.5E	15:26	-18.4	1.708	2.2	0.7	0.1	0.997	99.0	14.8	9.9	-3.9	12.6	70.3
2014-Nov-13	4.7E	15:32	-18.7	1.707	3.7	0.7	0.2	0.997	99.3	14.4	9.9	-3.9	15.4	157.2



Venus_2014														
2014-Nov-14	5.0E	15:37	-19.0	1.706	5.3	0.8	0.2	0.996	99.6	14.0	9.9	-3.8	18.1	244.2
2014-Nov-15	5.2E	15:42	-19.4	1.705	6.9	0.8	0.3	0.996	99.7	13.6	9.9	-3.8	20.9	331.2
2014-Nov-16	5.5E	15:47	-19.7	1.704	8.5	0.8	0.4	0.996	99.9	13.2	9.9	-3.8	23.6	58.1
2014-Nov-17	5.7E	15:52	-20.0	1.703	10.1	0.9	0.5	0.995	99.9	12.7	9.9	-3.8	26.3	145.1
2014-Nov-18	6.0E	15:57	-20.3	1.702	11.7	0.9	0.5	0.995	99.9	12.3	9.9	-3.8	29.1	232.1
2014-Nov-19	6.2E	16:03	-20.6	1.700	13.3	0.9	0.6	0.995	99.9	11.9	9.9	-3.8	31.8	319.0
2014-Nov-20	6.5E	16:08	-20.9	1.699	14.9	0.9	0.7	0.994	99.9	11.4	9.9	-3.8	34.5	46.0
2014-Nov-21	6.7E	16:13	-21.1	1.698	16.5	1.0	0.7	0.994	99.8	11.0	9.9	-3.8	37.3	133.0
2014-Nov-22	6.9E	16:18	-21.4	1.697	18.1	1.0	0.8	0.993	99.6	10.5	9.9	-3.8	40.0	220.0
2014-Nov-23	7.2E	16:24	-21.6	1.695	19.6	1.0	0.9	0.993	99.5	10.1	9.9	-3.8	42.8	306.9
2014-Nov-24	7.4E	16:29	-21.9	1.694	21.2	1.0	1.0	0.992	99.3	9.6	9.9	-3.8	45.5	33.9
2014-Nov-25	7.7E	16:34	-22.1	1.693	22.8	1.0	1.0	0.992	99.1	9.1	9.9	-3.8	48.2	120.9
2014-Nov-26	7.9E	16:40	-22.3	1.691	24.4	1.1	1.1	0.991	98.8	8.6	9.9	-3.8	51.0	207.8
2014-Nov-27	8.2E	16:45	-22.5	1.690	26.0	1.1	1.2	0.991	98.6	8.1	10.0	-3.8	53.7	294.8
2014-Nov-28	8.4E	16:50	-22.7	1.688	27.6	1.1	1.2	0.990	98.3	7.6	10.0	-3.8	56.4	21.8
2014-Nov-29	8.7E	16:56	-22.9	1.687	29.2	1.1	1.3	0.989	98.0	7.2	10.0	-3.8	59.2	108.8
2014-Nov-30	8.9E	17:01	-23.1	1.685	30.7	1.2	1.3	0.989	97.7	6.6	10.0	-3.8	61.9	195.7

Date	Elong	R.A.	Dec	Dist	Ls	De	Ds	Phase	Defect	Axis	Size	Mag	CM	CMII
yyyy-mm-dd	o	hh:mm	o	A.U.	o	o	o	k	o	o	,,	(v)	o	o
2014-Dec-01	9.1E	17:07	-23.2	1.684	32.3	1.2	1.4	0.988	97.4	6.1	10.0	-3.8	64.7	282.7
2014-Dec-02	9.4E	17:12	-23.4	1.682	33.9	1.2	1.5	0.988	97.0	5.6	10.0	-3.8	67.4	9.7
2014-Dec-03	9.6E	17:17	-23.5	1.680	35.5	1.2	1.5	0.987	96.7	5.1	10.0	-3.8	70.1	96.6
2014-Dec-04	9.9E	17:23	-23.6	1.678	37.1	1.2	1.6	0.986	96.3	4.6	10.0	-3.8	72.9	183.6
2014-Dec-05	10.1E	17:28	-23.7	1.677	38.7	1.3	1.6	0.986	95.9	4.1	10.0	-3.8	75.6	270.6
2014-Dec-06	10.4E	17:34	-23.8	1.675	40.2	1.3	1.7	0.985	95.5	3.6	10.0	-3.8	78.3	357.6
2014-Dec-07	10.6E	17:39	-23.9	1.673	41.8	1.3	1.8	0.984	95.1	3.0	10.1	-3.8	81.1	84.5
2014-Dec-08	10.8E	17:45	-24.0	1.671	43.4	1.3	1.8	0.984	94.7	2.5	10.1	-3.8	83.8	171.5
2014-Dec-09	11.1E	17:50	-24.1	1.669	45.0	1.3	1.9	0.983	94.3	2.0	10.1	-3.8	86.5	258.5
2014-Dec-10	11.3E	17:56	-24.1	1.667	46.6	1.3	1.9	0.982	93.8	1.4	10.1	-3.8	89.3	345.4
2014-Dec-11	11.6E	18:01	-24.2	1.665	48.1	1.3	2.0	0.981	93.4	0.9	10.1	-3.8	92.0	72.4
2014-Dec-12	11.8E	18:07	-24.2	1.663	49.7	1.4	2.0	0.980	92.9	0.4	10.1	-3.8	94.8	159.4
2014-Dec-13	12.0E	18:12	-24.2	1.661	51.3	1.4	2.1	0.980	92.5	359.8	10.1	-3.8	97.5	246.3
2014-Dec-14	12.3E	18:18	-24.2	1.659	52.9	1.4	2.1	0.979	92.0	359.3	10.1	-3.8	100.2	333.3
2014-Dec-15	12.5E	18:23	-24.2	1.657	54.5	1.4	2.1	0.978	91.6	358.8	10.2	-3.8	103.0	60.3
2014-Dec-16	12.8E	18:29	-24.2	1.655	56.0	1.4	2.2	0.977	91.1	358.2	10.2	-3.8	105.7	147.3
2014-Dec-17	13.0E	18:34	-24.1	1.652	57.6	1.4	2.2	0.976	90.6	357.7	10.2	-3.8	108.4	234.2
2014-Dec-18	13.2E	18:40	-24.1	1.650	59.2	1.4	2.3	0.975	90.1	357.2	10.2	-3.8	111.2	321.2
2014-Dec-19	13.5E	18:45	-24.0	1.648	60.8	1.4	2.3	0.975	89.7	356.6	10.2	-3.8	113.9	48.2
2014-Dec-20	13.7E	18:51	-24.0	1.646	62.4	1.4	2.3	0.974	89.2	356.1	10.2	-3.8	116.7	135.1
2014-Dec-21	14.0E	18:56	-23.9	1.643	64.0	1.4	2.4	0.973	88.7	355.6	10.2	-3.8	119.4	222.1
2014-Dec-22	14.2E	19:02	-23.8	1.641	65.5	1.4	2.4	0.972	88.2	355.1	10.3	-3.8	122.1	309.1
2014-Dec-23	14.4E	19:07	-23.7	1.638	67.1	1.4	2.4	0.971	87.7	354.6	10.3	-3.8	124.9	36.1
2014-Dec-24	14.7E	19:13	-23.5	1.636	68.7	1.4	2.5	0.970	87.3	354.0	10.3	-3.8	127.6	123.0

Venus_2014														
2014-Dec-25	14.9E	19:18	-23.4	1.633	70.3	1.4	2.5	0.969	86.8	353.5	10.3	-3.8	130.3	210.0
2014-Dec-26	15.1E	19:23	-23.3	1.631	71.9	1.4	2.5	0.968	86.3	353.0	10.3	-3.7	133.1	297.0
2014-Dec-27	15.4E	19:29	-23.1	1.628	73.4	1.4	2.5	0.967	85.8	352.5	10.3	-3.7	135.8	23.9
2014-Dec-28	15.6E	19:34	-22.9	1.626	75.0	1.4	2.5	0.966	85.3	352.0	10.3	-3.7	138.5	110.9
2014-Dec-29	15.8E	19:40	-22.8	1.623	76.6	1.4	2.6	0.965	84.9	351.5	10.4	-3.7	141.3	197.9
2014-Dec-30	16.1E	19:45	-22.6	1.620	78.2	1.4	2.6	0.964	84.4	351.1	10.4	-3.7	144.0	284.8
2014-Dec-31	16.3E	19:50	-22.4	1.617	79.8	1.4	2.6	0.963	83.9	350.6	10.4	-3.7	146.7	11.8

#### GLOSSARY OF TERMS IN HEADING

- Date - Terrestrial Dates starting with January 1st and ending December 31st of each year.
- Elong - Geocentric elongation West (W) or East (E) of the Sun in degrees.
- R.A. - The Geocentric Right Ascension of the center of Venus in hours and minutes (hh:mm).
- Dec - The Declination of the center of Venus in degrees.
- Dist - The distance of Earth from Venus in Astronomical Units. NOTE: An Astronomical Unit is 92,955,621 miles or 149,597,892 km.
- Ls - Planetocentric Longitude of the Sun, measured eastward in the planet's orbital plane from Venus' Northern Hemisphere's vernal equinox. (Also referred to Areocentric Long).
- De - Sub-Earth point (Planetocentric Declination of Earth) as seen from Earth with respect to Venus in degrees.
- Ds - Sub-Solar point (Planetocentric Declination of Sun) as seen from the Sun with respect to Venus in degrees (positive to the north).
- Phase - The fraction of the area of the apparent disk of Venus that is illuminated by the Sun. Equation:  $k = (1 + \cos i) / 2$ , where  $i$  = phase in degrees.
- Defect - Sun-Venus-Earth position angle. Measured counterclockwise from north; 0° to 359°, to the point on the limb of the greatest defect of illumination.
- Axis - Position angle of the North Pole of Venus with respect to the North Pole of the Earth.
- Size - Apparent angular diameter in seconds of arc (twice the semidiameter).
- Mag - Geocentric apparent Visual Magnitude.
- CM - Planetographic longitude of the central meridian of Venus, in degrees.
- CM-II - Planetographic longitude of the central meridian of Venus, in degrees, correlated to the higher atmosphere visible in UV light.  
NOTE: The Central Meridian is an imaginary line passing through the planetary poles of rotation and bisecting the planetary disk. This line is used to define what planetographic longitudes are present on the disk during an observing session.

#### MOTION OF THE CENTRAL MERIDIAN OF VENUS

The tabulated values for the Central Meridian are listed for 0-hours UT in the Ephemeris  
(Add the values below to the listed Central Meridian)

HR	Sys I DEGREES	Sys II DEGREES	HR	Sys I DEGREES	Sys II DEGREES	MIN	Sys I DEGREES	Sys II DEGREES	MIN	Sys I DEGREES	Sys II DEGREES
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										Venus_2014	
1	0.062	3.57	13	0.802	46.43	10	0.010	0.60	1	0.001	0.06
2	0.123	7.14	14	0.864	50.00	20	0.021	1.19	2	0.002	0.12
3	0.185	10.71	15	0.926	53.57	30	0.031	1.79	3	0.003	0.18
4	0.247	14.29	16	0.988	57.14	40	0.041	2.38	4	0.004	0.24
5	0.309	17.86	17	1.049	60.71	50	0.051	2.98	5	0.005	0.30
6	0.370	21.43	18	1.111	64.29				6	0.006	0.36
7	0.432	25.00	19	1.173	67.86				7	0.007	0.42
8	0.494	28.57	20	1.234	71.43				8	0.008	0.48
9	0.556	32.14	21	1.296	75.00				9	0.009	0.54
10	0.617	35.71	22	1.358	78.57						
11	0.579	39.29	23	1.420	82.14						
12	0.741	42.86									

Example: 0h UT CMI = 19.7. At 1413UT CMI =  $19.7^\circ + 0.864^\circ + 0.010^\circ + 0.003^\circ = 20.6^\circ$   
Example: 0h UT CMII = 146.3. At 1413UT CMII =  $146.3^\circ + 50.00^\circ + 0.60^\circ + 0.18^\circ = 197.1^\circ$