



## Venus 2023

Datum	$\alpha$	$\delta$	b	$\Delta$ (AE)	E	mv	$\varphi$	$\emptyset$	k	q (")	$\Delta\alpha$ (h:m)	$\Delta\delta$ (°)	l	r
1.01.	19:59	-22.0	-1.4	1.607	17 O	-3.9	23.5	10.38	0.959	0.43	1:14	1.0	320.8	0.728
4.01.	20:14	-21.3	-1.4	1.599	18 O	-3.9	24.5	10.43	0.955	0.47	1:17	1.5	325.6	0.728
7.01.	20:30	-20.5	-1.5	1.589	19 O	-3.9	25.5	10.49	0.951	0.51	1:19	1.9	330.3	0.728
10.01.	20:46	-19.6	-1.5	1.580	19 O	-3.9	26.5	10.56	0.948	0.55	1:22	2.5	335.1	0.728
13.01.	21:01	-18.6	-1.6	1.570	20 O	-3.9	27.5	10.62	0.944	0.60	1:24	3.0	339.8	0.728
16.01.	21:16	-17.5	-1.6	1.560	21 O	-3.9	28.5	10.69	0.940	0.65	1:26	3.5	344.6	0.727
19.01.	21:31	-16.4	-1.6	1.550	21 O	-3.9	29.5	10.76	0.935	0.70	1:28	4.1	349.4	0.727
22.01.	21:46	-15.1	-1.6	1.539	22 O	-3.9	30.5	10.84	0.931	0.75	1:30	4.7	354.1	0.727
25.01.	22:00	-13.9	-1.6	1.528	23 O	-3.9	31.5	10.92	0.926	0.81	1:32	5.2	358.9	0.727
28.01.	22:14	-12.5	-1.6	1.516	23 O	-3.9	32.6	11.00	0.921	0.86	1:34	5.8	3.7	0.726
31.01.	22:29	-11.1	-1.5	1.504	24 O	-3.9	33.6	11.09	0.916	0.93	1:36	6.4	8.4	0.726
3.02.	22:43	-9.7	-1.5	1.492	25 O	-3.9	34.6	11.18	0.911	0.99	1:38	6.9	13.2	0.726
6.02.	22:56	-8.3	-1.4	1.480	25 O	-3.9	35.7	11.27	0.906	1.06	1:39	7.5	18.0	0.725
9.02.	23:10	-6.8	-1.4	1.467	26 O	-3.9	36.8	11.37	0.901	1.13	1:41	8.1	22.8	0.725
12.02.	23:24	-5.2	-1.3	1.453	27 O	-3.9	37.8	11.48	0.895	1.21	1:43	8.6	27.6	0.725
15.02.	23:37	-3.7	-1.2	1.440	27 O	-4.0	38.9	11.58	0.889	1.29	1:45	9.1	32.4	0.724
18.02.	23:51	-2.1	-1.1	1.426	28 O	-4.0	40.0	11.70	0.883	1.37	1:46	9.7	37.2	0.724
21.02.	0:04	-0.6	-1.0	1.412	29 O	-4.0	41.1	11.82	0.877	1.46	1:48	10.2	42.0	0.723
24.02.	0:18	1.0	-0.9	1.397	29 O	-4.0	42.3	11.94	0.870	1.55	1:50	10.6	46.8	0.723
27.02.	0:31	2.6	-0.8	1.382	30 O	-4.0	43.4	12.07	0.863	1.65	1:52	11.1	51.6	0.722
2.03.	0:44	4.1	-0.6	1.366	31 O	-4.0	44.5	12.21	0.856	1.75	1:54	11.5	56.4	0.722
5.03.	0:57	5.7	-0.5	1.351	31 O	-4.0	45.7	12.35	0.849	1.86	1:56	11.9	61.2	0.722
8.03.	1:11	7.2	-0.3	1.334	32 O	-4.0	46.9	12.50	0.842	1.98	1:59	12.3	66.1	0.721
11.03.	1:24	8.7	-0.2	1.318	33 O	-4.0	48.1	12.66	0.834	2.10	2:01	12.6	70.9	0.721
14.03.	1:38	10.2	0.0	1.301	33 O	-4.0	49.3	12.82	0.826	2.23	2:03	12.9	75.7	0.721
17.03.	1:51	11.6	0.1	1.284	34 O	-4.0	50.5	12.99	0.818	2.36	2:06	13.2	80.5	0.720
20.03.	2:05	13.0	0.3	1.266	35 O	-4.0	51.7	13.17	0.810	2.50	2:09	13.4	85.4	0.720
23.03.	2:19	14.4	0.5	1.248	35 O	-4.0	52.9	13.36	0.801	2.65	2:11	13.5	90.2	0.720
26.03.	2:33	15.7	0.6	1.230	36 O	-4.0	54.2	13.57	0.792	2.82	2:14	13.7	95.1	0.719
29.03.	2:46	16.9	0.8	1.211	36 O	-4.0	55.5	13.78	0.783	2.99	2:17	13.7	99.9	0.719
1.04.	3:01	18.1	1.0	1.192	37 O	-4.0	56.8	14.00	0.774	3.16	2:21	13.8	104.8	0.719
4.04.	3:15	19.2	1.1	1.172	38 O	-4.0	58.1	14.23	0.764	3.35	2:24	13.7	109.7	0.719
7.04.	3:29	20.3	1.3	1.152	38 O	-4.0	59.4	14.47	0.754	3.55	2:27	13.6	114.5	0.719
10.04.	3:44	21.3	1.5	1.132	39 O	-4.1	60.8	14.73	0.744	3.77	2:31	13.5	119.4	0.719
13.04.	3:58	22.2	1.6	1.112	39 O	-4.1	62.1	15.01	0.734	4.00	2:34	13.3	124.3	0.718
16.04.	4:13	23.0	1.8	1.091	40 O	-4.1	63.5	15.29	0.723	4.23	2:38	13.0	129.1	0.718
19.04.	4:28	23.7	1.9	1.069	40 O	-4.1	64.9	15.60	0.712	4.49	2:41	12.7	134.0	0.718
22.04.	4:42	24.3	2.1	1.048	41 O	-4.1	66.3	15.92	0.701	4.77	2:45	12.3	138.9	0.718
25.04.	4:57	24.9	2.2	1.026	41 O	-4.1	67.8	16.26	0.689	5.06	2:49	11.8	143.8	0.719
28.04.	5:12	25.3	2.3	1.004	42 O	-4.1	69.3	16.61	0.677	5.36	2:52	11.3	148.6	0.719



Datum	$\alpha$	$\delta$	b	$\Delta$ (AE)	E	mv	$\varphi$	$\varnothing$	k	q (")	$\Delta\alpha$ (h:m)	$\Delta\delta$ (°)	l	r
1.05.	5:27	25.7	2.4	0.982	42 O	-4.1	70.7	16.99	0.665	5.69	2:56	10.7	153.5	0.719
4.05.	5:42	25.9	2.5	0.959	43 O	-4.1	72.3	17.40	0.652	6.05	2:59	10.1	158.4	0.719
7.05.	5:57	26.0	2.6	0.936	43 O	-4.2	73.8	17.82	0.639	6.43	3:02	9.3	163.3	0.719
10.05.	6:11	26.1	2.7	0.913	44 O	-4.2	75.4	18.27	0.626	6.83	3:05	8.6	168.1	0.719
13.05.	6:26	26.0	2.7	0.889	44 O	-4.2	77.0	18.76	0.613	7.27	3:08	7.8	173.0	0.720
16.05.	6:40	25.9	2.8	0.866	44 O	-4.2	78.6	19.27	0.599	7.73	3:10	6.9	177.9	0.720
19.05.	6:54	25.7	2.8	0.842	45 O	-4.2	80.3	19.81	0.584	8.24	3:12	6.0	182.7	0.720
22.05.	7:08	25.3	2.8	0.818	45 O	-4.2	82.0	20.39	0.570	8.78	3:14	5.0	187.6	0.721
25.05.	7:21	24.9	2.8	0.794	45 O	-4.2	83.8	21.01	0.554	9.36	3:16	4.0	192.4	0.721
28.05.	7:35	24.4	2.7	0.770	45 O	-4.3	85.5	21.67	0.539	9.99	3:17	3.0	197.3	0.721
31.05.	7:48	23.8	2.7	0.746	45 O	-4.3	87.4	22.37	0.523	10.68	3:18	2.0	202.1	0.722
3.06.	8:00	23.2	2.6	0.721	45 O	-4.3	89.3	23.12	0.506	11.42	3:18	0.9	206.9	0.722
6.06.	8:12	22.5	2.5	0.697	45 O	-4.3	91.2	23.93	0.489	12.22	3:18	-0.1	211.8	0.722
9.06.	8:24	21.7	2.4	0.673	45 O	-4.3	93.3	24.80	0.472	13.11	3:17	-1.1	216.6	0.723
12.06.	8:35	20.9	2.2	0.648	45 O	-4.3	95.4	25.73	0.453	14.07	3:16	-2.2	221.4	0.723
15.06.	8:46	20.1	2.0	0.624	45 O	-4.4	97.5	26.72	0.435	15.11	3:14	-3.2	226.2	0.724
18.06.	8:56	19.2	1.8	0.600	45 O	-4.4	99.8	27.79	0.415	16.26	3:11	-4.2	231.0	0.724
21.06.	9:05	18.2	1.5	0.576	44 O	-4.4	102.1	28.95	0.395	17.52	3:09	-5.2	235.8	0.724
24.06.	9:14	17.3	1.3	0.553	44 O	-4.4	104.6	30.19	0.374	18.91	3:05	-6.2	240.5	0.725
27.06.	9:23	16.3	0.9	0.529	43 O	-4.4	107.2	31.52	0.352	20.43	3:01	-7.0	245.3	0.725
30.06.	9:30	15.3	0.6	0.506	42 O	-4.5	110.0	32.95	0.329	22.10	2:56	-7.9	250.1	0.726
3.07.	9:37	14.3	0.2	0.484	41 O	-4.5	112.9	34.49	0.306	23.94	2:51	-8.7	254.9	0.726
6.07.	9:43	13.4	-0.3	0.462	40 O	-4.5	115.9	36.14	0.281	25.97	2:44	-9.3	259.6	0.726
9.07.	9:48	12.4	-0.7	0.440	39 O	-4.5	119.2	37.90	0.256	28.19	2:37	-10.0	264.4	0.727
12.07.	9:52	11.5	-1.2	0.419	37 O	-4.5	122.7	39.77	0.230	30.62	2:29	-10.5	269.1	0.727
15.07.	9:55	10.7	-1.8	0.400	35 O	-4.5	126.4	41.75	0.203	33.26	2:20	-10.9	273.9	0.727
18.07.	9:57	9.9	-2.4	0.381	33 O	-4.4	130.4	43.81	0.176	36.10	2:09	-11.2	278.6	0.727
21.07.	9:58	9.1	-3.0	0.363	31 O	-4.4	134.6	45.94	0.149	39.11	1:58	-11.4	283.4	0.728
24.07.	9:57	8.5	-3.7	0.347	28 O	-4.4	139.2	48.10	0.122	42.25	1:45	-11.5	288.1	0.728
27.07.	9:55	8.0	-4.4	0.332	25 O	-4.3	144.0	50.23	0.095	45.44	1:31	-11.3	292.9	0.728
30.07.	9:52	7.5	-5.1	0.319	22 O	-4.3	149.1	52.26	0.071	48.56	1:16	-11.1	297.6	0.728
2.08.	9:47	7.2	-5.7	0.308	18 O	-4.2	154.4	54.11	0.049	51.45	0:60	-10.6	302.3	0.728
5.08.	9:41	7.1	-6.4	0.300	14 O	-4.1	159.7	55.68	0.031	53.95	0:43	-10.0	307.1	0.728
8.08.	9:35	7.1	-6.9	0.293	11 O	-4.0	164.6	56.86	0.018	55.85	0:24	-9.2	311.8	0.728
11.08.	9:27	7.2	-7.4	0.290	8 O	-4.0	168.4	57.58	0.010	56.99	0:06	-8.2	316.6	0.728
14.08.	9:20	7.4	-7.7	0.289	8 W	-3.9	169.1	57.78	0.009	57.26	-0:13	-7.1	321.3	0.728
17.08.	9:13	7.7	-8.0	0.290	10 W	-4.0	166.4	57.46	0.014	56.66	-0:32	-5.8	326.1	0.728
20.08.	9:06	8.1	-8.1	0.295	13 W	-4.1	161.8	56.63	0.025	55.22	-0:50	-4.5	330.8	0.728
23.08.	9:00	8.6	-8.1	0.301	17 W	-4.2	156.6	55.36	0.041	53.08	-1:06	-3.0	335.6	0.728
26.08.	8:55	9.1	-7.9	0.310	20 W	-4.3	151.2	53.76	0.062	50.45	-1:22	-1.5	340.3	0.728
29.08.	8:52	9.5	-7.7	0.321	24 W	-4.4	146.1	51.90	0.085	47.48	-1:36	0.0	345.1	0.727



Datum	$\alpha$	$\delta$	b	$\Delta$ (AE)	E	mv	$\varphi$	$\emptyset$	k	q (")	$\Delta\alpha$ (h:m)	$\Delta\delta$ (°)	l	r
1.09.	8:50	10.0	-7.4	0.334	27 W	-4.4	141.1	49.90	0.111	44.37	-1:49	1.5	349.8	0.727
4.09.	8:50	10.4	-7.0	0.349	30 W	-4.5	136.4	47.82	0.138	41.23	-2:00	3.0	354.6	0.727
7.09.	8:51	10.7	-6.6	0.365	32 W	-4.5	132.0	45.73	0.165	38.17	-2:10	4.5	359.4	0.727
10.09.	8:54	11.0	-6.2	0.382	35 W	-4.5	127.9	43.68	0.193	35.27	-2:18	5.9	4.2	0.726
13.09.	8:57	11.2	-5.7	0.400	37 W	-4.5	124.1	41.70	0.220	32.54	-2:25	7.3	8.9	0.726
16.09.	9:02	11.4	-5.3	0.419	38 W	-4.5	120.5	39.81	0.246	30.02	-2:31	8.6	13.7	0.726
19.09.	9:08	11.4	-4.8	0.439	40 W	-4.5	117.2	38.01	0.271	27.70	-2:36	9.8	18.5	0.725
22.09.	9:15	11.4	-4.3	0.459	41 W	-4.5	114.1	36.33	0.296	25.58	-2:40	10.9	23.3	0.725
25.09.	9:22	11.3	-3.9	0.480	42 W	-4.5	111.2	34.75	0.320	23.65	-2:43	12.0	28.1	0.724
28.09.	9:30	11.1	-3.4	0.501	43 W	-4.5	108.4	33.28	0.342	21.89	-2:46	13.0	32.9	0.724
1.10.	9:39	10.8	-3.0	0.523	44 W	-4.5	105.8	31.90	0.364	20.29	-2:48	13.8	37.7	0.724
4.10.	9:48	10.5	-2.6	0.545	45 W	-4.5	103.3	30.62	0.385	18.83	-2:50	14.7	42.5	0.723
7.10.	9:58	10.1	-2.1	0.567	45 W	-4.5	100.9	29.42	0.405	17.50	-2:51	15.4	47.3	0.723
10.10.	10:08	9.5	-1.7	0.589	46 W	-4.5	98.7	28.31	0.424	16.29	-2:52	16.0	52.1	0.722
13.10.	10:19	9.0	-1.4	0.612	46 W	-4.4	96.5	27.27	0.443	15.19	-2:52	16.6	56.9	0.722
16.10.	10:30	8.3	-1.0	0.634	46 W	-4.4	94.5	26.30	0.461	14.17	-2:52	17.0	61.7	0.722
19.10.	10:41	7.6	-0.7	0.657	46 W	-4.4	92.5	25.40	0.478	13.25	-2:52	17.4	66.5	0.721
22.10.	10:52	6.8	-0.3	0.679	46 W	-4.4	90.6	24.55	0.495	12.39	-2:52	17.6	71.4	0.721
25.10.	11:04	5.9	0.0	0.702	46 W	-4.4	88.7	23.76	0.511	11.61	-2:52	17.8	76.2	0.721
28.10.	11:16	5.0	0.2	0.725	46 W	-4.4	86.9	23.02	0.527	10.89	-2:52	17.9	81.0	0.720
31.10.	11:27	4.0	0.5	0.747	46 W	-4.3	85.2	22.32	0.542	10.22	-2:52	18.0	85.9	0.720
3.11.	11:39	3.0	0.8	0.770	46 W	-4.3	83.5	21.67	0.557	9.60	-2:52	17.9	90.7	0.720
6.11.	11:52	1.9	1.0	0.792	46 W	-4.3	81.8	21.05	0.571	9.03	-2:51	17.8	95.6	0.719
9.11.	12:04	0.8	1.2	0.815	46 W	-4.3	80.2	20.48	0.585	8.50	-2:51	17.6	100.4	0.719
12.11.	12:16	-0.3	1.4	0.837	45 W	-4.3	78.6	19.93	0.599	8.00	-2:51	17.3	105.3	0.719
15.11.	12:29	-1.5	1.6	0.859	45 W	-4.3	77.1	19.42	0.612	7.54	-2:51	16.9	110.2	0.719
18.11.	12:41	-2.6	1.7	0.881	45 W	-4.2	75.6	18.93	0.624	7.11	-2:50	16.5	115.0	0.719
21.11.	12:54	-3.8	1.8	0.903	44 W	-4.2	74.1	18.47	0.637	6.71	-2:50	16.0	119.9	0.719
24.11.	13:07	-5.1	2.0	0.925	44 W	-4.2	72.7	18.04	0.649	6.33	-2:50	15.4	124.8	0.718
27.11.	13:20	-6.3	2.1	0.946	44 W	-4.2	71.2	17.63	0.661	5.98	-2:50	14.8	129.6	0.718
30.11.	13:33	-7.5	2.1	0.968	43 W	-4.2	69.8	17.24	0.672	5.65	-2:49	14.1	134.5	0.718
3.12.	13:46	-8.7	2.2	0.989	43 W	-4.2	68.5	16.87	0.684	5.34	-2:49	13.3	139.4	0.718
6.12.	14:00	-9.9	2.2	1.010	42 W	-4.2	67.1	16.52	0.695	5.05	-2:49	12.6	144.3	0.719
9.12.	14:13	-11.1	2.3	1.030	42 W	-4.1	65.8	16.19	0.705	4.77	-2:48	11.7	149.1	0.719
12.12.	14:27	-12.2	2.3	1.051	41 W	-4.1	64.4	15.87	0.716	4.51	-2:47	10.8	154.0	0.719
15.12.	14:41	-13.3	2.3	1.071	41 W	-4.1	63.2	15.57	0.726	4.27	-2:47	9.9	158.9	0.719
18.12.	14:55	-14.4	2.2	1.091	40 W	-4.1	61.9	15.28	0.736	4.04	-2:46	9.0	163.8	0.719
21.12.	15:09	-15.4	2.2	1.111	40 W	-4.1	60.6	15.01	0.745	3.82	-2:45	8.0	168.6	0.719
24.12.	15:24	-16.4	2.1	1.131	39 W	-4.1	59.4	14.75	0.755	3.62	-2:44	7.0	173.5	0.720
27.12.	15:39	-17.4	2.1	1.150	38 W	-4.1	58.1	14.50	0.764	3.42	-2:43	6.0	178.4	0.720
30.12.	15:53	-18.2	2.0	1.169	38 W	-4.1	56.9	14.26	0.773	3.24	-2:41	5.0	183.2	0.720

Die Ephemeriden gelten für 0 Uhr Weltzeit.

Geozentrische Koordinaten:

$\alpha$  und  $\delta$ : Rektaszension und Deklination zum Äquinoktium des Datums. b: ekliptikale Breite;  $\Delta$ : Abstand von der Erde.  
E: Elongation (Winkel zwischen Planet und Sonnenmitte); mv: visuelle Helligkeit;  $\varphi$ : Phasenwinkel

Physische Ephemeriden (für Beobachtungen am Teleskop):

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

Koordinaten für Tagesbeobachtungen:

$\Delta\alpha$  und  $\Delta\delta$ : Rektaszensions- und Deklinationsdifferenzen (Venus minus Sonne)

Heliozentrische Koordinaten:

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

14.09.2015