Ephemeriden für Sternfreunde
von Karl-Heinz Bücke

www.buecke-info.de

Venus 2019

Datum	α	δ	b	Δ (AE)	E	mv	φ	∅	k	q (")	Δα(h:m)	Δδ(°)	l	r
1.01.	15:28	-15.3	3.4	0.635	47 W	-4.5	93.0	26.28	0.474	13.83	-3:17	7.7	140.3	0.718
4.01.	15:40	-16.0	3.4	0.657	47 W	-4.5	91.1	25.37	0.490	12.93	-3:18	6.8	145.2	0.719
7.01.	15:52	-16.7	3.4	0.680	47 W	-4.4	89.3	24.52	0.506	12.10	-3:19	5.7	150.1	0.719
10.01.	16:05	-17.4	3.4	0.703	47 W	-4.4	87.5	23.72	0.522	11.34	-3:19	4.7	154.9	0.719
13.01.	16:17	-18.0	3.3	0.726	47 W	-4.4	85.8	22.98	0.537	10.65	-3:19	3.6	159.8	0.719
16.01.	16:31	-18.6	3.3	0.749	47 W	-4.4	84.1	22.28	0.551	10.00	-3:19	2.5	164.7	0.719
19.01.	16:44	-19.1	3.2	0.771	46 W	-4.3	82.5	21.62	0.565	9.40	-3:18	1.3	169.5	0.719
22.01.	16:58	-19.6	3.0	0.794	46 W	-4.3	80.9	21.01	0.579	8.85	-3:17	0.2	174.4	0.720
25.01.	17:12	-20.1	2.9	0.817	46 W	-4.3	79.4	20.43	0.592	8.34	-3:16	-1.0	179.3	0.720
28.01.	17:26	-20.4	2.8	0.839	46 W	-4.3	77.9	19.88	0.605	7.86	-3:14	-2.1	184.1	0.720
31.01.	17:40	-20.7	2.6	0.861	45 W	-4.3	76.4	19.36	0.617	7.41	-3:12	-3.2	189.0	0.721
3.02.	17:55	-21.0	2.5	0.884	45 W	-4.2	75.0	18.87	0.629	7.00	-3:10	-4.3	193.8	0.721
6.02.	18:10	-21.1	2.3	0.906	45 W	-4.2	73.6	18.41	0.641	6.61	-3:07	-5.3	198.7	0.721
9.02.	18:24	-21.2	2.1	0.928	44 W	-4.2	72.2	17.98	0.653	6.25	-3:04	-6.4	203.5	0.722
12.02.	18:39	-21.2	1.9	0.950	44 W	-4.2	70.9	17.56	0.664	5.91	-3:01	-7.3	208.3	0.722
15.02.	18:54	-21.1	1.7	0.971	43 W	-4.2	69.6	17.17	0.675	5.59	-2:58	-8.2	213.1	0.723
18.02.	19:09	-20.9	1.6	0.993	43 W	-4.2	68.3	16.80	0.685	5.29	-2:55	-9.1	218.0	0.723
21.02.	19:24	-20.6	1.4	1.014	42 W	-4.1	67.0	16.45	0.696	5.01	-2:52	-9.9	222.8	0.723
24.02.	19:39	-20.3	1.2	1.035	42 W	-4.1	65.7	16.11	0.706	4.74	-2:48	-10.6	227.6	0.724
27.02.	19:54	-19.8	1.0	1.056	41 W	-4.1	64.5	15.79	0.716	4.49	-2:44	-11.3	232.4	0.724
2.03.	20:09	-19.3	0.8	1.077	41 W	-4.1	63.2	15.48	0.725	4.25	-2:41	-11.9	237.1	0.725
5.03.	20:24	-18.7	0.6	1.098	40 W	-4.1	62.0	15.19	0.735	4.03	-2:37	-12.5	241.9	0.725
8.03.	20:39	-18.0	0.4	1.118	40 W	-4.1	60.8	14.92	0.744	3.82	-2:33	-12.9	246.7	0.725
11.03.	20:53	-17.3	0.2	1.138	39 W	-4.0	59.6	14.65	0.753	3.62	-2:30	-13.3	251.5	0.726
14.03.	21:08	-16.4	0.0	1.158	38 W	-4.0	58.4	14.40	0.762	3.43	-2:26	-13.7	256.2	0.726
17.03.	21:22	-15.5	-0.2	1.178	38 W	-4.0	57.2	14.16	0.771	3.25	-2:23	-14.0	261.0	0.726
20.03.	21:37	-14.5	-0.3	1.198	37 W	-4.0	56.1	13.92	0.779	3.08	-2:19	-14.2	265.7	0.727
23.03.	21:51	-13.5	-0.5	1.217	37 W	-4.0	54.9	13.70	0.787	2.91	-2:16	-14.3	270.5	0.727
26.03.	22:05	-12.4	-0.6	1.236	36 W	-4.0	53.8	13.49	0.795	2.76	-2:13	-14.4	275.2	0.727
29.03.	22:19	-11.3	-0.8	1.255	35 W	-4.0	52.6	13.29	0.803	2.61	-2:10	-14.4	280.0	0.727
1.04.	22:33	-10.1	-0.9	1.274	35 W	-4.0	51.5	13.09	0.811	2.47	-2:07	-14.4	284.7	0.728
4.04.	22:47	-8.8	-1.0	1.292	34 W	-4.0	50.4	12.91	0.819	2.34	-2:04	-14.3	289.5	0.728
7.04.	23:00	-7.6	-1.1	1.310	33 W	-4.0	49.2	12.73	0.826	2.21	-2:01	-14.2	294.2	0.728
10.04.	23:14	-6.2	-1.2	1.328	33 W	-3.9	48.1	12.56	0.834	2.09	-1:59	-14.0	299.0	0.728
13.04.	23:28	-4.9	-1.3	1.346	32 W	-3.9	47.0	12.39	0.841	1.97	-1:56	-13.8	303.7	0.728
16.04.	23:41	-3.5	-1.4	1.363	31 W	-3.9	45.9	12.24	0.848	1.86	-1:54	-13.5	308.5	0.728
19.04.	23:54	-2.2	-1.5	1.380	31 W	-3.9	44.8	12.08	0.855	1.75	-1:52	-13.2	313.2	0.728
22.04.	0:08	-0.8	-1.5	1.397	30 W	-3.9	43.7	11.94	0.862	1.65	-1:49	-12.8	317.9	0.728
25.04.	0:21	0.6	-1.6	1.414	29 W	-3.9	42.5	11.80	0.868	1.55	-1:47	-12.4	322.7	0.728
28.04.	0:35	2.0	-1.6	1.430	29 W	-3.9	41.4	11.67	0.875	1.46	-1:45	-12.0	327.4	0.728

Venus 2019

Datum	α	δ	b	Δ (AE)	E	mv	φ	∅	k	q (")	Δα(h:m)	Δδ(°)	l	r
1.05.	0:48	3.4	-1.7	1.445	28 W	-3.9	40.3	11.54	0.881	1.37	-1:43	-11.5	332.2	0.728
4.05.	1:02	4.8	-1.7	1.461	27 W	-3.9	39.2	11.42	0.887	1.29	-1:41	-11.0	336.9	0.728
7.05.	1:15	6.2	-1.7	1.476	26 W	-3.9	38.1	11.30	0.893	1.20	-1:39	-10.5	341.7	0.728
10.05.	1:29	7.6	-1.7	1.491	26 W	-3.9	37.0	11.19	0.899	1.13	-1:37	-9.9	346.5	0.727
13.05.	1:42	8.9	-1.6	1.505	25 W	-3.9	35.9	11.08	0.905	1.05	-1:35	-9.3	351.2	0.727
16.05.	1:56	10.2	-1.6	1.519	24 W	-3.9	34.7	10.98	0.911	0.98	-1:33	-8.8	356.0	0.727
19.05.	2:10	11.5	-1.6	1.533	23 W	-3.9	33.6	10.88	0.916	0.91	-1:31	-8.2	0.8	0.727
22.05.	2:24	12.8	-1.5	1.546	23 W	-3.9	32.5	10.79	0.922	0.84	-1:29	-7.5	5.5	0.726
25.05.	2:38	14.0	-1.4	1.559	22 W	-3.9	31.4	10.70	0.927	0.78	-1:27	-6.9	10.3	0.726
28.05.	2:53	15.1	-1.4	1.572	21 W	-3.9	30.2	10.61	0.932	0.72	-1:25	-6.3	15.1	0.726
31.05.	3:07	16.2	-1.3	1.584	20 W	-3.9	29.1	10.53	0.937	0.67	-1:23	-5.6	19.9	0.725
3.06.	3:22	17.2	-1.2	1.596	20 W	-3.9	28.0	10.45	0.942	0.61	-1:21	-5.0	24.7	0.725
6.06.	3:36	18.2	-1.1	1.607	19 W	-3.9	26.8	10.38	0.946	0.56	-1:18	-4.4	29.5	0.724
9.06.	3:51	19.1	-1.0	1.618	18 W	-3.9	25.7	10.31	0.951	0.51	-1:16	-3.8	34.3	0.724
12.06.	4:07	20.0	-0.9	1.628	17 W	-3.9	24.5	10.25	0.955	0.46	-1:13	-3.2	39.1	0.724
15.06.	4:22	20.7	-0.8	1.638	16 W	-3.9	23.4	10.18	0.959	0.42	-1:10	-2.6	43.9	0.723
18.06.	4:37	21.4	-0.7	1.647	16 W	-3.9	22.3	10.13	0.963	0.38	-1:07	-2.0	48.7	0.723
21.06.	4:53	22.0	-0.6	1.656	15 W	-3.9	21.1	10.07	0.966	0.34	-1:04	-1.5	53.5	0.722
24.06.	5:08	22.4	-0.5	1.665	14 W	-3.9	19.9	10.02	0.970	0.30	-1:01	-1.0	58.3	0.722
27.06.	5:24	22.8	-0.3	1.673	13 W	-3.9	18.8	9.97	0.973	0.27	-0:57	-0.5	63.1	0.722
30.06.	5:40	23.1	-0.2	1.680	12 W	-3.9	17.6	9.93	0.977	0.23	-0:54	-0.1	67.9	0.721
3.07.	5:56	23.3	-0.1	1.687	12 W	-3.9	16.5	9.89	0.980	0.20	-0:50	0.3	72.8	0.721
6.07.	6:12	23.4	0.0	1.694	11 W	-3.9	15.3	9.85	0.982	0.17	-0:47	0.7	77.6	0.720
9.07.	6:28	23.4	0.1	1.700	10 W	-3.9	14.1	9.81	0.985	0.15	-0:43	1.0	82.4	0.720
12.07.	6:44	23.3	0.3	1.705	9 W	-3.9	13.0	9.78	0.987	0.12	-0:39	1.3	87.3	0.720
15.07.	7:00	23.1	0.4	1.710	8 W	-3.9	11.8	9.75	0.989	0.10	-0:35	1.5	92.1	0.720
18.07.	7:16	22.8	0.5	1.714	8 W	-3.9	10.7	9.73	0.991	0.08	-0:32	1.7	97.0	0.719
21.07.	7:32	22.3	0.6	1.718	7 W	-3.9	9.5	9.71	0.993	0.07	-0:28	1.8	101.8	0.719
24.07.	7:48	21.8	0.7	1.722	6 W	-3.9	8.4	9.69	0.995	0.05	-0:24	1.9	106.7	0.719
27.07.	8:03	21.2	0.8	1.725	5 W	-3.9	7.2	9.67	0.996	0.04	-0:20	1.9	111.6	0.719
30.07.	8:19	20.5	0.9	1.727	4 W	-3.9	6.1	9.66	0.997	0.03	-0:16	1.9	116.4	0.719
2.08.	8:34	19.7	1.0	1.729	4 W	-3.9	5.0	9.65	0.998	0.02	-0:13	1.8	121.3	0.719
5.08.	8:50	18.8	1.1	1.730	3 W	-3.9	3.9	9.64	0.999	0.01	-0:09	1.7	126.2	0.718
8.08.	9:05	17.9	1.1	1.731	2 W	-3.9	2.9	9.64	0.999	0.01	-0:05	1.6	131.0	0.718
11.08.	9:20	16.8	1.2	1.731	2 W	-3.9	2.1	9.63	1.000	0.00	-0:02	1.4	135.9	0.718
14.08.	9:34	15.7	1.3	1.731	1 W	-3.9	1.8	9.64	1.000	0.00	0:01	1.2	140.8	0.718
17.08.	9:49	14.6	1.3	1.730	2 O	-3.9	2.1	9.64	1.000	0.00	0:05	1.0	145.7	0.719
20.08.	10:03	13.3	1.4	1.729	2 O	-3.9	2.9	9.65	0.999	0.01	0:08	0.7	150.6	0.719
23.08.	10:18	12.0	1.4	1.727	3 O	-3.9	3.9	9.66	0.999	0.01	0:11	0.4	155.4	0.719
26.08.	10:32	10.7	1.4	1.725	4 O	-3.9	5.0	9.67	0.998	0.02	0:14	0.1	160.3	0.719
29.08.	10:46	9.3	1.4	1.722	4 O	-3.9	6.0	9.68	0.997	0.03	0:17	-0.2	165.2	0.719

Venus 2019

Datum	α	δ	b	Δ (AE)	E	mv	φ	∅	k	q (")	Δα(h:m)	Δδ(°)	l	r
1.09.	11:00	7.9	1.4	1.719	5 O	-3.9	7.1	9.70	0.996	0.04	0:20	-0.5	170.0	0.719
4.09.	11:13	6.5	1.4	1.716	6 O	-3.9	8.2	9.72	0.995	0.05	0:23	-0.9	174.9	0.720
7.09.	11:27	5.0	1.4	1.712	7 O	-3.9	9.3	9.75	0.993	0.06	0:26	-1.3	179.8	0.720
10.09.	11:41	3.5	1.4	1.707	7 O	-3.9	10.4	9.77	0.992	0.08	0:29	-1.6	184.6	0.720
13.09.	11:55	2.0	1.3	1.702	8 O	-3.9	11.5	9.80	0.990	0.10	0:32	-2.0	189.5	0.721
16.09.	12:08	0.5	1.3	1.697	9 O	-3.9	12.6	9.83	0.988	0.12	0:35	-2.4	194.3	0.721
19.09.	12:22	-1.1	1.2	1.691	10 O	-3.9	13.7	9.86	0.986	0.14	0:38	-2.7	199.2	0.721
22.09.	12:35	-2.6	1.2	1.685	11 O	-3.9	14.8	9.90	0.983	0.16	0:41	-3.1	204.0	0.722
25.09.	12:49	-4.1	1.1	1.678	11 O	-3.9	15.9	9.94	0.981	0.19	0:43	-3.5	208.8	0.722
28.09.	13:03	-5.6	1.0	1.671	12 O	-3.9	17.0	9.98	0.978	0.22	0:46	-3.8	213.6	0.723
1.10.	13:16	-7.1	0.9	1.663	13 O	-3.9	18.0	10.03	0.975	0.25	0:49	-4.1	218.4	0.723
4.10.	13:30	-8.6	0.8	1.656	14 O	-3.9	19.1	10.07	0.972	0.28	0:52	-4.5	223.3	0.723
7.10.	13:44	-10.1	0.7	1.647	14 O	-3.9	20.2	10.12	0.969	0.31	0:55	-4.7	228.0	0.724
10.10.	13:58	-11.5	0.6	1.639	15 O	-3.9	21.2	10.18	0.966	0.35	0:58	-5.0	232.8	0.724
13.10.	14:12	-12.8	0.5	1.630	16 O	-3.9	22.3	10.23	0.963	0.38	1:01	-5.3	237.6	0.725
16.10.	14:27	-14.2	0.4	1.621	17 O	-3.9	23.3	10.29	0.959	0.42	1:05	-5.5	242.4	0.725
19.10.	14:41	-15.4	0.3	1.611	17 O	-3.9	24.4	10.35	0.955	0.46	1:08	-5.6	247.2	0.725
22.10.	14:56	-16.7	0.1	1.601	18 O	-3.9	25.4	10.42	0.952	0.50	1:11	-5.8	251.9	0.726
25.10.	15:11	-17.8	0.0	1.591	19 O	-3.9	26.4	10.49	0.948	0.55	1:15	-5.9	256.7	0.726
28.10.	15:26	-18.9	-0.1	1.580	20 O	-3.9	27.5	10.56	0.944	0.60	1:18	-5.9	261.5	0.726
31.10.	15:41	-19.9	-0.3	1.569	20 O	-3.9	28.5	10.63	0.939	0.64	1:22	-6.0	266.2	0.727
3.11.	15:56	-20.8	-0.4	1.558	21 O	-3.9	29.5	10.71	0.935	0.70	1:26	-5.9	271.0	0.727
6.11.	16:12	-21.7	-0.5	1.546	22 O	-3.9	30.6	10.79	0.931	0.75	1:29	-5.8	275.7	0.727
9.11.	16:28	-22.4	-0.6	1.534	23 O	-3.9	31.6	10.87	0.926	0.80	1:33	-5.7	280.5	0.728
12.11.	16:44	-23.1	-0.8	1.522	23 O	-3.9	32.6	10.96	0.921	0.86	1:37	-5.5	285.2	0.728
15.11.	17:00	-23.6	-0.9	1.510	24 O	-3.9	33.6	11.05	0.916	0.92	1:41	-5.3	290.0	0.728
18.11.	17:16	-24.1	-1.0	1.497	25 O	-3.9	34.6	11.14	0.911	0.99	1:44	-5.0	294.7	0.728
21.11.	17:32	-24.4	-1.1	1.484	25 O	-3.9	35.7	11.24	0.906	1.05	1:48	-4.6	299.4	0.728
24.11.	17:49	-24.6	-1.2	1.470	26 O	-3.9	36.7	11.34	0.901	1.12	1:52	-4.2	304.2	0.728
27.11.	18:05	-24.8	-1.3	1.457	27 O	-3.9	37.7	11.45	0.896	1.20	1:56	-3.7	308.9	0.728
30.11.	18:21	-24.8	-1.4	1.443	28 O	-3.9	38.7	11.56	0.890	1.27	1:59	-3.2	313.7	0.728
3.12.	18:38	-24.7	-1.5	1.429	28 O	-3.9	39.8	11.67	0.884	1.35	2:03	-2.6	318.4	0.728
6.12.	18:54	-24.5	-1.6	1.414	29 O	-3.9	40.8	11.79	0.879	1.43	2:06	-2.0	323.2	0.728
9.12.	19:10	-24.1	-1.7	1.400	30 O	-4.0	41.8	11.92	0.873	1.52	2:09	-1.4	327.9	0.728
12.12.	19:26	-23.7	-1.7	1.385	30 O	-4.0	42.9	12.05	0.867	1.61	2:12	-0.7	332.7	0.728
15.12.	19:42	-23.1	-1.8	1.369	31 O	-4.0	43.9	12.18	0.860	1.70	2:15	0.1	337.4	0.728
18.12.	19:58	-22.5	-1.8	1.354	31 O	-4.0	45.0	12.32	0.854	1.80	2:17	0.9	342.2	0.728
21.12.	20:14	-21.8	-1.8	1.338	32 O	-4.0	46.0	12.47	0.847	1.91	2:19	1.7	346.9	0.727
24.12.	20:29	-20.9	-1.9	1.322	33 O	-4.0	47.1	12.62	0.840	2.01	2:22	2.5	351.7	0.727
27.12.	20:44	-20.0	-1.9	1.306	33 O	-4.0	48.2	12.77	0.834	2.13	2:23	3.4	356.5	0.727
30.12.	20:59	-19.0	-1.9	1.289	34 O	-4.0	49.2	12.94	0.826	2.25	2:25	4.2	1.2	0.727

Die Ephemeriden gelten für 0 Uhr Weltzeit.

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

Physische Ephemeriden (für Beobachtungen am Teleskop):
∅: scheinbarer Durchmesser;
k: beleuchteter Teil; q: Phasendefekt (Beleuchtungsdefekt)

Koordinaten für Tagesbeobachtungen:
Δα und Δδ: Rektaszensions- und Deklinationsdifferenzen (Venus minus Sonne)

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

14.09.2015