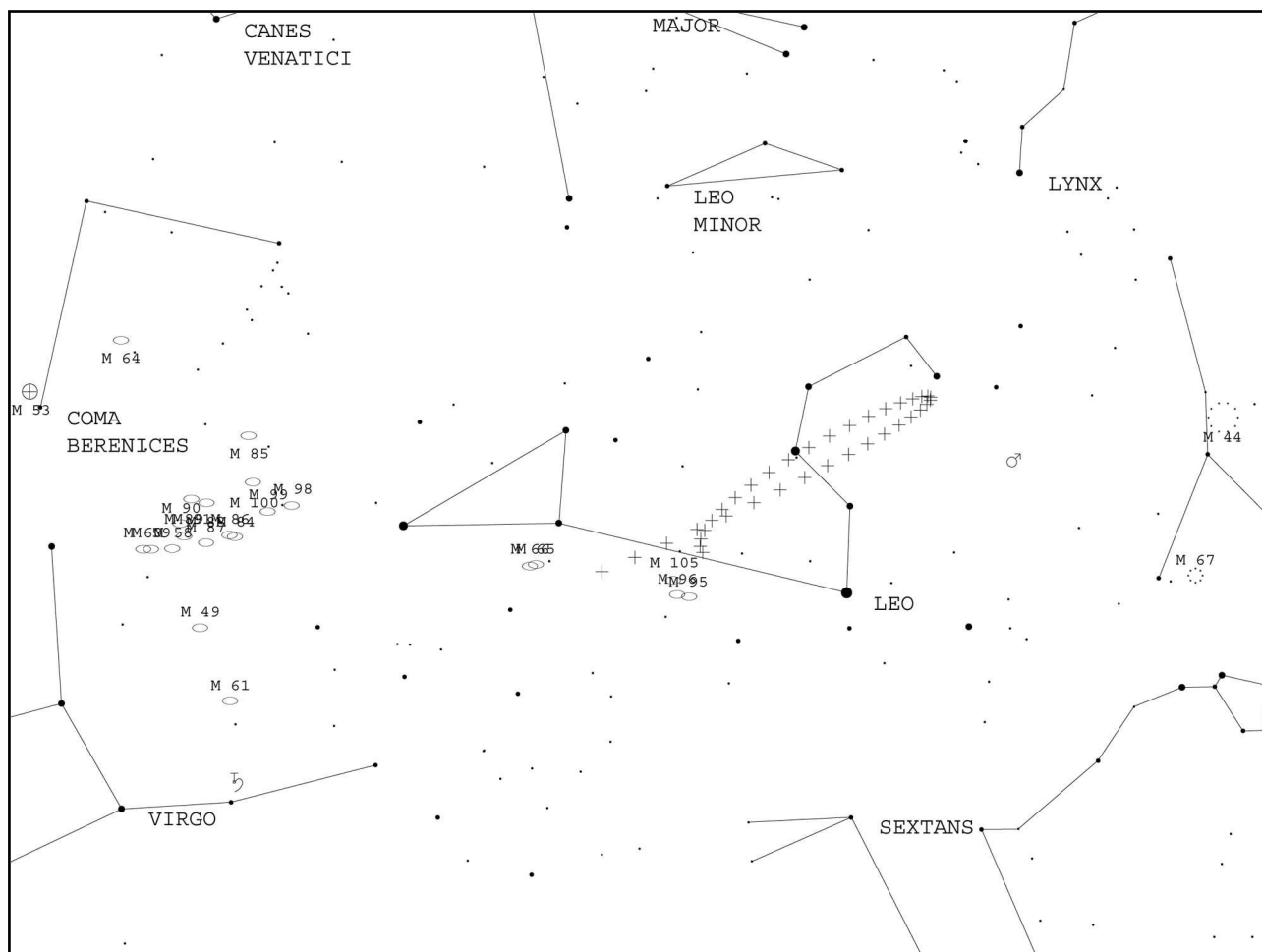


Infoblatt für den Planetoiden

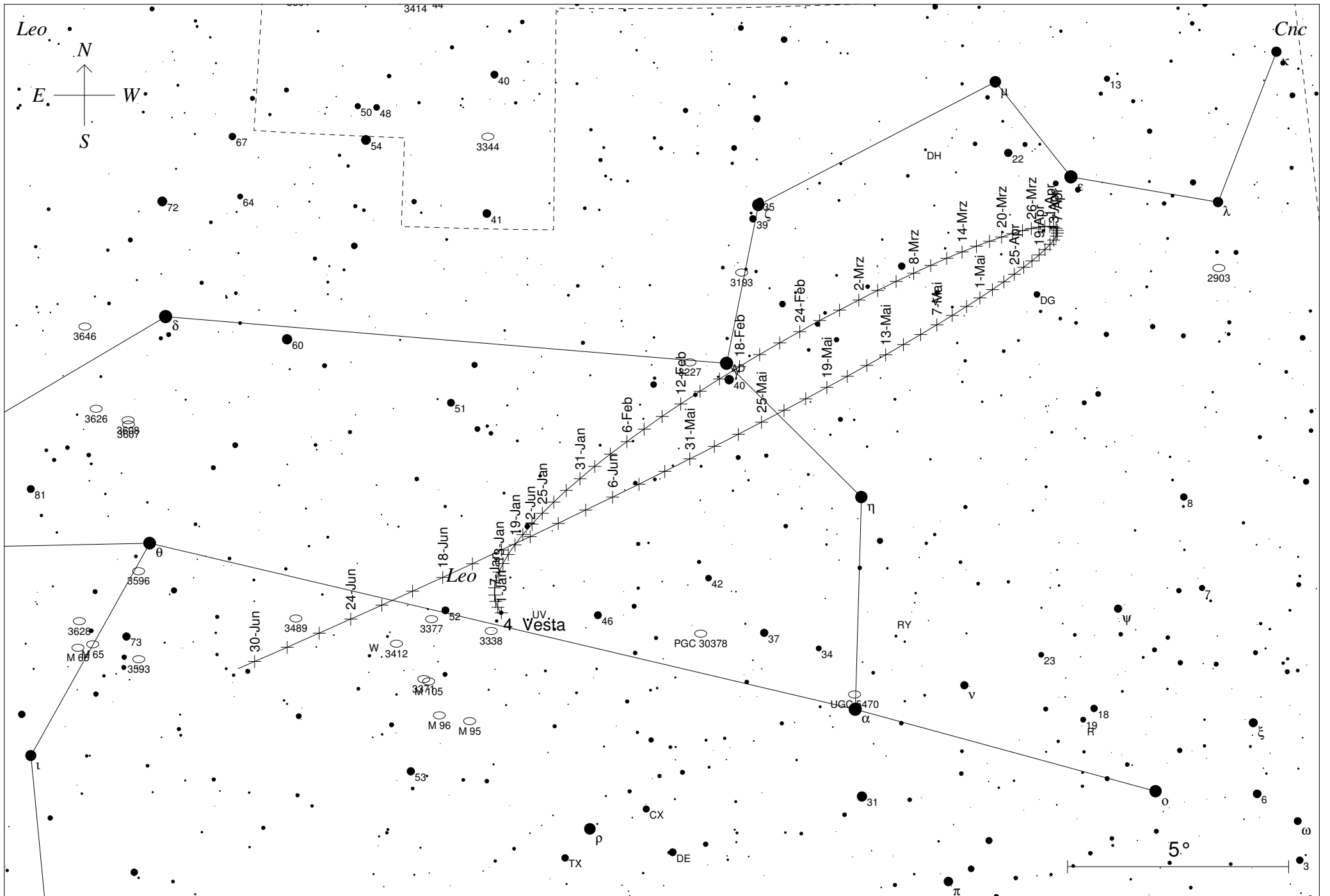
(4) VESTA

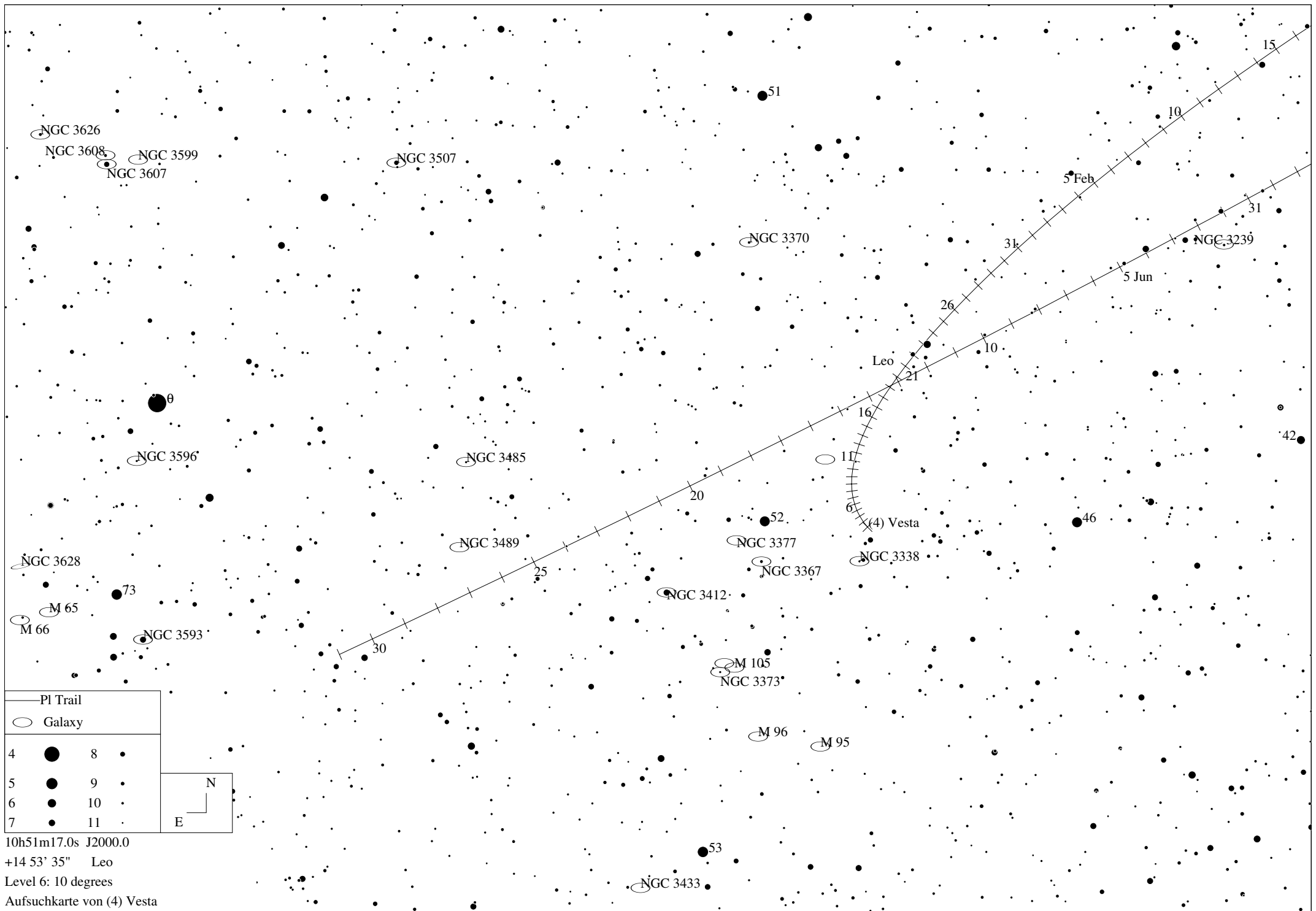


(4) Vesta könnte in ihrer diesjährigen Oppositionsperiode für das bloße Auge sichtbar werden. Vorausgesetzt natürlich, dass es die Bedingungen am Beobachtungsort zulassen und eine dunkle und transparente Nacht vorherrscht. Auch wenn man nicht mit einem dunklen Himmel gesegnet ist, wird Vesta zumindest in jedem kleineren Fernglas ein auffälliges Objekt.

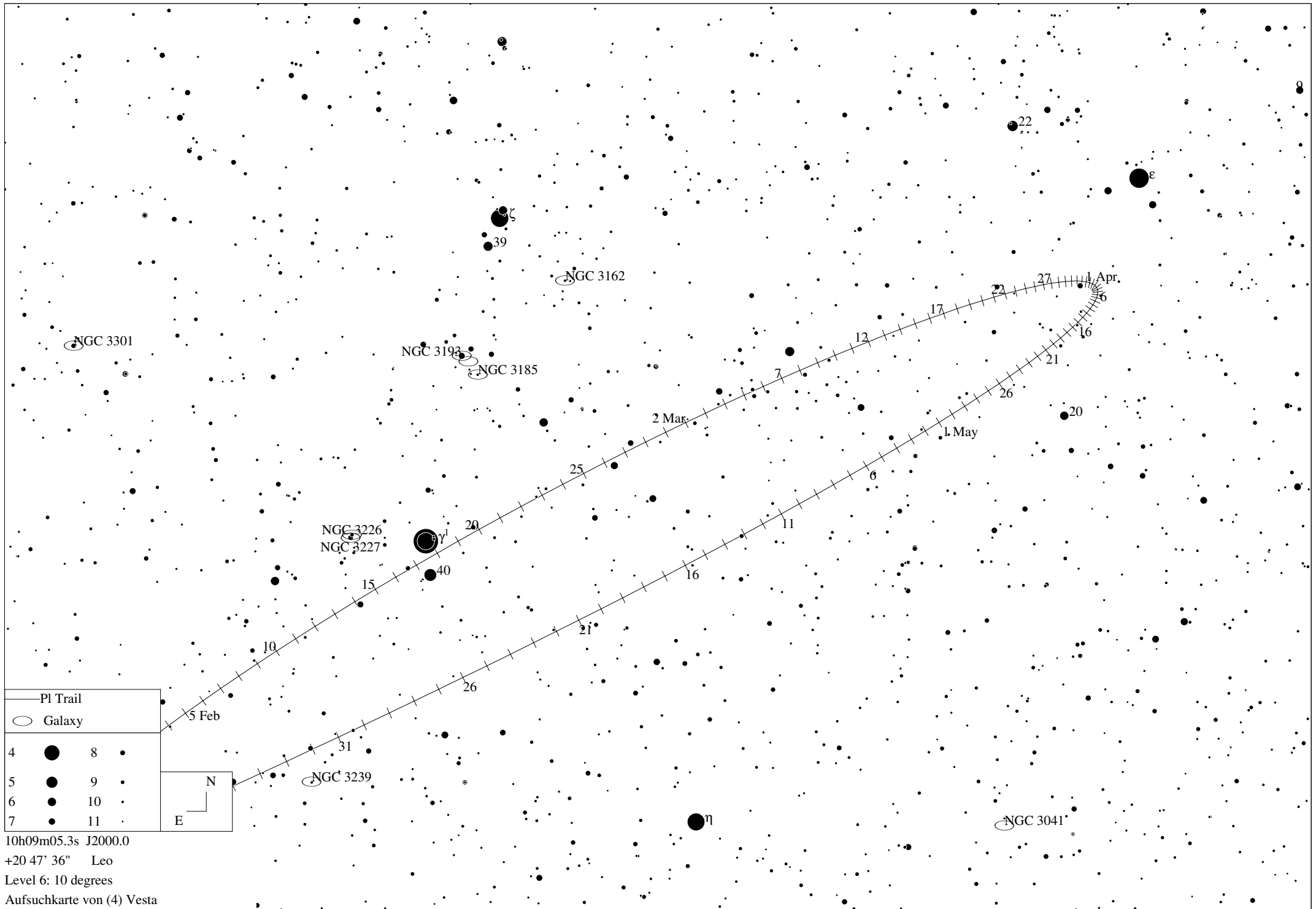
Die scheinbare Bahn des Himmelskörpers verläuft in der westlichen Hälfte des Sternbilds Löwe, welches im Februar gegen Mitternacht seine höchste Stellung über dem Südhorizont erreicht. Vesta wird zur Opposition, in der Nacht vom 17. auf den 18. Februar 2010, rund 6,1 Magnituden hell werden.

Am 16. Februar ist Vesta besonders leicht aufzufinden, wenn sie nur 12 Bogenminuten südlich vom 2,3 mag hellen Doppelstern γ (Gamma) Leonis steht. Somit kann dieser Stern sehr gut als Aufsuchhilfe dienen. Vesta wandert dann in nordwestlicher Richtung weiter und steht am 18. Februar nur 20 Bogenminuten westlich dieses Sterns. Mit Hilfe eines Fernglases kann Nacht für Nacht die Wanderung des Himmelskörpers vor dem Sternenhintergrund nachvollzogen werden - besonders mit γ Leonis als Bezugspunkt. Hat man Vesta schließlich im Fernglas aufgespürt kann man versuchen, ihn auch mit bloßem Auge zu sichten. Vom 16. bis 18. Februar ist es allerdings noch schwierig, aufgrund der Nähe zu dem besagten Stern. Danach hat man aber bis zum 22. Februar Zeit, bis sich der zunehmende Mond störend bemerkbar macht. Auch fotografisch lohnt es sich, die Eigenbewegung von Vesta zu verfolgen, entweder mit feststehender analoger oder digitaler Kamera bzw. direkt durch ein Teleskop.





10h51m17.0s J2000.0
 +14 53' 35" Leo
 Level 6: 10 degrees
 Aufsuchkarte von (4) Vesta



Ephemeride des Planetoiden (4) Vesta

1. Januar 2010 bis 1. Juli 2010 (00:00 UT)

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA	
1 Jan 2010	10h41m44.55s	+14 07' 14.2"	2.4410	1.7562	7.2	123.5	19.6	37.28	118.46	10.90	37.4	Leo
2 Jan 2010	10h41m55.72s	+14 10' 44.8"	2.4401	1.7446	7.1	124.5	19.4	37.83	119.37	10.72	31.5	Leo
3 Jan 2010	10h42m05.21s	+14 14' 27.0"	2.4392	1.7331	7.1	125.5	19.2	38.39	120.30	10.66	25.4	Leo
4 Jan 2010	10h42m13.02s	+14 18' 20.8"	2.4383	1.7217	7.1	126.5	18.9	38.95	121.25	10.71	19.2	Leo
5 Jan 2010	10h42m19.13s	+14 22' 26.2"	2.4374	1.7105	7.1	127.5	18.7	39.51	122.21	10.88	13.1	Leo
6 Jan 2010	10h42m23.52s	+14 26' 43.3"	2.4365	1.6994	7.0	128.5	18.4	40.07	123.19	11.17	7.3	Leo
7 Jan 2010	10h42m26.16s	+14 31' 12.0"	2.4356	1.6884	7.0	129.5	18.1	40.64	124.19	11.57	1.7	Leo
8 Jan 2010	10h42m27.06s	+14 35' 52.3"	2.4347	1.6776	7.0	130.6	17.9	41.20	125.21	12.07	356.5	Leo
9 Jan 2010	10h42m26.18s	+14 40' 44.2"	2.4338	1.6670	7.0	131.6	17.6	41.76	126.24	12.65	351.7	Leo
10 Jan 2010	10h42m23.53s	+14 45' 47.6"	2.4329	1.6565	7.0	132.7	17.3	42.33	127.30	13.32	347.4	Leo
11 Jan 2010	10h42m19.09s	+14 51' 02.4"	2.4320	1.6462	6.9	133.7	17.0	42.89	128.38	14.05	343.5	Leo
12 Jan 2010	10h42m12.86s	+14 56' 28.6"	2.4311	1.6360	6.9	134.8	16.7	43.46	129.49	14.84	339.9	Leo
13 Jan 2010	10h42m04.82s	+15 02' 05.9"	2.4302	1.6261	6.9	135.8	16.4	44.02	130.61	15.67	336.7	Leo
14 Jan 2010	10h41m54.97s	+15 07' 54.2"	2.4293	1.6162	6.9	136.9	16.1	44.58	131.76	16.55	333.8	Leo
15 Jan 2010	10h41m43.32s	+15 13' 53.3"	2.4284	1.6066	6.8	138.0	15.7	45.14	132.94	17.45	331.2	Leo
16 Jan 2010	10h41m29.86s	+15 20' 03.1"	2.4274	1.5972	6.8	139.1	15.4	45.70	134.14	18.32	328.9	Leo
17 Jan 2010	10h41m14.59s	+15 26' 23.4"	2.4265	1.5879	6.8	140.1	15.1	46.25	135.37	19.32	326.8	Leo
18 Jan 2010	10h40m57.52s	+15 32' 53.8"	2.4256	1.5789	6.8	141.2	14.7	46.80	136.62	20.27	324.8	Leo
19 Jan 2010	10h40m38.66s	+15 39' 34.1"	2.4247	1.5700	6.7	142.3	14.4	47.35	137.91	21.24	323.1	Leo
20 Jan 2010	10h40m18.01s	+15 46' 24.0"	2.4238	1.5614	6.7	143.4	14.0	47.89	139.22	22.20	321.5	Leo
21 Jan 2010	10h39m55.59s	+15 53' 23.3"	2.4228	1.5530	6.7	144.6	13.6	48.42	140.57	23.17	320.0	Leo
22 Jan 2010	10h39m31.41s	+16 00' 31.6"	2.4219	1.5447	6.7	145.7	13.2	48.95	141.95	24.13	318.6	Leo
23 Jan 2010	10h39m05.48s	+16 07' 48.6"	2.4210	1.5367	6.7	146.8	12.9	49.47	143.36	25.09	317.4	Leo
24 Jan 2010	10h38m37.83s	+16 15' 13.9"	2.4201	1.5289	6.6	147.9	12.5	49.98	144.80	26.04	316.2	Leo
25 Jan 2010	10h38m08.48s	+16 22' 47.0"	2.4191	1.5213	6.6	149.0	12.1	50.49	146.28	26.97	315.1	Leo
26 Jan 2010	10h37m37.45s	+16 30' 27.7"	2.4182	1.5140	6.6	150.2	11.7	50.98	147.79	27.89	314.1	Leo
27 Jan 2010	10h37m04.76s	+16 38' 15.5"	2.4173	1.5069	6.6	151.3	11.3	51.46	149.34	28.80	313.2	Leo
28 Jan 2010	10h36m30.44s	+16 46' 10.0"	2.4163	1.5000	6.5	152.4	10.9	51.93	150.92	29.68	312.3	Leo
29 Jan 2010	10h35m54.51s	+16 54' 10.8"	2.4154	1.4934	6.5	153.6	10.5	52.39	152.54	30.55	311.4	Leo
30 Jan 2010	10h35m17.02s	+17 02' 17.4"	2.4145	1.4870	6.5	154.7	10.0	52.84	154.20	31.39	310.6	Leo
31 Jan 2010	10h34m37.99s	+17 10' 29.3"	2.4135	1.4808	6.5	155.8	9.6	53.27	155.90	32.21	309.9	Leo
1 Feb 2010	10h33m57.45s	+17 18' 46.0"	2.4126	1.4749	6.4	156.9	9.2	53.68	157.63	33.01	309.1	Leo
2 Feb 2010	10h33m15.44s	+17 27' 07.2"	2.4116	1.4692	6.4	158.1	8.8	54.08	159.40	33.77	308.4	Leo
3 Feb 2010	10h32m32.00s	+17 35' 32.2"	2.4107	1.4638	6.4	159.2	8.4	54.46	161.21	34.51	307.8	Leo
4 Feb 2010	10h31m47.17s	+17 44' 00.5"	2.4097	1.4587	6.4	160.3	7.9	54.82	163.05	35.22	307.1	Leo
5 Feb 2010	10h31m01.00s	+17 52' 31.6"	2.4088	1.4538	6.4	161.4	7.5	55.16	164.93	35.89	306.5	Leo
6 Feb 2010	10h30m13.53s	+18 01' 04.8"	2.4079	1.4491	6.3	162.5	7.1	55.48	166.84	36.52	305.9	Leo
7 Feb 2010	10h29m24.83s	+18 09' 39.6"	2.4069	1.4448	6.3	163.5	6.7	55.77	168.79	37.12	305.3	Leo
8 Feb 2010	10h28m34.95s	+18 18' 15.4"	2.4060	1.4407	6.3	164.6	6.3	56.05	170.77	37.67	304.8	Leo
9 Feb 2010	10h27m43.94s	+18 26' 51.5"	2.4050	1.4368	6.3	165.6	5.9	56.30	172.78	38.18	304.2	Leo
10 Feb 2010	10h26m51.87s	+18 35' 27.3"	2.4040	1.4333	6.2	166.6	5.5	56.52	174.82	38.64	303.7	Leo
11 Feb 2010	10h25m58.81s	+18 44' 02.1"	2.4031	1.4300	6.2	167.5	5.1	56.72	176.88	39.06	303.2	Leo
12 Feb 2010	10h25m04.83s	+18 52' 35.3"	2.4021	1.4270	6.2	168.4	4.7	56.89	178.97	39.43	302.7	Leo
13 Feb 2010	10h24m10.01s	+19 01' 06.3"	2.4012	1.4242	6.2	169.2	4.4	57.03	181.08	39.74	302.2	Leo
14 Feb 2010	10h23m14.40s	+19 09' 34.3"	2.4002	1.4217	6.2	169.9	4.1	57.14	183.20	40.01	301.7	Leo
15 Feb 2010	10h22m18.11s	+19 17' 58.8"	2.3993	1.4196	6.1	170.5	3.9	57.22	185.34	40.23	301.3	Leo
16 Feb 2010	10h21m21.19s	+19 26' 19.1"	2.3983	1.4177	6.1	170.9	3.7	57.28	187.48	40.39	300.8	Leo
17 Feb 2010	10h20m23.74s	+19 34' 34.6"	2.3973	1.4160	6.1	171.2	3.6	57.30	189.63	40.50	300.3	Leo
18 Feb 2010	10h19m25.83s	+19 42' 44.6"	2.3964	1.4147	6.1	171.3	3.6	57.30	191.79	40.56	299.9	Leo
19 Feb 2010	10h18m27.55s	+19 50' 48.5"	2.3954	1.4136	6.1	171.3	3.6	57.26	193.94	40.56	299.4	Leo
20 Feb 2010	10h17m28.99s	+19 58' 45.8"	2.3944	1.4128	6.1	171.0	3.7	57.20	196.09	40.51	299.0	Leo
21 Feb 2010	10h16m30.23s	+20 06' 35.8"	2.3935	1.4123	6.1	170.6	3.9	57.10	198.23	40.40	298.6	Leo
22 Feb 2010	10h15m31.35s	+20 14' 18.1"	2.3925	1.4121	6.1	170.1	4.1	56.98	200.35	40.24	298.1	Leo
23 Feb 2010	10h14m32.44s	+20 21' 52.1"	2.3915	1.4121	6.2	169.4	4.4	56.82	202.46	40.03	297.7	Leo
24 Feb 2010	10h13m33.59s	+20 29' 17.2"	2.3906	1.4125	6.2	168.6	4.7	56.64	204.55	39.77	297.3	Leo
25 Feb 2010	10h12m34.88s	+20 36' 33.1"	2.3896	1.4130	6.2	167.8	5.0	56.43	206.61	39.46	296.8	Leo
26 Feb 2010	10h11m36.38s	+20 43' 39.3"	2.3886	1.4139	6.2	166.8	5.4	56.19	208.65	39.11	296.4	Leo
27 Feb 2010	10h10m38.18s	+20 50' 35.3"	2.3876	1.4150	6.2	165.9	5.8	55.92	210.67	38.70	296.0	Leo
28 Feb 2010	10h09m40.37s	+20 57' 20.7"	2.3867	1.4164	6.2	164.9	6.2	55.63	212.65	38.25	295.6	Leo
1 Mär 2010	10h08m43.01s	+21 03' 55.3"	2.3857	1.4181	6.2	163.8	6.6	55.32	214.60	37.76	295.1	Leo
2 Mär 2010	10h07m46.18s	+21 10' 18.6"	2.3847	1.4200	6.3	162.8	7.1	54.98	216.51	37.22	294.7	Leo
3 Mär 2010	10h06m49.96s	+21 16' 30.3"	2.3837	1.4222	6.3	161.7	7.5	54.61	218.39	36.64	294.3	Leo
4 Mär 2010	10h05m54.42s	+21 22' 30.1"	2.3828	1.4247	6.3	160.6	7.9	54.23	220.23	36.01	293.8	Leo
5 Mär 2010	10h04m59.64s	+21 28' 17.7"	2.3818	1.4274	6.3	159.5	8.4	53.82	222.03	35.35	293.4	Leo
6 Mär 2010	10h04m05.69s	+21 33' 52.8"	2.3808	1.4303	6.3	158.4	8.8	53.40	223.80	34.64	292.9	Leo
7 Mär 2010	10h03m12.65s	+21 39' 15.2"	2.3798	1.4335	6.4	157.3	9.3	52.96	225.52	33.90	292.4	Leo
8 Mär 2010	10h02m20.59s	+21 44' 24.5"	2.3789	1.4370	6.4	156.2	9.7	52.49	227.21	33.12	292.0	Leo
9 Mär 2010	10h01m29.57s	+21 49' 20.7"	2.3779	1.4407	6.4	155.0	10.2	52.02	228.86	32.30	291.5	Leo
10 Mär 2010	10h00m39.66s	+21 54' 03.4"	2.3769	1.4446	6.4	153.9	10.6	51.52	230.47	31.44	291.0	Leo
11 Mär 2010	09h59m50.94s	+21 58' 32.5"	2.3759	1.4488	6.4	152.8	11.0	51.02	232.04	30.55	290.5	Leo

Ephemeride des Planetoiden (4) Vesta

1. Januar 2010 bis 1. Juli 2010 (00:00 UT)

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA
12 Mär 2010	09h59m03.46s	+22 02' 48.0"	2.3749	1.4532	6.5	151.6	11.5	50.50	233.57	29.63	289.9 Leo
13 Mär 2010	09h58m17.29s	+22 06' 49.5"	2.3739	1.4578	6.5	150.5	11.9	49.96	235.06	28.67	289.4 Leo
14 Mär 2010	09h57m32.48s	+22 10' 37.2"	2.3729	1.4627	6.5	149.4	12.3	49.42	236.52	27.69	288.8 Leo
15 Mär 2010	09h56m49.10s	+22 14' 10.8"	2.3720	1.4678	6.5	148.3	12.7	48.86	237.94	26.68	288.2 Leo
16 Mär 2010	09h56m07.19s	+22 17' 30.3"	2.3710	1.4731	6.5	147.2	13.1	48.30	239.32	25.65	287.6 Leo
17 Mär 2010	09h55m26.80s	+22 20' 35.8"	2.3700	1.4786	6.5	146.1	13.6	47.72	240.67	24.60	286.9 Leo
18 Mär 2010	09h54m47.99s	+22 23' 27.1"	2.3690	1.4843	6.6	144.9	14.0	47.14	241.98	23.52	286.2 Leo
19 Mär 2010	09h54m10.79s	+22 26' 04.4"	2.3680	1.4902	6.6	143.8	14.4	46.55	243.26	22.43	285.4 Leo
20 Mär 2010	09h53m35.25s	+22 28' 27.6"	2.3670	1.4964	6.6	142.7	14.8	45.96	244.51	21.32	284.6 Leo
21 Mär 2010	09h53m01.39s	+22 30' 36.8"	2.3660	1.5027	6.6	141.7	15.1	45.35	245.73	20.20	283.8 Leo
22 Mär 2010	09h52m29.26s	+22 32' 32.2"	2.3650	1.5092	6.6	140.6	15.5	44.75	246.92	19.07	282.8 Leo
23 Mär 2010	09h51m58.88s	+22 34' 13.7"	2.3640	1.5159	6.7	139.5	15.9	44.14	248.07	17.93	281.7 Leo
24 Mär 2010	09h51m30.28s	+22 35' 41.6"	2.3631	1.5228	6.7	138.4	16.3	43.52	249.20	16.78	280.6 Leo
25 Mär 2010	09h51m03.48s	+22 36' 55.9"	2.3621	1.5299	6.7	137.4	16.6	42.90	250.30	15.64	279.2 Leo
26 Mär 2010	09h50m38.50s	+22 37' 56.7"	2.3611	1.5371	6.7	136.3	17.0	42.28	251.38	14.50	277.7 Leo
27 Mär 2010	09h50m15.35s	+22 38' 44.4"	2.3601	1.5445	6.7	135.3	17.3	41.66	252.43	13.36	276.0 Leo
28 Mär 2010	09h49m54.05s	+22 39' 18.9"	2.3591	1.5521	6.8	134.2	17.6	41.03	253.45	12.23	274.0 Leo
29 Mär 2010	09h49m34.59s	+22 39' 40.5"	2.3581	1.5598	6.8	133.2	18.0	40.40	254.45	11.12	271.6 Leo
30 Mär 2010	09h49m17.00s	+22 39' 49.4"	2.3571	1.5677	6.8	132.2	18.3	39.78	255.43	10.03	268.8 Leo
31 Mär 2010	09h49m01.27s	+22 39' 45.7"	2.3561	1.5757	6.8	131.1	18.6	39.15	256.39	8.96	265.3 Leo
1 Apr 2010	09h48m47.41s	+22 39' 29.6"	2.3551	1.5839	6.8	130.1	18.9	38.52	257.32	7.93	261.0 Leo
2 Apr 2010	09h48m35.42s	+22 39' 01.2"	2.3541	1.5922	6.8	129.1	19.2	37.89	258.24	6.96	255.4 Leo
3 Apr 2010	09h48m25.30s	+22 38' 20.7"	2.3531	1.6006	6.9	128.1	19.5	37.26	259.14	6.08	248.2 Leo
4 Apr 2010	09h48m17.05s	+22 37' 28.2"	2.3521	1.6092	6.9	127.1	19.8	36.63	260.01	5.32	238.8 Leo
5 Apr 2010	09h48m10.68s	+22 36' 24.0"	2.3511	1.6179	6.9	126.2	20.1	36.00	260.87	4.73	226.8 Leo
6 Apr 2010	09h48m06.17s	+22 35' 08.1"	2.3501	1.6267	6.9	125.2	20.4	35.37	261.71	4.41	212.4 Leo
7 Apr 2010	09h48m03.53s	+22 33' 40.8"	2.3491	1.6357	6.9	124.2	20.6	34.74	262.54	4.38	196.8 Leo
8 Apr 2010	09h48m02.75s	+22 32' 02.1"	2.3481	1.6448	7.0	123.3	20.9	34.12	263.34	4.67	182.2 Leo
9 Apr 2010	09h48m03.83s	+22 30' 12.3"	2.3472	1.6540	7.0	122.3	21.1	33.49	264.14	5.20	170.0 Leo
10 Apr 2010	09h48m06.75s	+22 28' 11.5"	2.3462	1.6633	7.0	121.4	21.4	32.87	264.91	5.92	160.4 Leo
11 Apr 2010	09h48m11.51s	+22 25' 59.9"	2.3452	1.6727	7.0	120.4	21.6	32.25	265.68	6.76	153.1 Leo
12 Apr 2010	09h48m18.10s	+22 23' 37.6"	2.3442	1.6822	7.0	119.5	21.8	31.63	266.42	7.67	147.5 Leo
13 Apr 2010	09h48m26.50s	+22 21' 04.9"	2.3432	1.6918	7.0	118.6	22.1	31.02	267.16	8.63	143.1 Leo
14 Apr 2010	09h48m36.71s	+22 18' 21.8"	2.3422	1.7015	7.1	117.7	22.3	30.40	267.88	9.62	139.6 Leo
15 Apr 2010	09h48m48.70s	+22 15' 28.5"	2.3412	1.7113	7.1	116.8	22.5	29.79	268.59	10.63	136.7 Leo
16 Apr 2010	09h49m02.46s	+22 12' 25.2"	2.3402	1.7211	7.1	115.9	22.7	29.18	269.29	11.65	134.4 Leo
17 Apr 2010	09h49m17.98s	+22 09' 12.1"	2.3392	1.7311	7.1	115.0	22.9	28.57	269.98	12.68	132.5 Leo
18 Apr 2010	09h49m35.23s	+22 05' 49.3"	2.3382	1.7411	7.1	114.1	23.1	27.96	270.65	13.70	130.8 Leo
19 Apr 2010	09h49m54.20s	+22 02' 17.0"	2.3372	1.7512	7.1	113.2	23.3	27.36	271.32	14.72	129.4 Leo
20 Apr 2010	09h50m14.86s	+21 58' 35.4"	2.3362	1.7614	7.2	112.4	23.4	26.76	271.97	15.74	128.2 Leo
21 Apr 2010	09h50m37.20s	+21 54' 44.7"	2.3352	1.7716	7.2	111.5	23.6	26.16	272.61	16.74	127.1 Leo
22 Apr 2010	09h51m01.18s	+21 50' 45.0"	2.3342	1.7819	7.2	110.6	23.8	25.57	273.25	17.74	126.2 Leo
23 Apr 2010	09h51m26.79s	+21 46' 36.5"	2.3332	1.7923	7.2	109.8	23.9	24.98	273.88	18.72	125.4 Leo
24 Apr 2010	09h51m53.99s	+21 42' 19.3"	2.3322	1.8027	7.2	109.0	24.1	24.39	274.49	19.70	124.6 Leo
25 Apr 2010	09h52m22.77s	+21 37' 53.6"	2.3312	1.8132	7.2	108.1	24.2	23.80	275.10	20.66	124.0 Leo
26 Apr 2010	09h52m53.10s	+21 33' 19.6"	2.3302	1.8237	7.3	107.3	24.3	23.21	275.70	21.61	123.4 Leo
27 Apr 2010	09h53m24.95s	+21 28' 37.4"	2.3292	1.8343	7.3	106.5	24.5	22.63	276.29	22.54	122.8 Leo
28 Apr 2010	09h53m58.29s	+21 23' 47.2"	2.3282	1.8449	7.3	105.7	24.6	22.05	276.88	23.47	122.3 Leo
29 Apr 2010	09h54m33.10s	+21 18' 49.0"	2.3272	1.8556	7.3	104.9	24.7	21.48	277.45	24.38	121.9 Leo
30 Apr 2010	09h55m09.37s	+21 13' 43.1"	2.3262	1.8663	7.3	104.1	24.8	20.90	278.02	25.28	121.5 Leo
1 Mai 2010	09h55m47.05s	+21 08' 29.4"	2.3253	1.8770	7.3	103.3	24.9	20.33	278.59	26.17	121.1 Leo
2 Mai 2010	09h56m26.14s	+21 03' 08.1"	2.3243	1.8878	7.3	102.5	25.0	19.76	279.15	27.04	120.7 Leo
3 Mai 2010	09h57m06.60s	+20 57' 39.4"	2.3233	1.8986	7.4	101.7	25.1	19.19	279.70	27.91	120.4 Leo
4 Mai 2010	09h57m48.42s	+20 52' 03.2"	2.3223	1.9094	7.4	100.9	25.2	18.63	280.24	28.76	120.1 Leo
5 Mai 2010	09h58m31.58s	+20 46' 19.8"	2.3213	1.9203	7.4	100.2	25.3	18.07	280.78	29.60	119.8 Leo
6 Mai 2010	09h59m16.05s	+20 40' 29.2"	2.3203	1.9312	7.4	99.4	25.4	17.51	281.31	30.43	119.6 Leo
7 Mai 2010	10h00m01.82s	+20 34' 31.4"	2.3193	1.9421	7.4	98.7	25.5	16.95	281.84	31.25	119.3 Leo
8 Mai 2010	10h00m48.86s	+20 28' 26.6"	2.3183	1.9530	7.4	97.9	25.5	16.40	282.37	32.06	119.1 Leo
9 Mai 2010	10h01m37.14s	+20 22' 14.9"	2.3173	1.9639	7.4	97.2	25.6	15.85	282.88	32.86	118.9 Leo
10 Mai 2010	10h02m26.66s	+20 15' 56.3"	2.3163	1.9749	7.4	96.4	25.7	15.30	283.40	33.65	118.7 Leo
11 Mai 2010	10h03m17.38s	+20 09' 30.9"	2.3154	1.9859	7.5	95.7	25.7	14.75	283.91	34.42	118.5 Leo
12 Mai 2010	10h04m09.30s	+20 02' 58.9"	2.3144	1.9969	7.5	95.0	25.8	14.21	284.41	35.19	118.4 Leo
13 Mai 2010	10h05m02.38s	+19 56' 20.3"	2.3134	2.0079	7.5	94.2	25.8	13.67	284.91	35.94	118.2 Leo
14 Mai 2010	10h05m56.61s	+19 49' 35.1"	2.3124	2.0189	7.5	93.5	25.9	13.13	285.41	36.68	118.1 Leo
15 Mai 2010	10h06m51.96s	+19 42' 43.6"	2.3114	2.0299	7.5	92.8	25.9	12.59	285.90	37.41	117.9 Leo
16 Mai 2010	10h07m48.42s	+19 35' 45.7"	2.3104	2.0409	7.5	92.1	25.9	12.06	286.39	38.13	117.8 Leo
17 Mai 2010	10h08m45.95s	+19 28' 41.6"	2.3094	2.0519	7.5	91.4	26.0	11.52	286.87	38.83	117.7 Leo
18 Mai 2010	10h09m44.55s	+19 21' 31.3"	2.3085	2.0629	7.5	90.7	26.0	10.99	287.35	39.53	117.5 Leo
19 Mai 2010	10h10m44.19s	+19 14' 15.0"	2.3075	2.0739	7.6	90.0	26.0	10.47	287.83	40.21	117.4 Leo
20 Mai 2010	10h11m44.85s	+19 06' 52.7"	2.3065	2.0849	7.6	89.3	26.0	9.94	288.30	40.88	117.3 Leo

Ephemeride des Planetoiden (4) Vesta

1. Januar 2010 bis 1. Juli 2010 (00:00 UT)

Datum	RA	Deklination	r	delta	mag	Elong	Phase	Höhe	Az.	Gesch.	PA
21 Mai 2010	10h12m46.49s	+18 59' 24.6"	2.3055	2.0959	7.6	88.6	26.0	9.42	288.77	41.53	117.2 Leo
22 Mai 2010	10h13m49.11s	+18 51' 50.6"	2.3045	2.1069	7.6	87.9	26.0	8.89	289.24	42.18	117.1 Leo
23 Mai 2010	10h14m52.68s	+18 44' 11.0"	2.3036	2.1179	7.6	87.3	26.0	8.37	289.71	42.81	117.1 Leo
24 Mai 2010	10h15m57.17s	+18 36' 25.8"	2.3026	2.1288	7.6	86.6	26.0	7.86	290.17	43.43	117.0 Leo
25 Mai 2010	10h17m02.57s	+18 28' 35.1"	2.3016	2.1398	7.6	85.9	26.0	7.34	290.63	44.03	116.9 Leo
26 Mai 2010	10h18m08.86s	+18 20' 38.9"	2.3006	2.1507	7.6	85.3	26.0	6.83	291.09	44.63	116.8 Leo
27 Mai 2010	10h19m16.02s	+18 12' 37.3"	2.2997	2.1616	7.6	84.6	26.0	6.31	291.55	45.22	116.8 Leo
28 Mai 2010	10h20m24.02s	+18 04' 30.3"	2.2987	2.1725	7.6	84.0	26.0	5.80	292.00	45.80	116.7 Leo
29 Mai 2010	10h21m32.86s	+17 56' 18.1"	2.2977	2.1834	7.7	83.3	26.0	5.30	292.45	46.37	116.7 Leo
30 Mai 2010	10h22m42.52s	+17 48' 00.7"	2.2967	2.1942	7.7	82.7	26.0	4.79	292.90	46.92	116.6 Leo
31 Mai 2010	10h23m52.97s	+17 39' 38.0"	2.2958	2.2050	7.7	82.0	25.9	4.28	293.35	47.48	116.6 Leo
1 Jun 2010	10h25m04.21s	+17 31' 10.3"	2.2948	2.2158	7.7	81.4	25.9	3.78	293.80	48.02	116.5 Leo
2 Jun 2010	10h26m16.22s	+17 22' 37.5"	2.2938	2.2266	7.7	80.8	25.9	3.28	294.24	48.55	116.5 Leo
3 Jun 2010	10h27m28.99s	+17 13' 59.6"	2.2929	2.2374	7.7	80.1	25.8	2.78	294.69	49.08	116.4 Leo
4 Jun 2010	10h28m42.50s	+17 05' 16.7"	2.2919	2.2481	7.7	79.5	25.8	2.28	295.13	49.60	116.4 Leo
5 Jun 2010	10h29m56.74s	+16 56' 28.9"	2.2909	2.2588	7.7	78.9	25.8	1.79	295.57	50.11	116.4 Leo
6 Jun 2010	10h31m11.70s	+16 47' 36.3"	2.2900	2.2695	7.7	78.3	25.7	1.29	296.01	50.62	116.3 Leo
7 Jun 2010	10h32m27.35s	+16 38' 38.7"	2.2890	2.2801	7.7	77.7	25.7	0.80	296.45	51.11	116.3 Leo
8 Jun 2010	10h33m43.70s	+16 29' 36.4"	2.2881	2.2907	7.7	77.0	25.6	0.31	296.88	51.60	116.3 Leo
9 Jun 2010	10h35m00.73s	+16 20' 29.3"	2.2871	2.3013	7.7	76.4	25.6	-0.18	297.32	52.09	116.3 Leo
10 Jun 2010	10h36m18.42s	+16 11' 17.6"	2.2861	2.3118	7.8	75.8	25.5	-0.67	297.75	52.56	116.2 Leo
11 Jun 2010	10h37m36.76s	+16 02' 01.2"	2.2852	2.3223	7.8	75.2	25.4	-1.16	298.19	53.03	116.2 Leo
12 Jun 2010	10h38m55.75s	+15 52' 40.2"	2.2842	2.3328	7.8	74.6	25.4	-1.64	298.62	53.49	116.2 Leo
13 Jun 2010	10h40m15.36s	+15 43' 14.7"	2.2833	2.3432	7.8	74.0	25.3	-2.13	299.06	53.95	116.2 Leo
14 Jun 2010	10h41m35.59s	+15 33' 44.7"	2.2823	2.3536	7.8	73.4	25.3	-2.61	299.49	54.39	116.2 Leo
15 Jun 2010	10h42m56.41s	+15 24' 10.4"	2.2814	2.3640	7.8	72.9	25.2	-3.09	299.92	54.83	116.1 Leo
16 Jun 2010	10h44m17.83s	+15 14' 31.7"	2.2804	2.3743	7.8	72.3	25.1	-3.57	300.35	55.26	116.1 Leo
17 Jun 2010	10h45m39.83s	+15 04' 48.7"	2.2795	2.3845	7.8	71.7	25.0	-4.04	300.78	55.68	116.1 Leo
18 Jun 2010	10h47m02.38s	+14 55' 01.6"	2.2785	2.3947	7.8	71.1	25.0	-4.52	301.21	56.10	116.1 Leo
19 Jun 2010	10h48m25.49s	+14 45' 10.3"	2.2776	2.4049	7.8	70.5	24.9	-4.99	301.65	56.50	116.1 Leo
20 Jun 2010	10h49m49.13s	+14 35' 15.0"	2.2767	2.4150	7.8	70.0	24.8	-5.47	302.08	56.90	116.1 Leo
21 Jun 2010	10h51m13.29s	+14 25' 15.7"	2.2757	2.4251	7.8	69.4	24.7	-5.94	302.51	57.29	116.1 Leo
22 Jun 2010	10h52m37.96s	+14 15' 12.5"	2.2748	2.4352	7.8	68.8	24.6	-6.41	302.94	57.67	116.1 Leo
23 Jun 2010	10h54m03.14s	+14 05' 05.4"	2.2738	2.4451	7.8	68.3	24.5	-6.88	303.37	58.05	116.0 Leo
24 Jun 2010	10h55m28.81s	+13 54' 54.5"	2.2729	2.4551	7.8	67.7	24.4	-7.34	303.80	58.42	116.0 Leo
25 Jun 2010	10h56m54.95s	+13 44' 39.7"	2.2720	2.4650	7.9	67.1	24.3	-7.81	304.23	58.79	116.0 Leo
26 Jun 2010	10h58m21.57s	+13 34' 21.3"	2.2710	2.4748	7.9	66.6	24.2	-8.27	304.66	59.14	116.0 Leo
27 Jun 2010	10h59m48.66s	+13 23' 59.1"	2.2701	2.4846	7.9	66.0	24.1	-8.74	305.10	59.50	116.0 Leo
28 Jun 2010	11h01m16.19s	+13 13' 33.3"	2.2692	2.4943	7.9	65.5	24.0	-9.20	305.53	59.85	116.0 Leo
29 Jun 2010	11h02m44.18s	+13 03' 03.9"	2.2683	2.5040	7.9	64.9	23.9	-9.66	305.96	60.19	116.0 Leo
30 Jun 2010	11h04m12.61s	+12 52' 30.9"	2.2673	2.5136	7.9	64.4	23.8	-10.12	306.40	60.53	116.0 Leo
1 Jul 2010	11h05m41.47s	+12 41' 54.3"	2.2664	2.5232	7.9	63.8	23.7	-10.57	306.83	60.87	116.0 Leo

MPC Bahnelemente (4) Vesta

Epoch 2010 Jan. 4.0 TT = JD_T 2455200.5

MPC

M 253.50426	(2000.0)	P	Q	
n 0.27151980	Peri. 149.83677	-0.27602578	+0.95356004	T = 2455592.72088 JD _T
a 2.3619374	Node 103.91484	-0.90480069	-0.21547655	q = 2.1523646
e 0.0887292	Incl. 7.13442	-0.32426144	-0.21045929	
P 3.63	H 3.20	G 0.32	U 0	

From 6449 observations at 82 oppositions, 1827-2007, mean residual 0".60.

Last observed on 2009 Dec. 15. Perturbed ephemeris below based on elements from MPO 135420.

Discovery date : 1807 03 29
 Discovery site : Bremen
 Discoverer(s) : Olbers, H. W.

Sichtbarkeit von (4) Vesta

1. Januar 2010 bis 1. Juli 2010 (00:00 UT)

Datum	"/h	Posw.	Az	h	Aufgang	Kulm.	Unterg.	Kulm.-h	Tagebogen
01.01.2010	10,9"	37°	118,6	37,4	20:42	04:04	11:22	52,2	14:40
02.01.2010	10,8"	31°	119,5	38,0	20:37	04:00	11:18	52,2	14:41
03.01.2010	10,7"	25°	120,4	38,5	20:33	03:56	11:15	52,3	14:42
04.01.2010	10,8"	19°	121,4	39,1	20:29	03:52	11:11	52,4	14:42
05.01.2010	10,9"	13°	122,3	39,6	20:25	03:48	11:08	52,4	14:43
06.01.2010	11,2"	7°	123,3	40,2	20:20	03:45	11:04	52,5	14:44
07.01.2010	11,6"	1°	124,3	40,8	20:16	03:41	11:01	52,6	14:45
08.01.2010	12,1"	356°	125,3	41,3	20:12	03:37	10:57	52,7	14:46
09.01.2010	12,7"	352°	126,4	41,9	20:07	03:33	10:54	52,7	14:47
10.01.2010	13,4"	347°	127,4	42,5	20:03	03:29	10:50	52,8	14:47
11.01.2010	14,1"	343°	128,5	43,0	19:58	03:25	10:47	52,9	14:48
12.01.2010	14,9"	340°	129,6	43,6	19:54	03:21	10:43	53,0	14:49
13.01.2010	15,8"	337°	130,8	44,1	19:49	03:17	10:40	53,1	14:50
14.01.2010	16,6"	334°	131,9	44,7	19:45	03:13	10:36	53,2	14:52
15.01.2010	17,5"	331°	133,1	45,3	19:40	03:08	10:33	53,3	14:53
16.01.2010	18,5"	329°	134,3	45,8	19:35	03:04	10:29	53,4	14:54
17.01.2010	19,4"	327°	135,5	46,4	19:30	03:00	10:25	53,5	14:55
18.01.2010	20,4"	325°	136,8	46,9	19:25	02:56	10:22	53,6	14:57
19.01.2010	21,3"	323°	138,1	47,5	19:20	02:52	10:18	53,7	14:58
20.01.2010	22,3"	321°	139,4	48,0	19:15	02:47	10:15	53,8	14:59
21.01.2010	23,3"	320°	140,7	48,5	19:10	02:43	10:11	54,0	15:01
22.01.2010	24,2"	319°	142,1	49,1	19:05	02:39	10:08	54,1	15:02
23.01.2010	25,2"	317°	143,5	49,6	19:00	02:34	10:04	54,2	15:04
24.01.2010	26,1"	316°	145,0	50,1	18:55	02:30	10:00	54,3	15:06
25.01.2010	27,1"	315°	146,5	50,6	18:49	02:26	09:57	54,5	15:07
26.01.2010	28,0"	314°	148,0	51,1	18:44	02:21	09:53	54,6	15:09
27.01.2010	28,9"	313°	149,5	51,6	18:39	02:17	09:50	54,7	15:11
28.01.2010	29,8"	312°	151,1	52,0	18:33	02:12	09:46	54,8	15:12
29.01.2010	30,6"	311°	152,8	52,5	18:28	02:08	09:42	55,0	15:14
30.01.2010	31,5"	311°	154,4	52,9	18:23	02:03	09:38	55,1	15:16
31.01.2010	32,3"	310°	156,1	53,4	18:17	01:58	09:35	55,2	15:18
01.02.2010	33,1"	309°	157,9	53,8	18:12	01:54	09:31	55,4	15:19
02.02.2010	33,9"	308°	159,6	54,2	18:06	01:49	09:27	55,5	15:21
03.02.2010	34,6"	308°	161,5	54,6	18:01	01:45	09:23	55,7	15:22
04.02.2010	35,3"	307°	163,3	54,9	17:55	01:40	09:19	55,8	15:24
05.02.2010	36,0"	307°	165,2	55,3	17:50	01:35	09:16	55,9	15:26
06.02.2010	36,6"	306°	167,1	55,6	17:44	01:30	09:12	56,1	15:27
07.02.2010	37,2"	305°	169,1	55,9	17:39	01:26	09:08	56,2	15:29
08.02.2010	37,7"	305°	171,1	56,1	17:33	01:21	09:04	56,4	15:31
09.02.2010	38,2"	304°	173,1	56,4	17:27	01:16	09:00	56,5	15:33
10.02.2010	38,7"	304°	175,1	56,6	17:22	01:11	08:56	56,7	15:35
11.02.2010	39,1"	303°	177,2	56,8	17:16	01:07	08:52	56,8	15:36
12.02.2010	39,5"	303°	179,3	57,0	17:10	01:02	08:48	56,9	15:38

Datum	"/h	Posw.	Az	h	Aufgang	Kulm.	Unterg.	Kulm.-h	Tagebogen
13.02.2010	39,8"	302°	181,4	57,1	17:04	00:57	08:44	57,1	15:40
14.02.2010	40,1"	302°	183,5	57,2	16:58	00:52	08:40	57,2	15:42
15.02.2010	40,3"	301°	185,6	57,3	16:53	00:47	08:36	57,4	15:44
16.02.2010	40,4"	301°	187,8	57,3	16:47	00:42	08:32	57,5	15:46
17.02.2010	40,6"	300°	190,0	57,3	16:41	00:37	08:28	57,6	15:47
18.02.2010	40,6"	300°	192,1	57,3	16:35	00:32	08:24	57,8	15:49
19.02.2010	40,6"	299°	194,3	57,3	16:29	00:28	08:20	57,9	15:51
20.02.2010	40,5"	299°	196,4	57,2	16:23	00:23	08:16	58,0	15:53
21.02.2010	40,4"	299°	198,5	57,1	16:18	00:18	08:12	58,2	15:54
22.02.2010	40,3"	298°	200,7	57,0	16:12	00:13	08:08	58,3	15:56
23.02.2010	40,1"	298°	202,8	56,8	16:06	00:08	08:04	58,4	15:58
24.02.2010	39,8"	297°	204,9	56,7	16:01	00:03	08:00	58,5	15:59
25.02.2010	39,5"	297°	206,9	56,4	15:55	23:53	07:56	58,8	16:01
26.02.2010	39,1"	296°	209,0	56,2	15:50	23:48	07:52	58,9	16:03
27.02.2010	38,7"	296°	211,0	55,9	15:44	23:43	07:48	59,0	16:04
28.02.2010	38,3"	296°	213,0	55,6	15:38	23:39	07:44	59,1	16:06
01.03.2010	37,8"	295°	214,9	55,3	15:33	23:34	07:40	59,2	16:07
02.03.2010	37,2"	295°	216,8	55,0	15:27	23:29	07:36	59,3	16:09
03.03.2010	36,6"	294°	218,7	54,6	15:22	23:24	07:32	59,4	16:10
04.03.2010	36,0"	294°	220,5	54,2	15:16	23:19	07:27	59,5	16:11
05.03.2010	35,3"	293°	222,3	53,8	15:11	23:14	07:23	59,6	16:13
06.03.2010	34,6"	293°	224,1	53,4	15:05	23:10	07:19	59,7	16:14
07.03.2010	33,9"	292°	225,8	52,9	15:00	23:05	07:15	59,8	16:15
08.03.2010	33,1"	292°	227,5	52,5	14:54	23:00	07:10	59,9	16:16
09.03.2010	32,3"	291°	229,1	52,0	14:49	22:55	07:06	60,0	16:17
10.03.2010	31,4"	291°	230,7	51,5	14:43	22:50	07:02	60,0	16:18
11.03.2010	30,5"	290°	232,3	51,0	14:38	22:46	06:58	60,1	16:20
12.03.2010	29,6"	290°	233,8	50,5	14:33	22:41	06:53	60,2	16:20
13.03.2010	28,6"	289°	235,3	49,9	14:28	22:36	06:49	60,2	16:21
14.03.2010	27,7"	289°	236,8	49,4	14:23	22:32	06:45	60,3	16:22
15.03.2010	26,7"	288°	238,2	48,8	14:18	22:27	06:41	60,3	16:23
16.03.2010	25,6"	288°	239,5	48,3	14:13	22:23	06:36	60,4	16:24
17.03.2010	24,6"	287°	240,9	47,7	14:08	22:18	06:32	60,4	16:24
18.03.2010	23,5"	286°	242,2	47,1	14:03	22:13	06:28	60,5	16:25
19.03.2010	22,4"	285°	243,5	46,5	13:58	22:09	06:24	60,5	16:25
20.03.2010	21,3"	285°	244,7	45,9	13:54	22:04	06:19	60,6	16:26
21.03.2010	20,2"	284°	245,9	45,3	13:49	22:00	06:15	60,6	16:26
22.03.2010	19,0"	283°	247,1	44,7	13:44	21:55	06:11	60,6	16:27
23.03.2010	17,9"	282°	248,3	44,1	13:40	21:51	06:07	60,6	16:27
24.03.2010	16,7"	281°	249,4	43,5	13:35	21:47	06:03	60,7	16:27
25.03.2010	15,6"	279°	250,5	42,9	13:31	21:42	05:58	60,7	16:28
26.03.2010	14,5"	278°	251,6	42,2	13:26	21:38	05:54	60,7	16:28
27.03.2010	13,3"	276°	252,6	41,6	13:22	21:34	05:50	60,7	16:28
28.03.2010	12,2"	274°	253,6	41,0	13:18	21:30	05:46	60,7	16:28
29.03.2010	11,1"	272°	254,6	40,4	13:13	21:25	05:42	60,7	16:29
30.03.2010	10,0"	269°	255,6	39,7	13:09	21:21	05:38	60,7	16:29
31.03.2010	8,9"	265°	256,6	39,1	13:05	21:17	05:33	60,7	16:29
01.04.2010	7,9"	261°	257,5	38,5	13:01	21:13	05:29	60,7	16:29

Datum	"/h	Posw.	Az	h	Aufgang	Kulm.	Unterg.	Kulm.-h	Tagebogen
02.04.2010	6,9"	255°	258,4	37,8	12:57	21:09	05:25	60,7	16:28
03.04.2010	6,0"	248°	259,3	37,2	12:53	21:05	05:21	60,7	16:28
04.04.2010	5,3"	238°	260,2	36,6	12:49	21:01	05:17	60,7	16:28
05.04.2010	4,7"	226°	261,0	36,0	12:45	20:57	05:12	60,6	16:28
06.04.2010	4,4"	212°	261,9	35,3	12:41	20:53	05:08	60,6	16:27
07.04.2010	4,4"	196°	262,7	34,7	12:37	20:49	05:04	60,6	16:27
08.04.2010	4,7"	182°	263,5	34,1	12:33	20:45	05:00	60,6	16:27
09.04.2010	5,2"	170°	264,3	33,5	12:30	20:41	04:56	60,5	16:26
10.04.2010	6,0"	160°	265,1	32,8	12:26	20:37	04:52	60,5	16:26
11.04.2010	6,8"	153°	265,8	32,2	12:22	20:33	04:47	60,4	16:25
12.04.2010	7,7"	147°	266,6	31,6	12:19	20:29	04:43	60,4	16:24
13.04.2010	8,7"	143°	267,3	31,0	12:16	20:26	04:39	60,4	16:24
14.04.2010	9,7"	140°	268,0	30,4	12:12	20:22	04:35	60,3	16:23
15.04.2010	10,7"	137°	268,7	29,8	12:09	20:18	04:31	60,3	16:22
16.04.2010	11,7"	134°	269,4	29,1	12:06	20:15	04:27	60,2	16:21
17.04.2010	12,7"	132°	270,1	28,5	12:02	20:11	04:23	60,2	16:20
18.04.2010	13,7"	131°	270,8	27,9	11:59	20:07	04:19	60,1	16:20
19.04.2010	14,8"	129°	271,4	27,3	11:56	20:04	04:15	60,0	16:19
20.04.2010	15,8"	128°	272,1	26,7	11:53	20:00	04:11	60,0	16:18
21.04.2010	16,8"	127°	272,7	26,1	11:50	19:57	04:07	59,9	16:17
22.04.2010	17,8"	126°	273,4	25,5	11:47	19:53	04:03	59,8	16:16
23.04.2010	18,8"	125°	274,0	25,0	11:44	19:50	03:59	59,8	16:15
24.04.2010	19,7"	125°	274,6	24,4	11:41	19:46	03:55	59,7	16:14
25.04.2010	20,7"	124°	275,2	23,8	11:38	19:43	03:51	59,6	16:13
26.04.2010	21,6"	123°	275,8	23,2	11:35	19:39	03:47	59,5	16:12
27.04.2010	22,6"	123°	276,4	22,6	11:32	19:36	03:43	59,5	16:11
28.04.2010	23,5"	122°	277,0	22,0	11:30	19:33	03:39	59,4	16:10
29.04.2010	24,4"	122°	277,6	21,5	11:27	19:29	03:36	59,3	16:09
30.04.2010	25,3"	121°	278,1	20,9	11:24	19:26	03:32	59,2	16:08
01.05.2010	26,2"	121°	278,7	20,3	11:21	19:23	03:28	59,1	16:06
02.05.2010	27,1"	121°	279,3	19,8	11:19	19:19	03:24	59,0	16:05
03.05.2010	27,9"	120°	279,8	19,2	11:16	19:16	03:20	58,9	16:04
04.05.2010	28,8"	120°	280,3	18,6	11:13	19:13	03:16	58,8	16:03
05.05.2010	29,6"	120°	280,9	18,1	11:11	19:10	03:12	58,7	16:01
06.05.2010	30,5"	120°	281,4	17,5	11:08	19:07	03:08	58,6	16:00
07.05.2010	31,3"	119°	281,9	17,0	11:06	19:03	03:04	58,5	15:59
08.05.2010	32,1"	119°	282,5	16,4	11:03	19:00	03:00	58,4	15:57
09.05.2010	32,9"	119°	283,0	15,9	11:01	18:57	02:57	58,3	15:56
10.05.2010	33,7"	119°	283,5	15,3	10:58	18:54	02:53	58,2	15:54
11.05.2010	34,4"	119°	284,0	14,8	10:56	18:51	02:49	58,1	15:53
12.05.2010	35,2"	118°	284,5	14,2	10:54	18:48	02:45	58,0	15:51
13.05.2010	36,0"	118°	285,0	13,7	10:51	18:45	02:41	57,9	15:50
14.05.2010	36,7"	118°	285,5	13,2	10:49	18:42	02:38	57,8	15:48
15.05.2010	37,4"	118°	286,0	12,6	10:47	18:39	02:34	57,7	15:47
16.05.2010	38,2"	118°	286,5	12,1	10:45	18:36	02:30	57,5	15:45
17.05.2010	38,9"	118°	287,0	11,6	10:42	18:33	02:26	57,4	15:44
18.05.2010	39,6"	118°	287,4	11,0	10:40	18:30	02:22	57,3	15:42
19.05.2010	40,2"	117°	287,9	10,5	10:38	18:27	02:19	57,2	15:41

Datum	"/h	Posw.	Az	h	Aufgang	Kulm.	Unterg.	Kulm.-h	Tagebogen
20.05.2010	40,9"	117°	288,4	10,0	10:36	18:24	02:15	57,1	15:39
21.05.2010	41,5"	117°	288,9	9,5	10:34	18:21	02:11	56,9	15:38
22.05.2010	42,2"	117°	289,3	9,0	10:32	18:18	02:08	56,8	15:36
23.05.2010	42,8"	117°	289,8	8,4	10:30	18:15	02:04	56,7	15:35
24.05.2010	43,4"	117°	290,3	7,9	10:28	18:13	02:01	56,6	15:33
25.05.2010	44,1"	117°	290,7	7,4	10:26	18:10	01:57	56,4	15:31
26.05.2010	44,7"	117°	291,2	6,9	10:24	18:07	01:53	56,3	15:30
27.05.2010	45,2"	117°	291,6	6,4	10:22	18:04	01:50	56,2	15:28
28.05.2010	45,8"	117°	292,1	5,9	10:20	18:01	01:46	56,0	15:26
29.05.2010	46,4"	117°	292,5	5,4	10:18	17:59	01:42	55,9	15:25
30.05.2010	46,9"	117°	293,0	4,9	10:16	17:56	01:39	55,7	15:23
31.05.2010	47,5"	117°	293,4	4,4	10:14	17:53	01:35	55,6	15:21
01.06.2010	48,0"	117°	293,9	3,9	10:12	17:50	01:32	55,5	15:19
02.06.2010	48,6"	117°	294,3	3,5	10:10	17:48	01:28	55,3	15:18
03.06.2010	49,1"	116°	294,8	3,0	10:09	17:45	01:24	55,2	15:16
04.06.2010	49,6"	116°	295,2	2,5	10:07	17:42	01:21	55,0	15:14
05.06.2010	50,1"	116°	295,7	2,1	10:05	17:40	01:17	54,9	15:12
06.06.2010	50,6"	116°	296,1	1,6	10:03	17:37	01:13	54,7	15:10
07.06.2010	51,1"	116°	296,5	1,2	10:02	17:34	01:10	54,6	15:08
08.06.2010	51,6"	116°	297,0	0,7	10:00	17:32	01:06	54,4	15:06
09.06.2010	52,1"	116°	297,4	0,3	09:58	17:29	01:03	54,3	15:04
10.06.2010	52,6"	116°	297,8	-0,1	09:56	17:26	00:59	54,1	15:03
11.06.2010	53,1"	116°	298,3	-1,2	09:55	17:24	00:55	54,0	15:01
12.06.2010	53,5"	116°	298,7	-1,7	09:53	17:21	00:52	53,8	14:59
13.06.2010	54,0"	116°	299,1	-2,1	09:52	17:18	00:48	53,6	14:57
14.06.2010	54,4"	116°	299,6	-2,6	09:50	17:16	00:45	53,5	14:55
15.06.2010	54,9"	116°	300,0	-3,1	09:48	17:13	00:41	53,3	14:53
16.06.2010	55,3"	116°	300,4	-3,6	09:47	17:11	00:38	53,2	14:51
17.06.2010	55,7"	116°	300,9	-4,1	09:45	17:08	00:34	53,0	14:49
18.06.2010	56,1"	116°	301,3	-4,5	09:43	17:06	00:31	52,8	14:47
19.06.2010	56,5"	116°	301,7	-5,0	09:42	17:03	00:27	52,7	14:45
20.06.2010	56,9"	116°	302,2	-5,5	09:40	17:00	00:23	52,5	14:43
21.06.2010	57,3"	116°	302,6	-6,0	09:39	16:58	00:20	52,3	14:41
22.06.2010	57,7"	116°	303,0	-6,4	09:37	16:55	00:17	52,2	14:39
23.06.2010	58,1"	116°	303,4	-6,9	09:36	16:53	00:13	52,0	14:37
24.06.2010	58,4"	116°	303,9	-7,4	09:34	16:50	00:10	51,8	14:35
25.06.2010	58,8"	116°	304,3	-7,8	09:33	16:48	00:06	51,7	14:34
26.06.2010	59,2"	116°	304,7	-8,3	09:31	16:45	00:03	51,5	14:32
27.06.2010	59,5"	116°	305,2	-8,8	09:30	16:43	23:56	51,3	14:26
28.06.2010	59,9"	116°	305,6	-9,2	09:28	16:40	23:53	51,1	14:24
29.06.2010	60,2"	116°	306,0	-9,7	09:27	16:38	23:49	51,0	14:22
30.06.2010	60,5"	116°	306,5	-10,1	09:25	16:36	23:46	50,8	14:21
01.07.2010	60,9"	116°	306,9	-10,6	09:24	16:33	23:42	50,6	14:19

alle Daten gelten für Lübben, Deutschland (51° 56' N / 13° 53' O)

Ten degrees 0 10 20 30 40 50 60 70 80 90 Degrees

