

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.	
Mo 01.08.2011	00:00	21h36'55.8"	+12°13'59.3"	2.455 aE	1.543 aE	146.7°	308°	41°	8.8/	19:21	02:29	+52°	09:26	02:28	+52°	PEG
Di 02.08.2011	00:00	21h33'34.9"	+12°33'53.2"	2.446 aE	1.529 aE	147.3°	310°	42°	8.8/	19:11	02:22	+52°	09:20	02:21	+52°	PEG
Mi 03.08.2011	00:00	21h30' 9.6"	+12°53'39.6"	2.437 aE	1.517 aE	147.8°	312°	44°	8.8/	19:02	02:15	+52°	09:15	02:14	+52°	PEG
Do 04.08.2011	00:00	21h26'40.0"	+13°13'16.8"	2.427 aE	1.505 aE	148.3°	314°	45°	8.7/	18:53	02:07	+53°	09:09	02:06	+53°	PEG
Fr 05.08.2011	00:00	21h23' 6.1"	+13°32'42.9"	2.418 aE	1.493 aE	148.6°	316°	46°	8.7/	18:44	02:00	+53°	09:03	01:59	+53°	PEG
Sa 06.08.2011	00:00	21h19'28.1"	+13°51'56.3"	2.408 aE	1.482 aE	148.9°	318°	47°	8.7/	18:34	01:52	+53°	08:57	01:51	+53°	PEG
So 07.08.2011	00:00	21h15'46.2"	+14°10'55.0"	2.399 aE	1.472 aE	149.1°	321°	48°	8.6/	18:25	01:45	+54°	08:51	01:44	+54°	PEG
Mo 08.08.2011	00:00	21h12' 0.5"	+14°29'37.3"	2.390 aE	1.462 aE	149.1°	323°	49°	8.6/	18:16	01:37	+54°	08:45	01:36	+54°	PEG
Di 09.08.2011	00:00	21h 8'11.2"	+14°48' 1.1"	2.380 aE	1.453 aE	149.1°	325°	50°	8.6/	18:06	01:29	+54°	08:39	01:28	+54°	PEG
Mi 10.08.2011	00:00	21h 4'18.6"	+15° 6' 4.6"	2.371 aE	1.444 aE	148.9°	328°	51°	8.5/	17:57	01:21	+55°	08:33	01:20	+55°	PEG
Do 11.08.2011	00:00	21h 0'22.7"	+15°23'46.0"	2.362 aE	1.436 aE	148.7°	331°	52°	8.5/	17:48	01:14	+55°	08:26	01:13	+55°	PEG
Fr 12.08.2011	00:00	20h56'23.9"	+15°41' 3.3"	2.352 aE	1.429 aE	148.3°	334°	53°	8.5/	17:38	01:06	+55°	08:20	01:05	+55°	DEL
Sa 13.08.2011	00:00	20h52'22.5"	+15°57'54.8"	2.343 aE	1.422 aE	147.9°	336°	54°	8.5/	17:29	00:58	+56°	08:14	00:57	+56°	DEL
So 14.08.2011	00:00	20h48'18.5"	+16°14'18.8"	2.334 aE	1.416 aE	147.3°	340°	54°	8.4/	17:19	00:50	+56°	08:07	00:49	+56°	DEL
Mo 15.08.2011	00:00	20h44'12.5"	+16°30'13.4"	2.325 aE	1.411 aE	146.6°	343°	55°	8.4/	17:10	00:42	+56°	08:01	00:41	+56°	DEL
Di 16.08.2011	00:00	20h40' 4.6"	+16°45'37.3"	2.316 aE	1.406 aE	145.9°	346°	56°	8.4/	17:00	00:34	+56°	07:54	00:33	+56°	DEL
Mi 17.08.2011	00:00	20h35'55.1"	+17° 0'28.8"	2.306 aE	1.402 aE	145.1°	349°	56°	8.4/	16:51	00:26	+57°	07:48	23:59	+57°	DEL
Do 18.08.2011	00:00	20h31'44.3"	+17°14'46.6"	2.297 aE	1.399 aE	144.2°	353°	57°	8.3/	16:41	00:18	+57°	07:41	23:59	+57°	DEL
Fr 19.08.2011	00:00	20h27'32.7"	+17°28'29.5"	2.288 aE	1.396 aE	143.2°	356°	57°	8.3/	16:32	00:10	+57°	07:34	23:59	+57°	DEL
Sa 20.08.2011	00:00	20h23'20.4"	+17°41'36.5"	2.279 aE	1.394 aE	142.2°	360°	57°	8.3/	16:23	23:53	+57°	07:27	23:52	+57°	DEL
So 21.08.2011	00:00	20h19' 7.8"	+17°54' 6.5"	2.270 aE	1.392 aE	141.1°	3°	57°	8.3/	16:13	23:45	+58°	07:20	23:44	+58°	DEL
Mo 22.08.2011	00:00	20h14'55.3"	+18° 5'58.9"	2.261 aE	1.391 aE	139.9°	7°	57°	8.3/	16:04	23:37	+58°	07:13	23:36	+58°	DEL
Di 23.08.2011	00:00	20h10'43.2"	+18°17'13.0"	2.252 aE	1.391 aE	138.7°	11°	57°	8.2/	15:55	23:29	+58°	07:06	23:28	+58°	DEL
Mi 24.08.2011	00:00	20h 6'31.8"	+18°27'48.5"	2.243 aE	1.391 aE	137.5°	14°	57°	8.2/	15:46	23:21	+58°	06:59	23:20	+58°	SGE
Do 25.08.2011	00:00	20h 2'21.4"	+18°37'45.0"	2.234 aE	1.392 aE	136.2°	18°	57°	8.2/	15:37	23:13	+58°	06:52	23:12	+58°	SGE
Fr 26.08.2011	00:00	19h58'12.4"	+18°47' 2.6"	2.225 aE	1.393 aE	134.9°	21°	57°	8.2/	15:29	23:05	+58°	06:45	23:04	+58°	SGE
Sa 27.08.2011	00:00	19h54' 5.1"	+18°55'41.3"	2.216 aE	1.395 aE	133.5°	25°	57°	8.2/	15:20	22:57	+59°	06:37	22:56	+59°	SGE
So 28.08.2011	00:00	19h49'59.7"	+19° 3'41.5"	2.207 aE	1.397 aE	132.2°	28°	56°	8.2/	15:11	22:49	+59°	06:30	22:48	+59°	SGE
Mo 29.08.2011	00:00	19h45'56.6"	+19°11' 3.5"	2.198 aE	1.400 aE	130.8°	31°	56°	8.2/	15:02	22:41	+59°	06:23	22:40	+59°	SGE
Di 30.08.2011	00:00	19h41'56.1"	+19°17'48.1"	2.189 aE	1.404 aE	129.4°	34°	55°	8.1/	14:54	22:33	+59°	06:16	22:32	+59°	VUL
Mi 31.08.2011	00:00	19h37'58.3"	+19°23'55.9"	2.180 aE	1.408 aE	128.0°	37°	54°	8.1/	14:45	22:25	+59°	06:09	22:24	+59°	VUL
Do 01.09.2011	00:00	19h34' 3.6"	+19°29'27.9"	2.171 aE	1.412 aE	126.6°	40°	54°	8.1/	14:37	22:18	+59°	06:01	22:17	+59°	VUL
Fr 02.09.2011	00:00	19h30'12.2"	+19°34'25.0"	2.162 aE	1.418 aE	125.2°	43°	53°	8.1/	14:28	22:10	+59°	05:54	22:09	+59°	VUL
Sa 03.09.2011	00:00	19h26'24.3"	+19°38'48.4"	2.154 aE	1.423 aE	123.7°	46°	52°	8.1/	14:20	22:02	+59°	05:47	22:01	+59°	VUL
So 04.09.2011	00:00	19h22'40.0"	+19°42'39.3"	2.145 aE	1.429 aE	122.3°	48°	51°	8.1/	14:13	21:55	+59°	05:40	21:54	+59°	VUL
Mo 05.09.2011	00:00	19h18'59.5"	+19°45'59.0"	2.136 aE	1.435 aE	120.9°	51°	50°	8.1/	14:05	21:47	+59°	05:33	21:49	+59°	VUL
Di 06.09.2011	00:00	19h15'23.1"	+19°48'48.7"	2.127 aE	1.442 aE	119.4°	53°	49°	8.1/	13:57	21:40	+59°	05:25	21:47	+59°	VUL
Mi 07.09.2011	00:00	19h11'50.7"	+19°51' 9.9"	2.119 aE	1.449 aE	118.0°	56°	49°	8.1/	13:50	21:32	+59°	05:18	21:44	+59°	VUL
Do 08.09.2011	00:00	19h 8'22.6"	+19°53' 3.8"	2.110 aE	1.457 aE	116.6°	58°	48°	8.1/	13:42	21:25	+59°	05:11	21:41	+59°	SGE
Fr 09.09.2011	00:00	19h 4'58.8"	+19°54'32.0"	2.101 aE	1.465 aE	115.2°	60°	47°	8.1/	13:35	21:18	+59°	05:04	21:39	+59°	SGE

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Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.
Sa 10.09.2011 00:00	19h 1'39.5"	+19°55'35.9"	2.093	aE 1.473	aE 113.8°	62°	46°	8.0/	13:28	21:11	+59°	04:56	21:36	+59°	SGE
So 11.09.2011 00:00	18h58'24.6"	+19°56'16.8"	2.084	aE 1.482	aE 112.4°	64°	45°	8.0/	13:20	21:03	+59°	04:49	21:33	+59°	SGE
Mo 12.09.2011 00:00	18h55'14.2"	+19°56'36.3"	2.076	aE 1.490	aE 111.0°	66°	44°	8.0/	13:13	20:56	+59°	04:42	21:31	+59°	SGE
Di 13.09.2011 00:00	18h52' 8.4"	+19°56'35.7"	2.067	aE 1.500	aE 109.6°	67°	43°	8.0/	13:06	20:49	+59°	04:35	21:28	+58°	SGE
Mi 14.09.2011 00:00	18h49' 7.2"	+19°56'16.4"	2.059	aE 1.509	aE 108.2°	69°	41°	8.0/	12:59	20:43	+59°	04:28	21:26	+58°	SGE
Do 15.09.2011 00:00	18h46'10.6"	+19°55'39.7"	2.050	aE 1.519	aE 106.9°	71°	40°	8.0/	12:53	20:36	+59°	04:21	21:23	+58°	HER
Fr 16.09.2011 00:00	18h43'18.6"	+19°54'47.2"	2.042	aE 1.529	aE 105.5°	72°	39°	8.0/	12:46	20:29	+59°	04:15	21:21	+58°	HER
Sa 17.09.2011 00:00	18h40'31.2"	+19°53'40.0"	2.034	aE 1.539	aE 104.2°	74°	38°	8.0/	12:39	20:22	+59°	04:08	21:18	+57°	HER
So 18.09.2011 00:00	18h37'48.4"	+19°52'19.5"	2.025	aE 1.549	aE 102.8°	75°	37°	8.0/	12:33	20:16	+59°	04:01	21:16	+57°	HER
Mo 19.09.2011 00:00	18h35'10.2"	+19°50'46.9"	2.017	aE 1.560	aE 101.5°	77°	36°	8.0/	12:26	20:09	+59°	03:55	21:13	+57°	HER
Di 20.09.2011 00:00	18h32'36.4"	+19°49' 3.5"	2.009	aE 1.570	aE 100.2°	78°	35°	8.0/	12:20	20:03	+59°	03:48	21:11	+56°	HER
Mi 21.09.2011 00:00	18h30' 7.2"	+19°47'10.4"	2.001	aE 1.581	aE 98.9°	80°	34°	8.0/	12:14	19:57	+59°	03:42	21:08	+56°	HER
Do 22.09.2011 00:00	18h27'42.3"	+19°45' 8.8"	1.993	aE 1.592	aE 97.7°	81°	33°	8.0/	12:08	19:50	+59°	03:35	21:06	+56°	HER
Fr 23.09.2011 00:00	18h25'21.9"	+19°42'59.7"	1.984	aE 1.604	aE 96.4°	82°	32°	8.0/	12:02	19:44	+59°	03:29	21:03	+55°	HER
Sa 24.09.2011 00:00	18h23' 5.7"	+19°40'44.3"	1.976	aE 1.615	aE 95.2°	83°	31°	8.0/	11:56	19:38	+59°	03:22	21:01	+55°	HER
So 25.09.2011 00:00	18h20'53.9"	+19°38'23.5"	1.968	aE 1.626	aE 93.9°	85°	30°	8.0/	11:51	19:32	+59°	03:16	20:58	+55°	HER
Mo 26.09.2011 00:00	18h18'46.2"	+19°35'58.4"	1.960	aE 1.638	aE 92.7°	86°	29°	8.0/	11:45	19:26	+59°	03:09	20:56	+54°	HER
Di 27.09.2011 00:00	18h16'42.6"	+19°33'29.9"	1.953	aE 1.649	aE 91.5°	87°	28°	8.0/	11:39	19:20	+59°	03:03	20:54	+54°	HER
Mi 28.09.2011 00:00	18h14'43.0"	+19°30'58.8"	1.945	aE 1.661	aE 90.3°	88°	27°	8.0/	11:34	19:14	+59°	02:57	20:51	+53°	HER
Do 29.09.2011 00:00	18h12'47.4"	+19°28'26.1"	1.937	aE 1.672	aE 89.2°	89°	26°	8.0/	11:28	19:08	+59°	02:51	20:49	+53°	HER
Fr 30.09.2011 00:00	18h10'55.7"	+19°25'52.5"	1.929	aE 1.684	aE 88.0°	90°	25°	8.0/	11:23	19:03	+59°	02:45	20:47	+53°	HER
Sa 01.10.2011 00:00	18h 9' 7.7"	+19°23'18.8"	1.921	aE 1.696	aE 86.8°	91°	24°	8.0/	11:17	18:57	+59°	02:39	20:44	+52°	HER
So 02.10.2011 00:00	18h 7'23.5"	+19°20'45.8"	1.914	aE 1.707	aE 85.7°	92°	23°	8.0/	11:12	18:51	+59°	02:33	20:42	+52°	HER
Mo 03.10.2011 00:00	18h 5'42.8"	+19°18'14.0"	1.906	aE 1.719	aE 84.6°	93°	23°	8.0/	11:06	18:46	+59°	02:27	20:40	+51°	HER
Di 04.10.2011 00:00	18h 4' 5.7"	+19°15'44.1"	1.898	aE 1.731	aE 83.5°	94°	22°	8.0/	11:01	18:40	+59°	02:21	20:37	+51°	HER
Mi 05.10.2011 00:00	18h 2'32.0"	+19°13'16.8"	1.891	aE 1.742	aE 82.4°	95°	21°	8.0/	10:56	18:35	+59°	02:15	20:35	+51°	HER
Do 06.10.2011 00:00	18h 1' 1.6"	+19°10'52.4"	1.883	aE 1.754	aE 81.3°	96°	20°	8.0/	10:50	18:30	+59°	02:10	20:33	+50°	HER
Fr 07.10.2011 00:00	17h59'34.5"	+19° 8'31.5"	1.876	aE 1.765	aE 80.3°	97°	19°	8.0/	10:45	18:24	+59°	02:04	20:31	+50°	HER
Sa 08.10.2011 00:00	17h58'10.5"	+19° 6'14.5"	1.869	aE 1.777	aE 79.2°	98°	18°	8.0/	10:40	18:19	+59°	01:59	20:29	+49°	HER
So 09.10.2011 00:00	17h56'49.6"	+19° 4' 1.9"	1.861	aE 1.788	aE 78.2°	99°	17°	8.0/	10:35	18:14	+59°	01:53	20:26	+49°	HER
Mo 10.10.2011 00:00	17h55'31.7"	+19° 1'54.1"	1.854	aE 1.800	aE 77.2°	100°	16°	8.0/	10:30	18:08	+59°	01:48	20:24	+48°	HER
Di 11.10.2011 00:00	17h54'16.8"	+18°59'51.4"	1.847	aE 1.811	aE 76.1°	101°	16°	8.0/	10:25	18:03	+58°	01:43	20:22	+48°	HER
Mi 12.10.2011 00:00	17h53' 4.6"	+18°57'54.3"	1.840	aE 1.822	aE 75.2°	102°	15°	7.9/	10:20	17:58	+58°	01:37	20:20	+48°	HER
Do 13.10.2011 00:00	17h51'55.2"	+18°56' 3.0"	1.833	aE 1.833	aE 74.2°	103°	14°	7.9/	10:15	17:53	+58°	01:32	20:18	+47°	HER
Fr 14.10.2011 00:00	17h50'48.5"	+18°54'17.8"	1.826	aE 1.844	aE 73.2°	104°	13°	7.9/	10:10	17:48	+58°	01:27	20:16	+47°	HER
Sa 15.10.2011 00:00	17h49'44.4"	+18°52'39.1"	1.819	aE 1.855	aE 72.3°	105°	12°	7.9/	10:06	17:43	+58°	01:22	20:14	+46°	HER
So 16.10.2011 00:00	17h48'42.8"	+18°51' 7.1"	1.812	aE 1.865	aE 71.3°	106°	11°	7.9/	10:01	17:38	+58°	01:17	20:12	+46°	HER
Mo 17.10.2011 00:00	17h47'43.6"	+18°49'42.2"	1.805	aE 1.876	aE 70.4°	107°	11°	7.9/	09:56	17:33	+58°	01:11	20:10	+46°	HER
Di 18.10.2011 00:00	17h46'46.9"	+18°48'24.5"	1.798	aE 1.886	aE 69.5°	108°	10°	7.9/	09:52	17:29	+58°	01:06	20:08	+45°	HER
Mi 19.10.2011 00:00	17h45'52.4"	+18°47'14.3"	1.791	aE 1.896	aE 68.6°	108°	9°	7.9/	09:47	17:24	+58°	01:01	20:06	+45°	HER

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Do 20.10.2011	00:00	17h45' 0.2"	+18°46'11.9"	1.785 aE	1.907 aE	67.7°	109°	8°	7.9/	09:42	17:19	+58°	00:56	20:04	+44° HER
Fr 21.10.2011	00:00	17h44'10.2"	+18°45'17.5"	1.778 aE	1.916 aE	66.8°	110°	8°	7.9/	09:38	17:14	+58°	00:52	20:02	+44° HER
Sa 22.10.2011	00:00	17h43'22.4"	+18°44'31.3"	1.772 aE	1.926 aE	66.0°	111°	7°	7.9/	09:33	17:10	+58°	00:47	20:01	+43° HER
So 23.10.2011	00:00	17h42'36.5"	+18°43'53.5"	1.765 aE	1.936 aE	65.1°	112°	6°	7.9/	09:28	17:05	+58°	00:42	19:59	+43° HER
Mo 24.10.2011	00:00	17h41'52.7"	+18°43'24.5"	1.759 aE	1.945 aE	64.3°	113°	6°	7.9/	09:24	17:00	+58°	00:37	19:57	+43° HER
Di 25.10.2011	00:00	17h41'10.8"	+18°43' 4.3"	1.753 aE	1.954 aE	63.5°	114°	5°	7.9/	09:19	16:56	+58°	00:33	19:55	+42° HER
Mi 26.10.2011	00:00	17h40'30.8"	+18°42'53.2"	1.746 aE	1.963 aE	62.7°	115°	4°	7.9/	09:15	16:51	+58°	00:28	19:53	+42° HER
Do 27.10.2011	00:00	17h39'52.6"	+18°42'51.4"	1.740 aE	1.972 aE	61.9°	115°	4°	7.9/	09:10	16:47	+58°	00:23	19:52	+41° HER
Fr 28.10.2011	00:00	17h39'16.1"	+18°42'59.1"	1.734 aE	1.980 aE	61.1°	116°	3°	7.9/	09:05	16:42	+58°	00:19	19:50	+41° HER
Sa 29.10.2011	00:00	17h38'41.4"	+18°43'16.5"	1.728 aE	1.989 aE	60.3°	117°	2°	7.9/	09:01	16:38	+58°	00:14	19:48	+41° HER
So 30.10.2011	00:00	17h38' 7.0"	+18°43'44.9"	1.722 aE	1.997 aE	59.6°	130°	-6°	7.9/	07:56	15:33	+58°	23:06	18:47	+40° HER
Mo 31.10.2011	00:00	17h37'35.5"	+18°44'22.5"	1.716 aE	2.005 aE	58.8°	131°	-7°	7.9/	07:52	15:29	+58°	23:01	18:45	+40° HER
Di 01.11.2011	00:00	17h37' 5.6"	+18°45'10.3"	1.711 aE	2.013 aE	58.1°	132°	-7°	7.9/	07:47	15:24	+58°	22:57	18:44	+39° HER
Mi 02.11.2011	00:00	17h36'37.2"	+18°46' 8.3"	1.705 aE	2.020 aE	57.4°	133°	-8°	7.8/	07:43	15:20	+58°	22:53	18:42	+39° HER
Do 03.11.2011	00:00	17h36'10.2"	+18°47'16.8"	1.699 aE	2.027 aE	56.7°	133°	-8°	7.8/	07:39	15:16	+58°	22:48	18:41	+38° HER
Fr 04.11.2011	00:00	17h35'44.5"	+18°48'35.7"	1.694 aE	2.034 aE	56.1°	134°	-9°	7.8/	07:34	15:11	+58°	22:44	18:39	+38° HER
Sa 05.11.2011	00:00	17h35'20.2"	+18°50' 5.3"	1.688 aE	2.041 aE	55.4°	135°	-9°	7.8/	07:30	15:07	+58°	22:40	18:38	+38° HER
So 06.11.2011	00:00	17h34'57.2"	+18°51'45.7"	1.683 aE	2.047 aE	54.8°	136°	-10°	7.8/	07:25	15:03	+58°	22:36	18:36	+37° HER
Mo 07.11.2011	00:00	17h34'35.4"	+18°53'36.9"	1.678 aE	2.053 aE	54.2°	137°	-10°	7.8/	07:21	14:58	+58°	22:32	18:35	+37° HER
Di 08.11.2011	00:00	17h34'14.8"	+18°55'39.1"	1.673 aE	2.059 aE	53.6°	138°	-11°	7.8/	07:16	14:54	+58°	22:28	18:34	+36° HER
Mi 09.11.2011	00:00	17h33'55.3"	+18°57'52.3"	1.668 aE	2.065 aE	53.0°	139°	-11°	7.8/	07:12	14:50	+59°	22:24	18:32	+36° HER
Do 10.11.2011	00:00	17h33'37.0"	+19° 0'16.9"	1.663 aE	2.070 aE	52.4°	140°	-11°	7.8/	07:07	14:46	+59°	22:20	18:31	+36° HER
Fr 11.11.2011	00:00	17h33'19.7"	+19° 2'52.7"	1.658 aE	2.075 aE	51.9°	141°	-12°	7.8/	07:03	14:41	+59°	22:16	18:30	+35° HER
Sa 12.11.2011	00:00	17h33' 3.5"	+19° 5'40.1"	1.653 aE	2.080 aE	51.3°	142°	-12°	7.8/	06:58	14:37	+59°	22:12	18:29	+35° HER
So 13.11.2011	00:00	17h32'48.3"	+19° 8'39.0"	1.648 aE	2.084 aE	50.8°	143°	-13°	7.8/	06:53	14:33	+59°	22:08	18:27	+34° HER
Mo 14.11.2011	00:00	17h32'34.1"	+19°11'49.8"	1.644 aE	2.088 aE	50.3°	144°	-13°	7.8/	06:49	14:29	+59°	22:04	18:26	+34° HER
Di 15.11.2011	00:00	17h32'20.7"	+19°15'12.4"	1.639 aE	2.092 aE	49.9°	145°	-13°	7.8/	06:44	14:25	+59°	22:01	18:25	+33° HER
Mi 16.11.2011	00:00	17h32' 8.3"	+19°18'47.1"	1.635 aE	2.096 aE	49.4°	146°	-14°	7.7/	06:40	14:21	+59°	21:57	18:24	+33° HER
Do 17.11.2011	00:00	17h31'56.8"	+19°22'34.0"	1.631 aE	2.099 aE	49.0°	147°	-14°	7.7/	06:35	14:16	+59°	21:53	18:23	+33° HER
Fr 18.11.2011	00:00	17h31'46.1"	+19°26'33.3"	1.627 aE	2.102 aE	48.6°	148°	-14°	7.7/	06:31	14:12	+59°	21:50	18:22	+32° HER
Sa 19.11.2011	00:00	17h31'36.1"	+19°30'45.1"	1.623 aE	2.105 aE	48.2°	149°	-14°	7.7/	06:26	14:08	+59°	21:46	18:21	+32° HER
So 20.11.2011	00:00	17h31'27.0"	+19°35' 9.8"	1.619 aE	2.107 aE	47.8°	150°	-15°	7.7/	06:22	14:04	+59°	21:43	18:21	+31° HER
Mo 21.11.2011	00:00	17h31'18.6"	+19°39'47.4"	1.615 aE	2.110 aE	47.4°	150°	-15°	7.7/	06:17	14:00	+59°	21:39	18:20	+31° HER
Di 22.11.2011	00:00	17h31'10.9"	+19°44'38.2"	1.611 aE	2.111 aE	47.1°	151°	-15°	7.7/	06:13	13:56	+59°	21:36	18:19	+30° HER
Mi 23.11.2011	00:00	17h31' 3.9"	+19°49'42.3"	1.607 aE	2.113 aE	46.8°	152°	-15°	7.7/	06:08	13:52	+59°	21:32	18:18	+30° HER
Do 24.11.2011	00:00	17h30'57.6"	+19°55' 0.1"	1.604 aE	2.114 aE	46.5°	153°	-16°	7.7/	06:04	13:48	+59°	21:29	18:18	+29° HER
Fr 25.11.2011	00:00	17h30'51.8"	+20° 0'31.7"	1.600 aE	2.115 aE	46.3°	154°	-16°	7.7/	05:59	13:44	+60°	21:25	18:17	+29° HER
Sa 26.11.2011	00:00	17h30'46.6"	+20° 6'17.3"	1.597 aE	2.116 aE	46.0°	155°	-16°	7.7/	05:55	13:40	+60°	21:22	18:16	+28° HER
So 27.11.2011	00:00	17h30'42.0"	+20°12'17.1"	1.594 aE	2.116 aE	45.8°	156°	-16°	7.7/	05:50	13:36	+60°	21:18	18:16	+28° HER
Mo 28.11.2011	00:00	17h30'37.9"	+20°18'31.4"	1.591 aE	2.116 aE	45.6°	157°	-16°	7.6/	05:46	13:32	+60°	21:15	18:15	+27° HER

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.
Di 29.11.2011	00:00	17h30'34.3"	+20°25' 0.4"	1.588 aE	2.116 aE	45.4°	158° -16°	7.6/	05:41	13:28	+60°	21:12	18:15	+27°	HER
Mi 30.11.2011	00:00	17h30'31.2"	+20°31'44.3"	1.585 aE	2.115 aE	45.3°	159° -17°	7.6/	05:36	13:24	+60°	21:08	18:14	+26°	HER
Do 01.12.2011	00:00	17h30'28.4"	+20°38'43.4"	1.582 aE	2.114 aE	45.2°	160° -17°	7.6/	05:32	13:20	+60°	21:05	18:14	+26°	HER
Fr 02.12.2011	00:00	17h30'26.1"	+20°45'57.7"	1.579 aE	2.113 aE	45.1°	161° -17°	7.6/	05:27	13:16	+60°	21:02	18:13	+26°	HER
Sa 03.12.2011	00:00	17h30'24.2"	+20°53'27.7"	1.577 aE	2.111 aE	45.0°	162° -17°	7.6/	05:22	13:12	+60°	20:59	18:13	+25°	HER
So 04.12.2011	00:00	17h30'22.6"	+21° 1'13.4"	1.574 aE	2.110 aE	44.9°	163° -17°	7.6/	05:17	13:08	+61°	20:55	18:13	+25°	HER
Mo 05.12.2011	00:00	17h30'21.3"	+21° 9'15.2"	1.572 aE	2.107 aE	44.9°	164° -17°	7.6/	05:12	13:04	+61°	20:52	18:13	+24°	HER
Di 06.12.2011	00:00	17h30'20.2"	+21°17'33.4"	1.570 aE	2.105 aE	44.9°	165° -17°	7.6/	05:08	13:00	+61°	20:49	18:12	+24°	HER
Mi 07.12.2011	00:00	17h30'19.5"	+21°26' 8.2"	1.568 aE	2.102 aE	44.9°	166° -17°	7.6/	05:03	12:56	+61°	20:46	18:12	+23°	HER
Do 08.12.2011	00:00	17h30'19.0"	+21°34'59.9"	1.566 aE	2.099 aE	45.0°	167° -17°	7.6/	04:58	12:52	+61°	20:43	18:12	+23°	HER
Fr 09.12.2011	00:00	17h30'18.7"	+21°44' 8.7"	1.564 aE	2.096 aE	45.1°	168° -17°	7.5/	04:53	12:48	+61°	20:40	18:12	+22°	HER
Sa 10.12.2011	00:00	17h30'18.6"	+21°53'35.1"	1.562 aE	2.092 aE	45.2°	169° -17°	7.5/	04:48	12:45	+62°	20:37	18:12	+22°	HER
So 11.12.2011	00:00	17h30'18.6"	+22° 3'19.4"	1.560 aE	2.088 aE	45.3°	170° -17°	7.5/	04:43	12:41	+62°	20:34	18:12	+21°	HER
Mo 12.12.2011	00:00	17h30'18.8"	+22°13'21.8"	1.559 aE	2.084 aE	45.4°	171° -17°	7.5/	04:38	12:37	+62°	20:32	18:12	+21°	HER
Di 13.12.2011	00:00	17h30'19.1"	+22°23'42.8"	1.558 aE	2.079 aE	45.6°	172° -17°	7.5/	04:33	12:33	+62°	20:29	18:12	+20°	HER
Mi 14.12.2011	00:00	17h30'19.5"	+22°34'22.8"	1.556 aE	2.074 aE	45.8°	173° -17°	7.5/	04:27	12:29	+62°	20:26	18:13	+19°	HER
Do 15.12.2011	00:00	17h30'19.9"	+22°45'22.1"	1.555 aE	2.069 aE	46.0°	174° -17°	7.5/	04:22	12:25	+62°	20:23	18:13	+19°	HER
Fr 16.12.2011	00:00	17h30'20.4"	+22°56'41.1"	1.554 aE	2.063 aE	46.2°	175° -16°	7.5/	04:17	12:21	+63°	20:21	06:35	+20°	HER
Sa 17.12.2011	00:00	17h30'20.9"	+23° 8'20.4"	1.553 aE	2.057 aE	46.5°	176° -16°	7.5/	04:12	12:17	+63°	20:18	06:36	+21°	HER
So 18.12.2011	00:00	17h30'21.4"	+23°20'20.3"	1.553 aE	2.051 aE	46.8°	177° -16°	7.5/	04:07	12:13	+63°	20:16	06:36	+21°	HER
Mo 19.12.2011	00:00	17h30'21.8"	+23°32'41.3"	1.552 aE	2.045 aE	47.1°	178° -16°	7.5/	04:02	12:09	+63°	20:13	06:37	+22°	HER
Di 20.12.2011	00:00	17h30'22.1"	+23°45'24.0"	1.551 aE	2.038 aE	47.4°	179° -16°	7.5/	03:56	12:05	+63°	20:11	06:38	+23°	HER
Mi 21.12.2011	00:00	17h30'22.3"	+23°58'28.9"	1.551 aE	2.031 aE	47.7°	179° -16°	7.4/	03:51	12:01	+64°	20:08	06:38	+24°	HER
Do 22.12.2011	00:00	17h30'22.4"	+24°11'56.4"	1.551 aE	2.024 aE	48.1°	180° -15°	7.4/	03:46	11:57	+64°	20:06	06:39	+25°	HER
Fr 23.12.2011	00:00	17h30'22.3"	+24°25'47.1"	1.551 aE	2.016 aE	48.5°	181° -15°	7.4/	03:40	11:54	+64°	20:04	06:39	+26°	HER
Sa 24.12.2011	00:00	17h30'22.0"	+24°40' 1.6"	1.551 aE	2.008 aE	48.9°	182° -15°	7.4/	03:35	11:50	+64°	20:02	06:40	+27°	HER
So 25.12.2011	00:00	17h30'21.4"	+24°54'40.4"	1.551 aE	2.000 aE	49.3°	183° -15°	7.4/	03:29	11:46	+65°	19:59	06:40	+28°	HER
Mo 26.12.2011	00:00	17h30'20.5"	+25° 9'44.1"	1.551 aE	1.992 aE	49.8°	184° -14°	7.4/	03:23	11:42	+65°	19:57	06:40	+28°	HER
Di 27.12.2011	00:00	17h30'19.3"	+25°25'13.3"	1.551 aE	1.983 aE	50.3°	185° -14°	7.4/	03:17	11:38	+65°	19:55	06:41	+29°	HER
Mi 28.12.2011	00:00	17h30'17.7"	+25°41' 8.5"	1.552 aE	1.974 aE	50.7°	186° -14°	7.4/	03:11	11:34	+65°	19:53	06:41	+30°	HER
Do 29.12.2011	00:00	17h30'15.8"	+25°57'30.4"	1.552 aE	1.965 aE	51.2°	187° -13°	7.4/	03:05	11:30	+66°	19:52	06:41	+31°	HER
Fr 30.12.2011	00:00	17h30'13.3"	+26°14'19.6"	1.553 aE	1.956 aE	51.8°	188° -13°	7.4/	02:59	11:26	+66°	19:50	06:41	+32°	HER
Sa 31.12.2011	00:00	17h30'10.3"	+26°31'36.8"	1.554 aE	1.946 aE	52.3°	189° -13°	7.4/	02:53	11:22	+66°	19:48	06:41	+33°	HER
So 01.01.2012	00:00	17h30' 6.8"	+26°49'22.6"	1.555 aE	1.936 aE	52.9°	189° -12°	7.4/	02:47	11:18	+66°	19:46	06:42	+34°	HER
Mo 02.01.2012	00:00	17h30' 2.8"	+27° 7'37.6"	1.556 aE	1.926 aE	53.5°	190° -12°	7.3/	02:40	11:14	+67°	19:45	06:42	+34°	HER
Di 03.01.2012	00:00	17h29'58.0"	+27°26'22.7"	1.557 aE	1.916 aE	54.0°	191° -11°	7.3/	02:34	11:10	+67°	19:43	06:42	+35°	HER
Mi 04.01.2012	00:00	17h29'52.6"	+27°45'38.5"	1.558 aE	1.905 aE	54.7°	192° -11°	7.3/	02:27	11:06	+67°	19:42	06:42	+36°	HER
Do 05.01.2012	00:00	17h29'46.5"	+28° 5'25.9"	1.560 aE	1.894 aE	55.3°	193° -10°	7.3/	02:20	11:02	+68°	19:41	06:42	+37°	HER
Fr 06.01.2012	00:00	17h29'39.5"	+28°25'45.5"	1.561 aE	1.883 aE	55.9°	194° -10°	7.3/	02:14	10:58	+68°	19:39	06:42	+38°	HER
Sa 07.01.2012	00:00	17h29'31.7"	+28°46'38.3"	1.563 aE	1.872 aE	56.6°	195° -9°	7.3/	02:07	10:54	+68°	19:38	06:41	+39°	HER

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.	
So 08.01.2012	00:00	17h29'23.0"	+29° 8' 5.0"	1.565 aE	1.860 aE	57.3°	195°	-9°	7.3/	02:00	10:50	+69°	19:37	06:41	+40°	HER
Mo 09.01.2012	00:00	17h29'13.4"	+29°30' 6.6"	1.567 aE	1.849 aE	57.9°	196°	-8°	7.3/	01:53	10:46	+69°	19:37	06:41	+40°	HER
Di 10.01.2012	00:00	17h29' 2.7"	+29°52'43.9"	1.569 aE	1.837 aE	58.6°	197°	-8°	7.3/	01:45	10:41	+70°	19:36	06:41	+41°	HER
Mi 11.01.2012	00:00	17h28'50.9"	+30°15'57.8"	1.571 aE	1.825 aE	59.4°	198°	-7°	7.3/	01:38	10:37	+70°	19:35	06:40	+42°	HER
Do 12.01.2012	00:00	17h28'37.9"	+30°39'49.4"	1.573 aE	1.813 aE	60.1°	199°	-7°	7.3/	01:30	10:33	+70°	19:35	06:40	+43°	HER
Fr 13.01.2012	00:00	17h28'23.7"	+31° 4'19.5"	1.576 aE	1.800 aE	60.8°	199°	-6°	7.3/	01:22	10:29	+71°	19:35	06:40	+44°	HER
Sa 14.01.2012	00:00	17h28' 8.2"	+31°29'29.3"	1.578 aE	1.788 aE	61.6°	200°	-5°	7.2/	01:14	10:25	+71°	19:35	06:39	+45°	HER
So 15.01.2012	00:00	17h27'51.3"	+31°55'19.8"	1.581 aE	1.775 aE	62.4°	201°	-5°	7.2/	01:05	10:21	+72°	19:35	06:39	+46°	HER
Mo 16.01.2012	00:00	17h27'32.8"	+32°21'51.9"	1.583 aE	1.762 aE	63.1°	202°	-4°	7.2/	00:56	10:16	+72°	19:36	06:38	+47°	HER
Di 17.01.2012	00:00	17h27'12.8"	+32°49' 6.9"	1.586 aE	1.750 aE	63.9°	202°	-3°	7.2/	00:47	10:12	+73°	19:36	06:38	+48°	HER
Mi 18.01.2012	00:00	17h26'51.0"	+33°17' 5.8"	1.589 aE	1.737 aE	64.7°	203°	-3°	7.2/	00:37	10:08	+73°	19:38	06:37	+48°	HER
Do 19.01.2012	00:00	17h26'27.4"	+33°45'49.6"	1.592 aE	1.723 aE	65.6°	204°	-2°	7.2/	00:28	10:03	+73°	19:39	06:36	+49°	HER
Fr 20.01.2012	00:00	17h26' 1.8"	+34°15'19.6"	1.596 aE	1.710 aE	66.4°	204°	-1°	7.2/	00:17	09:59	+74°	19:41	06:36	+50°	HER
Sa 21.01.2012	00:00	17h25'34.2"	+34°45'36.8"	1.599 aE	1.697 aE	67.2°	205°	0°	7.2/	00:07	09:55	+74°	19:44	06:35	+51°	HER
So 22.01.2012	00:00	17h25' 4.3"	+35°16'42.2"	1.602 aE	1.683 aE	68.1°	206°	0°	7.2/	23:44	09:50	+75°	19:47	06:34	+52°	HER
Mo 23.01.2012	00:00	17h24'32.0"	+35°48'37.0"	1.606 aE	1.670 aE	69.0°	207°	1°	7.2/	23:31	09:46	+76°	19:50	06:33	+53°	HER
Di 24.01.2012	00:00	17h23'57.2"	+36°21'22.3"	1.609 aE	1.657 aE	69.9°	207°	2°	7.2/	23:17	09:41	+76°	19:55	06:32	+54°	HER
Mi 25.01.2012	00:00	17h23'19.7"	+36°54'59.0"	1.613 aE	1.643 aE	70.7°	208°	3°	7.2/	23:01	09:37	+77°	20:01	06:31	+55°	HER
Do 26.01.2012	00:00	17h22'39.2"	+37°29'28.2"	1.617 aE	1.629 aE	71.6°	208°	4°	7.1/	22:44	09:32	+77°	20:09	06:30	+56°	HER
Fr 27.01.2012	00:00	17h21'55.7"	+38° 4'50.8"	1.621 aE	1.616 aE	72.6°	209°	5°	7.1/	22:23	09:27	+78°	20:20	06:29	+57°	HER
Sa 28.01.2012	00:00	17h21' 8.8"	+38°41' 7.9"	1.625 aE	1.602 aE	73.5°	210°	6°	7.1/	21:57	09:23	+78°	20:37	06:28	+58°	HER
So 29.01.2012	00:00	17h20'18.4"	+39°18'20.3"	1.629 aE	1.589 aE	74.4°	210°	7°	7.1/	--:--	09:18	+79°	--:--	06:27	+58°	HER
Mo 30.01.2012	00:00	17h19'24.2"	+39°56'28.9"	1.633 aE	1.575 aE	75.4°	211°	7°	7.1/	--:--	09:13	+80°	--:--	06:26	+59°	HER
Di 31.01.2012	00:00	17h18'25.9"	+40°35'34.5"	1.638 aE	1.562 aE	76.3°	211°	8°	7.1/	--:--	09:08	+80°	--:--	06:25	+60°	HER
Mi 01.02.2012	00:00	17h17'23.2"	+41°15'37.9"	1.642 aE	1.548 aE	77.3°	212°	9°	7.1/	--:--	09:03	+81°	--:--	06:24	+61°	HER
Do 02.02.2012	00:00	17h16'15.9"	+41°56'39.6"	1.647 aE	1.535 aE	78.2°	213°	11°	7.1/	--:--	08:58	+82°	--:--	06:23	+62°	HER
Fr 03.02.2012	00:00	17h15' 3.6"	+42°38'40.2"	1.651 aE	1.522 aE	79.2°	213°	12°	7.1/	--:--	08:53	+82°	--:--	06:21	+63°	HER
Sa 04.02.2012	00:00	17h13'45.9"	+43°21'40.0"	1.656 aE	1.509 aE	80.2°	214°	13°	7.1/	--:--	08:47	+83°	--:--	06:20	+64°	HER
So 05.02.2012	00:00	17h12'22.5"	+44° 5'39.5"	1.661 aE	1.496 aE	81.2°	214°	14°	7.1/	--:--	08:42	+84°	--:--	06:19	+65°	HER
Mo 06.02.2012	00:00	17h10'52.8"	+44°50'38.5"	1.666 aE	1.483 aE	82.2°	215°	15°	7.1/	--:--	08:37	+85°	--:--	06:17	+66°	HER
Di 07.02.2012	00:00	17h 9'16.4"	+45°36'37.2"	1.671 aE	1.470 aE	83.2°	215°	16°	7.1/	--:--	08:31	+85°	--:--	06:16	+67°	HER
Mi 08.02.2012	00:00	17h 7'32.8"	+46°23'35.1"	1.676 aE	1.458 aE	84.2°	215°	17°	7.1/	--:--	08:25	+86°	--:--	06:15	+68°	HER
Do 09.02.2012	00:00	17h 5'41.5"	+47°11'31.7"	1.681 aE	1.446 aE	85.2°	216°	18°	7.1/	--:--	08:19	+87°	--:--	06:13	+69°	HER
Fr 10.02.2012	00:00	17h 3'41.7"	+48° 0'26.1"	1.686 aE	1.433 aE	86.2°	216°	20°	7.1/	--:--	08:13	+88°	--:--	06:12	+70°	HER
Sa 11.02.2012	00:00	17h 1'32.8"	+48°50'17.4"	1.692 aE	1.422 aE	87.3°	217°	21°	7.0/	--:--	08:07	+89°	--:--	06:10	+71°	HER
So 12.02.2012	00:00	16h59'14.0"	+49°41' 3.8"	1.697 aE	1.410 aE	88.3°	217°	22°	7.0/	--:--	08:01	+89°	--:--	06:09	+72°	HER
Mo 13.02.2012	00:00	16h56'44.4"	+50°32'43.5"	1.702 aE	1.399 aE	89.3°	217°	24°	7.0/	--:--	07:55	+90°	--:--	06:07	+73°	HER
Di 14.02.2012	00:00	16h54' 3.3"	+51°25'14.1"	1.708 aE	1.388 aE	90.3°	218°	25°	7.0/	--:--	07:48	+89°	--:--	06:05	+74°	HER
Mi 15.02.2012	00:00	16h51' 9.4"	+52°18'32.6"	1.714 aE	1.377 aE	91.4°	218°	26°	7.0/	--:--	07:41	+88°	--:--	06:04	+75°	DRA
Do 16.02.2012	00:00	16h48' 1.8"	+53°12'35.3"	1.720 aE	1.367 aE	92.4°	218°	28°	7.0/	--:--	07:34	+87°	--:--	06:02	+76°	DRA

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.
Fr 17.02.2012	00:00	16h44'39.0"	+54° 7'18.2"	1.725 aE	1.357 aE	93.4°	218°	29°	7.0/	--:--	07:26 +86°	--:--	06:00 +76°	DRA	
Sa 18.02.2012	00:00	16h40'59.9"	+55° 2'36.1"	1.731 aE	1.348 aE	94.4°	219°	30°	7.0\	--:--	07:19 +85°	--:--	05:59 +77°	DRA	
So 19.02.2012	00:00	16h37' 2.8"	+55°58'23.1"	1.737 aE	1.338 aE	95.4°	219°	32°	7.0\	--:--	07:11 +84°	--:--	05:57 +78°	DRA	
Mo 20.02.2012	00:00	16h32'46.0"	+56°54'32.5"	1.743 aE	1.330 aE	96.4°	219°	33°	7.0\	--:--	07:02 +83°	--:--	05:55 +78°	DRA	
Di 21.02.2012	00:00	16h28' 7.9"	+57°50'56.4"	1.750 aE	1.322 aE	97.4°	219°	35°	7.0\	--:--	06:54 +82°	--:--	05:53 +78°	DRA	
Mi 22.02.2012	00:00	16h23' 6.3"	+58°47'25.7"	1.756 aE	1.314 aE	98.4°	219°	36°	7.0\	--:--	06:45 +81°	--:--	05:51 +79°	DRA	
Do 23.02.2012	00:00	16h17'39.2"	+59°43'50.3"	1.762 aE	1.307 aE	99.3°	219°	38°	7.0\	--:--	06:35 +80°	--:--	05:50 +79°	DRA	
Fr 24.02.2012	00:00	16h11'44.1"	+60°39'58.5"	1.769 aE	1.300 aE	100.3°	219°	39°	7.0\	--:--	06:25 +80°	--:--	05:48 +78°	DRA	
Sa 25.02.2012	00:00	16h 5'18.6"	+61°35'37.1"	1.775 aE	1.294 aE	101.2°	219°	41°	7.1\	--:--	06:15 +79°	--:--	05:46 +78°	DRA	
So 26.02.2012	00:00	15h58'20.1"	+62°30'31.4"	1.782 aE	1.288 aE	102.1°	219°	43°	7.1\	--:--	06:04 +78°	--:--	05:44 +77°	DRA	
Mo 27.02.2012	00:00	15h50'45.8"	+63°24'25.0"	1.788 aE	1.283 aE	103.0°	219°	44°	7.1\	--:--	05:52 +77°	--:--	05:42 +77°	DRA	
Di 28.02.2012	00:00	15h42'32.9"	+64°16'59.5"	1.795 aE	1.279 aE	103.8°	218°	46°	7.1\	--:--	05:40 +76°	--:--	05:39 +76°	DRA	
Mi 29.02.2012	00:00	15h33'38.6"	+65° 7'54.6"	1.802 aE	1.275 aE	104.6°	218°	47°	7.1\	--:--	05:27 +75°	--:--	05:26 +75°	DRA	
Do 01.03.2012	00:00	15h24' 0.5"	+65°56'48.4"	1.808 aE	1.272 aE	105.4°	218°	49°	7.1\	--:--	05:13 +74°	--:--	05:12 +74°	DRA	
Fr 02.03.2012	00:00	15h13'36.1"	+66°43'16.7"	1.815 aE	1.269 aE	106.2°	217°	51°	7.1\	--:--	04:59 +74°	--:--	04:58 +74°	UMI	
Sa 03.03.2012	00:00	15h 2'23.9"	+67°26'54.1"	1.822 aE	1.268 aE	106.9°	216°	52°	7.1\	--:--	04:44 +73°	--:--	04:43 +73°	UMI	
So 04.03.2012	00:00	14h50'22.8"	+68° 7'13.6"	1.829 aE	1.266 aE	107.6°	216°	54°	7.1\	--:--	04:28 +72°	--:--	04:27 +72°	UMI	
Mo 05.03.2012	00:00	14h37'33.2"	+68°43'47.7"	1.836 aE	1.266 aE	108.2°	215°	55°	7.2\	--:--	04:11 +72°	--:--	04:10 +72°	UMI	
Di 06.03.2012	00:00	14h23'56.6"	+69°16' 8.9"	1.843 aE	1.266 aE	108.8°	214°	57°	7.2\	--:--	03:54 +71°	--:--	03:53 +71°	UMI	
Mi 07.03.2012	00:00	14h 9'36.4"	+69°43'50.6"	1.851 aE	1.267 aE	109.4°	213°	58°	7.2\	--:--	03:36 +71°	--:--	03:35 +71°	UMI	
Do 08.03.2012	00:00	13h54'37.6"	+70° 6'28.5"	1.858 aE	1.269 aE	109.9°	211°	60°	7.2\	--:--	03:17 +70°	--:--	03:16 +70°	DRA	
Fr 09.03.2012	00:00	13h39' 7.3"	+70°23'41.9"	1.865 aE	1.271 aE	110.3°	210°	61°	7.2\	--:--	02:58 +70°	--:--	02:57 +70°	DRA	
Sa 10.03.2012	00:00	13h23'14.3"	+70°35'15.0"	1.872 aE	1.274 aE	110.7°	208°	63°	7.3\	--:--	02:38 +70°	--:--	02:37 +70°	UMI	
So 11.03.2012	00:00	13h 7' 8.7"	+70°40'57.7"	1.880 aE	1.278 aE	111.1°	206°	64°	7.3\	--:--	02:19 +70°	--:--	02:18 +70°	UMI	
Mo 12.03.2012	00:00	12h51' 1.5"	+70°40'46.7"	1.887 aE	1.283 aE	111.4°	203°	66°	7.3\	--:--	01:59 +70°	--:--	01:58 +70°	DRA	
Di 13.03.2012	00:00	12h35' 3.8"	+70°34'45.8"	1.895 aE	1.288 aE	111.6°	201°	67°	7.3\	--:--	01:40 +70°	--:--	01:39 +70°	DRA	
Mi 14.03.2012	00:00	12h19'26.0"	+70°23' 5.5"	1.902 aE	1.294 aE	111.8°	198°	68°	7.4\	--:--	01:20 +70°	--:--	01:19 +70°	DRA	
Do 15.03.2012	00:00	12h 4'17.4"	+70° 6' 2.2"	1.910 aE	1.301 aE	111.9°	195°	69°	7.4\	--:--	01:02 +70°	--:--	01:01 +70°	DRA	
Fr 16.03.2012	00:00	11h49'45.7"	+69°43'57.2"	1.918 aE	1.308 aE	112.0°	191°	70°	7.4\	--:--	00:43 +71°	--:--	23:59 +71°	DRA	
Sa 17.03.2012	00:00	11h35'56.5"	+69°17'15.6"	1.925 aE	1.317 aE	112.0°	187°	71°	7.4\	--:--	00:26 +71°	--:--	23:59 +72°	DRA	
So 18.03.2012	00:00	11h22'53.8"	+68°46'24.3"	1.933 aE	1.325 aE	112.0°	182°	72°	7.5\	--:--	23:53 +72°	--:--	23:52 +72°	DRA	
Mo 19.03.2012	00:00	11h10'39.6"	+68°11'51.5"	1.941 aE	1.335 aE	111.9°	177°	72°	7.5\	--:--	23:38 +73°	--:--	23:37 +73°	UMA	
Di 20.03.2012	00:00	10h59'14.6"	+67°34' 5.2"	1.949 aE	1.345 aE	111.8°	172°	73°	7.5\	--:--	23:24 +74°	--:--	23:23 +74°	UMA	
Mi 21.03.2012	00:00	10h48'38.3"	+66°53'32.4"	1.957 aE	1.356 aE	111.7°	167°	73°	7.6\	--:--	23:10 +74°	--:--	23:09 +74°	UMA	
Do 22.03.2012	00:00	10h38'49.0"	+66°10'38.7"	1.965 aE	1.368 aE	111.4°	162°	73°	7.6\	--:--	22:57 +75°	--:--	22:56 +75°	UMA	
Fr 23.03.2012	00:00	10h29'44.8"	+65°25'47.8"	1.973 aE	1.380 aE	111.2°	157°	73°	7.6\	--:--	22:45 +76°	--:--	22:44 +76°	UMA	
Sa 24.03.2012	00:00	10h21'23.0"	+64°39'21.6"	1.981 aE	1.393 aE	110.9°	152°	73°	7.7\	--:--	22:33 +77°	--:--	22:32 +77°	UMA	
So 25.03.2012	00:00	10h13'59.7"	+63°53'40.3"	1.988 aE	1.406 aE	110.5°	167°	76°	7.7\	--:--	23:22 +77°	--:--	23:21 +77°	UMA	
Mo 26.03.2012	00:00	10h 6'53.3"	+63° 5' 2.2"	1.997 aE	1.420 aE	110.1°	161°	76°	7.8\	--:--	23:12 +78°	--:--	23:11 +78°	UMA	
Di 27.03.2012	00:00	10h 0'21.1"	+62°15'40.9"	2.005 aE	1.434 aE	109.7°	155°	76°	7.8\	--:--	23:02 +79°	--:--	23:01 +79°	UMA	

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.
Mi 28.03.2012 00:00	09h54'20.6"	+61°25'50.1"	2.013 aE	1.450 aE	109.2°	149°	76°	7.8\	--:--	22:52 +80°	--:--	22:51 +80°	UMA		
Do 29.03.2012 00:00	09h48'49.2"	+60°35'42.2"	2.021 aE	1.465 aE	108.8°	143°	76°	7.9\	--:--	22:43 +81°	--:--	22:42 +81°	UMA		
Fr 30.03.2012 00:00	09h43'44.5"	+59°45'27.5"	2.029 aE	1.482 aE	108.2°	137°	76°	7.9\	--:--	22:35 +82°	--:--	22:34 +82°	UMA		
Sa 31.03.2012 00:00	09h39' 4.2"	+58°55'15.3"	2.038 aE	1.498 aE	107.7°	132°	75°	8.0\	--:--	22:26 +82°	--:--	22:25 +82°	UMA		
So 01.04.2012 00:00	09h34'46.4"	+58° 5'13.6"	2.046 aE	1.516 aE	107.1°	128°	74°	8.0\	--:--	22:19 +83°	--:--	22:18 +83°	UMA		
Mo 02.04.2012 00:00	09h30'49.1"	+57°15'29.2"	2.055 aE	1.534 aE	106.5°	124°	73°	8.1\	--:--	22:11 +84°	--:--	22:10 +84°	UMA		
Di 03.04.2012 00:00	09h27'10.6"	+56°26' 7.8"	2.063 aE	1.552 aE	105.9°	121°	73°	8.1\	--:--	22:04 +85°	--:--	22:03 +85°	UMA		
Mi 04.04.2012 00:00	09h23'49.4"	+55°37'14.4"	2.071 aE	1.570 aE	105.2°	118°	72°	8.1\	--:--	21:57 +86°	--:--	21:56 +86°	UMA		
Do 05.04.2012 00:00	09h20'44.0"	+54°48'53.1"	2.080 aE	1.590 aE	104.5°	115°	71°	8.2\	--:--	21:50 +86°	--:--	21:51 +86°	UMA		
Fr 06.04.2012 00:00	09h17'53.2"	+54° 1' 7.3"	2.088 aE	1.609 aE	103.9°	113°	70°	8.2\	--:--	21:43 +87°	--:--	21:54 +87°	UMA		
Sa 07.04.2012 00:00	09h15'15.7"	+53°13'60.0"	2.097 aE	1.629 aE	103.2°	111°	69°	8.3\	--:--	21:37 +88°	--:--	21:56 +86°	UMA		
So 08.04.2012 00:00	09h12'50.6"	+52°27'33.3"	2.106 aE	1.649 aE	102.4°	109°	68°	8.3\	--:--	21:31 +89°	--:--	21:58 +85°	UMA		
Mo 09.04.2012 00:00	09h10'36.8"	+51°41'49.2"	2.114 aE	1.670 aE	101.7°	108°	67°	8.4\	--:--	21:25 +89°	--:--	22:00 +84°	UMA		
Di 10.04.2012 00:00	09h 8'33.5"	+50°56'49.0"	2.123 aE	1.691 aE	101.0°	106°	65°	8.4\	--:--	21:19 +90°	--:--	22:02 +83°	UMA		
Mi 11.04.2012 00:00	09h 6'40.0"	+50°12'33.8"	2.132 aE	1.712 aE	100.2°	105°	64°	8.5\	--:--	21:13 +89°	--:--	22:04 +82°	UMA		
Do 12.04.2012 00:00	09h 4'55.4"	+49°29' 4.3"	2.140 aE	1.734 aE	99.4°	104°	63°	8.5\	--:--	21:08 +88°	--:--	22:06 +80°	UMA		
Fr 13.04.2012 00:00	09h 3'19.1"	+48°46'21.1"	2.149 aE	1.756 aE	98.7°	104°	62°	8.5\	--:--	21:02 +88°	--:--	22:09 +79°	UMA		
Sa 14.04.2012 00:00	09h 1'50.6"	+48° 4'24.5"	2.158 aE	1.778 aE	97.9°	103°	61°	8.6\	--:--	20:57 +87°	--:--	22:11 +77°	UMA		
So 15.04.2012 00:00	09h 0'29.2"	+47°23'14.5"	2.167 aE	1.801 aE	97.1°	102°	60°	8.6\	--:--	20:52 +86°	--:--	22:13 +76°	LYN		
Mo 16.04.2012 00:00	8h59'14.6"	+46°42'50.9"	2.175 aE	1.823 aE	96.3°	102°	59°	8.7\	--:--	20:47 +86°	--:--	22:15 +75°	LYN		
Di 17.04.2012 00:00	8h58' 6.2"	+46° 3'13.7"	2.184 aE	1.846 aE	95.5°	101°	58°	8.7\	--:--	20:42 +85°	--:--	22:18 +73°	LYN		
Mi 18.04.2012 00:00	8h57' 3.7"	+45°24'22.3"	2.193 aE	1.870 aE	94.7°	101°	57°	8.8\	--:--	20:37 +84°	--:--	22:20 +72°	LYN		
Do 19.04.2012 00:00	8h56' 6.6"	+44°46'16.4"	2.202 aE	1.893 aE	93.9°	101°	56°	8.8\	--:--	20:32 +84°	--:--	22:22 +70°	LYN		
Fr 20.04.2012 00:00	8h55'14.7"	+44° 8'55.4"	2.211 aE	1.917 aE	93.1°	101°	55°	8.9\	--:--	20:27 +83°	--:--	22:25 +69°	LYN		
Sa 21.04.2012 00:00	8h54'27.5"	+43°32'18.6"	2.220 aE	1.941 aE	92.2°	100°	54°	8.9\	--:--	20:22 +83°	--:--	22:27 +67°	LYN		
So 22.04.2012 00:00	8h53'44.8"	+42°56'25.4"	2.229 aE	1.965 aE	91.4°	100°	53°	8.9\	--:--	20:18 +82°	--:--	22:30 +66°	LYN		
Mo 23.04.2012 00:00	8h53' 6.3"	+42°21'15.1"	2.238 aE	1.989 aE	90.6°	100°	52°	9.0\	--:--	20:13 +81°	--:--	22:32 +65°	LYN		
Di 24.04.2012 00:00	8h52'31.8"	+41°46'46.7"	2.247 aE	2.013 aE	89.8°	100°	51°	9.0\	--:--	20:09 +81°	--:--	22:34 +63°	LYN		
Mi 25.04.2012 00:00	8h52' 0.9"	+41°12'59.5"	2.256 aE	2.038 aE	88.9°	100°	50°	9.1\	--:--	20:04 +80°	--:--	22:37 +62°	LYN		
Do 26.04.2012 00:00	8h51'33.6"	+40°39'52.7"	2.265 aE	2.063 aE	88.1°	100°	49°	9.1\	--:--	20:00 +80°	--:--	22:39 +60°	LYN		
Fr 27.04.2012 00:00	8h51' 9.6"	+40° 7'25.3"	2.274 aE	2.088 aE	87.3°	100°	48°	9.2\	--:--	19:56 +79°	--:--	22:42 +59°	LYN		
Sa 28.04.2012 00:00	8h50'48.7"	+39°35'36.5"	2.283 aE	2.113 aE	86.5°	100°	47°	9.2\	08:22	19:52 +79°	07:23	22:44 +58°	LYN		
So 29.04.2012 00:00	8h50'30.7"	+39° 4'25.3"	2.292 aE	2.138 aE	85.6°	100°	46°	9.3\	08:41	19:47 +78°	06:55	22:47 +56°	LYN		
Mo 30.04.2012 00:00	8h50'15.5"	+38°33'51.0"	2.302 aE	2.163 aE	84.8°	100°	45°	9.3\	08:52	19:43 +78°	06:36	22:50 +55°	LYN		
Di 01.05.2012 00:00	8h50' 2.8"	+38° 3'52.4"	2.311 aE	2.188 aE	84.0°	100°	44°	9.3\	09:00	19:39 +77°	06:19	22:52 +54°	LYN		
Mi 02.05.2012 00:00	8h49'52.7"	+37°34'28.9"	2.320 aE	2.213 aE	83.2°	101°	43°	9.4\	09:06	19:35 +77°	06:05	22:55 +52°	LYN		
Do 03.05.2012 00:00	8h49'44.9"	+37° 5'39.3"	2.329 aE	2.239 aE	82.3°	101°	42°	9.4\	09:11	19:31 +76°	05:52	22:58 +51°	LYN		
Fr 04.05.2012 00:00	8h49'39.3"	+36°37'22.9"	2.338 aE	2.264 aE	81.5°	101°	41°	9.5\	09:15	19:27 +76°	05:40	23:00 +49°	LYN		
Sa 05.05.2012 00:00	8h49'35.8"	+36° 9'38.8"	2.348 aE	2.290 aE	80.7°	101°	40°	9.5\	09:18	19:23 +75°	05:29	23:03 +48°	LYN		
So 06.05.2012 00:00	8h49'34.3"	+35°42'25.9"	2.357 aE	2.315 aE	79.9°	101°	39°	9.5\	09:21	19:19 +75°	05:18	23:06 +47°	LYN		

# Ephemeride für den Kometen C/2009 P1 Garradd

Alle Zeiten gelten für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	D (2000.0)	r	Entferng.	Elong.	Azim	Höhe	Hell	Aufg.	Kulm.	KHöh	Untg.	TOpt	TOptH	Stb.
Mo 07.05.2012 00:00	8h49'34.6"	+35°15'43.6"	2.366 aE	2.341 aE	79.0°	102°	38°	9.6\	09:23	19:15	+74°	05:08	23:08	+45°	LYN
Di 08.05.2012 00:00	8h49'36.8"	+34°49'30.9"	2.376 aE	2.367 aE	78.2°	102°	37°	9.6\	09:25	19:11	+74°	04:58	23:11	+44°	LYN
Mi 09.05.2012 00:00	8h49'40.6"	+34°23'47.0"	2.385 aE	2.392 aE	77.4°	102°	36°	9.7\	09:27	19:08	+74°	04:49	23:14	+43°	LYN
Do 10.05.2012 00:00	8h49'46.1"	+33°58'31.1"	2.394 aE	2.418 aE	76.6°	102°	36°	9.7\	09:28	19:04	+73°	04:40	23:17	+41°	LYN
Fr 11.05.2012 00:00	8h49'53.2"	+33°33'42.3"	2.404 aE	2.444 aE	75.8°	103°	35°	9.7\	09:29	19:00	+73°	04:31	23:20	+40°	CNC
Sa 12.05.2012 00:00	8h50' 1.7"	+33° 9'19.8"	2.413 aE	2.469 aE	74.9°	103°	34°	9.8\	09:30	18:56	+72°	04:23	23:23	+39°	CNC
So 13.05.2012 00:00	8h50'11.6"	+32°45'23.0"	2.422 aE	2.495 aE	74.1°	103°	33°	9.8\	09:30	18:52	+72°	04:15	23:25	+38°	CNC
Mo 14.05.2012 00:00	8h50'22.9"	+32°21'51.0"	2.432 aE	2.521 aE	73.3°	103°	32°	9.9\	09:31	18:49	+72°	04:07	23:28	+36°	CNC
Di 15.05.2012 00:00	8h50'35.4"	+31°58'43.2"	2.441 aE	2.547 aE	72.5°	104°	31°	9.9\	09:31	18:45	+71°	04:00	23:31	+35°	CNC
Mi 16.05.2012 00:00	8h50'49.2"	+31°35'58.8"	2.450 aE	2.572 aE	71.7°	104°	30°	9.9\	09:31	18:41	+71°	03:52	23:34	+34°	CNC
Do 17.05.2012 00:00	8h51' 4.2"	+31°13'37.2"	2.460 aE	2.598 aE	70.9°	104°	30°	10.0\	09:31	18:38	+70°	03:45	23:37	+32°	CNC
Fr 18.05.2012 00:00	8h51'20.2"	+30°51'37.7"	2.469 aE	2.624 aE	70.1°	105°	29°	10.0\	09:31	18:34	+70°	03:38	23:40	+31°	CNC
Sa 19.05.2012 00:00	8h51'37.4"	+30°29'59.6"	2.479 aE	2.649 aE	69.3°	105°	28°	10.1\	09:30	18:30	+70°	03:31	23:43	+30°	CNC
So 20.05.2012 00:00	8h51'55.6"	+30° 8'42.4"	2.488 aE	2.675 aE	68.5°	105°	27°	10.1\	09:30	18:27	+69°	03:24	23:46	+28°	CNC

## Legende:

Datum	= Berechnungsdatum
RA, D	= Rektaszension, Deklination (2000.0)
r	= Abstand zur Sonne in aE
Entferng.	= Abstand zur Erde in aE
Elong.	= Elongation
Azim, Höhe	= Azimut und Höhe zum Berechnungszeitpunkt
Hell	= Helligkeit in Mag. und Tendenz
Aufg	= Aufgangszeit
Kulm, KHöh	= Kulminationszeit und -höhe
Untg	= Untergangszeit
TOpt, Höhe	= Optimale Beobachtungszeit und -höhe
Stb	= Sternbild zu RA und D