

# Ephemeride für den Kleinplaneten (134340) Pluto

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 01.01.2012	00:00	18h30'16.3"	-19°19'59.5"	32.154	aE 33.134	aE 4.8°	171° -59°	14.4	07:58	12:18	+20°	16:33	---:--	---°	SGR
Mo 02.01.2012	00:00	18h30'25.3"	-19°19'58.2"	32.155	aE 33.134	aE 5.4°	173° -59°	14.4	07:54	12:14	+20°	16:29	---:--	---°	SGR
Di 03.01.2012	00:00	18h30'34.4"	-19°19'56.7"	32.155	aE 33.133	aE 6.1°	175° -59°	14.4	07:51	12:10	+20°	16:25	---:--	---°	SGR
Mi 04.01.2012	00:00	18h30'43.4"	-19°19'55.0"	32.156	aE 33.132	aE 6.8°	177° -59°	14.4	07:47	12:07	+20°	16:22	---:--	---°	SGR
Do 05.01.2012	00:00	18h30'52.5"	-19°19'53.2"	32.156	aE 33.131	aE 7.7°	178° -59°	14.4	07:43	12:03	+20°	16:18	---:--	---°	SGR
Fr 06.01.2012	00:00	18h31' 1.5"	-19°19'51.3"	32.157	aE 33.129	aE 8.5°	180° -59°	14.4	07:39	11:59	+20°	16:14	---:--	---°	SGR
Sa 07.01.2012	00:00	18h31'10.5"	-19°19'49.2"	32.158	aE 33.127	aE 9.4°	182° -59°	14.4	07:36	11:55	+20°	16:10	---:--	---°	SGR
So 08.01.2012	00:00	18h31'19.4"	-19°19'47.0"	32.158	aE 33.125	aE 10.3°	184° -59°	14.4	07:32	11:51	+20°	16:07	---:--	---°	SGR
Mo 09.01.2012	00:00	18h31'28.4"	-19°19'44.7"	32.159	aE 33.123	aE 11.2°	185° -59°	14.4	07:28	11:48	+20°	16:03	---:--	---°	SGR
Di 10.01.2012	00:00	18h31'37.3"	-19°19'42.2"	32.159	aE 33.120	aE 12.1°	187° -59°	14.4	07:24	11:44	+20°	15:59	---:--	---°	SGR
Mi 11.01.2012	00:00	18h31'46.2"	-19°19'39.5"	32.160	aE 33.117	aE 13.0°	189° -59°	14.4	07:20	11:40	+20°	15:56	---:--	---°	SGR
Do 12.01.2012	00:00	18h31'55.1"	-19°19'36.8"	32.160	aE 33.114	aE 14.0°	190° -59°	14.4	07:16	11:36	+20°	15:52	---:--	---°	SGR
Fr 13.01.2012	00:00	18h32' 3.9"	-19°19'33.9"	32.161	aE 33.110	aE 14.9°	192° -58°	14.4	07:13	11:32	+20°	15:48	---:--	---°	SGR
Sa 14.01.2012	00:00	18h32'12.7"	-19°19'30.9"	32.161	aE 33.106	aE 15.9°	194° -58°	14.4	07:09	11:29	+20°	15:44	---:--	---°	SGR
So 15.01.2012	00:00	18h32'21.5"	-19°19'27.7"	32.162	aE 33.102	aE 16.8°	195° -58°	14.4	07:05	11:25	+20°	15:41	---:--	---°	SGR
Mo 16.01.2012	00:00	18h32'30.3"	-19°19'24.5"	32.163	aE 33.098	aE 17.8°	197° -58°	14.4	07:01	11:21	+20°	15:37	---:--	---°	SGR
Di 17.01.2012	00:00	18h32'39.0"	-19°19'21.1"	32.163	aE 33.093	aE 18.7°	199° -58°	14.4	06:57	11:17	+20°	15:33	---:--	---°	SGR
Mi 18.01.2012	00:00	18h32'47.6"	-19°19'17.6"	32.164	aE 33.088	aE 19.7°	200° -58°	14.4	06:53	11:14	+20°	15:29	---:--	---°	SGR
Do 19.01.2012	00:00	18h32'56.3"	-19°19'14.0"	32.164	aE 33.083	aE 20.7°	202° -57°	14.4	06:50	11:10	+20°	15:26	---:--	---°	SGR
Fr 20.01.2012	00:00	18h33' 4.9"	-19°19'10.3"	32.165	aE 33.077	aE 21.6°	204° -57°	14.5	06:46	11:06	+20°	15:22	---:--	---°	SGR
Sa 21.01.2012	00:00	18h33'13.4"	-19°19' 6.4"	32.165	aE 33.072	aE 22.6°	205° -57°	14.5	06:42	11:02	+20°	15:18	---:--	---°	SGR
So 22.01.2012	00:00	18h33'21.9"	-19°19' 2.5"	32.166	aE 33.065	aE 23.6°	207° -57°	14.5	06:38	10:58	+20°	15:14	---:--	---°	SGR
Mo 23.01.2012	00:00	18h33'30.3"	-19°18'58.5"	32.166	aE 33.059	aE 24.5°	208° -56°	14.5	06:34	10:55	+20°	15:10	---:--	---°	SGR
Di 24.01.2012	00:00	18h33'38.7"	-19°18'54.3"	32.167	aE 33.052	aE 25.5°	210° -56°	14.5	06:31	10:51	+20°	15:06	06:32	+ 0°	SGR
Mi 25.01.2012	00:00	18h33'47.0"	-19°18'50.1"	32.168	aE 33.046	aE 26.5°	211° -56°	14.5	06:27	10:47	+20°	15:03	06:31	+ 1°	SGR
Do 26.01.2012	00:00	18h33'55.3"	-19°18'45.8"	32.168	aE 33.038	aE 27.5°	213° -55°	14.5	06:23	10:43	+20°	14:59	06:30	+ 1°	SGR
Fr 27.01.2012	00:00	18h34' 3.5"	-19°18'41.4"	32.169	aE 33.031	aE 28.4°	214° -55°	14.5	06:19	10:39	+20°	14:55	06:29	+ 1°	SGR
Sa 28.01.2012	00:00	18h34'11.7"	-19°18'36.9"	32.169	aE 33.023	aE 29.4°	216° -55°	14.5	06:15	10:36	+20°	14:51	06:28	+ 2°	SGR
So 29.01.2012	00:00	18h34'19.8"	-19°18'32.3"	32.170	aE 33.015	aE 30.4°	217° -54°	14.5	06:12	10:32	+20°	14:47	06:27	+ 2°	SGR
Mo 30.01.2012	00:00	18h34'27.8"	-19°18'27.7"	32.170	aE 33.007	aE 31.4°	219° -54°	14.5	06:08	10:28	+20°	14:43	06:26	+ 2°	SGR
Di 31.01.2012	00:00	18h34'35.7"	-19°18'22.9"	32.171	aE 32.999	aE 32.3°	220° -54°	14.5	06:04	10:24	+20°	14:40	06:25	+ 3°	SGR
Mi 01.02.2012	00:00	18h34'43.6"	-19°18'18.1"	32.171	aE 32.990	aE 33.3°	221° -53°	14.5	06:00	10:20	+20°	14:36	06:24	+ 3°	SGR
Do 02.02.2012	00:00	18h34'51.5"	-19°18'13.3"	32.172	aE 32.981	aE 34.3°	223° -53°	14.5	05:57	10:17	+20°	14:32	06:23	+ 3°	SGR
Fr 03.02.2012	00:00	18h34'59.2"	-19°18' 8.3"	32.173	aE 32.972	aE 35.3°	224° -52°	14.5	05:53	10:13	+20°	14:28	06:21	+ 4°	SGR
Sa 04.02.2012	00:00	18h35' 6.9"	-19°18' 3.4"	32.173	aE 32.963	aE 36.2°	225° -52°	14.5	05:49	10:09	+20°	14:24	06:20	+ 4°	SGR
So 05.02.2012	00:00	18h35'14.5"	-19°17'58.3"	32.174	aE 32.953	aE 37.2°	226° -51°	14.5	05:45	10:05	+20°	14:21	06:19	+ 4°	SGR
Mo 06.02.2012	00:00	18h35'22.0"	-19°17'53.2"	32.174	aE 32.943	aE 38.2°	228° -51°	14.5	05:42	10:01	+20°	14:17	06:17	+ 5°	SGR
Di 07.02.2012	00:00	18h35'29.4"	-19°17'48.1"	32.175	aE 32.933	aE 39.2°	229° -51°	14.5	05:38	09:58	+20°	14:13	06:16	+ 5°	SGR
Mi 08.02.2012	00:00	18h35'36.8"	-19°17'42.9"	32.175	aE 32.923	aE 40.2°	230° -50°	14.5	05:34	09:54	+20°	14:09	06:15	+ 5°	SGR
Do 09.02.2012	00:00	18h35'44.1"	-19°17'37.6"	32.176	aE 32.912	aE 41.1°	231° -50°	14.5	05:30	09:50	+20°	14:06	06:13	+ 6°	SGR

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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 10.02.2012	00:00	18h35'51.3"	-19°17'32.3"	32.176 aE	32.902 aE	42.1°	232°	-49°	14.5\	05:26	09:46	+20°	14:02	06:12	+ 6° SGR
Sa 11.02.2012	00:00	18h35'58.4"	-19°17'27.0"	32.177 aE	32.891 aE	43.1°	234°	-49°	14.5\	05:22	09:42	+20°	13:58	06:10	+ 6° SGR
So 12.02.2012	00:00	18h36' 5.4"	-19°17'21.6"	32.178 aE	32.879 aE	44.1°	235°	-48°	14.5\	05:19	09:38	+20°	13:54	06:09	+ 6° SGR
Mo 13.02.2012	00:00	18h36'12.4"	-19°17'16.2"	32.178 aE	32.868 aE	45.0°	236°	-48°	14.5\	05:15	09:35	+20°	13:51	06:07	+ 7° SGR
Di 14.02.2012	00:00	18h36'19.2"	-19°17'10.8"	32.179 aE	32.856 aE	46.0°	237°	-47°	14.5\	05:11	09:31	+20°	13:47	06:05	+ 7° SGR
Mi 15.02.2012	00:00	18h36'26.0"	-19°17' 5.4"	32.179 aE	32.845 aE	47.0°	238°	-47°	14.5\	05:07	09:27	+20°	13:43	06:04	+ 7° SGR
Do 16.02.2012	00:00	18h36'32.6"	-19°16'59.9"	32.180 aE	32.833 aE	48.0°	239°	-46°	14.5\	05:03	09:23	+20°	13:39	06:02	+ 7° SGR
Fr 17.02.2012	00:00	18h36'39.2"	-19°16'54.4"	32.180 aE	32.820 aE	49.0°	240°	-46°	14.5\	04:59	09:19	+20°	13:35	06:00	+ 8° SGR
Sa 18.02.2012	00:00	18h36'45.7"	-19°16'48.9"	32.181 aE	32.808 aE	49.9°	241°	-45°	14.5\	04:55	09:16	+20°	13:32	05:59	+ 8° SGR
So 19.02.2012	00:00	18h36'52.0"	-19°16'43.4"	32.181 aE	32.795 aE	50.9°	242°	-45°	14.5\	04:51	09:12	+20°	13:28	05:57	+ 8° SGR
Mo 20.02.2012	00:00	18h36'58.3"	-19°16'37.9"	32.182 aE	32.783 aE	51.9°	243°	-44°	14.5\	04:48	09:08	+20°	13:24	05:55	+ 8° SGR
Di 21.02.2012	00:00	18h37' 4.5"	-19°16'32.4"	32.183 aE	32.770 aE	52.9°	244°	-43°	14.5\	04:44	09:04	+20°	13:20	05:53	+ 9° SGR
Mi 22.02.2012	00:00	18h37'10.6"	-19°16'26.9"	32.183 aE	32.756 aE	53.9°	245°	-43°	14.5\	04:40	09:00	+20°	13:16	05:51	+ 9° SGR
Do 23.02.2012	00:00	18h37'16.5"	-19°16'21.4"	32.184 aE	32.743 aE	54.8°	246°	-42°	14.5\	04:36	08:56	+20°	13:12	05:50	+ 9° SGR
Fr 24.02.2012	00:00	18h37'22.4"	-19°16'15.9"	32.184 aE	32.730 aE	55.8°	247°	-42°	14.5\	04:32	08:53	+20°	13:09	05:48	+ 9° SGR
Sa 25.02.2012	00:00	18h37'28.1"	-19°16'10.4"	32.185 aE	32.716 aE	56.8°	248°	-41°	14.5\	04:28	08:49	+20°	13:05	05:46	+10° SGR
So 26.02.2012	00:00	18h37'33.8"	-19°16' 4.9"	32.185 aE	32.702 aE	57.8°	249°	-41°	14.5\	04:24	08:45	+20°	13:01	05:44	+10° SGR
Mo 27.02.2012	00:00	18h37'39.3"	-19°15'59.5"	32.186 aE	32.688 aE	58.8°	250°	-40°	14.5\	04:21	08:41	+20°	12:57	05:42	+10° SGR
Di 28.02.2012	00:00	18h37'44.7"	-19°15'54.1"	32.186 aE	32.674 aE	59.7°	251°	-39°	14.5\	04:17	08:37	+20°	12:53	05:40	+10° SGR
Mi 29.02.2012	00:00	18h37'50.0"	-19°15'48.7"	32.187 aE	32.660 aE	60.7°	252°	-39°	14.5\	04:13	08:33	+20°	12:49	05:38	+10° SGR
Do 01.03.2012	00:00	18h37'55.2"	-19°15'43.3"	32.188 aE	32.645 aE	61.7°	253°	-38°	14.5\	04:09	08:30	+20°	12:45	05:36	+11° SGR
Fr 02.03.2012	00:00	18h38' 0.3"	-19°15'38.0"	32.188 aE	32.631 aE	62.7°	254°	-38°	14.5\	04:05	08:26	+20°	12:41	05:34	+11° SGR
Sa 03.03.2012	00:00	18h38' 5.3"	-19°15'32.8"	32.189 aE	32.616 aE	63.7°	254°	-37°	14.5\	04:01	08:22	+20°	12:38	05:32	+11° SGR
So 04.03.2012	00:00	18h38'10.1"	-19°15'27.5"	32.189 aE	32.601 aE	64.7°	255°	-37°	14.5\	03:58	08:18	+20°	12:34	05:29	+11° SGR
Mo 05.03.2012	00:00	18h38'14.9"	-19°15'22.3"	32.190 aE	32.586 aE	65.6°	256°	-36°	14.5\	03:54	08:14	+20°	12:30	05:27	+11° SGR
Di 06.03.2012	00:00	18h38'19.5"	-19°15'17.2"	32.190 aE	32.571 aE	66.6°	257°	-35°	14.5\	03:50	08:10	+20°	12:26	05:25	+11° SGR
Mi 07.03.2012	00:00	18h38'24.0"	-19°15'12.1"	32.191 aE	32.556 aE	67.6°	258°	-35°	14.5/	03:46	08:06	+20°	12:22	05:23	+12° SGR
Do 08.03.2012	00:00	18h38'28.4"	-19°15' 7.1"	32.191 aE	32.541 aE	68.6°	259°	-34°	14.5/	03:42	08:03	+20°	12:18	05:21	+12° SGR
Fr 09.03.2012	00:00	18h38'32.6"	-19°15' 2.1"	32.192 aE	32.525 aE	69.6°	260°	-34°	14.5/	03:39	07:59	+20°	12:14	05:19	+12° SGR
Sa 10.03.2012	00:00	18h38'36.8"	-19°14'57.2"	32.193 aE	32.510 aE	70.5°	260°	-33°	14.5/	03:35	07:55	+20°	12:11	05:16	+12° SGR
So 11.03.2012	00:00	18h38'40.8"	-19°14'52.4"	32.193 aE	32.494 aE	71.5°	261°	-32°	14.5/	03:31	07:51	+20°	12:07	05:14	+12° SGR
Mo 12.03.2012	00:00	18h38'44.7"	-19°14'47.6"	32.194 aE	32.479 aE	72.5°	262°	-32°	14.5/	03:27	07:47	+20°	12:03	05:12	+12° SGR
Di 13.03.2012	00:00	18h38'48.4"	-19°14'42.9"	32.194 aE	32.463 aE	73.5°	263°	-31°	14.5/	03:23	07:43	+20°	11:59	05:10	+13° SGR
Mi 14.03.2012	00:00	18h38'52.1"	-19°14'38.3"	32.195 aE	32.447 aE	74.5°	264°	-30°	14.5/	03:19	07:39	+20°	11:55	05:07	+13° SGR
Do 15.03.2012	00:00	18h38'55.6"	-19°14'33.7"	32.195 aE	32.431 aE	75.4°	264°	-30°	14.5/	03:15	07:35	+20°	11:52	05:05	+13° SGR
Fr 16.03.2012	00:00	18h38'59.0"	-19°14'29.2"	32.196 aE	32.415 aE	76.4°	265°	-29°	14.5/	03:11	07:32	+20°	11:48	05:03	+13° SGR
Sa 17.03.2012	00:00	18h39' 2.3"	-19°14'24.9"	32.196 aE	32.399 aE	77.4°	266°	-29°	14.5/	03:07	07:28	+20°	11:44	05:00	+13° SGR
So 18.03.2012	00:00	18h39' 5.4"	-19°14'20.6"	32.197 aE	32.383 aE	78.4°	267°	-28°	14.5/	03:03	07:24	+20°	11:40	04:58	+13° SGR
Mo 19.03.2012	00:00	18h39' 8.4"	-19°14'16.4"	32.198 aE	32.367 aE	79.4°	267°	-27°	14.5/	03:00	07:20	+20°	11:36	04:55	+13° SGR
Di 20.03.2012	00:00	18h39'11.3"	-19°14'12.3"	32.198 aE	32.350 aE	80.3°	268°	-27°	14.5/	02:56	07:16	+20°	11:32	04:53	+14° SGR

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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 21.03.2012	00:00	18h39'14.0"	-19°14' 8.3"	32.199	aE 32.334	aE 81.3°	269° -26°	14.5/	02:52	07:12	+20°	11:28	04:51	+14°	SGR
Do 22.03.2012	00:00	18h39'16.7"	-19°14' 4.4"	32.199	aE 32.318	aE 82.3°	270° -26°	14.5/	02:48	07:08	+20°	11:25	04:48	+14°	SGR
Fr 23.03.2012	00:00	18h39'19.1"	-19°14' 0.6"	32.200	aE 32.301	aE 83.3°	270° -25°	14.5/	02:44	07:04	+20°	11:21	04:46	+14°	SGR
Sa 24.03.2012	00:00	18h39'21.5"	-19°13'56.9"	32.200	aE 32.285	aE 84.3°	271° -24°	14.5/	02:40	07:01	+20°	11:17	04:43	+14°	SGR
So 25.03.2012	00:00	18h39'23.6"	-19°13'53.5"	32.201	aE 32.269	aE 85.2°	260° -33°	14.5/	03:36	07:57	+20°	12:12	05:41	+14°	SGR
Mo 26.03.2012	00:00	18h39'25.7"	-19°13'50.0"	32.201	aE 32.253	aE 86.2°	261° -33°	14.5/	03:33	07:53	+20°	12:09	05:38	+14°	SGR
Di 27.03.2012	00:00	18h39'27.7"	-19°13'46.7"	32.202	aE 32.236	aE 87.2°	262° -32°	14.5/	03:29	07:49	+20°	12:05	05:36	+14°	SGR
Mi 28.03.2012	00:00	18h39'29.5"	-19°13'43.4"	32.203	aE 32.220	aE 88.1°	262° -31°	14.5/	03:25	07:45	+20°	12:01	05:33	+15°	SGR
Do 29.03.2012	00:00	18h39'31.2"	-19°13'40.3"	32.203	aE 32.203	aE 89.1°	263° -31°	14.5/	03:21	07:41	+20°	11:57	05:31	+15°	SGR
Fr 30.03.2012	00:00	18h39'32.8"	-19°13'37.3"	32.204	aE 32.186	aE 90.1°	264° -30°	14.5/	03:17	07:37	+20°	11:53	05:28	+15°	SGR
Sa 31.03.2012	00:00	18h39'34.2"	-19°13'34.5"	32.204	aE 32.170	aE 91.1°	265° -29°	14.5/	03:13	07:33	+20°	11:49	05:26	+15°	SGR
So 01.04.2012	00:00	18h39'35.5"	-19°13'31.8"	32.205	aE 32.153	aE 92.1°	266° -29°	14.5/	03:09	07:29	+20°	11:46	05:23	+15°	SGR
Mo 02.04.2012	00:00	18h39'36.7"	-19°13'29.2"	32.205	aE 32.137	aE 93.0°	266° -28°	14.5/	03:05	07:25	+20°	11:42	05:20	+15°	SGR
Di 03.04.2012	00:00	18h39'37.8"	-19°13'26.7"	32.206	aE 32.120	aE 94.0°	267° -28°	14.5/	03:01	07:21	+20°	11:38	05:18	+15°	SGR
Mi 04.04.2012	00:00	18h39'38.7"	-19°13'24.4"	32.206	aE 32.104	aE 95.0°	268° -27°	14.5/	02:57	07:18	+20°	11:34	05:15	+15°	SGR
Do 05.04.2012	00:00	18h39'39.4"	-19°13'22.2"	32.207	aE 32.088	aE 96.0°	269° -26°	14.5/	02:53	07:14	+20°	11:30	05:13	+15°	SGR
Fr 06.04.2012	00:00	18h39'40.1"	-19°13'20.2"	32.208	aE 32.071	aE 97.0°	269° -26°	14.5/	02:49	07:10	+20°	11:26	05:10	+16°	SGR
Sa 07.04.2012	00:00	18h39'40.6"	-19°13'18.3"	32.208	aE 32.055	aE 97.9°	270° -25°	14.5/	02:45	07:06	+20°	11:22	05:07	+16°	SGR
So 08.04.2012	00:00	18h39'41.0"	-19°13'16.5"	32.209	aE 32.038	aE 98.9°	271° -24°	14.5/	02:41	07:02	+20°	11:18	05:05	+16°	SGR
Mo 09.04.2012	00:00	18h39'41.2"	-19°13'14.9"	32.209	aE 32.022	aE 99.9°	272° -24°	14.5/	02:37	06:58	+20°	11:14	05:02	+16°	SGR
Di 10.04.2012	00:00	18h39'41.3"	-19°13'13.4"	32.210	aE 32.006	aE 100.9°	272° -23°	14.5/	02:33	06:54	+20°	11:10	04:59	+16°	SGR
Mi 11.04.2012	00:00	18h39'41.3"	-19°13'12.1"	32.210	aE 31.990	aE 101.8°	273° -23°	14.5/	02:29	06:50	+20°	11:06	04:57	+16°	SGR
Do 12.04.2012	00:00	18h39'41.2"	-19°13'10.9"	32.211	aE 31.974	aE 102.8°	274° -22°	14.5/	02:25	06:46	+20°	11:02	04:54	+16°	SGR
Fr 13.04.2012	00:00	18h39'40.9"	-19°13' 9.9"	32.211	aE 31.957	aE 103.8°	275° -21°	14.5/	02:21	06:42	+20°	10:58	04:51	+16°	SGR
Sa 14.04.2012	00:00	18h39'40.5"	-19°13' 9.1"	32.212	aE 31.941	aE 104.8°	275° -21°	14.5/	02:17	06:38	+20°	10:54	04:49	+16°	SGR
So 15.04.2012	00:00	18h39'40.0"	-19°13' 8.4"	32.213	aE 31.926	aE 105.8°	276° -20°	14.5/	02:14	06:34	+20°	10:50	04:46	+16°	SGR
Mo 16.04.2012	00:00	18h39'39.3"	-19°13' 7.9"	32.213	aE 31.910	aE 106.7°	277° -19°	14.5/	02:10	06:30	+20°	10:46	04:43	+16°	SGR
Di 17.04.2012	00:00	18h39'38.5"	-19°13' 7.5"	32.214	aE 31.894	aE 107.7°	278° -19°	14.5/	02:06	06:26	+20°	10:42	04:40	+17°	SGR
Mi 18.04.2012	00:00	18h39'37.6"	-19°13' 7.3"	32.214	aE 31.878	aE 108.7°	278° -18°	14.5/	02:02	06:22	+20°	10:38	04:38	+17°	SGR
Do 19.04.2012	00:00	18h39'36.6"	-19°13' 7.2"	32.215	aE 31.863	aE 109.7°	279° -18°	14.5/	01:58	06:19	+20°	10:34	04:35	+17°	SGR
Fr 20.04.2012	00:00	18h39'35.4"	-19°13' 7.4"	32.215	aE 31.847	aE 110.7°	280° -17°	14.5/	01:54	06:15	+20°	10:30	04:32	+17°	SGR
Sa 21.04.2012	00:00	18h39'34.1"	-19°13' 7.6"	32.216	aE 31.832	aE 111.6°	281° -16°	14.5/	01:50	06:11	+20°	10:26	04:29	+17°	SGR
So 22.04.2012	00:00	18h39'32.7"	-19°13' 8.1"	32.216	aE 31.817	aE 112.6°	281° -16°	14.5/	01:46	06:07	+20°	10:23	04:27	+17°	SGR
Mo 23.04.2012	00:00	18h39'31.1"	-19°13' 8.7"	32.217	aE 31.801	aE 113.6°	282° -15°	14.5/	01:42	06:03	+20°	10:19	04:24	+17°	SGR
Di 24.04.2012	00:00	18h39'29.4"	-19°13' 9.5"	32.218	aE 31.786	aE 114.6°	283° -15°	14.5/	01:38	05:59	+20°	10:15	04:21	+17°	SGR
Mi 25.04.2012	00:00	18h39'27.6"	-19°13'10.5"	32.218	aE 31.771	aE 115.6°	283° -14°	14.5/	01:35	05:55	+20°	10:11	04:18	+17°	SGR
Do 26.04.2012	00:00	18h39'25.7"	-19°13'11.7"	32.219	aE 31.757	aE 116.5°	284° -13°	14.5/	01:31	05:51	+20°	10:07	04:15	+17°	SGR
Fr 27.04.2012	00:00	18h39'23.7"	-19°13'13.0"	32.219	aE 31.742	aE 117.5°	285° -13°	14.5/	01:27	05:47	+20°	10:03	04:13	+17°	SGR
Sa 28.04.2012	00:00	18h39'21.5"	-19°13'14.5"	32.220	aE 31.727	aE 118.5°	286° -12°	14.5/	01:23	05:43	+20°	09:59	04:10	+17°	SGR
So 29.04.2012	00:00	18h39'19.2"	-19°13'16.2"	32.220	aE 31.713	aE 119.5°	286° -11°	14.5/	01:19	05:39	+20°	09:55	04:07	+17°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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 30.04.2012	00:00	18h39'16.8"	-19°13'18.0"	32.221	aE 31.699	aE 120.4°	287° -11°	14.4/	01:15	05:35	+20°	09:51	04:04	+18°	SGR
Di 01.05.2012	00:00	18h39'14.3"	-19°13'20.0"	32.222	aE 31.685	aE 121.4°	288° -10°	14.4/	01:11	05:31	+20°	09:47	04:01	+18°	SGR
Mi 02.05.2012	00:00	18h39'11.7"	-19°13'22.2"	32.222	aE 31.671	aE 122.4°	289° -10°	14.4/	01:07	05:27	+20°	09:43	03:58	+18°	SGR
Do 03.05.2012	00:00	18h39' 8.9"	-19°13'24.6"	32.223	aE 31.657	aE 123.4°	289° -9°	14.4/	01:03	05:23	+20°	09:39	03:56	+18°	SGR
Fr 04.05.2012	00:00	18h39' 6.0"	-19°13'27.1"	32.223	aE 31.643	aE 124.4°	290° -8°	14.4/	00:59	05:19	+20°	09:35	03:53	+18°	SGR
Sa 05.05.2012	00:00	18h39' 3.1"	-19°13'29.9"	32.224	aE 31.630	aE 125.3°	291° -8°	14.4/	00:54	05:15	+20°	09:31	03:50	+18°	SGR
So 06.05.2012	00:00	18h38'60.0"	-19°13'32.8"	32.224	aE 31.617	aE 126.3°	292° -7°	14.4/	00:50	05:11	+20°	09:27	03:47	+18°	SGR
Mo 07.05.2012	00:00	18h38'56.8"	-19°13'35.9"	32.225	aE 31.604	aE 127.3°	292° -7°	14.4/	00:46	05:07	+20°	09:23	03:44	+18°	SGR
Di 08.05.2012	00:00	18h38'53.5"	-19°13'39.1"	32.225	aE 31.591	aE 128.3°	293° -6°	14.4/	00:42	05:03	+20°	09:19	03:41	+18°	SGR
Mi 09.05.2012	00:00	18h38'50.1"	-19°13'42.6"	32.226	aE 31.578	aE 129.2°	294° -5°	14.4/	00:38	04:59	+20°	09:15	03:38	+18°	SGR
Do 10.05.2012	00:00	18h38'46.6"	-19°13'46.2"	32.227	aE 31.565	aE 130.2°	295° -5°	14.4/	00:34	04:55	+20°	09:11	03:35	+18°	SGR
Fr 11.05.2012	00:00	18h38'43.0"	-19°13'50.0"	32.227	aE 31.553	aE 131.2°	295° -4°	14.4/	00:30	04:51	+20°	09:07	03:33	+18°	SGR
Sa 12.05.2012	00:00	18h38'39.3"	-19°13'53.9"	32.228	aE 31.541	aE 132.2°	296° -4°	14.4/	00:26	04:47	+20°	09:03	03:30	+18°	SGR
So 13.05.2012	00:00	18h38'35.4"	-19°13'58.1"	32.228	aE 31.529	aE 133.1°	297° -3°	14.4/	00:22	04:43	+20°	08:59	03:27	+18°	SGR
Mo 14.05.2012	00:00	18h38'31.5"	-19°14' 2.4"	32.229	aE 31.517	aE 134.1°	298° -3°	14.4/	00:18	04:39	+20°	08:55	03:24	+18°	SGR
Di 15.05.2012	00:00	18h38'27.5"	-19°14' 6.9"	32.229	aE 31.505	aE 135.1°	298° -2°	14.4/	00:14	04:35	+20°	08:51	03:21	+18°	SGR
Mi 16.05.2012	00:00	18h38'23.4"	-19°14'11.6"	32.230	aE 31.494	aE 136.1°	299° -2°	14.4/	00:11	04:31	+20°	08:47	03:18	+18°	SGR
Do 17.05.2012	00:00	18h38'19.2"	-19°14'16.5"	32.230	aE 31.483	aE 137.1°	300° -1°	14.4/	00:07	04:27	+20°	08:43	03:15	+19°	SGR
Fr 18.05.2012	00:00	18h38'14.9"	-19°14'21.5"	32.231	aE 31.472	aE 138.0°	301° -0°	14.4/	00:03	04:23	+20°	08:39	03:12	+19°	SGR
Sa 19.05.2012	00:00	18h38'10.5"	-19°14'26.8"	32.232	aE 31.461	aE 139.0°	301° 0°	14.4/	23:55	04:19	+20°	08:35	03:09	+19°	SGR
So 20.05.2012	00:00	18h38' 6.0"	-19°14'32.2"	32.232	aE 31.451	aE 140.0°	302° 1°	14.4/	23:51	04:15	+20°	08:31	03:07	+19°	SGR
Mo 21.05.2012	00:00	18h38' 1.4"	-19°14'37.7"	32.233	aE 31.440	aE 141.0°	303° 1°	14.4/	23:47	04:11	+20°	08:27	03:04	+19°	SGR
Di 22.05.2012	00:00	18h37'56.7"	-19°14'43.5"	32.233	aE 31.430	aE 141.9°	304° 2°	14.4/	23:43	04:07	+20°	08:23	03:01	+19°	SGR
Mi 23.05.2012	00:00	18h37'52.0"	-19°14'49.4"	32.234	aE 31.420	aE 142.9°	305° 2°	14.4/	23:39	04:03	+20°	08:19	02:58	+19°	SGR
Do 24.05.2012	00:00	18h37'47.1"	-19°14'55.5"	32.234	aE 31.411	aE 143.9°	305° 3°	14.4/	23:35	03:59	+20°	08:15	02:55	+19°	SGR
Fr 25.05.2012	00:00	18h37'42.2"	-19°15' 1.8"	32.235	aE 31.401	aE 144.9°	306° 3°	14.4/	23:31	03:55	+20°	08:11	02:52	+19°	SGR
Sa 26.05.2012	00:00	18h37'37.2"	-19°15' 8.2"	32.235	aE 31.392	aE 145.8°	307° 4°	14.4/	23:27	03:51	+20°	08:07	02:49	+19°	SGR
So 27.05.2012	00:00	18h37'32.2"	-19°15'14.9"	32.236	aE 31.383	aE 146.8°	308° 4°	14.4/	23:23	03:47	+20°	08:03	02:46	+19°	SGR
Mo 28.05.2012	00:00	18h37'27.0"	-19°15'21.6"	32.237	aE 31.375	aE 147.8°	309° 5°	14.4/	23:19	03:43	+20°	07:59	02:43	+19°	SGR
Di 29.05.2012	00:00	18h37'21.8"	-19°15'28.6"	32.237	aE 31.366	aE 148.7°	309° 5°	14.4/	23:15	03:39	+20°	07:55	02:40	+19°	SGR
Mi 30.05.2012	00:00	18h37'16.5"	-19°15'35.7"	32.238	aE 31.358	aE 149.7°	310° 6°	14.4/	23:11	03:35	+20°	07:51	02:38	+19°	SGR
Do 31.05.2012	00:00	18h37'11.1"	-19°15'43.0"	32.238	aE 31.350	aE 150.7°	311° 6°	14.4/	23:07	03:31	+20°	07:47	02:35	+19°	SGR
Fr 01.06.2012	00:00	18h37' 5.7"	-19°15'50.5"	32.239	aE 31.343	aE 151.7°	312° 7°	14.4/	23:03	03:27	+20°	07:43	02:32	+19°	SGR
Sa 02.06.2012	00:00	18h37' 0.2"	-19°15'58.1"	32.239	aE 31.335	aE 152.6°	313° 7°	14.4/	22:59	03:23	+20°	07:39	02:29	+19°	SGR
So 03.06.2012	00:00	18h36'54.7"	-19°16' 5.8"	32.240	aE 31.328	aE 153.6°	313° 8°	14.4/	22:55	03:19	+20°	07:35	02:26	+19°	SGR
Mo 04.06.2012	00:00	18h36'49.1"	-19°16'13.8"	32.241	aE 31.321	aE 154.6°	314° 8°	14.4/	22:50	03:15	+20°	07:31	02:23	+19°	SGR
Di 05.06.2012	00:00	18h36'43.4"	-19°16'21.9"	32.241	aE 31.315	aE 155.5°	315° 9°	14.3/	22:46	03:11	+20°	07:27	02:20	+19°	SGR
Mi 06.06.2012	00:00	18h36'37.7"	-19°16'30.1"	32.242	aE 31.309	aE 156.5°	316° 9°	14.3/	22:42	03:07	+20°	07:23	02:18	+19°	SGR
Do 07.06.2012	00:00	18h36'31.9"	-19°16'38.5"	32.242	aE 31.303	aE 157.5°	317° 10°	14.3/	22:38	03:03	+20°	07:19	02:15	+19°	SGR
Fr 08.06.2012	00:00	18h36'26.1"	-19°16'47.1"	32.243	aE 31.297	aE 158.4°	318° 10°	14.3/	22:34	02:59	+20°	07:15	02:12	+20°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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.	
Sa 09.06.2012	00:00	18h36'20.2"	-19°16'55.8"	32.243	aE 31.291	aE 159.4°	319°	10°	14.3/	22:30	02:55	+20°	07:11	02:09	+20°	SGR
So 10.06.2012	00:00	18h36'14.3"	-19°17' 4.7"	32.244	aE 31.286	aE 160.4°	319°	11°	14.3/	22:26	02:51	+20°	07:06	02:06	+20°	SGR
Mo 11.06.2012	00:00	18h36' 8.3"	-19°17'13.7"	32.244	aE 31.281	aE 161.3°	320°	11°	14.3/	22:22	02:47	+20°	07:02	02:04	+20°	SGR
Di 12.06.2012	00:00	18h36' 2.3"	-19°17'22.9"	32.245	aE 31.276	aE 162.3°	321°	12°	14.3/	22:18	02:43	+20°	06:58	02:01	+20°	SGR
Mi 13.06.2012	00:00	18h35'56.2"	-19°17'32.2"	32.246	aE 31.272	aE 163.2°	322°	12°	14.3/	22:14	02:39	+20°	06:54	01:59	+20°	SGR
Do 14.06.2012	00:00	18h35'50.1"	-19°17'41.6"	32.246	aE 31.268	aE 164.2°	323°	12°	14.3/	22:10	02:35	+20°	06:50	01:56	+20°	SGR
Fr 15.06.2012	00:00	18h35'43.9"	-19°17'51.3"	32.247	aE 31.264	aE 165.1°	324°	13°	14.3/	22:06	02:31	+20°	06:46	01:54	+20°	SGR
Sa 16.06.2012	00:00	18h35'37.8"	-19°18' 1.0"	32.247	aE 31.260	aE 166.1°	325°	13°	14.3/	22:02	02:26	+20°	06:42	01:52	+20°	SGR
So 17.06.2012	00:00	18h35'31.6"	-19°18'10.9"	32.248	aE 31.257	aE 167.0°	326°	14°	14.3/	21:58	02:22	+20°	06:38	01:50	+20°	SGR
Mo 18.06.2012	00:00	18h35'25.3"	-19°18'20.9"	32.248	aE 31.254	aE 167.9°	327°	14°	14.3/	21:54	02:18	+20°	06:34	01:48	+20°	SGR
Di 19.06.2012	00:00	18h35'19.1"	-19°18'31.1"	32.249	aE 31.251	aE 168.9°	328°	14°	14.3/	21:51	02:14	+20°	06:30	01:47	+20°	SGR
Mi 20.06.2012	00:00	18h35'12.8"	-19°18'41.4"	32.250	aE 31.249	aE 169.8°	328°	15°	14.3/	21:47	02:10	+20°	06:26	01:46	+20°	SGR
Do 21.06.2012	00:00	18h35' 6.5"	-19°18'51.9"	32.250	aE 31.247	aE 170.7°	329°	15°	14.3/	21:43	02:06	+20°	06:22	01:46	+20°	SGR
Fr 22.06.2012	00:00	18h35' 0.1"	-19°19' 2.5"	32.251	aE 31.245	aE 171.6°	330°	15°	14.3/	21:39	02:02	+20°	06:18	01:47	+20°	SGR
Sa 23.06.2012	00:00	18h34'53.8"	-19°19'13.2"	32.251	aE 31.243	aE 172.4°	331°	16°	14.3/	21:35	01:58	+20°	06:14	01:48	+20°	SGR
So 24.06.2012	00:00	18h34'47.4"	-19°19'24.0"	32.252	aE 31.242	aE 173.3°	332°	16°	14.3/	21:31	01:54	+20°	06:10	01:50	+20°	SGR
Mo 25.06.2012	00:00	18h34'41.0"	-19°19'34.9"	32.252	aE 31.241	aE 174.1°	333°	16°	14.3/	21:26	01:50	+20°	06:06	01:49	+20°	SGR
Di 26.06.2012	00:00	18h34'34.6"	-19°19'46.0"	32.253	aE 31.240	aE 174.8°	334°	16°	14.3/	21:22	01:46	+20°	06:02	01:45	+20°	SGR
Mi 27.06.2012	00:00	18h34'28.2"	-19°19'57.2"	32.253	aE 31.240	aE 175.4°	335°	17°	14.3/	21:18	01:42	+20°	05:58	01:41	+20°	SGR
Do 28.06.2012	00:00	18h34'21.8"	-19°20' 8.5"	32.254	aE 31.240	aE 175.9°	336°	17°	14.3/	21:14	01:38	+20°	05:54	01:37	+20°	SGR
Fr 29.06.2012	00:00	18h34'15.4"	-19°20'19.9"	32.255	aE 31.240	aE 176.2°	337°	17°	14.3/	21:10	01:34	+20°	05:50	01:33	+20°	SGR
Sa 30.06.2012	00:00	18h34' 9.0"	-19°20'31.5"	32.255	aE 31.241	aE 176.2°	338°	17°	14.3\	21:06	01:30	+20°	05:46	01:29	+20°	SGR
So 01.07.2012	00:00	18h34' 2.6"	-19°20'43.1"	32.256	aE 31.241	aE 176.0°	339°	18°	14.3\	21:02	01:26	+20°	05:42	01:25	+20°	SGR
Mo 02.07.2012	00:00	18h33'56.2"	-19°20'54.9"	32.256	aE 31.242	aE 175.6°	340°	18°	14.3\	20:58	01:22	+20°	05:37	01:21	+20°	SGR
Di 03.07.2012	00:00	18h33'49.8"	-19°21' 6.7"	32.257	aE 31.244	aE 175.0°	341°	18°	14.3\	20:54	01:18	+20°	05:33	01:17	+20°	SGR
Mi 04.07.2012	00:00	18h33'43.5"	-19°21'18.7"	32.257	aE 31.245	aE 174.4°	342°	18°	14.3\	20:50	01:14	+20°	05:29	01:13	+20°	SGR
Do 05.07.2012	00:00	18h33'37.1"	-19°21'30.8"	32.258	aE 31.247	aE 173.6°	343°	19°	14.3\	20:46	01:10	+20°	05:25	01:09	+20°	SGR
Fr 06.07.2012	00:00	18h33'30.7"	-19°21'43.0"	32.258	aE 31.250	aE 172.8°	344°	19°	14.3\	20:42	01:06	+20°	05:21	01:05	+20°	SGR
Sa 07.07.2012	00:00	18h33'24.4"	-19°21'55.2"	32.259	aE 31.252	aE 171.9°	345°	19°	14.3\	20:38	01:02	+20°	05:17	01:01	+20°	SGR
So 08.07.2012	00:00	18h33'18.1"	-19°22' 7.6"	32.260	aE 31.255	aE 171.1°	346°	19°	14.3\	20:34	00:58	+20°	05:13	00:57	+20°	SGR
Mo 09.07.2012	00:00	18h33'11.7"	-19°22'20.1"	32.260	aE 31.258	aE 170.2°	347°	19°	14.3\	20:30	00:54	+20°	05:09	00:53	+20°	SGR
Di 10.07.2012	00:00	18h33' 5.5"	-19°22'32.6"	32.261	aE 31.261	aE 169.3°	348°	19°	14.3\	20:26	00:50	+20°	05:05	00:49	+20°	SGR
Mi 11.07.2012	00:00	18h32'59.2"	-19°22'45.3"	32.261	aE 31.265	aE 168.3°	349°	19°	14.3\	20:22	00:46	+20°	05:01	00:45	+20°	SGR
Do 12.07.2012	00:00	18h32'53.0"	-19°22'58.0"	32.262	aE 31.269	aE 167.4°	350°	20°	14.3\	20:18	00:42	+20°	04:57	00:41	+20°	SGR
Fr 13.07.2012	00:00	18h32'46.8"	-19°23'10.8"	32.262	aE 31.273	aE 166.5°	351°	20°	14.3\	20:14	00:37	+20°	04:53	00:36	+20°	SGR
Sa 14.07.2012	00:00	18h32'40.6"	-19°23'23.7"	32.263	aE 31.278	aE 165.5°	352°	20°	14.3\	20:10	00:33	+20°	04:48	00:32	+20°	SGR
So 15.07.2012	00:00	18h32'34.4"	-19°23'36.7"	32.264	aE 31.283	aE 164.6°	353°	20°	14.3\	20:06	00:29	+20°	04:44	00:28	+20°	SGR
Mo 16.07.2012	00:00	18h32'28.3"	-19°23'49.7"	32.264	aE 31.288	aE 163.6°	354°	20°	14.3\	20:02	00:25	+20°	04:40	00:24	+20°	SGR
Di 17.07.2012	00:00	18h32'22.3"	-19°24' 2.9"	32.265	aE 31.293	aE 162.7°	355°	20°	14.3\	19:58	00:21	+20°	04:36	00:20	+20°	SGR
Mi 18.07.2012	00:00	18h32'16.2"	-19°24'16.1"	32.265	aE 31.299	aE 161.7°	356°	20°	14.3\	19:54	00:17	+20°	04:32	00:16	+20°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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.	
Do 19.07.2012	00:00	18h32'10.3"	-19°24'29.4"	32.266	aE 31.305	aE 160.8°	357°	20°	14.3\	19:50	00:13	+20°	04:28	00:12	+20°	SGR
Fr 20.07.2012	00:00	18h32' 4.3"	-19°24'42.7"	32.266	aE 31.311	aE 159.8°	358°	20°	14.3\	19:46	00:09	+20°	04:24	00:08	+20°	SGR
Sa 21.07.2012	00:00	18h31'58.4"	-19°24'56.1"	32.267	aE 31.317	aE 158.8°	359°	20°	14.3\	19:42	00:05	+20°	04:20	00:04	+20°	SGR
So 22.07.2012	00:00	18h31'52.6"	-19°25' 9.6"	32.267	aE 31.324	aE 157.9°	360°	20°	14.3\	19:38	23:57	+20°	04:16	00:00	+20°	SGR
Mo 23.07.2012	00:00	18h31'46.8"	-19°25'23.1"	32.268	aE 31.331	aE 156.9°	1°	20°	14.3\	19:34	23:53	+20°	04:12	23:52	+20°	SGR
Di 24.07.2012	00:00	18h31'41.1"	-19°25'36.7"	32.269	aE 31.338	aE 156.0°	2°	20°	14.4\	19:30	23:49	+20°	04:08	23:48	+20°	SGR
Mi 25.07.2012	00:00	18h31'35.4"	-19°25'50.4"	32.269	aE 31.346	aE 155.0°	3°	20°	14.4\	19:26	23:45	+20°	04:04	23:45	+20°	SGR
Do 26.07.2012	00:00	18h31'29.8"	-19°26' 4.0"	32.270	aE 31.354	aE 154.0°	4°	20°	14.4\	19:22	23:41	+20°	04:00	23:42	+20°	SGR
Fr 27.07.2012	00:00	18h31'24.3"	-19°26'17.8"	32.270	aE 31.362	aE 153.1°	5°	20°	14.4\	19:18	23:37	+20°	03:56	23:39	+20°	SGR
Sa 28.07.2012	00:00	18h31'18.8"	-19°26'31.6"	32.271	aE 31.370	aE 152.1°	6°	20°	14.4\	19:14	23:33	+20°	03:52	23:37	+20°	SGR
So 29.07.2012	00:00	18h31'13.3"	-19°26'45.4"	32.271	aE 31.379	aE 151.1°	7°	20°	14.4\	19:10	23:29	+20°	03:48	23:34	+20°	SGR
Mo 30.07.2012	00:00	18h31' 8.0"	-19°26'59.3"	32.272	aE 31.387	aE 150.2°	8°	20°	14.4\	19:06	23:25	+20°	03:44	23:31	+20°	SGR
Di 31.07.2012	00:00	18h31' 2.7"	-19°27'13.2"	32.273	aE 31.397	aE 149.2°	9°	20°	14.4\	19:02	23:21	+20°	03:40	23:28	+20°	SGR
Mi 01.08.2012	00:00	18h30'57.5"	-19°27'27.1"	32.273	aE 31.406	aE 148.2°	10°	20°	14.4\	18:58	23:17	+20°	03:36	23:25	+20°	SGR
Do 02.08.2012	00:00	18h30'52.3"	-19°27'41.1"	32.274	aE 31.416	aE 147.2°	11°	19°	14.4\	18:54	23:13	+20°	03:32	23:22	+20°	SGR
Fr 03.08.2012	00:00	18h30'47.3"	-19°27'55.1"	32.274	aE 31.425	aE 146.3°	12°	19°	14.4\	18:50	23:09	+20°	03:28	23:19	+20°	SGR
Sa 04.08.2012	00:00	18h30'42.3"	-19°28' 9.2"	32.275	aE 31.435	aE 145.3°	13°	19°	14.4\	18:46	23:05	+20°	03:24	23:16	+20°	SGR
So 05.08.2012	00:00	18h30'37.4"	-19°28'23.3"	32.275	aE 31.446	aE 144.3°	14°	19°	14.4\	18:42	23:01	+20°	03:20	23:13	+20°	SGR
Mo 06.08.2012	00:00	18h30'32.5"	-19°28'37.4"	32.276	aE 31.456	aE 143.4°	15°	19°	14.4\	18:38	22:57	+20°	03:16	23:11	+20°	SGR
Di 07.08.2012	00:00	18h30'27.8"	-19°28'51.5"	32.276	aE 31.467	aE 142.4°	16°	19°	14.4\	18:34	22:53	+20°	03:12	23:08	+20°	SGR
Mi 08.08.2012	00:00	18h30'23.1"	-19°29' 5.6"	32.277	aE 31.478	aE 141.4°	17°	18°	14.4\	18:30	22:49	+20°	03:08	23:05	+20°	SGR
Do 09.08.2012	00:00	18h30'18.5"	-19°29'19.8"	32.278	aE 31.489	aE 140.5°	18°	18°	14.4\	18:26	22:45	+20°	03:03	23:02	+20°	SGR
Fr 10.08.2012	00:00	18h30'14.1"	-19°29'34.0"	32.278	aE 31.501	aE 139.5°	19°	18°	14.4\	18:22	22:41	+20°	02:59	22:59	+20°	SGR
Sa 11.08.2012	00:00	18h30' 9.7"	-19°29'48.2"	32.279	aE 31.513	aE 138.5°	20°	18°	14.4\	18:18	22:37	+20°	02:55	22:56	+20°	SGR
So 12.08.2012	00:00	18h30' 5.3"	-19°30' 2.4"	32.279	aE 31.524	aE 137.5°	21°	18°	14.4\	18:14	22:33	+20°	02:51	22:53	+20°	SGR
Mo 13.08.2012	00:00	18h30' 1.1"	-19°30'16.6"	32.280	aE 31.537	aE 136.6°	22°	17°	14.4\	18:10	22:29	+20°	02:47	22:51	+20°	SGR
Di 14.08.2012	00:00	18h29'57.0"	-19°30'30.8"	32.280	aE 31.549	aE 135.6°	23°	17°	14.4\	18:06	22:25	+20°	02:43	22:48	+20°	SGR
Mi 15.08.2012	00:00	18h29'53.0"	-19°30'45.1"	32.281	aE 31.562	aE 134.6°	24°	17°	14.4\	18:02	22:21	+20°	02:39	22:45	+20°	SGR
Do 16.08.2012	00:00	18h29'49.0"	-19°30'59.3"	32.282	aE 31.574	aE 133.6°	25°	17°	14.4\	17:58	22:17	+20°	02:35	22:42	+20°	SGR
Fr 17.08.2012	00:00	18h29'45.2"	-19°31'13.5"	32.282	aE 31.587	aE 132.7°	26°	16°	14.4\	17:54	22:13	+20°	02:31	22:39	+20°	SGR
Sa 18.08.2012	00:00	18h29'41.5"	-19°31'27.7"	32.283	aE 31.600	aE 131.7°	27°	16°	14.4\	17:50	22:09	+20°	02:27	22:36	+20°	SGR
So 19.08.2012	00:00	18h29'37.8"	-19°31'42.0"	32.283	aE 31.614	aE 130.7°	27°	16°	14.4\	17:46	22:05	+20°	02:23	22:34	+20°	SGR
Mo 20.08.2012	00:00	18h29'34.3"	-19°31'56.2"	32.284	aE 31.627	aE 129.8°	28°	15°	14.4\	17:43	22:01	+20°	02:19	22:31	+20°	SGR
Di 21.08.2012	00:00	18h29'30.9"	-19°32'10.3"	32.284	aE 31.641	aE 128.8°	29°	15°	14.4\	17:39	21:57	+20°	02:15	22:28	+20°	SGR
Mi 22.08.2012	00:00	18h29'27.6"	-19°32'24.5"	32.285	aE 31.655	aE 127.8°	30°	15°	14.4\	17:35	21:53	+20°	02:11	22:25	+20°	SGR
Do 23.08.2012	00:00	18h29'24.4"	-19°32'38.7"	32.286	aE 31.669	aE 126.8°	31°	14°	14.4\	17:31	21:49	+20°	02:07	22:23	+20°	SGR
Fr 24.08.2012	00:00	18h29'21.3"	-19°32'52.8"	32.286	aE 31.683	aE 125.9°	32°	14°	14.4\	17:27	21:45	+20°	02:03	22:20	+20°	SGR
Sa 25.08.2012	00:00	18h29'18.3"	-19°33' 6.9"	32.287	aE 31.698	aE 124.9°	33°	14°	14.4\	17:23	21:41	+20°	01:59	22:17	+19°	SGR
So 26.08.2012	00:00	18h29'15.5"	-19°33'21.0"	32.287	aE 31.712	aE 123.9°	34°	13°	14.4\	17:19	21:37	+20°	01:55	22:14	+19°	SGR
Mo 27.08.2012	00:00	18h29'12.7"	-19°33'35.0"	32.288	aE 31.727	aE 122.9°	35°	13°	14.5\	17:15	21:33	+20°	01:51	22:12	+19°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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 28.08.2012	00:00	18h29'10.1"	-19°33'49.1"	32.288	aE 31.742	aE 122.0°	36°	13°	14.5\	17:11	21:29	+20°	01:47	22:09	+19°	SGR
Mi 29.08.2012	00:00	18h29' 7.5"	-19°34' 3.0"	32.289	aE 31.757	aE 121.0°	37°	12°	14.5\	17:07	21:25	+20°	01:43	22:06	+19°	SGR
Do 30.08.2012	00:00	18h29' 5.1"	-19°34'17.0"	32.289	aE 31.772	aE 120.0°	37°	12°	14.5\	17:03	21:21	+20°	01:39	22:03	+19°	SGR
Fr 31.08.2012	00:00	18h29' 2.8"	-19°34'30.9"	32.290	aE 31.788	aE 119.1°	38°	12°	14.5\	16:59	21:17	+20°	01:35	22:01	+19°	SGR
Sa 01.09.2012	00:00	18h29' 0.7"	-19°34'44.8"	32.291	aE 31.803	aE 118.1°	39°	11°	14.5\	16:55	21:13	+20°	01:31	21:58	+19°	SGR
So 02.09.2012	00:00	18h28'58.6"	-19°34'58.7"	32.291	aE 31.819	aE 117.1°	40°	11°	14.5\	16:51	21:09	+20°	01:27	21:55	+19°	SGR
Mo 03.09.2012	00:00	18h28'56.7"	-19°35'12.5"	32.292	aE 31.835	aE 116.1°	41°	10°	14.5\	16:47	21:05	+20°	01:23	21:53	+19°	SGR
Di 04.09.2012	00:00	18h28'54.9"	-19°35'26.2"	32.292	aE 31.851	aE 115.2°	42°	10°	14.5\	16:43	21:01	+20°	01:19	21:50	+19°	SGR
Mi 05.09.2012	00:00	18h28'53.2"	-19°35'39.9"	32.293	aE 31.867	aE 114.2°	43°	9°	14.5\	16:39	20:57	+20°	01:15	21:47	+19°	SGR
Do 06.09.2012	00:00	18h28'51.6"	-19°35'53.6"	32.293	aE 31.883	aE 113.2°	43°	9°	14.5\	16:35	20:53	+20°	01:11	21:45	+19°	SGR
Fr 07.09.2012	00:00	18h28'50.2"	-19°36' 7.2"	32.294	aE 31.899	aE 112.2°	44°	9°	14.5\	16:31	20:49	+20°	01:07	21:42	+19°	SGR
Sa 08.09.2012	00:00	18h28'48.8"	-19°36'20.7"	32.295	aE 31.915	aE 111.3°	45°	8°	14.5\	16:27	20:45	+20°	01:03	21:39	+19°	SGR
So 09.09.2012	00:00	18h28'47.6"	-19°36'34.2"	32.295	aE 31.932	aE 110.3°	46°	8°	14.5\	16:23	20:42	+20°	00:59	21:37	+19°	SGR
Mo 10.09.2012	00:00	18h28'46.6"	-19°36'47.7"	32.296	aE 31.949	aE 109.3°	47°	7°	14.5\	16:19	20:38	+20°	00:55	21:34	+19°	SGR
Di 11.09.2012	00:00	18h28'45.6"	-19°37' 1.0"	32.296	aE 31.965	aE 108.3°	47°	7°	14.5\	16:15	20:34	+20°	00:51	21:32	+19°	SGR
Mi 12.09.2012	00:00	18h28'44.8"	-19°37'14.3"	32.297	aE 31.982	aE 107.4°	48°	6°	14.5\	16:11	20:30	+20°	00:47	21:29	+19°	SGR
Do 13.09.2012	00:00	18h28'44.1"	-19°37'27.6"	32.297	aE 31.999	aE 106.4°	49°	6°	14.5\	16:08	20:26	+20°	00:43	21:26	+19°	SGR
Fr 14.09.2012	00:00	18h28'43.6"	-19°37'40.7"	32.298	aE 32.016	aE 105.4°	50°	5°	14.5\	16:04	20:22	+20°	00:39	21:24	+19°	SGR
Sa 15.09.2012	00:00	18h28'43.1"	-19°37'53.8"	32.298	aE 32.033	aE 104.4°	51°	5°	14.5\	16:00	20:18	+20°	00:35	21:21	+18°	SGR
So 16.09.2012	00:00	18h28'42.8"	-19°38' 6.8"	32.299	aE 32.050	aE 103.5°	51°	4°	14.5\	15:56	20:14	+20°	00:31	21:19	+18°	SGR
Mo 17.09.2012	00:00	18h28'42.7"	-19°38'19.8"	32.300	aE 32.067	aE 102.5°	52°	4°	14.5\	15:52	20:10	+20°	00:27	21:16	+18°	SGR
Di 18.09.2012	00:00	18h28'42.6"	-19°38'32.6"	32.300	aE 32.084	aE 101.5°	53°	3°	14.5\	15:48	20:06	+20°	00:23	21:14	+18°	SGR
Mi 19.09.2012	00:00	18h28'42.7"	-19°38'45.4"	32.301	aE 32.102	aE 100.6°	54°	3°	14.5\	15:44	20:02	+20°	00:19	21:11	+18°	SGR
Do 20.09.2012	00:00	18h28'43.0"	-19°38'58.1"	32.301	aE 32.119	aE 99.6°	55°	2°	14.5\	15:41	19:58	+20°	00:15	21:09	+18°	SGR
Fr 21.09.2012	00:00	18h28'43.3"	-19°39'10.7"	32.302	aE 32.136	aE 98.6°	55°	2°	14.5\	15:37	19:54	+20°	00:12	21:06	+18°	SGR
Sa 22.09.2012	00:00	18h28'43.8"	-19°39'23.2"	32.302	aE 32.154	aE 97.6°	56°	1°	14.5\	15:33	19:50	+20°	00:08	21:04	+18°	SGR
So 23.09.2012	00:00	18h28'44.4"	-19°39'35.6"	32.303	aE 32.171	aE 96.7°	57°	1°	14.5\	15:29	19:46	+20°	00:04	21:01	+18°	SGR
Mo 24.09.2012	00:00	18h28'45.2"	-19°39'47.9"	32.304	aE 32.189	aE 95.7°	58°	0°	14.5\	15:25	19:43	+20°	23:56	20:59	+18°	SGR
Di 25.09.2012	00:00	18h28'46.1"	-19°40' 0.1"	32.304	aE 32.206	aE 94.7°	58°	-0°	14.5\	15:21	19:39	+20°	23:52	20:57	+18°	SGR
Mi 26.09.2012	00:00	18h28'47.1"	-19°40'12.3"	32.305	aE 32.224	aE 93.7°	59°	-1°	14.5\	15:17	19:35	+20°	23:48	20:54	+18°	SGR
Do 27.09.2012	00:00	18h28'48.2"	-19°40'24.3"	32.305	aE 32.242	aE 92.8°	60°	-1°	14.5\	15:13	19:31	+20°	23:44	20:52	+18°	SGR
Fr 28.09.2012	00:00	18h28'49.5"	-19°40'36.2"	32.306	aE 32.259	aE 91.8°	61°	-2°	14.5\	15:09	19:27	+20°	23:40	20:50	+17°	SGR
Sa 29.09.2012	00:00	18h28'50.9"	-19°40'48.0"	32.306	aE 32.277	aE 90.8°	61°	-2°	14.5\	15:05	19:23	+20°	23:37	20:47	+17°	SGR
So 30.09.2012	00:00	18h28'52.5"	-19°40'59.8"	32.307	aE 32.294	aE 89.8°	62°	-3°	14.5\	15:01	19:19	+20°	23:33	20:45	+17°	SGR
Mo 01.10.2012	00:00	18h28'54.1"	-19°41'11.4"	32.308	aE 32.312	aE 88.9°	63°	-4°	14.5\	14:57	19:15	+20°	23:29	20:43	+17°	SGR
Di 02.10.2012	00:00	18h28'55.9"	-19°41'22.9"	32.308	aE 32.330	aE 87.9°	64°	-4°	14.5\	14:53	19:11	+20°	23:25	20:40	+17°	SGR
Mi 03.10.2012	00:00	18h28'57.9"	-19°41'34.3"	32.309	aE 32.347	aE 86.9°	64°	-5°	14.5\	14:50	19:07	+20°	23:21	20:38	+17°	SGR
Do 04.10.2012	00:00	18h28'59.9"	-19°41'45.6"	32.309	aE 32.365	aE 85.9°	65°	-5°	14.5\	14:46	19:03	+20°	23:17	20:36	+17°	SGR
Fr 05.10.2012	00:00	18h29' 2.1"	-19°41'56.7"	32.310	aE 32.382	aE 85.0°	66°	-6°	14.5\	14:42	19:00	+20°	23:13	20:34	+17°	SGR
Sa 06.10.2012	00:00	18h29' 4.4"	-19°42' 7.8"	32.310	aE 32.400	aE 84.0°	67°	-6°	14.5\	14:38	18:56	+20°	23:09	20:31	+17°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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 07.10.2012	00:00	18h29' 6.9"	-19°42'18.7"	32.311	aE 32.417	aE 83.0°	67° -7°	14.5\	14:34	18:52	+20°	23:05	20:29	+17°	SGR
Mo 08.10.2012	00:00	18h29' 9.5"	-19°42'29.5"	32.311	aE 32.435	aE 82.0°	68° -7°	14.5\	14:30	18:48	+20°	23:01	20:27	+16°	SGR
Di 09.10.2012	00:00	18h29'12.2"	-19°42'40.2"	32.312	aE 32.452	aE 81.1°	69° -8°	14.5\	14:26	18:44	+20°	22:57	20:25	+16°	SGR
Mi 10.10.2012	00:00	18h29'15.0"	-19°42'50.7"	32.313	aE 32.470	aE 80.1°	69° -9°	14.5\	14:22	18:40	+20°	22:53	20:23	+16°	SGR
Do 11.10.2012	00:00	18h29'18.0"	-19°43' 1.2"	32.313	aE 32.487	aE 79.1°	70° -9°	14.5\	14:18	18:36	+20°	22:49	20:21	+16°	SGR
Fr 12.10.2012	00:00	18h29'21.1"	-19°43'11.5"	32.314	aE 32.504	aE 78.1°	71° -10°	14.5\	14:15	18:32	+20°	22:45	20:19	+16°	SGR
Sa 13.10.2012	00:00	18h29'24.3"	-19°43'21.6"	32.314	aE 32.521	aE 77.2°	72° -10°	14.5\	14:11	18:29	+20°	22:41	20:17	+16°	SGR
So 14.10.2012	00:00	18h29'27.7"	-19°43'31.6"	32.315	aE 32.539	aE 76.2°	72° -11°	14.5\	14:07	18:25	+20°	22:37	20:14	+16°	SGR
Mo 15.10.2012	00:00	18h29'31.2"	-19°43'41.5"	32.315	aE 32.556	aE 75.2°	73° -12°	14.5\	14:03	18:21	+20°	22:34	20:12	+16°	SGR
Di 16.10.2012	00:00	18h29'34.8"	-19°43'51.3"	32.316	aE 32.573	aE 74.2°	74° -12°	14.5\	13:59	18:17	+20°	22:30	20:11	+15°	SGR
Mi 17.10.2012	00:00	18h29'38.5"	-19°44' 0.9"	32.317	aE 32.590	aE 73.3°	74° -13°	14.5\	13:56	18:13	+20°	22:26	20:09	+15°	SGR
Do 18.10.2012	00:00	18h29'42.3"	-19°44'10.3"	32.317	aE 32.606	aE 72.3°	75° -13°	14.5\	13:52	18:09	+20°	22:22	20:07	+15°	SGR
Fr 19.10.2012	00:00	18h29'46.3"	-19°44'19.7"	32.318	aE 32.623	aE 71.3°	76° -14°	14.5\	13:48	18:05	+20°	22:18	20:05	+15°	SGR
Sa 20.10.2012	00:00	18h29'50.4"	-19°44'28.8"	32.318	aE 32.640	aE 70.3°	77° -15°	14.5\	13:44	18:01	+20°	22:14	20:03	+15°	SGR
So 21.10.2012	00:00	18h29'54.7"	-19°44'37.9"	32.319	aE 32.656	aE 69.4°	77° -15°	14.5\	13:40	17:58	+20°	22:10	20:01	+15°	SGR
Mo 22.10.2012	00:00	18h29'59.0"	-19°44'46.8"	32.319	aE 32.673	aE 68.4°	78° -16°	14.5\	13:37	17:54	+20°	22:07	19:59	+14°	SGR
Di 23.10.2012	00:00	18h30' 3.5"	-19°44'55.5"	32.320	aE 32.689	aE 67.4°	79° -16°	14.5\	13:33	17:50	+20°	22:03	19:57	+14°	SGR
Mi 24.10.2012	00:00	18h30' 8.0"	-19°45' 4.1"	32.321	aE 32.705	aE 66.4°	79° -17°	14.5\	13:29	17:46	+20°	21:59	19:56	+14°	SGR
Do 25.10.2012	00:00	18h30'12.7"	-19°45'12.5"	32.321	aE 32.722	aE 65.5°	80° -18°	14.5\	13:25	17:42	+20°	21:55	19:54	+14°	SGR
Fr 26.10.2012	00:00	18h30'17.5"	-19°45'20.8"	32.322	aE 32.738	aE 64.5°	81° -18°	14.5\	13:21	17:38	+20°	21:51	19:52	+14°	SGR
Sa 27.10.2012	00:00	18h30'22.5"	-19°45'28.9"	32.322	aE 32.753	aE 63.5°	81° -19°	14.5/	13:17	17:34	+20°	21:48	19:50	+14°	SGR
So 28.10.2012	00:00	18h30'27.7"	-19°45'37.2"	32.323	aE 32.770	aE 62.5°	94° -29°	14.5/	12:13	16:31	+20°	20:43	18:49	+13°	SGR
Mo 29.10.2012	00:00	18h30'32.9"	-19°45'45.0"	32.323	aE 32.785	aE 61.5°	94° -30°	14.5/	12:09	16:27	+20°	20:39	18:47	+13°	SGR
Di 30.10.2012	00:00	18h30'38.2"	-19°45'52.7"	32.324	aE 32.801	aE 60.5°	95° -30°	14.5/	12:06	16:23	+20°	20:36	18:46	+13°	SGR
Mi 31.10.2012	00:00	18h30'43.5"	-19°46' 0.1"	32.325	aE 32.816	aE 59.6°	96° -31°	14.5/	12:02	16:19	+20°	20:32	18:44	+13°	SGR
Do 01.11.2012	00:00	18h30'49.0"	-19°46' 7.5"	32.325	aE 32.831	aE 58.6°	97° -31°	14.5/	11:58	16:15	+20°	20:28	18:42	+13°	SGR
Fr 02.11.2012	00:00	18h30'54.6"	-19°46'14.6"	32.326	aE 32.846	aE 57.6°	98° -32°	14.5/	11:54	16:11	+20°	20:24	18:41	+12°	SGR
Sa 03.11.2012	00:00	18h31' 0.3"	-19°46'21.6"	32.326	aE 32.861	aE 56.6°	98° -33°	14.5/	11:51	16:08	+20°	20:20	18:39	+12°	SGR
So 04.11.2012	00:00	18h31' 6.2"	-19°46'28.5"	32.327	aE 32.876	aE 55.7°	99° -33°	14.5/	11:47	16:04	+20°	20:16	18:38	+12°	SGR
Mo 05.11.2012	00:00	18h31'12.1"	-19°46'35.1"	32.327	aE 32.890	aE 54.7°	100° -34°	14.5/	11:43	16:00	+20°	20:12	18:37	+12°	SGR
Di 06.11.2012	00:00	18h31'18.1"	-19°46'41.6"	32.328	aE 32.905	aE 53.7°	101° -34°	14.5/	11:39	15:56	+20°	20:09	18:35	+11°	SGR
Mi 07.11.2012	00:00	18h31'24.2"	-19°46'48.0"	32.328	aE 32.919	aE 52.7°	102° -35°	14.5/	11:35	15:52	+20°	20:05	18:34	+11°	SGR
Do 08.11.2012	00:00	18h31'30.4"	-19°46'54.1"	32.329	aE 32.933	aE 51.7°	102° -36°	14.5/	11:32	15:48	+20°	20:01	18:33	+11°	SGR
Fr 09.11.2012	00:00	18h31'36.8"	-19°47' 0.1"	32.330	aE 32.947	aE 50.8°	103° -36°	14.5/	11:28	15:45	+20°	19:57	18:31	+11°	SGR
Sa 10.11.2012	00:00	18h31'43.2"	-19°47' 6.0"	32.330	aE 32.961	aE 49.8°	104° -37°	14.5/	11:24	15:41	+20°	19:54	18:30	+10°	SGR
So 11.11.2012	00:00	18h31'49.7"	-19°47'11.6"	32.331	aE 32.974	aE 48.8°	105° -37°	14.5/	11:20	15:37	+20°	19:50	18:29	+10°	SGR
Mo 12.11.2012	00:00	18h31'56.3"	-19°47'17.1"	32.331	aE 32.987	aE 47.8°	106° -38°	14.5/	11:16	15:33	+20°	19:46	18:28	+10°	SGR
Di 13.11.2012	00:00	18h32' 3.0"	-19°47'22.4"	32.332	aE 33.000	aE 46.9°	107° -39°	14.5/	11:12	15:29	+20°	19:42	18:27	+ 9°	SGR
Mi 14.11.2012	00:00	18h32' 9.8"	-19°47'27.5"	32.332	aE 33.013	aE 45.9°	108° -39°	14.5/	11:08	15:25	+20°	19:38	18:26	+ 9°	SGR
Do 15.11.2012	00:00	18h32'16.7"	-19°47'32.5"	32.333	aE 33.026	aE 44.9°	108° -40°	14.5/	11:05	15:22	+20°	19:35	18:25	+ 9°	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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 16.11.2012	00:00	18h32'23.7"	-19°47'37.2"	32.334 aE	33.039 aE	43.9°	109°	-40°	14.5/	11:01	15:18	+20°	19:31	18:24	+ 9° SGR	
Sa 17.11.2012	00:00	18h32'30.8"	-19°47'41.8"	32.334 aE	33.051 aE	43.0°	110°	-41°	14.5/	10:57	15:14	+20°	19:27	18:23	+ 8° SGR	
So 18.11.2012	00:00	18h32'37.9"	-19°47'46.3"	32.335 aE	33.063 aE	42.0°	111°	-42°	14.5/	10:53	15:10	+20°	19:23	18:22	+ 8° SGR	
Mo 19.11.2012	00:00	18h32'45.2"	-19°47'50.5"	32.335 aE	33.075 aE	41.0°	112°	-42°	14.5/	10:49	15:06	+20°	19:19	18:21	+ 8° SGR	
Di 20.11.2012	00:00	18h32'52.5"	-19°47'54.6"	32.336 aE	33.086 aE	40.0°	113°	-43°	14.5/	10:45	15:03	+20°	19:15	18:20	+ 7° SGR	
Mi 21.11.2012	00:00	18h32'59.9"	-19°47'58.5"	32.336 aE	33.098 aE	39.0°	114°	-43°	14.5/	10:42	14:59	+20°	19:12	18:19	+ 7° SGR	
Do 22.11.2012	00:00	18h33' 7.4"	-19°48' 2.2"	32.337 aE	33.109 aE	38.1°	115°	-44°	14.5/	10:38	14:55	+20°	19:08	18:18	+ 7° SGR	
Fr 23.11.2012	00:00	18h33'14.9"	-19°48' 5.7"	32.338 aE	33.120 aE	37.1°	116°	-44°	14.5/	10:34	14:51	+20°	19:04	18:18	+ 6° SGR	
Sa 24.11.2012	00:00	18h33'22.6"	-19°48' 9.1"	32.338 aE	33.130 aE	36.1°	117°	-45°	14.5/	10:30	14:47	+20°	19:00	18:17	+ 6° SGR	
So 25.11.2012	00:00	18h33'30.3"	-19°48'12.3"	32.339 aE	33.141 aE	35.1°	118°	-45°	14.5/	10:26	14:44	+20°	18:56	18:16	+ 5° SGR	
Mo 26.11.2012	00:00	18h33'38.0"	-19°48'15.3"	32.339 aE	33.151 aE	34.2°	119°	-46°	14.5/	10:22	14:40	+20°	18:52	18:16	+ 5° SGR	
Di 27.11.2012	00:00	18h33'45.9"	-19°48'18.1"	32.340 aE	33.161 aE	33.2°	120°	-46°	14.5/	10:19	14:36	+20°	18:48	18:15	+ 5° SGR	
Mi 28.11.2012	00:00	18h33'53.8"	-19°48'20.8"	32.340 aE	33.171 aE	32.2°	121°	-47°	14.5/	10:15	14:32	+20°	18:45	18:15	+ 4° SGR	
Do 29.11.2012	00:00	18h34' 1.8"	-19°48'23.3"	32.341 aE	33.180 aE	31.2°	122°	-47°	14.5/	10:11	14:28	+20°	18:41	18:14	+ 4° SGR	
Fr 30.11.2012	00:00	18h34' 9.8"	-19°48'25.6"	32.342 aE	33.189 aE	30.3°	123°	-48°	14.5/	10:07	14:25	+20°	18:37	18:14	+ 3° SGR	
Sa 01.12.2012	00:00	18h34'17.9"	-19°48'27.7"	32.342 aE	33.198 aE	29.3°	124°	-48°	14.5/	10:04	14:21	+20°	18:33	18:14	+ 3° SGR	
So 02.12.2012	00:00	18h34'26.1"	-19°48'29.7"	32.343 aE	33.207 aE	28.3°	126°	-49°	14.5/	10:00	14:17	+20°	18:29	18:13	+ 2° SGR	
Mo 03.12.2012	00:00	18h34'34.3"	-19°48'31.4"	32.343 aE	33.216 aE	27.3°	127°	-49°	14.5/	09:56	14:13	+20°	18:26	18:13	+ 2° SGR	
Di 04.12.2012	00:00	18h34'42.6"	-19°48'33.0"	32.344 aE	33.224 aE	26.4°	128°	-50°	14.5/	09:53	14:09	+20°	18:22	18:13	+ 1° SGR	
Mi 05.12.2012	00:00	18h34'50.9"	-19°48'34.5"	32.344 aE	33.232 aE	25.4°	129°	-50°	14.5/	09:49	14:06	+20°	18:18	18:12	+ 1° SGR	
Do 06.12.2012	00:00	18h34'59.3"	-19°48'35.7"	32.345 aE	33.239 aE	24.4°	130°	-51°	14.5/	09:45	14:02	+20°	18:14	18:12	+ 1° SGR	
Fr 07.12.2012	00:00	18h35' 7.7"	-19°48'36.8"	32.346 aE	33.247 aE	23.5°	132°	-51°	14.5/	09:41	13:58	+20°	18:10	18:12	+ 0° SGR	
Sa 08.12.2012	00:00	18h35'16.2"	-19°48'37.7"	32.346 aE	33.254 aE	22.5°	133°	-52°	14.5/	09:37	13:54	+20°	18:07	---	---	SGR
So 09.12.2012	00:00	18h35'24.7"	-19°48'38.4"	32.347 aE	33.261 aE	21.5°	134°	-52°	14.5/	09:34	13:50	+20°	18:03	---	---	SGR
Mo 10.12.2012	00:00	18h35'33.3"	-19°48'39.0"	32.347 aE	33.268 aE	20.5°	135°	-53°	14.5/	09:30	13:47	+20°	17:59	---	---	SGR
Di 11.12.2012	00:00	18h35'41.9"	-19°48'39.4"	32.348 aE	33.274 aE	19.6°	137°	-53°	14.5/	09:26	13:43	+20°	17:56	---	---	SGR
Mi 12.12.2012	00:00	18h35'50.6"	-19°48'39.6"	32.348 aE	33.280 aE	18.6°	138°	-53°	14.5/	09:22	13:39	+20°	17:52	---	---	SGR
Do 13.12.2012	00:00	18h35'59.3"	-19°48'39.6"	32.349 aE	33.286 aE	17.6°	139°	-54°	14.5/	09:18	13:35	+20°	17:48	---	---	SGR
Fr 14.12.2012	00:00	18h36' 8.0"	-19°48'39.5"	32.349 aE	33.291 aE	16.7°	141°	-54°	14.5/	09:15	13:31	+20°	17:44	---	---	SGR
Sa 15.12.2012	00:00	18h36'16.8"	-19°48'39.2"	32.350 aE	33.296 aE	15.7°	142°	-55°	14.5/	09:11	13:28	+20°	17:41	---	---	SGR
So 16.12.2012	00:00	18h36'25.6"	-19°48'38.8"	32.351 aE	33.301 aE	14.8°	143°	-55°	14.5/	09:07	13:24	+20°	17:37	---	---	SGR
Mo 17.12.2012	00:00	18h36'34.5"	-19°48'38.2"	32.351 aE	33.306 aE	13.8°	145°	-55°	14.5/	09:03	13:20	+20°	17:33	---	---	SGR
Di 18.12.2012	00:00	18h36'43.3"	-19°48'37.4"	32.352 aE	33.310 aE	12.9°	146°	-56°	14.4/	08:59	13:16	+20°	17:29	---	---	SGR
Mi 19.12.2012	00:00	18h36'52.2"	-19°48'36.5"	32.352 aE	33.314 aE	11.9°	148°	-56°	14.4/	08:56	13:13	+20°	17:25	---	---	SGR
Do 20.12.2012	00:00	18h37' 1.1"	-19°48'35.4"	32.353 aE	33.318 aE	11.0°	149°	-56°	14.4/	08:52	13:09	+20°	17:22	---	---	SGR
Fr 21.12.2012	00:00	18h37'10.0"	-19°48'34.1"	32.353 aE	33.322 aE	10.1°	151°	-57°	14.4/	08:48	13:05	+20°	17:18	---	---	SGR
Sa 22.12.2012	00:00	18h37'19.0"	-19°48'32.7"	32.354 aE	33.325 aE	9.1°	152°	-57°	14.4/	08:44	13:01	+20°	17:14	---	---	SGR
So 23.12.2012	00:00	18h37'28.0"	-19°48'31.2"	32.355 aE	33.328 aE	8.2°	154°	-57°	14.4/	08:40	12:57	+20°	17:10	---	---	SGR
Mo 24.12.2012	00:00	18h37'36.9"	-19°48'29.4"	32.355 aE	33.330 aE	7.4°	156°	-57°	14.4/	08:36	12:54	+20°	17:06	---	---	SGR
Di 25.12.2012	00:00	18h37'45.9"	-19°48'27.6"	32.356 aE	33.333 aE	6.5°	157°	-58°	14.4/	08:33	12:50	+20°	17:03	---	---	SGR

# Ephemeride für den Kleinplaneten (134340) Pluto

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 26.12.2012	00:00	18h37'54.9"	-19°48'25.6"	32.356 aE	33.335 aE	5.7°	159° -58°	14.4/	08:29	12:46	+20°	16:59	--:--	---°	SGR
Do 27.12.2012	00:00	18h38' 4.0"	-19°48'23.4"	32.357 aE	33.337 aE	4.9°	160° -58°	14.4/	08:25	12:42	+20°	16:55	--:--	---°	SGR
Fr 28.12.2012	00:00	18h38'13.0"	-19°48'21.1"	32.357 aE	33.338 aE	4.3°	162° -58°	14.4/	08:21	12:39	+20°	16:51	--:--	---°	SGR
Sa 29.12.2012	00:00	18h38'22.0"	-19°48'18.7"	32.358 aE	33.339 aE	3.8°	164° -59°	14.4/	08:17	12:35	+20°	16:47	--:--	---°	SGR
So 30.12.2012	00:00	18h38'31.0"	-19°48'16.1"	32.359 aE	33.340 aE	3.5°	165° -59°	14.4/	08:14	12:31	+20°	16:43	--:--	---°	SGR
Mo 31.12.2012	00:00	18h38'40.1"	-19°48'13.4"	32.359 aE	33.341 aE	3.5°	167° -59°	14.4\	08:10	12:27	+20°	16:40	--:--	---°	SGR

## 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