

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Fr 1. 1.2016	0:00 16h38'21.3"	-20°27'54.3"	10.010	aE 10.860	aE 28.84°	0.7/	220°	-55°	15.4"	07:50	+11°	SO	06:14	10:26	+19°	14:36	OPH
Sa 2. 1.2016	0:00 16h38'48.8"	-20°28'46.9"	10.010	aE 10.852	aE 29.75°	0.7/	221°	-54°	15.4"	07:50	+12°	SO	06:11	10:23	+19°	14:32	OPH
So 3. 1.2016	0:00 16h39'16.2"	-20°29'38.8"	10.011	aE 10.844	aE 30.66°	0.7/	223°	-54°	15.5"	07:50	+12°	SO	06:08	10:19	+19°	14:29	OPH
Mo 4. 1.2016	0:00 16h39'43.4"	-20°30'29.9"	10.011	aE 10.835	aE 31.57°	0.7/	224°	-54°	15.5"	07:50	+12°	SO	06:04	10:16	+19°	14:25	OPH
Di 5. 1.2016	0:00 16h40'10.4"	-20°31'20.4"	10.011	aE 10.826	aE 32.49°	0.7/	225°	-53°	15.5"	07:50	+12°	SO	06:01	10:12	+19°	14:21	OPH
Mi 6. 1.2016	0:00 16h40'37.3"	-20°32'10.1"	10.011	aE 10.817	aE 33.40°	0.7/	226°	-53°	15.5"	07:50	+13°	SO	05:58	10:09	+19°	14:18	OPH
Do 7. 1.2016	0:00 16h41' 4.0"	-20°32'59.0"	10.011	aE 10.808	aE 34.31°	0.7/	227°	-53°	15.5"	07:49	+13°	SO	05:54	10:05	+19°	14:14	OPH
Fr 8. 1.2016	0:00 16h41'30.6"	-20°33'47.2"	10.011	aE 10.798	aE 35.23°	0.7/	229°	-52°	15.5"	07:49	+13°	SO	05:51	10:02	+19°	14:11	OPH
Sa 9. 1.2016	0:00 16h41'56.9"	-20°34'34.6"	10.011	aE 10.789	aE 36.14°	0.6/	230°	-52°	15.5"	07:49	+13°	SO	05:47	09:58	+19°	14:07	OPH
So 10. 1.2016	0:00 16h42'23.1"	-20°35'21.3"	10.011	aE 10.779	aE 37.06°	0.6/	231°	-51°	15.6"	07:48	+14°	SO	05:44	09:55	+19°	14:04	OPH
Mo 11. 1.2016	0:00 16h42'49.0"	-20°36' 7.3"	10.012	aE 10.769	aE 37.97°	0.6/	232°	-51°	15.6"	07:48	+14°	SO	05:41	09:51	+19°	14:00	OPH
Di 12. 1.2016	0:00 16h43'14.8"	-20°36'52.5"	10.012	aE 10.758	aE 38.89°	0.6/	233°	-50°	15.6"	07:47	+14°	SO	05:37	09:48	+19°	13:57	OPH
Mi 13. 1.2016	0:00 16h43'40.3"	-20°37'36.9"	10.012	aE 10.748	aE 39.81°	0.6/	234°	-50°	15.6"	07:47	+14°	SO	05:34	09:44	+19°	13:53	OPH
Do 14. 1.2016	0:00 16h44' 5.7"	-20°38'20.6"	10.012	aE 10.737	aE 40.73°	0.6/	235°	-50°	15.6"	07:46	+15°	SO	05:30	09:41	+19°	13:50	OPH
Fr 15. 1.2016	0:00 16h44'30.8"	-20°39' 3.4"	10.012	aE 10.726	aE 41.64°	0.6/	236°	-49°	15.6"	07:46	+15°	SO	05:27	09:37	+19°	13:46	OPH
Sa 16. 1.2016	0:00 16h44'55.7"	-20°39'45.6"	10.012	aE 10.715	aE 42.56°	0.6/	237°	-49°	15.6"	07:45	+15°	SO	05:23	09:34	+19°	13:43	OPH
So 17. 1.2016	0:00 16h45'20.4"	-20°40'26.9"	10.012	aE 10.703	aE 43.49°	0.6/	238°	-48°	15.7"	07:44	+15°	SO	05:20	09:30	+19°	13:39	OPH
Mo 18. 1.2016	0:00 16h45'44.8"	-20°41' 7.5"	10.012	aE 10.692	aE 44.41°	0.6/	239°	-48°	15.7"	07:44	+15°	SO	05:16	09:27	+19°	13:35	OPH
Di 19. 1.2016	0:00 16h46' 9.0"	-20°41'47.3"	10.013	aE 10.680	aE 45.33°	0.6/	240°	-47°	15.7"	07:43	+16°	SO	05:13	09:23	+19°	13:32	OPH
Mi 20. 1.2016	0:00 16h46'33.0"	-20°42'26.4"	10.013	aE 10.668	aE 46.25°	0.6/	241°	-47°	15.7"	07:42	+16°	SO	05:09	09:20	+19°	13:28	OPH
Do 21. 1.2016	0:00 16h46'56.7"	-20°43' 4.6"	10.013	aE 10.656	aE 47.18°	0.6/	242°	-46°	15.7"	07:41	+16°	S	05:06	09:16	+19°	13:25	OPH
Fr 22. 1.2016	0:00 16h47'20.2"	-20°43'42.1"	10.013	aE 10.643	aE 48.10°	0.6/	243°	-46°	15.8"	07:40	+16°	S	05:02	09:13	+19°	13:21	OPH
Sa 23. 1.2016	0:00 16h47'43.4"	-20°44'18.9"	10.013	aE 10.631	aE 49.03°	0.6/	244°	-45°	15.8"	07:39	+16°	S	04:59	09:09	+19°	13:17	OPH
So 24. 1.2016	0:00 16h48' 6.4"	-20°44'54.8"	10.013	aE 10.618	aE 49.95°	0.6/	245°	-45°	15.8"	07:38	+16°	S	04:55	09:05	+19°	13:14	OPH
Mo 25. 1.2016	0:00 16h48'29.1"	-20°45'30.0"	10.013	aE 10.605	aE 50.88°	0.6/	246°	-44°	15.8"	07:37	+16°	S	04:52	09:02	+19°	13:10	OPH
Di 26. 1.2016	0:00 16h48'51.6"	-20°46' 4.5"	10.013	aE 10.592	aE 51.81°	0.6/	247°	-44°	15.8"	07:36	+17°	S	04:48	08:58	+19°	13:06	OPH
Mi 27. 1.2016	0:00 16h49'13.8"	-20°46'38.1"	10.014	aE 10.579	aE 52.74°	0.6/	248°	-43°	15.8"	07:35	+17°	S	04:45	08:55	+19°	13:03	OPH
Do 28. 1.2016	0:00 16h49'35.7"	-20°47'11.0"	10.014	aE 10.566	aE 53.67°	0.6/	249°	-43°	15.9"	07:34	+17°	S	04:41	08:51	+19°	12:59	OPH
Fr 29. 1.2016	0:00 16h49'57.3"	-20°47'43.2"	10.014	aE 10.552	aE 54.60°	0.6/	250°	-42°	15.9"	07:32	+17°	S	04:38	08:48	+19°	12:55	OPH
Sa 30. 1.2016	0:00 16h50'18.6"	-20°48'14.5"	10.014	aE 10.539	aE 55.53°	0.6/	251°	-42°	15.9"	07:31	+17°	S	04:34	08:44	+19°	12:52	OPH
So 31. 1.2016	0:00 16h50'39.7"	-20°48'45.1"	10.014	aE 10.525	aE 56.46°	0.6/	251°	-41°	15.9"	07:30	+17°	S	04:31	08:40	+19°	12:48	OPH
Mo 1. 2.2016	0:00 16h51' 0.5"	-20°49'15.0"	10.014	aE 10.511	aE 57.39°	0.6/	252°	-41°	16.0"	07:29	+17°	S	04:27	08:37	+19°	12:44	OPH
Di 2. 2.2016	0:00 16h51'20.9"	-20°49'44.1"	10.014	aE 10.497	aE 58.33°	0.6/	253°	-40°	16.0"	07:27	+17°	S	04:24	08:33	+19°	12:41	OPH
Mi 3. 2.2016	0:00 16h51'41.1"	-20°50'12.4"	10.014	aE 10.482	aE 59.26°	0.6/	254°	-40°	16.0"	07:26	+17°	S	04:20	08:30	+19°	12:37	OPH
Do 4. 2.2016	0:00 16h52' 0.9"	-20°50'40.0"	10.015	aE 10.468	aE 60.20°	0.6/	255°	-39°	16.0"	07:25	+17°	S	04:16	08:26	+19°	12:33	OPH
Fr 5. 2.2016	0:00 16h52'20.5"	-20°51' 6.8"	10.015	aE 10.453	aE 61.14°	0.6/	256°	-38°	16.0"	07:23	+18°	S	04:13	08:22	+19°	12:30	OPH
Sa 6. 2.2016	0:00 16h52'39.7"	-20°51'32.9"	10.015	aE 10.439	aE 62.08°	0.6/	256°	-38°	16.1"	07:22	+18°	S	04:09	08:19	+19°	12:26	OPH
So 7. 2.2016	0:00 16h52'58.6"	-20°51'58.2"	10.015	aE 10.424	aE 63.02°	0.6/	257°	-37°	16.1"	07:20	+18°	S	04:06	08:15	+19°	12:22	OPH
Mo 8. 2.2016	0:00 16h53'17.2"	-20°52'22.8"	10.015	aE 10.409	aE 63.96°	0.6/	258°	-37°	16.1"	07:19	+18°	S	04:02	08:12	+19°	12:19	OPH

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Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Di 9. 2. 2016	0:00 16h53'35.5"	-20°52'46.6"	10.015	aE 10.394	aE 64.90°	0.6/	259°	-36°	16.1"	07:17	+18°	S	03:59	08:08	+19°	12:15	OPH
Mi 10. 2. 2016	0:00 16h53'53.4"	-20°53' 9.7"	10.015	aE 10.379	aE 65.84°	0.6/	260°	-36°	16.2"	07:15	+18°	S	03:55	08:04	+19°	12:11	OPH
Do 11. 2. 2016	0:00 16h54'11.0"	-20°53'32.0"	10.015	aE 10.363	aE 66.78°	0.6/	260°	-35°	16.2"	07:14	+18°	S	03:52	08:01	+19°	12:08	OPH
Fr 12. 2. 2016	0:00 16h54'28.2"	-20°53'53.6"	10.016	aE 10.348	aE 67.73°	0.6/	261°	-34°	16.2"	07:12	+18°	S	03:48	07:57	+19°	12:04	OPH
Sa 13. 2. 2016	0:00 16h54'45.1"	-20°54'14.5"	10.016	aE 10.332	aE 68.67°	0.6/	262°	-34°	16.2"	07:10	+18°	S	03:45	07:53	+19°	12:00	OPH
So 14. 2. 2016	0:00 16h55' 1.7"	-20°54'34.6"	10.016	aE 10.317	aE 69.62°	0.6/	263°	-33°	16.3"	07:09	+18°	S	03:41	07:50	+19°	11:57	OPH
Mo 15. 2. 2016	0:00 16h55'17.8"	-20°54'53.9"	10.016	aE 10.301	aE 70.57°	0.6/	264°	-33°	16.3"	07:07	+18°	S	03:37	07:46	+19°	11:53	OPH
Di 16. 2. 2016	0:00 16h55'33.7"	-20°55'12.6"	10.016	aE 10.285	aE 71.51°	0.6/	264°	-32°	16.3"	07:05	+18°	S	03:34	07:42	+19°	11:50	OPH
Mi 17. 2. 2016	0:00 16h55'49.1"	-20°55'30.5"	10.016	aE 10.270	aE 72.46°	0.6/	265°	-32°	16.3"	07:04	+18°	S	03:30	07:39	+19°	11:46	OPH
Do 18. 2. 2016	0:00 16h56' 4.3"	-20°55'47.7"	10.016	aE 10.254	aE 73.41°	0.6/	266°	-31°	16.4"	07:02	+18°	S	03:26	07:35	+19°	11:42	OPH
Fr 19. 2. 2016	0:00 16h56'19.0"	-20°56' 4.1"	10.016	aE 10.238	aE 74.36°	0.6/	266°	-30°	16.4"	07:00	+18°	S	03:23	07:31	+19°	11:38	OPH
Sa 20. 2. 2016	0:00 16h56'33.4"	-20°56'19.9"	10.017	aE 10.221	aE 75.32°	0.5/	267°	-30°	16.4"	06:58	+18°	S	03:19	07:28	+19°	11:35	OPH
So 21. 2. 2016	0:00 16h56'47.4"	-20°56'34.9"	10.017	aE 10.205	aE 76.27°	0.5/	268°	-29°	16.4"	06:56	+18°	S	03:15	07:24	+19°	11:31	OPH
Mo 22. 2. 2016	0:00 16h57' 1.0"	-20°56'49.3"	10.017	aE 10.189	aE 77.22°	0.5/	269°	-29°	16.5"	06:54	+18°	S	03:12	07:20	+19°	11:27	OPH
Di 23. 2. 2016	0:00 16h57'14.3"	-20°57' 2.9"	10.017	aE 10.173	aE 78.18°	0.5/	269°	-28°	16.5"	06:52	+18°	S	03:08	07:17	+19°	11:23	OPH
Mi 24. 2. 2016	0:00 16h57'27.1"	-20°57'15.8"	10.017	aE 10.156	aE 79.13°	0.5/	270°	-28°	16.5"	06:50	+18°	S	03:04	07:13	+19°	11:20	OPH
Do 25. 2. 2016	0:00 16h57'39.6"	-20°57'28.0"	10.017	aE 10.140	aE 80.09°	0.5/	271°	-27°	16.5"	06:49	+18°	S	03:00	07:09	+19°	11:16	OPH
Fr 26. 2. 2016	0:00 16h57'51.7"	-20°57'39.6"	10.017	aE 10.124	aE 81.05°	0.5/	272°	-26°	16.6"	06:47	+18°	S	02:57	07:05	+19°	11:12	OPH
Sa 27. 2. 2016	0:00 16h58' 3.4"	-20°57'50.4"	10.017	aE 10.107	aE 82.01°	0.5/	272°	-26°	16.6"	06:45	+18°	S	02:53	07:02	+19°	11:08	OPH
So 28. 2. 2016	0:00 16h58'14.8"	-20°58' 0.6"	10.018	aE 10.091	aE 82.97°	0.5/	273°	-25°	16.6"	06:43	+18°	S	02:49	06:58	+19°	11:05	OPH
Mo 29. 2. 2016	0:00 16h58'25.7"	-20°58'10.1"	10.018	aE 10.074	aE 83.93°	0.5/	274°	-25°	16.6"	06:41	+19°	S	02:45	06:54	+19°	11:01	OPH
Di 1. 3. 2016	0:00 16h58'36.2"	-20°58'18.9"	10.018	aE 10.057	aE 84.89°	0.5/	274°	-24°	16.7"	06:39	+19°	S	02:42	06:50	+19°	10:57	OPH
Mi 2. 3. 2016	0:00 16h58'46.3"	-20°58'27.1"	10.018	aE 10.041	aE 85.85°	0.5/	275°	-23°	16.7"	06:36	+19°	S	02:38	06:47	+19°	10:53	OPH
Do 3. 3. 2016	0:00 16h58'56.1"	-20°58'34.6"	10.018	aE 10.024	aE 86.82°	0.5/	276°	-23°	16.7"	06:34	+19°	S	02:34	06:43	+19°	10:49	OPH
Fr 4. 3. 2016	0:00 16h59' 5.4"	-20°58'41.4"	10.018	aE 10.007	aE 87.78°	0.5/	277°	-22°	16.8"	06:32	+19°	S	02:30	06:39	+19°	10:45	OPH
Sa 5. 3. 2016	0:00 16h59'14.3"	-20°58'47.5"	10.018	aE 9.9912	aE 88.75°	0.5/	277°	-22°	16.8"	06:30	+19°	S	02:26	06:35	+19°	10:42	OPH
So 6. 3. 2016	0:00 16h59'22.8"	-20°58'53.0"	10.018	aE 9.9745	aE 89.72°	0.5/	278°	-21°	16.8"	06:28	+19°	S	02:23	06:31	+19°	10:38	OPH
Mo 7. 3. 2016	0:00 16h59'30.9"	-20°58'57.8"	10.019	aE 9.9578	aE 90.69°	0.5/	279°	-20°	16.8"	06:26	+19°	S	02:19	06:28	+19°	10:34	OPH
Di 8. 3. 2016	0:00 16h59'38.5"	-20°59' 2.0"	10.019	aE 9.9411	aE 91.66°	0.5/	279°	-20°	16.9"	06:23	+19°	S	02:15	06:24	+19°	10:30	OPH
Mi 9. 3. 2016	0:00 16h59'45.8"	-20°59' 5.5"	10.019	aE 9.9244	aE 92.63°	0.5/	280°	-19°	16.9"	06:19	+19°	S	02:11	06:20	+19°	10:26	OPH
Do 10. 3. 2016	0:00 16h59'52.6"	-20°59' 8.4"	10.019	aE 9.9078	aE 93.60°	0.5/	281°	-19°	16.9"	06:15	+19°	S	02:08	06:16	+19°	10:22	OPH
Fr 11. 3. 2016	0:00 16h59'59.0"	-20°59'10.7"	10.019	aE 9.8911	aE 94.58°	0.5/	281°	-18°	17.0"	06:11	+19°	S	02:04	06:12	+19°	10:19	OPH
Sa 12. 3. 2016	0:00 17h 0' 4.9"	-20°59'12.3"	10.019	aE 9.8745	aE 95.55°	0.5/	282°	-17°	17.0"	06:08	+19°	S	02:00	06:09	+19°	10:15	OPH
So 13. 3. 2016	0:00 17h 0'10.5"	-20°59'13.3"	10.019	aE 9.8579	aE 96.53°	0.5/	283°	-17°	17.0"	06:04	+19°	S	01:56	06:05	+19°	10:11	OPH
Mo 14. 3. 2016	0:00 17h 0'15.6"	-20°59'13.6"	10.019	aE 9.8413	aE 97.51°	0.5/	284°	-16°	17.0"	06:00	+19°	S	01:53	06:01	+19°	10:07	OPH
Di 15. 3. 2016	0:00 17h 0'20.3"	-20°59'13.3"	10.019	aE 9.8248	aE 98.49°	0.5/	284°	-16°	17.1"	05:56	+19°	S	01:49	05:57	+19°	10:03	OPH
Mi 16. 3. 2016	0:00 17h 0'24.6"	-20°59'12.4"	10.020	aE 9.8083	aE 99.46°	0.5/	285°	-15°	17.1"	05:52	+19°	S	01:45	05:53	+19°	10:00	OPH
Do 17. 3. 2016	0:00 17h 0'28.4"	-20°59'10.9"	10.020	aE 9.7919	aE 100.44°	0.5/	286°	-14°	17.1"	05:48	+19°	S	01:41	05:49	+19°	09:56	OPH
Fr 18. 3. 2016	0:00 17h 0'31.8"	-20°59' 8.8"	10.020	aE 9.7755	aE 101.43°	0.5/	286°	-14°	17.2"	05:44	+19°	S	01:37	05:45	+19°	09:52	OPH

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Sa 19. 3.2016	0:00 17h 0'34.8"	-20°59' 6.0"	10.020	aE 9.7592	aE 102.41°	0.5/	287°	-13°	17.2"	05:41	+19°	S	01:33	05:42	+19°	09:48	OPH
So 20. 3.2016	0:00 17h 0'37.4"	-20°59' 2.7"	10.020	aE 9.7429	aE 103.39°	0.4/	288°	-13°	17.2"	05:37	+19°	S	01:29	05:38	+19°	09:44	OPH
Mo 21. 3.2016	0:00 17h 0'39.5"	-20°58'58.8"	10.020	aE 9.7268	aE 104.38°	0.4/	289°	-12°	17.2"	05:33	+19°	S	01:25	05:34	+19°	09:40	OPH
Di 22. 3.2016	0:00 17h 0'41.2"	-20°58'54.3"	10.020	aE 9.7106	aE 105.36°	0.4/	289°	-11°	17.3"	05:29	+19°	S	01:22	05:30	+19°	09:37	OPH
Mi 23. 3.2016	0:00 17h 0'42.5"	-20°58'49.2"	10.020	aE 9.6946	aE 106.35°	0.4/	290°	-11°	17.3"	05:25	+19°	S	01:18	05:26	+19°	09:33	OPH
Do 24. 3.2016	0:00 17h 0'43.4"	-20°58'43.5"	10.021	aE 9.6786	aE 107.34°	0.4/	291°	-10°	17.3"	05:21	+19°	S	01:14	05:22	+19°	09:29	OPH
Fr 25. 3.2016	0:00 17h 0'43.8"	-20°58'37.3"	10.021	aE 9.6628	aE 108.32°	0.4/	291°	-10°	17.4"	05:17	+19°	S	01:10	05:18	+19°	09:25	OPH
Sa 26. 3.2016	0:00 17h 0'43.8"	-20°58'30.4"	10.021	aE 9.6470	aE 109.31°	0.4/	292°	- 9°	17.4"	05:13	+19°	S	01:06	05:14	+19°	09:21	OPH
So 27. 3.2016	0:00 17h 0'43.4"	-20°58'23.3"	10.021	aE 9.6319	aE 110.26°	0.4/	282°	-18°	17.4"	06:09	+19°	S	02:02	06:10	+19°	10:17	OPH
Mo 28. 3.2016	0:00 17h 0'42.6"	-20°58'15.4"	10.021	aE 9.6163	aE 111.26°	0.4/	283°	-17°	17.4"	06:05	+19°	S	01:58	06:06	+19°	10:13	OPH
Di 29. 3.2016	0:00 17h 0'41.4"	-20°58' 6.9"	10.021	aE 9.6008	aE 112.25°	0.4/	283°	-16°	17.5"	06:01	+19°	S	01:54	06:02	+19°	10:09	OPH
Mi 30. 3.2016	0:00 17h 0'39.7"	-20°57'57.9"	10.021	aE 9.5855	aE 113.24°	0.4/	284°	-16°	17.5"	05:57	+19°	S	01:50	05:58	+19°	10:05	OPH
Do 31. 3.2016	0:00 17h 0'37.6"	-20°57'48.3"	10.021	aE 9.5702	aE 114.24°	0.4/	285°	-15°	17.5"	05:53	+19°	S	01:46	05:54	+19°	10:01	OPH
Fr 1. 4.2016	0:00 17h 0'35.1"	-20°57'38.2"	10.021	aE 9.5550	aE 115.24°	0.4/	285°	-15°	17.5"	05:49	+19°	S	01:42	05:50	+19°	09:57	OPH
Sa 2. 4.2016	0:00 17h 0'32.1"	-20°57'27.5"	10.022	aE 9.5400	aE 116.23°	0.4/	286°	-14°	17.6"	05:45	+19°	S	01:38	05:46	+19°	09:53	OPH
So 3. 4.2016	0:00 17h 0'28.8"	-20°57'16.3"	10.022	aE 9.5251	aE 117.23°	0.4/	287°	-13°	17.6"	05:41	+19°	S	01:34	05:42	+19°	09:49	OPH
Mo 4. 4.2016	0:00 17h 0'25.0"	-20°57' 4.6"	10.022	aE 9.5103	aE 118.23°	0.4/	288°	-13°	17.6"	05:37	+19°	S	01:30	05:38	+19°	09:45	OPH
Di 5. 4.2016	0:00 17h 0'20.8"	-20°56'52.3"	10.022	aE 9.4957	aE 119.23°	0.4/	288°	-12°	17.7"	05:33	+19°	S	01:26	05:34	+19°	09:41	OPH
Mi 6. 4.2016	0:00 17h 0'16.2"	-20°56'39.5"	10.022	aE 9.4812	aE 120.24°	0.4/	289°	-11°	17.7"	05:29	+19°	S	01:22	05:30	+19°	09:37	OPH
Do 7. 4.2016	0:00 17h 0'11.2"	-20°56'26.2"	10.022	aE 9.4668	aE 121.24°	0.4/	290°	-11°	17.7"	05:25	+19°	S	01:18	05:26	+19°	09:33	OPH
Fr 8. 4.2016	0:00 17h 0' 5.7"	-20°56'12.3"	10.022	aE 9.4527	aE 122.24°	0.4/	291°	-10°	17.7"	05:21	+19°	S	01:14	05:22	+19°	09:29	OPH
Sa 9. 4.2016	0:00 16h59'59.9"	-20°55'58.0"	10.022	aE 9.4386	aE 123.25°	0.3/	291°	-10°	17.8"	05:17	+19°	S	01:10	05:18	+19°	09:25	OPH
So 10. 4.2016	0:00 16h59'53.7"	-20°55'43.1"	10.022	aE 9.4247	aE 124.26°	0.3/	292°	- 9°	17.8"	05:13	+19°	S	01:06	05:14	+19°	09:21	OPH
Mo 11. 4.2016	0:00 16h59'47.0"	-20°55'27.8"	10.023	aE 9.4110	aE 125.26°	0.3/	293°	- 8°	17.8"	05:09	+19°	S	01:01	05:10	+19°	09:17	OPH
Di 12. 4.2016	0:00 16h59'40.0"	-20°55'11.9"	10.023	aE 9.3975	aE 126.27°	0.3/	294°	- 8°	17.8"	05:05	+19°	S	00:57	05:06	+19°	09:13	OPH
Mi 13. 4.2016	0:00 16h59'32.6"	-20°54'55.6"	10.023	aE 9.3841	aE 127.28°	0.3/	294°	- 7°	17.9"	05:01	+19°	S	00:53	05:02	+19°	09:09	OPH
Do 14. 4.2016	0:00 16h59'24.8"	-20°54'38.8"	10.023	aE 9.3709	aE 128.29°	0.3/	295°	- 7°	17.9"	04:57	+19°	S	00:49	04:58	+19°	09:05	OPH
Fr 15. 4.2016	0:00 16h59'16.6"	-20°54'21.5"	10.023	aE 9.3579	aE 129.30°	0.3/	296°	- 6°	17.9"	04:53	+19°	S	00:45	04:54	+19°	09:01	OPH
Sa 16. 4.2016	0:00 16h59' 8.0"	-20°54' 3.7"	10.023	aE 9.3451	aE 130.31°	0.3/	297°	- 5°	17.9"	04:49	+19°	S	00:41	04:50	+19°	08:57	OPH
So 17. 4.2016	0:00 16h58'59.1"	-20°53'45.5"	10.023	aE 9.3325	aE 131.32°	0.3/	297°	- 5°	18.0"	04:45	+19°	S	00:37	04:46	+19°	08:53	OPH
Mo 18. 4.2016	0:00 16h58'49.8"	-20°53'26.8"	10.023	aE 9.3201	aE 132.34°	0.3/	298°	- 4°	18.0"	04:41	+19°	S	00:32	04:42	+19°	08:49	OPH
Di 19. 4.2016	0:00 16h58'40.1"	-20°53' 7.7"	10.023	aE 9.3079	aE 133.35°	0.3/	299°	- 4°	18.0"	04:37	+19°	S	00:28	04:38	+19°	08:45	OPH
Mi 20. 4.2016	0:00 16h58'30.1"	-20°52'48.2"	10.024	aE 9.2958	aE 134.37°	0.3/	300°	- 3°	18.0"	04:33	+19°	S	00:24	04:34	+19°	08:41	OPH
Do 21. 4.2016	0:00 16h58'19.7"	-20°52'28.2"	10.024	aE 9.2840	aE 135.38°	0.3/	300°	- 3°	18.1"	04:28	+19°	S	00:20	04:29	+19°	08:36	OPH
Fr 22. 4.2016	0:00 16h58' 9.0"	-20°52' 7.8"	10.024	aE 9.2724	aE 136.40°	0.3/	301°	- 2°	18.1"	04:24	+19°	S	00:16	04:25	+19°	08:32	OPH
Sa 23. 4.2016	0:00 16h57'57.9"	-20°51'46.9"	10.024	aE 9.2610	aE 137.42°	0.3/	302°	- 1°	18.1"	04:20	+19°	S	00:12	04:21	+19°	08:28	OPH
So 24. 4.2016	0:00 16h57'46.5"	-20°51'25.7"	10.024	aE 9.2498	aE 138.43°	0.3/	303°	- 1°	18.1"	04:16	+19°	S	00:08	04:17	+19°	08:24	OPH
Mo 25. 4.2016	0:00 16h57'34.8"	-20°51' 4.0"	10.024	aE 9.2389	aE 139.45°	0.3/	303°	- 0°	18.1"	04:12	+19°	S	00:04	04:13	+19°	08:20	OPH
Di 26. 4.2016	0:00 16h57'22.7"	-20°50'42.0"	10.024	aE 9.2281	aE 140.47°	0.2/	304°	+ 0°	18.2"	04:08	+19°	S	23:55	04:09	+19°	08:16	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Mi 27. 4.2016	0:00 16h57'10.3"	-20°50'19.5"	10.024	aE 9.2176	aE 141.49°	0.2/	305°	+ 1°	18.2"	04:04	+19°	S	23:51	04:05	+19°	08:12	OPH
Do 28. 4.2016	0:00 16h56'57.6"	-20°49'56.7"	10.025	aE 9.2074	aE 142.51°	0.2/	306°	+ 1°	18.2"	04:00	+19°	S	23:47	04:01	+19°	08:08	OPH
Fr 29. 4.2016	0:00 16h56'44.6"	-20°49'33.5"	10.025	aE 9.1973	aE 143.53°	0.2/	307°	+ 2°	18.2"	03:55	+19°	S	23:43	03:56	+19°	08:04	OPH
Sa 30. 4.2016	0:00 16h56'31.2"	-20°49' 9.9"	10.025	aE 9.1875	aE 144.56°	0.2/	308°	+ 2°	18.2"	03:51	+19°	S	23:39	03:52	+19°	08:00	OPH
So 1. 5.2016	0:00 16h56'17.6"	-20°48'45.9"	10.025	aE 9.1780	aE 145.58°	0.2/	308°	+ 3°	18.3"	03:47	+19°	S	23:35	03:48	+19°	07:56	OPH
Mo 2. 5.2016	0:00 16h56' 3.7"	-20°48'21.6"	10.025	aE 9.1686	aE 146.60°	0.2/	309°	+ 3°	18.3"	03:43	+19°	S	23:30	03:44	+19°	07:52	OPH
Di 3. 5.2016	0:00 16h55'49.5"	-20°47'57.0"	10.025	aE 9.1596	aE 147.63°	0.2/	310°	+ 4°	18.3"	03:39	+19°	S	23:26	03:40	+19°	07:48	OPH
Mi 4. 5.2016	0:00 16h55'35.0"	-20°47'32.0"	10.025	aE 9.1508	aE 148.65°	0.2/	311°	+ 4°	18.3"	03:35	+19°	S	23:22	03:36	+19°	07:44	OPH
Do 5. 5.2016	0:00 16h55'20.2"	-20°47' 6.7"	10.025	aE 9.1422	aE 149.68°	0.2/	312°	+ 5°	18.3"	03:30	+19°	S	23:18	03:31	+19°	07:39	OPH
Fr 6. 5.2016	0:00 16h55' 5.2"	-20°46'41.1"	10.025	aE 9.1339	aE 150.70°	0.2/	313°	+ 5°	18.4"	03:26	+19°	S	23:13	03:27	+19°	07:35	OPH
Sa 7. 5.2016	0:00 16h54'49.9"	-20°46'15.1"	10.026	aE 9.1259	aE 151.73°	0.2/	313°	+ 6°	18.4"	03:22	+19°	S	23:09	03:23	+19°	07:31	OPH
So 8. 5.2016	0:00 16h54'34.4"	-20°45'48.9"	10.026	aE 9.1181	aE 152.76°	0.2/	314°	+ 6°	18.4"	03:18	+19°	S	23:05	03:19	+19°	07:27	OPH
Mo 9. 5.2016	0:00 16h54'18.6"	-20°45'22.3"	10.026	aE 9.1106	aE 153.78°	0.2/	315°	+ 7°	18.4"	03:14	+19°	S	23:01	03:15	+19°	07:23	OPH
Di 10. 5.2016	0:00 16h54' 2.6"	-20°44'55.5"	10.026	aE 9.1033	aE 154.81°	0.2/	316°	+ 7°	18.4"	03:10	+19°	S	22:56	03:11	+19°	07:19	OPH
Mi 11. 5.2016	0:00 16h53'46.4"	-20°44'28.4"	10.026	aE 9.0964	aE 155.84°	0.2/	317°	+ 8°	18.4"	03:05	+19°	S	22:52	03:06	+19°	07:14	OPH
Do 12. 5.2016	0:00 16h53'30.0"	-20°44' 1.1"	10.026	aE 9.0897	aE 156.86°	0.2/	318°	+ 8°	18.4"	03:01	+19°	S	22:48	03:02	+19°	07:10	OPH
Fr 13. 5.2016	0:00 16h53'13.3"	-20°43'33.5"	10.026	aE 9.0833	aE 157.89°	0.2/	319°	+ 9°	18.5"	02:57	+19°	S	22:43	02:58	+19°	07:06	OPH
Sa 14. 5.2016	0:00 16h52'56.5"	-20°43' 5.7"	10.026	aE 9.0771	aE 158.92°	0.2/	319°	+ 9°	18.5"	02:53	+19°	S	22:39	02:54	+19°	07:02	OPH
So 15. 5.2016	0:00 16h52'39.5"	-20°42'37.7"	10.026	aE 9.0713	aE 159.95°	0.1/	320°	+10°	18.5"	02:48	+19°	S	22:35	02:49	+19°	06:58	OPH
Mo 16. 5.2016	0:00 16h52'22.3"	-20°42' 9.5"	10.026	aE 9.0657	aE 160.97°	0.1/	321°	+10°	18.5"	02:44	+19°	S	22:31	02:45	+19°	06:53	OPH
Di 17. 5.2016	0:00 16h52' 4.9"	-20°41'41.1"	10.027	aE 9.0604	aE 162.00°	0.1/	322°	+11°	18.5"	02:40	+19°	S	22:26	02:41	+19°	06:49	OPH
Mi 18. 5.2016	0:00 16h51'47.4"	-20°41'12.5"	10.027	aE 9.0554	aE 163.03°	0.1/	323°	+11°	18.5"	02:36	+19°	S	22:22	02:37	+19°	06:45	OPH
Do 19. 5.2016	0:00 16h51'29.7"	-20°40'43.8"	10.027	aE 9.0507	aE 164.05°	0.1/	324°	+11°	18.5"	02:32	+19°	S	22:18	02:33	+19°	06:41	OPH
Fr 20. 5.2016	0:00 16h51'11.9"	-20°40'14.9"	10.027	aE 9.0462	aE 165.08°	0.1/	325°	+12°	18.5"	02:27	+19°	S	22:13	02:28	+19°	06:37	OPH
Sa 21. 5.2016	0:00 16h50'53.9"	-20°39'45.8"	10.027	aE 9.0421	aE 166.10°	0.1/	326°	+12°	18.5"	02:23	+19°	S	22:09	02:24	+19°	06:32	OPH
So 22. 5.2016	0:00 16h50'35.9"	-20°39'16.7"	10.027	aE 9.0382	aE 167.12°	0.1/	327°	+13°	18.6"	02:19	+19°	S	22:05	02:20	+19°	06:28	OPH
Mo 23. 5.2016	0:00 16h50'17.7"	-20°38'47.4"	10.027	aE 9.0347	aE 168.14°	0.1/	328°	+13°	18.6"	02:15	+19°	S	22:01	02:16	+19°	06:24	OPH
Di 24. 5.2016	0:00 16h49'59.4"	-20°38'18.0"	10.027	aE 9.0314	aE 169.16°	0.1/	329°	+13°	18.6"	02:10	+19°	S	21:57	02:11	+19°	06:20	OPH
Mi 25. 5.2016	0:00 16h49'41.0"	-20°37'48.6"	10.027	aE 9.0284	aE 170.18°	0.1/	330°	+14°	18.6"	02:06	+19°	S	21:52	02:07	+19°	06:16	OPH
Do 26. 5.2016	0:00 16h49'22.5"	-20°37'19.1"	10.028	aE 9.0257	aE 171.19°	0.1/	331°	+14°	18.6"	02:02	+19°	S	21:48	02:03	+19°	06:11	OPH
Fr 27. 5.2016	0:00 16h49' 3.9"	-20°36'49.5"	10.028	aE 9.0234	aE 172.20°	0.1/	332°	+14°	18.6"	01:58	+19°	S	21:44	01:59	+19°	06:07	OPH
Sa 28. 5.2016	0:00 16h48'45.2"	-20°36'19.9"	10.028	aE 9.0213	aE 173.20°	0.1/	333°	+15°	18.6"	01:53	+19°	S	21:40	01:54	+19°	06:03	OPH
So 29. 5.2016	0:00 16h48'26.5"	-20°35'50.2"	10.028	aE 9.0195	aE 174.19°	0.1/	334°	+15°	18.6"	01:49	+19°	S	21:35	01:50	+19°	05:59	OPH
Mo 30. 5.2016	0:00 16h48' 7.7"	-20°35'20.6"	10.028	aE 9.0180	aE 175.16°	0.1/	335°	+15°	18.6"	01:45	+19°	S	21:31	01:46	+19°	05:55	OPH
Di 31. 5.2016	0:00 16h47'48.9"	-20°34'50.9"	10.028	aE 9.0168	aE 176.10°	0.1/	336°	+16°	18.6"	01:41	+19°	S	21:27	01:42	+19°	05:51	OPH
Mi 1. 6.2016	0:00 16h47'30.1"	-20°34'21.3"	10.028	aE 9.0159	aE 176.98°	0.1/	336°	+16°	18.6"	01:36	+19°	S	21:22	01:37	+19°	05:47	OPH
Do 2. 6.2016	0:00 16h47'11.2"	-20°33'51.7"	10.028	aE 9.0153	aE 177.73°	0.1/	337°	+16°	18.6"	01:32	+19°	S	21:18	01:33	+19°	05:43	OPH
Fr 3. 6.2016	0:00 16h46'52.3"	-20°33'22.1"	10.028	aE 9.0150	aE 178.17°	0.1\	338°	+16°	18.6"	01:28	+19°	S	21:14	01:29	+19°	05:38	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Sa 4. 6.2016	0:00 16h46'33.4"	-20°32'52.6"	10.029	aE 9.0150	aE 178.09°	0.1\	340°	+17°	18.6"	01:24	+19°	S	21:09	01:25	+19°	05:34	OPH
So 5. 6.2016	0:00 16h46'14.5"	-20°32'23.2"	10.029	aE 9.0153	aE 177.53°	0.1\	341°	+17°	18.6"	01:20	+19°	S	21:05	01:21	+19°	05:30	OPH
Mo 6. 6.2016	0:00 16h45'55.7"	-20°31'53.9"	10.029	aE 9.0159	aE 176.73°	0.1\	342°	+17°	18.6"	01:15	+19°	S	21:01	01:16	+19°	05:26	OPH
Di 7. 6.2016	0:00 16h45'36.8"	-20°31'24.7"	10.029	aE 9.0168	aE 175.83°	0.1\	343°	+17°	18.6"	01:11	+19°	S	20:56	01:12	+19°	05:22	OPH
Mi 8. 6.2016	0:00 16h45'18.0"	-20°30'55.7"	10.029	aE 9.0180	aE 174.88°	0.1\	344°	+17°	18.6"	01:07	+19°	S	20:52	01:08	+19°	05:17	OPH
Do 9. 6.2016	0:00 16h44'59.3"	-20°30'26.8"	10.029	aE 9.0195	aE 173.91°	0.1\	345°	+18°	18.6"	01:03	+19°	S	20:48	01:04	+19°	05:13	OPH
Fr 10. 6.2016	0:00 16h44'40.5"	-20°29'58.1"	10.029	aE 9.0213	aE 172.92°	0.1\	346°	+18°	18.6"	00:58	+19°	S	20:43	00:59	+19°	05:09	OPH
Sa 11. 6.2016	0:00 16h44'21.9"	-20°29'29.5"	10.029	aE 9.0234	aE 171.92°	0.1\	347°	+18°	18.6"	00:54	+19°	S	20:39	00:55	+19°	05:05	OPH
So 12. 6.2016	0:00 16h44' 3.3"	-20°29' 1.2"	10.029	aE 9.0258	aE 170.91°	0.1\	348°	+18°	18.6"	00:50	+19°	S	20:35	00:51	+19°	05:00	OPH
Mo 13. 6.2016	0:00 16h43'44.9"	-20°28'33.1"	10.029	aE 9.0285	aE 169.90°	0.2\	349°	+18°	18.6"	00:46	+19°	S	20:30	00:47	+19°	04:56	OPH
Di 14. 6.2016	0:00 16h43'26.5"	-20°28' 5.3"	10.030	aE 9.0315	aE 168.89°	0.2\	350°	+18°	18.6"	00:41	+19°	S	20:26	00:42	+19°	04:52	OPH
Mi 15. 6.2016	0:00 16h43' 8.2"	-20°27'37.7"	10.030	aE 9.0348	aE 167.87°	0.2\	351°	+19°	18.6"	00:37	+19°	S	20:22	00:38	+19°	04:48	OPH
Do 16. 6.2016	0:00 16h42'50.0"	-20°27'10.4"	10.030	aE 9.0383	aE 166.86°	0.2\	352°	+19°	18.5"	00:33	+19°	S	20:18	00:34	+19°	04:43	OPH
Fr 17. 6.2016	0:00 16h42'32.0"	-20°26'43.5"	10.030	aE 9.0422	aE 165.84°	0.2\	353°	+19°	18.5"	00:29	+19°	S	20:13	00:30	+19°	04:39	OPH
Sa 18. 6.2016	0:00 16h42'14.0"	-20°26'16.8"	10.030	aE 9.0463	aE 164.82°	0.2\	354°	+19°	18.5"	00:24	+19°	S	20:09	00:25	+19°	04:35	OPH
So 19. 6.2016	0:00 16h41'56.2"	-20°25'50.4"	10.030	aE 9.0508	aE 163.81°	0.2\	355°	+19°	18.5"	00:20	+19°	S	20:05	00:21	+19°	04:31	OPH
Mo 20. 6.2016	0:00 16h41'38.6"	-20°25'24.5"	10.030	aE 9.0555	aE 162.79°	0.2\	356°	+19°	18.5"	00:16	+19°	S	20:01	00:17	+19°	04:27	OPH
Di 21. 6.2016	0:00 16h41'21.1"	-20°24'58.8"	10.030	aE 9.0605	aE 161.77°	0.2\	357°	+19°	18.5"	00:12	+19°	S	19:57	00:13	+19°	04:22	OPH
Mi 22. 6.2016	0:00 16h41' 3.8"	-20°24'33.6"	10.030	aE 9.0658	aE 160.76°	0.2\	358°	+19°	18.5"	23:59	+19°	S	19:52	00:09	+19°	04:18	OPH
Do 23. 6.2016	0:00 16h40'46.6"	-20°24' 8.8"	10.031	aE 9.0713	aE 159.74°	0.2\	359°	+19°	18.5"	23:59	+19°	S	19:48	00:04	+19°	04:14	OPH
Fr 24. 6.2016	0:00 16h40'29.7"	-20°23'44.3"	10.031	aE 9.0772	aE 158.72°	0.2\	0°	+19°	18.5"	23:55	+19°	S	19:44	23:56	+19°	04:10	OPH
Sa 25. 6.2016	0:00 16h40'12.9"	-20°23'20.3"	10.031	aE 9.0833	aE 157.71°	0.2\	1°	+19°	18.5"	23:51	+19°	S	19:40	23:52	+19°	04:06	OPH
So 26. 6.2016	0:00 16h39'56.3"	-20°22'56.8"	10.031	aE 9.0897	aE 156.69°	0.3\	2°	+19°	18.4"	23:46	+19°	S	19:35	23:47	+19°	04:02	OPH
Mo 27. 6.2016	0:00 16h39'39.9"	-20°22'33.7"	10.031	aE 9.0963	aE 155.68°	0.3\	3°	+19°	18.4"	23:42	+19°	S	19:31	23:43	+19°	03:58	OPH
Di 28. 6.2016	0:00 16h39'23.7"	-20°22'11.1"	10.031	aE 9.1032	aE 154.66°	0.3\	4°	+19°	18.4"	23:38	+19°	S	19:27	23:39	+19°	03:54	OPH
Mi 29. 6.2016	0:00 16h39' 7.7"	-20°21'49.0"	10.031	aE 9.1104	aE 153.65°	0.3\	5°	+19°	18.4"	23:34	+19°	S	19:23	23:35	+19°	03:50	OPH
Do 30. 6.2016	0:00 16h38'51.9"	-20°21'27.4"	10.031	aE 9.1179	aE 152.64°	0.3\	6°	+19°	18.4"	23:30	+19°	S	19:18	23:31	+19°	03:45	OPH
Fr 1. 7.2016	0:00 16h38'36.4"	-20°21' 6.3"	10.031	aE 9.1256	aE 151.62°	0.3\	8°	+19°	18.4"	23:26	+19°	S	19:14	23:27	+19°	03:41	OPH
Sa 2. 7.2016	0:00 16h38'21.1"	-20°20'45.8"	10.031	aE 9.1336	aE 150.61°	0.3\	9°	+19°	18.4"	23:21	+19°	S	19:10	23:22	+19°	03:37	OPH
So 3. 7.2016	0:00 16h38' 6.1"	-20°20'25.8"	10.032	aE 9.1418	aE 149.60°	0.3\	10°	+19°	18.3"	23:17	+19°	S	19:06	23:18	+19°	03:33	OPH
Mo 4. 7.2016	0:00 16h37'51.3"	-20°20' 6.4"	10.032	aE 9.1503	aE 148.59°	0.3\	11°	+19°	18.3"	23:13	+19°	S	19:01	23:14	+19°	03:29	OPH
Di 5. 7.2016	0:00 16h37'36.8"	-20°19'47.6"	10.032	aE 9.1591	aE 147.58°	0.3\	12°	+18°	18.3"	23:09	+19°	S	18:57	23:10	+19°	03:25	OPH
Mi 6. 7.2016	0:00 16h37'22.6"	-20°19'29.4"	10.032	aE 9.1681	aE 146.58°	0.3\	13°	+18°	18.3"	23:05	+19°	S	18:53	23:06	+19°	03:21	OPH
Do 7. 7.2016	0:00 16h37' 8.7"	-20°19'11.9"	10.032	aE 9.1773	aE 145.57°	0.4\	14°	+18°	18.3"	23:00	+19°	S	18:49	23:01	+19°	03:16	OPH
Fr 8. 7.2016	0:00 16h36'55.0"	-20°18'54.9"	10.032	aE 9.1868	aE 144.56°	0.4\	15°	+18°	18.3"	22:56	+19°	S	18:45	22:57	+19°	03:12	OPH
Sa 9. 7.2016	0:00 16h36'41.6"	-20°18'38.7"	10.032	aE 9.1965	aE 143.56°	0.4\	16°	+18°	18.2"	22:52	+19°	S	18:40	22:53	+19°	03:08	OPH
So 10. 7.2016	0:00 16h36'28.5"	-20°18'23.1"	10.032	aE 9.2065	aE 142.56°	0.4\	17°	+18°	18.2"	22:48	+19°	S	18:36	22:49	+19°	03:04	OPH
Mo 11. 7.2016	0:00 16h36'15.7"	-20°18' 8.1"	10.032	aE 9.2167	aE 141.55°	0.4\	18°	+17°	18.2"	22:44	+19°	S	18:32	22:45	+19°	03:00	OPH
Di 12. 7.2016	0:00 16h36' 3.3"	-20°17'53.9"	10.032	aE 9.2271	aE 140.55°	0.4\	19°	+17°	18.2"	22:40	+19°	S	18:28	22:41	+19°	02:56	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Mi 13. 7.2016	0:00 16h35'51.1"	-20°17'40.4"	10.033	aE 9.2377	aE 139.55°	0.4\	20°	+17°	18.1"	22:36	+19°	S	18:24	22:37	+19°	02:51	OPH
Do 14. 7.2016	0:00 16h35'39.3"	-20°17'27.6"	10.033	aE 9.2486	aE 138.55°	0.4\	21°	+17°	18.1"	22:32	+19°	S	18:19	22:33	+19°	02:47	OPH
Fr 15. 7.2016	0:00 16h35'27.8"	-20°17'15.5"	10.033	aE 9.2597	aE 137.56°	0.4\	22°	+17°	18.1"	22:27	+19°	S	18:15	22:28	+19°	02:43	OPH
Sa 16. 7.2016	0:00 16h35'16.6"	-20°17' 4.2"	10.033	aE 9.2709	aE 136.56°	0.4\	23°	+16°	18.1"	22:23	+19°	S	18:11	22:24	+19°	02:39	OPH
So 17. 7.2016	0:00 16h35' 5.8"	-20°16'53.7"	10.033	aE 9.2824	aE 135.57°	0.4\	24°	+16°	18.1"	22:19	+19°	S	18:07	22:20	+19°	02:35	OPH
Mo 18. 7.2016	0:00 16h34'55.3"	-20°16'43.8"	10.033	aE 9.2941	aE 134.57°	0.4\	25°	+16°	18.0"	22:15	+19°	S	18:03	22:16	+19°	02:31	OPH
Di 19. 7.2016	0:00 16h34'45.1"	-20°16'34.8"	10.033	aE 9.3060	aE 133.58°	0.4\	26°	+16°	18.0"	22:12	+19°	S	17:59	22:12	+19°	02:27	OPH
Mi 20. 7.2016	0:00 16h34'35.3"	-20°16'26.5"	10.033	aE 9.3181	aE 132.59°	0.5\	27°	+15°	18.0"	22:11	+19°	S	17:55	22:08	+19°	02:23	OPH
Do 21. 7.2016	0:00 16h34'25.8"	-20°16'19.1"	10.033	aE 9.3304	aE 131.60°	0.5\	27°	+15°	18.0"	22:09	+19°	S	17:51	22:04	+19°	02:19	OPH
Fr 22. 7.2016	0:00 16h34'16.7"	-20°16'12.4"	10.033	aE 9.3429	aE 130.61°	0.5\	28°	+15°	17.9"	22:08	+19°	S	17:47	22:00	+19°	02:14	OPH
Sa 23. 7.2016	0:00 16h34' 7.9"	-20°16' 6.5"	10.034	aE 9.3556	aE 129.62°	0.5\	29°	+14°	17.9"	22:07	+19°	S	17:43	21:56	+19°	02:10	OPH
So 24. 7.2016	0:00 16h33'59.5"	-20°16' 1.4"	10.034	aE 9.3685	aE 128.63°	0.5\	30°	+14°	17.9"	22:05	+19°	S	17:39	21:52	+19°	02:06	OPH
Mo 25. 7.2016	0:00 16h33'51.5"	-20°15'57.2"	10.034	aE 9.3815	aE 127.65°	0.5\	31°	+14°	17.9"	22:03	+19°	S	17:35	21:48	+19°	02:02	OPH
Di 26. 7.2016	0:00 16h33'43.9"	-20°15'53.8"	10.034	aE 9.3947	aE 126.66°	0.5\	32°	+13°	17.8"	22:02	+19°	S	17:31	21:43	+19°	01:59	OPH
Mi 27. 7.2016	0:00 16h33'36.6"	-20°15'51.2"	10.034	aE 9.4081	aE 125.68°	0.5\	33°	+13°	17.8"	22:00	+19°	S	17:27	21:39	+19°	01:55	OPH
Do 28. 7.2016	0:00 16h33'29.7"	-20°15'49.4"	10.034	aE 9.4216	aE 124.70°	0.5\	34°	+13°	17.8"	21:59	+19°	S	17:23	21:35	+19°	01:51	OPH
Fr 29. 7.2016	0:00 16h33'23.1"	-20°15'48.5"	10.034	aE 9.4353	aE 123.72°	0.5\	35°	+12°	17.8"	21:57	+19°	S	17:19	21:31	+19°	01:47	OPH
Sa 30. 7.2016	0:00 16h33'17.0"	-20°15'48.4"	10.034	aE 9.4492	aE 122.74°	0.5\	36°	+12°	17.7"	21:55	+19°	S	17:15	21:27	+19°	01:43	OPH
So 31. 7.2016	0:00 16h33'11.2"	-20°15'49.2"	10.034	aE 9.4633	aE 121.76°	0.5\	37°	+12°	17.7"	21:53	+19°	S	17:10	21:23	+19°	01:39	OPH
Mo 1. 8.2016	0:00 16h33' 5.8"	-20°15'50.8"	10.034	aE 9.4774	aE 120.78°	0.5\	37°	+11°	17.7"	21:52	+19°	S	17:06	21:19	+19°	01:35	OPH
Di 2. 8.2016	0:00 16h33' 0.9"	-20°15'53.4"	10.035	aE 9.4918	aE 119.81°	0.5\	38°	+11°	17.7"	21:50	+19°	S	17:02	21:15	+19°	01:31	OPH
Mi 3. 8.2016	0:00 16h32'56.3"	-20°15'56.7"	10.035	aE 9.5062	aE 118.83°	0.6\	39°	+10°	17.6"	21:48	+19°	S	16:58	21:11	+19°	01:26	OPH
Do 4. 8.2016	0:00 16h32'52.1"	-20°16' 1.0"	10.035	aE 9.5208	aE 117.86°	0.6\	40°	+10°	17.6"	21:46	+19°	S	16:54	21:07	+19°	01:22	OPH
Fr 5. 8.2016	0:00 16h32'48.3"	-20°16' 6.1"	10.035	aE 9.5356	aE 116.89°	0.6\	41°	+10°	17.6"	21:44	+19°	S	16:50	21:03	+19°	01:18	OPH
Sa 6. 8.2016	0:00 16h32'44.9"	-20°16'12.2"	10.035	aE 9.5504	aE 115.92°	0.6\	42°	+ 9°	17.6"	21:42	+19°	S	16:46	20:59	+19°	01:14	OPH
So 7. 8.2016	0:00 16h32'42.0"	-20°16'19.1"	10.035	aE 9.5654	aE 114.95°	0.6\	43°	+ 9°	17.5"	21:40	+19°	S	16:42	20:55	+19°	01:10	OPH
Mo 8. 8.2016	0:00 16h32'39.4"	-20°16'26.8"	10.035	aE 9.5805	aE 113.98°	0.6\	43°	+ 8°	17.5"	21:38	+18°	S	16:38	20:51	+19°	01:06	OPH
Di 9. 8.2016	0:00 16h32'37.2"	-20°16'35.5"	10.035	aE 9.5958	aE 113.02°	0.6\	44°	+ 8°	17.5"	21:36	+18°	S	16:34	20:47	+19°	01:02	OPH
Mi 10. 8.2016	0:00 16h32'35.5"	-20°16'45.1"	10.035	aE 9.6111	aE 112.05°	0.6\	45°	+ 7°	17.4"	21:34	+18°	S	16:30	20:43	+19°	00:58	OPH
Do 11. 8.2016	0:00 16h32'34.1"	-20°16'55.5"	10.035	aE 9.6265	aE 111.09°	0.6\	46°	+ 7°	17.4"	21:32	+18°	S	16:26	20:40	+19°	00:54	OPH
Fr 12. 8.2016	0:00 16h32'33.2"	-20°17' 6.8"	10.036	aE 9.6421	aE 110.13°	0.6\	47°	+ 6°	17.4"	21:30	+18°	S	16:22	20:36	+19°	00:50	OPH
Sa 13. 8.2016	0:00 16h32'32.6"	-20°17'19.0"	10.036	aE 9.6577	aE 109.17°	0.6\	48°	+ 6°	17.4"	21:28	+18°	S	16:19	20:32	+19°	00:46	OPH
So 14. 8.2016	0:00 16h32'32.5"	-20°17'32.1"	10.036	aE 9.6734	aE 108.21°	0.6\	48°	+ 6°	17.3"	21:26	+18°	S	16:15	20:28	+19°	00:42	OPH
Mo 15. 8.2016	0:00 16h32'32.8"	-20°17'46.0"	10.036	aE 9.6892	aE 107.25°	0.6\	49°	+ 5°	17.3"	21:24	+18°	S	16:11	20:24	+19°	00:38	OPH
Di 16. 8.2016	0:00 16h32'33.5"	-20°18' 0.9"	10.036	aE 9.7051	aE 106.29°	0.6\	50°	+ 5°	17.3"	21:22	+18°	S	16:07	20:20	+19°	00:34	OPH
Mi 17. 8.2016	0:00 16h32'34.6"	-20°18'16.6"	10.036	aE 9.7211	aE 105.34°	0.6\	51°	+ 4°	17.2"	21:20	+18°	S	16:03	20:16	+19°	00:30	OPH
Do 18. 8.2016	0:00 16h32'36.1"	-20°18'33.1"	10.036	aE 9.7371	aE 104.38°	0.6\	52°	+ 4°	17.2"	21:18	+18°	S	15:59	20:12	+19°	00:26	OPH
Fr 19. 8.2016	0:00 16h32'38.0"	-20°18'50.5"	10.036	aE 9.7532	aE 103.43°	0.6\	52°	+ 3°	17.2"	21:16	+18°	S	15:56	20:08	+19°	00:22	OPH
Sa 20. 8.2016	0:00 16h32'40.3"	-20°19' 8.8"	10.036	aE 9.7694	aE 102.48°	0.6\	53°	+ 3°	17.2"	21:14	+17°	S	15:52	20:04	+19°	00:19	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
So 21. 8.2016	0:00 16h32'43.1"	-20°19'27.9"	10.036	aE 9.7856	aE 101.53°	0.6\	54°	+ 2°	17.1"	21:11	+17°	S	15:48	20:00	+19°	00:15	OPH
Mo 22. 8.2016	0:00 16h32'46.2"	-20°19'47.8"	10.036	aE 9.8019	aE 100.58°	0.6\	55°	+ 2°	17.1"	21:09	+17°	S	15:44	19:57	+19°	00:11	OPH
Di 23. 8.2016	0:00 16h32'49.7"	-20°20' 8.6"	10.037	aE 9.8182	aE 99.63°	0.6\	55°	+ 1°	17.1"	21:07	+17°	S	15:40	19:53	+19°	00:07	OPH
Mi 24. 8.2016	0:00 16h32'53.7"	-20°20'30.2"	10.037	aE 9.8346	aE 98.68°	0.7\	56°	+ 1°	17.0"	21:05	+17°	S	15:37	19:49	+19°	00:03	OPH
Do 25. 8.2016	0:00 16h32'58.1"	-20°20'52.7"	10.037	aE 9.8510	aE 97.73°	0.7\	57°	+ 0°	17.0"	21:03	+17°	S	15:33	19:45	+19°	23:55	OPH
Fr 26. 8.2016	0:00 16h33' 2.8"	-20°21'15.9"	10.037	aE 9.8675	aE 96.79°	0.7\	58°	- 0°	17.0"	21:00	+17°	S	15:29	19:41	+19°	23:52	OPH
Sa 27. 8.2016	0:00 16h33' 8.0"	-20°21'40.0"	10.037	aE 9.8840	aE 95.85°	0.7\	58°	- 1°	17.0"	20:58	+17°	S	15:25	19:37	+19°	23:48	OPH
So 28. 8.2016	0:00 16h33'13.6"	-20°22' 4.9"	10.037	aE 9.9005	aE 94.90°	0.7\	59°	- 2°	16.9"	20:56	+17°	S	15:21	19:33	+19°	23:44	OPH
Mo 29. 8.2016	0:00 16h33'19.5"	-20°22'30.6"	10.037	aE 9.9171	aE 93.96°	0.7\	60°	- 2°	16.9"	20:54	+17°	S	15:17	19:30	+19°	23:40	OPH
Di 30. 8.2016	0:00 16h33'25.9"	-20°22'57.1"	10.037	aE 9.9337	aE 93.02°	0.7\	60°	- 3°	16.9"	20:51	+17°	S	15:14	19:26	+19°	23:36	OPH
Mi 31. 8.2016	0:00 16h33'32.7"	-20°23'24.3"	10.037	aE 9.9503	aE 92.08°	0.7\	61°	- 3°	16.8"	20:49	+16°	S	15:10	19:22	+19°	23:32	OPH
Do 1. 9.2016	0:00 16h33'39.9"	-20°23'52.4"	10.037	aE 9.9669	aE 91.14°	0.7\	62°	- 4°	16.8"	20:47	+16°	S	15:06	19:18	+19°	23:29	OPH
Fr 2. 9.2016	0:00 16h33'47.5"	-20°24'21.2"	10.038	aE 9.9835	aE 90.20°	0.7\	63°	- 4°	16.8"	20:45	+16°	SW	15:02	19:14	+19°	23:25	OPH
Sa 3. 9.2016	0:00 16h33'55.5"	-20°24'50.8"	10.038	aE 10.000	aE 89.27°	0.7\	63°	- 5°	16.8"	20:42	+16°	SW	14:58	19:11	+19°	23:21	OPH
So 4. 9.2016	0:00 16h34' 3.9"	-20°25'21.2"	10.038	aE 10.016	aE 88.33°	0.7\	64°	- 5°	16.7"	20:40	+16°	SW	14:55	19:07	+19°	23:17	OPH
Mo 5. 9.2016	0:00 16h34'12.7"	-20°25'52.2"	10.038	aE 10.033	aE 87.40°	0.7\	65°	- 6°	16.7"	20:38	+16°	SW	14:51	19:03	+19°	23:13	OPH
Di 6. 9.2016	0:00 16h34'21.9"	-20°26'24.1"	10.038	aE 10.049	aE 86.47°	0.7\	65°	- 6°	16.7"	20:36	+16°	SW	14:47	18:59	+19°	23:09	OPH
Mi 7. 9.2016	0:00 16h34'31.4"	-20°26'56.6"	10.038	aE 10.066	aE 85.54°	0.7\	66°	- 7°	16.7"	20:33	+16°	SW	14:43	18:55	+19°	23:05	OPH
Do 8. 9.2016	0:00 16h34'41.4"	-20°27'29.9"	10.038	aE 10.083	aE 84.60°	0.7\	67°	- 8°	16.6"	20:31	+16°	SW	14:40	18:52	+19°	23:01	OPH
Fr 9. 9.2016	0:00 16h34'51.7"	-20°28' 3.8"	10.038	aE 10.099	aE 83.67°	0.7\	68°	- 8°	16.6"	20:29	+16°	SW	14:36	18:48	+19°	22:58	OPH
Sa 10. 9.2016	0:00 16h35' 2.5"	-20°28'38.5"	10.038	aE 10.116	aE 82.75°	0.7\	68°	- 9°	16.6"	20:26	+15°	SW	14:32	18:44	+19°	22:54	OPH
So 11. 9.2016	0:00 16h35'13.6"	-20°29'13.8"	10.038	aE 10.132	aE 81.82°	0.7\	69°	- 9°	16.5"	20:24	+15°	SW	14:29	18:40	+19°	22:50	OPH
Mo 12. 9.2016	0:00 16h35'25.0"	-20°29'49.7"	10.038	aE 10.148	aE 80.89°	0.7\	70°	-10°	16.5"	20:22	+15°	SW	14:25	18:37	+19°	22:46	OPH
Di 13. 9.2016	0:00 16h35'36.9"	-20°30'26.4"	10.039	aE 10.165	aE 79.97°	0.7\	70°	-10°	16.5"	20:20	+15°	SW	14:21	18:33	+19°	22:42	OPH
Mi 14. 9.2016	0:00 16h35'49.1"	-20°31' 3.6"	10.039	aE 10.181	aE 79.04°	0.7\	71°	-11°	16.5"	20:17	+15°	SW	14:18	18:29	+19°	22:38	OPH
Do 15. 9.2016	0:00 16h36' 1.8"	-20°31'41.5"	10.039	aE 10.197	aE 78.12°	0.7\	72°	-12°	16.4"	20:15	+15°	SW	14:14	18:26	+19°	22:35	OPH
Fr 16. 9.2016	0:00 16h36'14.7"	-20°32'20.0"	10.039	aE 10.214	aE 77.20°	0.7\	72°	-12°	16.4"	20:13	+15°	SW	14:10	18:22	+19°	22:31	OPH
Sa 17. 9.2016	0:00 16h36'28.1"	-20°32'59.1"	10.039	aE 10.230	aE 76.28°	0.7/	73°	-13°	16.4"	20:10	+15°	SW	14:07	18:18	+19°	22:27	OPH
So 18. 9.2016	0:00 16h36'41.8"	-20°33'38.8"	10.039	aE 10.246	aE 75.36°	0.7/	74°	-13°	16.4"	20:08	+15°	SW	14:03	18:14	+19°	22:23	OPH
Mo 19. 9.2016	0:00 16h36'55.8"	-20°34'19.0"	10.039	aE 10.262	aE 74.44°	0.7/	74°	-14°	16.3"	20:06	+14°	SW	14:00	18:11	+19°	22:20	OPH
Di 20. 9.2016	0:00 16h37'10.2"	-20°34'59.8"	10.039	aE 10.278	aE 73.52°	0.7/	75°	-14°	16.3"	20:04	+14°	SW	13:56	18:07	+19°	22:16	OPH
Mi 21. 9.2016	0:00 16h37'25.0"	-20°35'41.1"	10.039	aE 10.294	aE 72.60°	0.7/	76°	-15°	16.3"	20:01	+14°	SW	13:53	18:03	+19°	22:12	OPH
Do 22. 9.2016	0:00 16h37'40.1"	-20°36'23.0"	10.039	aE 10.309	aE 71.68°	0.7/	76°	-16°	16.3"	19:59	+14°	SW	13:49	18:00	+19°	22:08	OPH
Fr 23. 9.2016	0:00 16h37'55.6"	-20°37' 5.4"	10.039	aE 10.325	aE 70.76°	0.7/	77°	-16°	16.2"	19:57	+14°	SW	13:45	17:56	+19°	22:05	OPH
Sa 24. 9.2016	0:00 16h38'11.4"	-20°37'48.3"	10.040	aE 10.341	aE 69.85°	0.7/	78°	-17°	16.2"	19:55	+14°	SW	13:42	17:52	+19°	22:01	OPH
So 25. 9.2016	0:00 16h38'27.5"	-20°38'31.7"	10.040	aE 10.356	aE 68.93°	0.7/	78°	-17°	16.2"	19:52	+14°	SW	13:38	17:49	+19°	21:57	OPH
Mo 26. 9.2016	0:00 16h38'44.0"	-20°39'15.5"	10.040	aE 10.372	aE 68.02°	0.7/	79°	-18°	16.2"	19:50	+14°	SW	13:35	17:45	+19°	21:54	OPH
Di 27. 9.2016	0:00 16h39' 0.9"	-20°39'59.9"	10.040	aE 10.387	aE 67.10°	0.7/	80°	-18°	16.1"	19:48	+13°	SW	13:31	17:41	+19°	21:50	OPH
Mi 28. 9.2016	0:00 16h39'18.0"	-20°40'44.6"	10.040	aE 10.402	aE 66.19°	0.7/	80°	-19°	16.1"	19:46	+13°	SW	13:28	17:38	+19°	21:46	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Do 29. 9.2016	0:00 16h39'35.5"	-20°41'29.9"	10.040	aE 10.418	aE 65.28°	0.7/	81°	-20°	16.1"	19:43	+13°	SW	13:24	17:34	+19°	21:43	OPH
Fr 30. 9.2016	0:00 16h39'53.4"	-20°42'15.5"	10.040	aE 10.433	aE 64.37°	0.7/	82°	-20°	16.1"	19:41	+13°	SW	13:20	17:30	+19°	21:39	OPH
Sa 1.10.2016	0:00 16h40'11.5"	-20°43' 1.5"	10.040	aE 10.447	aE 63.46°	0.7/	82°	-21°	16.0"	19:39	+13°	SW	13:17	17:27	+19°	21:35	OPH
So 2.10.2016	0:00 16h40'30.0"	-20°43'48.0"	10.040	aE 10.462	aE 62.55°	0.7/	83°	-21°	16.0"	19:37	+13°	SW	13:13	17:23	+19°	21:32	OPH
Mo 3.10.2016	0:00 16h40'48.8"	-20°44'34.8"	10.040	aE 10.477	aE 61.64°	0.7/	84°	-22°	16.0"	19:35	+13°	SW	13:10	17:20	+19°	21:28	OPH
Di 4.10.2016	0:00 16h41' 7.9"	-20°45'22.0"	10.040	aE 10.492	aE 60.73°	0.7/	84°	-23°	16.0"	19:32	+13°	SW	13:06	17:16	+19°	21:24	OPH
Mi 5.10.2016	0:00 16h41'27.3"	-20°46' 9.5"	10.040	aE 10.506	aE 59.82°	0.7/	85°	-23°	16.0"	19:30	+12°	SW	13:03	17:12	+19°	21:20	OPH
Do 6.10.2016	0:00 16h41'47.0"	-20°46'57.4"	10.041	aE 10.520	aE 58.91°	0.7/	86°	-24°	15.9"	19:28	+12°	SW	12:59	17:09	+19°	21:17	OPH
Fr 7.10.2016	0:00 16h42' 7.1"	-20°47'45.6"	10.041	aE 10.534	aE 58.00°	0.7/	86°	-24°	15.9"	19:26	+12°	SW	12:55	17:05	+19°	21:13	OPH
Sa 8.10.2016	0:00 16h42'27.4"	-20°48'34.1"	10.041	aE 10.548	aE 57.10°	0.7/	87°	-25°	15.9"	19:24	+12°	SW	12:52	17:02	+19°	21:09	OPH
So 9.10.2016	0:00 16h42'48.0"	-20°49'22.8"	10.041	aE 10.562	aE 56.19°	0.7/	88°	-25°	15.9"	19:22	+12°	SW	12:48	16:58	+19°	21:06	OPH
Mo 10.10.2016	0:00 16h43' 8.9"	-20°50'11.9"	10.041	aE 10.576	aE 55.29°	0.7/	88°	-26°	15.9"	19:20	+12°	SW	12:45	16:54	+19°	21:02	OPH
Di 11.10.2016	0:00 16h43'30.1"	-20°51' 1.2"	10.041	aE 10.590	aE 54.38°	0.7/	89°	-27°	15.8"	19:18	+12°	SW	12:41	16:51	+19°	20:58	OPH
Mi 12.10.2016	0:00 16h43'51.6"	-20°51'50.7"	10.041	aE 10.603	aE 53.48°	0.7/	90°	-27°	15.8"	19:16	+11°	SW	12:38	16:47	+19°	20:54	OPH
Do 13.10.2016	0:00 16h44'13.3"	-20°52'40.5"	10.041	aE 10.616	aE 52.58°	0.6/	90°	-28°	15.8"	19:14	+11°	SW	12:34	16:44	+19°	20:51	OPH
Fr 14.10.2016	0:00 16h44'35.3"	-20°53'30.4"	10.041	aE 10.629	aE 51.67°	0.6/	91°	-28°	15.8"	19:12	+11°	SW	12:31	16:40	+19°	20:47	OPH
Sa 15.10.2016	0:00 16h44'57.6"	-20°54'20.5"	10.041	aE 10.642	aE 50.77°	0.6/	92°	-29°	15.8"	19:10	+11°	SW	12:27	16:37	+19°	20:43	OPH
So 16.10.2016	0:00 16h45'20.2"	-20°55'10.9"	10.041	aE 10.655	aE 49.87°	0.6/	92°	-29°	15.7"	19:08	+11°	SW	12:24	16:33	+19°	20:40	OPH
Mo 17.10.2016	0:00 16h45'43.0"	-20°56' 1.3"	10.042	aE 10.668	aE 48.97°	0.6/	93°	-30°	15.7"	19:06	+11°	SW	12:20	16:29	+19°	20:36	OPH
Di 18.10.2016	0:00 16h46' 6.1"	-20°56'52.0"	10.042	aE 10.680	aE 48.07°	0.6/	94°	-31°	15.7"	19:04	+10°	SW	12:17	16:26	+19°	20:32	OPH
Mi 19.10.2016	0:00 16h46'29.4"	-20°57'42.7"	10.042	aE 10.692	aE 47.17°	0.6/	94°	-31°	15.7"	19:02	+10°	SW	12:14	16:22	+19°	20:29	OPH
Do 20.10.2016	0:00 16h46'53.0"	-20°58'33.6"	10.042	aE 10.704	aE 46.27°	0.6/	95°	-32°	15.7"	19:00	+10°	SW	12:10	16:19	+19°	20:25	OPH
Fr 21.10.2016	0:00 16h47'16.8"	-20°59'24.5"	10.042	aE 10.716	aE 45.37°	0.6/	96°	-32°	15.6"	18:58	+10°	SW	12:07	16:15	+19°	20:21	OPH
Sa 22.10.2016	0:00 16h47'40.8"	-21° 0'15.6"	10.042	aE 10.728	aE 44.47°	0.6/	97°	-33°	15.6"	18:56	+10°	SW	12:03	16:12	+19°	20:18	OPH
So 23.10.2016	0:00 16h48' 5.1"	-21° 1' 6.7"	10.042	aE 10.739	aE 43.57°	0.6/	97°	-33°	15.6"	18:54	+10°	SW	12:00	16:08	+18°	20:14	OPH
Mo 24.10.2016	0:00 16h48'29.7"	-21° 1'57.9"	10.042	aE 10.751	aE 42.67°	0.6/	98°	-34°	15.6"	18:52	+ 9°	SW	11:57	16:05	+18°	20:11	OPH
Di 25.10.2016	0:00 16h48'54.4"	-21° 2'49.1"	10.042	aE 10.762	aE 41.77°	0.6/	99°	-35°	15.6"	18:50	+ 9°	SW	11:53	16:01	+18°	20:07	OPH
Mi 26.10.2016	0:00 16h49'19.4"	-21° 3'40.4"	10.042	aE 10.773	aE 40.87°	0.6/	99°	-35°	15.6"	18:49	+ 9°	SW	11:50	15:58	+18°	20:04	OPH
Do 27.10.2016	0:00 16h49'44.7"	-21° 4'31.7"	10.042	aE 10.784	aE 39.97°	0.6/	100°	-36°	15.5"	18:47	+ 9°	SW	11:46	15:54	+18°	20:00	OPH
Fr 28.10.2016	0:00 16h50'10.1"	-21° 5'23.0"	10.042	aE 10.794	aE 39.08°	0.6/	101°	-36°	15.5"	18:45	+ 9°	SW	11:43	15:51	+18°	19:57	OPH
Sa 29.10.2016	0:00 16h50'35.7"	-21° 6'14.3"	10.043	aE 10.805	aE 38.18°	0.6/	102°	-37°	15.5"	18:43	+ 8°	SW	11:40	15:47	+18°	19:53	OPH
So 30.10.2016	0:00 16h51' 2.7"	-21° 7' 7.6"	10.043	aE 10.815	aE 37.24°	0.6/	117°	-46°	15.5"	17:42	+ 8°	SW	10:36	14:44	+18°	18:49	OPH
Mo 31.10.2016	0:00 16h51'28.8"	-21° 7'58.9"	10.043	aE 10.825	aE 36.35°	0.6/	118°	-47°	15.5"	17:40	+ 8°	SW	10:32	14:40	+18°	18:46	OPH
Di 1.11.2016	0:00 16h51'55.0"	-21° 8'50.0"	10.043	aE 10.835	aE 35.45°	0.6/	119°	-47°	15.5"	17:38	+ 8°	SW	10:29	14:37	+18°	18:42	OPH
Mi 2.11.2016	0:00 16h52'21.5"	-21° 9'41.1"	10.043	aE 10.844	aE 34.55°	0.6/	120°	-48°	15.5"	17:37	+ 8°	SW	10:26	14:33	+18°	18:38	OPH
Do 3.11.2016	0:00 16h52'48.2"	-21°10'32.2"	10.043	aE 10.854	aE 33.66°	0.6/	121°	-48°	15.4"	17:35	+ 7°	SW	10:22	14:30	+18°	18:35	OPH
Fr 4.11.2016	0:00 16h53'15.0"	-21°11'23.1"	10.043	aE 10.863	aE 32.76°	0.6/	122°	-49°	15.4"	17:34	+ 7°	SW	10:19	14:26	+18°	18:31	OPH
Sa 5.11.2016	0:00 16h53'42.0"	-21°12'13.9"	10.043	aE 10.872	aE 31.87°	0.6/	123°	-49°	15.4"	17:32	+ 7°	SW	10:15	14:23	+18°	18:28	OPH

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
So 6.11.2016	0:00 16h54' 9.2"	-21°13' 4.6"	10.043	aE 10.880	aE 30.97°	0.6/ 124°	-50°	15.4"	17:31	+ 7°	SW	10:12 14:19	+18°	18:24	OPH		
Mo 7.11.2016	0:00 16h54'36.6"	-21°13'55.2"	10.043	aE 10.889	aE 30.07°	0.6/ 125°	-50°	15.4"	17:29	+ 6°	SW	10:09 14:16	+18°	18:20	OPH		
Di 8.11.2016	0:00 16h55' 4.1"	-21°14'45.6"	10.043	aE 10.897	aE 29.18°	0.6/ 126°	-51°	15.4"	17:28	+ 6°	SW	10:05 14:12	+18°	18:17	OPH		
Mi 9.11.2016	0:00 16h55'31.8"	-21°15'35.8"	10.043	aE 10.905	aE 28.29°	0.6/ 127°	-51°	15.4"	17:27	+ 6°	SW	10:02 14:09	+18°	18:13	OPH		
Do 10.11.2016	0:00 16h55'59.7"	-21°16'25.9"	10.044	aE 10.912	aE 27.39°	0.6/ 128°	-52°	15.4"	17:25	+ 6°	SW	09:59 14:05	+18°	18:10	OPH		
Fr 11.11.2016	0:00 16h56'27.7"	-21°17'15.7"	10.044	aE 10.920	aE 26.50°	0.6/ 129°	-52°	15.4"	17:24	+ 5°	SW	09:55 14:02	+18°	18:06	OPH		
Sa 12.11.2016	0:00 16h56'55.8"	-21°18' 5.4"	10.044	aE 10.927	aE 25.60°	0.6/ 130°	-53°	15.3"	17:23	+ 5°	SW	09:52 13:58	+18°	18:03	OPH		
So 13.11.2016	0:00 16h57'24.1"	-21°18'54.9"	10.044	aE 10.934	aE 24.71°	0.6/ 131°	-53°	15.3"	17:21	+ 5°	SW	09:49 13:55	+18°	17:59	OPH		
Mo 14.11.2016	0:00 16h57'52.6"	-21°19'44.1"	10.044	aE 10.941	aE 23.82°	0.6/ 132°	-53°	15.3"	17:20	+ 5°	SW	09:45 13:51	+18°	17:56	OPH		
Di 15.11.2016	0:00 16h58'21.1"	-21°20'33.1"	10.044	aE 10.948	aE 22.92°	0.5/ 134°	-54°	15.3"	17:19	+ 4°	SW	09:42 13:48	+18°	17:52	OPH		
Mi 16.11.2016	0:00 16h58'49.8"	-21°21'21.8"	10.044	aE 10.954	aE 22.03°	0.5/ 135°	-54°	15.3"	17:18	+ 4°	SW	09:39 13:45	+18°	17:49	OPH		
Do 17.11.2016	0:00 16h59'18.6"	-21°22'10.3"	10.044	aE 10.960	aE 21.14°	0.5/ 136°	-55°	15.3"	17:17	+ 4°	SW	09:35 13:41	+18°	17:45	OPH		
Fr 18.11.2016	0:00 16h59'47.6"	-21°22'58.4"	10.044	aE 10.966	aE 20.24°	0.5/ 137°	-55°	15.3"	17:16	+ 3°	SW	09:32 13:38	+18°	17:42	OPH		
Sa 19.11.2016	0:00 17h 0'16.6"	-21°23'46.4"	10.044	aE 10.971	aE 19.35°	0.5/ 139°	-55°	15.3"	17:15	+ 3°	SW	09:29 13:34	+18°	17:38	OPH		
So 20.11.2016	0:00 17h 0'45.8"	-21°24'34.0"	10.044	aE 10.977	aE 18.46°	0.5/ 140°	-56°	15.3"	17:14	+ 3°	SW	09:25 13:31	+18°	17:35	OPH		
Mo 21.11.2016	0:00 17h 1'15.1"	-21°25'21.3"	10.044	aE 10.982	aE 17.56°	0.5/ 141°	-56°	15.3"	17:13	+ 2°	SW	09:22 13:27	+18°	17:31	OPH		
Di 22.11.2016	0:00 17h 1'44.5"	-21°26' 8.3"	10.045	aE 10.987	aE 16.67°	0.5/ 142°	-57°	15.3"	17:12	+ 2°	SW	09:18 13:24	+18°	17:28	OPH		
Mi 23.11.2016	0:00 17h 2'13.9"	-21°26'55.0"	10.045	aE 10.991	aE 15.78°	0.5/ 144°	-57°	15.3"	17:11	+ 2°	SW	09:15 13:20	+18°	17:24	OPH		
Do 24.11.2016	0:00 17h 2'43.5"	-21°27'41.4"	10.045	aE 10.996	aE 14.89°	0.5/ 145°	-57°	15.2"	17:10	+ 1°	SW	09:12 13:17	+18°	17:21	OPH		
Fr 25.11.2016	0:00 17h 3'13.2"	-21°28'27.4"	10.045	aE 11.000	aE 13.99°	0.5/ 146°	-58°	15.2"	17:09	+ 1°	SW	09:08 13:14	+18°	17:17	OPH		
Sa 26.11.2016	0:00 17h 3'42.9"	-21°29'13.1"	10.045	aE 11.004	aE 13.10°	0.5/ 148°	-58°	15.2"	17:09	+ 1°	SW	09:05 13:10	+18°	17:14	OPH		
So 27.11.2016	0:00 17h 4'12.8"	-21°29'58.4"	10.045	aE 11.007	aE 12.21°	0.5/ 149°	-58°	15.2"	17:08	+ 0°	SW	09:01 13:07	+18°	17:10	OPH		
Mo 28.11.2016	0:00 17h 4'42.7"	-21°30'43.3"	10.045	aE 11.011	aE 11.32°	0.5/ 151°	-58°	15.2"	17:07	+ 0°	SW	08:58 13:03	+18°	17:07	OPH		
Di 29.11.2016	0:00 17h 5'12.6"	-21°31'27.9"	10.045	aE 11.014	aE 10.43°	0.5/ 152°	-59°	15.2"	--:--	---°	--	08:55 13:00	+18°	17:03	OPH		
Mi 30.11.2016	0:00 17h 5'42.7"	-21°32'12.0"	10.045	aE 11.016	aE 9.54°	0.5/ 154°	-59°	15.2"	--:--	---°	--	08:51 12:56	+18°	16:59	OPH		
Do 1.12.2016	0:00 17h 6'12.8"	-21°32'55.8"	10.045	aE 11.019	aE 8.66°	0.5/ 155°	-59°	15.2"	--:--	---°	--	08:48 12:53	+18°	16:56	OPH		
Fr 2.12.2016	0:00 17h 6'42.9"	-21°33'39.2"	10.045	aE 11.021	aE 7.77°	0.5/ 156°	-59°	15.2"	--:--	---°	--	08:44 12:50	+18°	16:52	OPH		
Sa 3.12.2016	0:00 17h 7'13.1"	-21°34'22.2"	10.045	aE 11.023	aE 6.89°	0.5/ 158°	-60°	15.2"	--:--	---°	--	08:41 12:46	+18°	16:49	OPH		
So 4.12.2016	0:00 17h 7'43.3"	-21°35' 4.7"	10.045	aE 11.025	aE 6.01°	0.5/ 160°	-60°	15.2"	--:--	---°	--	08:38 12:43	+18°	16:45	OPH		
Mo 5.12.2016	0:00 17h 8'13.6"	-21°35'46.8"	10.046	aE 11.027	aE 5.14°	0.5/ 161°	-60°	15.2"	--:--	---°	--	08:34 12:39	+18°	16:42	OPH		
Di 6.12.2016	0:00 17h 8'43.9"	-21°36'28.5"	10.046	aE 11.028	aE 4.28°	0.5/ 163°	-60°	15.2"	--:--	---°	--	08:31 12:36	+18°	16:38	OPH		
Mi 7.12.2016	0:00 17h 9'14.2"	-21°37' 9.7"	10.046	aE 11.029	aE 3.43°	0.5/ 164°	-60°	15.2"	--:--	---°	--	08:28 12:32	+18°	16:35	OPH		
Do 8.12.2016	0:00 17h 9'44.6"	-21°37'50.5"	10.046	aE 11.030	aE 2.63°	0.5/ 166°	-61°	15.2"	--:--	---°	--	08:24 12:29	+18°	16:31	OPH		
Fr 9.12.2016	0:00 17h10'14.9"	-21°38'30.8"	10.046	aE 11.030	aE 1.90°	0.5/ 167°	-61°	15.2"	--:--	---°	--	08:21 12:26	+18°	16:28	OPH		
Sa 10.12.2016	0:00 17h10'45.3"	-21°39'10.6"	10.046	aE 11.030	aE 1.39°	0.5\ 169°	-61°	15.2"	--:--	---°	--	08:18 12:22	+18°	16:24	OPH		
So 11.12.2016	0:00 17h11'15.7"	-21°39'50.0"	10.046	aE 11.030	aE 1.37°	0.5\ 171°	-61°	15.2"	--:--	---°	--	08:14 12:19	+18°	16:21	OPH		
Mo 12.12.2016	0:00 17h11'46.1"	-21°40'28.9"	10.046	aE 11.030	aE 1.85°	0.5\ 172°	-61°	15.2"	--:--	---°	--	08:11 12:15	+18°	16:17	OPH		
Di 13.12.2016	0:00 17h12'16.4"	-21°41' 7.3"	10.046	aE 11.030	aE 2.57°	0.5\ 174°	-61°	15.2"	--:--	---°	--	08:08 12:12	+18°	16:14	OPH		
Mi 14.12.2016	0:00 17h12'46.8"	-21°41'45.2"	10.046	aE 11.029	aE 3.37°	0.5\ 176°	-61°	15.2"	--:--	---°	--	08:04 12:08	+18°	16:10	OPH		

Planetenephemeride für Saturn im Zeitraum 1. 1.2016 - 31.12.2016

Berechnet für den Standort Boden (50.5° N, 7.9° O)

Die TOpt bezieht sich auf eine Sonnenhöhe von -16°

Datum	RA (2000.0)	Dek(2000.0)	r	Entferng.	Elong.	Hell	Azim	Höhe	Diam.	TOpt.	THoe.	TRi.	Aufg.	Kulm.	KHöh	Untg.	Stb.
Do 15.12.2016	0:00 17h13'17.2"	-21°42'22.6"	10.046	aE 11.028	aE 4.22°	0.5\	177°	-61°	15.2"	--:--	---	--	08:01	12:05	+18°	16:07	OPH
Fr 16.12.2016	0:00 17h13'47.5"	-21°42'59.5"	10.046	aE 11.026	aE 5.08°	0.5\	179°	-61°	15.2"	--:--	---	--	07:58	12:02	+18°	16:03	OPH
Sa 17.12.2016	0:00 17h14'17.9"	-21°43'35.9"	10.046	aE 11.025	aE 5.95°	0.5\	181°	-61°	15.2"	--:--	---	--	07:54	11:58	+18°	16:00	OPH
So 18.12.2016	0:00 17h14'48.2"	-21°44'11.8"	10.047	aE 11.023	aE 6.83°	0.6\	182°	-61°	15.2"	--:--	---	--	07:51	11:55	+18°	15:57	OPH
Mo 19.12.2016	0:00 17h15'18.4"	-21°44'47.2"	10.047	aE 11.021	aE 7.72°	0.6\	184°	-61°	15.2"	--:--	---	--	07:48	11:51	+18°	15:53	OPH
Di 20.12.2016	0:00 17h15'48.7"	-21°45'22.1"	10.047	aE 11.018	aE 8.61°	0.6\	186°	-61°	15.2"	07:47	+ 1°	SO	07:44	11:48	+18°	15:50	OPH
Mi 21.12.2016	0:00 17h16'18.9"	-21°45'56.5"	10.047	aE 11.016	aE 9.50°	0.6\	187°	-61°	15.2"	07:47	+ 1°	SO	07:41	11:44	+18°	15:46	OPH
Do 22.12.2016	0:00 17h16'49.0"	-21°46'30.3"	10.047	aE 11.013	aE 10.39°	0.6\	189°	-61°	15.2"	07:48	+ 1°	SO	07:38	11:41	+18°	15:43	OPH
Fr 23.12.2016	0:00 17h17'19.1"	-21°47' 3.6"	10.047	aE 11.010	aE 11.29°	0.6\	190°	-61°	15.2"	07:48	+ 2°	SO	07:34	11:38	+18°	15:39	OPH
Sa 24.12.2016	0:00 17h17'49.1"	-21°47'36.4"	10.047	aE 11.006	aE 12.18°	0.6\	192°	-61°	15.2"	07:49	+ 2°	SO	07:31	11:34	+18°	15:36	OPH
So 25.12.2016	0:00 17h18'19.1"	-21°48' 8.7"	10.047	aE 11.003	aE 13.08°	0.6\	194°	-61°	15.2"	07:49	+ 3°	SO	07:28	11:31	+18°	15:32	OPH
Mo 26.12.2016	0:00 17h18'49.0"	-21°48'40.5"	10.047	aE 10.999	aE 13.98°	0.6\	195°	-61°	15.2"	07:49	+ 3°	SO	07:24	11:27	+18°	15:29	OPH
Di 27.12.2016	0:00 17h19'18.9"	-21°49'11.7"	10.047	aE 10.995	aE 14.88°	0.6\	197°	-61°	15.2"	07:49	+ 4°	SO	07:21	11:24	+18°	15:25	OPH
Mi 28.12.2016	0:00 17h19'48.7"	-21°49'42.4"	10.047	aE 10.990	aE 15.78°	0.6\	199°	-60°	15.3"	07:50	+ 4°	SO	07:17	11:20	+18°	15:22	OPH
Do 29.12.2016	0:00 17h20'18.3"	-21°50'12.5"	10.047	aE 10.985	aE 16.68°	0.6\	200°	-60°	15.3"	07:50	+ 5°	SO	07:14	11:17	+18°	15:18	OPH
Fr 30.12.2016	0:00 17h20'47.9"	-21°50'42.1"	10.047	aE 10.981	aE 17.58°	0.6\	202°	-60°	15.3"	07:50	+ 5°	SO	07:10	11:13	+18°	15:15	OPH
Sa 31.12.2016	0:00 17h21'17.4"	-21°51'11.2"	10.048	aE 10.975	aE 18.49°	0.6\	203°	-60°	15.3"	07:50	+ 5°	SO	07:07	11:10	+18°	15:11	OPH

Legende:

Eine Zeile in dieser Farbe signalisiert eine optimale Beobachtbarkeit in über 10° Höhe

Eine Zeile in dieser Farbe signalisiert eine optimale Beobachtbarkeit in unter 10° Höhe

Eine Zeile in dieser Farbe signalisiert eine Unbeobachtbarkeit des Saturn

Datum	= Berechnungsdatum und -Uhrzeit
RA (2000.0)	= Rektaszension zum Berechnungszeitpunkt (Äquinoktium 2000.0)
Dek.(2000.0)	= Deklination zum Berechnungszeitpunkt (Äquinoktium 2000.0)
r	= Abstand Sonne - Saturn zum Berechnungszeitpunkt
Entferng.	= Abstand Erde - Saturn zum Berechnungszeitpunkt
Elong.	= Elongation des Saturn zum Berechnungszeitpunkt
Hell.	= Helligkeit des Saturn zum Berechnungszeitpunkt
Azim	= Azimut des Saturn zum Berechnungszeitpunkt
Höhe	= Höhe des Saturn zum Berechnungszeitpunkt
Diam.	= Helligkeit des Saturn zum Berechnungszeitpunkt
TOpt.	= Optimaler Beobachtungszeitpunkt
TOptH.	= Höhe des Saturn zum optimalen Beobachtungszeitpunkt
TRi.	= Azimut des Saturn zum optimalen Beobachtungszeitpunkt
Aufg.	= Saturnaufgang
Kulm.	= Kulmination des Saturn
KHöh	= Höhe des Saturn zum Kulminationszeitpunkt
Untg.	= Saturnuntergang
Stb.	= Sternbild zur berechneten Position