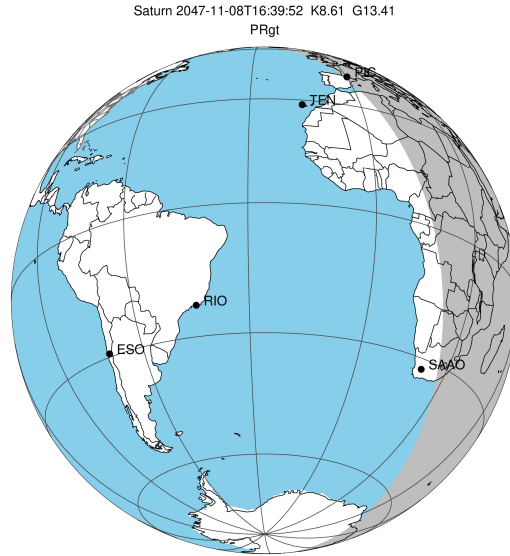


target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-11-08T16:39:52.420
 Event type : PRgt
 : Saturn occs: not geocentric or topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4069655308837133184
 2Mass ID (if available) : 18032884-2241270

Saturn 2047-11-08T16:39:52 K8.61 G13.41 PRgt

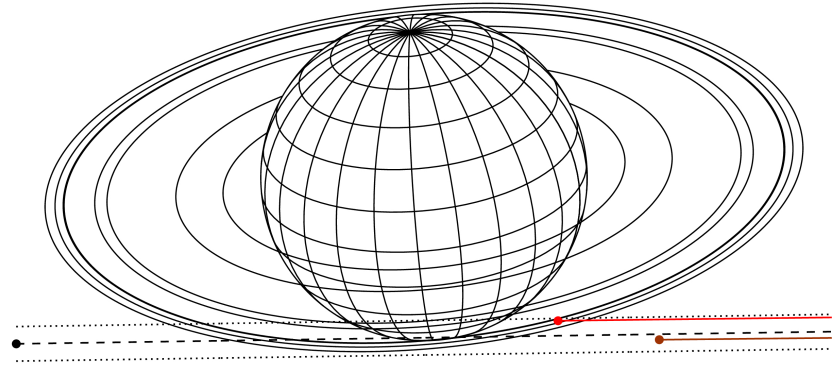
ICRS Star Coord at Epoch: 18h 03m 28.84490s -22:41:27.19170s

RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.608
 G magnitude : 13.415
 RP magnitude : 12.216
 BP magnitude : 14.968
 DUPflag : 0
 Distance (au) : 10.718
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 30.55
 Sun-Target sep (deg) : 45.28
 Sun-Moon sep (deg) : 159.89
 B (ring opening deg) : 26.75
 PA of pole (deg) : 5.60
 # a(km) ring



2047-11-08T16:39:52.4200 α: 18 03 28.8449 δ: -22 41 27.192 C/A 7.611° PA 0.86 deg v_sky +30.55 km/s D 10.72 AU
 Credit: Styled after SORA/Lucky Star

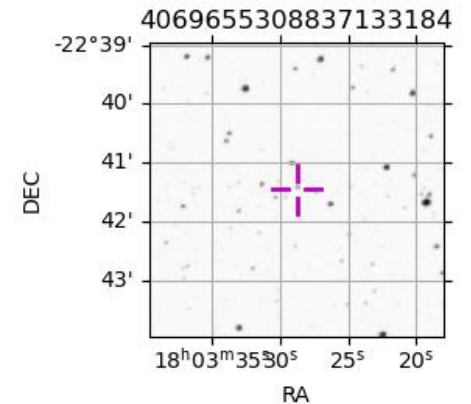
Earth
 PIC
 SAAO



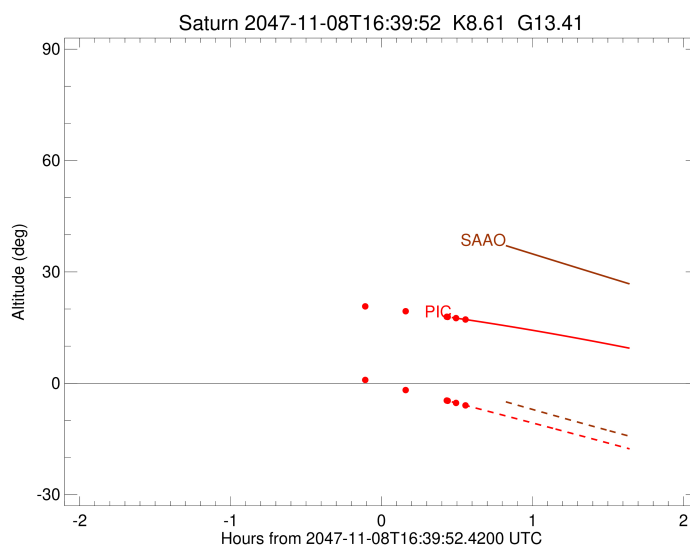
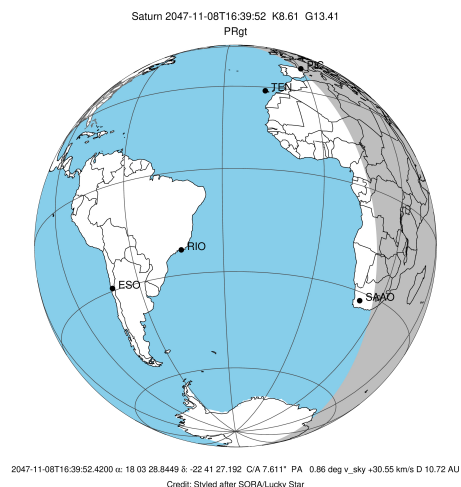
- 1 74490.6 C (IER)
- 2 91984.7 B (IER)
- 3 117571.2 B (OER)
- 4 122050.4 A (IER)
- 5 133423.3 Encke (IEG)
- 6 133744.9 Encke (OEG)
- 7 136774.4 A (OER)
- 8 140461.0 F ring

Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			+	NOV 08 17:09 - NOV 08 17:13	PnnRne
PAL	Palomar Mt (20	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl	32.0	248.4					PnnRnn
MCD	McDonald Obs.	30.7	256.0					PnnRnn
TEN	Teide Obs./Ten	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observ	12.6	78.8					PnnRnn
RIO	Rio de Janeiro	-22.9	316.8					PnnRnn
ESO	European South	-29.3	289.3					PnnRnn
AAT	Siding Spring	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Ob	-35.3	149.0					PnnRnn



target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-11-08T16:40:55.960
 Event type : PRgt
 : Saturn occs: not geocentric or topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 4069655308837133184
 2Mass ID (if available) : 18032884-2241270
 ICRS Star Coord at Epoch: 18h 03m 28.84490s -22:41:27.19170s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.608
 G magnitude : 13.415
 RP magnitude : 12.216
 BP magnitude : 14.968
 DUPflag : 0
 Distance (au) : 10.718
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 30.55
 Sun-Target sep (deg) : 45.28
 Sun-Moon sep (deg) : 159.68
 B (ring opening deg) : 26.75
 PA of pole (deg) : 5.60
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 6.888
 C/A sky separation (km) : 53542.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 Saturn_ring_plane.tf
 sat378.bsp
 sat286.bsp
 vgr1.sat286.bsp
 vgr2.sat286.bsp
 HST1081HSPephemUTC.bsp
 pfb10000r.bsp
 cassini.bsp
 earthstns_itrf93_040916.bsp
 earth_200101_990628_predict.bpc
 earth_720101_070426.bpc
 cpck28Mar2008.tpc
 pck.sat440.tpc
 IAU_SATURN_for_RINGFIT.tpc
 naif0012.tls
 earth_flat_IAU.spk



b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-11-08T15:49:31.429		23.36	8.03x	140461.00	-16.83		
A (OER)	I	2047-11-08T15:53:17.796		23.19	7.43x	136774.40	-15.73		
Encke (OEG)	I	2047-11-08T15:56:36.957		23.03	6.91x	133744.89	-14.68		
Encke (IEG)	I	2047-11-08T15:56:58.947		23.01	6.85x	133423.31	-14.56		
A (IER)	I	2047-11-08T16:13:19.406		22.10	4.22x	122050.38	-8.36		
B (OER)	I	2047-11-08T16:28:21.928	b	21.09	1.74x	117573.00	-1.45		
Saturn	I	2047-11-08T16:26:44.790		21.21	2.01x	59410.73		-50.33	-55.65
Saturn	E	2047-11-08T16:54:55.193		18.93	-2.77x	59259.72		-56.76	-61.59
B (OER)	E	2047-11-08T16:34:22.842	b	20.64	0.73x	117571.86	1.45		
A (IER)	E	2047-11-08T16:49:27.191	b	19.41	-1.83x	122050.38	8.34		
Encke (IEG)	E	2047-11-08T17:05:48.755		17.91	-4.66x	133423.31	14.57		
Encke (OEG)	E	2047-11-08T17:06:10.738		17.87	-4.72x	133744.89	14.69		
A (OER)	E	2047-11-08T17:09:29.778		17.55	-5.30	136774.40	15.74		
F ring	E	2047-11-08T17:13:15.882		17.17	-5.96	140461.00	16.85		