

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-02-06T18:22:00.060
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4115003596458033024
 2Mass ID (if available) : 17180990-2137354

Saturn 2046-02-06T18:22:00 K9.26 G14.01 PgtRgt

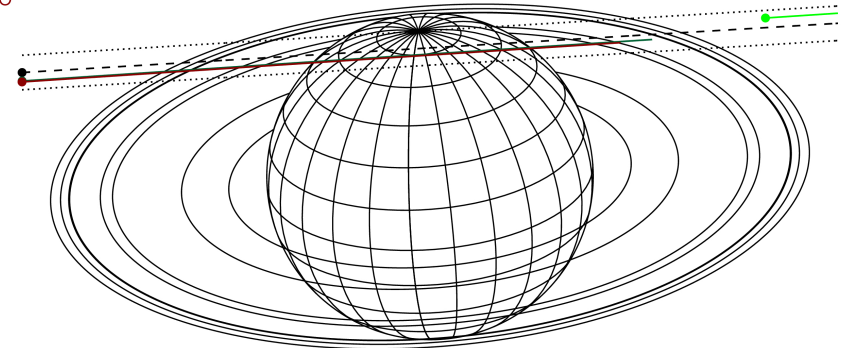
ICRS Star Coord at Epoch: 17h 18m 09.89281s -21:37:35.67596s

RUWE (>1.4 is poor) : 1.06
 K magnitude : 9.262
 G magnitude : 14.005
 RP magnitude : 12.743
 BP magnitude : 15.800
 DUPflag : 0
 Distance (au) : 10.525
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.72
 Sun-Target sep (deg) : 57.21
 Sun-Moon sep (deg) : 65.86
 B (ring opening deg) : 26.62
 PA of pole (deg) : 4.57



2046-02-06T18:22:00.0600 cc: 17 18 09.8928 s: -21 37 35.676 C/A 6.210° PA 183.45 deg v_sky +25.72 km/s D 10.52 AU
 Credit: Styled after SORA/Lucky Star

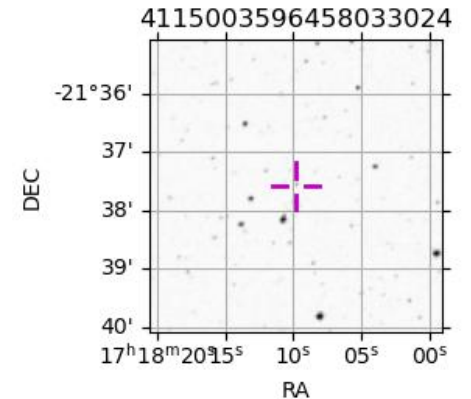
Earth
 PMO
 AAT
 MSO



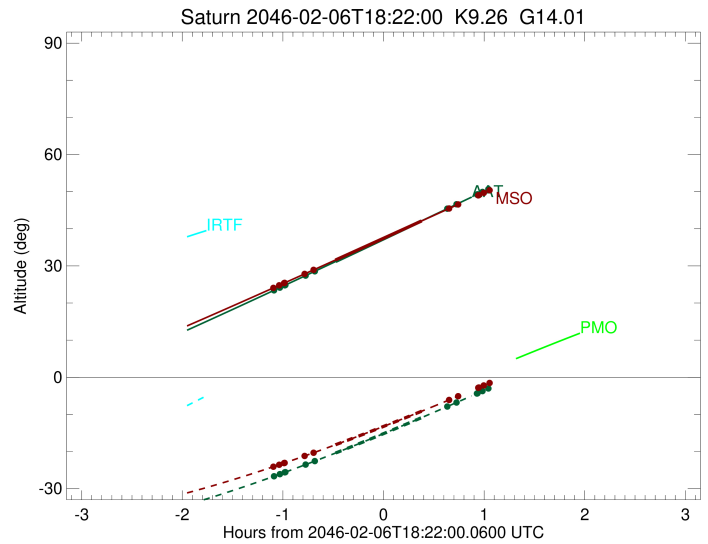
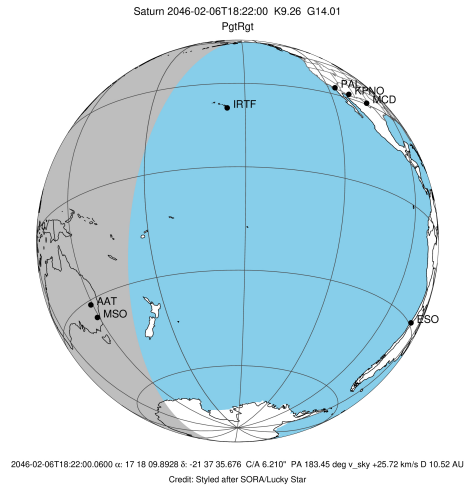
#	a(km)	ring
1	74490.6	C (IER)
2	91984.7	B (IER)
3	117571.2	B (OER)
4	122050.4	A (IER)
5	133423.3	Encke (IEG)
6	133744.9	Encke (OEG)
7	136774.4	A (OER)
8	140461.0	F ring

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					PnnRnn
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	+ + + + +	+ +	+ +	FEB 06 17:16 - FEB 06 19:05	PieRie
SAAO	So. Afr. Astro	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Ob	-35.3	149.0	+ + + + +	+ +	+ +	FEB 06 17:16 - FEB 06 19:06	PieRie



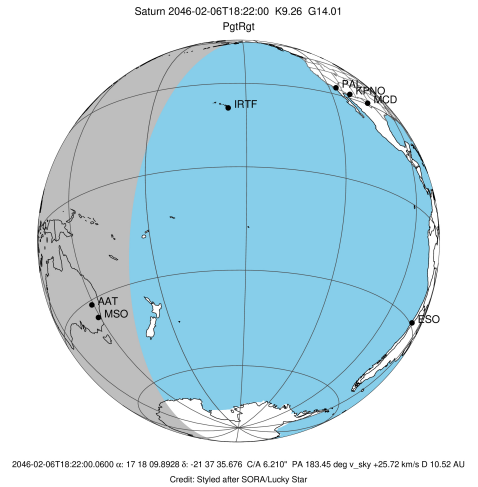
target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-02-06T18:18:52.740
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : AAT
 Location : Siding Spring (AAT)
 Latitude (deg) : -31.27703
 E. Longitude (deg) : 149.06608
 Altitude (km) : 1.164
 Gaia source ID : 4115003596458033024
 2Mass ID (if available) : 17180990-2137354
 ICRS Star Coord at Epoch: 17h 18m 09.89281s -21:37:35.67596s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 9.262
 G magnitude : 14.005
 RP magnitude : 12.743
 BP magnitude : 15.800
 DUPflag : 0
 Distance (au) : 10.525
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.72
 Sun-Target sep (deg) : 57.21
 Sun-Moon sep (deg) : 66.62
 B (ring opening deg) : 26.62
 PA of pole (deg) : 4.57
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 5.910
 C/A sky separation (km) : 45116.2
 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



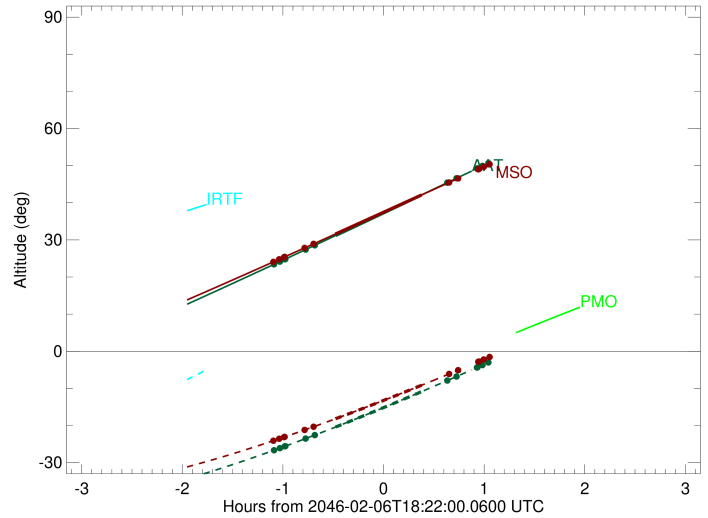
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2046-02-06T17:16:43.690		23.42	-26.67	140461.00	-17.88		
A (OER)	I	2046-02-06T17:20:12.998		24.15	-26.10	136774.40	-17.34		
Encke (OEG)	I	2046-02-06T17:23:10.101		24.77	-25.61	133744.89	-16.86		
Encke (IEG)	I	2046-02-06T17:23:29.203		24.84	-25.56	133423.31	-16.81		
A (IER)	I	2046-02-06T17:35:34.446		27.39	-23.52	122050.38	-14.45		
B (OER)	I	2046-02-06T17:40:58.300		28.53	-22.59	117571.16	-13.19		
Saturn	I	2046-02-06T17:53:28.768		31.19	-20.40	59594.16		43.22	48.82
Saturn	E	2046-02-06T18:44:21.378		42.06	-10.94	59625.26		41.95	47.57
B (OER)	E	2046-02-06T19:00:12.610		45.46	-7.85	117571.16	13.11		
A (IER)	E	2046-02-06T19:05:38.435		46.62	-6.78	122050.38	14.36		
Encke (IEG)	E	2046-02-06T19:17:49.138		49.23	-4.36x	133423.31	16.67		
Encke (OEG)	E	2046-02-06T19:18:08.402		49.30	-4.30x	133744.89	16.72		
A (OER)	E	2046-02-06T19:21:07.060		49.94	-3.70x	136774.40	17.19		
F ring	E	2046-02-06T19:24:38.309		50.70	-3.00x	140461.00	17.71		

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-02-06T18:19:02.290
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 4115003596458033024
 2Mass ID (if available) : 17180990-2137354
 ICRS Star Coord at Epoch: 17h 18m 09.89281s -21:37:35.67596s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 9.262
 G magnitude : 14.005
 RP magnitude : 12.743
 BP magnitude : 15.800
 DUPflag : 0
 Distance (au) : 10.525
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.72
 Sun-Target sep (deg) : 57.21
 Sun-Moon sep (deg) : 66.61
 B (ring opening deg) : 26.62
 PA of pole (deg) : 4.57
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 5.860
 C/A sky separation (km) : 44733.5
 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



Saturn 2046-02-06T18:22:00 K9.26 G14.01



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2046-02-06T17:16:21.236		24.08	-24.10	140461.00	-18.04		
A (OER)	I	2046-02-06T17:19:48.536		24.78	-23.57	136774.40	-17.52		
Encke (OEG)	I	2046-02-06T17:22:43.754		25.37	-23.12	133744.89	-17.05		
Encke (IEG)	I	2046-02-06T17:23:02.641		25.43	-23.07	133423.31	-17.00		
A (IER)	I	2046-02-06T17:34:57.554		27.85	-21.20	122050.38	-14.72		
B (OER)	I	2046-02-06T17:40:14.831		28.92	-20.34	117571.16	-13.50		
Saturn	I	2046-02-06T17:53:21.003		31.59	-18.18	59605.00		42.78	48.38
Saturn	E	2046-02-06T18:44:48.230		42.12	-9.14	59636.77		41.49	47.10
B (OER)	E	2046-02-06T19:01:16.855		45.49	-6.08	117571.16	13.42		
A (IER)	E	2046-02-06T19:06:36.026		46.58	-5.09	122050.38	14.62		
Encke (IEG)	E	2046-02-06T19:18:36.183		49.03	-2.81x	133423.31	16.86		
Encke (OEG)	E	2046-02-06T19:18:55.226		49.09	-2.75x	133744.89	16.91		
A (OER)	E	2046-02-06T19:21:51.936		49.69	-2.19x	136774.40	17.37		
F ring	E	2046-02-06T19:25:21.100		50.40	-1.52x	140461.00	17.87		