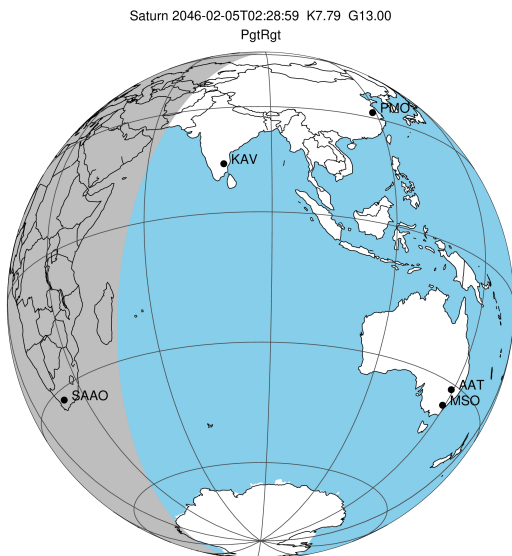


target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-02-05T02:28:59.570
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4115016039029356416
 2Mass ID (if available) : 17173480-2137161

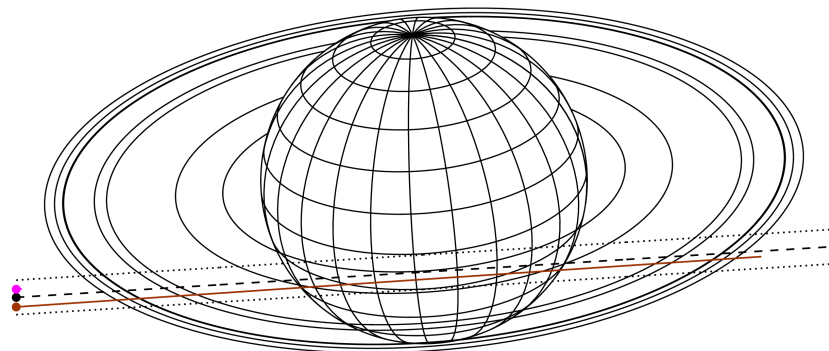
Saturn 2046-02-05T02:28:59 K7.79 G13.00 PgtRgt

ICRS Star Coord at Epoch: 17h 17m 34.79622s -21:37:16.33676s

RUWE (>1.4 is poor) : 1.10
 K magnitude : 7.791
 G magnitude : 12.996
 RP magnitude : 11.607
 BP magnitude : 15.372
 DUPflag : 0
 Distance (au) : 10.548
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.40
 Sun-Target sep (deg) : 55.66
 Sun-Moon sep (deg) : 46.28
 B (ring opening deg) : 26.62
 PA of pole (deg) : 4.55



Earth
 KAV
 SAAO

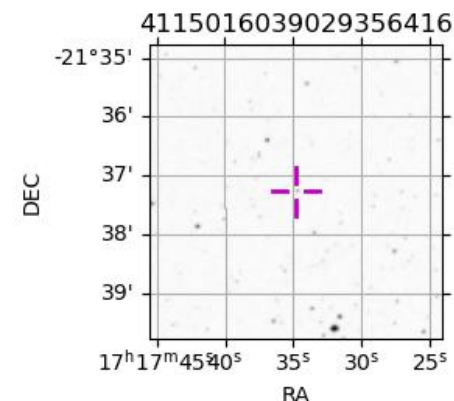


2046-02-05T02:28:59.5700 α: 17 17 34.7962 δ: -21 37 16.337 C/A 4.4111 PA 3.56 deg v_sky +26.40 km/s D 10.55 AU
 Credit: Styled after SORA/Lucky Star

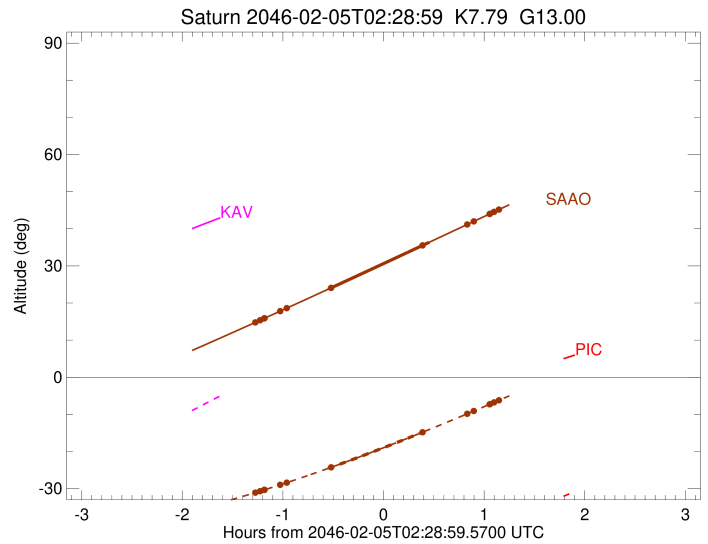
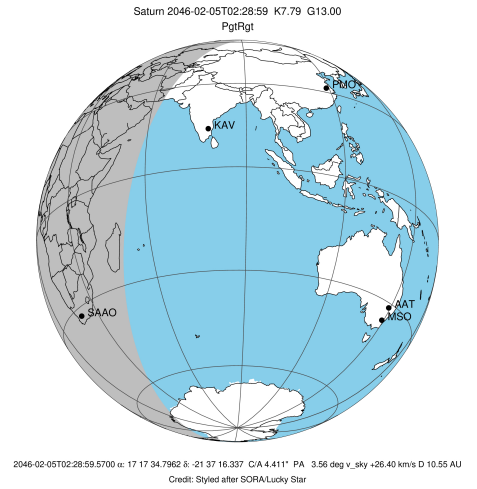
#	a(km)	ring
1	74490.6	C (IER)
2	91984.7	B (IER)
3	117571.2	B (OER)
4	122050.4	A (IER)
5	133423.3	Encke (IEG)
6	133744.9	Encke (OEG)
7	136774.4	A (OER)
8	140461.0	F ring

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					PnnRnn
SAAO	So. Afr. Astro	-32.4	20.8	+	+	+	FEB 05 01:12 - FEB 05 03:37	PieRie
MSO	Mt. Stromlo Ob	-35.3	149.0					PnnRnn



target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-02-05T02:26:04.050
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : SAAO
 Location : So. Afr. Astro. Obs. (Sutherland)
 Latitude (deg) : -32.37953
 E. Longitude (deg) : 20.81070
 Altitude (km) : 1.768
 Gaia source ID : 4115016039029356416
 2Mass ID (if available) : 17173480-2137161
 ICRS Star Coord at Epoch: 17h 17m 34.79622s -21:37:16.33676s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 7.791
 G magnitude : 12.996
 RP magnitude : 11.607
 BP magnitude : 15.372
 DUPflag : 0
 Distance (au) : 10.548
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.40
 Sun-Target sep (deg) : 55.66
 Sun-Moon sep (deg) : 47.07
 B (ring opening deg) : 26.62
 PA of pole (deg) : 4.55
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 4.760
 C/A sky separation (km) : 36414.4
 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



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2046-02-05T01:12:29.023		14.77	-31.09	140461.00	-21.53		
A (OER)	I	2046-02-05T01:15:21.421		15.35	-30.69	136774.40	-21.23		
Encke (OEG)	I	2046-02-05T01:17:45.025		15.84	-30.36	133744.89	-20.96		
Encke (IEG)	I	2046-02-05T01:18:00.379		15.89	-30.32	133423.31	-20.93		
A (IER)	I	2046-02-05T01:27:19.870		17.80	-28.98	122050.38	-19.67		
B (OER)	I	2046-02-05T01:31:11.197		18.59	-28.41	117571.17	-19.04		
B (IER)	I	2046-02-05T01:57:43.932	b	24.08	-24.27	91984.69	-12.26		
Saturn	I	2046-02-05T01:55:57.013		23.71	-24.56	59852.59		-32.40	-37.77
Saturn	E	2046-02-05T02:56:13.752		36.36	-14.08	59826.70		-33.54	-38.97
B (IER)	E	2046-02-05T02:52:13.599	b	35.51	-14.82	91984.69	12.21		
B (OER)	E	2046-02-05T03:18:55.594		41.16	-9.84	117571.17	18.90		
A (IER)	E	2046-02-05T03:22:48.695		41.99	-9.10	122050.38	19.52		
Encke (IEG)	E	2046-02-05T03:32:12.957		43.98	-7.29	133423.31	20.74		
Encke (OEG)	E	2046-02-05T03:32:28.452		44.04	-7.24	133744.89	20.77		
A (OER)	E	2046-02-05T03:34:53.395		44.55	-6.77	136774.40	21.03		
F ring	E	2046-02-05T03:37:47.460		45.16	-6.21	140461.00	21.32		