

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-02-25T23:55:07.180
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4069717603035913344
 2Mass ID (if available) : 18093835-2221270

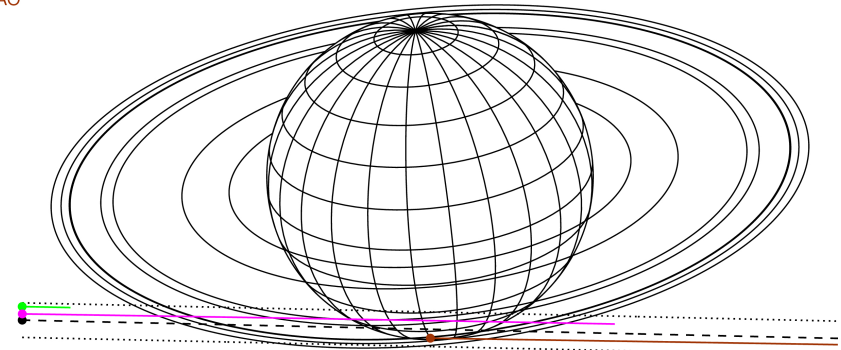
Saturn 2047-02-25T23:55:07 K8.66 G14.04 PgtRgt

ICRS Star Coord at Epoch: 18h 09m 38.35037s -22:21:27.14472s

RUWE (>1.4 is poor) : 0.97
 K magnitude : 8.661
 G magnitude : 14.039
 RP magnitude : 12.731
 BP magnitude : 16.027
 DUPflag : 0
 Distance (au) : 10.432
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.46
 Sun-Target sep (deg) : 64.41
 Sun-Moon sep (deg) : 78.13
 B (ring opening deg) : 26.27
 PA of pole (deg) : 5.70



Earth
 PMO
 KAV
 SAAO

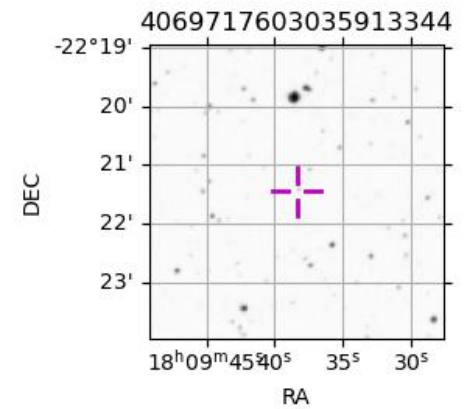


2047-02-25T23:55:07.1800 xi: 18 09 38.3504 delta: -22 21 27.145 C/A 7.454 PA 358.72 deg v_sky +22.46 km/s D 10.43 AU
 Credit: Styled after SORA/Lucky Star

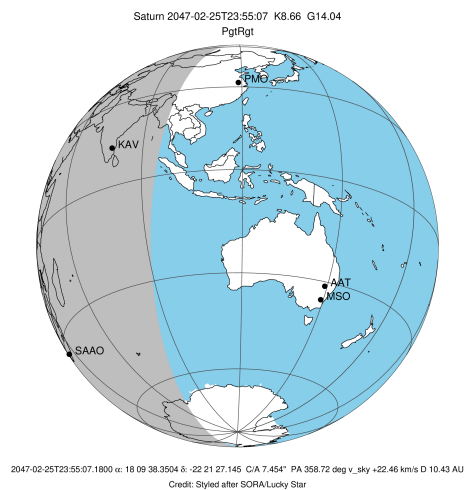
#	a(km)	ring
1	74490.6	C (IER)
2	91984.7	B (IER)
3	117571.2	B (OER)
4	122050.4	A (IER)
5	133423.3	Encke (IEG)
6	133744.9	Encke (OEG)
7	136774.4	A (OER)
8	140461.0	F ring

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

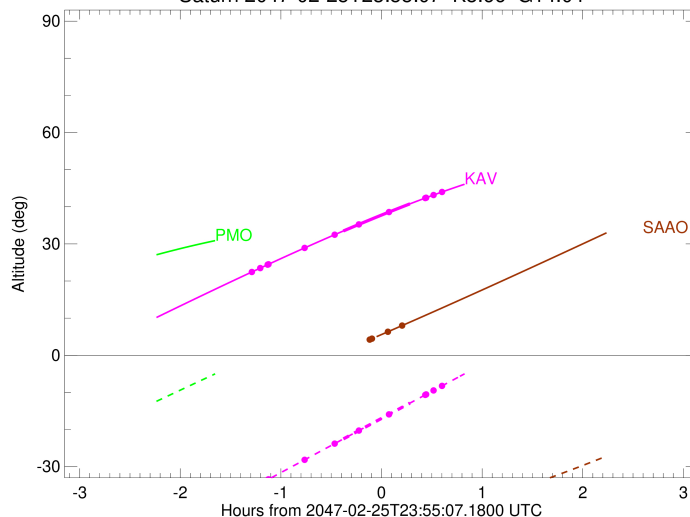
Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (20	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl	32.0	248.4					PnnRnn
MCD	McDonald Obs.	30.7	256.0					PnnRnn
TEN	Teide Obs./Ten	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observ	12.6	78.8	+ + + + +	+ +	+ + + +	FEB 25 22:37 - FEB 26 00:31	PieRie
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 25 23:58 - FEB 26 00:07	PnnRne
MSO	Mt. Stromlo Ob	-35.3	149.0					PnnRnn



target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-02-25T23:52:22.250
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : KAV
 Location : Kavalur Observatory
 Latitude (deg) : 12.57556
 E. Longitude (deg) : 78.83167
 Altitude (km) : 0.722
 Gaia source ID : 4069717603035913344
 2Mass ID (if available) : 18093835-2221270
 ICRS Star Coord at Epoch: 18h 09m 38.35037s -22:21:27.14472s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 8.661
 G magnitude : 14.039
 RP magnitude : 12.731
 BP magnitude : 16.027
 DUPflag : 0
 Distance (au) : 10.432
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.46
 Sun-Target sep (deg) : 64.41
 Sun-Moon sep (deg) : 78.78
 B (ring opening deg) : 26.27
 PA of pole (deg) : 5.70
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 7.032
 C/A sky separation (km) : 53206.6
 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

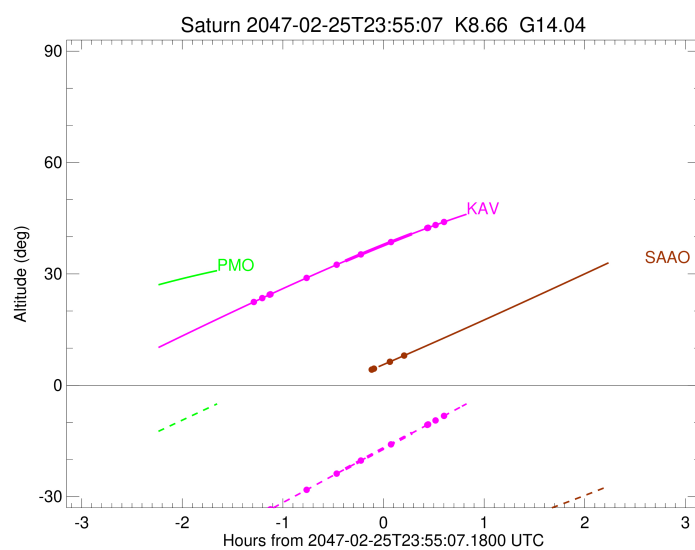
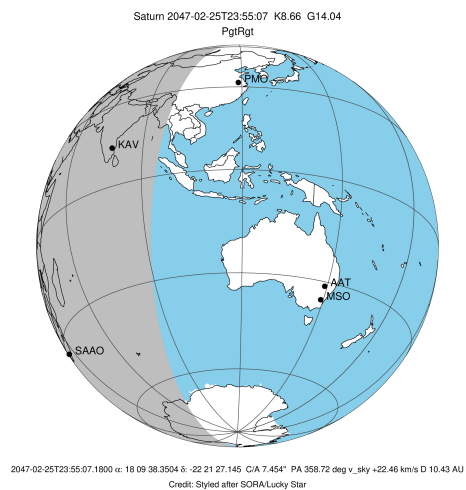


Saturn 2047-02-25T23:55:07 K8.66 G14.04



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-02-25T22:37:40.078		22.41	-35.87	140461.00	-12.66		
A (OER)	I	2047-02-25T22:42:40.941		23.46	-34.65	136774.40	-11.84		
Encke (OEG)	I	2047-02-25T22:47:05.324		24.38	-33.57	133744.89	-11.07		
Encke (IEG)	I	2047-02-25T22:47:34.492		24.48	-33.46	133423.31	-10.98		
A (IER)	I	2047-02-25T23:09:03.607		28.88	-28.22	122050.38	-6.47		
B (OER)	I	2047-02-25T23:26:18.202		32.30	-24.02	117571.19	-2.11		
Saturn	I	2047-02-25T23:32:20.539		33.48	-22.55	59485.95		-48.61	-54.03
Saturn	E	2047-02-26T00:12:04.634		40.79	-12.89	59279.58		-57.74	-62.48
B (OER)	E	2047-02-25T23:42:14.396	b	35.37	-20.14	117571.17	2.11		
A (IER)	E	2047-02-25T23:59:34.140	b	38.57	-15.93	122050.38	6.42		
Encke (IEG)	E	2047-02-26T00:21:13.082		42.35	-10.67	133423.31	10.89		
Encke (OEG)	E	2047-02-26T00:21:42.487		42.43	-10.55	133744.89	10.98		
A (OER)	E	2047-02-26T00:26:09.040		43.17	-9.48	136774.40	11.74		
F ring	E	2047-02-26T00:31:12.428		43.99	-8.25	140461.00	12.55		

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-02-25T23:51:23.290
 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 : 4069717603035913344
 2Mass ID (if available) : 18093835-2221270
 ICRS Star Coord at Epoch: 18h 09m 38.35037s -22:21:27.14472s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 8.661
 G magnitude : 14.039
 RP magnitude : 12.731
 BP magnitude : 16.027
 DUPflag : 0
 Distance (au) : 10.432
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.46
 Sun-Target sep (deg) : 64.41
 Sun-Moon sep (deg) : 78.38
 B (ring opening deg) : 26.27
 PA of pole (deg) : 5.70
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 7.890
 C/A sky separation (km) : 59699.4
 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	2047-02-25T22:56:02.581		-5.59x	-48.92	140461.00	-8.19		
A (OER)	I	2047-02-25T23:04:26.127		-4.05x	-48.80	136774.40	-6.42		
Encke (OEG)	I	2047-02-25T23:13:50.095		-2.31x	-48.55	133744.89	-4.30		
Encke (IEG)	I	2047-02-25T23:15:07.693		-2.07x	-48.51	133423.31	-3.99		

No planet occultations

Encke (IEG)	E	2047-02-25T23:48:13.528		4.24x	-46.64	133423.31	3.97		
Encke (OEG)	E	2047-02-25T23:49:31.537		4.49x	-46.54	133744.89	4.27		
A (OER)	E	2047-02-25T23:58:59.214		6.34	-45.75	136774.40	6.38		
F ring	E	2047-02-26T00:07:26.912		8.01	-44.96	140461.00	8.12		