

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-08-08T21:13:30.030
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4068930352767080960
 2Mass ID (if available) : 17502083-2226209

ICRS Star Coord at Epoch: 17h 50m 20.81756s -22:26:21.05803s

RUWE (>1.4 is poor) : 1.00
 K magnitude : 9.623
 G magnitude : 14.923
 RP magnitude : 13.524
 BP magnitude : 16.664
 DUPflag : 0
 Distance (au) : 9.337
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -10.44
 Sun-Target sep (deg) : 132.16
 Sun-Moon sep (deg) : 83.91
 B (ring opening deg) : 26.78
 PA of pole (deg) : 5.32

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

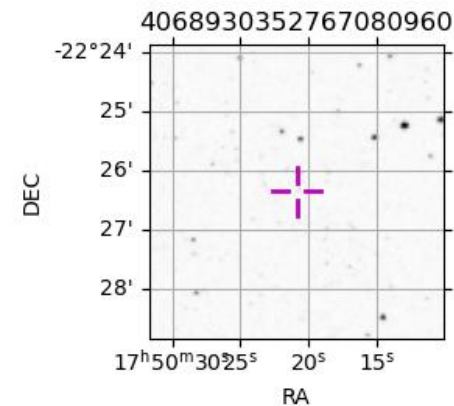
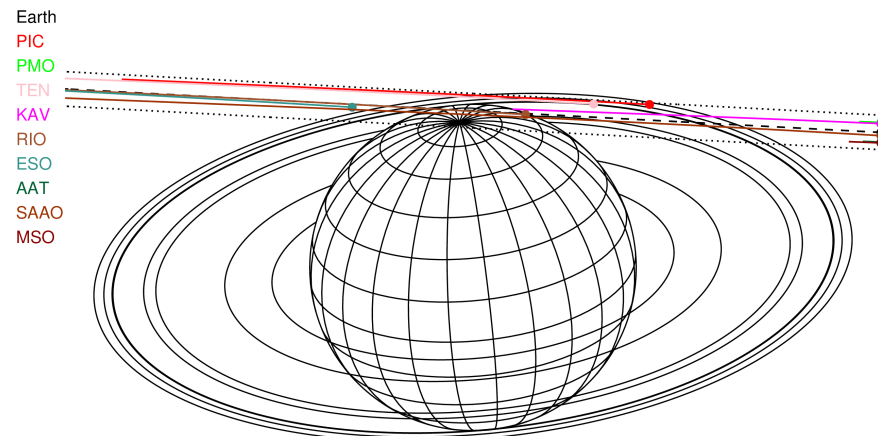
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+		+	AUG 08 19:54 - AUG 08 21:15	PnnRie
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			+	AUG 08 21:05 - AUG 08 21:27	PnnRne
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observ	12.6	78.8	+		+	AUG 08 18:49 - AUG 08 19:17	PnnRin
RIO	Rio de Janeiro	-22.9	316.8		+	+	AUG 08 20:56 - AUG 08 22:12	PieRne
ESO	European South	-29.3	289.3					PnnRnn
AAT	Siding Spring	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro	-32.4	20.8	+	+	+	AUG 08 18:38 - AUG 08 22:14	PieRie
MSO	Mt. Stromlo Ob	-35.3	149.0					PnnRnn



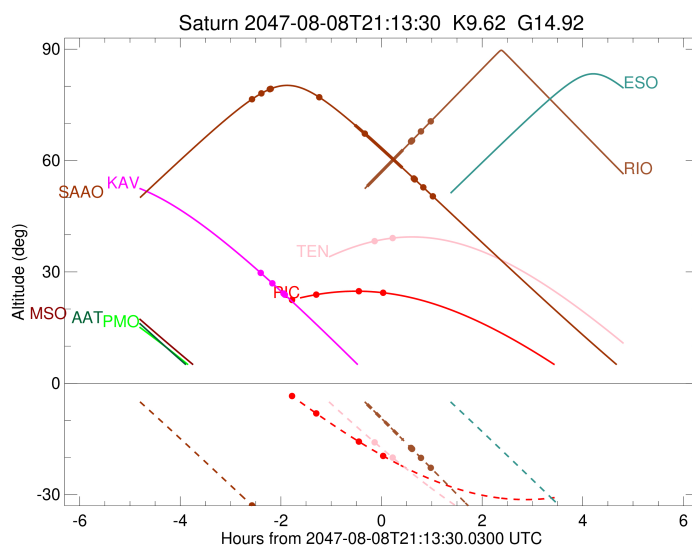
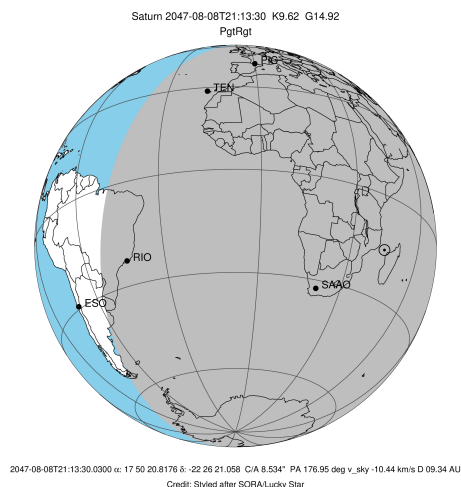
2047-08-08T21:13:30.030 at: 17 50 20.8176 s: -22 26 21.058 C/A 8.534° PA 176.95 deg v_sky -10.44 km/s D 09.34 AU
 Credit: Styled after SORA/Lucky Star

Saturn 2047-08-08T21:13:30 K9.62 G14.92 PgtRgt



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target                : Saturn
target radius (km)   : 60268.00
C/A epoch            : 2047-08-08T21:12:21.700
Event type           : PgtRgt
: Saturn occs: geocentric, 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       : 4068930352767080960
2Mass ID (if available) : 17502083-2226209
ICRS Star Coord at Epoch: 17h 50m 20.81756s -22:26:21.05803s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 9.623
G magnitude           : 14.923
RP magnitude          : 13.524
BP magnitude          : 16.664
DUPflag              : 0
Distance (au)         : 9.337
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -10.44
Sun-Target sep (deg) : 132.16
Sun-Moon sep (deg)   : 84.28
B (ring opening deg) : 26.78
PA of pole (deg)     : 5.32
Pole direction: RA (deg): 40.60000
Dec (deg): 83.50000
C/A sky separation (") : 9.380
C/A sky separation (km) : 63524.2
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
  
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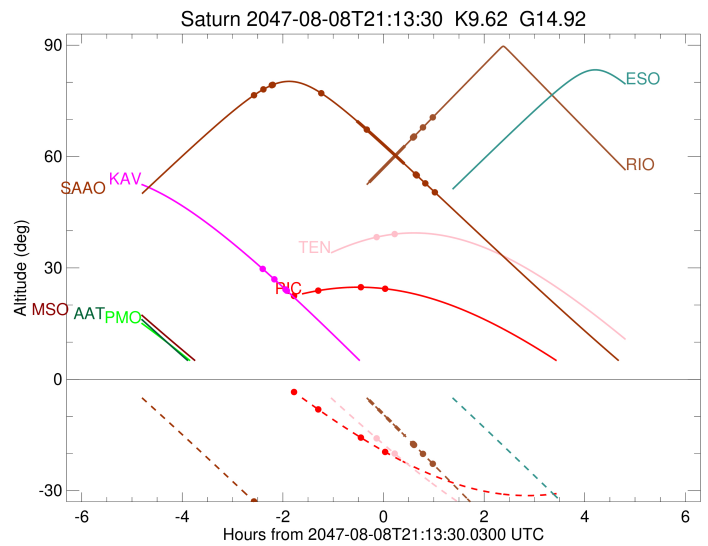
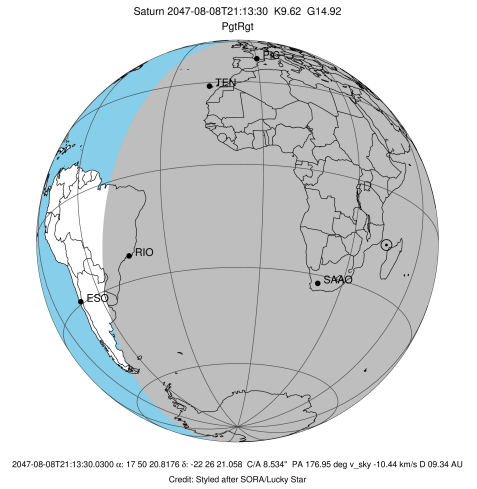


b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-08-08T19:26:11.783		22.40	-3.33x	140461.00	-2.89		
A (OER)	I	2047-08-08T19:54:32.090		23.83	-7.93	136774.40	-1.43		
No planet occultations									
A (OER)	E	2047-08-08T20:47:14.630		24.80	-15.82	136774.40	1.42		
F ring	E	2047-08-08T21:15:43.087		24.38	-19.61	140461.00	2.87		

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target                : Saturn
target radius (km)   : 60268.00
C/A epoch            : 2047-08-08T21:14:25.270
Event type          : PgtRgt
: Saturn occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : TEN
Location            : Teide Obs./Tenerife
Latitude (deg)      : 28.30050
E. Longitude (deg)  : 343.48909
Altitude (km)       : 2.395
Gaia source ID      : 4068930352767080960
2Mass ID (if available) : 17502083-2226209
ICRS Star Coord at Epoch: 17h 50m 20.81756s -22:26:21.05803s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 9.623
G magnitude          : 14.923
RP magnitude         : 13.524
BP magnitude         : 16.664
DUPflag             : 0
Distance (au)       : 9.337
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -10.44
Sun-Target sep (deg) : 132.16
Sun-Moon sep (deg)  : 84.50
B (ring opening deg) : 26.78
PA of pole (deg)    : 5.32
Pole direction: RA (deg): 40.60000
Dec (deg): 83.50000
C/A sky separation ("): 9.265
C/A sky separation (km): 62741.1
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
    
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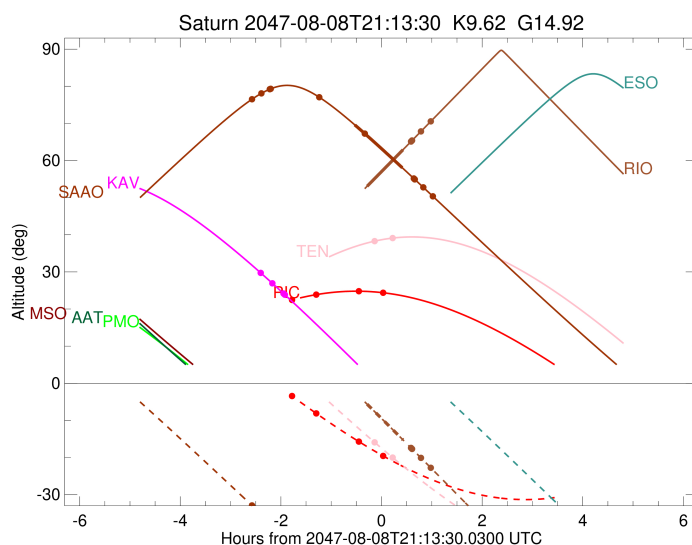
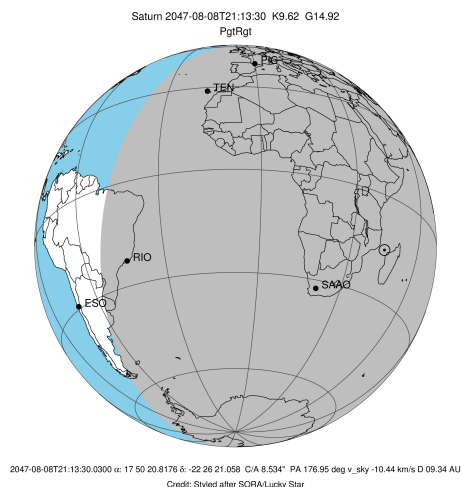
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-08-08T19:18:24.178		27.56	5.99x	140461.00	-3.41		
A (OER)	I	2047-08-08T19:39:40.479		30.43	1.49x	136774.40	-2.35		

No planet occultations

A (OER)	E	2047-08-08T21:05:39.802		38.30	-15.98	136774.40	2.34		
F ring	E	2047-08-08T21:26:59.531		39.12	-20.05	140461.00	3.40		

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-08-08T21:05:03.480
 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 : 4068930352767080960
 2Mass ID (if available) : 17502083-2226209
 ICRS Star Coord at Epoch: 17h 50m 20.81756s -22:26:21.05803s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 9.623
 G magnitude : 14.923
 RP magnitude : 13.524
 BP magnitude : 16.664
 DUPflag : 0
 Distance (au) : 9.337
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -10.44
 Sun-Target sep (deg) : 132.16
 Sun-Moon sep (deg) : 83.79
 B (ring opening deg) : 26.78
 PA of pole (deg) : 5.32
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 8.707
 C/A sky separation (km) : 58962.7
 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	2047-08-08T18:49:06.183		29.80	-61.52	140461.00	-4.75		
A (OER)	I	2047-08-08T19:02:55.348		27.01	-61.35	136774.40	-4.13		
Encke (OEG)	I	2047-08-08T19:16:08.946		24.28	-60.82	133744.89	-3.50		
Encke (IEG)	I	2047-08-08T19:17:41.938		23.96	-60.73	133423.31	-3.42		
Saturn	I	2047-08-08T20:57:13.360		2.32x	-47.63	59168.36		60.79	65.21
Saturn	E	2047-08-08T21:11:57.945		-0.99x	-44.86	59122.15		63.06	67.22
Encke (IEG)	E	2047-08-08T21:24:37.148		-3.86x	-42.39	133423.31	3.34		
Encke (OEG)	E	2047-08-08T21:26:12.407		-4.22x	-42.08	133744.89	3.41		
A (OER)	E	2047-08-08T21:39:47.299		-7.30x	-39.34	136774.40	4.02		
F ring	E	2047-08-08T21:54:02.284		-10.56x	-36.39	140461.00	4.60		

