

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2034-10-11T21:30:13.400
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 663352102527165312
 2Mass ID (if available) : 08242232+1928579

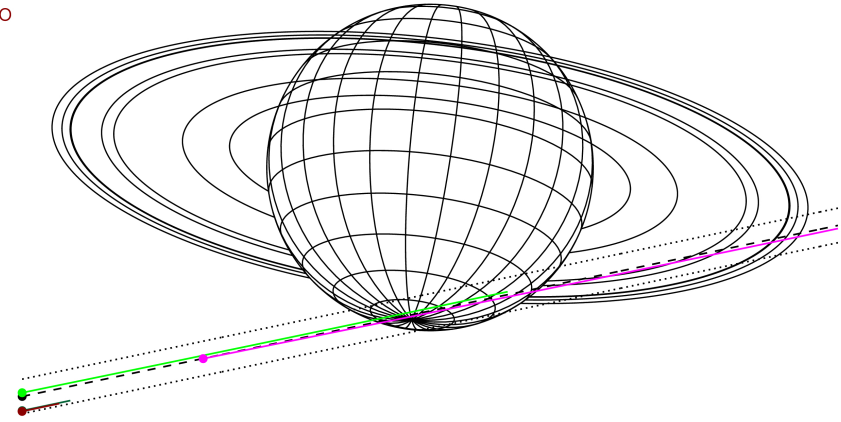
Saturn 2034-10-11T21:30:13 K9.45 G11.98 PgtRgt

ICRS Star Coord at Epoch: 08h 24m 22.31730s +19:28:57.96707s

RUWE (>1.4 is poor) : 1.07
 K magnitude : 9.450
 G magnitude : 11.982
 RP magnitude : 11.224
 BP magnitude : 12.613
 DUPflag : 0
 Distance (au) : 9.278
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.60
 Sun-Target sep (deg) : 74.42
 Sun-Moon sep (deg) : 69.75
 B (ring opening deg) : -19.86
 PA of pole (deg) : -6.89



Earth
 PMO
 KAV
 AAT
 MSO

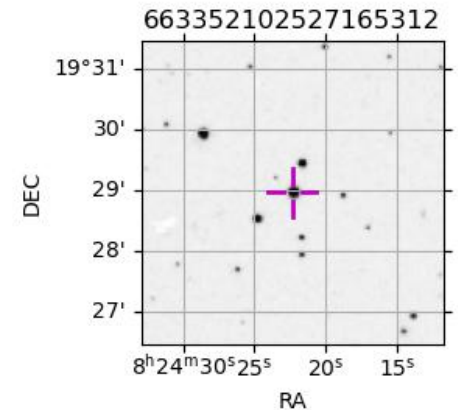


2034-10-11T21:30:13.4000 α: 08 24 22.3173 δ: +19 28 57.967 C/A 7.705° PA 11.84 deg v_sky +17.60 km/s D 09.28 AU
 Credit: Styled after SORA/Lucky Star

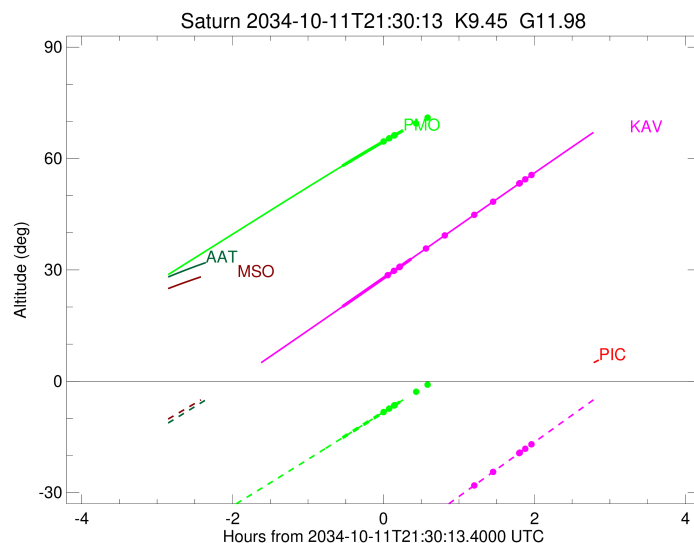
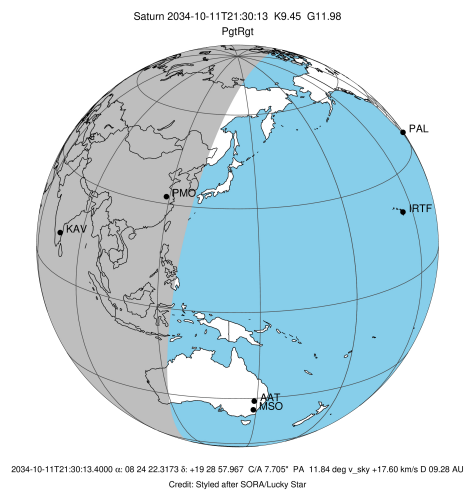
| # | a(km) | ring |
|---|----------|-------------|
| 1 | 74490.6 | C (IER) |
| 2 | 91984.7 | B (IER) |
| 3 | 117571.2 | B (OER) |
| 4 | 122050.4 | A (IER) |
| 5 | 133423.3 | Encke (IEG) |
| 6 | 133744.9 | Encke (OEG) |
| 7 | 136774.4 | A (OER) |
| 8 | 140461.0 | F ring |

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 | OEncode |
|------|----------------|-------|-------|---------|--------|---------|-----------------------------|---------|
| 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 | | + | | OCT 11 20:57 - OCT 11 20:57 | PinRnn |
| 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 | + | + | + | OCT 11 20:57 - OCT 11 23:27 | 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 | | | | | PnnRnn |
| MSO | Mt. Stromlo Ob | -35.3 | 149.0 | | | | | PnnRnn |



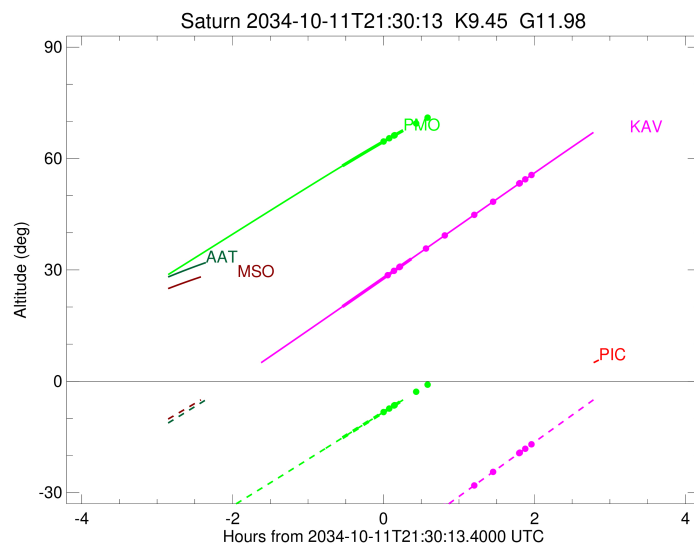
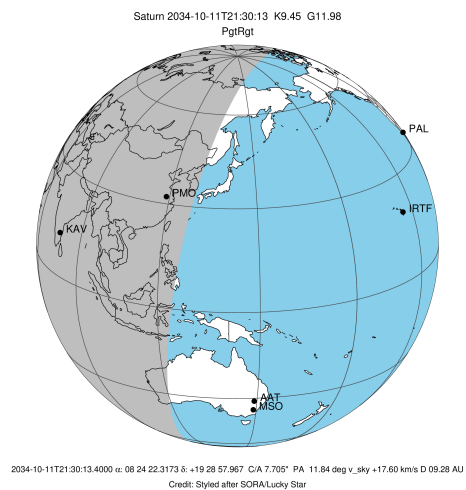
target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2034-10-11T21:27:49.980
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 663352102527165312
 2Mass ID (if available) : 08242232+1928579
 ICRS Star Coord at Epoch: 08h 24m 22.31730s +19:28:57.96707s
 RUWE (>1.4 is poor) : 1.07
 K magnitude : 9.450
 G magnitude : 11.982
 RP magnitude : 11.224
 BP magnitude : 12.613
 DUPflag : 0
 Distance (au) : 9.278
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.60
 Sun-Target sep (deg) : 74.42
 Sun-Moon sep (deg) : 70.65
 B (ring opening deg) : -19.86
 PA of pole (deg) : -6.89
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 7.550
 C/A sky separation (km) : 50805.5
 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



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 | 2034-10-11T21:30:21.364 | b | 64.60 | -8.29 | 140461.00 | -14.03 | | |
| A (OER) | I | 2034-10-11T21:34:50.423 | b | 65.47 | -7.34 | 136774.40 | -13.37 | | |
| Encke (OEG) | I | 2034-10-11T21:38:42.351 | b | 66.21 | -6.52 | 133744.89 | -12.75 | | |
| Encke (IEG) | I | 2034-10-11T21:39:07.639 | b | 66.29 | -6.43 | 133423.31 | -12.68 | | |
| A (IER) | I | 2034-10-11T21:56:10.285 | b | 69.44 | -2.83x | 122050.38 | -9.41 | | |
| B (OER) | I | 2034-10-11T22:05:03.334 | | 70.98 | -0.96x | 117571.16 | -7.36 | | |
| Saturn | I | 2034-10-11T20:57:36.851 | | 58.02 | -15.23 | 59648.26 | | -66.48 | -70.20 |
| Saturn | E | 2034-10-11T21:58:45.605 | | 69.90 | -2.29x | 60006.77 | | -36.34 | -41.89 |
| B (OER) | E | 2034-10-11T22:59:10.889 | | 77.29 | 10.28x | 117571.16 | 7.36 | | |
| A (IER) | E | 2034-10-11T23:08:03.847 | | 77.47 | 12.09x | 122050.38 | 9.41 | | |
| Encke (IEG) | E | 2034-10-11T23:25:05.670 | | 76.94 | 15.52x | 133423.31 | 12.70 | | |
| Encke (OEG) | E | 2034-10-11T23:25:30.920 | | 76.91 | 15.61x | 133744.89 | 12.77 | | |
| A (OER) | E | 2034-10-11T23:29:22.440 | | 76.63 | 16.38x | 136774.40 | 13.39 | | |
| F ring | E | 2034-10-11T23:33:50.896 | | 76.25 | 17.27x | 140461.00 | 14.06 | | |

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2034-10-11T21:24:35.040
 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 : 663352102527165312
 2Mass ID (if available) : 08242232+1928579
 ICRS Star Coord at Epoch: 08h 24m 22.31730s +19:28:57.96707s
 RUWE (>1.4 is poor) : 1.07
 K magnitude : 9.450
 G magnitude : 11.982
 RP magnitude : 11.224
 BP magnitude : 12.613
 DUPflag : 0
 Distance (au) : 9.278
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.60
 Sun-Target sep (deg) : 74.42
 Sun-Moon sep (deg) : 70.42
 B (ring opening deg) : -19.86
 PA of pole (deg) : -6.89
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 7.813
 C/A sky separation (km) : 52575.7
 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 | 2034-10-11T21:33:39.798 | b | 28.59 | -44.84 | 140461.00 | -12.92 | | |
| A (OER) | I | 2034-10-11T21:38:34.179 | b | 29.75 | -43.64 | 136774.40 | -12.12 | | |
| Encke (OEG) | I | 2034-10-11T21:42:52.012 | b | 30.76 | -42.59 | 133744.89 | -11.37 | | |
| Encke (IEG) | I | 2034-10-11T21:43:20.400 | b | 30.87 | -42.48 | 133423.31 | -11.29 | | |
| A (IER) | I | 2034-10-11T22:03:53.573 | | 35.73 | -37.46 | 122050.38 | -6.97 | | |
| B (OER) | I | 2034-10-11T22:18:16.511 | | 39.13 | -33.95 | 117571.17 | -3.35 | | |
| Saturn | I | 2034-10-11T20:57:37.874 | | 20.11 | -53.62 | 59635.02 | | -67.94 | -71.46 |
| Saturn | E | 2034-10-11T21:52:17.362 | | 32.99 | -40.29 | 59964.00 | | -39.77 | -45.38 |
| B (OER) | E | 2034-10-11T22:43:07.344 | | 45.00 | -27.89 | 117571.17 | 3.34 | | |
| A (IER) | E | 2034-10-11T22:57:32.558 | | 48.41 | -24.37 | 122050.38 | 6.94 | | |
| Encke (IEG) | E | 2034-10-11T23:18:11.483 | | 53.28 | -19.34 | 133423.31 | 11.22 | | |
| Encke (OEG) | E | 2034-10-11T23:18:40.029 | | 53.39 | -19.22 | 133744.89 | 11.31 | | |
| A (OER) | E | 2034-10-11T23:22:59.331 | | 54.41 | -18.17 | 136774.40 | 12.05 | | |
| F ring | E | 2034-10-11T23:27:55.446 | | 55.57 | -16.97 | 140461.00 | 12.84 | | |