

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:10:08.970
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513

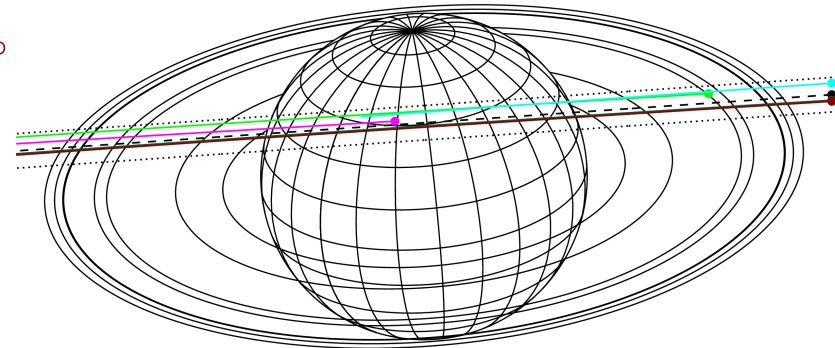
Saturn 2046-05-13T15:10:08 K8.59 G13.40 PgtRgt

ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s

RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 116.27
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 # a(km) ring



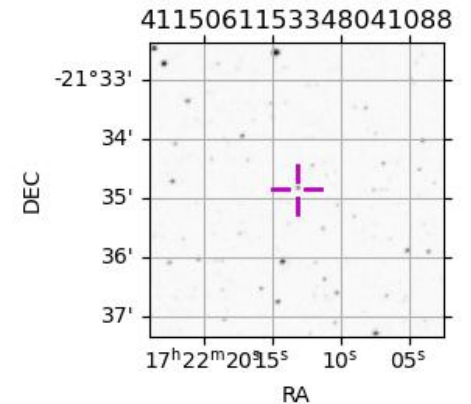
Earth
 PMO
 IRTF
 KAV
 AAT
 MSO



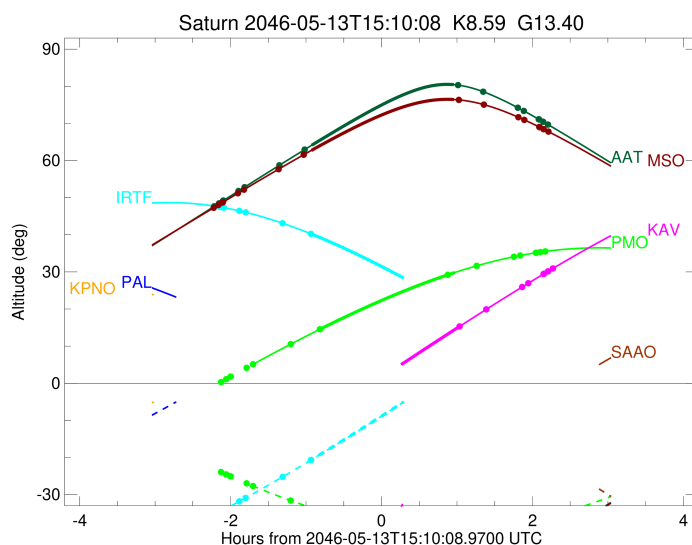
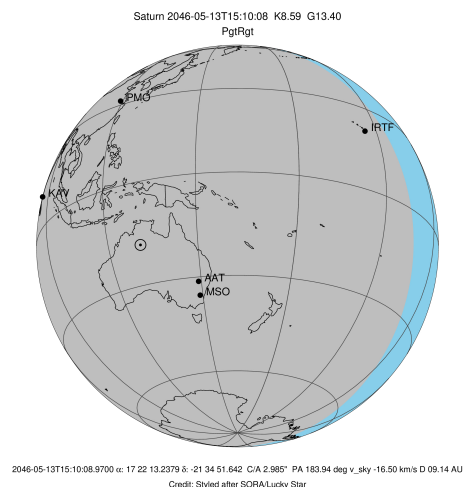
2046-05-13T15:10:08.9700 at: 17 22 13.2379 S: -21 34 51.642 C/A 2.985° PA 183.94 deg v_sky -16.50 km/s D 09.14 AU
 Credit: Styled after SORA/Lucky Star

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 | + | + | + | MAY 13 13:27 - MAY 13 17:20 | PieRie |
| 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 | + | + | | MAY 13 12:57 - MAY 13 14:11 | PinRin |
| KAV | Kavalur Observ | 12.6 | 78.8 | | + | + | MAY 13 16:12 - MAY 13 17:26 | PneRne |
| RIO | Rio de Janeiro | -22.9 | 316.8 | | | | | PnnRnn |
| ESO | European South | -29.3 | 289.3 | | | | | PnnRnn |
| AAT | Siding Spring | -31.3 | 149.1 | + | + | + | MAY 13 12:57 - MAY 13 17:22 | PieRie |
| SAAO | So. Afr. Astro | -32.4 | 20.8 | | | | | PnnRnn |
| MSO | Mt. Stromlo Ob | -35.3 | 149.0 | + | + | + | MAY 13 12:56 - MAY 13 17:22 | PieRie |

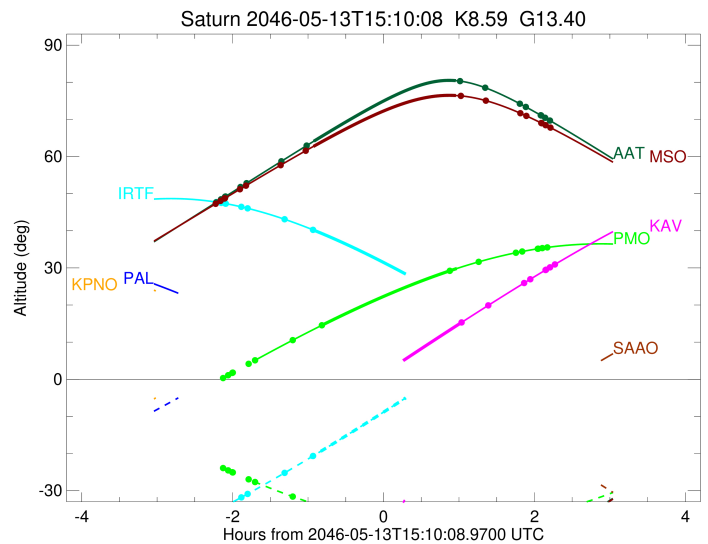
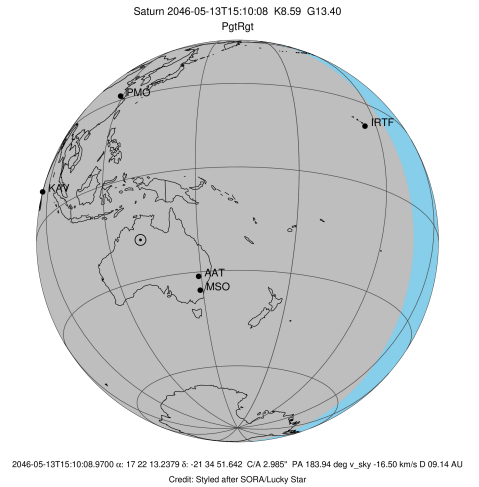


target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:13:57.140
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513
 ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 116.87
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 3.643
 C/A sky separation (km) : 24138.8
 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_itr93_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 | 2046-05-13T13:02:34.375 | | 0.31x | -23.92 | 140461.00 | -15.30 | | |
| A (OER) | I | 2046-05-13T13:06:35.868 | | 1.08x | -24.54 | 136774.40 | -15.23 | | |
| Encke (OEG) | I | 2046-05-13T13:09:55.145 | | 1.71x | -25.04 | 133744.89 | -15.17 | | |
| Encke (IEG) | I | 2046-05-13T13:10:16.345 | | 1.78x | -25.09 | 133423.31 | -15.17 | | |
| A (IER) | I | 2046-05-13T13:22:52.786 | | 4.15x | -26.95 | 122050.38 | -14.89 | | |
| B (OER) | I | 2046-05-13T13:27:54.936 | | 5.09 | -27.66 | 117571.16 | -14.76 | | |
| B (IER) | I | 2046-05-13T13:57:57.013 | | 10.53 | -31.60 | 91984.69 | -13.48 | | |
| C (IER) | I | 2046-05-13T14:21:07.601 | b | 14.54 | -34.19 | 74490.58 | -11.47 | | |
| Saturn | I | 2046-05-13T14:19:10.398 | | 14.21 | -33.99 | 60098.25 | | 20.09 | 24.14 |
| Saturn | E | 2046-05-13T16:08:27.558 | | 29.84 | -39.54 | 60066.10 | | 22.01 | 26.33 |
| C (IER) | E | 2046-05-13T16:02:49.050 | b | 29.21 | -39.57 | 74490.58 | 11.55 | | |
| B (IER) | E | 2046-05-13T16:25:47.256 | | 31.62 | -39.22 | 91984.69 | 13.62 | | |
| B (OER) | E | 2046-05-13T16:55:26.262 | | 34.08 | -37.90 | 117571.16 | 14.98 | | |
| A (IER) | E | 2046-05-13T17:00:23.812 | | 34.42 | -37.59 | 122050.38 | 15.13 | | |
| Encke (IEG) | E | 2046-05-13T17:12:47.851 | | 35.15 | -36.70 | 133423.31 | 15.43 | | |
| Encke (OEG) | E | 2046-05-13T17:13:08.685 | | 35.16 | -36.68 | 133744.89 | 15.44 | | |
| A (OER) | E | 2046-05-13T17:16:24.478 | | 35.33 | -36.42 | 136774.40 | 15.51 | | |
| F ring | E | 2046-05-13T17:20:21.636 | | 35.52 | -36.09 | 140461.00 | 15.58 | | |

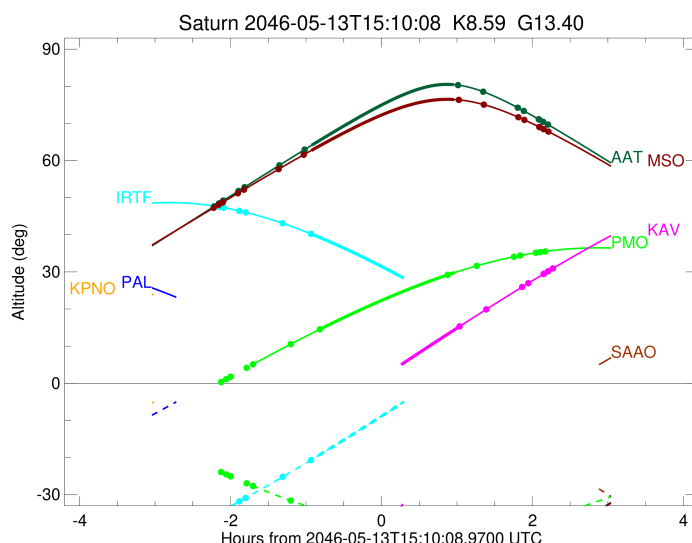
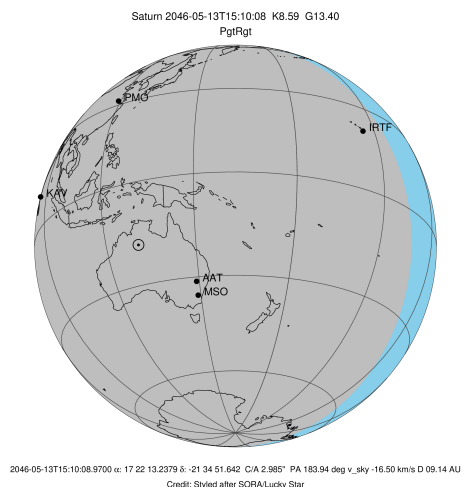
target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:06:29.930
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : IRTF
 Location : Mauna Kea/IRTF
 Latitude (deg) : 19.82622
 E. Longitude (deg) : 204.52800
 Altitude (km) : 4.168
 Gaia source ID : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513
 ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 116.46
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 3.574
 C/A sky separation (km) : 23683.3
 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_itr93_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 | 2046-05-13T12:57:11.533 | | 47.73 | -35.41 | 140461.00 | -15.63 | | |
| A (OER) | I | 2046-05-13T13:01:08.010 | | 47.52 | -34.71 | 136774.40 | -15.55 | | |
| Encke (OEG) | I | 2046-05-13T13:04:23.190 | | 47.33 | -34.13 | 133744.89 | -15.49 | | |
| Encke (IEG) | I | 2046-05-13T13:04:43.956 | | 47.31 | -34.07 | 133423.31 | -15.48 | | |
| A (IER) | I | 2046-05-13T13:17:05.162 | | 46.45 | -31.82 | 122050.38 | -15.19 | | |
| B (OER) | I | 2046-05-13T13:22:01.334 | | 46.06 | -30.90 | 117571.16 | -15.05 | | |
| B (IER) | I | 2046-05-13T13:51:27.689 | | 43.11 | -25.23 | 91984.69 | -13.76 | | |
| C (IER) | I | 2046-05-13T14:14:05.803 | b | 40.25 | -20.67 | 74490.58 | -11.79 | | |
| Saturn | I | 2046-05-13T14:11:53.202 | | 40.55 | -21.12 | 60095.51 | | 20.25 | 24.33 |
| Saturn | E | 2046-05-13T16:01:17.058 | | 22.03 | 2.37x | 60083.78 | | 20.97 | 25.15 |
| C (IER) | E | 2046-05-13T15:57:38.926 | b | 22.74 | 1.56x | 74490.58 | 11.72 | | |
| B (IER) | E | 2046-05-13T16:20:27.432 | | 18.25 | 6.66x | 91984.69 | 13.64 | | |
| B (OER) | E | 2046-05-13T16:50:12.493 | | 12.18 | 13.38x | 117571.16 | 14.87 | | |
| A (IER) | E | 2046-05-13T16:55:12.366 | | 11.14 | 14.52x | 122050.38 | 15.00 | | |
| Encke (IEG) | E | 2046-05-13T17:07:43.526 | | 8.52 | 17.37x | 133423.31 | 15.27 | | |
| Encke (OEG) | E | 2046-05-13T17:08:04.584 | | 8.44 | 17.45x | 133744.89 | 15.27 | | |
| A (OER) | E | 2046-05-13T17:11:22.553 | | 7.75 | 18.21x | 136774.40 | 15.33 | | |
| F ring | E | 2046-05-13T17:15:22.498 | | 6.90 | 19.12x | 140461.00 | 15.40 | | |

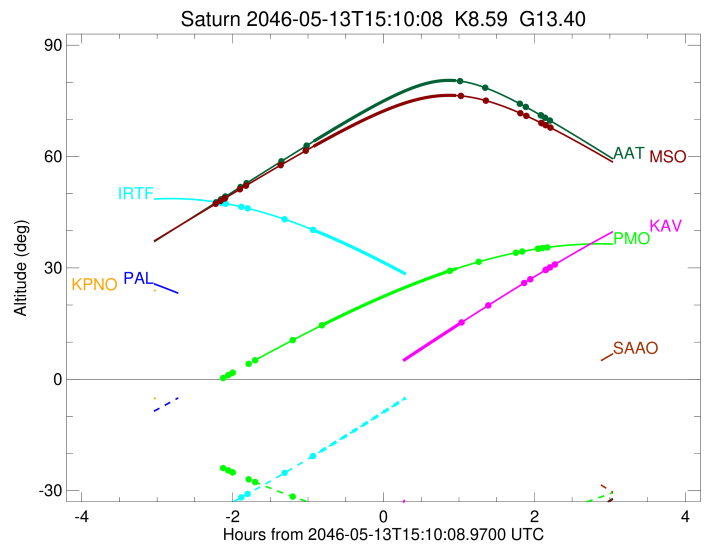
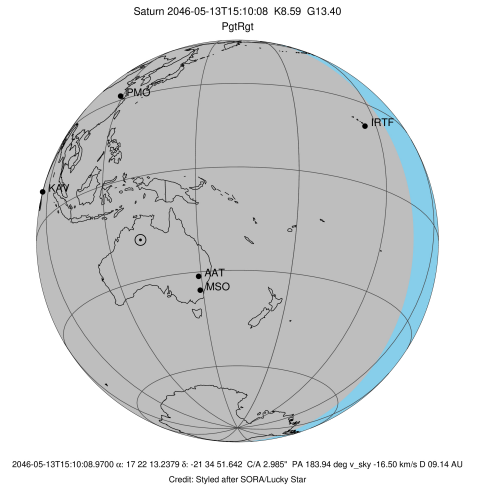
target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:16:14.850
 Event type : PgtRgt
 : Saturn occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : KAV
 Location : Kavalur Observatory
 Latitude (deg) : 12.57556
 E. Longitude (deg) : 78.83167
 Altitude (km) : 0.722
 Gaia source ID : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513
 ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 116.73
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 3.168
 C/A sky separation (km) : 20992.0
 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

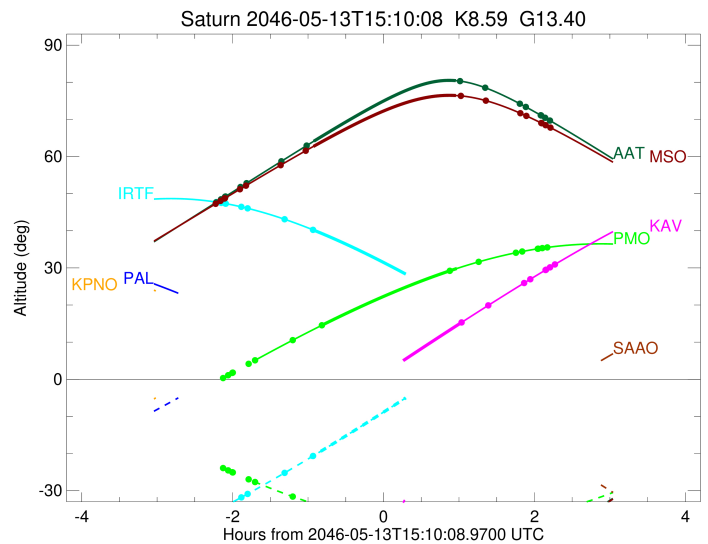
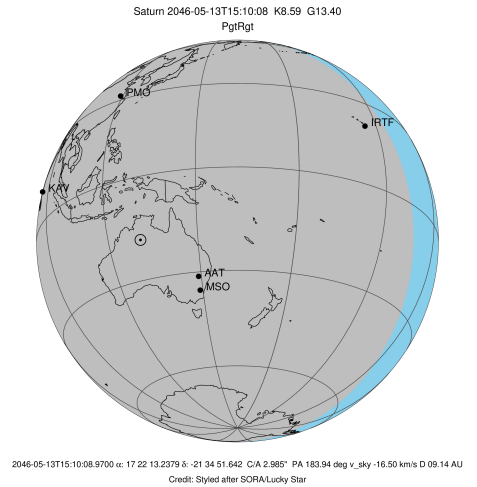
| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|-------------|-----|-------------------------|----|---------|---------|-----------|--------|---------|--------------|
| F ring | I | 2046-05-13T13:00:07.474 | | -28.45x | -0.49x | 140461.00 | -15.36 | | |
| A (OER) | I | 2046-05-13T13:04:07.800 | | -27.51x | -1.42x | 136774.40 | -15.32 | | |
| Encke (OEG) | I | 2046-05-13T13:07:25.857 | | -26.74x | -2.18x | 133744.89 | -15.28 | | |
| Encke (IEG) | I | 2046-05-13T13:07:46.912 | | -26.66x | -2.26x | 133423.31 | -15.27 | | |
| A (IER) | I | 2046-05-13T13:20:16.126 | | -23.76x | -5.12 | 122050.38 | -15.08 | | |
| B (OER) | I | 2046-05-13T13:25:14.076 | | -22.61x | -6.26 | 117571.16 | -14.99 | | |
| B (IER) | I | 2046-05-13T13:54:26.556 | | -15.84x | -12.89 | 91984.69 | -14.10 | | |
| C (IER) | I | 2046-05-13T14:16:02.709 | | -10.86x | -17.72 | 74490.58 | -12.75 | | |
| Saturn | I | 2046-05-13T14:19:18.859 | | -10.11x | -18.45 | 60143.65 | | 17.08 | 20.65 |
| Saturn | E | 2046-05-13T16:12:44.160 | | 15.42 | -42.06 | 60110.10 | | 19.34 | 23.28 |
| C (IER) | E | 2046-05-13T16:12:10.250 | b | 15.30 | -41.95 | 74490.58 | 12.92 | | |
| B (IER) | E | 2046-05-13T16:33:25.307 | | 19.90 | -45.82 | 91984.69 | 14.37 | | |
| B (OER) | E | 2046-05-13T17:01:59.117 | | 25.94 | -50.51 | 117571.16 | 15.37 | | |
| A (IER) | E | 2046-05-13T17:06:49.387 | | 26.94 | -51.24 | 122050.38 | 15.49 | | |
| Encke (IEG) | E | 2046-05-13T17:18:57.927 | | 29.43 | -52.95 | 133423.31 | 15.72 | | |
| Encke (OEG) | E | 2046-05-13T17:19:18.373 | | 29.50 | -53.00 | 133744.89 | 15.73 | | |
| A (OER) | E | 2046-05-13T17:22:30.631 | | 30.14 | -53.42 | 136774.40 | 15.78 | | |
| F ring | E | 2046-05-13T17:26:23.744 | | 30.93 | -53.92 | 140461.00 | 15.84 | | |

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:11:14.020
 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 : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513
 ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 117.20
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 2.808
 C/A sky separation (km) : 18602.8
 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_itr93_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 | 2046-05-13T12:57:07.004 | | 47.65 | -71.00 | 140461.00 | -15.99 | | |
| A (OER) | I | 2046-05-13T13:00:57.897 | | 48.47 | -71.64 | 136774.40 | -15.95 | | |
| Encke (OEG) | I | 2046-05-13T13:04:08.060 | | 49.15 | -72.16 | 133744.89 | -15.91 | | |
| Encke (IEG) | I | 2046-05-13T13:04:28.270 | | 49.22 | -72.21 | 133423.31 | -15.91 | | |
| A (IER) | I | 2046-05-13T13:16:26.399 | | 51.79 | -74.01 | 122050.38 | -15.76 | | |
| B (OER) | I | 2046-05-13T13:21:11.364 | | 52.81 | -74.64 | 117571.16 | -15.68 | | |
| B (IER) | I | 2046-05-13T13:48:55.810 | | 58.71 | -77.16 | 91984.69 | -14.97 | | |
| C (IER) | I | 2046-05-13T14:09:01.616 | | 62.94 | -77.25 | 74490.58 | -13.93 | | |
| Saturn | I | 2046-05-13T14:14:40.813 | | 64.12 | -76.99 | 60168.46 | | 15.23 | 18.47 |
| Saturn | E | 2046-05-13T16:07:39.322 | | 80.44 | -58.59 | 60147.53 | | 16.81 | 20.33 |
| C (IER) | E | 2046-05-13T16:10:57.843 | | 80.32 | -57.91 | 74490.58 | 13.98 | | |
| B (IER) | E | 2046-05-13T16:30:58.456 | | 78.54 | -53.74 | 91984.69 | 15.05 | | |
| B (OER) | E | 2046-05-13T16:58:33.262 | | 74.23 | -47.91 | 117571.16 | 15.78 | | |
| A (IER) | E | 2046-05-13T17:03:16.301 | | 73.37 | -46.90 | 122050.38 | 15.87 | | |
| Encke (IEG) | E | 2046-05-13T17:15:09.228 | | 71.12 | -44.37 | 133423.31 | 16.03 | | |
| Encke (OEG) | E | 2046-05-13T17:15:29.284 | | 71.06 | -44.30 | 133744.89 | 16.04 | | |
| A (OER) | E | 2046-05-13T17:18:37.983 | | 70.45 | -43.63 | 136774.40 | 16.07 | | |
| F ring | E | 2046-05-13T17:22:27.052 | | 69.70 | -42.81 | 140461.00 | 16.11 | | |

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2046-05-13T15:11:09.670
 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 : 4115061153348041088
 2Mass ID (if available) : 17221325-2134513
 ICRS Star Coord at Epoch: 17h 22m 13.23785s -21:34:51.64217s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.587
 G magnitude : 13.404
 RP magnitude : 12.155
 BP magnitude : 15.114
 DUPflag : 0
 Distance (au) : 9.135
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -16.50
 Sun-Target sep (deg) : 151.14
 Sun-Moon sep (deg) : 117.18
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.66
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 2.742
 C/A sky separation (km) : 18169.4
 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 | 2046-05-13T12:56:40.365 | | 47.26 | -68.20 | 140461.00 | -16.01 | | |
| A (OER) | I | 2046-05-13T13:00:30.897 | | 48.04 | -68.74 | 136774.40 | -15.97 | | |
| Encke (OEG) | I | 2046-05-13T13:03:40.741 | | 48.69 | -69.17 | 133744.89 | -15.94 | | |
| Encke (IEG) | I | 2046-05-13T13:04:00.915 | | 48.76 | -69.22 | 133423.31 | -15.94 | | |
| A (IER) | I | 2046-05-13T13:15:57.616 | | 51.18 | -70.69 | 122050.38 | -15.79 | | |
| B (OER) | I | 2046-05-13T13:20:41.901 | | 52.14 | -71.20 | 117571.16 | -15.72 | | |
| B (IER) | I | 2046-05-13T13:48:20.360 | | 57.67 | -73.17 | 91984.69 | -15.05 | | |
| C (IER) | I | 2046-05-13T14:08:17.772 | | 61.56 | -73.29 | 74490.58 | -14.06 | | |
| Saturn | I | 2046-05-13T14:14:24.567 | | 62.72 | -73.09 | 60173.20 | | 14.86 | 18.03 |
| Saturn | E | 2046-05-13T16:07:47.045 | | 76.44 | -57.29 | 60152.89 | | 16.42 | 19.87 |
| C (IER) | E | 2046-05-13T16:11:37.412 | | 76.34 | -56.56 | 74490.58 | 14.11 | | |
| B (IER) | E | 2046-05-13T16:31:29.745 | | 75.06 | -52.71 | 91984.69 | 15.12 | | |
| B (OER) | E | 2046-05-13T16:58:58.784 | | 71.66 | -47.26 | 117571.16 | 15.82 | | |
| A (IER) | E | 2046-05-13T17:03:41.187 | | 70.95 | -46.31 | 122050.38 | 15.90 | | |
| Encke (IEG) | E | 2046-05-13T17:15:32.805 | | 69.04 | -43.92 | 133423.31 | 16.06 | | |
| Encke (OEG) | E | 2046-05-13T17:15:52.829 | | 68.98 | -43.85 | 133744.89 | 16.06 | | |
| A (OER) | E | 2046-05-13T17:19:01.242 | | 68.45 | -43.21 | 136774.40 | 16.10 | | |
| F ring | E | 2046-05-13T17:22:49.993 | | 67.80 | -42.44 | 140461.00 | 16.14 | | |