

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:43:07.960
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057

Uranus 2035-02-01T12:43:07 K13.54 G16.24 PgtRgt

ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s

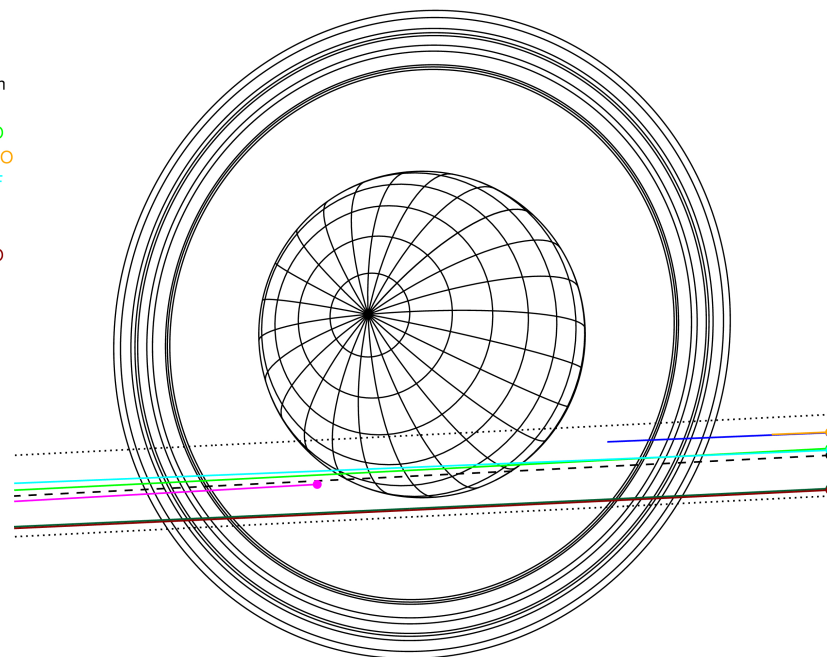
RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 138.92
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55

| # | a(km) | ring |
|----|---------|---------|
| 1 | 41837.2 | 6 |
| 2 | 42235.0 | 5 |
| 3 | 42571.2 | 4 |
| 4 | 44718.5 | alpha |
| 5 | 45661.1 | beta |
| 6 | 47176.1 | eta |
| 7 | 47626.3 | gamma |
| 8 | 48300.3 | delta |
| 9 | 50026.7 | lambda |
| 10 | 51149.4 | epsilon |



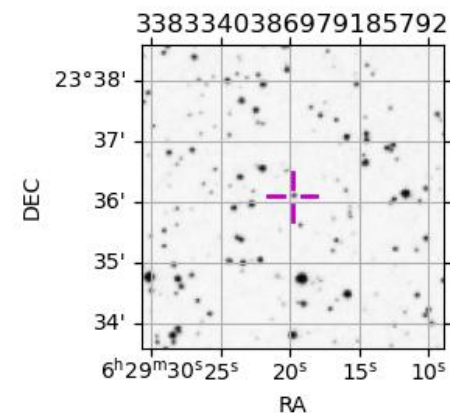
2035-02-01T12:43:07.9600 α: 06 29 19.8062 δ: +23 36 05.727 C/A 1.678° PA 2.86 deg v_sky -17.92 km/s D 18.07 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PAL
 PMO
 KPNO
 IRTF
 KAV
 AAT
 MSO

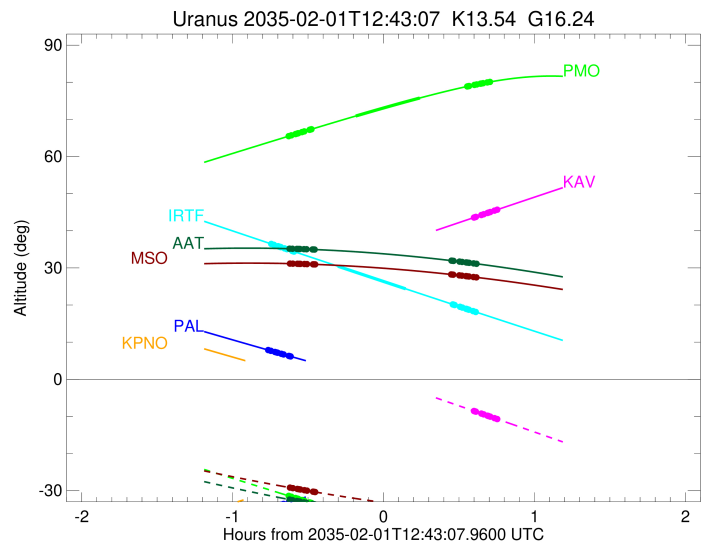
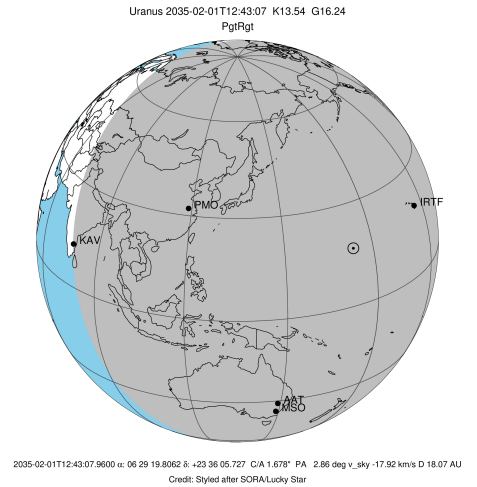


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

| 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 (200") | 33.4 | 243.1 | +++++ | | | FEB 01 11:57 - FEB 01 12:06 | PnnRin |
| PMO | Purple Mtn Obs. Nanki | 32.1 | 118.8 | +++++ | + + | +++++ | FEB 01 12:05 - FEB 01 13:25 | PieRie |
| KPNO | Kitt Peak Natl Obs | 32.0 | 248.4 | | | | | PnnRnn |
| MCD | McDonald Obs. 2.7m | 30.7 | 256.0 | | | | | PnnRnn |
| TEN | Teide Obs./Tenerife | 28.3 | 343.5 | | | | | PnnRnn |
| IRTF | Mauna Kea/IRTF | 19.8 | 204.5 | +++++ | + + | +++++ | FEB 01 11:58 - FEB 01 13:19 | PieRie |
| KAV | Kavalur Observatory | 12.6 | 78.8 | | | +++++ | FEB 01 13:19 - FEB 01 13:28 | PnnRne |
| RIO | Rio de Janeiro | -22.9 | 316.8 | | | | | PnnRnn |
| ESO | European Southern Obs | -29.3 | 289.3 | | | | | PnnRnn |
| AAT | Siding Spring (AAT) | -31.3 | 149.1 | +++++ | | +++++ | FEB 01 12:05 - FEB 01 13:19 | PnnRie |
| SAAO | So. Afr. Astro. Obs. | -32.4 | 20.8 | | | | | PnnRnn |
| MSO | Mt. Stromlo Observato | -35.3 | 149.0 | +++++ | | +++++ | FEB 01 12:06 - FEB 01 13:19 | PnnRie |

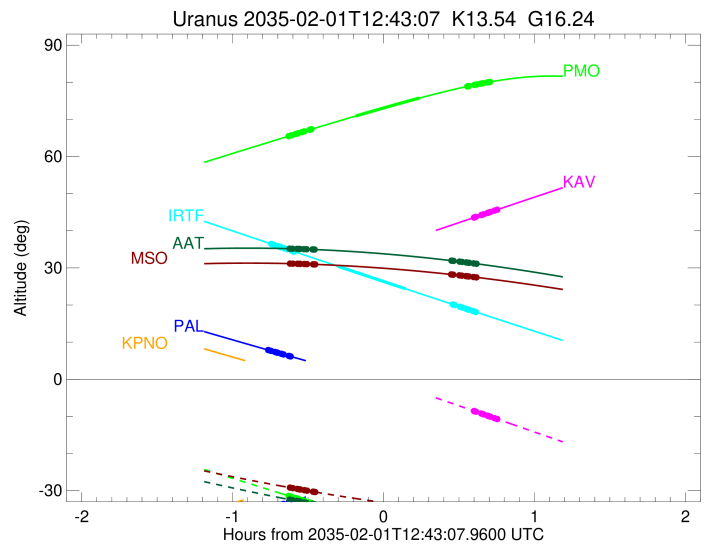
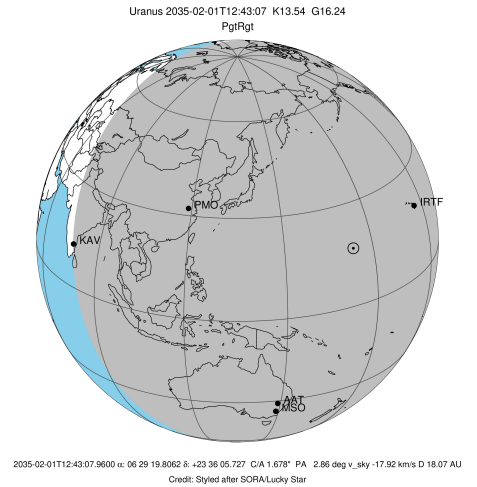


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:38:42.470
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057
 ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 139.49
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.374
 C/A sky separation (km) : 18009.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|--------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T11:57:19.630 | | 7.86 | -34.86 | 51129.60 | -17.64 | | |
| lambda | I | 2035-02-01T11:58:22.079 | | 7.66 | -34.64 | 50026.71 | -17.63 | | |
| delta | I | 2035-02-01T12:00:00.275 | | 7.35 | -34.29 | 48300.35 | -17.53 | | |
| gamma | I | 2035-02-01T12:00:38.607 | | 7.22 | -34.16 | 47629.23 | -17.49 | | |
| eta | I | 2035-02-01T12:01:04.541 | | 7.14 | -34.07 | 47176.12 | -17.46 | | |
| beta | I | 2035-02-01T12:02:32.811 | | 6.86 | -33.76 | 45641.06 | -17.35 | | |
| alpha | I | 2035-02-01T12:03:24.478 | | 6.69 | -33.58 | 44742.09 | -17.28 | | |
| 4 | I | 2035-02-01T12:05:33.420 | | 6.28 | -33.13 | 42528.24 | -17.08 | | |
| 5 | I | 2035-02-01T12:05:45.037 | | 6.24 | -33.09 | 42315.02 | -17.07 | | |
| 6 | I | 2035-02-01T12:06:15.521 | | 6.15 | -32.99 | 41794.75 | -17.02 | | |
| Uranus | I | 2035-02-01T12:22:19.717 | | 3.10x | -29.62 | 25122.58 | | -18.95 | -19.78 |
| Uranus | E | 2035-02-01T12:55:35.814 | | -3.03x | -22.68 | 25484.05 | | 7.65 | 8.01 |
| 6 | E | 2035-02-01T13:12:51.392 | | -6.10x | -19.09 | 41863.83 | 16.90 | | |
| 5 | E | 2035-02-01T13:13:10.786 | | -6.16x | -19.03 | 42189.17 | 16.95 | | |
| 4 | E | 2035-02-01T13:13:34.903 | | -6.23x | -18.94 | 42609.62 | 16.98 | | |
| alpha | E | 2035-02-01T13:15:38.829 | | -6.59x | -18.52 | 44720.77 | 17.16 | | |
| beta | E | 2035-02-01T13:16:34.270 | | -6.75x | -18.32 | 45674.48 | 17.22 | | |
| eta | E | 2035-02-01T13:18:01.271 | | -7.00x | -18.03 | 47176.12 | 17.32 | | |
| gamma | E | 2035-02-01T13:18:27.296 | | -7.08x | -17.94 | 47627.27 | 17.35 | | |
| delta | E | 2035-02-01T13:19:06.048 | | -7.19x | -17.80 | 48300.35 | 17.39 | | |
| lambda | E | 2035-02-01T13:20:45.054 | | -7.47x | -17.46 | 50026.71 | 17.48 | | |
| epsilon | E | 2035-02-01T13:21:34.366 | | -7.61x | -17.29 | 50889.94 | 17.49 | | |

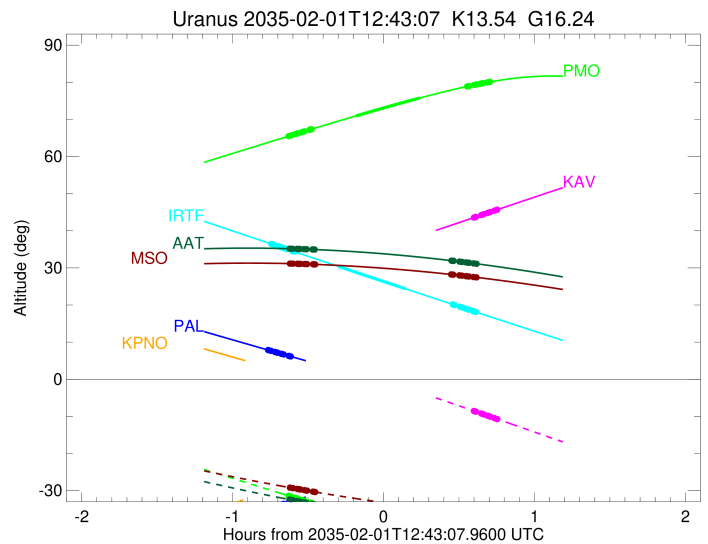
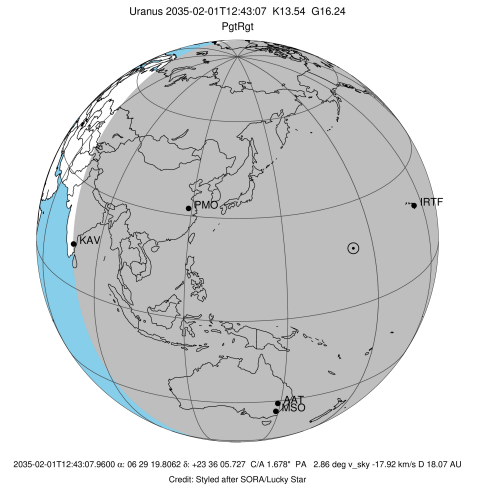
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:44:34.190
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057
 ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 139.32
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.614
 C/A sky separation (km) : 21153.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T12:05:29.713 | | 65.50 | -31.42 | 51106.11 | -17.50 | | |
| lambda | I | 2035-02-01T12:06:31.299 | | 65.71 | -31.64 | 50026.71 | -17.49 | | |
| delta | I | 2035-02-01T12:08:10.426 | | 66.05 | -31.99 | 48300.35 | -17.34 | | |
| gamma | I | 2035-02-01T12:08:49.172 | | 66.19 | -32.13 | 47629.51 | -17.28 | | |
| eta | I | 2035-02-01T12:09:15.437 | | 66.28 | -32.22 | 47176.12 | -17.24 | | |
| beta | I | 2035-02-01T12:10:44.925 | | 66.59 | -32.54 | 45641.07 | -17.09 | | |
| alpha | I | 2035-02-01T12:11:37.320 | | 66.77 | -32.72 | 44743.73 | -17.00 | | |
| 4 | I | 2035-02-01T12:13:48.781 | | 67.22 | -33.19 | 42529.43 | -16.73 | | |
| 5 | I | 2035-02-01T12:14:00.768 | | 67.26 | -33.23 | 42315.25 | -16.69 | | |
| 6 | I | 2035-02-01T12:14:31.947 | | 67.36 | -33.34 | 41794.88 | -16.62 | | |
| Uranus | I | 2035-02-01T12:32:05.536 | | 70.91 | -37.07 | 25200.91 | | -17.06 | -17.82 |
| Uranus | E | 2035-02-01T12:57:36.377 | | 75.78 | -42.46 | 25540.77 | | 3.76 | 3.94 |
| 6 | E | 2035-02-01T13:16:25.725 | | 78.88 | -46.42 | 41860.59 | 16.63 | | |
| 5 | E | 2035-02-01T13:16:45.992 | | 78.93 | -46.49 | 42195.50 | 16.70 | | |
| 4 | E | 2035-02-01T13:17:10.031 | | 78.99 | -46.58 | 42607.23 | 16.74 | | |
| alpha | E | 2035-02-01T13:19:15.644 | | 79.29 | -47.02 | 44723.71 | 17.01 | | |
| beta | E | 2035-02-01T13:20:11.275 | | 79.42 | -47.21 | 45673.15 | 17.11 | | |
| eta | E | 2035-02-01T13:21:38.782 | | 79.61 | -47.52 | 47176.12 | 17.26 | | |
| gamma | E | 2035-02-01T13:22:04.913 | | 79.67 | -47.61 | 47627.69 | 17.30 | | |
| delta | E | 2035-02-01T13:22:43.722 | | 79.76 | -47.74 | 48300.35 | 17.36 | | |
| lambda | E | 2035-02-01T13:24:22.738 | | 79.97 | -48.09 | 50026.71 | 17.51 | | |
| epsilon | E | 2035-02-01T13:25:10.659 | | 80.06 | -48.25 | 50867.14 | 17.52 | | |

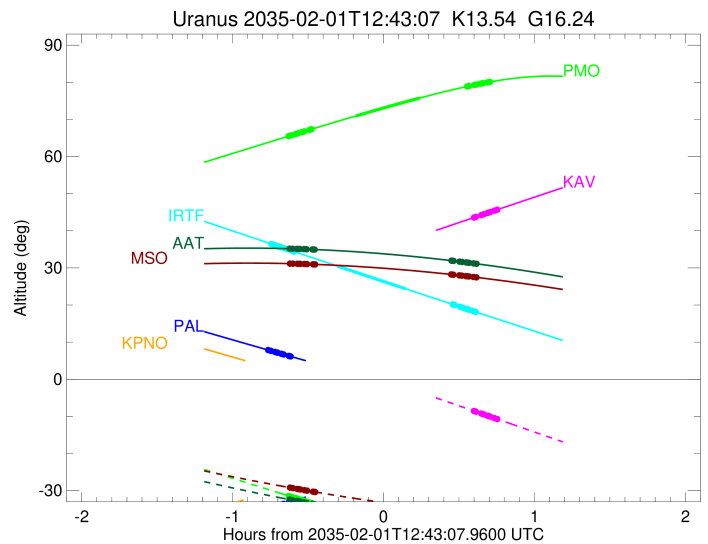
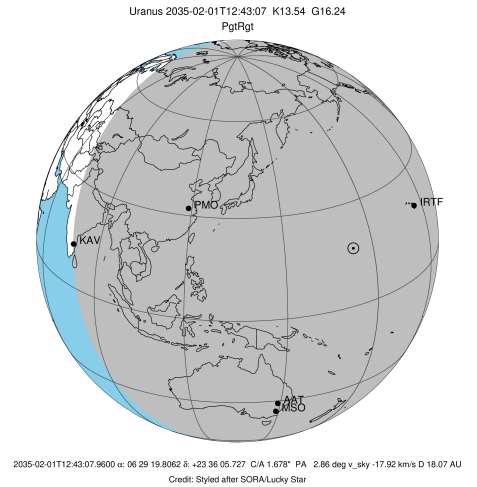
```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-02-01T12:38:12.280
Event type          : PgtRgt
: Uranus 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      : 3383340386979185792
2Mass ID (if available) : 06291981+2336057
ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 13.544
G magnitude          : 16.243
RP magnitude         : 15.382
BP magnitude         : 17.017
DUPflag             : 0
Distance (au)       : 18.070
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -17.92
Sun-Target sep (deg) : 144.73
Sun-Moon sep (deg)  : 139.79
B (ring opening deg) : 69.35
PA of pole (deg)    : 69.55
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.581
C/A sky separation (km) : 20721.9
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall11.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
```



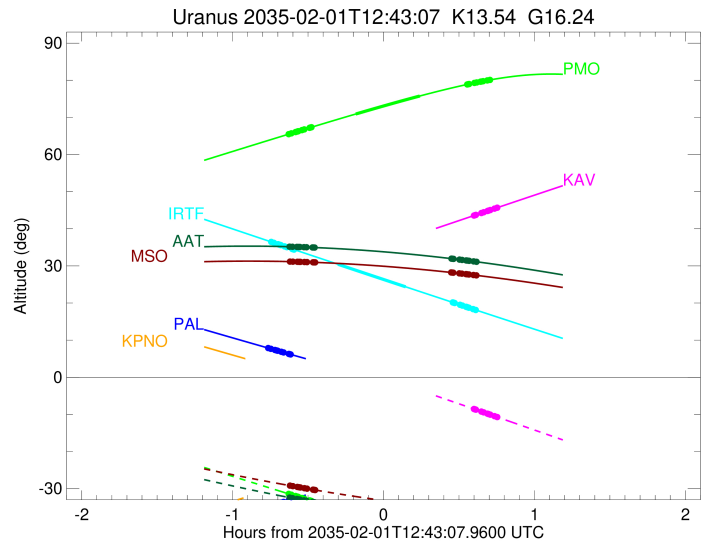
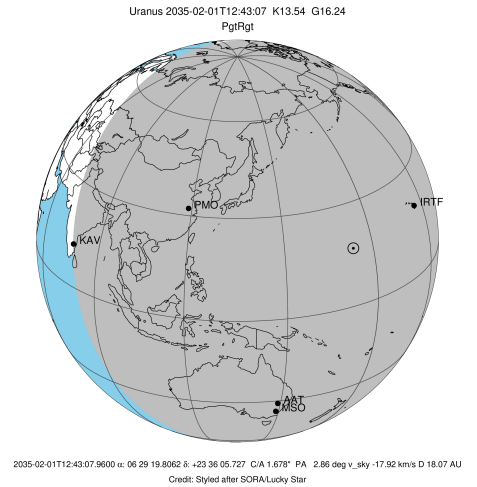
| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T11:58:33.889 | | 36.45 | -70.10 | 51105.72 | -17.47 | | |
| lambda | I | 2035-02-01T11:59:35.579 | | 36.21 | -69.86 | 50026.71 | -17.45 | | |
| delta | I | 2035-02-01T12:01:14.893 | | 35.84 | -69.47 | 48300.35 | -17.31 | | |
| gamma | I | 2035-02-01T12:01:53.707 | | 35.69 | -69.32 | 47629.51 | -17.25 | | |
| eta | I | 2035-02-01T12:02:20.015 | | 35.59 | -69.21 | 47176.12 | -17.21 | | |
| beta | I | 2035-02-01T12:03:49.637 | | 35.25 | -68.86 | 45641.07 | -17.07 | | |
| alpha | I | 2035-02-01T12:04:42.100 | | 35.05 | -68.66 | 44743.71 | -16.98 | | |
| 4 | I | 2035-02-01T12:06:53.678 | | 34.55 | -68.14 | 42529.40 | -16.72 | | |
| 5 | I | 2035-02-01T12:07:05.669 | | 34.51 | -68.09 | 42315.25 | -16.68 | | |
| 6 | I | 2035-02-01T12:07:36.862 | | 34.39 | -67.97 | 41794.88 | -16.61 | | |
| Uranus | I | 2035-02-01T12:25:00.462 | | 30.44 | -63.88 | 25191.94 | | -17.29 | -18.06 |
| Uranus | E | 2035-02-01T12:51:57.961 | | 24.36 | -57.54 | 25532.37 | | 4.55 | 4.76 |
| 6 | E | 2035-02-01T13:10:41.166 | | 20.16 | -53.13 | 41861.36 | 16.50 | | |
| 5 | E | 2035-02-01T13:11:01.463 | | 20.09 | -53.05 | 42193.99 | 16.56 | | |
| 4 | E | 2035-02-01T13:11:25.810 | | 20.00 | -52.96 | 42607.82 | 16.60 | | |
| alpha | E | 2035-02-01T13:13:32.497 | | 19.53 | -52.46 | 44723.01 | 16.85 | | |
| beta | E | 2035-02-01T13:14:28.732 | | 19.32 | -52.24 | 45673.48 | 16.94 | | |
| eta | E | 2035-02-01T13:15:57.131 | | 18.99 | -51.89 | 47176.12 | 17.08 | | |
| gamma | E | 2035-02-01T13:16:23.538 | | 18.89 | -51.79 | 47627.59 | 17.12 | | |
| delta | E | 2035-02-01T13:17:02.780 | | 18.74 | -51.64 | 48300.35 | 17.17 | | |
| lambda | E | 2035-02-01T13:18:42.928 | | 18.37 | -51.25 | 50026.71 | 17.30 | | |
| epsilon | E | 2035-02-01T13:19:31.744 | | 18.19 | -51.05 | 50872.80 | 17.32 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:47:44.170
 Event type : PgtRgt
 : Uranus 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 : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057
 ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 138.71
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.717
 C/A sky separation (km) : 22500.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T12:09:00.102 | | 27.47 | 7.76x | 51096.41 | -17.10 | | |
| lambda | I | 2035-02-01T12:10:02.585 | | 27.71 | 7.52x | 50026.71 | -17.07 | | |
| delta | I | 2035-02-01T12:11:44.164 | | 28.10 | 7.13x | 48300.35 | -16.91 | | |
| gamma | I | 2035-02-01T12:12:23.899 | | 28.25 | 6.98x | 47629.62 | -16.85 | | |
| eta | I | 2035-02-01T12:12:50.858 | | 28.36 | 6.88x | 47176.12 | -16.80 | | |
| beta | I | 2035-02-01T12:14:22.768 | | 28.71 | 6.52x | 45641.10 | -16.63 | | |
| alpha | I | 2035-02-01T12:15:16.609 | | 28.91 | 6.32x | 44744.39 | -16.52 | | |
| 4 | I | 2035-02-01T12:17:32.037 | | 29.43 | 5.80x | 42530.01 | -16.21 | | |
| 5 | I | 2035-02-01T12:17:44.470 | | 29.48 | 5.75x | 42315.21 | -16.17 | | |
| 6 | I | 2035-02-01T12:18:16.637 | | 29.60 | 5.63x | 41795.02 | -16.09 | | |
| Uranus | I | 2035-02-01T12:37:13.935 | | 33.96 | 1.24x | 25248.27 | | -15.84 | -16.55 |
| Uranus | E | 2035-02-01T12:58:50.306 | | 38.92 | -3.80x | 25555.64 | | 1.61 | 1.69 |
| 6 | E | 2035-02-01T13:19:06.379 | | 43.57 | -8.55 | 41858.99 | 16.17 | | |
| 5 | E | 2035-02-01T13:19:27.509 | | 43.65 | -8.63 | 42198.60 | 16.25 | | |
| 4 | E | 2035-02-01T13:19:51.999 | | 43.74 | -8.73 | 42606.00 | 16.29 | | |
| alpha | E | 2035-02-01T13:22:01.032 | | 44.23 | -9.24 | 44725.08 | 16.61 | | |
| beta | E | 2035-02-01T13:22:57.885 | | 44.45 | -9.46 | 45672.50 | 16.71 | | |
| eta | E | 2035-02-01T13:24:27.407 | | 44.79 | -9.81 | 47176.12 | 16.89 | | |
| gamma | E | 2035-02-01T13:24:54.113 | | 44.89 | -9.91 | 47627.89 | 16.94 | | |
| delta | E | 2035-02-01T13:25:33.726 | | 45.04 | -10.07 | 48300.35 | 17.01 | | |
| lambda | E | 2035-02-01T13:27:14.713 | | 45.43 | -10.47 | 50026.71 | 17.18 | | |
| epsilon | E | 2035-02-01T13:28:02.944 | | 45.61 | -10.65 | 50856.92 | 17.20 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:41:47.790
 Event type : PgtRgt
 : Uranus 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 : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057
 ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 139.33
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.072
 C/A sky separation (km) : 27148.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk

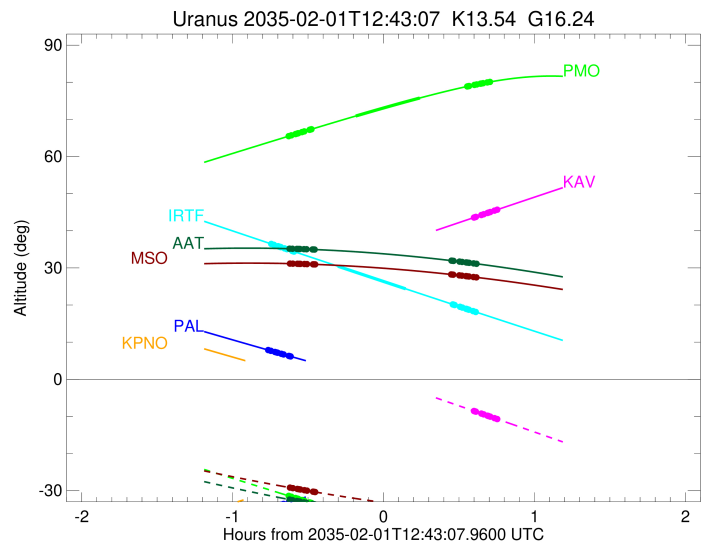
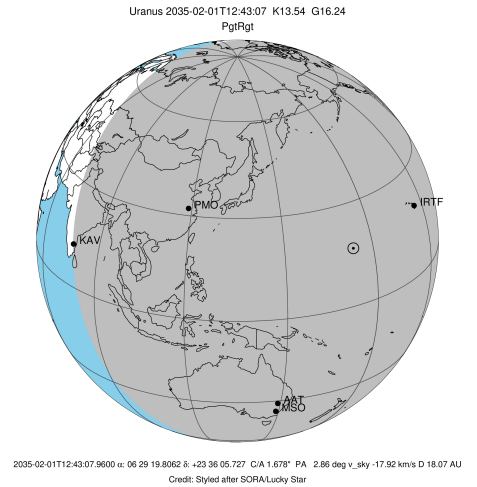


| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T12:05:54.385 | | 35.17 | -32.43 | 51050.32 | -16.27 | | |
| lambda | I | 2035-02-01T12:06:57.262 | | 35.15 | -32.57 | 50026.71 | -16.21 | | |
| delta | I | 2035-02-01T12:08:44.598 | | 35.12 | -32.80 | 48300.35 | -15.95 | | |
| gamma | I | 2035-02-01T12:09:26.752 | | 35.10 | -32.89 | 47630.11 | -15.85 | | |
| eta | I | 2035-02-01T12:09:55.473 | | 35.09 | -32.95 | 47176.12 | -15.77 | | |
| beta | I | 2035-02-01T12:11:33.708 | | 35.05 | -33.16 | 45641.47 | -15.49 | | |
| alpha | I | 2035-02-01T12:12:31.474 | | 35.03 | -33.29 | 44747.13 | -15.32 | | |
| 4 | I | 2035-02-01T12:14:58.473 | | 34.97 | -33.59 | 42533.19 | -14.82 | | |
| 5 | I | 2035-02-01T12:15:12.537 | | 34.96 | -33.62 | 42313.95 | -14.75 | | |
| 6 | I | 2035-02-01T12:15:47.649 | | 34.94 | -33.70 | 41796.22 | -14.62 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2035-02-01T13:10:08.397 | | 31.96 | -39.22 | 41854.05 | 14.60 | | |
| 5 | E | 2035-02-01T13:10:32.720 | | 31.92 | -39.25 | 42208.03 | 14.72 | | |
| 4 | E | 2035-02-01T13:10:58.967 | | 31.89 | -39.29 | 42602.05 | 14.79 | | |
| alpha | E | 2035-02-01T13:13:20.536 | | 31.69 | -39.46 | 44728.91 | 15.29 | | |
| beta | E | 2035-02-01T13:14:21.795 | | 31.61 | -39.53 | 45670.56 | 15.46 | | |
| eta | E | 2035-02-01T13:15:58.342 | | 31.47 | -39.65 | 47176.12 | 15.73 | | |
| gamma | E | 2035-02-01T13:16:27.017 | | 31.43 | -39.68 | 47628.41 | 15.81 | | |
| delta | E | 2035-02-01T13:17:09.372 | | 31.37 | -39.73 | 48300.35 | 15.92 | | |
| lambda | E | 2035-02-01T13:18:56.954 | | 31.21 | -39.85 | 50026.71 | 16.17 | | |
| epsilon | E | 2035-02-01T13:19:46.544 | | 31.14 | -39.91 | 50831.36 | 16.23 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-01T12:41:50.250
 Event type : PgtRgt
 : Uranus 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 : 3383340386979185792
 2Mass ID (if available) : 06291981+2336057
 ICRS Star Coord at Epoch: 06h 29m 19.80621s +23:36:05.72709s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.544
 G magnitude : 16.243
 RP magnitude : 15.382
 BP magnitude : 17.017
 DUPflag : 0
 Distance (au) : 18.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.92
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 139.29
 B (ring opening deg) : 69.35
 PA of pole (deg) : 69.55
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.091
 C/A sky separation (km) : 27399.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2035-02-01T12:06:03.954 | | 31.15 | -29.21 | 51048.04 | -16.19 | | |
| lambda | I | 2035-02-01T12:07:06.997 | | 31.13 | -29.33 | 50026.71 | -16.13 | | |
| delta | I | 2035-02-01T12:08:54.889 | | 31.10 | -29.55 | 48300.35 | -15.87 | | |
| gamma | I | 2035-02-01T12:09:37.274 | | 31.09 | -29.64 | 47630.13 | -15.76 | | |
| eta | I | 2035-02-01T12:10:06.159 | | 31.08 | -29.69 | 47176.12 | -15.68 | | |
| beta | I | 2035-02-01T12:11:44.980 | | 31.05 | -29.89 | 45641.50 | -15.40 | | |
| alpha | I | 2035-02-01T12:12:43.111 | | 31.02 | -30.00 | 44747.26 | -15.22 | | |
| 4 | I | 2035-02-01T12:15:11.146 | | 30.97 | -30.29 | 42533.38 | -14.71 | | |
| 5 | I | 2035-02-01T12:15:25.347 | | 30.96 | -30.31 | 42313.83 | -14.63 | | |
| 6 | I | 2035-02-01T12:16:00.720 | | 30.95 | -30.38 | 41796.31 | -14.50 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2035-02-01T13:10:01.591 | | 28.23 | -35.42 | 41853.73 | 14.48 | | |
| 5 | E | 2035-02-01T13:10:26.167 | | 28.20 | -35.44 | 42208.64 | 14.61 | | |
| 4 | E | 2035-02-01T13:10:52.564 | | 28.17 | -35.48 | 42601.78 | 14.68 | | |
| alpha | E | 2035-02-01T13:13:15.157 | | 27.99 | -35.64 | 44729.15 | 15.19 | | |
| beta | E | 2035-02-01T13:14:16.782 | | 27.91 | -35.70 | 45670.43 | 15.37 | | |
| eta | E | 2035-02-01T13:15:53.907 | | 27.79 | -35.81 | 47176.12 | 15.65 | | |
| gamma | E | 2035-02-01T13:16:22.745 | | 27.75 | -35.84 | 47628.44 | 15.72 | | |
| delta | E | 2035-02-01T13:17:05.328 | | 27.69 | -35.88 | 48300.35 | 15.83 | | |
| lambda | E | 2035-02-01T13:18:53.459 | | 27.55 | -36.00 | 50026.71 | 16.09 | | |
| epsilon | E | 2035-02-01T13:19:43.193 | | 27.48 | -36.05 | 50829.83 | 16.15 | | |