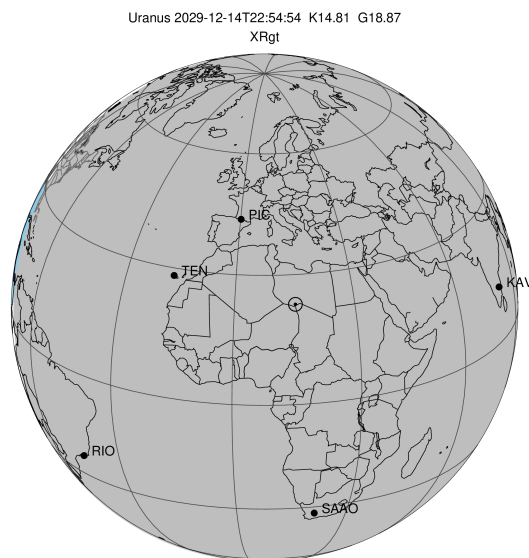


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-12-14T22:54:54.390
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3412521081981738752
 2Mass ID (if available) : 04582196+2242547

ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s

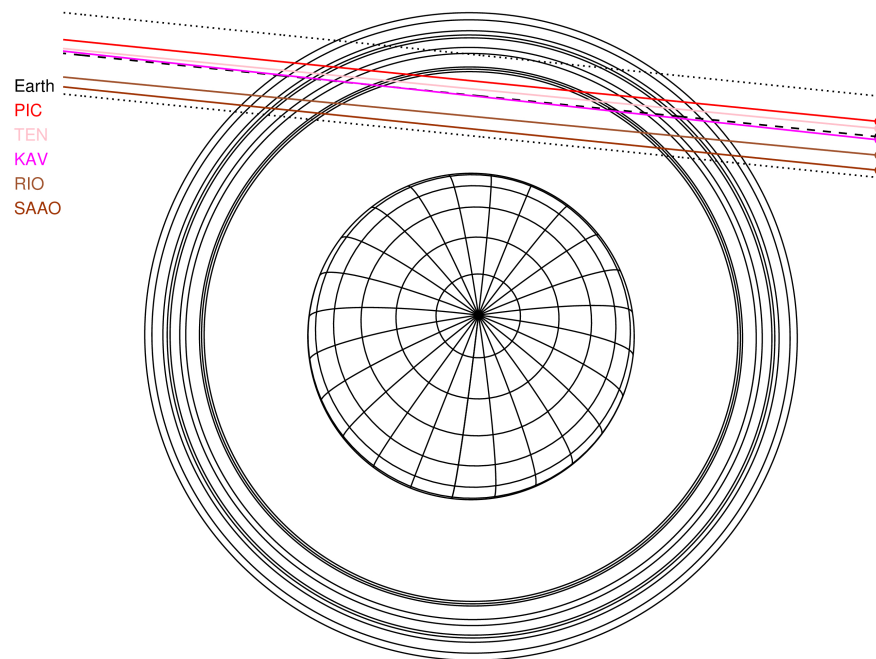
RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.811
 G magnitude : 18.874
 RP magnitude : 17.733
 BP magnitude : 20.281
 DUPflag : 0
 Distance (au) : 18.246
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.23
 Sun-Target sep (deg) : 172.98
 Sun-Moon sep (deg) : 58.66
 B (ring opening deg) : 82.03
 PA of pole (deg) : -19.30

| # | 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 |



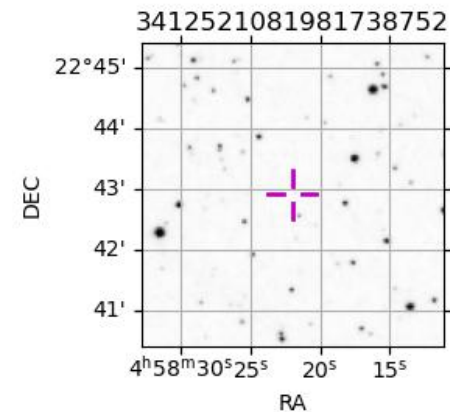
2029-12-14T22:54:54.3900 ex: 04 58 21.9751 s: +22 42 54.833 C/A 2.848° PA 174.15 deg v_sky -23.23 km/s D 18.25 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2029-12-14T22:54:54 K14.81 G18.87 XRgt

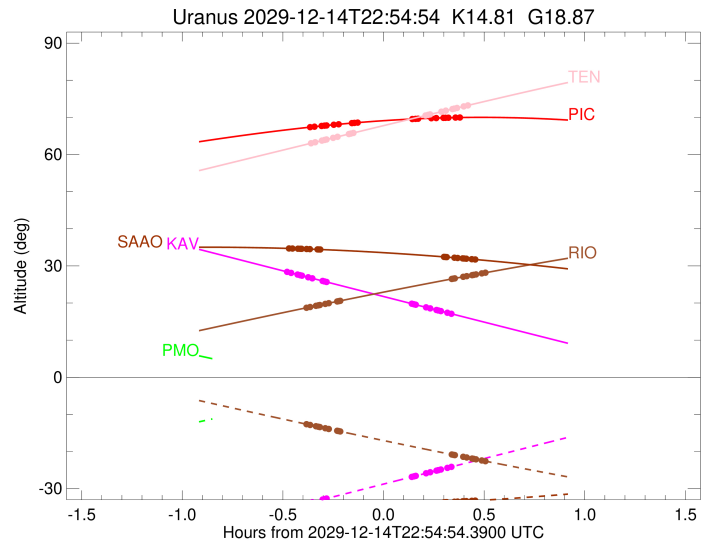
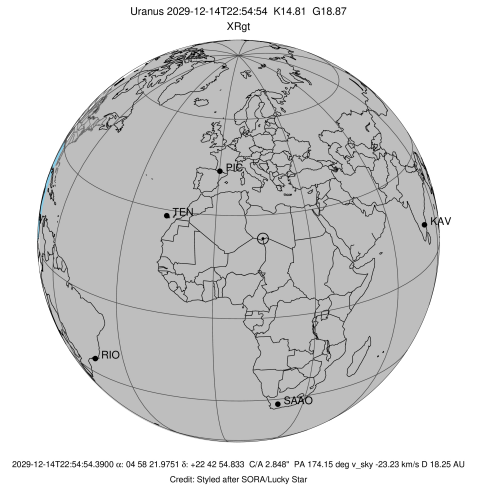


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

| Obs | Location | lat | Elon | Rings I | Planet | Rings E | Observed Events Interval | OEcode |
|------|-----------------------|-------|-------|---------|--------|---------|-----------------------------|--------|
| PIC | Pic du Midi | 42.9 | 0.1 | +++++ | | +++++ | DEC 14 22:32 - DEC 14 23:17 | PnnRie |
| PAL | Palomar Mt (200") | 33.4 | 243.1 | | | | | PnnRnn |
| PMO | Purple Mtn Obs. Nanki | 32.1 | 118.8 | | | | | PnnRnn |
| 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 | +++++ | | +++++ | DEC 14 22:32 - DEC 14 23:20 | PnnRie |
| IRTF | Mauna Kea/IRTF | 19.8 | 204.5 | | | | | PnnRnn |
| KAV | Kavalur Observatory | 12.6 | 78.8 | +++++ | | +++++ | DEC 14 22:25 - DEC 14 23:15 | PnnRie |
| RIO | Rio de Janeiro | -22.9 | 316.8 | +++++ | | +++++ | DEC 14 22:31 - DEC 14 23:25 | PnnRie |
| ESO | European Southern Obs | -29.3 | 289.3 | | | | | PnnRnn |
| AAT | Siding Spring (AAT) | -31.3 | 149.1 | | | | | PnnRnn |
| SAAO | So. Afr. Astro. Obs. | -32.4 | 20.8 | +++++ | | +++++ | DEC 14 22:26 - DEC 14 23:22 | PnnRie |
| MSO | Mt. Stromlo Observato | -35.3 | 149.0 | | | | | PnnRnn |



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-12-14T22:55:13.820
 Event type : XRgt
 : No Uranus occs
 : 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 : 3412521081981738752
 2Mass ID (if available) : 04582196+2242547
 ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.811
 G magnitude : 18.874
 RP magnitude : 17.733
 BP magnitude : 20.281
 DUPflag : 0
 Distance (au) : 18.246
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.23
 Sun-Target sep (deg) : 172.98
 Sun-Moon sep (deg) : 59.35
 B (ring opening deg) : 82.03
 PA of pole (deg) : -19.30
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.011
 C/A sky separation (km) : 39851.6
 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

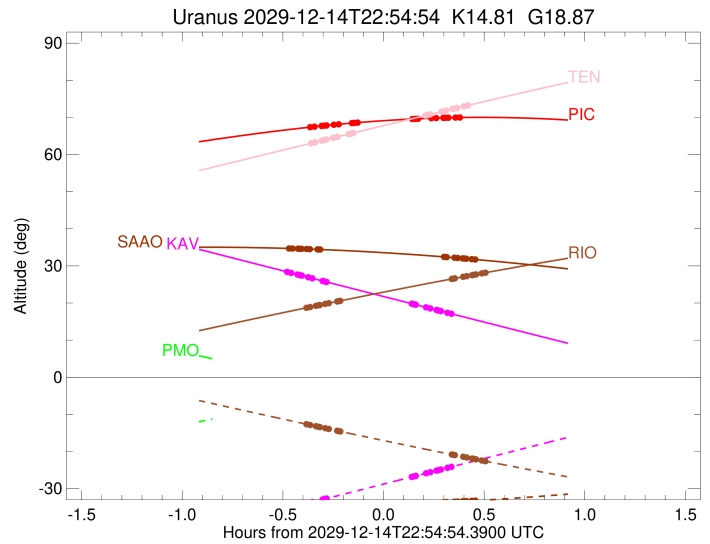
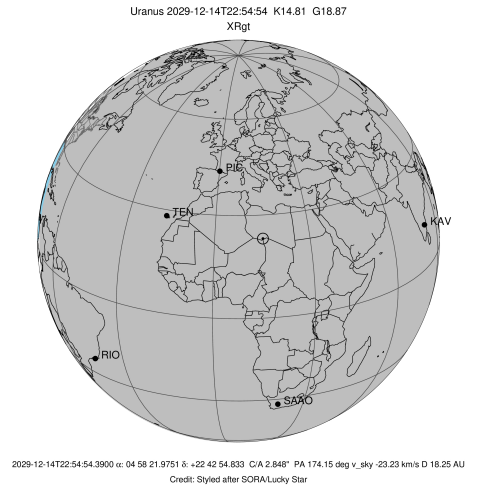


| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2029-12-14T22:32:35.653 | | 67.33 | -64.18 | 51538.11 | -14.69 | | |
| lambda | I | 2029-12-14T22:34:20.769 | | 67.50 | -64.42 | 50026.71 | -14.01 | | |
| delta | I | 2029-12-14T22:36:28.300 | | 67.70 | -64.70 | 48300.35 | -13.04 | | |
| gamma | I | 2029-12-14T22:37:21.252 | | 67.78 | -64.82 | 47620.96 | -12.61 | | |
| eta | I | 2029-12-14T22:37:56.946 | | 67.84 | -64.90 | 47176.12 | -12.31 | | |
| beta | I | 2029-12-14T22:40:06.792 | | 68.03 | -65.17 | 45652.77 | -11.13 | | |
| alpha | I | 2029-12-14T22:41:33.975 | | 68.15 | -65.36 | 44719.36 | -10.31 | | |
| 4 | I | 2029-12-14T22:45:32.063 | | 68.47 | -65.85 | 42571.90 | -7.68 | | |
| 5 | I | 2029-12-14T22:46:12.716 | | 68.52 | -65.93 | 42261.12 | -7.18 | | |
| 6 | I | 2029-12-14T22:47:12.772 | | 68.60 | -66.06 | 41859.69 | -6.47 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2029-12-14T23:03:26.642 | | 69.56 | -67.84 | 41837.28 | 6.48 | | |
| 5 | E | 2029-12-14T23:04:23.255 | | 69.60 | -67.93 | 42212.32 | 7.18 | | |
| 4 | E | 2029-12-14T23:05:07.115 | | 69.63 | -68.00 | 42543.89 | 7.68 | | |
| alpha | E | 2029-12-14T23:09:11.295 | | 69.78 | -68.38 | 44745.68 | 10.31 | | |
| beta | E | 2029-12-14T23:10:34.821 | | 69.82 | -68.50 | 45641.31 | 11.14 | | |
| eta | E | 2029-12-14T23:12:45.620 | | 69.88 | -68.69 | 47176.12 | 12.32 | | |
| gamma | E | 2029-12-14T23:13:21.544 | | 69.89 | -68.74 | 47624.01 | 12.62 | | |
| delta | E | 2029-12-14T23:14:14.237 | | 69.91 | -68.81 | 48300.35 | 13.05 | | |
| lambda | E | 2029-12-14T23:16:21.725 | | 69.95 | -68.98 | 50026.71 | 14.02 | | |
| epsilon | E | 2029-12-14T23:17:38.439 | | 69.97 | -69.08 | 51122.71 | 14.70 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-12-14T22:56:34.190
 Event type : XRgt
 : No Uranus occs
 : 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 : 3412521081981738752
 2Mass ID (if available) : 04582196+2242547
 ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.811
 G magnitude : 18.874
 RP magnitude : 17.733
 BP magnitude : 20.281
 DUPflag : 0
 Distance (au) : 18.246
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.23
 Sun-Target sep (deg) : 172.98
 Sun-Moon sep (deg) : 59.22
 B (ring opening deg) : 82.03
 PA of pole (deg) : -19.30
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.917
 C/A sky separation (km) : 38607.9
 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

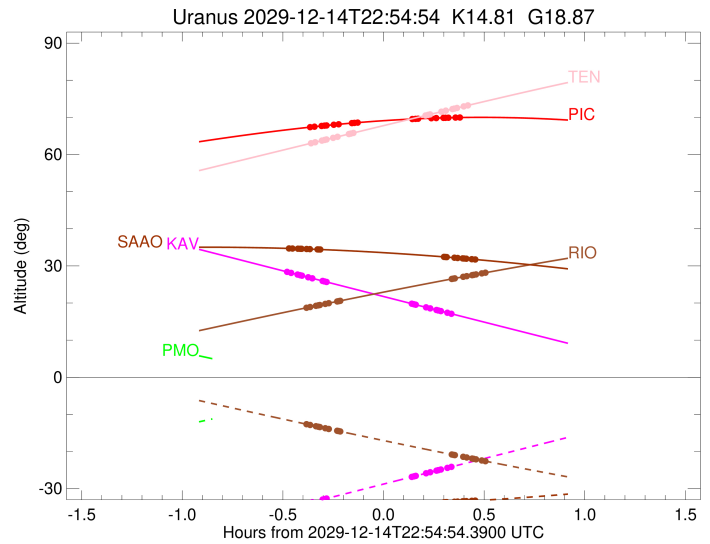
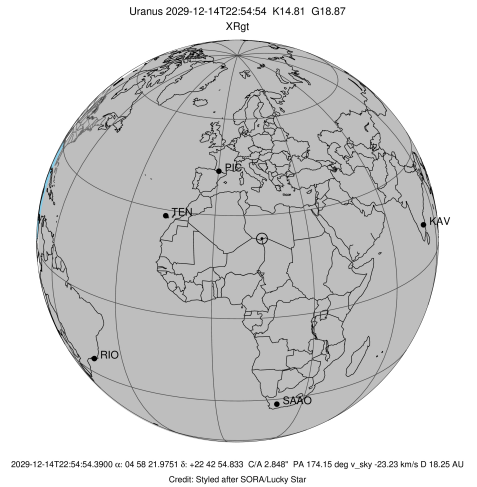


| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2029-12-14T22:32:53.330 | | 62.95 | -56.41 | 51542.09 | -15.40 | | |
| lambda | I | 2029-12-14T22:34:33.559 | | 63.32 | -56.78 | 50026.71 | -14.79 | | |
| delta | I | 2029-12-14T22:36:33.690 | | 63.76 | -57.22 | 48300.35 | -13.93 | | |
| gamma | I | 2029-12-14T22:37:23.110 | | 63.94 | -57.41 | 47620.96 | -13.56 | | |
| eta | I | 2029-12-14T22:37:56.245 | | 64.06 | -57.53 | 47176.12 | -13.29 | | |
| beta | I | 2029-12-14T22:39:55.239 | | 64.50 | -57.96 | 45653.76 | -12.28 | | |
| alpha | I | 2029-12-14T22:41:13.833 | | 64.79 | -58.25 | 44717.39 | -11.58 | | |
| 4 | I | 2029-12-14T22:44:36.973 | | 65.53 | -59.00 | 42575.47 | -9.47 | | |
| 5 | I | 2029-12-14T22:45:09.304 | | 65.65 | -59.12 | 42267.38 | -9.09 | | |
| 6 | I | 2029-12-14T22:45:56.046 | | 65.82 | -59.29 | 41862.90 | -8.58 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2029-12-14T23:07:23.636 | | 70.50 | -64.01 | 41833.21 | 8.59 | | |
| 5 | E | 2029-12-14T23:08:06.917 | | 70.66 | -64.17 | 42205.65 | 9.10 | | |
| 4 | E | 2029-12-14T23:08:42.436 | | 70.79 | -64.30 | 42540.99 | 9.47 | | |
| alpha | E | 2029-12-14T23:12:11.527 | | 71.54 | -65.07 | 44746.89 | 11.59 | | |
| beta | E | 2029-12-14T23:13:26.419 | | 71.81 | -65.34 | 45641.16 | 12.29 | | |
| eta | E | 2029-12-14T23:15:26.267 | | 72.24 | -65.78 | 47176.12 | 13.31 | | |
| gamma | E | 2029-12-14T23:15:59.604 | | 72.36 | -65.90 | 47624.25 | 13.57 | | |
| delta | E | 2029-12-14T23:16:48.721 | | 72.54 | -66.08 | 48300.35 | 13.95 | | |
| lambda | E | 2029-12-14T23:18:48.693 | | 72.97 | -66.52 | 50026.71 | 14.81 | | |
| epsilon | E | 2029-12-14T23:20:00.430 | | 73.22 | -66.78 | 51106.34 | 15.43 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-12-14T22:50:30.980
 Event type : XRgt
 : No Uranus occs
 : 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 : 3412521081981738752
 2Mass ID (if available) : 04582196+2242547
 ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.811
 G magnitude : 18.874
 RP magnitude : 17.733
 BP magnitude : 20.281
 DUPflag : 0
 Distance (au) : 18.246
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.23
 Sun-Target sep (deg) : 172.98
 Sun-Moon sep (deg) : 59.38
 B (ring opening deg) : 82.03
 PA of pole (deg) : -19.30
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.833
 C/A sky separation (km) : 37492.4
 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

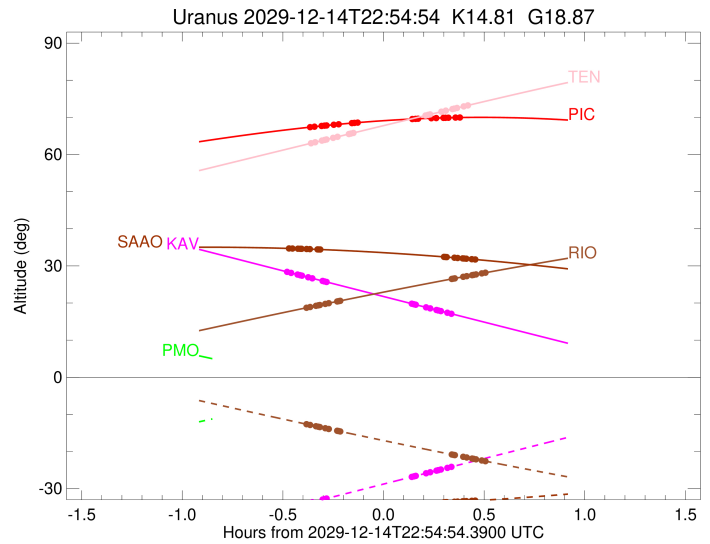
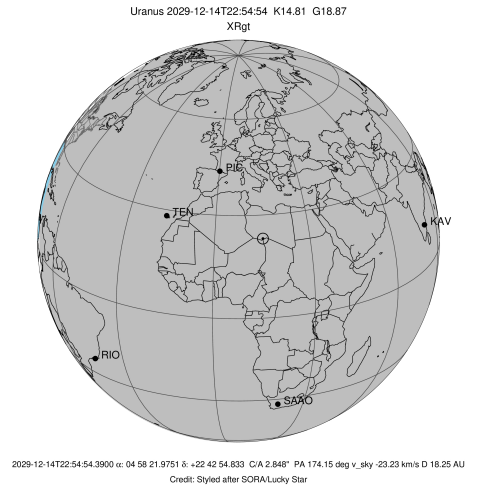


| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2029-12-14T22:25:45.390 | | 28.48 | -35.47 | 51546.21 | -15.89 | | |
| lambda | I | 2029-12-14T22:27:22.584 | | 28.11 | -35.10 | 50026.71 | -15.34 | | |
| delta | I | 2029-12-14T22:29:17.999 | | 27.67 | -34.65 | 48300.35 | -14.57 | | |
| gamma | I | 2029-12-14T22:30:05.182 | | 27.48 | -34.47 | 47620.98 | -14.23 | | |
| eta | I | 2029-12-14T22:30:36.706 | | 27.36 | -34.35 | 47176.12 | -13.99 | | |
| beta | I | 2029-12-14T22:32:28.951 | | 26.93 | -33.92 | 45654.82 | -13.10 | | |
| alpha | I | 2029-12-14T22:33:42.460 | | 26.65 | -33.64 | 44715.37 | -12.49 | | |
| 4 | I | 2029-12-14T22:36:46.430 | | 25.94 | -32.94 | 42578.71 | -10.70 | | |
| 5 | I | 2029-12-14T22:37:14.716 | | 25.83 | -32.83 | 42272.77 | -10.40 | | |
| 6 | I | 2029-12-14T22:37:55.486 | | 25.67 | -32.67 | 41865.48 | -9.98 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2029-12-14T23:03:17.753 | | 19.83 | -26.85 | 41830.78 | 9.97 | | |
| 5 | E | 2029-12-14T23:03:55.159 | | 19.68 | -26.71 | 42201.68 | 10.38 | | |
| 4 | E | 2029-12-14T23:04:26.724 | | 19.56 | -26.59 | 42539.30 | 10.68 | | |
| alpha | E | 2029-12-14T23:07:37.375 | | 18.83 | -25.86 | 44747.59 | 12.46 | | |
| beta | E | 2029-12-14T23:08:47.409 | | 18.56 | -25.59 | 45641.10 | 13.06 | | |
| eta | E | 2029-12-14T23:10:41.016 | | 18.13 | -25.16 | 47176.12 | 13.95 | | |
| gamma | E | 2029-12-14T23:11:12.884 | | 18.01 | -25.04 | 47624.39 | 14.18 | | |
| delta | E | 2029-12-14T23:11:59.987 | | 17.83 | -24.86 | 48300.35 | 14.52 | | |
| lambda | E | 2029-12-14T23:13:55.822 | | 17.38 | -24.41 | 50026.71 | 15.28 | | |
| epsilon | E | 2029-12-14T23:15:04.939 | | 17.12 | -24.15 | 51097.23 | 15.83 | | |

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-12-14T22:58:32.130
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : RIO
 Location : Rio de Janeiro
 Latitude (deg) : -22.89506
 E. Longitude (deg) : 316.77708
 Altitude (km) : 0.033
 Gaia source ID : 3412521081981738752
 2Mass ID (if available) : 04582196+2242547
 ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.811
 G magnitude : 18.874
 RP magnitude : 17.733
 BP magnitude : 20.281
 DUPflag : 0
 Distance (au) : 18.246
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.23
 Sun-Target sep (deg) : 172.98
 Sun-Moon sep (deg) : 58.63
 B (ring opening deg) : 82.03
 PA of pole (deg) : -19.30
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.594
 C/A sky separation (km) : 34330.8
 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



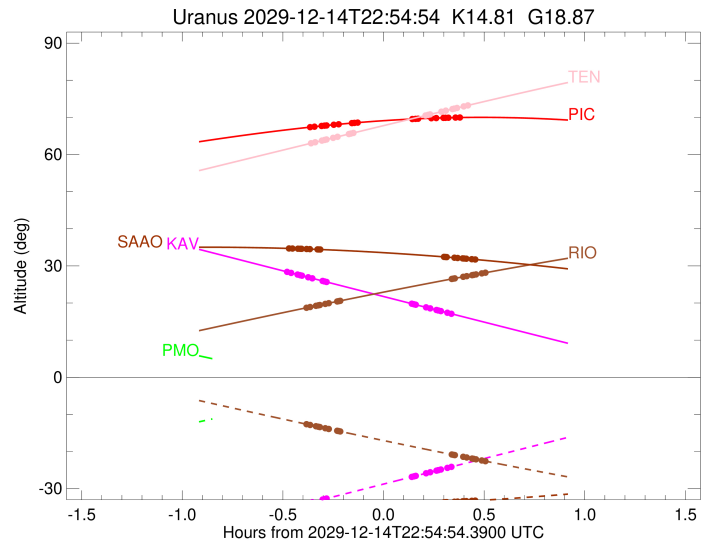
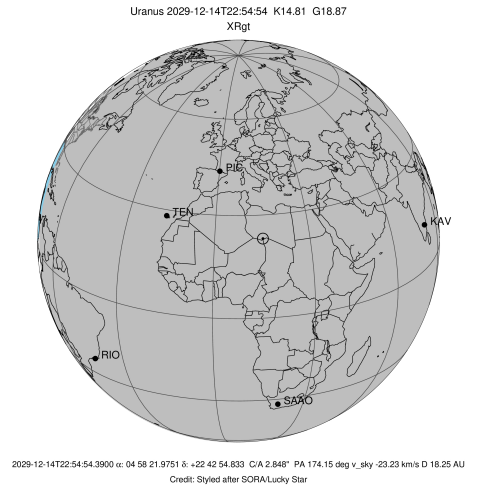
| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|---------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| epsilon | I | 2029-12-14T22:31:34.451 | | 18.65 | -12.57 | 51551.50 | -17.35 | | |
| lambda | I | 2029-12-14T22:33:03.362 | | 18.93 | -12.86 | 50026.71 | -16.92 | | |
| delta | I | 2029-12-14T22:34:47.116 | | 19.25 | -13.19 | 48300.35 | -16.35 | | |
| gamma | I | 2029-12-14T22:35:28.993 | | 19.38 | -13.33 | 47621.05 | -16.09 | | |
| eta | I | 2029-12-14T22:35:56.786 | | 19.47 | -13.42 | 47176.12 | -15.92 | | |
| beta | I | 2029-12-14T22:37:34.172 | | 19.77 | -13.73 | 45656.80 | -15.27 | | |
| alpha | I | 2029-12-14T22:38:37.016 | | 19.96 | -13.94 | 44711.69 | -14.84 | | |
| 4 | I | 2029-12-14T22:41:06.424 | | 20.42 | -14.42 | 42584.51 | -13.62 | | |
| 5 | I | 2029-12-14T22:41:28.340 | | 20.49 | -14.49 | 42282.00 | -13.42 | | |
| 6 | I | 2029-12-14T22:41:59.928 | | 20.59 | -14.59 | 41869.68 | -13.15 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2029-12-14T23:15:13.256 | | 26.48 | -20.80 | 41823.89 | 13.18 | | |
| 5 | E | 2029-12-14T23:15:41.346 | | 26.56 | -20.88 | 42190.40 | 13.45 | | |
| 4 | E | 2029-12-14T23:16:06.439 | | 26.63 | -20.96 | 42534.67 | 13.65 | | |
| alpha | E | 2029-12-14T23:18:41.656 | | 27.06 | -21.43 | 44749.67 | 14.88 | | |
| beta | E | 2029-12-14T23:19:40.715 | | 27.23 | -21.60 | 45641.09 | 15.31 | | |
| eta | E | 2029-12-14T23:21:18.832 | | 27.50 | -21.90 | 47176.12 | 15.97 | | |
| gamma | E | 2029-12-14T23:21:46.789 | | 27.58 | -21.98 | 47624.98 | 16.14 | | |
| delta | E | 2029-12-14T23:22:28.302 | | 27.70 | -22.10 | 48300.35 | 16.39 | | |
| lambda | E | 2029-12-14T23:24:11.742 | | 27.98 | -22.41 | 50026.71 | 16.98 | | |
| epsilon | E | 2029-12-14T23:25:11.876 | | 28.15 | -22.59 | 51056.98 | 17.41 | | |

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2029-12-14T22:54:23.550
Event type          : XRgt
: No Uranus occs
: 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      : 3412521081981738752
2Mass ID (if available) : 04582196+2242547
ICRS Star Coord at Epoch: 04h 58m 21.97514s +22:42:54.83311s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 14.811
G magnitude          : 18.874
RP magnitude         : 17.733
BP magnitude         : 20.281
DUPflag             : 0
Distance (au)       : 18.246
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -23.23
Sun-Target sep (deg) : 172.98
Sun-Moon sep (deg)  : 59.18
B (ring opening deg) : 82.03
PA of pole (deg)    : -19.30
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.445
C/A sky separation (km) : 32352.2
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ural11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ural11.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 | 2029-12-14T22:26:22.539 | | 34.71 | -34.52 | 51554.03 | -18.28 | | |
| lambda | I | 2029-12-14T22:27:46.929 | | 34.68 | -34.53 | 50026.71 | -17.90 | | |
| delta | I | 2029-12-14T22:29:24.675 | | 34.63 | -34.53 | 48300.35 | -17.41 | | |
| gamma | I | 2029-12-14T22:30:03.923 | | 34.61 | -34.53 | 47621.12 | -17.20 | | |
| eta | I | 2029-12-14T22:30:29.905 | | 34.60 | -34.53 | 47176.12 | -17.05 | | |
| beta | I | 2029-12-14T22:32:00.350 | | 34.55 | -34.53 | 45658.21 | -16.51 | | |
| alpha | I | 2029-12-14T22:32:58.531 | | 34.52 | -34.53 | 44709.26 | -16.15 | | |
| 4 | I | 2029-12-14T22:35:14.058 | | 34.44 | -34.53 | 42588.05 | -15.14 | | |
| 5 | I | 2029-12-14T22:35:33.657 | | 34.43 | -34.53 | 42287.32 | -14.98 | | |
| 6 | I | 2029-12-14T22:36:02.021 | | 34.42 | -34.52 | 41871.94 | -14.77 | | |

No planet occultations

| | | | | | | | | | |
|---------|---|-------------------------|--|-------|--------|----------|-------|--|--|
| 6 | E | 2029-12-14T23:12:54.215 | | 32.43 | -33.67 | 41820.94 | 14.76 | | |
| 5 | E | 2029-12-14T23:13:19.187 | | 32.40 | -33.65 | 42185.73 | 14.98 | | |
| 4 | E | 2029-12-14T23:13:41.990 | | 32.38 | -33.64 | 42532.88 | 15.14 | | |
| alpha | E | 2029-12-14T23:16:03.754 | | 32.20 | -33.53 | 44750.44 | 16.14 | | |
| beta | E | 2029-12-14T23:16:58.350 | | 32.14 | -33.49 | 45641.20 | 16.49 | | |
| eta | E | 2029-12-14T23:18:29.860 | | 32.02 | -33.42 | 47176.12 | 17.04 | | |
| gamma | E | 2029-12-14T23:18:56.103 | | 31.99 | -33.40 | 47625.26 | 17.19 | | |
| delta | E | 2029-12-14T23:19:35.141 | | 31.94 | -33.37 | 48300.35 | 17.40 | | |
| lambda | E | 2029-12-14T23:21:12.968 | | 31.81 | -33.29 | 50026.71 | 17.89 | | |
| epsilon | E | 2029-12-14T23:22:09.163 | | 31.74 | -33.24 | 51039.28 | 18.26 | | |