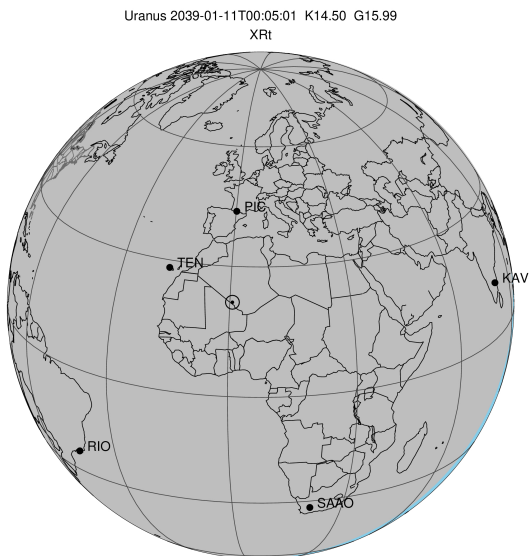


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2039-01-11T00:05:01.650
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 673759770358441216
 2Mass ID (if available) : 07542226+2123472

ICRS Star Coord at Epoch: 07h 54m 22.26788s +21:23:47.17058s

RUWE (>1.4 is poor) : 0.99
 K magnitude : 14.496
 G magnitude : 15.985
 RP magnitude : 15.511
 BP magnitude : 16.301
 DUPflag : 0
 Distance (au) : 17.668
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.06
 Sun-Target sep (deg) : 173.57
 Sun-Moon sep (deg) : 1.76
 B (ring opening deg) : 50.42
 PA of pole (deg) : 88.12

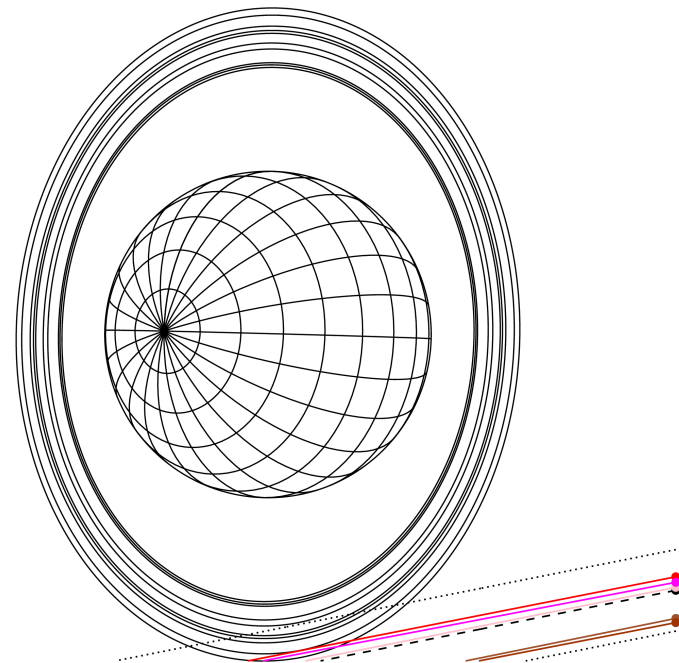
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2039-01-11T00:05:01.6500 α: 07 54 22.2678 s +21 23 47.171 C/A 4.028° PA 11.23 deg v_sky -23.06 km/s D 17.67 AU
 Credit: Styled after SORA/Lucky Star

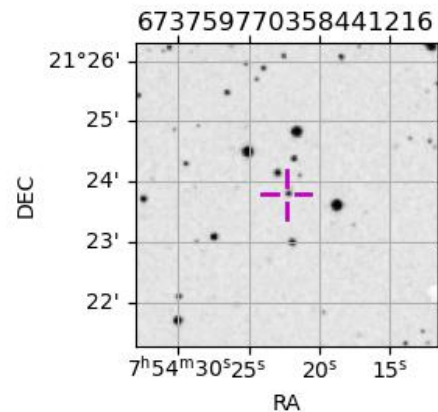
Uranus 2039-01-11T00:05:01 K14.50 G15.99 XRT

Earth
 PIC
 TEN
 KAV
 RIO
 SAAO



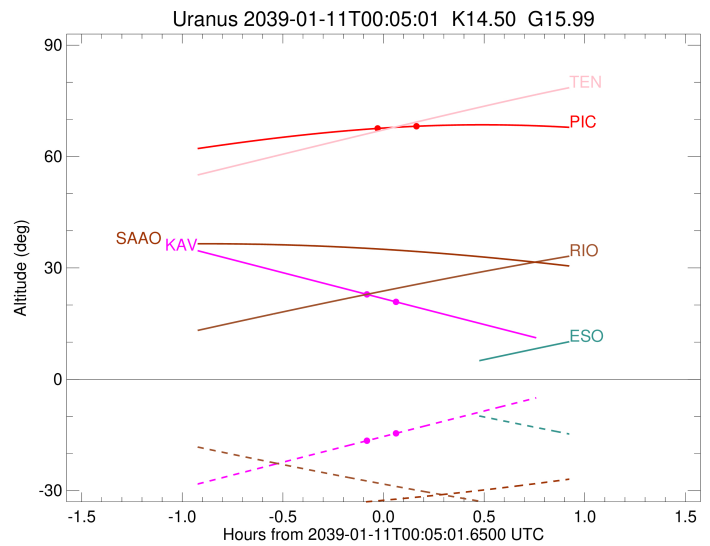
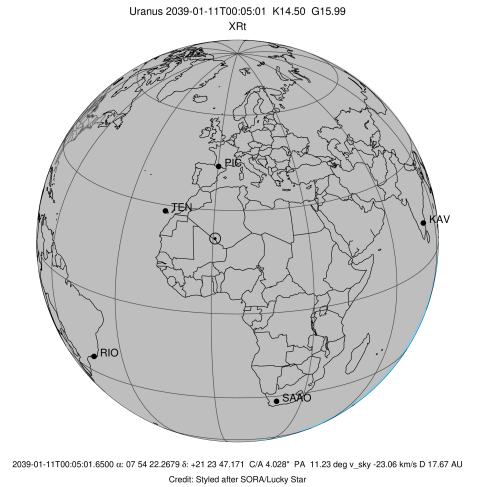
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+			JAN 11 00:02 - JAN 11 00:15	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					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observatory	12.6	78.8	+			JAN 10 23:59 - JAN 11 00:09	PnnRie
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					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



```

target                : Uranus
target radius (km)    : 25559.00
C/A epoch             : 2039-01-11T00:05:51.380
Event type            : XRt
: No Uranus occs
: Ring occs: topocentric, not geocentric
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 673759770358441216
2Mass ID (if available) : 07542226+2123472
ICRS Star Coord at Epoch: 07h 54m 22.26788s +21:23:47.17058s
RUWE (>1.4 is poor)  : 0.99
K magnitude           : 14.496
G magnitude           : 15.985
RP magnitude          : 15.511
BP magnitude          : 16.301
DUPflag               : 0
Distance (au)         : 17.668
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s)  : -23.06
Sun-Target sep (deg)  : 173.57
Sun-Moon sep (deg)    : 1.44
B (ring opening deg)  : 50.42
PA of pole (deg)      : 88.12
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.867
C/A sky separation (km) : 49558.6
NAIF SPICE kernels    : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrf93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
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
-----
epsilon   I 2039-01-11T00:02:37.586  67.53 -69.09  51412.61 -6.95
  
```

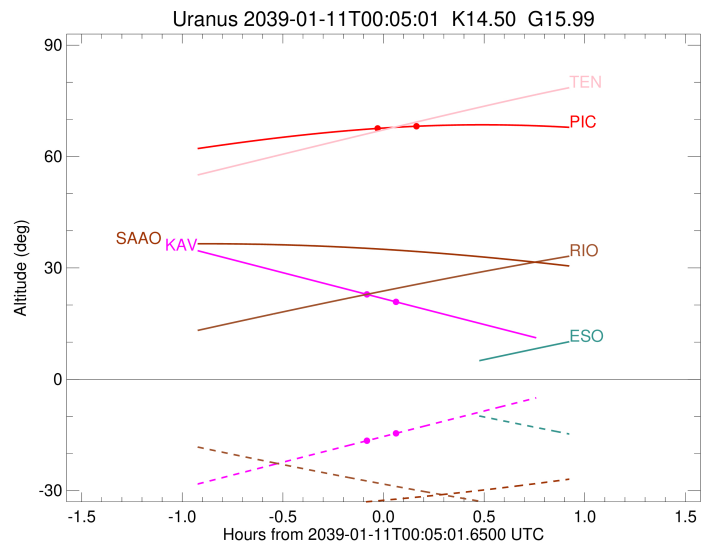
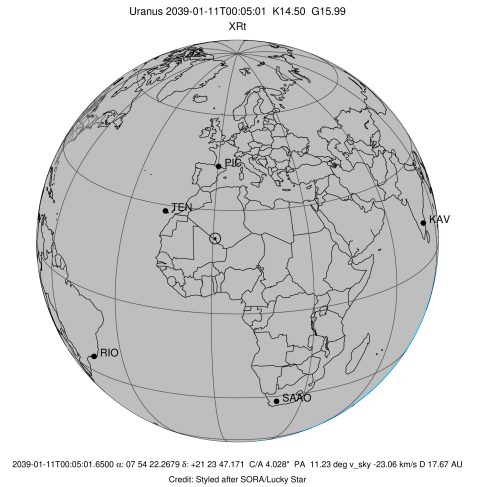
No planet occultations

```

epsilon   E 2039-01-11T00:15:45.746  68.19 -69.03  51523.76  6.95
  
```

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2039-01-11T00:01:14.020
Event type          : XRt
                    : No Uranus occs
                    : Ring occs: topocentric, not geocentric
Observer code       : KAV
Location            : Kavalur Observatory
Latitude (deg)      : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)       : 0.722
Gaia source ID      : 673759770358441216
2Mass ID (if available) : 07542226+2123472
ICRS Star Coord at Epoch: 07h 54m 22.26788s +21:23:47.17058s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 14.496
G magnitude          : 15.985
RP magnitude         : 15.511
BP magnitude         : 16.301
DUPflag             : 0
Distance (au)        : 17.668
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -23.06
Sun-Target sep (deg) : 173.57
Sun-Moon sep (deg)  : 1.95
B (ring opening deg) : 50.42
PA of pole (deg)    : 88.12
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.907
C/A sky separation (km) : 50063.6
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrf93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
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
-----
epsilon   I 2039-01-10T23:59:11.612  23.07 -16.76  51427.77  -5.58
  
```

No planet occultations

```

epsilon   E 2039-01-11T00:09:55.012  20.58 -14.30  51517.57  5.58
  
```