

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-01-08T20:07:16.670
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3427497323706184192
 2Mass ID (if available) : 05525312+2338357

Uranus 2033-01-08T20:07:16 K13.71 G15.90 XRT

ICRS Star Coord at Epoch: 05h 52m 53.11678s +23:38:35.87629s

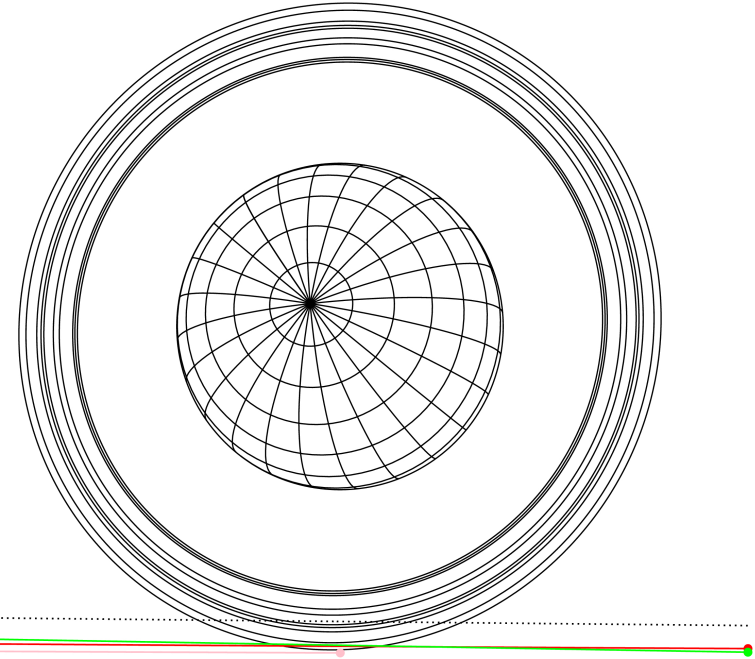
RUWE (>1.4 is poor) : 0.99
 K magnitude : 13.715
 G magnitude : 15.898
 RP magnitude : 15.184
 BP magnitude : 16.440
 DUPflag : 0
 Distance (au) : 18.089
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.62
 Sun-Target sep (deg) : 159.96
 Sun-Moon sep (deg) : 61.13
 B (ring opening deg) : 76.68
 PA of pole (deg) : 52.48

Uranus 2033-01-08T20:07:16 K13.71 G15.90 XRT



2033-01-08T20:07:16.6700 ra: 05 52 53.11688 s: +23 38 35.876 C/A 4.000" PA 359.42 deg v_sky -21.62 km/s D 18.09 AU
 Credit: Styled after SORA/Lucky Star

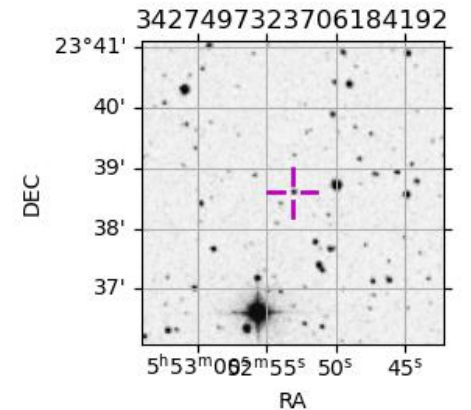
PIC
 PMO
 TEN



#	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

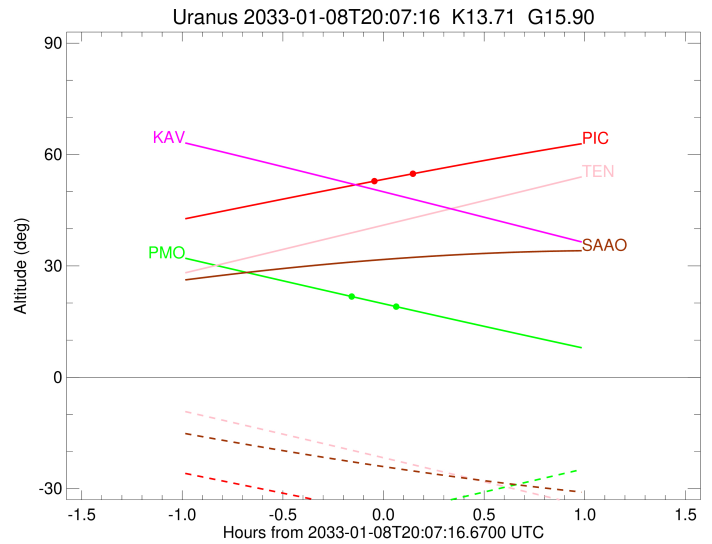
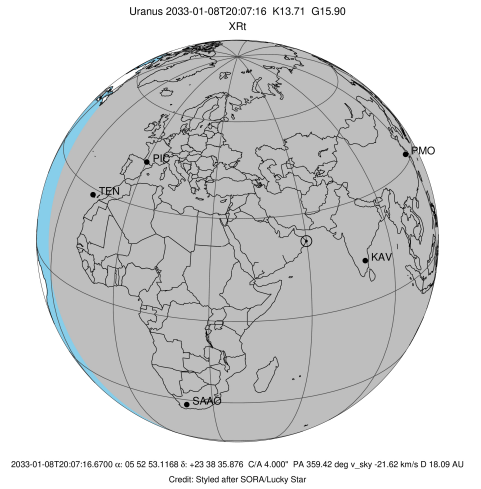
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+			JAN 08 20:06 - JAN 08 20:14	PnnRie
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+			JAN 08 19:59 - JAN 08 20:09	PnnRie
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					PnnRnn
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            : 2033-01-08T20:09:18.820
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      : 3427497323706184192
2Mass ID (if available) : 05525312+2338357
ICRS Star Coord at Epoch: 05h 52m 53.11678s +23:38:35.87629s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 13.715
G magnitude          : 15.898
RP magnitude         : 15.184
BP magnitude         : 16.440
DUPflag             : 0
Distance (au)       : 18.089
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -21.62
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)  : 61.61
B (ring opening deg) : 76.68
PA of pole (deg)    : 52.48
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.817
C/A sky separation (km) : 50079.2
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ura111.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ura111.bsp
ura161.bsp
vgr2.ura161.bsp
peph.ura160.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  2033-01-08T20:06:53.784  53.24 -36.65  50792.93 -2.09
  
```

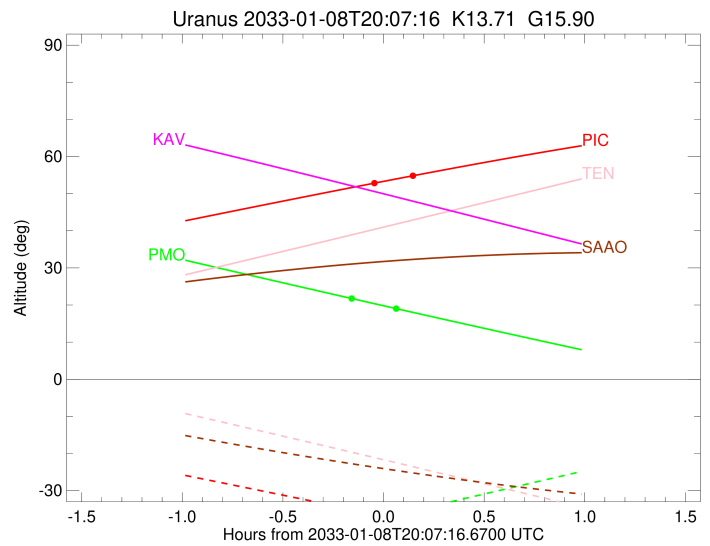
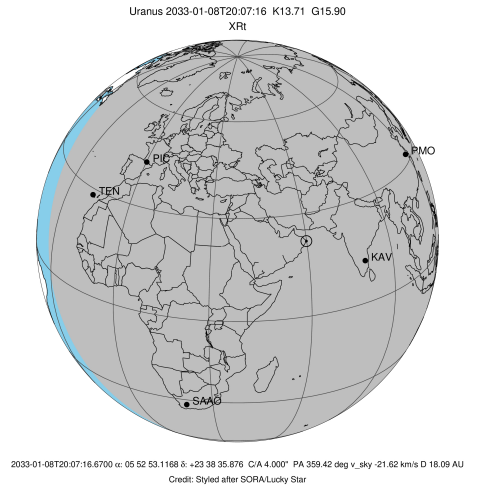
No planet occultations

```

epsilon   E  2033-01-08T20:14:02.936  54.48 -37.96  50833.39  2.09
  
```

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2033-01-08T20:03:26.180
Event type           : XRt
: No Uranus occs
: Ring occs: topocentric, not geocentric
Observer code        : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 3427497323706184192
2Mass ID (if available) : 05525312+2338357
ICRS Star Coord at Epoch: 05h 52m 53.11678s +23:38:35.87629s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.715
G magnitude           : 15.898
RP magnitude          : 15.184
BP magnitude          : 16.440
DUPflag              : 0
Distance (au)        : 18.089
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -21.62
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)   : 61.81
B (ring opening deg) : 76.68
PA of pole (deg)     : 52.48
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.804
C/A sky separation (km) : 49913.3
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ura111.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ura111.bsp
ura161.bsp
vgr2.ura161.bsp
peph.ura160.bsp
earthstns_itrf93_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	2033-01-08T19:59:43.879		21.35	-38.83	50786.98	-2.79		

No planet occultations

epsilon	E	2033-01-08T20:09:27.971		19.36	-36.77	50843.26	2.78		
---------	---	-------------------------	--	-------	--------	----------	------	--	--