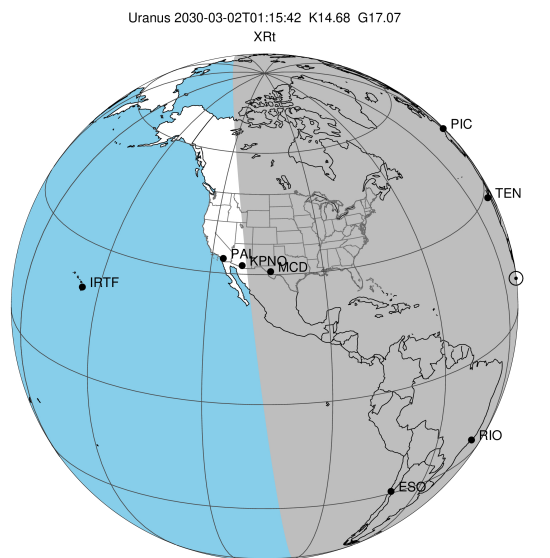


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2030-03-02T01:15:42.910
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3413242602128558208
 2Mass ID (if available) : 04510377+2232041

ICRS Star Coord at Epoch: 04h 51m 03.77638s +22:32:03.94303s

RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.682
 G magnitude : 17.070
 RP magnitude : 16.322
 BP magnitude : 17.680
 DUPflag : 0
 Distance (au) : 19.131
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 4.73
 Sun-Target sep (deg) : 93.04
 Sun-Moon sep (deg) : 119.84
 B (ring opening deg) : 81.48
 PA of pole (deg) : -31.07

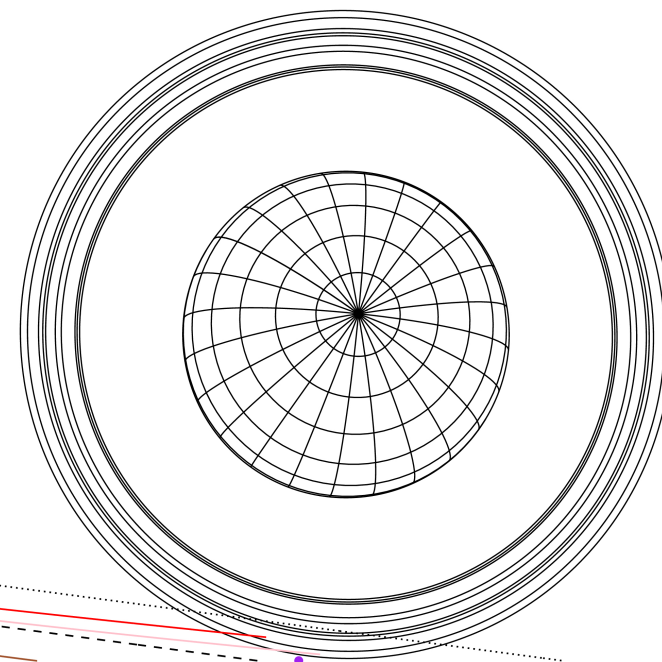
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2030-03-02T01:15:42.9100 ra: 04 51 03.7764 d: +22 32 03.943 C/A 3.779° PA 352.40 deg v_sky + 4.74 km/s D 19.13 AU
 Credit: Styled after SORA/Lucky Star

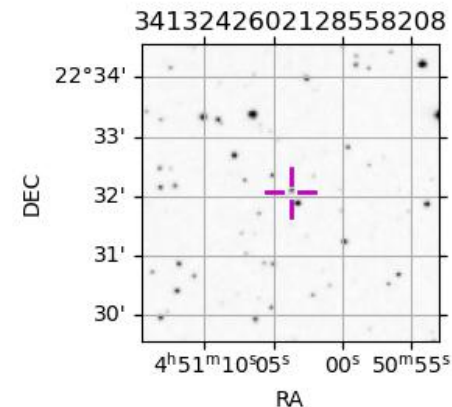
Uranus 2030-03-02T01:15:42 K14.68 G17.07 XRT

Earth
 PIC
 MCD
 TEN
 RIO



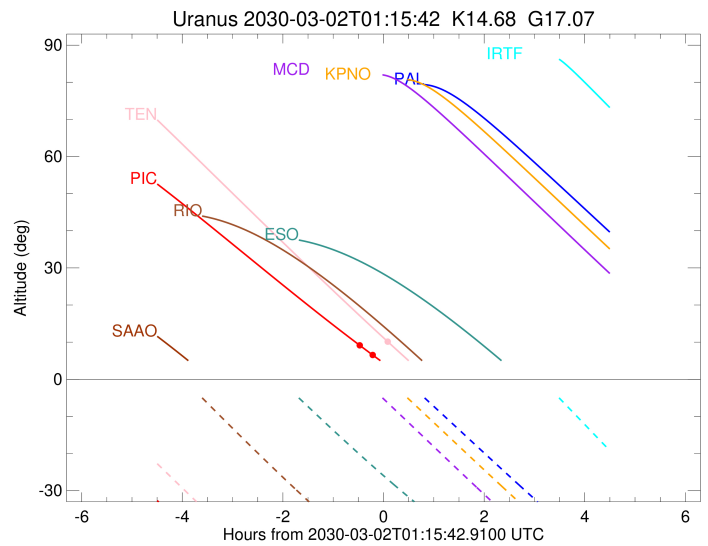
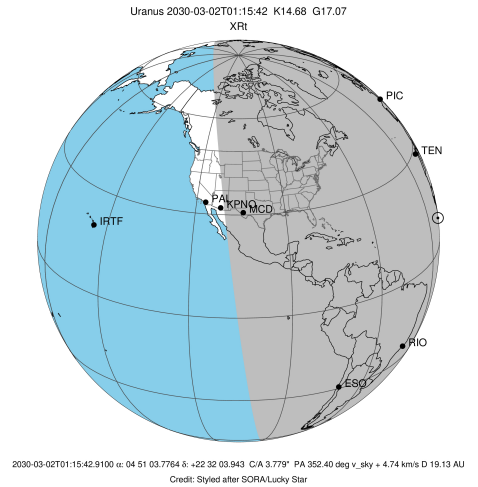
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	++			MAR 02 00:49 - MAR 02 01:03	PnnRin
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	+			MAR 02 01:29 - MAR 02 01:29	PnnRin
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             : 2030-03-02T01:37:51.470
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        : 3413242602128558208
2Mass ID (if available) : 04510377+2232041
ICRS Star Coord at Epoch: 04h 51m 03.77638s +22:32:03.94303s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 14.682
G magnitude           : 17.070
RP magnitude          : 16.322
BP magnitude          : 17.680
DUPflag              : 0
Distance (au)         : 19.131
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 4.73
Sun-Target sep (deg)  : 93.04
Sun-Moon sep (deg)    : 119.56
B (ring opening deg) : 81.48
PA of pole (deg)      : -31.07
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.492
C/A sky separation (km) : 48453.7
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_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```



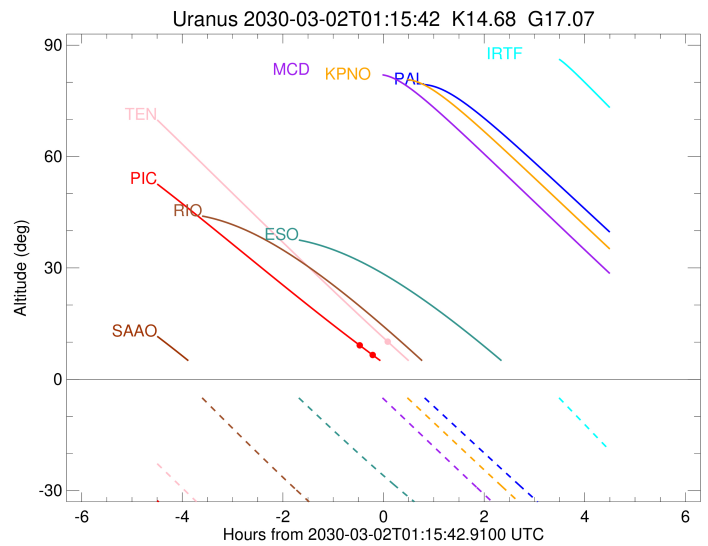
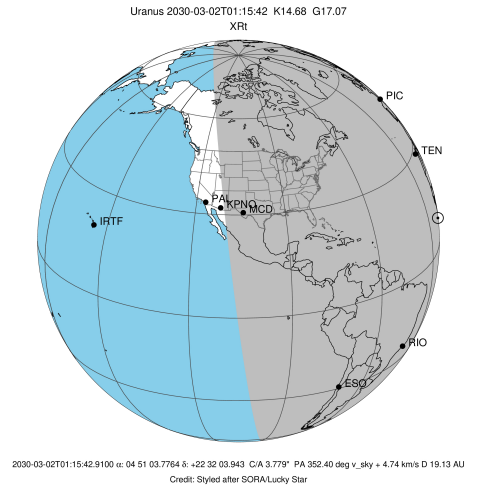
```

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  2030-03-02T00:49:35.267  8.77  -53.54  50980.09  -1.31
lambda    I  2030-03-02T01:03:04.104  6.50  -52.74  50026.71  -1.01

No planet occultations

lambda    E  2030-03-02T02:14:59.759  -4.85x  -45.31  50026.71  1.04
epsilon   E  2030-03-02T02:25:58.760  -6.44x  -43.81  50811.10  1.36
  
```

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2030-03-02T01:42:33.170
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 3413242602128558208
 2Mass ID (if available) : 04510377+2232041
 ICRS Star Coord at Epoch: 04h 51m 03.77638s +22:32:03.94303s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.682
 G magnitude : 17.070
 RP magnitude : 16.322
 BP magnitude : 17.680
 DUPflag : 0
 Distance (au) : 19.131
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 4.73
 Sun-Target sep (deg) : 93.04
 Sun-Moon sep (deg) : 119.58
 B (ring opening deg) : 81.48
 PA of pole (deg) : -31.07
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.622
 C/A sky separation (km) : 50258.8
 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_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	2030-03-02T01:29:08.960		8.40	-68.95	50910.08	-0.37		

No planet occultations

epsilon	E	2030-03-02T01:56:47.121		2.76x	-67.20	50864.10	0.38		
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