

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2031-02-10T21:06:22.040
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3415398675709960448
 2Mass ID (if available) : 05095475+2302146

ICRS Star Coord at Epoch: 05h 09m 54.76223s +23:02:14.55950s

RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.719
 G magnitude : 17.202
 RP magnitude : 16.449
 BP magnitude : 17.840
 DUPflag : 0
 Distance (au) : 18.676
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -7.20
 Sun-Target sep (deg) : 117.00
 Sun-Moon sep (deg) : 102.26
 B (ring opening deg) : 82.14
 PA of pole (deg) : 1.18

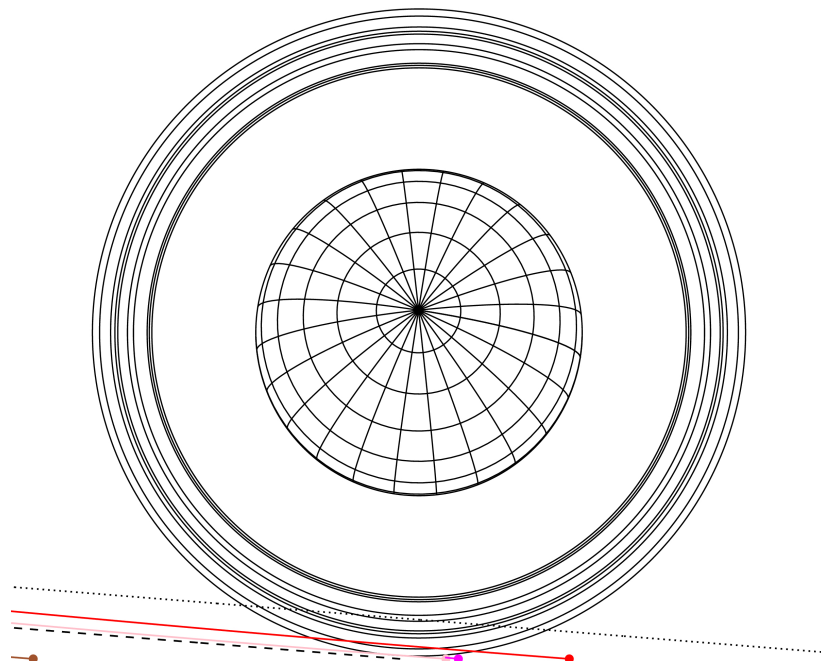
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2031-02-10T21:06:22.0400 α: 05 09 54.76222 δ: +23 02 14.559 C/A 3.773° PA 355.41 deg v_sky - 7.20 km/s D 18.68 AU
 Credit: Styled after SORA/Lucky Star

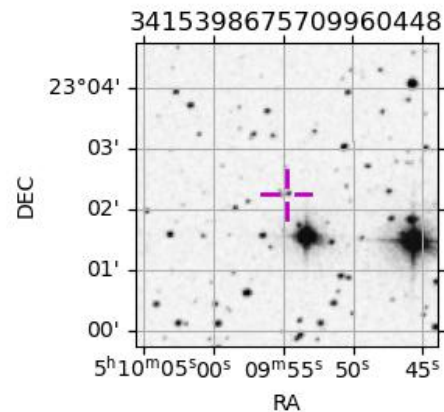
Uranus 2031-02-10T21:06:22 K14.72 G17.20 XRT

PIC
 TEN
 KAV
 RIO



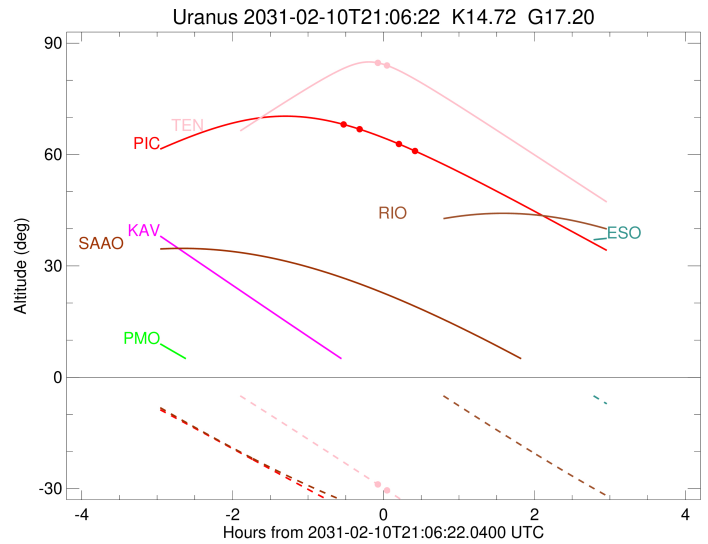
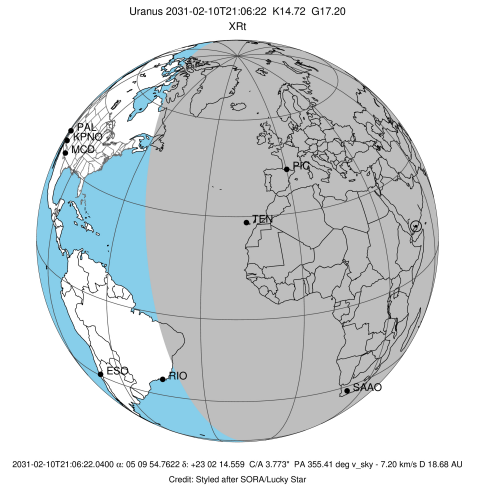
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	++		++	FEB 10 20:31 - FEB 10 21:34	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	+		+	FEB 10 20:51 - FEB 10 21:20	PnnRie
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            : 2031-02-10T21:02:47.220
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      : 3415398675709960448
2Mass ID (if available) : 05095475+2302146
ICRS Star Coord at Epoch: 05h 09m 54.76223s +23:02:14.55950s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 14.719
G magnitude          : 17.202
RP magnitude         : 16.449
BP magnitude         : 17.840
DUPflag             : 0
Distance (au)       : 18.676
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -7.20
Sun-Target sep (deg) : 117.00
Sun-Moon sep (deg)  : 103.14
B (ring opening deg) : 82.14
PA of pole (deg)    : 1.18
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.623
C/A sky separation (km) : 49069.8
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
  
```



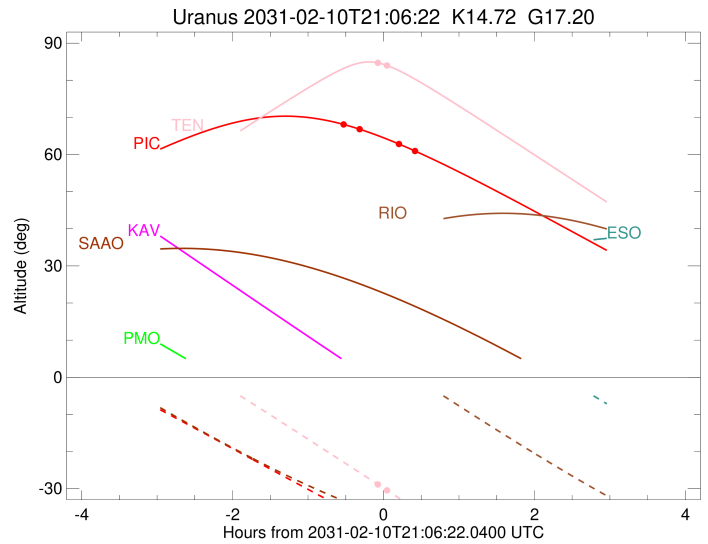
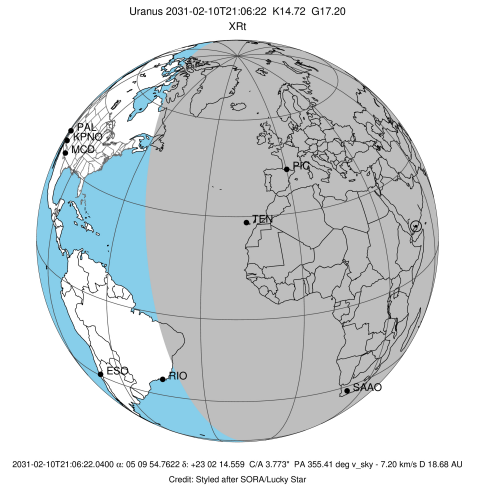
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2031-02-10T20:31:55.617		68.35	-34.79	51483.38	-2.08		
lambda	I	2031-02-10T20:47:37.045		66.80	-37.57	50026.71	-1.04		

No planet occultations

lambda	E	2031-02-10T21:18:24.533		62.87	-42.87	50026.71	1.04		
epsilon	E	2031-02-10T21:34:45.306		60.44	-45.57	51555.01	2.06		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2031-02-10T21:05:18.070
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       : 3415398675709960448
2Mass ID (if available) : 05095475+2302146
ICRS Star Coord at Epoch: 05h 09m 54.76223s +23:02:14.55950s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 14.719
G magnitude          : 17.202
RP magnitude         : 16.449
BP magnitude         : 17.840
DUPflag             : 0
Distance (au)        : 18.676
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -7.20
Sun-Target sep (deg) : 117.00
Sun-Moon sep (deg)  : 103.19
B (ring opening deg) : 82.14
PA of pole (deg)    : 1.18
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.739
C/A sky separation (km) : 50646.3
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
  
```



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2031-02-10T20:51:31.945		84.89	-26.59	51697.42	-1.14		

No planet occultations

epsilon	E	2031-02-10T21:20:21.449		82.33	-32.94	51843.59	1.24		
---------	---	-------------------------	--	-------	--------	----------	------	--	--