

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-01-01T21:50:56.850
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3427822985305799040
 2Mass ID (if available) : 05540690+2338449

ICRS Star Coord at Epoch: 05h 54m 06.91235s +23:38:44.87697s

RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.653
 G magnitude : 17.478
 RP magnitude : 16.585
 BP magnitude : 18.333
 DUPflag : 0
 Distance (au) : 18.057
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -22.71
 Sun-Target sep (deg) : 167.31
 Sun-Moon sep (deg) : 160.22
 B (ring opening deg) : 76.46
 PA of pole (deg) : 53.31

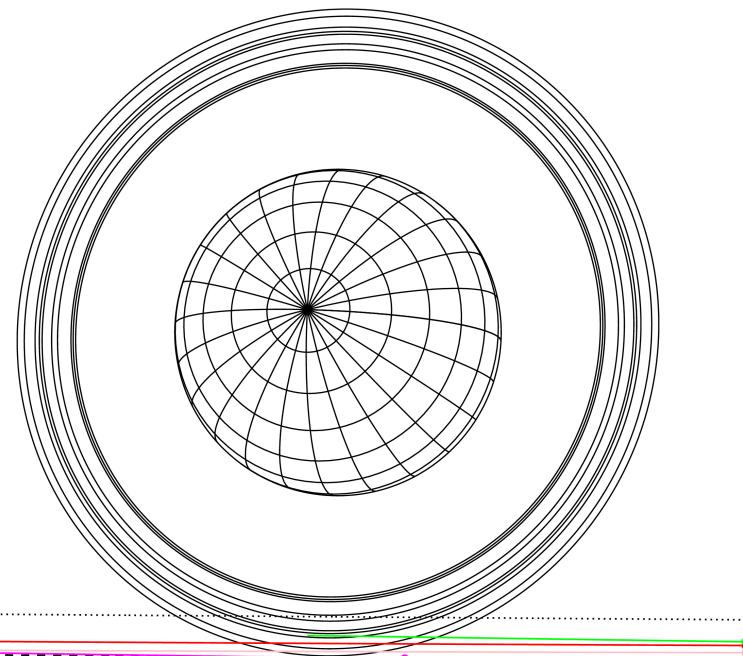
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2033-01-01T21:50:56.8500 ra: 05 54 06.91235 s: +23 38 44.877 C/A 3.880° PA 359.58 deg v_sky -22.71 km/s D 18.06 AU
 Credit: Styled after SORA/Lucky Star

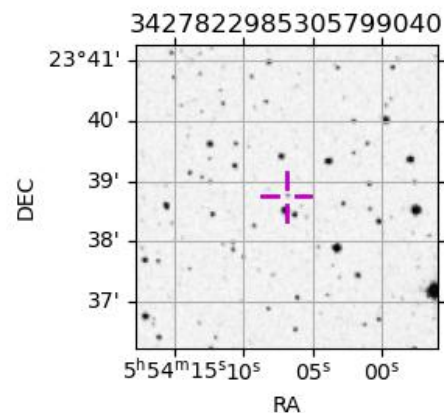
PIC
 PMO
 TEN
 KAV

Uranus 2033-01-01T21:50:56 K14.65 G17.48 XRT



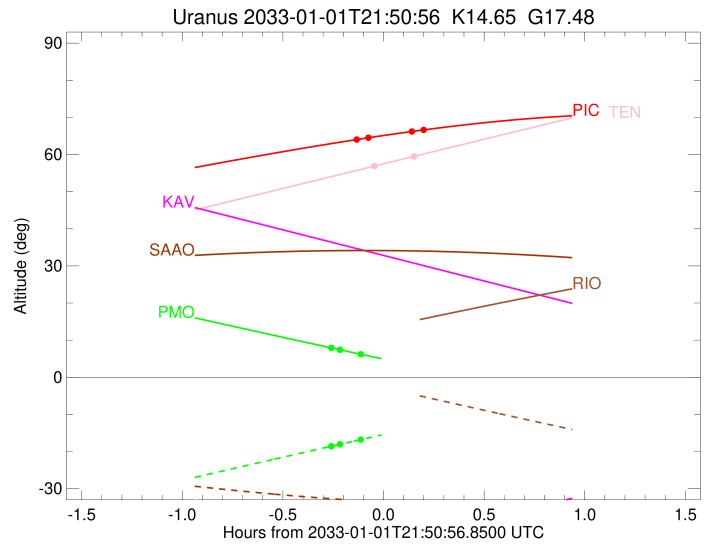
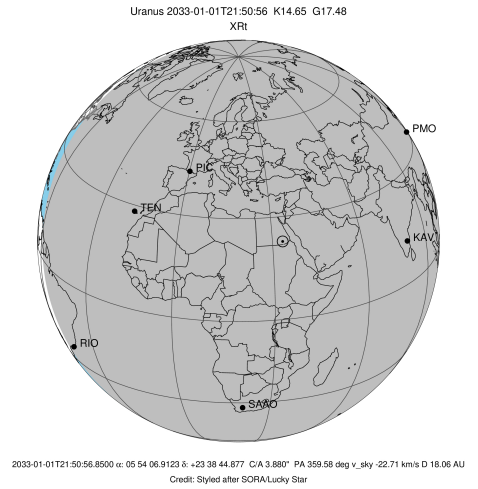
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	++		++	JAN 01 21:44 - JAN 01 22:02	PnnRie
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+++			JAN 01 21:36 - JAN 01 21:44	PnnRin
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	+		+	JAN 01 21:50 - JAN 01 21:58	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



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2033-01-01T21:51:59.380
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       : 3427822985305799040
2Mass ID (if available) : 05540690+2338449
ICRS Star Coord at Epoch: 05h 54m 06.91235s +23:38:44.87697s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 14.653
G magnitude          : 17.478
RP magnitude         : 16.585
BP magnitude         : 18.333
DUPflag             : 0
Distance (au)        : 18.057
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -22.71
Sun-Target sep (deg) : 167.31
Sun-Moon sep (deg)   : 160.82
B (ring opening deg) : 76.46
PA of pole (deg)     : 53.31
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.719
C/A sky separation (km) : 48710.1
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_itrfr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
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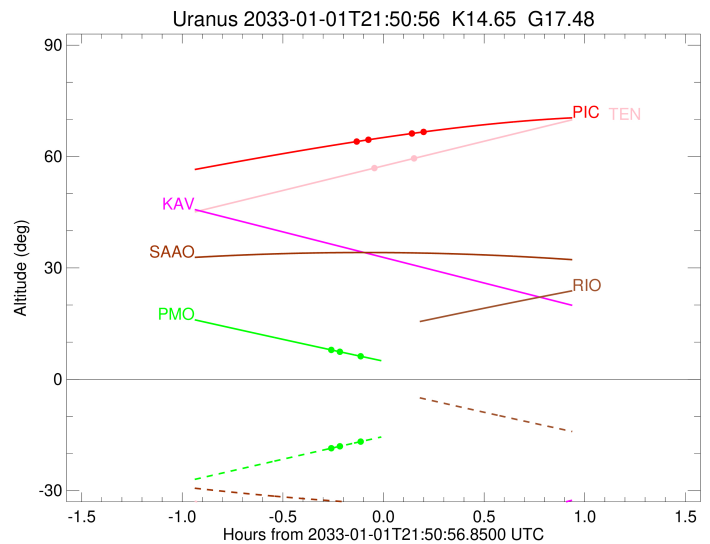
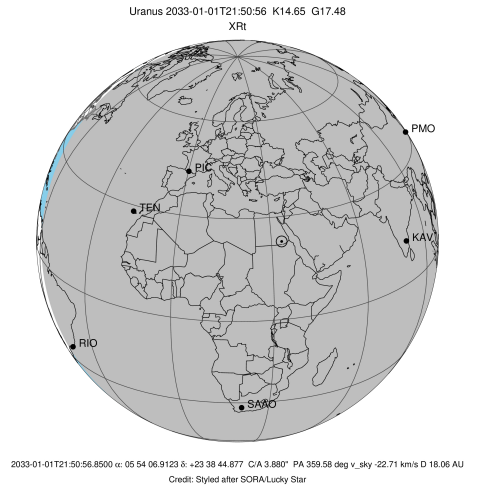
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b: ring blocked by planet  x: target alt < 5.0 deg or sun > -5.0 deg
Ring      I/E      UTC      b? alt  alt-sun  radius  r-dot  lat-geo lat-geodetic
-----
epsilon   I  2033-01-01T21:44:05.530  64.19 -55.05  50749.01 -5.78
lambda    I  2033-01-01T21:46:29.987  64.52 -55.46  50026.71 -4.24

No planet occultations

lambda    E  2033-01-01T21:59:21.824  66.20 -57.58  50026.71  4.24
epsilon   E  2033-01-01T22:02:00.051  66.52 -58.01  50829.33  5.78
  
```

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-01-01T21:47:15.100
 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 : 3427822985305799040
 2Mass ID (if available) : 05540690+2338449
 ICRS Star Coord at Epoch: 05h 54m 06.91235s +23:38:44.87697s
 RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.653
 G magnitude : 17.478
 RP magnitude : 16.585
 BP magnitude : 18.333
 DUPflag : 0
 Distance (au) : 18.057
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -22.71
 Sun-Target sep (deg) : 167.31
 Sun-Moon sep (deg) : 159.62
 B (ring opening deg) : 76.46
 PA of pole (deg) : 53.31
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.629
 C/A sky separation (km) : 47521.2
 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



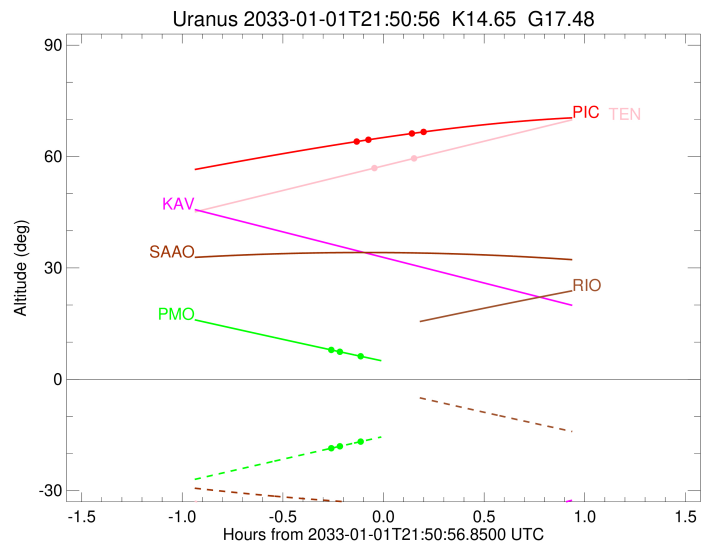
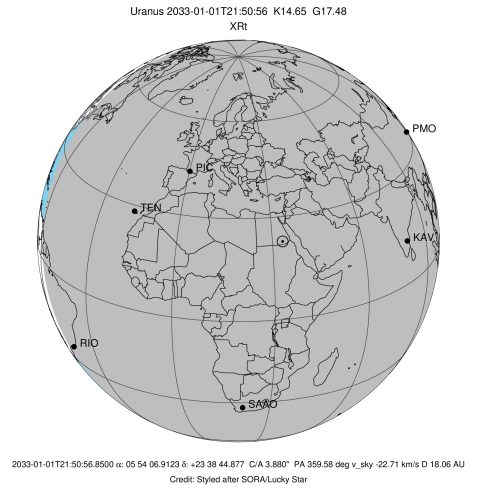
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2033-01-01T21:36:16.477		7.73	-18.40	50745.16	-7.52		
lambda	I	2033-01-01T21:37:58.817		7.40	-18.05	50026.71	-6.52		
delta	I	2033-01-01T21:44:13.860		6.18	-16.78	48300.35	-2.61		

No planet occultations

delta	E	2033-01-01T21:52:07.812		4.65x	-15.18	48300.35	2.61		
lambda	E	2033-01-01T21:58:23.261		3.45x	-13.91	50026.71	6.51		
epsilon	E	2033-01-01T22:00:20.098		3.07x	-13.52	50853.46	7.51		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2033-01-01T21:53:10.790
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       : 3427822985305799040
2Mass ID (if available) : 05540690+2338449
ICRS Star Coord at Epoch: 05h 54m 06.91235s +23:38:44.87697s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 14.653
G magnitude           : 17.478
RP magnitude          : 16.585
BP magnitude          : 18.333
DUPflag              : 0
Distance (au)        : 18.057
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -22.71
Sun-Target sep (deg) : 167.31
Sun-Moon sep (deg)   : 161.00
B (ring opening deg) : 76.46
PA of pole (deg)     : 53.31
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.816
C/A sky separation (km) : 49976.1
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural161.bsp
vgr2.ural161.bsp
peph.ural160.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	2033-01-01T21:50:21.526		57.36	-45.00	50764.29	-2.53		

No planet occultations

epsilon	E	2033-01-01T21:58:09.977		59.08	-46.71	50798.59	2.53		
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