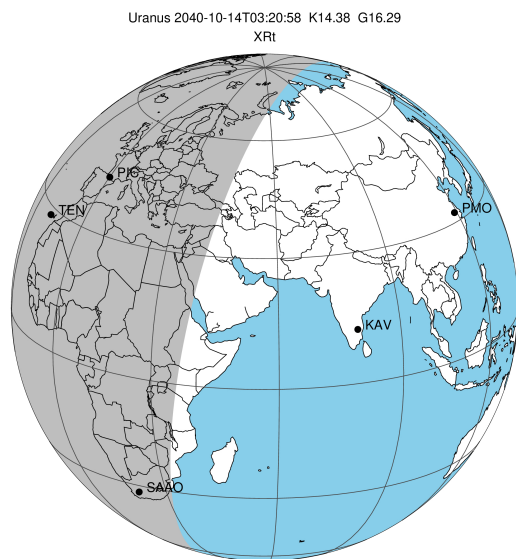


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-10-14T03:20:58.540
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 659705950170306688
 2Mass ID (if available) : 08384014+1903409

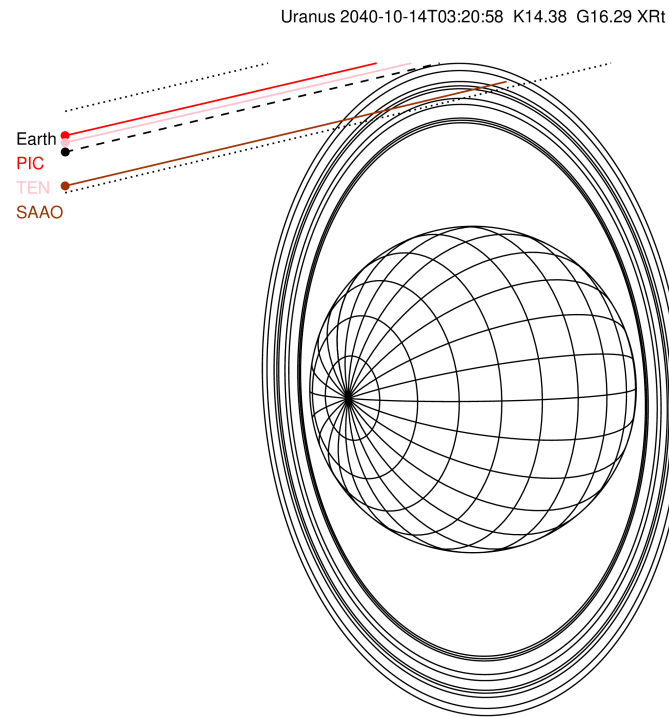
ICRS Star Coord at Epoch: 08h 38m 40.14040s +19:03:40.88441s

RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.375
 G magnitude : 16.294
 RP magnitude : 15.676
 BP magnitude : 16.746
 DUPflag : 0
 Distance (au) : 18.804
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 14.93
 Sun-Target sep (deg) : 73.73
 Sun-Moon sep (deg) : 172.68
 B (ring opening deg) : 39.99
 PA of pole (deg) : 94.11

#	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

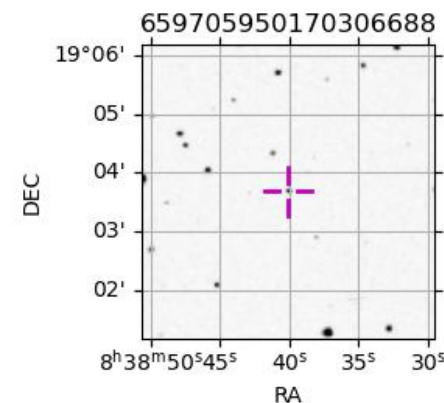


2040-10-14T03:20:58.5400 ex: 08 38 40.1404 s: +19 03 40.884 C/A 3.735° PA 193.35 deg v_sky +14.93 km/s D 18.80 AU
 Credit: Styled after SORA/Lucky Star



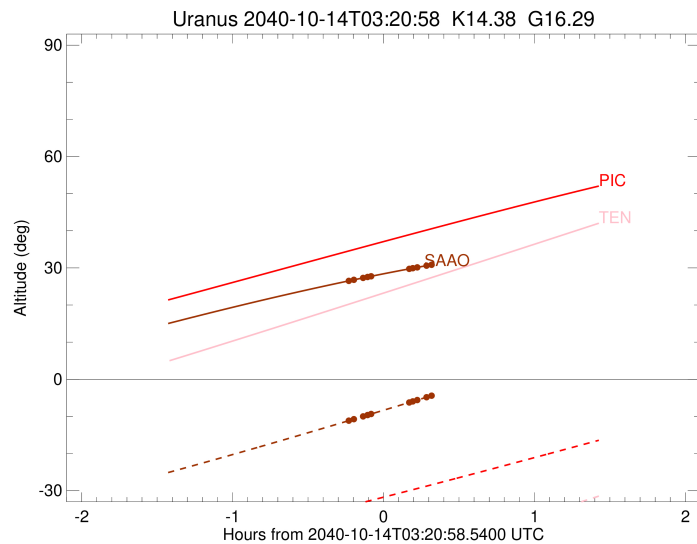
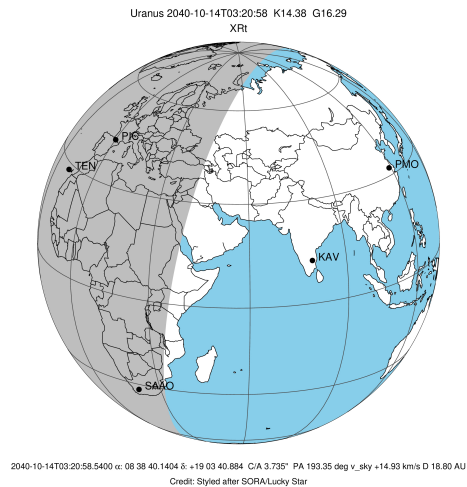
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
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					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	+++++		+++	OCT 14 03:07 - OCT 14 03:34	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2040-10-14T03:18:42.200
Event type          : XRT
: No Uranus occs
: Ring occs: topocentric, not geocentric
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 659705950170306688
2Mass ID (if available) : 08384014+1903409
ICRS Star Coord at Epoch: 08h 38m 40.14040s +19:03:40.88441s
RUWE (>1.4 is poor) : 1.07
K magnitude         : 14.375
G magnitude         : 16.294
RP magnitude        : 15.676
BP magnitude        : 16.746
DUPflag            : 0
Distance (au)       : 18.804
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : 14.93
Sun-Target sep (deg) : 73.73
Sun-Moon sep (deg)  : 172.92
B (ring opening deg) : 39.99
PA of pole (deg)    : 94.11
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.351
C/A sky separation (km) : 45697.5
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	2040-10-14T03:07:09.937		26.50	-11.16	51178.40	-10.00		
lambda	I	2040-10-14T03:09:13.338		26.79	-10.74	50026.71	-8.81		
delta	I	2040-10-14T03:12:54.153		27.31	-9.99	48300.35	-6.79		
gamma	I	2040-10-14T03:14:42.396		27.56	-9.63	47622.40	-5.73		
eta	I	2040-10-14T03:16:06.565		27.75	-9.34	47176.12	-4.87		

No planet occultations

eta	E	2040-10-14T03:31:09.380		29.74	-6.27	47176.12	4.87		
gamma	E	2040-10-14T03:32:34.068		29.91	-5.98	47624.68	5.72		
delta	E	2040-10-14T03:34:22.096		30.14	-5.61	48300.35	6.78		
lambda	E	2040-10-14T03:38:03.394		30.60	-4.85x	50026.71	8.79		
epsilon	E	2040-10-14T03:40:38.331		30.91	-4.31x	51488.58	9.98		