

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-01-07T00:21:39.100
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3427825566583885184
 2Mass ID (if available) : 05531216+2338394

ICRS Star Coord at Epoch: 05h 53m 12.16093s +23:38:38.55634s

RUWE (>1.4 is poor) : 1.11
 K magnitude : 10.479
 G magnitude : 13.445
 RP magnitude : 12.558
 BP magnitude : 14.204
 DUPflag : 0
 Distance (au) : 18.079
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.95
 Sun-Target sep (deg) : 161.89
 Sun-Moon sep (deg) : 86.67
 B (ring opening deg) : 76.63
 PA of pole (deg) : 52.70

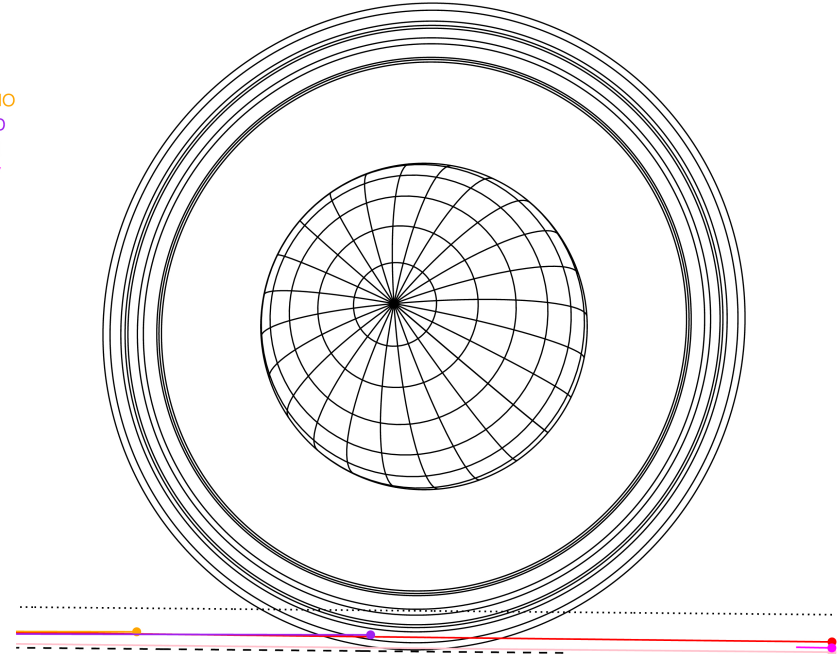
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2033-01-07T00:21:39.1000 α: 05 53 12.1609 s: +23 38 38.556 C/A 3.878° PA 359.46 deg v_sky -21.95 km/s D 18.08 AU
 Credit: Styled after SORA/Lucky Star

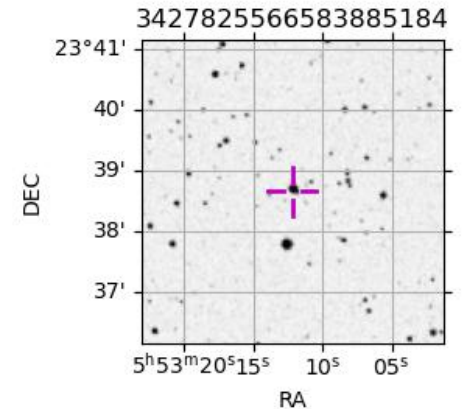
Uranus 2033-01-07T00:21:39 K10.48 G13.45 XRT

PIC
 KPNO
 MCD
 TEN
 KAV

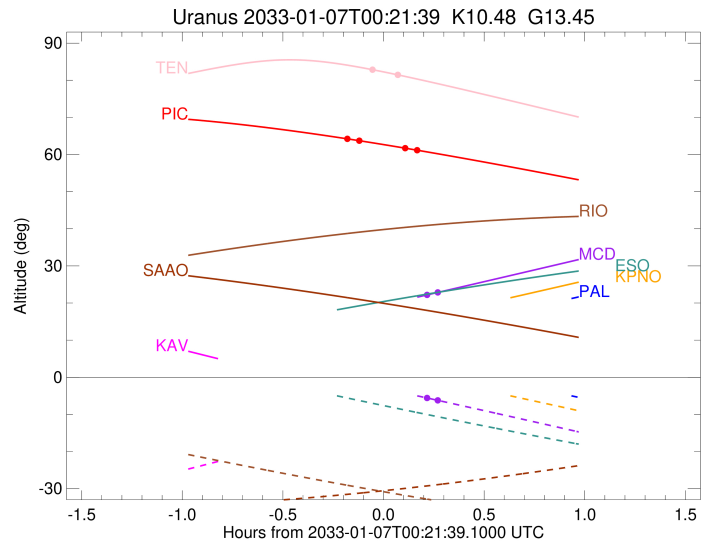
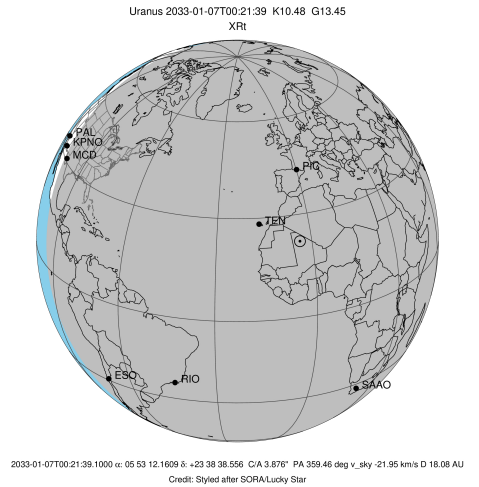


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	++		++	JAN 07 00:12 - JAN 07 00:30	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			++	JAN 07 00:34 - JAN 07 00:37	PnnRne
TEN	Teide Obs./Tenerife	28.3	343.5	+		+	JAN 07 00:21 - JAN 07 00:22	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 : 2033-01-07T00:20:19.370
 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 : 3427825566583885184
 2Mass ID (if available) : 05531216+2338394
 ICRS Star Coord at Epoch: 05h 53m 12.16093s +23:38:38.55634s
 RUWE (>1.4 is poor) : 1.11
 K magnitude : 10.479
 G magnitude : 13.445
 RP magnitude : 12.558
 BP magnitude : 14.204
 DUPflag : 0
 Distance (au) : 18.079
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.95
 Sun-Target sep (deg) : 161.89
 Sun-Moon sep (deg) : 87.56
 B (ring opening deg) : 76.63
 PA of pole (deg) : 52.70
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.713
 C/A sky separation (km) : 48684.0
 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



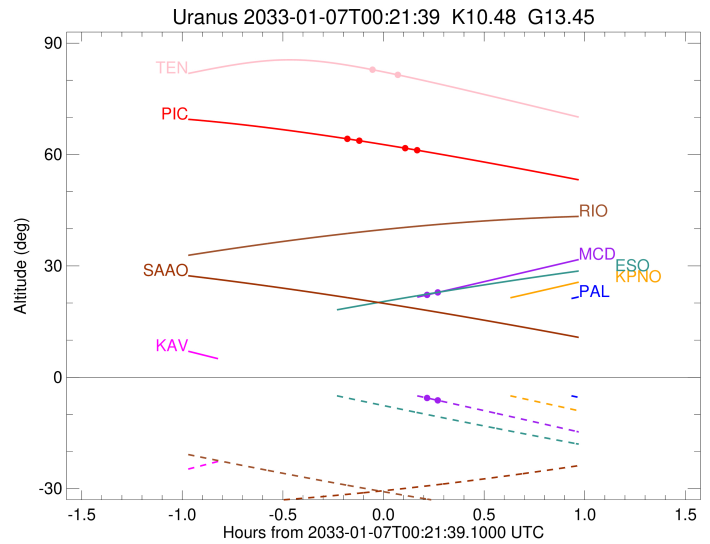
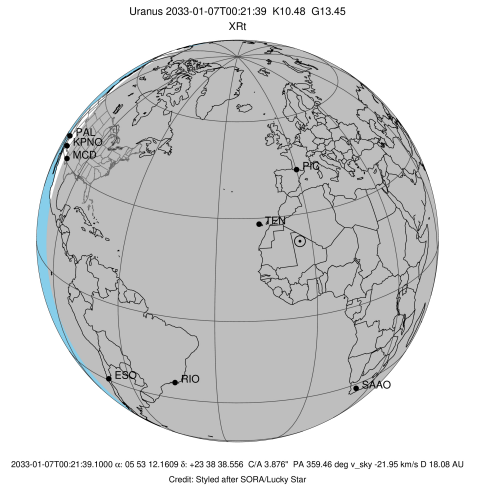
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2033-01-07T00:12:00.057		64.07	-69.56	50760.00	-5.68		
lambda	I	2033-01-07T00:14:29.402		63.72	-69.52	50026.71	-4.18		

No planet occultations

lambda	E	2033-01-07T00:28:03.782		61.72	-69.08	50026.71	4.18		
epsilon	E	2033-01-07T00:30:51.502		61.29	-68.94	50864.54	5.68		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2033-01-07T00:25:28.650
Event type           : XRt
: No Uranus occs
: Ring occs: topocentric, not geocentric
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 3427825566583885184
2Mass ID (if available) : 05531216+2338394
ICRS Star Coord at Epoch: 05h 53m 12.16093s +23:38:38.55634s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 10.479
G magnitude           : 13.445
RP magnitude          : 12.558
BP magnitude          : 14.204
DUPflag              : 0
Distance (au)        : 18.079
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -21.95
Sun-Target sep (deg) : 161.89
Sun-Moon sep (deg)   : 86.95
B (ring opening deg) : 76.63
PA of pole (deg)     : 52.70
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.685
C/A sky separation (km) : 48315.5
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
  
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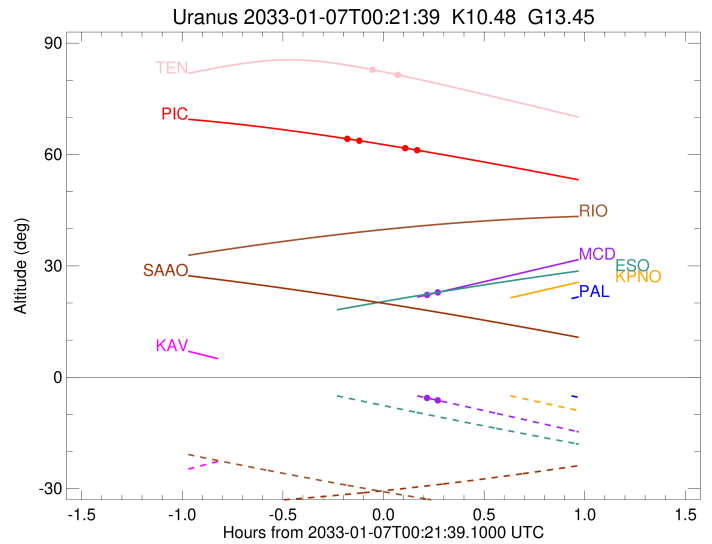
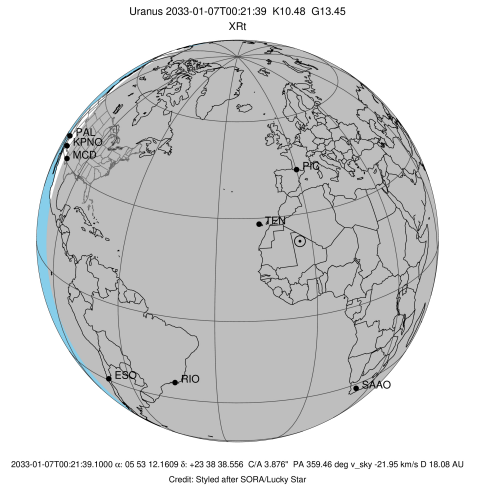


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2033-01-07T00:16:04.919		18.34	-1.93x	50756.12	-6.19		
lambda	I	2033-01-07T00:18:16.748		18.79	-2.36x	50026.71	-4.91		

No planet occultations

lambda	E	2033-01-07T00:34:35.629		22.18	-5.57	50026.71	4.92		
epsilon	E	2033-01-07T00:37:05.467		22.70	-6.07	50869.51	6.20		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-01-07T00:21:10.040
 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 : 3427825566583885184
 2Mass ID (if available) : 05531216+2338394
 ICRS Star Coord at Epoch: 05h 53m 12.16093s +23:38:38.55634s
 RUWE (>1.4 is poor) : 1.11
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 BP magnitude : 14.204
 DUPflag : 0
 Distance (au) : 18.079
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.95
 Sun-Target sep (deg) : 161.89
 Sun-Moon sep (deg) : 87.65
 B (ring opening deg) : 76.63
 PA of pole (deg) : 52.70
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.844
 C/A sky separation (km) : 50399.9
 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	2033-01-07T00:21:24.130		82.31	-77.16	50959.78	0.99		

No planet occultations

epsilon	E	2033-01-07T00:22:29.548		82.11	-77.38	50977.50	-1.32		
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