

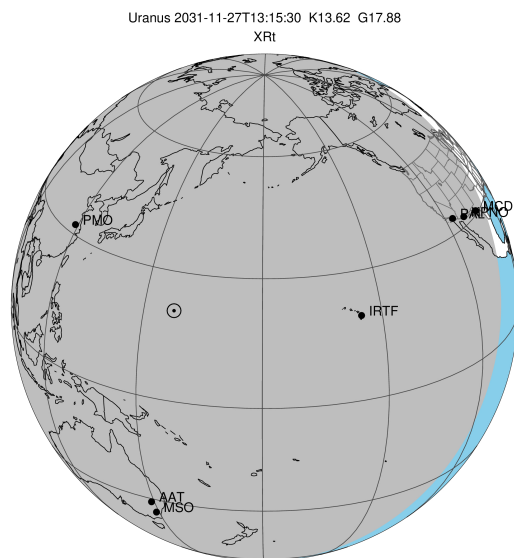
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2031-11-27T13:15:30.410
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 3404408679033933696
 2Mass ID (if available) : 05404760+2330555

ICRS Star Coord at Epoch: 05h 40m 47.59962s +23:30:55.55084s

RUWE (>1.4 is poor) : 1.09
 K magnitude : 13.621
 G magnitude : 17.877
 RP magnitude : 16.706
 BP magnitude : 19.284
 DUPflag : 0
 Distance (au) : 18.166
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.46
 Sun-Target sep (deg) : 159.04
 Sun-Moon sep (deg) : 37.42
 B (ring opening deg) : 78.83
 PA of pole (deg) : 43.12

a(km) ring

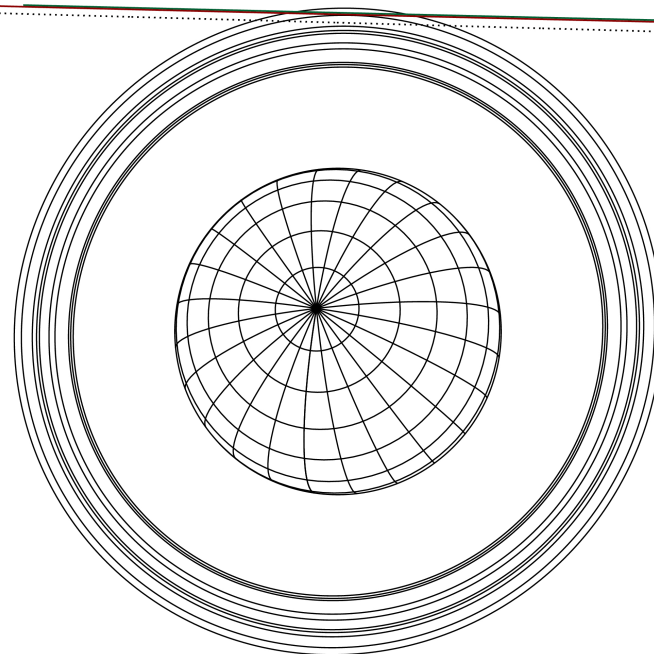
- 1 41837.2 6
- 2 42235.0 5
- 3 42571.2 4
- 4 44718.5 alpha
- 5 45661.1 beta
- 6 47176.1 eta
- 7 47626.3 gamma
- 8 48300.3 delta
- 9 50026.7 lambda
- 10 51149.4 epsilon



2031-11-27T13:15:30.4100 ex: 05 40 47.5996 s: +23 30 55.551 C/A 4.161" PA 178.40 deg v_sky -21.46 km/s D 18.17 AU
 Credit: Styled after SORA/Lucky Star

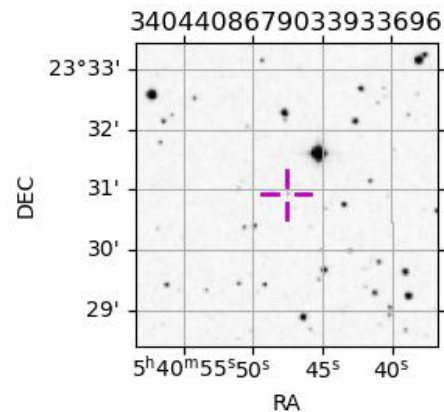
Uranus 2031-11-27T13:15:30 K13.62 G17.88 XRT

Earth
 AAT
 MSO

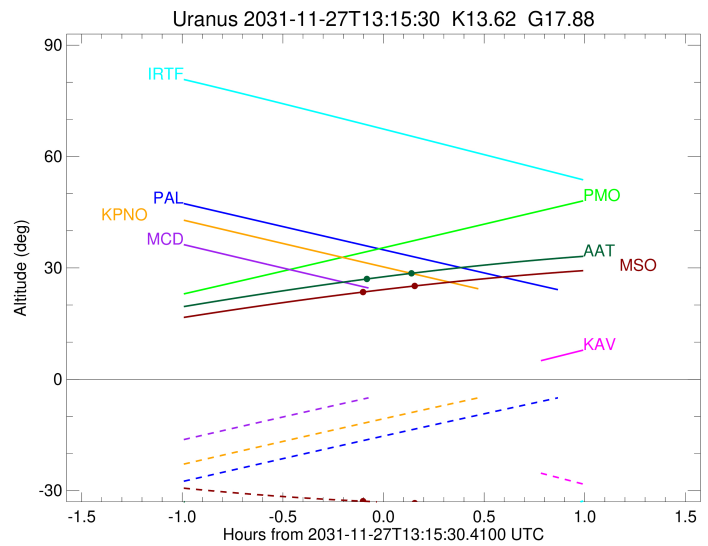
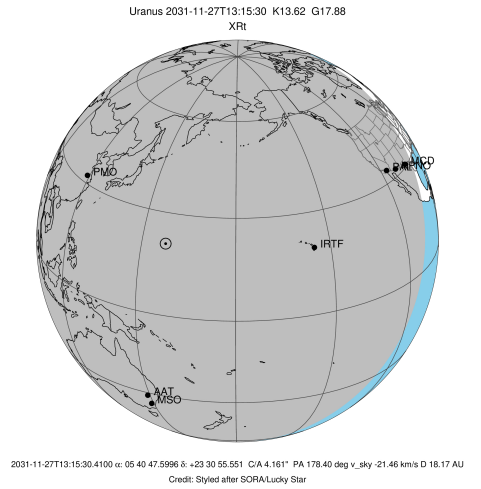


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+			NOV 27 13:12 - NOV 27 13:21	PnnRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+			NOV 27 13:11 - NOV 27 13:23	PnnRie



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2031-11-27T13:17:55.990
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : AAT
 Location : Siding Spring (AAT)
 Latitude (deg) : -31.27703
 E. Longitude (deg) : 149.06608
 Altitude (km) : 1.164
 Gaia source ID : 3404408679033933696
 2Mass ID (if available) : 05404760+2330555
 ICRS Star Coord at Epoch: 05h 40m 47.59962s +23:30:55.55084s
 RUWE (>1.4 is poor) : 1.09
 K magnitude : 13.621
 G magnitude : 17.877
 RP magnitude : 16.706
 BP magnitude : 19.284
 DUPflag : 0
 Distance (au) : 18.166
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.46
 Sun-Target sep (deg) : 159.04
 Sun-Moon sep (deg) : 37.34
 B (ring opening deg) : 78.83
 PA of pole (deg) : 43.12
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.788
 C/A sky separation (km) : 49906.9
 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

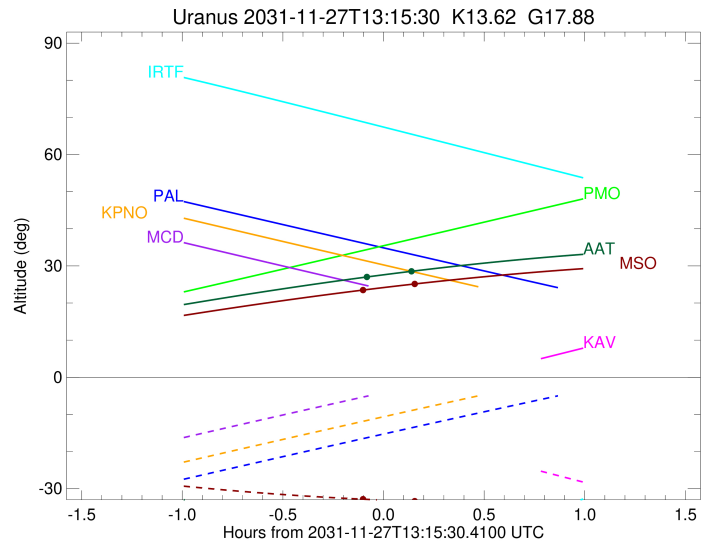
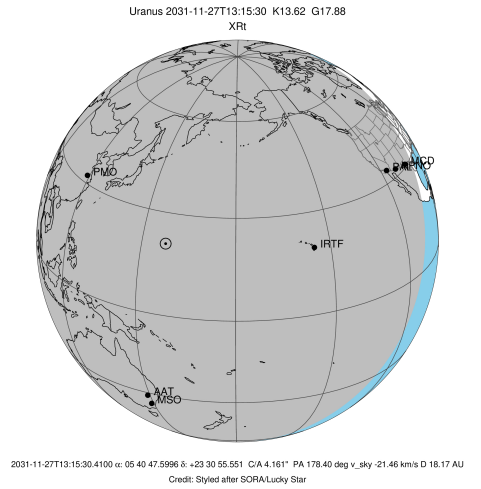


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2031-11-27T13:12:34.041		27.26	-36.93	50776.92	-2.59		

No planet occultations

epsilon	E	2031-11-27T13:21:40.145		28.30	-37.27	50750.81	2.60		
---------	---	-------------------------	--	-------	--------	----------	------	--	--

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2031-11-27T13:17:50.240
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 3404408679033933696
 2Mass ID (if available) : 05404760+2330555
 ICRS Star Coord at Epoch: 05h 40m 47.59962s +23:30:55.55084s
 RUWE (>1.4 is poor) : 1.09
 K magnitude : 13.621
 G magnitude : 17.877
 RP magnitude : 16.706
 BP magnitude : 19.284
 DUPflag : 0
 Distance (au) : 18.166
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.46
 Sun-Target sep (deg) : 159.04
 Sun-Moon sep (deg) : 37.32
 B (ring opening deg) : 78.83
 PA of pole (deg) : 43.12
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.768
 C/A sky separation (km) : 49646.6
 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	2031-11-27T13:11:01.352		23.67	-32.91	50782.16	-3.41		

No planet occultations

epsilon	E	2031-11-27T13:23:01.655		24.95	-33.32	50747.39	3.41		
---------	---	-------------------------	--	-------	--------	----------	------	--	--