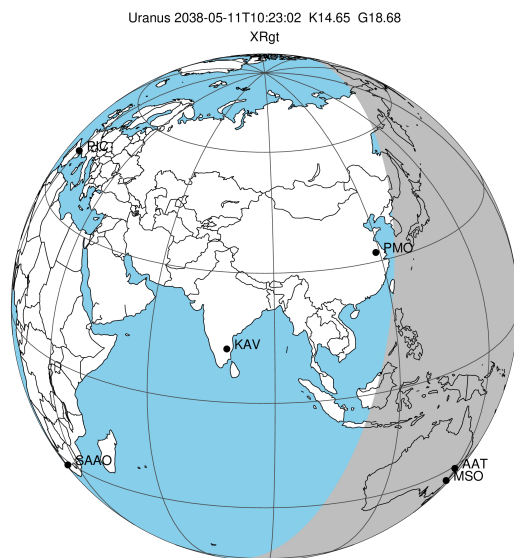


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-05-11T10:23:02.780
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 866450347059761920
 2Mass ID (if available) : 07283496+2221340

ICRS Star Coord at Epoch: 07h 28m 34.96367s +22:21:33.62908s

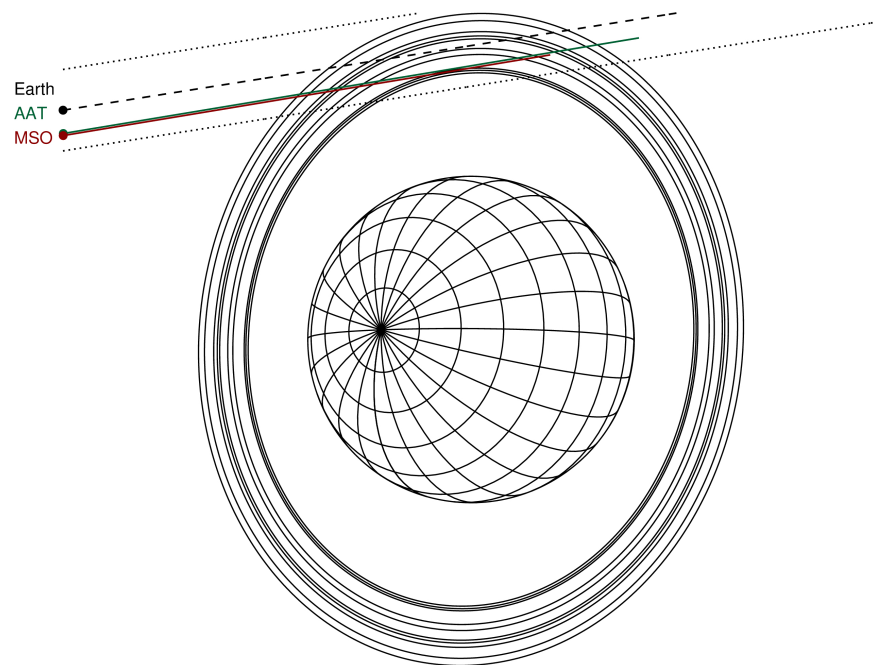
RUWE (>1.4 is poor) : 0.91
 K magnitude : 14.653
 G magnitude : 18.680
 RP magnitude : 17.406
 BP magnitude : 20.466
 DUPflag : 0
 Distance (au) : 19.168
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.35
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 20.71
 B (ring opening deg) : 56.33
 PA of pole (deg) : 83.86

#	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



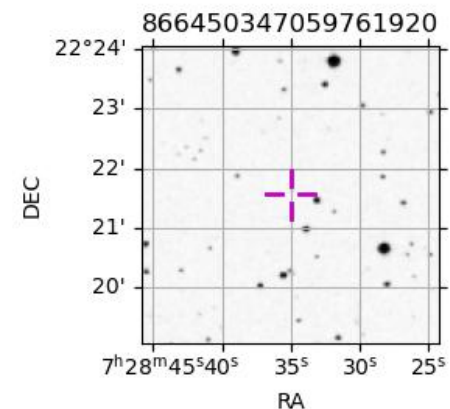
2038-05-11T10:23:02.7800 ex: 07 28 34.9637 s: +22 21 33.629 C/A 3.279° PA 188.99 deg v_sky +21.35 km/s D 19.17 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2038-05-11T10:23:02 K14.65 G18.68 XRgt

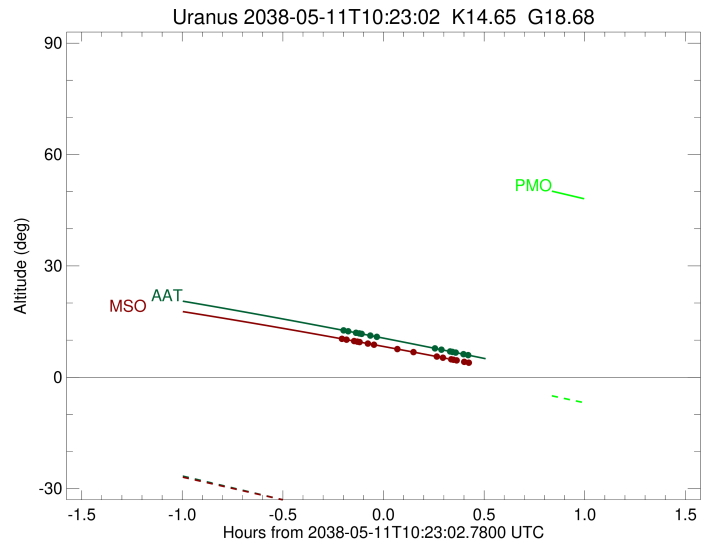
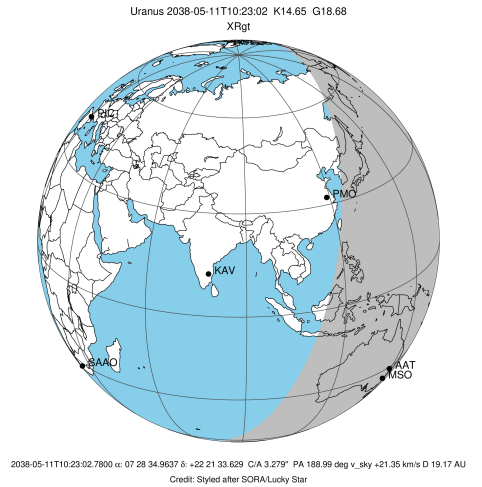


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
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	+++++		+++++	MAY 11 10:11 - MAY 11 10:47	PnnRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+++++		+++	MAY 11 10:11 - MAY 11 10:40	PnnRie



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-05-11T10:27:01.380
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : AAT
 Location : Siding Spring (AAT)
 Latitude (deg) : -31.27703
 E. Longitude (deg) : 149.06608
 Altitude (km) : 1.164
 Gaia source ID : 866450347059761920
 2Mass ID (if available) : 07283496+2221340
 ICRS Star Coord at Epoch: 07h 28m 34.96367s +22:21:33.62908s
 RUWE (>1.4 is poor) : 0.91
 K magnitude : 14.653
 G magnitude : 18.680
 RP magnitude : 17.406
 BP magnitude : 20.466
 DUPflag : 0
 Distance (au) : 19.168
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.35
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 20.08
 B (ring opening deg) : 56.33
 PA of pole (deg) : 83.86
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.042
 C/A sky separation (km) : 42282.3
 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



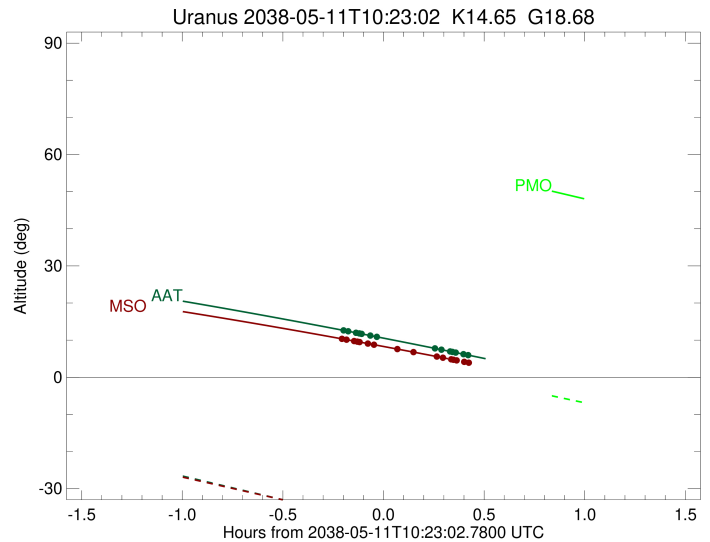
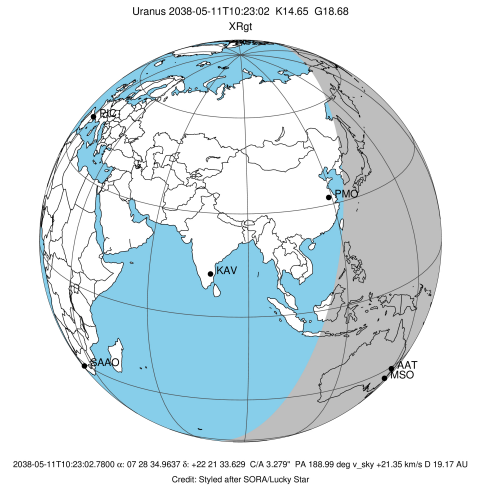
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2038-05-11T10:11:31.110		12.56	-36.96	50851.46	-13.48		
lambda	I	2038-05-11T10:12:33.021		12.38	-37.18	50026.71	-13.04		
delta	I	2038-05-11T10:14:52.542		11.98	-37.68	48300.35	-11.68		
gamma	I	2038-05-11T10:15:51.868		11.81	-37.89	47625.61	-11.06		
eta	I	2038-05-11T10:16:33.348		11.69	-38.04	47176.12	-10.61		
beta	I	2038-05-11T10:19:07.550		11.23	-38.59	45674.08	-8.83		
alpha	I	2038-05-11T10:21:05.554		10.89	-39.01	44720.46	-7.36		

No planet occultations

alpha	E	2038-05-11T10:38:23.753		7.78	-42.71	44739.08	7.37		
beta	E	2038-05-11T10:40:19.713		7.43	-43.12	45681.00	8.85		
eta	E	2038-05-11T10:42:53.002		6.96	-43.67	47176.12	10.64		
gamma	E	2038-05-11T10:43:34.030		6.84	-43.81	47621.70	11.09		
delta	E	2038-05-11T10:44:33.558		6.65	-44.02	48300.35	11.71		
lambda	E	2038-05-11T10:46:52.682		6.23	-44.52	50026.71	13.08		
epsilon	E	2038-05-11T10:47:48.666		6.05	-44.72	50773.40	13.53		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-05-11T10:26:54.200
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 866450347059761920
 2Mass ID (if available) : 07283496+2221340
 ICRS Star Coord at Epoch: 07h 28m 34.96367s +22:21:33.62908s
 RUWE (>1.4 is poor) : 0.91
 K magnitude : 14.653
 G magnitude : 18.680
 RP magnitude : 17.406
 BP magnitude : 20.466
 DUPflag : 0
 Distance (au) : 19.168
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.35
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 20.10
 B (ring opening deg) : 56.33
 PA of pole (deg) : 83.86
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.017
 C/A sky separation (km) : 41944.5
 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	2038-05-11T10:11:01.645		10.29	-36.69	50854.82	-13.75		
lambda	I	2038-05-11T10:12:02.546		10.13	-36.90	50026.71	-13.32		
delta	I	2038-05-11T10:14:18.647		9.75	-37.36	48300.35	-12.02		
gamma	I	2038-05-11T10:15:16.184		9.59	-37.56	47625.69	-11.42		
eta	I	2038-05-11T10:15:56.277		9.48	-37.69	47176.12	-11.00		
beta	I	2038-05-11T10:18:23.853		9.07	-38.19	45673.76	-9.32		
alpha	I	2038-05-11T10:20:14.450		8.77	-38.57	44719.62	-7.97		
4	I	2038-05-11T10:27:08.673		7.60	-39.98	42594.95	-2.20		

No planet occultations

4	E	2038-05-11T10:32:04.378		6.76	-40.98	42601.33	2.20		
alpha	E	2038-05-11T10:38:57.374		5.58	-42.38	44739.76	7.98		
beta	E	2038-05-11T10:40:45.936		5.26	-42.74	45681.06	9.34		
eta	E	2038-05-11T10:43:12.611		4.84x	-43.24	47176.12	11.02		
gamma	E	2038-05-11T10:43:52.256		4.72x	-43.37	47621.66	11.45		
delta	E	2038-05-11T10:44:50.000		4.55x	-43.57	48300.35	12.05		
lambda	E	2038-05-11T10:47:05.720		4.16x	-44.02	50026.71	13.37		
epsilon	E	2038-05-11T10:48:00.711		4.00x	-44.21	50775.37	13.79		