

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-03-01T01:02:12.550
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 670724327990726016
 2Mass ID (if available) : 08061802+2052426

ICRS Star Coord at Epoch: 08h 06m 18.02340s +20:52:42.81634s

RUWE (>1.4 is poor) : 0.96
 K magnitude : 12.342
 G magnitude : 13.640
 RP magnitude : 13.200
 BP magnitude : 13.922
 DUPflag : 0
 Distance (au) : 17.826
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -15.87
 Sun-Target sep (deg) : 138.79
 Sun-Moon sep (deg) : 65.09
 B (ring opening deg) : 47.65
 PA of pole (deg) : 89.85

a(km) ring

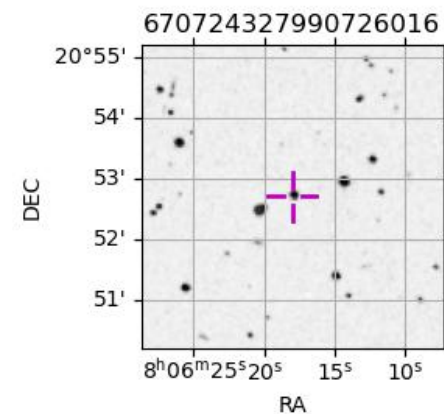
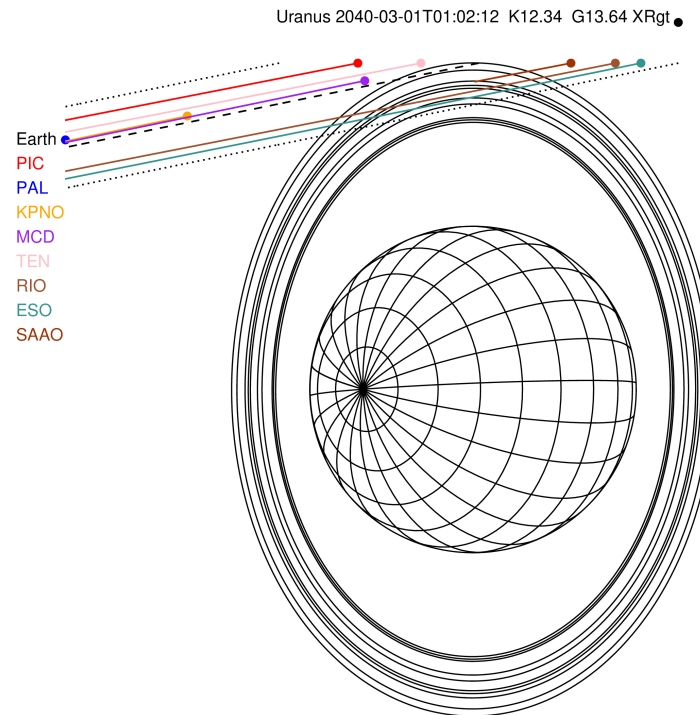
- 1 41837.2 6
- 2 42235.0 5
- 3 42571.2 4
- 4 44718.5 alpha
- 5 45661.1 beta
- 6 47176.1 eta
- 7 47626.3 gamma
- 8 48300.3 delta
- 9 50026.7 lambda
- 10 51149.4 epsilon

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

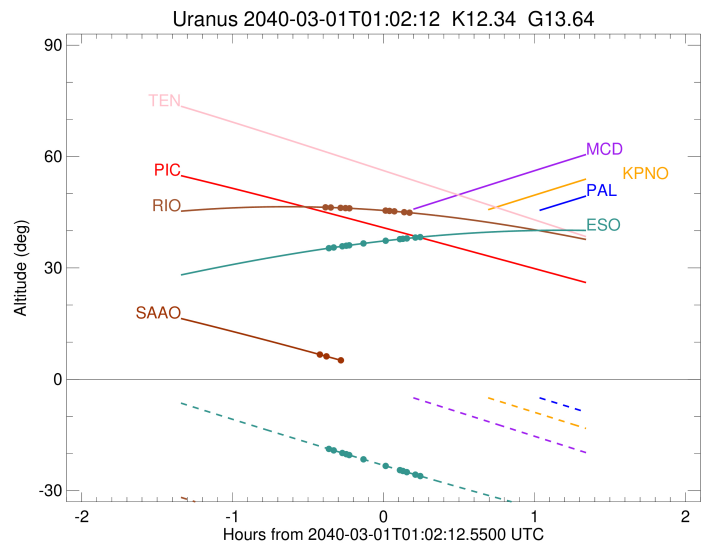
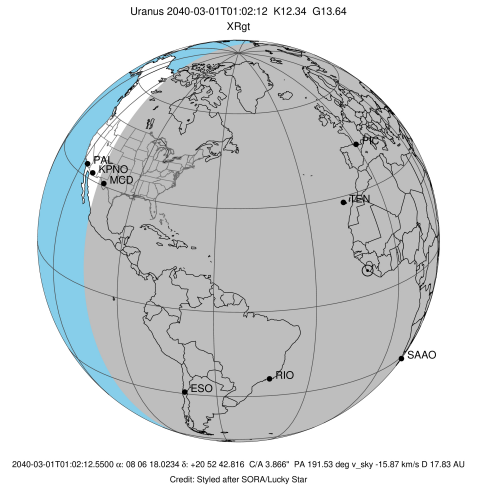
Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide 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	+++++		+++++	MAR 01 00:38 - MAR 01 01:13	PnnRie
ESO	European Southern Obs	-29.3	289.3	+++++		+++++	MAR 01 00:39 - MAR 01 01:17	PnnRie
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++			MAR 01 00:36 - MAR 01 00:45	PnnRin
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



2040-03-01T01:02:12.5500 cc: 08 06 18.0234 s: +20 52 42.816 C/A 3.866" PA 191.53 deg v_sky -15.87 km/s D 17.83 AU
 Credit: Styled after SORA/Lucky Star



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-03-01T00:59:59.930
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : RIO
 Location : Rio de Janeiro
 Latitude (deg) : -22.89506
 E. Longitude (deg) : 316.77708
 Altitude (km) : 0.033
 Gaia source ID : 670724327990726016
 2Mass ID (if available) : 08061802+2052426
 ICRS Star Coord at Epoch: 08h 06m 18.02340s +20:52:42.81634s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 12.342
 G magnitude : 13.640
 RP magnitude : 13.200
 BP magnitude : 13.922
 DUPflag : 0
 Distance (au) : 17.826
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -15.87
 Sun-Target sep (deg) : 138.79
 Sun-Moon sep (deg) : 65.61
 B (ring opening deg) : 47.65
 PA of pole (deg) : 89.85
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.544
 C/A sky separation (km) : 45821.6
 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

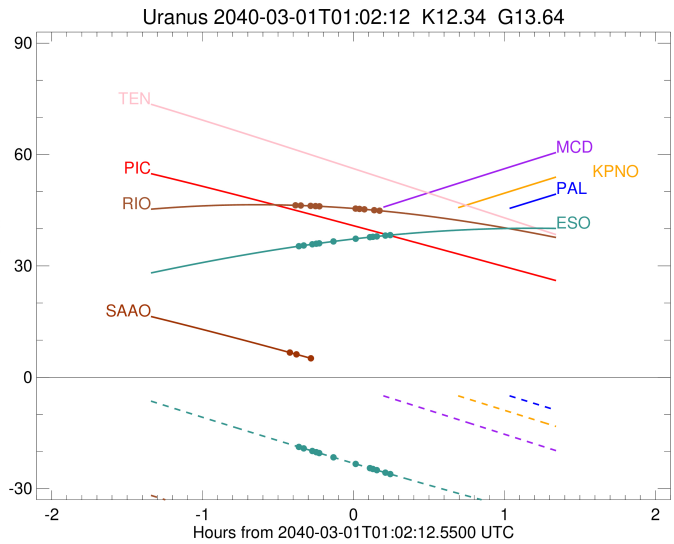
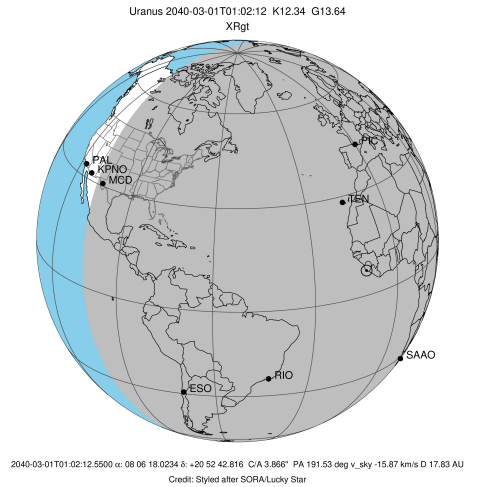


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2040-03-01T00:38:29.343		46.33	-43.13	51537.98	-9.70		
lambda	I	2040-03-01T00:41:17.104		46.27	-43.65	50026.71	-8.34		
delta	I	2040-03-01T00:45:12.082		46.17	-44.37	48300.35	-6.32		
gamma	I	2040-03-01T00:47:09.576		46.11	-44.73	47621.85	-5.22		
eta	I	2040-03-01T00:48:42.809		46.06	-45.02	47176.12	-4.33		

No planet occultations

eta	E	2040-03-01T01:02:58.450		45.44	-47.54	47176.12	4.33		
gamma	E	2040-03-01T01:04:31.571		45.35	-47.81	47620.99	5.22		
delta	E	2040-03-01T01:06:29.313		45.24	-48.14	48300.35	6.31		
lambda	E	2040-03-01T01:10:24.507		45.01	-48.80	50026.71	8.33		
epsilon	E	2040-03-01T01:13:06.280		44.84	-49.25	51478.50	9.69		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-03-01T01:02:49.660
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : ESO
 Location : European Southern Obs. (3.6m)
 Latitude (deg) : -29.26097
 E. Longitude (deg) : 289.26831
 Altitude (km) : 2.400
 Gaia source ID : 670724327990726016
 2Mass ID (if available) : 08061802+2052426
 ICRS Star Coord at Epoch: 08h 06m 18.02340s +20:52:42.81634s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 12.342
 G magnitude : 13.640
 RP magnitude : 13.200
 BP magnitude : 13.922
 DUPflag : 0
 Distance (au) : 17.826
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -15.87
 Sun-Target sep (deg) : 138.79
 Sun-Moon sep (deg) : 65.68
 B (ring opening deg) : 47.65
 PA of pole (deg) : 89.85
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.471
 C/A sky separation (km) : 44879.5
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



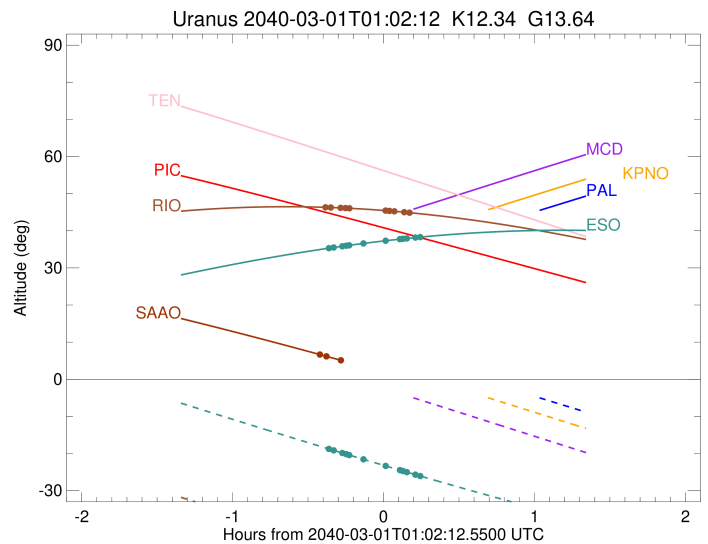
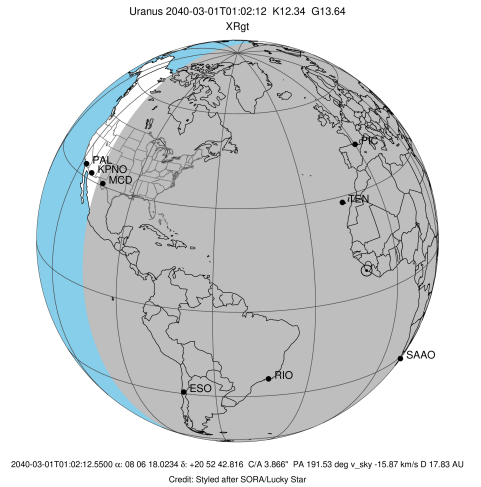
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2040-03-01T00:39:53.615		35.25	-18.64	51533.50	-10.43		
lambda	I	2040-03-01T00:42:27.013		35.50	-19.17	50026.71	-9.24		
delta	I	2040-03-01T00:45:52.214		35.83	-19.86	48300.35	-7.55		
gamma	I	2040-03-01T00:47:27.260		35.98	-20.19	47622.06	-6.71		
eta	I	2040-03-01T00:48:36.994		36.09	-20.42	47176.12	-6.07		
beta	I	2040-03-01T00:54:23.991		36.60	-21.60	45650.63	-2.65		

No planet occultations

beta	E	2040-03-01T01:02:53.568		37.30	-23.31	45646.81	2.65		
eta	E	2040-03-01T01:08:42.068		37.74	-24.47	47176.12	6.08		
gamma	E	2040-03-01T01:09:51.615		37.82	-24.70	47620.96	6.71		
delta	E	2040-03-01T01:11:26.789		37.94	-25.01	48300.35	7.56		
lambda	E	2040-03-01T01:14:51.898		38.17	-25.69	50026.71	9.25		
epsilon	E	2040-03-01T01:17:18.899		38.33	-26.17	51468.04	10.44		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2040-03-01T00:55:38.970
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
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      : 670724327990726016
2Mass ID (if available) : 08061802+2052426
ICRS Star Coord at Epoch: 08h 06m 18.02340s +20:52:42.81634s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 12.342
G magnitude          : 13.640
RP magnitude         : 13.200
BP magnitude         : 13.922
DUPflag             : 0
Distance (au)       : 17.826
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -15.87
Sun-Target sep (deg) : 138.79
Sun-Moon sep (deg)  : 64.76
B (ring opening deg) : 47.65
PA of pole (deg)    : 89.85
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.656
C/A sky separation (km) : 47261.8
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl.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
    
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Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2040-03-01T00:36:07.226		6.80	-42.86	51544.84	-8.19		
lambda	I	2040-03-01T00:39:34.142		6.17	-42.41	50026.71	-6.49		
delta	I	2040-03-01T00:45:20.379		5.10	-41.63	48300.35	-3.42		

No planet occultations

delta	E	2040-03-01T00:57:20.441		2.84x	-39.94	48300.35	3.42		
lambda	E	2040-03-01T01:03:07.416		1.74x	-39.09	50026.71	6.48		
epsilon	E	2040-03-01T01:06:28.771		1.10x	-38.59	51494.35	8.16		