

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-11-26T14:31:05.720  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3368119881875398016  
 2Mass ID (if available) : 07010150+2304400

ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s

RUWE (>1.4 is poor) : 1.07  
 K magnitude : 14.424  
 G magnitude : 15.510  
 RP magnitude : 15.120  
 BP magnitude : 15.761  
 DUPflag : 0  
 Distance (au) : 18.069  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : -16.26  
 Sun-Target sep (deg) : 139.64  
 Sun-Moon sep (deg) : 102.89  
 B (ring opening deg) : 62.49  
 PA of pole (deg) : 78.33

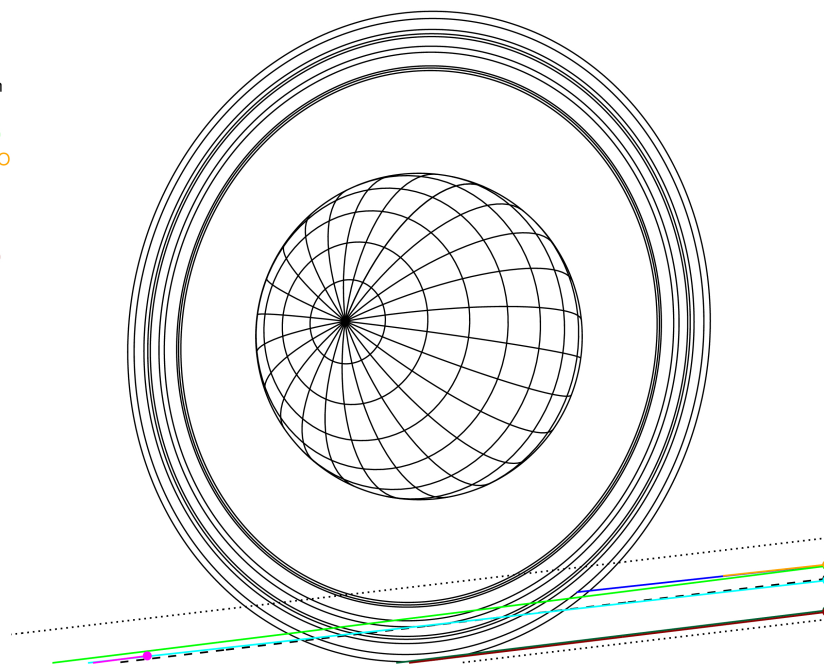
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2035-11-26T14:31:05.7200 a: 07 01 01.5153 & +23 04 40.024 C/A 3.437" PA 6.75 deg v\_sky -16.26 km/s D 18.07 AU  
 Credit: Styled after SORA/Lucky Star

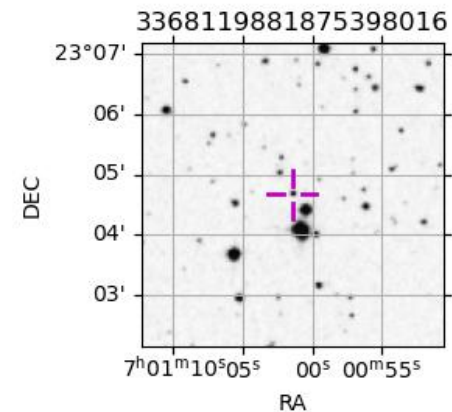
Uranus 2035-11-26T14:31:05 K14.42 G15.51 XRgt

Earth  
 PAL  
 PMO  
 KPNO  
 IRTF  
 KAV  
 AAT  
 MSO

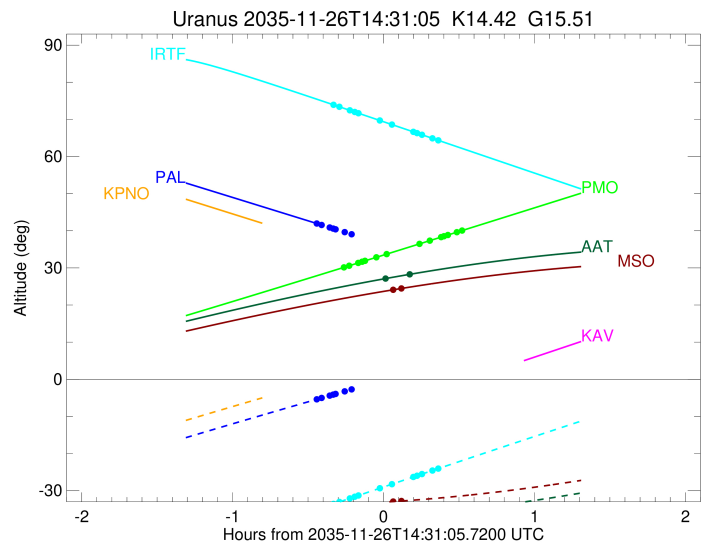
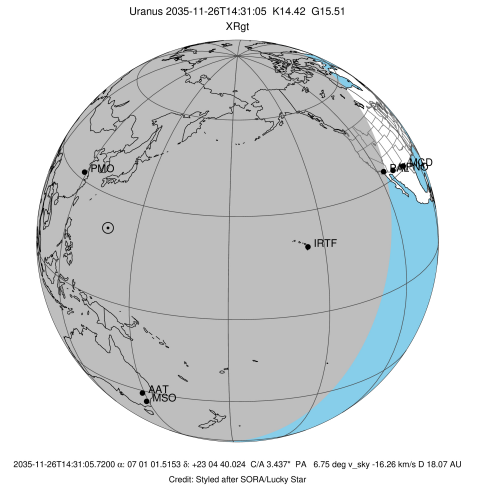


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	++			NOV 26 14:05 - NOV 26 14:06	PnnRin
PMO	Purple Mtn Obs. Nanki	32.1	118.8	++++++		++++++	NOV 26 14:16 - NOV 26 15:01	PnnRie
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	++++++		++++++	NOV 26 14:12 - NOV 26 14:52	PnnRie
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 26 14:35 - NOV 26 14:37	PnnRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+		+	NOV 26 14:28 - NOV 26 14:40	PnnRie



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-11-26T14:27:05.670  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Observer code : PAL  
 Location : Palomar Mt (200")  
 Latitude (deg) : 33.35622  
 E. Longitude (deg) : 243.13601  
 Altitude (km) : 1.706  
 Gaia source ID : 3368119881875398016  
 2Mass ID (if available) : 07010150+2304400  
 ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s  
 RUWE (>1.4 is poor) : 1.07  
 K magnitude : 14.424  
 G magnitude : 15.510  
 RP magnitude : 15.120  
 BP magnitude : 15.761  
 DUPflag : 0  
 Distance (au) : 18.069  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : -16.26  
 Sun-Target sep (deg) : 139.64  
 Sun-Moon sep (deg) : 103.59  
 B (ring opening deg) : 62.49  
 PA of pole (deg) : 78.33  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.242  
 C/A sky separation (km) : 42483.2  
 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



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

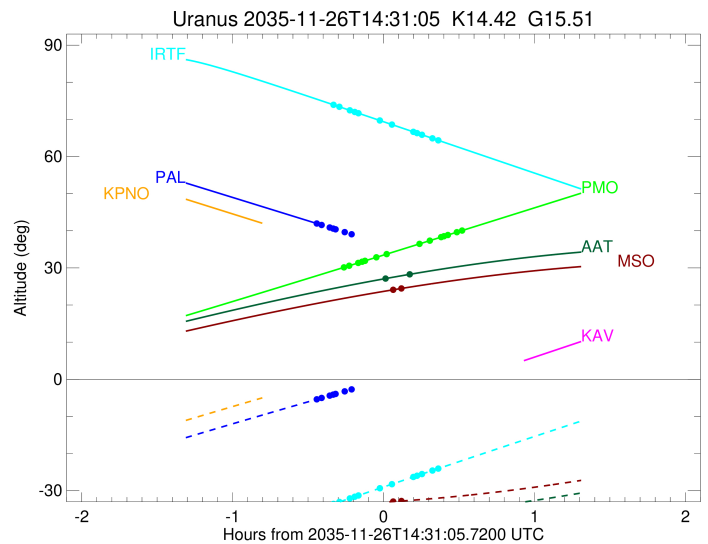
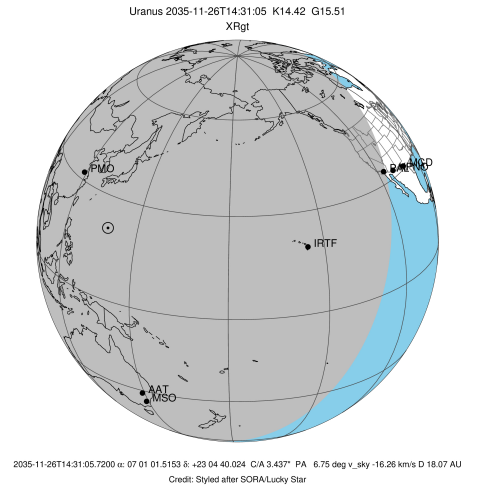
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-11-26T14:05:16.566		41.81	-5.26	50744.99	-9.78		
lambda	I	2035-11-26T14:06:31.281		41.55	-5.02	50026.71	-9.43		
delta	I	2035-11-26T14:09:44.574		40.88	-4.40x	48300.35	-8.41		
gamma	I	2035-11-26T14:11:07.502		40.59	-4.13x	47621.80	-7.95		
eta	I	2035-11-26T14:12:04.788		40.39	-3.95x	47176.12	-7.61		
beta	I	2035-11-26T14:15:43.920		39.62	-3.24x	45654.31	-6.24		
alpha	I	2035-11-26T14:18:25.486		39.06	-2.72x	44732.59	-5.17		

No planet occultations

alpha	E	2035-11-26T14:41:18.056		34.28	1.61x	44747.04	5.16		
beta	E	2035-11-26T14:43:55.429		33.74	2.10x	45643.81	6.22		
eta	E	2035-11-26T14:47:36.956		32.97	2.79x	47176.12	7.59		
gamma	E	2035-11-26T14:48:34.324		32.77	2.97x	47621.24	7.92		
delta	E	2035-11-26T14:49:57.559		32.48	3.22x	48300.35	8.39		
lambda	E	2035-11-26T14:53:11.467		31.81	3.82x	50026.71	9.40		
epsilon	E	2035-11-26T14:54:46.704		31.48	4.11x	50943.67	9.74		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-11-26T14:35:56.260
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 3368119881875398016
2Mass ID (if available) : 07010150+2304400
ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s
RUWE (>1.4 is poor) : 1.07
K magnitude         : 14.424
G magnitude         : 15.510
RP magnitude        : 15.120
BP magnitude        : 15.761
DUPflag            : 0
Distance (au)       : 18.069
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 139.64
Sun-Moon sep (deg)  : 103.23
B (ring opening deg) : 62.49
PA of pole (deg)    : 78.33
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.330
C/A sky separation (km) : 43645.4
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_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
```



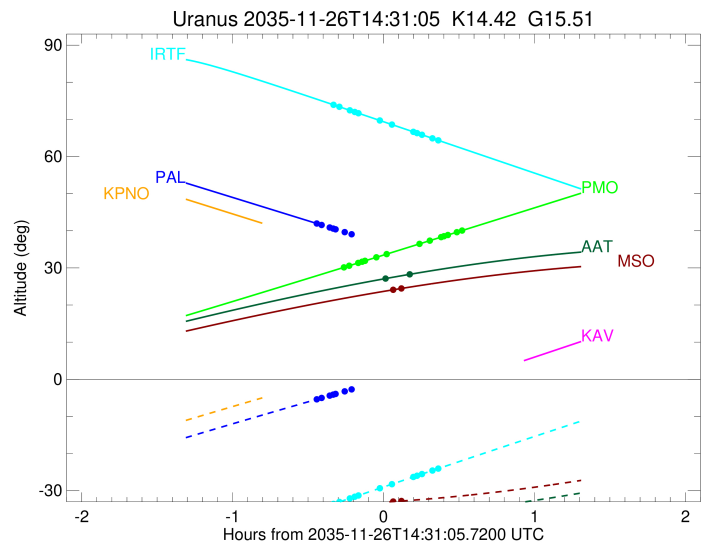
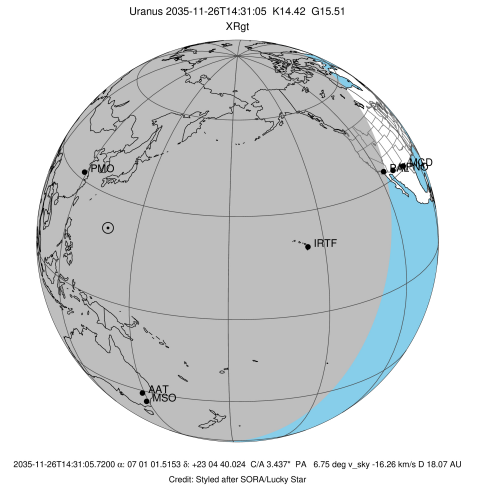
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-11-26T14:16:08.142		30.31	-66.01	50744.09	-9.01		
lambda	I	2035-11-26T14:17:29.541		30.59	-66.28	50026.71	-8.60		
delta	I	2035-11-26T14:21:04.690		31.34	-66.99	48300.35	-7.42		
gamma	I	2035-11-26T14:22:39.696		31.68	-67.30	47621.66	-6.86		
eta	I	2035-11-26T14:23:46.629		31.91	-67.51	47176.12	-6.45		
beta	I	2035-11-26T14:28:19.924		32.87	-68.39	45652.91	-4.65		
alpha	I	2035-11-26T14:32:20.511		33.71	-69.16	44735.86	-2.96		

No planet occultations

alpha	E	2035-11-26T14:45:28.001		36.49	-71.59	44744.26	2.96		
beta	E	2035-11-26T14:49:23.630		37.32	-72.28	45644.96	4.66		
eta	E	2035-11-26T14:53:58.094		38.28	-73.07	47176.12	6.47		
gamma	E	2035-11-26T14:55:04.728		38.52	-73.26	47621.12	6.88		
delta	E	2035-11-26T14:56:39.472		38.85	-73.53	48300.35	7.45		
lambda	E	2035-11-26T15:00:13.736		39.61	-74.11	50026.71	8.64		
epsilon	E	2035-11-26T15:01:54.364		39.97	-74.38	50922.72	9.06		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-11-26T14:29:09.020
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : IRTF
Location            : Mauna Kea/IRTF
Latitude (deg)      : 19.82622
E. Longitude (deg)  : 204.52800
Altitude (km)       : 4.168
Gaia source ID      : 3368119881875398016
2Mass ID (if available) : 07010150+2304400
ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s
RUWE (>1.4 is poor) : 1.07
K magnitude         : 14.424
G magnitude         : 15.510
RP magnitude        : 15.120
BP magnitude        : 15.761
DUPflag            : 0
Distance (au)       : 18.069
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 139.64
Sun-Moon sep (deg)  : 103.82
B (ring opening deg) : 62.49
PA of pole (deg)    : 78.33
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.442
C/A sky separation (km) : 45114.4
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_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
```

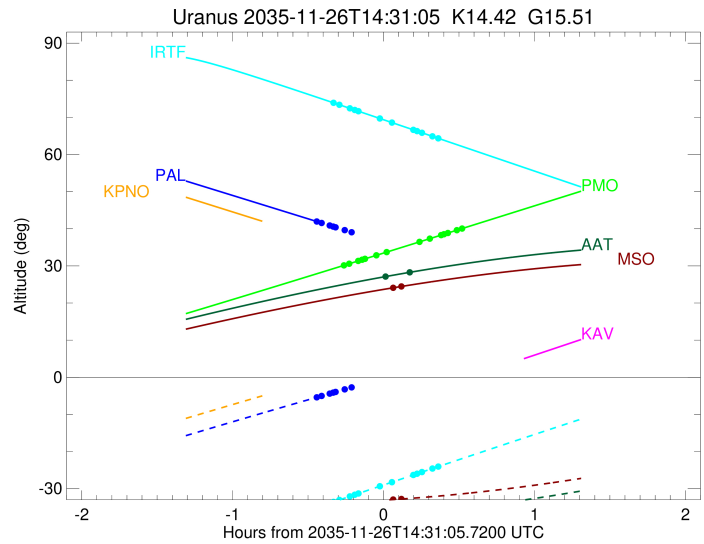
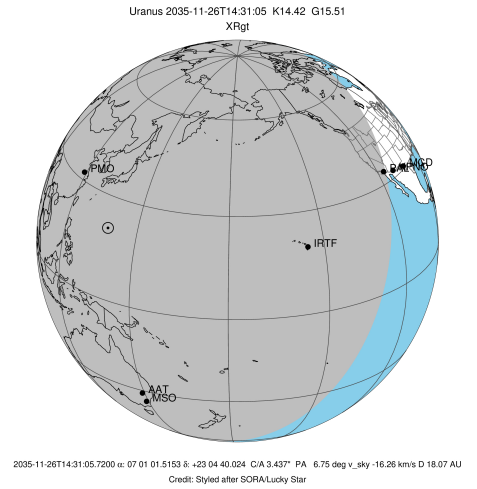


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-11-26T14:12:04.466		73.74	-33.39	50743.59	-8.16		
lambda	I	2035-11-26T14:13:35.205		73.39	-33.04	50026.71	-7.64		
delta	I	2035-11-26T14:17:45.435		72.44	-32.08	48300.35	-6.13		
gamma	I	2035-11-26T14:19:43.596		71.99	-31.63	47621.41	-5.36		
eta	I	2035-11-26T14:21:11.542		71.65	-31.29	47176.12	-4.77		
beta	I	2035-11-26T14:30:05.942		69.61	-29.26	45649.10	-0.88		

No planet occultations

beta	E	2035-11-26T14:33:58.053		68.72	-28.37	45647.64	0.88		
eta	E	2035-11-26T14:42:54.523		66.66	-26.33	47176.12	4.76		
gamma	E	2035-11-26T14:44:22.456		66.33	-26.00	47621.03	5.35		
delta	E	2035-11-26T14:46:20.778		65.87	-25.55	48300.35	6.12		
lambda	E	2035-11-26T14:50:31.242		64.91	-24.60	50026.71	7.64		
epsilon	E	2035-11-26T14:52:21.977		64.48	-24.18	50906.71	8.15		

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-11-26T14:33:23.190  
 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 : 3368119881875398016  
 2Mass ID (if available) : 07010150+2304400  
 ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s  
 RUWE (>1.4 is poor) : 1.07  
 K magnitude : 14.424  
 G magnitude : 15.510  
 RP magnitude : 15.120  
 BP magnitude : 15.761  
 DUPflag : 0  
 Distance (au) : 18.069  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : -16.26  
 Sun-Target sep (deg) : 139.64  
 Sun-Moon sep (deg) : 103.21  
 B (ring opening deg) : 62.49  
 PA of pole (deg) : 78.33  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.839  
 C/A sky separation (km) : 50317.4  
 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



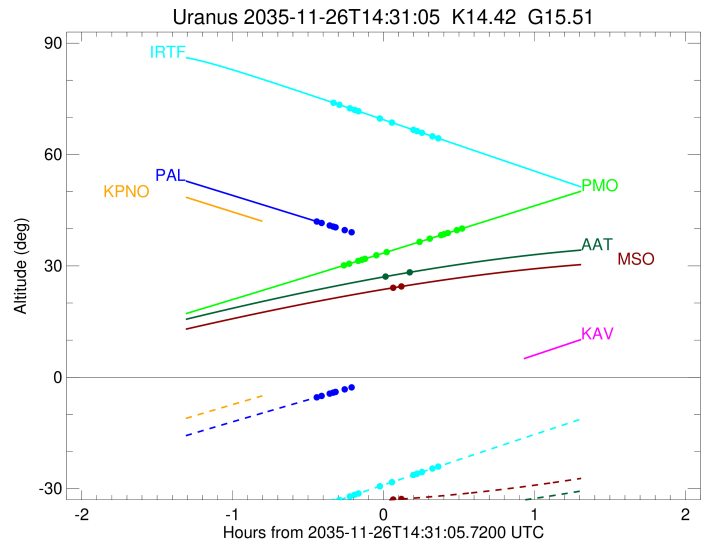
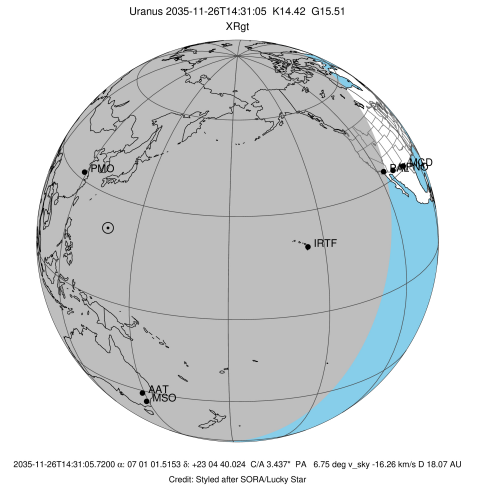
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-11-26T14:35:11.423		27.52	-36.85	50922.44	0.65		

No planet occultations

epsilon	E	2035-11-26T14:37:46.296		27.83	-36.73	50929.05	-0.84		
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target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-11-26T14:33:13.780  
 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 : 3368119881875398016  
 2Mass ID (if available) : 07010150+2304400  
 ICRS Star Coord at Epoch: 07h 01m 01.51528s +23:04:40.02373s  
 RUWE (>1.4 is poor) : 1.07  
 K magnitude : 14.424  
 G magnitude : 15.510  
 RP magnitude : 15.120  
 BP magnitude : 15.761  
 DUPflag : 0  
 Distance (au) : 18.069  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : -16.26  
 Sun-Target sep (deg) : 139.64  
 Sun-Moon sep (deg) : 103.16  
 B (ring opening deg) : 62.49  
 PA of pole (deg) : 78.33  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.858  
 C/A sky separation (km) : 50562.1  
 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	2035-11-26T14:28:02.451		23.32	-33.22	51165.14	0.61		

No planet occultations

epsilon	E	2035-11-26T14:40:17.324		24.69	-32.69	51220.53	-1.15		
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