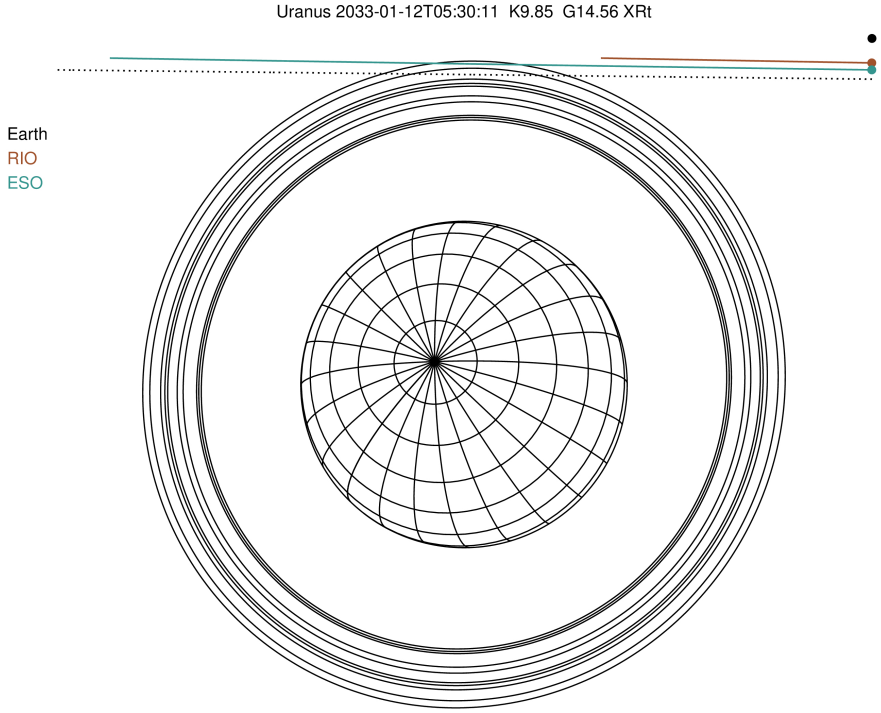
Stellar occultation prediction by rfrench@wellesley.edu Sun Jun 25 00:45:19 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2033-01-12T05:30:11.590
Event type : XRt
: No Uranus occs
: Ring occs: topocentric, not geoecetric
Gaia source ID : 3427498045260693632
2Mass ID (if available) : 05521855+2338389

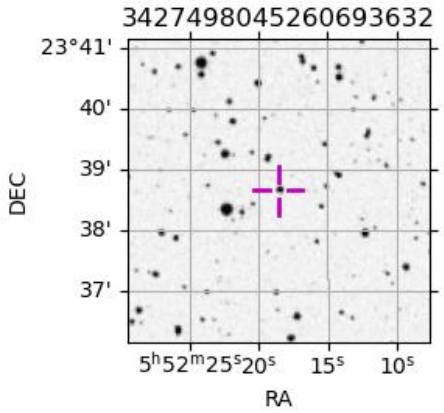
ICRS Star Coord at Epoch: 05h 52m 18.55220s +23:38:38.97525s
RUWE (>1.4 is poor) : 1.05
K magnitude : 9.845
G magnitude : 14.562
RP magnitude : 13.380
BP magnitude : 16.078
DUPflag : 0
Distance (au) : 18.110
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : -20.92
Sun-Target sep (deg) : 156.38
Sun-Moon sep (deg) : 15.96
B (ring opening deg) : 76.79
PA of pole (deg) : 52.08

#	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



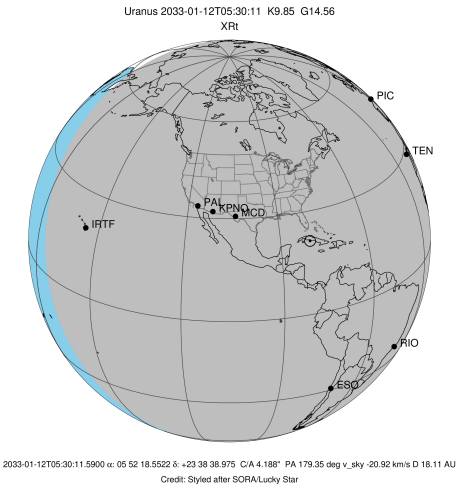
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

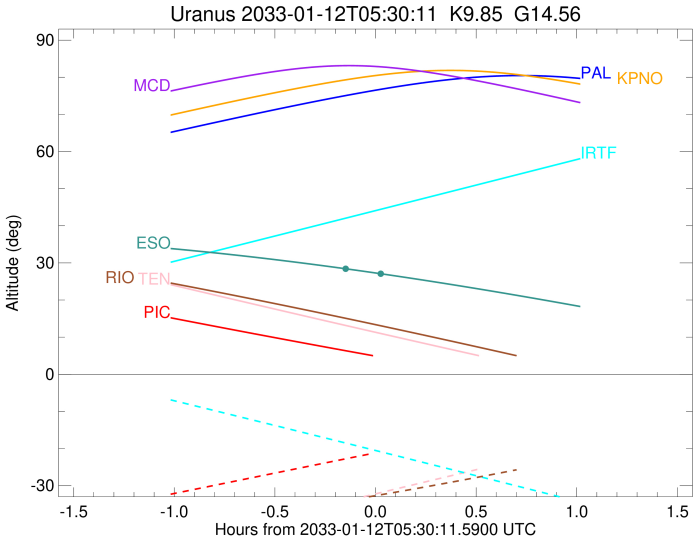
Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide 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					PnnRnn
ESO	European Southern Obs	-29.3	289.3	+		+	JAN 12 05:19 - JAN 12 05:33	PnnRie
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



Uranus_2033-01-12T05_30_11.5900_ESO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:35:21 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2033-01-12T05:27:31.960
Event type : XRt
: No Uranus occs
: Ring occs: topocentric, not geoecetric
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 : 3427498045260693632
2Mass ID (if available) : 05521855+2338389
ICRS Star Coord at Epoch: 05h 52m 18.55220s +23:38:38.97525s
RUWE (>1.4 is poor) : 1.05
K magnitude : 9.845
G magnitude : 14.562
RP magnitude : 13.380
BP magnitude : 16.078
DUPflag : 0
Distance (au) : 18.110
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : -20.92
Sun-Target sep (deg) : 156.38
Sun-Moon sep (deg) : 16.37
B (ring opening deg) : 76.79
PA of pole (deg) : 52.08
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.823
C/A sky separation (km) : 50214.4
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.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	2033-01-12T05:19:58.027		28.59	-38.85	51421.47	-3.71		

No planet occultations

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	E	2033-01-12T05:33:28.431		26.86	-38.31	51508.21	3.71		