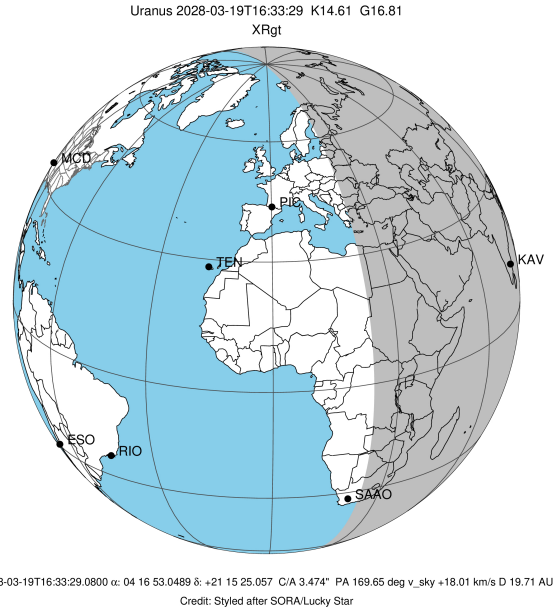
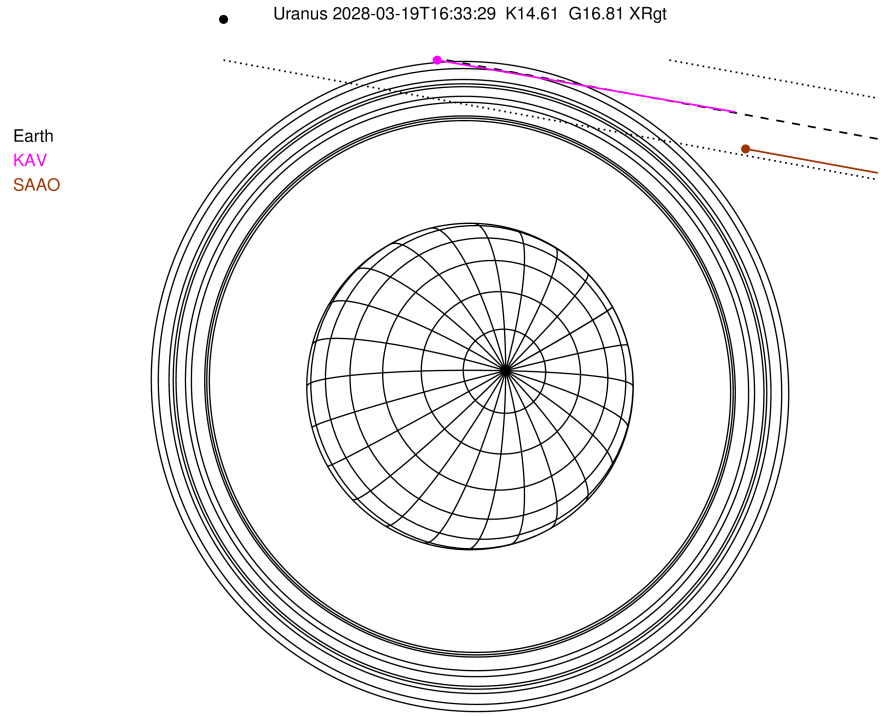
Stellar occultation prediction by rfrench@wellesley.edu Sat Jun 24 23:31:37 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2028-03-19T16:33:29.080
Event type : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Gaia source ID : 49475553645493376
2Mass ID (if available) : 04165304+2115251

ICRS Star Coord at Epoch: 04h 16m 53.04890s +21:15:25.05661s
RUWE (>1.4 is poor) : 0.99
K magnitude : 14.611
G magnitude : 16.814
RP magnitude : 16.061
BP magnitude : 17.426
DUPflag : 0
Distance (au) : 19.712
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : 18.01
Sun-Target sep (deg) : 66.88
Sun-Moon sep (deg) : 137.61
B (ring opening deg) : 76.17
PA of pole (deg) : -66.10

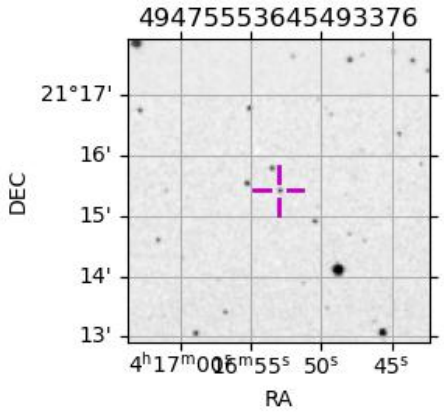
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon





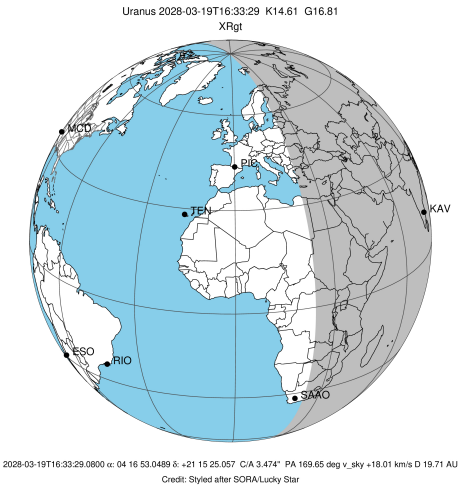
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

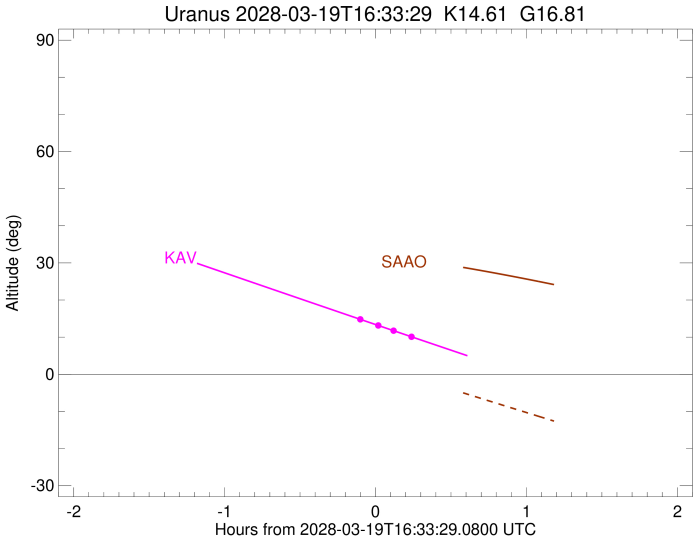
Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observatory	12.6	78.8	++		++	MAR 19 16:29 - MAR 19 16:45	PnnRie
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					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



Uranus_2028-03-19T16_33_29.0800_KAV.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:30:24 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2028-03-19T16:38:52.330
Event type : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code : KAV
Location : Kavalur Observatory
Latitude (deg) : 12.57556
E. Longitude (deg) : 78.83167
Altitude (km) : 0.722
Gaia source ID : 49475553645493376
2Mass ID (if available) : 04165304+2115251
ICRS Star Coord at Epoch: 04h 16m 53.04890s +21:15:25.05661s
RUWE (>1.4 is poor) : 0.99
K magnitude : 14.611
G magnitude : 16.814
RP magnitude : 16.061
BP magnitude : 17.426
DUPflag : 0
Distance (au) : 19.712
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : 18.01
Sun-Target sep (deg) : 66.88
Sun-Moon sep (deg) : 137.10
B (ring opening deg) : 76.17
PA of pole (deg) : -66.10
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.460
C/A sky separation (km) : 49472.1
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	2028-03-19T16:29:05.271		14.42	-52.43	50803.61	-3.30		
lambda	I	2028-03-19T16:34:48.520		13.09	-53.77	50026.71	-1.13		

No planet occultations

lambda	E	2028-03-19T16:40:27.670	11.79	-55.08	50026.71	1.14		
epsilon	E	2028-03-19T16:45:54.574	10.53	-56.34	50750.91	3.31		