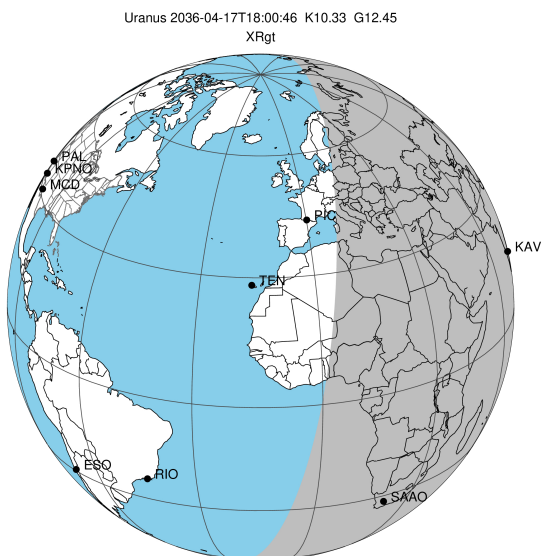


target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2036-04-17T18:00:46.680  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3379612733322742784  
 2Mass ID (if available) : 06472892+2322150

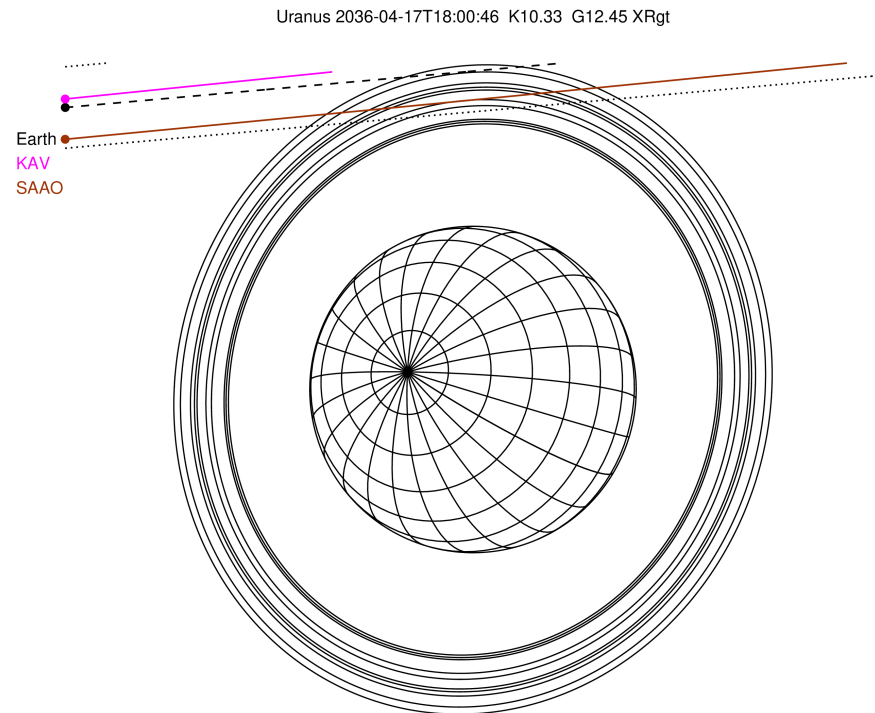
ICRS Star Coord at Epoch: 06h 47m 28.93354s +23:22:14.87286s

RUWE (>1.4 is poor) : 1.41  
 K magnitude : 10.331  
 G magnitude : 12.445  
 RP magnitude : 11.776  
 BP magnitude : 12.952  
 DUPflag : 0  
 Distance (au) : 19.076  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 15.08  
 Sun-Target sep (deg) : 73.09  
 Sun-Moon sep (deg) : 171.52  
 B (ring opening deg) : 65.45  
 PA of pole (deg) : 74.94

#	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

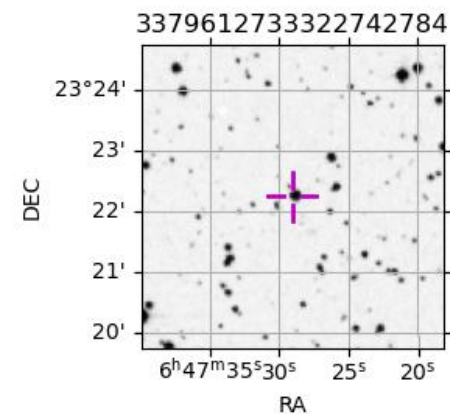


2036-04-17T18:00:46.6800 ex: 06 47 28.9335 s: +23 22 14.873 C/A 3.598° PA 185.10 deg v\_sky +15.08 km/s D 19.08 AU  
 Credit: Styled after SORA/Lucky Star

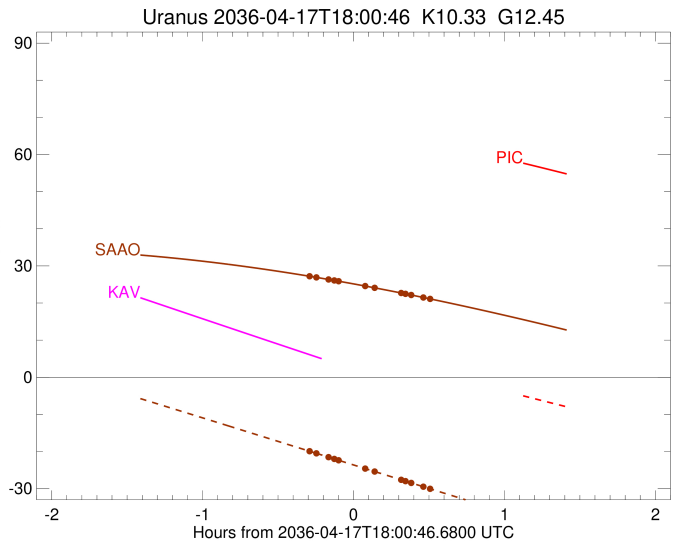
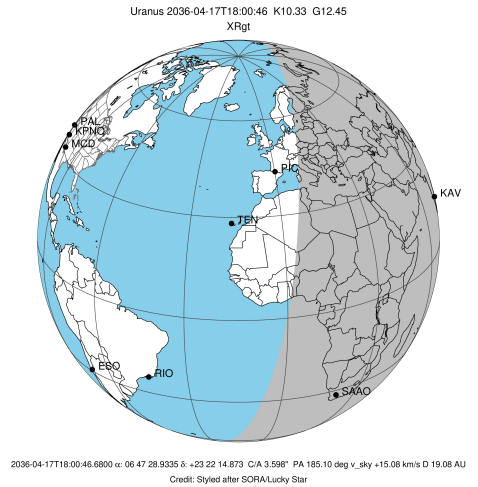


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					PnnRnn
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++		+++++	APR 17 17:44 - APR 17 18:30	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2036-04-17T18:04:21.030  
 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 : 3379612733322742784  
 2Mass ID (if available) : 06472892+2322150  
 ICRS Star Coord at Epoch: 06h 47m 28.93354s +23:22:14.87286s  
 RUWE (>1.4 is poor) : 1.41  
 K magnitude : 10.331  
 G magnitude : 12.445  
 RP magnitude : 11.776  
 BP magnitude : 12.952  
 DUPflag : 0  
 Distance (au) : 19.076  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 15.08  
 Sun-Target sep (deg) : 73.09  
 Sun-Moon sep (deg) : 170.87  
 B (ring opening deg) : 65.45  
 PA of pole (deg) : 74.94  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.262  
 C/A sky separation (km) : 45133.5  
 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\_itrfr93\_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	2036-04-17T17:44:16.977		27.10	-20.13	50758.83	-7.05		
lambda	I	2036-04-17T17:46:04.757		26.90	-20.51	50026.71	-6.57		
delta	I	2036-04-17T17:50:56.524		26.34	-21.54	48300.35	-5.24		
gamma	I	2036-04-17T17:53:14.514		26.07	-22.02	47622.61	-4.57		
eta	I	2036-04-17T17:54:58.031		25.86	-22.39	47176.12	-4.05		
beta	I	2036-04-17T18:07:15.342		24.34	-24.99	45653.62	-0.14		

No planet occultations

beta	E	2036-04-17T18:07:22.622		24.33	-25.01	45653.87	0.13		
eta	E	2036-04-17T18:19:37.087		22.72	-27.60	47176.12	4.06		
gamma	E	2036-04-17T18:21:20.940		22.48	-27.96	47625.31	4.59		
delta	E	2036-04-17T18:23:37.954		22.17	-28.45	48300.35	5.26		
lambda	E	2036-04-17T18:28:28.710		21.50	-29.47	50026.71	6.59		
epsilon	E	2036-04-17T18:30:49.481		21.17	-29.96	50996.70	7.08		