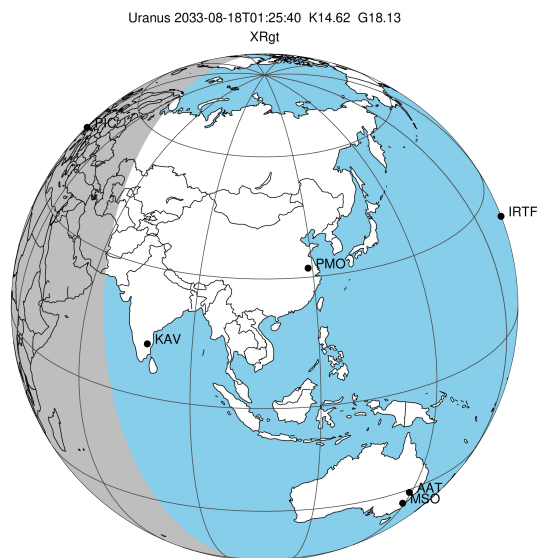


target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2033-08-18T01:25:40.850  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3377542456006816384  
 2Mass ID (if available) : 06191024+2335520

ICRS Star Coord at Epoch: 06h 19m 10.25380s +23:35:52.28326s

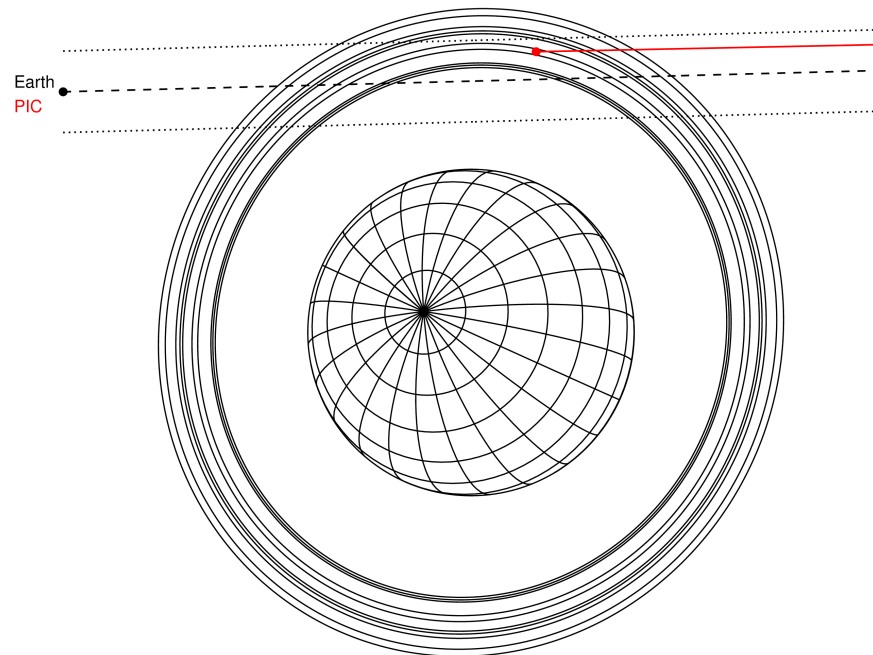
RUWE (>1.4 is poor) : 1.00  
 K magnitude : 14.618  
 G magnitude : 18.128  
 RP magnitude : 17.037  
 BP magnitude : 19.271  
 DUPflag : 0  
 Distance (au) : 19.603  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.31  
 Sun-Target sep (deg) : 50.59  
 Sun-Moon sep (deg) : 31.30  
 B (ring opening deg) : 71.51  
 PA of pole (deg) : 66.08

#	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



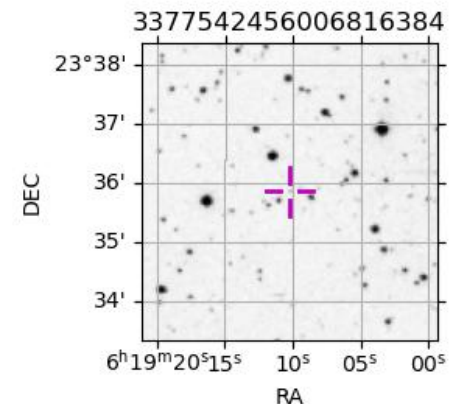
2033-08-18T01:25:40.8500 ex: 06 19 10.2538 s: +23 35 52.283 C/A 2.772° PA 181.50 deg v\_sky +25.31 km/s D 19.60 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2033-08-18T01:25:40 K14.62 G18.13 XRgt

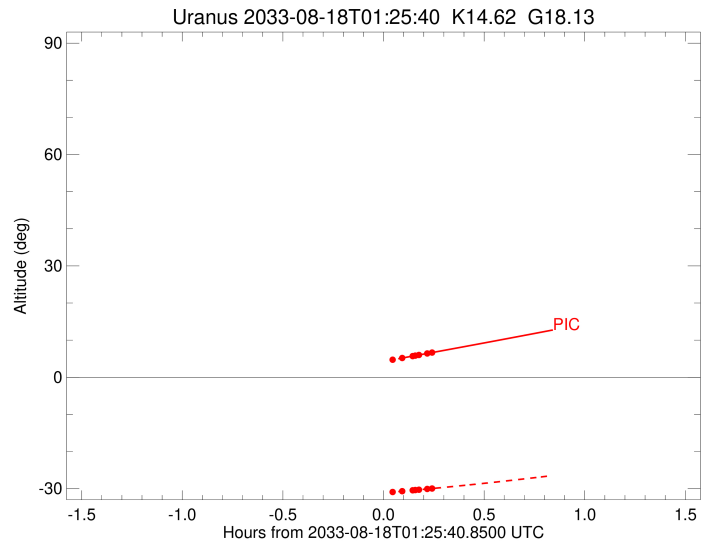
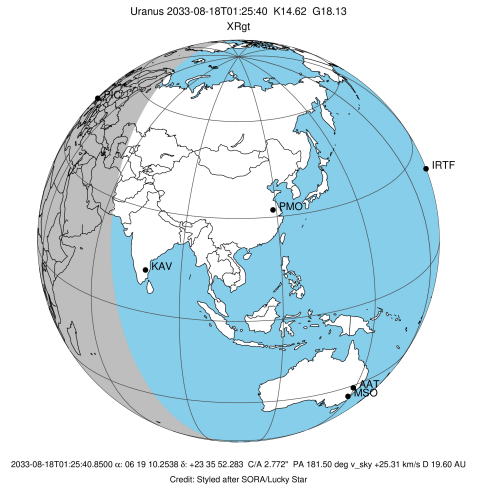


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1			+++++	AUG 18 01:31 - AUG 18 01:40	PnnRne
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					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2033-08-18T01:22:48.570  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Observer code : PIC  
 Location : Pic du Midi  
 Latitude (deg) : 42.93656  
 E. Longitude (deg) : 0.14231  
 Altitude (km) : 2.890  
 Gaia source ID : 3377542456006816384  
 2Mass ID (if available) : 06191024+2335520  
 ICRS Star Coord at Epoch: 06h 19m 10.25380s +23:35:52.28326s  
 RUWE (>1.4 is poor) : 1.00  
 K magnitude : 14.618  
 G magnitude : 18.128  
 RP magnitude : 17.037  
 BP magnitude : 19.271  
 DUPflag : 0  
 Distance (au) : 19.603  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.31  
 Sun-Target sep (deg) : 50.59  
 Sun-Moon sep (deg) : 30.82  
 B (ring opening deg) : 71.51  
 PA of pole (deg) : 66.08  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.077  
 C/A sky separation (km) : 43747.1  
 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\_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	2033-08-18T01:07:28.019		1.38x	-32.31	51379.70	-13.73		
lambda	I	2033-08-18T01:09:11.811		1.65x	-32.21	50026.71	-12.48		
delta	I	2033-08-18T01:11:40.236		2.04x	-32.06	48300.35	-10.75		
gamma	I	2033-08-18T01:12:44.976		2.21x	-31.99	47630.16	-9.95		
eta	I	2033-08-18T01:13:32.066		2.34x	-31.94	47176.12	-9.34		
beta	I	2033-08-18T01:16:38.113		2.83x	-31.74	45674.30	-6.76		
alpha	I	2033-08-18T01:19:35.138		3.30x	-31.54	44708.18	-4.10		

No planet occultations

alpha	E	2033-08-18T01:28:15.462		4.70x	-30.92	44698.81	4.10		
beta	E	2033-08-18T01:31:13.626		5.18	-30.69	45665.11	6.75		
eta	E	2033-08-18T01:34:21.227		5.70	-30.45	47176.12	9.32		
gamma	E	2033-08-18T01:35:08.526		5.83	-30.38	47631.58	9.93		
delta	E	2033-08-18T01:36:13.220		6.00	-30.30	48300.35	10.74		
lambda	E	2033-08-18T01:38:41.903		6.41	-30.09	50026.71	12.46		
epsilon	E	2033-08-18T01:40:38.593		6.73	-29.93	51552.42	13.70		