

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2025-07-07T02:43:45.890  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 51112795179561600  
 2Mass ID (if available) : 03495746+1952008

ICRS Star Coord at Epoch: 03h 49m 57.45904s +19:52:00.83945s

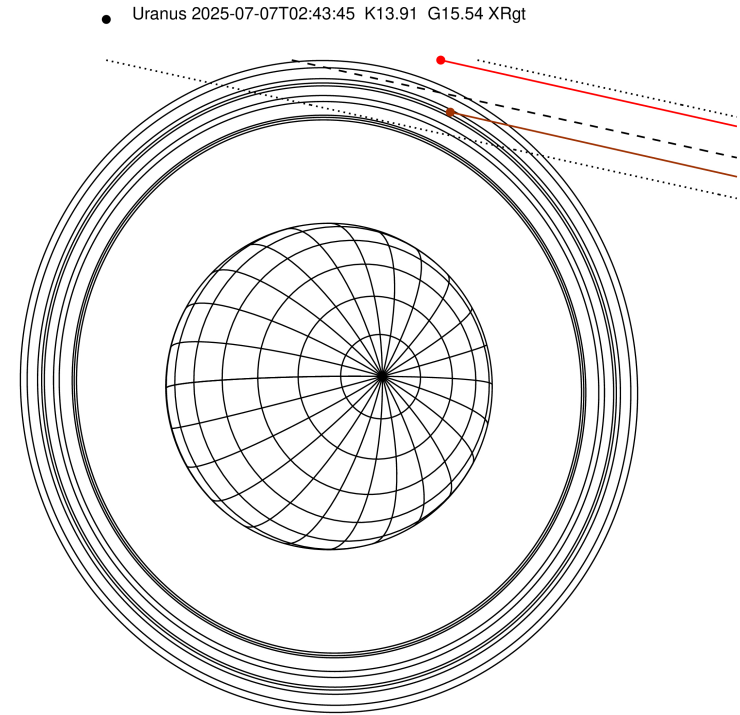
RUWE (>1.4 is poor) : 1.00  
 K magnitude : 13.909  
 G magnitude : 15.541  
 RP magnitude : 14.949  
 BP magnitude : 15.944  
 DUPflag : 0  
 Distance (au) : 20.223  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 27.29  
 Sun-Target sep (deg) : 45.28  
 Sun-Moon sep (deg) : 174.49  
 B (ring opening deg) : 70.54  
 PA of pole (deg) : -79.21

#	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



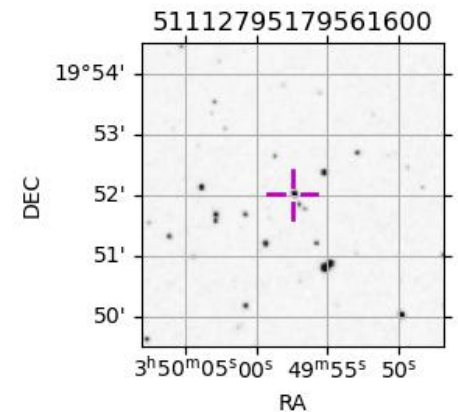
2025-07-07T02:43:45.8900 ex: 03 49 57.4590 8: +19 52 00.839 C/A 3.322" PA 167.63 deg v\_sky +27.29 km/s D 20.22 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 SAAO

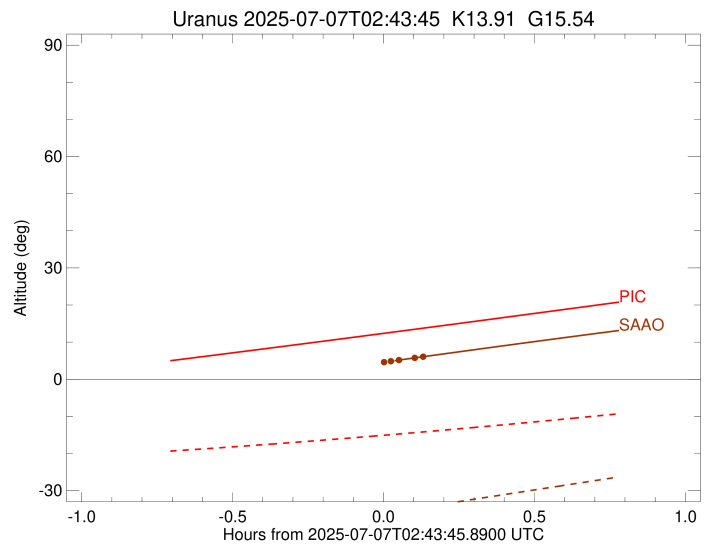
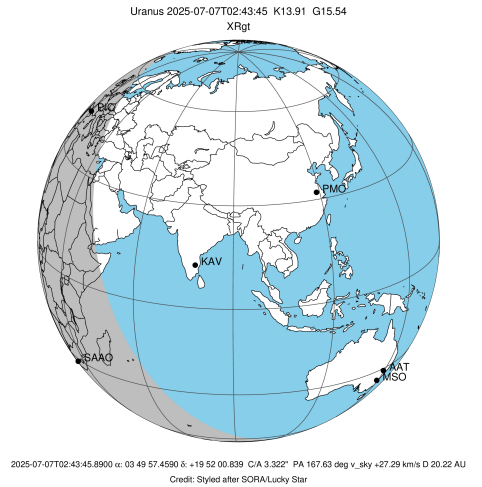


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1					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				+++ JUL 07 02:46 - JUL 07 02:51	PnnRne
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2025-07-07T02:40:22.670  
 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 : 51112795179561600  
 2Mass ID (if available) : 03495746+1952008  
 ICRS Star Coord at Epoch: 03h 49m 57.45904s +19:52:00.83945s  
 RUWE (>1.4 is poor) : 1.00  
 K magnitude : 13.909  
 G magnitude : 15.541  
 RP magnitude : 14.949  
 BP magnitude : 15.944  
 DUPflag : 0  
 Distance (au) : 20.223  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 27.29  
 Sun-Target sep (deg) : 45.28  
 Sun-Moon sep (deg) : 175.14  
 B (ring opening deg) : 70.54  
 PA of pole (deg) : -79.21  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.142  
 C/A sky separation (km) : 46082.6  
 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	2025-07-07T02:27:10.846		1.43x	-39.59	50887.94	-11.77		
lambda	I	2025-07-07T02:28:28.583		1.68x	-39.32	50026.71	-10.54		
delta	I	2025-07-07T02:31:37.240		2.28x	-38.66	48300.35	-7.71		
gamma	I	2025-07-07T02:33:15.230		2.59x	-38.31	47620.97	-6.14		
eta	I	2025-07-07T02:34:36.609		2.85x	-38.03	47176.12	-4.79		

No planet occultations

eta	E	2025-07-07T02:43:48.834		4.60x	-36.09	47176.12	4.78		
gamma	E	2025-07-07T02:45:10.324		4.86x	-35.80	47621.28	6.14		
delta	E	2025-07-07T02:46:48.356		5.16	-35.46	48300.35	7.71		
lambda	E	2025-07-07T02:49:57.256		5.76	-34.80	50026.71	10.52		
epsilon	E	2025-07-07T02:51:42.428		6.08	-34.43	51209.48	11.75		