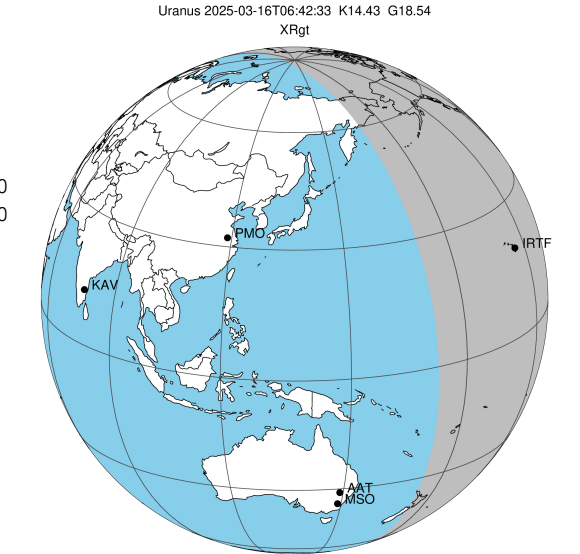


target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2025-03-16T06:42:33.270  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 55991770651464192  
 2Mass ID (if available) : 03254524+1829215

ICRS Star Coord at Epoch: 03h 25m 45.14420s +18:29:20.38726s

RUWE (>1.4 is poor) : 0.99  
 K magnitude : 14.426  
 G magnitude : 18.538  
 RP magnitude : 17.216  
 BP magnitude : 20.503  
 DUPflag : 0  
 Distance (au) : 20.047  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 22.04  
 Sun-Target sep (deg) : 58.18  
 Sun-Moon sep (deg) : 143.60  
 B (ring opening deg) : 65.04  
 PA of pole (deg) : -86.31

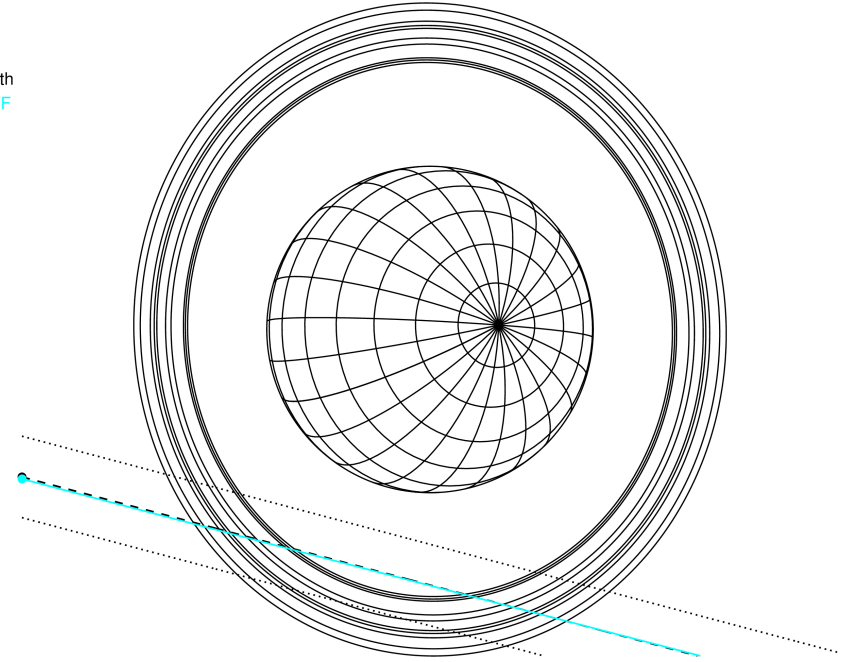
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2025-03-16T06:42:33.2700 ex: 03 25 45.1442 s: +18 29 20.387 C/A 2.659° PA 345.16 deg v\_sky +22.04 km/s D 20.05 AU  
 Credit: Styled after SORA/Lucky Star

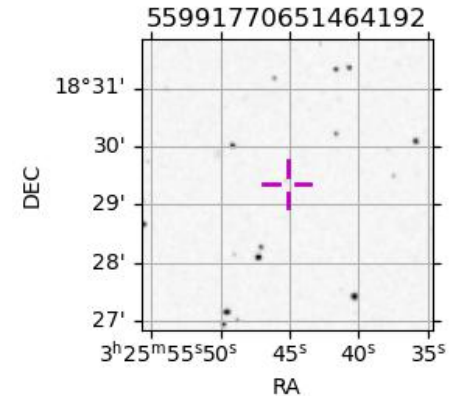
Uranus 2025-03-16T06:42:33 K14.43 G18.54 XRgt

Earth  
 IRTF



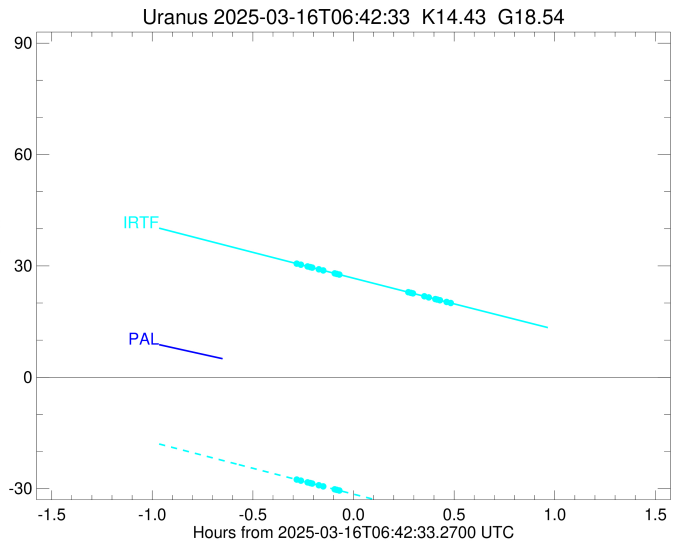
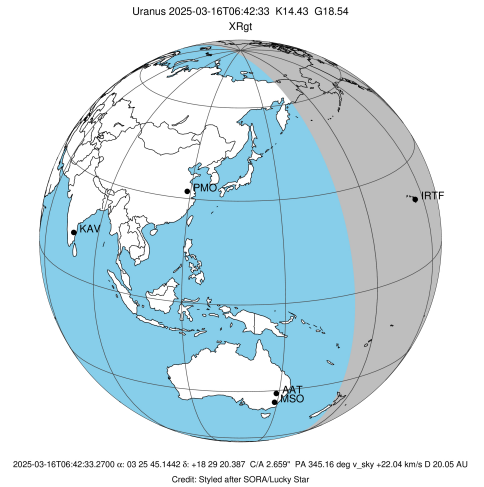
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++		+++++	MAR 16 06:25 - MAR 16 07:11	PnnRie
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            : 2025-03-16T06:47:00.940
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : IRTF
Location            : Mauna Kea/IRTF
Latitude (deg)      : 19.82622
E. Longitude (deg)  : 204.52800
Altitude (km)       : 4.168
Gaia source ID      : 55991770651464192
2Mass ID (if available) : 03254524+1829215
ICRS Star Coord at Epoch: 03h 25m 45.14420s +18:29:20.38726s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 14.426
G magnitude          : 18.538
RP magnitude         : 17.216
BP magnitude         : 20.503
DUPflag             : 0
Distance (au)       : 20.047
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 22.04
Sun-Target sep (deg) : 58.18
Sun-Moon sep (deg)  : 144.49
B (ring opening deg) : 65.04
PA of pole (deg)    : -86.31
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.669
C/A sky separation (km) : 38808.9
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall11.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.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	2025-03-16T06:25:18.669		30.69	-27.49	51462.43	-15.37		
lambda	I	2025-03-16T06:26:53.445		30.32	-27.85	50026.71	-14.83		
delta	I	2025-03-16T06:28:53.357		29.86	-28.32	48300.35	-13.95		
gamma	I	2025-03-16T06:29:42.708		29.66	-28.51	47621.45	-13.56		
eta	I	2025-03-16T06:30:15.879		29.54	-28.64	47176.12	-13.29		
beta	I	2025-03-16T06:32:15.740		29.07	-29.10	45644.49	-12.25		
alpha	I	2025-03-16T06:33:32.943		28.78	-29.40	44723.55	-11.53		
4	I	2025-03-16T06:36:58.565		27.98	-30.19	42570.18	-9.32		
5	I	2025-03-16T06:37:43.152		27.81	-30.37	42159.98	-8.84		
6	I	2025-03-16T06:38:16.498		27.68	-30.49	41878.06	-8.44		

No planet occultations

6	E	2025-03-16T06:58:56.125		22.91	-35.26	41875.68	8.46		
5	E	2025-03-16T06:59:33.358		22.77	-35.40	42200.06	8.86		
4	E	2025-03-16T07:00:10.484		22.62	-35.55	42537.93	9.34		
alpha	E	2025-03-16T07:03:41.720		21.81	-36.35	44749.57	11.56		
beta	E	2025-03-16T07:04:58.297		21.52	-36.65	45663.17	12.29		
eta	E	2025-03-16T07:06:56.317		21.07	-37.10	47176.12	13.34		
gamma	E	2025-03-16T07:07:29.447		20.94	-37.22	47622.48	13.61		
delta	E	2025-03-16T07:08:18.543		20.75	-37.41	48300.35	14.00		
lambda	E	2025-03-16T07:10:17.988		20.29	-37.86	50026.71	14.89		
epsilon	E	2025-03-16T07:11:18.964		20.06	-38.10	50947.47	15.43		