

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2024-03-14T06:20:07.500
 Event type : PRgt
 : Uranus occs: not geocentric or topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 34603456288192896
 2Mass ID (if available) : 03091635+1723091

ICRS Star Coord at Epoch: 03h 09m 16.35646s +17:23:09.13280s

RUWE (>1.4 is poor) : 1.14
 K magnitude : 14.255
 G magnitude : 15.796
 RP magnitude : 15.243
 BP magnitude : 16.169
 DUPflag : 0
 Distance (au) : 20.142
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.09
 Sun-Target sep (deg) : 55.86
 Sun-Moon sep (deg) : 3.75
 B (ring opening deg) : 61.15
 PA of pole (deg) : -90.00

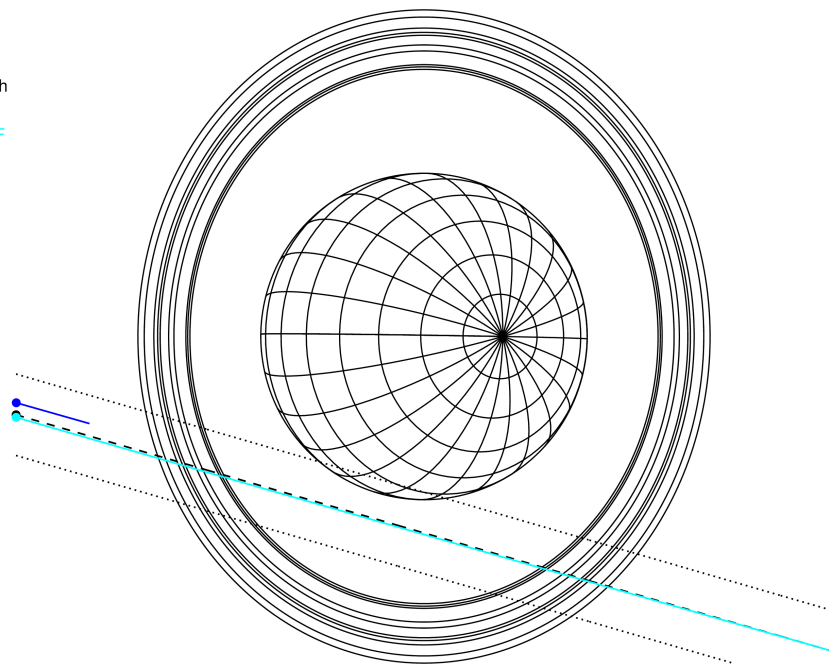
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2024-03-14T06:20:07.5000 ex: 03 09 16.3565 s: +17 23 09.133 C/A 2.021" PA 343.85 deg v_sky +23.09 km/s D 20.14 AU
 Credit: Styled after SORA/Lucky Star

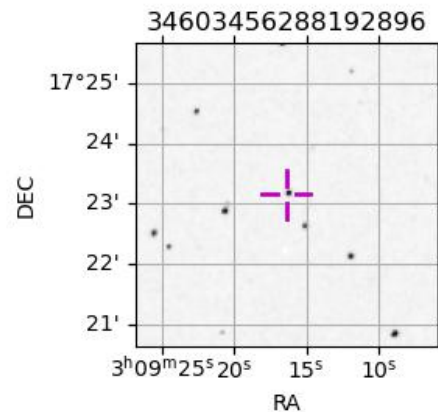
Uranus 2024-03-14T06:20:07 K14.26 G15.80 PRgt

Earth
 PAL
 IRTF



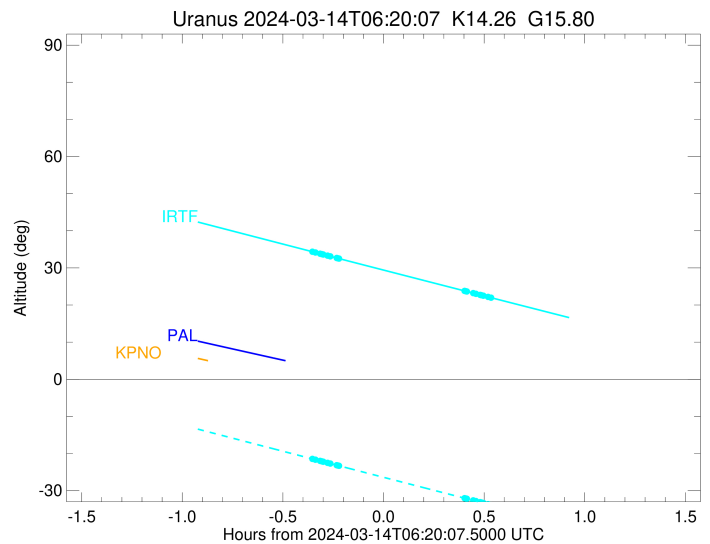
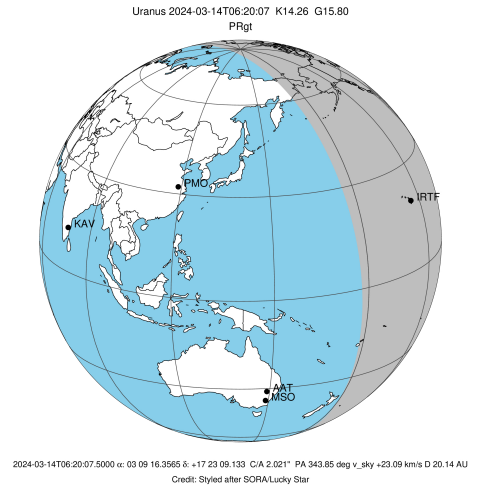
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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 14 05:59 - MAR 14 06:52	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



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2024-03-14T06:24:13.790
Event type           : PRgt
: Uranus occs: not geocentric or topocentric
: 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       : 34603456288192896
2Mass ID (if available) : 03091635+1723091
ICRS Star Coord at Epoch: 03h 09m 16.35646s +17:23:09.13280s
RUWE (>1.4 is poor) : 1.14
K magnitude          : 14.255
G magnitude          : 15.796
RP magnitude         : 15.243
BP magnitude         : 16.169
DUPflag              : 0
Distance (au)        : 20.142
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 23.09
Sun-Target sep (deg) : 55.86
Sun-Moon sep (deg)   : 4.36
B (ring opening deg) : 61.15
PA of pole (deg)     : -90.00
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.041
C/A sky separation (km) : 29812.8
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.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
    
```



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	2024-03-14T05:59:15.361	34.28	-21.53	50754.81	-20.76		
lambda	I	2024-03-14T05:59:50.518	34.15	-21.67	50026.71	-20.63		
delta	I	2024-03-14T06:01:15.074	33.82	-22.00	48300.35	-20.20		
gamma	I	2024-03-14T06:01:48.471	33.69	-22.13	47628.78	-20.01		
eta	I	2024-03-14T06:02:11.157	33.60	-22.22	47176.12	-19.89		
beta	I	2024-03-14T06:03:29.033	33.30	-22.52	45646.07	-19.42		
alpha	I	2024-03-14T06:04:15.520	33.12	-22.70	44750.70	-19.12		
4	I	2024-03-14T06:06:10.803	32.67	-23.15	42595.73	-18.29		
5	I	2024-03-14T06:06:29.495	32.59	-23.22	42251.23	-18.09		
6	I	2024-03-14T06:06:53.550	32.50	-23.32	41825.62	-17.95		

No planet occultations

6	E	2024-03-14T06:44:19.879	23.80	-32.04	41877.70	18.01		
5	E	2024-03-14T06:44:35.283	23.74	-32.10	42156.80	18.15		
4	E	2024-03-14T06:44:59.804	23.64	-32.19	42609.32	18.36		
alpha	E	2024-03-14T06:46:52.012	23.21	-32.63	44726.10	19.19		
beta	E	2024-03-14T06:47:41.263	23.02	-32.82	45676.28	19.50		
eta	E	2024-03-14T06:48:57.300	22.73	-33.11	47176.12	19.97		
gamma	E	2024-03-14T06:49:19.515	22.64	-33.19	47621.18	20.10		
delta	E	2024-03-14T06:49:53.150	22.51	-33.32	48300.35	20.29		
lambda	E	2024-03-14T06:51:17.338	22.19	-33.65	50026.71	20.72		
epsilon	E	2024-03-14T06:52:12.370	21.97	-33.86	51174.22	20.86		