

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2034-05-04T19:02:01.460  
 Event type : PRgt  
 : Uranus occs: not geocentric or topocentric  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3425422549560941952  
 2Mass ID (if available) : 06122619+2340402

ICRS Star Coord at Epoch: 06h 12m 26.20147s +23:40:40.22060s

RUWE (>1.4 is poor) : 1.03  
 K magnitude : 14.072  
 G magnitude : 16.016  
 RP magnitude : 15.363  
 BP magnitude : 16.492  
 DUPflag : 0  
 Distance (au) : 19.578  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.94  
 Sun-Target sep (deg) : 48.93  
 Sun-Moon sep (deg) : 144.76  
 B (ring opening deg) : 72.87  
 PA of pole (deg) : 63.12

# 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

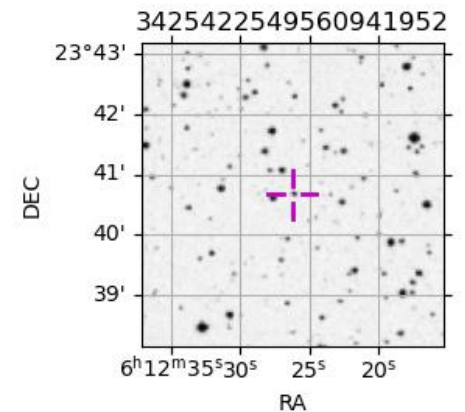
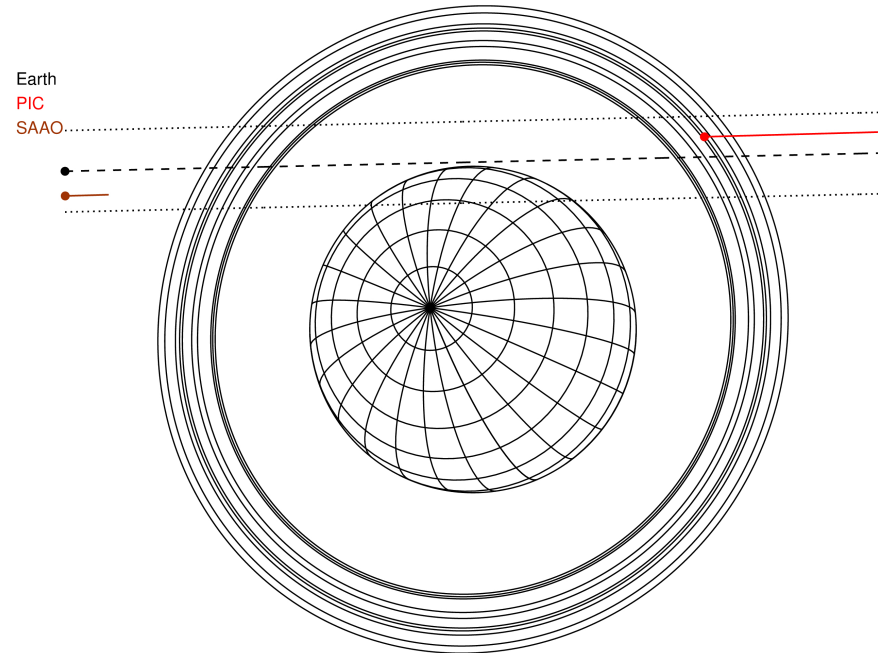
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			++++	MAY 04 19:28 - MAY 04 19:31	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

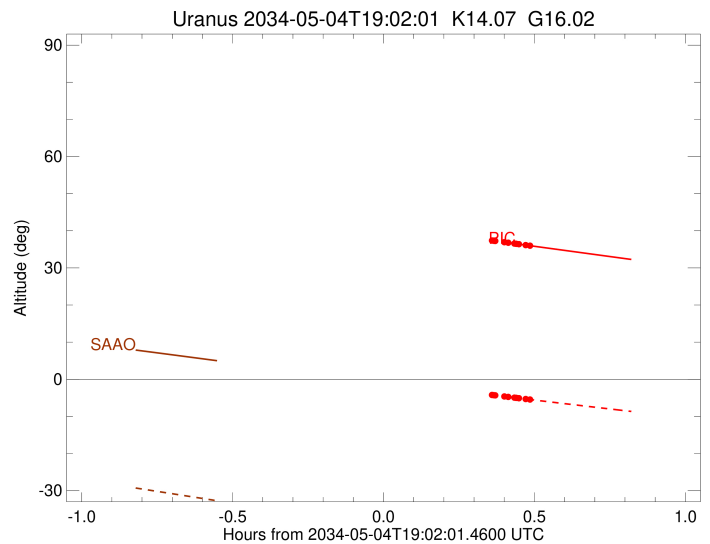
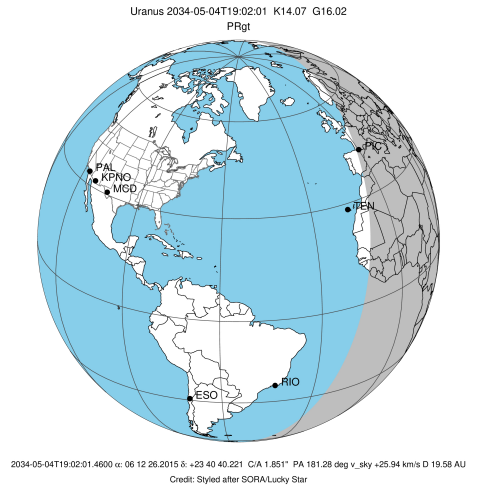


2034-05-04T19:02:01.4600 ex: 06 12 26.2015 s: +23 40 40.221 C/A 1.851" PA 181.28 deg v\_sky +25.94 km/s D 19.58 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2034-05-04T19:02:01 K14.07 G16.02 PRgt



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2034-05-04T19:04:21.740  
 Event type : PRgt  
 : Uranus occs: not geocentric or topocentric  
 : 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 : 3425422549560941952  
 2Mass ID (if available) : 06122619+2340402  
 ICRS Star Coord at Epoch: 06h 12m 26.20147s +23:40:40.22060s  
 RUWE (>1.4 is poor) : 1.03  
 K magnitude : 14.072  
 G magnitude : 16.016  
 RP magnitude : 15.363  
 BP magnitude : 16.492  
 DUPflag : 0  
 Distance (au) : 19.578  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.94  
 Sun-Target sep (deg) : 48.93  
 Sun-Moon sep (deg) : 145.57  
 B (ring opening deg) : 72.87  
 PA of pole (deg) : 63.12  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 2.056  
 C/A sky separation (km) : 29188.5  
 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\_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	2034-05-04T18:38:55.844	45.56	3.32x	51174.65	-21.89		
lambda	I	2034-05-04T18:39:48.874	45.39	3.17x	50026.71	-21.52		
delta	I	2034-05-04T18:41:09.873	45.15	2.93x	48300.35	-21.10		
gamma	I	2034-05-04T18:41:41.719	45.05	2.84x	47631.22	-20.92		
eta	I	2034-05-04T18:42:03.537	44.99	2.78x	47176.12	-20.80		
beta	I	2034-05-04T18:43:18.144	44.76	2.56x	45641.06	-20.33		
alpha	I	2034-05-04T18:44:03.908	44.62	2.43x	44721.16	-20.04		
4	I	2034-05-04T18:45:51.602	44.29	2.12x	42601.87	-19.22		
5	I	2034-05-04T18:46:14.446	44.22	2.06x	42155.15	-19.04		
6	I	2034-05-04T18:46:29.001	44.18	2.02x	41878.31	-18.92		

No planet occultations

6	E	2034-05-04T19:23:35.277	37.37	-4.23x	41847.81	18.96		
5	E	2034-05-04T19:23:56.078	37.31	-4.28x	42244.04	19.08		
4	E	2034-05-04T19:24:11.110	37.26	-4.33x	42536.61	19.26		
alpha	E	2034-05-04T19:26:03.760	36.92	-4.63x	44751.68	20.09		
beta	E	2034-05-04T19:26:48.920	36.78	-4.76x	45664.67	20.39		
eta	E	2034-05-04T19:28:02.175	36.56	-4.95x	47176.12	20.85		
gamma	E	2034-05-04T19:28:23.554	36.49	-5.01	47623.24	20.98		
delta	E	2034-05-04T19:28:55.693	36.39	-5.10	48300.35	21.16		
lambda	E	2034-05-04T19:30:16.461	36.14	-5.32	50026.71	21.58		
epsilon	E	2034-05-04T19:31:25.111	35.93	-5.50	51519.81	21.96		