

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2030-04-14T17:57:12.930  
 Event type : PgRgt  
 : Uranus occs: geocentric, not topocentric  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3412554960684418560  
 2Mass ID (if available) : 04555857+2240119

ICRS Star Coord at Epoch: 04h 55m 58.57128s +22:40:11.96050s

RUWE (>1.4 is poor) : 1.00  
 K magnitude : 13.992  
 G magnitude : 16.444  
 RP magnitude : 15.667  
 BP magnitude : 17.091  
 DUPflag : 0  
 Distance (au) : 19.818  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.13  
 Sun-Target sep (deg) : 50.85  
 Sun-Moon sep (deg) : 83.01  
 B (ring opening deg) : 81.88  
 PA of pole (deg) : -23.28

# 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

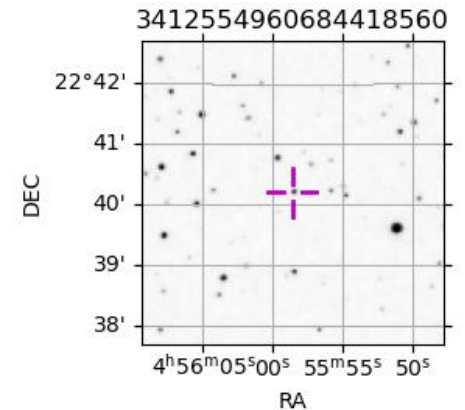
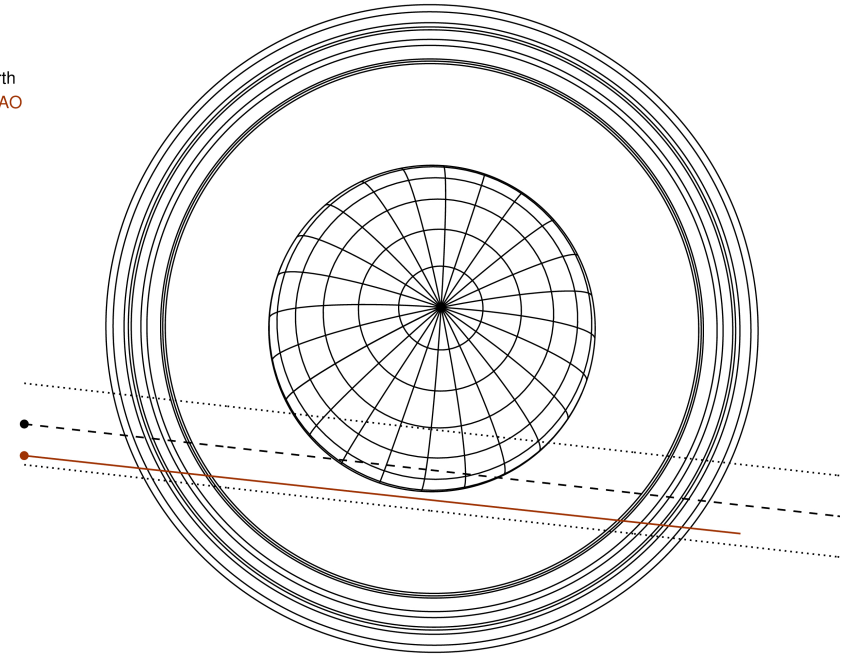
Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide 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	+++++		+++++	APR 14 17:30 - APR 14 18:28	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



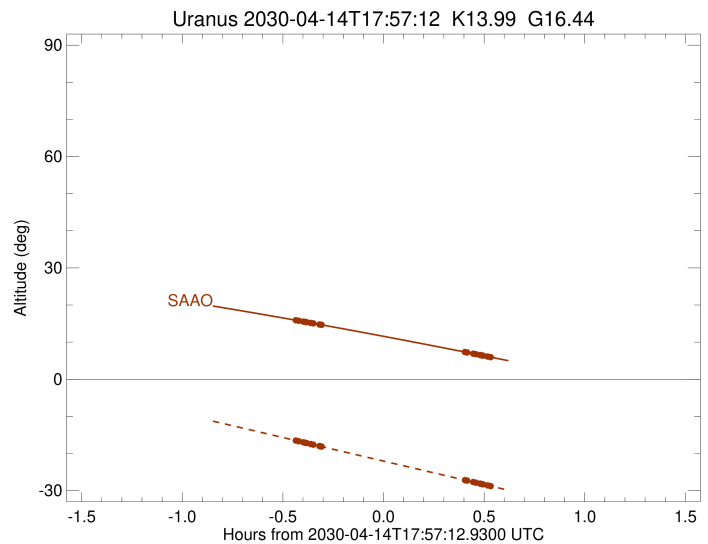
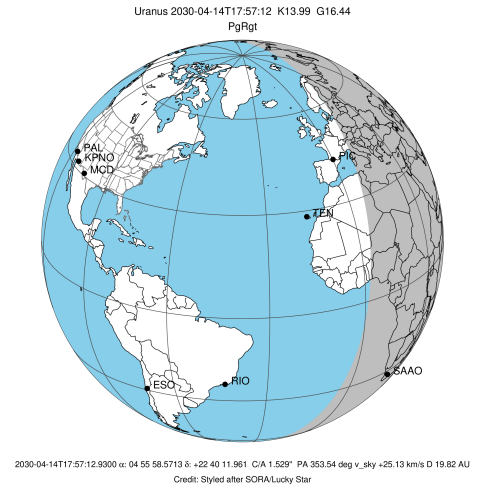
2030-04-14T17:57:12.9300 ex: 04 55 58.5713 s: +22 40 11.961 C/A 1.529° PA 353.54 deg v\_sky +25.13 km/s D 19.82 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2030-04-14T17:57:12 K13.99 G16.44 PgRgt

Earth  
 SAAO



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2030-04-14T18:00:02.730  
 Event type : PgRgt  
 : Uranus occs: geocentric, not topocentric  
 : 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 : 3412554960684418560  
 2Mass ID (if available) : 04555857+2240119  
 ICRS Star Coord at Epoch: 04h 55m 58.57128s +22:40:11.96050s  
 RUWE (>1.4 is poor) : 1.00  
 K magnitude : 13.992  
 G magnitude : 16.444  
 RP magnitude : 15.667  
 BP magnitude : 17.091  
 DUPflag : 0  
 Distance (au) : 19.818  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 25.13  
 Sun-Target sep (deg) : 50.85  
 Sun-Moon sep (deg) : 83.12  
 B (ring opening deg) : 81.88  
 PA of pole (deg) : -23.28  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 1.859  
 C/A sky separation (km) : 26727.1  
 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\_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	2030-04-14T17:30:46.425		15.95	-16.44	51546.45	-21.18		
lambda	I	2030-04-14T17:31:58.522		15.76	-16.70	50026.71	-20.95		
delta	I	2030-04-14T17:33:21.524		15.53	-16.99	48300.35	-20.64		
gamma	I	2030-04-14T17:33:54.438		15.45	-17.11	47623.21	-20.50		
eta	I	2030-04-14T17:34:16.290		15.39	-17.18	47176.12	-20.41		
beta	I	2030-04-14T17:35:30.186		15.19	-17.44	45679.57	-20.08		
alpha	I	2030-04-14T17:36:19.908		15.05	-17.62	44686.60	-19.83		
4	I	2030-04-14T17:38:07.625		14.76	-18.00	42581.74	-19.27		
5	I	2030-04-14T17:38:26.800		14.71	-18.07	42214.89	-19.17		
6	I	2030-04-14T17:38:48.017		14.65	-18.14	41810.13	-19.02		

No planet occultations

6	E	2030-04-14T18:21:31.134		7.33	-27.17	41874.04	19.08		
5	E	2030-04-14T18:21:54.378		7.26	-27.25	42315.07	19.23		
4	E	2030-04-14T18:22:09.631		7.22	-27.31	42612.39	19.33		
alpha	E	2030-04-14T18:23:56.865		6.90	-27.68	44716.11	19.90		
beta	E	2030-04-14T18:24:43.414		6.76	-27.84	45647.97	20.15		
eta	E	2030-04-14T18:25:58.639		6.53	-28.11	47176.12	20.49		
gamma	E	2030-04-14T18:26:20.417		6.47	-28.18	47623.31	20.58		
delta	E	2030-04-14T18:26:53.206		6.37	-28.30	48300.35	20.72		
lambda	E	2030-04-14T18:28:15.893		6.12	-28.59	50026.71	21.04		
epsilon	E	2030-04-14T18:28:57.071		6.00	-28.73	50895.95	21.26		