

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2033-05-01T18:56:44.960  
 Event type : PgRgt  
 : Uranus occs: geocentric, not topocentric  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3427825119907556992  
 2Mass ID (if available) : 05532736+2338434

Uranus 2033-05-01T18:56:44 K11.29 G15.68 PgRgt

ICRS Star Coord at Epoch: 05h 53m 27.36928s +23:38:43.40587s

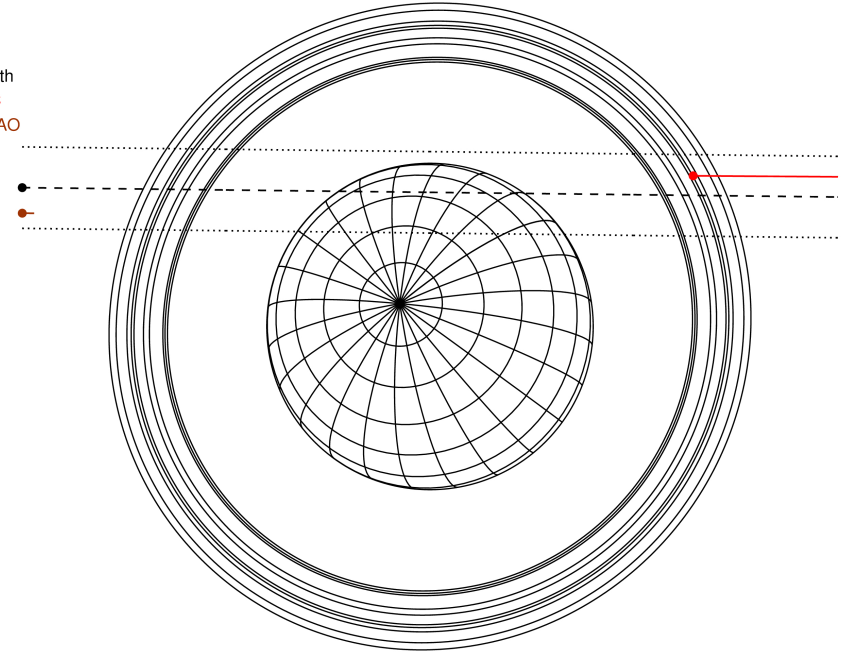
RUWE (>1.4 is poor) : 1.09  
 K magnitude : 11.293  
 G magnitude : 15.684  
 RP magnitude : 14.529  
 BP magnitude : 17.085  
 DUPflag : 0  
 Distance (au) : 19.665  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 26.59  
 Sun-Target sep (deg) : 47.25  
 Sun-Moon sep (deg) : 12.21  
 B (ring opening deg) : 76.58  
 PA of pole (deg) : 52.87

Uranus 2033-05-01T18:56:44 K11.29 G15.68  
PgRgt



2033-05-01T18:56:44.9600 ex: 05 53 27.3693 R: +23 38 43.406 C/A 1.479° PA 179.34 deg v\_sky +26.59 km/s D 19.67 AU  
 Credit: Styled after SORA/Lucky Star

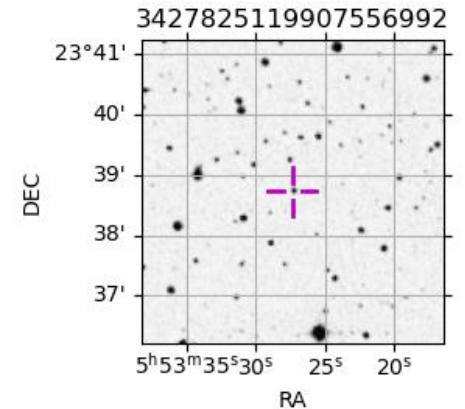
Earth  
 PIC  
 SAAO



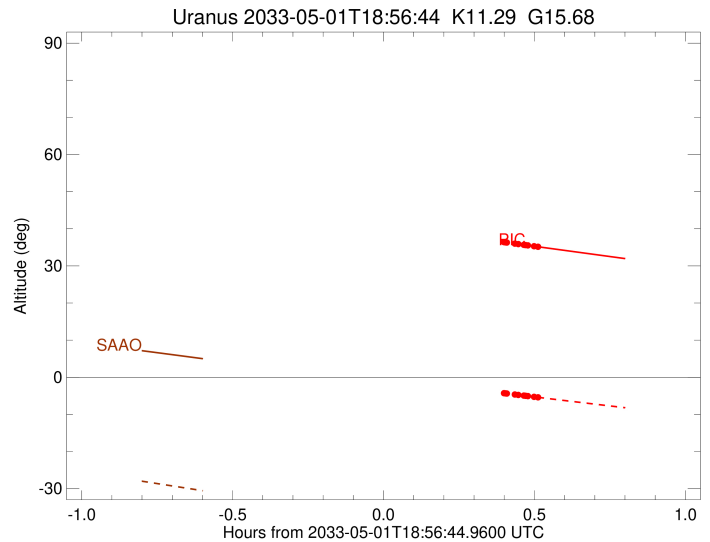
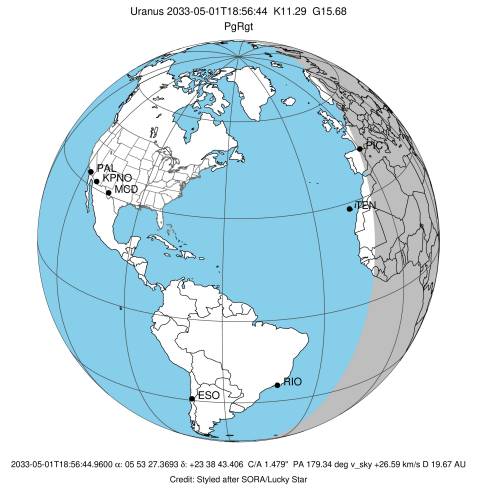
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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 01 19:25 - MAY 01 19:27	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



target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2033-05-01T18:59:08.010  
 Event type : PgRgt  
 : Uranus occs: geocentric, not 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 : 3427825119907556992  
 2Mass ID (if available) : 05532736+2338434  
 ICRS Star Coord at Epoch: 05h 53m 27.36928s +23:38:43.40587s  
 RUWE (>1.4 is poor) : 1.09  
 K magnitude : 11.293  
 G magnitude : 15.684  
 RP magnitude : 14.529  
 BP magnitude : 17.085  
 DUPflag : 0  
 Distance (au) : 19.665  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 26.59  
 Sun-Target sep (deg) : 47.25  
 Sun-Moon sep (deg) : 13.05  
 B (ring opening deg) : 76.58  
 PA of pole (deg) : 52.87  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 1.675  
 C/A sky separation (km) : 23892.2  
 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



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2033-05-01T18:31:43.665		45.37	4.07x	50912.06	-23.55		
lambda	I	2033-05-01T18:32:21.228		45.26	3.96x	50026.71	-23.51		
delta	I	2033-05-01T18:33:35.066		45.04	3.75x	48300.35	-23.25		
gamma	I	2033-05-01T18:34:04.126		44.95	3.66x	47626.36	-23.14		
eta	I	2033-05-01T18:34:23.617		44.89	3.60x	47176.12	-23.06		
beta	I	2033-05-01T18:35:30.419		44.69	3.41x	45644.70	-22.78		
alpha	I	2033-05-01T18:36:12.722		44.56	3.29x	44684.63	-22.59		
4	I	2033-05-01T18:37:49.436		44.27	3.01x	42528.11	-22.09		
5	I	2033-05-01T18:38:02.288		44.23	2.97x	42238.39	-22.06		
6	I	2033-05-01T18:38:18.758		44.18	2.92x	41870.21	-21.92		
Uranus	I	2033-05-01T18:54:06.671		41.29	0.19x	25182.03		10.98	11.48
Uranus	E	2033-05-01T19:04:47.022		39.33	-1.63x	25514.68		3.71	3.88
6	E	2033-05-01T19:20:39.863		36.40	-4.29x	41800.91	21.98		
5	E	2033-05-01T19:21:02.852		36.33	-4.35x	42308.88	22.11		
4	E	2033-05-01T19:21:14.964		36.30	-4.38x	42573.65	22.15		
alpha	E	2033-05-01T19:22:51.253		36.00	-4.65x	44733.63	22.65		
beta	E	2033-05-01T19:23:31.934		35.88	-4.76x	45658.04	22.84		
eta	E	2033-05-01T19:24:37.956		35.67	-4.94x	47176.12	23.13		
gamma	E	2033-05-01T19:24:57.186		35.61	-4.99x	47621.59	23.20		
delta	E	2033-05-01T19:25:26.367		35.53	-5.07	48300.35	23.32		
lambda	E	2033-05-01T19:26:39.985		35.30	-5.27	50026.71	23.58		
epsilon	E	2033-05-01T19:27:21.165		35.17	-5.39	51000.57	23.62		