

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2030-08-02T07:18:53.440  
 Event type : PgRgt  
 : Uranus occs: geocentric, not topocentric  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3416349993786464256  
 2Mass ID (if available) : 05212346+2312188

ICRS Star Coord at Epoch: 05h 21m 23.46964s +23:12:18.82134s

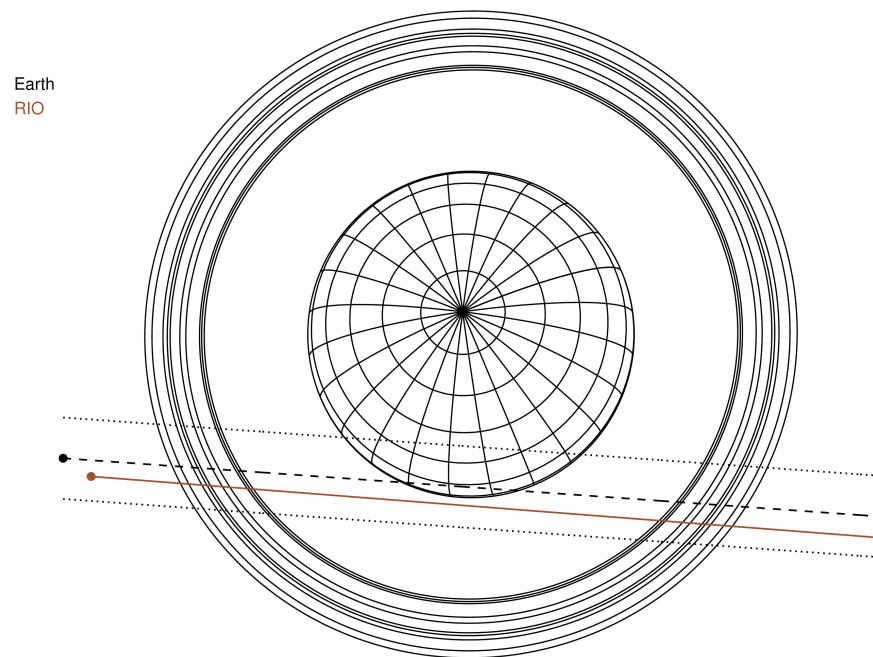
RUWE (>1.4 is poor) : 1.00  
 K magnitude : 14.605  
 G magnitude : 17.669  
 RP magnitude : 16.729  
 BP magnitude : 18.602  
 DUPflag : 0  
 Distance (au) : 19.837  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 26.07  
 Sun-Target sep (deg) : 48.51  
 Sun-Moon sep (deg) : 82.64  
 B (ring opening deg) : 81.47  
 PA of pole (deg) : 20.17

#	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



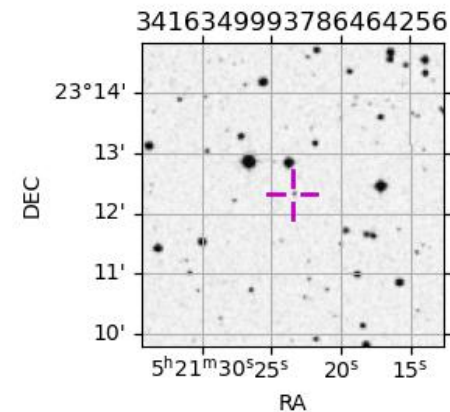
2030-08-02T07:18:53.4400 ex: 05 21 23.4696 8: +23 12 18.821 C/A 1.655° PA 355.92 deg v\_sky +26.07 km/s D 19.84 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2030-08-02T07:18:53 K14.61 G17.67 PgRgt

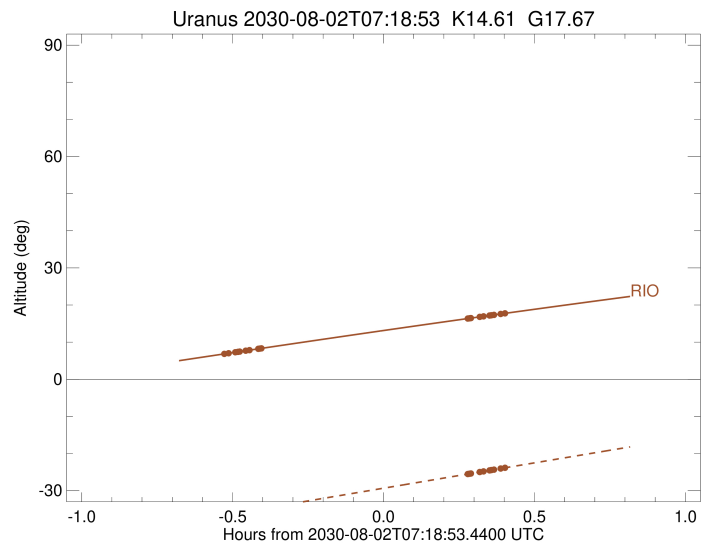
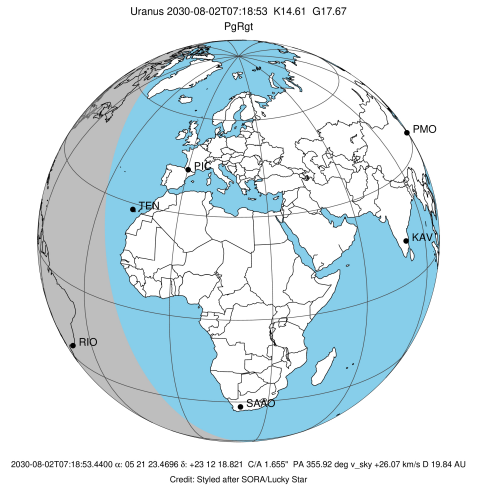


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
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	+++++		+++++	AUG 02 06:47 - AUG 02 07:43	PnnRie
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 : 2030-08-02T07:15:15.710  
 Event type : PgRgt  
 : Uranus occs: geocentric, not topocentric  
 : Ring occs: geocentric, topocentric  
 Observer code : RIO  
 Location : Rio de Janeiro  
 Latitude (deg) : -22.89506  
 E. Longitude (deg) : 316.77708  
 Altitude (km) : 0.033  
 Gaia source ID : 3416349993786464256  
 2Mass ID (if available) : 05212346+2312188  
 ICRS Star Coord at Epoch: 05h 21m 23.46964s +23:12:18.82134s  
 RUWE (>1.4 is poor) : 1.00  
 K magnitude : 14.605  
 G magnitude : 17.669  
 RP magnitude : 16.729  
 BP magnitude : 18.602  
 DUPflag : 0  
 Distance (au) : 19.837  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 26.07  
 Sun-Target sep (deg) : 48.51  
 Sun-Moon sep (deg) : 82.95  
 B (ring opening deg) : 81.47  
 PA of pole (deg) : 20.17  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 1.861  
 C/A sky separation (km) : 26781.6  
 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	2030-08-02T06:47:29.490		6.88	-36.53	50848.08	-22.09		
lambda	I	2030-08-02T06:48:06.920		7.01	-36.39	50026.71	-21.87		
delta	I	2030-08-02T06:49:26.451		7.28	-36.09	48300.35	-21.54		
gamma	I	2030-08-02T06:49:57.757		7.38	-35.97	47628.32	-21.40		
eta	I	2030-08-02T06:50:18.940		7.46	-35.88	47176.12	-21.30		
beta	I	2030-08-02T06:51:31.570		7.70	-35.61	45642.22	-20.93		
alpha	I	2030-08-02T06:52:15.647		7.85	-35.44	44724.51	-20.71		
4	I	2030-08-02T06:53:58.970		8.20	-35.04	42616.54	-20.08		
5	I	2030-08-02T06:54:14.976		8.25	-34.98	42298.34	-19.99		
6	I	2030-08-02T06:54:37.382		8.32	-34.90	41849.74	-19.84		

No planet occultations

6	E	2030-08-02T07:35:39.383		16.36	-25.53	41875.24	19.78		
5	E	2030-08-02T07:35:59.690		16.42	-25.45	42271.84	19.93		
4	E	2030-08-02T07:36:14.187		16.47	-25.39	42563.91	20.02		
alpha	E	2030-08-02T07:38:01.863		16.81	-24.99	44749.05	20.64		
beta	E	2030-08-02T07:38:45.750		16.95	-24.82	45660.33	20.86		
eta	E	2030-08-02T07:39:57.765		17.18	-24.55	47176.12	21.22		
gamma	E	2030-08-02T07:40:19.115		17.24	-24.47	47630.12	21.31		
delta	E	2030-08-02T07:40:50.459		17.34	-24.35	48300.35	21.45		
lambda	E	2030-08-02T07:42:10.313		17.59	-24.05	50026.71	21.78		
epsilon	E	2030-08-02T07:43:18.779		17.81	-23.79	51526.78	22.00		