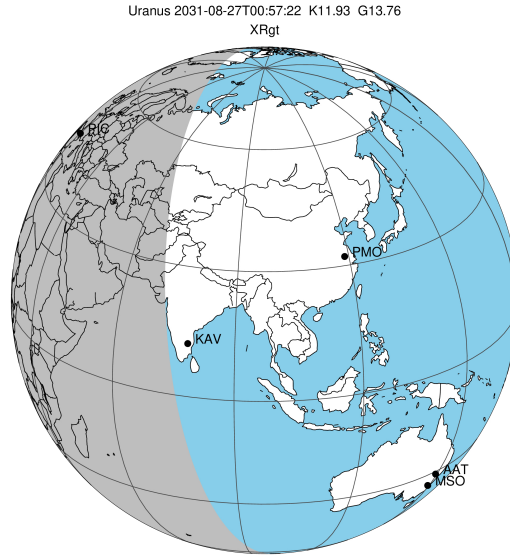


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2031-08-27T00:57:22.870
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3428369206364469632
 2Mass ID (if available) : 05433437+2330319

ICRS Star Coord at Epoch: 05h 43m 34.38890s +23:30:31.68805s

RUWE (>1.4 is poor) : 0.94
 K magnitude : 11.925
 G magnitude : 13.759
 RP magnitude : 13.148
 BP magnitude : 14.195
 DUPflag : 0
 Distance (au) : 19.481
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.01
 Sun-Target sep (deg) : 66.92
 Sun-Moon sep (deg) : 172.88
 B (ring opening deg) : 78.39
 PA of pole (deg) : 45.68

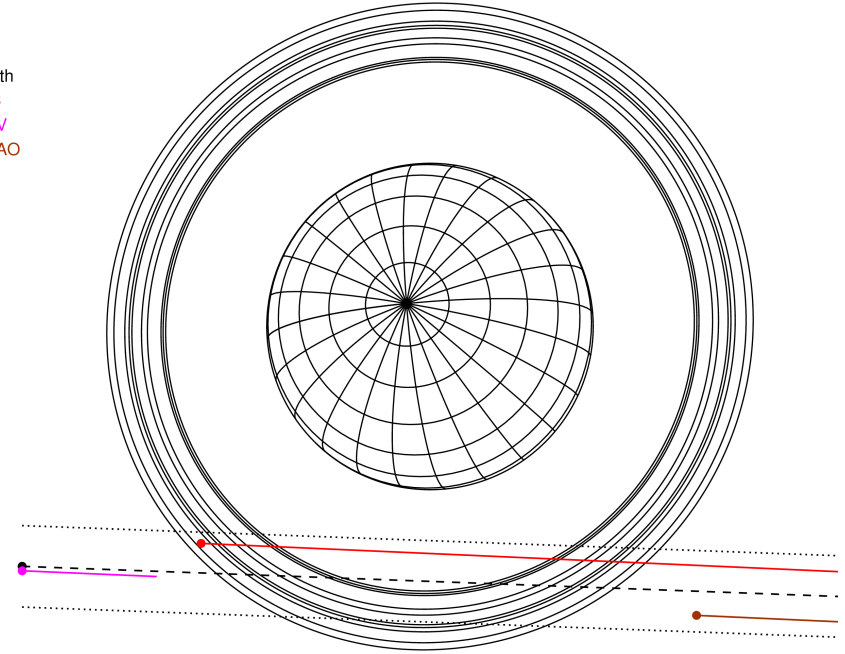
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2031-08-27T00:57:22.8700 ex: 05 43 34.3889 s: +23 30 31.688 C/A 2.819" PA 357.89 deg v_sky +18.01 km/s D 19.48 AU
 Credit: Styled after SORA/Lucky Star

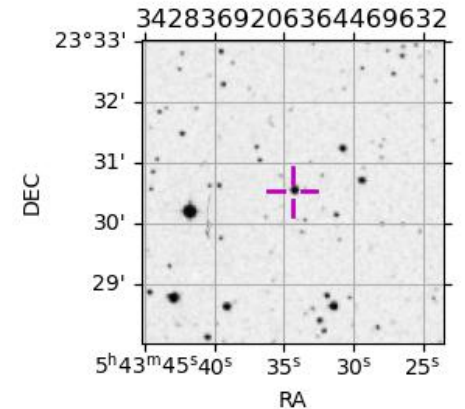
Uranus 2031-08-27T00:57:22 K11.93 G13.76 XRgt

Earth
 PIC
 KAV
 SAAO

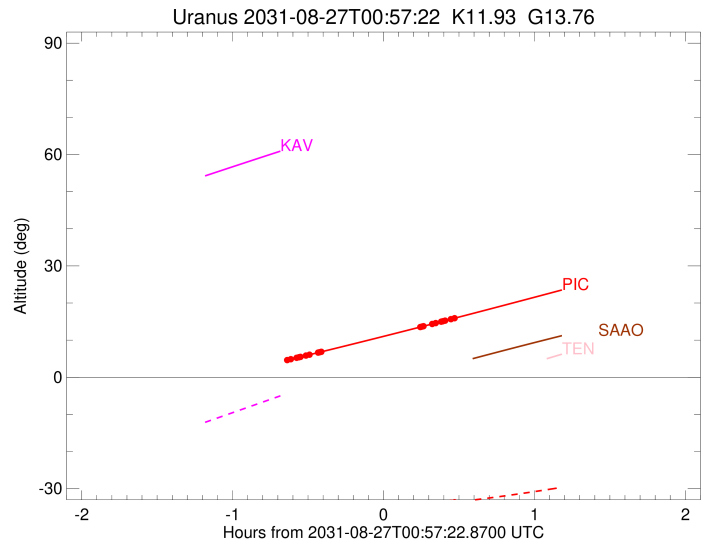
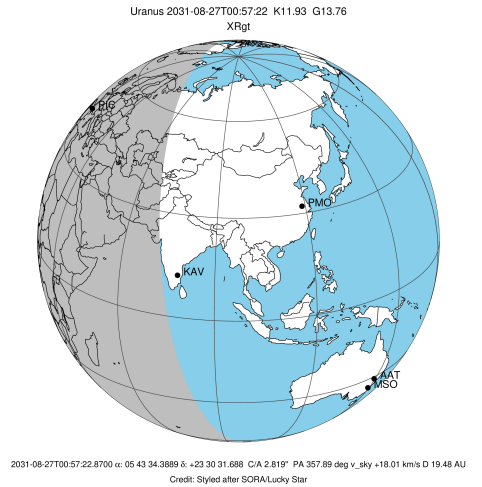


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++++		+++++++	AUG 27 00:22 - AUG 27 01:25	PnnRie
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 : 2031-08-27T00:52:59.030
 Event type : XRgt
 : No Uranus occs
 : 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 : 3428369206364469632
 2Mass ID (if available) : 05433437+2330319
 ICRS Star Coord at Epoch: 05h 43m 34.38890s +23:30:31.68805s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 11.925
 G magnitude : 13.759
 RP magnitude : 13.148
 BP magnitude : 14.195
 DUPflag : 0
 Distance (au) : 19.481
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.01
 Sun-Target sep (deg) : 66.92
 Sun-Moon sep (deg) : 172.42
 B (ring opening deg) : 78.39
 PA of pole (deg) : 45.68
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.514
 C/A sky separation (km) : 35517.7
 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	2031-08-27T00:18:52.762		4.59x	-36.91	51331.73	-13.03		
lambda	I	2031-08-27T00:20:33.499		4.87x	-36.88	50026.71	-12.78		
delta	I	2031-08-27T00:22:51.209		5.24	-36.83	48300.35	-12.28		
gamma	I	2031-08-27T00:23:46.168		5.39	-36.81	47631.37	-12.06		
eta	I	2031-08-27T00:24:24.149		5.49	-36.80	47176.12	-11.91		
beta	I	2031-08-27T00:26:34.837		5.85	-36.75	45656.26	-11.33		
alpha	I	2031-08-27T00:28:01.963		6.09	-36.71	44685.86	-10.93		
4	I	2031-08-27T00:31:24.442		6.65	-36.62	42576.50	-9.86		
5	I	2031-08-27T00:31:51.746		6.72	-36.60	42310.92	-9.71		
6	I	2031-08-27T00:32:38.174		6.85	-36.58	41864.02	-9.46		

No planet occultations

6	E	2031-08-27T01:12:02.491		13.54	-34.65	41878.94	9.42		
5	E	2031-08-27T01:12:40.815		13.65	-34.61	42245.00	9.67		
4	E	2031-08-27T01:13:11.400		13.74	-34.57	42532.65	9.82		
alpha	E	2031-08-27T01:16:40.103		14.34	-34.33	44700.35	10.87		
beta	E	2031-08-27T01:18:05.198		14.59	-34.23	45641.06	11.28		
eta	E	2031-08-27T01:20:17.949		14.97	-34.07	47176.12	11.84		
gamma	E	2031-08-27T01:20:55.900		15.08	-34.03	47628.40	11.99		
delta	E	2031-08-27T01:21:51.430		15.25	-33.96	48300.35	12.21		
lambda	E	2031-08-27T01:24:09.994		15.65	-33.78	50026.71	12.70		
epsilon	E	2031-08-27T01:25:09.242		15.82	-33.71	50785.16	12.94		