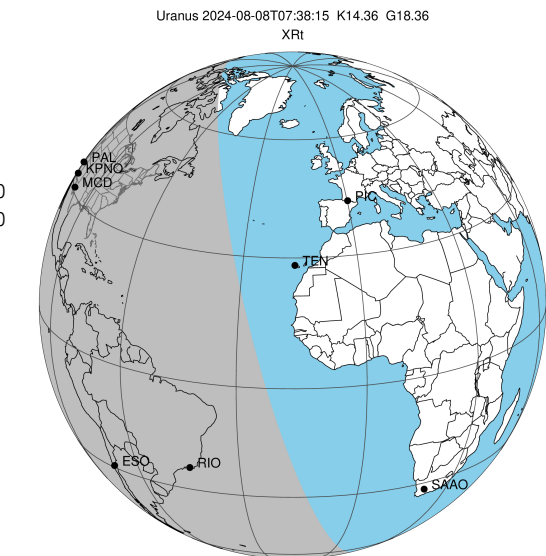


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2024-08-08T07:38:15.580
 Event type : XRT
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 57151274382159360
 2Mass ID (if available) : 03374327+1909087

ICRS Star Coord at Epoch: 03h 37m 43.38038s +19:09:05.85967s

RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.357
 G magnitude : 18.363
 RP magnitude : 17.053
 BP magnitude : 20.223
 DUPflag : 0
 Distance (au) : 19.741
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 11.89
 Sun-Target sep (deg) : 79.25
 Sun-Moon sep (deg) : 122.07
 B (ring opening deg) : 67.80
 PA of pole (deg) : -83.25

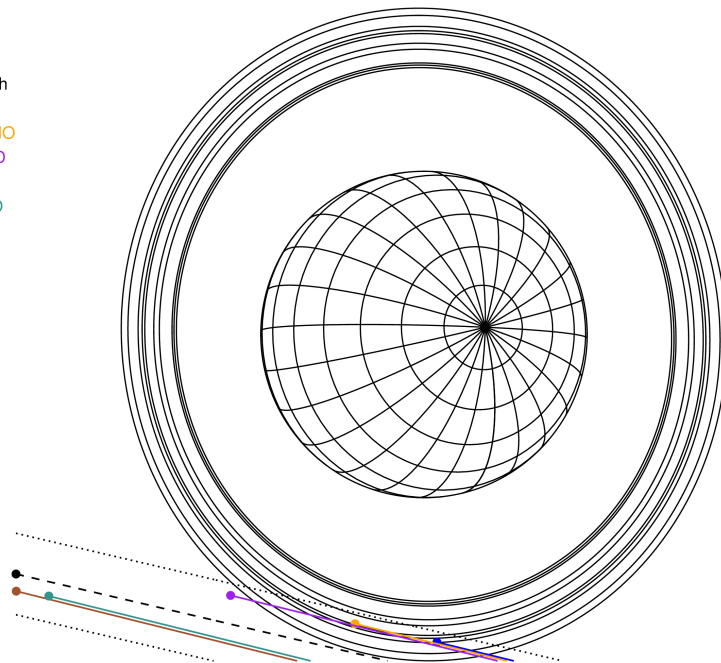
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2024-08-08T07:38:15.5800 ex: 03 37 43.3804 s: +19 09 05.860 C/A 3.564" PA 346.85 deg v_sky +11.89 km/s D 19.74 AU
 Credit: Styled after SORA/Lucky Star

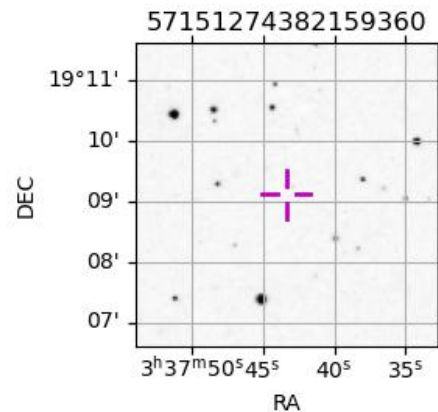
Uranus 2024-08-08T07:38:15 K14.36 G18.36 XRT

Earth
 PAL
 KPNO
 MCD
 RIO
 ESO

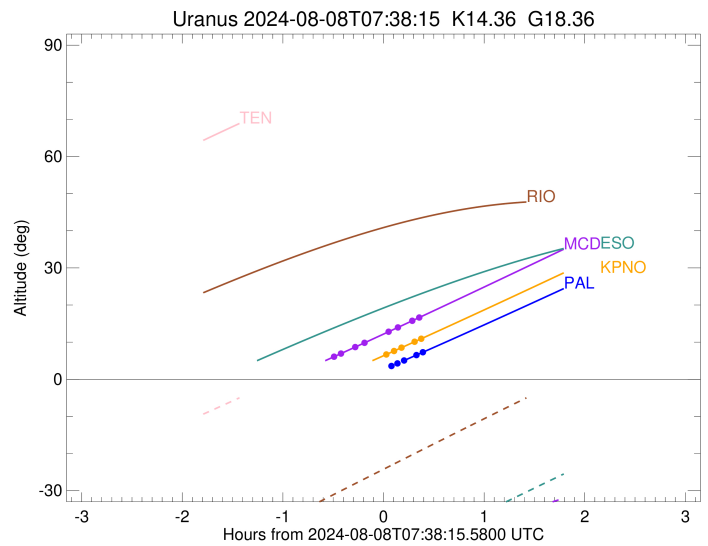
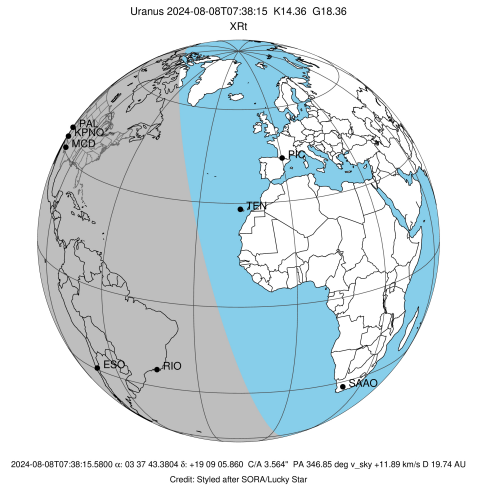


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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			+++	AUG 08 07:50 - AUG 08 08:02	PnnRne
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			+++++	AUG 08 07:39 - AUG 08 08:01	PnnRne
MCD	McDonald Obs. 2.7m	30.7	256.0	+++++		++++	AUG 08 07:07 - AUG 08 08:00	PnnRie
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 : 2024-08-08T07:31:42.110
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 57151274382159360
 2Mass ID (if available) : 03374327+1909087
 ICRS Star Coord at Epoch: 03h 37m 43.38038s +19:09:05.85967s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.357
 G magnitude : 18.363
 RP magnitude : 17.053
 BP magnitude : 20.223
 DUPflag : 0
 Distance (au) : 19.741
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 11.89
 Sun-Target sep (deg) : 79.25
 Sun-Moon sep (deg) : 121.78
 B (ring opening deg) : 67.80
 PA of pole (deg) : -83.25
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.236
 C/A sky separation (km) : 46338.4
 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

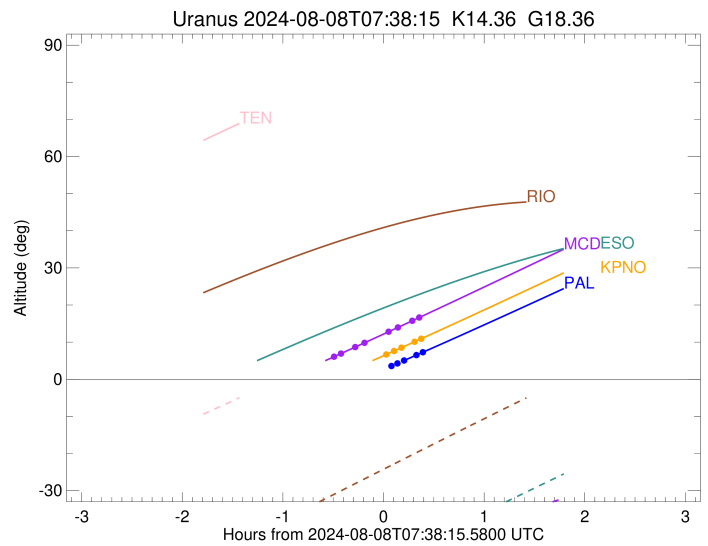
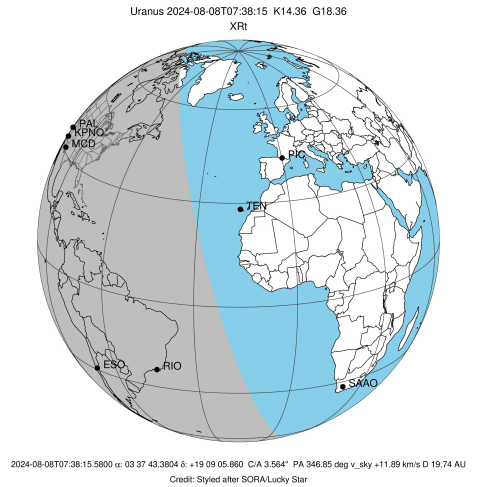


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2024-08-08T07:06:40.480		-3.43x	-39.62	51553.55	-5.44		
lambda	I	2024-08-08T07:11:44.870		-2.47x	-39.87	50026.71	-4.58		
delta	I	2024-08-08T07:19:05.672		-1.07x	-40.19	48300.35	-3.23		
gamma	I	2024-08-08T07:23:05.312		-0.30x	-40.34	47621.42	-2.44		
eta	I	2024-08-08T07:26:40.486		0.39x	-40.45	47176.12	-1.70		

No planet occultations

eta	E	2024-08-08T07:42:50.623		3.54x	-40.80	47176.12	1.70		
gamma	E	2024-08-08T07:46:26.979		4.25x	-40.84	47622.58	2.43		
delta	E	2024-08-08T07:50:27.234		5.04	-40.86	48300.35	3.21		
lambda	E	2024-08-08T07:57:50.880		6.50	-40.85	50026.71	4.55		
epsilon	E	2024-08-08T08:02:36.506		7.45	-40.81	51439.11	5.39		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2024-08-08T07:31:20.020
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : KPNO
 Location : Kitt Peak Natl Obs
 Latitude (deg) : 31.96333
 E. Longitude (deg) : 248.40000
 Altitude (km) : 2.120
 Gaia source ID : 57151274382159360
 2Mass ID (if available) : 03374327+1909087
 ICRS Star Coord at Epoch: 03h 37m 43.38038s +19:09:05.85967s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.357
 G magnitude : 18.363
 RP magnitude : 17.053
 BP magnitude : 20.223
 DUPflag : 0
 Distance (au) : 19.741
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 11.89
 Sun-Target sep (deg) : 79.25
 Sun-Moon sep (deg) : 121.82
 B (ring opening deg) : 67.80
 PA of pole (deg) : -83.25
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.253
 C/A sky separation (km) : 46572.5
 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

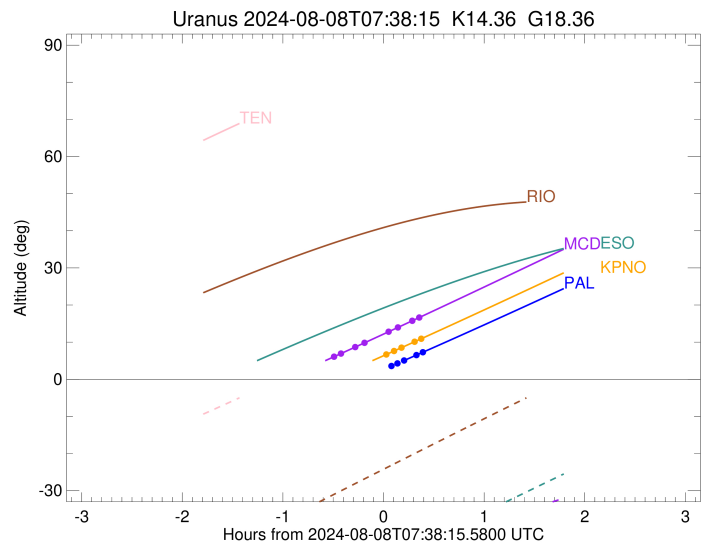
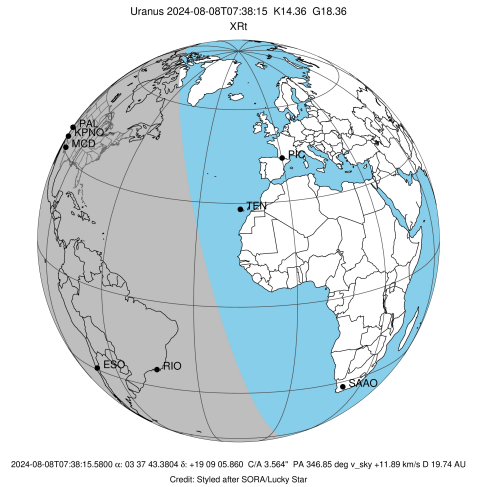


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2024-08-08T07:06:56.063		0.10x	-41.86	51553.91	-5.30		
lambda	I	2024-08-08T07:12:10.615		1.13x	-42.01	50026.71	-4.41		
delta	I	2024-08-08T07:19:57.743		2.67x	-42.16	48300.35	-2.96		
gamma	I	2024-08-08T07:24:27.518		3.57x	-42.21	47621.49	-2.07		
eta	I	2024-08-08T07:29:07.993		4.51x	-42.24	47176.12	-1.11		

No planet occultations

eta	E	2024-08-08T07:39:42.326		6.63	-42.21	47176.12	1.10		
gamma	E	2024-08-08T07:44:24.011		7.58	-42.16	47622.47	2.06		
delta	E	2024-08-08T07:48:54.445		8.50	-42.08	48300.35	2.95		
lambda	E	2024-08-08T07:56:44.527		10.09	-41.89	50026.71	4.37		
epsilon	E	2024-08-08T08:01:40.409		11.10	-41.73	51442.51	5.25		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2024-08-08T07:30:59.690
 Event type : XRt
 : No Uranus occs
 : Ring occs: topocentric, not geocentric
 Observer code : MCD
 Location : McDonald Obs. 2.7m
 Latitude (deg) : 30.67158
 E. Longitude (deg) : 255.97844
 Altitude (km) : 2.075
 Gaia source ID : 57151274382159360
 2Mass ID (if available) : 03374327+1909087
 ICRS Star Coord at Epoch: 03h 37m 43.38038s +19:09:05.85967s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 14.357
 G magnitude : 18.363
 RP magnitude : 17.053
 BP magnitude : 20.223
 DUPflag : 0
 Distance (au) : 19.741
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 11.89
 Sun-Target sep (deg) : 79.25
 Sun-Moon sep (deg) : 121.88
 B (ring opening deg) : 67.80
 PA of pole (deg) : -83.25
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.275
 C/A sky separation (km) : 46889.5
 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_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	2024-08-08T07:07:28.179		5.81	-43.51	51554.36	-5.09		
lambda	I	2024-08-08T07:12:58.348		6.94	-43.45	50026.71	-4.15		
delta	I	2024-08-08T07:21:30.625		8.69	-43.29	48300.35	-2.56		
gamma	I	2024-08-08T07:27:10.398		9.86	-43.13	47621.60	-1.43		

No planet occultations

gamma	E	2024-08-08T07:41:05.215		12.76	-42.58	47622.28	1.43		
delta	E	2024-08-08T07:46:45.688		13.94	-42.29	48300.35	2.55		
lambda	E	2024-08-08T07:55:21.032		15.74	-41.78	50026.71	4.12		
epsilon	E	2024-08-08T08:00:32.605		16.83	-41.43	51447.14	5.05		