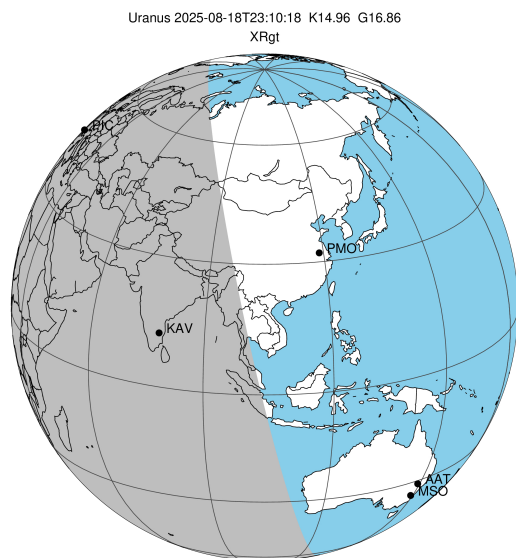


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2025-08-18T23:10:18.180
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 51314521203330432
 2Mass ID (if available) : 03552904+2008356

ICRS Star Coord at Epoch: 03h 55m 29.06222s +20:08:35.50214s

RUWE (>1.4 is poor) : 0.96
 K magnitude : 14.960
 G magnitude : 16.864
 RP magnitude : 16.214
 BP magnitude : 17.363
 DUPflag : 0
 Distance (au) : 19.577
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 8.98
 Sun-Target sep (deg) : 84.93
 Sun-Moon sep (deg) : 31.47
 B (ring opening deg) : 71.75
 PA of pole (deg) : -77.17

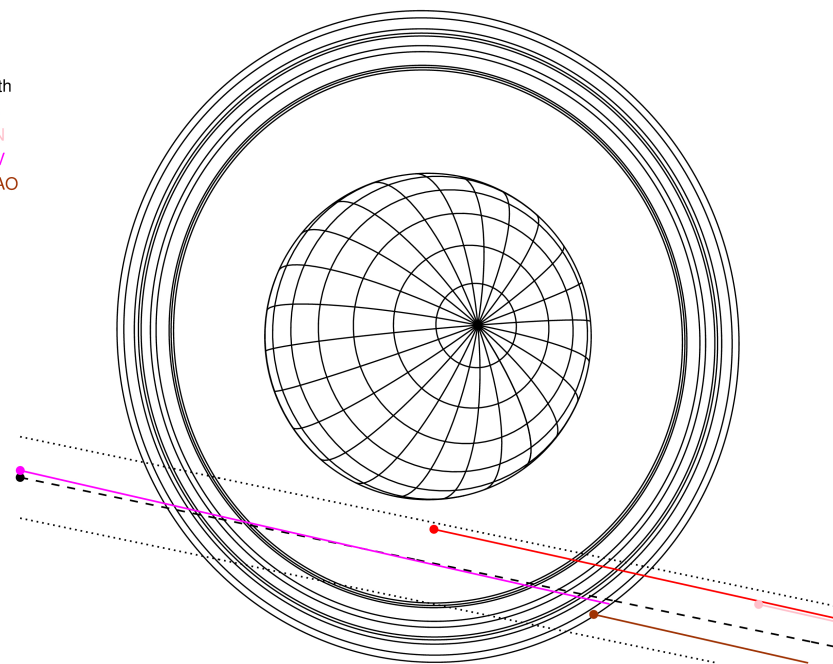
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2025-08-18T23:10:18.1800 ra: 03 55 29.06222 s: +20 08 35.502 C/A 2.435° PA 348.26 deg v_sky + 8.98 km/s D 19.58 AU
 Credit: Styled after SORA/Lucky Star

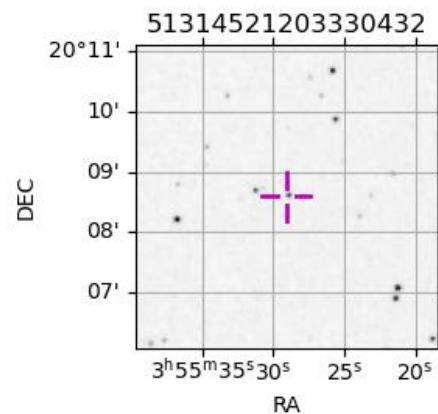
Uranus 2025-08-18T23:10:18 K14.96 G16.86 XRgt

Earth
 PIC
 TEN
 KAV
 SAAO

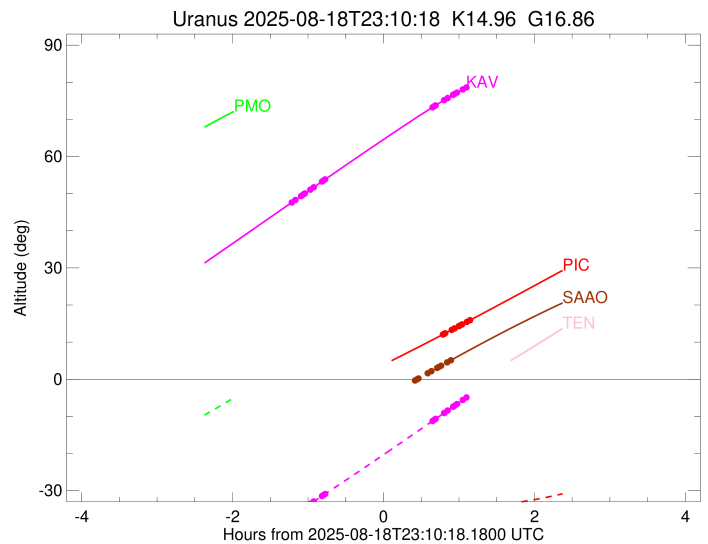
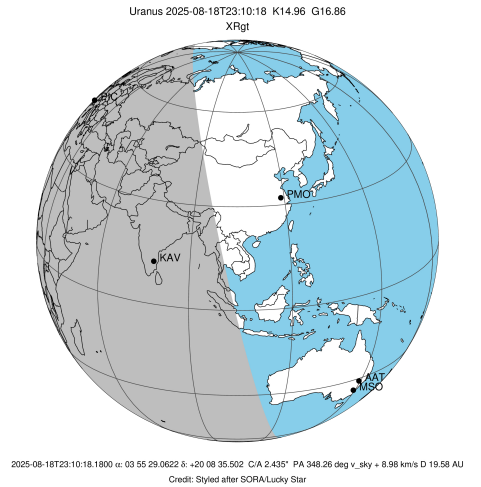


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			+++++	AUG 18 23:57 - AUG 19 00:19	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	+++++		+++++	AUG 18 21:58 - AUG 19 00:13	PnnRie
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			+	AUG 19 00:03 - AUG 19 00:03	PnnRne
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2025-08-18T23:03:14.390
 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 : 51314521203330432
 2Mass ID (if available) : 03552904+2008356
 ICRS Star Coord at Epoch: 03h 55m 29.06222s +20:08:35.50214s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 14.960
 G magnitude : 16.864
 RP magnitude : 16.214
 BP magnitude : 17.363
 DUPflag : 0
 Distance (au) : 19.577
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 8.98
 Sun-Target sep (deg) : 84.93
 Sun-Moon sep (deg) : 31.85
 B (ring opening deg) : 71.75
 PA of pole (deg) : -77.17
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.063
 C/A sky separation (km) : 29297.4
 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_itrfr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk

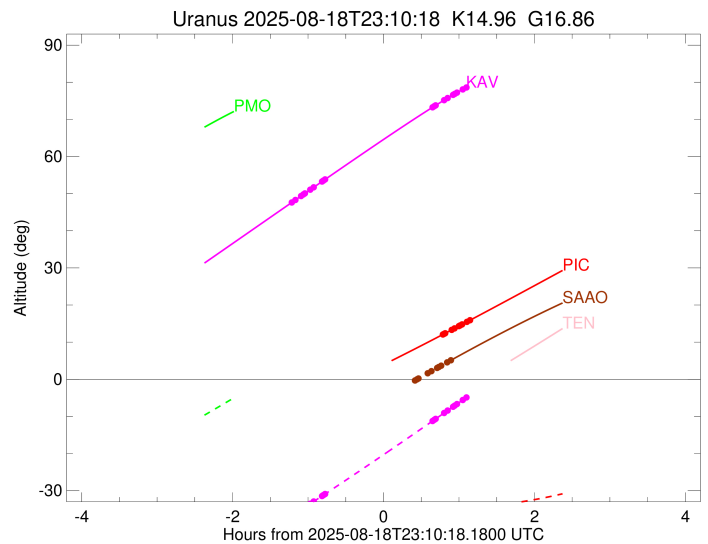
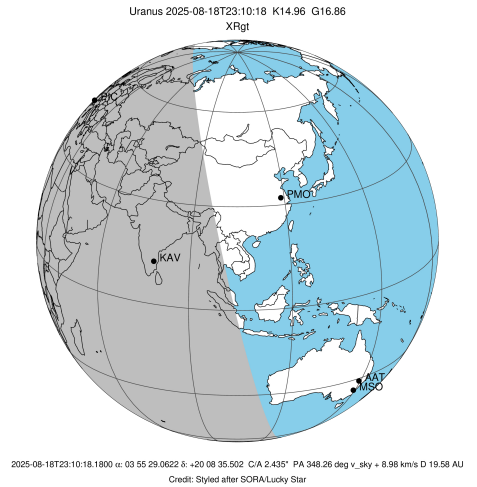


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2025-08-18T21:53:25.757	-8.23x	-27.02	50746.44	-7.81			
lambda	I	2025-08-18T21:54:58.180	-8.00x	-27.19	50026.71	-7.76			
delta	I	2025-08-18T21:58:42.994	-7.45x	-27.58	48300.35	-7.60			
gamma	I	2025-08-18T22:00:12.590	-7.23x	-27.74	47622.55	-7.53			
eta	I	2025-08-18T22:01:12.051	-7.08x	-27.84	47176.12	-7.48			
beta	I	2025-08-18T22:04:38.282	-6.57x	-28.19	45650.82	-7.32			
alpha	I	2025-08-18T22:06:45.543	-6.25x	-28.40	44723.57	-7.20			
4	I	2025-08-18T22:11:44.167	-5.49x	-28.89	42612.70	-6.90			
5	I	2025-08-18T22:12:44.723	-5.34x	-28.99	42193.64	-6.82			
6	I	2025-08-18T22:13:41.367	-5.20x	-29.08	41822.36	-6.78			

No planet occultations

6	E	2025-08-18T23:57:35.474	12.08	-34.49	41876.99	6.65			
5	E	2025-08-18T23:58:18.609	12.21	-34.49	42166.68	6.69			
4	E	2025-08-18T23:59:15.558	12.37	-34.50	42551.70	6.76			
alpha	E	2025-08-19T00:04:34.008	13.31	-34.50	44751.19	7.04			
beta	E	2025-08-19T00:06:44.965	13.70	-34.50	45679.78	7.15			
eta	E	2025-08-19T00:10:12.124	14.32	-34.48	47176.12	7.30			
gamma	E	2025-08-19T00:11:14.213	14.50	-34.48	47630.80	7.34			
delta	E	2025-08-19T00:12:44.998	14.77	-34.46	48300.35	7.41			
lambda	E	2025-08-19T00:16:35.845	15.46	-34.42	50026.71	7.55			
epsilon	E	2025-08-19T00:19:14.242	15.93	-34.39	51229.58	7.60			

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2025-08-18T23:03:49.010
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : KAV
 Location : Kavalur Observatory
 Latitude (deg) : 12.57556
 E. Longitude (deg) : 78.83167
 Altitude (km) : 0.722
 Gaia source ID : 51314521203330432
 2Mass ID (if available) : 03552904+2008356
 ICRS Star Coord at Epoch: 03h 55m 29.06222s +20:08:35.50214s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 14.960
 G magnitude : 16.864
 RP magnitude : 16.214
 BP magnitude : 17.363
 DUPflag : 0
 Distance (au) : 19.577
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 8.98
 Sun-Target sep (deg) : 84.93
 Sun-Moon sep (deg) : 32.29
 B (ring opening deg) : 71.75
 PA of pole (deg) : -77.17
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.441
 C/A sky separation (km) : 34656.7
 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

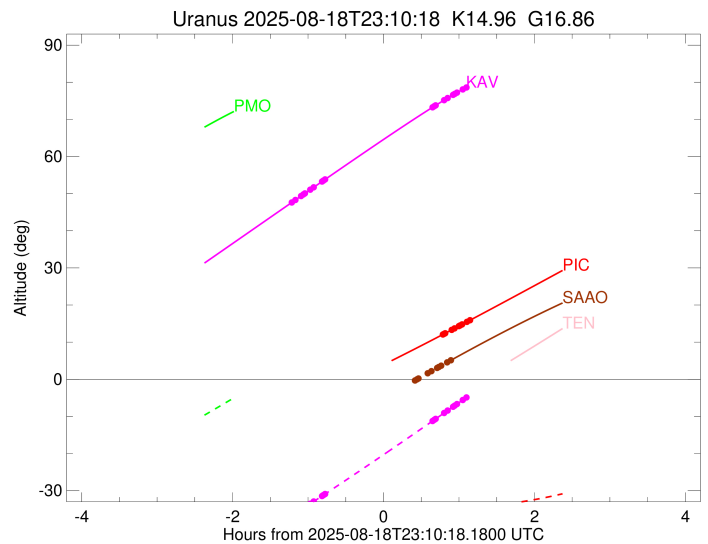
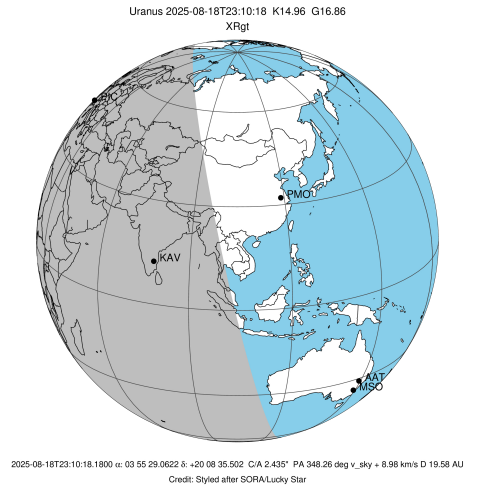


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2025-08-18T21:58:27.638		47.88	-36.53	50743.52	-6.57		
lambda	I	2025-08-18T22:00:17.551		48.31	-36.13	50026.71	-6.48		
delta	I	2025-08-18T22:04:48.956		49.37	-35.14	48300.35	-6.24		
gamma	I	2025-08-18T22:06:38.354		49.80	-34.74	47623.14	-6.14		
eta	I	2025-08-18T22:07:51.590		50.08	-34.47	47176.12	-6.07		
beta	I	2025-08-18T22:12:08.046		51.09	-33.52	45653.68	-5.81		
alpha	I	2025-08-18T22:14:49.112		51.71	-32.93	44729.05	-5.63		
4	I	2025-08-18T22:21:21.717		53.25	-31.47	42608.57	-5.14		
5	I	2025-08-18T22:22:45.278		53.57	-31.16	42181.29	-5.02		
6	I	2025-08-18T22:23:58.358		53.86	-30.88	41830.41	-4.95		

No planet occultations

6	E	2025-08-18T23:49:22.449		73.28	-11.23	41872.98	4.88		
5	E	2025-08-18T23:50:20.411		73.48	-11.01	42159.54	4.95		
4	E	2025-08-18T23:51:40.212		73.76	-10.69	42560.26	5.07		
alpha	E	2025-08-18T23:58:33.103		75.20	-9.07	44752.29	5.54		
beta	E	2025-08-19T00:01:17.775		75.75	-8.43	45678.21	5.71		
eta	E	2025-08-19T00:05:34.537		76.61	-7.42	47176.12	5.96		
gamma	E	2025-08-19T00:06:50.364		76.85	-7.12	47630.30	6.02		
delta	E	2025-08-19T00:08:40.722		77.21	-6.69	48300.35	6.12		
lambda	E	2025-08-19T00:13:17.734		78.07	-5.60	50026.71	6.34		
epsilon	E	2025-08-19T00:16:16.593		78.61	-4.89x	51172.79	6.42		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2025-08-18T22:58:14.030
 Event type : XRgt
 : No Uranus occs
 : 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 : 51314521203330432
 2Mass ID (if available) : 03552904+2008356
 ICRS Star Coord at Epoch: 03h 55m 29.06222s +20:08:35.50214s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 14.960
 G magnitude : 16.864
 RP magnitude : 16.214
 BP magnitude : 17.363
 DUPflag : 0
 Distance (au) : 19.577
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 8.98
 Sun-Target sep (deg) : 84.93
 Sun-Moon sep (deg) : 32.23
 B (ring opening deg) : 71.75
 PA of pole (deg) : -77.17
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.589
 C/A sky separation (km) : 36767.4
 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



b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2025-08-18T21:59:50.153	-19.58x	-68.46	50744.54	-6.49			
lambda	I	2025-08-18T22:01:41.811	-19.19x	-68.64	50026.71	-6.37			
delta	I	2025-08-18T22:06:19.068	-18.24x	-69.05	48300.35	-6.08			
gamma	I	2025-08-18T22:08:11.672	-17.85x	-69.21	47623.46	-5.95			
eta	I	2025-08-18T22:09:27.476	-17.59x	-69.31	47176.12	-5.86			
beta	I	2025-08-18T22:13:54.889	-16.67x	-69.64	45655.19	-5.52			
alpha	I	2025-08-18T22:16:45.128	-16.09x	-69.82	44731.72	-5.29			
4	I	2025-08-18T22:23:52.266	-14.62x	-70.20	42605.88	-4.64			
5	I	2025-08-18T22:25:26.292	-14.30x	-70.27	42175.56	-4.48			
6	I	2025-08-18T22:26:46.260	-14.03x	-70.32	41834.80	-4.36			

No planet occultations

6	E	2025-08-18T23:35:24.988	-0.32x	-66.83	41870.51	4.29			
5	E	2025-08-18T23:36:30.732	-0.11x	-66.69	42157.27	4.40			
4	E	2025-08-18T23:38:01.588	0.19x	-66.50	42564.42	4.56			
alpha	E	2025-08-18T23:45:30.389	1.63x	-65.50	44752.43	5.18			
beta	E	2025-08-18T23:48:25.141	2.19x	-65.09	45677.35	5.40			
eta	E	2025-08-18T23:52:54.567	3.04x	-64.43	47176.12	5.72			
gamma	E	2025-08-18T23:54:13.366	3.29x	-64.23	47630.05	5.80			
delta	E	2025-08-18T23:56:07.679	3.65x	-63.95	48300.35	5.92			
lambda	E	2025-08-19T00:00:52.370	4.55x	-63.21	50026.71	6.20			
epsilon	E	2025-08-19T00:03:51.010	5.11	-62.74	51148.53	6.30			