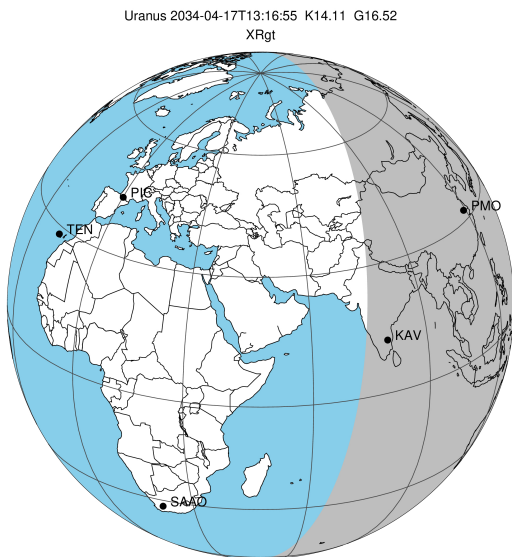


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-17T13:16:55.540
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3425387429613900160
 2Mass ID (if available) : 06093288+2341296

ICRS Star Coord at Epoch: 06h 09m 32.88417s +23:41:29.38655s

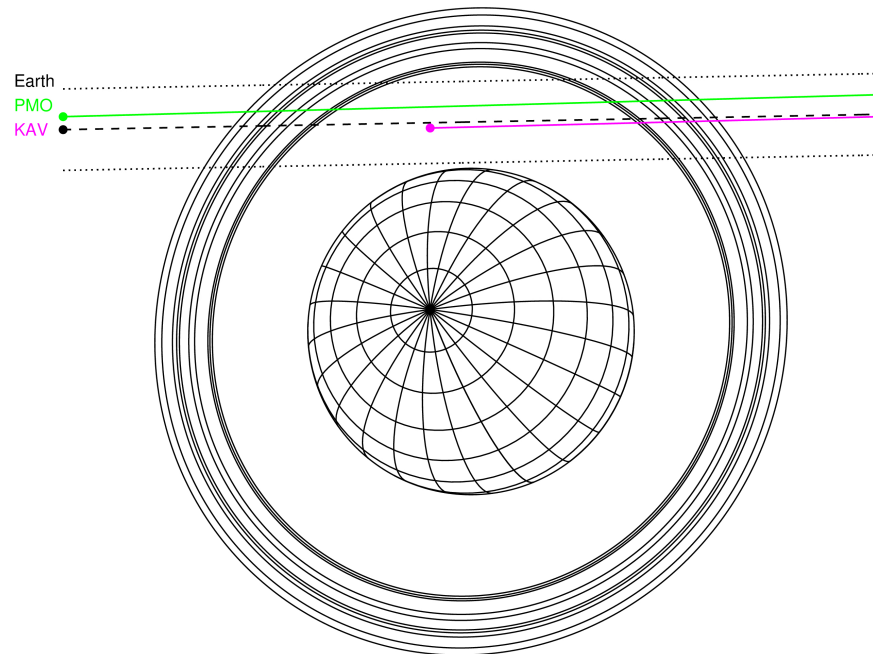
RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.109
 G magnitude : 16.523
 RP magnitude : 15.742
 BP magnitude : 17.152
 DUPflag : 0
 Distance (au) : 19.335
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.94
 Sun-Target sep (deg) : 65.05
 Sun-Moon sep (deg) : 82.82
 B (ring opening deg) : 73.45
 PA of pole (deg) : 61.78

#	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



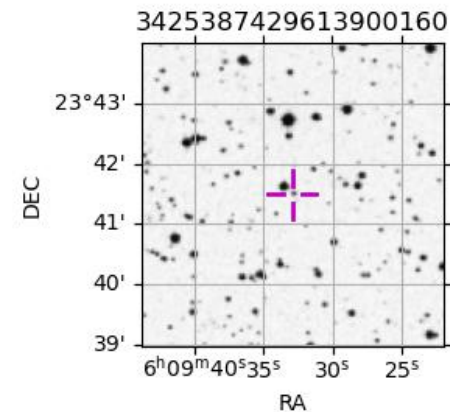
2034-04-17T13:16:55.5400 ex: 06 09 32.8842 s: +23 41 29.387 C/A 2.346° PA 181.08 deg v_sky +18.94 km/s D 19.34 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2034-04-17T13:16:55 K14.11 G16.52 XRgt

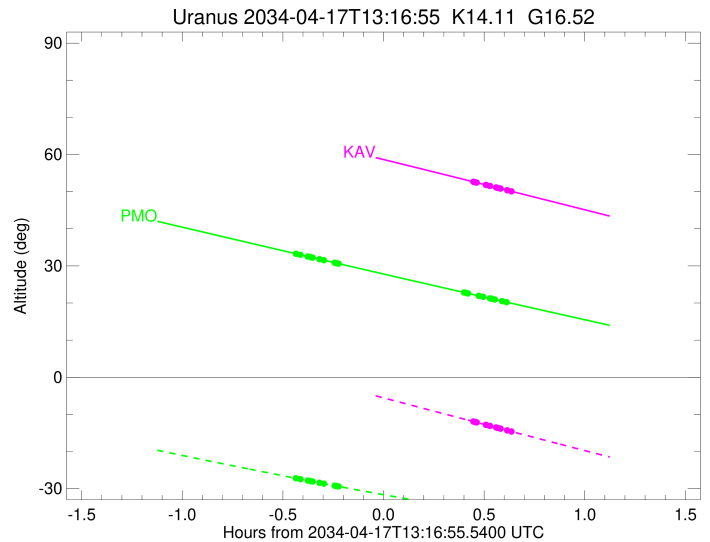
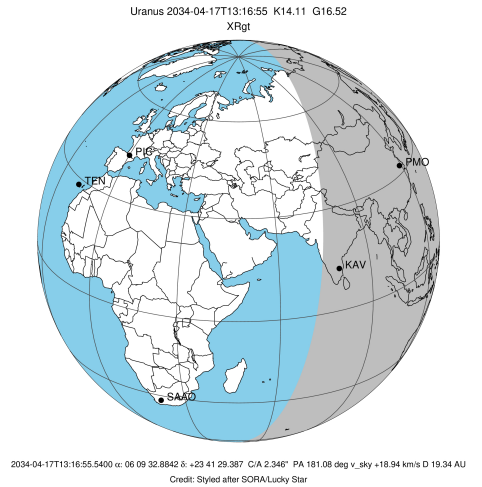


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+++++		+++++	APR 17 12:50 - APR 17 13:54	PnnRie
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			+++++	APR 17 13:43 - APR 17 13:55	PnnRne
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 : 2034-04-17T13:21:08.970
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 3425387429613900160
 2Mass ID (if available) : 06093288+2341296
 ICRS Star Coord at Epoch: 06h 09m 32.88417s +23:41:29.38655s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.109
 G magnitude : 16.523
 RP magnitude : 15.742
 BP magnitude : 17.152
 DUPflag : 0
 Distance (au) : 19.335
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.94
 Sun-Target sep (deg) : 65.05
 Sun-Moon sep (deg) : 83.38
 B (ring opening deg) : 73.45
 PA of pole (deg) : 61.78
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.520
 C/A sky separation (km) : 35332.5
 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

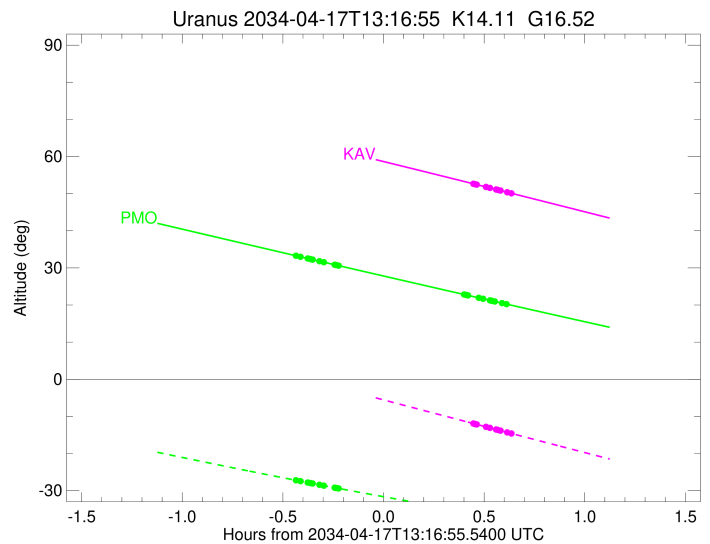
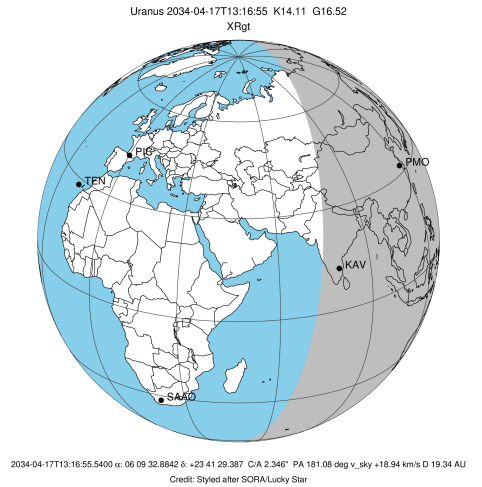


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-04-17T12:50:55.766		33.26	-27.23	51071.56	-13.96		
lambda	I	2034-04-17T12:52:11.924		32.99	-27.45	50026.71	-13.58		
delta	I	2034-04-17T12:54:21.515		32.54	-27.83	48300.35	-13.06		
gamma	I	2034-04-17T12:55:13.175		32.35	-27.98	47631.58	-12.83		
eta	I	2034-04-17T12:55:48.887		32.23	-28.08	47176.12	-12.67		
beta	I	2034-04-17T12:57:52.764		31.80	-28.44	45642.72	-12.08		
alpha	I	2034-04-17T12:59:11.671		31.52	-28.66	44705.96	-11.68		
4	I	2034-04-17T13:02:18.710		30.87	-29.19	42614.92	-10.59		
5	I	2034-04-17T13:03:02.320		30.72	-29.32	42163.98	-10.30		
6	I	2034-04-17T13:03:31.666		30.61	-29.40	41865.07	-10.14		

No planet occultations

6	E	2034-04-17T13:40:59.629		22.83	-35.40	41878.49	10.18		
5	E	2034-04-17T13:41:28.076		22.73	-35.47	42170.61	10.34		
4	E	2034-04-17T13:42:06.802		22.60	-35.57	42577.79	10.63		
alpha	E	2034-04-17T13:45:20.467		21.94	-36.05	44745.38	11.74		
beta	E	2034-04-17T13:46:36.175		21.68	-36.23	45649.22	12.14		
eta	E	2034-04-17T13:48:38.817		21.26	-36.53	47176.12	12.74		
gamma	E	2034-04-17T13:49:13.964		21.14	-36.61	47626.82	12.91		
delta	E	2034-04-17T13:50:05.699		20.96	-36.74	48300.35	13.13		
lambda	E	2034-04-17T13:52:14.517		20.52	-37.04	50026.71	13.66		
epsilon	E	2034-04-17T13:54:04.380		20.15	-37.30	51550.50	14.06		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-17T13:19:39.230
 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 : 3425387429613900160
 2Mass ID (if available) : 06093288+2341296
 ICRS Star Coord at Epoch: 06h 09m 32.88417s +23:41:29.38655s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.109
 G magnitude : 16.523
 RP magnitude : 15.742
 BP magnitude : 17.152
 DUPflag : 0
 Distance (au) : 19.335
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.94
 Sun-Target sep (deg) : 65.05
 Sun-Moon sep (deg) : 83.73
 B (ring opening deg) : 73.45
 PA of pole (deg) : 61.78
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.283
 C/A sky separation (km) : 32013.4
 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_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	2034-04-17T12:46:20.445		65.29	1.77x	51038.13	-14.89		
lambda	I	2034-04-17T12:47:29.259		65.05	1.49x	50026.71	-14.59		
delta	I	2034-04-17T12:49:29.097		64.62	1.01x	48300.35	-14.21		
gamma	I	2034-04-17T12:50:16.434		64.45	0.82x	47631.56	-14.05		
eta	I	2034-04-17T12:50:48.994		64.34	0.69x	47176.12	-13.93		
beta	I	2034-04-17T12:52:40.721		63.94	0.25x	45643.69	-13.50		
alpha	I	2034-04-17T12:53:51.264		63.69	-0.04x	44702.48	-13.22		
4	I	2034-04-17T12:56:33.161		63.11	-0.68x	42616.11	-12.46		
5	I	2034-04-17T12:57:09.541		62.98	-0.83x	42169.54	-12.26		
6	I	2034-04-17T12:57:34.929		62.89	-0.93x	41860.46	-12.16		

No planet occultations

6	E	2034-04-17T13:43:45.406		52.65	-11.93	41876.64	12.20		
5	E	2034-04-17T13:44:09.951		52.56	-12.03	42177.78	12.30		
4	E	2034-04-17T13:44:41.454		52.44	-12.15	42571.75	12.50		
alpha	E	2034-04-17T13:47:30.256		51.80	-12.82	44747.63	13.27		
beta	E	2034-04-17T13:48:37.674		51.55	-13.09	45651.12	13.55		
eta	E	2034-04-17T13:50:28.335		51.13	-13.52	47176.12	13.99		
gamma	E	2034-04-17T13:51:00.377		51.01	-13.65	47626.27	14.11		
delta	E	2034-04-17T13:51:47.876		50.83	-13.83	48300.35	14.27		
lambda	E	2034-04-17T13:53:47.153		50.38	-14.30	50026.71	14.67		
epsilon	E	2034-04-17T13:55:30.228		49.99	-14.71	51554.46	14.97		