

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2025-03-14T20:16:13.960
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 55991805011194496
 2Mass ID (if available) : 03253252+1828330

ICRS Star Coord at Epoch: 03h 25m 32.53871s +18:28:33.11572s

RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.974
 G magnitude : 17.462
 RP magnitude : 16.696
 BP magnitude : 18.132
 DUPflag : 0
 Distance (au) : 20.026
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.43
 Sun-Target sep (deg) : 59.56
 Sun-Moon sep (deg) : 126.58
 B (ring opening deg) : 64.99
 PA of pole (deg) : -86.37

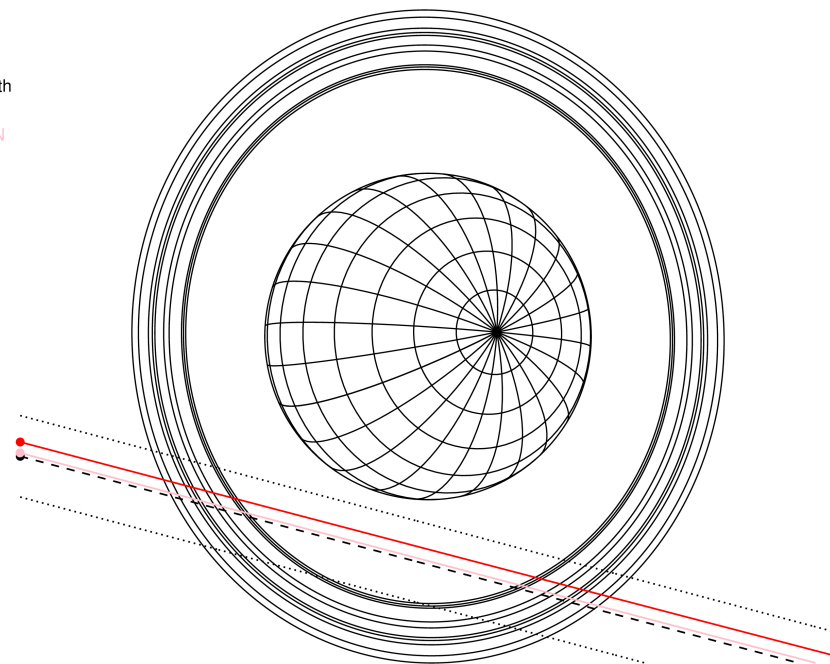
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2025-03-14T20:16:13.9600 ex: 03 25 32.5387 8: +18 28 33.116 C/A 2.375° PA 345.13 deg v_sky +21.43 km/s D 20.03 AU
 Credit: Styled after SORA/Lucky Star

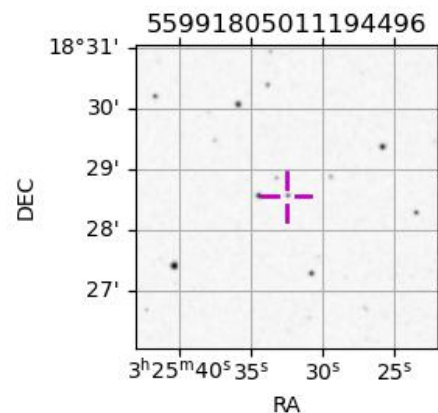
Earth
 PIC
 TEN

Uranus 2025-03-14T20:16:13 K14.97 G17.46 XRgt

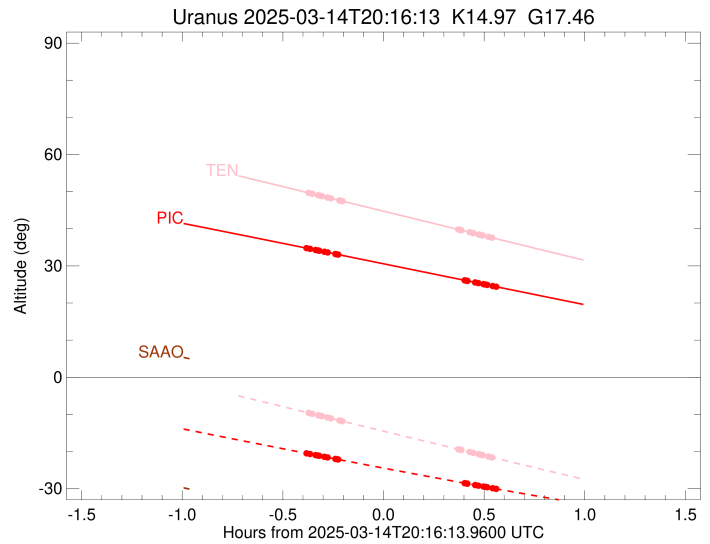
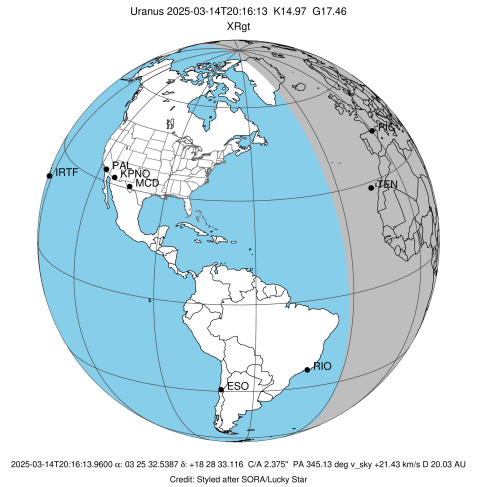


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+++++		+++++	MAR 14 19:52 - MAR 14 20:49	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	+++++		+++++	MAR 14 19:53 - MAR 14 20:48	PnnRie
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 : 2025-03-14T20:20:12.930
 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 : 55991805011194496
 2Mass ID (if available) : 03253252+1828330
 ICRS Star Coord at Epoch: 03h 25m 32.53871s +18:28:33.11572s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.974
 G magnitude : 17.462
 RP magnitude : 16.696
 BP magnitude : 18.132
 DUPflag : 0
 Distance (au) : 20.026
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.43
 Sun-Target sep (deg) : 59.56
 Sun-Moon sep (deg) : 127.37
 B (ring opening deg) : 64.99
 PA of pole (deg) : -86.37
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.219
 C/A sky separation (km) : 32235.1
 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_itrff93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



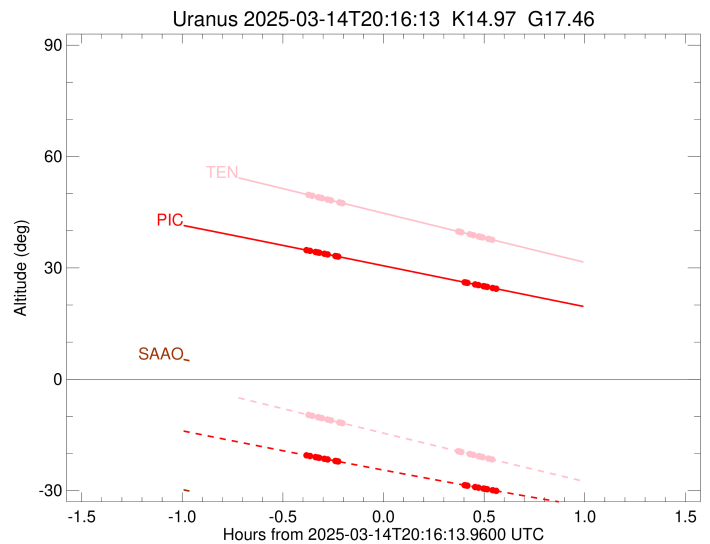
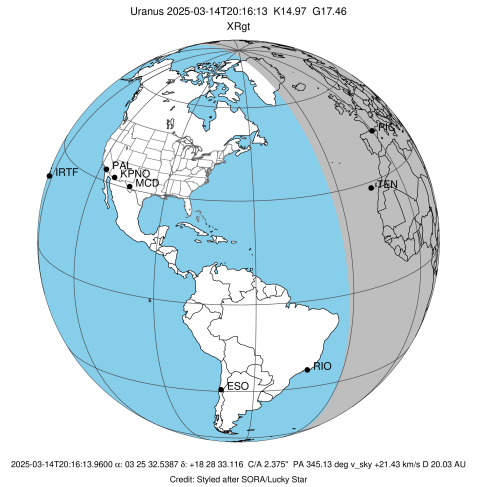
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2025-03-14T19:52:58.148		34.84	-20.44	51497.34	-17.93		
lambda	I	2025-03-14T19:54:20.714		34.59	-20.68	50026.71	-17.63		
delta	I	2025-03-14T19:55:59.952		34.28	-20.97	48300.35	-17.15		
gamma	I	2025-03-14T19:56:39.738		34.16	-21.08	47621.90	-16.95		
eta	I	2025-03-14T19:57:06.148		34.08	-21.16	47176.12	-16.81		
beta	I	2025-03-14T19:58:38.810		33.80	-21.43	45642.68	-16.28		
alpha	I	2025-03-14T19:59:36.014		33.63	-21.60	44716.83	-15.94		
4	I	2025-03-14T20:01:53.882		33.20	-22.00	42580.74	-14.96		
5	I	2025-03-14T20:02:22.017		33.12	-22.08	42155.37	-14.77		
6	I	2025-03-14T20:02:41.351		33.06	-22.13	41873.83	-14.62		

No planet occultations

6	E	2025-03-14T20:40:26.693		26.12	-28.53	41865.99	14.66		
5	E	2025-03-14T20:40:50.820		26.04	-28.60	42228.93	14.81		
4	E	2025-03-14T20:41:11.002		25.98	-28.65	42529.20	15.00		
alpha	E	2025-03-14T20:43:34.439		25.54	-29.04	44752.23	15.99		
beta	E	2025-03-14T20:44:31.119		25.37	-29.20	45668.75	16.34		
eta	E	2025-03-14T20:46:01.900		25.09	-29.44	47176.12	16.87		
gamma	E	2025-03-14T20:46:28.306		25.01	-29.52	47623.55	17.01		
delta	E	2025-03-14T20:47:07.840		24.89	-29.62	48300.35	17.22		
lambda	E	2025-03-14T20:48:46.673		24.58	-29.89	50026.71	17.70		
epsilon	E	2025-03-14T20:49:34.410		24.44	-30.02	50877.03	18.01		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2025-03-14T20:19:48.740
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : TEN
Location            : Teide Obs./Tenerife
Latitude (deg)      : 28.30050
E. Longitude (deg)  : 343.48909
Altitude (km)       : 2.395
Gaia source ID      : 55991805011194496
2Mass ID (if available) : 03253252+1828330
ICRS Star Coord at Epoch: 03h 25m 32.53871s +18:28:33.11572s
RUWE (>1.4 is poor) : 1.01
K magnitude         : 14.974
G magnitude         : 17.462
RP magnitude        : 16.696
BP magnitude        : 18.132
DUPflag            : 0
Distance (au)       : 20.026
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 21.43
Sun-Target sep (deg) : 59.56
Sun-Moon sep (deg)  : 127.47
B (ring opening deg) : 64.99
PA of pole (deg)    : -86.37
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.340
C/A sky separation (km) : 33984.7
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall11.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.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	2025-03-14T19:53:34.785		49.74	-9.54	51487.79	-17.14		
lambda	I	2025-03-14T19:55:00.723		49.42	-9.85	50026.71	-16.79		
delta	I	2025-03-14T19:56:45.204		49.04	-10.23	48300.35	-16.24		
gamma	I	2025-03-14T19:57:27.288		48.89	-10.39	47621.75	-16.00		
eta	I	2025-03-14T19:57:55.275		48.78	-10.49	47176.12	-15.84		
beta	I	2025-03-14T19:59:33.936		48.42	-10.85	45643.15	-15.23		
alpha	I	2025-03-14T20:00:35.198		48.19	-11.08	44718.80	-14.82		
4	I	2025-03-14T20:03:05.124		47.64	-11.63	42577.81	-13.65		
5	I	2025-03-14T20:03:35.760		47.53	-11.74	42156.18	-13.42		
6	I	2025-03-14T20:03:57.092		47.45	-11.82	41875.23	-13.24		

No planet occultations

6	E	2025-03-14T20:38:33.488		39.80	-19.40	41868.15	13.27		
5	E	2025-03-14T20:38:59.599		39.71	-19.50	42223.35	13.46		
4	E	2025-03-14T20:39:22.268		39.62	-19.58	42530.46	13.69		
alpha	E	2025-03-14T20:41:57.827		39.05	-20.14	44751.95	14.87		
beta	E	2025-03-14T20:42:58.577		38.83	-20.36	45667.66	15.28		
eta	E	2025-03-14T20:44:35.354		38.47	-20.71	47176.12	15.90		
gamma	E	2025-03-14T20:45:03.337		38.37	-20.82	47623.31	16.06		
delta	E	2025-03-14T20:45:45.170		38.22	-20.97	48300.35	16.30		
lambda	E	2025-03-14T20:47:29.249		37.83	-21.35	50026.71	16.86		
epsilon	E	2025-03-14T20:48:20.154		37.64	-21.53	50891.43	17.21		