

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2036-08-26T11:44:39.170  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 869287808614381184  
 2Mass ID (if available) : 07163527+2239457

ICRS Star Coord at Epoch: 07h 16m 35.28121s +22:39:45.27062s

RUWE (>1.4 is poor) : 1.01  
 K magnitude : 14.763  
 G magnitude : 18.516  
 RP magnitude : 17.353  
 BP magnitude : 20.084  
 DUPflag : 0  
 Distance (au) : 19.478  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 27.27  
 Sun-Target sep (deg) : 45.71  
 Sun-Moon sep (deg) : 109.88  
 B (ring opening deg) : 59.04  
 PA of pole (deg) : 81.69

# a(km) ring

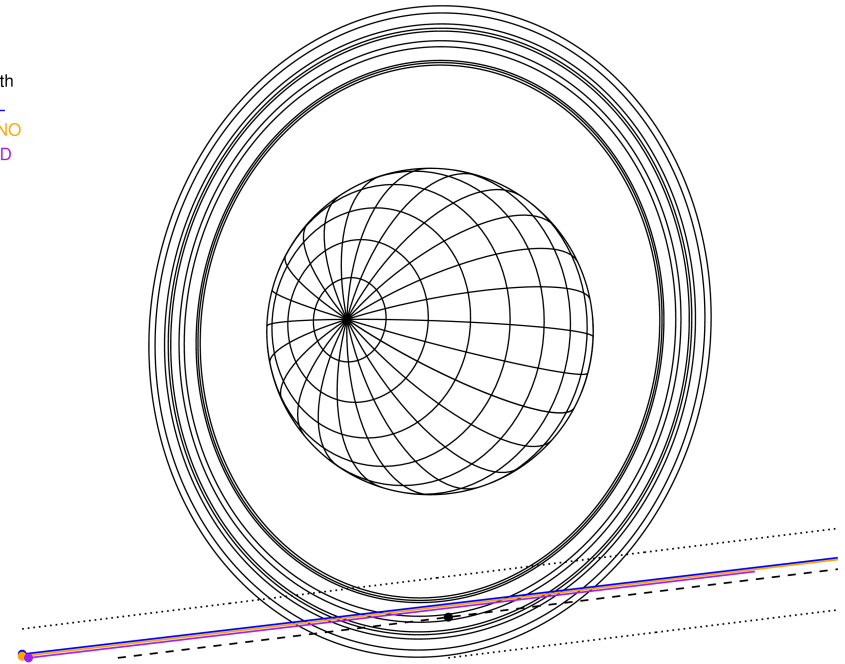
-----  
 1 41837.2 6  
 2 42235.0 5  
 3 42571.2 4  
 4 44718.5 alpha  
 5 45661.1 beta  
 6 47176.1 eta  
 7 47626.3 gamma  
 8 48300.3 delta  
 9 50026.7 lambda  
 10 51149.4 epsilon



2036-08-26T11:44:39.1700 α: 07 16 35.28121 δ: +22 39 45.271 C/A 3.163° PA 7.02 deg v\_sky +27.27 km/s D 19.48 AU  
 Credit: Styled after SORA/Lucky Star

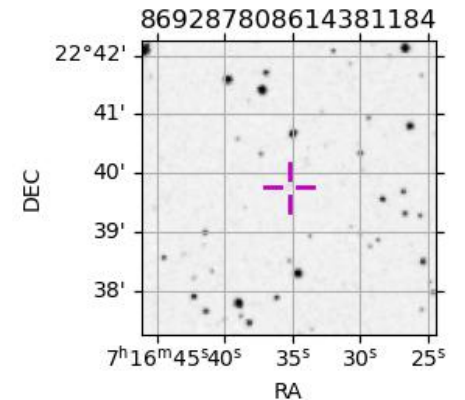
Uranus 2036-08-26T11:44:39 K14.76 G18.52 XRgt

Earth  
 PAL  
 KPNO  
 MCD

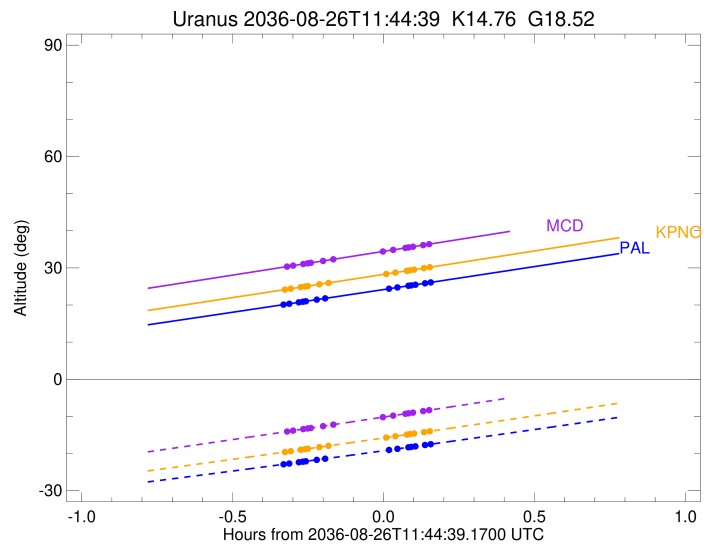
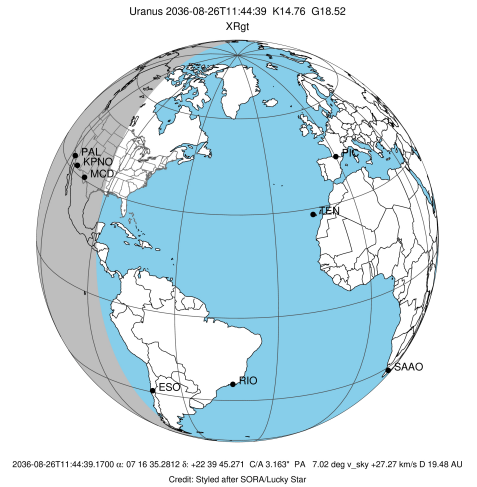


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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 26 11:24 - AUG 26 11:53	PnnRie
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	++++++		++++++	AUG 26 11:25 - AUG 26 11:53	PnnRie
MCD	McDonald Obs. 2.7m	30.7	256.0	++++++		++++++	AUG 26 11:25 - AUG 26 11:53	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 : 2036-08-26T11:41:10.750  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Observer code : PAL  
 Location : Palomar Mt (200")  
 Latitude (deg) : 33.35622  
 E. Longitude (deg) : 243.13601  
 Altitude (km) : 1.706  
 Gaia source ID : 869287808614381184  
 2Mass ID (if available) : 07163527+2239457  
 ICRS Star Coord at Epoch: 07h 16m 35.28121s +22:39:45.27062s  
 RUWE (>1.4 is poor) : 1.01  
 K magnitude : 14.763  
 G magnitude : 18.516  
 RP magnitude : 17.353  
 BP magnitude : 20.084  
 DUPflag : 0  
 Distance (au) : 19.478  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 27.27  
 Sun-Target sep (deg) : 45.71  
 Sun-Moon sep (deg) : 109.98  
 B (ring opening deg) : 59.04  
 PA of pole (deg) : 81.69  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.023  
 C/A sky separation (km) : 42704.0  
 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



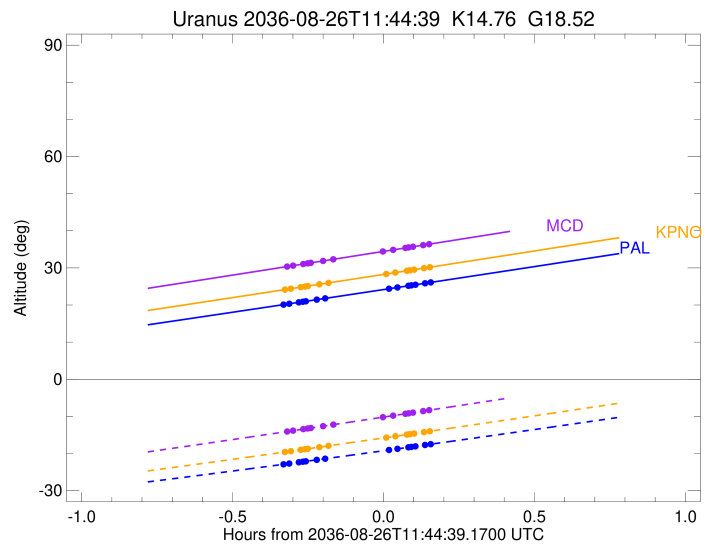
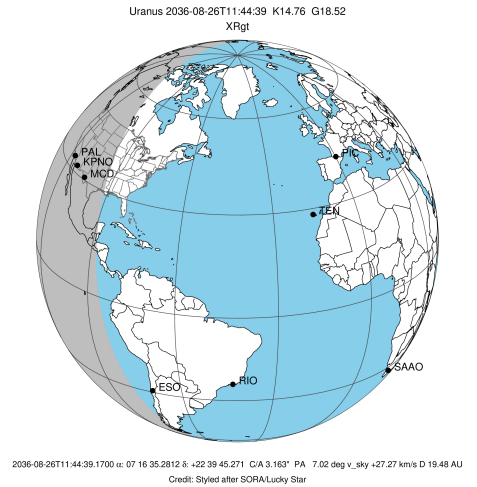
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2036-08-26T11:24:54.590		20.13	-22.89	51034.31	-16.62		
lambda	I	2036-08-26T11:25:56.085		20.34	-22.70	50026.71	-15.94		
delta	I	2036-08-26T11:27:50.627		20.73	-22.35	48300.35	-14.17		
gamma	I	2036-08-26T11:28:39.298		20.89	-22.21	47630.25	-13.36		
eta	I	2036-08-26T11:29:14.066		21.01	-22.10	47176.12	-12.76		
beta	I	2036-08-26T11:31:23.023		21.45	-21.71	45680.65	-10.39		
alpha	I	2036-08-26T11:33:09.245		21.81	-21.39	44687.92	-8.26		

No planet occultations

alpha	E	2036-08-26T11:45:38.818		24.37	-19.07	44684.74	8.26		
beta	E	2036-08-26T11:47:25.114		24.73	-18.74	45673.38	10.38		
eta	E	2036-08-26T11:49:35.083		25.17	-18.33	47176.12	12.74		
gamma	E	2036-08-26T11:50:09.593		25.29	-18.23	47626.11	13.34		
delta	E	2036-08-26T11:50:58.653		25.46	-18.07	48300.35	14.15		
lambda	E	2036-08-26T11:52:53.403		25.85	-17.71	50026.71	15.91		
epsilon	E	2036-08-26T11:53:37.919		26.01	-17.57	50749.29	16.58		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2036-08-26T11:41:14.760
Event type           : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 869287808614381184
2Mass ID (if available) : 07163527+2239457
ICRS Star Coord at Epoch: 07h 16m 35.28121s +22:39:45.27062s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 14.763
G magnitude           : 18.516
RP magnitude          : 17.353
BP magnitude          : 20.084
DUPflag              : 0
Distance (au)         : 19.478
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 27.27
Sun-Target sep (deg) : 45.71
Sun-Moon sep (deg)   : 110.04
B (ring opening deg) : 59.04
PA of pole (deg)     : 81.69
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.044
C/A sky separation (km) : 43005.0
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrf93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
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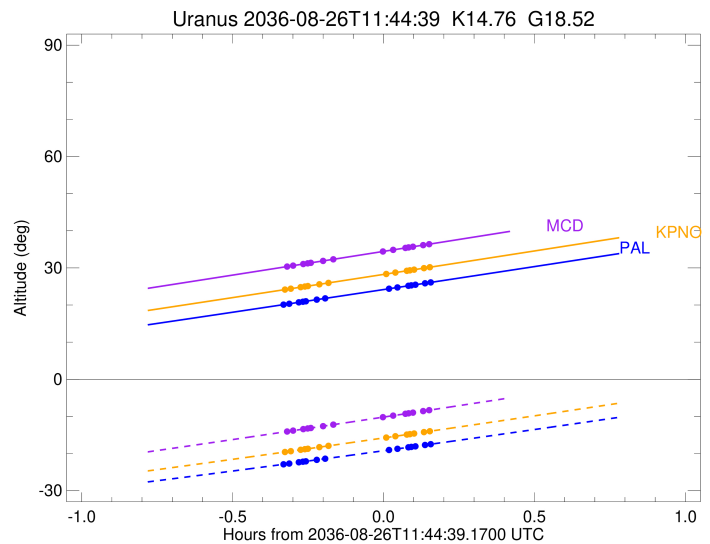
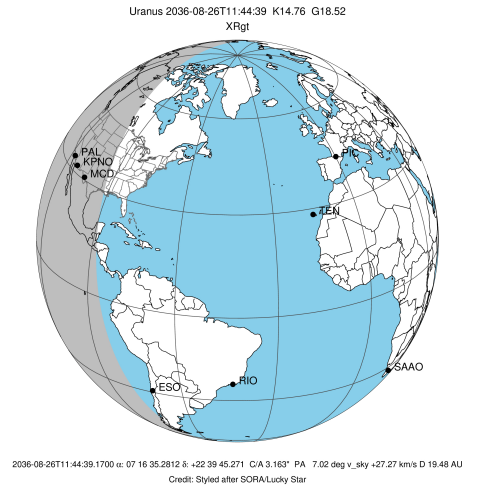


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2036-08-26T11:25:12.189		24.19	-19.57	51029.83	-16.29		
lambda	I	2036-08-26T11:26:14.701		24.40	-19.37	50026.71	-15.59		
delta	I	2036-08-26T11:28:12.235		24.81	-19.00	48300.35	-13.75		
gamma	I	2036-08-26T11:29:02.500		24.98	-18.84	47630.20	-12.90		
eta	I	2036-08-26T11:29:38.557		25.11	-18.72	47176.12	-12.28		
beta	I	2036-08-26T11:31:54.020		25.58	-18.29	45680.54	-9.75		
alpha	I	2036-08-26T11:33:49.338		25.98	-17.92	44687.53	-7.42		

No planet occultations

alpha	E	2036-08-26T11:45:04.727		28.34	-15.73	44684.68	7.42		
beta	E	2036-08-26T11:47:00.119		28.74	-15.35	45673.70	9.75		
eta	E	2036-08-26T11:49:16.595		29.22	-14.91	47176.12	12.26		
gamma	E	2036-08-26T11:49:52.393		29.34	-14.79	47626.19	12.89		
delta	E	2036-08-26T11:50:43.048		29.52	-14.62	48300.35	13.73		
lambda	E	2036-08-26T11:52:40.787		29.93	-14.23	50026.71	15.56		
epsilon	E	2036-08-26T11:53:26.300		30.09	-14.09	50750.08	16.26		

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2036-08-26T11:41:25.050  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Observer code : MCD  
 Location : McDonald Obs. 2.7m  
 Latitude (deg) : 30.67158  
 E. Longitude (deg) : 255.97844  
 Altitude (km) : 2.075  
 Gaia source ID : 869287808614381184  
 2Mass ID (if available) : 07163527+2239457  
 ICRS Star Coord at Epoch: 07h 16m 35.28121s +22:39:45.27062s  
 RUWE (>1.4 is poor) : 1.01  
 K magnitude : 14.763  
 G magnitude : 18.516  
 RP magnitude : 17.353  
 BP magnitude : 20.084  
 DUPflag : 0  
 Distance (au) : 19.478  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 27.27  
 Sun-Target sep (deg) : 45.71  
 Sun-Moon sep (deg) : 110.13  
 B (ring opening deg) : 59.04  
 PA of pole (deg) : 81.69  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 3.069  
 C/A sky separation (km) : 43355.0  
 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	2036-08-26T11:25:38.517		30.39	-14.05	51024.46	-15.90		
lambda	I	2036-08-26T11:26:42.321		30.62	-13.83	50026.71	-15.17		
delta	I	2036-08-26T11:28:43.701		31.05	-13.43	48300.35	-13.24		
gamma	I	2036-08-26T11:29:36.058		31.23	-13.25	47630.13	-12.35		
eta	I	2036-08-26T11:30:13.828		31.37	-13.12	47176.12	-11.68		
beta	I	2036-08-26T11:32:38.368		31.88	-12.64	45680.40	-8.96		
alpha	I	2036-08-26T11:34:48.140		32.34	-12.20	44687.05	-6.31		

No planet occultations

alpha	E	2036-08-26T11:44:23.967		34.39	-10.24	44684.62	6.30		
beta	E	2036-08-26T11:46:33.810		34.86	-9.80	45674.10	8.95		
eta	E	2036-08-26T11:48:59.361		35.37	-9.30	47176.12	11.67		
gamma	E	2036-08-26T11:49:36.871		35.51	-9.17	47626.29	12.33		
delta	E	2036-08-26T11:50:29.614		35.70	-8.99	48300.35	13.22		
lambda	E	2036-08-26T11:52:31.193		36.13	-8.58	50026.71	15.14		
epsilon	E	2036-08-26T11:53:17.970		36.30	-8.42	50751.06	15.87		