

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-21T20:58:08.870
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3383339837223368576
 2Mass ID (if available) : 06285627+2335512

ICRS Star Coord at Epoch: 06h 28m 56.27384s +23:35:51.11854s

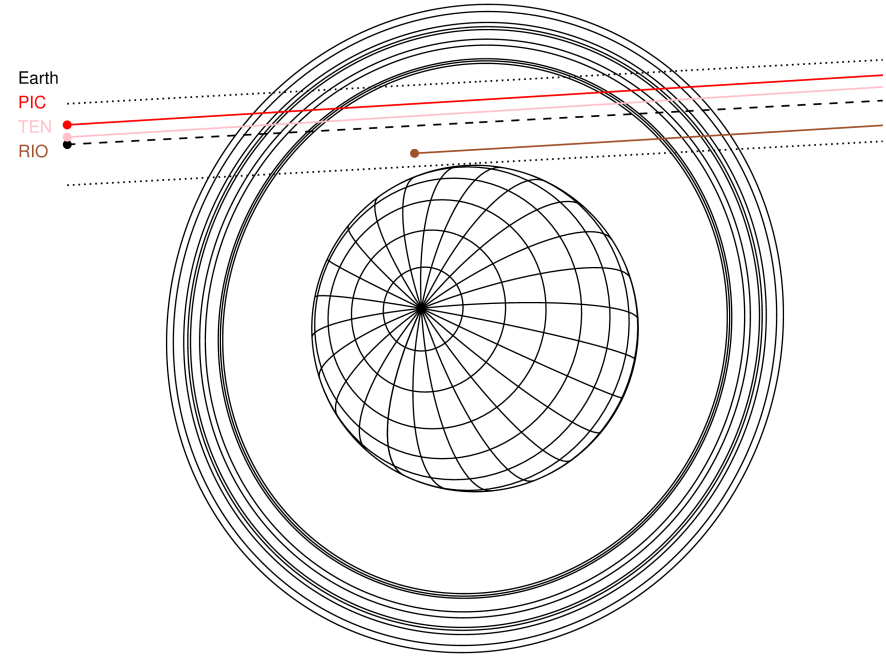
RUWE (>1.4 is poor) : 1.04
 K magnitude : 14.580
 G magnitude : 16.361
 RP magnitude : 15.733
 BP magnitude : 16.811
 DUPflag : 0
 Distance (au) : 19.264
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.74
 Sun-Target sep (deg) : 65.52
 Sun-Moon sep (deg) : 106.61
 B (ring opening deg) : 69.44
 PA of pole (deg) : 69.44

#	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



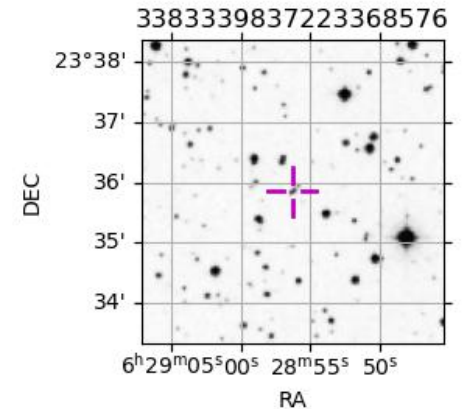
2035-04-21T20:58:08.8700 ex: 06 28 56.2738 s: +23 35 51.119 C/A 2.313° PA 183.08 deg v_sky +18.74 km/s D 19.26 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2035-04-21T20:58:08 K14.58 G16.36 XRgt



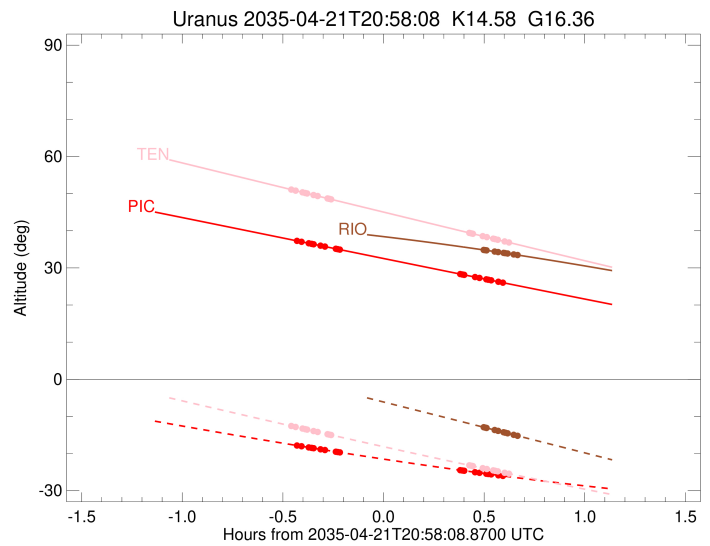
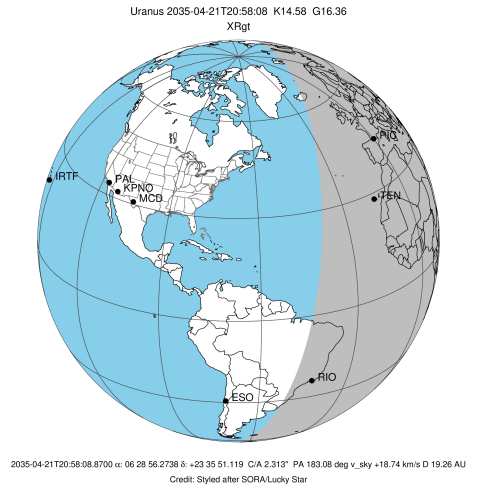
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++		+++++	APR 21 20:32 - APR 21 21:33	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	+++++		+++++	APR 21 20:30 - APR 21 21:35	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			+++++	APR 21 21:28 - APR 21 21:37	PnnRne
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             : 2035-04-21T21:01:35.610
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        : 3383339837223368576
2Mass ID (if available) : 06285627+2335512
ICRS Star Coord at Epoch: 06h 28m 56.27384s +23:35:51.11854s
RUWE (>1.4 is poor)  : 1.04
K magnitude           : 14.580
G magnitude           : 16.361
RP magnitude          : 15.733
BP magnitude          : 16.811
DUPflag              : 0
Distance (au)         : 19.264
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s)  : 18.74
Sun-Target sep (deg)  : 65.52
Sun-Moon sep (deg)    : 107.27
B (ring opening deg)  : 69.44
PA of pole (deg)      : 69.44
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.555
C/A sky separation (km) : 35700.6
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
  
```

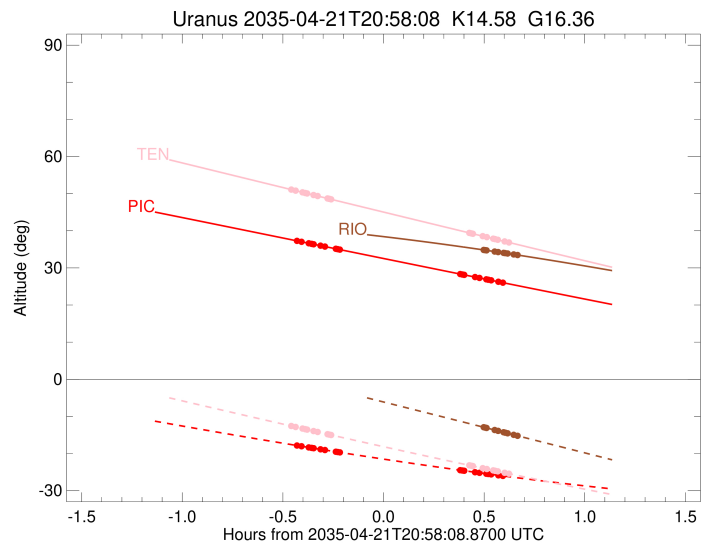
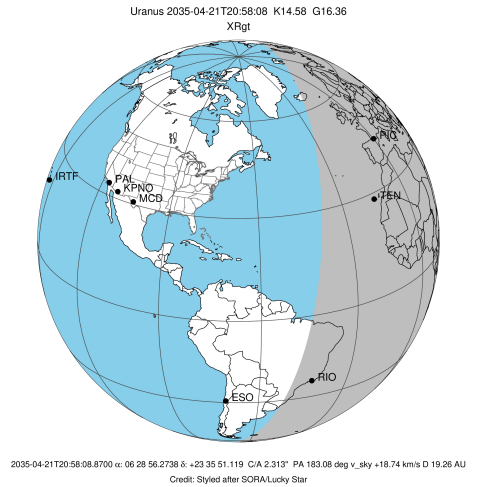


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-04-21T20:32:01.027		37.34	-17.80	51444.04	-13.91		
lambda	I	2035-04-21T20:33:43.760		37.03	-18.05	50026.71	-13.60		
delta	I	2035-04-21T20:35:53.282		36.63	-18.36	48300.35	-13.05		
gamma	I	2035-04-21T20:36:45.267		36.47	-18.49	47627.96	-12.82		
eta	I	2035-04-21T20:37:20.755		36.36	-18.58	47176.12	-12.65		
beta	I	2035-04-21T20:39:25.110		35.98	-18.88	45641.22	-12.02		
alpha	I	2035-04-21T20:40:40.878		35.75	-19.06	44749.53	-11.62		
4	I	2035-04-21T20:43:59.140		35.14	-19.53	42560.33	-10.43		
5	I	2035-04-21T20:44:27.844		35.05	-19.60	42275.32	-10.20		
6	I	2035-04-21T20:45:12.602		34.91	-19.71	41824.18	-9.94		

No planet occultations

6	E	2035-04-21T21:21:02.368		28.34	-24.50	41866.21	9.98		
5	E	2035-04-21T21:21:34.519		28.24	-24.56	42191.95	10.24		
4	E	2035-04-21T21:22:14.581		28.12	-24.65	42606.09	10.47		
alpha	E	2035-04-21T21:25:27.099		27.53	-25.04	44740.89	11.67		
beta	E	2035-04-21T21:26:44.380		27.30	-25.20	45658.65	12.08		
eta	E	2035-04-21T21:28:46.713		26.93	-25.45	47176.12	12.71		
gamma	E	2035-04-21T21:29:22.307		26.82	-25.52	47631.49	12.88		
delta	E	2035-04-21T21:30:13.766		26.66	-25.62	48300.35	13.12		
lambda	E	2035-04-21T21:32:22.622		26.27	-25.88	50026.71	13.67		
epsilon	E	2035-04-21T21:33:23.655		26.08	-26.00	50868.47	13.99		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-21T21:01:43.490
 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 : 3383339837223368576
 2Mass ID (if available) : 06285627+2335512
 ICRS Star Coord at Epoch: 06h 28m 56.27384s +23:35:51.11854s
 RUWE (>1.4 is poor) : 1.04
 K magnitude : 14.580
 G magnitude : 16.361
 RP magnitude : 15.733
 BP magnitude : 16.811
 DUPflag : 0
 Distance (au) : 19.264
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.74
 Sun-Target sep (deg) : 65.52
 Sun-Moon sep (deg) : 107.42
 B (ring opening deg) : 69.44
 PA of pole (deg) : 69.44
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.419
 C/A sky separation (km) : 33795.9
 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



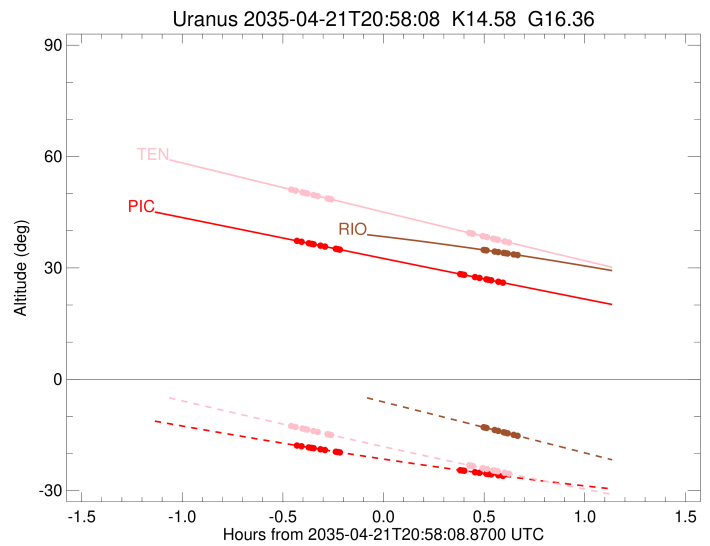
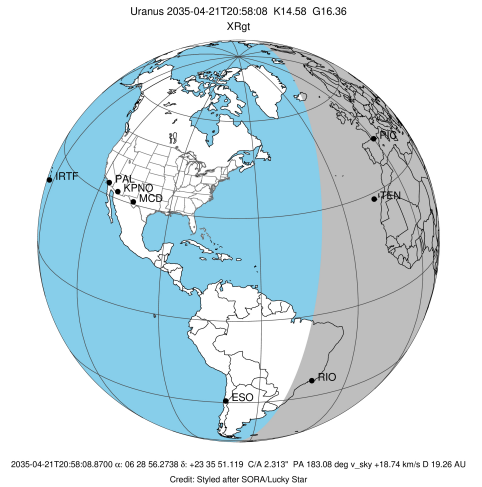
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-04-21T20:30:18.869		51.17	-12.52	51458.17	-14.51		
lambda	I	2035-04-21T20:31:58.185		50.81	-12.86	50026.71	-14.24		
delta	I	2035-04-21T20:34:01.340		50.35	-13.28	48300.35	-13.78		
gamma	I	2035-04-21T20:34:50.488		50.17	-13.45	47627.66	-13.59		
eta	I	2035-04-21T20:35:23.889		50.05	-13.56	47176.12	-13.45		
beta	I	2035-04-21T20:37:20.201		49.62	-13.96	45641.09	-12.93		
alpha	I	2035-04-21T20:38:30.441		49.36	-14.20	44748.49	-12.60		
4	I	2035-04-21T20:41:30.904		48.70	-14.81	42556.83	-11.65		
5	I	2035-04-21T20:41:55.849		48.61	-14.89	42280.91	-11.47		
6	I	2035-04-21T20:42:36.263		48.46	-15.03	41820.79	-11.26		

No planet occultations

6	E	2035-04-21T21:23:45.400		39.43	-23.19	41868.73	11.31		
5	E	2035-04-21T21:24:13.126		39.32	-23.27	42186.57	11.52		
4	E	2035-04-21T21:24:49.557		39.19	-23.39	42608.29	11.69		
alpha	E	2035-04-21T21:27:44.217		38.56	-23.95	44739.09	12.66		
beta	E	2035-04-21T21:28:55.987		38.29	-24.18	45659.96	13.00		
eta	E	2035-04-21T21:30:50.252		37.88	-24.54	47176.12	13.52		
gamma	E	2035-04-21T21:31:23.756		37.76	-24.65	47631.43	13.66		
delta	E	2035-04-21T21:32:12.367		37.58	-24.80	48300.35	13.86		
lambda	E	2035-04-21T21:34:14.836		37.13	-25.19	50026.71	14.33		
epsilon	E	2035-04-21T21:35:12.170		36.93	-25.37	50853.88	14.60		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-04-21T21:00:21.670
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 3383339837223368576
2Mass ID (if available) : 06285627+2335512
ICRS Star Coord at Epoch: 06h 28m 56.27384s +23:35:51.11854s
RUWE (>1.4 is poor) : 1.04
K magnitude         : 14.580
G magnitude         : 16.361
RP magnitude        : 15.733
BP magnitude        : 16.811
DUPflag            : 0
Distance (au)       : 19.264
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : 18.74
Sun-Target sep (deg) : 65.52
Sun-Moon sep (deg)  : 107.26
B (ring opening deg) : 69.44
PA of pole (deg)    : 69.44
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.000
C/A sky separation (km) : 27942.1
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	2035-04-21T20:24:33.205		41.46	1.46x	51492.70	-16.15		
lambda	I	2035-04-21T20:26:04.285		41.35	1.12x	50026.71	-15.99		
delta	I	2035-04-21T20:27:53.164		41.21	0.71x	48300.35	-15.72		
gamma	I	2035-04-21T20:28:36.178		41.16	0.55x	47626.81	-15.60		
eta	I	2035-04-21T20:29:05.143		41.12	0.44x	47176.12	-15.52		
beta	I	2035-04-21T20:30:44.963		40.99	0.07x	45641.19	-15.22		
alpha	I	2035-04-21T20:31:44.502		40.91	-0.16x	44745.11	-15.03		
4	I	2035-04-21T20:34:12.928		40.71	-0.71x	42548.44	-14.50		
5	I	2035-04-21T20:34:31.606		40.68	-0.78x	42293.48	-14.41		
6	I	2035-04-21T20:35:04.932		40.64	-0.91x	41812.91	-14.30		

No planet occultations

6	E	2035-04-21T21:28:03.473		34.83	-12.93	41874.13	14.34		
5	E	2035-04-21T21:28:24.087		34.79	-13.01	42174.19	14.45		
4	E	2035-04-21T21:28:54.550		34.72	-13.12	42612.89	14.55		
alpha	E	2035-04-21T21:31:17.375		34.40	-13.67	44733.68	15.09		
beta	E	2035-04-21T21:32:18.642		34.27	-13.90	45663.59	15.28		
eta	E	2035-04-21T21:33:56.603		34.04	-14.27	47176.12	15.58		
gamma	E	2035-04-21T21:34:25.732		33.98	-14.39	47631.15	15.66		
delta	E	2035-04-21T21:35:08.298		33.88	-14.55	48300.35	15.78		
lambda	E	2035-04-21T21:36:56.729		33.63	-14.96	50026.71	16.06		
epsilon	E	2035-04-21T21:37:45.699		33.52	-15.15	50815.93	16.22		