

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2027-08-14T04:12:55.520
 Event type : PtRgt
 : Uranus occs: topocentric, not geocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 144663711237441792
 2Mass ID (if available) : 04294861+2143075

ICRS Star Coord at Epoch: 04h 29m 48.60903s +21:43:07.38969s

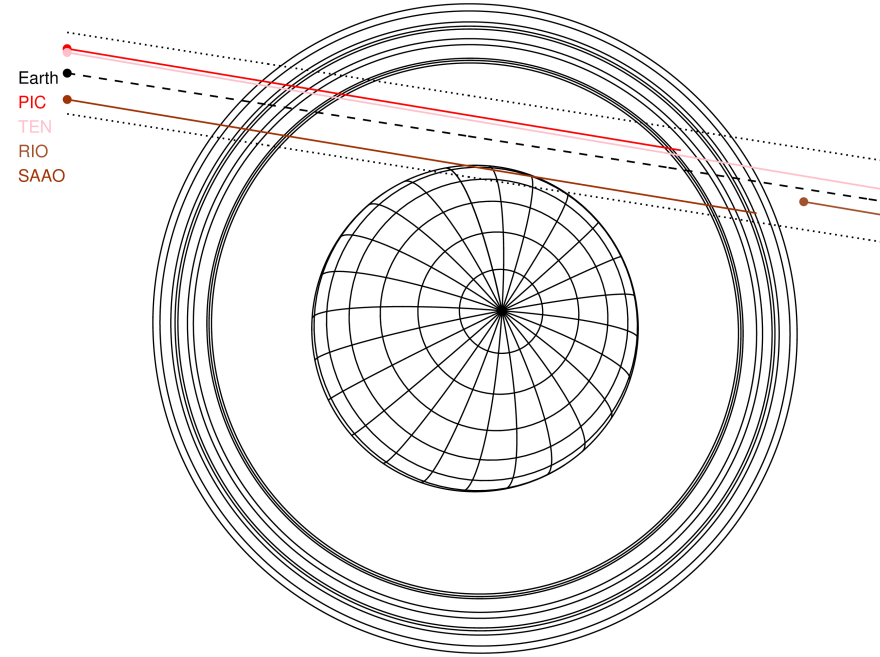
RUWE (>1.4 is poor) : 0.97
 K magnitude : 14.010
 G magnitude : 16.722
 RP magnitude : 15.864
 BP magnitude : 17.471
 DUPflag : 0
 Distance (au) : 19.678
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 15.69
 Sun-Target sep (deg) : 71.67
 Sun-Moon sep (deg) : 142.31
 B (ring opening deg) : 78.59
 PA of pole (deg) : -56.67

#	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



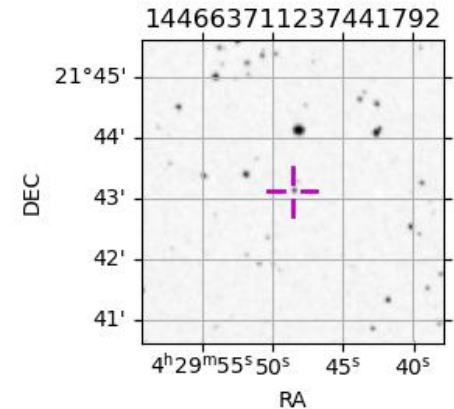
2027-08-14T04:12:55.5200 ex: 04 29 48.6090 s: +21 43 07.390 C/A 2.077° PA 171.07 deg v_sky +15.69 km/s D 19.68 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2027-08-14T04:12:55 K14.01 G16.72 PtRgt



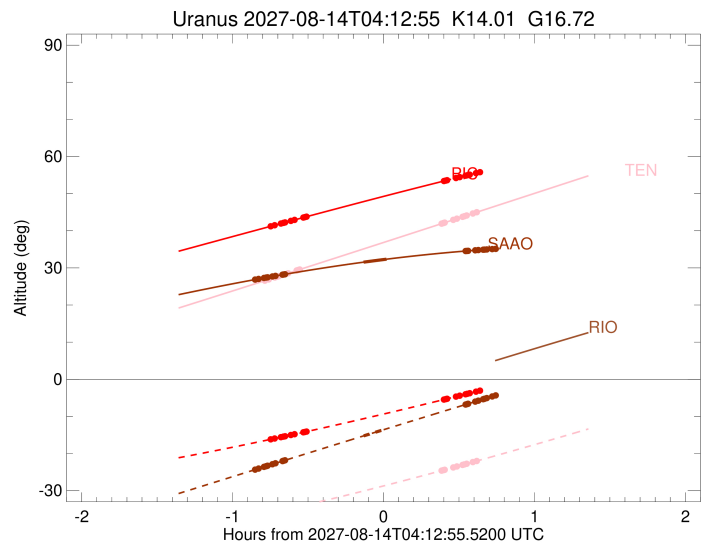
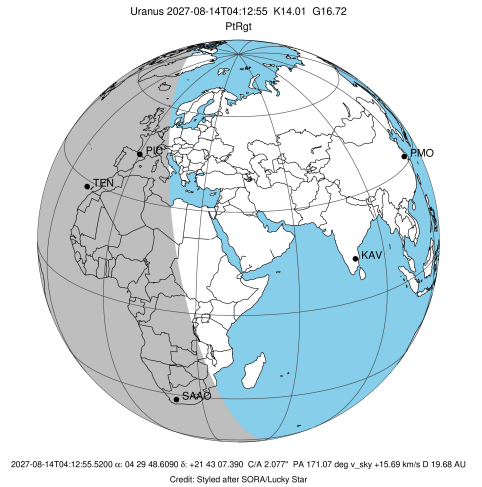
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++		+++	AUG 14 03:28 - AUG 14 04:38	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	+++++		+++++	AUG 14 03:26 - AUG 14 04:50	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	+++++	+ +	+++++	AUG 14 03:22 - AUG 14 04:53	PieRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2027-08-14T04:10:18.640
Event type           : PtRgt
: Uranus occs: topocentric, not geocentric
: 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       : 144663711237441792
2Mass ID (if available) : 04294861+2143075
ICRS Star Coord at Epoch: 04h 29m 48.60903s +21:43:07.38969s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 14.010
G magnitude          : 16.722
RP magnitude         : 15.864
BP magnitude         : 17.471
DUPflag             : 0
Distance (au)        : 19.678
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 15.69
Sun-Target sep (deg) : 71.67
Sun-Moon sep (deg)   : 143.00
B (ring opening deg) : 78.59
PA of pole (deg)     : -56.67
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.297
C/A sky separation (km) : 32784.3
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_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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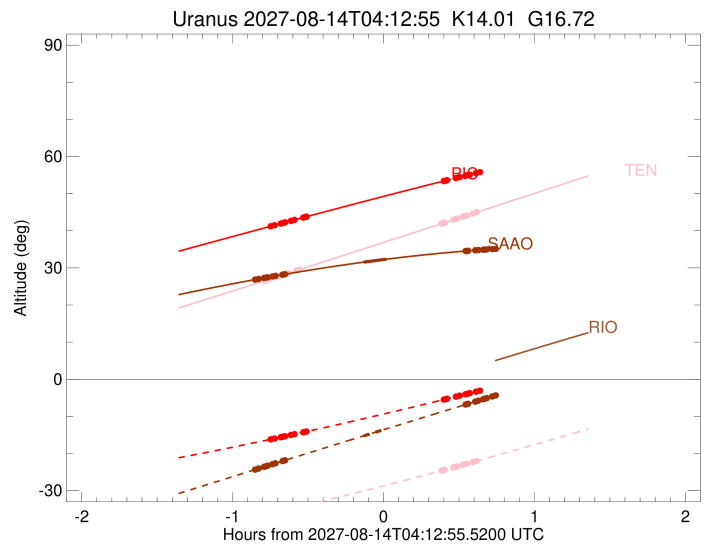
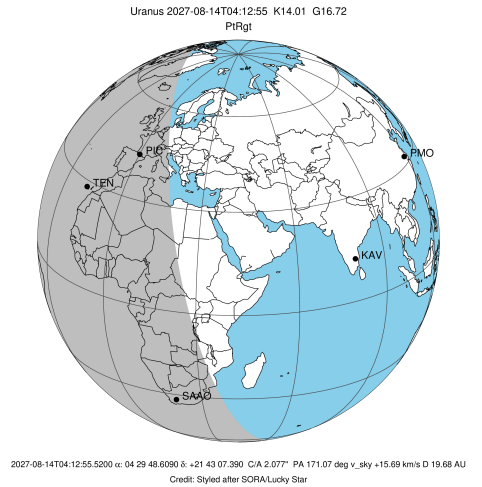
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2027-08-14T03:28:39.999		41.31	-16.10	50747.09	-11.88		
lambda	I	2027-08-14T03:29:40.921		41.50	-15.95	50026.71	-11.76		
delta	I	2027-08-14T03:32:09.850		41.95	-15.59	48300.35	-11.42		
gamma	I	2027-08-14T03:33:08.943		42.13	-15.45	47629.88	-11.27		
eta	I	2027-08-14T03:33:49.378		42.25	-15.35	47176.12	-11.17		
beta	I	2027-08-14T03:36:08.192		42.67	-15.01	45651.32	-10.80		
alpha	I	2027-08-14T03:37:33.350		42.93	-14.80	44742.72	-10.55		
4	I	2027-08-14T03:41:10.357		43.59	-14.27	42529.95	-9.83		
5	I	2027-08-14T03:41:43.712		43.69	-14.19	42203.72	-9.69		
6	I	2027-08-14T03:42:18.833		43.79	-14.10	41863.99	-9.58		

No planet occultations

6	E	2027-08-14T04:36:53.283		53.39	-5.48	41811.94	9.54		
5	E	2027-08-14T04:37:27.655		53.49	-5.38	42155.93	9.65		
4	E	2027-08-14T04:38:08.305		53.60	-5.27	42544.30	9.78		
alpha	E	2027-08-14T04:41:45.225		54.21	-4.67x	44744.41	10.49		
beta	E	2027-08-14T04:43:13.272		54.46	-4.42x	45678.16	10.73		
eta	E	2027-08-14T04:45:30.449		54.84	-4.04x	47176.12	11.10		
gamma	E	2027-08-14T04:46:10.463		54.95	-3.93x	47622.25	11.20		
delta	E	2027-08-14T04:47:10.624		55.11	-3.76x	48300.35	11.34		
lambda	E	2027-08-14T04:49:40.575		55.52	-3.34x	50026.71	11.68		
epsilon	E	2027-08-14T04:51:16.456		55.78	-3.07x	51155.77	11.79		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2027-08-14T04:08:27.360
Event type           : PtRgt
: Uranus occs: topocentric, not geocentric
: 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       : 144663711237441792
2Mass ID (if available) : 04294861+2143075
ICRS Star Coord at Epoch: 04h 29m 48.60903s +21:43:07.38969s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 14.010
G magnitude           : 16.722
RP magnitude          : 15.864
BP magnitude          : 17.471
DUPflag              : 0
Distance (au)        : 19.678
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 15.69
Sun-Target sep (deg) : 71.67
Sun-Moon sep (deg)   : 143.12
B (ring opening deg) : 78.59
PA of pole (deg)     : -56.67
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.246
C/A sky separation (km) : 32057.3
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_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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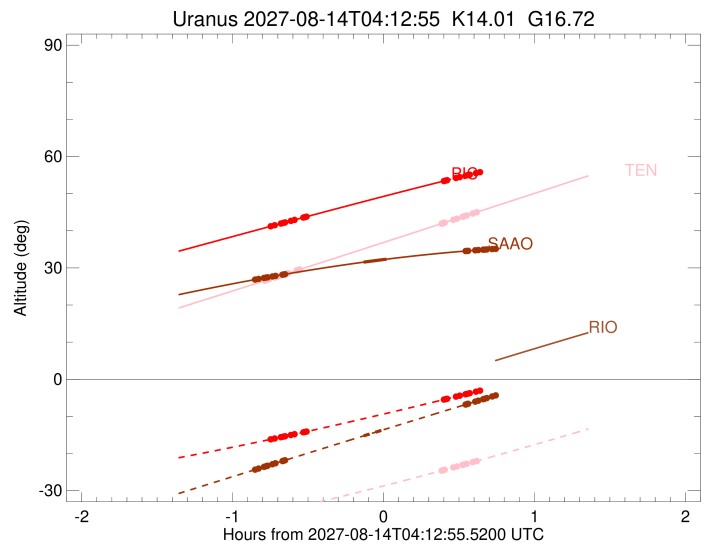
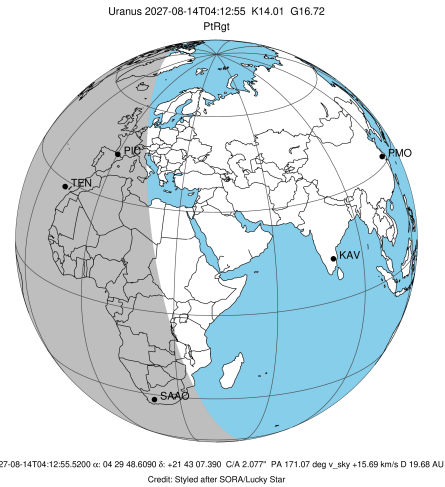
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2027-08-14T03:26:19.850		26.69	-36.26	50748.04	-12.12		
lambda	I	2027-08-14T03:27:19.596		26.90	-36.11	50026.71	-12.01		
delta	I	2027-08-14T03:29:45.249		27.43	-35.75	48300.35	-11.69		
gamma	I	2027-08-14T03:30:42.942		27.64	-35.60	47629.95	-11.55		
eta	I	2027-08-14T03:31:22.396		27.78	-35.50	47176.12	-11.45		
beta	I	2027-08-14T03:33:37.619		28.27	-35.16	45650.96	-11.10		
alpha	I	2027-08-14T03:35:00.357		28.57	-34.95	44742.20	-10.87		
4	I	2027-08-14T03:38:30.194		29.33	-34.41	42530.42	-10.20		
5	I	2027-08-14T03:39:02.196		29.44	-34.33	42205.60	-10.07		
6	I	2027-08-14T03:39:36.116		29.57	-34.24	41864.83	-9.97		

No planet occultations

6	E	2027-08-14T04:35:57.322		41.91	-24.62	41810.91	9.90		
5	E	2027-08-14T04:36:30.613		42.03	-24.52	42156.37	10.00		
4	E	2027-08-14T04:37:09.934		42.17	-24.40	42545.38	10.12		
alpha	E	2027-08-14T04:40:40.082		42.94	-23.76	44743.82	10.78		
beta	E	2027-08-14T04:42:05.892		43.26	-23.49	45678.43	11.01		
eta	E	2027-08-14T04:44:19.792		43.75	-23.08	47176.12	11.35		
gamma	E	2027-08-14T04:44:58.920		43.90	-22.96	47622.17	11.45		
delta	E	2027-08-14T04:45:57.820		44.11	-22.77	48300.35	11.58		
lambda	E	2027-08-14T04:48:24.865		44.65	-22.31	50026.71	11.89		
epsilon	E	2027-08-14T04:49:59.773		45.00	-22.02	51164.43	12.00		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch             : 2027-08-14T04:10:10.110
Event type            : PtRgt
: Uranus occs: topocentric, not geocentric
: 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        : 144663711237441792
2Mass ID (if available) : 04294861+2143075
ICRS Star Coord at Epoch: 04h 29m 48.60903s +21:43:07.38969s
RUWE (>1.4 is poor)  : 0.97
K magnitude           : 14.010
G magnitude           : 16.722
RP magnitude          : 15.864
BP magnitude          : 17.471
DUPflag               : 0
Distance (au)         : 19.678
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s)  : 15.69
Sun-Target sep (deg)  : 71.67
Sun-Moon sep (deg)    : 142.93
B (ring opening deg)  : 78.59
PA of pole (deg)      : -56.67
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.748
C/A sky separation (km) : 24950.7
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	2027-08-14T03:22:21.968		26.92	-24.24	50764.53	-13.49		
lambda	I	2027-08-14T03:23:16.706		27.03	-24.05	50026.71	-13.45		
delta	I	2027-08-14T03:25:25.904		27.29	-23.59	48300.35	-13.28		
gamma	I	2027-08-14T03:26:16.488		27.40	-23.42	47630.61	-13.20		
eta	I	2027-08-14T03:26:50.975		27.47	-23.29	47176.12	-13.15		
beta	I	2027-08-14T03:28:47.990		27.70	-22.88	45647.63	-12.97		
alpha	I	2027-08-14T03:29:58.496		27.84	-22.63	44736.51	-12.86		
4	I	2027-08-14T03:32:51.805		28.18	-22.02	42536.10	-12.52		
5	I	2027-08-14T03:33:16.842		28.23	-21.93	42223.99	-12.46		
6	I	2027-08-14T03:33:45.231		28.28	-21.83	41871.76	-12.41		
Uranus	I	2027-08-14T04:05:00.868		31.55	-15.25	25397.92		6.00	6.28
Uranus	E	2027-08-14T04:14:07.433		32.35	-13.34	25214.87		8.84	9.25
6	E	2027-08-14T04:45:30.602		34.54	-6.82	41803.87	12.35		
5	E	2027-08-14T04:45:58.535		34.56	-6.72	42162.06	12.40		
4	E	2027-08-14T04:46:30.707		34.59	-6.61	42554.44	12.46		
alpha	E	2027-08-14T04:49:23.650		34.75	-6.02	44738.63	12.79		
beta	E	2027-08-14T04:50:36.935		34.81	-5.77	45680.12	12.90		
eta	E	2027-08-14T04:52:32.105		34.90	-5.37	47176.12	13.08		
gamma	E	2027-08-14T04:53:06.107		34.93	-5.26	47621.61	13.13		
delta	E	2027-08-14T04:53:57.677		34.97	-5.08	48300.35	13.20		
lambda	E	2027-08-14T04:56:07.668		35.07	-4.63x	50026.71	13.36		
epsilon	E	2027-08-14T04:57:37.501		35.13	-4.33x	51231.77	13.41		