

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2026-08-26T04:39:11.030  
 Event type : PgtRgt  
 : Uranus occs: geocentric, topocentric  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 52362012186180096  
 2Mass ID (if available) : 04131654+2100561

ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s

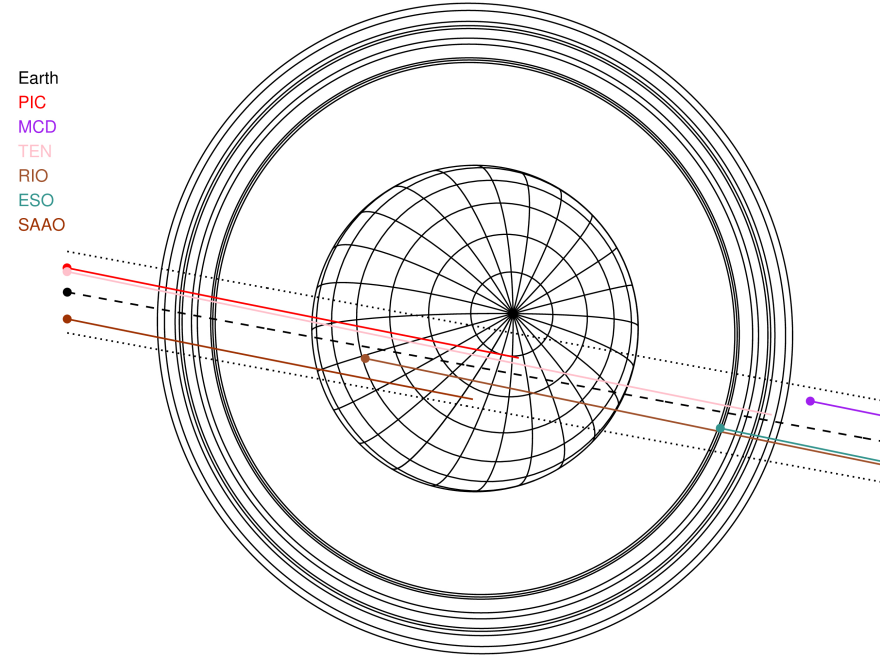
RUWE (>1.4 is poor) : 1.15  
 K magnitude : 13.979  
 G magnitude : 16.461  
 RP magnitude : 15.656  
 BP magnitude : 17.140  
 DUPflag : 0  
 Distance (au) : 19.467  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 7.68  
 Sun-Target sep (deg) : 87.40  
 Sun-Moon sep (deg) : 115.57  
 B (ring opening deg) : 75.48  
 PA of pole (deg) : -68.59

#	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



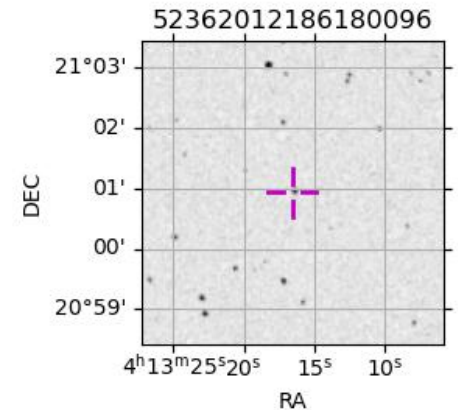
2026-08-26T04:39:11.0300 ra: 04 13 16.5627 s: +21 00 55.831 C/A 0.415° PA 349.63 deg v\_sky + 7.68 km/s D 19.47 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2026-08-26T04:39:11 K13.98 G16.46 PgtRgt

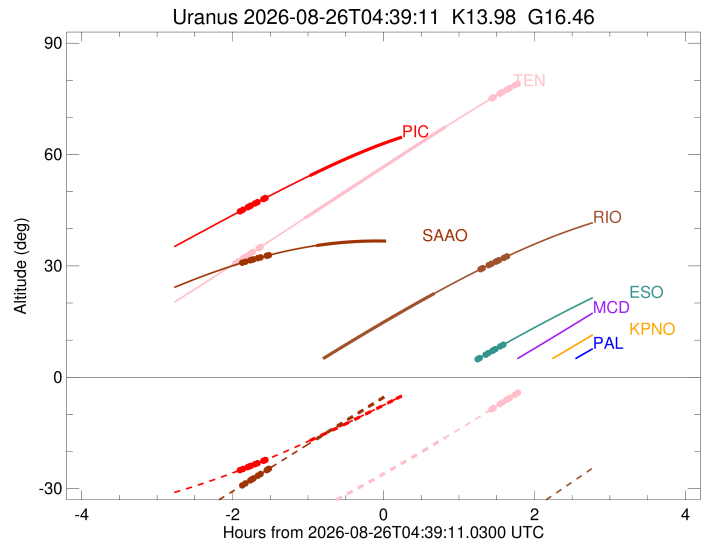
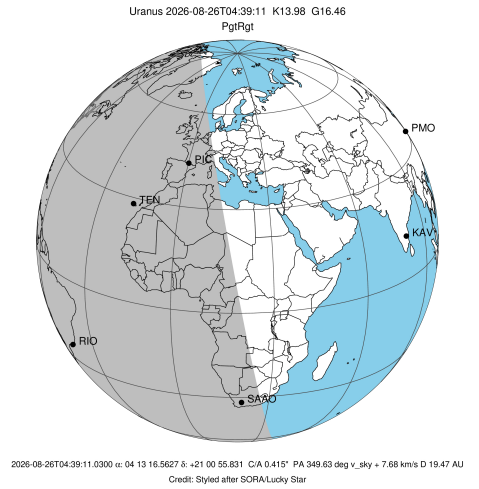


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++++	+		AUG 26 02:44 - AUG 26 03:40	PinRin
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 26 02:40 - AUG 26 06:19	PieRie
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		+	+++++++	AUG 26 05:19 - AUG 26 06:16	PneRne
ESO	European Southern Obs	-29.3	289.3			+++++++	AUG 26 05:55 - AUG 26 06:13	PnnRne
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++++	+		AUG 26 02:45 - AUG 26 03:45	PinRin
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

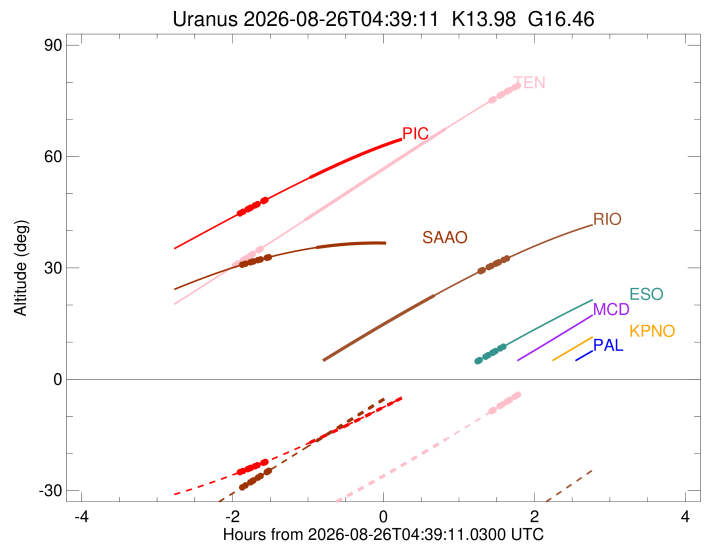
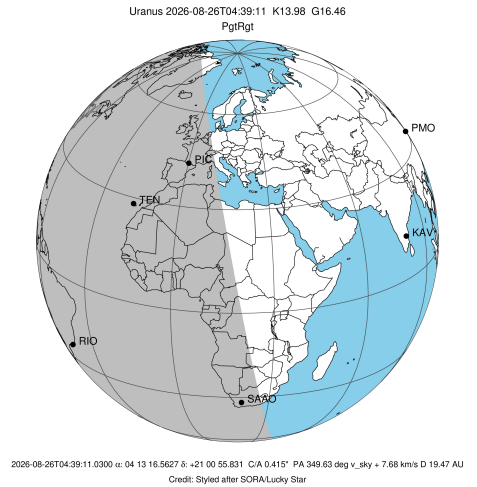


target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2026-08-26T04:36:37.450  
 Event type : PgtRgt  
 : Uranus occs: geocentric, topocentric  
 : Ring occs: geocentric, topocentric  
 Observer code : PIC  
 Location : Pic du Midi  
 Latitude (deg) : 42.93656  
 E. Longitude (deg) : 0.14231  
 Altitude (km) : 2.890  
 Gaia source ID : 52362012186180096  
 2Mass ID (if available) : 04131654+2100561  
 ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s  
 RUWE (>1.4 is poor) : 1.15  
 K magnitude : 13.979  
 G magnitude : 16.461  
 RP magnitude : 15.656  
 BP magnitude : 17.140  
 DUPflag : 0  
 Distance (au) : 19.467  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 7.68  
 Sun-Target sep (deg) : 87.40  
 Sun-Moon sep (deg) : 116.37  
 B (ring opening deg) : 75.48  
 PA of pole (deg) : -68.59  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 0.227  
 C/A sky separation (km) : 3205.0  
 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



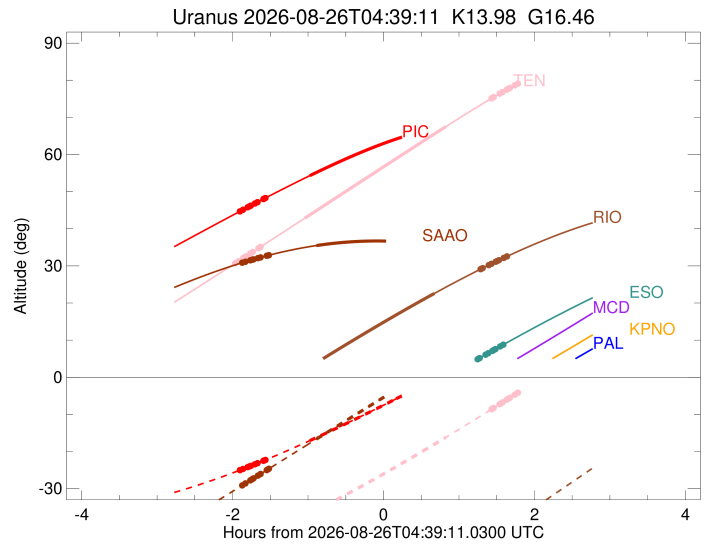
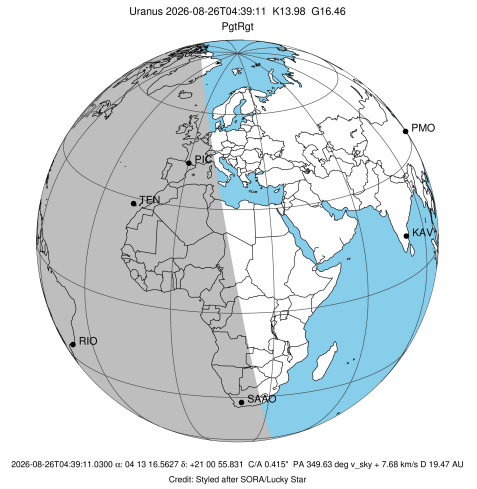
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2026-08-26T02:44:10.640		44.53	-25.13	51552.18	-7.67		
lambda	I	2026-08-26T02:47:29.634		45.13	-24.70	50026.71	-7.66		
delta	I	2026-08-26T02:51:15.028		45.80	-24.20	48300.35	-7.66		
gamma	I	2026-08-26T02:52:43.229		46.06	-24.00	47625.22	-7.65		
eta	I	2026-08-26T02:53:41.919		46.24	-23.87	47176.12	-7.65		
beta	I	2026-08-26T02:57:02.650		46.83	-23.42	45641.62	-7.64		
alpha	I	2026-08-26T02:59:06.727		47.20	-23.13	44689.94	-7.64		
4	I	2026-08-26T03:03:45.735		48.02	-22.49	42565.95	-7.63		
5	I	2026-08-26T03:04:38.780		48.17	-22.37	42157.21	-7.63		
6	I	2026-08-26T03:05:20.369		48.29	-22.27	41830.12	-7.63		
Uranus	I	2026-08-26T03:40:32.141		54.30	-17.08	25107.73		-13.10	-13.70
Uranus	E	2026-08-26T05:33:23.979		67.81	1.98x	25230.29		11.11	11.62
6	E	2026-08-26T06:09:26.182		68.16	8.50x	41850.72	7.46		
5	E	2026-08-26T06:10:26.236		68.14	8.68x	42308.91	7.46		
4	E	2026-08-26T06:11:00.802		68.12	8.79x	42569.52	7.46		
alpha	E	2026-08-26T06:15:53.290		67.95	9.68x	44744.15	7.46		
beta	E	2026-08-26T06:17:58.320		67.87	10.06x	45679.80	7.46		
eta	E	2026-08-26T06:21:19.046		67.71	10.67x	47176.12	7.46		
gamma	E	2026-08-26T06:22:19.635		67.66	10.86x	47628.00	7.46		
delta	E	2026-08-26T06:23:49.782		67.58	11.13x	48300.35	7.46		
lambda	E	2026-08-26T06:27:41.242		67.36	11.84x	50026.71	7.46		
epsilon	E	2026-08-26T06:29:18.977		67.26	12.13x	50755.69	7.46		

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2026-08-26T04:32:07.350  
 Event type : PgtRgt  
 : Uranus occs: geocentric, topocentric  
 : 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 : 52362012186180096  
 2Mass ID (if available) : 04131654+2100561  
 ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s  
 RUWE (>1.4 is poor) : 1.15  
 K magnitude : 13.979  
 G magnitude : 16.461  
 RP magnitude : 15.656  
 BP magnitude : 17.140  
 DUPflag : 0  
 Distance (au) : 19.468  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 7.68  
 Sun-Target sep (deg) : 87.40  
 Sun-Moon sep (deg) : 116.45  
 B (ring opening deg) : 75.48  
 PA of pole (deg) : -68.59  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 0.291  
 C/A sky separation (km) : 4105.8  
 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



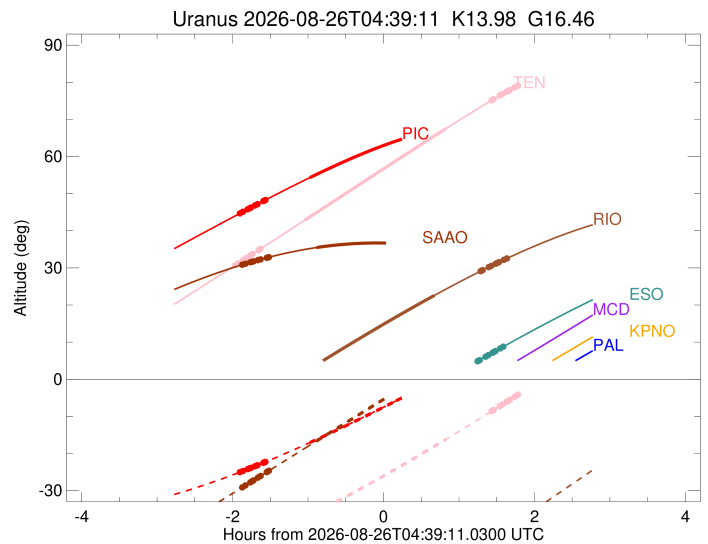
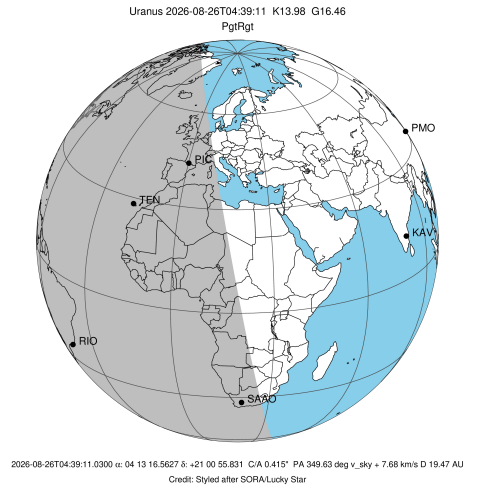
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2026-08-26T02:40:26.524		30.52	-45.42	51552.78	-7.73		
lambda	I	2026-08-26T02:43:44.101		31.24	-45.01	50026.71	-7.72		
delta	I	2026-08-26T02:47:27.874		32.06	-44.54	48300.35	-7.71		
gamma	I	2026-08-26T02:48:55.452		32.38	-44.35	47625.29	-7.71		
eta	I	2026-08-26T02:49:53.750		32.59	-44.23	47176.12	-7.70		
beta	I	2026-08-26T02:53:13.156		33.32	-43.79	45641.56	-7.69		
alpha	I	2026-08-26T02:55:16.469		33.77	-43.52	44689.67	-7.69		
4	I	2026-08-26T02:59:53.849		34.78	-42.88	42565.23	-7.68		
5	I	2026-08-26T03:00:46.520		34.97	-42.76	42156.91	-7.67		
6	I	2026-08-26T03:01:27.759		35.12	-42.67	41830.81	-7.67		
Uranus	I	2026-08-26T03:36:32.169		42.84	-37.30	25095.46		-13.28	-13.89
Uranus	E	2026-08-26T05:28:43.226		67.51	-16.19	25253.44		10.70	11.20
6	E	2026-08-26T06:05:04.970		75.13	-8.62	41851.87	7.39		
5	E	2026-08-26T06:06:05.249		75.33	-8.40	42307.99	7.39		
4	E	2026-08-26T06:06:40.091		75.44	-8.28	42568.24	7.39		
alpha	E	2026-08-26T06:11:35.185		76.41	-7.24	44743.53	7.39		
beta	E	2026-08-26T06:13:41.373		76.82	-6.80	45679.59	7.39		
eta	E	2026-08-26T06:17:03.912		77.46	-6.08	47176.12	7.39		
gamma	E	2026-08-26T06:18:05.063		77.65	-5.86	47628.13	7.39		
delta	E	2026-08-26T06:19:36.009		77.93	-5.54	48300.35	7.39		
lambda	E	2026-08-26T06:23:29.595		78.64	-4.71x	50026.71	7.39		
epsilon	E	2026-08-26T06:25:08.586		78.93	-4.36x	50758.25	7.39		

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2026-08-26T04:26:06.330  
 Event type : PgtRgt  
 : Uranus occs: geocentric, topocentric  
 : 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 : 52362012186180096  
 2Mass ID (if available) : 04131654+2100561  
 ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s  
 RUWE (>1.4 is poor) : 1.15  
 K magnitude : 13.979  
 G magnitude : 16.461  
 RP magnitude : 15.656  
 BP magnitude : 17.140  
 DUPflag : 0  
 Distance (au) : 19.468  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 7.68  
 Sun-Target sep (deg) : 87.40  
 Sun-Moon sep (deg) : 116.15  
 B (ring opening deg) : 75.48  
 PA of pole (deg) : -68.59  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 0.571  
 C/A sky separation (km) : 8062.6  
 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	2026-08-26T02:38:20.295	-10.60x	-77.06	51555.08	-7.85			
lambda	I	2026-08-26T02:41:35.090	-9.89x	-77.28	50026.71	-7.84			
delta	I	2026-08-26T02:45:15.537	-9.08x	-77.47	48300.35	-7.82			
gamma	I	2026-08-26T02:46:41.807	-8.77x	-77.52	47625.74	-7.82			
eta	I	2026-08-26T02:47:39.345	-8.56x	-77.56	47176.12	-7.81			
beta	I	2026-08-26T02:50:56.099	-7.84x	-77.64	45641.24	-7.80			
alpha	I	2026-08-26T02:52:57.984	-7.40x	-77.67	44688.19	-7.79			
4	I	2026-08-26T02:57:32.417	-6.41x	-77.66	42561.02	-7.76			
5	I	2026-08-26T02:58:24.055	-6.22x	-77.64	42155.53	-7.76			
6	I	2026-08-26T02:59:04.259	-6.08x	-77.63	41834.87	-7.75			
Uranus	I	2026-08-26T03:34:04.313	1.43x	-74.51	25042.53			-14.06	-14.70
Uranus	E	2026-08-26T05:19:36.786	22.58	-53.30	25343.26			8.95	9.37
6	E	2026-08-26T05:56:23.466	29.12	-44.97	41855.83	7.39			
5	E	2026-08-26T05:57:22.759	29.29	-44.74	42304.29	7.39			
4	E	2026-08-26T05:57:57.613	29.39	-44.61	42563.77	7.39			
alpha	E	2026-08-26T06:02:52.967	30.21	-43.48	44741.25	7.39			
beta	E	2026-08-26T06:04:59.316	30.56	-43.00	45678.77	7.40			
eta	E	2026-08-26T06:08:21.790	31.11	-42.23	47176.12	7.40			
gamma	E	2026-08-26T06:09:22.933	31.28	-41.99	47628.57	7.40			
delta	E	2026-08-26T06:10:53.710	31.52	-41.65	48300.35	7.40			
lambda	E	2026-08-26T06:14:46.959	32.15	-40.76	50026.71	7.40			
epsilon	E	2026-08-26T06:16:27.200	32.41	-40.37	50768.69	7.41			

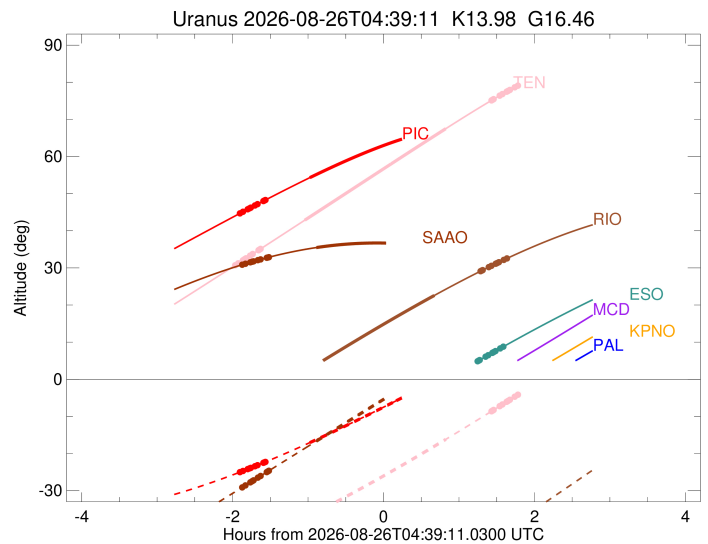
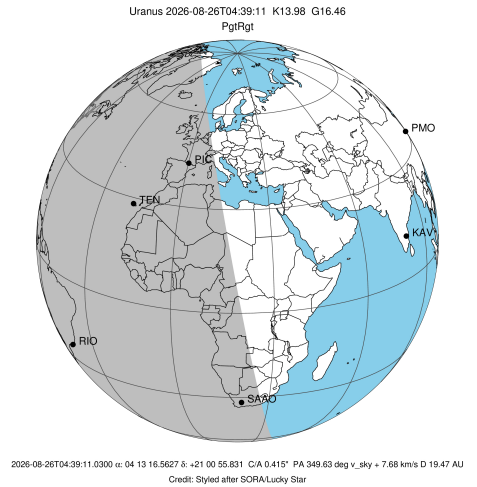
target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2026-08-26T04:25:56.620  
 Event type : PgtRgt  
 : Uranus occs: geocentric, topocentric  
 : Ring occs: geocentric, topocentric  
 Observer code : ESO  
 Location : European Southern Obs. (3.6m)  
 Latitude (deg) : -29.26097  
 E. Longitude (deg) : 289.26831  
 Altitude (km) : 2.400  
 Gaia source ID : 52362012186180096  
 2Mass ID (if available) : 04131654+2100561  
 ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s  
 RUWE (>1.4 is poor) : 1.15  
 K magnitude : 13.979  
 G magnitude : 16.461  
 RP magnitude : 15.656  
 BP magnitude : 17.140  
 DUPflag : 0  
 Distance (au) : 19.468  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 7.68  
 Sun-Target sep (deg) : 87.40  
 Sun-Moon sep (deg) : 115.81  
 B (ring opening deg) : 75.48  
 PA of pole (deg) : -68.59  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 0.541  
 C/A sky separation (km) : 7641.7  
 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\_itrfr93\_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	2026-08-26T02:40:37.711	-35.56x	-55.51	51555.05	-8.04			
lambda	I	2026-08-26T02:43:47.955	-34.87x	-56.13	50026.71	-8.03			
delta	I	2026-08-26T02:47:23.193	-34.09x	-56.82	48300.35	-8.01			
gamma	I	2026-08-26T02:48:47.408	-33.78x	-57.09	47625.72	-8.01			
eta	I	2026-08-26T02:49:43.566	-33.58x	-57.27	47176.12	-8.00			
beta	I	2026-08-26T02:52:55.571	-32.88x	-57.88	45641.25	-7.99			
alpha	I	2026-08-26T02:54:54.481	-32.45x	-58.25	44688.24	-7.98			
4	I	2026-08-26T02:59:22.130	-31.49x	-59.09	42561.21	-7.96			
5	I	2026-08-26T03:00:12.503	-31.30x	-59.24	42155.58	-7.96			
6	I	2026-08-26T03:00:51.728	-31.16x	-59.36	41834.68	-7.95			
Uranus	I	2026-08-26T03:34:54.966	-23.82x	-65.18	25045.73			-14.01	-14.65
Uranus	E	2026-08-26T05:18:20.368	-2.22x	-69.73	25332.05			9.19	9.61
6	E	2026-08-26T05:54:02.773	4.86x	-65.27	41855.33	7.59			
5	E	2026-08-26T05:55:00.597	5.05	-65.12	42304.81	7.59			
4	E	2026-08-26T05:55:34.509	5.16	-65.03	42564.34	7.59			
alpha	E	2026-08-26T06:00:21.950	6.08	-64.28	44741.55	7.60			
beta	E	2026-08-26T06:02:24.928	6.48	-63.95	45678.89	7.60			
eta	E	2026-08-26T06:05:42.069	7.11	-63.41	47176.12	7.60			
gamma	E	2026-08-26T06:06:41.608	7.30	-63.24	47628.51	7.60			
delta	E	2026-08-26T06:08:10.028	7.58	-62.99	48300.35	7.60			
lambda	E	2026-08-26T06:11:57.247	8.30	-62.35	50026.71	7.60			
epsilon	E	2026-08-26T06:13:34.721	8.61	-62.07	50767.22	7.60			

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2026-08-26T04:37:09.700
Event type          : PgtRgt
: Uranus occs: geocentric, topocentric
: 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      : 52362012186180096
2Mass ID (if available) : 04131654+2100561
ICRS Star Coord at Epoch: 04h 13m 16.56270s +21:00:55.83084s
RUWE (>1.4 is poor) : 1.15
K magnitude          : 13.979
G magnitude          : 16.461
RP magnitude         : 15.656
BP magnitude         : 17.140
DUPflag             : 0
Distance (au)       : 19.467
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 7.68
Sun-Target sep (deg) : 87.40
Sun-Moon sep (deg)  : 116.12
B (ring opening deg) : 75.48
PA of pole (deg)    : -68.59
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 0.775
C/A sky separation (km) : 10945.0
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
    
```



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2026-08-26T02:45:57.855		30.76	-29.31	51555.08	-7.37		
lambda	I	2026-08-26T02:49:25.317		31.12	-28.59	50026.71	-7.36		
delta	I	2026-08-26T02:53:20.194		31.51	-27.76	48300.35	-7.34		
gamma	I	2026-08-26T02:54:52.091		31.66	-27.44	47626.11	-7.33		
eta	I	2026-08-26T02:55:53.478		31.76	-27.22	47176.12	-7.33		
beta	I	2026-08-26T02:59:23.305		32.10	-26.49	45641.09	-7.31		
alpha	I	2026-08-26T03:01:33.471		32.30	-26.03	44687.14	-7.30		
4	I	2026-08-26T03:06:26.747		32.74	-24.99	42557.59	-7.27		
5	I	2026-08-26T03:07:21.443		32.82	-24.80	42154.94	-7.26		
6	I	2026-08-26T03:08:03.977		32.88	-24.65	41838.26	-7.26		
Uranus	I	2026-08-26T03:45:47.673		35.48	-16.67	25017.01		-14.42	-15.07
Uranus	E	2026-08-26T05:29:39.773		35.05	5.02x	25398.73		7.69	8.06
6	E	2026-08-26T06:08:13.111		32.10	12.76x	41857.89	7.18		
5	E	2026-08-26T06:09:13.515		32.00	12.96x	42302.00	7.19		
4	E	2026-08-26T06:09:49.385		31.95	13.08x	42561.39	7.19		
alpha	E	2026-08-26T06:14:52.630		31.46	14.07x	44739.97	7.22		
beta	E	2026-08-26T06:17:02.162		31.24	14.49x	45678.29	7.23		
eta	E	2026-08-26T06:20:29.285		30.89	15.17x	47176.12	7.24		
gamma	E	2026-08-26T06:21:31.769		30.78	15.37x	47628.78	7.25		
delta	E	2026-08-26T06:23:04.401		30.61	15.67x	48300.35	7.25		
lambda	E	2026-08-26T06:27:02.169		30.19	16.44x	50026.71	7.27		
epsilon	E	2026-08-26T06:28:45.040		30.00	16.77x	50774.71	7.28		