

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T05:55:59.730
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201

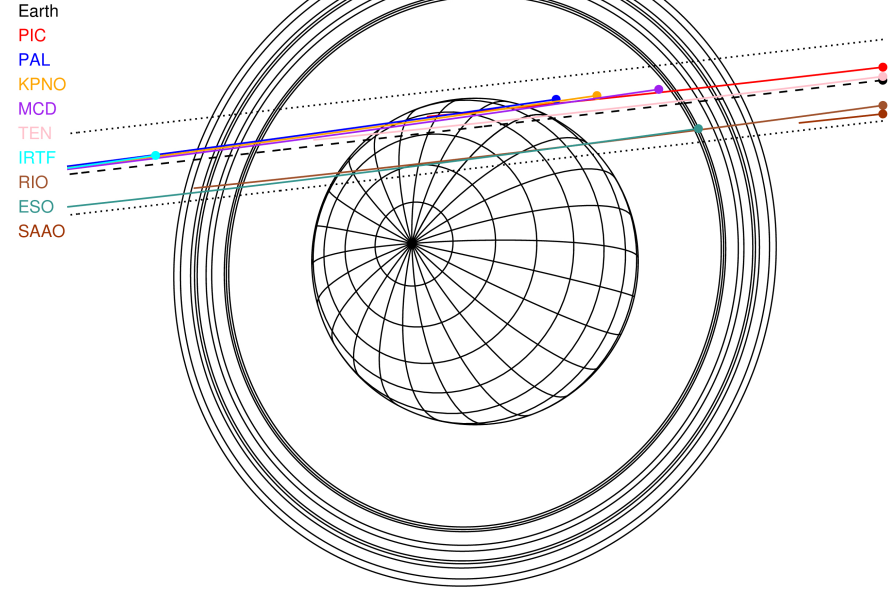
Uranus 2034-10-28T05:55:59 K12.46 G14.70 PgtRgt

ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s

RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 55.58
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05



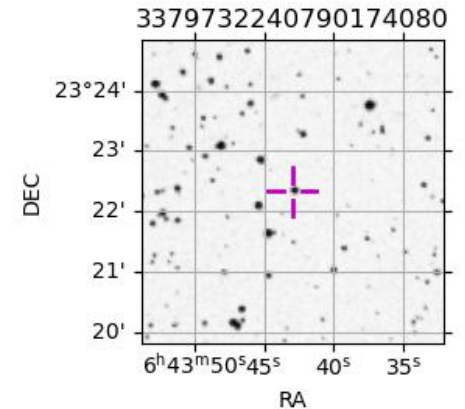
2034-10-28T05:55:59.7300 α: 06 43 42.9361 s: +23 22 20.035 C/A 1.572° PA 186.59 deg v_sky - 5.88 km/s D 18.47 AU
 Credit: Styled after SORA/Lucky Star



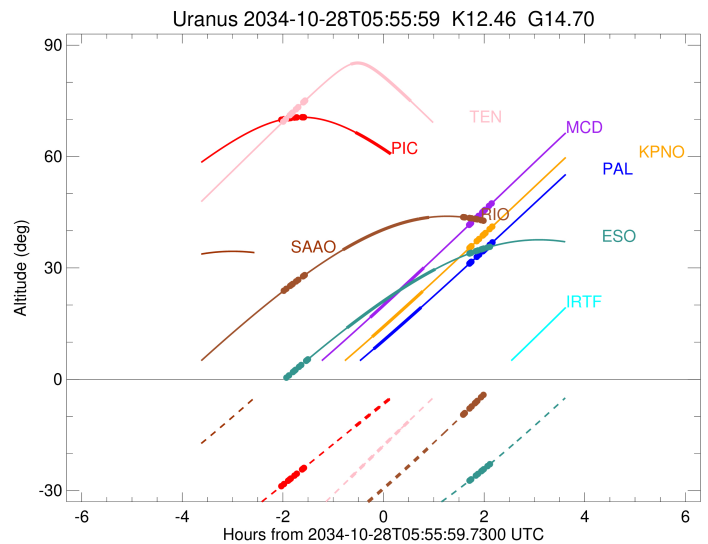
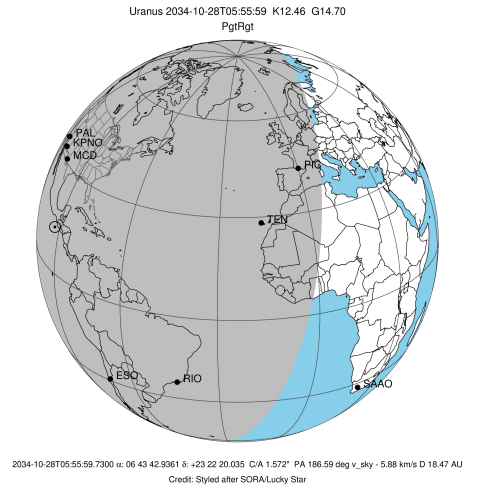
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	+++++++	+		OCT 28 03:54 - OCT 28 05:22	PinRin
PAL	Palomar Mt (200")	33.4	243.1		+ +	+++++++	OCT 28 05:44 - OCT 28 08:04	PieRne
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+ +	+++++++	OCT 28 05:42 - OCT 28 08:04	PieRne
MCD	McDonald Obs. 2.7m	30.7	256.0		+ +	+++++++	OCT 28 05:40 - OCT 28 08:03	PieRne
TEN	Teide Obs./Tenerife	28.3	343.5	+++++++	+ +		OCT 28 03:56 - OCT 28 06:28	PieRin
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	+++++++	+ +	+++++++	OCT 28 03:56 - OCT 28 07:47	PieRie
ESO	European Southern Obs	-29.3	289.3		++	+++++++	OCT 28 04:24 - OCT 28 08:02	PieRie
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

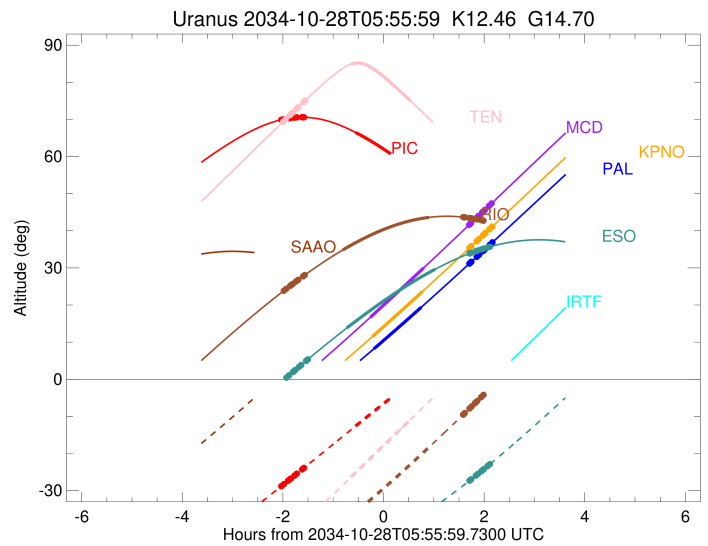
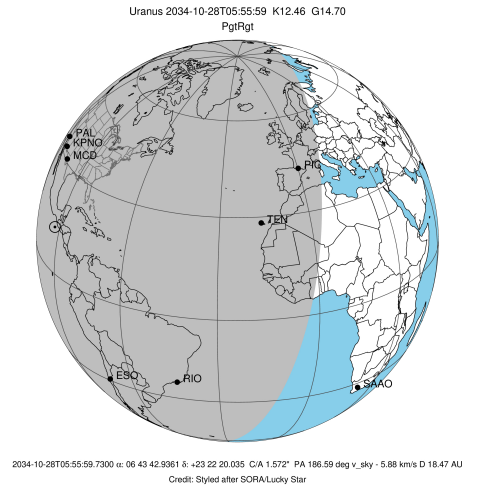


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T05:50:38.910
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 56.51
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.741
 C/A sky separation (km) : 23324.4
 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	2034-10-28T03:54:11.959		69.92	-28.79	51150.24	-5.91		
lambda	I	2034-10-28T03:57:21.951		70.08	-28.22	50026.71	-5.90		
delta	I	2034-10-28T04:02:16.236		70.28	-27.32	48300.35	-5.84		
gamma	I	2034-10-28T04:04:11.853		70.35	-26.97	47627.10	-5.81		
eta	I	2034-10-28T04:05:29.589		70.39	-26.74	47176.12	-5.79		
beta	I	2034-10-28T04:09:51.397		70.50	-25.94	45666.74	-5.73		
alpha	I	2034-10-28T04:12:33.741		70.54	-25.45	44742.21	-5.69		
4	I	2034-10-28T04:19:02.619		70.59	-24.26	42553.54	-5.57		
5	I	2034-10-28T04:19:49.928		70.59	-24.12	42299.10	-5.56		
6	I	2034-10-28T04:21:20.040		70.58	-23.85	41801.18	-5.53		
Uranus	I	2034-10-28T05:22:34.468		66.51	-12.63	25558.15		-0.95	-0.99
Uranus	E	2034-10-28T06:17:07.204		58.74	-2.81x	25314.37		16.38	17.11
6	E	2034-10-28T07:13:17.028		49.12	6.85x	41828.83	5.48		
5	E	2034-10-28T07:14:35.529		48.89	7.07x	42256.31	5.52		
4	E	2034-10-28T07:15:25.238		48.74	7.20x	42539.11	5.52		
alpha	E	2034-10-28T07:21:58.605		47.56	8.28x	44730.11	5.64		
beta	E	2034-10-28T07:24:40.756		47.08	8.73x	45641.42	5.68		
eta	E	2034-10-28T07:29:09.398		46.27	9.45x	47176.12	5.74		
gamma	E	2034-10-28T07:30:28.420		46.03	9.67x	47630.40	5.76		
delta	E	2034-10-28T07:32:24.538		45.68	9.98x	48300.35	5.78		
lambda	E	2034-10-28T07:37:21.633		44.78	10.77x	50026.71	5.84		
epsilon	E	2034-10-28T07:39:35.570		44.37	11.13x	50810.35	5.85		

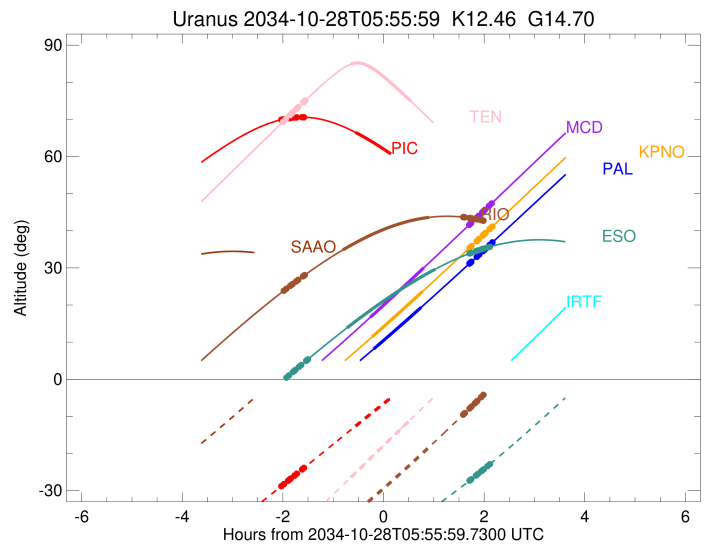
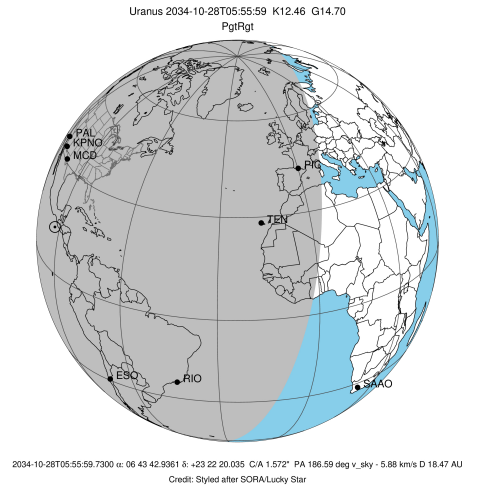
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T06:13:44.230
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 55.25
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.743
 C/A sky separation (km) : 23347.3
 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	2034-10-28T04:08:41.904	-9.34x	-39.89	51135.62	-5.39		
lambda	I	2034-10-28T04:12:07.150	-8.76x	-40.59	50026.71	-5.39		
delta	I	2034-10-28T04:17:28.877	-7.83x	-41.69	48300.35	-5.34		
gamma	I	2034-10-28T04:19:35.116	-7.47x	-42.12	47627.29	-5.32		
eta	I	2034-10-28T04:21:00.014	-7.22x	-42.40	47176.12	-5.31		
beta	I	2034-10-28T04:25:45.734	-6.39x	-43.37	45666.03	-5.25		
alpha	I	2034-10-28T04:28:42.289	-5.88x	-43.97	44743.08	-5.22		
4	I	2034-10-28T04:35:45.900	-4.62x	-45.39	42552.01	-5.12		
5	I	2034-10-28T04:36:36.660	-4.47x	-45.56	42300.84	-5.12		
6	I	2034-10-28T04:38:15.047	-4.18x	-45.89	41800.37	-5.09		
Uranus	I	2034-10-28T05:44:20.517	8.17	-58.48	25559.00		0.01	0.01
Uranus	E	2034-10-28T06:40:59.382	19.39	-66.94	25296.59		16.99	17.75
6	E	2034-10-28T07:38:24.026	31.15	-69.93	41830.28	5.41		
5	E	2034-10-28T07:39:42.785	31.42	-69.90	42253.61	5.45		
4	E	2034-10-28T07:40:33.929	31.60	-69.88	42540.24	5.46		
alpha	E	2034-10-28T07:47:11.055	32.97	-69.67	44728.99	5.59		
beta	E	2034-10-28T07:49:54.804	33.54	-69.55	45641.56	5.63		
eta	E	2034-10-28T07:54:25.211	34.48	-69.31	47176.12	5.71		
gamma	E	2034-10-28T07:55:44.635	34.75	-69.23	47630.28	5.73		
delta	E	2034-10-28T07:57:41.307	35.16	-69.11	48300.35	5.76		
lambda	E	2034-10-28T08:02:39.296	36.19	-68.75	50026.71	5.83		
epsilon	E	2034-10-28T08:04:54.798	36.66	-68.58	50818.45	5.84		

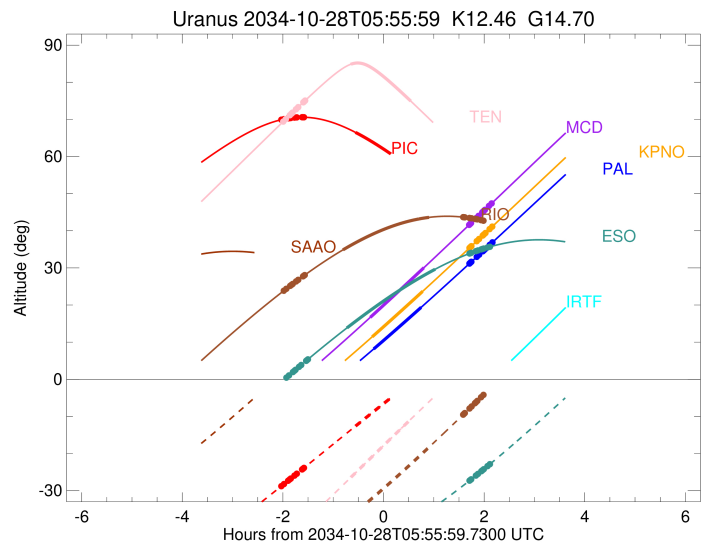
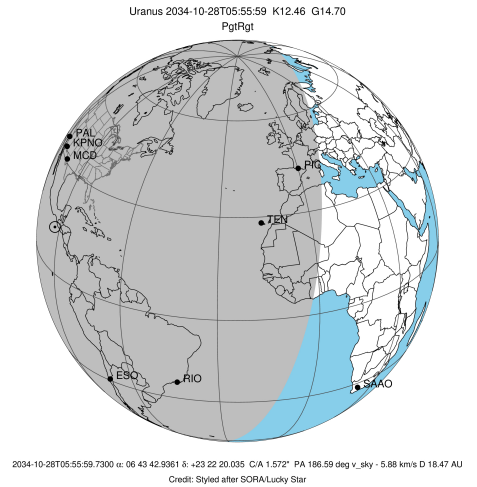
```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2034-10-28T06:13:41.560
Event type           : PgtRgt
: Uranus occs: geocentric, topocentric
: 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       : 3379732240790174080
2Mass ID (if available) : 06434293+2322201
ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
RUWE (>1.4 is poor) : 8.04
K magnitude          : 12.456
G magnitude          : 14.702
RP magnitude         : 13.942
BP magnitude         : 15.143
DUPflag             : 0
Distance (au)        : 18.468
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -5.88
Sun-Target sep (deg) : 114.38
Sun-Moon sep (deg)   : 55.30
B (ring opening deg) : 66.29
PA of pole (deg)     : 74.05
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.719
C/A sky separation (km) : 23027.4
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
    
```



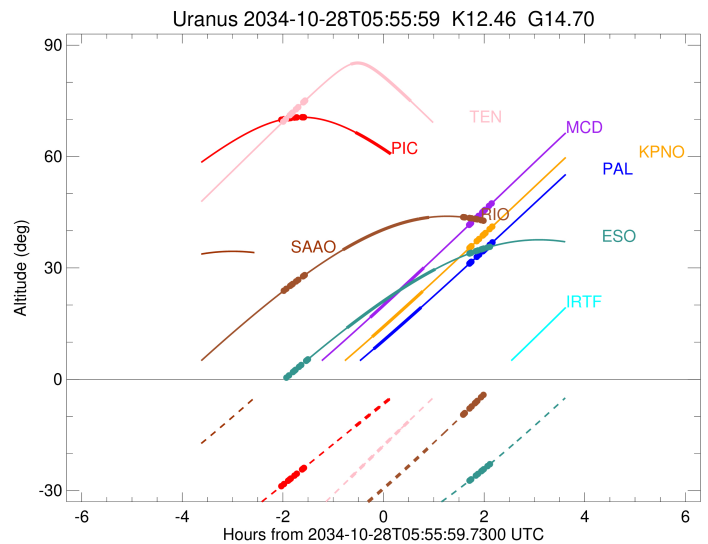
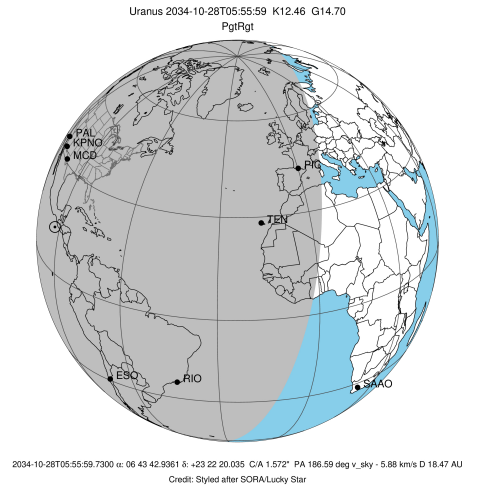
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-10-28T04:09:02.188	-6.39x	-44.59	51138.53	-5.45			
lambda	I	2034-10-28T04:12:26.012	-5.78x	-45.29	50026.71	-5.44			
delta	I	2034-10-28T04:17:44.570	-4.82x	-46.38	48300.35	-5.40			
gamma	I	2034-10-28T04:19:49.535	-4.44x	-46.81	47627.25	-5.38			
eta	I	2034-10-28T04:21:13.550	-4.18x	-47.10	47176.12	-5.36			
beta	I	2034-10-28T04:25:56.210	-3.32x	-48.06	45666.19	-5.31			
alpha	I	2034-10-28T04:28:50.906	-2.78x	-48.65	44742.88	-5.28			
4	I	2034-10-28T04:35:49.522	-1.48x	-50.06	42552.39	-5.18			
5	I	2034-10-28T04:36:39.836	-1.33x	-50.23	42300.41	-5.18			
6	I	2034-10-28T04:38:16.908	-1.02x	-50.55	41800.57	-5.15			
Uranus	I	2034-10-28T05:42:32.325	11.44	-62.59	25558.55			-0.68	-0.72
Uranus	E	2034-10-28T06:42:42.577	23.69	-70.33	25282.19			17.47	18.25
6	E	2034-10-28T07:38:27.442	35.36	-70.28	41830.64	5.48			
5	E	2034-10-28T07:39:45.067	35.63	-70.18	42252.96	5.52			
4	E	2034-10-28T07:40:35.792	35.81	-70.12	42540.51	5.52			
alpha	E	2034-10-28T07:47:08.278	37.19	-69.54	44728.74	5.65			
beta	E	2034-10-28T07:49:50.300	37.76	-69.28	45641.59	5.69			
eta	E	2034-10-28T07:54:17.874	38.71	-68.81	47176.12	5.77			
gamma	E	2034-10-28T07:55:36.487	38.99	-68.67	47630.25	5.79			
delta	E	2034-10-28T07:57:31.999	39.39	-68.45	48300.35	5.82			
lambda	E	2034-10-28T08:02:27.109	40.44	-67.86	50026.71	5.88			
epsilon	E	2034-10-28T08:04:41.588	40.91	-67.58	50819.90	5.90			

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T06:13:16.040
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 55.38
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.690
 C/A sky separation (km) : 22641.8
 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_itrff93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



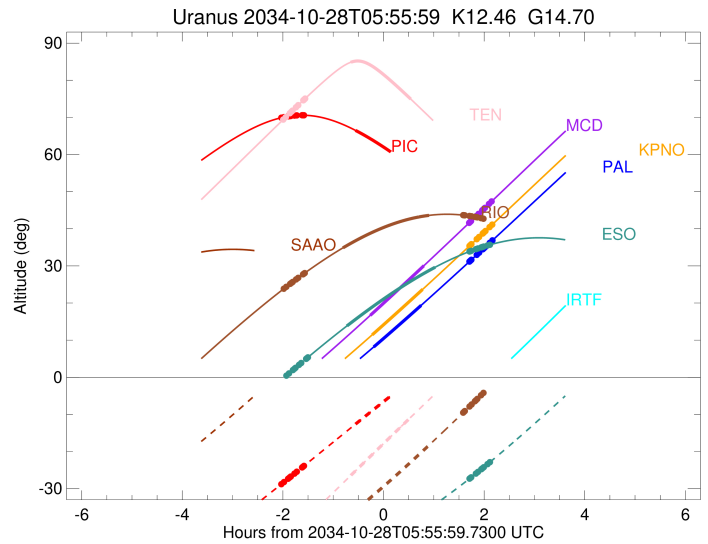
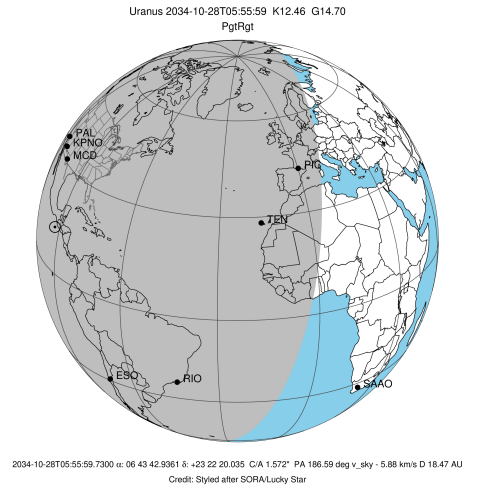
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-10-28T04:09:17.579	-1.40x	-51.23	51142.27	-5.52			
lambda	I	2034-10-28T04:12:39.354	-0.76x	-51.92	50026.71	-5.52			
delta	I	2034-10-28T04:17:53.537	0.24x	-52.98	48300.35	-5.47			
gamma	I	2034-10-28T04:19:56.754	0.64x	-53.40	47627.19	-5.45			
eta	I	2034-10-28T04:21:19.563	0.90x	-53.68	47176.12	-5.44			
beta	I	2034-10-28T04:25:58.068	1.80x	-54.61	45666.40	-5.39			
alpha	I	2034-10-28T04:28:50.244	2.36x	-55.18	44742.62	-5.36			
4	I	2034-10-28T04:35:42.194	3.70x	-56.54	42552.88	-5.27			
5	I	2034-10-28T04:36:31.902	3.86x	-56.70	42299.85	-5.26			
6	I	2034-10-28T04:38:07.242	4.17x	-57.01	41800.83	-5.24			
Uranus	I	2034-10-28T05:40:15.335	16.68	-67.86	25556.91			-1.48	-1.55
Uranus	E	2034-10-28T06:44:09.720	30.05	-72.63	25266.50			17.99	18.78
6	E	2034-10-28T07:38:03.603	41.57	-68.08	41831.03	5.56			
5	E	2034-10-28T07:39:19.867	41.85	-67.90	42252.24	5.60			
4	E	2034-10-28T07:40:10.054	42.03	-67.78	42540.82	5.60			
alpha	E	2034-10-28T07:46:36.880	43.41	-66.82	44728.47	5.73			
beta	E	2034-10-28T07:49:16.780	43.99	-66.41	45641.63	5.77			
eta	E	2034-10-28T07:53:40.883	44.94	-65.71	47176.12	5.84			
gamma	E	2034-10-28T07:54:58.506	45.22	-65.50	47630.23	5.86			
delta	E	2034-10-28T07:56:52.594	45.63	-65.19	48300.35	5.89			
lambda	E	2034-10-28T08:01:44.175	46.67	-64.38	50026.71	5.95			
epsilon	E	2034-10-28T08:03:57.365	47.15	-64.00	50821.48	5.97			

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T05:53:33.750
 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 : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 56.49
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.604
 C/A sky separation (km) : 21486.5
 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



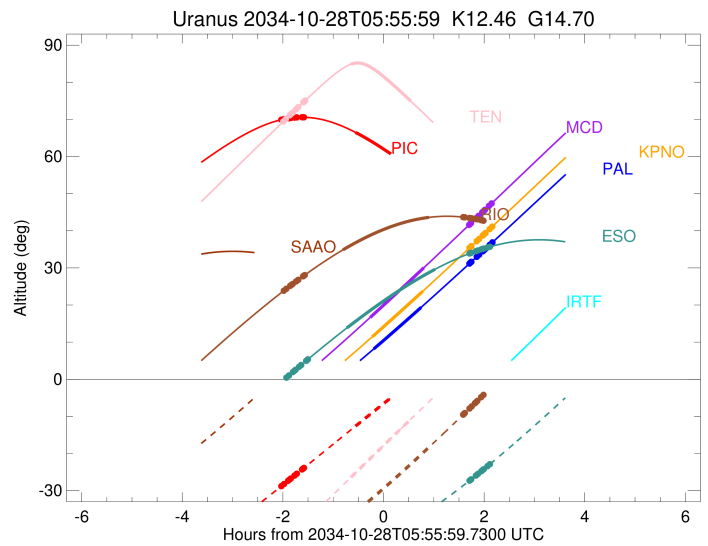
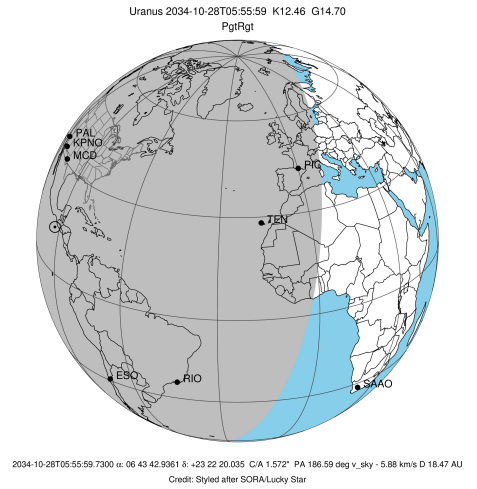
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-10-28T03:56:27.341		69.42	-44.14	51164.70	-6.07		
lambda	I	2034-10-28T03:59:34.438		70.10	-43.46	50026.71	-6.07		
delta	I	2034-10-28T04:04:20.033		71.14	-42.42	48300.35	-6.02		
gamma	I	2034-10-28T04:06:12.080		71.55	-42.01	47626.89	-6.00		
eta	I	2034-10-28T04:07:27.293		71.82	-41.74	47176.12	-5.99		
beta	I	2034-10-28T04:11:40.173		72.73	-40.82	45667.54	-5.93		
alpha	I	2034-10-28T04:14:17.097		73.30	-40.24	44741.13	-5.90		
4	I	2034-10-28T04:20:30.469		74.63	-38.88	42555.52	-5.81		
5	I	2034-10-28T04:21:16.589		74.80	-38.71	42296.74	-5.80		
6	I	2034-10-28T04:22:42.343		75.10	-38.40	41802.30	-5.77		
Uranus	I	2034-10-28T05:17:01.237		84.86	-26.44	25541.65		-4.28	-4.48
Uranus	E	2034-10-28T06:28:36.018		74.92	-10.75	25239.28		18.85	19.68
6	E	2034-10-28T07:17:55.663		64.16	-0.12x	41831.12	5.78		
5	E	2034-10-28T07:19:09.004		63.89	0.14x	42252.11	5.81		
4	E	2034-10-28T07:19:57.368		63.71	0.31x	42540.86	5.82		
alpha	E	2034-10-28T07:26:10.974		62.34	1.63x	44728.50	5.92		
beta	E	2034-10-28T07:28:45.940		61.77	2.18x	45641.62	5.95		
eta	E	2034-10-28T07:33:02.552		60.82	3.08x	47176.12	6.00		
gamma	E	2034-10-28T07:34:18.122		60.54	3.35x	47630.24	6.02		
delta	E	2034-10-28T07:36:09.307		60.13	3.74x	48300.35	6.04		
lambda	E	2034-10-28T07:40:54.092		59.09	4.74x	50026.71	6.09		
epsilon	E	2034-10-28T07:43:04.238		58.61	5.19x	50820.10	6.09		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T05:59:39.650
 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 : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 55.96
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.209
 C/A sky separation (km) : 16194.1
 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_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	2034-10-28T03:56:59.363		23.83	-49.09	51205.73	-6.26		
lambda	I	2034-10-28T04:00:07.260		24.38	-48.71	50026.71	-6.27		
delta	I	2034-10-28T04:04:43.073		25.17	-48.14	48300.35	-6.25		
gamma	I	2034-10-28T04:06:31.012		25.48	-47.91	47626.30	-6.24		
eta	I	2034-10-28T04:07:43.187		25.68	-47.76	47176.12	-6.23		
beta	I	2034-10-28T04:11:45.030		26.36	-47.23	45669.73	-6.21		
alpha	I	2034-10-28T04:14:15.693		26.78	-46.89	44737.92	-6.20		
4	I	2034-10-28T04:20:08.322		27.75	-46.08	42561.12	-6.15		
5	I	2034-10-28T04:20:53.855		27.88	-45.97	42289.56	-6.15		
6	I	2034-10-28T04:22:12.941		28.09	-45.78	41805.80	-6.14		
Uranus	I	2034-10-28T05:07:35.104		34.85	-38.49	25450.48		-10.78	-11.28
Uranus	E	2034-10-28T06:50:13.949		43.61	-18.31	25113.11		22.52	23.47
6	E	2034-10-28T07:30:56.149		43.68	-9.55	41837.60	6.30		
5	E	2034-10-28T07:32:00.639		43.65	-9.31	42240.12	6.32		
4	E	2034-10-28T07:32:48.361		43.63	-9.14	42546.22	6.32		
alpha	E	2034-10-28T07:38:32.084		43.45	-7.88	44723.84	6.38		
beta	E	2034-10-28T07:40:56.923		43.37	-7.35	45642.46	6.39		
eta	E	2034-10-28T07:44:55.989		43.21	-6.48	47176.12	6.43		
gamma	E	2034-10-28T07:46:06.543		43.16	-6.22	47629.74	6.43		
delta	E	2034-10-28T07:47:50.680		43.08	-5.84	48300.35	6.45		
lambda	E	2034-10-28T07:52:17.915		42.87	-4.85x	50026.71	6.47		
epsilon	E	2034-10-28T07:54:25.186		42.76	-4.38x	50851.47	6.47		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-10-28T06:05:57.660
 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 : 3379732240790174080
 2Mass ID (if available) : 06434293+2322201
 ICRS Star Coord at Epoch: 06h 43m 42.93613s +23:22:20.03510s
 RUWE (>1.4 is poor) : 8.04
 K magnitude : 12.456
 G magnitude : 14.702
 RP magnitude : 13.942
 BP magnitude : 15.143
 DUPflag : 0
 Distance (au) : 18.468
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -5.88
 Sun-Target sep (deg) : 114.38
 Sun-Moon sep (deg) : 55.52
 B (ring opening deg) : 66.29
 PA of pole (deg) : 74.05
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.194
 C/A sky separation (km) : 15997.0
 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_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	2034-10-28T04:00:05.624		0.42x	-47.30	51203.36	-6.09		
lambda	I	2034-10-28T04:03:18.556		1.04x	-47.41	50026.71	-6.09		
delta	I	2034-10-28T04:08:02.218		1.96x	-47.54	48300.35	-6.08		
gamma	I	2034-10-28T04:09:53.186		2.31x	-47.59	47626.33	-6.07		
eta	I	2034-10-28T04:11:07.384		2.55x	-47.61	47176.12	-6.07		
beta	I	2034-10-28T04:15:15.933		3.35x	-47.69	45669.63	-6.05		
alpha	I	2034-10-28T04:17:50.659		3.84x	-47.73	44738.07	-6.03		
4	I	2034-10-28T04:23:52.785		4.99x	-47.77	42560.89	-6.00		
5	I	2034-10-28T04:24:39.434		5.13	-47.77	42289.86	-6.00		
6	I	2034-10-28T04:26:00.664		5.39	-47.78	41805.65	-5.98		
Uranus	I	2034-10-28T05:12:23.355		13.83	-46.35	25451.01		-10.75	-11.25
Uranus	E	2034-10-28T06:57:40.129		29.65	-34.20	25107.20		22.68	23.64
6	E	2034-10-28T07:38:31.868		33.87	-27.32	41838.28	6.27		
5	E	2034-10-28T07:39:36.336		33.97	-27.13	42238.85	6.29		
4	E	2034-10-28T07:40:24.617		34.03	-26.99	42546.82	6.29		
alpha	E	2034-10-28T07:46:09.559		34.50	-25.95	44723.31	6.35		
beta	E	2034-10-28T07:48:35.031		34.69	-25.51	45642.58	6.37		
eta	E	2034-10-28T07:52:34.886		34.99	-24.78	47176.12	6.40		
gamma	E	2034-10-28T07:53:45.651		35.08	-24.56	47629.68	6.41		
delta	E	2034-10-28T07:55:30.108		35.20	-24.24	48300.35	6.43		
lambda	E	2034-10-28T07:59:58.056		35.51	-23.42	50026.71	6.46		
epsilon	E	2034-10-28T08:02:06.265		35.64	-23.02	50855.63	6.46		