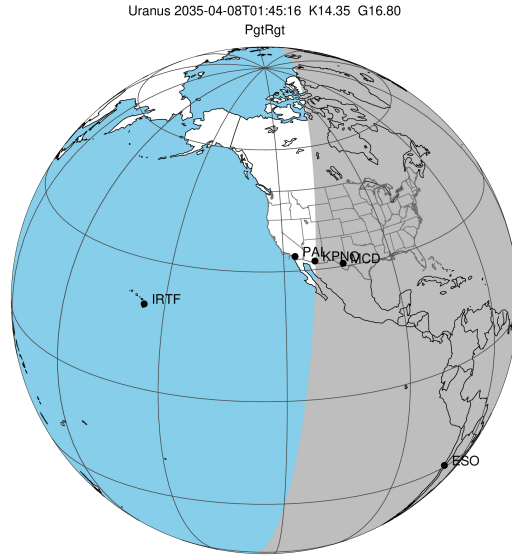


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:45:16.000
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014

ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s

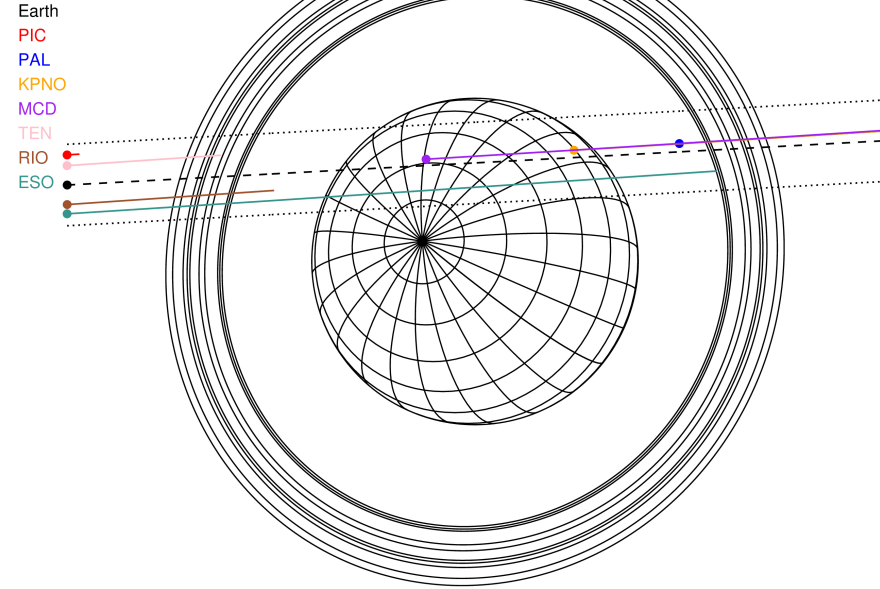
RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 83.79
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88

#	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



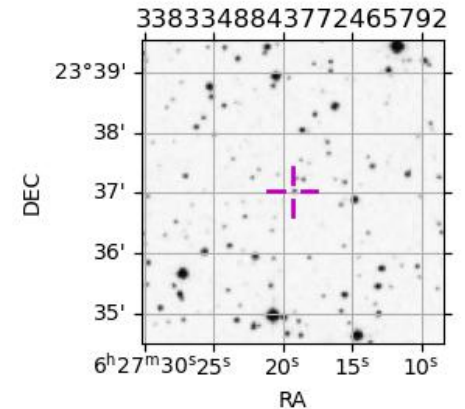
2035-04-08T01:45:16.00000 ex: 06 27 19.30800 s: +23 37 01.455 C/A 1.124° PA 183.10 deg v_sky +12.25 km/s D 19.04 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2035-04-08T01:45:16 K14.35 G16.80 PgtRgt

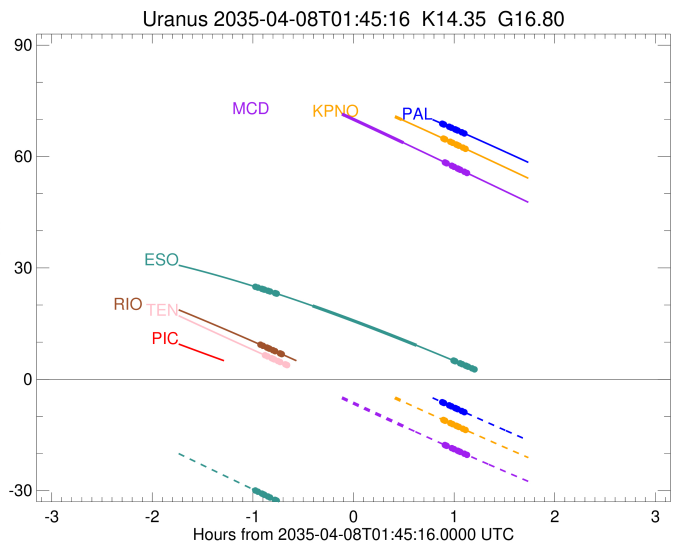
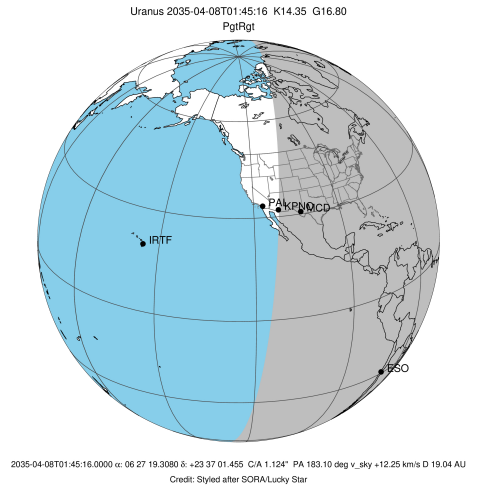


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1			+++++	APR 08 02:38 - APR 08 02:50	PnnRne
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+	+++++	APR 08 02:14 - APR 08 02:51	PneRne
MCD	McDonald Obs. 2.7m	30.7	256.0		+	+++++	APR 08 02:15 - APR 08 02:52	PneRne
TEN	Teide Obs./Tenerife	28.3	343.5	+++++			APR 08 00:51 - APR 08 00:58	PnnRin
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 08 00:49 - APR 08 01:02	PnnRin
ESO	European Southern Obs	-29.3	289.3	+++++	+ +	+	APR 08 00:46 - APR 08 02:44	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



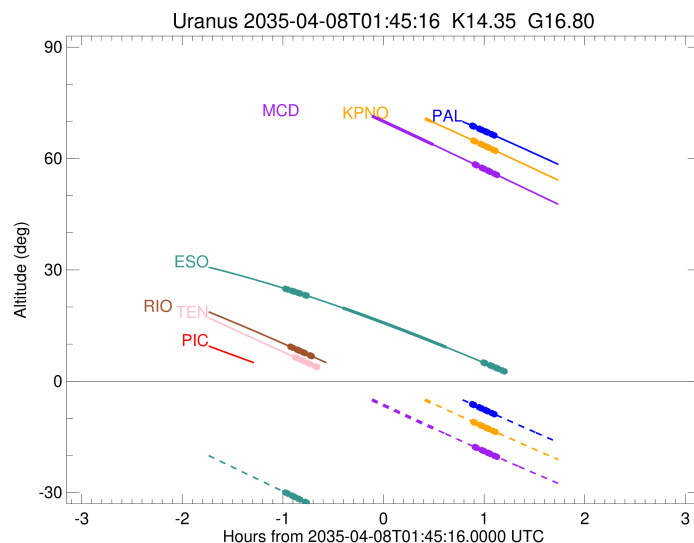
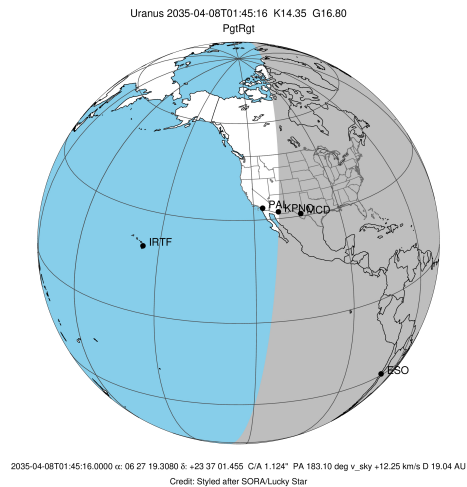
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:46:09.860
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014
 ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 84.76
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.198
 C/A sky separation (km) : 16543.0
 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	2035-04-08T00:42:17.619		78.36	17.90x	51555.20	-11.82		
lambda	I	2035-04-08T00:44:27.129		78.62	17.45x	50026.71	-11.78		
delta	I	2035-04-08T00:46:54.007		78.90	16.94x	48300.35	-11.73		
gamma	I	2035-04-08T00:47:51.802		79.00	16.73x	47623.28	-11.70		
eta	I	2035-04-08T00:48:30.035		79.07	16.60x	47176.12	-11.69		
beta	I	2035-04-08T00:50:41.025		79.29	16.14x	45648.61	-11.63		
alpha	I	2035-04-08T00:52:01.305		79.42	15.86x	44720.99	-11.60		
4	I	2035-04-08T00:55:11.202		79.70	15.20x	42526.14	-11.49		
5	I	2035-04-08T00:55:30.895		79.72	15.13x	42313.37	-11.49		
6	I	2035-04-08T00:56:16.133		79.78	14.98x	41794.77	-11.46		
Uranus	I	2035-04-08T01:19:41.204		80.27	10.08x	25085.89		19.32	20.16
Uranus	E	2035-04-08T02:13:18.374		73.51	-1.07x	25464.65		-8.40	-8.79
6	E	2035-04-08T02:38:10.739		68.83	-6.18	41865.05	11.52		
5	E	2035-04-08T02:38:38.921		68.74	-6.28	42193.64	11.55		
4	E	2035-04-08T02:39:15.554		68.62	-6.40	42605.54	11.55		
alpha	E	2035-04-08T02:42:18.953		68.02	-7.02	44740.16	11.66		
beta	E	2035-04-08T02:43:37.892		67.76	-7.29	45659.59	11.70		
eta	E	2035-04-08T02:45:47.115		67.34	-7.73	47176.12	11.76		
gamma	E	2035-04-08T02:46:25.806		67.21	-7.86	47631.40	11.78		
delta	E	2035-04-08T02:47:22.556		67.02	-8.05	48300.35	11.80		
lambda	E	2035-04-08T02:49:48.506		66.54	-8.55	50026.71	11.86		
epsilon	E	2035-04-08T02:50:56.568		66.31	-8.78	50834.55	11.90		

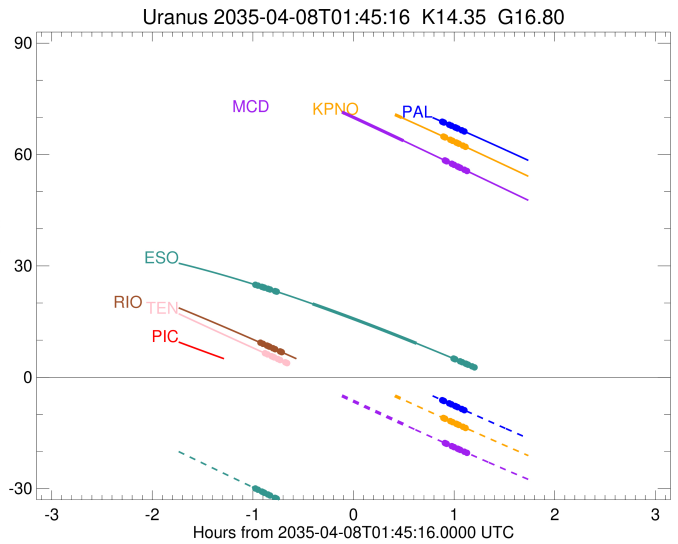
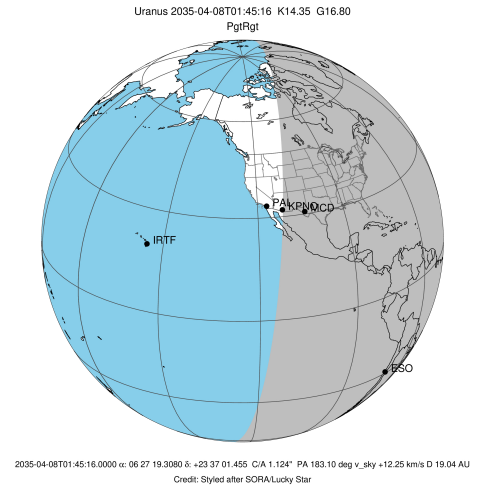
```

target                : Uranus
target radius (km)    : 25559.00
C/A epoch             : 2035-04-08T01:46:50.780
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        : 3383348843772465792
2Mass ID (if available) : 06271930+2337014
ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
RUWE (>1.4 is poor)  : 1.12
K magnitude           : 14.345
G magnitude           : 16.805
RP magnitude          : 16.039
BP magnitude          : 17.427
DUPflag              : 0
Distance (au)         : 19.043
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 12.25
Sun-Target sep (deg)  : 78.67
Sun-Moon sep (deg)    : 84.75
B (ring opening deg)  : 69.78
PA of pole (deg)      : 68.88
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.192
C/A sky separation (km) : 16460.9
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_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
```



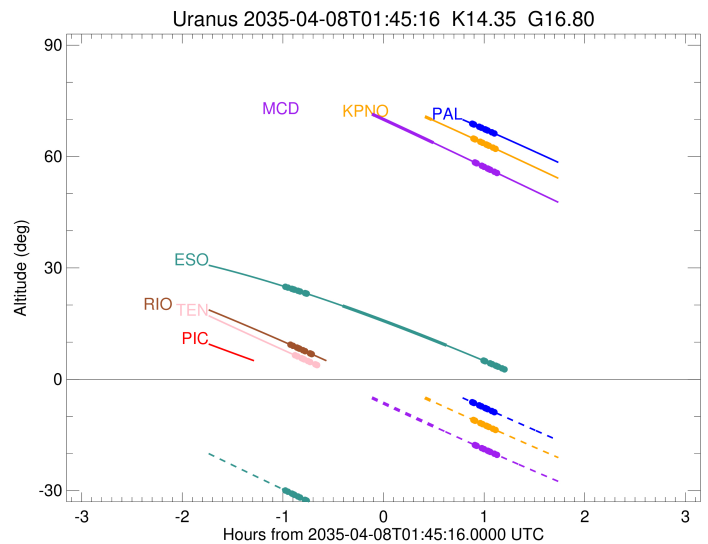
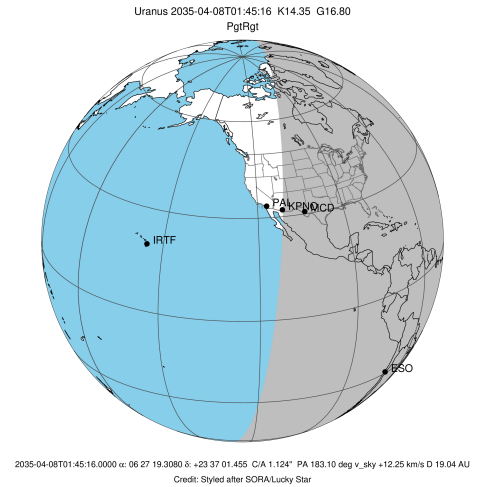
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-04-08T00:42:54.950		81.59	13.37x	51555.17	-11.82		
lambda	I	2035-04-08T00:45:04.475		81.68	12.91x	50026.71	-11.78		
delta	I	2035-04-08T00:47:31.362		81.76	12.39x	48300.35	-11.73		
gamma	I	2035-04-08T00:48:29.158		81.78	12.18x	47623.27	-11.70		
eta	I	2035-04-08T00:49:07.389		81.79	12.05x	47176.12	-11.69		
beta	I	2035-04-08T00:51:18.364		81.80	11.58x	45648.67	-11.63		
alpha	I	2035-04-08T00:52:38.646		81.79	11.30x	44720.89	-11.60		
4	I	2035-04-08T00:55:48.485		81.74	10.63x	42526.12	-11.50		
5	I	2035-04-08T00:56:08.178		81.73	10.56x	42313.31	-11.49		
6	I	2035-04-08T00:56:53.392		81.71	10.40x	41794.78	-11.46		
Uranus	I	2035-04-08T01:20:16.270		79.59	5.44x	25084.35		19.35	20.20
Uranus	E	2035-04-08T02:14:04.434		69.93	-5.85	25463.46		-8.45	-8.85
6	E	2035-04-08T02:38:52.819		64.84	-10.97	41865.08	11.54		
5	E	2035-04-08T02:39:20.942		64.74	-11.06	42193.57	11.57		
4	E	2035-04-08T02:39:57.521		64.61	-11.19	42605.57	11.58		
alpha	E	2035-04-08T02:43:00.602		63.98	-11.81	44740.14	11.68		
beta	E	2035-04-08T02:44:19.414		63.70	-12.08	45659.60	11.72		
eta	E	2035-04-08T02:46:28.422		63.25	-12.52	47176.12	11.78		
gamma	E	2035-04-08T02:47:07.050		63.12	-12.65	47631.40	11.79		
delta	E	2035-04-08T02:48:03.708		62.92	-12.84	48300.35	11.82		
lambda	E	2035-04-08T02:50:29.423		62.41	-13.33	50026.71	11.88		
epsilon	E	2035-04-08T02:51:37.364		62.17	-13.56	50834.41	11.92		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:47:48.240
 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 : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014
 ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 84.74
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.191
 C/A sky separation (km) : 16454.1
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



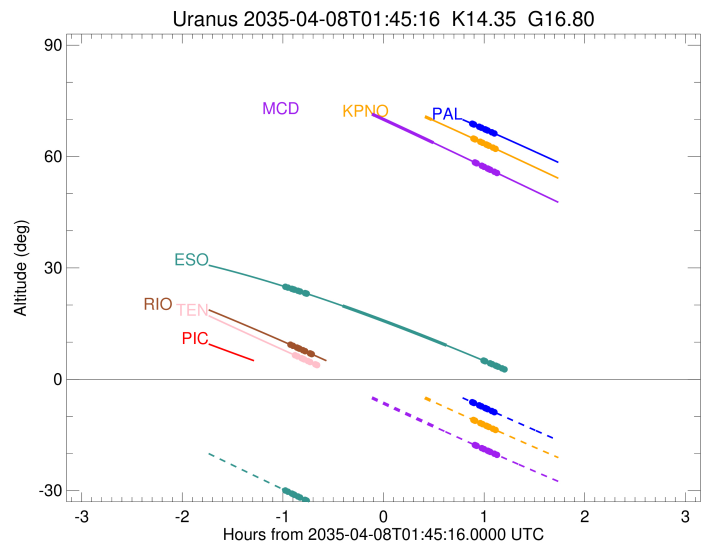
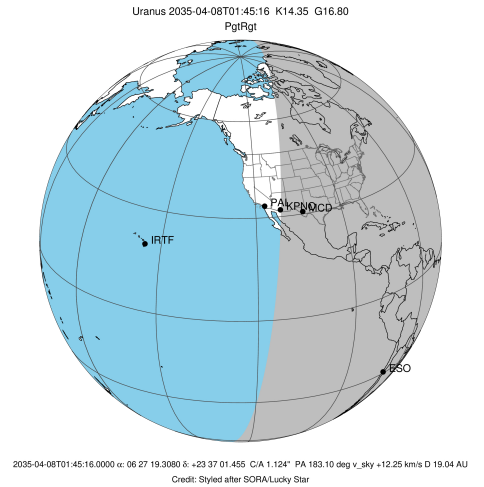
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-04-08T00:43:53.817		81.42	6.63x	51555.16	-11.82		
lambda	I	2035-04-08T00:46:03.368		81.12	6.16x	50026.71	-11.78		
delta	I	2035-04-08T00:48:30.279		80.77	5.64x	48300.35	-11.72		
gamma	I	2035-04-08T00:49:28.083		80.63	5.43x	47623.26	-11.70		
eta	I	2035-04-08T00:50:06.318		80.53	5.29x	47176.12	-11.69		
beta	I	2035-04-08T00:52:17.300		80.19	4.83x	45648.69	-11.63		
alpha	I	2035-04-08T00:53:37.593		79.98	4.54x	44720.82	-11.60		
4	I	2035-04-08T00:56:47.425		79.46	3.86x	42526.11	-11.50		
5	I	2035-04-08T00:57:07.121		79.40	3.79x	42313.28	-11.49		
6	I	2035-04-08T00:57:52.328		79.27	3.63x	41794.78	-11.46		
Uranus	I	2035-04-08T01:21:14.582		74.91	-1.36x	25083.78		19.37	20.21
Uranus	E	2035-04-08T02:15:00.273		63.72	-12.65	25463.99		-8.43	-8.82
6	E	2035-04-08T02:39:46.024		58.41	-17.72	41865.03	11.56		
5	E	2035-04-08T02:40:14.102		58.31	-17.81	42193.67	11.59		
4	E	2035-04-08T02:40:50.594		58.18	-17.94	42605.53	11.60		
alpha	E	2035-04-08T02:43:53.306		57.52	-18.55	44740.17	11.71		
beta	E	2035-04-08T02:45:11.947		57.24	-18.82	45659.58	11.74		
eta	E	2035-04-08T02:47:20.686		56.77	-19.25	47176.12	11.80		
gamma	E	2035-04-08T02:47:59.232		56.64	-19.38	47631.40	11.82		
delta	E	2035-04-08T02:48:55.768		56.43	-19.57	48300.35	11.84		
lambda	E	2035-04-08T02:51:21.167		55.91	-20.05	50026.71	11.90		
epsilon	E	2035-04-08T02:52:28.989		55.67	-20.28	50834.76	11.95		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:51:50.600
 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 : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014
 ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 83.81
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.394
 C/A sky separation (km) : 19249.1
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



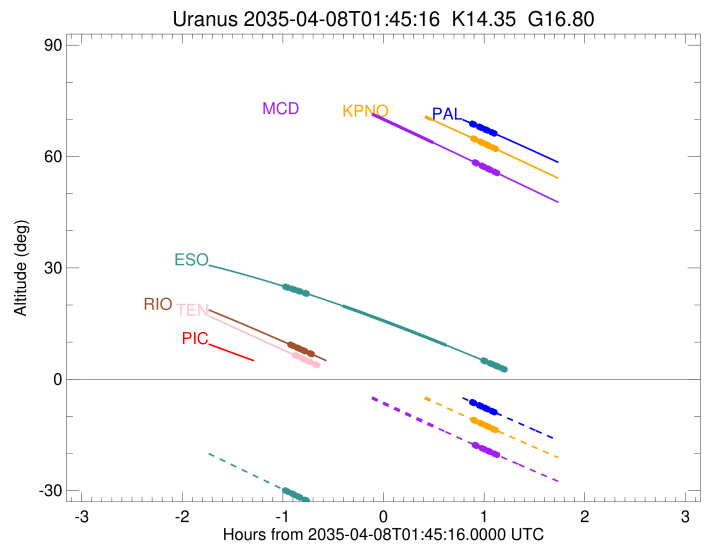
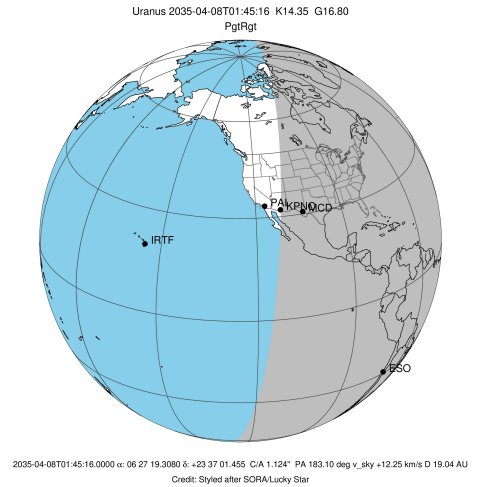
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-04-08T00:51:55.469		6.58	-54.58	51555.16	-11.98		
lambda	I	2035-04-08T00:54:03.313		6.15	-54.63	50026.71	-11.93		
delta	I	2035-04-08T00:56:28.503		5.66	-54.68	48300.35	-11.85		
gamma	I	2035-04-08T00:57:25.678		5.47	-54.70	47623.52	-11.82		
eta	I	2035-04-08T00:58:03.557		5.34	-54.71	47176.12	-11.80		
beta	I	2035-04-08T01:00:13.488		4.90x	-54.74	45647.76	-11.72		
alpha	I	2035-04-08T01:01:32.947		4.64x	-54.76	44722.94	-11.67		
4	I	2035-04-08T01:04:42.078		4.00x	-54.78	42526.49	-11.53		
5	I	2035-04-08T01:05:01.605		3.94x	-54.79	42314.30	-11.52		
6	I	2035-04-08T01:05:46.856		3.79x	-54.79	41794.76	-11.48		
Uranus	I	2035-04-08T01:30:05.170		-1.03x	-54.38	25133.96		18.25	19.05
Uranus	E	2035-04-08T02:14:18.973		-9.46x	-51.31	25517.97		-5.52	-5.78
6	E	2035-04-08T02:40:04.709		-14.12x	-48.34	41862.45	11.66		
5	E	2035-04-08T02:40:33.236		-14.20x	-48.28	42199.06	11.70		
4	E	2035-04-08T02:41:08.629		-14.31x	-48.20	42603.17	11.71		
alpha	E	2035-04-08T02:44:09.575		-14.84x	-47.81	44741.99	11.87		
beta	E	2035-04-08T02:45:26.790		-15.06x	-47.63	45658.18	11.92		
eta	E	2035-04-08T02:47:33.564		-15.43x	-47.35	47176.12	12.01		
gamma	E	2035-04-08T02:48:11.439		-15.54x	-47.26	47631.48	12.04		
delta	E	2035-04-08T02:49:06.935		-15.70x	-47.13	48300.35	12.07		
lambda	E	2035-04-08T02:51:29.466		-16.11x	-46.81	50026.71	12.15		
epsilon	E	2035-04-08T02:52:37.191		-16.30x	-46.65	50851.06	12.22		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:53:08.740
 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 : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014
 ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 83.85
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.959
 C/A sky separation (km) : 13246.6
 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	2035-04-08T00:49:14.882		9.42	-55.96	51553.23	-12.30		
lambda	I	2035-04-08T00:51:19.134		9.01	-56.40	50026.71	-12.27		
delta	I	2035-04-08T00:53:39.958		8.54	-56.90	48300.35	-12.24		
gamma	I	2035-04-08T00:54:35.314		8.36	-57.09	47622.92	-12.23		
eta	I	2035-04-08T00:55:11.858		8.23	-57.22	47176.12	-12.22		
beta	I	2035-04-08T00:57:16.853		7.82	-57.66	45650.05	-12.19		
alpha	I	2035-04-08T00:58:33.763		7.56	-57.93	44717.94	-12.17		
4	I	2035-04-08T01:01:34.046		6.95	-58.56	42525.93	-12.11		
5	I	2035-04-08T01:01:52.945		6.89	-58.62	42311.36	-12.11		
6	I	2035-04-08T01:02:35.582		6.75	-58.77	41795.11	-12.09		
Uranus	I	2035-04-08T01:24:04.328	2.36x	-63.11	25050.94			20.07	20.94
Uranus	E	2035-04-08T02:22:37.329	-9.99x	-72.52	25398.40			-11.01	-11.52
6	E	2035-04-08T02:45:01.961	-14.84x	-74.17	41867.44	12.32			
5	E	2035-04-08T02:45:27.724	-14.93x	-74.18	42188.53	12.34			
4	E	2035-04-08T02:46:02.691	-15.06x	-74.20	42607.68	12.34			
alpha	E	2035-04-08T02:48:54.390	-15.68x	-74.28	44738.25	12.41			
beta	E	2035-04-08T02:50:08.885	-15.95x	-74.31	45660.98	12.44			
eta	E	2035-04-08T02:52:10.420	-16.39x	-74.34	47176.12	12.48			
gamma	E	2035-04-08T02:52:46.875	-16.53x	-74.34	47631.31	12.49			
delta	E	2035-04-08T02:53:40.395	-16.72x	-74.35	48300.35	12.51			
lambda	E	2035-04-08T02:55:58.176	-17.22x	-74.35	50026.71	12.55			
epsilon	E	2035-04-08T02:57:01.319	-17.45x	-74.34	50819.70	12.58			

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-04-08T01:51:39.910
 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 : 3383348843772465792
 2Mass ID (if available) : 06271930+2337014
 ICRS Star Coord at Epoch: 06h 27m 19.30800s +23:37:01.45512s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 14.345
 G magnitude : 16.805
 RP magnitude : 16.039
 BP magnitude : 17.427
 DUPflag : 0
 Distance (au) : 19.043
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 12.25
 Sun-Target sep (deg) : 78.67
 Sun-Moon sep (deg) : 84.12
 B (ring opening deg) : 69.78
 PA of pole (deg) : 68.88
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.840
 C/A sky separation (km) : 11600.7
 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_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	2035-04-08T00:46:12.989		24.99	-29.85	51551.77	-12.25		
lambda	I	2035-04-08T00:48:17.624		24.70	-30.29	50026.71	-12.23		
delta	I	2035-04-08T00:50:38.943		24.36	-30.80	48300.35	-12.20		
gamma	I	2035-04-08T00:51:34.482		24.23	-31.00	47622.78	-12.20		
eta	I	2035-04-08T00:52:11.120		24.14	-31.13	47176.12	-12.19		
beta	I	2035-04-08T00:54:16.370		23.84	-31.58	45650.65	-12.16		
alpha	I	2035-04-08T00:55:33.576		23.65	-31.86	44716.71	-12.15		
4	I	2035-04-08T00:58:33.934		23.21	-32.51	42525.96	-12.10		
5	I	2035-04-08T00:58:52.948		23.16	-32.57	42310.35	-12.11		
6	I	2035-04-08T00:59:35.467		23.05	-32.73	41795.36	-12.09		
Uranus	I	2035-04-08T01:20:52.050		19.78	-37.26	25044.86		20.20	21.08
Uranus	E	2035-04-08T02:22:48.645		9.14	-49.98	25361.46		-12.24	-12.80
6	E	2035-04-08T02:44:55.972		5.04	-54.20	41868.70	12.28		
5	E	2035-04-08T02:45:21.486		4.96x	-54.28	42185.80	12.30		
4	E	2035-04-08T02:45:56.910		4.85x	-54.39	42608.78	12.30		
alpha	E	2035-04-08T02:48:49.076		4.30x	-54.92	44737.14	12.36		
beta	E	2035-04-08T02:50:04.087		4.07x	-55.15	45661.76	12.38		
eta	E	2035-04-08T02:52:06.208		3.68x	-55.52	47176.12	12.41		
gamma	E	2035-04-08T02:52:42.869		3.56x	-55.63	47631.24	12.42		
delta	E	2035-04-08T02:53:36.720		3.39x	-55.79	48300.35	12.43		
lambda	E	2035-04-08T02:55:55.409		2.95x	-56.21	50026.71	12.46		
epsilon	E	2035-04-08T02:56:58.362		2.75x	-56.39	50811.74	12.49		