

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:15:24.930
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032

Uranus 2034-02-11T00:15:24 K13.31 G15.19 PgtRgt

ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s

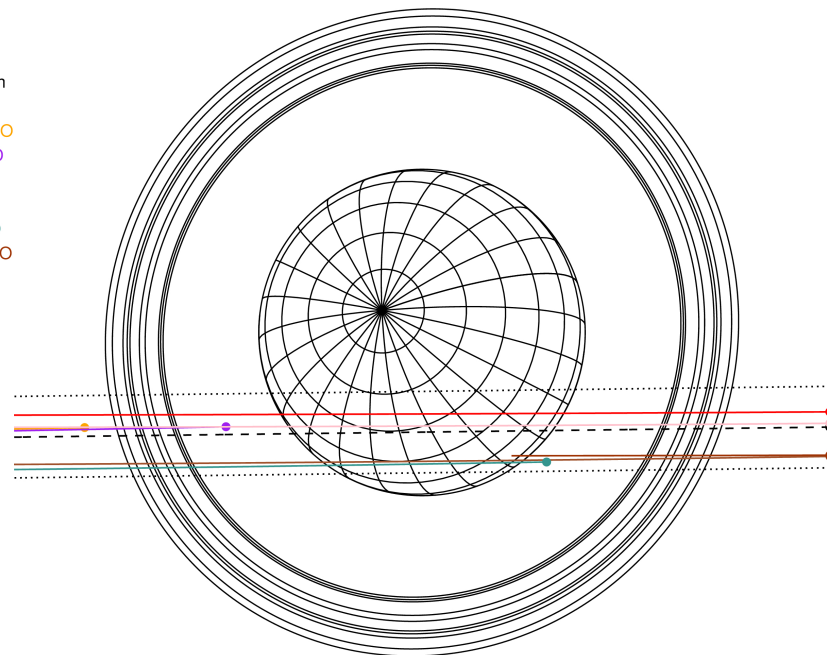
RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 134.91
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09

Uranus 2034-02-11T00:15:24 K13.31 G15.19
 PgtRgt



2034-02-11T00:15:24.9300 α: 06 08 09.1250 δ: +23 42 03.245 C/A 1.169° PA 0.71 deg v_sky -12.78 km/s D 18.30 AU
 Credit: Styled after SORA/Lucky Star

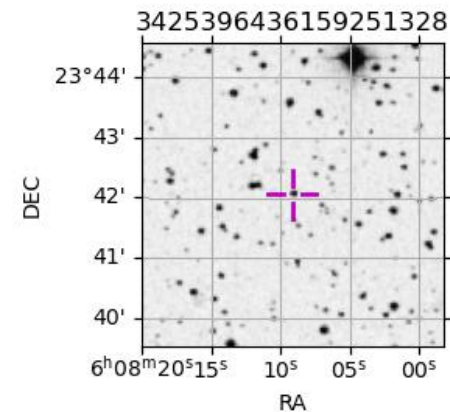
Earth
 PIC
 KPNO
 MCD
 TEN
 RIO
 ESO
 SAAO



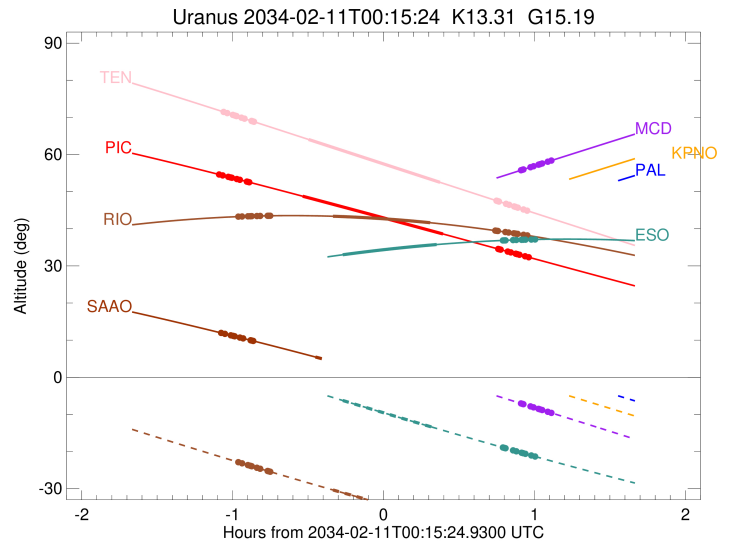
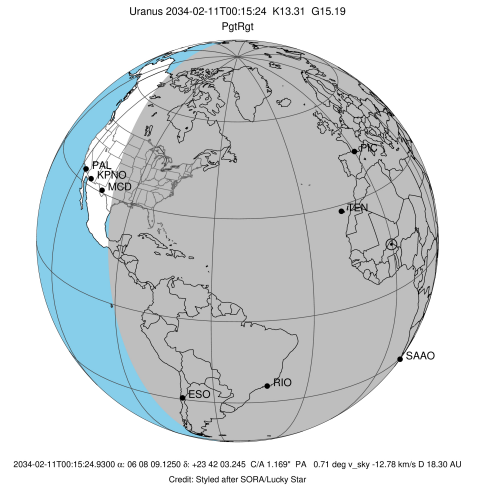
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	+++++	+ +	+++++	FEB 10 23:09 - FEB 11 01:12	PieRie
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PNO	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			+++++	FEB 11 01:10 - FEB 11 01:21	PnnRne
TEN	Teide Obs./Tenerife	28.3	343.5	+++++	+ +	+++++	FEB 10 23:11 - FEB 11 01:12	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	+++++	+ +	+++++	FEB 10 23:17 - FEB 11 01:12	PieRie
ESO	European Southern Obs	-29.3	289.3		+ +	+++++	FEB 10 23:59 - FEB 11 01:15	PieRne
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++	+		FEB 10 23:10 - FEB 10 23:48	PinRin
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

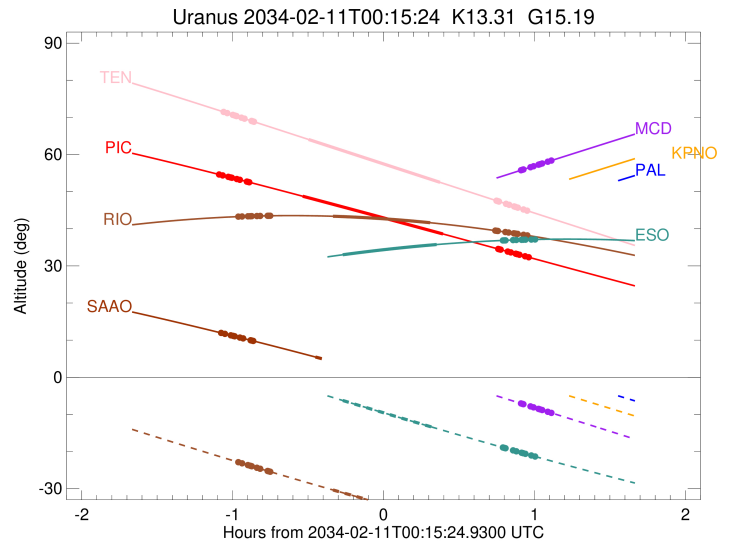
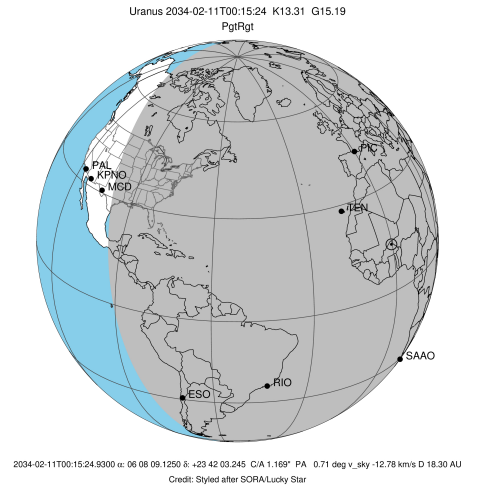


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:10:50.730
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 135.74
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.961
 C/A sky separation (km) : 12756.5
 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_itrfr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



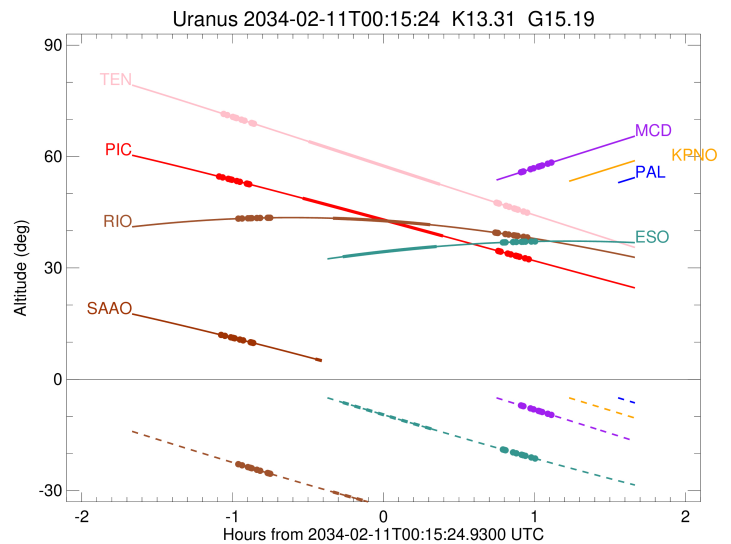
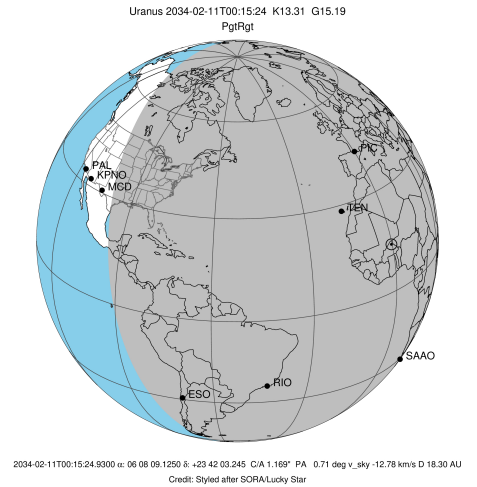
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-02-10T23:09:40.782		54.69	-58.21	51464.63	-13.07		
lambda	I	2034-02-10T23:11:31.025		54.37	-58.37	50026.71	-13.03		
delta	I	2034-02-10T23:13:43.709		53.99	-58.57	48300.35	-12.99		
gamma	I	2034-02-10T23:14:35.284		53.84	-58.65	47630.64	-12.98		
eta	I	2034-02-10T23:15:10.323		53.74	-58.70	47176.12	-12.97		
beta	I	2034-02-10T23:17:08.931		53.40	-58.87	45641.40	-12.93		
alpha	I	2034-02-10T23:18:20.947		53.19	-58.97	44706.83	-12.90		
4	I	2034-02-10T23:21:03.854		52.71	-59.18	42615.39	-12.84		
5	I	2034-02-10T23:21:36.961		52.62	-59.23	42197.05	-12.82		
6	I	2034-02-10T23:22:04.924		52.53	-59.26	41837.48	-12.82		
Uranus	I	2034-02-10T23:43:16.575		48.77	-60.59	25019.89		-16.27	-17.00
Uranus	E	2034-02-11T00:39:05.267		38.60	-60.79	25414.54		8.24	8.63
6	E	2034-02-11T01:01:01.369		34.56	-59.54	41861.72	12.68		
5	E	2034-02-11T01:01:30.039		34.47	-59.51	42224.97	12.68		
4	E	2034-02-11T01:01:55.692		34.39	-59.48	42540.91	12.70		
alpha	E	2034-02-11T01:04:48.985		33.86	-59.26	44745.72	12.76		
beta	E	2034-02-11T01:06:01.607		33.64	-59.16	45675.79	12.78		
eta	E	2034-02-11T01:07:58.952		33.28	-59.01	47176.12	12.81		
gamma	E	2034-02-11T01:08:33.671		33.17	-58.96	47620.97	12.82		
delta	E	2034-02-11T01:09:26.651		33.01	-58.89	48300.35	12.83		
lambda	E	2034-02-11T01:11:41.049		32.60	-58.70	50026.71	12.86		
epsilon	E	2034-02-11T01:12:56.103		32.37	-58.59	50992.47	12.90		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:20:46.970
 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 : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 134.93
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.064
 C/A sky separation (km) : 14119.4
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



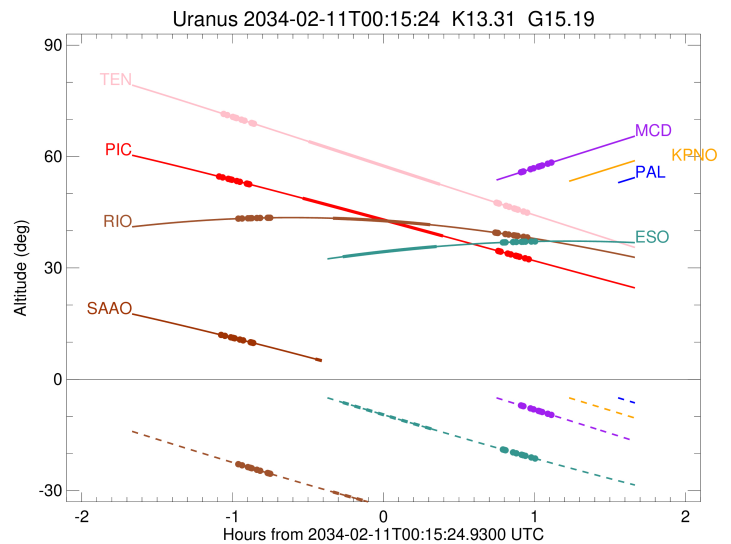
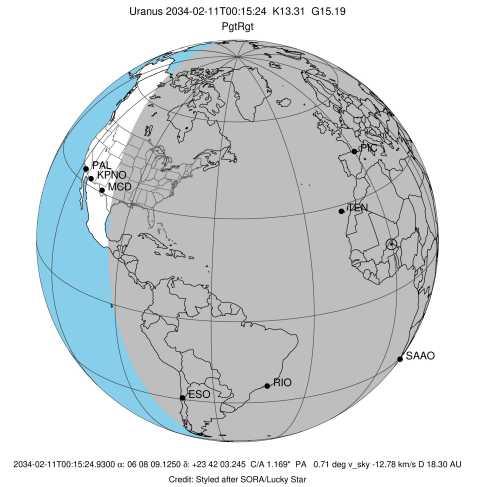
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-02-10T23:19:57.989		32.10	15.26x	51467.36	-12.86		
lambda	I	2034-02-10T23:21:50.290		32.50	14.90x	50026.71	-12.81		
delta	I	2034-02-10T23:24:05.217		32.98	14.47x	48300.35	-12.77		
gamma	I	2034-02-10T23:24:57.676		33.17	14.30x	47630.60	-12.76		
eta	I	2034-02-10T23:25:33.314		33.29	14.19x	47176.12	-12.75		
beta	I	2034-02-10T23:27:33.985		33.72	13.80x	45641.35	-12.71		
alpha	I	2034-02-10T23:28:47.229		33.98	13.56x	44707.32	-12.68		
4	I	2034-02-10T23:31:33.118		34.57	13.02x	42615.56	-12.61		
5	I	2034-02-10T23:32:06.932		34.69	12.91x	42195.81	-12.59		
6	I	2034-02-10T23:32:35.253		34.79	12.82x	41838.24	-12.59		
Uranus	I	2034-02-10T23:54:20.496		39.44	8.53x	25022.31		-16.23	-16.96
Uranus	E	2034-02-11T00:47:49.707		50.97	-2.40x	25451.20		7.11	7.44
6	E	2034-02-11T01:10:04.581		55.77	-7.05	41863.48	12.69		
5	E	2034-02-11T01:10:32.789		55.87	-7.15	42220.90	12.69		
4	E	2034-02-11T01:10:58.865		55.97	-7.24	42542.67	12.71		
alpha	E	2034-02-11T01:13:51.791		56.59	-7.85	44746.69	12.79		
beta	E	2034-02-11T01:15:04.098		56.85	-8.10	45675.11	12.82		
eta	E	2034-02-11T01:17:01.062		57.27	-8.51	47176.12	12.86		
gamma	E	2034-02-11T01:17:35.630		57.39	-8.64	47620.96	12.87		
delta	E	2034-02-11T01:18:28.363		57.58	-8.82	48300.35	12.89		
lambda	E	2034-02-11T01:20:42.032		58.06	-9.29	50026.71	12.94		
epsilon	E	2034-02-11T01:21:57.920		58.34	-9.56	51009.33	12.99		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:11:22.900
 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 : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 135.78
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.104
 C/A sky separation (km) : 14650.5
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



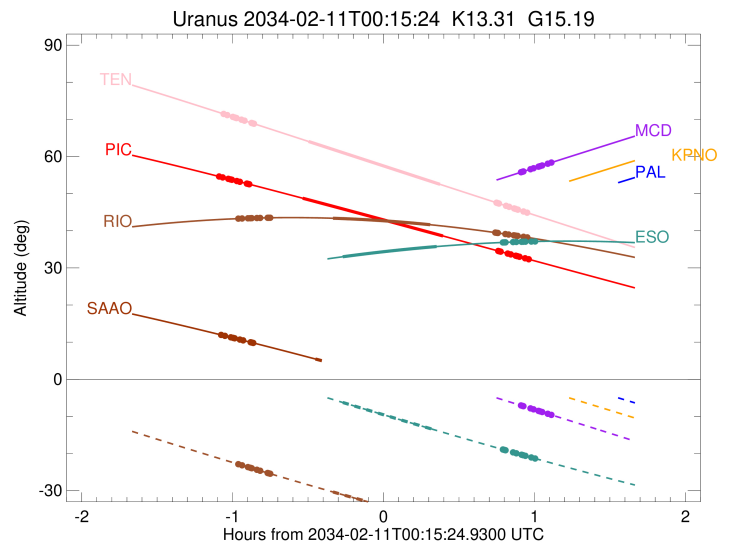
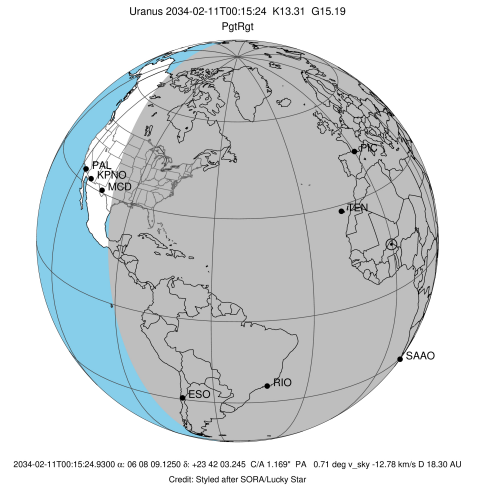
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-02-10T23:11:28.506		71.56	-57.02	51473.98	-13.04		
lambda	I	2034-02-10T23:13:19.796		71.16	-57.40	50026.71	-12.99		
delta	I	2034-02-10T23:15:32.975		70.67	-57.87	48300.35	-12.94		
gamma	I	2034-02-10T23:16:24.785		70.48	-58.05	47630.52	-12.92		
eta	I	2034-02-10T23:16:59.978		70.36	-58.17	47176.12	-12.90		
beta	I	2034-02-10T23:18:59.220		69.92	-58.58	45641.26	-12.85		
alpha	I	2034-02-10T23:20:11.552		69.66	-58.83	44708.23	-12.82		
4	I	2034-02-10T23:22:55.729		69.06	-59.39	42615.82	-12.74		
5	I	2034-02-10T23:23:29.346		68.93	-59.51	42193.79	-12.72		
6	I	2034-02-10T23:23:57.123		68.83	-59.60	41839.49	-12.71		
Uranus	I	2034-02-10T23:45:37.532		64.06	-63.94	25026.47		-16.17	-16.89
Uranus	E	2034-02-11T00:37:52.454		52.51	-72.84	25454.82		6.98	7.31
6	E	2034-02-11T01:00:20.554		47.56	-75.19	41863.39	12.59		
5	E	2034-02-11T01:00:48.993		47.45	-75.23	42221.13	12.60		
4	E	2034-02-11T01:01:15.236		47.36	-75.26	42542.57	12.62		
alpha	E	2034-02-11T01:04:09.432		46.72	-75.44	44746.62	12.69		
beta	E	2034-02-11T01:05:22.278		46.45	-75.51	45675.17	12.72		
eta	E	2034-02-11T01:07:20.102		46.02	-75.61	47176.12	12.77		
gamma	E	2034-02-11T01:07:54.928		45.89	-75.64	47620.96	12.78		
delta	E	2034-02-11T01:08:48.054		45.70	-75.68	48300.35	12.80		
lambda	E	2034-02-11T01:11:02.734		45.20	-75.76	50026.71	12.84		
epsilon	E	2034-02-11T01:12:19.044		44.92	-75.80	51007.25	12.89		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:14:11.890
 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 : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 135.40
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.521
 C/A sky separation (km) : 20178.9
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



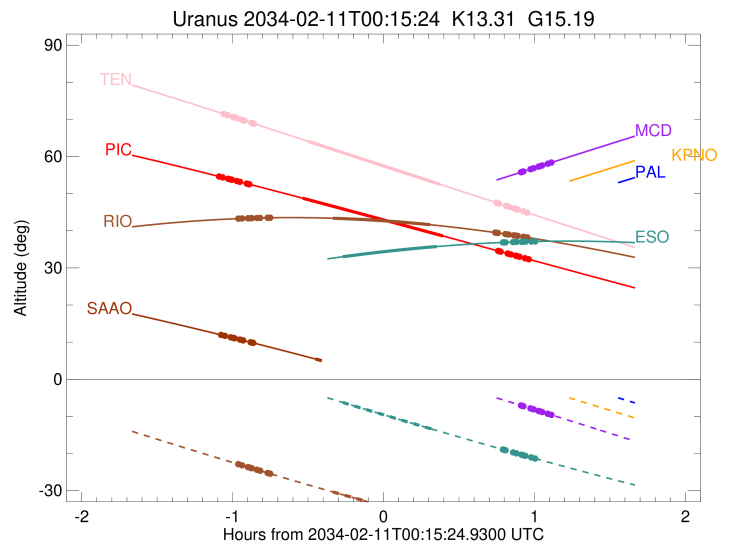
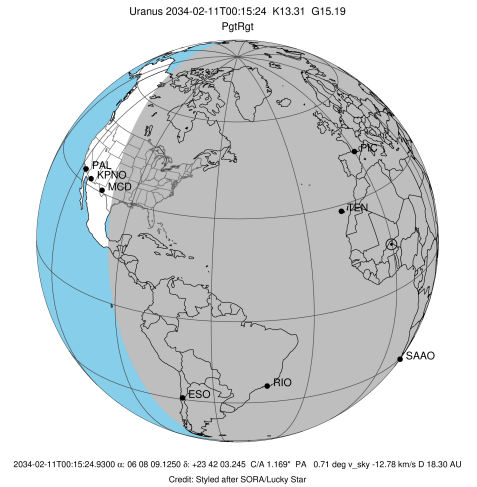
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-02-10T23:17:15.093		43.26	-22.79	51498.99	-12.54		
lambda	I	2034-02-10T23:19:13.021		43.31	-23.19	50026.71	-12.45		
delta	I	2034-02-10T23:21:32.195		43.37	-23.66	48300.35	-12.36		
gamma	I	2034-02-10T23:22:26.515		43.38	-23.84	47630.10	-12.32		
eta	I	2034-02-10T23:23:03.405		43.40	-23.97	47176.12	-12.29		
beta	I	2034-02-10T23:25:08.840		43.44	-24.39	45641.06	-12.20		
alpha	I	2034-02-10T23:26:24.819		43.46	-24.65	44712.54	-12.13		
4	I	2034-02-10T23:29:19.298		43.50	-25.23	42616.53	-11.97		
5	I	2034-02-10T23:29:55.767		43.50	-25.36	42184.53	-11.92		
6	I	2034-02-10T23:30:24.088		43.51	-25.45	41845.49	-11.91		
Uranus	I	2034-02-10T23:55:20.404		43.37	-30.36	25106.29		-14.84	-15.51
Uranus	E	2034-02-11T00:33:59.664		41.63	-37.48	25547.18		2.34	2.45
6	E	2034-02-11T00:59:51.623		39.51	-41.79	41868.17	11.87		
5	E	2034-02-11T01:00:20.409		39.46	-41.87	42209.44	11.88		
4	E	2034-02-11T01:00:49.551		39.42	-41.94	42548.09	11.92		
alpha	E	2034-02-11T01:03:52.887		39.12	-42.42	44749.00	12.09		
beta	E	2034-02-11T01:05:08.978		38.99	-42.62	45673.07	12.14		
eta	E	2034-02-11T01:07:12.294		38.78	-42.93	47176.12	12.24		
gamma	E	2034-02-11T01:07:48.603		38.72	-43.03	47620.99	12.27		
delta	E	2034-02-11T01:08:43.906		38.62	-43.17	48300.35	12.30		
lambda	E	2034-02-11T01:11:03.718		38.38	-43.52	50026.71	12.39		
epsilon	E	2034-02-11T01:12:26.467		38.23	-43.72	51054.06	12.48		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:17:26.420
 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 : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 135.05
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.552
 C/A sky separation (km) : 20599.6
 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_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	2034-02-10T23:20:28.897		28.87	1.82x	51499.73	-12.41		
lambda	I	2034-02-10T23:22:28.116		29.11	1.40x	50026.71	-12.32		
delta	I	2034-02-10T23:24:48.772		29.39	0.91x	48300.35	-12.23		
gamma	I	2034-02-10T23:25:43.680		29.49	0.72x	47630.08	-12.19		
eta	I	2034-02-10T23:26:20.972		29.57	0.58x	47176.12	-12.16		
beta	I	2034-02-10T23:28:27.800		29.81	0.14x	45641.06	-12.06		
alpha	I	2034-02-10T23:29:44.629		29.96	-0.13x	44712.72	-12.00		
4	I	2034-02-10T23:32:41.175		30.30	-0.75x	42616.54	-11.83		
5	I	2034-02-10T23:33:18.111		30.37	-0.87x	42184.14	-11.78		
6	I	2034-02-10T23:33:46.723		30.42	-0.97x	41845.75	-11.77		
Uranus	I	2034-02-10T23:59:14.502		33.01	-6.26	25115.26		-14.68	-15.35
Uranus	E	2034-02-11T00:36:34.952		35.76	-13.80	25551.89		1.82	1.90
6	E	2034-02-11T01:02:53.933		36.86	-18.93	41868.67	11.79		
5	E	2034-02-11T01:03:22.757		36.87	-19.02	42208.12	11.80		
4	E	2034-02-11T01:03:52.240		36.88	-19.11	42548.76	11.85		
alpha	E	2034-02-11T01:06:56.612		36.96	-19.70	44749.24	12.02		
beta	E	2034-02-11T01:08:13.066		36.99	-19.94	45672.80	12.08		
eta	E	2034-02-11T01:10:16.990		37.03	-20.33	47176.12	12.18		
gamma	E	2034-02-11T01:10:53.460		37.04	-20.44	47621.00	12.21		
delta	E	2034-02-11T01:11:48.997		37.06	-20.62	48300.35	12.25		
lambda	E	2034-02-11T01:14:09.349		37.10	-21.06	50026.71	12.35		
epsilon	E	2034-02-11T01:15:32.856		37.12	-21.32	51059.92	12.44		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-02-11T00:08:57.630
 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 : 3425396436159251328
 2Mass ID (if available) : 06080912+2342032
 ICRS Star Coord at Epoch: 06h 08m 09.12498s +23:42:03.24473s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.315
 G magnitude : 15.190
 RP magnitude : 14.551
 BP magnitude : 15.651
 DUPflag : 0
 Distance (au) : 18.296
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.78
 Sun-Target sep (deg) : 130.01
 Sun-Moon sep (deg) : 135.40
 B (ring opening deg) : 73.72
 PA of pole (deg) : 61.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.456
 C/A sky separation (km) : 19314.7
 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_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	2034-02-10T23:10:25.494		12.02	-43.48	51497.19	-12.44		
lambda	I	2034-02-10T23:12:24.161		11.69	-43.43	50026.71	-12.36		
delta	I	2034-02-10T23:14:44.325		11.30	-43.37	48300.35	-12.27		
gamma	I	2034-02-10T23:15:39.010		11.14	-43.34	47630.14	-12.24		
eta	I	2034-02-10T23:16:16.147		11.04	-43.32	47176.12	-12.21		
beta	I	2034-02-10T23:18:22.367		10.68	-43.25	45641.06	-12.12		
alpha	I	2034-02-10T23:19:38.819		10.47	-43.21	44712.13	-12.07		
4	I	2034-02-10T23:22:34.144		9.97	-43.10	42616.50	-11.91		
5	I	2034-02-10T23:23:10.714		9.87	-43.08	42185.41	-11.87		
6	I	2034-02-10T23:23:39.280		9.78	-43.06	41844.89	-11.86		
Uranus	I	2034-02-10T23:48:18.588		5.47	-41.73	25089.27		-15.13	-15.81
Uranus	E	2034-02-11T00:30:34.072	-2.33x	-37.95	25535.29			3.32	3.47
6	E	2034-02-11T00:56:18.077	-7.27x	-34.86	41867.22		11.71		
5	E	2034-02-11T00:56:47.552	-7.37x	-34.79	42211.85		11.72		
4	E	2034-02-11T00:57:16.828	-7.46x	-34.73	42546.88		11.75		
alpha	E	2034-02-11T01:00:23.058	-8.07x	-34.32	44748.54		11.89		
beta	E	2034-02-11T01:01:40.477	-8.32x	-34.15	45673.53		11.94		
eta	E	2034-02-11T01:03:45.901	-8.73x	-33.87	47176.12		12.02		
gamma	E	2034-02-11T01:04:22.863	-8.85x	-33.79	47620.98		12.05		
delta	E	2034-02-11T01:05:19.183	-9.03x	-33.66	48300.35		12.08		
lambda	E	2034-02-11T01:07:41.655	-9.50x	-33.33	50026.71		12.15		
epsilon	E	2034-02-11T01:09:05.190	-9.77x	-33.14	51043.71		12.23		