

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2026-03-09T21:55:45.970
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 57079977925186304
 2Mass ID (if available) : 03412691+1926520

ICRS Star Coord at Epoch: 03h 41m 26.89019s +19:26:51.35607s

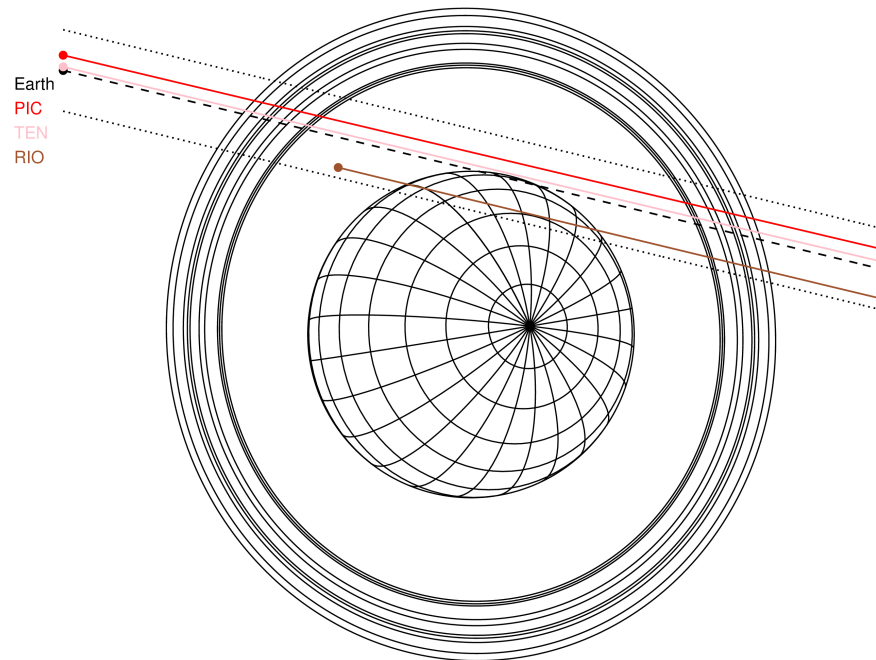
RUWE (>1.4 is poor) : 0.90
 K magnitude : 13.493
 G magnitude : 17.579
 RP magnitude : 16.386
 BP magnitude : 19.075
 DUPflag : 0
 Distance (au) : 19.818
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.18
 Sun-Target sep (deg) : 68.62
 Sun-Moon sep (deg) : 172.51
 B (ring opening deg) : 68.63
 PA of pole (deg) : -81.92

#	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



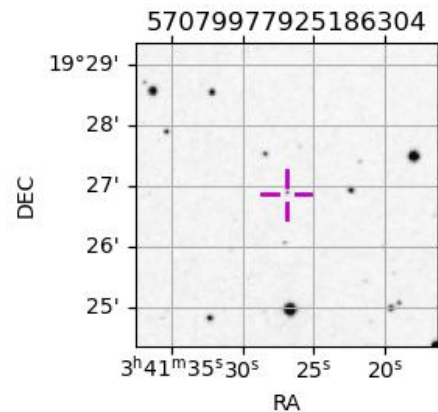
2026-03-09T21:55:45.9700 ex: 03 41 26.8902 s: +19 26 51.356 C/A 1.750° PA 166.36 deg v_sky +17.18 km/s D 19.82 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2026-03-09T21:55:45 K13.49 G17.58 PgtRgt

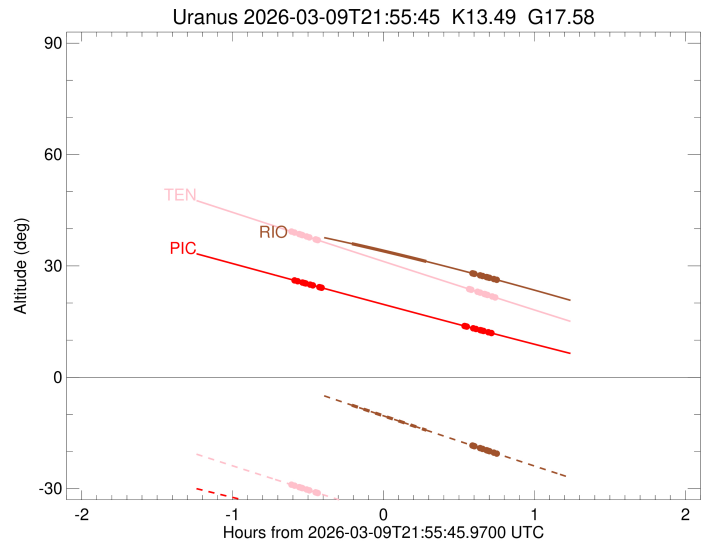
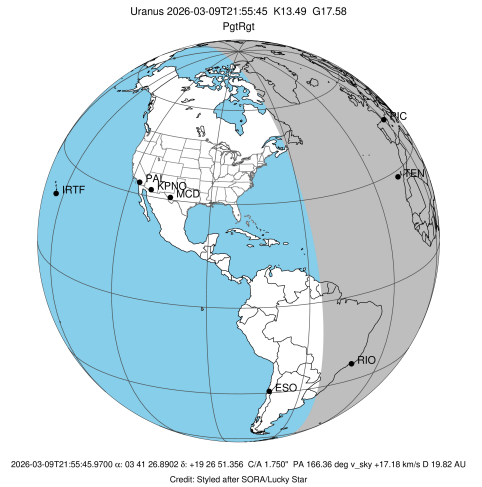


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++		+++++	MAR 09 21:20 - MAR 09 22:38	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	+++++		+++++	MAR 09 21:19 - MAR 09 22:40	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		+ +	+++++	MAR 09 21:43 - MAR 09 22:40	PieRne
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					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2026-03-09T22:00:51.440
 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 : 57079977925186304
 2Mass ID (if available) : 03412691+1926520
 ICRS Star Coord at Epoch: 03h 41m 26.89019s +19:26:51.35607s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 13.493
 G magnitude : 17.579
 RP magnitude : 16.386
 BP magnitude : 19.075
 DUPflag : 0
 Distance (au) : 19.818
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.18
 Sun-Target sep (deg) : 68.62
 Sun-Moon sep (deg) : 171.75
 B (ring opening deg) : 68.63
 PA of pole (deg) : -81.92
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.933
 C/A sky separation (km) : 27789.3
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk

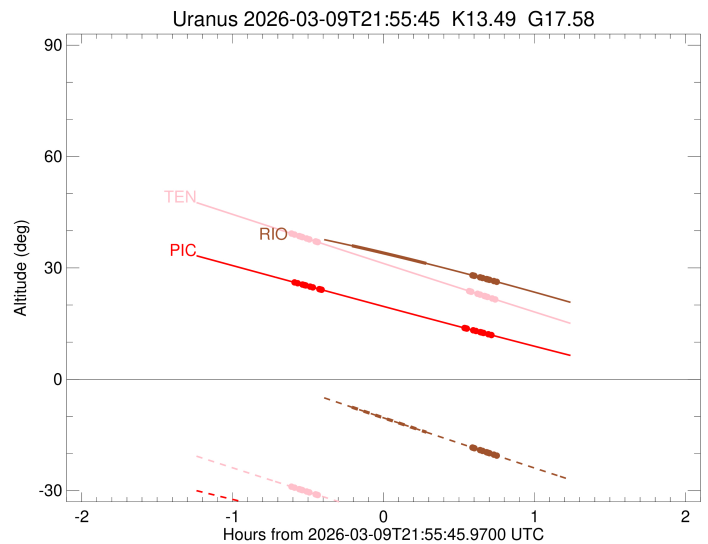
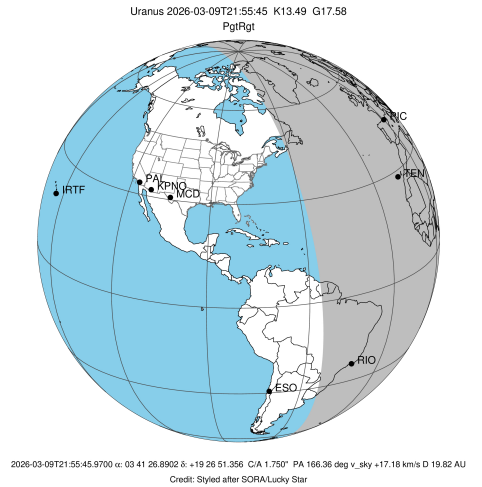


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2026-03-09T21:20:51.695		26.01	-36.32	50746.67	-15.11		
lambda	I	2026-03-09T21:21:39.464		25.87	-36.44	50026.71	-15.02		
delta	I	2026-03-09T21:23:35.323		25.51	-36.73	48300.35	-14.77		
gamma	I	2026-03-09T21:24:21.445		25.37	-36.85	47621.43	-14.67		
eta	I	2026-03-09T21:24:51.885		25.28	-36.93	47176.12	-14.59		
beta	I	2026-03-09T21:26:37.162		24.95	-37.19	45654.69	-14.33		
alpha	I	2026-03-09T21:27:43.770		24.75	-37.36	44704.23	-14.14		
4	I	2026-03-09T21:30:19.586		24.27	-37.74	42541.26	-13.66		
5	I	2026-03-09T21:30:47.390		24.19	-37.81	42167.46	-13.55		
6	I	2026-03-09T21:31:09.403		24.12	-37.87	41870.72	-13.48		

No planet occultations

6	E	2026-03-09T22:27:55.906		13.82	-45.32	41807.77	13.55		
5	E	2026-03-09T22:28:23.177		13.74	-45.37	42199.81	13.63		
4	E	2026-03-09T22:28:53.285		13.65	-45.43	42608.91	13.74		
alpha	E	2026-03-09T22:31:27.222		13.19	-45.71	44751.62	14.23		
beta	E	2026-03-09T22:32:31.845		13.00	-45.83	45681.17	14.42		
eta	E	2026-03-09T22:34:14.503		12.70	-46.01	47176.12	14.70		
gamma	E	2026-03-09T22:34:45.295		12.61	-46.07	47629.83	14.77		
delta	E	2026-03-09T22:35:30.516		12.47	-46.15	48300.35	14.88		
lambda	E	2026-03-09T22:37:25.507		12.13	-46.35	50026.71	15.14		
epsilon	E	2026-03-09T22:38:46.446		11.89	-46.49	51258.92	15.23		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2026-03-09T22:00:56.390
 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 : 57079977925186304
 2Mass ID (if available) : 03412691+1926520
 ICRS Star Coord at Epoch: 03h 41m 26.89019s +19:26:51.35607s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 13.493
 G magnitude : 17.579
 RP magnitude : 16.386
 BP magnitude : 19.075
 DUPflag : 0
 Distance (au) : 19.818
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.18
 Sun-Target sep (deg) : 68.62
 Sun-Moon sep (deg) : 171.95
 B (ring opening deg) : 68.63
 PA of pole (deg) : -81.92
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.803
 C/A sky separation (km) : 25918.8
 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

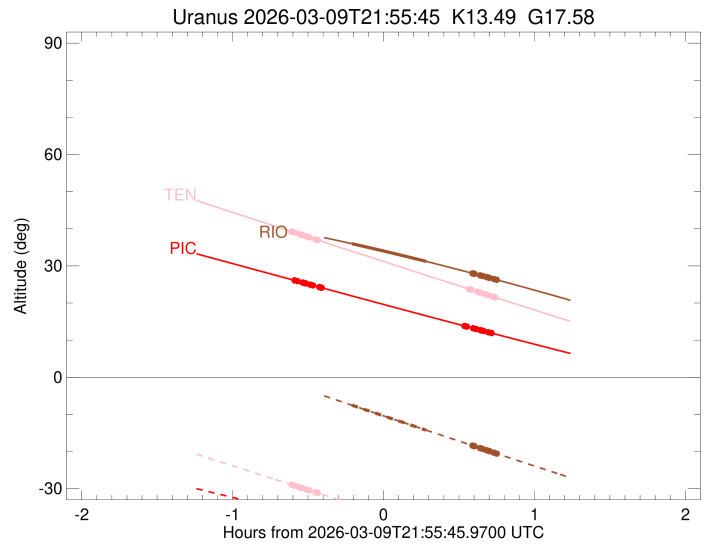
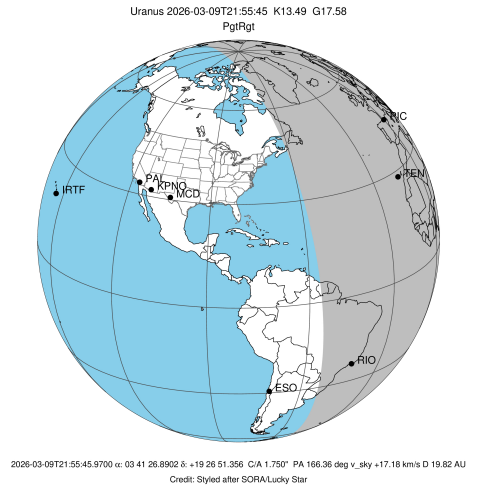


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2026-03-09T21:19:37.764		39.15	-29.03	50749.18	-15.42		
lambda	I	2026-03-09T21:20:24.707		38.98	-29.20	50026.71	-15.35		
delta	I	2026-03-09T21:22:17.934		38.56	-29.61	48300.35	-15.14		
gamma	I	2026-03-09T21:23:02.913		38.40	-29.77	47621.33	-15.05		
eta	I	2026-03-09T21:23:32.553		38.29	-29.87	47176.12	-14.99		
beta	I	2026-03-09T21:25:14.927		37.91	-30.24	45653.74	-14.77		
alpha	I	2026-03-09T21:26:19.478		37.68	-30.47	44702.65	-14.62		
4	I	2026-03-09T21:28:49.779		37.12	-31.01	42539.39	-14.22		
5	I	2026-03-09T21:29:16.192		37.03	-31.11	42170.05	-14.13		
6	I	2026-03-09T21:29:37.331		36.95	-31.18	41872.19	-14.07		

No planet occultations

6	E	2026-03-09T22:29:45.398		23.77	-43.77	41805.99	14.16		
5	E	2026-03-09T22:30:11.936		23.67	-43.86	42204.14	14.22		
4	E	2026-03-09T22:30:40.654		23.57	-43.96	42610.32	14.32		
alpha	E	2026-03-09T22:33:08.936		23.03	-44.45	44751.97	14.72		
beta	E	2026-03-09T22:34:11.456		22.81	-44.66	45681.23	14.88		
eta	E	2026-03-09T22:35:51.137		22.44	-45.00	47176.12	15.11		
gamma	E	2026-03-09T22:36:21.114		22.34	-45.10	47630.02	15.17		
delta	E	2026-03-09T22:37:05.159		22.18	-45.24	48300.35	15.27		
lambda	E	2026-03-09T22:38:57.439		21.77	-45.62	50026.71	15.48		
epsilon	E	2026-03-09T22:40:17.765		21.48	-45.88	51276.15	15.55		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2026-03-09T21:58:18.580
 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 : 57079977925186304
 2Mass ID (if available) : 03412691+1926520
 ICRS Star Coord at Epoch: 03h 41m 26.89019s +19:26:51.35607s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 13.493
 G magnitude : 17.579
 RP magnitude : 16.386
 BP magnitude : 19.075
 DUPflag : 0
 Distance (au) : 19.818
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.18
 Sun-Target sep (deg) : 68.62
 Sun-Moon sep (deg) : 172.75
 B (ring opening deg) : 68.63
 PA of pole (deg) : -81.92
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.427
 C/A sky separation (km) : 20504.5
 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_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	2026-03-09T21:14:12.440		40.08	-0.88x	50759.74	-16.29		
lambda	I	2026-03-09T21:14:57.457		39.99	-1.05x	50026.71	-16.26		
delta	I	2026-03-09T21:16:44.024		39.75	-1.46x	48300.35	-16.14		
gamma	I	2026-03-09T21:17:26.180		39.66	-1.62x	47621.12	-16.09		
eta	I	2026-03-09T21:17:53.873		39.60	-1.72x	47176.12	-16.05		
beta	I	2026-03-09T21:19:29.307		39.39	-2.09x	45651.29	-15.93		
alpha	I	2026-03-09T21:20:29.070		39.25	-2.32x	44698.64	-15.84		
4	I	2026-03-09T21:22:47.001		38.94	-2.85x	42534.93	-15.62		
5	I	2026-03-09T21:23:10.309		38.89	-2.93x	42177.91	-15.56		
6	I	2026-03-09T21:23:29.634		38.84	-3.01x	41875.48	-15.53		
Uranus	I	2026-03-09T21:43:15.615		35.97	-7.54	25524.79		-5.35	-5.61
Uranus	E	2026-03-09T22:12:47.458		31.20	-14.26	25197.24		17.84	18.63
6	E	2026-03-09T22:31:04.924		28.01	-18.39	41801.75	15.61		
5	E	2026-03-09T22:31:30.090		27.94	-18.48	42216.33	15.65		
4	E	2026-03-09T22:31:55.757		27.86	-18.58	42613.44	15.70		
alpha	E	2026-03-09T22:34:11.788		27.45	-19.09	44752.43	15.93		
beta	E	2026-03-09T22:35:09.633		27.28	-19.30	45681.09	16.02		
eta	E	2026-03-09T22:36:42.568		27.00	-19.65	47176.12	16.15		
gamma	E	2026-03-09T22:37:10.664		26.91	-19.76	47630.49	16.19		
delta	E	2026-03-09T22:37:51.968		26.79	-19.91	48300.35	16.24		
lambda	E	2026-03-09T22:39:37.824		26.47	-20.30	50026.71	16.37		
epsilon	E	2026-03-09T22:40:56.799		26.23	-20.60	51323.07	16.41		