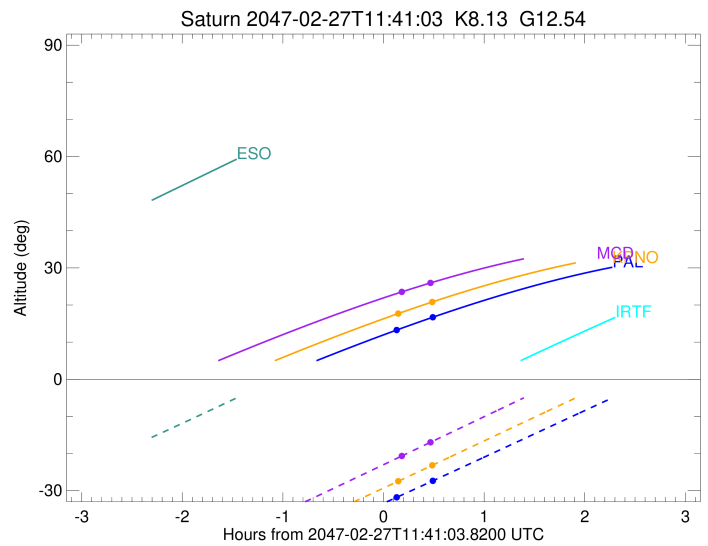
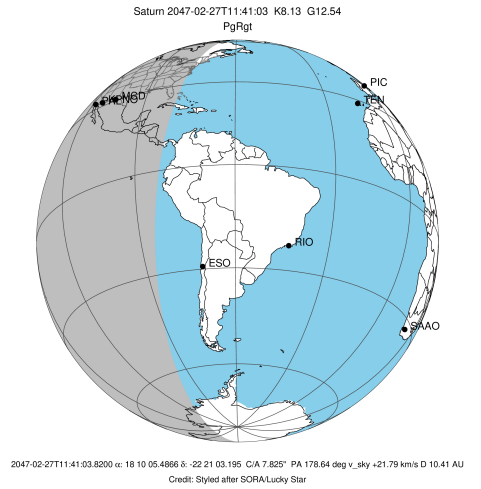



```

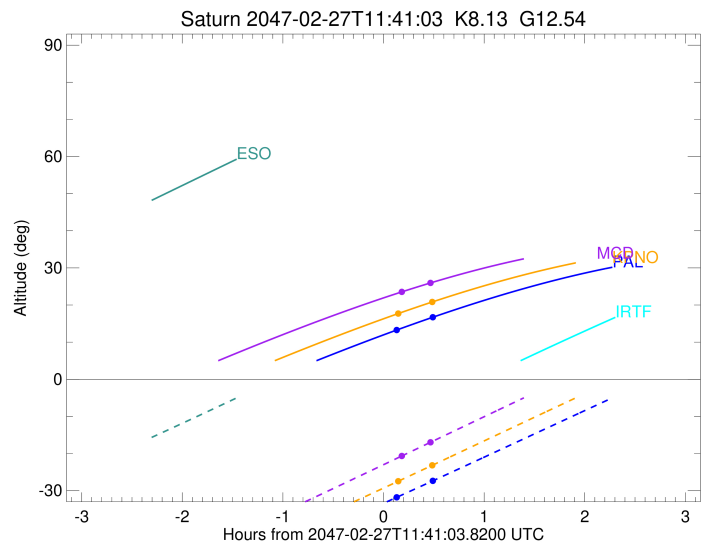
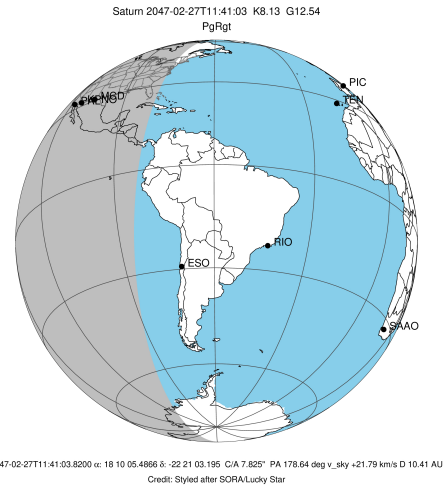
target                : Saturn
target radius (km)   : 60268.00
C/A epoch             : 2047-02-27T11:37:24.670
Event type            : PgRgt
: Saturn occs: geocentric, not topocentric
: Ring occs: geocentric, topocentric
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4066738506328321280
2Mass ID (if available) : 18100549-2221029
ICRS Star Coord at Epoch: 18h 10m 05.48663s -22:21:03.19463s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 8.131
G magnitude           : 12.537
RP magnitude          : 11.382
BP magnitude          : 13.966
DUPflag              : 0
Distance (au)         : 10.410
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 21.79
Sun-Target sep (deg)  : 65.81
Sun-Moon sep (deg)   : 96.01
B (ring opening deg) : 26.26
PA of pole (deg)     : 5.71
Pole direction: RA (deg): 40.60000
Dec (deg): 83.50000
C/A sky separation (") : 8.409
C/A sky separation (km) : 63491.2
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl.spk
Saturn_ring_plane.tf
sat378.bsp
sat286.bsp
vgr1.sat286.bsp
vgr2.sat286.bsp
HST1081HSPephemUTC.bsp
pfb10000r.bsp
cassini.bsp
earthstns_itrf93_040916.bsp
earth_200101_990628_predict.bpc
earth_720101_070426.bpc
cpck28Mar2008.tpc
pck.sat440.tpc
IAU_SATURN_for_RINGFIT.tpc
naif0012.tls
earth_flat_IAU.spk
  
```



b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-02-27T11:48:29.581		13.19	-31.89	140461.00	-2.37		
No planet occultations									
F ring	E	2047-02-27T12:11:10.387		16.82	-27.22	140461.00	2.37		

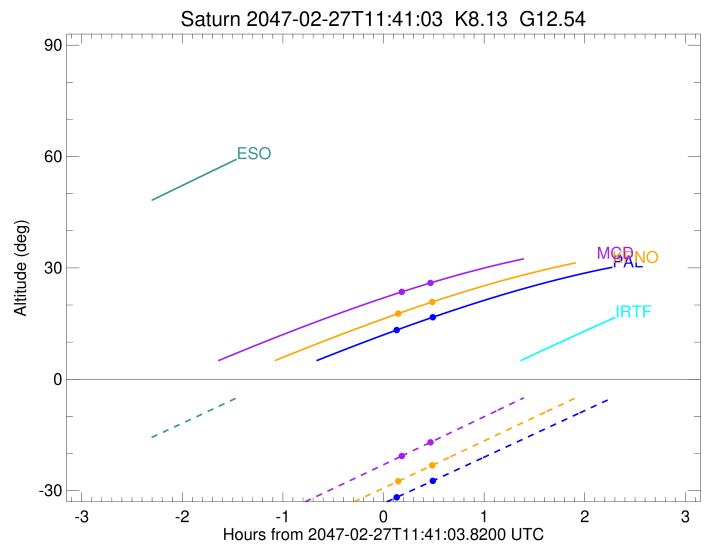
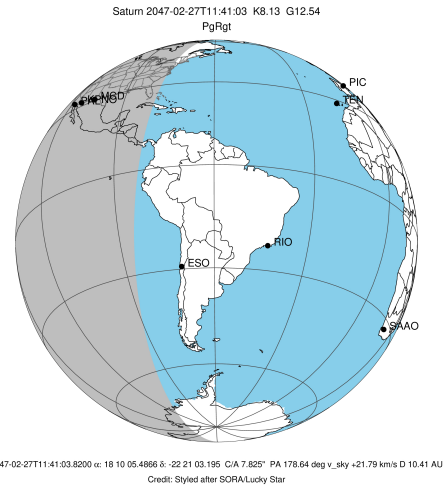
target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-02-27T11:37:35.270
 Event type : PgRgt
 : Saturn occs: geocentric, not topocentric
 : Ring occs: geocentric, topocentric
 Observer code : KPNO
 Location : Kitt Peak Natl Obs
 Latitude (deg) : 31.96333
 E. Longitude (deg) : 248.40000
 Altitude (km) : 2.120
 Gaia source ID : 4066738506328321280
 2Mass ID (if available) : 18100549-2221029
 ICRS Star Coord at Epoch: 18h 10m 05.48663s -22:21:03.19463s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 8.131
 G magnitude : 12.537
 RP magnitude : 11.382
 BP magnitude : 13.966
 DUPflag : 0
 Distance (au) : 10.410
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.79
 Sun-Target sep (deg) : 65.81
 Sun-Moon sep (deg) : 96.08
 B (ring opening deg) : 26.26
 PA of pole (deg) : 5.71
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 8.416
 C/A sky separation (km) : 63539.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 Saturn_ring_plane.tf
 sat378.bsp
 sat286.bsp
 vgr1.sat286.bsp
 vgr2.sat286.bsp
 HST1081HSPephemUTC.bsp
 pfb10000r.bsp
 cassini.bsp
 earthstns_itrf93_040916.bsp
 earth_200101_990628_predict.bpc
 earth_720101_070426.bpc
 cpck28Mar2008.tpc
 pck.sat440.tpc
 IAU_SATURN_for_RINGFIT.tpc
 naif0012.tls
 earth_flat_IAU.spk



b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-02-27T11:49:22.478		17.62	-27.57	140461.00	-2.24		
No planet occultations									
F ring	E	2047-02-27T12:10:52.388		20.93	-23.02	140461.00	2.24		

target : Saturn
 target radius (km) : 60268.00
 C/A epoch : 2047-02-27T11:37:56.330
 Event type : PgRgt
 : Saturn occs: geocentric, not 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 : 4066738506328321280
 2Mass ID (if available) : 18100549-2221029
 ICRS Star Coord at Epoch: 18h 10m 05.48663s -22:21:03.19463s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 8.131
 G magnitude : 12.537
 RP magnitude : 11.382
 BP magnitude : 13.966
 DUPflag : 0
 Distance (au) : 10.410
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.79
 Sun-Target sep (deg) : 65.81
 Sun-Moon sep (deg) : 96.17
 B (ring opening deg) : 26.26
 PA of pole (deg) : 5.71
 Pole direction: RA (deg): 40.60000
 Dec (deg): 83.50000
 C/A sky separation (") : 8.430
 C/A sky separation (km) : 63642.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 Saturn_ring_plane.tf
 sat378.bsp
 sat286.bsp
 vgr1.sat286.bsp
 vgr2.sat286.bsp
 HST1081HSPephemUTC.bsp
 pfb10000r.bsp
 cassini.bsp
 earthstns_itrf93_040916.bsp
 earth_200101_990628_predict.bpc
 earth_720101_070426.bpc
 cpck28Mar2008.tpc
 pck.sat440.tpc
 IAU_SATURN_for_RINGFIT.tpc
 naif0012.tls
 earth_flat_IAU.spk



b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
F ring	I	2047-02-27T11:51:23.461		23.46	-20.79	140461.00	-1.92		
No planet occultations									
F ring	E	2047-02-27T12:09:56.862		26.07	-16.79	140461.01	1.92		