

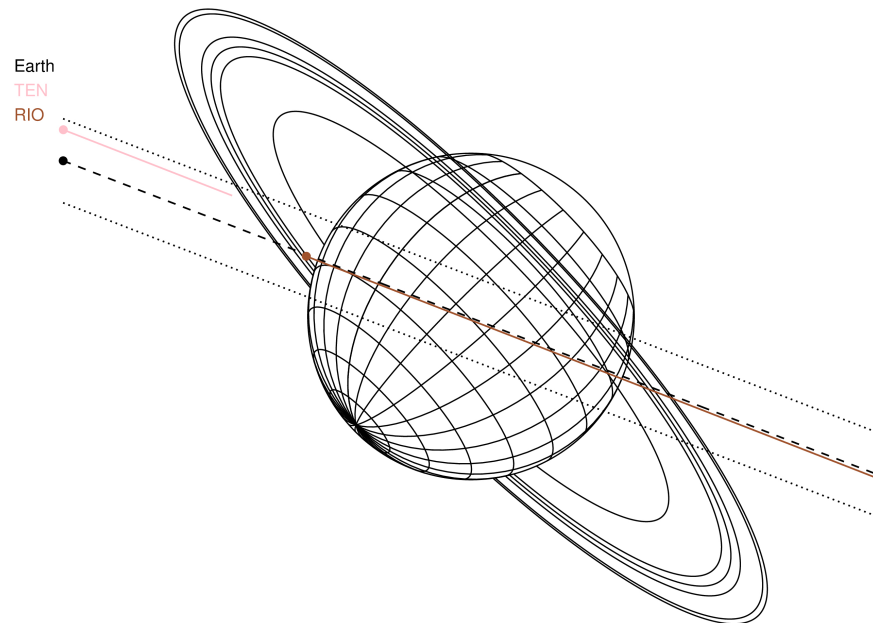
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2031-05-28T06:20:11.330
 Event type : PgtRgt
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 2551822525060002304
 2Mass ID (if available) : 00554014+0418206

Neptune 2031-05-28T06:20:11 K14.67 G16.41 PgtRgt

ICRS Star Coord at Epoch: 00h 55m 40.17326s +04:18:20.35873s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 14.671
 G magnitude : 16.406
 RP magnitude : 15.796
 BP magnitude : 16.856
 DUPflag : 0
 Distance (au) : 30.465
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.86
 Sun-Target sep (deg) : 51.87
 Sun-Moon sep (deg) : 127.81
 B (ring opening deg) : -14.33
 PA of pole (deg) : -46.67



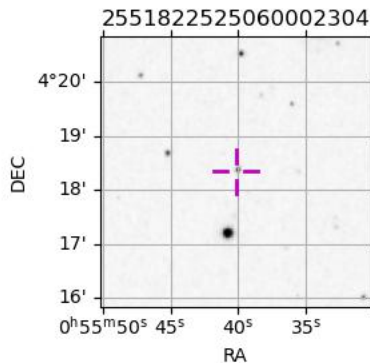
2031-05-28T06:20:11.3300 ex: 00 55 40.1733 s: +04 18 20.359 C/A 0.009° PA 338.74 deg v_sky +23.86 km/s D 30.47 AU
 Credit: Styled after SORA/Lucky Star



- 1 42000.0 Galle
- 2 53200.0 LeVerrier
- 3 55200.0 Lassell
- 4 57200.0 Arago
- 5 61953.0 Galatea
- 6 62933.0 Adams

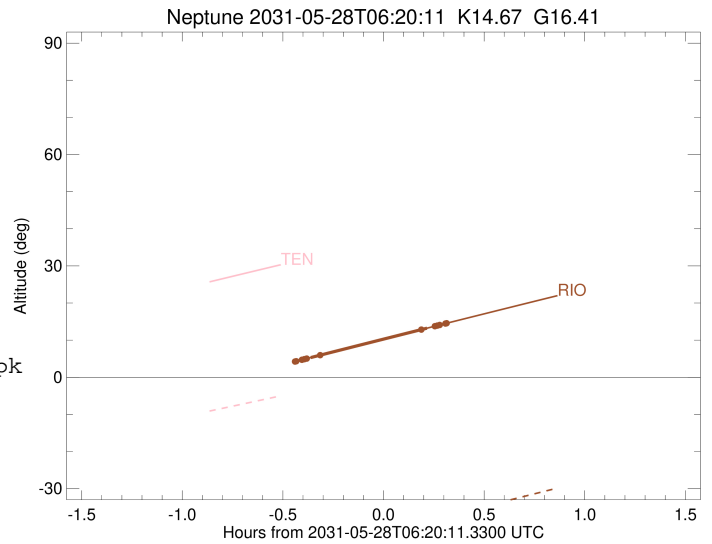
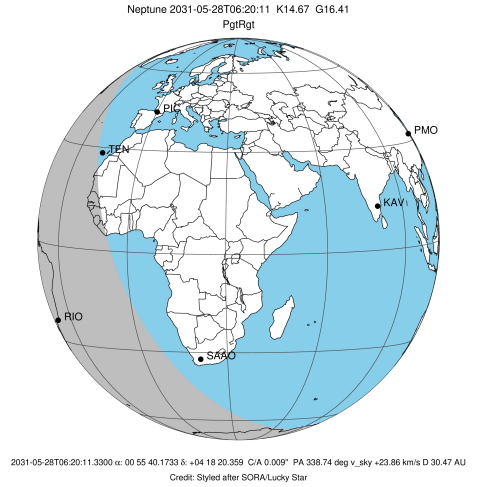
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

| 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 | | | | | 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 | | | | | PnnRnn |
| 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 | + | ++ | +++++ | MAY 28 05:57 - MAY 28 06:38 | PieRie |
| 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 |



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target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2031-05-28T06:15:47.970
Event type           : PgtRgt
: Neptune 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       : 2551822525060002304
2Mass ID (if available) : 00554014+0418206
ICRS Star Coord at Epoch: 00h 55m 40.17326s +04:18:20.35873s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 14.671
G magnitude           : 16.406
RP magnitude         : 15.796
BP magnitude         : 16.856
DUPflag              : 0
Distance (au)        : 30.465
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 23.86
Sun-Target sep (deg) : 51.87
Sun-Moon sep (deg)   : 127.40
B (ring opening deg) : -14.33
PA of pole (deg)     : -46.67
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.024
C/A sky separation (km) : 521.7
NAIF SPICE kernels   : RAJobs_U111+rgf16.spk
URKALLv1.spk
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
earthstns_itr93_040916.bsp
earth_200101_990628_predict.bpc
pck00010.tpc
pck.urall11.tpc.Neptune
naif0012.tls
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
earth_flat_IAU.spk
    
```



| Ring | I/E | UTC | b? | alt | alt-sun | radius | r-dot | lat-geo | lat-geodetic |
|-----------|-----|-------------------------|----|-------|---------|----------|--------|---------|--------------|
| Adams | I | 2031-05-28T05:53:53.991 | | 4.26x | -47.59 | 62933.00 | -46.60 | | |
| Galatea | I | 2031-05-28T05:54:15.021 | | 4.34x | -47.51 | 61953.00 | -46.60 | | |
| Arago | I | 2031-05-28T05:55:57.050 | | 4.73x | -47.12 | 57200.00 | -46.57 | | |
| Lassell | I | 2031-05-28T05:56:39.999 | | 4.89x | -46.96 | 55200.00 | -46.56 | | |
| LeVerrier | I | 2031-05-28T05:57:22.959 | | 5.05 | -46.79 | 53200.00 | -46.55 | | |
| Galle | I | 2031-05-28T06:01:23.799 | b | 5.98 | -45.88 | 42000.00 | -46.45 | | |
| Neptune | I | 2031-05-28T05:58:28.402 | | 5.31 | -46.55 | 24758.81 | | -25.78 | -26.55 |
| Neptune | E | 2031-05-28T06:33:09.094 | | 13.22 | -38.65 | 24759.66 | | 23.43 | 24.15 |
| Galle | E | 2031-05-28T06:31:22.302 | b | 12.82 | -39.05 | 42000.00 | 46.32 | | |
| LeVerrier | E | 2031-05-28T06:35:23.999 | | 13.73 | -38.14 | 53200.00 | 46.35 | | |
| Lassell | E | 2031-05-28T06:36:07.148 | | 13.90 | -37.97 | 55200.00 | 46.35 | | |
| Arago | E | 2031-05-28T06:36:50.296 | | 14.06 | -37.81 | 57200.00 | 46.35 | | |
| Galatea | E | 2031-05-28T06:38:32.832 | | 14.45 | -37.42 | 61953.00 | 46.35 | | |
| Adams | E | 2031-05-28T06:38:53.973 | | 14.53 | -37.34 | 62933.00 | 46.35 | | |