

target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2035-10-18T20:32:31.840
 Event type : PgtRgt
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 2566151184502925312
 2Mass ID (if available) : 01262017+0711593

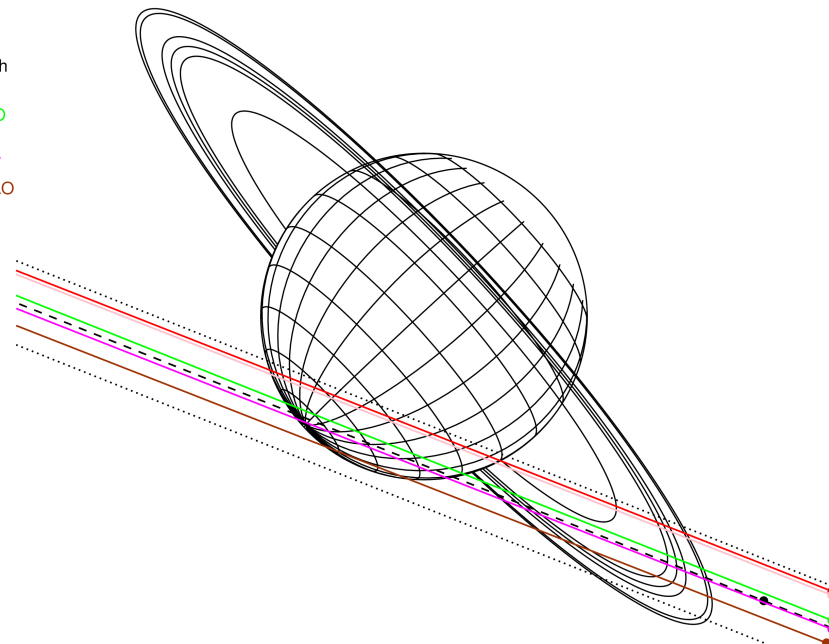
Neptune 2035-10-18T20:32:31 K9.53 G12.90 PgtRgt

ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
 RUWE (>1.4 is poor) : 1.42
 K magnitude : 9.534
 G magnitude : 12.901
 RP magnitude : 11.820
 BP magnitude : 14.090
 DUPflag : 0
 Distance (au) : 28.839
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -24.35
 Sun-Target sep (deg) : 177.23
 Sun-Moon sep (deg) : 25.32
 B (ring opening deg) : -10.73
 PA of pole (deg) : -47.52
 # a(km) ring



2035-10-18T20:32:31.8400 α: 01 26 20.7096 δ: +07 11 58.538 C/A 1.003° PA 338.27 deg v_sky -24.35 km/s D 28.84 AU
 Credit: Styled after SORA/Lucky Star

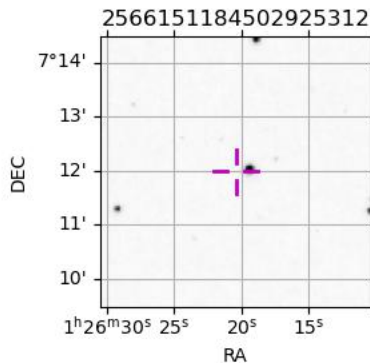
Earth
 PIC
 PMO
 TEN
 KAV
 SAAO



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

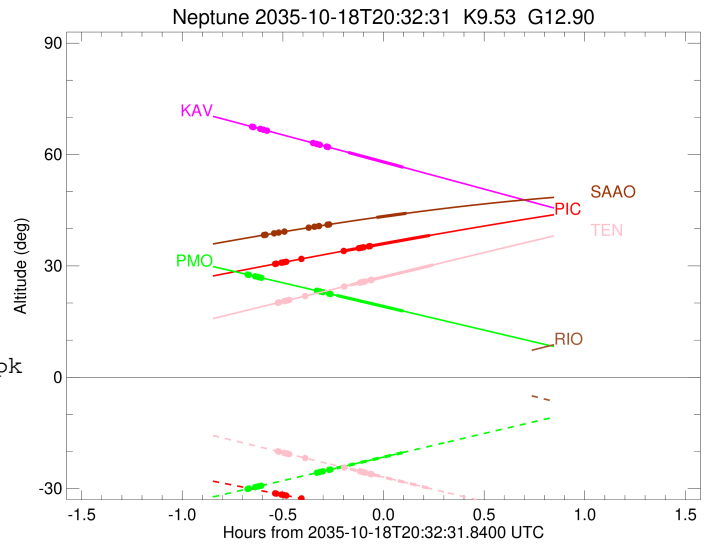
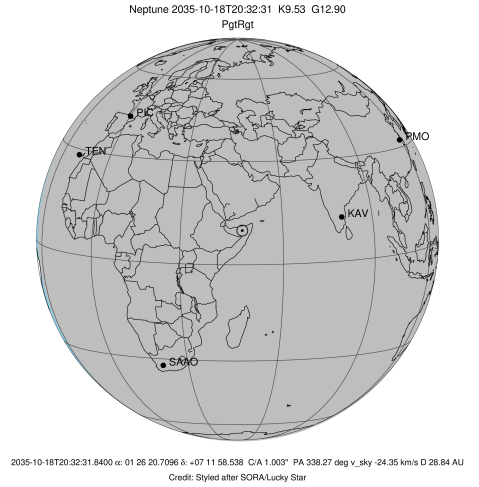
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

| Obs | Location | lat | Elon | Rings I | Planet | Rings E | Observed Events Interval | OEcode |
|------|-----------------------|-------|-------|-----------|--------|-----------|-----------------------------|--------|
| PIC | Pic du Midi | 42.9 | 0.1 | + + + + + | + + | | OCT 18 20:00 - OCT 18 20:46 | PieRin |
| PAL | Palomar Mt (200") | 33.4 | 243.1 | | | | | PnnRnn |
| PMO | Purple Mtn Obs. Nanki | 32.1 | 118.8 | + + + + + | + + | + + + + + | OCT 18 19:52 - OCT 18 20:38 | PieRie |
| 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 | + + + + + | + + | + | OCT 18 20:01 - OCT 18 20:47 | PieRie |
| IRTF | Mauna Kea/IRTF | 19.8 | 204.5 | | | | | PnnRnn |
| KAV | Kavalur Observatory | 12.6 | 78.8 | + + + + + | + + | + + + + + | OCT 18 19:53 - OCT 18 20:38 | PieRie |
| RIO | Rio de Janeiro | -22.9 | 316.8 | | | | | PnnRnn |
| 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 | + + + + + | + + | + + + + + | OCT 18 19:57 - OCT 18 20:39 | PieRie |
| MSO | Mt. Stromlo Observato | -35.3 | 149.0 | | | | | PnnRnn |



```

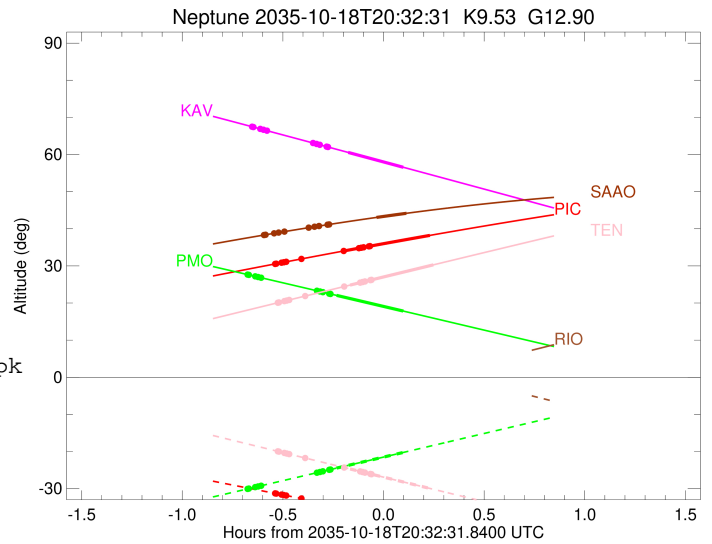
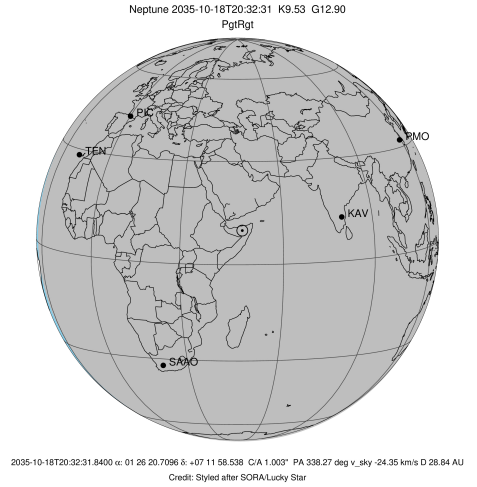
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-10-18T20:33:39.170
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 2566151184502925312
2Mass ID (if available) : 01262017+0711593
ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
RUWE (>1.4 is poor) : 1.42
K magnitude           : 9.534
G magnitude           : 12.901
RP magnitude          : 11.820
BP magnitude          : 14.090
DUPflag               : 0
Distance (au)         : 28.839
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.35
Sun-Target sep (deg) : 177.23
Sun-Moon sep (deg)   : 25.91
B (ring opening deg) : -10.73
PA of pole (deg)     : -47.52
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.771
C/A sky separation (km) : 16130.5
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.urall1.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 | 2035-10-18T20:00:34.576 | | 30.59 | -31.34 | 62933.00 | -51.86 | | |
| Galatea | I | 2035-10-18T20:00:53.538 | | 30.65 | -31.40 | 61953.00 | -51.51 | | |
| Arago | I | 2035-10-18T20:02:27.582 | | 30.92 | -31.67 | 57200.00 | -49.49 | | |
| Lassell | I | 2035-10-18T20:03:08.413 | | 31.04 | -31.79 | 55200.00 | -48.45 | | |
| LeVerrier | I | 2035-10-18T20:03:50.190 | | 31.16 | -31.91 | 53200.00 | -47.27 | | |
| Galle | I | 2035-10-18T20:08:16.017 | | 31.92 | -32.69 | 42000.00 | -35.62 | | |
| Neptune | I | 2035-10-18T20:20:53.868 | | 34.06 | -34.87 | 24763.09 | | -14.33 | -14.81 |
| Neptune | E | 2035-10-18T20:46:23.446 | | 38.22 | -39.15 | 24751.74 | | -64.50 | -65.25 |
| Galle | E | 2035-10-18T20:21:13.987 | b | 34.11 | -34.93 | 42000.04 | 35.78 | | |
| LeVerrier | E | 2035-10-18T20:25:38.139 | b | 34.85 | -35.68 | 53200.00 | 47.66 | | |
| Lassell | E | 2035-10-18T20:26:19.559 | b | 34.96 | -35.80 | 55200.00 | 48.89 | | |
| Arago | E | 2035-10-18T20:27:00.019 | b | 35.07 | -35.91 | 57200.00 | 49.96 | | |
| Galatea | E | 2035-10-18T20:28:33.144 | b | 35.33 | -36.17 | 61953.00 | 52.03 | | |
| Adams | E | 2035-10-18T20:28:51.914 | b | 35.38 | -36.23 | 62933.00 | 52.39 | | |

```

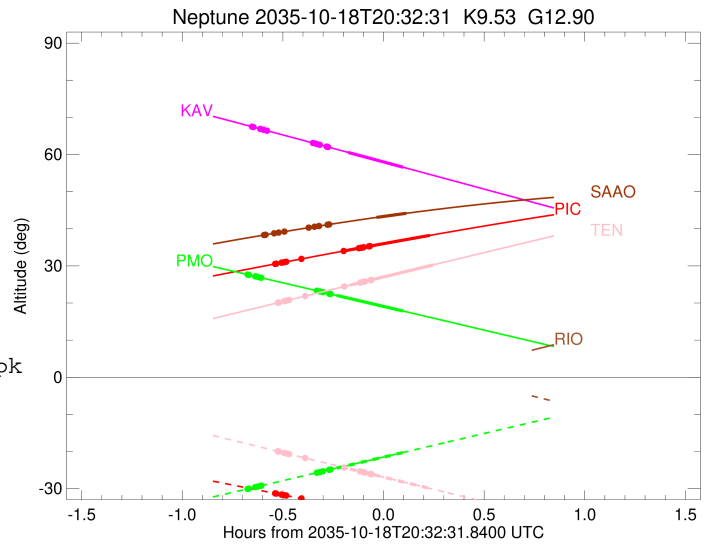
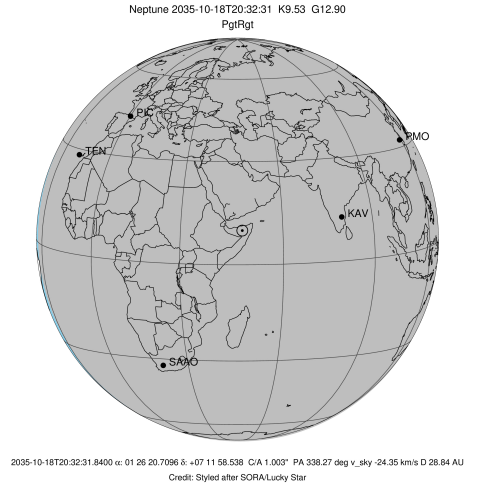
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-10-18T20:28:29.220
Event type           : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : PMO
Location             : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 2566151184502925312
2Mass ID (if available) : 01262017+0711593
ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
RUWE (>1.4 is poor) : 1.42
K magnitude           : 9.534
G magnitude           : 12.901
RP magnitude         : 11.820
BP magnitude         : 14.090
DUPflag              : 0
Distance (au)        : 28.839
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -24.35
Sun-Target sep (deg) : 177.23
Sun-Moon sep (deg)   : 24.64
B (ring opening deg) : -10.73
PA of pole (deg)     : -47.52
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.955
C/A sky separation (km) : 19973.8
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 | 2035-10-18T19:52:22.582 | | 27.59 | -29.99 | 62933.00 | -45.11 | | |
| Galatea | I | 2035-10-18T19:52:44.457 | | 27.51 | -29.92 | 61953.00 | -44.48 | | |
| Arago | I | 2035-10-18T19:54:35.732 | | 27.12 | -29.53 | 57200.00 | -40.80 | | |
| Lassell | I | 2035-10-18T19:55:25.949 | | 26.94 | -29.35 | 55200.00 | -38.82 | | |
| LeVerrier | I | 2035-10-18T19:56:19.024 | | 26.76 | -29.16 | 53200.00 | -36.50 | | |
| Neptune | I | 2035-10-18T20:18:31.642 | | 22.06 | -24.47 | 24760.81 | | -27.44 | -28.25 |
| Neptune | E | 2035-10-18T20:38:26.415 | | 17.83 | -20.25 | 24749.96 | | -75.10 | -75.57 |
| LeVerrier | E | 2035-10-18T20:13:23.315 | | 23.15 | -25.56 | 53200.04 | 36.52 | | |
| Lassell | E | 2035-10-18T20:14:16.352 | | 22.96 | -25.37 | 55200.02 | 38.86 | | |
| Arago | E | 2035-10-18T20:15:06.525 | | 22.79 | -25.20 | 57200.01 | 40.84 | | |
| Galatea | E | 2035-10-18T20:16:57.675 | | 22.39 | -24.80 | 61953.00 | 44.54 | | |
| Adams | E | 2035-10-18T20:17:19.520 | | 22.32 | -24.73 | 62933.00 | 45.18 | | |

```

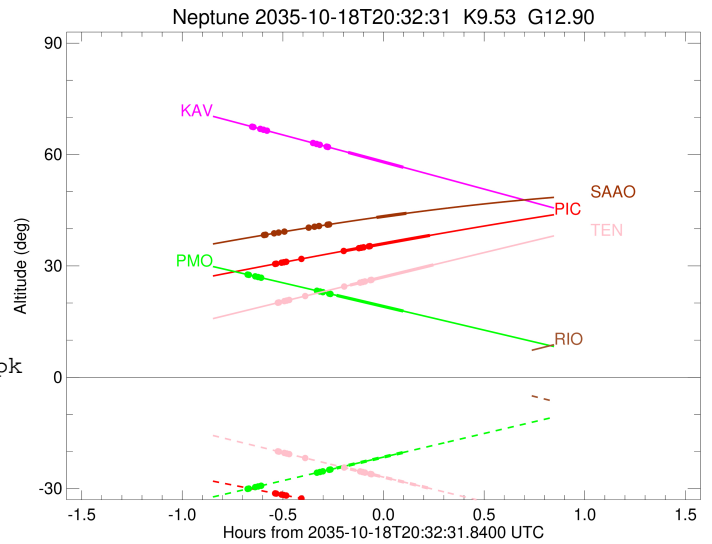
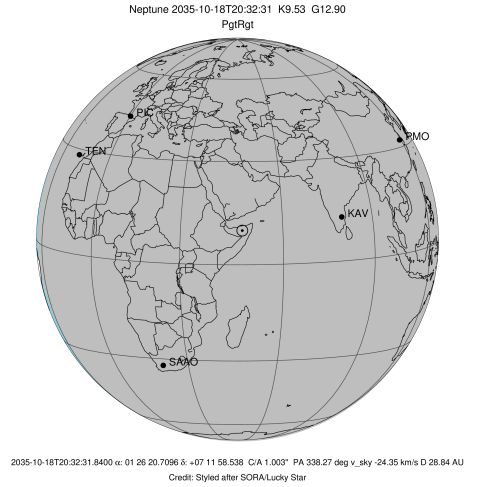
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2035-10-18T20:34:59.120
Event type          : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : TEN
Location            : Teide Obs./Tenerife
Latitude (deg)      : 28.30050
E. Longitude (deg)  : 343.48909
Altitude (km)       : 2.395
Gaia source ID      : 2566151184502925312
2Mass ID (if available) : 01262017+0711593
ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
RUWE (>1.4 is poor) : 1.42
K magnitude          : 9.534
G magnitude          : 12.901
RP magnitude         : 11.820
BP magnitude         : 14.090
DUPflag             : 0
Distance (au)       : 28.839
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -24.35
Sun-Target sep (deg) : 177.23
Sun-Moon sep (deg)  : 26.11
B (ring opening deg) : -10.73
PA of pole (deg)    : -47.52
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.797
C/A sky separation (km) : 16674.5
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 | 2035-10-18T20:01:23.340 | | 20.16 | -20.03 | 62933.00 | -50.92 | | |
| Galatea | I | 2035-10-18T20:01:42.658 | | 20.23 | -20.11 | 61953.00 | -50.54 | | |
| Arago | I | 2035-10-18T20:03:18.692 | | 20.58 | -20.46 | 57200.00 | -48.36 | | |
| Lassell | I | 2035-10-18T20:04:00.530 | | 20.74 | -20.61 | 55200.00 | -47.23 | | |
| LeVerrier | I | 2035-10-18T20:04:43.453 | | 20.89 | -20.77 | 53200.00 | -45.93 | | |
| Galle | I | 2035-10-18T20:09:22.041 | | 21.92 | -21.79 | 42000.00 | -32.93 | | |
| Neptune | I | 2035-10-18T20:22:31.885 | | 24.82 | -24.70 | 24762.87 | | -15.99 | -16.52 |
| Neptune | E | 2035-10-18T20:47:25.164 | | 30.29 | -30.18 | 24751.44 | | -66.01 | -66.72 |
| Galle | E | 2035-10-18T20:21:25.742 | | 24.58 | -24.45 | 42000.09 | 33.07 | | |
| LeVerrier | E | 2035-10-18T20:26:02.646 | b | 25.60 | -25.47 | 53200.00 | 46.31 | | |
| Lassell | E | 2035-10-18T20:26:45.209 | b | 25.75 | -25.63 | 55200.00 | 47.64 | | |
| Arago | E | 2035-10-18T20:27:26.672 | b | 25.90 | -25.78 | 57200.00 | 48.81 | | |
| Galatea | E | 2035-10-18T20:29:01.763 | b | 26.25 | -26.13 | 61953.00 | 51.07 | | |
| Adams | E | 2035-10-18T20:29:20.880 | b | 26.32 | -26.20 | 62933.00 | 51.46 | | |

```

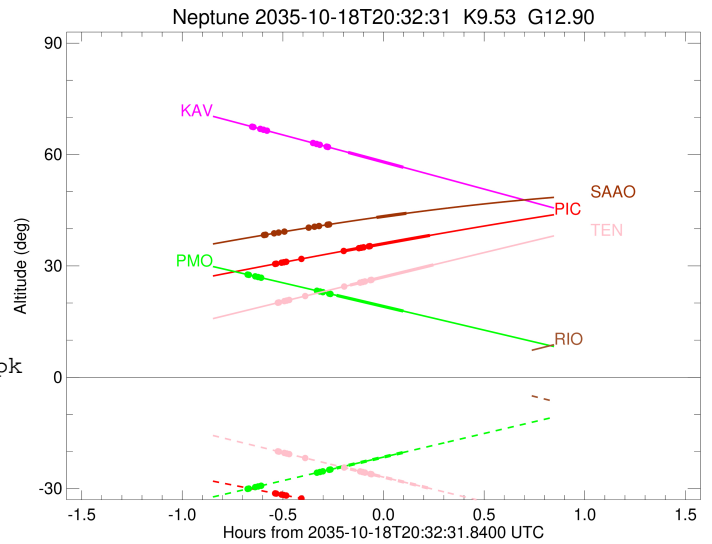
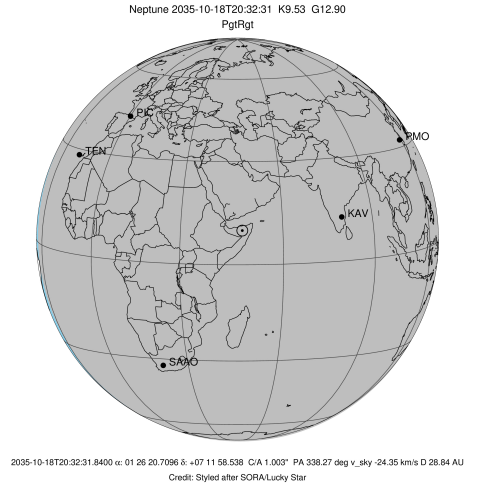
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-10-18T20:30:13.130
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : KAV
Location              : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 2566151184502925312
2Mass ID (if available) : 01262017+0711593
ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
RUWE (>1.4 is poor) : 1.42
K magnitude           : 9.534
G magnitude           : 12.901
RP magnitude          : 11.820
BP magnitude          : 14.090
DUPflag               : 0
Distance (au)         : 28.839
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.35
Sun-Target sep (deg) : 177.23
Sun-Moon sep (deg)   : 25.20
B (ring opening deg) : -10.73
PA of pole (deg)     : -47.52
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.030
C/A sky separation (km) : 21542.3
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 | 2035-10-18T19:53:41.972 | | 67.41 | -69.24 | 62933.00 | -42.87 | | |
| Galatea | I | 2035-10-18T19:54:05.038 | | 67.32 | -69.14 | 61953.00 | -42.09 | | |
| Arago | I | 2035-10-18T19:56:04.312 | | 66.84 | -68.66 | 57200.00 | -37.42 | | |
| Lassell | I | 2035-10-18T19:56:59.624 | | 66.62 | -68.44 | 55200.00 | -34.85 | | |
| LeVerrier | I | 2035-10-18T19:57:59.639 | | 66.38 | -68.19 | 53200.00 | -31.74 | | |
| Neptune | I | 2035-10-18T20:21:59.399 | | 60.57 | -62.35 | 24759.35 | | -33.72 | -34.64 |
| Neptune | E | 2035-10-18T20:38:26.206 | | 56.57 | -58.34 | 24749.54 | | -78.74 | -79.11 |
| LeVerrier | E | 2035-10-18T20:12:21.859 | | 62.91 | -64.70 | 53200.18 | 31.77 | | |
| Lassell | E | 2035-10-18T20:13:21.830 | | 62.66 | -64.45 | 55200.08 | 34.88 | | |
| Arago | E | 2035-10-18T20:14:17.094 | | 62.44 | -64.23 | 57200.04 | 37.46 | | |
| Galatea | E | 2035-10-18T20:16:16.235 | | 61.96 | -63.74 | 61953.01 | 42.15 | | |
| Adams | E | 2035-10-18T20:16:39.271 | | 61.87 | -63.65 | 62933.01 | 42.93 | | |

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2035-10-18T20:34:54.490
Event type          : PgtRgt
: Neptune 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      : 2566151184502925312
2Mass ID (if available) : 01262017+0711593
ICRS Star Coord at Epoch: 01h 26m 20.70964s +07:11:58.53817s
RUWE (>1.4 is poor) : 1.42
K magnitude          : 9.534
G magnitude          : 12.901
RP magnitude         : 11.820
BP magnitude         : 14.090
DUPflag             : 0
Distance (au)       : 28.839
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -24.35
Sun-Target sep (deg) : 177.23
Sun-Moon sep (deg)  : 26.07
B (ring opening deg) : -10.73
PA of pole (deg)    : -47.52
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.140
C/A sky separation (km) : 23840.8
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 | 2035-10-18T19:57:12.542 | | 38.36 | -35.65 | 62933.00 | -37.04 | | |
| Galatea | I | 2035-10-18T19:57:39.393 | | 38.43 | -35.72 | 61953.00 | -35.94 | | |
| Arago | I | 2035-10-18T20:00:05.090 | | 38.80 | -36.08 | 57200.00 | -29.02 | | |
| Lassell | I | 2035-10-18T20:01:19.234 | | 38.99 | -36.26 | 55200.00 | -24.85 | | |
| LeVerrier | I | 2035-10-18T20:02:49.928 | | 39.21 | -36.49 | 53200.00 | -19.15 | | |
| Neptune | I | 2035-10-18T20:30:24.180 | | 43.05 | -40.29 | 24755.92 | | -47.12 | -48.10 |
| Neptune | E | 2035-10-18T20:39:23.870 | | 44.17 | -41.40 | 24749.97 | | -74.99 | -75.47 |
| LeVerrier | E | 2035-10-18T20:11:32.803 | | 40.49 | -37.75 | 53208.04 | 19.20 | | |
| Lassell | E | 2035-10-18T20:13:03.380 | | 40.70 | -37.96 | 55201.25 | 24.89 | | |
| Arago | E | 2035-10-18T20:14:17.402 | | 40.88 | -38.14 | 57200.40 | 29.08 | | |
| Galatea | E | 2035-10-18T20:16:42.781 | | 41.22 | -38.47 | 61953.07 | 36.04 | | |
| Adams | E | 2035-10-18T20:17:09.563 | | 41.28 | -38.53 | 62933.05 | 37.14 | | |