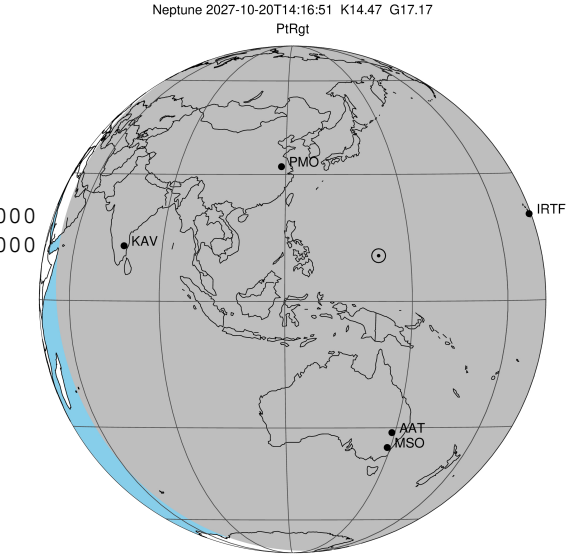


target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2027-10-20T14:16:51.750
 Event type : PtRgt
 : Neptune occs: topocentric, not geocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 2545532012880205952
 2Mass ID (if available) : 00175528+0020489

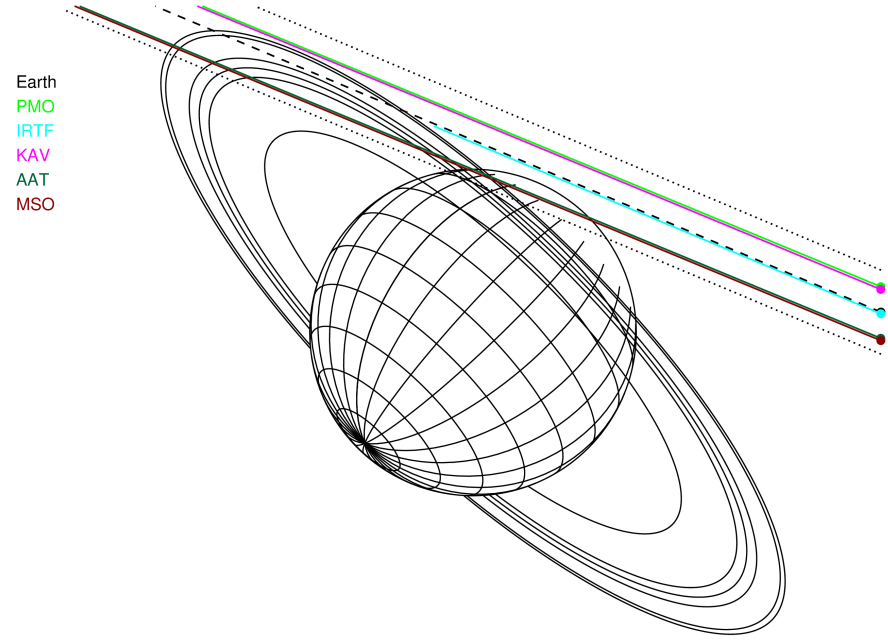
ICRS Star Coord at Epoch: 00h 17m 55.31395s +00:20:48.75509s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.466
 G magnitude : 17.169
 RP magnitude : 16.289
 BP magnitude : 17.978
 DUPflag : 0
 Distance (au) : 28.946
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -22.02
 Sun-Target sep (deg) : 157.63
 Sun-Moon sep (deg) : 84.79
 B (ring opening deg) : -18.28
 PA of pole (deg) : -44.29
 # a(km) ring

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



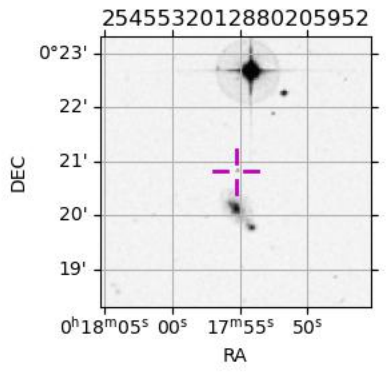
2027-10-20T14:16:51.7500 cc: 00 17 55.3140 cc: +00 20 48.755 C/A 1.281" PA 157.14 deg v_sky -22.02 km/s D 28.95 AU
 Credit: Styled after SORA/Lucky Star

Neptune 2027-10-20T14:16:51 K14.47 G17.17 PtRgt



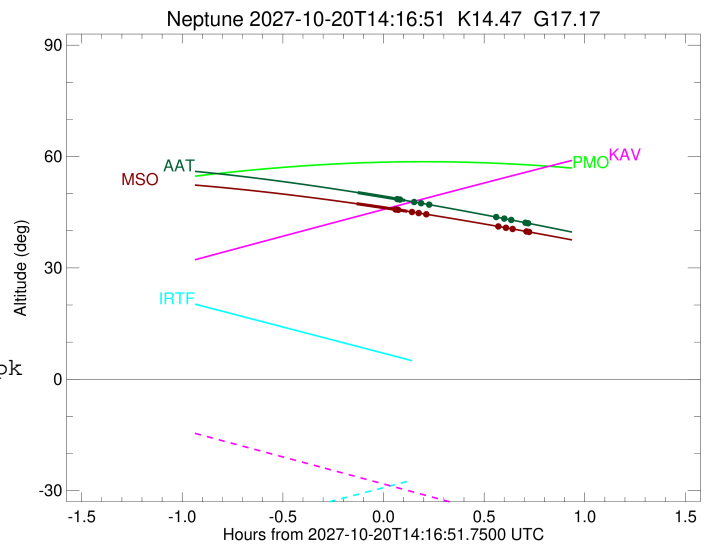
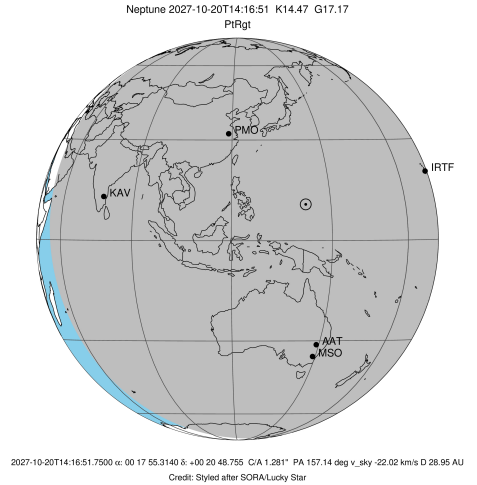
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					PnnRnn
ESO	European Southern Obs	-29.3	289.3					PnnRnn
AAT	Siding Spring (AAT)	-31.3	149.1	+ + +	+ +	+ + + + +	OCT 20 14:09 - OCT 20 14:59	PieRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+ + +	+ +	+ + + + +	OCT 20 14:08 - OCT 20 15:00	PieRie



```

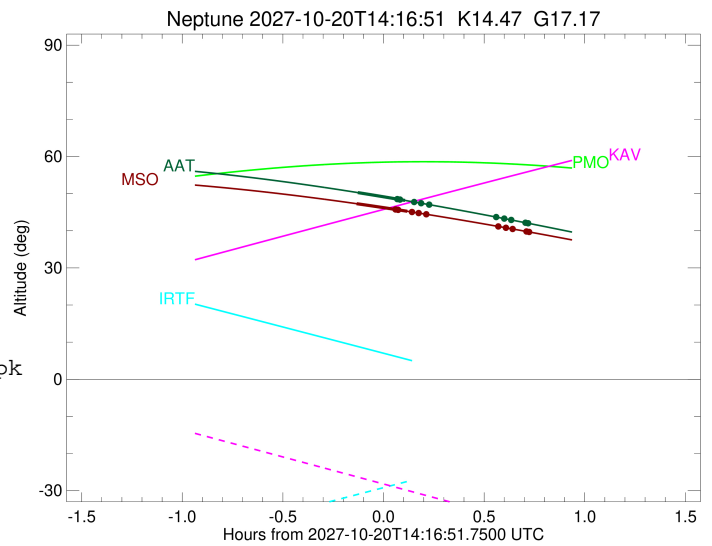
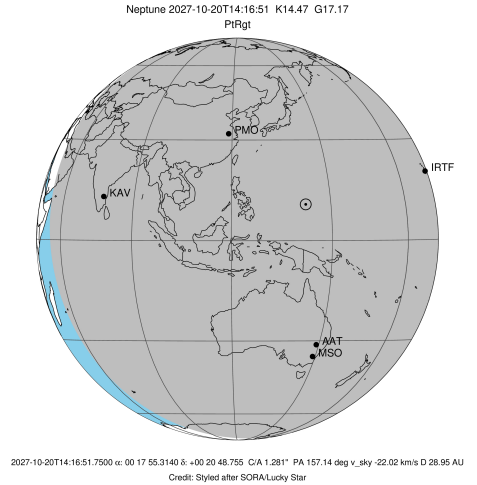
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2027-10-20T14:16:12.830
Event type           : PtRgt
: Neptune occs: topocentric, not geocentric
: Ring occs: geocentric, topocentric
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 2545532012880205952
2Mass ID (if available) : 00175528+0020489
ICRS Star Coord at Epoch: 00h 17m 55.31395s +00:20:48.75509s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 14.466
G magnitude           : 17.169
RP magnitude         : 16.289
BP magnitude         : 17.978
DUPflag              : 0
Distance (au)        : 28.946
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -22.02
Sun-Target sep (deg) : 157.63
Sun-Moon sep (deg)   : 85.52
B (ring opening deg) : -18.28
PA of pole (deg)     : -44.29
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.089
C/A sky separation (km) : 22859.7
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	2027-10-20T14:20:12.511	b	48.65	-47.81	62933.00	-21.48		
Galatea	I	2027-10-20T14:20:58.666	b	48.53	-47.78	61953.00	-20.98		
Arago	I	2027-10-20T14:25:02.450		47.90	-47.59	57200.01	-17.88		
Lassell	I	2027-10-20T14:27:00.026		47.59	-47.49	55200.04	-16.10		
LeVerrier	I	2027-10-20T14:29:13.366		47.24	-47.37	53200.15	-13.85		
Neptune	I	2027-10-20T14:09:11.600		50.29	-48.21	24722.71		71.71	72.28
Neptune	E	2027-10-20T14:23:16.533		48.18	-47.67	24742.81		42.83	43.80
LeVerrier	E	2027-10-20T14:50:53.252		43.62	-45.88	53200.00	13.79		
Lassell	E	2027-10-20T14:53:07.225		43.24	-45.70	55200.00	16.02		
Arago	E	2027-10-20T14:55:05.429		42.89	-45.53	57200.00	17.79		
Galatea	E	2027-10-20T14:59:10.590		42.17	-45.17	61953.00	20.87		
Adams	E	2027-10-20T14:59:56.994		42.03	-45.10	62933.00	21.37		

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2027-10-20T14:16:23.780
Event type           : PtRgt
: Neptune occs: topocentric, not geocentric
: Ring occs: geocentric, topocentric
Observer code        : MSO
Location             : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 2545532012880205952
2Mass ID (if available) : 00175528+0020489
ICRS Star Coord at Epoch: 00h 17m 55.31395s +00:20:48.75509s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 14.466
G magnitude           : 17.169
RP magnitude          : 16.289
BP magnitude          : 17.978
DUPflag              : 0
Distance (au)         : 28.946
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -22.02
Sun-Target sep (deg) : 157.63
Sun-Moon sep (deg)   : 85.49
B (ring opening deg) : -18.28
PA of pole (deg)     : -44.29
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.075
C/A sky separation (km) : 22560.3
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	2027-10-20T14:19:43.054	b	45.85	-43.89	62933.00	-21.85		
Galatea	I	2027-10-20T14:20:28.401	b	45.74	-43.86	61953.00	-21.37		
Arago	I	2027-10-20T14:24:26.460		45.19	-43.69	57200.01	-18.44		
Lassell	I	2027-10-20T14:26:19.990		44.92	-43.61	55200.03	-16.77		
LeVerrier	I	2027-10-20T14:28:27.043		44.61	-43.51	53200.09	-14.68		
Neptune	I	2027-10-20T14:08:51.082		47.30	-44.23	24722.74		71.57	72.14
Neptune	E	2027-10-20T14:23:58.937		45.25	-43.71	24744.07		41.25	42.22
LeVerrier	E	2027-10-20T14:51:26.677		41.11	-42.11	53200.00	14.61		
Lassell	E	2027-10-20T14:53:34.362		40.77	-41.95	55200.00	16.68		
Arago	E	2027-10-20T14:55:28.513		40.47	-41.81	57200.00	18.33		
Galatea	E	2027-10-20T14:59:27.902		39.82	-41.49	61953.00	21.26		
Adams	E	2027-10-20T15:00:13.482		39.69	-41.43	62933.00	21.74		