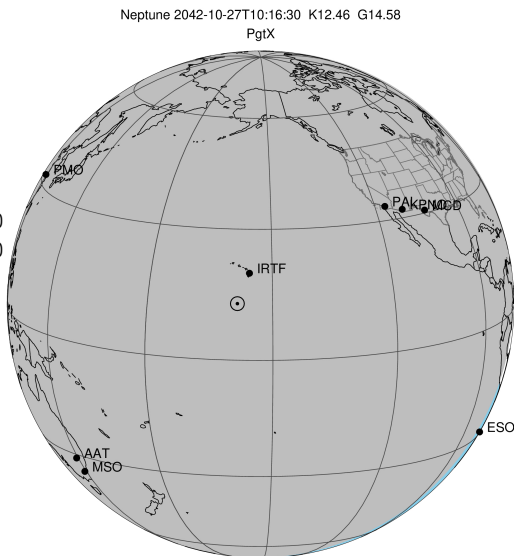


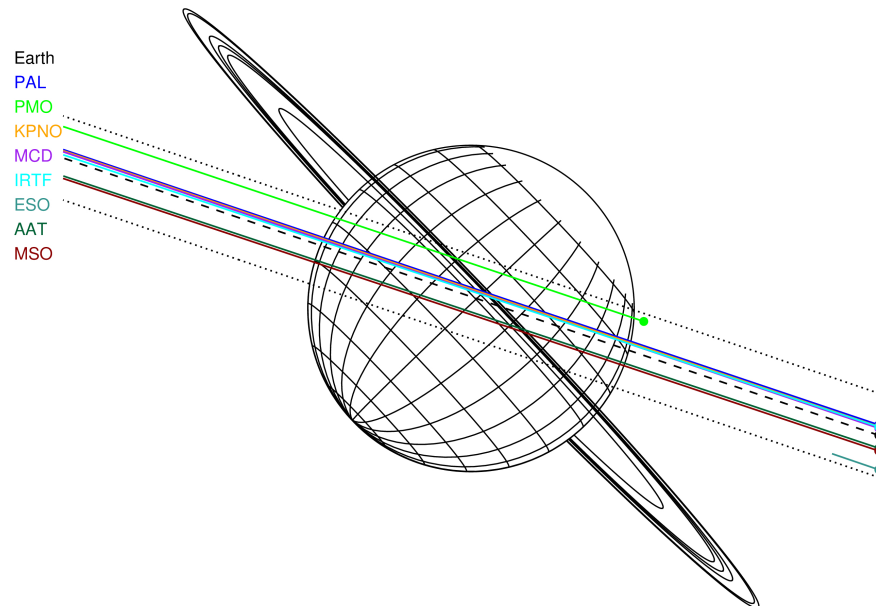
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2042-10-27T10:16:30.910
 Event type : PgtX
 : Neptune occs: geocentric, topocentric
 : No ring occs
 Gaia source ID : 74364167570243072
 2Mass ID (if available) : 02264733+1235488

Neptune 2042-10-27T10:16:30 K12.46 G14.58 PgtX

ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
 RUWE (>1.4 is poor) : 0.98
 K magnitude : 12.459
 G magnitude : 14.581
 RP magnitude : 13.889
 BP magnitude : 15.123
 DUPflag : 0
 Distance (au) : 28.817
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -24.41
 Sun-Target sep (deg) : 174.74
 Sun-Moon sep (deg) : 24.83
 B (ring opening deg) : -3.47
 PA of pole (deg) : -46.66



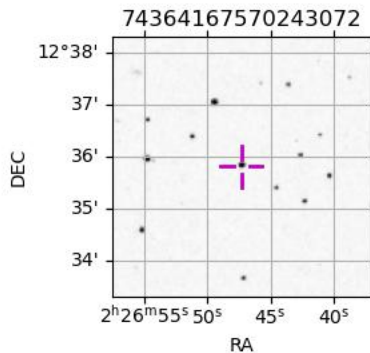
2042-10-27T10:16:30.9100 α: 02 26 47.2824 δ: +12 35 47.964 C/A 0.081'' PA 161.24 deg v_sky -24.41 km/s D 28.82 AU
 Credit: Styled after SORA/Lucky Star



#	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

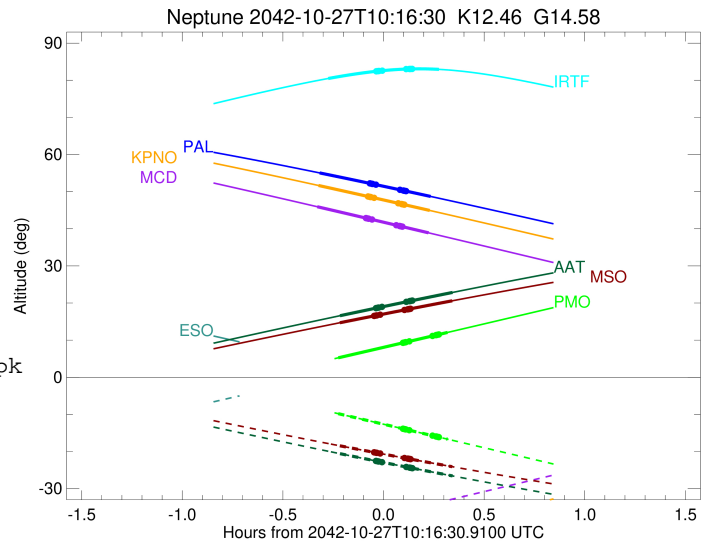
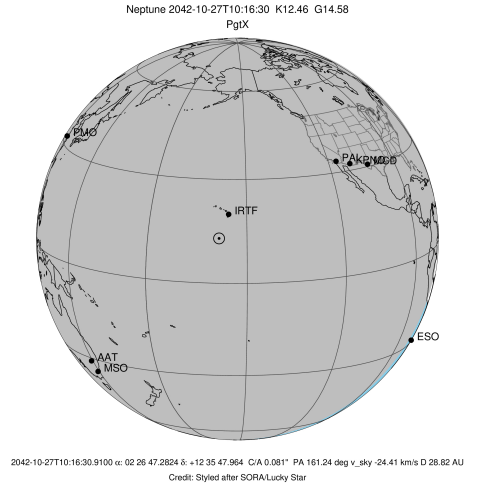
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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		+	+	OCT 27 09:57 - OCT 27 10:30	PieRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8		+	+	OCT 27 10:02 - OCT 27 10:35	PieRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+	+	OCT 27 09:57 - OCT 27 10:30	PieRnn
MCD	McDonald Obs. 2.7m	30.7	256.0		+	+	OCT 27 09:56 - OCT 27 10:30	PieRnn
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5		+	+	OCT 27 10:00 - OCT 27 10:33	PieRnn
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 27 10:03 - OCT 27 10:37	PieRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0		+	+	OCT 27 10:03 - OCT 27 10:37	PieRnn



```

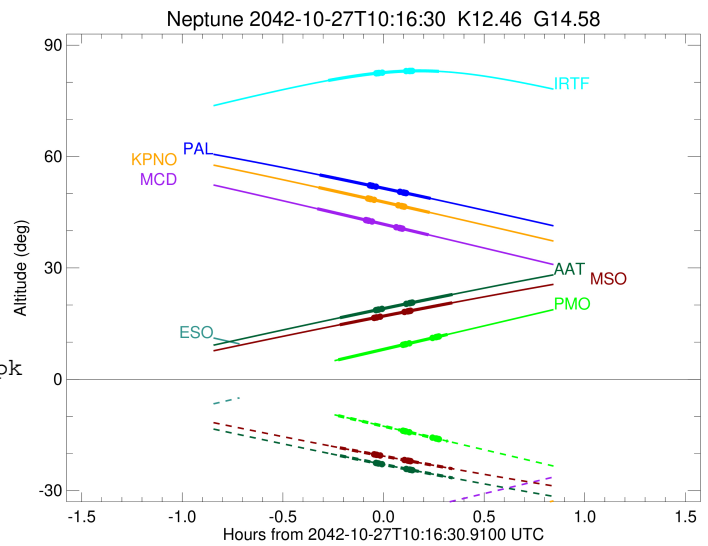
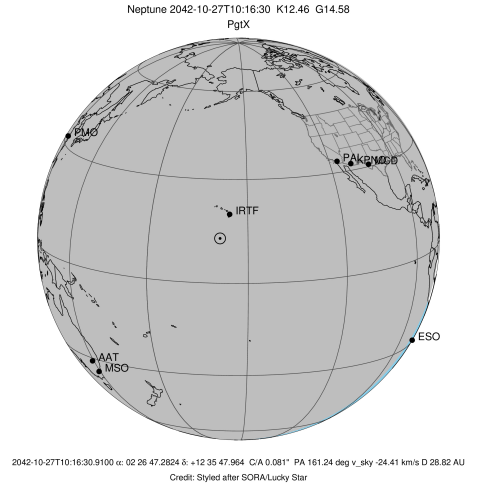
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2042-10-27T10:13:59.640
Event type            : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)   : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.459
G magnitude           : 14.581
RP magnitude          : 13.889
BP magnitude          : 15.123
DUPflag              : 0
Distance (au)         : 28.817
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg) : 174.74
Sun-Moon sep (deg)   : 25.71
B (ring opening deg) : -3.47
PA of pole (deg)     : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.145
C/A sky separation (km) : 3025.0
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	2042-10-27T10:12:48.377	b	52.16	-48.03	62933.00	-182.43		
Galatea	I	2042-10-27T10:12:53.748	b	52.15	-48.01	61952.99	-182.39		
Arago	I	2042-10-27T10:13:20.087	b	52.06	-47.93	57200.00	-177.19		
Lassell	I	2042-10-27T10:13:31.490	b	52.03	-47.89	55200.03	-173.65		
LeVerrier	I	2042-10-27T10:13:43.083	b	51.99	-47.85	53200.00	-171.91		
Galle	I	2042-10-27T10:14:41.223	b	51.80	-47.66	41997.48	-225.95		
Neptune	I	2042-10-27T09:57:25.926		55.06	-51.04	24763.49		34.96	35.89
Neptune	E	2042-10-27T10:30:33.903		48.71	-44.49	24763.80		-20.94	-21.60
Galle	E	2042-10-27T10:21:18.537	b	50.52	-46.34	42000.01	190.84		
LeVerrier	E	2042-10-27T10:22:17.112	b	50.33	-46.15	53200.01	191.50		
Lassell	E	2042-10-27T10:22:27.554	b	50.30	-46.11	55200.00	191.57		
Arago	E	2042-10-27T10:22:37.992	b	50.27	-46.08	57200.00	191.64		
Galatea	E	2042-10-27T10:23:02.784	b	50.19	-46.00	61953.00	191.78		
Adams	E	2042-10-27T10:23:07.894	b	50.17	-45.98	62933.00	191.80		

```

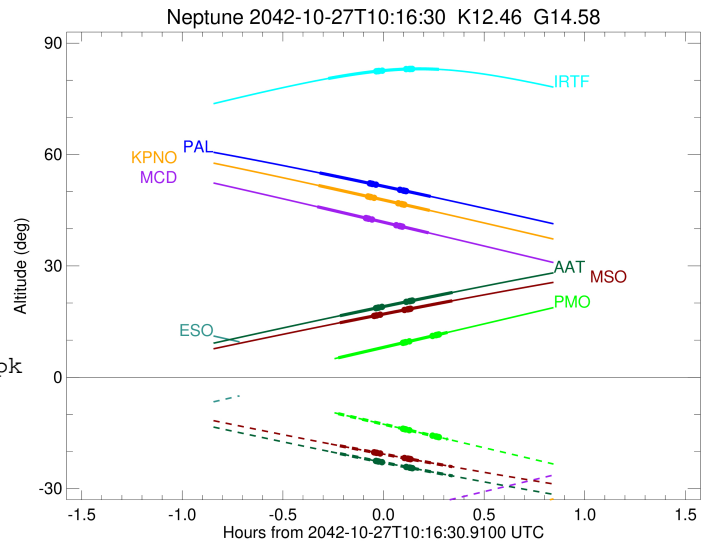
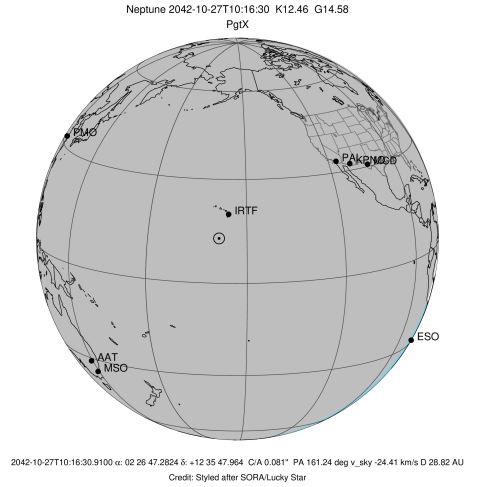
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2042-10-27T10:19:19.380
Event type           : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code        : PMO
Location             : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID       : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 12.459
G magnitude          : 14.581
RP magnitude         : 13.889
BP magnitude         : 15.123
DUPflag             : 0
Distance (au)       : 28.817
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg) : 174.74
Sun-Moon sep (deg)  : 24.27
B (ring opening deg) : -3.47
PA of pole (deg)    : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.311
C/A sky separation (km) : 6492.8
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.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	2042-10-27T10:22:16.132	b	9.27	-13.86	62933.00	-195.56		
Galatea	I	2042-10-27T10:22:21.147	b	9.28	-13.87	61953.01	-195.25		
Arago	I	2042-10-27T10:22:45.593	b	9.37	-13.96	57200.00	-193.55		
Lassell	I	2042-10-27T10:22:55.948	b	9.41	-14.00	55200.00	-192.74		
LeVerrier	I	2042-10-27T10:23:06.347	b	9.44	-14.03	53199.98	-191.87		
Galle	I	2042-10-27T10:24:05.613	b	9.65	-14.24	42000.00	-185.65		
Neptune	I	2042-10-27T10:02:59.292		5.23	-9.80	24763.28		43.18	44.16
Neptune	E	2042-10-27T10:35:38.404		12.08	-16.68	24763.92		-12.87	-13.31
Galle	E	2042-10-27T10:30:56.317	b	11.09	-15.69	42000.01	181.09		
LeVerrier	E	2042-10-27T10:31:57.414	b	11.30	-15.90	53200.00	185.07		
Lassell	E	2042-10-27T10:32:08.208	b	11.34	-15.94	55199.99	185.53		
Arago	E	2042-10-27T10:32:18.976	b	11.38	-15.98	57199.99	185.94		
Galatea	E	2042-10-27T10:32:44.480	b	11.47	-16.07	61952.99	186.76		
Adams	E	2042-10-27T10:32:49.725	b	11.49	-16.09	62933.00	186.90		

```

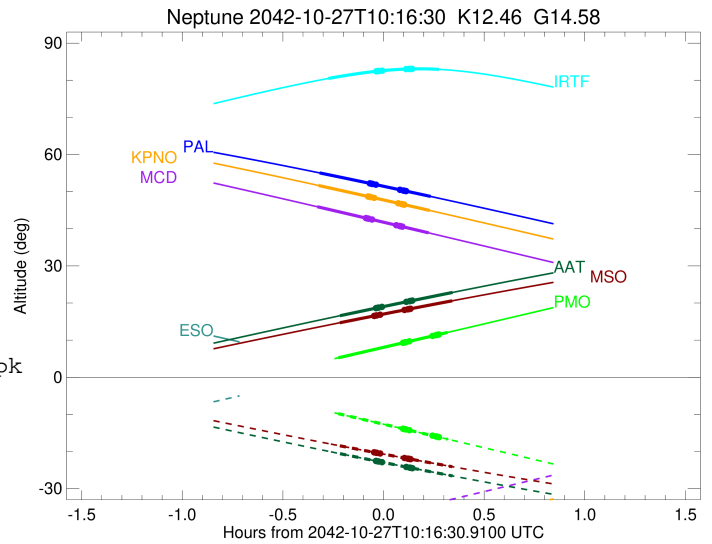
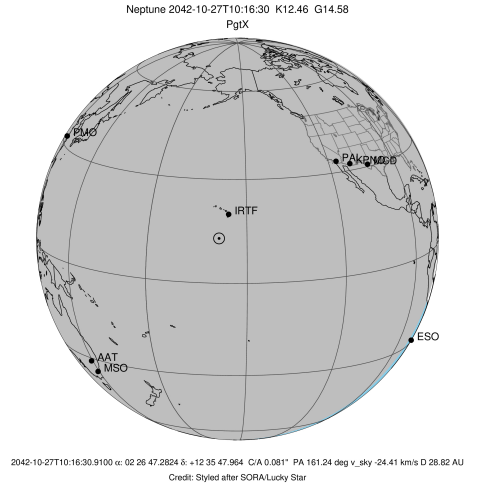
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2042-10-27T10:13:43.620
Event type          : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code       : KPNO
Location           : Kitt Peak Natl Obs
Latitude (deg)     : 31.96333
E. Longitude (deg) : 248.40000
Altitude (km)     : 2.120
Gaia source ID     : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude         : 12.459
G magnitude         : 14.581
RP magnitude        : 13.889
BP magnitude        : 15.123
DUPflag            : 0
Distance (au)      : 28.817
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg) : 174.74
Sun-Moon sep (deg) : 25.75
B (ring opening deg) : -3.47
PA of pole (deg)   : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.135
C/A sky separation (km) : 2814.7
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.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	2042-10-27T10:12:16.313	b	48.63	-44.27	62932.98	-180.82		
Galatea	I	2042-10-27T10:12:21.718	b	48.61	-44.26	61952.99	-181.80		
Arago	I	2042-10-27T10:12:47.731	b	48.52	-44.17	57200.00	-181.85		
Lassell	I	2042-10-27T10:12:58.839	b	48.48	-44.13	55200.01	-177.77		
LeVerrier	I	2042-10-27T10:13:10.289	b	48.44	-44.09	53200.11	-171.27		
Galle	I	2042-10-27T10:14:13.820	b	48.23	-43.87	41987.48	-214.74		
Neptune	I	2042-10-27T09:57:08.380		51.66	-47.38	24763.51		34.45	35.37
Neptune	E	2042-10-27T10:30:19.498		44.93	-40.53	24763.79		-21.40	-22.08
Galle	E	2042-10-27T10:20:47.607	b	46.89	-42.51	42000.02	190.78		
LeVerrier	E	2042-10-27T10:21:46.223	b	46.69	-42.31	53199.99	191.32		
Lassell	E	2042-10-27T10:21:56.675	b	46.66	-42.27	55200.00	191.38		
Arago	E	2042-10-27T10:22:07.124	b	46.62	-42.23	57200.00	191.44		
Galatea	E	2042-10-27T10:22:31.944	b	46.54	-42.15	61953.01	191.56		
Adams	E	2042-10-27T10:22:37.059	b	46.52	-42.13	62933.01	191.58		

```

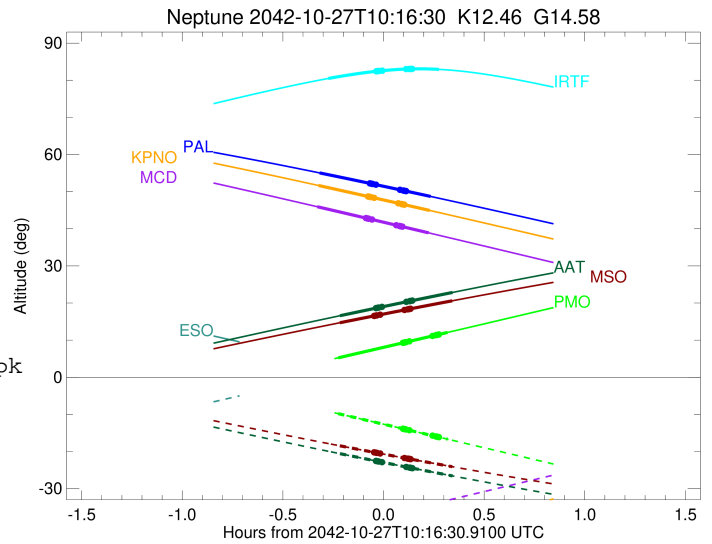
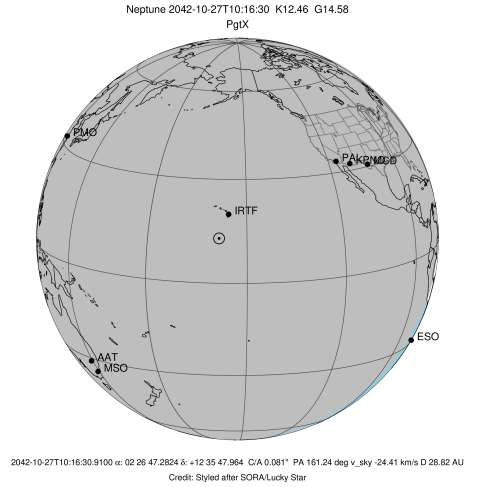
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2042-10-27T10:13:21.970
Event type            : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.459
G magnitude           : 14.581
RP magnitude          : 13.889
BP magnitude          : 15.123
DUPflag              : 0
Distance (au)         : 28.817
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg)  : 174.74
Sun-Moon sep (deg)    : 25.79
B (ring opening deg) : -3.47
PA of pole (deg)      : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.125
C/A sky separation (km) : 2615.1
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	2042-10-27T10:11:39.130	b	42.80	-38.27	62933.00	-176.19		
Galatea	I	2042-10-27T10:11:44.670	b	42.78	-38.25	61953.00	-177.64		
Arago	I	2042-10-27T10:12:10.886	b	42.69	-38.16	57199.97	-184.45		
Lassell	I	2042-10-27T10:12:21.710	b	42.65	-38.12	55200.02	-184.59		
LeVerrier	I	2042-10-27T10:12:32.632	b	42.61	-38.08	53200.01	-180.87		
Galle	I	2042-10-27T10:13:41.217	b	42.37	-37.84	41993.70	-189.83		
Neptune	I	2042-10-27T09:56:44.781		45.95	-41.44	24763.52		33.94	34.85
Neptune	E	2042-10-27T10:29:59.926		38.90	-34.35	24763.79		-21.82	-22.51
Galle	E	2042-10-27T10:20:12.222	b	40.99	-36.44	41999.99	190.44		
LeVerrier	E	2042-10-27T10:21:10.955	b	40.78	-36.23	53200.00	190.89		
Lassell	E	2042-10-27T10:21:21.431	b	40.74	-36.20	55200.00	190.95		
Arago	E	2042-10-27T10:21:31.903	b	40.70	-36.16	57200.01	191.00		
Galatea	E	2042-10-27T10:21:56.782	b	40.62	-36.07	61953.00	191.10		
Adams	E	2042-10-27T10:22:01.910	b	40.60	-36.05	62933.01	191.12		

```

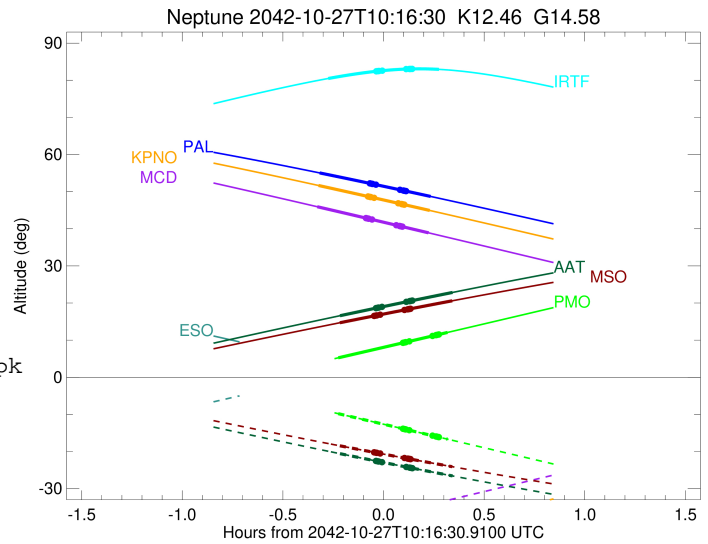
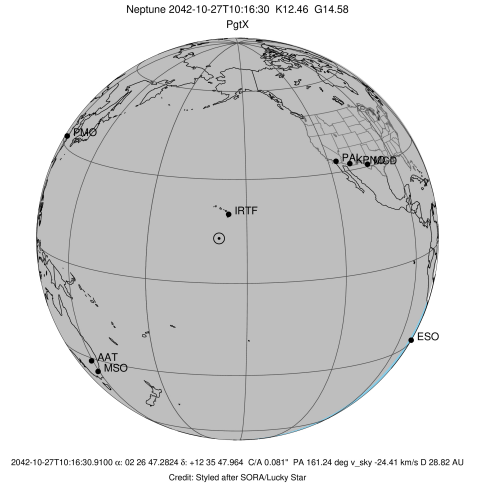
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2042-10-27T10:16:32.330
Event type            : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.459
G magnitude           : 14.581
RP magnitude          : 13.889
BP magnitude          : 15.123
DUPflag              : 0
Distance (au)         : 28.817
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg)  : 174.74
Sun-Moon sep (deg)    : 25.26
B (ring opening deg) : -3.47
PA of pole (deg)      : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.121
C/A sky separation (km) : 2519.1
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	2042-10-27T10:14:43.089	b	82.46	-82.85	62933.00	-176.61		
Galatea	I	2042-10-27T10:14:48.617	b	82.47	-82.85	61952.99	-177.97		
Arago	I	2042-10-27T10:15:14.711	b	82.51	-82.81	57199.96	-186.60		
Lassell	I	2042-10-27T10:15:25.351	b	82.52	-82.80	55199.98	-189.00		
LeVerrier	I	2042-10-27T10:15:35.936	b	82.54	-82.79	53200.03	-188.21		
Galle	I	2042-10-27T10:16:45.125	b	82.64	-82.69	41998.70	-172.40		
Neptune	I	2042-10-27T09:59:59.833		80.48	-83.05	24763.52		33.99	34.90
Neptune	E	2042-10-27T10:33:04.681		82.94	-80.54	24763.78		-22.33	-23.03
Galle	E	2042-10-27T10:23:08.982	b	83.02	-82.01	42000.01	193.43		
LeVerrier	E	2042-10-27T10:24:06.816	b	83.04	-81.88	53200.00	193.84		
Lassell	E	2042-10-27T10:24:17.132	b	83.05	-81.86	55199.99	193.90		
Arago	E	2042-10-27T10:24:27.446	b	83.05	-81.84	57199.99	193.95		
Galatea	E	2042-10-27T10:24:51.946	b	83.06	-81.78	61952.99	194.05		
Adams	E	2042-10-27T10:24:56.996	b	83.06	-81.77	62933.00	194.07		


```

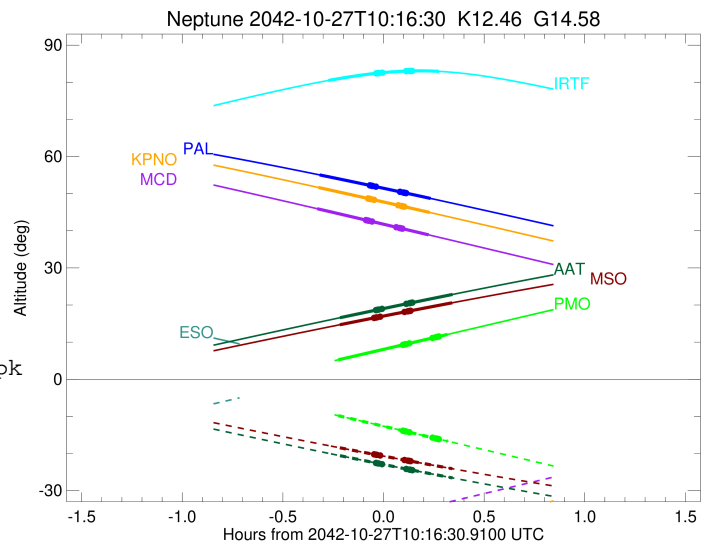
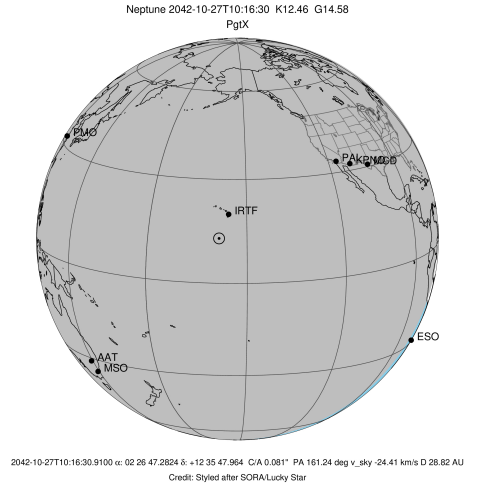
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2042-10-27T10:20:19.450
Event type           : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.459
G magnitude           : 14.581
RP magnitude         : 13.889
BP magnitude         : 15.123
DUPflag              : 0
Distance (au)        : 28.817
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg) : 174.74
Sun-Moon sep (deg)   : 24.17
B (ring opening deg) : -3.47
PA of pole (deg)     : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.024
C/A sky separation (km) : 498.2
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	2042-10-27T10:14:22.580	b	18.64	-22.56	62933.00	-190.10		
Galatea	I	2042-10-27T10:14:27.737	b	18.66	-22.58	61953.01	-190.00		
Arago	I	2042-10-27T10:14:52.786	b	18.74	-22.65	57200.00	-189.46		
Lassell	I	2042-10-27T10:15:03.350	b	18.77	-22.69	55200.01	-189.18		
LeVerrier	I	2042-10-27T10:15:13.931	b	18.80	-22.72	53199.99	-188.87		
Galle	I	2042-10-27T10:16:13.603	b	18.99	-22.90	41999.99	-186.17		
Neptune	I	2042-10-27T10:03:32.114		16.58	-20.58	24763.68		27.00	27.80
Neptune	E	2042-10-27T10:37:05.765		22.85	-26.58	24763.63		-29.30	-30.15
Galle	E	2042-10-27T10:22:59.292	b	20.26	-24.11	42000.10	157.50		
LeVerrier	E	2042-10-27T10:24:04.909	b	20.46	-24.30	53200.00	179.19		
Lassell	E	2042-10-27T10:24:16.018	b	20.49	-24.34	55200.00	180.86		
Arago	E	2042-10-27T10:24:27.033	b	20.53	-24.37	57200.01	182.25		
Galatea	E	2042-10-27T10:24:52.925	b	20.61	-24.44	61952.99	184.74		
Adams	E	2042-10-27T10:24:58.224	b	20.62	-24.46	62933.00	185.15		

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2042-10-27T10:20:15.850
Event type          : PgtX
: Neptune occs: geocentric, topocentric
: No ring occs
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 74364167570243072
2Mass ID (if available) : 02264733+1235488
ICRS Star Coord at Epoch: 02h 26m 47.28244s +12:35:47.96408s
RUWE (>1.4 is poor) : 0.98
K magnitude         : 12.459
G magnitude         : 14.581
RP magnitude        : 13.889
BP magnitude        : 15.123
DUPflag            : 0
Distance (au)       : 28.817
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -24.41
Sun-Target sep (deg) : 174.74
Sun-Moon sep (deg)  : 24.17
B (ring opening deg) : -3.47
PA of pole (deg)    : -46.66
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.042
C/A sky separation (km) : 879.8
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	2042-10-27T10:13:49.349	b	16.55	-20.24	62933.00	-190.84		
Galatea	I	2042-10-27T10:13:54.485	b	16.56	-20.25	61952.99	-190.78		
Arago	I	2042-10-27T10:14:19.417	b	16.64	-20.33	57200.00	-190.48		
Lassell	I	2042-10-27T10:14:29.921	b	16.67	-20.36	55199.99	-190.33		
LeVerrier	I	2042-10-27T10:14:40.433	b	16.70	-20.39	53199.99	-190.17		
Galle	I	2042-10-27T10:15:39.501	b	16.87	-20.55	41999.99	-188.93		
Neptune	I	2042-10-27T10:03:28.613		14.68	-18.46	24763.70		26.10	26.88
Neptune	E	2042-10-27T10:37:02.101		20.60	-24.09	24763.61		-30.17	-31.03
Galle	E	2042-10-27T10:22:15.595	b	18.04	-21.67	42003.46	124.83		
LeVerrier	E	2042-10-27T10:23:28.845	b	18.26	-21.87	53200.02	170.69		
Lassell	E	2042-10-27T10:23:40.456	b	18.29	-21.90	55199.99	173.74		
Arago	E	2042-10-27T10:23:51.885	b	18.32	-21.93	57200.00	176.21		
Galatea	E	2042-10-27T10:24:18.513	b	18.40	-22.01	61953.01	180.50		
Adams	E	2042-10-27T10:24:23.933	b	18.42	-22.02	62932.99	181.18		