

target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2046-10-06T16:32:51.440
 Event type : PgtRgt
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 30952935949594880
 2Mass ID (if available) : 03045866+1530095

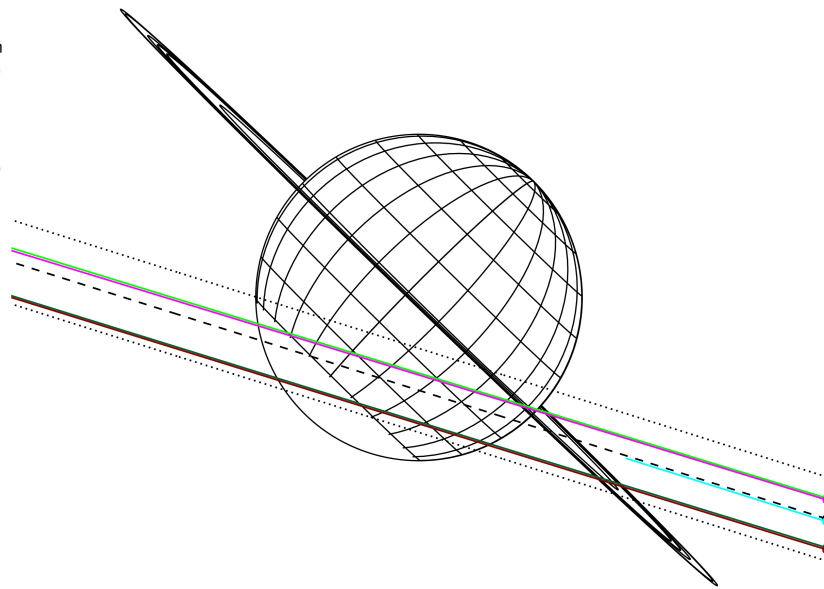
Neptune 2046-10-06T16:32:51 K14.25 G15.86 PgtRgt

ICRS Star Coord at Epoch: 03h 04m 58.66086s +15:30:09.38213s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 14.251
 G magnitude : 15.859
 RP magnitude : 15.301
 BP magnitude : 16.253
 DUPflag : 0
 Distance (au) : 28.992
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -19.14
 Sun-Target sep (deg) : 144.72
 Sun-Moon sep (deg) : 127.18
 B (ring opening deg) : 1.11
 PA of pole (deg) : -44.51



2046-10-06T16:32:51.4400 cc: 03 04 58.6609 s: +15 30 09.382 C/A 0.639° PA 342.50 deg v_sky -19.14 km/s D 28.99 AU
 Credit: Styled after SORA/Lucky Star

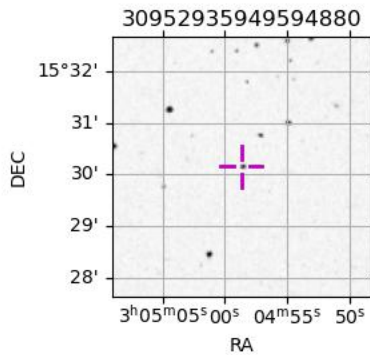
Earth
 PMO
 IRTF
 KAV
 AAT
 MSO



#	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

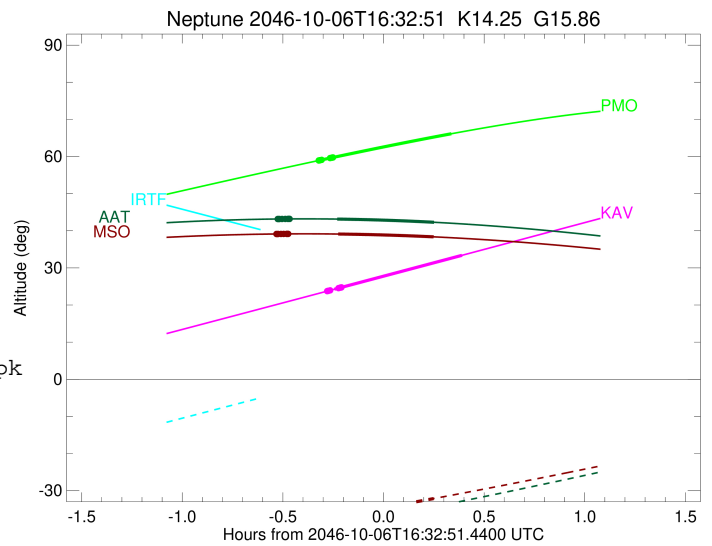
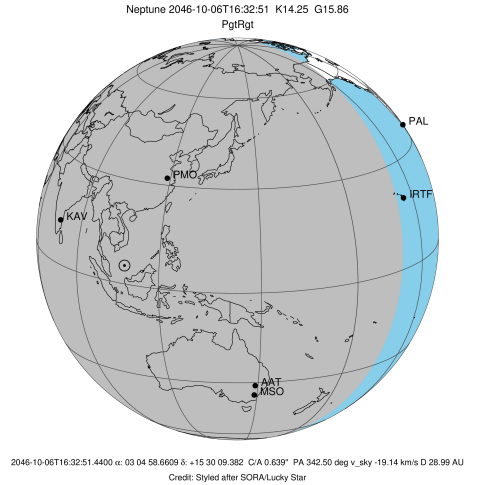
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+ + + + +	+ +		OCT 06 16:13 - OCT 06 16:53	PieRin
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	+ + + + +	+ +		OCT 06 16:16 - OCT 06 16:56	PieRin
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 06 16:01 - OCT 06 16:47	PieRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+ + + + +	+ +	+ + + + +	OCT 06 16:01 - OCT 06 16:47	PieRie



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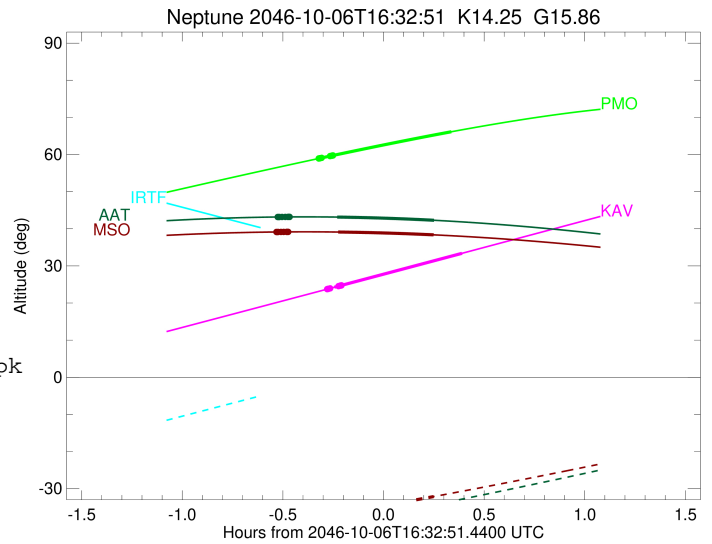
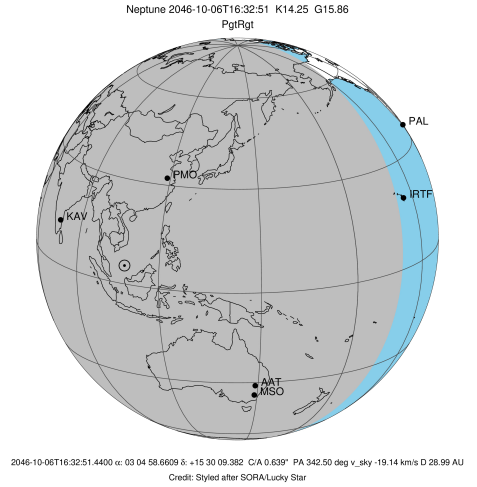
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2046-10-06T16:34:07.290
Event type          : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 30952935949594880
2Mass ID (if available) : 03045866+1530095
ICRS Star Coord at Epoch: 03h 04m 58.66086s +15:30:09.38213s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 14.251
G magnitude          : 15.859
RP magnitude         : 15.301
BP magnitude         : 16.253
DUPflag             : 0
Distance (au)       : 28.992
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -19.14
Sun-Target sep (deg) : 144.72
Sun-Moon sep (deg)  : 127.97
B (ring opening deg) : 1.11
PA of pole (deg)    : -44.51
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.522
C/A sky separation (km) : 10973.7
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	2046-10-06T16:13:58.875		59.02	-63.00	62933.04	-429.86		
Galatea	I	2046-10-06T16:14:01.158		59.03	-63.00	61953.01	-428.71		
Arago	I	2046-10-06T16:14:12.325		59.06	-62.99	57200.04	-422.23		
Lassell	I	2046-10-06T16:14:17.079		59.08	-62.99	55200.02	-418.95		
LeVerrier	I	2046-10-06T16:14:21.873		59.09	-62.99	53200.08	-415.27		
Galle	I	2046-10-06T16:14:49.813		59.18	-62.97	42000.45	-382.47		
Neptune	I	2046-10-06T16:15:06.527		59.24	-62.95	24764.00		1.16	1.20
Neptune	E	2046-10-06T16:53:06.948		66.14	-59.94	24763.90		-53.74	-54.67
Galle	E	2046-10-06T16:17:18.592	b	59.66	-62.85	42003.74	383.09		
LeVerrier	E	2046-10-06T16:17:46.494	b	59.75	-62.83	53200.25	416.01		
Lassell	E	2046-10-06T16:17:51.280	b	59.77	-62.82	55200.20	419.73		
Arago	E	2046-10-06T16:17:56.026	b	59.78	-62.82	57200.13	423.04		
Galatea	E	2046-10-06T16:18:07.173	b	59.82	-62.81	61953.05	429.59		
Adams	E	2046-10-06T16:18:09.451	b	59.82	-62.81	62933.05	430.75		

```

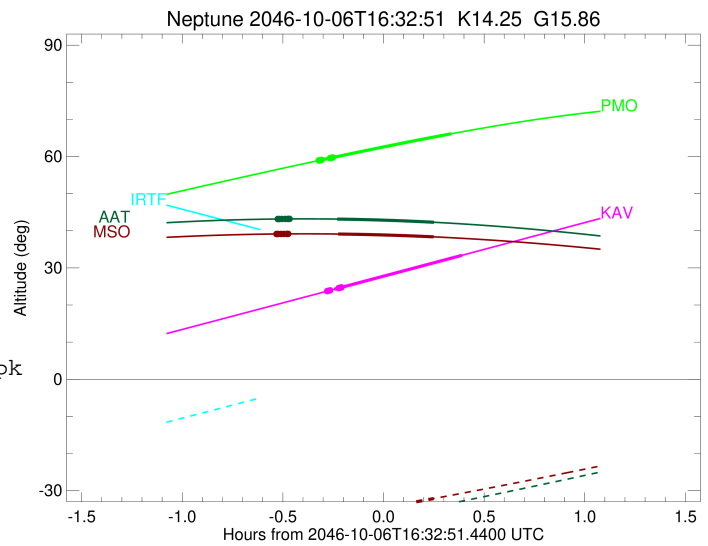
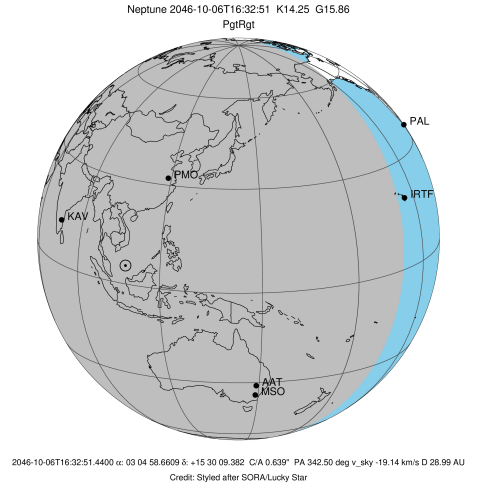
target                : Neptune
target radius (km)    : 24764.00
C/A epoch             : 2046-10-06T16:37:14.850
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code         : KAV
Location              : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 30952935949594880
2Mass ID (if available) : 03045866+1530095
ICRS Star Coord at Epoch: 03h 04m 58.66086s +15:30:09.38213s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 14.251
G magnitude           : 15.859
RP magnitude          : 15.301
BP magnitude          : 16.253
DUPflag              : 0
Distance (au)         : 28.992
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -19.14
Sun-Target sep (deg) : 144.72
Sun-Moon sep (deg)   : 127.99
B (ring opening deg) : 1.11
PA of pole (deg)     : -44.51
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.535
C/A sky separation (km) : 11250.9
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	2046-10-06T16:16:30.360		23.85	-55.68	62933.02	-424.31		
Galatea	I	2046-10-06T16:16:32.672		23.85	-55.69	61952.99	-423.11		
Arago	I	2046-10-06T16:16:43.992		23.90	-55.73	57200.04	-416.36		
Lassell	I	2046-10-06T16:16:48.814		23.92	-55.75	55200.07	-412.94		
LeVerrier	I	2046-10-06T16:16:53.679		23.94	-55.77	53200.04	-409.09		
Galle	I	2046-10-06T16:17:22.106		24.05	-55.89	42000.57	-374.74		
Neptune	I	2046-10-06T16:18:10.983		24.25	-56.08	24764.00		0.48	0.50
Neptune	E	2046-10-06T16:56:16.494		33.39	-65.19	24763.90		-54.53	-55.44
Galle	E	2046-10-06T16:19:50.476	b	24.64	-56.48	42005.06	375.42		
LeVerrier	E	2046-10-06T16:20:18.858	b	24.76	-56.60	53200.40	409.92		
Lassell	E	2046-10-06T16:20:23.714	b	24.78	-56.62	55200.23	413.80		
Arago	E	2046-10-06T16:20:28.528	b	24.80	-56.64	57200.14	417.26		
Galatea	E	2046-10-06T16:20:39.823	b	24.84	-56.68	61953.07	424.10		
Adams	E	2046-10-06T16:20:42.131	b	24.85	-56.69	62933.06	425.31		

```

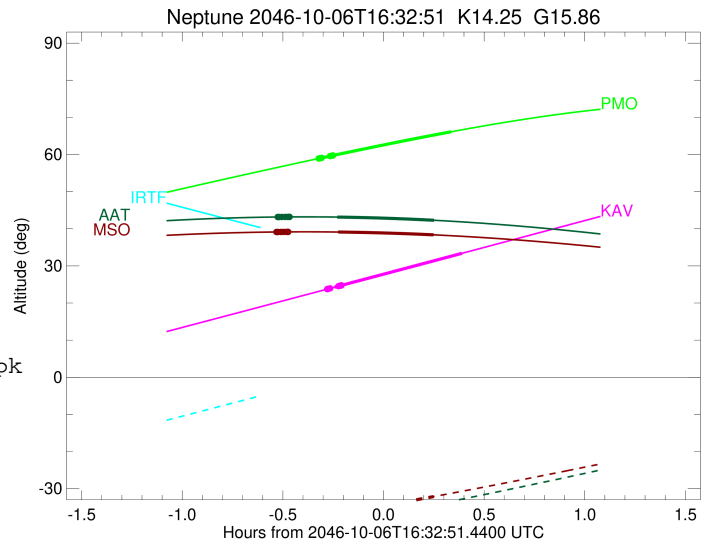
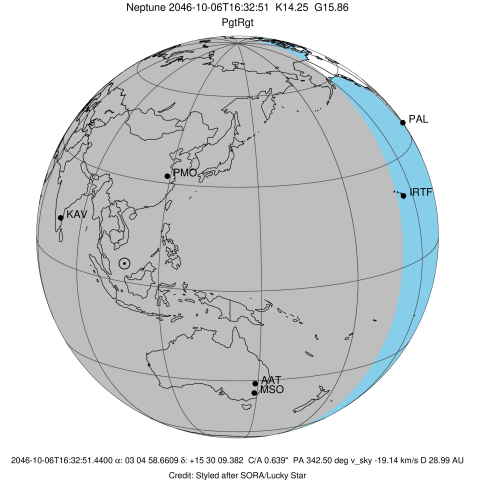
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2046-10-06T16:33:29.500
Event type          : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : AAT
Location            : Siding Spring (AAT)
Latitude (deg)      : -31.27703
E. Longitude (deg)  : 149.06608
Altitude (km)       : 1.164
Gaia source ID      : 30952935949594880
2Mass ID (if available) : 03045866+1530095
ICRS Star Coord at Epoch: 03h 04m 58.66086s +15:30:09.38213s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 14.251
G magnitude          : 15.859
RP magnitude         : 15.301
BP magnitude         : 16.253
DUPflag             : 0
Distance (au)       : 28.992
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -19.14
Sun-Target sep (deg) : 144.72
Sun-Moon sep (deg)  : 127.78
B (ring opening deg) : 1.11
PA of pole (deg)    : -44.51
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.858
C/A sky separation (km) : 18046.7
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	2046-10-06T16:01:59.031		43.18	-42.07	62934.78	-362.53		
Galatea	I	2046-10-06T16:02:01.747		43.18	-42.07	61955.10	-358.82		
Arago	I	2046-10-06T16:02:15.384		43.18	-42.03	57204.24	-337.29		
Lassell	I	2046-10-06T16:02:21.411		43.18	-42.02	55205.90	-326.00		
LeVerrier	I	2046-10-06T16:02:27.668		43.18	-42.00	53208.32	-312.94		
Galle	I	2046-10-06T16:03:12.941		43.19	-41.88	42089.07	-166.43		
Neptune	I	2046-10-06T16:19:00.560		43.15	-39.34	24763.99		-19.43	-20.06
Neptune	E	2046-10-06T16:47:58.331		42.29	-34.34	24763.86		-74.07	-74.57
Galle	E	2046-10-06T16:03:12.848		43.19	-41.88	42482.28	-176.51		
LeVerrier	E	2046-10-06T16:05:02.257		43.20	-41.60	53386.09	314.46		
Lassell	E	2046-10-06T16:05:08.512		43.20	-41.58	55309.69	326.89		
Arago	E	2046-10-06T16:05:14.538		43.20	-41.57	57267.42	337.87		
Galatea	E	2046-10-06T16:05:28.171		43.20	-41.53	61977.07	359.13		
Adams	E	2046-10-06T16:05:30.887		43.20	-41.52	62952.83	362.82		

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2046-10-06T16:33:35.670
Event type          : PgtRgt
: Neptune occs: geocentric, topocentric
: 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      : 30952935949594880
2Mass ID (if available) : 03045866+1530095
ICRS Star Coord at Epoch: 03h 04m 58.66086s +15:30:09.38213s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 14.251
G magnitude          : 15.859
RP magnitude         : 15.301
BP magnitude         : 16.253
DUPflag             : 0
Distance (au)       : 28.992
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -19.14
Sun-Target sep (deg) : 144.72
Sun-Moon sep (deg)  : 127.75
B (ring opening deg) : 1.11
PA of pole (deg)    : -44.51
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.871
C/A sky separation (km) : 18319.2
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.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	2046-10-06T16:01:36.470		39.14	-39.31	62935.10	-358.38		
Galatea	I	2046-10-06T16:01:39.219		39.14	-39.30	61955.42	-354.52		
Arago	I	2046-10-06T16:01:53.044		39.15	-39.27	57204.98	-332.07		
Lassell	I	2046-10-06T16:01:59.172		39.15	-39.25	55206.93	-320.26		
LeVerrier	I	2046-10-06T16:02:05.550		39.15	-39.24	53209.78	-306.57		
Galle	I	2046-10-06T16:02:53.144		39.15	-39.13	42106.45	-148.04		
Neptune	I	2046-10-06T16:19:21.085		39.12	-36.70	24763.97		-20.38	-21.03
Neptune	E	2046-10-06T16:47:50.149		38.36	-32.14	24763.87		-74.98	-75.46
Galle	E	2046-10-06T16:02:53.151		39.15	-39.13	42035.08	-145.82		
LeVerrier	E	2046-10-06T16:04:37.421		39.16	-38.88	53438.26	308.53		
Lassell	E	2046-10-06T16:04:43.796		39.16	-38.86	55338.59	321.36		
Arago	E	2046-10-06T16:04:49.923		39.17	-38.85	57284.41	332.75		
Galatea	E	2046-10-06T16:05:03.745		39.17	-38.82	61982.70	354.85		
Adams	E	2046-10-06T16:05:06.493		39.17	-38.81	62957.38	358.68		