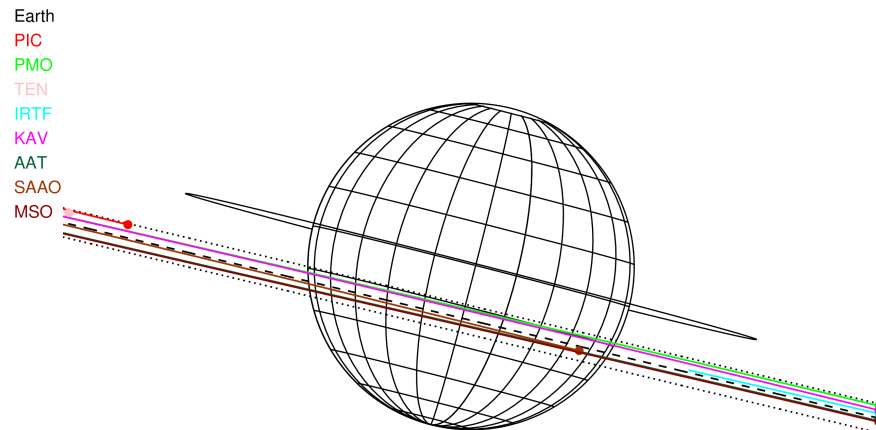
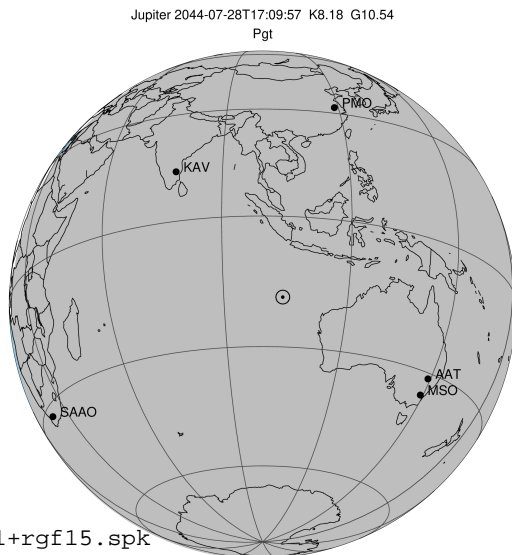


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2044-07-28T17:09:57.890  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 6854311850689096448  
 2Mass ID (if available) : 20124484-2032514

Jupiter 2044-07-28T17:09:57 K8.18 G10.54 Pgt

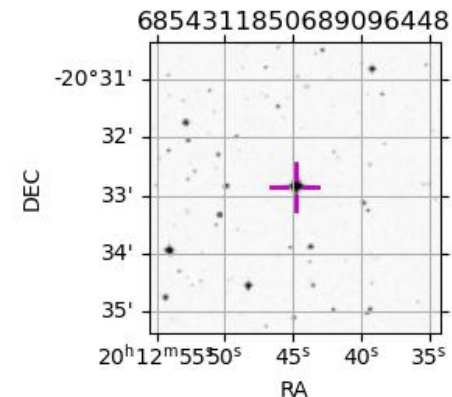
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s  
 RUWE (>1.4 is poor) : 1.14  
 K magnitude : 8.181  
 G magnitude : 10.540  
 RP magnitude : 9.807  
 BP magnitude : 11.127  
 DUPflag : 0  
 Distance (au) : 4.110  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -15.98  
 Sun-Target sep (deg) : 175.15  
 Sun-Moon sep (deg) : 121.37  
 B (ring opening deg) : -0.74  
 PA of pole (deg) : -14.35  
 Pole direction: RA (deg): 268.05689  
 Dec (deg): 64.49728  
 C/A sky separation (") : 7.698  
 C/A sky separation (km) : 22945.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



2044-07-28T17:09:57.8900 at: 20 12 44.8527 s: -20 32 52.223 C/A 7.704" PA 346.51 deg v\_sky -15.98 km/s D 04.11 AU  
 Credit: Styled after SORA/Lucky Star

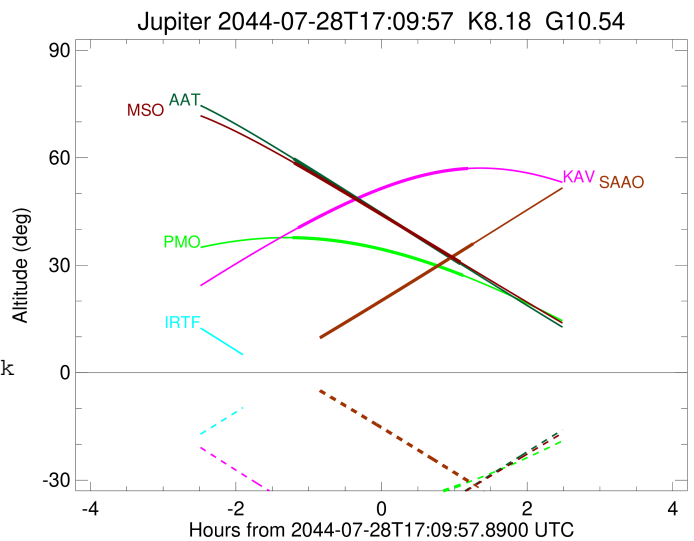
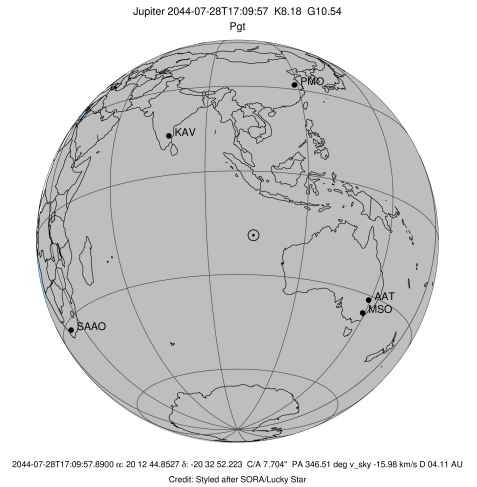
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	JUL 28 15:56 - JUL 28 18:17	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUL 28 16:01 - JUL 28 18:21	Pie
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1	+ +	JUL 28 15:57 - JUL 28 18:14	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 28 18:25 - JUL 28 18:25	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 28 15:57 - JUL 28 18:14	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2044-07-28T17:06:49.600
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)        : 32.06667
E. Longitude (deg)    : 118.82089
Altitude (km)         : 0.364
Gaia source ID        : 6854311850689096448
2Mass ID (if available) : 20124484-2032514
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s
RUWE (>1.4 is poor) : 1.14
K magnitude           : 8.181
G magnitude           : 10.540
RP magnitude          : 9.807
BP magnitude          : 11.127
DUPflag              : 0
Distance (au)         : 4.110
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.98
Sun-Target sep (deg)  : 175.15
Sun-Moon sep (deg)    : 121.59
B (ring opening deg) : -0.74
PA of pole (deg)      : -14.35
Pole direction: RA (deg): 268.05689
Dec (deg): 64.49728
C/A sky separation (") : 6.225
C/A sky separation (km) : 18556.5
NAIF SPICE kernels    : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

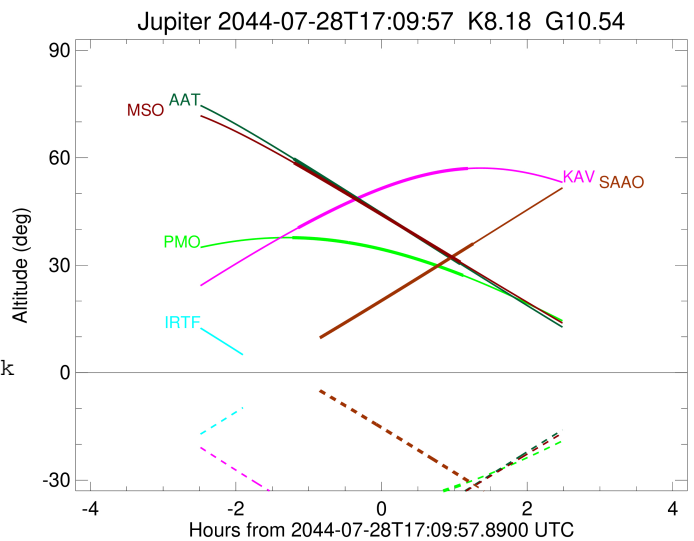
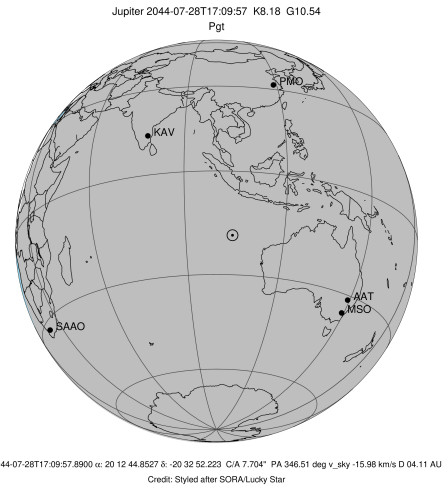


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2044-07-28T15:56:28.664	37.69	-39.27	71492.0	-13.79	-15.67
Jupiter	E	2044-07-28T18:17:23.546	27.13	-31.07	71491.9	-16.40	-18.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2044-07-28T17:11:15.350
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : KAV
Location            : Kavalur Observatory
Latitude (deg)      : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)       : 0.722
Gaia source ID      : 6854311850689096448
2Mass ID (if available) : 20124484-2032514
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s
RUWE (>1.4 is poor) : 1.14
K magnitude          : 8.181
G magnitude          : 10.540
RP magnitude         : 9.807
BP magnitude         : 11.127
DUPflag             : 0
Distance (au)       : 4.110
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -15.98
Sun-Target sep (deg) : 175.15
Sun-Moon sep (deg)  : 122.11
B (ring opening deg) : -0.74
PA of pole (deg)    : -14.35
Pole direction: RA (deg): 268.05689
Dec (deg): 64.49728
C/A sky separation (" ) : 6.441
C/A sky separation (km) : 19200.0
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

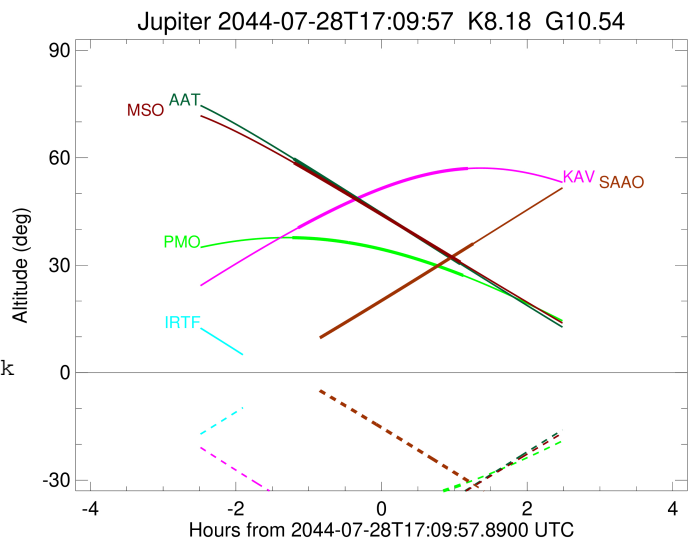
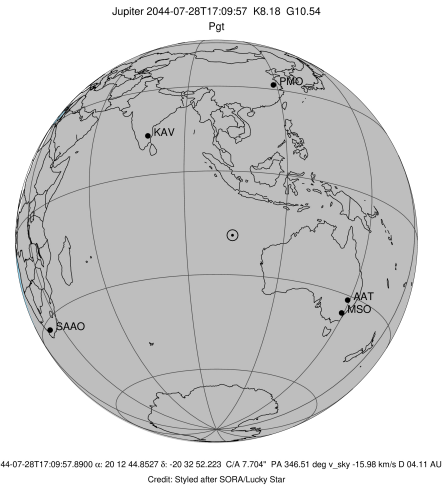


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2044-07-28T16:01:14.163	40.42	-37.78	71492.0	-14.66	-16.64
Jupiter	E	2044-07-28T18:21:08.111	56.99	-57.95	71491.9	-16.69	-18.91

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2044-07-28T17:05:59.380
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)        : -31.27703
E. Longitude (deg)    : 149.06608
Altitude (km)         : 1.164
Gaia source ID        : 6854311850689096448
2Mass ID (if available) : 20124484-2032514
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s
RUWE (>1.4 is poor) : 1.14
K magnitude           : 8.181
G magnitude           : 10.540
RP magnitude          : 9.807
BP magnitude          : 11.127
DUPflag              : 0
Distance (au)         : 4.110
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.98
Sun-Target sep (deg) : 175.15
Sun-Moon sep (deg)   : 121.66
B (ring opening deg) : -0.74
PA of pole (deg)     : -14.35
Pole direction: RA (deg): 268.05689
Dec (deg): 64.49728
C/A sky separation ("): 8.622
C/A sky separation (km): 25699.2
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

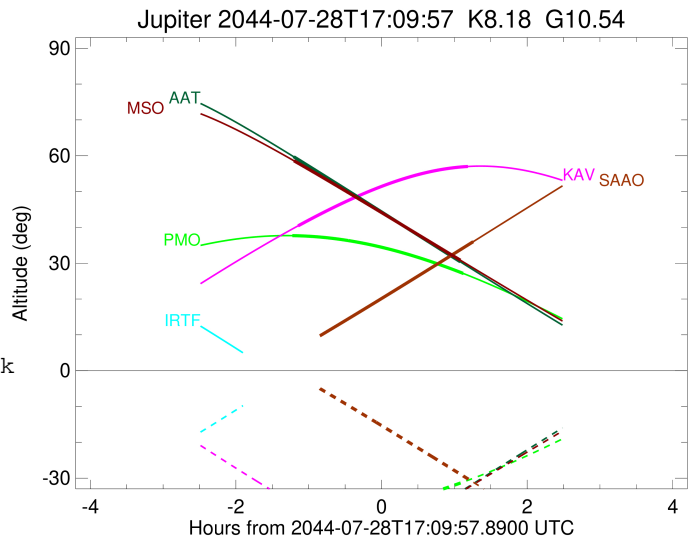
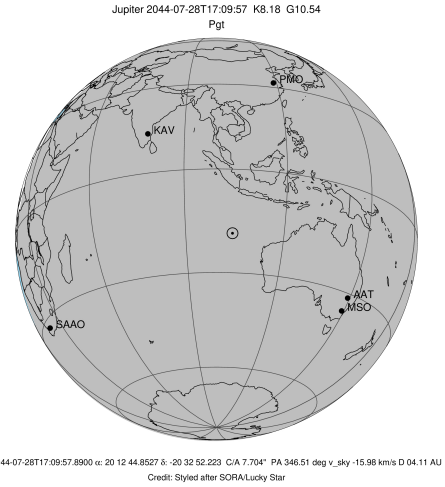


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2044-07-28T15:57:35.855	59.72	-62.78	71491.9	-19.66	-22.20
Jupiter	E	2044-07-28T18:14:47.570	30.42	-33.85	71491.9	-22.50	-25.31

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2044-07-28T17:16:08.530
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
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        : 6854311850689096448
2Mass ID (if available) : 20124484-2032514
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s
RUWE (>1.4 is poor) : 1.14
K magnitude           : 8.181
G magnitude           : 10.540
RP magnitude          : 9.807
BP magnitude          : 11.127
DUPflag              : 0
Distance (au)         : 4.110
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.98
Sun-Target sep (deg) : 175.15
Sun-Moon sep (deg)   : 122.13
B (ring opening deg) : -0.74
PA of pole (deg)     : -14.35
Pole direction: RA (deg): 268.05689
Dec (deg): 64.49728
C/A sky separation ("): 8.179
C/A sky separation (km): 24380.3
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

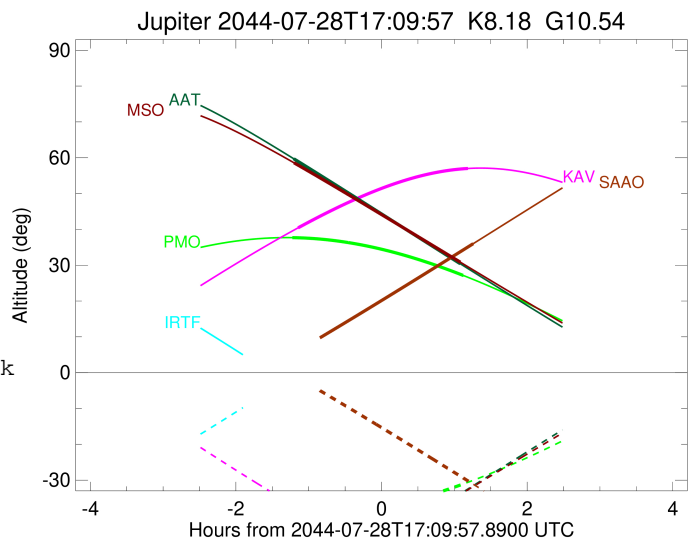
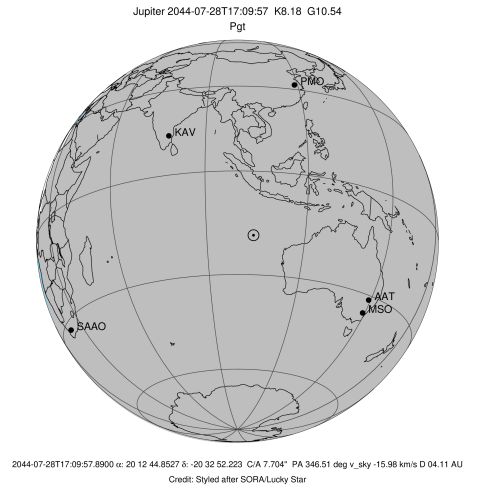


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2044-07-28T16:06:20.905	7.14	-2.44x	71491.9	-19.54	-22.06
Jupiter	E	2044-07-28T18:25:27.958	35.99	-31.11	71491.9	-20.47	-23.10

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2044-07-28T17:06:17.150
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : MSO
Location             : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 6854311850689096448
2Mass ID (if available) : 20124484-2032514
ICRS Star Coord at Epoch: 20h 12m 44.85270s -20:32:52.22255s
RUWE (>1.4 is poor) : 1.14
K magnitude           : 8.181
G magnitude           : 10.540
RP magnitude         : 9.807
BP magnitude         : 11.127
DUPflag              : 0
Distance (au)        : 4.110
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.98
Sun-Target sep (deg) : 175.15
Sun-Moon sep (deg)   : 121.68
B (ring opening deg) : -0.74
PA of pole (deg)     : -14.35
Pole direction: RA (deg): 268.05689
Dec (deg): 64.49728
C/A sky separation (") : 8.740
C/A sky separation (km) : 26051.8
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```



x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2044-07-28T15:57:58.872	58.56	-61.10	71491.9	-19.99	-22.56
Jupiter	E	2044-07-28T18:14:58.974	30.82	-33.94	71491.9	-22.78	-25.61