

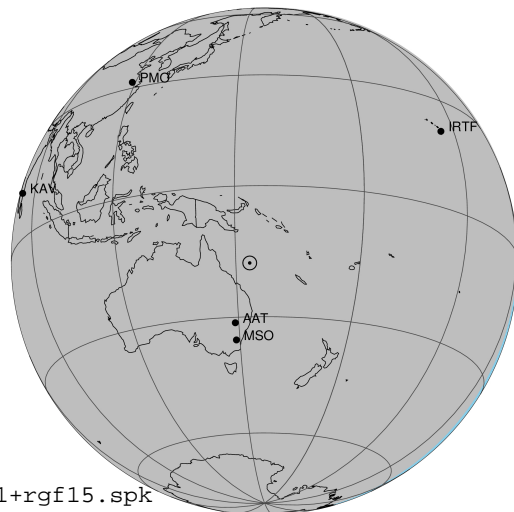
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2030-05-10T13:43:09.280
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 6258288179483242112
 2Mass ID (if available) : 15222875-1717319

Jupiter 2030-05-10T13:43:09 K9.91 G12.73 Pgt

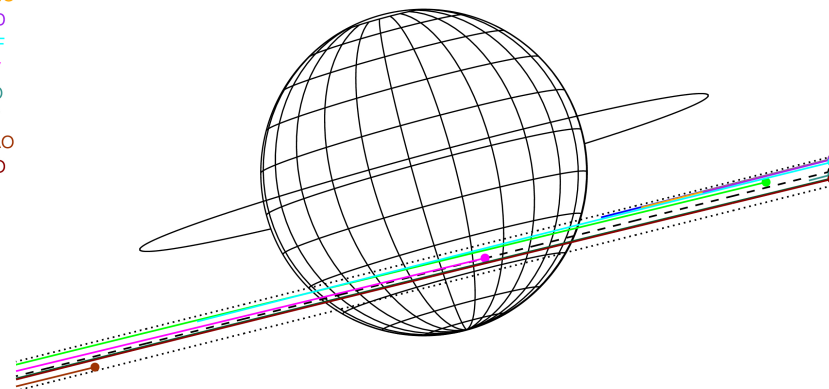
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s

RUWE (>1.4 is poor) : 0.92
 K magnitude : 9.909
 G magnitude : 12.732
 RP magnitude : 11.915
 BP magnitude : 13.448
 DUPflag : 0
 Distance (au) : 4.388
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.84
 Sun-Target sep (deg) : 176.61
 Sun-Moon sep (deg) : 94.98
 B (ring opening deg) : -3.33
 PA of pole (deg) : 15.20
 Pole direction: RA (deg): 268.05726
 Dec (deg): 64.49652
 C/A sky separation (") : 13.503
 C/A sky separation (km) : 42972.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2030-05-10T13:43:09 K9.91 G12.73
 Pgt



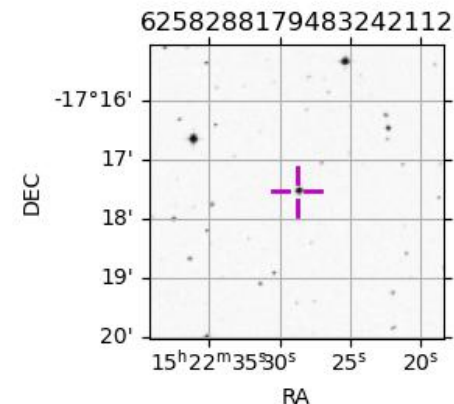
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 SAAO
 MSO



2030-05-10T13:43:09.2800 α: 15 22 28.7480 δ: -17 17 31.8571 C/A ***** PA 14.11 deg v_sky -16.84 km/s D 04.39 AU
 Credit: Styled after SORA/Lucky Star

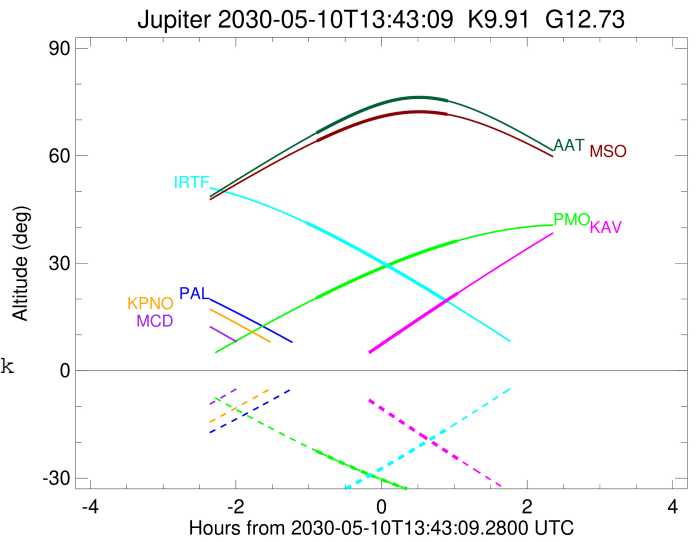
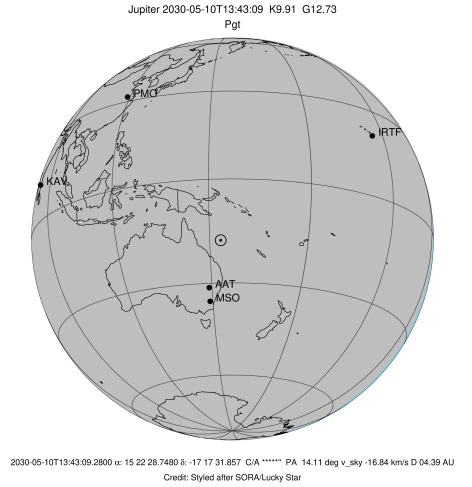
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAY 10 12:49 - MAY 10 14:45	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	+ +	MAY 10 12:41 - MAY 10 14:38	Pie
KAV	Kavalur Observatory	12.6	78.8	+ +	MAY 10 14:46 - MAY 10 14:46	Pne
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	+ +	MAY 10 12:49 - MAY 10 14:37	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAY 10 12:49 - MAY 10 14:37	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2030-05-10T13:47:40.810
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      : 6258288179483242112
2Mass ID (if available) : 15222875-1717319
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.909
G magnitude          : 12.732
RP magnitude         : 11.915
BP magnitude         : 13.448
DUPflag             : 0
Distance (au)       : 4.388
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.84
Sun-Target sep (deg) : 176.61
Sun-Moon sep (deg)  : 95.48
B (ring opening deg) : -3.33
PA of pole (deg)    : 15.20
Pole direction: RA (deg): 268.05726
Dec (deg): 64.49652
C/A sky separation (") : 12.375
C/A sky separation (km) : 39384.3
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
    
```

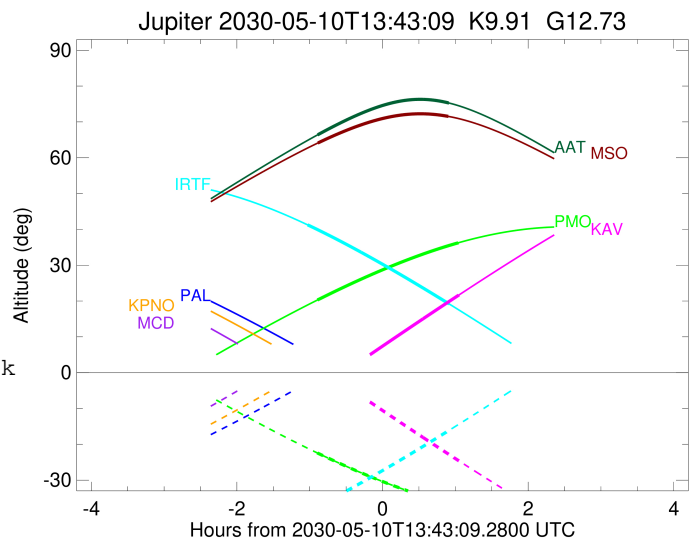
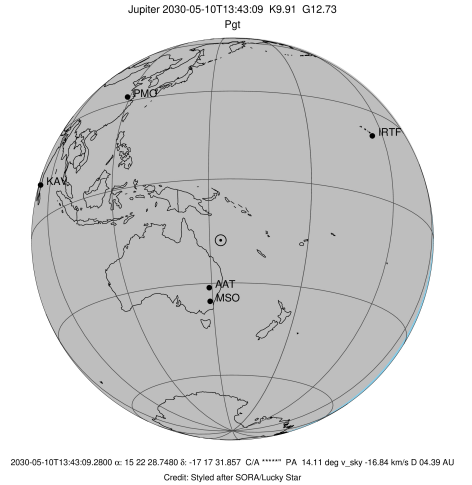


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2030-05-10T12:49:31.799	20.28	-22.42	71487.0	-34.95	-38.55
Jupiter	E	2030-05-10T14:45:36.303	36.25	-37.17	71487.8	-31.81	-35.28

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2030-05-10T13:39:41.310
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 6258288179483242112
2Mass ID (if available) : 15222875-1717319
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.909
G magnitude           : 12.732
RP magnitude          : 11.915
BP magnitude          : 13.448
DUPflag              : 0
Distance (au)         : 4.388
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.84
Sun-Target sep (deg)  : 176.61
Sun-Moon sep (deg)    : 95.39
B (ring opening deg) : -3.33
PA of pole (deg)      : 15.20
Pole direction: RA (deg): 268.05726
Dec (deg): 64.49652
C/A sky separation (") : 12.170
C/A sky separation (km) : 38730.1
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
    
```

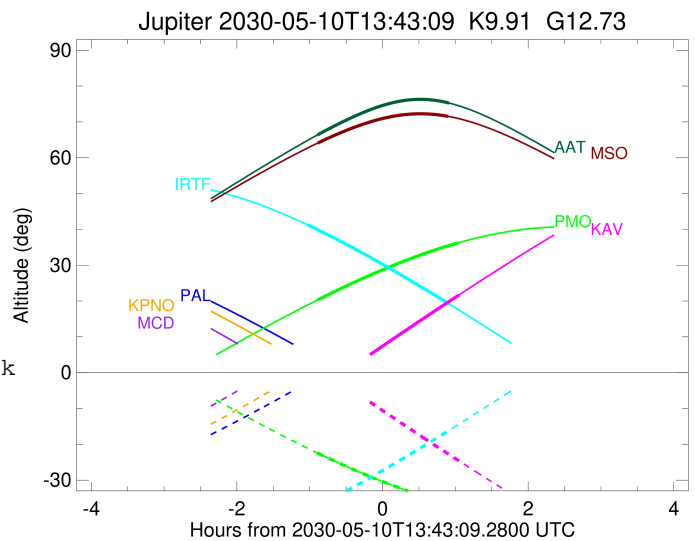
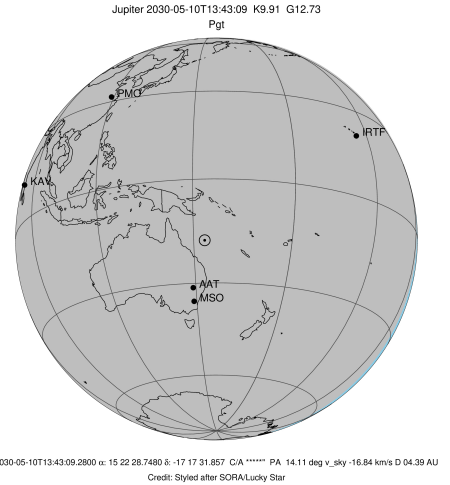


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2030-05-10T12:41:28.538	41.25	-38.67	71487.3	-33.83	-37.39
Jupiter	E	2030-05-10T14:38:08.861	19.17	-16.07	71487.8	-31.79	-35.26

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2030-05-10T13:49:46.180
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      : 6258288179483242112
2Mass ID (if available) : 15222875-1717319
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s
RUWE (>1.4 is poor) : 0.92
K magnitude         : 9.909
G magnitude         : 12.732
RP magnitude        : 11.915
BP magnitude        : 13.448
DUPflag            : 0
Distance (au)       : 4.388
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -16.84
Sun-Target sep (deg) : 176.61
Sun-Moon sep (deg)  : 95.18
B (ring opening deg) : -3.33
PA of pole (deg)    : 15.20
Pole direction: RA (deg): 268.05726
Dec (deg): 64.49652
C/A sky separation (") : 13.427
C/A sky separation (km) : 42730.9
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
    
```

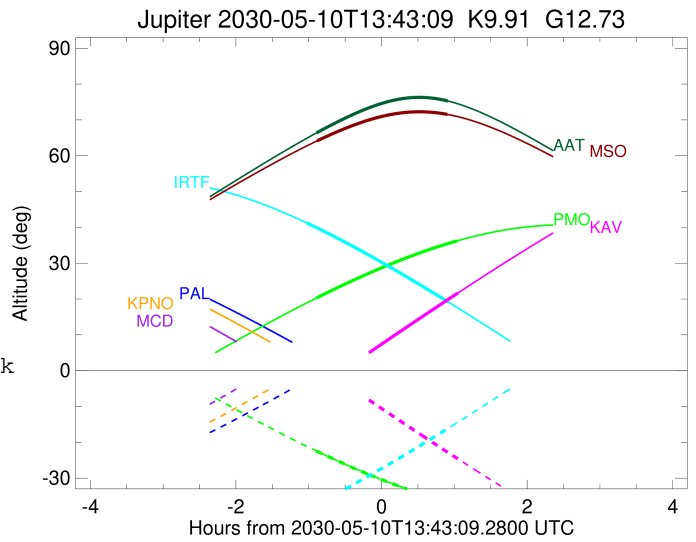
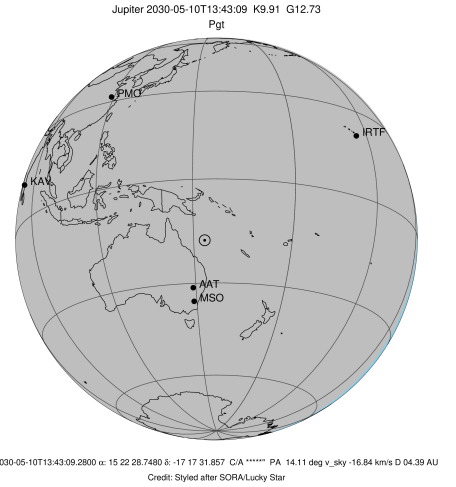


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2030-05-10T12:53:05.650	-4.25x	0.98x	71486.2	-38.21	-41.89
Jupiter	E	2030-05-10T14:46:04.565	21.67	-24.61	71487.0	-35.00	-38.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2030-05-10T13:43:46.210
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        : 6258288179483242112
2Mass ID (if available) : 15222875-1717319
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s
RUWE (>1.4 is poor)  : 0.92
K magnitude           : 9.909
G magnitude           : 12.732
RP magnitude          : 11.915
BP magnitude          : 13.448
DUPflag              : 0
Distance (au)         : 4.388
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -16.84
Sun-Target sep (deg)  : 176.61
Sun-Moon sep (deg)    : 95.88
B (ring opening deg)  : -3.33
PA of pole (deg)      : 15.20
Pole direction: RA (deg): 268.05726
Dec (deg): 64.49652
C/A sky separation (") : 14.023
C/A sky separation (km) : 44627.6
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
    
```

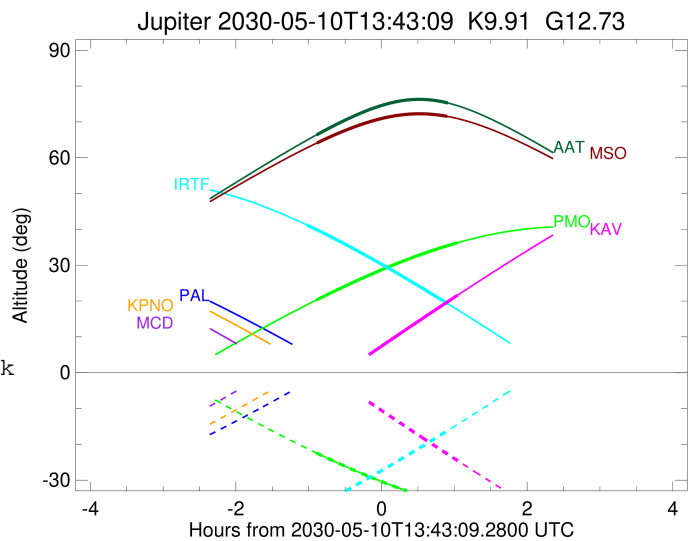
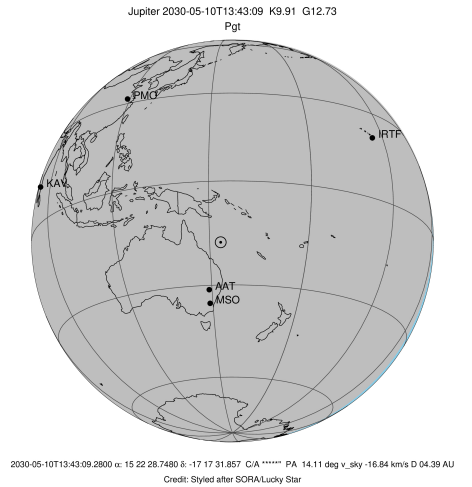


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2030-05-10T12:49:42.816	66.39	-69.16	71485.7	-40.04	-43.75
Jupiter	E	2030-05-10T14:37:45.675	75.28	-74.14	71486.4	-37.14	-40.80

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2030-05-10T13:43:38.050
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      : 6258288179483242112
2Mass ID (if available) : 15222875-1717319
ICRS Star Coord at Epoch: 15h 22m 28.74800s -17:17:31.85713s
RUWE (>1.4 is poor) : 0.92
K magnitude         : 9.909
G magnitude         : 12.732
RP magnitude        : 11.915
BP magnitude        : 13.448
DUPflag            : 0
Distance (au)       : 4.388
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.84
Sun-Target sep (deg) : 176.61
Sun-Moon sep (deg)  : 95.86
B (ring opening deg) : -3.33
PA of pole (deg)    : 15.20
Pole direction: RA (deg): 268.05726
Dec (deg): 64.49652
C/A sky separation (") : 14.153
C/A sky separation (km) : 45039.7
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	2030-05-10T12:49:50.746	64.10	-66.57	71485.6	-40.45	-44.16
Jupiter	E	2030-05-10T14:37:21.597	71.53	-70.76	71486.3	-37.58	-41.25