

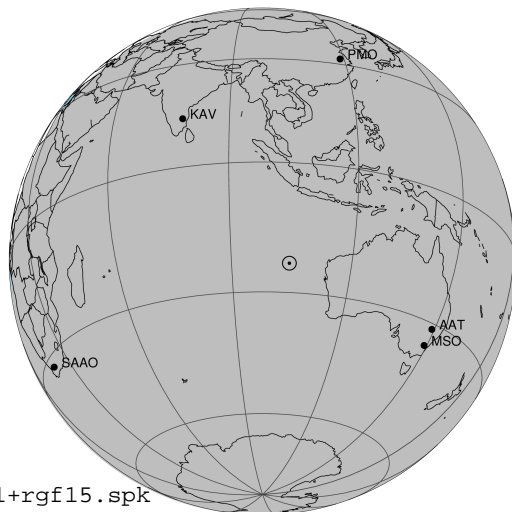
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-25T17:05:31.920
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068869364210987008
 2Mass ID (if available) : 17483834-2304541

Jupiter 2043-06-25T17:05:31 K8.91 G14.12 Pgt

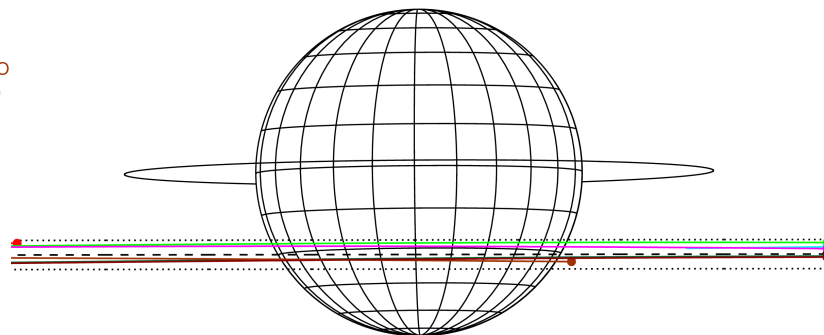
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23°04:54.15374s

RUWE (>1.4 is poor) : 1.00
 K magnitude : 8.914
 G magnitude : 14.123
 RP magnitude : 12.783
 BP magnitude : 16.136
 DUPflag : 0
 Distance (au) : 4.253
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.26
 Sun-Target sep (deg) : 173.92
 Sun-Moon sep (deg) : 42.14
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.39
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 11.649
 C/A sky separation (km) : 35929.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-06-25T17:05:31 K8.91 G14.12 Pgt



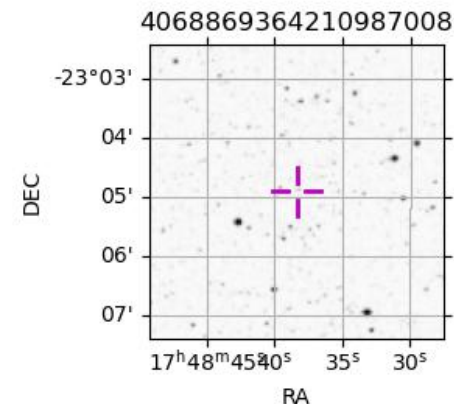
Earth
 PIC
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



2043-06-25T17:05:31.9200 α: 17 48 38.3431 δ: -23 04 54.154 C/A ***** PA 0.07 deg v_sky -16.26 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

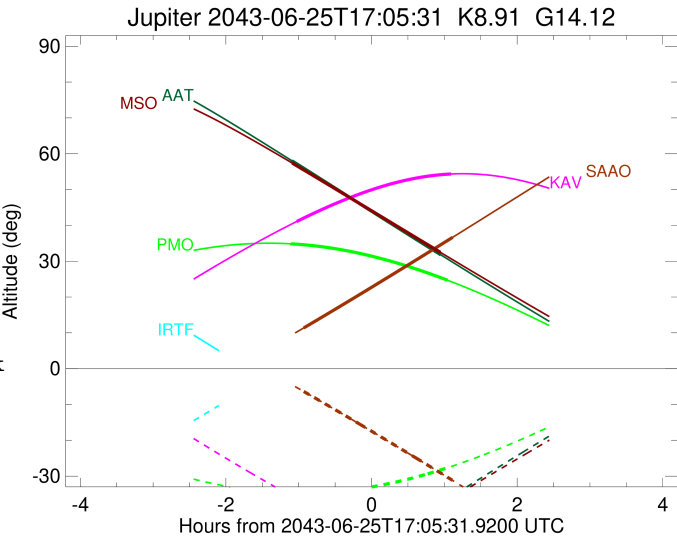
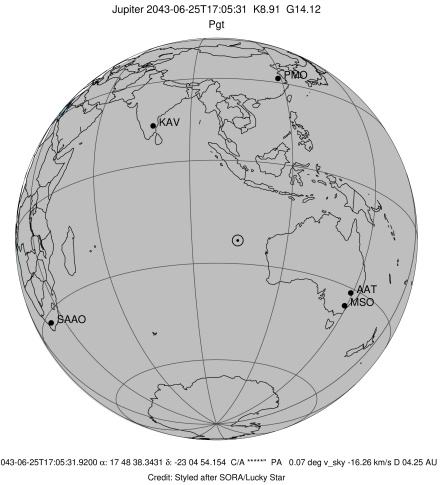
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	JUN 25 15:58 - JUN 25 18:08	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	+ +	JUN 25 16:03 - JUN 25 18:11	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	+ +	JUN 25 15:59 - JUN 25 18:02	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 25 16:09 - JUN 25 18:12	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 25 16:00 - JUN 25 18:02	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T17:03:27.300
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       : 4068869364210987008
2Mass ID (if available) : 17483834-2304541
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23:04:54.15374s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.914
G magnitude           : 14.123
RP magnitude          : 12.783
BP magnitude          : 16.136
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.92
Sun-Moon sep (deg)   : 42.33
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.39
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 10.003
C/A sky separation (km): 30852.7
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
    
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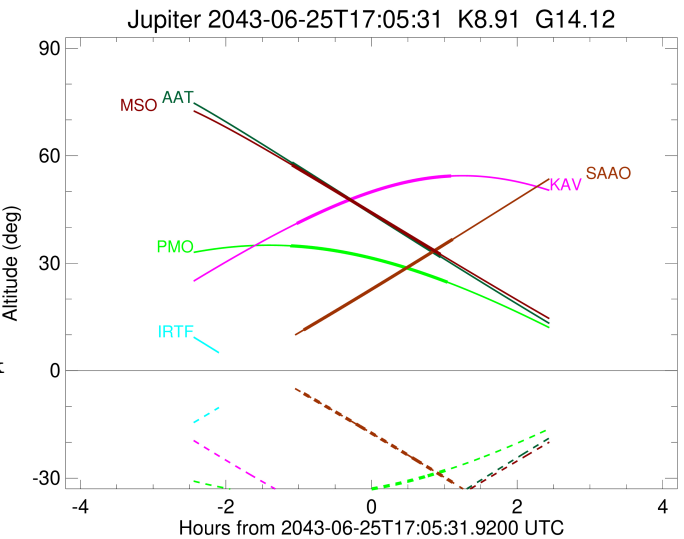
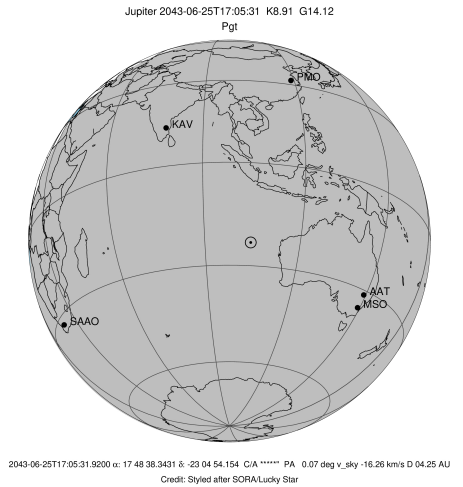


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T15:58:55.059	34.85	-34.70	71490.5	-25.74	-28.83
Jupiter	E	2043-06-25T18:08:09.336	24.69	-27.65	71490.5	-25.49	-28.55

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T17:07:38.050
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        : 4068869364210987008
2Mass ID (if available) : 17483834-2304541
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23:04:54.15374s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.914
G magnitude           : 14.123
RP magnitude          : 12.783
BP magnitude          : 16.136
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg)  : 173.92
Sun-Moon sep (deg)   : 42.89
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.39
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 10.483
C/A sky separation (km): 32335.0
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
    
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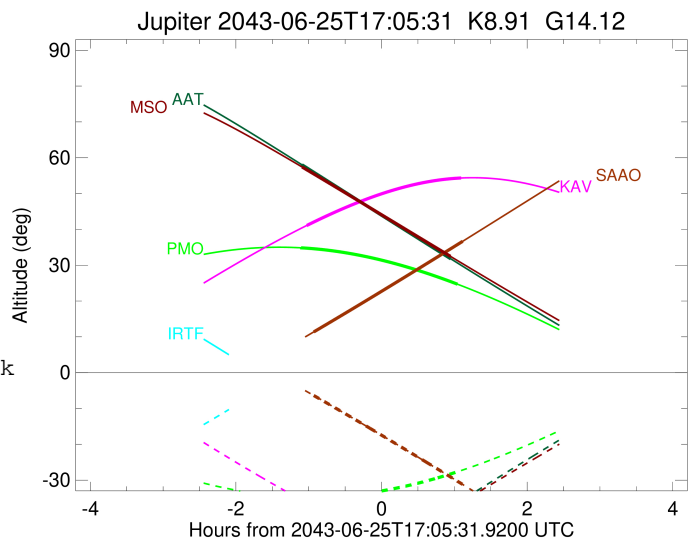
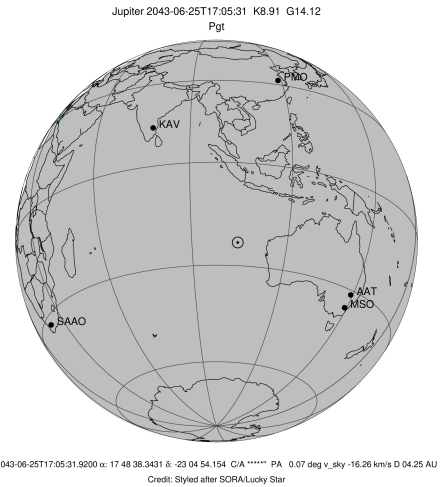


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T16:03:55.123	41.08	-36.30	71490.3	-27.45	-30.66
Jupiter	E	2043-06-25T18:11:12.376	54.34	-53.06	71490.4	-26.44	-29.58

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T17:00:57.340
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       : 4068869364210987008
2Mass ID (if available) : 17483834-2304541
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23:04:54.15374s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 8.914
G magnitude          : 14.123
RP magnitude         : 12.783
BP magnitude         : 16.136
DUPflag             : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.92
Sun-Moon sep (deg)  : 42.09
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.39
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 12.192
C/A sky separation (km): 37604.5
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
    
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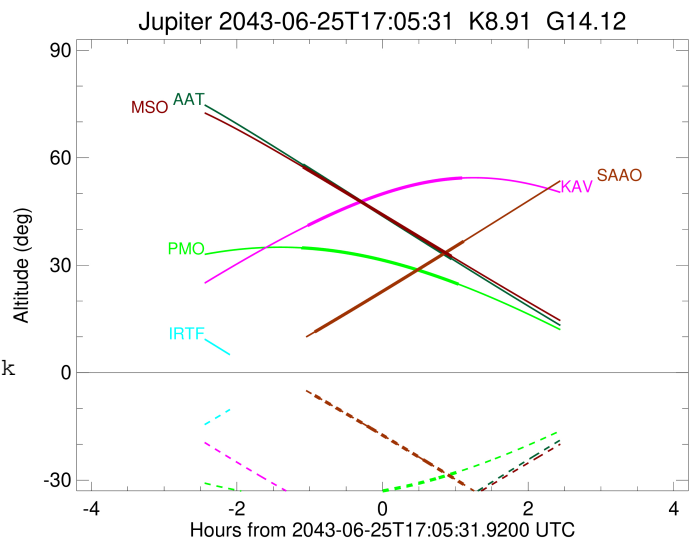
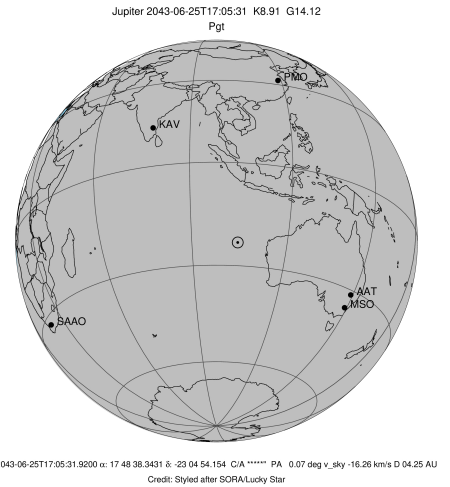


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T15:59:46.277	58.06	-63.73	71489.8	-31.66	-35.11
Jupiter	E	2043-06-25T18:02:27.429	31.81	-37.56	71489.8	-31.85	-35.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T17:11:15.060
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        : 4068869364210987008
2Mass ID (if available) : 17483834-2304541
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23:04:54.15374s
RUWE (>1.4 is poor)  : 1.00
K magnitude           : 8.914
G magnitude           : 14.123
RP magnitude          : 12.783
BP magnitude          : 16.136
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg)  : 173.92
Sun-Moon sep (deg)    : 42.91
B (ring opening deg)  : -2.42
PA of pole (deg)      : 0.39
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 12.484
C/A sky separation (km) : 38505.9
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
    
```

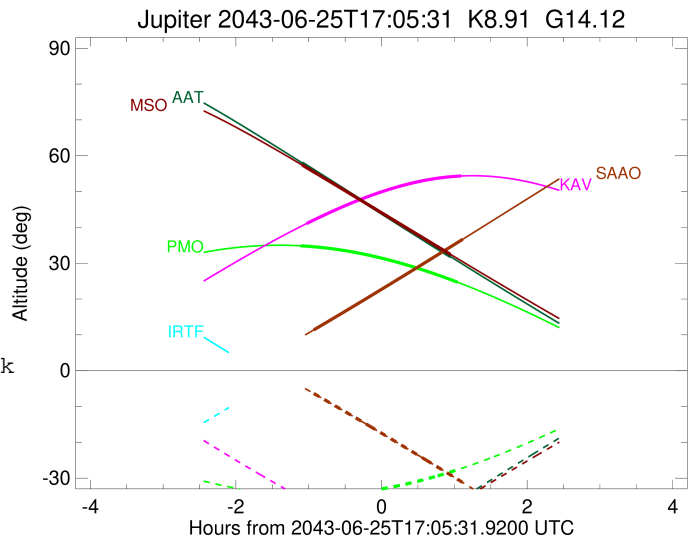
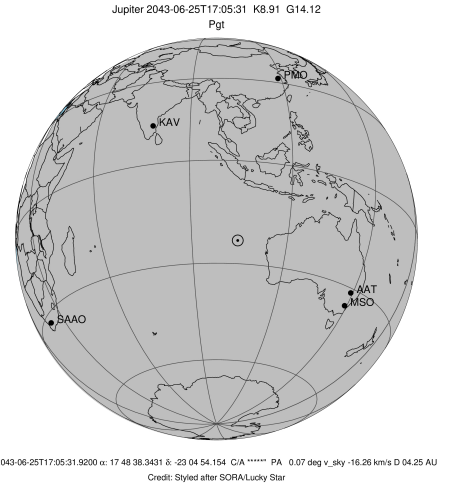


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T16:09:42.250	11.38	-6.38	71489.6	-33.41	-36.95
Jupiter	E	2043-06-25T18:12:25.055	36.66	-31.20	71489.8	-31.75	-35.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T17:01:09.680
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      : 4068869364210987008
2Mass ID (if available) : 17483834-2304541
ICRS Star Coord at Epoch: 17h 48m 38.34305s -23:04:54.15374s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 8.914
G magnitude          : 14.123
RP magnitude         : 12.783
BP magnitude         : 16.136
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.92
Sun-Moon sep (deg)  : 42.11
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.39
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 12.323
C/A sky separation (km) : 38010.0
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	2043-06-25T16:00:10.867	57.39	-62.72	71489.7	-32.05	-35.53
Jupiter	E	2043-06-25T18:02:26.577	32.44	-37.99	71489.7	-32.21	-35.70