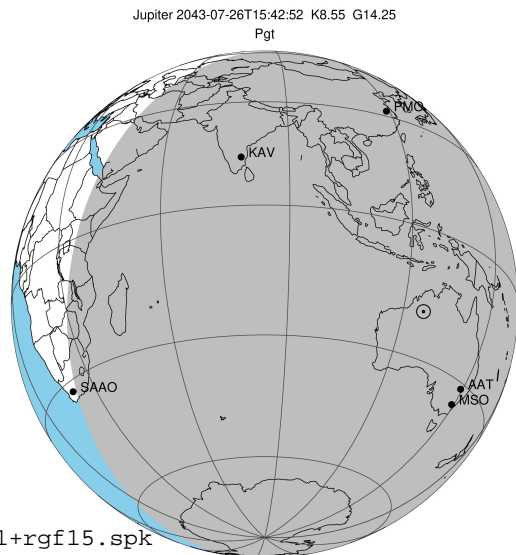


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-07-26T15:42:52.180  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116696986200201344  
 2Mass ID (if available) : 17342105-2303011

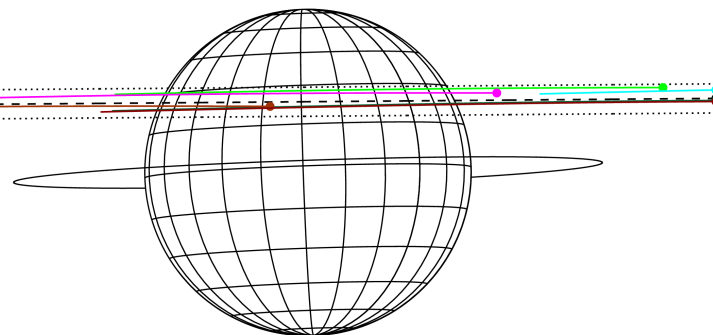
Jupiter 2043-07-26T15:42:52 K8.55 G14.25 Pgt

ICRS Star Coord at Epoch: 17h 34m 21.04252s -23°03'01.40368s  
 RUWE (>1.4 is poor) : 0.93  
 K magnitude : 8.553  
 G magnitude : 14.249  
 RP magnitude : 12.814  
 BP magnitude : 16.973  
 DUPflag : 0  
 Distance (au) : 4.424  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -9.98  
 Sun-Target sep (deg) : 141.13  
 Sun-Moon sep (deg) : 94.10  
 B (ring opening deg) : -2.38  
 PA of pole (deg) : 1.92  
 Pole direction: RA (deg): 268.05671  
 Dec (deg): 64.49731  
 C/A sky separation (") : 9.661  
 C/A sky separation (km) : 31001.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk  
 URKALLvl.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp



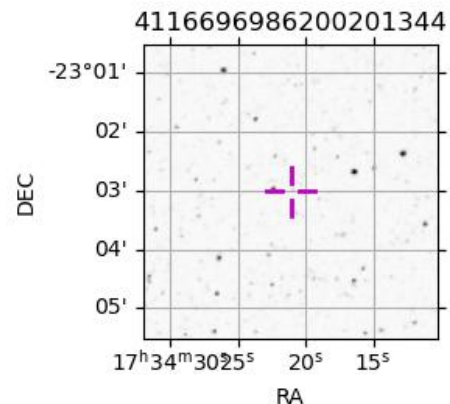
2043-07-26T15:42:52.1800 α: 17 34 21.0425 δ: -23 03 01.404 C/A 9.651" PA 180.46 deg v\_sky - 9.98 km/s D 04.42 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 PMO  
 TEN  
 IRTF  
 KAV  
 RIO  
 AAT  
 SAAO  
 MSO



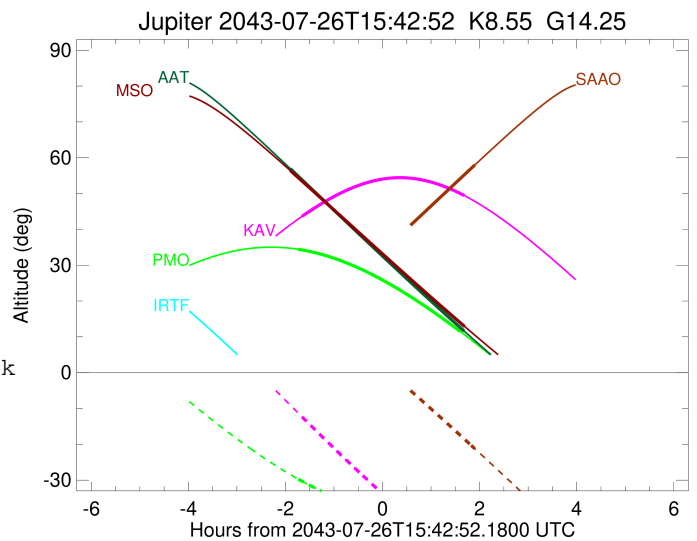
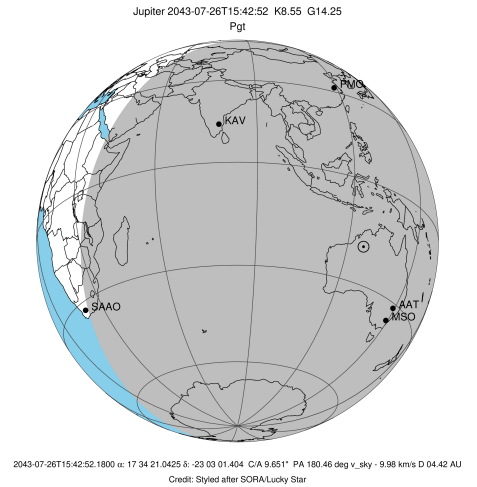
Observable events with sun below -5 deg and altitude above 5 deg

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 26 13:58 - JUL 26 17:19	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 26 14:03 - JUL 26 17:23	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 26 13:49 - JUL 26 17:23	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 26 17:36 - JUL 26 17:36	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 26 13:48 - JUL 26 17:24	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-26T15:38:24.580
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      : 4116696986200201344
2Mass ID (if available) : 17342105-2303011
ICRS Star Coord at Epoch: 17h 34m 21.04252s -23:03:01.40368s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 8.553
G magnitude          : 14.249
RP magnitude         : 12.814
BP magnitude         : 16.973
DUPflag             : 0
Distance (au)       : 4.424
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -9.98
Sun-Target sep (deg) : 141.13
Sun-Moon sep (deg)  : 94.55
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.92
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 11.182
C/A sky separation (km) : 35880.4
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
    
```

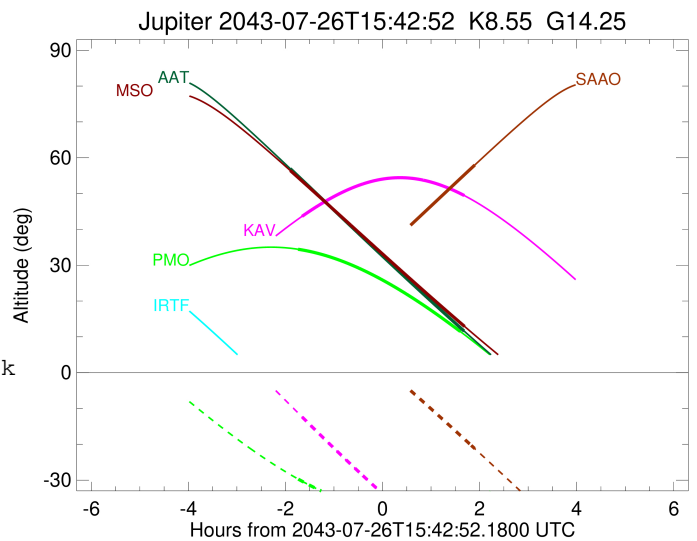
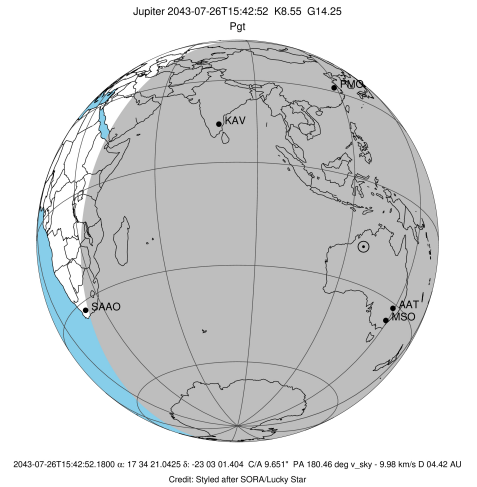


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-26T13:58:44.612	34.43	-29.71	71490.2	28.93	32.24
Jupiter	E	2043-07-26T17:19:09.807	11.46	-36.25	71489.9	30.95	34.37

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-26T15:43:44.360
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        : 4116696986200201344
2Mass ID (if available) : 17342105-2303011
ICRS Star Coord at Epoch: 17h 34m 21.04252s -23:03:01.40368s
RUWE (>1.4 is poor)  : 0.93
K magnitude           : 8.553
G magnitude           : 14.249
RP magnitude          : 12.814
BP magnitude          : 16.973
DUPflag              : 0
Distance (au)         : 4.424
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.98
Sun-Target sep (deg)  : 141.13
Sun-Moon sep (deg)    : 94.87
B (ring opening deg) : -2.38
PA of pole (deg)      : 1.92
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 10.814
C/A sky separation (km) : 34699.5
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
    
```

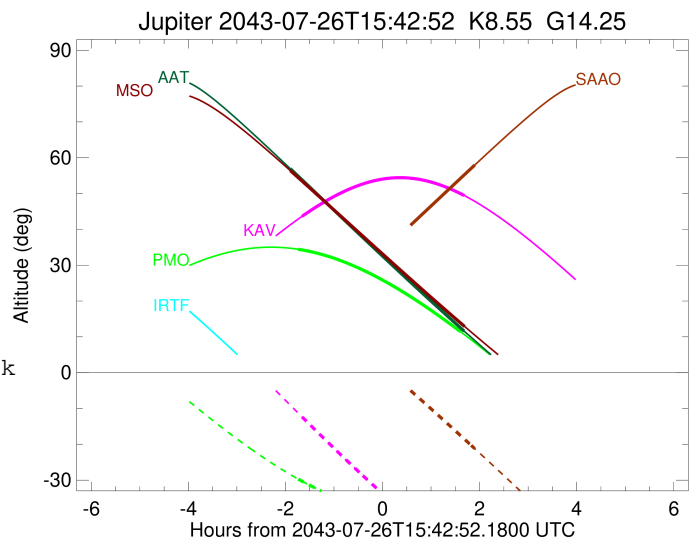
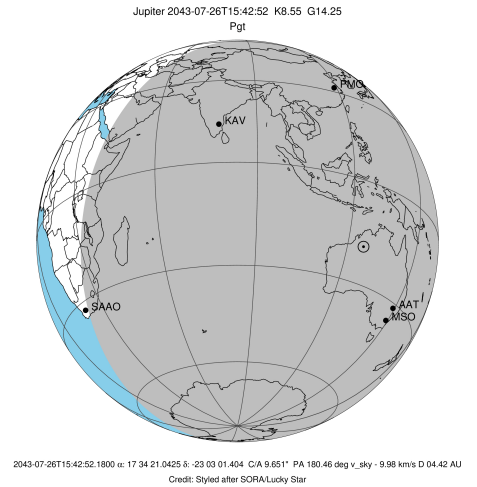


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-26T14:03:33.787	43.66	-12.38	71490.4	27.25	30.44
Jupiter	E	2043-07-26T17:23:57.073	49.44	-51.60	71490.0	30.35	33.74

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-26T15:35:24.160
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      : 4116696986200201344
2Mass ID (if available) : 17342105-2303011
ICRS Star Coord at Epoch: 17h 34m 21.04252s -23:03:01.40368s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 8.553
G magnitude          : 14.249
RP magnitude         : 12.814
BP magnitude         : 16.973
DUPflag             : 0
Distance (au)       : 4.424
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -9.98
Sun-Target sep (deg) : 141.13
Sun-Moon sep (deg)  : 94.68
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.92
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 9.027
C/A sky separation (km) : 28965.7
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
    
```

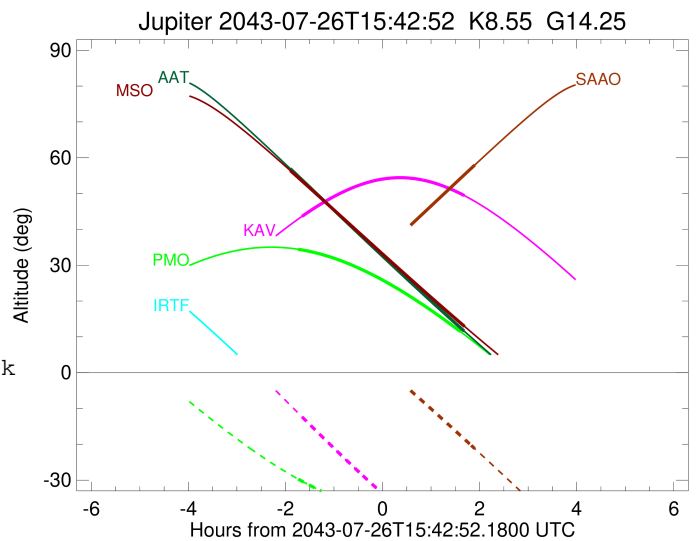
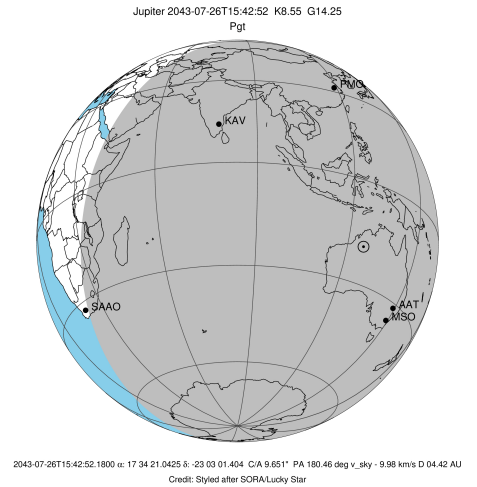


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-26T13:49:01.492	56.90	-77.32	71490.8	23.07	25.94
Jupiter	E	2043-07-26T17:23:41.926	11.62	-45.06	71490.7	24.49	27.47

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-26T15:50:08.190
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        : 4116696986200201344
2Mass ID (if available) : 17342105-2303011
ICRS Star Coord at Epoch: 17h 34m 21.04252s -23:03:01.40368s
RUWE (>1.4 is poor)  : 0.93
K magnitude           : 8.553
G magnitude           : 14.249
RP magnitude          : 12.814
BP magnitude          : 16.973
DUPflag              : 0
Distance (au)         : 4.424
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.98
Sun-Target sep (deg)  : 141.13
Sun-Moon sep (deg)    : 94.58
B (ring opening deg)  : -2.38
PA of pole (deg)      : 1.92
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 8.996
C/A sky separation (km) : 28866.3
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
    
```

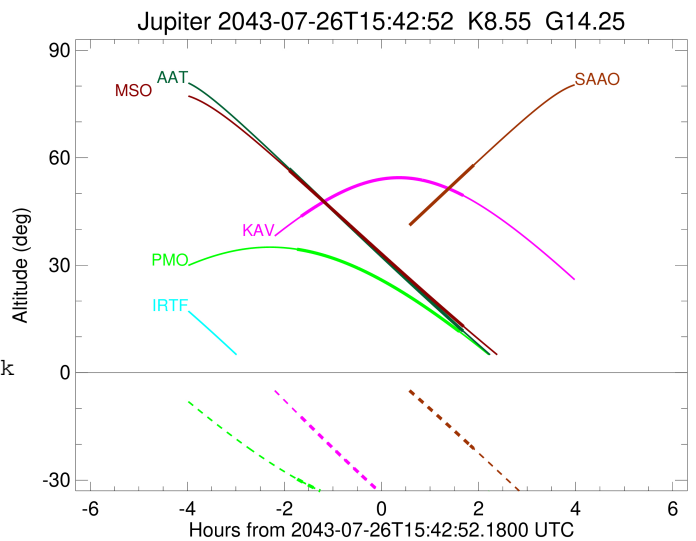
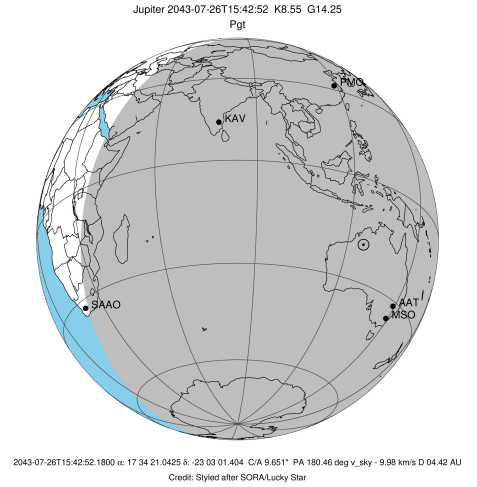


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-26T14:02:02.977	13.06	19.85x	71491.0	21.50	24.22
Jupiter	E	2043-07-26T17:36:49.145	57.93	-21.18	71490.5	25.90	28.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-26T15:35:43.660
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     : 4116696986200201344
2Mass ID (if available) : 17342105-2303011
ICRS Star Coord at Epoch: 17h 34m 21.04252s -23:03:01.40368s
RUWE (>1.4 is poor) : 0.93
K magnitude         : 8.553
G magnitude         : 14.249
RP magnitude        : 12.814
BP magnitude        : 16.973
DUPflag            : 0
Distance (au)      : 4.424
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -9.98
Sun-Target sep (deg) : 141.13
Sun-Moon sep (deg)  : 94.69
B (ring opening deg) : -2.38
PA of pole (deg)   : 1.92
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 8.905
C/A sky separation (km) : 28575.3
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	2043-07-26T13:48:57.377	56.40	-73.53	71490.8	22.70	25.54
Jupiter	E	2043-07-26T17:24:21.365	12.90	-44.60	71490.7	24.18	27.14