

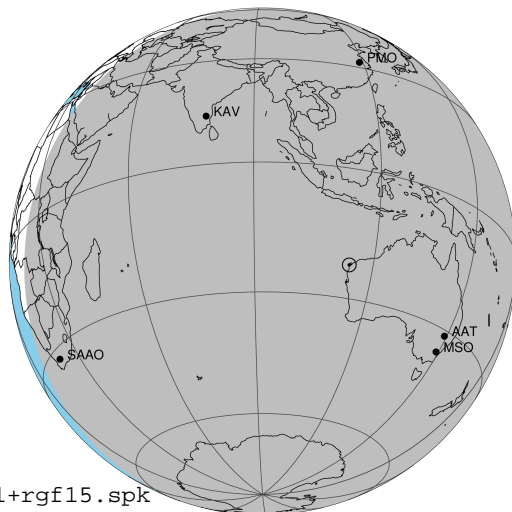
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-07-08T16:30:09.030
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116499898783445632
 2Mass ID (if available) : 17414847-2304219

Jupiter 2043-07-08T16:30:09 K8.92 G14.29 Pgt

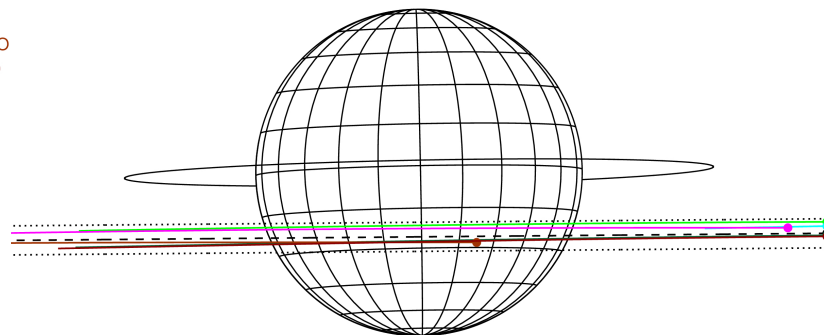
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s

RUWE (>1.4 is poor) : 0.96
 K magnitude : 8.923
 G magnitude : 14.291
 RP magnitude : 12.938
 BP magnitude : 16.506
 DUPflag : 0
 Distance (au) : 4.293
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.69
 Sun-Target sep (deg) : 159.98
 Sun-Moon sep (deg) : 133.87
 B (ring opening deg) : -2.41
 PA of pole (deg) : 1.12
 Pole direction: RA (deg): 268.05670
 Dec (deg): 64.49732
 C/A sky separation (") : 9.053
 C/A sky separation (km) : 28188.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-07-08T16:30:09 K8.92 G14.29
 Pgt



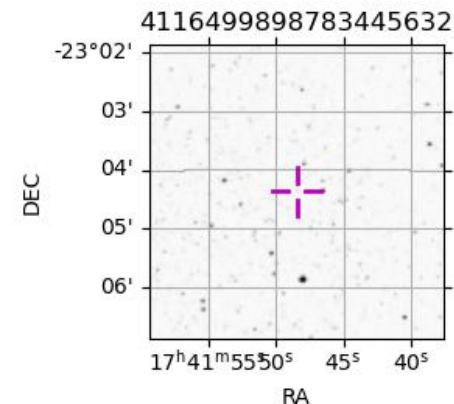
Earth
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



2043-07-08T16:30:09.0300 a: 17 41 48.4662 s: -23 04 22.016 C/A 9.064" PA 0.50 deg v_sky -14.69 km/s D 04.29 AU
 Credit: Styled after SORA/Lucky Star

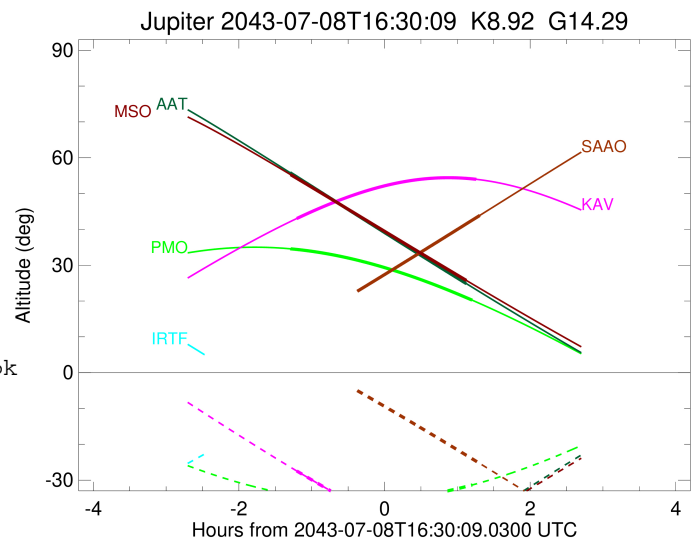
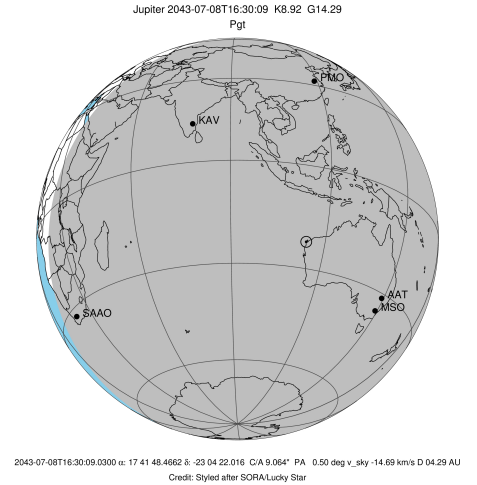
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
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 08 15:12 - JUL 08 17:42	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 08 15:17 - JUL 08 17:45	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 08 15:12 - JUL 08 17:37	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 08 17:48 - JUL 08 17:48	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 08 15:12 - JUL 08 17:37	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:27:21.470
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       : 4116499898783445632
2Mass ID (if available) : 17414847-2304219
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 8.923
G magnitude           : 14.291
RP magnitude          : 12.938
BP magnitude          : 16.506
DUPflag              : 0
Distance (au)         : 4.293
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.98
Sun-Moon sep (deg)   : 134.01
B (ring opening deg) : -2.41
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 7.443
C/A sky separation (km): 23176.2
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
    
```

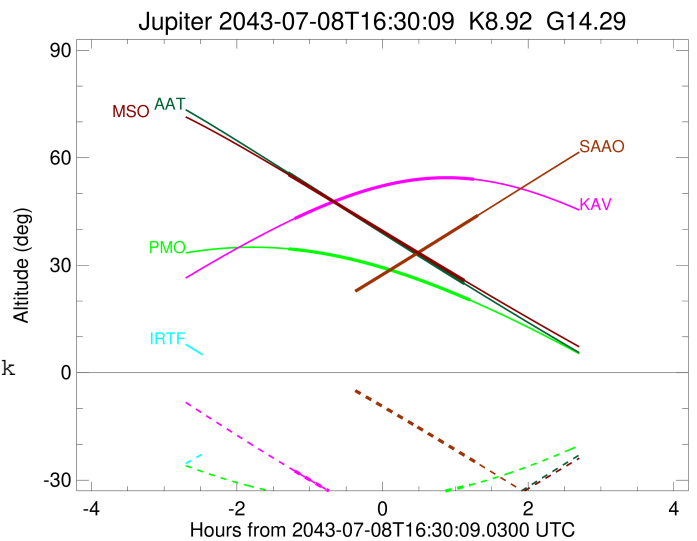
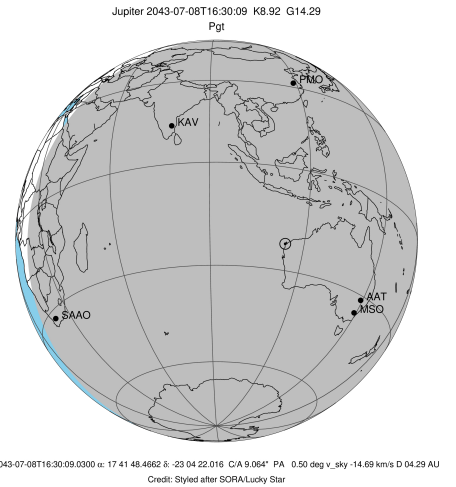


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:12:36.818	34.57	-33.98	71491.1	-19.36	-21.87
Jupiter	E	2043-07-08T17:42:25.746	20.23	-31.35	71491.2	-18.61	-21.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:31:48.370
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      : 4116499898783445632
2Mass ID (if available) : 17414847-2304219
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 8.923
G magnitude          : 14.291
RP magnitude         : 12.938
BP magnitude         : 16.506
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.98
Sun-Moon sep (deg)  : 134.61
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 7.882
C/A sky separation (km) : 24543.4
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
    
```

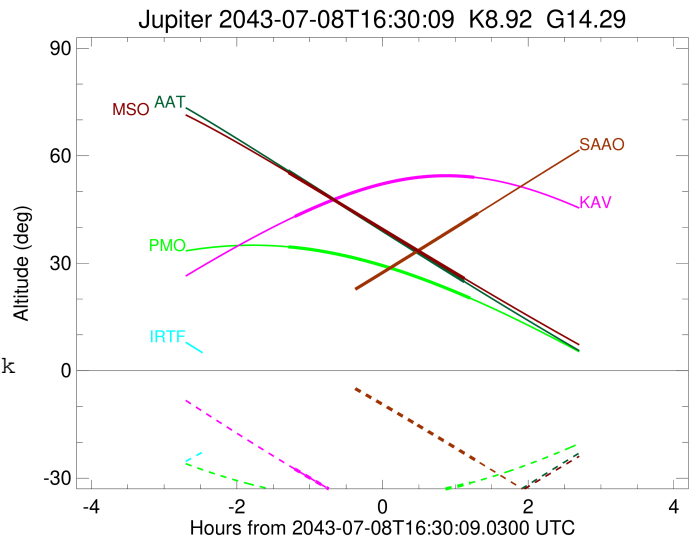
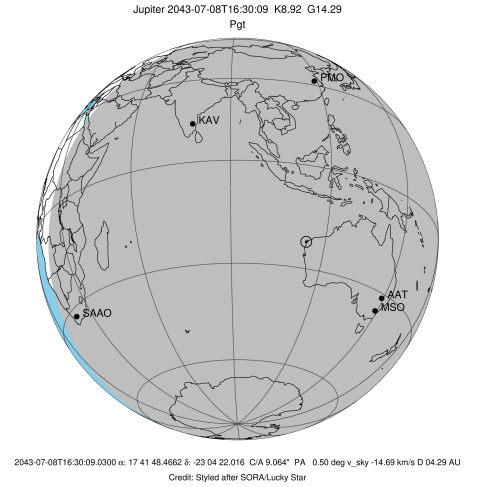


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:17:48.677	43.02	-27.43	71491.0	-20.94	-23.61
Jupiter	E	2043-07-08T17:45:41.042	53.97	-51.72	71491.1	-19.39	-21.90

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:24:44.220
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      : 4116499898783445632
2Mass ID (if available) : 17414847-2304219
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 8.923
G magnitude          : 14.291
RP magnitude         : 12.938
BP magnitude         : 16.506
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.98
Sun-Moon sep (deg)  : 133.80
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 9.632
C/A sky separation (km) : 29993.3
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
    
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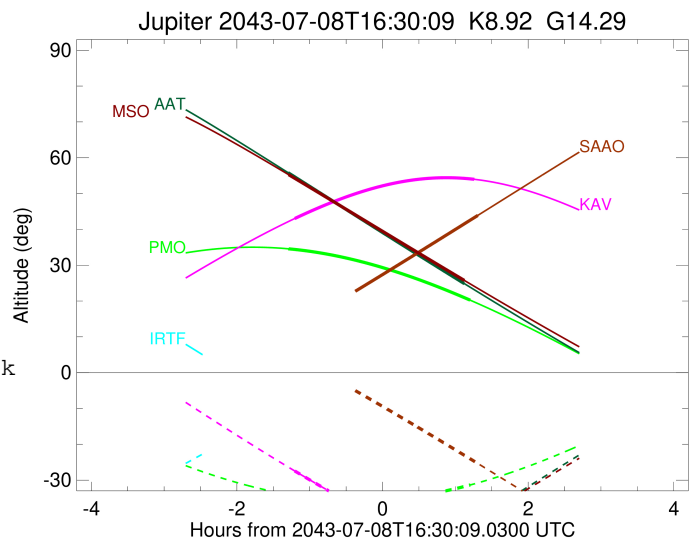
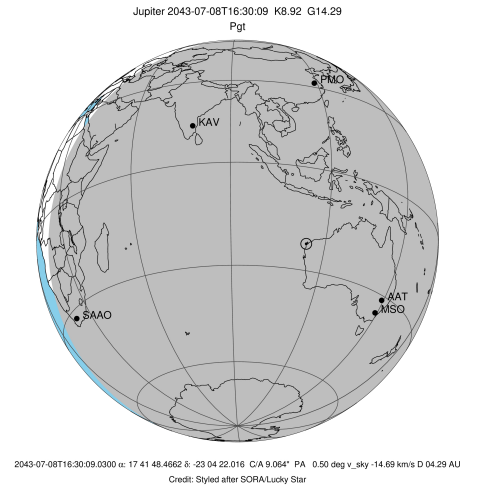


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:12:31.161	55.78	-73.38	71490.6	-24.98	-28.00
Jupiter	E	2043-07-08T17:37:30.392	24.87	-43.04	71490.6	-24.70	-27.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-08T16:36:13.070
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        : 4116499898783445632
2Mass ID (if available) : 17414847-2304219
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s
RUWE (>1.4 is poor)  : 0.96
K magnitude           : 8.923
G magnitude           : 14.291
RP magnitude          : 12.938
BP magnitude          : 16.506
DUPflag              : 0
Distance (au)         : 4.293
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -14.69
Sun-Target sep (deg)  : 159.98
Sun-Moon sep (deg)    : 134.70
B (ring opening deg)  : -2.41
PA of pole (deg)      : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 9.828
C/A sky separation (km) : 30601.6
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
    
```

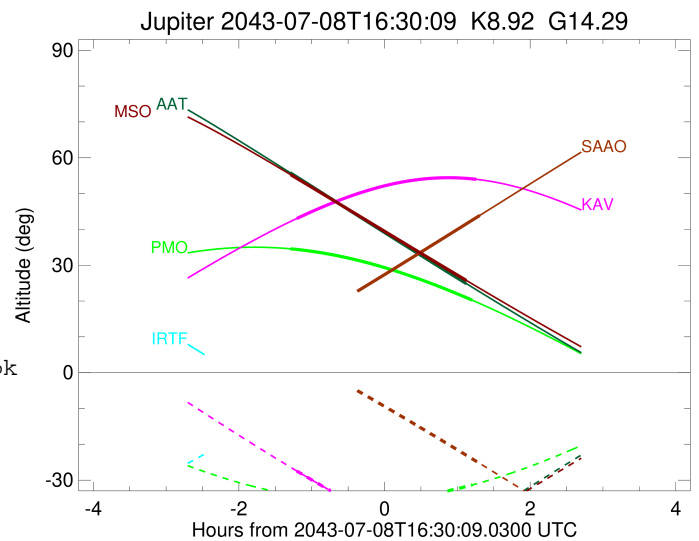
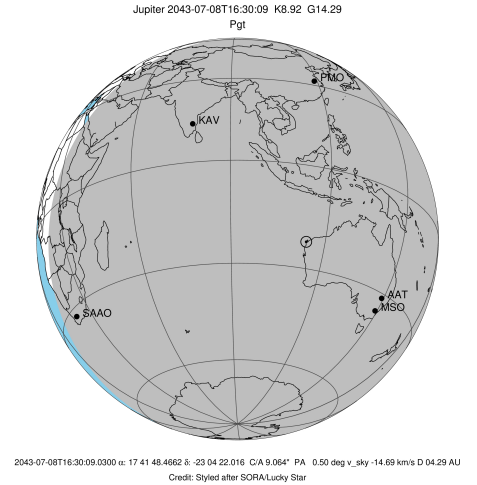


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:23:19.749	13.68	3.40x	71490.4	-26.53	-29.67
Jupiter	E	2043-07-08T17:48:34.158	43.87	-25.32	71490.7	-24.18	-27.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-08T16:24:58.510
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        : 4116499898783445632
2Mass ID (if available) : 17414847-2304219
ICRS Star Coord at Epoch: 17h 41m 48.46624s -23:04:22.01597s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 8.923
G magnitude           : 14.291
RP magnitude          : 12.938
BP magnitude          : 16.506
DUPflag              : 0
Distance (au)         : 4.293
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.98
Sun-Moon sep (deg)   : 133.82
B (ring opening deg) : -2.41
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 9.761
C/A sky separation (km) : 30393.2
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	2043-07-08T15:12:54.222	55.25	-71.15	71490.5	-25.35	-28.40
Jupiter	E	2043-07-08T17:37:34.433	25.75	-43.13	71490.6	-25.03	-28.06