

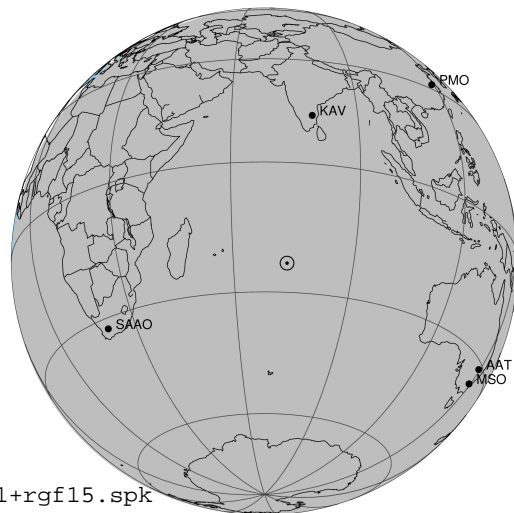
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-24T19:09:27.020
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068871769395413504
 2Mass ID (if available) : 17490857-2304238

Jupiter 2043-06-24T19:09:27 K9.91 G14.89 Pgt

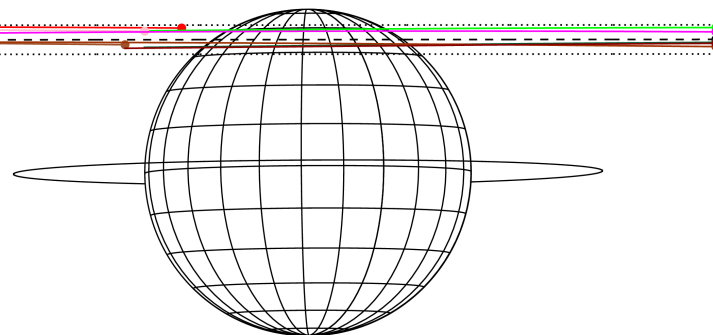
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s

RUWE (>1.4 is poor) : 0.98
 K magnitude : 9.913
 G magnitude : 14.886
 RP magnitude : 13.643
 BP magnitude : 16.613
 DUPflag : 0
 Distance (au) : 4.252
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.30
 Sun-Target sep (deg) : 174.91
 Sun-Moon sep (deg) : 30.62
 B (ring opening deg) : -2.43
 PA of pole (deg) : 0.33
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 18.877
 C/A sky separation (km) : 58210.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-06-24T19:09:27 K9.91 G14.89
 Pgt



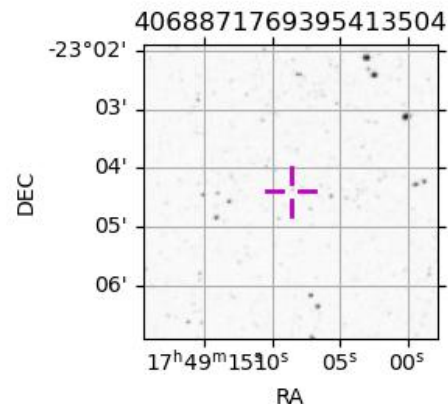
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-06-24T19:09:27.0200 a: 17 49 08.5558 s: -23 04 23.984 C/A ***** PA 180.03 deg v_sky -16.30 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

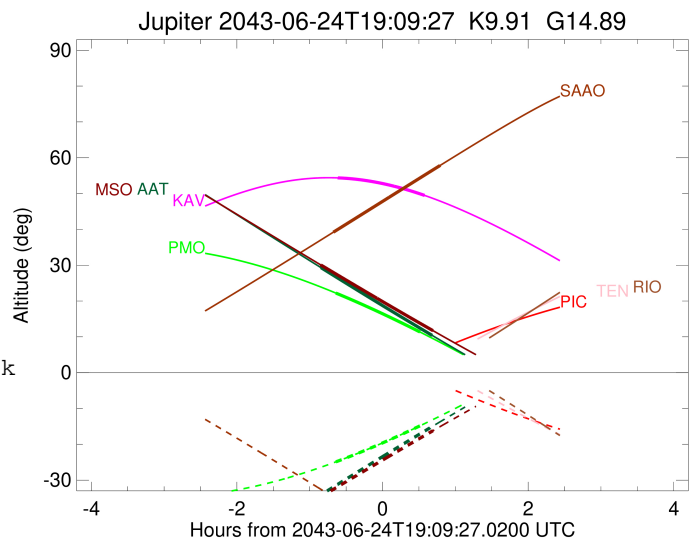
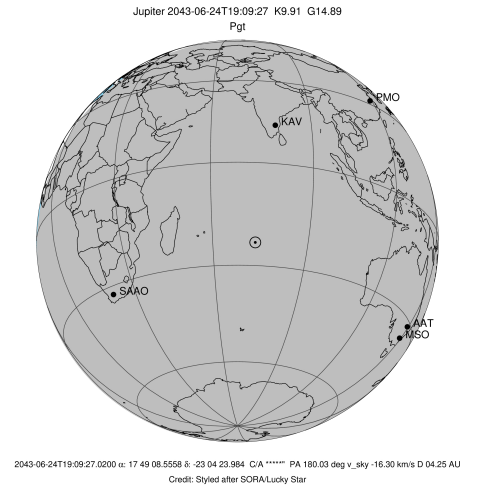
Observable events with sun below -5 deg and altitude above 5 deg

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 24 18:31 - JUN 24 19:40	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 24 18:32 - JUN 24 19:44	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 24 18:18 - JUN 24 19:50	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 24 18:28 - JUN 24 19:56	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 24 18:18 - JUN 24 19:51	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-24T19:05:38.970
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      : 4068871769395413504
2Mass ID (if available) : 17490857-2304238
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s
RUWE (>1.4 is poor) : 0.98
K magnitude         : 9.913
G magnitude         : 14.886
RP magnitude        : 13.643
BP magnitude        : 16.613
DUPflag            : 0
Distance (au)       : 4.252
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.30
Sun-Target sep (deg) : 174.91
Sun-Moon sep (deg)  : 30.34
B (ring opening deg) : -2.43
PA of pole (deg)    : 0.33
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 20.317
C/A sky separation (km) : 62651.9
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
    
```

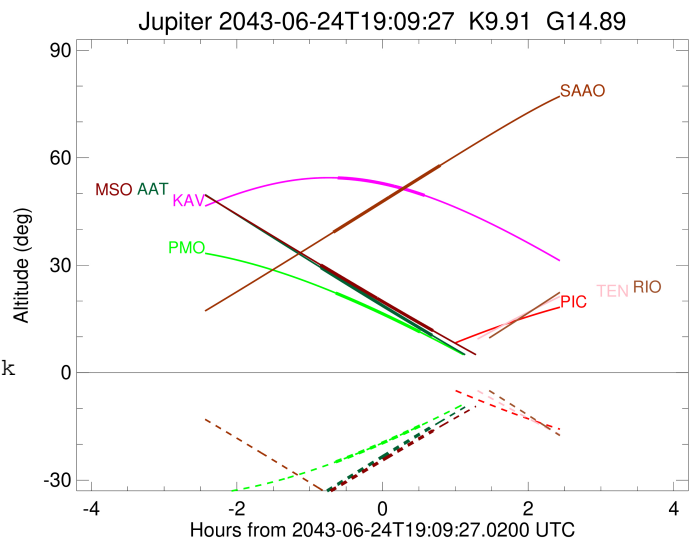
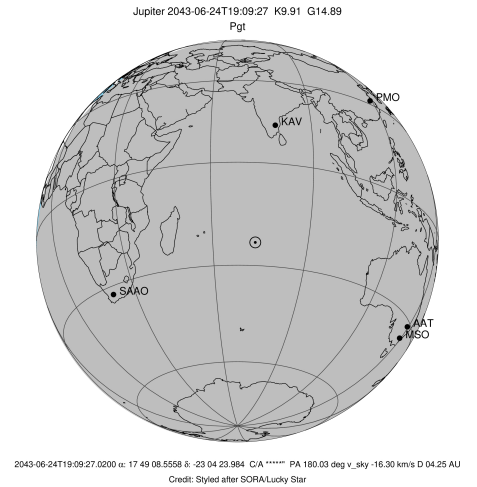


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-24T18:31:00.757	22.22	-24.90	71485.8	61.20	64.18
Jupiter	E	2043-06-24T19:40:22.870	11.35	-14.83	71485.9	60.98	63.98

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-24T19:08:22.310
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        : 4068871769395413504
2Mass ID (if available) : 17490857-2304238
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.913
G magnitude           : 14.886
RP magnitude          : 13.643
BP magnitude          : 16.613
DUPflag              : 0
Distance (au)         : 4.252
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.30
Sun-Target sep (deg)  : 174.91
Sun-Moon sep (deg)   : 30.94
B (ring opening deg) : -2.43
PA of pole (deg)     : 0.33
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 20.065
C/A sky separation (km) : 61873.1
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
    
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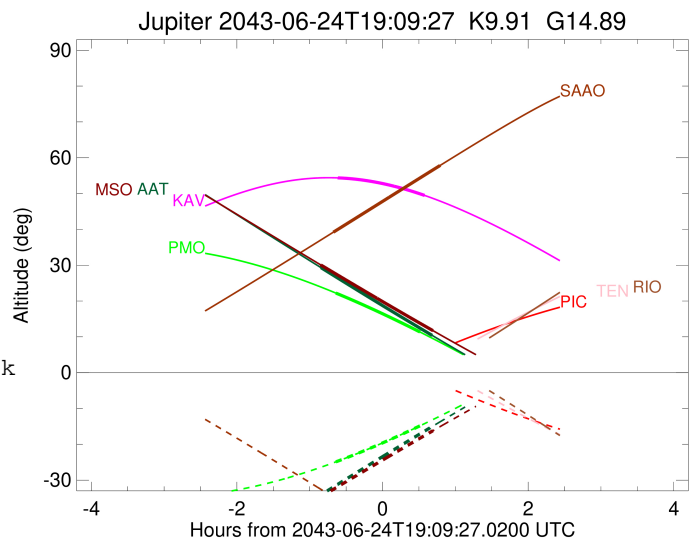
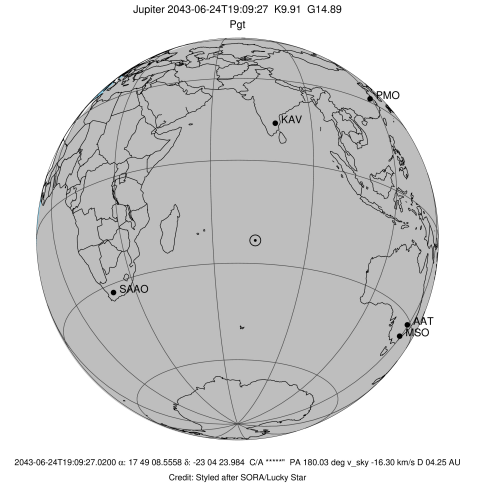


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-24T18:32:42.249	54.37	-53.94	71486.0	59.63	62.71
Jupiter	E	2043-06-24T19:44:04.141	49.48	-51.51	71486.0	59.99	63.05

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-24T19:04:30.000
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        : 4068871769395413504
2Mass ID (if available) : 17490857-2304238
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.913
G magnitude           : 14.886
RP magnitude          : 13.643
BP magnitude          : 16.613
DUPflag              : 0
Distance (au)         : 4.252
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.30
Sun-Target sep (deg) : 174.91
Sun-Moon sep (deg)    : 30.04
B (ring opening deg) : -2.43
PA of pole (deg)      : 0.33
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 18.008
C/A sky separation (km): 55529.7
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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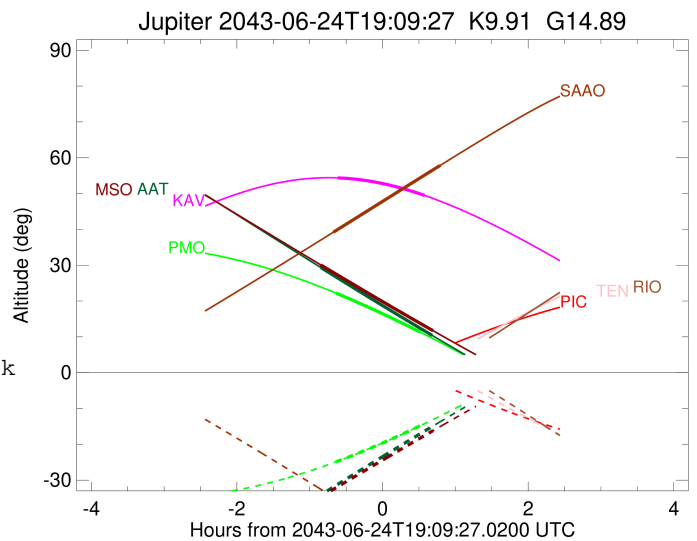
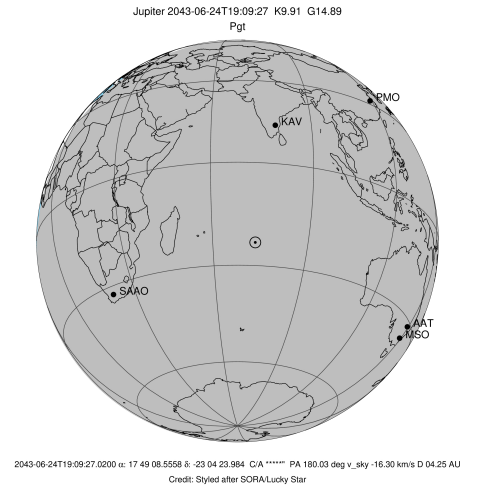


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-24T18:18:45.890	29.31	-34.07	71487.1	51.12	54.67
Jupiter	E	2043-06-24T19:50:27.070	10.39	-15.02	71487.2	50.66	54.22

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-24T19:13:02.460
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       : 4068871769395413504
2Mass ID (if available) : 17490857-2304238
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.913
G magnitude           : 14.886
RP magnitude         : 13.643
BP magnitude         : 16.613
DUPflag              : 0
Distance (au)        : 4.252
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.30
Sun-Target sep (deg) : 174.91
Sun-Moon sep (deg)   : 31.42
B (ring opening deg) : -2.43
PA of pole (deg)     : 0.33
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 18.345
C/A sky separation (km): 56571.1
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
    
```

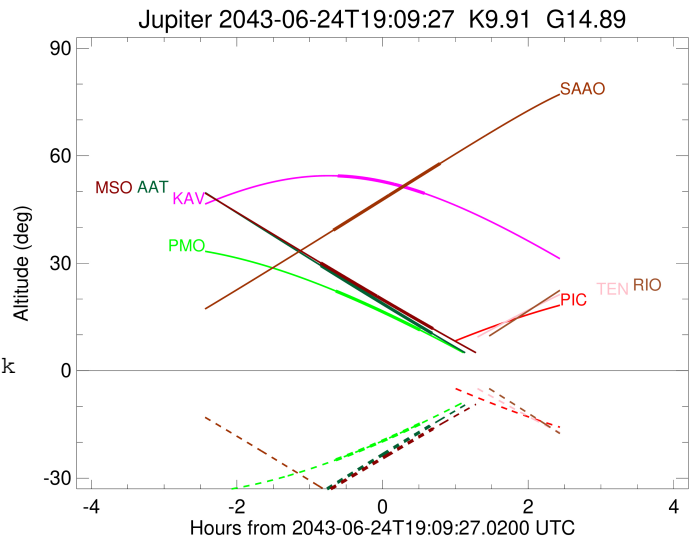
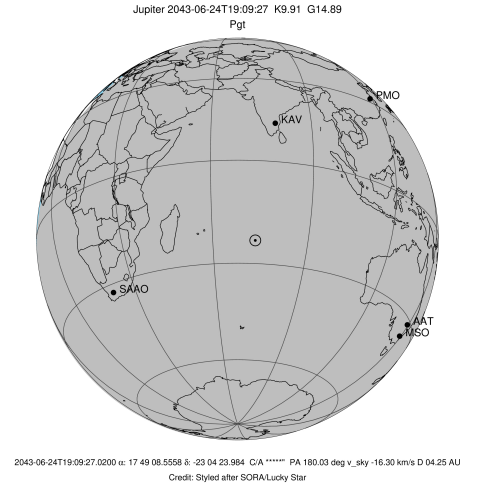


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-24T18:28:59.464	39.22	-34.72	71487.1	51.53	55.06
Jupiter	E	2043-06-24T19:56:57.295	57.84	-53.28	71486.9	52.89	56.36

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-24T19:04:43.340
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       : 4068871769395413504
2Mass ID (if available) : 17490857-2304238
ICRS Star Coord at Epoch: 17h 49m 08.55580s -23:04:23.98428s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.913
G magnitude           : 14.886
RP magnitude         : 13.643
BP magnitude         : 16.613
DUPflag              : 0
Distance (au)        : 4.252
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.30
Sun-Target sep (deg) : 174.91
Sun-Moon sep (deg)   : 30.07
B (ring opening deg) : -2.43
PA of pole (deg)     : 0.33
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 17.891
C/A sky separation (km) : 55169.4
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	2043-06-24T18:18:31.643	30.08	-34.68	71487.2	50.65	54.21
Jupiter	E	2043-06-24T19:51:07.685	11.71	-16.18	71487.3	50.23	53.81