

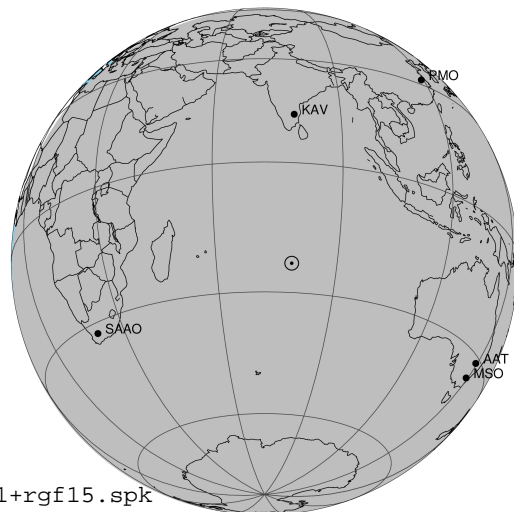
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-25T18:48:04.910
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068869428581923968
 2Mass ID (if available) : 17483601-2304473

Jupiter 2043-06-25T18:48:04 K9.85 G14.81 Pgt

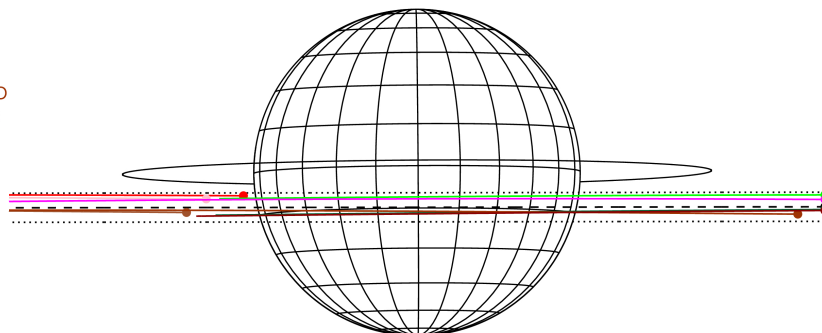
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40471s

RUWE (>1.4 is poor) : 0.92
 K magnitude : 9.849
 G magnitude : 14.815
 RP magnitude : 13.553
 BP magnitude : 16.632
 DUPflag : 0
 Distance (au) : 4.253
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.26
 Sun-Target sep (deg) : 173.85
 Sun-Moon sep (deg) : 43.05
 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 (") : 4.939
 C/A sky separation (km) : 15233.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-06-25T18:48:04 K9.85 G14.81
 Pgt



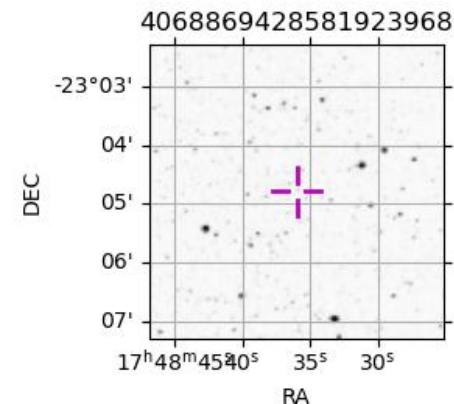
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 AAT
 SAAO
 MSO



2043-06-25T18:48:04.9100 a: 17 48 35.9935 ð -23 04 47.405 C/A 4.950" PA 0.07 deg v_sky -16.26 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

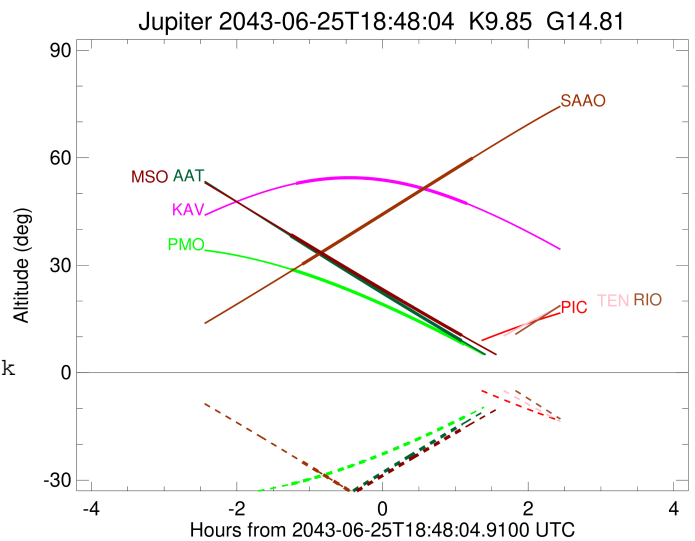
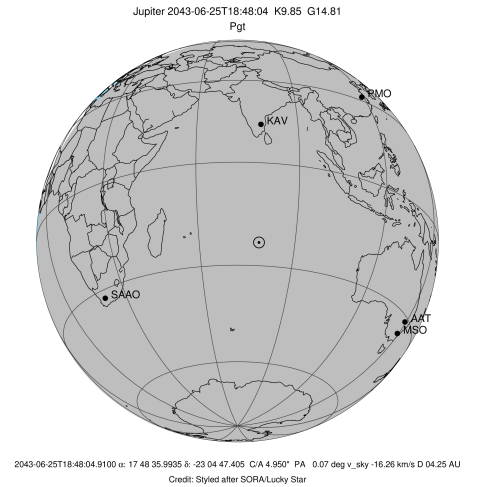
Observable events with sun below -5 deg and altitude above 5 deg

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 17:32 - JUN 25 19:55	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 17:36 - JUN 25 19:57	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 17:32 - JUN 25 19:53	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 25 17:42 - JUN 25 20:02	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 25 17:32 - JUN 25 19:53	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T18:44:00.750
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        : 4068869428581923968
2Mass ID (if available) : 17483601-2304473
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40471s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.849
G magnitude           : 14.815
RP magnitude          : 13.553
BP magnitude          : 16.632
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg)  : 173.85
Sun-Moon sep (deg)    : 42.90
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 (") : 3.460
C/A sky separation (km) : 10671.6
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
    
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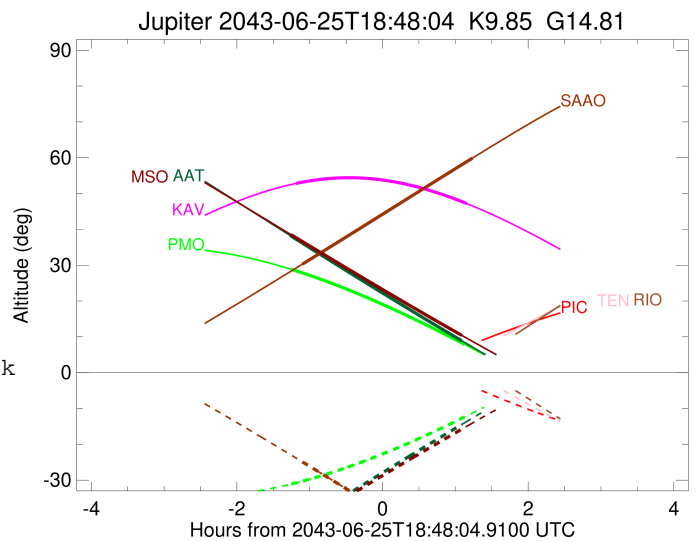
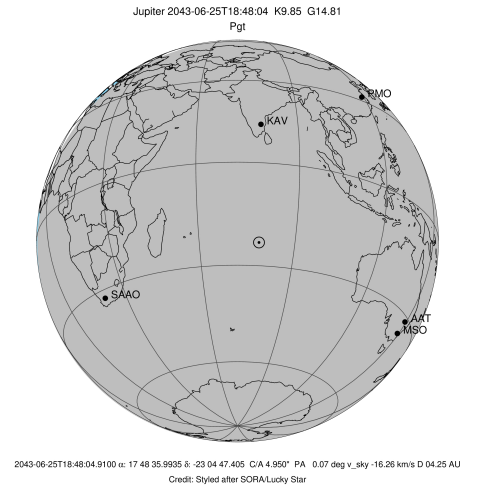


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T17:32:55.487	28.83	-31.07	71491.8	-8.57	-9.78
Jupiter	E	2043-06-25T19:55:29.450	7.93	-12.40	71491.8	-8.70	-9.92

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T18:47:18.670
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      : 4068869428581923968
2Mass ID (if available) : 17483601-2304473
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40471s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.849
G magnitude          : 14.815
RP magnitude         : 13.553
BP magnitude         : 16.632
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.85
Sun-Moon sep (deg)  : 43.54
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 ("): 3.742
C/A sky separation (km): 11541.4
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
    
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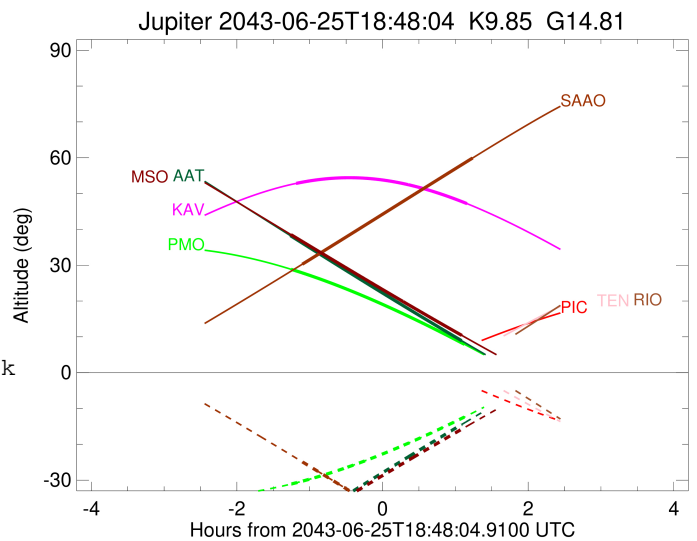
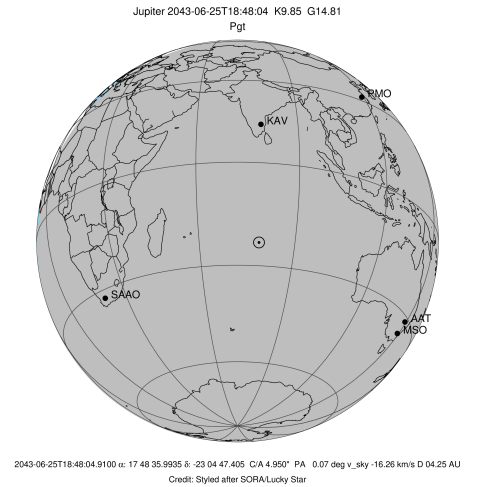


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T17:36:57.186	52.83	-50.21	71491.8	-9.62	-10.97
Jupiter	E	2043-06-25T19:57:44.937	47.17	-50.22	71491.8	-9.13	-10.41

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T18:42:29.990
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        : 4068869428581923968
2Mass ID (if available) : 17483601-2304473
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40471s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.849
G magnitude           : 14.815
RP magnitude          : 13.553
BP magnitude          : 16.632
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg)  : 173.85
Sun-Moon sep (deg)    : 42.69
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 (") : 5.756
C/A sky separation (km) : 17752.8
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
    
```

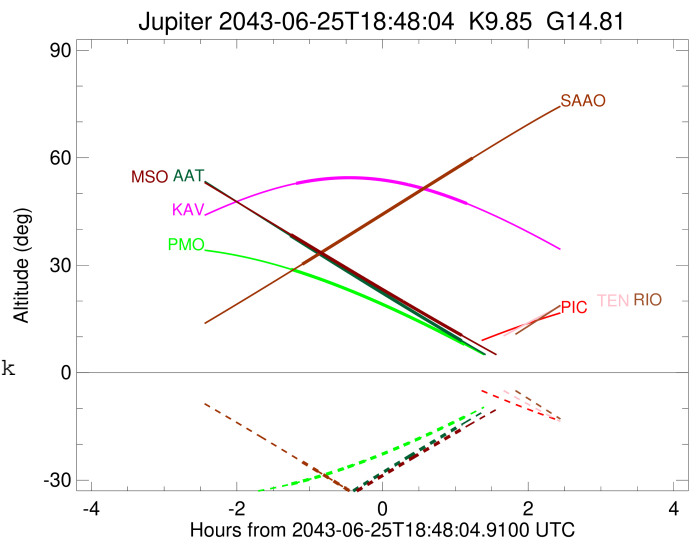
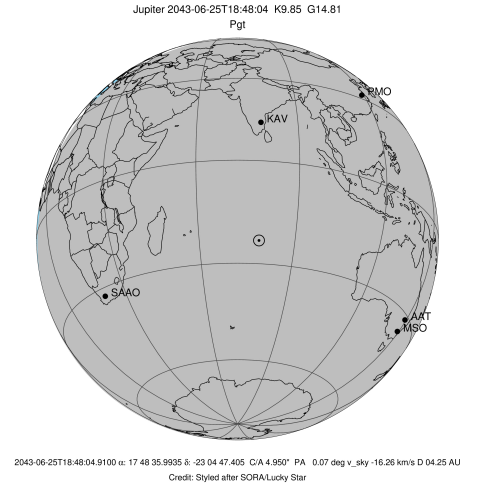


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T17:32:11.088	38.25	-44.02	71491.5	-14.19	-16.11
Jupiter	E	2043-06-25T19:53:20.445	8.91	-14.47	71491.5	-14.59	-16.57

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T18:52:27.070
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      : 4068869428581923968
2Mass ID (if available) : 17483601-2304473
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40472s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.849
G magnitude          : 14.815
RP magnitude         : 13.553
BP magnitude         : 16.632
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.85
Sun-Moon sep (deg)  : 43.92
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 (") : 5.507
C/A sky separation (km) : 16987.1
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
    
```

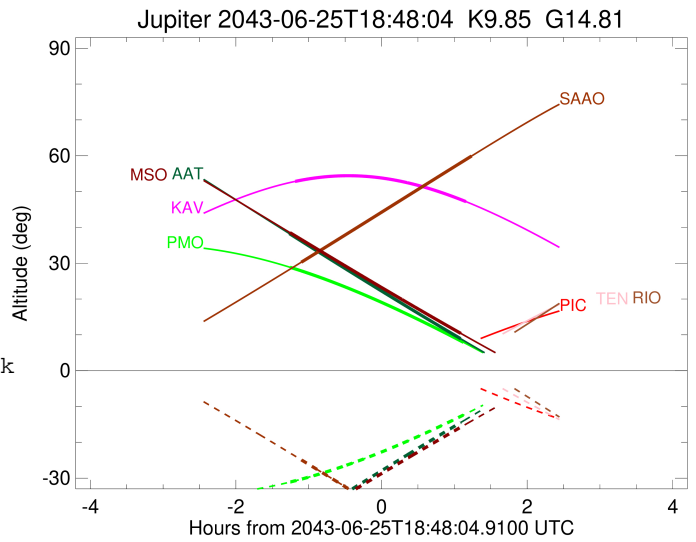
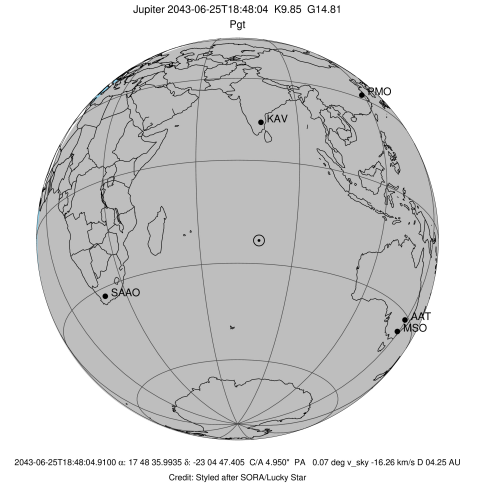


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T17:42:08.970	30.30	-24.92	71491.5	-14.51	-16.47
Jupiter	E	2043-06-25T20:02:22.301	59.92	-54.36	71491.6	-13.07	-14.86

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T18:42:45.010
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       : 4068869428581923968
2Mass ID (if available) : 17483601-2304473
ICRS Star Coord at Epoch: 17h 48m 35.99349s -23:04:47.40471s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.849
G magnitude           : 14.815
RP magnitude          : 13.553
BP magnitude          : 16.632
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.85
Sun-Moon sep (deg)   : 42.72
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 ("): 5.875
C/A sky separation (km): 18120.6
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	2043-06-25T17:32:30.062	38.56	-44.11	71491.5	-14.51	-16.48
Jupiter	E	2043-06-25T19:53:30.062	10.39	-15.75	71491.5	-14.87	-16.88