

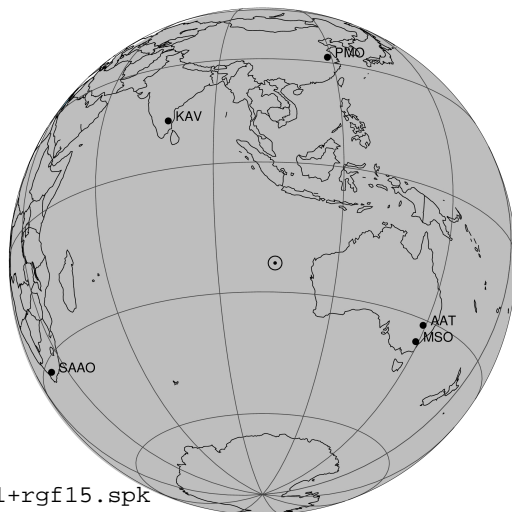
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-22T17:04:42.140
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068684268364510848
 2Mass ID (if available) : 17501783-2304493

Jupiter 2043-06-22T17:04:42 K9.35 G14.73 Pgt

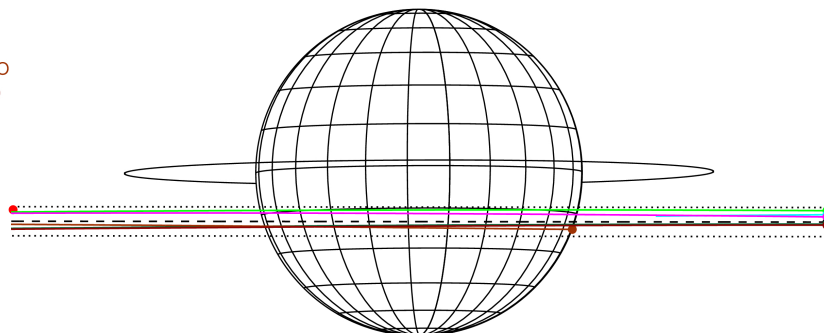
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s

RUWE (>1.4 is poor) : 0.95
 K magnitude : 9.347
 G magnitude : 14.727
 RP magnitude : 13.407
 BP magnitude : 16.747
 DUPflag : 0
 Distance (au) : 4.250
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.38
 Sun-Target sep (deg) : 177.15
 Sun-Moon sep (deg) : 6.72
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.21
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 6.985
 C/A sky separation (km) : 21531.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-06-22T17:04:42 K9.35 G14.73
 Pgt



Earth
 PIC
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO

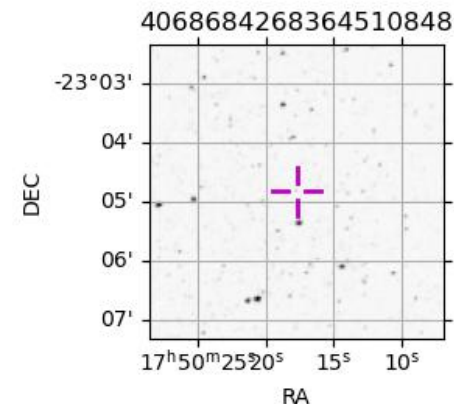


2043-06-22T17:04:42.1400 at: 17 50 17.8180 s: -23 04 49.594 C/A 6.986" PA 359.94 deg v_sky -16.38 km/s D 04.25 AU

Credit: Styled after SORA/Lucky Star

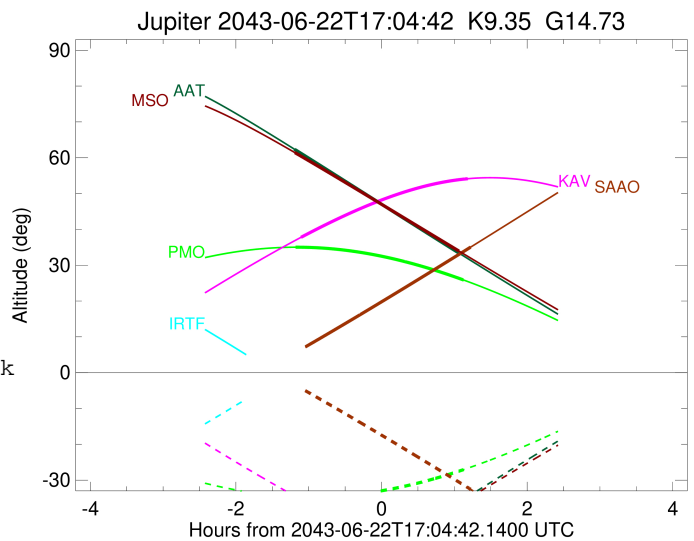
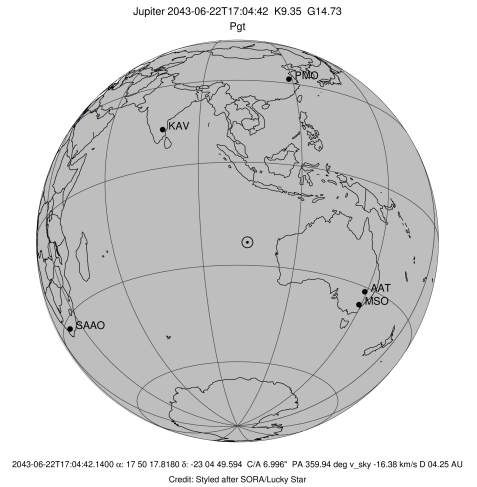
Observable events with sun below -5 deg and altitude above 5 deg

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 22 15:53 - JUN 22 18:12	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 22 15:58 - JUN 22 18:15	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 22 15:52 - JUN 22 18:08	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 22 16:01 - JUN 22 18:18	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 22 15:53 - JUN 22 18:08	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-22T17:03:00.190
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      : 4068684268364510848
2Mass ID (if available) : 17501783-2304493
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 9.347
G magnitude          : 14.727
RP magnitude         : 13.407
BP magnitude         : 16.747
DUPflag             : 0
Distance (au)       : 4.250
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.38
Sun-Target sep (deg) : 177.15
Sun-Moon sep (deg)  : 7.25
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.21
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 5.325
C/A sky separation (km) : 16415.4
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
    
```

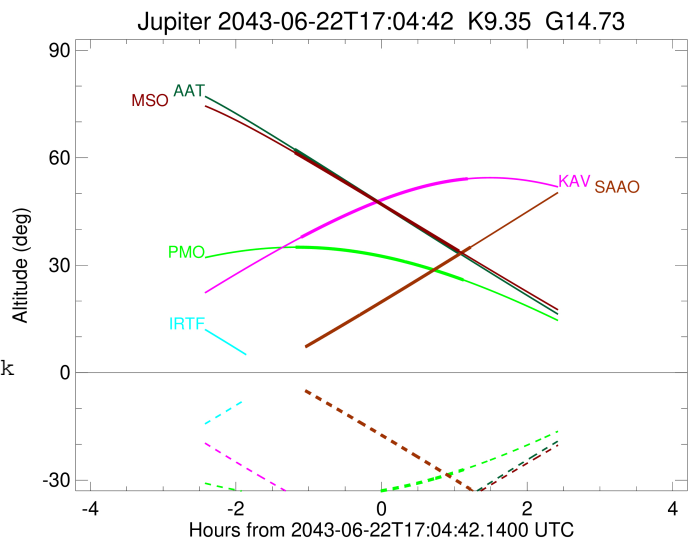
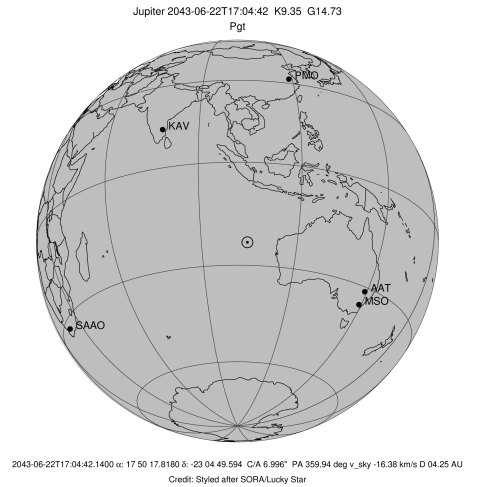


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-22T15:53:52.059	35.02	-34.59	71491.6	-13.45	-15.28
Jupiter	E	2043-06-22T18:12:17.416	25.87	-27.07	71491.6	-13.23	-15.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-22T17:07:06.420
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       : 4068684268364510848
2Mass ID (if available) : 17501783-2304493
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.347
G magnitude           : 14.727
RP magnitude          : 13.407
BP magnitude          : 16.747
DUPflag              : 0
Distance (au)         : 4.250
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.38
Sun-Target sep (deg) : 177.15
Sun-Moon sep (deg)   : 7.41
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 5.833
C/A sky separation (km): 17981.9
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
    
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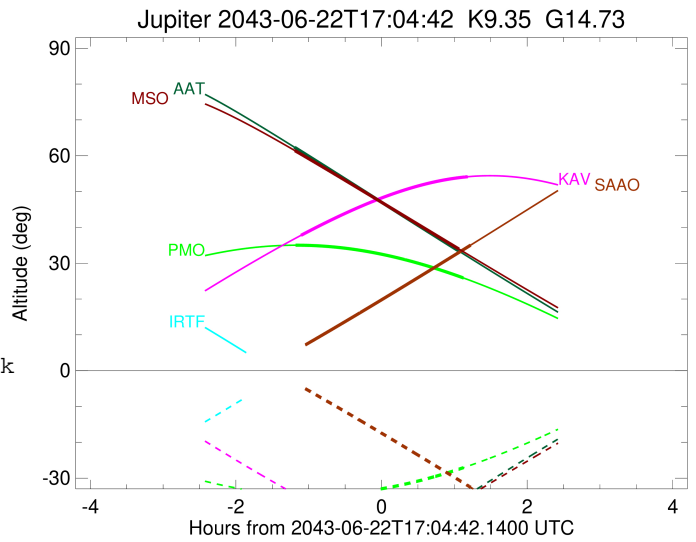
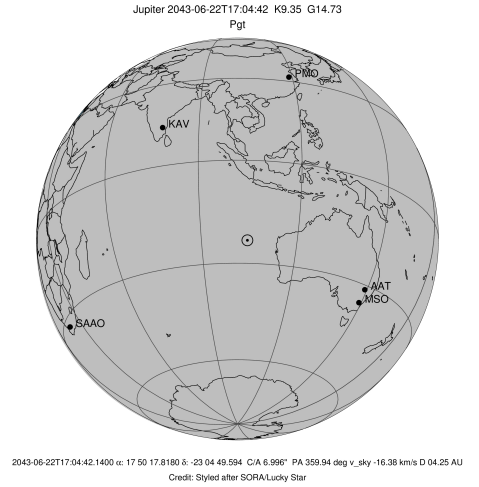


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-22T15:58:22.146	37.77	-35.37	71491.5	-15.12	-17.16
Jupiter	E	2043-06-22T18:15:38.663	54.13	-53.28	71491.5	-14.16	-16.08

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-22T17:00:30.230
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        : 4068684268364510848
2Mass ID (if available) : 17501783-2304493
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.347
G magnitude           : 14.727
RP magnitude          : 13.407
BP magnitude          : 16.747
DUPflag              : 0
Distance (au)         : 4.250
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.38
Sun-Target sep (deg)  : 177.15
Sun-Moon sep (deg)    : 6.28
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 7.499
C/A sky separation (km) : 23116.7
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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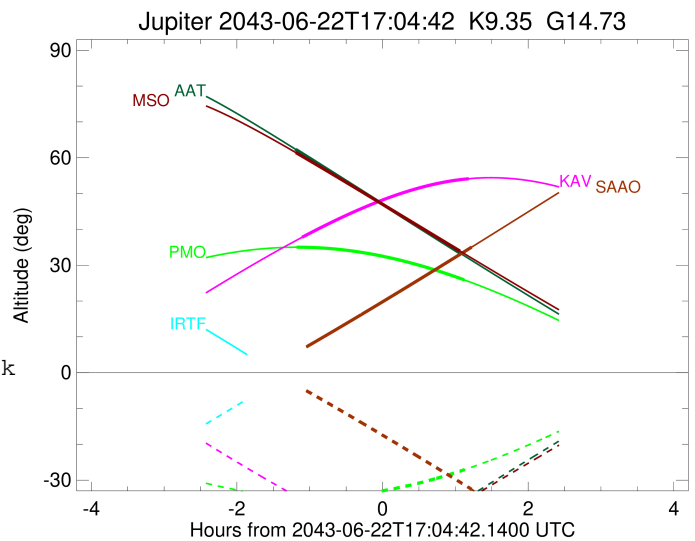
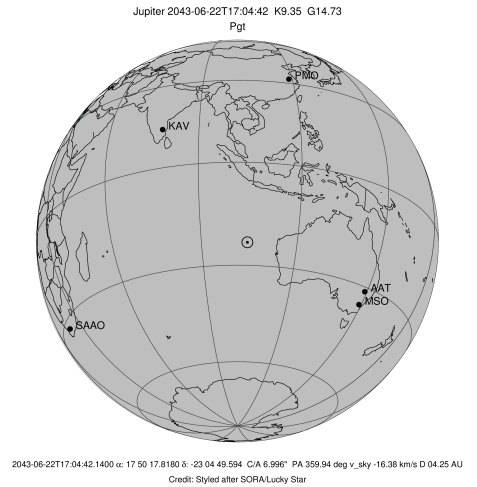


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-22T15:52:58.583	62.37	-65.04	71491.2	-18.78	-21.23
Jupiter	E	2043-06-22T18:08:23.233	33.41	-36.19	71491.1	-19.03	-21.50

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-22T17:10:19.900
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       : 4068684268364510848
2Mass ID (if available) : 17501783-2304493
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.347
G magnitude           : 14.727
RP magnitude          : 13.407
BP magnitude          : 16.747
DUPflag              : 0
Distance (au)        : 4.250
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.38
Sun-Target sep (deg) : 177.15
Sun-Moon sep (deg)   : 6.95
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 7.858
C/A sky separation (km): 24224.8
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
    
```

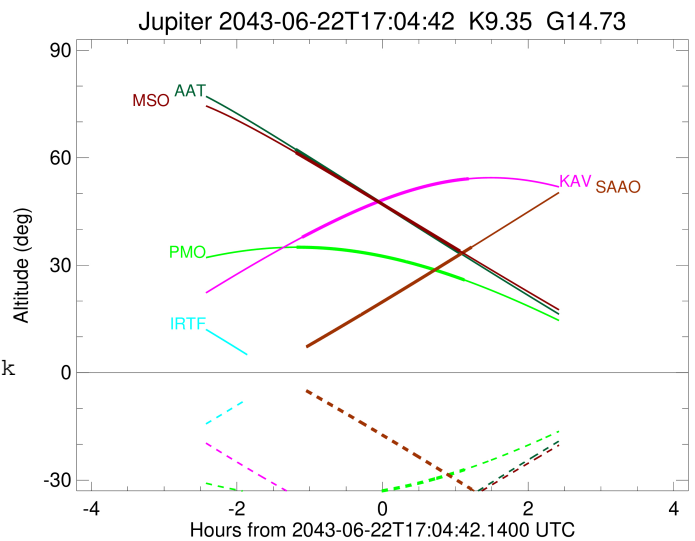
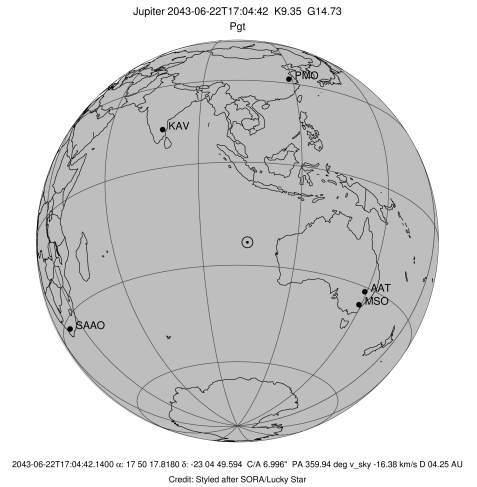


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-22T16:01:58.344	7.19	-5.04	71491.0	-20.59	-23.23
Jupiter	E	2043-06-22T18:18:13.040	35.05	-32.57	71491.1	-19.02	-21.50

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-22T17:00:41.640
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       : 4068684268364510848
2Mass ID (if available) : 17501783-2304493
ICRS Star Coord at Epoch: 17h 50m 17.81797s -23:04:49.59438s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.347
G magnitude           : 14.727
RP magnitude         : 13.407
BP magnitude         : 16.747
DUPflag              : 0
Distance (au)        : 4.250
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.38
Sun-Target sep (deg) : 177.15
Sun-Moon sep (deg)   : 6.24
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 7.632
C/A sky separation (km) : 23526.2
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	2043-06-22T15:53:15.012	61.44	-63.96	71491.1	-19.14	-21.63
Jupiter	E	2043-06-22T18:08:28.641	33.95	-36.66	71491.1	-19.35	-21.86