

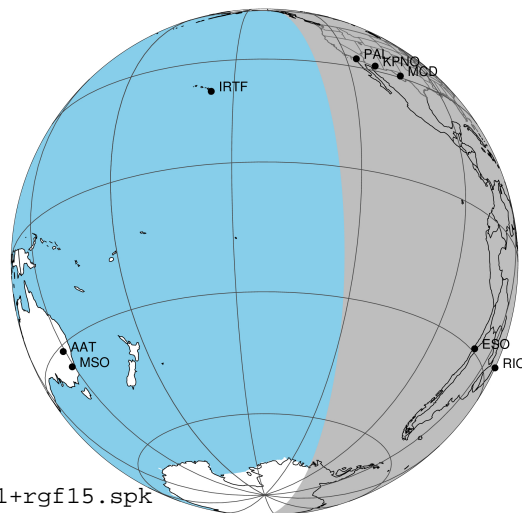
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-10-09T02:07:58.010
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068803045567850368
 2Mass ID (if available) : 17453886-2319250

Jupiter 2043-10-09T02:07:58 K9.31 G14.93 Pgt

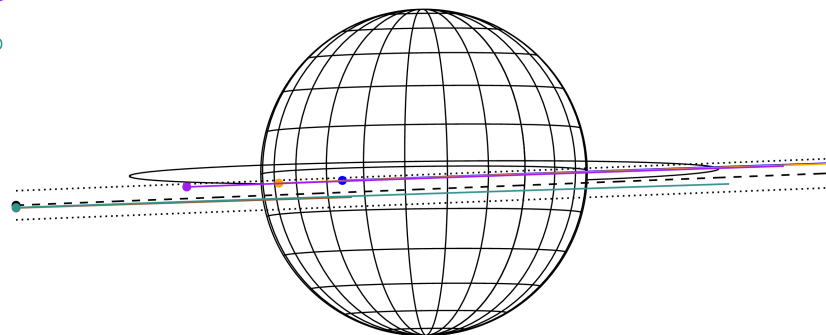
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s

RUWE (>1.4 is poor) : 0.97
 K magnitude : 9.307
 G magnitude : 14.933
 RP magnitude : 13.500
 BP magnitude : 17.593
 DUPflag : 0
 Distance (au) : 5.456
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 22.54
 Sun-Target sep (deg) : 71.63
 Sun-Moon sep (deg) : 7.94
 B (ring opening deg) : -2.17
 PA of pole (deg) : 0.71
 Pole direction: RA (deg): 268.05675
 Dec (deg): 64.49731
 C/A sky separation (") : 1.848
 C/A sky separation (km) : 7313.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-10-09T02:07:58 K9.31 G14.93
 Pgt



Earth
 PAL
 KPNO
 MCD
 RIO
 ESO

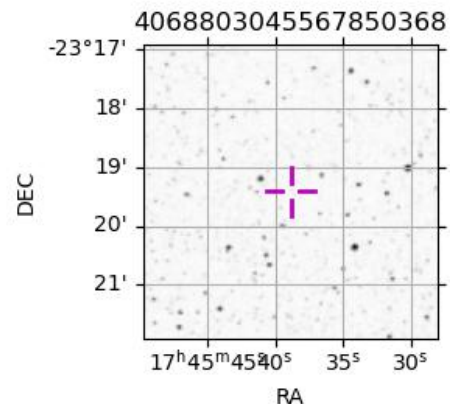


2043-10-09T02:07:58.0100 α: 17 45 38.8675 δ: -23 19 25.051 C/A 1.856" PA 2.25 deg v_sky +22.54 km/s D 05.46 AU

Credit: Styled after SORA/Lucky Star

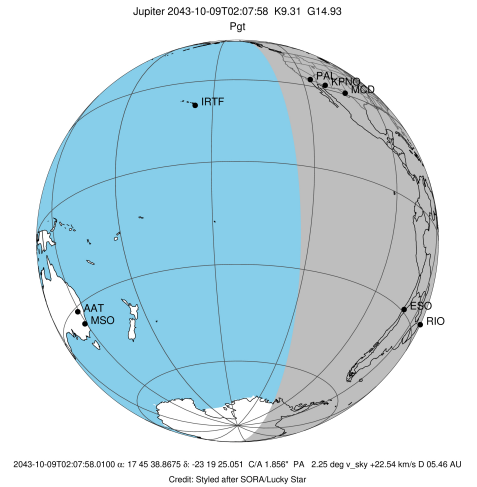
Observable events with sun below -5 deg and altitude above 5 deg

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	+	OCT 09 03:03	- OCT 09 03:03	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8				Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	OCT 09 03:03	- OCT 09 03:03	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	OCT 09 01:16	- OCT 09 03:03	Pie
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				Pnn
RIO	Rio de Janeiro	-22.9	316.8	+	OCT 09 01:19	- OCT 09 01:19	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	OCT 09 01:19	- OCT 09 03:04	Pie
AAT	Siding Spring (AAT)	-31.3	149.1				Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8				Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0				Pnn

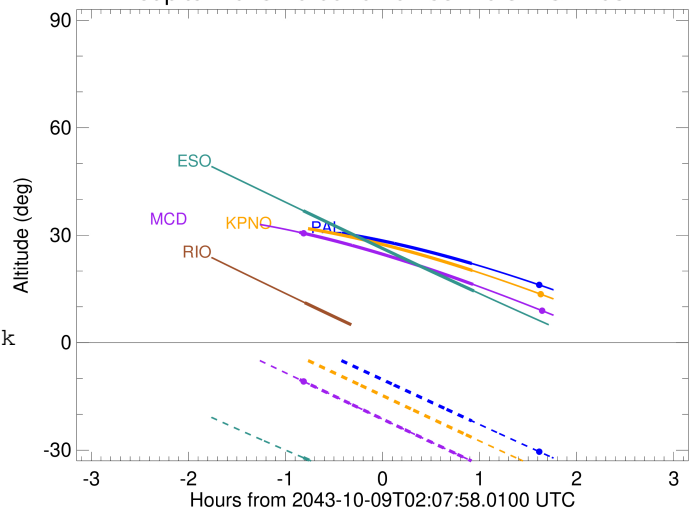


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-09T02:09:33.880
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4068803045567850368
2Mass ID (if available) : 17453886-2319250
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.307
G magnitude          : 14.933
RP magnitude         : 13.500
BP magnitude         : 17.593
DUPflag             : 0
Distance (au)       : 5.456
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.54
Sun-Target sep (deg) : 71.63
Sun-Moon sep (deg)  : 8.72
B (ring opening deg) : -2.17
PA of pole (deg)    : 0.71
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 0.539
C/A sky separation (km): 2134.0
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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Jupiter 2043-10-09T02:07:58 K9.31 G14.93

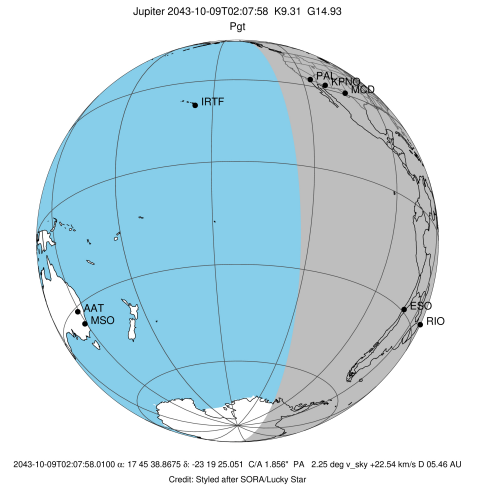


x: target alt < 5.0 deg or sun > -5.0 deg

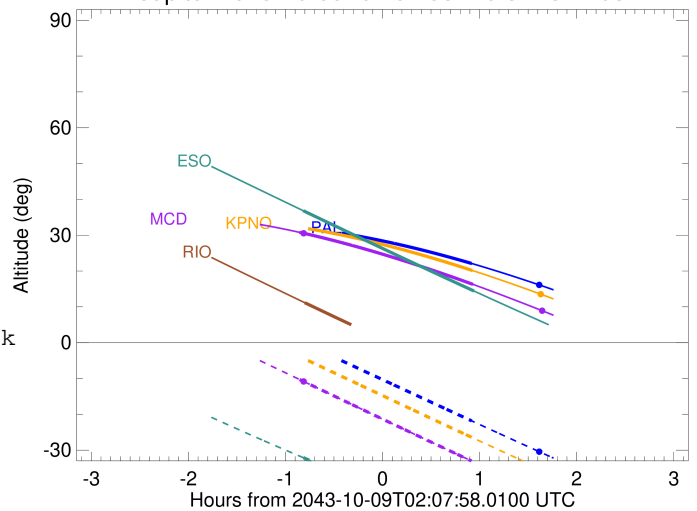
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-09T01:15:49.566	32.22	0.57x	71492.0	-3.16	-3.61
Jupiter	E	2043-10-09T03:03:09.952	22.09	-21.85	71492.0	-0.35	-0.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-09T02:09:55.380
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 4068803045567850368
2Mass ID (if available) : 17453886-2319250
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.307
G magnitude           : 14.933
RP magnitude          : 13.500
BP magnitude          : 17.593
DUPflag              : 0
Distance (au)         : 5.456
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.54
Sun-Target sep (deg) : 71.63
Sun-Moon sep (deg)   : 8.75
B (ring opening deg) : -2.17
PA of pole (deg)     : 0.71
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 0.582
C/A sky separation (km): 2303.1
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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Jupiter 2043-10-09T02:07:58 K9.31 G14.93

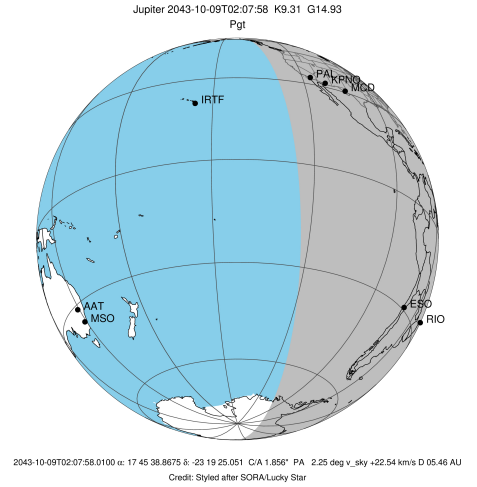


x: target alt < 5.0 deg or sun > -5.0 deg

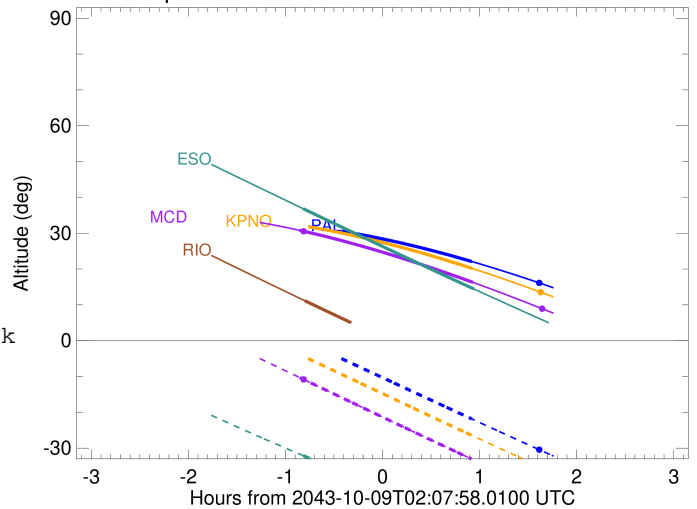
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-09T01:16:12.436	32.25	-3.77x	71492.0	-3.25	-3.72
Jupiter	E	2043-10-09T03:03:28.918	20.16	-26.51	71492.0	-0.52	-0.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-09T02:10:24.060
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 4068803045567850368
2Mass ID (if available) : 17453886-2319250
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.307
G magnitude           : 14.933
RP magnitude          : 13.500
BP magnitude          : 17.593
DUPflag              : 0
Distance (au)         : 5.456
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.54
Sun-Target sep (deg)  : 71.63
Sun-Moon sep (deg)    : 8.78
B (ring opening deg) : -2.17
PA of pole (deg)      : 0.71
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 0.641
C/A sky separation (km) : 2536.7
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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Jupiter 2043-10-09T02:07:58 K9.31 G14.93

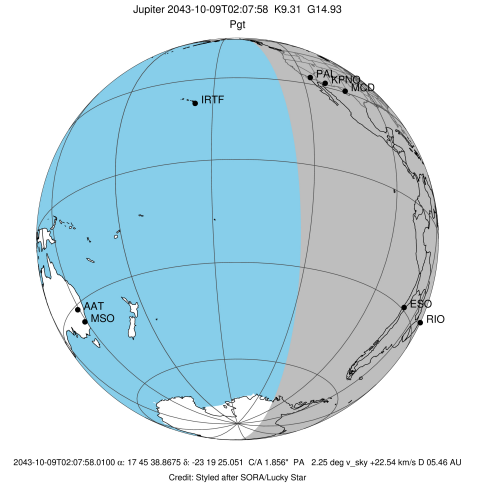


x: target alt < 5.0 deg or sun > -5.0 deg

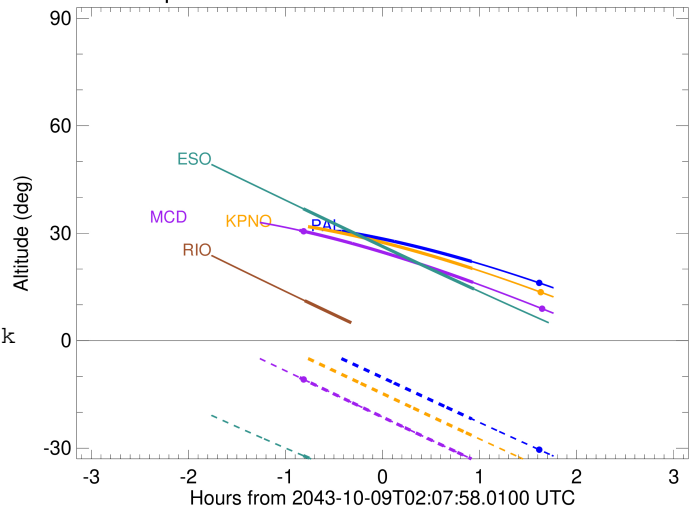
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-09T01:16:44.419	30.79	-10.29	71492.0	-3.39	-3.87
Jupiter	E	2043-10-09T03:03:52.739	16.27	-33.20	71492.0	-0.76	-0.86

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-09T02:12:15.280
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 4068803045567850368
2Mass ID (if available) : 17453886-2319250
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.307
G magnitude          : 14.933
RP magnitude         : 13.500
BP magnitude         : 17.593
DUPflag             : 0
Distance (au)       : 5.456
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.54
Sun-Target sep (deg) : 71.63
Sun-Moon sep (deg)  : 8.35
B (ring opening deg) : -2.17
PA of pole (deg)    : 0.71
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 2.475
C/A sky separation (km): 9795.3
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
    
```



Jupiter 2043-10-09T02:07:58 K9.31 G14.93

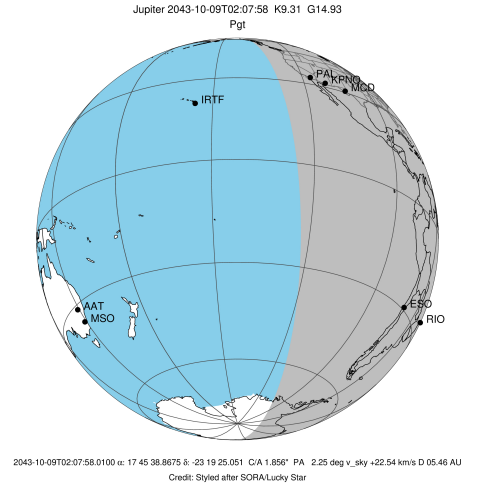


x: target alt < 5.0 deg or sun > -5.0 deg

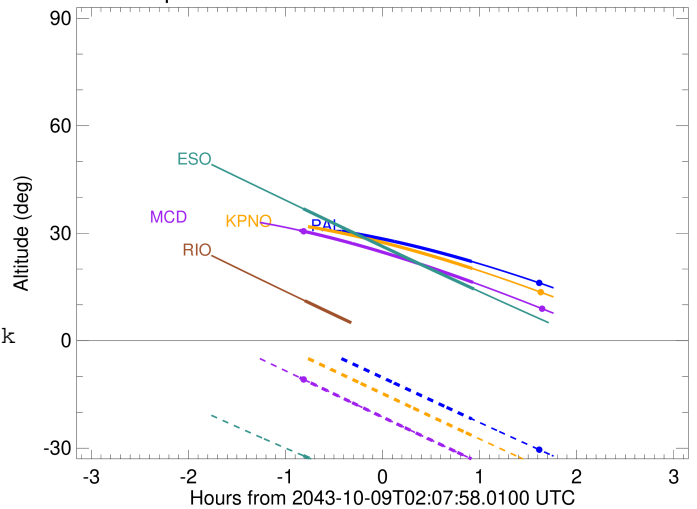
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-09T01:19:55.433	11.16	-55.05	71491.8	-8.98	-10.25
Jupiter	E	2043-10-09T03:04:19.462	-10.57x	-60.46	71491.9	-6.75	-7.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-09T02:11:54.590
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4068803045567850368
2Mass ID (if available) : 17453886-2319250
ICRS Star Coord at Epoch: 17h 45m 38.86746s -23:19:25.05107s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.307
G magnitude           : 14.933
RP magnitude         : 13.500
BP magnitude         : 17.593
DUPflag              : 0
Distance (au)        : 5.456
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.54
Sun-Target sep (deg) : 71.63
Sun-Moon sep (deg)   : 8.39
B (ring opening deg) : -2.17
PA of pole (deg)     : 0.71
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 2.356
C/A sky separation (km): 9321.1
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
    
```



Jupiter 2043-10-09T02:07:58 K9.31 G14.93



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	2043-10-09T01:19:05.117	36.81	-32.11	71491.9	-8.67	-9.89
Jupiter	E	2043-10-09T03:04:29.122	14.42	-49.13	71491.9	-6.34	-7.24