

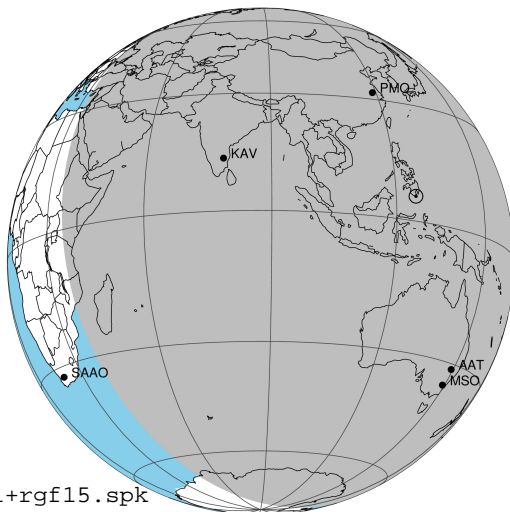
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2045-10-07T15:25:35.290  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 2602339376344535808  
 2Mass ID (if available) : 22194807-1149413

Jupiter 2045-10-07T15:25:35 K9.53 G12.02 Pgt

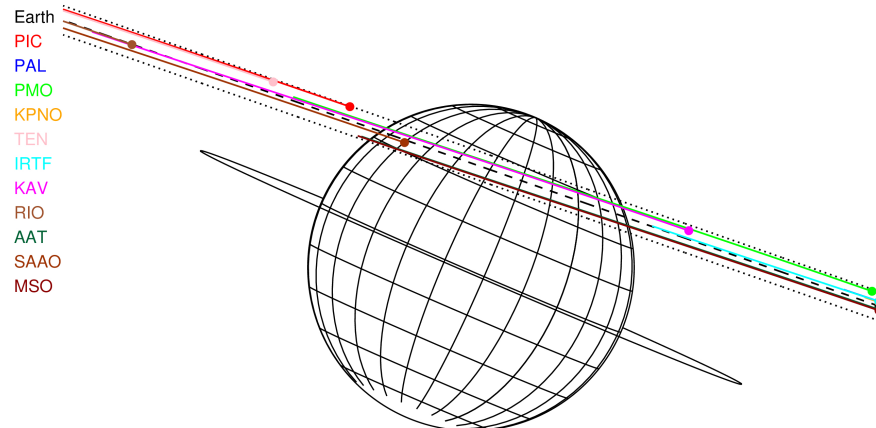
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s

RUWE (>1.4 is poor) : 2.94  
 K magnitude : 9.525  
 G magnitude : 12.020  
 RP magnitude : 11.223  
 BP magnitude : 12.691  
 DUPflag : 0  
 Distance (au) : 4.205  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -8.54  
 Sun-Target sep (deg) : 138.34  
 Sun-Moon sep (deg) : 175.85  
 B (ring opening deg) : 1.12  
 PA of pole (deg) : -23.33  
 Pole direction: RA (deg): 268.05705  
 Dec (deg): 64.49723  
 C/A sky separation (") : 14.160  
 C/A sky separation (km) : 43182.9  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2045-10-07T15:25:35 K9.53 G12.02  
 Pgt

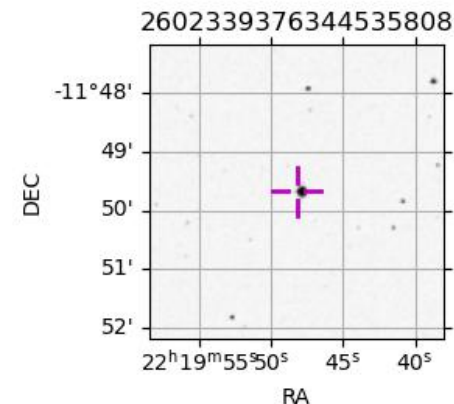


2045-10-07T15:25:35.2900 α: 22 19 48.4512 δ: -11 49 39.704 C/A \*\*\*\*\* PA 160.68 deg v\_sky - 8.54 km/s D 04.20 AU  
 Credit: Styled after SORA/Lucky Star



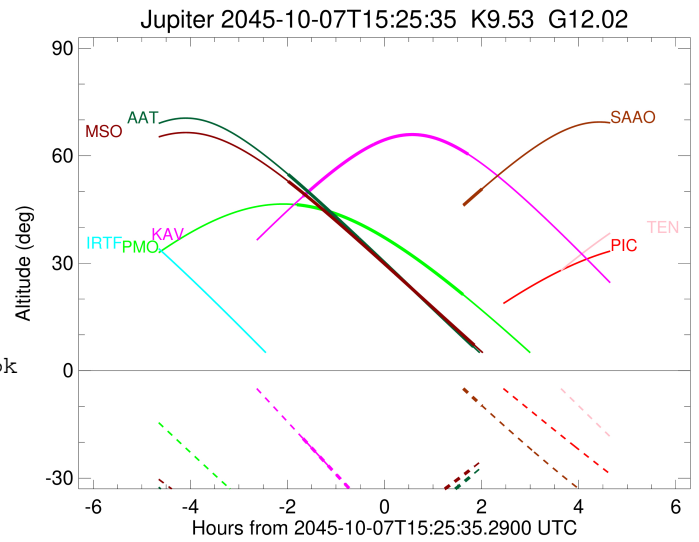
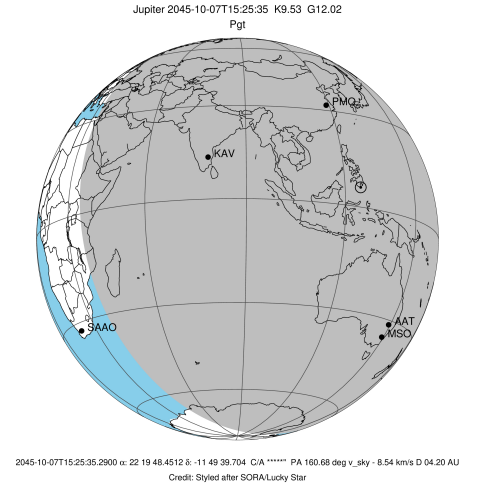
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	OCT 07 13:37 - OCT 07 17:02	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	+ +	OCT 07 13:44 - OCT 07 17:09	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	+ +	OCT 07 13:26 - OCT 07 17:15	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	OCT 07 17:26 - OCT 07 17:26	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	OCT 07 13:26 - OCT 07 17:16	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2045-10-07T15:19:25.430
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      : 2602339376344535808
2Mass ID (if available) : 22194807-1149413
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s
RUWE (>1.4 is poor) : 2.94
K magnitude          : 9.525
G magnitude          : 12.020
RP magnitude         : 11.223
BP magnitude         : 12.691
DUPflag             : 0
Distance (au)       : 4.205
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -8.54
Sun-Target sep (deg) : 138.34
Sun-Moon sep (deg)  : 175.10
B (ring opening deg) : 1.12
PA of pole (deg)    : -23.33
Pole direction: RA (deg): 268.05705
Dec (deg): 64.49723
C/A sky separation ("): 15.181
C/A sky separation (km): 46294.9
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
    
```

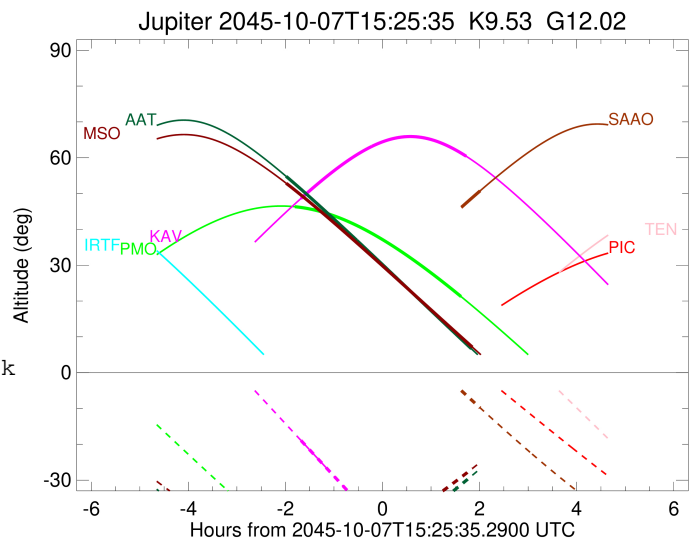
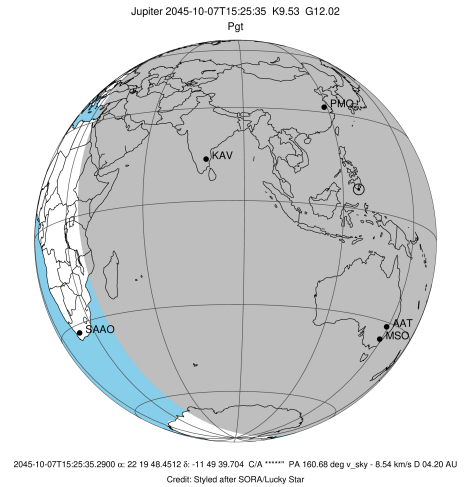


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2045-10-07T13:37:20.136	46.32	-49.09	71491.1	45.30	49.00
Jupiter	E	2045-10-07T17:02:45.966	21.23	-59.18	71491.4	35.37	38.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2045-10-07T15:26:55.740
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        : 2602339376344535808
2Mass ID (if available) : 22194807-1149413
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s
RUWE (>1.4 is poor) : 2.94
K magnitude           : 9.525
G magnitude           : 12.020
RP magnitude          : 11.223
BP magnitude          : 12.691
DUPflag              : 0
Distance (au)         : 4.205
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.54
Sun-Target sep (deg)  : 138.34
Sun-Moon sep (deg)    : 175.62
B (ring opening deg) : 1.12
PA of pole (deg)     : -23.33
Pole direction: RA (deg): 268.05705
Dec (deg): 64.49723
C/A sky separation (") : 15.061
C/A sky separation (km) : 45929.4
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
    
```

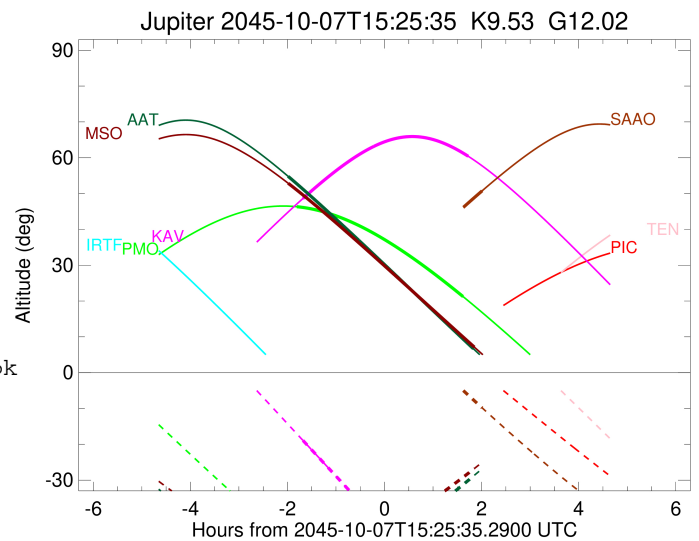
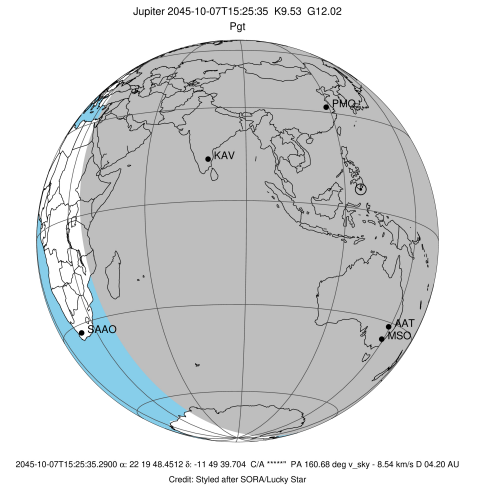


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2045-10-07T13:44:44.074	48.61	-18.90	71491.1	44.67	48.38
Jupiter	E	2045-10-07T17:09:08.819	60.39	-68.46	71491.4	34.94	38.54

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2045-10-07T15:19:45.970
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        : 2602339376344535808
2Mass ID (if available) : 22194807-1149413
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s
RUWE (>1.4 is poor) : 2.94
K magnitude           : 9.525
G magnitude           : 12.020
RP magnitude          : 11.223
BP magnitude          : 12.691
DUPflag              : 0
Distance (au)         : 4.205
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.54
Sun-Target sep (deg) : 138.34
Sun-Moon sep (deg)   : 175.80
B (ring opening deg) : 1.12
PA of pole (deg)     : -23.33
Pole direction: RA (deg): 268.05705
Dec (deg): 64.49723
C/A sky separation (") : 12.817
C/A sky separation (km) : 39085.9
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
    
```

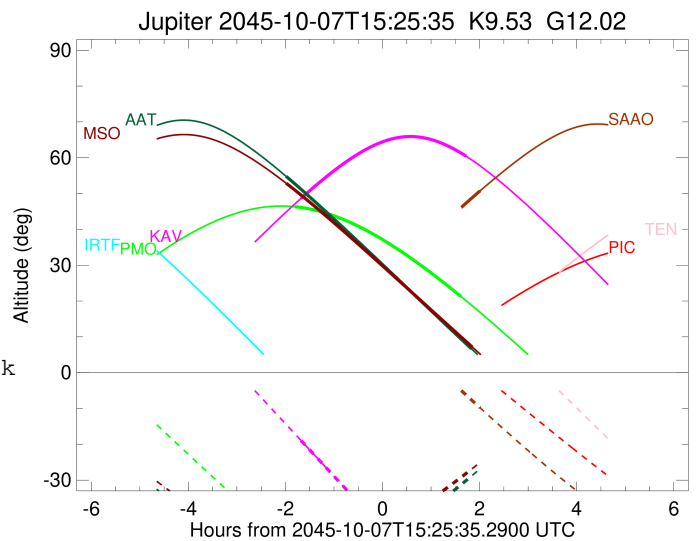
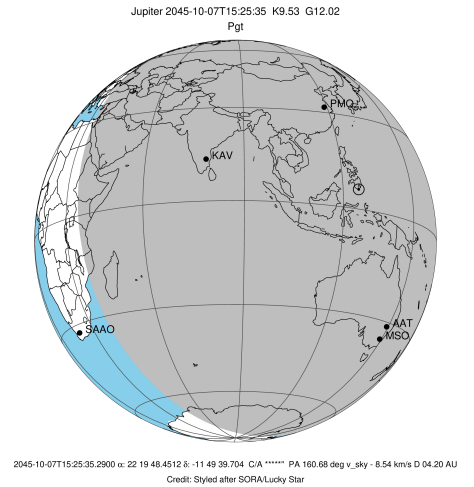


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2045-10-07T13:26:25.225	54.81	-52.63	71491.3	38.09	41.77
Jupiter	E	2045-10-07T17:15:34.094	6.65	-28.85	71491.6	28.40	31.67

```

target           : Jupiter
target radius (km) : 71492.00
C/A epoch       : 2045-10-07T15:36:16.300
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  : 2602339376344535808
2Mass ID (if available) : 22194807-1149413
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s
RUWE (>1.4 is poor) : 2.94
K magnitude     : 9.525
G magnitude     : 12.020
RP magnitude    : 11.223
BP magnitude    : 12.691
DUPflag        : 0
Distance (au)  : 4.205
f0 (km)        : 0.00
g0 (km)        : 0.00
skyplane vel. (km/s) : -8.54
Sun-Target sep (deg) : 138.34
Sun-Moon sep (deg) : 176.62
B (ring opening deg) : 1.12
PA of pole (deg) : -23.33
Pole direction: RA (deg): 268.05705
Dec (deg): 64.49723
C/A sky separation (") : 13.806
C/A sky separation (km) : 42105.1
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
    
```

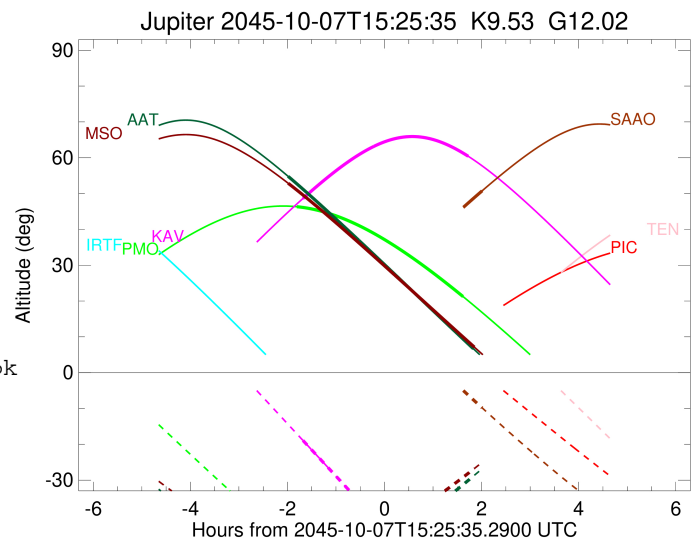
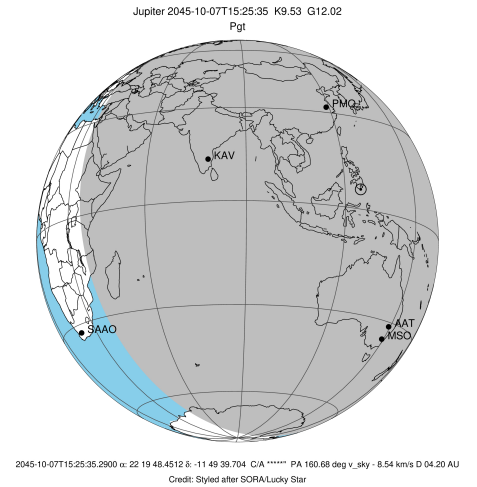


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2045-10-07T13:44:38.112	4.52x	36.45x	71491.3	39.79	43.49
Jupiter	E	2045-10-07T17:26:17.290	50.76	-9.82	71491.5	31.88	35.35

```

target           : Jupiter
target radius (km) : 71492.00
C/A epoch       : 2045-10-07T15:20:20.830
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  : 2602339376344535808
2Mass ID (if available) : 22194807-1149413
ICRS Star Coord at Epoch: 22h 19m 48.45121s -11:49:39.70389s
RUWE (>1.4 is poor) : 2.94
K magnitude     : 9.525
G magnitude     : 12.020
RP magnitude    : 11.223
BP magnitude    : 12.691
DUPflag        : 0
Distance (au)   : 4.205
f0 (km)         : 0.00
g0 (km)         : 0.00
skyplane vel. (km/s) : -8.54
Sun-Target sep (deg) : 138.34
Sun-Moon sep (deg) : 175.86
B (ring opening deg) : 1.12
PA of pole (deg) : -23.33
Pole direction: RA (deg): 268.05705
Dec (deg): 64.49723
C/A sky separation (") : 12.718
C/A sky separation (km) : 38784.7
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
    
```



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	2045-10-07T13:26:28.948	52.88	-48.65	71491.3	37.76	41.43
Jupiter	E	2045-10-07T17:16:35.799	7.14	-26.76	71491.6	28.15	31.40