

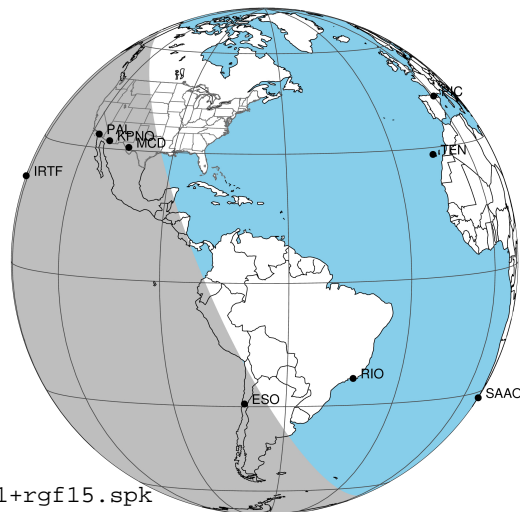
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2046-06-22T11:18:14.010
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 2552224151746264704
 2Mass ID (if available) : 00571182+0444562

Jupiter 2046-06-22T11:18:14 K9.74 G11.77 Pgt

ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s

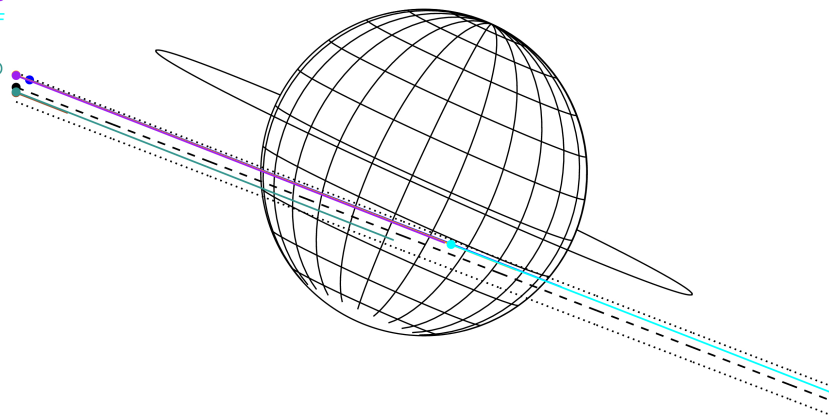
RUWE (>1.4 is poor) : 1.11
 K magnitude : 9.741
 G magnitude : 11.773
 RP magnitude : 11.109
 BP magnitude : 12.289
 DUPflag : 0
 Distance (au) : 5.113
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 20.86
 Sun-Target sep (deg) : 75.59
 Sun-Moon sep (deg) : 58.16
 B (ring opening deg) : 2.60
 PA of pole (deg) : -24.44
 Pole direction: RA (deg): 268.05711
 Dec (deg): 64.49722
 C/A sky separation (") : 7.898
 C/A sky separation (km) : 29284.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2046-06-22T11:18:14 K9.74 G11.77
 Pgt



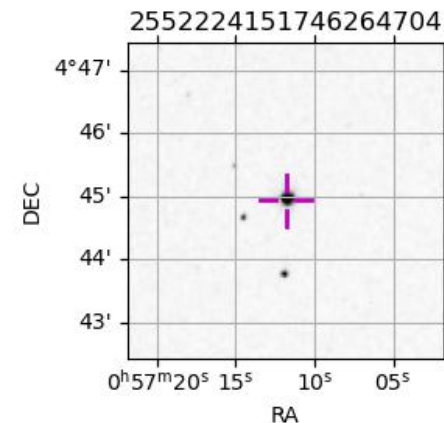
2046-06-22T11:18:14.0100 ex: 00 57 11.8413 s: +04 44 55.868 C/A 7.892" PA 338.97 deg v_sky +20.86 km/s D 05.11 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PAL
 KPNO
 MCD
 IRTF
 RIO
 ESO



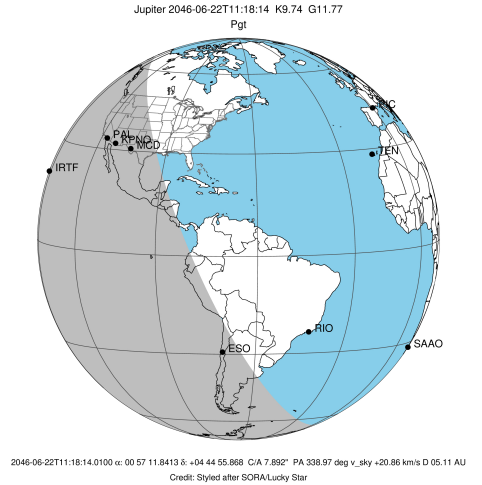
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	JUN 22 10:21 - JUN 22 12:10	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	JUN 22 10:22 - JUN 22 10:22	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	JUN 22 10:22 - JUN 22 10:22	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	JUN 22 12:07 - JUN 22 12:07	Pne
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	JUN 22 10:24 - JUN 22 10:24	Pin
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

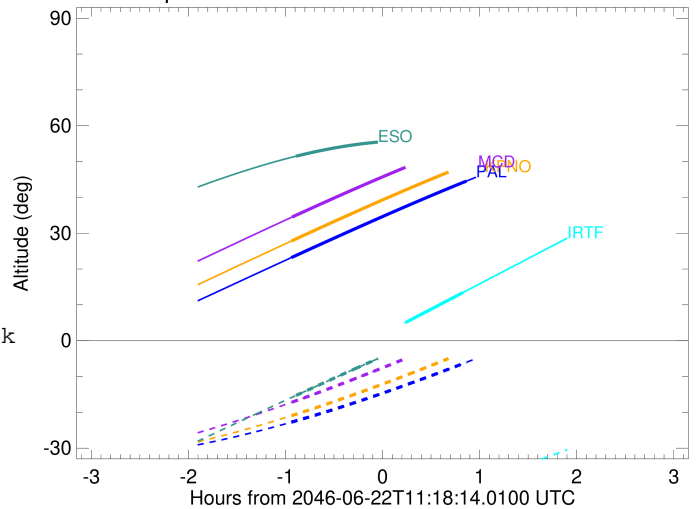


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-22T11:15:54.280
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 2552224151746264704
2Mass ID (if available) : 00571182+0444562
ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 9.741
G magnitude           : 11.773
RP magnitude          : 11.109
BP magnitude          : 12.289
DUPflag              : 0
Distance (au)         : 5.113
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.86
Sun-Target sep (deg)  : 75.59
Sun-Moon sep (deg)   : 58.40
B (ring opening deg) : 2.60
PA of pole (deg)     : -24.44
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 6.689
C/A sky separation (km) : 24804.9
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
    
```



Jupiter 2046-06-22T11:18:14 K9.74 G11.77

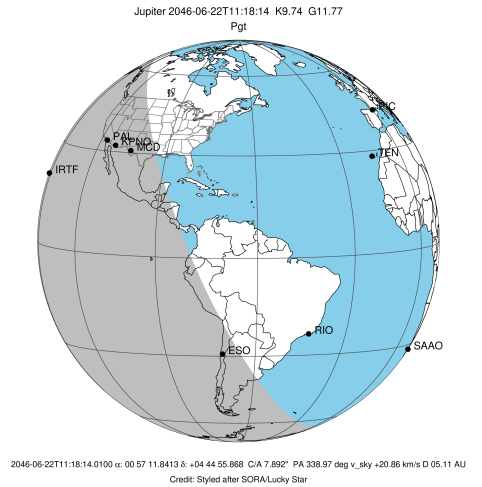


x: target alt < 5.0 deg or sun > -5.0 deg

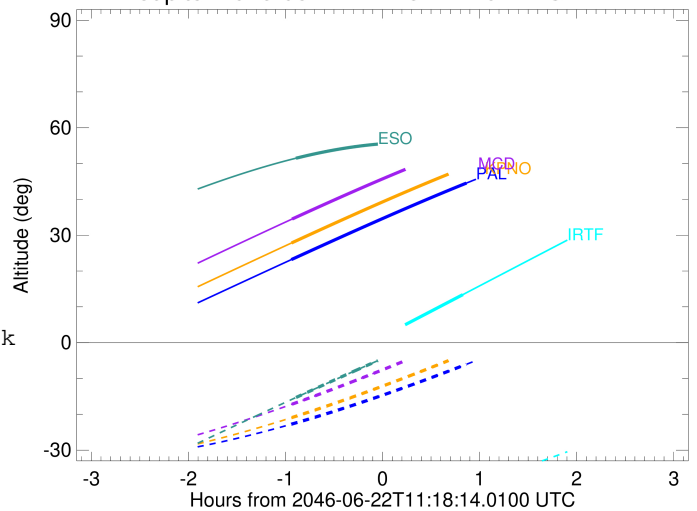
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-22T10:21:54.641	23.19	-22.75	71490.5	-23.41	-26.31
Jupiter	E	2046-06-22T12:10:07.721	44.55	-6.03	71491.2	-17.21	-19.48

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-22T11:16:02.440
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        : 2552224151746264704
2Mass ID (if available) : 00571182+0444562
ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 9.741
G magnitude           : 11.773
RP magnitude          : 11.109
BP magnitude          : 12.289
DUPflag              : 0
Distance (au)         : 5.113
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.86
Sun-Target sep (deg)  : 75.59
Sun-Moon sep (deg)   : 58.46
B (ring opening deg) : 2.60
PA of pole (deg)     : -24.44
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 6.757
C/A sky separation (km) : 25054.1
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 2046-06-22T11:18:14 K9.74 G11.77

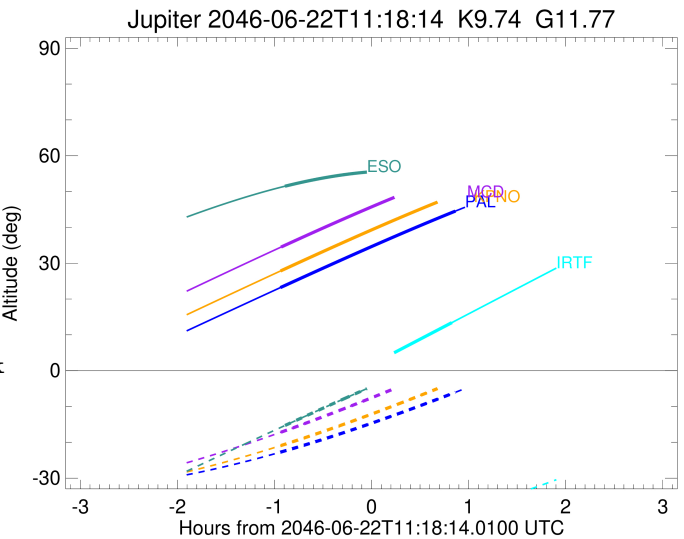
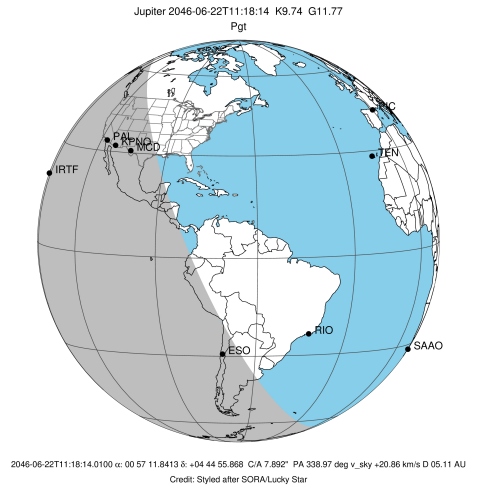


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-22T10:22:02.282	27.84	-20.93	71490.5	-23.60	-26.51
Jupiter	E	2046-06-22T12:10:15.819	49.08	-2.95x	71491.2	-17.44	-19.75

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-22T11:16:20.390
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        : 2552224151746264704
2Mass ID (if available) : 00571182+0444562
ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 9.741
G magnitude           : 11.773
RP magnitude          : 11.109
BP magnitude          : 12.289
DUPflag              : 0
Distance (au)         : 5.113
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.86
Sun-Target sep (deg) : 75.59
Sun-Moon sep (deg)   : 58.56
B (ring opening deg) : 2.60
PA of pole (deg)     : -24.44
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 6.846
C/A sky separation (km) : 25385.9
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
    
```

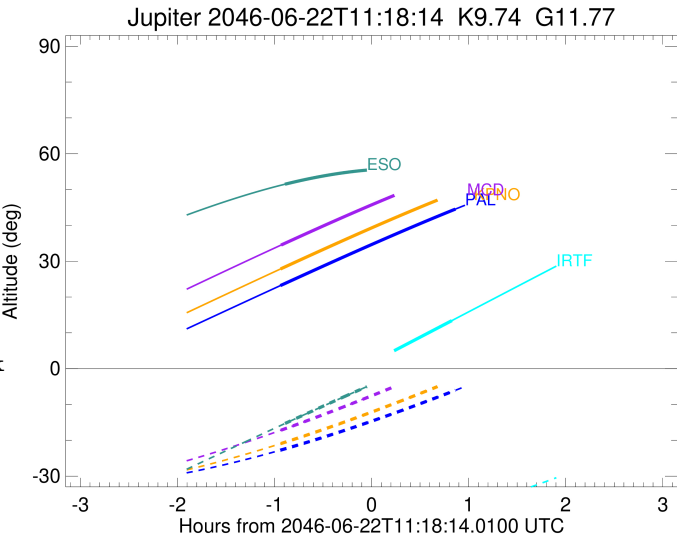
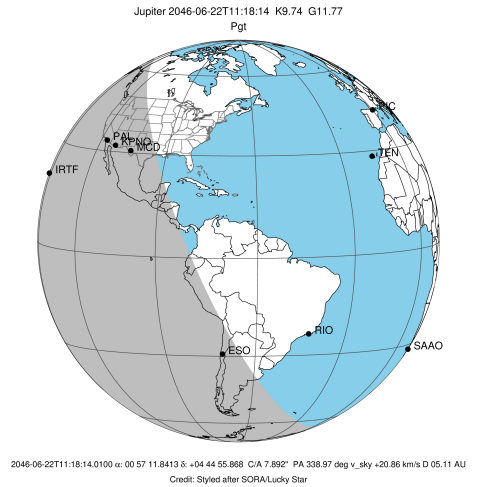


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-22T10:22:19.617	34.50	-17.17	71490.5	-23.84	-26.77
Jupiter	E	2046-06-22T12:10:33.244	55.04	2.23x	71491.1	-17.75	-20.09

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-22T11:14:20.190
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 2552224151746264704
2Mass ID (if available) : 00571182+0444562
ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 9.741
G magnitude           : 11.773
RP magnitude          : 11.109
BP magnitude          : 12.289
DUPflag              : 0
Distance (au)         : 5.113
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.86
Sun-Target sep (deg)  : 75.59
Sun-Moon sep (deg)   : 57.81
B (ring opening deg) : 2.60
PA of pole (deg)     : -24.44
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 6.776
C/A sky separation (km) : 25126.6
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
    
```

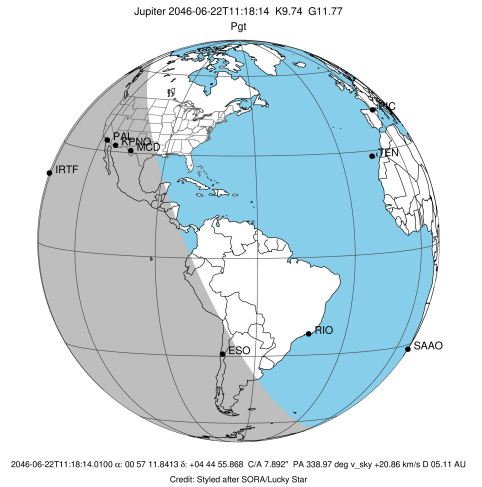


x: target alt < 5.0 deg or sun > -5.0 deg

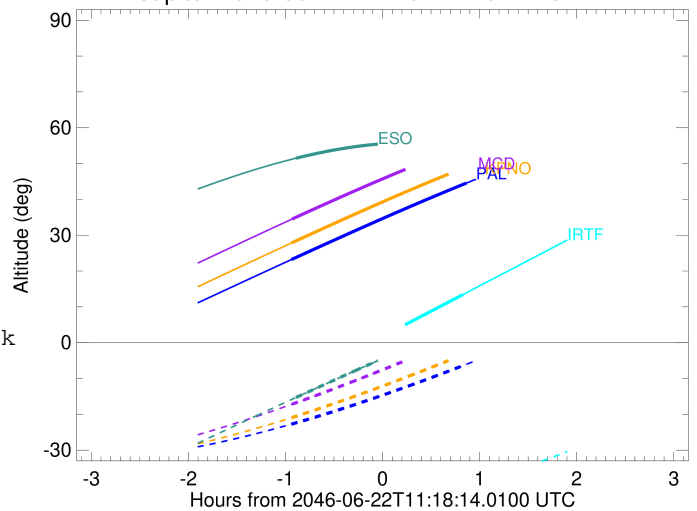
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-22T10:21:04.677	-11.67x	-46.86	71490.5	-23.92	-26.86
Jupiter	E	2046-06-22T12:07:53.032	13.41	-39.97	71491.2	-17.29	-19.57

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-22T11:16:37.000
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        : 2552224151746264704
2Mass ID (if available) : 00571182+0444562
ICRS Star Coord at Epoch: 00h 57m 11.84127s +04:44:55.86761s
RUWE (>1.4 is poor) : 1.11
K magnitude           : 9.741
G magnitude           : 11.773
RP magnitude          : 11.109
BP magnitude          : 12.289
DUPflag              : 0
Distance (au)         : 5.113
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.86
Sun-Target sep (deg) : 75.59
Sun-Moon sep (deg)   : 58.68
B (ring opening deg) : 2.60
PA of pole (deg)     : -24.44
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation ("): 8.744
C/A sky separation (km): 32424.9
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
    
```



Jupiter 2046-06-22T11:18:14 K9.74 G11.77



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	2046-06-22T10:24:49.309	51.49	-15.29	71489.7	-29.93	-33.30
Jupiter	E	2046-06-22T12:08:29.235	55.17	5.30x	71490.5	-23.94	-26.88