

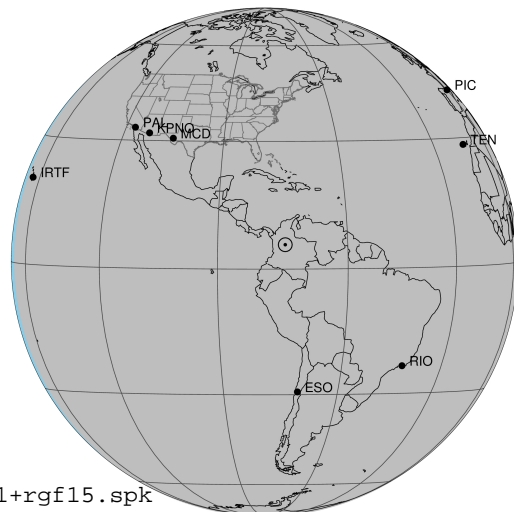
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2034-10-07T04:46:06.840
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 2544385153533347200
 2Mass ID (if available) : 00310044+0133547

Jupiter 2034-10-07T04:46:06 K9.46 G10.86 Pt

ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s

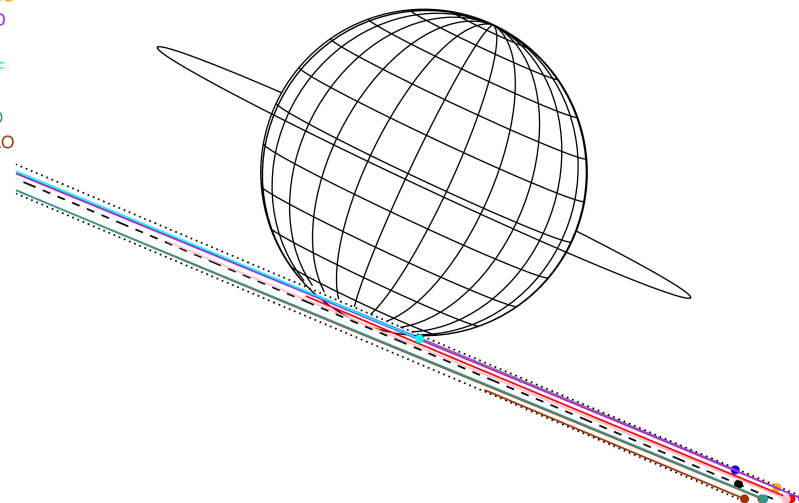
RUWE (>1.4 is poor) : 1.22
 K magnitude : 9.463
 G magnitude : 10.859
 RP magnitude : 10.373
 BP magnitude : 11.174
 DUPflag : 1
 Distance (au) : 3.958
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.90
 Sun-Target sep (deg) : 173.99
 Sun-Moon sep (deg) : 126.22
 B (ring opening deg) : 2.74
 PA of pole (deg) : -25.14
 Pole direction: RA (deg): 268.05641
 Dec (deg): 64.49674
 C/A sky separation (") : 25.137
 C/A sky separation (km) : 72168.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2034-10-07T04:46:06 K9.46 G10.86 Pt



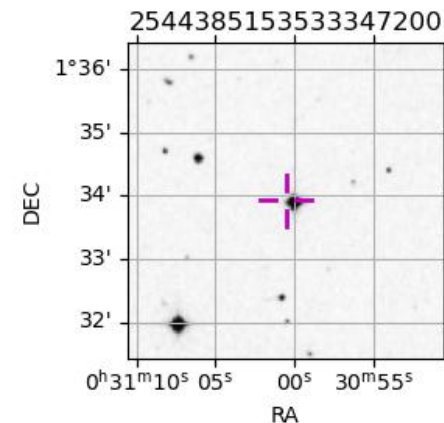
2034-10-07T04:46:06.8400 a: 00 31 00.6813 s: +01 33 56.314 C/A ***** PA 337.09 deg v_sky -15.90 km/s D 03.96 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 IRTF
 RIO
 ESO
 SAAO



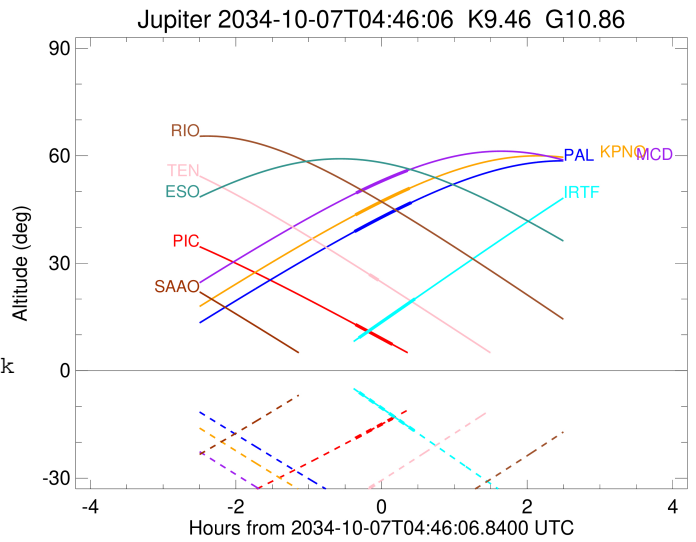
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+ +	OCT 07 04:24 - OCT 07 04:55	Pie
PAL	Palomar Mt (200")	33.4	243.1	+ +	OCT 07 04:24 - OCT 07 05:10	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 07 04:24 - OCT 07 05:09	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	OCT 07 04:25 - OCT 07 05:07	Pie
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	OCT 07 04:36 - OCT 07 04:43	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	OCT 07 04:27 - OCT 07 05:13	Pie
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			Pnn
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



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-10-07T04:39:51.680
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.463
G magnitude           : 10.859
RP magnitude          : 10.373
BP magnitude          : 11.174
DUPflag              : 1
Distance (au)         : 3.958
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg) : 173.99
Sun-Moon sep (deg)   : 126.85
B (ring opening deg) : 2.74
PA of pole (deg)     : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation ("): 24.380
C/A sky separation (km): 69992.8
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
    
```

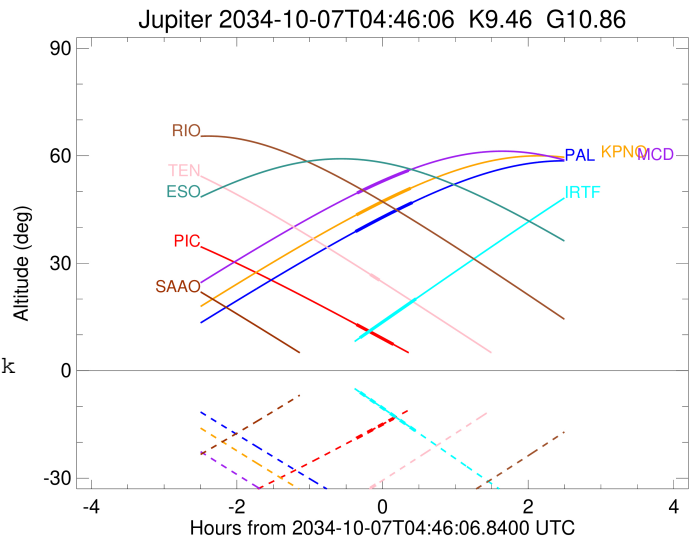


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-10-07T04:24:41.944	12.88	-18.85	71482.4	-75.71	-77.35
Jupiter	E	2034-10-07T04:55:02.522	7.33	-13.33	71482.1	-80.18	-81.33

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-10-07T04:47:18.650
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: 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        : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.463
G magnitude           : 10.859
RP magnitude          : 10.373
BP magnitude          : 11.174
DUPflag              : 1
Distance (au)         : 3.958
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg)  : 173.99
Sun-Moon sep (deg)   : 126.55
B (ring opening deg) : 2.74
PA of pole (deg)     : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation (" ) : 23.623
C/A sky separation (km) : 67821.0
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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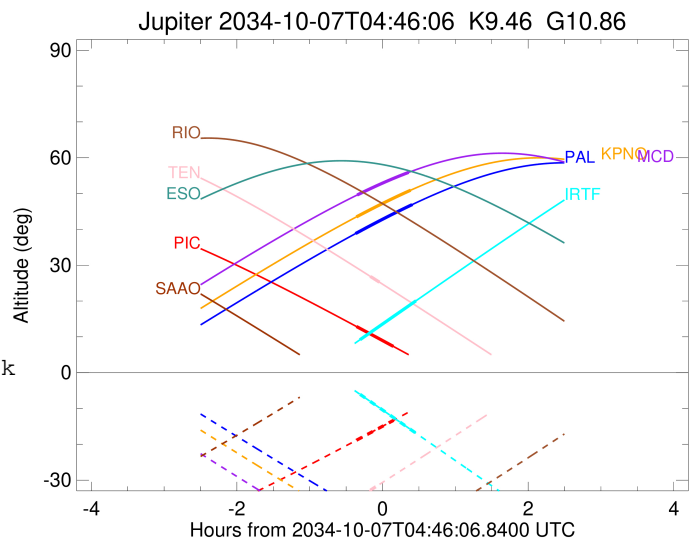


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-10-07T04:24:02.830	38.85	-37.74	71483.1	-68.75	-71.09
Jupiter	E	2034-10-07T05:10:32.594	46.91	-46.47	71482.5	-74.05	-75.86

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-10-07T04:46:59.200
Event type           : Pt
: Jupiter occs: topocentric, not geocentric
: 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       : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.463
G magnitude           : 10.859
RP magnitude          : 10.373
BP magnitude          : 11.174
DUPflag              : 1
Distance (au)         : 3.958
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg) : 173.99
Sun-Moon sep (deg)   : 126.62
B (ring opening deg) : 2.74
PA of pole (deg)     : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation ("): 23.716
C/A sky separation (km): 68087.5
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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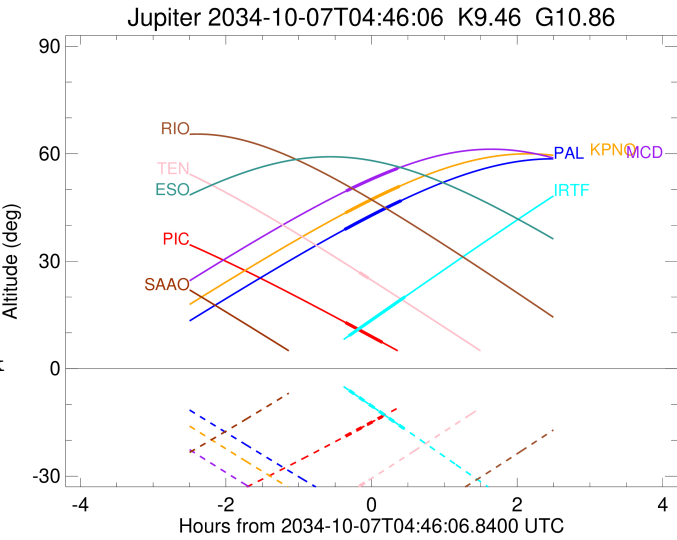


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-10-07T04:24:35.827	43.48	-42.47	71483.0	-69.40	-71.68
Jupiter	E	2034-10-07T05:09:21.038	50.93	-50.73	71482.5	-74.75	-76.49

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-10-07T04:46:25.640
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: 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       : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.463
G magnitude           : 10.859
RP magnitude          : 10.373
BP magnitude          : 11.174
DUPflag              : 1
Distance (au)         : 3.958
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg) : 173.99
Sun-Moon sep (deg)   : 126.71
B (ring opening deg) : 2.74
PA of pole (deg)     : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation ("): 23.839
C/A sky separation (km): 68440.3
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
    
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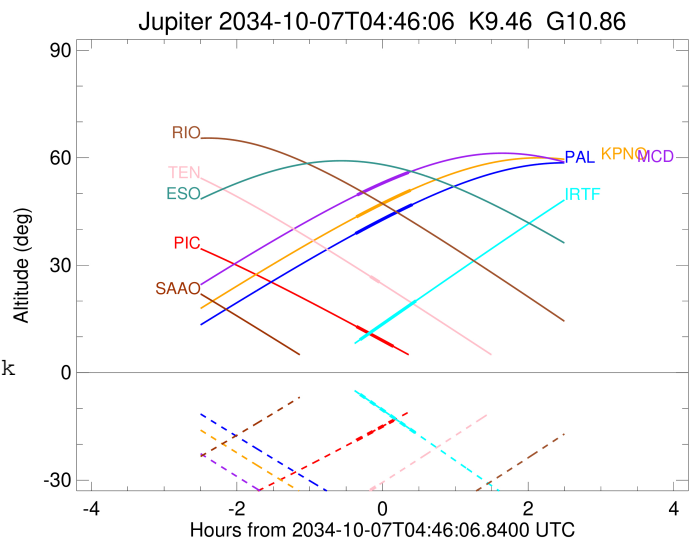


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-10-07T04:25:14.531	49.59	-48.94	71482.9	-70.30	-72.50
Jupiter	E	2034-10-07T05:07:35.657	55.89	-56.29	71482.4	-75.72	-77.36

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-10-07T04:39:51.260
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.463
G magnitude           : 10.859
RP magnitude          : 10.373
BP magnitude          : 11.174
DUPflag              : 1
Distance (au)         : 3.958
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg)  : 173.99
Sun-Moon sep (deg)    : 127.04
B (ring opening deg) : 2.74
PA of pole (deg)      : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation (") : 24.867
C/A sky separation (km) : 71393.1
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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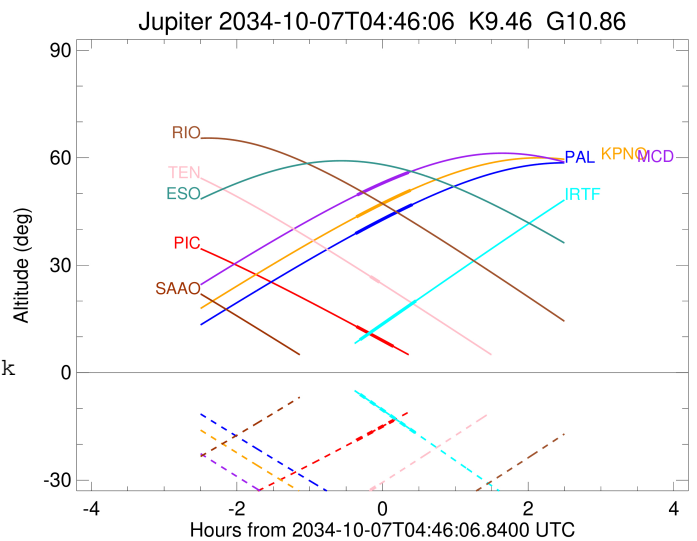


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-10-07T04:36:09.540	26.85	-32.79	71481.9	-84.01	-84.72
Jupiter	E	2034-10-07T04:43:32.942	25.26	-31.20	71481.8	-87.24	-87.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2034-10-07T04:50:36.860
Event type          : Pt
                    : Jupiter occs: topocentric, not geocentric
                    : 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      : 2544385153533347200
2Mass ID (if available) : 00310044+0133547
ICRS Star Coord at Epoch: 00h 31m 00.68131s +01:33:56.31413s
RUWE (>1.4 is poor) : 1.22
K magnitude         : 9.463
G magnitude         : 10.859
RP magnitude        : 10.373
BP magnitude        : 11.174
DUPflag            : 1
Distance (au)       : 3.958
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -15.90
Sun-Target sep (deg) : 173.99
Sun-Moon sep (deg)  : 125.97
B (ring opening deg) : 2.74
PA of pole (deg)    : -25.14
Pole direction: RA (deg): 268.05641
Dec (deg): 64.49674
C/A sky separation (") : 23.677
C/A sky separation (km) : 67974.6
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	2034-10-07T04:27:34.499	9.19	-6.04	71483.0	-69.40	-71.68
Jupiter	E	2034-10-07T05:13:35.839	20.04	-16.87	71482.5	-74.20	-76.00