

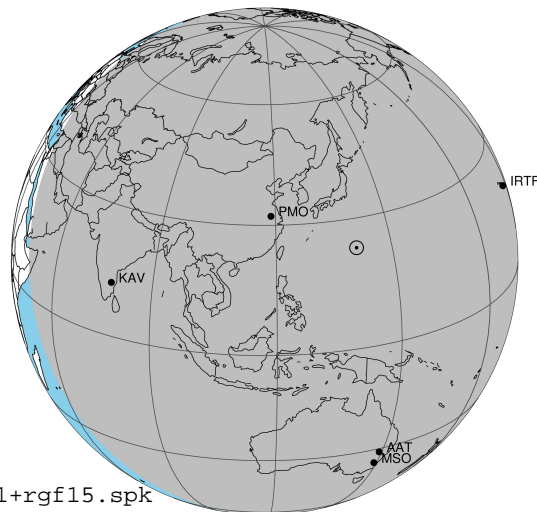
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2024-12-26T14:39:11.160
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3412815927192085632
 2Mass ID (if available) : 04483682+2147526

Jupiter 2024-12-26T14:39:11 K6.26 G9.57 Pgt

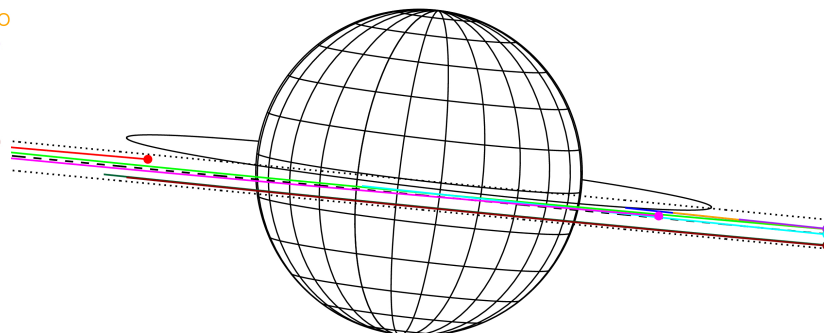
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s

RUWE (>1.4 is poor) : 1.09
 K magnitude : 6.260
 G magnitude : 9.568
 RP magnitude : 8.635
 BP magnitude : 10.473
 DUPflag : 0
 Distance (au) : 4.153
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.80
 Sun-Target sep (deg) : 158.48
 Sun-Moon sep (deg) : 151.12
 B (ring opening deg) : 2.83
 PA of pole (deg) : -6.78
 Pole direction: RA (deg): 268.05784
 Dec (deg): 64.49672
 C/A sky separation (") : 3.251
 C/A sky separation (km) : 9791.8
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2024-12-26T14:39:11 K6.26 G9.57
 Pgt



Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 AAT
 MSO

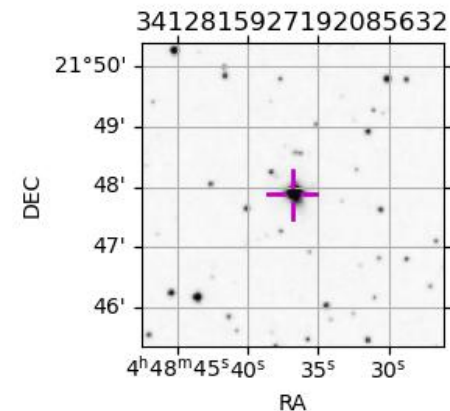


2024-12-26T14:39:11.1600 cc: 04 48 36.8374 s: +21 47 52.398 C/A 3.238" PA 354.51 deg v_sky -14.80 km/s D 04.15 AU

Credit: Styled after SORA/Lucky Star

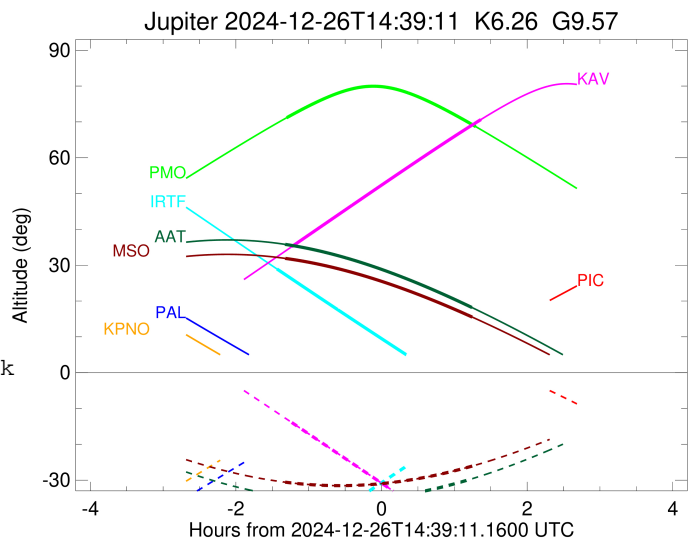
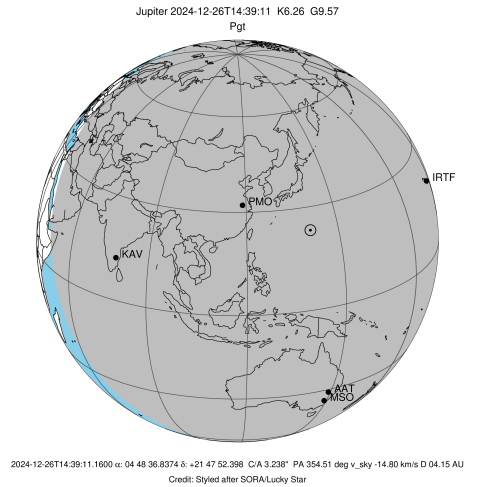
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	DEC 26 13:21 - DEC 26 15:56	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	+	DEC 26 13:13 - DEC 26 13:13	Pin
KAV	Kavalur Observatory	12.6	78.8	+ +	DEC 26 13:25 - DEC 26 16:01	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	+ +	DEC 26 13:19 - DEC 26 15:53	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	DEC 26 13:19 - DEC 26 15:53	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-26T14:38:52.730
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      : 3412815927192085632
2Mass ID (if available) : 04483682+2147526
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s
RUWE (>1.4 is poor) : 1.09
K magnitude         : 6.260
G magnitude         : 9.568
RP magnitude        : 8.635
BP magnitude        : 10.473
DUPflag            : 0
Distance (au)       : 4.153
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.80
Sun-Target sep (deg) : 158.48
Sun-Moon sep (deg)  : 151.56
B (ring opening deg) : 2.83
PA of pole (deg)    : -6.78
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 2.888
C/A sky separation (km) : 8697.8
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
    
```

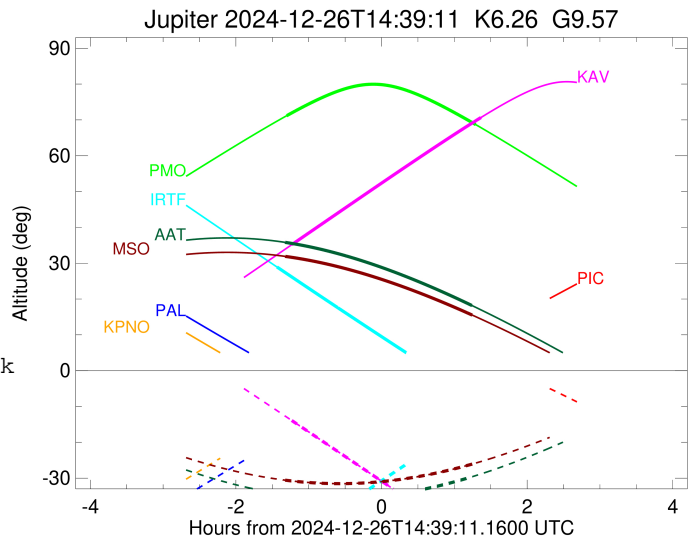
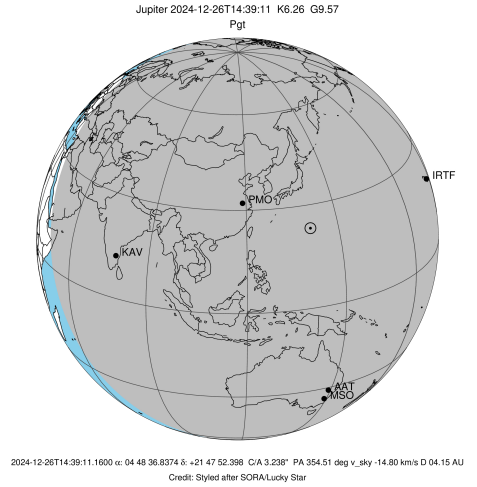


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-26T13:20:59.981	71.15	-52.79	71491.9	-5.47	-6.25
Jupiter	E	2024-12-26T15:56:48.481	68.68	-81.22	71491.8	-8.30	-9.47

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-26T14:32:22.870
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     : 3412815927192085632
2Mass ID (if available) : 04483682+2147526
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s
RUWE (>1.4 is poor) : 1.09
K magnitude         : 6.260
G magnitude         : 9.568
RP magnitude        : 8.635
BP magnitude        : 10.473
DUPflag            : 0
Distance (au)      : 4.153
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -14.80
Sun-Target sep (deg) : 158.48
Sun-Moon sep (deg)  : 151.94
B (ring opening deg) : 2.83
PA of pole (deg)   : -6.78
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 2.832
C/A sky separation (km) : 8530.1
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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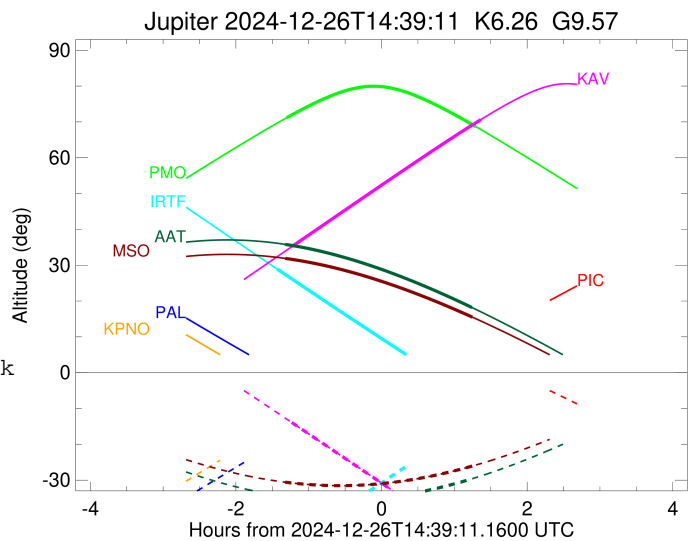
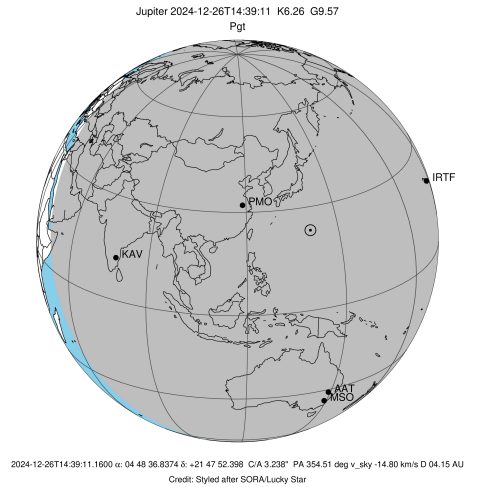


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-26T13:13:07.189	28.92	-50.34	71491.9	-6.11	-6.98
Jupiter	E	2024-12-26T15:52:29.892	-6.43x	-14.32	71491.8	-7.50	-8.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-26T14:43:22.320
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        : 3412815927192085632
2Mass ID (if available) : 04483682+2147526
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 6.260
G magnitude           : 9.568
RP magnitude          : 8.635
BP magnitude          : 10.473
DUPflag              : 0
Distance (au)         : 4.153
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.80
Sun-Target sep (deg)  : 158.48
Sun-Moon sep (deg)   : 150.99
B (ring opening deg) : 2.83
PA of pole (deg)     : -6.78
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 3.320
C/A sky separation (km) : 10001.6
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
    
```

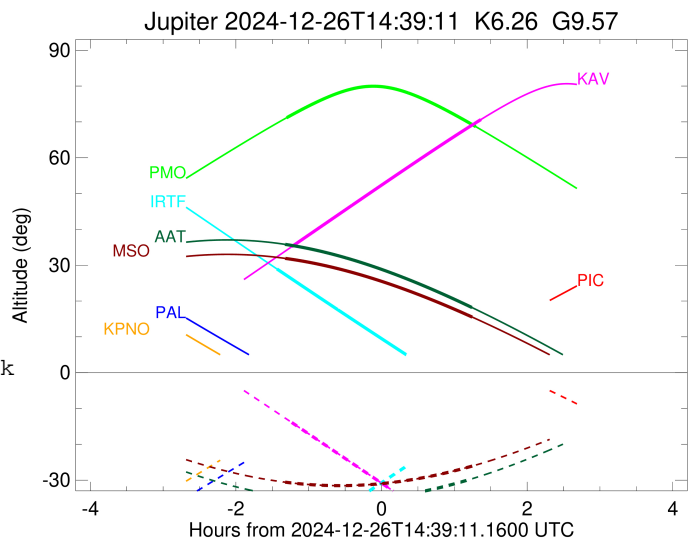
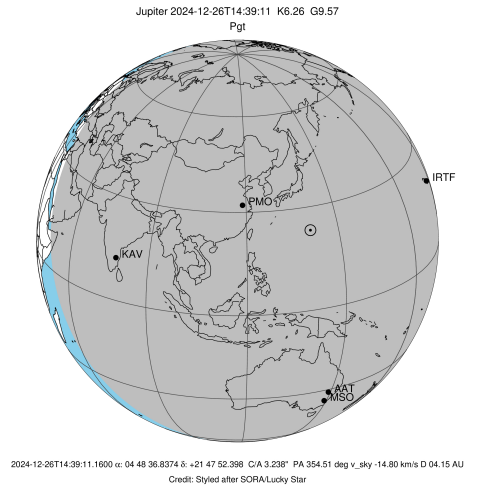


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-26T13:25:13.339	35.16	-13.91	71491.9	-6.16	-7.04
Jupiter	E	2024-12-26T16:01:04.954	70.64	-49.56	71491.7	-9.76	-11.12

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-26T14:36:33.750
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        : 3412815927192085632
2Mass ID (if available) : 04483682+2147526
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 6.260
G magnitude           : 9.568
RP magnitude          : 8.635
BP magnitude          : 10.473
DUPflag              : 0
Distance (au)         : 4.153
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.80
Sun-Target sep (deg)  : 158.48
Sun-Moon sep (deg)   : 151.70
B (ring opening deg) : 2.83
PA of pole (deg)     : -6.78
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 4.922
C/A sky separation (km) : 14826.8
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
    
```

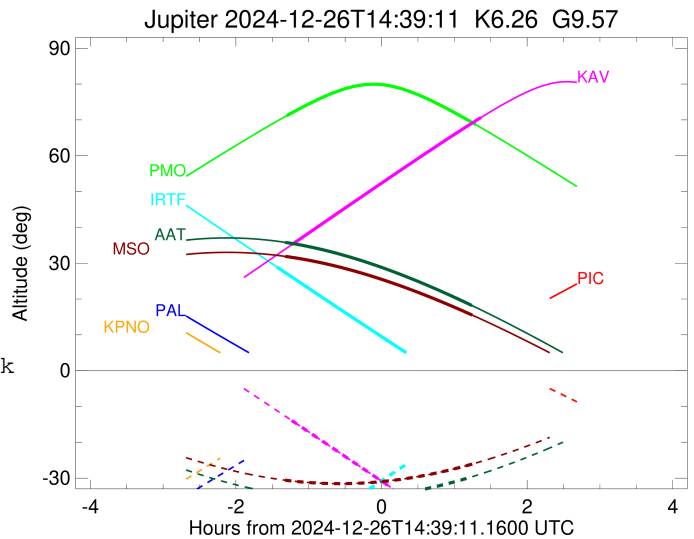
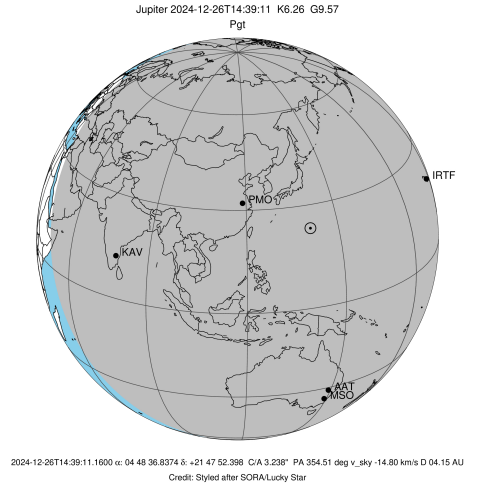


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-26T13:19:43.666	35.81	-34.51	71491.6	-10.74	-12.23
Jupiter	E	2024-12-26T15:53:46.609	18.17	-29.61	71491.4	-12.99	-14.77

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-26T14:36:44.050
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       : 3412815927192085632
2Mass ID (if available) : 04483682+2147526
ICRS Star Coord at Epoch: 04h 48m 36.83736s +21:47:52.39788s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 6.260
G magnitude           : 9.568
RP magnitude          : 8.635
BP magnitude          : 10.473
DUPflag              : 0
Distance (au)        : 4.153
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.80
Sun-Target sep (deg) : 158.48
Sun-Moon sep (deg)   : 151.66
B (ring opening deg) : 2.83
PA of pole (deg)     : -6.78
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 5.008
C/A sky separation (km) : 15083.2
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	2024-12-26T13:19:52.523	31.89	-30.57	71491.6	-10.94	-12.46
Jupiter	E	2024-12-26T15:53:57.477	15.51	-26.07	71491.4	-13.21	-15.02