

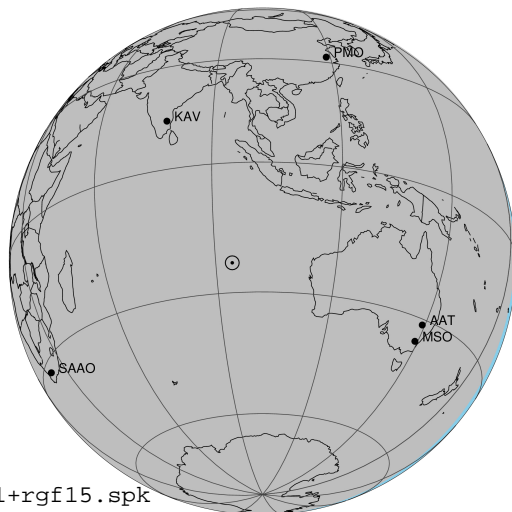
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-06-13T17:43:42.540  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4070137715246205568  
 2Mass ID (if available) : 17551578-2304228

Jupiter 2043-06-13T17:43:42 K3.98 G11.53 Pgt

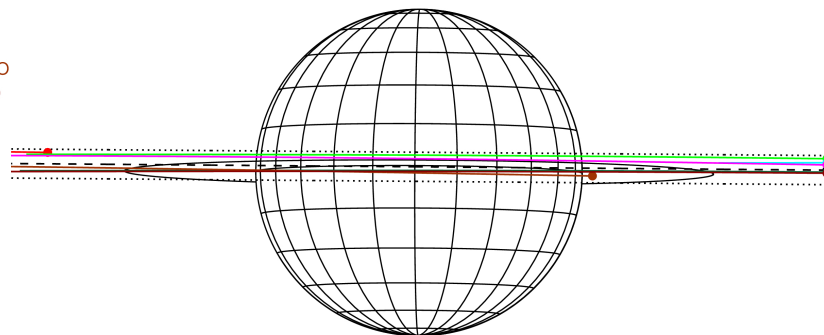
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23°04'23.11536s

RUWE (>1.4 is poor) : 0.95  
 K magnitude : 3.985  
 G magnitude : 11.534  
 RP magnitude : 9.923  
 BP magnitude : 16.091  
 DUPflag : 0  
 Distance (au) : 4.259  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -16.20  
 Sun-Target sep (deg) : 173.11  
 Sun-Moon sep (deg) : 104.83  
 B (ring opening deg) : -2.43  
 PA of pole (deg) : -0.33  
 Pole direction: RA (deg): 268.05668  
 Dec (deg): 64.49732  
 C/A sky separation (") : 0.806  
 C/A sky separation (km) : 2489.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-06-13T17:43:42 K3.98 G11.53  
 Pgt



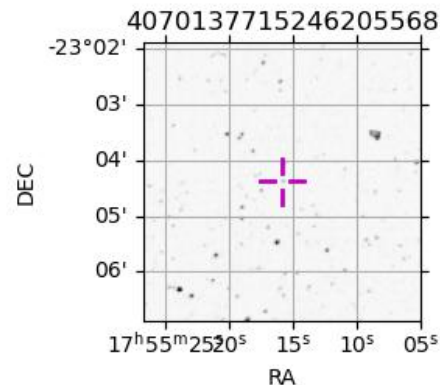
Earth  
 PIC  
 PMO  
 IRTF  
 KAV  
 AAT  
 SAAO  
 MSO



2043-06-13T17:43:42.5400 at: 17 55 15.7820 6: -23 04 23.115 C/A 0.794° PA 179.54 deg v\_sky -16.20 km/s D 04.26 AU  
 Credit: Styled after SORA/Lucky Star

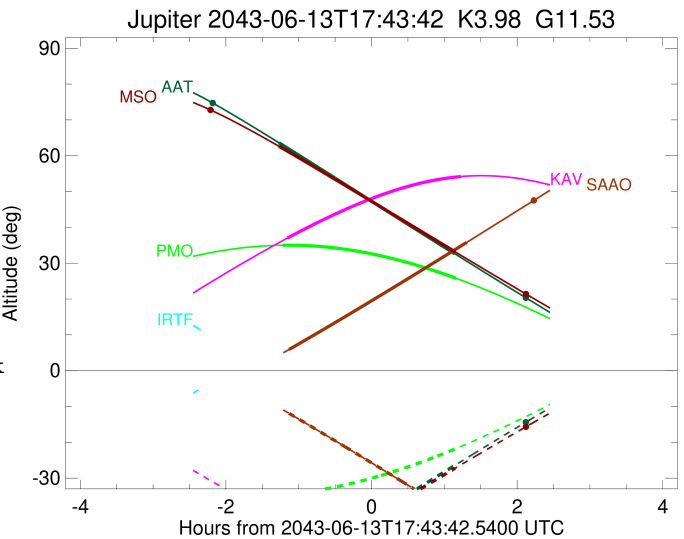
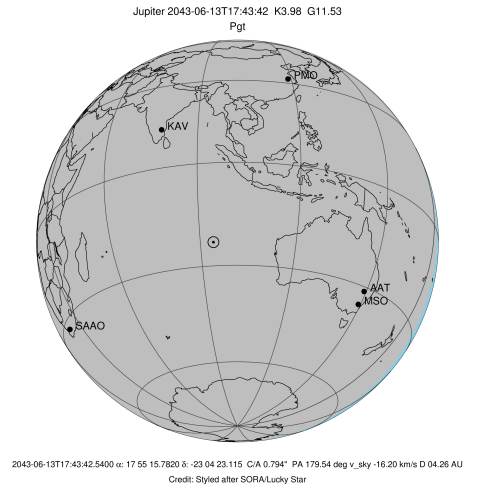
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
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	+ +	JUN 13 16:30 - JUN 13 18:53	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	+ +	JUN 13 16:34 - JUN 13 18:57	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	+ +	JUN 13 16:27 - JUN 13 18:52	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 13 16:35 - JUN 13 19:02	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 13 16:27 - JUN 13 18:52	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-13T17:42:03.340
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      : 4070137715246205568
2Mass ID (if available) : 17551578-2304228
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23:04:23.11536s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 3.985
G magnitude         : 11.534
RP magnitude        : 9.923
BP magnitude        : 16.091
DUPflag            : 0
Distance (au)       : 4.259
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.20
Sun-Target sep (deg) : 173.11
Sun-Moon sep (deg)  : 105.26
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.33
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (" ) : 2.459
C/A sky separation (km) : 7596.7
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
    
```

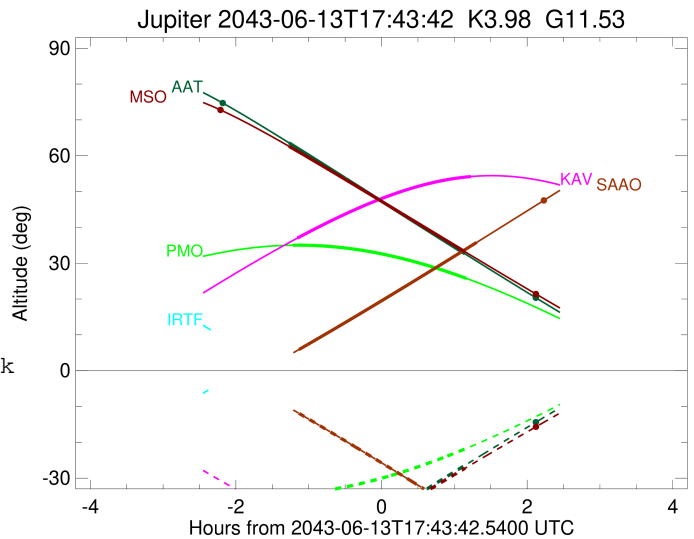
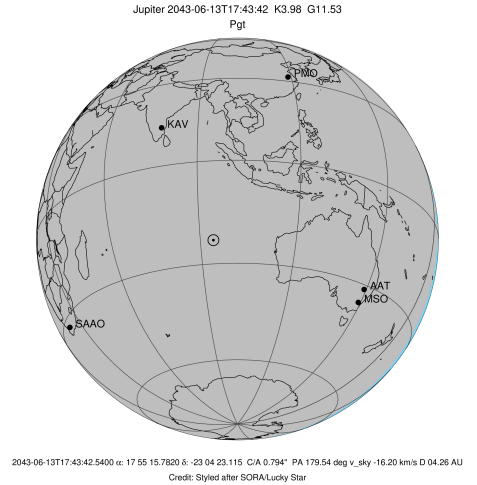


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-13T16:30:38.141	35.02	-34.53	71491.9	6.04	6.90
Jupiter	E	2043-06-13T18:53:37.081	25.76	-21.69	71491.9	5.98	6.83

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-13T17:46:03.390
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      : 4070137715246205568
2Mass ID (if available) : 17551578-2304228
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23:04:23.11536s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 3.985
G magnitude         : 11.534
RP magnitude        : 9.923
BP magnitude        : 16.091
DUPflag            : 0
Distance (au)       : 4.259
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.20
Sun-Target sep (deg) : 173.11
Sun-Moon sep (deg)  : 105.60
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.33
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (" ) : 1.958
C/A sky separation (km) : 6048.7
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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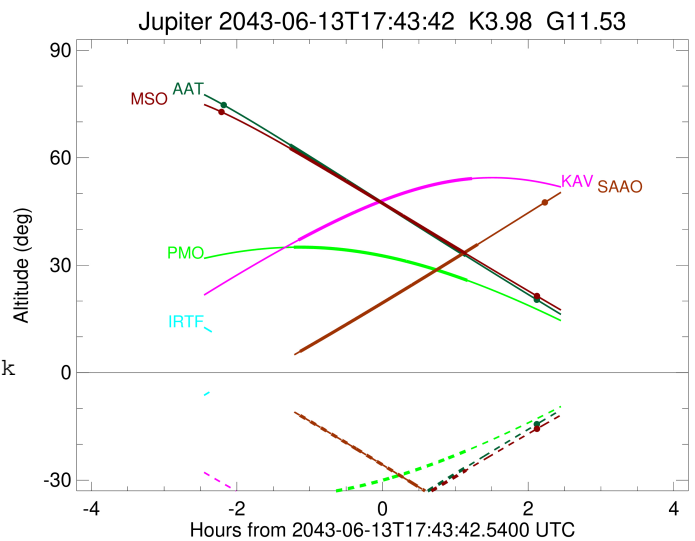
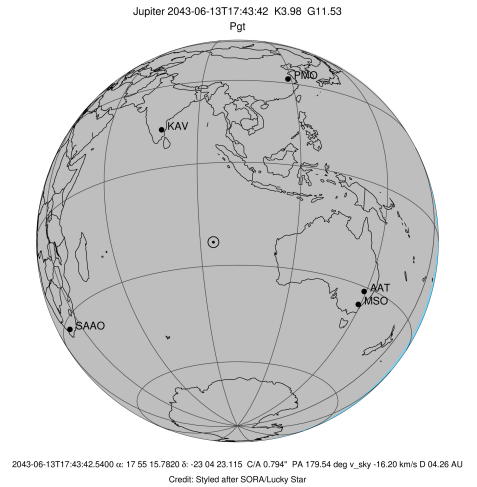


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-13T16:34:29.243	37.02	-42.13	71492.0	4.41	5.04
Jupiter	E	2043-06-13T18:57:23.384	54.18	-54.14	71491.9	5.11	5.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-13T17:39:40.040
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      : 4070137715246205568
2Mass ID (if available) : 17551578-2304228
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23:04:23.11536s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 3.985
G magnitude          : 11.534
RP magnitude         : 9.923
BP magnitude         : 16.091
DUPflag             : 0
Distance (au)       : 4.259
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.20
Sun-Target sep (deg) : 173.11
Sun-Moon sep (deg)  : 105.33
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.33
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (" ) : 0.286
C/A sky separation (km) : 883.9
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
    
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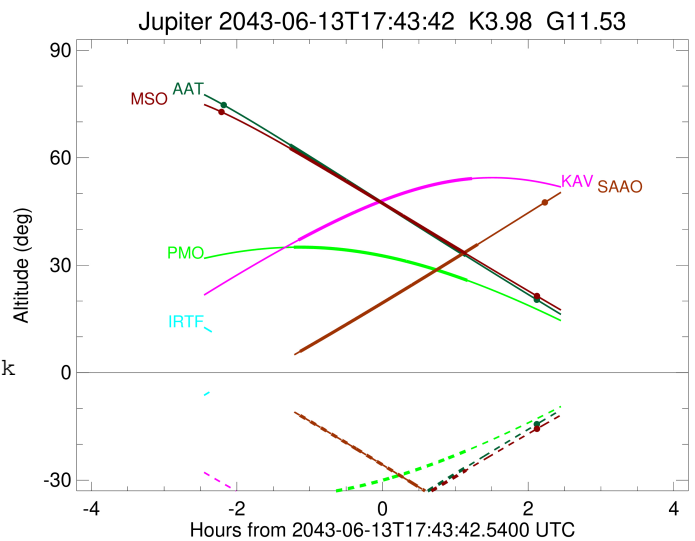
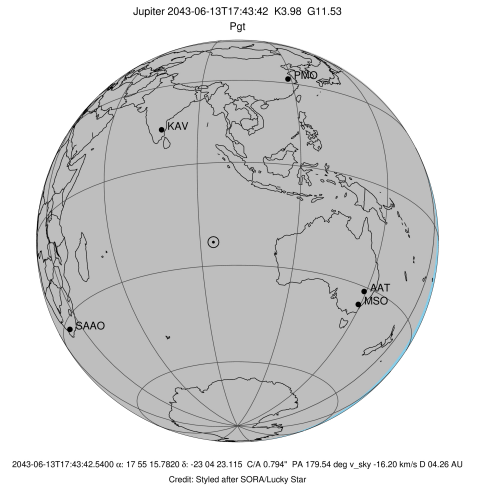


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-13T16:27:31.735	63.58	-57.24	71492.0	0.91	1.04
Jupiter	E	2043-06-13T18:52:11.521	32.67	-26.48	71492.0	0.39	0.44

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-13T17:49:11.910
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       : 4070137715246205568
2Mass ID (if available) : 17551578-2304228
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23:04:23.11536s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 3.985
G magnitude           : 11.534
RP magnitude         : 9.923
BP magnitude         : 16.091
DUPflag              : 0
Distance (au)        : 4.259
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.20
Sun-Target sep (deg) : 173.11
Sun-Moon sep (deg)   : 105.33
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.33
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 0.058
C/A sky separation (km): 179.5
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
    
```

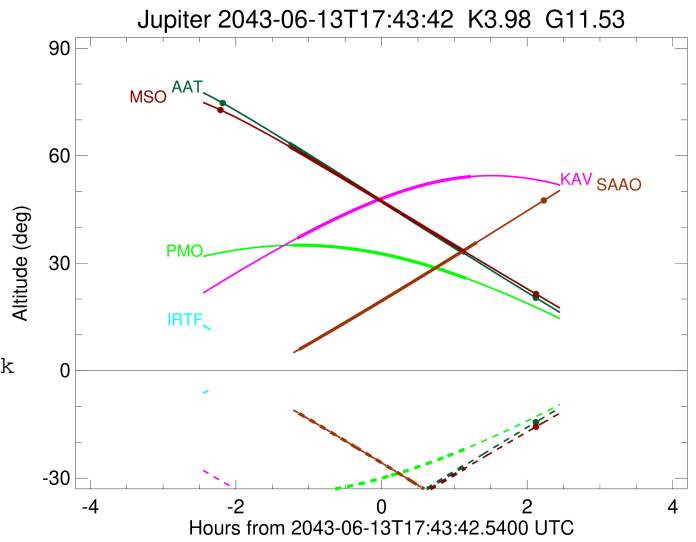
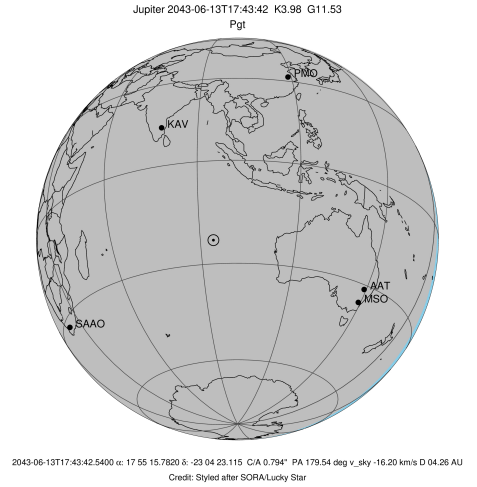


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-13T16:35:42.914	5.90	-11.91	71492.0	-0.82	-0.94
Jupiter	E	2043-06-13T19:02:07.097	35.80	-42.12	71492.0	0.49	0.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-13T17:39:51.240
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       : 4070137715246205568
2Mass ID (if available) : 17551578-2304228
ICRS Star Coord at Epoch: 17h 55m 15.78203s -23:04:23.11536s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 3.985
G magnitude          : 11.534
RP magnitude         : 9.923
BP magnitude         : 16.091
DUPflag             : 0
Distance (au)        : 4.259
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.20
Sun-Target sep (deg) : 173.11
Sun-Moon sep (deg)   : 105.34
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.33
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 0.154
C/A sky separation (km): 475.7
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	2043-06-13T16:27:39.032	62.59	-56.69	71492.0	0.57	0.65
Jupiter	E	2043-06-13T18:52:25.604	33.21	-27.27	71492.0	0.08	0.09