

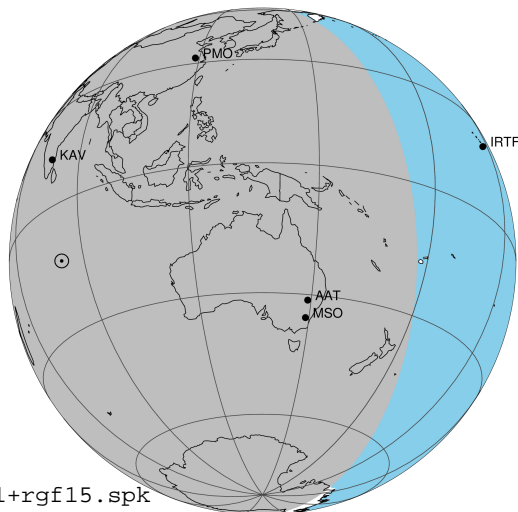
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-04-26T18:28:10.580  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4070200043810737024  
 2Mass ID (if available) : 17524801-2253466

Jupiter 2031-04-26T18:28:10 K9.11 G14.99 Pgt

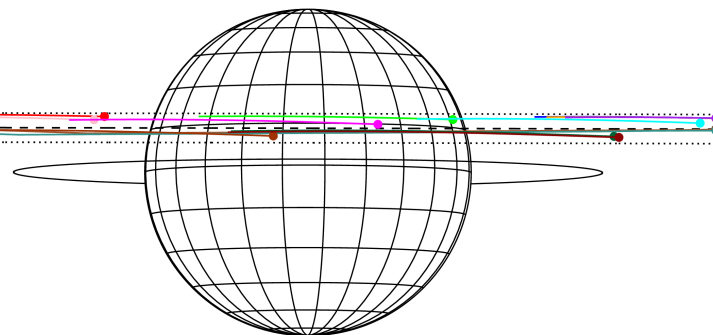
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s

RUWE (>1.4 is poor) : 0.96  
 K magnitude : 9.114  
 G magnitude : 14.990  
 RP magnitude : 13.561  
 BP magnitude : 17.712  
 DUPflag : 0  
 Distance (au) : 4.623  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -4.93  
 Sun-Target sep (deg) : 127.56  
 Sun-Moon sep (deg) : 174.91  
 B (ring opening deg) : -2.61  
 PA of pole (deg) : -0.06  
 Pole direction: RA (deg): 268.05696  
 Dec (deg): 64.49651  
 C/A sky separation (") : 5.783  
 C/A sky separation (km) : 19392.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-04-26T18:28:10 K9.11 G14.99  
 Pgt



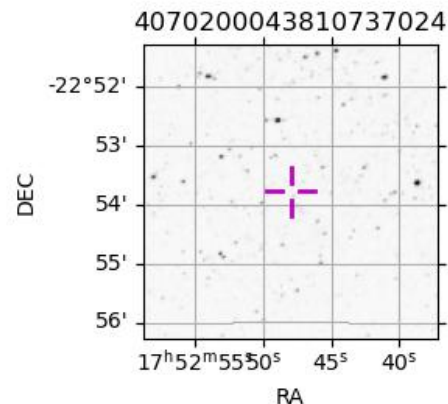
Earth  
 PIC  
 PAL  
 PMO  
 KPNO  
 MCD  
 TEN  
 IRTF  
 KAV  
 RIO  
 ESO  
 AAT  
 SAAO  
 MSO



2031-04-26T18:28:10.5800 at: 17 52 48.0007 s -22 53 46.905 C/A 5.772" PA 179.88 deg v\_sky - 4.93 km/s D 04.62 AU  
 Credit: Styled after SORA/Lucky Star

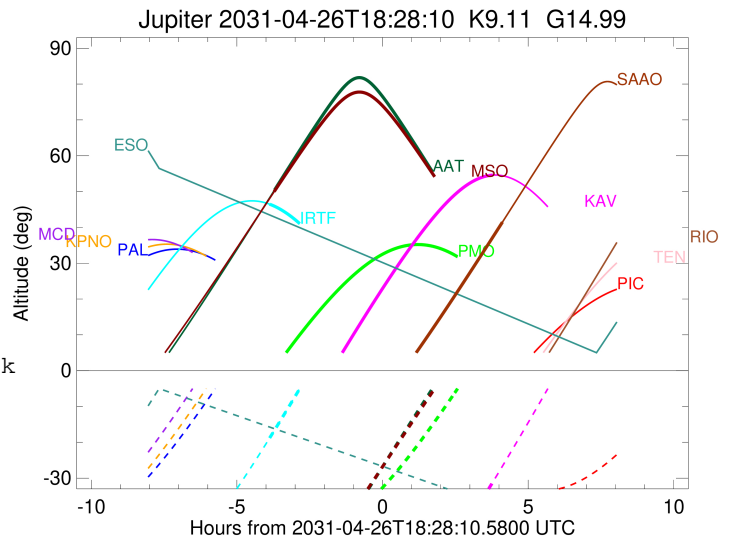
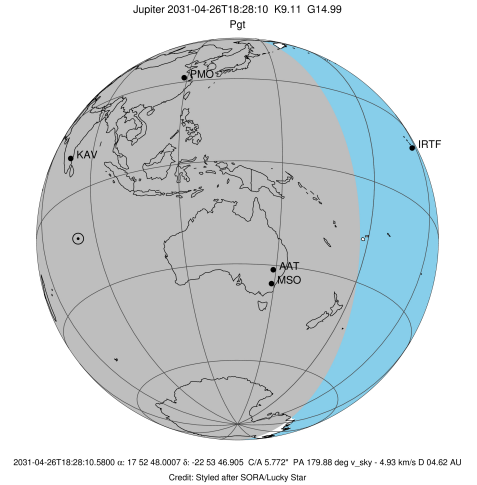
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
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	+	APR 26 14:35 - APR 26 14:35	Pin
KAV	Kavalur Observatory	12.6	78.8	+	APR 26 22:15 - APR 26 22:15	Pne
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	+	APR 26 14:45 - APR 26 14:45	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	APR 26 22:35 - APR 26 22:35	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	APR 26 14:44 - APR 26 14:44	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-26T18:12:13.750
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      : 4070200043810737024
2Mass ID (if available) : 17524801-2253466
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.114
G magnitude          : 14.990
RP magnitude         : 13.561
BP magnitude         : 17.712
DUPflag             : 0
Distance (au)       : 4.623
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.93
Sun-Target sep (deg) : 127.56
Sun-Moon sep (deg)  : 174.05
B (ring opening deg) : -2.61
PA of pole (deg)    : -0.06
Pole direction: RA (deg): 268.05696
Dec (deg): 64.49651
C/A sky separation (") : 6.680
C/A sky separation (km) : 22399.5
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
    
```

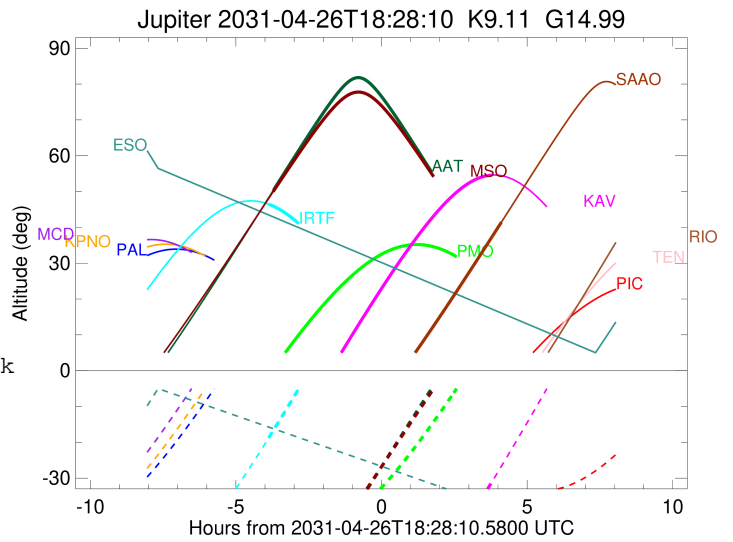
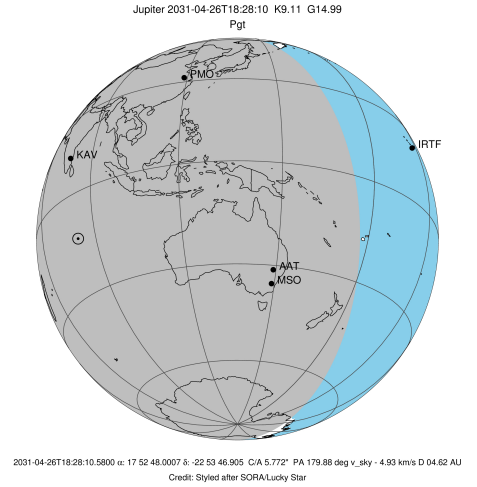


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-26T14:35:29.347	46.47	-18.84	71491.0	19.26	21.76
Jupiter	E	2031-04-26T22:01:09.537	-35.17x	82.52x	71491.3	16.40	18.59

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-26T18:43:11.760
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      : 4070200043810737024
2Mass ID (if available) : 17524801-2253466
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.114
G magnitude          : 14.990
RP magnitude         : 13.561
BP magnitude         : 17.712
DUPflag             : 0
Distance (au)        : 4.623
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.93
Sun-Target sep (deg) : 127.56
Sun-Moon sep (deg)  : 175.37
B (ring opening deg) : -2.61
PA of pole (deg)    : -0.06
Pole direction: RA (deg): 268.05696
Dec (deg): 64.49651
C/A sky separation ("): 6.593
C/A sky separation (km): 22107.1
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
    
```

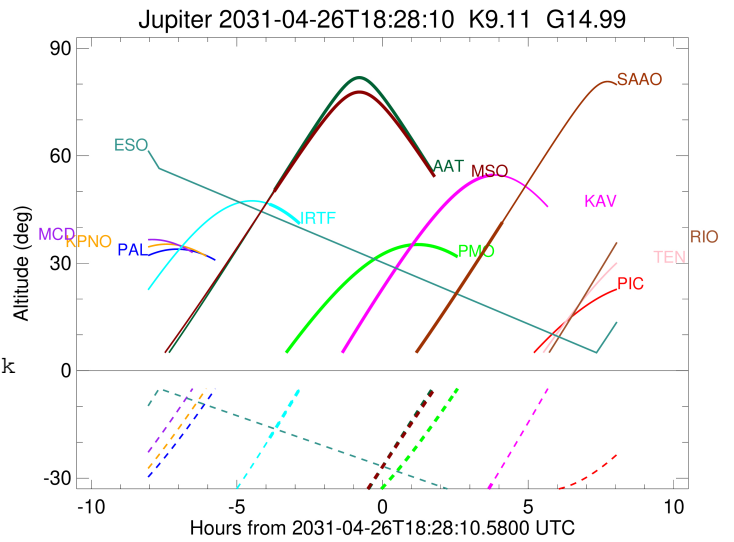
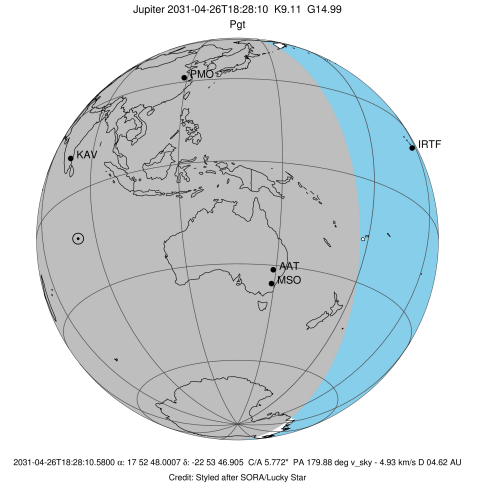


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-26T14:54:21.198	-24.76x	-27.75	71491.3	16.00	18.14
Jupiter	E	2031-04-26T22:15:38.343	54.58	-31.05	71491.0	18.87	21.33

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-26T18:24:59.360
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       : 4070200043810737024
2Mass ID (if available) : 17524801-2253466
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 9.114
G magnitude           : 14.990
RP magnitude         : 13.561
BP magnitude         : 17.712
DUPflag              : 0
Distance (au)        : 4.623
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.93
Sun-Target sep (deg) : 127.56
Sun-Moon sep (deg)   : 174.91
B (ring opening deg) : -2.61
PA of pole (deg)     : -0.06
Pole direction: RA (deg): 268.05696
Dec (deg): 64.49651
C/A sky separation (") : 5.498
C/A sky separation (km) : 18437.0
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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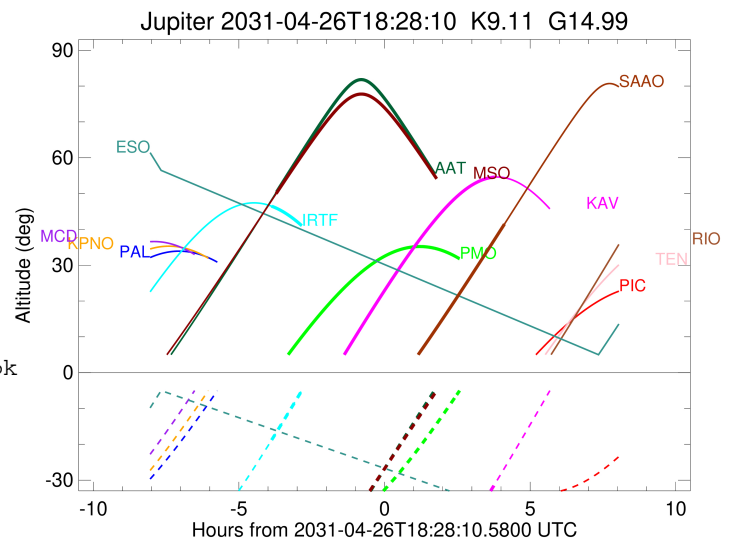
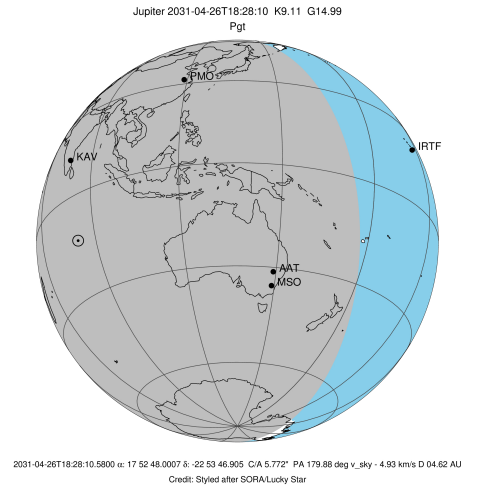


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-26T14:45:46.148	50.42	-69.74	71491.4	14.44	16.40
Jupiter	E	2031-04-26T22:04:25.664	31.27	17.63x	71491.5	13.95	15.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-04-26T18:43:31.670
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       : 4070200043810737024
2Mass ID (if available) : 17524801-2253466
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 9.114
G magnitude           : 14.990
RP magnitude          : 13.561
BP magnitude          : 17.712
DUPflag              : 0
Distance (au)        : 4.623
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.93
Sun-Target sep (deg) : 127.56
Sun-Moon sep (deg)   : 175.78
B (ring opening deg) : -2.61
PA of pole (deg)     : -0.06
Pole direction: RA (deg): 268.05696
Dec (deg): 64.49651
C/A sky separation ("): 4.622
C/A sky separation (km): 15496.9
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
    
```

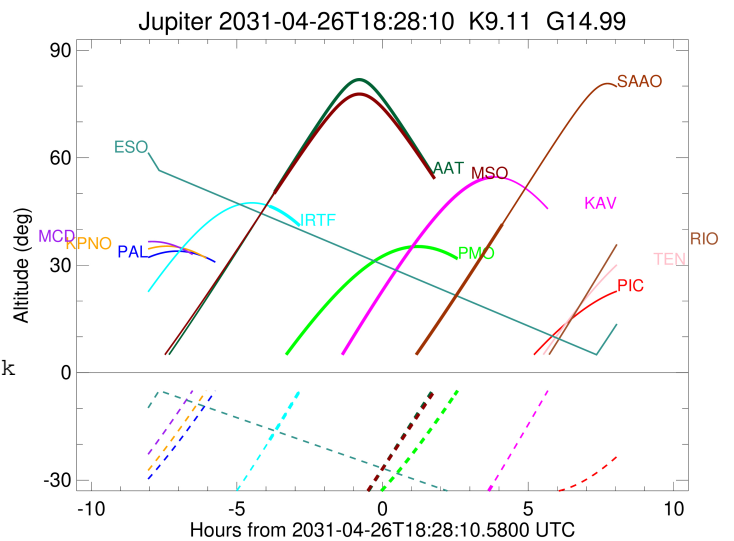
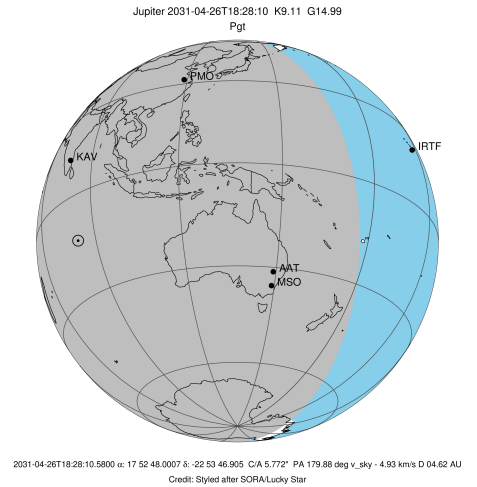


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-26T14:31:23.006	-34.73x	17.22x	71491.6	11.37	12.94
Jupiter	E	2031-04-26T22:35:24.067	41.49	-71.48	71491.4	14.21	16.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-26T18:25:08.410
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      : 4070200043810737024
2Mass ID (if available) : 17524801-2253466
ICRS Star Coord at Epoch: 17h 52m 48.00071s -22:53:46.90456s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.114
G magnitude          : 14.990
RP magnitude         : 13.561
BP magnitude         : 17.712
DUPflag             : 0
Distance (au)       : 4.623
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -4.93
Sun-Target sep (deg) : 127.56
Sun-Moon sep (deg)  : 174.95
B (ring opening deg) : -2.61
PA of pole (deg)    : -0.06
Pole direction: RA (deg): 268.05696
Dec (deg): 64.49651
C/A sky separation (" ) : 5.368
C/A sky separation (km) : 17998.3
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
    
```



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	2031-04-26T14:44:53.236	49.95	-66.36	71491.5	14.09	16.01
Jupiter	E	2031-04-26T22:05:28.805	31.69	15.80x	71491.5	13.63	15.49