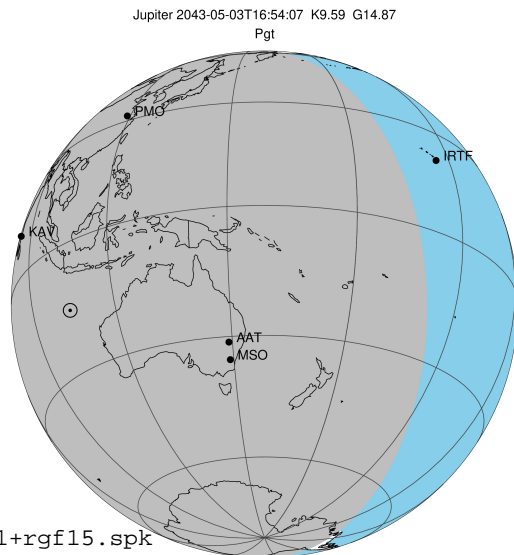


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-05-03T16:54:07.190
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066623779160709248
 2Mass ID (if available) : 18114335-2259327

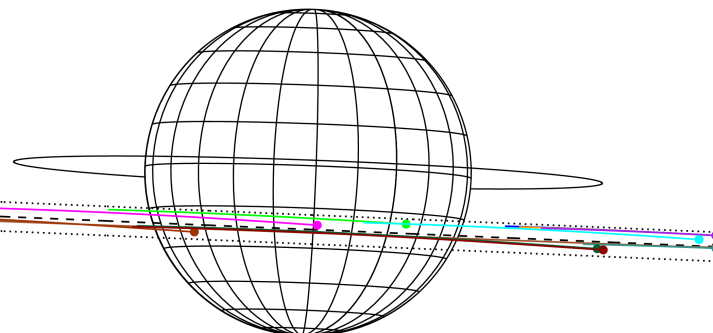
Jupiter 2043-05-03T16:54:07 K9.59 G14.87 Pgt

ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 9.590
 G magnitude : 14.866
 RP magnitude : 13.587
 BP magnitude : 16.724
 DUPflag : 0
 Distance (au) : 4.580
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -5.81
 Sun-Target sep (deg) : 129.87
 Sun-Moon sep (deg) : 56.20
 B (ring opening deg) : -2.43
 PA of pole (deg) : -2.10
 Pole direction: RA (deg): 268.05666
 Dec (deg): 64.49732
 C/A sky separation (") : 7.500
 C/A sky separation (km) : 24911.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



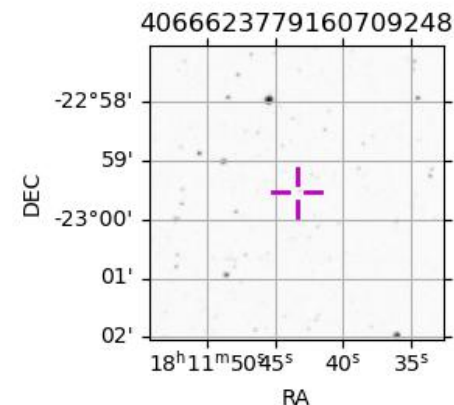
2043-05-03T16:54:07.1900 α: 18 11 43.3381 δ: -22 59 32.841 C/A 7.511" PA 357.58 deg v_sky - 5.81 km/s D 04.58 AU
 Credit: Styled after SORA/Lucky Star

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



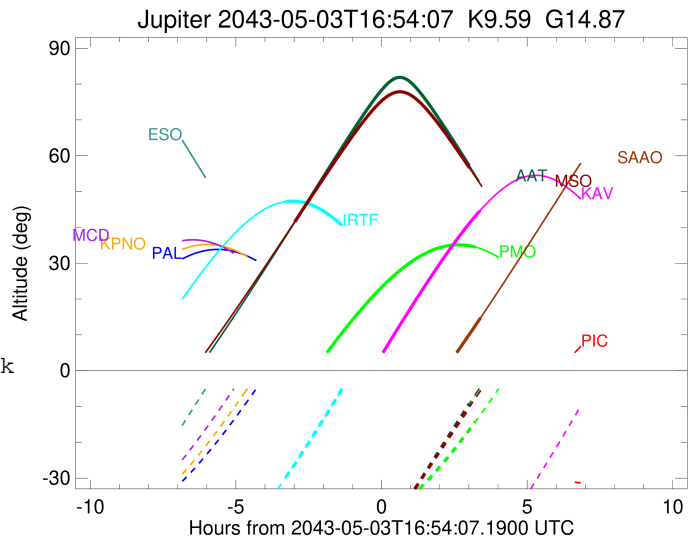
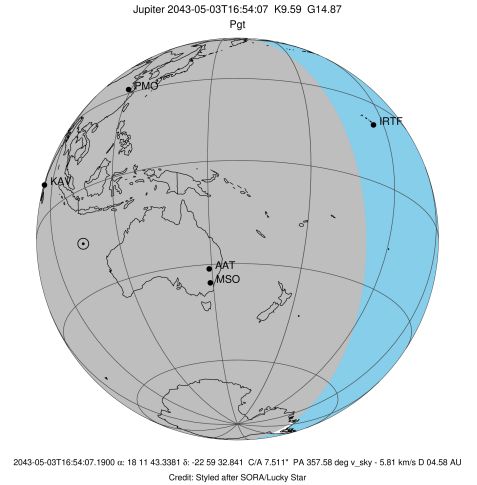
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAY 03 20:07 - MAY 03 20:07	Pne
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	+	MAY 03 13:37 - MAY 03 13:37	Pin
KAV	Kavalur Observatory	12.6	78.8	+	MAY 03 20:17 - MAY 03 20:17	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	+	MAY 03 13:55 - MAY 03 19:55	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	MAY 03 20:18 - MAY 03 20:18	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAY 03 13:55 - MAY 03 19:55	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-03T17:03:37.420
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        : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.590
G magnitude           : 14.866
RP magnitude          : 13.587
BP magnitude          : 16.724
DUPflag              : 0
Distance (au)         : 4.580
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg) : 129.87
Sun-Moon sep (deg)   : 56.83
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 6.017
C/A sky separation (km): 19986.3
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
    
```

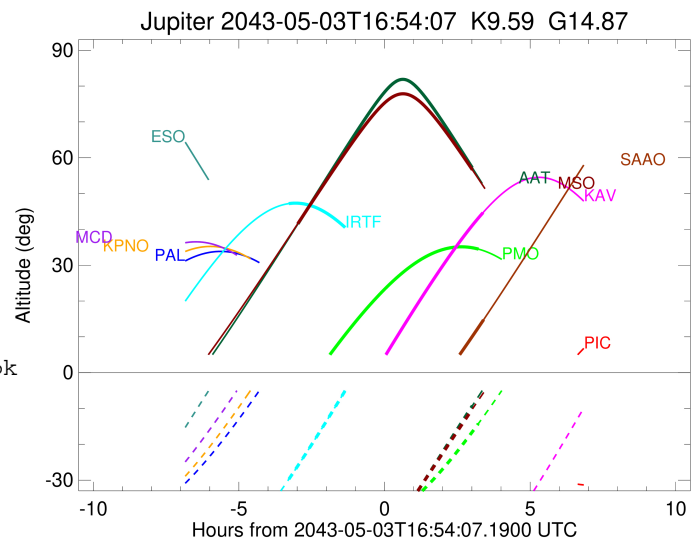
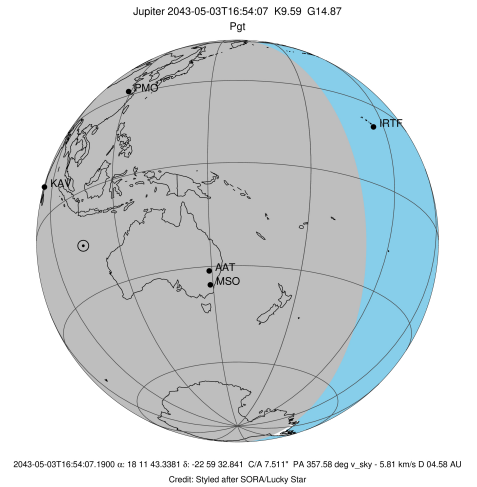


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-03T13:52:33.718	-8.13x	-33.21	71491.3	-17.72	-20.05
Jupiter	E	2043-05-03T20:07:25.789	34.49	-14.24	71491.4	-15.72	-17.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-03T16:40:38.880
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      : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 9.590
G magnitude         : 14.866
RP magnitude        : 13.587
BP magnitude        : 16.724
DUPflag            : 0
Distance (au)       : 4.580
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg) : 129.87
Sun-Moon sep (deg)  : 56.23
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 6.444
C/A sky separation (km) : 21404.6
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
    
```

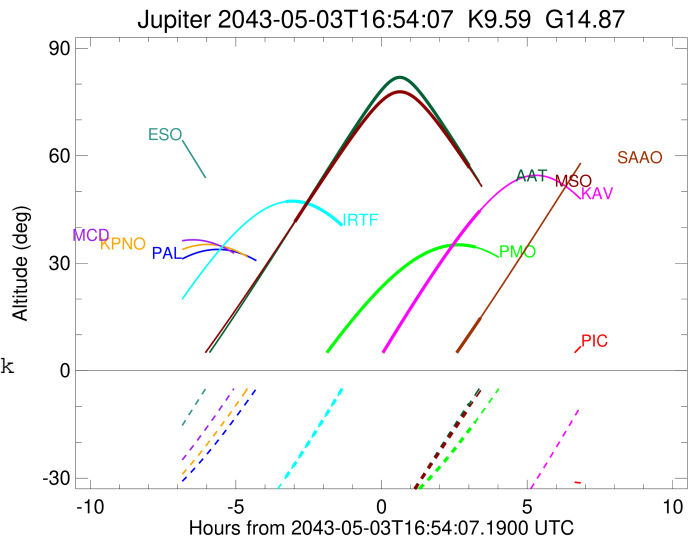
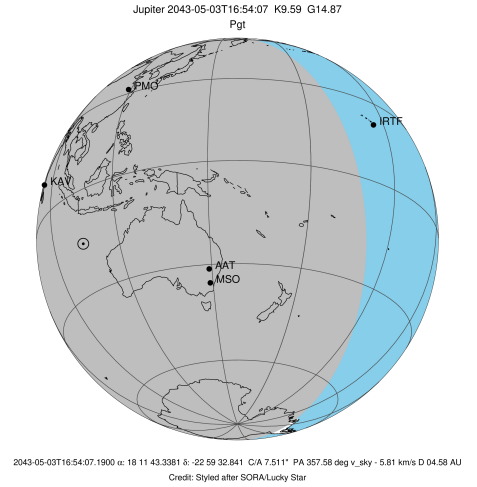


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-03T13:37:08.077	47.19	-29.72	71491.3	-17.04	-19.30
Jupiter	E	2043-05-03T19:50:01.040	-7.64x	54.46x	71491.2	-18.62	-21.05

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-03T17:12:55.380
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      : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 9.590
G magnitude          : 14.866
RP magnitude         : 13.587
BP magnitude         : 16.724
DUPflag             : 0
Distance (au)       : 4.579
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg) : 129.87
Sun-Moon sep (deg)  : 56.78
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 6.847
C/A sky separation (km): 22742.2
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
    
```

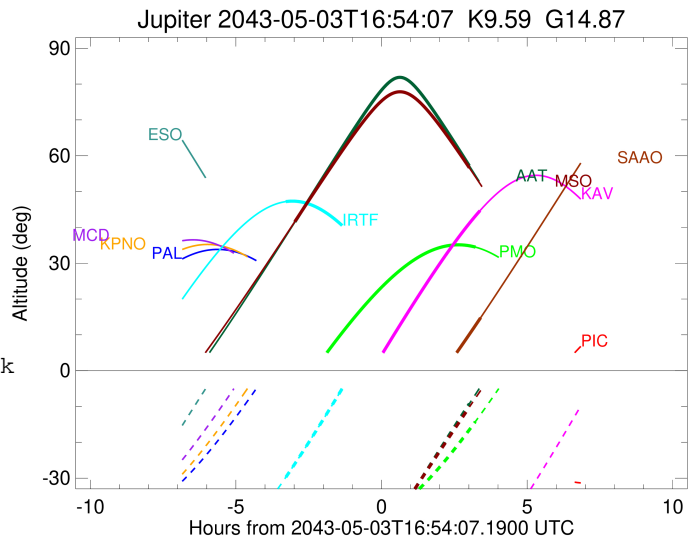
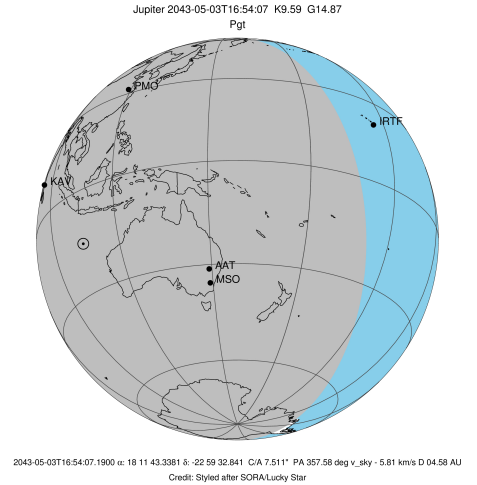


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-03T13:55:37.384	-36.38x	-13.88	71491.0	-20.58	-23.22
Jupiter	E	2043-05-03T20:17:09.409	44.68	-53.09	71491.3	-17.07	-19.33

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-03T16:56:42.690
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      : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 9.590
G magnitude         : 14.866
RP magnitude        : 13.587
BP magnitude        : 16.724
DUPflag            : 0
Distance (au)      : 4.580
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg) : 129.87
Sun-Moon sep (deg)  : 57.06
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 7.767
C/A sky separation (km) : 25797.8
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
    
```

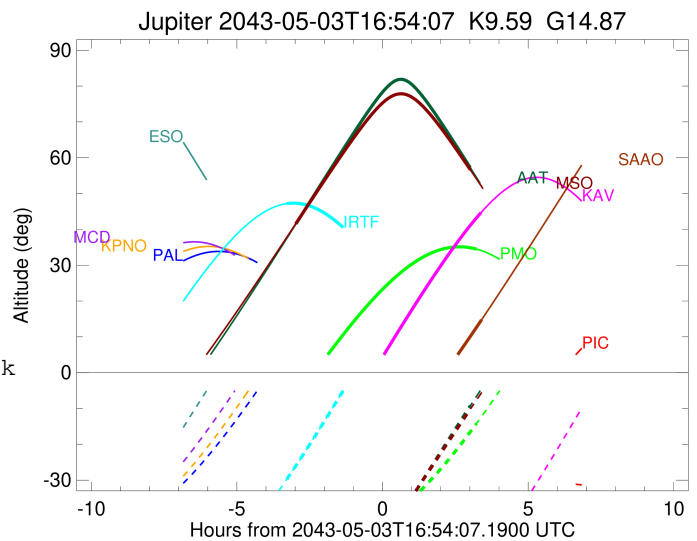
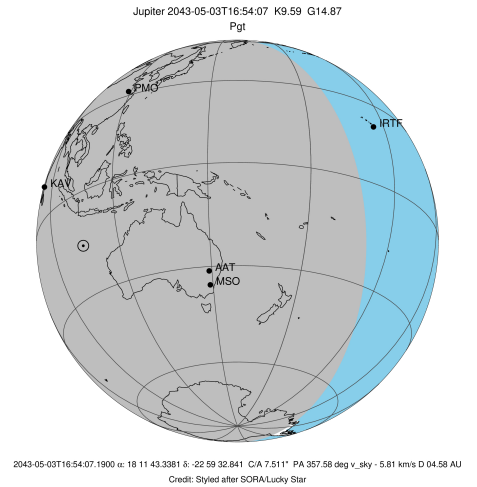


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-03T13:55:42.498	41.50	-74.61	71490.9	-22.05	-24.82
Jupiter	E	2043-05-03T19:55:07.308	57.16	-9.23	71490.9	-21.31	-24.01

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-03T17:07:39.220
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        : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 9.590
G magnitude           : 14.866
RP magnitude          : 13.587
BP magnitude          : 16.724
DUPflag              : 0
Distance (au)         : 4.580
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg)  : 129.87
Sun-Moon sep (deg)   : 56.20
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 8.832
C/A sky separation (km) : 29332.9
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
    
```

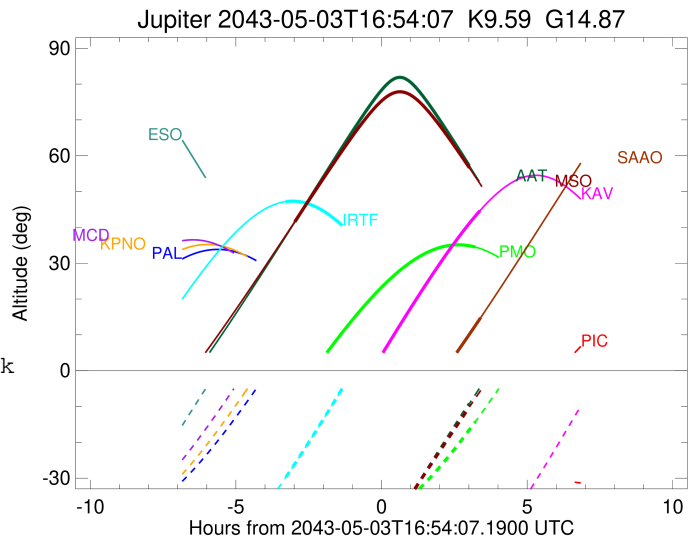
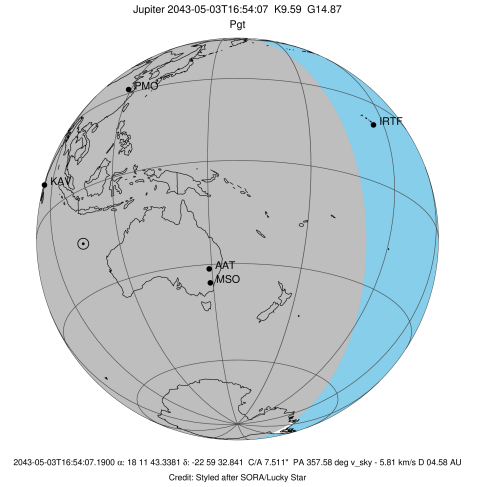


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-03T13:46:40.171	-34.63x	23.41x	71490.5	-25.25	-28.29
Jupiter	E	2043-05-03T20:18:14.394	14.76	-55.25	71490.8	-22.42	-25.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-03T16:56:40.770
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      : 4066623779160709248
2Mass ID (if available) : 18114335-2259327
ICRS Star Coord at Epoch: 18h 11m 43.33812s -22:59:32.84061s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 9.590
G magnitude         : 14.866
RP magnitude        : 13.587
BP magnitude        : 16.724
DUPflag            : 0
Distance (au)      : 4.580
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -5.81
Sun-Target sep (deg) : 129.87
Sun-Moon sep (deg)  : 57.05
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.10
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 7.900
C/A sky separation (km) : 26239.1
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	2043-05-03T13:55:40.492	41.63	-70.58	71490.8	-22.41	-25.21
Jupiter	E	2043-05-03T19:55:07.698	56.61	-10.16	71490.9	-21.66	-24.40