

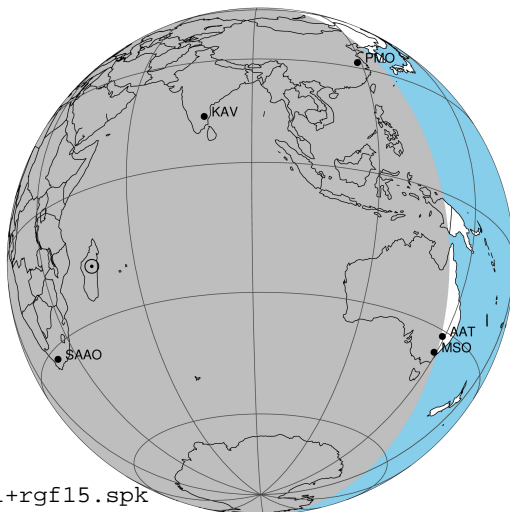
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-05-11T20:46:09.840
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066539292907952896
 2Mass ID (if available) : 18094842-2300300

Jupiter 2043-05-11T20:46:09 K9.86 G13.47 Pgt

ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s

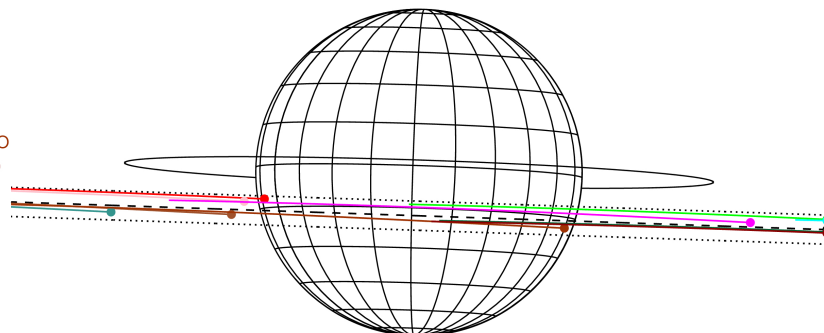
RUWE (>1.4 is poor) : 1.91
 K magnitude : 9.855
 G magnitude : 13.470
 RP magnitude : 12.472
 BP magnitude : 14.346
 DUPflag : 0
 Distance (au) : 4.484
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -8.91
 Sun-Target sep (deg) : 138.21
 Sun-Moon sep (deg) : 173.58
 B (ring opening deg) : -2.43
 PA of pole (deg) : -1.89
 Pole direction: RA (deg): 268.05666
 Dec (deg): 64.49732
 C/A sky separation (") : 5.827
 C/A sky separation (km) : 18949.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-05-11T20:46:09 K9.86 G13.47
 Pgt



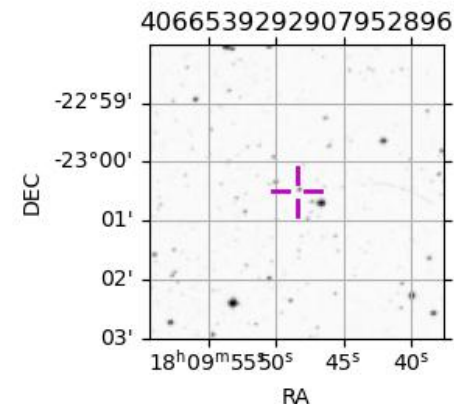
2043-05-11T20:46:09.8400 α: 18 09 48.4733 δ: -23 00 30.360 C/A 5.838" PA 358.05 deg v_sky - 8.91 km/s D 04.48 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PMO
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



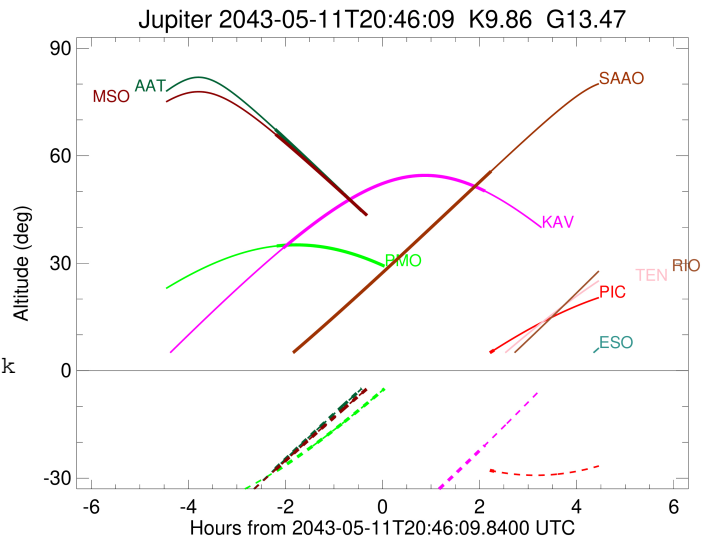
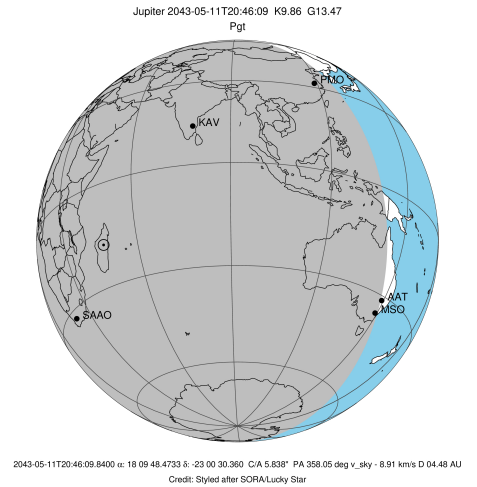
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	MAY 11 23:04 - MAY 11 23:04	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAY 11 18:35 - MAY 11 18:35	Pin
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	+ +	MAY 11 18:43 - MAY 11 22:52	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	+	MAY 11 18:33 - MAY 11 18:33	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	MAY 11 23:00 - MAY 11 23:00	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAY 11 18:34 - MAY 11 18:34	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T20:55:02.090
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: 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        : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude           : 9.855
G magnitude           : 13.470
RP magnitude          : 12.472
BP magnitude          : 14.346
DUPflag              : 0
Distance (au)         : 4.484
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg) : 138.21
Sun-Moon sep (deg)   : 173.65
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 4.546
C/A sky separation (km): 14782.2
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
    
```

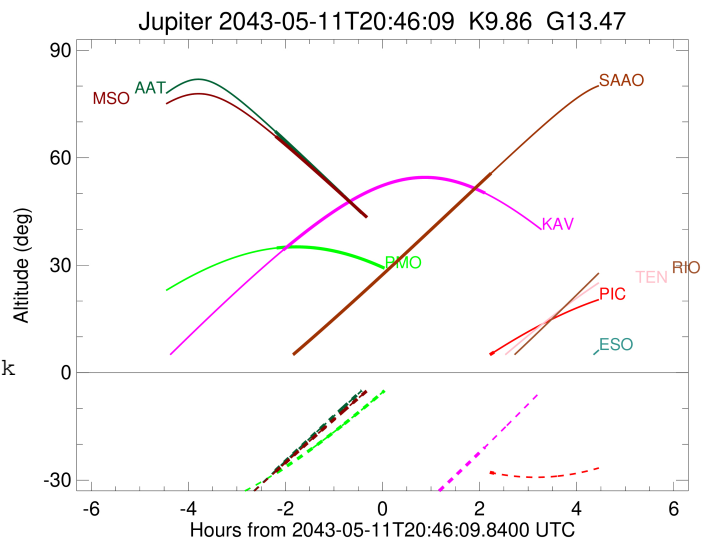
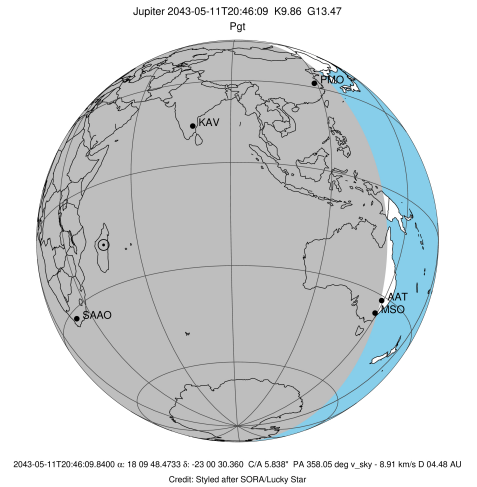


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T18:42:39.523	-39.18x	3.89x	71491.6	-12.82	-14.58
Jupiter	E	2043-05-11T23:04:08.581	5.76	-28.06	71491.7	-11.09	-12.63

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-11T20:41:12.630
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      : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude          : 9.855
G magnitude          : 13.470
RP magnitude         : 12.472
BP magnitude         : 14.346
DUPflag             : 0
Distance (au)       : 4.484
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg) : 138.21
Sun-Moon sep (deg)  : 174.50
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 4.317
C/A sky separation (km) : 14037.7
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
    
```

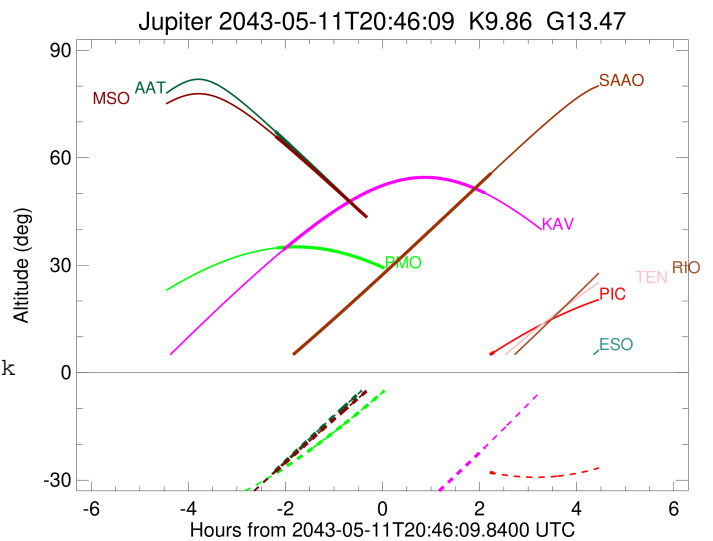
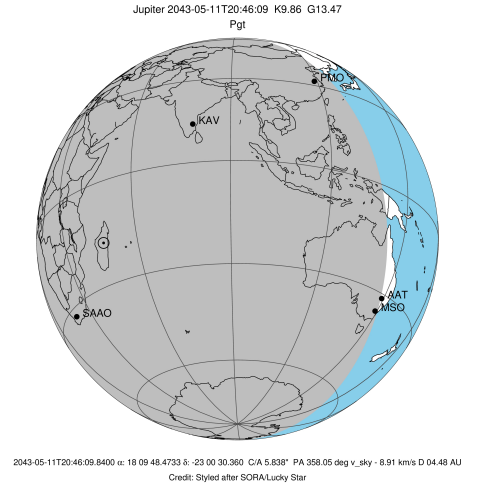


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T18:35:21.447	34.81	-27.91	71491.7	-11.12	-12.66
Jupiter	E	2043-05-11T22:47:58.203	12.43	19.13x	71491.6	-11.96	-13.61

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-11T20:48:30.340
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      : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude          : 9.855
G magnitude          : 13.470
RP magnitude         : 12.472
BP magnitude         : 14.346
DUPflag             : 0
Distance (au)       : 4.484
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg) : 138.21
Sun-Moon sep (deg)  : 174.03
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 4.691
C/A sky separation (km) : 15255.7
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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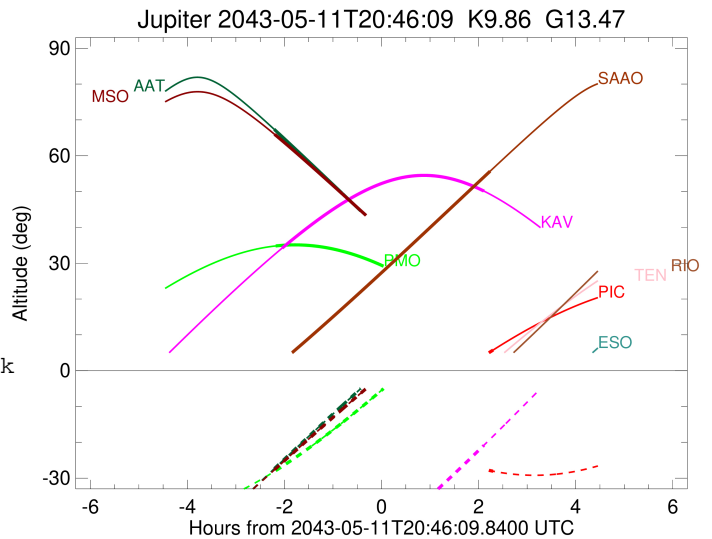
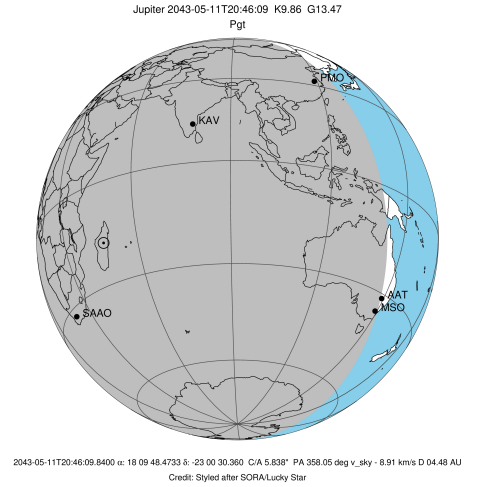


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T18:43:22.239	34.21	-59.50	71491.6	-12.78	-14.54
Jupiter	E	2043-05-11T22:52:35.639	50.14	-20.85	71491.6	-12.42	-14.13

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T20:37:22.160
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        : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude           : 9.855
G magnitude           : 13.470
RP magnitude          : 12.472
BP magnitude          : 14.346
DUPflag              : 0
Distance (au)         : 4.484
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg)  : 138.21
Sun-Moon sep (deg)   : 173.70
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 6.435
C/A sky separation (km) : 20926.1
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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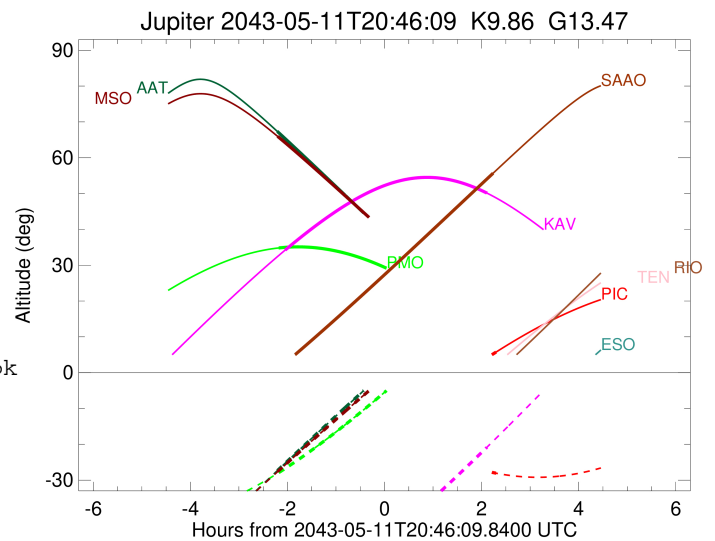
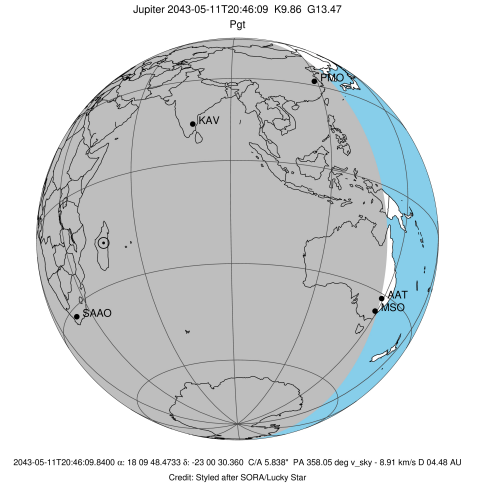


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T18:33:32.749	67.36	-27.38	71491.4	-16.38	-18.57
Jupiter	E	2043-05-11T22:43:14.454	14.55	21.83x	71491.2	-17.90	-20.25

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-11T20:56:19.410
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      : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude          : 9.855
G magnitude          : 13.470
RP magnitude         : 12.472
BP magnitude         : 14.346
DUPflag             : 0
Distance (au)       : 4.484
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg) : 138.21
Sun-Moon sep (deg)  : 172.89
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 6.494
C/A sky separation (km): 21116.8
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
    
```

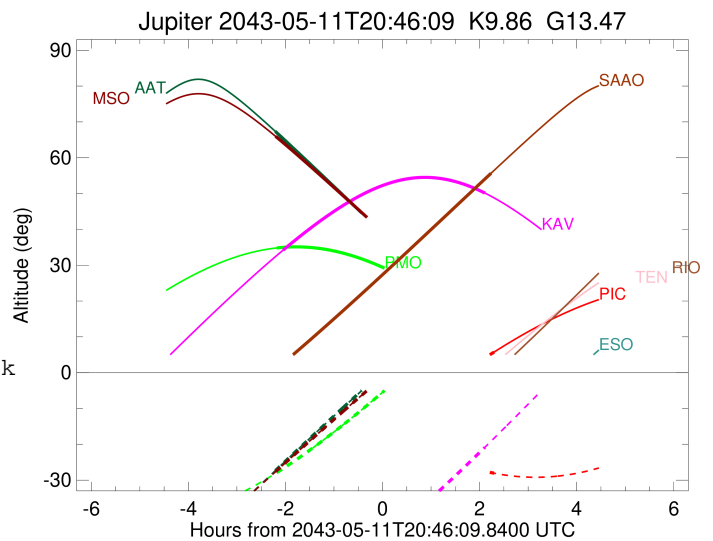
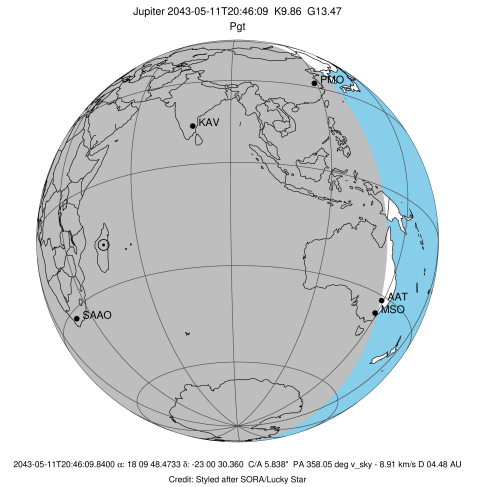


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T18:49:02.703	3.75x	-37.92	71491.2	-18.18	-20.56
Jupiter	E	2043-05-11T23:00:26.242	55.68	-74.56	71491.4	-16.41	-18.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T20:37:47.130
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        : 4066539292907952896
2Mass ID (if available) : 18094842-2300300
ICRS Star Coord at Epoch: 18h 09m 48.47331s -23:00:30.35994s
RUWE (>1.4 is poor) : 1.91
K magnitude           : 9.855
G magnitude           : 13.470
RP magnitude          : 12.472
BP magnitude          : 14.346
DUPflag              : 0
Distance (au)         : 4.484
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.91
Sun-Target sep (deg) : 138.21
Sun-Moon sep (deg)   : 173.63
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 6.556
C/A sky separation (km) : 21319.6
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	2043-05-11T18:33:59.678	65.97	-27.64	71491.3	-16.74	-18.97
Jupiter	E	2043-05-11T22:43:30.969	15.78	19.25x	71491.2	-18.19	-20.57