

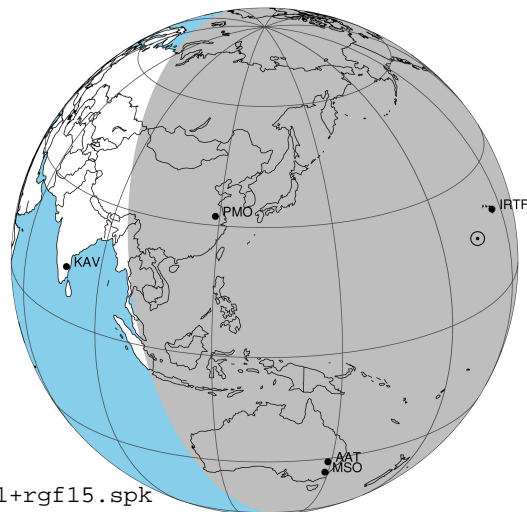
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2037-02-02T11:20:05.120  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3412470268224876160  
 2Mass ID (if available) : 04581303+2217260

Jupiter 2037-02-02T11:20:05 K8.86 G10.35 Pgt

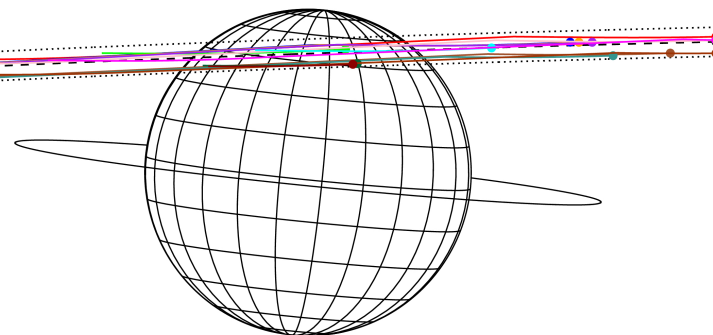
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s

RUWE (>1.4 is poor) : 0.99  
 K magnitude : 8.857  
 G magnitude : 10.348  
 RP magnitude : 9.825  
 BP magnitude : 10.693  
 DUPflag : 0  
 Distance (au) : 4.515  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -3.19  
 Sun-Target sep (deg) : 122.29  
 Sun-Moon sep (deg) : 84.40  
 B (ring opening deg) : 2.58  
 PA of pole (deg) : -5.78  
 Pole direction: RA (deg): 268.05631  
 Dec (deg): 64.49687  
 C/A sky separation (") : 15.899  
 C/A sky separation (km) : 52058.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2037-02-02T11:20:05 K8.86 G10.35  
 Pgt



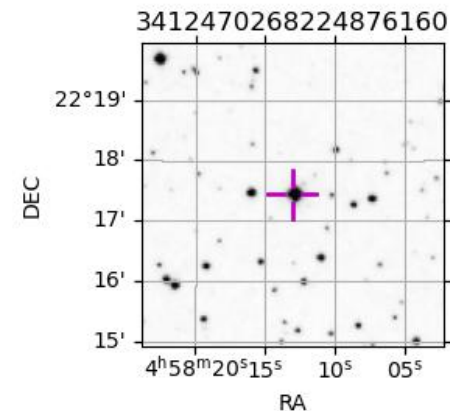
Earth  
 PIC  
 PAL  
 PMO  
 KPNO  
 MCD  
 TEN  
 IRTF  
 KAV  
 RIO  
 ESO  
 AAT  
 SAAO  
 MSO



2037-02-02T11:20:05.1200 a: 04 58 13.05191 s: +22 17 26.527 C/A \*\*\*\*\* PA 182.00 deg v\_sky - 3.19 km/s D 04.51 AU  
 Credit: Styled after SORA/Lucky Star

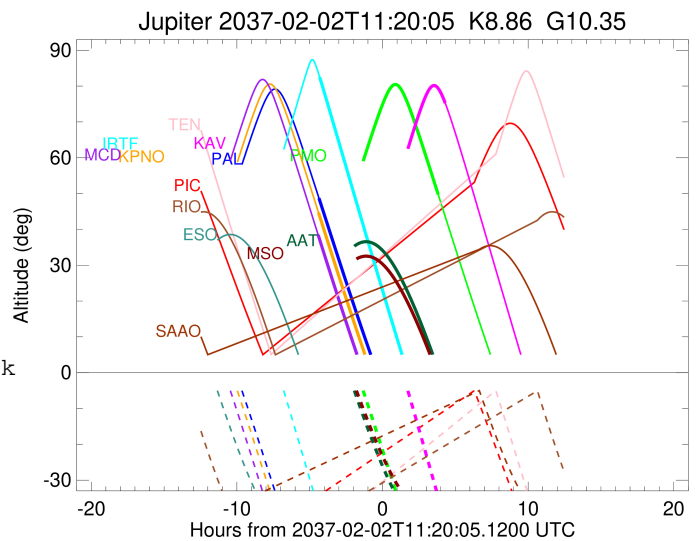
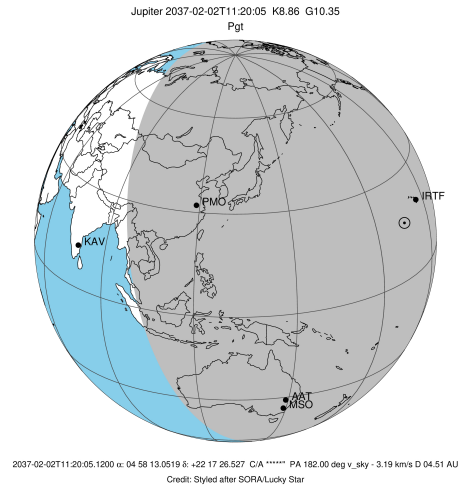
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 02 06:58 - FEB 02 06:58	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	FEB 02 15:09 - FEB 02 15:09	Pne
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 02 06:56 - FEB 02 06:56	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	FEB 02 06:54 - FEB 02 06:54	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	FEB 02 07:00 - FEB 02 07:00	Pin
KAV	Kavalur Observatory	12.6	78.8	+	FEB 02 15:38 - FEB 02 15:38	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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-02-02T10:40:01.620
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.857
G magnitude           : 10.348
RP magnitude          : 9.825
BP magnitude          : 10.693
DUPflag              : 0
Distance (au)         : 4.514
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg)  : 122.29
Sun-Moon sep (deg)   : 84.24
B (ring opening deg) : 2.58
PA of pole (deg)     : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.083
C/A sky separation (km) : 55929.0
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
    
```

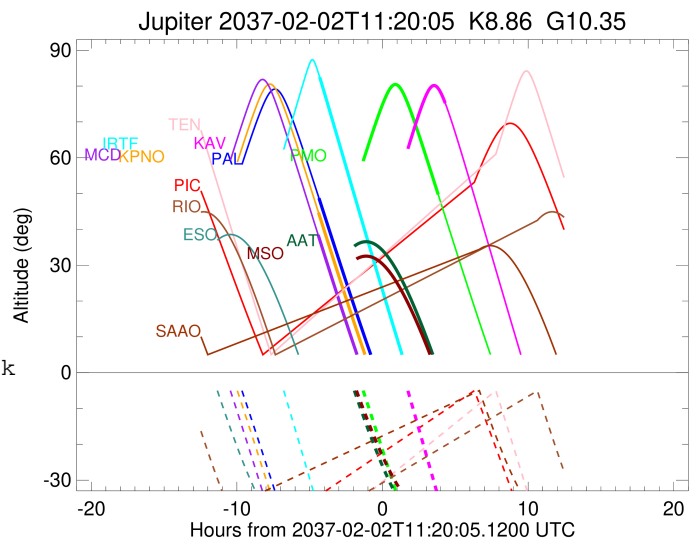
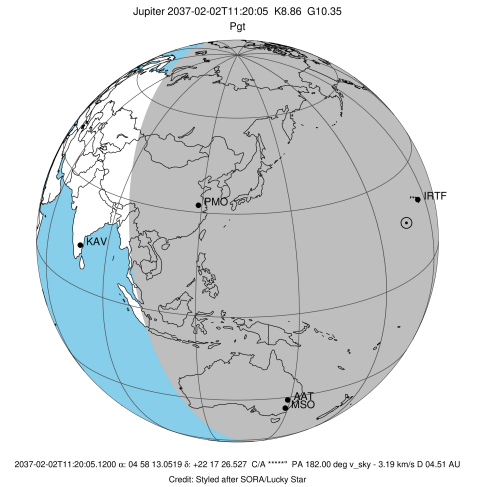


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-02-02T06:58:17.094	48.71	-68.27	71485.6	56.64	59.92
Jupiter	E	2037-02-02T15:01:00.339	-33.00x	2.92x	71487.4	45.36	49.06

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2037-02-02T11:27:07.910
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      : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude         : 8.857
G magnitude         : 10.348
RP magnitude        : 9.825
BP magnitude        : 10.693
DUPflag            : 0
Distance (au)       : 4.515
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg) : 122.29
Sun-Moon sep (deg)  : 85.39
B (ring opening deg) : 2.58
PA of pole (deg)    : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (" ) : 16.222
C/A sky separation (km) : 53115.0
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
    
```

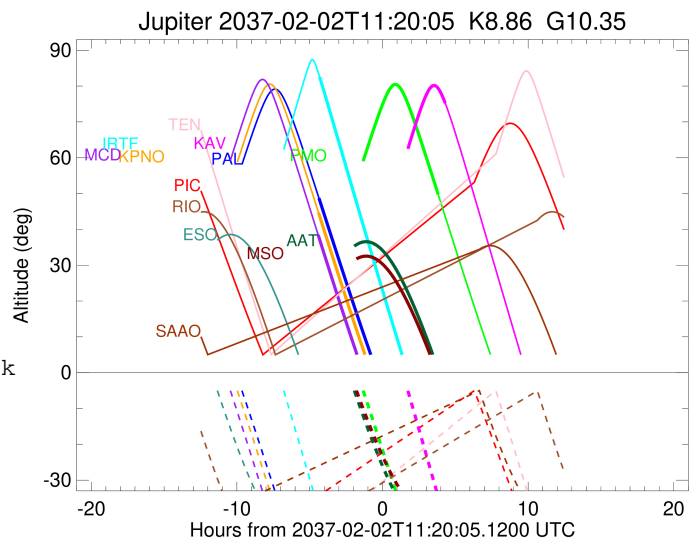
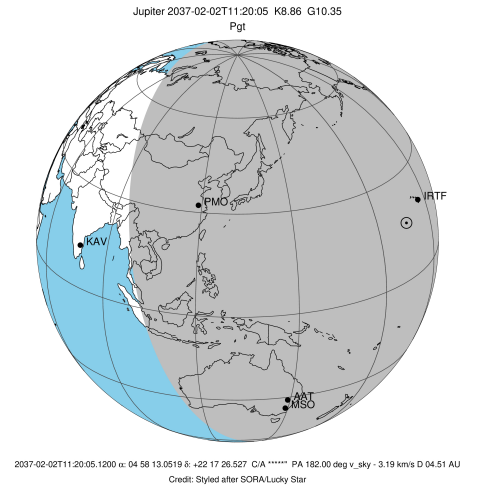


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-02-02T07:44:32.566	30.26	20.74x	71485.6	56.90	60.16
Jupiter	E	2037-02-02T15:09:37.095	49.73	-68.15	71488.1	40.96	44.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-02-02T10:40:17.310
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID        : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.857
G magnitude           : 10.348
RP magnitude          : 9.825
BP magnitude          : 10.693
DUPflag              : 0
Distance (au)         : 4.514
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg)  : 122.29
Sun-Moon sep (deg)    : 84.16
B (ring opening deg) : 2.58
PA of pole (deg)      : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.104
C/A sky separation (km) : 55999.1
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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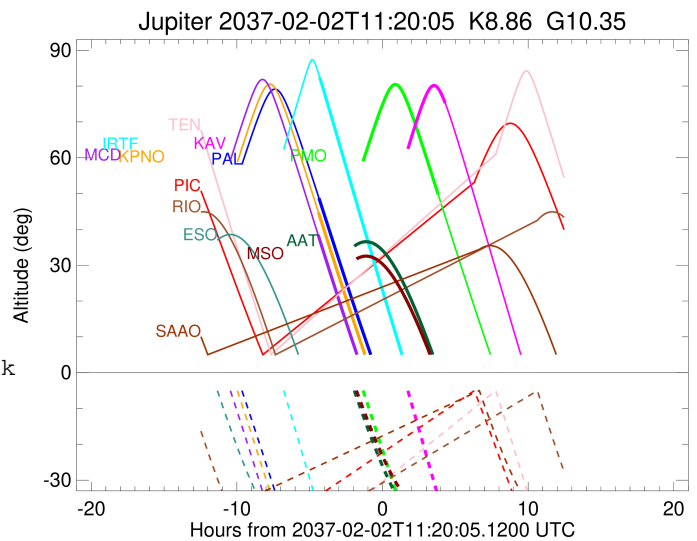
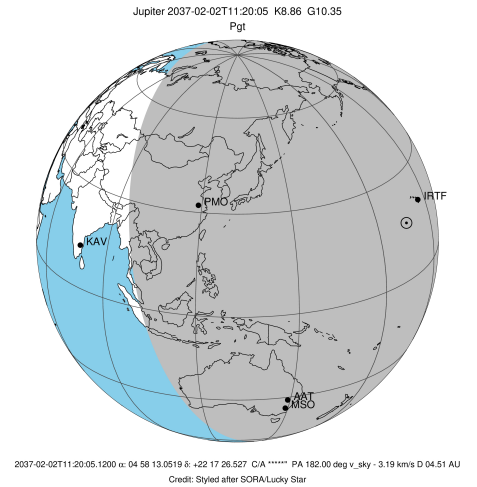


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-02-02T06:56:24.837	44.69	-71.95	71485.6	56.64	59.92
Jupiter	E	2037-02-02T15:04:26.851	-35.41x	8.21x	71487.4	45.26	48.96

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-02-02T10:41:46.290
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.857
G magnitude           : 10.348
RP magnitude          : 9.825
BP magnitude          : 10.693
DUPflag              : 0
Distance (au)        : 4.514
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg) : 122.29
Sun-Moon sep (deg)   : 84.06
B (ring opening deg) : 2.58
PA of pole (deg)     : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.151
C/A sky separation (km) : 56153.9
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
    
```

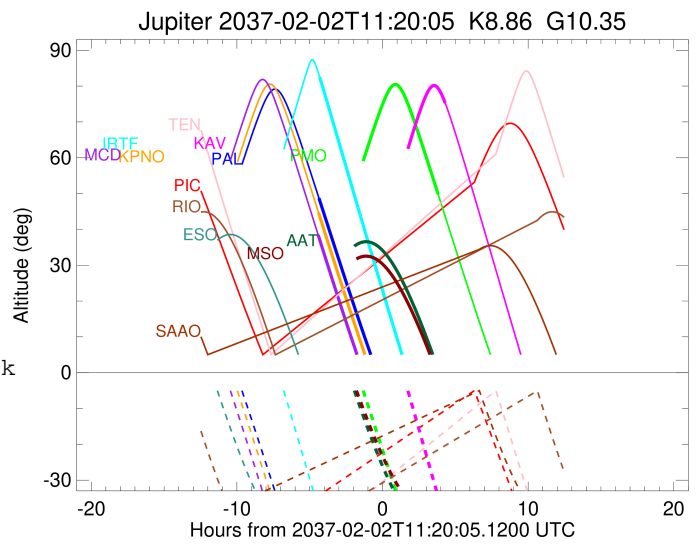
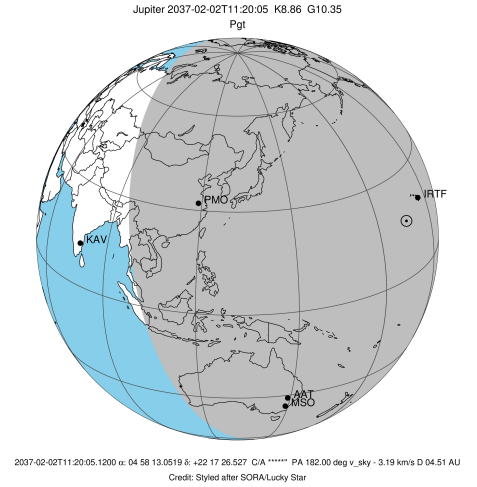


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-02-02T06:54:38.141	38.52	-75.76	71485.6	56.76	60.03
Jupiter	E	2037-02-02T15:09:39.613	-37.14x	15.52x	71487.4	45.12	48.82

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-02-02T10:39:40.930
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        : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.857
G magnitude           : 10.348
RP magnitude          : 9.825
BP magnitude          : 10.693
DUPflag              : 0
Distance (au)         : 4.514
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg)  : 122.29
Sun-Moon sep (deg)   : 84.71
B (ring opening deg) : 2.58
PA of pole (deg)     : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 16.263
C/A sky separation (km) : 53246.8
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
    
```

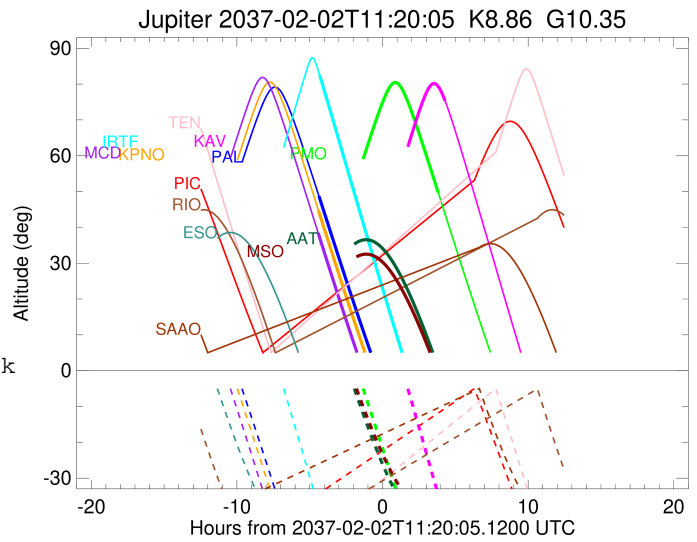
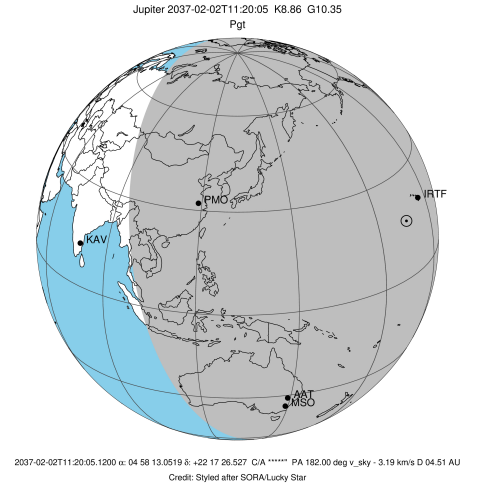


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-02-02T07:00:59.432	82.53	-39.17	71486.0	54.05	57.46
Jupiter	E	2037-02-02T14:53:08.105	-22.46x	-29.09	71487.7	43.11	46.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2037-02-02T11:51:47.320
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      : 3412470268224876160
2Mass ID (if available) : 04581303+2217260
ICRS Star Coord at Epoch: 04h 58m 13.05191s +22:17:26.52654s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 8.857
G magnitude          : 10.348
RP magnitude         : 9.825
BP magnitude         : 10.693
DUPflag             : 0
Distance (au)       : 4.515
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -3.19
Sun-Target sep (deg) : 122.29
Sun-Moon sep (deg)  : 85.09
B (ring opening deg) : 2.58
PA of pole (deg)    : -5.78
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 15.735
C/A sky separation (km) : 51523.8
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	2037-02-02T07:47:05.786	-10.16x	58.43x	71485.7	56.41	59.70
Jupiter	E	2037-02-02T15:38:44.438	75.20	-41.64	71488.6	37.67	41.34