

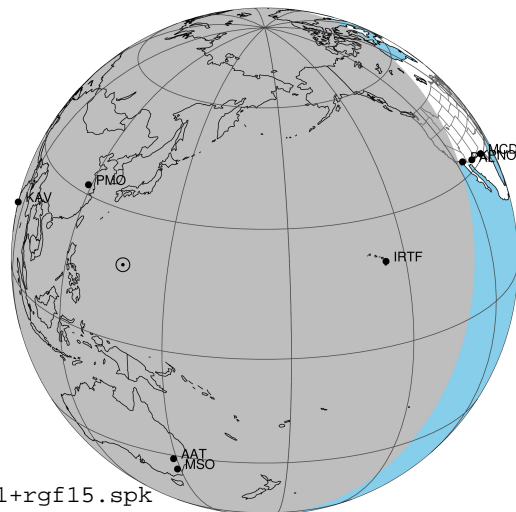
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2036-11-12T14:32:30.890
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3404254025850351360
 2Mass ID (if available) : 05351370+2243217

Jupiter 2036-11-12T14:32:30 K9.69 G10.27 Pgt

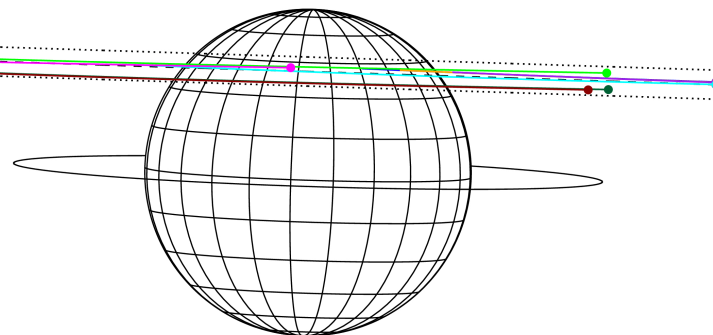
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s

RUWE (>1.4 is poor) : 2.79
 K magnitude : 9.686
 G magnitude : 10.268
 RP magnitude : 10.069
 BP magnitude : 10.367
 DUPflag : 0
 Distance (au) : 4.231
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.95
 Sun-Target sep (deg) : 145.99
 Sun-Moon sep (deg) : 76.26
 B (ring opening deg) : 2.72
 PA of pole (deg) : -1.83
 Pole direction: RA (deg): 268.05632
 Dec (deg): 64.49686
 C/A sky separation (") : 14.401
 C/A sky separation (km) : 44196.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2036-11-12T14:32:30 K9.69 G10.27
 Pgt



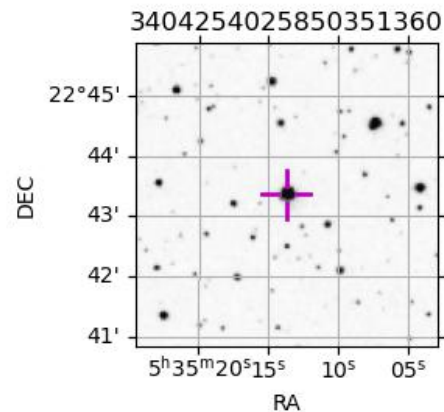
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 AAT
 MSO



2036-11-12T14:32:30.8900 a: 05 35 13.7168 s: +22 43 21.474 C/A ***** PA 178.15 deg v_sky -11.95 km/s D 04.23 AU
 Credit: Styled after SORA/Lucky Star

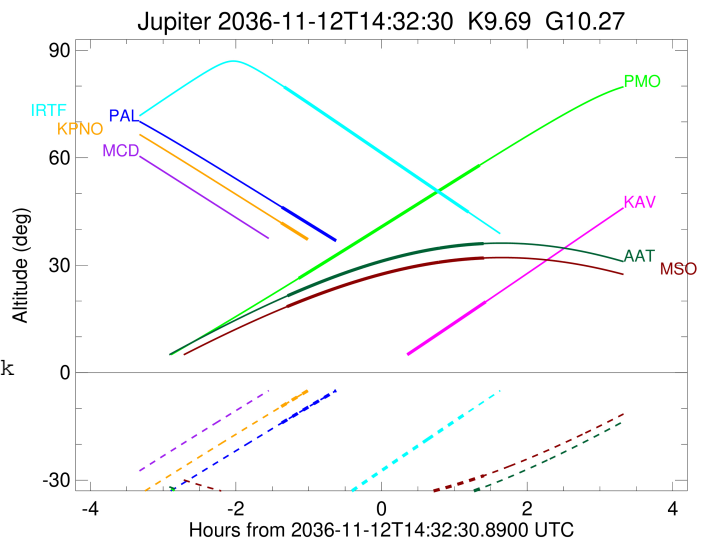
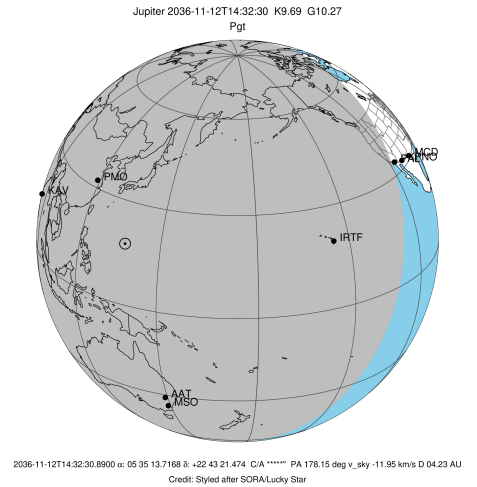
Observable events with sun below -5 deg and altitude above 5 deg

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	+	NOV 12 13:10 - NOV 12 13:10	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	NOV 12 13:24 - NOV 12 15:53	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	NOV 12 13:09 - NOV 12 13:09	Pin
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	+ +	NOV 12 13:12 - NOV 12 15:44	Pie
KAV	Kavalur Observatory	12.6	78.8	+	NOV 12 15:58 - NOV 12 15:58	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	+ +	NOV 12 13:15 - NOV 12 15:56	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	NOV 12 13:14 - NOV 12 15:56	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-12T14:24:50.270
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       : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude           : 9.686
G magnitude           : 10.268
RP magnitude         : 10.069
BP magnitude         : 10.367
DUPflag              : 0
Distance (au)        : 4.232
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)   : 76.54
B (ring opening deg) : 2.72
PA of pole (deg)     : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation (") : 15.145
C/A sky separation (km) : 46479.5
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
    
```

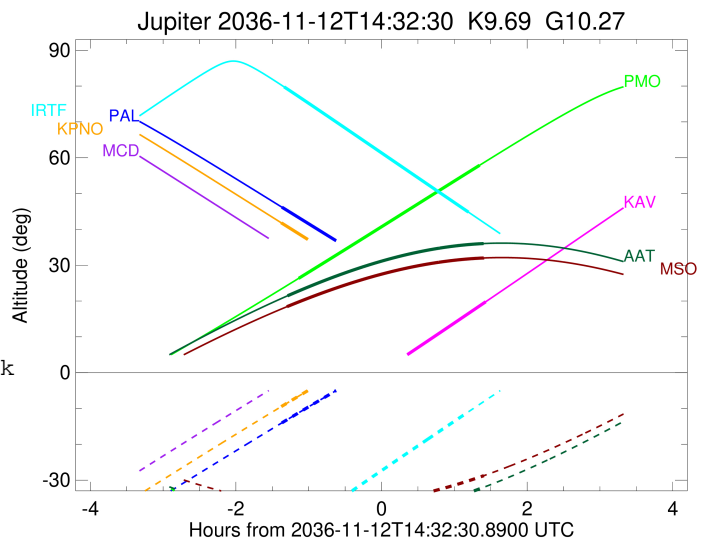
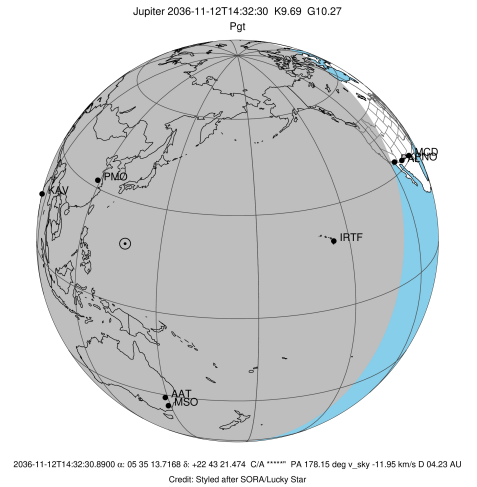


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:10:24.056	46.20	-14.02	71487.8	39.92	43.62
Jupiter	E	2036-11-12T15:39:55.046	15.29	14.71x	71487.6	41.19	44.91

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-11-12T14:39:10.910
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      : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude          : 9.686
G magnitude          : 10.268
RP magnitude         : 10.069
BP magnitude         : 10.367
DUPflag             : 0
Distance (au)       : 4.231
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)  : 77.03
B (ring opening deg) : 2.72
PA of pole (deg)    : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation (") : 15.048
C/A sky separation (km) : 46180.2
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
    
```

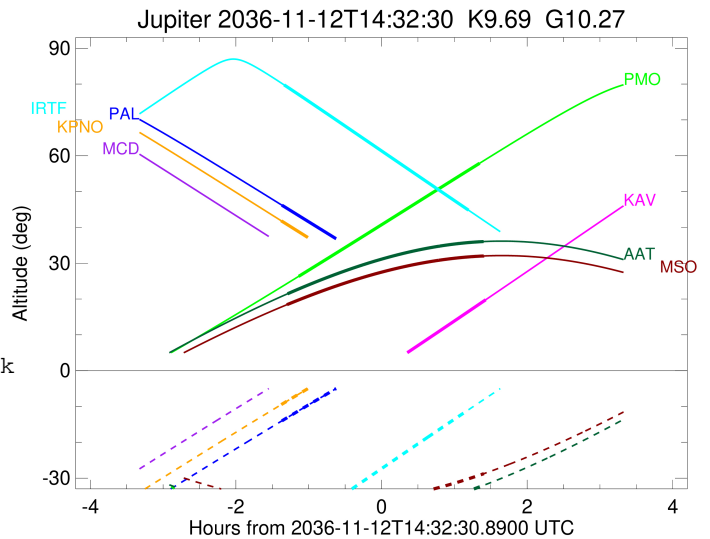
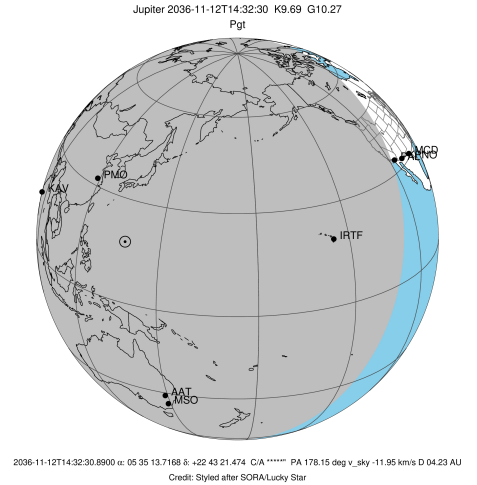


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:24:11.791	26.31	-54.57	71487.7	40.83	44.55
Jupiter	E	2036-11-12T15:53:25.225	57.90	-76.03	71487.9	39.67	43.37

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-12T14:24:26.980
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        : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude           : 9.686
G magnitude           : 10.268
RP magnitude          : 10.069
BP magnitude          : 10.367
DUPflag              : 0
Distance (au)         : 4.232
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg)  : 145.99
Sun-Moon sep (deg)   : 76.46
B (ring opening deg) : 2.72
PA of pole (deg)     : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation (") : 15.157
C/A sky separation (km) : 46517.9
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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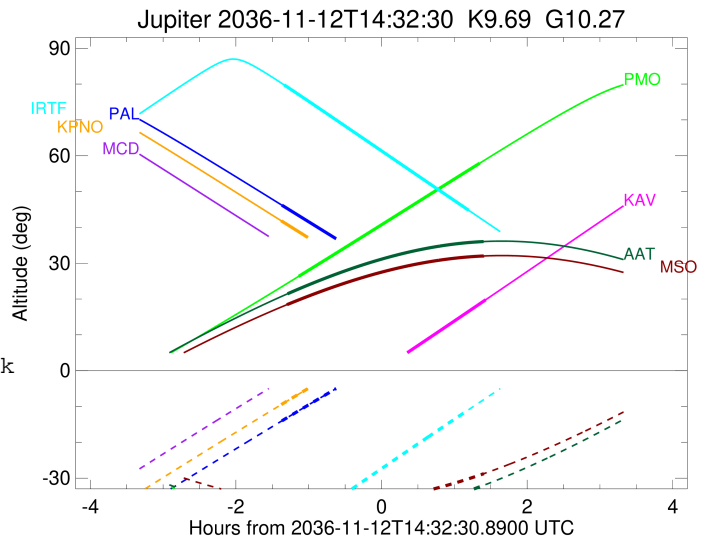
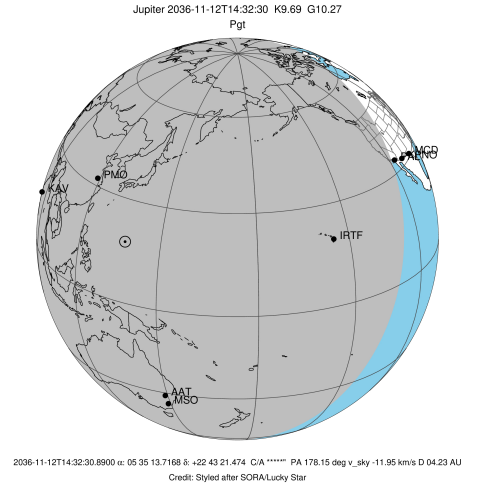


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:09:52.928	41.84	-9.48	71487.8	39.91	43.62
Jupiter	E	2036-11-12T15:39:42.163	10.68	19.10x	71487.6	41.26	44.98

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-11-12T14:28:01.970
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      : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude          : 9.686
G magnitude          : 10.268
RP magnitude         : 10.069
BP magnitude         : 10.367
DUPflag             : 0
Distance (au)       : 4.231
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)  : 77.00
B (ring opening deg) : 2.72
PA of pole (deg)    : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation ("): 14.362
C/A sky separation (km): 44075.9
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
    
```

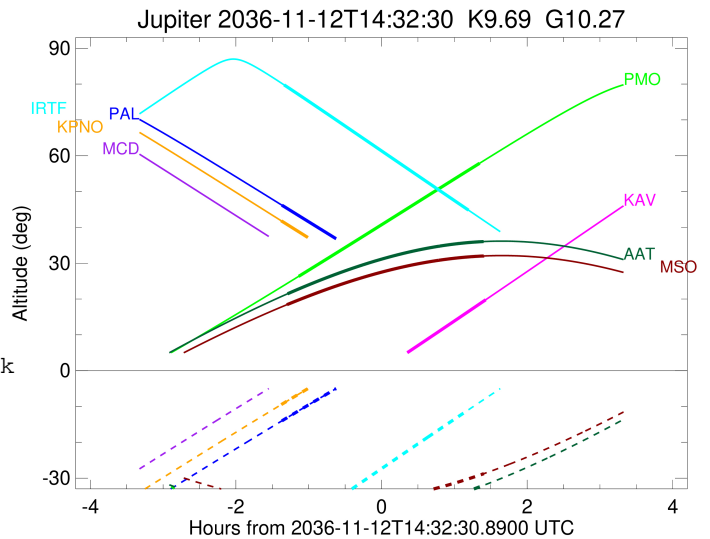
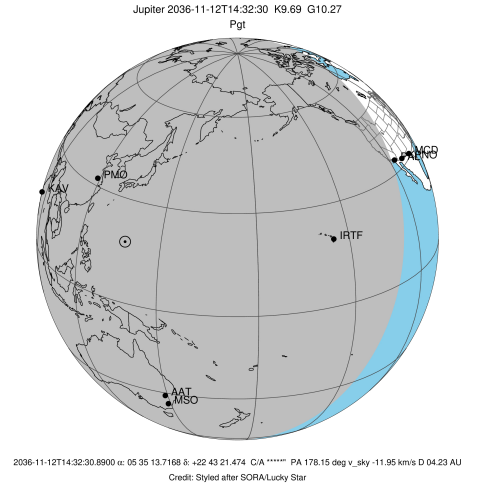


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:12:12.915	79.78	-46.05	71488.2	37.79	41.46
Jupiter	E	2036-11-12T15:44:11.608	44.80	-10.92	71488.1	38.48	42.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-11-12T14:42:03.980
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      : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude          : 9.686
G magnitude          : 10.268
RP magnitude         : 10.069
BP magnitude         : 10.367
DUPflag             : 0
Distance (au)       : 4.231
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)  : 76.48
B (ring opening deg) : 2.72
PA of pole (deg)    : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation ("): 14.912
C/A sky separation (km): 45762.6
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
    
```

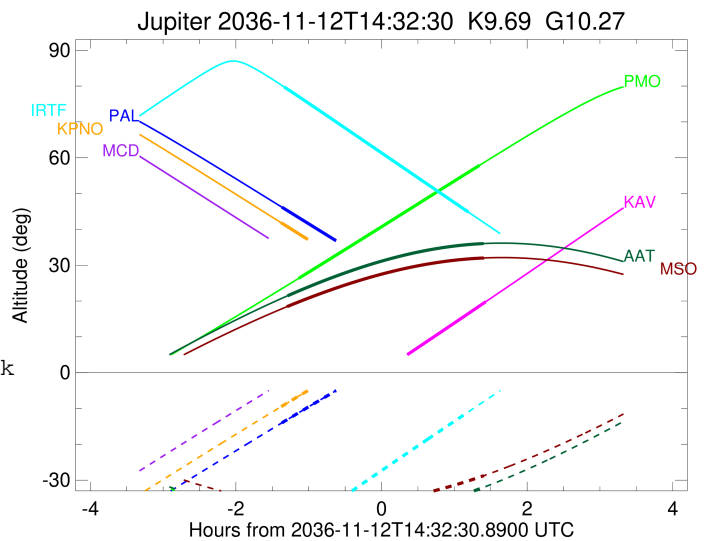
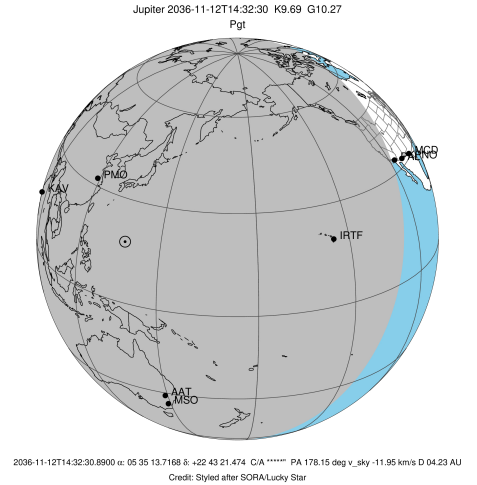


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:24:44.622	-14.76x	-16.92	71487.7	40.54	44.26
Jupiter	E	2036-11-12T15:58:16.919	19.77	-53.33	71488.0	38.93	42.63

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-12T14:36:07.400
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       : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude           : 9.686
G magnitude           : 10.268
RP magnitude         : 10.069
BP magnitude         : 10.367
DUPflag              : 0
Distance (au)        : 4.231
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)   : 76.85
B (ring opening deg) : 2.72
PA of pole (deg)     : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation (") : 12.805
C/A sky separation (km) : 39297.0
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
    
```

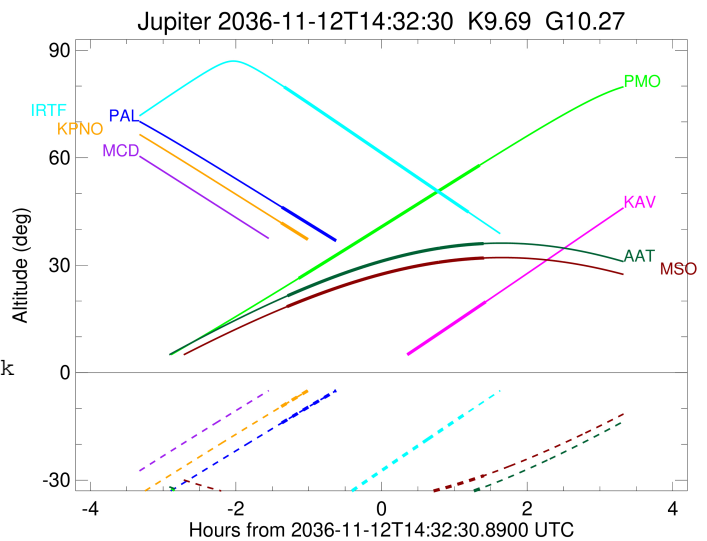
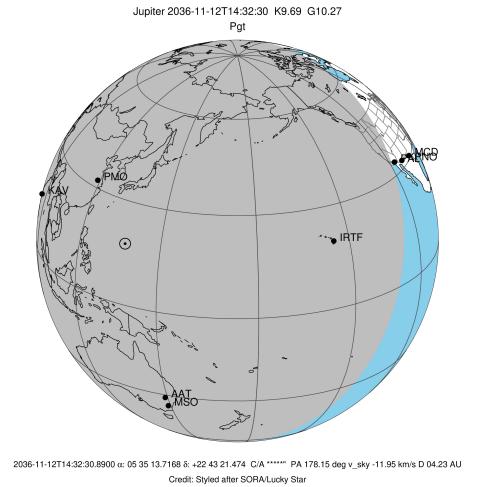


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-12T13:15:05.061	21.46	-40.33	71488.9	33.73	37.28
Jupiter	E	2036-11-12T15:56:39.819	36.04	-32.01	71489.0	33.10	36.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-12T14:35:59.350
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        : 3404254025850351360
2Mass ID (if available) : 05351370+2243217
ICRS Star Coord at Epoch: 05h 35m 13.71675s +22:43:21.47398s
RUWE (>1.4 is poor) : 2.79
K magnitude           : 9.686
G magnitude           : 10.268
RP magnitude          : 10.069
BP magnitude          : 10.367
DUPflag              : 0
Distance (au)         : 4.231
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.95
Sun-Target sep (deg) : 145.99
Sun-Moon sep (deg)   : 76.79
B (ring opening deg) : 2.72
PA of pole (deg)     : -1.83
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49686
C/A sky separation (") : 12.720
C/A sky separation (km) : 39037.4
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	2036-11-12T13:14:36.779	18.42	-36.34	71488.9	33.47	37.01
Jupiter	E	2036-11-12T15:56:52.704	32.01	-28.75	71489.0	32.86	36.38