

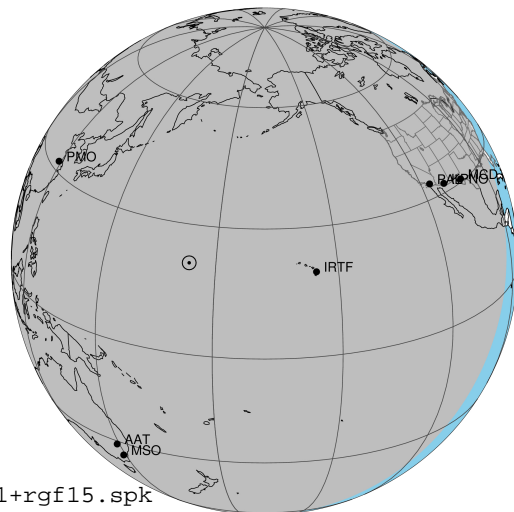
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2036-11-27T12:14:27.140
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3416029524803139968
 2Mass ID (if available) : 05280497+2239092

Jupiter 2036-11-27T12:14:27 K9.17 G12.62 Pgt

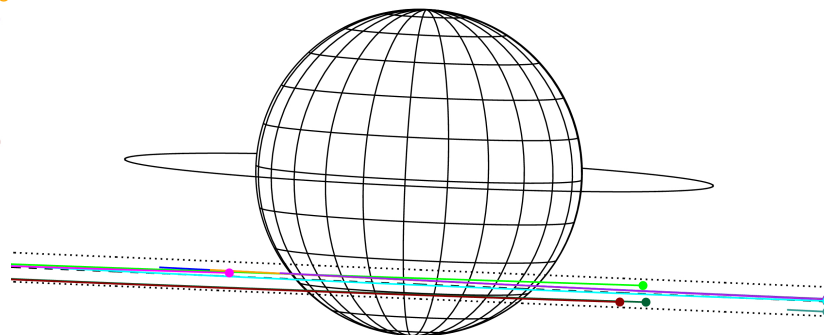
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s

RUWE (>1.4 is poor) : 1.17
 K magnitude : 9.170
 G magnitude : 12.619
 RP magnitude : 11.666
 BP magnitude : 13.557
 DUPflag : 0
 Distance (au) : 4.137
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.62
 Sun-Target sep (deg) : 162.68
 Sun-Moon sep (deg) : 90.13
 B (ring opening deg) : 2.72
 PA of pole (deg) : -2.60
 Pole direction: RA (deg): 268.05632
 Dec (deg): 64.49687
 C/A sky separation (") : 16.319
 C/A sky separation (km) : 48958.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2036-11-27T12:14:27 K9.17 G12.62
 Pgt



Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 MSO

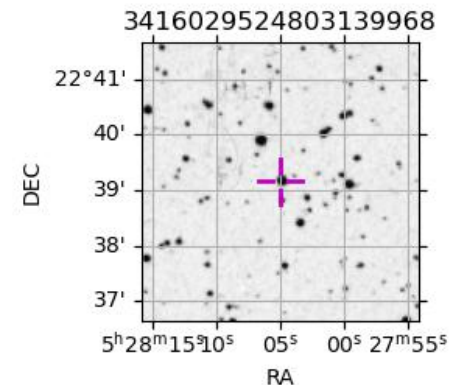


2036-11-27T12:14:27.1400 a: 05 28 04.9811 s: +22 39 09.213 C/A ***** PA 357.58 deg v_sky -15.62 km/s D 04.14 AU

Credit: Styled after SORA/Lucky Star

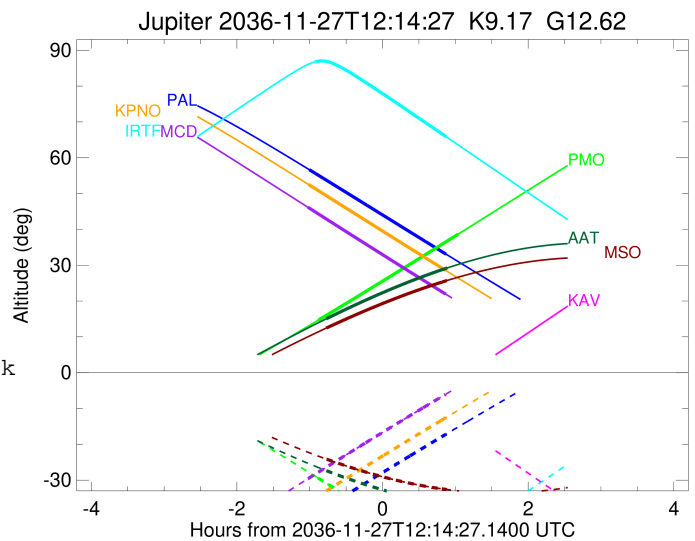
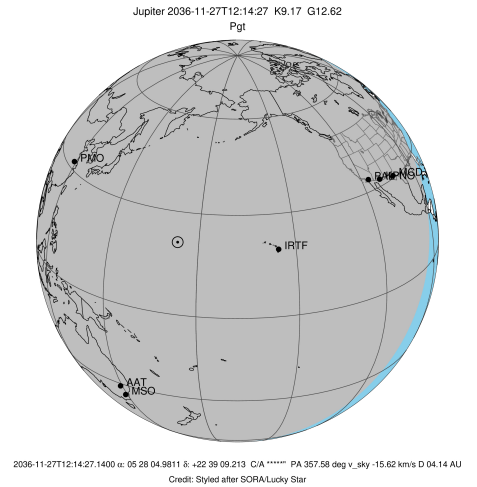
Observable events with sun below -5 deg and altitude above 5 deg

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 27 11:14 - NOV 27 13:06		Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	NOV 27 11:21 - NOV 27 13:16		Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	NOV 27 11:13 - NOV 27 13:06		Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	NOV 27 11:13 - NOV 27 13:06		Pie
TEN	Teide Obs./Tenerife	28.3	343.5				Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	NOV 27 11:19 - NOV 27 13:07		Pie
KAV	Kavalur Observatory	12.6	78.8				Pnn
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 27 11:28 - NOV 27 13:07		Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8				Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	NOV 27 11:28 - NOV 27 13:07		Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-27T12:10:20.540
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        : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude           : 9.170
G magnitude           : 12.619
RP magnitude          : 11.666
BP magnitude          : 13.557
DUPflag              : 0
Distance (au)         : 4.137
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)   : 90.75
B (ring opening deg) : 2.72
PA of pole (deg)     : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (" ) : 15.738
C/A sky separation (km) : 47217.5
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
    
```

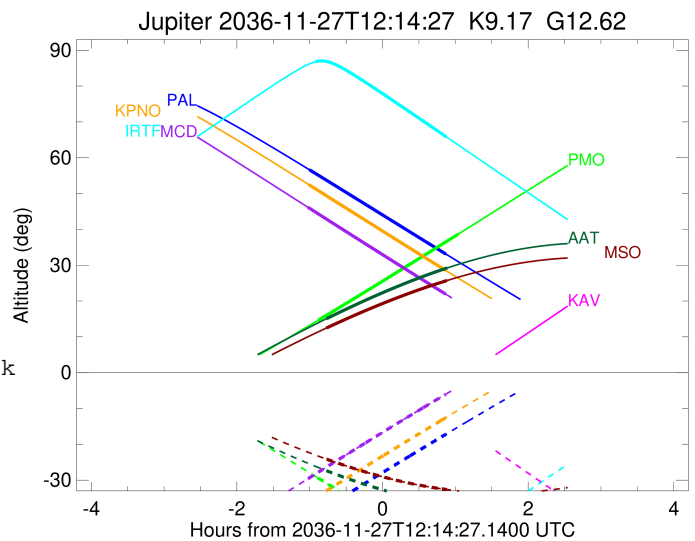
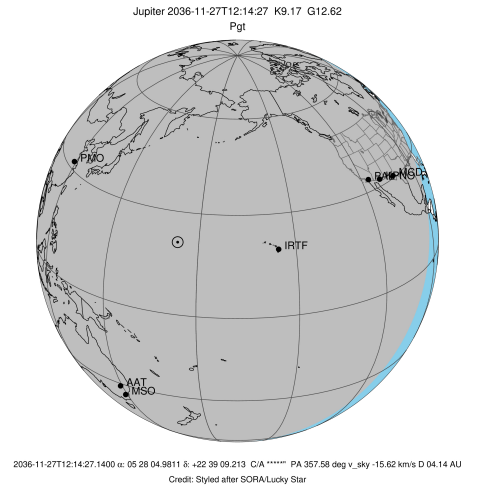


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:14:02.305	56.67	-40.48	71487.6	-41.43	-45.15
Jupiter	E	2036-11-27T13:06:52.558	33.06	-17.15	71487.6	-41.04	-44.75

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-11-27T12:19:22.040
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      : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude          : 9.170
G magnitude          : 12.619
RP magnitude         : 11.666
BP magnitude         : 13.557
DUPflag             : 0
Distance (au)       : 4.137
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)  : 90.53
B (ring opening deg) : 2.72
PA of pole (deg)    : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 15.435
C/A sky separation (km) : 46306.5
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
    
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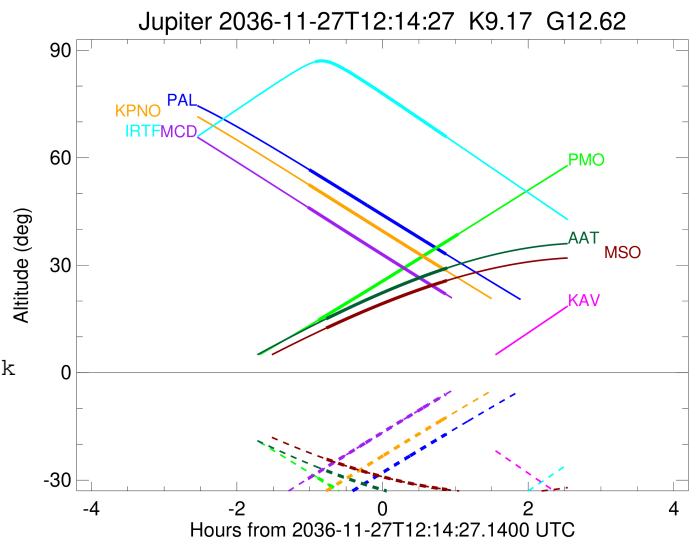
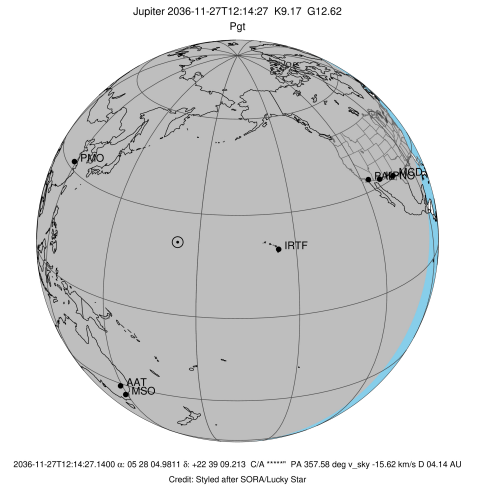


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:21:28.858	14.64	-29.43	71487.9	-39.58	-43.29
Jupiter	E	2036-11-27T13:16:53.658	38.68	-53.85	71487.6	-41.02	-44.73

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-27T12:09:59.590
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        : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude           : 9.170
G magnitude           : 12.619
RP magnitude          : 11.666
BP magnitude          : 13.557
DUPflag              : 0
Distance (au)         : 4.137
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg)  : 162.68
Sun-Moon sep (deg)    : 90.70
B (ring opening deg) : 2.72
PA of pole (deg)      : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 15.740
C/A sky separation (km) : 47222.0
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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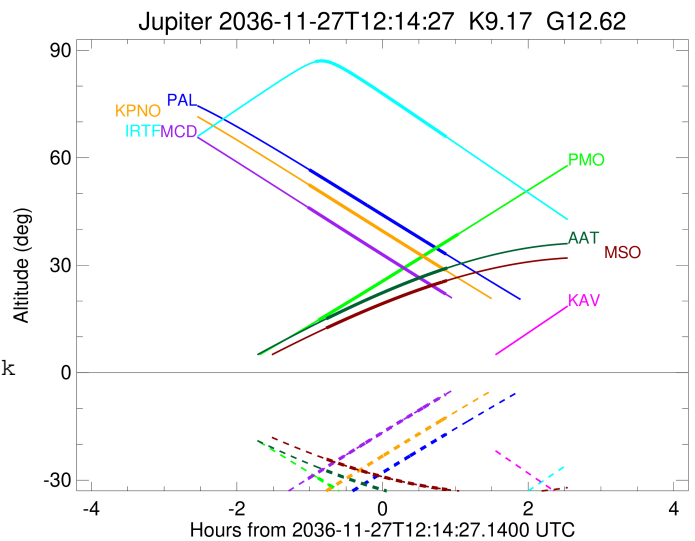
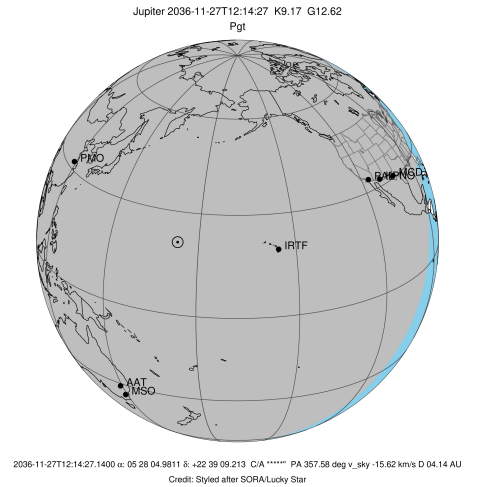


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:13:37.397	52.50	-36.07	71487.6	-41.48	-45.19
Jupiter	E	2036-11-27T13:06:36.983	28.52	-12.55	71487.6	-41.00	-44.72

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-27T12:09:34.480
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        : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude           : 9.170
G magnitude           : 12.619
RP magnitude          : 11.666
BP magnitude          : 13.557
DUPflag              : 0
Distance (au)         : 4.137
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)   : 90.62
B (ring opening deg) : 2.72
PA of pole (deg)     : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 15.710
C/A sky separation (km) : 47131.3
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
    
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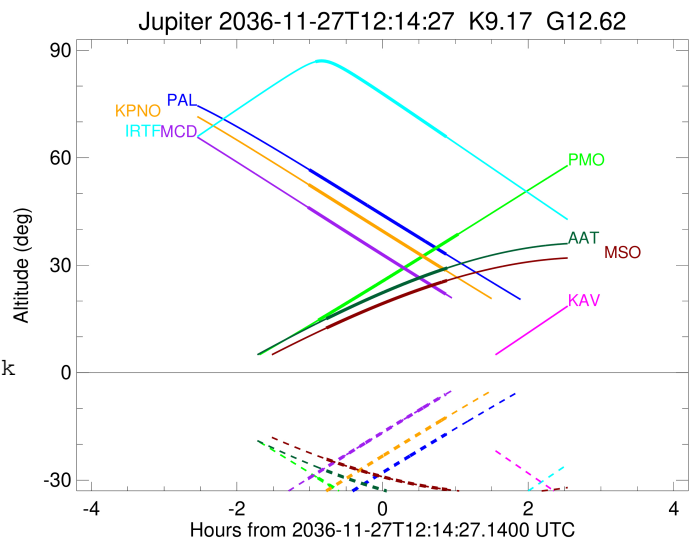
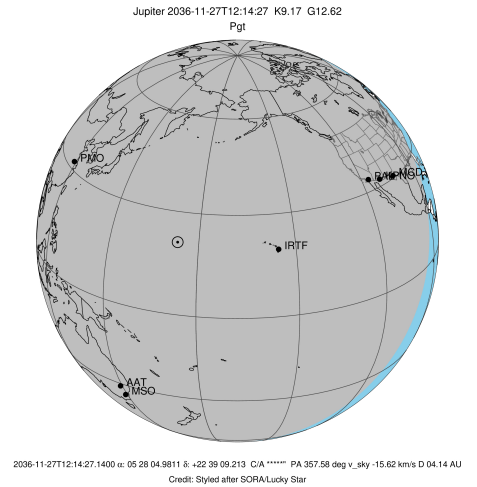


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:12:59.732	46.16	-29.61	71487.6	-41.44	-45.15
Jupiter	E	2036-11-27T13:06:26.236	21.95	-6.05	71487.7	-40.86	-44.58

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-11-27T12:13:10.100
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       : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude          : 9.170
G magnitude          : 12.619
RP magnitude         : 11.666
BP magnitude         : 13.557
DUPflag             : 0
Distance (au)        : 4.137
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)   : 91.02
B (ring opening deg) : 2.72
PA of pole (deg)     : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 16.428
C/A sky separation (km) : 49285.5
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
    
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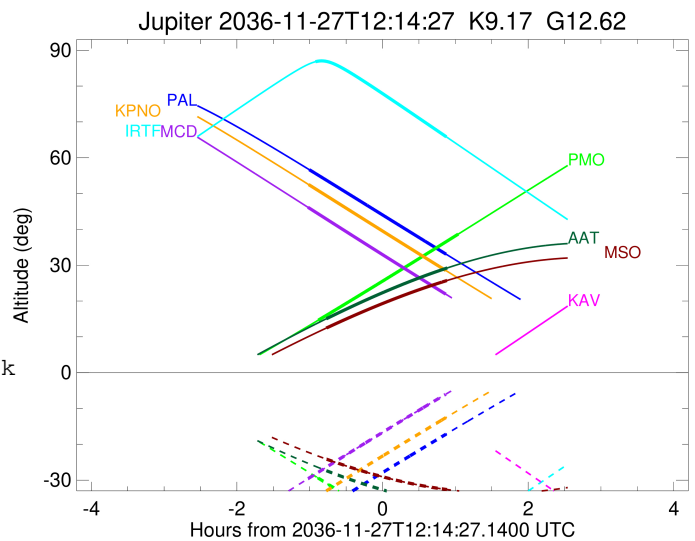
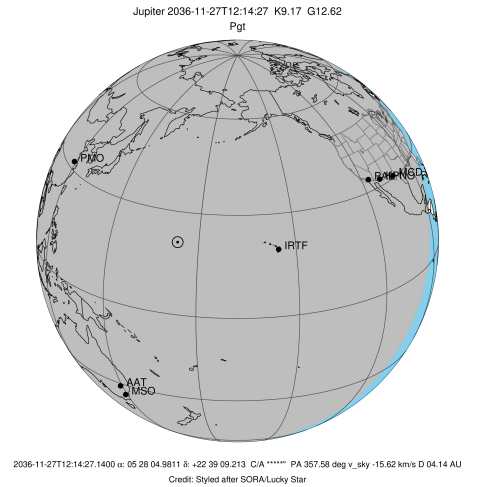


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:19:19.887	86.80	-73.61	71487.2	-43.34	-47.06
Jupiter	E	2036-11-27T13:07:03.198	65.82	-48.57	71487.2	-43.56	-47.28

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-27T12:18:07.460
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       : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude           : 9.170
G magnitude           : 12.619
RP magnitude          : 11.666
BP magnitude          : 13.557
DUPflag              : 0
Distance (au)        : 4.137
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)   : 90.48
B (ring opening deg) : 2.72
PA of pole (deg)     : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 17.806
C/A sky separation (km) : 53419.0
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
    
```

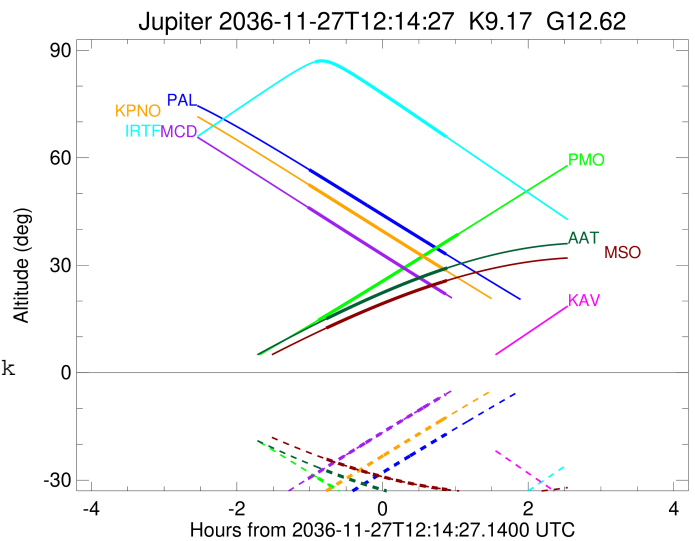
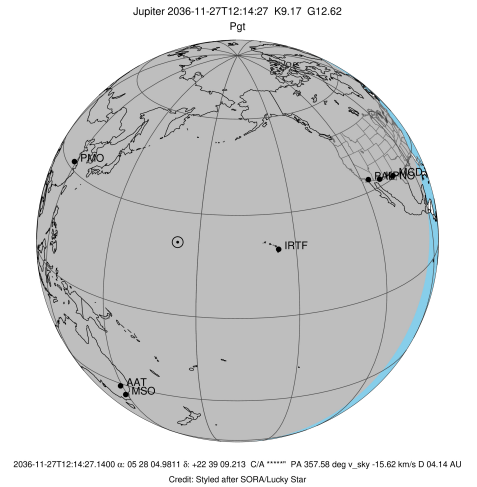


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-11-27T11:28:12.834	15.05	-27.36	71486.5	-47.65	-51.31
Jupiter	E	2036-11-27T13:07:50.439	29.23	-36.58	71486.3	-48.82	-52.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-11-27T12:17:58.910
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       : 3416029524803139968
2Mass ID (if available) : 05280497+2239092
ICRS Star Coord at Epoch: 05h 28m 04.98110s +22:39:09.21313s
RUWE (>1.4 is poor) : 1.17
K magnitude           : 9.170
G magnitude           : 12.619
RP magnitude          : 11.666
BP magnitude          : 13.557
DUPflag              : 0
Distance (au)        : 4.137
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.62
Sun-Target sep (deg) : 162.68
Sun-Moon sep (deg)   : 90.43
B (ring opening deg) : 2.72
PA of pole (deg)     : -2.60
Pole direction: RA (deg): 268.05632
Dec (deg): 64.49687
C/A sky separation (") : 17.898
C/A sky separation (km) : 53697.5
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	2036-11-27T11:28:21.985	12.48	-24.14	71486.4	-48.01	-51.65
Jupiter	E	2036-11-27T13:07:24.784	25.70	-32.61	71486.2	-49.15	-52.76