

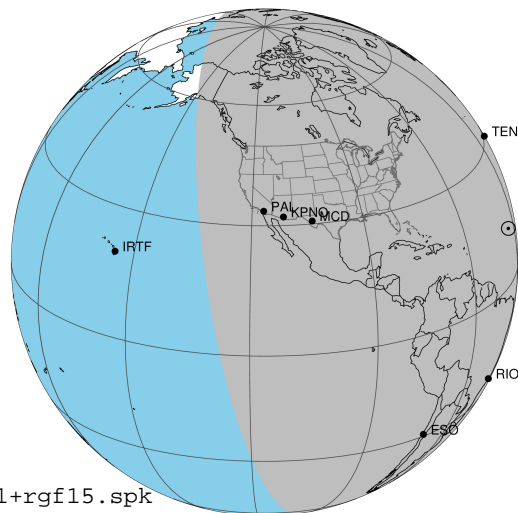
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2025-02-16T02:41:10.160  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 144833203528549760  
 2Mass ID (if available) : 04383889+2140359

Jupiter 2025-02-16T02:41:10 K9.67 G13.09 Pgt

ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s

RUWE (>1.4 is poor) : 1.03  
 K magnitude : 9.672  
 G magnitude : 13.094  
 RP magnitude : 12.130  
 BP magnitude : 14.059  
 DUPflag : 0  
 Distance (au) : 4.771  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 5.66  
 Sun-Target sep (deg) : 103.83  
 Sun-Moon sep (deg) : 115.94  
 B (ring opening deg) : 2.65  
 PA of pole (deg) : -7.82  
 Pole direction: RA (deg): 268.05782  
 Dec (deg): 64.49672  
 C/A sky separation (") : 0.307  
 C/A sky separation (km) : 1063.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2025-02-16T02:41:10 K9.67 G13.09  
 Pgt

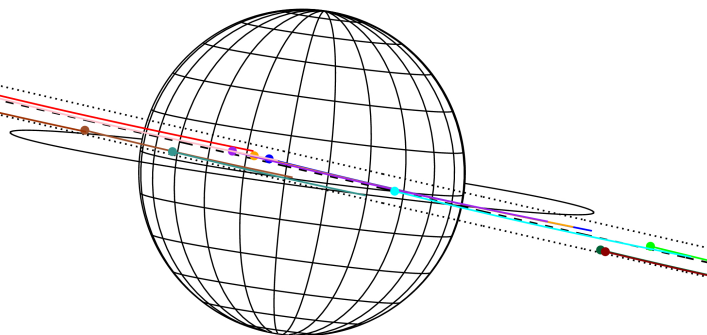


2025-02-16T02:41:10.1600 α: 04 38 38.8958 δ: +21 40 35.886 C/A 0.318" PA 167.08 deg v\_sky + 5.66 km/s D 04.77 AU

Credit: Styled after SORA/Lucky Star

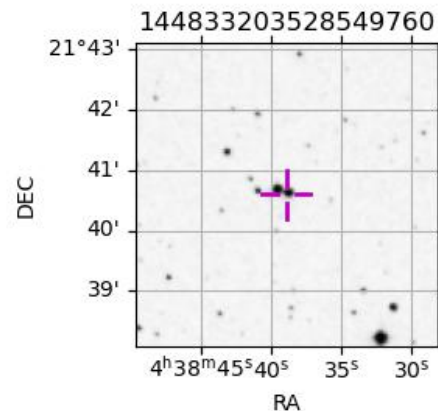
Earth

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



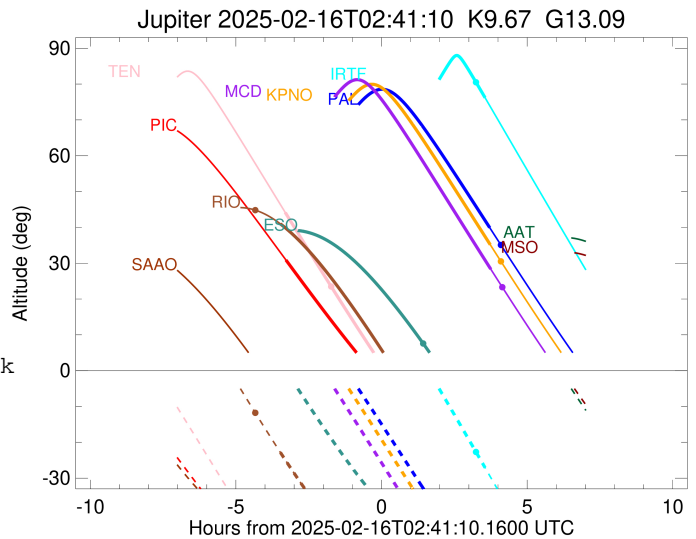
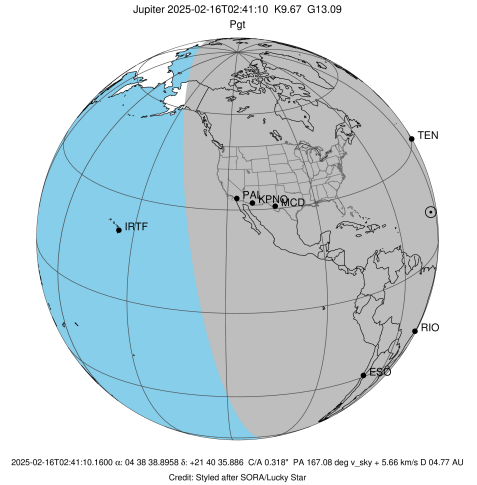
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events	Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	FEB 15 23:24 - FEB 15 23:24		Pin
PAL	Palomar Mt (200")	33.4	243.1	+	FEB 16 06:24 - FEB 16 06:24		Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8				Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 16 06:25 - FEB 16 06:25		Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	FEB 16 06:26 - FEB 16 06:26		Pne
TEN	Teide Obs./Tenerife	28.3	343.5	+	FEB 15 23:22 - FEB 15 23:22		Pin
IRTF	Mauna Kea/IRTF	19.8	204.5	+	FEB 16 06:14 - FEB 16 06:14		Pne
KAV	Kavalur Observatory	12.6	78.8				Pnn
RIO	Rio de Janeiro	-22.9	316.8	+	FEB 15 23:12 - FEB 15 23:12		Pin
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            : 2025-02-16T02:55:35.200
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      : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude         : 9.672
G magnitude         : 13.094
RP magnitude        : 12.130
BP magnitude        : 14.059
DUPflag            : 0
Distance (au)       : 4.771
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)  : 116.19
B (ring opening deg) : 2.65
PA of pole (deg)    : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation (") : 1.429
C/A sky separation (km) : 4943.4
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
    
```

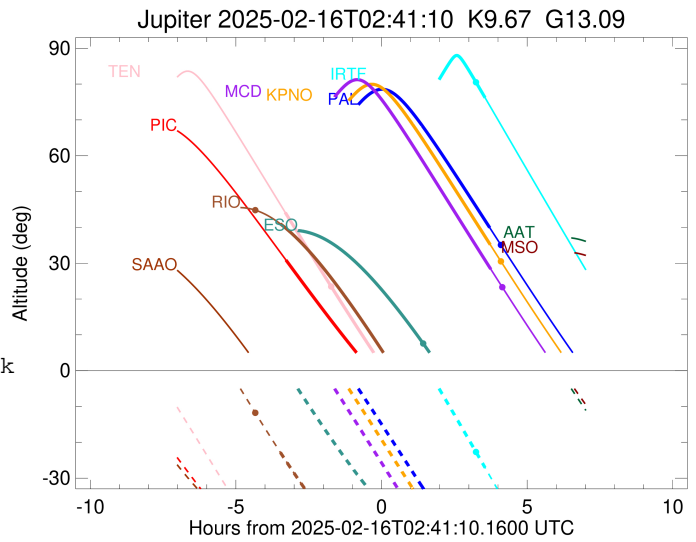
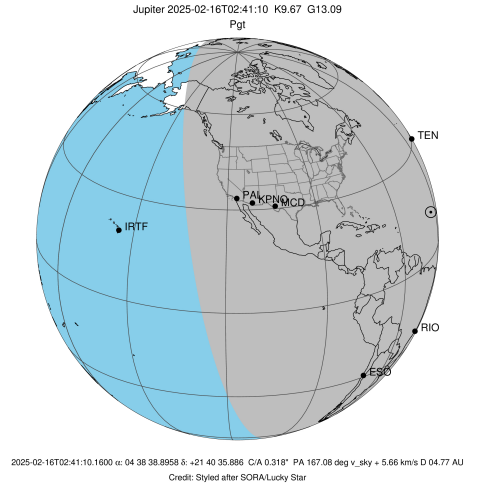


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T23:24:11.822	30.91	-57.76	71491.8	7.83	8.94
Jupiter	E	2025-02-16T06:15:26.573	-24.93x	-7.91	71492.0	0.13	0.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2025-02-16T02:42:05.810
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       : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.672
G magnitude           : 13.094
RP magnitude         : 12.130
BP magnitude         : 14.059
DUPflag              : 0
Distance (au)        : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)   : 116.74
B (ring opening deg) : 2.65
PA of pole (deg)     : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation ("): 0.664
C/A sky separation (km): 2298.4
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
    
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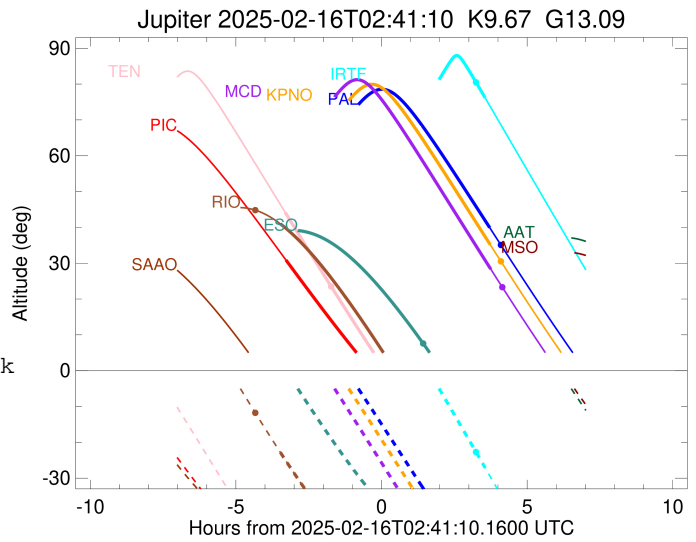
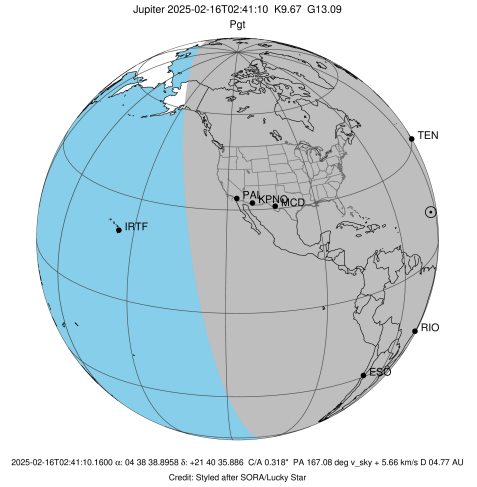


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T22:58:02.975	39.44	28.03x	71491.8	8.45	9.63
Jupiter	E	2025-02-16T06:24:10.787	39.90	-59.46	71492.0	-3.33	-3.81

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2025-02-16T02:43:30.010
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       : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 9.672
G magnitude          : 13.094
RP magnitude         : 12.130
BP magnitude         : 14.059
DUPflag             : 0
Distance (au)        : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)   : 116.77
B (ring opening deg) : 2.65
PA of pole (deg)     : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation ("): 0.590
C/A sky separation (km): 2042.5
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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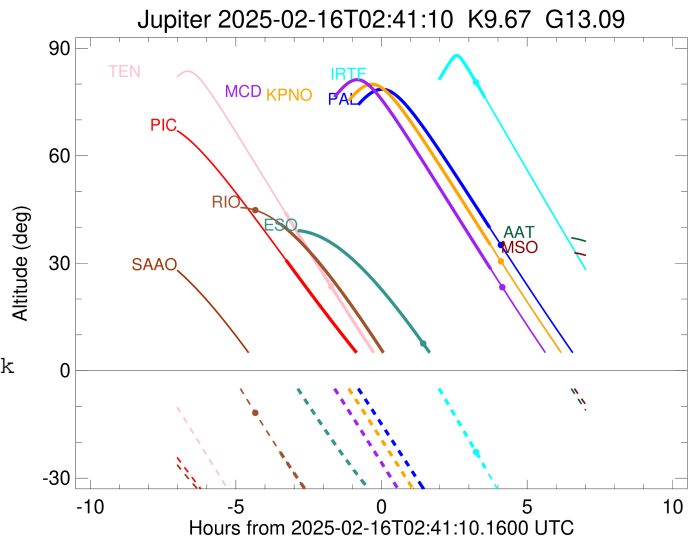
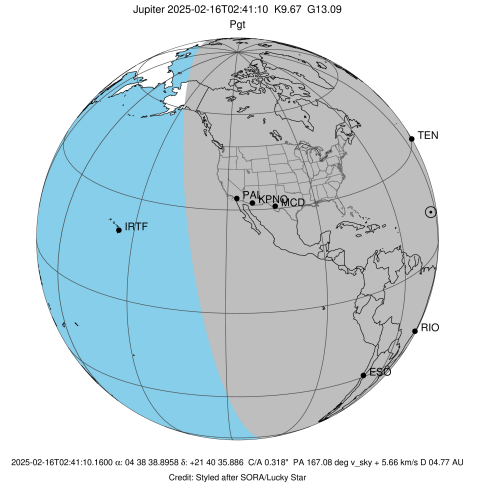


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T22:58:28.778	43.94	25.26x	71491.8	8.18	9.33
Jupiter	E	2025-02-16T06:25:10.236	35.17	-63.88	71492.0	-3.37	-3.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2025-02-16T02:45:37.720
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       : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.672
G magnitude           : 13.094
RP magnitude          : 12.130
BP magnitude          : 14.059
DUPflag              : 0
Distance (au)        : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)   : 116.81
B (ring opening deg) : 2.65
PA of pole (deg)     : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation ("): 0.515
C/A sky separation (km): 1780.8
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
    
```

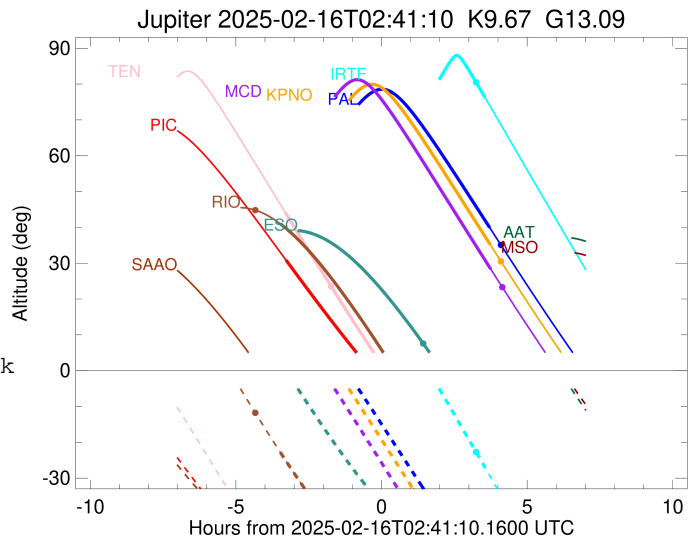
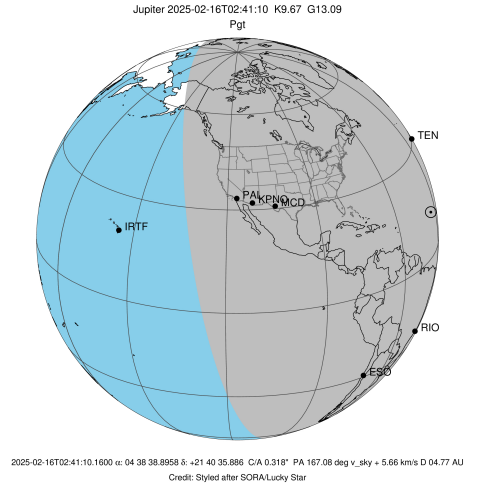


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T22:59:31.223	50.67	20.23x	71491.8	7.84	8.94
Jupiter	E	2025-02-16T06:26:19.956	28.32	-69.10	71492.0	-3.34	-3.82

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2025-02-16T02:58:41.600
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : TEN
Location            : Teide Obs./Tenerife
Latitude (deg)      : 28.30050
E. Longitude (deg)  : 343.48909
Altitude (km)       : 2.395
Gaia source ID      : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 9.672
G magnitude          : 13.094
RP magnitude         : 12.130
BP magnitude         : 14.059
DUPflag             : 0
Distance (au)       : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)  : 116.33
B (ring opening deg) : 2.65
PA of pole (deg)    : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation ("): 0.894
C/A sky separation (km): 3092.4
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
    
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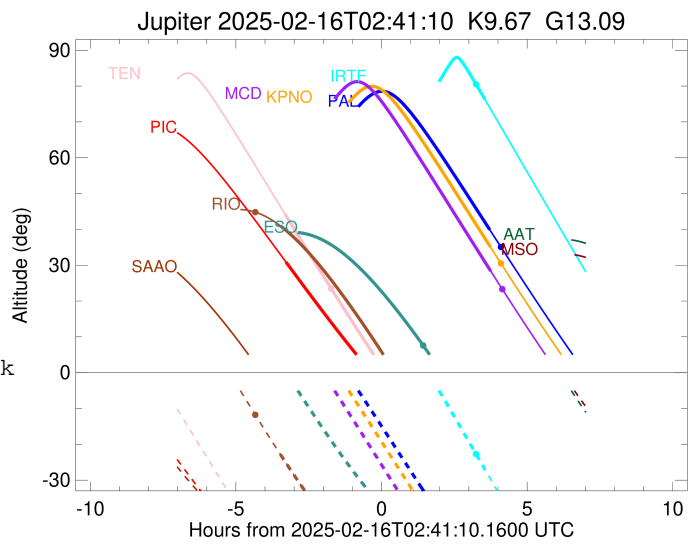
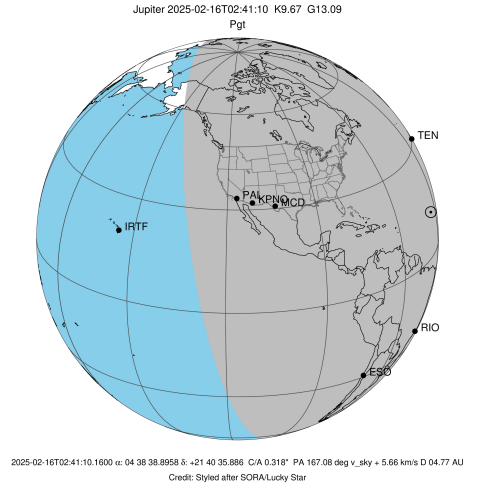


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T23:22:47.846	44.18	-58.42	71491.9	6.36	7.26
Jupiter	E	2025-02-16T06:19:39.899	-34.55x	-18.92	71492.0	-0.98	-1.12

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2025-02-16T02:30:08.600
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       : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.672
G magnitude           : 13.094
RP magnitude         : 12.130
BP magnitude         : 14.059
DUPflag              : 0
Distance (au)        : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)   : 116.36
B (ring opening deg) : 2.65
PA of pole (deg)     : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation ("): 0.658
C/A sky separation (km): 2275.5
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
    
```



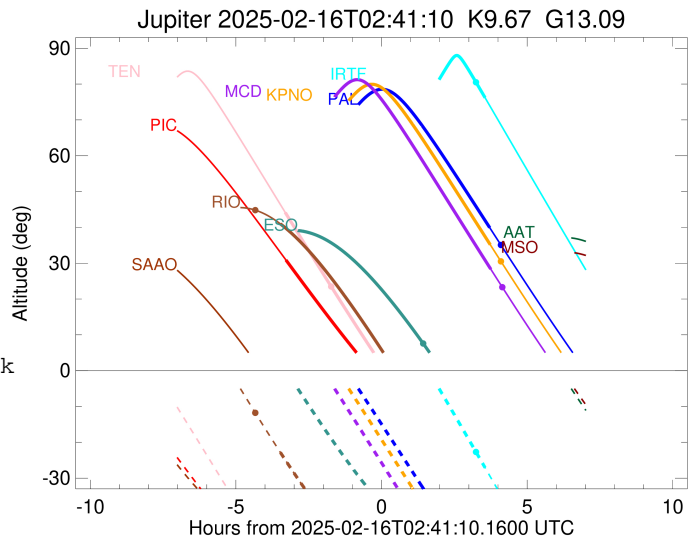
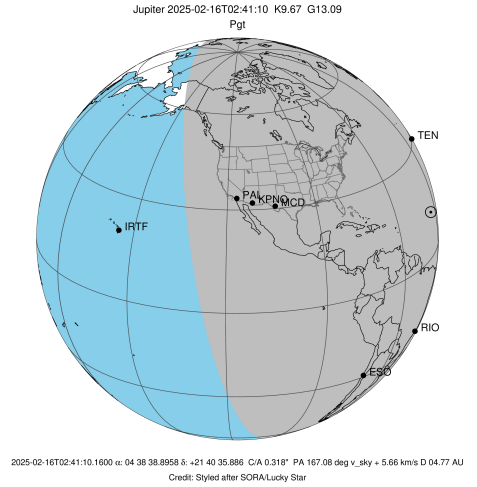
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2025-02-15T22:53:41.462	2.01x	57.66x	71491.8	8.79	10.02
Jupiter	E	2025-02-16T06:14:37.555	76.16	-27.10	71491.9	-4.60	-5.26



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2025-02-16T02:56:01.050
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 144833203528549760
2Mass ID (if available) : 04383889+2140359
ICRS Star Coord at Epoch: 04h 38m 38.89581s +21:40:35.88555s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 9.672
G magnitude          : 13.094
RP magnitude         : 12.130
BP magnitude         : 14.059
DUPflag             : 0
Distance (au)       : 4.771
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.66
Sun-Target sep (deg) : 103.83
Sun-Moon sep (deg)  : 116.35
B (ring opening deg) : 2.65
PA of pole (deg)    : -7.82
Pole direction: RA (deg): 268.05782
Dec (deg): 64.49672
C/A sky separation (" ) : 0.842
C/A sky separation (km) : 2912.6
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	2025-02-15T23:12:45.684	40.98	-22.80	71492.0	2.23	2.55
Jupiter	E	2025-02-16T06:22:47.064	-42.96x	-30.65	71491.9	-5.74	-6.56