

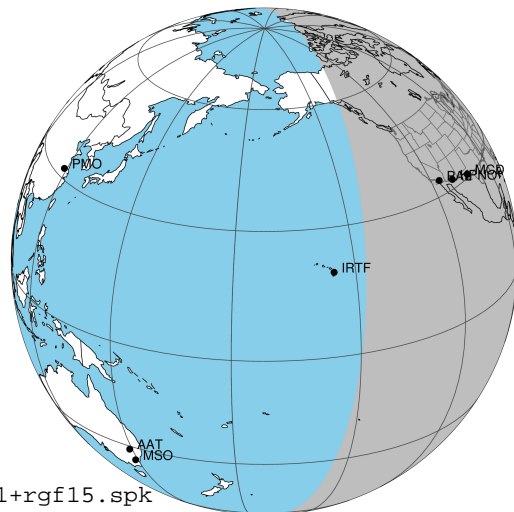
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2049-04-08T04:01:23.490  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3404482174514608768  
 2Mass ID (if available) : 05361694+2312202

Jupiter 2049-04-08T04:01:23 K9.15 G12.57 Pgt

ICRS Star Coord at Epoch: 05h 36m 16.94703s +23:12:20.07940s

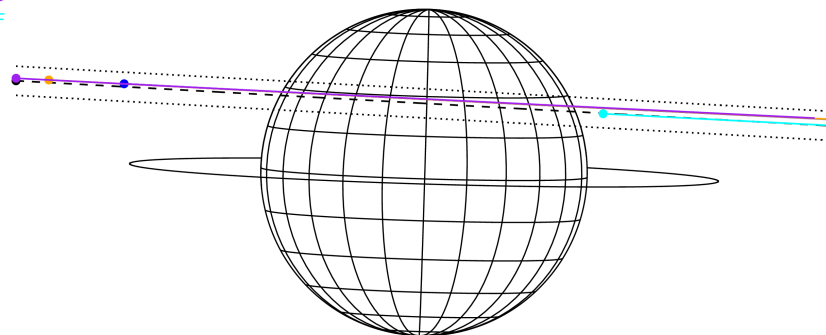
RUWE (>1.4 is poor) : 1.09  
 K magnitude : 9.146  
 G magnitude : 12.574  
 RP magnitude : 11.610  
 BP magnitude : 13.534  
 DUPflag : 0  
 Distance (au) : 5.462  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 24.53  
 Sun-Target sep (deg) : 66.47  
 Sun-Moon sep (deg) : 1.22  
 B (ring opening deg) : 2.24  
 PA of pole (deg) : -1.72  
 Pole direction: RA (deg): 268.05742  
 Dec (deg): 64.49719  
 C/A sky separation (") : 7.633  
 C/A sky separation (km) : 30238.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2049-04-08T04:01:23 K9.15 G12.57  
 Pgt



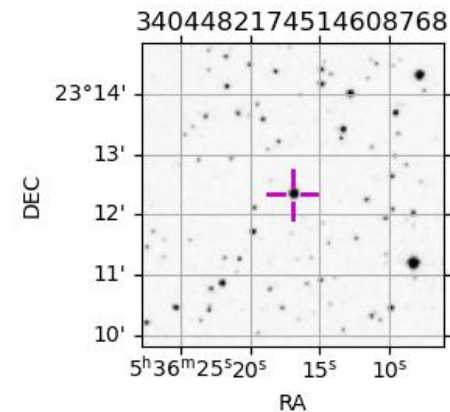
2049-04-08T04:01:23.4900 ex: 05 36 16.9470 s: +23 12 20.079 C/A 7.642" PA 176.83 deg v\_sky +24.53 km/s D 05.46 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PAL  
 KPNO  
 MCD  
 IRTF



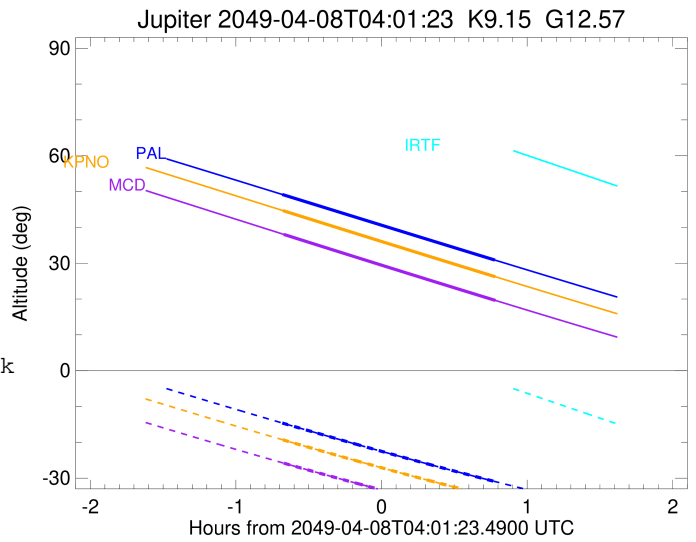
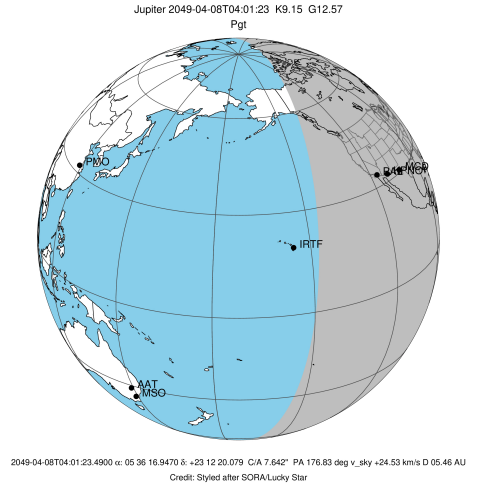
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	APR 08 03:20 - APR 08 04:48	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	APR 08 03:20 - APR 08 04:48	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	APR 08 03:21 - APR 08 04:48	Pie
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			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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2049-04-08T04:04:22.090
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        : 3404482174514608768
2Mass ID (if available) : 05361694+2312202
ICRS Star Coord at Epoch: 05h 36m 16.94703s +23:12:20.07940s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 9.146
G magnitude           : 12.574
RP magnitude          : 11.610
BP magnitude          : 13.534
DUPflag              : 0
Distance (au)         : 5.462
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.53
Sun-Target sep (deg)  : 66.47
Sun-Moon sep (deg)   : 1.55
B (ring opening deg) : 2.24
PA of pole (deg)     : -1.72
Pole direction: RA (deg): 268.05742
Dec (deg): 64.49719
C/A sky separation (" ) : 8.091
C/A sky separation (km) : 32052.2
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
    
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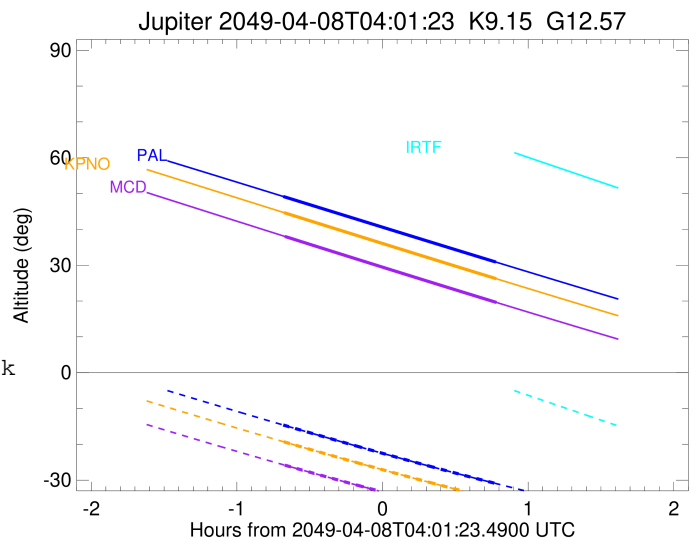
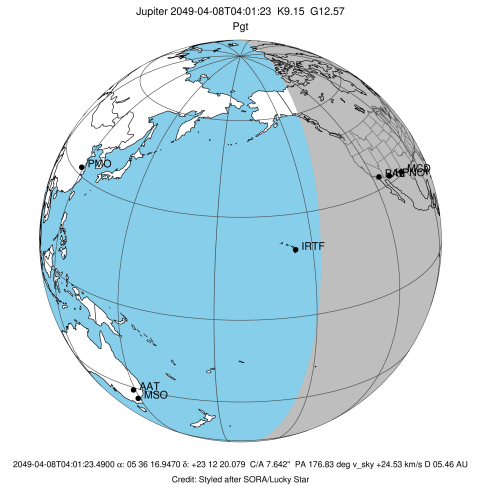


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2049-04-08T03:20:29.492	49.18	-14.61	71490.5	27.81	31.05
Jupiter	E	2049-04-08T04:48:06.648	30.87	-30.94	71490.7	25.46	28.53

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2049-04-08T04:04:34.970
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        : 3404482174514608768
2Mass ID (if available) : 05361694+2312202
ICRS Star Coord at Epoch: 05h 36m 16.94703s +23:12:20.07940s
RUWE (>1.4 is poor)  : 1.09
K magnitude           : 9.146
G magnitude           : 12.574
RP magnitude          : 11.610
BP magnitude          : 13.534
DUPflag              : 0
Distance (au)         : 5.462
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.53
Sun-Target sep (deg)  : 66.47
Sun-Moon sep (deg)    : 1.56
B (ring opening deg) : 2.24
PA of pole (deg)      : -1.72
Pole direction: RA (deg): 268.05742
Dec (deg): 64.49719
C/A sky separation (") : 8.095
C/A sky separation (km) : 32068.0
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
    
```

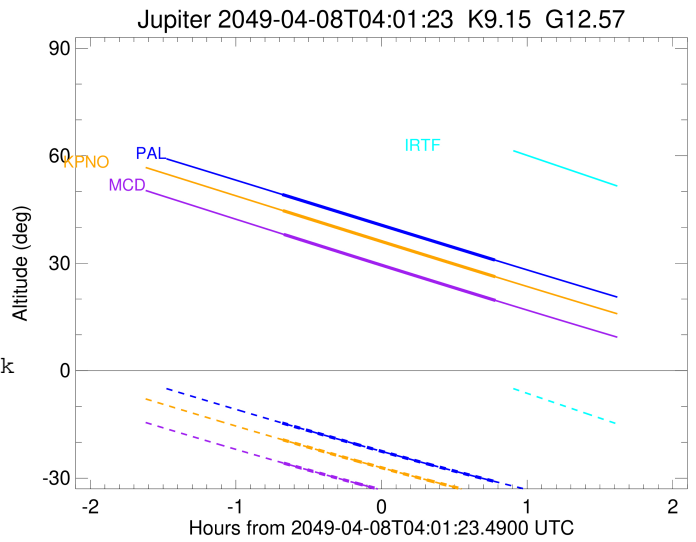
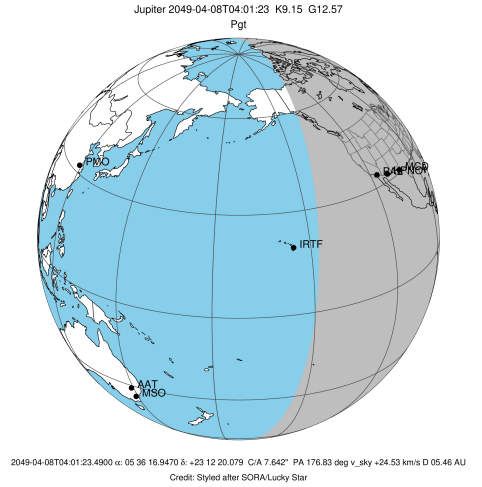


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2049-04-08T03:20:45.374	44.68	-19.31	71490.5	27.80	31.03
Jupiter	E	2049-04-08T04:48:16.054	26.22	-35.36	71490.7	25.50	28.57

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2049-04-08T04:04:49.590
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        : 3404482174514608768
2Mass ID (if available) : 05361694+2312202
ICRS Star Coord at Epoch: 05h 36m 16.94703s +23:12:20.07940s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 9.146
G magnitude           : 12.574
RP magnitude          : 11.610
BP magnitude          : 13.534
DUPflag              : 0
Distance (au)         : 5.462
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.53
Sun-Target sep (deg) : 66.47
Sun-Moon sep (deg)   : 1.59
B (ring opening deg) : 2.24
PA of pole (deg)     : -1.72
Pole direction: RA (deg): 268.05742
Dec (deg): 64.49719
C/A sky separation ("): 8.125
C/A sky separation (km): 32185.5
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	2049-04-08T03:21:06.955	38.04	-25.81	71490.5	27.87	31.11
Jupiter	E	2049-04-08T04:48:23.224	19.59	-41.06	71490.7	25.63	28.71