

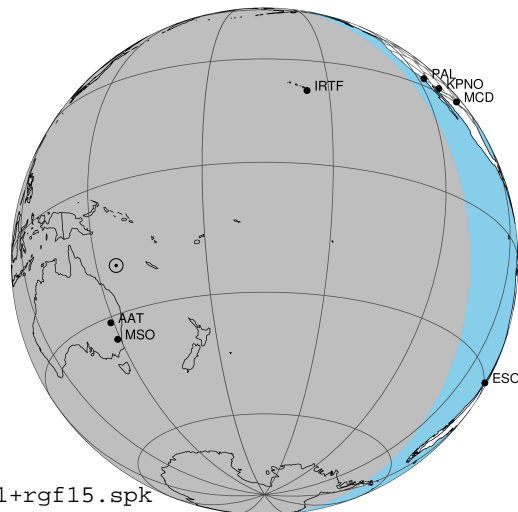
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-05-17T13:32:46.910  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4066595471084976256  
 2Mass ID (if available) : 18075939-2300529

Jupiter 2043-05-17T13:32:46 K9.98 G14.53 Pgt

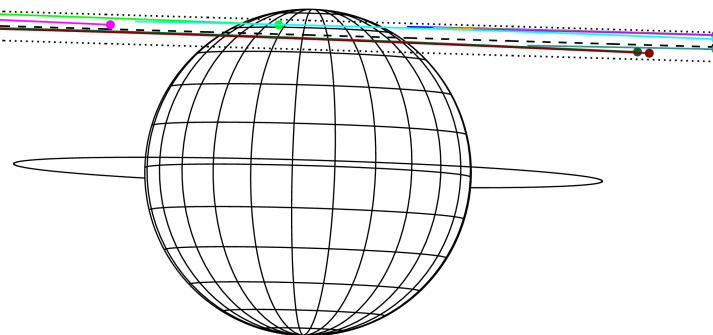
ICRS Star Coord at Epoch: 18h 07m 59.38082s -23°00'53.46662s

RUWE (>1.4 is poor) : 1.00  
 K magnitude : 9.984  
 G magnitude : 14.525  
 RP magnitude : 13.368  
 BP magnitude : 15.934  
 DUPflag : 0  
 Distance (au) : 4.425  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -10.81  
 Sun-Target sep (deg) : 144.13  
 Sun-Moon sep (deg) : 106.25  
 B (ring opening deg) : -2.43  
 PA of pole (deg) : -1.70  
 Pole direction: RA (deg): 268.05667  
 Dec (deg): 64.49732  
 C/A sky separation (") : 18.760  
 C/A sky separation (km) : 60209.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-05-17T13:32:46 K9.98 G14.53  
 Pgt



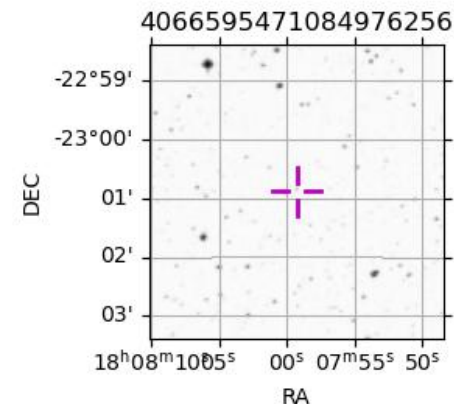
Earth  
 PAL  
 PMO  
 KPNO  
 MCD  
 IRTF  
 KAV  
 RIO  
 ESO  
 AAT  
 MSO



2043-05-17T13:32:46.9100 a: 18 07 59.3808 s: -23 00 53.467 C/A \*\*\*\*\* PA 178.31 deg v\_sky -10.81 km/s D 04.43 AU  
 Credit: Styled after SORA/Lucky Star

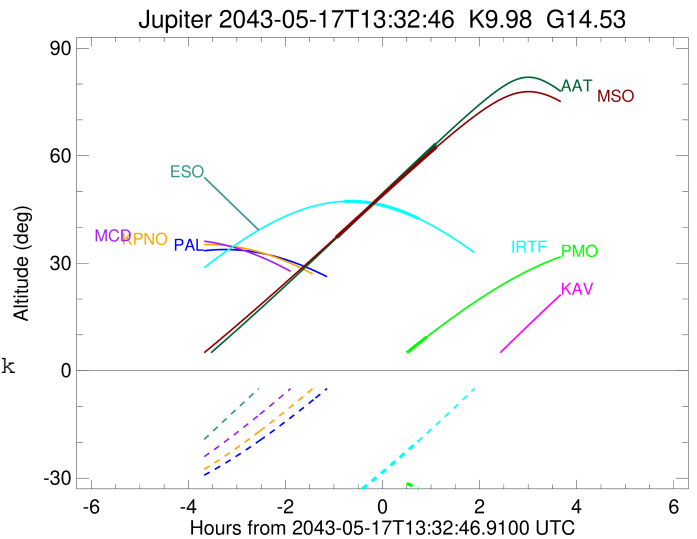
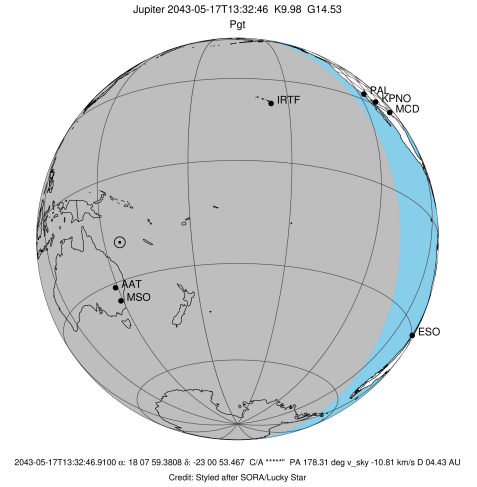
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAY 17 14:27 - MAY 17 14:27	Pne
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
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	+ +	MAY 17 12:45 - MAY 17 14:17	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	+ +	MAY 17 12:36 - MAY 17 14:38	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAY 17 12:35 - MAY 17 14:39	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-17T13:39:17.410
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      : 4066595471084976256
2Mass ID (if available) : 18075939-2300529
ICRS Star Coord at Epoch: 18h 07m 59.38082s -23:00:53.46662s
RUWE (>1.4 is poor) : 1.00
K magnitude         : 9.984
G magnitude         : 14.525
RP magnitude        : 13.368
BP magnitude        : 15.934
DUPflag            : 0
Distance (au)       : 4.425
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -10.81
Sun-Target sep (deg) : 144.13
Sun-Moon sep (deg)  : 106.46
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.70
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation ("): 19.965
C/A sky separation (km): 64077.6
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
    
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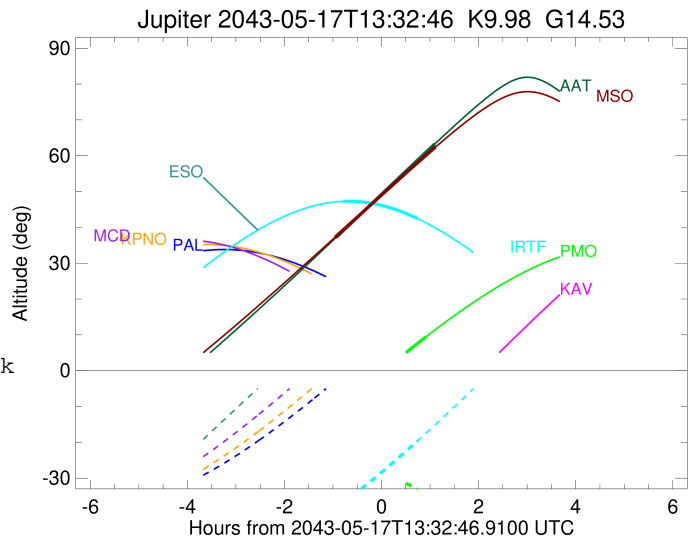
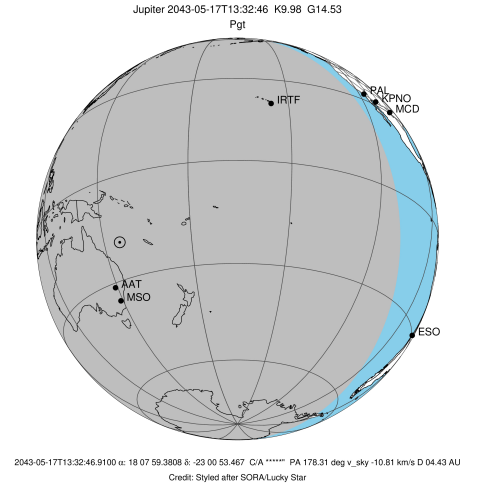


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-17T12:50:42.445	-8.76x	-21.40	71485.6	62.81	65.66
Jupiter	E	2043-05-17T14:27:29.734	9.40	-34.03	71485.4	64.28	67.02

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-17T13:31:21.480
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       : 4066595471084976256
2Mass ID (if available) : 18075939-2300529
ICRS Star Coord at Epoch: 18h 07m 59.38082s -23:00:53.46662s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 9.984
G magnitude          : 14.525
RP magnitude         : 13.368
BP magnitude         : 15.934
DUPflag             : 0
Distance (au)        : 4.425
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.81
Sun-Target sep (deg) : 144.13
Sun-Moon sep (deg)   : 106.85
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.70
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation ("): 20.086
C/A sky separation (km): 64465.2
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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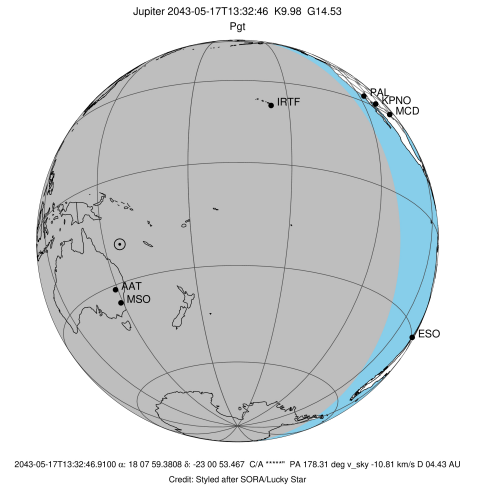


x: target alt < 5.0 deg or sun > -5.0 deg

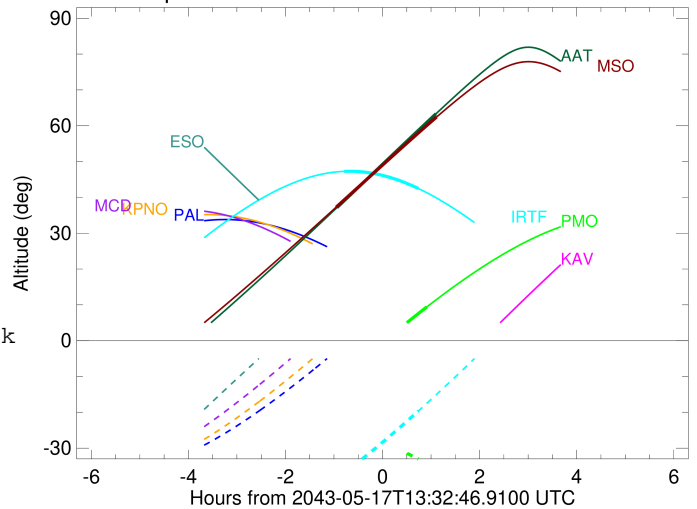
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-17T12:45:24.672	47.25	-36.83	71485.4	64.43	67.16
Jupiter	E	2043-05-17T14:17:19.673	42.45	-19.59	71485.5	63.97	66.73

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-17T13:37:53.570
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       : 4066595471084976256
2Mass ID (if available) : 18075939-2300529
ICRS Star Coord at Epoch: 18h 07m 59.38082s -23:00:53.46662s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 9.984
G magnitude           : 14.525
RP magnitude          : 13.368
BP magnitude          : 15.934
DUPflag              : 0
Distance (au)        : 4.425
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -10.81
Sun-Target sep (deg) : 144.13
Sun-Moon sep (deg)   : 107.08
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.70
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation ("): 18.335
C/A sky separation (km): 58846.6
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
    
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Jupiter 2043-05-17T13:32:46 K9.98 G14.53

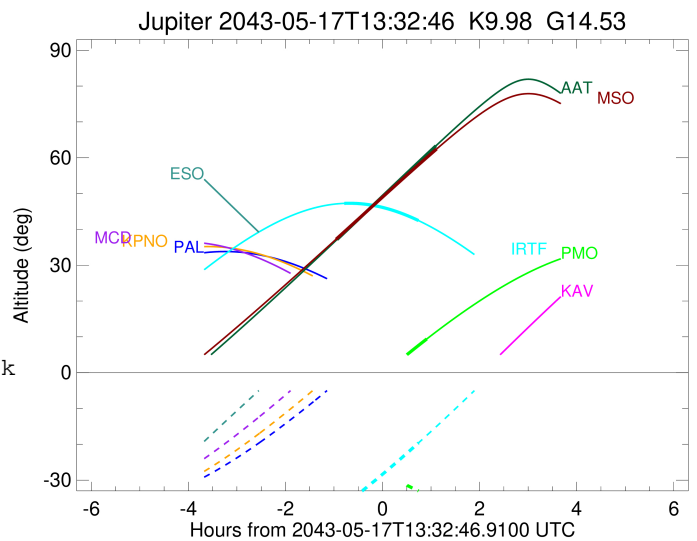
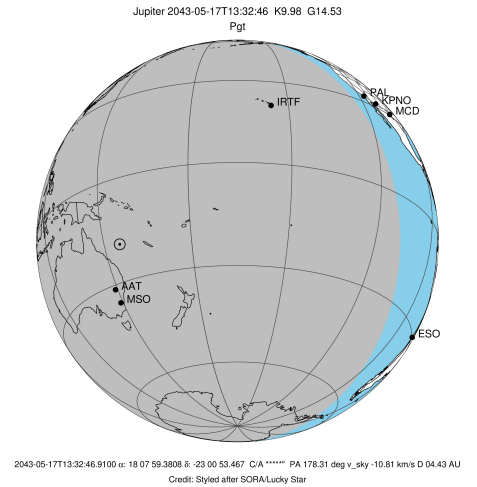


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-17T12:36:35.222	37.17	-67.83	71486.6	54.75	58.14
Jupiter	E	2043-05-17T14:38:45.009	63.30	-75.41	71486.5	55.73	59.06

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-17T13:37:42.050
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       : 4066595471084976256
2Mass ID (if available) : 18075939-2300529
ICRS Star Coord at Epoch: 18h 07m 59.38082s -23:00:53.46662s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 9.984
G magnitude           : 14.525
RP magnitude          : 13.368
BP magnitude          : 15.934
DUPflag              : 0
Distance (au)         : 4.425
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -10.81
Sun-Target sep (deg) : 144.13
Sun-Moon sep (deg)   : 107.07
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.70
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (" ) : 18.204
C/A sky separation (km) : 58424.3
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
    
```



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	2043-05-17T12:35:24.933	37.24	-65.51	71486.7	54.19	57.60
Jupiter	E	2043-05-17T14:39:32.382	62.40	-72.03	71486.6	55.13	58.49