

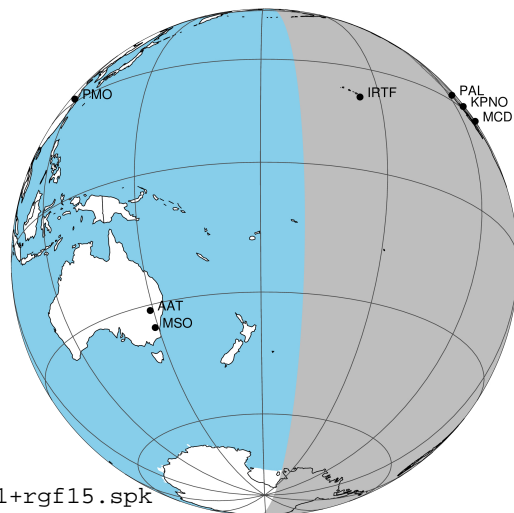
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-28T05:11:01.390
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116517112938105472
 2Mass ID (if available) : 17394656-2315510

Jupiter 2043-09-28T05:11:01 K8.32 G14.62 Pgt

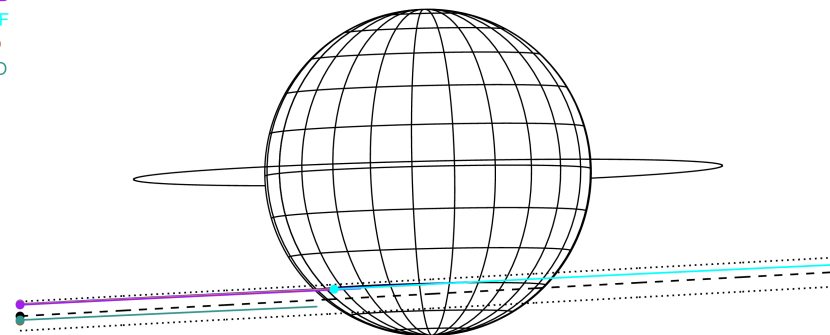
ICRS Star Coord at Epoch: 17h 39m 46.54815s -23:15:51.36729s

RUWE (>1.4 is poor) : 1.07
 K magnitude : 8.324
 G magnitude : 14.616
 RP magnitude : 13.071
 BP magnitude : 17.755
 DUPflag : 0
 Distance (au) : 5.294
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 17.76
 Sun-Target sep (deg) : 80.98
 Sun-Moon sep (deg) : 139.56
 B (ring opening deg) : -2.20
 PA of pole (deg) : 1.34
 Pole direction: RA (deg): 268.05674
 Dec (deg): 64.49731
 C/A sky separation (") : 13.850
 C/A sky separation (km) : 53178.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-09-28T05:11:01 K8.32 G14.62
 Pgt



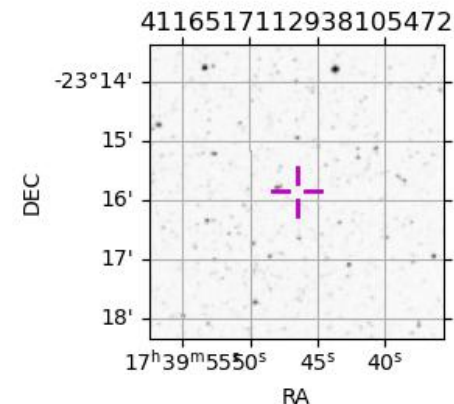
Earth
 PAL
 KPNO
 MCD
 IRTF
 RIO
 ESO



2043-09-28T05:11:01.3900 α: 17 39 46.5482 δ: -23 15 51.367 C/A ***** PA 3.09 deg v_sky +17.76 km/s D 05.29 AU
 Credit: Styled after SORA/Lucky Star

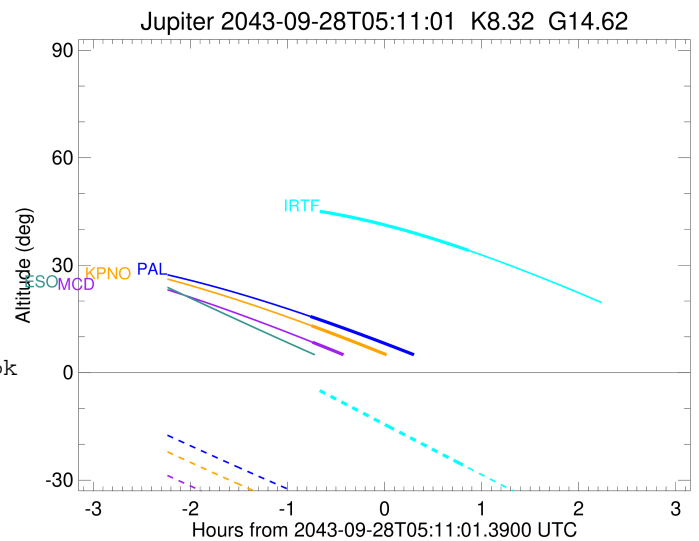
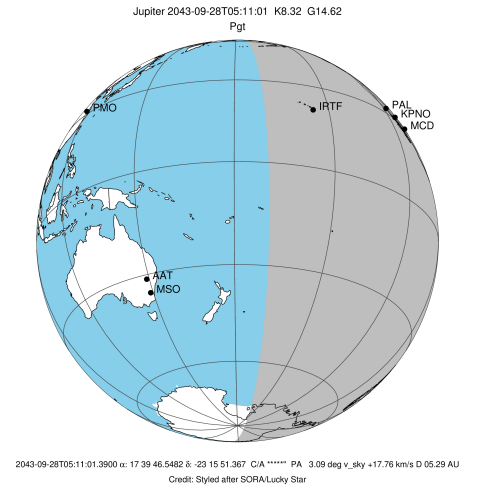
Observable events with sun below -5 deg and altitude above 5 deg

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	+	SEP 28 04:25 - SEP 28 04:25	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	SEP 28 04:25 - SEP 28 04:25	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	SEP 28 04:26 - SEP 28 04:26	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	SEP 28 06:02 - SEP 28 06:02	Pne
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            : 2043-09-28T05:14:57.440
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     : 4116517112938105472
2Mass ID (if available) : 17394656-2315510
ICRS Star Coord at Epoch: 17h 39m 46.54815s -23:15:51.36729s
RUWE (>1.4 is poor) : 1.07
K magnitude         : 8.324
G magnitude         : 14.616
RP magnitude        : 13.071
BP magnitude        : 17.755
DUPflag            : 0
Distance (au)      : 5.294
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 17.76
Sun-Target sep (deg) : 80.98
Sun-Moon sep (deg)  : 139.18
B (ring opening deg) : -2.20
PA of pole (deg)   : 1.34
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 12.708
C/A sky separation (km) : 48794.4
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
    
```

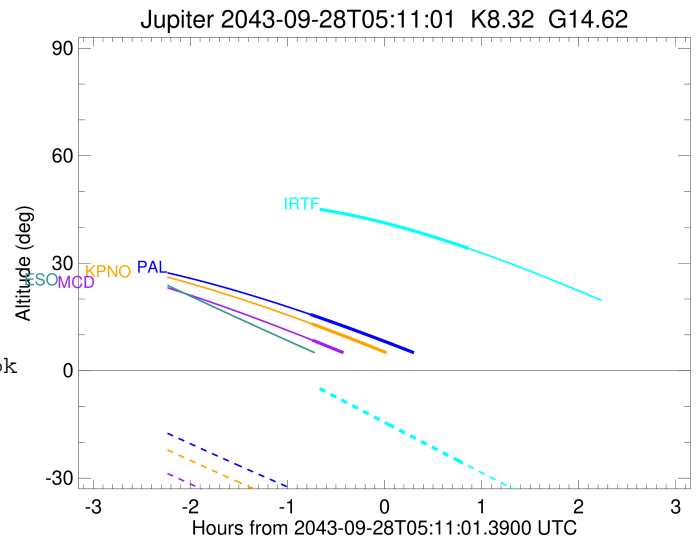
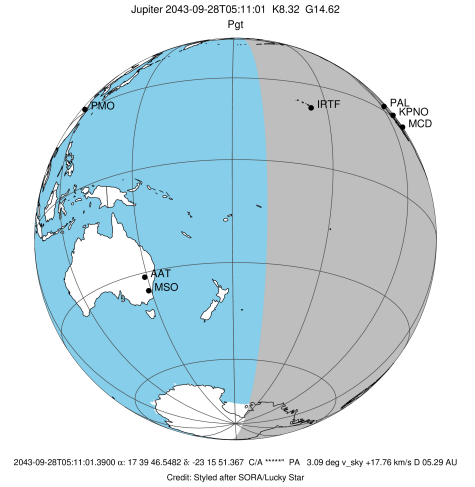


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-28T04:25:20.016	15.68	-35.19	71488.7	-44.37	-48.08
Jupiter	E	2043-09-28T06:04:19.792	-1.40x	-51.85	71489.0	-41.70	-45.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-28T05:15:12.440
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       : 4116517112938105472
2Mass ID (if available) : 17394656-2315510
ICRS Star Coord at Epoch: 17h 39m 46.54815s -23:15:51.36729s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 8.324
G magnitude          : 14.616
RP magnitude         : 13.071
BP magnitude         : 17.755
DUPflag             : 0
Distance (au)        : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.76
Sun-Target sep (deg) : 80.98
Sun-Moon sep (deg)  : 139.11
B (ring opening deg) : -2.20
PA of pole (deg)    : 1.34
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 12.779
C/A sky separation (km) : 49066.3
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
    
```

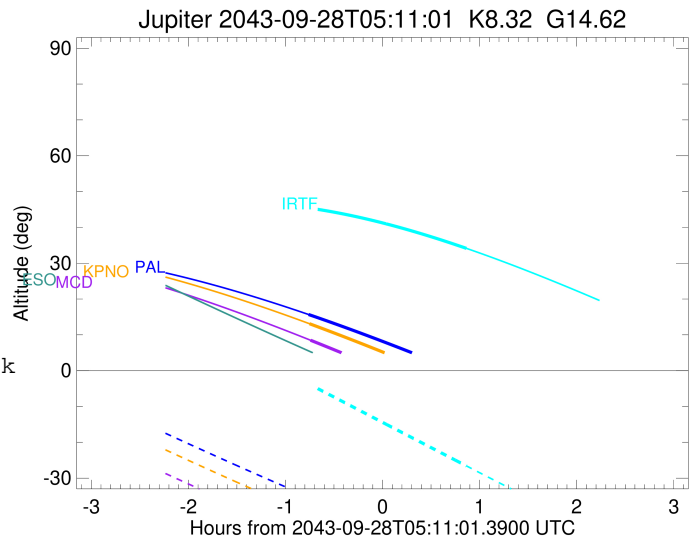
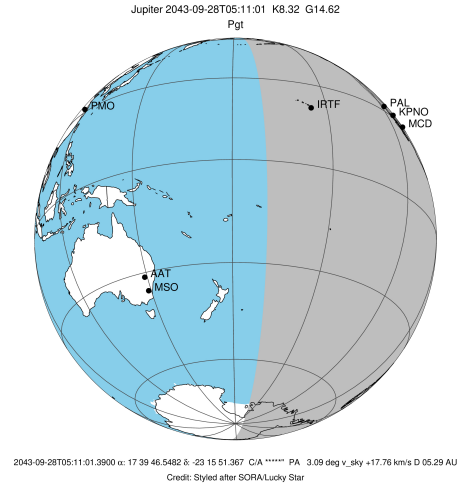


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-28T04:25:54.152	13.10	-39.90	71488.7	-44.63	-48.34
Jupiter	E	2043-09-28T06:04:15.146	-4.78x	-55.62	71489.0	-42.02	-45.74

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-28T05:15:28.080
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      : 4116517112938105472
2Mass ID (if available) : 17394656-2315510
ICRS Star Coord at Epoch: 17h 39m 46.54815s -23:15:51.36729s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 8.324
G magnitude          : 14.616
RP magnitude         : 13.071
BP magnitude         : 17.755
DUPflag             : 0
Distance (au)       : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.76
Sun-Target sep (deg) : 80.98
Sun-Moon sep (deg)  : 139.02
B (ring opening deg) : -2.20
PA of pole (deg)    : 1.34
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 12.873
C/A sky separation (km): 49429.2
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
    
```

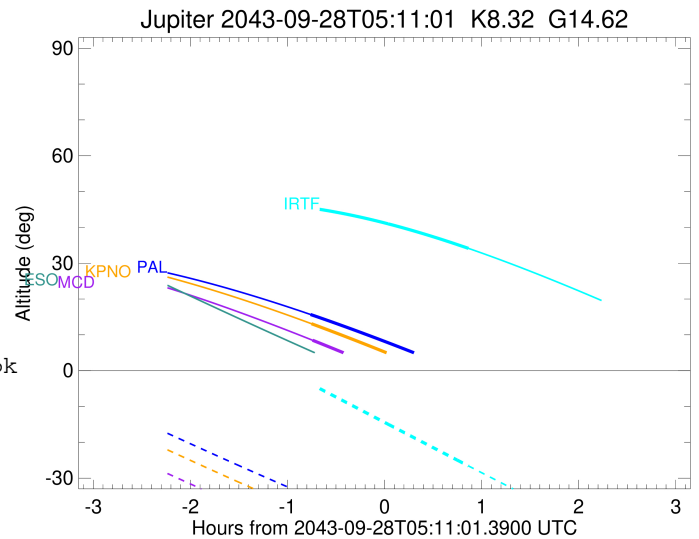
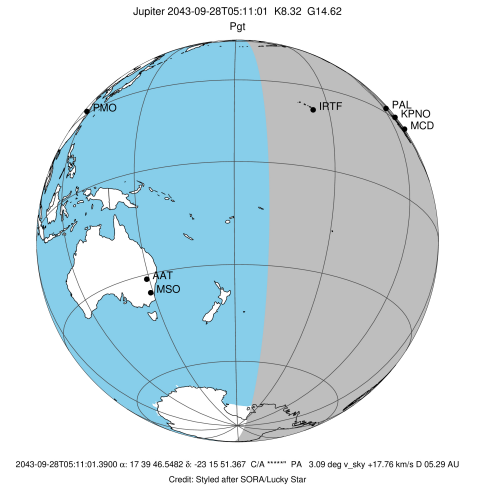


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-28T04:26:36.836	8.48	-46.26	71488.7	-44.99	-48.69
Jupiter	E	2043-09-28T06:04:03.316	-10.22x	-59.75	71489.0	-42.45	-46.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-28T05:12:59.580
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      : 4116517112938105472
2Mass ID (if available) : 17394656-2315510
ICRS Star Coord at Epoch: 17h 39m 46.54815s -23:15:51.36729s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 8.324
G magnitude          : 14.616
RP magnitude         : 13.071
BP magnitude         : 17.755
DUPflag             : 0
Distance (au)       : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.76
Sun-Target sep (deg) : 80.98
Sun-Moon sep (deg)  : 139.76
B (ring opening deg) : -2.20
PA of pole (deg)    : 1.34
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 12.741
C/A sky separation (km) : 48918.9
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	2043-09-28T04:22:55.663	45.57	-3.10x	71488.7	-44.78	-48.49
Jupiter	E	2043-09-28T06:02:54.246	34.13	-26.58	71489.1	-41.62	-45.34