

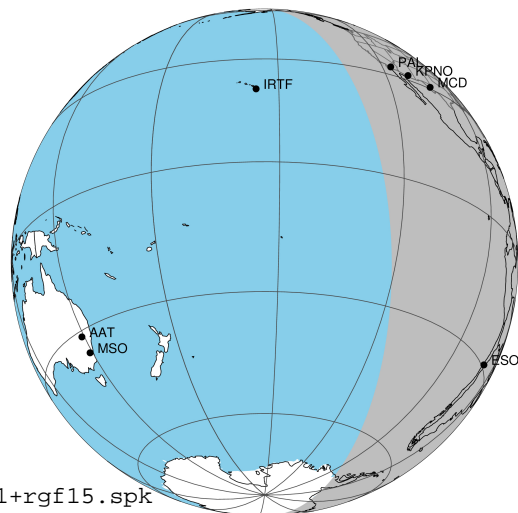
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-10-23T02:05:31.440  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4069373215403749632  
 2Mass ID (if available) : 17545187-2323240

Jupiter 2043-10-23T02:05:31 K9.64 G14.18 Pgt

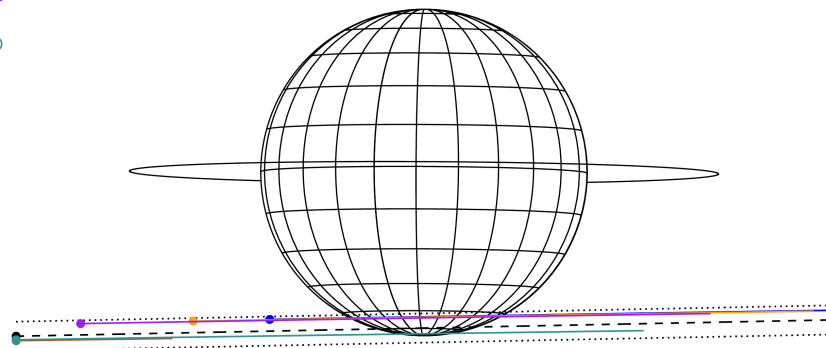
ICRS Star Coord at Epoch: 17h 54m 51.86948s -23:23:24.25897s

RUWE (>1.4 is poor) : 0.92  
 K magnitude : 9.644  
 G magnitude : 14.176  
 RP magnitude : 12.983  
 BP magnitude : 15.728  
 DUPflag : 0  
 Distance (au) : 5.651  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 28.14  
 Sun-Target sep (deg) : 59.87  
 Sun-Moon sep (deg) : 173.54  
 B (ring opening deg) : -2.11  
 PA of pole (deg) : -0.28  
 Pole direction: RA (deg): 268.05675  
 Dec (deg): 64.49731  
 C/A sky separation (") : 16.624  
 C/A sky separation (km) : 68126.8  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-10-23T02:05:31 K9.64 G14.18  
 Pgt



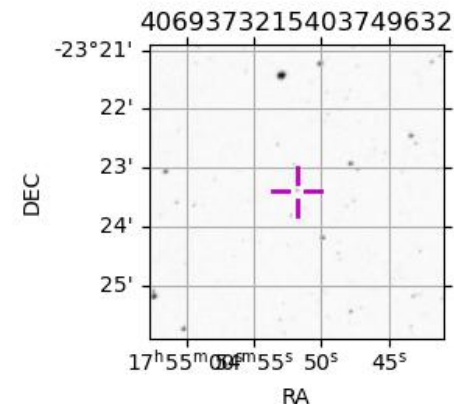
Earth  
 PAL  
 KPNO  
 MCD  
 RIO  
 ESO



2043-10-23T02:05:31.4400 α: 17 54 51.8695 δ: -23 23 24.259 C/A \*\*\*\*\* PA 1.14 deg v\_sky +28.14 km/s D 05.65 AU  
 Credit: Styled after SORA/Lucky Star

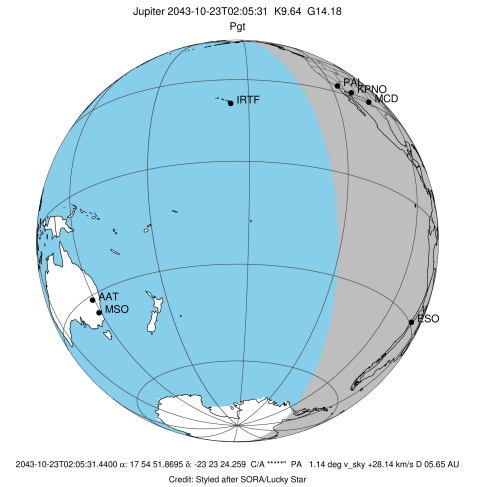
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	OCT 23 01:47 - OCT 23 02:27	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 23 01:47 - OCT 23 02:27	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	OCT 23 01:48 - OCT 23 02:27	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	+ +	OCT 23 02:02 - OCT 23 02:15	Pie
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

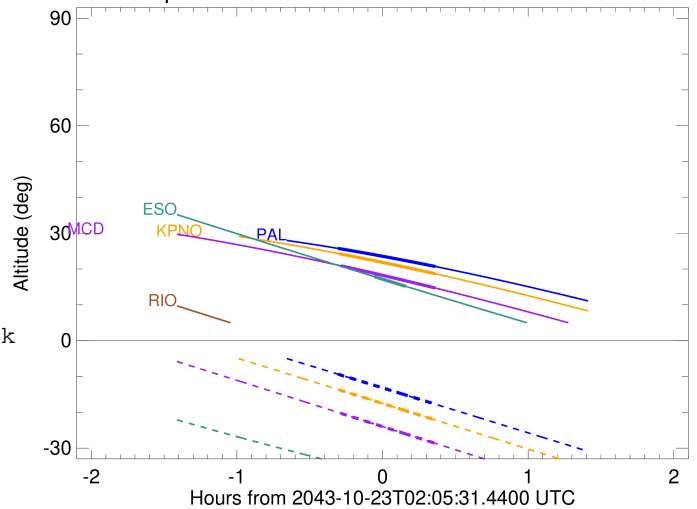


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-23T02:07:15.690
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4069373215403749632
2Mass ID (if available) : 17545187-2323240
ICRS Star Coord at Epoch: 17h 54m 51.86948s -23:23:24.25897s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.644
G magnitude          : 14.176
RP magnitude         : 12.983
BP magnitude         : 15.728
DUPflag             : 0
Distance (au)       : 5.651
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.14
Sun-Target sep (deg) : 59.87
Sun-Moon sep (deg)  : 173.86
B (ring opening deg) : -2.11
PA of pole (deg)    : -0.28
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 15.418
C/A sky separation (km): 63185.4
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
    
```



Jupiter 2043-10-23T02:05:31 K9.64 G14.18

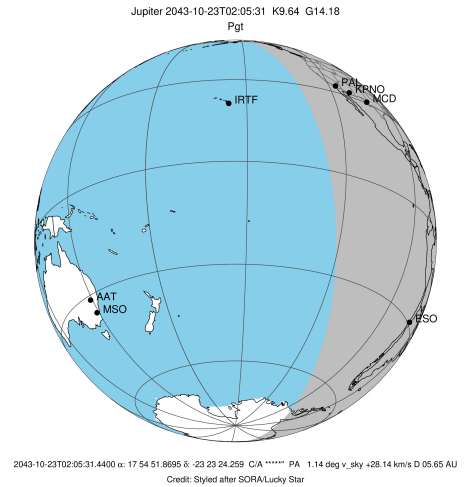


x: target alt < 5.0 deg or sun > -5.0 deg

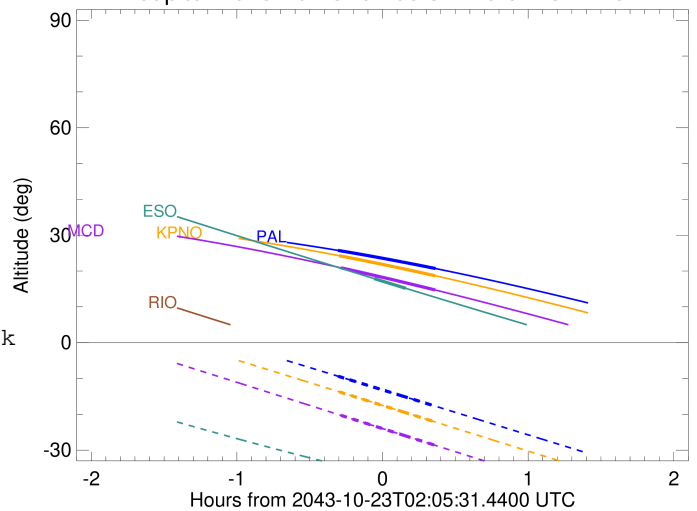
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-23T01:47:14.169	25.74	-9.37	71487.1	-63.29	-66.11
Jupiter	E	2043-10-23T02:27:16.101	20.70	-17.72	71487.3	-60.81	-63.81

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-23T02:07:30.300
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       : 4069373215403749632
2Mass ID (if available) : 17545187-2323240
ICRS Star Coord at Epoch: 17h 54m 51.86948s -23:23:24.25897s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.644
G magnitude          : 14.176
RP magnitude         : 12.983
BP magnitude         : 15.728
DUPflag             : 0
Distance (au)        : 5.651
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.14
Sun-Target sep (deg) : 59.87
Sun-Moon sep (deg)  : 173.79
B (ring opening deg) : -2.11
PA of pole (deg)    : -0.28
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 15.470
C/A sky separation (km) : 63398.9
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
    
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Jupiter 2043-10-23T02:05:31 K9.64 G14.18

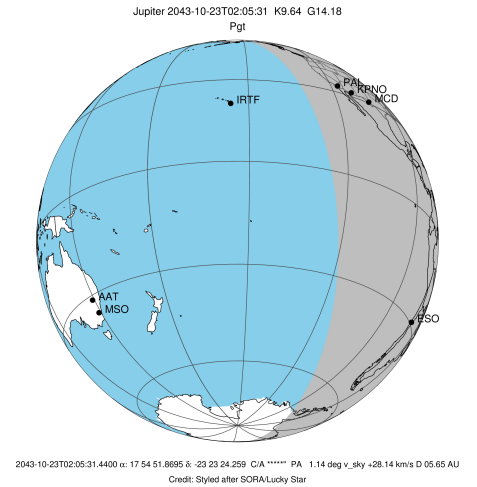


x: target alt < 5.0 deg or sun > -5.0 deg

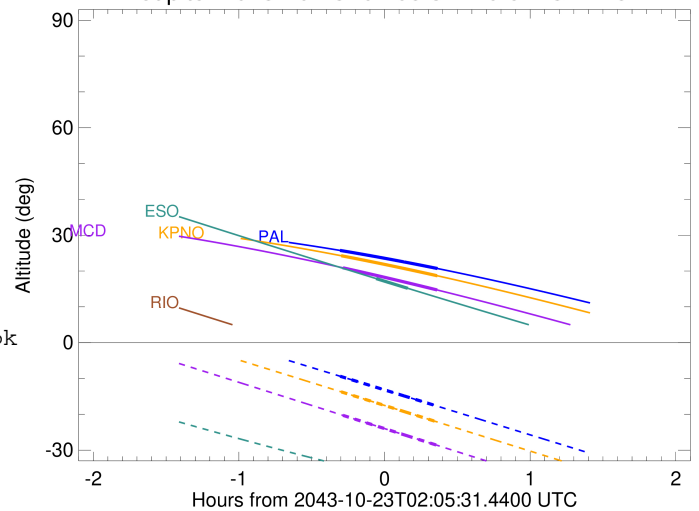
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-23T01:47:44.108	24.26	-13.74	71487.1	-63.63	-66.42
Jupiter	E	2043-10-23T02:27:15.300	18.68	-22.13	71487.3	-61.20	-64.18

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-23T02:07:48.920
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       : 4069373215403749632
2Mass ID (if available) : 17545187-2323240
ICRS Star Coord at Epoch: 17h 54m 51.86948s -23:23:24.25897s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.644
G magnitude          : 14.176
RP magnitude         : 12.983
BP magnitude         : 15.728
DUPflag             : 0
Distance (au)        : 5.651
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.14
Sun-Target sep (deg) : 59.87
Sun-Moon sep (deg)   : 173.69
B (ring opening deg) : -2.11
PA of pole (deg)     : -0.28
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 15.541
C/A sky separation (km) : 63691.0
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
    
```



Jupiter 2043-10-23T02:05:31 K9.64 G14.18

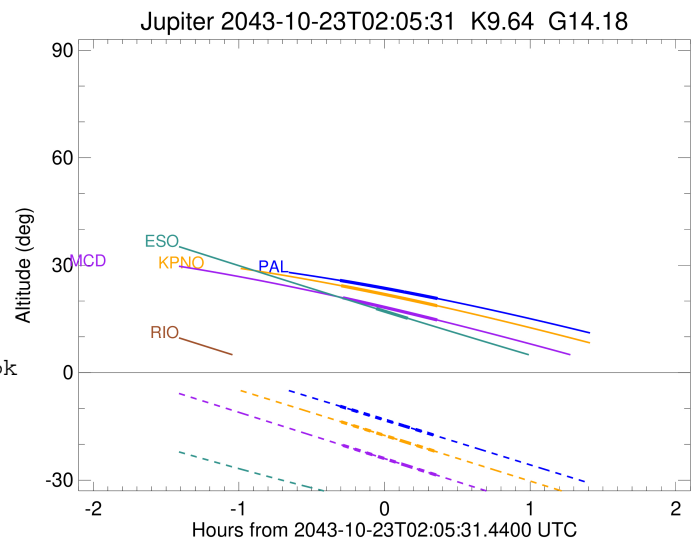
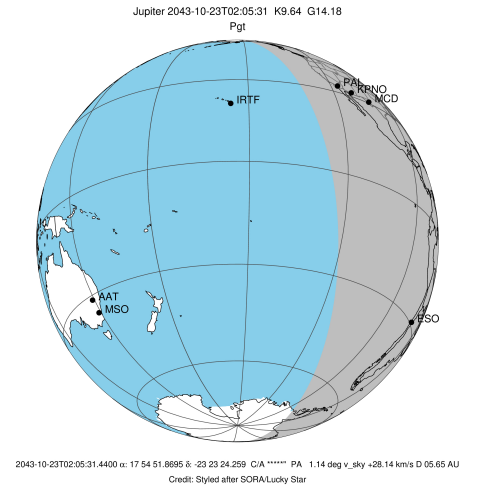


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-23T01:48:24.413	20.89	-20.29	71487.0	-64.11	-66.86
Jupiter	E	2043-10-23T02:27:12.129	14.71	-28.64	71487.2	-61.74	-64.68

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-23T02:08:35.230
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4069373215403749632
2Mass ID (if available) : 17545187-2323240
ICRS Star Coord at Epoch: 17h 54m 51.86948s -23:23:24.25897s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.644
G magnitude          : 14.176
RP magnitude         : 12.983
BP magnitude         : 15.728
DUPflag             : 0
Distance (au)        : 5.651
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.14
Sun-Target sep (deg) : 59.87
Sun-Moon sep (deg)   : 172.74
B (ring opening deg) : -2.11
PA of pole (deg)     : -0.28
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 17.236
C/A sky separation (km) : 70636.1
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	2043-10-23T02:02:03.969	17.89	-36.53	71486.0	-81.98	-82.92
Jupiter	E	2043-10-23T02:15:06.328	15.17	-38.53	71486.1	-79.83	-81.02