

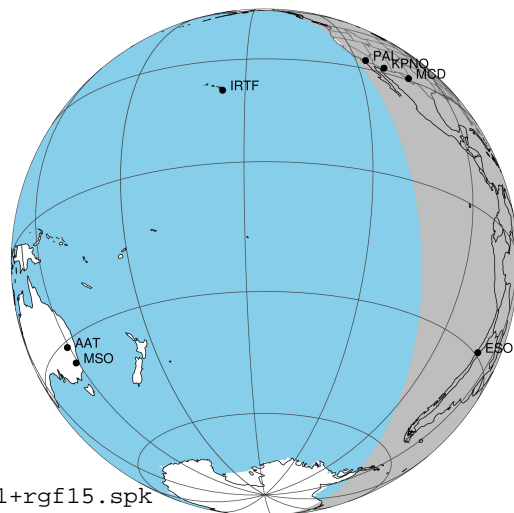
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-11-02T01:01:26.810
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4069222857165892096
 2Mass ID (if available) : 18022360-2324401

Jupiter 2043-11-02T01:01:26 K9.61 G14.55 Pgt

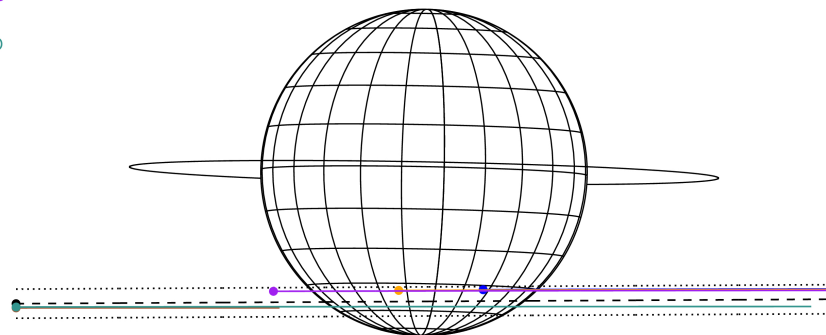
ICRS Star Coord at Epoch: 18h 02m 23.61094s -23:24:40.20102s

RUWE (>1.4 is poor) : 0.94
 K magnitude : 9.614
 G magnitude : 14.553
 RP magnitude : 13.210
 BP magnitude : 16.669
 DUPflag : 0
 Distance (au) : 5.776
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 31.74
 Sun-Target sep (deg) : 51.66
 Sun-Moon sep (deg) : 49.44
 B (ring opening deg) : -2.07
 PA of pole (deg) : -1.09
 Pole direction: RA (deg): 268.05676
 Dec (deg): 64.49731
 C/A sky separation (") : 13.484
 C/A sky separation (km) : 56487.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-11-02T01:01:26 K9.61 G14.55
 Pgt



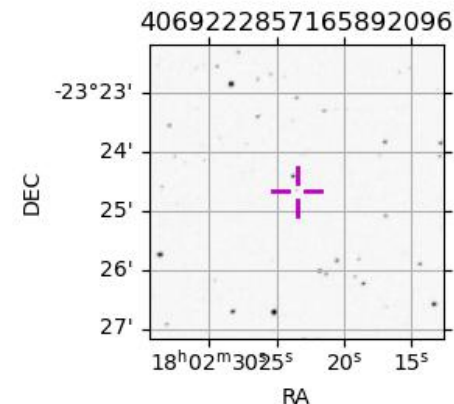
Earth
 PAL
 KPNO
 MCD
 RIO
 ESO



2043-11-02T01:01:26.8100 α: 18 02 23.6109 β: -23 24 40.201 C/A ***** PA 0.31 deg v_sky +31.74 km/s D 05.78 AU
 Credit: Styled after SORA/Lucky Star

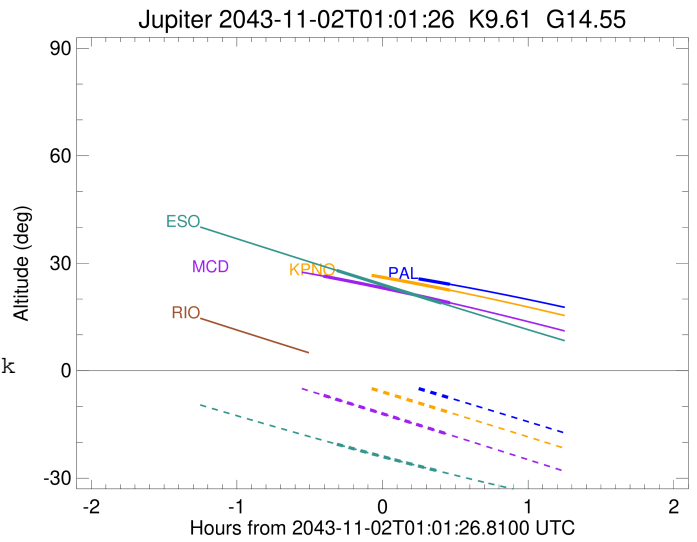
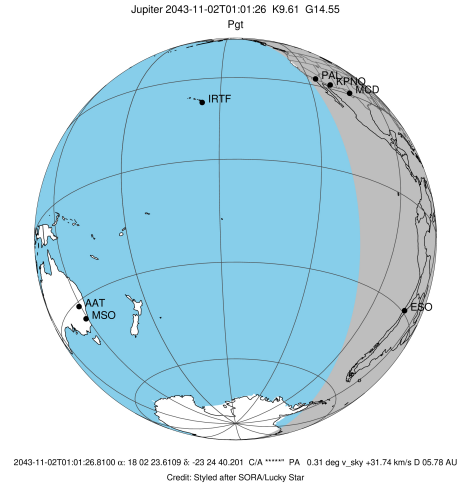
Observable events with sun below -5 deg and altitude above 5 deg

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	+	NOV 02 01:29 - NOV 02 01:29	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	NOV 02 01:29 - NOV 02 01:29	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	NOV 02 00:37 - NOV 02 01:29	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	+ +	NOV 02 00:42 - NOV 02 01:25	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             : 2043-11-02T01:02:43.790
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        : 4069222857165892096
2Mass ID (if available) : 18022360-2324401
ICRS Star Coord at Epoch: 18h 02m 23.61094s -23:24:40.20102s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.614
G magnitude           : 14.553
RP magnitude          : 13.210
BP magnitude          : 16.669
DUPflag              : 0
Distance (au)         : 5.776
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 31.74
Sun-Target sep (deg)  : 51.66
Sun-Moon sep (deg)    : 50.03
B (ring opening deg) : -2.07
PA of pole (deg)      : -1.09
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 12.276
C/A sky separation (km) : 51427.0
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
    
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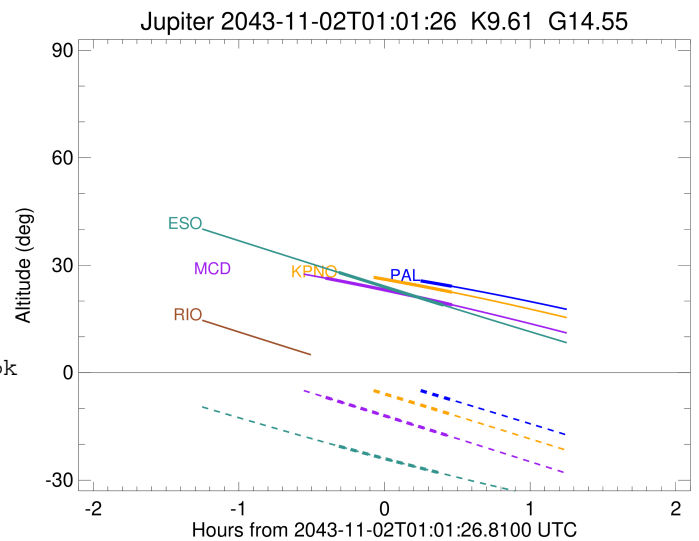
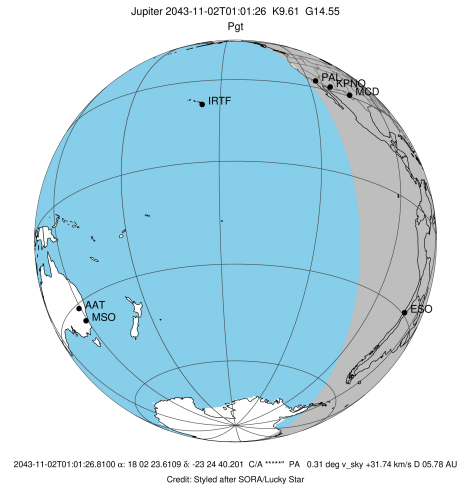


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-11-02T00:36:22.012	29.59	3.01x	71488.8	-47.25	-50.91
Jupiter	E	2043-11-02T01:29:04.134	24.13	-7.59	71489.1	-44.71	-48.41

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-11-02T01:02:57.870
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      : 4069222857165892096
2Mass ID (if available) : 18022360-2324401
ICRS Star Coord at Epoch: 18h 02m 23.61094s -23:24:40.20102s
RUWE (>1.4 is poor) : 0.94
K magnitude         : 9.614
G magnitude         : 14.553
RP magnitude        : 13.210
BP magnitude        : 16.669
DUPflag            : 0
Distance (au)      : 5.776
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 31.74
Sun-Target sep (deg) : 51.66
Sun-Moon sep (deg)  : 50.06
B (ring opening deg) : -2.07
PA of pole (deg)    : -1.09
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 12.322
C/A sky separation (km) : 51620.9
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
    
```

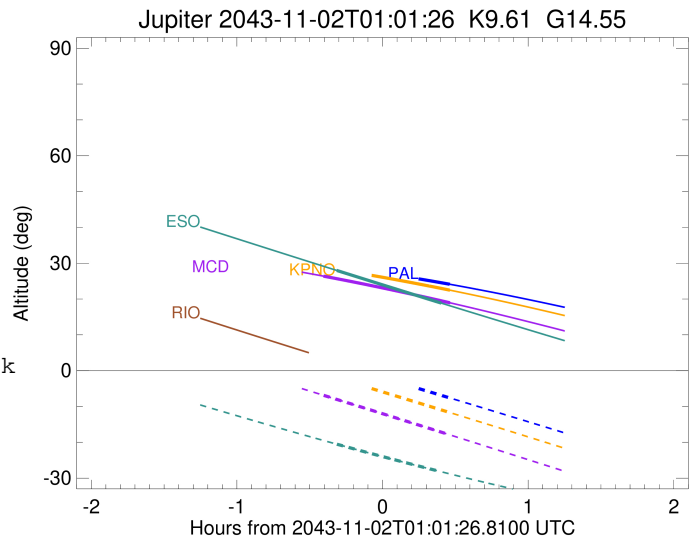
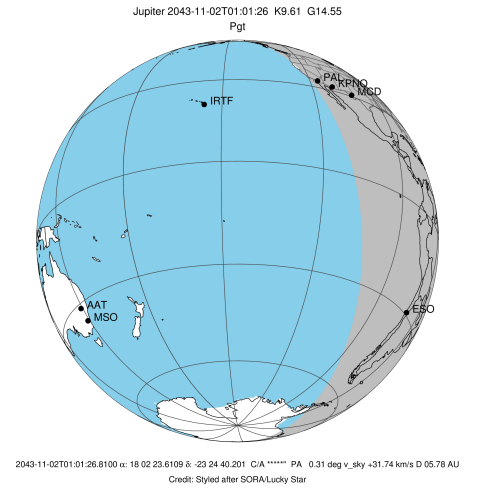


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-11-02T00:36:43.105	28.84	-0.85x	71488.8	-47.45	-51.11
Jupiter	E	2043-11-02T01:29:11.025	22.47	-11.69	71489.1	-44.96	-48.66

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-11-02T01:03:16.460
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        : 4069222857165892096
2Mass ID (if available) : 18022360-2324401
ICRS Star Coord at Epoch: 18h 02m 23.61094s -23:24:40.20102s
RUWE (>1.4 is poor)  : 0.94
K magnitude           : 9.614
G magnitude           : 14.553
RP magnitude          : 13.210
BP magnitude          : 16.669
DUPflag              : 0
Distance (au)         : 5.776
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 31.74
Sun-Target sep (deg)  : 51.66
Sun-Moon sep (deg)    : 50.08
B (ring opening deg)  : -2.07
PA of pole (deg)      : -1.09
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 12.386
C/A sky separation (km) : 51887.5
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
    
```

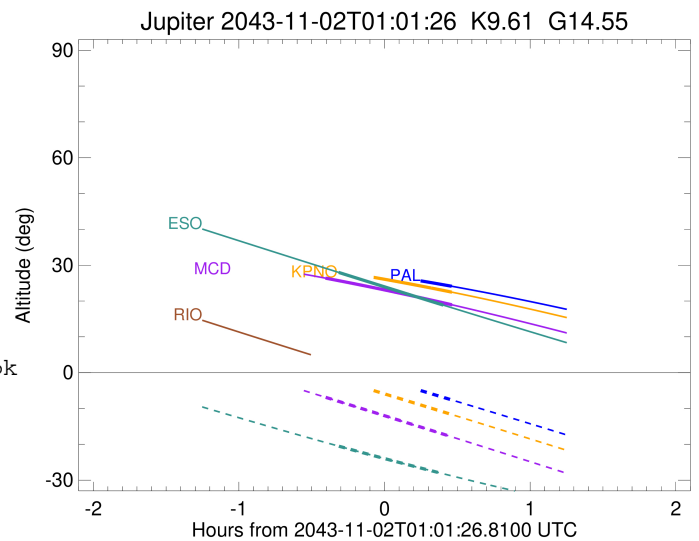
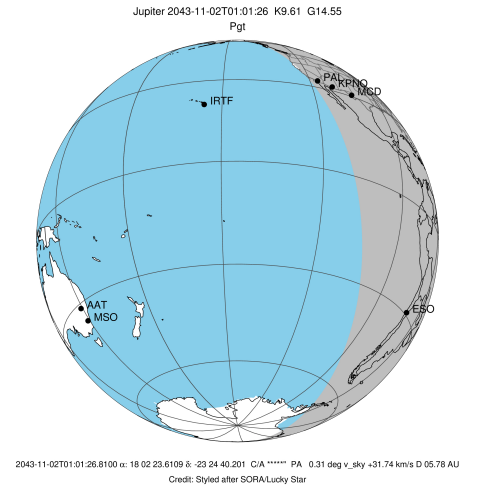


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-11-02T00:37:11.867	26.37	-6.88	71488.8	-47.72	-51.37
Jupiter	E	2043-11-02T01:29:19.213	18.93	-17.95	71489.0	-45.30	-49.00

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2043-11-02T01:04:07.490
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        : 4069222857165892096
2Mass ID (if available) : 18022360-2324401
ICRS Star Coord at Epoch: 18h 02m 23.61094s -23:24:40.20102s
RUWE (>1.4 is poor)  : 0.94
K magnitude           : 9.614
G magnitude           : 14.553
RP magnitude          : 13.210
BP magnitude          : 16.669
DUPflag              : 0
Distance (au)         : 5.776
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 31.74
Sun-Target sep (deg)  : 51.66
Sun-Moon sep (deg)    : 50.19
B (ring opening deg)  : -2.07
PA of pole (deg)      : -1.09
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 14.028
C/A sky separation (km) : 58765.9
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	2043-11-02T00:42:40.064	27.96	-20.53	71487.9	-56.36	-59.66
Jupiter	E	2043-11-02T01:25:33.201	18.88	-28.20	71488.1	-54.12	-57.53