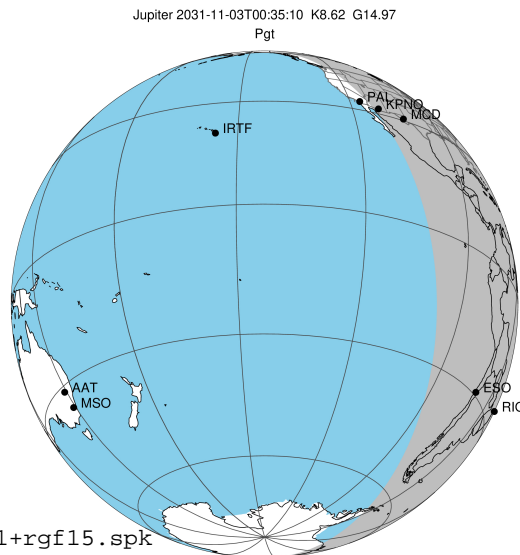


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-11-03T00:35:10.790
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068782399747870080
 2Mass ID (if available) : 17472346-2317381

Jupiter 2031-11-03T00:35:10 K8.62 G14.97 Pgt

ICRS Star Coord at Epoch: 17h 47m 23.45236s -23:17:38.35436s

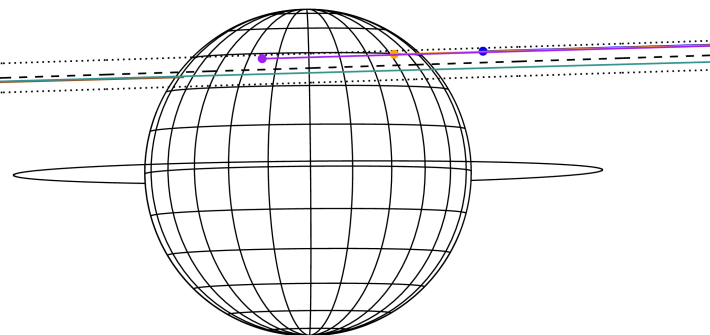
RUWE (>1.4 is poor) : 1.05
 K magnitude : 8.625
 G magnitude : 14.973
 RP magnitude : 13.438
 BP magnitude : 18.419
 DUPflag : 0
 Distance (au) : 5.855
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 33.49
 Sun-Target sep (deg) : 47.16
 Sun-Moon sep (deg) : 175.13
 B (ring opening deg) : -2.20
 PA of pole (deg) : 0.52
 Pole direction: RA (deg): 268.05680
 Dec (deg): 64.49652
 C/A sky separation (") : 10.759
 C/A sky separation (km) : 45685.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



2031-11-03T00:35:10.7900 a: 17 47 23.4524 s: -23 17 38.354 C/A ***** PA 181.82 deg v_sky +33.49 km/s D 05.85 AU
 Credit: Styled after SORA/Lucky Star

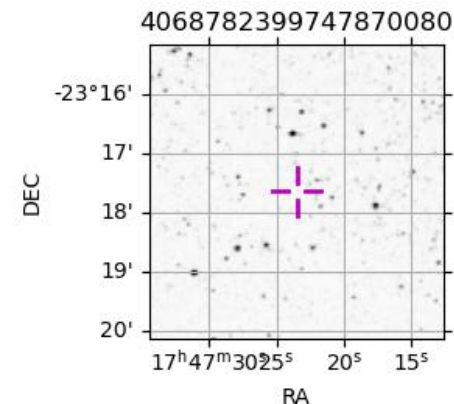
Earth

PAL
 KPNO
 MCD
 RIO
 ESO



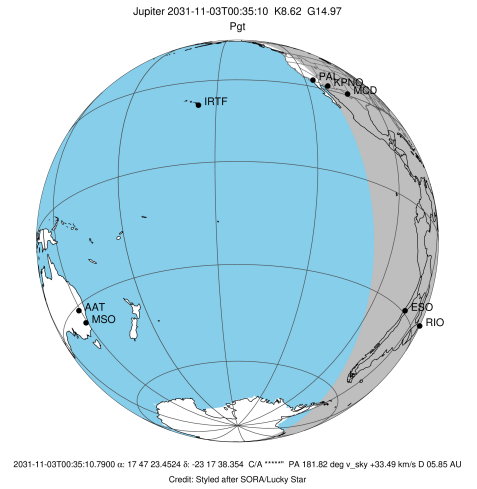
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	NOV 03 01:01 - NOV 03 01:01	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	NOV 03 01:02 - NOV 03 01:02	Pne
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	+	NOV 03 00:09 - NOV 03 00:09	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	NOV 03 00:09 - NOV 03 01:06	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

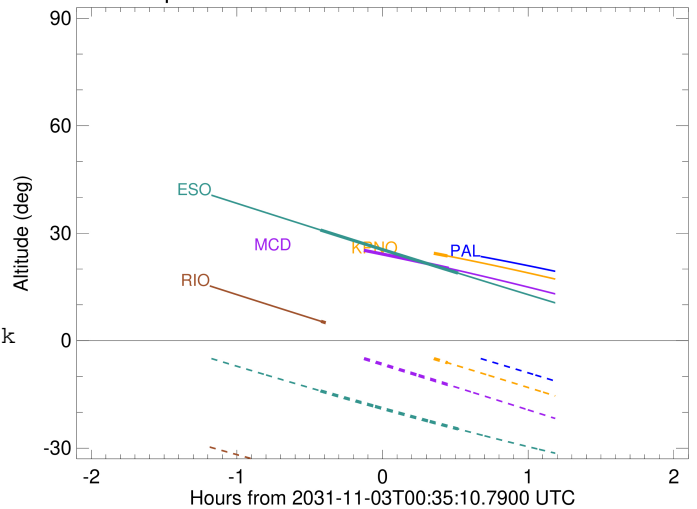


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-11-03T00:36:36.460
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      : 4068782399747870080
2Mass ID (if available) : 17472346-2317381
ICRS Star Coord at Epoch: 17h 47m 23.45236s -23:17:38.35436s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 8.625
G magnitude          : 14.973
RP magnitude         : 13.438
BP magnitude         : 18.419
DUPflag             : 0
Distance (au)        : 5.855
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.49
Sun-Target sep (deg) : 47.16
Sun-Moon sep (deg)   : 175.00
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 11.930
C/A sky separation (km) : 50661.5
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
    
```



Jupiter 2031-11-03T00:35:10 K8.62 G14.97

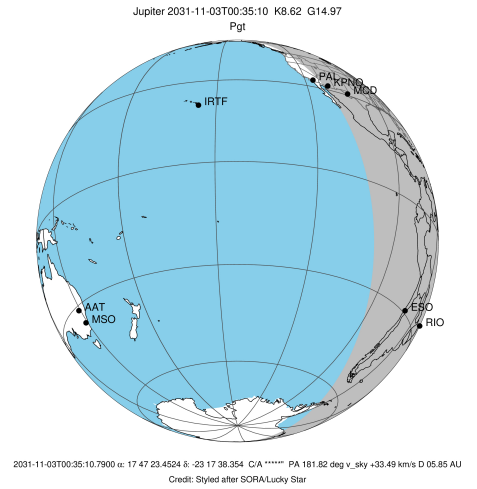


x: target alt < 5.0 deg or sun > -5.0 deg

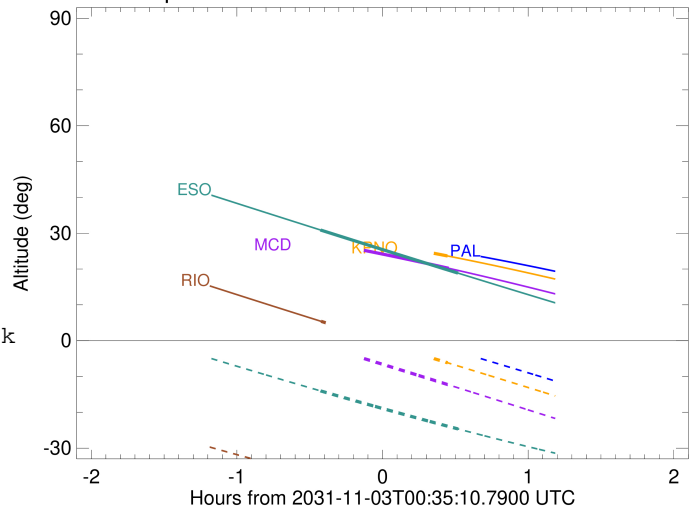
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-03T00:11:13.944	29.57	4.15x	71488.8	43.90	47.61
Jupiter	E	2031-11-03T01:01:57.582	23.65	-6.16	71488.5	46.24	49.93

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-11-03T00:36:56.400
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       : 4068782399747870080
2Mass ID (if available) : 17472346-2317381
ICRS Star Coord at Epoch: 17h 47m 23.45236s -23:17:38.35436s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 8.625
G magnitude           : 14.973
RP magnitude          : 13.438
BP magnitude          : 18.419
DUPflag              : 0
Distance (au)        : 5.855
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.49
Sun-Target sep (deg) : 47.16
Sun-Moon sep (deg)   : 175.08
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 11.874
C/A sky separation (km) : 50420.8
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 2031-11-03T00:35:10 K8.62 G14.97

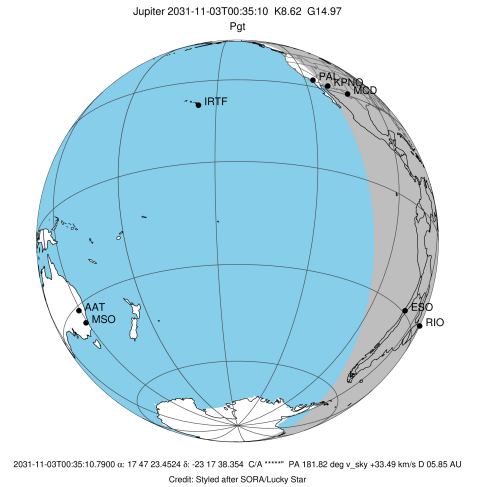


x: target alt < 5.0 deg or sun > -5.0 deg

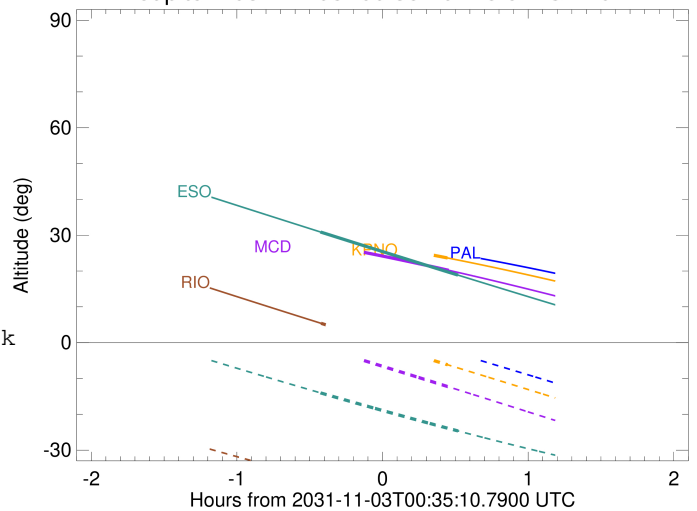
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-03T00:11:27.752	27.28	-1.65x	71488.8	43.66	47.37
Jupiter	E	2031-11-03T01:02:23.408	20.21	-12.33	71488.6	45.94	49.63

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-11-03T00:38:11.770
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : RIO
Location              : Rio de Janeiro
Latitude (deg)        : -22.89506
E. Longitude (deg)    : 316.77708
Altitude (km)         : 0.033
Gaia source ID        : 4068782399747870080
2Mass ID (if available) : 17472346-2317381
ICRS Star Coord at Epoch: 17h 47m 23.45236s -23:17:38.35436s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 8.625
G magnitude           : 14.973
RP magnitude          : 13.438
BP magnitude          : 18.419
DUPflag              : 0
Distance (au)         : 5.855
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.49
Sun-Target sep (deg) : 47.16
Sun-Moon sep (deg)   : 176.02
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 10.159
C/A sky separation (km) : 43139.0
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 2031-11-03T00:35:10 K8.62 G14.97

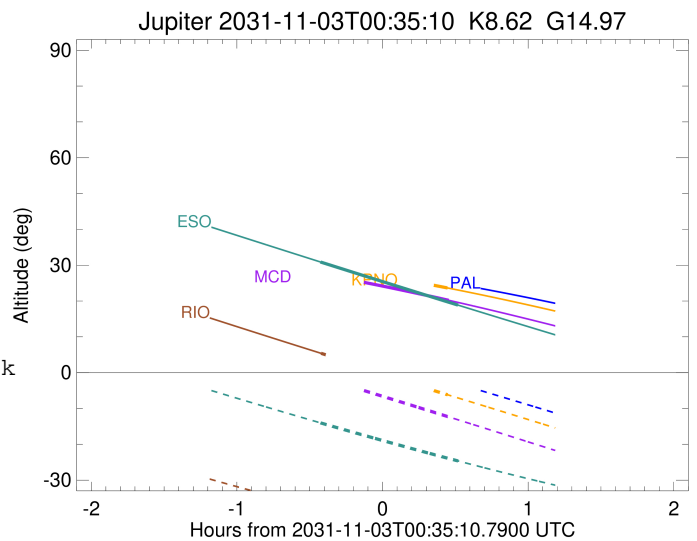
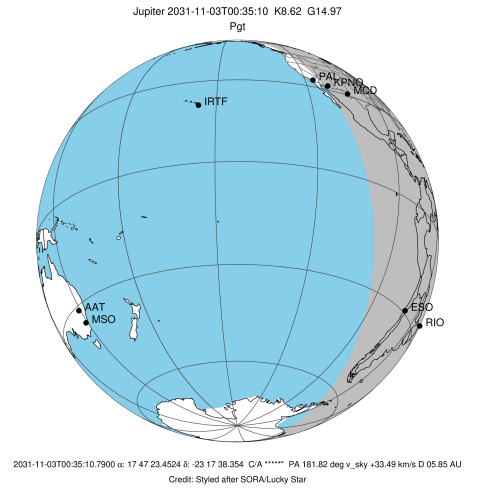


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-03T00:09:51.893	5.40	-37.98	71489.7	36.07	39.70
Jupiter	E	2031-11-03T01:06:28.595	-6.38x	-46.35	71489.5	38.10	41.78

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-11-03T00:37:58.020
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       : 4068782399747870080
2Mass ID (if available) : 17472346-2317381
ICRS Star Coord at Epoch: 17h 47m 23.45236s -23:17:38.35436s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 8.625
G magnitude           : 14.973
RP magnitude         : 13.438
BP magnitude         : 18.419
DUPflag             : 0
Distance (au)        : 5.855
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.49
Sun-Target sep (deg) : 47.16
Sun-Moon sep (deg)   : 175.95
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 10.271
C/A sky separation (km) : 43616.3
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	2031-11-03T00:09:38.951	30.89	-14.02	71489.6	36.52	40.16
Jupiter	E	2031-11-03T01:06:14.227	18.87	-24.63	71489.4	38.60	42.29