

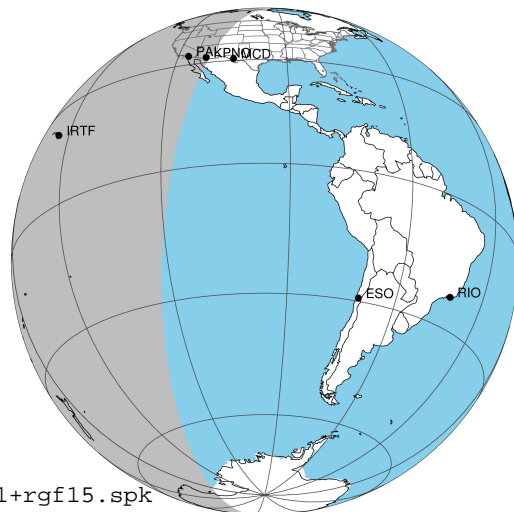
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-19T14:02:35.610
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116710313384406272
 2Mass ID (if available) : 17344668-2246209

Jupiter 2031-02-19T14:02:35 K9.65 G14.19 Pgt

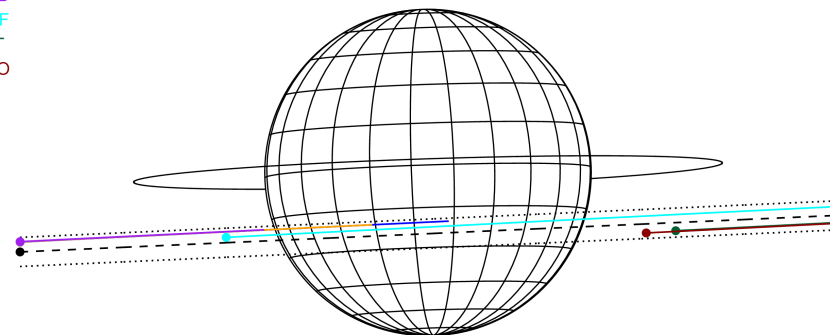
ICRS Star Coord at Epoch: 17h 34m 46.68150s -22:46:20.97969s

RUWE (>1.4 is poor) : 0.91
 K magnitude : 9.648
 G magnitude : 14.191
 RP magnitude : 13.005
 BP magnitude : 15.715
 DUPflag : 0
 Distance (au) : 5.642
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 25.22
 Sun-Target sep (deg) : 66.10
 Sun-Moon sep (deg) : 38.15
 B (ring opening deg) : -2.67
 PA of pole (deg) : 1.88
 Pole direction: RA (deg): 268.05702
 Dec (deg): 64.49651
 C/A sky separation (") : 6.543
 C/A sky separation (km) : 26772.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-02-19T14:02:35 K9.65 G14.19
 Pgt



Earth
 PAL
 KPNO
 MCD
 IRTF
 AAT
 MSO

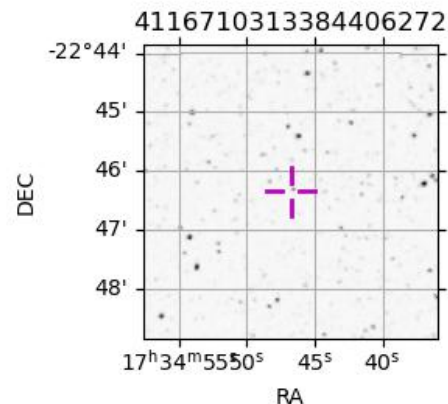


2031-02-19T14:02:35:6100 a: 17 34 46.6815 s: -22 46 20.980 C/A 6.553" PA 2.56 deg v_sky +25.22 km/s D 05.64 AU

Credit: Styled after SORA/Lucky Star

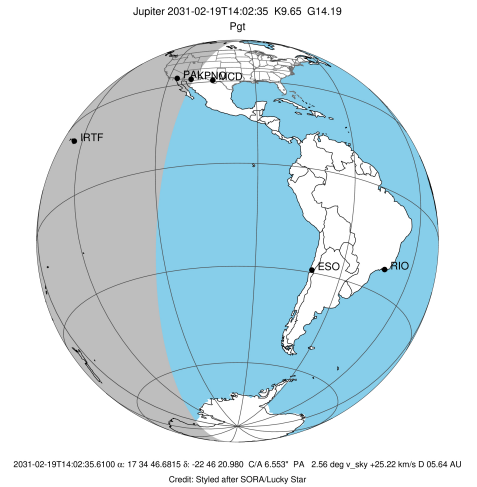
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 19 13:15 - FEB 19 13:15	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 19 13:15 - FEB 19 13:15	Pin
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	+ +	FEB 19 13:14 - FEB 19 14:44	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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

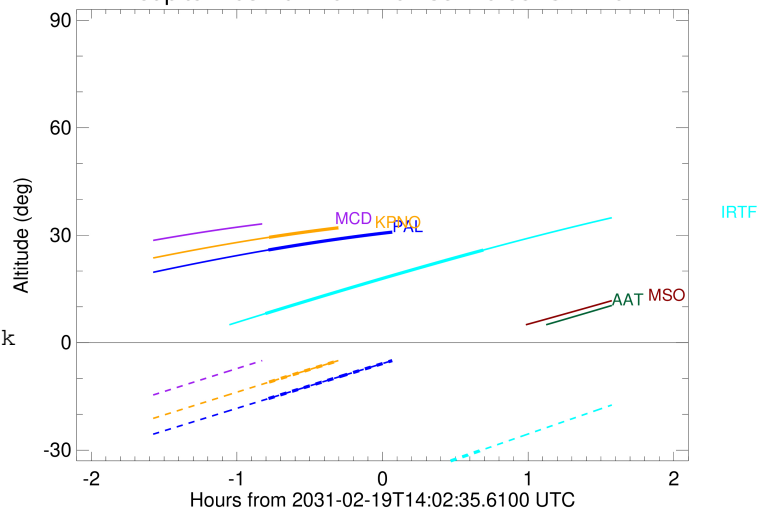


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-19T14:01:12.490
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4116710313384406272
2Mass ID (if available) : 17344668-2246209
ICRS Star Coord at Epoch: 17h 34m 46.68150s -22:46:20.97969s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 9.648
G magnitude          : 14.191
RP magnitude         : 13.005
BP magnitude         : 15.715
DUPflag             : 0
Distance (au)       : 5.642
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.22
Sun-Target sep (deg) : 66.10
Sun-Moon sep (deg)  : 38.66
B (ring opening deg) : -2.67
PA of pole (deg)    : 1.88
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 5.308
C/A sky separation (km) : 21717.8
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
    
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Jupiter 2031-02-19T14:02:35 K9.65 G14.19

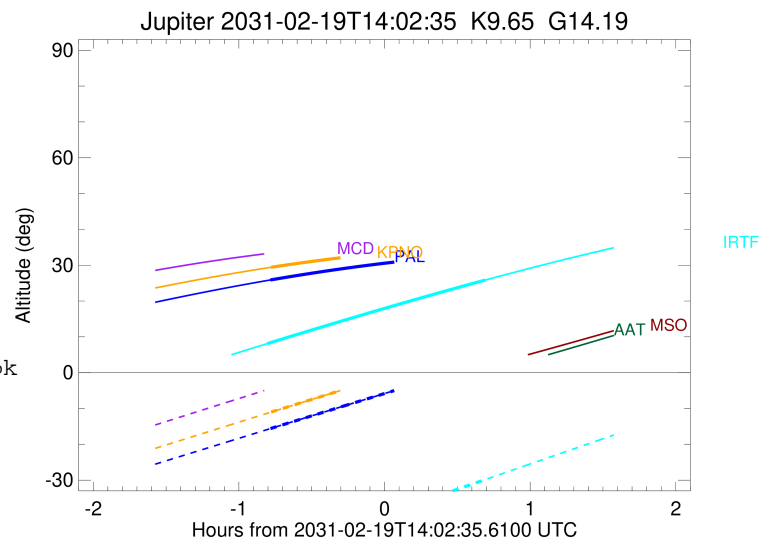
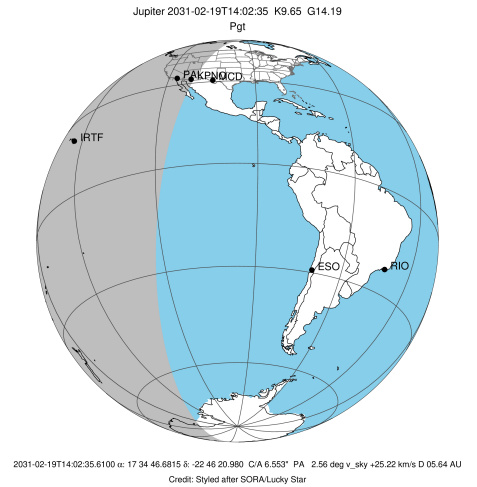


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-19T13:15:35.955	25.88	-15.61	71491.0	-18.54	-20.96
Jupiter	E	2031-02-19T14:46:53.908	33.23	3.22x	71491.2	-16.86	-19.10

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-19T14:01:29.840
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      : 4116710313384406272
2Mass ID (if available) : 17344668-2246209
ICRS Star Coord at Epoch: 17h 34m 46.68150s -22:46:20.97969s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 9.648
G magnitude          : 14.191
RP magnitude         : 13.005
BP magnitude         : 15.715
DUPflag             : 0
Distance (au)       : 5.642
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.22
Sun-Target sep (deg) : 66.10
Sun-Moon sep (deg)  : 38.64
B (ring opening deg) : -2.67
PA of pole (deg)    : 1.88
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 5.310
C/A sky separation (km) : 21726.0
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
    
```

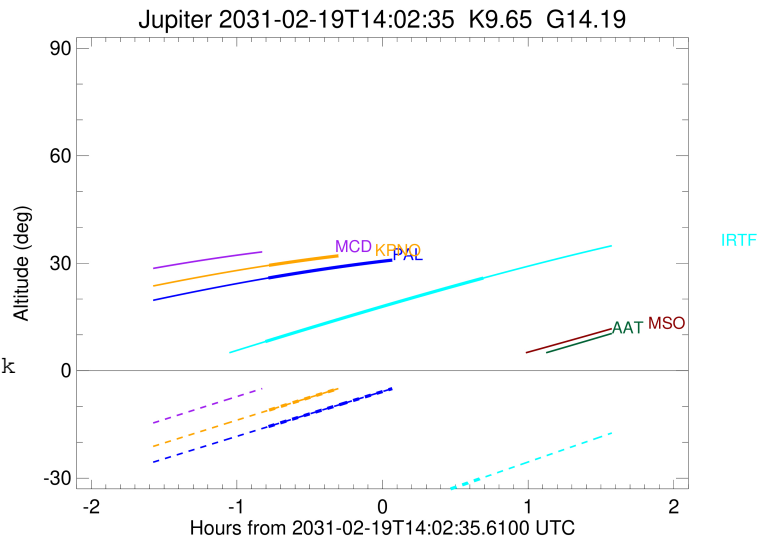
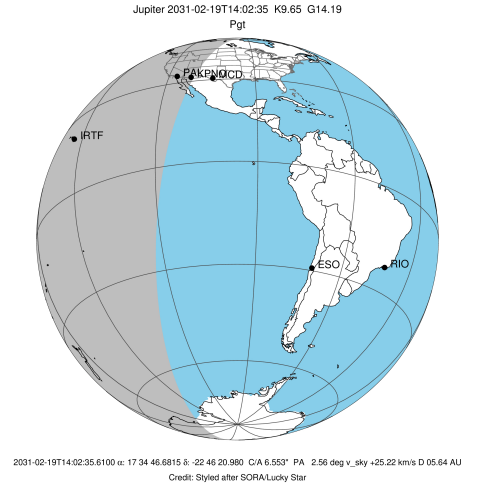


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-19T13:15:51.109	29.41	-11.01	71491.0	-18.52	-20.94
Jupiter	E	2031-02-19T14:47:12.759	35.24	7.93x	71491.2	-16.89	-19.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-19T13:59:09.250
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      : 4116710313384406272
2Mass ID (if available) : 17344668-2246209
ICRS Star Coord at Epoch: 17h 34m 46.68150s -22:46:20.97969s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 9.648
G magnitude          : 14.191
RP magnitude         : 13.005
BP magnitude         : 15.715
DUPflag             : 0
Distance (au)       : 5.642
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.22
Sun-Target sep (deg) : 66.10
Sun-Moon sep (deg)  : 38.95
B (ring opening deg) : -2.67
PA of pole (deg)    : 1.88
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 5.832
C/A sky separation (km) : 23863.8
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
    
```



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	2031-02-19T13:14:20.196	8.12	-50.94	71490.8	-20.53	-23.16
Jupiter	E	2031-02-19T14:44:07.954	25.85	-29.83	71491.0	-18.46	-20.87