

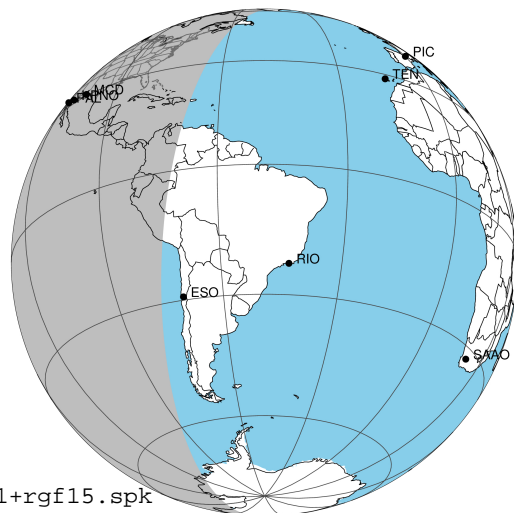
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-19T10:56:33.220
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116710489579426688
 2Mass ID (if available) : 17344168-2246260

Jupiter 2031-02-19T10:56:33 K9.12 G14.20 Pgt

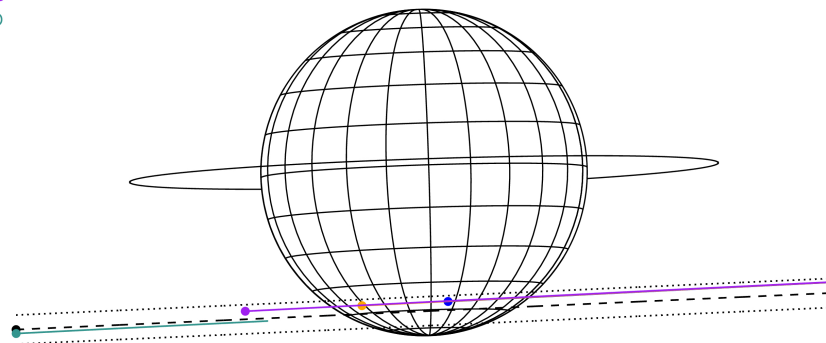
ICRS Star Coord at Epoch: 17h 34m 41.68066s -22:46:26.18654s

RUWE (>1.4 is poor) : 0.88
 K magnitude : 9.123
 G magnitude : 14.200
 RP magnitude : 12.879
 BP magnitude : 16.179
 DUPflag : 0
 Distance (au) : 5.644
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 25.27
 Sun-Target sep (deg) : 65.99
 Sun-Moon sep (deg) : 36.28
 B (ring opening deg) : -2.66
 PA of pole (deg) : 1.89
 Pole direction: RA (deg): 268.05702
 Dec (deg): 64.49651
 C/A sky separation (") : 14.838
 C/A sky separation (km) : 60731.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-02-19T10:56:33 K9.12 G14.20
 Pgt



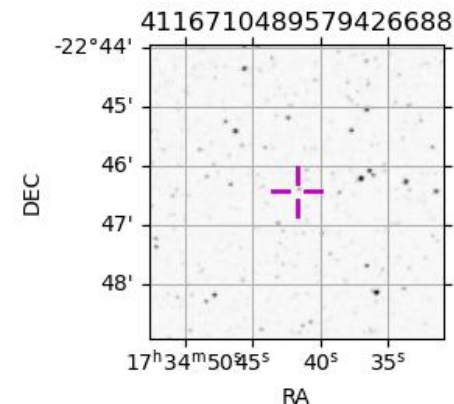
Earth
 PAL
 KPNO
 MCD
 ESO



2031-02-19T10:56:33.2200 α: 17 34 41.6807 δ: -22 46 26.187 C/A ***** PA 2.57 deg v_sky +25.27 km/s D 05.64 AU
 Credit: Styled after SORA/Lucky Star

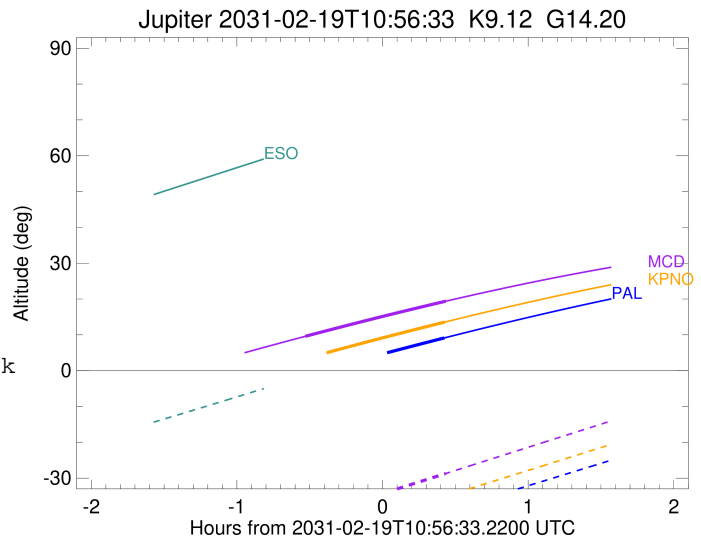
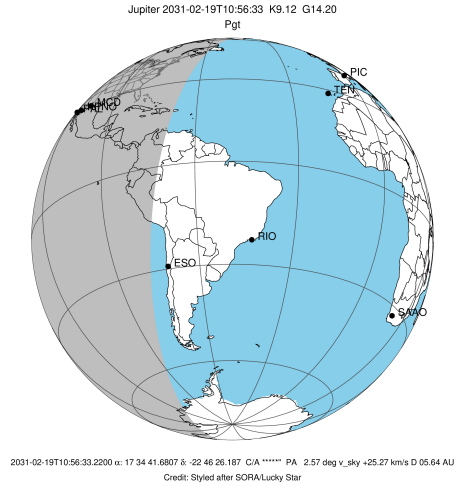
Observable events with sun below -5 deg and altitude above 5 deg

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 11:22 - FEB 19 11:22	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 19 11:22 - FEB 19 11:22	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	FEB 19 10:24 - FEB 19 11:22	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			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             : 2031-02-19T10:53:23.630
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        : 4116710489579426688
2Mass ID (if available) : 17344168-2246260
ICRS Star Coord at Epoch: 17h 34m 41.68066s -22:46:26.18654s
RUWE (>1.4 is poor) : 0.88
K magnitude           : 9.123
G magnitude           : 14.200
RP magnitude          : 12.879
BP magnitude          : 16.179
DUPflag              : 0
Distance (au)         : 5.644
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 25.27
Sun-Target sep (deg) : 65.99
Sun-Moon sep (deg)   : 36.91
B (ring opening deg) : -2.66
PA of pole (deg)     : 1.89
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation ("): 13.918
C/A sky separation (km): 56967.8
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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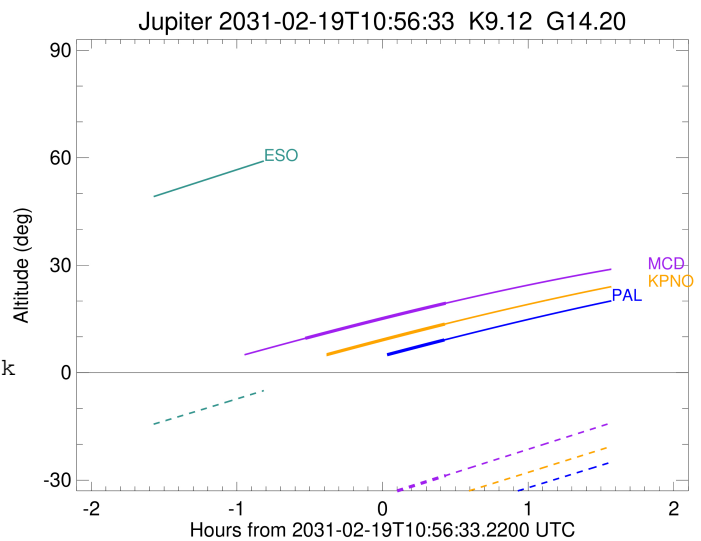
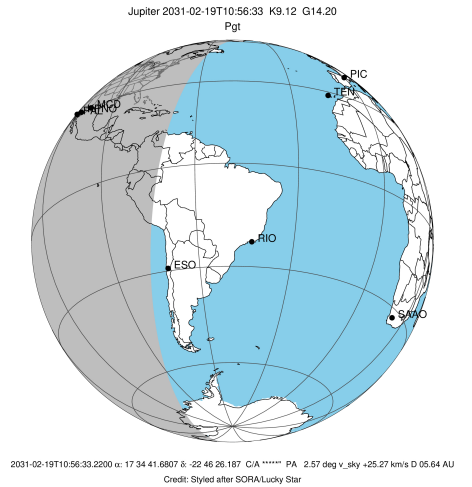


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-19T10:24:47.807	-1.17x	-50.53	71485.7	-53.77	-57.20
Jupiter	E	2031-02-19T11:22:03.151	9.14	-39.22	71486.0	-51.75	-55.27

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-19T10:53:28.330
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      : 4116710489579426688
2Mass ID (if available) : 17344168-2246260
ICRS Star Coord at Epoch: 17h 34m 41.68066s -22:46:26.18654s
RUWE (>1.4 is poor) : 0.88
K magnitude          : 9.123
G magnitude          : 14.200
RP magnitude         : 12.879
BP magnitude         : 16.179
DUPflag             : 0
Distance (au)       : 5.644
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.27
Sun-Target sep (deg) : 65.99
Sun-Moon sep (deg)  : 36.94
B (ring opening deg) : -2.66
PA of pole (deg)    : 1.89
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 13.900
C/A sky separation (km) : 56893.9
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
    
```

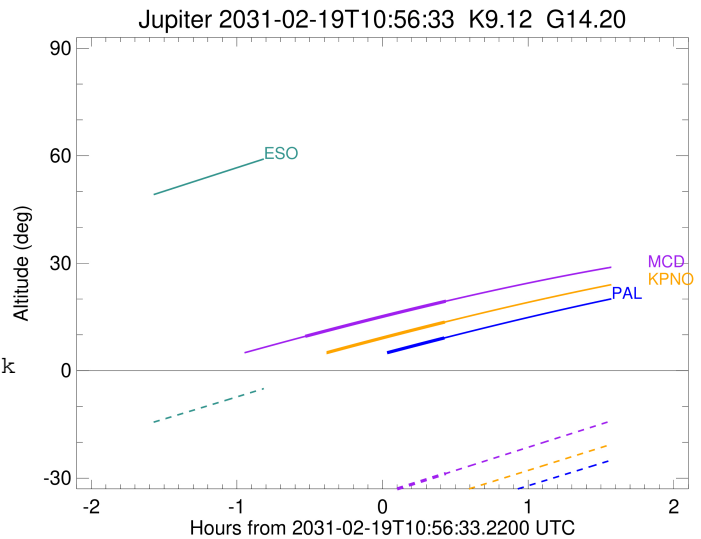
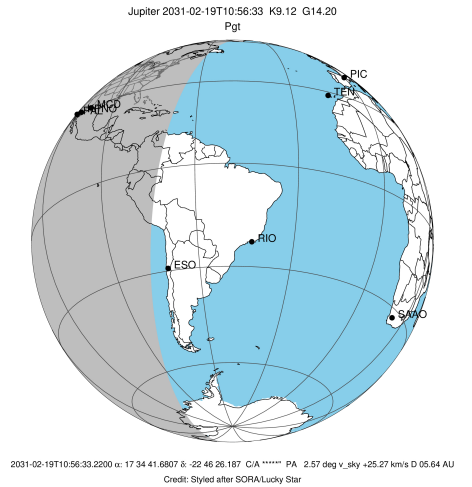


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-19T10:24:46.267	3.40x	-46.95	71485.7	-53.67	-57.11
Jupiter	E	2031-02-19T11:22:14.067	13.56	-35.09	71486.0	-51.66	-55.18

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-19T10:53:39.580
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       : 4116710489579426688
2Mass ID (if available) : 17344168-2246260
ICRS Star Coord at Epoch: 17h 34m 41.68066s -22:46:26.18654s
RUWE (>1.4 is poor) : 0.88
K magnitude           : 9.123
G magnitude           : 14.200
RP magnitude          : 12.879
BP magnitude          : 16.179
DUPflag              : 0
Distance (au)        : 5.644
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.27
Sun-Target sep (deg) : 65.99
Sun-Moon sep (deg)   : 36.97
B (ring opening deg) : -2.66
PA of pole (deg)     : 1.89
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 13.862
C/A sky separation (km) : 56737.6
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	2031-02-19T10:24:46.053	9.59	-41.05	71485.7	-53.46	-56.90
Jupiter	E	2031-02-19T11:22:36.649	19.38	-28.71	71486.0	-51.47	-55.00