

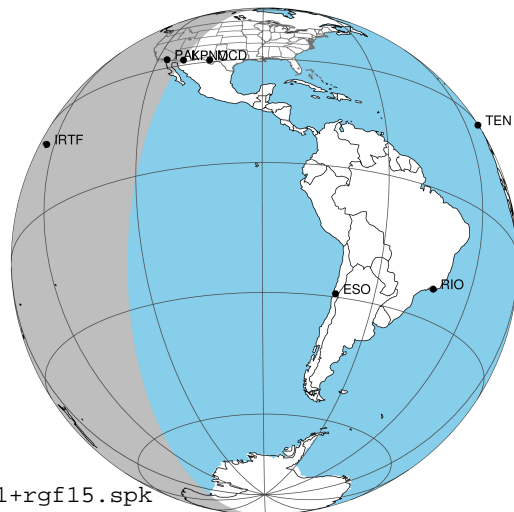
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-02-13T14:12:56.170
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068841945194257664
 2Mass ID (if available) : 17464137-2256466

Jupiter 2043-02-13T14:12:56 K9.70 G14.65 Pgt

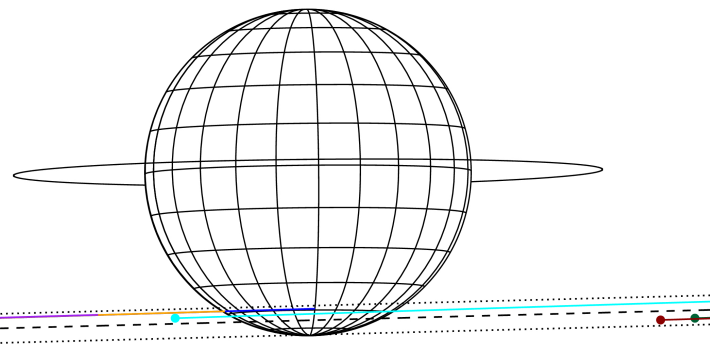
ICRS Star Coord at Epoch: 17h 46m 41.37934s -22:56:47.00411s

RUWE (>1.4 is poor) : 0.94
 K magnitude : 9.703
 G magnitude : 14.651
 RP magnitude : 13.378
 BP magnitude : 16.505
 DUPflag : 0
 Distance (au) : 5.778
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 29.32
 Sun-Target sep (deg) : 57.23
 Sun-Moon sep (deg) : 106.07
 B (ring opening deg) : -2.55
 PA of pole (deg) : 0.60
 Pole direction: RA (deg): 268.05661
 Dec (deg): 64.49732
 C/A sky separation (") : 15.450
 C/A sky separation (km) : 64744.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-02-13T14:12:56 K9.70 G14.65
 Pgt



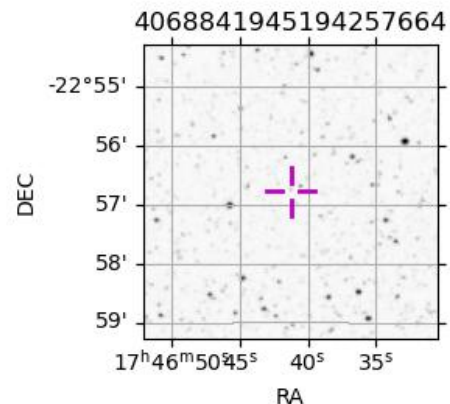
Earth
 PAL
 KPNO
 MCD
 IRTF
 AAT
 MSO



2043-02-13T14:12:56.1700 az: 17 46 41.3793 s: -22 56 47.004 C/A ***** PA 1.49 deg v_sky +29.32 km/s D 05.78 AU
 Credit: Styled after SORA/Lucky Star

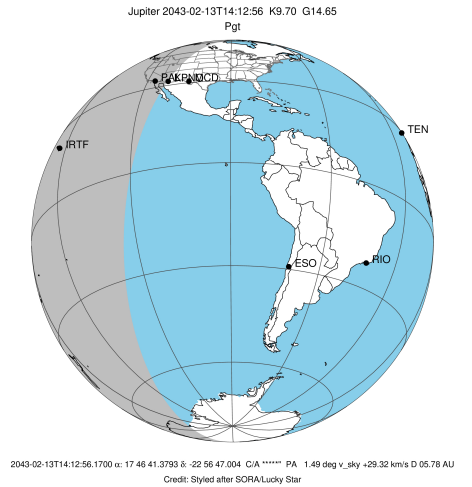
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 13 13:49 - FEB 13 13:49	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 13 13:49 - FEB 13 13:49	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 13 13:49 - FEB 13 14:30	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

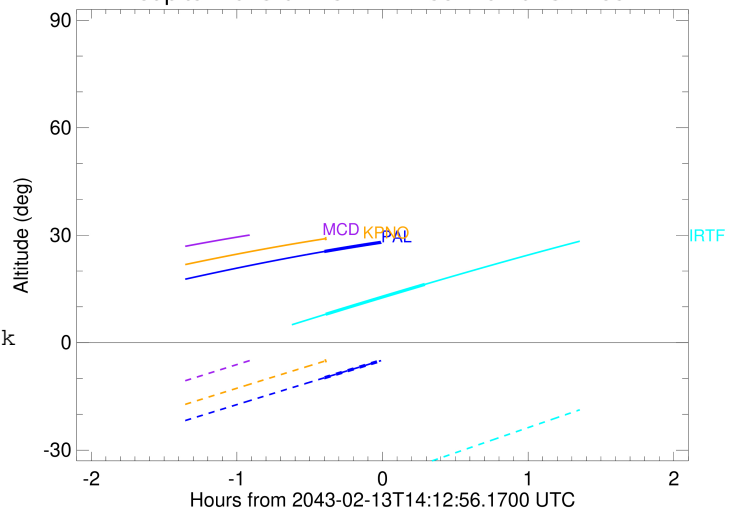


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-13T14:11:33.200
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4068841945194257664
2Mass ID (if available) : 17464137-2256466
ICRS Star Coord at Epoch: 17h 46m 41.37934s -22:56:47.00411s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.703
G magnitude           : 14.651
RP magnitude          : 13.378
BP magnitude          : 16.505
DUPflag              : 0
Distance (au)         : 5.778
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 29.32
Sun-Target sep (deg)  : 57.23
Sun-Moon sep (deg)   : 106.41
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.60
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 14.257
C/A sky separation (km) : 59745.8
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 2043-02-13T14:12:56 K9.70 G14.65

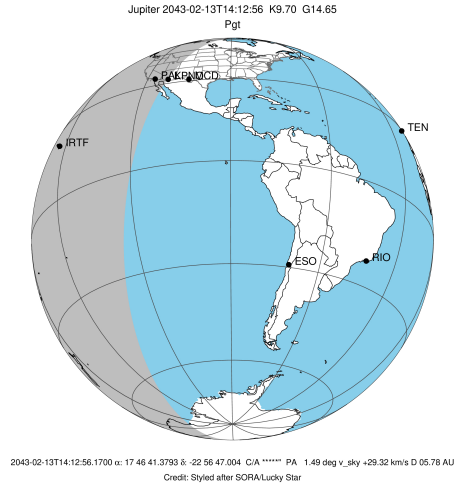


x: target alt < 5.0 deg or sun > -5.0 deg

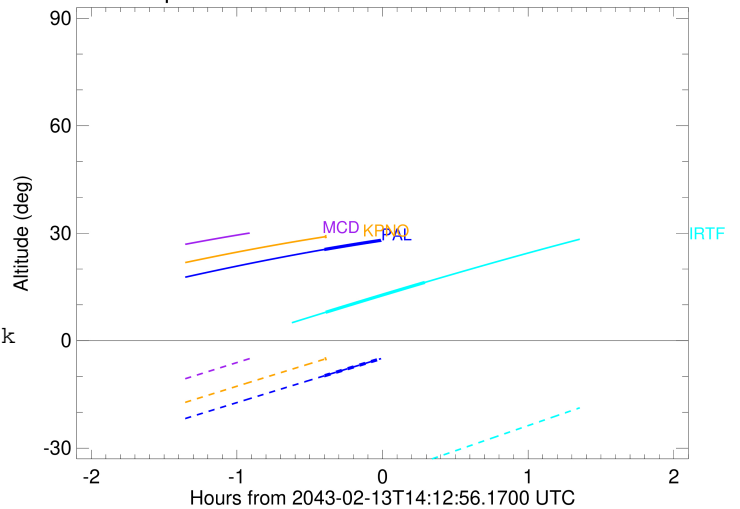
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-13T13:48:59.591	25.45	-9.80	71485.6	-57.67	-60.88
Jupiter	E	2043-02-13T14:34:07.993	30.03	-0.58x	71485.9	-55.58	-58.92

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-13T14:11:46.610
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        : 4068841945194257664
2Mass ID (if available) : 17464137-2256466
ICRS Star Coord at Epoch: 17h 46m 41.37934s -22:56:47.00411s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.703
G magnitude           : 14.651
RP magnitude          : 13.378
BP magnitude          : 16.505
DUPflag              : 0
Distance (au)         : 5.778
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 29.32
Sun-Target sep (deg)  : 57.23
Sun-Moon sep (deg)   : 106.47
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.60
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 14.257
C/A sky separation (km) : 59744.2
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 2043-02-13T14:12:56 K9.70 G14.65

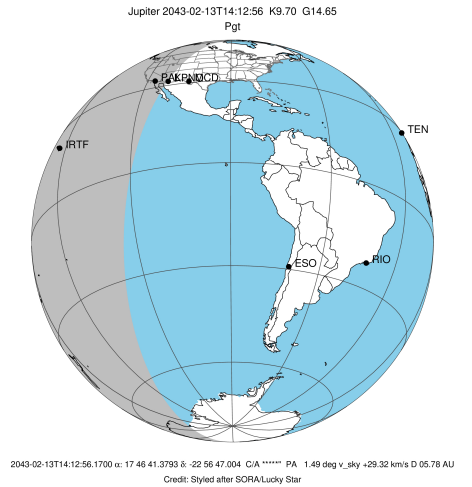


x: target alt < 5.0 deg or sun > -5.0 deg

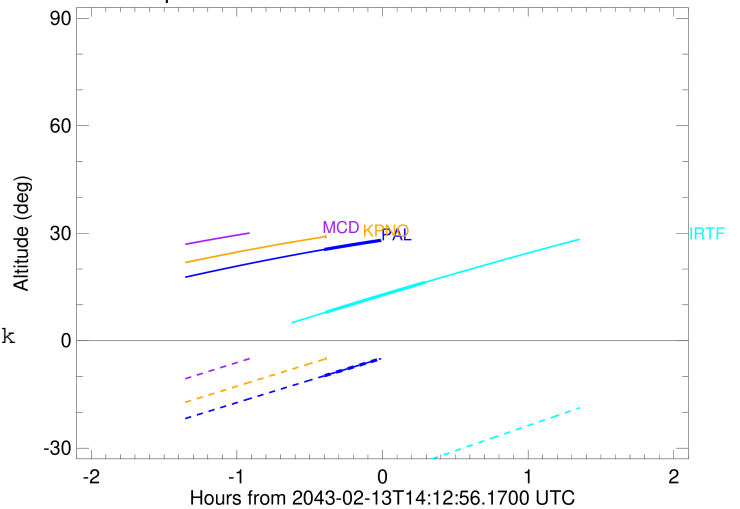
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-13T13:49:11.884	29.00	-5.14	71485.6	-57.64	-60.86
Jupiter	E	2043-02-13T14:34:22.377	32.94	4.12x	71485.9	-55.60	-58.94

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-13T14:09:57.460
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       : 4068841945194257664
2Mass ID (if available) : 17464137-2256466
ICRS Star Coord at Epoch: 17h 46m 41.37934s -22:56:47.00411s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.703
G magnitude           : 14.651
RP magnitude          : 13.378
BP magnitude          : 16.505
DUPflag              : 0
Distance (au)        : 5.778
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 29.32
Sun-Target sep (deg) : 57.23
Sun-Moon sep (deg)   : 106.04
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.60
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 14.786
C/A sky separation (km) : 61959.5
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 2043-02-13T14:12:56 K9.70 G14.65



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	2043-02-13T13:49:35.371	7.94	-43.29	71485.1	-61.19	-64.17
Jupiter	E	2043-02-13T14:30:21.310	16.26	-33.70	71485.5	-58.78	-61.93