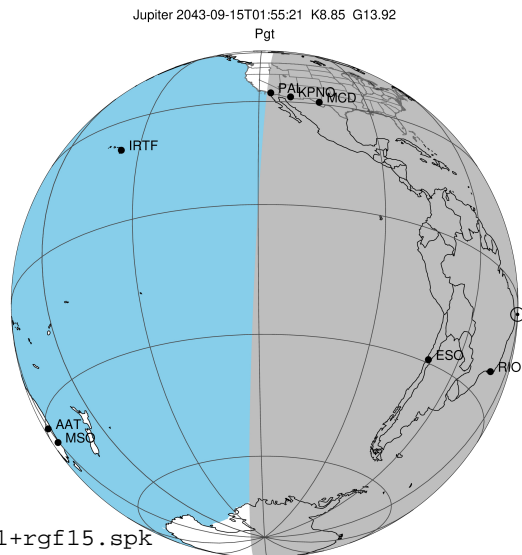


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-15T01:55:21.300
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116681936631792000
 2Mass ID (if available) : 17342493-2310391

Jupiter 2043-09-15T01:55:21 K8.85 G13.92 Pgt

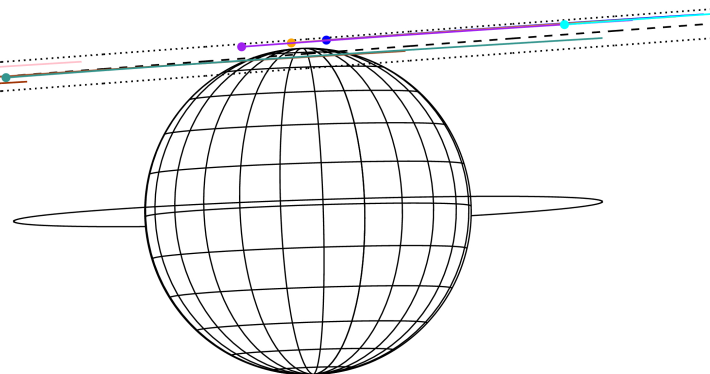
ICRS Star Coord at Epoch: 17h 34m 24.94285s -23:10:39.28504s

RUWE (>1.4 is poor) : 0.93
 K magnitude : 8.845
 G magnitude : 13.917
 RP magnitude : 12.651
 BP magnitude : 15.741
 DUPflag : 0
 Distance (au) : 5.093
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 11.74
 Sun-Target sep (deg) : 92.58
 Sun-Moon sep (deg) : 37.69
 B (ring opening deg) : -2.26
 PA of pole (deg) : 1.92
 Pole direction: RA (deg): 268.05673
 Dec (deg): 64.49731
 C/A sky separation (") : 18.665
 C/A sky separation (km) : 68949.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



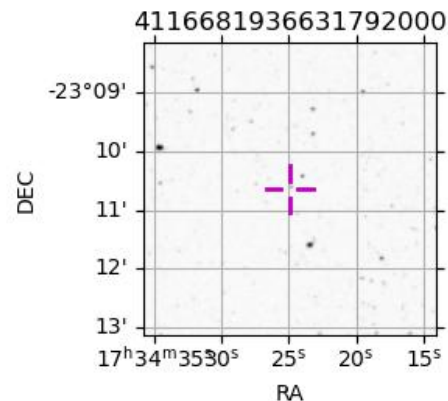
2043-09-15T01:55:21.3000 a: 17 34 24.94285 s: -23 10 39.285 C/A ***** PA 184.26 deg v_sky +11.74 km/s D 05.09 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 IRTF
 RIO
 ESO
 SAAO



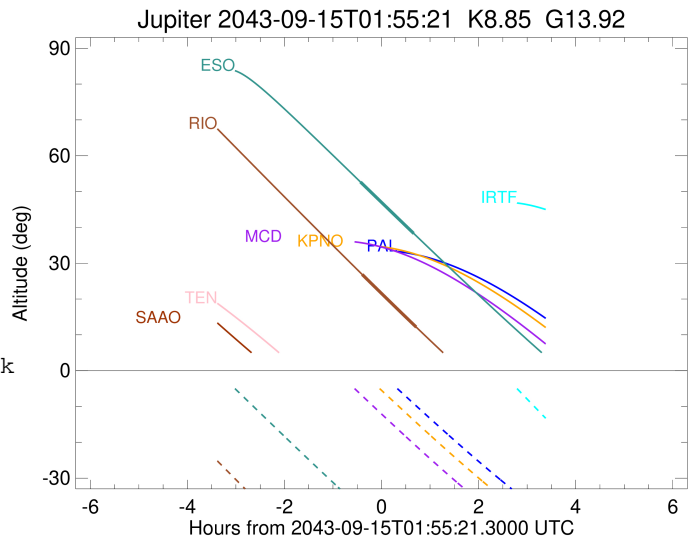
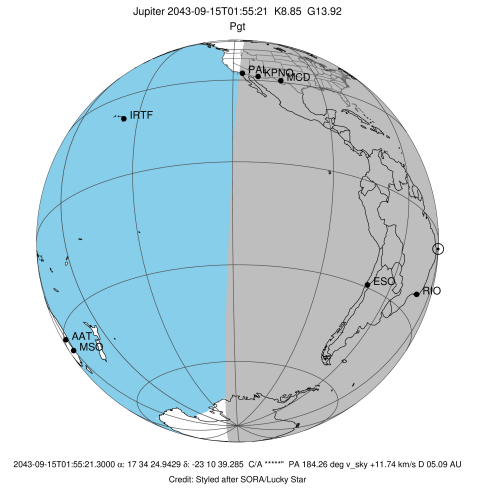
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
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			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	SEP 15 01:31 - SEP 15 02:38	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	SEP 15 01:29 - SEP 15 02:35	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            : 2043-09-15T02:04:57.930
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      : 4116681936631792000
2Mass ID (if available) : 17342493-2310391
ICRS Star Coord at Epoch: 17h 34m 24.94285s -23:10:39.28504s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 8.845
G magnitude          : 13.917
RP magnitude         : 12.651
BP magnitude         : 15.741
DUPflag             : 0
Distance (au)       : 5.094
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 11.74
Sun-Target sep (deg) : 92.58
Sun-Moon sep (deg)  : 37.21
B (ring opening deg) : -2.26
PA of pole (deg)    : 1.92
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 18.295
C/A sky separation (km) : 67586.6
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
    
```

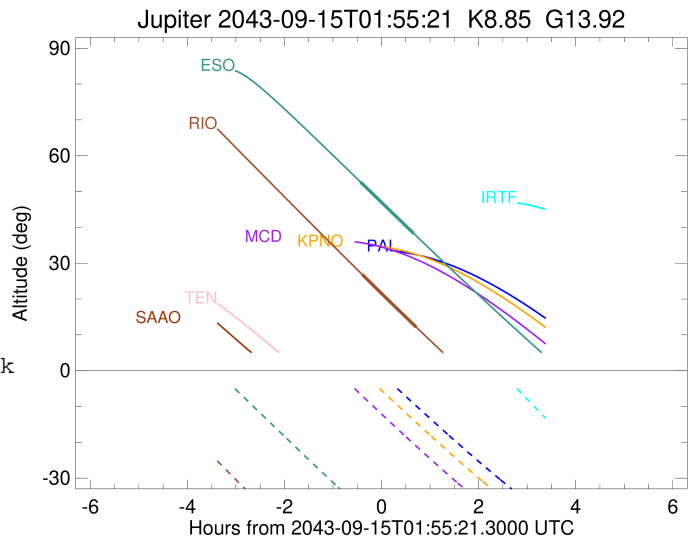
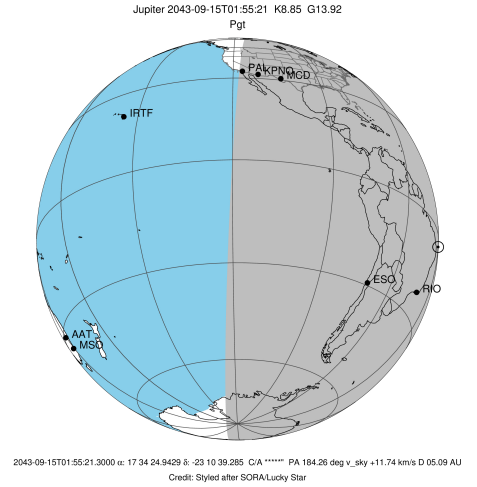


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-15T01:31:29.607	26.85	-62.96	71485.9	69.29	71.58
Jupiter	E	2043-09-15T02:38:13.174	12.17	-70.20	71485.7	72.39	74.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-15T02:02:21.780
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      : 4116681936631792000
2Mass ID (if available) : 17342493-2310391
ICRS Star Coord at Epoch: 17h 34m 24.94285s -23:10:39.28504s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 8.845
G magnitude          : 13.917
RP magnitude         : 12.651
BP magnitude         : 15.741
DUPflag             : 0
Distance (au)       : 5.094
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 11.74
Sun-Target sep (deg) : 92.58
Sun-Moon sep (deg)  : 37.61
B (ring opening deg) : -2.26
PA of pole (deg)    : 1.92
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 18.360
C/A sky separation (km): 67825.6
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	2043-09-15T01:29:24.592	52.65	-38.26	71485.9	69.59	71.86
Jupiter	E	2043-09-15T02:35:09.059	38.31	-50.90	71485.6	73.22	75.12