

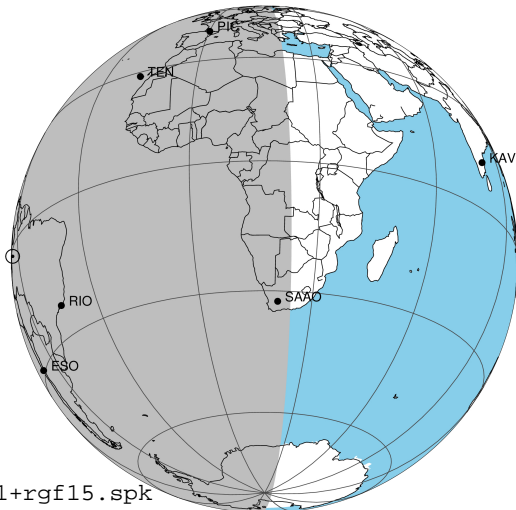
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-25T04:33:25.400
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068899085396835072
 2Mass ID (if available) : 17503848-2252397

Jupiter 2031-03-25T04:33:25 K9.21 G14.55 Pgt

ICRS Star Coord at Epoch: 17h 50m 38.49343s -22:52:39.67750s

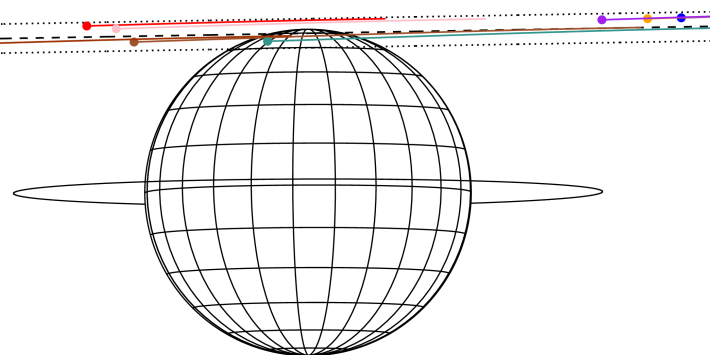
RUWE (>1.4 is poor) : 0.91
 K magnitude : 9.211
 G magnitude : 14.554
 RP magnitude : 13.246
 BP magnitude : 16.541
 DUPflag : 0
 Distance (au) : 5.109
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 10.00
 Sun-Target sep (deg) : 96.06
 Sun-Moon sep (deg) : 120.83
 B (ring opening deg) : -2.63
 PA of pole (deg) : 0.17
 Pole direction: RA (deg): 268.05699
 Dec (deg): 64.49651
 C/A sky separation (") : 18.821
 C/A sky separation (km) : 69741.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-03-25T04:33:25 K9.21 G14.55
 Pgt



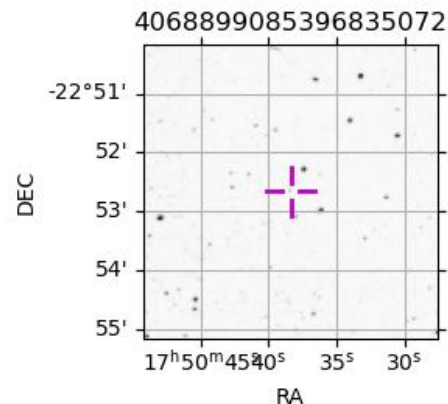
2031-03-25T04:33:25.4000 a: 17 50 38.4934 s: -22 52 39.6778 C/A ***** PA 180.99 deg v_sky +10.00 km/s D 05.11 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 KAV
 RIO
 ESO
 SAAO



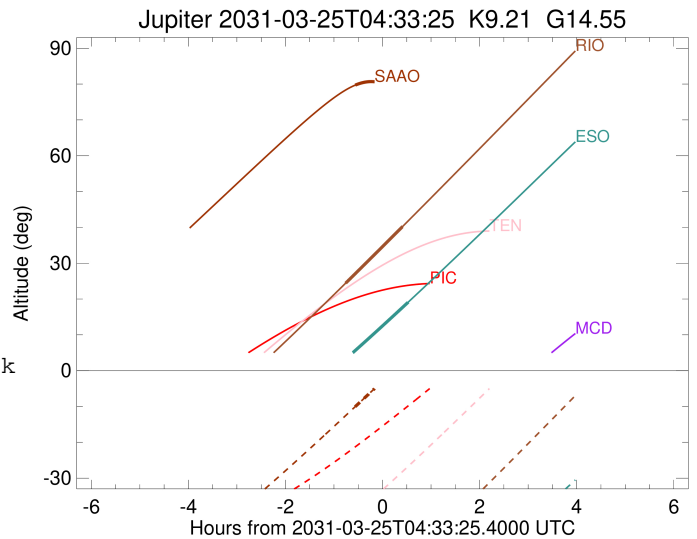
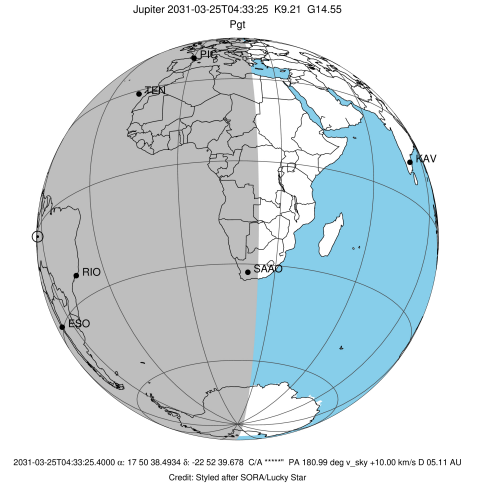
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAR 25 03:47 - MAR 25 04:58	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	MAR 25 05:05 - MAR 25 05:05	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	MAR 25 03:59 - MAR 25 03:59	Pin
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-25T04:22:56.970
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       : 4068899085396835072
2Mass ID (if available) : 17503848-2252397
ICRS Star Coord at Epoch: 17h 50m 38.49343s -22:52:39.67750s
RUWE (>1.4 is poor) : 0.91
K magnitude           : 9.211
G magnitude           : 14.554
RP magnitude         : 13.246
BP magnitude         : 16.541
DUPflag              : 0
Distance (au)        : 5.109
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.00
Sun-Target sep (deg) : 96.06
Sun-Moon sep (deg)   : 120.90
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.17
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.469
C/A sky separation (km) : 68436.4
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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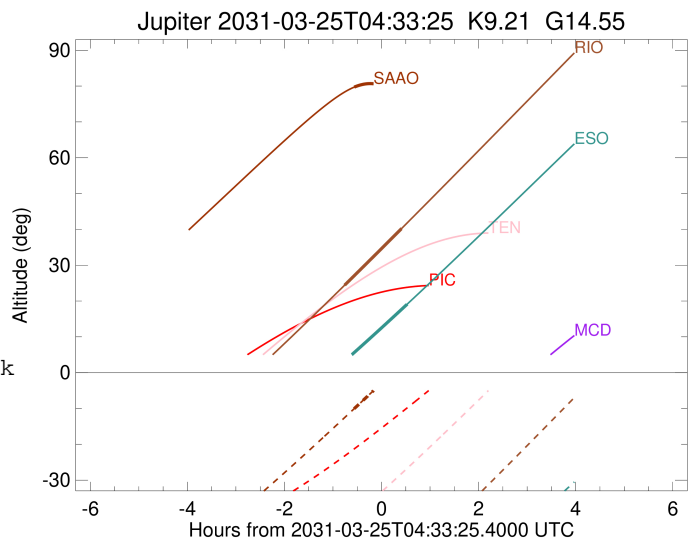
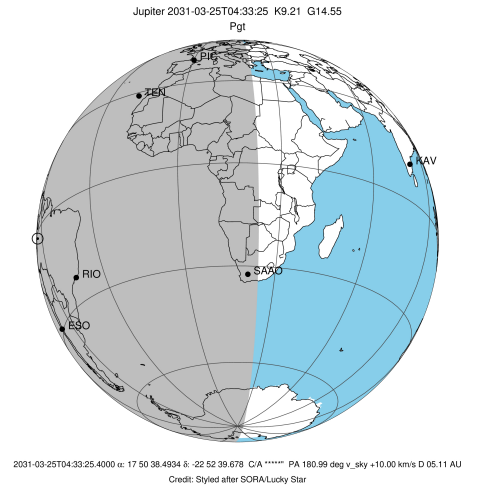


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-25T03:47:57.333	24.44	-65.84	71483.6	71.31	73.40
Jupiter	E	2031-03-25T04:58:12.741	40.22	-54.25	71483.3	74.66	76.41

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-25T04:22:27.160
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     : 4068899085396835072
2Mass ID (if available) : 17503848-2252397
ICRS Star Coord at Epoch: 17h 50m 38.49343s -22:52:39.67750s
RUWE (>1.4 is poor) : 0.91
K magnitude         : 9.211
G magnitude         : 14.554
RP magnitude        : 13.246
BP magnitude        : 16.541
DUPflag            : 0
Distance (au)      : 5.109
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 10.00
Sun-Target sep (deg) : 96.06
Sun-Moon sep (deg) : 120.58
B (ring opening deg) : -2.63
PA of pole (deg)   : 0.17
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.023
C/A sky separation (km) : 66785.7
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
    
```

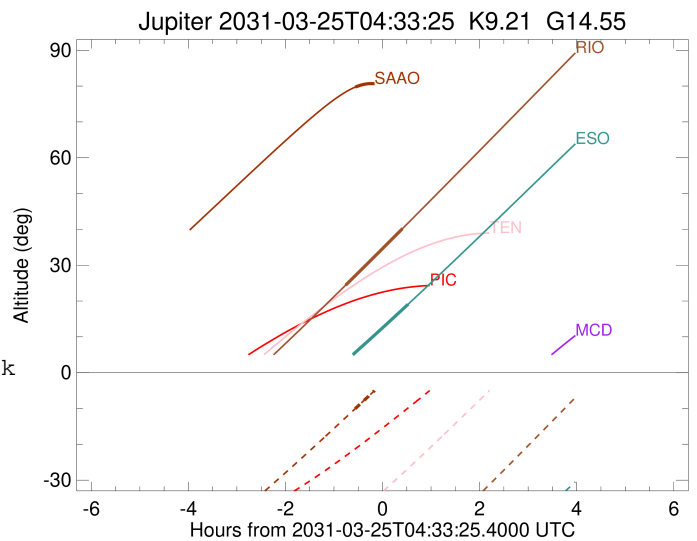
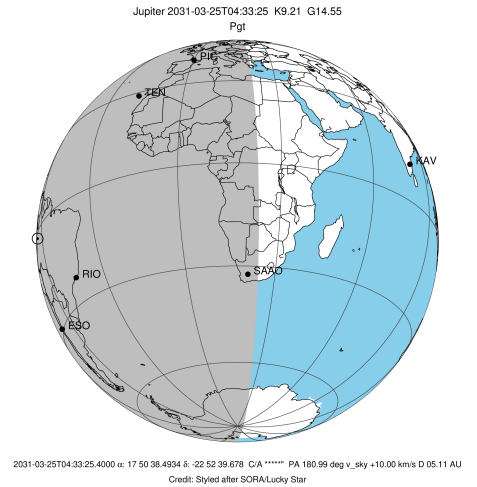


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-25T03:40:14.147	1.73x	-58.09	71484.0	67.26	69.74
Jupiter	E	2031-03-25T05:05:04.158	19.10	-62.37	71483.6	70.66	72.82

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-25T04:34:04.180
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 4068899085396835072
2Mass ID (if available) : 17503848-2252397
ICRS Star Coord at Epoch: 17h 50m 38.49343s -22:52:39.67750s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 9.211
G magnitude          : 14.554
RP magnitude         : 13.246
BP magnitude         : 16.541
DUPflag             : 0
Distance (au)       : 5.109
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.00
Sun-Target sep (deg) : 96.06
Sun-Moon sep (deg)  : 121.64
B (ring opening deg) : -2.63
PA of pole (deg)    : 0.17
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.543
C/A sky separation (km) : 68709.5
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
    
```



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	2031-03-25T03:59:43.892	79.70	-10.04	71483.4	72.93	74.86
Jupiter	E	2031-03-25T05:08:26.285	75.70	4.47x	71483.3	74.49	76.26