

target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2048-08-31T05:08:32.730  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3427527766435285248  
 2Mass ID (if available) : 05455070+2252482

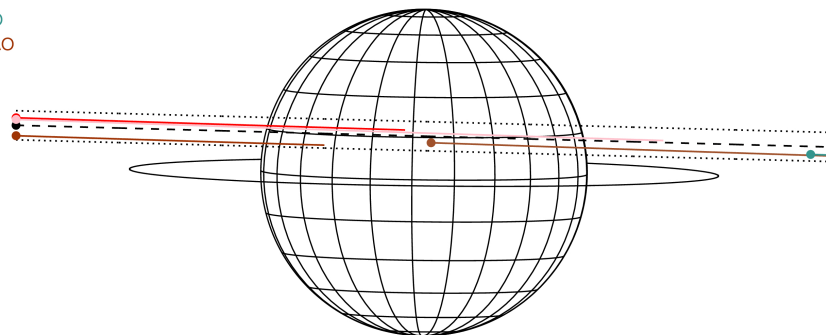
Jupiter 2048-08-31T05:08:32 K9.19 G12.98 Pgt

ICRS Star Coord at Epoch: 05h 45m 50.72433s +22:52:46.24405s  
 RUWE (>1.4 is poor) : 3.99  
 K magnitude : 9.187  
 G magnitude : 12.979  
 RP magnitude : 11.799  
 BP magnitude : 14.384  
 DUPflag : 0  
 Distance (au) : 5.307  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 22.24  
 Sun-Target sep (deg) : 71.07  
 Sun-Moon sep (deg) : 20.20  
 B (ring opening deg) : 2.61  
 PA of pole (deg) : -0.69  
 Pole direction: RA (deg): 268.05733  
 Dec (deg): 64.49722  
 C/A sky separation (") : 4.133  
 C/A sky separation (km) : 15906.8  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



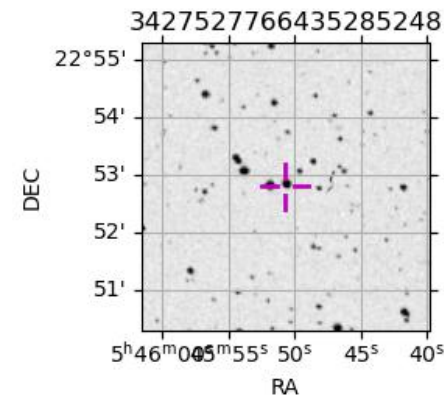
2048-08-31T05:08:32.7300 ex: 05 45 50.72433 s: +22 52 46.244 C/A 4.1433" PA 178.47 deg v\_sky +22.24 km/s D 05.31 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 TEN  
 RIO  
 ESO  
 SAAO



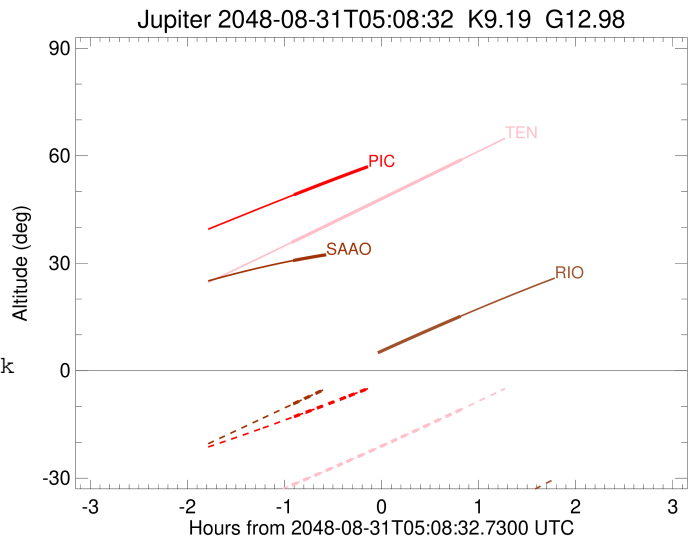
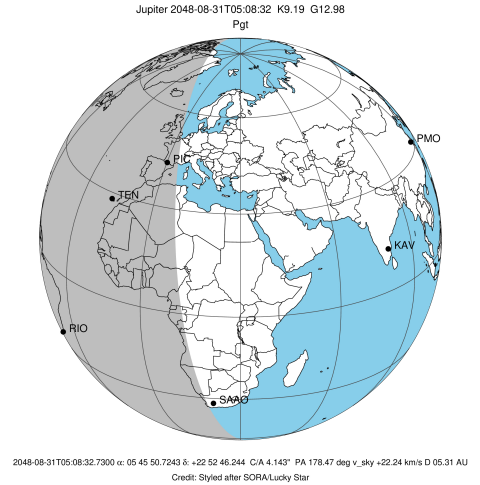
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	AUG 31 04:14 - AUG 31 04:14	Pin
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	+ +	AUG 31 04:13 - AUG 31 05:58	Pie
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	+	AUG 31 05:57 - AUG 31 05:57	Pne
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	+	AUG 31 04:13 - AUG 31 04:13	Pin
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-08-31T05:06:51.860
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 3427527766435285248
2Mass ID (if available) : 05455070+2252482
ICRS Star Coord at Epoch: 05h 45m 50.72433s +22:52:46.24405s
RUWE (>1.4 is poor)  : 3.99
K magnitude           : 9.187
G magnitude           : 12.979
RP magnitude          : 11.799
BP magnitude          : 14.384
DUPflag              : 0
Distance (au)         : 5.307
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.24
Sun-Target sep (deg)  : 71.07
Sun-Moon sep (deg)    : 20.13
B (ring opening deg) : 2.61
PA of pole (deg)      : -0.69
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 4.772
C/A sky separation (km) : 18368.3
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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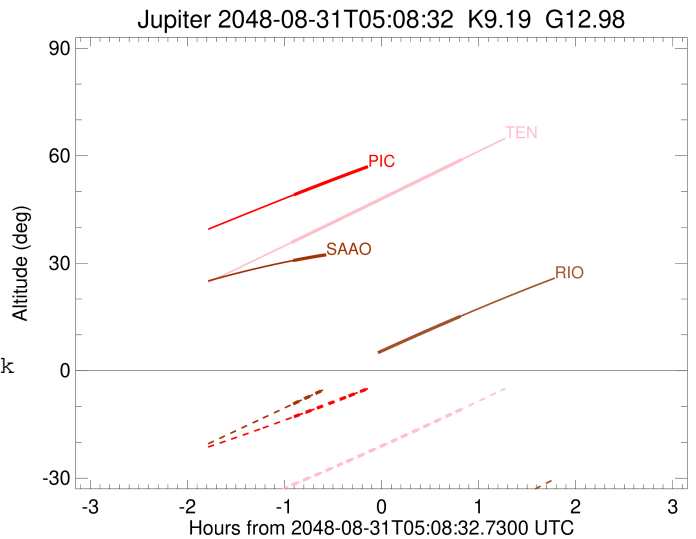
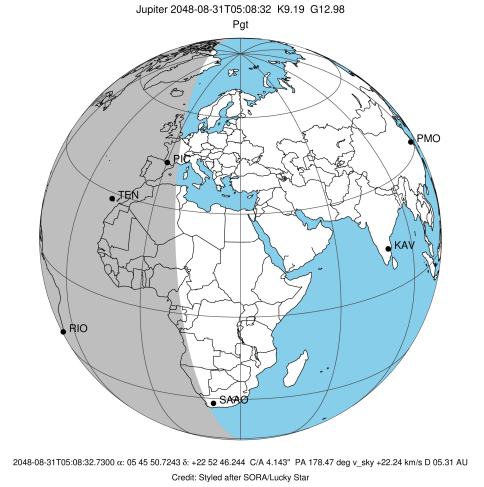


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-08-31T04:14:29.147	49.10	-12.85	71491.3	15.93	18.07
Jupiter	E	2048-08-31T05:59:22.727	65.60	5.64x	71491.5	13.88	15.77

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-08-31T05:05:32.830
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : TEN
Location            : Teide Obs./Tenerife
Latitude (deg)      : 28.30050
E. Longitude (deg) : 343.48909
Altitude (km)       : 2.395
Gaia source ID      : 3427527766435285248
2Mass ID (if available) : 05455070+2252482
ICRS Star Coord at Epoch: 05h 45m 50.72433s +22:52:46.24405s
RUWE (>1.4 is poor) : 3.99
K magnitude          : 9.187
G magnitude          : 12.979
RP magnitude         : 11.799
BP magnitude         : 14.384
DUPflag             : 0
Distance (au)       : 5.307
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.24
Sun-Target sep (deg) : 71.07
Sun-Moon sep (deg)  : 19.87
B (ring opening deg) : 2.61
PA of pole (deg)    : -0.69
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 4.489
C/A sky separation (km) : 17279.2
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
    
```

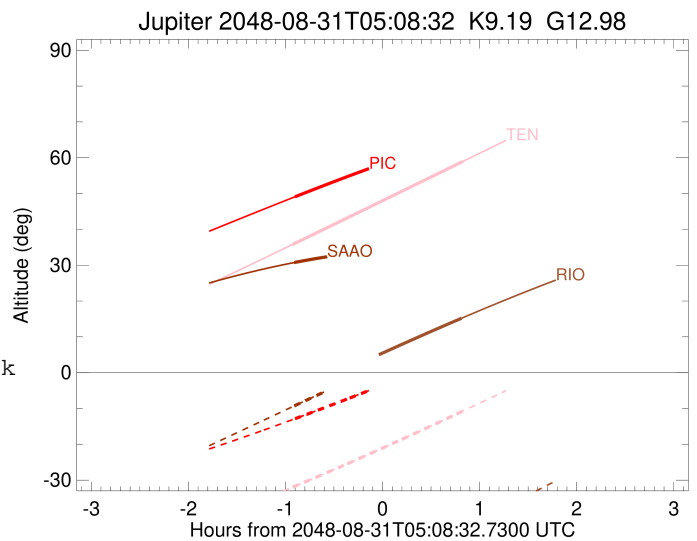
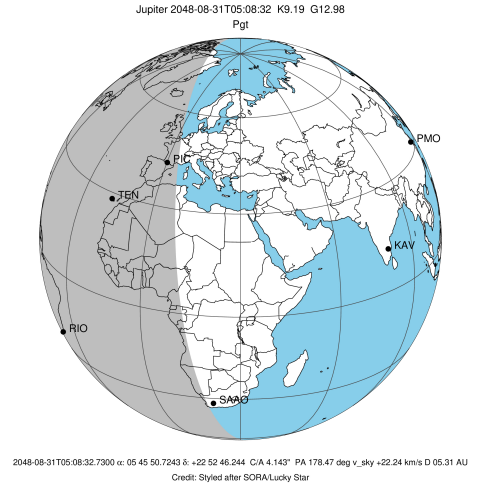


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-08-31T04:13:01.957	35.80	-31.95	71491.4	15.16	17.20
Jupiter	E	2048-08-31T05:58:16.124	58.97	-10.71	71491.5	12.85	14.61

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-08-31T05:04:19.980
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       : 3427527766435285248
2Mass ID (if available) : 05455070+2252482
ICRS Star Coord at Epoch: 05h 45m 50.72433s +22:52:46.24405s
RUWE (>1.4 is poor) : 3.99
K magnitude           : 9.187
G magnitude           : 12.979
RP magnitude          : 11.799
BP magnitude          : 14.384
DUPflag              : 0
Distance (au)        : 5.307
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.24
Sun-Target sep (deg) : 71.07
Sun-Moon sep (deg)   : 19.51
B (ring opening deg) : 2.61
PA of pole (deg)     : -0.69
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 3.413
C/A sky separation (km) : 13136.9
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
    
```

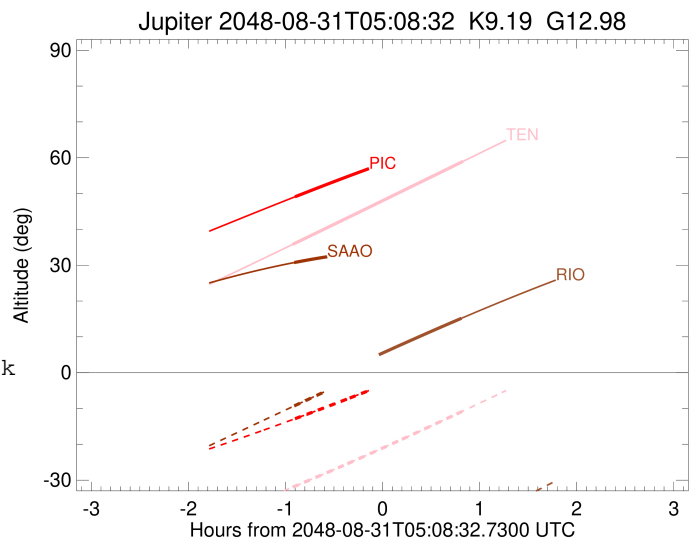
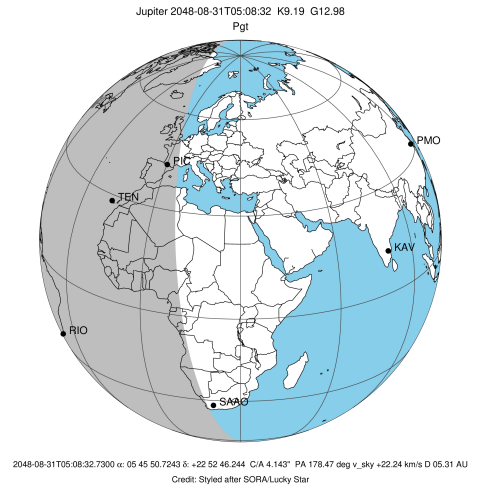


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-08-31T04:11:32.988	-6.49x	-66.31	71491.6	11.85	13.48
Jupiter	E	2048-08-31T05:57:23.070	15.19	-43.55	71491.8	9.33	10.64

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-08-31T05:07:49.080
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      : 3427527766435285248
2Mass ID (if available) : 05455070+2252482
ICRS Star Coord at Epoch: 05h 45m 50.72433s +22:52:46.24405s
RUWE (>1.4 is poor) : 3.99
K magnitude          : 9.187
G magnitude          : 12.979
RP magnitude         : 11.799
BP magnitude         : 14.384
DUPflag             : 0
Distance (au)        : 5.307
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.24
Sun-Target sep (deg) : 71.07
Sun-Moon sep (deg)  : 20.33
B (ring opening deg) : 2.61
PA of pole (deg)    : -0.69
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (" ) : 2.787
C/A sky separation (km) : 10727.1
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	2048-08-31T04:13:58.417	30.74	-9.28	71491.7	9.59	10.94
Jupiter	E	2048-08-31T06:01:44.690	34.76	13.03x	71491.8	7.74	8.84