

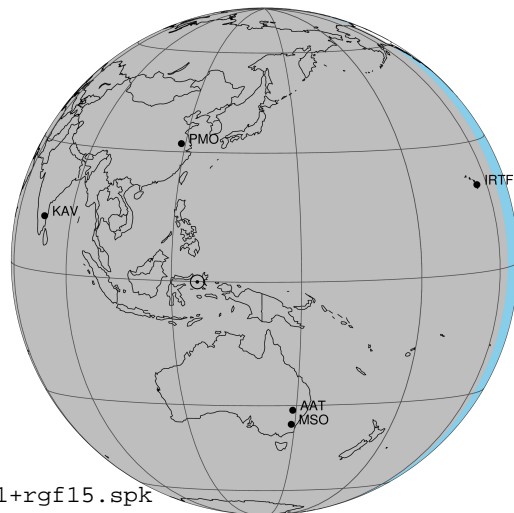
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2046-09-22T15:27:41.150
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 2552154818089758336
 2Mass ID (if available) : 00582885+0429037

Jupiter 2046-09-22T15:27:41 K9.28 G11.61 Pgt

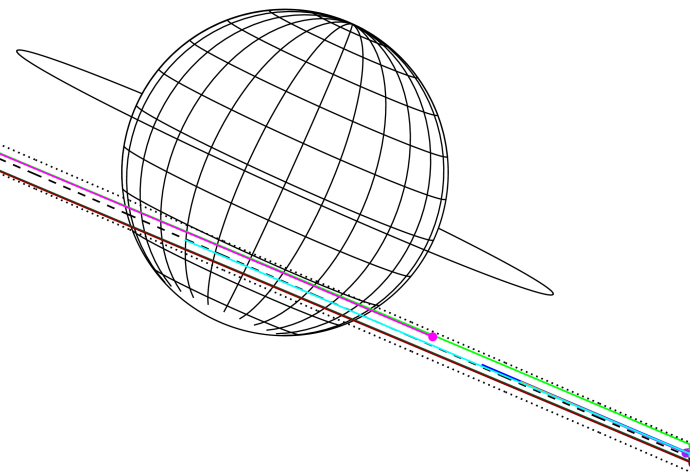
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s

RUWE (>1.4 is poor) : 1.22
 K magnitude : 9.280
 G magnitude : 11.611
 RP magnitude : 10.895
 BP magnitude : 12.193
 DUPflag : 0
 Distance (au) : 3.982
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.96
 Sun-Target sep (deg) : 163.88
 Sun-Moon sep (deg) : 65.84
 B (ring opening deg) : 2.97
 PA of pole (deg) : -24.41
 Pole direction: RA (deg): 268.05713
 Dec (deg): 64.49722
 C/A sky separation (") : 15.271
 C/A sky separation (km) : 44099.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2046-09-22T15:27:41 K9.28 G11.61
 Pgt



Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 AAT
 SAAO
 MSO

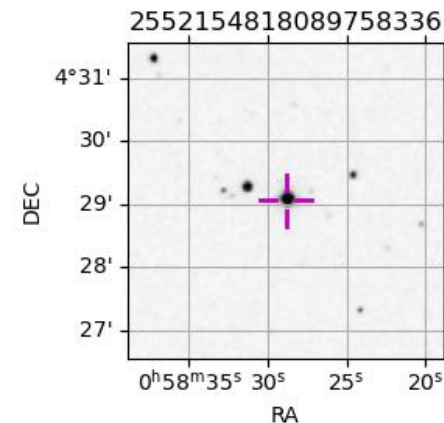


2046-09-22T15:27:41.1500 a: 00 58 28.8613 s: +04 29 03.491 C/A ***** PA 336.63 deg v_sky -14.96 km/s D 03.98 AU

Credit: Styled after SORA/Lucky Star

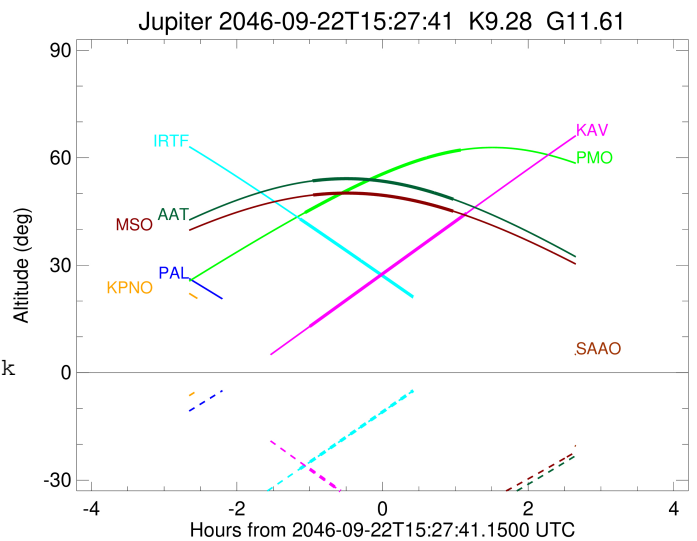
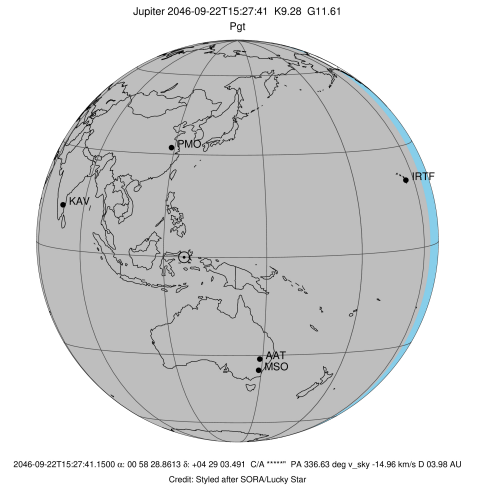
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	SEP 22 14:23 - SEP 22 16:32	Pie
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	+	SEP 22 14:19 - SEP 22 14:19	Pin
KAV	Kavalur Observatory	12.6	78.8	+ +	SEP 22 14:27 - SEP 22 16:36	Pie
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	+ +	SEP 22 14:30 - SEP 22 16:25	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	SEP 22 14:30 - SEP 22 16:25	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-09-22T15:28:03.920
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 2552154818089758336
2Mass ID (if available) : 00582885+0429037
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s
RUWE (>1.4 is poor) : 1.22
K magnitude          : 9.280
G magnitude          : 11.611
RP magnitude         : 10.895
BP magnitude         : 12.193
DUPflag             : 0
Distance (au)       : 3.982
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.96
Sun-Target sep (deg) : 163.88
Sun-Moon sep (deg)  : 66.58
B (ring opening deg) : 2.97
PA of pole (deg)    : -24.41
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (" ) : 14.049
C/A sky separation (km) : 40572.7
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
    
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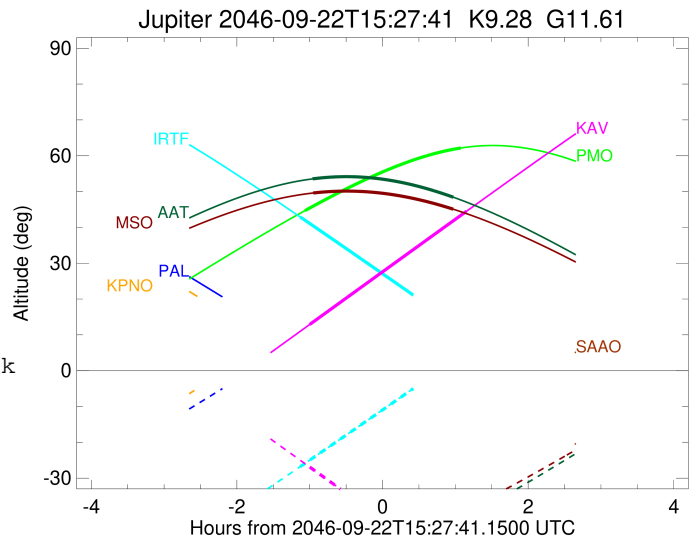
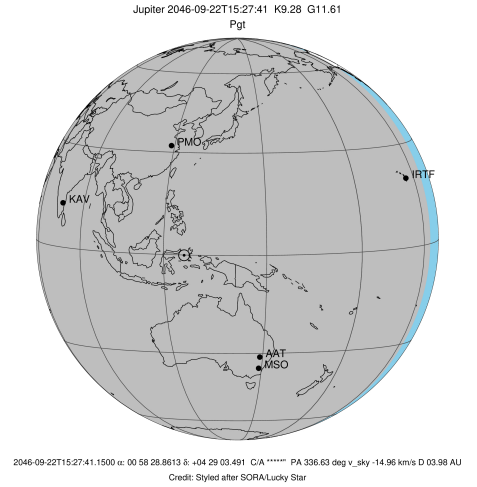


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-09-22T14:23:47.642	44.67	-51.13	71488.4	-32.93	-36.45
Jupiter	E	2046-09-22T16:32:08.537	62.14	-57.00	71487.8	-36.16	-39.79

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-09-22T15:21:16.660
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       : 2552154818089758336
2Mass ID (if available) : 00582885+0429037
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s
RUWE (>1.4 is poor) : 1.22
K magnitude          : 9.280
G magnitude          : 11.611
RP magnitude         : 10.895
BP magnitude         : 12.193
DUPflag             : 0
Distance (au)        : 3.982
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.96
Sun-Target sep (deg) : 163.88
Sun-Moon sep (deg)   : 65.89
B (ring opening deg) : 2.97
PA of pole (deg)     : -24.41
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation ("): 15.386
C/A sky separation (km): 44433.9
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
    
```

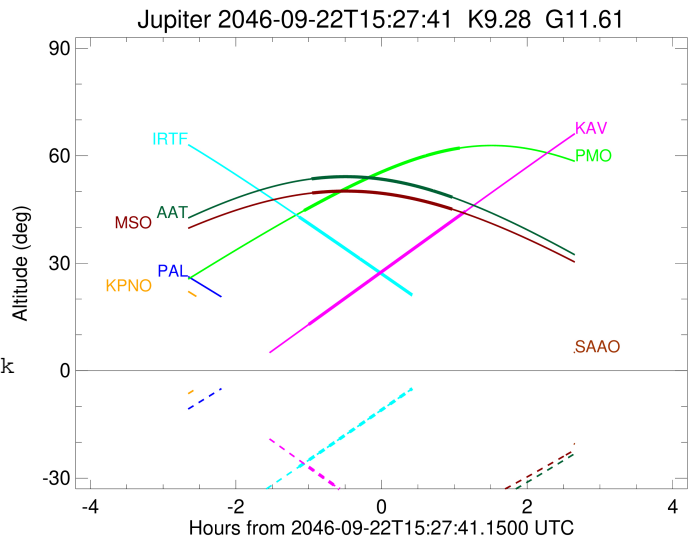
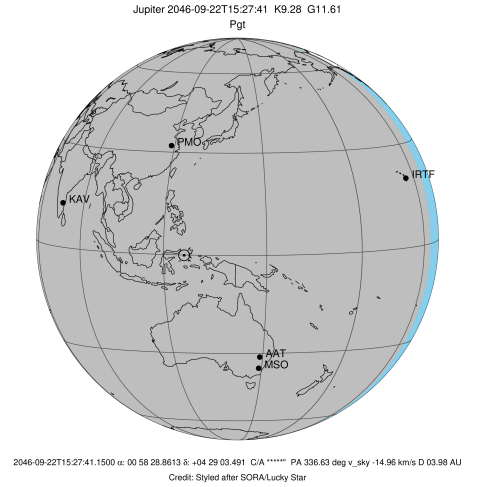


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-09-22T14:19:49.095	42.91	-26.80	71487.6	-37.05	-40.70
Jupiter	E	2046-09-22T16:23:05.651	14.00	2.07x	71487.1	-39.53	-43.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-09-22T15:32:26.650
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 2552154818089758336
2Mass ID (if available) : 00582885+0429037
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.280
G magnitude           : 11.611
RP magnitude          : 10.895
BP magnitude          : 12.193
DUPflag              : 0
Distance (au)         : 3.982
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.96
Sun-Target sep (deg) : 163.88
Sun-Moon sep (deg)   : 66.49
B (ring opening deg) : 2.97
PA of pole (deg)     : -24.41
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 14.161
C/A sky separation (km) : 40896.0
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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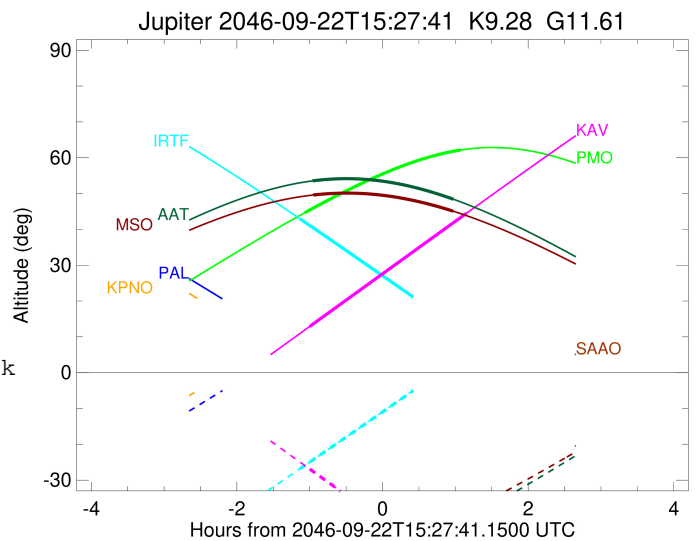
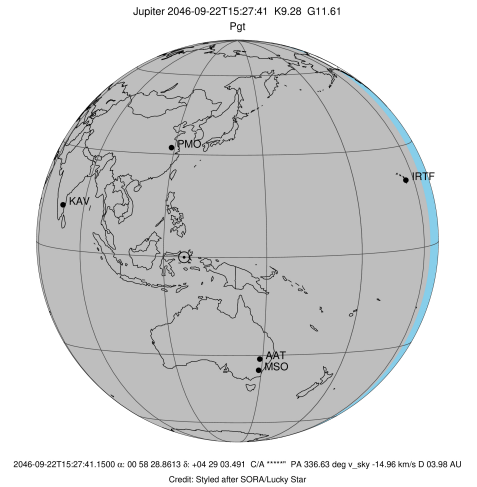


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-09-22T14:27:43.548	12.90	-26.90	71488.3	-33.45	-36.99
Jupiter	E	2046-09-22T16:36:41.779	44.44	-57.60	71487.8	-36.38	-40.02

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-09-22T15:28:04.030
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 2552154818089758336
2Mass ID (if available) : 00582885+0429037
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.280
G magnitude           : 11.611
RP magnitude         : 10.895
BP magnitude         : 12.193
DUPflag              : 0
Distance (au)        : 3.982
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.96
Sun-Target sep (deg) : 163.88
Sun-Moon sep (deg)   : 66.59
B (ring opening deg) : 2.97
PA of pole (deg)     : -24.41
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation ("): 16.555
C/A sky separation (km): 47809.6
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
    
```

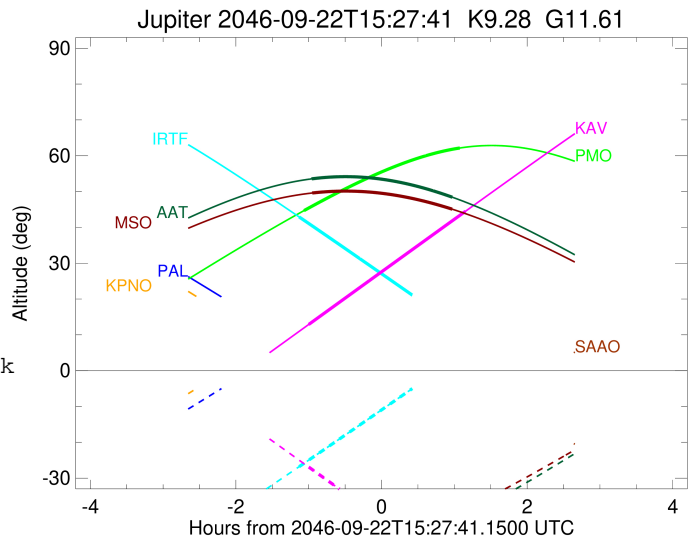
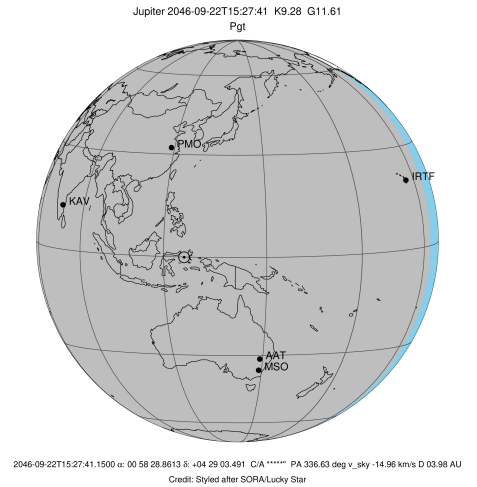


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-09-22T14:30:13.956	53.54	-57.96	71487.0	-40.28	-43.99
Jupiter	E	2046-09-22T16:25:55.402	48.43	-42.89	71486.3	-43.48	-47.20

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-09-22T15:28:16.580
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : MSO
Location             : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 2552154818089758336
2Mass ID (if available) : 00582885+0429037
ICRS Star Coord at Epoch: 00h 58m 28.86131s +04:29:03.49135s
RUWE (>1.4 is poor) : 1.22
K magnitude          : 9.280
G magnitude          : 11.611
RP magnitude         : 10.895
BP magnitude         : 12.193
DUPflag             : 0
Distance (au)        : 3.982
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.96
Sun-Target sep (deg) : 163.88
Sun-Moon sep (deg)   : 66.56
B (ring opening deg) : 2.97
PA of pole (deg)     : -24.41
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 16.663
C/A sky separation (km) : 48120.8
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
    
```



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	2046-09-22T14:30:41.216	49.59	-54.06	71486.9	-40.64	-44.36
Jupiter	E	2046-09-22T16:25:53.129	45.08	-40.59	71486.2	-43.79	-47.51