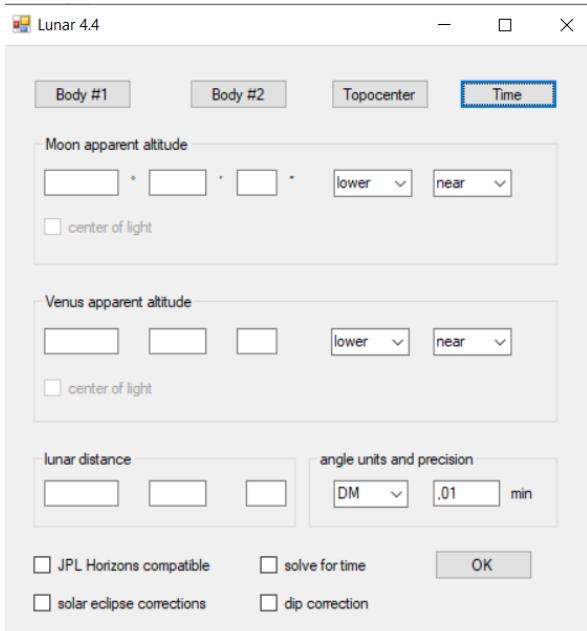# Fr. Reed online calculator inputs and the results

OBSERVER:
Latitude: 56° N
Longitude: 24° E

GMT/UT:
Date: 02 04 2023
Time: 18:40:00

DISTANCE:
Body: Venus
Distance: 103° 44.89' Near

ALTITUDES +

DETAILS +
I.C.:
Temp: 10 °C
Pressure: 1010 mbar
Ht of Eye: 0.0 m
Ht of Obs: km

Options:
☐ Ignore Earth oblateness
☐ Ignore SD refraction
☑ SI/metric units

STAR LISTS +
○ Sun and Lunars Stars
● Include Planets
○ Sun, Planets, Bright stars
○ Include Navigation Stars

Error in Lunar: 0.00'
Equivalent Error in Longitude: 0.05'
Equivalent Position Error: 0.03 miles

Using *calculated* Moon Altitude.
Using *calculated* Venus Altitude.
Moon SD refraction negligible.
Corrected for Earth oblateness.

	Moon	Venus
GHA	313° 22.7'	63° 28.8'
Dec	14° 19.3'	18° 47.4'
HP	54.54	0.12

True LD	103° 37.5'
cos δAzm	-0.64894
cos α	0.6613
cos β	0.8271
Cleared LD	103° 37.5'

P.Hirose Lunar4.4 inputs and the results

Choose Body #1

Open Ephemeris   Ephemeris Tools

◉ solar system body   Moon ▾

designation

○ star   Fomalhaut   Search

search results (mag/desig.)

1.2 / NAME FOMALHAUT

○ star   Enter Star Data

OK   Cancel

Choose Body #2

Open Ephemeris   Ephemeris Tools

◉ solar system body   Venus ▾

designation

○ star   regul   Search

search results (mag/desig.)

1.4 / NAME REGULUS

○ star   Enter Star Data

OK   Cancel

Topocenter Data

latitude

☐ S   56 °   0 '   "

longitude

☐ W   24 °   0 '   "

height

0   ◉ m   ○ ft

deflection of vertical

xi   0   " N   eta   0   " E

☐ standard temperature

10   ◉ C   ○ F

☐ standard altimeter setting

1010   ◉ mb   ○ " Hg

humidity / dew point

50   ◉ %   ○ C   ○ F

OK   Cancel

Date and Time

◉ Gregorian
○ Julian

☐ BC   2023   4   2   18   40   00

○ JD   2460058.339942   ○ B   1950.0   ○ J   2000.0

○ UTC   ◉ UT1   ○ TT   ○ GAT   ○ LAT   ○ LMT

UT1-UTC   0   sec   Leap Second Table   table OK

ΔT   69,495   ☑ auto ΔT   polar motion x   0   "   y   0   "

OK   Cancel

```
topocentric apparent Moon to Venus angle
104°03,44' center to center, unrefracted
     3,25' refraction
104°00,19' center to center, refracted
   -15,02' Moon near limb refracted SD
    -0,12' Venus near limb refracted SD
103°45,05' computed Moon to Venus
   +0,339' per minute time
77% of total angular velocity
```

```
predicted geocentric apparent Moon to Venus angle
103°37,52' center to center
+0,453' per minute
82% of total angular velocity
```

Near limb lunar distance from Venus: 104° 00,19'-15,02=**103° 45,17'**

Difference from Fr. Reed's calculator: **103° 45,17'-103° 44,89'=0,28'**

Geocentric distances are identical.