

Solution with Lunar 4.4:  
06:31:46 UTC  
+46°37.61' -2°30.64' N lat E lon  
28° LOP intersection angle

Moon

3.91' dip  
21°53.09' apparent lower limb altitude  
2.40' refraction  
-14.86' unrefracted semidiameter  
22°05.55' unrefracted altitude of center  
22°05.55' predicted altitude  
-0°00.00' observed - predicted  
150°20.50' predicted azimuth

Mercury

3.91' dip  
3°09.09' apparent center altitude  
13.87' refraction  
2°55.22' unrefracted altitude of center  
2°55.22' predicted altitude  
-0°00.00' observed - predicted  
122°46.22' predicted azimuth

topocentric apparent Moon to Mercury angle

32°55.10' center to center, unrefracted  
7.26' refraction  
32°47.85' center to center, refracted  
-14.85' Moon near limb refracted SD  
32°33.00' observed angle  
32°33.00' computed Moon to Mercury  
+0.00' observed - computed

geocentric apparent Moon to Mercury angle

33°21.83' center to center

Chauvenet solution

06:31:46 UTC  
33°21.835' cleared distance

> \_Predicted Lunar Distances for 15 Dec 2025\_

>  
> 06h00 GMT Moon HP 54.215' Moon - Mercury Geocentric Distance  
> 33°35.5' Mercury HP 0.125'

54.22' HP Moon  
0.13' HP Mercury  
33°35.49' center to center

> 07h00 GMT Moon HP 54.204' Moon - Mercury Geocentric Distance  
> 33°09.7' Mercury HP 0.125'

54.20' HP Moon  
0.13' HP Mercury  
33°09.71' center to center

> \*\_16 Dec 2025\_\*

> Near-Limb Moon distance to Mercury corrected for Instrument error 22°23.3'  
> Mercury Altitude corrected for only Instrument error 3°08'  
> Moon Lower Limb Altitude corrected for only Instrument error 14°06'

Solution with Lunar 4.4:  
06:35:06 UTC  
+46°40.68' -2°32.36' N lat E lon  
20° LOP intersection angle

Moon

3.91' dip  
14°02.09' apparent lower limb altitude  
3.82' refraction  
-14.78' unrefracted semidiameter  
14°13.05' unrefracted altitude of center  
14°13.05' predicted altitude  
-0°00.00' observed - predicted  
143°13.34' predicted azimuth

Mercury

3.91' dip  
3°04.09' apparent center altitude  
14.12' refraction  
2°49.97' unrefracted altitude of center  
2°49.97' predicted altitude  
-0°00.00' observed - predicted  
123°17.77' predicted azimuth

topocentric apparent Moon to Mercury angle

22°43.58' center to center, unrefracted  
5.52' refraction  
22°38.06' center to center, refracted  
-14.76' Moon near limb refracted SD  
22°23.30' observed angle  
22°23.30' computed Moon to Mercury  
+0.00' observed - computed

geocentric apparent Moon to Mercury angle

23°09.03' center to center

Chauvenet solution

06:35:05 UTC  
23°09.042' cleared distance

> \_Predicted Lunar Distances for 16 Dec 2025\_

>  
> 06h00 GMT Moon HP 54.027' Moon - Mercury Geocentric Distance  
> 23°23.7' Mercury HP 0.124'

54.03' Moon HP  
0.12' Mercury HP  
23°23.73' center to center

> 07h00 GMT Moon HP 54.023' Moon - Mercury Geocentric Distance  
> 22°58.6' Mercury HP 0.124'

54.02' Moon HP  
0.12' Mercury HP  
22°58.62' center to center