



# An unusual observing test – no telescope required!



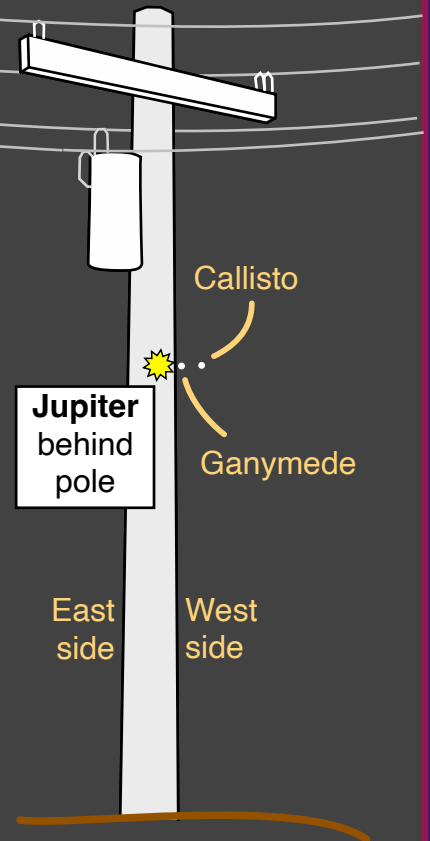
If you have excellent eyesight,  
and if you observe from a dark area,  
then try spotting Jupiter's two largest moons,  
**Ganymede** and **Callisto**, with the unaided eye.

**On nights when either of those two moons appears farthest from the glaring planet ...**

- Position yourself so that Jupiter is placed behind an occulting structure such as a darkened utility pole.
- If Ganymede and Callisto are west of Jupiter, place Jupiter just out of sight behind the right side of the pole. Do the opposite when the moons are east of the planet.
- Since Ganymede and Callisto are 4.5 and 5.5 magnitude, respectively, they should be barely visible as two dim starlike points.

**Ganymede: Best Nights**  
Nov 15 (East side)  
Nov 25 (West side)  
Dec 6 (East side)  
Dec 31 (West side)

**Callisto: Best Nights**  
Nov 11-14 (East side)  
Nov 19-22 (West side)  
Nov 27-30 (East side)  
Dec 6-9 (West side)  
Dec 14-17 (East side)  
Dec 22-25 (West side)

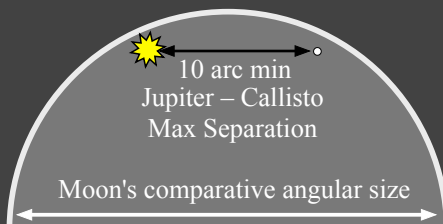


## Note

- Callisto can reach twice as far from Jupiter as Ganymede.
- On the night of Nov 15, Ganymede and Callisto appear to merge, forming a brighter point. They will be on the east side of Jupiter.
- Confirm your observations with binoculars.
- Be aware that bright moonlight will interfere with observations.



**Relative maximum angular distance Callisto is from Jupiter compared to the diameter of our moon.**



- Even at Callisto's maximum distance from the planet (10 arc min), it still appears very close – about 1/3 of the moon's angular diameter (30 arc min)!
- Ganymede's maximum angular distance is about half of Callisto's.