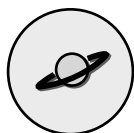
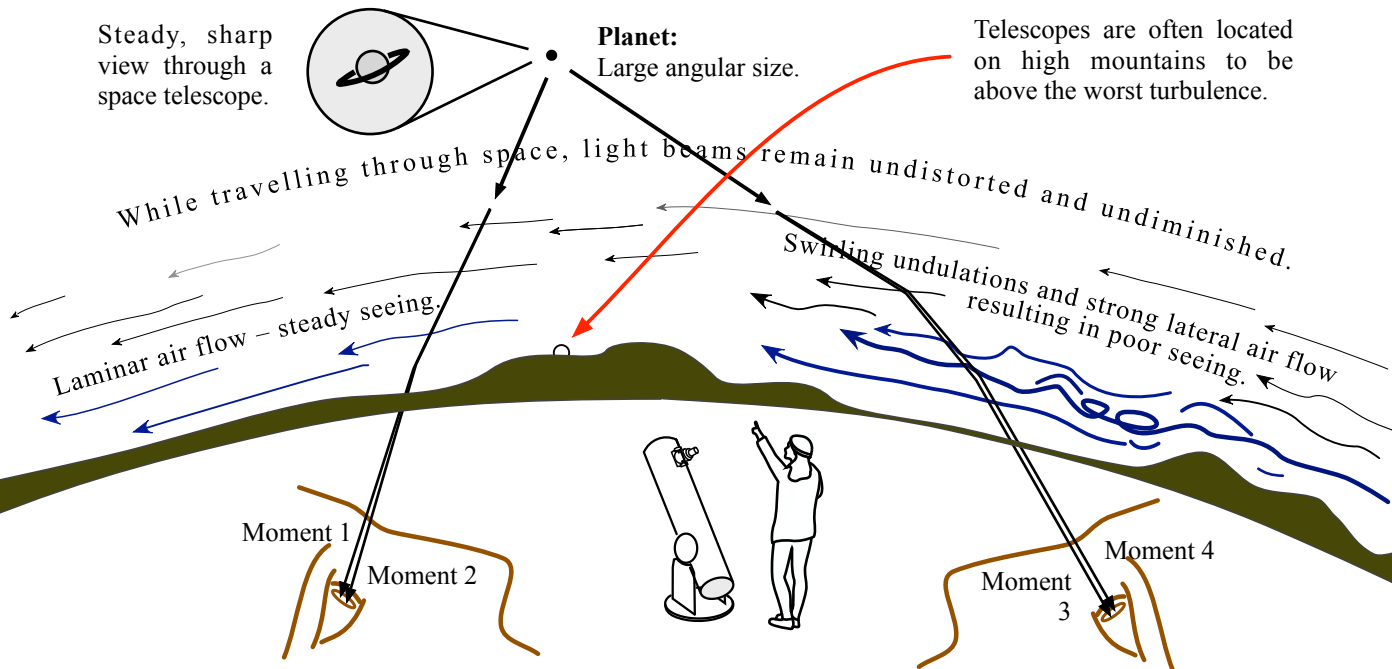




Planets don't twinkle

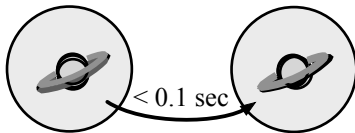
... at least under typical atmospheric conditions.
When low in the sky, and if the air is especially turbulent,
yes, planets can twinkle.

Twinkling is caused by light refracting through layers of turbulent atmosphere. Since the light path is slightly altered from moment to moment, the light beam slightly moves erratically when it enters the eye's pupil. The image, therefore, appears to "dance" slightly – i.e., twinkle. If no turbulence exists, the planet's light path doesn't deviate, and it doesn't twinkle. The seeing is then said to be excellent.



Sharp and steady

Under a very steady atmosphere, one that doesn't have much turbulence, the planet will appear very steady through a telescope.





Moment 1 < 0.1 sec Moment 2

Under most atmospheric conditions, though, planets shimmer from moment to moment when viewed under magnification.

If the turbulence is sufficiently strong, a planet twinkles to the unaided eye, and its image through a telescope will be blurred.

Light beam passing through a turbulent atmosphere

 View of a twinkling planet with unaided eye	 A blurred view through a telescope
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Planets don't twinkle under typical atmospheric conditions. Unlike the pinpoint of stars, they exhibit a small angular area. The light path from each small portion of that area slightly distorts as it travels through turbulence in the atmosphere. As happens with starlight, the light from each small area arrives at the pupil in a slightly different position which changes constantly. But over the planet's full true area, the distortions blend together, and, as a result, the light from the planet doesn't twinkle. But, as seen through a telescope, the distortions cause it to shimmer. (However, under a very turbulent atmosphere, it is a different story! It twinkles also.)