

Star Count Biases Expanded With Stellar Metamorphosis

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Abstract: It is observed that stars evolve into what are called “planets/exoplanets”, this meaning planets/exoplanets are simply evolved/evolving stars. Therefore the biases in counting stars need to be expanded considerably to account for transits and outdated classifications.

There are many unavoidable problems in counting stars for the purpose of getting an accurate picture of the distribution of stars in space. The effects of our point of view in the galaxy, the obscuring clouds of gas and dust in the galaxy, the extreme range of inherent brightness, the lack of strong spectrums in highly evolved stars, and even classifying evolved stars as “planets” create a biased and far from reasonable view of stars.

1. Stars vary far more in intrinsic brightness than they do in distance.
2. Our line of sight through the Milky Way Galaxy is interrupted by great clouds of gas and dust, which block our view of stars more than a few thousand light-years away.
3. The Sun is located in the disk of the Milky Way Galaxy, in the northern edge of the thin disk and on the inner edge of a spiral arm called the Orion–Cygnus Arm. There is good reason to believe that stars in the galaxy's thin disk are different from thicker part of the disk, and from the bulge and the halo. Some stars are obviously more common in spiral arms than in the disk in between the arms.
4. The vast majority of stars lack strong visible spectrums, so they can only be indirectly observed. This leads to a bias in itself concerning a type of indirect observation called a transit. The majority of star systems with older stars cannot be observed via transits. Most evolved stars that orbit younger ones have an angle that does not allow for a dip in the light curve of the host, as well have orbital periods far in excess of 1 Earth year. As an example, even if we had a line of sight transit for an object like Neptune (as observed from another star system), it wouldn't occur for 165 Earth years, and to confirm the transit wouldn't happen for another 330 years (the second transit).
5. The vast majority of stars are physically smaller than brown dwarfs, so direct observation is impossible with current technology and even transit data can (and still does) miss them.
6. Stars still have the label “planet/exoplanet”. So giving an accurate “star” count will miss the overwhelmingly huge percentage of stars that have cooled significantly and begun the differentiation of their interiors over many hundreds of millions of years.

With the expansion of biases it is clear that we still cannot give an accurate star count. There are probably trillions of stars in our galaxy, thus a star “count” is akin to saying there's air in the room, versus saying oxygen and nitrogen molecule count. With star counts it has become 2 steps forward, 10 miles of steps back.