



BRIEF

STARS

Stellar Motions



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Stellar Motions

Overview

In terms of a human lifetime, stars appear static on the night sky. Thus, we call these “fixed stars”.

The only real discernable motion are from very close objects such as: Sun, Moon, planets, comets, and asteroids. However, all objects in the Universe move.

This will focus on providing an introduction to Stellar Motions. For further understanding of the topics discussed here, consult those individual lesson videos.

This lesson only provides an overview. Radial Velocity and Proper Motion will be further explored in other lessons.



Stellar Motions

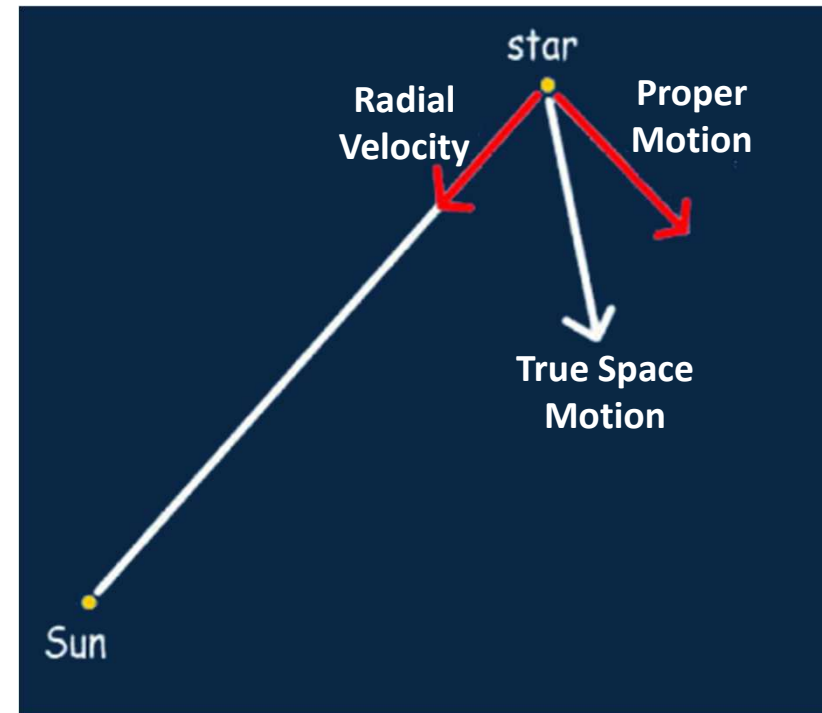
Motion of Stars

Stellar Motion is divided into specific parts, each with its own name and measurement technique, according to its direction.

Radial Motion: Motions toward or away from the Sun measured by Doppler shifts in their spectrographic wavelengths. Measured spectroscopically. Symbol, v_r ; Units, km/s. A negative radial velocity means a star is approaching us

Proper Motion: The angular velocity of a star tangential to the line of sight. This is perpendicular to its radial motion. Angular measurement, astrometrically, in seconds of arc per year or per century. Units, arcsec/year

True Space Motion: Combination of Radial Velocity (towards or away from us), and Proper Motion (tangential motion on the celestial sphere).



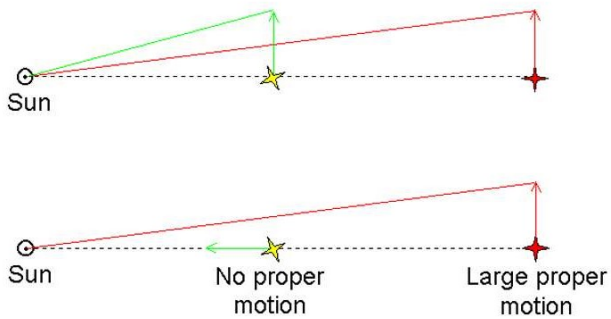
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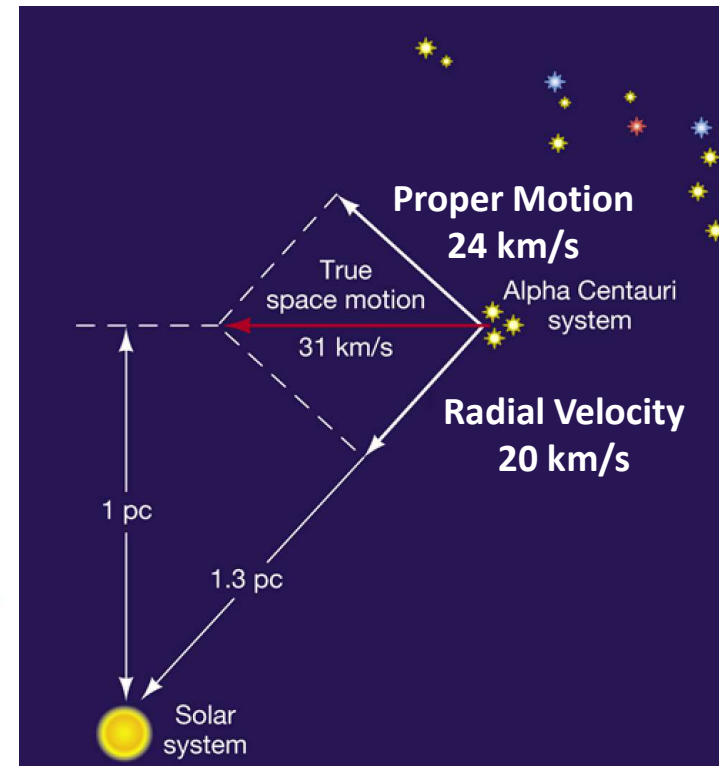
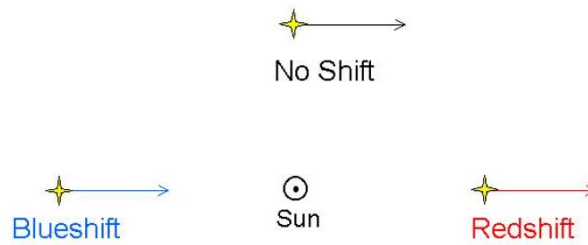
Motions of Stars

Radial Velocity vs. Proper Motion

Proper Motions



Radial Velocities





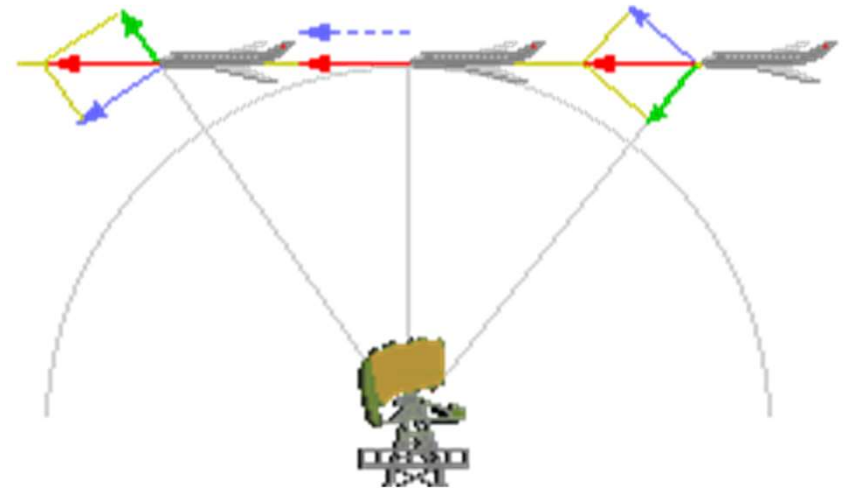
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Summary

This lesson covered just the basic topics of stellar motion. For more details of each, consult those video lessons.

Stellar motions can basically be divided into three categories:

- Towards or away from us (Radial)
- Tangential to us (Proper)
- Space (Radial plus Proper)





Stellar Motions

Questions?