



Charlie Elliott
CHAPTER
Atlanta Astronomy Club

Feature Presentation for February 12th:

"Double Trouble"

A presentation about Double Stars

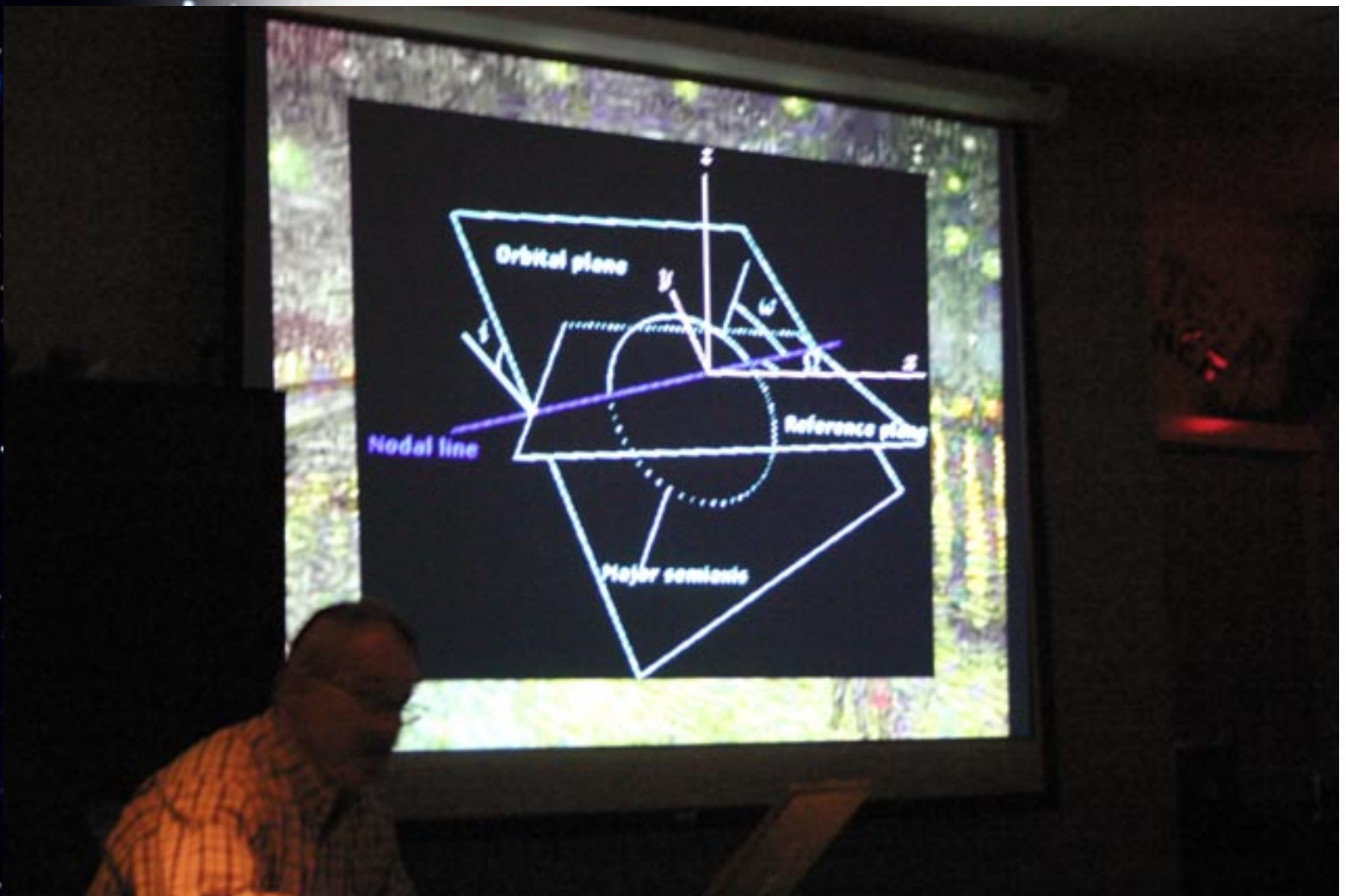
Dr. Bill McKibben



Dr. McKibben's presentation covered the basic classifications of binary star systems, including Visual, Astrometric, Spectroscopic and Photometric systems.



The presentation continued with a bit of basic astronomy, including Kepler's 3 laws of planetary motion, and Newton's discovery of the 2nd law of motion ($F=ma$) and the law of universal gravitation that offered an explanation as to why Kepler's laws were correct.



Then it was on to the orbital elements of 2 body systems. Dr. McKibben explained that every plane elliptical orbit can be described by 6 orbital elements: **a** - semimajor axis, **e** - eccentricity, **T** - time of periastron, **i** - inclination, **Ω** - ascending node position angle and **ω** - argument of periastron.

Case 2 – Spectroscopic Binary

Case 2A. If two sets of spectral lines can be seen in the spectrum of a stellar object, then the object is called a *double-lined spectroscopic binary*.



From Spectroscopic Binaries, to Radial Velocity Curves , Dr. McKibben covered the observational techniques and the math required to find the masses and orbital elements of these common stellar systems in our galaxy.

Thank you Dr. McKibben for an absolutely superb introduction to the study of double stars!

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