

Physics & Space Sciences Department Colloquium

Winds that Sail on Starlight

Presented by:



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We are most familiar with light's role as a carrier of energy or information. But in massive, luminous stars, the relatively small *momentum* of light, set by dividing its energy by its (very large) speed, can overcome gravity and drive matter from the stellar surface to form a supersonic, outflowing, stellar "wind". Such winds can recycle much of the star's mass back into the interstellar medium, and are even thought to be a key factor in setting an upper limit to the mass and luminosity of stars. This talk will review the sometimes quite subtle physics in the interaction of light and matter, and explain how, much as a sailboat can be propelled against the wind, the driving from light can sometimes act across, or even against, the energy flux of light. I will conclude with some mention of broader application of this physics of light driving, e.g. for the disk winds from quasars, and even for the future exploration of our solar system via "light sails".

Light Refreshments will be served

Friday, January 16, 2015

4:00-5:00 P.M.

OPS Room 140