

# PHY 688: Special Topics in Astrophysics

## Fall 2017

### The Formation of Stars and Planets

**Instructor:** F.M. Walter (frederick.walter@stonybrook.edu)

**Class Time:** Mondays/Wednesdays 10:00-11:20AM; room TBD

**Text:** Protostars and Planets VI, eds. Beuther, Klessen, Dullemond, and Henning, University of Arizona Press (2014), supplemented by more recent refereed literature.

**Prerequisites:** graduate standing and an interest in the topic.

This semester we will explore the current frontiers in the formation of stars, brown dwarfs, and planets. High spatial resolution observations from the X-rays through the radio have revealed a wealth of new insights. The focus will be on low mass stars and exoplanets, but will include topics ranging from molecular clouds and the initial mass function to accretion disks and protostars and on to the stability of planetary systems and the long term habitability of exoplanets. We will be biased towards the observational side of things, and will emphasize recent results (e.g., from ALMA, Herschel, and HST/COS).

This will be an audience-participation course. In addition to some formal lectures, students will be asked to lead discussions based on the assigned readings. Each student will prepare a review paper on some relevant astrophysics.

The class meeting time is flexible, and can be changed to accommodate all interested students. We will discuss this at the first class meeting, on August 28.

**Questions?** Please contact Professor Walter.