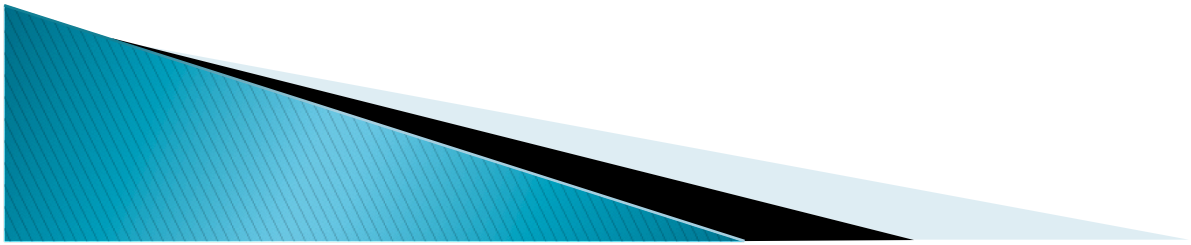
YSO Circumstellar disks

- There is a continuum of disk properties between primordial and debris disks
- Some open issues
  - What is the true disk mass (can ALMA measure this with spatially resolved gas rotation?)
  - When does the gas dissipate?
  - How do we constrain the disk properties in the areas we can't spatially resolve (~10 AU)?
  - What can we learn by comparisons to other disks? e.g. Be stars, post-AGB
    - Grain composition, growth and destruction
    - Effect of binarity on disks
  - How can we trace larger (> 1 cm) bodies in primordial disks?



Connections with stellar evolution

- Pre-main sequence tracks
  - Major disagreements, particularly at the low mass end
  - Some new masses coming from dynamical measurements
  - But how do we get high accuracy T_{eff} in the presence of veiling?
- Are there fundamental differences between disks around solar mass and larger stars?
  - Inner disks around Be stars follows a different L/size relation than those around lower mass stars
  - Some suggestions in the debris disk frequency
  - Location of the snow line?

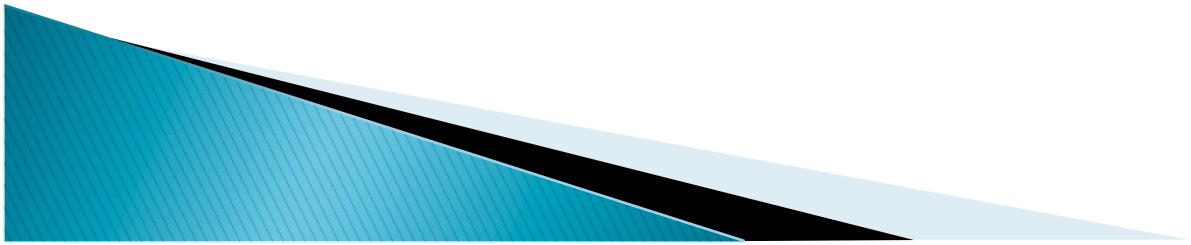
Stellar properties and exoplanets

- Determination of the planet physical properties requires good knowledge of the stellar values
- Studying planet evolution requires good stellar age

	Kepler 7b	Kepler 8b
Spectral type	Late F/early G V	F8 IV
Stellar mass	4%	5%
Stellar radius	3%	5%
Stellar age	30% (1 Gyr)	45% (1.5 Gyr)
Planet mass	10%	25%
Planet radius	3%	5%

Stellar evolution and planets

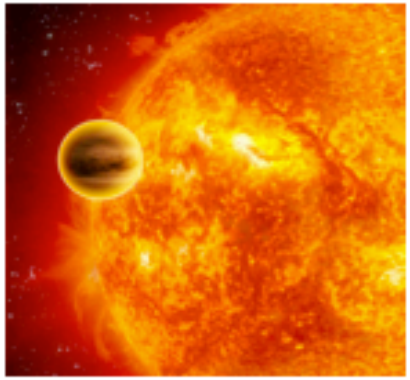
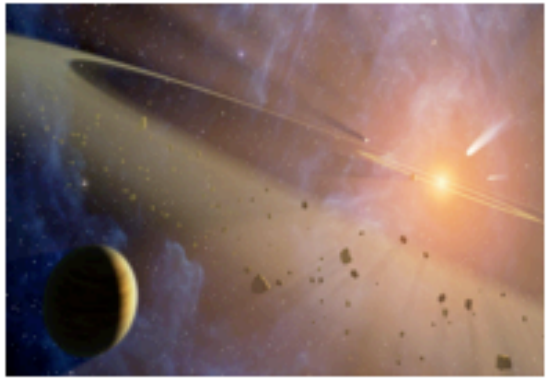
- Need better census of debris disks around giant stars and white dwarfs
  - RV surveys have found planets around giants
- What happens to the planetary system when the star leaves the main sequence?
  - Can planets form in the post-MS disks?
- Planets around pulsars
  - How do they survive? Or were they formed after?



Workshop on stellar/exoplanet connection

2010 Sagan Exoplanet Summer Workshop

Stars as Homes for Habitable Planetary Systems


images courtesy NASA/JPL-Caltech, NASA/JPL-Caltech, ESO

Hosted by the NASA Exoplanet Science Institute, California Institute of Technology, Pasadena, CA

The 2010 workshop will take place **July 26-30, 2010** at the **Beckman Institute Auditorium** on the Caltech Campus, Pasadena, CA

Financial assistance applications: due March 5, 2010

http://nexsci.caltech.edu/workshop/2010/index.shtml