Curriculum Vitae
Kaylan Joshua Burleigh

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Education

- The University of California, Berkeley (Expected)
  - Ph.D. in Astrophysics
- The University of Arizona (08/2007 – 05/2011)
  - B.S. in Physics, Astronomy, *Summa cum laude* and Honors

Research Interests

- Theoretical astrophysics
  - I am interested in star formation at all scales, including the interplay between stellar physics and disk dynamics and gas in the ISM. I want to know how the IMF behaves at the low and high mass ends, for any redshift, and physically understand why.

Research Advisors

- Steve Stahler (10/2012 – Present) – Analytic model for cluster formation
  - I use the mass continuity, momentum, poisson, and heat equations to describe an spatially isothermal cloud, including mass and energy loss (due to star formation and turbulent dissipation, respectively). I numerically solve a set of ODEs for the physical properties of the cloud.
- John Bieging – CO mapping of a low mass star-forming cloud (*Paper in prep*)
  - NASA Space Grant Internship, Lunar and Planetary Laboratory (2010-11)
  - Undergraduate Research Assistant, Steward Observatory (2009-10, 2011-12)
- Ali Tritschler & Han Uitenbroek – Solar Chromosphere, spectra and polarimetry
  - NSF REU Astronomy Internship, NSO, Sac Peak (Summer 2011)
  - NSF REU Astronomy Internship, NSO, Sac Peak (Summer 2010)
- Jay Melosh – Mars, impact cratering
  - Independent Study, Lunar and Planetary Laboratory (2008-09)
- Joe Veverka & Paul Helfenstein – Moons of Saturn, albedo and polarization
  - NSF REU Astronomy Internship, Cornell University (Summer 2009)

Publications

- Burleigh, K. J., Bieging, J., Chromey, A., and Kulesa, C. 2013. *Paper in Prep*.
- Burleigh, K. J., Melosh, H. J., Tornabene, L. L., Ivanov, B., McEwen, A. S., and Daubar, I. J. 2012. Impact airblast triggers dust avalanches on Mars. Icarus, 217, 194-201.

Awards & Honors

- *Graduate*
  - NSF Graduate Research Fellow (08/2012 – Present)
- *Undergraduate*
  - Outstanding Senior Award (Astronomy) (05/2012)
  - Studentship Award, at *AAS/SPD Meeting*, Las Cruces, New Mexico (06/2011)
  - Dwornik Award, at *40th LPSC*, The Woodlands, Texas (03/2009)

Presentations

- (*Poster*) K. Burleigh 2012, "Tracing the Serpens molecular cloud with ^{12}CO and ^{13}CO J = 2 -> 1: Achieving high resolution over a large field of view", *AAS Winter Meeting*, Austin, Texas.
- (*Talk*) K. Burleigh 2011, "The observed red asymmetry in bisectors of the chromospheric Ca II 854.2 nm line", *AAS/SPD Meeting*, Las Cruces, New Mexico.
    - (video of talk) URL: http://www.youtube.com/watch?v=-VpqNhfn_Yw
- (*Talk*) K. Burleigh 2011, "High resolution ^{12}CO and ^{13}CO maps of the Serpens molecular cloud", *Statewide Arizona Space Grant Symposium*, Phoenix, Arizona.
    - (video of talk) URL: http://www.youtube.com/watch?v=Ya9TAwHGMJ8
- (*Talk*) K. Burleigh 2009, "Small impacts trigger dust landslides on Mars", *40th LPSC*, The Woodlands, Texas.

Technical Skills

- Proficient in: C, Python, IDL
- Platforms: Linux/Unix, Mac OS