

CURRICULUM VITAE

JOEL D. GREEN

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EDUCATION AND CAREER:

- 2011– UNIVERSITY OF TEXAS AT AUSTIN
Research Associate
- 2008–2011 UNIVERSITY OF TEXAS AT AUSTIN
Postdoctoral Researcher
Supervisor: Neal J. Evans, II
- 2000–2008 UNIVERSITY OF ROCHESTER
Ph.D., Astronomy (2009)
Thesis: *Observations of Feedback Between Protostars and Their Natal Clouds*
Advisor: Dan M. Watson
A.M., Astronomy (2002)
- 1996–2000 CORNELL UNIVERSITY
B.A., Astrophysics (2000)
Research Advisor: Terry L. Herter

TEACHING, OUTREACH AND LEADERSHIP:

- 2011 **Public Outreach Lectures:**
– “Building Alien Worlds”, Nerd Nite Austin (March 2, 2011)
– SAGE Lecture “The Formation of Protostars” (April 18, 2011)
– Booth, Texas Science and Engineering Festival (Nov. 5-6, 2011)
– “Building Alien Worlds”, Science in the Pub (November 16, 2011)
– “Building Alien Worlds”, Nerd Nite NYC (May 4, 2012)
- 2010-2012 Chair: Scientific/Local Organizing Committee, Frank N. Bash Symposium October 2011
- 2011-2012 Representative, Postdoc Mentoring Committee
- 2010-2011 Postdoctoral Representative, Dept. of Astronomy, UT Austin
- 2010-2012 Undergraduate Mentor (Student: Michelle Rascati)
- 2010-2012 High school Mentor (Student: Shakthi Shrima)
- 2010 SOFIA EXES Schoolteacher Outreach lecture:
“Planet Construction with Spitzer and Herschel”
- 2009 “Planet Construction: A New View of Earth’s History”
- 2002 Two Guest Lectures in AST 142 – “Elementary Astrophysics”
- 2001 Teaching Assistant AST 142 – “Elementary Astrophysics”
- 2000 Teaching Assistant, PHY 142 – “Electricity & Magnetism (Honors)”

MEMBERSHIP: PI: FOOSH and COPS (Herschel) Teams (2010-present)
DIGIT (Herschel Key Project) Team Member (2008-present)
IRS_Disks (Spitzer Instrument) Team Member (2000-present)
American Astronomical Society (AAS) (2000-present)
Summer research assistant, SOFIA-FORCAST team (1998-2000)

RESEARCH INTERESTS: star and planet formation
jets and outflows in molecular clouds
dust processing, molecular gas and ice in protostars and YSOs
infrared and submillimeter spectroscopy
accretion processes in YSOs
abundances in planetary nebulae

OBSERVING EXPERIENCE:

- McDonald Observatory 2.1 m (1 night/ 2011): “Short-term Variability in FU Orionis Objects”
- CSO (7 nights/2009, 6 nights/2011): “SHARC-II and Heterodyne Receiver Observations of Prestellar and Protostellar Sources”
- IRTF (1 night/2005): “Ground-based Photometry of IRS_Disk Sources”
- UK Infrared Telescope (2 nights/2004): “Ground-based Photometry of IRS_Disks Sources”
- MMT/Whipple Observatory (2 nights/2004): “Ground-based Photometry of IRS_Disks Sources”
- Service observing: University of Rochester- RIT Mees Telescope, 2001

PUBLICATIONS:

Refereed journals

Selected Publications

- “Disentangling the Environment of the FU Orionis Candidate HBC 722 with Herschel” **Green, J. D.** et al. 2011, ApJL, 731, 25
- “GGD37: An Extreme Protostellar Outflow” **Green, J. D.** et al. 2011, ApJL, 726, 1
- “Dust, Ice and Gas in Time (DIGIT) Herschel program first results: A full PACS-SED scan of the gas line emission in protostar DK Cha,” van Kempen, T., **Green, J. D.**, et al. 2010, A&A Herschel Special Issue, 518, 128
- “The development of a protoplanetary disk from its natal envelope,” Watson, D. M., et al. 2007, Nature, 448, 1026
- “Spitzer IRS Observations of FU Orionis Objects,” **Green, J. D.**, Hartmann, L., Calvet, N., Watson, D. M., Ibrahimov, M., Furlan, E., Sargent, B., & Forrest, W. J. 2006, ApJ, 648, 1099

- “Spitzer Observations of Hydrogen Deuteride,” Neufeld, D. A., **Green, J. D.**, et al. 2006, ApJL, 647, L33

All Publications

- “High Resolution Optical Spectra of HBC 722 after Outburst,” Lee, J.-E. et al. 2011, JKAS, 44, 67
- “The Spitzer Infrared Spectrograph Survey of T Tauri Stars in Taurus,” Furlan, E. et al. 2011, ApJS, 195, 3
- “Spitzer Infrared Spectrograph Survey of Young Stars in the Chamaeleon I Star-Forming Region,” Manoj, P. et al. 2011, ApJS, 193, 11
- “First results of the Herschel Key Program ‘Dust, Ice and Gas in Time’: Dust and Gas Spectroscopy of HD 100546,” Sturm, B., et al. 2010, A&A Herschel Special Issue, 518, 129
- “Crystalline Silicates and Dust Processing in the Protoplanetary Disks of the Taurus Young Cluster,” Watson, D. M., et al. 2009, ApJS, 180, 84
- “Silica in Protoplanetary Disks,” Sargent, B. A., et al. 2009, ApJ, 690, 1193
- “Spitzer IRS Spectra and Envelope Models of Class I Protostars in Taurus,” Furlan, E., et al. 2009, ApJS, 176, 184
- “Dust Processing and Grain Growth in Protoplanetary Disks in the Taurus-Auriga Star-Forming Region,” Sargent, B. A., et al. 2008, ApJS, 182, 477
- “Spitzer Space Telescope Infrared Spectrograph mapping of the central kpc of Centaurus A,” Quillen, A. C., et al. 2008, MNRAS, 384, 1469
- “HD 98800: A 10 Myr Old Transition Disk,” Furlan, E., et al. 2007, ApJ, 664, 1176
- “Spitzer Observations of HH 54 and HH 7-11: Mapping the H₂ Ortho-to-Para Ratio in Shocked Molecular Gas,” Neufeld, D. A., et al. 2006, ApJ, 649, 816
- “A Survey and Analysis of Spitzer Infrared Spectrograph Spectra of T Tauri Stars in Taurus,” Furlan, E., et al. 2006, ApJS, 165, 568
- “Dust Processing in Disks around T Tauri Stars,” Sargent, B., et al. 2006, ApJ, 645, 395
- “Polycyclic Aromatic Hydrocarbons Orbiting HD 233517, an Evolved Oxygen-rich Red Giant,” Jura, M., et al. 2006, ApJL, 637, L45
- “Mid-Infrared Spectra of Polycyclic Aromatic Hydrocarbon Emission in Herbig Ae/Be stars,” Sloan, G. C., et al. 2005, ApJ, 632, 956
- “Disks in Transition in the Taurus Population: Spitzer IRS Spectra of GM Aurigae and DM Tauri,” Calvet, N., et al. 2005, ApJL, 630, L185
- “The Accretion Disk of the Lithium-depleted Young Binary St 34,” Hartmann, L., et al. 2005, ApJL, 628, L147
- “Colors of Classical T Tauri Stars in Taurus Derived from Spitzer Infrared Spectrograph Spectra: Indication of Dust Settling,” Furlan, E., et al. 2005, ApJL, 628, L65

- “Spitzer IRS Spectra of Young Stars Near the Hydrogen-burning Mass Limit,” Furlan, E., et al. 2005, ApJL, 621, L129
- “The Truncated Disk of CoKu Tau/4,” D’Alessio, P., et al. 2005, ApJ, 621, 461
- “The SMART Data Analysis Package for the Infrared Spectrograph on the Spitzer Space Telescope,” Higdon, S. J. U., et al. 2004, PASP, 116, 975
- “Mid-Infrared Spectra of Dust Debris around Main-Sequence Stars,” Jura, M., et al. 2004, ApJS, 154, 453
- “Mid-infrared Spectroscopy of Disks around Classical T Tauri Stars,” Forrest, W. J., et al. 2004, ApJS, 154, 443
- “The State of Protoplanetary Material 10 Million years after Stellar Formation: Circumstellar Disks in the TW Hydrae Association,” Uchida, K. I., et al. 2004, ApJS, 154, 439
- “Mid-infrared Spectra of Class I Protostars in Taurus,” Watson, D. M., et al. 2004, ApJS, 154, 391
- **Referee for Astrophysical Journal, Astrophysical Journal Letters, Astronomy & Astrophysics, NASA ROSES: Origins of Solar Systems**

Non-Refereed/Submitted Articles

- “Caught in the Act: Cascading Material Pours onto a Young Star” , **Green, J. D.**, McDonald Observatory press release, <http://mcdonaldobservatory.org/news/releases/2011/0420.html>, 20 Apr 2011
- “X-ray and Ultraviolet detection of the new FU Orionis object HBC 722” , Pooley, D., **Green, J. D.**, 18 Nov 2010, ATel 3040
- Editor, “New Horizons in Astronomy: Frank N. Bash Symposium 2009, 2010, ASPC, 432
- “Ph D. Thesis: Observations of Feedback Between Protostars and their Natal Clouds” **Green, J. D.** 2009
- “Pointing with Spitzer-IRS: IRS Pickup Targets,” Watson, D. M., **Green, J. D.**, & Leisenring, J. 2003

Conference Proceedings/Posters - First Author/Presenter Only

- “FOOSH (FU Orionis Objects Surveyed with Herschel): Characterizing Outbursting Sources with Herschel” **Green, J. D.**, et al. July 2011, Gordon Research Conference, Mount Holyoke College, Massachusetts
- “DIGIT (Dust, Ice, and Gas in Time): Herschel-PACS Observations of Gas in Protostars” **Green, J. D.**, et al. May 2010, Herschel First Results Symposium, ESA, Noordwijk, Netherlands
- “Highlights from DIGIT (Dust, Ice, and Gas in Time)” **Green, J. D.**, et al. May 2010, Herschel First Results Symposium, ESA, Noordwijk, Netherlands
- “DIGIT (Dust, Ice, and Gas in Time) First Results: HD 100546 and DK Cha,” **Green, J. D.**, et al. January 2010, AAS January 2010: Herschel First Results Session, Washington, DC
- “DIGIT (Dust, Ice, and Gas in Time) First Results” **Green, J. D.**, et al. December 2009, Herschel Initial Results Workshop, ESAC, Madrid, Spain
- “The Birth of a High Mass Protostar?” **Green, J. D.**, et al. November 2009, ESO Conference on Circumstellar Disks, Garching, Germany
- “The Symbiotic Relationship Between Protostars and Their Natal Clouds,” **Green, J. D.**, et al. October 2008, Spitzer Sheds Light on Circumstellar Disks Conference, Pasadena, CA
- “Where is the Driving Source for HH 168?” **Green, J. D.**, et al. 2008, Bulletin of the American Astronomical Society, 39, 889
- “Mid-infrared spectra of Class I protostars in Taurus,” **Green, J. D.**, et al. Cores, Disks, Jets and Outflows” conference Banff, Canada, 2004
- “Mid-infrared spectra of Class I protostars in Taurus,” **Green, J. D.**, et al. 2004, Bulletin of the American Astronomical Society, 36, 723 (Denver, CO)
- “Mid-infrared spectroscopy of disks around classical T Tauri stars,” Forrest, W. J., et al. 2004, Bulletin of the American Astronomical Society, 36, 722 (Denver, CO)

Popular Science Articles

- Interview Guest, “They Blinded Me with Science”, KVRX 91.7 Austin, Jan. 30, 2012
- Contributor, StarDate/Universo/Sternzeit radio shows Oct. 4-6, 2010, “Protoplanetary Disks”
- “Learning How to Build a Solar System” Joel D. Green, *Mercury*, Summer 2010 issue
- “How to Build a Planet: Learning Nature’s Secret with the Spitzer Space Telescope,” Adam Frank, *Discover* cover article July 2005

Papers in preparation

- “First Detection of Accretion Streams in a Young Stellar Object? Rapid Cadence Monitoring of HBC 722” **Green, J. D.** et al. 2012, in prep.
- “Herschel-SPIRE Observations of FU Orionis-type Objects” **Green, J. D.** et al. 2012, in prep.
- “Spitzer-IRS Observations of GGD37” **Green, J. D.** et al. 2012, in prep.
- “Using Fine Structure Emission to Derive Kinematics of the HH 168 Jet” **Green, J. D.** et al. 2012, in prep.
- “Embedded Protostars from the DIGIT Herschel-PACS Sample: Characteristics and Trends” **Green, J. D.** et al. 2012, in prep.

Accepted Proposals

- “SPIRE-FTS Observations of a Diverse Sample of Protostars and their Surroundings” **Green, J. D.** et al. 2011, Herschel OT2 program (Award: \$140,000)
- “FOOSH: FU Orionis Objects Surveyed with Herschel” **Green, J. D.** et al. 2010, Herschel OT1 program (Award: \$114,000)
- “Target of Opportunity Observations of the new FU Orionis Event HBC 722” **Green, J. D.** et al. 2010, Herschel ToO program (Award: \$40,000)
- “Target of Opportunity Observations of the new FU Orionis Event HBC 722”, Pooley, D. & **Green, J. D.**, 2010-2011, SWIFT ToO/DDT program
- “Target of Opportunity Observations of the new FU Orionis Event HBC 722”, Guedel, M., Skinner S., **Green, J. D.**, et al., 2010-2011, XMM ToO/DDT program
- “Addressing the Abundance Discrepancy Factor in Planetary Nebulae,” Dinerstein, H., **Green, J. D.**, 2010, Herschel OT1 program (Award: \$34,000)
- “Herschel-PACS Spectroscopy of Exoplanet Host Debris Disks”, Dodson-Robinson, S., **Green, J. D.**, Evans, N. J., 2010, Herschel OT1 program (Award: \$128,000)

SCIENTIFIC TALKS:

- “The Herschel View on Protostellar and Protoplanetary Evolution in Nearby Molecular Clouds”, New York University, May 11, 2012
- “The Herschel View on Protostellar and Protoplanetary Evolution in Nearby Molecular Clouds”, Columbia University, May 10, 2012
- “The Herschel View on Protostellar and Protoplanetary Evolution in Nearby Molecular Clouds”, SUNY Stonybrook, May 9, 2012
- “CO in DIGIT: Protostars and Disk Sources”, Lorentz Workshop, Leiden, Netherlands (March 2012)
- “Highlights from the DIGIT Key Program”, Herschel Special Session, Winter 2012 AAS, Austin (January 2012)
- “Connecting Episodic Accretion and Outflow,” Astronomy Colloquium, Rice University (February 23, 2011)
- “The Natural Laboratory of Evolving Protostars and Planetary Systems: Geology and Chemistry at a Distance” Board of Visitors Winter 2011 Meeting, University of Texas at Austin (February 12, 2011)
- “Herschel Observations of the New FU Orionis Candidate HBC 722” Astronomy Colloquium, University of Rochester (December 16, 2010)
- “Herschel-PACS Observations of Water in Protostars” ISM/Planets and Life Seminar, University of Texas at Austin (September 24, 2010)
- “DIGIT (Dust, Ice, and Gas in Time): Herschel-PACS Observations of Young Stars”, Astronomy Colloquium, University of Rochester (June 7, 2010)
- “DIGIT First Results: Herschel-PACS Observations of HD 100546 and DK Cha,” Herschel Initial Results Workshop, ESAC, Madrid, Spain (December 17, 2009)
- “Circumstellar Disk Mineralogy in Nearby Molecular Clouds: Spitzer and the Herschel Followup,” Planetary Science Symposium, University of Texas at Austin (October 2, 2009)
- “The Birth of a Massive Protostar,” ISM/Planets and Life Seminar, University of Texas at Austin (September 25, 2009)
- “The Birth of a Massive Protostar,” Astronomy Colloquium, American Museum of Natural History, New York, NY (September 3, 2009)
- “The Symbiotic Relationship Between Protostars and Their Natal Clouds,” ISM/Planets and Life Seminar, University of Texas at Austin (February 13, 2009)
- “Where is the Driving Source for HH 168?” ISM/Planets and Life Seminar, University of Texas at Austin (April 2008)
- “Spitzer Observations of FU Orionis Objects,” ASNY Conference (Troy, NY October 2004)

REFERENCES:

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