Joseph Schmitt — Curriculum Vitae

Astronomy Department
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PRIMARY INTERESTS

Science policy
- ❖ Supporting scientifically sound government policies
- ❖ Advocating for increased funding for science as prioritized by scientists themselves
- ❖ Promoting public scientific literacy

Exoplanets
- ❖ Discovery of new planets and planet candidates
- ❖ Characterization of exoplanets and their orbits
- ❖ Statistics on populations of exoplanets

EDUCATION

Yale University, New Haven, CT — *2012 – Present*
Master of Philosophy, Astronomy — *May 2015*
Master of Science, Astronomy — *May 2015*
PhD Candidate, Astronomy — *Expected May 2017*

Dissertation: "Planet Hunting: The Search for Hidden Planets in the *Kepler* Field"
- ❖ Discovered two new planets (PH3 c and Kepler-150 f) and 24 new planet candidates
- ❖ Found the first seven planet candidate system outside of the solar system
- ❖ Identified six new stars in the neighborhoods of distant planets
- ❖ Science team leader for the Planet Hunters citizen science program
- ❖ Analyzing the frequency of planets orbiting the smallest and most abundant type of star
- ❖ Searching in multi-planet systems for additional planets hidden in the data

Research assistant:
- ❖ Assisted other members of the Planet Hunters science team in the discovery of 67 new planet candidates, including many of the longest period planet candidates ever found
- ❖ Aided in the discovery and analysis of KIC 8462852, called "The Most Mysterious Star in Our Galaxy" by The Atlantic and at the center of speculation of "alien megastructures"
- ❖ Determined the best method to correct for imperfect modeling of stellar surfaces allowing for more accurate estimates of a star's mass, radius, age, and other properties
- ❖ Supported a citizen scientist on his own scientific publication on eclipsing binary stars

University of Iowa, Iowa City, IA — *2008 – 2012*
Bachelor of Science, Astronomy and Physics, Minor in Latin — *May 2012*
Special Honors, With Highest Distinction

Research Assistant — *2009 – 2012*
- ❖ Measured higher than expected X-ray emission from black holes in small blue galaxies, implying that they were important in heating the early universe

LEADERSHIP, ADVOCACY, AND OUTREACH

- **Christine Mirzayan Science and Technology Policy Fellow** *Jan. 2017 – Apr. 2017*
  Graduate Fellow at the Space Studies Board at the National Academy of Sciences
- **Astrobites.org** *Dec. 2015 – Present*
  Author of articles summarizing the latest astronomical research
- **Leitner Family Observatory and Planetarium** *Sept. 2015 – Present*
  Volunteer presenting two weekly planetarium shows to the public (2500+ visitors so far)
- **Planet Hunters citizen science program** *Nov. 2012 – Present*
  Science team leader and regular communicator with citizen scientists
- **Yale Graduate Student Assembly** *Oct. 2012 – Present*
  Executive Board and Steering Committee member *Sept. 2016 – Jan. 2017*
  Advocate for graduate students and organizer of multiple tax information sessions
- **Annual New Haven Science Fair** *May 2015, May 2016*
  Volunteer judge for elementary school science fair projects
- **Reddit.com Science Ask Me Anything (AMA) Series** *July 2015*
  Hosted a Planet Hunters AMA with 28,000 unique visitors (and facilitated other AMAs)
- **Emerging Researchers in Exoplanet Science Symposium** *May 2015*
  Member of the Organizing Committee
- **House Midterm and Connecticut Gubernatorial Election** *Oct. 2014 – Nov. 2014*
  Canvassed for House Representative DeLauro and Governor Malloy
- **American Astronomical Society** *Nov. 2013*
  Advocated for the funding of astronomy priorities in meetings with four House of Representatives offices as part of the "Communicating with Washington" program
- **University of Iowa Department of Physics and Astronomy** *Feb. 2009, Feb. 2010*
  Presenter in the Department of Physics and Astronomy Demonstration Shows

TEACHING

Yale University **New Haven, CT**
Teaching Fellow
Teaching weekly discussion sections, grading homework and exams, and/or leading astronomical labs at the observatory

- ASTR 320: Physical Processes in Astronomy *Fall 2016*
- ASTR 120: Galaxies and the Universe *Summer 2016*
- ASTR 120: Galaxies and the Universe *Spring 2016*
- ASTR 130: Origins & the Search for Life in the Universe *Fall 2014*
- ASTR 130: Life in the Universe *Fall 2013*
- ASTR 110: Planets and Stars *Spring 2013*
- ASTR 220: Galaxies and Cosmology *Fall 2012*

Independent Tutoring **Oxford, CT**
Private math tutor for local high school sophomore *May 2016 – June 2016*

Yale University **New Haven, CT**
Math/science coach for *Freshman Scholars at Yale* program *June 2015 – July 2015*

AWARDS AND HONORS

- Presidential Management Fellowship Finalist *2017 – 2018*

- Henry A. Smith Fellowship in Astronomy *2012 – 2014*
- University of Iowa Department of Physics and Astronomy Undergraduate Scholar Award *2012*
- University of Iowa Dean's List *2008 – 2012*
- University of Iowa President's List *2008 – 2012*
- University of Iowa National Scholars Award *2008 – 2012*

PUBLICATIONS

- **Schmitt, J. R.**, Jenkins, J. M., & Fischer, D. A. 2017, "A Search for Lost Planets in the *Kepler* Multi-planet Systems and the Discovery of the Long-period, Neptune-sized Exoplanet Kepler-150 f", *The Astronomical Journal*, 153, 180
- **Schmitt, J. R.**, Tokovinin, A., Wang, J., et al. 2016, "Planet Hunters. X. Searching for Nearby Neighbors of 75 Planet and Eclipsing Binary Candidates from the K2 *Kepler* Extended Mission", *The Astronomical Journal*, 151, 159
- **Schmitt, J. R.** and Basu, S. 2015, "Modeling the Asteroseismic Surface Term Across the HR Diagram", *The Astrophysical Journal*, 808, 123
- **Schmitt, J. R.**, Agol, E., Deck, K. M., et al. 2014, "Planet Hunters. VII. Discovery of a New Low-mass, Low-density Planet (PH3 c) Orbiting Kepler-289 with Mass Measurements of Two Additional Planets (PH3 b and d)", *The Astrophysical Journal*, 795, 167
- **Schmitt, J. R.**, Wang, J., Fischer, D. A., et al. 2014, "Planet Hunters. VI. An Independent Characterization of KOI-351 and Several Long Period Planet Candidates from the Kepler Archival Data", *The Astronomical Journal*, 148, 28
- Boyajian, T. S., et al., including **Schmitt, J. R.**, 2016, "Planet Hunters IX. KIC 8462852 - where's the flux?", *Monthly Notices of the Royal Astronomical Society*, 457, 3988
- Wang, J., Fischer, D. A., Barclay, T., Picard, A., Ma, B., Bowler, B. P., **Schmitt, J. R.**, et al. 2015, "Planet Hunters. VIII. Characterization of 41 Long-period Exoplanet Candidates from Kepler Archival Data", *The Astrophysical Journal*, 815, 127
- LaCourse, D. M., et al., including **Schmitt, J. R.**, 2015, "Kepler eclipsing binary stars - VI. Identification of eclipsing binaries in the K2 Campaign 0 data set", *Monthly Notices of the Royal Astronomical Society*, 452, 3561
- Wang, J., et al., including **Schmitt, J. R.**, 2013, "Planet Hunters. V. A Confirmed Jupiter-Size Planet in the Habitable Zone and 42 Planet Candidates from the *Kepler* Archive Data", *The Astrophysical Journal*, 776, 10
- Kaaret, P., **Schmitt, J.**, and Gorski, M. 2011, "X-rays from Blue Compact Dwarf Galaxies", *The Astrophysical Journal*, 741, 10

TALKS

- **Schmitt, J. R.**, 2016, "Mr. Rogers or Dennis the Menace? How friendly are the neighbors of planet host stars?", Connecticut Exoplanet Picnic, Wesleyan University (May 26)

POSTERS

- **Schmitt, J. R.**, Giguere, M. J., Fischer, D. A., Lintott, C. J., and the Planet Hunters team. 2015, "M-dwarf Planet Occurrence Rates out to Several Hundred Days Using the Citizen Science Program Planet Hunters", Emerging Researchers in Exoplanet Science Symposium, Penn State University (May 28-29)

- **Schmitt, J. R.**, Wang, J., Agol, E., and the Planet Hunters team. 2014, "Planet Hunters: Three New Confirmed Planets and the First *Kepler* Seven Candidate System", American Astronomical Society meeting, Washington, D.C. (Jan. 5-9)
- **Schmitt, J. R.**, Wang, J., and the Planet Hunters team. 2013, "Planet Hunters VI: The First *Kepler* Seven Planet Candidate System and 13 Other Planet Candidates from the *Kepler* Archival Data", *Kepler* Science Conference II, NASA Ames Research Center, Moffet Field, CA (Nov. 4-8)
- **Schmitt, J. R.**, Wang, J., and the Planet Hunters team. 2013, "Planet Hunters Update: Many New Planet Candidates Identified by Citizen Scientists from *Kepler* Data, Including Several in the Habitable Zone", Protostars and Planets VI, Heidelberg, Germany (July 15-20)
- **Schmitt, J.**, Kaaret, P., and Gorski, M. 2012, "X-rays from Blue Compact Dwarf Galaxies", American Astronomical Society meeting, Austin, TX (Jan. 8-12, 2012)
- **Schmitt, J.**, Kaaret, P., and Gorski, M. 2012, "X-rays from Blue Compact Dwarf Galaxies", Fall Research Festival, Iowa City, IA (Dec. 7, 2011)

PROFESSIONAL SKILLS

- Computer skills: Python, Linux/Unix, and Microsoft Excel, Word, and PowerPoint
- Leading large research projects and collaborations
- Public outreach either directly or via citizen science programs

OBSERVATIONAL EXPERIENCE

- Keck I (10 meters) — **Mauna Kea, HI**
  Multi-Object Spectrograph For Infra-Red Exploration (MOSFIRE) — *June 2015*
- Southern Astrophysical Research Telescope (SOAR; 4.1 meters) — **La Serena, Chile**
  High-Resolution Camera (HRCAM) — *May 2015*
- Harlan J. Smith (2.7 meters) — **Fort Davis, TX**
  Robert G. Tull Coudé Spectrograph — *Oct. 2014*
- CTIO/SMARTS (1.5 meters) — **La Serena, Chile**
  CHIRON — *May 2013*
- Keck I (10 meters) — **Mauna Kea**
  High Resolution Echelle Spectrometer ((HIRES) — *Jan. 2013*