

Rahul I. Patel - Postdoctoral Scholar

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EDUCATION

Sept. 2015

Ph.D. – Physics (Concentration in Astronomy)

Stony Brook University /Stony Brook, NY

Adviser: Dr. Stanimir Metchev

Committee Members: Dr. Tom Weinacht, Dr. Michael Zingale, Dr. Rebecca Oppenheimer

Characterization and evolution of circumstellar debris disks around nearby stars.

May 2013

M.A.– Physics

Stony Brook University /Stony Brook, NY

Spring 2009

B.S. – Physics, 2009 (Minor in Math and Astronomy, Magna Cum Laude)

Florida International University (FIU)

- **Adviser:** Rajamani Narayanan. *Study of QCD and Calculating the ρ Mass in 4D and Large N .*
- **Adviser:** Werner Boeglin. *Dust Particle Tracking in Princeton Plasma Physics Lab.*
- **Adviser:** Jaime Fernandez-Baca: ORNL. *Study of MnAs and MnO Structure From Neutron Scattering Data.*

PRESS

RELEASES

51 Eri b and Debris Disk Discovery

- [Western Ontario University Press Release \(http://bit.ly/1NtugKG\)](http://bit.ly/1NtugKG).
- [Stony Brook University Press Release \(http://bit.ly/1Yka0kk\)](http://bit.ly/1Yka0kk).
- [Washington Post Press Release \(http://bit.ly/1Yka0kk\)](http://bit.ly/1Yka0kk).
- [CBC News \(http://bit.ly/1gESuqA\)](http://bit.ly/1gESuqA).

REFEREED

PUBLICATIONS

“Astrometric Confirmation and Preliminary Orbital Parameters of the Young Exoplanet 51 Eridani b with the Gemini Planet Imager”, by Robert J. De Rosa, Eric L. Nielsen, Sarah C. Blunt, James R. Graham, Quinn M. Konopacky, Christian Marois, Laurent Pueyo, Julien Rameau, Dominic M. Ryan, Jason J. Wang, Vanessa Bailey, Ashley Chontos, Daniel C. Fabrycky, Katherine B. Follette, Bruce Macintosh, Franck Marchis, S. Mark Ammons, Pauline Arriaga, Jeffrey K. Chilcote, Tara H. Cotten, René Doyon, Gaspard Duchêne, Thomas M. Esposito, Michael P. Fitzgerald, Benjamin Gerard, Stephen J. Goodsell, Alexandra Z. Greenbaum, Pascale Hibon, Patrick Ingraham, Mara Johnson-Groh, Paul G. Kalas, David Lafrenière, Jerome Maire, Stanimir Metchev, Maxwell A. Millar-Blanchaer, Katie M. Morzinski, Rebecca Oppenheimer, **Rahul I. Patel**, Jennifer L. Patience, Marshall D. Perrin, Abhijith Rajan, Fredrik T. Rantakyro, Jean-Baptiste Ruffio, Adam C. Schneider, Anand Sivaramakrishnan, Inseok Song, Debby Tran, Gautam Vasisht, Kimberly Ward-Duong, and Schuyler G. Wolff. 2015. *ApJ*, 814, L3.

“Discovery and spectroscopy of the young jovian planet 51 Eri b with the Gemini Planet Imager”, by B. Macintosh, J. R. Graham, T. Barman, R. J. De Rosa, Q. Konopacky, M. S. Marley, C. Marois, E. L. Nielsen, L. Pueyo, A. Rajan, J. Rameau, D. Saumon, J. J. Wang, J. Patience, M. Ammons, P. Arriaga, E. Artigau, S. Beckwith, J. Brewster, S. Bruzzone, J. Bulger, B. Burningham, A. S. Burrows, C. Chen, E. Chiang, J. K. Chilcote, R. I. Dawson, R. Dong, R. Doyon, Z. H. Draper, G. Duchêne, T. M. Esposito, D. Fabrycky, M. P. Fitzgerald, K. B. Follette, J. J. Fortney, B. Gerard, S. Goodsell, A. Z. Greenbaum, P. Hibon, S. Hinkley, T. H. Cotten, L.-W. Hung, P. Ingraham, M. Johnson-Groh, P. Kalas, D. Lafreniere, J. E. Larkin, J. Lee, M. Line, D. Long, J. Maire, F. Marchis, B. C. Matthews, C. E. Max, S. Metchev, M. A. Millar-Blanchaer, T. Mittal, C. V. Morley, K. M. Morzinski, R. Murray-Clay, R. Oppenheimer, D. W. Palmer, **R. Patel**, M. D. Perrin, L. A. Poyneer, R. R. Rafikov, F. T. Rantakyro, E. L. Rice, P. Rojo, A. R. Rudy, J.-B. Ruffio, M. T. Ruiz, N. Sadakuni, L. Saddlemyer, M. Salama, D. Savransky, A. C. Schneider, A. Sivaramakrishnan, I. Song, R. Soummer, S. Thomas, G. Vasisht, J. K. Wallace, K. Ward-Duong, S. J. Wiktorowicz, S. G. Wolff, B. Zuckerman. 2015, *Science*, 350, 64-67.

“A Sensitive Identification of Warm Debris Disks in the Solar Neighborhood Through Precise Calibration of Saturated WISE Photometry”, by **Patel, R.**, Metchev, S., & Heinze, A. 2014. *ApJS*, 212, 10.

“3-D reconstruction of pre-characterized lithium and tungsten dust particle trajectories in NSTX”, by J. Nicols, AL Roquemore, W. Davis, DK Mansfield, CH Skinner, E. Feibush, W. Boeglin, **R. Patel**, D. Abolafia, K. Hartzfeld, R. Maqueda. 2011, *Journal of Nuclear Materials*, 415, S1098-S1101.

	<p>"Advances in fast 2D camera data handling and analysis on NSTX", by W.M. Davis, R.I. Patel, W.U. Boeglin, A.L. Roquemore, R.J. Maqueda, S.J. Zweben. 2010. <i>Fusion Engineering and Design</i>, 85, 325-327.</p> <p>"The Vector Meson Mass in the Large N Limit of QCD", A. Hietanen, R. Narayanan, R. Patel, C. Prays. 2009. <i>Physics Letters B</i>, 674, 80-82.</p>
OTHER	<p>"Constraints on the Position of Supernova 2016adj in NGC 5128 from Keck-II NIRC2 Adaptive Optics Observations", by Patrick L. Kelly, David R. Ciardi, Charles A. Beichman, Alexei V. Filippenko, Ori D. Fox, Rahul I. Patel, Evan Sinukoff. 2016. <i>ATel</i> 8720.</p>
INVITED TALKS	<p><i>My Love Hate Relationship with Astrophysics & Why I Don't Regret it</i>. Seminar, Florida International University, Apr. 2016</p> <p><i>New Exozodi and Asteroid Belt Analogs using WISE</i>. Seminar, DTM, Carnegie Institute of Science, Nov. 14th, 2014.</p> <p><i>New Exozodi and Asteroid Belt Analogs using WISE</i>. Seminar, American Museum of Natural History, Oct 21st, 2014.</p>
CONFERENCE PROCEEDINGS	<p>Patel, R., Metchev, S., Heinze, A., Trollo, J., "Sensitive Identification of Nearby Debris Disks via Precise Calibration of WISE Data.", 2015, <i>Proceedings of the International Astronomical Union</i>, S314, 199-200</p> <p>Patel, R., Metchev, S., Heinze, A., "A sensitive identification of warm debris disks in the solar neighborhood through precise calibration of saturated wise photometry.", 2014, at <i>30 Years of β Pic and Debris Disks</i>, Paris, France.</p> <p>Patel, R., Metchev, S., "Finding Asteroid Belt Analogues with WISE", 2013, <i>Proceedings of the International Astronomical Union</i>, S299, 352-353</p> <p>Wahl, M., Metchev, S., Patel, R., Serabyn, E., et al., "Debris Disk Science with the Palomar ExAO System: First Results", 2013, <i>Proceedings of the International Astronomical Union</i>, S299, 72-73</p>
CONFERENCES AND SEMINARS	<p>Talk at 223 <i>American Astronomical Society</i>. Patel, R., Metchev, S., Heinze, A., "Finding the Faintest Exozodi and Asteroid Belt Analogs in WISE", 2014.</p> <p>Talk to Physics and Astronomy Graduate Students at Stony Brook University for Grad Seminar Series on "Studying Debris Disks Around Other Stars to Understand Our Own", Fall 2013.</p> <p>Poster at Astronomical Society of New York, "A Study of Planetary System Architecture through WISE's Eye", Apr. 2012.</p> <p>Poster at 218 <i>American Astronomical Society</i>, "Modeling the Detectability of Exoplanets for Palomar Extreme AO Palm-3000 System", May 2011.</p> <p>Talk and Poster at Florida International University for McNair Fellowship Research Program on "Dust Trajectories in NSTX", Oct. 2009.</p> <p>Talk at Florida International University's Honors College Student Research & Artistic Initiatives program on "Calculation of Mass of ρ Meson", Apr. 2008.</p>
RESEARCH & OBSERVING EXPERIENCE	
Telescope Time Awarded:	<p>2 Nights: 8-m Subaru Mid-IR COMICS Instrument <i>Programs: 2014A-0407 and 2013B-0410; (PI: Rahul Patel)</i></p> <p>8 Nights: 3.8-m AAT Optical Echelle Spectroscopy with UCLES <i>Programs: 2014B-0206, 2014A-0394, 2013B-0393, 2013A-0170, 2012B-0541; (PI: Rahul Patel)</i></p> <p>4 Nights: 4-m Mayall Optical Echelle Spectroscopy <i>Programs: 2014B-0206, 2013A-0170, 2012B-0541; (PI: Rahul Patel)</i></p> <p>>8 Nights: 5-m Hale Near-IR Adaptive Optics Imaging with ExAO and PHARO <i>Programs: 2011A-2013; (PI: Stanimir Metchev)</i></p>

Other Facilities:	National Labs: Princeton Plasma Physics Lab Tokamak, High-Flux Isotope Reactor – Oak Ridge National Lab	
TEACHING EXPERIENCE	<p>2014-2015 Guest Lecturer Stony Brook University Prepared and presented special topic lectures in astronomical research to undergraduate students. Aug. 2009–Apr. 2010</p> <p>Teaching Assistant Stony Brook University Teaching assistant for pre-med undergraduate physics lab. Aug. 2007 – Apr. 2009</p> <p>Teaching Assistant FIU Teaching assistant for introductory physics lab. June 5 – 15th 2006</p> <p>Teaching Assistant Upward Bound Program / FIU Teaching introductory physics to middle and high school students.</p>	
ACADEMIC SERVICE	<p>Sept. 2013 – Current Quality of Life Committee Stony Brook University Serving on committee to organize and enhance the quality of life for the physics and astronomy dept. at SBU.</p> <p>Spring 2011 Local Palomar TAC Stony Brook University Served on local TAC to allocate observing time for Stony Brook’s share of Palomar observing. 2009-2010</p> <p>Friday Afternoon Seminar Coordinator Stony Brook University Co-organized friday afternoon graduate seminar to expose graduate students of ongoing department research.</p>	
OUTREACH	<p>Fall 2014 Adopt-A-Physicist Program Stony Brook University Online program answering questions from middle/high school students about astrophysics. May 14, 2014</p> <p>Science Unplugged Miller Place High School Outreach lecture on debris disks and exoplanetary science to high school students hosted via Alan Alda’s Program for Science Communication. Feb. 7, 2014</p> <p>Astronomy Public Talk Stony Brook University Astronomy open night talk on “Looking For Solar System 2.0 By Studying Extra Solar Debris Disks.” 2012-2014</p> <p>Science Fair Judge at LISEF Woodbury, NY Volunteered to judge science projects from high school students at the pre-Intel Long Island Science Engineering Fair.</p>	
PROFESSIONAL SOCIETIES	<ul style="list-style-type: none"> • American Astronomical Society (2010–Present) • GPIES: Gemini Planet Imager Exoplanet Survey Collaboration (2014 – Present) 	
HONORS & AWARDS	<ul style="list-style-type: none"> • Peter B. Kahn Travel Prize, 2013 • Phi Beta Kappa, 2009 • Southern Cross Astronomical Society Scholarship, 2008 • Harriet Robinson Scholarship, 2008 • McNair Post Baccalaureate Fellow, (2008–present) • Florida Bright Futures Scholarship, (2004–2009) • Florida International University Honors College, (2006–2009) • Florida International University Deans’ List, (2004–2009) 	
TECHNICAL EXPERIENCE	Python, minimal IDL, Linux, minimal IRAF, Gnuplot	

REFERENCES

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