

Rahul I. Patel

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SCIENTIFIC INTERESTS

- Debris disks and exoplanetary studies
- Large survey data mining
- High-Contrast imaging

EDUCATION

Expected 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.*

REFEREED PUBLICATIONS

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, *ApJS*, 212, 10.

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

W.M. Davis, **R.I. Patel**, W.U. Boeglin, A.L. Roquemore, R.J Maqueda, S.J. Zweben, "Advances in fast 2D camera data handling and analysis on NSTX", 2010, *Fusion Engineering and Design*, 85, 325-327.

A. Hietanen, R. Narayanan, **R. Patel**, C. Prays, "The Vector Meson Mass in the Large N Limit of QCD", 2009, *Physics Letters B*, 674, 80-82.

INVITED TALKS

New Exozodi and Asteroid Belt Analogs using WISE. Seminar, American Museum of Natural History, Oct 21st, 2014.

New Exozodi and Asteroid Belt Analogs using WISE. Seminar, DTM, Carnegie Institute of Science, Nov. 14th, 2014.

CONFERENCE PROCEEDINGS

Patel, R., Metchev, S., Heinze, A., "Finding Warm Debris Disks with WISE Around Bright Stars.", 2014, at *30 Years of β Pic and Debris Disks*, Paris, France.

Patel, R., Metchev, S., "Finding Asteroid Belt Analogues with WISE", 2013, *Proceedings of the International Astronomical Union*, S299, 352-3535

Wahl, M., Metchev, S., **Patel, R.**, Serabyn, E., et al., "Debris Disk Science with the Palomar ExAO System: First Results", 2013, *Proceedings of the International Astronomical Union*, S299, 72-73

CONFERENCES AND SEMINARS

Talk at *223 American Astronomical Society*. **Patel, R., Metchev, S., Heinze, A., "Finding the Faintest Exozodi and Asteroid Belt Analogs in WISE", 2014.**

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.

Poster at Astronomical Society of New York, "A Study of Planetary System Architecture through WISE's Eye", Apr. 2012.

Poster at *218 American Astronomical Society*, "Modeling the Detectability of Exoplanets for Palomar Extreme AO Palm-3000 System", May 2011.

Talk and Poster at Florida International University for McNair Fellowship Research Program on "[Dust Trajectories in NSTX](#)", Oct. 2009.

Talk at Florida International University's Honors College Student Research & Artistic Initiatives program on "Calculation of Mass of ρ Meson", Apr. 2008.

RESEARCH & OBSERVING EXPERIENCE

Telescope Time Awarded: **2 Nights: 8-m Subaru** Mid-IR COMICS Instrument
Programs: 2014A-0407 and 2013B-0410; (PI: Rahul Patel)

8 Nights: 3.8-m AAT Optical Echelle Spectroscopy with UCLES
Programs: 2014B-0206, 2014A-0394, 2013B-0393, 2013A-0170, 2012B-0541; (PI: Rahul Patel)

4 Nights: 4-m Mayall Optical Echelle Spectroscopy
Programs: 2014B-0206, 2013A-0170, 2012B-0541; (PI: Rahul Patel)

>8 Nights: 5-m Hale Near-IR Adaptive Optics Imaging with ExAO and PHARO
Programs: 2011A-2013; (PI: Stanimir Metchev)

Other Facilities: **National Labs:** Princeton Plasma Physics Lab Tokamak, High-Flux Isotope Reactor – Oak Ridge National Lab

TEACHING EXPERIENCE

Aug. 2009–Apr. 2010
Teaching Assistant Stony Brook University
Teaching assistant for pre-med undergraduate physics lab.

Aug. 2007 – Apr. 2009
Teaching Assistant FIU
Teaching assistant for introductory physics lab.

June 5 – 15th 2006
Teaching Assistant Upward Bound Program / FIU
Teaching introductory physics to middle and high school students.

ACADEMIC SERVICE

Sept. 2013 – Sept. 2014
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.

Spring 2011
Local Palomar TAC Stony Brook University
Served on local TAC to allocate observing time for Stony Brook's share of Palomar observing.

2011-2013
Prospective Graduate Student Host Stony Brook University
Volunteered to house prospective students visiting students during SBU Visiting Week.

2009-2010
Friday Afternoon Seminar Coordinator Stony Brook University
Co-organized Friday afternoon graduate seminar to expose graduate students of ongoing department research.

OUTREACH

Fall 2014
Adopt-A-Physicist Program Stony Brook University
Online program answering questions from middle/high school students about astrophysics.
May 14, 2014

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. 12, 2014**Guest Lecture - Astronomy 200**

Stony Brook University

One class lecture on understanding our solar system in context of exoplanetary disk systems.

Feb. 7, 2014**Astronomy Public Talk**

Stony Brook University

Astronomy open night talk on "Looking For Solar System 2.0 By Studying Extra Solar Debris Disks."

2012-2013**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.

PROFESSIONAL
SOCIETIES

American Astronomical Society (2010–Present)

GPIES: Gemini Planet Imager Exoplanet Survey Collaboration (2014 – Present)

HONORS &
AWARDS

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 (incl. Astropy), minimal IDL, Linux, minimal IRAF, Gnuplot

REFERENCES

Dr. Stanimir Metchev

Associate Professor and Canada Research Chair

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The University of Western Ontario

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Curator and Professor

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Dr. Bruce Macintosh

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