Vishnu Reddy

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Education

Ph.D. 2009; Earth System Science and Policy	University of North Dakota
M.S. 2005; Space Studies	University of North Dakota
M.A. 2001; Communication	Madurai Kamraj University
B.S. 1998; Visual Communication	Bharathiar University

Training

ISIS Image Processing Workshop (2010)	USGS Astrogeology Center
Small Spacecraft Summer Study, (2008)	NASA Ames Research Center
Solar Physics Summer School, (2006)	National Solar Observatory

Federal Funding

Period	Role	$k	Source	Short Title
2017-22	PI	736	NASA NEOO	Characterization of Small NEOs
2017-18	PI	100	NASA PDCO	Sensor Tasking for NEOCam
2017-18	PI	156	NASA NEOO	Rapid Recovery of Meteorites
2017-20	PI	100	NASA ECF	Sagan Early Career Fellowship
2014-17	PI	250	NASA PGG	Characterization of Ceres for Dawn
2014-17	PI	330	NASA NEOO	Characterization of Small NEOs
2013-17	PI	900	NASA PMDAP	Hayabusa Mission Data Calibration
2014-18	Co-1	1000	NASA PMDAP	Dawn Mission Data Calibration
2014-17	Co-1	276	NASA PAST	V-type Asteroids Composition
2014-17	Co-1	475	NASA PGG	Asteroid Surface Composition

Awards

NASA Group Achievement Award: Dawn Science Operations Team 2016

NASA Group Achievement Award: Dawn Science Team Ceres Phase 2016

NASA Sagan Early Career Fellowship, NASA PMDAP, 2013

NASA Group Achievement Award: Dawn Science Operations Team 2013

NASA Group Achievement Award: Dawn Science Team Vesta Phase 2013

Pellas-Ryder Award, Meteoritical Society/Geological Society of America, 2009.

Eugene M. Shoemaker Impact Cratering Award, Geological Society of America, 2006.

Grant-in-Aid of Research Program Award, *Sigma Xi Physics Society*, 2004.

Asteroid (8068) Vishnureddy named by the International Astronomical Union.

Discoveries

Discovered supernova 2006E in NGC 3558.

Discovered 23 Main Belt asteroids since 2002.

Discovered the binary nature of near-Earth asteroids 2005 AB and (7088) Ishtar.

Discovered the binary nature of Main Belt asteroids (4951) Iwamoto, co-discovered the binary nature of asteroids (1338) Duponta, (32008) 2000 HM53, (2486) Metsahovi, (3073) Kursk, (9617) Grahamchapman, and (1717) Arlon.

Teaching Experience

ASTR/PTYS 170B2, Universe and Humanity: Origin and Destiny: Spring 2016 and Spring 2017. Gen. Ed. Course for Non-Science Majors.

Post-doctoral Fellow, Observatório Nacional (COAA), Brazil: 2010. Co-taught graduate classes on reflectance spectroscopy.

Teaching Assistant, Observational Astronomy course, Department of Space Studies, University of North Dakota: 2003-2006. Assisted Dr. P. S. Hardersen to run Space Studies observatory in extreme temperatures of North Dakota winter.

Instructor, Observational Astronomy, Osher Lifelong Learning Institute, University of North Dakota: 2007. Taught summer astronomy course for senior citizens including practical observing at the Space Studies observatory.

Undergraduate Students:

Damon Calpo	BE, Optical Sciences, Univ. of Arizona (Senior Design Project)

Graduate Students:

Ben Sharkey	PhD, Planetary Sciences, Univ. of Arizona (Thesis Advisor)
Sondy Springmann	PhD, Planetary Sciences, Univ. of Arizona (Comm. Member)
Chet Maleszewski	PhD, Planetary Sciences, Univ. of Arizona (Comm. Member)
Tanner Campbell	MS, AME, Univ. of Arizona (Comm. Member)

Post Docs:

Juan Sanchez	Planetary Science Institute
Mike McCraig	University of Arizona

Former Students:

Lindsie Jeffries	BE, Biomechanical Eng., Univ. of Arizona (Design Project 2017)
Evelyn Hunten	BE, ECE, Univ. of Arizona (Design Project 2017)
Ryan Bronson	BE, Optical Sciences, Univ. of Arizona (Design Project 2017)
Sameep Arora	BE, AME, Univ. of Arizona (Design Project 2017)
Tyler Linder	MS, Space Studies, Univ. of North Dakota (co-advisor 2015-2017)
Simone Bellesia	ME, Engineering, Polytechnic of Milan (co-advisor, 2015-2017)
Rakesh Nath	MS, Space Studies, Univ. of North Dakota (co-advisor 2010-2012)
Megha Bhatt	PhD, Max Planck Institute, Germany (co-advisor 2010-2013)
Juan Sanchez	PhD, Max Planck Institute, Germany (thesis advisor 2010-2013)
Karsten Schindler	PhD, Max Planck Institute, Germany (co-advisor 2011-2015)
G. Thangjam	PhD, Max Planck Institute, Germany (co-advisor 2011-2015)

Research Experience

Research Scientist, Planetary Science Institute, Tucson, Arizona: 2013-2016. Principal investigator on NASA Research and Analysis grants working on calibration of camera and spectrometer data from Japanese Hayabusa Mission to constrain the potentially-

hazardous asteroid surface mineralogy, understand regolith processes and effect of space weathering.

Associate Research Scientist, Planetary Science Institute, Tucson, Arizona: 2013. Co-investigator on NASA Research and Analysis grants working on physical characterization of near-Earth objects using NASA Infrared Telescope Facility. As part of the Dawn Mission, I worked on the Framing Camera color images of asteroid Vesta to constrain the abundance of exogenic primitive asteroid impactors on its surface.

Research Assistant Professor, University of North Dakota: 2010-2103. Conducted federal grant funded research on asteroids and served as co-advisor on thesis committees for MS space studies students.

Scientist in the Dawn Framing Camera (FC) Team, Max Planck Institute for Solar System Research, Germany: 2010-Present. Science lead for the Dawn Framing Camera during the Vesta operations phase responsible for overall management of FC science team; developing interpretive tools and precursor studies of HED meteorites; cross calibration of camera and spectrometer data sets; analysis and interpretation of first science results; lead member of the Dark Material Task Force; science input for imaging operations at Vesta and Ceres; advised four Ph.D. students.

NASA Planetary Mission Data Analysis Program Principal Investigator: 2013-2017. Calibration and restoration of AMICA multi-color camera and NIRS point spectrometer data sets and archive them on the Planetary Data System in collaboration with USGS.

Co-I Dawn Participating Scientist Program, NASA Dawn Mission: 2010-2013. Responsible for precursor ground-based spectral and photometric characterization of Vesta; developing phase curves for exposure time calculations for Framing Camera; development of interpretive tools for visible and imaging spectrometer on Dawn.

Visiting Scientist, Max Planck Institute for Solar System Research, Germany: 2009-2010. Participated in ASTEX mission proposal for in-situ characterization of two compositionally distinct near-Earth asteroids (proposal funded for Phase A study).

Post-doctoral Fellow, Observatório Nacional (COAA), Brazil: 2010. Conducted research on K/T impactor and the Baptistina Asteroid Family.

Graduate Research Assistant, University of North Dakota: 2002-2005 for Masters in Space Studies and 2006-2009 for PhD in Earth System Science. Advisors Dr. P. S. Hardersen and Dr. M. J. Gaffey

Research Staff, Department of Space Studies, University of North Dakota: 2005-2006. Worked with Dr. M. J. Gaffey on analysis and interpretation of asteroid spectral data.

Professional Activities

Service:

Chair LOC/SOC, NASA Near-Earth Object Observation Program Review 2017

Chair LOC/SOC, AFRL NISOI workshop 2017

Press Officer, Division for Planetary Sciences, AAS 2010-2016

Member, NASA Infrared Telescope Facility TAC 2013-2015

Member, Keck/NASA IRTF Management Operations Working Group 2015-2017

Group Chief, Solar System Observations Review Panel (2 years)

Group Chief, NASA CADET Review Panel

Member, Spitzer Space Telescope Solar System TAC 2015

Member, NASA Dawn Guest Investigator Program Review Panel

Member, NASA SIMPLEX Mission Review Panel

Member, Keck Institute Asteroid Characterization Study Panel 2015

Panel Chair, Discovery Data Analysis Program Review Panel (2 years)

Panel Chair, Solar System Workings Review Panel

Member, Organizing Committee, Asteroids IV Book, 2013

Member, NASA SSERVI Review Panel

Member, NASA Outer Planets Review Panel (2 years)

Member, NASA Earth and Space Science Fellowships Review Panel

Member, NASA LASER Review Panel (2 years)

Member, NASA PDS Small Bodies Node Review Panel 2013, 2014, 2015

Member, NASA Planetary Geology and Geophysics Review Panel

Chair, Jonathan Eberhart Planetary Sciences Journalism Award Committee 2010-2015

Member, DPS Hartmann Student Travel Grant Committee, 2010-2015

Visiting Astronomer, NASA Infrared Telescope Facility

Organizing Committee Member, EPSC-DPS Joint Meeting, Nantes, France, 2011

Organizing Committee Member, DPS Meeting, Reno, Nevada, 2012

Organizing Committee Member, DPS Meeting, Denver, Colorado, 2013

Organizing Committee Member, DPS Meeting, Tucson, Arizona, 2014

Organizing Committee Member, DPS Meeting, National Harbor, MD, 2015

Program Committee Member, DPS Meeting, Reno, Nevada, 2012

Program Committee Member, DPS Meeting, Denver, Colorado, 2013

Program Committee Member, DPS Meeting, Tucson, Arizona, 2014

Organizing Committee Member, Dawn in the Light of Vesta Meeting, Houston, 2014

Chair, Small Bodies Session, DPS Meeting, Puerto Rico, 2009

Chair, Small Bodies Session, LPSC, Houston, 2011

Chair, Dawn at Vesta Session, DPS Meeting, Reno, 2012

Chair, Small Bodies Poster Session, DPS Meeting, Denver, 2013

Invited Talks at American Geophysical Union Meeting; Indian Space Research Organization; Max-Planck Institute for Solar System Research, Germany; Lunar and Planetary Institute; University of Hawai'i Manoa, International Asteroid Warning Network, UNCOPUS.

Conducted several workshops for students and amateur astronomers in India, Germany, Brazil and the US on planetary sciences. Participated in over 50 public outreach activities around the world over the last decade.

Professional Society Membership:

American Astronomical Society (Division for Planetary Sciences)

American Geophysical Union

Meteoritical Society

Geological Society of America