

David S. Choi

CONTACT INFORMATION

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EDUCATION

University of Arizona, Tucson, AZ USA

Ph.D., Planetary Sciences, Dec 2009

- Dissertation Title: “The Meteorology of Giant Planets Revealed through Automated Cloud Feature Tracking”
- Advisor: Adam P. Showman

Cornell University, Ithaca, NY USA

B.A., Astronomy, May 2004

EXPERIENCE

NASA Goddard Space Flight Center, Greenbelt, MD USA

NASA Postdoctoral Fellow

2011–current

- Supervisor: Amy Simon-Miller
- Investigating planetary atmospheric dynamics, structure, and meteorology through data analysis and numerical modeling.

University of Arizona, Tucson, AZ USA

Postdoctoral Research Associate

2010–2011

- Supervisor: Adam P. Showman
- Investigated Jupiter’s equatorial circulation through data analysis of *Cassini* imaging data of Jupiter; Measured meteorological characteristics of Martian dust devils via HiRISE remote sensing.

Adjunct Instructor

Fall 2010

- Instructor of record for general education natural science course in planetary science/astronomy (enrollment: 102). Composed and delivered lectures, created and graded assignments and exams, tutored students during office hours.

Graduate Research Associate

2005–2009

- Supervisor: Adam P. Showman
- Developed an automated cloud tracker and applied it to various data sets.
- Analyzed *Cassini*/VIMS near-infrared data of Saturn’s atmosphere. Investigated Oval BA’s changing dynamics over a multi-mission time span. Gathered evidence for an inverse energy cascade within Jupiter’s atmosphere.

Graduate Teaching Assistant

2005–2007 (3 semesters)

- Supervisors: Tim Swindle, Joe Giacalone, and Caitlin Griffith
- Tutored students during office hours, gave occasional lectures, and graded assignments and tests.

Cornell University, Ithaca, NY USA

Undergraduate Research Assistant

2001–2004

- Supervisor: Peter Gierasch
- Created mosaics of Jupiter's Great Red Spot, investigated *Voyager* IRIS spectral data, deployed microbarometers in the Greater Ithaca area, helped create an automated feature tracker for the purpose of measuring winds.

REFERREED
PUBLICATIONS

A.A. Simon-Miller, J.H. Rogers, P.J. Gierasch, **D.S. Choi**, M.D. Allison, G. Adamoli, and H-J. Mettig (2012). Longitudinal Variation and Waves in Jupiter's South Equatorial Belt. *Icarus*, **218**: 817–830. doi:10.1016/j.icarus.2012.01.022

D.S. Choi and C.M. Dundas (2011). Measurements of Martian Dust Devil Winds with HiRISE. *Geophysical Research Letters*, **38**, L24206. doi: 10.1029/2011GL049806

D.S. Choi and A.P. Showman (2011). Power Spectral Analysis of Jupiter's Clouds and Kinetic Energy from *Cassini*. *Icarus*, **216**: 597–609. doi: 10.1016/j.icarus.2011.10.001

D.S. Choi, A.P. Showman, and A.R. Vasavada (2010). The Evolving Flow of Jupiter's White Ovals and Adjacent Cyclones. *Icarus*, **207**: 359–372. doi: 10.1016/j.icarus.2009.10.013

A. Penny, A.P. Showman, and **D.S. Choi** (2010). The Suppression of the Rhines Effect and the Location of Vortices on Saturn. *Journal of Geophysical Research - Planets*, **115**, E02001. doi: 10.1029/2009JE003384

D.S. Choi, A.P. Showman, and R.H. Brown (2009). Cloud Features and Zonal Wind Measurements of Saturn's Atmosphere as Observed by Cassini/VIMS. *Journal of Geophysical Research - Planets*, **114**, E04007. doi: 10.1029/2008JE003254

D.S. Choi, D. Banfield, P. Gierasch, A.P. Showman (2007). Velocity and Vorticity Measurements of Jupiter's Great Red Spot Using Automated Cloud Feature Tracking. *Icarus*, **188**: 35–46. doi: 10.1016/j.icarus.2006.10.037

HONORS/AWARDS

University of Arizona Department of Planetary Sciences Gerard P. Kuiper Award, 2010
NASA Earth and Space Science Fellowship, 2008-2010
University of Arizona TRIF Imaging Fellowship, 2008-2009
University of Arizona College of Science Galileo Circle Scholar, 2007, 2009
Cornell University Department of Astronomy Excellence in Undergraduate Research Award, 2004
Cornell University Presidential Research Scholar, 2000-2004

PROFESSIONAL
ACTIVITIES

DPS Federal Relations Subcommittee member, 2011-current
Reviewer for *Icarus* and *Advances in Space Research*
Review panel member for NASA OPR and MFRP
External Reviewer for NASA OPR and CDAP
Student Member, DPS Federal Relations Subcommittee, 2009
NASA/JPL Planetary Science Summer School, 2008
Graduate Student Representative to the LPL Faculty, 2008-2009
Webmaster for the LPL Graduate Students, 2007-2009
Participant, Astro 101 Teaching Excellence Workshop, October 2007
Co-organizer for department graduate student colloquium talks, 2006-2007

RESEARCH INTERESTS	Planetary Atmospheric Dynamics and Meteorology Observations and Analysis of Jovian Atmospheric Phenomena Software Development in support of Data Analysis from Spacecraft Missions Numerical Modeling of Jupiter's Atmosphere
PROFESSIONAL AFFILIATIONS	American Astronomical Society, Division of Planetary Sciences American Geophysical Union
CONFERENCE PRESENTATIONS	<p>Choi, D. S., and Dundas, C. M. "Wind Measurements of Martian Dust Devils from HiRISE" Oral Presentation. DPS Meeting, October 2011, Nantes, France.</p> <p>Choi, D. S., Showman, A. P., and Vasavada, A. R.,. "Meteorology of Jupiter's Equatorial Hotspots and Plumes from Cassini Imagery" Poster Presentation. DPS Meeting, October 2011, Nantes, France.</p> <p>Choi, D. S., and Dundas, C. M. "Wind Measurements of Martian Dust Devils from HiRISE" Poster Presentation. LPSC Meeting, March 2011, Houston, TX.</p> <p>Choi, D. S., and Showman, A. P. "Power Spectral Analysis of Jupiter's Clouds and Kinetic Energy from <i>Cassini</i>" Oral Presentation. DPS Meeting, Fall 2010, Pasadena, CA.</p> <p>Choi, D. S., Inverse Energy Cascades in Terrestrial, Jovian, and Exoplanetary Atmospheres. Oral Presentation, Exoclines: Exploring the Diversity of Planetary Atmospheres, September 2010, Exeter, UK</p> <p>Choi, D. S., and Showman, A. P. "The Meteorology of Giant Planets Revealed through Automated Cloud Feature Tracking" Poster. CPS International School of Planetary Science, Jan 2010, Kobe, Japan.</p> <p>Choi, D. S., and Showman, A. P. "Power Spectra of Jupiter's Cloud Albedos and Kinetic Energy from <i>Cassini</i>" Oral Presentation. DPS Meeting, Fall 2009, Fajardo, PR.</p> <p>Choi, D. S., Showman, A. P., and Vasavada, A. "New Measurements of the Evolving Flow of Oval BA" Poster. AGU Meeting, Fall 2008, San Francisco, CA.</p> <p>Penny, A., Showman, A. P., and Choi, D. S. "The Suppression of the Rhines Effect and the Location of Vortices on Saturn" Poster. AGU Meeting, Fall 2008, San Francisco, CA.</p> <p>Choi, D. S., Showman, A. P., and Brown, R. H. "Cloud Features and Zonal Wind Measurements of Saturn's Atmosphere as Observed by Cassini/VIMS" Oral Presentation. DPS Meeting, Fall 2008, Ithaca, NY.</p> <p>Chen, E. and Borer, N. K. and Choi, D. S. and Craft, K. L. and Fortenberry, R. and Harben, J. P. and Isaacson, P. and Johnson, A. and Mabry, J. and McDunn, T. and Millham, R. A. and Pankine, A. and Prater, A. and Rodriguez, H. M. and Smith, D. J. and Snowden, D. "Argus: A New Frontiers Mission to Observe Io" Poster. DPS Meeting, Fall 2008, Ithaca, NY.</p> <p>Choi, D., Showman, A., Dowling, T., Palotai, C. "Numerical Modeling of Jupiter's 5-Micron Hot Spots" Poster. PATM Workshop, Fall 2007, Baltimore, MD.</p>

Choi, D., Showman, A., Dowling, T., Palotai, C. “Numerical Modeling of Jupiter’s 5-Micron Hot Spots” Poster. DPS Meeting, Fall 2007, Orlando, FL.

Choi, D., Gierasch, P., Banfield, D., Showman, A. “Velocity and Vorticity Measurements of Jupiter’s Great Red Spot Using Automated Cloud Feature Trackers” Oral Presentation. DPS Meeting, Fall 2006, Pasadena, CA.

Choi, D., Gierasch, P., Banfield, D., Showman, A. “Velocity and Vorticity Measurements of Jupiter’s Great Red Spot Using Automated Cloud Feature Trackers” Poster. 2005 AGU Fall Meeting, San Francisco, CA.

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