

Sarah F. Newman – Curriculum Vitae

Work Address:

Astronomy Department
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Education:

2008-Present **University of California at Berkeley**
PhD student

2002-2006 **Massachusetts Institute of Technology, Cambridge, Massachusetts**
Bachelor of Science degree in Earth, Atmospheric and Planetary Sciences awarded June 2006

Relevant courses: Calculus I & II, Physics I, II & III, Differential Equations, Principles of Chemical Science, Introduction to Computers and Engineering Problem Solving, Linear Algebra, Organic Chemistry I, Probability and Random Variables, Nonlinear Dynamics I & II, Observational Techniques of Optical Astronomy, Introduction to Planetary Science and Physics and Chemistry of the Solid Earth, Quantum Physics I, Statistical Physics I, The Early Universe, Computational Mechanics, Modern Astrophysics, Physics and Chemistry of the Solar System

Cumulative GPA: 4.9/5.0

1998-2002 **St. Paul Academy and Summit School, St. Paul, Minnesota**
Cumulative GPA: (high school) 3.9/4.0

Publications:

Peer-Reviewed Papers:

Robert H. Brown, Roger N. Clark, Bonnie J. Buratti, Dale P. Cruikshank, Jason W. Barnes, Rachel M. E. Mastrapa, J. Bauer, **S. Newman**, T. Momary, K. H. Baines, G. Bellucci, F. Capaccioni, P. Cerroni, M. Combes, A. Coradini, P. Drossart, V. Formisano, R. Jaumann, Y. Langevin, D. L. Matson, T. B. McCord, R. M. Nelson, P. D. Nicholson, B. Sicardy, and C. Sotin (2006), Composition and Physical Properties of Enceladus' Surface, *Science*, 311, 1425-1428.

Filacchione, G., Capaccioni, F., McCord, T. B., Coradini, A., Cerroni, P., Bellucci, G., Tosi, F., D'Aversa, E., Formisano, V., Brown, R. H., Baines, K. H., Bibring, J. P., Buratti, B. J., Clark, R. N., Combes, M., Cruikshank, D. P., Drossart, P., Jaumann, R., Langevin, Y., Matson, D. L., Mennella, V., Nelson, R. M., Nicholson, P. D., Sicardy, B., Sotin, C., Hansen, G., Hibbitts, K., Showalter, M., **Newman, S.**, 2007. Saturn's icy satellites investigated by Cassini-VIMS I. Full-disk properties: 350-5100 nm reflectance spectra and phase curves. *Icarus* 186, 259-290.

Grundy, W. M., Buratti, B. J., Cheng, A. F., Emery, J. P., Lunsford, A., McKinnon, W. B., Moore, J. M., **Newman, S. F.**, Olkin, C. B., Reuter, D. C., Schenk, P. M., Spencer, J. R., Stern, S. A., Throop, H. B., Weaver, H. A., and the New Horizons team, 2007. New Horizons mapping of Europa and Ganymede. *Science* 318, 234-237.

Newman, S. F., Buratti, B. J., Jaumann, R., Bauer, J. M., Momary, T. W., 2007. Hydrogen peroxide on Enceladus. *ApJL* 670, L143.

Newman, S. F., Buratti, B. J., Brown, R. H., Jaumann, R., Bauer, J., Momary, T., 2008. Photometric and spectral analysis of the distribution of crystalline and amorphous ices on Enceladus as seen by Cassini. *Icarus* 193, 397-406.

Jaumann, R., Stephan, K., Hansen, G. B., Clark, R. N., Buratti, B. J., Brown, R.H., Baines, K. H., **S.F. Newman**, G. Bellucci, G. Filacchione, A. Coradini, D. P. Cruikshank, C.A. Griffith, C. A. Hibbitts, T.B. McCord, R.M. Nelson, P. D. Nicholson, C. Sotin, and R. Wagner, 2008. Distribution of icy particles across Enceladus' surface as derived from Cassini-VIMS measurements. *Icarus* 193, 407-419.

Newman, S. F., Buratti, B. J., Brown, R. H., Jaumann, R., Bauer, J., Momary, T., 2009. Water ice crystallinity and grain sizes on Dione. *Icarus*. In press.

Meeting Abstracts:

Clayton, R.W., Heckman, V., Tian, X., **Newman, S.**, 2008. Ambient Noise Correlations with Seismic Networks in Mexico. AGU Fall Meeting 2008, S31A-1870.

Newman, S., Buratti, B. J., Brown, R. H., Jaumann, R., Bauer, J., Momary, T., 2006. Crystalline and Amorphous Ice on Enceladus: Observations from the Cassini Visual and Infrared Mapping Spectrometer. DPS 38, 18.02.

Buratti, B., Mosher, J., **Newman, S.**, Brown, R. H., Soderlund, K., Bauer, J., Clark, R., Nicholson, P., Baines, K., 2006. Visual and Infrared Photometry of the Icy Satellites of Saturn with the Cassini Visual and Infrared Mapping Spectrometer (VIMS). DPS 38, 69.06.

Newman, S. F., Buratti, B. J., Brown, R. H., Jaumann, R., Bauer, J., Momary, T., 2007. The Search for Hydrogen Peroxide on Enceladus. LPSC XXXVIII, 1338.

Newman, S. F., Buratti, B. J., Brown, R. H., Jaumann, R., Bauer, J. M., Momary, T. W., 2007. Water ice crystallinity and grain sizes on Dione. AGU 2007 Joint Assembly, P43A-05.

Honors/Awards:

2002	National Merit Scholarship Finalist
2002	St. Paul Academy and Summit School Science Award
2005	Awarded a NASA USRP fellowship
2006	Elected to Phi Beta Kappa (MIT)
2008	Awarded Berkeley Fellowship for Graduate Study
2009	Awarded NSF Graduate Research Fellowship

Work Experience:

Jan. 2008 -Jun. 2008	Research Assistant at Caltech, working with Professor Rob Clayton in the GPS department. Area of research: Seismic noise correlation and mapping using seismometer arrays in central Mexico.	Contact: Rob Clayton clay@gps.caltech.edu
Oct. 2006 -Oct. 2007	Associate Technician at JPL, studying photometric and spectral properties of the icy satellites of Saturn (particularly Enceladus, Dione and Rhea), using VIMS data from the Cassini spacecraft.	Contact: Bonnie Buratti bburatti@scn.jpl.nasa.gov
Summer 2005	USRP Internship at JPL, working with Bonnie J. Buratti. Area of research: Photometric study of Saturn's satellites, including construction of lightcurves from data obtained from the Cassini spacecraft.	Contact: Bonnie Buratti bburatti@scn.jpl.nasa.gov
Fall & Winter 2004	UROP in the lab of Professor Dorothy Hosler Area of research: material aspects of Mesoamerican archeology	Contact: Prof. Dorothy Hosler hosler@mit.edu
Fall 2003	UROP in the lab of Professor Nancy Kanwisher Area of research: facial recognition, collected behavioral data	Contact: Prof. Nancy Kanwisher ngk@mit.edu
Summers 2002 and 2003	Lucia's Restaurant, Minneapolis, Minnesota Prep cook	Contact: Lucia Watson lucia@lucias.com
Summers 2000 and 2001	Laboratory of Prof. Thomas Hays, University of Minnesota, Minneapolis, Minnesota Area of research: Drosophila genetics and cell biology Lab assistant: carried out my own experiments to isolate new mutants in studies of cytoplasmic dynein function	Contact: Prof. Thomas Hays tom-h@biosci.cbs.umn.edu

Teaching Experience:

Fall 2008	GSI (Graduate Student Instructor) for Astronomy C10 (equivalent of Astronomy 101) at UC Berkeley with instructor Alex Filippenko.	Contact: Alex Filippenko alex@astro.berkeley.edu
Summer 2004	Teaching internship at Hebrew University as part of the MIT-backed coexistence program, MEET (Middle East Education through Technology). The instructors taught introductory Java to Israeli and Palestinian high school students and served as conflict resolution facilitators.	Contact: Yaron Binur ybinur@mit.edu

Skills:

Archeology/Materials Science: use of grinding and cutting machinery and microscopic analysis of minerals
Astronomy: Use of Celestron Nextstar 11 Schmidt-Cassegrain telescope and CCD camera
Computer: Java, IDL/ISIS, Matlab, C, html. Familiar with Windows, Mac and Linux.

Other Activities:

MIT Varsity Crew Team, rock climbing, cycling, running, painting, MEET (Middle East Education through Technology) student group, archeological dig volunteer