

# Alejandro Soto

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**CONTACT INFORMATION** California Institute of Technology  
Geological and Planetary Sciences  
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**RESEARCH INTERESTS** Atmosphere-surface interactions, planetary climatology and paleoclimatology, water transport throughout atmosphere/surface, spectroscopy, and remote sensing instrument development.

**EDUCATION** **California Institute of Technology**, Pasadena, CA USA  
Graduate Student, Geological and Planetary Sciences  
Thesis: "Atmospheric Dynamics of Early Mars."  
**Stanford University**, Palo Alto, California USA  
M.S., Aeronautics & Astronautics, May 2000  
**Dartmouth College**, Hanover, New Hampshire USA  
B.A., Physics & Astronomy, May, 1993  
Thesis: "A Kinematic Study of the Galactic Supernova Remnant 3C 58."

**PROFESSIONAL EXPERIENCE** **Jet Propulsion Laboratory** Pasadena, CA USA  
*Instrument/System Engineer* April 2000 - September 2004  
Worked as an instrument engineer, systems engineer, and science operations engineer on a variety of flight projects, including Mars Reconnaissance Orbiter, Deep Impact, and Terrestrial Planet Finder Coronagraph. Led development teams for a Mars occultation spectrometer and for coronagraph masks. Frequently led instrument proposal efforts for NASA proposal opportunities. Designed lunar imaging for the Deep Impact mission.  
**Lockheed Martin** Houston, TX USA  
*Experimental Support Scientist* September 1997 - September 1998  
Working in NASA's Orbital Debris Program Office, analyzed orbital debris modeling results and developed/tested orbital models.

**RESEARCH** *Co-Investigator*  
2002 Planetary Instrument Definition and Development Program (PIDDP), A Miniature High Resolution Fourier Transform Infrared Spectrometer.  
*Co-Investigator*  
2003 Planetary Instrument Definition and Development Program (PIDDP), High Performance Interferogram Sampling for a Planetary Fourier Transform Spectrometer.

**PAPERS** Anderson, M.S., J.M. Andringa, R.W. Carlson, P.Conrad, W.Hartford, M.Shafer, A.Soto, A.I. Tsapin, J.P. Dybwad, W.Wadsworth, and K.Hand. "Fourier transform infrared spectroscopy for mars science." *Review of Scientific Instruments*, 76, March 2005.

**CONFERENCE PROCEEDINGS** Heverly, M., S.Dougherty, G.C. Toon, A.Soto, and J.-F. Blavier. "A low mass translation mechanism for planetary ftir spectrometry using an ultrasonic linear motor." *Proceedings fo the 37th Aerospace Mechanisms Symposium*, May 2004.

ABSTRACTS

Soto, A., M.A. Mischna, and M.I. Richardson. "The Atmospheric Dynamics of Early Mars." *Seventh International Mars Conference*, no. 3327, 2007.

Carlson, R.W., M.S. Anderson, J.Andringa, P.G. Conrad, A.Soto, A.Tsapin, W.M. Calvin, R.N. Clark, K.P. Hand, J.P. Dybwad, and W.Wadsworth. "Lucina: A Spectro-Chemical and Mineralogical Investigation of Mars Habitability." *Bulletin of the American Astronomical Society*, 36:, Nov. 2004.

Soto, A., S.Berinde, A.Biscaya, A.Bongiovanni, S.Dayanand, D.Galligan, S.Garaj, S.Lederer, K.Okpala, A.Pavlov, S.Poirier, S.Sankarankutty, G.Steren, J.Toth, L.van Zyl, and G.J. Consolmagno. "Meteorite Bulk Density Measurements: A Test of the Glass Bead Immersion Method." *Bulletin of the American Astronomical Society*, 29:1116, Sept. 1997.