Dr. Mark R. Swain

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Education:

1989	B.A., Physics, University of Virginia
1992	M.A., Physics, University of Rochester
1996	Ph.D., Physics and Astronomy, University of Rochester

Position and Professional Experience:

- **Principal Scientist**, Jet Propulsion Laboratory
- **PI** of the FINESSE exoplanet characterization mission concept
- **National Lead** for the US contribution to the EChO ESA M3 mission concept
- Led discovery team for detection of CH_4 and CO_2 in an exoplanet atmospheres
- Member of the NASA Balloon Program Working Group representing exoplanets
- Lead for the ExoSpec team working on exoplanet characterization
- PI for numerous exoplanet spectroscopy programs with HST, Spitzer, IRTF
- Originator of the THESIS exoplanet spectroscopy mission concept

Expertise:

- Exoplanet spectroscopic characterization
- High dynamic range spectroscopy **& i**nterferometry techniques
- Infrared instrumentation, integration and test, and system engineering

Recent Awards:

- JPL Ed Stone Award (2009)
- NASA group achievement award (2009)
- NASA Exceptional Scientific Achievement Medal (2010)

Selected Refereed Publications:

- Swain M. R. Deroo, P., Tinetti, G. Hollis, M., Tessenyi, M., Line, M., et al. 2013 "**Probing the extreme planetary atmosphere of WASP-12b**", *Icarus*, 225, 432.
- Swain, M. R., Deroo, P., Griffith, C. A., Tinetti, G., Thatte, A., Vasisht, G. et al. 2010 **"A ground-based near-infrared emission spectrum of the exoplanet HD189733b"**, *Nature*, 463, 637.
- Swain, M. R., Tinetti, G., Vasisht, G., Deroo, P., Griffith, C., Bouwman, J., Chen, P., Yung, Y., Burrows, A., Brown, L.R., Maththews, J., Row, J. F., Kuschnig, R., & Angerhausen, D. 2009 **"Water, Methane and Carbon Dioxide Present in the Dayside Spectrum of the Exoplanet HD 209458b"**, *Astrophys. J*, 704, 1616.
- Swain, M. R., Vasisht, G., Tinetti, G., Bouwman, J., Chen, P., Yung, Y., Deming, D., and Deroo, P. 2009 "**Molecular Signatures in the Near Infrared Dayside Spectrum of HD 189733b**". *Astrophys. J. Letters*, 960, 114.
- Swain, M. R., Vasisht, G., & Tinetti, G. 2008 "**The presence of methane in the atmosphere of an extrasolar planet**", *Nature*, 452, 329.