



**Post-doc position - World's deepest hydrothermal vents
at JPL, Caltech, Pasadena California**

The California Institute of Technology (Caltech), Postdoctoral Scholars Program at the Jet Propulsion Laboratory (JPL) invites applicants to apply for a postdoctoral research post at JPL in the Planetary Surface Instruments Group. The post is supported by a NASA award. The successful candidate, while having her/his own project, will be expected to work with team members in other institutions.

The research is funded by the NASA program, Astrobiology Science and Technology for Exploring Planets (ASTEP) and the results will be used to plan astrobiological exploration of any planetary body that can host hydrothermal circulation (for example, Jupiter's moon, Europa). The work is a collaboration between Woods Hole Oceanographic Institution (WHOI), JPL, the Marine Biological Laboratory (MBL) and Duke University Marine Laboratory (DUML).

We used WHOI's Hybrid AUV-ROV, *Nereus*, and in 2009 identified three hydrothermal systems along the Earth's deepest mid-ocean ridge by detecting and analyzing the plumes (German et al., 2010, PNAS, v107, p14020). We plan to return in 2011 for detailed sampling. The research has two complementary aspects. The principal one concerns participation in the cruise and sample acquisition followed by characterization of minerals and their geochemical and stable isotope compositions to contribute to understanding the present and past energy budgets of the system. The second involves working with the research team using a laboratory flow-through reactor system to simulate hydrothermal vent processes on the Early Earth.

Candidates, who must have a very strong background in stable isotope science with practical experience of sample preparation methods and mass spectrometry, should have completed a Ph.D. in the last four years in geochemistry, astrobiology, oceanography, biogeochemistry, geology, chemistry, environmental science (or other sciences). The Group has a well-equipped stable isotope laboratory with a 253 mass spectrometer (with seven collectors) and many peripheral devices, including a UP 213 laser ablation sampler.

The annual starting salary for a recent Ph.D. is approximately US\$52,000 and can vary somewhat according to the applicant's qualifications.

Postdoctoral scholars positions are awarded for a 1-year period. Appointments may be renewed in 1-year increments for a maximum addition of 2 years. The funding is in place and appointments can begin almost immediately.

Please e-mail a letter describing your research interests, a curriculum vitae, and a list of three references (with telephone numbers and e-mail addresses) to Dr. Max Coleman, Jet Propulsion Laboratory: max.coleman@jpl.nasa.gov

Caltech and JPL are equal opportunity/affirmative action employers. Women, minorities, veterans, and disabled persons are encouraged to apply.