Postdoctoral position on extraterrestrial impacts of terrestrial climate change, University of Michigan

We seek applicants for a postdoctoral position at the University of Michigan. The position is part of the NASA project "*Impact of changes in sea level and ocean stratification on tides and lunar orbital parameters*" and funding may be available for up to three years. The successful applicant will run and analyze models of tides and tidal dissipation to ascertain changes over the last 30 years and will then compare these changes to changes inferred from satellite altimetry and lunar laser ranging. Altimetry measures ocean tidal elevations and provides an estimate of the globally integrated ocean tidal dissipation. Lunar laser ranging measures the Earth-Moon distance with laser pulses that reflect off mirrors left on the Moon by Apollo astronauts. Tidal dissipation in Earth's oceans slows down Earth's rotation rate and relatedly controls the rate at which the Moon recedes from the Earth. Preliminary results suggest that the rate of lunar recession appears to be changing in a manner consistent with what one would expect from the changes in tides estimated from altimetry and ocean modeling. The latter in turn appear to be due to changes in sea level and ocean stratification. The project will therefore quantify the effects of climate change on Earth on the motions of another celestial body (the Moon).

This postdoctoral position offers the opportunity to collaborate with project scientists at the University of Michigan, NASA Jet Propulsion Laboratory (JPL), NASA Goddard Space Flight Center, and the University of Bonn. The project team includes world leaders in global ocean tide and general circulation modeling, satellite altimetry, and solar system celestial dynamics. Two of the NASA JPL scientists are on the solar system ephemeris team. The ephemeris (high-precision positions of objects in the solar system) is a fundamental product that underlies solar system exploration. This project offers an unparalleled opportunity to perform highly interdisciplinary research.

The postdoc will be encouraged to travel to professional society meetings and collaborating institutions to present project results and network with other scientists. Residence in Ann Arbor, Michigan, is preferred, but remote residence near our collaborating institutions in Pasadena (California), Bethesda (Maryland), or elsewhere will be considered especially for strong applications.

The successful applicant should have a PhD in physical oceanography, physics, or a related field, and strong skills in physics, math, and computing. Applicants should send a letter of interest, curriculum vitae, including a list of publications and presentations, and contact information for three references to Dr. Brian Arbic (arbic@umich.edu). Applications will be considered until the position is filled, with a preferred start date in summer 2024.

The University of Michigan offers competitive salary and benefits packages for postdoctoral scientists. My lab is committed to recruiting and retaining a diverse workforce and we encourage all employees to incorporate their diverse backgrounds, skills, and life experiences into their work. The University of Michigan is an equal opportunity/affirmative action employer.