

March 4, 2011

Advisory Committee on Earthquake Hazards Reduction (ACEHR)
National Institute of Standards and Technology
100 Bureau Drive
MS 8630
Gaithersburg, MD 20899-8630

Dear members of the ACEHR,

We write to you as a group of scientists deeply interested in the physics of earthquakes and the use of our science to improve our nation's capabilities for reducing the hazards associated with future earthquakes, as well as the rapid assessment and efficient response to earthquakes when they occur. None of us are able to attend your upcoming meeting on March 10 and 11, but we wish to bring to your attention our serious concerns about the fate of the DESDynI radar satellite that NASA was expected to develop and launch by 2017.

Consistent with the recommendations of the National Research Council's Earth Science Decadal Survey (Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond), NASA's DESDynI radar satellite is a major component of a top priority Tier 1 research mission recommended for launch this decade. NASA's DESDynI radar satellite would contribute essential support for national priorities regarding the mitigation, assessment, and response to catastrophic natural and anthropogenic events (earthquakes, floods, volcanic eruptions, fires, oil spills etc.) as well as environmental change observations aiding in predicting the fate of polar glaciers and icecaps, assessments of the carbon stored in global woody biomass, predictions of sea level rise, and the extent of land surface subsidence. Development of the DESDynI radar satellite is also vital to maintaining U.S. preeminence in this critical Earth observing technology.

The DESDynI radar satellite would enable detection of fault zones that are actively accumulating elastic strain to be released in future earthquakes, it would enable the rapid detection of surface faulting and liquefaction after an earthquake, and it would enable estimating the next generation of precise fault slip models for use in assessing ground motion. Data from the DESDynI radar would also form the basis of a rapid remotely sensed block-by-block proxy for damage assessment that works day or night independent of the condition of local ground-based infrastructure.

We note that DESDynI was originally expected to be two instruments (a radar and a lidar) launched as separate satellites. Earlier this year, the DESDynI mission design successfully went through the Mission Concept Review (MCR) within the NASA development cycle and was ready for transition to Phase A. It now appears that NASA intends to focus on the DESDynI radar mission, thereby significantly reducing the anticipated cost from \$1.7 billion to approximately \$900 million over approximately 9 years, while still accomplishing the observational goals of the mission relevant to natural hazards.

However, to the surprise of the entire earthquake science community, OMB removed DESDynI entirely from NASA's component of the recently announced 2012 Presidential budget request. NASA has also removed it from publicly available documents describing near term future plans.

In the context of recent earthquakes in Baja California, Haiti, Chile, and New Zealand, we encourage your committee to consider the contribution that the DESDynI radar satellite could have on the reduction of earthquake-related hazards and the ability to rapidly assess and respond to earthquakes as they occur. We then also encourage you to look into the impact of what is effectively a cancellation of the DESDynI mission. Given the recommendations of the National Research Council, the critical importance of these measurements to scientists, state and city planners, first responders, and governors, as well as NASA's prior support in previous budget plans, NASA should ensure that sufficient funding is allocated to proceed immediately with rapid development and launch of the DESDynI radar satellite mission.

Please do not hesitate to contact any one of us with further questions on this important issue.

Sincerely,

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