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Sponsor: National Aeronautics and Space Administration (NASA) Langley
Dates: June 7, 2010 – June 6, 2013
Amount: \$417,685

**SOLAR RESOURCE MAPPING
TO SUPPORT EXPANDED USE AND EFFICIENT OPERATION
OF DISTRIBUTED SOLAR ENERGY TECHNOLOGIES**

Considering the likelihood of global climate change and the global competition for energy resources, the nation requires policies, plans and technological advances to better integrate renewable energy sources into traditional energy grid systems. Solar energy technologies are becoming increasingly available and cost-effective, however the increased use of solar energy on a large scale will require better integration of solar and related information into energy planning tools. The National Renewable Energy Laboratory (NREL) is a leader in developing solar resource information for the U.S. and various regions around the world, and in developing and applying decision support tools for assessing the cost-effectiveness of integrating solar energy into the nation's energy supply. However, NREL does not have advanced global solar mapping tools for improved depiction of historical solar resources and variability, and to provide a mechanism for continual updates of solar resource information. NASA Langley Research Center, in collaboration with NREL and SUNY's Atmospheric Sciences Research Center (ASRC) proposed, and was recently awarded the project of developing such a satellite based mapping tool from NASA Earth Science project algorithms and data sets for NREL needs.

The four-year project aims to produce and evaluate an enhanced long-term solar resource data set; transition this processing and data dissemination capability to NREL; and use the data sets to address the needs of decision support tools such as: NREL's National Solar Radiation Data Base (NSRDB), Solar Advisor In My Back Yard, and other tools. Finally, the proposal provides for a transition of the algorithms using the NASA data sets and algorithms to NREL, ensuring the repeatability of the satellite-based retrieval process and providing for continual production of solar resource data sets into the future.

The role of the ASRC team will be to adapt the GOES satellite algorithm they developed for the production of the NSRDB (referred to as the SUNY model) to the exploitation of worldwide 3-hourly B1U data archived at NASA.