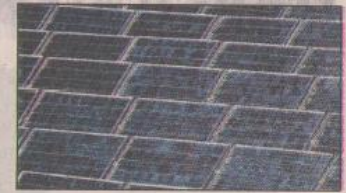


WESTERN ENERGY

Large-scale solar projects get go-ahead
across the West | PAGE A9

Police reports, obituaries PAGE A7



MSU attracts NASA attention with computer system

By EVELYN BOSWELL,
MSU News Service

Two Montana State University graduate students who are building a radiation-proof computer system for use in space have received an extra boost from NASA.

Justin Hogan and Raymond Weber recently learned their project with faculty member Brock LaMeris was one of 14 selected by NASA for development and demonstration on commercial launch vehicles in 2013 or 2014.

LaMeris, the project manager, is an associate professor in MSU's Department of Electrical and Computer Engineering. Weber, from Bozeman, and Hogan, from Albuquerque, N.M., are doctoral students in electrical and computer engineering.

"I was excited to hear the



Weber

MSU grad students Justin Hogan and Raymond Weber, along with faculty member Brock LaMeris, have created a radiation-proof computer system for use in space.

news," Weber said. "It will be nice to be able to fly our research on a rocket and be able to apply what we learned to our actual research."

"It's a huge leap from having a system that should work in space to a system that has been demonstrated in space, and I'm excited about the experience we'll gain in the process of making that happen," Hogan said.

NASA's Space Technology Program said the chosen projects offer innovative, cutting-edge

ideas and approaches that NASA needs for current and future missions in exploration, science and space operations.

Michael Gazarik, director of the Space Technology Program, said the projects will be tested on commercial, suborbital flights sponsored by NASA. They will fly near the boundary of space to ensure the projects work before they are actually sent into space.

MSU will receive between \$125,000 and \$500,000 to



Hogan

continue designing and building an "environmentally aware" computer system that will work in space -- even if it's bombarded by radiation or high-energy particles. Work on the project began in 2010 with a three-year, \$750,000 grant LaMeris received from NASA EPSCoR.

Radiation and high energy particles can cause even shielded computers to crash or malfunction. Modern computers, with their tiny parts, are especially vulnerable to radiation.

"It's a major problem specifically for manned missions where computers aren't allowed to fail," LaMeris said.

If MSU's computer system works as designed, it will detect radiation before it strikes the computer and shut down circuits before the radiation can do any harm, putting spare circuits into

use instead, LaMeris said.

The system should let astronauts get by with less shielding than they currently carry into space to protect their computers, and it should allow them to work without having to stop to fix computer problems.

When Hogan and Weber finish work on the computer system, it will fit into a cube approximately four inches on each side. That's about the same size as the William A. Hiscock Radiation Belt Explorer, the MSU satellite that has been orbiting the Earth since Oct. 28, 2011.

The cube will head to the Columbia Scientific Balloon Facility at Fort Sumner, N.M. at the end of July. It is scheduled to be launched in early September. The high-altitude balloon will carry the system 22 miles above Earth and stay aloft for 15 to 20 hours.