

Tech sails into space-based research project

September 16 2004

Dr. Chris Jenkins, a researcher at South Dakota School of Mines and Technology, is developing instrumentation that could help [NASA](#) find planets outside our solar system, photograph the sun and create an advanced warning system for radiation from solar storms.

Jenkins is a professor in Tech's Department of Mechanical Engineering, and he is joined in his work by collaborators at the NASA Langley Research Center, James Madison University and Tethers, Inc. Together, they will design a very lightweight optical instrumentation package that will be tested on solar sails during ground-based experiments. If all goes well, the experiments will continue as part of actual flight missions.

A solar sail is a very large mirror that reflects sunlight. As the photons of sunlight strike the sail and bounce off, they gently push the sail along by transferring momentum to it. Just as sails on a ship allow it to move forward, solar sails enable spacecraft to move within the solar system and between stars without bulky rocket engines and enormous amounts of fuel.

The instrumentation Jenkins is developing will monitor solar sails and their performance during flight.

"Solar sails represent a tremendous opportunity for in-space propulsion of a number of NASA science missions," Jenkins said. "Without experimental data, solar sail technology will be seriously hampered.

"The project also gives Tech important visibility as a significant

contributor to NASA and provides needed educational resources for our students," Jenkins said.

The optical systems developed also offer the potential for technology transfer and economic development. The research is funded with \$140,000 from NASA.

Source: South Dakota School of Mines and Technology

Citation: Tech sails into space-based research project (2004, September 16) retrieved 23 April 2024 from <https://phys.org/news/2004-09-tech-space-based.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.