

NASA and partners to send test solar sail craft into space next year

March 13 2013, by Bob Yirka

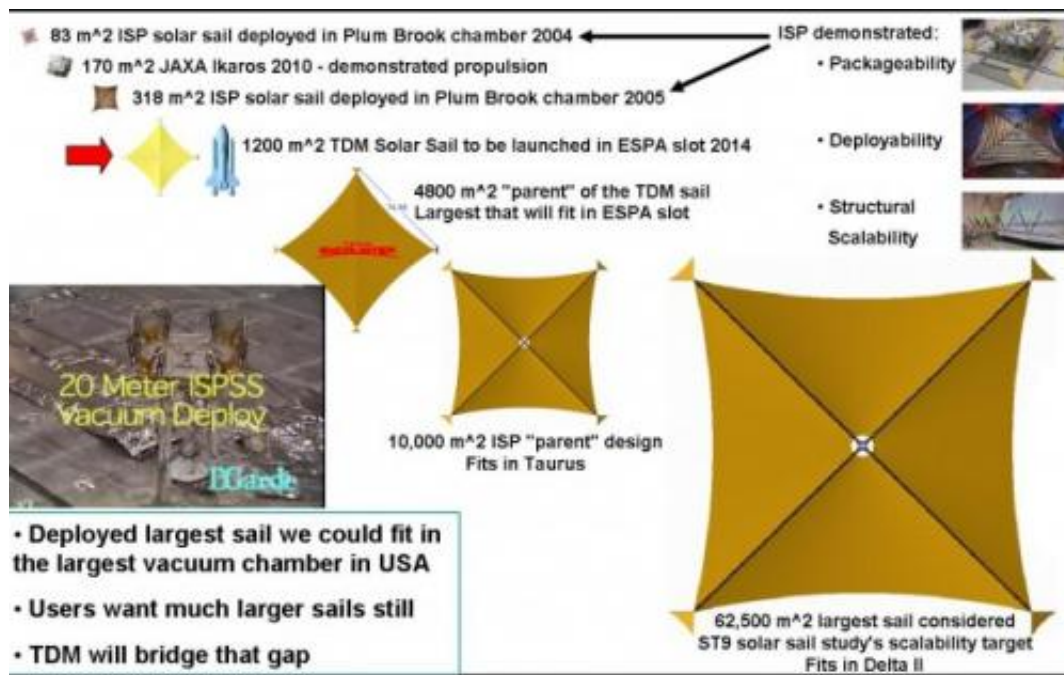


(Phys.org) —NASA has announced a project with space company L'Garde Inc. to send a test craft into space sometime next year powered only by a solar sail. The craft, called Sunjammer, after the short story by Arthur C. Clarke about yacht races in space that relied on the solar wind to carry them along, will be much larger than any other tested in space before.

The idea is to test the feasibility of [solar sail](#) powered craft both as near-Earth vehicles and as those used to travel out of the [solar system](#). In this

new project, NASA has teamed with L'Garde to build the craft and is also working with people from the [National Oceanic and Atmospheric Administration](#). The deployment of a solar sail powered craft would be the second for NASA, after the NanoSail-D project in 2010.

Solar sails work by making use of the momentum of [photons](#) traveling from the sun. When they strike a sail, their momentum is transferred to it, pushing the vehicle to which they are attached through space. And while the amount of force they are able to exert is small (about 0.01 Newton for Sunjammer), the continuous pressure causes a constant acceleration that can lead to a craft eventually moving at very high rates of speed.



The Sunjammer project represents another step forward in researching

and testing such craft—it will be considerably larger than the NanoSail-D, or the IKAROS, a solar sail vehicle launched by Japan that same year. This new sail will be square with 124 foot long sides and will be made of Kapton, a material that is strong enough to withstand micrometeoroid strikes, provides [thermal insulation](#) and can also serve as a shield against radiation. And because it can be made into a very thin fabric, the sail will only weigh 70 pounds and can be folded for deployment into a package small enough to fit into an ordinary dishwasher, making it relatively cheap to send aloft.

Scientists are hoping that spacecraft powered by solar sails can help overcome some of the limitations of conventionally powered space craft, the main one being the need to carry fuel onboard. Researchers are hoping to learn whether it will be feasible to send such a craft to another star system for example, or perhaps to provide for a new type of satellite system or even as means for putting together a long-term project to clean up the space debris circling the globe.

[NASA](#) plans to launch the craft aboard a rocket provided by SpaceX sometime next year.

More information: www.nasa.gov/mission_pages/tdm...arsail_overview.html
www.lgarde.com/programs/space-...ropulsion/sunjammer/

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