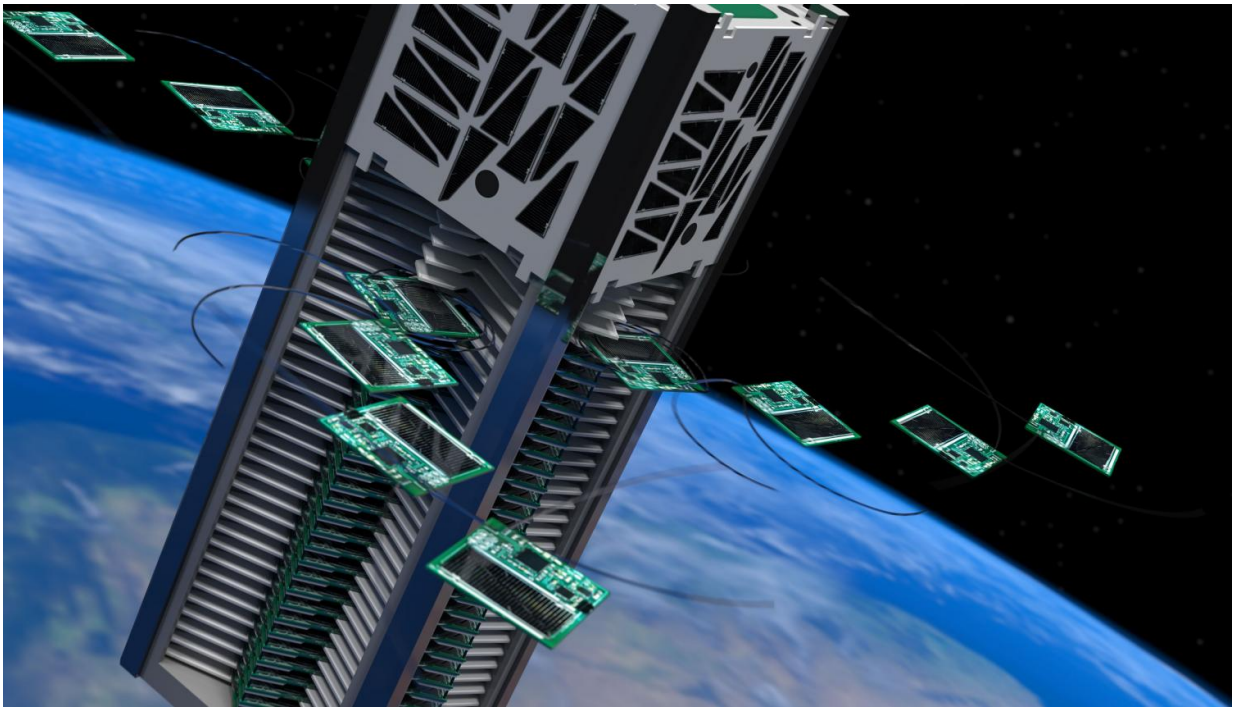
KickStarter project KickSat set for trip to ISS next month to test 'sprites'

June 3 2016, by Bob Yirka



Credit: KickSat

(Phys.org)—The team that has posted a project called KickSat on crowd sourcing site KickStarter, has arranged to have the tiny satellite system sent to the International Space Station on July 6. KickSat is a satellite system where one small satellite deploys multiple other small satellites called "sprites" and then establishes a communications system. The

initiative is part of a much larger plan to deploy similar systems to the far reaches of space faster and cheaper than can be done with conventional probes.

The deployment and testing of KickSat is seen as one of the baby steps for a much more ambitious project called the Breakthrough Starshot mission—partially funded by Yurie Milner and championed by Steven Hawking. The goal is to send tiny satellites to places as far flung as Alpha Centauri at a fifth the speed of light.

This latest effort comes after the failure of the initial project, called KickSat-1, which was bombarded shortly after deployment with an unusually large amount of cosmic radiation, which caused it to malfunction—the sprites were never deployed and the whole project burned up in the atmosphere.

KickSat-2, the official name of this next project, will be sent to the ISS, where it will be deployed shortly after arrival, followed thereafter by the release of 100 sprites (they will be spring-loaded)—post-it note sized circuit boards with solar cells, gyroscope, magnometer, radio and antenna affixed. Each will move independently in space and will communicate directly with the shoe-boxed sized CubeSat using a modified form of standard cell phone communications systems, which will also allow for listening in from ground stations back on Earth. Some of the sprites will also have a wire attached that will generate a tiny magnetic field which will work like a tiny compass, aligning the sprite with Earth's magnetic field—a primitive means for steering. After testing, the CubeSat and all of the sprites will be allowed to burn up as they fall through the atmosphere.

As noted, the testing of the sprites is just one tiny step towards building a much more ambitious probe system—other details, such as how to fire a laser at such a probe with enough power to get it up to a fifth the speed

of light, without destroying it, have yet to be worked out.