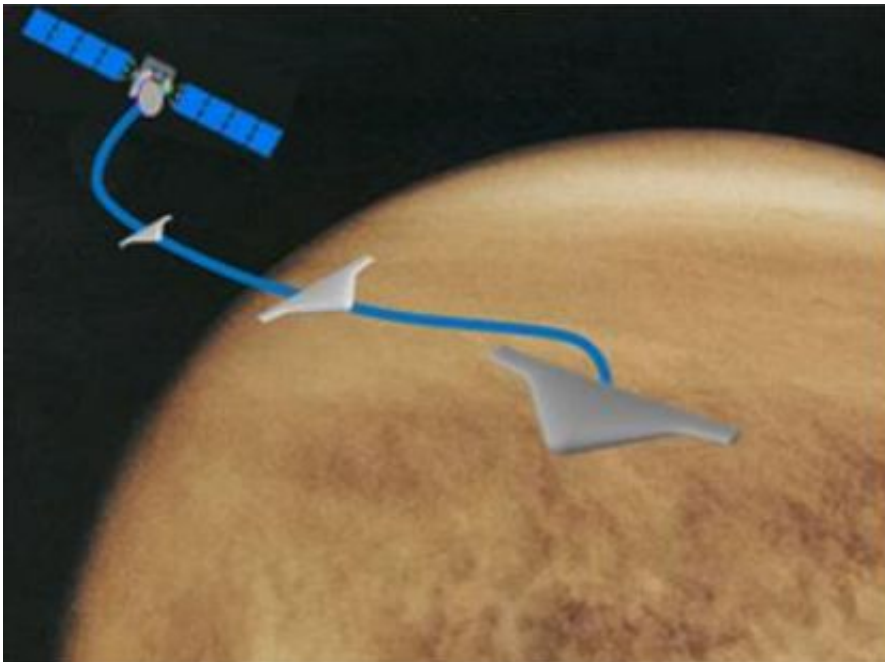


# Researchers mulling inflatable airship VAMP for flying the skies of Venus

March 4 2014, by Bob Yirka

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VAMP released from Venus orbiting spacecraft and inflating exoatmospherically for benign entry.

(Phys.org) —Researchers at Northrup Grumman and L'Garde are mulling the idea of a Venus Atmospheric Maneuverable Platform (VAMP) inflatable spacecraft—they have published an outline of their idea on [NASA's web site](#).

The traditional approach to sending research craft to other planets, such

as Mars, is to build something mechanical and then figure out a way to get it to the planet's surface intact, using a variety of methods (parachute, inflatable protection, etc.). In this new effort, the researchers have come up with a craft that doesn't land on the surface, but instead simply flies around in the planet's atmosphere. To make that happen, they have designed an incredibly light (just 992 pounds) inflatable drone that doesn't require the development of any new technology—that means it could be made relatively inexpensively and could be ready for construction as soon as NASA agrees to pay for it. The team predicts the VAMP could operate for approximately a year before the gas inside is lost.

The overall idea is to carry the drone—VAMP—to Venus using a conventional spaceship. Once there, the VAMP would be deployed while still tethered to its mothership so that it could be filled with a gas, such as hydrogen. Once filled, it would be set loose to fly in the atmosphere—the elevation would depend on how much gear it would be carrying. The VAMP would use engines (to turn propellers) that get their power from solar panels and the heat that escapes from a bit of onboard radioactive plutonium-238 as it decays. At night, the VAMP would serve as a glider making good use of its 151 foot wingspan. Because Venus has such high winds, the team has calculated that the VAMP could circle the planet every six days. The craft could be steered by engineers back on Earth via signals relayed through the mothership.

The basis for suggesting such a mission to Venus is to better understand the planet's atmosphere, which many suggest is similar to what Earth's would be like if it were to succumb to global warming. If the mission proves successful, it would be an almost certainty that other such drones would be sent to Mars, or even the moons of Saturn, offering an entirely new approach to studying our neighbors in the solar system.

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