

# Danish engineers planning manned space craft

27 August 2010, by Lin Edwards



Tycho Brahe spacecraft designed and build by Kristian von Bengtson

(PhysOrg.com) -- A couple of Danish engineers are working towards launching a human being into space.

An unmanned [test flight](#) carrying a crash-test mannequin will be launched on 31 August by the Danish non-profit Copenhagen Suborbitals, and if successful, a manned suborbital flight could follow soon after. The rocket will be launched from the [Baltic Sea](#), from a floating platform towed into position by a mini-submarine, also designed and built by the same group.

The manned craft is known as the HEAT1X-Tycho Brahe after a 16th century aristocrat who identified a supernova. It is a single occupant [capsule](#), and the passenger would stand in the cramped capsule looking out of a plexiglass dome.

The rocket will take the capsule to a suborbital altitude of 30 km and then the booster will separate allowing the capsule to descend, with parachutes slowing its descent to a splashdown in water. On its way up the rocket will break the sound barrier, subjecting the passenger to almost 3-g forces. Movement will be limited to operating a camera, and reaching for an oxygen mask, vomit bag, the

exit hatch, and manual override controls for booster separation.

The HEAT1X rocket (for Hybrid Exo Atmospheric Transporter) will carry the one-person capsule. It is basically a 640 mm diameter tube about 10 meters long. It will burn for around 60 seconds and provide 40 kN of thrust. The rocket was successfully tested in May this year.

The Tycho Brahe-1 spacecraft is a pressurized capsule with a polymer plexiglass dome. Having the astronaut stand enabled them to build a smaller diameter [rocket](#). According to the group's [website](#) the passenger will wear a pressure suit to control the orthostatic pressure, and their calculations indicate that "g-loads and g-load time will not become a problem."

The designers and builders of the craft, engineers Kristian von Bengtson and Peter Madsen, belong to the SomethingAwful web community and hope to show that space travel does not have to be the exclusive domain of groups with access to millions or billions of dollars. Their entire budget was a mere \$63,000, all of it in donations and sponsorships, which von Bengtson (who once worked for NASA) said would "barely cover the cost of the key hole on the shuttle."

The Tycho Brahe is one of a series of suborbital craft the group is developing, and their aim is to use these vehicles to "pave the way for manned space flight on a micro size spacecraft."

Madsen and von Bengtson say the mission has a 100% peaceful purpose, and no explosive, nuclear, biological or chemical payloads will be carried.

**More information:** [copenhagensuborbitals.com/](http://copenhagensuborbitals.com/)

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