



2515 Liberty Avenue
Pittsburgh, PA 15222
www.astrobotic.com
412-682-3282

FOR IMMEDIATE RELEASE

ASTROBOTIC TECHNOLOGY ANNOUNCES SUCCESSFUL LANDING SYSTEM TEST

Astrobotic Autolanding System (AAS) completes open-loop flight on Masten Aerospace suborbital rocket

Pittsburgh, PA: Astrobotic Technology announced today that its autonomous landing technology, the Astrobotic Autolanding System (AAS), performed successfully throughout an open-loop flight campaign on the [Masten Aerospace Xombie](#), a vertical-takeoff vertical-landing suborbital rocket. Testing was conducted at the Mojave Air and Space Port in Mojave, CA in February 2014. The test was made possible through funding by the NASA Flight Opportunities Program, which is managed by NASA's Armstrong Flight Research Center.

The AAS provides precise real-time location updates for spacecraft through visual navigation and automatically avoids hazards during landing on unknown terrain. The landing sensor uses two cameras, an inertial measurement unit (IMU), and a scanning laser. "The pair of cameras work together like human eyes to measure distance and track motion. The scanning laser gives precise distance measurements and enables us to pick out hazards as small as a curb. The AAS landing sensor combines these sensors with an IMU – the device that enables airplane autopilots to determine direction to the ground – to build its models," explained Kevin Peterson, Astrobotic's Chief Technology Officer.

The test campaign validated performance of pose estimation and hazard detection in a flight-relevant environment (i.e., one that includes factors such as vibration, rotation rate, plume, etc.) Ground truth trajectory and hazard data confirmed the ability of the sensor to detect hazards as small as a soccer ball. The test also confirmed that the shape of the trajectory is flyable and supports hazard detection.

This flight campaign was a critical step in maturing the AAS technology. Prior to this test, the sensors and software were exercised on ground vehicles, ziplines, helicopters, and airplanes to validate visual navigation and hazard detection at a variety of altitudes and velocities. This flight campaign improved on those tests by flying the AAS on a relevant propulsive vehicle in a trajectory that mimics the one that will be flown to land on the Moon.

See the demonstration on Youtube at this link:

<https://www.youtube.com/watch?v=53hLiOWHByQ&feature=youtu.be>

Astrobotic Technology flies hardware systems into space for companies, governments, and universities. The company has 14 employees and is headquartered in Pittsburgh.

