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ABSTRACT

Title: NATIONAL REPORT ON THE NASA SOUNDING ROCKET AND BALLOON PROGRAMS

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The U. S. National Aeronautics and Space Administration (NASA) Sounding Rockets and Balloon Programs conduct a total of 30 to 40 missions per year in support of the NASA scientific community and other users.

The NASA Sounding Rockets Program supports the science community by integrating their experiments into the sounding rocket payloads, and providing both the rocket vehicle and launch operations services. Activities since 2011 have included two flights from Andoya Rocket Range, more than eight flights from White Sands Missile Range, approximately sixteen flights from Wallops Flight Facility, two flights from Poker Flat Research Range, and four flights from Kwajalein Atoll. Other activities included the final developmental flight of the Terrier-Improved Malemute launch vehicle, a test flight of the Talos-Terrier-Oriole launch vehicle, and a host of smaller activities to improve program support capabilities. Several operational missions have utilized the new Terrier-Malemute vehicle. The NASA Sounding Rockets Program is currently engaged in the development of a new sustainer motor known as the Peregrine. The Peregrine development effort will involve one static firing and three flight tests with a target completion data of August 2014.

The NASA Balloon Program supported numerous scientific and developmental missions since its last report. The program conducted flights from the U.S., Sweden, Australia, and Antarctica utilizing standard and experimental vehicles. Of particular note are the successful test flights of the Wallops Arc Second Pointer (WASP), the successful

demonstration of a medium-size Super Pressure Balloon (SPB), and most recently, three simultaneous missions aloft over Antarctica. NASA continues its successful incremental design qualification program and will support a science mission aboard WASP in late 2013 and a science mission aboard the SPB in early 2015. NASA has also embarked on an intra-agency collaboration to launch a rocket from a balloon to conduct supersonic decelerator tests.

An overview of NASA's Sounding Rockets and Balloon Operations, Technology Development and Science support activities will be presented.