Project Overview

The NAU/NASA Space Grant Administration has requested the design, launch and retrieval of a small payload on a high-altitude weather balloon. The payload satellite will be designed to measure various atmospheric parameters as a function of altitude up to 100,000 feet, and correlate the data to a series of images. These images will help characterize the earth's surface features, cloud structure and curvature.

The payload satellite will be battery powered, equipped with a position and altitude providing device, timing circuits, data loggers, temperature sensors, digital camera, pressure sensor, and other yet to be determined measuring devices with which to conduct other atmospheric experiments. The electronics designed must function within the environment maintained by the container, specifically the rapidly changing and extremely low temperatures and pressures.

Along with being thermally consistent, the payload container will be mechanically stable to facilitate the operation of the electronics during high levels of shock and vibration. It also must connect securely to the balloon-tether provided by Arizona Near-Space Research.

The photo and atmospheric data will be stored in the satellite and easily downloadable once the balloon payload is recovered. Recovered data will be analyzed with the assistance of the Space Grant and ANSR teams.

System Diagram