Design and Analysis of a CubeSat

A Major Qualifying Project

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1 Introduction

The goal of this project is to design and conduct analysis of a 6U CubeSat on an extreme low earth orbit (eLEO) mission. The satellite will be carrying a mass spectrometer to conduct atmospheric observation. Following deployment from the ISS the satellite will enter a 250 - 600 kilometer orbit and maintain this orbit as long as possible. The overall project is composed of three separate MQP teams, each responsible for a different aspect of the satellite design and analysis. This portion of the overall project is focused on the attitude determination and control, orbital determination and control, and command subsystems of the satellite.