The HELIOS Program

- HELIOS I was designed to take picture of the sun in Hydrogen-Alpha and Calcium-K wavelengths

- HELIOS II/III focused on the ADCS aspect of the mission in order to improve the tracking capabilities of HELIOS

- HELIOS IV was focused solely on the engineering mission of tracking the sun and proving the viability of consistent science images of the sun on a high altitude platform
HELIOS V will use the HELIOS IV tracking system to track and take pictures of the Sun in the Hydrogen Alpha wavelength.

Primary Objectives:
• Take advantage of the successful HELIOS IV system to gather science data
• Capture images of the Sun in the Hydrogen Alpha wavelength
DESIGN OVERVIEW
Structures

HELIOS IV

HELIOS V (April)

HELIOS V (July)
TESTING OVERVIEW
Optics Tests

- Environmental testing
- Exposure test
- Field of view testing

Too dark

Too bright

Just right

Cold test set up

Picture of the flatirons after the system reached about 50 °C

Too blurry!
ADCS TESTING
SYSTEMS TESTING
Summary of Systems Tests

- **First Systems Test:** June 13
- **# of Systems Tests:** 12
- **# of successful tests:** 6
  - Verified nominal operations of all systems of the payload in a flight-like configuration
DAY IN THE LIFE (DITL) TESTS
Flight Overview

- **Launched Sep. 1st**
  - Launch Time: 10:08 AM
  - Launch Location: 34.473162N 104.242232W (Fort Sumner)
  - Float Start: 12:32 PM
  - Termination: 3:41 AM Sep. 2nd
  - Float Time: 15H:08M:54s
  - Impact: 4:27 AM
  - Impact Location: 34.41N 112.78W (Arizona)
But... All of the images came back like this

So what happened?
That is our job to find out now!
QUESTIONS?
Thank you!