

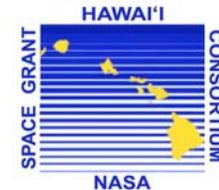
Hawaii Space Flight Laboratory



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Hawaii Space Flight Laboratory
University of Hawaii

2007 CubeSat Workshop
Logan, Utah
8/12/07





UH Small-Sat Education

Crawl → Walk → Run



CricketSat

Middle School



BalloonSat

High School
Undergraduate



Pico/Nanosat

Undergraduate



UH Pico/Nanosat Projects

2002

2003

2004

2005

2006

2007

2008



Mea Huaka`i (Voyager)



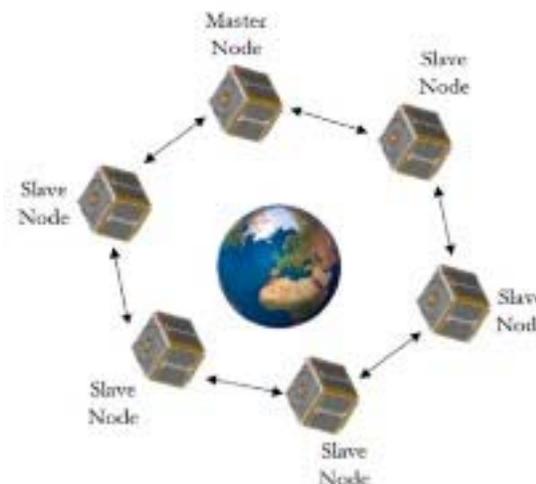
Ho`okele (Way Finder)



Kumu a`o
(Source of Learning)



Hokulua (Twin Stars)



Ho`okia`i (Watchman)



UH Small-Sat Education

Crawl → Walk → Run → FLY!



CricketSat

Middle School



BalloonSat

High School
Undergraduate



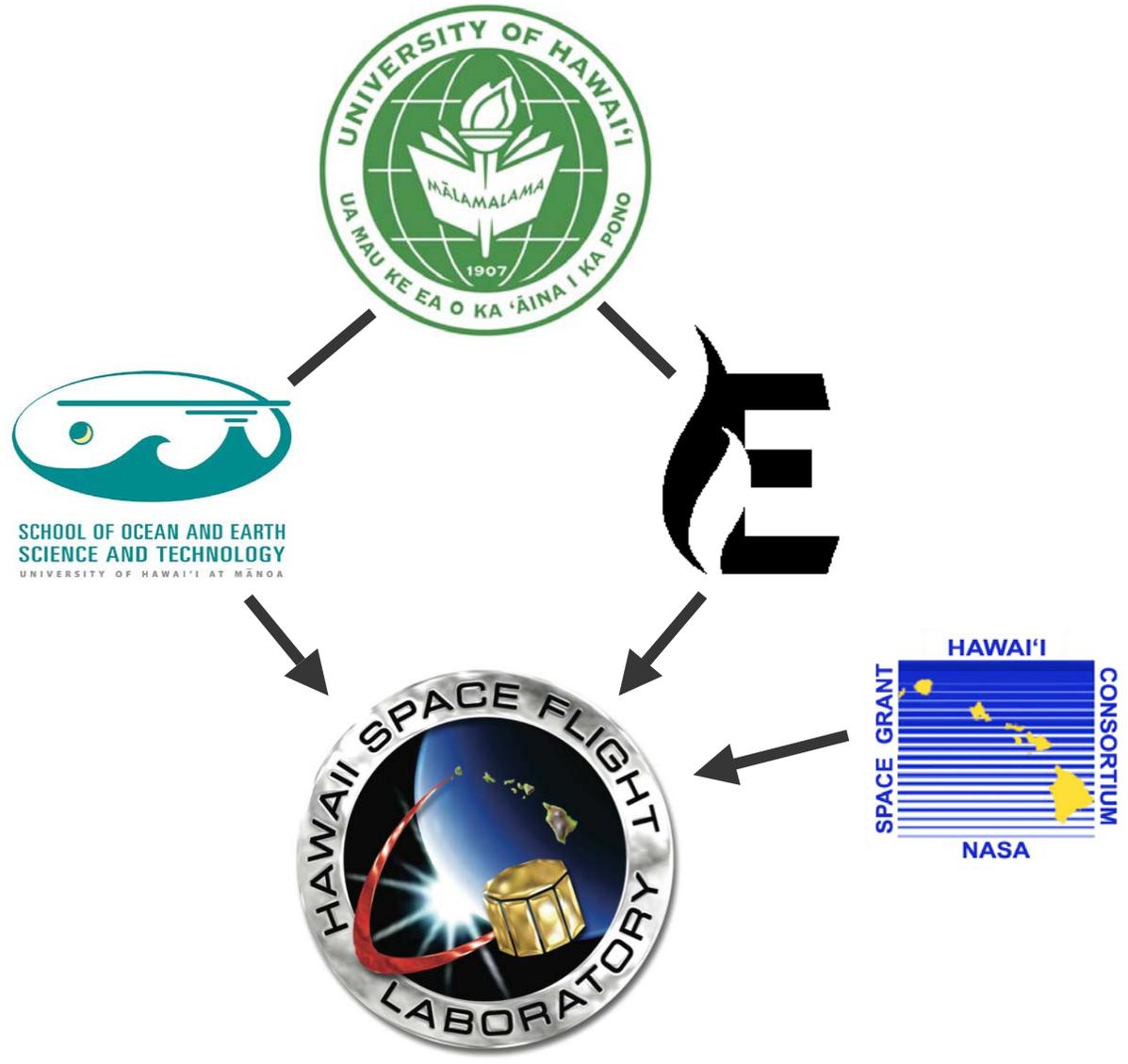
Pico/Nanosat

Undergraduate





Hawaii Space Flight Laboratory





HSFL Objectives



Reliable, low-cost, rapid-response launch system



Aerospace education and training



End-to-end small-sat development



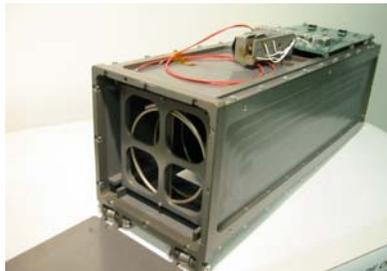
Payload



+

Payload Adapter/Deployer

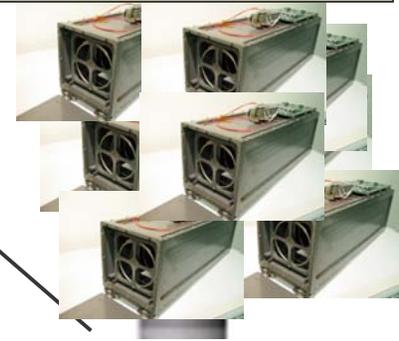
+



+



Payload Adapter/Deployer





Launch Vehicle



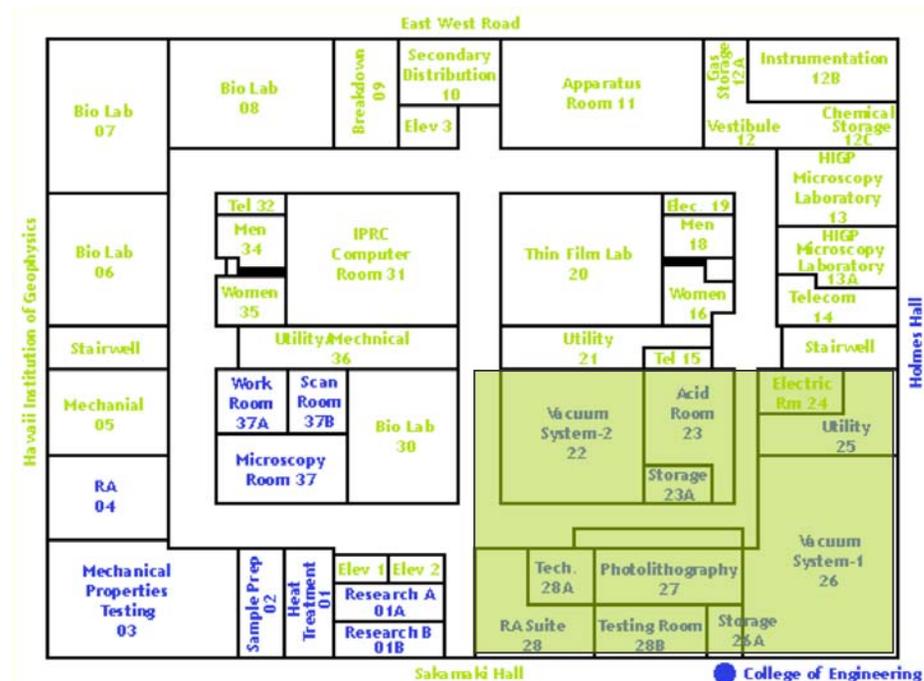
- Sandia 3 stage SuperStrypi
- ~250 kg to 400 km LEO
- 120 degree inclination (1st flight)
- Locally launched from Kauai





Integration and Testing

- On-campus test facility
- Dirty and clean room integration
- Thermo-vac
- Vibration
- Spin
- Machining





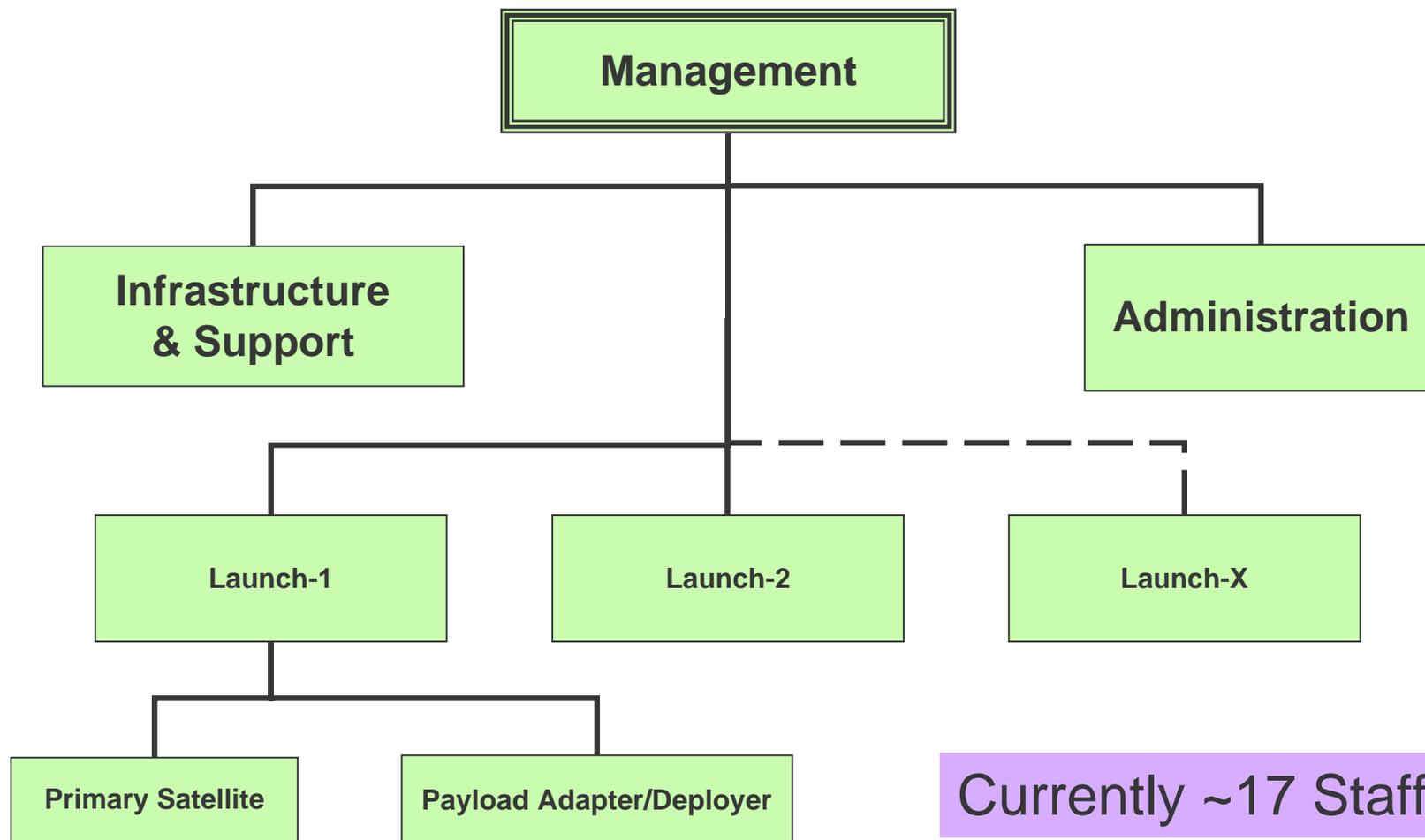
Operations

- On-campus groundstation
- Mission Operations Center
- UHF and S-band





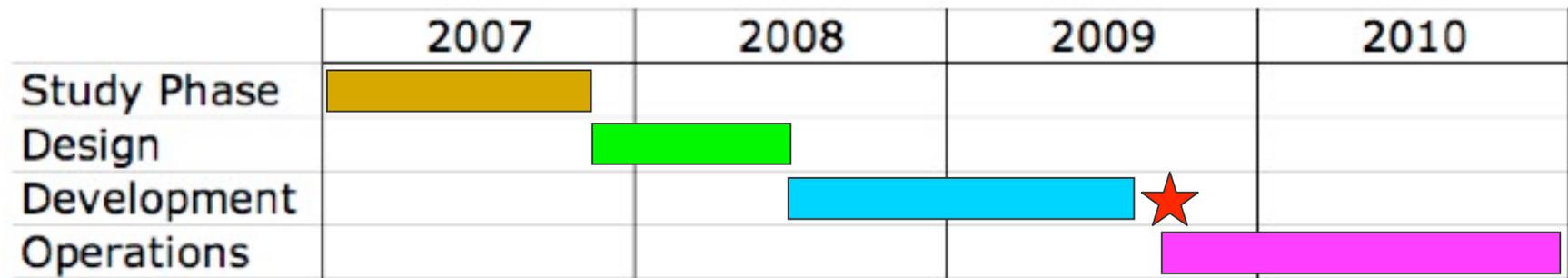
Staffing



Currently ~17 Staff



Timeline



Projected Launch Fall 2009



Wrap Up

- Evolution of existing technology
- Narrow access-to-space cost gap
- Transitional last leg in aerospace education
- Opportunity for small & secondary payloads

Questions?



Mea Huaka'i

2002-2006

Rest in Peace