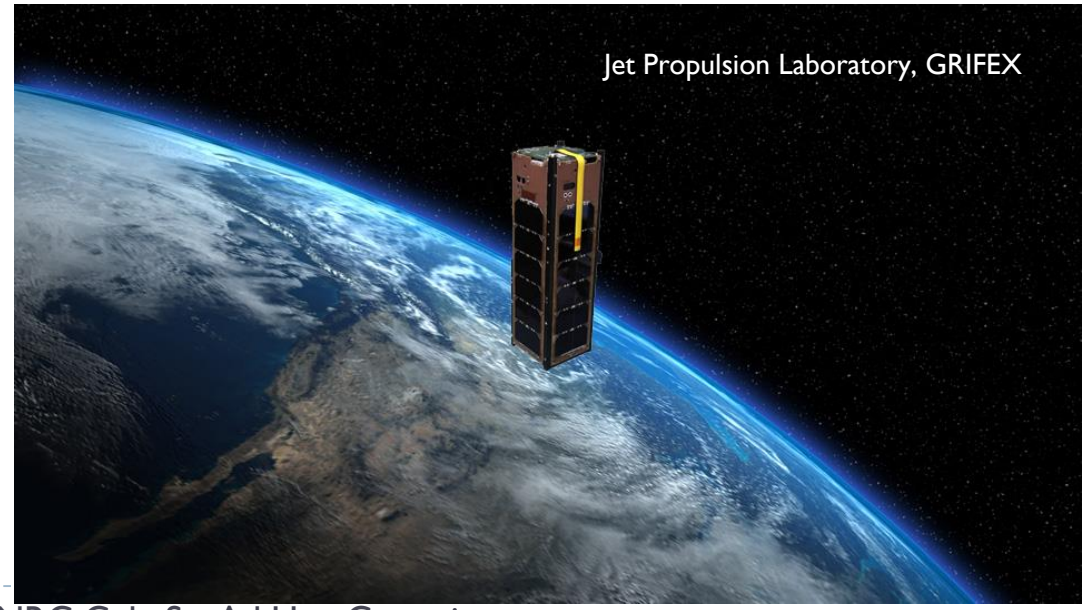
Achieving Science Goals with CubeSats

NRC Ad Hoc Committee
Chair: Thomas H Zurbuchen, University of Michigan
Staff lead: Abigail Sheffer, Program Officer, NRC

CubeSats

- Satellites in increments of 10 cm cubes.
  - $U := (10\ cm)^3$
- Applications can be 1U, 2U, 3U, etc.



Key Elements of Charge

- Review the current state of scientific potential and technological promise of CubeSats
- Review the potential of CubeSats as platforms for obtaining high-priority science data
  - From recent decadal reviews
  - Science priorities in 2014 NASA Science plan
- Provide a set of recommendations on how to assure scientific return on future federal agency support of CubeSat programs

Committee Actions

- Develop summary of status, capability, availability and accomplishments in government, academic and industrial sectors.
- Recommend any potential near-term investments that could be made to
  - A) improve the capabilities that have a high impact and return
  - B) enable the science communities' use of CubeSats
- Identify a set of sample priority science goals that describe near-term science opportunities

Work Plan

- Ad Hoc Committee has ~ 15 scientists and engineers
- Initial information gathering symposium of 1-3 days, and other input processes such as town hall meetings at conferences
- Meet as committee to further gather input and synthesize what is learned about
  - Status quo of CubeSats in research, innovation, education
  - Funding sources, programs, etc.
  - Enabling technologies, etc.
  - Evolutionary path of CubeSats, etc.
  - Limitations, barriers of this technology, etc.
  - Many more
- Anticipated completion Spring 2016

Questions/Inputs Needed

- What are your inputs to this?
- What are aspects of this study we cannot miss?
- What are traps we should stay away from?