Building the Hera Sampler

The Hera Mission

- Multiple Near-Earth Asteroid Sample Return
- The Hera mission will return samples from 3 Near-Earth asteroids.
- There is constant scientific benefits from the sample return mission.
- The recent success of the NEAR mission will return samples from asteroids.
- Asteroids may hold the key to the origins of the solar system.
- Minimum sample size is 300g.
- To return 3 samples from each visited asteroid.

Sampler Objectives

- What we are looking for...
  - Control samples from each visited asteroid.
  - Minimum sample size is 300g.
  - Sampler must be reliable under any conditions.
  - Sampler must be lightweight and require a minimum amount of electricity.

Test equipment

- Sample foot
- Adhesive

Honeybee Robotics Sampler

- Counter rotating blades push sample into storage container.

Preliminary Test Results

- AVG 5.883
- AVG 17.774

3M Adhesives

- Possibilities for Adhesives that will work for the Hera Sampler

Conclusions

- Will this idea really work?
- Rolling pin type devices have been devised
- Working with the 3M adhesives team to find adhesives that will work in space.

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