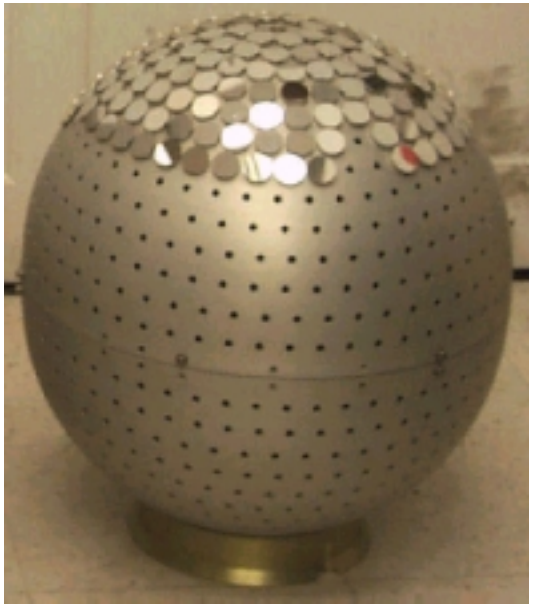
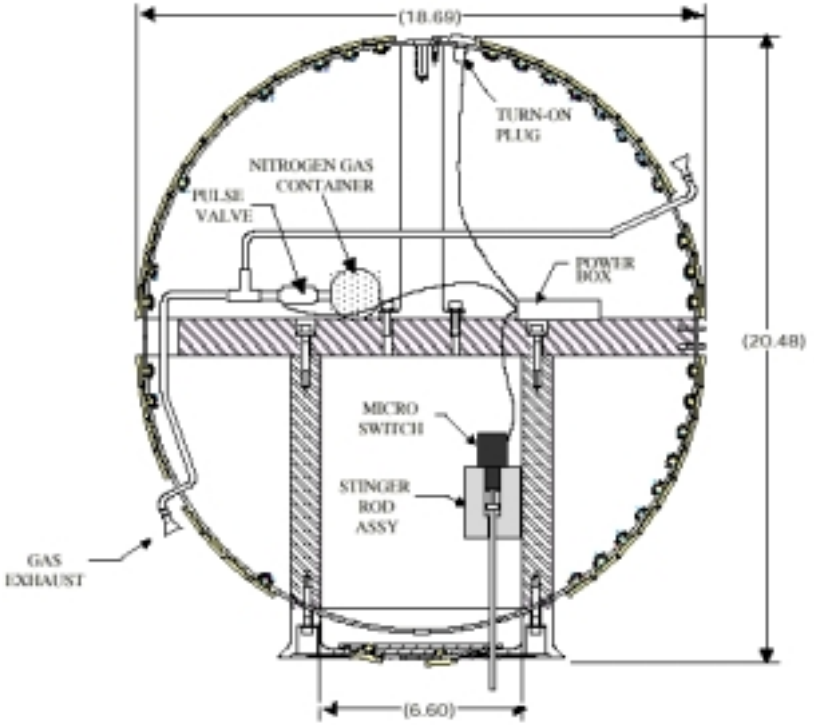
Starshine 2

- **Official Name**
  - **Starshine 2**
- **Sponsor**
  - **Cooperative of international organizations**
- **Primary Mission**
  - **Drag function research**
  - **Student experiments**
- **Launch**
  - **November 2001**
  - **STS 108**
- **Orbital Parameters**
  - **Altitude: 360 km**
  - **Inclination: 39°**
  - **Eccentricity: TBD**
- **Mission Duration**
  - **8 - 9 months**
- **Array Characteristics**
  - **18.7 inch diameter sphere**
  - **approximately 150 total pounds**
  - **20 one cm cubes spaced around the sphere**
  - **858 student ground and polished mirrors**



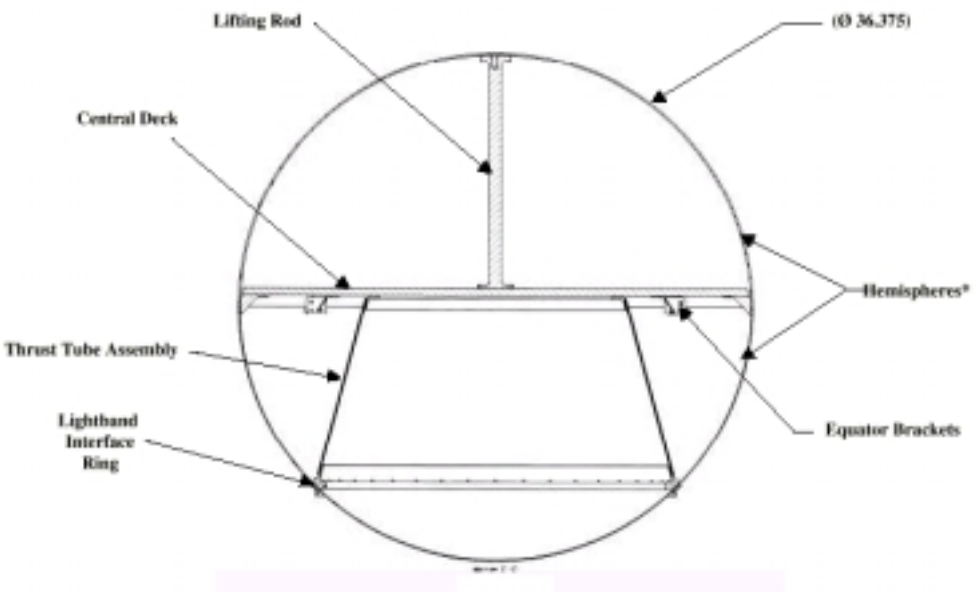
Starshine 2 partially covered with mirrors



Starshine 3

- **Official Name**
  - **Starshine 3**
- **Sponsor**
  - **Cooperative international organization**
- **Primary Mission**
  - **Drag function research**
  - **Student experiments**
- **Launch**
  - **August 31, 2001**
  - **Athena ELV from Kodiak, Alaska**
- **Orbital Parameters**
  - **Altitude: 470 km**
  - **Inclination: 67.048°**
  - **Eccentricity: 0.000066**
- **Mission Duration**
  - **3-5 years**
- **Array Characteristics**
  - **36 inch sphere**
  - **approximately 250 total pounds**
  - **31 one cm cubes spaced around the sphere**
  - **1000 student ground and polished mirrors**

Starshine 3 sphere without mirrors or cubes



Starshine 2/3 Mission and Support Requirements

- Mission Goals
  - The study of the effects of solar activity on the Earth's upper atmosphere and on the atmospheric drag on satellites.
    - More accurate density and drag models are being developed, but solar inputs are the primary source of errors in both models
    - NASA has funded efforts to use Starshine data to improve the drag models as part of "Living with a Star" program
  - Promote the study of math and science by combining classroom study with a real application. Students learn about orbits, astronomy, the Earth's atmosphere, the effects of solar activity on the Earth, and the construction and testing of satellite hardware.
    - Students from around the world polish aluminum mirrors that are mounted onto the outer surface of Starshine then record positions and report for help in POD effort
- SLR Requirements
  - 90 day intensive tracking to solidify orbit
  - Routine priority for remainder of missions