



## NASA Main Activities (1/2)

- **Study of Orbital Debris Environment**
    - MMOD measurements
      - Radar (SSN, HAX, Haystack, Goldstone, 1957 to present)
      - Optical (MODEST, 2004-2006, 2007-2009, 2010-2012)
      - STS window and radiator surfaces (1992-2011)
      - HST WFPC2 radiator (returned surfaces 1993-2009)
      - DRAGONS/SDS (Debris Resistive/Acoustic Grid Orbital NASA-Navy Sensor/Space Debris Sensor)
        - SDS to launch in October 2017 to ISS *Columbus* module
      - Highly dynamic environment
    - Ground tests in 2014 (DebrisSat and DebrisLV )
      - 2 impact tests were completed successfully.
      - ~ 112K fragments have been extracted (and bagged, cataloged, but not completely characterized) . We expect ~200K.
        - DebrisSat will be discussed this meeting
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## NASA Main Activities (2/2)

- **Publically available computer model upgrades**
    - DAS 2.1 includes ORDEM 3.0 debris environment
    - ORDEM 3.0 is being upgraded to ORDEM 3.1
      - Upgrades require new, more current debris environment data
  
  - **Lower priority studies**
    - Al<sub>2</sub>O<sub>3</sub> vs. Al identification study
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