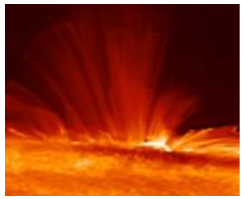
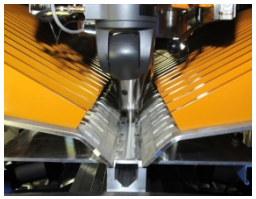
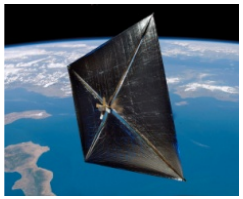
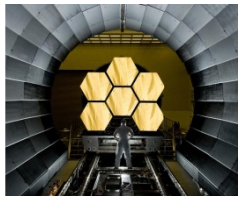
National Aeronautics and Space Administration

MSFC input to the NAS Review Committee on NASA's Planetary Science Division's Restructured Research and Analysis Programs



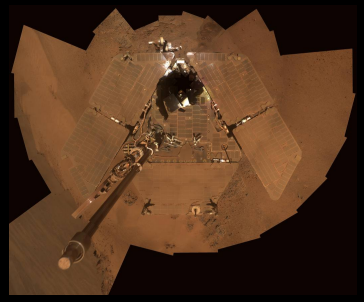




marshall

James Spann, Chief Scientist
with Renee Weber and Barbara Cohen
NASA MSFC , Science & Technology Office

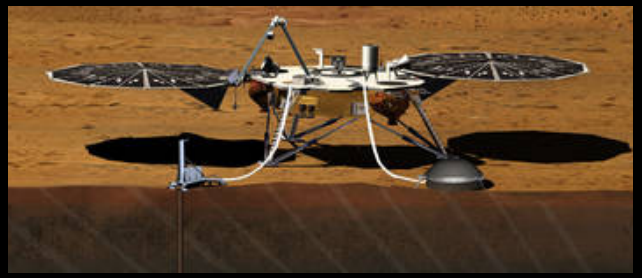
MSFC Planetary Research at MSFC

1. Planetary R&A at MSFC is lead by a team of 10 PhD planetary scientists – supported by MSFC engineering and project management
   - 5 FTE (including two new hires that begin in September)
   - 3 Post Docs (2 NPP's), 2 Research Scientists



- R&A Focus
  - Geochemistry/Geochronology, Geophysics as applied to planetary surfaces and interiors, planetary formation and evolution
  - Dusty plasma and planetary atmospheres
  - Apollo regolith grain size and shape analysis, regolith simulants

- Mission participation/Application
  - Science lead and team membership (Lunar Flashlight, InSight, Cassini, MER, MSL)
  - Mission Operations – MER and MSL
  - Instrument & technology development
  - Sample analysis, laboratory experiments
  - In situ resource utilization (ISRU)



MSFC Planetary Proposals

- 2015 - 2016
  - PDART Planetary Data Archiving, Restoration, and Tools
  - Hayabusa 2 Participating Scientist
  - MSL Participating Scientist
  - LDAP Lunar Data Analysis Program
  - EW Emerging Worlds
  - MATISSE Maturation of Technology and Instrumentation for Solar System Exploration
  - SSW Solar System Workings

MSFC input to PSD R&A restructure assessment

2. Impact of PSD R&A restructure on MSFC and NASA strategic direction

+ All of MSFC areas of research are related to one or more program elements *except ISRU*

- Some program elements have accrued more proposals
    - Reviewer pool is even more limited since the scope of program element is increased
    - Greater potential for proposal overt/covert conflict

3. Impact on morale

- Implementation has caused some angst in the community because of availability gaps of some program elements

4. Refocused resources on priorities

+ Better mapped to the Decadal Survey

- Focus is a function of prioritization, and relevant priority of the program elements is not clear

MSFC input to PSD R&A restructure assessment

5. Thoughts for improvements
   - *Consistency*: Establish consistent phasing of non-core program elements so the community can plan their proposals and funding profiles
   - *Transparency*: Frequent and early communication with the community on forecasting calls; clarity of intent
6. Transparency

+ The restructure is transparent

- The relative priority of the program and its various elements is not transparent

MSFC input to PSD R&A restructure assessment

7. Committee task and future directions for NASA research
   - Commit to broader cross-directorate research
   - Example: In Situ Resource Utilization (ISRU)
     - Lack of overall coordination for this area of research, and technology development & application
     - ISRU is critical for the success of NASA Exploration as it is currently envisioned.
     - Within SMD there is the capability to address many unresolved ISRU issues
     - *Encourage SMD & HEOMD to jointly develop and support ISRU R&A*
     - The former LASER program element would have been a place for this research – but the letter "E" has been removed
       - Recall the1939 novel entitled GADSBY by Ernest Vincent Wright
8. Effect on interdisciplinary research

   + Positive
     - Creation of PDART was a good move
     - Made the call very relevant