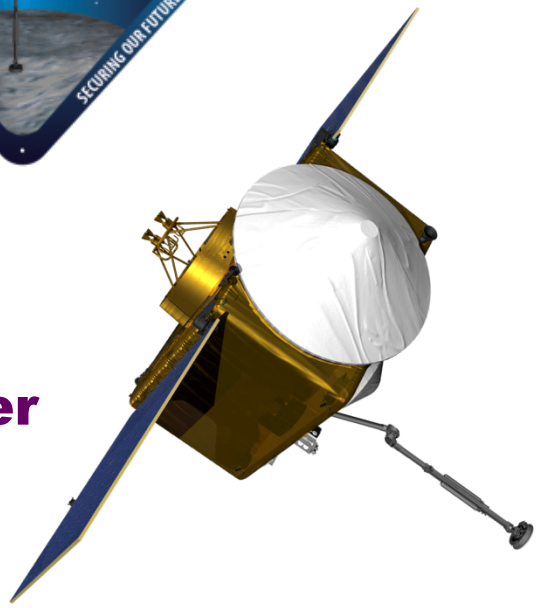
GSFC Supply Chain Conference 2012

former **GOES-R Flight Project Manager**

Michael Donnelly
OSIRIS-REx Project Manager



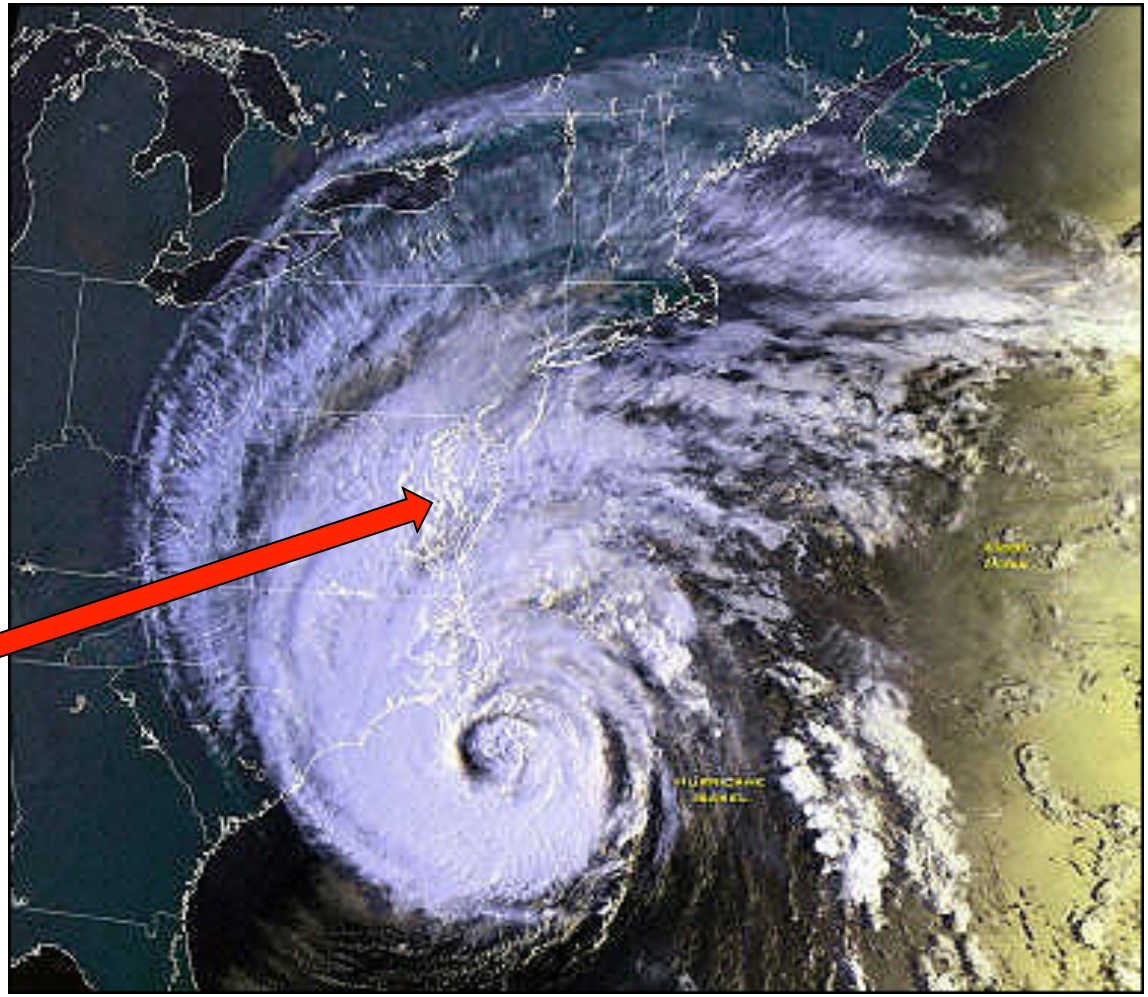
Supply Chain Management

- Oct 2010 – Project Manager of GOES-R Flight Project
  - Directed mission – National asset
  - 4 geostationary weather satellites
  - ~ $6B budget
  - 6 prime contracts (instruments & spacecraft)
    - Spacecraft LMSSC
    - ABI ITT / Exelis
    - SUVI LMSSC
    - GLM LMSSC
    - SEISS ATC
    - EXIS LASP (Univ of CO)
  - 65+ subcontractors (and counting…)
  - 90+ staff on the Flight Project
    - ~ 25+ MA staff (including PMP)

Supply Chain Management

- This is what I said then…
  - The GOES-R MA staff, led by Roman Kilgore, has been charged with "…getting into our contractors knickers…"
    - They are to be friendly and cordial and professional, but not your friends…
    - We expect everyone to become confident in your ability to deliver, but not comfortable…
  - Why?
    - Friends are willing to overlook our faults
    - Comfortableness leads to sloppiness, laziness, screw-ups, failures
    - Really big numbers…
      - 20 yr life times, $7.6B total life cycle budget, 65+ contractors

this may have had something to do with it too…



Hurricane Isabel – September 2003

Supply Chain Management

- Oct 2012 – Project Manager of OSIRIS-REx Project
  - PI-managed, cost-capped, in Phase B, with LRD in Sept 2016
  - Asteroid sample return flight system
    - Insts, S/C, EELV, Grnd Sys, prox-ops, return capsule, science, curation
  - ~ $1B budget
  - 5 prime contracts (instruments & spacecraft) + 1
    - Spacecraft LMSSC
    - OCAMS Univ. of AZ
    - OTES AZ State Univ.
    - OVIRS GSFC
    - REXIS MIT (student instrument)
    - OLA CSA / MDA (contributed instrument)
  - 23+ subcontractors (with another 16+ upon entering Phase C)
  - ~45 staff on the Project
    - ~ 9+ MA staff (including PMP)

Supply Chain Management

- So… what now…?
  - We still need to have assurance that our requirements will be met, but we don't have the luxury of time or money
    - Cost-capped mission in Phase B with less than 4 yrs to go
  - We need to be more collaborative and less heavy-handed
    - Don't have the staff to make sure we're everywhere enforcing our requirements
  - We need everyone to be more proactive
    - Can't wait for a manufacturing readiness review to find out that contractor-X doesn't have acceptable processes

Supply Chain Management

- So… what have I learned?
  - We need teammates
    - That requires openness and collaboration

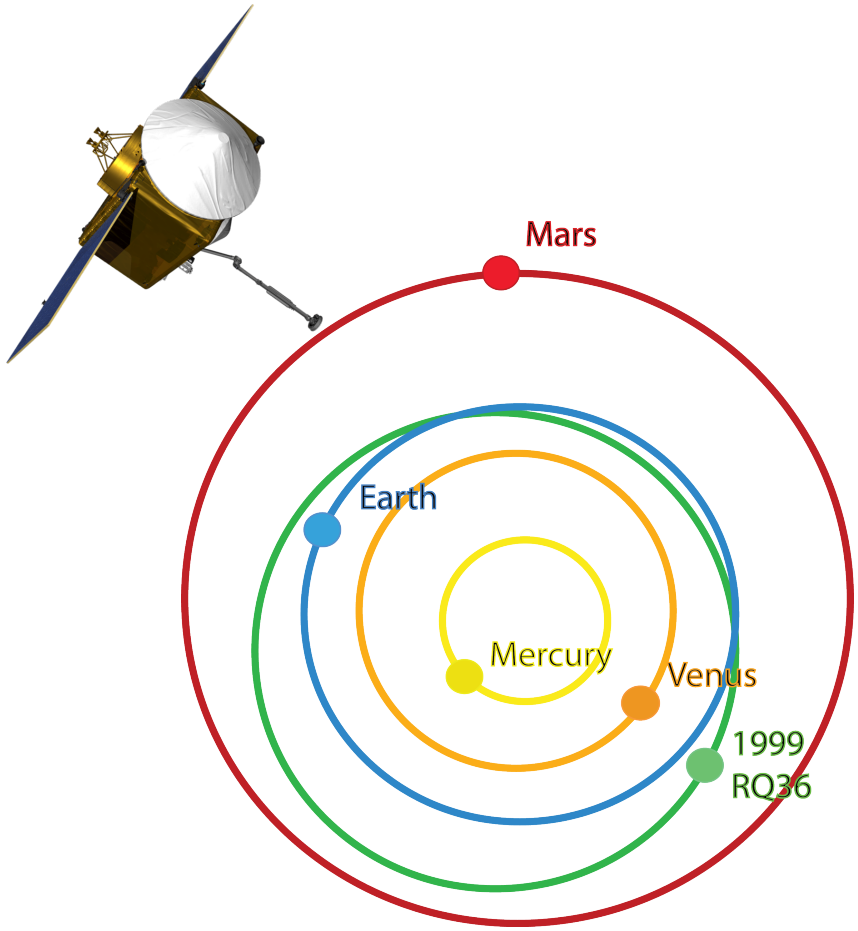
All sides need to understand the requirements of the others and why those requirements are important, where there's common ground, and where each can give a little

  - We need trust
    - That requires honesty and fairness

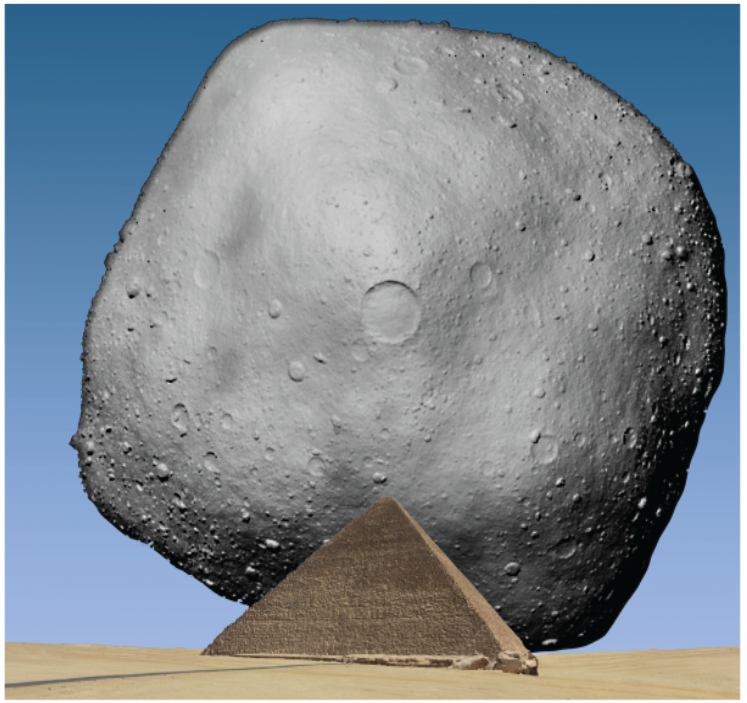
All products, processes, requirements, documents, etc… need to be evaluated based upon their merit and whether they contribute to mission success

OSIRIS-REx will not be successful if we have to rely upon the traditional customer / supplier relationship – there isn't time for that dance

OSIRIS-REx Mission



- Launch in September 2016
- Rendezvous with asteroid 1999 RQ36 in October 2018
- In July 2019, obtain at least 60g of pristine regolith, using 'touch and go sample acquisition mechanism' (TAGSAM)
- Leave the asteroid in June 2021
- Return to Earth in September 2023
- Deliver samples to JSC curation



- Asteroid 1999 RQ36
- Near-Earth asteroid, about 500 m (⅓ mile) diameter
- 4.5-hour rotation period
- 436.6-day orbit of Sun at 27.8 kilometers/second (62,120 mph)
- Rocky fragments with fractures and pores, ancient carbon
- Potentially hazardous, has a probability 1 in 1800 of colliding with Earth in the 22nd century (2182)