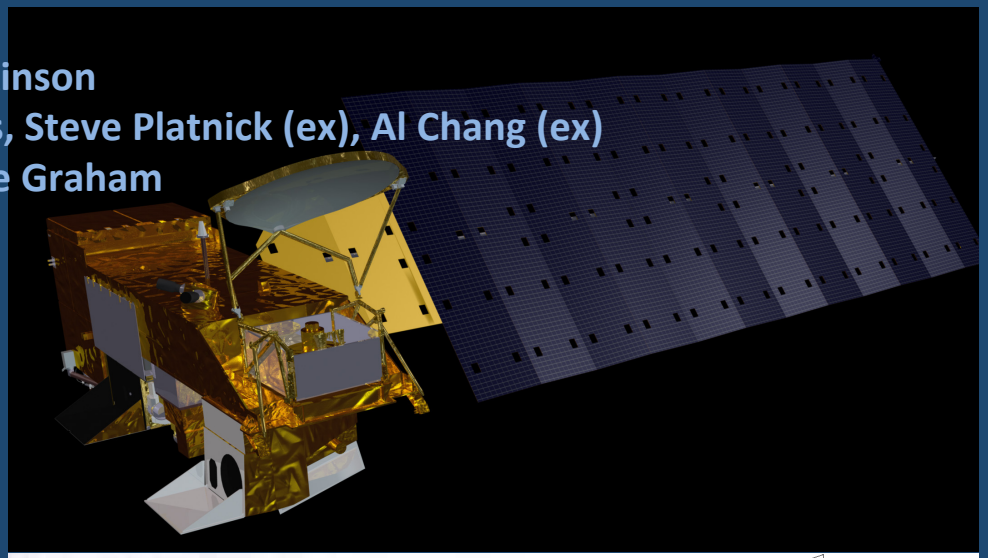
Aqua launch May 4, 2002, 2:55 a.m., Vandenberg Air Force Base, California

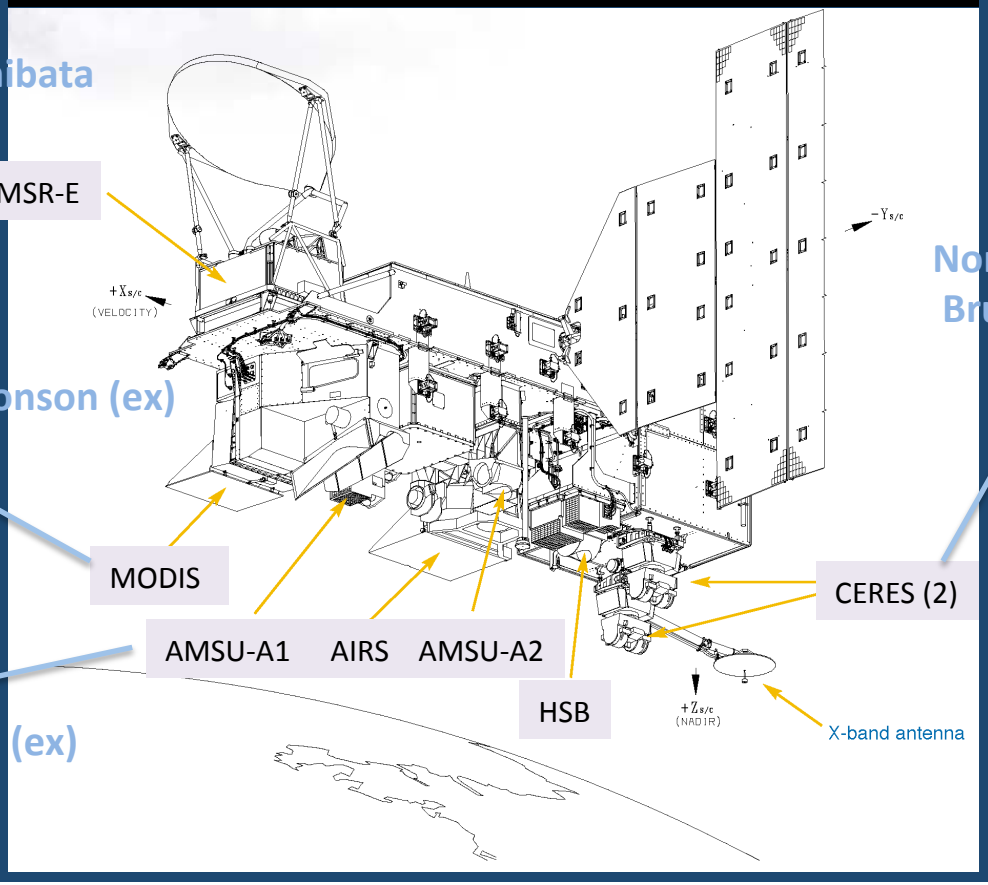
Aqua: Current status and future

Lazaros Oreopoulos, NASA, Dep. Proj. Scientist

Claire Parkinson, NASA, Proj. Scientist

Project Scientist: Claire Parkinson
Deputy: Lazaros Oreopoulos, Steve Platnick (ex), Al Chang (ex)
Outreach Coordinator: Steve Graham
Mission director: Bill Guit





What Aqua Observes

- Temperature and humidity profiles
- Carbon dioxide and other trace gases
- Earth radiation budget
- Chlorophyll in the oceans
- Fires over land
- Global ice cover
- Cloud properties
- Land reflectances and land use/change
- Numerous other geophysical variables
  - ~ 88 GB data per day

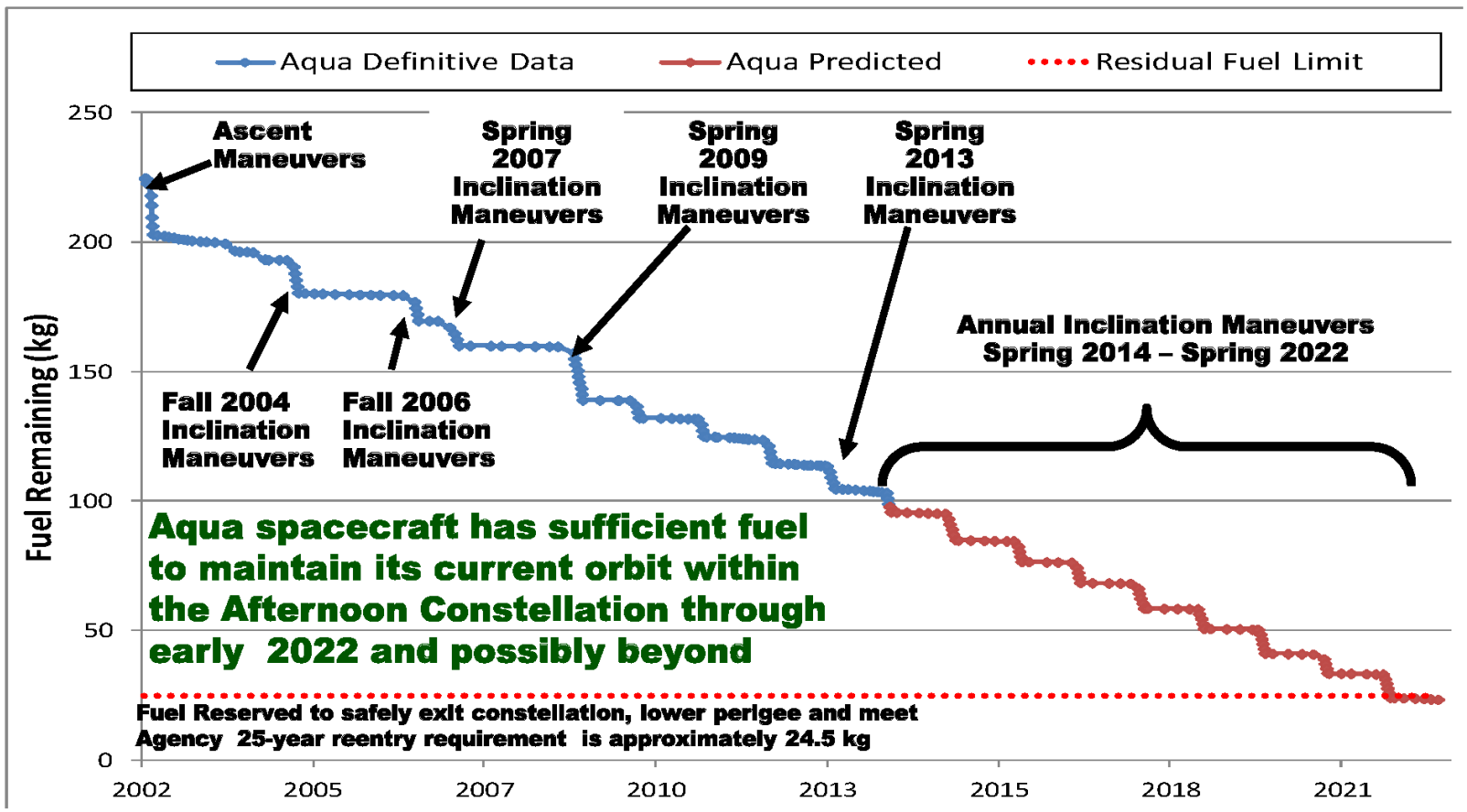
Spacecraft and Instrument Status

- Spacecraft bus: Nominal Operations (Excellent health)
- AIRS: Nominal Operations (<5% of channels degraded) (Excellent health, except Cooler A telemetry)
- AMSU-A: Nominal Operations of 12/15 channels (Good Health)
- HSB: Non-operational since February 2003
- AMSR-E: Operating at 2 rpm (vs original 40 rpm); Calibration purposes only – no science (Poor Health)
- CERES-AFT (FM-3): Nominal Operations (Excellent Health)
- CERES-FORE (FM-4): Nominal Operations (SW channel failed on March 2005) (Good Health)
- MODIS: Nominal Operations (Excellent health)

No Changes

Fuel Usage: Actual & Predicted

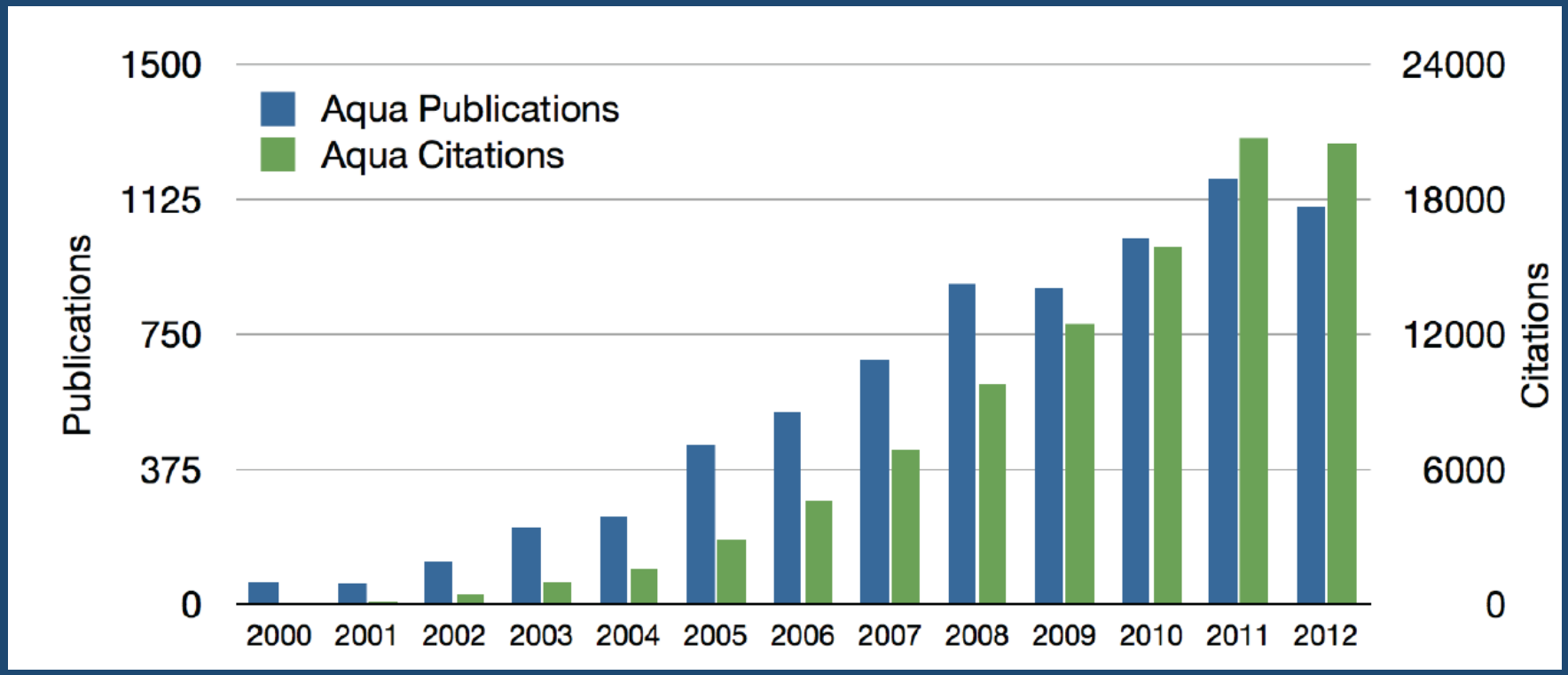
(Last Updated March 2014)



Fuel usage continues to follow prediction

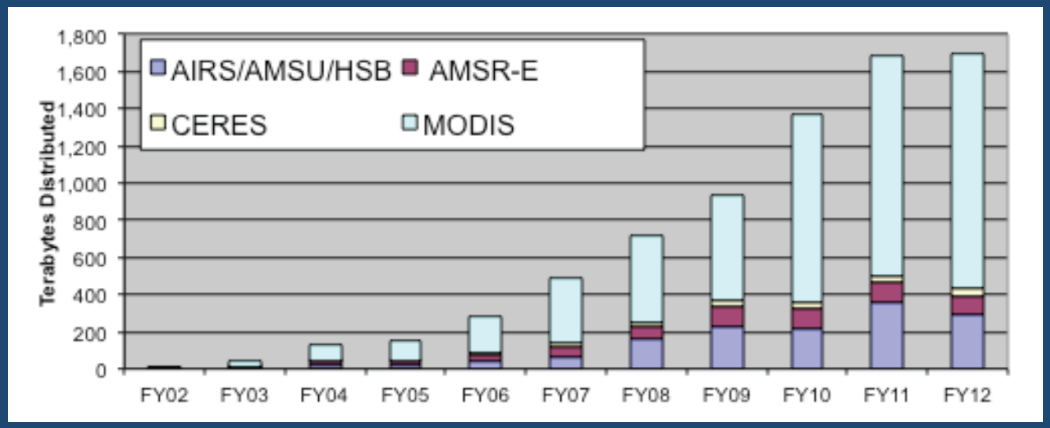
Aqua status file is updated monthly at http://aqua.nasa.gov

Aqua Publications and Citations

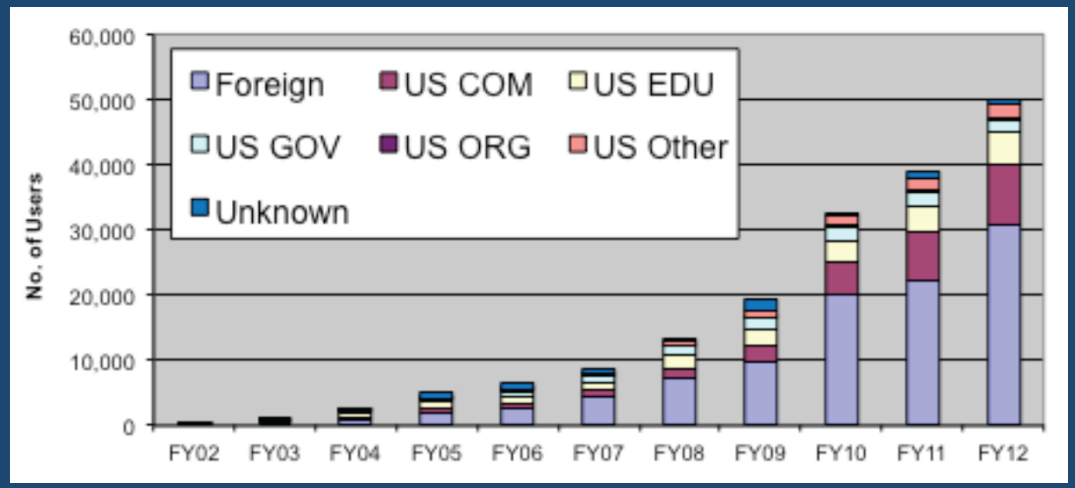


Plot from 2013 Aqua Senior Review proposal

Aqua Data Usage



Aqua data volume (in TB) by instrument



Number of Aqua data users by affiliation

Plots from 2013 Aqua Senior Review proposal

Communication and Public Engagement (formerly EPO)

- FY15 Budget: $280 K
- Main funded activities (incl. discontinued)
  - ~~Vodcasts, and Earth-Sky Podcasts~~
  - Dynamic Planet
  - ~~SatCam~~
  - Students' Cloud Observations On Line (S'COOL)/My NASA Data (MND)
  - ~~Earth System Science Education Alliance (ESSEA)~~
  - REEL Science Communication Contest
  - Science on a Sphere (SOS) Earth Stories
  - Know Your Earth (KYE)
  - AIRS displays and pubs
- Uncertain future because of possible consolidation (i.e., possibly no separate budget line for "Aqua EPO" after FY15)
- Distinction between "Education" (in danger) and "Engagement"

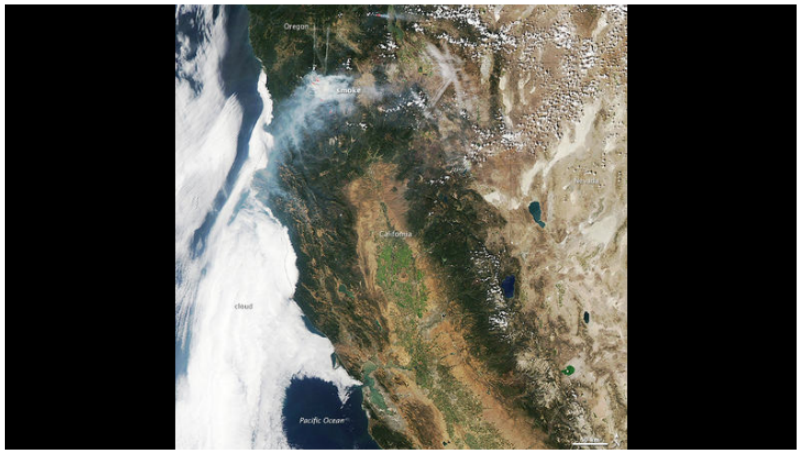
Recent Milestones

- MODIS Collection 6 release (atmosphere and land)
- AIRS Version 6 release
- Near ready for CERES Edition 4 : BDS, SSF, SSF1deg
- ROSES 2013
  - Science of Terra-Aqua: 51 of 56 awarded proposals involve instruments on Aqua
  - Terra-Aqua algorithms: 30 of 32 awarded proposals involve instruments on Aqua
  - In above, more Aqua-only (because of AMSR-E and AIRS/AMSU) than Terra-only proposals
  - Suomi NPP data continuity: 32 of 40 awarded proposals to continue Aqua products

Aqua in Recent News

NASA image shows north-south disparity of wildfires in California

[LA Times 8/26/14]



NASA satellite image of California shows the smoky effect of wildfires burning in the northern part of the state. (NASA image courtesy

Alaska Dispatch News

NEWS POLITICS VOICES ARCTIC CULTURE SPORTS ADVENTURE MULTIMEDIA

NASA projects tracking changes in Alaska's glaciers and Arctic atmosphere

NASA ARISE (Arctic) campaign flights timed to fly during Aqua overpasses

Yereth Rosen | September 17, 2014

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The U.S. agency that explores outer space is also probing another frontier -- the rapidly warming climate in Alaska and other parts of the Far North.

NASA has launched three Alaska-based projects to better understand how warming is changing the size and behavior of glaciers, the release of carbon gases from thawing permafrost and the interplay between sea ice, clouds and weather in and above the Arctic Ocean.

At a teleconferenced briefing on Tuesday, scientists working on the three NASA projects explained why changes on this part of the planet Earth are important to the space agency.

RELATED:

Glacier melting linked more closely with burning of fossil fuels

Permafrost lakes are long-term climate coolers, study says

ADN, 9/17/14

Changes in more than 130 Alaska glaciers are being surveyed by scientists at the University

Over 30 Hikers Die During Ontake Eruption in Japan: What Happened?

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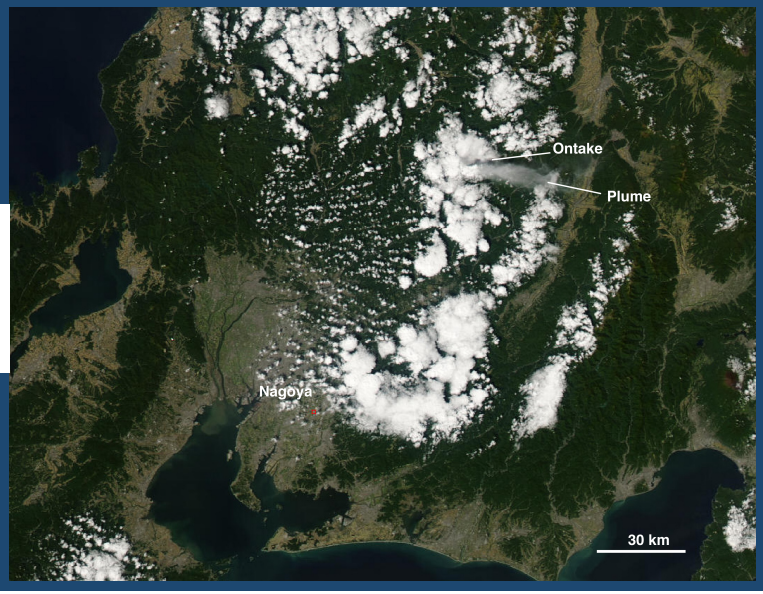
[Wired 9/28/14]



2015 Senior Review

- Required for all operating missions beyond prime phase
- Will be 5th for Aqua
- Kick-off meeting at 2014 Fall AGU
- Based on past experience:
  - Proposal to be submitted early March 2015
    - ✧Proposal consists of Science, Technical and Budget sections
  - Review panels expected to meet April/May with final evaluation to be released around June 2015
- Aqua budget ~32.5 M, ~55% for mission operations

2013 Senior Review Results

Mission	Science Scores			Summary Science Score	Utility Score	Technical Risk	Conclusion	
	Merit	Relevance	Product Maturity				FY14-15	FY16-17
ACRIMSAT	4.0	4.2	2.8	3.7	Some	Medium-Low	Continue	Continue
Aqua	5.0	5.0	4.7	4.9	Very High	Medium	Continue	Continue
Aura	5.0	5.0	4.9	5.0	High	Medium-High	Continue	Continue
CALIPSO	5.0	5.0	4.9	5.0	High	Medium	Continue	Continue
CloudSat	5.0	5.0	4.9	5.0	High	Medium-High	Continue	Continue
EO-1	4.0	4.3	3.0	3.8	Some	Medium-High	Continue	Terminate & Close out*
GRACE	5.0	5.0	4.0	4.7	High	High	Continue	Continue
Jason-1	5.0	5.0	5.0	5.0	High	Medium-High	Continue	Continue & Reduce*
OSTM	5.0	5.0	5.0	5.0	High	Low	Continue	Continue
QuikSCAT	5.0	5.0	5.0	5.0	High	High	Continue	Continue
SORCE	4.9	5.0	3.2	4.4	High	High	Continue	Continue
Terra	5.0	5.0	4.8	4.9	Very High	Medium-Low	Continue	Continue
TRMM	5.0	5.0	5.0	5.0	Very High	High	Continue	Continue

"The Aqua mission has been extremely successful and produces a large number of critical products that are very widely used by scientists, government agencies and operational groups. The impressive list of core science products is very mature and stable. The government agencies all gave Aqua the highest ranking of all missions…"