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 Oreopoulo, Steve Platnick (ex), Al Chang (ex)
Outreach Coordinator: Steve Graham
Mission director: Bill Guit

Roy Spencer, Akira Shibata

Michael King, Vince Salomonson (ex)

Joao Teixeira, Mous Chahine (ex)
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)

Aqua spacecraft has sufficient fuel to maintain its current orbit within the Afternoon Constellation through early 2022 and possibly beyond.

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]

![Image of wildfire disparity in California](image-url)

**Alaska Dispatch News**

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

Yereh Rosen | September 17, 2014

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.

**RELATED:**

- Glacier melting linked more closely with burning of fossil fuels
- Permafrost lakes are long-term climate indicators, study says

At a teleconference 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.

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

[ADN, 9/17/14]

![Image of Alaska's glaciers and atmosphere](image-url)

Changes in more than 130 Alaska glaciers are being surveyed by scientists at the University of Delaware, NASA.

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

[ Wired 9/28/14]

![Image of Ontake Eruption in Japan](image-url)

[30 km]
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

<table>
<thead>
<tr>
<th>Mission</th>
<th>Science Scores</th>
<th>Summary Science Score</th>
<th>Utility Score</th>
<th>Technical Risk</th>
<th>Conclusion</th>
<th>FY14-15</th>
<th>FY16-17</th>
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“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...”