



NASA Health and Air Quality Applications 2013 Program Review

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Program Review Goals

- Update of project status and look ahead to the coming year
- Discussion of community priority topics and “grand challenges”
- Identification of projects to highlight through conferences, press releases, web features, reports, etc. -- e.g., need projects to present at NASA AGU booth (including Hyperwall) in December. Let us know if you are going and willing to present!
- Investigation of collaborative opportunities (particularly between AQ and Health portfolios)
- Leveraging existing programs (SERVIR, AQUEST, etc.)





2010 NASA Science Plan

The 2010 Science Plan identifies the direction NASA has received from the Administration and Congress, advice received from the nation's science community, principles and strategies guiding the conduct of our activities, and challenges we face. The plan that results enables NASA, as Administrator Bolden says, to "do the best science, not just more science."

The NASA Earth Science strategic goal is stated as, ***“Advance Earth System Science to meet the challenges of climate and environmental change.”***

http://science.nasa.gov/media/medialibrary/2010/08/30/2010SciencePlan_TAGGED.pdf





1960







Suomi NPP Launched on Oct. 28, 2011!





**Launch of Landsat-8
(LDCM) on February 11,
2013**

Earth Science Missions in Operation



Aquarius

OSTM/Jason 2 (NOAA)

Jason
2001-2013

QuikSCAT*

TRMM

EO-1

Landsat-7 (USGS)

Aqua

ACRIMSAT

Terra

SORCE

GRACE (2)

Aura

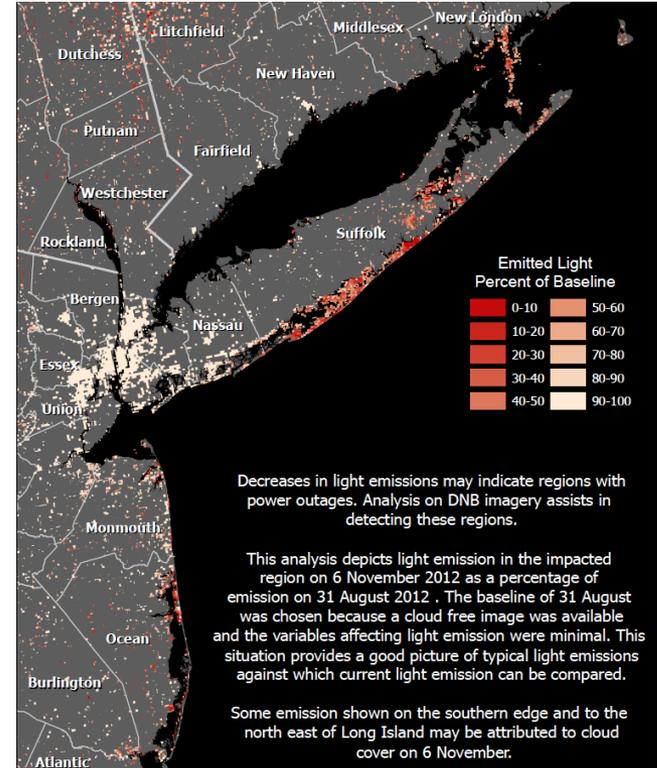
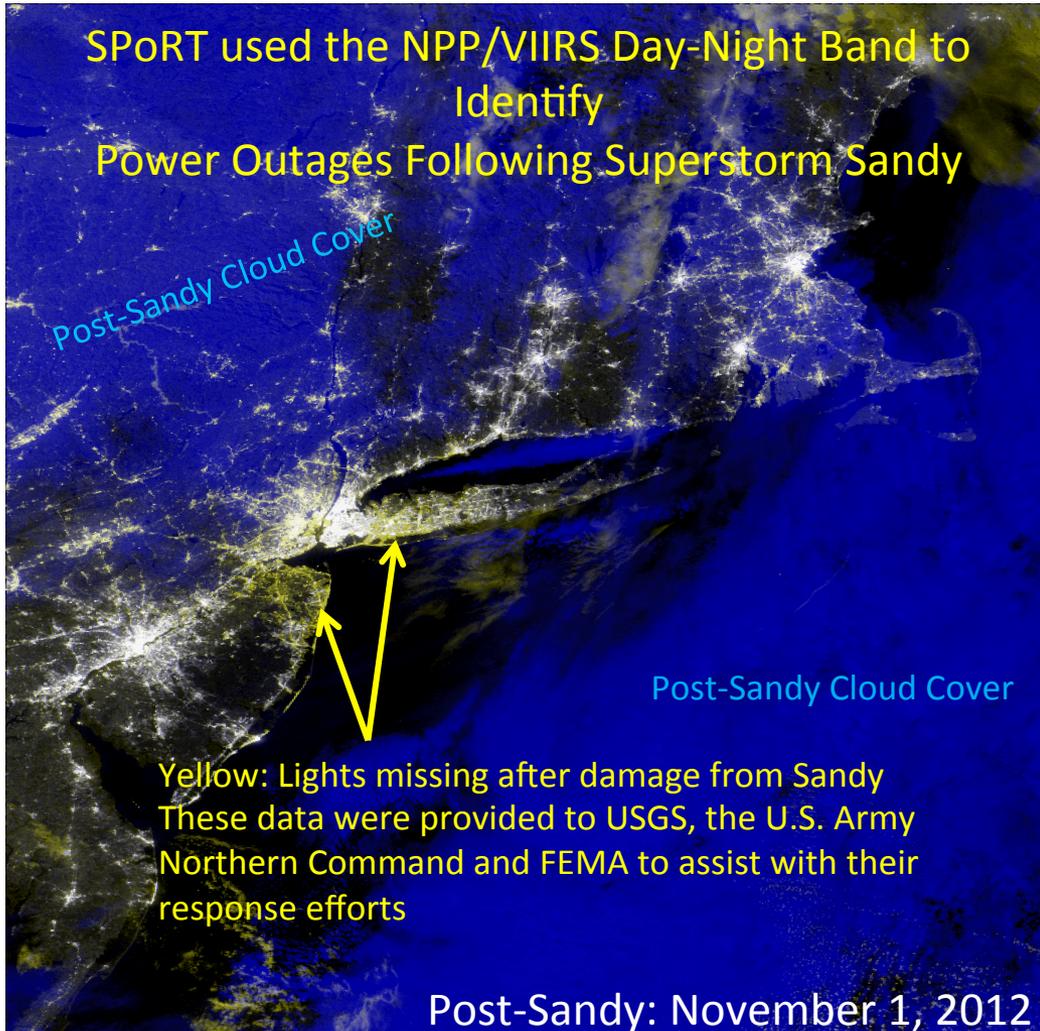
CALIPSO

CloudSat

NPP

Landsat-8

NASA's SPoRT Center Supports Disaster Response Following "Superstorm Sandy" (Landfall 10/29/12 in S. NJ)



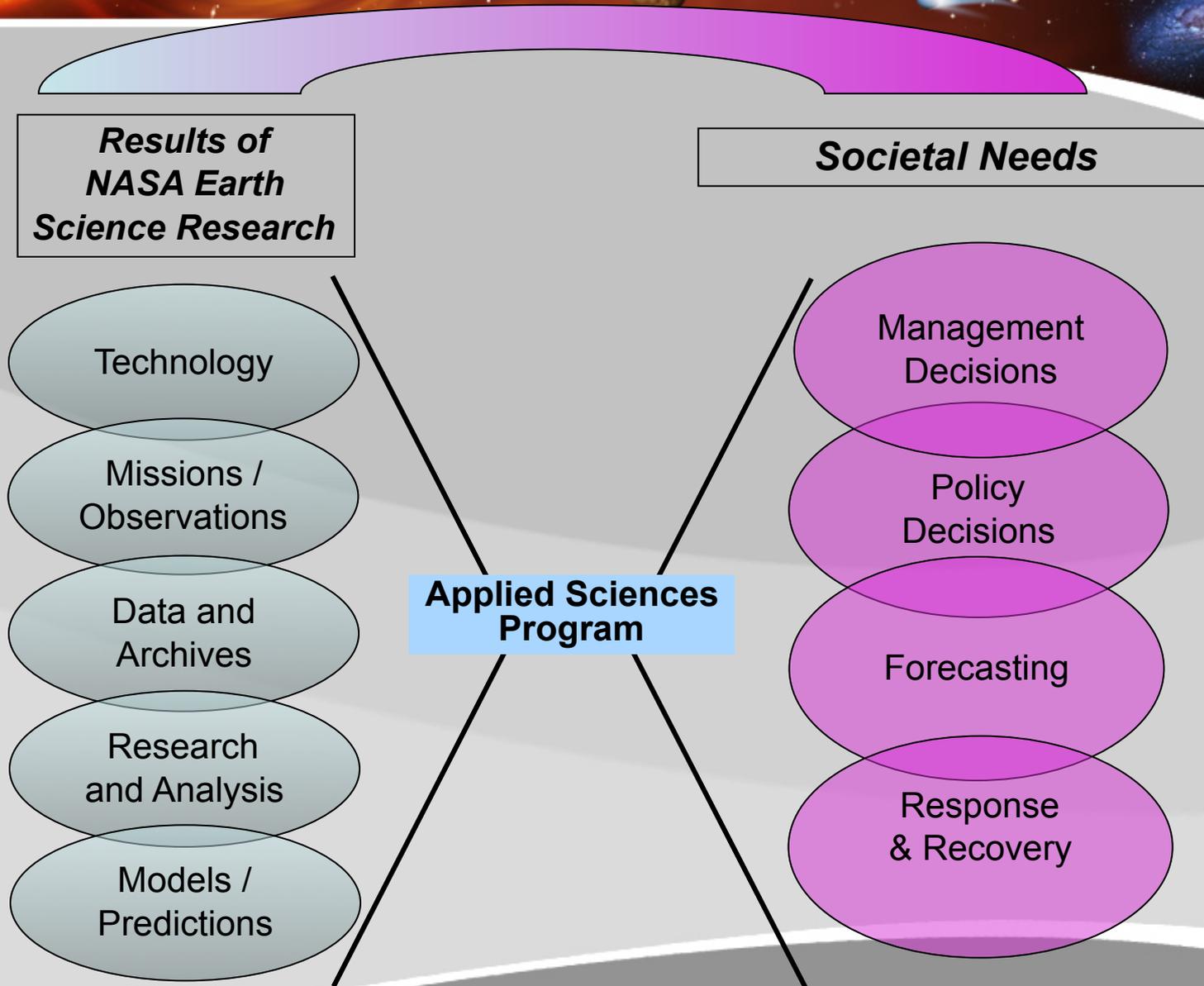
SPoRT provided NPP/VIIRS data to the Joint Task Force Civil Support (JTF-CS) and the Department of Defense Northern Command (NORTHCOM). With SPoRT's support, analysts adapted the VIIRS data into their own product to help gauge power restoration in support of recovery efforts.



transitioning unique NASA data and research technologies to operations



NASA Applied Sciences Program Architecture





Applied Sciences Program

Four Major Program Elements



**Health and Air
Quality**



**Ecological
Forecasting**



**Water
Resources**



**Disaster
Management**



Focus Areas of Health and AQ

NASA's Health & Air Quality Applications Area supports the use of Earth observations in air quality management and public health, particularly regarding **infectious disease** and **environmental health** issues. The area addresses issues of toxic and pathogenic exposure and health-related hazards and their effects for risk characterization and mitigation. The area promotes uses of Earth observing data and models regarding implementation of **air quality standards, policy, and regulations** for economic and human welfare. The Health & Air Quality Applications Area also addresses **effects of climate change on public health and air quality** to support managers and policy makers in their planning and preparations.



NASA Earth Science Division FY14 President's Budget

(\$ millions)

- FY12: \$1,760.5
 - FY13: ~\$1,700.0
 - FY14: \$1,846.1
 - FY15: \$1,854.6*
 - FY16: \$1,848.9*
 - FY17: \$1,836.9*
 - FY18: \$1,838.1*
- * FY15-18 budgets are considered “notional.”

■ Major Items:

- President's Budget requests \$35.0M for ASP in FY14 rising to \$40.1M in FY18
- The FY14 budget for Earth Science is consistent with the FY12 and FY13 request – this represents **continued stability**, which is a strong endorsement of NASA in a time of fiscal austerity.
- \$78M impact from sequestration in FY13.
- Additional scope added to ESD (land imaging, climate sensors) with some additional funding.
- One time \$50M FY14 infusion to accelerate Venture Class.
- **Risks:** Sequestration continues in FY14 (larger impact); Government shutdown on Oct. 1



News Items in the ESD/ASP during 2012/2013

- New Health and Air Quality solicitation expected soon. (ROSES 13)
- NASA Health/AQ Sessions at the following venues:
 - CENSARA Fall Meeting (October 2012)
 - AGU Fall Meeting (Dec 2012) – ACAST 4 held immediately prior
 - AMS Annual Conference (January 2013)
 - AWMA Webinar (March 2013)
 - Public Health Informatics course at the Uniformed Services University of the Health Sciences – Walter Reed/Bethesda, MD (April 2013)
 - ATS Annual Conference (May 2013)
 - NCAR/CDC Colloquium on Climate and Health (July 2013)
 - ISPRS/MEDGEO Conference (August 2013)
 - Louisiana Air and Waste Management Association (October 2013)
- NASA Earth Science Senior Review report released (June 2013)
 - <http://science.nasa.gov/media/medialibrary/2013/07/16/2013-NASA-ESSR-FINAL.pdf>
- ACAST 5 Review in College Park, MD (June 2013)
 - ACAST 6 planned for January 15-17, 2014, at Rice University in Houston, TX
- GEO Health CoP in Washington, DC (July 23-25, 2013)
- ARL updates moving to a quarterly schedule independent of project start date (Feb/May/Aug/Nov)

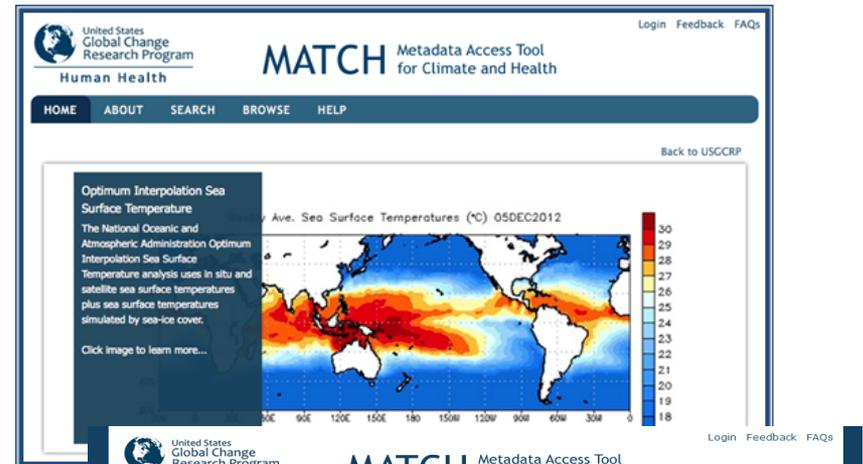


Metadata Access Tool for Climate and Health (MATCH)

USGCRP, Climate Change and Human Health Working Group (CCHHG)

MATCH is a searchable clearinghouse that:

- Provides access to metadata for health surveillance, climate, ocean and environmental data sets through a single online geoportal;
- Characterizes and provides links to publicly available Federal data sets, early warning systems, and tools related to health impacts of global climate change;
- Is designed to facilitate and improve the quality of research and data stewardship;
- Includes points of contact and caveats about data;
- Was developed through a collaborative interagency effort of the USGCRP (including the NASA Health and Air Quality Applications Program).
- <http://match.globalchange.gov>



The MATCH portal launched on May 9, 2013, in conjunction with a new White House Open Data Policy and Executive Order on data management. MATCH was highlighted on the OSTP and CEQ blogs as a model for using Federal open data to address critical societal challenges. Future goals include adding metadata from additional federal agencies, supporting data overlay, and providing data integration capabilities.

Office of Science and Technology Policy

Council on Environmental Quality

Open Data for Climate and Health Insights

Posted by Tom Armstrong on May 9, 2013 at 1:28 PM EDT

Today, in conjunction with a series of landmark steps announced by the Obama Administration to unleash troves of useful data from the vaults of government, the interagency US Global Change Research Program (USGCRP) launched a new online tool that promises to accelerate research relating to climate change and human health—the Metadata Access Tool for Climate and Health, or “MATCH.”

The Administration announcements made today include an Executive Order signed by the President declaring that information is a valuable national resource and strategic asset, and a new government-wide Open Data Policy

Upcoming Conference/Workshops of Interest

- **GPM Applications Workshop**
 - November 12-13, 2013
 - College Park, MD
 - <http://pmm.nasa.gov/node/851>

- **SMAP Health Applications Workshop**
 - January 7-8, 2014
 - Atlanta, GA (in cooperation with the CDC)
 - <https://smap.jpl.nasa.gov/science/workshops/>

- **American Meteorological Society Annual Meeting**
 - February 2-6, 2014
 - Atlanta, GA
 - 5th Conference on Environment and Health
 - <http://annual.ametsoc.org/2014/index.cfm/programs-and-events/conferences-and-symposia/fifth-conference-on-environment-and-health/>

Recent and Future Observations for Health and AQ – Near Term

- **Landsat Data Continuity Mission (LDCM -- now Landsat-8) -- 2/11/2013**
 - Continues the longest running enterprise for acquisition of satellite imagery of Earth. Land use/land cover observations from this program date to 1972.
- **Global Precipitation Mission (GPM) – Feb. 2014**
 - Will provide accurate observations of the intensity and distribution of global precipitation. GPM builds on the heritage of the TRMM mission and is in partnership with JAXA.



Future Observations for Health and AQ – Near Term

- **Orbiting Carbon Observatory (OCO)-2 – 2014**
 - NASA's first dedicated Earth remote sensing satellite to study atmospheric carbon dioxide from Space. OCO-2 will be collecting space-based global measurements of atmospheric CO₂ with the precision, resolution, and coverage needed to characterize sources and sinks on regional scales.
- **Soil Moisture Active Passive (SMAP) – 2014**
 - SMAP will use a combined radiometer and high-resolution radar to measure surface soil moisture and freeze-thaw state.



Future Orbital Flight Missions through 2020



For More Information...



National Aeronautics and
Space Administration

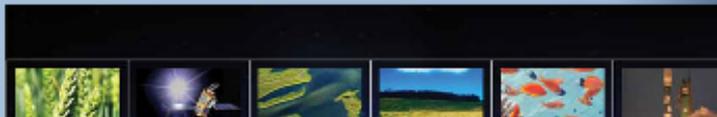
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Cooperations



**New Health and AQ solicitation planned as Element
A.44 of NASA ROSES 2013!!**

Release date TBD

[http:// nspires.nasaprs.com/external/](http://nspires.nasaprs.com/external/)



Themes to support both applied research and targeted, decision support
projects in 9 areas of national priority.

Disasters
Ecological Forecasting
Health & Air Quality

Agriculture
Climate
Energy



<http://appliedsciences.nasa.gov>

http://weather.msfc.nasa.gov/conference/phconference_np_home.html

http://weather.msfc.nasa.gov/conference/phconference_sp_home.html