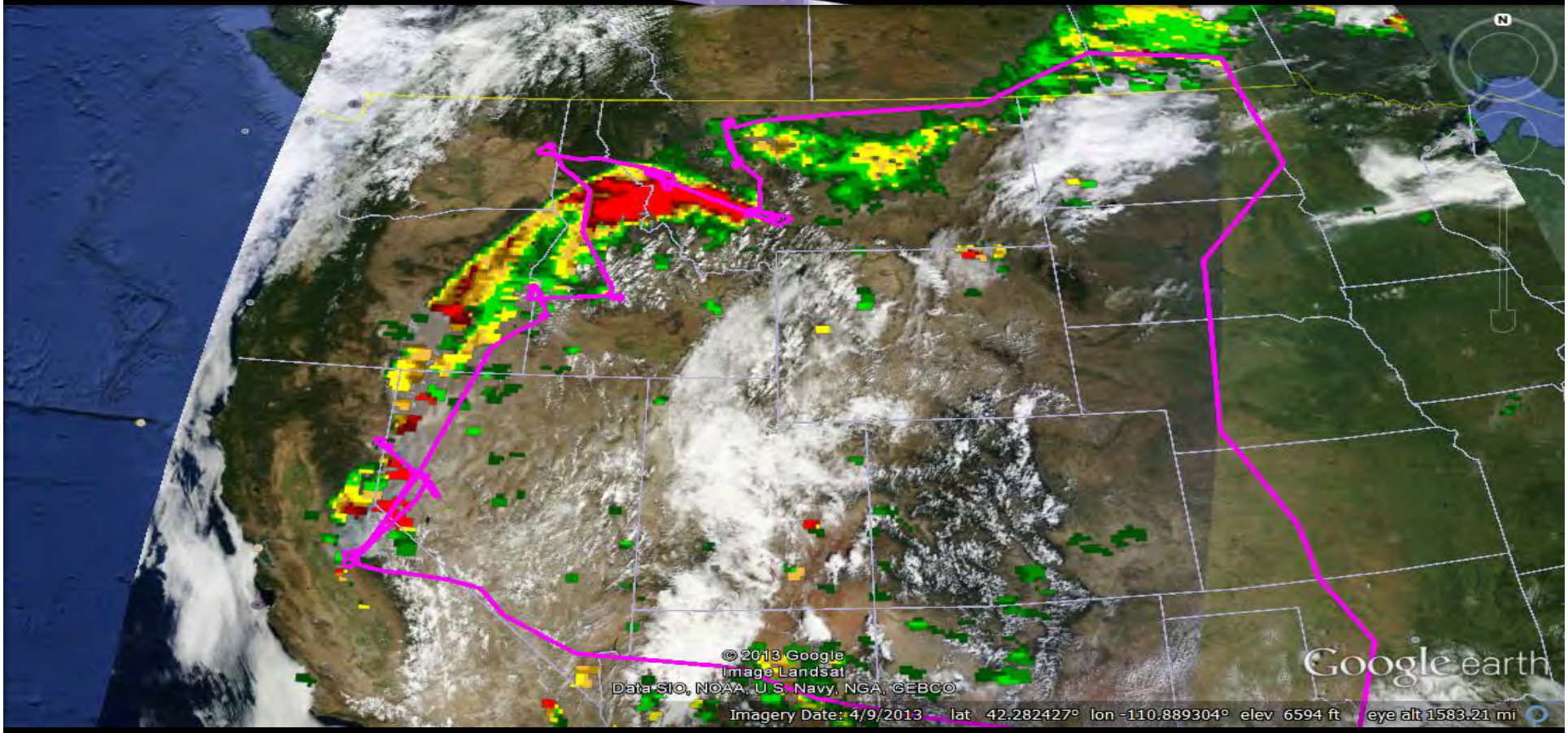
NASA HQ Update

Paula Bontempi
National Aeronautics and Space Administration HQ
MODIS Science Team Meeting
29 April -1 May 2014

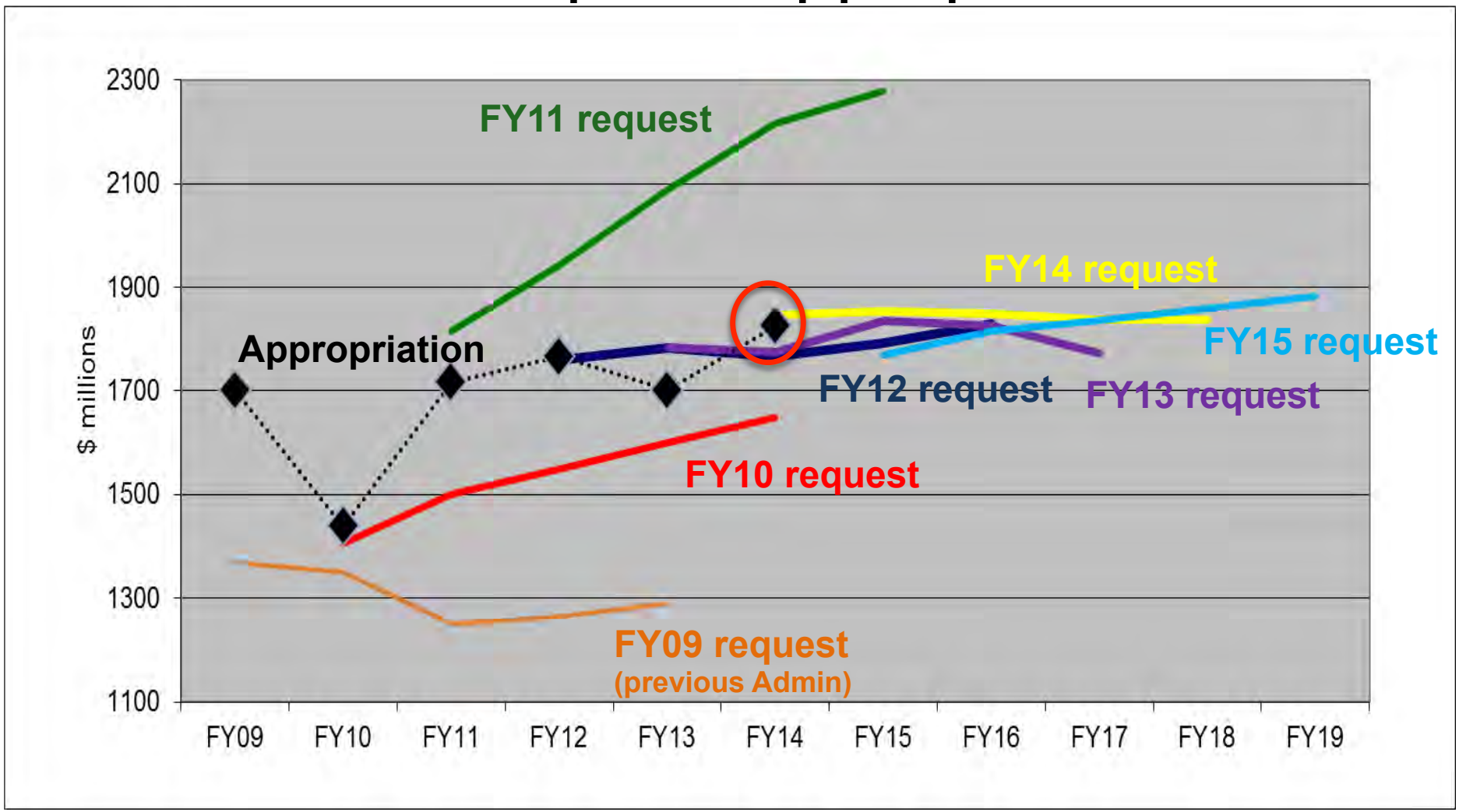
National Aeronautics and Space Administration



ESD: FY15 Budget Request Overview

March 11, 2014

Earth Science Budget: FY15 Request/Appropriation



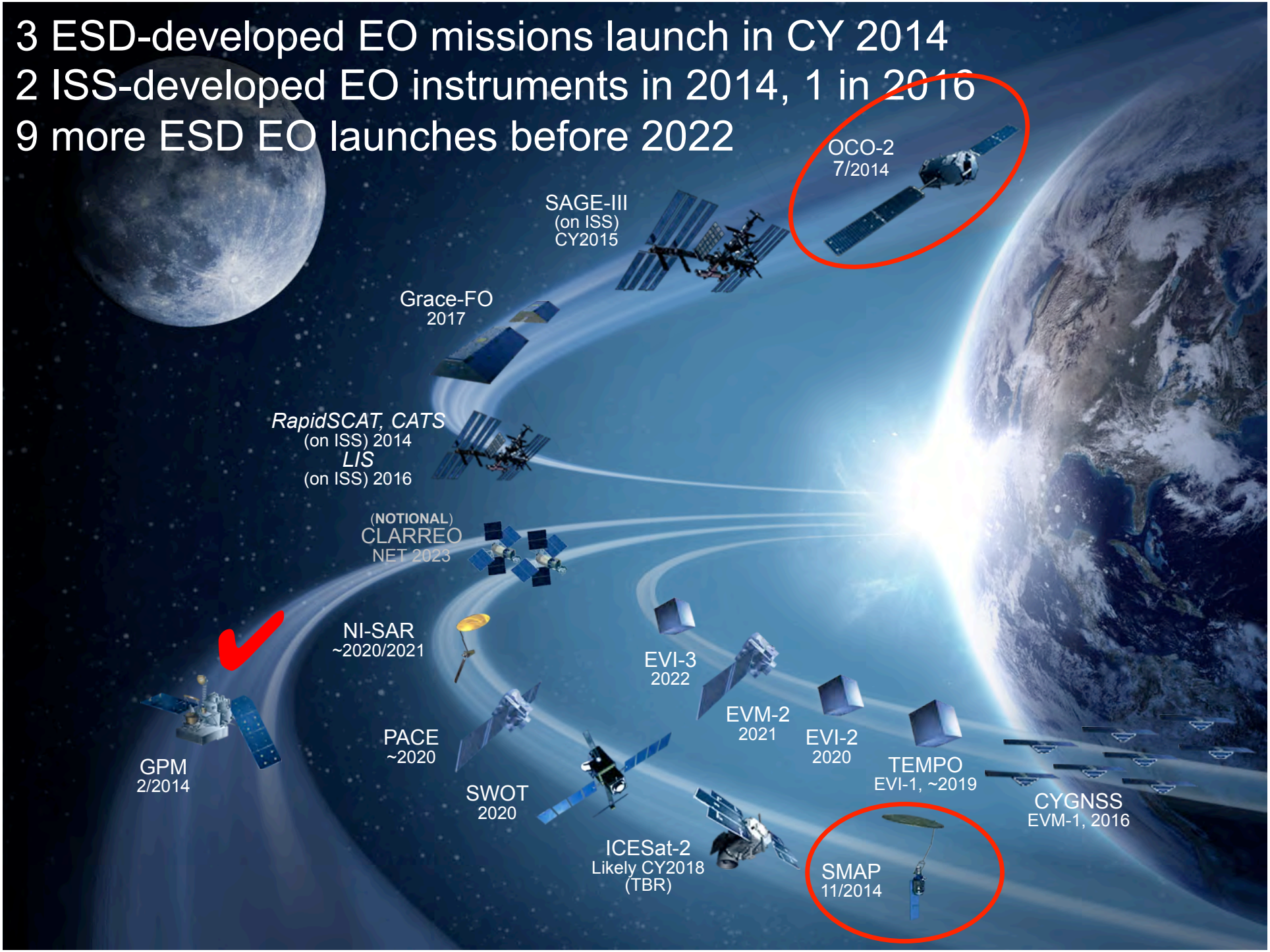
FY 2015 Budget Request

	FY 2013 Op Plan*	FY 2014 Enacted**	FY2015	Notional FY2016	Notional FY2017	Notional FY2018	Notional FY2019
Science	4,781.6	5,151.2	4,972.0	5,021.7	5,071.9	5,122.6	5,173.9
Earth Science	1,659.2	1,826.0	1,770.3	1,815.5	1,837.6	1,861.9	1,886.3
Planetary Science	1,274.6	1,345.0	1,280.3	1,304.9	1,337.1	1,355.7	1,374.1
Astrophysics	617.0	668.0	607.3	633.7	651.2	696.8	993.0
James Webb Space Telescope	627.6	658.2	645.4	620.0	569.4	534.9	305.0
Heliophysics	603.2	654.0	668.9	647.6	676.6	673.3	675.5
Aeronautics	529.5	566.0	551.1	556.6	562.2	567.8	573.5
Space Technology	614.5	576.0	705.5	712.6	719.7	726.9	734.2
Exploration	3,705.5	4,113.2	3,976.0	4,079.9	4,061.2	4,119.5	3,673.4
Exploration Systems Development	2,883.8	3,115.2	2,784.4	2,863.3	2,917.7	2,993.9	3,106.6
Commercial Spaceflight	525.0	696.0	848.3	872.3	791.7	730.9	172.0
Exploration Research and Development	296.7	302.0	343.4	344.3	351.8	394.7	394.7
Space Operations	3,724.9	3,778.0	3,905.4	3,951.9	4,051.0	4,073.8	4,601.8
Space Shuttle	38.8		0.0	0.0	0.0	0.0	0.0
International Space Station	2,775.9		3,050.8	3,126.5	3,266.9	3,290.3	3,818.6
Space and Flight Support (SFS)	910.2		854.6	825.4	784.1	783.5	783.2
Education	116.3	116.6	88.9	89.8	90.7	91.6	92.6
Cross Agency Support	2,711.0	2,793.0	2,778.6	2,806.4	2,834.4	2,862.8	2,891.4
Center Management and Operations	1,991.6		2,038.8	2,059.2	2,079.7	2,100.5	2,121.6
Agency Management and Operations	719.4		739.8	747.2	754.7	762.3	769.8
Construction & Envrmtl Compl Restoration	646.6	515.0	446.1	379.0	382.7	386.6	390.4
Construction of Facilities	589.5		370.6	302.7	305.7	308.7	311.8
Environmental Compliance and Restoration	57.0		75.5	76.3	77.0	77.8	78.6
Inspector General	35.3	37.5	37.0	37.4	37.7	38.1	38.5
Grand Total	**16,865.2**	**17,646.5**	**17,460.6**	**17,635.3**	**17,811.5**	**17,989.7**	**18,169.7**

As reflected in the August 2013 Operating Plan, FY 2013 includes rescissions per P.L.113-6 Division G, Section 3001(b)(1)(B) and Division G, Section 3004(c)(1) and reductions due to sequestration per BBEDCA Section 215A.

****FY 2014 reflects funding amounts specified in P.L. 113-76, Consolidated Appropriations Act, 2014, including amounts noted in the Explanatory Statement. Where amounts were not specified, no amount is shown in the budget table.***

Note: Funds associated with out-year estimates for programmatic construction remain in programmatic accounts.


3 ESD-developed EO missions launch in CY 2014
2 ISS-developed EO instruments in 2014, 1 in 2016
9 more ESD EO launches before 2022
OCO-2
7/2014
SAGE-III
(on ISS)
CY2015
Grace-FO
2017
RapidSCAT, CATS
(on ISS) 2014
LIS
(on ISS) 2016
(NOTIONAL)
CLARREO
NET 2023
NI-SAR
~2020/2021
GPM
2/2014
PACE
~2020
SWOT
2020
EVI-3
2022
EVM-2
2021
EVI-2
2020
TEMPO
EVI-1, ~2019
CYGNSS
EVM-1, 2016
ICESat-2
Likely CY2018
(TBR)
SMAP
11/2014

Earth Systematic Missions Program

- Phase E: GPM, TRMM, Terra, Aqua, Aura, EO-1, OSTM/ Jason-2, S-NPP, [Landsat-7], Landsat-8
  - ACRIMSAT & QuikScat to be terminated, SORCE TBD
- Phase C/D: [DSCOVR (2015)], SMAP (2014), SAGE III (2015), GRACE FO (2017), ICESat-2 (~2018)
- Phase A/B: SWOT (2020), RBI (2019), OMPS-L (2019)
- Pre-Phase A:
  - Near term: PACE (~2020), NI-SAR (~2020/2021), TSIS (2021)
  - Sustainable Land Imaging – pending outcome of NASA/USGS study and Administration decision
  - Longer term (lower level): CLARREO, HyspIRI, ACE, ASCENDS, GEO-CAPE
- Multi-Mission Operations, including EOSDIS and DAACs

ROSES 2013 A. 28 The Science of Terra and Aqua and A.46

Paula Bontempi (& Lucia Tsaoussi)

National Aeronautics and Space Administration HQ

MODIS Science Team Meeting

29 April -1 May 2014

A.28: The Science of Terra and Aqua

- **This solicitation follows on from the 2009 NASA ROSES Program Element A.41 "The Science of Terra and Aqua" (NNH09ZDA001N-EOS in ROSES-2009) and provides an opportunity for scientists to undertake significant studies responsive to NASA's and the Science Mission Directorate's science objectives (http://nasascience.nasa.gov/about-us/science-strategy) and the NASA Earth Science Research objectives (http://nasascience.nasa.gov/earth-science) through the use of data and derived products from two of the EOS satellites, namely Terra and Aqua, and their measurement sensors.**

- **A.28 represents a continuation of the research aspects of the EOS Instrument Teams for these satellites, emphasizes new opportunities for scientists to analyze and exploit EOS data, as well as develop new products by combining multi-sensor and multi-platform data or by developing an innovative approach to data retrievals.**

- **This solicitation offers investigators an opportunity to conduct integrative research projects using the data and products resulting from these satellites, and to become involved in the utilization of EOS data to provide answers to NASA's Earth Science Research questions (http://nasascience.nasa.gov/earth-science/big_question_list).**

A.28 The Science of Terra and Aqua

- **This solicitation recognizes the advances already made by investigations that were solicited by prior NASA Research Announcements and ROSES program elements, and that focused in the areas of sensor calibration, algorithm development and refinement, data product validation, and scientific data analysis.**
- **As these EOS missions continue to mature and move into the extended mission phase, less emphasis will be placed upon algorithm refinement, and more emphasis will be directed to multi-sensor product development, accompanied by active utilization of these data and products in scientific research, modeling, synthesis, and diagnostic analysis to answer Earth science questions.**
- **2. Four Types of Proposals Solicited in A.28 - notes**
  - **Scientific scope is required to fall within the breadth of NASA Earth science (Appendix A.1) and its embraced challenges while being an appropriate use of EOS mission observations.**
  - **Section 2.4 addresses Algorithms for Existing Data Products (not solicited here); Section 3.1 addresses uncertainty or error analysis requirements; and Section 3.2 addresses the Suomi National Polar-orbiting Partnership (NPP) Science Team (not solicited here)**
  - **International PIs from countries outside the United States of America are free to propose to this solicitation on a no-exchange-of-funds basis. International PIs from countries outside the United States of America who proposed to previous announcements (e.g., *Earth System Science Research using Data and Products from Terra, Aqua and ACRIMSAT Satellites from 2003 or 2006 or The Science of Terra and Aqua 2009)* are not required to propose here, but, as interested, should indicate to the A.28 Points-of-Contact of their continued participation in a measurement and/or instrument team**

A.28 The Science of Terra and Aqua

2. Four Types of Proposals Solicited

- **2.1 Science Data Analysis**
  - **2.1.1 Multiplatform and Sensor Data Fusion**
- **2.2 Algorithms – New Data Products**
- **2.3 Real- or Near-Real-Time Data Algorithms**

A.28 The Science of Terra and Aqua – Subelement 2.1

- **2.1 Science Data Analysis**
  - **Disciplinary or interdisciplinary Earth science research questions; must make scientific use of the data or products from those NASA EOS research sensors listed in Section 5.0. Terra and Aqua sensor data and/or products can be used individually for disciplinary or interdisciplinary research, or in combination with those from other Terra and Aqua sensors for disciplinary or interdisciplinary research within the Earth System.**
  - **Proposals addressing Terra and Aqua instrument-specific algorithm maintenance/ refinement that require research efforts for maintenance and refinement should be submitted as Science Data Analysis proposals. An example of such a proposal would be one that proposed to deliver major algorithm improvements enabling new research, combined with a plan to undertake the research. In this case, the proposal would contain a plan for improvements to the algorithm(s), as well as clear scientific objectives and science questions to be addressed.**
  - **PIs of proposals responsive to this category may request to become members of one or more instrument or measurement science teams (please see the explanation of the Instrument and Science Measurement Teams in Section 4.0).**

A.28 The Science of Terra and Aqua – Subelement 2.1.1

- **2.1.1 Multiplatform and Sensor Data Fusion**
  - **Terra and Aqua data in conjunction with appropriate data from other satellites for interdisciplinary studies of the Earth System. Successful proposals should pose science questions that cross traditional NASA Earth Science disciplinary program boundaries.**
  - **NASA solicits multimission and multisensor innovative research that can be used to quantify change, characterize processes, and examine function within the Earth System over time.**
  - **"mission" is defined as a satellite mission; "sensor" is defined as satellite sensor. "Data" must include satellite sensor data products from multiple (at least two) satellite sensors, one of which must be on the Terra and/or Aqua platform, and the other data source must be from a different sensor on a satellite platform. However, while there is a MODIS sensor and CERES sensor on board Terra and Aqua, use of the two MODIS or two CERES sensor's data will not fulfill the subelement requirement of two independent data streams. Please note: model output, including data assimilation and reanalysis output, does not qualify as an independent satellite sensor data source.**
  - **Proposals responding to this program subelement must utilize two or more remote sensing data sets, as defined above, in a greater than marginal application. For example, incorporation of Aqua MODIS land surface temperature data and AMSR-E soil moisture data into a land model with an analysis of the model output does not appropriately respond to the supplement due to a limited exploitation of the input data sets.**

A.28 The Science of Terra and Aqua – Subelement 2.2

- **2.2 Algorithms – New Data Products**
  - **a) advance a new data product that has passed through an Algorithm Theoretical Basis Document (ATBD) review or equivalent process, to implementation as either a core or experimental EOS data product, or b) to introduce a new data product/algorithm development that will yield a new ATBD or equivalent for peer-review. Proposals that address new data products/algorithms are expected to detail the instrument-specific algorithm, significant science, supporting and calibration/validation (cal/val) activities, and depending on the maturity of the data product, a timeline or path to delivery of an ATBD or initial data product release to the community.**
  - **Proposed calibration and validation activities may involve a single or multiple data products and/or instruments. The scientific justification for such improvements must be compelling and should be the focus of the proposed data product or algorithm or suite of algorithms or instrument(s). New field validation campaigns are not solicited.**
  - **Proposals responsive to this category must specify the instrument or measurement science teams on which they would like to become members (please see the explanation of the Instrument and Science Measurement Teams in Section 4.0).**

A.28 The Science of Terra and Aqua – Subelement 2.3

- **2.3 Real- or Near-Real-Time Data Algorithms**
  - **Some of the Terra and Aqua observations have been utilized for operational purposes such as emergency response and/or weather forecasting. Ongoing activities include Direct Readout Laboratory (http://directreadout.sci.gsfc.nasa.gov/) and Land, Atmosphere Near-Real-Time Capability for EOS (LANCE) (http://earthdata.nasa.gov/data/near-real-time-data). Proposals to enhance, refine, or develop near real time algorithms for application and operational usage will be considered.**

A.28 The Science of Terra and Aqua – Subelement 2.4

- **2.4 Algorithms – Existing Data Product Refinement - A.46**
  - **In 2009, NASA solicited (NNH09ZDA001N-EOS) proposals to focus on Terra and Aqua instrument-specific algorithm maintenance/refinement from prospective new or continuing science team members who wished to maintain or modestly refine the derived product for any of the currently approved ATBD algorithms. There were also proposals that addressed existing data products/ algorithms and were expected to emphasize instrument-specific algorithms and necessary supporting calibration/validation activities. Did NOT include Terra and Aqua algorithms for existing data product maintenance/refinement activities. If a prospective PI wishes to propose refinement to a new or existing algorithm, or an algorithm that has not been through ATBD review, the proposal should be submitted to Section 2.2 Algorithms – New Data Products of this program element. [Text clarified March 18, 2013].**
  - **Topics that were covered by NNH09ZDA001N-EOS that are not covered by the ROSES- 2013 A.28 program element (Algorithms – Existing Data Products topics) addressed by a new ROSES program element A.46 – Terra and Aqua – Algorithms – Existing Data Products.**

    1. For existing Terra and Aqua data products, successor proposals to those proposals selected under the former ROSES 2009 A.41 Algorithms-Existing Data Product Refinement topic area.

    2. Proposals to address "orphan" existing data products. Orphan data products are data products that a) did not have a proposal submitted for review in response to the ROSES-2009 but did have a proposal selected in earlier EOS solicitations for Terra and Aqua data products; and b) proposals for existing data products that were represented by a proposal submitted in response to ROSES-2009 A.41 Algorithms-Existing Data Products that were not selected.

    3. Proposals to maintain and make minor refinement to mature data products selected under the "Algorithms – New Data Products" program subelement in ROSES-2009 A.41 that have gone through ATBD review and are in routine production will be considered.

A.28 The Science of Terra and Aqua

4.0. Instrument and Science Measurement Teams (not required)

- Additional detailed guidance for the Instrument and Science Measurement Teams are provided in the disciplinary Sections of 4.0 (4.1- 4.7).
- Proposed studies may be relevant to more than one team. Proposals should request membership on the team that, to the best of their knowledge, is most relevant to their research.
- Please see specific guidance in each section, and identify if the proposer called out membership in a particular science team
  - Land Measurements Team
  - Ocean Biology and Biogeochemistry Measurement Team (OCRT)
  - Cryospheric Sciences Measurement Team
  - Atmospheric Sciences Measurement Team
  - Geodynamics and Geohazards Research Team
  - Biodiversity and Ecological Forecasting Team
  - Sea Surface Temperature Science Team

Move from Missions to Measurements due to Mission and Science Maturity

A.28 The Science of Terra and Aqua

5.0 Available Data and Products

- **This solicitation encourages research proposals that make use of the Terra and Aqua satellite data, including those data from sensors on Terra and Aqua no longer functioning. For those sensors that have met their demise, the focus will be on historical data.**
- **Not all important science questions can be answered with data from Terra and Aqua alone. Other *in situ* and/or satellite data may be used in conjunction with the Terra and Aqua data; however, data from these EOS platforms should play a primary role in answering the questions addressed in the proposals.**
- **Questions defined in the Earth Science Research Strategy as part of the NASA Science Plan (http://nasascience.nasa.gov/about-us/science-strategy) show a clear focus on systematic observations, which are best addressed with a series of interrelated measurements, of which the Terra and Aqua observations provide a crucial link. For such long-term studies, particularly in addressing Earth System Data Records, it is anticipated that the proposals will utilize Terra and Aqua data together with data from precursor instruments. Proposals that utilize Terra and Aqua data together with those from other platforms to answer specific questions (especially those associated with the response, consequences, and/or prediction areas addressed in the NASA Science Plan) are also appropriate in response to Section 2.1.1, Multiplatform and Sensor Data Fusion.**
- **Data include: MODIS, ASTER, MOPITT, MISR, CERES, AIRS/AMSU-A, AMSR-E, and EOS Direct Broadcast sites**
- **Proposals addressing Suomi NPP Science will be solicited in 2013 through the Suomi NPP Science Team program element in ROSES-2013.**

A.28 The Science of Terra and Aqua

- 214 proposals received - 1 Non-responsive; 1 Late; 1 Withdrawn; 1 Incomplete submission.
- 210 proposals reviewed - assigned to five panels organized as:
  - 2.1.1 Multiplatform and Sensor Data Fusion (Interdisciplinary and Earth System Science - 56 proposals)
    - NR reviewed in other panels as well
  - Land Panel (52 proposals)
  - Oceans Panel (32 proposals)
  - Weather (25 proposals)
  - Atmosphere (71 proposals in two sub-panels- Composition (30); Clouds (41))

A.28 The Science of Terra and Aqua: Revised Schedule & Terms

Release Date: February 14, 2013

Amended: March 18, 2013

Estimated Budget Available: Up to $11.5M/yr.

Estimated Number of Awards: 45-55

Maximum Award Duration: 3 years

Proposals Due: May 20, 2013

Panels from July to November* (Weather and Land Panels had to be rescheduled)

Selection Announcement: March 2014*

Potential Start Date for Awards: April/May 2014*

***delayed due to government shutdown**

A.28 Science of Terra and Aqua – Statistics

Breakout by Program Subelement

- **Total # Proposals reviewed: 210 ($124.6M/3 yrs requested)**
  1. **2.1 Science Data Analysis – 96**
  2. **2.1.1 Multi-Platform and Sensor Data Fusion – 56**
  3. **2.2 Algorithms – New Data Products – 41**
  4. **2.3 Real- or Near-Real-Time Data Algorithms – 14**
  5. **No classification – 3**

- **Proposals Recommended for Funding: 56 ($34.96M/3 yrs selected - $11.5 / $11.7 / $11.75M)**
  1. **2.1 Science Data Analysis – 22**
  2. **2.1.1. Multi-Platform and Sensor Data Fusion – 12**
  3. **2.2 Algorithms – New Data Products – 17**
  4. **2.3 Real- or Near-Real-Time Data Algorithms – 5**

A.46 Terra and Aqua – Evolution

- Since 2008 NASA HQ and the science team have discussed the inclusion of “Algorithms – Existing Data Products” with the Senior Review Proposals
- Plan is to do this in the next two to four years, need to sync with Senior Review cycle
- No dissenting opinions thus far from HQ or ST
- For ST benefit, we are doing a two step transition: 1) ROSES 2013 A.46 “Terra and Aqua - Algorithms – Existing Data Products” (four year proposals), 2) Senior Review sync

A.46: Terra and Aqua – Algorithms – Existing Data Products: Scope of Solicitation

- **This solicitation follows on from the 2009 NASA ROSES Program Element A.41 "The Science of Terra and Aqua" (NNH09ZDA001N-EOS in ROSES-2009) - breaks out the Existing Algorithms. This solicitation format and content is based on discussions among and recommendations from program managers, science teams, and NASA user community**
- **NASA's Earth Science Research aims to utilize global measurements to better understand the Earth system and interactions among its components as steps toward ultimate prediction of Earth system behavior. To achieve this goal, a combination of shorter-term process-oriented measurements is complemented by longer-term satellite measurements of a limited number of environmental properties. For the latter, a key requirement is the provision of well-calibrated, multiyear data.**
- **The purpose of this ROSES new program element is to solicit proposals for the maintenance and minor refinement of the standard Terra and Aqua sensor algorithms. This program element is a partner to ROSES-2013 A.28 The Science of Terra and Aqua. A.28 represented a continuation of the research aspects of the EOS Instrument Teams for these satellites, emphasized new opportunities for scientists to analyze and exploit EOS data, develop new products by combining multi-sensor and multi-platform data & innovative approaches to data retrievals.**

A.46: Terra and Aqua – Algorithms – Existing Data Products: Scope of Solicitation

- **The previous Terra and Aqua recompetition (A.41 The Science of Terra and Aqua; NNH09ZDA001N-EOS in ROSES-2009) solicited:**
  - **Scientific utilization of Terra and Aqua data,**
  - **Development of new research algorithms, and**
  - **Maintenance and minor refinement of Terra and Aqua existing algorithms in a single ROSES element.**

- **In ROSES-2013 with program element A.28 The Science of Terra and Aqua, NASA is soliciting:**
  - **Scientific utilization of Terra and Aqua data, and**
  - **Development of new research algorithms**

- **With this program element in ROSES-2013, NASA is soliciting:**
  - **Maintenance and minor refinement of Terra and Aqua existing algorithms**

- **Only one type of research is solicited by this A.46 solicitation—maintenance and minor refinement of existing algorithms for sensors on the Terra and Aqua satellites selected under prior NASA awards. Studies must respond to NASA's and the SMD's science objectives (http://nasascience.nasa.gov/about-us/science-strategy) and NASA Earth Science Research objectives (http://nasascience.nasa.gov/earth-science).**

A.46: Terra and Aqua – Algorithms – Existing Data Products: Types of Proposals Solicited

This ROSES program element welcomes submission of the following proposal types:

1. For existing Terra and Aqua data products, successor proposals to those proposals selected under the former ROSES 2009 A.41 Algorithms-Existing Data Product Refinement topic area.

2. Proposals to address "orphan" existing data products. Orphan data products are data products that a) did not have a proposal submitted for review in response to the ROSES-2009 but did have a proposal selected in earlier EOS solicitations for Terra and Aqua data products; and b) proposals for existing data products that were represented by a proposal submitted in response to ROSES-2009 A.41 Algorithms-Existing Data Products that were not selected.

3. Proposals to maintain and make minor refinement to mature data products selected under the "Algorithms – New Data Products" program subelement in ROSES-2009 A.41 that have gone through Algorithm Theoretical Basis Document review and are in routine production will be considered.

The proposer should have been abundantly clear as to which topic their proposal was responding. The algorithm or algorithms being proposed for maintenance should also have been crystal clear.

A.46: Terra and Aqua – Algorithms – Existing Data Products: Types of Proposals Solicited (con't)

- **Proposals to pursue significant changes to existing algorithms should be submitted to ROSES- 2013 A.28's Section 2.2 Algorithms – New Data Products.**

- **For all proposals, minimum calibration/validation activities that will be minor investments given the maturity of the existing algorithms (minimal calibration/ validation efforts needed to maintain the quality of the existing data products, such as algorithm refinement based on the accommodation of instrument changes) are welcome. By no means should comprehensive field campaigns be proposed.**

- **Principal Investigators (PIs) at institutions in countries outside the U.S. are free to propose to this solicitation on a no-exchange-of-funds basis. PIs from institutions outside the U.S. who proposed to previous announcements (e.g., Earth System Science Research using Data and Products from Terra, Aqua and ACRIMSAT Satellites from 2003 or 2006 or ROSES-2009 A.41) are not required to propose here, but, as interested, should indicate to this announcement's Points-of- Contact their desire for continued participation in a measurement and/or instrument team, as well as their institutional and funding status that will allow their participation.**

A.46: Terra and Aqua – Algorithms – Existing Data Products: Other Requirements

Requirements - Error and Uncertainty Analysis

- **All proposals submitted in response to this solicitation must quantify errors and uncertainties associated with the proposed efforts (e.g., the data products themselves, any scientific data analysis, etc.). The error and uncertainty discussion must be clearly identifiable in a separate section within the proposal body. Explicit attention will be given to this section during the review process.**

Points of Clarification (Questions from Panelists)

- **Algorithm history should be very clear**
- **One proposal does not necessarily equal one algorithm**
- **NASA is considering whether to transition the core standard algorithms to the Senior Review. To do this, we need to examine and understand why there is such a huge range of cost ($50-550K/yr) associated with the individual core algorithm proposals and the MINOR associated calibration/validation activities**
- **This announcement responds to historical and long-time input from the reviewer communities that existing algorithm/data product production should not be competing with new research ideas. For example, in 2009 there was up to $15M/yr available, 21 algorithm proposals were selected (out of 101 total selections) and this accounted for over 1/3 of the available budget.**
- **Example: is it worth 500K/yr to get an eighth significant digit on SST?**
- **What you should be looking for (from the reviews thus far):**
  - **"incremental improvement" – what is this? Is it quantified? What's the cost associated with progress relative to the science return?**
  - **Innovation – maybe, maybe not, but is the work plan justified?**
  - **"approach far from state of the art" – is there a better approach/data product NASA should be considering?**
  - **Continued work showing no history or progress**
  - **Relevance weak – we know people will use the product, but does the author say anything about it? "x product important for a CDR", but the authors do not describe**
  - **Cal/Val work – probably the *in situ* component important but team does not give details or say why**

A.46 Terra and Aqua: Schedule & Terms

Release Date: February 14, 2013

Estimated Budget Available: Up to $2.5M/yr.

Estimated Number of Awards: 18-20

Maximum Award Duration: 4 years

Proposals Due: July 1, 2013

A Total of 38 Proposals were Received and Assigned to one panel

NASA Selection Discussions: January 2014/February 2014

Selection Announcement: February 2014/March 2014

Potential Start Date for Awards: March 2014/April-May 2014

A.46 Terra and Aqua – Statistics

- **Total # Proposals reviewed: 38 ($6.8/7.2/6.6/4.6M – total $25.2M request)**
- **Proposals Recommended for Funding: 30 + 2 ($5.2/5.4/5.0/3.8M – total $19.4M recommended)**
- **Orphaned algorithms and other activities that were not recommended:**
  - **MODIS Oceans NPP**
  - **MODIS Near-IR water vapor and cirrus reflectance**
  - **Validation of VI (MOD13)**
  - **Evaluate / improve MOD16 ET product**
  - **AIRS NH3**
  - **MODIS Angstrom Exponent**
  - **Surface Emissivity**

A. 28 and A.46 Terra and Aqua – Statistics

- **A. 28 Proposals Recommended for Funding: 56 ($34.96M/3 yrs selected - $11.5 /11.7 / 11.75M)**

- **A. 46 Proposals Recommended for Funding: 32 ($5.2/5.4/5.0/3.8M – total $19.4M rec)**

- **Total 88 proposals selected (248 received for both program elements)**
- **Total budget profile of $16.7M / 17.1 / 16.75 / 3.8M**
  - **Advertised $14M / yr combined.**
  - **Argued for more money, won (sort of)**
  - **Profile we were given was $23 / 14 / 14 / 3.8M**
  - **Had to work a new budget profile for selected projects to fit this**
  - **Not a lot of room for reprofiling, in fact, next to none.**

  - **Historical data:**
    - **2003: 566 proposals received – 192 selected - $66M/yr advertised**
    - **2006: 322 proposals received – 121 selected - $25M/yr advertised**
    - **2009: 325 proposals received – 101 selected - $17M/yr ($15M Adv)**
    - **2013: 248 proposals received – 88 selected - $23/14/14/3.8M /yr**

ATBD/Data Product Reviews

- **ATBD/Data Product Reviews:** Review of algorithms for new & alternative MODIS algorithms
  - New algorithms/data products – draft new proposals, documentation and requirements, follow with review and endorsement by user communities
  - Is there a need for periodic review of ATBDs/Algorithms off-cycle of the competition?
  - Documentation on web sites lacking for Sensor/Team/ATBDs/Data – new users (applied)
- **Instrument or Measurement Teams**

4.1 Land Measurements Team (LCLUC)

4.2 Ocean Biology & Biogeochemistry Measurements Team (OCRT)

4.3 Cryospheric Sciences Measurement Team

4.4 Atmospheric Science Measurement Team

4.5 Geodynamics and Geohazards Research Team

4.6 Biodiversity and Ecological Forecasting Team

4.7 Sea Surface Temperature Science Team

- OCRT, TE, LCLUC, BEFT, OVWST, SST and others exist
- Other areas are interested in formation but how – Cryospheric Sciences, AC, etc.
- Team Leaders needed/competed?

Measurement Teams

Historical Philosophy: Continuing/evolving measurement streams, there should be one science team, competed periodically, that provides scientific guidance to present and future missions and for the utilization of past data sets

- Support and focus on Earth System Data Records
- Data system to ensure a "seamless" time series
- Scientific guidance and priorities must represent broad user community (including outside of NASA/U.S.)
- Suomi NPP VIIRS continuity, DS missions, CI missions, international missions
  - Thought to jointly compete MODIS and Suomi NPP next round

Issues for MODIS Team

- Sync of program element competition with Senior Review
- Evolution/migration of Existing Algorithms to Senior Review (new program element, A.46 as intermediate step) – we have to weigh investments versus potential outcomes?
- Algorithm developers and validation investigators should continue to address important deficiencies in key data products (uncertainties)
- Algorithm developers need to represent broader community needs by working with them
- How best to facilitate interdisciplinary algorithm development approaches, Terra/Aqua intersensor science (2.1.1)
- Established process for regular data product and algorithm reviews – done for four new ATBDs, but is a cycle needed off the recompete cycle? Need to maintain, evolve, refine, review as needed
- Formal establishment of measurement teams and blend with MODIS Team (and other mission teams)
- MODIS website – updated and coordinated with discipline leads, team leader, project scientists – more user friendly in terms of applied users