



NASA Langley Research Center

SCIENCE, TECHNOLOGY, AND RESEARCH SUPPORT SERVICES (STARSS) III PRE-SOLICITATION CONFERENCE

NNL15ZB1003R

June 23, 2015

NASA Langley Research Center
Pearl Young Theater



- Welcome - T. Duncan Fairlie, Source Evaluation Board (SEB) Chair
 - Conference Guidelines
 - Today's Agenda
- Dave Young – Science Overview



Conference Guidelines

- All questions/communications pertaining to the Draft RFP (DRFP) and proposal preparation instructions shall be submitted in writing to Tameka Woodley at tameka.woodley@nasa.gov in accordance with DRFP instructions
- All questions and answers from the conference will be posted on the NAIS/FedBizOpps websites
- List of attendees and conference presentation will be posted on the NAIS/FedBizOpps websites
- Nothing stated at this conference should be construed as a revision unless subsequently issued in an amendment or incorporated into the final RFP
- Communications blackout will be invoked once the final RFP is issued



Questions and Answers Protocol

- For questions submitted at the conference, preliminary responses will be provided when possible, however the official responses will be posted on NAIS/FedBizOpps websites.



- In the event of any inconsistency between data provided in these charts and the Final RFP, the language in the Final RFP, including any amendments, will govern.



Agenda

Start Time	End Time	Duration	Item	Presenter
9:00 AM	9:05 AM	5	Industry Welcome	SEB Chair
9:05 AM	9:15 AM	10	SD Overview	David Young
9:15 AM	9:30 AM	15	Atmospheric Science Data Center	John Kusterer
9:30 AM	9:45 AM	15	Atmospheric Composition Branch	David MacDonnell
9:45 AM	10:00 AM	15	Climate Science Branch	Donald Garber
10:00 AM	10:15 AM	15	Chemistry and Dynamics Branch	Bruce Doddridge
10:15 AM	10:25 AM	10	SD Business Model	Rosemary Baize
10:25 AM	10:40 AM	15	Break	
10:40 AM	11:20 AM	40	Procurement Overview	Tameka Woodley, Teresa Hass, Austin Rentschler
11:20 AM	11:50 AM	30	Questions & Answers	Teresa Hass
11:50 AM	12:05 PM	15	Break	
12:05 PM	12:35 PM	30	Tour 1 of ASDC	OP Personnel
12:35 PM	1:05 PM	30	Tour 2 of ASDC	OP Personnel
1:05 PM	1:35 PM	30	Tour 3 of ASDC	OP Personnel
1:35 PM	1:35 PM		Adjourn	



NASA Langley Research Center

SD Overview

David Young, Science Director



REACH
— NEW —
HEIGHTS

BENEFIT
— ALL —
HUMANKIND

Science at Langley: An Overview

REVEAL
— THE —
UNKNOWN

David Young
Science Director
NASA Langley Research Center



NASA Langley at a Glance (2015)



As of 6/1/15

Langley's Economic Impact (2014)

- National economic output of ~\$2.3b and generates over 17,500 high-tech jobs
- Virginia economic output of ~\$900m and generates over 7,000 high-tech jobs
- Within Virginia, executed \$66m or 21% of obligations to small businesses

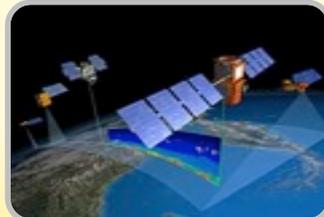


PY2015 Budget Estimate	~\$825m
NASA Langley Budget.....	~\$795m
External Business.....	~\$30m
Workforce	~3,500
Civil Servants.....	~1,900
Contractors (on/near-site).....	~1,600
Infrastructure/Facilities	
156 Buildings.....	764 acres
Replacement Value.....	~\$3.5b

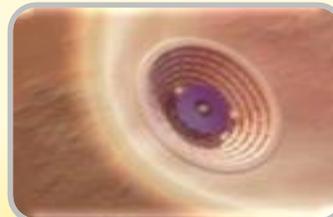
AERONAUTICS
\$214m



SCIENCE
\$198m



SPACE TECH
\$36m



HUMAN EXPLORATION
\$41m



EDUCATION
\$5m



CROSS-AGENCY SUPPORT PROGRAMS & CONSTRUCTION/ENVIRONMENTAL COMPLIANCE & RESTORATION

Center Management & Operations

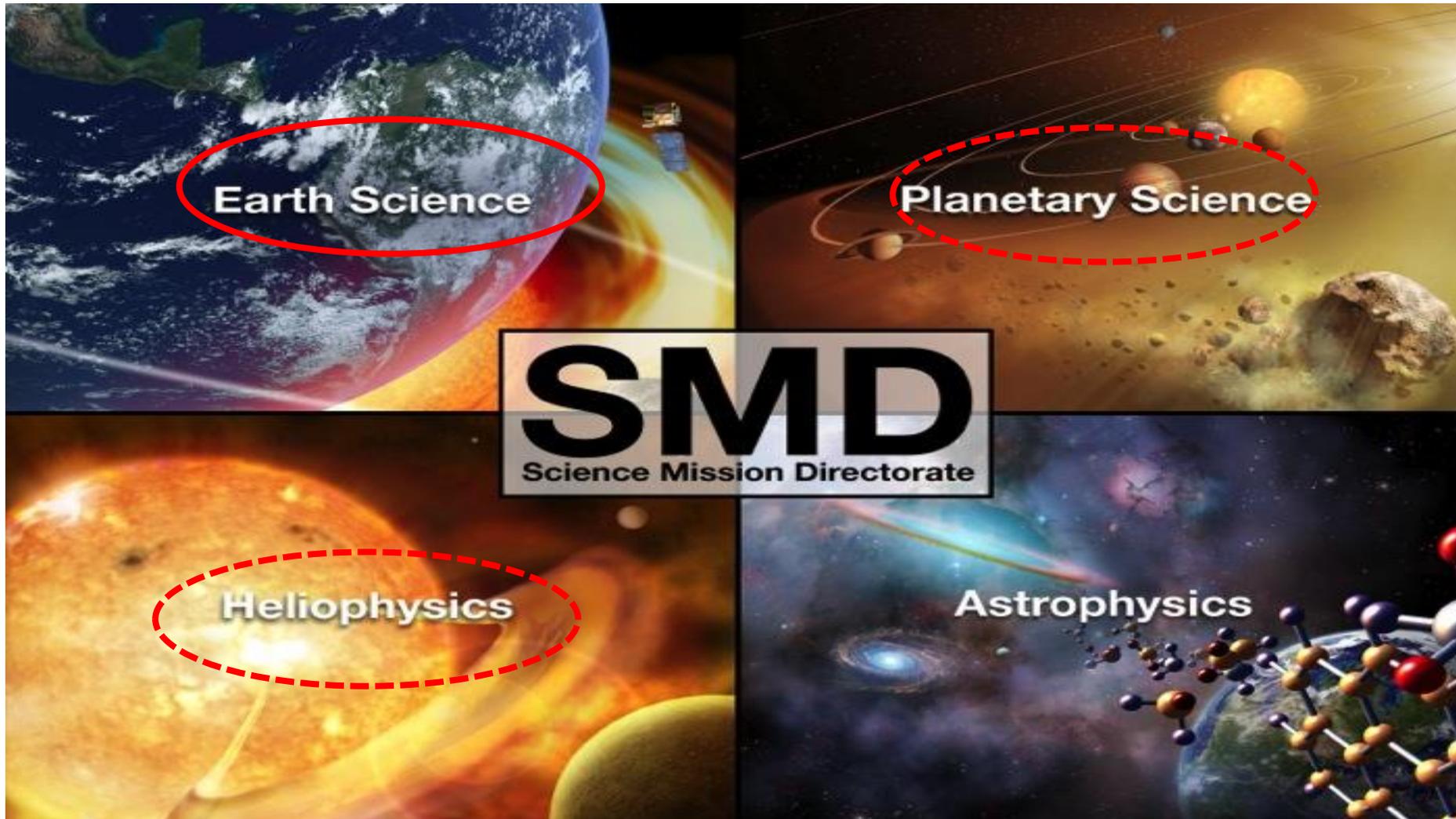
(Facilities, IT, Engineering, Tech Authority, B&P, IRAD, Safety/Mission Assurance, Legal, Finance, Procurement, Human Resources)

Agency Management & Operations

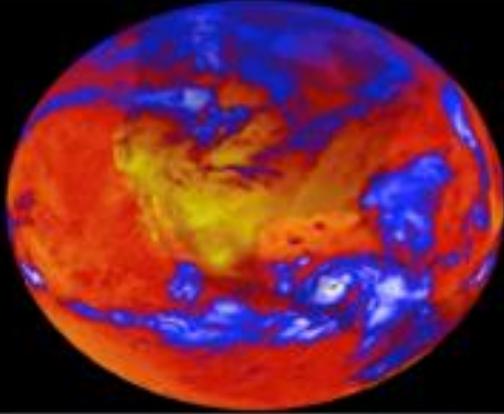
(NASA Engineering & Safety Center, Office of Chief Engineer, Agency IT)

Construction Environmental Compliance & Restoration

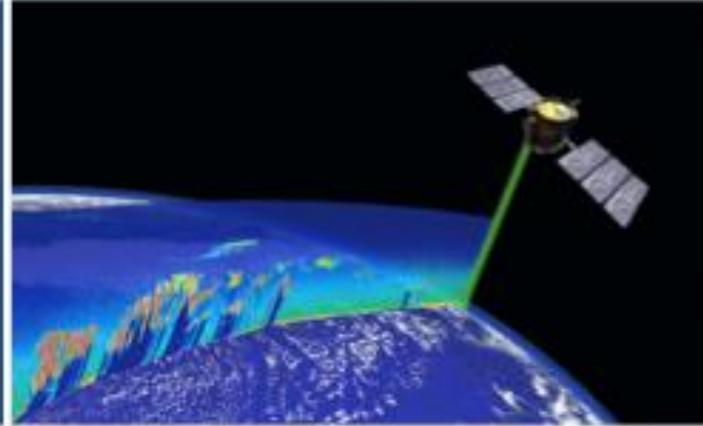
(Revitalization Plan)



LaRC Earth Science Areas of Expertise



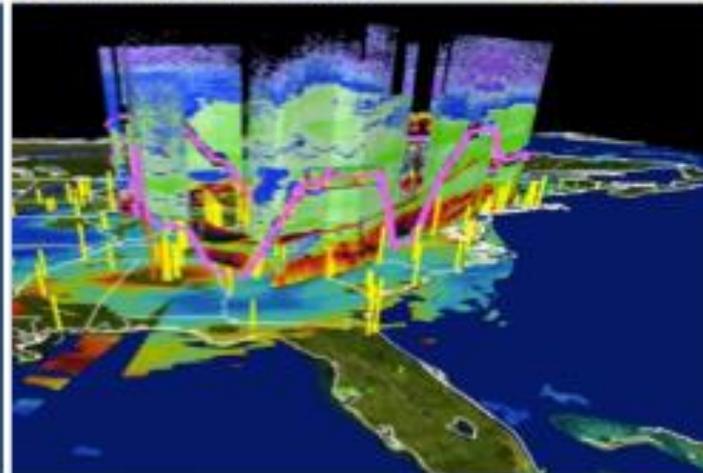
Radiation &
Climate



Active
Remote
Sensing



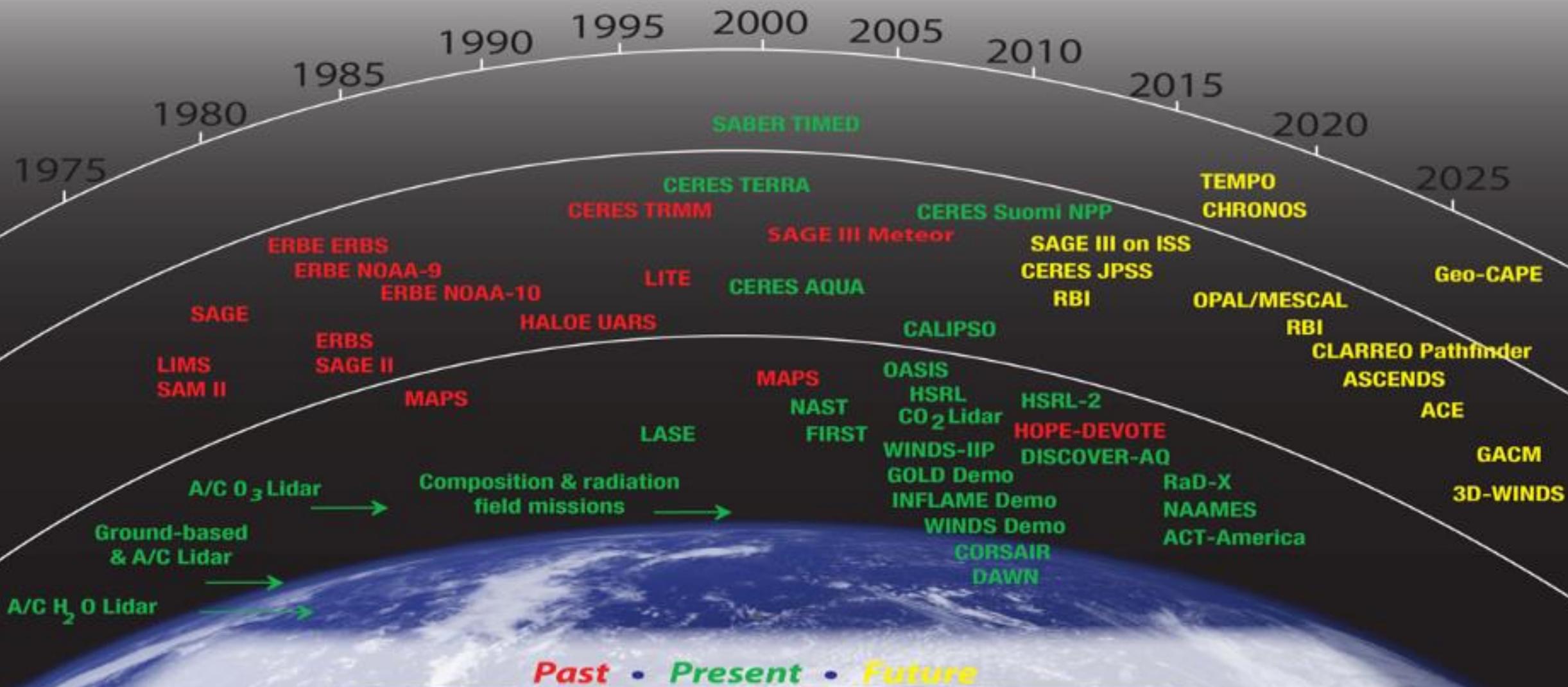
Atmospheric
Composition



Air
Quality

Through our research, we strive to unlock the secrets of Earth's atmosphere for the greater good, a safer planet, and a better tomorrow

Atmospheric Sensing at NASA Langley Research Center



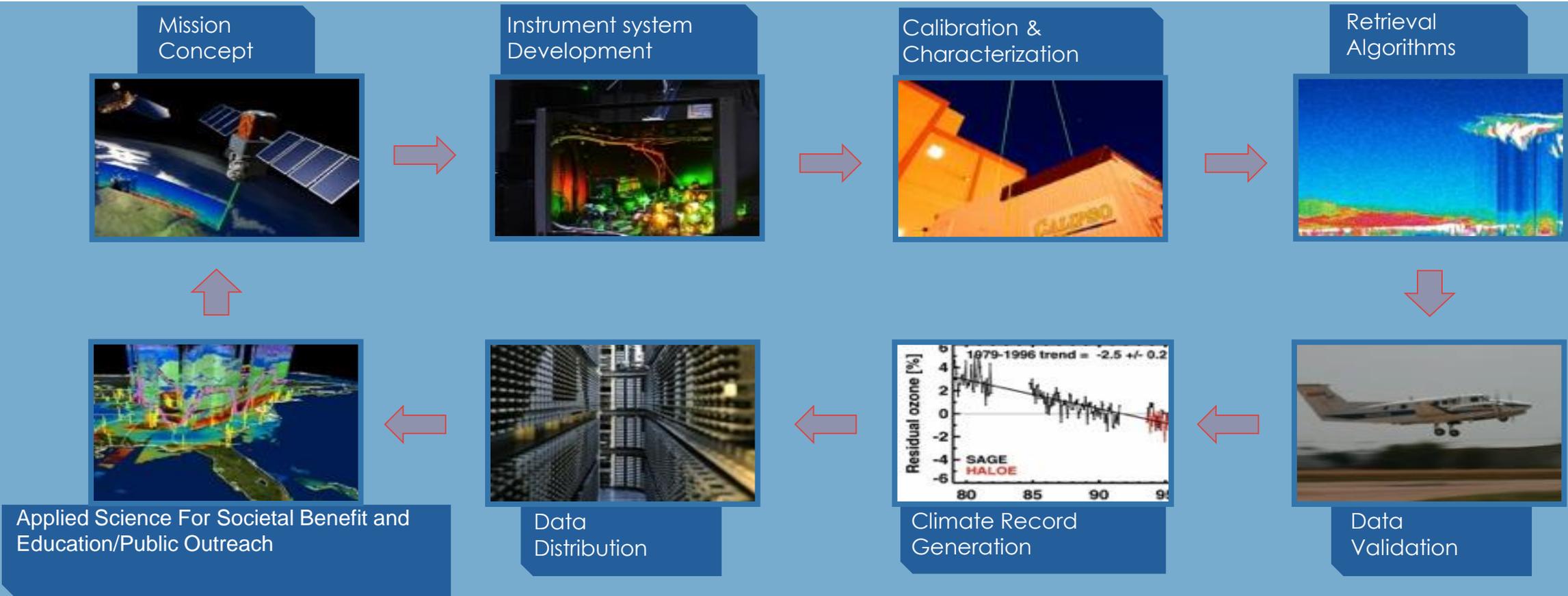
Langley has developed a significant portion of NASA's spaceflight atmospheric research instruments.



LaRC Science Capabilities

LaRC Provides All of the Elements for End-to-End Approach

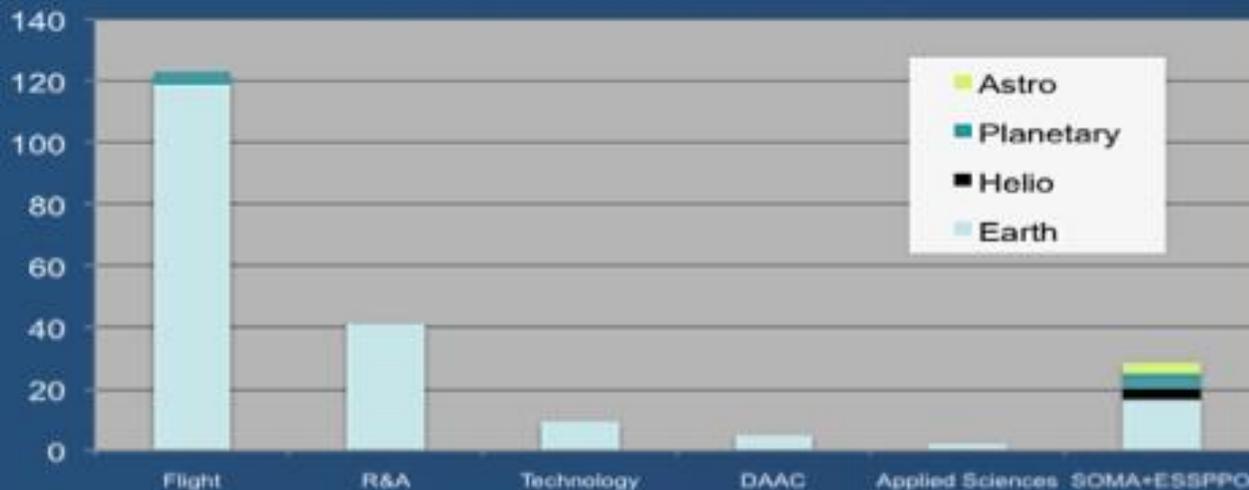
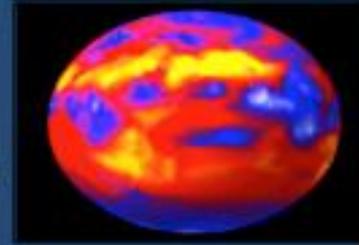
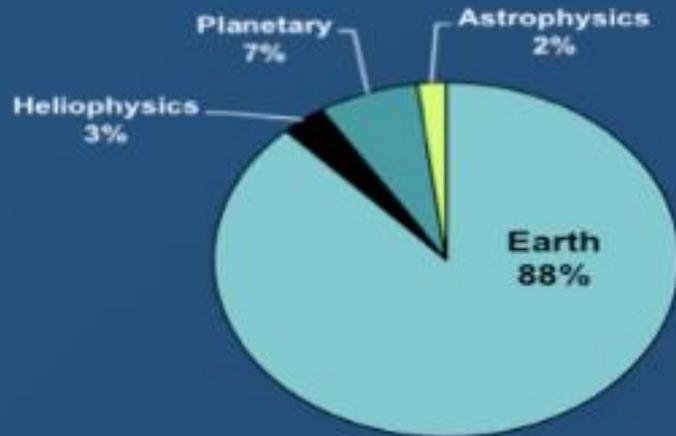
Example: Production of Climate Data Records





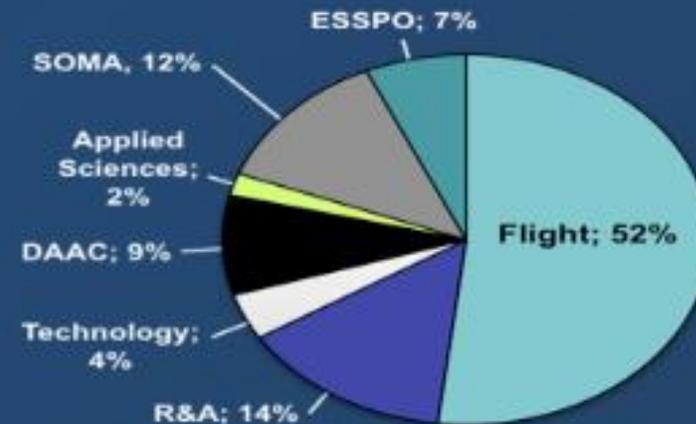
Science at NASA Langley

Funding from SMD by Division



Estimated annualized CS FTEs

Spending by Function





Current Langley Science Directorate Portfolio

- Directed Science Directorate work
 - Mission Operations and Data Analysis for CERES and CALIPSO
 - The Atmospheric Science Data Center (ASDC)
 - DEVELOP
 - Directed Research & Technology, community service
 - Decadal Survey pre-formulation activities (e.g. CLARREO, ACE, ASCENDS, GEO-CAPE, 3D-Winds)
- Competed research
 - Basic research, data analysis, modeling, applied science, education, and technology development
- Project scientists and science team support for flight development projects such as TEMPO, SAGE III, RBI, and Rad-X



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NASA DEVELOP National Program



DEVELOP bridges the gap between NASA Earth Science and society



DEVELOP is a dual capacity building program that addresses environmental and public policy issues through interdisciplinary research projects that apply the lens of NASA Earth observations to community concerns around the globe.

- ▶ Age 18+ with a minimum 3.0 GPA
- ▶ Interdisciplinary backgrounds
- ▶ Three 10-week terms per year (spring, summer, fall)
- ▶ 14 domestic locations, 1 int'l location
- ▶ 300+ participants per year



DEVELOP Website: <http://develop.larc.nasa.gov>





Communication and Education

The Science Directorate leads and participates in meaningful activities to communicate and engage the public to inspire them about the noble work we do. Our work aligns to the Co-STEM priorities and NASA Education and Communication strategies

Communication: Dedicated contractor team (writers, artists, webmaster) supports Science Directorate communication activities:

- Internal communications products (metrics and annual report, etc)
- External comm products (papers, proposals, Fact sheets, websites, news items, etc)

SD also participates in and supports a variety of public events, with help from contractor and civil servant volunteer staffers.

Education: Dedicated contractor/CS team (educators, scientists, webmaster) supports Science Directorate education activities:

- GLOBE partnership, including training offerings, resource development, etc
- S'COOL citizen science project which has engaged thousands of participants across the GLOBE since its inception
- MY NASA DATA Project which makes NASA Earth Science data accessible for educational use

CALIPSO/SAGE III on ISS/TEMPO/DISCOVER-AQ and other missions leverage these and other NASA projects to extend their impact.





- Atmospheric Science Data Center (ASDC) – John Kusterer
- Atmospheric Composition Branch (ACB) – David MacDonnell
- Climate Science Branch (CSB) – Donald Garber
- Chemistry and Dynamics Branch (CDB) – Bruce Doddridge



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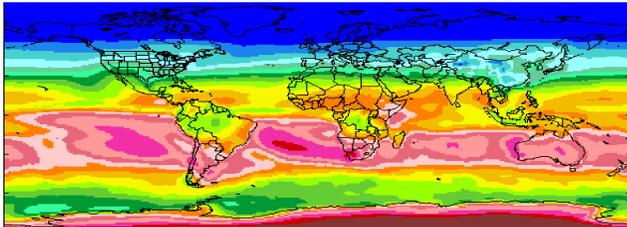
Atmospheric Science Data Center (ASDC)

John M. Kusterer, Branch Head

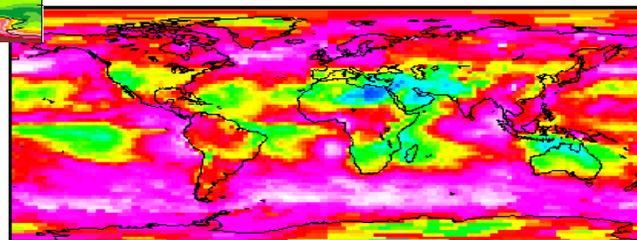


- Provides data services for over 44 science projects
- Primary: CERES, MISR, CALIPSO, ISCCP, SAGE III, MOPITT, TES
- Distributes 300+ unique science products
- In 2014, 624 Terabytes of data were distributed to over 165,000 customers in 158 countries
- 3.5 Petabytes of data are in the archive as of January 2015
- Over 58 million files (1,537 TB) on high-speed disk for quick access

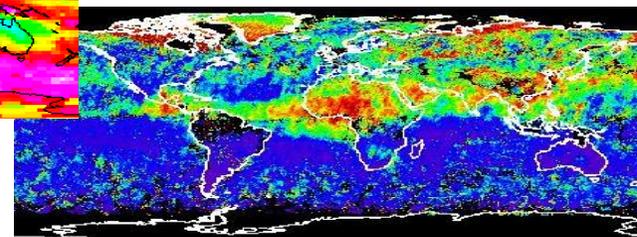
Radiation Budget



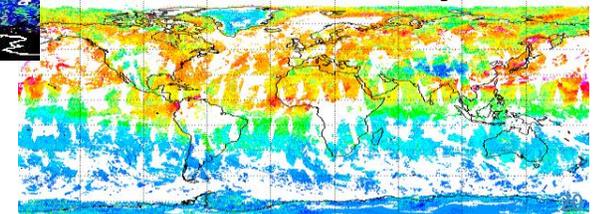
Clouds



Aerosols



Tropospheric Chemistry

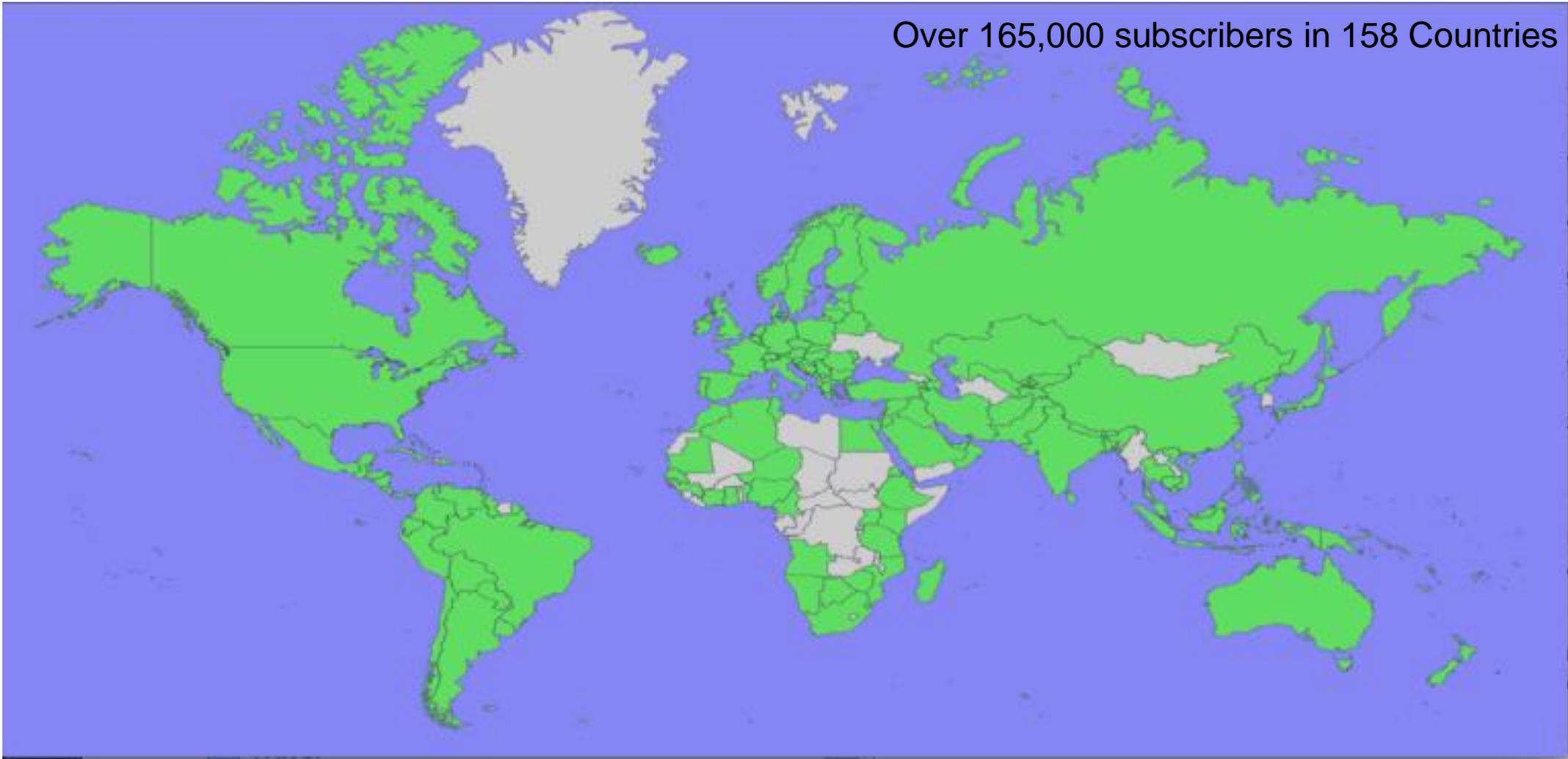




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ASDC Data Subscribers

Over 165,000 subscribers in 158 Countries





Primary Functions/Roles:

- Receive (*Ingest*) data from numerous data providers to archive and support science driven requirements
- *Archive* data to ensure the long term preservation, provenance, and proper use of the science data
- *Process* data in current and managed environments to create higher level data products for science community
- *Distribute* data to as many scientific communities as possible in as many formats and through as many mechanisms as possible



Primary Functions/Roles:

- Provide customer support and outreach to the science community to support science teams and facilitate use of data products by current and emerging users
- Support and maintain mission documentation working closely with science teams
- Generate and provide metrics data to various customers and stakeholders related to ASDC data holdings
- Provide system administration support to ASDC non-commodity IT in the Science Directorate
- Serve as IT Security lead for Science Directorate ensuring IT Security requirements are properly addressed



Notable ASDC Supported Missions

CERES	TES	NAAMES*
CALIPSO	DISCOVER/AQ	ORACLES*
MISR	DSCOVN*	Atom*
SAGE III	CATS*	
ISCCP	TEMPO*	

*Newer missions assigned to ASDC



■ ANGe

- Archive Next Generation
- Supports select current (e.g., CERES, CALIPSO) and most future missions
- STARSS III contractor responsible for supporting all software engineering, system administration, and operations of the system

■ ECS

- EOSDIS Core System
- Supports select current missions (e.g., MISR, TES, SAGE)
- STARSS III contractor responsible for supporting system administration and operations of the system



Production Processing at the ASDC

- Host, support and operate production processing for
 - CERES
 - MISR
 - SRB
 - FLASHFlux
- Host and support processing for
 - CALIPSO
 - SAGE



- Allow variety of ways for scientists to get data
- High speed data access
 - Serving international community
 - Science community needs for larger and larger files
- GIS/Visualization
 - Allowing science community to use commercial and custom tools to visualize data
- Customizing data
 - Subset data so scientists get only the data they want



- Developing and maintaining web presence supporting ASDC
 - Working with scientists to ensure documentation is completed and current
- Work with ASDC customers to address questions about data holdings
 - Work closely with science teams
- Work and maintain customer agreements with ASDC
- Provide outreach to science community related to ASDC data and missions



Storage

Linux (RedHat, SUSE, FreeBSD)
GPFS
StorNEXT/CVFS
RAID 5, 6 (IBM, SGI, NetApps, DDN)
EMC
SAN

Processors

x86 (IBM, HP, SGI)
P6 and P7 (IBM)

Development languages

Java
Python
Drupal

Networking

10GigE
Infiniband
1GigE
Fiberchannel



Tools

Netbackup

Jira

Confluence

Stash

Git

Subversion

Ganglia

ArcGIS

Esri

GDAL

OPeNDAP

Openstack

Eucalyptus

StackIQ

IDL

MatLab

JBOSS

AppDynamics

VMWare

LDAP

Splunk

Univa Grid Engine



Emerging Technologies and Changes for STARSS III

- ASDC daily operations
 - Highly skilled, multi-disciplinary team
 - Ability to integrate emerging complex-storage capabilities (i.e., container storage, SDS)
 - Afford greater focus on innovative customer-driven solutions
- Move toward increased science-depth
 - User Services
 - Software Engineering (scientific formats, unique science data requirements)
 - Advanced technology development
- STARSS III contractor core staffing for ASDC reduced from STARSS II contractor staffing



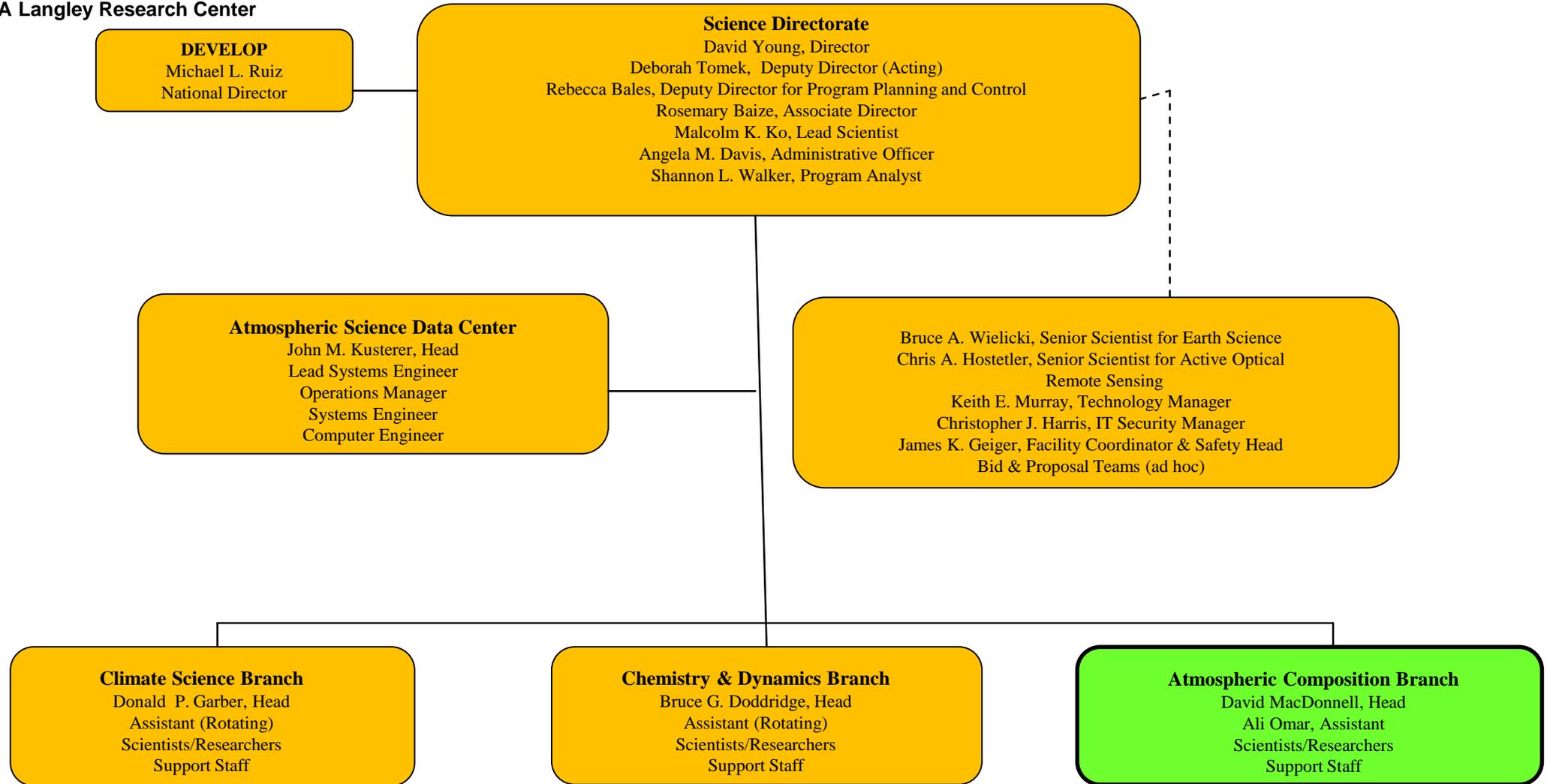
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Atmospheric Composition Branch (ACB)

David MacDonnell, Branch Head



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ACB Areas of Expertise

- **Active Remote Sensing**

- Research to improve understanding of the role that clouds and aerosols play in climate, weather, and air quality.
- Research to develop state of the art atmospheric profiling lidars for satellite, and sub-orbital platforms.

- **Active Measurement Techniques from Space**

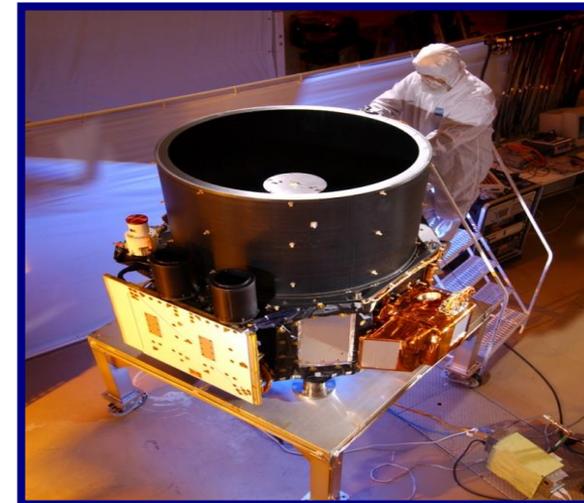
- The lidar on CALIPSO (launched April 2006) provides vertically-resolved measurements on the structure and properties of clouds and aerosols over the globe, day and night, and for all seasons.

- **Active Measurement Techniques from Aircraft**

- Airborne High Spectral Resolution Lidar (HSRL) measures vertical profiles of aerosols and clouds to address climate and air quality.
- Multifunctional Fiber Laser Lidar (MFL) Laser Absorption Spectrometer for high precision measurements of column CO₂.



- Work includes major satellite missions, airborne field campaigns, and Research & Analysis funded by competitive research proposals to NASA Science Mission Directorate.
- Research focused on generating continuous global information through analysis of remotely sensed data.
- We collaborate with scientists and engineers at LaRC and other NASA Centers as well as government agencies, private companies, and universities worldwide
- Contractors support work in:
 - Instrument Development
 - Mission Planning and Operations
 - Algorithm Development and Implementation
 - Data Processing, Validation, and Analysis





Satellite remote sensing provides:

- Climate Data Records
- Data for Science Studies
- Applications for Societal Benefit (e.g., Air Quality)

Contractors support this work in the following areas:

- Instrument / Sensor Development, Characterization, Calibration, and Validation
- Field Mission / Flight Operations Logistical Support
- Algorithm Development, Validation, Implementation, and Maintenance
- Data Analysis and Data Management
- Scientific Analysis, Modeling, and Interpretation



CALIPSO has been in operation since launch on 26 April 2006

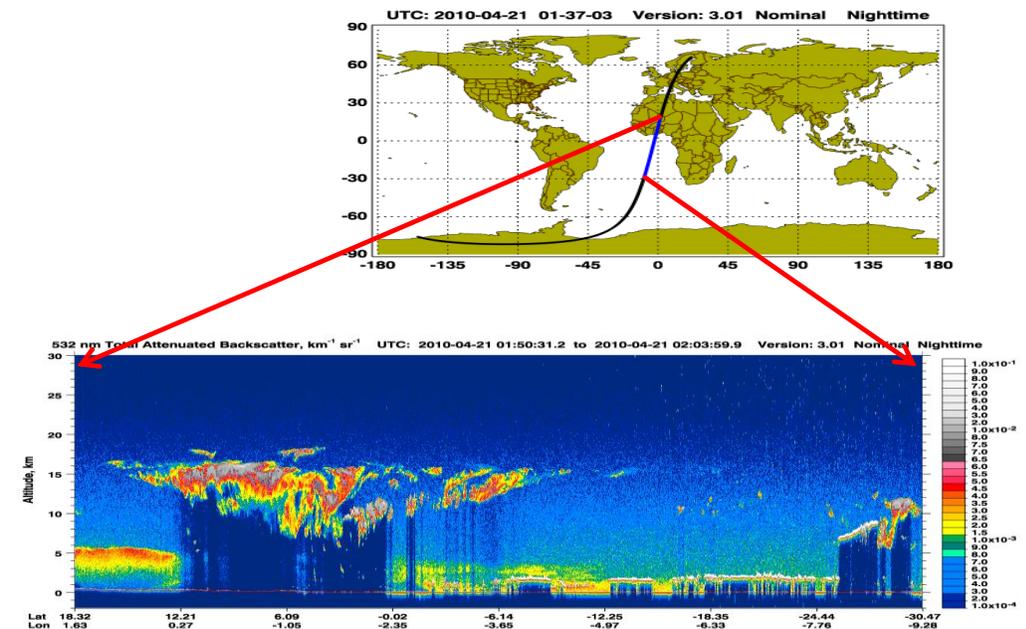
The CALIPSO payload consists of three co-aligned nadir-viewing instruments:

- Cloud-Aerosol Lidar with Orthogonal Polarization (CALIOP)
- Imaging Infrared Radiometer (IIR)
- Wide Field Camera (WFC)

CALIPSO Science Objectives

Improve our understanding of how clouds and aerosols govern climate forcings and feedbacks by providing:

- Vertical distribution of aerosols and clouds over all surfaces (ocean, land, snow/ice)
- Cloud ice-water phase, cirrus particle size, and aerosol type
- Assessments of aerosol radiative impact in both clear and cloudy scenes



CALIOP Measurements

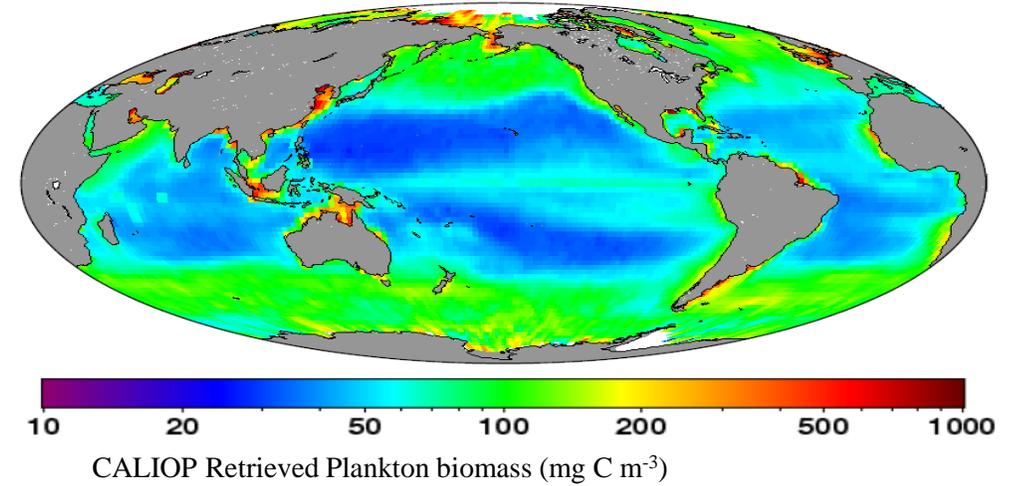
CLOUD-AEROSOL-LIDAR AND INFRARED PATHFINDER SATELLITE OBSERVATIONS (CALIPSO)



Lidar (CALIOP) designed for cloud and aerosols studies

- 532 and 1064 nm backscatter
- 532 nm polarization
- Imaging Infrared Radiometer
- Wide Field Camera

Unanticipated Ocean Applications



CALIPSO provides first space lidar measurements of:

- Ocean plankton biomass
- Sea surface roughness
- Surface wind speed

Successful ocean plankton retrievals with CALIOP are proof-of-concept for a future ocean-focused lidar mission allowing 3-dimensional reconstruction of global ocean plankton ecosystems



Observations from the A-Train

National Aeronautics and Space Administration

The Afternoon Constellation "A-Train"

Aura:
 OMI: O₃, SO₂, NO₂, HCHO, aerosol
 TES: O₃, SO₂, CH₄
 polarization, multi-angle aerosol OD, size, index

CloudSat:
 clouds
 Precip.
 drizzle

CALIPSO:
 aerosol & cloud profiles,
 aerosol type

Aqua:
 MODIS: aerosol OD, size
 CERES: LW/SW flux
 AIRS: T & Rh

GCOM-W1:
 water cycle
 15 sec. ~ 3 min. 15 sec.

OCO-2:
 CO₂
 tbd

The Afternoon Constellation consists of eight U.S. and international Earth Science satellites that fly within approximately ten minutes of each other to enable concurrent science. The joint measurements provide an unprecedented sensor system for Earth Observations.

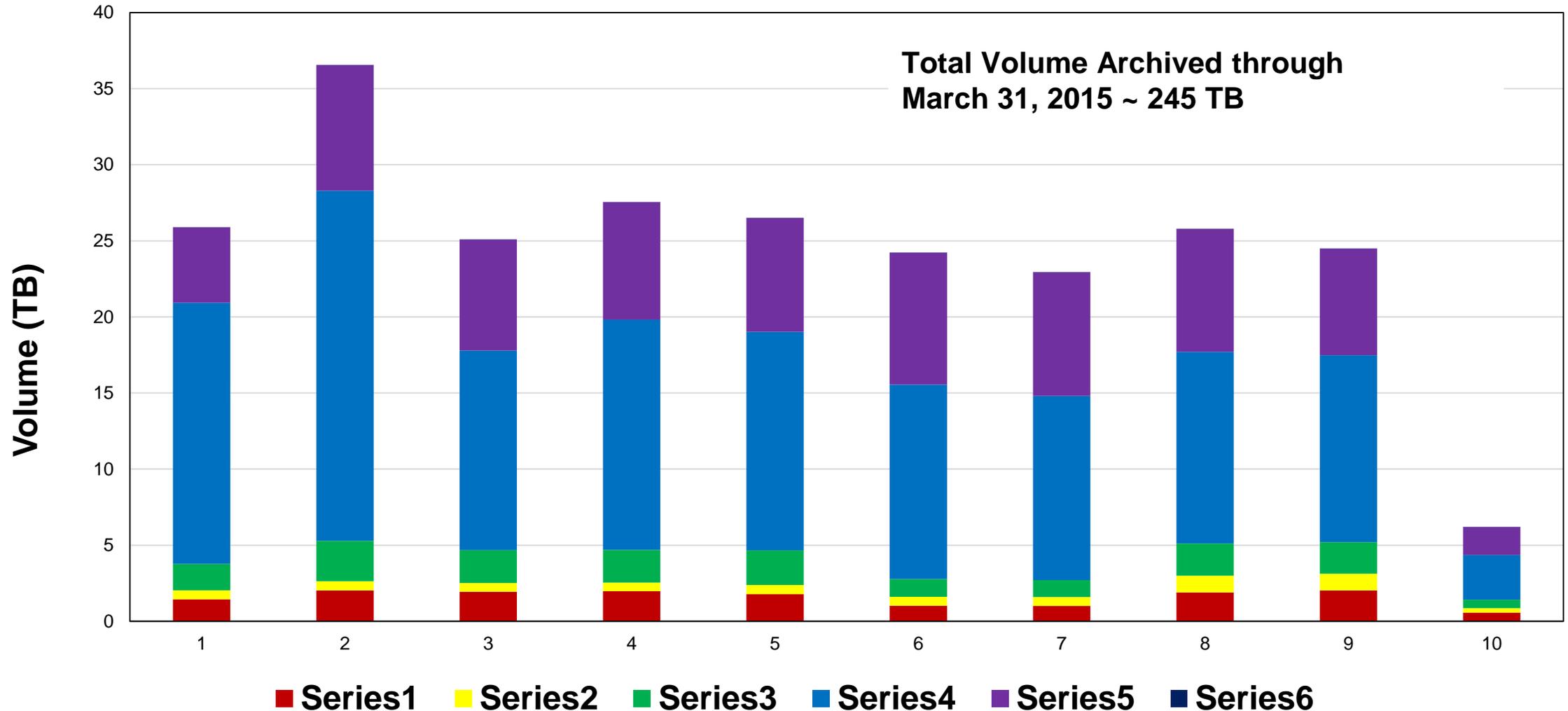
02/19/10

United States Brazil Canada Finland France Japan Netherlands United Kingdom

www.nasa.gov



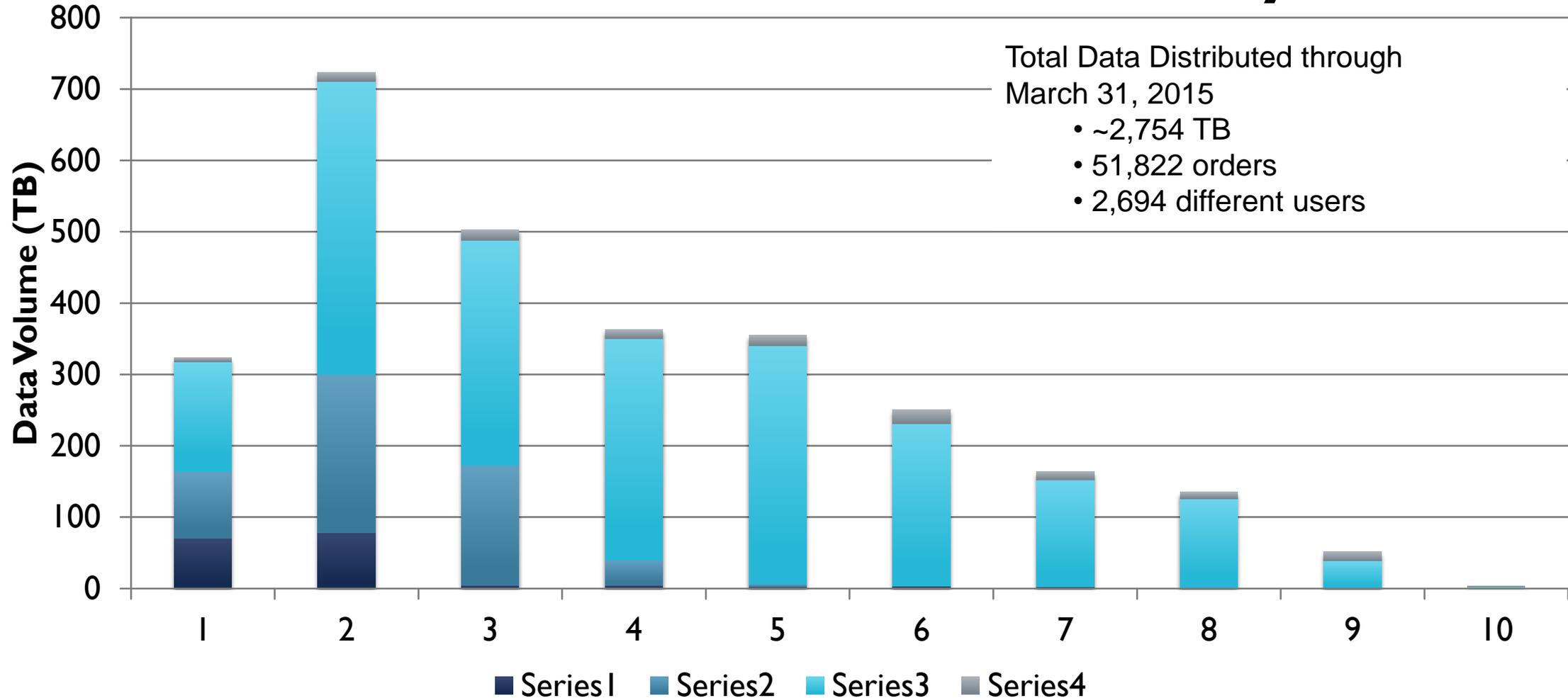
Total Volume of CALIPSO Data Archived





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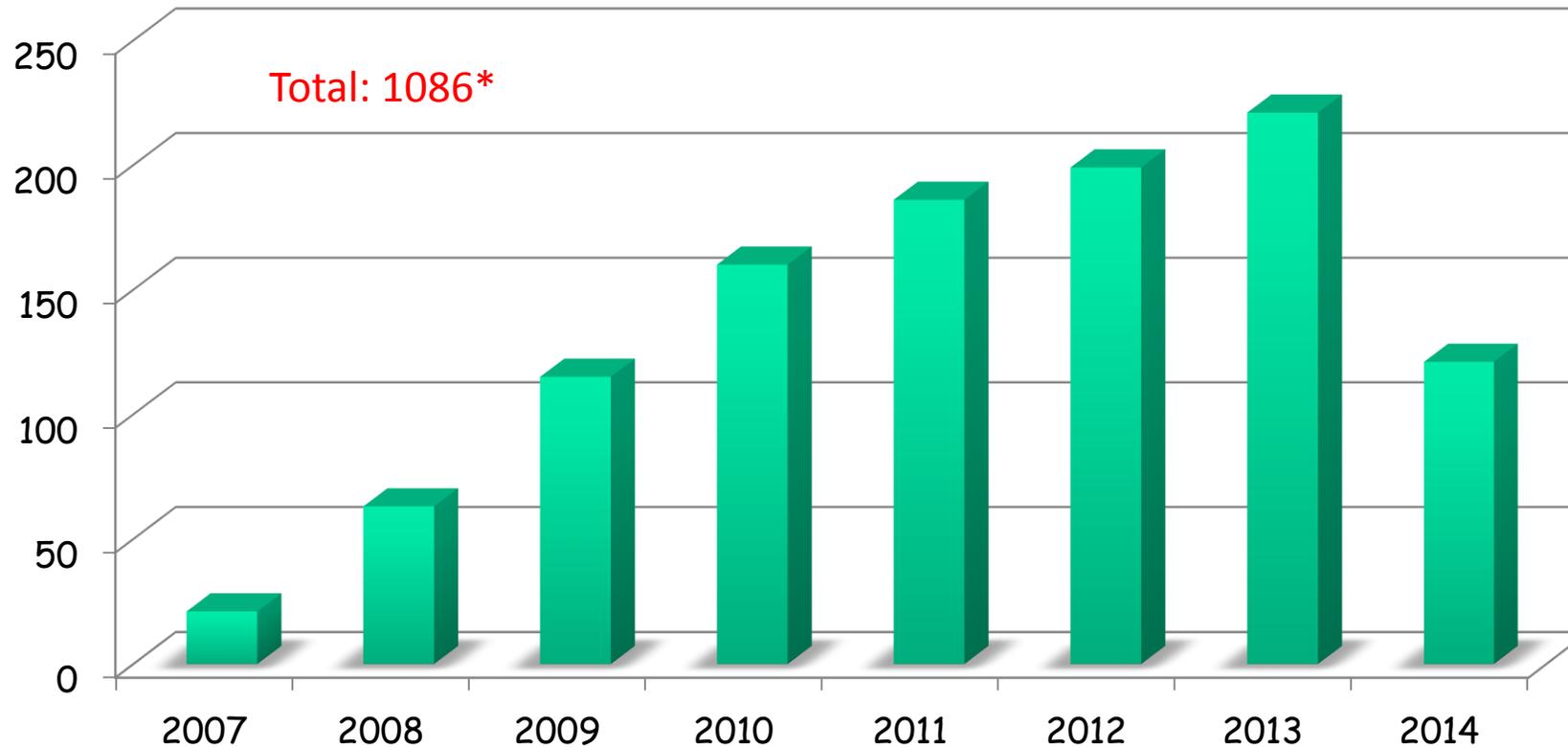
CALIPSO Data Distribution by Date





CALIPSO Publications

Publication record per year since launch



* As of 21 May 2014 – includes papers submitted and published.



ACB Actively Fields 7 Airborne Lidars



UV DIAL/HSRL
Ozone and aerosols
1983 - Present



LASE
Water vapor and aerosols
1994 - Present



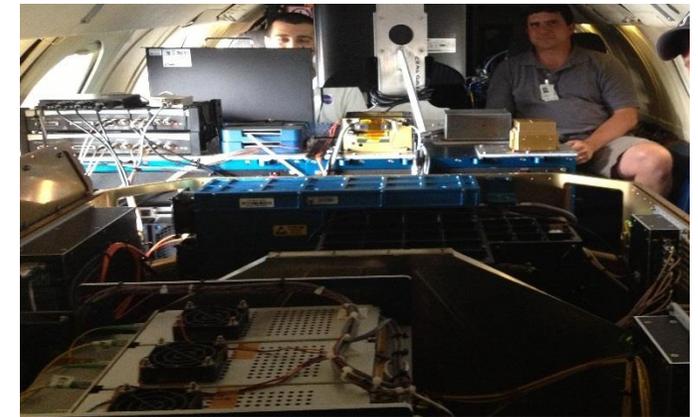
MFL (Harris)
CO₂
2005 - Present



HSRL-1
Aerosols, clouds, oceans
2004 - Present



HSRL-2
Aerosols, Clouds → Oceans, Ozone
2012 - Present



ACES
CO₂
2014 - Present



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HSRL - I

Airborne High Spectral Resolution Lidar

Airborne HSRL has logged over 1000 flight hours

HSRL measures vertical profiles of aerosols, clouds and ocean subsurface phytoplankton concentration.

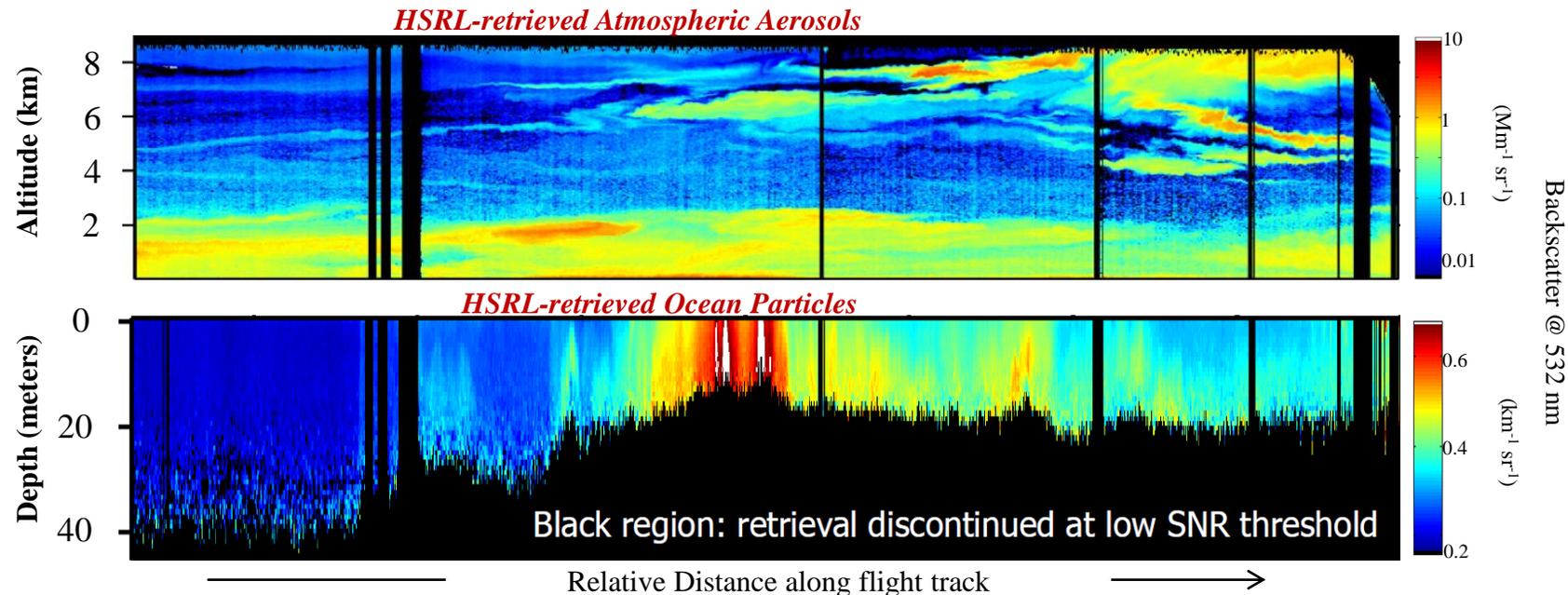
HSRL measurements are used to validate CALIPSO data since HSRL spectrally resolves aerosol and molecular backscatter in the receiver.



HSRL is being considered for the Aerosol-Cloud-Ecosystem (ACE) Mission lidar. ACE is a NRC Decadal Survey Tier 2 Mission

ACE Science will address:

- Climate
- Air Quality
- Clouds
- Aerosols
- Ecosystems (Oceans)

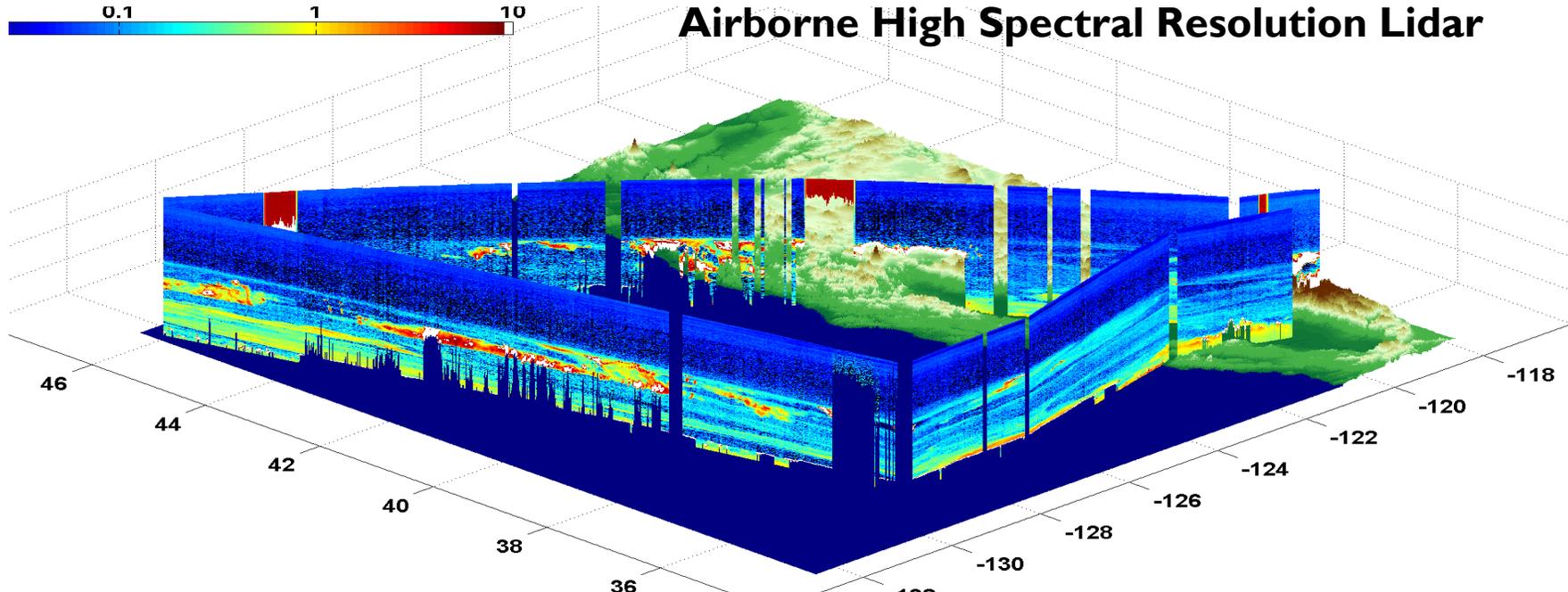




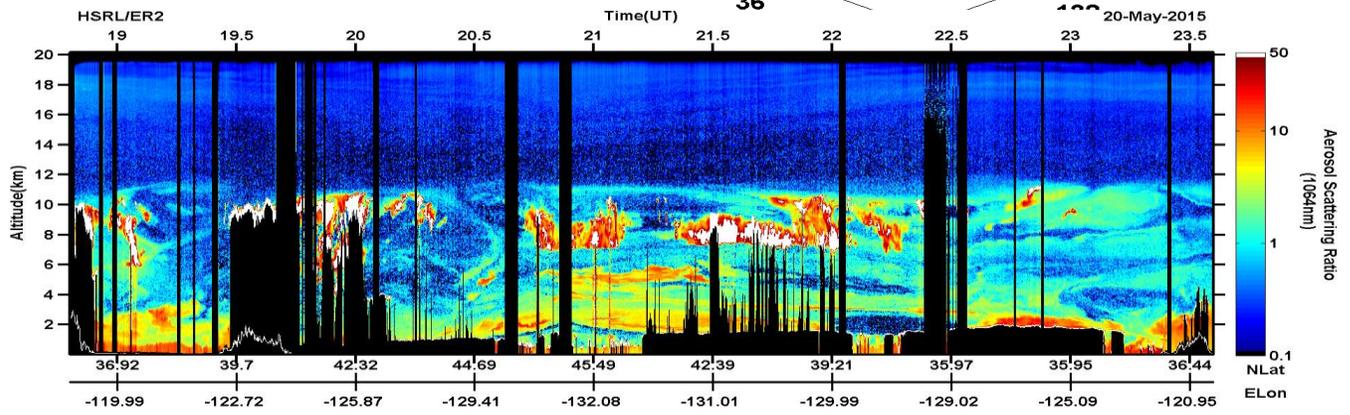
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HSRL - 2

Airborne High Spectral Resolution Lidar



HSRL – 2 is compact and efficient flight version of the HSRL fleet. It is being expanded to include ocean subsurface profiles and ozone atmospheric profiles.



HSRL-2 is compatible with NASA ER-2 aircraft

NASA Dryden flight Research Center Photo Collection
http://www.drlrc.nasa.gov/gallery/photos/index.html
NASA Photo: EC01-0232-2 Date: August 1, 2001
Lockheed ER-2 #809 high altitude research aircraft in flight



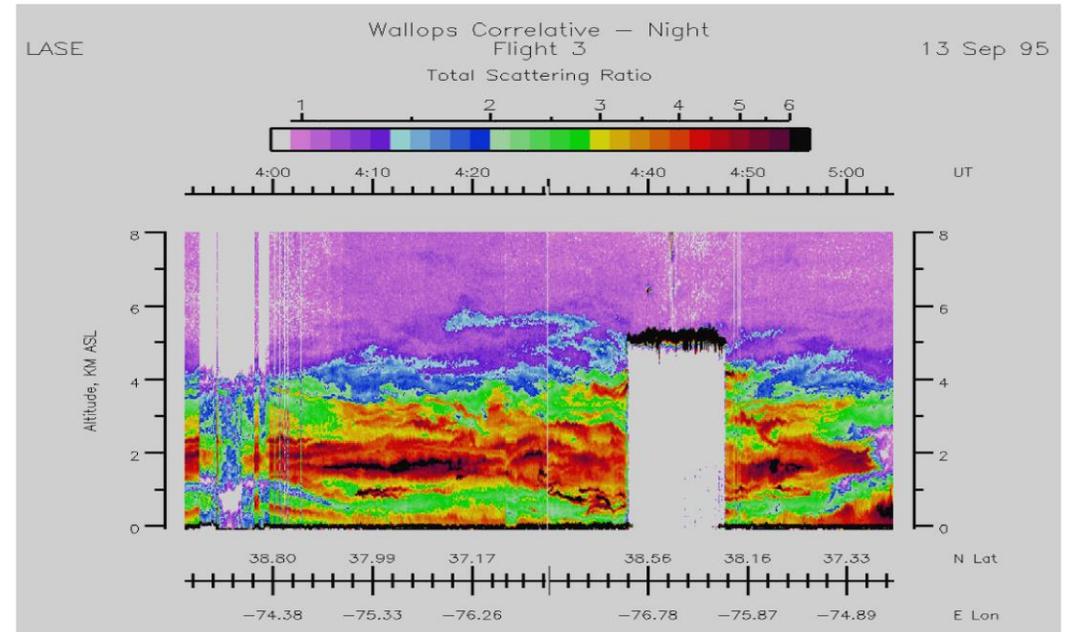
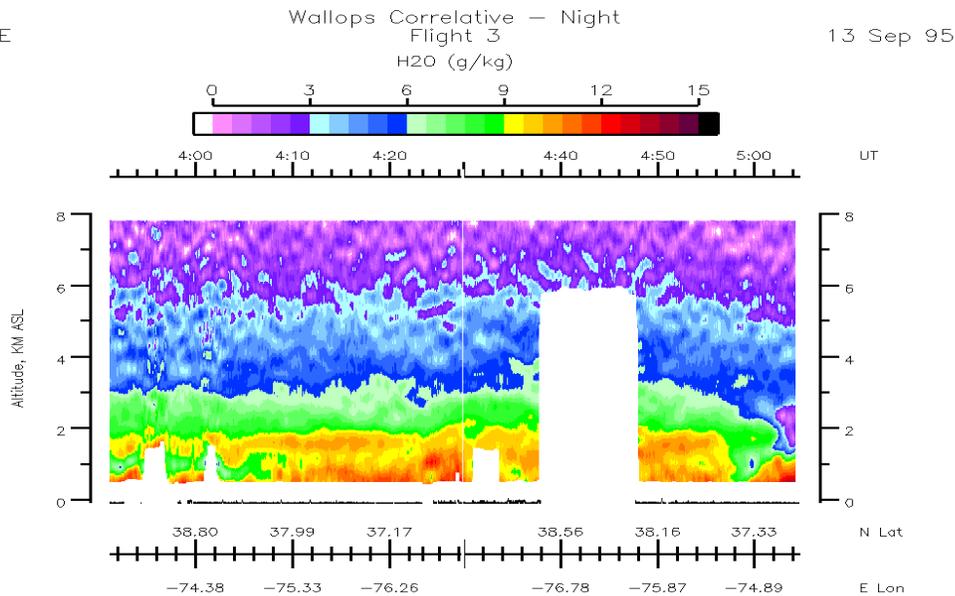
LASE

Lidar Atmospheric Sensing Experiment

LASE provide water vapor profiles for key information about boundary layers. It is currently deployed on the PECAN field campaign. The system is slated for replacement by the HALO lidar.



LASE





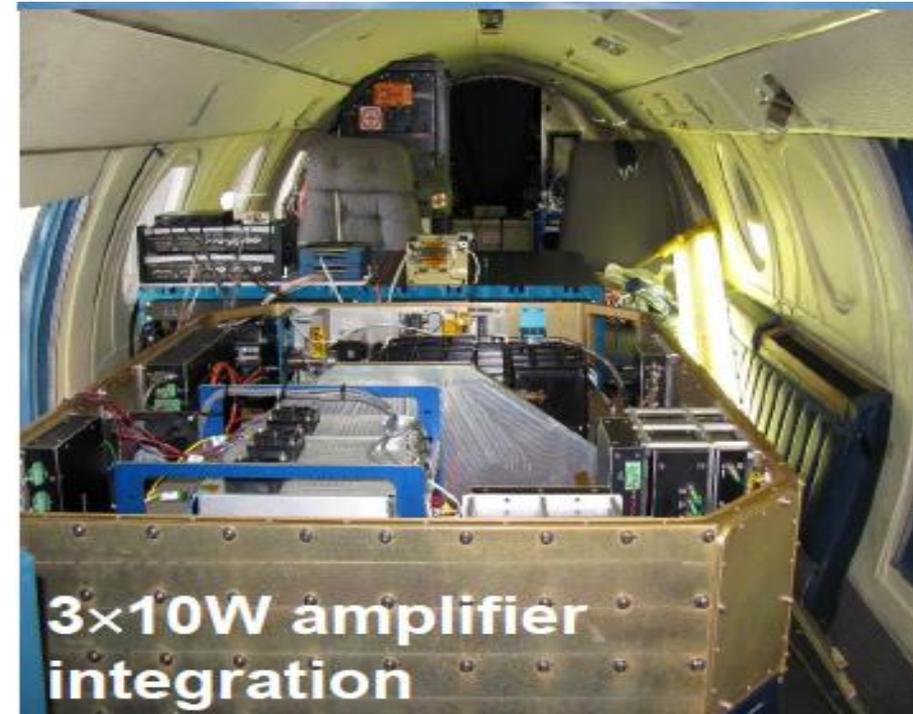
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MFLL and ACES

Multifunctional Fiber Laser Lidar and ASCENDS Carbonhawk Experiment Simulator



Multifunctional Fiber Laser Lidar



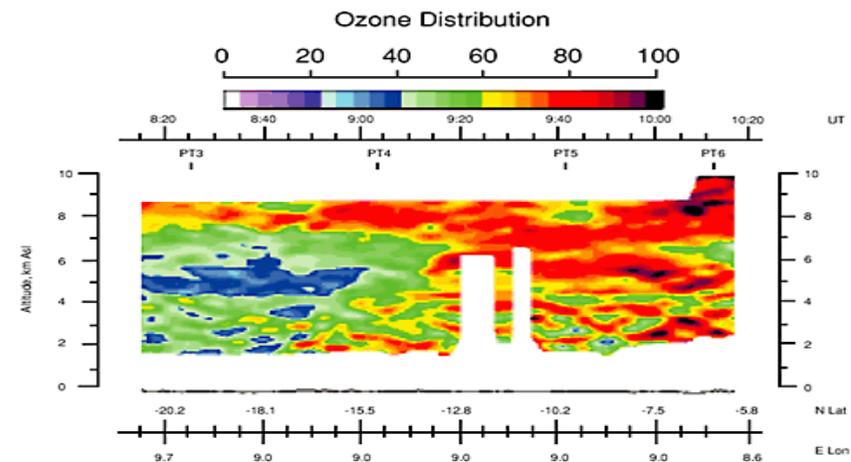
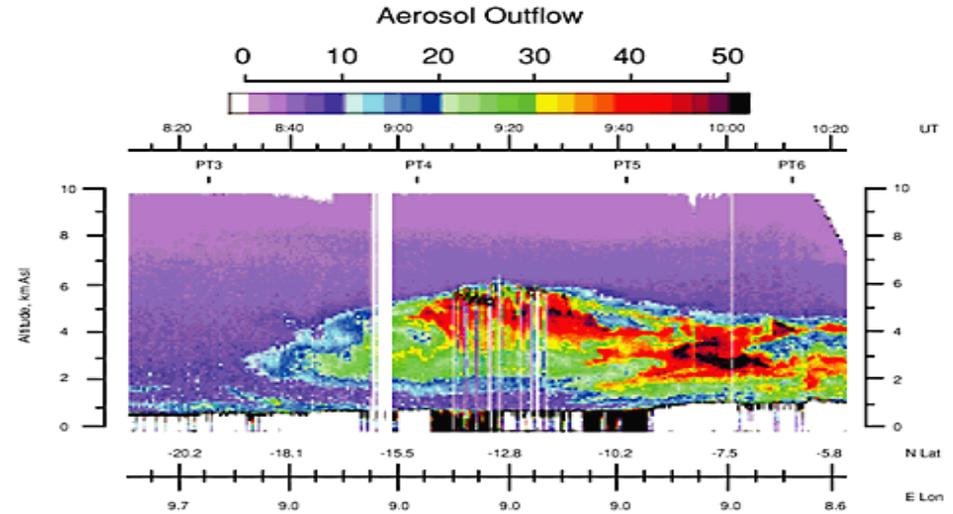
ACES Langley IIP



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UV DIAL/HSRL

Differential Absorption Lidar/HSRL





NASA Langley Research Center

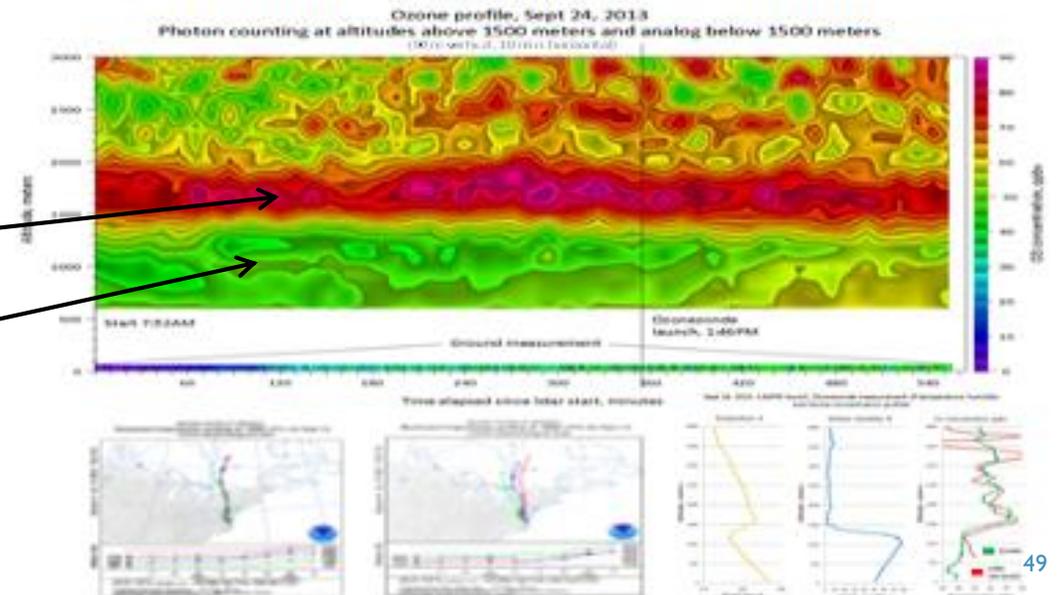
LANGLEY MOBILE OZONE LIDAR (LMOL) PROFILING

Operational ozone lidar taking weekly atmospheric profiles with ozonesonde launch

Four Channel Lidar

- In-situ ozone 4 m
- Far Field ozone 4-7 km
- Near field ozone 1.5-4 km
- Very near field ozone .1-1.5 km
- Green aerosol 1-10 km

Hampton Roads Ozone Profile: Example of Ozone Transport and Local Ozone Generation



Sept. ozone curtain plot showing ozone transport from DC above boundary layer with local ozone below boundary layer



Mobile ozone is operational in trailer. Deployed in DISCOVER-AQ Denver July 15-August 15, 2014.



- CALIPSO (2006 to 2018 estimate)
- NAAMES (2015-2019) HSRL-1/LARGE
- ACT-America (2015-2019) MFLL/CPL/In-situ
- ORACLES (2015-2019) HSRL-2
- PECAN (2015) LASE
- KORUS-AQ (2016) DIAL/HSRL (Proposed)



- Submit Papers for next NRC Decadal Survey
 - ACE
 - ASCENDS
- Complete joint space mission study with CNES
- Continue CALIPSO Data Product version development
- Develop HALO flight instrument for HSRL/water vapor/Methane



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Climate Science Branch (CSB)

Donald Garber, Branch Head



CSB Areas of Expertise

- **Radiation and Climate**
 - Investigation of the Earth's energy balance (incoming solar radiation vs outgoing infrared) to improve understanding and enable prediction of global climate change
 - Maintain, expand, and improve climate data records
- **Thermosphere/Ionosphere/Mesosphere Energetics & Dynamics**
 - Investigation of temperature and chemical structure of the upper atmosphere to improve understanding of Earth's connection with the Sun and enable prediction of global climate change
- **Passive Remote Sensing**
 - Research to develop new instruments and algorithms to measure reflected and emitted radiation from the earth, identify cloud and aerosol properties, and derive useful parameters to improve understanding of climate
- **Cloud and Aerosol Physics**
 - Research to improve understanding of aerosol and cloud effects on radiative transfer and improve understanding of cloud-climate feedback



- Work is primarily major satellite missions but with significant Research & Analysis component funded by competitive research proposals to NASA Science Mission Directorate
- Research focused on generating continuous global information through analysis of remotely sensed data
- We collaborate with scientists and engineers at LaRC and other NASA Centers as well as government agencies, private companies, and universities worldwide
- Contractors support work in:
 - Instrument Development
 - Mission Planning and Operations
 - Algorithm Development and Implementation
 - Data Processing, Validation, and Analysis





Satellite Remote Sensing

Satellite remote sensing provides:

- Instrument / Sensor Development, Characterization, Calibration, and Validation
- Field Mission / Flight Operations Logistical Support
- Algorithm Development, Validation, Implementation, and Maintenance
- Data Analysis and Data Management
- Scientific Analysis, Modeling, and Interpretation
- Meeting Support

Contractors support this work in the following areas:

- Climate Data Records
- Data for Science Studies
- Societal Applications



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CSB Instruments Observing the Earth

Current



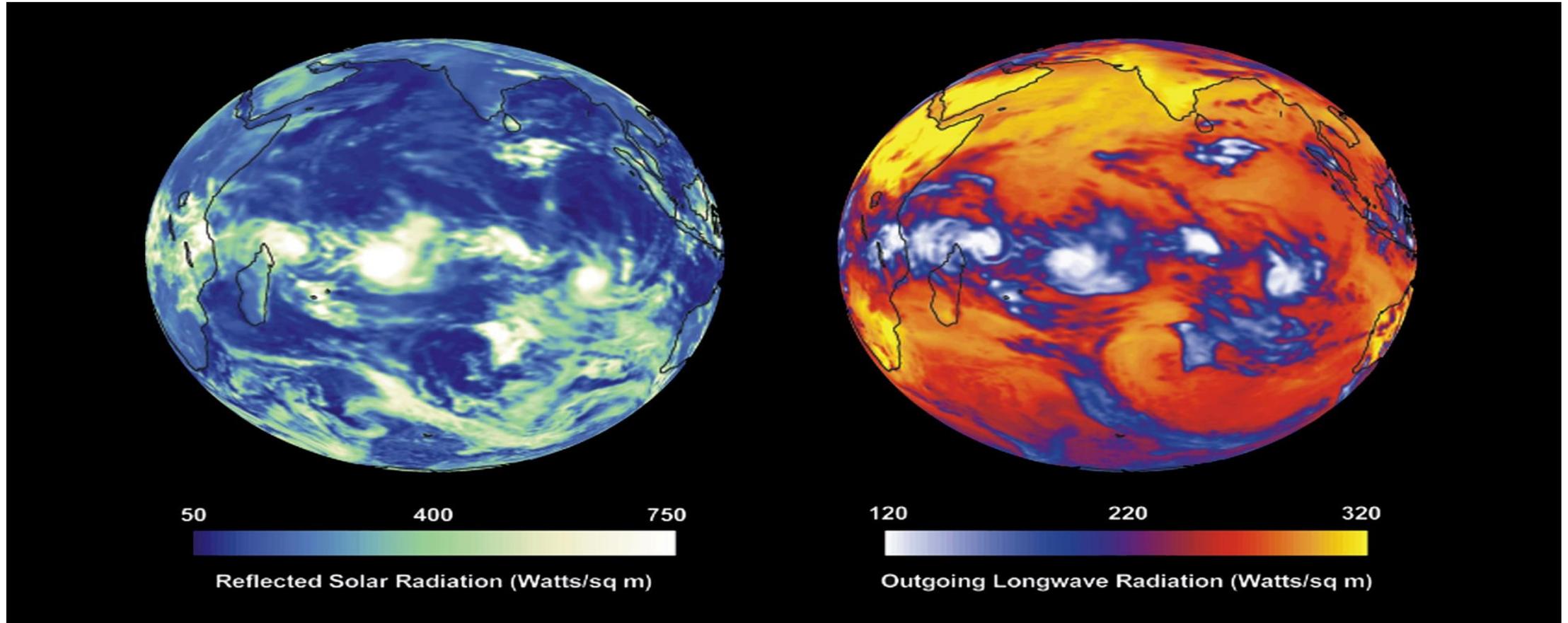
Future



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CERES on Terra, Aqua, NPP, & J1

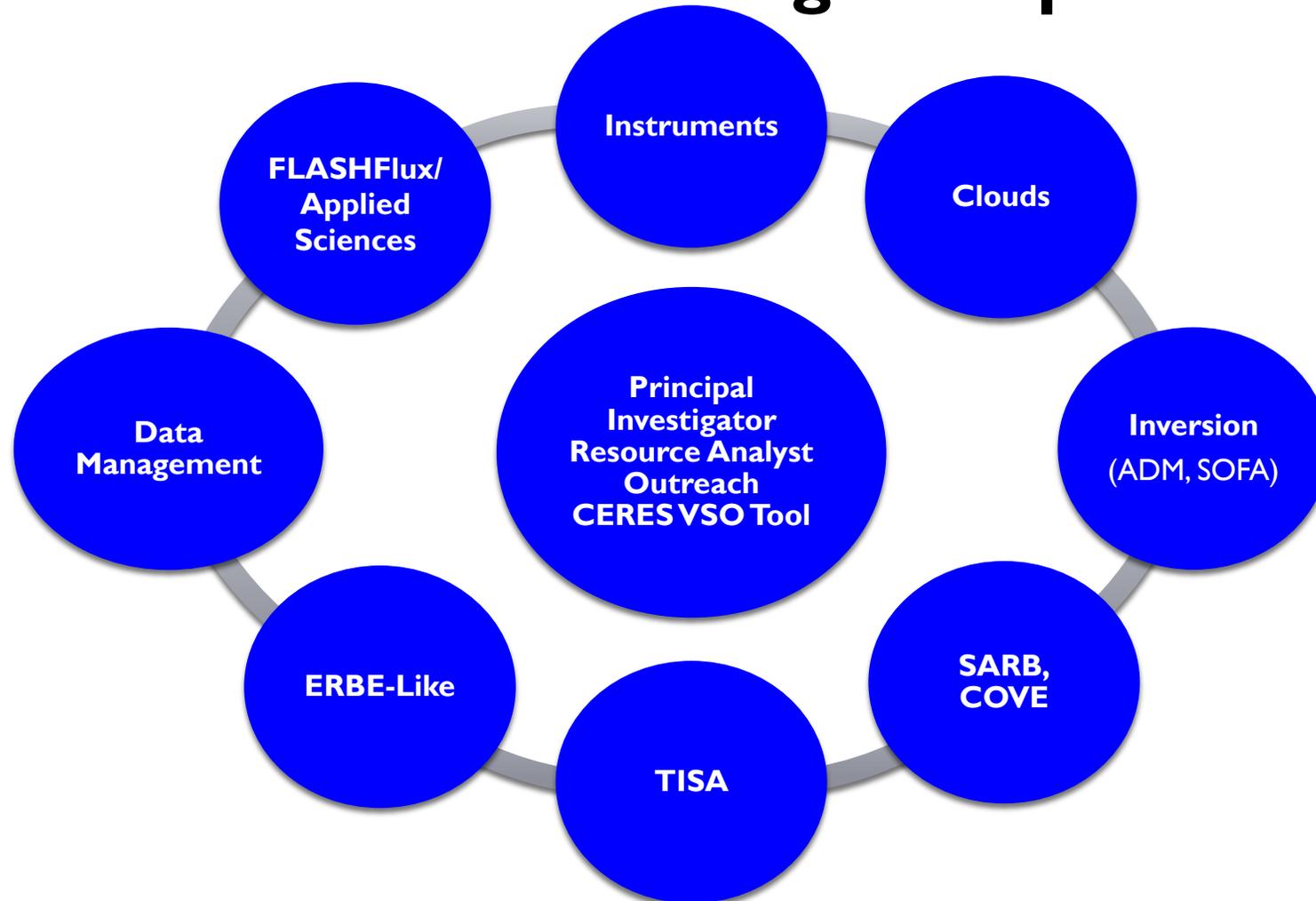
Clouds and the Earth's Radiant Energy System



CERES instruments measure the flow of energy from the sun to Earth and the planet's heat loss, which shows us how the planet is either warming or cooling.



Earth Radiation Budget Science Working Groups





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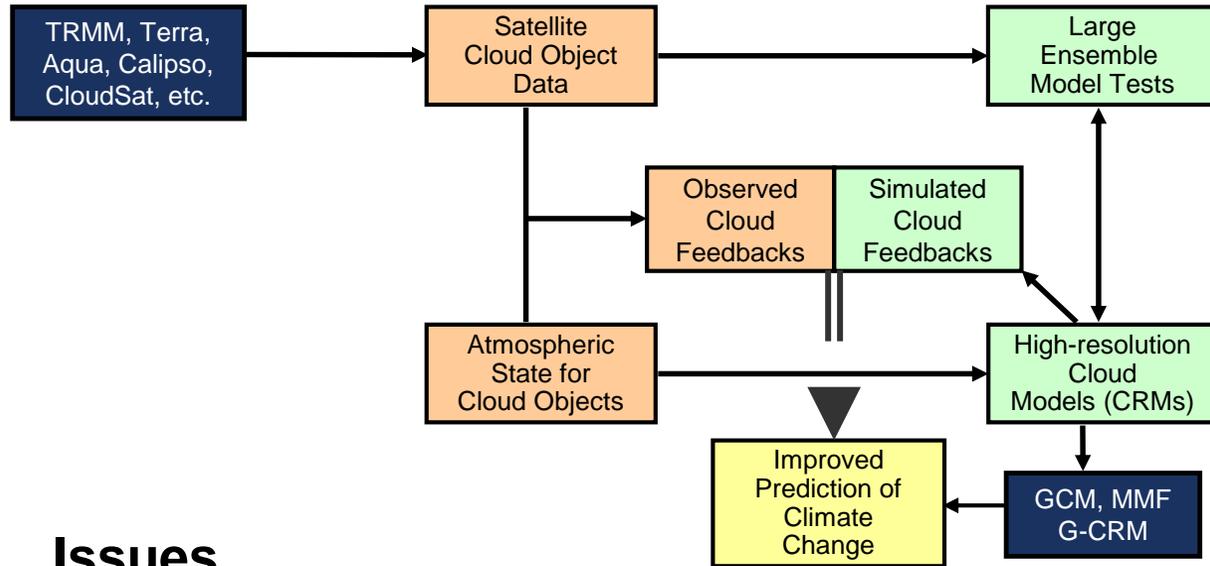
CERES Ocean Validation Experiment (COVE)

- COVE is located on the Chesapeake Lighthouse, which is a Coast Guard platform located 25 km East of Virginia Beach, near the mouth of the Chesapeake Bay. Only accessible via helicopter.
- It is located outside of the surf zone and far enough away from shore to make it an excellent validation site for space-borne retrievals of cloud and aerosol microphysics.
- Instrumentation is located at the housing level and on the roof of the accompanying lookout tower at 37 meters above the surface.
- Access is provided to LaRC via an interagency agreement with DOE. Lighthouse is being excessed through GSA in 2015, and CERES expects to remain on the platform before and after it is excessed.





Cloud Object Analysis and Modeling



- A new methodology for analyzing and modeling of cloud systems is implemented at LaRC
- The new satellite data matched with meteorological state data will enable a more rigorous evaluation of cloud models and parameterizations
- Cloud feedbacks will be better understood through an iterative process

Issues

- Persistent, large uncertainties in modeling cloud processes and feedbacks in climate models
- Nonlinearity of cloud processes requiring observations on all modeling scales
- Inability of existing methods to evaluate cloud models using observational data
- Abundant satellite measurements are not adequately used

Present and future LaRC work

- Analysis of Aqua and Terra cloud objects
- Cloud resolving model (CRM) simulations of various cloud object types
- Analysis of new types of cloud objects using CALIPSO/CloudSat/CERES/MODIS data
- Multi-scale modeling framework (super-parameterization) modeling of cloud feedback processes and climate sensitivity



Cloud Processes in the Climate System

Background:

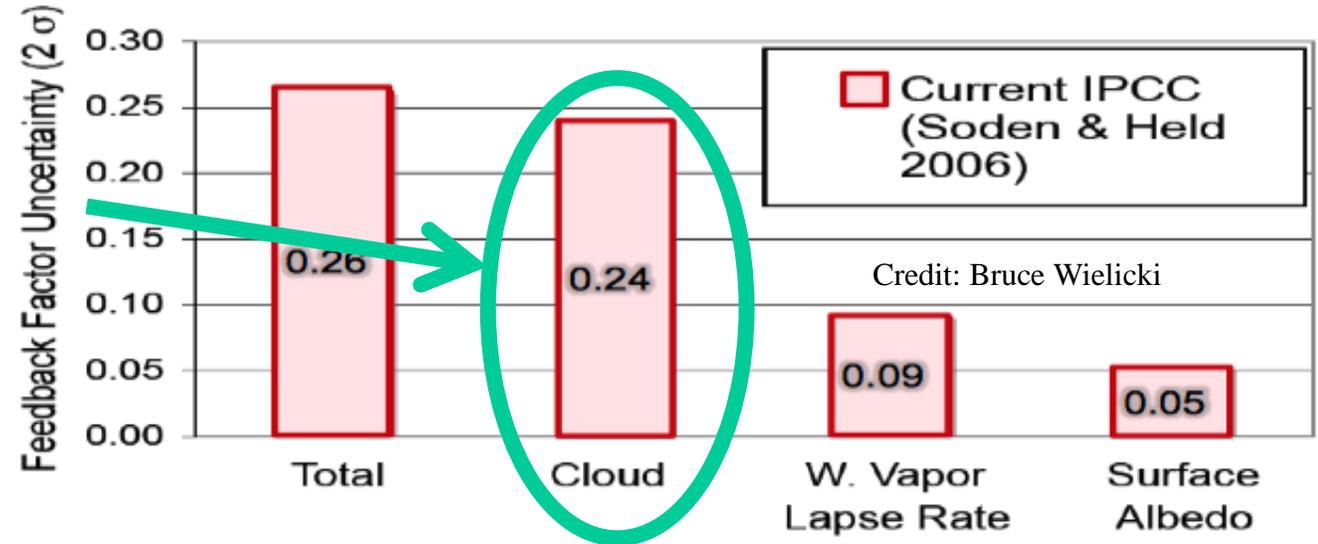
- Uncertainty in cloud feedback is the largest contributor to spread in GCM surface temperature projections

Science Question:

- How does observed cloud variability influence the climate, climate change, and cloud feedback?

Research:

- Evaluate and improve model simulation of cloud processes using state-of-the-art NASA instruments and novel techniques to increase confidence in GCM simulated climate, climate change, and cloud feedback



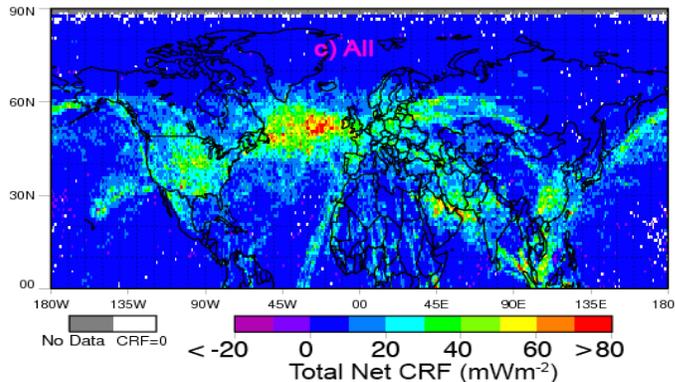
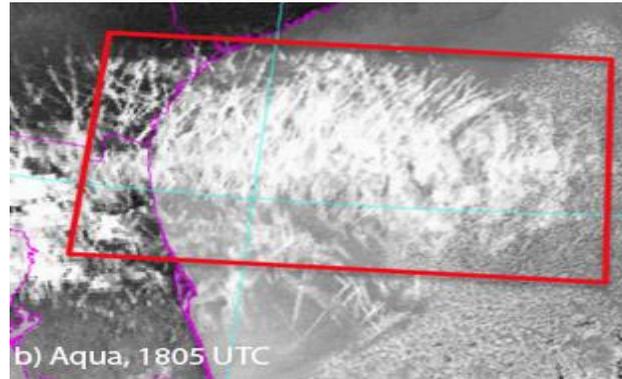
Present and future LaRC work:

- Evaluation of model simulated convective diurnal cycle
- Assessment of diurnal cycle impact on TOA and surface energy budget
- Evaluation of simulated Arctic surface energy budget and cloud-sea ice interaction using CERES and CALIPSO/CloudSat data
- Data-constrained climate projections using process-oriented metrics



Contrail Analysis & Modeling

Contrails in
MODIS
imagery



Net contrail
radiative impact
from 2006
MODIS, NWP, &
flight data

Issues

- Assessing climate impact is complex due to co-mingling of natural & contrail cirrus
- Accurate modeling of contrails is needed to evaluate warming risk

- Contrails are the most visible signature of human impact on the atmosphere; cause 1%/decade increase in US cirrus coverage
- Current estimates of the direct forcing of climate by contrails are highly uncertain (order of magnitude)
- We seek to use current global satellite measurements & models to assess net radiative impacts and, with air traffic data, aid the development of a contrail simulator that "flies" aircraft through numerical weather prediction model data

Present and future LaRC work

Use multiyear MODIS & GOES data to:

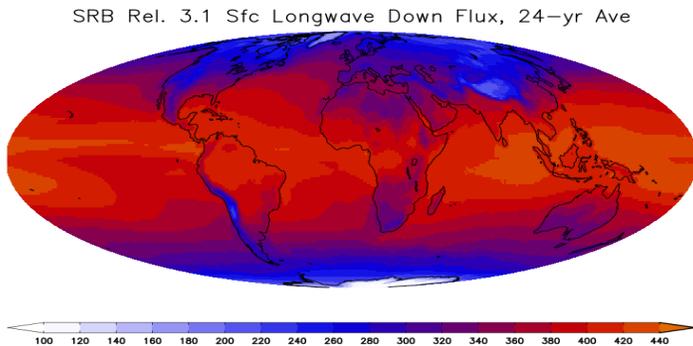
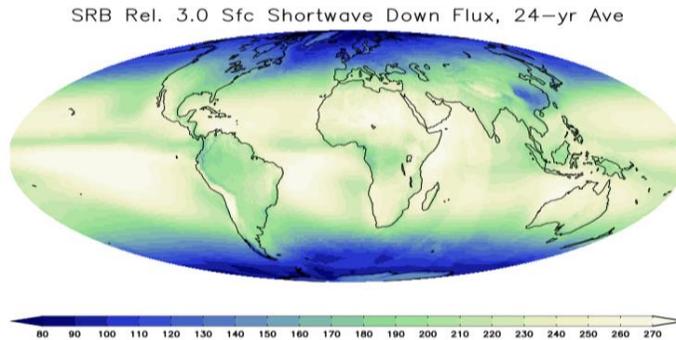
- Determine contrail coverage & radiative properties; separate natural & contrail cirrus
- Match with NWP output; tune parameterization
- Validate with S'COOL, MODIS observations
- Quantify direct forcing of climate by contrails



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Long-term Surface and Atmospheric Radiation Budget Research

24-Year Surface Solar Irradiance (W m^{-2})



22-Year Surface Thermal Infrared Irradiance (W m^{-2})

NASA/GEWEX Surface Radiation Budget

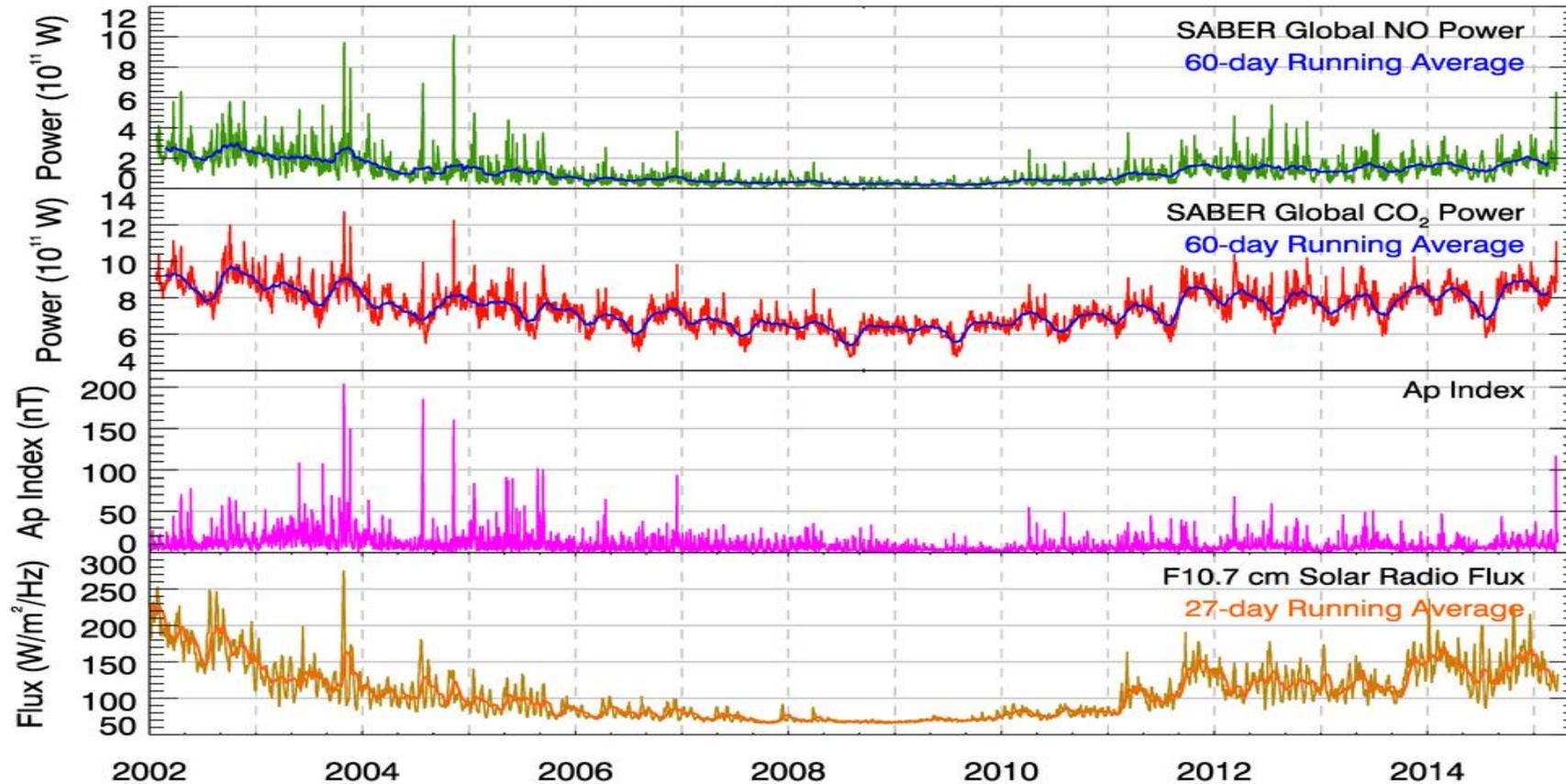
- Contribute to international Global Energy Water Cycle Exchange (GEWEX) program global
- Compute and describe long-term radiative balance of the Earth's atmosphere and surface from long-term cloud and meteorological input
- Assess uncertainties of long-term the Earth's radiative balance and identify requirements for improvement (i.e., compare with CERES)
- Analyze data sets for global and regional variability of the radiative fluxes
- Provide datasets to interdisciplinary research and applied science needs.



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SABER on TIMED

Sounding of the Atmosphere using Broadband Emission Radiometry



SABER measures the flow of infrared energy from the mesosphere and thermosphere and identifies the drivers in solar variability that influence upper atmosphere climate

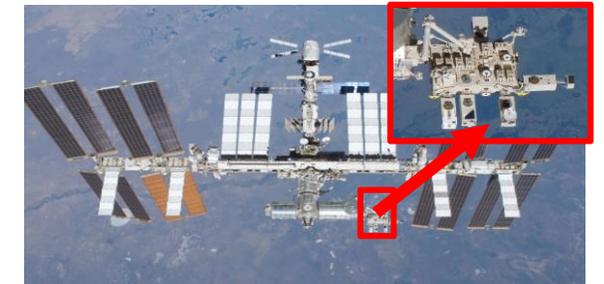
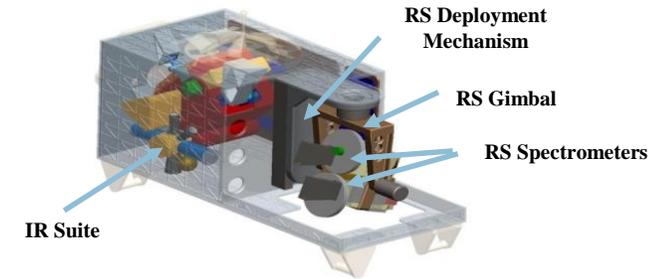


CLARREO

Climate Absolute Radiance and Refractivity Observatory

- Climate Benchmark (*Decadal Survey Tier 1 mission*): Fills the critical need for unambiguous climate change measurements with a high level of accuracy
- Standard for Intercalibration: Provides a metrology laboratory in orbit for the purpose of accurately quantifying/attributing climate change.
- Benchmark for GSICS to tie 30 to 40 Earth viewing sensors in LEO and GEO orbits to a higher accuracy.
- Discovery Science: Provides the first spectral observations of Earth's far-infrared, which includes 50% of Earth's energy emitted to space.

- Passed Mission Concept Review in Nov 2010.
- CLARREO RS and IR payloads compatible with ISS hosting
- Advanced measurement design maturity (all components now TRL 6) and incorporated NIST's recent calibration advances
- Focus on lower cost, smaller instruments with ability to achieve required accuracy on-orbit



CLARREO instruments will measure tiny, incremental changes in the amount of energy entering and leaving Earth's atmosphere such that even minor global temperature change trends over the course of a decade will be detected with confidence.

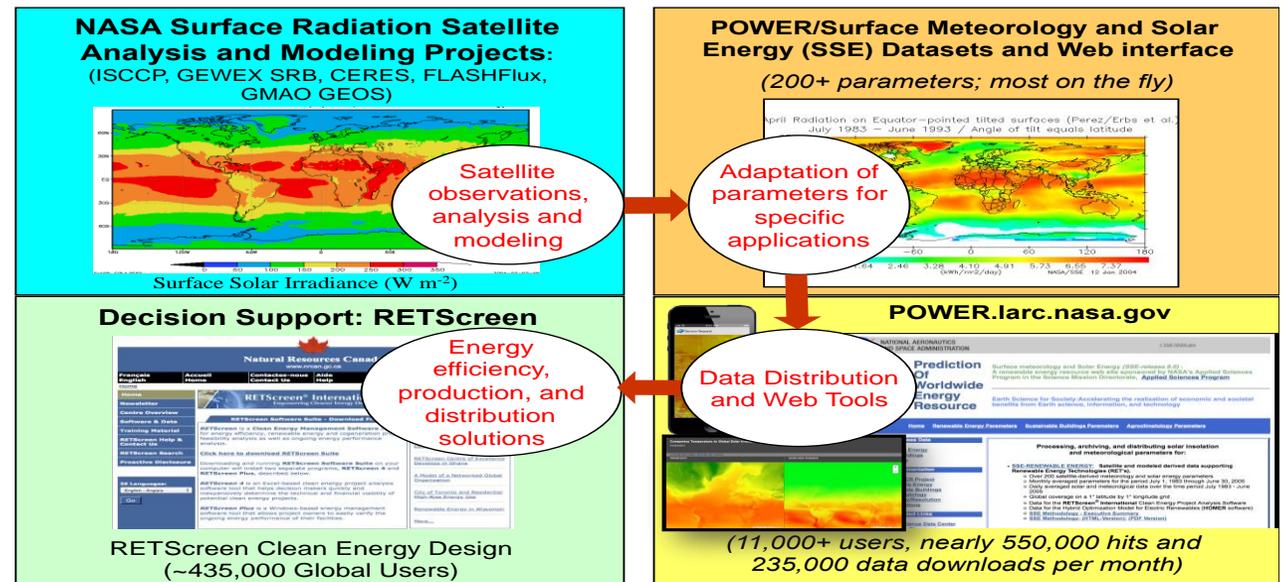
Applications: Prediction of Worldwide Energy Resource Project (POWER) Climate Data Records for Energy And Agricultural Decisions

Objective: Improve the Nation's capability for integrating environmental data into sound management of energy production and efficiency systems; agricultural planning.

Target Areas: Electric Power and Distributed Energy, Renewable Energy, Energy-Efficient Building Design and Biomass Crop Development Industries

Approach:

- Establish partnerships to integrate and adapt NASA data into energy sector Decision Support System's (DSS) and databases.
- Develop and validate prototype data sets and data pathways, including GIS formats
- Target such datasets for transition operational capabilities to government and/or private sector entities including web services.



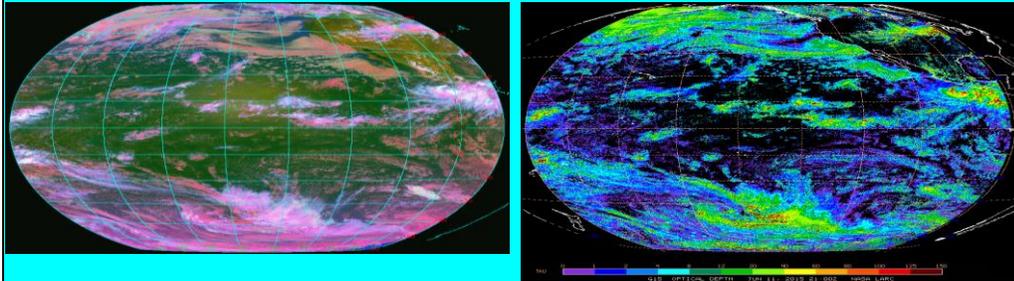
Development to Decision Cycle



NASA Langley Research Center

Applications: Aviation Weather/Icing/HIWC

Analysis of NASA & Operational Satellites for Global/Regional Cloud Properties (MODIS, AVHRR, GEOsats, VIIRS)



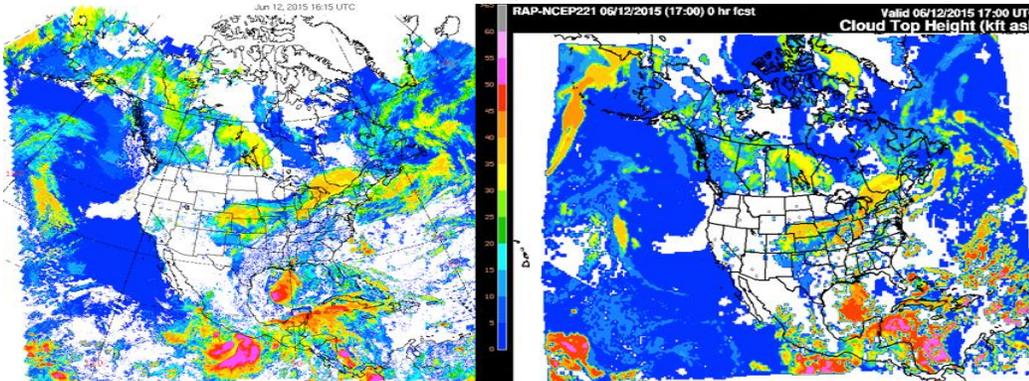
GOES-W Image

Cloud Optical Depth

Langley Clouds Provide Key Input for State-of-the-Art Numerical Weather Prediction Models

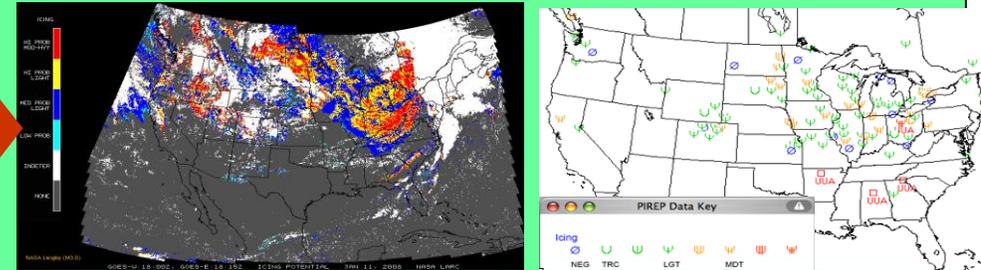
GOES-E&W Cloud Top Retrievals

NCEP Rapid Refresh Model Analysis



Nowcasting Aircraft Icing

Real-time determination of icing hazards

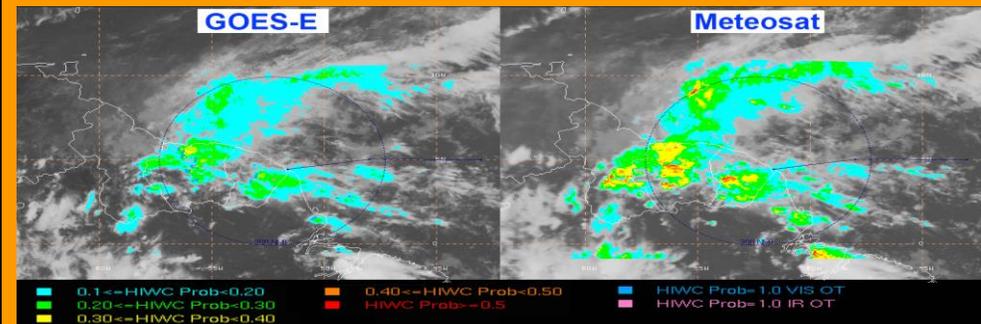


Icing Potential
Icing from GOES-E/W

PIREPS

Nowcasting Engine Icing Potential

High ice water content (HIWC) leads to engine icing hazards. Satellites provide warnings.





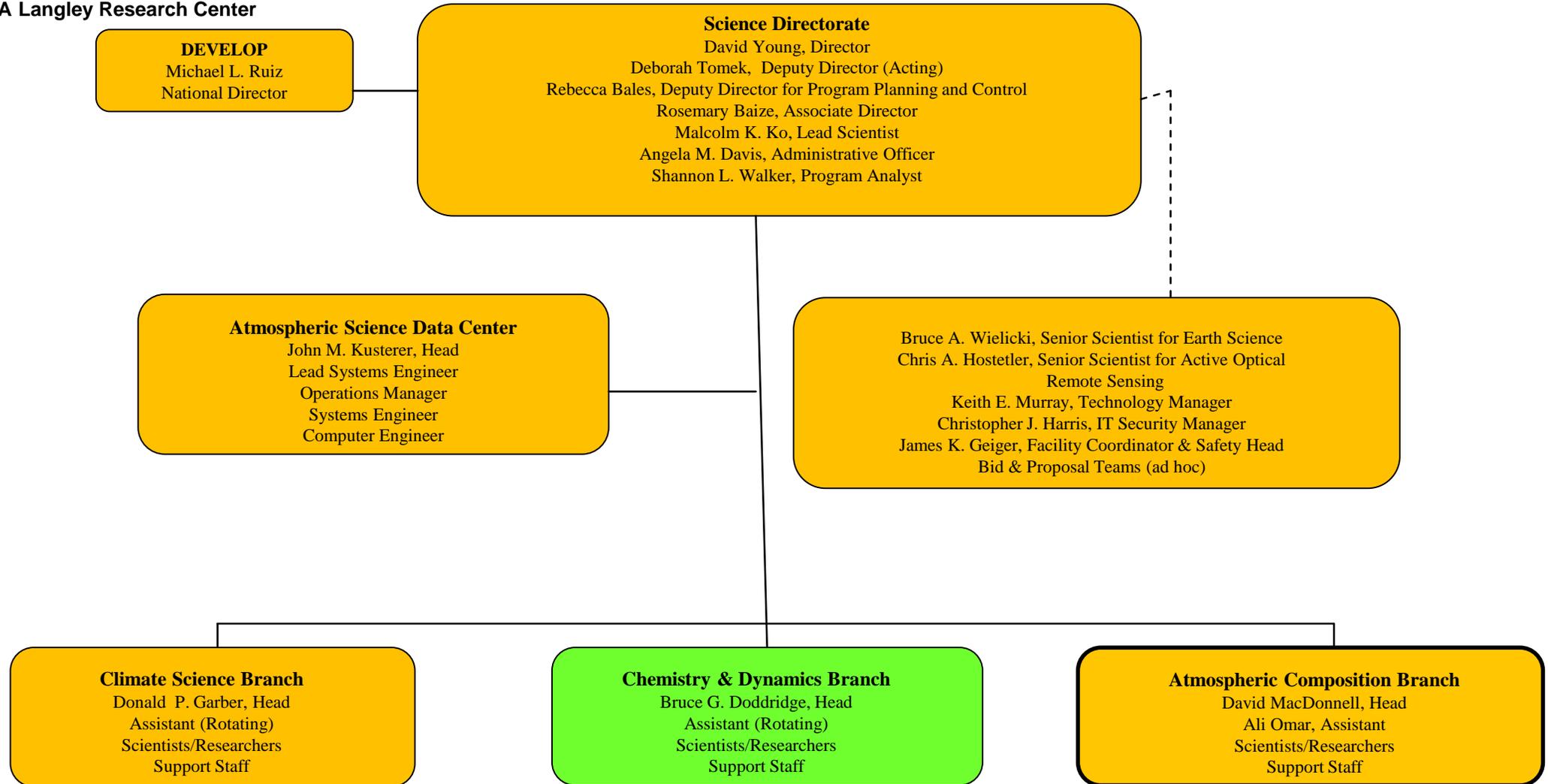
NASA Langley Research Center

Chemistry and Dynamics Branch (CDB)

Bruce Doddridge, Branch Head



NASA Langley Research Center





NASA Langley Research Center

Atmospheric Composition

Studying changes in the atmosphere's chemistry and what those changes mean for environmental and public health





CDB Areas of Expertise

- **Tropospheric Chemistry**
 - To improve understanding and enable prediction of air quality and climate change on multiple scales
- **Stratospheric Chemistry**
 - Studies of middle atmospheric chemistry and dynamics to improve understanding of climate variability and trends
- **Weather and Climate**
 - To improve understanding of weather and climate, and model development to enable better prediction of hazards and events
- **Space Weather and Planetary Atmospheres**
 - To understand effects of intense solar radiation on communications, aviation and human health, and to enable better prediction of hazards and events
 - Chemistry and dynamics of atmospheres on other planets



NASA Langley Research Center

Research Science in CDB

- Work is funded through competitive research proposals (mainly to NASA Science Mission Directorate)
- Our research validates and exploits the data that NASA produces and provides the basis for new ideas for future missions
- We partner and collaborate with scientists and engineers at LaRC, at other NASA centers and federal labs, university researchers worldwide, and the private sector
- Contractors support work in:
 - Instrument development
 - Satellite missions
 - Field missions
 - Data validation and analysis
 - Atmospheric modeling
 - Algorithm development
 - Reporting and dissemination





Airborne Science

Airborne campaigns provide unique contributions, including:

- Satellite calibration/validation
- Field campaigns (process studies & integrated science)
- Risk mitigation for future satellite programs
- Concept & instrument demonstrations

Contractors support this work in the following areas:

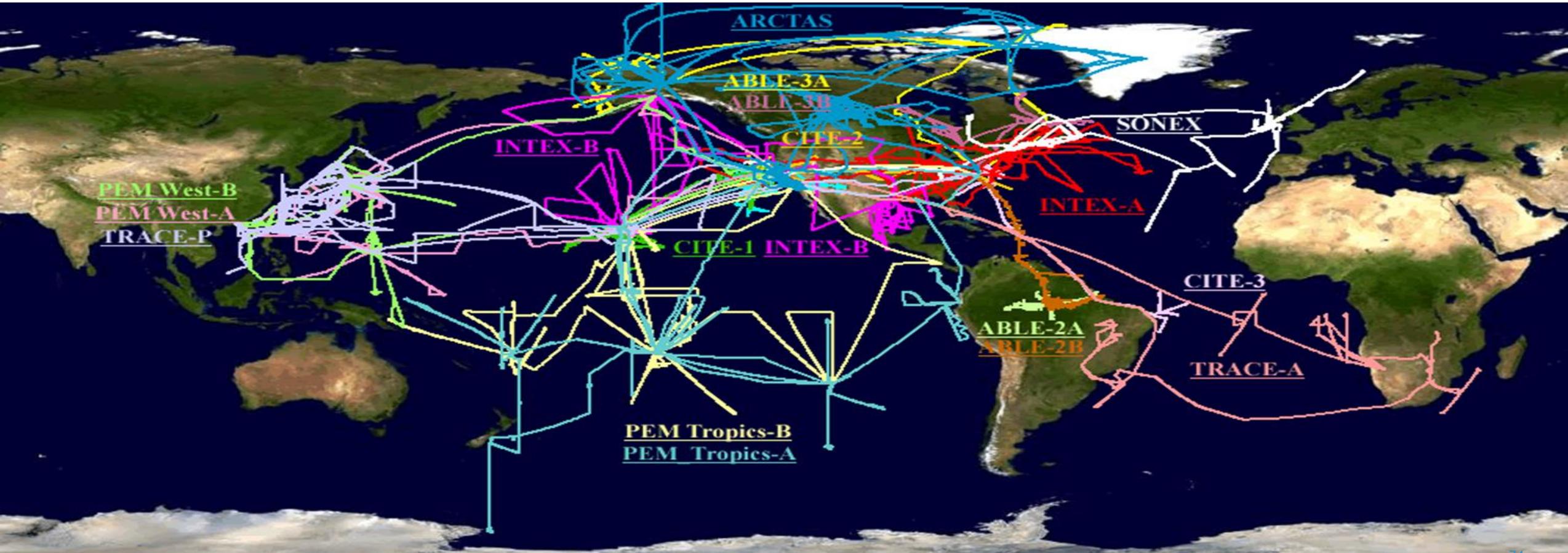
- Instrument development
- Research flight forecasting and operations
- Data acquisition and analysis
- Modeling and simulation
- Documentation and Dissemination





Airborne Science

Langley scientists have contributed to NASA airborne field campaigns since 1983. Data from these campaigns continues to be used for model evaluation, evaluating requirements for satellite observations, and formulation of future field activities.





NASA Langley Research Center

Science Serving Society



Our work affects fundamental aspects of life on this planet — including:

Health and Air Quality, Ecological Forecasting, Water Resources, Disasters



Contractors support this work in:

- Instrument and method development
- Data acquisition and processing
- Data analysis
- Modeling and simulation
- Documentation and Dissemination



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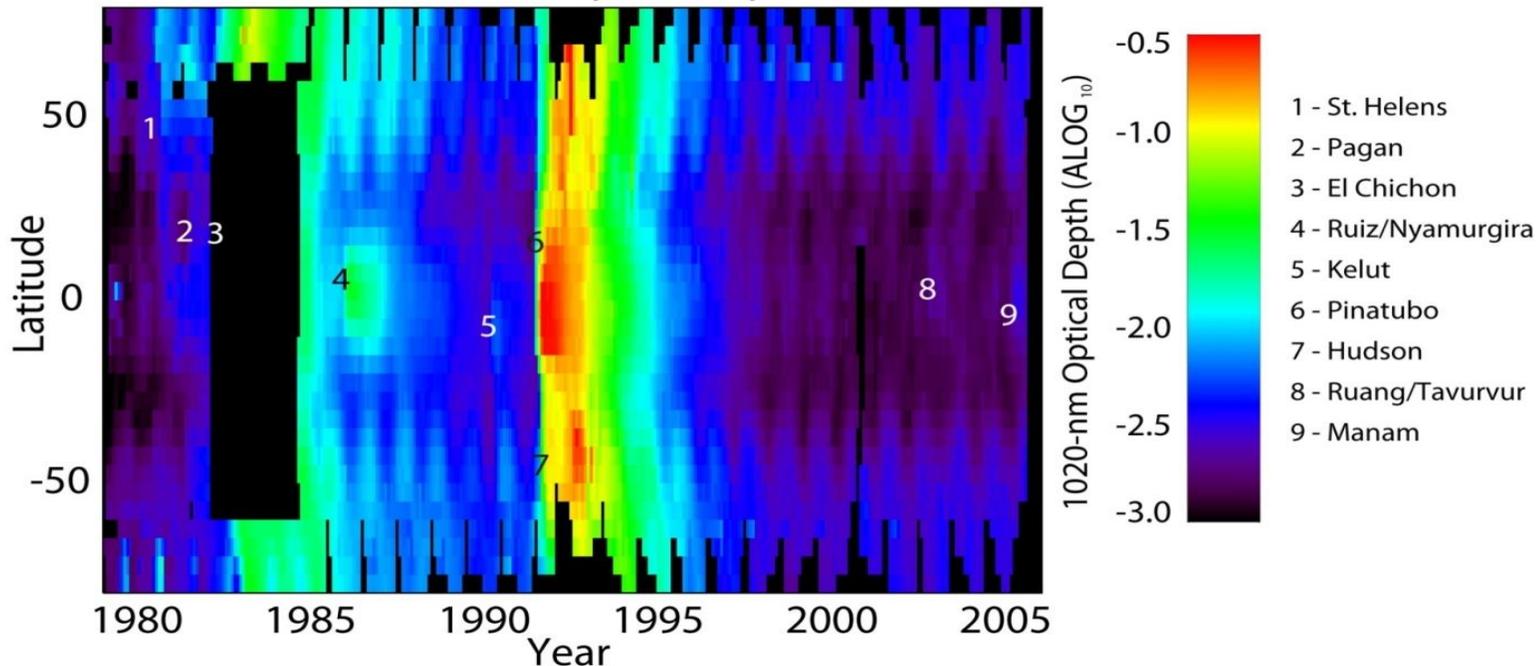
Stratospheric Aerosol & Gas Experiment SAGE III

SAGE III/ISS will measure high resolution vertical profiles of key components of the atmosphere to enhance understanding of their roles in climate and the impact of human activity.

SAGE III will address:

- Is stratospheric ozone recovering as predicted?
- How are stratospheric aerosols changing climate?

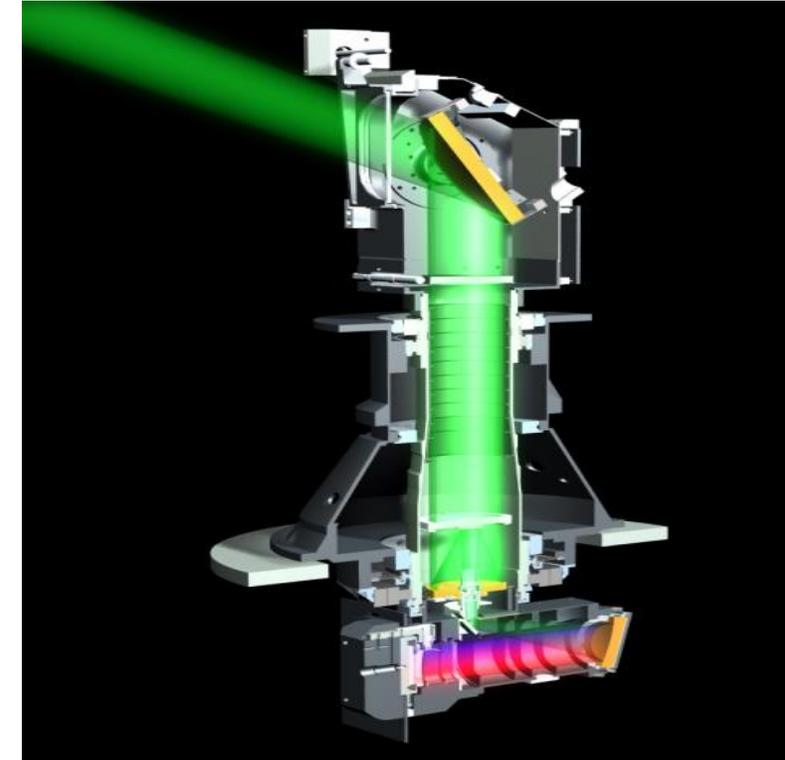
SAGE 1000-nm Optical Depth





SAGE III/ISS Activities

- SAGE III International Space Station mission
 - Launch in 2016
- Contractors will support the following:
 - Flight Mission Support Center Operations
 - Data Production:
 - Algorithm refinement and testing
 - Acquisition of level 0 and auxiliary data (e.g., definitive orbit, T/p)
 - Transition SAGE III data to ASDC
 - Maintain compatibility with SAGE II and SAGE III/METEOR

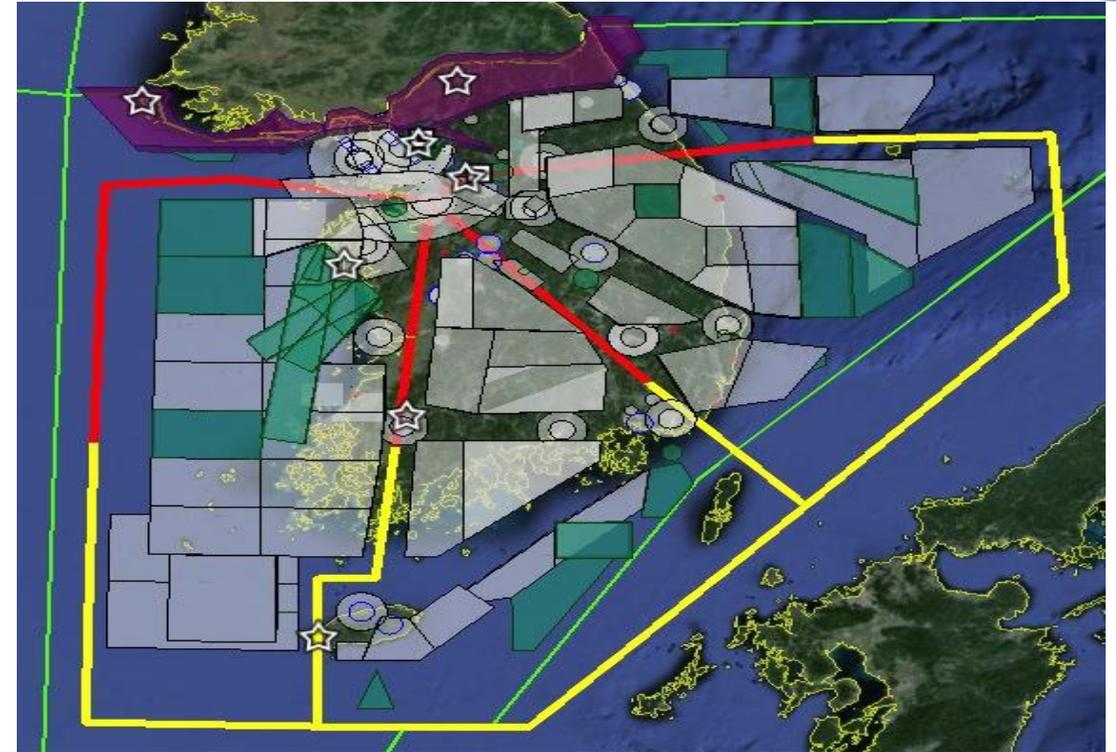
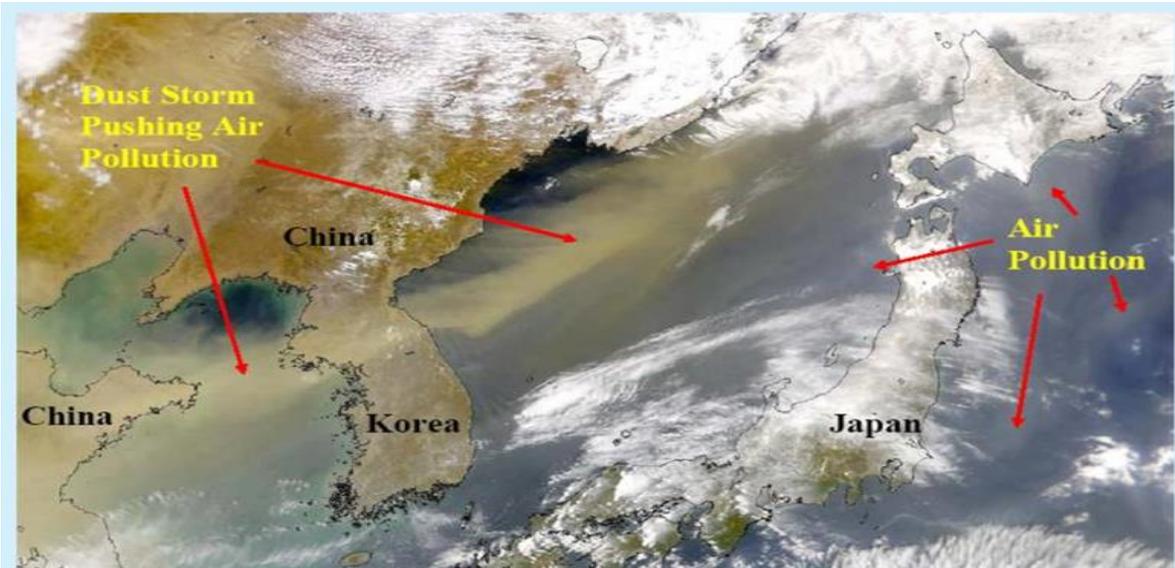


What:

- A co-operative intensive airborne, ground, and satellite field study being planned for a 6-week period within April-June 2016
- Focus on Korean peninsula and adjacent waters

Components:

- NASA DC-8 flying laboratory
- Korean partner aircraft
- Ground sites including the Korean Air Quality network and research supersites



Notional flight planning map illustrating the feasibility of conducting intensive airborne air quality surveys in Korea

Participants:

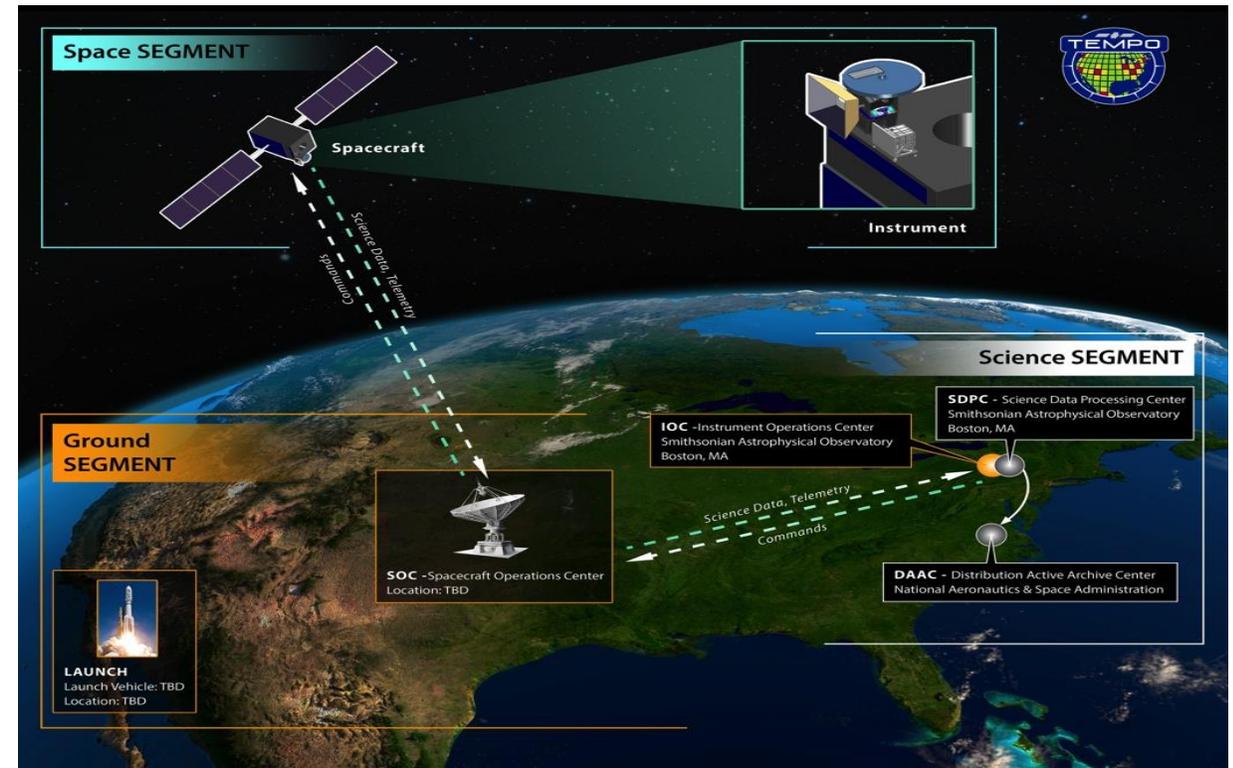
- Korea Ministry of Environment, National Institute of Environmental Research, and Universities
- US NASA, NCAR, Universities, and possible other government agencies



NASA Langley Research Center

Tropospheric Emissions: Monitoring of Pollution (TEMPO)

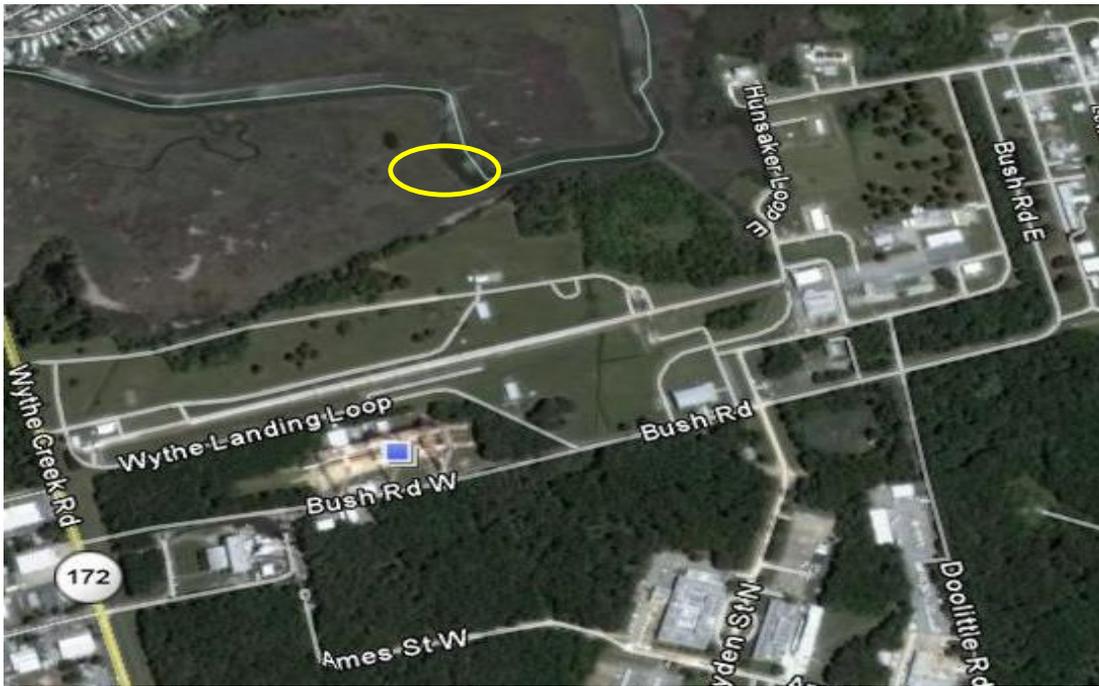
- TEMPO is the first Instrument from NASA's Earth Venture Class Series
- The mission will measure pollution in North America, from Mexico City to the Canadian tar/oil sands, and from the Atlantic to the Pacific, hourly and at high spatial resolution
- TEMPO observations are from the geostationary vantage point, **flying on a geostationary host spacecraft** with the goal to launch in 2019





NASA Langley Research Center

Atmospheric Composition: Lower Troposphere



Pandora

Chemistry and Physics Atmospheric Boundary Layer Experiment (CAPABLE) supersite established at NASA LaRC

Ultimate goal is to permanently support a broad range of science, including satellite, ground-based and airborne instrument development, testing and validation

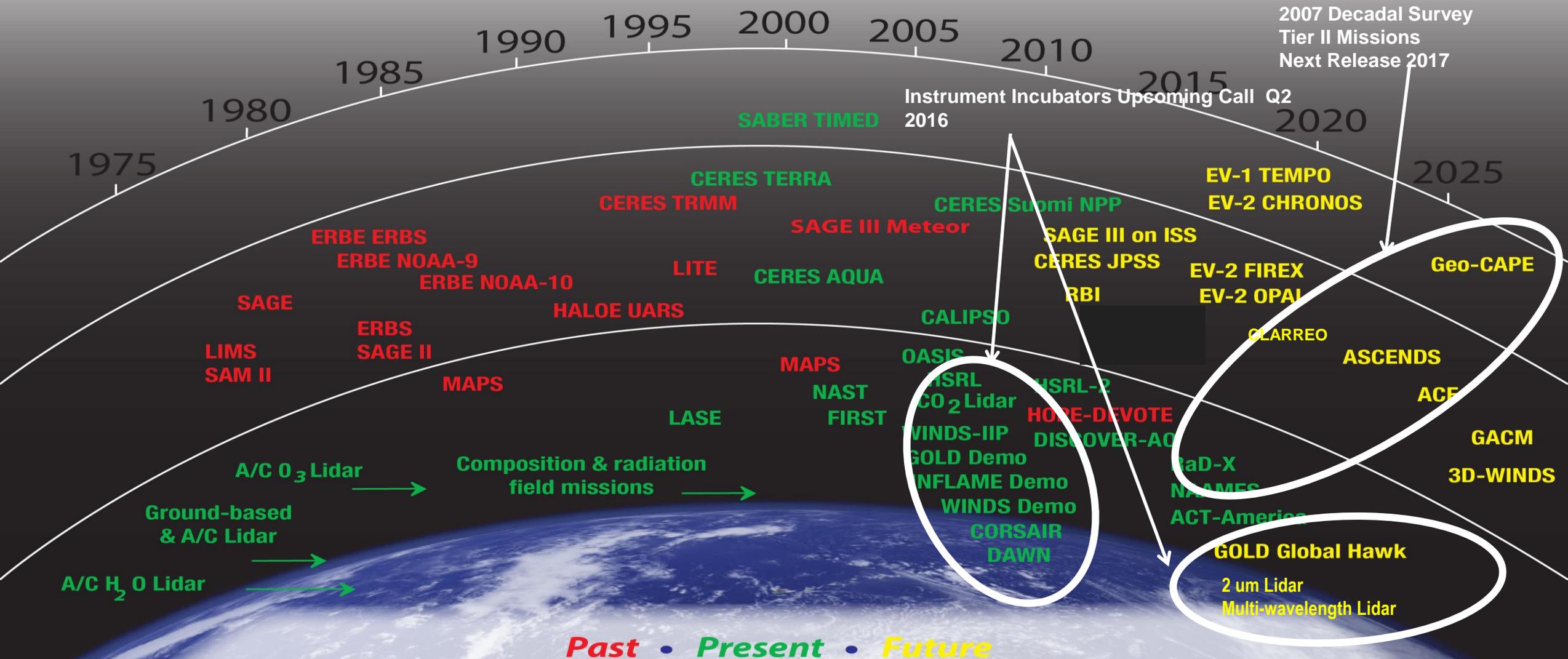


NASA Langley Research Center

New Business Opportunities

Rosemary R. Baize, Associate Director for Advanced Planning and Technology

Atmospheric Sensing at NASA Langley Research Center

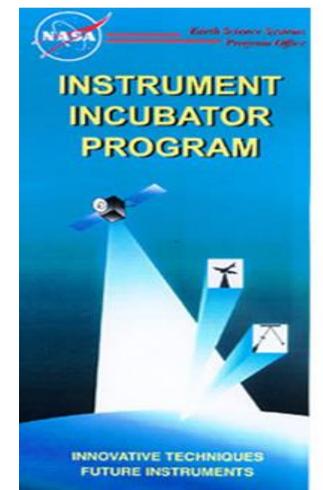
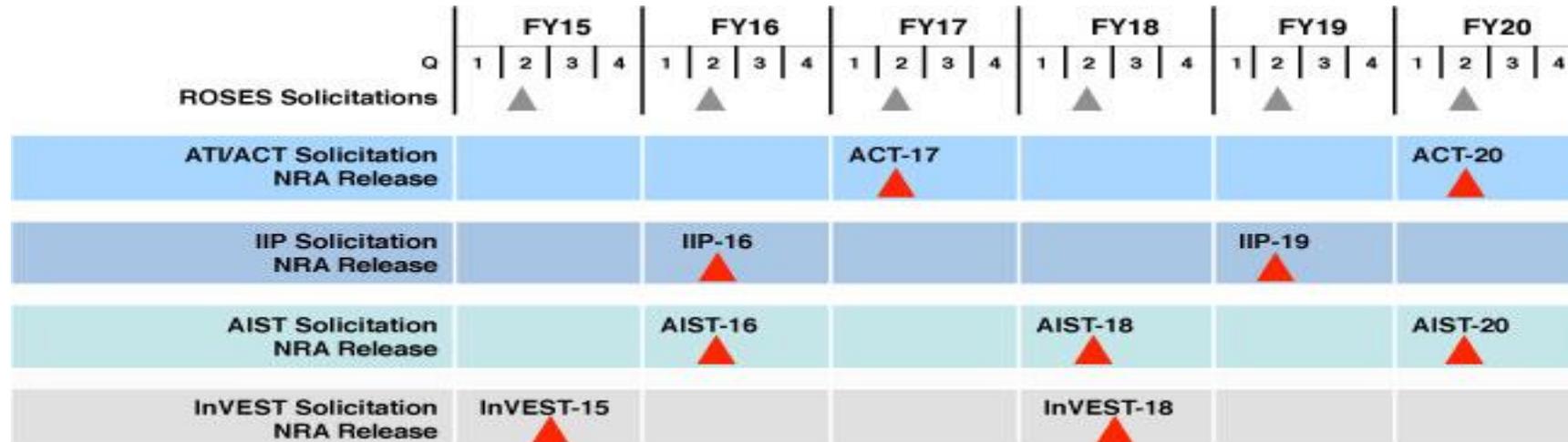


Langley has developed a significant portion of NASA's spaceflight atmospheric research instruments.



Instrument Incubator Strategy

- New and innovative technologies will lead to future flight instruments that are smaller, less resource intensive, less costly, and require less build time.
 - Instrument Incubator Program technologies enter with a Technology Readiness Level (TRL) of 3 and exit with a TRL of 5.
- NASA Research Announcements (NRAs) are conducted regularly to ensure that a steady stream of instrument technologies is available for future measurement needs.



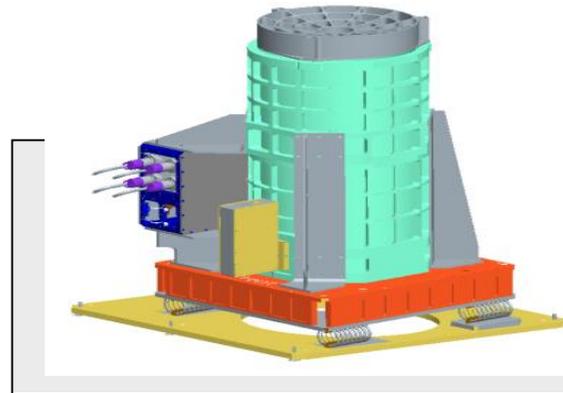
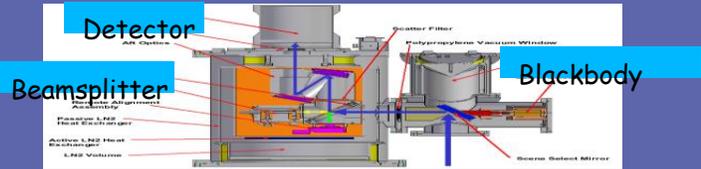
* Proposal development activities



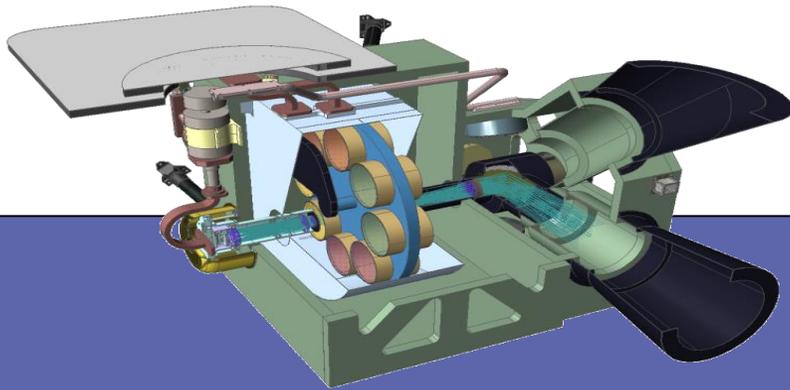
NASA Langley Research Center

Instrument Incubator

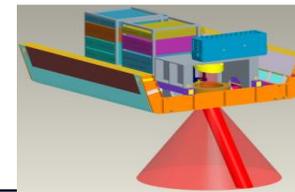
CORSAIR: Calibrated Observations of Radiance Spectra from the Atmosphere in the far-InfraRed



Mobile and Airborne 2µm IPDA LIDAR system



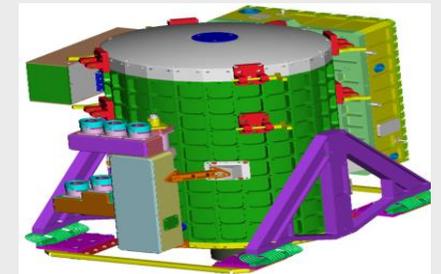
Infrared Correlation Radiometer for GEO-CAPE



DAWN AIR II Flight demonstration

- First flight demonstration of an airborne 2 micron wind lidar system
- Science campaign for measuring hurricane dynamics

Compact O₃ DIAL & HSRL Lidar

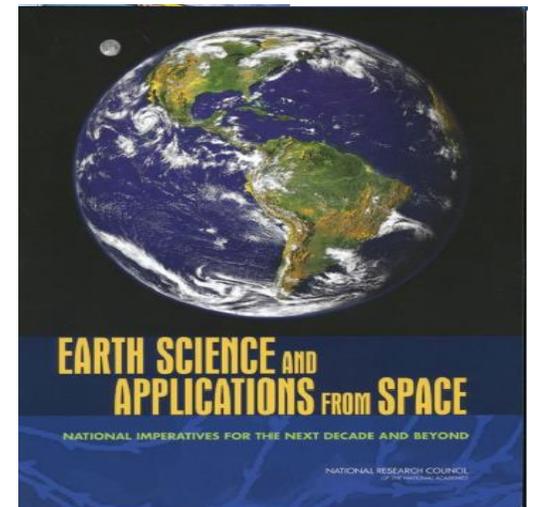


* Instrument design and development, flight demonstration, data analysis



NRC Earth Science Decadal Survey

- Provides a comprehensive survey of all Earth sciences that could benefit from space borne observations
- The 10-year anniversary of the first Decadal Survey (DS) is in 2017
- A Statement of Task (SOT) for the next DS has been negotiated with NAS/NRC space studies board.
- The principal sponsors of the survey are anticipated to be NASA, NOAA, and the USGS.
- Elements of SOT:
 - Assess scientific progress since first Survey
 - (balance of science and applications)
 - Assess gaps and opportunities
 - Prioritize measurements for key science “targets”
 - (open up the scope of missions), plus suggested instruments
 - Fit within ESD realistic budget scenarios





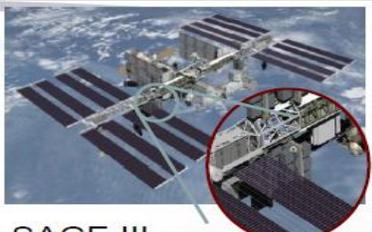
Decadal Survey Missions

DS Mission	Mission Description	Orbit	Instruments	Estimated Cost/Status
TIER 1 - Timeframe 2010 – 2013, Missions listed by cost				
CLARREO (NASA Portion)	Solar and Earth radiation: spectrally resolved forcing and response of the climate system	LEO, Precessing	Absolute, spectrally-resolved interferometer	Est. \$200M Pre-Formulation – Pathfinder \$76M
SMAP	Soil moisture and freeze/thaw for weather and water cycle processes	LEO, SSO	L-band radar L-band radiometer	Est. \$300M Approved LRD 2014 - \$914M
ICESat-II	Ice sheet height changes for climate change diagnosis	LEO, Non-SSO	Laser altimeter	Est. \$300M Approved LRD 2016 - \$860M
DESDynI	Surface and ice sheet deformation for understanding natural hazards and climate; vegetation structure for ecosystem health	LEO, SSO	L-band InSAR (NiSAR) Laser-altimeter-(EV GEDI)	Est. \$700M Approved LRD 2021 (\$TBD)
TIER 2 - Timeframe: 2013 – 2016, Missions listed by cost				
HypIRI	Land surface composition for agriculture and mineral characterization; vegetation types for ecosystem health	LEO, SSO	Hyperspectral spectrometer	Est. \$300M Pre-formulation (EV Ecostress \$30M)
ASCENDS	Day/night, all-latitude, all-season CO ₂ column integrals for climate emissions	LEO, SSO	Multifrequency laser	Est. \$400M Pre-formulation
SWOT	Ocean, lake, and river water levels for ocean and inland water dynamics	LEO, SSO	Ka-band wide swath radar C-band radar	Est. \$450M Approved LRD 2020 \$642-\$752M
GEO-CAPE	Atmospheric gas columns for air quality forecasts; ocean color for coastal ecosystem health and climate emissions	GEO	High and low spatial resolution hyperspectral imagers	Est. \$550M Pre-Formulation (EV TEMPO \$94M)
ACE	Aerosol and cloud profiles for climate and water cycle; ocean color for open ocean biogeochemistry	LEO, SSO	Backscatter lidar Multiangle polarimeter Doppler radar	Est. \$800M Pre-formulation (PACE Approved \$805M)

NASA Earth Science Missions

Current & Planned

- Formulation
- Implementation
- Primary Ops
- Extended Ops



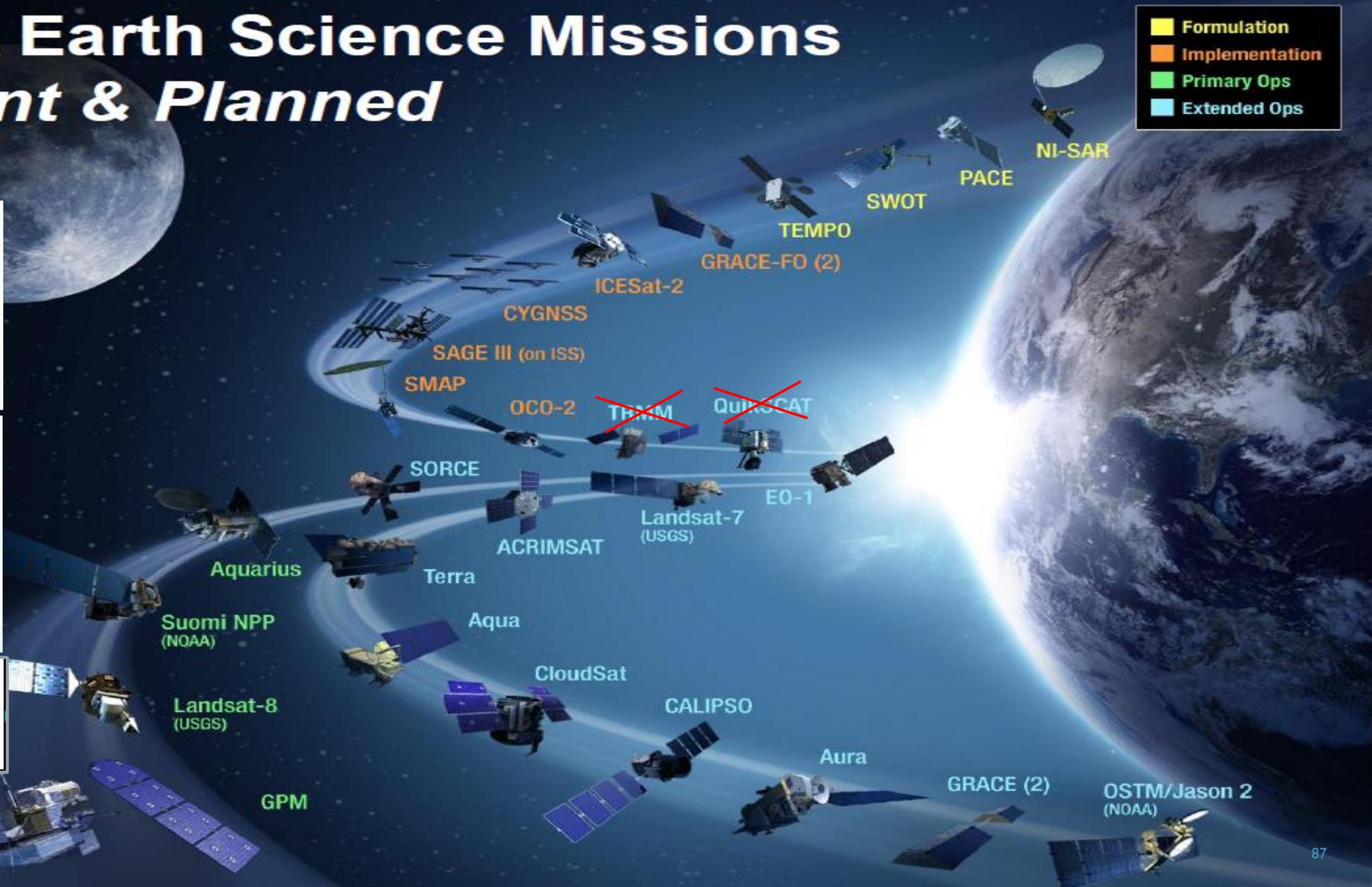
SAGE III
Mar 2015; on ISS
Ozone & Trace Gases



TEMPO
2019
Hosted Payload:
Tropospheric
pollution

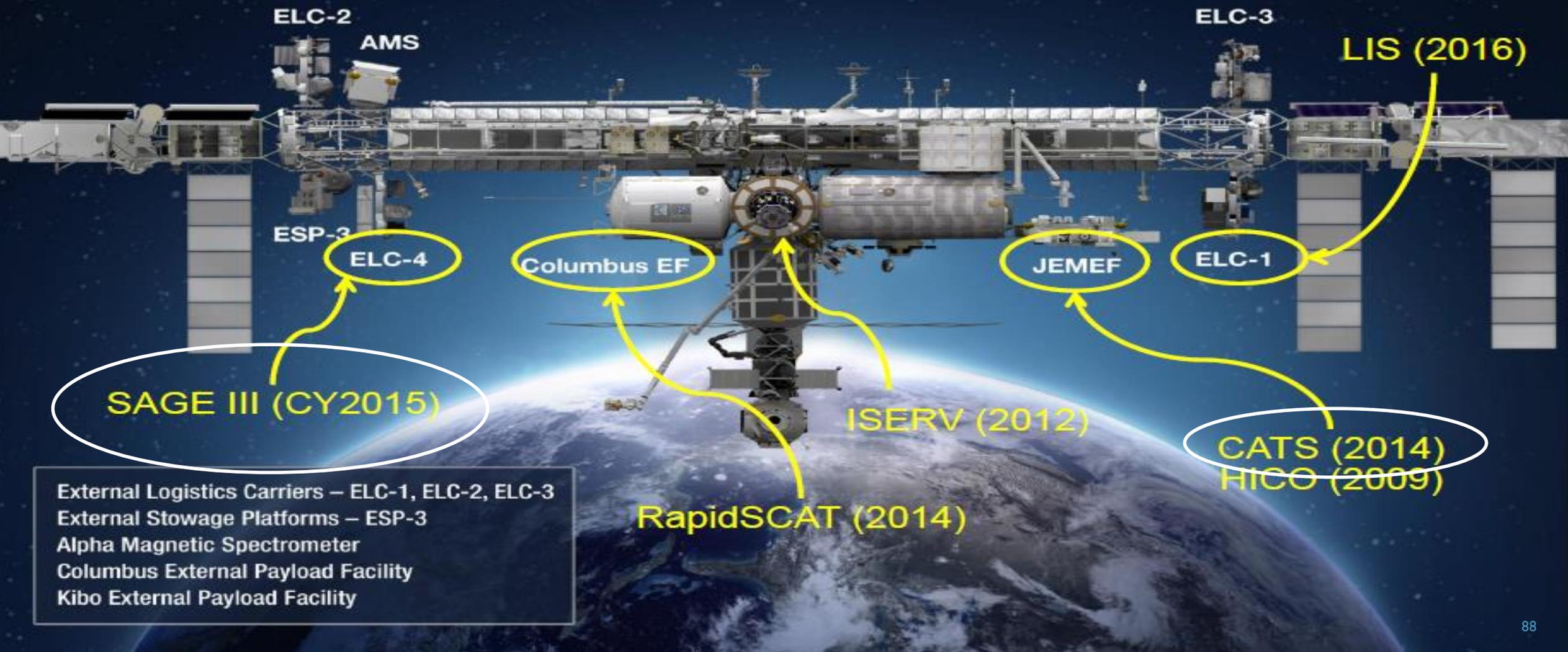


VENTURE-CLASS



International Space Station

Earth Science Instruments





ESSP Venture Class Opportunities

- Science-driven, PI-led, competitively selected, cost- and schedule-constrained, regularly solicited, orbital and suborbital opportunities
- Venture class investigations complement the systematic (directed) missions identified in the Decadal Survey and provide flexibility to accommodate scientific advances and new implementation approaches.

Venture-class is *complementary* to systematic missions; no single Venture mission is essential for overall program success



Types of Venture Class Opportunities

- **EV Instrument (EV-I)** – Spaceborne instruments for flight on Missions of Opportunity (< 5 years development); Class C or Class D allowable, cost capped at \$94M/\$30M for development and operations; solicited in FY 12 and FY 15 and **every 15-18 months**
- **EV Mission (EV-M)** – Small complete mission (5 years to launch); Class D allowable; small-sat or stand-alone payload; cost capped at \$150M; solicited in FY 11 and FY 15 (every 4 years)
- **EV Suborbital (EV-S)** – Suborbital/airborne investigations (5 years in duration); multiple selections per solicitation; cost capped at \$150M total per solicitation (\$30M x 5); solicited in 2009 and 2013 (every 4 years)

Solicitation Schedule

EV-S
Sustained sub-orbital/
Airborne
investigations
(~\$30M Each)

EV-I
Full function
instruments for
Mission of Opportunity
(~\$94M)

EV-M
Complete, self-
contained, small
mission
(~\$150M)

Mission	Mission Type	Release Date	Selection Date	Major Milestone
EV-I, aka EVS-I	Suborbital	2009	2010	Complete 2015
EVM-I, CYGNSS	Full Orbital	2011	2012	Launch ~2017
EVI-I, TEMPO	Instrument Only	2011	2012	Delivery in 2017
EVI-2, ECOSTRESS, GEDI	Instrument Only	2013	2014	Delivery NLT 2019
EVS-2	Suborbital	2013	2014	Complete 2019
EVI-3	Instrument Only	Jan. 2015	2016	Delivery NLT 2021
EVM-2	Full Orbital	May 2015	2016	Launch ~2021
EVI-4	Instrument Only	2016	2017	Delivery NLT 2022
EVI-5	Instrument Only	2017	2019	Delivery NLT 2024



Langley Science Strategic Thrusts

1. **Capture next flight instrument/mission** (ROI 1-4 yrs.)
 - Respond to Earth Science Venture Class solicitations
 - Pursue possible lidar mission opportunity with CNES
 - Continue CLARREO/ACE/ASCENDS/GEO-CAPE mission pre-formulation
 - Partner on Planetary Science New Frontiers mission

2. **Expand use of alternative, affordable platforms** (ROI 4-8 yrs.)
 - High altitude, long endurance autonomous aircraft
 - Small sats
 - Commercial space opportunities for technology demonstration

3. **Advance development/use of smaller, smarter sensors** (ROI 10-20 yrs.)
 - Alternative platforms, distributed remote sensing, crowd-sourced measurement



Recent Activities (Capture Next Mission)

- Langley was extremely successful on the Venture Class Suborbital selections
 - Langley is leading 2 and participating in 2 new airborne field missions
 - Planning is well underway and staffing has been (mostly) addressed
 - Center investments in laser/lidar and B&P helped enable this success
 - These airborne projects will help demonstrate our science / technology readiness for future space-based missions (ACE, ASCENDS)
- A CLARREO Pathfinder technology demonstration mission is in the President's FY16 budget
 - \$75M over 4 years to place 2 instruments on the ISS
 - Langley will lead this effort
 - Working with GSFC, University of Wisconsin, University of Colorado (LASP) on initial planning



NASA Langley Research Center

Procurement Overview

Tameka Woodley, Austin Rentschler & Teresa Hass, Office of Procurement



Activities to Date:

- Initial Sources Sought Notice released to industry on November 14, 2014
 - Included a detailed description of need and the current STARSS II Statement of Work (SOW)
 - Requested capability statements be provided
- Pre-Solicitation Notice posted on May 28, 2015
- Draft RFP posted on June 4, 2015
- Pre-Solicitation Conference on June 23, 2015



Important Notice:

- Any procurement updates will be posted via NAIS/FEDBIZOPPS websites
 - Offerors are responsible for monitoring these sites for the release of the solicitation and any amendments
 - Potential Offerors are responsible for downloading their own copy of the solicitation and any amendments



Reference Documents

- Bidder's Resource File (link provided with DRFP)
 - Includes non-publicly-available documents
 - Publicly available documents are not included in Bidder's Resource File



Procurement Overview

- This procurement is a re-competition of the Science, Technology, and Research Support Services (STARSS) contract
- Small Business Set-Aside
 - North American Industrial Classification System (NAICS) Code 541712, “Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)”
 - Size Standard of 1,000 employees or less
 - NASA LaRC Small Business Representative, Mr. Randy Manning, randy.a.manning@nasa.gov



- Contract Structure
 - Contract Line Item Numbers (CLINs)
 - CLIN 1 – Phase-in - Firm Fixed Price (FFP)
 - CLIN 2 – Core Work - Cost Plus Fixed Fee (CPFF)
 - CLIN 3 – IDIQ (CPFF) - Maximum Value of \$60M
- Section B – Supplies and Services
 - Technical Direction Notices (TDNs) will be issued for the core work requirements under CLIN 2
 - Task Orders may be issued for additional work within the general scope of the contract under CLIN 3



Section E – Inspection and Acceptance

- Higher-Level Contract Quality Requirements
 - Contractor must comply with higher-level quality standards:
 - ISO 9001 Quality Management Systems Requirements – **certification required at the time of proposal submission.**
 - Capability Maturity Model – Integration (CMMI®) for Development Capability Level 2 or higher for each entity [Prime and/or subcontractor(s)] that will be engaged in software engineering requiring CMMI DEV-CMMI Level 2. **Offerors shall provide a copy of the rating at the time of proposal submission.**
 - Contractor must maintain compliance throughout contract performance.



Section F – Deliveries or Performance

- 5 Year Period of Performance
- Delivery Requirements
 - Contract deliverables contained in Draft RFP Exhibit B
 - Specific work deliverables identified in each TDN and Task Order
- Place of Performance
 - NASA LaRC
 - Contractor's facility
 - Subcontractor's facilities
 - Other sites as specified by each TDN and Task Order



Section G – Contract Administration Data

- All interim and final cost vouchers shall be submitted electronically using the DOD Wide Area Work Flow (WAWF) system
 - To access the DOD WAWF system, the contractor shall be required to have a designated electronic business point of contact in the System for Award Management at <https://www.acquisition.gov> and be registered to use the DOD WAWF at <https://wawf.eb.mil>
- All fee vouchers shall be prepared using an SF 1034 and submitted electronically to NSSC-AccountsPayable@nasa.gov



Section H – Special Contract Requirements

- Organizational Conflicts of Interest (OCIs) (**Plan due with proposal**) – Due to the nature of services, the Contractor may encounter OCIs such as:
 - **Impaired Objectivity** - the contractor will be required to use its subjective judgment and may have a financial interest in the outcome of performance. The contractor may provide assessment/evaluation findings of the work/proposals/performance of itself or others.
 - **Biased Ground Rules** - the contractor may influence requirements definition for future competitions. The contractor may participate in the development of requirements/specifications to be incorporated into future solicitations.
 - **Unequal Access to Information** - the contractor may have access to nonpublic information and proprietary information that could provide an unfair competitive advantage in a later competition for another contract.



Section H – Special Contract Requirements (cont.)

- Organizational and Personal Conflicts of Interest
 - DRFP Section H.6 describes the potential for OCIs and Personal Conflicts of Interest (PCIs) that may arise and details contractor requirements for avoiding, neutralizing, and mitigating such conflicts
- Off-Site Facility:
 - The Offerors shall provide an off-site facility to house all personnel not residing at NASA Langley and all associated GFP.
 - The Offeror shall comply with the IT Security requirements for the off-site facility.
 - The labor categories of the off-site personnel will be determined by the work requirements and on-site space availability.



Section H – Special Contract Requirements (cont.)

- Key Contract Terms and Conditions
 - NFS 1852.209-71, Limitation of Future Contracting
 - LaRC 52.237-72, Access to Sensitive Information
 - LaRC 52.237-73, Release of Sensitive Information
 - LaRC 52.204-91, Security Program/Foreign National Employee Access Requirements
 - LaRC 52.204-92, Requirements for Access to NASA Langley Research Center
 - LaRC 52.211-104, Observation of Regulations and Identification of Contractor's Employees
 - LaRC 1852.242-72, Observation of Legal Holidays



Section K – Representations and Instructions

- Ensure an active record in the System for Award Management (SAM) database (sam.gov)
- Complete all representations and certifications

■ Section L - Instructions and Notices to Offerors

- Offerors are highly encouraged to perform a thorough review of the instructions, conditions, and notices
- Offerors are responsible for reviewing the final RFP and complying with all instructions, conditions, and notices
- Do not rely on this presentation or the Draft RFP; and do not make assumptions based on past solicitations
- This presentation does not cover all proposal submission requirements



- Section L - Instructions and Notices to Offerors (cont.)
 - Three proposal volumes
 - **Technical**
 - Review submittal requirements for each Subfactor
 - Subfactor 1 - Management and Staffing Approach
 - Subfactor 2 - Understanding the Requirement and Technical Approach (URTA)
 - **Business**
 - **Past Performance**



FACTOR 1 - MISSION SUITABILITY

The Offeror shall identify and discuss 5 of the most significant programmatic risks for each subfactor and the approach to avoid, neutralize or mitigate such risks, during contract performance as set forth in NFS 1815.305, Proposal evaluation.

In responding to the Mission Suitability subfactors, the Offeror shall clearly identify any efforts expected to be performed by a subcontractor.

Subfactor 1 - Management and Staffing Approach

Staffing and Management

The Offeror shall describe its approach to recruitment and retention to assure that highly qualified professional employees are attracted and retained, including:

- Recruiting, hiring and retaining incumbent personnel to staff the contract core CLIN for the following key labor categories: Research Scientists, Engineers, Programmers, Computer Scientists, and Project Managers/Project Planners.



Staffing and Management (cont.)

- Recruitment and retention of non-incumbent personnel to staff the contract core CLIN for the following key labor categories: Research Scientists, Engineers, Programmers, Computer Scientists, and Project Managers/Project Planners.
- Quickly and efficiently respond to surging workload requirements resulting from changing missions and requirements including the approach to identifying and recruiting subject matter experts for urgent missions or new Task Orders.
- The Offeror shall submit a total compensation plan that demonstrates the ability to attract and retain highly qualified professional employees. The plan shall be compliant with FAR 52.222-46, Evaluation of Compensation for Professional Employees, and NFS 1852.231- 71, Determination of Compensation Reasonableness. The Offeror shall include total compensation plans for significant subcontractors.

The Offeror shall describe its approach for efficiently and effectively managing fluctuating contract requirements including day-to-day management across the core effort and management of Task Orders. The Offeror shall provide a functional chart and narrative that maps what work the prime and each subcontractor is proposed to perform for each Statement of Work area.



Organizational Conflicts of Interest (OCI), and Personal Conflicts of Interest (PCI) Avoidance Plan

- The Offeror shall provide a plan for complying with the requirements of LaRC 52.237-72, Access to Sensitive Information, Section H.6, Organizational and Personal Conflicts of Interest and Section H.7, Limitation of Future Contracting. The Offeror shall explain its approach to identifying, mitigating, neutralizing, and/or avoiding OCIs and PCIs that may arise under this contract. The Offeror shall include, at a minimum:
 - An assessment of the potential risk for various types of OCIs and PCIs that work under this contract may engender given the Offeror's current work (including subcontracts), and approach to performing work under this contract;
 - The Offeror's process for identifying OCIs and PCIs, including the Offeror's coordination with each of its parent, subsidiaries, affiliates, office locations, divisions and/or other similar entities (collectively, the "Business Units") to determine whether conflicts currently exist;



Organizational Conflicts of Interest (OCI), and Personal Conflicts of Interest (PCI) Avoidance Plan (cont.)

- Approach for maintaining communication with each Business Unit during the performance of this contract to identify potential OCIs and PCIs arising during such performance period;
- Approach to training and refresher training for its employees in identifying OCIs and PCIs to include what actions employees are expected to take when potential PCIs and OCIs are identified by an employee,
- Once identified, the methods the Offeror will utilize to mitigate the various types of OCIs and PCIs;
- Approach for ensuring the processes and procedures included herein will be applied to each of its subcontractors, subcontractor employees, and/or consultants (including their respective Business Units) and, if applicable.



Subfactor 2 - Understanding the Requirement and Technical Approach

The Offeror's proposal shall include a description of its approach to the following, including:

- Performing SOW section 4.7, Atmospheric Science Data Center, at the staffing levels established for this SOW area within the solicitation staffing plan, and its approach to identifying, adopting and adapting to emerging technologies.
- Knowledge capture and retention of expertise to sustain long-term expertise in key technical areas of instrument design, measurement, algorithm development and data analysis for long term missions that are greater than 5 years.
- New business and proposal development techniques to facilitate LaRC in capturing new Science Mission Directorate work spanning Earth Science, Heliophysics, and Planetary missions.
- Collaboration, participation, or teaming with international partners on (1) mission operations, (2) programs and missions supporting Earth and planetary atmospheric science and associated research and technology, including programs and mission involving NASA's foreign counterparts (e.g. ESA, JAXA, CNES).



Volume	Proposal Section	Page Limit
1	Technical Proposal	30 pages
	Organizational Conflicts of Interest (OCI) and Personal Conflicts of Interest (PCI) Plan	15 pages
	Total Compensation Plan	5 pages for the prime and 5 pages for each significant subcontractor
2	Business Proposal	None
	Responsibility Determination Documents	None
	Contract Offer	None
3	Past Performance Proposal	20 pages for the prime and 10 pages for each significant subcontractor



Section L - Instructions and Notices to Offerors (cont.)

- **Business Proposal Volume (Provision L.15)**
 - Completion of Attachment 1, Cost Forms
 - Cost instruction presentation to follow
 - Significant subcontractor - a subcontractor is significant if expected to exceed \$15M (See DRFP Provision L.6)
 - Must comply with cost/pricing instructions and complete Attachment 1, Cost Forms
 - Subcontractors may submit proprietary information directly to NASA and submissions must be timely



Section L - Instructions and Notices to Offerors (cont.)

- **Past Performance Volume** (Provision L.17)
 - Provide a list of the three most relevant contracts that the Offeror, as well as significant subcontractors, has held within the last 3 years that are similar in size (in dollars per year), content, and complexity
- **Past Performance Questionnaire – RFP Attachment 6**
 - Provide the questionnaire to three customers of the Offeror and each significant subcontractor for whom it has performed services in the past 3 years and that are similar in size (in dollars per year), content and complexity
 - Request customers return by the timeframe specified in L.13 (b)
- **Independent Past Performance Information**



Reminders:

- Assure proposal contains all necessary information, required documentation, and is complete in all aspects. The evaluation will be based upon actual material presented and not on the basis of what may be implied.
- Ensure that the cost/price proposal is consistent with the technical proposal in all aspects since the cost/price proposal may be used as an aid to determine the Offeror's understanding of the technical requirements. Discrepancies may be viewed as a lack of understanding.
- Page limitations, font size and other Section L Instructions are firm, and thus any requests to deviate from them may not be considered.
- NASA may reject any proposal that fails to comply with all proposal instructions.



STARSS III Source Evaluation Board (SEB)

Source Selection Authority (SSA) - Clayton P. Turner

Contracting Officer (CO) - Teresa M. Hass

SEB Voting Members:

Name	Position	Organization
T. Duncan Fairlie	Chairman	Science Directorate (SD)
Erica Alston	Member	SD
Ali Omar	Member	SD
Tameka Woodley	Member	Office of Procurement



Section M – Evaluation Factors for Award

- Conducted in accordance with FAR 15.3 and NFS 1815.3 Source Selection Procedures
- Evaluation Factors
 - Mission Suitability (point scored per NFS 1815.304-70)
 - Cost
 - Past Performance (adjectival rating per NFS 1815.305)
- Anticipate award on initial offers, but the Government reserves the right to hold discussions with Offerors



Section M – Evaluation Factors for Award (cont.)

- The Government will award a contract to the responsible Offeror whose proposal provides the best solution to the solicitation and the best value to the Government, all factors considered
- Mission Suitability, Cost, and Past Performance will be of approximately equal importance
- All evaluation factors other than Cost, when combined, are significantly more important than Cost



Section M – Evaluation Factors for Award (cont.)

- Factor 1 – Mission Suitability

No.	Sub-Factor	Weight
1	Management and Staffing Approach	650
2	Understanding the Requirement and Technical Approach (URTA)	350
	Total	1,000



Procurement Schedule

Procurement Schedule	Date
Draft RFP Questions Due	June 29, 2015
RFP Release	July 7, 2015
Past Performance Proposal <u>Requested</u>	July 21, 2015
Proposal Due	August 6, 2015
Award	March 1, 2016
Contract Effective Date	May 1, 2016



- Check web sites periodically for pertinent information
- Since the DRFP has been released, request all communications and inquiries be directed to Tameka Woodley
- **As previously stated, the final RFP, including any amendments, will govern. Do not rely on the Draft RFP or this presentation**



Factor 2 – Cost / Price

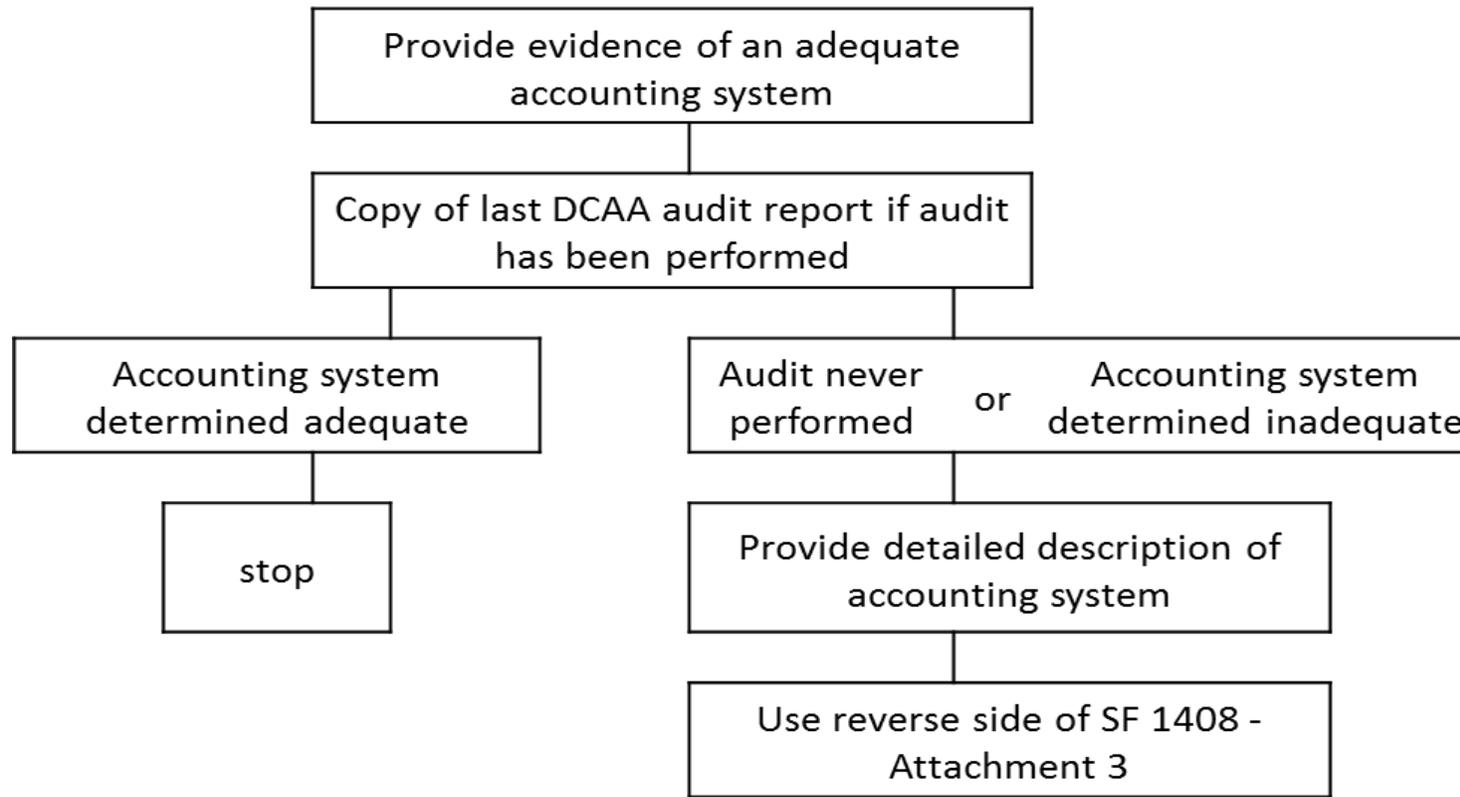
Austin Rentschler



- Adequate accounting system:
 - Accurately collecting, segregating and recording costs by contract, by individual Task Order and by CLIN
 - Excluding unallowable costs
 - Meeting the requirements contained in FAR 52.216-7, Allowable Cost and Payment
 - See reverse side of SF 1408, Attachment 3, for more specific requirements



Accounting System (continued)





- **Form 1 – Total Price Summary**
 - Completely self-calculating / populated
 - Offerors shall propose the IDIQ, CLIN 3, plug numbers listed in Form 1: \$12M per year
- **Form 2 – CLINs 1 & 2 Price Summary(ies)**
 - Phase-In [CLIN 1]
 - Core effort [CLIN 2]
 - Offerors shall propose the ODC amounts listed in Form 2: \$1.5M per year. This is for material, equipment, and travel, **but does not include off-site facility costs**
- **Form 3 – Labor Categories, WYEs, & Average Direct Labor Rates**
 - Offerors shall propose the labor categories and WYEs listed in Form 3.
 - Sum total of all proposed WYEs by category, year, and in total, shall equal the WYEs listed in Form 3 (i.e. Offeror plus all subcontract hours).



Cost / Price Forms (continued)

- **Form 4 – *Subcontractors / Consultants***
 - This form is for proposed subcontractors / consultants performing direct labor under CLIN 2.
- **Form 5 – *Status of Business Systems***
 - Provide the status of system(s) such as accounting, estimating, purchasing, billing, compensation, and budgeting.
- **Form 6 – *Verification of Limitations on Subcontracting***
 - Completely self-calculating. Offerors shall not make changes to this Form.
 - At least 50% of the cost of contract performance shall be proposed for the [prime] Offeror.
 - Calculated based on burdened labor cost excluding profit / fee.
 - Cell B20 must be $\geq 50\%$
 - Proposal will not be considered for award if this requirement is not met.



- Significant sub > \$15M
- Cost proposal is required from each significant sub.
 - Subcontract cost proposal shall comply with all instructions in Sec. L.16, except for the following:
 - Subs shall not propose the IDIQ amounts listed in Form 1 [\$12M per year].
 - Subs shall not propose the ODC amounts listed in Form 2 [\$1.5M per year].
 - Subs shall not complete Form 6, Verification of Limitations on Subcontracting.



- Show the impact of this contract on the proposed indirect rates (i.e. the impact on the forecasted indirect bases and pools).
- Forecasted rates should be based on the total proposed price for CLINs 1 and 2, not the IDIQ maximum specified in Section B.
- If indirect rates have not been reviewed within the last 12 months, provide:
 - Cost history for the last three years, including the actual indirect cost pools and application base amounts for the larger indirect pools (e.g. overhead, fringe benefits, and G&A). Provide a detailed breakdown by cost element of the indirect cost pools and bases.



NASA Langley Research Center

Pre-Submitted Questions and Answers Updates to DRFP

Teresa M. Hass, Contracting Officer



Q1: Consider rewording the Special Standard of Responsibility in a manner similar to previous RFPs (i.e., STARSS I, STARSS II, and TEAMS 2) to allow Offerors who are fully ISO 9001 compliant but not yet “Certified/Registered” to “develop quality system procedures and associated documentation and obtain ISO 9001 Certification/Registration within nine months after the contract effective date.” The ISO 9001 certification requirement, as it is written now, limits small business competition as proposals submitted by any companies who are fully ISO 9001 Compliant, but not certified/registered, “will not be considered” and we request that the STARSS III RFP contain language consistent with that found in STARSS I, STARSS II, and TEAMS 2.

A1: The Government considered the ISO 9001 certification during the development of the acquisition strategy and determined that this procurement requires ISO 9001 certification upon receipt of proposals due to the type of work on the contract. The ISO 9001 quality management system requirement has existed for a sufficient period of time such that that companies performing ISO 9001 work on Center at NASA LaRC, are required to be certified.



Q2: We request clarification of the CMMI Level 2 requirements stated in the DRFP. Our interpretation of the CMMI-related wording in the STARSS III DRFP is that only those companies on a team that will actually perform software engineering and processing must be CMMI Level 2 at the time of award. Thus, in a scenario where all software engineering is performed by the major subcontractors, only those subcontractors, and not the Prime, would be required to be at CMMI Level 2 or above.

A2: In accordance with H.13, **CAPABILITY MATURITY MODEL INTEGRATION (CMMI) REQUIREMENTS (LaRC 52.246.105) (MAR 2012)**, the Contractor (including subcontractors) that will be performing software engineering shall have a non-expired rating at CMMI for Development (CMMI-DEV) Maturity Level 2 or higher for software, or Capability Level 2 or higher as measured by a Software Engineering Institute (SEI) authorized lead appraiser from an external organization.

The Offeror shall provide proof of a current CMMI for Development Capability Level 2 rating or higher for each entity [Prime and/or subcontractor(s)] that will be engaged in software engineering requiring CMMI DEV-CMMI Level 2. **Offerors shall provide a copy of the rating at the time of proposal submission.**



Q3: Reference DFRP cover page 2, paragraph “b.” which indicates that Offerors are encouraged to provide evidence of compliance with the CMMI requirements “as soon as possible”, and further states that those who submit the evidence concurrent with the proposal submission run the risk that the documentation may be unacceptable. However, Page 64, paragraph “(iv)” states that Offers shall provide a copy of the certifications and ratings at the time of proposal submission. Please clarify if the government would prefer that the Offerors submit the certifications and/or other evidence prior to the proposal due date.

A3: The DRFP’s cover page 2, paragraph 5 b., states Offerors are encouraged to provide evidence of compliance with the standards listed as soon as possible. This will allow time for Government review and/or request for clarifications and additional information, if needed. Offerors must submit evidence of compliance by the time proposals are due, however Offerors choosing to submit evidence of compliance for the first time with their proposal at the date and time shown in Block 9 of the SF 33 (face page of the solicitation) do so at the risk that their documentation may be unacceptable and their proposal will not be considered.

The DRFP Section L.13 Proposal Preparation and Submission Instructions, paragraph (c) Contract Offer, subparagraph (iv) states that “The Offeror shall provide a copy of the certification (s) and ratings (s) at the time of proposal submission.” Therefore, while the Government encourages Offerors to provide evidence as soon as possible, prior to the proposal submission date, to allow for clarifications, a copy of the certification and rating also is required at the time of proposal submission.



Q4: Reference page 82, Section M.3, Subfactor 1 – Please clarify the importance/weighting of Subfactor 1(a) “Staffing and Management” and Subfactor (b) “Organizational OCI & PCI” relative to the 650 points allocated to Subfactor 1. In other words, of the 650 points for Subfactor 1, how many points are allocated to subfactors (a) and (b)?

A4: No points are allocated separately to Subfactor (a) and (b) nor is there a weighting of Subfactors 1(a) Staffing and Management and Subfactor (b) Organizational Conflicts of Interest and Personal Conflicts of Interest.

Q5: Reference Attachment 2 – Staffing Plan – What is the current average productive work year for the incumbent staff (i.e. average hours charged direct to the contract one Full Time Equivalent)?

A5: The Government will not provide the current average productive work year for the incumbent contractor.



Q6: Reference page 64, Section L.13 (d) – Proposal Organization - The Proposal Organization Table includes that a different number of copies are needed of each section of Volume 2 (i.e. Business Proposal: Original + 5 Copies, Responsibility Determination Documents: Original + 3 Copies, Contract Offer: Original + 1 Copy). Is it the government's intent that Volume 2 be provided as three sub-Volumes in order to be consistent with the number of copies required?

In addition, Section L.13 (c) indicates that the ISO 9001-2008 certification and proof of CMMI for Development Capability Level 2 should be provided in the Contract Offer section while Section L.15 indicates they should be in the Responsibility Determination Documents section.

Please clarify what content is required in each section of Volume 2 and the number of copies of Volume 2 that are to be provided.

A6: The Government does not intend for the Offeror to submit three sub-Volumes of Volume 2. Section L.13 (d) will be revised to increase the number of copies from 3 to 5 for the Responsibility Determination Documents and to require only the original Contract Offer.

Also, Section L.13, c) Contract Offer, paragraph, 2(iv) will be deleted in its entirety. Offerors shall abide by the instructions in Section L.13(c).



Q7: Section L.13, d), 2, page 65 – Figure/Table Font Size Question - Is Arial 10pt. font acceptable for Figure Captions and Tables?

A7: No, the Government requires Arial 11 font for all text throughout all volumes to include graphs, graphics, charts, tables, and figure captions.

Q8: L.16 Factor 2, page 69 – Cost/Price Question - Per Form 3-WYEs & Labor Rates there are 278-276 WYEs on the contract. Per G.5 of the draft contract there will be office space provided at the government facility for 155 personnel. Should bidder assume 121-123 WYEs are to be bid as Offsite (housed at contractor facility) and for which categories?

A8: The Government will provide office space for up to 155 personnel of the 276-278 WYEs on the contract. The Offeror shall propose where the remaining personnel will be located and the labor categories of the offsite personnel.



Q9: L.16 Factor 2, page 69 – Cost/Price Question - Form excel columns C, f, I, L and O has a title “Allocation Base 5”. Should the title be “hours” to correspond with column R?

A9: Columns C, F, I, L, and O (in Cost Form 2) are for direct labor hours, the allocation bases for indirect costs, and the base for fixed fee.

Column R (in Cost Form 2) is simply the total hours for each proposed labor category (i.e. across the entire period of performance).

Columns C, F, I, L, and O (in Cost Form 2) entitled “Allocation Base” incorrectly references Superscript [5]. The correct superscript for these columns is [6]. Below the table in Cost Form 2, the Footnote 6 reads: “(6) Show the hours for each proposed labor category and the allocation base for each indirect cost element and fee.”

The Government will revise the title and superscript of columns C, F, I, L, and O in Cost Form 2, from “Allocation Base ⁵” to “Labor Hours or Allocation Base ⁶”.



Q10: L.16 Factor 2, page 69 – Cost/Price Question - Per Form 1-Total Price Summary worksheet there is a row for “IDIQ – CLIN 3”. Are bidders to complete a price the IDIQ portion of the contract? If so, will worksheets be provided in the RFP?

A10: Offerors are simply required to propose the IDIQ amounts that are already included in Form 1: \$12M per year, \$60M in total. Also, please see the paragraph entitled “Form 1” under Sec. L.16(b)(1), which states: “Form 1 – Total Price Summary: This form is completely self-calculating. Offerors shall not make changes to Form 1. If proposed, the Phase-In price is part of the Total Proposed Price.”



Q11: L.16 Factor 2, page 69 – Cost/Price Question - Per L.16 c) Subcontractors may submit proprietary cost data directly to NASA. Should significant subcontractors submit Form 3 or Form 4 to NASA? Form 3 includes indirect rate detail, Form 4 does not.

A11: Form 3 does not include indirect rate detail. It includes the RFP specified labor categories, WYEs, and average direct labor rates. The only part of Form 3 to be completed by Offerors (and significant subcontractors) is cell B7: productive work year.

As it pertains to significant subcontractors, Form 4 would be for the significant sub's subcontractor(s) (if proposed) (i.e. second tier subcontractors).

The Government will revise DRFP Section L.16(c)(1)

The DRFP states that significant subcontractors must submit a proposal in accordance with DRFP Section L.16 of the solicitation (i.e. must complete and submit all Forms).



The Government will revise L.16(c)(1) to read as follows:

“1) Each significant subcontractor, as defined in L.6, shall be supported with a separate cost proposal that complies with all cost/pricing instructions of this solicitation, except for the following:

Subcontractors shall not propose the IDIQ amounts listed in Form 1 [\$12M per year].

Subcontractors shall not propose the ODC amounts listed in Form 2 [\$1.5M per year].

Subcontractors shall not complete Form 6, Verification of Limitations on Subcontracting.

If not included in the Offeror’s proposal (i.e. due to proprietary cost data), each significant subcontractor shall submit its cost proposal directly to NASA no later than the date and time specified in the instructions for receipt of offers for this solicitation. The price(s) presented in the Offeror's proposal for the subcontracted effort(s) will be considered the intended price(s). If applicable, the Offeror shall explain any differences between the subcontractor total proposed price and that proposed by the prime Offeror. The Offeror shall provide sufficient information to support their determination of price/cost reasonableness of subcontractor proposed costs (see FAR 15.404-3, Subcontract pricing considerations).”



Q12: Introduction, page 2 – Size Standard Issue: We request that the small business size standard selected for the STARSS-III procurement be reviewed. While the NAICS code 541712, *Research and Development in the Physical, Engineering, and Life Sciences*, is applicable, the invocation of an exception to the base size standard of 500 is not warranted. The preponderance of work for this contract, as described in the Draft RFP and RFI, as well as the preponderance of work on the existing STARSS-II contract, is atmospheric science, atmospheric science instrument development and atmospheric science data processing. Very little, if any, of the work is properly described by the allowed exceptions to this size standard. We therefore request that the exception be removed and the base size standard of 500 employees for NAICS 541712 be applied to this procurement.

A12: The Government reviewed the small business size standard selected and determined NAICS Code 541712 and small business size standard of 1,000 employees is appropriate for this procurement. This procurement requires an in-depth knowledge of spacecraft and launch vehicles in order to accommodate science payloads. It also requires translation of research objectives and scientific requirements into viable instruments concepts for ground-, aircraft-, and space-based atmospheric research applications. This procurement will support current and future space instruments/experiments launched on space vehicles (i.e., SAGE III, CERES, RBI, CALIPSO, and CLARREO). Furthermore, this contract will support space qualifications of instruments including but not limited to vibration, thermal, and vacuum tests.



Q13: L.17 – Past Performance Proposal – Volume III, Factor 3, pages 73 & 74 and M.2 Evaluation Factors, Factor 3 – Past Performance, pages 80 & 81: Would the government please clarify and expand upon the requirement and evaluation process for past performance, specifically in regards to the \$10M annual obligations threshold? The DRFP indicates that a prime contractor citing three \$10M contracts would receive a “somewhat pertinent” score, which translates to a “low level of confidence” for size relevancy as described in Section M. This appears to be overly constraining for small business concerns. Furthermore, the DRFP does not indicate what is required to achieve any higher level of confidence for size relevancy.

A13: The SEB will conduct the past performance evaluation in accordance with FAR 15.305 and NFS 1815.305. The SEB will assign one confidence rating for the Past Performance proposal. A prime contractor whose largest reference contract is \$10M/year in obligations will be assigned a “somewhat pertinent” for “size.” However “size” is only one component of past performance, therefore an offeror assigned a “somewhat pertinent” for size would not on its own translate to a “low level of confidence” for past performance. The evaluation conducted is an evaluation of pertinence (recent (past 3 years), of size, content and complexity) for the proposal team (prime and significant subcontractors) and performance, which results in an overall Level of Confidence rating.



The DRFP specified dollar values for the Prime (at least one of the three contracts with \$10M in obligations per year) and each significant subcontractor (at least one of the three contracts with \$3M in obligations per year) is provided within the RFP to clearly notify interested offerors of the “size” of contract that would be considered “somewhat pertinent” (using the confidence definitions set forth in NFS 1815.305 and the RFP). The \$10M annual obligation threshold is roughly 20% of the current annual obligations on the contract.

No further thresholds will be specified.

The Government will revise the first paragraph of L.17a) to read as follows:

a) **Proposal Content** – The offeror shall include a list of the three most relevant contracts that the prime as well as each significant subcontractor have on-going or completed within the past three (3) years for requirements that are similar in size in dollars per year, content, and complexity to the requirements of this solicitation (including Federal, State, and local Government and private contracts). For the prime offeror, to be considered at least “somewhat pertinent” in size, at least one of the three contracts being submitted for consideration shall be at least \$10 million in average annual dollar obligations.



For a significant subcontractor, to be considered at least “somewhat pertinent” in size, at least one of the three contracts being submitted for consideration shall be at least \$3 million in average annual dollar obligations. It is the responsibility of the offeror to clearly and completely demonstrate in its proposal the relevancy of each of the prior contracts offered in terms of size, content (by Statement of Work area specified in 11) below and complexity to the current procurement. For each contract identified, include:

The Government will revise the third paragraph of M.2 Factor 3 – PAST PERFORMANCE to read as follows:

For the purpose of determining size relevance, the Government will compare the size of work performed for the referenced contracts to the total price proposed for CLIN 2. To be considered at least “somewhat pertinent” in size, at least one of the three contracts being submitted for consideration shall be at least \$10 million in average annual dollar obligations. The confidence rating assigned to Past Performance will reflect consideration of information contained in the proposal, past performance evaluation input provided through customer questionnaires, and data NASA obtains from other sources. Offerors without a record of relevant past performance, or for whom information on past performance is not available, shall receive a neutral rating.



Q14: Section L, paragraph FACTOR 1 – MISSION SUITABILITY states “The Offeror shall identify and discuss 5 of the most significant programmatic risks for each subfactor and the approach to avoid, neutralize or mitigate such risks, during contract performance as set forth in NFS1815.305, Proposal evaluation.” Are we correct to assume that a total of 10 risks are to be presented, i.e., five for each subfactor?

A14: Yes, the Government requires five (5) risks for each of the two (2) subfactors.

Q15: FACTOR 3 – PAST PERFORMANCE Content Guidelines Subparagraph a) states “The Offeror shall include a list of the firms that will submit past performance questionnaires along with the written consent of each proposed significant subcontractor to allow NASA to discuss the subcontractors’ past performance with the Offeror.” **Question:** Would it be permissible to exclude the consent letters from page count?

A15: The Government will amend the RFP to exclude the consent letters from the past performance volume page count.



Q16: L.13 PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS, subparagraph d), item 2. states “The Offeror shall use Arial 11 font in its proposal (all volumes). Line spacing or the amount of vertical space between lines of text shall not be less than a single line (Microsoft Word’s default line spacing). Character spacing shall be “normal” and not “expanded” or “condensed”. **Question:** Would it be permissible to use a smaller font such as Arial Narrow 9 or 10 pt?

A16: See A7 above.

Q17: SOW Section 3.2 Electronic Contract Management System states” The Government will provide a commercial-off-the-shelf Electronic Contract Management System (ECMS) implemented as a web based ordering system. **Question:** Has the Government selected the product? If so, please disclose the name of the product.

A17: The Government has not yet selected the commercial-off-the-shelf Electronic Contract Management System (ECMS).



Q18: L.16 FACTOR 2 – COST/PRICE, c) Significant Subcontractor Proposal Information:

Question: Is it permissible for the prospective prime contractor to exclusively propose hours for itself and its significant subcontractors and require its significant subcontractors to only include rates and rate data in their sealed packages?

A18: See A11 above for response.

Q19: G.5 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY, (C): Question: Will the Government provide computers and ancillary IT equipment to support the 155 on-site personnel? If not, should Offerors assume that costs for this equipment will be accommodated from the \$1.5 million annual ODC budget?

A19: Please see DRFP Section H.10 Government Furnished Information Technology (IT) Services (LaRC 52.245-7) (June 2012), this clause specifies that NASA LaRC will furnish all necessary computers and related information technology services that will be connected to the NASA network infrastructure for all on-site contractors.



Q20: G.6 LIST OF GOVERNMENT PROPERTY FURNISHED PURSUANT TO FAR 52.245-1:

This Offeror notes that computers and peripheral equipment are not included in Exhibit C, Off-site Government Furnished Property. Will the Government make computers and peripheral equipment available to off-site contractor personnel? If not, should Offerors assume that costs for this equipment will be accommodated from the \$1.5 million annual ODC budget?

A20: The Government will not provide computers and peripheral equipment to off-site contractor personnel. The costs for this equipment is not accommodated from the \$1.5 million annual ODC amount.

The Government will modify DRFP Section L.16.(f)(1) as follows:

“1) For proposal purposes, the Offeror shall propose all the ODC amounts set forth in Form 2: \$1.5M per year. These amounts are for material, equipment, and travel, but do not include off-site facility costs. The Offeror shall provide support and rationale for off-site facility costs. Off-site facility costs include but are not limited to facility lease/rental, computers, and peripheral equipment. The Offeror shall specify if these costs are, according to the Offeror’s established accounting policies and practices, considered direct or indirect and propose these costs accordingly. The Offeror shall apply applicable burden rates to these proposed ODC amounts [or costs]. The Offeror shall not propose ODCs in addition to those specified in Form 2 and, if applicable, the off-site facility costs.”



NASA Langley Research Center

Update(s) to Draft RFP

Exhibit A - Statement of Work Section 4.6.2, Science Directorate Management will be removed in its entirety.



NASA Langley Research Center

ASDC Tour



ASDC Facility Tour Guidelines

- Please ensure you sign up for one tour, the same material will be presented on each tour.
- Nothing stated or shown at the conference or tour changes the solicitation requirements. All changes to the Draft RFP will be reflected in the final RFP.
- Questions which arise during the facility tour should be submitted in writing.
- Conversations with the working staff are not permitted.
- Everyone must stay together as a group.
- Photography is not allowed on the tour.
- The Conference will conclude following the tours.