

EPO UPDATE

STUC – October 2013

Hussein Jirdeh

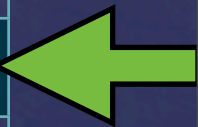
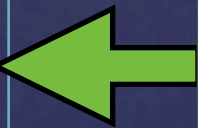
PROPOSED ACTION BY THE ADMINISTRATION

- The President proposed in the FY14 budget to consolidate 90 EPO programs and to realign ongoing STEM education activities.
- The funding for most of these programs would be removed from the Agencies (e.g., NASA, NOAA, NIH, etc) and be transferred to NSF, Smithsonian & Department of Education.
- None of these other agencies have any known plans for continuing any of the existing programs.

NASA EPO Budget

\$ in Millions	FY2012 Budget	Change	FY2014 Budget Request
TOTAL	202.5	(93.1)	109.4
Education	138.4	(44.2)	94.2
Aerospace Res. & Career Development	58.4	(25.4)	33.0
Space Grant	40.0	(16)	24.0
EPSCoR	18.4	(9.4)	9.0
STEM Education and Accountability	80.0	(18.8)	61.2*
Mission Directorates Subtotal	64.1	(48.9)	15.2
Science	41.9	(41.9)	0.0
Aeronautics Research	3.3	(3.3)	0.0
Space Technology	10.4	4.8	15.2
Exploration	4.4	(4.4)	0.0
Space Operations	0.0	0.0	0.0
Cross Agency Support	4.1	(4.1)	0.0

*30 MUREP, 4.5 GLOBE, 6.8 Coordination, 19.9 Facilitation



STATUS OF SMD EPO

SMD memo giving direction for EPO Projects under Continuing Resolution – Sept 20, 2013

- SMD projects are directed to continue all EPO activities in the approved EPO plans
- Carry over funds from FY13 reserves may be used for approved FY14 EPO activities
- There is no augmentation for the projects above the FY14 budget guidelines
- No guidance for FY15 EPO yet

OPO Activities

- Presentation to the NAC Education Subcommittee
- Met with the NASA offices of Education and Communications
- Worked with the AAS in creating an SMD EPO website with metrics
- Met with the National Science Teachers Association management
- Coordinated ideas and actions with Spitzer & Chandra
- Wrote position papers including an EPO article for the Institute newsletter

A sample list of education partners that raised concerns about the STEM reorganization proposal

- IMAX Corp
- Astronomical Society of the Pacific
- Pennsylvania STEM Grant for Math and Science
- Delaware Aerospace Education Foundation
- Johns Hopkins School of Education, Center for Education and Technology
- Maryland Science Center
- STEM Innovation Project Educators in the states of California, New York, and Florida
- Maryland Business Round Table for Education
- Ohio Resource Center

NEWS AND PUBLIC AFFAIRS

News of Hubble's discoveries

For 2013:

- 31 Science News Releases
- 2,850 online articles with total circulation ~ **3.8 billion***
- The average news release is exposed to **138 million potential readers**



Comet ISON

* Meltwater News

ViewSpace

- We are up to 205 museums and science centers using ViewSpace
- Developed 3 new ViewSpace programs in 2013
- 50 science themes in circulation



INSTALLATION AT CLARK PLANETARIUM, SALT LAKE CITY

Formal Education

- Star Witness News – 2 stories produced in FY13
40,000 printed each
- Partnerships (over 500 local, regional and national)
- Lithographs – 4 lithos w/ educational guides
- Inquiry Based Education Poster – Horsehead Nebula



Activities with local Baltimore Schools

- New partnership with the Dream Academy – After school program
- Astronomy & Engineering Club activities
- Community outreach events at the Institute



ONLINE OUTREACH

The screenshot shows the HubbleSite NASA website. At the top is the HubbleSite logo and a NASA logo. Below the logo is a navigation bar with links: Home, NewsCenter, Gallery, Hubble Discoveries, Hubble Telescope, Explore Astronomy, Education & Museums, Reference Desk, and The Future: Webb Telescope. The main banner features the text "HUBBLE'S UNIVERSE unfiltered" with "unfiltered" in green, and "with Dr. Frank Summers" and "The wonders of the universe, explained for you!". A "GO TO THE PAGE" button is also present. Below the banner are several sections: "iBooks are here!" with a link to "GET THE IBOOKS", "HubbleSite App" with a link to "Available on the App Store", "A CURIOUS MIND" with a link to "READ THE BLOG (external link)", "Gallery" with a link to "Explore Gallery" and a list of links: "Picture Album", "Wallpaper", "Astronomy Printshop", and "Behind the Pictures", "Get Involved!" with a link to "Explore opportunities to collaborate with experts, contribute your time and talents, or just have fun." and a list of links: "Hubble Hangouts", "Citizen Science", and "Hubble Image Processors", "Hubble in Action" with a link to "The Discoveries" and a list of links: "Extrasolar Planets", "Dark energy", and "Hubble Deep Field", "The Telescope" with a link to "How it operates and what it can do" and a list of links: "Hubble Essentials", "Servicing Missions", and "Nuts and Bolts", "NewsCenter" with a link to "Latest news" and a link to "Hubble Finds Dead Stars 'Polluted' with Planet Debris", "Webb Telescope" with a link to "Behind the Webb (video podcast)" and a link to "Technology at the Extremes", and "EDUCATORS" with a link to "Get the latest astronomy tools for your classroom. Visit our sister-site, Amazing Space."

HUBBLESITE NASA

Home NewsCenter Gallery Hubble Discoveries Hubble Telescope Explore Astronomy Education & Museums Reference Desk The Future: Webb Telescope

HUBBLE'S UNIVERSE
unfiltered
with Dr. Frank Summers
The wonders of the universe, explained for you!
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A CURIOUS MIND
For more science musings
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Gallery
Spectacular pictures of stars, galaxies, nebulae and more. Catch the best of Hubble's extensive portfolio.
[Explore Gallery:](#)

- [Picture Album](#)
- [Wallpaper](#)
- [Astronomy Printshop](#)
- [Behind the Pictures](#)

Get Involved!
Explore opportunities to collaborate with experts, contribute your time and talents, or just have fun.

- [Hubble Hangouts](#)
- [Citizen Science](#)
- [Hubble Image Processors](#)

Hubble in Action
The Discoveries
Hubble's scientific achievements

- [Extrasolar Planets](#)
- [Dark energy](#)
- [Hubble Deep Field](#)

The Telescope
How it operates and what it can do

- [Hubble Essentials](#)
- [Servicing Missions](#)
- [Nuts and Bolts](#)

NewsCenter
Latest news
[Hubble Finds Dead Stars 'Polluted' with Planet Debris](#)
[Want more? Visit the archive.](#)

Webb Telescope
[Behind the Webb](#) (video podcast)
[Technology at the Extremes](#)
The Webb Space Telescope, Hubble's successor, will see in infrared, the light emitted by the farthest objects we can detect. Learn about Webb, its technology, and the science it will reveal.

EDUCATORS
Get the latest astronomy tools for your classroom. Visit our sister-site, [Amazing Space](#).

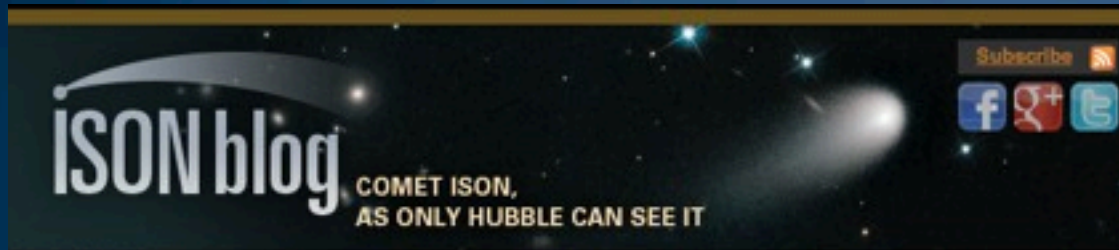


ONLINE OUTREACH

- **2 million** visits/month
- **150 million** hits/month
- Inbox Astronomy
 - ~**40,000** subscribers
- **160** questions/month
- **HubbleSite is 10% of NASA's online traffic**



Outreach



August 13, 2013 Hubble Hangout: How To Get Comet ISON Hubble Data

by Tracy Vogel



Did you know you have access to Hubble observations of Comet ISON? Join our host Tony Damell and a bevy of astronomers at 4 p.m. EDT Aug. 14 for an [online discussion](#) of how to obtain and use Hubble data on the comet. A must-see Google Hangout for both new and experienced astrophotographers, as well as people curious to see how Hubble data becomes images.

Ever wondered how to get images and original data from the Hubble Space Telescope yourself? Here's your chance, we're holding a hangout to show you how you can access and download Hubble data of the Comet ISON.

Please join Tony Damell, Alberto Conti and Scott Lewis as they work with Zolt Levay, Max Mutchler and Bonnie Meinke to show you how to get data for the comet yourself!

August 13, 2013

Insights on ISON: A Chat with Dean C. Hines

by Josh Sokol



Dean Hines

Astronomer Dean C. Hines of [the Space Telescope Science Institute](#) is using the Hubble Space Telescope to study Comet ISON in polarized light. This technique offers new insight into ISON's structure and composition – factors that will play a key role in the comet's eventual fate. We sat down with Dean to discuss his recent results.

ISONblog: Can you briefly explain polarization?

Dean Hines: Sure. Polarization is a property of light that happens most frequently when light scatters off particles like dust or reflects off a surface. We use polarization to tell us about the scattering material or the reflective surface. Different materials will scatter or reflect light differently, and will impart different polarization signatures. If you're looking at snow with polarized sunglasses, for example, that's a lot different than looking at the surface of water. You can put on polarized sunglasses, which filter out polarized light, and see the fish in the pond without the glare from the reflected sunlight. But putting on polarized sunglasses when you're snow skiing reduces the brightness, but doesn't do much else because the snow doesn't polarize the scattered sunlight.

When you look at a comet with polarization data, what can you see?

You can determine the particle sizes and their structure. Is it made of rocky material? Are the particles big or small? Are they round? Are they fluffy like snowflakes, or hard like little hailstones?

What does polarization show for ISON specifically?

A banner for 'HUBBLE hangouts' featuring a stylized illustration of the Hubble Space Telescope. The text 'HUBBLE' is in large, bold, orange letters, and 'hangouts' is in a smaller, cursive font below it.

LIVE TALKS EACH MONTH!

We have a lot of great hangouts planned, all designed to get everyone engaged in astronomy research and outreach. Comment, present your questions, or just watch. We hope to see you there!

All Hubble Hangout events will also be announced on the [Hubble Space Telescope Google Plus page](#)

A circular seal with a sunburst border. Inside the seal, the text 'Find Future Events Here' is written in a cursive font.An advertisement for 'skype in the classroom' showing a classroom of students with their hands raised. A blue overlay box contains the text 'Connect your classroom to the world with Skype'. Below the box is a white search bar with the text 'Choose a subject' and a dropdown arrow. The top right corner has a 'Search' button.

skype in the classroom

Connect your classroom to the world with Skype

Choose a subject

Search

Frontier Fields - News, Education, and Public Outreach

Engaging the public, educators, and students

Enhance **understanding** of
light, optics, and gravity

Engage students, educators,
and the public in the search for
the earliest galaxies, which will
culminate with Webb

Convey the **process** of
science and how science
works

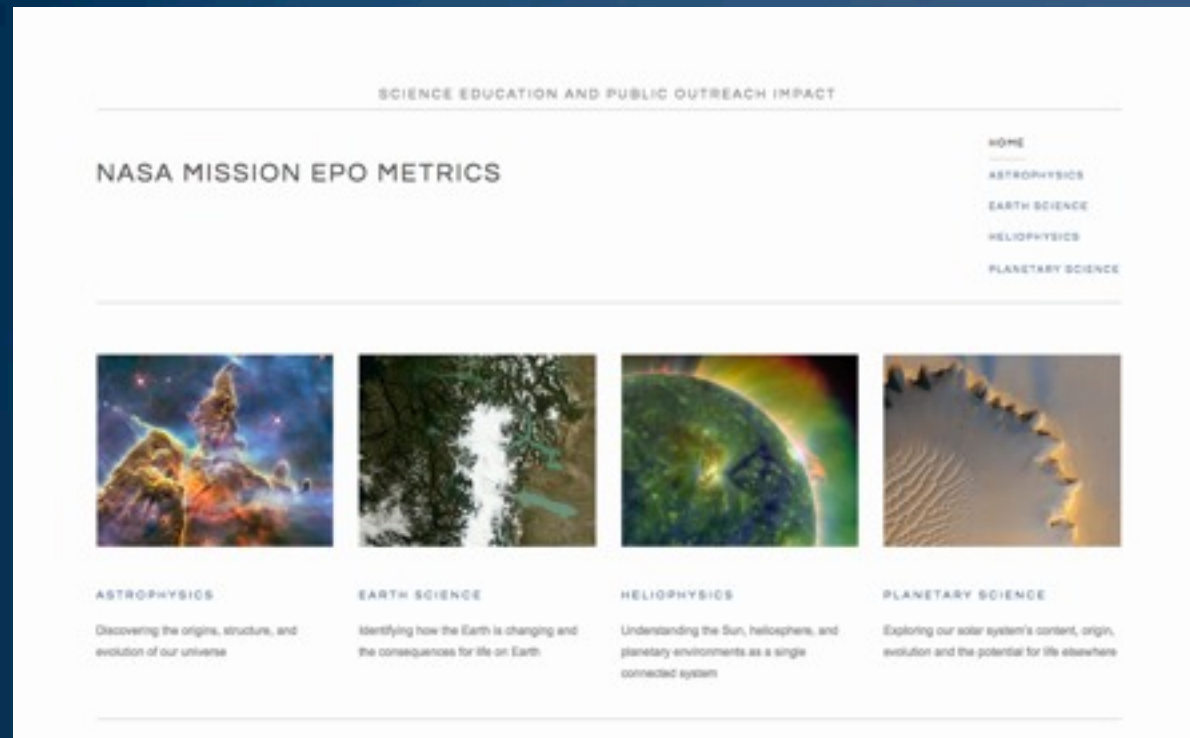
Provide an accurate portrayal
of the **diversity** of people and
experiences that comprise a
successful science team

Engage **citizen scientists**
in the process of
discovery



Scientific visualization of a black hole passing
through Baltimore's Inner Harbor

MORE INFORMATION



NASA SMD Missions:
<http://nasamissionepometrics.org>



STSCI Office of Public Outreach:
<http://outreachoffice.stsci.edu>