



UV/VISIBLE RFI

Q&A Opportunity #2

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RFI Q&A #2 INSTRUCTIONS

- To dial in for audio:
 - Toll free number for US: **1-866-692-4541**
 - Toll number for internationals: **1-517-466-2153**
 - Participant passcode for both number is **6467497**
- To watch along on WebEx™:
 1. Go to <https://nasa.webex.com/nasa/j.php?ED=1296948&UID=0&PW=NNjFIZWI0OGM5&RT=MiMxMQ%3D%3D>
 2. Enter your name and email address.
 3. Enter the meeting password: **4astro****
 4. Click "Join Now".
 5. Follow the instructions that appear on your screen.

RFI Q&A #2 TELECON/WEBEX™

JULY 17, 2012
4PM - 5PM EDT USA

- Introduction Beth (5 min)
 - Program Office Personnel introduction
 - Procedure and rules for telecon
 - Caller should state his/her name and affiliation
 - Telecon should end at 5pm EDT US
 - Questions, comments, answers are logged and will be made public as appropriate (anonymized)
 - Conversations during this telecon are recorded
- RFI #1 Overview Dominic (10 min)
- Q&A
 - Previously received Q&A Dominic (10 min)
 - New Questions and Comments All (30 min)
- Wrap-up/Closing Mario (5 min)

RFI BASICS

- Request for Information released 25 May 2012 – NSPIRES
- Visit <http://tinyurl.com/7skstfn> for NSPIRES web site.
- Visit <http://cor.gsfc.nasa.gov/RFI2012/> for current RFI information

PROSAIC RFI PURPOSE

For this RFI, we seek to discern the future of UV/visible astrophysics by posing the question: what observing proposal will you write in the next decade?

BIG PICTURE: CONTEXT

- Use scientific priorities of Astro2010 Decadal Survey to guide strategy
 - Due to budget constraints, no new missions other than Explorers can enter formulation before FY17.
- In order to prepare for a new mission starting in FY17, a near term program of mission concept studies and technology development will be undertaken, with the goal of making a mid-decade decision on which mission(s) will begin formulation starting in FY17
 - Currently there are no new starts for large missions. Moderate missions must be considered for start in FY17, possibly in addition to a large mission (WFIRST).
 - Use of the NRO telescopes must be considered for WFIRST and possibly other mission concepts.
- New strategic missions in the future are possible only if the Astrophysics budget recovers a large portion of the SMD funds freed up as the JWST budget begins to decrease in FY18 and out.

BIG PICTURE: TIMELINE

2012

Study WFIRST options.

Solicit ideas from the community for studies of moderate missions that address DS priorities.

Establish community study teams for mission concepts.

Initiate mission concept studies within the programs.

Use community analysis groups to inform process.

2013

Use competed and directed technology programs to develop enabling technology and mission concepts.

2014

Continue

2015

Using community input, conduct prioritization and decision process for identifying FY17 new start.

Start pre-formulation for new FY17 strategic mission.

Start NRC mid-decade review.

2016

Complete mid-decade review. Revise plans as necessary in response to report.

2017

New start for strategic mission.



COR IMPLEMENTATION

Elucidation of Cosmic Origins version of strategic vision

- Overall goal set by opportunity to start a new astrophysics mission in latter years of this decade, presumed scoped for a <\$1 B-class project (life cycle).
- Guidance from mid-decadal survey likely to provide the *de facto* selection of this mission, derived from a suite of lucidly defined, prudently designed, and unimpeachably costed mission concepts.
- Our near-term goal is thus to mature technologies for a mission concept to provide the necessary capabilities to produce high-impact scientific discoveries in the post-HST era at UV and visible wavelengths.

UV/VIS RFI RESPONSES

The responses:

- Can come from any person or group, as often as people want
- Represent a clear idea of the detailed science investigation the respondent hopes to conduct
- Should be untrammelled by the bounds of any prior mission concepts
- Are illimitable in scope: support COR, PCOS, ExEP...
- Promote the *demos* that support UV/vis science
- Provide a working set of science requirements directed to future UV/visible mission concept and pursuant technologies

DESIRED CHARACTERISTICS

- What we would like to see in the responses:
 - Brevity
 - Specificity
 - Clarity
 - Plenitude
 - Vision
 - Innovation

RFI WORKSHOP

- All RFI responses amalgamated and made available for people to peruse
- Community discussion at STScl on September 18 to provide further consideration and input
- Visit <http://cor.gsfc.nasa.gov/RFI2012/> for further details on workshop participation
- COPAG will lead synthesis effort to funnel down to mission requirements

INGESTING RESPONSES

Public:

- Submits all responses through NSPIRES

COR Program Office:

- Compliance checks to avoid inappropriate release (e.g., ITAR or proprietary info)
- Collates into single entity
- Makes available to COPAG & community

COPAG *et alia*:

- Deliberates & synthesizes cohesive set of science requirements

PATH FORWARD

- This is RFI#1. RFI#2 concerning technologies, instruments, and mission concepts to be released roughly New Year.
- Technology priorities realign as needed to support results of RFI findings.
- Funded concept study/studies presumed in the pipeline for 2013 initiation.
- Prominent placement of UV/Vis mission concept at mid-decadal in ~2015.

FAQ # 1

Can non-COR science be submitted?

Yes, all types of astrophysics science goals are encouraged; it is expected that COR will be most strongly represented.

FAQ #2

Can non-US respondents submit?

Yes; the international and domestic scientific community is invited; people should keep in mind that there be no expectation of privacy.

FAQ #3

Are members of COPAG, ApS, etc. eligible to submit?

Yes; since the deliberations following this RFI do not imply any selection and therefore no conflict of interest exists; all parties are invited to submit.

FAQ #4

Why does this RFI not include the IR and Far-IR in its scope?

This RFI is intended to solicit science investigations leading to a future UV/Visible mission concept and the development of the requisite technologies, in direct response to language in the NWNH Decadal Survey.

FAQ #5

What are the wavelength limits for the RFI?

The RFI explicitly refers to scientific investigations that can be addressed within near-UV and visible wavelengths. We have not defined the actual pass band limits in order to not overconstrain the science investigations solicited.

FAQ #6

Since the mission will replace HST, why are you not including the near-IR part of the spectrum?

The current UV/Visible RFI is soliciting information regarding science objectives and goals and is not soliciting mission or mission concepts, especially architectures that will replace Hubble in the future.

FAQ #7

Why not join the World Space Observatory (WSO) UV mission consortium?

The current UV/Visible RFI is soliciting only science investigations. Mission concepts or mission architectures that will address some or all of the proposed scientific objectives are not presently being solicited.

FAQ #8

NWNH recommendation specifically targeted towards a far-UV telescope ($\sim 1000\text{\AA}$); why aim at near-UV and visible wavebands?

The RFI does not exclude scientific objectives that require observations around Lyman- α . The term “near-UV” needs to be interpreted loosely as longward of $\sim 1000\text{\AA}$. NWNH specified space-based capabilities from this wavelength to visible for the HST successor.

FAQ #9

How does this RFI differ from the substantial body of work submitted to the Decadal Survey?

The Decadal Survey is entirely relevant but distinct; with this RFI, NASA is soliciting only science investigations. This RFI seeks to reveal detailed requirements for the science investigations (e.g., sensitivity, angular resolution, wavelengths, spectral resolution).

FAQ # 10

What type of response is NASA hoping to get with this RFI?

We hope that respondents will submit a large number of focused science investigations. The responses should be brief, specific, and clear in purpose. Ideally, they will represent long-term vision and innovative science.

RFI REMINDER

- Visit <http://tinyurl.com/7skstfn> for NSPIRES web site.
- Visit <http://cor.gsfc.nasa.gov/RFI2012/> for current RFI information
- FAQs are posted online and will be updated.
- Responses due Friday August 10 – NSPIRES
- Discussion Workshop : September 18 @ STScI

BACKUP: NWNH

Definition of a Future Ultraviolet-Optical Space Capability

Following the fourth servicing mission, the Hubble Space Telescope (HST) is now more capable than ever before and is enabling spectacular science, including observation at ultraviolet wavelengths. No more servicing missions are planned, and NASA intends to deorbit HST robotically at the end of the decade. The committee endorses this decision. Meanwhile, the results from FUSE, GALEX, and the HST's Cosmic Origins Spectrograph now show that as much could be learned about the universe at ultraviolet wavelengths as motivated the proposal and development of JWST for observations at infrared wavelengths. Topics that are central to the survey's committee's proposed science program include understanding the history of the intergalactic medium and its cycling in and out of galaxies as well as the evolution of normal stars and galaxies.

Key advances could be made with a telescope with a 4-meter-diameter aperture with large field of view and fitted with high-efficiency UV and optical cameras/ spectrographs operating at shorter wavelengths than HST. This is a compelling vision that requires further technology development. The committee highly recommends a modest program of technology development to begin mission trade-off studies, in particular those contrasting coronagraph and star-shade approaches, and to invest in essential technologies such as detectors, coatings, and optics, to prepare for a mission to be considered by the 2020 decadal survey. A notional budget of \$40 million for the decade is recommended.

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BACKUP: BUDGET

