



Astrophysics
Division

PhysPAG Agenda

First Meeting
13 January 2011

S. Ritz



Agenda Outline

1. Introductions (5')
2. PhysPAG issues in context and plan for this meeting – S. Ritz (10'+10' discussion, time allocations)
3. Topics discussion - [see later slides with details](#) (50')
4. AOB (20')
5. Discussion of how we will operate, formation of working groups (10')
6. Actions, next meetings (5')



NWNH Summary

- Large-scale, in priority order
 - Wide-Field Infrared Survey Telescope (WFIRST)
 - The Explorer Program augmentation
 - Laser Interferometer Space Antenna (LISA)
 - International X-ray Observatory (IXO)
- Medium-scale, in rank order
 - New Worlds Technology Development Program
 - Inflation Probe Technology Development Program
- Small: contribution to JAXA-ESA SPICA
- Core Program augmentation to ensure a balanced program
 - includes support of individual investigators, instrumentation, laboratory astrophysics...suborbital space missions, technology development, theoretical investigations...



Context: PhysPAG-specific (Simplistic) NWNH Summary

- Recommendations under constrained budget scenario:
 - **First priority: WFIRST, Explorer augmentation, and Core research augmentation.**
 - The Core research augmentation includes the following (not prioritized, see p7-26 and following in the prepublication version or p219 and following in the published version just released):
 - **Astrophysics Theory Program (ATP)**, Definition of a future UV-Optical Space Capability, **Intermediate Technology Development, Lab Astro, Suborbital Program, and Theory/Computation Networks**.
 - **Second priority: LISA, IXO tech development**, New Worlds tech development
 - **Third priority: Inflation Probe Tech Development (CMB).**
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- TODAY: PhysPAG to consider each of the highlighted items and what PhysPAG might be doing about them.
 - For the items that are not mission-specific, use the inputs to Astro2010 (http://sites.nationalacademies.org/BPA/BPA_049526) as one of the resources for systematically surveying needs.



Explorers

- Technology development needs
 - How to identify?
 - From latest round of explorer non-selects
 - From Astro2010 inputs
 - From call to community/our website
 - How to support?
- Other issues:
 - encourage identification of explorer-class opportunities to address PCOS science

Targeted technology development for scale relevant for Explorers? Augmentation of R&A program for this purpose?

Next steps: identify types of science questions that would benefit that would not otherwise be sufficiently supported.

- [Note: EELV (“Evolving Expense of Launch Vehicles”) to be addressed at a different level]



Core Research Program

- Theory: ATP, Theory/Computation Networks
 - Understand status and plans. (Advice through other channels?)
 - something akin to BEFS?
- **Technology Development (SAT)**
 - **By science or by technique (e.g., wavelength)? See Astro2010 inputs.**
 - **Identify scales: from small-group activities through pathfinder missions**
 - **Additional areas to consider, e.g., all-sky survey/wide FOV, data handling, space qualified optical clocks for fundamental physics tests, formation flying,...**
- Lab Astro
 - (R&A advice through other channels?)
 - inputs needed for science requirements definition of PCOS missions? Ask missions, e.g., IXO.
- Suborbital
 - (R&A advice through other channels?)
 - range of vehicles



Missions

- LISA, IXO Tech Development
 - These programs have their own SWGs
 - **Useful for PhysPAG to hear details**
 - **Understand support levels and timescales**
 - **Hear what might be missing**



Inflation Probe Technology Development

- Existing plans and roadmaps
- Landscape (ground-based)
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- Needs a SAG to follow on to pre-Astro2010 work as input, looking forward to mid-decade decisions. Define near-term work.



Other Questions/Issues

- International Discussions
 - What and when?
 - International participation in SAGs
 - Support for US people participating in international processes (e.g., cosmic visions) that do not yet have NASA participation to facilitate later integration? **APS issue.**
- How best to position PCOS missions for DSIAC and next Decadal
 - including scope and cost
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- **NRC technology development study inputs – immediate.**
 - **Alert community mailing lists. Understand timescales.**
 - **Have a look at those things relating to PCOS and give inputs to NRC?**
 - **Surface concerns to APS. Gaps.**
- Dark Energy
 - **WFIRST flow of information to/from PhysPAG. Fall between the cracks? Report to APS.**
 - Other missions (EUCLID, ...)
- **Tests of GR beyond gravitational waves**
- Community interactions, gathering information systematically, communicating. Help make community aware of opportunities (e.g., Franklin and Edison) Recruiting participants.
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Paths Forward, Next Meeting Topics

- Define working groups (SAGs). After discussion, selected the following, convener in ():
 - 1. NRC Technology inputs **immediate**, leading to 1a (Roger)
 - 1a. Technology Development planning for Explorer science and beyond.
 - 2. Inflation Probe (Shaul)
 - 3. Community Interactions/Interfaces/how people join (Steve and Jason)
- **NOTE:** formally, the APS must first approve these. Steve and Rita will send a note to Alan Boss (APS chair). Informal work to start before the next APS meeting (February) unless Alan sees a problem.
- NASA will provide one POC for each
- Meeting summary presentation to APS – SR to circulate slides to EC
- NRA language
 - Previous language, see draft language in late summer/early fall
 - ADAP, ATP, APRA, SAT, ...
 - Report our analysis to the APS, which can make recommendations
- Hear technology development plans for PCOS missions and NASA R&T program plans.
 - See http://www.nasa.gov/pdf/501624main_TA08-SIOSS-DRAFT-Nov2010-A.pdf and <http://www.nasa.gov/offices/oct/home/roadmaps/>
- Next meetings: status phonecall in ~6 weeks. F2F: American Physical Society, and possible presentation to business meetings of DAP and DPF.



Discussion