

The Astro 2010 Survey

- Every ~10 years, the U.S. National Research Council is contracted by the U.S. funding agencies (NASA + NSF) to conduct a "decadal" survey ("Greenstein"; "Bahcall")
- The last one was in 2000 (AANM; "McKee-Taylor" AASC)
- DOE is now funding AA research and has in principle agreed to participate in a new survey ...

Astro 2010

Martha Haynes (Cornell University)
Evolution of Galaxies through the HI Window
February 1-3, 2008

Astro 2010 Survey Planning

- BPA and SSB convened a planning meeting, 07Apr28 to discuss issues and provide NRC staff with general outlines, suitable for the proposal process.
- NRC Governing Board approved plan on June 14.
- NRC staff, with BPA/SSB/CAA input prepared proposal for NASA, NSF, and DOE; submitted Aug 2007.
- Agencies have sent reviews of proposal to NRC; negotiations/revision underway (Jan 2008)
- Survey to **initiate** summer 2008 (?)
- Survey to **complete** ~2 years after start date.

Decadal Survey Planning

- How to get input from the community
- Committee/panel structure - should it be technique or science-based?
- Membership - should those who are not astronomers be included?
International representation?
- Structure of the recommendations - prioritization across categories, or just within, e.g. space - ground, major - moderate - small, etc
- What boundaries are placed on the scientific scope of the survey - e.g. solar, particle astrophysics
- How to make our survey stand out from the crowd
- How to get realistic estimates of costs (and uncertainties in costs) of projects
- How to address previously recommended projects that have not been completed
- How to make the process flexible and responsive to changes in mid-decade
- How to incorporate consideration of realistic budgetary outlook
- International Coordination
- Consideration of Existing Infrastructure - process of 'Senior Review'

Wayne van Citters, NSF-AST

Astro 2010 Survey: Challenging Times

- COMPLICATIONS since 2000
 - Many of the initiatives endorsed by AANM have not progressed.
 - Many projects endorsed by AANM cost much more than the estimates presented to that survey.
 - 2 major projects left over from Astro1990 are not yet complete (AIM=>SIM, SOFIA) and they are WAY over budget
 - The agencies have different agendas/mandates.
 - The major facilities are also hugely expensive to operate and to instrument.
 - >80% of PhD astronomers are not faculty at richest 25 major research institutions
 - GRO is dead; Spitzer is dying; HST is at risk; CHANDRA is in middle-age; the Explorer line died (but was resurrected)
 - PI grant proposal acceptance rates are dropping <25%

Astro 2010 Survey: Challenging Times

Should we all go to law/B- school after all?

- The **SCIENCE** is **GREAT!**
- The **POTENTIAL SCIENCE** is **EVEN BETTER**

But we cannot be complacent!
(It's not just about astronomy)

Best bet: clear, coherent strategy

Astro2010:

The Need for a US HI strategy

- HI science is undergoing a renaissance driven both by **science** and by **technology**
 - **Science**
 - EOR/dark ages exploration
 - Importance of gas to galaxy evolution
 - Kinematic tracer of interactions
 - Distinct probe of cosmology
 - Tracer of dark matter
 - **Technology**
 - "Cameras": Feed arrays => phased arrays
 - New antennas/dish designs
 - Broadband, low noise receivers
 - Flexible, multibit digital spectrometers
 - Processing capability

Astro2010: The Need for a US HI strategy

- Much of the technical capability is **NEW!**
 - Attendees at this conference are **YOUNG!**
 - HI galaxies are **NOT radio** galaxies (for the most part, anyway); we are **astronomers!**
 - The facilities that produce HI science are **FEW!**
 - The promise for the **FUTURE** is even **GREATER** than the present success.

How does a future field establish itself?