NASA Space Sciences
Strategic Planning

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ORIGINS THEME SCIENTIST

NASA / HQ

NASA Strategic Planning

• NASA Strategic Planning, Roadmaps, GPRA, and all that.
• Schedule, People, Origins/SEU
• Issues:
  – Decadal report priorities
  – Breadth of the Research
  – Content
NASA ADVISORY STRUCTURE

NASA Advisory Council

Advisory Committees:
- International Space Station
- Aero-Space Technology
- Earth System Science and Applications
- Space Science (SScAQ)
- Minority Business Resource
- Life & Microgravity Sciences & Applications
- Technology and Commercialization

Subcommittees:
- Sun-Earth Connections
- Astronomical Search for Origins
- Structure and Evolution of the Universe
- Solar System Exploration

The Strategic Planning Process

National Academy
Fundamental Science Questions

Roadmap Teams
Space Science Roadmaps
Long Range Program Alternatives

Community Strategic Planning

SSE Strategic Plan
Science Questions/Science Goals

SSAC & Subcomites

Budget & Guidance
- President’s Budget
- Congressional Actions

SSE Performance Plan & Metrics

External Community Assessment

SSE Performance Report
**Purpose**

- Fulfill the strategic planning requirements.
- Provide a guide to the science community in presenting research requests to NASA.
- Inform and inspire.
- Focus investments in technology and research for future missions.
- Provide the scientific and technical justification for augmentation requests.

**Relevant Time Scales**

- GPRA is an annual event, so the Roadmaps feed this exercise through the Enterprise Strategic Plan.
- Strategic Planning occurs on a 3 year cycle where the near term outlook is for 5 years.
- Roadmapping also is on a 3 year cycle, but looks out 10 years and 20 years.
  - For Origins, the next 5-8 years is well defined.
  - For SEU, funding beyond GLAST for LISA, and Con-X is uncertain.
### Activity Name

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### Some Related Activities

- March: **2nd Workshop on New Concepts in IR Submm Astronomy--Univ of Maryland**
- April: Hubble Legacy Workshop--Chicago
- April: Astro-biology Conference--Ames
- May: Laboratory Astrophysics Workshop--Ames
- May: Astrophysics of Life--STScI
- May: Brown Dwarfs--Kona
- May: Origins 2002--Grand Teton
- June: International Virtual Observatory--Munich
- June: Research in Extra-solar planets--Washington
## ASTRONOMY & PHYSICS DIVISION
### ROADMAPPING ACTIVITIES

**• ORIGINS** Roadmapping basically an update and redirection of the 2000 Roadmap

- Led by the Origins Subcommittee.
- Community input through individuals selected for expertise and from meetings like this.

**• SEU** is preparing both a Roadmap, and a new initiative

- Group of 12 people led by Sterl Phinney.
- Aimed at generating a new initiative for LISA, Con-X, and several selected smaller missions.
- Community Input from White Papers and meetings.

## ORIGINS Roadmap Organization

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<tr>
<th>1 Co-Chairs</th>
<th>4 Research &amp; Analysis</th>
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<tr>
<td>Phil Crane (HQ)</td>
<td>Hashima Hasan (HQ) – Lead</td>
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<td>Alan Dressler (Carnegie)</td>
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<td>Lou Allamandola (ARC)</td>
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<td>Adam Burrows (U of A)</td>
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SEU Roadmap Team

Roadmap team:
Sterl Phinney* (Chair)
Sean Carroll          Sarah Church          Roy Gould
Craig Hogan           Steve Kahn            Dan Lester*
Robert March          Mike Shull            Simon Swordy*
Nick White*
Rocky Kolb* (SEUS Chair)

Paul Hertz (SEU Theme Scientist)
Paul DeMinco (SEU Program Integration Manager)

ROADMAPPING Cont’d

• ORIGINS Roadmap will be very similar to the 2000 version
  – Origins has a funded program.
    • HST, SIRTF, SIM, NGST, SOFIA, KEPLER, TPF.
    • New mission content in the next several years from Explorer, Discovery, or possibly from a new competed mission line.
  – Future strategic missions must define their science goals and technology needs.
    • Large filled aperture IR mission
    • UV/Optical mission in the 2020 time frame
The SEU Roadmap Team solicited community input in the form of white papers describing mission concepts

**Category 1 - Missions**
- Advanced Compton Telescope (ACT)
- Constellation-X
- Cosmic Microwave Background Polarization Experiment (CMBPOL)
  3a. Cosmic Microwave Background Polarization Experiment (CMBPOL) Addendum
- Energetic X-ray Imaging Survey Telescope (EXIST)
- Fresnel Microarcsecond Gamma Ray Imager
- Generation-X
- Gravitational Echoes Across Time Mission (GREAT)
- High-resolution Spectroscopic Imaging Mission (HSI)
- International Advanced Radio Interferometry between Space and Earth (iARISE)
- Laser Interferometer Space Antenna (LISA)
- Microarcsecond X-ray Imaging Mission (MAXIM)
- Next Generation High-Energy Gamma-Ray Astrophysics Mission
- Orbiting Wide-angle Light-collectors (OWL)
- Probing the Invisible Universe: The Case for Far-IR/Submillimeter Interferometry
- Single Aperture Far InfraRed Observatory (SAFIR)
- Space UltraViolet/Optical Observatory (SUVO)
- The Stellar Imager (SI)
- A Facility Far-Infrared Spectrometer for SOFIA
- Supernova/Acceleration Probe (SNAP)
- Tests of Relativistic Gravity via Solar System Laser Ranging
- Ultra-High-Throughput X-ray Telescope Observatory (UXT)

**Category 2 - Non-Mission Activities**
- "Amicus Brief"
- Balloon Program
- Bridging the Gap From New Instruments and Data to New Science and Understanding
- The DART System for Far-IR/Submillimeter Space Missions
- Theory of Rotation in Big Bang Universe
Roadmap Issues

- Decadal Report Priorities and Requests
  - Specific Missions & Priorities
  - Competed Missions-- Call for medium size mission like Discovery
  - Other Issues-- Theory, NVO, Lab-Astro

- Origins/SEU Priorities
  - Astronomy & Physics Div. needs a funded SEU line for LISA, Con-X and for medium size competed missions
  - How to accommodate new content in the next several years

Roadmap Guidelines

Reviews and Recommendations that guide the Roadmap priorities:
- NAS Committee on Gravitational Physics (1999)
- OSS/SEU 2000 Roadmap
- NAS Physics Survey Overview Committee (2001)
- NAS Astronomy and Astrophysics Survey Committee (2001)
- NAS Committee on Physics of the Universe (2002)