



**2010 NASA LAW**  
Gatlinburg

**Science Organizing Committee**

**Daniel Wolf Savin (Columbia)**  
**Lou Allamandola (NASA Ames)**  
**Steve Federman (U. Toledo)**  
**Paul Goldsmith (JPL)**  
**Caroline Kilbourne (GSFC)**  
**Martin Laming (NRL)**  
**Karin Oberg (Harvard-Smithsonian)**  
**David Schultz (ORNL)**  
**Ted Snow (U. Colorado)**  
**Susanna Widicus Weaver (Emory)**

**NASA Ex-officio SOC**

**Hashima Hasan**  
**Doug Hudgins**  
**Wilt Sanders**  
**Eric P. Smith**

**Sponsored by NASA Science Mission Directorate (SMD)  
Astrophysics Division.**

# **Fourth in an ~ quadrennial series of NASA sponsored lab astro workshops.**

- 1998. Sponsored by Office of Space Science (OSS).  
Replaced previous wavelength-specific meetings.  
Hosted by Harvard-Smithsonian.**
- 2002. Sponsored by OSS.  
Hosted by NASA Ames.  
131 attendees.**
- 2006. Sponsored by SMD Astrophysics Division.  
Hosted by University of Nevada at Las Vegas.  
104 attendees.**
- 2010. Sponsored by SMD Astrophysics Division.  
Hosted by ORNL/SELAC  
99 attendees.**

# **LAW 2010 is to provide a forum within which the scientific community can...**

- 1. Review the current state of knowledge in the field of Laboratory Astrophysics.**
- 2. Assess the critical data needs of NASA's current and future space astrophysics missions.**
- 3. Identify the challenges and opportunities facing the field as we begin a new decade.**

# Program shaped by NASA Astrophysics Lab Astro Support since 2005 (5 funding cycles).

## Funded Proposals

Atoms – 47%

Molecules – 38%

Solids – 12%

Plasma – 4%

## Posters here

Atoms – 43%

Molecules – 39%

Solids – 11%

Plasma – 7%

The elephant in the room was the ongoing Astro2010  
Decadal Survey which we couldn't ignore.

**Thanks in advance to all our presenters and attendees for being here to meet LAW charge .**

**Astro 2010 Survey**

**Decadal Report (1)**

**Science Frontier Panels (5)**

**NASA Missions**

**Mid and far IR, sub-mm (2)**

**UV, Optical, and near IR (1)**

**X-ray (1)**

**Laboratory Astrophysics**

**Atoms (4)**

**Molecules (3)**

**Dust (2)**

**Ice (2)**

**Plasma (2)**

**Posters (61)**

# Specific goals of LAW 2010 include...

1. Review the current state-of-the-art in laboratory astrophysics.
2. Review recommendations of previous LAWs and assess progress toward those recommendations.
3. Identify critical data needs of NASA's current and future planned space astrophysics missions, and assess the degree to which NASA-supported research efforts currently address those needs.
4. Assess strengths, weaknesses, opportunities, and threats facing NASA's Laboratory Astrophysics program in context of the Astro2010 Decadal Survey.

# Specific goals of LAW 2010 include...

5. **Formulate a White Paper summarizing the key findings from the workshop for submission to the NAC Astrophysics Subcommittee and the Astrophysics Division.**
6. **Generate a volume of science proceedings from the workshop that will serve as a reference to NASA and the community, and distribute that volume through the NASA Astrophysics Data System (ADS).**

# Breakout Sessions to help draft White Paper

- **Atoms (Savin and Schultz)**
- **Molecules (Federman and Widicus Weaver).**
- **Dust and Ice (Allamandola and Oberg).**
- **Plasma (TBD).**

# **Most important and valuable deliverable for LAW 2010 will be the White Paper**

**Summarize proceedings and outcomes.**

**Report critical lab astro data needed to maximize scientific return from NASA space astrophysics missions.**

**Outline specific opportunities and threats facing NASA's lab astro program.**

**Articulate concrete actions by which NASA can capitalize on opportunities and mitigate challenges.**

**Tabulate recent significant astronomical results where lab astro input was of critical importance.**

**Address how best to foster, educate, and produce future generations of lab astro scientists.**

# **AAS** American Astronomical Society

## **AAS Divisions - Advocates for science since 1899**

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## **Working Group on Laboratory Astrophysics**

### **WGLA**

Established by the AAS Council in response to recommendations from the scientific community, the Working Group on Laboratory Astrophysics (WGLA) is charged with improving the interaction between the data users (astronomers, astrophysicists, and astrochemists) and the data providers (laboratory astrophysicists and astrochemists, i.e., all experimentalists and theorists carrying out research motivated by problems in astrophysics and astrochemistry). WGLA promotes the coordination of research and knowledge between astronomy and other branches of science (physics, chemistry, geology, biology) and is guided by advancing astronomy through the promotion of laboratory astrophysics and astrochemistry. WGLA holds and sponsors topical sessions at the meetings of the AAS and promotes interaction with national and international science organizations.

[Working Group on Laboratory Astrophysics \(WGLA\) Website](#)

<http://www.aas.org/labastro>