

2011-2012 Annual Report Working Group on Laboratory Astrophysics

Daniel Wolf Savin, Chair

The activities of the Working Group on Laboratory Astrophysics (WGLA) over the past year (May 2011 – April 2012) were the following:

- In May 2011, the WGLA, lead by Haxton, Cowan, Federman, and Profumo held its fourth, three-day “Meeting-in-a-Meeting” on laboratory astrophysics at the 218th AAS held in Boston. In this case the focus was on nuclear and particle physics in the universe and the laboratory. There were a total of six sessions with one each devoted to stellar nucleosynthesis, gamma-ray spectroscopy and radioactive nuclei, neutrino astrophysics, dense matter, high energy astrophysics, and variations of fundamental constants and dark matter searches. Each session started with a keynote talk on how laboratory work has aided astronomical research, followed by a talk on recent theoretical developments in the field and one on recent experimental developments in the field. The talks were delivered by both senior and junior scientists. A poster session lasted the three days of the “Meeting-in-a-Meeting”. This fourth MiM was well attended with 30 to 50 people in attendance in each of the six sessions including a large number of students and young scientists. The Working Group also held a business meeting during the AAS meeting.
- In May 2011, at the 218th AAS meeting, the Council voted to convert the WGLA, at the end of its mandate, into a Division of the AAS and requested draft Bylaws. A Steering Committee consisting of Drake, Federman, Haxton, Salama (Chair), and Savin was formed to draft the Bylaws.
- In May 2011, Hendrik Schatz (Michigan State University) joined the WGLA for “nuclear astrophysics”, replacing John Cowan (University of Oklahoma) who rotated out after serving four years on the WGLA.
- In May 2011, the Savin became Chair of the WGLA, replacing Drake who had served as chair from 2010-2011.
- In Fall 2011, building on the success of the first four MiMs and on the recommendations from the astronomy community regarding the nature and the frequency of the sessions the WGLA should sponsor, the WGLA, lead by Savin, submitted a proposal to hold a “Meeting-in-a-Meeting” in Anchorage spanning all the disciplines covered by the WGLA. The AAS Council subsequently approved the proposal. There will be six sessions spanning atomic, molecule, dust and ice, plasma, particle, nuclear, and particle laboratory astrophysics. The sessions will highlight how theoretical and experimental work has aided astronomical research and include talks on recent theoretical and experimental developments in the field. A poster session will be coincident with the “Meeting-in-a-Meeting”. The Council approved the submission in November 2011.

- In October 2011, Salama and Savin presented the draft Bylaws to the AAS Executive Committee for the proposed Laboratory Astrophysics Division (LAD). After several iterations the LAD and proposed Bylaws were adopted at the 219th AAS meeting held in January 2012 in Austin.
- WGLA member Gudipati was the lead convener of the laboratory studies session at the combined AAS DPS and the European Planetary Science Congress (EPSC) meeting at Nantes, France, in October 2011. This was the first laboratory studies session ever in DPS. With over 25 talks and a similar number of posters, the oral sessions were spread over one and a half days and the poster session held during one afternoon. The planetary science community was very supportive of similar sessions in the future.
- In February 2012, *Reports on Progress in Physics* published “The Impact of Recent Advances in Laboratory Astrophysics on Our Understanding of the Cosmos” (Savin et al. 2012, Rep. Prog. Phys. 75, 036901). This review article covering the past decade was co-authored by the entire WGLA and led by Savin.
- In March 2012, Savin submitted the WGLA article for the May/June 2012 AAS Newsletter.
- WGLA member Gudipati is the lead editor of a forthcoming book “The Science of Solar System Ices” which is expected to be published in Summer 2012. Motivated by an international workshop held in May 2010 (lead convener Gudipati), this book presents the current status of our understanding of icy bodies and their evolution with a focus on the role of laboratory studies.
- WGLA member Federman serves as Part-President of Commission 14 (Atomic and Molecular Data) of IAU (2009-2012)
- The WGLA, led by Salama, has continued to compile the activities of the group and update the history of its membership since inception.
- The WGLA, led by Savin, maintains an email list for the lab astro community (<http://lists.aas.org/cgi-bin/mailman/listinfo/wgla>). The list went active in January 2010. The number of subscribers exceeds 380 members and continues to grow. Over the coming year this list will evolve into the LAD email list.
- The WGLA webpage has been superseded by the LAD webpage. This new webpage provides links of interest to the community. Salama is the Web master.