

High Accuracy Atomic Physics in Astronomy

A joint workshop planned with participants from the International Iron Project and ITAMP

August 7–9 , 2006

The Harvard-Smithsonian Center for Astrophysics,
Cambridge, Massachusetts, USA

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Organizers:

Anil K. Pradhan
(Ohio State University)

Sultana N. Nahar
(Ohio State University)



Michael J. Seaton

In honor of Michael J. Seaton, Professor *Emeritus*, University College London, London, UK, for monumental contributions to atomic physics and astrophysics and as founder of the Opacity Project and the Iron Project.

Final Report: A joint workshop was held with participants from the International Iron Project and ITAMP. Approximately 50 participants attended, with about 30 attendees from the Iron Project and about 20 attendees from the host institution. The first 1.5 days of the workshop consisted on invited talks, and the other 1.5 days specifically to related Iron Project work. The workshop was dedicated to honor Mike Seaton.

The aim of the workshop was to bring together astrophysicists and atomic physicists to discuss high-precision atomic physics applied to high-resolution astrophysical spectroscopy. The presentations covered all areas of astrophysical spectroscopy. They included observational results from space based observatories such as the Chandra X-ray Observatory, Far Ultraviolet Spectroscopic Explorer, and Solar Heliospheric Observatory, and ground based telescopes. In addition to atomic data computations, the thrust of the Iron Project presentations was the development of computational methods and codes for to meet future needs of the next generation of large ground based and space based observatories.

The workshop was a great success. As a result of the workshop, or stimulated by it, several initiatives are under way. Among these is the recent launch of an electronic on-line database of customized opacities for stellar modeling, called OPSERVER, from the Ohio Supercomputer Center. Another new program involves nanobiomedicine involving a multi-disciplinary and multi-institutional consortium of physicists, chemists, bio-medical engineers, and clinical researchers to explore the application of AMO science to cancer diagnostics and therapy. Finally, several proposals to funding agencies are planned to pursue the agenda laid out at the workshop.

As part of ITAMP's ongoing outreach to the Physics Community, abstracts and powerpoint presentations remain available online. Go to the section on