



Preface: Stars, galaxies and star formation history in the UV

This special issue devoted to ultraviolet studies of stars, galaxies and the star formation history contains some of the main results presented and discussed during the session entitled: “Hot stars, galactic star formation and cosmic star formation history: ultraviolet astrophysics using space missions” held during the 2012 Scientific Assembly of the Committee on Space Research (COSPAR). With the 2012 COSPAR Assembly in Mysore, India, there was an important Indian presence gathered by Pravjal Shastri, Ashok Pati and their colleagues at the Indian Institute of Astrophysics. The meeting brought together experts working on stellar, galactic and extragalactic physics making use of data from the main UV missions: Far UV Spectroscopic Explorer (FUSE), Galaxy Evolution Explorer (GALEX), Swift Gamma Rays Explorer equipped with the UVOT instrument, and Hubble Space Telescope (HST). This was also a preparatory activity associated with the upcoming UVIT mission to be launched by the Indian Space Agency on-board ASTROSAT. UVIT, which stands for Ultraviolet Imaging Telescope, is being developed by India in collaboration with Canada. The UVIT objective is to provide simultaneous flux calibrated images of the sky at a spatial resolution of ~ 1.5 arcseconds in two ultraviolet channels, the far UV (1200–1800 Å) and the near UV (1800–3000 Å) channels, with $\sim 0.5^\circ$ field of view. An additional visible channel (3500–5500 Å) will grant simultaneous access to this range.

At the conclusion of this well attended meeting, Dr. Shastri suggested that a special issue of *Advances in Space Research* on Ultraviolet Astrophysics would be an excellent way to gather together papers on this important topic. Appropriate submissions were solicited from the scientific community at large; all manuscripts were refereed by at least two reviewers.

This issue of *ASR* contains two definitive sections: UV observations and instrumentation for UV astronomy.

- The section on UV observations is introduced with an important review by Luciana Bianchi and co-workers on the surveys run by the GALEX mission. GALEX has been the first *nearly* all-sky survey mission for ultraviolet wavelengths and gathered fundamental information for any UV mission. Contributions from several researchers in the field of star formation, massive stars, interstellar medium and variable UV sources follow this review paper.
- The section on UV instrumentation includes an appraisal of the requirements for wide field imaging in future UV missions, a fair description of the WSO-UV mission and its imaging instrument ISSIS, and an informed review on the status and the future of extreme UV astronomy.

Finally, we would like to thank the authors and reviewers who wrote and evaluated the papers included in this topical issue.

Ana Inés Gómez de Castro
AEGORA Research Group, Universidad Complutense de Madrid, Fac. de CC. Matemáticas, 28040 Madrid, Spain
E-mail address: aig@ucm.es

M.A. Shea
COSPAR, University of Alabama at Huntsville, Huntsville, AL, USA
E-mail address: sssrc@msn.com

Available online 27 January 2014