

Announcement of a Special Issue
Advances in Space Research

Astrophysical Spectroscopy and Data in Investigation of the Laboratory and Space Plasmas

Papers are invited for a special topical issue of *Advances in Space Research* (ASR) entitled “**Astrophysical Spectroscopy and Data in Investigation of the Laboratory and Space Plasmas**”.

To understand the physical environment in which spectral lines are originating from cosmological sources, astronomers need the corresponding reliable atomic and molecular data and precise laboratory measurements of spectral line properties. Particularly analysis of spectral lines from various astrophysical sources is a powerful tool to collect data on various properties of objects from the Solar system to the most distant quasars. For example, based on observed spectra one can perform diagnostics, analysis and modelling of various astrophysical objects from interstellar clouds of molecular hydrogen to neutron stars and quasars, to determine chemical composition of stellar atmospheres and even obtain information on thermonuclear processes in stellar interiors. Therefore, interaction between astrophysicists and laboratory physicists who produce various atomic and molecular data and investigate spectra originating from different cosmological sources can provide a boost to our understanding of the Universe. Accordingly, the main objective of this special issue is to provide a wide view on recent investigation and production of various atomic and molecular data needed for investigations of spectra and radiation in astrophysics, laboratory physics, geo-cosmical physics and atomic and molecular physics, to discuss the organization of new data in international databases and to demonstrate their applications for various problems in astrophysics (e.g. stellar atmosphere modelling, analysis and synthesis of stellar spectra, radiative transfer, stellar opacities, active galactic nuclei, gravitational lensing etc.), laboratory plasma diagnostics, plasmas in fusion experiments, laser produced plasmas, atmospheric plasmas and plasmas in technology.

We welcome high quality and relevant manuscripts from all scientists involved in astrophysical spectroscopy and data work. Papers must be submitted electronically to <https://www.editorialmanager.com/AISR>. To ensure that all manuscripts are correctly identified for inclusion into the special issue, authors must select “**Special Issue: Astrophys. Spect. & Data**” when they reach the "Article Type" step in the submission process.

The general format for submission of papers can be found on the *ASR* Elsevier web site at <http://www.journals.elsevier.com/advances-in-space-research/>

Submitted papers must be written in English and should include full affiliation postal addresses for all authors. Only full-length papers will be considered for publication, subject to peer review by a minimum of two reviewers. There are no page limits although the length of the paper should be appropriate for the material being presented. While the deadline for submissions is 31 January 2025, papers will be published electronically as soon as they are accepted. The printed issue will be assembled within a reasonable time with late papers being printed in regular issues of *ASR*. All articles will be typeset at no cost to the author. There is a charge for printing color figures; there is no charge for color figures on the electronic version.

Dr. Milan S. Dimitrijević (mdimitrijevic@aob.rs) and Dr. Luka Č. Popović (ipopovic@aob.rs) are the Guest Editors for this special issue. Questions can be directed to Drs. Dimitrijević or Popović or to the Co-Editor for Special Issues, Dr. Peggy Ann Shea (sssrc@msn.com).