

Announcement of a Special Issue of *Advances in Space Research* on
Recent Progress in the Physics of the Sun and Heliosphere

Manuscripts are solicited for a special topical issue of *Advances in Space Research* (ASR) entitled “**Recent Progress in the Physics of the Sun and Heliosphere**”.

With the recent launch of the Parker Solar Probe and Solar Orbiter, the solar physics community has entered a new era of solar physics research. The observations within the inner heliosphere from a few previously inaccessible locations are not only complementing the observation from 1 AU, but bring in new, sometimes puzzling unexpected results. The wealth of the new generation of space and ground-based observational facilities coupled with the state-of-the-art modelling continuously advances and deepens our understanding of basic physical processes operating in the solar interior, solar atmosphere and solar wind, and contributes to uncovering the solar-terrestrial relations, inspiring new theoretical insights and forecasting space weather and space climate.

The main objective of this special issue is to highlight and review recent progress achieved in different areas of Solar Physics. While we expect many contributions from participants of the 16th European Solar Physics Meeting (ESPM-16, <https://indico.ict.inaf.it/event/794/>) organized in September 2021, we welcome original and high-quality relevant manuscripts from all scientists working on solar and heliospheric physics. All submissions must be original papers that meet the quality and peer-review standards of *Advances in Space Research*.

Topics to be considered include:

1. Solar Interior, Dynamo, Large-Scale Flows and the Solar Cycle
2. The Solar Atmosphere: Heating, Dynamics and Coupling
3. Fundamental Plasma Processes in the Solar Atmosphere: Magnetic Reconnection, Waves, Emission, Particle Acceleration
4. From Radio to Gamma Rays: Near-Sun Manifestations and Triggering of Solar Flares and Coronal Mass Ejections
5. Solar-Terrestrial Relations, Solar wind, Space Weather and Space climate

The contributions to the special issue will not focus on a particular area of solar physics. Instead we plan to have a wide distribution of research papers that will address the above areas, as well as the coupling between them.

Choose the Article Type of your submission from the drop-down menu.

How do I submit a manuscript?

Select Article Type

The description of each section is listed below to assist you in making your choice:

(AD) Astrodynamics and Space Debris:
Space dynamics, space debris and satellite dynamics.

(AP) Astrophysics:
Stellar, galactic and extragalactic astrophysics, extra-solar planetary systems, cosmology, particle astrophysics, astrophysical phenomena, neutrino astrophysics, astronomical space missions and instrumentation. The Sun as a star is included in this category.

(EM) Earth Magnetosphere and Upper Atmosphere:
Upper atmosphere, ionosphere, magnetosphere, radiation belts, geomagnetic phenomena, Earth's magnetic field.

(ES) Earth Sciences:
Remote sensing of Earth atmosphere, ocean and land (including Earth observation missions and instrumentation), scientific applications to Earth studies, including meteorology, climate, solid Earth science, geophysical hazards, etc., as well as physical, chemical and biological interactions within the global Earth system.

(FM) Fundamental Physics in Space and Microgravity Sciences:
Gravitational physics, microgravity fluids, material and combustion sciences.

(SB) Solar System Bodies:
Planetary bodies (i.e. telluric planets, giant planets and dwarf planets); moons (i.e. natural satellites); planetary atmospheres, magnetospheres and ionospheres; trans-neptunian objects; small bodies (i.e. comets, asteroids, interplanetary dust and meteoroids).

(SH) Solar and Heliospheric Physics:
Solar activity, solar emissions (photons, particles and plasma), solar cycle, cosmic ray modulation, and processes in the interplanetary medium.

(ST) Space Technology, Policy and Education Issues:
Space technology and engineering, space policy, space education and capacity building.

Invited Review Paper:
Review papers invited by Journal Editors.

Alternatively, if submitting to a Special Issue, select the special issue name from the list.

SI: Progress in solar physics

Proceed ➔

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: Progress in solar physics**” when they reach the "Article Type" step in the submission process (see picture above). Submitted papers must be written in English and should include full affiliation postal addresses for all authors. 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/>

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 to the scientific material being presented, relevant to the purpose of the Special Issue, and should be of good scientific content. While the deadline for submissions is **1 April 2022**, 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.

The Guest Editors of this Special Issue are Eduard P. Kontar (Eduard.Kontar@glasgow.ac.uk) and Istvan Ballai (i.ballai@sheffield.ac.uk). Questions can be directed to Dr. Kontar or Dr. Ballai, or to the Co-Editor for Special Issues, Dr. Peggy Ann Shea (sssrc@msn.com).