Announcement of a Special Issue of *Advances in Space Research* on

Magnetic Flux Ropes in Solar and Stellar Environments

Papers are invited for a special topical issue of *Advances in Space Research* (ASR) entitled **"Magnetic Flux Ropes in Solar and Stellar Environments".**

Magnetic flux bundles or ropes are the main building blocks forming active regions. Their destabilization can lead to the most violent events -- flares, coronal mass ejections (CMEs), and energetic particle events. After eruption, they are observed over a wide range of spatial scales throughout the heliosphere. Specific configurations of these structures, can produce the strongest geomagnetic storms as they impact the Earth's magnetosphere. Stellar CMEs, which in analogy to solar CMEs could be caused by the eruption of large-scale flux ropes, may play an important role in mass and angular momentum losses of young Sun-like stars. It is also highly probable that observed superflares might be associated with very large stellar CMEs. Such powerful events may have significant implications for the physical conditions and the eventual habitability of orbiting exoplanets. The proposed issue aims to gather new results that highlight the fundamental physics of different sets of flux rope structures, their genesis, escape of confinement, interaction, relevance for solar/stellar environments and plausible impact on their planets.

Topics at a glance:
Solar dynamo and flux emergence
Solar active regions from their origin
Flux emergence and solar activity
Solar activity and the role of flux ropes (including prominences and their destabilization)
Stellar mass ejections and superflares on solar-type stars: Observations
Eruptive events in low mass stars: Numerical simulations
Magnetic flux ropes: Modelling in the Sun and stars
Coronal mass ejections origin and consequences
Flux ropes in the heliosphere: Formation, propagation, modelling, interaction
Interplanetary flux ropes and their impact on Earth magnetosphere

Manuscripts 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: Sun - stars: Flux ropes"** when they reach the "Article Type" step in the submission process. 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.elsevier.com/wps/find/journaldescription.cws_home/644/authorinstructions.

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 August 2021**, 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 although there is no charge for color figures on the electronic version.

Dr. Brigitte Schmieder (Brigitte.Schmieder@obspm.fr) and **Dr. Cristina H. Mandrini (mandrini@iafe.uba.ar)** are the Guest Editors for this special issue. Questions can be directed to Dr. Schmieder or Dr. Mandrini, or to the Co-Editor for ASR Special Issues, Dr. Peggy Ann Shea (sssrc@msn.com).