

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

Space Weather Events in Solar Cycle 22

Papers are invited for a special topical issue of *Advances in Space Research* (ASR) entitled **“Space Weather Events in Solar Cycle 22”**.

Several major solar-terrestrial events occurred in Solar Cycle 22 (September 1986-April 1996), five of which were designated as "Extreme Space Weather" events. These five events occurred in March, September and October 1989 and March and June 1991. In addition there were other major solar-terrestrial events during Cycle 22 such as those in July and November 1989 and May 1990. Occurring in the space age, these events have been used as references for comparative and theoretical analyses for historical superstorms. It has been 25 years since the end of Cycle 22, which is an appropriate time to review these events with respect to what has been learned in 25 years. Papers are solicited on the solar, interplanetary, ionosphere, cosmic-ray, geomagnetic, and auroral aspects of these events particularly a comparison of the events with each other or events in other cycles. The effects of these events on technology and infrastructure, some of which were identified years later are particularly welcomed. In addition new insights that have been developed from retrospective studies – either empirical, statistical, theoretical, or predictive – are encouraged. Other subjects of importance include results from models that may have changed with the recalibration of the sunspot number. Improvements on such long-term datasets would be appreciated, as they may update our understanding on the space-climate context in Solar Cycle 22. Data rescues and data archiving are important subjects welcomed in this issue as well. Old data are frequently difficult to locate or access for external users and occasionally forgotten and lost even in the data-holding institutes, as time goes by and with limited storage facilities. For future scientists, it is time to record what has been observed during SC22 before being forgotten in the darkness of history. Finally, it would be highly welcomed to record personal experiences and personal records during these events. These may be small items of particular interest that can be combined into one compendium article by the editors somewhat similar to the "Some individual recollections" of the 23 February 1956 event published in the Appendix of Rishbeth et al. (ASR, **44**, 1096, 2009) and the Loomis reports on the Carrington event (ASR, **38**, 313, 2006), which has formed important basis for further scientific analyses (e.g., Cliver and Dietrich, 2013, *Journal of Space Weather and Space Climate*, **3**, A31; Dyer et al., 2018, *IEEE Transactions on Nuclear Science*, **65**, 432-438; Hayakawa et al., 2019, *Space Weather*, **17**, 1553-1569). Individuals having short items of personal interest are requested to contact the editors directly for more information.

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 "S.I.: Cycle 22 Major Events"** when they reach the "Article Type" step in the submission process. Submitted papers must be written in English and they 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 **1 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. Hisashi Hayakawa (hisashi@nagoya-u.jp) and Dr. Peggy Ann Shea (sssrc@msn.com) are the Guest Editors for this special issue. Questions can be directed to Dr. Hayakawa or Dr. Shea.