Solar and Stellar Multi-scale Activity
Proceedings IAU Symposium No. 400, 2026
S. Vargas-Domínguez & J. C. Buitrago-Casas, eds.
doi:10.1017/S1743921326107388

Preface

In the ever-evolving landscape of 21st-century astrophysics, where new technologies and international collaboration continue to expand the frontiers of our knowledge, the International Astronomical Union Symposium 400 (IAUS400) "Solar and Stellar Multi-Scale Activity" stands as a landmark in the global effort to understand the dynamic and interconnected processes that govern our Sun and other stars. Held in Medellín, Colombia, from July 21 to 25, 2025, IAUS400 brought together a vibrant and diverse community of scientists, early-career researchers, and students from across the world. Hosted at EAFIT University, one of Colombia's leading institutions for innovation and interdisciplinary research, the symposium provided an inspiring environment to discuss cutting-edge advances in solar and stellar physics, numerical modeling, and theoretical frameworks.

The scientific program covered a broad range of topics, including solar and stellar instrumentation, energy release processes, magnetic variability, helio- and asteroseismology, and the integration of artificial intelligence and machine learning in astrophysical research. The symposium's central goal was to build bridges between the solar and stellar communities, encouraging comparative approaches and fostering interdisciplinary dialogue between observational, theoretical, and computational domains. Over the course of five days, participants exchanged insights through invited and contributed talks, flash presentations, posters, and collaborative discussions. These contributions reflected the remarkable scientific vitality of a field that continues to illuminate our understanding of magnetic activity, energy transport, and their effects on planetary environments and habitability.

IAUS400 also served as a platform to highlight the impact of international collaborations, particularly through the DynaSun Horizon Europe project, which connects research institutions across Europe and the Americas in a shared pursuit of understanding coronal dynamics, oscillatory processes, and magnetic coupling across solar and stellar atmospheres. Beyond its scientific achievements, the symposium celebrated human connection and collaboration. From the Comuna 13 cultural tour to the public outreach activities and stargazing events organized in Medellín, IAUS400 reaffirmed the power of science to inspire curiosity, build community, and transcend borders.

The organization of IAUS400 was made possible through the dedicated work of both the Scientific Organizing Committee (SOC) and the Local Organizing Committee (LOC). The SOC was chaired by Santiago Vargas (Universidad Nacional de Colombia, Colombia), with Patrick Antolin (Northumbria University, UK), Juan Camilo Buitrago (University of California, Berkeley, USA), Jose Iván Campos (Astronomical Institute, Czech Academy of Sciences, Czech Republic), and Juan Carlos Martínez (University of California, Berkeley, USA) serving as co-chairs. The committee was further enriched by the participation of Eliana Amazo Gómez (AIP, Germany), Anne-Marie Broomhall (University of Warwick, UK), Hebe Cremades (CONICET, Universidad de Mendoza, Argentina), Cecilia Garraffo (Harvard-Smithsonian Center for Astrophysics, USA), Moira Jardine (University of St Andrews, UK), Lucia Kleint (University of Bern, Switzerland),

© The Author(s), 2026. Published by Cambridge University Press on behalf of The International Astronomical Union.

https://doi.org/10.1017/S1743921326107388 Published online by Cambridge University Press

Sophie Musset (Johns Hopkins University Applied Physics Laboratory, USA), Kosuke Namekata (NAOJ, Japan), Alexander I. Shapiro (Max Planck Institute for Solar System Research, Germany), and Tom Van Doorsselaere (KU Leuven, Belgium). The LOC, chaired by Benjamín Calvo Mozo (Universidad Nacional de Colombia), included Adriana Araujo (Gimnasio Campestre), Germán Chaparro (Universidad de Antioquia), Jessica Ducon (Project Manager), María Gracia Batista (Universidad de los Andes), Ángela Pérez (Red de Astronomía de Colombia, NAEC-Colombia, OAE), René Restrepo (Universidad EAFIT), Andrés Torres (Instituto Tecnológico Metropolitano), and Islena Bonilla (Observatorio Astronómico Nacional de Colombia).

We express our most sincere gratitude to all members of both committees for their vision, dedication, and tireless efforts in shaping the scientific and logistical success of the symposium. We also acknowledge the invaluable institutional support of the International Astronomical Union (IAU), the DynaSun Horizon Europe Project (Grant 101086601), the Universidad Nacional de Colombia and its Observatorio Astronómico Nacional, as well as Universidad EAFIT, which generously hosted the event in Medellín. Special thanks are extended to the Academia Colombiana de Ciencias Exactas, Físicas y Naturales, whose support, collaboration, and commitment made IAUS400 a remarkable and unforgettable meeting.

For more details about the symposium, please visit the official website:
http://astronomiaoan.github.io/iaus400.

Santiago Vargas-Domínguez and Juan Camilo Buitrago-Casas

https://doi.org/10.1017/S1743921326107388 Published online by Cambridge University Press



https://doi.org/10.1017/S1743921326107388 Published online by Cambridge University Press