

COMMISSION E4

IMPACT OF MAGNETIC ACTIVITY ON SOLAR AND STELLAR ENVIRONMENTS

PRESIDENT
VICE-PRESIDENT
ORGANIZING COMMITTEE

Heidi Korhonen
Dibyendu Nandi
Rim Fares, Emre Işık, Silva P.
Järvinen, Krisztián Vida,

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1. Introduction

The Working Group *Impact of Magnetic Activity on Solar and Stellar Environments* was formed in the IAU General Assembly in Beijing, 2012. In 2021 it was proposed to make this Working Group into an Inter-Division Commission. The proposal was accepted by the IAU Executive Committee in their meeting in January 2021 and since August 2022 the Working Group has been Inter-Division E-F-G Commission E4 *Impact of Magnetic Activity on Solar and Stellar Environments*.

The main aim of this Commission is to facilitate interdisciplinary science in understanding the impact of solar and stellar magnetic activity on their space environments and orbiting (exo)planets. This is done by bringing together theorists, modellers and observers working in the relevant fields of astronomy.

2. Membership in Commission E4 membership and Organizing Committee

In the pre-registration for the membership in the new Commissions in early 2021, Commission E4 received 68 registrations. This set the recommended number of organizing committee members to four (in addition to the president and vice-president). For the posts of president and vice president only one candidate came forward for each post. Therefore, Heidi Korhonen (Denmark/Chile) and Dibyendu Nandi (India) were de-facto elected as the president and vice-president, respectively. For the four Organizing Committee posts six candidates came forward and after a vote the following candidates were elected: Rim Fares (United Arab Emirates), Emre Işık (Turkey), Silva P. Järvinen (Germany), and Krisztián Vida (Hungary).

After the initial call for membership, new call for joining the newly formed Commissions was made in September 2021. In this call more people joined the Commission E4 and currently there are 116 members. We are very happy to see the approximately threefold increase in the membership from the original Working Group.

3. Overview of Commission Activities 2021-2022

One of the main goals for the new commission is to catalysing closer collaboration between community members. One of the ways we want to achieve this is to host regular online talks by experts in the field. We are starting these monthly virtual talks on 2022 April 20 with a talk by Prof. Katja Poppenhaeger. She will talk about "Magnetic activity as the landscaping force in stellar and exoplanetary systems".

Our Commission members are very active in organising meetings and there are several interesting events planned for 2022. For example there are two events in XXXI IAU General Assembly in Busan that are at the core of the science interests of the Commission E4 and are also lead by our members: *IAUS370 Winds of Stars and Exoplanets* and *FM5 Beyond the Goldilocks Zone: the Effect of Stellar Magnetic Activity on Exoplanet Habitability*.

In addition, the Cool Stars 21, which is to be organised in Toulouse in July 2022, has a very strong participation by the members of the Commission E4. For example, several splinter sessions organised in this event have our members as co-organisers:

- What's Up With Spin Down?
- Manifestations of star-planet interactions
- Towards a better understanding of cool star magnetised winds and mass-loss rates

I am looking forward to all the exciting events that are planned for 2022.

Heidi Korhonen
President of Commission E4