# Report on the outcomes of a presentation and participation - Young Researcher and Innovator Conference[1]

**Action number: CA21126**

**Grantee name: Heleri Ramler**

## Conference Details

Conference title: Europlanet Science Congress 2026

Conference web-page: https://www.epsc2026.eu/

Conference venue[2]: Amare, Hague, Netherlands

## Accepted contribution details

Title of the presentation: Fundamental parameters of 18 hot stars in the Ariel mission candidate sample

Type of the presentation: (oral/poster) poster

Co-authors: Sandipan Borthakur, Ariel Stellar Characterisation and Planet Formation Working Group members

Other details of the presentation: specify here any additional details related to the contribution (e.g. title of the session / track of the conference programme in which the contribution is accepted)

I presented the poster under the session: Star-Planet-Disc connections, EXOA7

## Outcome of the conference participation

Description of the outcome of the presentation of the accepted contribution, in terms of grantee's visibility, including the establishment of new contacts for future collaborations

The outcome of the conference participation was very useful for me, both for presenting my work and for meeting researchers from different fields. I presented the fundamental parameters of 18 hot stars in the Ariel mission candidate sample and was able to show my expertise in hot-star analysis.

When I applied for the YRI Conference Grant, I had planned to also include preliminary chemical abundances, including carbon, in the poster. Unfortunately, this analysis was not sufficiently advanced by the time of EPSC, so the final poster was based on the published stellar parameter work only. I am currently working on the chemical abundance analysis as a follow-up, including C and other elements.

Although the chemical abundances were not yet included in the poster, EPSC was still very useful for putting this future work into a wider context. I attended several talks connecting stellar composition, Galactic chemical evolution, planet formation and astrochemistry. For example, K. Dale, S. Mojzsis and collaborators discussed how stellar abundances together with volatile depletion trends can be used to predict rocky exoplanet compositions. T. Trueman presented work on Galactic chemical evolution of

[1] This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the Grant Holder Manager to verify the grant documents compliance and proceed with the payment.

[2] For an online conference, specify virtual participation; for hybrid conferences, specify whether it is an in-person or virtual participation.

40K and the role of C-O shell mergers in massive stars, which was interesting because I plan to combine my abundances with Gaia kinematics and Galactic populations. I also found the work by F. Ballieux and M. McClure very relevant, as they discussed carbon-rich chemistry in a young protoplanetary disk and possible outward transport of carbon-rich material by a disk wind. The "reflation" work by L. Cesario, T. Lichtenberg and collaborators showed how atmospheric escape can transform an initially CO-dominated atmosphere into an $H_2$-dominated one, linking carbon chemistry, mantle redox state and the observable properties of highly irradiated rocky planets. Finally, L. Peerani's talk on how the birthplace of gas giants affects their core masses and final compositions was interesting because of my own work on planet-hosting stars.

I also chaired the session "Star-Planet-Disc Connections", EXOA7. This was a new experience for me and I think it increased my visibility in the topic. One participant suggested extending the session towards Galactic chemical evolution in the future, which is very relevant to the abundance and kinematic analysis I am working on now.

I also made new contacts with researchers working on M dwarf stellar analysis, machine learning, exoplanet atmospheres and amateur astronomy. Discussions with M dwarf researchers were useful because several of the A stars I work with have M dwarf companions, and I am planning a research visit to Tenerife to work on some of these systems. Discussions with machine-learning researchers also gave me ideas for automating parts of my stellar analysis.

Finally, discussions with exoplanet atmosphere modellers, Solar System scientists and researchers doing laboratory experiments helped me see my stellar work in a broader picture. Although not all of these discussions led to an immediate overlap, they expanded my knowledge and helped connect my ongoing abundance work, including carbon, with wider astrochemical and planetary-science questions addressed by NanoSpace.

**Acknowledgement of inclusion of necessary supporting documents to claim the grant**

I confirm that the following documents have been uploaded on e-COST as an integral part of this report:

- the certificate of conference attendance issued by the conference organiser.

- the programme of the conference or book of abstracts / proceedings indicating the presentation (oral or poster) of the grantee.