



Warsaw, 25 October 2024

In connection with the project “*Evolution of the outer heliosphere seen in neutral atom fluxes*” funded by the National Science Centre, Poland (NCN) under the SONATA-19 call, the principal investigator, Dr. Paweł Swaczyna, announces an open call for

NCN scholarship for PhD student WR.110.15.2024

Requirements:

- Master’s degree in Physics, Astronomy, Mathematics, or a related field* (the candidate must not be a PhD holder)
- Good knowledge of at least one programming language/environment (preferably C/C++, Python, Mathematica)
- High analytical skills
- Knowledge of English necessary to understand scientific literature, write scientific papers, and present results at scientific conferences
- Motivation to fully engage in the implementation of the project tasks

*As a related field, we consider studies that include a significant share of physics, astronomy, or mathematics classes, including the basics of data analysis or statistics.

The person selected in the call will be required to become a doctoral student at the GeoPlanet Doctoral School at CBK PAN in a special recruitment call, which will be announced after this call is concluded.

Description of tasks:

The solar wind emitted from the Sun carves out a cavity called the heliosphere, protecting the solar system from the direct influence of the interstellar medium called the heliosphere. The heliosphere extends more than 100 au from the Sun and evolves in response to the solar cycle changes. The heliosphere changes are imaged using energetic neutral atoms (ENAs) formed from charge exchange between energetic ions with ambient neutral atoms. ENA fluxes have been observed using dedicated instruments on the Interstellar Boundary Explorer (IBEX) mission since 2008. In 2025, the Interstellar Mapping and Acceleration Probe (IMAP), a new NASA mission, will be launched with next-generation ENA detectors. To fully analyze the IMAP observations, new data analysis techniques are needed.

The PhD student will participate in the development and implement methods utilizing spherical harmonic decomposition of the observed ENA fluxes. They will use the obtained results to study the solar cycle evolution of the heliosphere and seek transient signal sources. The research tasks will be carried out under the supervision of the principal investigator. The tasks will include in particular:

- Reading scientific papers on the subject of the project.
- Development of research methods in cooperation with the principal investigator.
- Writing software implementing the developed research methods.
- Scientific analysis of the results obtained.



- Preparation of scientific articles and reports.
- Presenting results at international scientific conferences and science team meetings.

Under the scholarship, the PhD student will carry out research tasks in the project under the supervision of the principal investigator in person at the CBK PAN headquarters in Warsaw. We expect full commitment to the execution of the research tasks. The scientific results will be the basis of the doctoral thesis.

We offer:

NCN scholarship in the amount of PLN 5000 per month for 12 months with a possible extension up to 36 months.

The scholarship will be awarded and paid in accordance with the rules laid down in the Regulations on awarding NCN scholarships in research projects funded by the National Science Centre, as set out in the Annex to NCN Council Resolution No 124/2022 of 1 December 2022 (hereafter NCN Regulations, https://www.ncn.gov.pl/sites/default/files/pliki/uchwaly-rady/2022/uchwala124_2022-zal1_ang.pdf).

The candidates meeting the requirements to receive a doctoral scholarship for the participants of the doctoral school can combine it with the NCN scholarship.

The application should include:

- Cover letter describing the candidate's competencies, predispositions, and motivations.
- CV containing information about the candidate's scientific achievements.
- Information on English language proficiency, at least B2 level (e.g., an exam grade undertaken as part of their studies or an English language proficiency certificate).
- Transcript of records from the first- and second-cycle studies.
- Scan of the master's diploma or other document confirming the award of the master's degree.
- Possibly other documents confirming the candidate's achievements or competences.
- Recommendation letter from the advisor of the master's thesis or other academic mentor included in the application package or sent directly by the advisor or mentor to the principal investigator (pswaczyna@cbk.waw.pl).

Applications in Polish or English should be sent to the email address rekrutacja@cbk.waw.pl with the call reference number (WR.110.15.2024) in the email subject **by 25 November 2024**.

Applications meeting the requirements will be evaluated in accordance with the criteria set out in Article 3(12) of the NCN Regulations. Questions about the scholarship and the project can be directed to the principal investigator at pswaczyna@cbk.waw.pl. The results of the call will be announced by 20 December 2024. The scholarship will be awarded after the admission to the GeoPlanet Doctoral School, indicative start date: 1 March 2025.

NOTE: As part of the recruitment procedure, selected candidates may be invited to participate in a remote interview.

In case of the resignation of the selected candidate, we reserve the right to select the next person from the ranking list.



Please include the following clause in your application documents: I authorize Centrum Badań Kosmicznych Polskiej Akademii Nauk located in Warsaw (00-716), Bartycka 18A, to process my personal data included in my application documents for the needs of the recruitment process in accordance with Article 6(1)(a) of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

The controller of collected personal data is the Centrum Badań Kosmicznych Polskiej Akademii Nauk located in Warsaw (00-716), Bartycka 18A. The Data Protection Officer may be contacted by email: iod@cbk.waw.pl. Personal data are processed for the purpose of carrying out the recruitment process, based on voluntary consent and for the purposes of fulfilling archival obligations. The legal basis for data processing shall be Article 6(1)(a) (b) (c) (f) of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). In this respect, the legitimate interest of the controller is to enable the recruitment process to be carried out by the controller. We inform you of the right to withdraw your consent at any time, however, the withdrawal of consent does not affect the lawfulness of the processing that was carried out on its basis before the withdrawal of consent. Personal data will be processed for a maximum period of two years. In the event that personal data constitute evidence in proceedings conducted on the basis of the law or the controller has become aware that they may constitute evidence in proceedings, the storage period is extended until the final conclusion of the proceedings. Personal data will not be transferred to a third country or an international organization. Personal data may be made available to services authorized to conduct preparatory proceedings or other public authorities who have the right to access them on the basis of legal provisions. Providing data is voluntary, but necessary for the purpose of recruitment. The data subject is not obliged to provide it, however, failure to provide it may result in the inability to conclude a contract. We inform you about the right to access your personal data, rectify it, delete it or limit its processing and the right to lodge a complaint with the supervisory authority. The Centrum Badań Kosmicznych Polskiej Akademii Nauk does not use profiling or an automated decision-making system in recruitment processes.