



2 Postdoctoral Positions in

Thermal properties and activity of comets

Temporary Positions (contract of 2 years), Salary Level TV-L E13, 100%

The Institute for Geophysics and extraterrestrial Physics of the Technische Universität Braunschweig is looking to fill two postdoctoral researcher positions (Entgeltgruppe E 13, m/w/d) as part of Prof. Dr. Jessica Agarwal's research group. The earliest starting date for these positions will be on 01 March 2021. The positions are limited to a period of maximum two years, depending on starting date.

The applicants are expected to carry out research on at least one of the following topics:

- (1) **Activity in comet 67P/Churyumov-Gerasimenko from a Rosetta multi-instrument perspective.** The goal is to understand the processes underlying activity, and their implications for the structure and composition of the cometary sub-surface and interior. The approach should exploit synergies between the various Rosetta instruments and the broad temporal and spatial coverage of the Rosetta data set. Experience with the analysis of Rosetta data is an advantage.
- (2) **Properties of comet dust from thermal infrared observations.** The task is to analyse archival data from infrared telescopes showing the thermal emission by cometary dust, and potentially to prepare proposals requesting observing time for future such observations. The goal of this work is to study how the effective dust colour temperature depends on circumstances such as phase angle and position relative to the comet. Combined with numerical simulations carried out by a member of our research group, these data will constrain the physical properties of cometary dust. Experience with the analysis of thermal IR data will be beneficial.
- (3) **Surface properties of comet 67P from VIRTIS and/or MIRO data.** The goal is to characterise the scattered light and thermal emission by the surface of comet 67P at visible and near-infrared (VIRTIS) and (sub-)mm wavelengths (MIRO), its evolution with time and its variation with surface properties and activity. Such data shall be analysed in connection

with a comprehensive model of light-scattering and thermal processes in near the surface that is being developed in our group. The ultimate goal is to better understand how ice is integrated in the near-surface layers. Experience with the analysis of VIRTIS and/or MIRO data will be a significant asset.

The positions will offer the possibility to acquire teaching experience at a low level (up to 10% FTE). For this aspect, knowledge of German will be a strong advantage.

The Institute for Geophysics and extraterrestrial Physics offers an active and interdisciplinary scientific environment with an open and collaborative atmosphere. Key research areas include Laboratory Astrophysics, Planet Formation, Space Physics, Applied Geophysics, and Small Body Astronomy and Exploration.

Applicants should hold a PhD in a relevant field, and combine proven dedication to scientific work with a strong motivation to approach their project from an interdisciplinary perspective. Good command of English is required.

Applications should include a description of research interests, curriculum vitae, publication list, proposed starting date and the contact information of two potential referees. Applications should be sent by email as a single pdf file to Jessica Agarwal (j.agarwal@tu-braunschweig.de). Review of applications will begin on 04 January 2021 and continue until the position is filled. Remuneration is according to the German public salary scale TVL group E13. Social security benefits are in accordance with the public service regulations.

The TU Braunschweig aims to increase the number of women in science and technology. Women are therefore strongly urged to apply, as are qualified handicapped applicants. Applications are welcome from persons of all nationalities. Please note that personal data and documents related to the application process will be stored electronically, and that application costs cannot be refunded.

Full contact information:

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