

Job ID: IWF144DOC224

The Space Research Institute ([IWF](#)), with about 100 employees from twenty nations, is one of the largest institutes of the Austrian Academy of Sciences ([OeAW](#)). The institute is located in the Victor Franz Hess Research Center of the OeAW in the south of Graz and hosts eight research groups working on physics of the solar system, exoplanets, and space instrumentation. The IWF also operates a world-leading satellite laser ranging station at the Lustbühl Observatory. The Space Research Institute in Graz invites applications for a

## PHD STUDENT POSITION (F/M/X) *in Solar System Planetary Physics* (part-time, 30h per week)

The institute invites applications for a three-year PhD position working on the evolution of Venus' stable hydrogen isotope ratio under the influence of solar soft-X-ray and extreme ultraviolet (EUV) radiation of the Sun. A study that evaluates the escape rates and related fractionation of hydrogen isotopes from present Venus to its past will be carried out and different initial sources and also expected mixtures of water with their corresponding isotope ratios will be assumed (i.e., water from a primordial atmosphere, water from carbonaceous chondrites, water from comets). The available data from Venus' atmosphere indicate a strong loss of the lighter and an enrichment of the heavier isotope. The PhD and the work are embedded in a GAČR-FWF-funded project 'Redox Disequilibrium in the Clouds of Venus - A Sign of Life?' and the team members at the IWF and the JH of the Czech Academy of Sciences in Prague.

The results of this study will yield constraints on UV-photochemistry, which is important for the hypothetical abiotic production of redox disequilibrium pairs in the clouds of Venus.

### Your tasks:

- Study potential exogenous and endogenous sources and sinks of Venus' hydrogen reservoirs;
- Analyze data (particle, spectroscopic, plasma, magnetic field) from PVO and VEX and reconstruct the most realistic evolution of hydrogen isotope ratios before and after the planets last resurfacing;
- Present your results at international conferences;
- Publish two articles in peer-reviewed journals and write a PhD thesis to get your degree.

### Your profile:

- You must hold a Master's degree in physics, astrophysics, or a related field;
- You should have experience in data analysis with MATLAB, IDL and/or Python;
- You are willing to collaborate with international colleagues.

The annual gross salary according to the collective agreement of the Austrian Academy of Sciences (OeAW) for this position is € 37.773,33 (30 hours per week, before taxes). The appointment can begin at November 2024, but a later starting date is negotiable.

Please send your application including (1) a curriculum vitae, (2) a statement of your background, research interests, and relevant experiences, (3) two names of references with full contact information in a single PDF file via email to Dr. Helmut Lammer, [helmut.lammer@oeaw.ac.at](mailto:helmut.lammer@oeaw.ac.at) mentioning Job ID, no later than **October 5, 2024**. Inquiries about the position should be directed to Dr. Helmut Lammer. More information about [the solar system planetary physics group](#) of IWF.

The PhD student will be part of the [Young Researcher Program YRP @ Graz](#), which is a collaboration between the [IWF](#), the [Graz University of Technology](#), and the [University of Graz](#). The successful candidate will benefit from the YRP@Graz network of peers and supervisors across these institutions.

*The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.*