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In search of our planet's siblings – astronomers meet in Vienna

The night skies have fascinated mankind for thousands of years - and not just since the lunar eclipse or "blood moon" this July. At the moment, Austrian astronomers are playing a pioneering research role in the quest to find habitable planets orbiting other stars. From 20-31 August around 3,000 astronomers from the International Astronomic Union (IAU) will converge on the Austria Center Vienna to discuss the latest research breakthroughs. A special programme for children and young people has also been lined up.

“For smaller countries like Austria it is especially important to find niches to specialise in. We found our niche with the development of aviation software: used in space telescopes that work autonomously above the Earth’s atmosphere looking for stars, taking measurements and collecting data before beaming it back home. Our software replaces the astronomers on board and is in use in both European and international space missions,” explained,” Prof. Franz Kerschbaum from the University of Vienna’s Institute of Astrophysics.

Discovery of thousands of planets expected

Thanks to this specialisation, Austria is playing a pioneering role in planetary habitability research, an area which has set itself the task of finding planets that could support life based on their physical properties and distance to the nearest star – as they continue their quest to discover the Earth’s twin. The central instrument computer used in the Cheops mission, created by researchers from Graz and Vienna, will be put to work monitoring known planets for habitability from 2019. Follow-up mission Plato, also developed with significant involvement from Austria, will discover a large number of previously unknown planets. “The question of whether we are alone in the universe is a central part of the way humanity sees itself. We expect Plato to discover many thousands of new planets. It is entirely plausible that that number will include hundreds of habitable ones,” Kerschbaum said. The most promising of the newly discovered planets are the focus of the Ariel project that will analyse their atmospheres for the presence of the core components needed for the development of life, such as water, methane and carbon dioxide.

Research reveals answers to climate questions on Earth

Comparative planetary science and research into the entire cosmic matter cycle is essential for understanding how the Earth formed, how it developed and what the conditions were for life to form on our planet in the first place. At the same time, these revelations form the basis of long-term predictions for various topics such as the Earth's climate. All stars, including the sun, go through different phases that have an immediate impact on the planets orbiting them – in our case, Planet Earth. "In addition to climate change fuelled by human activity, we should not lose sight of the fact that the sun also influences climatic conditions on Earth," Kerschbaum noted.

Astronomy as a "gateway drug"

"Astronomy is there for everyone and, with the information so readily accessible, it is the ideal gateway drug for getting children and adolescents interested in science and technology," he confirmed. In addition to a broad-based scientific programme, the IAU will also be offering events at the Kids Uni for children aged 7-10 and the Astronomy Youth Day, which is aimed at young people aged 16-20 to help them find out more about astronomy in general and degree courses in astronomy and astrophysics.

About IAKW-AG

Internationales Amtssitz- und Konferenzzentrum Wien, Aktiengesellschaft (IAKW-AG) is responsible for maintaining the Vienna International Centre (VIC) and operating the Austria Center Vienna (ACV). The Austria Center Vienna is Austria's largest conference centre, with 24 halls, 180 meeting rooms, and some 22,000m² of exhibition space, and is one of the top players on the international conference circuit. IAKW-AG committed to helping its employees and congress participants maintain an optimal work-life balance. Which is why it will be providing free childcare for about 50 next-generation astronomers at the IAU.

Kontakt

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