



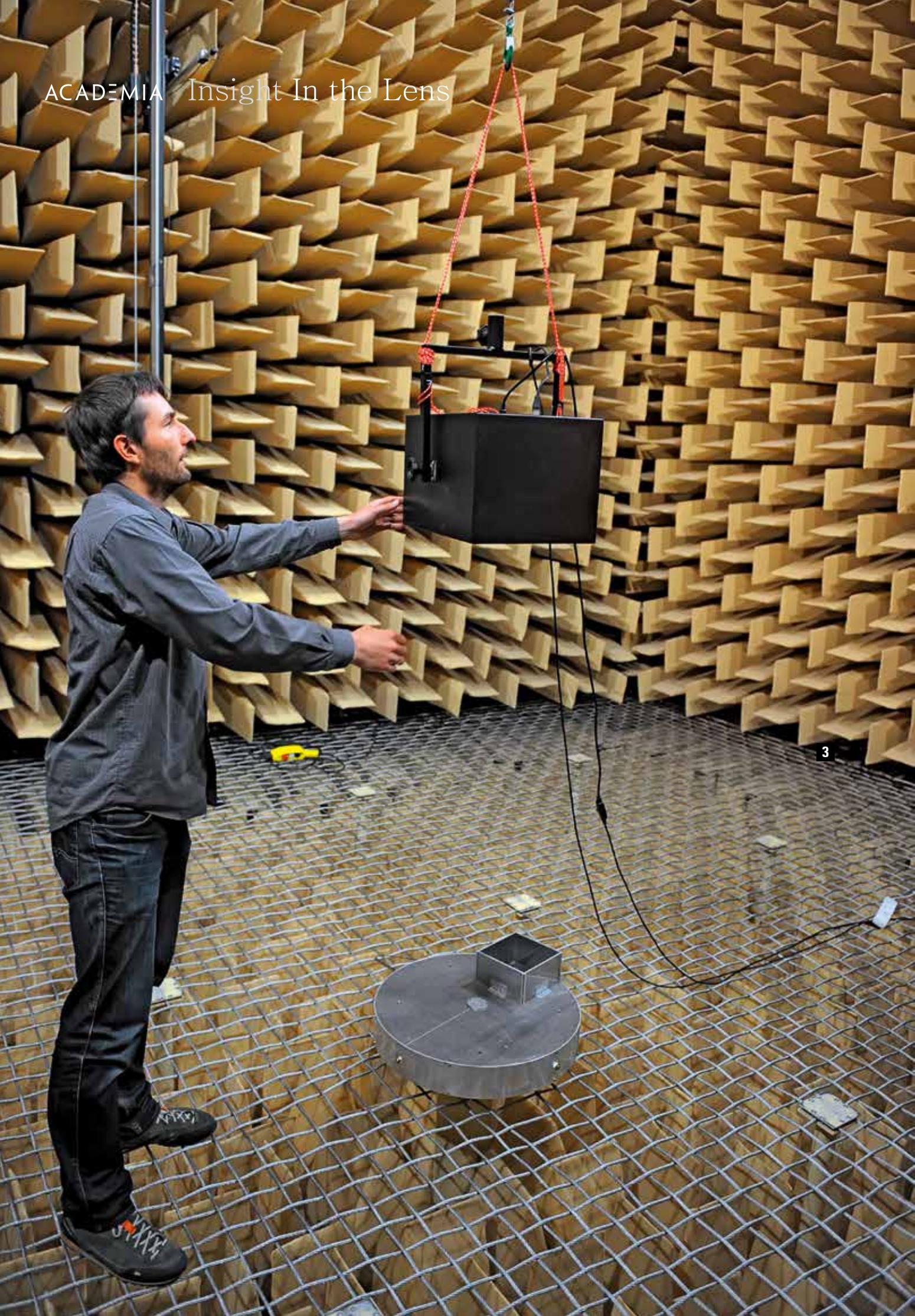
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A GODDESS THAT WILL TOUCH THE STARS



Photography by Jakub Ostakowski

The ancient goddess Athena's domain included art, just warfare, and also wisdom. Today such wisdom is being put to use in modern astrophysics, as part of the "ATHENA" project to study the hot universe (including a team led by a Polish female researcher).

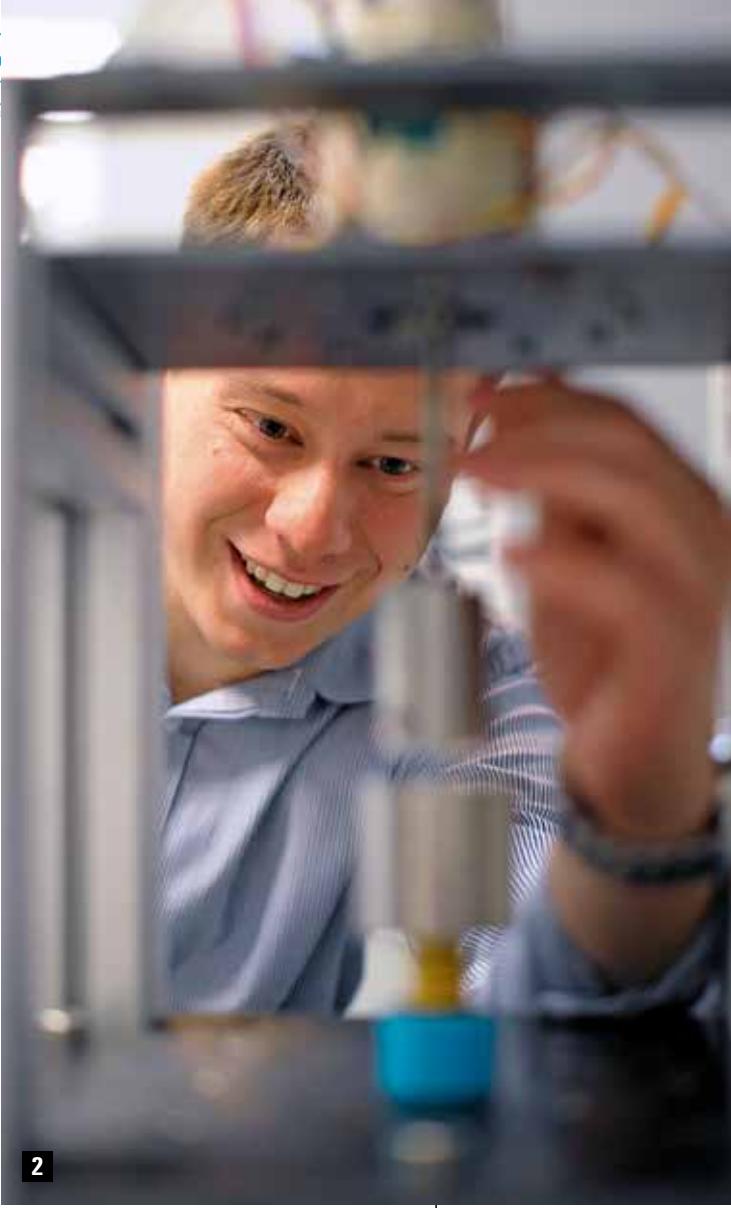


THE ATHENA MISSION

Nearly half of the observed matter in the Cosmos occurs in the form of rare, hot gas, called “hot phase,” with temperatures in the millions of degrees Kelvin. Such heated plasma is the source of x-ray radiation, which is invisible to the naked eye and can only be studied using special instruments. The first observations in the x-ray field of the spectrum showed that hot gas is everywhere – occurring in the central areas of galaxy clusters and surrounding individual galaxies and their active cores. It also is found near black holes, one example being found in our own Milky Way galaxy: SgrA*. Studying the hot Universe is an important field of interest for modern astrophysics. ATHENA (*Advanced Telescope for High ENergy Astrophysics*) is a next-generation x-ray telescope approved by the European Space Agency for launch in 2028.

Polish engineers have been building elements of satellite instruments for years. The good reputation their work has earned led them to be invited by the Max Planck Institute and French Space Agency to work on preparing elements of the ATHENA satellite. Poles will design and create four subassemblies: two opto-mechanical and two electronic. The involvement of Polish research institutes and space-industry companies in the ATHENA mission represents a huge opportunity for us to play an important decision-making role in the planning of the telescope’s observation work and to have direct access to their results. The involvement of the research community in the development of the mission is crucial for us to be prepared for future discoveries. Involvement in the ATHENA project fits in very well with the policies of the Polish Space Agency (POLSA) and will have a positive impact on the Polish space industry.

ASST. PROF. AGATA RÓŻAŃSKA



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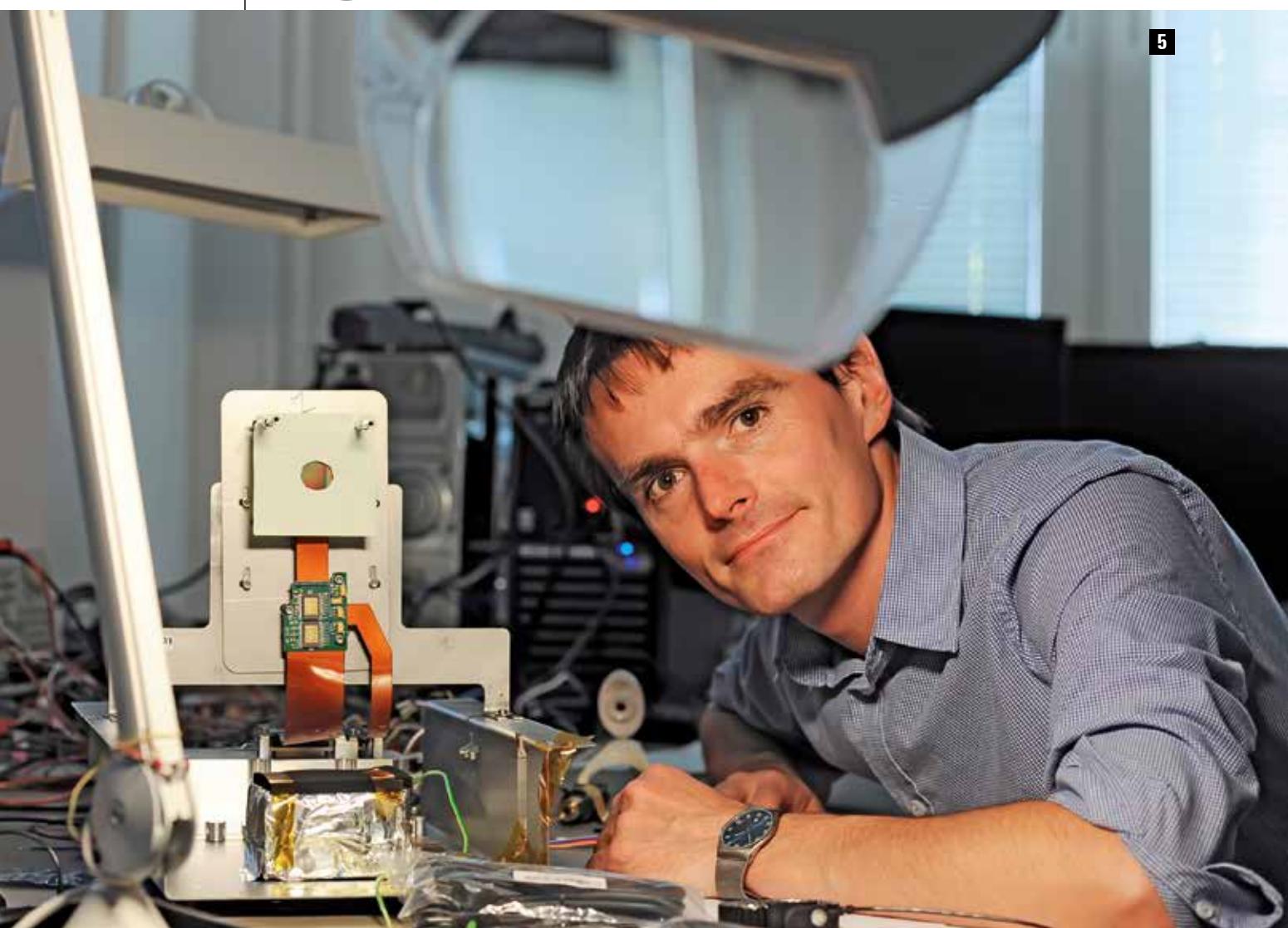


Fig. 1

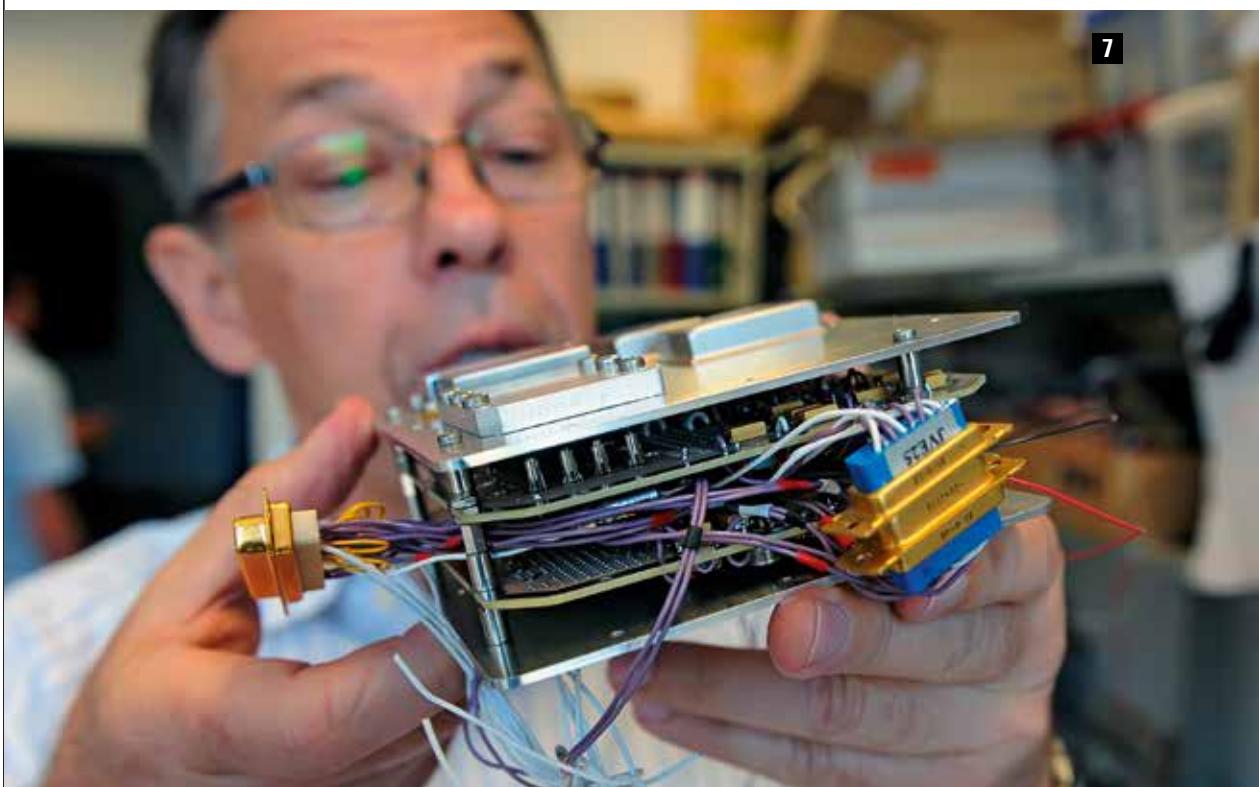
Asst. Prof. Agata Różańska from the Nicolaus Copernicus Astronomical Centre in Warsaw – coordinator of Poland's involvement in building the ATHENA mission.

Fig. 2

Bartosz Kędziora from the company Astronika – the designer and implementer of the door to the chamber where ATHENA's x-ray detector will be situated.

Fig. 3, 4

Prototype of the filter changing system for the ATHENA telescope, being tested at the Technical Acoustics Lab at AGH University of Science and Technology in Kraków.



THE ATHENA MISSION

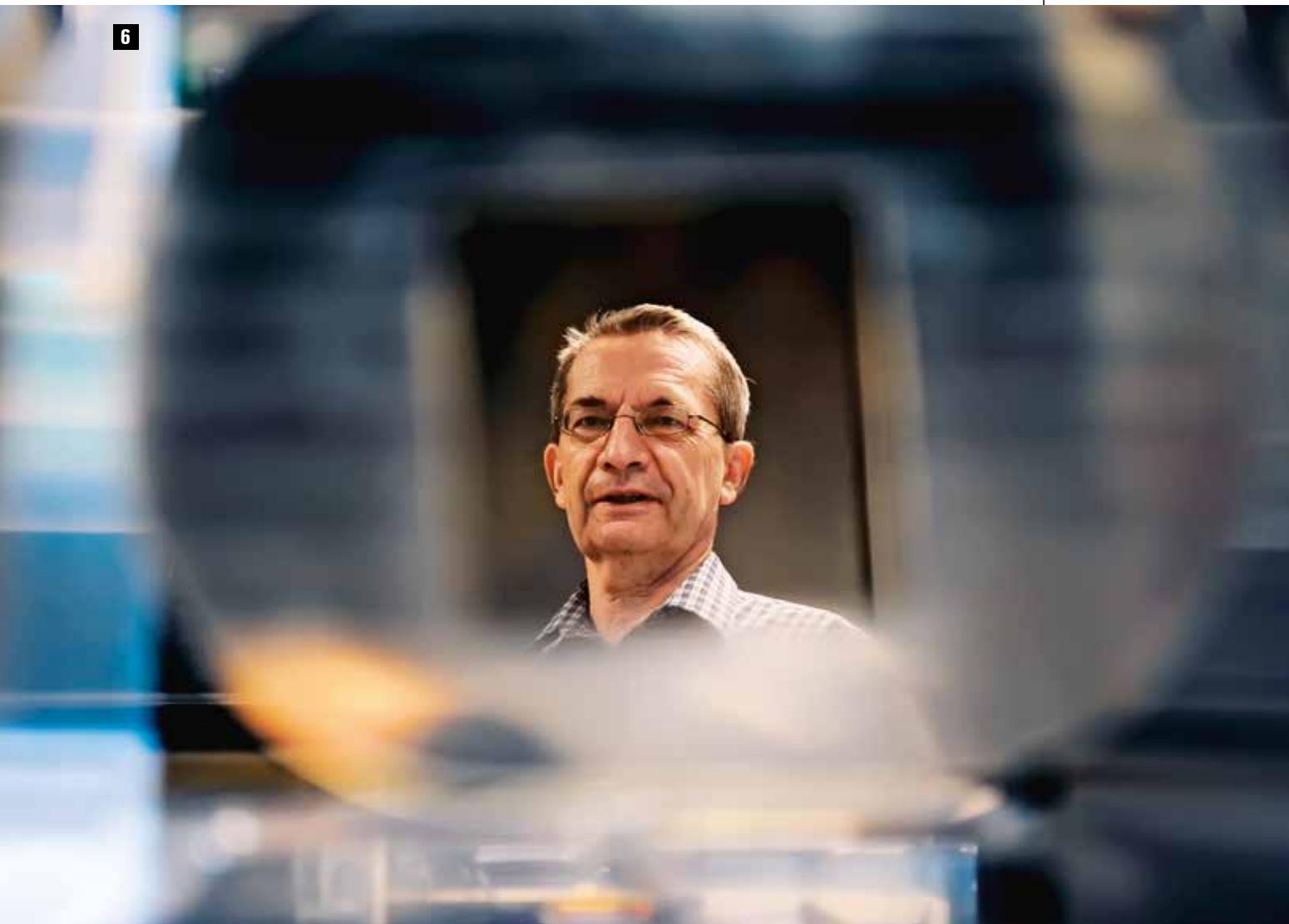
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Fig. 5

Konrad Skup, an engineer from the PAS Space Research Centre – the designer and implementer of power supplies for detectors.

Fig. 6

Asst. Prof. Miroslaw from the PAS Centre for Space Research – designer and implementer of the filter change system for one of the cameras of the ATHENA telescope.

Fig. 7, 8

Examples of satellite elements being created at the PAS Space Research Centre and the company Astronika.

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