
14-Year-Old Young Researcher Wins Hesse State Competition “Jugend forscht” in Geo and Space Sciences

Julian Mayer impresses with a self-developed radiation measurement system for stratospheric research.



*14-year-old student Julian Mayer with his self-developed radiation measurement system.
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Bensheim, Germany, 31 March 2026 - Fourteen-year-old student Julian Mayer from Goethe-Gymnasium Bensheim has won first place in the Geo and Space Sciences category at the Hesse [state competition “Jugend forscht” on March 21, 2026](#). Having already succeeded at the regional level, he has now also prevailed at the state level. The sponsor, speedikon FM AG, [interviewed him earlier in March on the company blog](#) about his success in the regional competition.

The jury of the state competition particularly praised the high technical quality, the independent execution, and the strong potential of his project for future applications in space exploration. At the heart of his work is the development of a multi-channel radiation measurement system designed to analyze the shielding effectiveness of different materials under real-world conditions. The long-term goal is to contribute to better protection of astronauts and onboard technology from cosmic radiation.

Press contact

Alexandra Kiourtsi
Public Relations
+49 6251 / 584 – 261
a.kiourtsi@speedikonfm.com

speedikon FM

Berliner Ring 103
Bensheim – Germany
+49 6251 / 584 – 0
information@speedikonfm.com

To collect data, the system was deployed in a stratospheric balloon reaching an altitude of around 40 kilometers. The entire measurement electronics, control system, and data acquisition were independently designed and implemented by Julian Mayer.

The jury described the project as “exceptionally high quality” and highlighted, in particular, the combination of technical sophistication, an interdisciplinary approach, and successful practical implementation: “The combination of in-depth expertise, strong project management skills, and tireless dedication convinced the jury.” The independent development of the electronics and the successful balloon flight were also recognized as outstanding achievements.

For Julian Mayer, the focus was primarily on the scientific work itself rather than the competition: “It was important to me to develop a system that produces reproducible and comparable results, not just a one-off experiment.”

He describes his participation in the competition as a formative experience: “The feedback from the jury helped me see my work from a new perspective. It was especially exciting to answer critical questions and realize how confidently I can explain my own project.”

His success at the state competition also motivates him to take the next steps. Building on his current results, he plans to further develop the system and eventually deploy it under real space conditions. “In the long term, it would be a dream to operate such a measurement system on a small satellite of my own in space.”

About the Project

As part of the project, Julian Mayer developed a modular multi-channel system for detecting ionizing radiation. The aim is to make the protective effect of different materials experimentally comparable and to lay the groundwork for future applications in space exploration.

About “Jugend forscht”

“Jugend forscht” is Germany’s most well-known competition for young scientists in the fields of science and technology. Its goal is to inspire young people to engage in research and to support innovative projects.

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