

A Constant Commitment to Research



From overseeing the science operations of an upcoming observatory to the study of proper motions

How do stars move inside large systems like galaxies? How do galaxies move? These questions have driven Roeland van der Marel's research for decades. He's focused on studying the proper motions of stars—their change in position on the sky from year to year—primarily based on Hubble data, but also recently from the European Space Agency's Gaia mission to understand the movements of these massive structures.

"I've always worked in the area between observations and theory," van der Marel explains. Fortuitously, his role at the institute combines both. He's served on Hubble's instrument teams after its launch, contributed to the James Webb Space Telescope's development, and now leads the mission office for the Wide Field Infrared Survey Telescope (WFIRST), which is in its preliminary design phase.

Throughout his career, van der Marel has also prioritized research. His 2018 work focused on Gaia's second data release in April, which included proper motions for more than 1.3 billion sources. "My research group and I spent months preparing scripts and tools, and discussing analysis methods to have them ready the moment the data came out," he says. Their preparation paid off. Within a month, the team submitted six papers, both validating and improving the Hubble measurements obtained in their previous publications.

Ongoing research anchors him. "It allows me to engage others with ideas, provide direction, and take satisfaction from their successes," van der Marel says. "What makes the job interesting is the ability to work with a variety of people from a range of backgrounds to do something new and innovative. Mentoring, and the creative processes of research and development are extremely satisfying."