

**The Norwegian Academy of Science of Letters has decided to award
the Kavli Prize in Astrophysics 2026 to**

Vasily Belokurov

University of Cambridge, UK

Amina Helmi

University of Groningen, The Netherlands

Rodrigo Ibata

University of Strasbourg, France

“for uncovering the fossil evidence of past mergers proving that the Milky Way galaxy was built through hierarchical accretion”

The three Kavli Prize laureates have fundamentally transformed our understanding of how massive galaxies have evolved over the history of the universe. In the hierarchical framework of

galaxy formation, massive galaxies are thought to grow by accreting numerous smaller galactic systems from their surrounding circumgalactic environment. The laureates have provided clear observational evidence that major merger events have indeed occurred, and that their signatures remain visible today, billions of years later in our Milky Way galaxy.

Enormous datasets from surveys like the Sloan Digital Sky Survey and the *Gaia* space mission have delivered 3-dimensional positions, 3-dimensional velocities, and chemical abundances for billions of stars. By combining these datasets with innovative analytical methods and simulations, the three laureates have revealed our Galaxy as the outcome of repeated, dramatic, and violent cosmic collisions. They discovered numerous individual stellar streams and halo substructures that can be traced back to specific major accretion events, revealing a complex assembly history that goes far beyond a simple scenario of smooth, continuous accretion.

Vasily Belokurov demonstrated the importance of the ultra-faint dwarf galaxies for the accretion history of the Milky Way. He presented a comprehensive outline of the accretion history of the Galaxy (the so-called “field of streams”) with profound implications for the dark matter distribution. Belokurov and Helmi, independently of each other, identified the remnant – the Gaia-Enceladus Sausage – of the last major merger with a dwarf galaxy. Belokurov highlighted its strongly radial orbits and dominant role in building the local halo.

Amina Helmi identified stellar streams, remnants of ancient, accreted dwarf galaxies, demonstrating that old mergers can still be traced in local halo stars. She showed that the Gaia-Enceladus Sausage accretion event contributed a large fraction of inner-halo stars and likely heated the early disk 8–11 billion years ago. Helmi applies chemo-dynamics, combining detailed chemical abundances with kinematics, to distinguish in-situ formed stars from accreted ones.

Rodrigo Ibata’s discovery of the Sagittarius Dwarf Spheroidal Galaxy provided the first clear observational evidence that the Milky Way is still accreting satellite galaxies. His later mapping of the Sagittarius tidal stream and his identification of the rich substructure and asymmetry of the Andromeda galaxy’s halo have been central to visualizing the complex debris fields around the two galaxies which even today challenge our understanding of structure formation on galactic scales. ---