Royal Astronomical Society

The 2024 Gold Medal for Astronomy is awarded to Professor Gilles Chabrier

Professor Gilles Chabrier has made outstanding contributions to our understanding of the physics of astrophysical plasmas, to stellar and planetary astrophysics, and to Galactic astronomy.

As prime examples, Professor Chabrier's work has explored the nature of high-density environments in white dwarf interiors, leading to the transformational Segretain-Chabrier phase diagram.

Through developing the Saumon-Chabrier theory of hydrogen pressure ionization, which led to the Saumon-Chabrier-Van Horn equation-of-state Professor Chabrier has allowed us to better understand the prevailing conditions in the interior of low-mass stars, brown dwarfs, giant planets, and the envelopes of white dwarfs and neutron stars.

Within the field of Galactic astronomy, perhaps Professor Chabrier's most impactful work is the derivation of the Galactic stellar and substellar initial mass function (IMF), the Chabrier IMF, which has become the standard IMF reference in Galactic astronomy.

Use of this IMF led to the first accurate determination of the various contributions of stars, brown dwarfs and stellar remnants to the Galactic mass budget.

It is for these reasons Professor Gilles Chabrier is awarded the RAS Gold Medal.

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