



Royal
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The 2023 Jackson-Gwilt Award is awarded to Roberto Abraham and Pieter van Dokkum

The Jackson-Gwilt Medal is awarded to Professor Roberto Abraham of the University of Toronto and Professor Pieter van Dokkum of Yale University.

Professors Abraham and van Dokkum developed and implemented the Dragonfly Telephoto Array, an innovative robotic imaging system designed to measure ultra-low-surface-brightness structures. The system ingeniously exploits the capabilities of standard telephoto lenses and CCD arrays and careful optical design to minimise stray light in order to achieve unprecedented surface brightness sensitivity. This has enabled new and important scientific breakthroughs including the discovery and characterisation of a population of ultra-diffuse galaxies and the quantitative study of extended stellar halos around Milky Way type galaxies. Their work has stimulated a new area of observational research by demonstrating the capabilities of ultra-low surface brightness measurements to investigate galaxy evolution and the nature of dark matter. The Dragonfly project has also enabled many PhD students to play key roles in the development and use of a state-of-the-art observational facility.

The Dragonfly system and its impressive scientific productivity and significance represent an exceptionally creative and novel achievement in experimental astrophysics.

For this reason, Professor Roberto Abraham and Professor Pieter van Dokkum are awarded the RAS Jackson-Gwilt Medal.