

Citation for the 2019 RAS Herschel Medal: Professor Nial Tanvir

The 2019 Herschel Medal is awarded to Professor Nial Tanvir.

Professor Nial Tanvir is a world leader in studies of the explosive universe. He has made pivotal contributions to the discovery of gamma-ray burst (GRB) afterglows, the identification of their progenitors and their use as cosmological probes to the most distant galaxies. This work includes the discovery of the most distant GRB ($z=8.23$), and for some time the most distant spectroscopically confirmed object.

In 2013, Professor Tanvir led a team that identified the first example of a new kind of astrophysical event known as a kilonova, arising from the merger of two neutron stars. This seminal work resolved two central questions in contemporary astrophysics: what forms the short-duration gamma-ray bursts, and where are the heaviest elements synthesised?

These results received spectacular confirmation in 2017 with the discovery of merging neutron stars from gravitational waves, and Professor Tanvir's team were among those who discovered the optical and infrared counterparts independently, providing a template of what a kilonova looks like.

For these reasons, Professor Tanvir is awarded the Herschel Medal.