

Trucker turned astrophysicist wins NASA funding for Queen's

Belfast researcher Dr Ryan Milligan (38) hopes to better understand large solar flares



Truck-driver turned astrophysicist. Dr Ryan Milligan standing outside Queen's University Belfast. Photograph Queen's University Belfast

Michel Destrade

Topics: News Science astrophysicist

Ryan Milligan Nasa

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A major source of funding for a collaboration between [Queen's University Belfast](#) and NASA has just been awarded to one of Queen's astrophysicists.

When he is not truck-driving the odd week-end, Dr [Ryan Milligan](#) (38) sticks to what he now knows best, the study of large [solar flares](#).

The grant worth €240,000 will allow Dr Milligan to analyse data sent from the Goddard Space Flight Center outside Washington DC directly to Queen's Astrophysics Research Centre.



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The data is collected from NASA's Solar Dynamics Observatory spacecraft. "This research will lead to a better understanding of the underlying physics of large solar flares." Very little is actually known about this phenomenon. Dr Milligan plans to measure the level of ultraviolet [radiation](#) emitted by a solar flare and its effect on the atmosphere.

These massive bursts of radiation are emitted now and again by the Sun and if one crossed the Earth's path, the consequences could be catastrophic. "The largest ever recorded happened in 1859," he said. At the time it disturbed the telegraph and caused Northern Lights so intense that people could read the newspaper at night.

Nowadays, a large solar flare would throw off GPS signals, disrupt power-grids and could lead to total blackouts of radio and satellite communications. The resulting extensive chaos would cost in excess of \$2 trillion according to a study by the American National Academy of Sciences.

Two years ago, NASA observed a massive solar flare that narrowly missed our planet. It was calculated at the time that the odds of an actual hit over a period of 10 years were 12 per cent. Understandably Met offices and insurance companies are keen to come up with a forecasting method for large solar flares, but that possibility is still far away, Dr Milligan said.

And what about the truck-driving background? "I don't mind talking about that, if it is a way of getting people interested in the science," says Dr Milligan. A former HGV driver from Co Down, Ryan Milligan went to Queen's University as a mature student, where he completed a Masters degree and a PhD in astrophysics.

He has worked as a research associate at NASA's Goddard Space Flight Center for four years, and looks forward to being based at Queen's as a visiting research fellow. "I still drive trucks now and again... clears the mind," he said.