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## Solar weather: QUB scientists try to predict explosions

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**By Barra Best**  
BBC News NI Weather Presenter

**Scientists in Belfast are to play a major part in answering some of the mysteries of solar weather.**

They want to observe the build up of magnetic energy on the surface of the sun that can lead to solar flares and explosions that affect Earth.

The explosions send particles to the planet that can severely disrupt telecommunications and power grids.

On one such occasion there was a huge blackout in Quebec, Canada, when a massive solar storm took out the grid.

The blackout on 13 March 1989 lasted for 12 hours.

### **'Unprecedented detail'**

"We are trying to predict when these explosions will happen so that we can issue a warning" said Prof Mihalis Mathioudakis, from Queen's University in Belfast.

"People could be told that power will go out for a few hours and airlines that travel over the poles could divert their flights due to increased radiation in those areas".

Queen's University is at the forefront of a consortium of UK universities and businesses that will build cameras for the world's biggest solar telescope.

Costing \$344m (£226m), the Daniel K Inouye Solar Telescope (DKIST) will be launched in 2019 in Hawaii.

Its 4m wide mirror will be able to pick up unprecedented detail of the surface of the star - like examining a £1 coin located in Dublin from a telescope in Belfast.

### **'Key questions'**

"The Sun is the most important astronomical object for humankind with solar activity driving space weather and having profound effects on global climate and technology-based communications." Prof Mathioudakis added.

"It will be in a position to explore key questions regarding solar magnetic field generation and dissipation, solar variability, atmospheric structure and dynamics." he added.

Scientists hope that DKIST will address fundamental questions at the core of contemporary solar physics.

It will do this via high-speed spectroscopic and magnetic measurements of the solar photosphere, chromosphere and corona.

Dr Thomas Rimmele, who is leading the project, said it "will be the world's most powerful solar telescope".

"The scientific and technological expertise represented by the Queen's University Belfast-led consortium is a great asset to the project."

Belfast-based firm Andor Technology will play a central role in the design and manufacture of state-of-the-art detectors for the project.

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