

PRESS RELEASE

17th February 2011

Good chance of Northern Lights spectacle over next few nights due to stormy space weather

The British Geological Survey (BGS) says all the ingredients are coming together for aurora sightings over the next few days. This is due to the largest solar storm in 4 years which could result in possible space weather impacts in the UK. This coincides with the release of a rarely seen archive of unique geomagnetic records that provide insights into space weather dating back to Victorian times. BGS scientists hope that a study of solar storms in the past will inform the prediction of future space weather and help counter the threat to our national power grid and communication systems.



Aurora borealis ©Jim Henderson Photography

This current activity is due to three energetic solar flares that are heading towards the Earth. One of these flares (01:56, 15th February 2011) is the largest since December 2006. Displays of the Northern Lights (aurora borealis) have already been seen further south than usual in Northern Ireland and elsewhere in the UK. Further solar activity is expected with displays of the Northern Lights possible for the next few nights if skies are clear and the activity peaks in night-time.

Solar storms, unpredictable eruptions on the Sun, cause bad space weather and are a growing threat to modern technology. Electrical power grids, communications systems and satellites are all recognised to be at risk. We don't yet fully understand what the impact of severe solar storms will be in the future and what this means for the way we live.

Rarely seen records of past space weather, dating back 160 years, have been made available online by the BGS. These unique magnetic recordings, known as 'magnetograms', provide a glimpse into the history of the Sun's stormy relationship with planet Earth. BGS scientists hope to gain a better understanding of the potential severity of future space weather by studying the magnetogram archive (www.bgs.ac.uk/data/Magnetograms/home.html).



Alan Thomson, Head of Geomagnetism at the BGS, said "Life today increasingly depends on technologies in space and on the ground that didn't exist when the magnetic recordings began. Studying the records will tell us what we have to plan and prepare for to make sure systems can resist the threat of solar and magnetic storms."

He continues "The 'Carrington Storm' of 1859 caused fires and electrocuted workers at Victorian telegraph stations. But what else is there in the records that we might find? How might such events affect today's power grid, if they were to occur again?" Scientists also hope to discover how slow changes in the magnetic fields of both the Sun and the Earth affect our natural environment.

Bob McIntosh, Geo-Information specialist at the BGS, commented "There are more than a quarter of a million records in the archive, many on crumbling photographic paper. Preserving these records digitally is essential for the future and for enabling access to the public and scientists alike." Ellen Clarke, Geomagnetism scientist, added "The on-line photographs contain UK magnetic observatory records from 1846 to 1940. Future releases will extend that up to 1983, when digital recording was introduced."

Alan Thomson said "Making these records available now marks the 175th anniversary of the explorer Alexander Von Humboldt's plea to the British government to join the 'magnetic crusade' of the Victorian era. Long-term monitoring of the Earth's magnetic field and the science of geomagnetism in the UK, in many ways, date from this event."

This release also coincides with the modern day crusade to extend magnetic observatories around the world, as BGS scientists set off to re-establish an observatory in South Georgia. See <http://www.bgs.ac.uk/research/highlights/southAtlantic2011.html>

Ends

For further details or to arrange media interviews please contact:

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Notes for Editors

The following are available for interview:

- Dr Alan Thomson, Head of Geomagnetism, BGS
- Bob McIntosh, Geo-Information Specialist, BGS

For additional information go to: http://www.bgs.ac.uk/research/earth_hazards_geo.html

Photographs are available from our ftp server: <ftp://ftp.bgs.ac.uk/pubload/cjmi/Geomagnetism/>

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