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International Association
of Geomagnetism and Aeronomy

Dr Alan Thomson
British Geological Survey
The Lyell Centre,
Research Avenue South,
Edinburgh EH14 4AP
UK

Tel: +44 (0)131 650 0257

E-mail: awpt@bgs.ac.uk

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Dr Jill McCarthy
Center Director,
Geologic Hazards Science Centre,
United States Geological Survey

Dear Dr McCarthy,

USGS geomagnetic observatory network

Both the International Association of Geomagnetism and Aeronomy (IAGA) and the International Network of Geomagnetic Observatories (INTERMAGNET) note with concern the decision of USGS to suspend maintenance on three of its fourteen magnetic observatories, beginning in April 2019. The three observatories concerned are located in Shumagin (AK), Fresno (CA) and Bay St. Louis (MS). We understand that this unfortunate and incomprehensible development is due to a funding shortfall caused by a client of USGS withdrawing financial support.

The fourteen US magnetic observatories provide excellent coverage and monitoring of magnetic variations across North America and the eastern Pacific, caused by natural processes in the Earth's outer core, and by the action of space weather, caused by the Sun's magnetic activity. The US observatories, including the three under threat, provide high quality long-term data that scientists use to improve our understanding of the Earth and its environment. Importantly, these data also have significant practical applications, including the construction of maps of the time-varying magnetic field that are essential for precision navigation activities, such as directional drilling for oil and gas, and for monitoring of severe space weather, which can impact

infrastructure such as electrical power networks and gas transmission pipeline networks. For both science and practical applications there are already too few permanent magnetic observatories, so the potential loss of even three from the US is a major blow.

We note that in the past few months there has been significant media interest in the rapid movement of the northern magnetic pole and the consequent impact – loss of navigation accuracy - on the World Magnetic Model (WMM) and the International Geomagnetic Reference Field (IGRF). The WMM is commissioned by the US and UK defence departments for military maps and software. The WMM and IGRF also find civilian use by the aviation industry and by smartphone app designers, amongst others. In this context and at this time the decision by US funders to risk the three observatories is particularly difficult to understand.

Whilst we recognise that USGS has made this decision out of financial necessity, we hope that what we have said above helps to convince all clients of USGS to see the folly of any short-sighted decision to remove support. We also hope that our comments help lead to the restoration of funding that enables maintenance of the full USGS magnetic observatory network to be secured, to the benefit of the US economy and science. Finally we note that IAGA resolution #2 at the 2017 Assembly in Cape Town (see <http://www.iaga-aiga.org/index.php?id=res2-2017>), addressed previous concerns over support for the USGS magnetic observatory network. The health of the USGS network remains clearly of concern worldwide.

We, the president of IAGA and the chair of the Executive Council of INTERMAGNET, are more than happy to discuss this further with relevant US authorities and USGS stakeholders.

Yours sincerely,



Alan Thomson
Chair, INTERMAGNET
Executive Council



Eduard Petrovsky
President, International Association
of Geomagnetism and Aeronomy