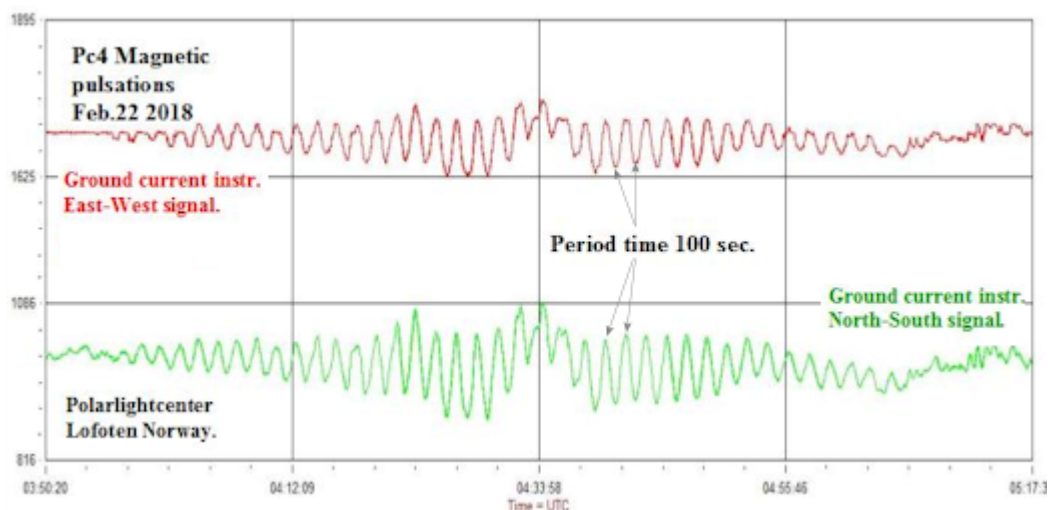


Earth's Magnetic Field is Ringing Like a Bell

Source: [Space Weather](#)

EARTH'S MAGNETIC FIELD IS RINGING LIKE A BELL: Today, a high speed solar wind stream is passing just south of Earth, making grazing contact with our planet's magnetic field. This is causing something unusual to happen. Around the poles, Earth's magnetic field has been ringing like a bell. Rob Stammer recorded the phenomenon from his magnetic observatory in Lofoten, Norway.

"This morning, the magnetic field around our observatory (as measured by ground currents) was swinging back and forth with a 100 second period," says Stammer. "This very stable oscillation went on for more than an hour."



This is quite different from what normally happens when a solar wind stream hits Earth's magnetic field. [Here is an example](#) of Stammer's recordings during a regular geomagnetic storm. Compared to the cacophany of a normal storm, this morning's event was a sweet pure tone.

Researchers call these pure ultra-low frequency oscillations "[pulsations continuous](#)" (Pc). Pc waves have an [energizing](#)

[influence](#) on particles in Earth's inner magnetosphere because they resonate with the natural motion of particles around the geomagnetic field. This, in turn, can supercharge the aurora borealis.

Some of the energy injected by Pc waves is being observed right now in Sweden. "The auroras are going crazy!" reports Chad Blakley of [Lights over Lapland](#), who roared out on his snowmobile to photograph the display:



"The lights were so impressive that I forgot that I was only wearing jeans before heading out! It may have been -25 degrees outside but it was worth 15 minutes in the cold to see a display that I will never forget," says Blakley.

The effect of this solar wind stream may be likened to a person blowing across the top of a soda bottle, the glancing

breath producing a nearly monochromatic waveform. “This is quite rare,” says Stammes. “Pulsating continuous signals like these are visible only 2 or 3 times a year.”

Stay tuned for more “ringing auroras” in the hours ahead.

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