



# How Magnetic is the Earth?

## Do your own 'Magnetic Survey' to see!

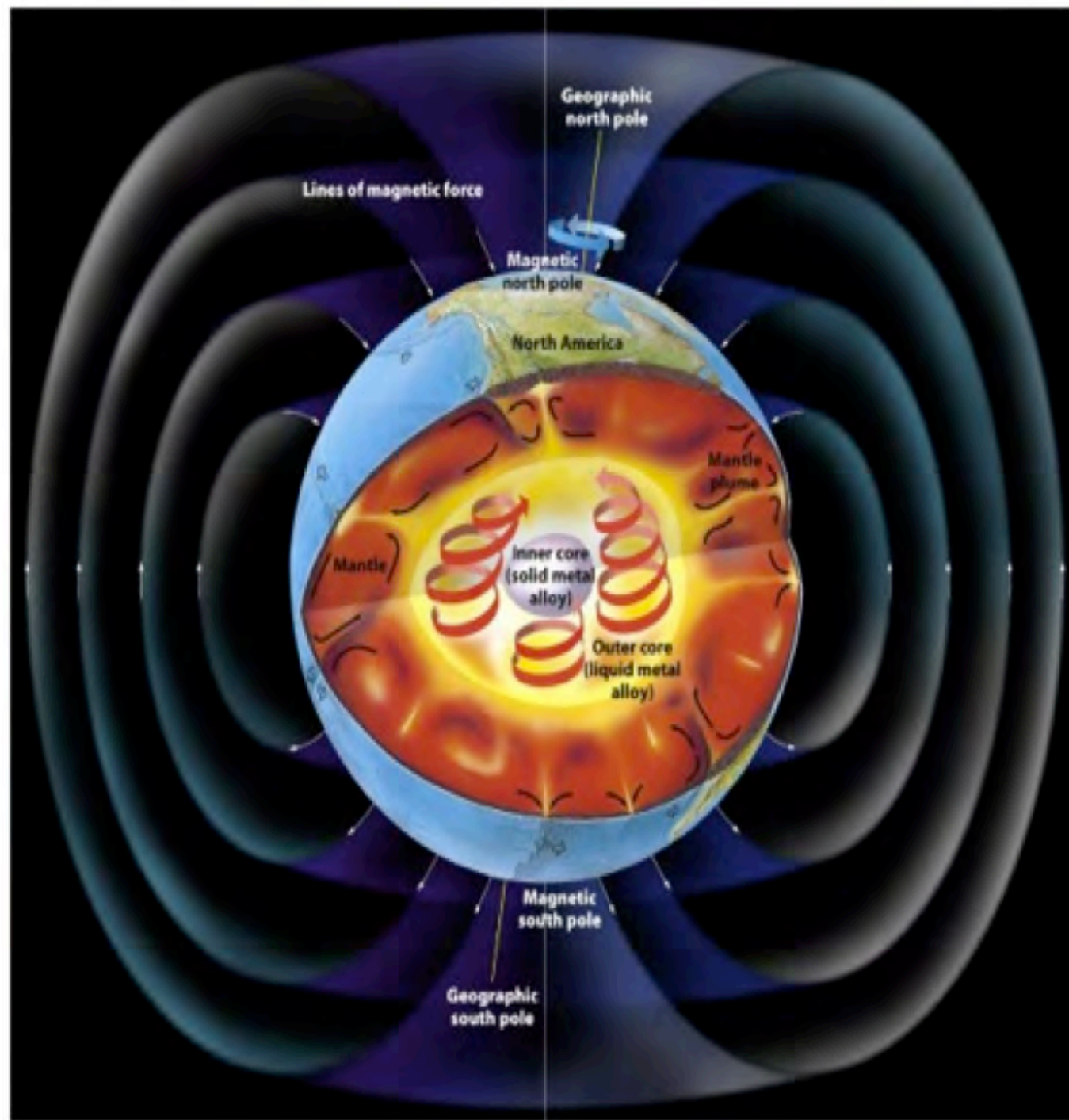


Image from S. Marshak Earth "Portrait of a planet" Third Edition, Norton & Co.

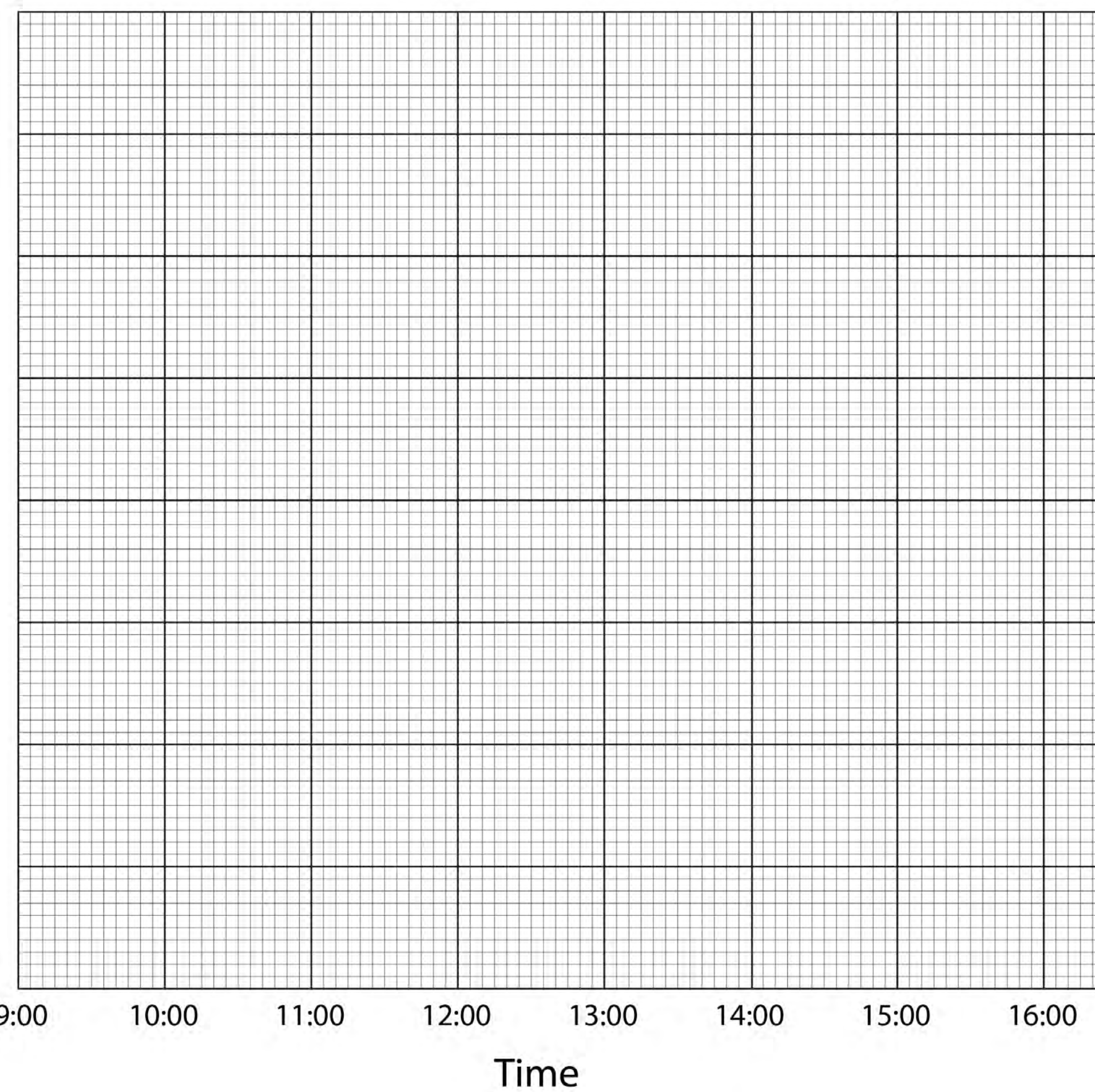
### WHY IS THE EARTH MAGNETIC?

The Earth's magnetic field is maintained by a self exciting dynamo. The center of the Earth (core) has two parts, a solid iron alloy in the central core surrounded by a liquid iron alloy. The fluid flow in the outer core generates an electric current creating Earth's magnetic field.



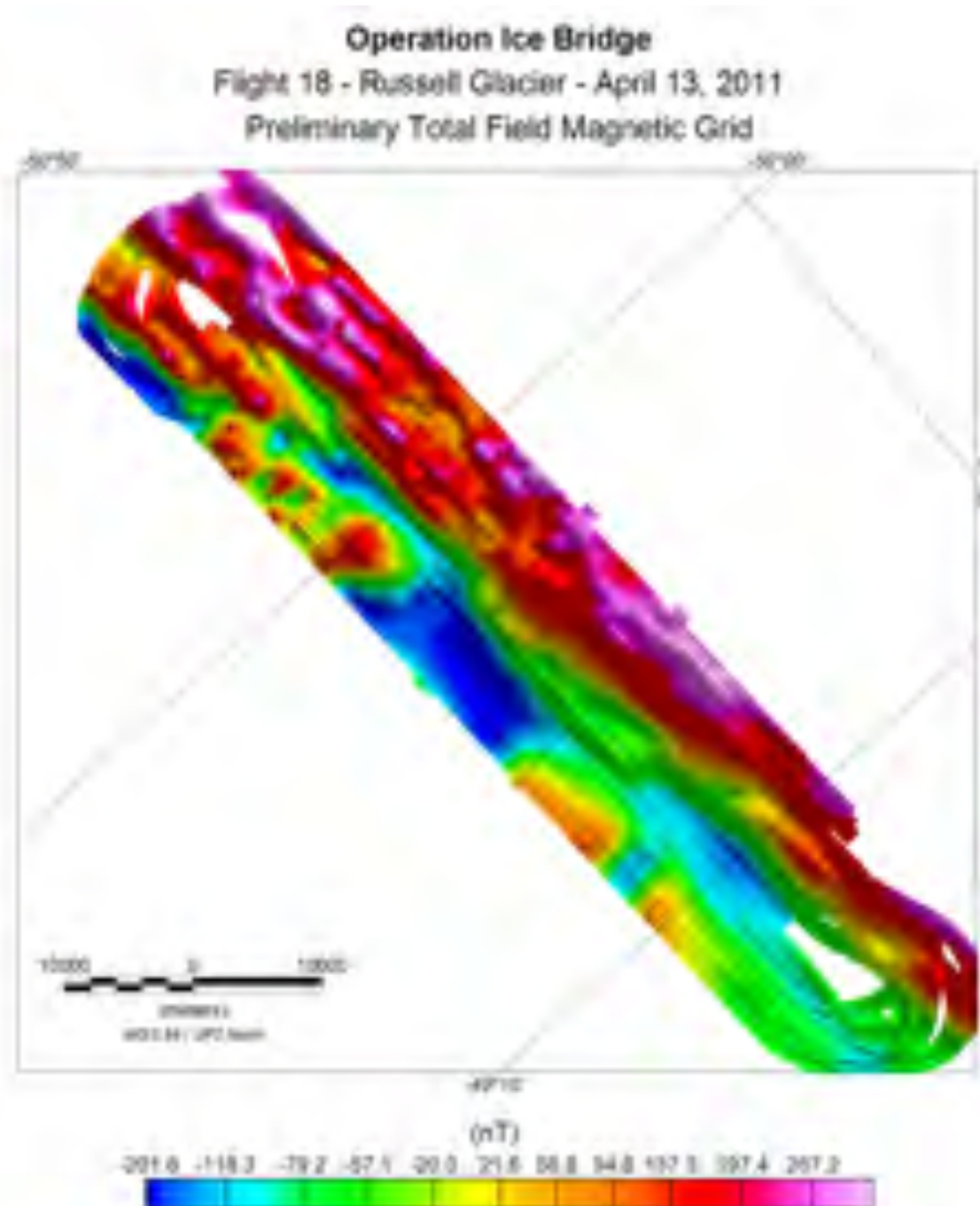
Image from Paal Brekke, Norwegian solar physicist astrophysicist

### LAMONT OPEN HOUSE MAGNETIC SURVEY 10/1/11



### OUR POLAR TEAM MEASURES MAGNETICS!

On Operation Ice Bridge we measure magnetics to learn what is under the ice - distinguishing between different rock types according to their magnetism. The red and pink colors below show a higher magnetic signature.



### THE FIELD CHANGES THROUGH THE DAY

The sun has a small influence on the Earth's magnetic field causing it to shift slightly during the day. We can see this on our magnetic survey as we plot it here. Another effect of the sun interacting with the magnetic field is the Aurora Borealis pictured above.

### DO A MAGNETIC SURVEY TODAY!

Work with our scientists to complete a magnetic survey. Mark your starting and ending magnetic reading in nT (nanotesla) and record the time. We will watch how it shifts during the day. Record your readings as you survey and look for anomalies!

