

Reading up on the origins of the compass and how magnetic pull was used in navigation was a spectacular read. This idea of finding North seemed to be central to navigation as it is today for GPS devices. It's interesting to hear about the struggles of producing quality compasses like the need to "feed the needle" or floating a magnetized needle on a liquid (that was the best they could do for maritime navigation, really?). This whole article on the Lodestone and Needle made me feel like I did not fully appreciate having a compass as a boy scout. Then of course, having GPS systems makes society almost disregard the history of these novel devices. Having magnetism and the direction pointing the North makes it interesting to investigate how one can interfere with these physical systems. I can imagine a great deal of resources is spent (by various countries) on how one can successfully interfere with navigation systems that rely on magnetism and finding the North as mechanisms to work successfully.

Nonetheless, it seems almost like "luck" that the magnetic axis of the Earth aligned well with the rotation axis, especially when one considers that Blackett was wrong about his prediction but it did not seem unreasonable initially. A question that will likely not be answered in my life time is what happens when the magnetic polarity of the earth reverses? Will all of today's compasses start pointing south? I also found the discussion about the core of the Earth in regards to the belief that the core is made up of molten iron. The circulation of this molten metal yields electric currents throughout the core causing results magnetic forces. It is nice to see how things regarding navigation can be related based on Electromagnetism. However, it makes you realize the complexity of the self-sustaining dynamo and want to explore the topic more in search of the likely solution. It would be interesting to study more the rotation of the Sun and planets to compare to the Earth in the context of electromagnetic theory. I am a bit of astronomy nerd but have never explored the field in much depth.