

AM 275 - Magnetohydrodynamics: HW 0

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Problem 1:

The MHD phenomenon I am interested in, perhaps, because it is one of the MHD concepts I've been the most exposed to, is the concept of Dynamo Theory (mostly through Adrian Fraser who I've had the pleasure of meeting several times). I don't fully understand what a Dynamo is yet, but I really would like to. Not only to have a better understanding of some of the presentations I have seen, but also because it seems like a cool application of MHD. This image depicts the "Solar Dynamo" as the general cycle of sunspots which (I believe) are perturbations in the solar magnetic field that punch through the surface of the sun. I think in general dynamo theory applies to the warping of magnetic fields, whether that be by advection or some MHD instability, I have no idea. I'm excited to eventually learn about dynamos towards the end of the quarter.

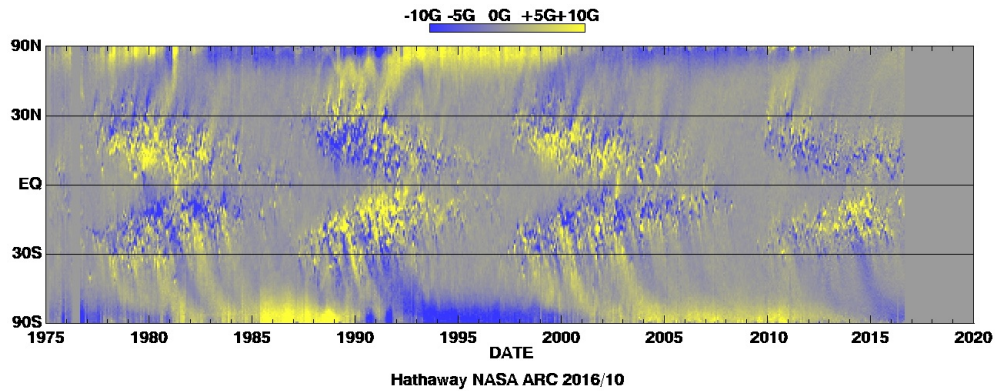


Figure 1: Evolution of the Solar Dynamo, taken from NASA's website.