

# MAGNETIC FORCE

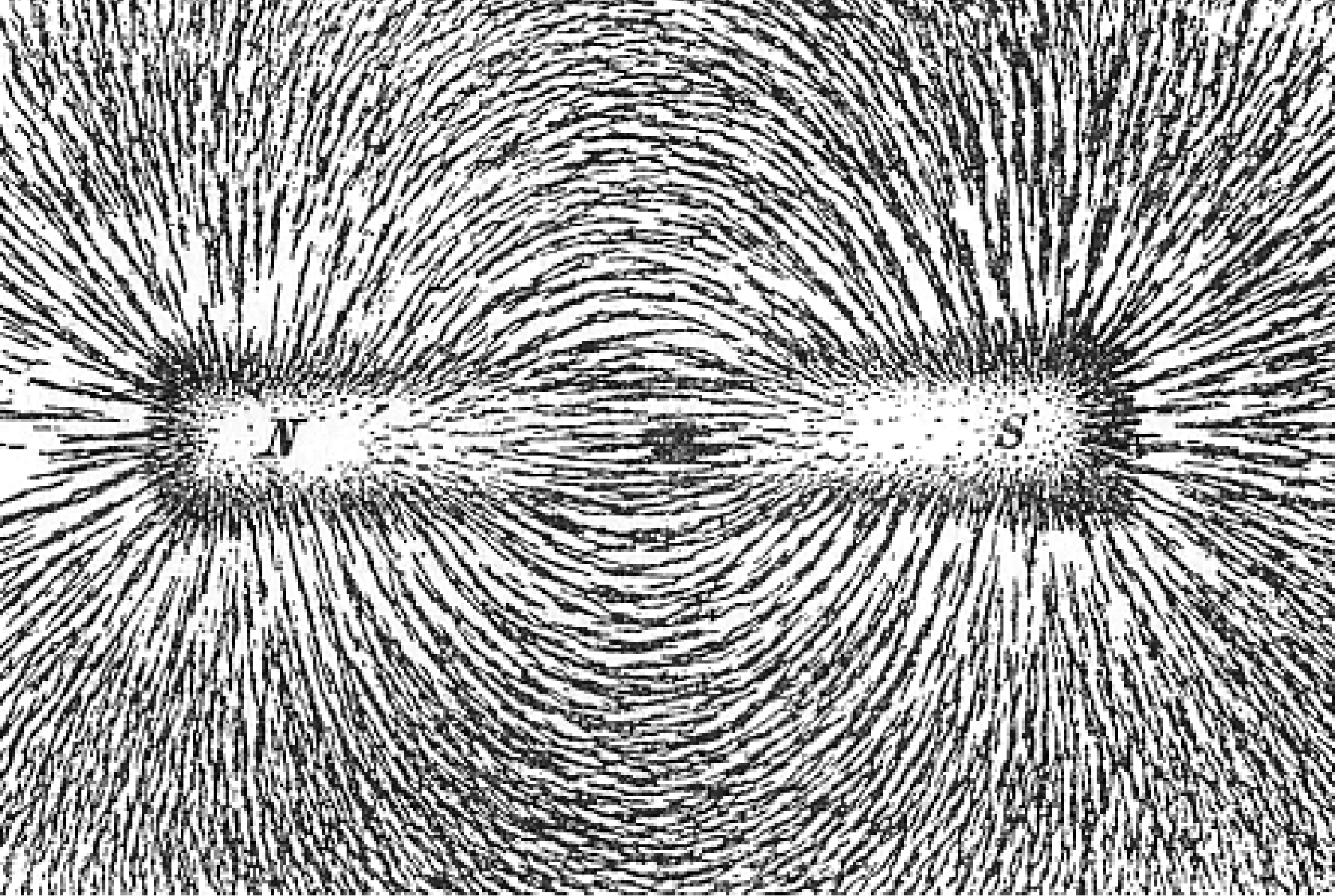
Prof. Stephen Sekula

3/22/2011

Supplementary Material for  
PHY1308 (General Physics -  
Electricity and Magnetism)

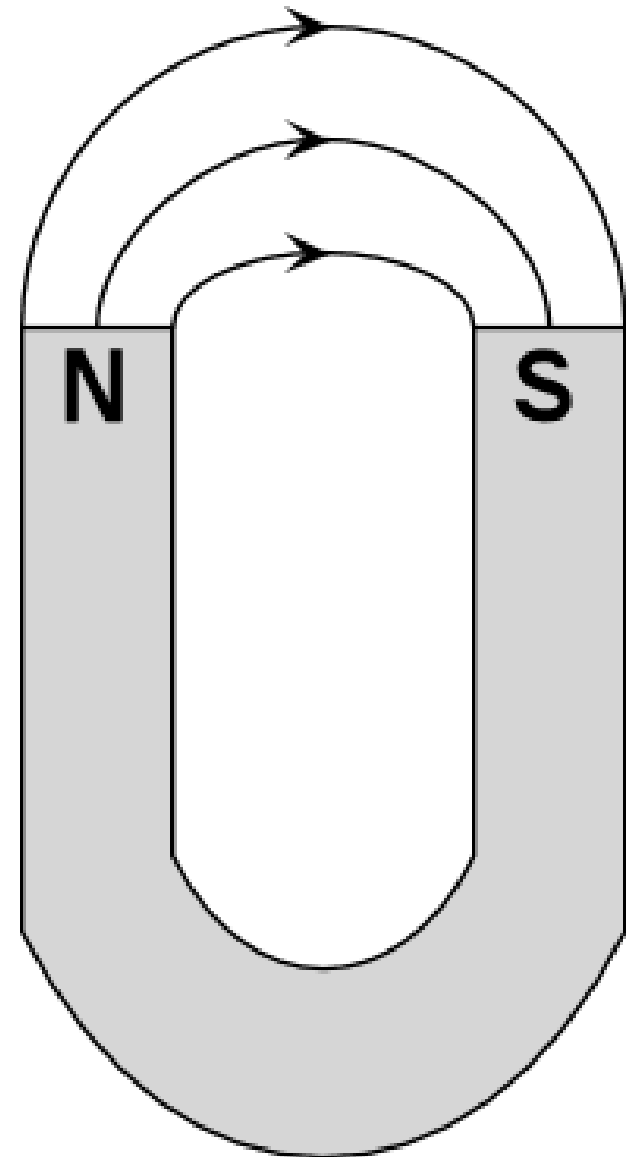
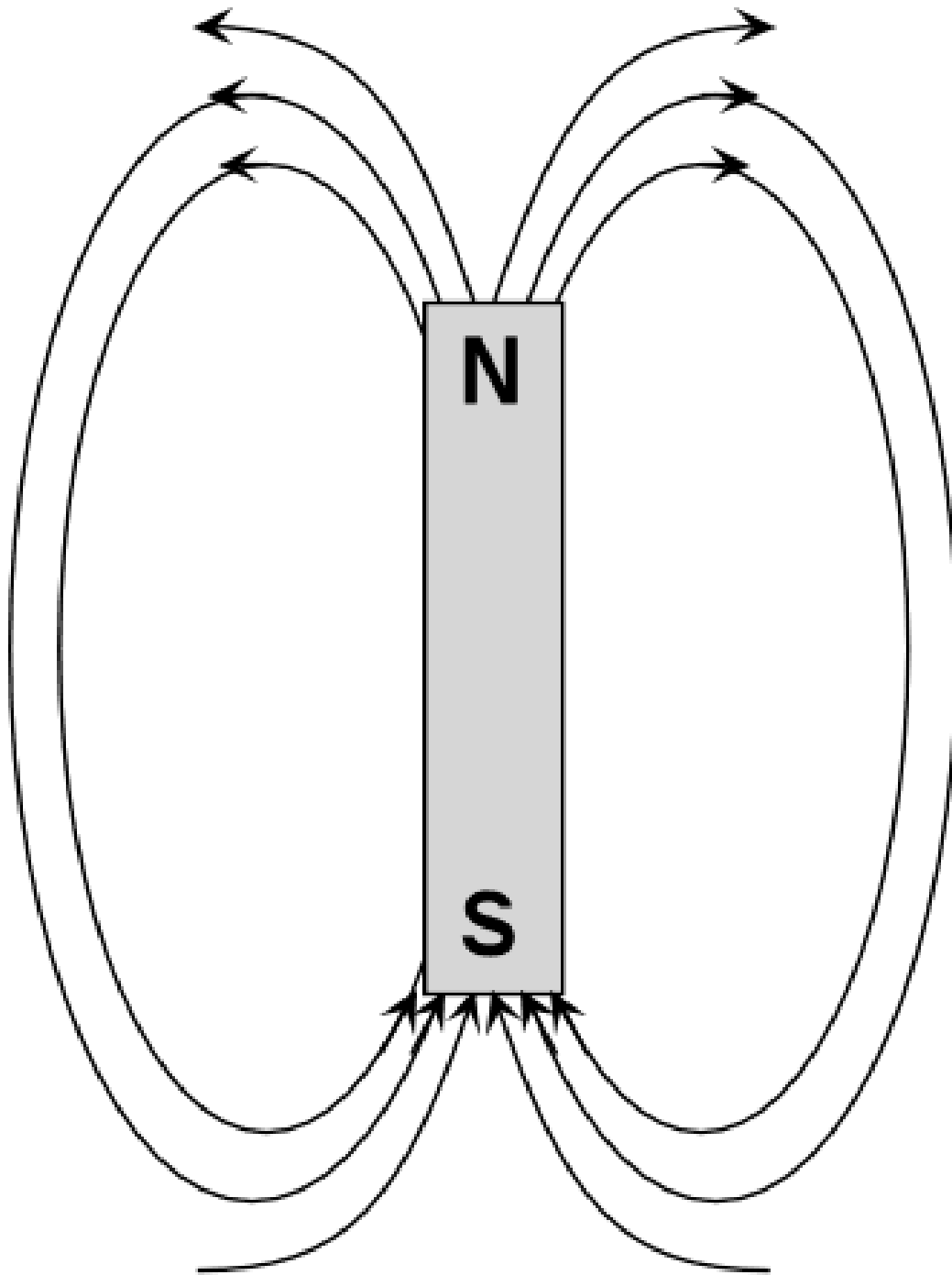
# ANNOLINCEMENTS

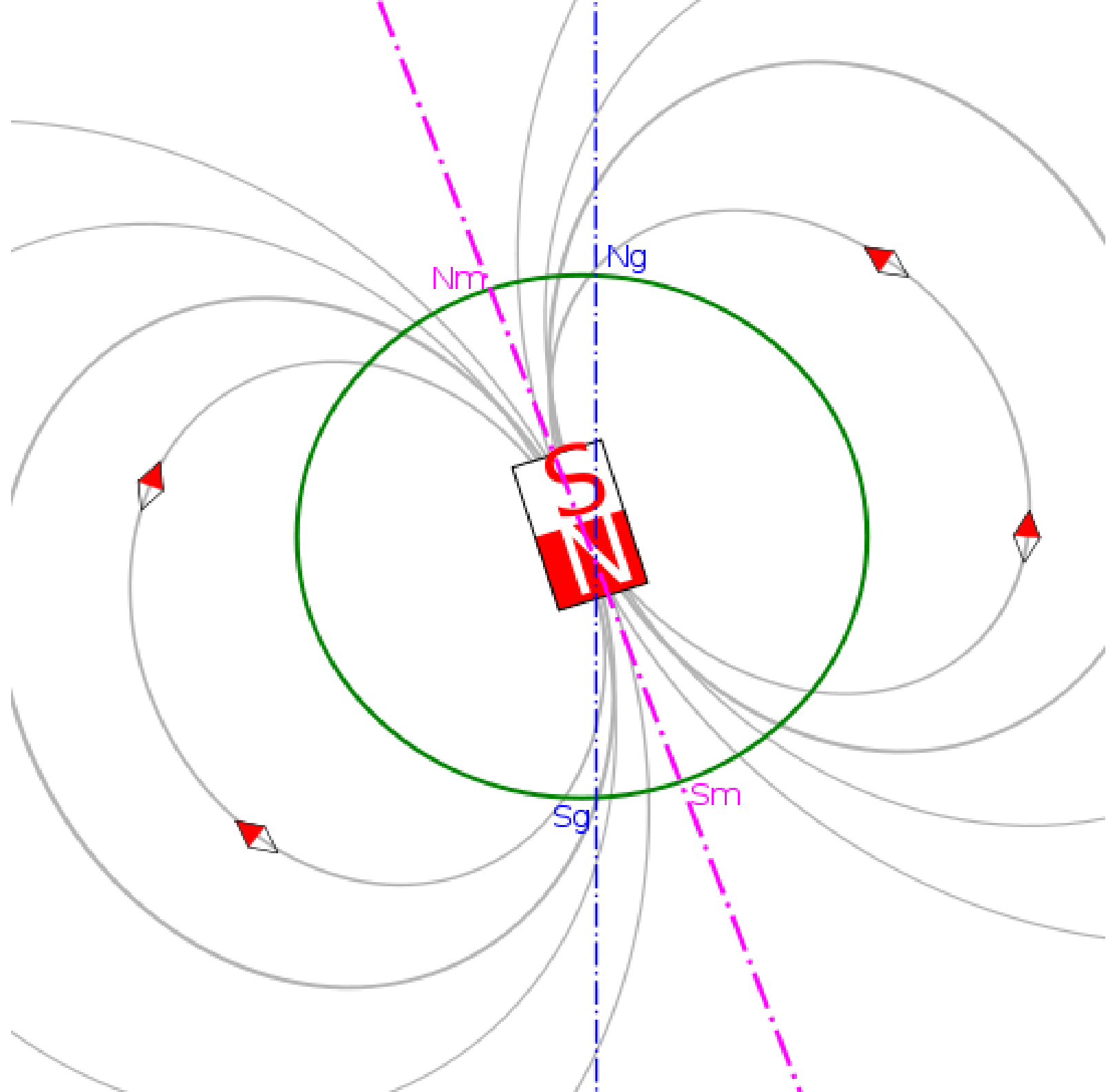
- Homework 7:
  - Available later today, due Tuesday by 9:30am
- Exam 2
  - I want to review grades before handing them back
  - Will announce when they are available



Iron particles exposed to a bar magnet.

# Magnetic Field Line Conventions





# TERRESTRIAL MAGNETISM



Refrigerator magnets:  
 $\sim 100\text{G}$  ( $\sim 0.01\text{T}$ )

Rare earth magnets:  
 $\sim 0.5\text{-}1.0\text{T}$

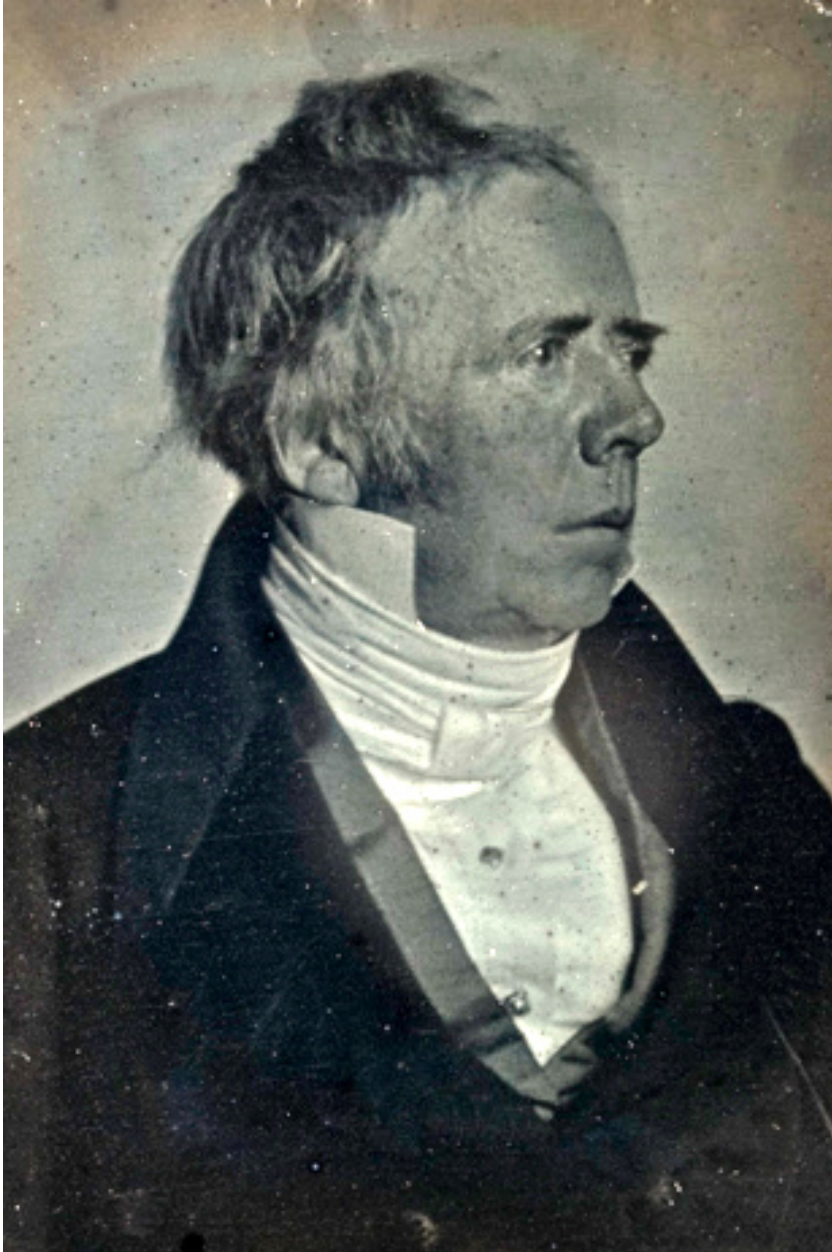
So, the scale of  
terrestrial magnetism is  
about  $1\text{T}$ .

# HANS CHRISTIAN OERSTED

*1777-1851*

Danish physicist and chemist.

Observed in 1819 that an electric current caused a compass needle to deflect. This observation caused quite a stir. Electricity and magnetism were related phenomena.





<http://www.youtube.com/watch?v=hX7TKEBGUXk>



# THE JUMPING WIRE

<http://www.youtube.com/watch?v=43AeuDvWcOk>