Lab 6
Our Sun

Names: _____

Exercise #1 Station 2

- SOHO Images (*8 points*)
  - If the Sun turns by 90 degress in a time t, it would complete one revolution of 360 degrees in how much time?

  - Does this match the rotation rate given in your textbook or in lecture? Cite a source for this value.

- Magnetogram (*7 points*)
  - What do you notice about the location of *sunspots* in the photo and the location of the *strongest magnetic fields*, shown by the brightest or darkest colors in the magnetogram?

  - Based on this answer, what do you think causes sunspots to form? Why are they dark?

Station 3 (*10 points*)

- Diameter of the Sun (on paper): _____

  Minimum extent of the corona (on paper): _____

- Size of the corona (in reality): _____

- How many times larger than the Earth is the corona? _____

Station 4 (*15 points*)

- Diameter of the Sun (on paper): _____

  First prominence distance (on paper): _____

  Second prominence distance (on paper): _____

  How far did the prominence move (on paper)? _____

- Diameter of the Sun (in reality): _____

  How far did the prominence move (in reality)? _____

- Velocity of the prominence: _____

- Time to reach the Earth if a prominence were moving at 2000 km/s:

Station 5 What do you notice about the distribution of sunspots? How long does it take for the pattern to repeat? What does the length of time correspond to? (*3 points*)

Exercise #2

- Which end of the compass needle (or arrow) seems to be attracted by the north pole of the magnet? (*1 point*)

- Which end of the compass needle is attracted to the south pole of the bar magnet? (*1 point*)

- Which pole is attracted to which pole? (*1 point*)

- What is the actual "polarity" of the Earth's "magnetic North" pole?

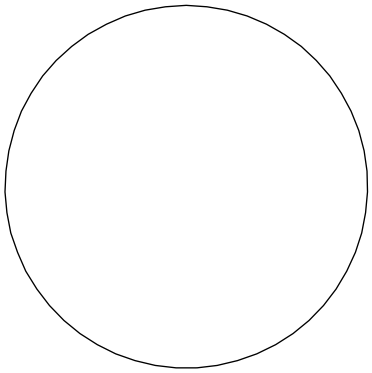
- Sketch the pattern traced out by the magnetic filings below and **describe** the pattern in words. (*2 points*)

- What does this imply about sunspots? (*2 points*)

- Draw the field lines **above** a bar magnet. (*2 points*)

- What are the similarities between your drawing and the loop prominence from station #1 of Exercise #1? (*1 point*)

Solar Observation Worksheet



Name:_____ Lab Sec.:_____

Date: _____ TA: _____