

Lab 6

Our Sun

Names: _____

Exercise #1 Station 2

- SOHO Images (*8 points*)
 - If the Sun turns by 90 degrees 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? Show your work.

- 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: _____

Minimum extent of the corona: _____

- Size of the corona: _____

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

Station 4 (*15 points*)

- Diameter of the Sun: _____

First prominence distance: _____

Second prominence distance: _____

- Diameter of the Sun: _____

First prominence distance: _____

Second prominence distance: _____

- Velocity of prominence: _____

- Time to reach the Earth: _____

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. (*2 points*)

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

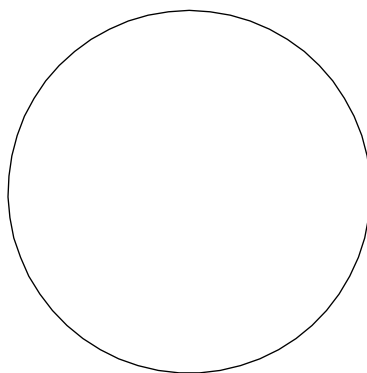
- Draw the field lines above a bar magnet. (*2 points*)

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

Exercise #3

- On the “Solar Observation Worksheet”, draw what you see on and near the Sun as seen through the special solar telescope. (*8 points*)

Solar Observation Worksheet



Name: _____

Lab Sec.: _____

Date: _____

TA: _____