Sunspot Regions Data Collection

Date: _____
Time: _____
Initial: _____

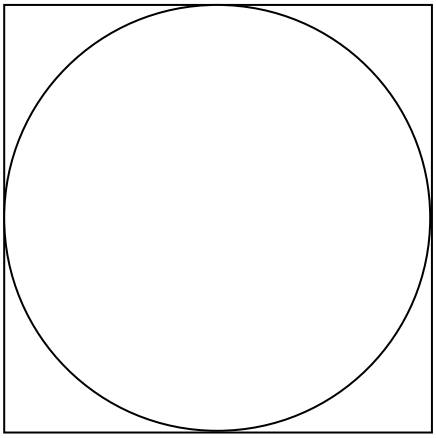
Directions: The following questions will help you analyze the data to determine the answer to the big question, "Do sunspot regions exist today that could be a source of solar storms?" You can answer each of the questions on the back of this paper or on a separate sheet of paper.

Refer to the "H-Alpha Full Disk Image of the Sun" Data

a) Do you see any dark spots called sunspots on the surface of the Sun?
b) Where is the sunspot(s) compared to the Sun's equator?
c) Compared to the size of Earth, how large is the sunspot? For this answer refer to the scaled image of Earth in the lower right hand corner of the Sun-Earth Media Viewer. (ex. 3 times larger than Earth.)
d) Is there more than one sunspot?
e) Do you see clusters of sunspots (grouped together)?

Refer to the "HMI Intensitygram" Data

f) In the circle to the right draw any sunspots you observe from the data.



Refer to the "HMI Magnetogram" Data

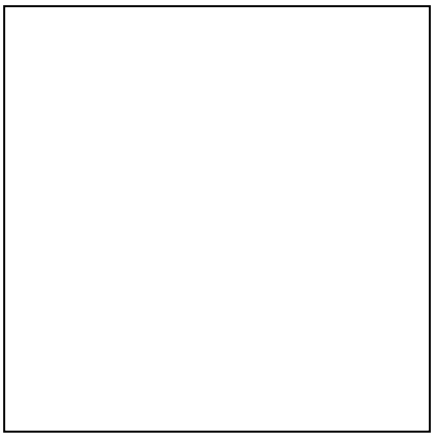
g) Do you observe any black and white areas on the magnetogram? If so, do those areas seem mixed together or clearly separated?

Refer to the "Atmospheric Imagery Assembly" Data (Observe 4 images called: AIA 193, 304, 171, 171/HMI)

h) Do the active places in these images occur near the sunspots? Explain.

Refer to the "Large Angle and Spectrometric Coronagraph" Data (Observe 2 images called: LASCO C2, LASCO C3)

i) Do you observe any CMEs leaving the surface of the Sun? Where?
j) Do you see a halo effect (like a bubble from the bubble gum you might be chewing) in either image? If so, draw what you observe in the box to the right. This could indicate that a storm is coming directly toward Earth.
k) How long before the effects of the particles (CME or solar flare) of the Sun will affect our magnetosphere?



Comprehension Question: Based on the data you have analyzed from these instruments, answer the question, **"Do sunspot regions exist today that could be a source of solar storms?"** Be sure to cite specific data in your response.