



# Magnetism Activities



## Activity 1: Mapping Magnetic Field Lines

- Groups of 2
- Tape magnet in center of paper
- Using compass, start close to the north pole
- Draw arrows around the magnet using the compass as a guide. Draw the arrows pointing to where the “north” is on the compass. Try to make the arrow the same length as the compass needle

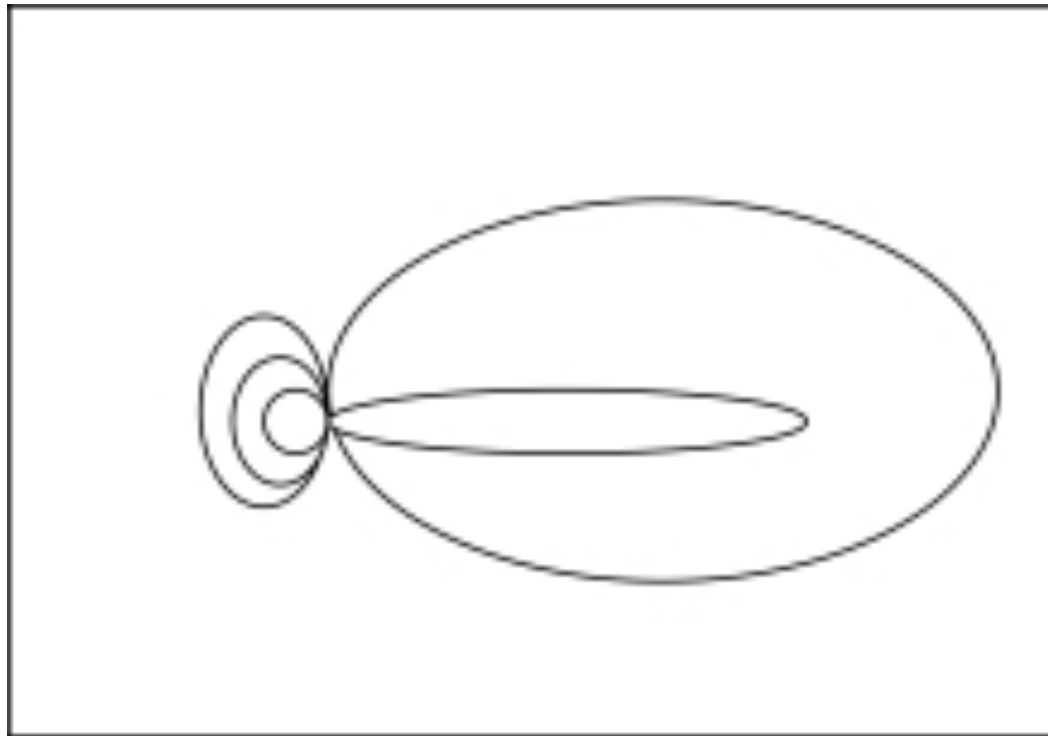


# Questions to think about

- Did the pattern look like you expected?
  - Did it deviate at any point?
  - Why would it deviate?
- What can this tell us about the magnetic field of Earth?
- What does this tell us about detecting a magnetic field in space?

## Activity 2: Solar Wind and Earth's Magnetic Field from Space

- In groups of 2, can you think of a way to generate the below magnetic field using multiple magnets?

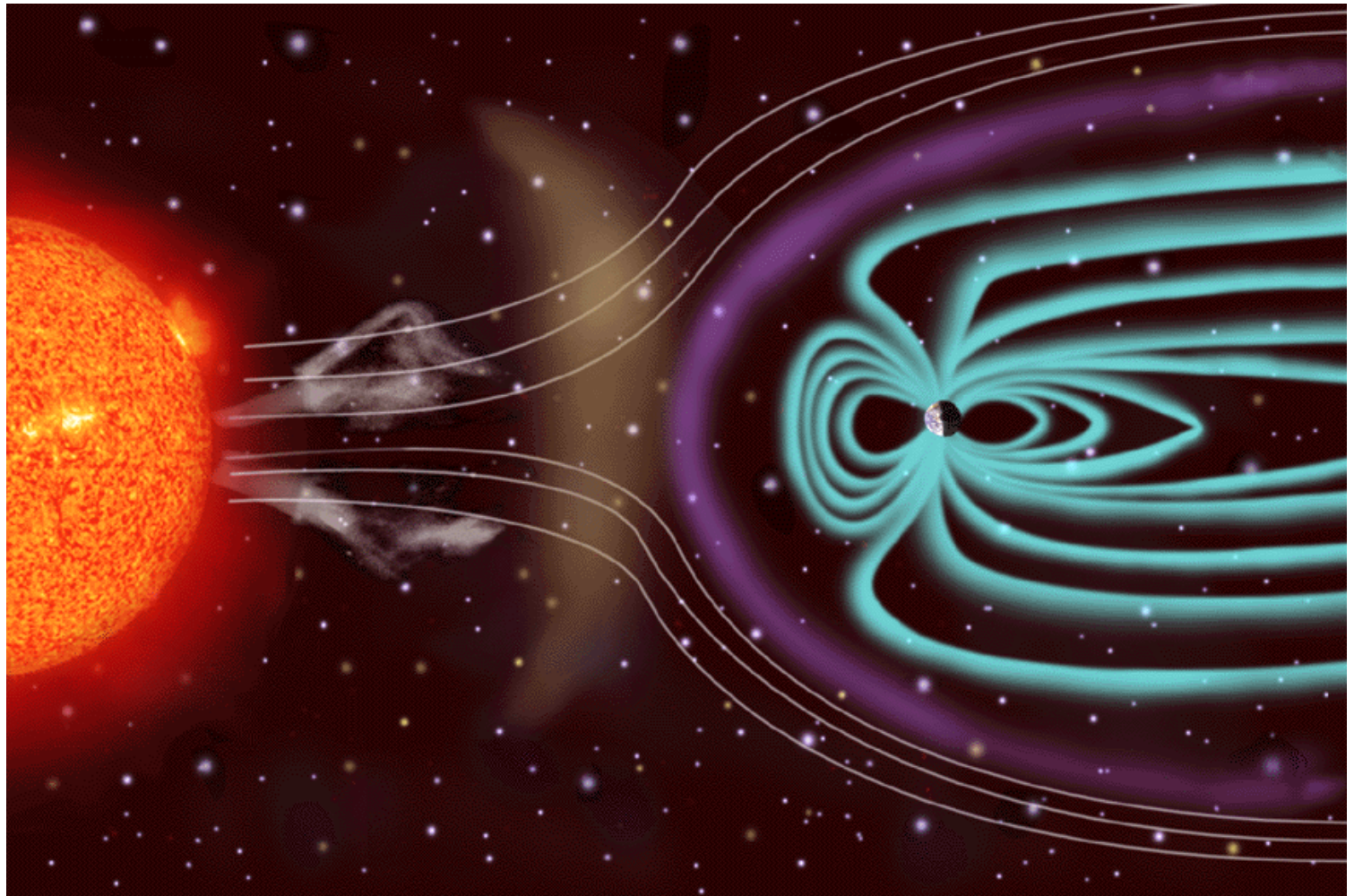




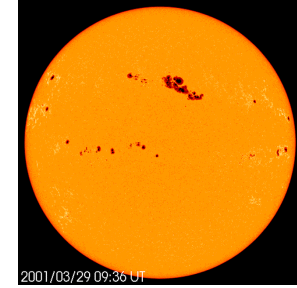
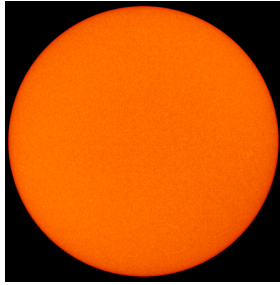
# Questions to think about

- What are the limitations of this model?
- What does this imply about Earth's magnetic field (if anything)?

# Solar Wind



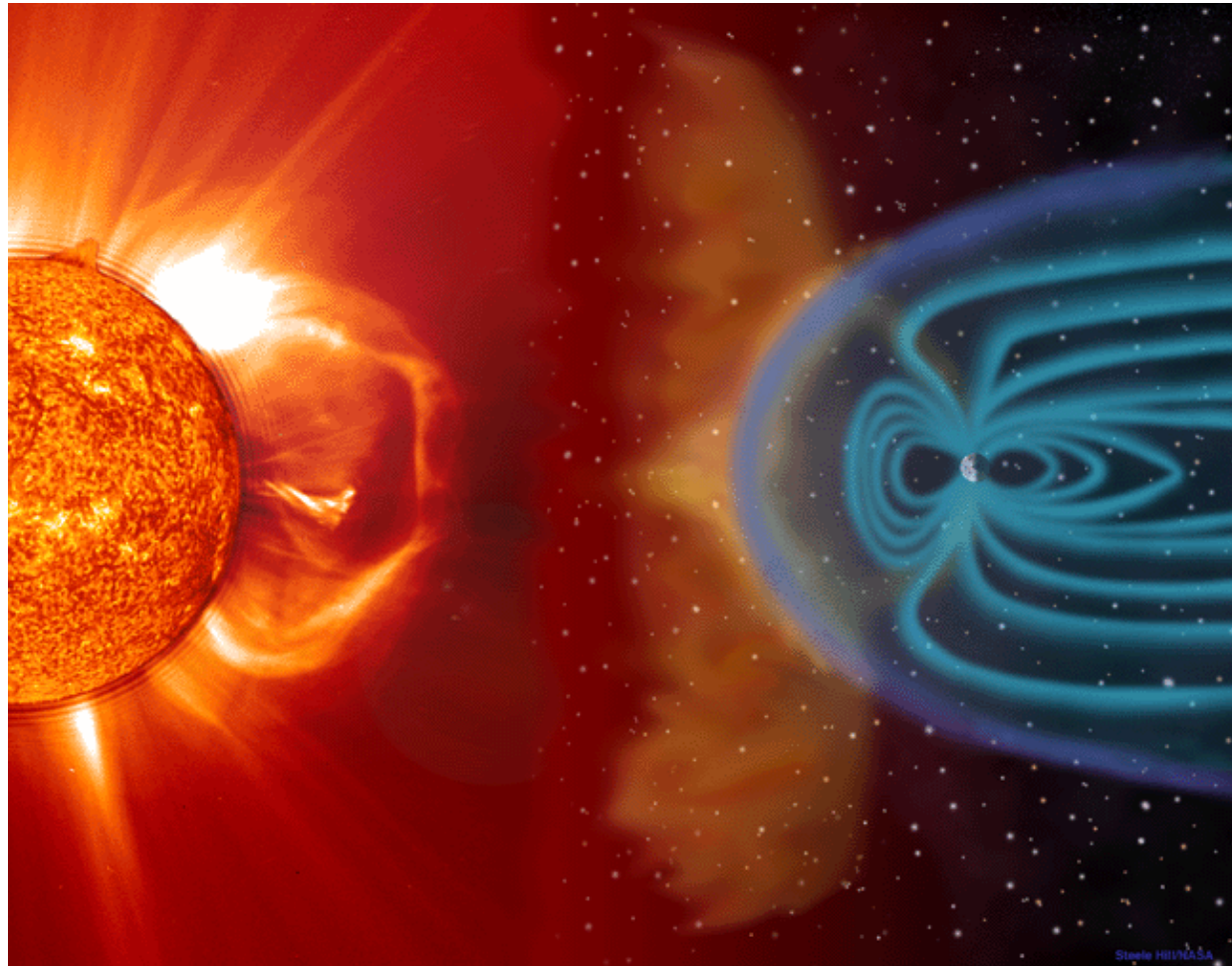
# CISM Lab 2: Solar Min v. Solar Max



- Complete activity 1, 2, 3 and 4 in groups of 2.
- View the questions in the lab, and discuss with your group.
- Share your findings with a nearby group

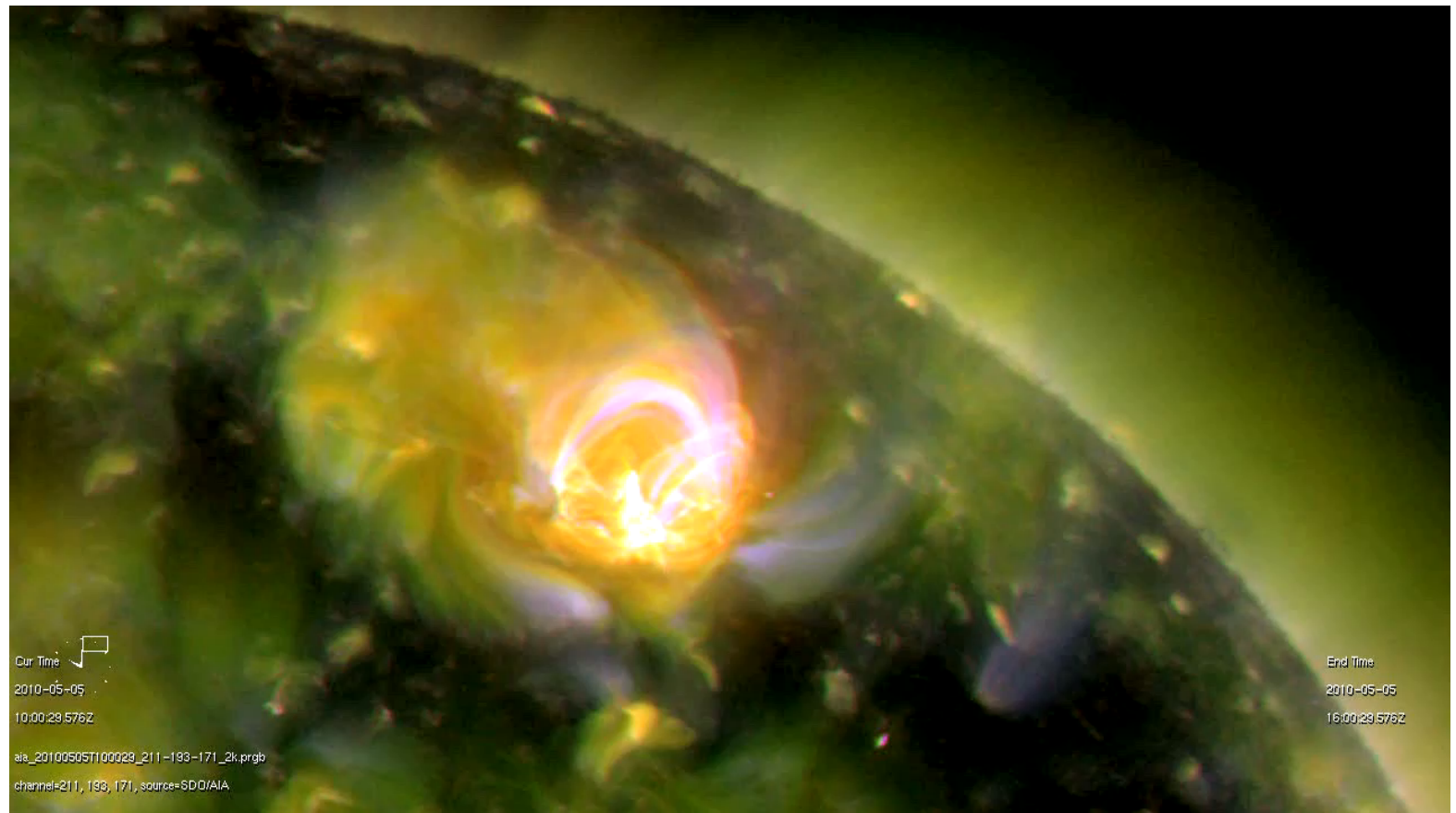


What's (majorly) wrong with this picture?

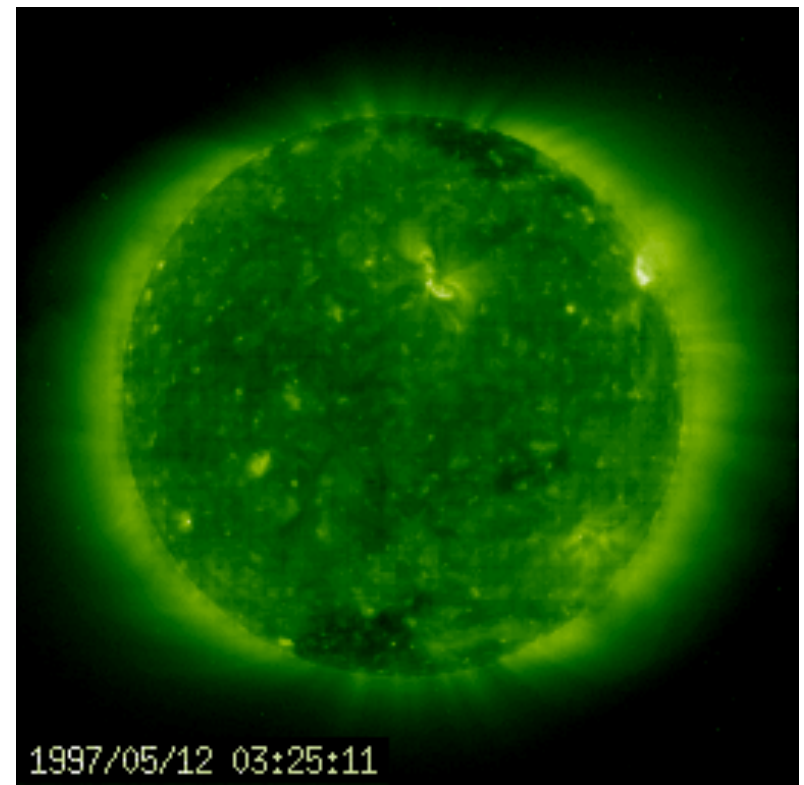
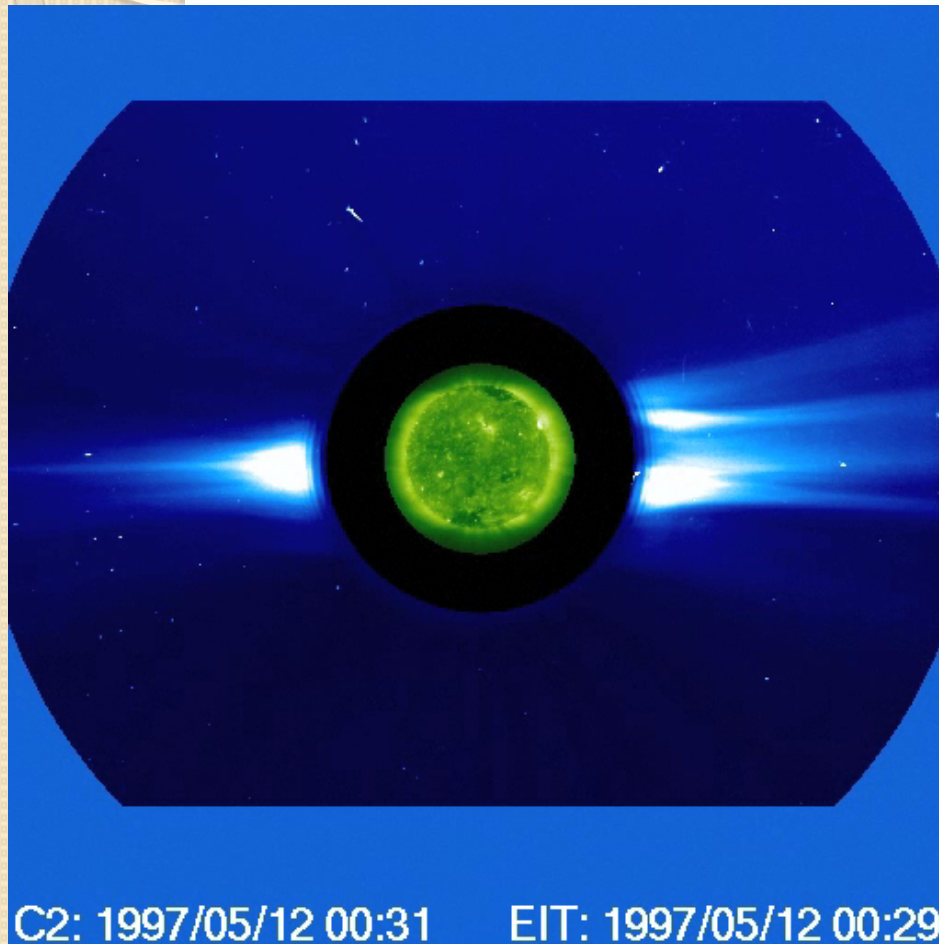




# Storms from the Sun Activities



# Storms from the Sun: Two instruments, same day/time





## Storms from the Sun: Measure the Motion of a Coronal Mass Ejection

- On your own (with peer support)
- Measure a prominent feature from the right side of sun disk
- Calculate the velocity and acceleration of the various images



## Discussion

- What surprised you about the velocity and acceleration of the CME?
- Was it easy to calculate/measure?
- What insight does this give you into space weather prediction?



# Citizen Science efforts

- Solar Storm Watch (video)
- Jhelioviewer.org and helioviewer.org



# Discussion and KWL