

ASTR 1020

Lab 11: Rotation of the Sun



Rotation of the Sun

The sun rotates. How can we tell?



Rotation of the Sun

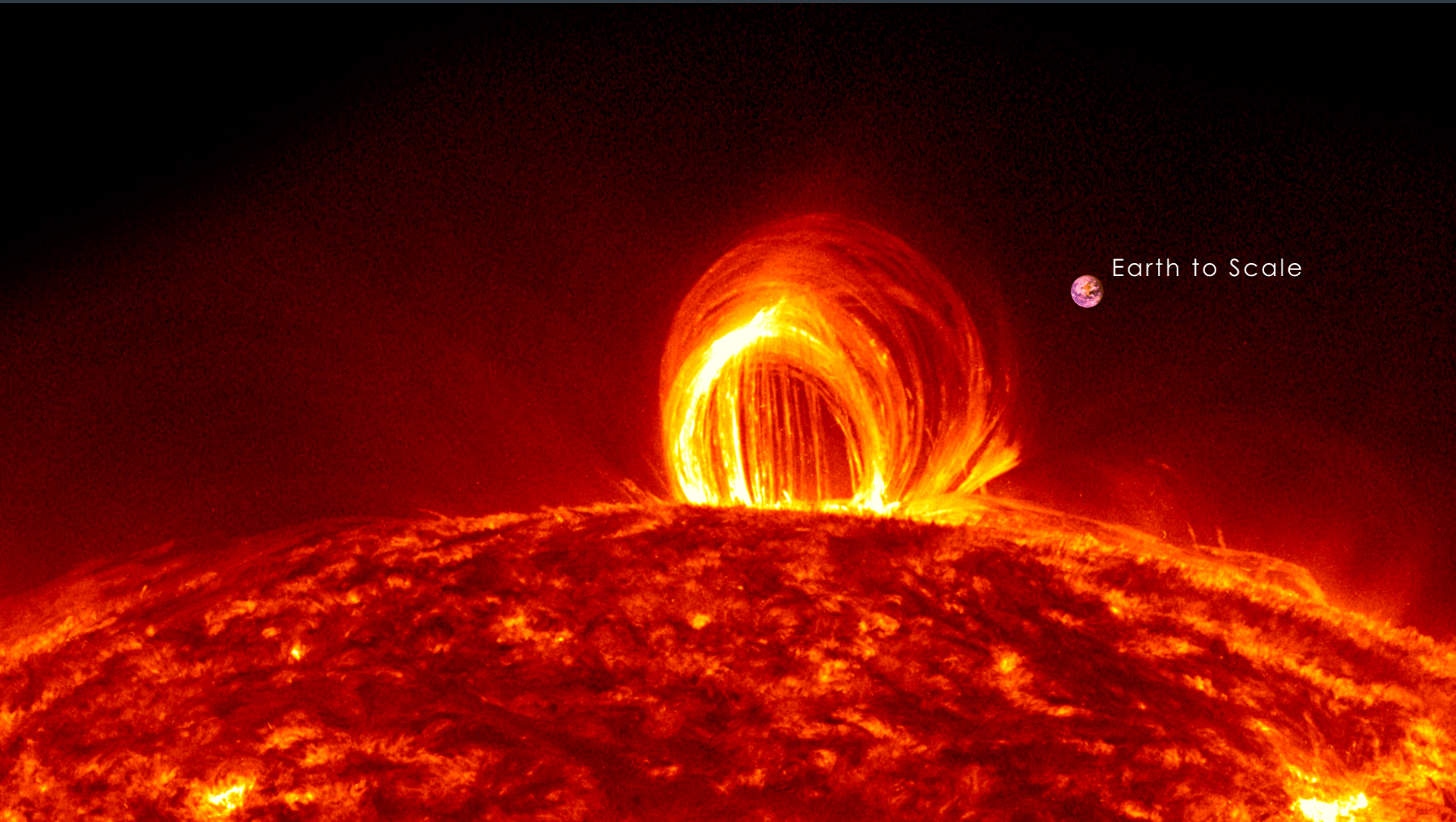
Freckles! (Sunspots!)

Sunspots give us features to track over time.



What Are Sunspots?

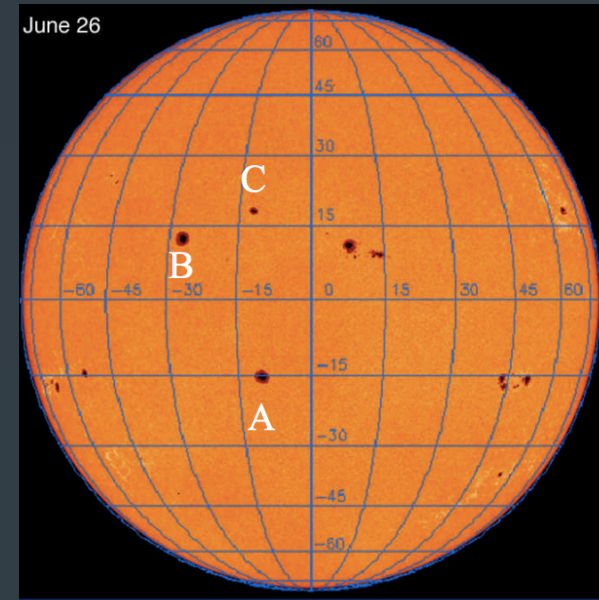
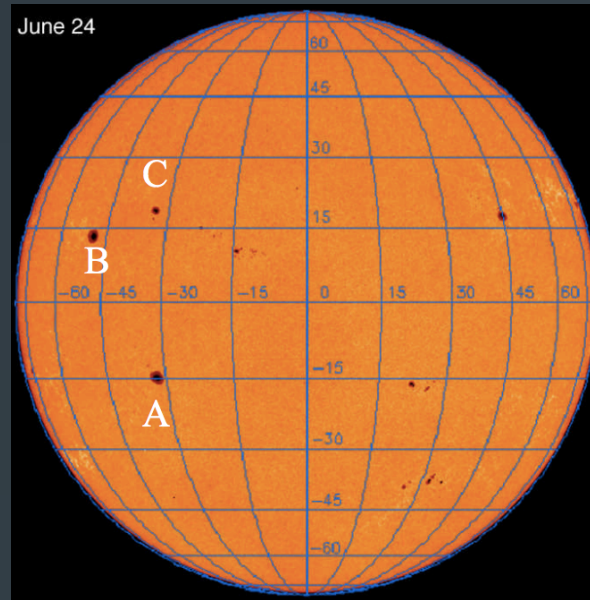
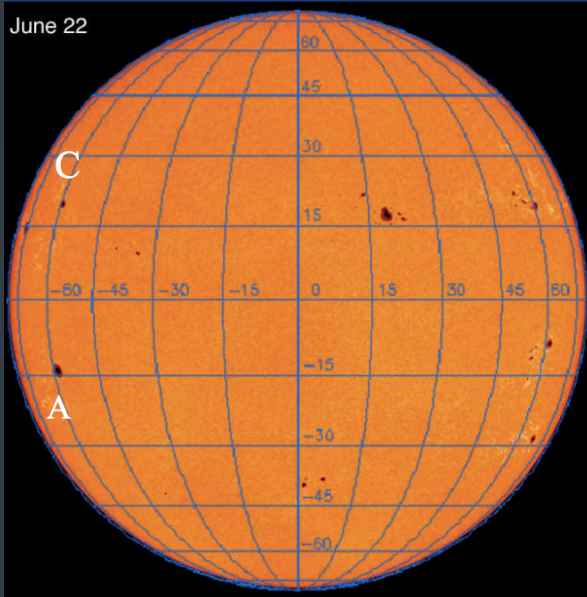
Sunspots are cool, dark areas in the sun's photosphere surrounding intense magnetic activity. Sometimes solar flares burst out of them. Sunspots evolve over time but are useful for tracking the sun's steady rotation.



Earth to Scale

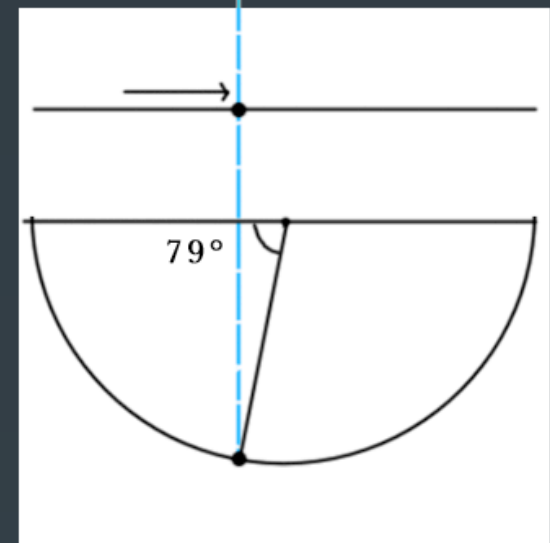
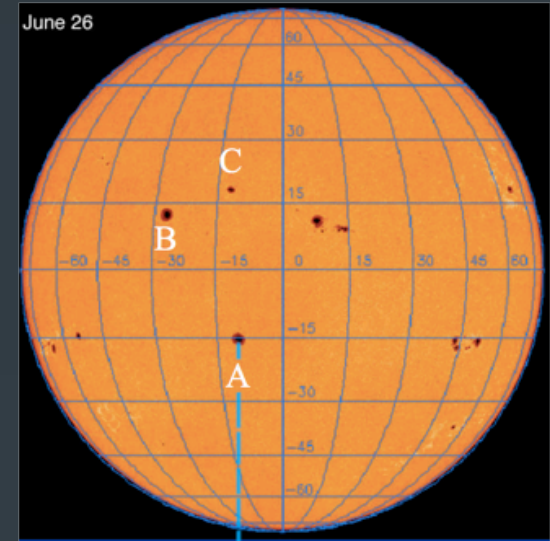
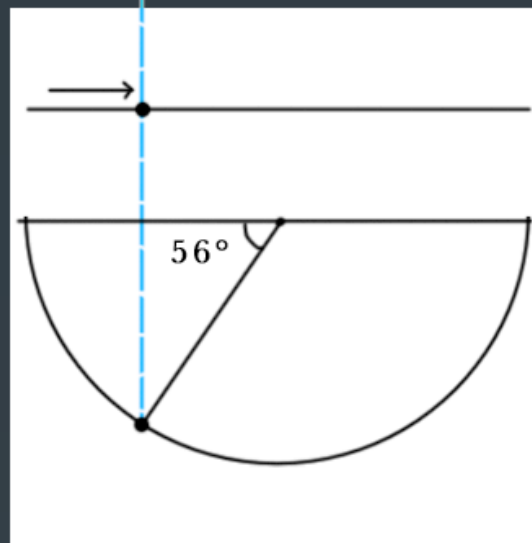
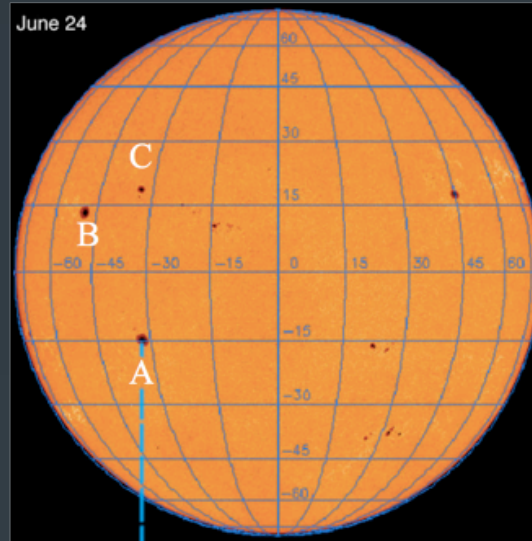
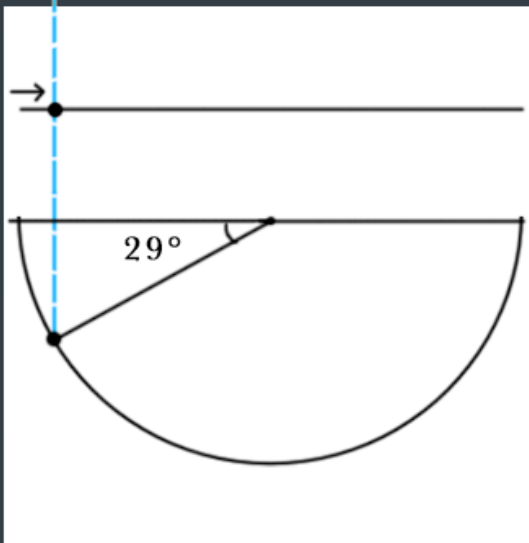
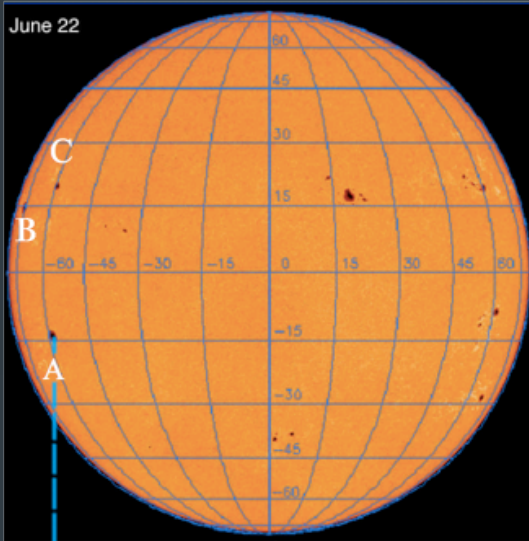
Tracking Sunspots

Day to day, we see the sunspots on the sun's surface move as the sun rotates. How fast they move indicates how fast the sun is rotating.



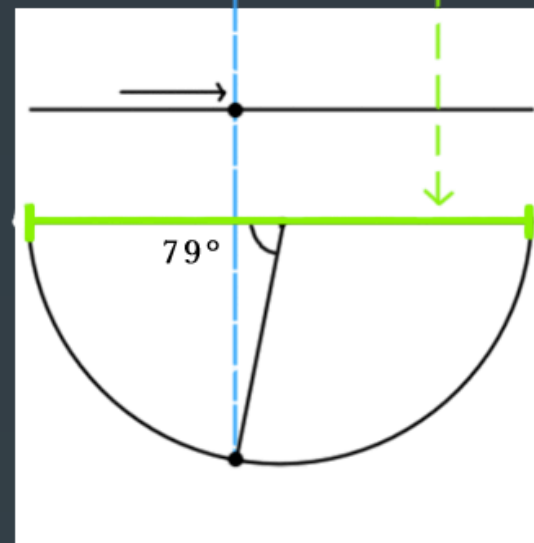
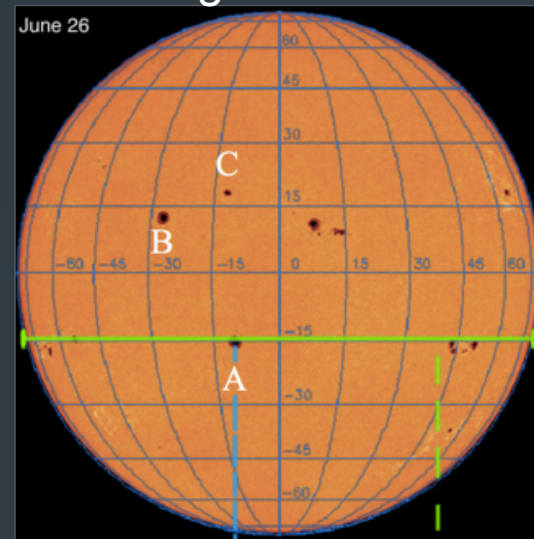
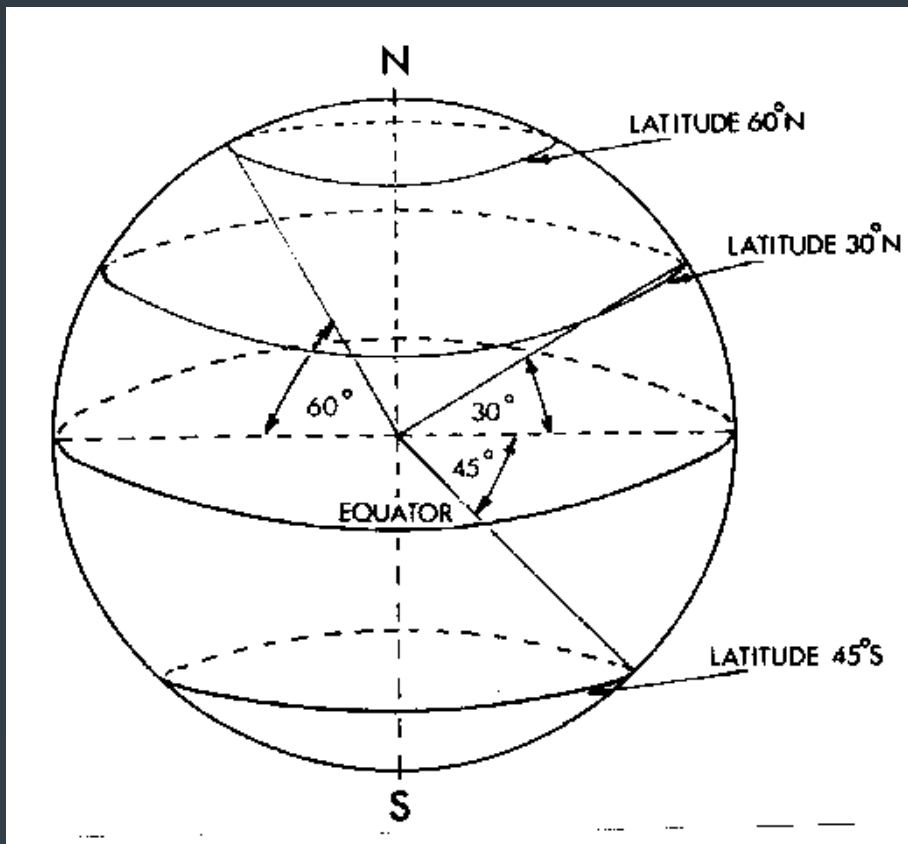
Projection

We'll use tracing paper to track sunspot movement, and from this we'll calculate how long it takes the sun to spin all the way around.



Latitude Circles

Notice that each latitude circle is actually a different size: large at the equator, and smaller and smaller towards each pole. Make the correct size semicircle for your sunspot's latitude by making your base line the same length as the line you drew through your sunspot dots.



Fin

