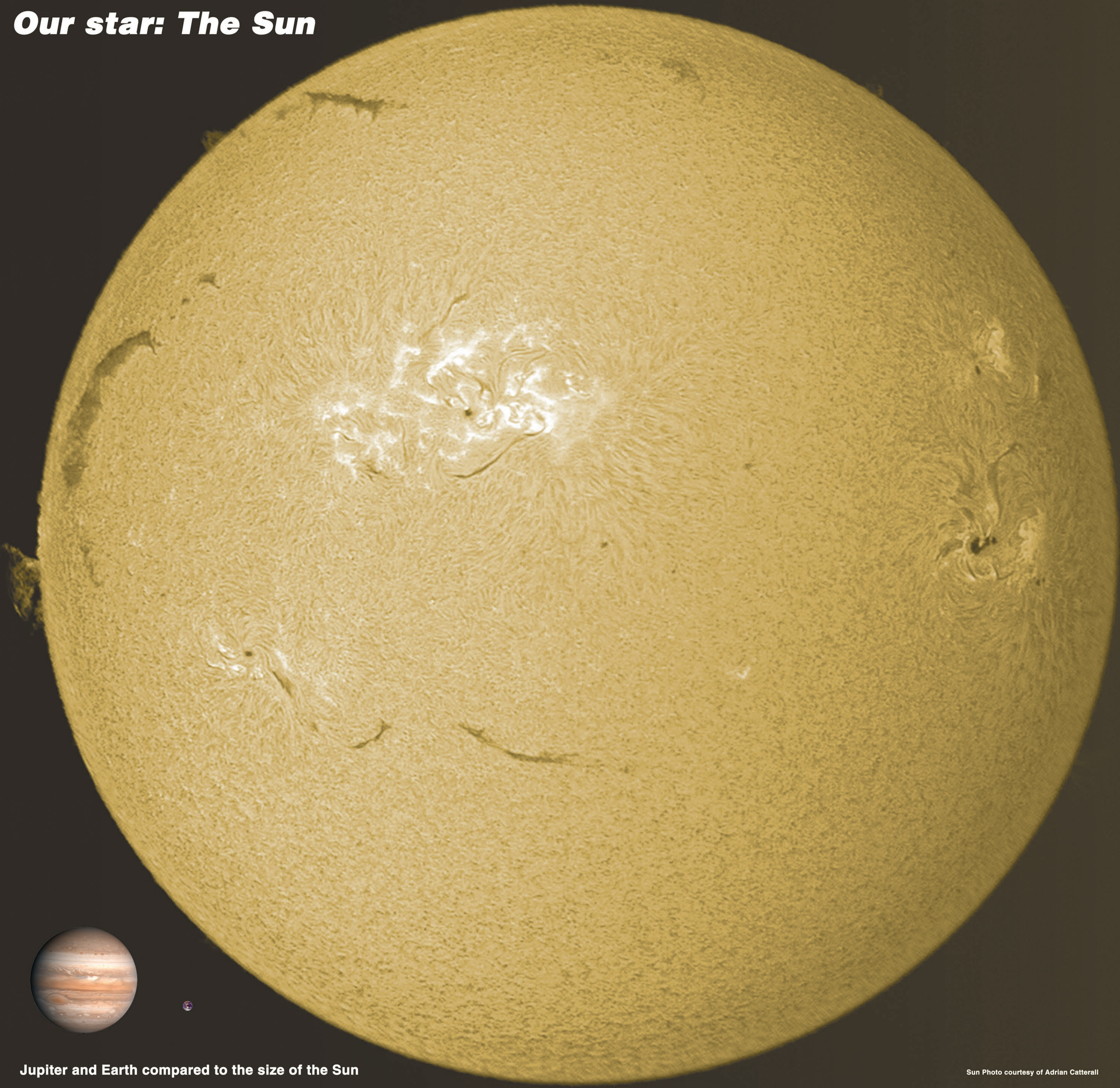
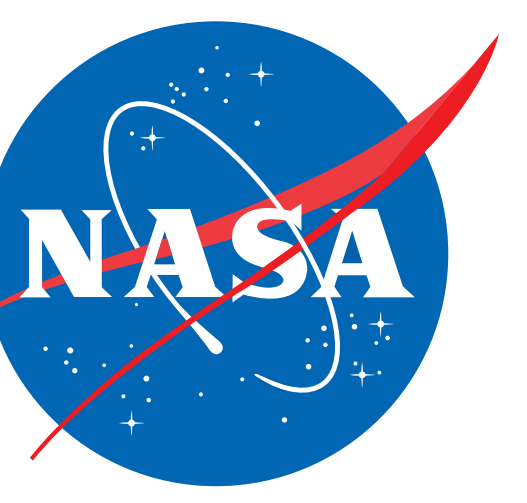


# ***Our star: The Sun***



**Jupiter and Earth compared to the size of the Sun**

Sun Photo courtesy of Adrian Catterall



# Exploring Our Solar System

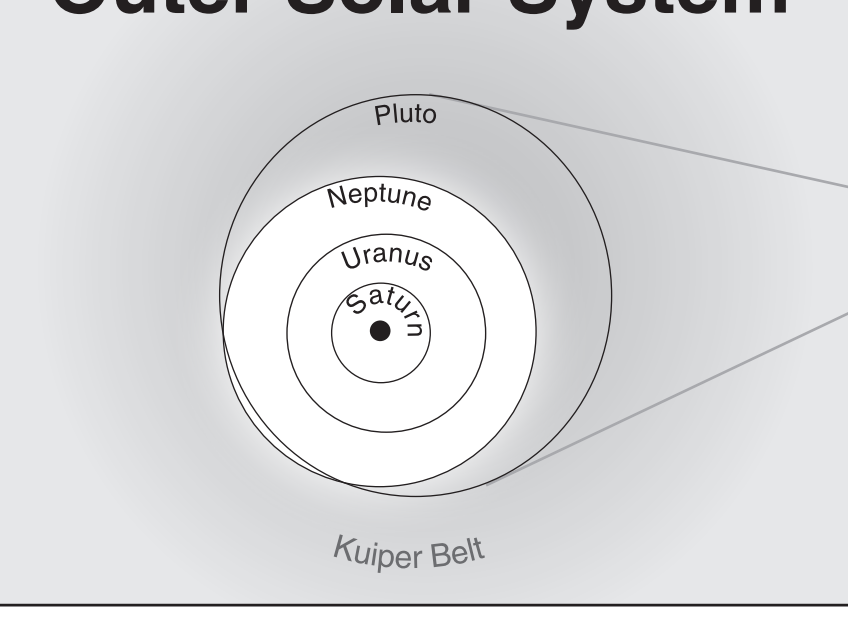

Date

**RECOMMENDED:** Use only *wet-erase* marking pens.

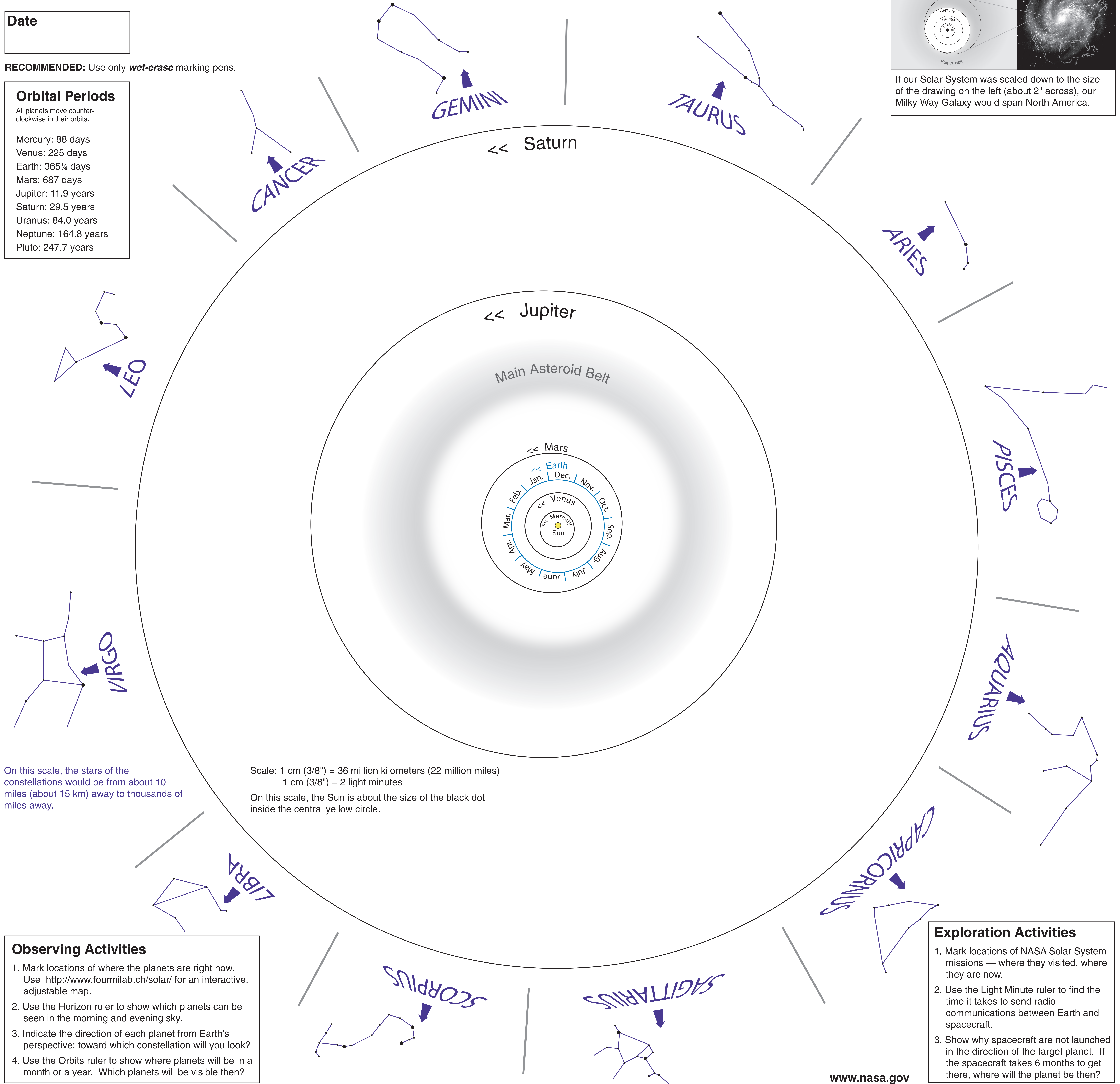
**Orbital Periods**  
 All planets move counter-clockwise in their orbits.

Mercury: 88 days  
 Venus: 225 days  
 Earth: 365¼ days  
 Mars: 687 days  
 Jupiter: 11.9 years  
 Saturn: 29.5 years  
 Uranus: 84.0 years  
 Neptune: 164.8 years  
 Pluto: 247.7 years

**Outer Solar System**

If our Solar System was scaled down to the size of the drawing on the left (about 2" across), our Milky Way Galaxy would span North America.



On this scale, the stars of the constellations would be from about 10 miles (about 15 km) away to thousands of miles away.

Scale: 1 cm (3/8") = 36 million kilometers (22 million miles)  
 1 cm (3/8") = 2 light minutes  
 On this scale, the Sun is about the size of the black dot inside the central yellow circle.

**Observing Activities**

1. Mark locations of where the planets are right now. Use <http://www.fourmilab.ch/solar/> for an interactive, adjustable map.
2. Use the Horizon ruler to show which planets can be seen in the morning and evening sky.
3. Indicate the direction of each planet from Earth's perspective: toward which constellation will you look?
4. Use the Orbits ruler to show where planets will be in a month or a year. Which planets will be visible then?

**Exploration Activities**

1. Mark locations of NASA Solar System missions — where they visited, where they are now.
2. Use the Light Minute ruler to find the time it takes to send radio communications between Earth and spacecraft.
3. Show why spacecraft are not launched in the direction of the target planet. If the spacecraft takes 6 months to get there, where will the planet be then?