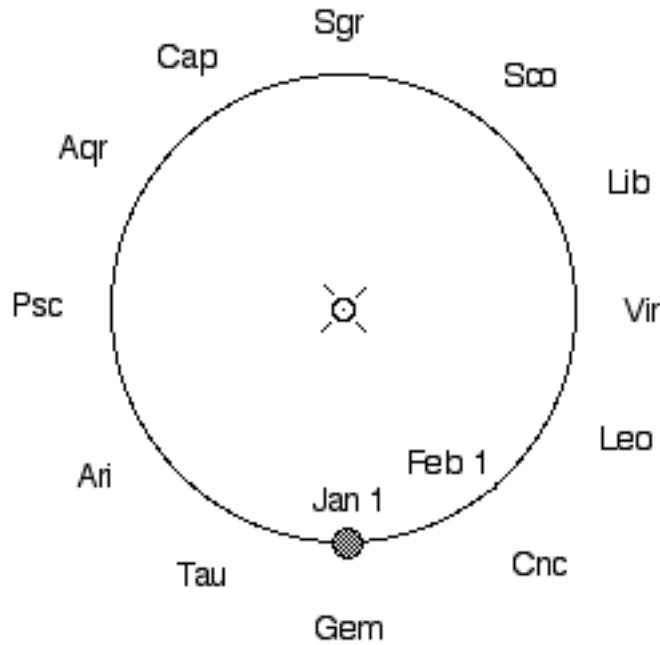


HOMEWORK #1

ANNUAL MOTION OF THE SUN



In the diagram, you are looking down on the north pole of the Sun. Notice the Earth in its orbit. Mark the position of the Earth on the 1st of every month.

1. Is the Earth going around the Sun clockwise or counter-clockwise? _____

Beyond the Earth's orbit are the constellations of the zodiac:

- | | |
|-----------------|--------------|
| Sgr Sagittarius | Gem Gemini |
| Cap Capricornus | Cnc Cancer |
| Aqr Aquarius | Leo Leo |
| Psc Pisces | Vir Virgo |
| Ari Aries | Lib Libra |
| Tau Taurus | Sco Scorpius |

2. On January 1, then the Earth (as seen from Sun) is in Gemini.
 On February 1... _____
 On March 1... _____
 On July 1... _____
 On December 1... _____

[over]

3. On January 1, then the Sun (as seen from Earth) is in Sagittarius.
On February 1... _____
On March 1... _____
On July 1... _____
On December 1... _____

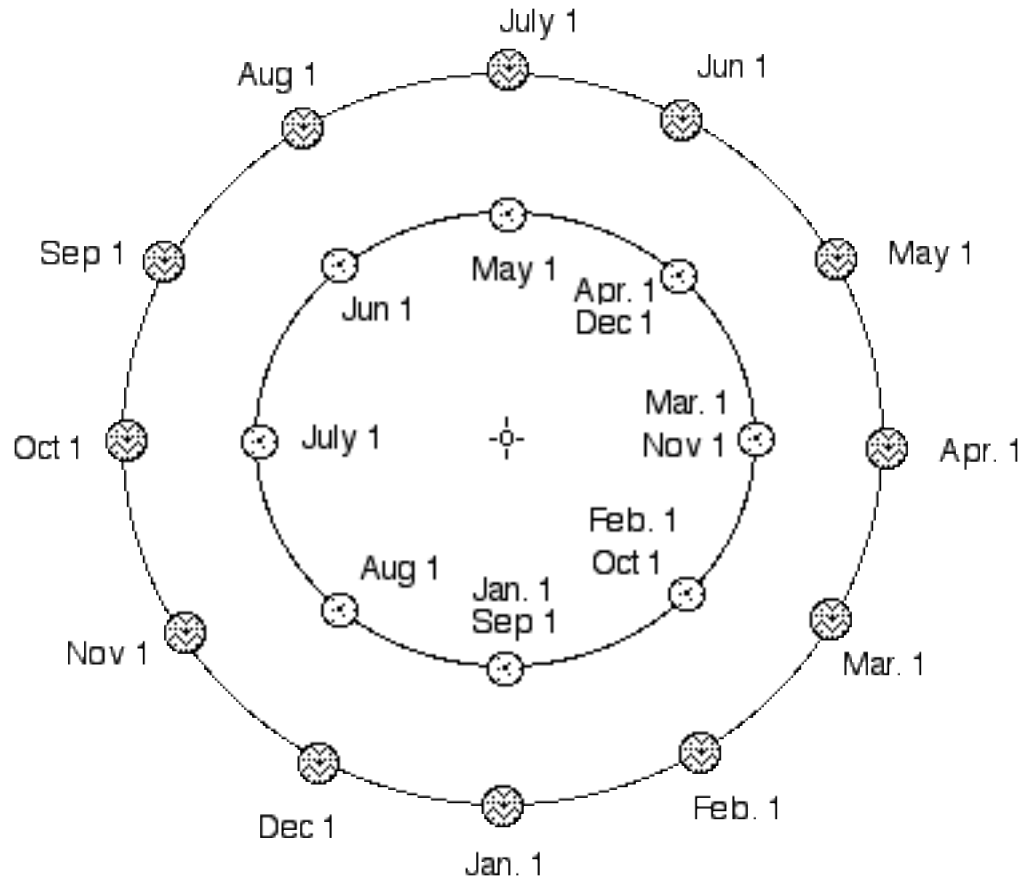
4. If the Sun is in Leo today then:
tomorrow it will probably be in _____
in 1 month _____
in 6 months _____

5. The Sun is in Capricornus at 6 am on February 1.
It is in _____ at 12 noon on February 1.
_____ at 6 pm on February 1.
_____ at 12 midnight on February 2.
_____ at 12 midnight on March 2.

6. **Carefully explain** your answer to question 4 in a complete sentence.

PART II. INFERIOR PLANETS

The diagram shows the Earth and Venus every 10 days. Use a protractor to measure the angle between Venus and the Sun, as seen from the Earth, on each date.



1. On what date is Venus farthest from the Sun to the left (as seen from Earth)? Label this date **eastern elongation**.

2. On what date is Venus farthest from the Sun to the right (as seen from Earth)? Label this date **western elongation**.

3. On what date is Venus between the Sun and the Earth? Label this date **inferior conjunction**.

4. On what date is the Sun between Venus and the Earth? Label this date **superior conjunction**.

5. How many months is it from inferior conjunction to inferior conjunction? This is the **synodic period** of Venus.

(1 Feb. 2015)