Phys 102 Astronomy

Name Solution

Positions of the Planets

Planetary Positions with respect to the Sun:

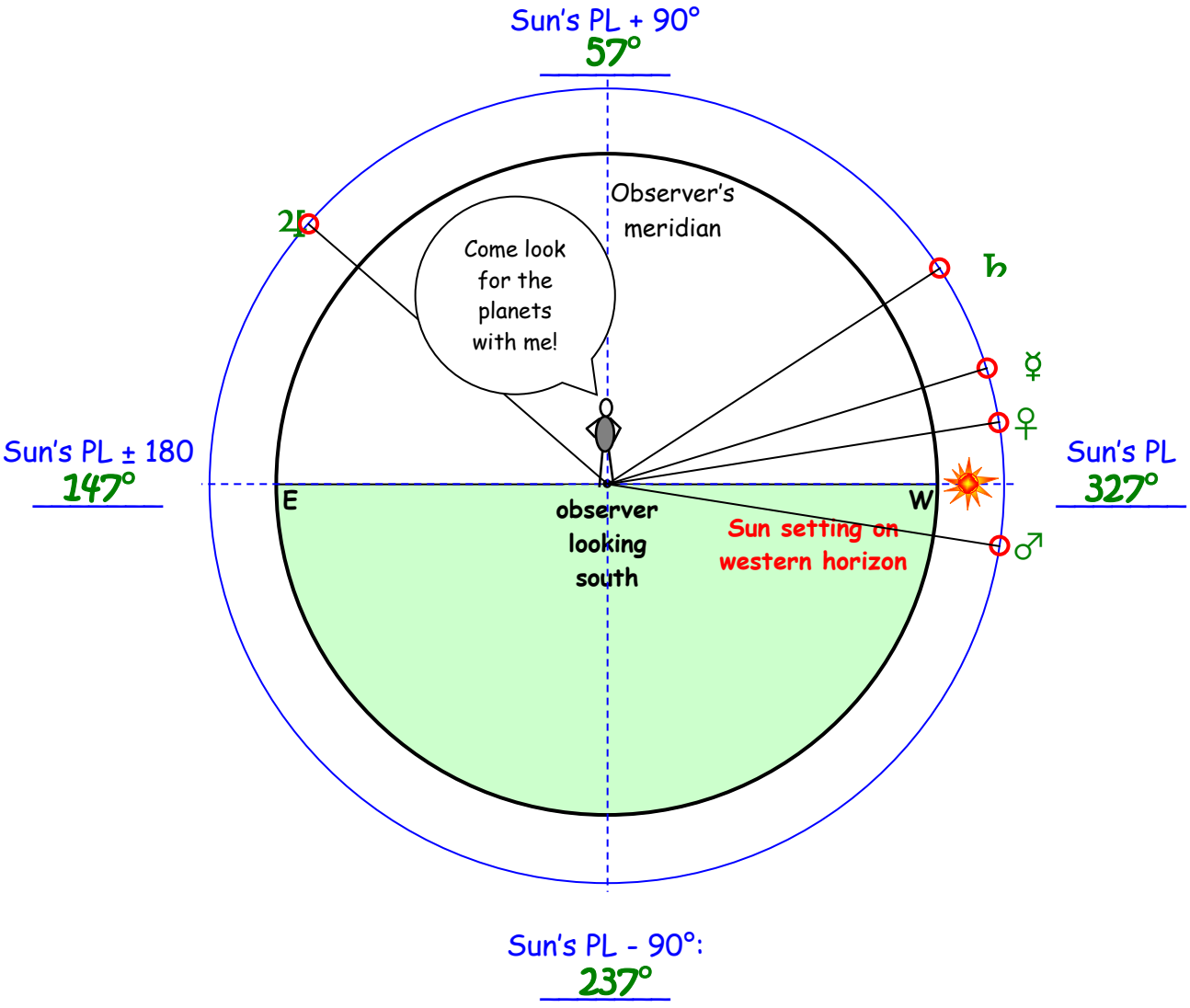
Use appendix 11 in the Field Guide for February 15, 2026 to complete the following table[20]:

Planets in order of orbit distance from the Sun.

Object	Planetary Longitude	Atlas Chart #	Constellation	Elongation
Sol (☉)	327	32	Capricornus	ZERO!
Mercury (☿)	344	32	Aquarius	17° E
Venus(♀)	336	32	Aquarius	9° E
Mars (♂)	318	32	Capricornus	9° W
Jupiter (♃)	106	12	Gemini	139° E
Saturn (♄)	0	21	Pisces	33° E

Planetary Positions In the Sky[12]

The digram below shows an observer looking south at sunset. From the planetary longitude of the Sun and planets abovee, show where the planets will be in the observer's sky (some may be below the horizon). Discuss how these positions correspond to the times the planets will be visible to this observer (eg. after sunset, before sunrise or most of the night). Check out https://in-the-sky.org/data/planets.php!



Planetary Positions In the Solar System[10]

A view of the solar system as seen FROM ABOVE THE NORTH ECLIPTIC POLE with the Sun in the center is shown below. The line from the Earth ( ) to the Sun ( ) represents the planetary longitude of the Sun. For each of the five visible planets,

1) **Center a protractor on the Earth**, measure the elongation angle **from the Sun's longitude**.

2) Use a ruler to determine **where this crosses the orbit of the planet** you're plotting, and mark the planet's position on its orbit.

Special Note: Can you be certain where Mercury and Venus are in their orbits? How many positions for each planet are possible? What information will help you figure this out?