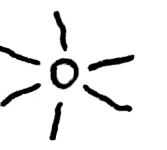
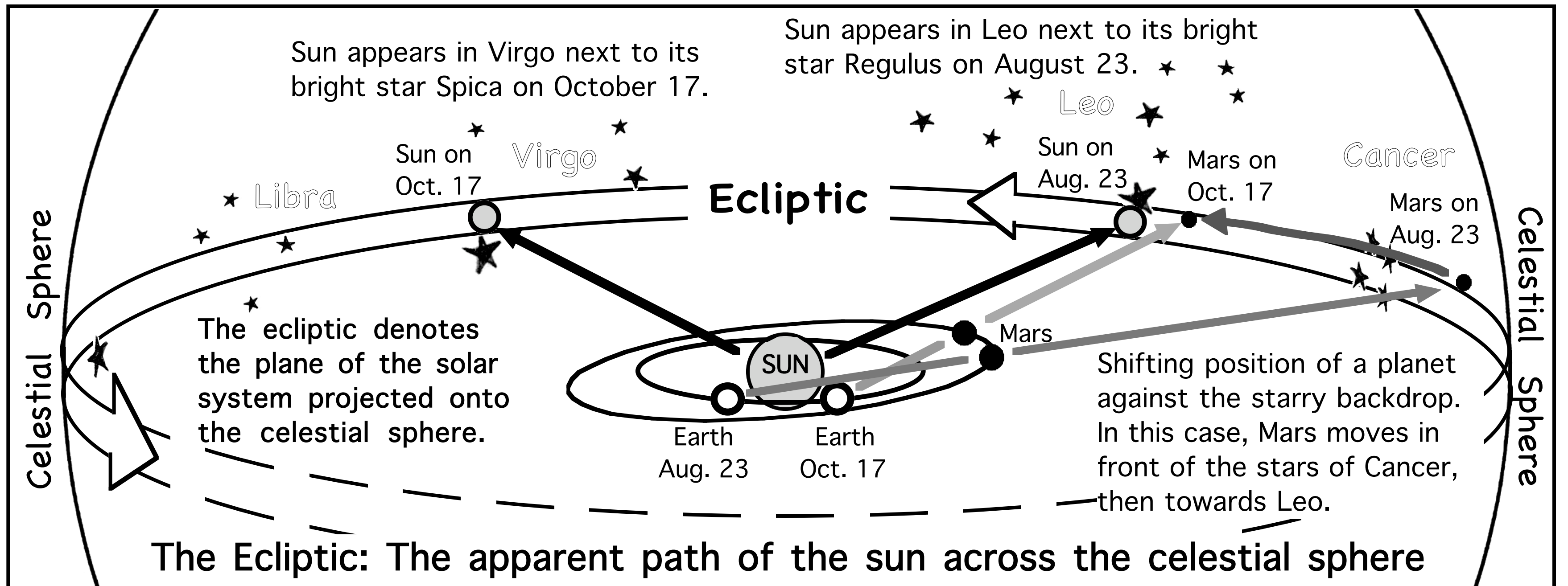
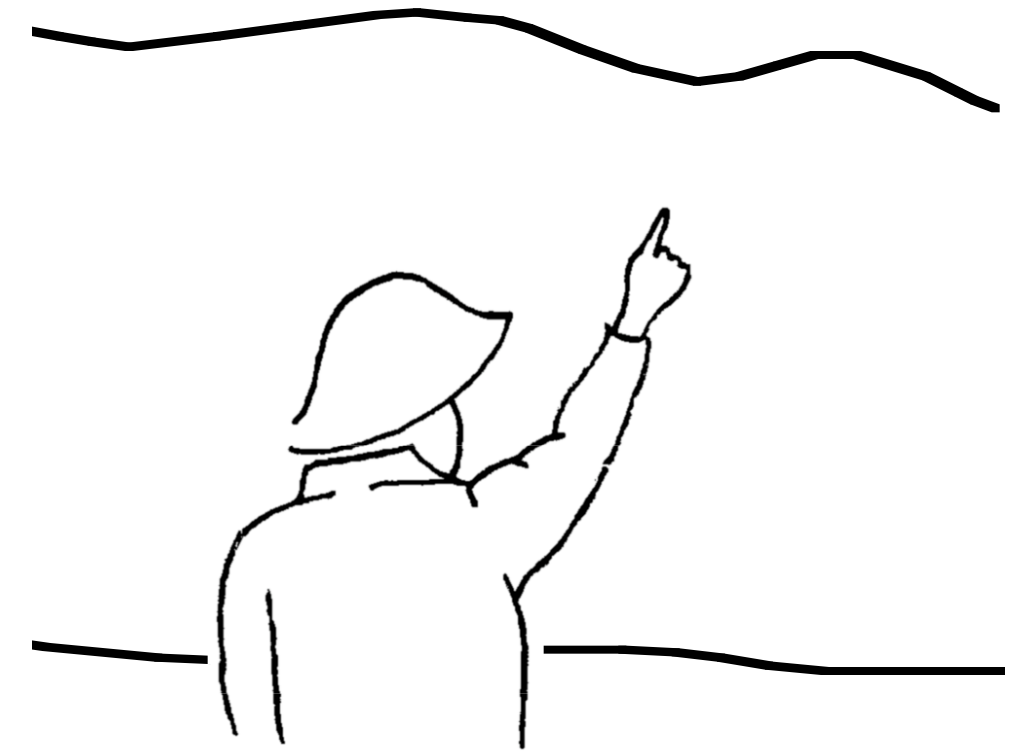


# Is that a planet or a star?



Three tell tale visual characteristics a planet:

- 1 A planet shines with a steady light, unless it is very close to the horizon. It doesn't "twinkle," while a star does.
- 2 A planet is always located near the ecliptic.
- 3 A planet slowly shifts its position nightly with respect to the background stars.



## Mercury

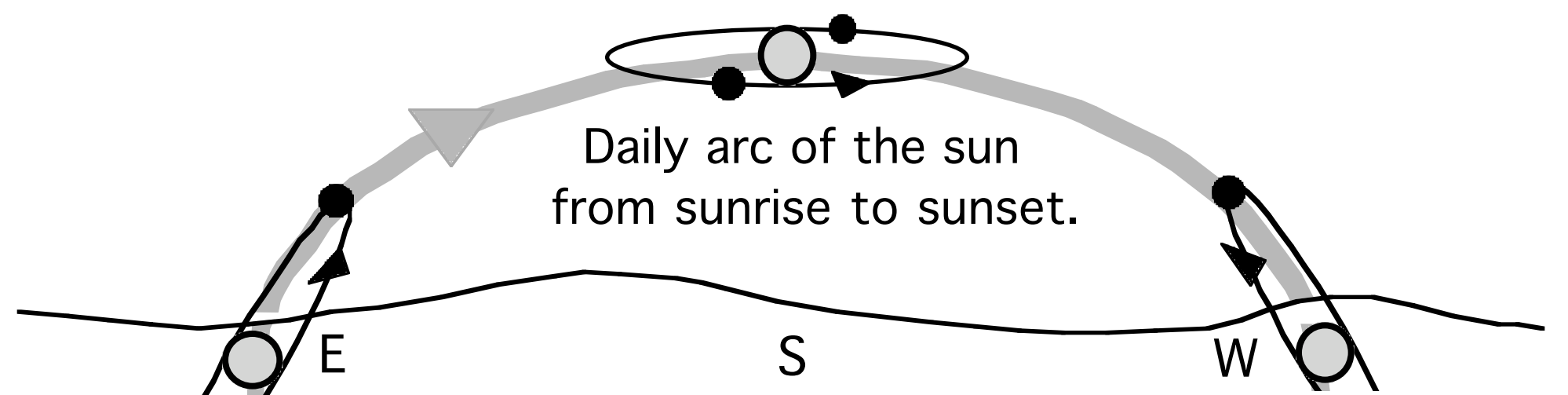
- Either low above western horizon in the evening, or
- Low above the eastern horizon in the morning.
- A challenge to spot.

## Venus

- Dazzling white object.
- Either above the western horizon in the evening,
- or rising above the eastern horizon in the morning.
- Very easy to see.

## The Inner Planets: Mercury and Venus

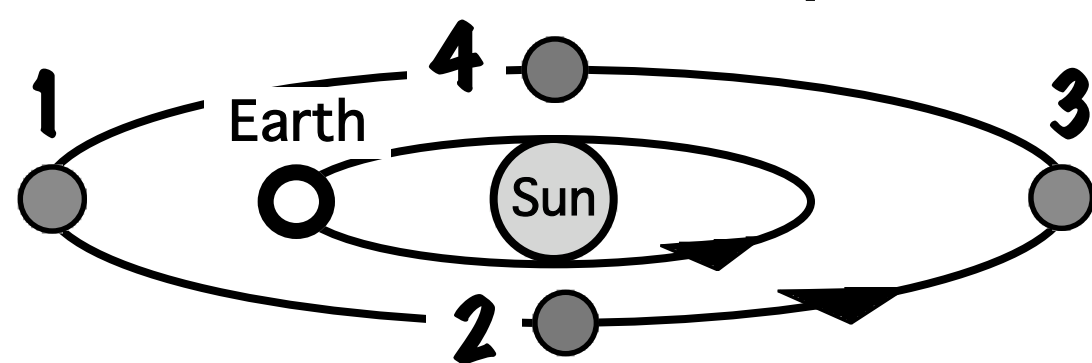
When Mercury or Venus move between the Earth and the sun or when they orbit on the sun's far side, they appear near it in our day sky and can't be seen.



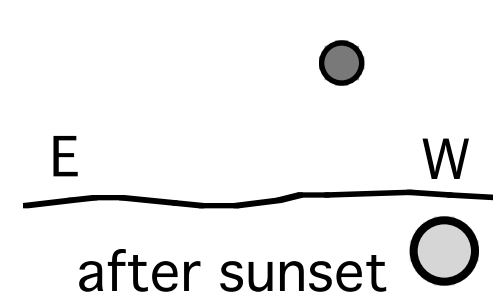
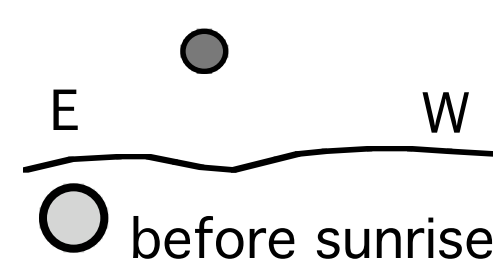
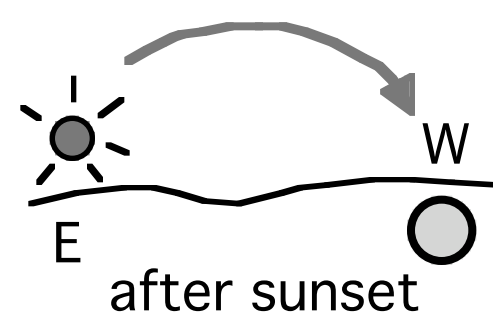
When Mercury or Venus lies to the right of the sun, it is a morning star and can be seen in the eastern twilight before sunrise.

When Mercury or Venus lies to the left of the sun, it is an evening star and can be found in the western twilight after sunset.

## The Outer Planets: Mars, Jupiter, and Saturn



- 1 When the planet is opposite the sun, it rises near sunset and is visible all night. It is closest to the Earth and shines at its brightest.
- 2 When the planet lies ahead of the Earth in their orbits, it is seen high in the east before sunrise. It is often said to be a "Morning Star" in the east.
- 3 When the planet moves on the far side of the sun, it appears in the day sky near the sun and can't be seen.
- 4 When the Earth lies ahead of the planet in their orbits, it is seen high in the west after sunset and sets around midnight. It is often said to be an "Evening Star" in the west.



## Mars

- When it is close to the Earth, Mars is a very bright red-orange object in the east after sunset, high in the sky near midnight, and in the west before sunrise.

## Jupiter

- When it is not positioned near the sun, Jupiter is always seen as a bright pale yellow object.

## Saturn

- When it does not appear close to the sun, Saturn is seen as a bright creamy starlike object.
- It moves slowly with respect to the background stars.

