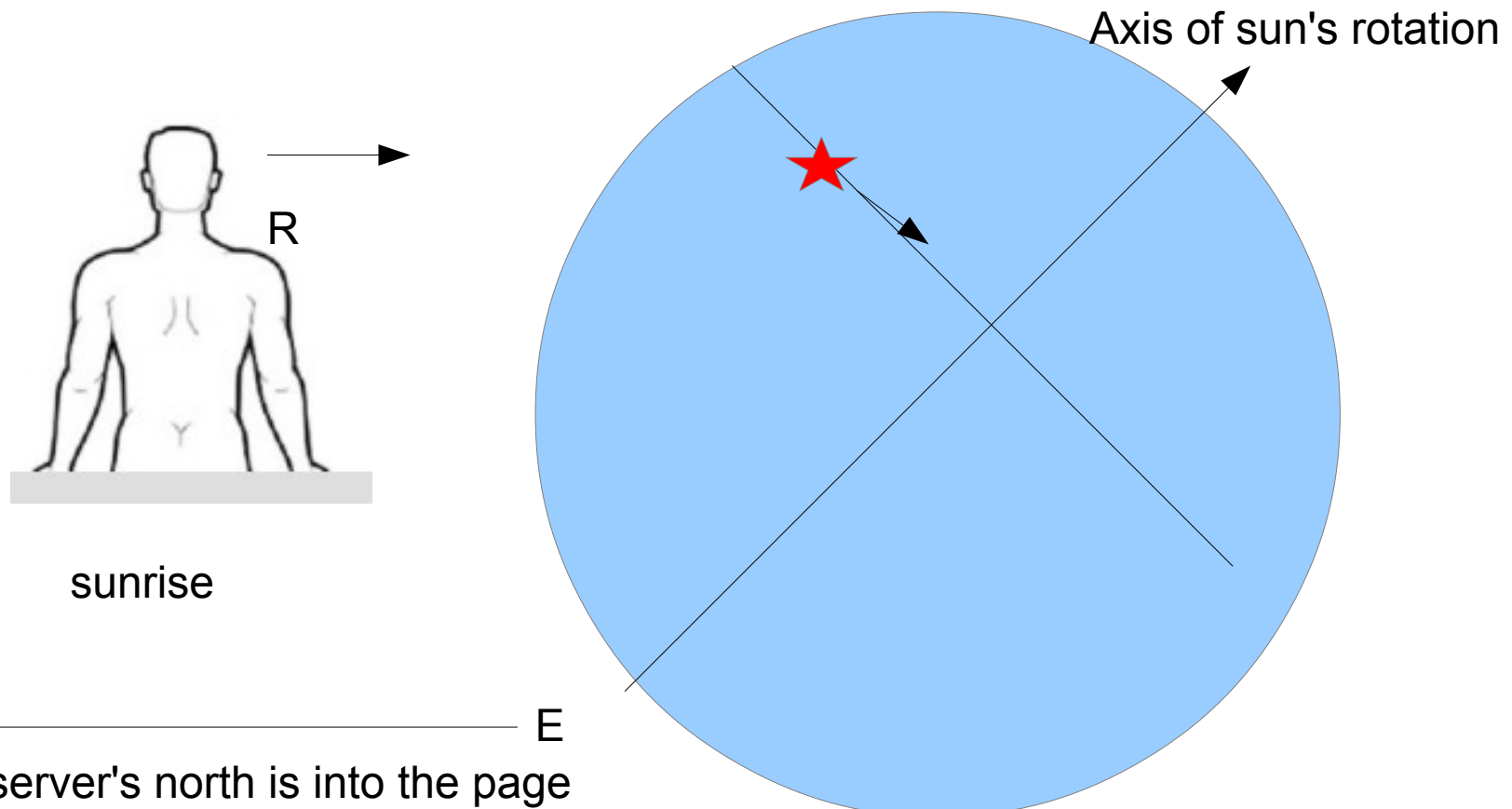
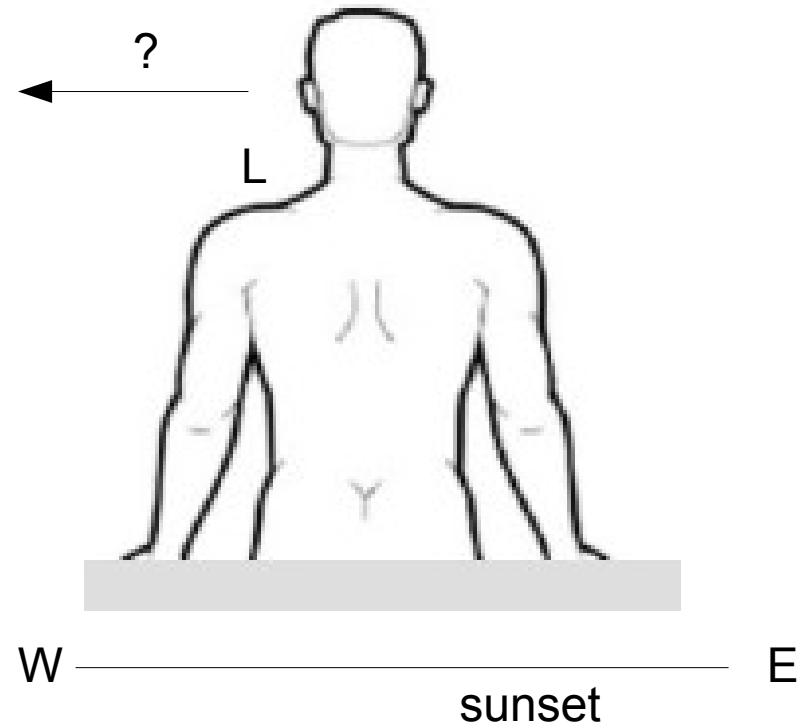
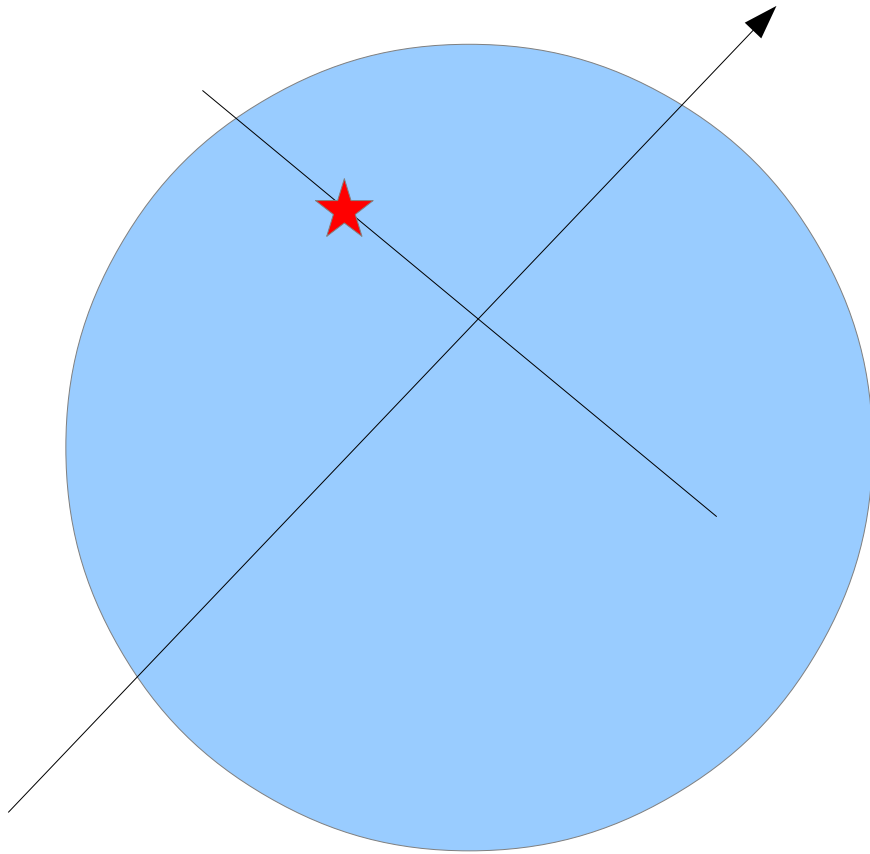


At sunrise the north facing observer sees the sun over his right shoulder.
The sunspot is visible at dawn. The sun's rotational period is about 30 days as judged by the spots "fixed to the sun's surface."



Sun spots' apparent motion are shown by the arrow. Spots on the surface of the sun are carried around by sun's rotation.

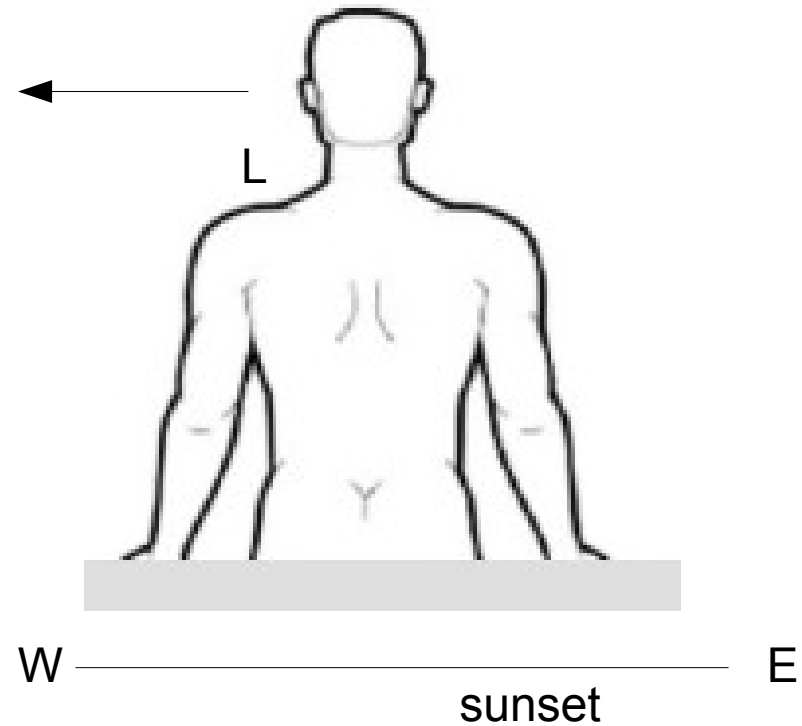
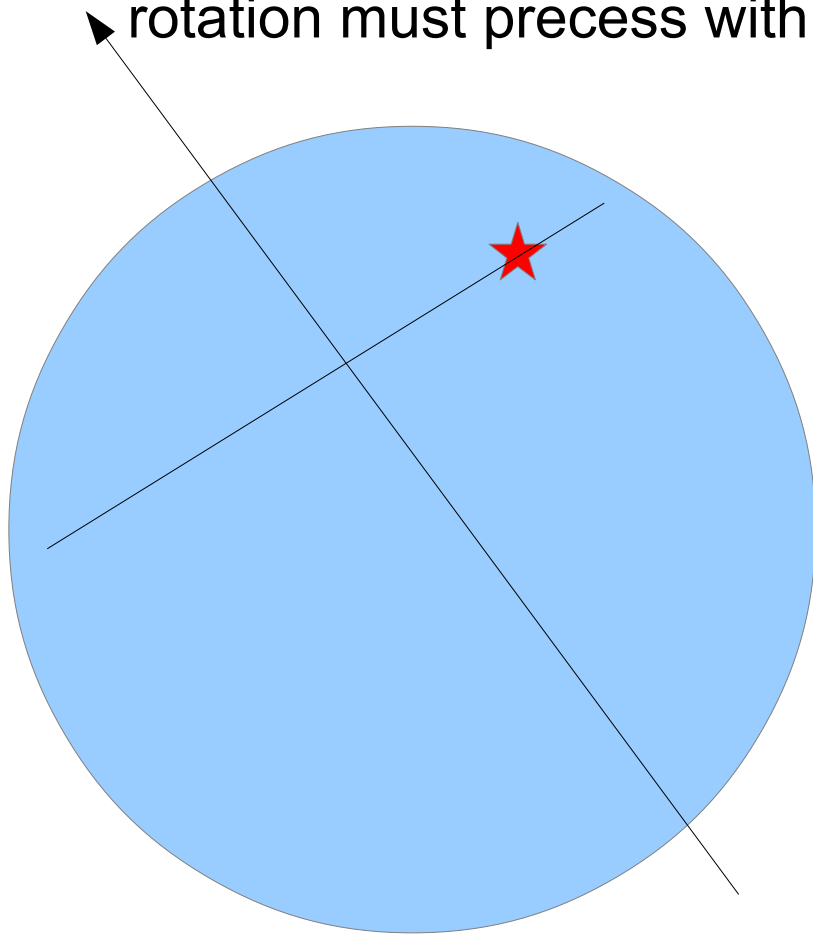
At sunset, if the axis of the sun's rotation continues to point in the same direction as at sunrise, the sunspot is no longer visible over his left shoulder, if the observer's orientation doesn't change.



Observer's north is into the page

These are the relative positions of sun and observer if the observer is stationary and the sun orbits him. The direction of the axis of rotation is the same as at sunrise.

At sunset, if the axis of the sun's rotation changes to point in a different direction from at sunrise, then the sunspot is visible over his left shoulder, if the observer's orientation doesn't change. Sun's axis of rotation must precess with a 24 hour period. Galileo's claim



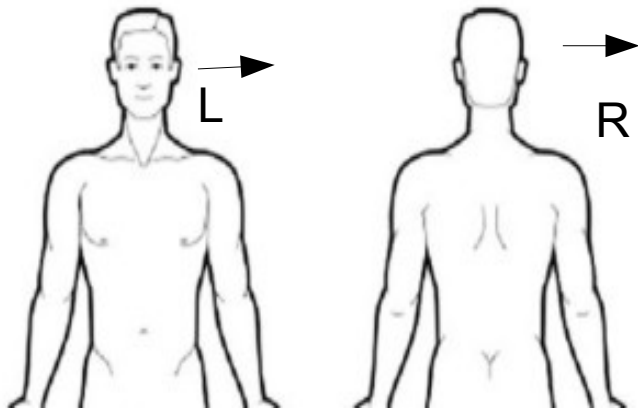
Observer's north is into the page

These are the relative positions of sun and observer if the observer is stationary and the sun orbits him. The direction of the axis of rotation is the same as at sunrise.

Galileo and sunspot observation.

In order to see the same sunspot over his right shoulder at sunrise he must see the same sunspot over his left shoulder at sunset, then the Earth must rotate on its axis.

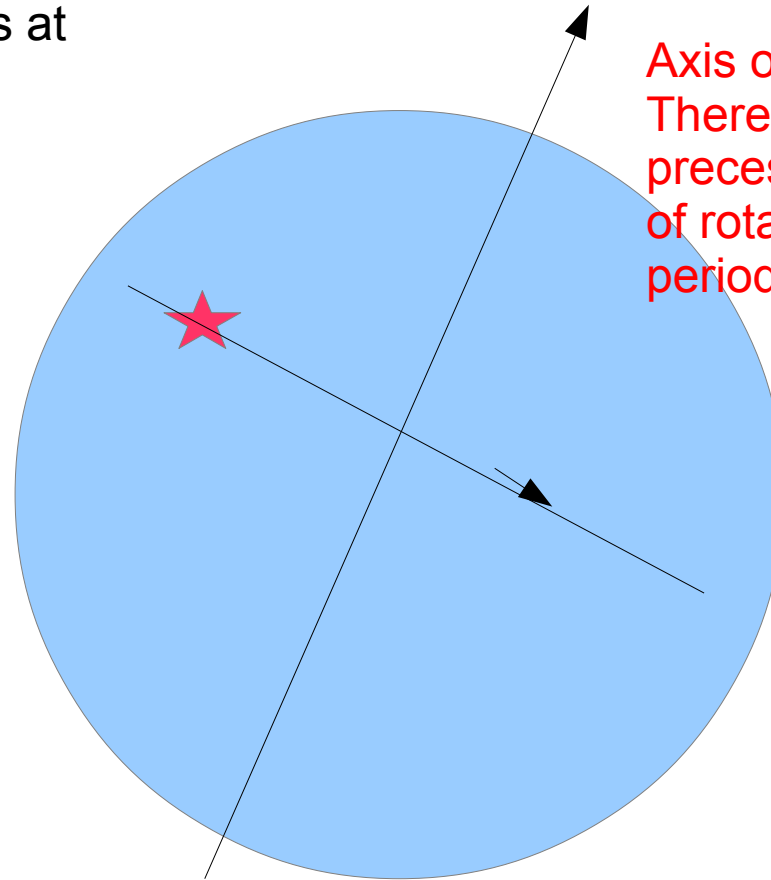
Human being facing his north looks at Sun at sunrise and sunset over his right and left shoulders.



sunset

sunrise

At sunrise the north facing man has the sun on his right shoulder. At sunset the north facing man has the sun over his left shoulder. He sees the same sunspot for the whole day.



Sun's rotational period ~ 30 days
Over the time from sunrise to sunset
the sunspot has moved very little

Therefore, the observer had to rotate because the sun can not precess with a 24 hr period.