

Sun's differential rotation

Quiz – Intermediate Level

Name: _____

Class: _____

Mark the proper way to end each sentence. Only one answer is possible.

1. Unlike the Earth, the Sun is not a rigid body. This means that
 - ☐ when studying its movement, you can not consider the Earth as a compact structure.
 - ☐ the Sun is about to turn into a compact structure by eating planet Earth.
 - ☐ the Sun is not forced to move as a whole.
 - ☐ when studying the movement of the Sun, you can consider it as a compact structure.
2. Unlike Earth's, the Sun's surface
 - ☐ is made of water, with sea currents that are free to move anywhere.
 - ☐ rotates at higher speeds in lower latitudes.
 - ☐ is made of plasma that will turn into soil after a few years.
 - ☐ moves faster in the poles and slower in the equator.
3. The Sun's rotation speed is different at different latitudes, this means that if two sunspots appear
 - ☐ at the same longitude, they will be at different longitudes after a few days.
 - ☐ at the same latitude, they will be at the same longitude after a few days.
 - ☐ at the same longitude, they will be at the same longitude after a few days.
 - ☐ at the same time, they will fuse into a bigger sunspot capable of great things.
4. We can calculate the rotation speed of the Sun by measuring the speed of sunspots because
 - ☐ sunspots want to help us and they whisper the Sun's differential rotation.
 - ☐ sunspots are located at the Sun's surface, that moves as a whole.
 - ☐ sunspots move like sea currents as they are free to move anywhere.
 - ☐ sunspots are located at the Sun's surface, whose speed we want to measure.
5. The Sun rotates
 - ☐ clockwise, like the Earth does.
 - ☐ so fast that it is flat.
 - ☐ counter-clockwise, like the Earth does.
 - ☐ faster in the poles.

6. You wrote down the latitude of each sunspot to

- ☐ check the speed of the Sun at different latitudes.
- ☐ measure how much the latitude changes after a few days.
- ☐ measure the latitude of the Sun as seen by a radiotelescope.
- ☐ subtract it from the latitude of the same sunspot after a few days, and divide it by time.

7. You wrote down the longitude of each sunspot to

- ☐ check the speed of the Sun at different longitudes.
- ☐ measure how much the longitude changes after a few days.
- ☐ measure the longitude of the Sun as seen by a new radiotelescope.
- ☐ check if the longitude remains stable.

8. To calculate the speed of each sunspot you

- ☐ divided time by distance.
- ☐ used a chronometer.
- ☐ looked at, at least, two different sunspots.
- ☐ tracked the sunspot in time-spaced images.

9. We say that the Sun has differential rotation because

- ☐ two sunspots in the equator don't necessarily have to rotate at the same speed.
- ☐ the plasma is differential and it does actually rotate.
- ☐ the plasma located at different distances from the poles may rotate at different speeds.
- ☐ the student's guide says so, and the student's guide knows more than anyone.

10. The Sun's differential rotation graph, where the rotation speed was represented as function of

- ☐ the heliographic longitude, showed that we are not alone in the Universe.
- ☐ the heliographic longitude, showed that the Sun rotates faster in the equator.
- ☐ the heliographic latitude, showed that the rotation speed is symmetric to the equator.
- ☐ the heliographic latitude, showed that the Sun rotates faster in the poles.