The Venus-Sun distance

Quiz – Advanced Level

Name: _____ Class: _____

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

1. Back in the 16th century, astronomers

- ☐ discovered the astronomical unit, usually just named au.
- ☐ set the Earth-Sun distance as reference unit.
- ☐ were not able to measure distances.
- ☐ travelled to Venus after visiting the Sun.

2. The Parallax relation we used involves

- ☐ four different astronomy constant values.
- ☐ the Venus-Sun distance and the Venus-Earth distance.
- ☐ a Venus satellite and two Sun prominences
- ☐ the distance between an observer and the apparent position of Venus as seen by him.

3. Besides de parallax relation, we also used a relation obtained from

- ☐ the Venus Express mission.
- ☐ the Venus transit data.
- ☐ the geometry of the transit.
- ☐ the Venus transit images.

4. We need images from two different observatories because

- ☐ Earth rotation will eventually provoke dawn, and Venus will no longer be visible.
- ☐ one observatory must be launched in a Sun rocket to Venus.
- ☐ having two observatories is necessary for getting accurate images.
- ☐ only with two different lines of sight parallax effect occurs.

5. We chose two images taken at the exact same time because

- ☐ if not, Venus would be in a different position when each picture was taken.
- ☐ Canberra images were named using UTC, but Svalbard ones where named using UTC+2.
- ☐ that way the two pictures will be exactly the same.
- ☐ if not, Venus and the Sun would fall apart.

6. The distance that was measured in pixels in the merged image was

- ☐ the distance between the two observatories.
- ☐ the distance between the two Venus' shadows.
- ☐ the distance between the apparent position of the Sun while it absorbs Venus.
- ☐ the distance between the apparent position of Venus as seen from two different places.

7. The unit conversion of the distance between the two Venus' apparent positions was

- ☐ done in two steps, first we expressed it as a multiple of the Sun radius and then in metes.
- ☐ done using some Venus images taken from the Sun.
- ☐ done because the value needed to be expressed in pixels.
- ☐ done because the measurement in a digital image wasn't accurate enough.

8. After doing the calculations, the Venus-Sun distance is obtained in au because

- ☐ back in the 16th century the au was set as a reference unit for measuring distances in space.
- ☐ while developing the (eq. I) we set the Earth-Sun distance equal to one.
- ☐ the au is still the appropriate unit to express distances between solar system objects.
- ☐ someone from Venus told the Sun to do it that way.

9. Parallax effect was useful because thanks to the fact that Venus is

- ☐ in two places at the same time, we can draw proportional triangles and use proportionality.
- ☐ seen in two different positions, we can draw proportional triangles and use proportionality.
- ☐ seen in two different positions from the same place, we can use proportionality.
- ☐ a green planet, we can draw proportional triangles and use proportionality.

10. Proportionality was useful because it helped us find

- ☐ the distance between A and B.
- ☐ a shiny treasure.
- ☐ the distance between A' and B'.
- ☐ the parallax relation.