

## What You Should Know: “Celestial Sphere, Time and Seasons”

- 1.) Be able to identify all the points on the celestial and ecliptic plane sphere.
- 2.) When is the winter solstice? The summer solstice?
- 3.) What defines the solstices?
- 4.) When is the vernal equinox? The autumnal equinox?
- 5.) What defines the equinoxes?
- 6.) By how much is the earth tilted (to a tenth of a degree)? How long does it take to wobble once?
- 7.) Why is Pasadena hot during the time of the year when the sun is as far away from the earth as possible?
- 8.) What is the celestial sphere counterpart to latitude?

- 9.) What is the celestial sphere counterpart to longitude?
- 10.) Where is the zero for right ascension?
- 11.) What is the name of the plane in which both the sun and earth reside?
- 12.) If you extend the earth's equator out onto the celestial sphere, what do you define?
- 13.) What is today's pole star?
- 14.) How long does it take the earth to wobble on its axis once?
- 15.) Will the pole star be the same as today's in 10,000 years? In 23,000 years?
- 16.) By definition, how many hours are there in a solar day?
- 17.) A solar day is defined from when to when?

18.) What is the name of the year that is defined by the time it takes a star to pass by a given point in the sky twice?

19.) What is one unusual fact about solar days (and I'm not talking about the fact that there is one more sidereal day in a year than solar days)?

20.) How many times does the earth rotate during a year?

21.) A sidereal day is approximately how much shorter than a solar day?

22.) Why is a sidereal day longer than a solar day?

23.) How is a year defined?

24.) What causes "season creep?"

25.) Why is season creep a problem?

26.) Who instituted "leap year?"

27.) What is the name of the current calendar?,,,,

28.) How does leap year work? That is, what happens when?

29.) The idea behind leap year had to be modified. Why, and what was the modification?

30.) When did the U.S. accept the current calendar?

31.) What was the last major nation to accept the current calendar?

32.) The calendar was accepted in the U.S. on Wednesday, Sept. 2, 1752. What was the date of the next day?

33.) Who was the last major country to accept the current calendar, and when did they do it?