

**Assignment #42**  
**ASTRONOMY TOPICS I**

**Name:**

Go back to <http://formontana.net> and then click on picture # 9.

1. With most photos the camera shutter is open for a fraction of a second. How long was the shutter open to take this photo?
2. Which was moving . . . the Earth or the stars?
3. What star was at the center of the spiral?
4. If you were standing on the Earth and Polaris was directly over your head, where are you?
5. What are “circumpolar stars”?
6. Why is the meteor giving off light as it travels through the Earth’s atmosphere?
7. Which is closer to the Earth . . . the stars or the meteor?
8. Why are there so many meteors on certain nights of the year?
9. On what dates does the Perseid Meteor Shower happen each year? (This is a good one to watch.)
10. Which comet is responsible for the Perseid shower?

Go to <http://formontana.net> and then click on picture # 37.

11. Explain the difference between a “lunar eclipse” and a “solar eclipse.”
  
12. Which one would be visible during the daytime?
  
13. There is a full moon about once per month. So why isn't there a lunar eclipse every month?
  
14. How did lunar eclipses help prove that the Earth was not flat?

Go back to <http://formontana.net> and then click on picture # 48.

15. Why did we invade France? (This was portrayed the opening scene in the movie “Saving Private Ryan”.)
  
16. Although most Montanans have little experience with tides, what causes tides?
  
17. Why did the Allies (U.S.A., Great Britain, etc.) want some moonlight the night before the invasion?
  
18. Why did they want the boats to reach the beaches at low tide?
  
19. About once every month or so there is big difference between the high and low tides. On these days the high tides are really high and the low tides are really low. This happened on June 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> of 1944. Why does this happen?

20. Look at the map at the bottom of the web page. What two other countries were also involved with the invasion of Normandy?

**Go to back to <http://formontana.net> and then click on picture # 52.**

21. What is the scientific name for the northern lights?

22. What do many people believe causes the lights? They are wrong!

23. On the model shown near the bottom of the web page, what do the blue lines represent?

24. What is the solar wind?

25. How does Earth's magnetic field influence the particles that make up the solar wind?

26. The lights happen in our atmosphere, not in outer space. Explain why.

27. Why does there need to be some sort of increase in the solar wind in order for us to see the northern lights as far south as Montana?

28. On the image at the top of the web page why is the oval (northern lights) centered on the red dot and not the yellow dot?