

Fearofphysics.com - Astronomy 101
Things “we should all know about astronomy”

1. What is the difference between astronomy, astrophysics, astrology, astronomology?
2. How are rainbows formed?
3. Why is the sky blue?
4. Why are clouds white?
5. Why are sunsets red?
6. Where does the “green flash” come from?
7. What is a mirage, and how does it form?
8. Why is “the sky” on the Moon black? (Related to: “Did you hear about the restaurant on the moon?”)
9. Telescopes are often advertised by their “power.” What is meant by their power and are there any other parameters are important in buying a telescope?
10. What are some limitations to the common 60 mm refracting telescope found at Walmart? What does the 60 mm even measure? Are such telescopes worth buying?
11. Why are telescopes always long?
12. What is the most important function of a telescope? To make things bigger, right?
13. When you see a vehicle’s lights, approaching at night. How come you can’t tell if it’s a motorcycle (one light) or a car (two lights) until it is closer to you?
14. Why does the moon appear red during a full-moon lunar eclipse?
15. The North Star is easy to find because it’s so bright, right?
16. Is there are “dark side” to the moon?
17. What would a star (other than the sun) look like through a telescope? (Related: I’ll bet you don’t know how to draw a star properly. (note: see <https://www.youtube.com/watch?v=VVAKFJ8VVp4>)
18. What color is the Sun?
19. Why do we draw the Sun looking all “happy” with a smiley face and all?
20. Is going to Mars really all about building a big rocket and having food, shelter, and oxygen once there?
21. How do you pronounce “Uranus?”
22. What else can you figure from the North Star?
23. What’s the deal with the song “twinkle, twinkle, little star?”
24. Why is Bensky so “bummed out” about Europa?
25. If we want to look for alien civilizations, what might we actually look for?
26. Name one interesting fact about each planet (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus).
27. Why isn’t Pluto a planet anymore?
28. Know at least one “bad” astronomy joke.

29. Why don't we see solar eclipses once a month at new moon?
30. What was the "Star of Bethlehem?"
31. Is the presence of greenhouse gasses in our atmosphere *all bad*?
32. What are those dark splotches on the moon?
33. Why are beautiful sunsets actually, not so beautiful?
34. Ok, without any hesitation or doubt: know why we have seasons.
35. Why does the moon have phases?
36. The Sun is always over the equator, right?
37. Impress your friends and family: How do you find Arcturas? Spica? The North Star? Cassiopeia? (Starting with the Big Dipper, of course.)
38. Why should we all go outside, look up at Jupiter and say: "Thank you, Jupiter."
39. Anything wrong with this Star Wars quote? "You've never heard of the Millennium Falcon?... It's the ship that made the Kessel Run in less than twelve parsecs."
40. The moon landings were faked, right? Why can't I see the landing equipment with a telescope?
41. What's the "Venus equation?"
42. Is the moon really that far from the Earth?
43. The Sun always sets in the west, right?
44. Is the north star visible worldwide?
45. Where do stars go when they set?
46. We know the north star points us north. Is there an east-west beacon in the sky? What about a "south star?"
47. Can you tell a comet's direction of travel based on a picture of it alone?
48. What is the "lie of the sunset?"