

**TedEd: The search for other Earth-like planets - Olivier Guyon (6m21sec)**

<http://ed.ted.com/lessons/the-search-for-other-planets-olivier-guyon>

**Pre-Video Review:**

1. What 3 main things make a planet habitable?
  - a. S \_\_\_\_\_
  - b. A \_\_\_\_\_
  - c. D \_\_\_\_\_
2. Beside that, you also need to know a planet's C \_\_\_\_\_.
3. The \_\_\_\_\_ of star the planet is orbiting.
4. And we need to know a planets position in the galaxy called the \_\_\_\_\_.

**Directions:** While watching the video, answer the questions, choose the best answer for each question.

1. We need to look for planets that are the right \_\_\_\_\_ and right \_\_\_\_\_ from their stars.
  - a. Size, atmosphere
  - b. Size, distance
  - c. Distance, atmosphere
  - d. Temperature, distance
2. If you count 5 stars a second, how long will it take you to count all the stars in our galaxy?
  - a. More than a year
  - b. More than a 100 years
  - c. More than a 1,000 years
  - d. More than 10,000 years
3. How long will it take you to count all the galaxies in our universe if you are counting at 5 galaxy/sec.
  - a. More than a year
  - b. More than a 100 years
  - c. More than a 1,000 years
  - d. More than 10,000 years
4. If 1 out of every 100 planets had a habitable world, how long would it take you to visit all the habitable planets in our galaxy if you visited them 1 H.P/sec.
  - a. 10 years
  - b. 60 years
  - c. 135 years
  - d. 250 years

5. Why is it so hard to take images of exoplanets?
  - a. Starlight is way brighter than the planet.
  - b. Planet is so small compared to it's star.
  - c. Planets are really far away.
  - d. All of the above.
  
6. What is "coronagraphy"?
  - a. Using your cornea to see planets.
  - b. Using optics tricks to remove starlight without removing planet light.
  - c. Using light to separate into color spectrum to determine the chemicals of a planet
  - d. Using light from our planet as a chemical signature.
  
7. Guyon says we need a better eye. What does he mean?
  - a. We need a more powerful telescope
  - b. We need a more acute sense of where life most likely exists
  - c. We all need laser eye surgery
  - d. We need to pay closer attention because we have obviously missed many things already
  
8. Why is it important to explore space? (Short Answer)

**Exceed- Showing the teacher that I got this!!!!**

9. How could a K-class star that has an large gas giant (super-Jupiter) outside its habitable zone, surrounded by 5 rocky/ice moons the size of Mars, have the possibility of having life on one or more of those moons? Use examples and discuss reasons why it could host/harbor life.