Name:

The “Habitable” Worlds of Sci-Fi

In today’s lecture we discussed “habitable” worlds from various science fiction television shows, movies and books. In this activity you will discuss the accuracies and inaccuracies in the depictions of these worlds.

Endor: “Exomoon”

1) What moon (or moons) in our solar system is Endor most similar to? In what ways is it similar?

2) Endor is an example of a habitable exomoon (moon of an exoplanet). Does Endor’s planet have to be in the habitable zone of its star for Endor to be habitable? Why or why not?

Tatooine & Gallifrey: Circumbinary Planets

3) How is the starlight received by a planet different for a circumbinary system versus a single star system?

Hoth, Mann, & Trondheim: Ice Worlds

4) What is one way to warm a planet that is covered in ice? *Hint: think in terms of atmosphere.*

5) Follow-up to question 4: what process could produce this atmospheric component?

Mustafar: Lava World

6) What moon in the solar system does Mustafar most resemble? What powers the volcanic activity on this moon?

Vulcan: Class M Planet

7) Mars, like Vulcan, has a thinner atmosphere than Earth, but unlike Vulcan Mars has less gravity. Describe how a planet with more gravity than Earth could have a thinner atmosphere (i.e. more atmospheric escape).

Miller: Planet around a Black Hole

8) Do you think a planet could stably orbit a black hole? Why or why not?

Edmunds: Planet around a Neutron Star

9) Explain why a planet around a neutron star is not likely to be habitable.

34 Tauri: Multi-Star, Multi-Planet System

10) The main star in this system is an A type star. Give one reason why planets around an A type star might be less habitable than planets around a G type star like the sun.