Chapter 5: Hubble (HST) vs. Webb (JWST)

Student Worksheet

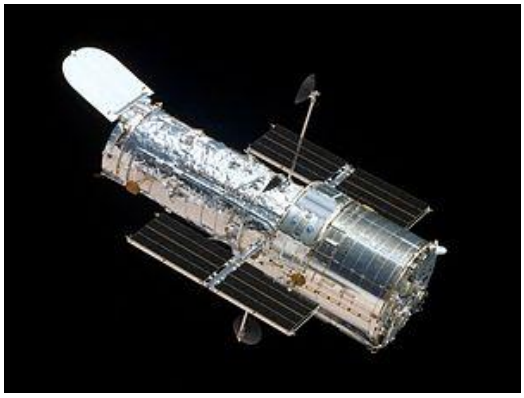

Figure 1: HST NASA

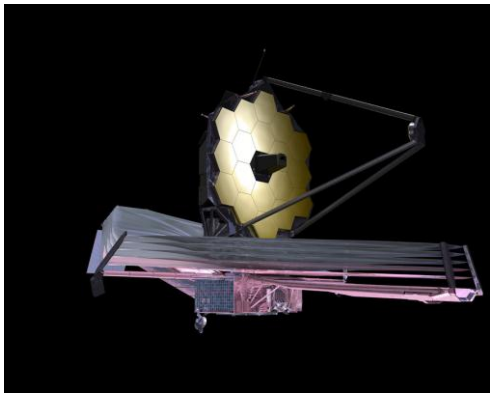

Figure 2: JWST NASA

Objective:

To compare the Hubble Space Telescope and the James Webb Space Telescope.

Engage:

If you could design the ultimate telescope, where would you put it? What would it look at? What questions would it answer?

Introduction:

The beloved Hubble Space Telescope will continue operating until it no longer can but the HST is in its twilight years and will not be repaired. The people of the world will surely miss Hubble, though we have much to look forward to with the James Webb Space Telescope, Hubble's successor. The planned launch date for JWST is 2018.

Your Task:

Compare and contrast these two telescopes from multiple points of view using a Venn Diagram.

Procedure:

1. Visit NASA's James Webb Space Telescope page: www.jwst.nasa.gov, and Hubble's page: www.hubblesite.org
2. Spend about 15 minutes simply exploring these sites and following your interest. At this point you won't even have the topics you are to investigate, so take some time to just see what you find. There's lots to explore!

3. Collect the Venn diagram from your instructor to compare the telescopes. Your instructor will provide you with a few categories to focus your search.
4. Choose 3 additional categories to compare and contrast the telescopes .
5. Begin your quest, and keep notes. When ready, complete your Venn Diagram by recording your results.
6. After completing the Venn diagram, review the **Conclusion** questions below to see if any additional research is necessary.

Conclusion:

1. What does it mean to say the JWST will be able to see galaxy formation in the early universe?

2. What are a few of Hubble's biggest discoveries?

3. In your opinion which is a better telescope? Why?

4. Explain a Lagrange point. Why is it advantageous for JWST to be located at a Lagrange point?

Extend:

- Watch the movie *Hubble 3D* from 2010.

- Edwin Hubble and James Webb are both interesting people. Make a compare contrast chart of your choice to learn more about them.

- The website has loads of fun activity and project ideas. Look around – build a model!