Discussion Questions
Black Holes and Telescopes

1. What year did Chandrasekhar move to England?
   a. 1930
2. How many universities did Chandrasekhar work for?
   a. One, University of Chicago.
   b. He lectured at Harvard for a few months before going to Chicago’s Yerkes Observatory
3. How did the conflict with Eddington affect Chandrasekhar’s career? What sparked the conflict?
   a. He didn’t get the Nobel until decades later for something he should have gotten in the 1940s
   b. He had to move on to a different research area
   c. Eddington could not believe Chandra’s math because it led to an object of radius zero and infinite mass
4. Who coined the term “black holes”? When did this happen?
   a. John Wheeler
   b. At a NASA conference in 1967
5. What company published the first article about black holes?
6. When was the Chandra X-Ray Telescope launched?
   a. July 23rd, 1999
7. What are the main uses of the Chandra X-Ray Telescope?
   a. To observe hot gases, exploding stars, and young stars that have very active surfaces
   b. Space material that is too hot to be seen with visible light
   c. To observe supernovas
8. What is the mass limit of a White Dwarf? What is the mass limit of a Black Hole?
   a. 1.4 solar masses or less a star dies as a White dwarf
   b. 8 or more solar masses a star dies as a Black hole
9. How does the Chandra X-Ray Telescope detect black holes?
   a. The telescope detects the super-hot gas and dust that is swirling around the black hole.
10. How often do Supernova occur?
    a. About every fifty years in our galaxy
11. When was the first picture of a black hole taken? With what type of telescope was it taken with?
    a. 2019
    b. Radio Telescopes
12. What elements are created in a Supernova?
    a. Gold
    b. Titanium
    c. Uranium
13. How long was Chandrasekhar working at Yerkes Observatory?
    a. 15 years
14. Why are scientists interested in studying young stars?
   a. Because scientists would like to understand how when our sun was young the sun flares effect the Earth
15. Why do we have to use satellites to observe the X-Rays from space?
   a. Earth’s atmosphere absorbs X-Rays so we can’t detect this data on earth’s surface.