

Formation of Elements in the Stars

"We are all star stuff" - Carl Sagan

Name: _____

Directions: Answer the following questions below

1. The primary composition of a young star is _____
2. Describe a nuclear fusion reaction _____
3. In stars, fusion reactions can produce elements up to _____ atomic number _____
4. How do elements formed in stars end up on the planets? _____

5. In stars less massive than the sun what is the primary reaction that takes place?

6. Describe the conditions in which elements heavier than Iron can be produced?

7. Nickel - 64 must absorb a _____ in order to form Nickel - 65.
8. Nickel - 65 is radioactive and only lasts a short amount of time. It releases an electron which is called a _____.
9. Elements heavier than 270 amu spontaneously break apart in a process called _____.
10. The majority of an interstellar cloud is composed of which element _____
11. Fusion reactions that produce elements up to Iron _____ energy, however fusion reactions producing elements heavier than iron _____ energy.
12. The process scientists use to determine which chemical elements are formed inside stars is called _____.
13. Atoms and molecules produce their own "fingerprint" when the light they emit is spread in a spectroscope, this is called the elements _____.
14. In addition to the composition of the elements found in stars, scientists can use a spectroscope to measure _____ of the elements inside of the stars.
15. In a supernova explosion tremendous amounts of _____ are released in addition to heavier elements that are spewed across space.