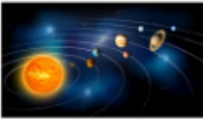


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Crash Course Astronomy #28: Brown Dwarfs

Name: _____ Date: _____

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1. Stars generate energy by fusing _____ into helium in their cores.
2. The balance between heat expansion and gravity in stars creates an internal _____.
3. _____ are too small to start fusion in their cores.
4. An object must be at least about _____ times the mass of Jupiter to sustain hydrogen fusion.
5. Objects that are too massive to be planets but not massive enough to be stars are called _____.
6. Brown dwarfs emit most of their energy in the _____ part of the spectrum.
7. Brown dwarfs can contain the element _____, which true stars quickly burn up.
8. The _____ test helps astronomers distinguish brown dwarfs from stars.
9. The first true brown dwarf discovered was called _____ 1.
10. The brown dwarf Gliese 229b was notable for having _____ in its atmosphere.
11. Extremely cool brown dwarfs are classified as _____ dwarfs.
12. In WISE telescope images, brown dwarfs appear _____ due to infrared mapping.
13. Adding mass to a brown dwarf makes it _____ instead of larger.
14. Brown dwarfs more massive than 13 times Jupiter's mass can fuse _____.
15. Some brown dwarfs are cool enough that it can _____ molten iron.

Crash Course Astronomy #28: Brown Dwarfs KEY

1. Stars generate energy by fusing **hydrogen** into helium in their cores.
2. The balance between heat expansion and gravity in stars creates an internal **equilibrium**.
3. **Planets** are too small to start fusion in their cores.
4. An object must be at least about **75** times the mass of Jupiter to sustain hydrogen fusion.
5. Objects that are too massive to be planets but not massive enough to be stars are called **brown dwarfs**.
6. Brown dwarfs emit most of their energy in the **infrared** part of the spectrum.
7. Brown dwarfs can contain the element **lithium**, which true stars quickly burn up.
8. The **lithium** test helps astronomers distinguish brown dwarfs from stars.
9. The first true brown dwarf discovered was called **Telde 1**.
10. The brown dwarf Gliese 229b was notable for having **methane** in its atmosphere.
11. Extremely cool brown dwarfs are classified as **Y** dwarfs.
12. In WISE telescope images, brown dwarfs appear **green** due to infrared mapping.
13. Adding mass to a brown dwarf makes it **denser** instead of larger.
14. Brown dwarfs more massive than 13 times Jupiter's mass can fuse **deuterium**.
15. Some brown dwarfs are cool enough that it can **rain** molten iron.

15 Questions

Answer Key Included

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