

## Star sizes and mass

Stars come in various sizes and masses, and their classification often depends on their place in the Hertzsprung-Russell diagram, which plots their luminosity against their temperature. Here is a list of different types of stars along with their typical sizes and masses:

### 1. **Brown Dwarfs:**

- Mass: Less than 0.08 times the mass of the Sun.
- Size: Similar to or slightly larger than Jupiter.
- Description: Sub stellar objects not massive enough to sustain hydrogen fusion in their cores.



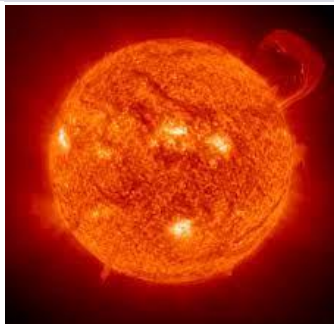
### 2. **Red Dwarfs:**

- Mass: Between 0.08 and 0.5 times the mass of the Sun.
- Size: Approximately 10-20% the radius of the Sun.
- Description: The most common type of star in the universe, with low luminosity and long lifespans.



### 3. **Sun-Like Stars (G-type Main Sequence Stars):**

- Mass: About 0.5 to 1.4 times the mass of the Sun.
- Size: Similar to the Sun, with a radius around 1 solar radius.
- Description: These stars, like our Sun, are in a stable phase of hydrogen burning.



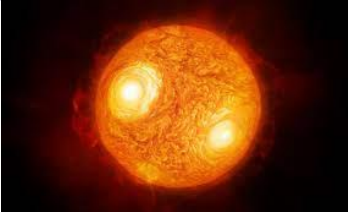
#### 4. Subgiant and Giant Stars:

- Mass: 1.5 to 10 times the mass of the Sun.
- Size: Radius can be 10 to 100 times that of the Sun.
- Description: These stars are in advanced stages of their evolution, having exhausted the hydrogen in their cores.



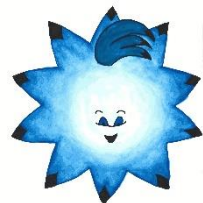
#### 5. Supergiant Stars:

- Mass: Greater than 10 times the mass of the Sun.
- Size: Can be several hundred to over a thousand times the radius of the Sun.
- Description: Extremely luminous stars, often in the late stages of their evolution.



#### 6. Blue Giant and Blue Supergiant Stars:

- Mass: 10 to 60 times or more the mass of the Sun.
- Size: Varies but can be larger than supergiant's.
- Description: Hot, massive stars emitting predominantly blue light.



#### 7. Wolf-Rayet Stars:

- Mass: Typically more than 20 times the mass of the Sun.
- Size: Variable, but often smaller than supergiant's.
- Description: Very hot and luminous stars, often in the later stages of evolution.



## 8. Hypergiants:

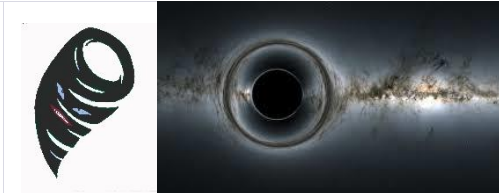
- Mass: Over 40 times the mass of the Sun.
- Size: Extremely large, with radii that can be several hundred to over a thousand times that of the Sun.
- Description: Among the most massive and luminous stars known.



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## 9. Black Holes:

- Mass: Varies, but they can result from the collapse of massive stars.
- Size: Size is typically defined by the event horizon.
- Description: Regions of space-time exhibiting gravitational effects so strong that nothing, not even light, can escape.



It's important to note that these categories provide generalizations, and individual stars within each category may vary in size and mass. Additionally, the evolution and behaviour of stars are complex processes influenced by numerous factors.

