

What is Earendel?

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About Earendel:

- It is a star discovered by the Hubble Space Telescope in 2022 and it is the most distant and earliest known star.
- It is a massive B-type star that is more than twice as hot as our Sun and about a million times more luminous.
- It is located in the Sunrise Arc Galaxy and is around 12.9 billion years away.
- Both Webb and Hubble were only able to detect it due to a natural phenomenon called gravitational lensing.
- The star happened to be aligned behind a wrinkle in space-time created by the galaxy cluster WHL0137-08, which is located between us and Earendel.

What is gravitational lensing?

- It occurs when a massive celestial body, such as a galaxy cluster, causes a sufficient curvature of spacetime for the path of light around it to be visibly bent, as if by a lens.

- The body causing the light to curve is accordingly called a gravitational lens.
 - An important consequence of this lensing distortion is magnification, allowing us to observe objects that would otherwise be too far away and too faint to be seen.
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Q1) What is B-type star?

A B-type star is a classification for a type of star based on its spectral characteristics. Spectral classification is a system astronomers use to categorize stars based on the features present in their spectra, which provide information about the star's temperature, composition, and other properties.

Source: Webb captures Earendel, most distant star ever discovered

Source: <https://vajiramandravi.com/current-affairs/what-is-earendel/>

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