

Discovery of Most Distant Quasar

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In news : Recently, a team of astronomers have discovered the most distant 'radio-loud' quasar with the help of European Southern Observatory's Very Large Telescope (ESO's VLT).

What are Quasars & what is the significance of recent findings?

Quasars are very luminous objects in faraway galaxies that emit jets at radio frequencies. In other words, **Quasars are** a massive and extremely remote celestial object, emitting exceptionally large amounts of energy, and typically having a starlike image in a telescope. It has been suggested that quasars contain massive black holes and may represent a stage in the evolution of some galaxies. They are only found in galaxies that have supermassive blackholes which power these bright discs. However, 90 percent of them do not emit strong radio waves, making this newly-discovered one special.

Name of Quasar & other discoveries

Named P172+18, the quasar emitted wavelengths which had a redshift of 6.8.

The three other 'radio-loud' sources with redshift greater than six have been discovered so far and the most distant one had a redshift of 6.18. The higher the redshift of the radio wavelength, the farther away is the source.

Formation of Quasar and its significance for the study of Blackhole

- Most of the active galaxies have a supermassive black hole at the centre which sucks in surrounding objects.
- **Quasars are formed by the energy emitted by materials**

spiralling around a blackhole right before being sucked into it.

- The recently discovered quasar appears to the scientists as it was when the universe was just around 780 million years old.
- The glowing disc around a blackhole 300 million times more massive than our Sun, thus, **holds clues about the ancient star systems and astronomical bodies.**
- The Quasar is also one of the fastest accreting quasars, which means it is accumulating objects from the galaxy at an enormous speed. This has led the team that discovered it to **infer that the blackhole at its centre is consuming from its galaxy at a faster rate.**
- The scientists are of the opinion that the **powerful radio jets shooting out of the quasar fuelled the appetite of the blackhole.**
- They also mention that the jets are thought to be capable of disturbing the gas around the black hole, increasing the rate at which gas falls in
- They also hope that the detailed study of these 'radio-loud' super bright objects can lead astronomers to understand how the supermassive blackholes in their core grew to be as big so rapidly since the Big Bang.