Recent Discovery of Quasars

Prelims: *Current events of national and international importance | Science and Technology*

Why in News?

Recently, an international team of astronomers using the European Space Agency's Euclid telescope has discovered 31 quasars.

- **Quasars –** Quasars are the intensely luminous cores of distant galaxies powered by supermassive black holes.
- **Brightness –** Shine with the light of a trillion suns due to gravitational energy converted into radiation.
- **Observation –** Provide insights into early galaxy formation, black hole growth, and the *epoch of reionisation (end of cosmic dark ages).*

Key Findings

- **Oldest Pair –** 2 oldest ever quasars were observed, dating back to when the universe was just 670 million years old (5% of its current age).
- **Scale –** Supermassive black holes weighing billions of solar masses existed in the infancy of the universe.
- **Mystery –** Raises questions about how such massive objects grew so quickly.
- **Euclid's Role –** Launched in 2023, Euclid has doubled the number of discoveries of ancient quasars for 2 years.

Significance

- **Epoch of Reionisation –** Quasars act as "lighthouses" to trace how the universe transitioned from dark ages to ionised state.
- **Cosmic Puzzle –** Galaxies and quasars appear far bigger and more evolved than expected at such early times.
- **Future Goal –** Build a ***quasar chronicle*** of the first billion years to understand black hole and galaxy evolution.

Reference

The Hindu | Quasar