Evidence of Supernova Remnants

A team of Indian astronomers has found significant evidence of a supernova explosion in a star-forming region called G351.7–1.2.

- The evidence of explosion is in the form of a high-velocity jet of atomic hydrogen.
- The explosion should have resulted in a compact stellar object such as a neutron star or a pulsar or a black hole. However, there is no trace of either yet.
- **The Giant Metrewave Radio Telescope (GMRT),** operated by the National Centre of Radio Astrophysics in Pune was used in observation.
- A large number of gas clouds of bubble-shaped, which is usual for a supernova remnant were observed.
    - The high-velocity jets of atomic hydrogen extending to about 20 light years racing at a speed of about 50 km per second in opposite directions in the neighbourhood.
    - It is evidence of a supernova explosion but could not find the leftover of the massive star.

Notes:

Black Holes- The term ‘black hole’ was coined in the mid-1960s by American Physicist John Archibald Wheeler. It refers to a point in space where the matter is so compressed as to create a gravity field from which even light cannot escape. Black-holes were theorized by Albert Einstein in 1915.

Supernova- A supernova is the explosion of a star. It is the largest explosion that takes place in space. A supernova happens where there is a change in the core, or centre, of a star. A change can occur in two different ways, with both resulting in a supernova.

Neutron stars-

- Neutron stars comprise one of the possible evolutionary end-points of high mass stars.
- Once the core of the star has completely burned to iron, energy production stops and the core rapidly collapses, squeezing electrons and protons together to form neutrons and neutrinos.
- A star supported by neutron degeneracy pressure is known as a ‘neutron star’, which may be seen as a pulsar if its magnetic field is favourably aligned with its spin axis.

Big Bang- The Big Bang Theory is the leading explanation about how the universe began. At its simplest, it says the universe as we know, started with a small singularity, then inflated over the next 13.8 billion years to the cosmos that we know today.