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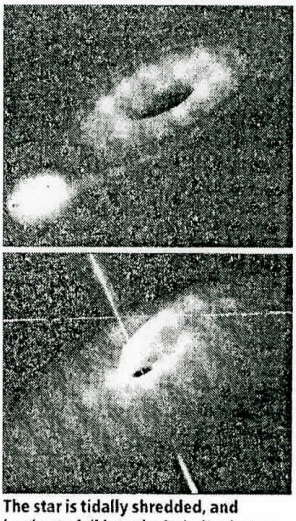

The star is tidally shredded, and begins to fall into the hole (top); star then falls into the hole, creating powerful jets

Black hole swallows a dying Star

SINDYA N. BHANOO

IN what sounds like a one of a kind murder mystery, a dying star has fallen into a black hole and been ripped apart.

The event, which was observed on March 28, was originally thought to be a gamma ray burst from a collapsing star, but researchers suspected something more sinister was at play. Their findings appear in a pair of papers published online by the journal *Science*.

Traditional gamma ray bursts involve a deluge of high-energy photons bursting through space. They generally result from the explosion of a star or when two objects collide. In this case the burst was unusually long, said Joshua Bloom , an associate professor of astronomy at Berkeley and the first author of one of the studies.

The burst also came from the centre of a galaxy four billion light years away. Most galaxies are thought to have black holes at their center, a clue that tipped off Dr Bloom and his colleagues. "Astronomers are not so different from real estate agents—location, location, location," he said. "This picture had emerged for me and I saw that this was a black hole swallowing up a star."

The team used data gathered by the Swift Gamma Burst Mission, the Hubble Space Telescope and the Chandra X-ray Observatory to confirm their theory. They also studied historical data to look for similar events involving the same black hole, but they found no other occurrences. "This is a singular event in the history of mankind," Bloom said. "This black hole was otherwise sitting dormant, a star got too close, its gas got ripped apart and in doing so some of it got spit up."

There are still a number of unanswered questions that the researchers are exploring, like how large the star was in comparison to the sun, how close it got to the black hole and role of the hole's spin in the event. *NYT*