

## ...And from cosmic cataclysms

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Wednesday, 02 June 2010  
Last Updated Sunday, 29 August 2010

Image composite image of Supernova 1006 Credit : NASA/CXC/NRAO/NOAO/AURA

Supernovae explosions, pulsars, active galaxies, black holes – The Universe is filled with extremely violent phenomena. They bombard us with particles charged with a colossal energy, accelerated at velocities close to the speed of light. These messengers reveal the intimate mechanisms of real cosmic monsters.

First image in November 2004 of a supernova shell in TeV gamma rays by the H.E.S.S telescope in Namibia / credit: H.E.S.S Collaboration / ASCA satellite / ASPERA

In the year 1006 a star appeared in the sky which was visible in daylight, surpassing Venus's brightness at night: it was a supernova, the explosion of a star 7,000 years before, leaving in our sky an expanding sphere of a diameter of 60 light-years which can be seen even today. In 2003, the telescope H.E.S.S made a gamma-ray map of what was left of another supernova, which appeared in Scorpio in the year 393. Such observations have shown that charged particles are

accelerated at very high energies in the core of such exploded stars, proving that they could be the source of a part of the cosmic radiation in our galaxy.