



RESEARCH

RECORD EMISSION FOR THE CRAB PULSAR

It is the most energetic emission ever observed so far from the pulsar in the centre of the Crab nebula, in the Taurus constellation, approx. 6,000 light-years away from us. Discovering this pulsed radiation flux of energy over one thousand billion times that associated with the radiation in visible light, was the international team of MAGIC, the observatory consisting of two of the largest gamma ray telescopes in the world, situated on the island of La Palma in the Canary Islands, with the participation, for Italy, of INFN and INAF (National Institute for Astrophysics).

Newly formed as the nebula of the same name, both remnants of a supernova which exploded around the year 1054, the Crab pulsar rotates 30 times per second around its axis and is surrounded by an extremely intense magnetic field, emitting an intense pulsed signal up to the highest frequencies (X-rays and gamma rays). Until now it was thought that at the highest energies, this pulsed emission no longer took place. But the MAGIC observations, which lasted more than 300 hours in total between October 2007 and April 2014, have shown us a completely new view of the Crab pulsar in the gamma rays spectrum.

The discovery was published in the article *Teraelectronvolt pulsed emission from the Crab Pulsar detected by MAGIC*, on the journal *Astronomy&Astrophysics*. ■