Seventeenth Marcel Grossmann Meeting



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Fitting the Crab Supernova with a Gamma-Ray Burst

Tuesday, 9 July 2024 17:40 (20 minutes)

A panorama of the current historiography on the Supernova of 1054 is outlined. Shklovsky (1968), and Murdin (1985) show how the interpretation of this phenomenon converged on a Su-pernova event. Here we reconsider the historical data, assuming a Gamma-Ray Burst (GRB) as its source. A Supernova correlated with the GRB explains well the fading time observed by the an-cient Chinese astronomers, in daytime and in night time, while the GRB power-law explains the present X-rays and GeV emission of the Crab. On the ground of recent understanding of the first episode of binary driven Hypernova GRB (BDHN GRB) in terms of the collapse of a ten solar masses core, we propose the possible identification of the real Supernova event at earlier time than Chinese chronicles. This work allows a new understanding of the significance of historical astronomical observations, including a fireball, due to gamma-rays air shower observation, and a plague of acute radiation syndrome, documented with several thousands of victims in the Eura-sian area (Egypt, Iraq and Siria).

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