

The origin of the Fast Radio Bursts, still an open question

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Abstract

Fast Radio Bursts (FRBs) are transient sources characterized by exhibiting a strong single pulse (with a duration of milliseconds or submilliseconds). They were firstly discovered by Lorimer et al. (2007), and nowadays tens of these events have been observed. Their origin remains unknown. Both, Galactic and extragalactic origins, have been proposed. The observed pulses resemble the ones from pulsars, and thus preferring a Galactic origin. However, the large dispersion measures observed in the FRBs point to an extragalactic origin. Many scenarios have been proposed up to now to explain the FRBs, most of them based on cataclysmic events. However, the discovery of the first repeating FRB (Spitler et al. 2016) indicates that could there be, at least, two different scenarios. Keane et al. (2016) reported for the first time the localization of an FRB. FRB 150418 was observed by the Parkes Telescope and a transient source associated with a galaxy was localized in the same field of view with the Australian Telescope Compact Array (ATCA). This association would confirm the extragalactic origin of the FRBs. However, this association has been widely discussed during the last months. Here we present a monitoring of the associated galaxy, WISE J071634.59190039.2, with the European VLBI Network (EVN). Our data show a compact radio emission persistent on day/week timescales one year after the observed FRB. This behavior perfectly fits to the expected emission of a regular active galactic nuclei (AGN), and thus not with the association of the FRB. The full study on this source can be found in Giroletti et al. (2016).