

GRB 171205A/SN2017iuk as a reference for GRB studies

Friday, April 16, 2021 8:08 AM (4 minutes)

GRB 171205A was one of the closest GRBs that we have ever detected and one of the best-followed events. In this talk I will present the result of several studies of this event, its afterglow, associated supernova SN2017iuk, and host galaxy. Optical spectroscopy ranges from one hour after the event to more than 7 months later. These data served to identify cocoon signatures during the first 3 days, with material expanding at speeds that reached $0.3c$ (Izzo, de Ugarte Postigo et al. 2019, Nature 565, 324), and study the supernova evolution into the nebular phase. The interaction of the jet that emerged from the collapsing star with the interstellar medium generated a weak afterglow. In spite of its intrinsic faintness, thanks to the proximity of the GRB, we have been able to follow the radio emission for over 2 years now, obtaining a detailed insight on the physics involved in this event. Finally the data are complemented with a very detailed study of the host galaxy in which this GRB happened, thanks to high-resolution HST imaging, resolved molecular spectroscopy from ALMA and optical integrated field spectroscopy from VLT/MUSE. The GRB is located in the outskirts of a barred grand-design spiral galaxy, a very unique environment for a long GBR.

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