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Title: Searching for GRBs Coincident with Gravitational Waves with Swift BAT GUANO

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The joint detection of a short GRB and gravitational waves had long been a goal by astronomers that was finally realized with GRB/GW 170817A. The GRB emission was much less luminous than expected though, with a peak luminosity more than two orders of magnitude lower than any other short GRB known. This implies that there is a population of low-luminosity short GRBs and greatly motivates more sensitive GRB searches. In 2019 GUANO, a system for saving time-tagged event data on command was implemented, enabling more sensitive searches to be run on the ground around times of interest. The most sensitive of these searches, NITRATES is a likelihood based analysis that increases the distance that a GRB 170817a-like burst can be detected at by ~50% over the onboard analysis. In this talk I will discuss the planned followup analyses by Swift BAT GUANO to gravitational wave triggers during O4 along with any preliminary results.

Primary author: DELAUNAY, James (University of Alabama)

Presenter: DELAUNAY, James (University of Alabama)

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