

Abstract Submitted
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LIGO Sub-threshold Alerts for the Swift Observatory REBECCA EWING, Pennsylvania State University, LIGO COLLABORATION — Under many circumstances, advanced LIGO and Virgo are not able to localize neutron star mergers to sufficient accuracy to be useful for electromagnetic (EM) follow-up observations. However, temporal coincidence with a sub-threshold short gamma-ray burst (GRB) may provide compelling evidence of a joint origin and an indirect way to obtain accurate positions. Swift is a large field-of-view gamma-ray burst (GRB) observatory that can localize GRBs to arcminute precision. The rapid follow-up of LIGO triggers by Swift can result in dramatically improved sky localizations through temporal coincidence. This will allow the rest of the EM follow-up community to efficiently search for counterparts in the hours to days following the GW signal. Unfortunately, not all sub-threshold Swift data is saved or archived. We have developed a sub-threshold trigger pipeline which has enabled Swift to recover data around LIGO events that otherwise would have been lost. This could potentially increase the number of EM counterparts to BNS events found by LIGO and Virgo. We will describe this project and what has been achieved by the pipeline so far.

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