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Wide-field X-ray afterglow searches for gravitational wave events[1]
PETER SHAWHAN, JUSTIN TERVALA, University of Maryland — The Advanced LIGO and Virgo gravitational wave (GW) detectors are on track to begin collecting science data soon and to reach full sensitivity by 2019. Low-latency analysis of the GW data will provide triggers for astronomers to seek electromagnetic transient counterparts. Many instruments will contribute to that effort, but instruments with very large fields of view will have a natural advantage for following up the typically large GW error regions. In particular, we consider ISS-Lobster, a proposed NASA mission to be deployed on the International Space Station, which features a focusing imager for soft X-rays with a field of view of over 800 square degrees. Our study using binary neutron star coalescence simulations from Singer et al. shows that a single ISS-Lobster pointing will, on average, cover over 95% of a LIGO-Virgo 3-detector sky map, while even a 2-detector sky map can be over 85% covered (on average) by a sequence of four pointings.

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