Abstract Submitted
for the APR18 Meeting of
The American Physical Society

BurstCube: A CubeSat for Gravitational Wave Counterparts JUDITH RACUSIN, NASA/GSFC, BURSTCUBE TEAM — We present BurstCube, a novel CubeSat concept in development that is approved and will fly in ˜2022. BurstCube will detect, localize, and characterize gamma-ray transients, including long and short duration gamma-ray bursts (GRBs), solar flares, and other Galactic sources in outburst in the 10-1000 keV band. Short duration GRBs are of particular interest because at least some of them are counterparts to gravitational wave (GW) sources detectable by LIGO/Virgo. BurstCube contains 4 CsI scintillators coupled with arrays of compact low-power Silicon photomultipliers (SiPMs) on a 6U Dellingr bus, a flagship modular platform that is easily modifiable for a variety of 6U CubeSat architectures. BurstCube will complement existing facilities such as Swift and Fermi in the short term, and provide a means for GRB detection, localization, and characterization in the interim time before the next generation future gamma-ray mission flies, as well as space-qualify SiPMs and test technologies for future use on larger gamma-ray missions. The ultimate configuration of BurstCube is to have a set of ˜10 BurstCubes to provide all-sky coverage to GRBs for substantially lower cost than a full-scale mission.

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Date submitted: 12 Jan 2018 Electronic form version 1.4