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BurstCube, a CubeSat for Gravitational Wave Counterparts: Instrument Design[1] GEORGIA DE NOLFO, NASA Goddard Space Flight Center, BURSTCUBE TEAM[2] — The recent detection of Gravitational Waves (GWs) has increased the need for multi-messenger astronomy to further our understanding of the nature and source of GWs as well as to probe fundamental physics questions such as neutron star equation of state, speed of gravity, and heavy element production.BurstCube, aCubeSatfor Gravitational Wave Counterparts,will expand sky coverage of the current suite of gamma-ray bursts (GRB) monitors in order to detect and localize GRBs and search for simultaneous detections with GWs.BurstCubeis designed to fly on a 6U CubeSat and consists of four Cesium Iodide (CsI) scintillators coupled to large-area arrays of silicon photo-multipliers (SiPMs) with sensitivity to gamma-rays between 50 keV and 1 MeV.The four CsI crystals are oriented to allow for localization of GRBs.We discuss the BurstCube instrument design, associated front-end electronics, and preliminary performance characteristics.

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