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<b>Thesis Title</b>	<i>Study of Variable Sources in Parallel Fields of Hubble Source Catalog (v. 2)</i>
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<b>Summary</b>	<p>Construction of the Hubble Catalog of Variables (HCV) is a project funded by ESA which takes place at the National Observatory of Athens with the cooperation of Space Telescope Science Institute. The main goals of this project are to achieve a highly automated access to the Hubble Source Catalog (HSC), to evaluate and validate the variable sources contained in HSC, and to include those variable sources in a catalog accessible from MAST portal.</p> <p>In this study we investigate variable sources in parallel fields of observations of the Hubble Space Telescope (HST), which correspond to galactic bulge fields. These fields have never been investigated before, so they have potentially great scientific interest. The data we use have been processed by the HCV variability detection &amp; validation algorithm (the first version of this algorithm), which has classified the sources processed as high confidence variables, possible variables and possible artifacts.</p> <p>The main aim of our work is the detection of variable sources in the parallel fields of HSC (v.2). We expect that many of these variable objects will be recorded for the first time. Especially, we focus on sources that have been characterised as “high confidence variables” from the HCV pipeline. We check if the characterisation is correct and if it is, we record those sources. Otherwise, we record the reasons which misled the HCV pipeline to a false characterisation.</p> <p>We give the lightcurves for those sources we confirmed as real variables. We perform a statistical analysis of the results, and we propose some improvements for the HCV pipeline. Finally, we give the catalogue we constructed, with all the confirmed variable sources.</p>
<b>Key words</b>	Variable sources, Parallel fields, Hubble Source Catalog, HSC, Hubble Catalog of Variables, HCV, variability index, stellar variability, Hubble Space Telescope, Telescope, Space Telescope, Galaxy, Bulge, Astronomy
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