Abstract Submitted
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Finding the coldest star-forming regions in our Galaxy WILL NETTKE, University of British Columbia Dept. of Physics and Astronomy — Surveys of the sky at different wavelengths are the pathfinders for driving astronomical research. In particular, catalogues of sources found in new surveys give us objects that can be followed up with other observations to probe the physical conditions in the distant Universe. The sub-millimetre part of the electromagnetic spectrum is ideal for studying the coldest and dustiest regions, and in particular to trace star-formation. However, the use of these wavelengths requires high-and-dry sites and state-of-the art instruments. Such data come from the Sub-millimetre Common User Bolometer Array 2 (SCUBA-2) on the James Clerk Maxwell Telescope, located at an altitude of 4000m on the summit of Mauna Kea, Hawaii. Using data obtained from the SCUBA-2 'All-Sky' Survey (SASSy), which covers a large part of the Milky Way, I have been extracting and cataloguing compact sources of interstellar dust and gas. Efficient source extraction methods have been developed by utilizing a matched-filtering approach to increase the signal-to-noise ratio in large mosaicked maps of the sub-millimetre sky. I have created a catalogue of sources, testing the efficiency of the extraction procedure through the use of artificial stars inserted into the real images. Some of these objects are previously unknown, and have properties characteristic of the earliest stages of star formation. Further study of these objects may tell us more about the birth of stars from clouds of gas and dust.

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