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Spitzer Observations of IC 2118

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ABSTRACT

IC 2118, also known as the Witch Head Nebula, is a wispy, roughly cometary, ∼5 degree long reflection nebula, and is thought to be a site of triggered star formation. In order to search for new young stellar objects (YSOs), we have observed this region in 7 mid- and far-infrared bands using the Spitzer Space Telescope and in 4 bands in the optical using the U. S. Naval Observatory 40-inch telescope. We find infrared excesses in 4 of the 6 previously-known T Tauri stars in our combined infrared maps, and we find 6 entirely new candidate YSOs, one of which may be an edge-on disk. Most of the YSOs seen in the infrared are Class II objects, and they are all in the "head" of the nebula, within the most massive molecular cloud of the region.

Subject headings: stars: formation – stars: circumstellar matter – stars: pre-main sequence – ISM: clouds – ISM: individual (IC 2118) – infrared: stars – infrared: ISM

1. Introduction

Our general understanding of how and why it is stars form rests upon the answers to a set of more basic questions: given a particular locale, how, why, and when did stars form there?

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