Abstract Submitted for the 4CF09 Meeting of The American Physical Society

Rare Detections of OH MASERS in Star Forming Regions DEREK FELLI, VICTOR MIGENES, BYU — MASERs (Microwave Amplification by Stimulated Emission of Radiation) appear from a variety of molecules and they originate from dense clumps of molecular gas. MASERs are some of strongest radio wave emitters in the observable universe. Due to their compact nature interferometry techniques is the best method to study the emission. The VLBA-NRAO instrument was used to study MASERs to further understand how stars form. Radio observations are used because at the early stages of star formation dust prevents optical studies. OH MASER emission has 4 strong transitions at 1.612, 1.665, 1.667 and 1.720 GHz. In star forming regions it is common to detect MASERs at 1.665 and 1.667 GHz. Detections at 1.612 and 1.720 GHz are rare in star forming regions but have been detected in Orion-KL, W3 and W75N which are high mass star forming regions. Detections of the 1.612 and 1.720 GHz transitions in this study may give further evidence that only high mass star forming regions produce these transitions though we don't understand why, yet. Because these transitions haven't been exhibited in low star mass forming regions, it may be the link to classify several unknown star forming regions as low mass or high mass star formation. We present and discuss some of our preliminary results.

> Derek Felli BYU

Date submitted: 25 Sep 2009

Electronic form version 1.4