Abstract Submitted
for the TSF10 Meeting of
The American Physical Society

Mapping Class I Methanol Masers in the DR21 Region TALITHA MUEHLBRAD, Texas Lutheran University, V. FISH, P. PRATAP, MIT Haystack Observatory, L.O. SJOUWERMAN, NRAO, V. STRELNITSKI, Maria Mitchel Observatory, Y.M. PIHLSTROM, University of New Mexico, T.L. BOURKE, Harvar-Smithsonian Center for Astrophysics — Class I methanol masers are believed to be produced in the shock-excited environment around star-forming regions and are believed to be indicative of stages of star formation or excitation conditions. We report on the first EVLA observations of the 36-GHz methanol masers as well as on Submillimeter Array observations of the 229-GHz methanol masers in DR21OH, DR21N, and DR21W. The data are compared to existing Class I methanol data in other transitions in each region. In the outflow of DR21OH, the distribution of the 36-GHz masers is similar to that of the other transitions. At the main continuum source in this region, the 36- and 229-GHz masers virtually overlap with the Class II 6.7-GHz masers. To the south of the region, 36-GHz masers are scattered with 44-GHz masers, but the two transitions do not appear coincident. A magnetic field of 58.1±6.2 mG is detected in DR21W. If this magnetic field is related to the density with usual scaling, the resultant high density may be indicative of an alternative pumping scheme than that commonly assumed for Class I masers.

Talitha Muehlbrad
Texas Lutheran University

Date submitted: 27 Sep 2010 Electronic form version 1.4