INTERSTELLAR GLYCOLALDEHYDE, METHYL FORMATE, AND ACETIC ACID: BI-MODAL ABUNDANCE PATTERNS IN STAR-FORMING REGIONS

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The photo-dissociation of methanol (CH_3OH) in the interstellar medium is still not a particularly well-understood phenomenon. Since many of the radicals that are formed from this process go on to form the $C_2H_4O_2$ isomers glycolaldehyde, methyl formate, and acetic acid, measuring the relative abundances of these molecules can give us clues as to the rates at which the radicals are produced. Data on the relative abundances of these molecules also has the potential to constrain formation pathways for the molecules that are necessary for life to emerge. For this analysis we derived molecular abundances of the isomers in two massive cores of NGC 6334I using ALMA spectroscopic data, then examined the literature to find every source for which at least two of the isomers had measured column densities. This resulted in 15 total sources among which we could compare relative abundances of the $C_2H_4O_2$ isomers.