

PROBING THE PHOTOPRODUCTS OF INTERSTELLAR ICE ANALOGUES VIA LABORATORY SUBMILLIMETER SPECTROSCOPY

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Studying the chemical evolution of the interstellar medium (ISM) is critical for understanding chemical processes which take place during the formation of stars and planetary systems. The gas-phase composition of interstellar space is revealed through remote observations employing high-resolution spectroscopy. It is believed that many complex organics found in the ISM, some of which are of prebiotic interest, first formed in the ices coating interstellar dust grains. The results of laboratory simulations of interstellar ices provide great insight into how complex organics form and/or evolve in the ISM. Previous experimental techniques have monitored the thermal and photoprocessing of relevant ices via infrared spectroscopy while studying the sublimated gases with mass spectrometry. Here we will discuss a new approach that uses noninvasive submillimeter spectroscopy to analyze the gas-phase reactions occurring above the ice during processing. New results and experimental improvements will be discussed.