The Curous Case of NH_2OH: Hunting a Direct Amino Acid Precursor Species in the Interstellar Medium.

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Despite the detection of amino acids, the building blocks of the proteins that support life, in cometary and meteoritic samples, we do not yet understand the conditions under which these life-essential species have formed. Hydroxylamine (NH_2OH) is potentially a direct precursor to the formation of the amino acids glycine and alanine in the ISM, through reaction with acetic and propionic acids. Recent laboratory and modeling work has shown that there are a variety of pathways to the formation of NH2OH in interstellar ices both efficiently and in high abundance. Here, we present the result of a deep, multi-telescope search for NH_2OH in the shocked, complex molecular source L1157. We find no evidence suggesting the presence of this important precursor, and discuss the implications of this non-detection on the reactivity of NH_2OH both within the ices, and in the gas-phase ISM. We will also discuss how these observations should inform the direction of future studies, both in the laboratory and with state-of-the-art telescopes such as ALMA.