

The observation of the stratospheric molecules by balloon-borne submillimeter limb sounder

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A new generation of sub-millimeter-wave receivers employing sensitive SIS (Super-conductor-Insulator-Super-conductor) detector technology will provide new opportunities for precise remote sensing measurements of stratospheric molecules. Balloon-borne submillimeter limb sounder (B-SMILES) equipped SIS mixer was launched in September 2004 and had measured several stratospheric species. Simultaneous measurements of HCl, ClO, HO₂, HOCl, HNO₃, CH₃CN, O₃, and O₃ isotopes, provide a much more complete picture of the chemical process in the stratosphere than has previously been possible. Early retrieval results have demonstrated these measurements over an initial altitude range.