LOOKING FOR PHOTONS FROM ION-ION RECOMBINATIONS

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Ion composition in the earth's ionosphere at altitudes from 30-85 km is extremely sensitive to environmental perturbations. In fact Cl^- was discovered in the D-region before the ozone hole had been discovered. When one looks at models of D-region ion chemistry, one finds that the ion-ion recombination input data is generic. In order to use ion composition as a diagnostic for environmental perturbations, molecule specific ion-ion recombination rates are needed. An apparatus that coaxially merges positive ion beams with negative beams has been modified to enable the search for photons emitted by the products of ion-ion recombination reactions. Preliminary results will be presented.