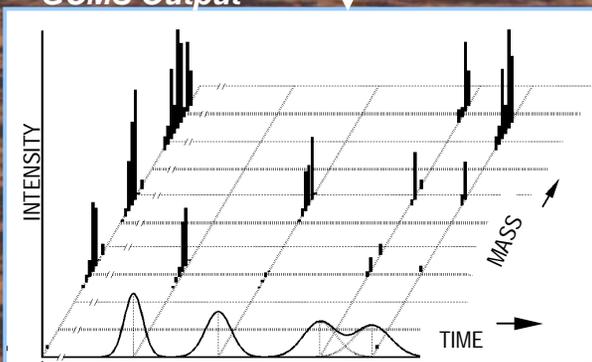
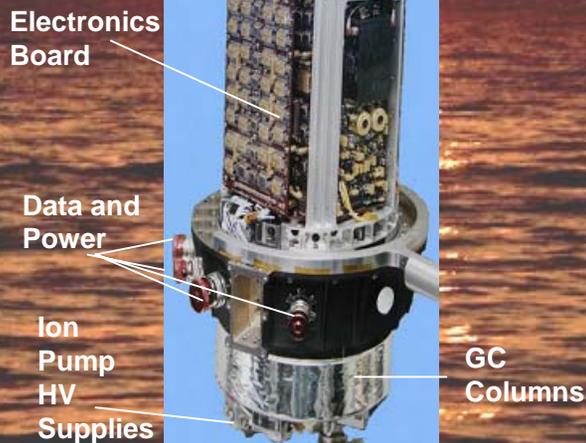


GCMS Output



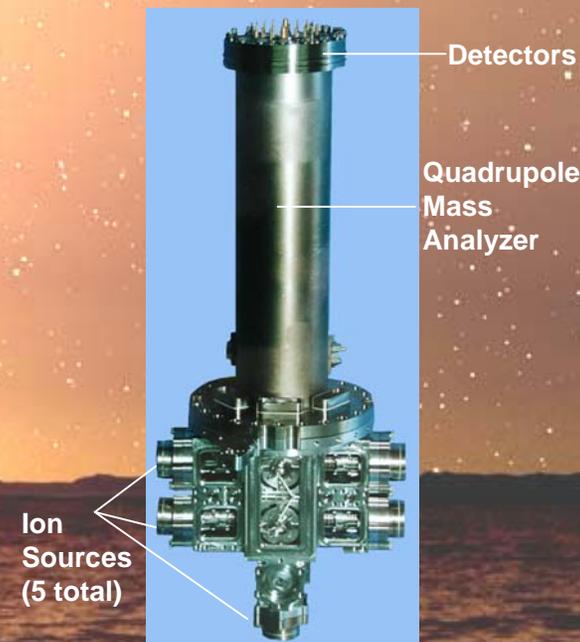
The GCMS will use the techniques of Gas Chromatography and Mass Spectrometry to analyze gases in Titan's atmosphere. If the atmospheric inlet contacts a solid, liquid or ice upon landing, a heater will vaporize it and allow analysis of the gas phase.



The GCMS is shown above with the protective covers removed, revealing the electronics and computer boards and high voltage (HV) power supplies.

The 3 gas chromatograph (GC) columns are coiled into a cylindrical shape beneath the silver insulation.

The red connectors provide the interface between the GCMS and the Huygens Probe, so that the instrument can be powered on and off by the Probe, and data from the GCMS can be returned to Earth.



The quadrupole mass analyzer of the GCMS is packed beneath the electronics and gas chromatograph columns in the picture to the left. The quadrupole sorts the ions in the samples by their mass to charge ratio, allowing the composition of the mixture to be determined. The mass range is 2-141 Dalton.

Scientific Objectives:

The GCMS will measure the chemical composition of the atmosphere and the isotope ratios of many trace components, which cannot be determined from Earth or orbit. This data will be used to study the origin and evolution of Titan's atmosphere. The GCMS will also identify organics in the atmosphere and on the surface, which contributes to the study of how life arose on Earth.

Background image by Gregor Kervina