

THE SPARTAN AND CHAMPS DATA SETS - OVERVIEW & ASSESSMENT;  
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The Spartan-Halley spacecraft and the CHAMPS observatory have each obtained observations of comet P/Halley at and near the time of the comet's 1986 perihelion passage.

Spartan-Halley was deployed for a two day research flight from STS-51L in late January; aboard the spacecraft were two Ebert-Fastie ultraviolet spectrometers with 1024 element digital linear array CODACON detectors; these devices together surveyed the spectral region from 1280-3400 Å at a characteristic resolution of 2 Å. These spectra were obtained with the aid of a unique vacuum baffling system designed and constructed by the University of Colorado. Approximately 60,000 seconds of comet observations were obtained by this observatory, spanning a period approximately equal to a full rotation of Halley's nucleus.

The CHAMPS experiment also observed comet Halley from earth orbit. CHAMPS, an image-intensified camera/spectrograph obtained images of P/Halley in early-January, late-January, and early-March of 1986 on three consecutive Shuttle flights, as the comet approached and then receded from perihelion. CHAMPS obtained both broad-band continuum color measurements as well as monochromatic images of the comet in the CN, CO<sup>+</sup>, CO<sub>2</sub><sup>+</sup>, C<sub>2</sub>, and OH emissions bands. CHAMPS also produced a series of UV/visible spectra at 30 Å resolution during each of the Shuttle flights on which it was carried.

Together, the CHAMPS and Spartan-Halley data sets provide a unique record of P/Halley's behavior at perihelion, as seen from above the earth's UV obscuring atmosphere. In many respects, the data obtained by these instruments is unique, since earth-based (and IUE) observations were largely curtailed during perihelion passage due to the comet's angular proximity to the solar disk.

Here we present both a quantitative assessment of the data return from each of these experiments, and a qualitative overview of the spectra and images obtained. We discuss here the various emissions seen at perihelion, and their relative strengths. We also discuss the general nature of the unique perihelion images, and the morphological information contained in these images, as it related to cometary activity at the time of maximum solar insolation during late January of 1986.