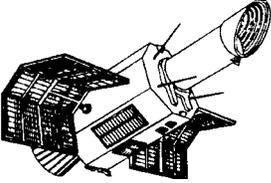


# IUE

## International Ultraviolet Explorer

Spacecraft Sketch	Mission Objective
	<p>The mission objectives of the International Ultraviolet Explorer (IUE) will be to: 1) obtain high resolution (-0.1 Å) spectra in the ultraviolet region of the spectrum from 1150Å to 3200Å of stars and planets brighter than the 7th visual magnitude; 2) obtain lower resolution (-6Å) spectra over the same wavelength range for both stellar and extended objects as faint as 12th magnitude; 3) evaluate the performance of instrument subsystems and components such as the spectrograph system for potential application to large astronomical facilities ; 4) evaluate applicability of an advanced technology, 3-axis stabilized Explorer spacecraft for use in other scientific or applications missions; and 5) provide a basis of utility and experience by combining operations of a geosynchronous orbit observatory with a groundbased real-time observatory to maximize international and guest-observer participation in this mission and to prepare for potential large telescope missions.</p>

TYPE OF MISSION	PROGRAM OFFICE	PROJECT LEAD CENTER	MANAGEMENT APPROACH	S/C CONTRACTOR	I&T CONTRACTOR
ASTROPHYSICS	SPACE SCIENCE	GSFC	IN-HOUSE	GSFC IN-HOUSE	GSFC-IN HOUSE

Payload Description
<p>The International Ultraviolet Explorer (IUE) is a spaceborne astronomical observatory for use as an international ultraviolet spectroscopy facility. The IUE payload consists of a single scientific instrument, which consists basically of a reflecting telescope, an echelle spectrograph and video cameras, and supporting spacecraft systems. The IUE spacecraft is an octagonal structure with a 45-centimeter telescope protruding from the top and a fixed solar array on two opposite sides which is maintained with one of the array faces toward the sun when stabilized. Most of the electronic equipment is mounted on a platform adjacent to the louvers. Heat pipes are mounted to the underside of the platform to distribute the heat and maintain a uniform temperature between zero and 40 degrees C. A solid propellant kick motor accelerates the IUE to near synchronous velocity at the apogee of the transfer orbit. A propulsion system provides spin-despun functions, active nutation control, attitude control, east-west station keeping, momentum unloading, and trajectory error corrections.</p>

INSTRUMENT NAME	ACRONYM	PI AFFILIATION	PRINCIPAL INVESTIGATOR	I&T CONTRACTOR
IUE EXPERIMENT	NONE	N/A	NONE	GSFC
UNITED KINGDOM CAMERAS	NONE	N/A	NONE	UK

Instrument Descriptions
<p>The IUE Experiment, Data Point 467, is designed and built by Goddard Space Flight Center with the exception of the SEC vidicon cameras. These are supplied by the United Kingdom. The IUE telescope is a Ritchey-Chretien configuration with a 45 cm aperture and an effective focal ratio of f/15. Two Echelle grating spectrographs are used as focal plane detectors.</p>
<p>The IUE United Kingdom Cameras, Data Point 59, are developed for the IUE program under the auspices of the British Space Research Council. The cameras consist of two redundant pairs of spectrograph cameras (Angstrom ranges 1,800 to 3,200 and 1,150 to 1,900) and a redundant pair of acquisition cameras.</p>

Launch
01/26/78