

## LONG RANGE PLANNING COMMITTEE REPORT

A Long Range Planning Committee for the IUE satellite was appointed in 1984; this committee has met twice in conjunction with the semi-annual 3-Agency meeting for IUE. The membership of the committee was selected to provide scientific and technical representation from each of the three communities served by NASA, ESA, and SERC; a list of current members is included at the end of this report.

At the first meeting, held at Goddard in November 1984, the Long Range Planning Committee accomplished two major tasks: (1) the purpose and goals of this committee were defined, and (2) information concerning future operations and options for the satellite was requested of the three agencies. The "Terms of Reference" of the LRPC are:

In the light of the future constraints that will limit the operational flexibility of IUE and ultimately end it, and taking full account of the views of the international user community, to assess the optimum ways of maximising the scientific returns and preserving the data in an accessible for future use; to report and make recommendations to the 3 agencies accordingly.

Further action taken at the first meeting of the LRPC included recommendations concerning future operations philosophy (to continue interactive guest observing as long as possible, to plan ahead for necessary coordination in scheduling and planning by the two ground stations, and to plan for an era of integrated scheduling); a recommendation that an IUE data bank be established for future use which will maintain the data in a fully calibrated and reduced form; a request for further study of the degree of improvement to be gained by the calibration and reprocessing of images for the final archives; a recommendation that the predicted constraints in operations and lifetime of IUE be considered as a factor in the assessment of proposals in the peer review; and a recommendation that the project should consider arranging for the writing of a book on the scientific accomplishments of the IUE.

At the second meeting of the LRPC, held at VILSPA late April 1985, reports were presented concerning the expected

evolution of observing constraints as the spacecraft continues to age, and on possible means of minimizing the effects of such constraints on the scientific programs of IUE. In response to these reports, the LRPC formulated the following.

#### POLICY STATEMENT ON FUTURE IUE OPERATIONS

IUE is the first satellite designed as a purely Guest Observer instrument with the maximum flexibility for real time observations. This mode of operations has been highly productive of important scientific results as indicated by the continuing high rate of publications in the scientific literature. An essential aspect of this high productivity has been the ability for an observer to select targets and specific observational parameters in a flexible way in real time to maximize their utility in answering the scientific questions of the program.

Since operational flexibility is a major contributor to the success of IUE, and as it will be more difficult for this flexibility to be maintained in the future as the spacecraft ages and the observing constraints become tighter, the Long Range Planning Committee therefore urges that all steps be taken to maintain and maximize this observational flexibility. In particular, we encourage steps to lower the power consumption without requiring turning off one camera.

As the Hubble Space Telescope (HST) is due to be launched in 1986, and as it also has spectroscopic capability in the UV, the LRPC also addressed the question of the relation between HST and IUE, with the following resolution:

#### THE ROLE OF IUE IN THE ERA OF THE HUBBLE SPACE TELESCOPE

The need for IUE observations will likely increase after the launch of the Hubble Space Telescope (HST) for the following reasons: (1) the need for observations of brighter targets in proposed HST program in order to plan future HST operations; (2) the need for long term monitoring of targets suspected of variability; (3) the need for full UV wavelength coverage at high resolution; (4) the need to observe targets of opportunity not easily scheduled by HST; (6) the need to observe targets that cannot or will not be observed by HST; (7) the need to observe large numbers of targets.

Although some of these seven points are also true in absence of the HST, their importance is enhanced at the time when the HST is launched. This, together with the present stable oversubscription for IUE observing time, will place heavy demand on the IUE Spacecraft for years to come.

Projected changes in the spacecraft suggest currently that the most limiting constraint in the future will be provided by the power needs of the satellite. In response to this, the LRPC passed this resolution:

We recommend that a study be undertaken regarding the risks and possible scientific impact of turning off cameras not in use - including the SWP camera - at the observer's option.

Among the important missions of the LRPC is planning for the long term quality and accessibility of the archived data from IUE. Two further recommendations addressed this issue:

#### UV CALIBRATION

We recognize the importance of the far and extreme UV (shortward of about 1200 Å) data from the EUV spectrometers on board Voyagers 1 and 2 as aid to the calibration of the spectra of the IUE hot standard stars. As the IUE standard spectra will be used to calibrate the Hubble Space Telescope (HST) spectra, the importance of such Voyager data must be stressed. Further, improved models of hot stars are prerequisite in successfully merging the Voyager data with those of IUE.

We also recommend that the sampling frequency of the IUE standard star spectral energy distribution be improved from the current sampling intervals of 50 Å to smaller intervals in order especially to accommodate their use in the analysis of HST data.

#### ARCHIVE REPROCESSING

The IUE archives are considered as the best organized of all in astronomy, and the enormous demand for them shows how useful they are. Their usefulness is expected to increase in the context of Space Telescope observations. As the archive data are currently heterogeneous in their calibration and processing, and as it will be possible to

use calibrations currently being obtained to significantly improve the scientific value of these archives, the Long Range Planning Committee strongly recommends that all archival data be reprocessed according to these new parameters. This reprocessing should not be done however at the expense of the operation of the satellite and the guest observer programs.

The Long Range Planning Committee recommends that planning for the final archives include reformatting to an astronomical standard (almost certainly FITS format).

Other items of some significance from the LRPC meeting: (1) A request was made to ESA and NASA to prepare a joint short report on the projected status of the spacecraft over the next 3-6 years of operation, including the impact of some of the options currently under consideration (e.g. turning off camera(s) not in use). (2) Plans for a book on the Scientific Results from IUE were announced and approved, and Y. Kondo was selected as Chairman of the Editorial Board.

Current members of the LRPC:

NASA	ESA	SERC
Y. Kondo	W. Wamsteker	R. Wilson
D. West	D. de Pablo	D. Stickland
C. Imhoff	J. Lequeux	
D. Stone		
G. Sonneborn		
J. Linsky		
L.A. Willson		

Report submitted by L.A. Willson, May 8, 1985.