

April 25, 1989

Dear Colleague;

The Signal-to-Noise Working Group has met twice since the publication of NASA IUE Newsletter #36. At the September, 1988 meeting, the results of work at the NASA IUE Project were preliminary, so publication of this special NASA IUE Newsletter was delayed until more definitive results could be presented. At the January, 1989 meeting, a decision was made to reconstruct the SWP ITF, using improvements of bilinear spatial interpolation for performing the geometric correction, Fourier filtering of the instrumentally-induced periodic noise, construction in raw space for each exposure level, and image defect removal. The geometric correction procedure which uses fixed pattern as fiducials was to be rigorously tested and enhanced to achieve sub-pixel accuracy.

It is a pleasure to present the following monographs, summarizing work on signal-to-noise improvements achieved to date. Preceding these monographs are the agendas and final reports of the meetings which took place September 8-9, 1988 and January 26-27, 1989.


Because the scope of concern of the Signal-to-Noise Working Group has increased to include all aspects of the preparations for the IUE Final Archive, the name has been changed, with Dr. Yoji Kondo's concurrence, to the Final Archive Definition Committee (FADC). Subsequent reports and communications will refer to this committee by that name.

A deadline of September, 1989 has been set by the FADC for finalizing decisions on the algorithms and image processing and spectral extraction methods to be used to create the IUE Final Archive. This deadline is necessary in order to allow sufficient time for the derivation of the final absolute calibrations and the implementation of the selected algorithms and methods into the IUESIPS code. The current goal is to begin reprocessing of IUE data for the Final Archive by April, 1991.

It has been my pleasure to work with the very competent and committed members of the FADC. Their technical input and judicious recommendations have provided the direction to the analysis described herein. Dr. Jeff Linsky continues to motivate and focus the efforts of this committee in their endeavor to specify the highest quality data achievable in the IUE Final Archive. It is noteworthy that the work of this committee represents a "grassroots" effort by the astronomical community to actively participate in the definition

of the requirements for the IUE Final Archive. Such involvement by the community is unique among space observatory projects. The strong support of this effort by Dr. Don West has enabled the impressive achievements to date by CSC personnel at the NASA IUE Project. Finally, Dr. Yoji Kondo's visioned guidance of the NASA IUE Project toward a final archive of processed IUE data which will be a worthy and exemplary legacy of the unprecedented performance of the scientific instrument should be commended.

Sincerely,



Joy Nichols-Bohlin

Supervisor, IUE Image Processing