

Correction of Data Affected by the SWP ITF ERROR

During December 1979, agreements were reached between NASA, ESA and the UK regarding actions needed to correct the photometric errors that exist in some SWP spectra. The three-agency statement reproduced below summarizes these agreements. Detailed memoranda have been sent to each NASA Principal Investigator, explaining the project policies regarding correction of the data and describing a specific algorithm for correcting SWP low dispersion spectra. On the following pages these memoranda are reproduced so that they will be available for easy reference.

Three Agency Statement

Users are already aware of the error in the ITF table for the SWP camera used at GSFC between 22 May 1978 and 7 July 1979 and at VILSPA between 14 June 1978 and 6 August 1979 (NASA Newsletter No. 7, p. 27. ESA Newsletter No. 4, p. 5. SRC Newsletter No. 5, p. 2). This note describes the arrangements made jointly by the 3 agencies to enable users to correct the affected spectra.

Low Dispersion SWP Spectra

The accompanying report by Cassatella, Holm, Ponz, and Schiffer describes an algorithm for correcting low dispersion SWP spectra which has been adopted as being suitable for most IUE users. Since the correction algorithm can readily be implemented on a small computer, the original data will not be reprocessed by the IUE Projects. Although this algorithm has been officially adopted as most generally suitable, individual users are free to apply any other correction techniques they judge to be superior for their particular applications.

High Dispersion SWP Spectra

The three agencies have concluded that for high dispersion there is no equivalent program suitable for small computers. It has therefore been decided to reprocess the affected images (about 2000) and it is anticipated that there will be sufficient time available on the ground stations' Sigma 9 computers to complete this task in eight months without impacting the daily reprocessing of current observations.

For this reprocessing, a priority system will be operated. All images will be classified as routine or urgent. Images will only be placed in the urgent category after a request by the appropriate P.I. or proposer,

certifying that the data are needed for immediate analysis and cannot be reprocessed in-house, has been approved by the appropriate agency. Non-IUESIPS programs available in the UK will be used where possible to reduce the demand on the ground stations for urgent reprocessing of SRC images. Such images will, however, be reprocessed by VILSPA to provide a complete, uniform set of high dispersion data for the data centers.

Absolute Calibration

The effect of this error on the SWP absolute calibration is small, generally less than 5 percent, since the calibration images were well exposed. Since these changes are smaller than the uncertainties present in the calibration standards, the adopted SWP absolute calibration will remain unchanged for the present.

M. C. W. Sandford, SRC
M. V. Penston, ESA
A. Boggess, NASA

National Aeronautics and
Space Administration



Goddard Space Flight Center
Greenbelt, Maryland
20771

Reply to Attn of: **683**

DEC 20 1979

Dear Observer with the International Ultraviolet Explorer (IUE):

This letter announces the actions being taken at Goddard to correct the photometric errors that exist in some short wavelength IUE spectra. These actions result from a recent meeting between project personnel from the National Aeronautics and Space Administration, European Space Agency and the United Kingdom, where an agreement was reached regarding a suitable correction algorithm for the low dispersion spectra and regarding a procedure for correcting the high dispersion spectra. The formal statement issued by the three agencies will be reproduced in the next IUE Newsletter. In the meantime, our plan is described below.

The data that are affected are those short wavelength spectra processed at Goddard between 22 May 1978 and 7 July 1979, and at VILSPA between 14 June 1978 and 6 August 1979. The problem arose because of an error in the short wavelength intensity transfer function in use between those dates. This error was described in a memo by A. V. Holm dated 16 July 1979 and sent to all NASA IUE Principal Investigators. Holm's memo was reprinted in the IUE Newsletter No. 7 along with a status report describing the progress made in dealing with the problem as of late September.

High Dispersion Spectra

a. Correction Policy

All high dispersion SWP images (except TFLGOD and WAVCAL frames) originally processed at Goddard between 22 May 1978 and 7 July 1979, will be completely reprocessed. About 1400 Goddard images are involved and about seven months will be required to complete the job, starting in January 1980. Generally, images will be reprocessed in chronological order, but a limited opportunity to request urgently needed reprocessing is described below. An additional 500 images originally taken at VILSPA will be reprocessed there on a similar time scale.

b. Calibration Files

The reseau-positions and dispersion constants used for reprocessing will be mean values which are also being adopted for use in processing all current data. Thus, wavelength assignments in the reprocessed spectra generally will differ slightly from the original processings

which used either "bi-weekly standards" or "special" calibrations. A discussion of the use of mean calibrations in high dispersion will be published shortly in the Newsletter; their use in low dispersion has already been described in the Newsletter No. 7. Those observers who obtained special calibrations in order to derive the best possible wavelength scales may use their originally processed spectra to identify wavelengths and the reprocessed spectra to do photometry.

c. Observer Options and Priorities

New G.O. tapes and photowrites for the reprocessed spectra will be sent to the original observer automatically. CalComp plots will not be produced unless the observer cannot make his own and must have them to complete the data analyses. In many cases, a request for plots will delay distribution of the observer's reprocessed data. If a request for plots is approved, the plots will be the gross and background spectra at 10Å/inch and the net ripple-corrected spectrum at 2Å/inch.

Observers may also request that a few images be given priority status and be processed as soon as possible rather than in chronological order. We will honor these requests as efficiently as we can, but we are not able to promise specific completion dates. Obviously, the time needed to fill an urgent request will depend on how many other urgent requests have been received. Therefore, observers are urged to use restraint and only ask for images that are genuinely needed quickly.

d. Data Center Policy

The IUE data centers operated by NASA, ESA, and the UK no longer fulfill requests for the incorrectly processed high dispersion spectra. Reprocessed spectra will be deposited in the data centers with release dates approximately six months later than the delivery of the reprocessed data to the original observer.

Low Dispersion Spectra

a. Correction Policy

Low dispersion spectra will not be reprocessed. A memo by Cassatella, Holm, Ponz, and Schiffer is being distributed under separate cover which describes in detail the algorithm officially adopted by NASA, ESA, and the UK for the purpose of correcting the short wavelength low dispersion spectra. Since this algorithm can be implemented readily on small computers, observers will be expected to correct their own data.

b. Computing Assistance

A few observers may not be able to obtain the computing resources needed to correct their spectra. These observers may request to have their spectra corrected at Goddard. If the request is approved, the observer must return his original G.O. tape to Goddard and he will receive in exchange, a replacement tape on which all the short wavelength low

dispersion spectra have been corrected and all other data have been copied unchanged. A standard set of CalComp plots will be supplied automatically for each corrected spectrum. This assistance will be provided only to those observers who have no other way of correcting their data, and we are unable to promise how long it may take.

c. Data Center Policy

The IUE data centers operated by NASA, ESA, and the UK have placed a temporary moratorium on the distribution of incorrectly processed low dispersion spectra. A new release date, approximately six months after official publication of the correction algorithm in the IUE Newsletter, will be assigned to all these spectra. After that date, requests will be filled by distributing the data as originally processed along with a written description of the correction algorithm.

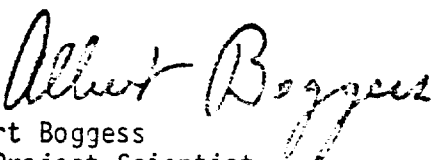
Requests for Special Assistance

This letter has described three types of special help that we will be able to give observers if they need it. They are: high priority reprocessing of high dispersion spectra, CalComp plots of high dispersion spectra, and correction and replotting of low dispersion spectra. Since our capacity for these extra tasks is very limited, I will approve these special requests only when I am convinced that they are essential.

In order for us to organize the job efficiently, we must insist that all requests conform to the following rules:

- (1) All requests must be submitted on the special request form. A copy of the form is enclosed with this letter.
- (2) The request form must be signed by the Principal Investigator who is responsible for the original observations. Each form must contain requests from only a single Principal Investigator, but P.I.'s with more than one program may combine requests for all their programs on a single form.
- (3) All requests must be returned to us by February 15, 1980. No requests will be honored after that date.

Sincerely yours,


Albert Boggess
IUE Project Scientist

Enclosure

cc: w/o encl.
NASA HQ/LI-15
100
683
Mailroom/251.2

683/AB/pa:12/17/79

THIS FORM MUST BE RETURNEDAS SOON AS POSSIBLE

Dr. Albert Boggess
 NASA/Goddard Space Flight Center
 Code 683
 Greenbelt, MD 20771

Dear Dr. Boggess:

I request the following special assistance in correcting my short wavelength IUE spectra which were originally processed between 22 May 1978 and 7 July 1979. I have checked the appropriate boxes below and listed the necessary image numbers.

High Priority Reprocessing of High Dispersion Data

It is important for me to receive the reprocessed data for the following high dispersion image numbers as soon as possible: _____

High Dispersion Cal Comp Plots

It is essential for me to have plots of my reprocessed high dispersion spectra and I cannot obtain them without your help.

I need plots for all my spectra.

I only need plots for the following image numbers: _____

Low Dispersion Corrections

I have no way of correcting my low dispersion data tapes. Please approve my request to send you my tapes for correction and for replotting of the low dispersion spectra.

Number of tapes: _____

Total number of low dispersion SWP images on the tapes: _____

 Signature

 Printed Name

NOTE: This request will be honored only if it is signed by the Principal Investigator responsible for the original observations.