

April 11, 1990

IUE REGIONAL DATA-ANALYSIS FACILITY
GUIDE FOR REMOTE USERS OF THE GODDARD FACILITY

1. INTRODUCTION

This manual describes how to remotely access the IUE Regional Data Analysis Facility (RDAF) at Goddard Space Flight Center. Remote access is currently offered to experienced users interested in preparing for a visit, searching the IUE merged observing log, or continuing IUE data analysis. Depending on the users local networking capabilities, users may log in remotely via DECNET (e.g., the Space Physics Analysis Network (SPAN)), TCP/IP (i.e., INTERNET), or using standard phone lines. The sections below describe each of these remote access methods as well as general information on obtaining a network connection and using the RDAF software.

It should be noted that as a general policy, we request that users calling in via either a network or a phone, try to complete their work in about four to eight weeks, and as a courtesy to other RDAF users, be logged on for less than four hours at a time.

2. USING THE RDAF VIA SPAN

The Goddard RDAF has been supporting SPAN users since March, 1986. Although the quality of the network connections vary, users have successfully logged on from continental United States and Europe. Currently the RDAF supports between 10-20 SPAN users per month.

The SPAN node number for the Goddard RDAF computer is 6164, and the node name is IUE. If your computer supports DECnet and is connected to SPAN you can log on remotely in the following manner:

- 1) Call Randy Thompson (301-286-8800) to get a remote user account and to schedule computer time.
- 2) Log on to your computer using an appropriate terminal (i.e., you will need a terminal which can emulate a Tektronix 4010 if you plan to do any plotting).
- 4) Type the command:
 SET HOST IUE
 or SET HOST 6164
 (if your computer doesn't recognize IUE)

Once you are prompted for username you can type in your assigned name

and password as you would if you were a visitor. When your session is done, get out of IDL with a <CNTRL-Z> and type BYE. This should log you off the RDAF computer and return you to your local computer.

File transfer is also possible across SPAN using the VMS DCL command COPY. Once you know your IUE account name and password, files can be transferred from the IUE VAX to your local computer as follows:

```
COPY 6164"name password"::IUE$USER0:[name]file.ext file.ext
```

where name and password are your IUE account name and password, and file.ext is the name of the file to be transferred. Note that the example above assumes you are logged on to your local computer. More information can be obtained on COPY using the online VMS HELP utility.

3. USING THE RDAF VIA INTERNET

Software was installed on the IUE VAX in December, 1989 to support the Transmission Control Protocol, Internet Protocol, (commonly known as TCP/IP), which was defined by the U. S. Department of Defense for the communication and interconnection of differing computer systems. The term INTERNET has become somewhat ambiguous as it is frequently used to refer to both the TCP/IP protocol and the various networks which use TCP/IP. The TCP/IP network to which the RDAF is connected is the NASA Science Network (NSN) which, together with SPAN, comprise the NASA Science Internet (NSI). Although the RDAF has less experience with INTERNET (i.e., TCP/IP-based networks), users have regularly logged on from as far away as Mexico City.

Our INTERNET address is 128.183.84.15 and the name is IUE.GSFC.NASA.GOV. If your home computer supports TCP/IP and is connected to a wide-area network, you can log on to the IUE VAX in the following manner:

- 1) Call Randy Thompson (301-286-8800) to get a remote user account and to schedule computer time.
- 2) Log on to your local computer or workstation (as before, you will need Tektronix 4010 emulation if you plan to do any plotting).
- 4) Type the command:

```
TELNET 128.183.84.15
```

(If the IUE VAX is listed in your local hosts file, the number could be replaced with the name iue.gsfc.nasa.gov.)

Once you are prompted for username you can type in your assigned name and password as you would if you were a visitor. When your session is done, get out of IDL with a <CNTRL-Z> and type BYE. This should log you off the RDAF computer and return you to your local computer.

The TELNET command has several options that may be of interest to users. For example, the following set of commands show how to improve your control of starting and stopping text being displayed on your terminal by transferring the processing of the flow control characters to your local host:

```
telnet
toggle flowchars
display
open 128.183.84.15
```

File transfer is possible using the command FTP. To use FTP from your local computer to transfer a file from the IUE VAX, type the following:

```
ftp
open 128.183.84.15
(enter IUE account name and password when prompted)
get file.ext file.ext
quit
```

where file.ext is the file to copy from your IUE VAX account to your local account. More information on FTP is available by typing ? or help from within FTP. Note that for security reasons, the IUE VAX does not support TFTP or anonymous FTP accounts.

4. USING THE RDAF VIA PHONE LINES

The RDAF has supported two dial-in phone lines since 1984, and has supported more than 50 remote phone users during this time. Phone access generally requires the least amount of hardware, in fact many users use this method to log in from their home during off-hours. All that is required is a terminal and a 1200 baud modem. If all you need to do is search the observing log or list files, any terminal will do; but if you want to make plots, then you will need a terminal which can emulate a Tektronix 4010 terminal, (e.g. a VT100 with Retrographics). Personal computers with modems can also be used for remote use but you will still need software for emulating a Tektronix 4010 if you want to do any plotting (e.g. you could use a Macintosh PC with Versaterm).

The RDAF modems have a special "automatic call-back" security feature, which will disconnect your initial call and if the proper name and password were entered, will call you back using a Federal Telephone System (FTS) line. This requires that users first call Randy Thompson, the RDAF manager, at (301) 286-8800 to get both a special name and password for accessing the call-back authenticator, and an account name and password for logging on to the IUE VAX. Users will also be asked for the phone number at which to receive the returned call (i.e. the phone number for the modem).

A. How to Log On

(1) After receiving your special name and password, call the facility's computer at (301) 344-0709 or 344-5351 and hit the carriage return key until one of the following messages appears:

It is not nice to fool sleuth.

or

Welcome to the IADAF.

(Sleuth is the name of the call-back authenticator, and the IADAF is the name for our VAX cluster.)

(2) Upon prompting, enter the special name and password that the RDAF manager gave you.

(3) The following message will appear on your screen:

STANDBY FOR CALL-BACK

and the line will be disconnected.

(4) After about 10 seconds, your phone will ring once. Hit the carriage return key until the computer responds with

>

which is your signal that you can log on the way you usually do:

username/password

(Note that this name and password is not the same as the ones specified above for Sleuth).

During normal working hours the FTS lines sometimes get too busy for Sleuth to dial out. If repeated attempts fail to get you a connection you may want to try again during off-hours. An alternative is to call in directly using the call-back authenticators 'pass-through' mode but the phone charges will be billed to you. Pass-through mode is obtained by initially entering the name REMOTE and the password RDAF when you first call 344-0709 or 344-5351.

B. How to Log Off

Logging off remotely is the same as logging off at the facility (i.e. get out of IDL with a <CNTL Z> and say LO or BYE). Logging off however does not disconnect your phone line. You have to disconnect the line, and the way to do it depends on the type of modem you use (e.g. with a Hayes Smartmodem, you would get into local mode by typing 3 plus signs and then typing ATH).

5. Network Access

Using SPAN or INTERNET has definite advantages over calling in by phone. You can avoid the generally noisy phone connections, transfer files to your local computer, work at a higher effective baud rate, and receive more information about any problems with the computers or network. We usually recommend phone access only when a network connection is not available, and suggest that phone users generally try to work during off-hours to obtain less noisy connections.

Users who do not currently have network access to the RDAF, but who are supported by NASA's Office of Space Science and Applications (OSSA) can request a network connection by contacting the NSI Customer Service Manager, Christine Falsetti at 415-604-6935 or 415-604-5859.

NSI can provide networking solutions for systems running DECNET, TCP/IP, both or even other communications protocols. Their Basic Services are provided free of charge to OSSA-funded projects and users. The Basic Service provides 9600bps to 56Kbps, end-to-end connectivity to support electronic mail, file transfer and remote logon; also included are value-added services such as user assistance, network performance monitoring, network documentation, help in locating and addressing other users, and gateways for open connectivity within the United States as well as with international NASA collaborators.

NSI's Priority Services provides dedicated private lines, high speed links (56Kbps to T1), high reliability and performance during mission data analysis operations, non-standard interfaces, etc. NSI does not support mission critical communications. The costs for Priority Services depend on the nature of the service required, and may require cost-sharing by the initiating user or project.

If future requirements are expected to have very high costs, they should be submitted to the NSI Project Office at least two years in advance, so that NSI can submit a request for budget augmentation. Generally, brand new domestic network circuits can take up to six months to be installed. International circuits cost more and take longer to install.

6. PREPARING FOR DATA ANALYSIS

Probably the most useful way to prepare for an analysis session is to select and order IUE spectra that you wish to work with. You can select the observations as you usually do, via the procedures SEARCH or MOIMAGE. The output of either program is a vector, LIST, that lists the entry numbers of your spectra in the observing catalogue.

There are a couple of ways to order spectra remotely. You can compile and execute the procedure REMORDER (this is the remote version of the procedure ORDER which you may have used at the facility). REMORDER will file your order away and remind you to call the facility so that they know you have put in an order. Requests can also be sent directly to the IUE::STAFF account via VMS mail. The mail message should contain the camera name, the image sequence numbers, and, if low dispersion data are requested, a comment as to whether both the line-by-line files and the extracted spectral files are desired. Whichever method is used, the Data Analysis Assistants will then get the spectra from the archive and put them in your assigned account.

5. ANALYZING YOUR DATA

Once the log-on procedure has put you in IDL, you are ready to go. You will find it most helpful if you have a copy of the IUE Tutorial Manual at your side to remind you of the calling procedures. For quick reference, we list some of the procedures used most often along with the page number of the IUE Tutorial Manual (Version 5.1, June 5, 1989) where they are described.

Binned Fluxes	
BINS,wave,flux,[weight],WCENTER,WIDTHS,WMEAN,WSIGMA,WGT....	52
WEIGHT,eps,Wf.....	52
PRTBINS,w,f,wcenter,widths,mean,sigma,wnpts.....	52
Compare data with standard spectrum	
BBDRAW,wave,flux,eps,WPICK,TEMP,DILUTION.....	53
KURUCZ,te,logg,ab,WAVE,FLAM,CONT.....	53
Correct Data	
RADCOR,h,wave,WCOR,VNET,VDIVC.....	43
TRIM,min-wave,max-wave,wave,flux,eps.....	43
PATCH,flux,eps,[FCOR].....	48
BLEMISH,wave,flux,[bsize],FCOR.....	48
CALIB,h,wave,net-flux,exposure-time,FLUX.....	44
UNRED,[table],h,wave,flux,e(b-v),FCOR.....	45
LYMANA,wave,flux,ncol,FCOR.....	45
NORM,wave,flux,[FNORM,CONT,MODE].....	45
MULTERP,'name'.....	46
COADD,nspec,elim,wopt,cname.....	47
Correct line-by-line files	

BSPOT, 'imagein', 'imageout'	36
SWPFIX, 'imaget', aperture	37
Extract fluxes as a function of wavelength	
IUESPEC, 'imaget', H, WAVE, FLUX, EPS, [, start_wave][, end_wave] ..	33
HIGH	34
LOW	35
HELP	
HELP	14
DOC_LIBRARY, 'procedure-name'	39
List files in your disk area	
\$DIR	8
Line-by-line files	
EXMELO, 'imaget', p, H, WAVE, GROSS, BCKGND, NET, ABSCAL, EPS	38
IUEIM, 'imaget', start, width, H, WAVE, FLUX, EPS	38
BSPOT, 'imaget', 'IMAGO'	36
LBL, 'imaget', starting-order, num	36
MAKEMELO, 'imaget', p	38
Measure Data	
POINT, wave, flux	51
RADCOR, h, wave, WCOR, VNET, VDIVC	43
RV[, h], wave, flux[, eps]	51
FEATURE, wave, flux, w0	51
GAUSSFITS, x, y, ndeg, A, YFIT, SIG	46
Plot spectra	
IUEPLOT, h, w, f, e	36
PLOT, w, f	21
OPLOT, w, f	21
SET_XY, xmin, xmax, ymin, ymax	22
SET_VIEWPORT, xmin, xmax, ymin, ymax	25
PLOTOPEN, unit, sysvars[, 'name']	26
PLOTPRINT, unit, sysvars[, 'name']	26
PLTPARM, nnew, NOLD, [snew][, SOLD]	25
Print information in the science image header	
LABEL, 'imaget', start-line, end-line	18
ASSESS, 'imaget'	29
MISDAT, 'imaget', order	29
Rename IUE Spectral Data Files	
RENIUE, filename, aperture_location	18
Retrieving data from disk	
IUEFETCH, 'imaget', H, W, F, E	40
DATGET, file-type, 'fname', order, H, W, F, E	40
Saving data on disk	
IUESAVE, 'name', h, w, f, e[, flag]	40
Search the merged log	
SEARCH, reset, LIST	57
MOPRINT, list, type, out	57
Smoothing	
FILTER, data, filtr, RESULT	49
SPLINE, xtable, ytable, x, Y, YP, YPP, INTEGRAL	46
SMOOTH(data, npts)	46

6. WHAT TO DO WHEN THINGS GO WRONG (OR RIGHT)

The easiest way to contact staff members is using the VMS MAIL utility. If you are logged on the IUE VAX and wish to contact Randy Thompson, simply type:

```
MAIL
SEND RTHOMPSON
subject (e.g. call-back problems)
```

MAIL will now allow you to enter your message. When you are finished type cntrl-Z and EXIT. If you are having problems logging on, you should call the RDAF number at (301) 286-8800. An answering service is available on this number which will allow users to leave messages during off-hours.