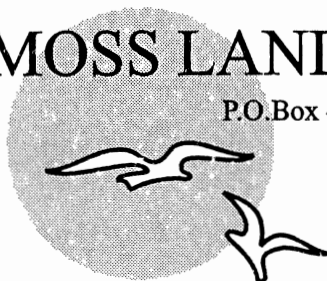


MOSS LANDING MARINE LABORATORIES

P.O.Box 450 Moss Landing, CA USA 95039-0450 (408)755-8650



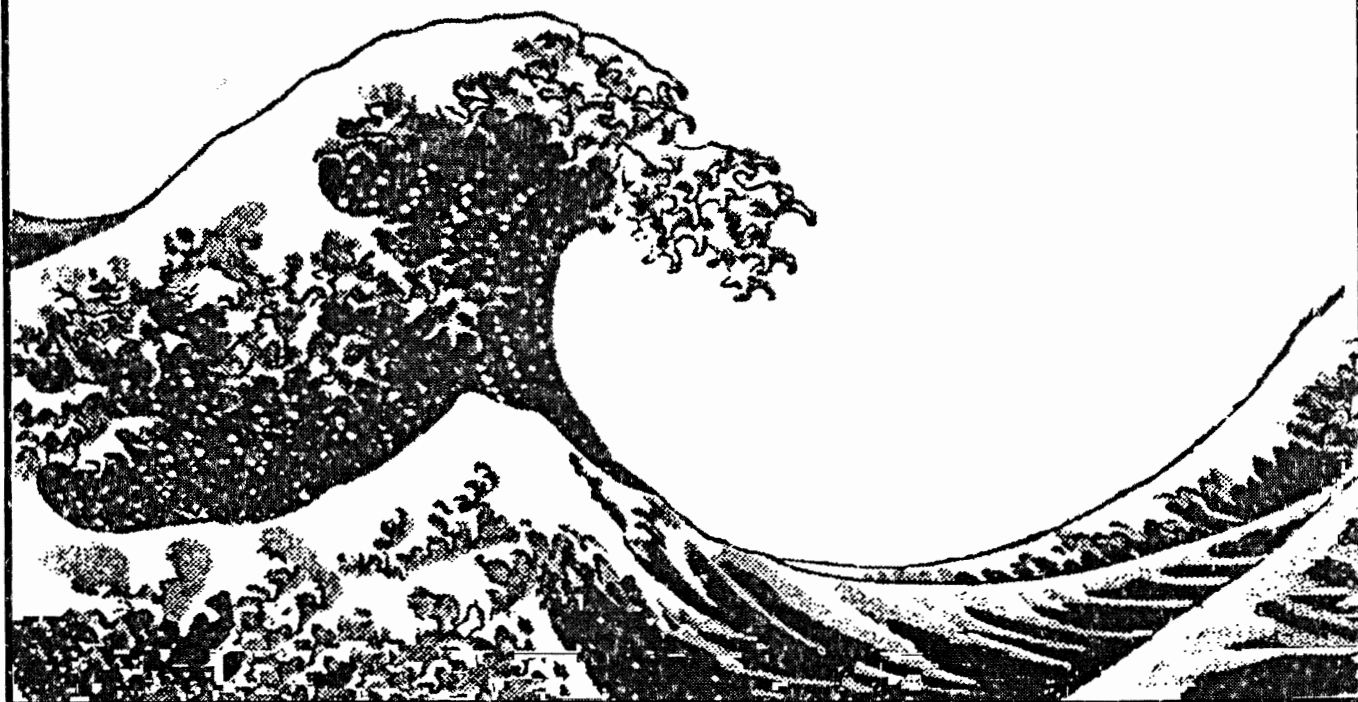
Daily MOBY Data Processing

Stephanie Flora and William W. Broenkow

MLML Technical Publication 98-2
July 1998

Supported By

National Oceanic and Atmospheric Administration
National Environmental Satellite Data Information Service
Grant No. NA77EC0252



Moss Landing Marine Laboratories
of the California State Universities
Moss Landing, CA 95039

Daily MOBY Data Processing

Stephanie Flora and William Broenkow

MLML Technical Publication 98-2
July 1998

Supported by

National Oceanic and Atmospheric Administration
National Environmental Satellite Service
Grant No. NA77EC0252

<http://color.mlml.calstate.edu/www/groups/physoce/>

MOBY DAILY PROCESSING

The following steps describe Marine Optical Buoy (MOBY) data processing (Fig. 1). These steps are used to process MOBY data on a daily basis. Only the most common problems are discussed. Any PC running Matlab 5.2 can be used for MOBY processing.

MOBY is an optical buoy designed to measure light above the surface and at 4 depths below the sea surface (Fig. 2). There are 4 Irradiance collectors (Es, EdTop, EdMid and EdBot) and four Radiance collectors (LuTop, LuMid, LuBot and LuMOS) and three internal calibration lamps (Blue LED, Red LED and Incandescent lamp). Data are collected by MOBY twice per day (22:00 and 22:45 GMT). The 22:45 file is sent each day to the VAX by cellular MODEM at 3 am local time. The 22:45 file contains only Lu, Es and internal calibration scan sets, but no Ed scan sets (Table 1). The 22:45 file is named YYMMDD22.mob. The 22:00 file, which is not sent, contains scan sets from all the collectors and internal calibration lamps and is named YYMMDD21.MOB. Files not sent by MOBY are retrieved for processing when MOBY is recovered after the deployment. Each file MOBY sends to the VAX will have an associated FORTH.LOG file with details of MOBY's activities that day. We also collect other data files (GOES images and Airport data) that are used on the MOBY homepage. These files are automatically retrieved using a Perl and C-Shell script and placed in color.mlml.calstate.edu's anonymous directory.

MOBY Processing Steps

- 1) Get the Raw MOBY file(s) and it's FORTH Log file (FTP)
 - 2) Get GOES Images (FTP)
 - 3) Get Airport Observations (FTP)
 - 4) Process the MOBY data and Create HTML Documents and JPG's (MATLAB 5.2)
 - 5) Put HTML and JPG files on the MOBY homepage (FTP)
-

FILE LOCATIONS ON Windows NT WorkStation

- 1) MOBY data files are in **e:\mldata\moby205\precals**
(YYMMDDHH.MOB, YYMMDDHH.MBY, YYMMDDc.MBY, YYMMDDd.MBY and YYMMDDHH.LOG)
- 2) MOBY Homepage Files are in **e:\moby\moby205**
(HTML files, JPG Images, YYMMDDHH.TXT, and YYMMDDHH.LOG)
- 3) GOES Image Files are in **d:\goes**
(JPG Image Files)
- 3) Airport Observations are in **d:\weather**
(TXT Files)

FILE LOCATIONS ON VAX or DecStation

- 1) MOBY data files are on **mlml.calstate.edu**
in **DUA1:[MOBY.MOBY_SN_X]**
(YYMMDDHH.MOB and FORTH.LOG)

2) MOBY Homepage Files are on **color.mlml.calstate.edu**
in **/usr/users/startrek/homepages/www/groups/physoce/moby**
(HTML, JPG Image, LOG and TXT Files)

3) GOES Image Files are on **color.mlml.calstate.edu**
in **/pub/incoming/GOES**
(JPG Image Files)

4) Airport Observations are on **color.mlml.calstate.edu**
in **/pub/incoming/WX**
(ASCII Airport Observations)

1) Get the Raw MOBY file(s) and it's FORTH Log file off the VAX.

MOBY attempts to send one FORTH LOG and one MOBY file (extension = '.MOB') to the MLML VAX (mlml.calstate.edu) each morning at 3 am local time. Occasionally communication problems occur. The MOB file and/or FORTH LOG file may not be sent or incomplete files sent (Table 2). When communication problems occur during MOB file transfer a partial MOB file is the result. Complete and incomplete files must be FTP ed to the NT WorkStation to be processed.

- **Open the WS_FTP95 program and choose the 'MLML get MOBY' profile and OK to connect to the MLML VAX (mlml.calstate.edu) using your username and password (Fig. 3).**

The directories containing the data are....

DUA1:[MOBY.MOBY_SN_X]

Where X stands for the current deployment number. X = 5 for the 5th MOBY deployment.

- **In the Remote System Filter Mask Box (below the Mkdir button) type *.*;* (Fig 4).** All files regardless of their version number will be listed in the Remote Host List Box. **Use the DirInfo Button to get an ASCII listing of the Files.**

Most FTP programs list only the latest version of a file. By typing *.*;* all the versions of a file will be listed. Using the ASCII listing of the directory first determine if a MOB and/or LOG file was sent. If a MOB file was sent then compare the size of the file with older complete files. If it's size is the same as earlier files then it is most likely complete. If the transfer of the MOB file is not complete (interrupted during transfer) then MOBY attempts to send the rest of the MOB file from the point of the interruption as version 2. If there are two MOB files, or only one but its size is too small, then the file is incomplete. We have not found a way to reconnect the two files to create a complete MOB file so we use only version 1 for processing.

- **Transfer all new MOB file(s) as binary into the e:\mldata\moby20X\precalcs directory (Fig. 5).** WS_FTP95 will prompt you for the local file name. Don't change the name just press OK.

If the MOB file(s) is incomplete then transfer version 1 only (ie. YYMMDDHH.MOB;1).

- **Transfer all new LOG file(s) as ASCII into the e:\mldata\moby20X\precalcs directory, changing it's name to match the MOB file when prompted for the local file name (Fig. 6).** Use the ASCII listing of files to match FORTH.LOG files with MOB files.

The FORTH.LOG file name must be changed to match the name of the MOB file. A

FORTH.LOG is sent with each MOB file. If more than one MOB file was sent (ie an incomplete MOB file) then there should be more than one FORTH.LOG file. The two or more FORTH log files must be cut and pasted together into one FORTH.LOG file. There must be only one FORTH log file per day. Transfer the first FORTH.LOG file changing its name. Then use the View Button to view the first FORTH.LOG file just transferred and the second FORTH.LOG still on the remote host. Copy the text in the second file and paste it to the bottom of the first file. Save the first file making the changes permanent.

If no MOBY file was received but a FORTH.LOG file was received, transfer the FORTH.LOG file and change the name to the name of the MOB file that should have been sent.

- **Update the MOBY log** noting if the file was complete (*), incomplete (NC) or no file was received (NR) and the hour of the file received (if any).
- **Close Connection but don't exit the program and continue.**

2) Get GOES Images

Perl and C-Shell Scripts on color.mlml.calstate.edu automatically retrieve GOES 9 images. Four types of GOES images are retrieved: 1) Visible images at full resolution of the Hawaii area (9_hw_vis), 2) Water Vapor images at full resolution of the Hawaii area (9_hw_wv), 3) Visible images of the Northern Hemisphere (9_nh_vis) and 4) Water Vapor images of the Northern Hemisphere (9_nh_wv)

- Use the connect button in the **WS_FTP95 program then choose the 'mlml color anony' profile and OK to connect** to the MLML DecStation (color.mlml.calstate.edu).

The directory containing the data is....

/pub/incoming/goes

- **Transfer the JPG image files as binary** from the Remote System dir pub/incoming/goes/9_hw_vis dir to the Local System dir d:\goes\9_hw_vis\MMYY dir. **Then delete all files.**

Where MMY stands for Month and Year (ie. jul98).

- **Transfer the JPG image files as binary** from the Remote System dir pub/incoming/goes/9_hw_wv dir to the Local System dir d:\goes\9_hw_wv\YYYY dir. **Then delete all files.**
- **Transfer the JPG image files as binary** from the Remote System dir pub/incoming/goes/9_nh_vis dir to the Local System dir d:\goes\9_nh_vis\YYYY dir. **Then delete all files.**
- **Transfer the JPG image files as binary** from the Remote System dir pub/incoming/goes/9_nh_wv dir to the Local System dir d:\goes\9_nh_wv\YYYY dir. **Then delete all files.**

Where YYYY stands for Year (ie. 1998).

3) Get Airport Observations

Perl and C-Shell Scripts (getcash.csh, perl_haw.pl, perl_lan.pl, perl_ncal.pl and perl_scal.pl) on color.mlml.calstate.edu automatically retrieve airport observation ASCII files daily. Four types of Observation

files are retrieved: 1) All airports in the Hawaii area, 2) the Lanai airport, 3) Northern California airports and 4) Southern California airports

- Use the **WS_FTP95 program and the 'mlml color anony' profile to connect** to the MLML DecStation (color.mlml.calstate.edu).

The directory that contains the data are....

/pub/incoming/WX

- **Transfer the TXT files as ASCII** from the Remote System dir pub/incoming/WX/hawaii dir to the Local System dir d:\weather\hawaii_obs\MMMYYY dir. Then **delete all files**.
- **Transfer the TXT files as ASCII** from the Remote System dir pub/incoming/WX/lanai dir to the Local System dir d:\weather\lanai_obs\MMMYYY dir. Then **delete all files**.
- **Transfer the TXT files as ASCII** from the Remote System dir pub/incoming/WX/ncal dir to the Local System dir d:\weather\ncal_obs\MMMYYY dir. Then **delete all files**.
- **Transfer the TXT files as ASCII** from the Remote System dir pub/incoming/WX/scal dir to the Local System dir d:\weather\scal_obs\MMMYYY dir. Then **delete all files**.

Where MMYYY stands for Month(MMM) and Year (YY).

- **Close Connection, exit the FTP program and continue.**

The DOALL_.M program is used to process one MOBY data and FORTH log file at a time. If there is more than one file to process then you will need to run the DOALL_.M program for each file.

4) Process the MOBY data and create HTML documents and JPG's

Currently all processing is done in Matlab 5.2.

- **Open Matlab 5.2** by double clicking on the Matlab 5.2 icon on the desktop.

Make sure your current working directory (pwd) is the directory that contains the MOB and LOG files to be processed by typing pwd at the Matlab command prompt. See File Locations for correct directory.

```
>> pwd
ans = e:\mldata\moby205\precal
```

If this is not the correct directory then use the cd command the change directories.

```
>> cd e:\mldata\moby205\precal
```

- **Run the DOALL_ program** by typing doall_ on the Matlab command line.

```
>> doall_
```

If at any time you wish to stop processing data type quit at any prompt. This will return you to the Matlab command line where you can run doall_ again. For help at any prompt type help.

- **Prompt 1: A standard open file dialog box will be displayed (Fig. 7)**. Select the MOB file to process.

- **Prompt 2: Did the file Load completely: 1=Yes, 0=No:**

READMOB_ just attempted to read in the file, list it's contents and convert it to the MLDBASE format.

If READMOB_ does not return an error the file is complete. A complete file's new MLDBASE extension is 'MBY'.

If the file is complete go to **Prompt 4**

If an error message is returned the MOB file is incomplete.

If the file is incomplete go to **Prompt 3**

If an error exits the DOALL_ program before Prompt 2 is displayed then do not process this file. The first or last record is missing and will need to be hand processed.

Example:

```
-----
Scan# 48: 1998: 5:17:22:45:56; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ;
Scan# 49: 1998: 5:17:22:46: 3; DARK ; MUX: 5 ; Time (B/R): 1/1 ;
Scan# 50: 1998: 5:17:22:46:27; DARK ; MUX: 9 ; Time (B/R): 4/1 ;
```

READMOB_ Error (Not a complete MOB file, USE NV)

*** If the File DID NOT load completely you will see the above READMOB_

```
-----
Scan#104: 1998: 5:18:22:55:33; LAMP ; MUX: 15 ; Time (B/R): 1/1 ;
Scan#105: 1998: 5:18:22:55:40; LAMP ; MUX: 15 ; Time (B/R): 1/1 ;
Scan#106: 1998: 5:18:22:55:48; DARK ; MUX: 5 ; Time (B/R): 1/1 ;
```

MOBY2 Radiometer Scans

STATION: MOBY205, Launched 22 Apr 1998

START: 1998:05:18:22:39:15 Position: 20°49.5' N 157°11.1' W

STOP: 1998:05:18:22:56:13 Position: 20°49.5' N 157°11.1' W

*** If the File DID load completely you will see the above display

- **Prompt 3: Enter variable number of last complete scan:**

Type help to see an example. MOBY file processing requires complete scan sets. A complete scan set consists of 1 dark scan, any number of light scans (3-12) followed by a dark scan (Table 1). 98061022.mob is an example of an incomplete MOB file. (Table 3) In the example, readmob_ reads in the file to scan number (Scan#) 90. Scan number 90 is half way through a complete Es scan set. If READMOB_ .M is stopped at scan number 84 then all of the scan sets in scans 1-84 are complete. In this case scans 85-90 do not constitute a complete scan and are removed from processing. There must be two complete Lu collectors to process the file.

Once the incomplete file is saved in the MLDBASE format it can be processed identically to the complete file. The only difference is that MOBY file's extension is set to MBX (not MBY). The MBX extension is reserved for MOBY files that require special attention during processing or that can not be processed. This extension will follow the file throughout MOBY batch processing.

Example:

The last complete scans set ends at variable number 101 (dark,lite,dark) in the listing below.

```
DscS 95: MOS2 ADU: BLUE LED; MUX#: 12; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 96: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 64/
DscS 97: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 64/
DscS 98: MOS2 ADU: RED LED ; MUX#: 13; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 99: MOS2 ADU: RED LED ; MUX#: 13; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 100: MOS2 ADU: RED LED ; MUX#: 13; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 101: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 64/
DscS 102: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 64/
DscS 103: MOS2 ADU: LAMP ; MUX#: 15; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 104: MOS2 ADU: LAMP ; MUX#: 15; Time (B/R): 1/1 ; Bin (B/R): 64
DscS 105: MOS2 ADU: LAMP ; MUX#: 15; Time (B/R): 1/1 ; Bin (B/R): 64
```

• **Prompt 4: Do any scans appear BAD: 1=Yes, 0=No:**

For help see examples of known BAD scans.

- MOBY's Top Arm is Missing (Fig. 8)
- LuTop Arm out of water (Fig. 9)
- LuTop Arm out of water (Fig. 10)
- LuTop Arm out of water (Fig. 11)
- Unusual Peaks in Red for LuMOS (Fig. 12)
- Unusual Peaks in Red and Blue for LuMOS and LuBot (Fig. 13)
- Unusual Peaks in Red for LuMOS (Fig. 14)
- Unusual Peak in Red for LuMOS (Fig. 15)
- Dead Battery (Fig. 16)
- Dead Battery (Fig. 17)
- No MUX Position Problems (a good day) (Fig. 18)
- MUX Position off by One (Fig. 19)
- MUX Position off by Two (Fig. 20)
- Bird Sitting on Es Collector (Fig. 21)

Before batch processing begins the file must be checked for BAD scans (ie. for scans taken when the top arm is out of the water or MUX home position changes). N4MBYRAW creates a 4 panel plot of the raw MOBY data. If one of the Lu or Ed arms are out of the water it will be higher than the other scans or it's shape may resemble an Es scan. MUX home position changes are more subtle.

If there are any questions about a collector choose YES. No scans are marked BAD when choosing yes here, this will only allows you to get a closer look at suspicious scans. If the scans are not BAD then they do not have to be marked BAD later.

If no scans appear BAD skip to **Prompt 10**

If some scans do appear BAD go to **Prompt 5**

• **Prompt 5: Choose one collector which appears BAD:**

Collectors to choose from....

```
LuTop = 21.1      LuMid = 21.2      LuBot = 21.3      LuMOS = 21.4
EdTop = 10.1      EdMid = 10.2      EdBot = 10.3
EsSFC = 12.5      Calib = 0         Exit = NaN
```


Choose only one collector at a time even if more than one appears BAD. You can look at as many collectors as you like, one at a time. You will return to this prompt after you have looked at all the scans for the chosen collector. When all the suspicious collectors have been looked at, choose NaN to continue processing. Choosing a collector here does not mark it as BAD. This only plots all the scans so you can get a closer look.

If NaN is chosen skip to **Prompt 10**

If a collector is chosen continue with **Plot 6**

- **Plot 6: Plot of suspicious data from chosen collector (Fig. 22).** Each scan of the collector chosen will be plotted with a pause between each.

Press Return after each scan is plotted (the last one plotted is red and its variable number (VN) will be in the title). Write down the variable numbers of scans that are BAD or you want a closer look at. Be careful not to press return too quickly, you may press return at the next prompt (which is displayed after the last variable is plotted) and not realize it. The last variable number is displayed so you will know the last variable to be plotted.

- **Prompt 7: Enter variable range that are BAD for XX.x:**

XX.x is the collector chosen at Prompt 5.

Use square brackets around the variable numbers entered (ie. [9 11 13]).

If you need to look at this collector again then enter zero at this prompt. This will return you to Prompt 5. Then enter the same collector again and the scans will be replotted. If you are ready to choose BAD scans then enter their variable numbers.

If 0 is chosen go to **Prompt 5**

If a variable range is chosen go to **Prompt 8**

- **Prompt 8: Mark [VR] as BAD (DO NOT process): 1=Yes, 0=No:**

VR is the variable range enter at Prompt 7.

By answering YES to this prompt the variable range entered will not be included in MOBY processing. If an entire collector is marked as BAD (say LuTop) then there will be no LuTop data for this day in the converted or derived data files. If the Top arm is out of the water or there are unusual peaks in the LuMOS red spectrum then exclude these scans from processing.

- **Prompt 9: Short Description of the problem for XX.x:**

Examples: 1 = ; MARKED BAD 2 = ; OUT OF WATER 3 = ; ARM MISSING

XX.x is the collector chosen at Prompt 5.

Type in a short description of the problem. The most used description is MARKED BAD. A more detailed description can be entered into the File Header String Later.

To choose one of the examples type in its number (ie. if you type 1 the description will be ; MARKED BAD).

The format of the Short Description is a semicolon (;), a space and then the text (upper case).

- **RETURN TO PROMPT 5.** If all the suspicions scans have been accounted for enter NaN at Prompt 5 to continue processing. Otherwise choose another collector to look at.
- **Prompt 10: Description for FhdS(6,;).**

Examples:

```
1 = MOBYS ENTIRE TOP ARM IS MISSING, ALL DATA FROM TOP ARM IS BAD
2 = Bird found sitting on Surface Irradiance Collector
3 = Lu MOS and Ed Mid are saturated, Ed Top and Bot are near saturation
4 = MOBY broke from Mooring 26-27 Oct 97 and drifted towards Penguin Ba
5 = MOBY broke from Mooring 26-27 Oct 97 and was found on Penguin Bank
```

Type in a detailed description of the problem. If there are no problems with this file then press return and no comments will be entered. You can type up to 80 characters at this prompt. The next prompt is for FhdS(7,;) with space for another 80 characters.

To choose one of the examples type in a number (ie. 1). The description will be MOBYS ENTIRE TOP ARM IS MISSING, ALL DATA FROM TOP ARM IS BAD.

There is no set format for the FhdS.

- **Prompt 11: Description for FhdS(7,;).**

Examples:

```
1 = All Surface Irradiance data is not usable
2 = Lu Top, Mid and Bot and Es scans are OK
3 = Data in this file were taken while the Buoy was on Penguin Bank
4 = Data in this file were taken while the Buoy was under tow back to i
```

Type in a detailed description of the problem. If there are no problems with this file then press return and no comments will be entered. You can type up to 80 characters at this prompt. To choose one of the examples type in a number (ie. 1). The description will be All Surface Irradiance data are not usable.

There is no set format for the FhdS.

- **NMOBY_ Batch Processing of MOBY File.** Text displayed to the screen as NMOBY_ processes a MOBY file (Table 5).

NMOBY_ creates a converted (YYMMHhc.mby) and derived (YYMMDDd.mby) files. After processing, the derived file will be plotted allowing you to decide if the file should be included in the data given to NASA.

- **Prompt 12: Update the NDAILY_ file: 1=Yes, 0=No:**

For help see examples of good and bad Kl's and Lw's.

- Good Kl's and Lw's - should be included (Fig. 23)
- Good Kl's and Lw's - should be included (Fig. 24)
- Good Kl's and Lw's - should be included (Fig. 25)
- Bad Kl's and Lw's - should NOT be included (Fig. 26)

- Bad KI's and Lw's - should NOT be included (Fig. 27)
- Bad KI's and Lw's - should NOT be included (Fig. 28)
- Bad KI's and Lw's - should NOT be included (Fig. 29)

CAUTION: By choosing Yes, this file will be included in the Satellite Weighted File given to NASA. The KI's and/or Lw's must pass the test or the data should not be included. See hard copy examples of good data.

Check the KI's. Many times on cloudy days the KI's will be very high or negative. On a 'good' day all three KI's will be very close in the blue. If the data pass then the data should be included. For help see the hardcopy examples.

If YES go to **Prompt 13**

If NO **Prompt 13 is skipped**

- **Prompt 13: Choose a Water-Leaving Radiance (Lw):**

Choose a Water Leaving Radiance (Lw) from variables 40-45 in the Derived File Variable Listing (Table 6). NDAILY_ processes the chosen Water Leaving Radiance (Lw) and its associated Surface Irradiance (Es), Signal-to-Noise Ratio (SNR) and Solar Normalized Water-Leaving Radiance (Lwsn). These data are added to the Daily Satellite file given to NASA.

- **The rest of the processing does not require further inputs.** Text displayed to the screen (Table 7). This should take no longer than 6 minutes.

NLOG_ updates the Monthly FORTH LOG File.
 NAUX_ updates the Monthly Auxiliary File.
 NINTCAL_ updates the Internal Calibration File.
 NOFFSET_ updates the Blue-Red offset File.
 NHTML_ creates YYMMDDHH.mby JPG and TXT Files.
 NHTML_ updates Engineering Image Files.
 NHTML_ updates Scientific Image Files.
 NHTML_ updates Internal Calibration Image Files.
 MBYHTML_ creates YYMMDDHH.mby HTML Files.
 DLYHTML_ updates MOBYXXX.htm File.
 DLYHTML_ updates MBYMBX.htm File.
 DLYHTML_ updates GOES9HAW.htm File and copy JPG images.
 DLYHTML_ updates CONVERT.HTM and CNVYYMMx.HTM Files.
 DLYHTML_ copies the FORTH LOG files.

- **Exit Matlab by typing exit at the command line and continue.**

>> exit

5) Put HTML and JPG files on the MOBY homepage

- **Open the WS_FTP95 program and choose the 'mlml MOBY homepage' profile then OK to connect** to the MLML DecStation (color.mlml.calstate.edu) using the WEBMASTER username and password.
- **Use the Local System Date button to list the files by date modified.**

- **Select all the files modified today.**
- **Transfer all selected files as AUTO.**
- **Close connection and exit the Program.**
- **Open Netscape and check all the new MOBY homepages by clicking on MOBY data on the Physical Oceanography Homepage..**
 - Under Engineering Time Series check the FORTH LOG maps of MOBY's position. It should be in the normal 1 km diameter watch circle. If not call Mark Yarbrough in Hawaii. Also check FORTH LOG Humidity and battery voltages.
 - Check the Scientific Time Series (Make sure the data are in the same range as previous data).
 - Check the GOES 9 Hawaii Visible Images (Make sure all the links work).
 - Check the Explanation of MBY and MBX file extensions (make sure the dates are correct).
 - Look at the individual MOBY file pages (make sure the File Header, Variable Descriptions, FORTH LOG, and all images are there and correct).

MOBY Processing Scheme

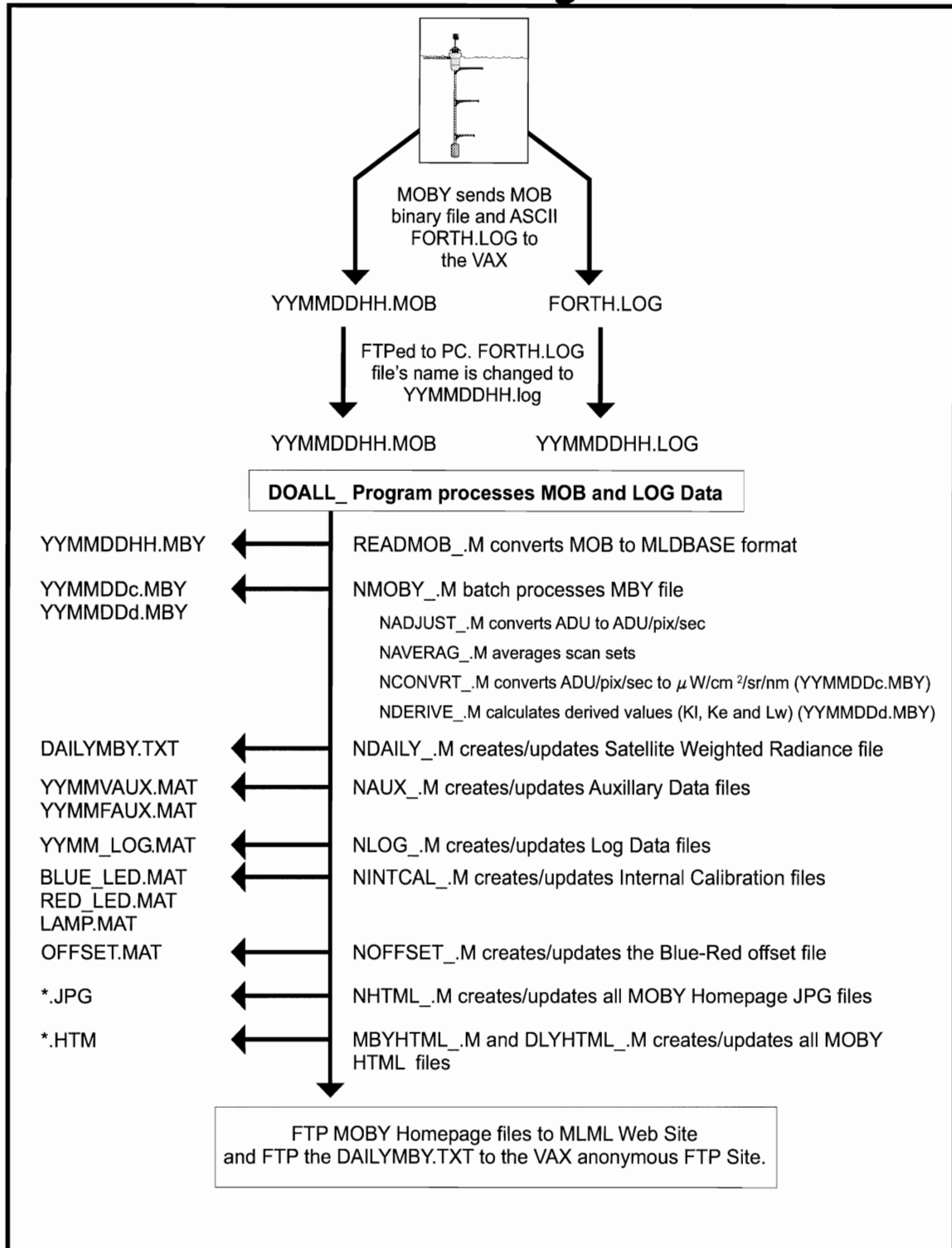


Figure 1

MOBY Schematic

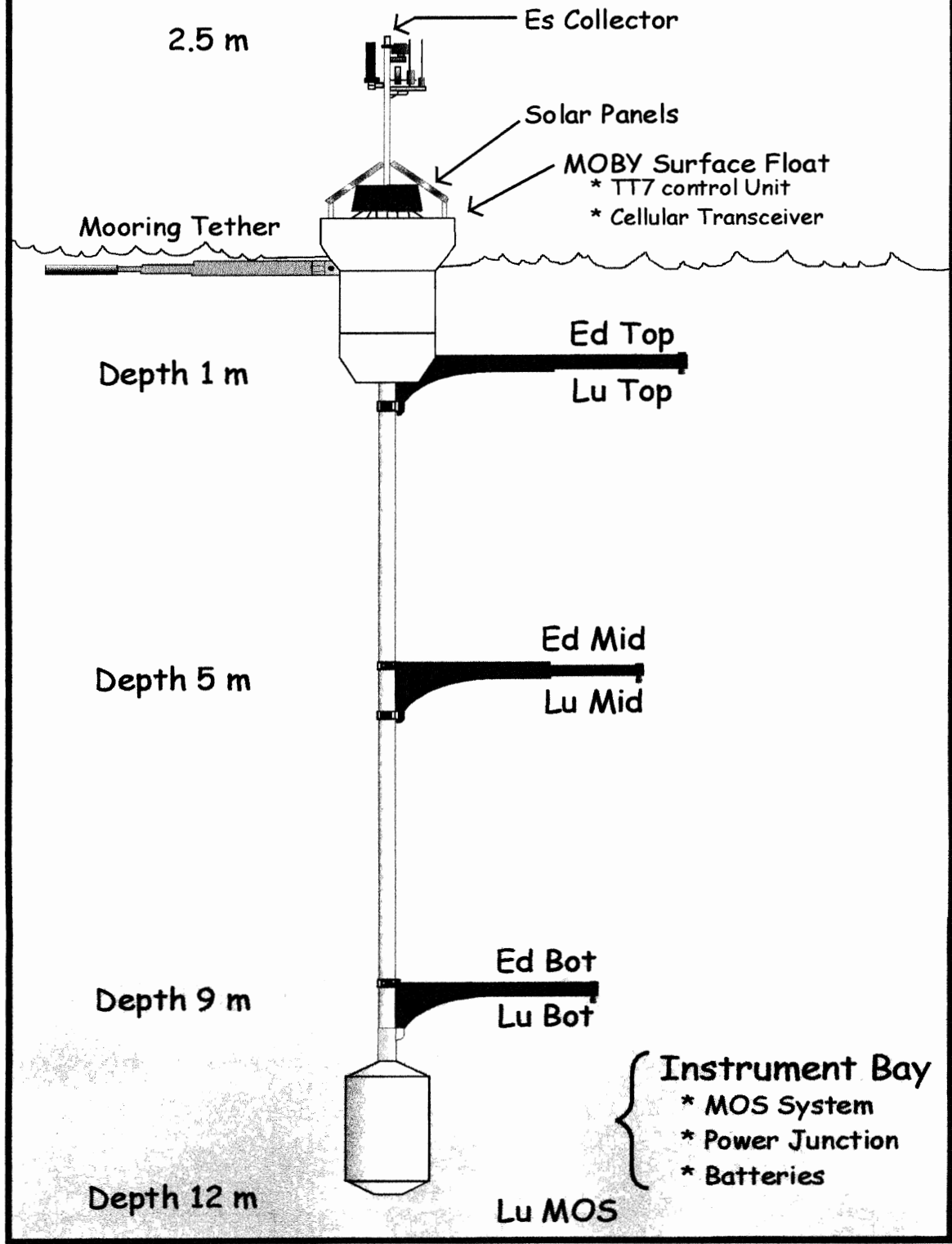


Figure 2

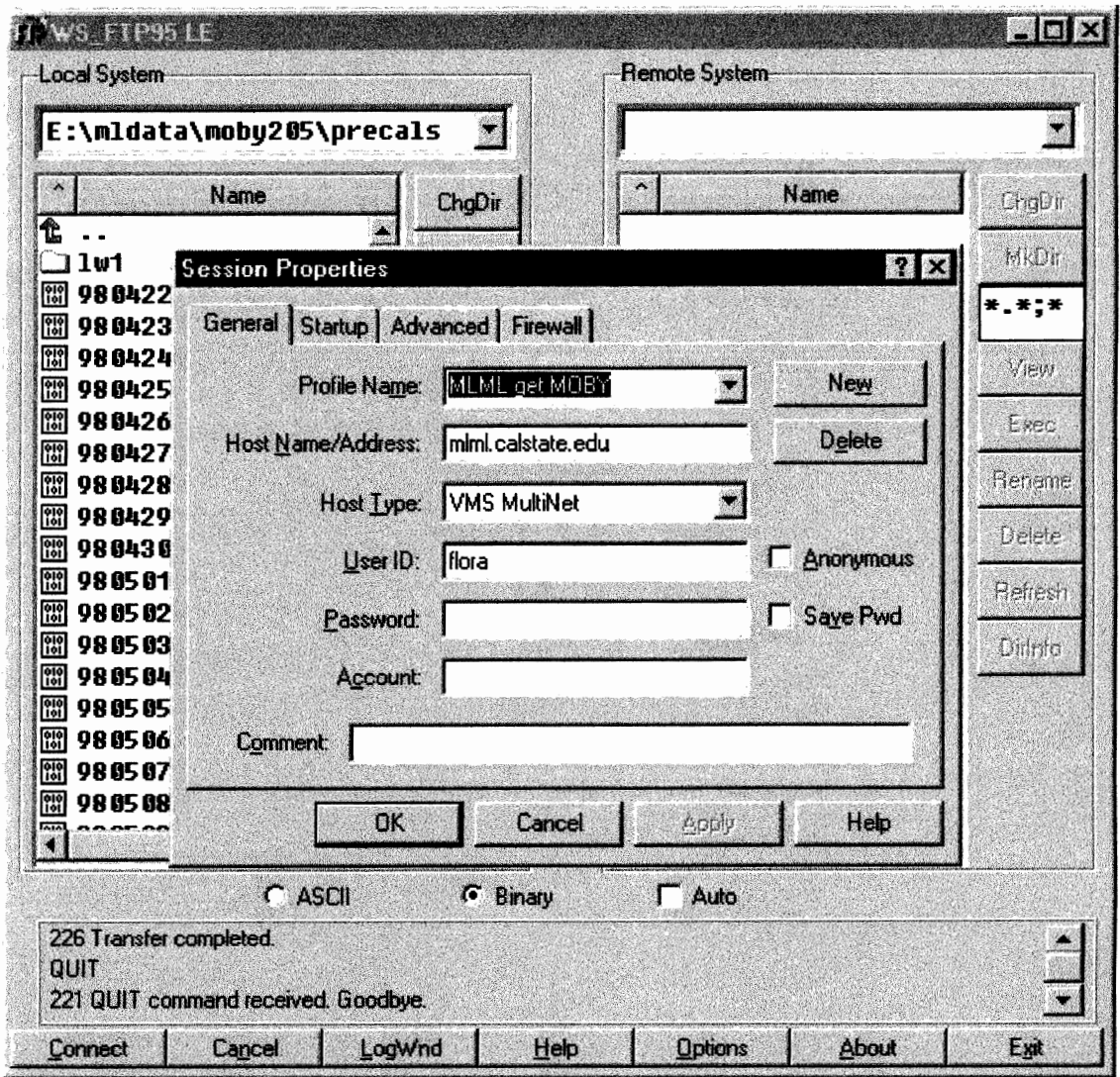


Figure 3: WS_FTP95 Program with the MLML get MOBY profile

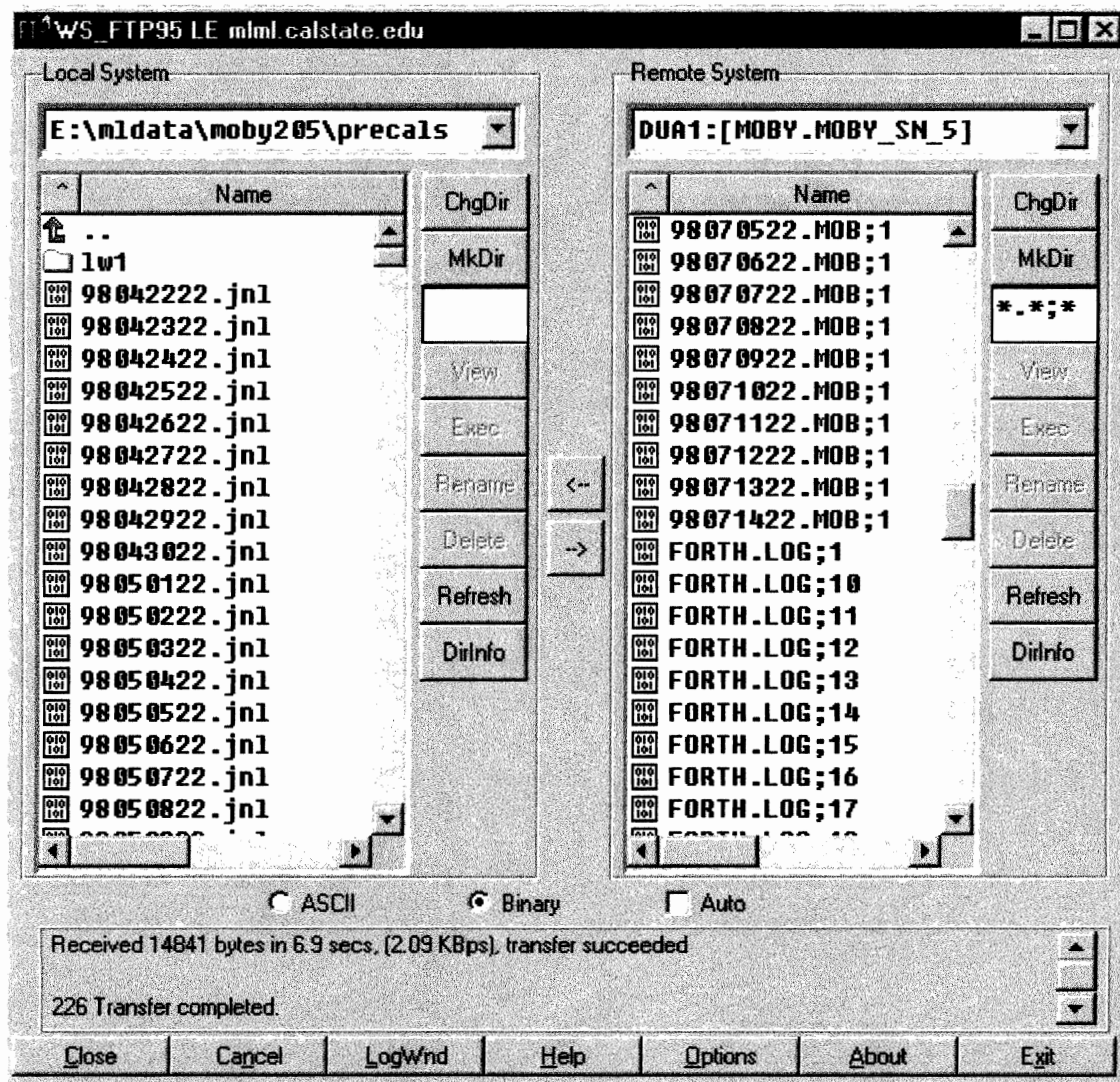


Figure 4: WS_FTP95 with *.*;* typed in the Remote System Filter Mask Box

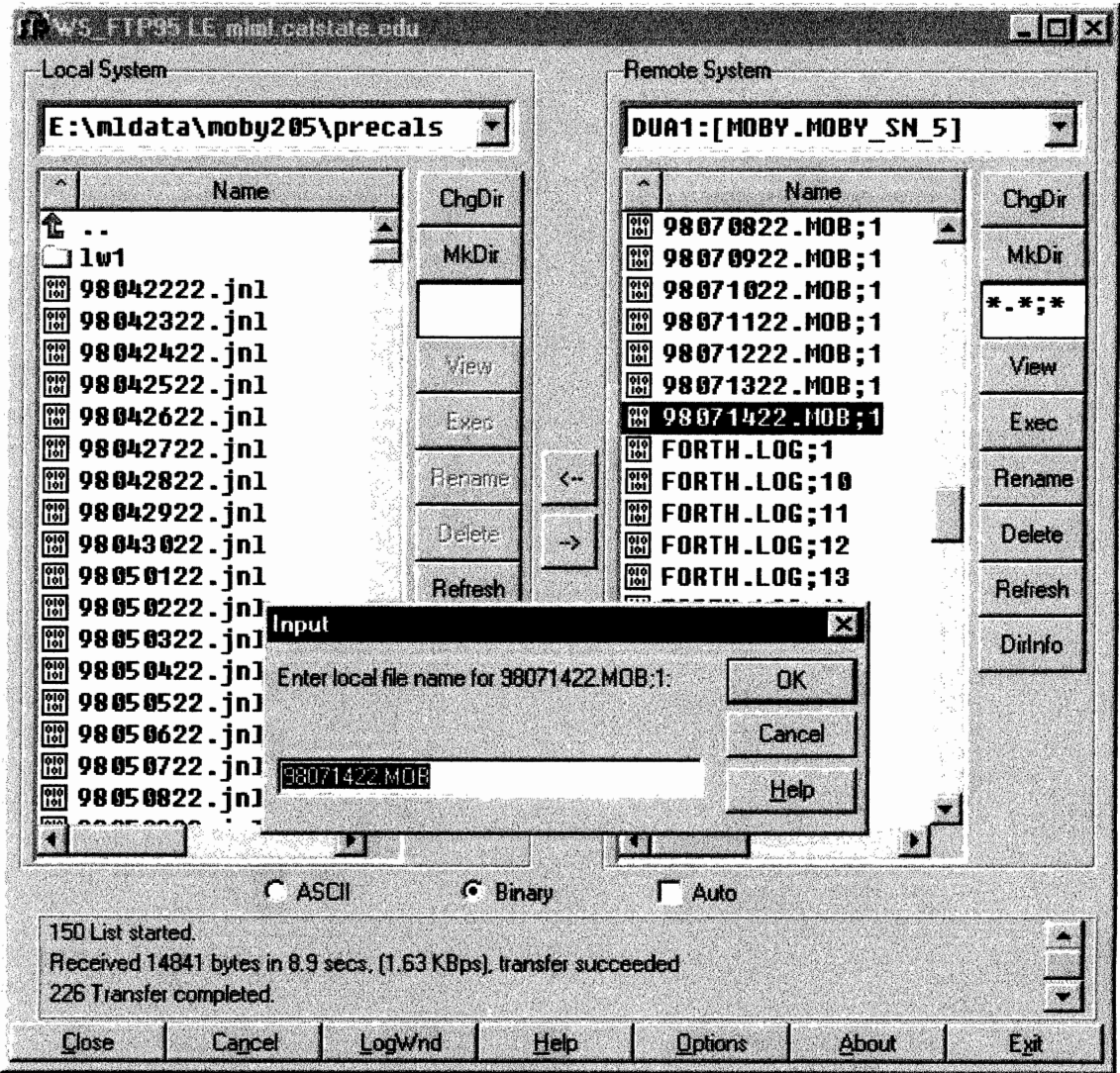


Figure 5: WS_FTP95 Tranfering a MOB file as binary

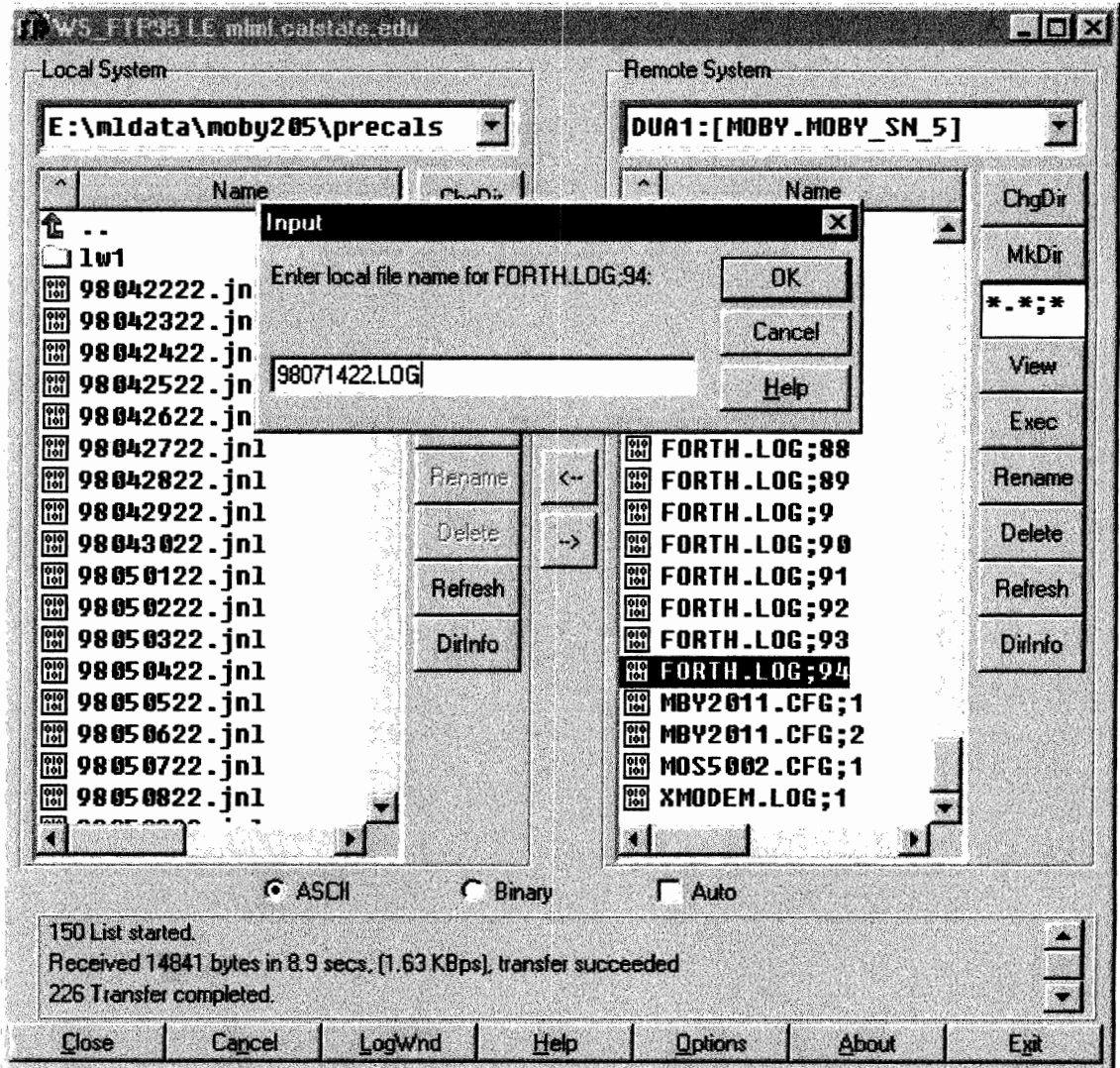


Figure 6: WS_FTP95 Tranfering a LOG file as ASCII and changing it's name in the Input box.

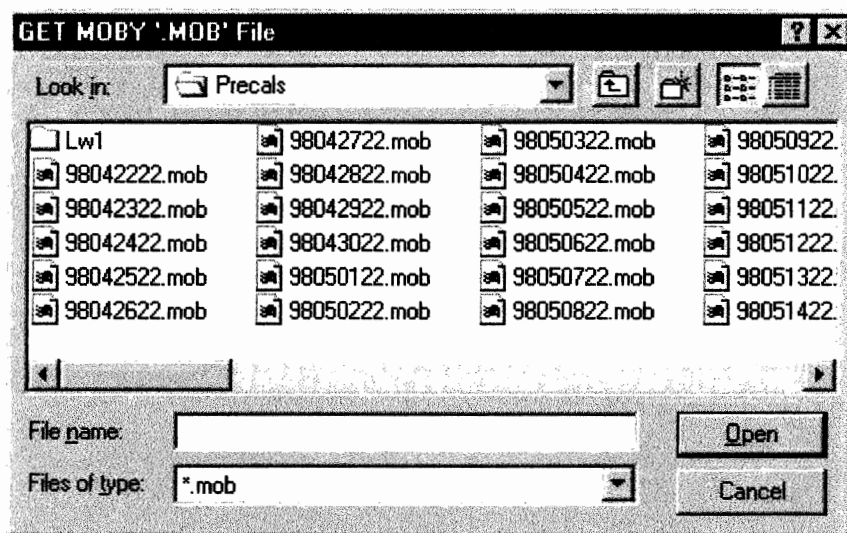


Figure 7: A standard Matlab open file dialog box

MOBY205: MOBY's Top Arm is Missing

LuTop and EdTop ADU's equal dark counts or are only a few hundred counts above dark.
Upper Arm Depth changed dramatically (went from about 2 m to -0.5 m).
All other sensors and collectors appear normal.

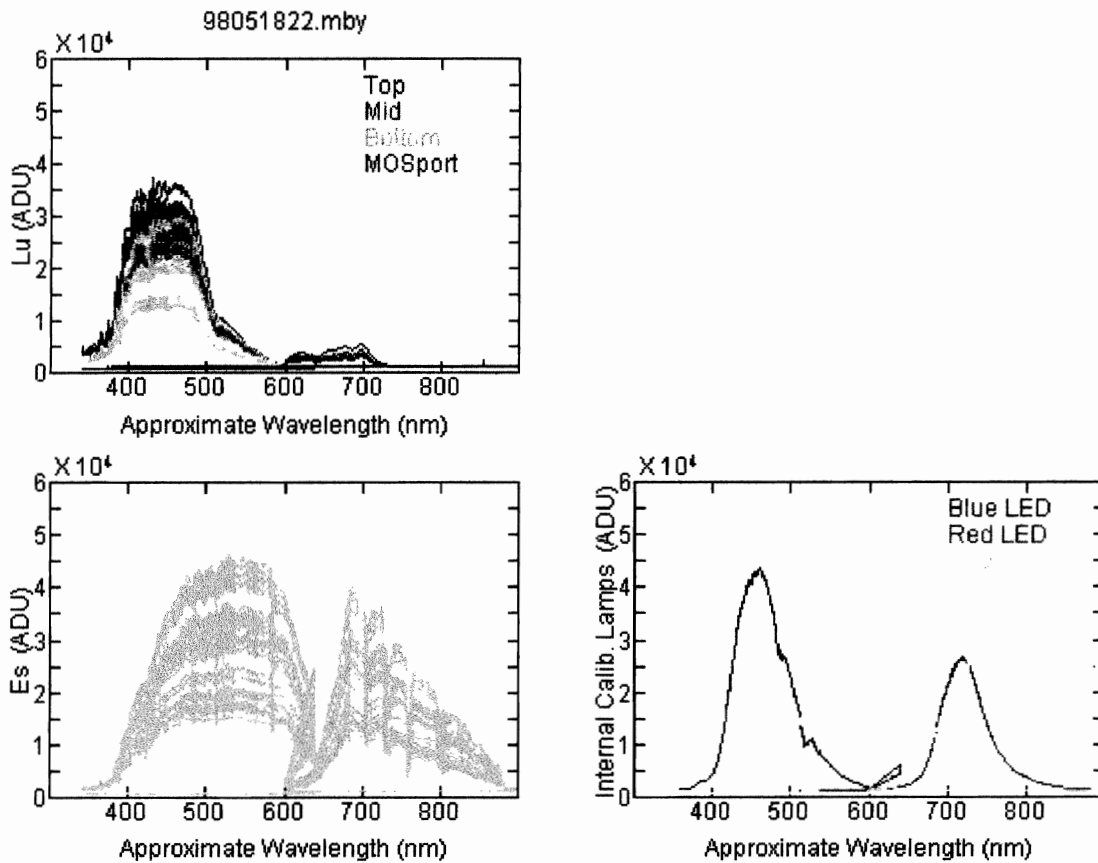


Figure 8: MOBY's Top Arm is Missing

LuTop Arm Out of the Water

Scans are too high.

Scans are more rounded, like Es scans. Normal Lu Scans, such as LuMid and LuBot, have a boxy appearance.

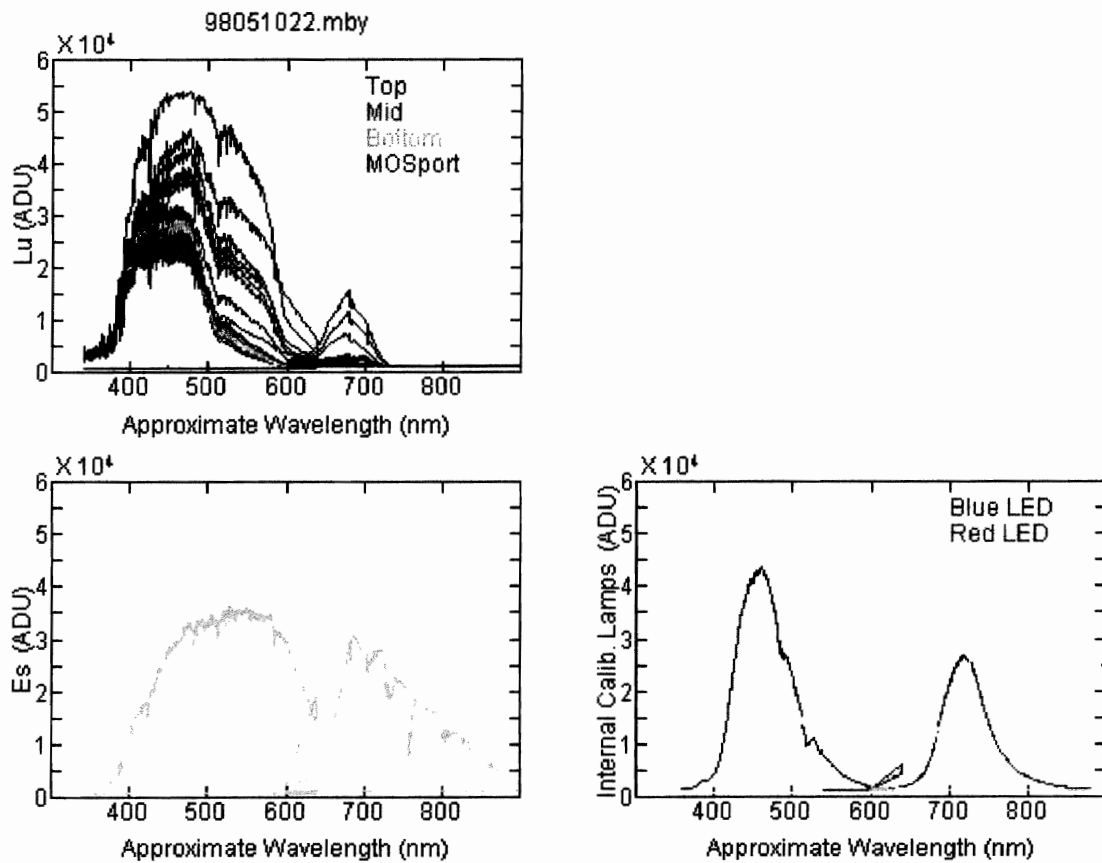


Figure 9: LuTop Arm Out of the Water

LuTop Arm Out of the Water

Scans are too high, most notably in the red.

Scans are more rounded, like Es scans. Normal Lu Scans, such as LuMid and LuBot, have a boxy appearance.

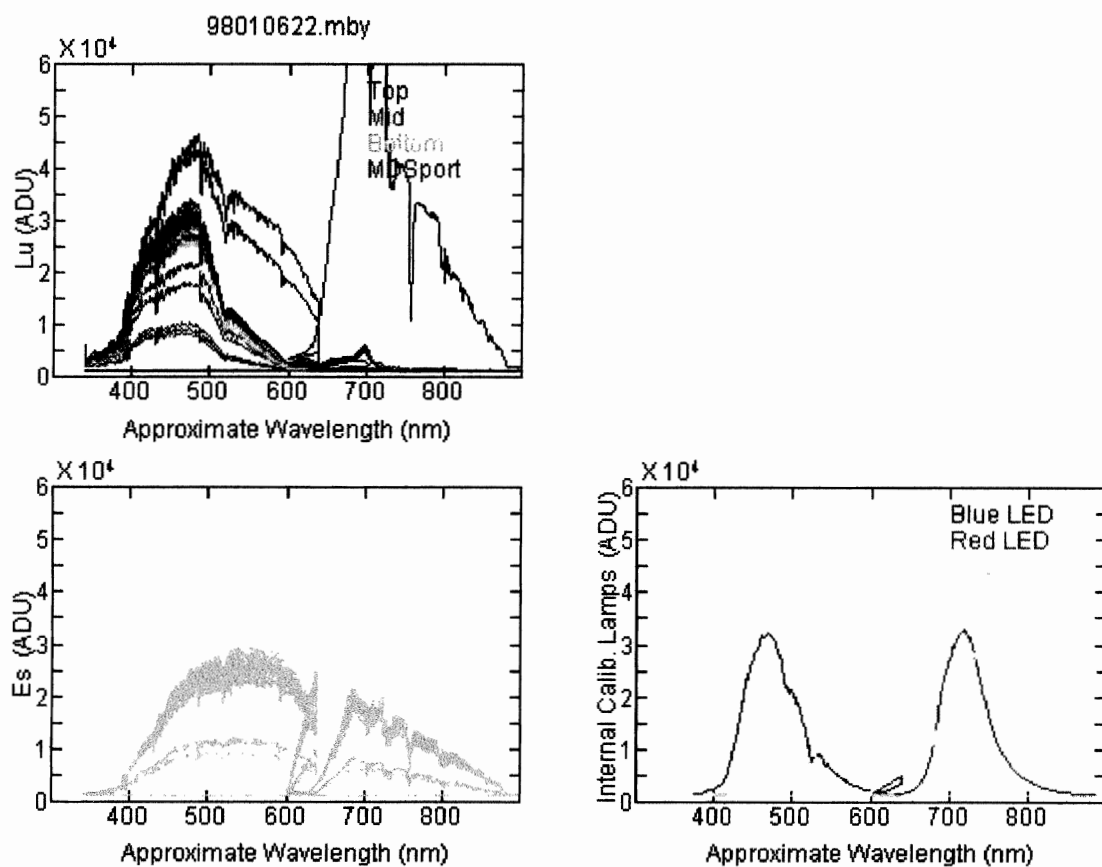


Figure 10: LuTop Arm out of the water

LuTop Arm Out of the Water

Scans are too high.

Scans are more rounded, like Es scans. Normal Lu Scans, such as LuMid and LuBot, have a boxy appearance.

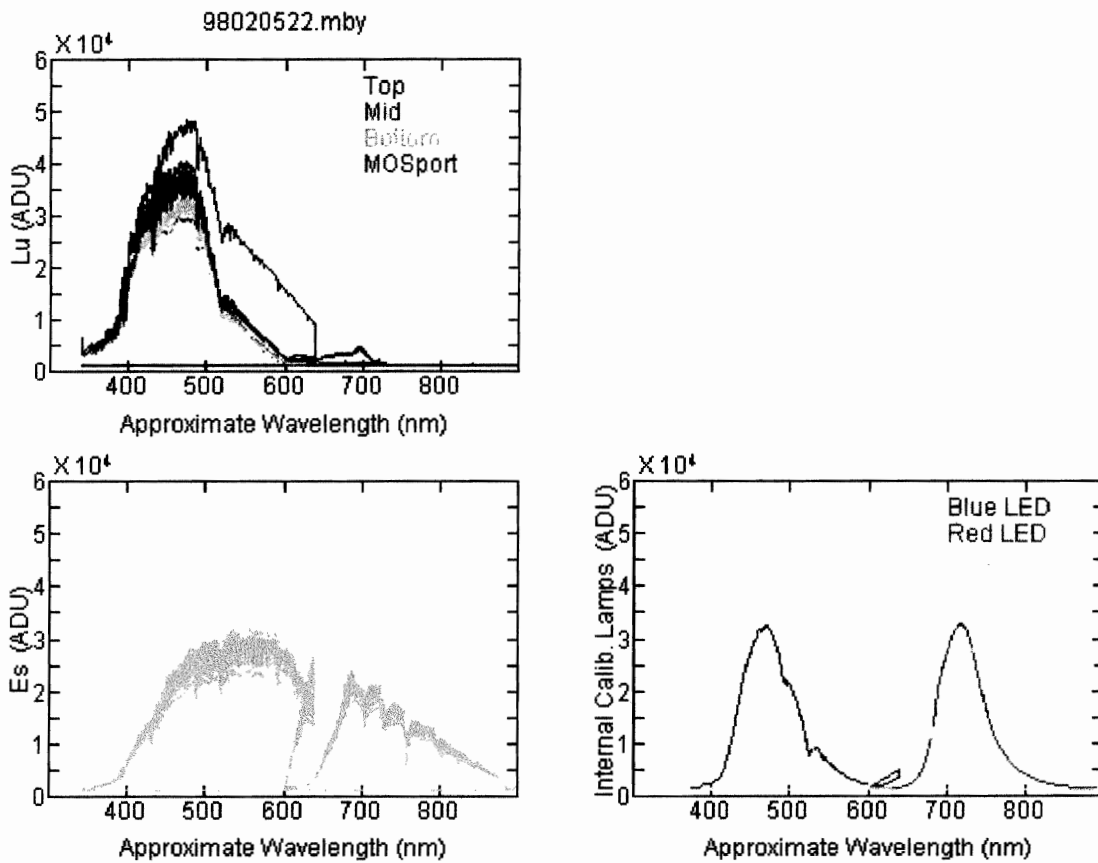


Figure 11: LuTop Arm out of the water

Unusual Peaks in Red for LuMOS

Noticeably higher peak in the red at ~698 nm associated with lower blue values.

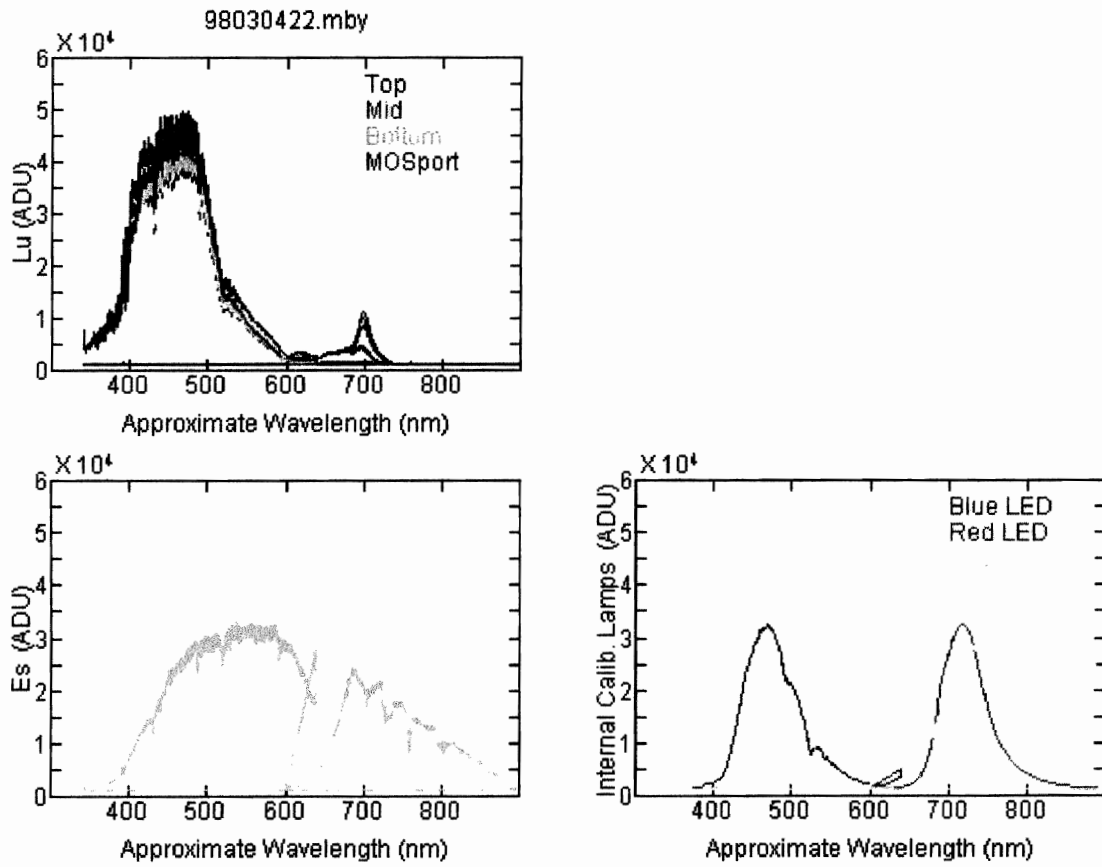


Figure 12: Unusual Peaks in Red for LuMOS

Unusual Peaks in Red and Blue for LuMOS and LuBot

Noticeably higher values in the red and blue which do not look like normal scans.

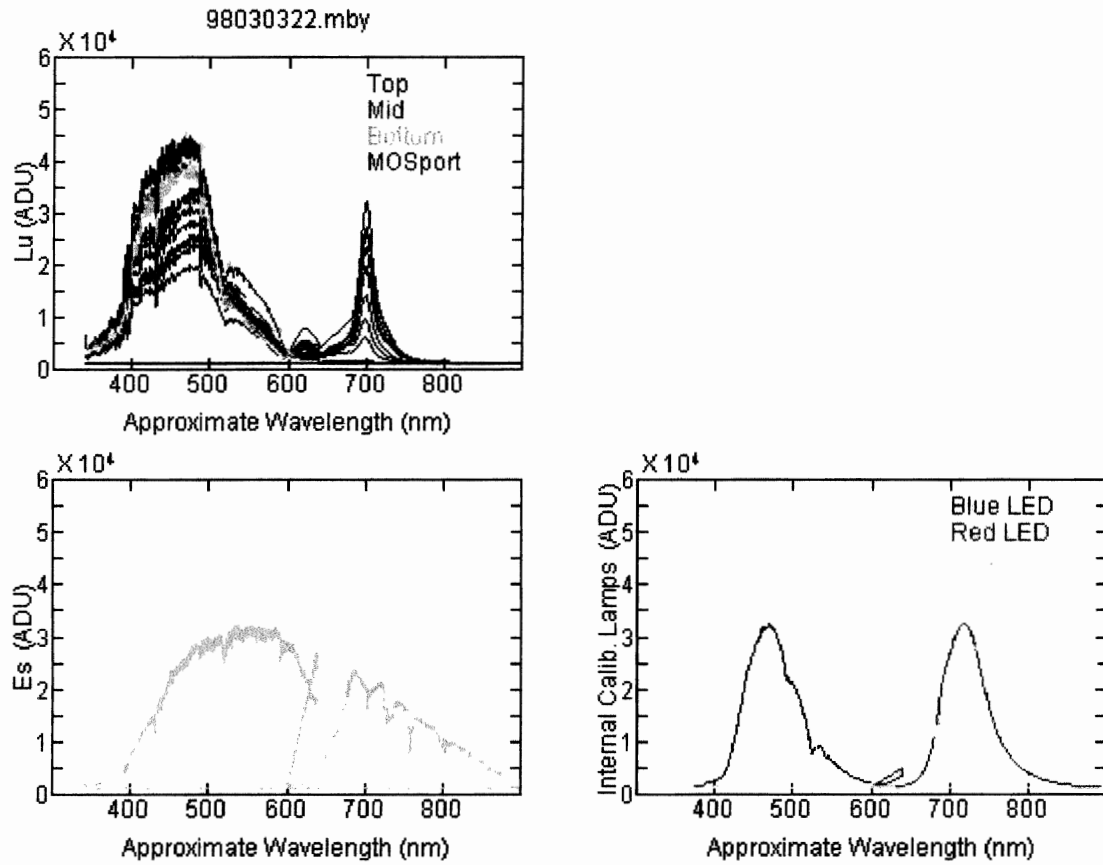


Figure 13: Unusual Peaks in Red and Blue for LuMOS and LuBot

Unusual Peaks in Red for LuMOS

Noticeably higher peak in the red at ~698 nm associated with lower blue values.

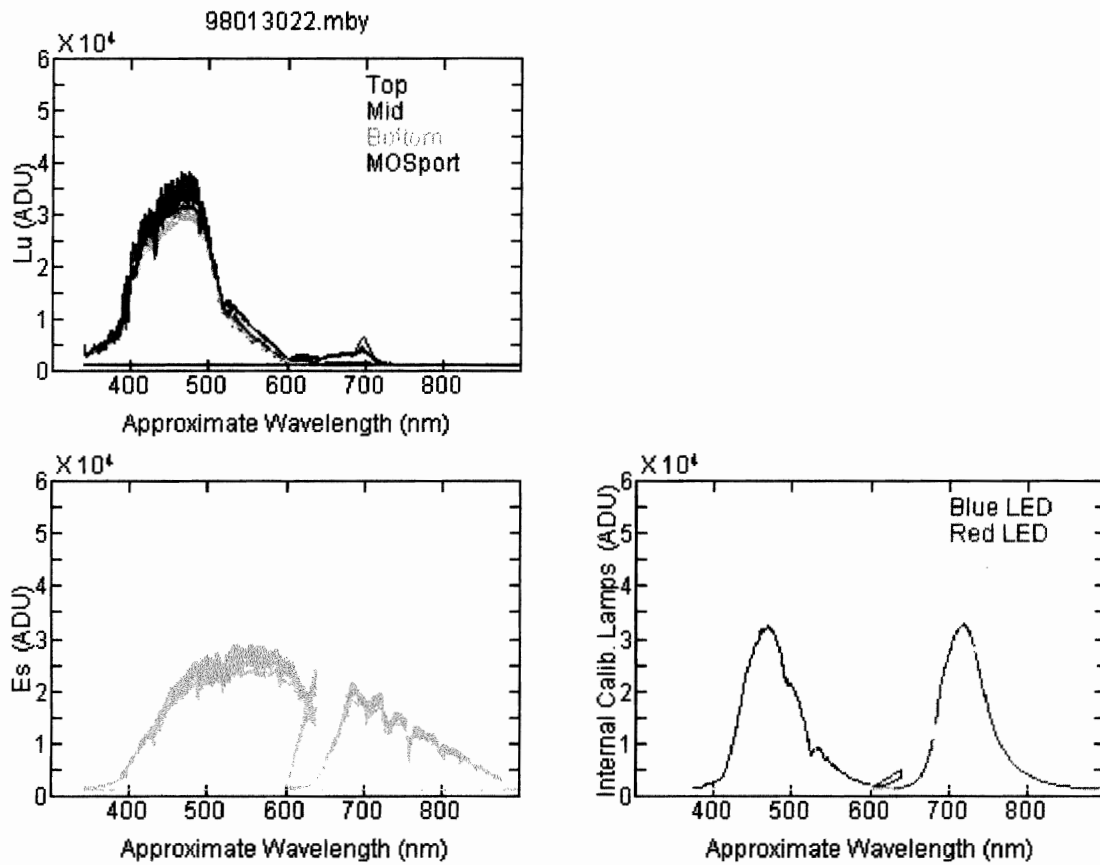


Figure 14: Unusual Peaks in Red for LuMOS

Unusual Peaks in Red for LuMOS

Higher flatish peaks in the red associated with lower blue values.

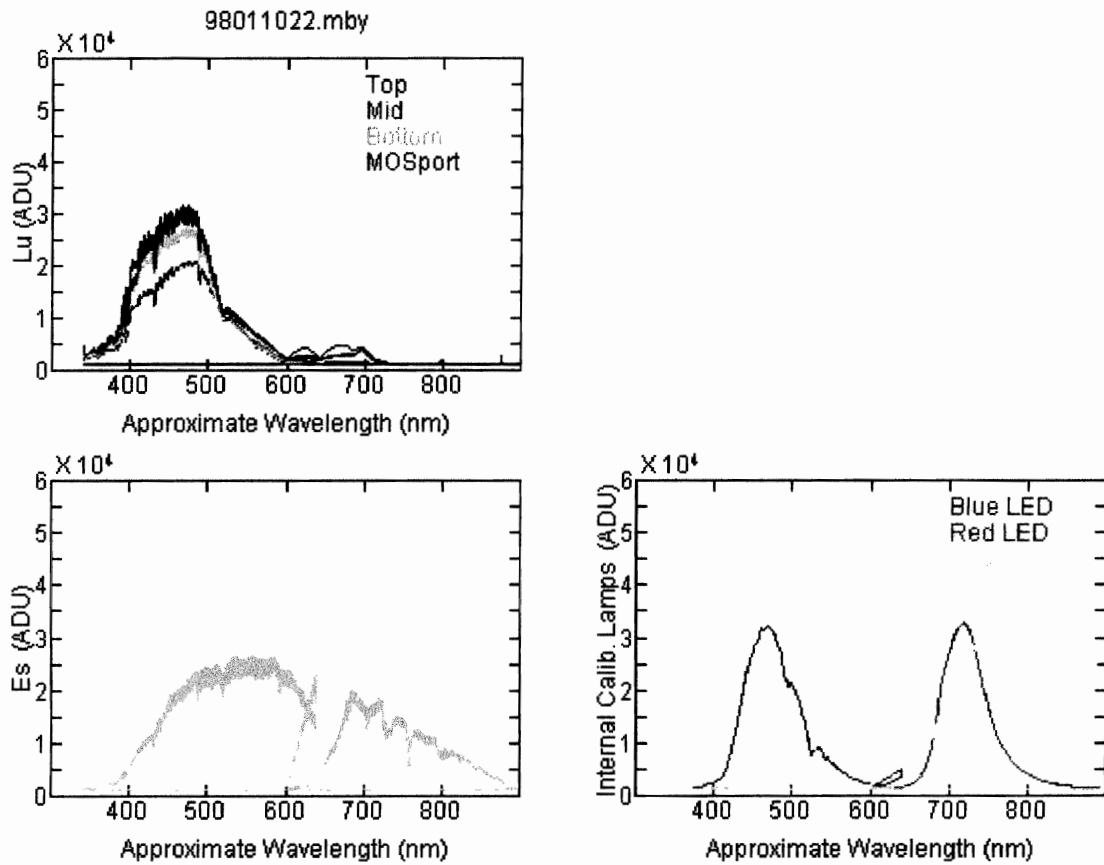


Figure 15: Unusual Peaks in Red for LuMOS

Dead Battery

All scans are affected. In general a mess.
Lower Battery voltage is less than 11.

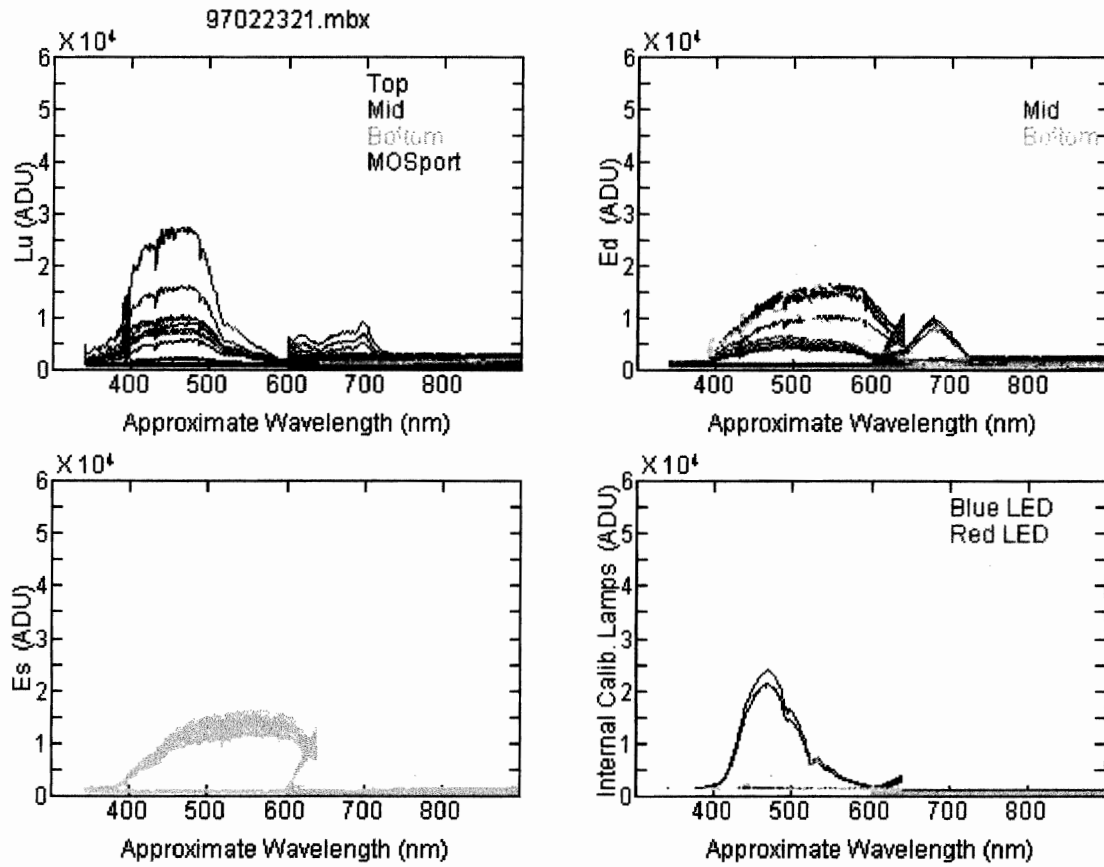


Figure 16: Dead Battery

Dead Battery

All scans are affected. In general a mess.
Lower Battery voltage is less than 11.

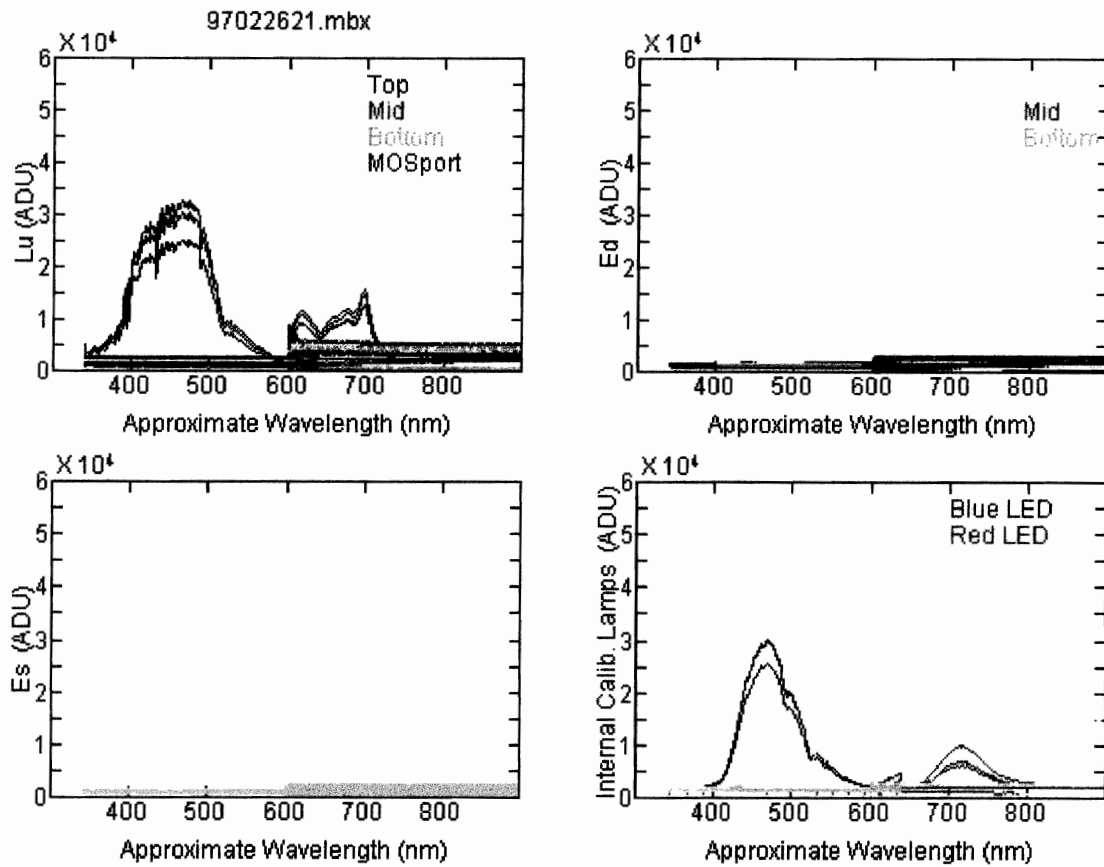


Figure 17: Dead Battery

MOBY202: No MUX Position Problems (a good day)
Note the position of the black line over Es blue spectrum.

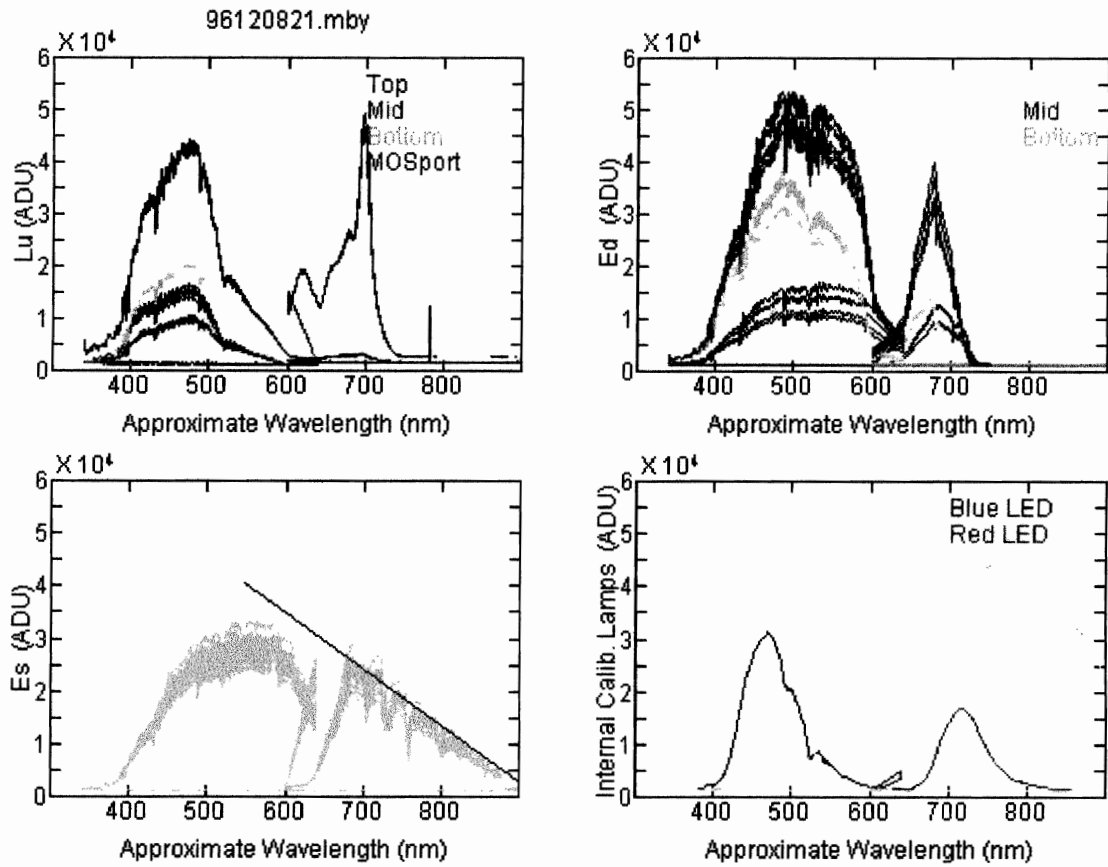


Figure 18: No MUX Position Problems (a good day)

MOBY202: MUX Position off by One

Collectors on MUX (LuTop, LuMid, LuBot, EdTop, EdMid, EdBot and Es) are low (could be mistaken for a cloudy day).

Note the position of the black line over Es blue spectrum. The red spectrophotograph data are reduced more than the blue. This is the signature of the MUX position being off by one.

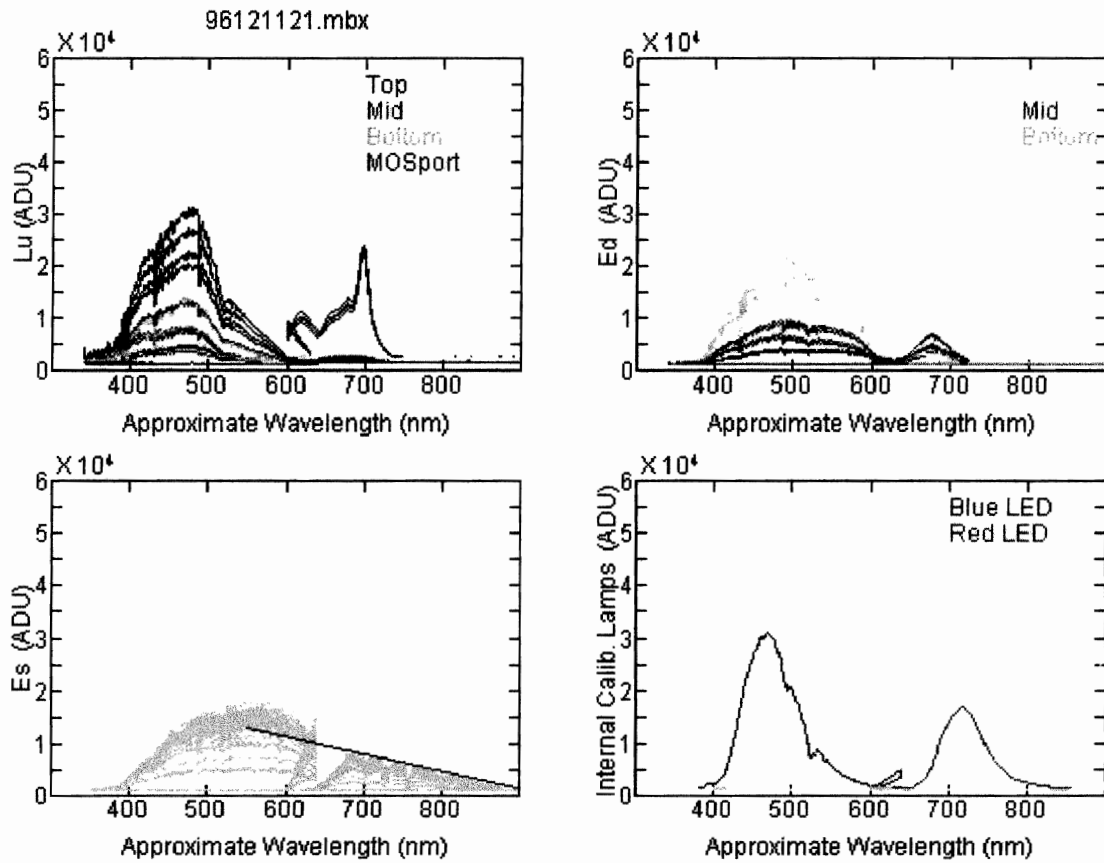


Figure 19: MUX Position off by One

MOBY202: MUX Position off by Two

A file with it's MUX position off by two is usually proceeded by a file with the MUX position off by One.

All collectors except LuMOS are affected.

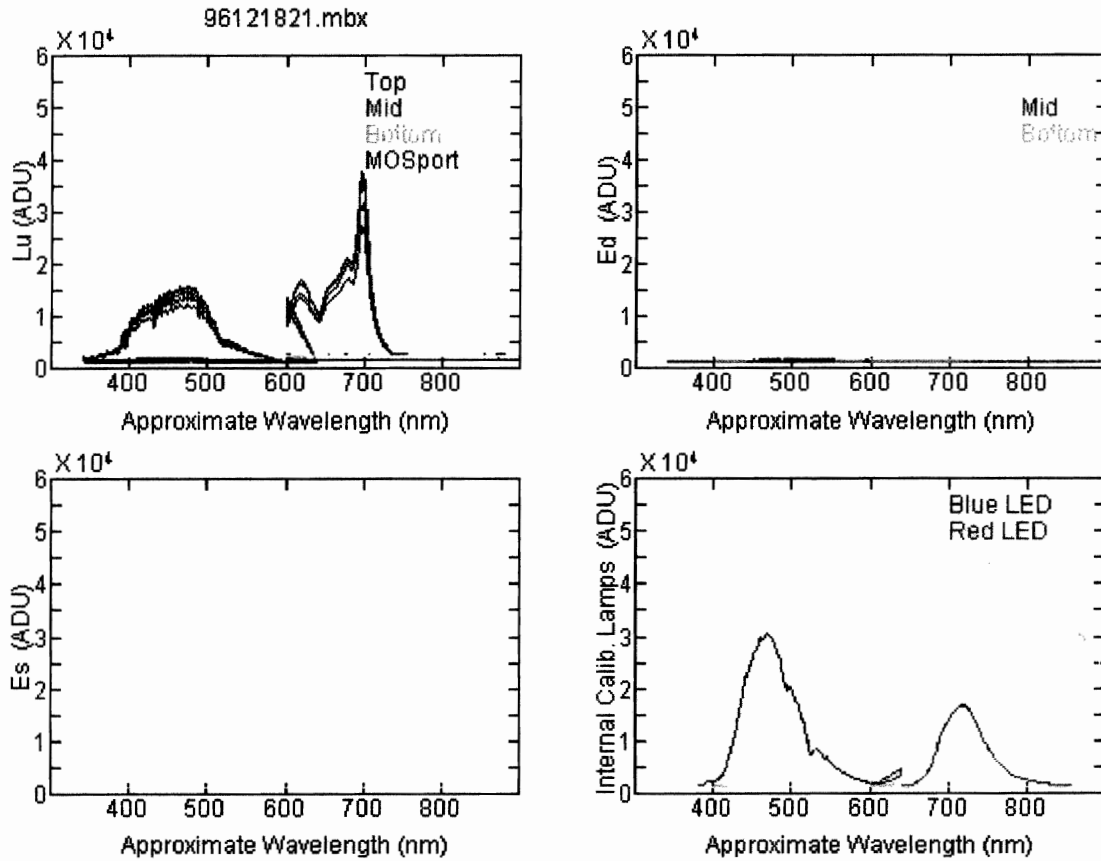


Figure 20: MUX Position off by Two

MOBY203: Bird Sitting on Es Collector

Es data are only a few hundred counts above dark.

All other collectors appear normal.

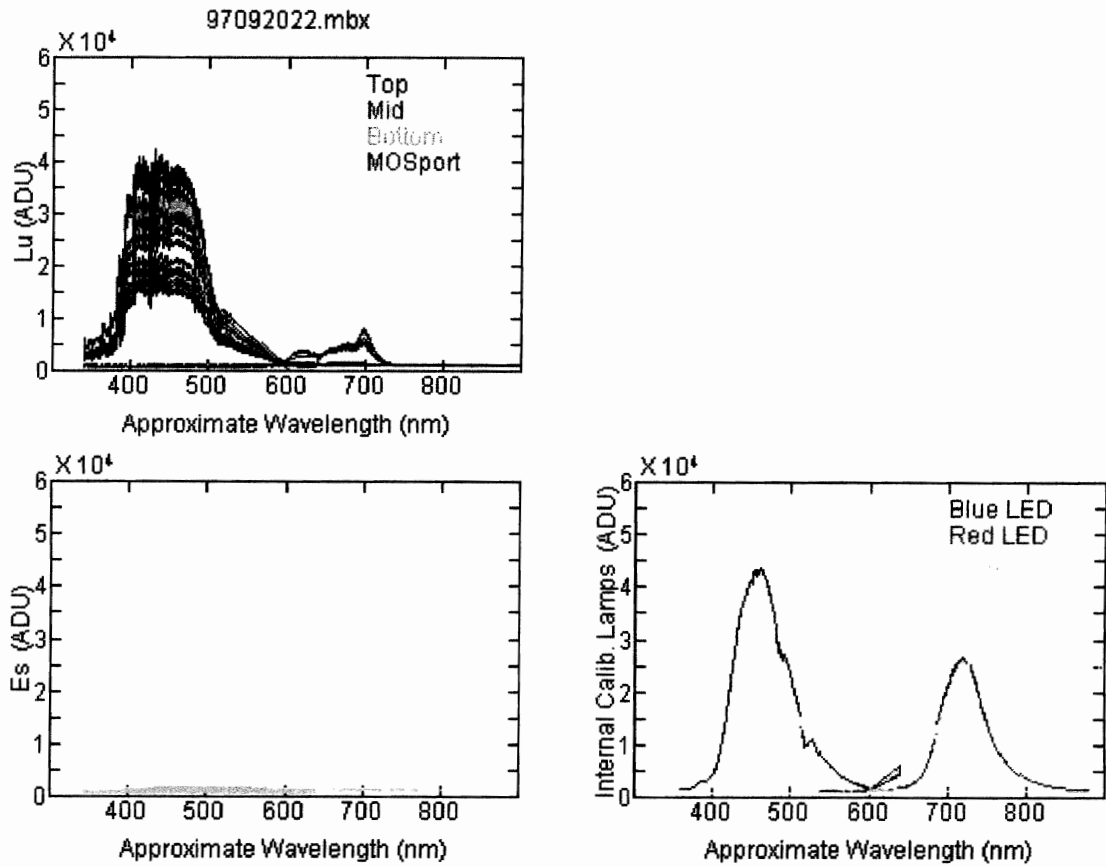


Figure 21: Bird Sitting on Es Collector

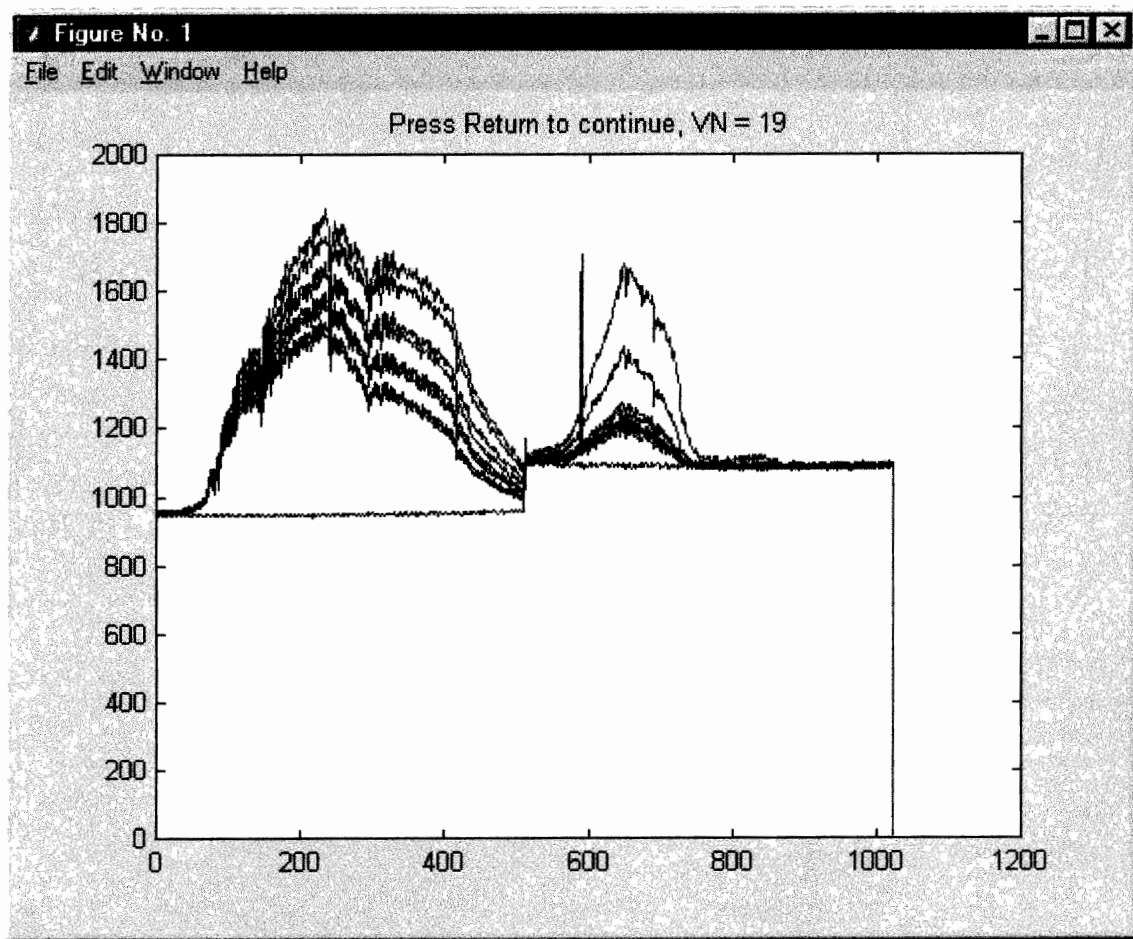
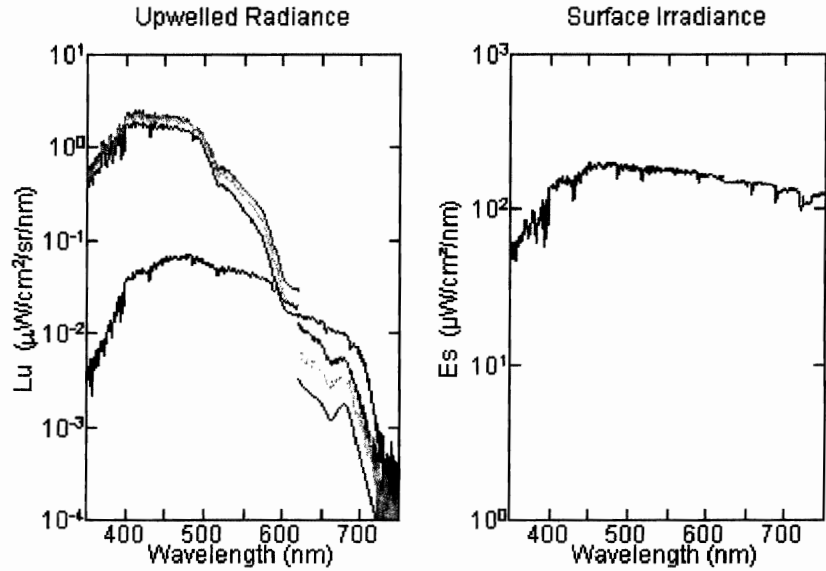


Figure 22: Plot of suspicious data from chosen collector

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m —	POSITION: 20° 49.4' N 157° 12.0' W
STATION: Lanai Mooring	MID 5 m —	DATE: 22:41 (GMT) 22 May 1998
	BOT 9 m —	
	MOS 11 m —	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m —	POSITION: 20° 49.4' N 157° 12.0' W
STATION: Lanai Mooring	T-B 1 to 9 m —	DATE: 22:41 (GMT) 22 May 1998
	W-B 5 to 9 m - - -	

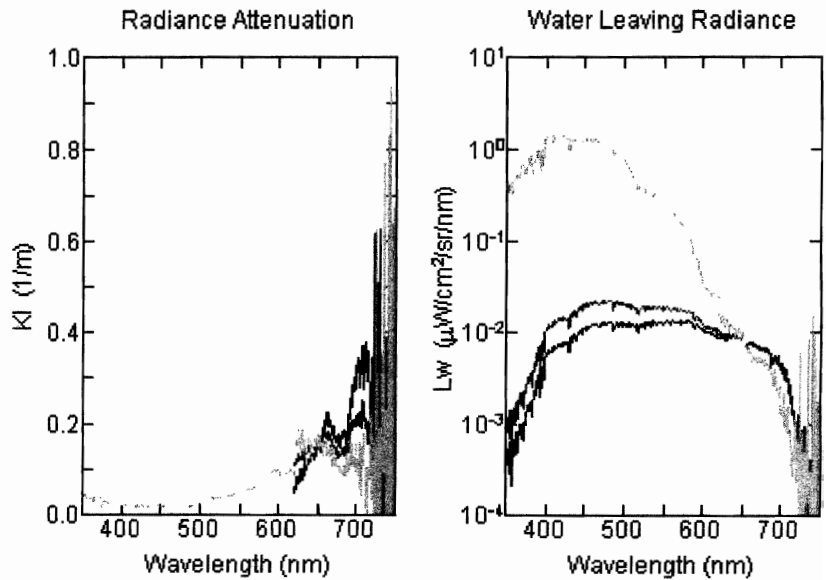
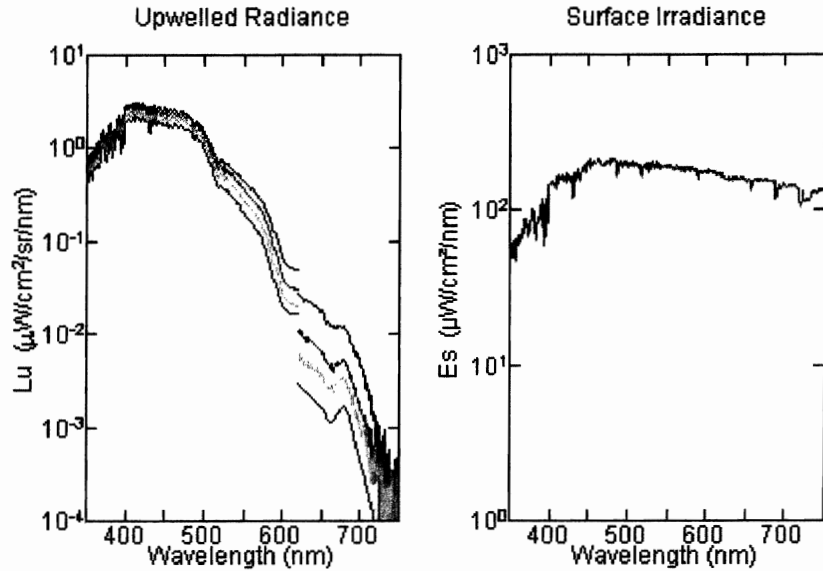


Figure 23: Good Kl's and Lw's - should be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m —	POSITION: 20° 49.4' N 157°11.9' W
STATION: Lanai Mooring	MID 5 m —	DATE: 22:41 (GMT) 02 May 1998
	SCIT 9 m —	
	MOS 11 m —	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m —	POSITION: 20° 49.4' N 157°11.9' W
STATION: Lanai Mooring	T-B 1 to 9 m —	DATE: 22:41 (GMT) 02 May 1998
	M-B 5 to 9 m - - -	

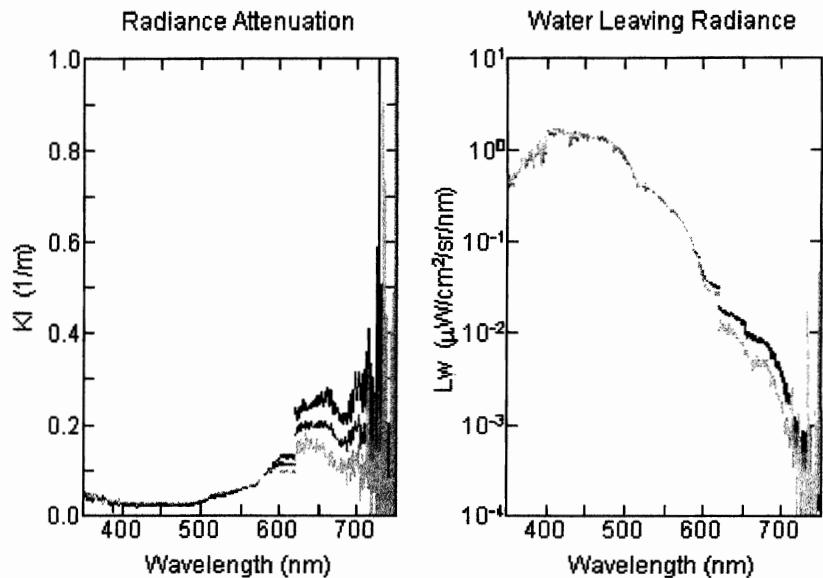
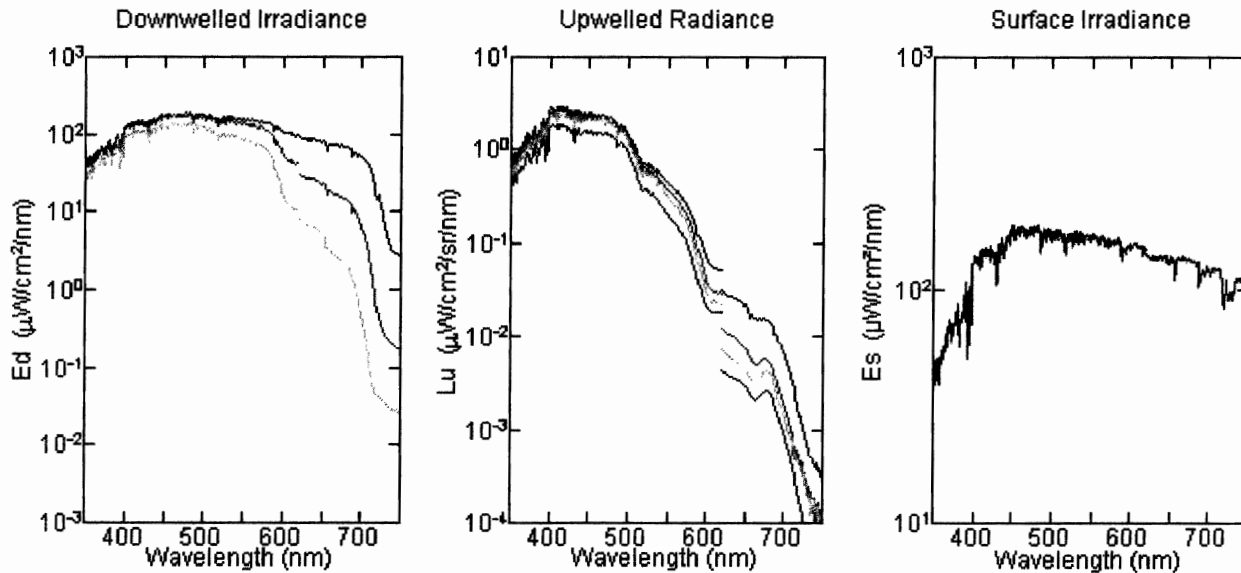


Figure 24: Good Kl's and Lw's - should be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 03 CONFIG: 01	TOP 1 m	---	POSITION: 20° 48.4' N 157° 11.4' W
STATION: Lanai Mooring	MID 5 m	---	DATE: 22:11 (GMT) 23 Jul 1997
	ICT 9 m	---	
	MOS 11 m	---	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 03 CONFIG: 01	T-M 1 to 5 m	---	POSITION: 20° 48.4' N 157° 11.4' W
STATION: Lanai Mooring	T-B 1 to 9 m	---	DATE: 22:11 (GMT) 23 Jul 1997
	M-B 5 to 9 m	---	

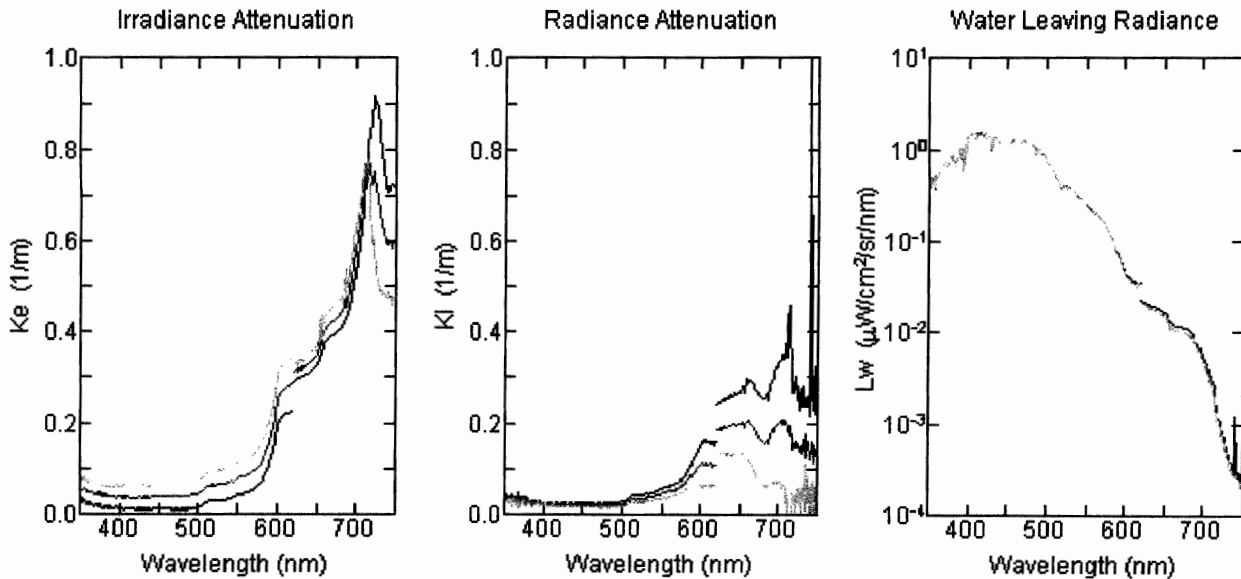
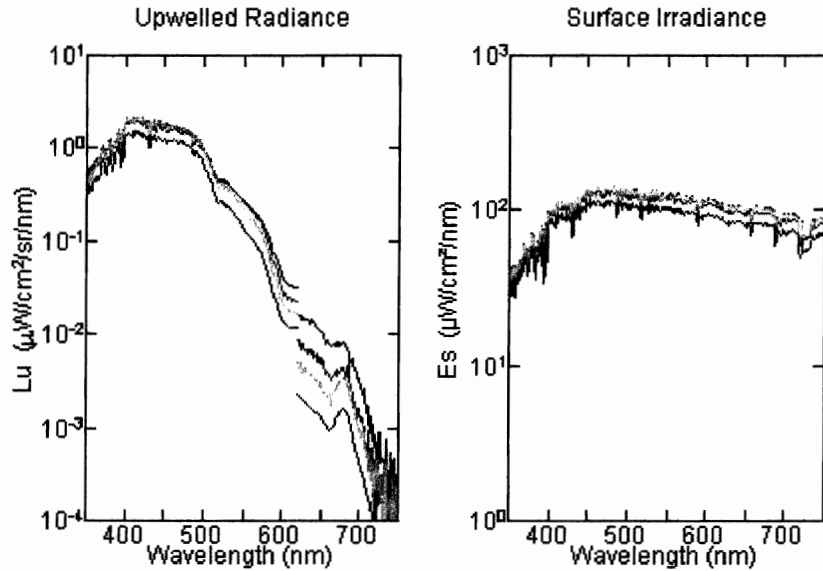


Figure 25: Good K_l 's and L_w 's - should be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m —	POSITION: 20° 49.5' N 157°11.8' W
STATION: Lanai Mooring	MID 5 m —	DATE: 22:41 (GMT) 03 May 1998
	SCF 9 m - -	
	MOS 11 m —	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m —	POSITION: 20° 49.5' N 157°11.8' W
STATION: Lanai Mooring	T-B 1 to 9 m —	DATE: 22:41 (GMT) 03 May 1998
	M-B 5 to 9 m - -	

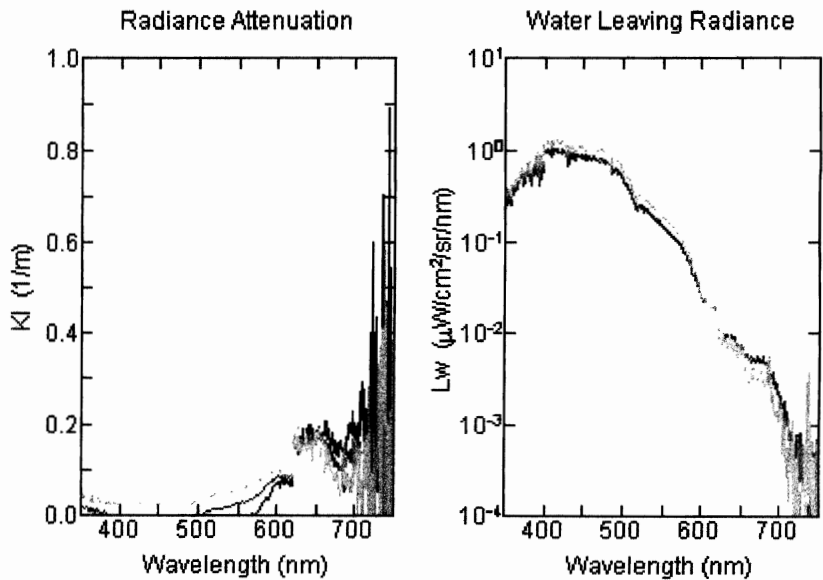
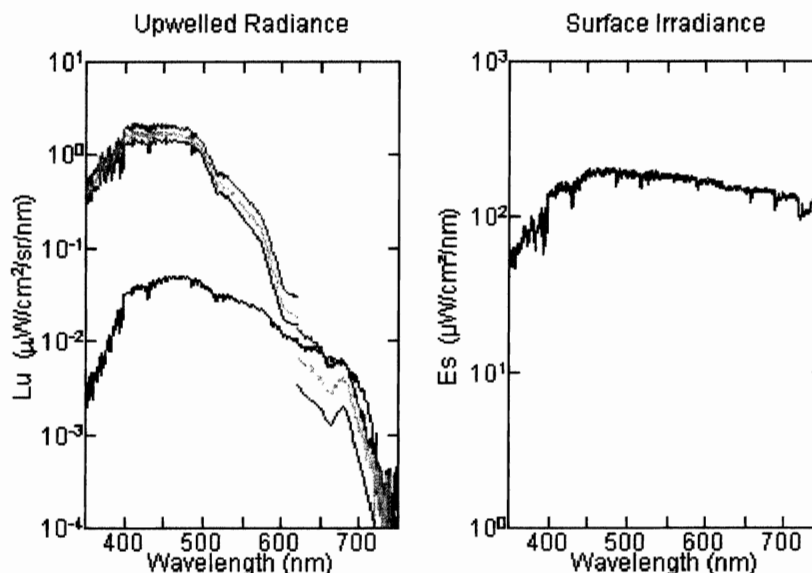


Figure 26: Bad Kl's and Lw's - should not be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m ———	POSITION: 20° 48.9' N 157°12.1' W
STATION: Lanai Mooring	MID 5 m ———	DATE: 22:41 (GMT) 26 May 1998
	BOT 9 m - - -	
	MOS 11 m ———	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m ———	POSITION: 20° 48.9' N 157°12.1' W
STATION: Lanai Mooring	T-B 1 to 9 m ———	DATE: 22:41 (GMT) 26 May 1998
	M-B 5 to 9 m - - -	

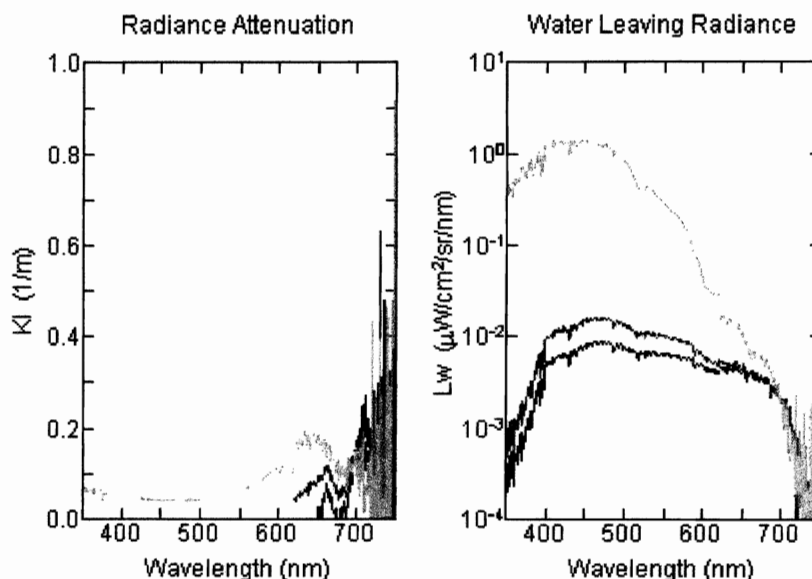
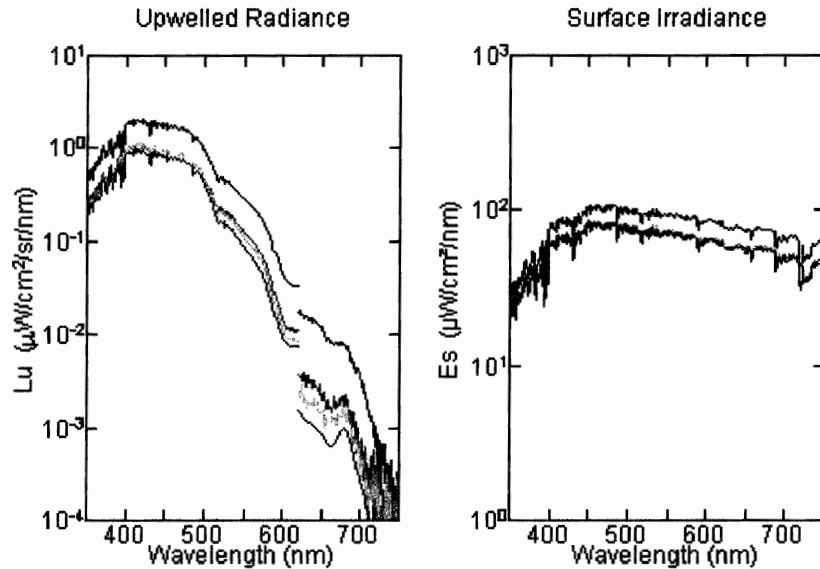


Figure 27: Bad Kl's and Lw's - should not be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m —	POSITION: 20° 48.9' N 157° 11.0' W
STATION: Lanai Mooring	MID 5 m —	DATE: 22:41 (GMT) 12 May 1998
	BOT 9 m —	
	MOS 11 m —	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m —	POSITION: 20° 48.9' N 157° 11.0' W
STATION: Lanai Mooring	T-B 1 to 9 m —	DATE: 22:41 (GMT) 12 May 1998
	M-B 5 to 9 m - -	

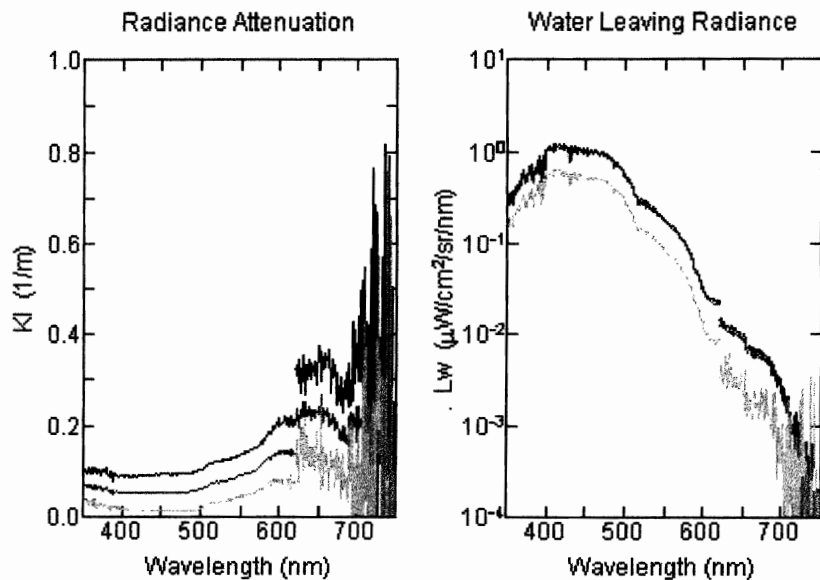
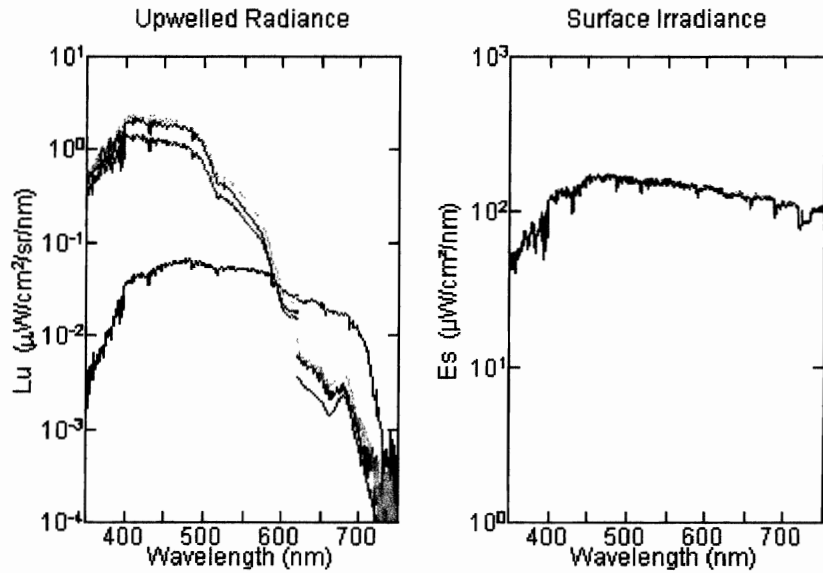


Figure 28: Bad Kl's and Lw's - should not be included

MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	TOP 1 m —	POSITION: 20° 49.5' N 157°11.8' W
STATION: Lanai Mooring	MID 5 m —	DATE: 22:41 (GMT) 13 Jun 1998
	SC1 9 m —	
	MOS 11 m —	



MODIS Marine Optical Buoy NOAA/MLML

MOBY2 DEPLOYMENT: 05 CONFIG: 01	T-M 1 to 5 m —	POSITION: 20° 49.5' N 157°11.8' W
STATION: Lanai Mooring	T-B 1 to 9 m —	DATE: 22:41 (GMT) 13 Jun 1998
	M-B 5 to 9 m - - -	

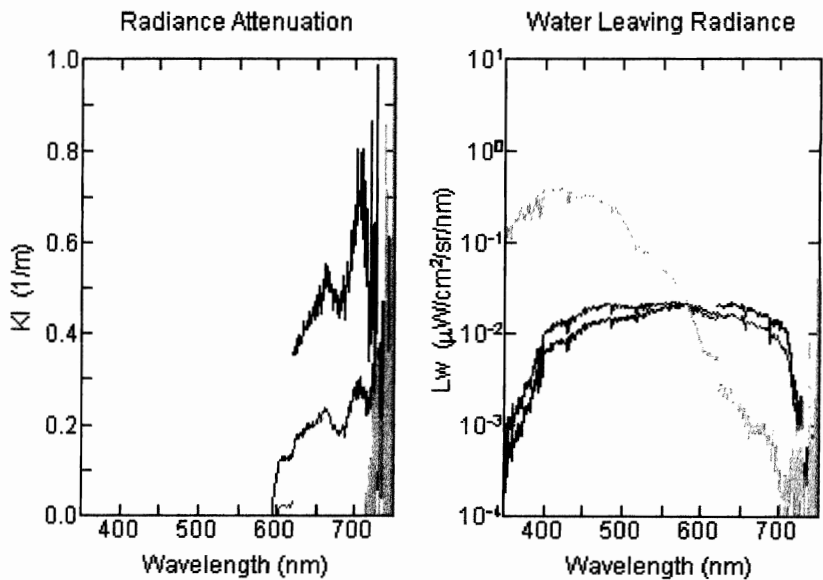


Figure 29: Bad Kl's and Lw's - should not be included

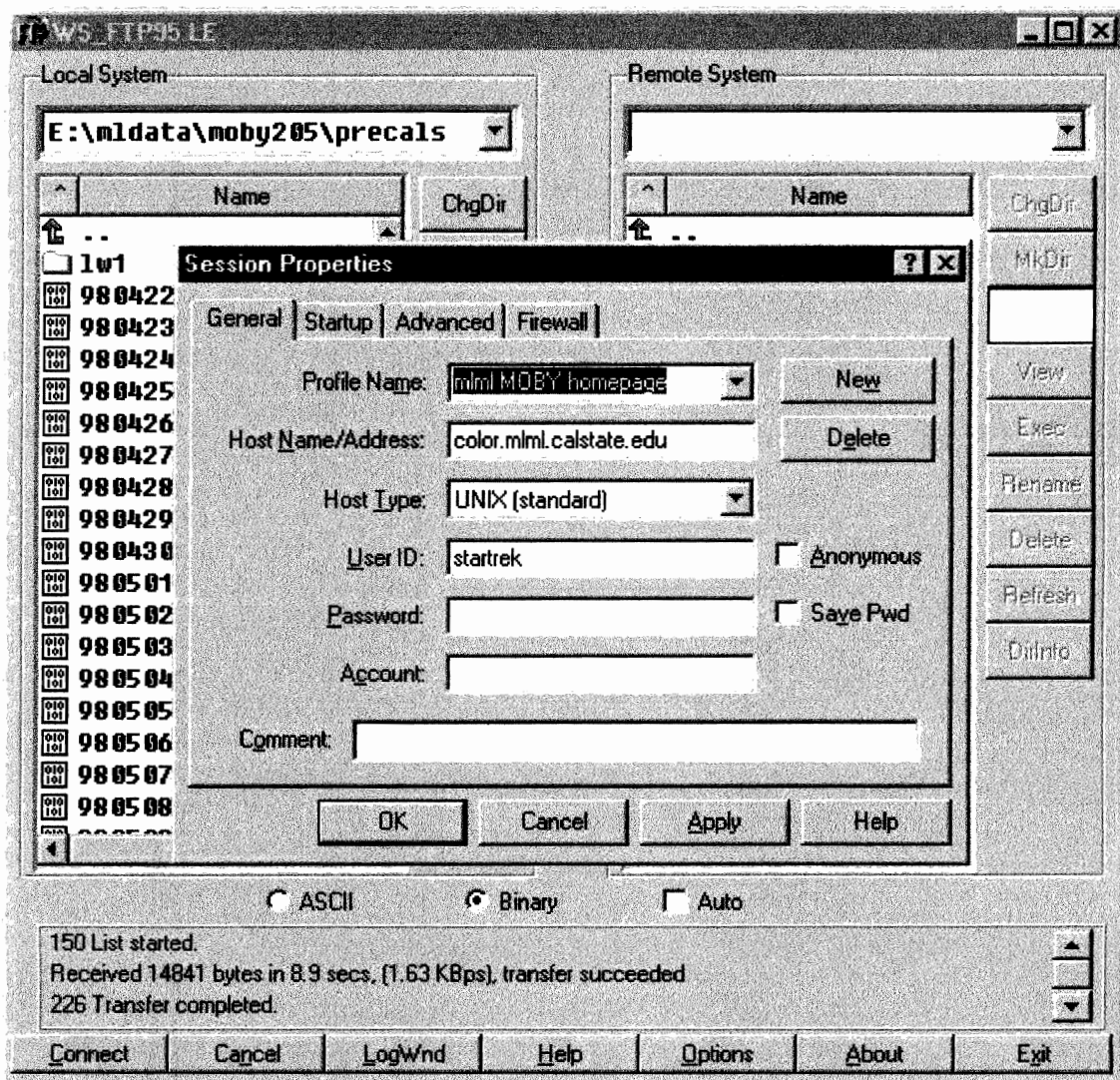


Figure 30: WS_FTP95 Program with the mlml MOBY homepage profile

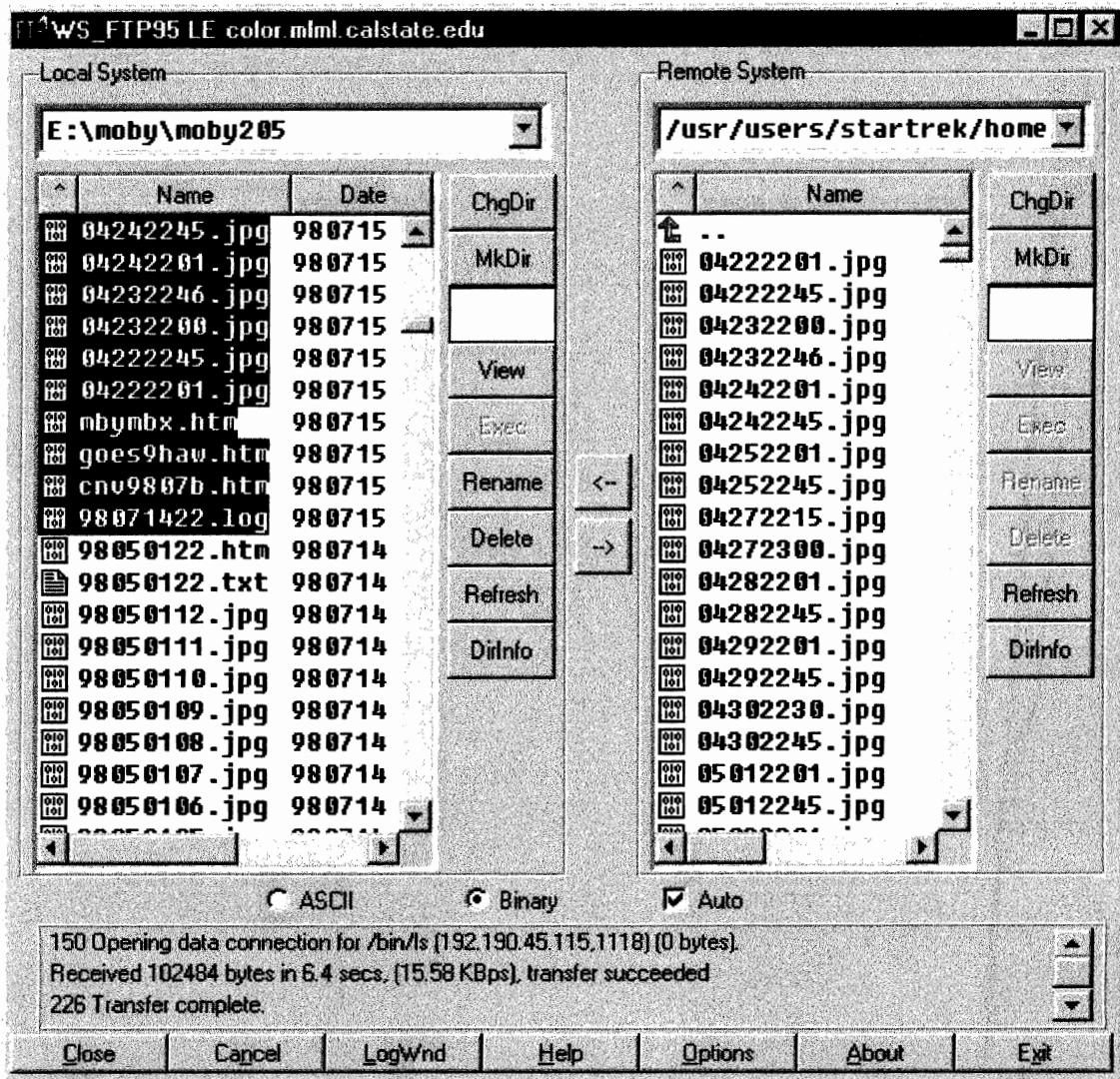


Figure 31: Select all the files modified today

Table 1: Terms and Definitions

Scan sets - contain 1 dark scan, any number of light scans (typically 5) followed by a dark scan.

Example: In the following listing variable range 2 through 8 is one Es Sfc scan set. It is followed by 2 Lu Bot scan sets. There are 2 Es Sfc, 2 Lu Bot, 2 Lu Mid and 3 Lu Top scan sets in this diver calibration data set.

Diver calibration data set - a collection of scan sets from MOBY's radiance and/or irradiance collectors. All the scan sets for a collector are acquired without removing the calibration lamp. A calibration data set can contain only Lu scan sets (as in this example), only Ed scan sets or both.

Example: For example, 10 data sets were acquired when MOBY was launched. The following listing is an example of a calibration data set.

```
DscS 1: Approximate wavelength (nm) of MOS2 Spectra (340.6 to 900 nm)
DscS 2: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 3: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 4: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 5: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 6: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 7: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 8: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 9: MOS2 ADU: DARK ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 10: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 11: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 12: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 13: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 14: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 15: MOS2 ADU: DARK ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 16: MOS2 ADU: DARK ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 17: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 18: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 19: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 20: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 21: MOS2 ADU: Lu BOT ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 22: MOS2 ADU: DARK ; MUX#: 1; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 23: MOS2 ADU: DARK ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 24: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 25: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 26: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 27: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 28: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 29: MOS2 ADU: DARK ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 30: MOS2 ADU: DARK ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 31: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 32: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 33: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 34: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 35: MOS2 ADU: Lu MID ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 36: MOS2 ADU: DARK ; MUX#: 9; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 37: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 38: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 39: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 40: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 41: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 42: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 43: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 44: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 45: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 46: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
```

DscS 47: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 48: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 49: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 50: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 51: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 52: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 53: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 54: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 55: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 56: MOS2 ADU: Lu TOP ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 57: MOS2 ADU: DARK ; MUX#: 7; Time (B/R): 1/1 ; Bin (B/R): 32/16
DscS 58: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 59: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 60: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 61: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 62: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 63: MOS2 ADU: Es SFC ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32
DscS 64: MOS2 ADU: DARK ; MUX#: 5; Time (B/R): 1/1 ; Bin (B/R): 32/32

Table 2: MOBY VAX DIRECTORY

The following listing is of the DUA1:[MOBY.MOBY_SN_3] directory on the MLML VAX. Note that occasionally there will be two versions of a MOB file and two FORTH.LOG files transmitted the same day. This is the result of a communication problem during file transfer. The 97080221.MOB;1 and 97080221.MOB;2 are examples of incomplete files. Version 1 will be used for processing. FORTH.LOG;14 and FORTH.LOG;15 are the two log files tranfered with each of the MOB files. The two FORTH.LOG files are cut and paste together into one log file for the day.

DUA1: [MOBY.MOBY_SN_3]

97071722.MOB;1	495	18-JUL-1997	10:22	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072021.MOB;1	521	21-JUL-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072121.MOB;1	399	22-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072221.MOB;1	421	23-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072321.MOB;1	421	24-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072421.MOB;1	421	25-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072521.MOB;1	421	26-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072621.MOB;1	421	27-JUL-1997	01:02	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072800.MOB;1	421	10-OCT-1997	12:23	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072821.MOB;1	421	29-JUL-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97072921.MOB;1	421	30-JUL-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97073021.MOB;1	421	31-JUL-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97073121.MOB;1	421	1-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080121.MOB;2	20	2-AUG-1997	01:20	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080121.MOB;1	401	2-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080221.MOB;1	421	3-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080321.MOB;1	421	4-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080421.MOB;1	421	5-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080521.MOB;1	421	6-AUG-1997	01:07	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080621.MOB;1	421	7-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080721.MOB;1	421	8-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080821.MOB;2	24	9-AUG-1997	01:20	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080821.MOB;1	397	9-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080921.MOB;2	20	10-AUG-1997	01:21	[OCEAN,MOBY]	(RWED,RWED,RE,)
97080921.MOB;1	401	10-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
97081021.MOB;1	421	11-AUG-1997	01:04	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;26	23	11-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;25	1	10-AUG-1997	01:21	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;24	23	10-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;23	1	9-AUG-1997	01:20	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;22	23	9-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;21	24	8-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;20	23	7-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;19	23	6-AUG-1997	01:05	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;18	23	5-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;17	23	4-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;16	23	3-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;15	1	2-AUG-1997	01:20	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;14	23	2-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;13	23	1-AUG-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;12	23	31-JUL-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;11	23	30-JUL-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;10	23	29-JUL-1997	01:03	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;9	22	28-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;8	22	27-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;7	22	26-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;6	21	25-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)

FORTH.LOG;5	21	24-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;4	22	23-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;3	22	22-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;2	65	21-JUL-1997	01:01	[OCEAN,MOBY]	(RWED,RWED,RE,)
FORTH.LOG;1	30	18-JUL-1997	10:21	[OCEAN,MOBY]	(RWED,RWED,RE,)
XMODEM.LOG;1	52	18-JUL-1997	10:22	[OCEAN,MOBY]	(RWED,RWED,RE,)

Table 3: READMOB_Incomplete file ERROR

Incomplete or partial MOB files are the result of a communication problem during the transfer of the file from MOBY to the VAX. READMOB_M is the Matlab program that converts the MOB file to a MBY file in the MLDBASE format. If the file is incomplete then READMOB_M will return an error message. READMOB_M must be used again this time having it stop before it reaches the end of the file.

```
READMOB_('98061022.mob',0,'mby20501');
Scan# 1: 1998: 6:10:22:38:41; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 2: 1998: 6:10:22:38:48; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 3: 1998: 6:10:22:38:54; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 4: 1998: 6:10:22:39: 0; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 5: 1998: 6:10:22:39: 6; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 6: 1998: 6:10:22:39:12; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 7: 1998: 6:10:22:39:19; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 8: 1998: 6:10:22:39:42; DARK ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 9: 1998: 6:10:22:39:53; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 10: 1998: 6:10:22:40: 1; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 11: 1998: 6:10:22:40:10; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 12: 1998: 6:10:22:40:19; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 13: 1998: 6:10:22:40:28; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 14: 1998: 6:10:22:40:37; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 15: 1998: 6:10:22:40:46; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 16: 1998: 6:10:22:40:54; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 17: 1998: 6:10:22:41: 3; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 18: 1998: 6:10:22:41:12; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 19: 1998: 6:10:22:41:21; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 20: 1998: 6:10:22:41:30; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 21: 1998: 6:10:22:41:40; DARK ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 22: 1998: 6:10:22:42: 7; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 23: 1998: 6:10:22:42:14; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 24: 1998: 6:10:22:42:20; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 25: 1998: 6:10:22:42:26; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 26: 1998: 6:10:22:42:32; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 27: 1998: 6:10:22:42:38; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 28: 1998: 6:10:22:42:45; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 29: 1998: 6:10:22:43: 6; DARK ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 30: 1998: 6:10:22:43:16; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 31: 1998: 6:10:22:43:25; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 32: 1998: 6:10:22:43:34; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 33: 1998: 6:10:22:43:43; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 34: 1998: 6:10:22:43:52; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 35: 1998: 6:10:22:44: 0; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 36: 1998: 6:10:22:44: 9; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 37: 1998: 6:10:22:44:18; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 38: 1998: 6:10:22:44:27; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 39: 1998: 6:10:22:44:36; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 40: 1998: 6:10:22:44:45; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 41: 1998: 6:10:22:44:53; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 42: 1998: 6:10:22:45: 3; DARK ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 43: 1998: 6:10:22:45:25; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 44: 1998: 6:10:22:45:33; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 45: 1998: 6:10:22:45:39; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 46: 1998: 6:10:22:45:45; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 47: 1998: 6:10:22:45:50; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 48: 1998: 6:10:22:45:56; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 49: 1998: 6:10:22:46: 3; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 50: 1998: 6:10:22:46:27; DARK ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
```


Scan# 51: 1998: 6:10:22:46:38; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 52: 1998: 6:10:22:46:47; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 53: 1998: 6:10:22:46:56; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 54: 1998: 6:10:22:47: 4; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 55: 1998: 6:10:22:47:13; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 56: 1998: 6:10:22:47:22; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 57: 1998: 6:10:22:47:31; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 58: 1998: 6:10:22:47:40; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 59: 1998: 6:10:22:47:48; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 60: 1998: 6:10:22:47:57; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 61: 1998: 6:10:22:48: 6; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 62: 1998: 6:10:22:48:15; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 63: 1998: 6:10:22:48:25; DARK ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
Scan# 64: 1998: 6:10:22:48:54; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 65: 1998: 6:10:22:49: 1; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 66: 1998: 6:10:22:49: 7; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 67: 1998: 6:10:22:49:13; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 68: 1998: 6:10:22:49:19; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 69: 1998: 6:10:22:49:25; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 70: 1998: 6:10:22:49:32; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 71: 1998: 6:10:22:49:48; DARK ; MUX: 5 ; Time (B/R): 1.5/1 ; Bin (
Scan# 72: 1998: 6:10:22:49:56; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 73: 1998: 6:10:22:50: 4; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 74: 1998: 6:10:22:50:12; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 75: 1998: 6:10:22:50:19; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 76: 1998: 6:10:22:50:27; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 77: 1998: 6:10:22:50:34; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 78: 1998: 6:10:22:50:42; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 79: 1998: 6:10:22:50:50; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 80: 1998: 6:10:22:50:57; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 81: 1998: 6:10:22:51: 5; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 82: 1998: 6:10:22:51:12; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 83: 1998: 6:10:22:51:20; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
Scan# 84: 1998: 6:10:22:51:29; DARK ; MUX: 5 ; Time (B/R): 1.5/1 ; Bin (
Scan# 85: 1998: 6:10:22:51:46; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 86: 1998: 6:10:22:51:54; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 87: 1998: 6:10:22:52: 0; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 88: 1998: 6:10:22:52: 6; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 89: 1998: 6:10:22:52:11; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 90: 1998: 6:10:22:52:17; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/

READMOB_ Error (Not a complete MOB file, USE NV)

Table 4: READMOB_ reads incomplete file up to variable 84

The fourth input is the scan number of the last complete scan. READMOB_M will stop reading the file at scan number 84. MOBY processing requires complete scan sets. The MOBY files extension is set to MBX (not MBY). This extension will follow the file throughout MOBY batch processing.

```
READMOB_('98061022.mob',0,'mby20501',84);
Scan# 1: 1998: 6:10:22:38:41; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 2: 1998: 6:10:22:38:48; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 3: 1998: 6:10:22:38:54; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 4: 1998: 6:10:22:39: 0; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 5: 1998: 6:10:22:39: 6; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 6: 1998: 6:10:22:39:12; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 7: 1998: 6:10:22:39:19; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 8: 1998: 6:10:22:39:42; DARK ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 9: 1998: 6:10:22:39:53; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 10: 1998: 6:10:22:40: 1; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 11: 1998: 6:10:22:40:10; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 12: 1998: 6:10:22:40:19; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 13: 1998: 6:10:22:40:28; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 14: 1998: 6:10:22:40:37; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 15: 1998: 6:10:22:40:46; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 16: 1998: 6:10:22:40:54; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 17: 1998: 6:10:22:41: 3; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 18: 1998: 6:10:22:41:12; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 19: 1998: 6:10:22:41:21; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 20: 1998: 6:10:22:41:30; Lu TOP ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 21: 1998: 6:10:22:41:40; DARK ; MUX: 7 ; Time (B/R): 4/1 ; Bin (B/
Scan# 22: 1998: 6:10:22:42: 7; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 23: 1998: 6:10:22:42:14; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 24: 1998: 6:10:22:42:20; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 25: 1998: 6:10:22:42:26; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 26: 1998: 6:10:22:42:32; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 27: 1998: 6:10:22:42:38; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 28: 1998: 6:10:22:42:45; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 29: 1998: 6:10:22:43: 6; DARK ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 30: 1998: 6:10:22:43:16; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 31: 1998: 6:10:22:43:25; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 32: 1998: 6:10:22:43:34; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 33: 1998: 6:10:22:43:43; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 34: 1998: 6:10:22:43:52; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 35: 1998: 6:10:22:44: 0; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 36: 1998: 6:10:22:44: 9; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 37: 1998: 6:10:22:44:18; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 38: 1998: 6:10:22:44:27; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 39: 1998: 6:10:22:44:36; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 40: 1998: 6:10:22:44:45; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 41: 1998: 6:10:22:44:53; Lu BOT ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 42: 1998: 6:10:22:45: 3; DARK ; MUX: 1 ; Time (B/R): 4/1 ; Bin (B/
Scan# 43: 1998: 6:10:22:45:25; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 44: 1998: 6:10:22:45:33; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 45: 1998: 6:10:22:45:39; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 46: 1998: 6:10:22:45:45; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 47: 1998: 6:10:22:45:50; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 48: 1998: 6:10:22:45:56; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
Scan# 49: 1998: 6:10:22:46: 3; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
```

Scan# 50: 1998: 6:10:22:46:27; DARK ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 51: 1998: 6:10:22:46:38; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 52: 1998: 6:10:22:46:47; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 53: 1998: 6:10:22:46:56; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 54: 1998: 6:10:22:47: 4; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 55: 1998: 6:10:22:47:13; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 56: 1998: 6:10:22:47:22; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 57: 1998: 6:10:22:47:31; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 58: 1998: 6:10:22:47:40; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 59: 1998: 6:10:22:47:48; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 60: 1998: 6:10:22:47:57; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 61: 1998: 6:10:22:48: 6; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 62: 1998: 6:10:22:48:15; Lu MID ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 63: 1998: 6:10:22:48:25; DARK ; MUX: 9 ; Time (B/R): 4/1 ; Bin (B/
 Scan# 64: 1998: 6:10:22:48:54; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 65: 1998: 6:10:22:49: 1; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 66: 1998: 6:10:22:49: 7; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 67: 1998: 6:10:22:49:13; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 68: 1998: 6:10:22:49:19; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 69: 1998: 6:10:22:49:25; Es SFC ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 70: 1998: 6:10:22:49:32; DARK ; MUX: 5 ; Time (B/R): 1/1 ; Bin (B/
 Scan# 71: 1998: 6:10:22:49:48; DARK ; MUX: 5 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 72: 1998: 6:10:22:49:56; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 73: 1998: 6:10:22:50: 4; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 74: 1998: 6:10:22:50:12; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 75: 1998: 6:10:22:50:19; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 76: 1998: 6:10:22:50:27; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 77: 1998: 6:10:22:50:34; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 78: 1998: 6:10:22:50:42; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 79: 1998: 6:10:22:50:50; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 80: 1998: 6:10:22:50:57; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 81: 1998: 6:10:22:51: 5; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 82: 1998: 6:10:22:51:12; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 83: 1998: 6:10:22:51:20; Lu MOS ; MUX: 11 ; Time (B/R): 1.5/1 ; Bin (
 Scan# 84: 1998: 6:10:22:51:29; DARK ; MUX: 5 ; Time (B/R): 1.5/1 ; Bin (

98061022.LOG

MOBY2 Radiometer Scans

STATION: MOBY205, Launched 22 Apr 1998

START: 1998:06:10:22:39:20 Position: 20°49.1' N 157°11.1' W

STOP: 1998:06:10:22:52:08 Position: 20°49.1' N 157°11.1' W

Incomplete File

Table 5: NMOBY_ Batch Processing of MOBY File

Text displayed to the screen as NMOBY_ processes a MOBY file.

```
NMOBY_('98071322.mby',1,1,1,1);
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% NMOBY Program: 14-Jul-1998, by Stephanie Flora
READMLD_('98071322.mby');

MOBY Configuration: 20501

% Es      2    3    4    5    6    7    8   23   24   25   26   27   28   29   44   45   46   47   4
% Ed
% Lu      9   10   11   12   13   14   15   16   17   18   19   20   21   22   30   31   32   33   3
% Calib   93   94   95   96   97   98   99  100  101  102  103  104  105  106  107

% Delete the Calibration Variables
MLTOOLS(6,[93;98;103;94;99;104;95;100;105;96;101;106;97;102;107])

% Integration Time conversion file and variable range
[status,P1] = READMLD_('9803rsp.mld',[13:14],[13:14],[7]);
% Bin Factor conversion file and variable range
[status,P1] = READMLD_('9803rsp.mld',[15:16],[15:16],[7]);

% Adjust the Data
[status,XDAT,VAUX,VR_used] = NADJUST_([1:8])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 9:22])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 23:29])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 30:43])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 44:50])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 51:64])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 65:71])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 72:85])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 86:92])

% Average the Data and move scans to correct variables

MLTOOLS(4,[33:34],[7:8],[1:7],[1:1024],[1:1024]
[status,XDAT,VAUX,VR_used] = NAVERAG_([35 31])
[status,XDAT,VAUX,VR_used] = NAVERAG_([36 32])
% SAVED Lu to 7 and SNR to 8
% SAVED Es to 9 and SNR to 10

MLTOOLS(4,[41:42],[15:16],[1:7],[1:1024],[1:1024]
[status,XDAT,VAUX,VR_used] = NAVERAG_([43 39])
[status,XDAT,VAUX,VR_used] = NAVERAG_([44 40])
% SAVED Lu to 15 and SNR to 16
% SAVED Es to 17 and SNR to 18

MLTOOLS(4,[37:38],[23:24],[1:7],[1:1024],[1:1024]
[status,XDAT,VAUX,VR_used] = NAVERAG_([39 35])
[status,XDAT,VAUX,VR_used] = NAVERAG_([40 36])
% SAVED Lu to 23 and SNR to 24
% SAVED Es to 25 and SNR to 26

MLTOOLS(4,[45:46],[27:28],[1:7],[1:1024],[1:1024]
[status,XDAT,VAUX,VR_used] = NAVERAG_([47 43])
[status,XDAT,VAUX,VR_used] = NAVERAG_([48 44])
% SAVED Lu to 27 and SNR to 28
```


Table 6: MOBY Derived File Variable Listing

File: MOBY Derived File Listing

DscS 1: MOS Calibrated Wavelength (nm)
DscS 2: MOS Calibrated Wavelength (nm)
DscS 3: MOS Downwelled Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$) P = 1.1
DscS 4: MOS Signal to Noise Ratio
DscS 5: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 6: MOS Signal to Noise Ratio
DscS 7: MOS Upwelled Radiance ($\mu\text{W}/\text{cm}^2/\text{sr}/\text{nm}$) P = 1.2
DscS 8: MOS Signal to Noise Ratio
DscS 9: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 10: MOS Signal to Noise Ratio
DscS 11: MOS Downwelled Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$) P = 5.0
DscS 12: MOS Signal to Noise Ratio
DscS 13: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 14: MOS Signal to Noise Ratio
DscS 15: MOS Upwelled Radiance ($\mu\text{W}/\text{cm}^2/\text{sr}/\text{nm}$) P = 5.1
DscS 16: MOS Signal to Noise Ratio
DscS 17: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 18: MOS Signal to Noise Ratio
DscS 19: MOS Downwelled Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$) P = 9.0
DscS 20: MOS Signal to Noise Ratio
DscS 21: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 22: MOS Signal to Noise Ratio
DscS 23: MOS Upwelled Radiance ($\mu\text{W}/\text{cm}^2/\text{sr}/\text{nm}$) P = 9.1
DscS 24: MOS Signal to Noise Ratio
DscS 25: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 26: MOS Signal to Noise Ratio
DscS 27: MOS Upwelled Radiance ($\mu\text{W}/\text{cm}^2/\text{sr}/\text{nm}$) P = 11.1
DscS 28: MOS Signal to Noise Ratio
DscS 29: MOS Surface Irradiance ($\mu\text{W}/\text{cm}^2/\text{nm}$)
DscS 30: MOS Signal to Noise Ratio
DscS 31: Diffuse Attenuation (1/m) Ke1 Top-Mid
DscS 32: Diffuse Attenuation (1/m) Kl1 Top-Mid
DscS 33: Diffuse Attenuation (1/m) Ke2 Top-Bot
DscS 34: Diffuse Attenuation (1/m) Kl2 Top-Bot
DscS 35: Diffuse Attenuation (1/m) Ke3 Mid-Bot
DscS 36: Diffuse Attenuation (1/m) Kl3 Mid-Bot
DscS 37: Diffuse Attenuation (1/m) Kl4 Top-Port
DscS 38: Diffuse Attenuation (1/m) Kl5 Mid-Port
DscS 39: Diffuse Attenuation (1/m) Kl6 Bot-Port
DscS 40: Water-Leaving Radiance Lw1(Top) Kl1(Top-Mid)
DscS 41: Water-Leaving Radiance Lw2(Top) Kl2(Top-Bot)
DscS 42: Water-Leaving Radiance Lw5(Top) Kl4(Top-Port)
DscS 43: Water-Leaving Radiance Lw7(Mid) Kl3(Mid-Bot)
DscS 44: Water-Leaving Radiance Lw8(Mid) Kl5(Mid-Port)
DscS 45: Water-Leaving Radiance Lw9(Bot) Kl6(Bot-Port)
DscS 46: Solar-Normalized Water-Leaving Radiance Lwsn1(top) Kl1(Top-Mid)
DscS 47: Solar-Normalized Water-Leaving Radiance Lwsn2(top) Kl2(Top-Bot)
DscS 48: Solar-Normalized Water-Leaving Radiance Lwsn3(mid) Kl1(Top-Mid)
DscS 49: Solar-Normalized Water-Leaving Radiance Lwsn4(bot) Kl2(Top-Bot)
DscS 50: Solar-Normalized Water-Leaving Radiance Lwsn5(top) Kl4(Top-Port)
DscS 51: Solar-Normalized Water-Leaving Radiance Lwsn6(port) Kl4(Top-Port)
DscS 52: Solar-Normalization Factor

Table 7: Text Displayed to Screen by NLOG_, NAUX_ ...

Text displayed to the screen as NLOG_, NAUX_, NINTCAL_, NOFFSET_, NHTML_, MBYHTML_ and DLYHTML_ processes auxiliary MOBY data. These programs create and update the auxiliary data and files associated with a MOBY data.

```
NLOG_('98071422.log');
LOAD 9807_log.mat

NAUX_('98071422.mby');
LOAD 9807vaux.mat
Saving 9807vaux.mat
LOAD 9807faux.mat
Saving 9807faux.mat

NINTCAL_('98071422.mby');
NINTCAL_ is Adjusting the Internal Calibration data
[status,XDAT,VAUX,VR_used] = NADJUST_([1 93:97])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 98:102])
[status,XDAT,VAUX,VR_used] = NADJUST_([1 103:107])
Loading blue_led.mat
Saving blue_led.mat
Loading red_led.mat
Saving red_led.mat
Loading lamp.mat
Saving lamp.mat

NOFFSET_('980714d.mby');

NHTML_('98071422.mby',1);
READMLD_('98071422.mby');
Listing to e:\moby\moby205\98071422.txt ...
print e:\moby\moby205\98071401.jpg -f1 -djpeg60
print e:\moby\moby205\98071402.jpg -f2 -djpeg60
print e:\moby\moby205\98071403.jpg -f3 -djpeg60
print e:\moby\moby205\98071404.jpg -f1 -djpeg60
print e:\moby\moby205\98071405.jpg -f2 -djpeg60
print e:\moby\moby205\98071406.jpg -f3 -djpeg60
print e:\moby\moby205\98071407.jpg -f4 -djpeg60
print e:\moby\moby205\98071408.jpg -f5 -djpeg60
print e:\moby\moby205\98071409.jpg -f1 -djpeg60
print e:\moby\moby205\98071412.jpg -f1 -djpeg60
READMLD_('980714d.mby');
PLOTDAT_ Caution (Can not delete Axis 2, does not exist)
PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
PLOTDAT_ Caution (Can not delete Axis 3, does not exist)
PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
PLOTDAT_ Caution (Y Data outside of Axis Limits, try autscale - make Gtype negat
print e:\moby\moby205\98071410.jpg -f1 -djpeg60
PLOTDAT_ Caution (Can not delete Axis 2, does not exist)
PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
PLOTDAT_ Caution (Y Data outside of Axis Limits, try autscale - make Gtype negat
PLOTDAT_ Caution (Can not delete Axis 3, does not exist)
PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
PLOTDAT_ Caution (Y Data outside of Axis Limits, try autscale - make Gtype negat
print e:\moby\moby205\98071411.jpg -f2 -djpeg60
PLOTDAT_ Caution (Can not delete Axis 2, does not exist)
```

PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
PLOTDAT_ Caution (Y Data outside of Axis Limits, try autoscale - make Gtype negat
PLOTDAT_ Caution (Can not delete Axis 3, does not exist)
PLOTDAT_ Caution (X Data outside of Axis Limits, try autoscale - make Gtype nega
print e:\moby\moby205\98071412.jpg -f3 -djpeg60

```
NHTML_('98071422.mby', 2);  
[status,P1] = READMLD_('98071422.mby', [1:107], [1:107], [6]);  
print e:\moby\moby205\tt7_cas.jpg -f1 -djpeg60  
print e:\moby\moby205\low_bat.jpg -f1 -djpeg60  
print e:\moby\moby205\freqbat.jpg -f1 -djpeg60  
print e:\moby\moby205\deltat.jpg -f1 -djpeg60  
print e:\moby\moby205\batsel.jpg -f1 -djpeg60  
print e:\moby\moby205\batselv.jpg -f2 -djpeg60  
print e:\moby\moby205\batselt.jpg -f3 -djpeg60  
print e:\moby\moby205\latlong.jpg -f1 -djpeg60  
print e:\moby\moby205\latlong1.jpg -f1 -djpeg60  
print e:\moby\moby205\latlong2.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_15.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_19.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_23.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_27.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_31.jpg -f1 -djpeg60  
print e:\moby\moby205\aux1_32.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_7.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_11.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_15.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_19.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_23.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_27.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_31.jpg -f1 -djpeg60  
print e:\moby\moby205\faux1_32.jpg -f1 -djpeg60
```

```
NHTML_('98071422.mby', 3);  
[status,P1] = READMLD_('98071422.mby', [1:107], [1:107], [6]);  
print e:\moby\moby205\d1_1.jpg -f1 -djpeg60  
print e:\moby\moby205\d1_2.jpg -f2 -djpeg60  
print e:\moby\moby205\d1_3.jpg -f3 -djpeg60  
print e:\moby\moby205\d1_4.jpg -f4 -djpeg60  
print e:\moby\moby205\d1_5.jpg -f5 -djpeg60  
print e:\moby\moby205\d1_6.jpg -f6 -djpeg60  
print e:\moby\moby205\d1_7.jpg -f7 -djpeg60  
print e:\moby\moby205\d2_1.jpg -f1 -djpeg60  
print e:\moby\moby205\d2_2.jpg -f2 -djpeg60  
print e:\moby\moby205\d2_3.jpg -f3 -djpeg60  
print e:\moby\moby205\d2_4.jpg -f4 -djpeg60  
print e:\moby\moby205\d2_5.jpg -f5 -djpeg60  
print e:\moby\moby205\d2_6.jpg -f6 -djpeg60  
print e:\moby\moby205\d2_7.jpg -f7 -djpeg60  
print e:\moby\moby205\d3_1.jpg -f1 -djpeg60  
print e:\moby\moby205\d3_2.jpg -f2 -djpeg60  
print e:\moby\moby205\d3_3.jpg -f3 -djpeg60  
print e:\moby\moby205\d3_4.jpg -f4 -djpeg60  
print e:\moby\moby205\d3_5.jpg -f5 -djpeg60  
print e:\moby\moby205\d3_6.jpg -f6 -djpeg60  
print e:\moby\moby205\d3_7.jpg -f7 -djpeg60  
print e:\moby\moby205\d3_8.jpg -f8 -djpeg60  
print e:\moby\moby205\d3_9.jpg -f9 -djpeg60  
print e:\moby\moby205\d4_1.jpg -f1 -djpeg60  
print e:\moby\moby205\d4_2.jpg -f2 -djpeg60  
print e:\moby\moby205\d4_3.jpg -f3 -djpeg60  
print e:\moby\moby205\d5_1.jpg -f1 -djpeg60  
print e:\moby\moby205\d5_2.jpg -f2 -djpeg60  
print e:\moby\moby205\d5_3.jpg -f3 -djpeg60
```



```
NHTML_('98071422.mby',4);
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
[status,P1] = READMLD_('980512c.mby',[1],[1],[7]);
[status,P1] = READMLD_('seawifs.mld',[1:16],[1:16],[7]);
print e:\moby\moby205\normblue.jpg -f1 -djpeg60
print e:\moby\moby205\blueled.jpg -f1 -djpeg60
[status,P1] = READMLD_('980512c.mby',[1],[1],[7]);
[status,P1] = READMLD_('seawifs.mld',[1:16],[1:16],[7]);
print e:\moby\moby205\normred.jpg -f1 -djpeg60
print e:\moby\moby205\redled.jpg -f1 -djpeg60
[status,P1] = READMLD_('980512c.mby',[1],[1],[7]);
[status,P1] = READMLD_('seawifs.mld',[1:16],[1:16],[7]);
print e:\moby\moby205\normlamp.jpg -f1 -djpeg60
print e:\moby\moby205\lamp.jpg -f1 -djpeg60
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);

MBYHTML_('98071422.mby',0);
Writing e:\moby\moby205\98071422.htm ...

DLYHTML_(1,98071422.mby,205)
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
Writing e:\moby\moby205\moby205.htm ...

DLYHTML_(2,98071422.mby,205)
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
Writing e:\moby\moby205\mbymbx.htm ...

DLYHTML_(3,98071422.mby,205)
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
Writing e:\moby\moby205\goes9haw.htm ...
    copy e:\goes\9_haw_vis\jul98\07142201.jpg e:\moby\moby205\
      1 file(s) copied.
    copy e:\goes\9_haw_vis\jul98\07142245.jpg e:\moby\moby205\
      1 file(s) copied.

DLYHTML_(4,98071422.mby,205)
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
Writing e:\moby\moby205\convert.htm ...

DLYHTML_(5,98071422.mby,205)
[status,P1] = READMLD_('98071422.mby',[1:107],[1:107],[6]);
    copy e:\mldata\moby205\precals\98071422.log e:\moby\moby205\
      1 file(s) copied.
```