

Documentation de Meteor v 8.0

Preamble The Meteor software functions correctly only if your radio installation is stable and can detect meteor echoes effectively. Concerning the materials necessary see the technical pages.

Dave Swan (U.K) created a protocol to the test the stability of your radio installation. I strongly recommend you read it to assure that only a received signal from an echo is counted.

[Read the procedure.](#)

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To install, Unzip Meteorv8.ZIP in a temporary directory then run SETUP.EXE, it will display this screen in French and English.



```
Install va créer le repertoire C:\METEOR08\  
Install going to create directory C:\METEOR08\  
OK <enter>          Abandon/Cancel <ESC>
```

After the automatic installation on your Hard Disk Meteor v 8.0 is complete, it will run automatically. Here is the first screen: Choose your language?



Then you must fill the " Observer Parameters ". these information are included by the software in the RMOB files so that users of your data know your parameters.

At end of fill click on Save or press <Alt>+ <S>.

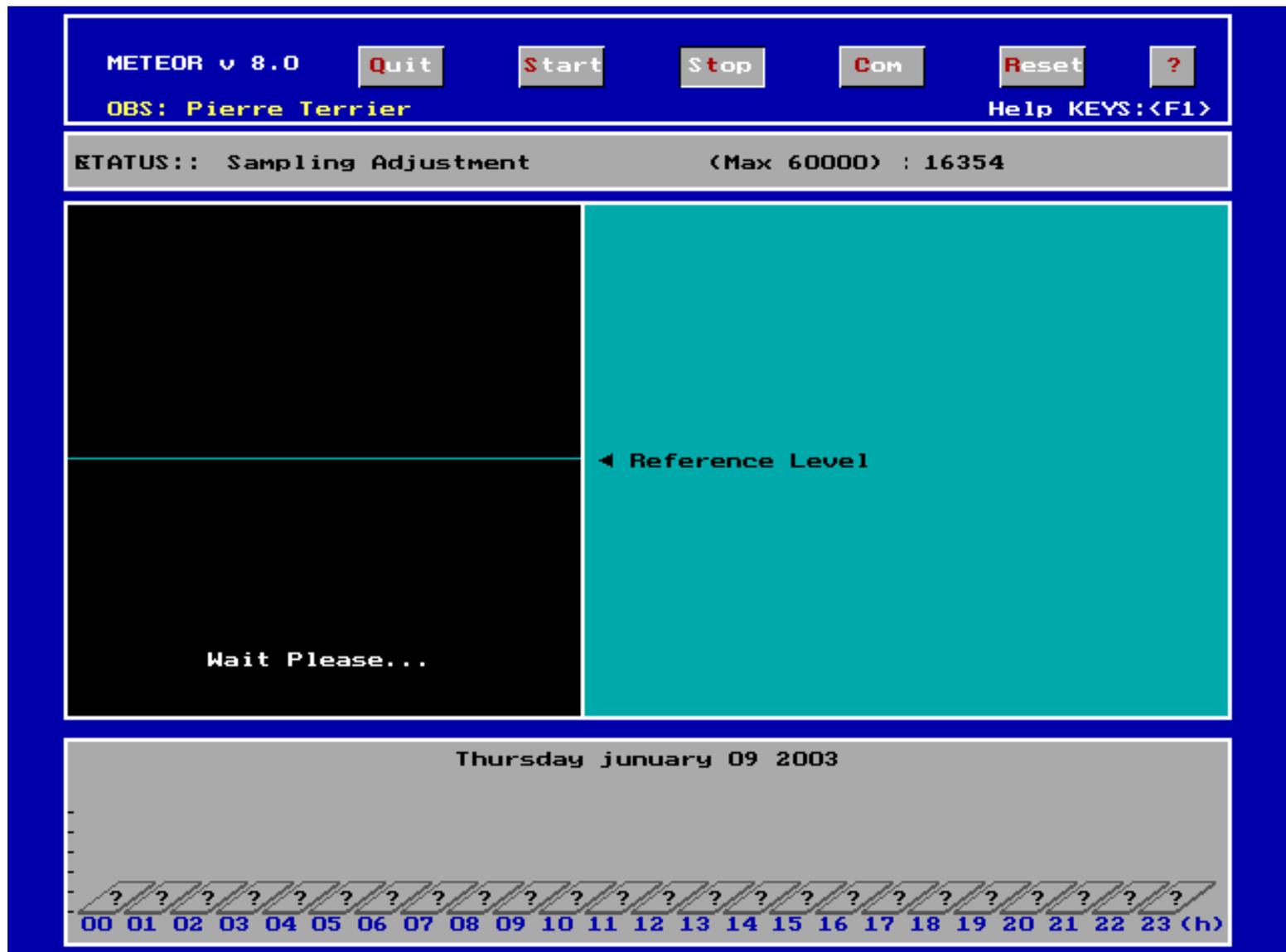
Click on 'Save' button or press <Alt>+<S> Keys

NAME : Terrier	Computer (Model) Pentium 75 Mhz
FIRST NAME : Pierre	
COUNTRY : France	
CITY : Canet	
LONGITUDE : 003.3611E <input checked="" type="radio"/> W <input type="radio"/>	
LATITUDE : 43.4101 N <input checked="" type="radio"/> S <input type="radio"/>	
FREQUENCY : 93.7MHz	
ANTENNA : Yagi 6 elements	
DIRECTION : AZ 0 H 90	
PRE-AMPLI. : homemade 23dB nf<2dB	
RECEIVER : Continetal Edison TU 9945	<input type="button" value="SAVE"/> <input type="button" value="Reset"/>

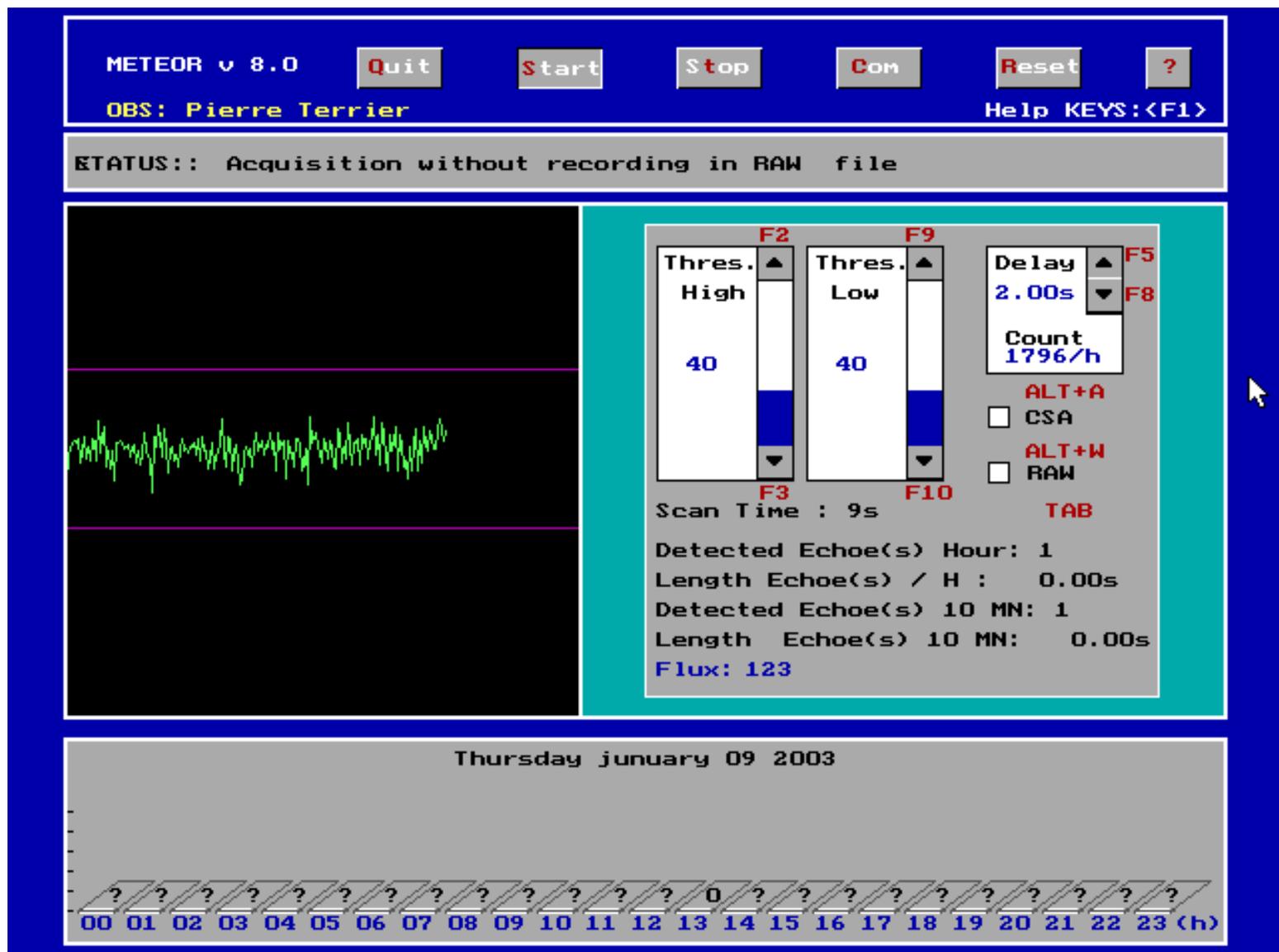
Next choose the PC's Com Port (ex. COM1) where your Meteor Electronic Interface Box (MEIB) is connected.



Now, Meteor will adjust the sampling. The time it will take depends on the computer speed and the strength of the audio signal from the output of your receiver. At the end, the color of the trace changes from red to green and Meteor evaluate the Window time scan.



Meteor should now be running properly. Please adjust the thresholds and the delay as needed. If you don't have a mouse, press <F1> key to know the keys short-cut.



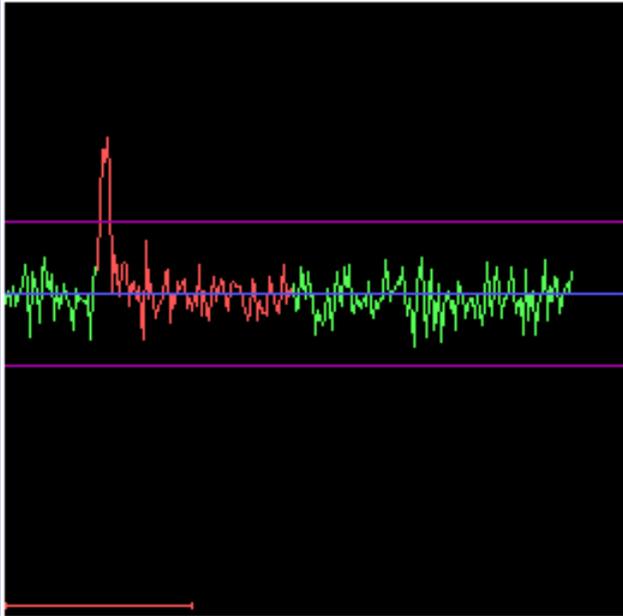
Below, here is a classic echo, is detected by crossing the thresholds. The colour changes from green to red and returns to green after the delay if the value is inside the thresholds. The delay is materialized by the small red horizontal line in bottom of the processing window. Is it a classic debate of users of the Meteor list to know what is the good threshold or the good delay ? There is not an answer all made ! Otherwise it would be automated in the software. In fact it depends closely of your radio installation and the on these performances. Thresholds can be optimized by the method of Dave Swan ([to Read the process](#)), when to the delay it is subjective enough. What one can say that is that he must be rather beyond 2 seconds to avoid the random numberings in the unsettled periods. This delay must be adjusted to get a daily curve with a maximum toward 6 hour (local time) and a minima in middle noon (~18h) out activity of a strong meteor shower. The reason is simple enough to understand. If admits the meteors background, is provoked by the sporadic meteors, is more intense toward 6h legal because it is the time we are turned in the sense of advancement of the earth on his orbit. To the manner of a car that rolls under a vertical rain, receives more rain on the windshield before to the rear.

At the bottom of the screen the day count of the meteors appear as 3D bars.

METEOR v 8.0 **Quit** **Start** **Stop** **Com** **Reset** **?**

OBS: Pierre Terrier Help KEYS:<F1>

STATUS : Acquisition without recording in RAW file



Thres. ▲

High

35

▼

Thres. ▲

Low

35

▼

Delay ▲

2.00s

▼

Count

1796/h

CSA

RAW

Scan Time : 9s

Detected Echoe(s) Hour: 15

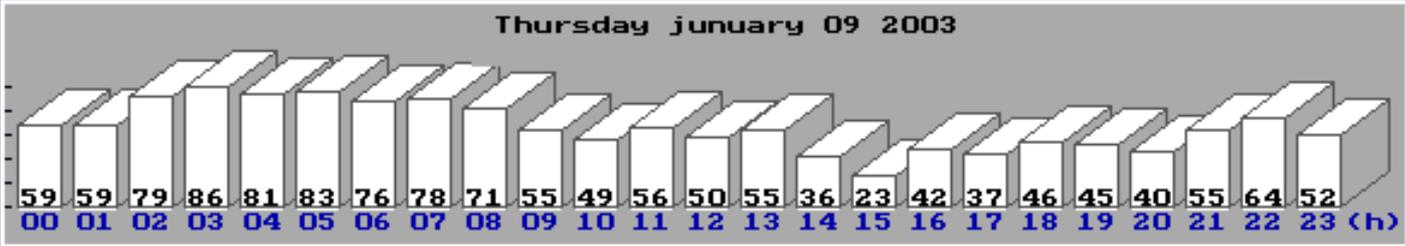
Length Echoe(s) / H : 4.57s

Detected Echoe(s) 10 MN: 0

Length Echoe(s) 10 MN: 0.00s

Flux: 122

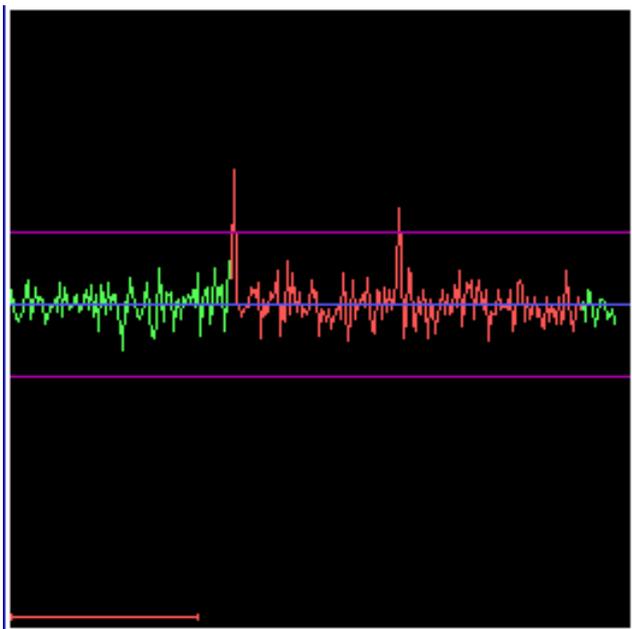
Thursday janyary 09 2003



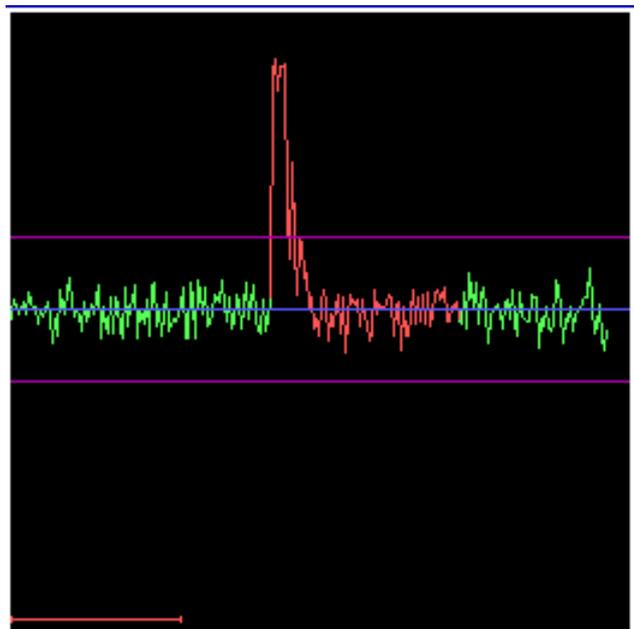
59	59	79	86	81	83	76	78	71	55	49	56	50	55	36	23	42	37	46	45	40	55	64	52
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23 (h)

If 2 echoes occur during the time delay Meteor counts only 1 echo and the delay restarts from the last crossing of the threshold. This process exist to stop excessive counts occurring from the passage of aeroplanes or periods of sporadic E.

2 echoes in time delay = only 1 count



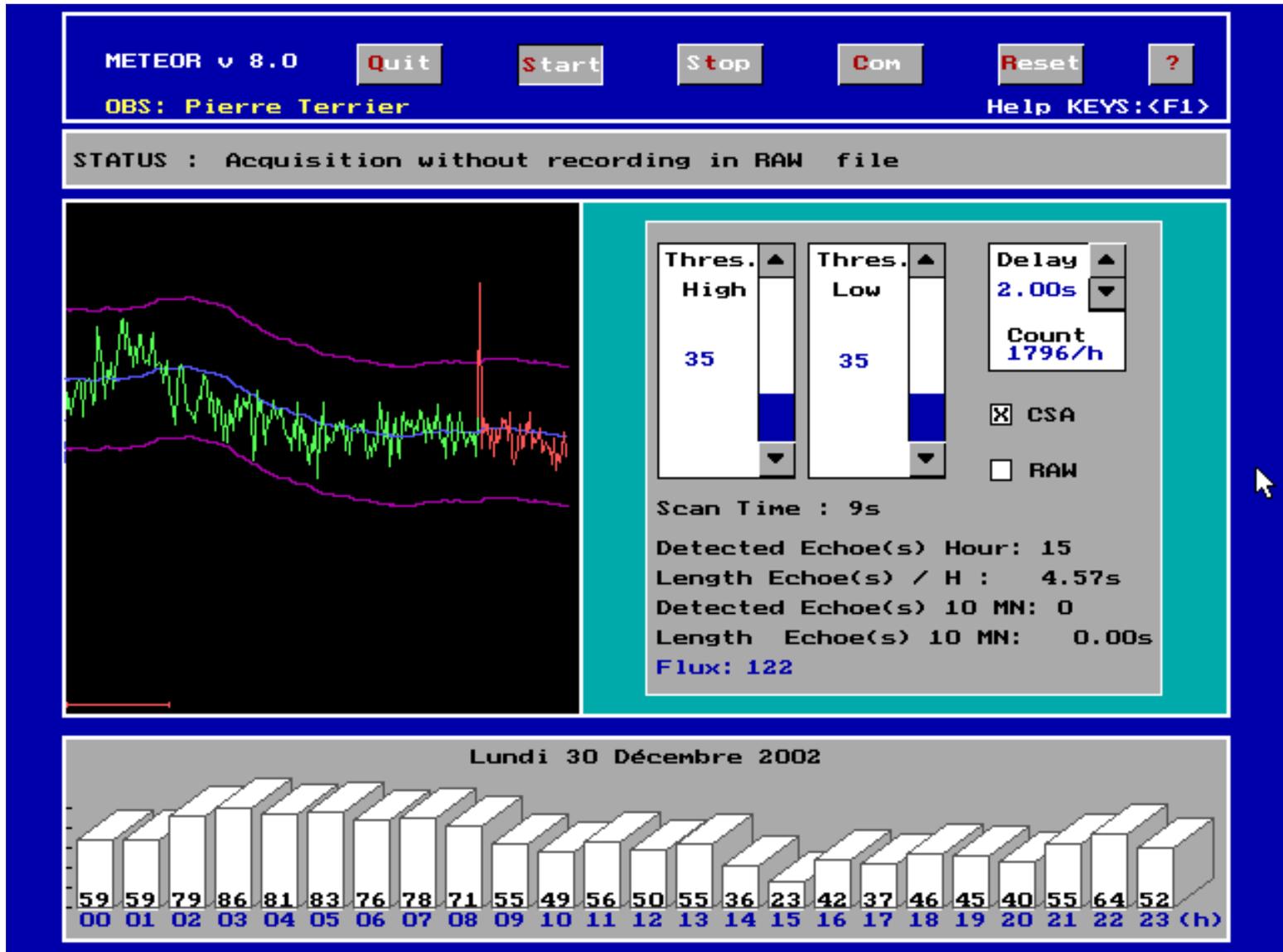
Here 1 "classic" echoe



The check box " CSA " flips the software in detection process called " Automatic Threshold Command." In this processing thresholds " follow " the small amplitude variations of the signal what avoids some uncertain detections when the signal is disrupted. It is not necessary to wait of some " miracles " nevertheless if the perturbed is too much strong.

The " speed " of reaction of the CSA is defined by the value of the delay. If this one is very short you risk of more nothing to detect, if it is too long, you bring closer the processing without CSA.

In the first window scan in "CSA" mode the thresholds is blocked at constant fixed value for re-calculate window scan time.



Meteor create some different files types, here is a brief description. I add an full description of "how to use" this files next time in this year...

STA files (Statistic) A file of this type is created automatically every day. Its name indicates the date (DDMMYYYY.STA), ex: 12082002.STA = 12 August 2002. It is a simple DOS text file readable with Notepad, etc. The first column indicates the hour in universal time (UT), the semi-colon serves as the separator for the following column, which indicates the number of echoes counted in hourly ex: 0;25 = 25 echoes between 0h and 0h59mn59s.

The STA files are fundamental data, so it is prudent to save them in case of a system reset. They also allow Meteor v 8.0 to create the monthly report for your observations for the RMOB (Radio Meteor Observing Bulletin). This bulletin is a text file that will permit you to distribute and to compare your observations with the other observers around the world via the Internet. See <http://www.rmob.org>

Meteor creates this RMOB file automatically. The name of this file corresponds to the month e.g :

RMOB012002.TXT = RMOB of January 2002. Its organization is simple and easy to understand, if you look at it with a text editor such as Microsoft's WordPad or Notepad. You can use this file to visualize your data as a graphic image with Colorgramme On Line on <http://www.rmob.org>

DAT Files (Data). This text file store all datas on length and numbers of echoes with a time resolution of 1 minute. Meteor create one of this file by day, and the name it is same of STA files, but it is stored in DAT subdirectory. The separator is ";" (semicolon). The first column indicates the hour, the second the length of echoes in seconds, the third the length of echoes in pixels, the fourth the number of echoes during this minute, the fifth is the average of the flux while this minute. The saving of this datas is automated every 10 minutes. If you stop the process and restart later before a same day "*;*;*;*;" is included in the file to indicate this cut. This files is used by Meteor to build the RMOB file of lengt of the echoes and used also by Colorgramme WMeteor for analysis. It is easy to edit with Microsoft® Excel.

RAW Files (Files of data) If you check the RAW files in Meteor, you see it creates a file. Its name indicates the date and the hour, created automatically each hour, ex.: 18110206.RAW = 18 November 2002 slice 06 h UT. These files are encoded with 8 bits and are readable for analysis using Colorgramme WMeteor. See analysis page. Attention: the RAW file stores and measures all that appears on screen and creates a 16 Kb. (Kilobytes) file each hour that may quickly fill up your PC's hard drive. This files is readable only with Colorgramme WMeteor.

NDX Files (index Files) This index files exist only if you check the RAW files in Meteor. These files is necessary to display the time and length of echoes with Colorgramme WMeteor.

How to access at my files under DOS ?

The access to files of data under Windows® is easy with windows explorer. It is less obvious under DOS when one doesn't know command of this OS.

Here is a small summary of commands useful for beginner under DOS ;-)
In follows, to explain, DOS commands is writings between hooks.

To go in a directory DOS command is [CD]+ directory name.

Example if you have prompt C:>

Write [CD METEORV8] <enter> now you are in METEORV8 directory.

To go in subdir DATAS write [CD DATAS] <enter> now you are in this subdir.

To go in subdir RMOB, write [CD RMOB] <enter> now you are in RMOB subdir.

At his ce moment if you want to copy RMOB file in this directory to A: drive (floppy)
write [COPY *.* A:] <enter>

The RMOB files is copied from METEORV8/DATA/RMOB to A: floppy disk.

Same process to copy DAT or STA files while replacing RMOB by DAT or STA.

Here is a screen shoot of this process.

```

C:\>CD METEORV8
C:\METEORV8>CD DATAS
C:\METEORV8\DATAS>CD RMOB
C:\METEORV8\DATAS\RMOB>DIR

Le volume dans le lecteur C n'a pas de nom
Le numéro de série du volume est 0D45-1DFA
Répertoire de C:\METEORV8\DATAS\RMOB

.                <REP>                29/12/02   23:13
..               <REP>                29/12/02   23:13
RMOB1202 TXT          4 400   30/12/02   15:12
    1 fichier(s)                4 400 octets
    2 répertoire(s)           281 886 720 octets libres

C:\METEORV8\DATAS\RMOB>COPY *.* a:
RMOB1202.TXT
    1 fichier(s) copié(s)

C:\METEORV8\DATAS\RMOB>

```

To exit the directory or subdir and come back to C: write [CD\] <enter>

To "go down" from one directory toward another (example STA) toward DATAS write [CD..] <enter>

You can go more quickly to copy your files from [C:\] while using below process.

From C:> prompt.

Write [COPY C:\METEORV8\RMOB*.* A: <enter>

Replace RMOB by DAT to copy DAT files.

Now you can verify the presence of your files on A: floppy disk by DOS command [DIR A:]<enter>

To what do my data be useful ?

If you send your RMOB files each end of month to [Christian Steyaert](mailto:Christian.Steyaert@radio-meteor.org), these will be published in Radio Meteor Observing Bulletin.

These data accessible on the site <http://www.rmob.org> are consulted and used by the astronomers specialist of forecastings models of meteors shower.

The PERMANENT data collection is extremely useful because it also permits to visualize the density of meteors according to the period of the year, as well as meteor background known very pain. To this topic see the software RMOB Survey on <http://www.rmob.org>

Pierre Terrier 2002

Meteor Ver. 8 calibration System par Dave Swan (UK)

1. Connect up the system and set the receiver to the frequency in use.

Terminate the receiver antenna input in its Characteristic Impedance, this is usually 50 ohm for professional or scanning receivers and 75ohms for Band 2 FM stereo receivers. Use only carbon resistors not wire wound.

Reset the system and adjust the Threshold controls above and below the displayed Noise level so that the system is not triggered into producing a count. If the system is triggered adjust the necessary threshold to prevent this. When the system is running with no triggering observe for at least 30 minutes to confirm no random triggering of the system.

If random triggering persists the probable cause is man-made noise getting through the power lines or computer hash usually the monitor, fit an appropriate filter.

If an RF Signal Generator is available, see Annex A.

Continuing from 3. Observe the displayed noise level and remove the terminating resistor and refit the antenna, if the antenna is a good match and there is no man-made noise present, you should see no major increase in noise.

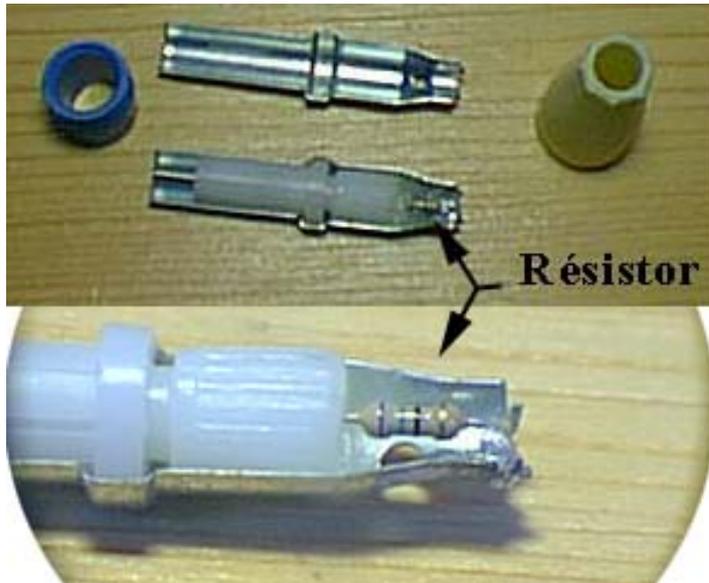
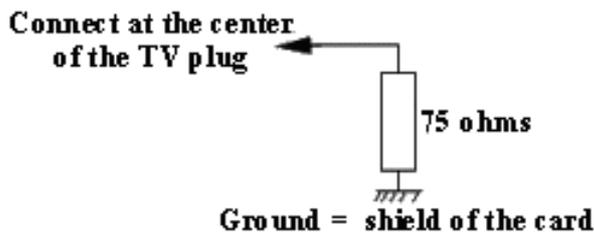
Reset the system, and you are ready to start observing.

Changing any of the system components will require system Reset.

This set-up is to ensure that the system itself is not generating false counts!

Annex A: At this point the system sensitivity can be measured.

If any problems occur with this procedure contact: daveswan@dorsetpubs.com



How to build ?

Take a 50/75 ohm plug and solder one end of a 50/75 ohm resistor to the centre pin and the other end to the outer case.

From Meteor v 6.0 my programming work is helped by some users observers. They test versions and suggest improvements. <?> button display the contributors without stop the processing.

```
          About METEOR V 6.0
Programming Pierre Terrier 2001
Special Thank"s for their Help
and many tests of BETA versions
to :
Aillaud Jean-Louis ->Reunion is.
Favre Didier       ->France
Guerin Patrice     ->France
Nelson Stan        ->USA (N.M)
Swan Dave           ->U.K
Young Bruce        ->Australia
Help and documentation on :
http://radio.meteor.free.fr
Click on <?> button to exit
```

Any question available on meteor@ml.free.fr the list of Meteor program. To subscribe please click on the button below. After Your validation by the list moderator your subscribe is ok.

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