

Alessandro Levi Montalcini
C.so Re Umberto 10
10121 Torino
Italy
mailto:LMontalcini@torino.alpcom.it
ftp://ftp.alpcom.it/software/mac/LMontalcini
ftp://ftp.alpcom.it/software/mac/LMontalcini/html/alm_home.html

PowerXplorer 1.0.4 documentation - December 1995

• Introduction

- ◇ PowerXplorer is a small application I wrote to **test the PowerPC speed** in native **floating-point calculations**. It draws the **Mandelbrot** set and lets you explore it by zooming in and out at will. The iterations may be increased (when there's too much black in the image) or decreased.
- ◇ PowerXplorer is a **"fat"** application: it contains code for both the 680x0 processors and the new PowerPC chip. The 680x0 code requires at least a 68020 and a 68881 coprocessor; it doesn't run on a 68LC040 because that chip has no math coprocessor. PowerXplorer requires **256 colors** (or grays) to display the images properly; with thousands or millions of colors the image is correct, but there's no **color animation**.

• Instructions

- ◇ PowerXplorer can display the actual **time** required to compute an image if the **Caps Lock** key is down when drawing is over (or if you type cmd-D). All screen drawing and other toolbox calls are excluded from the total time shown so you can test a machine's speed without worrying about its video card or the 57 extensions in its System folder.
- ◇ Two **"test"** images can be invoked by typing cmd-T or cmd-Y. These images take much longer than the default set to draw, so the **speed measurements** are more accurate. Typical values for a Power Mac 6100/60 on a 640x480 screen are **2.04** seconds for the whole set and **22.83** seconds for the first test image. A Quadra should be about **7 to 10 times slower**, whereas my Macintosh IIcx is about **100 times slower** (39 minutes for the first test image). Here's a list of the timings I measured with version 1.0.1 in a 640x480 window (timings for the current version would be different):

Machine	CPU/Speed	Whole Set	Test Img 1	Test Img 2
Macintosh IIcx	68030/16	188.26	2341.49	2166.91
Macintosh Quadra 700	68040/25	20.57	223.23	207.14
Power Mac 6100/60	601/60	2.04	22.83	21.10

- ◇ PowerXplorer checks for **keystrokes** or **mouse clicks** after each chunk of the image, but not during the calculations; on slow machines you may have to **wait** for up to 30 or 40 seconds before a command (like cmd-Q for Quit) is acknowledged.
- ◇ Comparing the speed of a 680x0 Mac to that of a Power Macintosh is **no easy task**, because their code comes from two separate compilers which may have different optimization capabilities. PowerXplorer 1.0.4 was entirely compiled with Metrowerks' **Code Warrior 7**, whose floating-point code optimization is now better than that of my other compilers.
- ◇ SORRY - there's almost **no user interface** in PowerXplorer because I never had the time to give it one.

• Version history

- ◇ **1.0.4** - Optimized 68K and PowerPC code with Code Warrior 7.
- ◇ **1.0.3** - Optimized 68K and PowerPC code with Code Warrior 5.5, cooler online docs.
- ◇ **1.0.2** - Added machine check, online docs and ported most of the code to Code Warrior.
- ◇ **1.0.1** - The color palette now changes every time that PowerXplorer is launched.
- ◇ **1.0** - First public release.

- **Distribution**

- ◇ PowerXplorer is ©1994-95 Alessandro Levi Montalcini. It can be freely distributed as long as it is not modified and there's no charge for it, but it may not be included in any commercial package without my consent.

- ◇ You may find the latest version of all my shareware programs by anonymous ftp to <ftp.alpcom.it>, inside the [/software/mac/LMontalcini](#) directory. The complete **ShareDisk** package, which contains all my stuff and can be registered at a very low price, is also available there.

- ◇ All **online services** and **bulletin boards** may make it available to their users at no charge other than the normal connection fees.

- ◇ All non-profit **user groups** may distribute it at no charge.

- ◇ All **magazines** may publish it on floppy disk without asking me first, as long as I get a copy of the issue containing my software.

- ◇ All **CD-ROM shareware collections** and **CD-ROM magazines** may include it without my prior consent, as long as I get either a copy of the CD-ROM or an offer to buy the CD-ROM at a discounted price.

- ◇ All **redistribution companies** such as Educorp may distribute it, as long as I get a copy of each media containing my software and a catalog of the company's offerings (where applicable).

- **Disclaimer**

- ◇ PowerXplorer shouldn't cause any damage, but you're using it at your own risk. As an independent software developer, I can make **no warranties** whatsoever on it.

Have fun with your Power Macintosh!
(or buy one right away...)