Apple's dragging OpenCL compiler problem

Remember the times that the OpenCL compilers where not that good as they're now? Correct source-code being rejected, typos being accepted, long compile times, crashes during compiling and other irritating bugs. These made the work of an OpenCL developer in "the old days" quite tiresome - you needed a lot of persistence and report bugs. Lucky on desktops the drivers have improved a lot.

Apple's buggy OpenCL compiler

Now to Apple. There have always been complaints about the irritating bugs that were in Apple's compiler. Recently the Luxrender community started to make more complaints, as the guy responsible for the OSX port decided to quit. This was due to utter frustration: code that worked on every other OS, simply did not work on OSX. Luxrender's Paolo Ciccone stood up and made this extremely public, by writing an open letter to Apple's CEO Tim Cook (posted below).

The letter is not specific about the kind of bugs and and therefore asked him via Twitter which were the bugs he was talking about. He explained me that it's very simple:

https://twitter.com/RealityPaolo/status/595972568961519616

Here at StreamHPC we could write around those bugs in most cases, but Luxrender has bigger and more complex kernels than we used in our projects - then it's simply impossible to write around, as the compiler simply crashes. It seems that OSX still has those old compilers, Linux and Windows used to have years ago.

Metal

Metal is the OpenCL-alternative on iOS 8 and up.

If you're thinking that Metal could be a reason - that language looks very much like OpenCL, as it's simply OpenCL as Apple would like it to be. Porting between the two languages is therefore quite simple. This also means that with some small fixes a Metel-kernel could be compiled by existing OpenCL-compiler. Ok, there is much more than the compute part, but the message is that more complex Metal wouldn't be possible using this driver-stack.

If we end up in a situation that Metal comes to OSX and is more stable than OpenCL, only then we can say that Apple tries to block OpenCL in favour of their own APIs.

The letter

I'm really happy that Paolo Ciccone had the guts to publicly complain. This is the letter he wrote:
Dear Mr. Cook.

I'm sorry to bother you but we have tried all other channels and nothing worked.

I'm part of a group of developers of a physically-based renderer called LuxRender. LuxRender has been written to use OpenCL to accelerate its enormous amount of computation necessary to generate photo-realistic scenes. You can see some of the images generated by Lux at http://luxrender.net. Lux is an Open Source program.

Apple has defined OpenCL and we have adopted this API instead of the proprietary CUDA in order to be able to work with all kind of hardware on all major platforms. It made sense for an OSS to use an open standard.

The reason why I'm writing to you is that, after waiting for years, we still have broken GPU drivers on OS X. Scenes that render perfectly well on Windows and even on Linux simply abort on OS X. This is happening with both AMD and nVidia GPUs.

The problem is unsolvable from our side. We need updated, fixed drivers for OS X. The problem is so bad hat our main OS X developer has announced, today, that he is giving up OS X. He simply can't do his job.

I kindly request that you look into this and give us working AMD and nVidia drivers in an upcoming, possibly soon, update of OS X. We are more than willing to work with your engineers, if you need any kind of specific help in identifying the problem.

Thank you for your attention.

Paolo Ciccone
If you want to help, also post this letter on your blog or in a forum. The more this is shared, the better. Especially Apple's forum, asking for the official statement.