

A pixel for pixel 8-bit downgrade from the vfx plate originated with the Dalsa Origin 4k camera - minimal grading has been used

Postcards from the Future

While many are settling for their new-found 2K environment VFX specialist Alan Chan is using the Dalsa 4K camera to accelerate the arrival of 4K stereo D-cinema

Alan Chan authored some of the first third party books exploring the power of LightWave 3D for photo-real visual effects, prior to heading off to Los Angeles to work on projects such as James Cameron's Titanic, Harry Potter and the Sorcerer's Stone, The Two Towers, and The Polar Express, among many others. Chan has been a Senior Technical Director at Sony Pictures Imageworks, and also produces, directs, writes and animates independent film projects like Postcards from the Future.

Alan Chan is a veteran of the VFX world with credits including the first Harry Potter, Titanic and Polar Express. He is a director too and has independently produced shorts for commercial distribution.

The distribution costs are driving his present project, *Postcards from the Future*, and persuaded him to use a beta version of a new camera system from Canadian company Dalsa. The company's Origin camera is a bayer-filtered 4K CCD type that records to remote RAID arrays. But Alan wasn't after putting the camera anywhere but in a green screen environment where everything is controlled and close to his VFX pipeline.

Postcards is a 34 minute short film about the future populating of the moon, it follows the first moon workers as they create an infrastructure on the planet. The postcards are the video messages coming back to their earthbound families.

Although the Dalsa Origin is one of the only 4K digital acquisition cameras out there, it really hasn't yet been seen enough to make any judgements. Alan used a pre-production model last year for the movie: "I come from a visual effects background, I've been working in the VFX industry for about 10 years and you get pretty cynical about stuff. But the plates that came back were unlike anything you've ever seen, we deal with 2k scanned plates all the time but this was a totally different

ball park. There's no grain, the images are rock solid and if you project it digitally what you don't have is the mechanical sprocket noise and artefacts."

Better Than The F-Word...

Alan isn't the only VFX guy I've talked to who has been freaked out by seeing what is ostensibly a film image but without any grain or artefacts from the film projector: "It doesn't look like film really but it doesn't look like HD either - I want to say 'better than film' but people would kill me..."

Ironically it is post guys like Alan who are pushing the use of high-end digital capture more than the acquisition industry itself. For Alan the reasons are easy to comprehend: "It gives me more control, its really easy to pull a clean key. With the Dalsa its nearly a one click operation, except for the hair, the hair is always a problem. Our two main issues on this project will be hair and helmet reflections, they're do-able but take a little bit of time.

"The big advantage for me is basically cost, the project itself is essentially a 34 min short film. We are going to post and prep

everything at 4K and so the final product will be a digital master with which we can go out and find large format distribution with. The idea is that we can take it to an IMAX theatre and have the resolution to hold up at that size.

"But all of that is actually done at a very low price point. We shot for three days on a soundstage which probably comes out to about \$50-60k. Granted there is a lot more effects work that goes on top of that but the whole reason we wanted to shoot digital was that I wanted to avoid all those steps where we basically had to shoot film or HD. Then transfer the stuff into the digital realm.

"What I am used to on my FX pipeline is essentially getting an image sequence for each shot and I wanted a camera

that would give me that data right away, instead of having to translate and copy and scan and all this stuff which costs money. So we are going straight from the camera into my pipeline and that's really the cool thing. At the end of the day you end up with a set of cool plates and you unplug the hard drive and you walk off!"

The Dalsa camera for all its great resolution has a down side which is its processing after shooting, basically the raw data has to be 'bayered' to turn it into something you can work with. Dalsa themselves helped Alan out with that, but what do you do about monitoring for exposure and focusing: "When we finished our offline edit or when the edit was locked we gave Dalsa a list of all the plates that we needed and they just ran it through their processor. Back then their software tool for processing the footage was still being developed so they did for us, hopefully it will be available next time.

"We had a sort of image village which would take a video tap from the camera and essentially would record a second or two of footage. We would pull up one of those frames and process it right there on the laptop so we could check our latitudes and

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exposures. Then we could start shooting”.

In a sense for Alan and his worldwide CGI collaborators this is where the work really starts. Once the Origin plates are in the pipeline, Alan’s usual ways of working are applied which means cutting proxy plates with frame numbers burnt in. These quarter resolution JPEG proxies, around 200,000 frames, are then burnt to a single DVD which is sent for the cut. That gets assembled into DV clips and is then cut with Adobe Premiere. Then when they’re happy they lock the edit and compile the EDL as usual.

4K Stereo

Once Alan has the footage into his digital domain the cost is slight as his ftp-able collaborators dotted around the world are doing him a favour... “My main goal is figuring out how to shoot this stuff as cheaply as possible and part of that meant going straight to the hard drives.

“If this thing is successful I’m hoping to get a budget for the next one and string two Dalsas together to shoot stereo 4K. They haven’t quite built the rig yet though!

“Dalsa is no longer playing in the 2K market, they say they are, because they want people to use this camera. But their technology supersedes all the other ones and takes it to the next step which is the large format.

“In order to go out and shoot a large format stereo feature, the cost at a minimum would be \$5million. If you take the Dalsa and put two of them together, granted the technology is not all there yet because of synch and the increase in data – it will come though. When it gets here essentially it will be a price point issue, I’m thinking I can probably shoot a large format movie for \$1million.

“Just like DV revolutionised the consumer industry, the HD



Top left anti-clockwise is – shooting 4K plates, processing a few frames to correct exposure etc, Eric Kaki DoP with the Dalsa, one of the leads in green screen mode

stuff is starting to change the film industry. I think what Dalsa is going to do is to end up changing the 4K industry”.

Alan is talking about the re-invention of the cinema, he sees what is going to happen when more people get great HDTV in their homes. The cinema will become less of an attraction: “The cinema used to be something you couldn’t get at home, it was an event, that’s what the theatres need to do now – give the audience something they can’t get at home. So we have large format and large format stereo.

“With the success of Polar Express IMAX you are going to see a lot more of that stuff”.

Alan scoffs at the emergence of the DI industry as he says the VFX guys have been doing it for ages. With *Postcards* he’s very keen not to touch film at all and has Sony’s 4K projector already in mind for his distribution. **HD**

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