

Digital Cinema and Data Workflows in China



An Interview with Wu Chiao, Director and Cinematographer



Wu Chiao, Director & DP

Well known director and cinematographer Wu Chiao is at the forefront of digital cinema in China. He has been immersed in the filmmaking process since his first day as a student of cinematography at the Beijing Film Academy. He has been the director and/or cinematographer (DP) of numerous films, setting a standard of excellence within China. George Lucas' 'Star Wars II' - the first motion picture to be shot using an HD camera - planted the seed with Wu Chiao that quality movies could be made outside the realm of traditional film methodology. Since then, he has amassed a good deal of experience and knowledge about the digital cinema process, including the quality and performance of digital cameras and data workflows, as well as their contribution to the art and craft of cinematography. He recently shared a few of his thoughts with ASSIMILATE.

QUESTION

Before digital cinema, you were using film. What was your impetus for choosing to work in the new medium of digital cinema?

Why have you embraced digital filmography?

You're at the forefront of digital cinema in China, using the workflow combination of the RED ONE™ 4K camera and ASSIMILATE's SCRATCH Digital Finishing Solution for post production. What projects have you completed using the RED/SCRATCH combination?

ANSWER

When I was studying cinematography at the Beijing Film Academy, film was the only option for making movies. At that time, China's film production and post-finishing process was very unsophisticated, so in order to achieve high quality for the film master and copies, we most often had to go abroad for the film processing and photo prints. At the beginning of 2002 I learned that the American director George Lucas filmed "Star Wars II" with HD cameras. This was hugely inspirational for me - I realized that if quality cinematography could break the boundaries of film, this would cause a great revolution, giving the creation of cinema much more freedom. This strong belief and sense of purpose was the impetus for my exploration and deployment of digital cinema. Although I experienced innumerable setbacks and difficulties during this quest, I have no regrets. I believe the future of cinema must be in the digital era.

I used the F900 in 2002 to shoot the first Chinese digital film "The Coldest Day," and won the Best Cinematography category for the Golden Rooster Award. From then on, my focus has been digital film technology and how to perfect the shooting, as well as the associated post and finishing processes. I have now finished over twenty digital films, while experiencing the spectrum of new digital technologies, from digital film development, to the initial stages of each digital technology - HDCAM to Film Stream - and now the REDRAW data. I believe I am one of the most progressive, comprehensive, thorough and active filmmakers in the field of digital film technology in China.

"Illusion," "Heavenly Man," "Right And Wrong," "Red Strawberry," and "Escape The Crisis." We have other projects in production now.

QUESTION

How long have you been using the RED ONE cameras for your films?

What major differences or advantages are you seeing in the use of the digital cinema workflow?



Image courtesy of Wu Chiao, Director & DP

Do you think digital cinema will become the mainstream medium in China for feature films and TV productions in the future?

What other digital tools are you using in conjunction with the RED camera?

How are you using SCRATCH?

What contributions does SCRATCH make to the digital cinema process?

ANSWER

Early in the 2008, we purchased a RED ONE 4K Camera, but as a new technology it required some time to test and adjust the workflow. In 2009, we set up a SCRATCH data workflow and mastered the use of its digital intermediate (DI) tool suite. Once we knew that SCRATCH could easily handle the REDCODE data, and we had very satisfactory results for the conform, color grading, finishing, and quality output, we began using the RED camera for filmmaking.

In 2004, I proposed that the nucleus of the digital filmmaking workflow was the integration and optimization of digital technologies, which is the most significant feature of, and biggest difference from traditional film. This premise is based on the integration of the digital-photography application features and the digital intermediate (DI) process. From the creative development to the technical principles, all filmmakers need to consider the fluid flow of pre-and-post production data, orchestrating a streamlined workflow for the entire production process. Exploiting digital technology to its fullest advantage ensures the best image quality and guarantees the narrative for the film. Integration is a prerequisite, while optimization is the goal.

Currently, the trends in digital film technology are a diverse selection of formats and flexible pipelines; seamless workflows and easily integrated DI tools; varying levels of technical complexity; increased productivity; and cost-effectiveness. The ultimate quality of the film depends on not only the talent and skill of the creative and post artists, but also the technology level of their tools. This differs from the past era of film, which has a defined, repetitive, time-consuming work process that relies on costly single pieces of equipment and fixed production methods.

In China, cinema has always been the high-end product of media entertainment, and always at the top of value chain. The swift development and broad application of digital technologies are bringing about a great revolutionary change to the filmmaking industry, now dominating present-day productions, and this will continue into the future. The digital era is here and it is changing the way movies are made in China and throughout the world.

Fortunately, there are numerous choices and options now for building a digital pipeline. We use a digital field recorder, Final Cut Pro, SCRATCH, plug-ins, and so much more.

SCRATCH is at the hub of our digital pipeline. We use it for data management, conform, color grading, compositing, reviewing dailies, client reviews, and finishing. Visual effects can be easily dropped into the timeline.

One of the important capabilities of SCRATCH is its ability to easily process the native RED R3D files so that post artists can get the most out of the imagery with the color grading and finishing. The analytic reduction of color space in SCRATCH is still the best within the variety of available DI products. The SCRATCH workflow includes the most effective DI tool suite for post production of RED-based imagery, including conform, color grading, and finishing, as well as the best quality results for filmmakers.

QUESTION

How have the digital cameras and other digital tools changed the way you approach your work?

What testing of digital cinema technology are you engaged in now?

What is your vision for future digital cinema technologies?



ANSWER

◀ Profound changes have occurred during the evolution from the HD era to the digital era of filmmaking. The present RED workflow is more like working with film. During the pre-production we can control the exposure, based on the exposure and temperature meters we're familiar with, while with an HD camera we must rely on the standard and waveform monitors. In contrast to the HD equipment, we use SCRATCH in the post production where we can immediately "process" the digital negative and do the color grading. We're able to hold a huge adjusting space for dynamic range, shadow and brightness levels, hues and so forth. It is much more convenient to use the disk-based and flash memory-based storage, compared to using the video tapes and film reels of the past. With the innovations and rapid progression of digital technology, the art of cinema is making a huge leap forward in ease of use, while maintaining high-level quality standards.

◀ We are currently doing a comparison test between RED MX and the ARRI ALEXA cameras. In all our testing, we have found that the present digital cameras have completely surpassed the film camera in the aspect of photo-sensitive characteristics and mechanical properties. The high-quality results have reached, and often exceeded that of film - in resolution, sensitivity, dynamic range, frame rate, and color reduction.

We are also researching the integration and optimization of workflows, by which the digital negative can reduce and replicate three channels of RGB within the smooth transition of 10-bit color gradation. This is the only problem caused by the photo-sensitive characteristics of the Bayer filter in the digital cameras, and this needs to be resolved quickly.

◀ The speed of technical progress and innovation for digital cinema will continue to move forward at a rapid pace. This is good news for filmmakers and all creative and post artists, as well as the viewing audience. As the digital negative replaces film, the quality output will reach even higher levels of clarity and sophistication. The focus should be on how to apply these new technologies in an integrated and optimized workflow. Only in this way can we put more power and performance into the hands of the creative communities and markets.



Images courtesy of Wu Chiao, Director & DP