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A New HD Frontier for *Scrubs*

by Bob Fisher

CAPTURING WILD OCEAN

by Claudia Kienzle

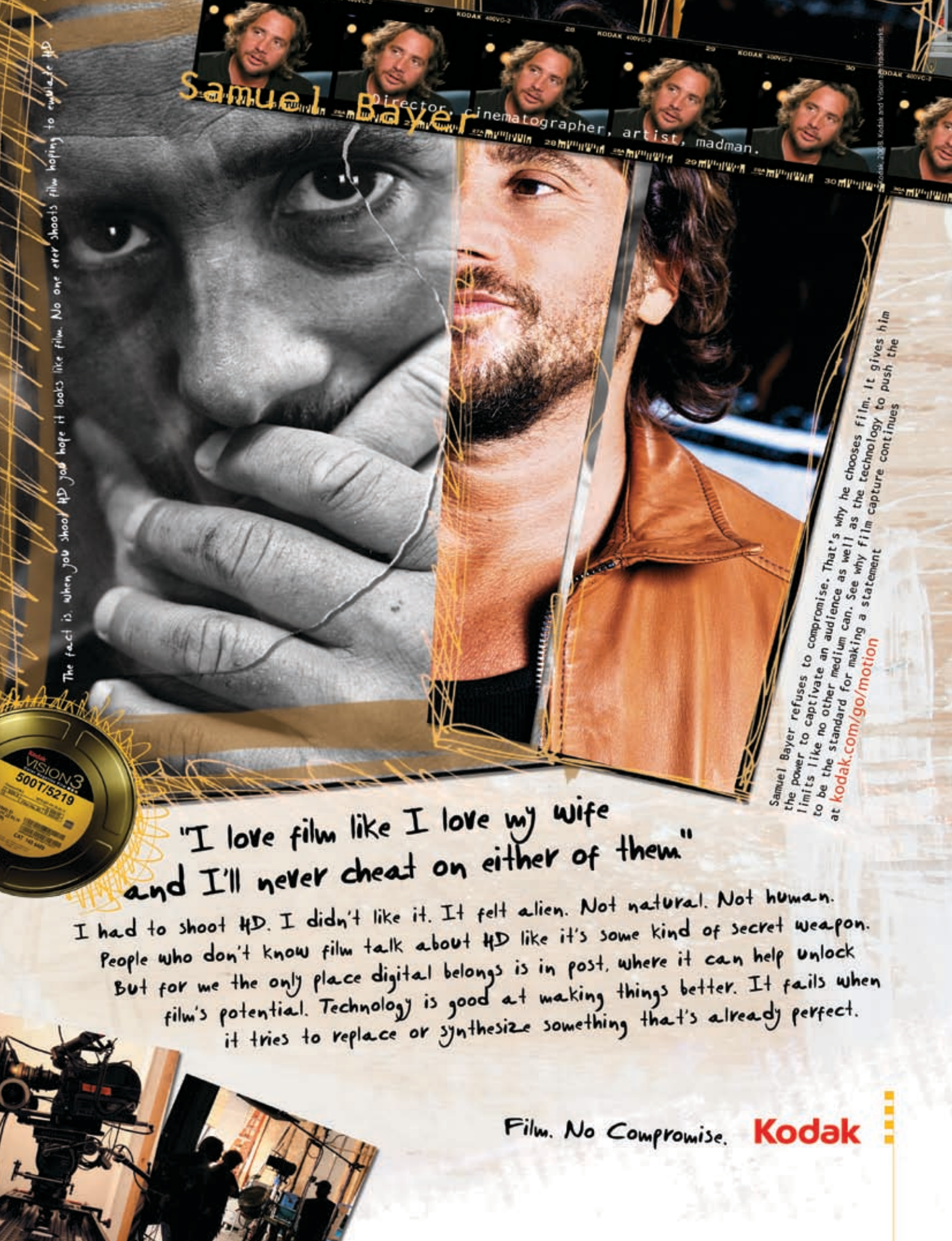
SOUND REVOLUTION

by David Royle

A SENSE OF WONDER

by Ian Cheney





The fact is, when you shoot HD you hope it looks like film. No one ever shoots film hoping to emulate HD.

Samuel Bayer Director, cinematographer, artist, madman.

Samuel Bayer refuses to compromise. That's why he chooses film. It gives him the power to captivate an audience as well as the technology to push the limits like no other medium can. See why film capture continues to be the standard for making a statement at kodak.com/go/motion

"I love film like I love my wife and I'll never cheat on either of them"

I had to shoot HD. I didn't like it. It felt alien. Not natural. Not human. People who don't know film talk about HD like it's some kind of secret weapon. But for me the only place digital belongs is in post, where it can help unlock film's potential. Technology is good at making things better. It fails when it tries to replace or synthesize something that's already perfect.

Film. No Compromise. **Kodak**

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c o n t e n t s



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Front Cover: (L – R) Actor Zach Braff and actress Sarah Chalke in a scene from the "Princess" episode of *Scrubs* shot by cinematographer John Inwood. Photo by Dean Hendler/NBC.

NEWS & PRODUCTS



MIRA SELECTS FUJINON

Portland, OR-based Mira Mobile Television has acquired a complement of 12 Fujinon HD lenses for the company's newest high-end, 53-foot HD production truck, M7HD. The new lens package for M7HD includes: one XA101x8.9BESM super telephoto field lens with image stabilization, six XA88x8.8BESM telephoto field lens with stabilization, three HA22 x7.8BERM ENG lenses and two HA13x4.5BERM ENG super wide angle lens. The 53-foot mobile unit will travel with the 12 Fujinon lenses and 10 Sony 1550 1080p HD cameras. The lenses utilize Aspheric technology (AT2), found exclusively on Fujinon lenses.



PANASONIC HDV/DV/DVCAM AND PRO DV TAPE

Panasonic Broadcast has two new advancements in its line of professional digital media - the new AMQ-Series Advanced Master Quality tape for professional master-quality HDV, DV and DVCam recording and the new PQUS-Series Professional Quality Pro DV tape for professional miniDV recording. AMQ tapes feature Panasonic's next generation Super Advanced Metal Evaporation (S-AME) technology with four times the magnetic density of the previous tape generation, providing +1.2dB higher output than the competition. Advancements in Panasonic's proprietary Dry-Type lubricant and Diamond-Like Carbon (DLC) film development boost the tape's durability for high speed shuttling, still-frame, and professional editing. A surface treatment process extends VTR head life and reduces head clogging and dropouts.

STUDY: SCREEN SIZE VS QUALITY

A new iSuppli consumer survey has found that U.S. consumers rate picture quality -- and then pricing and brand -- as the most important attributes, according to TWICE Magazine. In fact, the survey, which was conducted during the second quarter of 2008, found that screen size ranks fifth among consumers who make between \$25,000 and \$99,999. Higher income residents ranked screen size even lower.

PANASONIC AVC-INTRA CODEC AND AVID

Panasonic Broadcast announced that new editing solutions from Avid Technology, Inc. offer import and native editing support for its AVC-Intra codec. AVC-Intra provides high-quality 10-bit intra-frame encoding utilizing the Hi-10 and Hi-422 Intra profiles of H.264 in two modes: AVC-Intra 100 for full-raster mastering video quality and AVC-Intra 50 Mbps for DVCPRO HD comparable quality at half the bit rate. These new Avid solutions offer native support for Panasonic camera-based codecs. Avid's latest editing solutions enable AVC-I to be mixed and matched in real-time with other codecs such as Panasonic DVCPRO HD and Avid DNxHD (as long as the same edit rates are used), enabling high performance workflows in multi-format environments.



PETROL RAINCOVER FOR SONY EX-1 & Z7

Petrol, a Vittec Group brand, introduced the PRC-EX1 transparent Raincover, weather protection for Sony PMW-EX1 and HVR-Z7 cameras. Constructed largely of clear polyurethane (PTU) for maximum visibility, the PRC-EX1 offers quick and easy access to all camera features and even enables work with the flip out LCD screen fully open. A hot shoe con-

nectector in the cover's rigid front hood section anchors and stabilizes it on camera. At the rear, durable waterproof rubber fabric surrounds and protects the viewfinder.



CANON BU-50H HD ROBOTIC PAN-TILT-ZOOM SYSTEM

Following on the success of its BU-45H remote-control outdoor robotic pan-tilt HD 16:9 camera system, Canon U.S.A., Inc. introduced the BU-50H for indoor POV (point-of-view) applications. The BU-50H remote-control robotic indoor pan-tilt HD camera system is engineered to provide exceptional HD video imagery and versatile performance in such locations as houses of worship, legislative chambers, studio POV camera positions, indoor security areas, and many other environments. The BU-50H is an extremely quiet P/T system and features a maximum noise level of NC30. It is well suited for operation in very quiet environments, including studios, conferences, lectures, and classical music concerts.

AVID SUPPORTS XDCAM HD 50

Sony XDCam HD MPEG-2 Long GOP 50 Mbps format is now available in Avid Technology's Media Composer, NewsCutter and Symphony product lines. The functionality is available via a free software upgrade for all Avid customers running Version 3.0 of Media Composer and Symphony and Version 7.0 of NewsCutter software. With this release, Avid Media Composer, NewsCutter and Symphony products now support the Sony PDW-700 and PDW-HD1500 cameras for ingest at all bit-rates (50 Mbps for both 1080i and 720p) and frame rates of 1080 50i, 59.94i and 720p. Customers must upgrade to Version 3.0.5 of Media Composer and Symphony or Version 7.0.5 of NewsCutter software to receive these updates as well as ingest and edit capabilities for the Sony XDCam HD 50 Mbps format. **HD**

even **twins** have their own **personalities**.



the beauty of P2 HD in two new handhelds

Like twins, Panasonic's new AG-HPX170 and AG-HVX200A full production quality P2 HD handheld camcorders are as alike as they are different. They both offer a 13X Leica Dicomar zoom lens; 1080i/p and 720p and 4:2:2 independent-frame recording; variable frame rates; a new, advanced 3-CCD progressive imager with spectacular quality; and the reliability and flexibility of a fast, file-based workflow.

Why might you prefer one over the other? The HVX200A features a DV tape drive in addition to two P2 card slots, allowing you to move easily from SD to HD and from tape to solid-state. If you have already transitioned to a solid-state file-based workflow, the two-slot HPX170 offers additional high-end features, including HD-SDI, metadata input, Dynamic Range Stretch and a 5-year limited warranty (upon product registration).

The HVX200A and HPX170. Distinctly different, yet uniquely alike. Learn more at www.panasonic.com/p2hd.



AG-HVX200A

- 11 variable frame rates
- 4.2mm – 55mm
- Lightweight – 5.5 lbs
- 3.5" flip-out LCD
- 21 HD and SD formats

AG-HPX170

- 20 variable frame rates
- 3.9mm – 51mm
- Lightweight – 4.2 lbs
- Waveform/Vectorscope
- 3 focus assist functions



Capturing *Wild Ocean*

Photo by Dale Stokes

by Claudia Kienzle

As the ocean water cools off the coast of South Africa, massive schools of sardines migrate along the KwaZulu-Natal Coast in search of food, while dodging predators—such as sharks, dolphins, whales, and gannets—who gather to feast on them.

In the Fall of 2007, as these predators approached from air and sea to eat the sardines—these feeding frenzies were captured by Director of Photography D.J. Roller wielding a specially designed Cameron/Pace Fusion 3D HD camera system with Fujinon HD lenses for the IMAX 3D film, *Wild Ocean*, released by Giant Screen Films in March 2008. With its superior HD clarity and 3D realism, *Wild Ocean* gives viewers a sense of what it's like to be in the midst of

this underwater life and death struggle.

As the president of Liquid Pictures in Atlanta, GA, Roller's DP credits include underwater cinematography for several episodes for *National Geographic Explorer*, PBS' *Nova*, *Deep Sea Detectives*; as well as *Ghosts of the Abyss*, a 3D film directed by James Cameron about the Titanic. Roller's filmography also includes many pioneering HDCam production expeditions in the 1990's to Antarctica and other harsh, remote locations for National Geographic Channel, Discovery Channel, and *Nova*.



Photo by Dale Stokes

DP D.J. Roller filming scenes for the IMAX 3D film *Wild Ocean*. With Roller is underwater 1st AC Vance Wiese. Roller and Wiese are using Cameron/Pace Fusion Underwater HDTV 3D camera systems equipped with Fujinon HA10X5B-W50 HD Cine Style zoom lenses.

A 3D HD Camera is Born

While working on *Ghosts of the Abyss* and another Cameron 3D film, *Bismarck*, Roller encountered the unique Cameron/Pace Fusion 3D HD system, which Cameron had developed in conjunction with Vince Pace of The Pace Company in Burbank, CA. The Cameron/Pace Fusion 3D HD system consists of two customized Sony HDC-F950 Cine Alta HD cameras and specially configured Fujinon lenses that all operate in tandem to converge and focus on subjects the way the human eye does to create the stereo 3D imagery.

The two Cameron/Pace Fusion camera systems that Roller took out on *Wild Ocean*—one primary and one backup that were used simultaneously—were each outfitted with two Fujinon HA10x5B-W50 HD Cine-Style zoom

lenses. An additional lens was packed as a backup.

Extreme Adventure

Prior to each underwater production expedition, the primary camera system and the backup were each placed within their own watertight, aluminum underwater housing that has external controls to control the power, focus, iris, zoom, and other camera functions. A third watertight housing secured a companion Sony SRW-1 RGB HD tape deck.

Since there are no easily accessible beaches along the expansive South African coastline, Roller had to put the camera equipment onto two 25-foot, inflatable, rubber Zodiac boats. These boats, which carried the crew and equipment, negotiated narrow



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FUJINON INC.

2621 Manhattan Beach Blvd., Redondo Beach, CA 90278-1604
Phone: (310) 536-0800, Fax: (310) 536-0022

FUJINON INC. 10 High Point Dr., Wayne, NJ 07470-7434
Phone: (973) 633-5600, Fax: (973) 633-5216

1-324 Uetake, Kita-Ku, Saitama City, Saitama 331-9624 Japan
Phone: 81-48-668-2152

www.fujinon.com



Photo by Luke Cresswell

The IMAX 3D film, *Wild Ocean* provides viewers with a sense of what it's like to be in the midst of Gannets as they find a meal along the KwaZulu-Natal Coast in South Africa.

tributaries and rivers that run between rocky cliff walls and braved heavy, oncoming surf until they reached the sea. Since there was no way to prevent waves splashing into the boats, or to protect against sea spray and rain, these extreme, wet conditions presented a constant threat to the delicate electronic cargo onboard. "The ocean and camera equipment are two things that don't mix well together," Roller said. "Salt water, rain, wind, and the jostling and vibrations of the boats all presented risks to the well being of our equipment. Once we prepped the camera within the underwater housing and closed it up, we could not pop the lid open again until we returned to dry land. Opening it on-board would be too risky. It's a testament to the integrity of the camera equipment that it all worked extremely reliably despite the challenging environmental conditions we faced."

Nimble and Brave

When the boats reached the desired dive sites, the housings were dropped into the water and later retrieved by sliding them along custom plastic slides that Roller's crew attached to the sides of the Zodiac boats. A certified veteran diver, Roller jumped into the water and gripped the camera housing and submerged it to the desired depths, anywhere from just below the surface to about

90-feet down.

Roller's production crew included fellow divers and DP/Directors Steve McNicholas and Luke Cresswell, who shared shooting responsibilities, as well as members of Frog Squad, a South African dive team that often provides support to filmmakers that come to the region to shoot. Choosing not to use shark cages, the *Wild Ocean* divers occasionally had sharks brush up against them. But Roller said that no one was injured because fortunately the sharks were far more interested in eating the sardines. The dive team had to be extremely nimble to catch the many dramatic events that were unfolding below the water's surface. Minutes and seconds were of the essence since nature doesn't wait.

Failsafe Performance

The stereo 3D images were captured and recorded in RGB-4:2:2 HD resolution until each 26 minute Sony SRW-1 cassette tape was filled. Unlike the camera housing, the tape deck's housing could be opened on the boat so that the cassettes could be changed prior to the next dive. The record deck/housing was connected to the camera/housing via an umbilical cable, which added another layer of complexity to the production so that the camera and deck didn't become disconnected during rigorous underwater photography.

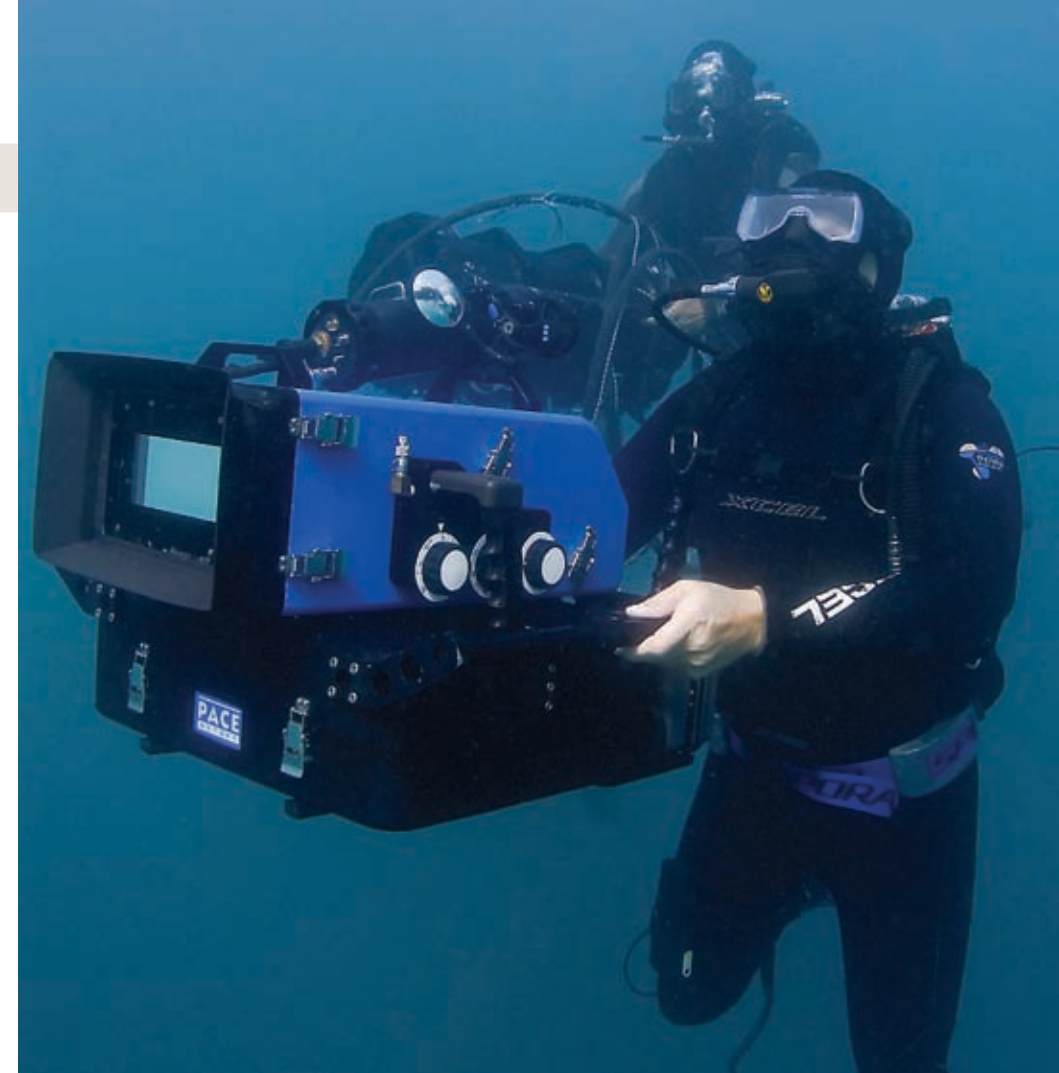


Photo by Dale Stokes

"As I'd move the camera housing from one spot to another underwater, it was not uncommon to encounter different temperature, lighting, and visibility levels. The water would range from gin-clear to dense with particulate matter," Roller said. "Despite these challenges, the Fujinon lenses performed extremely well and offered enough latitude to respond quickly to the changing conditions. The 5mm wide angle enabled me to focus on subjects about five feet away and the 50mm telephoto enabled me to zoom out to get subjects ranging from 30 to 50 feet away." Prior to leaving for production, in mid- 2007, Roller went to a Fujinon service center to tune up his two main Fujinon HD lenses and backup to optimal optical and mechanical perfection prior to the long journey.

Choosing HD over IMAX

When shooting was finished, the HD images were color graded and processed into stereo 4K 3D HD images for projection in either IMAX or digital cinemas in HD resolution. While HD resolution is not comparable to IMAX's 70mm superior projection quality, Roller said that tests done prior to shooting

assured them that HD technology would be sufficient when up-converted. "We could not have taken an IMAX film camera and underwater housing to South Africa because the entire assembly would have weighed about 1500 pounds, or ten times more than the Cameron/Pace Fusion camera and housing assembly. Because of its weight, we could not have easily shipped the IMAX equipment or even put it onto the small Zodiac boats, which were the only way to get out to our coastal production location," said Roller. The IMAX film camera equipment also out-weighs the small boat that would have carried it.

"The IMAX camera would also have limited us to much shorter film loads and caused us to wait each time we started the camera rolling before it would reach the 24 frames per second film speed," said Roller. Also evaluating the dailies would not have been as easy or immediate as it was to review the day's HD tapes. Roller noted, "While camera and record technology is continually advancing, we always choose the tools that we feel are the most mature, reliable, and well-suited to the needs of a particular production." **HD**

The Cameron/Pace Fusion 3D HD system consists of two customized Sony HDC-F950 Cine Alta HD cameras and specially configured Fujinon lenses that operate in tandem to converge and focus on subjects the way the human eye does to create the stereo 3D imagery.

Bringing History to Life

by Bob Fisher



Photo courtesy of The Library of Congress

Signs of the Time, the 60-minute documentary, focuses on the evolution of hand signals that umpires use to indicate balls and strikes. The story revolves around William Hoy, a deaf baseball player nicknamed "dummy," who competed from 1886 until 1902. Hoy couldn't hear umpires calling balls and strikes, so he worked out hand signals with his team's coaches. By the 1920s, umpires were using hand signals to indicate balls and strikes, and later for safe, out, fair and foul.

Director Don Casper learned about Hoy while he was working at the National Technical Institute for the Deaf. After joining Crystal Pix in Rochester, New York, Casper shared his vision for producing a documentary with cinematographer-editor Ray Manard and director of photography Eric McMaster.

The documentary includes archival footage of 35 mm newsreels dating back to the turn of the century. They used Super 16 film for recreations of period baseball games with actors and fans in costumes, as well as for

interviews in eight states with legendary baseball players, umpires, managers and Hoy's granddaughter.

"We chose Super 16 because the camera is mobile and unobtrusive," McMaster says. "Film gave us the flexibility we needed to work day and night in every kind of light without compromising production values. It's also a proven, archival medium."

"An ARRI SR3 camera was used with several zoom and prime lenses. The modest film palette consisted of KODAK VISION2 50D 7201 for daylight exteriors, 200T 7217 for interviews, and 500T 7218 film for night scenes. We shot everything at 30 frames per second instead of 24 giving it a smooth feel, and we avoided the 3:2 pull-down while transferring film to HD."

"We shot some 70,000 feet of film because we let the camera roll during interviews," Manard says. "What we didn't use is history for the archives."

Signs of the Time will premiere on the festival circuit starting in 2009. **HD**

Above: (L – R) Game announcers Smith, Cy Rigler, Bill Klem, Silk O'Laughlin and Billy Evans at the 1915 World Series.

Right: (L – R) Director of photography Eric McMaster and producer Ray Manard set up a shot for Signs of the Time while actor Michael Barreca and key grip Chuck Moran look on.



Photo by Shawn Birmingham



Photo © Laura Johnson

NATURE's American Eagle

by Neil Rettig

Following the success of Raptor Force, NATURE's American Eagle is the second collaboration between Thirteen/WNET New York, award-winning cinematographer, Neil Rettig and filmmaker, John Rubin. Rettig captures an unprecedented view of eaglets' first days of life using lipstick cameras high in a wild eagle nest.

The most important lens system used during production of American Eagle was the 10-400mm Canon with image stabilizer. This lens had the reach required with an often skittish eagle, and required no lens change in the field. While working in the blind near wild eagles, any movement such as hands changing a lens would frighten the eagles away. Once the Canon was on the camera, it was the only lens needed for the day. Also in windy situations it was a great tool, taking away camera shake due to wind and making it possible to shoot on seemingly impossible days.

We rigged and camouflaged three Korea

Technology and Communications high resolution outdoor bullet cameras around the nest, running cables to a workshop fortuitously located within 100 feet of the eagles. Raptor specialist, Bob Anderson, was in charge of the "nest cams" which enabled me to capture some intimate footage including a memorable shot of a female bald eagle steadfastly incubating her two fragile eggs in the middle of a virulent snowstorm. The nest of a bald eagle is a huge structure, often 6 feet in diameter. Sticks as large as 2 inches in width are often hauled in. I have seen both sexes collecting sticks by flying upward and smashing into the canopy of trees to dislodge a branch.

I think the beauty of flight is phenomenal and there's something about predatory birds that people relate to and become excited about. The eagle is just an absolutely magnificent bird. It is our American symbol and like our country it has gone through trials and tribulations but in the end thrives. **HD**

Neil Rettig, cinematographer of NATURE's American Eagle and Bald Eagle.

SONY®



— Robin Berg, Director



The Outdoor Channel airs over 300 hours of original programming per year. And has a new house format: XDCAM HD.

"We opened eyes at the Outdoor Channel when we shot *Spear Gun Hunter* on XDCAM HD," says Robin Berg, president of BEI Inc. and director of the new series, *Savage Wild*. "When they saw the durability, that was big. When they saw the possibilities for program exchange and archive, that was huge. And when they saw how well the footage matched far more expensive camcorders, they started converting their entire operation." To hear the full story, visit us online.

 [click: sony.com/xdcam](http://sony.com/xdcam)



Tips h d

by B . S E A N F A I R B U R N S O C

3D Images

3D offers a new and truly amazing way to view images and will be consumed in many forms. Movie theaters will always have the best 3D impact but markets for HDTV's and computers will also have many viewers. In addition to that you can download 3D content on cell phones and enjoy a music video or 3D animation.

This is great for the penetration of content as theaters and TV manufacturers build in that capability into all new products. An important element that needs to be considered is the screen size to viewer distance. Its simple geometry but it makes a big difference and will help the 3D images pop or be flat and less impressive.

First take a look at a 40 ft screen in a movie theatre, if you sit 2.5 screen heights away and your eyes are 2.75 inches apart that is a ratio of viewer distance, viewer IO and screen size 175:1 (Screen 175: your eyes 1). Now look at the same images on a 24 inch computer screen on your desk.

The field of view may be similar but your IO distance is still 2.75 and in relationship

is 9:1 (Screen 9: your eyes 1). In scale your eyes are much bigger and farther apart as the screen gets smaller watching the computer monitor than in the movie theatre. Now usually no big deal as when we watch movies it's always a single lens shooting and projecting a single eye's worth of information but with 3D the second eye provides the depth that our brains put together as a 3D scene.

The bottom line is that for each range of display

size the footage will need to be corrected to maintain the effectiveness of the 3D. Forty foot screen down to 6 foot screen can work, but smaller size displays will need to be repurposed or shot with wider IO in the first place. This will give the viewer the impression that the whole scene is miniature but that will be necessary to make it work. The real challenge will be shooting 3D for display on cell phones where infinity is entirely off the screen. **HD**



B. Sean Fairburn, SOC
Director of Photography,
Role Model Productions,
LLC. rolemodel@earthlink.net
seanfairburn.com
818-621-3912
Local 600,
Agent Steve Jacob,
323-460-4767

"Coffee Drinking Problem" in 3D would appear miniature on smaller screens and background would need to stay close for effective presentation.



Photo © Smithsonian Networks

Sound Revolution

by David Royle

Down in Clarksdale, Mississippi, there's a place called the Ground Zero Blues Club, so named because it stands at a crossroads known as ground zero for the blues.

In the club, sitting in front of an HD camera is its owner, Morgan Freeman. As the camera rolls, he suddenly breaks into song. "I've got a woman" he sings, "she's good to me..." and you can tell that he's not just singing. He's living the musical heritage that means so much to him, now explored in the Smithsonian Channel's new series *Sound Revolution*.

Morgan Freeman hosts the series from the club, located in a building with walls covered with hand written messages from Blues fans. "It was a challenge to make sure that every detail of the location stood up to the minute scrutiny of the HD camera," says executive producer Alan Ravenscroft of Eagle Rock Entertainment.

In *Sound Revolution* Freeman weaves the story of the roots of blues and jazz and rock

and roll, with rare archival footage and astonishing performances by musical greats performing on stage. What's so surprising is that the performances were all shot some 15 years ago in HD when most broadcasters were only beginning to consider the format.

"It all goes back to Claude Nobbs, the founder of the Montreux Festival" says Peter Worsley of Eagle Rock. "He always loved new technology and he had a partnership with Sony which provided him with early equipment." The HD video includes spellbinding performances by stars such as Carlos Santana, Eric Clapton, and BB King. Now the Smithsonian Channel has re-mastered these performances with 5.1 surround sound, and is bringing them to a wide audience.

It's a musical feast, and once broadcast, Morgan Freeman will no longer be alone bursting into song. **HD**

David Royle is Executive VP for Programming and Production at the Smithsonian Networks.



Photo © Kwaku Alston for stocklandmartel.com

Above: Carlos Santana who performs in the upcoming series *Sound Revolution*.

Top: Close-up of guitars at Paul Reed Smith Factory.



Photo by Chris Ramirez, HD Theater

Why We Race

by David Schaefer

Driver Tony Bufomante in his car, #34, at the Ford Racing Mustang Challenge for the Miller Cup at New Jersey Motorsports Park in Millville, NJ.

Discovery HD Theater's three-part series, *Why We Race: The Mustang Challenge*, captures the rivalry, competitive drive and racing action of the inaugural Ford Racing Mustang Challenge for the Miller Cup. This new professional road racing series, co-developed by Ford Racing and Miller Motorsports Park, features professional racers utilizing the Ford Mustang FR500S in an eight-race schedule across North America.

Why We Race: The Mustang Challenge features the thrill of this high-speed racing series from start to finish and all of the crumpled fenders and dented egos in between. But how did HD Theater capture all of this action in spectacular high-definition?

The HD in-car camera systems, which were supplied by On-Board Video, Ltd., were similar to the company's award-winning, innovative TREAD-CAM Motor-sports cameras typically embedded into race tracks' surfaces where race cars drive over them at speed. These high-definition 720p/1080i in-car cameras were mounted using race-proven camera

fixtures facing to the front and rear on the roofs, front splitters, rear wings, foot boxes, over the driver's shoulder, and straight-on towards the driver's face.

By covering all of the angles throughout the races, *Why We Race: The Mustang Challenge* allows audiences to feel as if they are riding shotgun through each hairpin turn or serpentine chicane on these magnificent road race tracks.

Since this racing series features both raw rookies and hardened veterans, the racing competition provided some bump and grind position changes and plenty of hard-hitting crashes. Most of the camera systems survived the production throughout the summer, but some of the tire barriers, retaining walls and other cars in a driver's way took their toll.

To see the end result, produced by Lingner Group Productions for HD Theater, watch *Why We Race: The Mustang Challenge* starting on Sunday, December 7 from 8-9 PM ET and running for three consecutive Sundays. **HD**

High Definition Makeup: The Latest Trend?

by Bradley M. Look

Move over mineral makeup, as cosmetic giants Christian Dior, Smashbox, Cargo, MAC, and Make Up Forever have jumped onto the pixel bandwagon. As HD has become the industry standard, the cosmetic industry has finally taken notice. Whereas theatrical makeup lines such as Graftobian, Temptu, and Kryolan (to name just a few), have already developed product lines for the professional makeup artist, it took a little longer for mainstream companies to follow suit. But new mega ad campaigns are embracing the latest trend and HD has become the buzzword.

Several years ago the "it" word being bantered around in cosmetic ads was the much-hyped term, "professional." Everything was anointed with the word to let the layperson know that only those products listed as "professional" would give the best results. This was followed by the equally popular "it" word, min-

eral. But with an entire nation quickly embracing the HD technology, from mega pixel cameras, computer monitors and the vast growing number of households having wide screen television entertainment centers, this may be one trend that will have staying power. With an overwhelming public interest in everything highdef, the cosmetic industry has now ushered in this new age with complete lines to make the average housewife look more similar to the fictional onscreen desperate counterpart! These newer makeup lines have even cross-pollinated as more professional makeup artists have begun to use them on their talent. Let's run through several of these new lines of makeup.

Cargo has introduced their blu ray High Definition™ line that uses revolutionary ingredients, such as Photochromatic pigments and optical blurring, which will give the skin a flawless natural finish. Make

Up Forever developed a High Definition Foundation that can give problem skin full coverage, while making it look flawless, but not cakey. Christian Dior brought out Capture Totale High-Definition Serum Foundation, which contains optical correctors and liquid crystal pigments. Smashbox has come out with 13 shades in their High Definition Healthy FX Foundation, which supposedly makes your skin healthier from the inside out. Luminess Air introduced Airbrush Cosmetics to the general public with a blitz of infomercials demonstrating the many virtues of applying makeup with air as oppose to "bacteria-filled brushes and sponges" when touching the face. MAC introduced their Micronized Airbrush Makeup that is a cutting edge silicone-based formula. NVEY Organic Crème Deluxe Foundation has been formulated to give the skin a soft smooth appearance. **HD**

HD makeup's are becoming quite commonplace. Step into any Sephora and you can find many brands offering their take on high definition makeup. Shown are just a few examples currently available to both the general public and professional makeup artist.



Photo by Bradley M. Look

hd tv

Forum

by STEVE SECHRIST

Panasonic 3D Plasma Delivers Full-HD to Each Eye

A new 3D plasma theater system from Matsushita Electric (Osaka, Japan; www.panasonic.com), is being touted as the world's first full HD 3D plasma system. It includes the giant Panasonic 103-inch plasma television and a modified Blu-ray disc (BD) player. Remarkably, the system distributes full HD (1920 x 1080 pixels) images to each eye, requiring active-shutter glasses that work in synchronization with the plasma television. The BD player plays back BD 3D images, consisting of coded information for left- and right-sided 1080p full HD.

Panasonic said this system enables full HD signal processing on each of the left and right images in every process – recording, playback and display. The system includes the plasma display; 3D images developed by Panasonic Hollywood Laboratory (PHL) recorded in real time onto a single, standard Blu-ray disc; BD player technology to decode and play back the left and right full-HD

image data, plus dynamic 3D images of athletes at the Olympic Games and animated Hollywood movies.

Panasonic displayed this technology in a separate theatre at the CEATEC show

in Japan last month. Our Panasonic contacts here in the US told us that so far, this is a technology demo only, and there is no official plan to commercialize the 3D system at this point. **HD**



Steve Sechrist is an editor/analyst at Insight Media, a technology based media firm specializing in large format and micro display and related industries.



Photo courtesy of Sherwood Pictures

Fireproof with AJ-HDC27H

by Brian Cali

The filmmaking team from the 2006 hit *Facing the Giants* -- writer/director Alex Kendrick, producer/assistant director David Nixon and Director of Photography Bob Scott – joined forces again for *Fireproof*, an action-packed love story about fighting fires and marital demons from Sherwood Pictures.

Shot with Panasonic's AJ-HDC27H VariCam® HD Cinema camera, the new film opened late September with little advance marketing and went on to earn an impressive \$6.8 million and the number four slot at the box office. *Fireproof* stars Kirk Cameron (*Growing Pains*) as Captain Caleb Holt, a firefighter trapped in a flailing marriage.

The *Fireproof* filmmakers were guaranteed a film-out. Therefore, Kendrick and Scott decided to take full advantage of the VariCam's imaging capacity and record (via an HD-SDI feed from the camera) directly to an on-set Mac using Final Cut Pro and Blackmagic's DeckLink HD video card. The video stream was encoded using Apple's

ProRes 422 at a 220 Mbps data rate. Scott also recorded to DVCPRO HD tapes for back-up.

Fireproof was predominantly a one-camera shoot, and Scott outfitted the camera with a Pro 35 lens adapter and Zeiss super-speed lenses. "We wanted to emulate a film look as much as possible, and those accessories gave us the same characteristics as 35mm from the lens standpoint, with a shallow depth of field and film-like grain." The DP used two AG-HVX200 P2 HD camcorders for some extreme action shots, including shooting out of a fireproof box in the middle of a fire.

"The camera stood up very well to punishing sequences shots on moving trucks and trains, not to mention in burning buildings," he continued. "I felt my greatest challenge on this shoot was lighting for fire. Fire is so bright that you need a certain exposure so the image doesn't wash out. I've had a lot of experience shooting tricky lighting conditions with the VariCam, and I was able to dial in a range that I was very happy with." **HD**

Scott recorded via an HD-SDI feed from the VariCam directly to an on-set Mac using Final Cut Pro and Blackmagic's DeckLink HD video card.



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A Sense of Wonder

by Ian Cheney



Above: Christopher Monger and Haskell Wexler on location.

Top: Kaiulani Lee portrays Rachel Carson.

A *Sense of Wonder* is a documentary-style film, shot in High Definition, reflecting the life of Rachel Carson, pioneer of the North American environmental movement and author of *Silent Spring*. Shot by two-time Academy Award-winning cinematographer Haskell Wexler, the film is based on the play of the same name, written by and starring Kaiulani Lee.

The 54-minute film unfolds in two acts. Act one takes place at Rachel Carson's cottage in Maine. Battling cancer and preparing to return to her public life, Carson fears it may be her last visit to her beloved coastal home. Act two fast-forwards two months to the critical maelstrom surrounding the release of Carson's book *Silent Spring*.

The film was shot in HD by Wexler (*Who's Afraid of Virginia Woolf*, *One Flew Over the Cuckoo's Nest*) at Carson's cottage on the coast of Maine; directed by Christopher Monger (*The Englishman Who Went Up a Hill But Came Down A Mountain*) and produced by Karen Montgomery (*Special Thanks to Roy London*). *A Sense of Wonder* will be released

in the United States in early 2009.

Ian Cheney, Outreach Producer, *A Sense of Wonder* (ian@asenseofwonderfilm.com)

Haskell Wexler, ASC and HighDef A brief interview by David Thompson Editor, HighDef Magazine

I spoke briefly with Mr. Wexler, two-time Academy Award-winning cinematographer. He was born February 6, 1926 and has been adjudged one of the ten most influential cinematographers in movie history, according to an International Cinematographers Guild survey of its membership. He won his Oscars in both black & white and color, for *Who's Afraid of Virginia Woolf?* (1966) and *Bound for Glory* (1976). In 1993, Wexler was awarded a Lifetime Achievement award by the cinematographer's guild, the American Society of Cinematographers. He received five Oscar nominations for his cinematography, in total, plus one Emmy Award in a career that has spanned six decades.

Q. Mr. Wexler, what challenges did you have on location with HD?

HW – The location was good, a natural location in New England where Rachel Carson lived. When shooting HD It's slightly different from shooting in film. I have been shooting HD with a consumer camera different however from the one we used in the film. We used a Panasonic HVX-200 on this project. We downloaded it onto P2 cards and then it would go right into the computer. I was not really acquainted with the system and there were things that I had to do which I did not expect to do. I got good advice in how important a properly set monitor is. The procedures were strange to me.

As far as problems go, a lot of things that I ordinarily do and have in my control were in someone else's control. In regards to the actual locations I had to be more conscientious while shooting exteriors about the direction of the light and the range from dark to light that is acceptable to highdef which is different from film.

Q. How was it working with the lighting, natural and artificial, while shooting in HD?

HW – About 80% of the film was interiors. In this particular film I am operating the cam-

era and when you operate the camera the finder screen does not accurately show what is on the card so you have to refer to the monitor. That means that monitoring is done separately from looking through the camera. Focus is very critical with high def. The lens doesn't have footage markers and things the way film cameras do. I had an assistant who would look at the big monitor and do the focusing. My experience has been good and I have been somewhat excited in learning something new and not just doing the same thing all the time.

Q. Are you excited about the growth in High Definition?

HW – Absolutely, one format doesn't erase the other. It's just another way of capturing images. I think that High Def 3D is going to be a terrific thing. Image making has to be able to give something to people that they can't easily see in their house. I do believe in the importance of a theater experience where you are sitting next to people and having a social experience. I think that Highdef 3D projected is something that is going to be the future in theaters. It's important to learn and to grow with it and that way it feels like progress. **HD**



Photos © 2008 Sense of Wonder Productions LLC

Aaron C. Doughty as Roger and Kaiulani Lee as Rachel Carson in tide pool.

A New HD Frontier for *Scrubs*

by Bob Fisher



John Inwood came onboard to shoot the first season of *Scrubs* after Dick Quinlan, ASC, filmed the pilot episode in 2001. Situation comedies were traditionally produced with four video cameras on sound stages in front of live audiences. *Scrubs* was produced with a single Super 16 film camera, mainly on sets built in a defunct Los Angeles hospital that was damaged in an 1994 earthquake. About 10 percent of each episode was filmed at practical locations.

The Touchstone Television series aired on NBC Television in standard definition format. Inwood used his own Aaton XTR prod camera and Canon zoom lenses. He composed images in 4:3 format, while protecting for 16:9 aspect ratio so episodes could be aired in HD format when the market evolved.

The series revolves around seven main characters in an urban hospital. Zack Braff portrays a naïve intern-turned-doctor who is

surrounded by an ensemble cast of regular characters and weekly role players. Threads of comedy, drama and fantasy are weaved into the fabric of each episode. Inwood established a cinema-like visual grammar on the television comedy series by using light, darkness, contrast and colors to punctuate the sense of place and time while amplifying emotional tones of stories. "There is comedy in drama and drama in comedy," he says.

Inwood has subsequently shot approximately 150 episodes of *Scrubs* and he has directed seven others. He earned an Emmy nomination for *My Princess*, the last episode of the 2008 season and NBC network finale, which was also directed by Braff. About half of that episode unfolds at the hospital in contemporary times. The other half happens in a fantasy world with different characters in medieval times.

Inwood took a non-traditional painterly



Photo by Richard Cartwright/NBC

Above: John Inwood, cinematographer, director

Right: (L – R) Zach Braff as John "J.D." Dorian, Donald Faison as Turk in a scene from "My Inconvenient Truth" Episode of *Scrubs*.



Photo by Dean Hendler/NBC

approach to creating nuanced looks for the different worlds. His basic tools were the same Aaton camera and Canon zoom lenses that he has used from the beginning. He varied his choice of media, while creating more contrasty lighting and manipulating images in postproduction. "I usually light for a natural look, but I felt that this episode called for extremely contrasty lighting," he says. "I shot the fantasy elements with color reversal film (KODAK EKTACHROME 100D 7285) using a warm filter on the camera lens and a stocking behind it to soften the look a bit. We punch up the colors in telecine."

Contemporary scenes, as well as the majority of the series, were filmed on KODAK VISION2 250D 7205, 50D 7201, and 200T 7217 color negative films. Inwood and telecine colorist Larry Fields at Level 3 in Burbank, California, collaborated to desaturate colors in telecine. "It's a nuanced difference that we wanted the audience to sense more on a subconscious level than having it jump off the

screen," Inwood says.

Inwood has worked with Fields from the beginning. They have developed a shorthand for communicating. Inwood chalks notes on gray scale charts filmed before each scene and longer written messages describing his intentions in addition to verbal communications. He also watches timed programs and provides input for Fields whenever possible.

Inwood is currently shooting the ninth season of *Scrubs*. It is airing in HD format on the ABC Television network. Fields is timing the episodes on a Spirit DataCine. "When we started producing this series some people were claiming that the picture quality that you render on film in Super 16 format wasn't sufficient to air in HD format," Inwood recalls. "Larry Fields and I tested the show in HD and found it not only held up, but it looked terrific. Many believed it had been shot on 35 mm. I believe that older episodes will continue to air long into the future on HD television." **HD**

(L – R) Actors John C. McGinley (on horse), Sarah Chalke, Zach Braff, and Donald Faison in a scene from the "Princess" episode of *Scrubs* shot by John Inwood.



Images courtesy JAXA / NHK

Direct from the Moon

by Dara Klatt



Above: A CGI image of Japan's space probe Kaguya orbiting the Moon. Kaguya has been circling the moon since October 2007.

Top: The earth captured with an HD wide-angle camera on April 5, 2008.

Neil Armstrong and Buzz Aldrin enthralled the nation when they became the first men to land on the moon. Now, 40 years later, you don't have to wear a space suit to see lunar marvels up close in spectacular detail. On November 17, as part of National Geographic Channel's first annual Expedition Week, the network is premiering highdef video of the moon's surface beamed directly back from just above the moon in *Direct from the Moon*. This special unveils the astonishing lunar terrain thanks to Kaguya, a Japanese lunar orbiter launched in October 2007, and shows the first footage of the moon's surface since Armstrong and Aldrin walked on it.

Kaguya captured the first-ever high-definition images of an "earth-rise" and "earth-set," a stunning visual even someone standing on the moon could not witness. To capture this image, the moon, earth, sun and Kaguya had to line up perfectly — an event that can occur only twice a year. For those

who spend their careers studying the moon, the event was incredible.

Kaguya consists of a main orbiting satellite and two small satellites (relay satellite and VRAD satellite) in polar orbit around the moon. The spacecraft is equipped with an HDTV camera, one wide-angle camera and one telephoto camera. Its high-performance terrain camera can take 3-D (stereo) images of craters. It is loaded with 14 different types of the most-up-to date observational instruments, with which it is studying the joint history of the earth and the moon.

"Seeing the moon and all of its unique features with the detail, clarity and crispness that HD offers makes you realize how precious and beautiful it is," says National Geographic Channel Executive Producer Howard Swartz. "Our hope with *Direct from the Moon* is that people walk away from this film with a sense of awe and wonder at our universe." The program is scheduled for November 17 at 9PM ET/PT. **HD**



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