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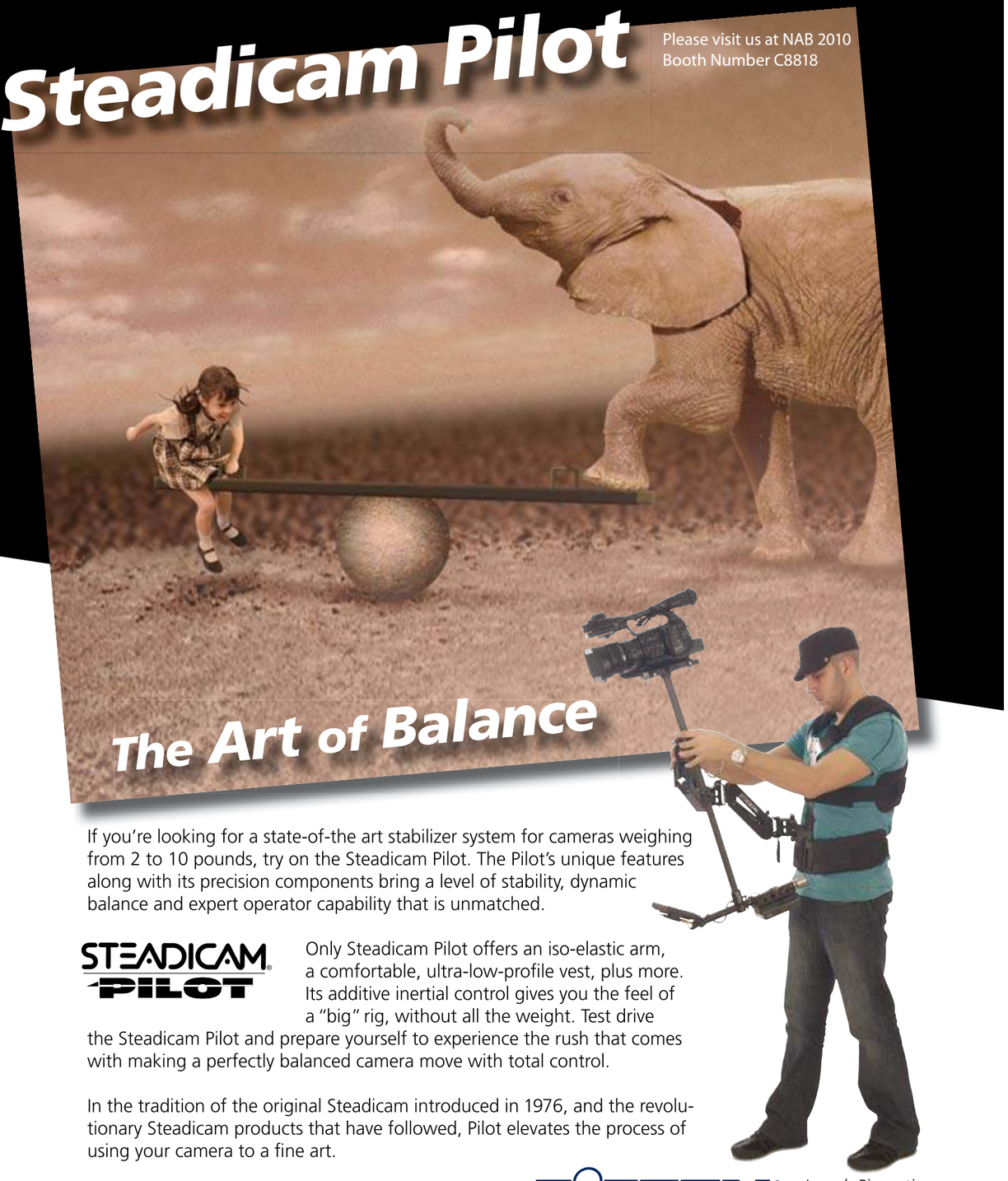
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## *Splice* Director Vincenzo Natali

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## On the Cover

Tim Hardy (left) and Jason Anderson (right) doing a Canon 7D and RED comparison test at Asgard Entertainment.



Welcome to our fourth anniversary issue of *StudentFilmmakers* Magazine. The Premiere Issue of *StudentFilmmakers* Magazine launched at NAB in April of 2006. We just finished a highly successful, two-day intensive RED ONE production workshop in NYC with Jon Firestone where each attendee shot up to a 10-minute clip. See photos and get more information in the networking section online at www.studentfilmmakers.com and be sure to sign up for both the magazine and future workshop notifications. We will be announcing summer workshops covering all stages of filmmaking and new technologies including 3D, HDSLRs, Sound, RED post production and more.

This edition's exclusive Close-Up interviews are with award-winning *Splice* Director Vincenzo Natali, who shares his directing and writing techniques for sci-fi creature and world creation – and with Oliver Curtis, BSC, who shares his insights and advice on camera moves, lighting, and finding your first shot. Volume 5, No. 2 highlights topics in relation to 3D Filmmaking, DSLR Filmmaking, and HD Production. Plus – excellent educational articles in the categories of Cinematography, Directing, Editing, Audio, and Formats. In this issue's 3D Filmmaking department, check out the articles, "23 Things 3D CGI Does Really Well To Plan Your Story Around: Reach Out and Grab Your Audience in Full 3D CGI Glory," and "New AG-3DA1 Integrated Full HD 3D Camcorder," which is a preview of Panasonic's new 3D camera.

On the Cover of Volume 5, No. 2 is a production still of Tim Hardy and Jason Anderson doing a Canon 7D and RED comparison test at Asgard Entertainment. Read this issue's Cover Story, "The Two Worlds of Still and Motion Imaging Collide: Are the New Canon DSLRs the Poor Man's RED?" Written by Jon Firestone, the article includes 14 reasons why the Canon DSLRs are not the RED, 7 things that are better about the Canon DSLRs, and 7 basic accessories you'll need to turn your Canon DSLR into a cinema camera. Additionally, audio issues on the Canon DSLRs are addressed.

We look forward to seeing you at the 2010 NAB show. As you trek through the levels, halls, and show floors, make sure and pick up your complimentary copies of *StudentFilmmakers* Magazine, which will be at several distribution points and at our booth # C10106.

*Enjoy this edition!*

Truly,
Kim E. Welch
Publisher / Editor-in-Chief


# studentfilmmakers

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Panasonic's AG-HPX370 P2 HD camcorder moves you up to a whole new level of production quality. A new, state-of-the-art 2.2 megapixel 3-chip U.L.T imager* produces stunning HD content in a wide range of shooting conditions, with the sensitivity and signal-to-noise ratios of larger imagers. With a superior 10-bit, 4:2:2, full 1920 x 1080 resolution AVC-Intra codec, the HPX370 can record more image detail more accurately. Ready for global production, the HPX370 offers international HD and SD standards, including 1080p/i and 720p as well as industry-standard DVCPRO HD.

Start your next project with all the advantages of P2 HD's faster, file-based workflow and AVC-Intra's precise independent-frame encoding. You deserve the HPX370. For more info, visit www.panasonic.com/broadcast. For a free demo or to purchase the HPX370, e-mail us at pbtsinfo@us.panasonic.com.



Easily configure the HPX370 for studio production.

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P2HD AVC-INTRA DVCPRO HD

# 23 Things 3D CGI Does Really Well To Plan Your Story Around

## *Reach Out and Grab Your Audience in Full 3D CGI Glory*

by Sherri Sheridan

*Avatar* is the new *Star Wars* for this generation of digital filmmakers. The visual fourth wall has just been shattered inviting the audience to now be in the film they are watching during a 3D IMAX type viewing experience. As a filmmaker and writer, you now have to consider things like Z depth, and how your story can literally reach out and grab the audience from the screen in full 3D CGI glory – every scene.

3D CGI films also make more money (if the visual story is good) and are the hot new thing studios are making. The 3D CGI experience cannot be duplicated as easily with home viewing situations, forcing movie lovers back into the 3D theaters.

*Avatar* is now the highest grossing film ever created and the most expensive. Independent filmmakers can still make 3D CGI films. They just need to focus on doing what 3D CGI does fast. Avoid using highly detailed photorealism visual styles that require long set up and rendering times. Pixar films started with plastic toys, then, moved on to fish, cars and flat shaded cartoon looks for a reason.

*23 Things 3D CGI Does Really Well To Plan Your Story Around:*

**(1) Original 3D CGI Characters.** You can create any character you can imagine in 3D CGI. This is the biggest sell point of this very time consuming animation style. People want to see things they have not seen before, or in a drastically new way in 3D animated films.

**(2) Original 3D CGI Sets.** Any location that you can imagine, you can build in 3D CGI. What set have you always wanted to see? *Avatar* shows us a jungle utopia on a distant planet with tree gods.



*Avatar* hooks us visually and emotionally using 11-foot tall, blue-skinned, native catlike beings with tails and glittery skin. In this photo, Neytiri (Zoe Saldana, right) teaches Jake (Sam Worthington) the skills he'll need to survive on Pandora. Photo credit: WETA; Courtesy of Twentieth Century Fox Film Corporation.



*Avatar* brings to life lush alien jungles and floating tree-covered islands hovering in space. These are great for the catlike people to climb around on and do extreme parkour type POV shots across the 3D CGI terrain. In this photo, Pandora's majestic floating mountains dwarf a massive gunship. Photo credit: ILM; Courtesy of Twentieth Century Fox Film Corporation.

**(3) Image/Camera Mapping.** Most 3D CGI programs do a good job of mapping photos or DV, to simple planes or objects, which can then appear as highly detailed 3D CGI elements with lots of depth.

**(4) Adding Digital Makeup/Extra Body Parts.** 3D CGI may be used as digital makeup on actors, or blue screen characters, to add limbs, cut them in half, or have something like a worm crawl out of holes in their faces.

**(5) 3D CGI Camera Movement.** Cameras in 3D CGI software programs can do almost anything, unencumbered by needing dollies or tracks for movement. They are especially good at mathematically controlled motion paths, original POV's and flying through unusual, microscopic or tight spaces.

**(6) Realistic 3D CGI Stunt Moves.** 3D CGI stunt actors never get hurt or complain. Blowing 3D CGI models up is much cheaper than destroying real cars or buildings. How could you create a 3D CGI enhanced POV stunt shot for your film that is too dangerous to do in real life?

**(7) 2D Characters on 3D CGI Planes for Better Animation Controls.** The 2D animated show *South Park* is done in Maya, by mapping pictures onto flat planes the shape of the images. This allows the character animators to take advantage of the powerful animation abilities in the 3D CGI software to move the parts around more easily than using a less evolved 2D package.

**(8) 2D Cell Shading for Video and 3D CGI Footage.** Some filmmakers are shooting on DV, then taking the footage into 3D Studio Max or Maya, to take advantage of the 2D shader abilities. A shader is like a filter that renders adjustable visual styles such as looking hand drawn.

**(9) Distorting Actors.** Many traditional 2D animated distortion or morphing effects can be created with an added dimension in 3D CGI.

**(10) Animated Animals or Objects.** What animals or inanimate objects could you bring to life in your film using 3D CGI?



This alien has a talking stick with a duplication of himself holding another one.

**(11) Duplication.** Once you model, texture map and animate one object or character, it is easy to make copies. Use this to your advantage by making robot armies, twins, gangs, fleets of objects or factories full of workers. How could you make simple variations of one character, to form a group of individuals, by modifying parameters such as scale, visibility, color, rotation and position on individual body parts?



Once you have one dancing alien, it is easy to duplicate and make a whole party of dancing aliens.

**(12) Flocking Systems.** Flocking is the ability to animate large groups of objects or characters in a natural looking way.

**(13) Physics.** Many 3D CGI programs allow you to assign properties to objects such as weight, material, velocity and friction. These objects then assume those properties during animations while interacting with other objects.

**(14) Hair and Cloth.** What kind of hairy looking characters or unique clothing could help give your film a signature look?

**(15) Motion Ride Animation Paths.** What kind of POV ride could you take your audience on as part of your film? 3D CGI works great for traveling through spaces in a way DV and 2D animation cannot do.

**(16) Mixing Animation Styles.** Real blue screen actors can be inserted into 3D worlds to save money on character animation and sets.

**(17) 3D CGI Water, Fire, Smoke, Weather, Plants and Trees**. 3D CGI is getting good at doing natural elements and plants. How would the plants and weather look different in your world where you control everything?

**(18) Outer Space Shots.** Space has low geometry (lots of space with round planets), that makes it easy to do in 3D CGI. Modeling a simple flying saucer and setting a few motion keyframes against a starry backdrop plane is relatively fast. Taking that spaceship and duplicating it a hundred times gives you a fleet of UFOs. How can you have your story take place in space? How can you create a unique version of outer space?

**(19) Unusual Texture Maps.** Once you have a 3D CGI model, you can place any type of texture map across the surface, which opens up a bunch of metaphorical possibilities for your stories. *Avatar* features characters with blue sparkly skin and lush jungles.

**(20) 3D Scanning.** 3D scanners are getting better and cheaper as the technology develops. Almost any object can be 3D scanned to save time modeling.

**(21) Motion Capture.** If character animating is not a thrilling way to spend your time, you could choose to use an actor in a motion capture suit to generate keyframes. There are lots of motion capture files available on the web to plug into your 3D CGI characters too.

**(22) Z Depth Wow Shots.** Study what works best in 3D CGI by watching *Avatar* in a 3D IMAX theatre. Thin things poking out into the audience from the middle of the screen look more 3D than big thick objects. Sets that wrap around the outside edges of the screen with 3D CGI elements extend the film world into the audience. Little firefly looking jellyfish creatures who hover in the middle of the theatre add lots of depth and pop out off the screen.

**(23) Free 3D Internet Models.** Google any type of model and find ones online ready to go for free.

Sherri Sheridan teaches storytelling techniques to digital filmmakers and animators with her books, classes and workshops. She's also the creative director at Minds Eye Media in San Francisco (www.mindseyemedia.com), where she directs, produces, animates, writes and designs projects for a wide range of clients. Sherri is the author of the books, "Maya 2 Character Animation" (New Riders 1999) and "Developing Digital Short Films" (New Riders / Peachpit / Pearson 2004). Recently, she created a 20 hour DV workshop based on the books called, "Writing a Great Script Fast," available at www.MyFlik.com.



Discuss this article, and post your ideas, comments, and questions in the Online Film and Video Production Forums moderated by experts at www.studentfilmmakers.com/bb.



# New AG-3DA1 Integrated Full HD 3D Camcorder



## *What are the features to check for?*



The new AG-3DA1 is the world's first professional quality, fully-integrated Full HD 3D camcorder offering SD media card recording. At less than 6.6 pounds, the AG-3DA1 is equipped with dual lenses and two full 1920 x 1080 2.07 megapixel 3-MOS imagers to record 1080/60i, 50i, 30p, 25p and 24p (native) and 720/60p and 50p in AVCHD. It can record for up to 180 minutes on dual 32GB SD cards in Panasonic's professional AVCHD PH mode, and offers professional interfaces including dual HD-SDI out, HDMI (version 1.4), two XLR connectors, built-in stereo microphone and twin-lens camera remotes.

**AG-3DA1's Major Specifications:**

- Twin-lens Full HD 3D camcorder.
- Power Consumption: 16 W (main unit only).
- Weight: Under 6.6 pounds (3 kg) -- main unit only.
- Recording Media: SDHC/SD Memory Card.

The Full HD 3D camcorder will offer the following core benefits:

**Easier to Use**

Current 3D systems are large-scale setups in which two cameras are fitted to a rig in parallel, or vertically intersect across a half-mirror. Separate recorders are also required. In the AG-3DA1, the lenses, camera head, and a dual Memory Card recorder are integrated into a single, lightweight body. The camcorder also incorporates stereoscopic adjustment controls making it easier to use and operate.

The twin-lens system adopted in the camcorder's optical section allows the convergence point to be adjusted. Functions for automatically correcting horizontal and vertical displacement are also provided. Conventional 3D camera systems require these adjustments to be made by means of a PC or an external video processor. This new camcorder, however, will automatically recalibrate without any need for external equipment, allowing immediate 3D image capture.

**More Flexible**

The solid-state memory file-based recording system offers greater flexibility to produce Full HD 3D videos reliably in more challenging shooting environments. The AG-3DA1 is lighter weight and smaller than current 3D rigs, while providing the flexibility of handheld-style shooting. Setup and transportation is simplified, making it ideal for sports, documentary and filmmaking projects.

**Solid-State Reliability and Workflow**

Right and Left Full HD video streams of the twin-lens 3D camcorder can be recorded and distributed as files on SDHC/SD Memory Cards, ensuring higher reliability than tape, optical disc, HDD or other mechanical-based recording systems. This solid-state, no-moving-parts design will help significantly reduce maintenance costs.

Users will enjoy a fast, highly-productive file-based workflow, with instant, random access to recorded content; easy plug-in to both Mac and PC-based platforms; and longer recording capacity.

**More Affordable**

Using a standardized, fully integrated design, the AG-3DA1 is being offered at a much lower price than traditional 3D rigs. Transportation expenses for this handheld unit will be less and faster setup times reduce labor costs. Using standard, re-recordable SDHC/SD Memory Cards available already everywhere, media costs become almost insignificant.

Suggested retail Prrice for main unit is $21,000, available in Fall 2010 (made to order). For more details information, visit Panasonic website: http://pro-av.panasonic.net/en/3d.

No close-up lens is used.



Shot with a close-up lens.



# Focus on:

# Close-up Lenses

## *When you need to get up close and personal...*

by Ira Tiffen

Lenses are a marvel of light control. They manage to take in the many details of the world around us, and then, project them onto a recording surface for our subsequent viewing pleasure. You can use them to define what your audience sees and what they don't see: viewing angle, depth-of-field, exposure, and much more are all managed by the exotic embodiment of optics extending outward from the front of your camera.

As capable as they can be, there will be times when they can use an assist. Filters, as we know, represent an array of assistant options that employ flat optical elements. However, even with their vast range, they can't do everything. And one of those things they can't do is help the lens to focus more closely than it was originally designed for. When getting closer is important, you need a close-up lens attachment.

To better relate to the ability of close-up lenses to add interest to your images, it might help to think of Sherlock Holmes... his deerstalker cap, the clay pipe, the ever-present magnifying glass, "Aha, Watson, it's elementary!" You can see what you'd otherwise miss when using a close-up lens, which is really a magnifying glass for your camera lens.

There are different styles of close-up lenses, although the basic one is analogous to the magnifier of Holmes' choice: a single-element lens, with at least one side convex, and of positive diopter strength. A typical example would fit within the range of +1 to +5 diopters, where 'diopter' is a unit of measurement relating to the optical strength of the lens. I won't get more detailed here, because it's rare that you need to know more. There are tables and figures and equations readily available if you need them. Just be aware that a +4 is stronger than a +2; they can be combined for added strength; while they get you up close, they also reduce depth-of-field to what may be a very narrow range. And they'll readily make a small object the center of your audience's attention.

Other types of close-up lenses improve the image quality by adding more optical elements, with a generally concurrent addition to cost. Dual-element achromats have such enhanced qualities and are what you'd seek if the standard single-element lens isn't right for you. Best way to tell is to test the single-element types first, as they are usually more readily available and more budget-friendly; if not acceptable, then go achro.

In our example images, the snail seems just another part of the landscape without the use of a close-up lens, taken at the closest distance to the subject that the un-aided camera lens will focus at.

Add the close-up lens, in this case a single-element +3 diopter, and you bring our snail to center stage – his presence is more powerful, for a snail, and this will allow you to tell his story with much greater effect than otherwise, without the lens attachment.

We all know of the many successful conclusions that Sherlock Holmes was able to deduce with the aid of his trusty magnifier. You'll find close-up lenses can work their imaging magic for you, too.

In over 30 years of making optical filters, Ira Tiffen created the Pro-Mist, Soft/FX, Ultra Contrast, GlimmerGlass, and others, netting him both a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences and a Prime-Time Emmy Award. Elected a Fellow of the SMPTE in 2002, he is also an Associate member of the ASC, and the author of the filter section of the *American Cinematographer Manual*.

