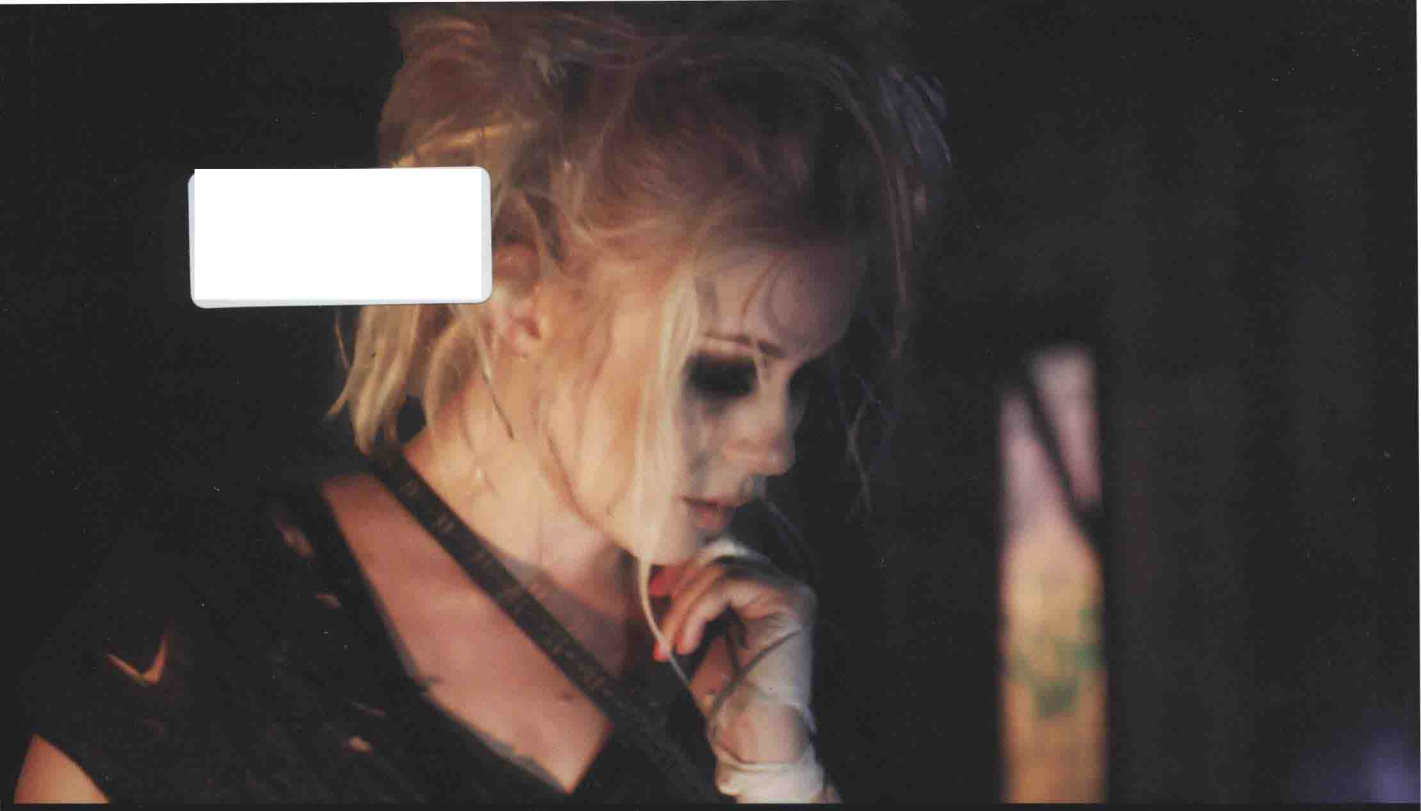

COMPOSITING VISUAL EFFECTS IN AFTER EFFECTS

ESSENTIAL TECHNIQUES

LEE LANIER

Compositing Visual Effects in After Effects

Essential Techniques

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Compositing Visual Effects in After Effects

Create vibrant visual effects with Adobe After Effects. Gain the tips, tricks, and applied knowledge you need to carry out essential visual effects tasks and bring your digital compositing to the next level.

In *Compositing Visual Effects in After Effects*, industry veteran Lee Lanier covers all the common After Effects techniques any serious visual effects artist needs to know, combining the latest, professionally vetted studio practices and workflows with mini- and multi-chapter projects and hands-on lessons.

Engaging, full-color tutorials cover:

- Color space management
- Color channel manipulation
- Chroma keying
- Rotoscoping and masking
- Matchmoving and motion tracking
- Working in the After Effects 3D environment
- Recompiling 3D render passes
- Color grading

The companion website (www.focalpress.com/cw/lanier) features video image sequences, 3D renders, matte paintings, and other tutorial materials, allowing you to immediately apply the techniques taught in the book.

Lee Lanier has worked in the motion picture industry since 1989, having spent hundreds of hours on live-action sets and thousands of hours working with high-end animation and compositing software. He's created visual effects for Walt Disney Studios and served as a senior animator in the modeling and lighting departments at PDI/DreamWorks on *Antz* and *Shrek*. In addition to having taught at the Academy of Art University and Gnomon School of Visual Effects, Lee has written seven books on visual effects and digital compositing, has recorded tutorials for lynda.com and The Foundry, and is a member of the Visual Effects Society.

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Introduction

Visual effects compositing is rarely boring and is often surprising. Every shot you are tasked to work with will undoubtedly contain new challenges. With time and practice, you'll develop your own tricks and workflows to create professional results—and that is what this book is about. I've worked as a professional animator and VFX compositor for almost 20 years, spending thousands of hours working in Adobe After Effects and similar compositing programs. The VFX compositing wisdom I've gained through mistakes, successes, and long hours is contained in this book. I have no intention to cover every After Effects effect, plug-in, parameter, option, and so on. Instead, I've included the most critical information on the most useful components of the program, along with tips and tricks for utilizing them. To strengthen this knowledge, I've included a number of short "mini-tutorials" that allow you to master VFX tasks quickly. In addition, each chapter includes a longer tutorial that steps you through more challenging compositing tasks.

You, the Reader

Compositing Visual Effects in After Effects is aimed at beginning compositors who have a basic working knowledge of After Effects who would like to expand their knowledge of visual effects compositing techniques. This book is also suitable for those professional compositors who wish to transition from other areas of compositing, such as motion graphics, to visual effects work. In addition, this book will prove useful for any digital artist wishing to transition from other compositing programs, such as The Foundry Nuke. Basic interface information is also included at the end of this introduction to help a new user get up to speed quickly.

Topics Covered

Compositing Visual Effects in After Effects covers critical visual effects theory and technique, including:

- Color space management
- Color channel manipulation
- Chroma keying
- Rotoscoping and masking
- Matchmoving and motion tracking
- Working in the After Effects 3D environment
- Recompiling 3D render passes
- Color grading

In addition to the coverage of After Effects built-in tools and effects, this book covers plug-ins commonly used in the visual effects industry. These include:

- RE:Vision Effects Twixtor and ReelSmart Motion Blur
- Red Giant Primatte
- Red Giant Trapcode Particular
- The Foundry CameraTracker
- Neat Video Reduce Noise

The book also explores bundled third-party party programs that are designed to work directly with After Effects. These include Imagineer Systems Mocha AE and Maxon Cinema 4D Lite.

Required Software

This book was written with Adobe After Effects CC 2013 and After Effects CC 2014. In addition, the files were tested with beta copies of After Effects CC 2015. Any significant differences between CC 2013, CC 2014, and CC 2015 are noted in the text. The majority of tutorial files are saved in the Adobe After Effects CC 2013 .aep format. A few files are saved in the CC 2014 and the CC 2015 formats as they require more recent effects. After Effects CC comes bundled with Mocha AE and Cinema 4D Lite. The non-bundled plug-ins discussed in this book are not mandatory for successful learning; however, they are useful and are available for trial download from their respective software websites (listed in each chapter).

Screen Snapshots

The book's screen snapshots are taken with After Effects CC 2013 and CC 2014 running on 64-bit Windows 7 and 8 systems. A minor difference between CC 2013/2014 and CC 2015 is the color scheme of the program interface (Figure I.1). Nevertheless, this has little impact on the program as the menu options and basic workflow are unaffected. Any exceptions to this rule are noted in the book.

System Requirements

After Effects will run poorly unless your computer's hardware and operating system software meets the minimum criteria. The criteria is carefully spelled out at the following web page: helpx.adobe.com/x-productkb/policy-pricing/system-requirements-effects.html

Downloading the Tutorial Files

Example tutorial files are provided for this book and may be downloaded from www.focalpress.com/cw/lanier. These include several gigabytes of After Effects project files, video image sequences and QuickTime movies, Maya and

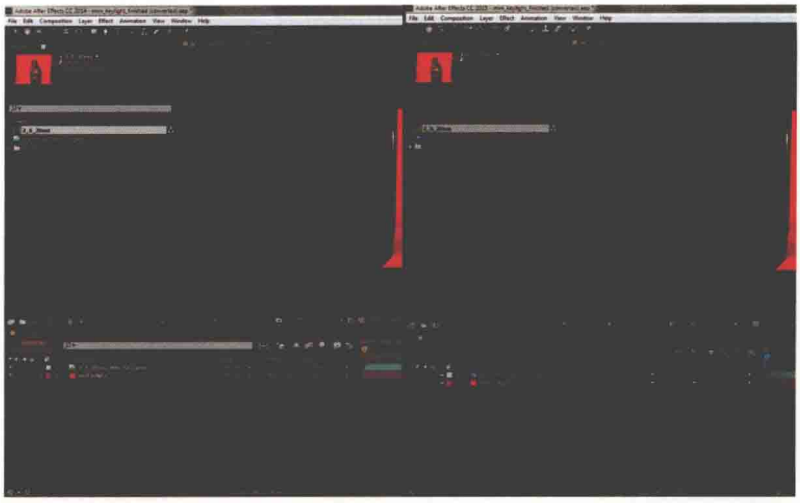

FIG 1 Left: After Effects CC 2014 on a Windows system; Right: After Effects CC 2015 (release 13.5).

Cinema 4D rendered image sequences, camera files, static artwork, and matte paintings. The files are organized in the following directory structure:

ProjectFiles\aeFiles\Chapter*n*\	After Effects `.aep` project files
ProjectFiles\Plates*Category*\ *PlateName*\	Video image sequences (`.png` and `.dng`) and QuickTime movies (`.mov`)
ProjectFiles\Renders*RenderName*\	Maya and Cinema 4D 3D renders (`.png` and `.exr`)
ProjectFiles\Data\	Maya and Cinema 4D geometry and camera files (`.ma`, `.c4d`, and `.rpf`), plus Adobe Illustrator `.ai` files
ProjectFiles\Art\	Static images and matte paintings (`.tif`, `.jpg` and `.png`)

About the Source Files

Many of the video image sequences in this book are culled from a music video, the copyright of which is held by BeezleBug Bit, LLC. The reader may use these image sequences for educational purposes but may not redistribute the sequences in any fashion. Commercial use of the sequences is not granted. A few additional movies and sequences are used under a Creative Commons Public Domain License and were sourced from the Prelinger Archive at www.archive.org. Additional information on Prelinger material is included with each chapter. Several texture bitmaps included with the project files are also used under a Creative Common license—a text copy of the license is included in the \ProjectFiles\Art\ directory.

Using the Tutorial Files with Windows and Mac Systems

I recommend that you copy the project files, with their current directory structure, directly to your root directory (C: on a Windows systems or / on a Mac system). In general, After Effects is very robust when it comes to locating required project files. However, if the program is unable to locate a file and a piece of footage (this is indicated by a colorbars substitute), you can update the file or footage by RMB-clicking the file/footage name in the Project panel and choosing Replace Footage > File.

Naming Conventions

Compositing Visual Effects in After Effects uses common conventions when describing mouse operation. A few examples follow:

click	Left mouse button click
double-click	Rapidly click left mouse button twice
MMB-drag	Drag while pressing middle mouse button
RMB-click	Right mouse button click
Shift+LMB	Left mouse click while holding Shift key

The Ctrl key on a Windows system and the Cmd key on a Mac PC serve the same function. Hence, a call to press either key is written as Ctrl/Cmd. The Alt key on a Windows system and the Opt key on a Mac PC serve the same function. Hence, a call to press either key is written as Alt/Opt.

Updates

For updates associated with this book, please visit www.focalpress.com/cw/lanier.

Contacting the Author

Feedback is always welcome. You can contact me at comp@beezlebugbit.com or find me on popular social media networks.

Interface Overview

For the new user, it's important to be familiar with the interface components listed in Figure I.2. As mentioned earlier in this introduction, color changes between CC 2014 and CC 2015 do not affect the component naming or basic functionality.

The following frames and panels are marked with letters:

- A: The project frame, which contains the Project panel and Effect Controls panel. Each panel is indicated with a named tab at the top left of the panel.

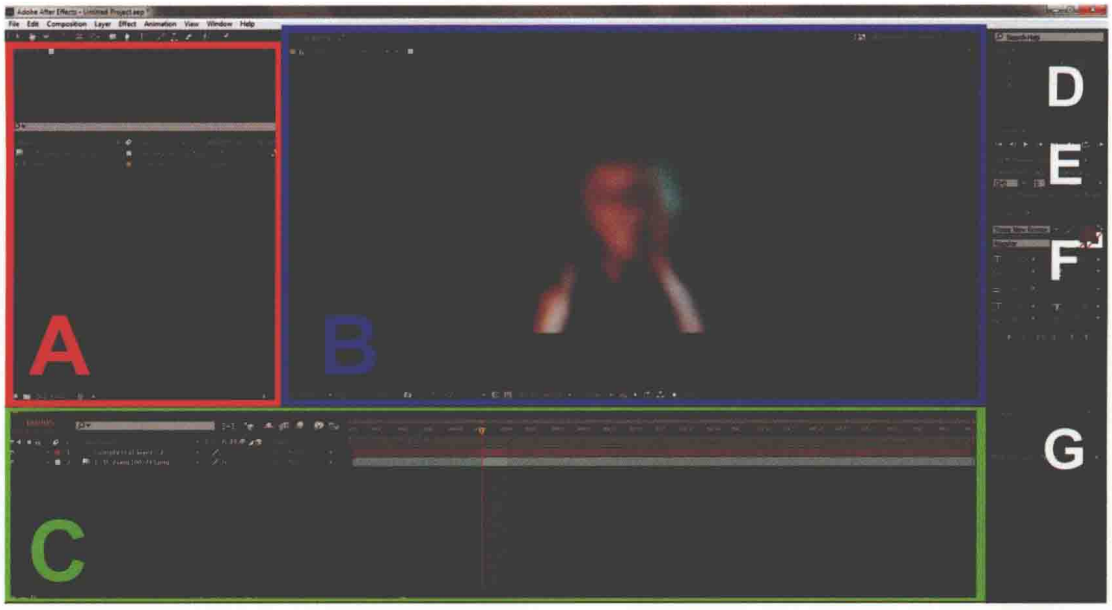

FIG 2 After Effects CC 2014 interface.

- B: Viewer frame, which holds the Composition, Footage, and Layer view panels.
- C: Timeline frame, with the layer outline on the left and timeline on the right. You can LMB-drag the time indicator (time slider) back and forth.
- D: Info panel
- E: Preview panel with playback controls
- F: Multipurpose frame that carries the Effects & Presets panel, plus the Character panel when the Text tool is used
- G: Multipurpose frame that carries the Tracker panel. In addition, this holds the Paragraph panel for the Text tool and the Paint panel for the Paint, Erase, and Clone Stamp tools.

After Effects and Visual Effects Terminology

When referring to components of After Effects, I've used terminology established by the After Effects help files and support documents. When discussing visual effects techniques, I've used words and phrases commonly used in the visual effects industry. Note that many terms were originally developed to describe techniques applied to motion picture film. For example, here are a few words and phrases used throughout this book:

- **Live-action:** Film of actors in a real-world location. *Live-action* does not refer to documentary or news-gathering footage of real events, nor does it include animation.

- **Footage:** Motion picture film shot for a particular scene or at a particular location. You can also use this term to refer to digital video.
- **Shot:** A single camera set-up of a multi-shot scene. For example, a shot may be a close-up of an actress or a wide-angle of a street. With film or video, a *scene* is a series of shots captured at one location that represents a particular period of time.
- **Plate:** A shot intended for visual effects work. For example, a plate may be a shot of a city street that requires the addition of an explosion or an animated robot. A plate may be static or may contain movement. Plates often include green screen and may be shot at an extra-high resolution (such as 70mm with motion picture film or 4K with digital video).

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