

# Adobe After Effects

All Things After Effects

- [After Effects Introduction & Hotkeys](#)
- [After Effects Scripts & Plugin Directory](#)
- [After Effects Expressions](#)
- [After Effects Gotchas](#)
- [After Effects Randos](#)

# After Effects Introduction & Hotkeys

Learning After Effects, and becoming really good in After Effects is maybe the best gateway drug to creative visual applications. If you use it a lot, you'll learn a ton about editing, graphics, layout, 3D, compositing, scripting to make your life easier, templating, workflow management and optimization, render farms, what's possible with plugins, and color correction (to name just a few). These things have other suites of programs dedicated to just that one thing. The skills you learn in AE will translate to these other programs and vice versa. In some cases, AE is better than its competition or sister programs. Good example of that? AE is 10x better at keying out backgrounds than Photoshop. It's also got a much better suite of color correction. So I find myself sometimes using AE to do select work that I used to do in Photoshop.

I've probably logged more flight hours in After Effects than any other program. I'm a utilitarian expert and can do spec work, I'm just not good enough to make sick marketing animations for social media under creative directors who say "make it pop." Usually my work in AE is clean-up, finishing, post supervision animatics, compositing, or content templates for complex multi-channel media projects. I sometimes use it to make things for my creative practice, but it's been a while.

## Hotkeys

After Effects shortcuts are *critical* to a speedy workflow. Here are some of my favorites - oh, and you can easily create your own, too!

Shift, Command, and Option are all modifier keys.

The below shortcut keys are for Mac, but if you substitute Command (⌘) for Control, they should work on Windows as well.

Overall	
⌘ + Option + ;	App settings
⌘ + 0-9	Workspace Panels
`	Make selected panel full-window

	Shift + ~	Collapse / Expand selected panel
<b>Timeline Navigation and Controls</b>		
	I/O	Go to in, go to out
	B/N	Set In, Set Out
	Page Up / Page Down ⌘ + ← / ⌘ + →	Move the timeline indicator Forward and Back a Frame (hold shift and the hotkey to advance 10 frames or reverse 10 frames)
	⌘ + ↑ / ⌘ + ↓	Select layer above / below
	⌘ + Option + ↑ / ⌘ + Option + ↓	Move layer up / down in stacking order
	Option + Page Up / Option + Page Down	Nudge a layer forward / back 1 frame
<b>Keyframe</b>		
	S	Scale
	P	Position
	R	Rotation
	T	Opacity
	EE	Expose Expressions
	U	Expose all variables with keyframes
<b>Misc</b>		
	⌘ + Shift + /	Add to Render Queue
	⌘ + K	Comp Settings
	⌘ + /	Add selected item to comp (from project window)



# After Effects Scripts & Plugin Directory

Scripts are additional tool panels in After Effects that allow you to speed things up. Scripts are also used for automation - like a "Find & Replace" script.

Plug-Ins are closer to programs... within a program.

High-level difference between the two: a script is run manually and/or can be added as a UI panel. A Plug-in lives in Effects & Presets.

## AE Scripts

AE Scripting is time saving. Most of my scripts come from [aescrpts.com](http://aescrpts.com). I probably own about 50. Some are donation-ware. Try to donate if/when you can! Not all AE scripts exists at this URL and not all tools on this URL are technically "scripts" - some are plugins.

<a href="#">AE-apprend</a>	<b>Free</b> - god bless the people responsible for this. This handy script will add a prefix or suffix to everything in your render queue (like "-422" for example).
AE Global Renamer	If you have a comp tree that has a variable, you can build your comp tree to have things like "ProjectName-%AssetName-Render" and folders in your project bin like "%AssetName" and you can find and replace that variable using this script. Or add a suffix or prefix to certain comps. Fantastic.
Auto Crop 3	This crops a nested precomp to a rectangle representing whatever is in the current frame. I use this a ton for Projection Mapping and template work so that I can build a key content comp and then have renderers comps that only target certain areas/surfaces.
<a href="#">Comp Buddy</a>	Light wrap and edge blur - not as thorough as Redgiant's Supercomp, but does the job.
<a href="#">Find and Replace in Expressions</a>	Thank god for Troy Yarnell, whoever you are. Does it exactly what it says. Useful for (among other things) when you have expressions referencing a controller and the controller needs to move somewhere else.
LockProperties	This will lock selected properties of a layer - like position, or scale, for example. Great for templates.

<a href="#">MatchCompDuration</a>	This will change comp duration of selected layers in a comp to match the CTI, the comp duration or with custom duration. Options: include nested layers, include locked layers.
Monospacer	Allows you to make any font a monospace font, useful when you want to have a custom timecode display.
Move Anchor Point 4	A click of a button will change the anchor point to the top left, bottom right, center etc, of a layer based on A) the layer B) the comp C) selection
RD Comp Setter	<b>Free</b> - Change FPS, resolution, duration etc of comps very quickly and/or in a batch.
<a href="#">Render Frame at Markers</a>	So you need to export a ton of stills from an After Effects comp for some reason? Can also be used to export stills from a finished product - way faster to use this tool in After Effects than to manually export a ton of stills using Premiere. Give Lloyd some money for this <i>Name Your Own Price</i> tool.
True Comp Duplicator	This duplicates a comp and all of its nested comps with select variables / inclusions / exclusions. You can duplicate a whole chain of comps, but you can set it to not duplicate a key resource comp. Also great for template building or reusing. At some point I'll write out a TCD workflow example. I use it a lot.

## AE Plugins

Many of these also work in Premiere, with more limited functionality.

Blace Plugins	Several tools that use machine learning and/or AI
Depth Scanner	An "AI" tool that you can use to create faux depth in an image (think DOF). This tool works incredibly well off-label as a way to create foreground / background mattes. Blace makes some other matte and greenscreen tools, but I'm guessing those use a similar AI method. To crank it up, throw some levels on a luma matte.

<p>Local Diffusion</p>	<p>This is their generative AI plugin. It's incredible. After playing with it a ton on my Mac M1 (would be better on a Windows PC w/ a nice RTX card),</p> <p>I've found a combination that works quite nicely:</p> <p><a href="#">LocalDiff-FXControls.png</a></p> <p>Approx ~3 seconds to render a frame in a 1080 sequence where the source video is some XT3 content with a LUT on it. 23.976.</p> <p>The tool can be incredibly finicky rendering. You can't render an export properly... You have to ram-preview and then export. This takes a long time, so you need to be patient! Otherwise, it will crash. I suspect there's a memory leak, as it will crash during use, too. This makes using it for production extremely limited. More to come on that.</p> <p><a href="#">LocalDiff-Sample.png</a></p>
<p>Boris FX &amp; Mocha</p>	<p>Lots of good repair stuff as part of a CONTINUUM license. Boris' full suite is stellar, too, but it's expensive to have everything. I can recommend Sapphire for fun FX.</p> <p>Mocha has a free limited version attached to After Effects that is a superior tracking and masking tool over the built in AE tools. That said: AE's masking and tracking covers 70% of my use cases and I'm often too lazy to take the extra step to work faster and smarter in Mocha ☹️</p>
<p>Digital Anarchy's Flicker Free</p>	<p>Helps repair media that has rolling refresh bands due to incompatible shutter speeds and frame rate combinations with non-continuous lighting sources like CFL bulbs or projection lamps. This doesn't fix all the problems, but it does fix many many of them. Highly recommended.</p> <p>This plug has been around for a decade and sometimes works magic, and other times, doesn't. Shot a concert at 120fps and 1/120.3 and it took care of it. Doesn't do as good of a job with rolling refresh bands (like on an LED screen or in projection). A good reminder to : <b>ALWAYS CHECK YOUR FOOTAGE!</b></p>

Mister Horse	Used to be a buy once and occasionally pay to upgrade. Now it's a subscription model.  Great motion plug for AE (and Premiere). Can recommend a few different plugins. The text one, the background one, the shapes one, the transition one.
Neat Video Reduce Noise	A plugin that reduces noises very well. Best in class for noise reduction.
Red Giant / Maxon	Many different tools, below are <i>some</i> of my favorites.
Colorista	Color Correction suite
Form	Another particle system.
Magic Bullet / Looks	Color and looks effect chain suite. Gateway drug.
Mir	Another particle system.
Particular	A particle systems generator tool with a ton of options and presets. Good for snow, rain, smoke, fog, weird shit.
Primatte	Green screen / color key tool when Keylight doesn't get you there
SuperComp	A tool that allows you to comp things way better. Lightwrap, color matching, etc. If you're doing a ton of greenscreen, this tool is critical!
Video Copilot	Andrew Kramer's plug-in and script company. He used to update frequently, but now I think he works at ILM. Even though the tools are beginning to show their age, they're still some of the best.
Element 3D	Gives you some very basic 3D capabilities in AE. Pretty decent for basic 3D integration. Not for modeling, but incredibly useful.
FX Console	<div style="background-color: #e0ffe0; padding: 5px; border: 1px solid #008000; margin-bottom: 5px;"> <p>#1 must have IMHO.</p> </div> <p>A <b>free</b> plugin that allows you turn pretty much anything into a key-command. Works like Spotlight / Alfred but within After Effects.</p>

Optical Flares

Custom optical flares. Not radically different than Red Giants' version, but it's a perpetual license which is sometimes preferred.

# After Effects Expressions

Expressions in After Effects is basically in-line scripting (language = JavaScript) within an effect or transform. It's incredibly powerful and useful.

## Expressions Resources

- Great resource: <http://www.motionscript.com/>
- Another great resource <https://ae-expressions.docsforadobe.dev/>
- "If Else" How To <https://www.premiumbeat.com/blog/use-ifelse-statements-effects/>
- Info on time expressions in After Effects <https://ae-expressions.docsforadobe.dev/time-conversion.html>
- How to parse comp names for things like lower 3rds: <https://lova.tt/split-sourcetext-from-comp-name>

## Sample Expressions

This is where I dump some useful AE expressions that I use often.

Remember that you can copy and paste expressions by selecting the expression, then going to File→Copy Expression Only and then pasting it onto a layer that has the same variables - it will automatically paste that expression on the same property!

## Layer Controls

Using another Layer's visibility (eye) to turn off/on another layer (apply to opacity)

```
target = thisComp.layer("MyComp") ;
o1 = [100] ;
o2 = [0] ;
if (target.active == true) {o1} else {o2} ;
```

Using a Checkbox Control to toggle an effect on or off

```
thisComp.layer("FX CONTROLS").effect("FX ON / OFF")("Checkbox")*100
```

Using a Checkbox Control to toggle a layer on or off

```
if (comp("CompName%%").layer("GRID CONTROL").effect("CheckboxName%%")("Checkbox") > 0 )
{100} else {0};
```

## Text

Source text populates from timecode in current timecode format

(numbers or 0:00:00:00)

```
timeToCurrentFormat()
```

Source text populates in frame number format

```
timeToFrames()
```

Source text populates in frame number format with leading digits

```
frames = timeToFrames(time, 60); // Replace fps with your actual frames per second value
framesString = pad(frames, 5); // 5 is the desired # of digits, adjust as needed

function pad(num, size) {
  var s = num + "";
  while (s.length < size) s = "0" + s;
  return s;
}

framesString;
```

Source text populates frame number in number format with prefix

```
timeX = timeToFrames()
"frame: "+timeX
```

Source text for a text layer is comp name

```
compName = thisComp.name
```

Source Text Parses From Comp Name

(ie, if comp name = "FARTS//Jeff Bezos", it will populate "Jeff Bezos" in the text field).

Learned this from ukrmedia ([source](#))

```
compName = thisComp.name
thisComp.name.split("//")[1]
```

## Position & Scale

This will automatically scale, and keep proportional, a layer to fit a comp based on width

```
scaleX = thisComp.width*(100/thisLayer.width);  
scaleY = thisComp.height*(100/thisLayer.height);  
  
[scaleX, scaleY]
```

This will automatically position a 200x200px box (shape layer) to fit into a 200x200 (per box) grid and place it in the third box from the closest corner. The "-1" multiplier determines which corner in polar terms (X,Y). -1, -1 for top left; 1, -1 for top right; -1, 1 for bottom left; 1, 1 for bottom right.

```
positionX = -1*[Math.floor(thisComp.width/2)-(Math.floor(thisComp.width/2)%200)-300];  
positionY = -1*[Math.floor(thisComp.height/2)-(Math.floor(thisComp.height/2)%200)-300];  
[positionX, positionY]
```

Using the size of an object to set the anchor point as the top left of that object

```
mathX = content("Rectangle 1").content("Rectangle Path 1").size[0];  
mathY = content("Rectangle 1").content("Rectangle Path 1").size[1];  
x=value[0]+mathX/2-mathX;  
y=value[1]+mathY/2-mathY;  
[x,y]
```

# After Effects Gotchas

## Color

**After Effects** and **Premiere** interpret color differently for some, but not all, footage types – so if you throw a LUT on a clip via Lumetri and then apply all the same settings in both applications, to the same clip, the color might be different. I figured this out when doing a quick and dirty color correct, thought my footage was borked, and then looked at it in Premiere – where it looked... fine.

After Effects can be stupid slow using Lumetri. In general, Premiere's version of Lumetri is superior and you won't take any significant performance hit. It's just a bummer because color correcting in-comp is a superior work flow for VFX.

## Performance

After Effects can be really slow, but it is very good in telling you why it's slow [in almost all ways]. In most cases, you can just wait, but if you're rendering a lot of very big things, you can make a significant improvement to render speeds by doing a little composition tweaking. Maybe Fast Box Blur looks good enough instead of Lens Blur (it probably doesn't, but you should check anyway).

Your first thing should be to always purge the memory and disk cache. Once you've filled up the cache, After Effects functions like a complete idiot. After Effects does not remind you that your cache is full, you have to remember to do this when performance begins to drag.

To analyze why else your composition is taking so long to render, you can really dig through the program.

At the very bottom of the timeline is a little button called "Expand or Collapse the Render Time pane." This toggle will show you down to the sub-settings of an effect why your rendering is taking so long.

[AE-FrameRenderTimes.png](#)

In the image above, it's telling me that "another layer" is taking 880ms per frame to render. Of that, 724ms are effects. Of that, 699ms is Lumetri, and 25ms is CC tiler. The very bottom tells me the Frame Render Time is 886ms. In this example, the other layers only represent 6ms per frame to render. What this tells me is that Lumetri is quite slow in this scenario. Can I use a different effect stack to speed it up and reach the same image goals? Is it faster to pre-process the color in another application?



# After Effects Randos

Want to create a 360 scene so someone can watch your video in VR or pan and scan?

[Here's How to take a 3D scene and then make it rectilinear.](#)

## Want to automatically scale and center an object using After Effects?

Use track motion and create a clean track for Position, Scale, Rotation. Apply that data to a null. Create a 3D camera. Parent the Null to the camera. Then, make your target layer a 3D layer. Donezo!

## Effects Manager

Plugin borked? Launch the effects manager within After Effects and disable it. Select the Dropdown menu: Effect → Effects Manager

## After Effects Sorting Order

This doesn't follow [ASCII](#) or Mac OS sorting, which is frustrating and annoying. Pick a lane, nerds!

1. space
2. ! \$ & % etc
3. Numbers
4. \_ @ etc
5. Letters
6. ~ etc