Stereo Scripts for Adobe After Effects

This collection contains five scripts for Adobe After Effects (CS3 and higher) that enhance the stereoscopic workflow.

To be able to use the scripts, copy them into the "Support Files\Scripts" folder in your After Effects directory. The three biggest scripts should be placed in the “ScriptUI Panels” subfolder for optimal integration. Restart After Effects, and you can find the three most important scripts in the "Window" menu. Moreover, two small helper scripts can be found under "File->Scripts".

Under „Edit->Preferences->General“, you should uncheck „Enable JavaScript Debugger“ (since there seems to be a bug in the scripting system, causing the „Stereo Converter“ to jump into the code the first time it is executed) and enable „Allow Scripts to Write Files and Access Network“.

Use the „**Stereo Viewer**“ script to create anaglyph, side-by-side or interleaved previews of your 3D scenes, do global mastering like convergence adjustments and color grading and render the final left and right view separately.

Use the „**Stereo Footage**“ script to perform elaborate preparation (that is, alignment) of stereo footage.

Use the „**Stereo Converter**“ script to automatically generate the right view for a scene. This script is the most complex, solving the main problem of the stereo workflow: Usually, you are working in two very similar comps, constantly checking that changes are transferred to both views and left and right comps are synced – this is unnecessary and annoying. The „Stereo Converter“ relieves you from doing your compositing work twice, establishing a workflow that is not prohibitive and that accentuates the creative part.
The script also includes calculation of a fairly complex and flexible camera rig.

To provide a starting point, here are two typical basic workflows:

1. Animation And Motion Graphics:
Create a basic scene that includes a camera in After Effect's true 3D space. Use the “Stereo Converter” script to generate the corresponding right view. Set the camera distance, regenerate the right comp and create a preview system with the “Stereo Viewer” script. Then push the scene back by increasing the convergence value in the stereo viewer. Now return to your 3D scene and improve it. In complex scenes that involve some kind of 2D effects or matte generation, you will need sophisticated techniques like “// STEREO OFFSET” or stereo pairs. Finally, you can perform some mastering in the viewer system and render out the final left and right viewer comps.

2. Stereoscopic Footage And Editing:
Craft a very rough cut for one eye by selecting relevant scenes and tossing them into a comp. Duplicate this comp and replace all layer sources with footage of the other view. Then execute the “Stereo Precomp And Trim” script for all layers of both comps. You should organize the new footage comps (for instance, in a “Footage Left” and a “Footage Right” folder). Select the first left and right footage comp in the project panel and prepare them for alignment with the “Stereo Footage” script. Take care you have enabled “Work In Existing Comps”. Repeat this for the remaining footage comps (“Auto Advance Items” can help tremendously). Now reorganize your project structure, since items have been moved during conversion. Generate a distinct preview system for each shot from the left and right comps using the “Stereo Viewer” script. You can then align your shots while checking the results in the stereo viewer. After that, duplicate your left and right rough cut comps, name them something like “Fine Cut LEFT” and “Fine Cut RIGHT”, and merge the right comp into the left with the “Stereo Merge Comps” script. Turn on “Hide Shy Layers” - only the left footage layers should be visible. Select them and mark them as footage with the “Stereo Converter” Script. Now you can perform the fine cut with the groomed footage. At any time, you are able to create the according right view by clicking on “Generate Right Comp”. Finally, select your left fine cut comp and the right comp generated from it, and create a final stereo viewer. Here you can do last convergence touches and color grading before rendering left and right eye separately.

Please note that these two workflows are nothing but examples that have proven to be effective. Heavily depending on the circumstances, steps can be added, removed or simplified. Moreover, there are stereoscopic tasks not mentioned here (like 2D-3D conversion or successive stereo) in which the scripts can

also be used to speed up the compositing.
I definitely encourage you to check out new ways and set up the workflow best suited for you.

Below is a detailed explanation of each individual script.

>>> Stereo Viewer <<<

Description:

Turns two selected items into a comp system that enables easy previewing, manipulating and rendering of stereoscopic content.
The script generates at least four comps: One master comp (typically named „STEREO VIEWER“), where the multiplexed 3D preview is displayed and convergence can be set. Use the „LEFT“ and „RIGHT“ comps to render out the final mastered images. Probably there is also a „GLOBAL ADJUSTMENTS“ comp, where tasks like grading can be done via adjustment layers (affecting left and right view symmetrically). The „PREVIEW“ comp contains the optimized anaglyphs; they can be overwritten by turning on the „3D Glasses“ effect in the main comp.

Settings:

- Automatic Naming:	If enabled, automatic comp names are generated. This may get confusing in complex projects, in which case a custom name can be specified.
- Keep Resolution:	If enabled, the new comps' resolution is set to the original items' resolution; otherwise, a custom resolution is used.
- Create Folder:	If enabled, all generated comps are organized in a new folder.
- Auto Advance Items:	If enabled, the next two items in the project are selected after executing the script. This can be handy when a great number of item pairs has to be viewed in stereo.
- Swap Left + Right:	If enabled, the second selected item is interpreted as the left view and the first as the right view.
- Optimized Anaglyph, Side By Side, Interleaved:	Default stereo view mode.
- Floating Window Adjustments:	If checked, stereoscopic floating windows are added to the left and the right view.
- Global Adjustments:	If checked, a comp is created where global adjustments like grading can be done.

Tricks & Tips:

Lock the stereo viewer while working in your scenes; you will have interactive preview in 3D.

>>> Stereo Footage <<<

Description:

Turns two selected footage items into a comp system that enables easy alignment of stereoscopic content.
The script generates three comps: Two for individual alignment of the left and the right view, and one for global adjustments that affect both left and right comp.

Settings:

- Automatic Naming:	If enabled, automatic comp names are generated from the original items. This may get confusing in complex projects, in which case a

	custom name can be specified.
- Keep Resolution:	If enabled, the new comps' resolution is set to the original items' resolution; otherwise, a custom resolution is used.
- Create Folder:	If enabled, all generated comps are organized in a new folder.
- Auto Advance Items:	If enabled, the next two items in the project are selected after executing the script. This can be handy when a great number of item pairs has to be converted to stereo footage.
- Work In Existing Comps:	If enabled and the selected items are comp items, the script will add the adjustments to the existing comps instead of creating new ones, so that the old comps don't have to be replaced if used in other places.
- Swap Left + Right:	If enabled, the second selected item is interpreted as the left view and the first as the right view.
- Temporal Alignment, Geometrical Alignment, Color Alignment, Floating Window Adjustments:	These adjustments can be included selectively, depending on what is needed.
- Export Frames For Alignment:	Two single frames are rendered at the left comp's current time, using the output template to the right of the button (PNG is recommended). These can then be used to align the footage externally.
- Load StereoPhoto Maker Alignment Data:	Geometrical alignment data calculated in StereoPhoto Maker is applied to two selected footage comps. Values can be added to existing alignments. Also, if a property contains key frames, new keys are inserted at the left comp's current time.

Tricks & Tips:

For perfect alignment, you need to view both comps simultaneously. You can either use the "Stereo Viewer" script or copy one eye into the other as a guide layer (turning it on and off for comparison or overlaying it by setting transparency/layer blending mode).

>>> Stereo Converter <<<

Description:

Duplicates a comp, applies a flexible stereo rig to all cameras and performs other user defined 3D operations. This way, stereo compositing is facilitated, since you can work in only one (the left) comp, and the right comp is automatically calculated. It should be regenerated with every major change and otherwise remain unmodified.
In 3D scenes, you can control the amount of camera separation via the "Separation" slider on the "Stereo Controls" null object.

Settings:

- Automatic Naming:	If enabled, an automatic comp name is generated from the original comp.
- Auto Link Properties:	If enabled, every right property (if supporting expressions) is linked to the according left property. Thus, most changes do not require rebuilding the right comp. However, in complex scenes, the interpretation of the many expressions can cause significantly longer render times.
- (Un)mark As Footage:	If a layer is marked as footage, its source gets replaced by the subsequent layer's source when converting. Thus, editing decisions (affecting timing, length, opacity etc.) and other layer manipulations don't have to be done twice.

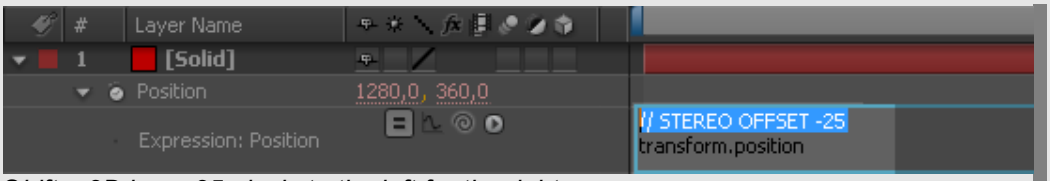
	The subsequent layer's properties like in/out points and length are completely ignored, it solely has to contain the right source. Furthermore, it should be invisible and even shy to keep the main comp clean.

Tricks & Tips:

A few extra features ensuring that the right comp can stay untouched:

If “Auto Link Properties” is turned on and an expression is to remain unaltered in the right comp, it should begin with the line "**// STEREO IGNORE**". This is useful when linking 2D effects like “lightning” to a 3D object – the expression for the 2D position (something like “*thisComp.layer("Light").toComp([0, 0, 0]);*”) has to be evaluated in both left and right comps independently in order to yield correct parallax. Without “// STEREO IGNORE”, the right 2D position would be linked to the left, bringing the lighting to the screen plane.

If a property value is to be offset in the right comp, the expression should begin with the line "***// STEREO OFFSET [parameter]***" ([parameter] has to be an atomic value and will be added to the first = left dimension of the property). This is particularly helpful when positioning 2D elements in 3D space by offsetting their x-position.

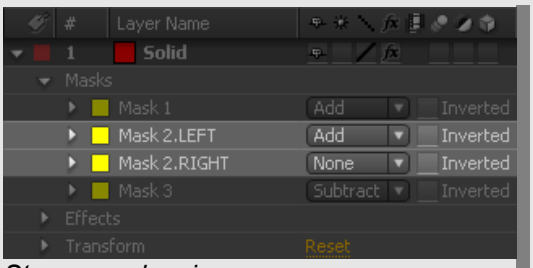


Shift a 2D layer 25 pixels to the left for the right eye

Stereo Pairs:

The most obvious area of application for stereo pairs is creating track mattes. Sometimes, because of perspective differences a matte for the left view can not simply be shifted to match the right view, but has to be modified in shape. Thus, you need to be able to create separate masks for left and right view in your main comp.

In general: If offsetting single parameters with “// STEREO OFFSET” does not suffice, but for some reason an effect/mask/layer varies so heavily between left and right that it is best to create two unique instances (one for each comp), the effect/mask/layer can be arranged in a stereo pair and the script will choose the correct instance when generating the right comp.
To create a stereo pair, the effect/mask/layer has to be duplicated in the main (= left) comp and given exactly the same name as the original object. Then, at least one of the two copies has to be renamed so that it ends with "**.LEFT**" or "**.RIGHT**", in order for the script to decide which instance belongs to the right view. Also, you should hide the right instance in the left comp. The effects/masks/layers will then be swapped during the conversion.

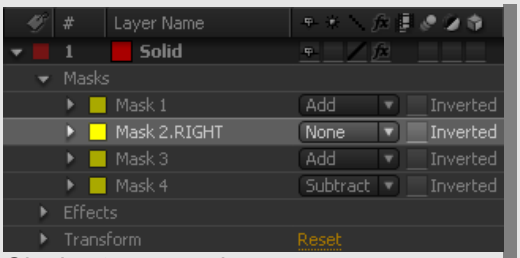


Stereo mask pair

In stereo mask pairs, the masks will not simply be exchanged. Typically, only the mask path varies; therefor, the right mask will be linked entirely to the left mask - with the exception of the mask path. If this is not desirable, you have to use two single stereo masks that are not associated.

Single Stereo Items:

If an effect/mask/layer should exist in only one of the two views, it can be turned to a single stereo item, and the script will react by enabling or disabling it in the right comp.
To become a single stereo item, an effect/mask/layer must have the appendix "**.LEFT**" (will be turned off in the right comp) or "**.RIGHT**" (will be turned on in the right comp).



Single stereo mask

Single masks provided with ".RIGHT" will be set to "Add" - if another mask mode is desired, a stereo pair of two masks has to be used (with the left mask drawn outside of the screen, so that is has no effect, and set to the designated mask mode).

For previewing changes in the main comp that affect the right view in real time, follow these steps:
Firstly, enable “Auto Link Properties” and regenerate the right comp so that changes in the left comp are transferred immediately. Then, lock the viewer for the right comp or create a second viewer.
When drawing masks, the left comp's viewer has to be used, or else the changes will be applied to the right comp. In order to interactively draw directly on the right content, copy the right comp into the left as a guide layer (recommendedly to the bottom, in order to avoid shifting of layer indices) and solo it. Then, in the left viewer the right view is displayed.

If an error occurs repeatedly during conversion, try to empty the right comp manually before converting. Sometimes, restarting After Effects might help as well. Also, make sure the structure of the right comps corresponds entirely to the left during and after conversion (some properties on some effects - for instance, occlusion layers in Trapcode Particular - create new layers when pasted. Be careful with those.)

>>> Stereo Precomp And Trim <<<

Description:

Precomps all selected layers and trims the results to the according layer length.

>>> Stereo Merge Comps <<<

Description:

Merges two selected comps by alternating their layers. Every other layer is disabled and turned shy. This is intended for stereoscopic editing – by merging left and right rough cuts and marking the original left layers as footage, a fine cut can be created effortlessly with the help of the “Stereo Converter” script.

Despite thorough tests, it is quite possible that the scripts fail in particular situations. Also, they have not been tested on a Mac platform. If you detect a bug or have an idea for improvement, please drop me a line so I can react (*chris [AT] chriskeller [DOT] me*).

Legal information:

The author can not be held liable for any damages these scripts MAY cause.

Have Fun!