Aquiplicity 2025 User Manual

Welcome to Aquiplicity 2025 (Align, Threshold, Lasso, Brush - V3), a powerful web-based tool for aligning and compositing multiple images. This manual will guide you through its features, interface, and step-by-step instructions to create stunning composite images with precise alignment and creative control.

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Overview

Aquiplicity 2025 is designed for users who need to align and combine multiple images into a single composite. It offers:

* Automatic and Manual Image Alignment: Align images using pixel-based offset calculations or fine-tune them manually.
* Threshold-Based Compositing: Combine images based on color differences, controlled by a customizable threshold.
* Lasso and Brush Editing Tools: Select and modify specific regions of the composite with patch, blend, or gradient effects.
* User-Friendly Interface: A clean, intuitive layout with real-time feedback and undo capabilities.

Whether you're working on astrophotography, HDR imaging, or creative composites, Aquiplicity provides the tools to achieve professional results.

System Requirements

* Web Browser: Modern browsers (Chrome, Firefox, Edge, Safari) with JavaScript enabled.
* Device: Desktop or laptop recommended for optimal performance.
* Memory: At least 4GB RAM (8GB+ recommended for large images).
* Image Files: Supports common formats (PNG, JPEG, etc.), up to 25 images, ideally with consistent dimensions.
* Internet: No internet connection required after loading the application (runs locally in the browser).

Note: Large images (>4000x4000 pixels) or many images (>10) may slow performance. See Troubleshooting (#troubleshooting) for tips.

Getting Started

* Open Aquiplicity:
  + Load the Aquiplicity HTML file in your web browser by double-clicking it or hosting it via a local server.
  + Ensure JavaScript is enabled.
* Prepare Your Images:
  + Gather the images you want to composite (e.g., photos taken from the same position with different exposures or subjects).
  + For best results, images should have the same resolution and similar content for alignment.
* Familiarize Yourself with the Interface:
  + See the User Interface Overview (#user-interface-overview) to understand the layout and controls.

User Interface Overview

Aquiplicity’s interface is divided into several key areas:

* Marquee (Top):
  + Displays a scrolling message with quick tips and updates (e.g., “NEW: Align Images!...”).
* Control Panel (Below Marquee):
  + Image Upload: Button to select multiple image files.
  + Compose Button: Triggers the compositing process.
  + Undo Button: Reverts the last action (up to 15 actions).
  + Reset Button: Clears all images and settings.
  + Threshold Slider: Adjusts the color difference threshold for compositing (0.01–1.0, default 15%).
  + Brush Size Slider: Sets the size of the patch brush tool (4–200 pixels, default 100px).
  + Tracy Rose Preset: Applies a preset threshold (~13%) optimized for certain workflows.
  + Alignment Controls:
    - Auto Align Checkbox: Enables automatic alignment when new images are loaded.
    - Align All Now: Runs auto-alignment on all images relative to the first.
    - Reset Offsets: Resets all alignment offsets to zero.
    - Manual Align Controls: Select an image to align manually, nudge it with arrows, and apply or reset offsets.
* Thumbnail Strip (Left):
  + Displays thumbnails of loaded images (Layer 0, Layer 1, etc.).
  + Each thumbnail shows the image name, resolution, and current offset.
  + Click to select for manual alignment (Layers 1+ only).
  + Hover to show a remove button (“×”) to delete an image.
* Working Area (Center):
  + Canvas: Displays the composite image, single image, or manual alignment view.
  + Save Master Image Button: Saves the current composite as a PNG file.
  + Status Bar: Shows real-time messages (e.g., “Upload images to begin”).

Key Features and How to Use Them

Uploading Images

* Select Images:
  + Click the “Choose Files” button in the Control Panel.
  + Select multiple images (up to 25) from your device.
* Loading Process:
  + Images appear as thumbnails in the Thumbnail Strip, labeled by layer number and filename.
  + The first image (Layer 0) sets the canvas size; subsequent images are resized to match.
  + If “Auto Align” is checked, images are automatically aligned to Layer 0.
  + If two or more images are loaded, Aquiplicity automatically composites them.
* Remove an Image:
  + Hover over a thumbnail and click the red “×” button.
  + Removed images invalidate the current composite, requiring re-composition.

Tip: Use images with the same resolution for best alignment and compositing results.

Image Alignment

Aquiplicity offers two alignment methods to ensure images are perfectly positioned before compositing.

Automatic Alignment

* Purpose: Aligns all images to the first image (Layer 0) using pixel-based offset calculations.
* How to Use:
  + Ensure at least two images are loaded.
  + Check the “Auto Align” checkbox to align images automatically upon upload, or click “Align All Now” to align manually.
  + The status bar shows progress (e.g., “Aligning image 2/3...”).
  + Offsets are applied to each image (visible in thumbnail tooltips).
* When to Use: Ideal for quick alignment of images with slight misalignments (e.g., handheld photos).

Manual Alignment

* Purpose: Fine-tune the alignment of a specific image (Layer 1 or higher) relative to the layer below it.
* How to Use:
  + Click a thumbnail (Layer 1 or higher) or select it from the “Manual Align” dropdown.
  + The canvas shows the selected image (transparent) over the layer below it (opaque).
  + Nudge the image using:
    - Arrow keys (Up, Down, Left, Right) for 1-pixel adjustments.
    - Nudge buttons (↑, ↓, ←, →) in the Control Panel.
  + Monitor the nudge and total offset in the “Manual Align Status” text.
  + Click “Apply” to save the offset and exit alignment mode, or “Reset” to set the offset to (0,0).
* When to Use: Use for precise adjustments when automatic alignment isn’t sufficient.

Note: Layer 0 cannot be aligned (it’s the reference). After adjusting offsets, click “Compose!” to update the composite.

Compositing Images

* Purpose: Combines multiple images into a single master image based on color differences.
* How to Use:
  + Load at least two images.
  + Adjust the Threshold Slider (0.01–1.0, displayed as 1%–100%) to control sensitivity:
    - Lower values (~5–10%): More selective, keeps pixels closer to Layer 0.
    - Higher values (~20–50%): Includes more pixels from other layers.
  + Click “Compose!” or let auto-composition run after loading images.
  + The canvas displays the composite, and the status bar confirms completion (e.g., “Composition complete. Threshold: 15%”).
* Tracy Rose Preset:
  + Click “By Tracy Rose” to set the threshold to ~13%, optimized for certain compositing tasks.
* When to Use: After aligning images, composite to create the master image.

Tip: Experiment with the threshold to balance detail retention and layer inclusion.

Editing with Lasso and Brush Tools

Once a composite is created, use these tools to refine specific regions.

Patch Brush (Click)

* Purpose: Applies pixels from the source layer at the clicked point to a circular region.
* How to Use:
  + Adjust the Brush Size Slider (4–200 pixels).
  + Click on the canvas (no modifier keys).
  + Pixels within the brush radius are replaced with pixels from the layer used at that point in the composite.
* When to Use: Fix small areas by pulling content from the original layer.

Patch Lasso (Ctrl+Drag)

* Purpose: Replaces an enclosed region with pixels from the source layer at the lasso’s starting point.
* How to Use:
  + Hold Ctrl and drag to draw a lasso around the desired area.
  + Release the mouse while holding Ctrl to apply.
  + The region is filled with pixels from the layer used at the lasso’s start.
* When to Use: Correct larger areas with content from a specific layer.

Blend Lasso (Alt+Drag)

* Purpose: Smooths pixels within an enclosed region by averaging nearby pixels.
* How to Use:
  + Hold Alt and drag to draw a lasso.
  + Release the mouse while holding Alt to apply.
  + Pixels inside the lasso are blended, reducing sharp transitions.
* When to Use: Soften edges or reduce noise in a selected area.

Gradient Lasso (Shift+Drag)

* Purpose: Applies a gradient overlay within an enclosed region, transitioning between colors at the lasso’s edges.
* How to Use:
  + Hold Shift and drag to draw a lasso.
  + Release the mouse while holding Shift to apply.
  + A gradient (horizontal or vertical, based on lasso shape) is applied at 25% opacity.
* When to Use: Add subtle color transitions for creative effects.

Notes:

* Lasso tools require at least three points to form a valid shape.
* Release the modifier key before the mouse to cancel the lasso.
* The status bar provides feedback (e.g., “Applied patch lasso from layer 2 (500 pixels)”).

Undo and Reset

* Undo:
  + Click the “Undo” button or press Ctrl+Z to revert the last action (up to 15 actions).
  + Applies to brush/lasso edits, offset changes, and image removals.
  + Disabled when no actions are available or during processing.
* Reset:
  + Click “Reset” to clear all images, offsets, and settings.
  + Resets the canvas, sliders, and alignment options to defaults.
* Reset Offsets:
  + Click “Reset Offsets” to set all image offsets to (0,0), requiring re-composition.

Tip: Save your composite before resetting, as it cannot be undone.

Saving Your Work

* Purpose: Export the composite image as a PNG file.
* How to Use:
  + Ensure a composite is displayed (after compositing or editing).
  + Click “Save Master Image” below the canvas.
  + The file downloads as “Aquiplicity\_Aligned\_Master.png” with the composite’s resolution.
* When to Use: Save after finalizing your composite to preserve your work.

Note: Saving is disabled during composition, alignment, or if no composite exists.

Tips and Best Practices

* Image Preparation:
  + Use images with consistent resolution and minimal distortion.
  + For alignment, ensure images have overlapping content (e.g., same scene, different exposures).
* Alignment:
  + Start with auto-alignment, then use manual alignment for fine-tuning.
  + Check thumbnail tooltips to monitor offsets.
* Threshold:
  + Test different threshold values to find the best balance for your images.
  + Use the Tracy Rose preset (~13%) as a starting point for balanced results.
* Editing:
  + Use the patch brush for small corrections and lasso tools for larger areas.
  + Save undo states frequently by performing actions incrementally.
* Performance:
  + Limit to 10–15 images for faster processing.
  + Reduce image resolution if you encounter slowdowns (see Troubleshooting (#troubleshooting)).
* Experimentation:
  + Try gradient lasso for creative effects like color overlays.
  + Blend lasso can help smooth transitions in HDR composites.

Troubleshooting

|  |  |  |
| --- | --- | --- |
| **Issue** | **Possible Cause** | **Solution** |
| Slow performance or browser crash | Large images (>4000x4000) or too many images (>15) | Reduce image resolution or number of images. Use a modern browser with sufficient RAM. |
| “Error during composition” | Stack overflow from large images | Downsize images or lower resolution before uploading. |
| “Canvas tainted” when saving | Images loaded from different domains | Host images locally or ensure all images are from the same source. |
| Alignment fails or offsets are (0,0) | Images too different or low contrast | Ensure images have overlapping content. Use manual alignment for fine control. |
| Lasso/brush tools not working | No composite or in alignment mode | Complete compositing first. Exit manual alignment by deselecting the thumbnail. |
| “Invalid image data” | Corrupted or unsupported image files | Verify images are valid (PNG/JPEG) and not corrupted. Try re-saving images. |

Contact Support: If issues persist, note the status bar error message and check the browser console (F12 > Console) for details. Aquiplicity is a local tool, so support is limited to documentation and community forums.

Glossary of Terms

* Layer: An individual image in the stack (Layer 0 is the reference).
* Offset: The (x, y) pixel shift applied to align an image.
* Threshold: The color difference limit for including pixels in the composite (as a percentage of 255).
* Composite: The final image created by combining layers based on the threshold.
* Lasso: A freeform selection tool for applying patch, blend, or gradient effects.
* Patch: Replaces pixels with those from a specific layer.
* Blend: Averages pixels to smooth transitions.
* Gradient: Applies a color transition overlay.
* Nudge: Small pixel adjustments during manual alignment.

Thank you for using Aquiplicity 2025! We hope this tool empowers your creative and technical projects. For feedback or feature suggestions, consider sharing with the open-source community or checking for updates to the V3 codebase. Happy compositing!