**Aquiplicity 2025 (Advanced) User Manual**

Welcome to **Aquiplicity 2025**, a powerful web-based tool for composing and editing images using advanced layering techniques. This manual will guide you through the features, interface, and workflows to help you create stunning composite images with ease.

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**Introduction**

Aquiplicity 2025 allows you to combine multiple images into a single composite based on color differences, with a customizable threshold. You can further refine your composition using interactive tools like lasso-based patching, blending, gradient overlays, and a brush tool for precise edits. The application supports up to 15 images and includes an undo feature for up to 15 actions.

**Getting Started**

* **Open the Application**: Load Aquiplicity 2025 in a modern web browser (e.g., Chrome, Firefox, or Edge).
* **Prepare Images**: Ensure your images are in a supported format (e.g., PNG, JPEG) and ideally have the same dimensions for optimal results.
* **Familiarize Yourself**: Read the marquee at the top of the interface for a quick overview of features:
  + **Images auto-composed on load.**
  + **Adjust Threshold & Compose!**
  + **Patch (Ctrl+Drag) / Blend (Alt+Drag) / Gradient (Shift+Drag) / Patch Brush (Click - size adjustable) / Undo.**
  + **Click 'X' on thumbnails to remove.**

**User Interface Overview**

The interface is divided into several key areas:

* **Marquee (Top)**: Displays a scrolling summary of features and instructions.
* **Controls (Below Marquee)**:
  + **Image Upload**: Button to upload multiple images.
  + **Compose! Button**: Triggers image composition.
  + **Undo Button**: Reverts the last action (up to 15 actions).
  + **Reset Button**: Clears all images and resets the application.
  + **Threshold Slider**: Adjusts the color difference threshold for composition (0.01–1.0, displayed as 1%–100%).
  + **Brush Size Slider**: Sets the diameter of the patch brush (4–200 pixels).
  + **Tracy Rose Button**: Applies a preset threshold (~13%).
* **Thumbnail Strip (Left)**: Displays thumbnails of uploaded images with an 'X' button to remove them.
* **Working Area (Center)**:
  + **Canvas**: Displays the master composite image and supports interactive editing.
  + **Save Master Image Button**: Saves the current composite.
  + **Status Bar**: Shows real-time feedback and error messages.

**Core Features**

**Uploading Images**

* **How to Use**:
  + Click the **Choose Files** button in the Controls area.
  + Select up to 15 images from your device.
  + Wait for the images to load (status updates in the Status Bar).
* **Behavior**:
  + Images are resized to match the dimensions of the first uploaded image.
  + If multiple images are loaded, Aquiplicity automatically composes them.
  + Thumbnails appear in the Thumbnail Strip with layer details (e.g., "Layer 0: filename (widthxheight)").
* **Notes**:
  + Large images (>4000x4000 pixels) may slow processing; a warning will appear.
  + Only the first 15 images are processed if more are selected.

**Removing Images**

* **How to Use**:
  + Hover over a thumbnail in the Thumbnail Strip.
  + Click the red **X** button that appears.
* **Behavior**:
  + Removes the selected image from the stack.
  + Updates thumbnail indices and clears the master image.
  + If only one image remains, it becomes the master image; otherwise, you must recompose.
* **Notes**:
  + Cannot remove images during composition.
  + Removal is saved for undo.

**Composing Images**

* **How to Use**:
  + Upload at least two images.
  + Adjust the **Threshold Slider** if desired.
  + Click **Compose!** (or rely on auto-composition after upload).
* **Behavior**:
  + Combines images based on color differences exceeding the threshold.
  + Displays the composite on the canvas.
  + Updates the Status Bar with progress (e.g., "Processing pixels... (50%)").
* **Notes**:
  + Requires at least two images.
  + Composition is disabled during processing.
  + The threshold is shown as a percentage (e.g., 15% = 0.15 \* 255).

**Adjusting Threshold**

* **How to Use**:
  + Move the **Threshold (% Diff)** slider (1%–100%).
  + The current value is displayed next to the slider (e.g., "15%").
  + Click **Compose!** to apply the new threshold.
* **Behavior**:
  + Controls how much color difference triggers a layer switch in the composite.
  + Lower values (e.g., 5%) create finer distinctions; higher values (e.g., 50%) allow more variation.
* **Notes**:
  + Default is 15%.
  + Disabled during composition.

**Adjusting Brush Size**

* **How to Use**:
  + Move the **Brush Size (px)** slider (4–200 pixels).
  + The current value is displayed next to the slider (e.g., "100px").
* **Behavior**:
  + Sets the diameter of the circular patch brush used for click-based edits.
  + Larger sizes cover more area; smaller sizes are more precise.
* **Notes**:
  + Default is 100 pixels.
  + Disabled during composition.

**Applying Tracy Rose Preset**

* **How to Use**:
  + Click the **By Tracy Rose** button.
* **Behavior**:
  + Sets the threshold to ~13% (0.13).
  + Updates the Threshold Slider and display.
* **Notes**:
  + Click **Compose!** to apply the preset.
  + Disabled during composition.

**Interactive Editing Tools**

Aquiplicity offers four editing tools for refining the composite on the canvas. These require a composed image (at least two images).

* **Patch Lasso (Ctrl+Drag)**:
  + **How to Use**:
    - Hold **Ctrl** and click-drag on the canvas to draw a lasso.
    - Release the mouse while holding Ctrl to apply.
  + **Behavior**:
    - Copies pixels from the layer at the lasso’s starting point to the enclosed area.
    - Displays a green lasso while drawing.
    - Updates the Status Bar (e.g., "Applied patch lasso from layer 2 (500 pixels).").
  + **Notes**:
    - Requires at least three points to form a valid lasso.
    - Cancels if Ctrl is released early or the lasso is too small.
* **Blend Lasso (Alt+Drag)**:
  + **How to Use**:
    - Hold **Alt** and click-drag to draw a lasso.
    - Release the mouse while holding Alt to apply.
  + **Behavior**:
    - Averages pixel colors within a small radius (2 pixels) inside the lasso for a feathered effect.
    - Displays a yellow lasso while drawing.
    - Updates the Status Bar (e.g., "Applied blend/feather effect (300 pixels inside lasso).").
  + **Notes**:
    - Softens edges in the selected area.
    - Cancels if Alt is released early or the lasso is too small.
* **Gradient Lasso (Shift+Drag)**:
  + **How to Use**:
    - Hold **Shift** and click-drag to draw a lasso.
    - Release the mouse while holding Shift to apply.
  + **Behavior**:
    - Applies a gradient overlay (25% opacity) based on colors sampled from the lasso’s edges.
    - Direction is horizontal or vertical based on lasso shape.
    - Displays a pink lasso while drawing.
    - Updates the Status Bar (e.g., "Applied gradient overlay effect (400 pixels at 25% opacity).").
  + **Notes**:
    - Useful for subtle color transitions.
    - Cancels if Shift is released early or the lasso is too small.
* **Patch Brush (Click)**:
  + **How to Use**:
    - Adjust the **Brush Size** slider if needed.
    - Click on the canvas (no modifier keys).
  + **Behavior**:
    - Copies pixels from the layer at the click point within a circular area (diameter set by Brush Size).
    - Updates the Status Bar (e.g., "Patched 785 pixels in 100px diameter brush from layer 1 at (x, y).").
  + **Notes**:
    - Ideal for precise, localized edits.
    - Requires a composed image.

**Undo Functionality**

* **How to Use**:
  + Click the **Undo** button or press **Ctrl+Z**.
* **Behavior**:
  + Reverts the last action (e.g., patch, blend, gradient, or image removal).
  + Supports up to 15 undo steps.
  + Updates the canvas and Status Bar (e.g., "Undo successful").
* **Notes**:
  + Disabled during composition or if no actions are available.
  + Clears redo history (no redo functionality).

**Saving the Master Image**

* **How to Use**:
  + Click the **Save Master Image** button below the canvas.
* **Behavior**:
  + Downloads the current composite as "Aquiplicity\_Master\_BrushClick.png".
  + Updates the Status Bar (e.g., "Master image saved as Aquiplicity\_Master\_BrushClick.png (widthxheight)").
* **Notes**:
  + Disabled if no composite exists or during composition.
  + Ensure pop-up blockers are disabled if the download doesn’t start.

**Resetting the Application**

* **How to Use**:
  + Click the **Reset** button in the Controls area.
* **Behavior**:
  + Clears all images, thumbnails, history, and the canvas.
  + Resets sliders to defaults (Threshold: 15%, Brush Size: 100px).
  + Updates the Status Bar (e.g., "Application reset. Upload images to begin.").
* **Notes**:
  + Use with caution, as all unsaved work is lost.

**Tips and Best Practices**

* **Image Preparation**:
  + Use images with similar dimensions to avoid resizing artifacts.
  + For best results, ensure images have consistent lighting and alignment.
* **Threshold Tuning**:
  + Start with the default 15% threshold and adjust based on results.
  + Lower thresholds (e.g., 5–10%) for detailed composites; higher thresholds (e.g., 20–30%) for broader blending.
* **Editing Workflow**:
  + Use the **Patch Brush** for small corrections.
  + Apply **Patch Lasso** for larger areas from a specific layer.
  + Use **Blend Lasso** to smooth transitions between layers.
  + Add **Gradient Lasso** for creative color effects.
* **Performance**:
  + Avoid very large images (>4000x4000 pixels) to prevent slowdowns.
  + Limit to 15 images to maintain responsiveness.
* **Saving Frequently**:
  + Save your master image after significant edits to avoid losing work.
  + Use the undo feature to experiment safely.

**Troubleshooting**

* **"No images loaded" or "Need at least two images to compose"**:
  + Ensure you’ve uploaded at least two images.
  + Check that images are valid (not corrupted) and in a supported format.
* **"Composition failed" or "Error during composition"**:
  + Verify all images have compatible dimensions.
  + Try reducing image resolution or the number of images.
* **Interactive tools not working**:
  + Ensure a composite exists (click **Compose!** after uploading).
  + Check that you’re holding the correct modifier key (Ctrl, Alt, or Shift) for lasso tools.
  + Avoid clicking during composition (cursor changes to "wait").
* **Canvas displays incorrectly**:
  + Refresh the browser and reload images.
  + Ensure your browser is up to date.
* **Slow performance**:
  + Reduce image size or the number of images.
  + Use a modern browser with hardware acceleration enabled.
* **Cannot save image**:
  + Check for browser pop-up blockers.
  + Ensure the composite is complete (Save button enabled).

For further assistance, check the browser console (F12 > Console) for detailed error messages.

Thank you for using **Aquiplicity 2025**! Create, experiment, and enjoy your image compositing journey.