Star Trails Stacker by Aquiplicity 2025 - Image Stacker & Video Creator (v7)

**User Manual**

Welcome to **Star Trails Stacker (v7)**, a powerful browser-based tool designed for astrophotography enthusiasts, photographers, and anyone looking to combine multiple images into a single stacked image or create a video from a sequence of images. This user manual provides a comprehensive guide to using the software, covering its features, interface, and step-by-step instructions for all functionalities.

**Table of Contents**

* Introduction
* System Requirements
* Getting Started
* User Interface Overview
  + Marquee
  + Controls Panel
  + Thumbnail Strip
  + Working Area
* Core Features
  + Loading Images
  + Stacking Images
  + Creating Videos
  + Deleting Images
  + Saving Outputs
  + Resetting the Application
* Step-by-Step Instructions
  + How to Load Images
  + How to Stack Images
  + How to Create a Video
  + How to Delete an Image
  + How to Save a Stacked Image
  + How to Save a Video
  + How to Reset the Application
* Troubleshooting
* Tips and Best Practices
* Frequently Asked Questions (FAQs)
* Contact and Support

**Introduction**

Star Trails Stacker by Aquiplicity 2025 is a combined image stacking and video creation tool that runs entirely in your web browser, requiring no installation. It is designed to:

* **Stack Images**: Combine multiple images into a single image using algorithms like Lighten (ideal for star trails), Average (for noise reduction), or Maximum (similar to Lighten). This is particularly useful for astrophotography to enhance details or create effects.
* **Create Videos**: Convert a sequence of images into a video at a user-defined frame rate (FPS), perfect for time-lapse videos or animations.
* **Manage Images**: Load, preview, and delete images with an intuitive interface, ensuring only the desired images are processed.
* **Save Outputs**: Export stacked images as PNG (with JPEG fallback) and videos as WEBM or MP4, depending on browser support.

The software is user-friendly, with a clean interface and real-time feedback via a status bar and progress indicator. It supports JPG, PNG, and WEBP image formats and ensures all images have the same dimensions for processing.

**System Requirements**

To use effectively, ensure your system meets the following requirements:

* **Web Browser**: A modern browser with support for HTML5, Canvas, and MediaRecorder APIs. Recommended browsers include:
  + Google Chrome (latest version)
  + Mozilla Firefox (latest version)
  + Microsoft Edge (latest version)
  + Safari (macOS/iOS, latest version, with partial video support)
* **Operating System**: Any OS that supports the above browsers (Windows, macOS, Linux, iOS, Android).
* **Memory**: At least 4GB of RAM (8GB recommended for large images or many frames).
* **Storage**: Sufficient free space for saving output files (stacked images or videos).
* **Internet**: No internet connection is required after loading the HTML file, as the application runs locally in the browser.
* **Note on MediaRecorder**: Video creation requires browser support for the MediaRecorder API. If unsupported (e.g., in older browsers), the "Create Video" button will be disabled, but image stacking will still function.

**Getting Started**

* **Obtain the Software**: The software is provided as a single HTML file (Stacker.html). Save this file to your computer or device.
* **Open the Application**:
  + Double-click the HTML file to open it in your default web browser, or
  + Drag the file into an open browser window, or
  + Right-click the file, select "Open with," and choose a supported browser.
* **Verify Interface**: Upon loading, you should see the Aquiplicity interface with a controls panel at the top, a thumbnail strip on the left, and a working area with a canvas in the center.
* **Prepare Images**: Ensure you have a set of images (JPG, PNG, or WEBP) with identical dimensions, ideally sorted in the desired sequence (e.g., by filename for time-lapse).

If the interface does not load correctly, ensure you’re using a supported browser and check the Troubleshooting (#troubleshooting) section.

**User Interface Overview**

The Aquiplicity interface is divided into four main sections for intuitive navigation and operation.

**Marquee**

* **Location**: Top of the screen, fixed.
* **Description**: A scrolling text bar that provides a quick summary of the application’s functionality and requirements.
* **Content**: “Load images (JPG, PNG, WEBP). Ensure SAME dimensions. Stack images (needs >= 2) using an algorithm, or create a video (needs >= 1) with chosen FPS. Delete flawed images with 'X'. Browser support for MediaRecorder required for video.”
* **Purpose**: Serves as a reminder of key instructions and limitations.

**Controls Panel**

* **Location**: Below the marquee, spanning the width of the screen.
* **Description**: Contains buttons and input fields for controlling the application.
* **Elements**:
  + **Image Input**: A file picker button (Choose Files) to select multiple images (JPG, PNG, WEBP).
  + **Stack Algorithm Selector**: A dropdown to choose the stacking algorithm:
    - **Lighten (Star Trails)**: Selects the brightest pixel at each position (default).
    - **Average (Noise Reduction)**: Averages pixel values to reduce noise.
    - **Maximum**: Similar to Lighten, takes the maximum pixel value.
  + **Stack Images Button**: Initiates the image stacking process (disabled until ≥2 images are loaded).
  + **Video FPS Input**: A number field to set the frames per second (1–60, default 10) for video creation.
  + **Create Video Button**: Starts video creation (disabled until ≥1 image is loaded and MediaRecorder is supported).
  + **Cancel Button**: Appears during stacking or video creation to stop the process (hidden otherwise).
  + **Reset Button**: Clears all loaded images, thumbnails, and outputs, resetting the application.
  + **Image Count Info**: Displays the number of loaded images (e.g., “(0 images loaded)”).

**Thumbnail Strip**

* **Location**: Left sidebar, vertically scrollable.
* **Description**: Displays thumbnails of loaded images for easy preview and management.
* **Features**:
  + Each thumbnail shows a scaled-down version of the image (150px width, maintaining aspect ratio).
  + Hovering over a thumbnail displays its filename and dimensions.
  + A red **X** button on each thumbnail allows deletion of individual images.
  + Thumbnails are sorted by filename (numeric-aware) upon loading.

**Working Area**

* **Location**: Center-right, occupying most of the screen.
* **Description**: The main workspace where images are displayed and processed.
* **Elements**:
  + **Canvas**: Displays the first loaded image, the stacked image result, or frames during video creation. Initially shows a placeholder message: “Load images using the button above. Then choose to Stack or Create Video.”
  + **Progress Bar**: Appears during image loading, stacking, or video creation to show progress (hidden when idle).
  + **Status Bar**: Displays real-time feedback (e.g., “Loading 5 images…”, “Stacking complete”).
  + **Button Container**:
    - **Save Stacked Image Button**: Saves the stacked image as a PNG (or JPEG if PNG fails), enabled only after successful stacking.
    - **Save Video Button**: Saves the created video as WEBM or MP4, enabled only after successful video creation.

**Core Features**

**Loading Images**

* Upload multiple images (JPG, PNG, WEBP) via the file picker.
* Images must have identical dimensions (width and height).
* Images are sorted by filename (numeric-aware) and displayed as thumbnails.
* The first valid image is shown on the canvas.

**Stacking Images**

* Combine ≥2 images into a single image using one of three algorithms:
  + **Lighten**: Takes the brightest pixel at each position, ideal for star trails.
  + **Average**: Averages pixel values, reducing noise for cleaner images.
  + **Maximum**: Similar to Lighten, selects the maximum pixel value.
* The result is displayed on the canvas and can be saved.

**Creating Videos**

* Convert ≥1 image into a video at a specified FPS (1–60).
* Requires browser support for the MediaRecorder API.
* Frames are drawn sequentially on the canvas, captured as a video stream, and saved as WEBM or MP4.
* The video is available for download after creation.

**Deleting Images**

* Remove individual images from the loaded set using the **X** button on thumbnails.
* Deletion updates the thumbnail strip, image count, and canvas (if the first image is deleted).

**Saving Outputs**

* **Stacked Image**: Save as a PNG file (e.g., stacked\_lighten\_10frames.png). Falls back to JPEG if PNG fails.
* **Video**: Save as a WEBM or MP4 file (e.g., video\_10frames\_10fps.webm), depending on browser support.

**Resetting the Application**

* Clears all loaded images, thumbnails, canvas content, and output data (stacked image or video).
* Restores the application to its initial state, ready for new images.

**Step-by-Step Instructions**

**How to Load Images**

* **Click the File Picker**:
  + In the controls panel, click the “Choose Files” button (or the file input field).
* **Select Images**:
  + Navigate to your folder and select multiple images (JPG, PNG, WEBP).
  + Hold Ctrl (Windows) or Cmd (macOS) to select multiple files, or drag-select.
  + Ensure all images have the same dimensions.
* **Confirm Upload**:
  + Click “Open” to start loading.
  + The status bar will show “Loading X images…” with a progress bar.
* **Verify Results**:
  + Thumbnails appear in the left strip, sorted by filename.
  + The first image is displayed on the canvas.
  + The image count updates (e.g., “(5 images loaded)”).
  + If errors occur (e.g., dimension mismatch), the status bar will report details (e.g., “2 had wrong dimensions”).

**How to Stack Images**

* **Ensure Enough Images**:
  + Load at least 2 images (see How to Load Images (#how-to-load-images)).
  + The “Stack Images” button will enable if ≥2 images are loaded.
* **Select Algorithm**:
  + In the controls panel, choose an algorithm from the dropdown:
    - **Lighten** for star trails.
    - **Average** for noise reduction.
    - **Maximum** for maximum pixel values.
* **Start Stacking**:
  + Click the “Stack Images” button.
  + The status bar will show progress (e.g., “Processing image 3 / 5…”), and the progress bar will update.
  + The “Cancel” button appears, allowing you to stop the process.
* **View Results**:
  + Upon completion, the stacked image appears on the canvas.
  + The status bar confirms: “Stacking complete: X images processed using ‘algorithm’.”
  + The “Save Stacked Image” button enables.

**How to Create a Video**

* **Ensure Images Loaded**:
  + Load at least 1 image (see How to Load Images (#how-to-load-images)).
  + The “Create Video” button will enable if MediaRecorder is supported.
* **Set FPS**:
  + In the controls panel, enter a value (1–60) in the “Video FPS” field (default is 10).
* **Start Video Creation**:
  + Click the “Create Video” button.
  + The status bar will show progress (e.g., “Recording frame 3 / 5…”), and the progress bar will update.
  + The canvas will display each frame as it’s recorded.
  + The “Cancel” button appears to stop the process.
* **View Results**:
  + Upon completion, the status bar confirms: “Video creation complete (X frames). Ready to save.”
  + The “Save Video” button enables.

**How to Delete an Image**

* **Locate the Thumbnail**:
  + In the thumbnail strip, find the image to delete.
  + Hover to see the filename and dimensions.
* **Click the X Button**:
  + Click the red **X** button in the top-right corner of the thumbnail.
* **Confirm Deletion**:
  + The thumbnail disappears, and the image is removed from the loaded set.
  + The status bar confirms: “Removed filename. X images remain.”
  + The image count updates.
  + If the first image was deleted, the canvas updates to show the new first image (or clears if no images remain).

**How to Save a Stacked Image**

* **Complete Stacking**:
  + Ensure a stacking operation has finished successfully (see How to Stack Images (#how-to-stack-images)).
  + The “Save Stacked Image” button will be enabled.
* **Click Save**:
  + Click the “Save Stacked Image” button in the working area.
* **Download**:
  + The browser prompts you to save the file (e.g., stacked\_lighten\_10frames.png).
  + If PNG fails, it falls back to JPEG (e.g., stacked\_lighten\_10frames.jpg).
  + The status bar confirms: “Stacked image saved as filename.”

**How to Save a Video**

* **Complete Video Creation**:
  + Ensure a video has been created successfully (see How to Create a Video (#how-to-create-a-video)).
  + The “Save Video” button will be enabled.
* **Click Save**:
  + Click the “Save Video” button in the working area.
* **Download**:
  + The browser prompts you to save the file (e.g., video\_10frames\_10fps.webm or .mp4).
  + The status bar confirms: “Video saved as filename.”

**How to Reset the Application**

* **Click Reset**:
  + In the controls panel, click the “Reset” button (red).
* **Confirm Reset**:
  + All loaded images, thumbnails, canvas content, and outputs (stacked image or video) are cleared.
  + The status bar resets to: “Select multiple image files (JPG, PNG, WEBP) in sequence to begin.”
  + The image count resets to “(0 images loaded)”.
  + The algorithm resets to “Lighten,” and FPS resets to 10.

**Troubleshooting**

|  |  |  |
| --- | --- | --- |
| **Issue** | **Possible Cause** | **Solution** |
| “Create Video” button is disabled | Browser lacks MediaRecorder support | Use a supported browser (e.g., Chrome, Firefox). Check the marquee for the warning. |
| Images fail to load | Unsupported format or corrupt files | Ensure images are JPG, PNG, or WEBP and not corrupted. Check the status bar for errors. |
| “Dimension mismatch” error | Images have different sizes | Use images with identical dimensions. Pre-process images in an editor if needed. |
| Stacking or video creation is slow | Large images or many frames | Reduce image size or number of images. Use a faster computer or browser. |
| Cannot save stacked image | Canvas context lost | Refresh the page and try again. Ensure stacking completed successfully. |
| Video saves as 0 bytes | MediaRecorder error | Cancel and retry. Ensure browser supports the selected MIME type (WEBM or MP4). |
| Application freezes | Browser memory limit exceeded | Reduce the number or size of images. Close other tabs or restart the browser. |
| Interface doesn’t load | Incompatible browser or file not loaded | Open in Chrome/Firefox/Edge. Ensure the HTML file is not blocked by security settings. |

If issues persist, check the browser’s developer console (F12 → Console) for detailed error messages and refer to Contact and Support (#contact-and-support).

**Tips and Best Practices**

* **Image Preparation**:
  + Use images with the same dimensions to avoid errors.
  + Sort images by filename (e.g., frame001.jpg, frame002.jpg) for consistent sequence in videos or stacking.
  + For astrophotography, capture images with consistent exposure settings.
* **Stacking**:
  + Use **Lighten** for star trails to emphasize bright stars against a dark sky.
  + Use **Average** for deep-sky objects to reduce noise and enhance faint details.
  + Test with a small subset of images to verify the algorithm before processing large sets.
* **Video Creation**:
  + Choose an FPS that matches your intended playback (e.g., 10 FPS for slow time-lapses, 30 FPS for smooth motion).
  + Test with a low FPS and fewer frames to ensure browser compatibility before processing large videos.
* **Performance**:
  + For large images (>2000x2000px) or many frames (>100), use a powerful computer and close other browser tabs.
  + Resize images in an external editor if processing is slow.
* **Saving**:
  + Check the saved file’s quality and format. If PNG fails, the JPEG fallback may have lower quality.
  + Rename saved files to avoid overwriting if you process multiple outputs.
* **Testing**:
  + Load a small set of images (2–5) to test the workflow before processing large batches.
  + Use the “Cancel” button to stop long operations if results look incorrect.

**Frequently Asked Questions (FAQs)**

**Q: What image formats are supported?**  
A: JPG, PNG, and WEBP. All images must have the same dimensions.

**Q: Why is the “Create Video” button disabled?**  
A: Your browser may not support the MediaRecorder API. Try Chrome or Firefox, or check the marquee for the warning.

**Q: Can I stack images of different sizes?**  
A: No, all images must have identical dimensions. Resize them in an image editor first.

**Q: How many images can I load?**  
A: There’s no fixed limit, but performance depends on your browser and system. For large sets (>100 images), expect slower processing.

**Q: Why does my video look choppy?**  
A: The FPS may be too low, or your browser struggled with encoding. Try a higher FPS (e.g., 24–30) or fewer frames.

**Q: Can I edit the stacked image or video after saving?**  
A: Yes, use external software (e.g., Photoshop for images, DaVinci Resolve for videos) to further edit the outputs.

**Q: Why did my browser crash during processing?**  
A: Large images or many frames may exceed memory limits. Reduce image size or quantity and try again.

**Q: Is the application secure?**  
A: Yes, it runs locally in your browser with no internet access required. No data is sent to servers.

**Contact and Support**

Aquiplicity 2025 is provided as-is, but community support may be available through:

* **X Platform**: Search for posts or communities discussing “Aquiplicity 2025” or astrophotography tools on x.com.
* **Developer Console**: For technical issues, open your browser’s developer tools (F12 → Console) and note any error messages to share with community forums.
* **Email**: If provided by the software distributor, contact the developer via email for specific inquiries.

For feature requests or bug reports, consider posting on relevant X communities or forums, as the software may be open to community contributions.

Thank you for choosing **Aquiplicity 2025 - Image Stacker & Video Creator (v7)**! We hope this manual helps you create stunning stacked images and time-lapse videos. Happy processing!