LinearStarRemoval Script

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# Purpose:

This script, LinearStarRemoval, applies StarNet++ to a linear image. It does so by first stretching the image, then removing the stars, and then restoring it to its original linear state.

As two examples of the utility of removing stars in the linear state, consider

1. stretching an image of a nebula with stars that exceed the nebula’s brightness. Those stars determine the upper limit of stretching available while not saturating the stars. If they are removed, then the nebula-only image is stretched, and the stars later replaced, the nebula can be emphasized more easily;
2. sharpening an image of a nebula with stars present. Often cause the stars to acquire dark borders or other sharpening artifacts before the nebula is sharpened to your satisfaction. Star-related artifacts can occur in other sharpening programs as well as in PixInsight.

# Implementation:

The pixel-by-pixel solution for the above model, yielding estimates for the isolated emission line intensities in each pixel, has been implemented as the PixInsight Script, **TrueColor-Plus SHORGB**. That script can be used to extract the emission lines for use outside of the script, perhaps to make an SHO image, or within the script, to augment the line contribution(s) to an RGB image.

# Acquiring the Script:

The current version of the script and documentation are available by downloading the folder at this link:

<https://www.dropbox.com/sh/dpd1zs5fl576ohh/AACtBkC16yB2EiqRuhBDmfxga?dl=0>

# Installation:

Installation procedures follow standard PixInsight protocols. Place the download folder in an accessible and stable location; open the Scripts tab in PixInsight; select Feature Scripts; select Add; Point the function to the downloaded folder and press the Done button when PixInsight completes its task.

# Usage:

There are no user-specified or user-adjustable inputs. It can be launched from the “RUN” button or from an instance icon dragged to the desktop. An instance icon retains no memory of previous operations, so it can be dragged to any number of linear images in succession and operate properly.

## The Blue Triangle & Using an ImageContainer:

An icon instance of the script can be put onto the desktop by dragging the blue triangle to the desktop. If you list your images in an image container (obtained by a right-click on the desktop), the triangle from the image container can be dropped on the LinearStarRemoval script icon.

# Quirks and Foibles:

The script applies a screen stretch (STF) before exiting.

# Reporting Problems & Submitting Suggestions:

Please let me know of any bug you uncover; contact me at [Alex@FaintLightPhotography.com](mailto:Alex@FaintLightPhotography.com). Include a description of the problem and any error messages generated. Also, describe the data and procedures that led to the error.

# Future Possibilities:

None identified.

# Known Bugs:

None identified.