Alignment: Solar image shift correction

There are a group of sunspot images taken from the campus telerscope. Because of the atmospheric turbulence, these images are shift their position from time to time.

In this assignment, you are required to write a VI code to do the image shift correction for all images in a fold. The code must create a new fold in the current fold, which is used to save the corrected images so that all the corrected images can be saved in this new fold. The code must be able to automatically select all images (no matter how many images have) for this correction.

It must include two display windows: one show the first image used to select the template for pattern match and the other show the current corrected image. The front panel is recommend to include these associated information, as shown below:

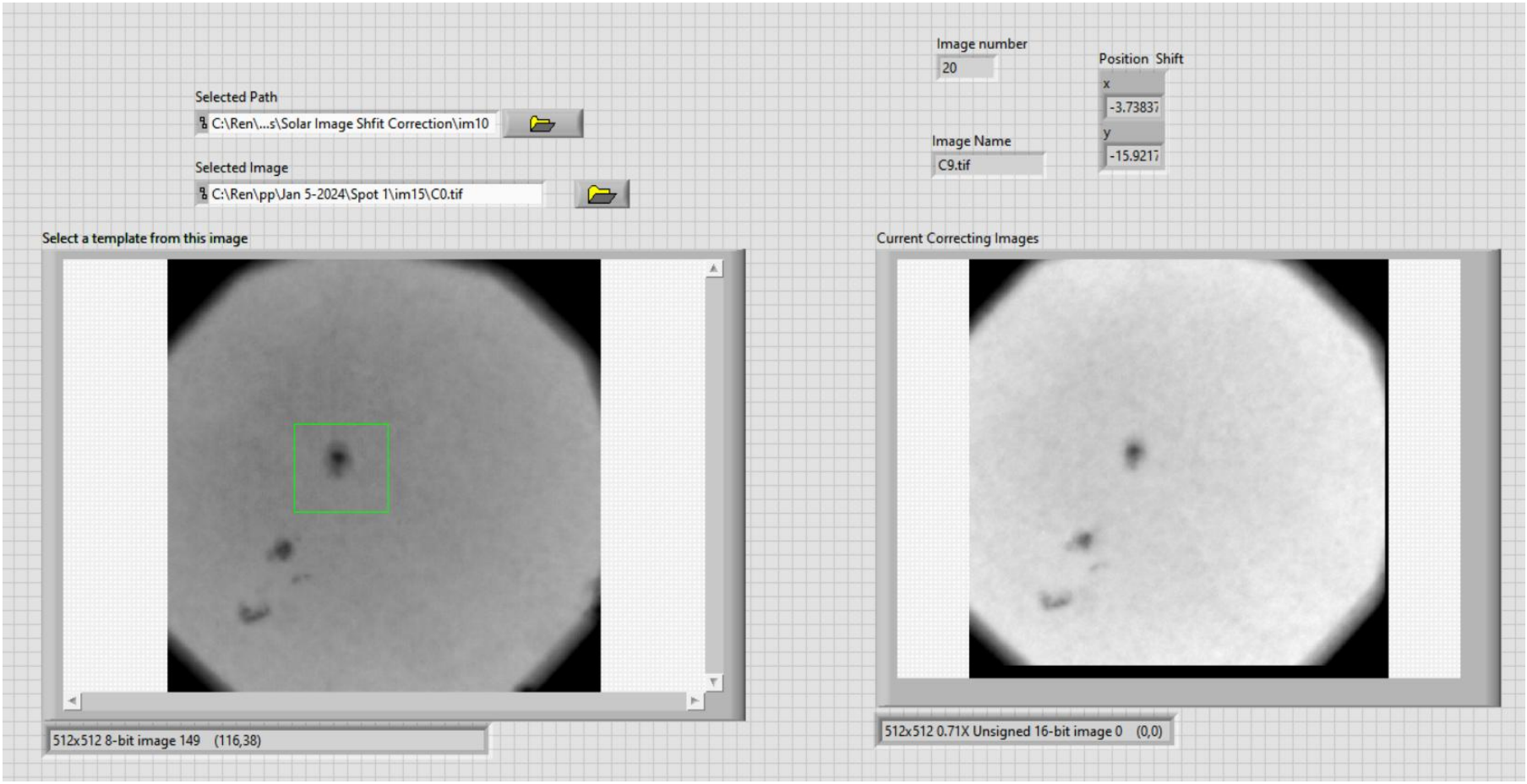
Image number
20
Position Shift
x
-3.73837
y
-15.9217
Image Name
C9.tif
Selected Path
C:\Ren\...s\Solar Image Shfit Correction\im10
Selected Image
C:\Ren\pp\Jan 5-2024\Spot 1\im15\C0.tif
Select a template from this image
512x512 8-bit image 149 (116,38)
Current Correcting Images
512x512 0.71X Unsigned 16-bit image 0 (0,0)

An example code is provided:

You can used the provided example code to select all images in a fold and show all image in the fold.

This example code can also be used to compare/show difference of the uncorrected and corrected images, in the associated fold.