

REGISTAX (Paul Maxon's tutorial)

My first step is to drag and drop my frames onto Registax (Figure 1). Once you do that, you'll see the screen shown in Figure 2. At this point you have a couple of decisions to make. For an object like Mars or Saturn, I set the **Minimum distance between** to it's lowest value (10). For Jupiter I'll set it to 15, and for the sun or moon I typically set it to 30 or 35. The number of alignment points will differ based on the size of the object on your image. In general, with a given sized object, the lower the **Minimum distance** number, the more alignment points (APS) you will have. As far as the number of APS, I find that there is a point of diminishing return. I have processed a solar image with 600 APS and 175 APS and found no difference in the final image. More points take longer to process, so you have to decide what looks right. The next box, **Min distance from edge**, can be left at it's default value, 20.

The **Intensity_section** has 3 possible settings. **Default** is used for most images, but for planets and for other images with large black areas it is important to use **3x3** or **Lowest pixel** value. The Intensity_section should be set in such a fashion that **no** alignpoints are in complete black parts of the image or - for planets - too close to the edge of the planet. This can be achieved by changing the method or by changing the LO-HI intensity settings, after changing the setting you will need to press "SET ALIGNPOINTS" again.

At this point I click the **Show Prefilter** box and click **Normalize**. This seems to help data that varies in brightness and since I've seen no problems using it with good data, I just always use it. Again this is your choice.

Now I'm ready to select the APS! I have tried manually selecting points and letting Registax 6 selecting them and I find that Registax 6 does a better job than me.

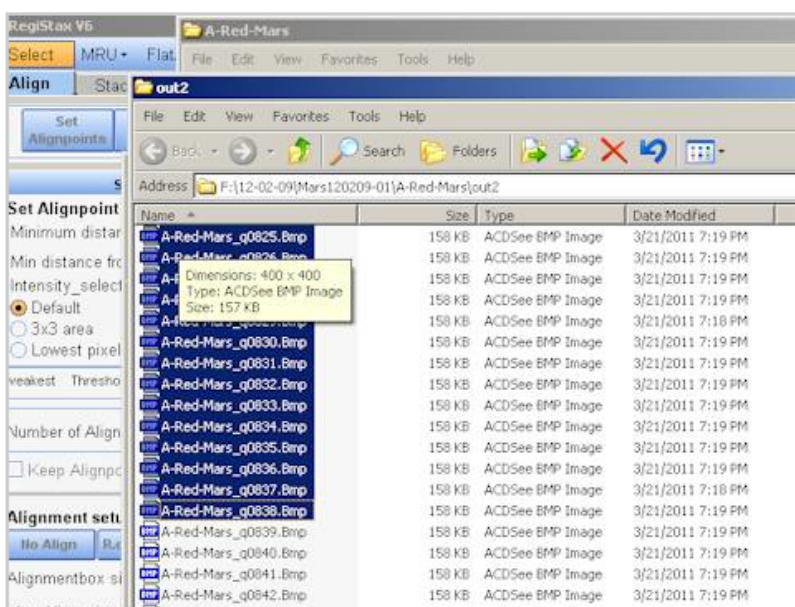


FIGURE 1



FIGURE 2

So I click the **Set Alignpoints** button and Registax will select the points. Registax tries to make sure you are selecting strong points, so the **weakest-strongest** slider moves 10% forward. See Figure 3.

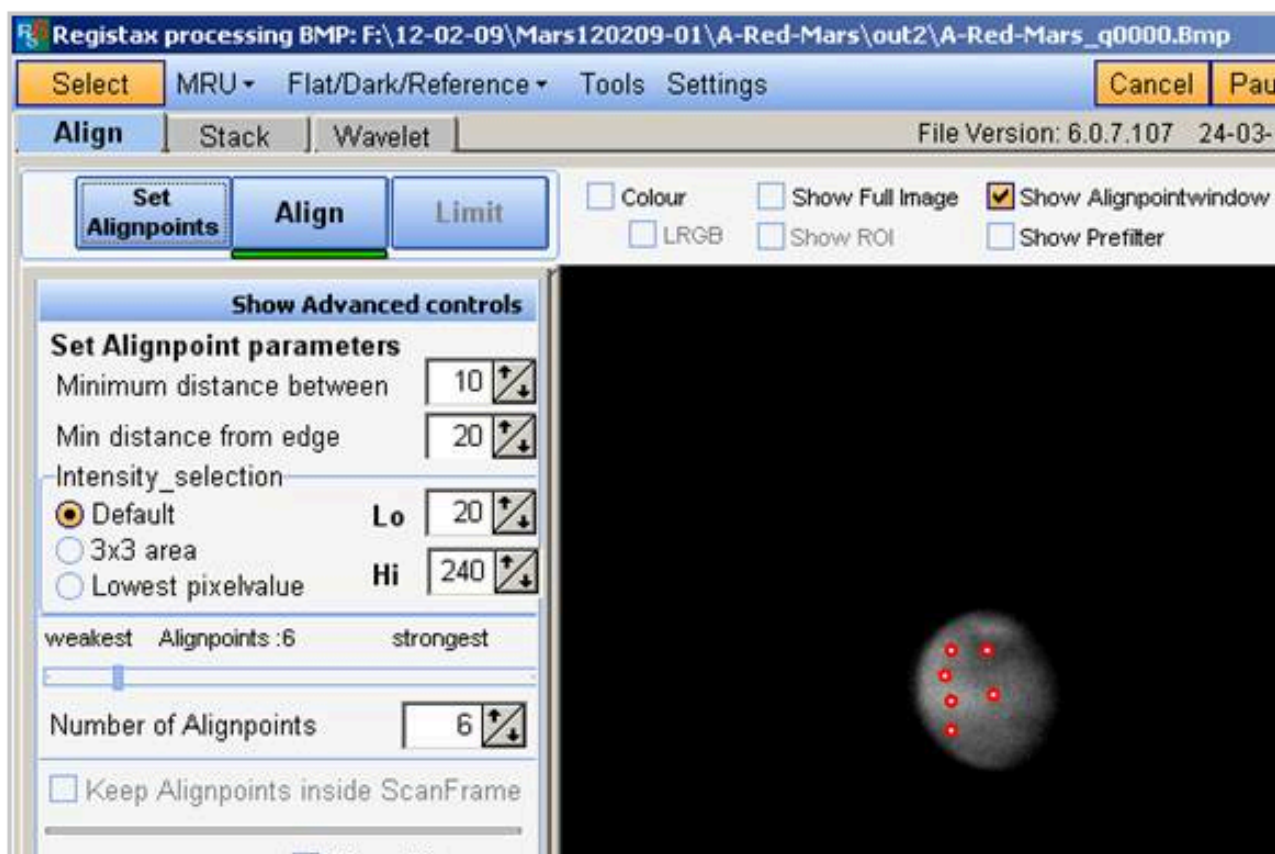


FIGURE 3

You will see from the figure the 6 APS selected and the slider moved to the right a bit. Six points will work fine with this Mars image. I like to have about 30 points on Saturn, 70-75 on Jupiter and 150-200 on the moon or sun. You can add more points manually simply by left-clicking on the image at the spots you want additional points, and rt-clicking on unwanted points removes them. It is best **not** to place APS in dark areas or areas with no contrast.

For me, I'm ready to click the **Align** button. You will see the progress bar move across the bottom of the screen and the timer on the right gives you elapsed time (Figure 4).

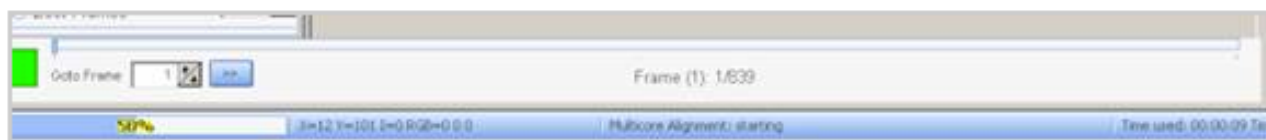


FIGURE 4

Once this is done, observe the **Goto Frame** box at the bottom of the screen (Figure 4). This box tells you how many frames will be stacked. Either move the slider to select the desired number of frames, or type in the desired number. I use the Best Frames option. Again, you should experiment to see what works best for you. If you set 100 frames with 100 frames/AP you will stack more frames than when using 100 best frames.

Click the **Limit** button and you will see the screen in Figure 5.

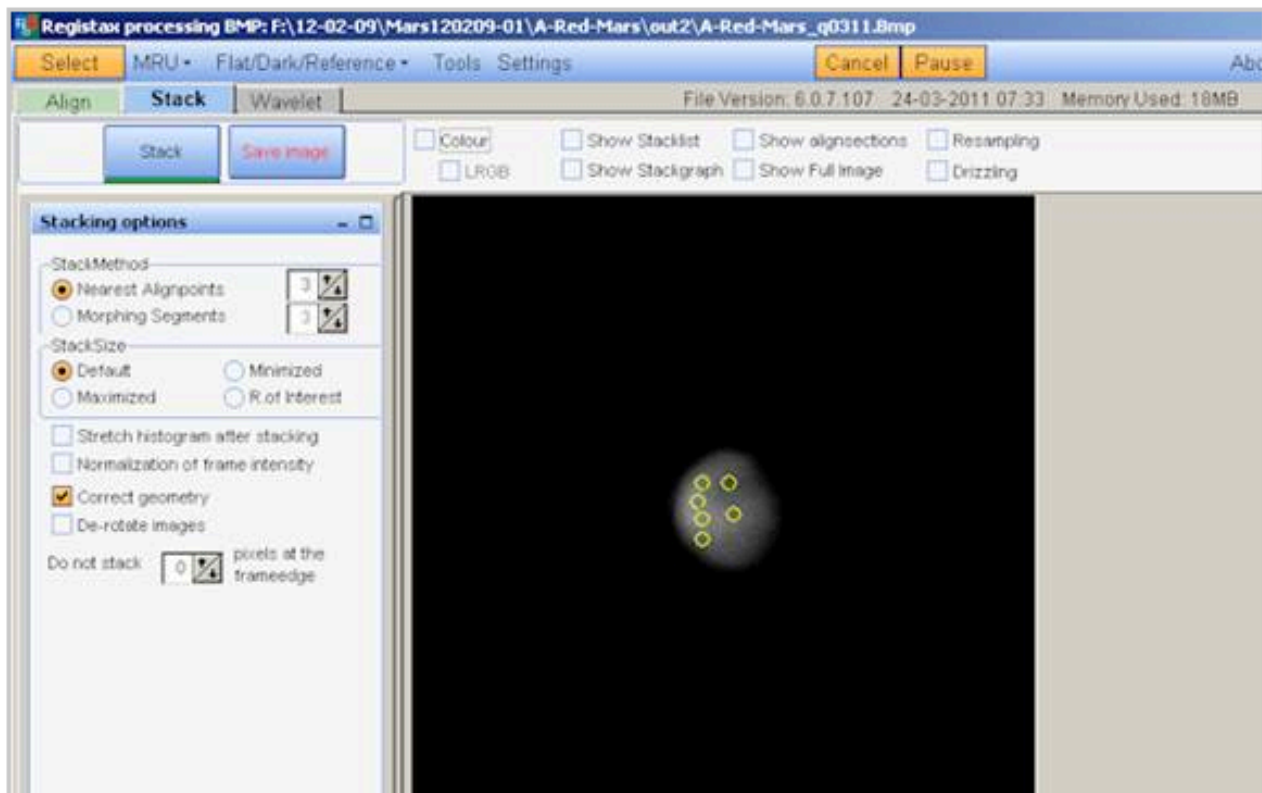


FIGURE 5

I leave the values as you see them in the figure. Then I click the **Stack** button (next to the "Save Image") button. In a few seconds the stacking will be done. The amount of time to stack will depend on the size of the image, number of frames and number of alignpoints. See Figure 6.

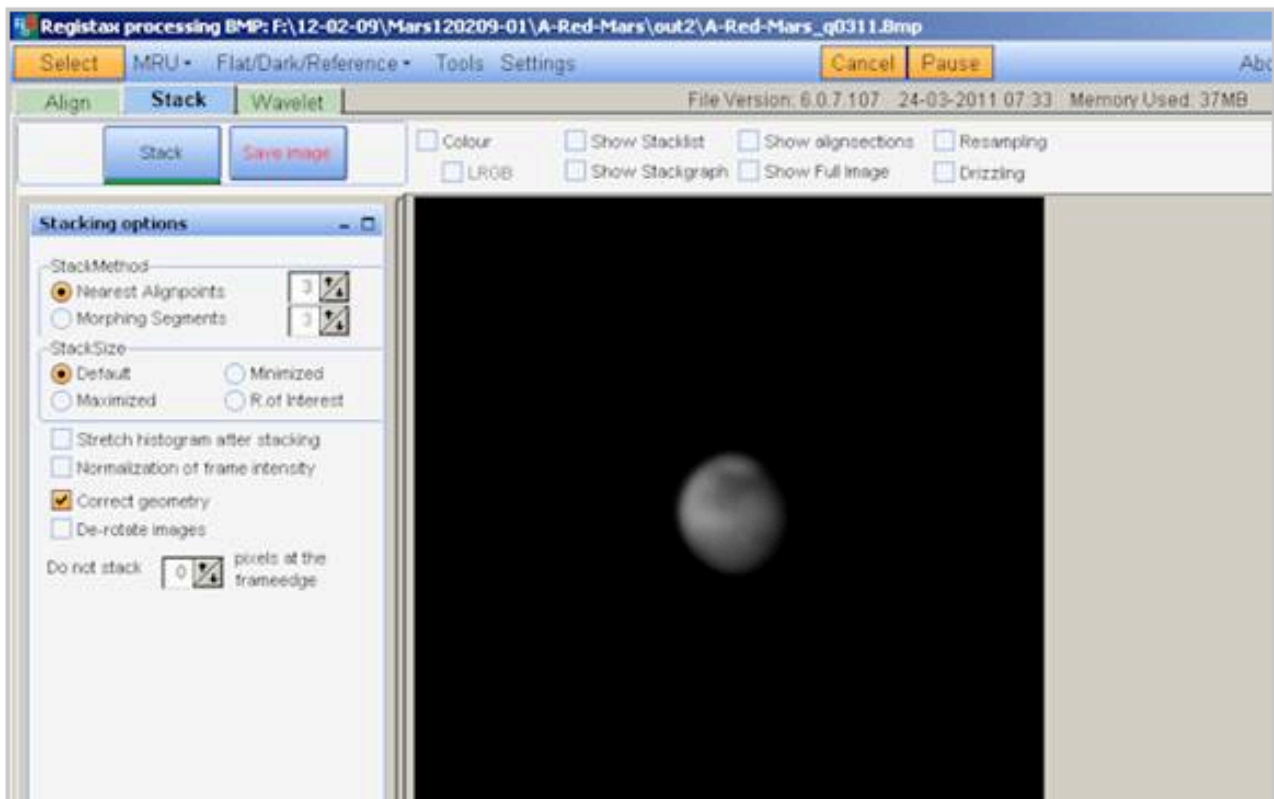


FIGURE 6

At this point, I click the **Wavelet** tab and save my raw data.

Wavelets

Cor has made some changes to the wavelet section. Most of it is over my head, but basically he added a denoise box for each layer. From his description, this is an extension of his noise trapping in layer 1 from Registax 5. There will be more detail with the release. To use the denoise settings you must use **Gaussian** wavelets. I got my settings file from Sylvain Weiller and made some slight modifications to suit me. These settings are guidelines only, just something to get you started. Look carefully at Figure 7 to see the **Denoise** and **Sharpen** settings for each layer. Notice the quality of the image compared to Figure 6.

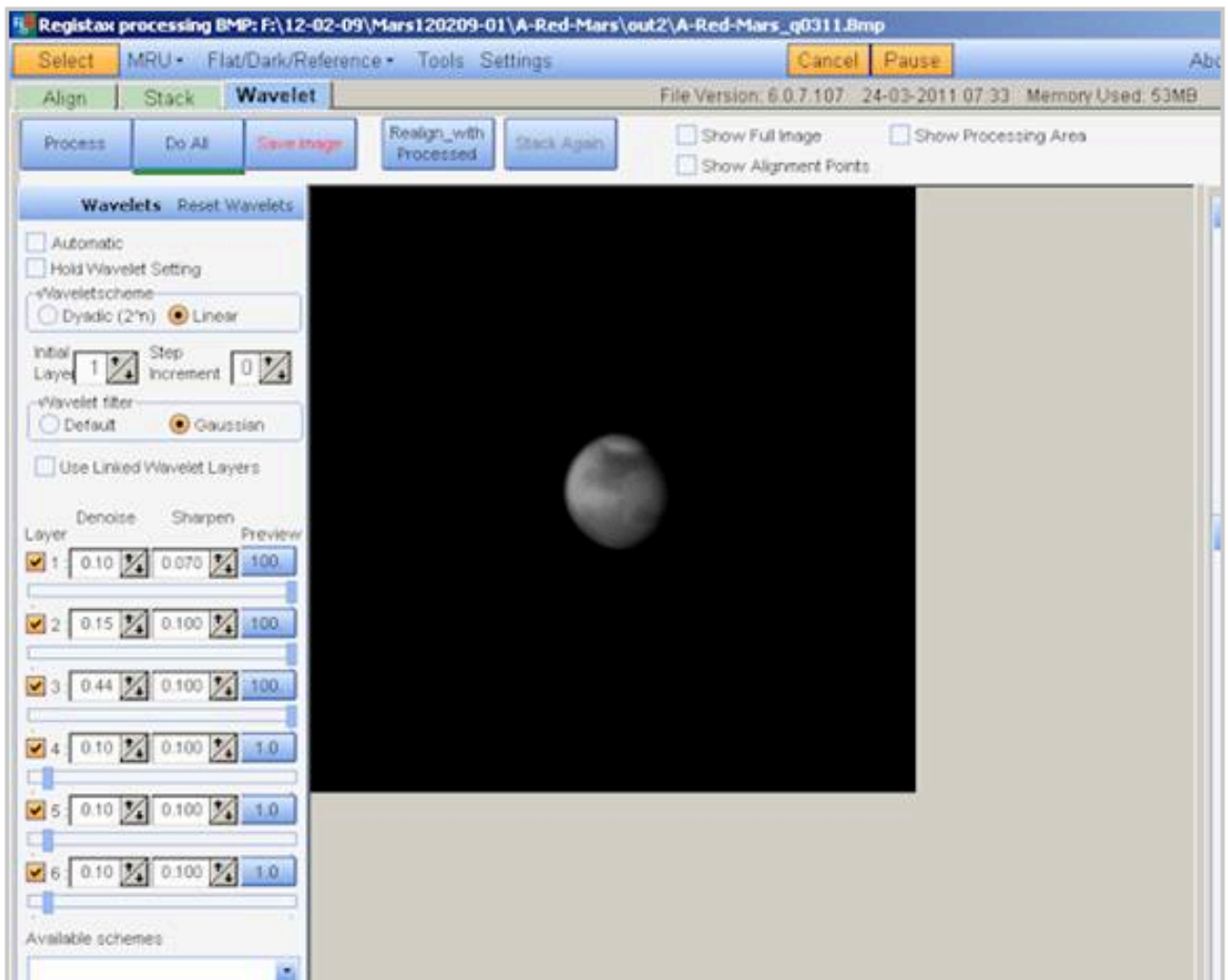


FIGURE 7

Looks pretty good doesn't it? Now I'm going to click one more box. Locate the **Use Linked Wavelet Layers** box just below the Gaussian and Default bullets. Look at Figure 8 and see what happens when I click that box.

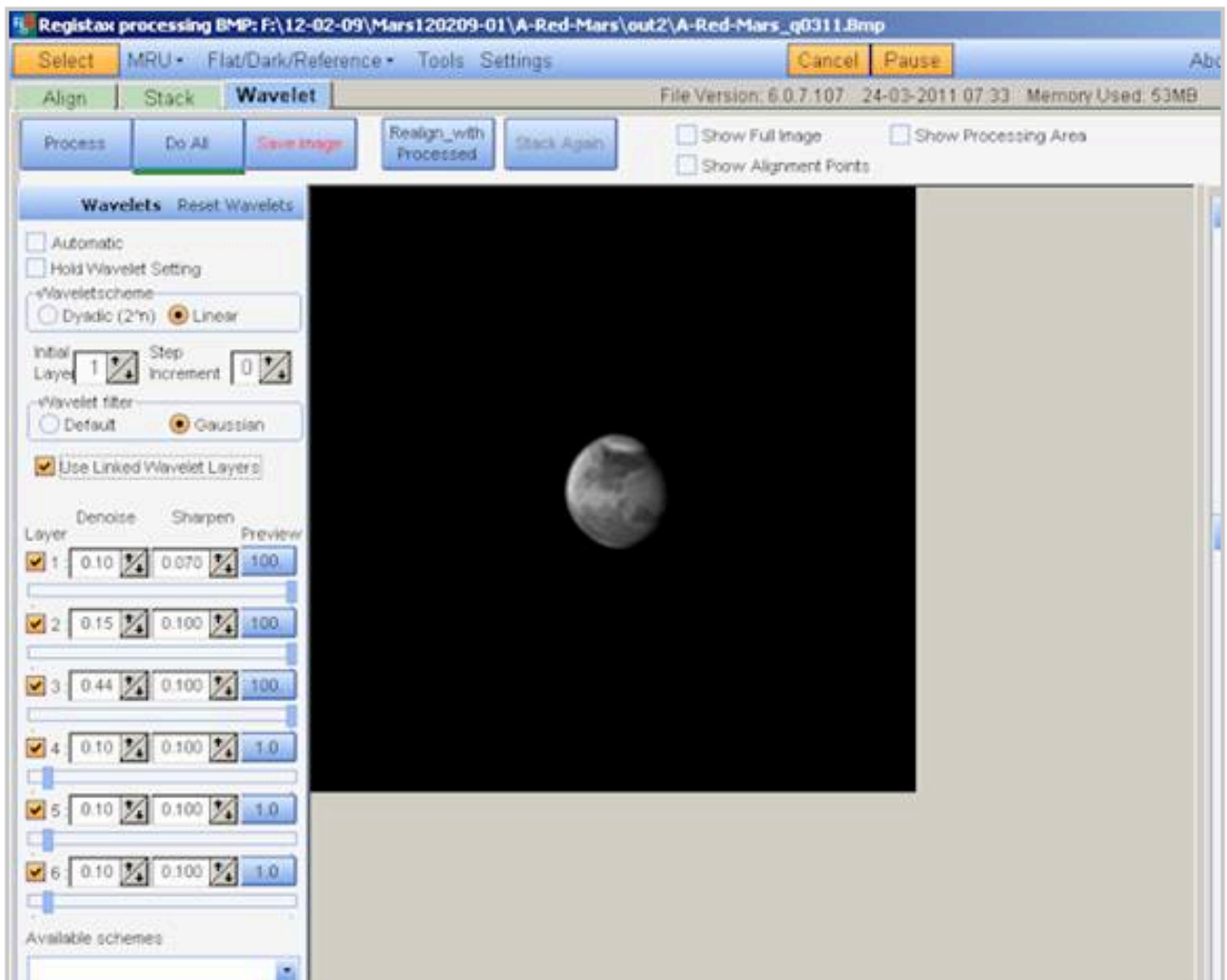


FIGURE 8

Pretty dramatic difference, huh? That illustrated the power of the Denoise and Linked Wavelet Layer features. You can experiment to find values that are pleasing to you. Figure 9 has a slightly different set of values for wavelets so you can see how changing the wavelet settings affect the final image.

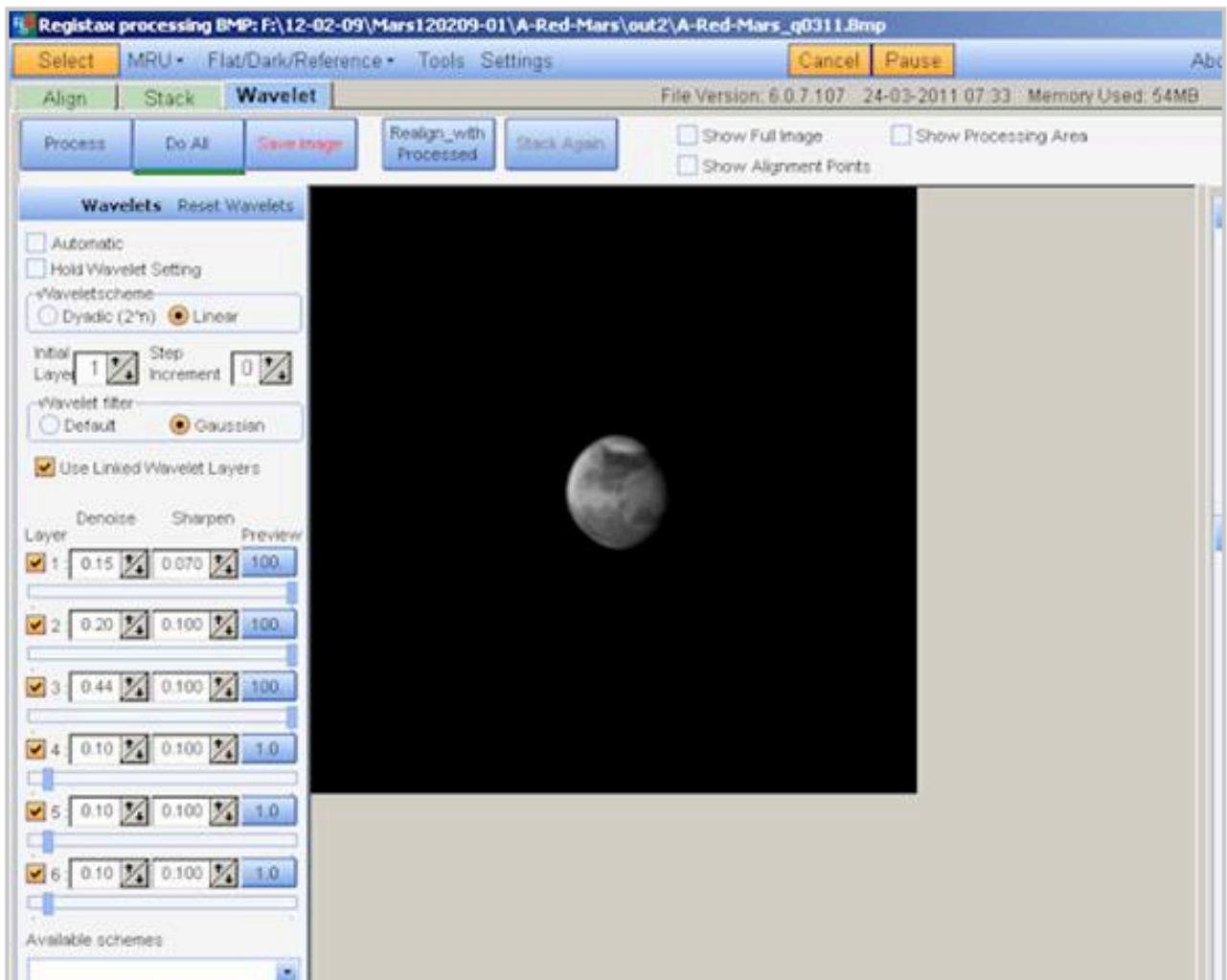


FIGURE 9

Well, that's about all I do. On my quad-core 2.8 GHz system, this process from drag and drop to wavelets takes less than 3 minutes. Of course, now I'll save the processed image and bring it into my post processing programs to give it the finishing touch.

I hope these guidelines help you to develop your own processing routine and maybe help you produce your best images ever.