Response to the Reviewers of MS 32444 (revised):
"Using Hilbert Curves to Organize, Sample, and Sonify Solar Data"
submitted to the *American Journal of Physics*

by W. D. Pesnell, Kyle Ingram-Johnson, and Kevin Addison

Dear Drs. Romano and Price,

Thank you for the reviews of manuscript MS 3244, "Using Hilbert Curves to Organize, Sample, and Sonify Solar Data," being considered for publication in *American Journal of Physics*.

We thank the referees for their comments. The comments have improved the paper, while unfortunately increasing the length a little, but the new version should withstand their scrutiny.

None of the reviewer comments argued against the paper being published. Although a detailed rebuttal of those comments is not included I implemented many of the specific points raised by Reviewer #1. The changes I made are highlighted in bold in the revised manuscript.

I think the manuscript is ready for publication in *Journal of American Journal of Physics*.

Sincerely,
W. Dean Pesnell

1. Reviewer #1

Some general statements about the response to the referee's comments:

The first reviewer continues to be positive about the paper. They provided extensive suggestions about ways to improve the paper. I have implemented many of those suggestions.

The subsections on the image sonifications were rewritten to better separate them. Figure 4 and 6 were rearranged to put the information in the more appropriate sections. I am reluctant to include yet another copy of the solar image used. By separating the raster and Hilbert sampling discussion this need may be unnecessary. The image in time section was also heavily modified.

I am familiar with helioseismology, having written papers in that field as well as its parent field of stellar pulsations. A discussion of sound waves in the Sun would take the paper far afield from its intent — a report on using Hilbert curves to sonify images. A few examples of datasets with different complexities were described to allow an interested reader of the paper to use the concepts in their class, the goal of the *Am. J. Physics*. I included two references to helioseismic sonifications in line 390 so those readers can see examples from other fields as well as adding a reference to Alexander's work.

I note that "timbre" is defined in line 55 of the revised version.

Again, we examined other software but elected to only report the sonifications we did and not write a white paper on software synthesizers.

We thank the reviewer for their comments and recommendations.

2. Reviewer #2

The second reviewer was also quite positive about the paper.
We thank the reviewer for their comments and recommendations.