Overall evaluation.

Overall, this is an excellent step forward in terms of providing these resources to the broader scientific community in an interactive and accessible format. I look forward to it being published with the recommended revisions.

I have read the manuscript as well as the posted comments, including those from reviewer #1. I agree with almost all of the comments made by that reviewer, so I will not repeat all of them here. I am pleased to see that the authors have already begun the process of making the necessary revisions.

As noted by the other reviewer, if this paper is to be published it will require very extensive editing to correct the grammar. As a result, I have not made any specific comments related to spelling, grammar, etc.

Specific comments.

I wish to reinforce the point that scales on all of the images are essential and I am glad that this is being changed. As of February 3, I still did not see scales on the images that I looked at either in the database folders or accessed through the FSIDvis tool.

I also had difficulty accessing the FSIDvis tool at fossil-onotology.com, but eventually I got there. However, I could not figure out how to access the images linked to the localities, so I was happy to see that this was explained in the reply to the other reviewer – by hitting the spacebar. This should be explained clearly within the FSIDvis tool web page and it should also be explained in this manuscript.

There are several places in the manuscript where the information about the number of species and images is repeated. Some of this repetition should be removed to make the paper more concise.

Once I was able to access the image files in the FSIDvis tool I was surprised at the naming conventions for the species. The image files that are called up are unusual because, for example, one species that I found was named Climacograptus angustatus but beside that it said that the genus was Proclimacograptus. I presume this is the result of taxonomic revision, but it is confusing, especially to someone less familiar with graptolites. What happens when the species name had also been revised from the original identification, is that also shown in these pop-up image files within the FSIDvis tool? I think it would be better if these pop-up files showed both the original name and the full revised name of each taxon. It would also be helpful if the reference source for the revised name was provided, either in these pop-up files or in the excel file, or both.

Once you have selected a pop-up image within the FSIDvis tool you can click on the image and another copy of the image alone will appear beside the pop-up box. This is good. It would be

even better, however, if, once the full image appeared, if the user could zoom in on it. Many of the photos are made up mostly of surrounding rock and empty space very small images of the actual graptolite specimens, so it is necessary to zoom in to see the actual morphology of the specimen (more on this below). Unfortunately, I was not able to do this within the FSIDvis tool. I could do it if I went to the full database of images and opened each one but, as noted by the other reviewer, it is very to find particular images within that database because the Excel file does not say what folder they are in.

As noted above, many of my concerns about this manuscript were already pointed out by reviewer #1 and I am pleased to hear that the authors are addressing these. However, I do have one additional, very important point and that is related to the quality of many of the images themselves. Many of these specimens should have been photographed at much higher magnification. For example, the first image in folder 1 is specimen 83260 and the specimen occupies only about 10% of the total field of view. There is no reason to have so much wasted space in images such as this, which just means that the image itself is shown at lower resolution than necessary. I think in every possible case the graptolites should have been photographed in the microscope rather than with a camera with a macro lens and the graptolite should fill the field of view as much as possible. The next image, 83269 is much better, although it is hard to see the thecal details as a result of the preservation. The next image, 90359, is not good at all. I cannot even tell where the specimen is that is supposed to be depicted in this image. In fact, there are a number of cases in which the specimens are quite hard to see in the images. Image 21217 illustrates another problem with some of these images. The actual specimen is so small compared to the image frame that by the time I zoom in far enough to see the thecae, the image is too blurry or pixilated to clearly see the thecal form. The same problem exists with image 53891 – by the time I zoom in to see the critical details of the proximal end it is too blurry to see them. Thus, this and many of the other images do not show the critical morphological details needed to identify the species, as suggested in the text of the manuscript. Another example of a different problem with some of the images is specimen 10335 in folder 1. In this case all that can be seen is some generally archiclimacograptid distal thecae. This is definitely not enough information to identify this or any other specimen, on its own to the level of species or maybe even genus, because this could also be a distal specimen of Pseudoclimacograptus. In the case of image 10336, the whole image is blurry and it is not at all clear which of the several specimens in the picture is the one this image is intending to show. Overall, then, higher magnification photographs, with scales, and more careful manipulation of the lighting to enhance the contrast between the specimens and host rock could improve many of these images considerably. This is a good database of images to have available and many of the images are excellent, but its value is considerably weakened by the low magnification and quality of a significant proportion of the photos. I hope that the authors are able to rectify these problems although I expect it will be a very time-consuming effort.

Note that it is because of the relatively poor quality of a significant proportion of the images that I rated the data quality as only good. If I had the choice I would rate it as somewhere between fair and good.

On a side point, I am surprised that the authors say that a scale in the images was not necessary for the AI species recognition. Without knowing the scale how could an AI distinguish two species that have the same thecal and rhabdsosomal form and differ only in width and thecal spacing?