

Interactive comment on “A Sample Characterization Toolkit for Carbonate U-Pb Geochronology” by E. Troy Rasbury et al.

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This manuscript describes various imaging methods used to characterize a number of carbonate standards useful for U-Pb geochronology. Carbonate dating is a relatively new and very promising field so the manuscript is useful to geochronologists and will be of great interest to those working in the field. I found it to be generally well written and organized, except for a small number of grammatical mistakes that are noted on the attached annotated copy. The only part that I have a comment on is the suggestion for more use of fission track mapping to outline high-U zones for laser ablation. Neutron activation produces a wide variety of radioactive atoms with varying half-lives so the specimen will remain somewhat radioactive for a long time. Dating carbonate samples requires ablating relatively large amounts of sample, which could

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result in making the quadrupole separator somewhat radioactive. This in turn could increase the background of the electron multiplier detector and it is also important to have low backgrounds for this kind of work. Although regular cleaning could minimize this I don't think that I would like to try it with my instrument. Radiography sounds safer.

Please also note the supplement to this comment:

<https://gchron.copernicus.org/preprints/gchron-2020-20/gchron-2020-20-RC2-supplement.pdf>

Interactive comment on Geochronology Discuss., <https://doi.org/10.5194/gchron-2020-20>, 2020.

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