This manuscript presents an intriguing set of exposure ages from late Pleistocene to Holocene glacial deposits in the Beartooth Mountains of the western United States. The late Pleistocene ages of the oldest dated moraine position and potential associations with the Younger Dryas will attract a lot of interest. But in my view, the most newsworthy aspect of the study is that it provides rare age control for the late Holocene record of glaciation in this region, which remains sparsely documented. The exposure ages are rather scattered on the youngest landforms, but despite this scatter, the data provide a clear signature of glacial activity during the Neoglacial and LIA.

Regarding the youngest landforms, there’s some acknowledgement of the complexities involved in interpreting these ages as either climate-driven glacial events or periglacial processes leading to rock glacier formation. I would like to see more discussion about that complex issue and the caution in interpreting such ages.

Overall, however, the ages reported in this manuscript are valuable and should be published because they advance our knowledge of late Pleistocene glacial events and late Holocene stabilizations/readvances of mountain glaciers in the western US.

I have a list of more detailed suggestions below, and recommend publication after moderate revisions.

Line 60: correct spelling is Absaroka

Line 63: Replace Course with Coarse
Figure 1: A more specific locator inset map with the Beartooth Mountains labeled would be more helpful than highlighting the entire states of Montana and Wyoming. Main map needs lat-lon tics.

Figure 2: This figure would be more informative if additional information was added, such as other glacial deposits or features, former ice flow directions, etc. There's also a lot of area included on eastern side of the map that doesn't include any plotted moraine or age information and therefore doesn't need to be shown.

Figure 2 again: With this degree of scatter among the exposure ages, it may not be meaningful to report an average age. Instead, reporting the range of ages could be more useful for interpretations. The scatter also makes me wonder if these features are rock glaciers or protalus ramparts, rather than moraines? This is acknowledged later in the discussion, but a satellite image base map would help visualize the landforms at these field sites.

Line 118: What exactly is meant by "deflated" moraine? Does this refer to ice-stagnation features or melting of an ice-cored moraine? Or wind deflation of fine-grained material from the surface?

Line 175: I'm not sure why it's useful to mention how many samples were collected if they weren't all measured.

Results section: Ages reported in this section do not match the ages plotted on Figure 2. This needs to be corrected.

Line 226: It does not seem warranted to report these exposure ages to the nearest year. I suggest rounding to the nearest decade or century, or whatever is justified by the actual precision of the results. Same comment for other quoted ages throughout the manuscript.

Lines 231-234: I'm not following the logic here. If rockfall is suspected, then the youngest ages may be reflecting the timing of that rockfall rather than a period of glaciation.

Lines 238-239: Again, considering the youngest ages to be the minimum-limiting ages of glaciation is risky if rockfall delivery is suspected.

Lines 244-245: What about choice of scaling? How much does that change the ages? I don't see Table 2 in the main text.
Lines 338-341: The apparent variability in the timing of moraine abandonment in the YD stadial seems to fall within age uncertainties, so it's difficult to make a strong case for this.