

Interactive comment on “Deglacial to postglacial history of Nares Strait, Northwest Greenland: a marine perspective” by Eleanor Georgiadis et al.

Eleanor Georgiadis et al.

eleanor.georgiadis@u-bordeaux.fr

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Dear referee,

We are very grateful that you provided us with a review of our work ahead of the deadline and that you allow us the opportunity to submit a revised version.

Thank you for pointing out Reusche et al.’s recent paper that we were not aware of at the time of writing our manuscript. Given the scarcity of archive in Nares Strait, we welcome this new study which we must of course take into account in our work. The remarkable coincidence in the dating of the retreat of the Humboldt Glacier from a lateral moraine and the IRD event in Kane Basin is striking and may well be meaningful, but we will also have to consider the wide uncertainties in the dating of both these

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events (dR and 14C dating uncertainties in Kane Basin of several hundred years and uncertainties of up to 1.7 ka for the lateral moraine). If we were to consider that unit 3 (the IRD event) is in fact the sole result of calving from the Humboldt Glacier during its retreat and that unit 1 was deposited by the collapse of glacial ice in Kennedy Channel, it would entail that the deglaciation of northern Kane Basin was either (1) relatively fast, (2) that it occurred simultaneously to the opening of Kennedy Channel, or (3) that post-glacial sediments at the core location were eroded by the opening of Kennedy Channel, given that the seismic profile seems to indicate that the core reached till. When taking into account age uncertainties, it is also tempting for us to consider that the change in sediment sources at ~ 8.1 cal ka BP (that we interpret as the retreat of Humboldt Glacier in eastern Kane Basin) corresponds to the abandonment of the lateral moraine dated by Reusche et al.

We will definitely include these alternative interpretations in our revised version. As you mention in your review, it is important that we do not over-interpret our dataset without at least giving alternative narratives. Referee #1 also advised us to acknowledge more evidently our uncertainties on the dating of the units we present and the interpretations we propose.

We hope to submit a revised version as soon possible.

Yours sincerely,

Eleanor Georgiadis on behalf of the authors

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