

***GROUNDING-LINE RETREAT INTO THE  
SOUTHERNMOST ROSS SEA –  
A COMPARISON BETWEEN SCOTT AND  
LOWER REEDY GLACIERS***

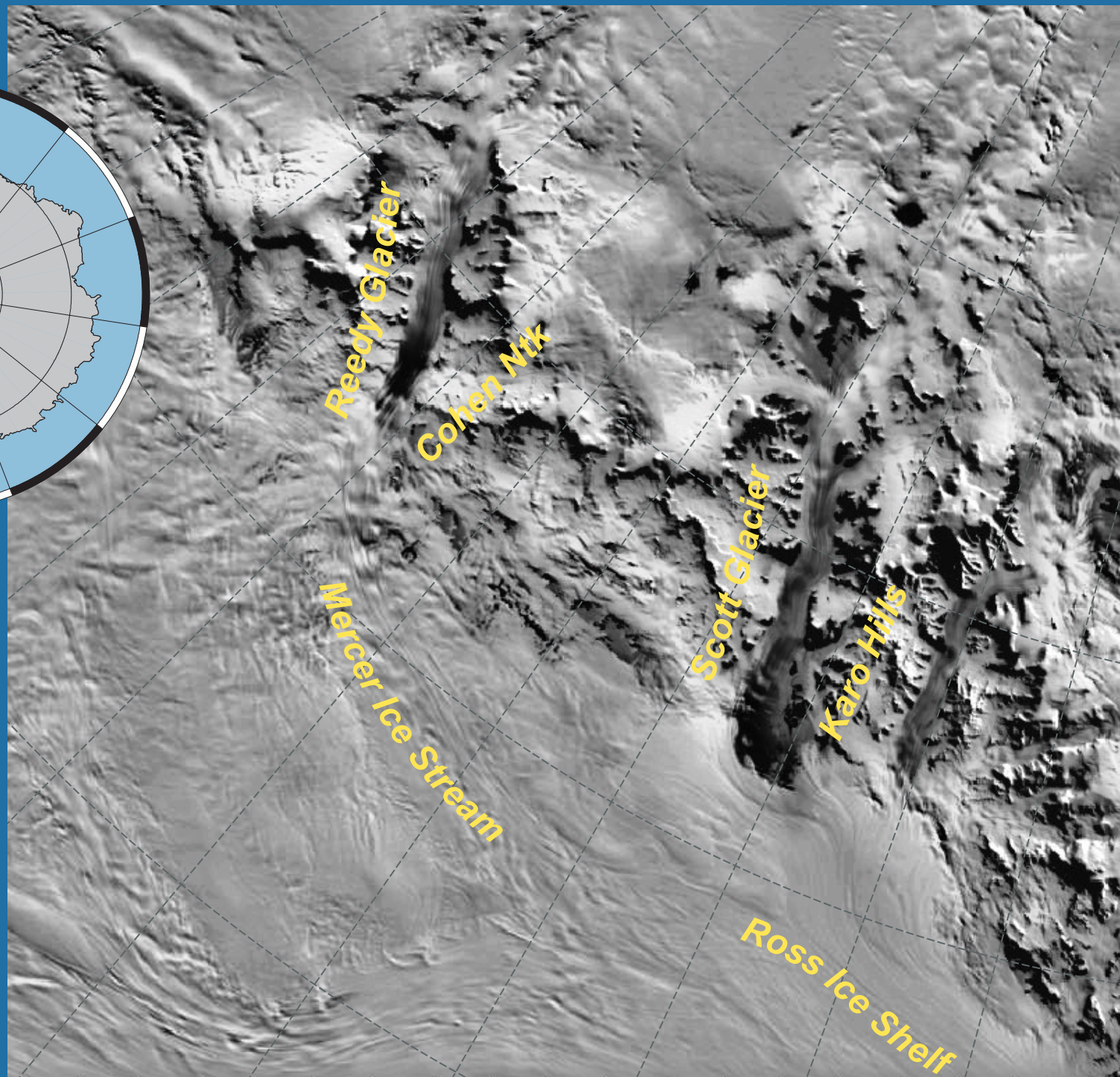
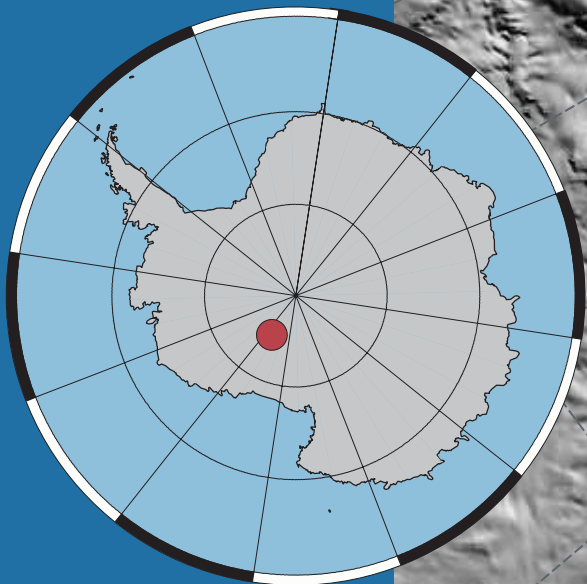
***John Stone, Claire Todd & Howard Conway  
University of Washington  
Brenda Hall & Gordon Bromley  
University of Maine***

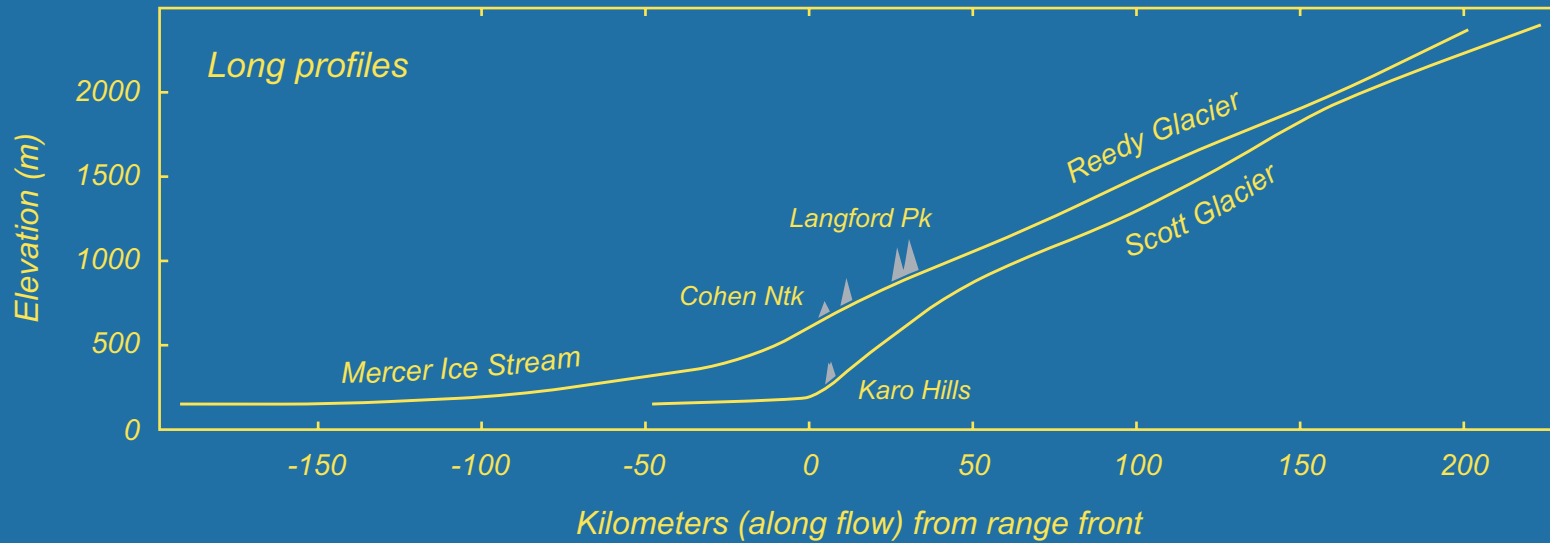
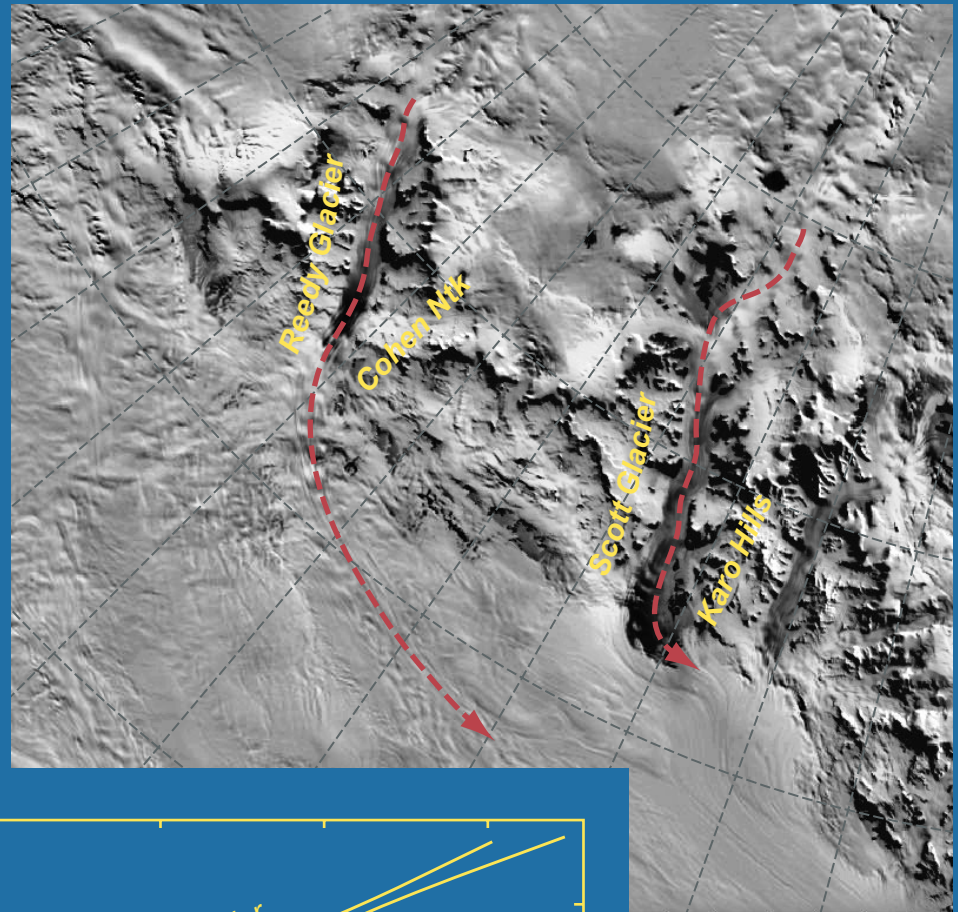
***Supported by NSF grant OPP-0229314  
Thanks to Mark Fahnestock, Ted Scambos  
and the creators of the MOA imagery.***

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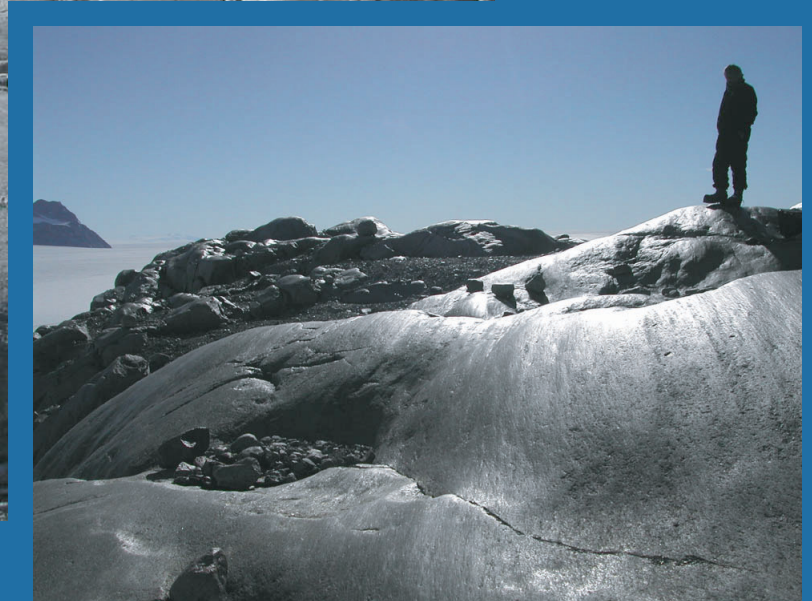
- *The West Antarctic Ice Sheet in the southeastern Ross Sea reached its present size ~ 2000 years ago.*
- *Reedy Glacier, and the grounding zone at the foot of Mercer Ice Stream, have been fairly stable since then.*
- *Changes in the width and discharge of Mercer Ice Stream over the last 500 - 1000 years have not involved much overall retreat of the grounding zone, but their effects may be evident up-glacier.*



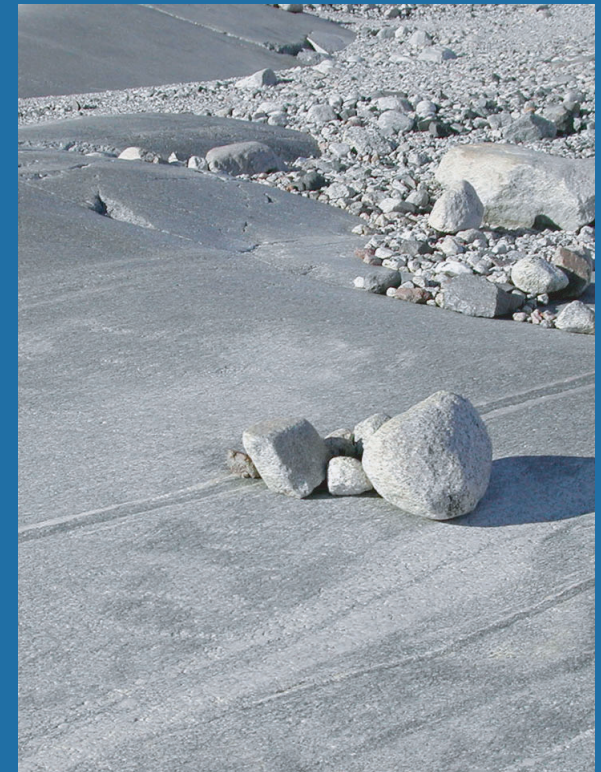
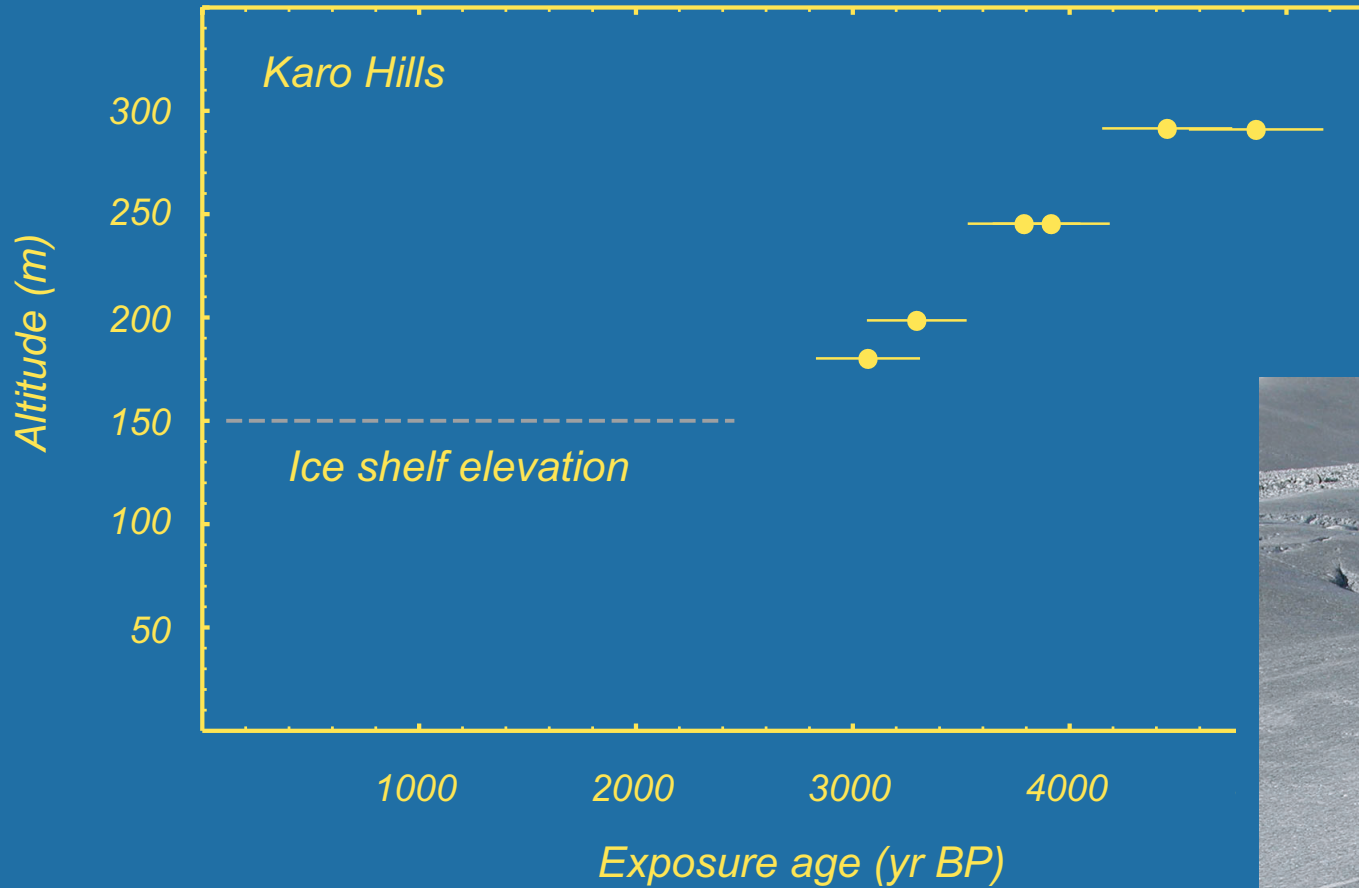




***Karo Hills, lower Scott Glacier***



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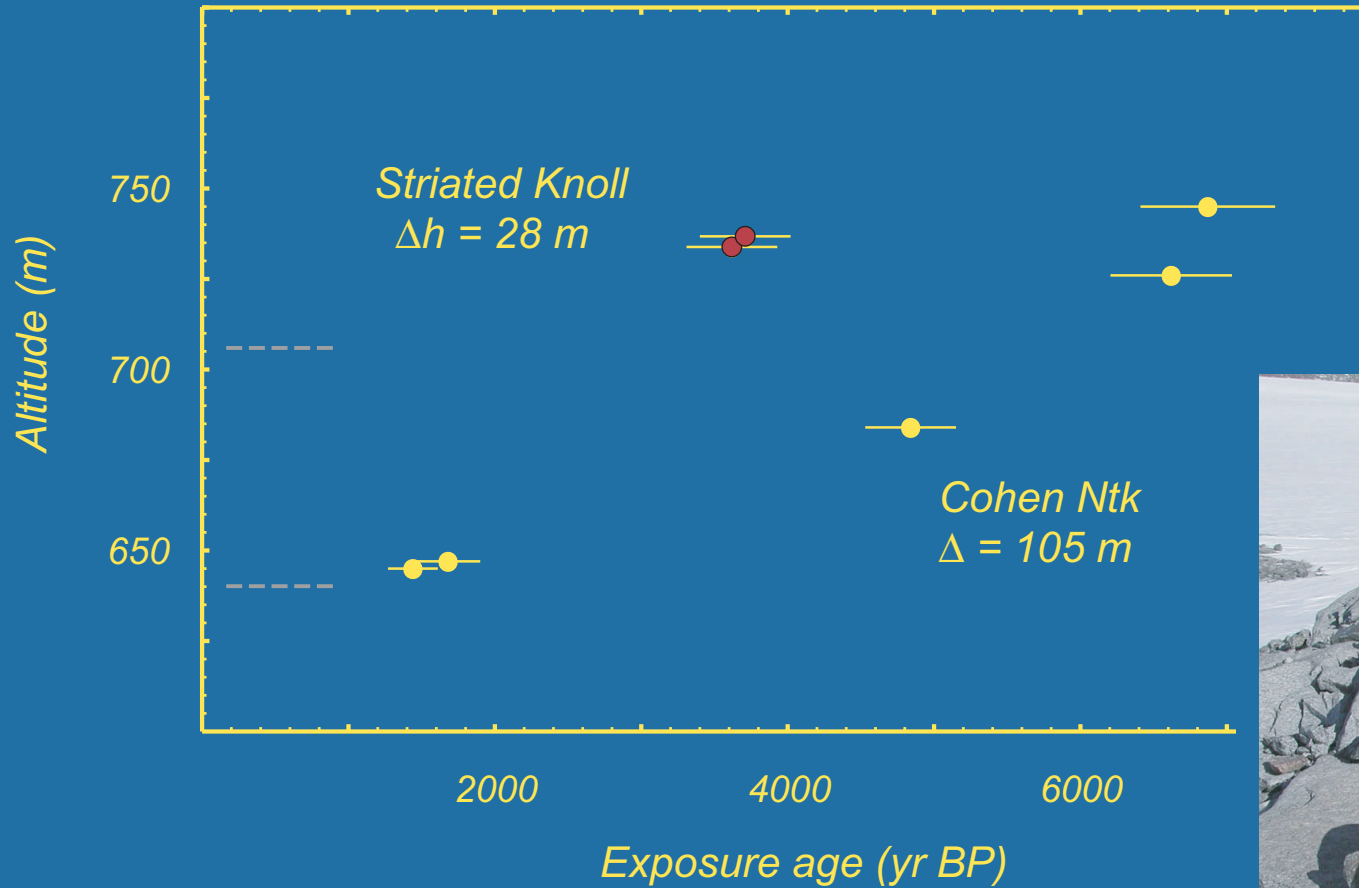


- **The West Antarctic Ice Sheet in the southeastern Ross Sea reached its present size ~ 2000 years ago.**

*Cohen Nunatak and nearby peaks, lower Reedy Glacier*



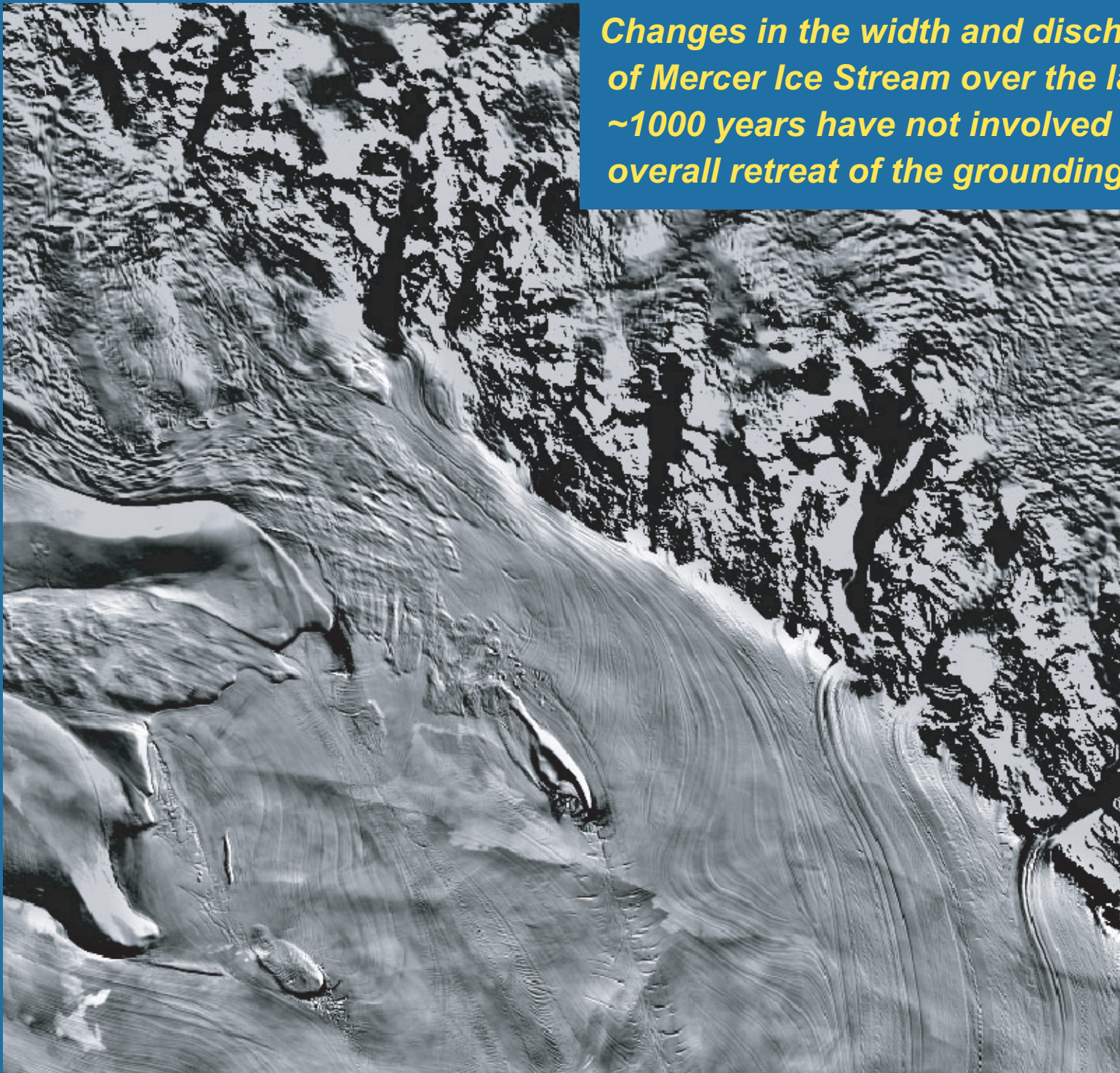
- *Reedy Glacier, and the grounding zone at the foot of Mercer Ice Stream, have been more or less stable for the last ~ 2000 years.*



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*Changes in the width and discharge of Mercer Ice Stream over the last ~1000 years have not involved much overall retreat of the grounding zone.*



*Changes in Mercer Ice Stream have not involved much retreat of the grounding zone ...  
But their effects may be evident upstream*

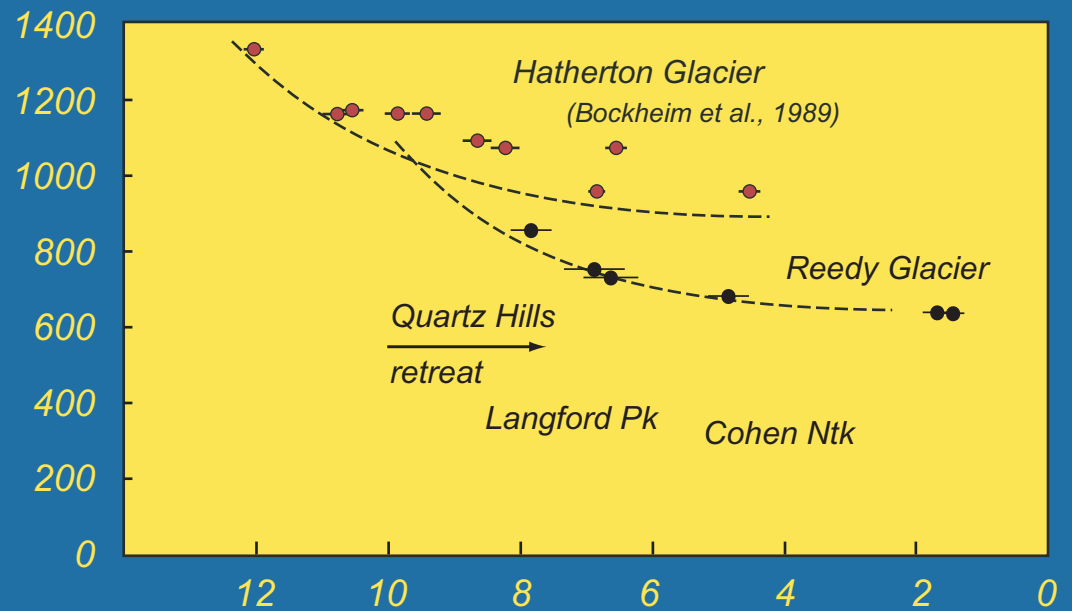
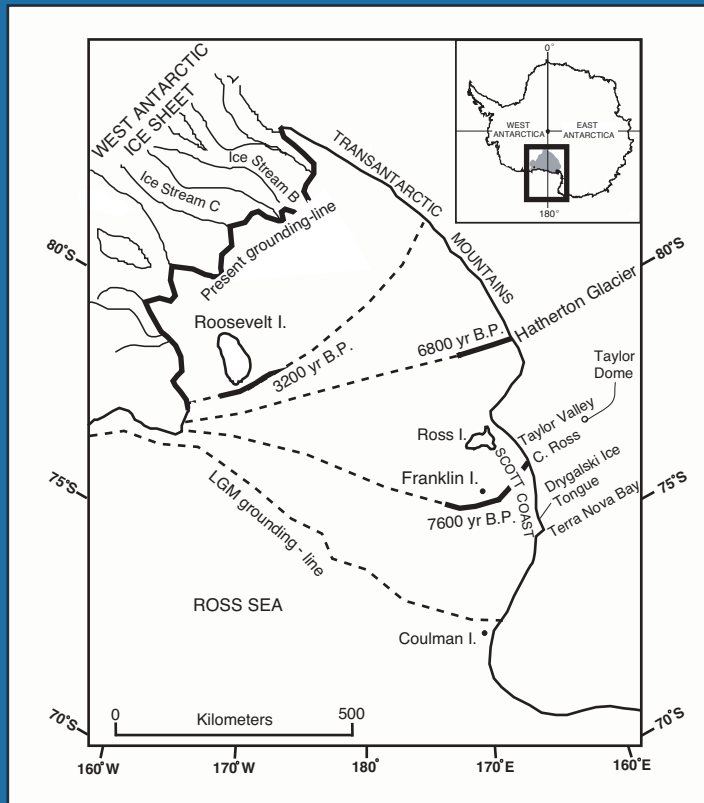


$670 \pm 60$  yr    ( $500 \pm 70$  yr)  
 $\Delta h \sim 34$  m     $\Delta h \sim 25$  m

$830 \pm 80$  yr  
 $\Delta h \sim 18$  m

$520 \pm 50$  yr  
 $\Delta h \sim 8$  m





*Hatherton Glacier: Thinning commenced at ~12 kyr BP, and ended around ~ 7 kyr BP*

*Reedy Glacier: Thinning commenced at ~10 kyr BP, and ended around ~ 4 kyr BP*

*Is the time lag consistent with the "swinging gate" picture?*

*Or did grounded ice retreat earlier in the central Ross Sea?*

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