

Supplementary Materials for

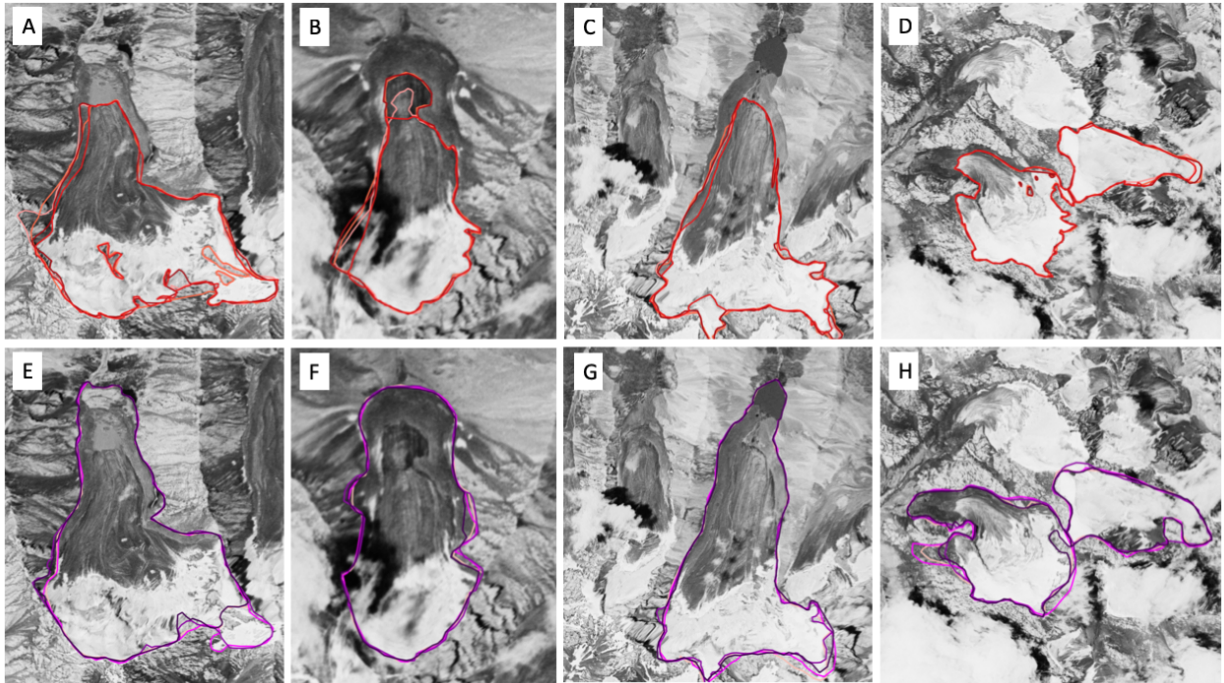
**Estimating the longevity of glaciers in the Xinjiang region of the Tian Shan  
through observations of glacier area change since the Little Ice Age using  
high-resolution imagery**

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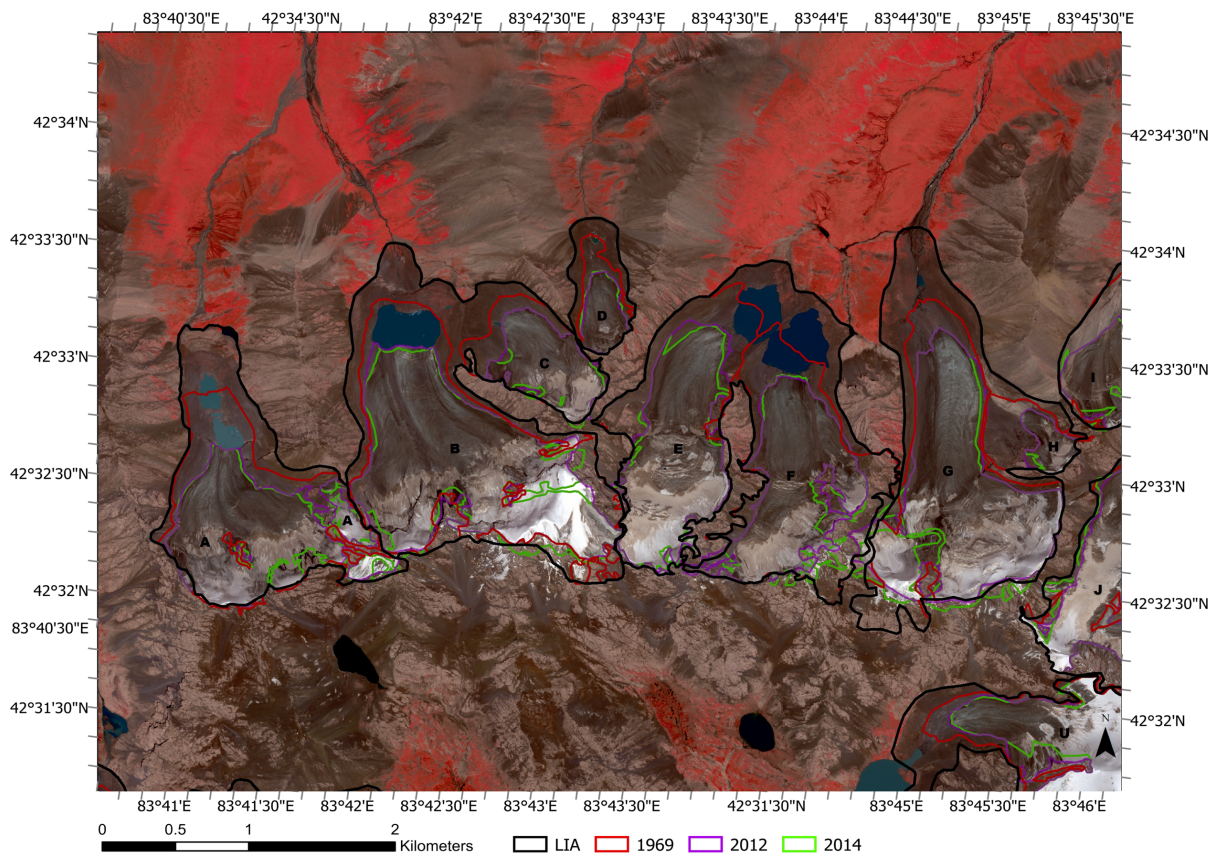
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The document includes:

- **Fig. S1.** Additional repeat delineations for the Little Ice Age (LIA) and 1969 extents used to determine uncertainty.
- Additional glacier outlines shown for smaller groups of glaciers:
  - **Fig. S2.** Glaciers A-H outlines from the LIA through 2014.
  - **Fig. S3.** Glaciers A-H outlines from the LIA and 2012 (separate).
  - **Fig. S4.** Glaciers A-H outlines from 1969 and 2014 (separate).
  - **Fig. S5.** Glacier A outlines in 1969, 2012, and 2014 (separate) over the images used for delineation.
  - **Fig. S6.** Glaciers ZG-ZP outlines from the LIA through 2012.

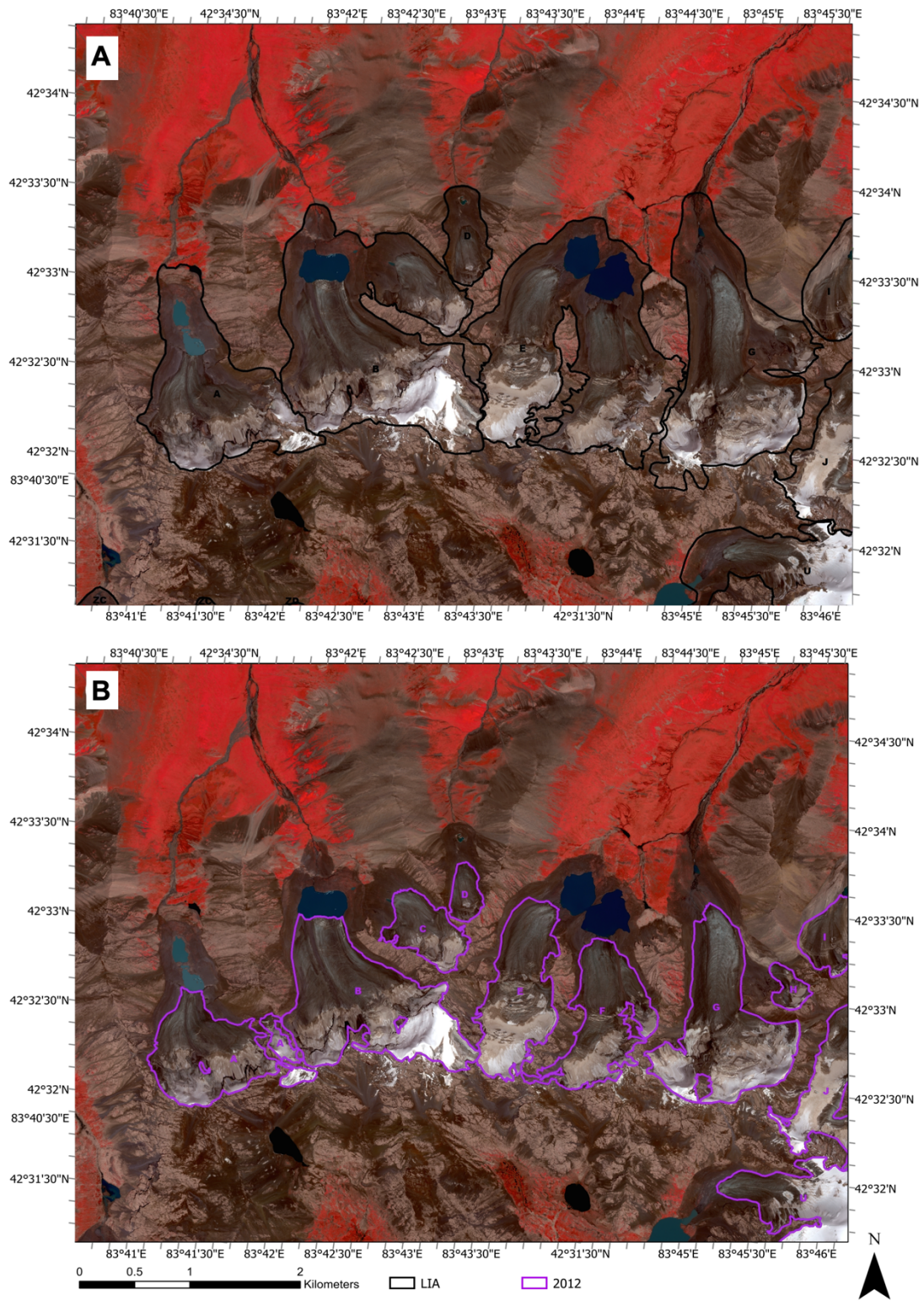


**Fig. S1.** Repeat delineations for Glaciers A ( $42.538^{\circ}$  N,  $83.690^{\circ}$  E), D ( $42.553^{\circ}$  N,  $83.718^{\circ}$  E), P ( $42.534^{\circ}$  N,  $83.840^{\circ}$  E), and ZN (left;  $42.478^{\circ}$  N,  $83.769^{\circ}$  E) and ZL (right;  $42.486^{\circ}$  N,  $83.779^{\circ}$  E) during 1969 (panels a-d) and the LIA (panels e-h).



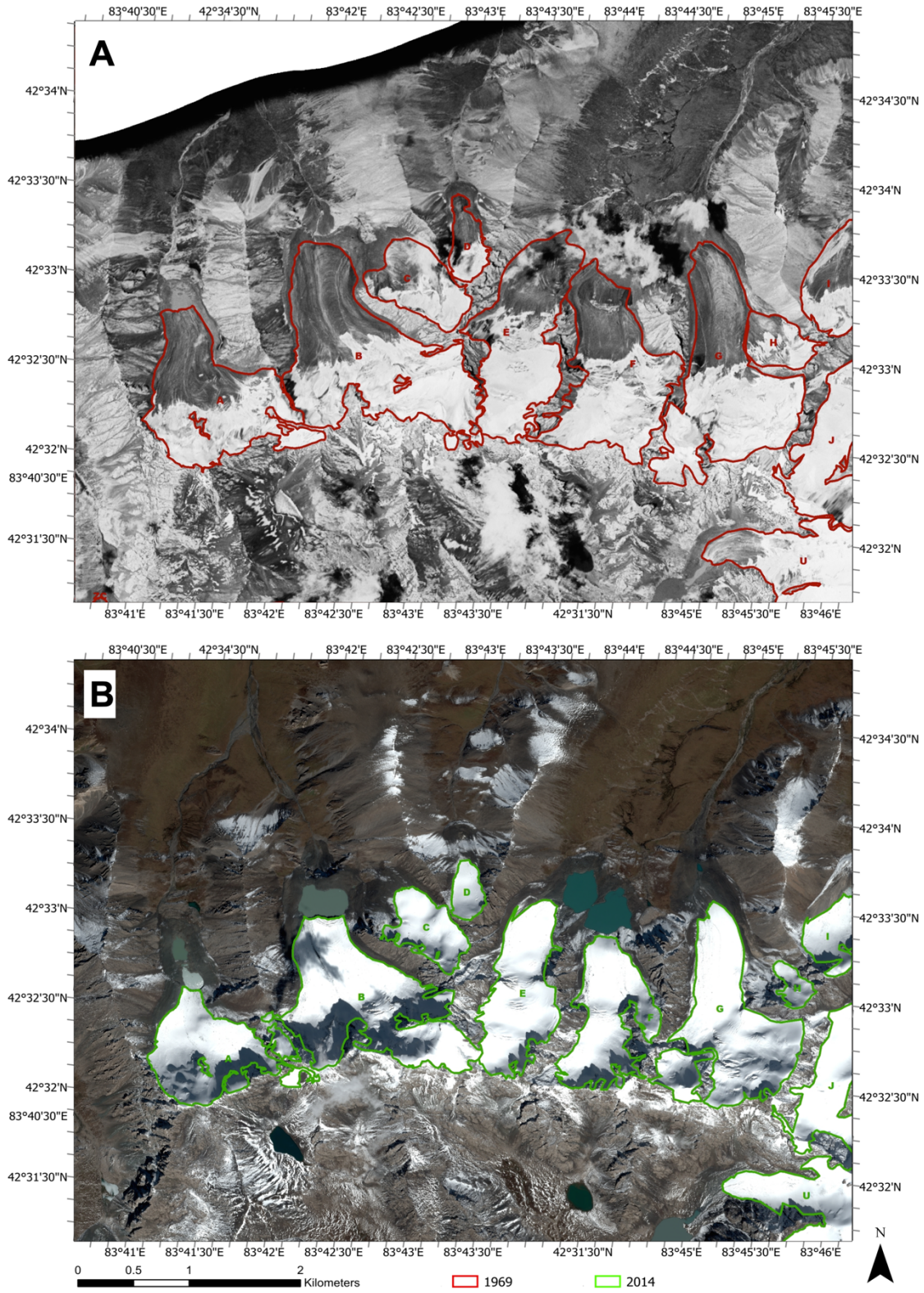
**Fig. S2.** Outlines of glaciers A-H from the LIA through 2014 over the Aug. 2012 Worldview-2 image.





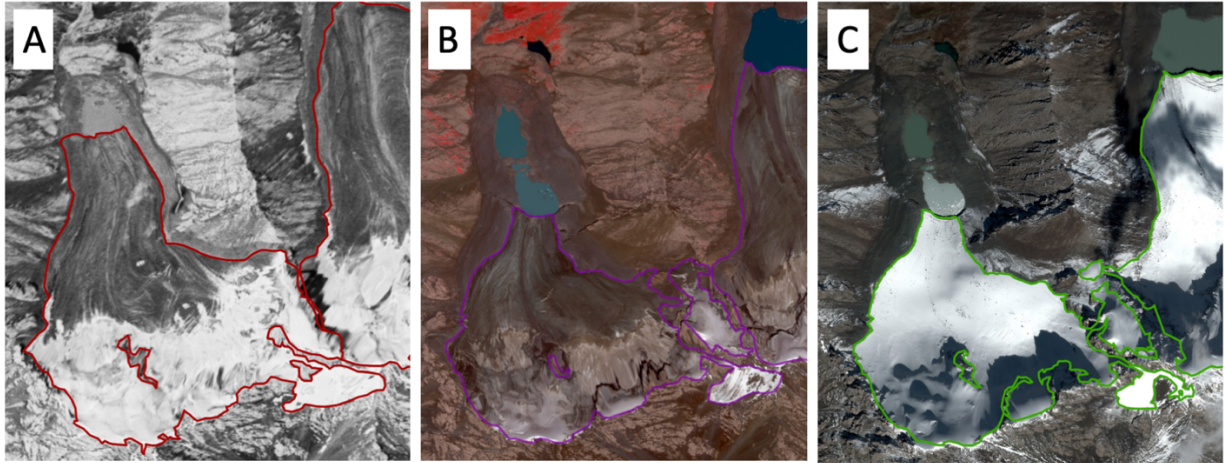
**Fig. S3.** Outlines of glaciers A-H from (a) the LIA and (b) 2012 over the 2012 Worldview-2 image.



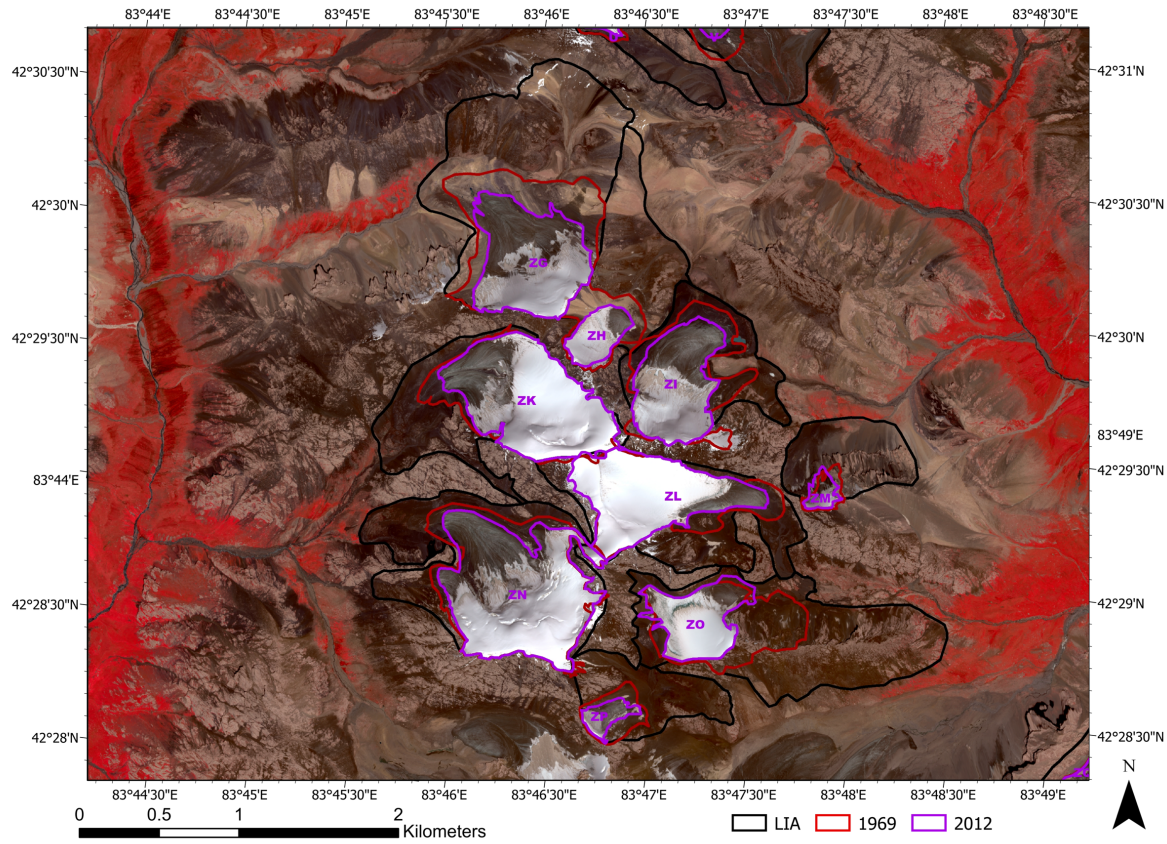


**Fig. S4.** Outlines of glaciers A-H from (a) 1969 over the Corona image and (b) 2014 over the Pléiades image.





**Fig. S5.** Glacier A ( $42.538^{\circ}$  N,  $83.690^{\circ}$  E) outlines in (a) 1969, (b) 2012, and (c) 2014 over the images used for delineation.



**Fig. S6.** Outlines for Glaciers ZG-ZP from the LIA through 2012 over the Worldview-2 image. No 2014 outlines are shown since the 2014 image did not cover this portion of the study area.