**Glacier anomaly over the Western Kunlun Mountains, northwestern Tibetan Plateau, since the 1970s**

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Table S1 Summary of meteorological stations used in this study

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stations | Latitude (N) | Longitude (E) | Elevation (m a.s.l.) | Data availability |
| Pishan | 37°37′ | 78°17′ | 1375 | 1959-present |
| Hetian | 37°08′ | 79°56′ | 1375 | 1953-present |
| Minfeng | 37°04′ | 82°43′ | 1410 | 1956-present |
| Yutian | 36°51′ | 81°39′ | 1422 | 1955-present |
| Shiquanhe | 32°30′ | 80°05′ | 4279 | 1961-present |

Table S2 Summary of the reanalyses used in this study.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Organization | Horizontal resolution | Vertical level | Assimilation system | Time coverage |
| ERA-Interim | ECMWF | T255; ~80 km | 60 | 4DVAR | 1979-present |
| MERRA | NASA GMAO | 0.5°×0.667°;~55 km | 72 | 3DVAR | 1979-present |
| CFSR | NECP | T382; ~38 km | 64 | 3DVAR | 1979-present |
| 20CR | NOAA | T62; ~200 km | 28 | Ensemble Kalman Filter | 1851-2014 |
| ERA-20C | ECMWF | T159; ~125 km | 91 | 4DVAR | 1900-2010 |
| CRUTS3.23 | [University of East Anglia](http://www.cru.uea.ac.uk/) | 0.5° × 0.5° | Surface | – | 1901-2014 |
| GHCN-Mv3.3.0 | NOAA | 5° × 5° | Surface | – | 1895-present |
| CPC | NOAA | 0.5° × 0.5° | Suface | – | 1948-present |
| GISS | NASA | 2°×2° | Suface | – | 1880-present |

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Figure S1. Spatial distribution of voids in the SRTM DEM.

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Figure S2. The footprints of ICESat data used for SRTM DEM and DEM70 accuracy assessments.