

Glacier surges in the north-west West Kunlun Shan inferred from 1972—2017 Landsat Imagery

Supplementary Material

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Table S1 I Dates, sensors, and long-form IDs for Landsat imagery used in this study.

Year	DoY	Satellite	Sensor	ID
1972	301	LS1	MSS	LM11570351972301AAA04
1973	43	LS1	MSS	LM11570351973043AAA05
1976	289	LS2	MSS	LM21570351976289XXX01
1976	307	LS2	MSS	LM21570351976307XXX01
1976	325	LS2	MSS	LM21570351976325AAA07
1976	343	LS2	MSS	LM21570351976343AAA02
1976	361	LS2	MSS	LM21570351976361AAA03
1977	13	LS2	MSS	LM21570351977013XXX03
1977	31	LS2	MSS	LM21570351977031XXX03
1977	49	LS2	MSS	LM21570351977049XXX03
1977	67	LS2	MSS	LM21570351977067AAA03
1977	85	LS2	MSS	LM21570351977085AAA03
1977	103	LS2	MSS	LM21570351977103AAA03
1977	121	LS2	MSS	LM21570351977121AAA02
1977	175	LS2	MSS	LM21570351977175XXX03
1977	193	LS2	MSS	LM21570351977193XXX03
1977	210	LS2	MSS	LM21570351977210AAA01
1977	211	LS2	MSS	LM21570351977211AAA03
1977	229	LS2	MSS	LM21570351977229AAA03
1977	246	LS2	MSS	LM21570351977246TGS02
1977	247	LS2	MSS	LM21570351977247AAA03
1977	265	LS2	MSS	LM21570351977265AAA03
1989	51	LS5	MSS	LM51460351989051ISP00
1989	339	LS5	TM	LT51460351989339ISP00
1989	355	LS5	TM	LT51460351989355ISP00
1990	38	LS5	TM	LT51460351990038ISP00
1990	54	LS5	TM	LT51460351990054ISP00
1990	214	LS5	TM	LT51460351990214ISP00
1991	9	LS5	TM	LT51460351991009ISP00
1991	25	LS5	TM	LT51460351991025ISP00
1991	57	LS5	TM	LT51460351991057ISP00
1991	73	LS5	TM	LT51460351991073ISP00
1991	89	LS5	TM	LT51460351991089ISP00
1991	105	LS5	TM	LT51460351991105SGI00
1991	137	LS5	TM	LT51460351991137ISP00
1991	313	LS5	TM	LT51460351991313ISP00
1991	345	LS5	TM	LT51460351991345ISP00
1992	12	LS5	TM	LT51460351992012ISP00
1992	28	LS5	TM	LT51460351992028ISP00

Year	DoY	Satellite	Sensor	ID
1992	44	LS5	TM	LT51460351992044ISP00
1992	60	LS5	TM	LT51460351992060ISP00
1992	76	LS5	TM	LT51460351992076ISP00
1992	92	LS5	TM	LT51460351992092ISP00
1992	124	LS5	TM	LT51460351992124ISP00
1992	156	LS5	TM	LT51460351992156ISP00
1992	316	LS5	TM	LT51460351992316ISP00
1992	364	LS5	TM	LT51460351992364ISP00
1993	30	LS5	TM	LT51460351993030ISP00
1993	46	LS5	TM	LT51460351993046ISP00
1993	62	LS5	TM	LT51460351993062ISP00
1993	78	LS5	TM	LT51460351993078ISP00
1993	94	LS5	TM	LT51460351993094ISP00
1993	126	LS5	TM	LT51460351993126ISP01
1993	142	LS5	TM	LT51460351993142ISP00
1993	158	LS5	TM	LT51460351993158ISP00
1993	174	LS5	TM	LT51460351993174ISP00
1993	206	LS5	TM	LT51460351993206ISP00
1993	222	LS5	TM	LT51460351993222ISP00
1993	238	LS5	TM	LT51460351993238ISP00
1993	270	LS5	TM	LT51460351993270ISP00
1993	302	LS5	TM	LT51460351993302ISP00
1993	318	LS5	TM	LT51460351993318ISP00
1993	334	LS5	TM	LT51460351993334ISP00
1994	1	LS5	TM	LT51460351994001ISP00
1994	17	LS5	TM	LT51460351994017ISP00
1994	33	LS5	TM	LT51460351994033ISP00
1994	49	LS5	TM	LT51460351994049ISP00
1994	65	LS5	TM	LT51460351994065ISP00
1994	97	LS5	TM	LT51460351994097ISP01
1994	129	LS5	TM	LT51460351994129ISP40
1994	161	LS5	TM	LT51460351994161ISP00
1994	193	LS5	TM	LT51460351994193ISP40
1994	209	LS5	TM	LT51460351994209ISP00
1994	225	LS5	TM	LT51460351994225ISP00
1994	241	LS5	TM	LT51460351994241ISP00
1994	257	LS5	TM	LT51460351994257ISP00
1994	273	LS5	TM	LT51460351994273ISP00
1994	289	LS5	TM	LT51460351994289ISP01
1994	305	LS5	TM	LT51460351994305ISP00
1994	337	LS5	TM	LT51460351994337ISP00
1995	4	LS5	TM	LT51460351995004ISP00

Year	DoY	Satellite	Sensor	ID
1995	20	LS5	TM	LT51460351995020ISP00
1995	68	LS5	TM	LT51460351995068ISP00
1995	84	LS5	TM	LT51460351995084ISP00
1995	308	LS5	TM	LT51460351995308ISP01
1995	340	LS5	TM	LT51460351995340ISP00
1996	23	LS5	TM	LT51460351996023ISP00
1996	39	LS5	TM	LT51460351996039ISP00
1996	55	LS5	TM	LT51460351996055ISP00
1996	71	LS5	TM	LT51460351996071ISP00
1996	87	LS5	TM	LT51460351996087ISP00
1996	103	LS5	TM	LT51460351996103ISP00
1996	135	LS5	TM	LT51460351996135ISP00
1996	151	LS5	TM	LT51460351996151ISP00
1996	167	LS5	TM	LT51460351996167ISP00
1996	199	LS5	TM	LT51460351996199ISP00
1996	215	LS5	TM	LT51460351996215ISP00
1996	231	LS5	TM	LT51460351996231ISP00
1996	247	LS5	TM	LT51460351996247ISP00
1996	263	LS5	TM	LT51460351996263ISP00
1996	295	LS5	TM	LT51460351996295ISP00
1996	311	LS5	TM	LT51460351996311ISP00
1997	9	LS5	TM	LT51460351997009ISP00
1997	25	LS5	TM	LT51460351997025ISP00
1997	57	LS5	TM	LT51460351997057SGI00
1997	121	LS5	TM	LT51460351997121SGI00
1997	137	LS5	TM	LT51460351997137SGI00
1997	201	LS5	TM	LT51460351997201SGI00
1997	217	LS5	TM	LT51460351997217ISP00
1997	233	LS5	TM	LT51460351997233ISP00
1997	265	LS5	TM	LT51460351997265ISP00
1997	281	LS5	TM	LT51460351997281ISP00
1998	108	LS5	TM	LT51460351998108XXX01
1998	140	LS5	TM	LT51460351998140ULM03
1998	236	LS5	TM	LT51460351998236BIK04
1998	252	LS5	TM	LT51460351998252BIK01
1998	268	LS5	TM	LT51460351998268BIK02
1999	47	LS5	TM	LT51460351999047AAA02
1999	63	LS5	TM	LT51460351999063XXX01
1999	79	LS5	TM	LT51460351999079XXX02
1999	111	LS5	TM	LT51460351999111XXX02
1999	199	LS7	ETM+ SLC-on	LE71460351999199EDC01
1999	215	LS7	ETM+ SLC-on	LE71460351999215SGS01

Year	DoY	Satellite	Sensor	ID
1999	231	LS7	ETM+ SLC-on	LE71460351999231SGS00
1999	295	LS7	ETM+ SLC-on	LE71460351999295SGS00
2000	26	LS7	ETM+ SLC-on	LE71460352000026EDC00
2000	74	LS7	ETM+ SLC-on	LE71460352000074SGS00
2000	122	LS7	ETM+ SLC-on	LE71460352000122SGS00
2000	130	LS5	TM	LT51460352000130XXX01
2000	154	LS7	ETM+ SLC-on	LE71460352000154SGS00
2000	218	LS7	ETM+ SLC-on	LE71460352000218SGS00
2000	282	LS7	ETM+ SLC-on	LE71460352000282SGS00
2001	12	LS7	ETM+ SLC-on	LE71460352001012SGS01
2001	60	LS7	ETM+ SLC-on	LE71460352001060SGS00
2001	92	LS7	ETM+ SLC-on	LE71460352001092SGS00
2001	100	LS5	TM	LT51460352001100SGI00
2001	124	LS7	ETM+ SLC-on	LE71460352001124SGS00
2001	164	LS5	TM	LT51460352001164SGI00
2001	212	LS5	TM	LT51460352001212SGI00
2001	252	LS7	ETM+ SLC-on	LE71460352001252SGS00
2001	268	LS7	ETM+ SLC-on	LE71460352001268EDC00
2002	31	LS7	ETM+ SLC-on	LE71460352002031SGS00
2002	63	LS7	ETM+ SLC-on	LE71460352002063SGS00
2002	111	LS7	ETM+ SLC-on	LE71460352002111SGS00
2002	191	LS7	ETM+ SLC-on	LE71460352002191SGS00
2002	223	LS7	ETM+ SLC-on	LE71460352002223SGS00
2002	239	LS7	ETM+ SLC-on	LE71460352002239SGS00
2002	255	LS7	ETM+ SLC-on	LE71460352002255SGS00
2002	271	LS7	ETM+ SLC-on	LE71460352002271SGS00
2002	287	LS7	ETM+ SLC-on	LE71460352002287SGS00
2002	335	LS7	ETM+ SLC-on	LE71460352002335SGS00
2003	34	LS7	ETM+ SLC-on	LE71460352003034SGS00
2003	66	LS7	ETM+ SLC-on	LE71460352003066SGS00
2003	82	LS7	ETM+ SLC-on	LE71460352003082ASN00
2003	130	LS7	ETM+ SLC-on	LE71460352003130ASN00
2003	274	LS7	ETM+ SLC-off	LE71460352003274ASN01
2003	290	LS7	ETM+ SLC-off	LE71460352003290ASN01
2004	37	LS7	ETM+ SLC-off	LE71460352004037ASN01
2004	69	LS7	ETM+ SLC-off	LE71460352004069ASN01
2004	117	LS7	ETM+ SLC-off	LE71460352004117ASN02
2004	165	LS7	ETM+ SLC-off	LE71460352004165ASN01
2004	229	LS7	ETM+ SLC-off	LE71460352004229ASN01
2004	261	LS7	ETM+ SLC-off	LE71460352004261ASN01
2004	309	LS7	ETM+ SLC-off	LE71460352004309PFS00
2004	341	LS7	ETM+ SLC-off	LE71460352004341PFS00

Year	DoY	Satellite	Sensor	ID
2005	7	LS7	ETM+ SLC-off	LE71460352005007ASN00
2005	71	LS7	ETM+ SLC-off	LE71460352005071ASN01
2005	87	LS7	ETM+ SLC-off	LE71460352005087PFS00
2005	103	LS7	ETM+ SLC-off	LE71460352005103ASN00
2005	247	LS7	ETM+ SLC-off	LE71460352005247ASN00
2005	263	LS7	ETM+ SLC-off	LE71460352005263PFS00
2006	26	LS7	ETM+ SLC-off	LE71460352006026PFS00
2006	170	LS7	ETM+ SLC-off	LE71460352006170PFS00
2006	186	LS7	ETM+ SLC-off	LE71460352006186ASN00
2006	202	LS7	ETM+ SLC-off	LE71460352006202ASN00
2006	250	LS7	ETM+ SLC-off	LE71460352006250PFS01
2006	282	LS7	ETM+ SLC-off	LE71460352006282PFS00
2006	314	LS7	ETM+ SLC-off	LE71460352006314PFS00
2006	346	LS7	ETM+ SLC-off	LE71460352006346SGS00
2007	29	LS7	ETM+ SLC-off	LE71460352007029SGS00
2007	61	LS7	ETM+ SLC-off	LE71460352007061SGS00
2007	77	LS7	ETM+ SLC-off	LE71460352007077SGS00
2007	93	LS7	ETM+ SLC-off	LE71460352007093SGS00
2007	109	LS7	ETM+ SLC-off	LE71460352007109SGS00
2007	173	LS7	ETM+ SLC-off	LE71460352007173PFS00
2007	269	LS7	ETM+ SLC-off	LE71460352007269PFS00
2007	285	LS7	ETM+ SLC-off	LE71460352007285PFS00
2007	301	LS7	ETM+ SLC-off	LE71460352007301PFS00
2007	317	LS7	ETM+ SLC-off	LE71460352007317PFS00
2008	32	LS7	ETM+ SLC-off	LE71460352008032SGS00
2008	112	LS7	ETM+ SLC-off	LE71460352008112SGS00
2008	120	LS5	TM	LT51460352008120BJC01
2008	128	LS7	ETM+ SLC-off	LE71460352008128ASN00
2008	152	LS5	TM	LT51460352008152KHC01
2008	160	LS7	ETM+ SLC-off	LE71460352008160PFS00
2008	168	LS5	TM	LT51460352008168KHC01
2008	184	LS5	TM	LT51460352008184KHC01
2008	192	LS7	ETM+ SLC-off	LE71460352008192PFS00
2008	200	LS5	TM	LT51460352008200KHC01
2008	216	LS5	TM	LT51460352008216KHC01
2008	256	LS7	ETM+ SLC-off	LE71460352008256ASN00
2008	264	LS5	TM	LT51460352008264KHC01
2008	272	LS7	ETM+ SLC-off	LE71460352008272ASN00
2008	280	LS5	TM	LT51460352008280KHC01
2008	296	LS5	TM	LT51460352008296KHC01
2008	328	LS5	TM	LT51460352008328KHC01
2009	10	LS5	TM	LT51460352009010KHC02

Year	DoY	Satellite	Sensor	ID
2009	74	LS5	TM	LT51460352009074KHC00
2009	82	LS7	ETM+ SLC-off	LE71460352009082SGS00
2009	90	LS5	TM	LT51460352009090KHC00
2009	106	LS5	TM	LT51460352009106KHC00
2009	122	LS5	TM	LT51460352009122KHC00
2009	138	LS5	TM	LT51460352009138KHC00
2009	154	LS5	TM	LT51460352009154KHC00
2009	170	LS5	TM	LT51460352009170KHC00
2009	186	LS5	TM	LT51460352009186KHC00
2009	202	LS5	TM	LT51460352009202KHC00
2009	208	LS7	ETM+ SLC-off	LE70112092009208EDC00
2009	218	LS5	TM	LT51460352009218KHC00
2009	226	LS7	ETM+ SLC-off	LE71460352009226ASN00
2009	234	LS5	TM	LT51460352009234KHC00
2009	242	LS7	ETM+ SLC-off	LE71460352009242ASN00
2009	250	LS5	TM	LT51460352009250KHC00
2009	258	LS7	ETM+ SLC-off	LE71460352009258SGS00
2009	266	LS5	TM	LT51460352009266KHC00
2009	274	LS7	ETM+ SLC-off	LE71460352009274ASN00
2009	282	LS5	TM	LT51460352009282KHC00
2009	298	LS5	TM	LT51460352009298KHC00
2009	306	LS7	ETM+ SLC-off	LE71460352009306SGS00
2009	330	LS5	TM	LT51460352009330KHC00
2009	346	LS5	TM	LT51460352009346KHC00
2010	13	LS5	TM	LT51460352010013KHC00
2010	29	LS5	TM	LT51460352010029KHC00
2010	85	LS7	ETM+ SLC-off	LE71460352010085ASN00
2010	93	LS5	TM	LT51460352010093KHC00
2010	101	LS7	ETM+ SLC-off	LE71460352010101SGS00
2010	141	LS5	TM	LT51460352010141KHC00
2010	157	LS5	TM	LT51460352010157KHC00
2010	173	LS5	TM	LT51460352010173KHC00
2010	189	LS5	TM	LT51460352010189KHC00
2010	205	LS5	TM	LT51460352010205KHC00
2010	237	LS5	TM	LT51460352010237KHC00
2010	245	LS7	ETM+ SLC-off	LE71460352010245ASN00
2010	269	LS5	TM	LT51460352010269KHC00
2010	277	LS7	ETM+ SLC-off	LE71460352010277ASN00
2010	285	LS5	TM	LT51460352010285KHC01
2010	293	LS7	ETM+ SLC-off	LE71460352010293SGS00
2010	301	LS5	TM	LT51460352010301KHC00
2010	309	LS7	ETM+ SLC-off	LE71460352010309ASN00

Year	DoY	Satellite	Sensor	ID
2010	317	LS5	TM	LT51460352010317KHC00
2010	333	LS5	TM	LT51460352010333KHC00
2010	349	LS5	TM	LT51460352010349KHC00
2011	32	LS5	TM	LT51460352011032KHC00
2011	48	LS5	TM	LT51460352011048KHC00
2011	64	LS5	TM	LT51460352011064KHC00
2011	96	LS5	TM	LT51460352011096KHC00
2011	104	LS7	ETM+ SLC-off	LE71460352011104PFS00
2011	112	LS5	TM	LT51460352011112KHC00
2011	128	LS5	TM	LT51460352011128KHC00
2011	136	LS7	ETM+ SLC-off	LE71460352011136PFS00
2011	160	LS5	TM	LT51460352011160KHC04
2011	182	LS7	ETM+ SLC-off	LE70112092011182EDC00
2011	192	LS5	TM	LT51460352011192KHC00
2011	216	LS7	ETM+ SLC-off	LE71460352011216PFS00
2011	256	LS5	TM	LT51460352011256KHC00
2011	264	LS7	ETM+ SLC-off	LE71460352011264PFS00
2011	272	LS5	TM	LT51460352011272KHC01
2011	280	LS7	ETM+ SLC-off	LE71460352011280PFS00
2011	296	LS7	ETM+ SLC-off	LE71460352011296PFS00
2011	312	LS7	ETM+ SLC-off	LE71460352011312PFS00
2011	344	LS7	ETM+ SLC-off	LE71460352011344PFS00
2012	11	LS7	ETM+ SLC-off	LE71460352012011PFS00
2012	27	LS7	ETM+ SLC-off	LE71460352012027PFS00
2012	75	LS7	ETM+ SLC-off	LE71460352012075PFS00
2012	139	LS7	ETM+ SLC-off	LE71460352012139PFS02
2012	299	LS7	ETM+ SLC-off	LE71460352012299PFS02
2012	315	LS7	ETM+ SLC-off	LE71460352012315PFS00
2013	45	LS7	ETM+ SLC-off	LE71460352013045PFS00
2013	61	LS7	ETM+ SLC-off	LE71460352013061PFS00
2013	77	LS7	ETM+ SLC-off	LE71460352013077PFS00
2013	93	LS7	ETM+ SLC-off	LE71460352013093PFS00
2013	133	LS8	OLI	LC81460352013133LGN01
2013	181	LS8	OLI	LC81460352013181LGN00
2013	197	LS8	OLI	LC81460352013197LGN00
2013	213	LS8	OLI	LC81460352013213LGN00
2013	261	LS8	OLI	LC81460352013261LGN00
2013	325	LS8	OLI	LC81460352013325LGN00
2013	341	LS8	OLI	LC81460352013341LGN00
2014	56	LS8	OLI	LC81460352014056LGN00
2014	72	LS8	OLI	LC81460352014072LGN00
2014	88	LS8	OLI	LC81460352014088LGN00

Year	DoY	Satellite	Sensor	ID
2014	136	LS8	OLI	LC81460352014136LGN00
2014	152	LS8	OLI	LC81460352014152LGN00
2014	168	LS8	OLI	LC81460352014168LGN00
2014	232	LS8	OLI	LC81460352014232LGN00
2014	280	LS8	OLI	LC81460352014280LGN00
2014	296	LS8	OLI	LC81460352014296LGN00
2014	328	LS8	OLI	LC81460352014328LGN00
2014	344	LS8	OLI	LC81460352014344LGN00
2015	11	LS8	OLI	LC81460352015011LGN00
2015	43	LS8	OLI	LC81460352015043LGN00
2015	139	LS8	OLI	LC81460352015139LGN00
2015	171	LS8	OLI	LC81460352015171LGN00
2015	203	LS8	OLI	LC81460352015203LGN00
2015	219	LS8	OLI	LC81460352015219LGN00
2015	235	LS8	OLI	LC81460352015235LGN00
2015	283	LS8	OLI	LC81460352015283LGN00
2015	315	LS8	OLI	LC81460352015315LGN00
2015	331	LS8	OLI	LC81460352015331LGN01
2015	347	LS8	OLI	LC81460352015347LGN00
2015	363	LS8	OLI	LC81460352015363LGN00
2016	14	LS8	OLI	LC81460352016014LGN00
2016	62	LS8	OLI	LC81460352016062LGN00
2016	94	LS8	OLI	LC81460352016094LGN00
2016	110	LS8	OLI	LC81460352016110LGN00
2016	142	LS8	OLI	LC81460352016142LGN00
2016	190	LS8	OLI	LC81460352016190LGN00
2016	206	LS8	OLI	LC81460352016206LGN00
2016	254	LS8	OLI	LC81460352016254LGN00
2016	270	LS8	OLI	LC81460352016270LGN00
2016	286	LS8	OLI	LC81460352016286LGN00
2016	302	LS8	OLI	LC81460352016302LGN00
2016	318	LS8	OLI	LC81460352016318LGN00
2016	334	LS8	OLI	LC81460352016334LGN00
2016	350	LS8	OLI	LC81460352016350LGN00
2016	366	LS8	OLI	LC81460352016366LGN00
2017	32	LS8	OLI	LC81460352017032LGN00
2017	64	LS8	OLI	LC81460352017064LGN00
2017	112	LS8	OLI	LC81460352017112LGN00
2017	128	LS8	OLI	LC08_L1TP_146035_20170508_20170515_01_T1
2017	144	LS8	OLI	LC08_L1TP_146035_20170524_20170526_01_T1
2017	176	LS8	OLI	LC08_L1TP_146035_20170625_20170713_01_T1
2017	192	LS8	OLI	LC08_L1TP_146035_20170711_20170725_01_T1

Year	DoY	Satellite	Sensor	ID
2017	208	LS8	OLI	LC08_L1TP_146035_20170727_20170810_01_T1
2017	240	LS8	OLI	LC08_L1TP_146035_20170828_20170914_01_T1
2017	256	LS8	OLI	LC08_L1TP_146035_20170913_20170928_01_T1
2017	272	LS8	OLI	LC08_L1TP_146035_20170929_20171013_01_T1

Table S2 I Velocity field temporal separation and uncertainties.

(a) Velocity field information for glacier 1.

From	To	Temporal Separation (Days)	Uncertainty (m a⁻¹)
26/01/2000	01/03/2001	400	13.7
01/03/2001	04/03/2002	368	14.9
18/09/2013	21/11/2013	64	85.5
21/11/2013	07/12/2013	16	342.2
29/03/2014	16/05/2014	48	114.1
23/10/2014	24/11/2014	32	171.1
24/11/2014	10/12/2014	16	342.2
10/12/2014	12/02/2015	64	85.5
19/05/2015	20/06/2015	32	171.1
23/08/2015	10/10/2015	48	114.1
10/10/2015	13/12/2015	64	85.5
13/12/2015	02/03/2016	80	68.4
02/03/2016	19/04/2016	48	114.1
19/04/2016	21/05/2016	32	171.1
21/05/2016	24/07/2016	64	85.5
24/07/2016	12/10/2016	80	68.4
26/09/2016	13/11/2016	48	114.1
13/11/2016	31/12/2016	48	114.1
31/12/2016	05/03/2017	64	85.5
05/03/2017	25/06/2017	112	48.9
25/06/2017	28/08/2017	64	85.5
28/08/2017	29/09/2017	32	171.1

(b) Velocity field information for glacier 3.

From	To	Temporal Separation (Days)	Uncertainty (m a⁻¹)
22/10/1999	08/10/2000	352	15.6
08/10/2000	25/09/2001	352	15.6
01/03/2001	04/03/2002	368	14.9
27/08/2002	03/02/2003	160	34.2
14/10/2002	01/12/2002	48	114.1
13/05/2013	30/06/2013	48	114.1
13/05/2013	18/09/2013	128	42.8
30/06/2013	01/08/2013	32	171.1
01/08/2013	21/11/2013	112	48.9
18/09/2013	07/12/2013	80	68.4
07/12/2013	29/03/2014	112	48.9
29/03/2014	16/05/2014	48	114.1
16/05/2014	23/10/2014	160	34.2
23/10/2014	10/12/2014	48	114.1
10/12/2014	12/02/2015	64	85.5
12/02/2015	19/05/2015	96	57
19/05/2015	20/06/2015	32	171.1
20/06/2015	23/08/2015	64	85.5
23/08/2015	10/10/2015	48	114.1
10/10/2015	11/11/2015	32	171.1
11/11/2015	14/01/2016	64	85.5
14/01/2016	02/03/2016	48	114.1
02/03/2016	08/07/2016	128	42.8
08/07/2016	26/09/2016	80	68.4
26/09/2016	13/11/2016	48	114.1
13/11/2016	22/04/2017	160	34.2
22/04/2017	27/07/2017	96	57
22/04/2017	28/08/2017	128	52.8

(c) Velocity field information for glacier 6.

From	To	Temporal Separation (Days)	Uncertainty (m a⁻¹)
08/10/2000	25/09/2001	352	15.6
01/03/2001	04/03/2002	368	14.9
18/09/2013	21/11/2013	64	85.5
07/12/2013	29/03/2014	112	48.9
13/03/2014	16/05/2014	64	85.5
01/06/2014	20/08/2014	80	68.4
07/10/2014	24/11/2014	48	114.1
24/11/2014	12/02/2015	80	68.4
12/02/2015	20/06/2015	128	42.8
20/06/2015	10/10/2015	112	48.9
10/10/2015	14/01/2016	96	57
14/01/2016	02/03/2016	48	114.1
02/03/2016	21/05/2016	80	68.4
21/05/2016	26/09/2016	128	42.8
26/09/2016	15/12/2016	80	68.4
15/12/2016	05/03/2017	80	68.4
01/02/2017	08/05/2017	96	57
22/04/2017	25/06/2017	64	85.5
25/06/2017	13/09/2017	80	68.4

Table S3 I Meteorological station data, including Name and ID provided by the Chinese Meteorological Administration, location, and temporal coverage.

Station Number	Name	ID	Lat. (°)	Lon. (°)	Elevation (m a.s.l.)	Temperature	Precipitation
1	Schache	51811	38.43	77.27	1231	1953-7 – 2015-6	1951-7 – 2015-6
2	Pishan	51818	37.62	78.28	1375	1959-1 – 2015-6	1959-1 – 2015-6
3	Hotan	51828	37.13	79.93	1375	1953-2 – 2015-6	1953-2 – 2015-6
4	Yutian	51931	36.85	81.65	1422	1955-11 – 2015-6	1955-11 – 2015-6
5	Minfeng	51839	37.07	82.72	1410	1956-12 – 2015-6	1956-12 – 2015-6
6	Andehe	51848	37.93	83.65	1263	1960-1 – 1998-12	1960-1 – 1998-12

Table S4 I Results of non-parametric Mann-Kendall tests for meteorological station data between 1960—1916.

Season	Variable	Stations	Kendall- τ	p-value
Winter	Temperature	Hotan	0.35	0
		All	0.38	0
	Precipitation	Hotan	0.11	0.25
		All	0.10	0.28
Spring	Temperature	Hotan	0.36	0
		All	0.35	0
	Precipitation	Hotan	0.01	0.94
		All	0.00	0.97
Summer	Temperature	Hotan	0.39	0
		All	0.32	0
	Precipitation	Hotan	0.17	0.06
		All	0.23	0.01
Autumn	Temperature	Hotan	0.54	0
		All	0.52	0
	Precipitation	Hotan	0.07	0.51
		All	0.09	0.32

Table S5 I Results of linear regression analysis for Hotan meteorological station data, between 1960–2016 (bold) and subsets 1960–1986 and 1987–2016. Figures represent regression slope coefficients (units of °C a⁻¹ for temperature data, and mm a⁻¹ for precipitation data). Only results with p-value < 0.05 are shown.

Variable	T _{mean} (°C a ⁻¹)			T _{min} (°C a ⁻¹)		
	1960-2016	1960-1986	1987-2016	1960-2016	1960-1986	1987-2016
Time Period	1960-2016	1960-1986	1987-2016	1960-2016	1960-1986	1987-2016
Annual	0.04	-	0.05	0.04	-	-
Winter	0.04	-	-	0.04	-	-
Spring	0.04	-	0.11	0.04	-	0.13
Summer	0.03	-	0.09	0.03	-	0.08
Autumn	0.05	-	0.10	0.06	-	0.07

Variable	T _{max} (°C a ⁻¹)			Precipitation (mm a ⁻¹)		
	1960-2016	1960-1986	1987-2016	1960-2016	1960-1986	1987-2016
Time Period	1960-2016	1960-1986	1987-2016	1960-2016	1960-1986	1987-2016
Annual	0.02	0.04	-	-	-	-
Winter	0.05	-	-	-	-	-
Spring	0.04	-	0.09	-	-0.67	-
Summer	0.03	0.04	0.07	0.23	-	-

Autumn	0.04	-	0.08	-	-	-
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