

Table S1:**Summary of remote sensing imagery used in this study (DD/MM/YYYY, Path-Row, Cloud cover rate %)**

Landsat 7	Landsat 8	ASTER	Landsat 2 & Landsat 5
15/08/1999 150-33 3	10/06/2013 150-33 3.81	06/05/2003 150-33 14	26/09/1977 161-33 9
18/10/1999 150-33 7	28/07/2013 150-33 7.96	23/06/2003 150-33 2	01/12/1989 150-33 2
11/04/2000 150-33 7	30/09/2013 150-33 6.31	18/07/2003 150-33 3	05/07/1993 150-33 7
02/09/2000 150-33 2	20/01/2014 150-33 24.53	09/09/2005 150-33 9	09/11/1995 149-33 3
20/10/2000 150-33 6	26/04/2014 150-33 25.16	26/09/2006 150-33 11	
30/04/2001 150-33 4	28/05/2014 150-33 16.99	15/04/2007 150-33 1	
20/08/2001 150-33 9	13/06/2014 150-33 11.17	10/05/2007 150-33 1	
30/09/2001 149-33 2	01/09/2014 150-33 7.63	05/08/2007 150-33 3	
07/10/2001 150-33 2	17/09/2014 150-33 3.71	21/08/2007 149-33 1	
04/06/2002 150-33 5	03/10/2014 150-33 0.91	09/11/2007 150-33 28	
16/08/2002 149-33 1	29/04/2015 150-33 11.04	26/10/2008 150-33 10	
23/08/2002 150-33 8	16/06/2015 150-33 17.62	03/10/2011 150-33 3	
03/10/2002 149-33 3	19/08/2015 150-33 3.82		
	04/09/2015 150-33 6.28		
	01/05/2016 150-33 2.92		
	20/07/2016 150-33 1.35		
	09/09/2017 150-33 1.22		

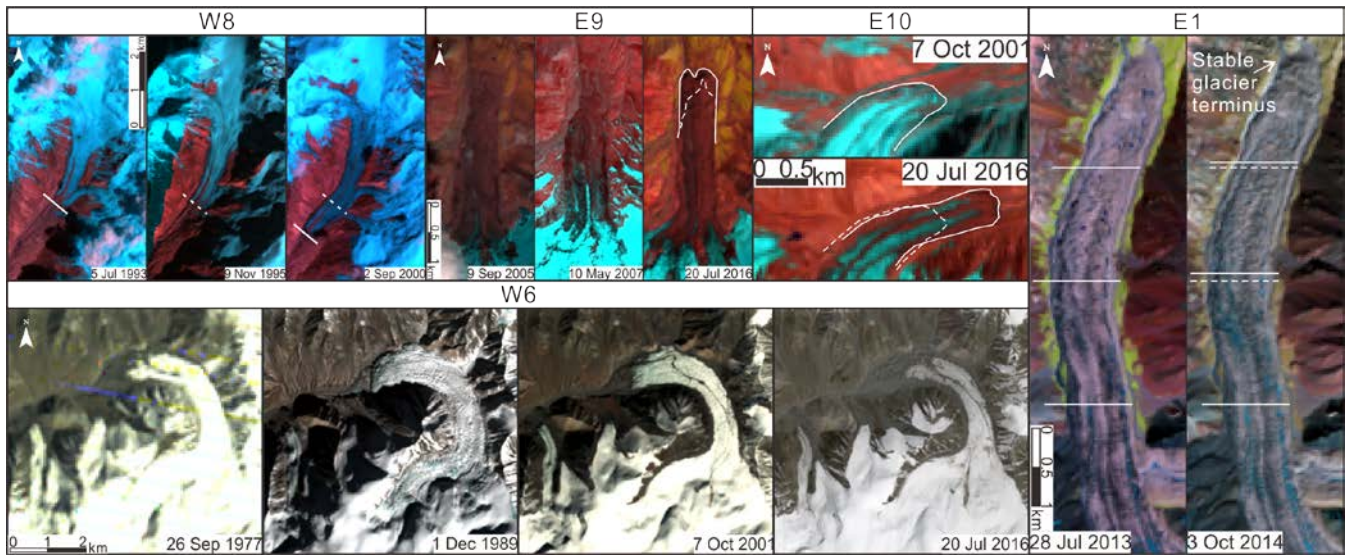


Figure S1: Comparison of the rest surge-type glaciers before and after surge events.