Table S1: Summary of Instrument Details and Available Data

Site	Province	Observed Permafrost Indicators & Periglacial Landforms	Borehole Id.	Fig. No.	Elev (m asl)	Slope (°)	Aspect (°)	Permafrost Presence	Surface Morphology	Snow Site [1]	No. Sensors	Max. Sensor Depth (m)	Sensor Depths (m)	Sensor Model
1	Atacama (Chile)	Ground ice, rock glaciers, gelifluction slopes, sorted/patterned ground, slope creep	1-1	S1	4,680	9	11	Not Present	Colluvium	N	15	24.9	0.0, 0.2, 0.4, 0.9, 1.4, 1.9, 2.9, 4.9, 7.4, 9.9, 12.4, 14.9, 17.4, 19.9, 24.9	YSI 44005
			1-2	S2	4,705	12	150	Possible	Bedrock (weathered)	Y	15	24.9	0.0, 0.2, 0.4, 0.9, 1.4, 1.9, 2.9, 4.9, 7.4, 9.9, 12.4, 14.9, 17.4, 19.9, 24.9	YSI 44005
			1-3	S3	4,144	11	126	Not Present	Colluvium	Y	15	25.0	0.0, 0.3, 0.5, 1.0, 1.5, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 25.0	YSI 44005
			1-4	S4	4,177	12	84	Not Present	Old landslide deposit	Y	15	25.0	0.0, 0.3, 0.5, 1.0, 1.5, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 25.0	YSI 44005
			1-5	S5	4,858	16	60	Not Present	Bedrock (highly weathered)	Y	15	25.2	0.2, 0.4, 0.7, 1.2, 1.7, 2.2, 3.2, 5.2, 7.7, 10.2, 12.7, 15.2, 17.7, 20.2, 25.2	YSI 44005
			1-6	S6	4,838	18	62	Not Present	Bedrock (highly weathered: sand)	UNK	12	24.3	0.3, 0.8, 1.3, 2.3, 4.3, 6.8, 9.3, 11.8, 14.3, 16.8, 19.3, 24.3	YSI 44005
			1-7	S7	4,688	9	135	Not Present	Colluvium	Y	15	25.3	0.3, 0.6, 0.8, 1.3, 1.8, 2.3, 3.3, 5.3, 7.8, 10.3, 12.8, 15.3, 17.8, 20.3, 25.3	YSI 44005
			1-8	S8	5,023	11	245	Possible	Bedrock	N	14	24.9	0.1, 0.4, 0.9, 1.4, 1.9, 2.9, 4.9, 7.4, 9.9, 12.4, 14.9, 17.4, 19.9, 24.9	YSI 44005
			1-9	S9	4,855	10	234	Not Present	Colluvium	N	14	24.8	0.0, 0.3, 0.8, 1.3, 1.8, 2.8, 4.8, 7.3, 9.8, 12.3, 14.8, 17.3, 19.8, 24.8	YSI 44005
2	San Juan (Argentina)	Gelifluction slopes, weakly patterned ground, rock glaciers	2-1	S10	5,163	13	102	Present	Colluvium	UNK	15	40.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0	YSI 44007
			2-2	S11	5,108	16	91	Possible	Colluvium	UNK	15	40.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0	YSI 44007
			2-3	S12	5,150	18	7	Present	Colluvium	N	15	40.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0	YSI 44007
			2-4	S13	4,607	22	25	Not Present	Colluvium	N	14	38.0	0, 0.5, 0.9, 1.4, 1.9, 2.8, 3.8, 7.5, 9.4, 14.1, 18.8, 23.5, 28.2, 37.6	YSI 44007
			2-5	S14	4,503	22	37	Not Present	Colluvium	N	15	38.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0	YSI 44007
			2-6	S15	4,830	17	260	Not Present	Colluvium	UNK	15	38.0	0.0, 0.5, 0.9, 1.4, 1.9, 2.8, 3.8, 5.7, 7.6, 9.5, 14.2, 18.9, 23.6, 28.4, 37.8	YSI 44007
			2-7	S16	4,819	15	16	Not Present	Colluvium	N	15	38.0	0.0, 0.5, 0.9, 1.4, 1.9, 2.8, 3.8, 5.6, 7.5, 9.4, 14.1, 18.8, 23.5, 28.2, 37.6	YSI 44007
			2-8	S17	4,687	22	69	Not Present	Colluvium	N	15	40.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 25.0, 30.0, 40.0	YSI 44007
			2-9	S18	4,484	20	91	Not Present	Colluvium	N	15	39.0	0.0, 0.5, 1.0, 1.5, 1.9, 3.0, 3.9, 5.8, 7.7, 9.7, 14.5, 19.3, 24.2, 29.0, 38.5	YSI 44007
			2-10	S19	5,082	17	305	Present	Colluvium	N	24	49.9	0, 0.2, 0.5, 0.7, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 12.5, 15.5, 17.5, 20, 25, 30, 35, 39.9, 44.9, 49.9	TNode 2W-Bus
3	San Juan (Argentina)	Rock glaciers, talus slopes, ground ice, gelifluction / solifluction slopes	3-1	S20	4,754	27	131	Present	Thin colluvium / weathered bedrock	UNK	15	72.5	0.9, 1.8, 2.7, 4.5, 6.8, 9.1, 11.3, 13.6, 15.9, 18.1, 27.2, 36.3, 54.4, 54.6, 72.5	YSI 44007
			3-2	S21	5,010	15	169	Present	Bedrock	N	16	94.0	0.7, 1.7, 2.6, 4.5, 6.8, 9.2, 11.5, 13.9, 16.2, 18.6, 28.0, 37.4, 46.8, 56.2, 75.0, 93.8	YSI44007
			3-3	S22	4,070	8	70	Not Present	Colluvium	UNK	11	15.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 12.5, 15.0	YSI44007
			3-5	S23	4,343	22	128	Present	Colluvium	Y	16	18.0	0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	YSI44007
			3-6	S24	4,568	27	173	Present	Colluvium	N	16	18.9	0.3, 0.8, 1.3, 1.7, 2.2, 2.7, 3.2, 3.6, 4.1, 4.6, 6.9, 9.3, 11.7, 14.0, 16.4, 18.8	YSI44007
	Atacama (Chile)		3-7	S25	5,082	19	1	Present	Colluvium / weathered bedrock	N	10	20.0	1.0, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 14.9, 17.4, 19.9	YSI44007
			3-8	S26	4,995	18	94	Present	Bedrock	N	16	20.0	0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	YSI44007
			3-9	S27	4,794	24	297	Present	Bedrock	UNK	16	20.0	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0	YSI44007
			3-11	S28	5,251	19	95	Present	Bedrock	N	16	20.0	0.0, 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	YSI44007
			3-12	S29	5,092	13	344	Present	Bedrock (thin weathered overburden)	N	16	100.0	1.0, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 29.9, 39.9, 49.9, 59.9, 79.8, 99.8	YSI44007

Notes:
1. Dampened temperature variations in winter (Y=Yes; N=No; UNK=Unknown).
2. Some values shown for depths not at 20m (i.e., maximum depth for strings < 20m, or adjusted depth to illustrate conditions within cryotic zones).

Table S1: Summary of Instrument Details and Available Data

Site	Province	Observed Permafrost Indicators & Periglacial Landforms	Borehole Id.	Fig. No.	Elev (m asl)	Slope (°)	Aspect (°)	Permafrost Presence	Surface Morphology	Snow Site [1]	No. Sensors	Max. Sensor Depth (m)	Sensor Depths (m)	Sensor Model
4	San Juan (Argentina)	Rock glaciers, protalus ramparts, gelifluction / solifluction slopes,	4-1	S30	4,396	15	81	Not Present	Colluvium	N	19	25.0	0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 9.0, 11.0, 13.0, 15.0, 17.0, 19.0, 21.0, 23.0, 25.0	TNode EX
			4-2	S31	4,438	23	152	Possible	Colluvium	N	19	25.0	0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 9.0, 11.0, 13.0, 15.0, 17.0, 19.0, 21.0, 23.0, 25.0	TNode EX
			4-3	S32	3,935	15	71	Not Present	Colluvium	N	19	25.0	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 9.0, 11.0, 13.0, 15.0, 17.0, 19.0, 21.0, 23.0, 25.0	TNode EX
5	Coquimbo (Chile)	Massive ground ice, sorted/patterned ground, slope creep, active layer detachment, gelifluction / solifluction slopes, protalus ramparts, rock glaciers	5-1	S33	4,970	20	293	Present	Colluvium (thin veneer)	N	9	9.4	0, 0.5, 0.9, 1.4, 2.8, 4.2, 5.6, 7.5, 9.4	YSI44007
			5-2	S34	5,023	12	272	Present	Colluvium (thin veneer)	N	13	46.0	0.0, 0.9, 1.9, 3.8, 6.1, 8.5, 10.8, 13.2, 17.9, 22.6, 27.3, 36.6, 46.0	YSI44007
			5-3	S35	4,928	20	244	Present	Colluvium (thin veneer)	N	15	47.7	0, 0.5, 1, 1.9, 2.9, 4.8, 7.2, 9.5, 11.9, 14.3, 19.1, 23.9, 28.6, 38.2, 47.7	YSI44007
	San Juan (Argentina)		5-4	S36	4,810	17	343	Present	Highly weathered bedrock	N	16	30.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 8.0, 10.0, 12.5, 15.0, 20.0, 25.0, 30.0	RST TH0022
			5-5	S37	5,036	21	99	Possible	Bedrock (weathered)	Y	16	30.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 8.0, 10.0, 12.5, 15.0, 20.0, 25.0, 30.0	RST TH0022
6	Coquimbo (Chile)	Rock glaciers, talus slopes, ground ice, gelifluction / solifluction slopes	6-1	S38	3,694	19	241	Present	Active Rock Glacier	N	15	27.7	0.2, 0.7, 1.2, 2.2, 3.2, 5.2, 7.7, 10.2, 12.7, 15.2, 17.7, 20.2, 22.7, 25.2, 27.7	YSI4007
			6-2	S39	3,840	28	269	Present	Active Rock Glacier	N	15	28.1	0.1, 0.6, 1.1, 2.1, 3.1, 5.1, 7.6, 10.1, 12.6, 15.1, 18.1, 20.1, 23.1, 25.1, 28.1	YSI2007
			6-4	S40	3,791	20	191	Present	Rock Glacier	N	15	35.0	0.0, 0.5, 1.0, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 25.0, 30.0, 35.0	YSI2007
			6-5	S41	3,724	19	143	Not Present	Rock Glacier	N	15	34.0	0.0, 0.5, 1.0, 2.0, 3.0, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0, 25.0, 29.2, 30.0, 34.0	YSI2007
			6-7	S42	3,625	9	70	Not Present	Glacial Deposits	N	15	34.0	0.2, 0.7, 1.2, 2.2, 3.2, 5.2, 7.7, 10.2, 12.7, 15.2, 20.2, 25.2, 30.2, 32.7, 35.2	YSI2007
			6-8	S43	3,684	27	239	Possible	Rock Glacier	Y	15	21.5	0, 0.5, 1, 2, 3, 5, 7.5, 10, 12.5, 13.5, 15, 17.9, 18.5, 20, 21.5	YSI2007
			6-11	S44	3,684	27	237	Possible	Rock Glacier	N	20	24.0	0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 8.5, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0, 22.0, 24.0	TNode EX
7	San Juan (Argentina)	Rock glaciers, protalus ramparts, gelifluction / solifluction slopes, ground ice	7-1	S45	3,803	9	20	Not Present	Colluvium	Y	13	29.0	0.0, 0.3, 0.5, 1.0, 1.5, 2.0, 4.0, 7.0, 10.0, 15.0, 20.0, 25.0, 29.0	YSI44007
			7-2	S46	3,928	28	194	Present	Bedrock	Y	13	40.0	0.0, 0.3, 0.5, 1.0, 1.5, 2.0, 4.0, 7.0, 10.0, 15.0, 20.0, 30.0, 40.0	YSI44007
			7-3	S47	4,029	29	124	Not Present	Colluvium (thin veneer)	Y	13	40.0	0.0, 0.3, 0.5, 1.0, 1.5, 2.0, 4.0, 7.0, 10.0, 15.0, 20.0, 30.0, 40.0	YSI44007
			7-4	S48	3,820	23	195	Possible	Rock Glacier	N	20	34.8	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 22.5, 25.0, 27.5, 30.0, 34.8, 32.5	TNode EX
			7-5	S49	3,835	24	204	Possible	Rock Glacier	N	20	30.0	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 22.5, 25.0, 27.5, 30.0, 26.0, 21.0	TNode EX
			7-6	S50	3,794	22	194	Possible	Rock Glacier	N	20	27.1	0.0, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 17.5, 20.0, 22.5, 25.0, 27.1, 26.1, 21.1, 16.1	TNode EX
8	Región Metropolitana (Chile)	Rock glaciers, gelifluction / solifluction slopes, ground ice	8-1	S51	3,627	12	271	Not Present	Colluvium	Y	15	90.3	0.3, 0.8, 1.3, 2.3, 4.3, 6.3, 8.3, 10.3, 15.3, 20.3, 30.3, 45.3, 60.3, 75.3, 90.3	YSI44007
			8-2	S52	4,080	18	306	Not Present	Colluvium	Y	12	87.7	0.0, 1.7, 3.7, 5.7, 7.7, 12.7, 17.7, 27.7, 42.7, 57.7, 72.7, 87.7	YSI44007
			8-3	S53	4,261	24	258	Not Present	Colluvium	Y	15	35.0	0.0, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 15.0, 20.0, 30.0, 35.0, 45.0, 50.0, 60.0	YSI44007

Notes:
1. Dampened temperature variations in winter (Y=Yes; N=No; UNK=Unknown).
2. Some values shown for depths not at 20m (i.e., maximum depth for strings < 20m, or adjusted depth to illustrate conditions within cryotic zones).

Table S1: Summary of Instrument Details and Available Data

Site	Province	Observed Permafrost Indicators & Periglacial Landforms	Borehole Id.	Fig. No.	Data Availability Range	Approx. DZAA (Sensor Depth, m)	Representative Ground Temperature[2] Month / Year	(°C)	Sensor Depth (m)	Estimated Temperature Trend[2] (°C / yr)	r²	Max. Estimated Depth to Permafrost Date	Depth (m)	Approx. Permafrost Thickness (m)	Apparent Secular Warming / Cooling (°C)
1	Atacama (Chile)	Ground ice, rock glaciers, gelifluction slopes, sorted/patterned ground, slope creep	1-1	S1	15/02/2010 - 01/05/2011	9.9	05/2011	1.7	19.9	--	--	--	--	--	--
			1-2	S2	26/01/2010 - 01/05/2011	4.9	05/2011	-0.2	19.9	--	--	31/03/2011	1.8	40	--
			1-3	S3	30/03/2010 - 09/10/2010	17.5	10/2010	7.4	20.0	--	--	--	--	--	--
			1-4	S4	30/03/2010 - 09/10/2010	17.5	10/2010	6.3	20.0	--	--	--	--	--	--
			1-5	S5	14/03/2010 - 28/05/2010	5.2	05/2010	1.6	20.2	--	--	--	--	--	--
			1-6	S6	14/03/2010 - 10/10/2010	9.3	10/2010	3.3	19.3	--	--	--	--	--	--
			1-7	S7	26/03/2010 - 03/05/2011	12.8	05/2011	1.3	20.3	--	--	--	--	--	--
			1-8	S8	30/03/2010 - 03/05/2011	9.9	05/2011	-2.2	19.9	--	--	22/02/2011	1.1	160	--
			1-9	S9	06/04/2010 - 03/05/2011	14.8	05/2011	1.2	19.8	--	--	--	--	--	--
2	San Juan (Argentina)	Gelifluction slopes, weakly patterned ground, rock glaciers	2-1	S10	01/02/2015 - 12/07/2015; 20/01/2017 - 18/05/2017	20.0	05/2017	-4.3	20.0	-0.01	0.61	20/01/2017	0.8	> 500	-0.2
			2-2	S11	01/02/2016 - 12/07/2016	15.0	07/2016	-3.0	20.0	--	--	--	--	N/A - Cooling with Depth	0.1
			2-3	S12	03/03/2017 - 18/05/2017; 17/03/2018 - 05/03/2020	20.0	03/2020	-3.3	20.0	0.00	0.03	25/01/2019	1.3	> 500	0.0
			2-4	S13	22/01/2017 - 07/02/2018	18.8	02/2018	4.7	18.8	--	--	--	--	--	--
			2-5	S14	14/04/2014 - 29/11/2015; 13/02/2016 - 22/12/2016; 22/01/2017 - 15/02/2019	--	02/2019	3.2	25.0	-0.09	0.75	--	--	--	0.1
			2-6	S15	16/02/2019 - 03/05/2019; 28/04/2020 - 19/05/2020	--	05/2019	0.8	18.9	--	--	--	--	--	--
			2-7	S16	18/03/2019 - 05/03/2020; 06/03/2021 - 11/06/2021	14.0	06/2021	1.7	18.8	--	--	--	--	--	-1.1
			2-8	S17	18/01/2014 - 02/09/2014; 29/09/2014 - 22/10/2014; 26/01/2017 - 16/12/2018	20.0	12/2018	1.3	20.0	0.01	0.23	--	--	--	0.1
			2-9	S18	15/04/2014 - 04/12/2015; 21/01/2017 - 26/03/2020	19.3	03/2020	2.3	19.3	-0.02	0.48	--	--	--	-0.3
			2-10	S19	17/03/2019 - 10/09/2021	20.0	09/2021	-3.8	20.0	0.03	0.84	19/01/2020	1.7	420	0.3
3	San Juan (Argentina)	Rock glaciers, talus slopes, ground ice, gelifluction / solifluction slopes	3-1	S20	27/01/2007 - 22/04/2007; 04/05/2007 - 10/11/2007; 01/01/2008 - 17/04/2008; 02/03/2013 - 09/06/2013; 17/03/2014 - 20/10/2014	18.1	12/2014	-1.2	18.1	0.01	0.20	26/03/2007	3.5	100	0.3
			3-2	S21	10/11/2012 - 08/01/2014; 16/03/2015 - 30/04/2015; 01/05/2016 - 08/03/2017	18.6	03/2017	-4.9	18.6	0.01	0.90	14/02/2016	1.0	> 500	0.2
			3-3	S22	17/03/2012 - 05/04/2012	3.0	04/2012	4.4	15.0	--	--	--	--	--	--
			3-5	S23	02/03/2013 - 18/03/2018	6.0	03/2018	-0.04	7.0	-0.04	0.82	12/03/2017	6.0	~2 m (from 6-8 m below ground)	--
			3-6	S24	18/04/2006 - 26/03/2008; 17/12/2009 - 17/04/2012; 21/02/2013 - 07/01/2014; 16/03/2014 - 15/04/2014	14.0	12/2014	-1.5	18.8	0.00	0.17	03/04/2007	3.5	N/A -Cooling with depth / Isothermal	--
	Atacama (Chile)		3-7	S25	22/04/2006 - 26/03/2008	10.0	03/2008	-5.2	19.9	0.02	0.71	--	< 1m	N/A - Cooling with Depth	--
			3-8	S26	18/02/2013 - 06/03/2018; 23/02/2019 - 08/05/2019	--	05/2019	-4.9	20.0	0.00	0.12	23/02/2019	0.8	N/A - Cooling with Depth	--
			3-9	S27	18/04/2006 - 03/04/2007; 09/09/2007 - 26/03/2008; 04/12/2009 - 01/02/2010; 17/10/2010 - 01/02/2012	--	02/2012	-2.9	20.0	0.00	0.19	17/03/2011	0.9	180	--
			3-11	S28	02/03/2013 - 06/03/2018; 23/02/2019 - 21/03/2022	--	03/2022	-6.9	20.0	0.01	0.60	24/12/2021	0.6	470	--
			3-12	S29	18/04/2006 - 06/05/2007; 25/10/2007 - 26/03/2008; 04/12/2009 - 17/12/2011	20.0	12/2011	-5.5	20.0	0.00	0.01	--	< 1m	280	0.1

Notes:
1. Dampened temperature variations in winter (Y=Yes; N=No; UNK=Unknown).
2. Some values shown for depths not at 20m (i.e., maximum depth for strings < 20m, or adjusted depth to illustrate conditions within cryotic zones).

Table S1: Summary of Instrument Details and Available Data

Site	Province	Observed Permafrost Indicators & Periglacial Landforms	Borehole Id.	Fig. No.	Data Availability Range	Approx. DZAA (Sensor Depth, m)	Representative Ground Temperature[2] Month / Year	(°C)	Sensor Depth (m)	Estimated Temperature Trend[2] (°C / yr)	r²	Max. Estimated Depth to Permafrost Date	Depth (m)	Approx. Permafrost Thickness (m)	Apparent Secular Warming / Cooling (°C)
4	San Juan (Argentina)	Rock glaciers, protalus ramparts, gelifluction / solifluction slopes,	4-1	S30	01/12/2021 - 13/09/2022	21.0	09/2022	3.5	21.0	--	--	--	--	--	--
			4-2	S31	01/12/2021 - 13/09/2022	11.0	09/2022	-0.3	21.0	--	--	--	--	N/A -Cooling with depth / Isothermal	--
			4-3	S32	21/05/2022 - 14/09/2022	21.0	09/2022	3.4	21.0	--	--	--	--	--	--
5	Coquimbo (Chile)	Massive ground ice, sorted/patterned ground, slope creep, active layer detachment, gelifluction / solifluction slopes, protalus ramparts, rock glaciers	5-1	S33	30/01/2014 - 05/09/2015	--	09/2015	-2.2	9.4	--	--	12/03/2015	0.9	N/A -Cooling with depth / Isothermal	--
			5-2	S34	12/03/2017 - 18/01/2018; 12/03/2019 - 19/01/2020; 18/03/2020 - 25/01/2021; 24/03/2021 - 25/03/2022	22.6	03/2022	-4.2	22.6	0.01	0.74	17/02/2022	1.8	150	0.3
			5-3	S35	13/03/2017 - 19/01/2018; 12/03/2019 - 19/01/2020; 18/03/2020 - 25/01/2021	9.5	01/2021	-3.4	19.1	-0.01	0.05	19/02/2020	1.5	130	0.3
	San Juan (Argentina)		5-4	S36	18/03/2017 - 21/04/2021	--	04/2021	-1.6	25.0	0.05	0.92	14/03/2020	1.7	120	--
			5-5	S37	17/03/2017 - 25/12/2017	--	12/2017	-4.1	20.0	--	--	--	--	N/A - Cooling with Depth	--
6	Coquimbo (Chile)	Rock glaciers, talus slopes, ground ice, gelifluction / solifluction slopes	6-1	S38	03/04/2016 - 25/09/2021	5.2	06/2021	-0.1	20.2	0.01	0.47	02/06/2021	9.0	N/A -Cooling with depth / Isothermal	--
			6-2	S39	05/04/2016 - 28/10/2021	7.6	09/2021	-0.1	10.1	0.01	0.31	11/05/2021	7.3	10	--
			6-4	S40	15/03/2016 - 27/10/2021	--	10/2021	-0.1	30.0	0.03	0.77	10/07/2021	17.4	N/A -Cooling with depth / Isothermal	--
			6-5	S41	01/06/2016 - 27/10/2021	10.0	10/2021	0.2	15.0	-0.02	0.07	--	--	25	--
			6-7	S42	30/04/2016 - 30/10/2021	20.2	08/2021	5.4	20.2	0.02	0.32	--	--	--	0.9
			6-8	S43	15/03/2016 - 09/04/2017	7.5	04/2017	0.0	7.5	--	--	--	--	10	--
			6-11	S44	14/01/2020 - 30/11/2020	7.0	11/2020	-0.1	10.0	--	--	--	--	10	--
7	San Juan (Argentina)	Rock glaciers, protalus ramparts, gelifluction / solifluction slopes, ground ice	7-1	S45	12/05/2011 - 19/03/2015; 12/04/2015 - 23/11/2016	25.0	03/2015	4.4	25.0	0.03	0.26	--	--	--	--
			7-2	S46	12/05/2011 - 20/11/2013; 19/03/2014 - 18/03/2015; 05/12/2015 - 24/07/2017	15.0	07/2017	-0.5	20.0	-0.01	0.70	24/02/2013	1.9	40	0.4
			7-3	S47	12/05/2011 - 27/12/2013; 19/03/2014 - 18/03/2015	30.0	03/2015	1.8	30.0	-0.04	0.42	--	--	--	0.0
			7-4	S48	07/07/2021 - 19/04/2022	10.0	04/2022	-0.1	20.0	--	--	--	--	20	--
			7-5	S49	07/07/2021 - 19/04/2022	15.0	04/2022	-0.6	20.0	--	--	--	--	40	--
			7-6	S50	07/07/2021 - 20/04/2022	7.5	04/2022	-0.6	20.0	--	--	--	--	N/A -Cooling with depth / Isothermal	--
8	Región Metropolitana (Chile)	Rock glaciers, gelifluction / solifluction slopes, ground ice	8-1	S51	05/12/2017 - 23/01/2021	20.0	01/2021	2.2	20.3	0.04	0.69	--	--	--	-0.2
			8-2	S52	30/04/2017 - 10/12/2017; 02/04/2018 - 23/01/2021	--	01/2021	1.0	17.7	0.05	0.68	--	--	--	0.1
			8-3	S53	24/02/2019 - 23/01/2021	10.0	12/2020	0.0	20.0	--	--	--	--	10	0.5

Notes:
1. Dampened temperature variations in winter (Y=Yes; N=No; UNK=Unknown).
2. Some values shown for depths not at 20m (i.e., maximum depth for strings < 20m, or adjusted depth to illustrate conditions within cryotic zones).
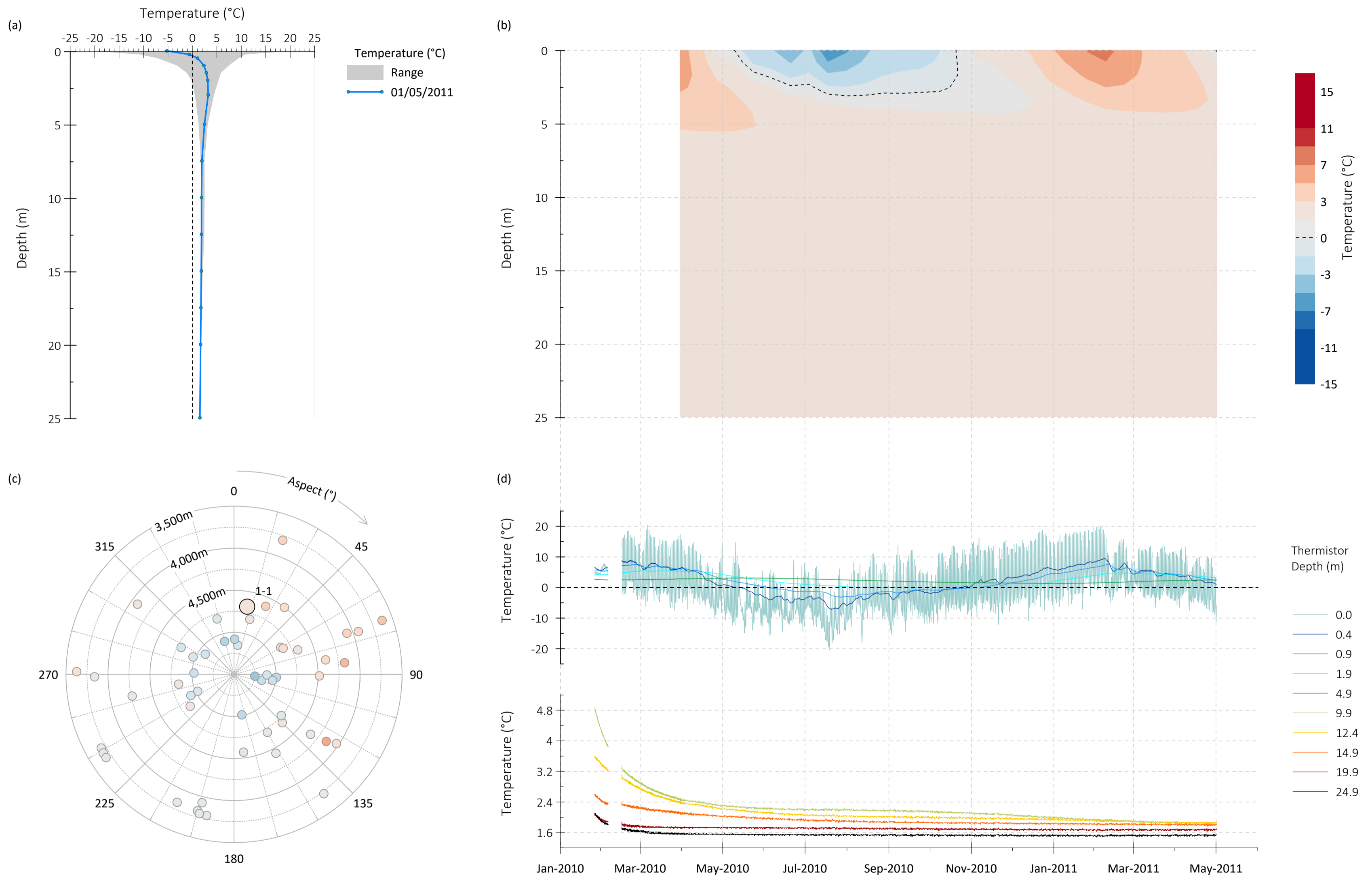
Figure S1: Ground thermal regime for Borehole 1-1 (El. = 4,680 m, Colluvium). Measurements collected approximately every 4 hours between 15/02/2010 and 01/05/2011.
Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-1 (T= 1.69 °C, depth=19.9 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-1. Full dataset includes measurements from 15 sensors.
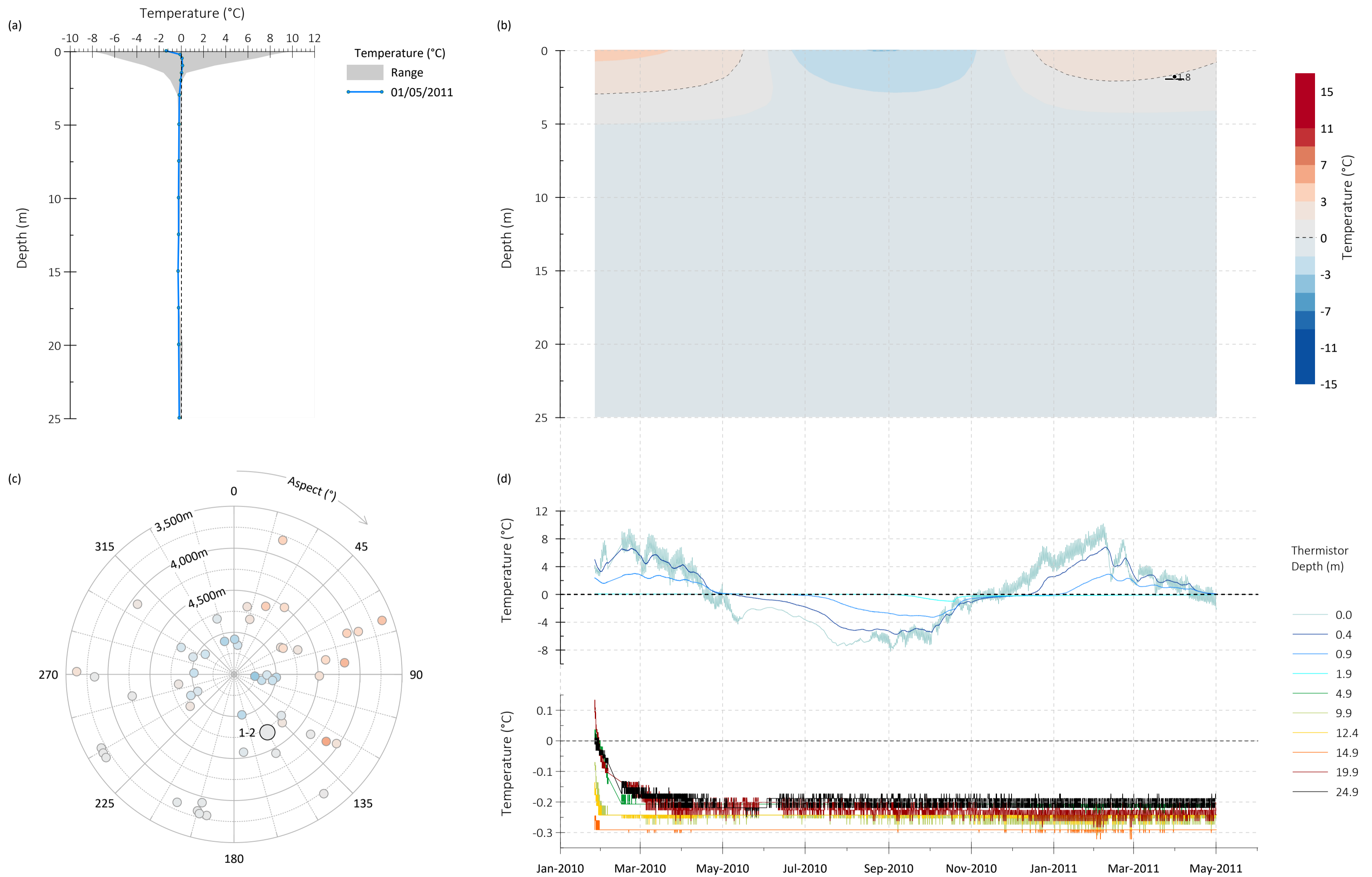
Figure S2: Ground thermal regime for Borehole 1-2 (El. = 4,705 m, Bedrock (weathered)). Measurements collected approximately every 4 hours between 26/01/2010 and 01/05/2011. Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Seasonal thaw indicated by black dot; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-2 (T= -0.24 °C, depth=19.9 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-2. Full dataset includes measurements from 15 sensors.
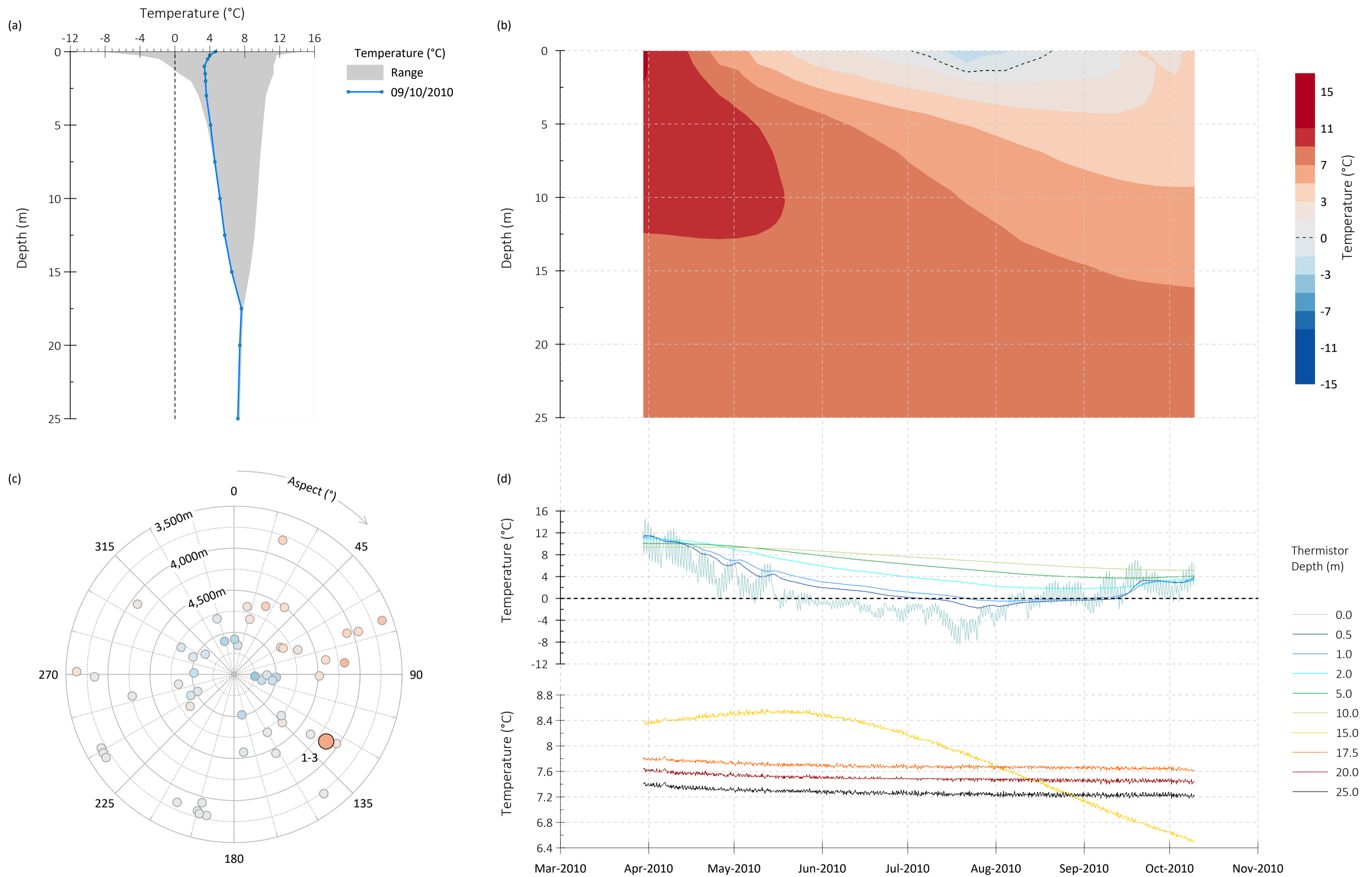
Figure S3: Ground thermal regime for Borehole 1-3 (El. = 4,144 m, Colluvium). Measurements collected approximately every 4 hours between 30/03/2010 and 09/10/2010. Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-3 (T= 7.44 °C, depth=20 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 1-3. Full dataset includes measurements from 15 sensors.
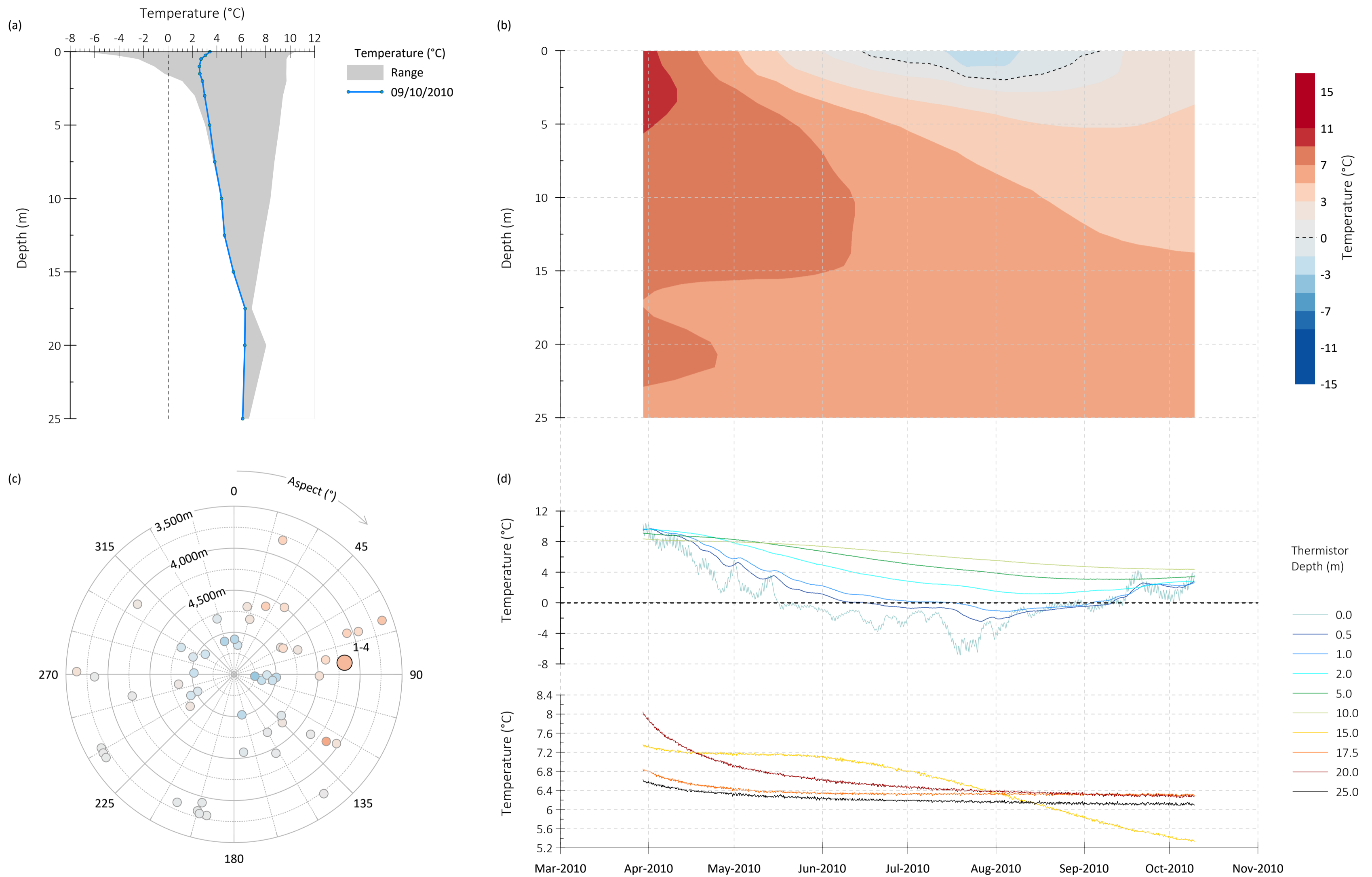
Figure S4: Ground thermal regime for Borehole 1-4 (El. = 4,177 m, Old landslide deposit). Measurements collected approximately every 4 hours between 30/03/2010 and 09/10/2010.
Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-4 (T= 6.28 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-4. Full dataset includes measurements from 15 sensors.
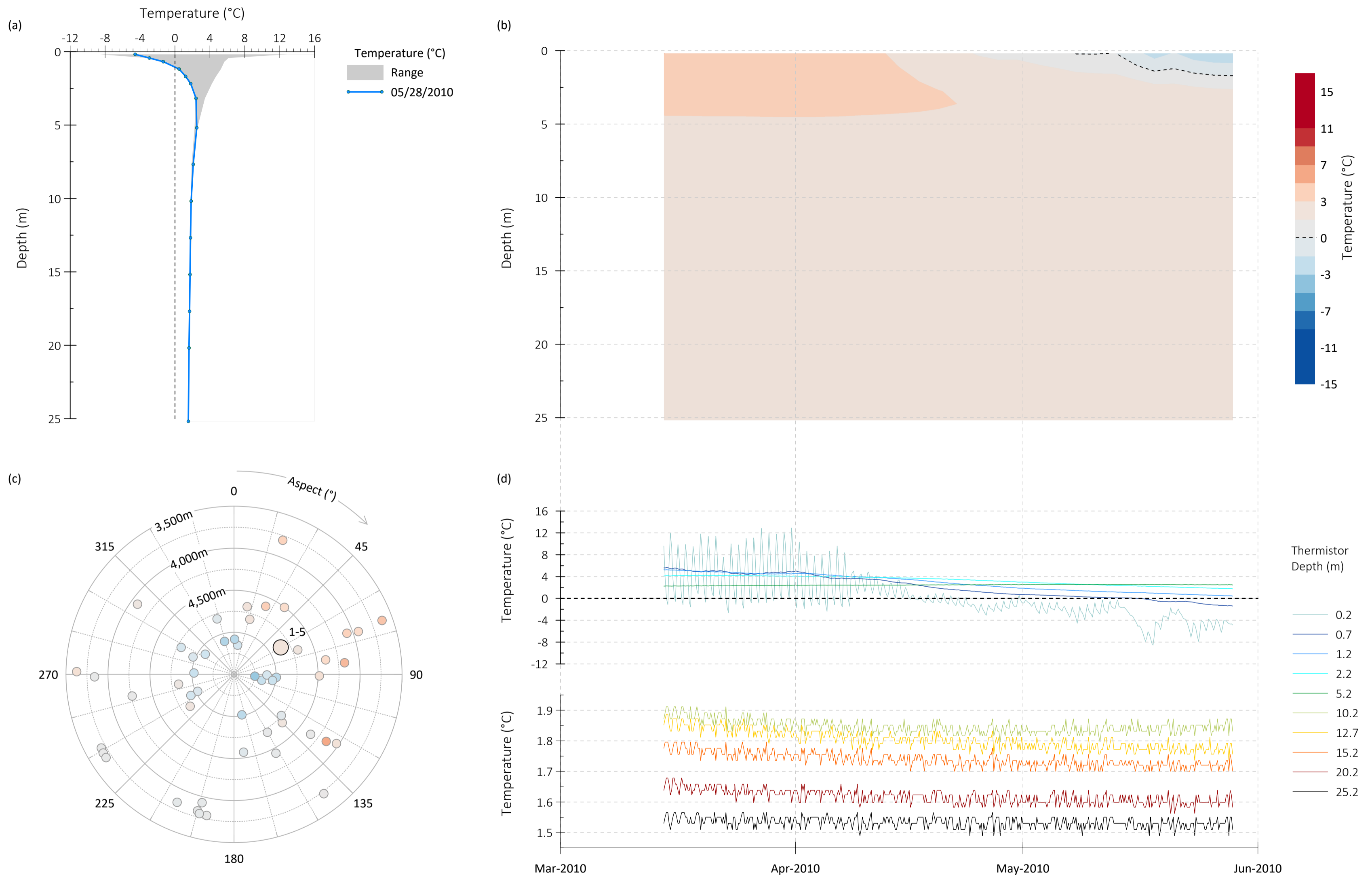
Figure S5: Ground thermal regime for Borehole 1-5 (El. = 4,858 m, Bedrock (highly weathered)). Measurements collected approximately every 4 hours between 14/03/2010 and 28/05/2010.
Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-5 (T= 1.6 °C, depth=20.2 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-5. Full dataset includes measurements from 15 sensors.
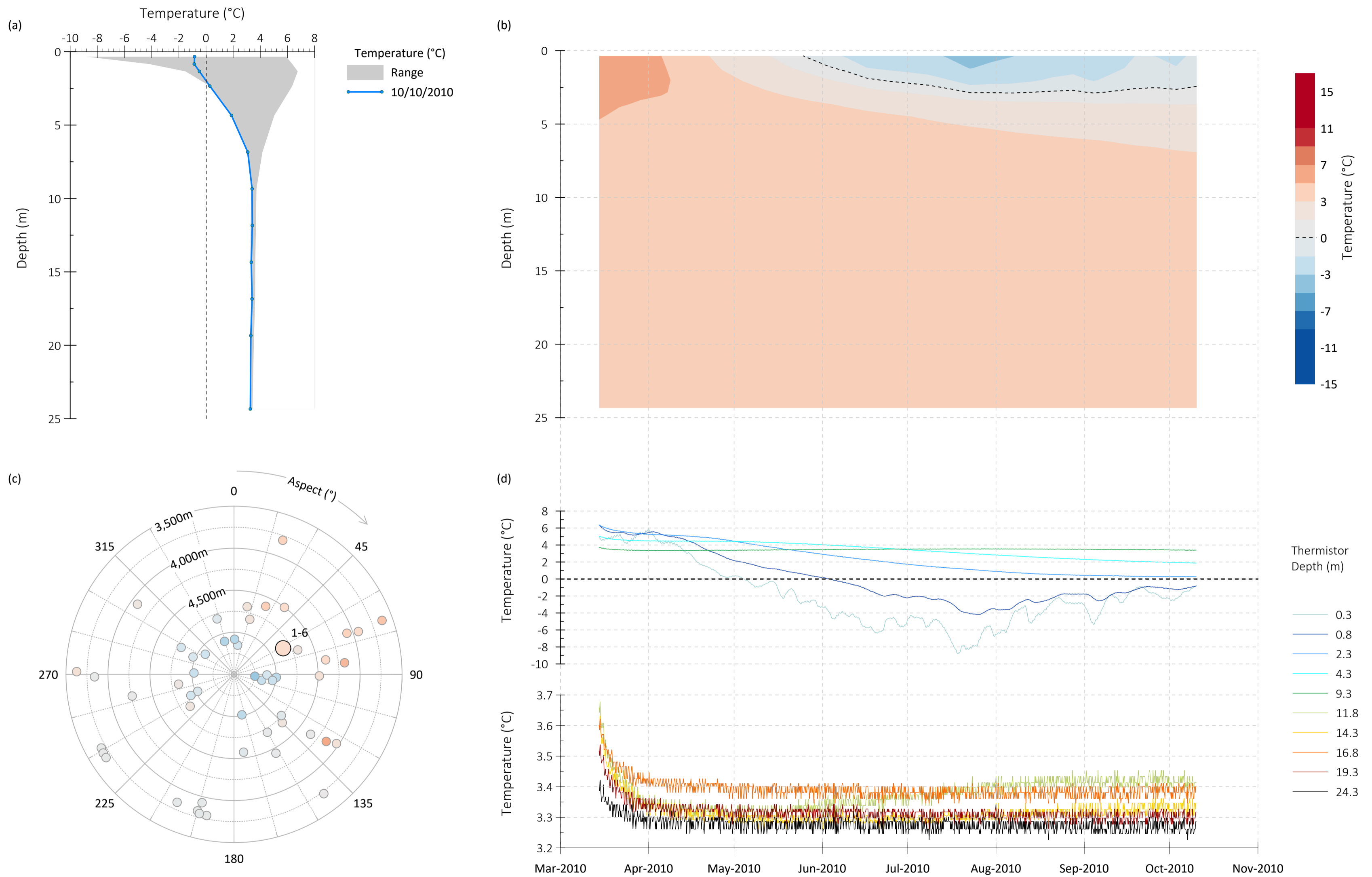
Figure S6: Ground thermal regime for Borehole 1-6 (El. = 4,838 m, Bedrock (highly weathered: sand)). Measurements collected approximately every 4 hours between 14/03/2010 and 10/10/2010. Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-6 (T= 3.3 °C, depth=19.3 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-6. Full dataset includes measurements from 12 sensors.
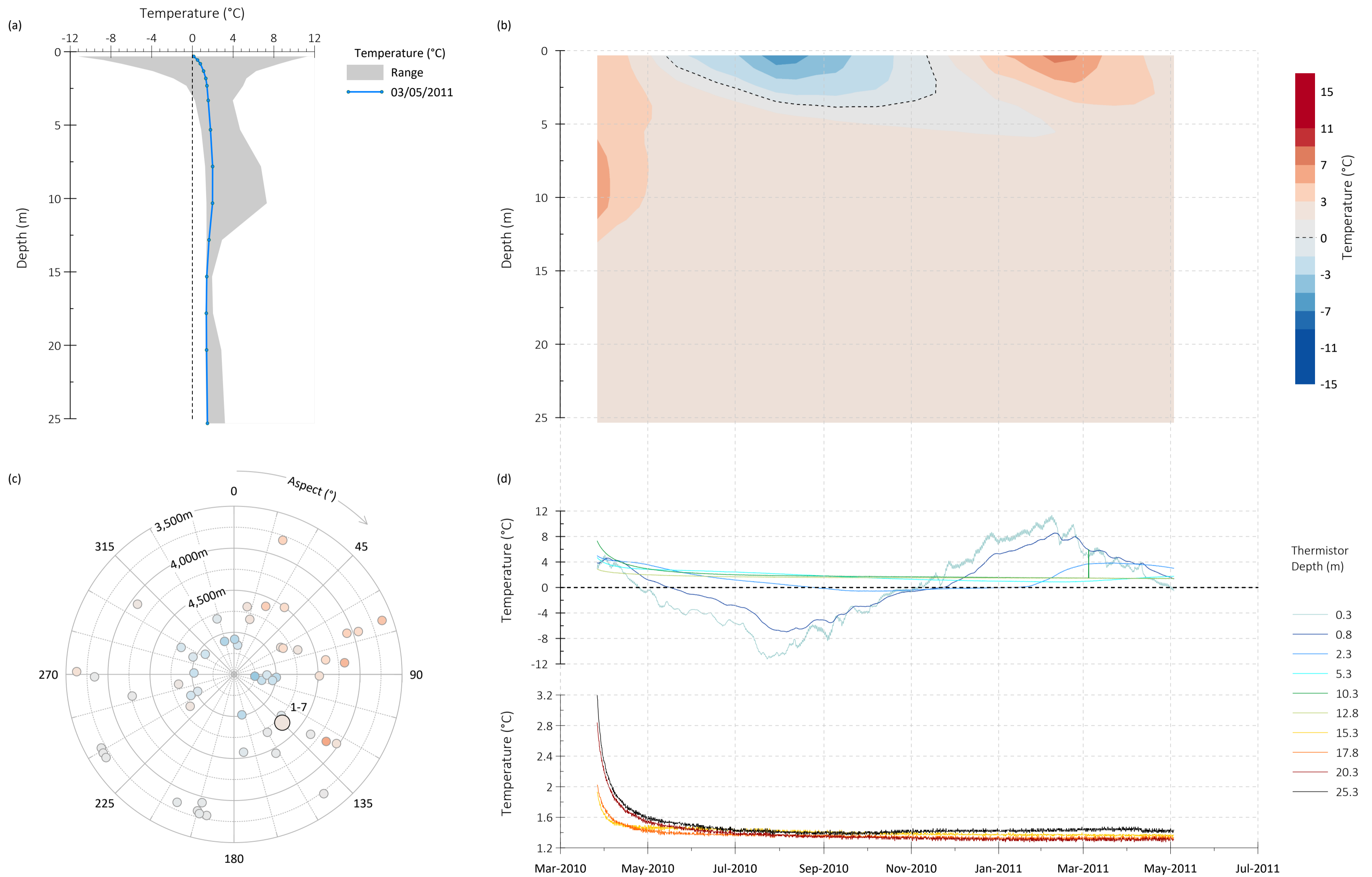
Figure S7: Ground thermal regime for Borehole 1-7 (El. = 4,688 m, Colluvium). Measurements collected approximately every 4 hours between 26/03/2010 and 03/05/2011.
Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-7 (T= 1.31 °C, depth=20.3 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-7. Full dataset includes measurements from 15 sensors.
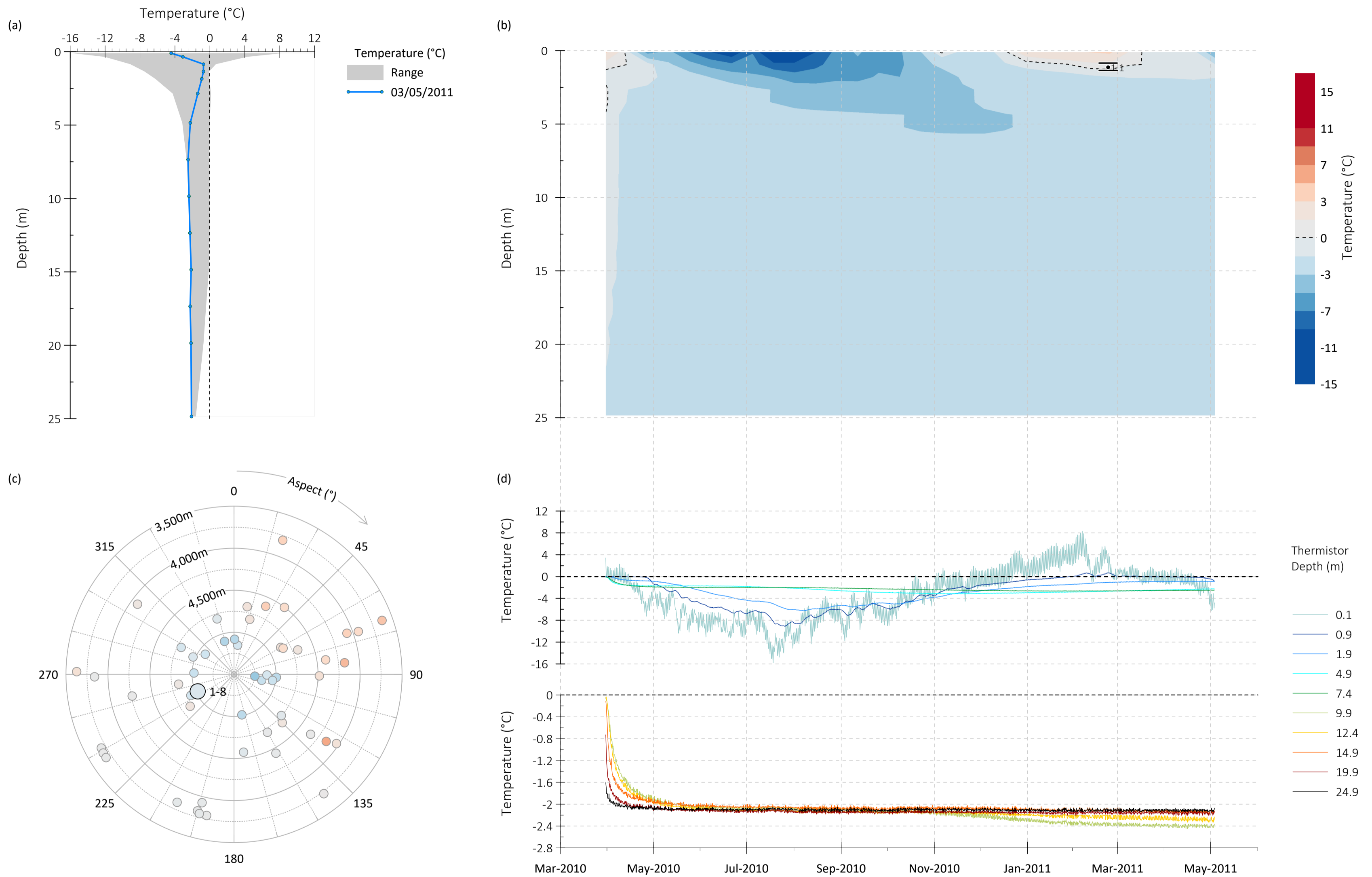
Figure S8: Ground thermal regime for Borehole 1-8 (El. = 5,023 m, Bedrock). Measurements collected approximately every 4 hours between 30/03/2010 and 03/05/2011. Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Seasonal thaw indicated by black dot; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-8 (T= -2.16 °C, depth=19.9 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-8. Full dataset includes measurements from 14 sensors.
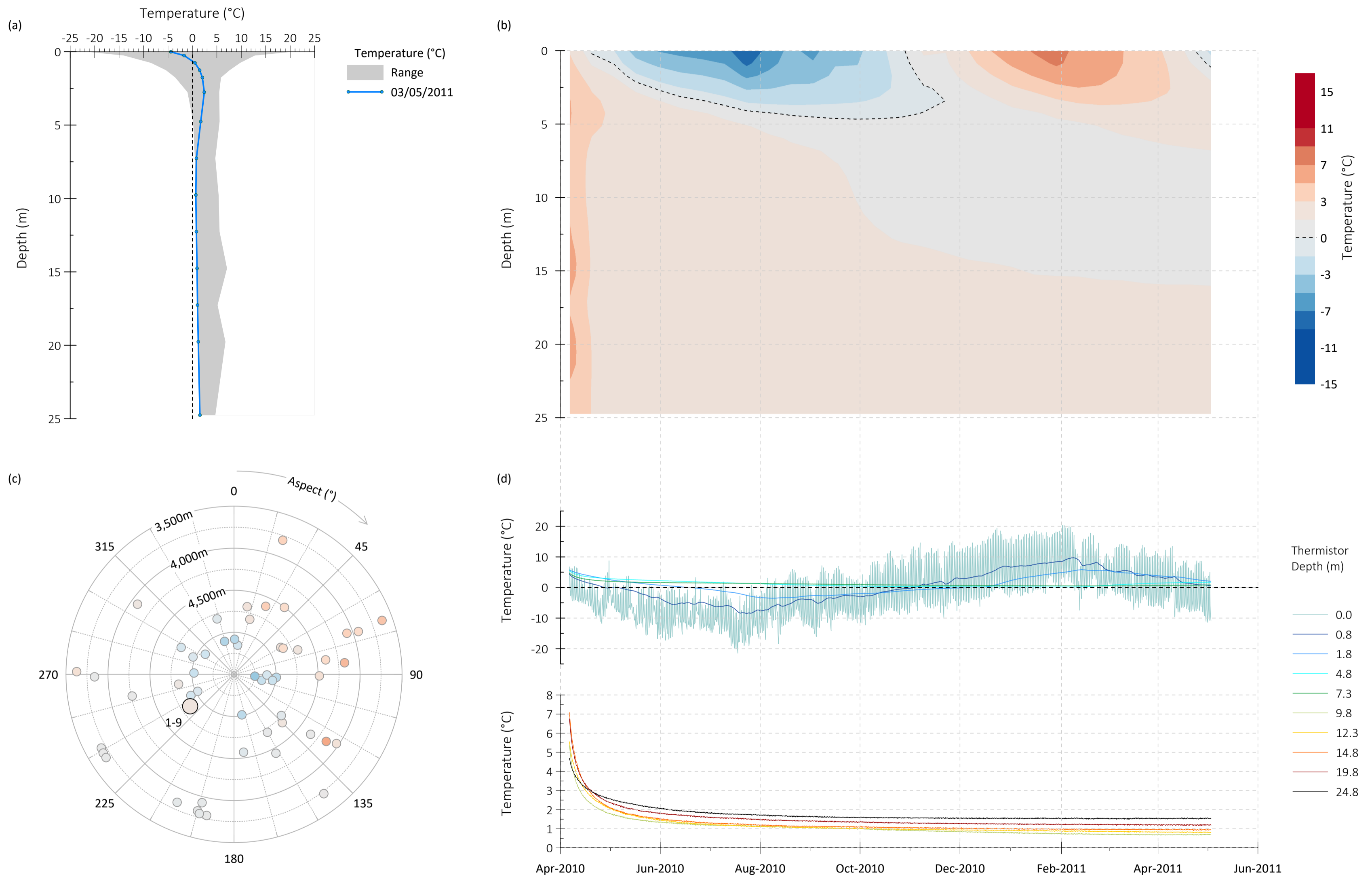
Figure S9: Ground thermal regime for Borehole 1-9 (El. = 4,855 m, Colluvium). Measurements collected approximately every 4 hours between 06/04/2010 and 03/05/2011.
Early measurements affected by drilling. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 1-9 (T= 1.2 °C, depth=19.8 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 1-9. Full dataset includes measurements from 14 sensors.
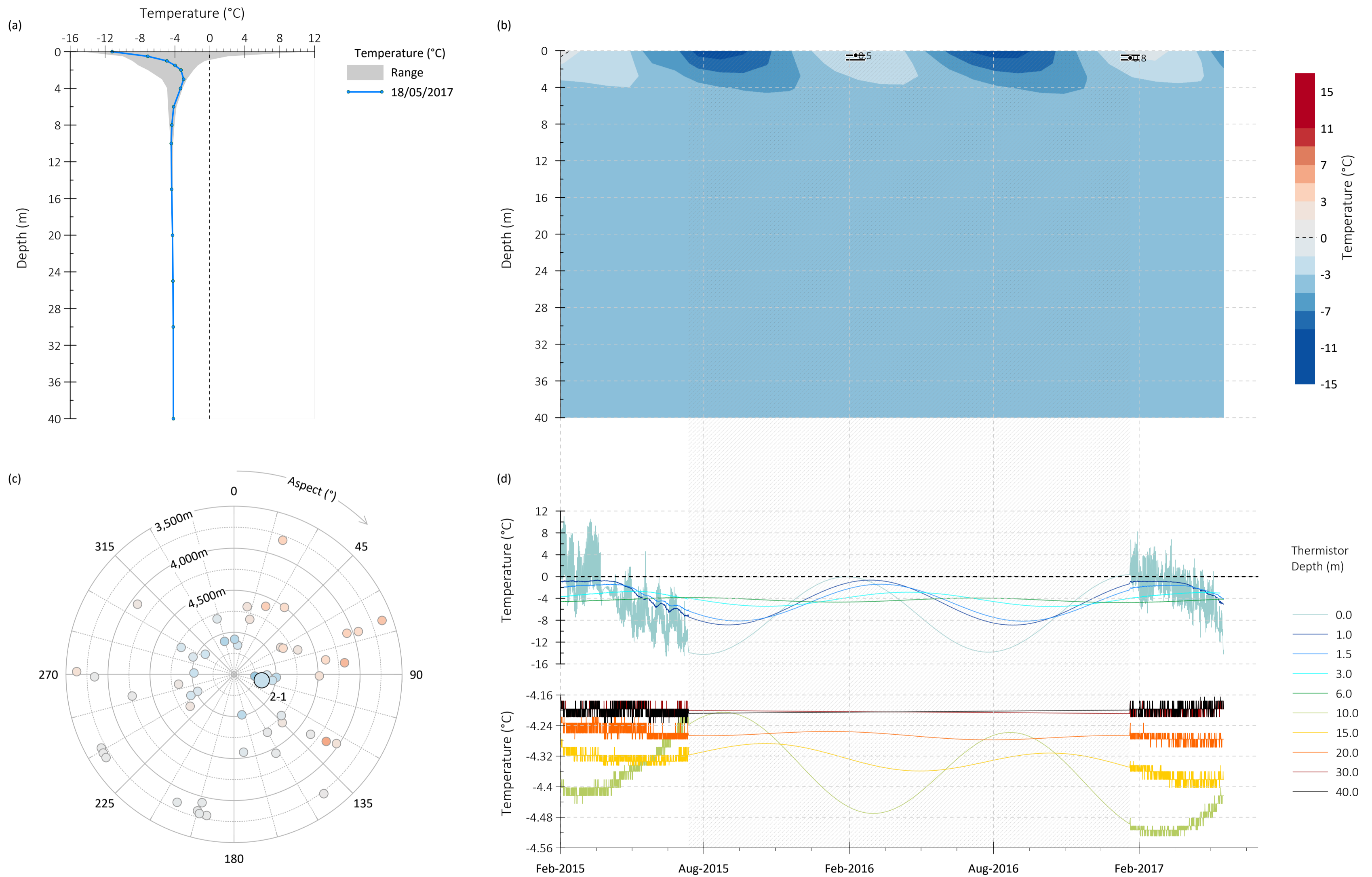
Figure S10: Ground thermal regime for Borehole 2-1 (El. = 5,163 m, Colluvium). Measurements collected approximately every 4 hours between 01/02/2015 and 18/05/2017. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-1 (T= -4.28 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-1. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
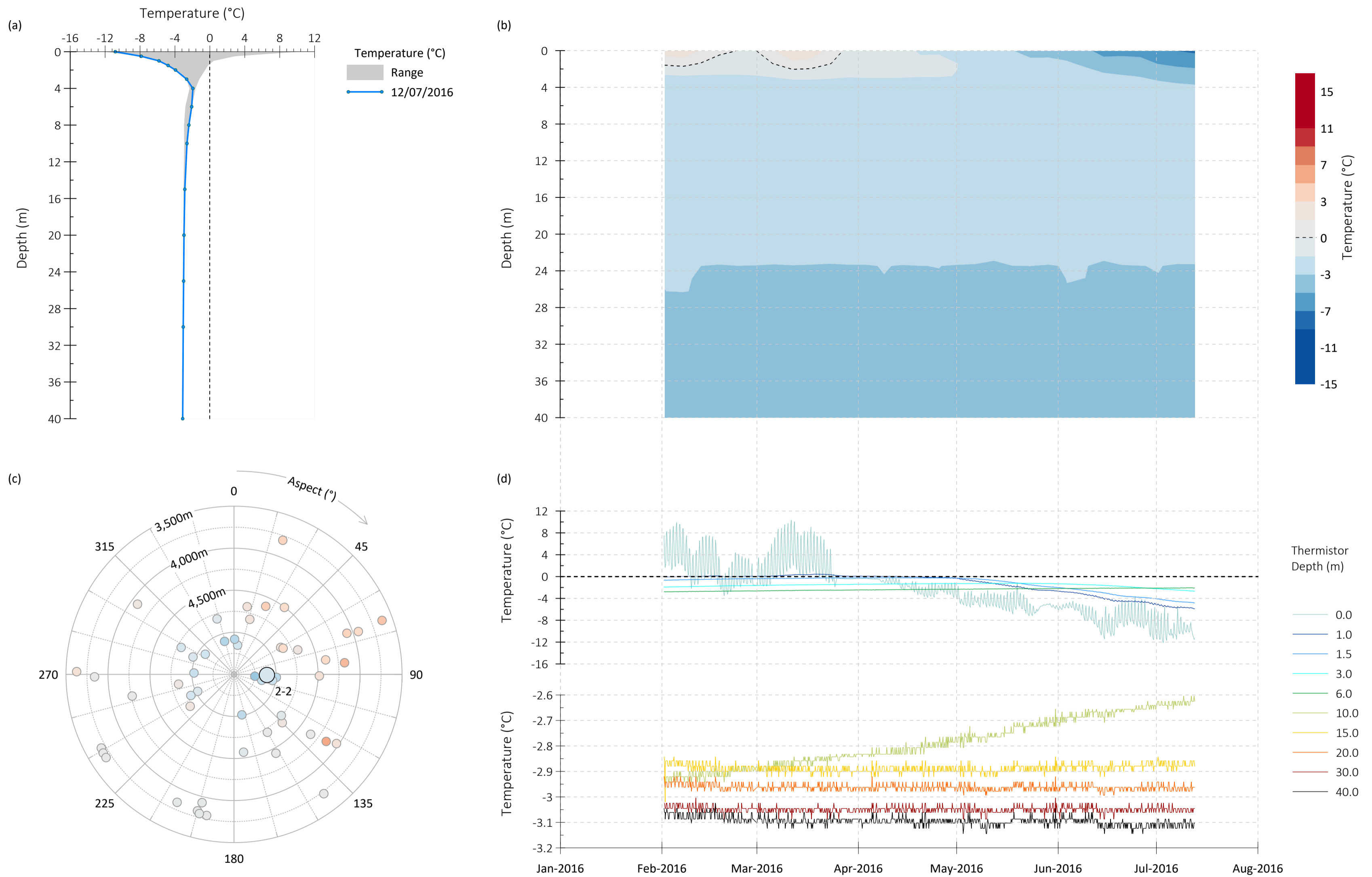
Figure S11: Ground thermal regime for Borehole 2-2 (El. = 5,108 m, Colluvium). Measurements collected approximately every 4 hours between 01/02/2016 and 12/07/2016.
Thermistor string relocated to Site 2-3 in March 2017 due to debris flow. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-2 (T= -2.96 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-2. Full dataset includes measurements from 15 sensors.
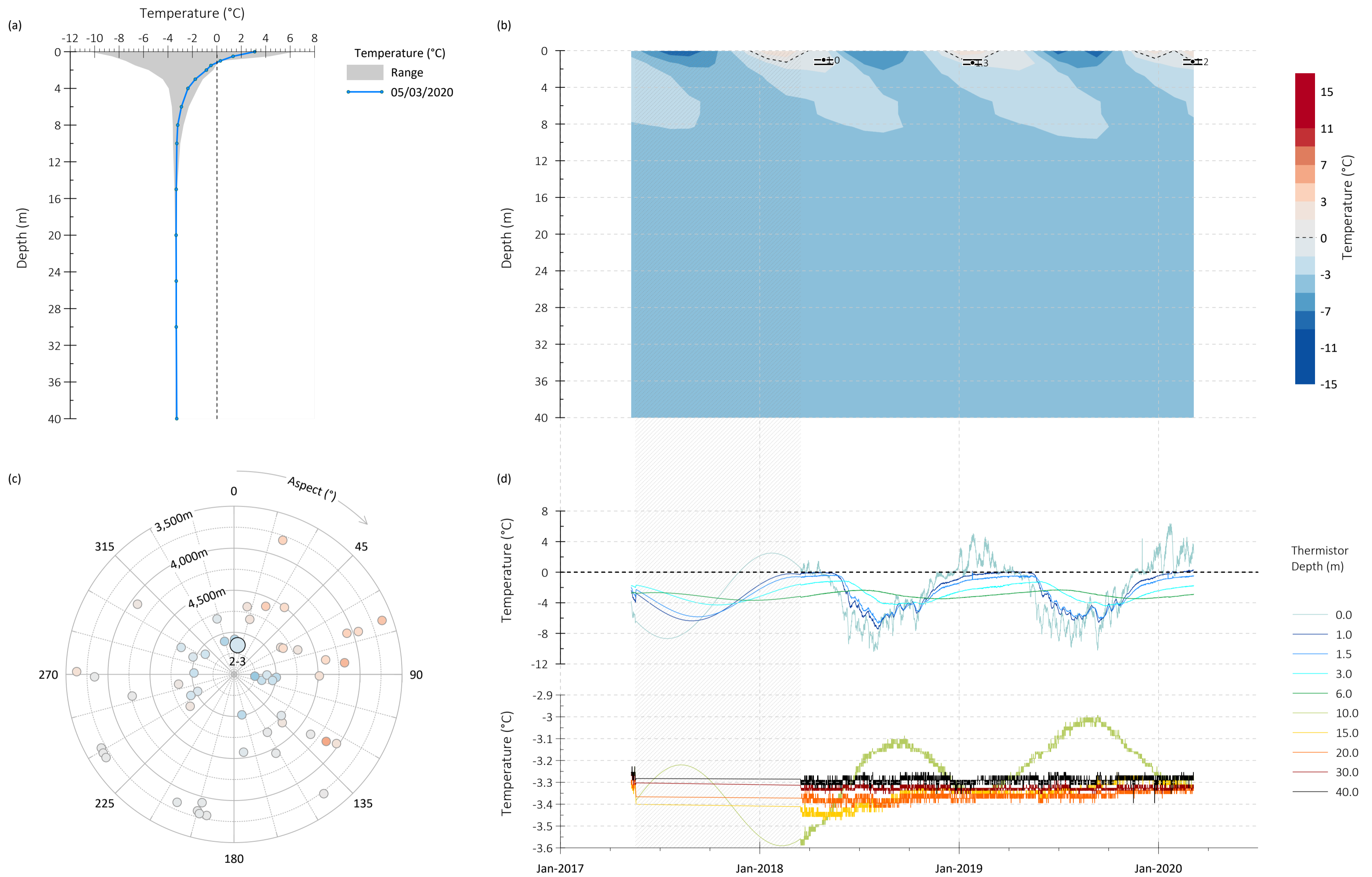
Figure S12: Ground thermal regime for Borehole 2-3 (El. = 5,150 m, Colluvium). Measurements collected approximately every 6 hours between 03/03/2017 and 05/03/2020. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-3 (T= -3.34 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-3. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
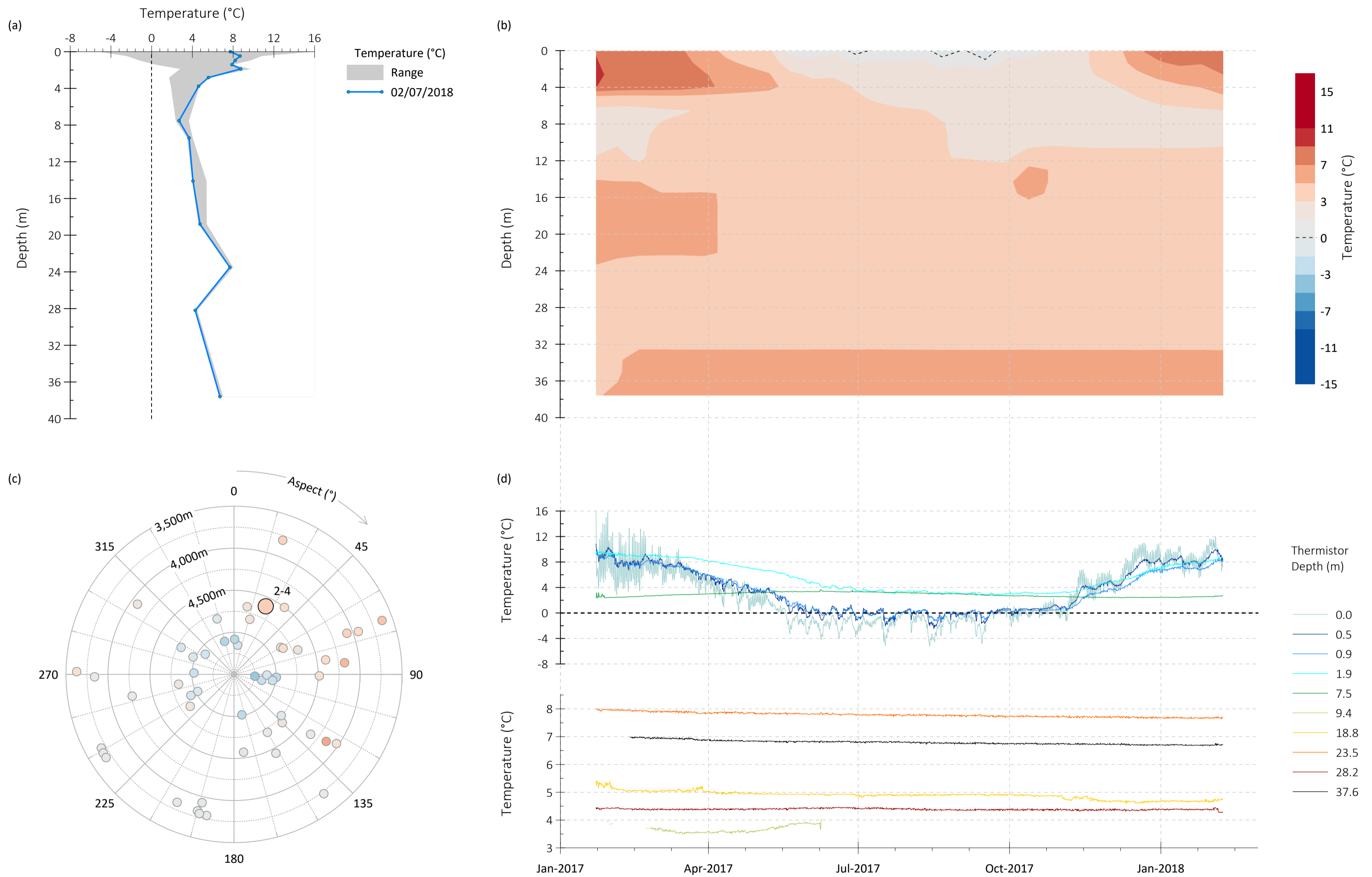
Figure S13: Ground thermal regime for Borehole 2-4 (El. = 4,607 m, Colluvium). Measurements collected approximately every 6 hours between 22/01/2017 and 07/02/2018.
Measurement at sensor 23.5 m is erroneous and excluded from analyses and contouring. Thermistor string relocated to Site 2-6 in Feb 2019 to increase likelihood of encountering permafrost. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-4 (T= 4.72 °C, depth=18.8 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-4. Full dataset includes measurements from 14 sensors.
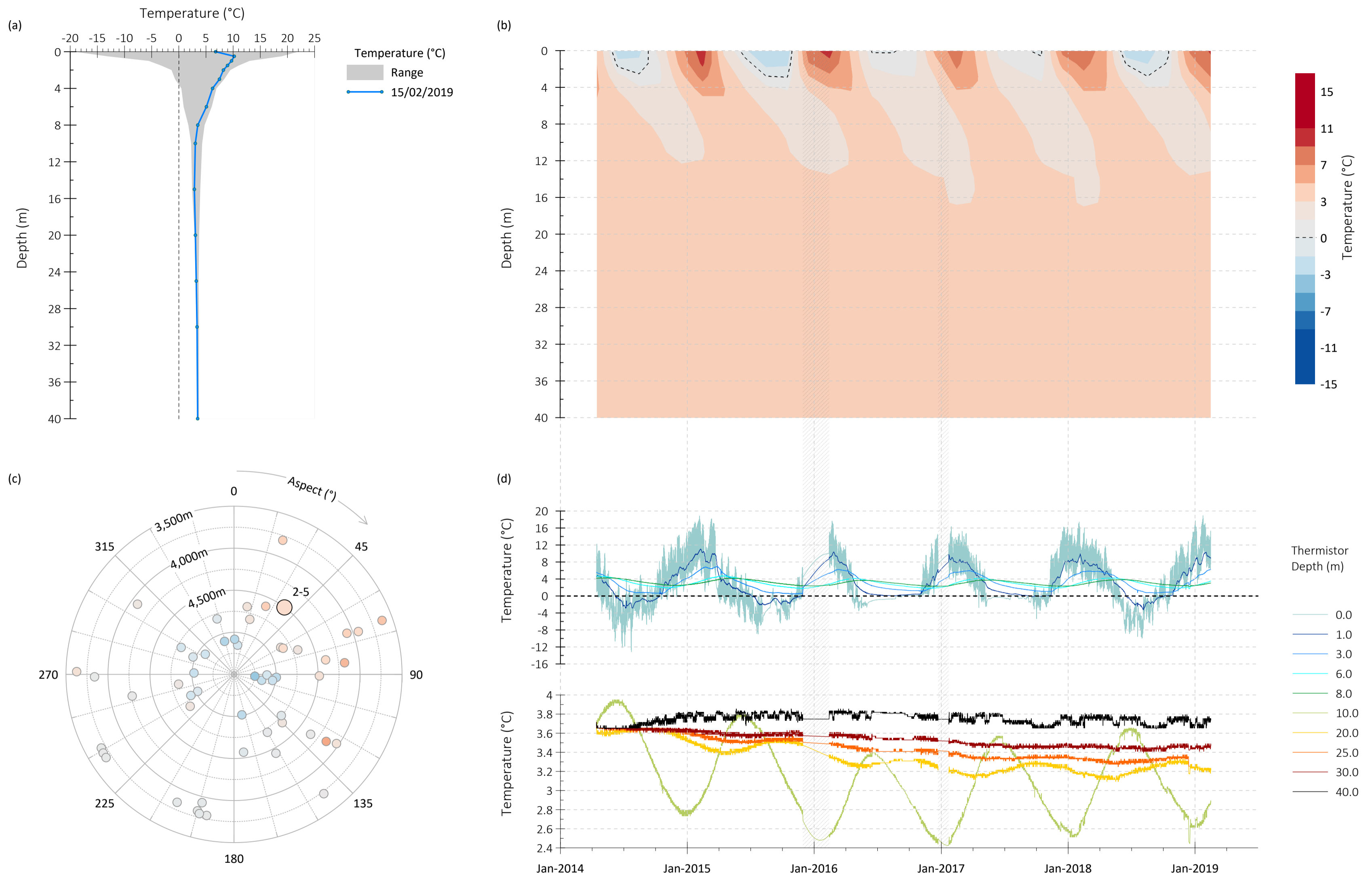
Figure S14: Ground thermal regime for Borehole 2-5 (El. = 4,503 m, Colluvium). Measurements collected approximately every 4 hours between 14/04/2014 and 15/02/2019. Interpolated data indicated by grey hatched areas. Thermistor string relocated to Site 2-7 in Feb 2019 to increase likelihood of encountering permafrost. Borehole not actively monitored.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-5 (T= 3.24 °C, depth=25 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 2-5. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
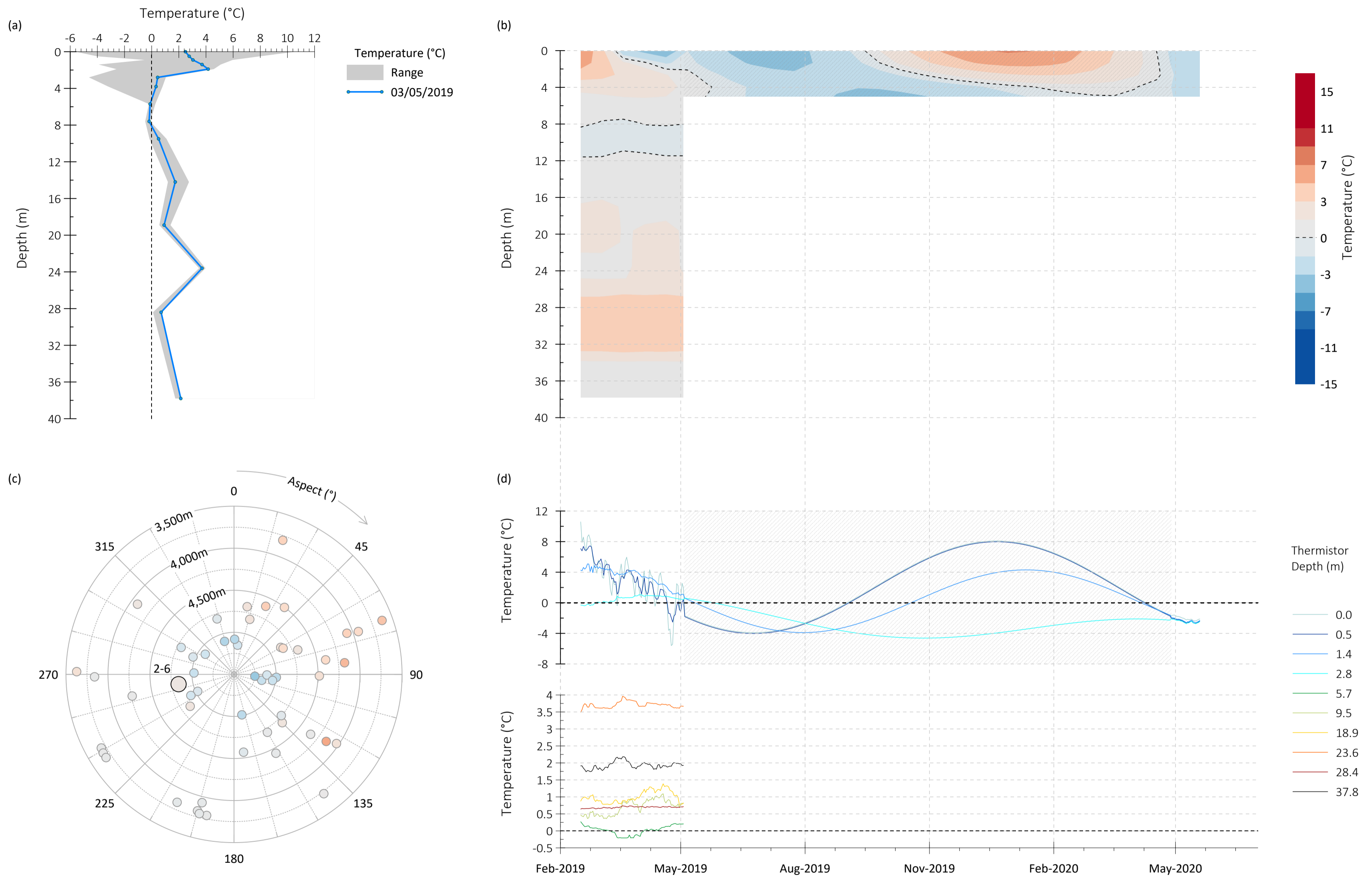
Figure S15: Ground thermal regime for Borehole 2-6 (El. = 4,830 m, Colluvium). Daily measurements collected between 16/02/2019 and 19/05/2020. Interpolated data indicated by grey hatched areas.
No data after 3/5/2019 for sensors at 0.9 m and below 5m depth. Measurement at sensor 23.6 m is erroneous and excluded from analyses and contouring.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-6 (T= 0.79 °C, depth=18.9 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-6. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
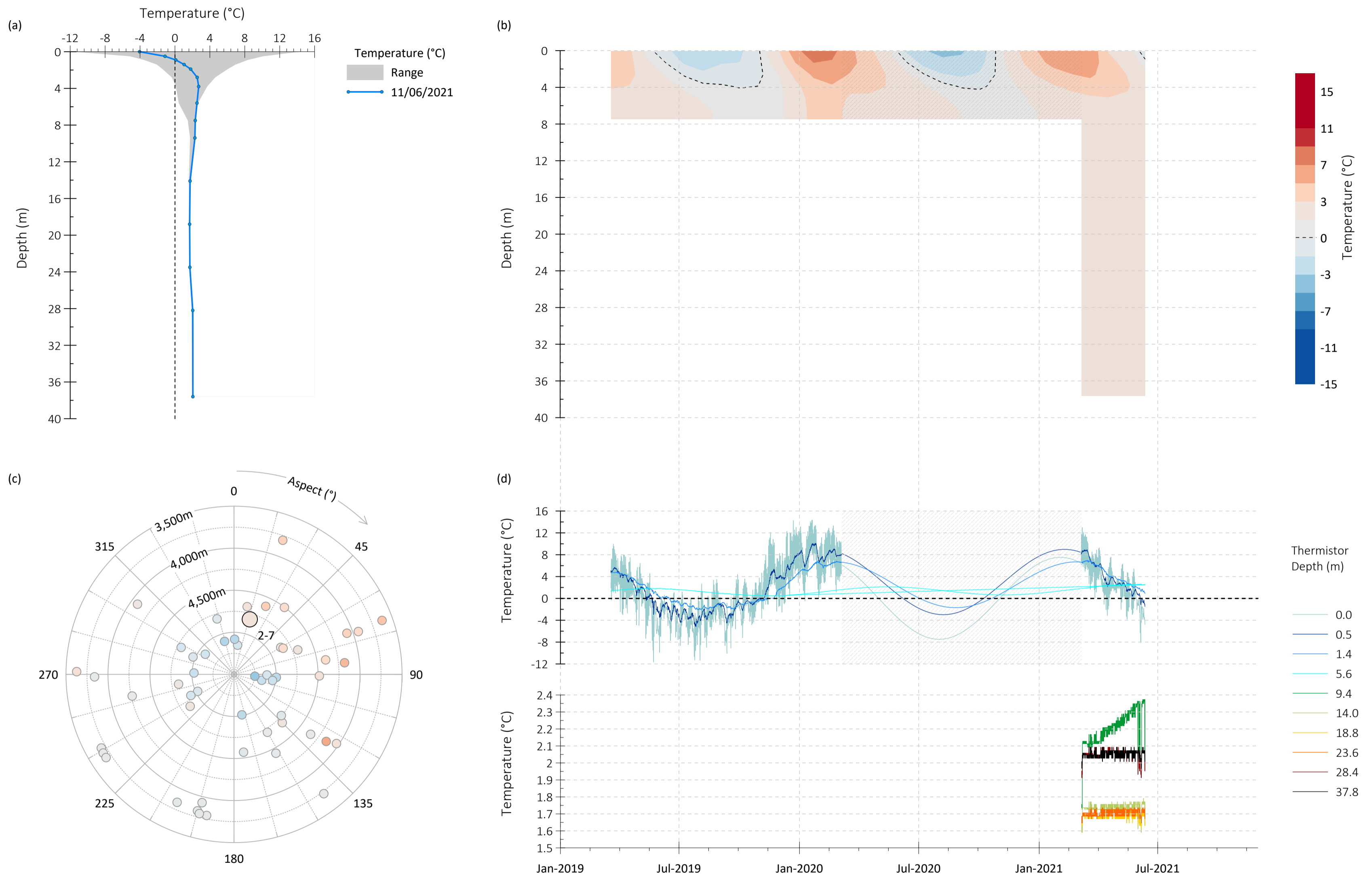
Figure S16: Ground thermal regime for Borehole 2-7 (El. = 4,819 m, Colluvium). Measurements collected approximately every 6 hours between 18/03/2019 and 11/06/2021. Interpolated data indicated by grey hatched areas. No data before 03/06/2021 below 7m depth.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-7 (T= 1.68 °C, depth=18.8 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 2-7. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
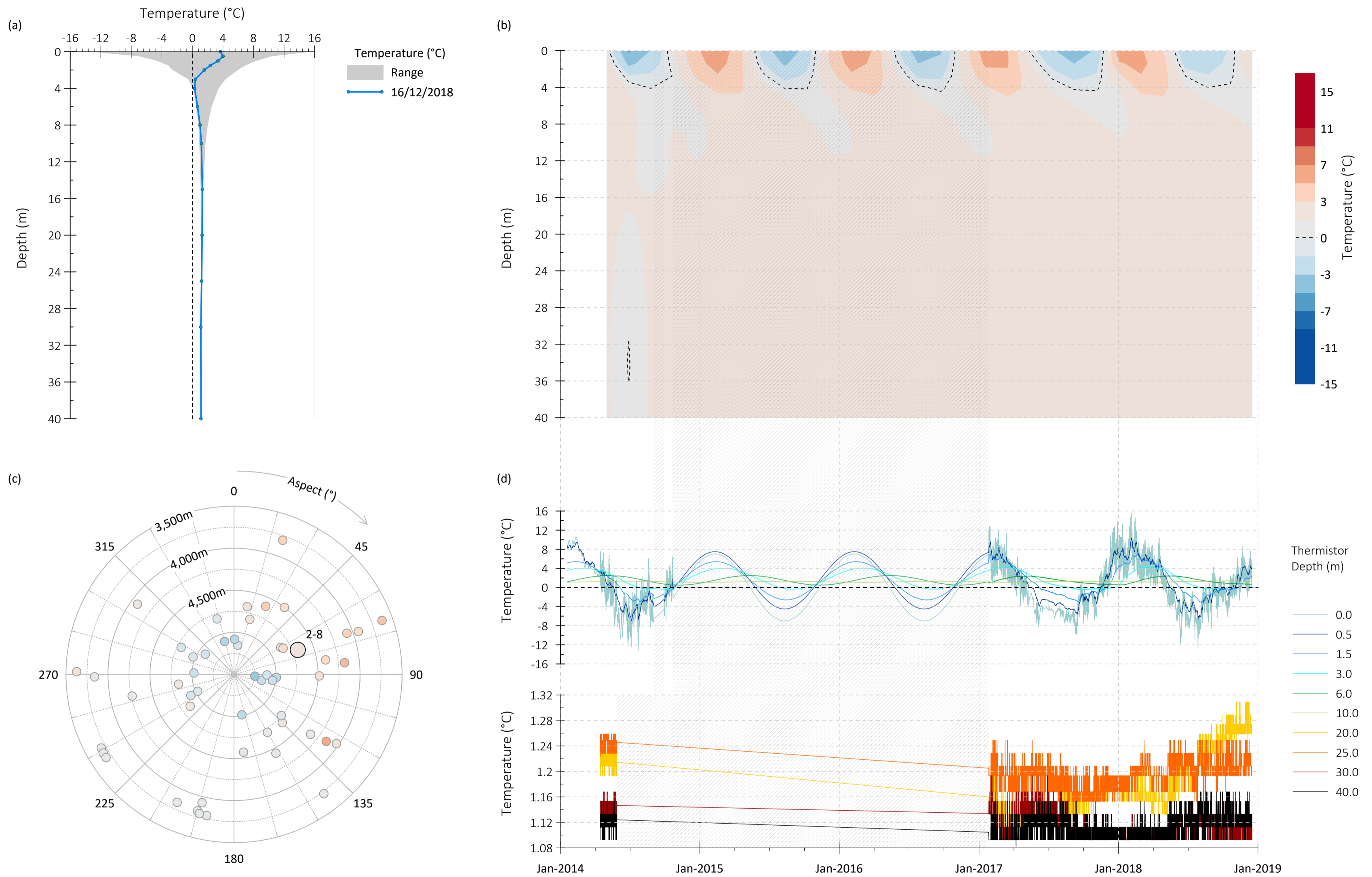
Figure S17: Ground thermal regime for Borehole 2-8 (El. = 4,687 m, Colluvium). Measurements collected approximately every 4 hours between 18/01/2014 and 16/12/2018. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-8 (T= 1.28 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-8. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
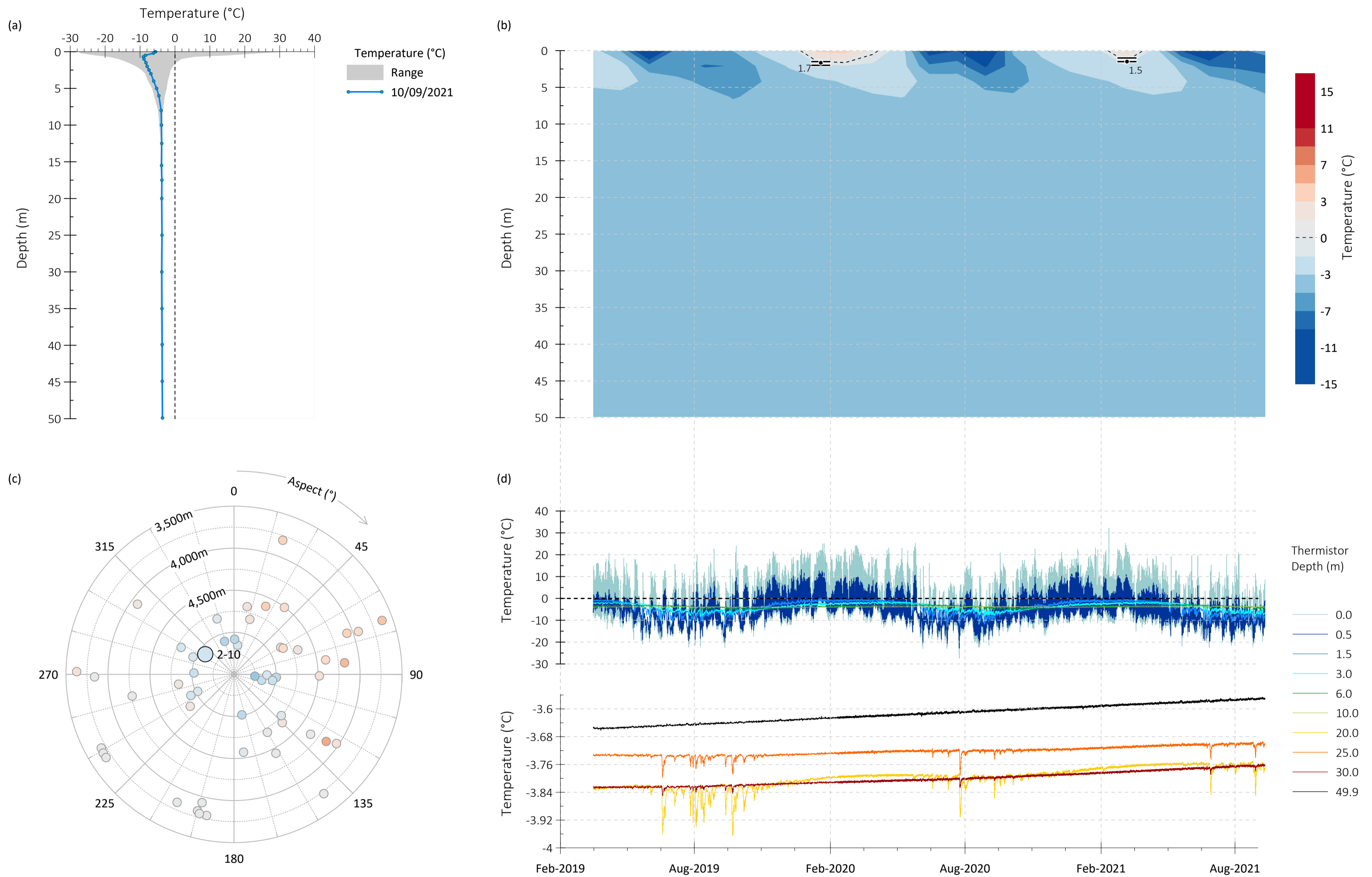
Figure S19: Ground thermal regime for Borehole 2-10 (El. = 5,082 m, Colluvium). Hourly measurements collected between 17/03/2019 and 10/09/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-10 (T= -3.77 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 2-10. Full dataset includes measurements from 24 sensors.
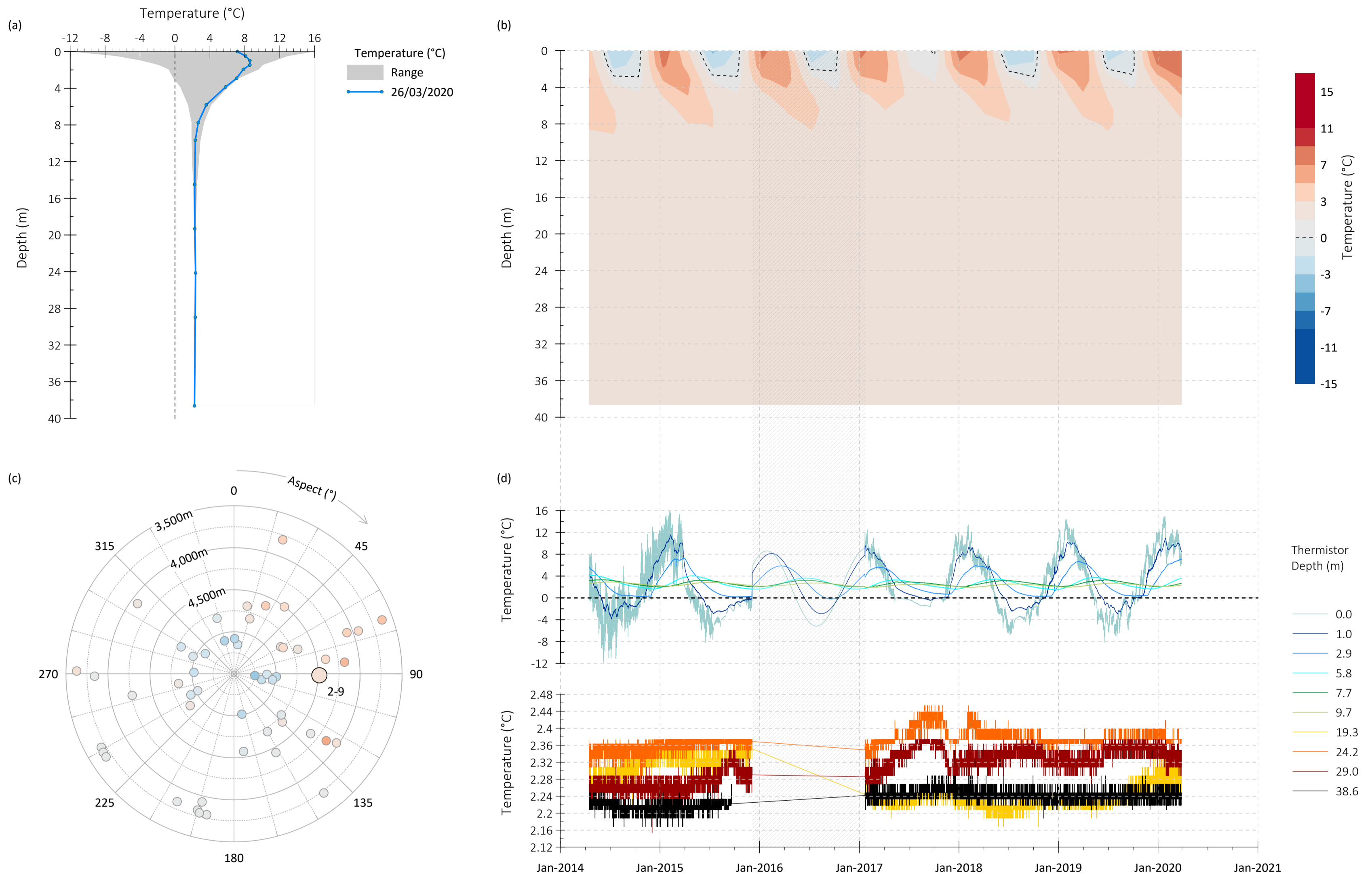
Figure S18: Ground thermal regime for Borehole 2-9 (El. = 4,484 m, Colluvium). Measurements collected approximately every 4 hours between 15/04/2014 and 26/03/2020. Interpolated data indicated by grey hatched areas. No data available at thermistor 1.9 m after 2017/01/21.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 2-9 (T= 2.28 °C, depth=19.3 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 2-9. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
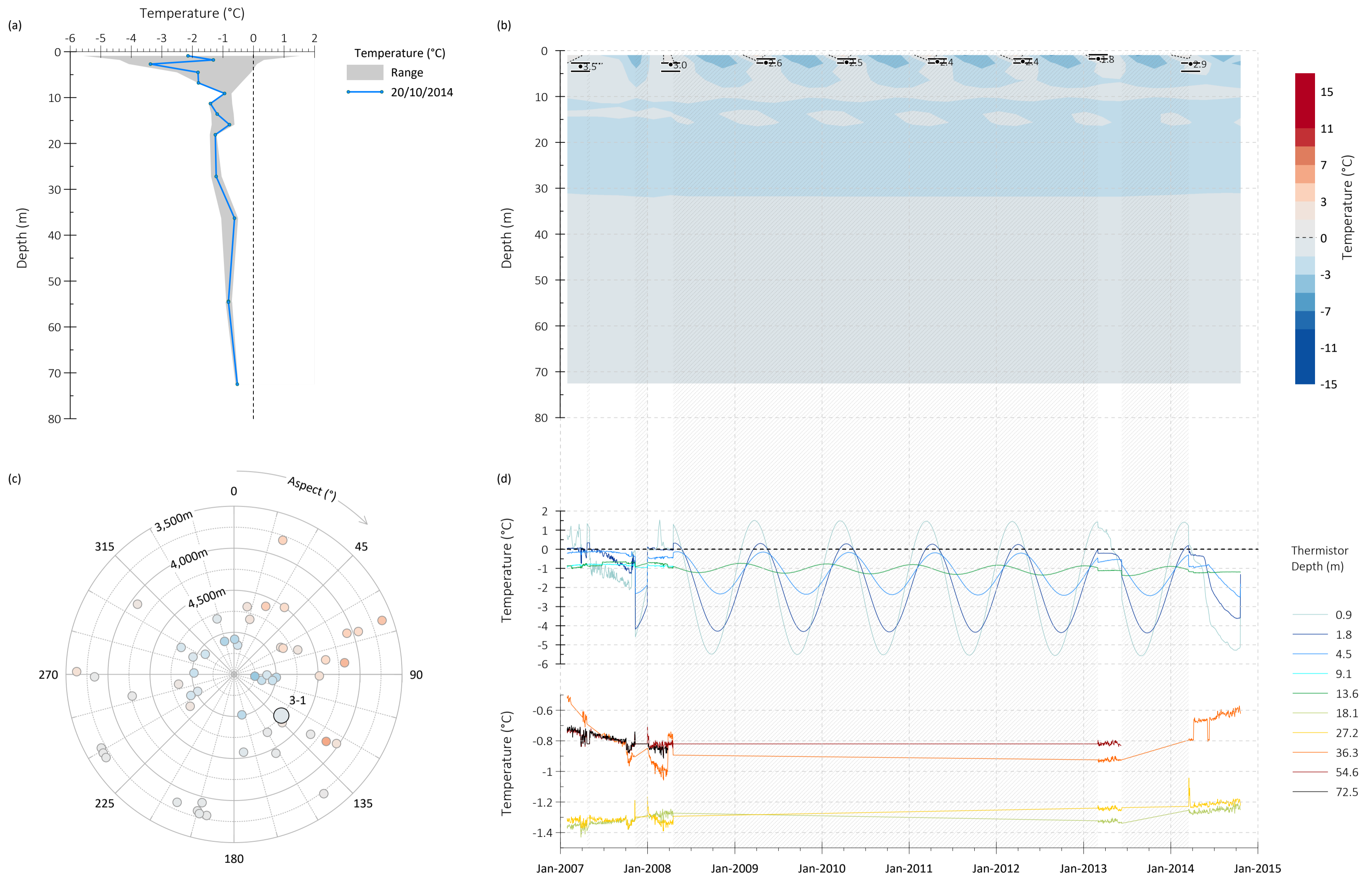
Figure S20: Ground thermal regime for Borehole 3-1 (El. = 4,754 m, Thin colluvium / weathered bedrock). Daily measurements collected between 27/01/2007 and 20/10/2014. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-1 (T= -1.25 °C, depth=18.1 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-1. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
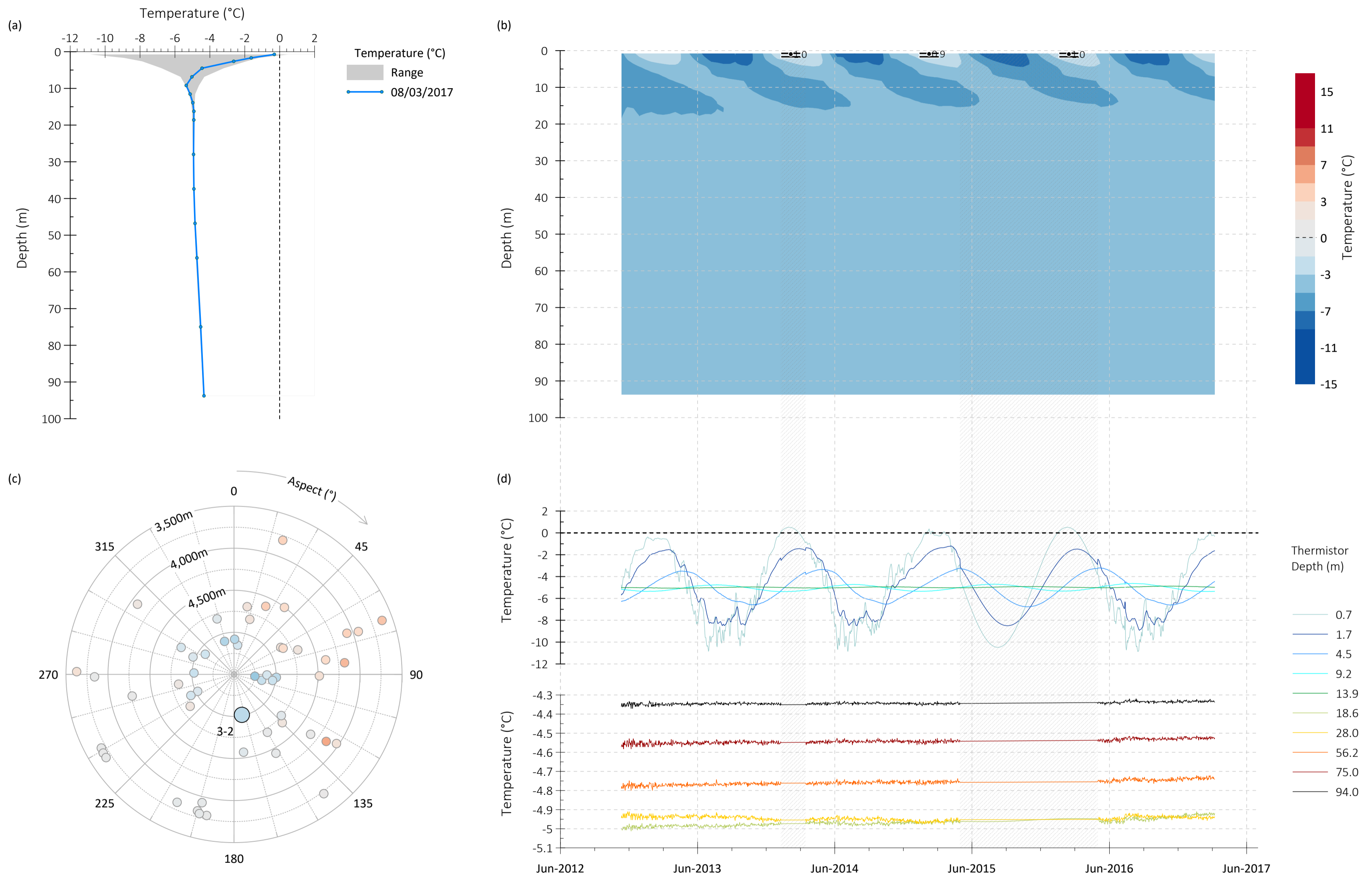
Figure S21: Ground thermal regime for Borehole 3-2 (El. = 5,010 m, Bedrock). Daily measurements collected between 10/11/2012 and 08/03/2017. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-2 (T= -4.92 °C, depth=18.6 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-2. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
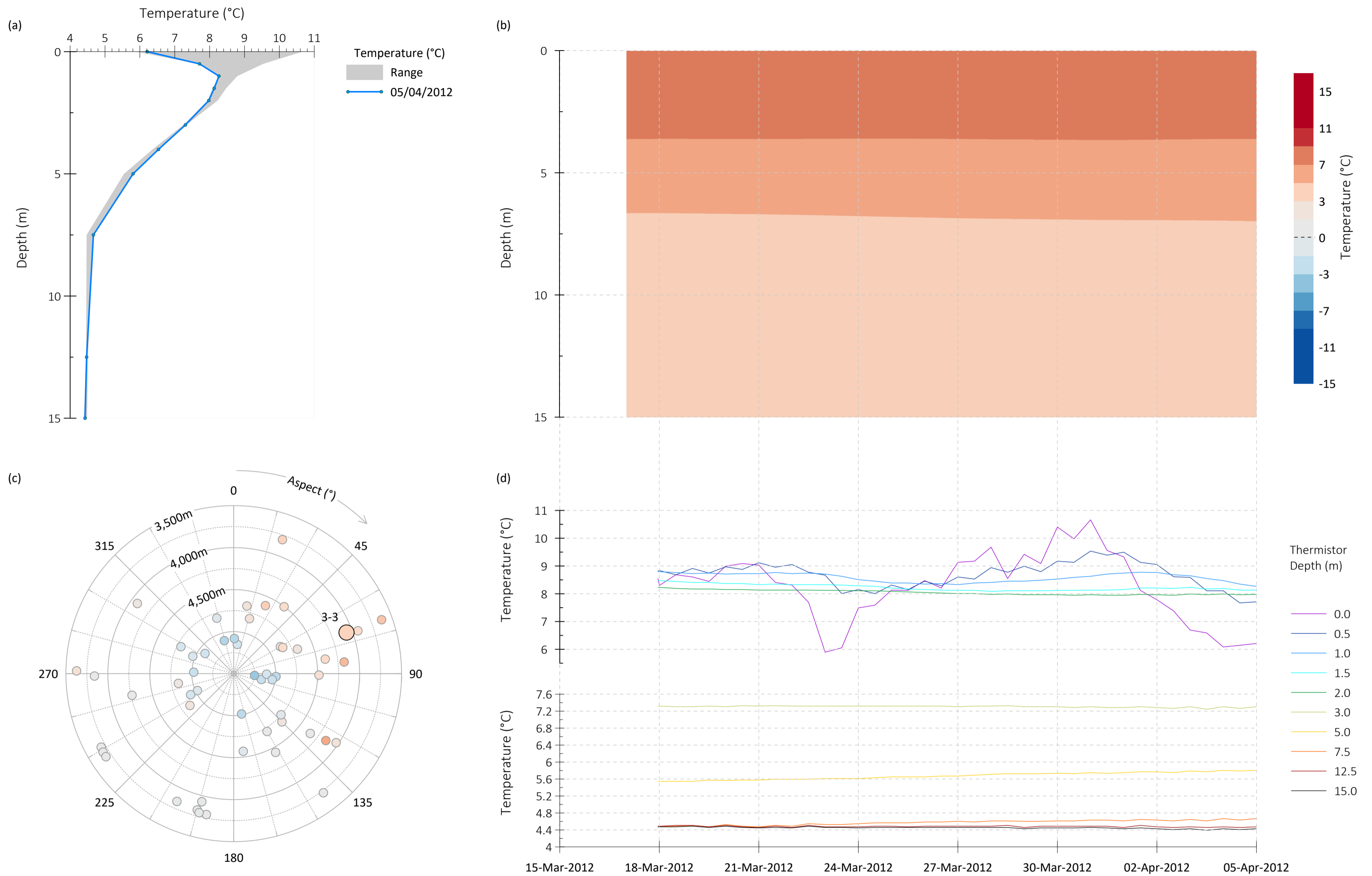
Figure S22: Ground thermal regime for Borehole 3-3 (El. = 4,070 m, Colluvium). Measurements collected approximately every 12 hours between 17/03/2012 and 05/04/2012.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-3 (T= 4.42 °C, depth=15 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-3. Full dataset includes measurements from 11 sensors.
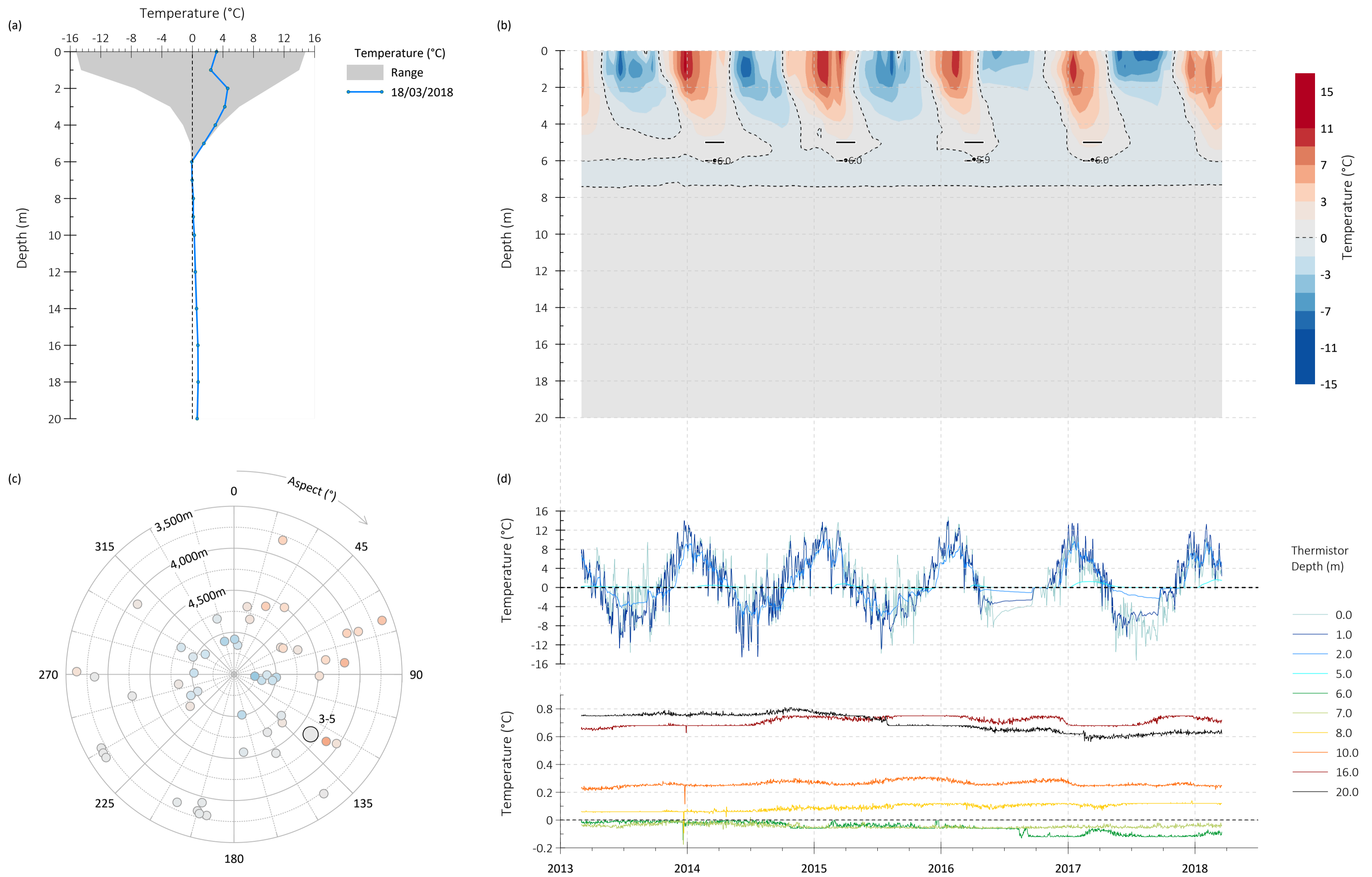
Figure S23: Ground thermal regime for Borehole 3-5 (El. = 4,343 m, Colluvium). Daily measurements collected between 02/03/2013 and 18/03/2018.

(a) Temperature depth profile. Range estimated using daily raw data. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-5 (T= -0.04 °C, depth=7 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-5. Full dataset includes measurements from 16 sensors.
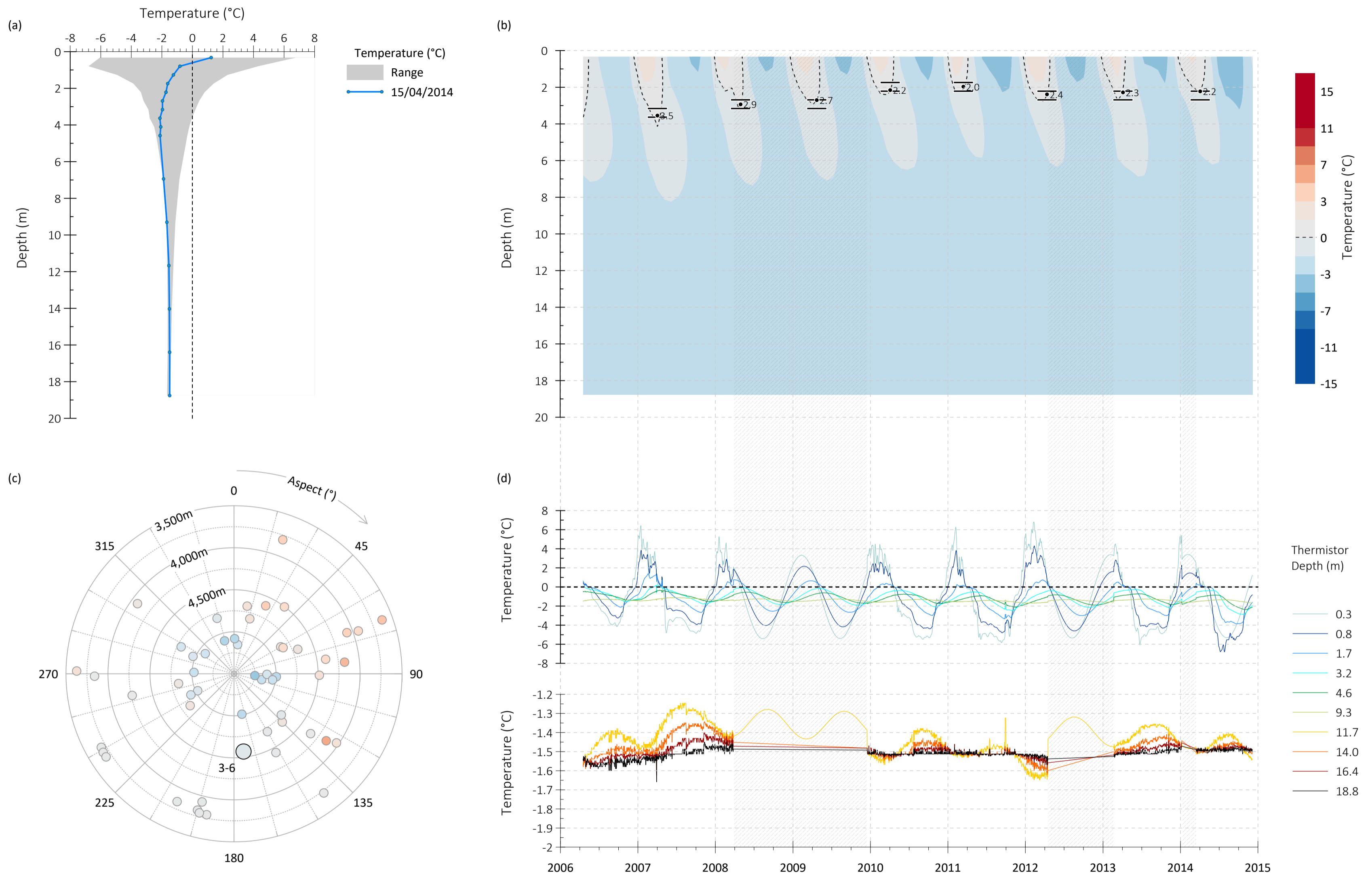
Figure S24: Ground thermal regime for Borehole 3-6 (El. = 4,568 m, Colluvium). Daily measurements collected between 18/04/2006 and 15/04/2014. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-6 (T= -1.49 °C, depth=18.8 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-6. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
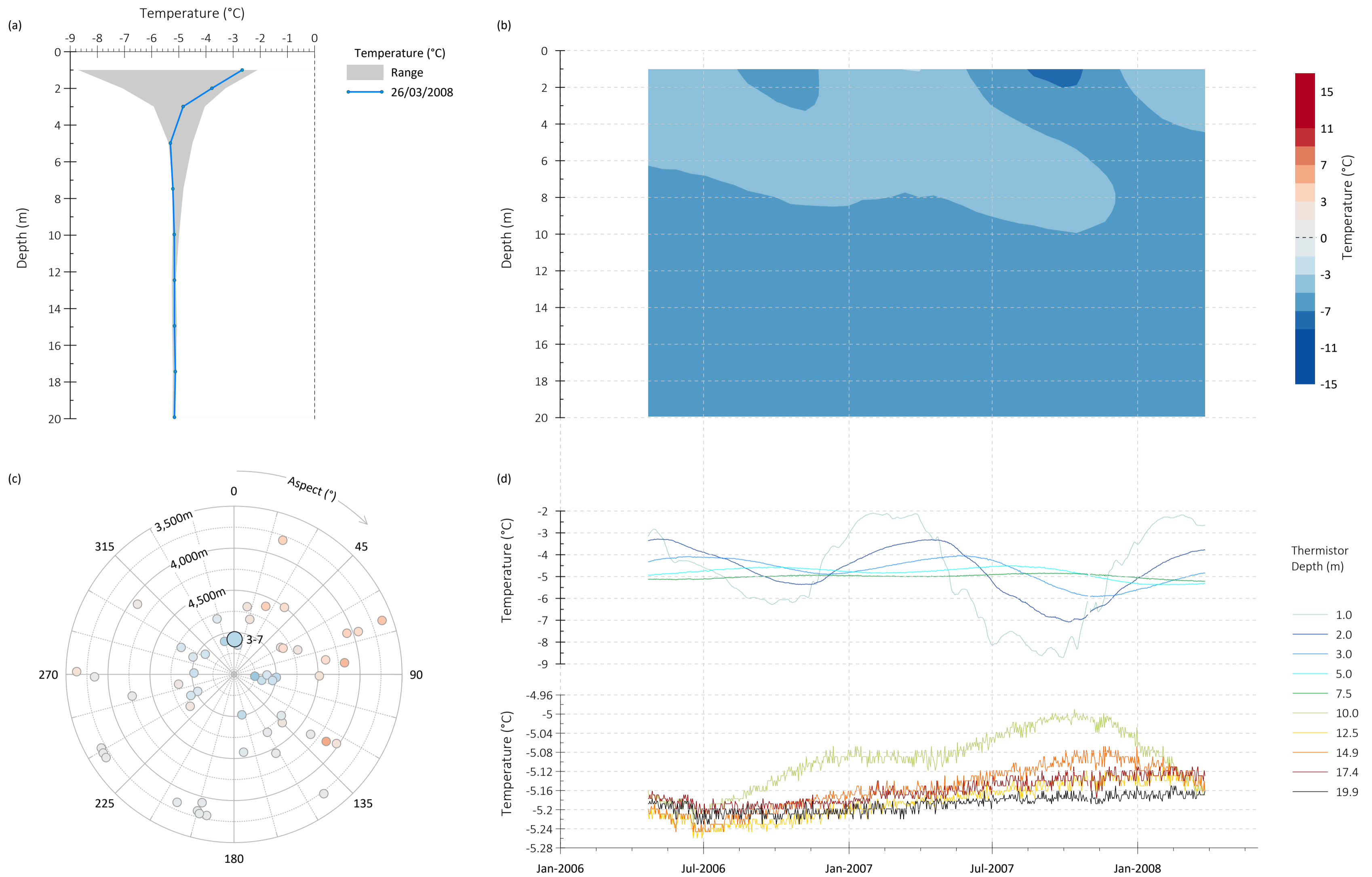
Figure S25: Ground thermal regime for Borehole 3-7 (El. = 5,082 m, Colluvium / weathered bedrock). Daily measurements collected between 22/04/2006 and 26/03/2008.

(a) Temperature depth profile. Range estimated using daily raw data. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-7 (T= -5.17 °C, depth=19.9 m) is indicated by enlarged symbol.
(d) Raw temperature time-series shown for all available sensors.
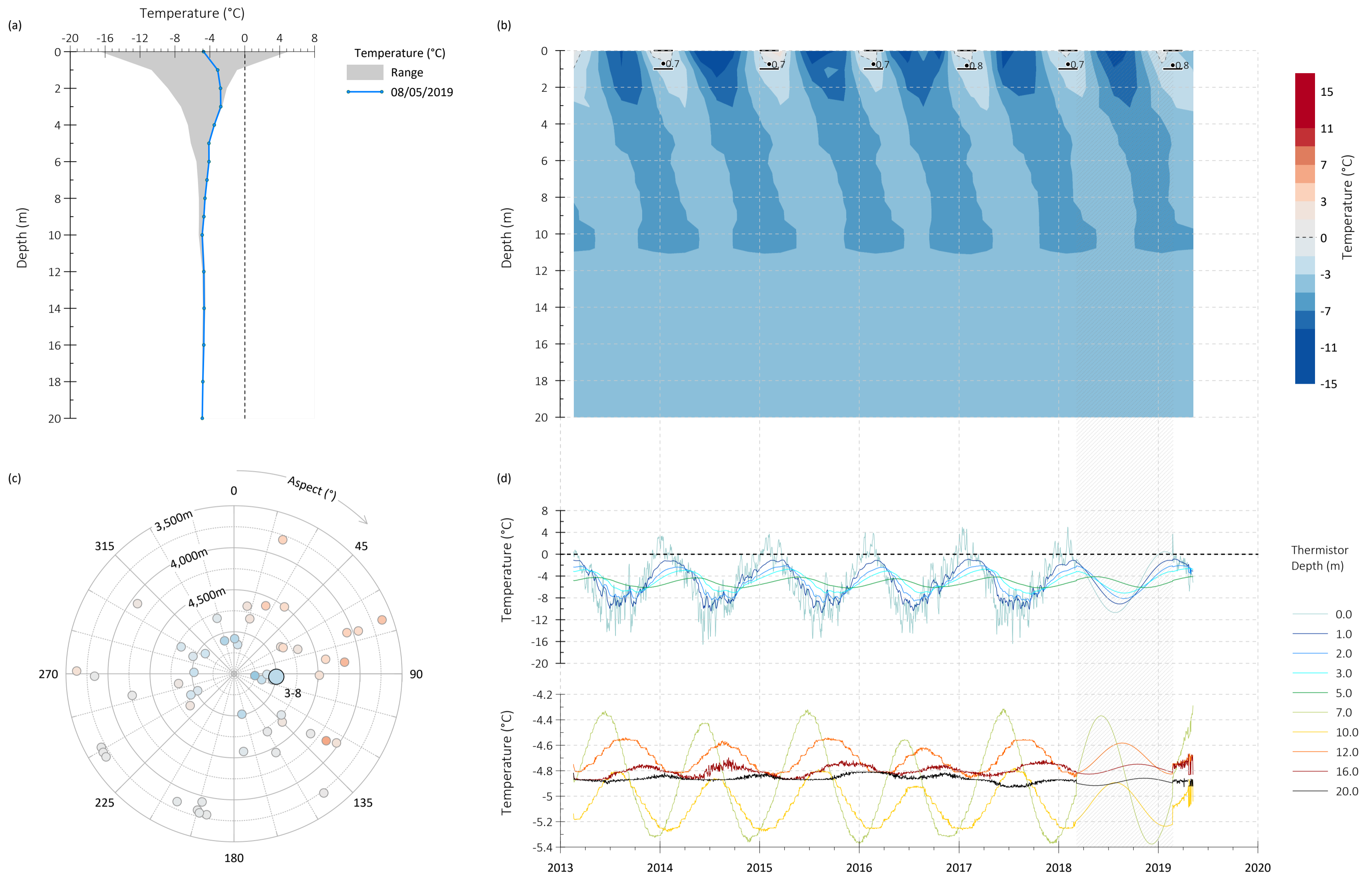
Figure S26: Ground thermal regime for Borehole 3-8 (El. = 4,995 m, Bedrock). Daily measurements collected between 18/02/2013 and 08/05/2019. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-8 (T= -4.89 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-8. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
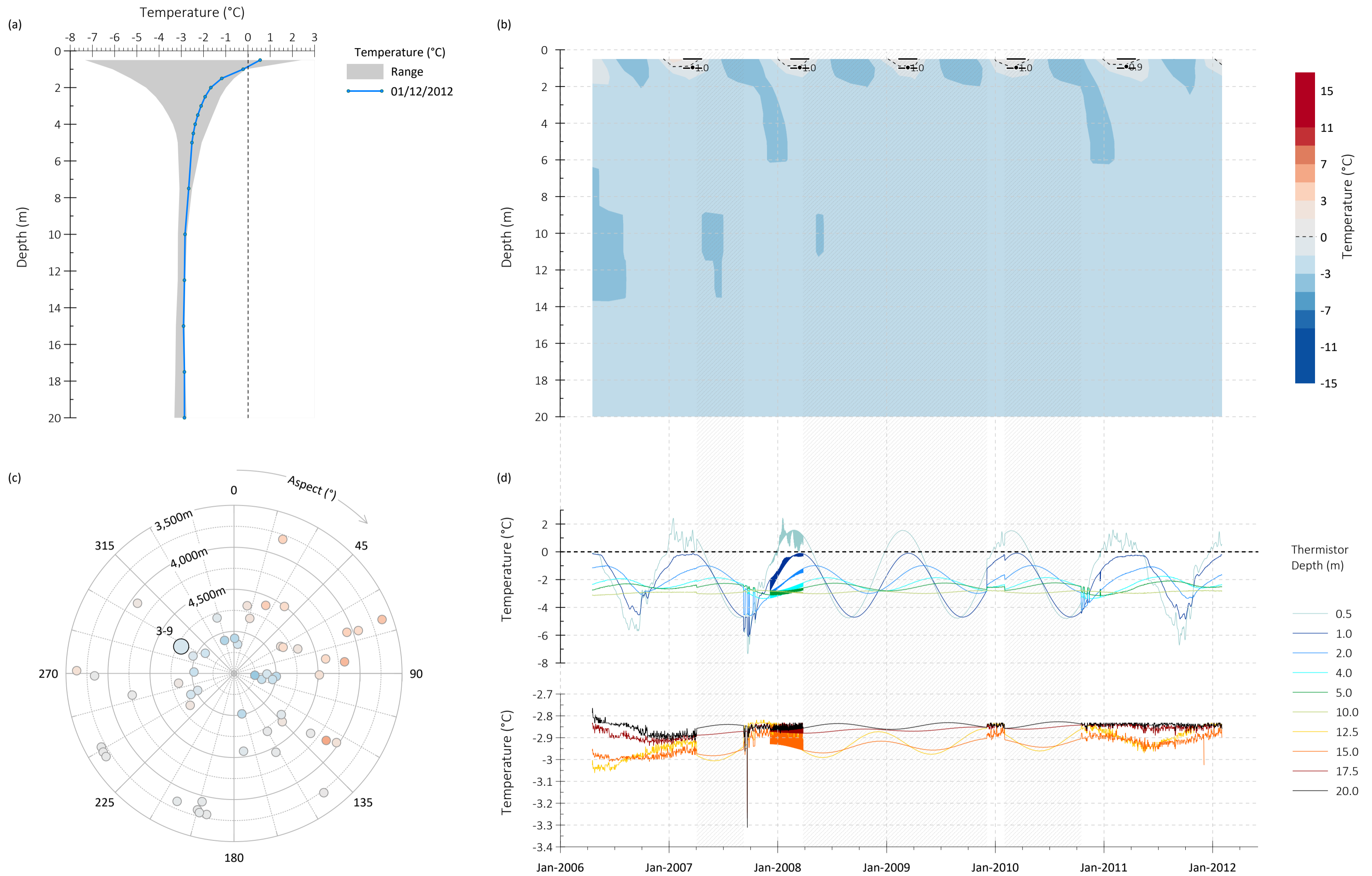
Figure S27: Ground thermal regime for Borehole 3-9 (El. = 4,794 m, Bedrock). Daily measurements collected between 18/04/2006 and 01/02/2012. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-9 (T= -2.86 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-9. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
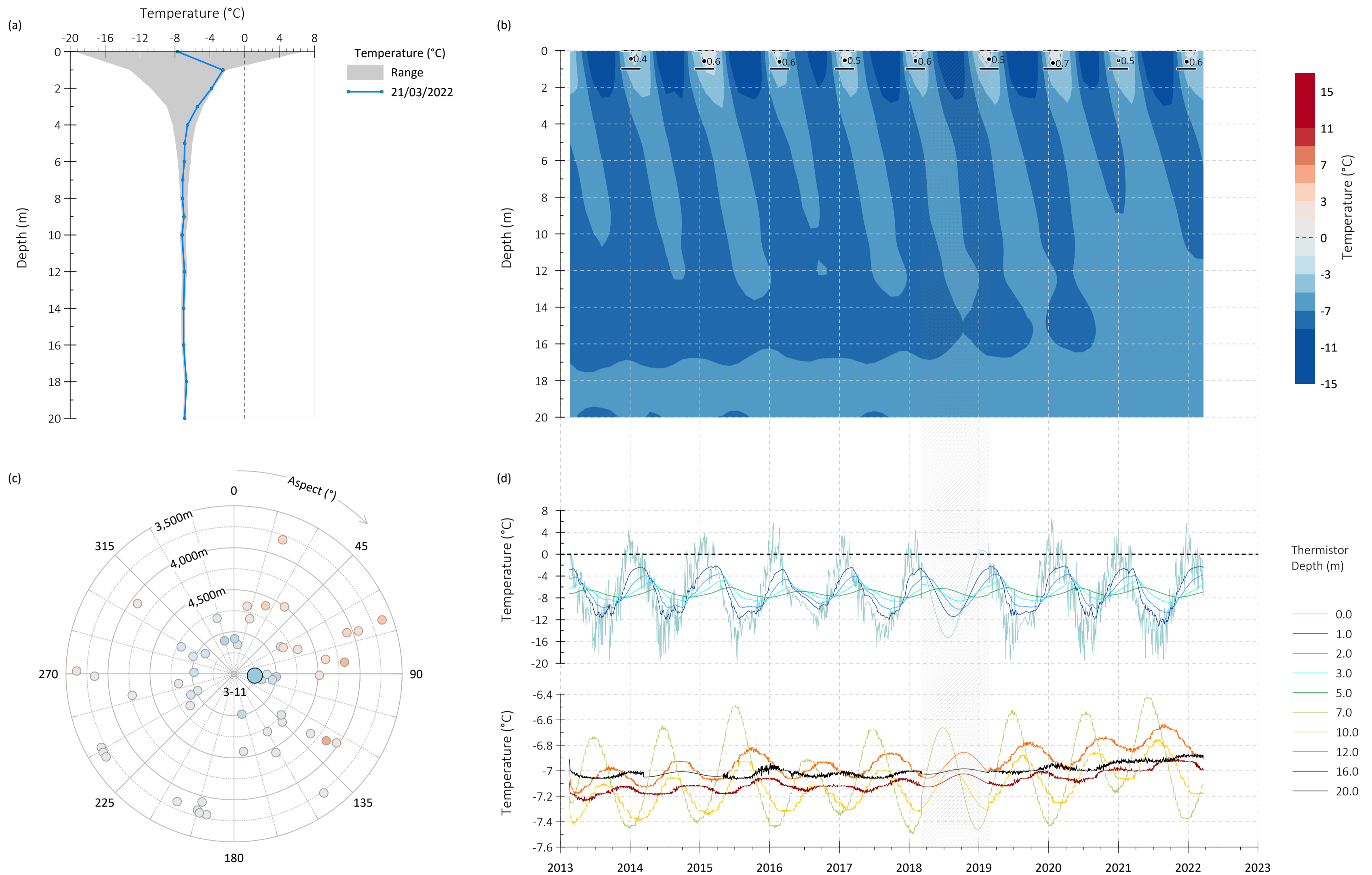
Figure S28: Ground thermal regime for Borehole 3-11 (El. = 5,251 m, Bedrock). Daily measurements collected between 02/03/2013 and 21/03/2022. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-11 (T= -6.89 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-11. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
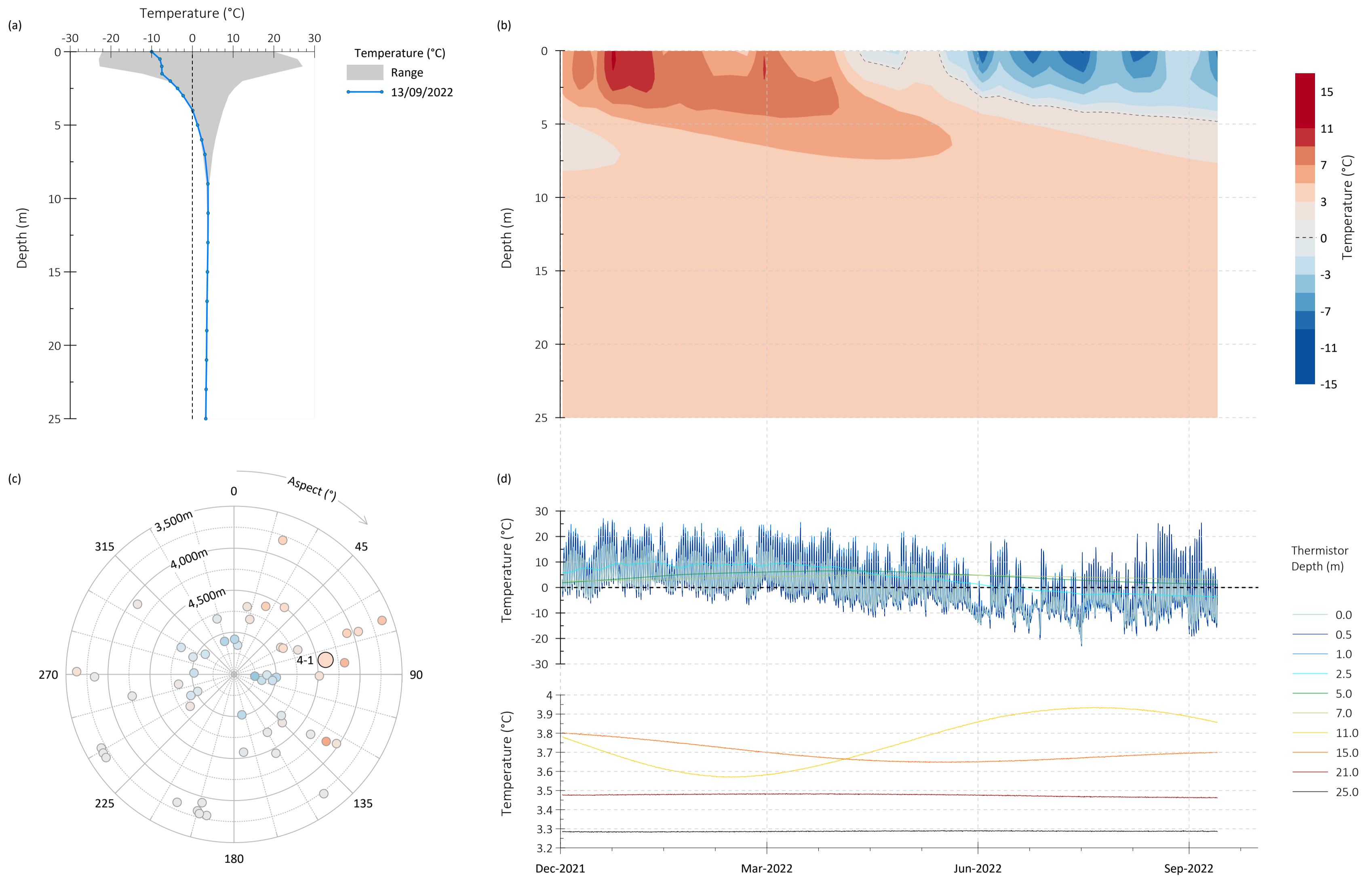
Figure S30: Ground thermal regime for Borehole 4-1 (El. = 4,396 m, Colluvium). Measurements collected approximately every 4 hours between 01/12/2021 and 13/09/2022.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 4-1 (T= 3.46 °C, depth=21 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 4-1. Full dataset includes measurements from 19 sensors.
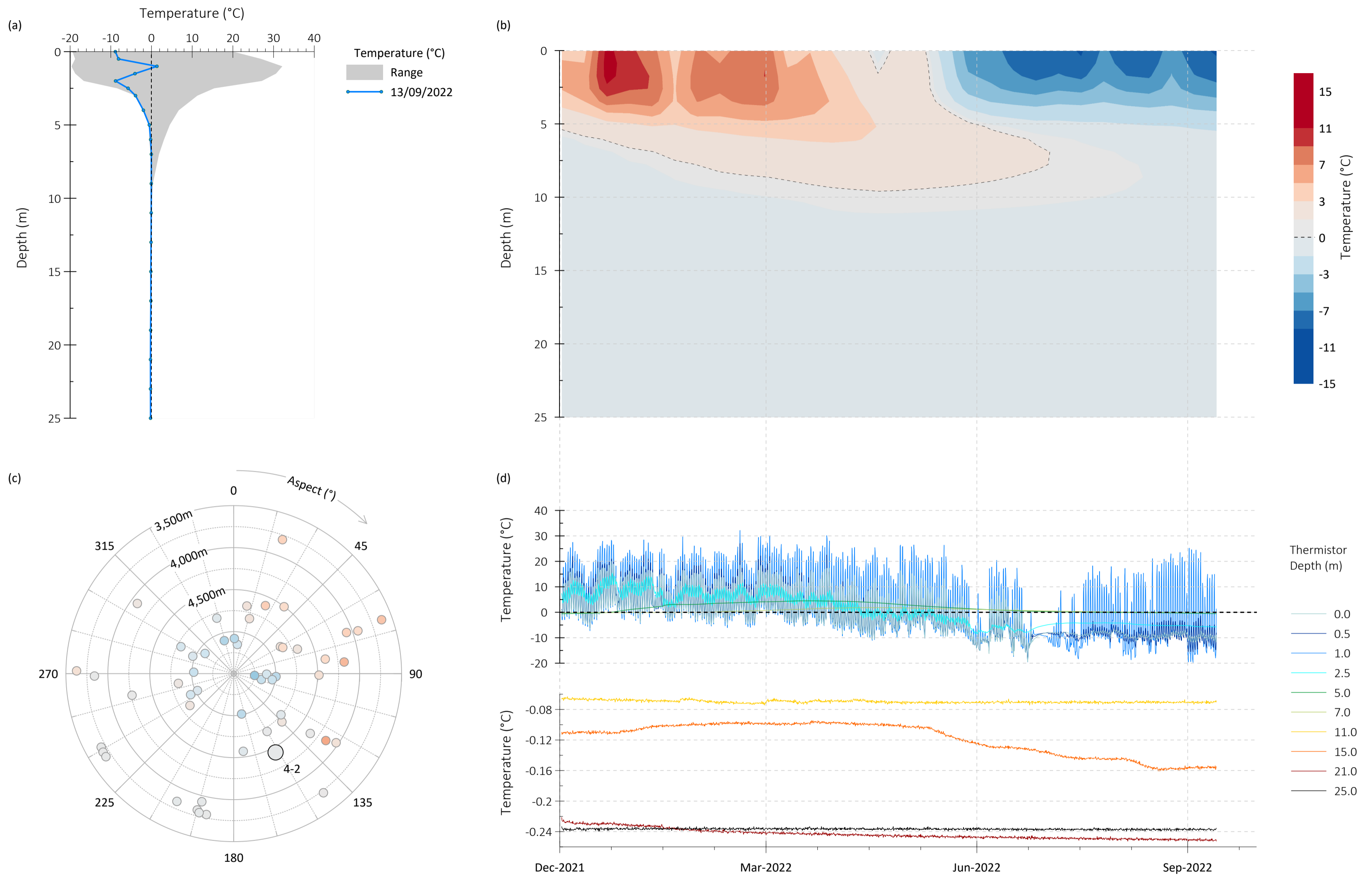
Figure S31: Ground thermal regime for Borehole 4-2 (El. = 4,438 m, Colluvium). Measurements collected approximately every 4 hours between 01/12/2021 and 13/09/2022.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 4-2 (T= -0.25 °C, depth=21 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 4-2. Full dataset includes measurements from 19 sensors.
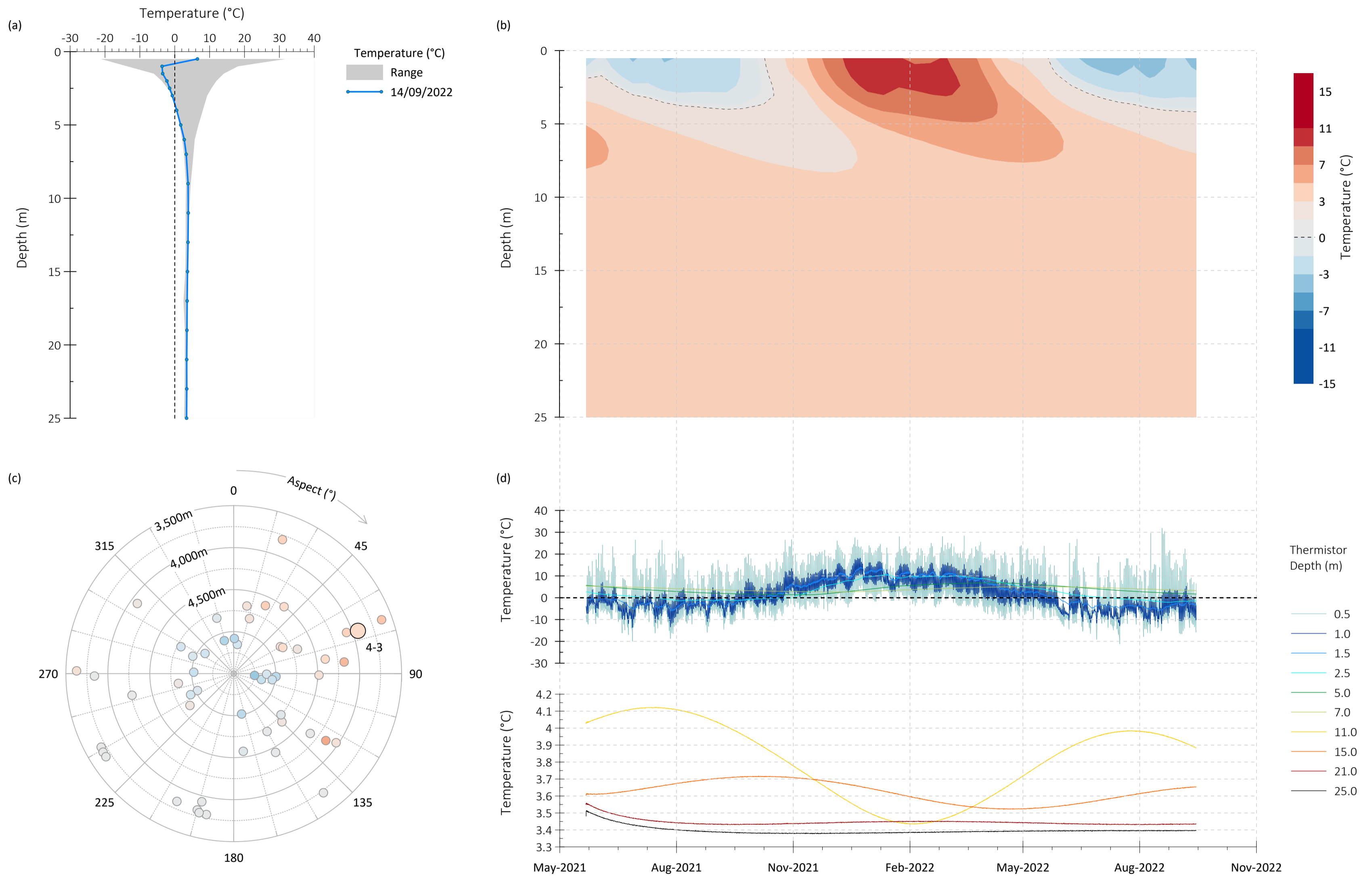
Figure S32: Ground thermal regime for Borehole 4-3 (El. = 3,935 m, Colluvium). Measurements collected approximately every 4 hours between 21/05/2021 and 14/09/2022.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 4-3 (T= 3.43 °C, depth=21 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 4-3. Full dataset includes measurements from 19 sensors.
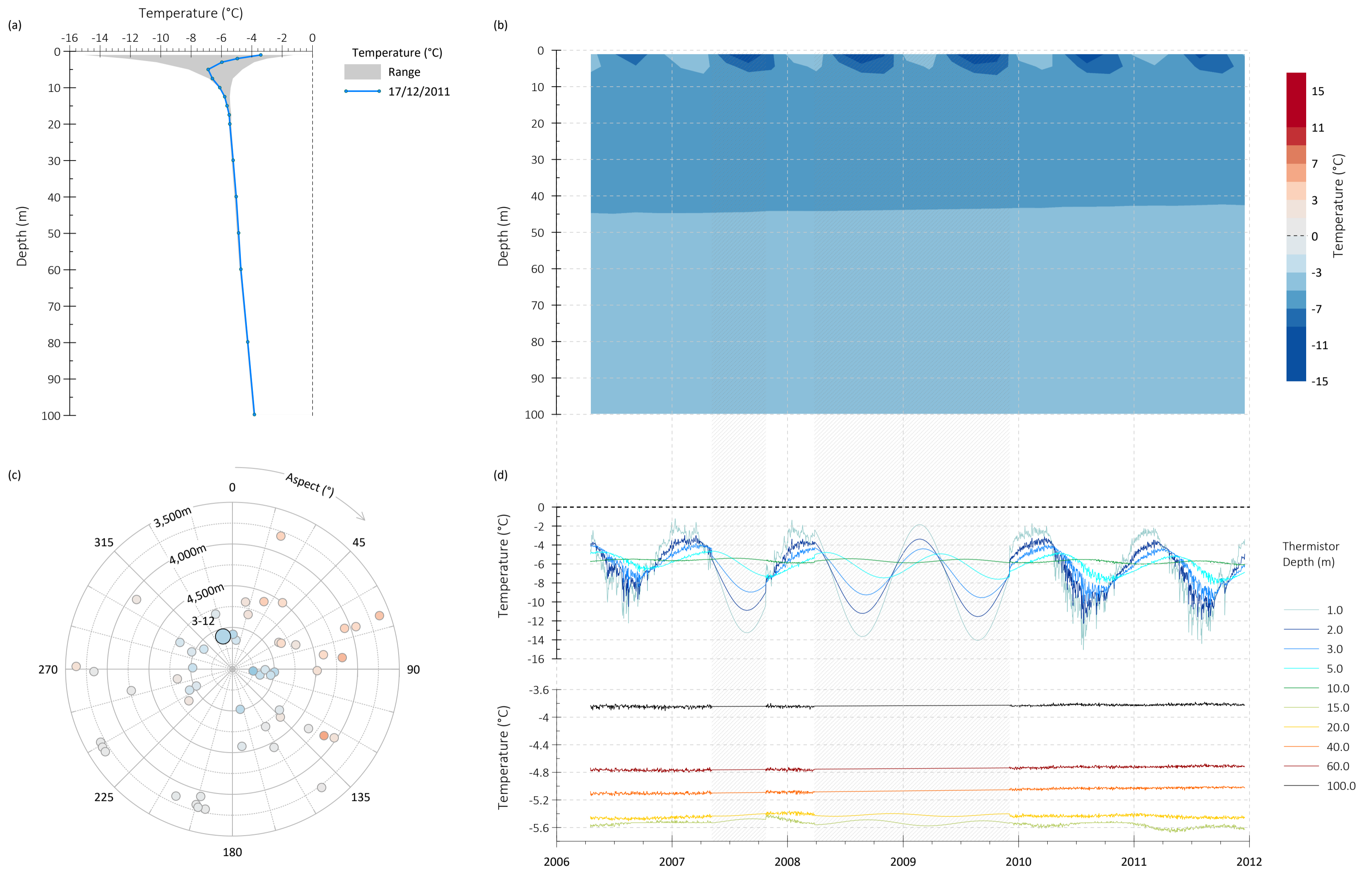
Figure S29: Ground thermal regime for Borehole 3-12 (El. = 5,092 m, Bedrock (thin weathered overburden)). Daily measurements collected between 18/04/2006 and 17/12/2011. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using daily raw data and interpolated values. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 3-12 (T= -5.45 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 3-12. Full dataset includes measurements from 16 sensors. Daily interpolated values are also shown.
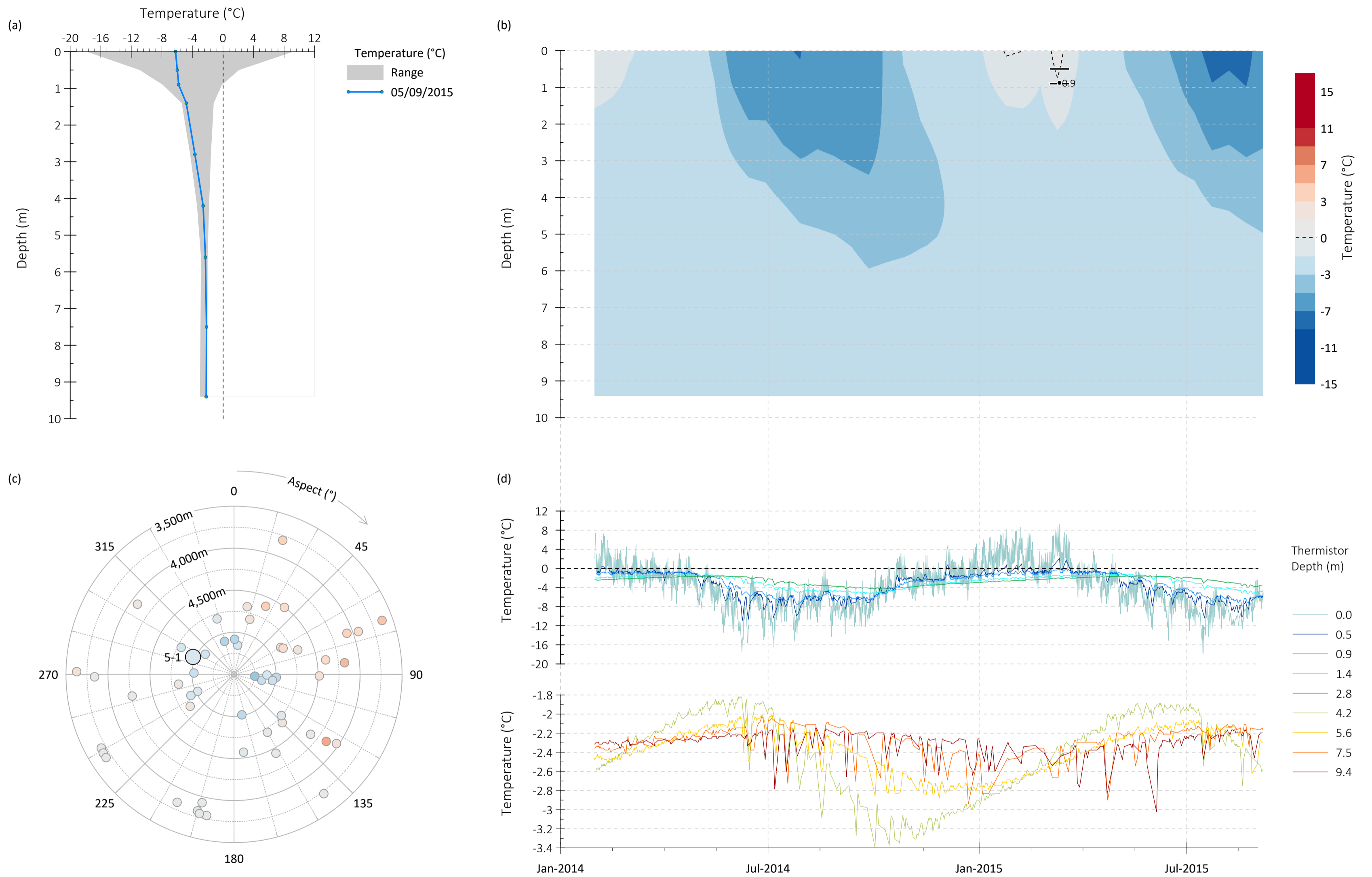
Figure S33: Ground thermal regime for Borehole 5-1 (El. = 4,970 m, Colluvium (thin veneer)). Measurements collected approximately every 4 hours between 30/01/2014 and 05/09/2015.
Monitoring discontinued in 2015 due to erosional feature.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 5-1 (T= -2.21 °C, depth=9.4 m) is indicated by enlarged symbol.
(d) Raw temperature time-series shown for all available sensors.
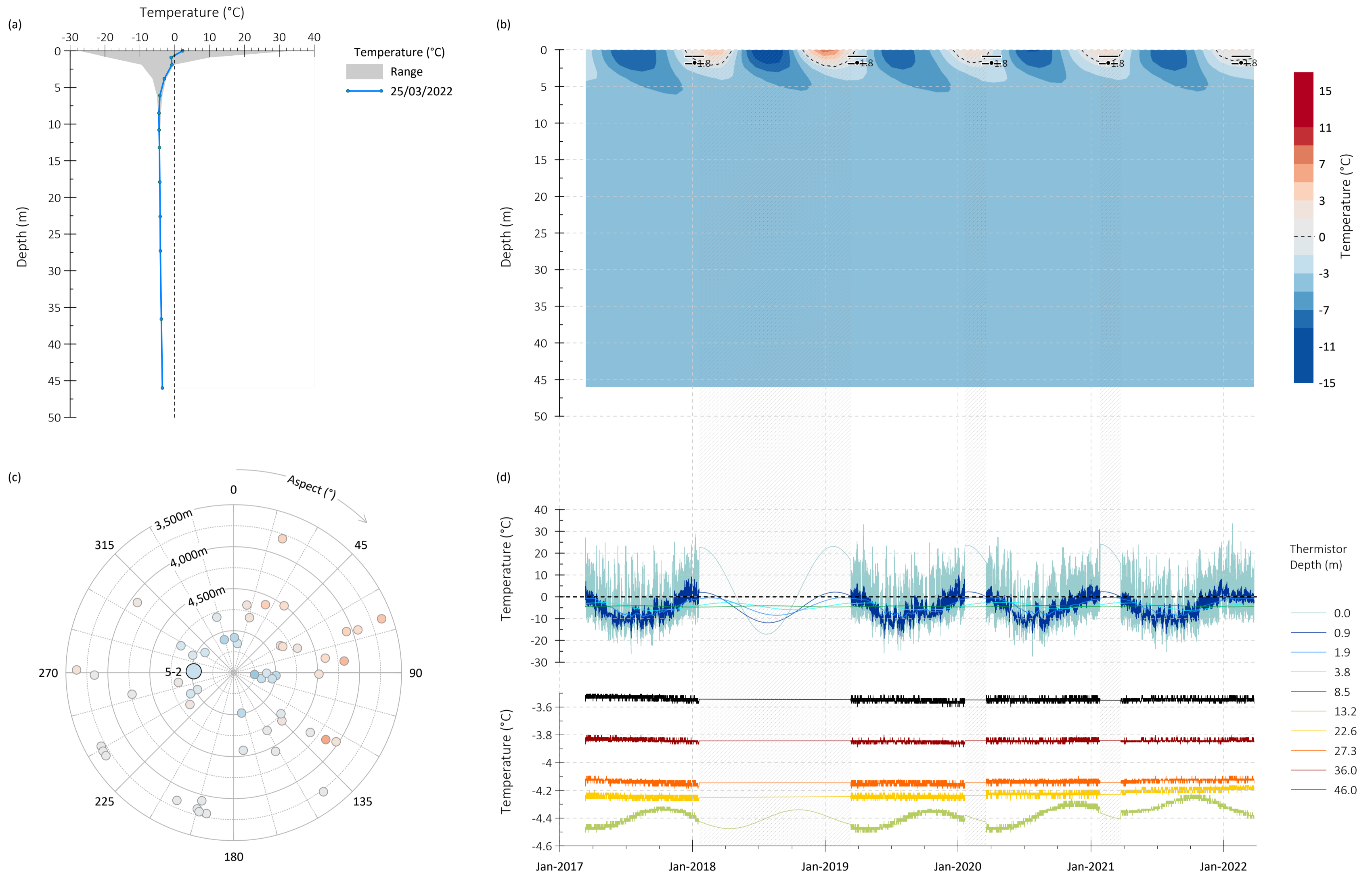
Figure S34: Ground thermal regime for Borehole 5-2 (El. = 5,023 m, Colluvium (thin veneer)). Measurements collected approximately every 6 hours between 12/03/2017 and 25/03/2022. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 5-2 (T= -4.18 °C, depth=22.6 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 5-2. Full dataset includes measurements from 13 sensors. Daily interpolated values are also shown.
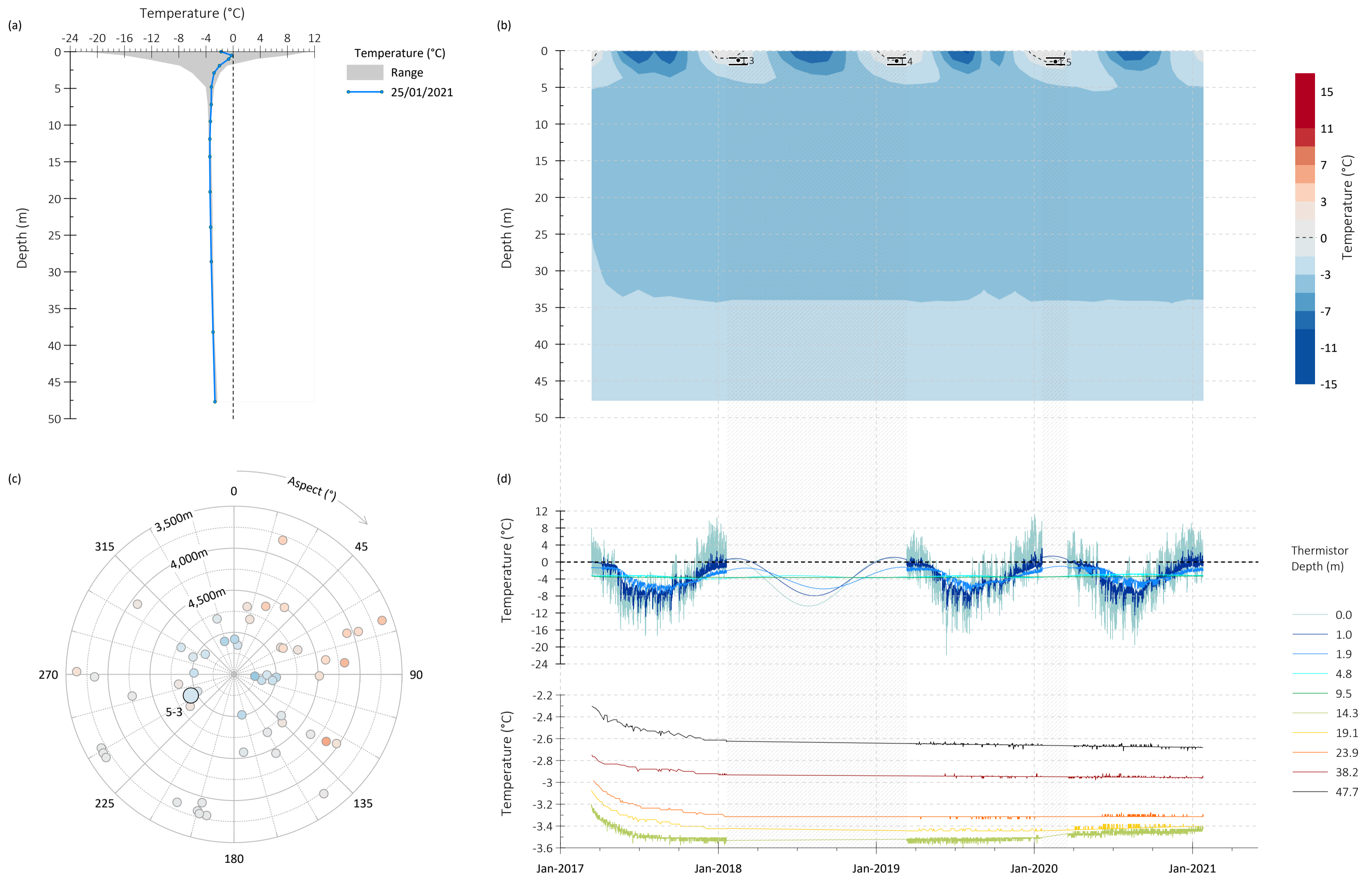
Figure S35: Ground thermal regime for Borehole 5-3 (El. = 4,928 m, Colluvium (thin veneer)). Measurements collected approximately every 4 hours between 13/03/2017 and 25/01/2021. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 5-3 (T= -3.4 °C, depth=19.1 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 5-3. Full dataset includes measurements from 15 sensors. Daily interpolated values are also shown.
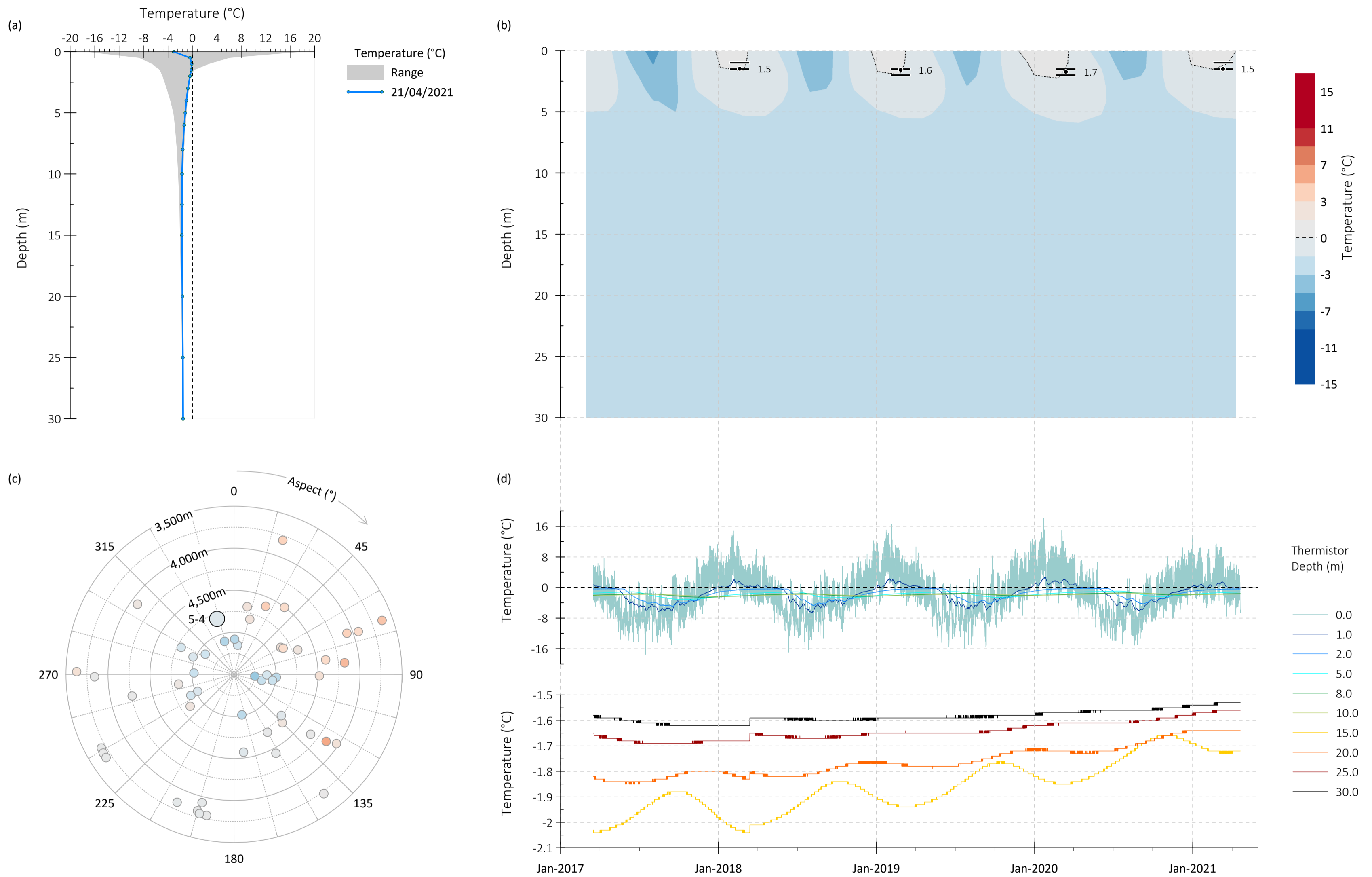
Figure S36: Ground thermal regime for Borehole 5-4 (El. = 4,810 m, highly weathered bedrock). Measurements collected approximately every 4 hours between 18/03/2017 and 21/04/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 5-4 (T= -1.56 °C, depth=25 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 5-4. Full dataset includes measurements from 16 sensors.
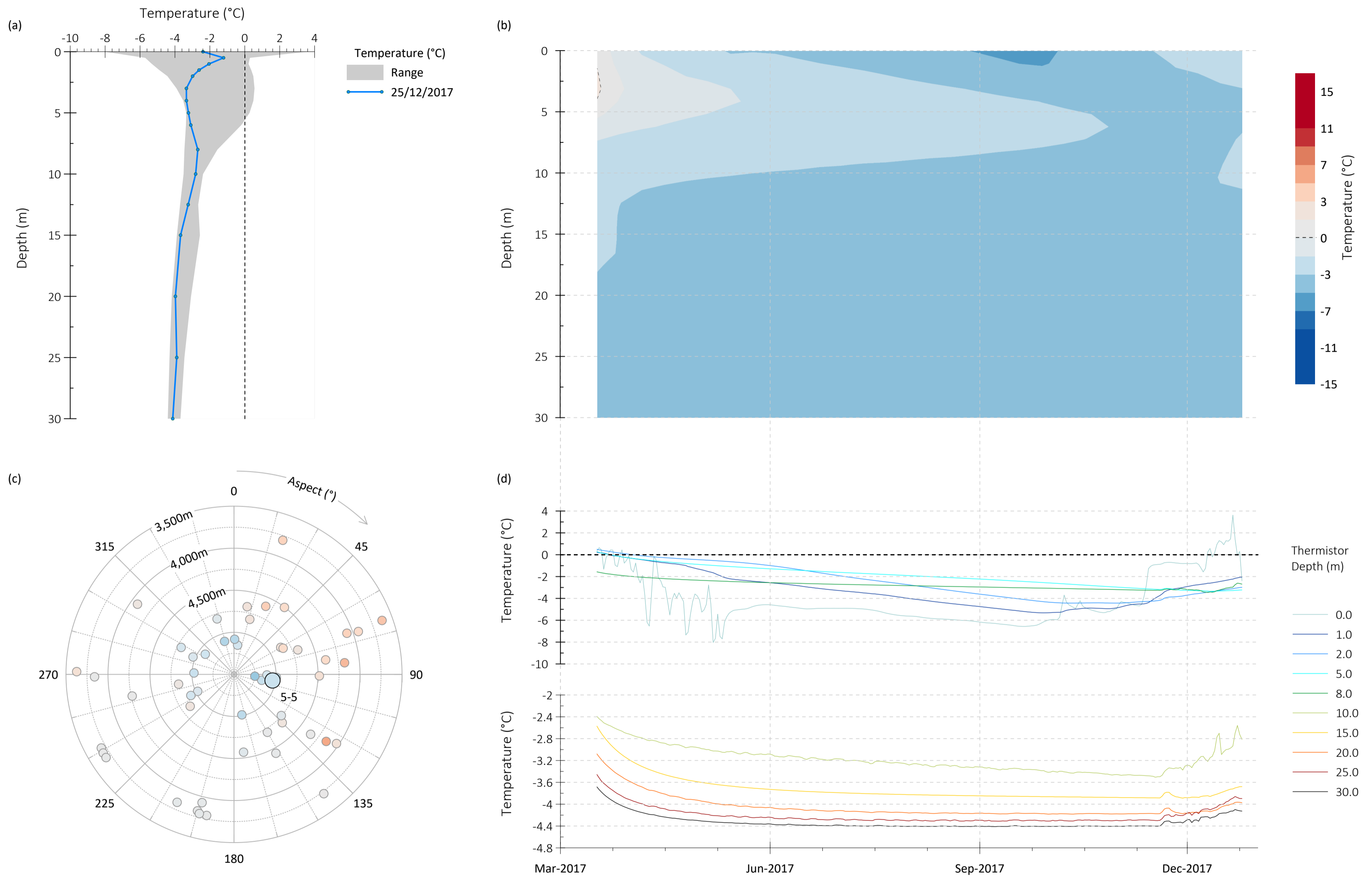
Figure S37: Ground thermal regime for Borehole 5-5 (El. = 5,036 m, Bedrock (weathered)). Daily measurements collected between 17/03/2017 and 25/12/2017.

(a) Temperature depth profile. Range estimated using daily raw data. Most recent available measurement shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from daily raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 5-5 (T= -4.08 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 5-5. Full dataset includes measurements from 16 sensors.
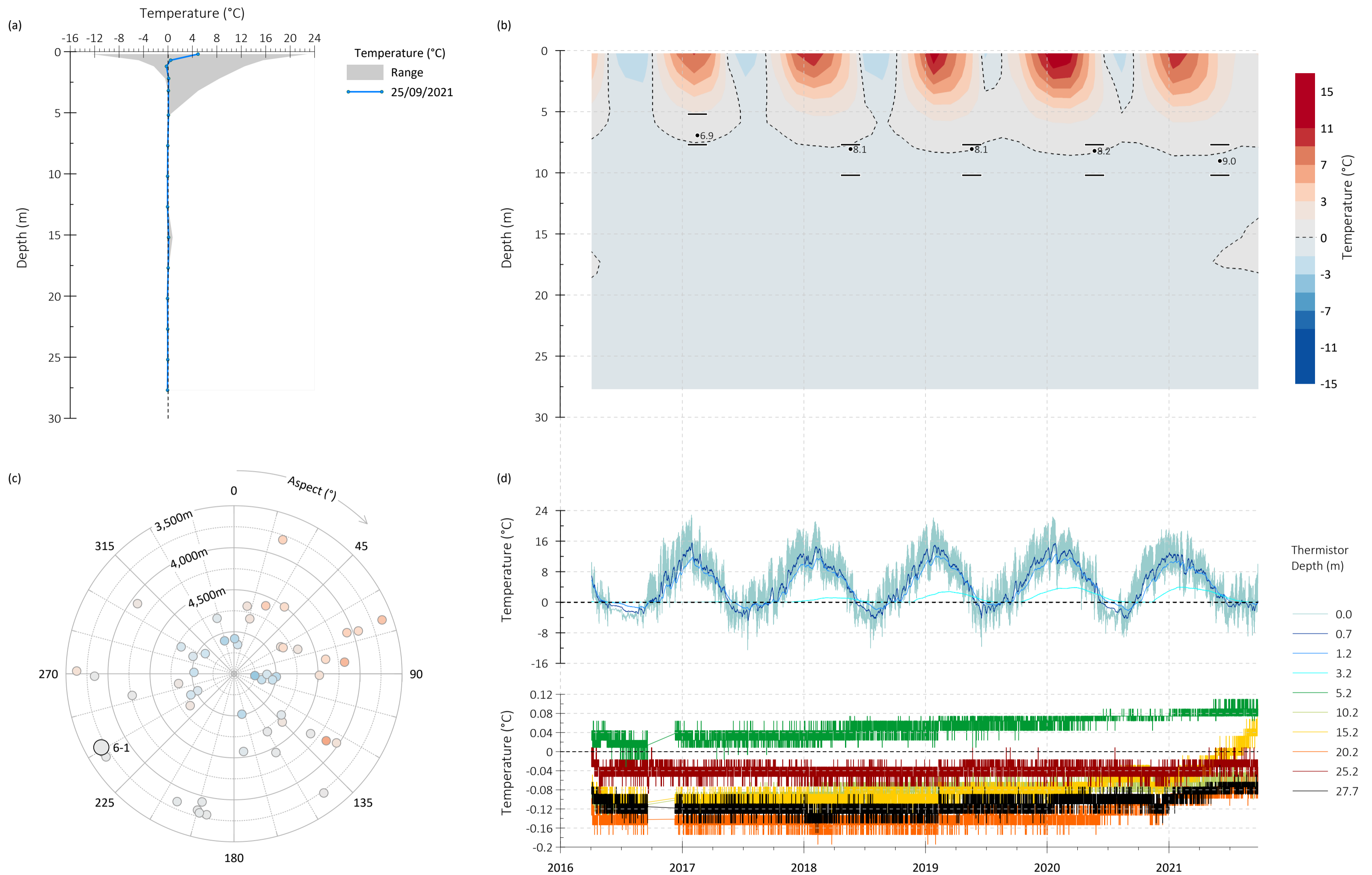
Figure S38: Ground thermal regime for Borehole 6-1 (El. = 3,694 m, Active Rock Glacier). Measurements collected approximately every 6 hours between 03/04/2016 and 25/09/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Depth to permafrost table indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-1 (T= -0.08 °C, depth=20.2 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-1. Full dataset includes measurements from 15 sensors.
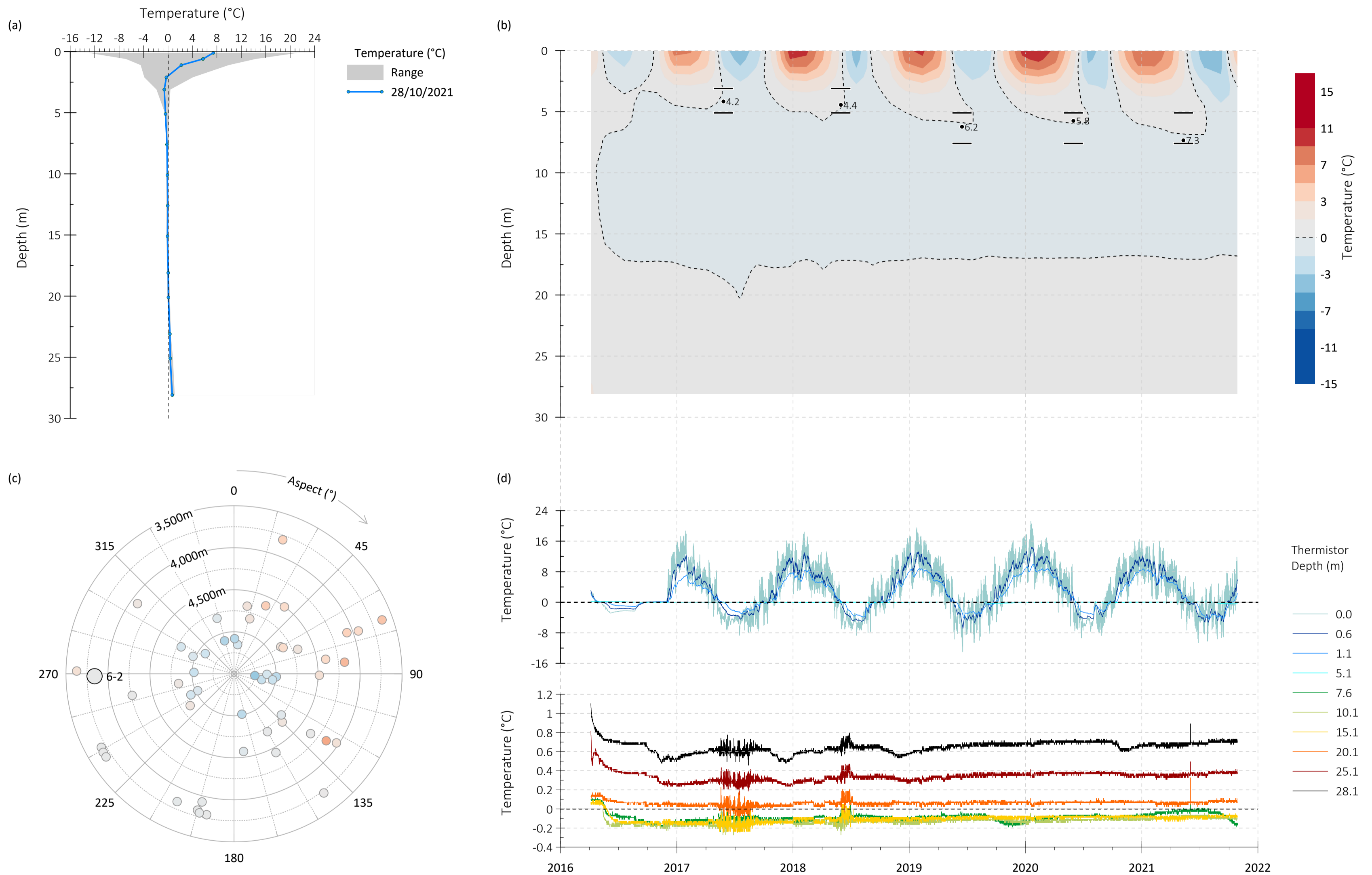
Figure S39: Ground thermal regime for Borehole 6-2 (El. = 3,840 m, Active Rock Glacier). Measurements collected approximately every 6 hours between 05/04/2016 and 28/10/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Depth to permafrost table indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-2 (T= -0.1 °C, depth=10.1 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 6-2. Full dataset includes measurements from 15 sensors.
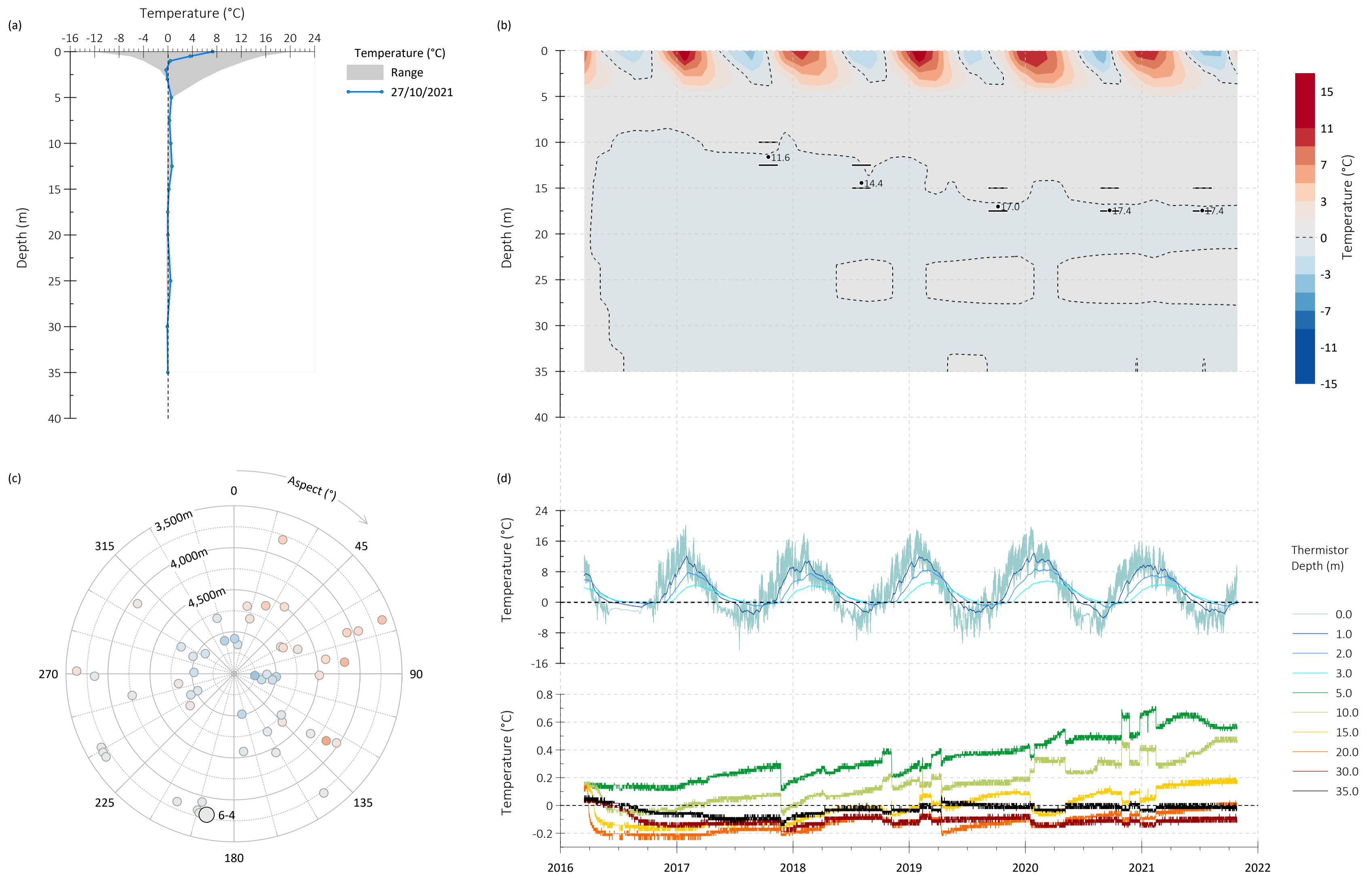
Figure S40: Ground thermal regime for Borehole 6-4 (El. = 3,791 m, Rock Glacier). Measurements collected approximately every 6 hours between 15/03/2016 and 27/10/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data. Depth to permafrost table indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-4 (T= -0.1 °C, depth=30 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-4. Full dataset includes measurements from 15 sensors.
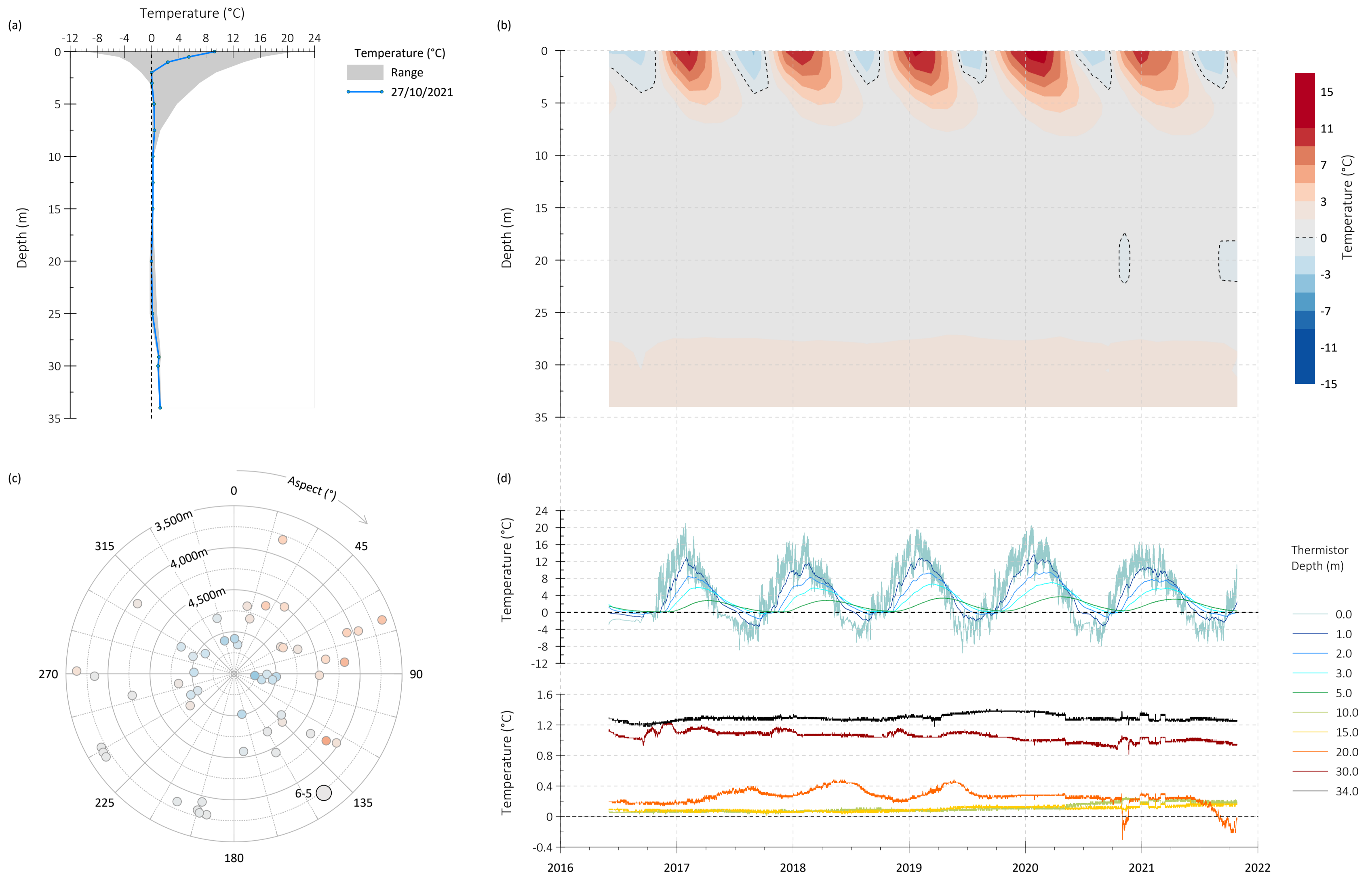
Figure S41: Ground thermal regime for Borehole 6-5 (El. = 3,724 m, Rock Glacier). Measurements collected approximately every 6 hours between 01/06/2016 and 27/10/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-5 (T= 0.16 °C, depth=15 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-5. Full dataset includes measurements from 15 sensors.
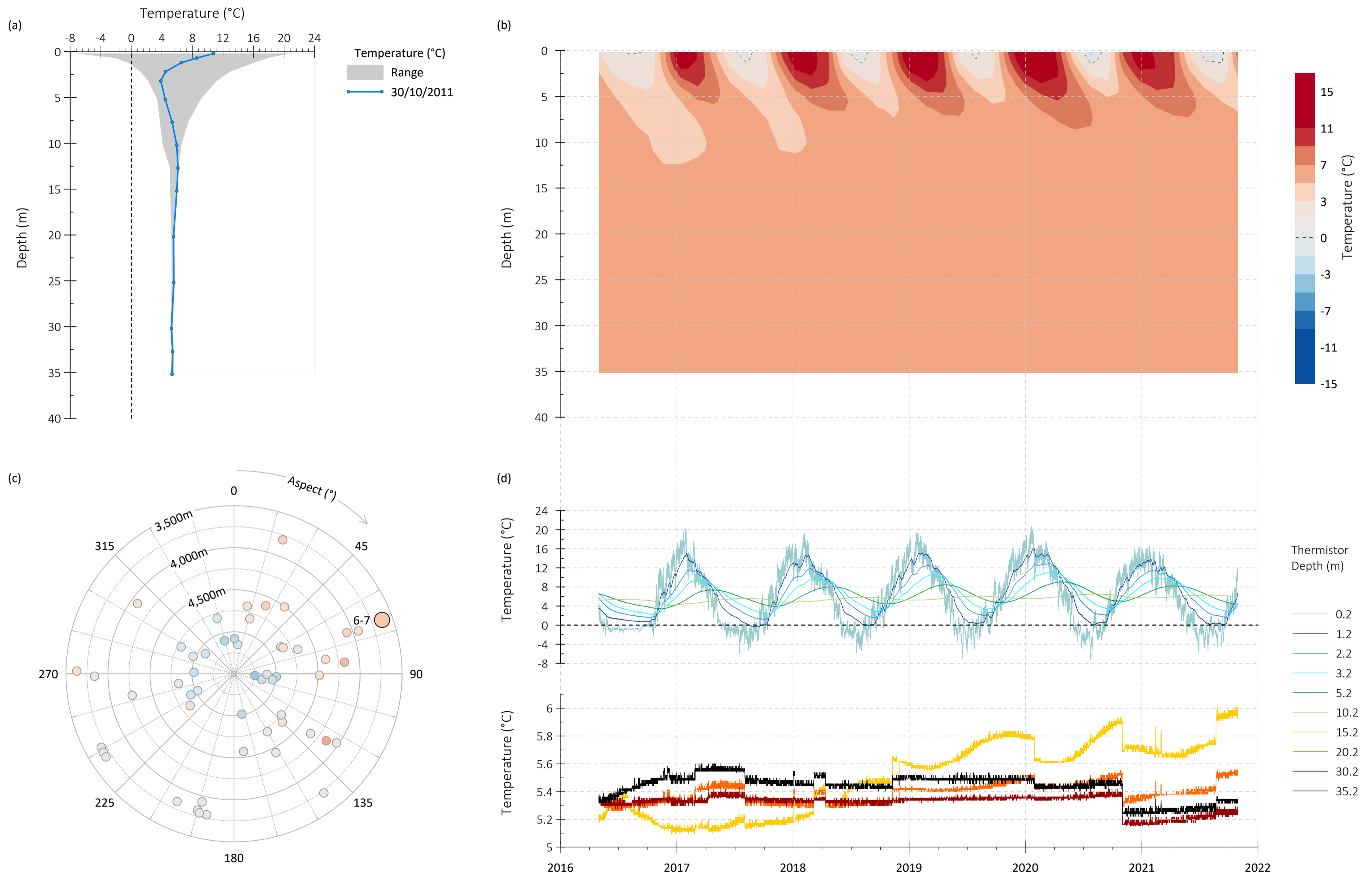
Figure S42: Ground thermal regime for Borehole 6-7 (El. = 3,625 m, Glacial Deposits). Measurements collected approximately every 4 hours between 30/04/2016 and 30/10/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-7 (T= 5.45 °C, depth=20.2 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-7. Full dataset includes measurements from 15 sensors.
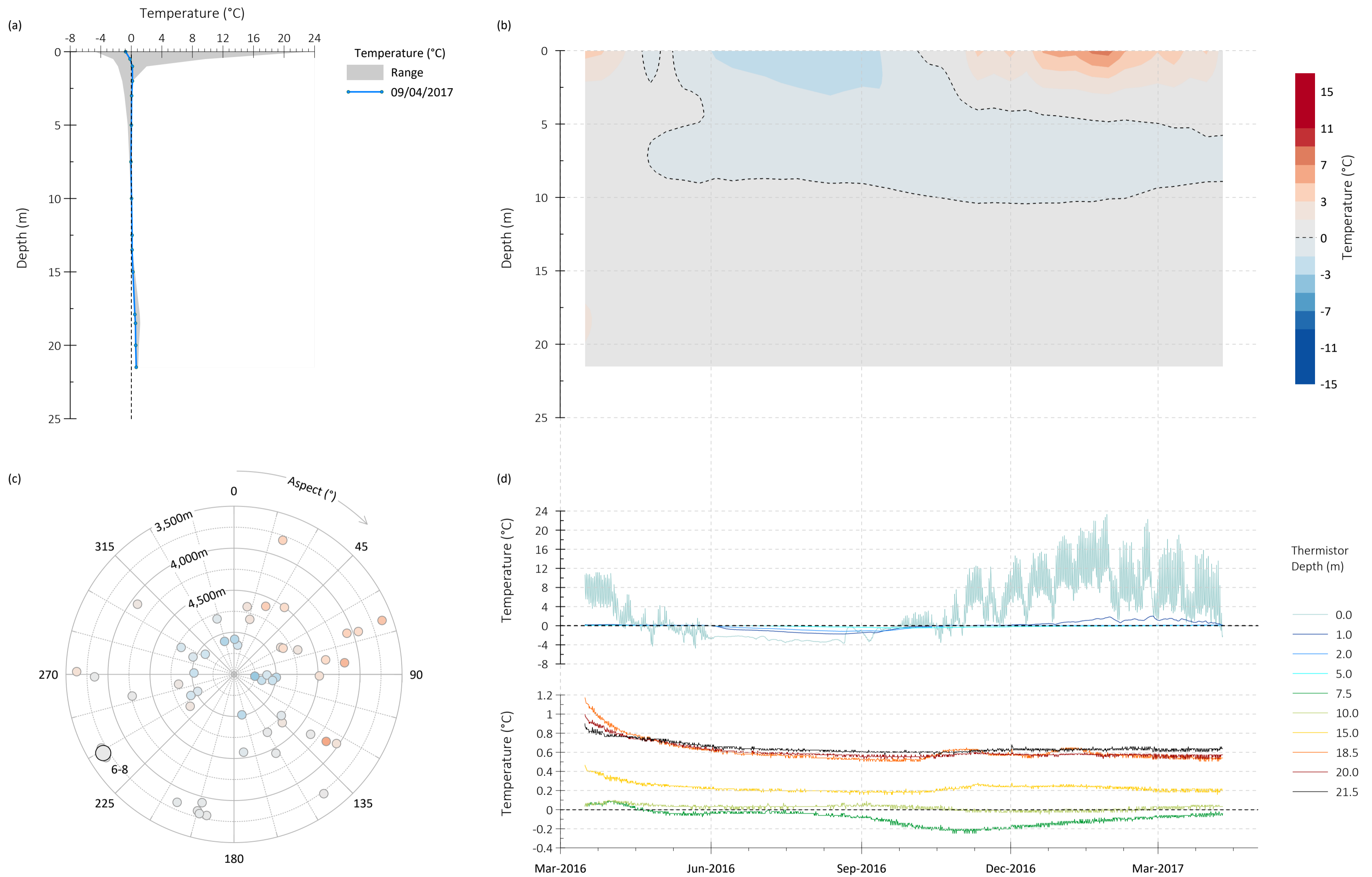
Figure S43: Ground thermal regime for Borehole 6-8 (El. = 3,684 m, Rock Glacier). Measurements collected approximately every 6 hours between 15/03/2016 and 09/04/2017.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-8 (T= -0.05 °C, depth=7.5m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-8. Full dataset includes measurements from 15 sensors.
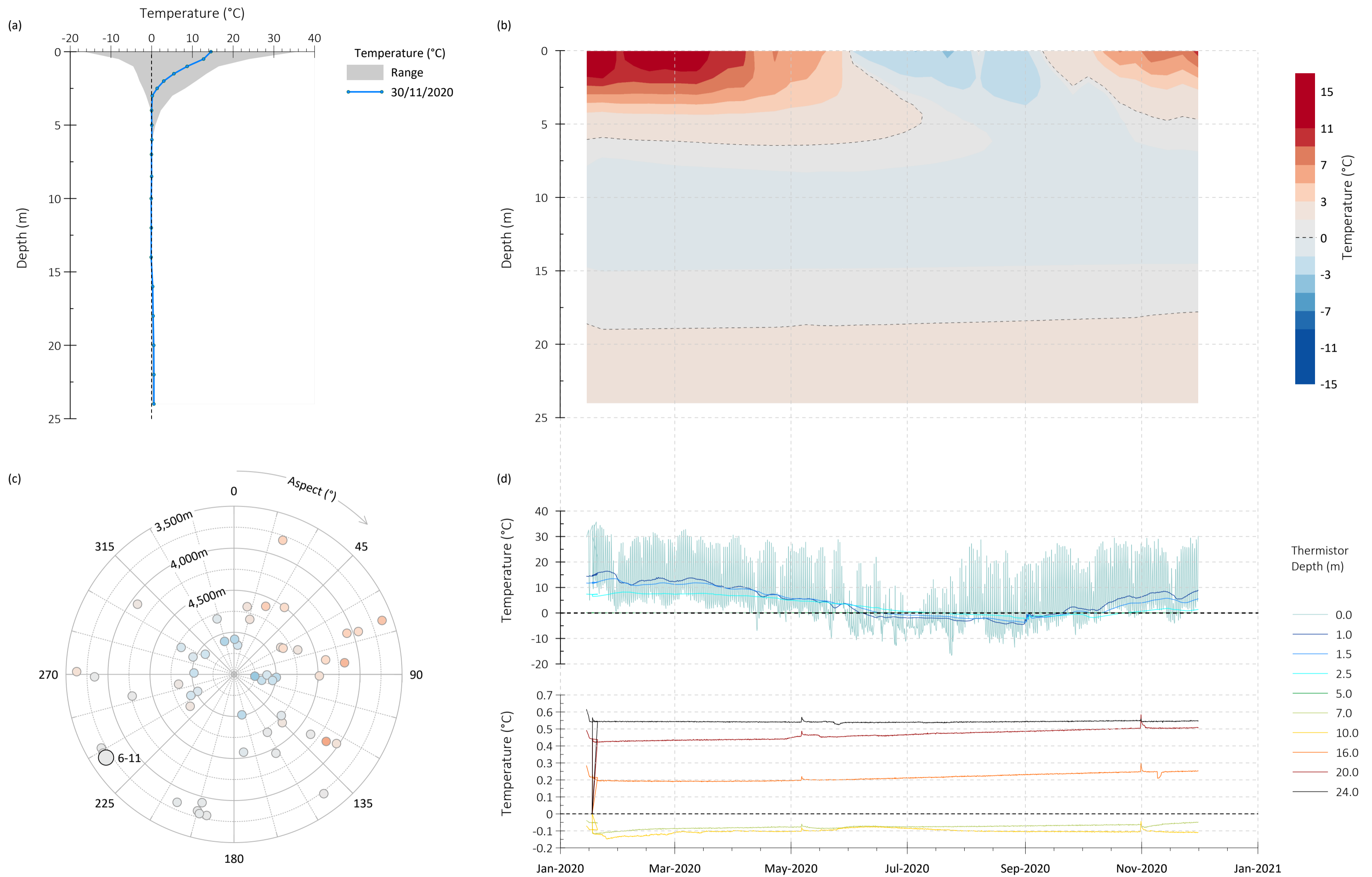
Figure S44: Ground thermal regime for Borehole 6-11 (El. = 3,684 m, Rock Glacier). Measurements collected approximately every 4 hours between 14/01/2020 and 30/11/2020.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 6-11 (T= -0.1 °C, depth=10 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 6-11. Full dataset includes measurements from 20 sensors.
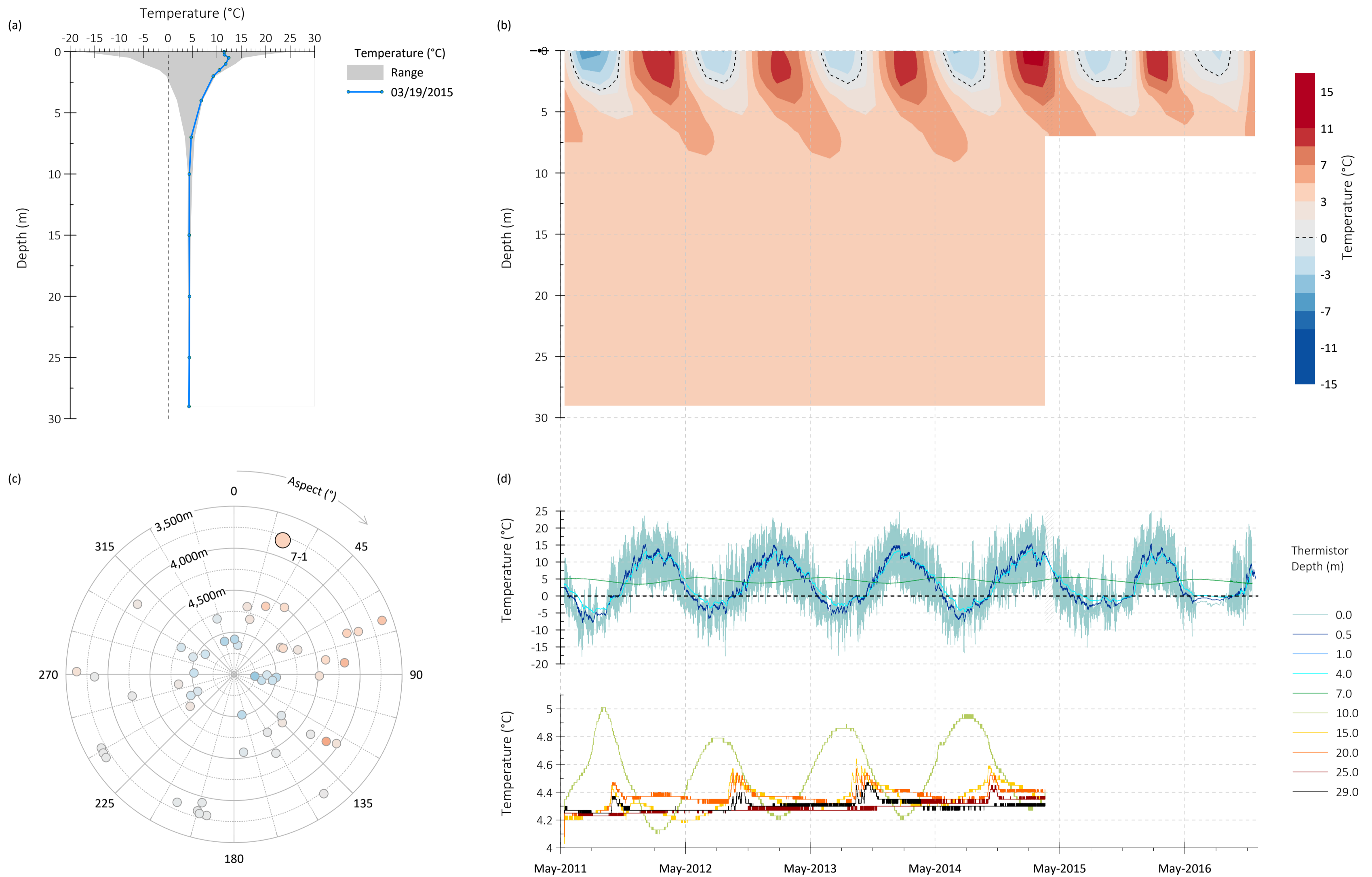
Figure S45: Ground thermal regime for Borehole 7-1 (El. = 3,803 m, Colluvium). Measurements collected approximately every 4 hours between 12/05/2011 and 23/11/2016. Interpolated data indicated by grey hatched areas. No data at thermistors 2.0 m and below 7 m depth after 19/03/2015. After 14/11/2016 data only available from thermistor 0.5 m.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-1 (T= 4.36 °C, depth=25 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-1. Full dataset includes measurements from 13 sensors. Daily interpolated values are also shown.
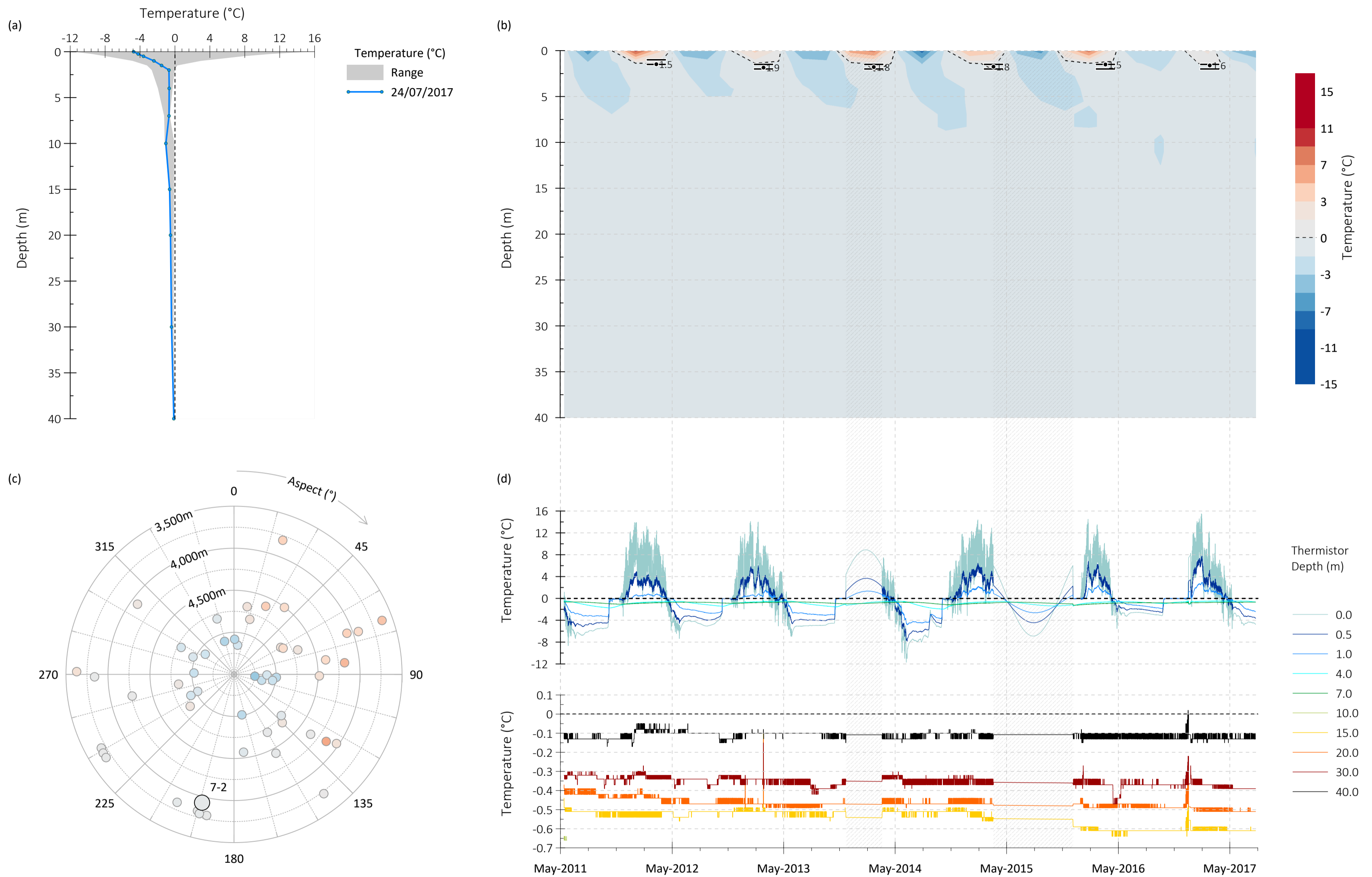
Figure S46: Ground thermal regime for Borehole 7-2 (El. = 3,928 m, Bedrock). Measurements collected approximately every 4 hours between 12/05/2011 and 24/07/2017. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values. Active layer thickness indicated by black dots; horizontal lines indicate the depth of thermistors used for interpolation.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-2 (T= -0.51 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-2. Full dataset includes measurements from 13 sensors. Daily interpolated values are also shown.
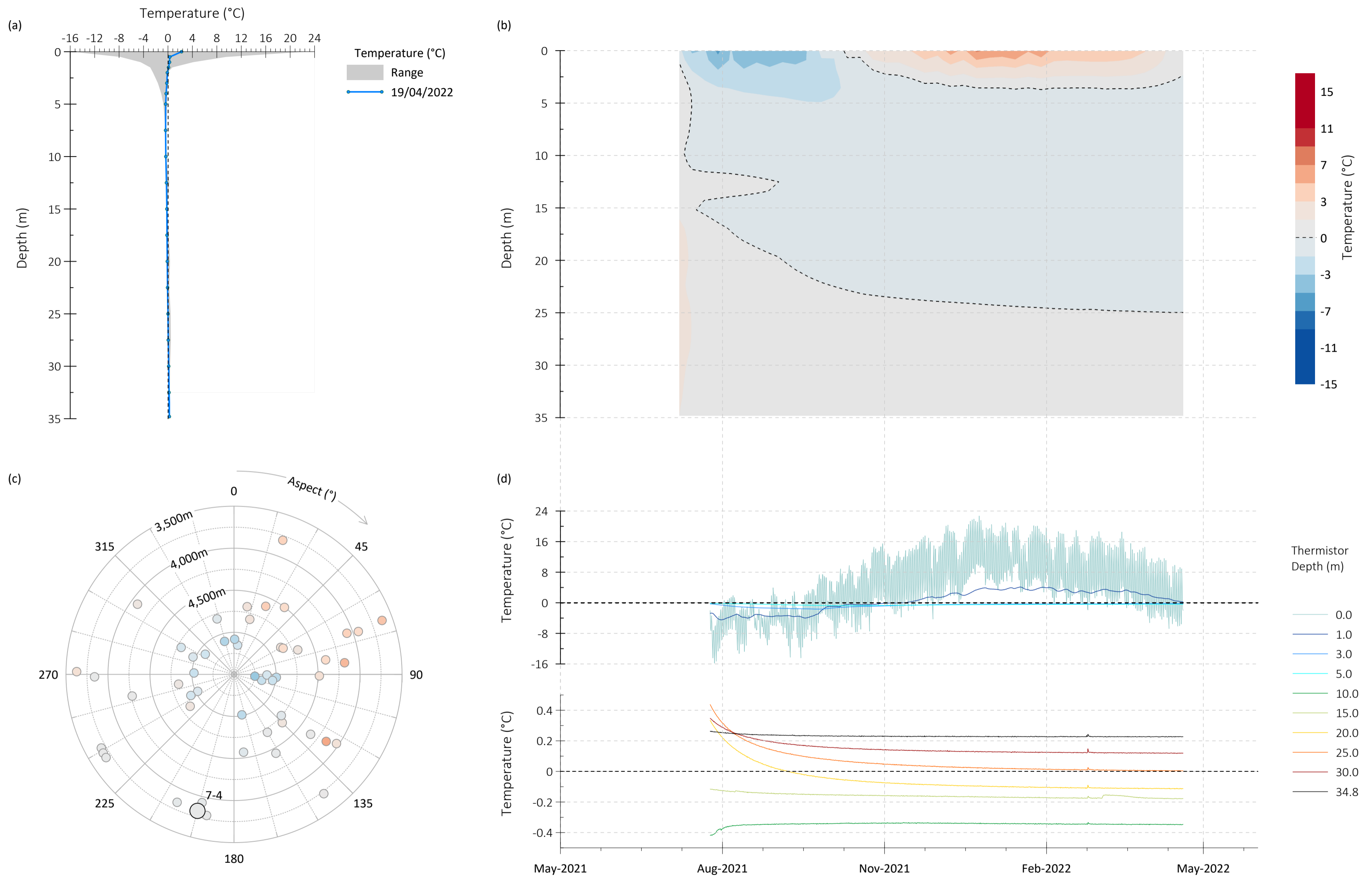
Figure S48: Ground thermal regime for Borehole 7-4 (El. = 3,820 m, Rock Glacier). Measurements collected approximately every 6 hours between 07/07/2021 and 19/04/2022.
Early measurements affected by drilling.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-4 (T= -0.11 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-4. Full dataset includes measurements from 20 sensors.
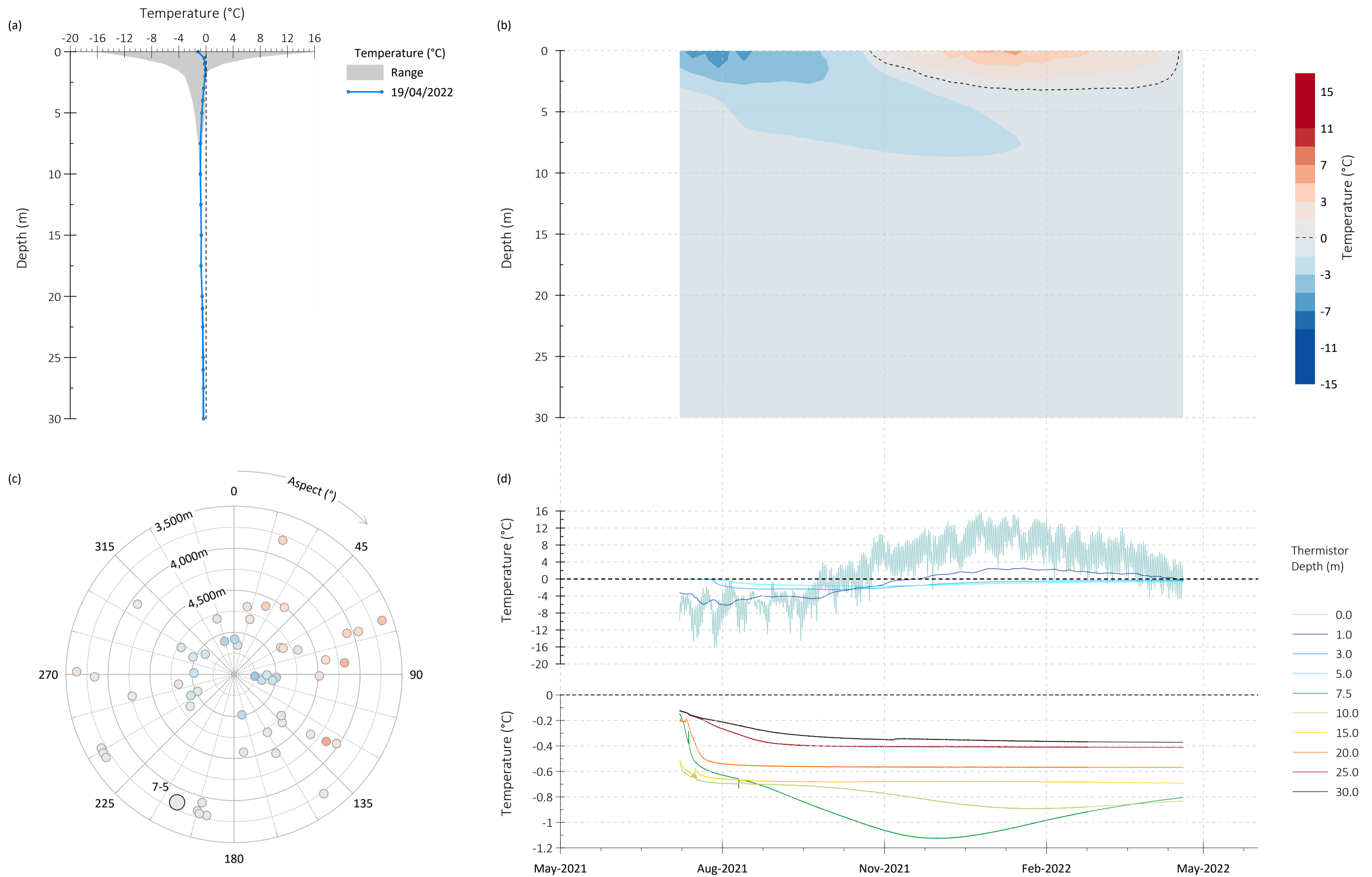
Figure S49: Ground thermal regime for Borehole 7-5 (El. = 3,835 m, Rock Glacier). Hourly measurements collected between 07/07/2021 and 19/04/2022.
Early measurements affected by drilling.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-5 (T= -0.57 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-5. Full dataset includes measurements from 20 sensors.
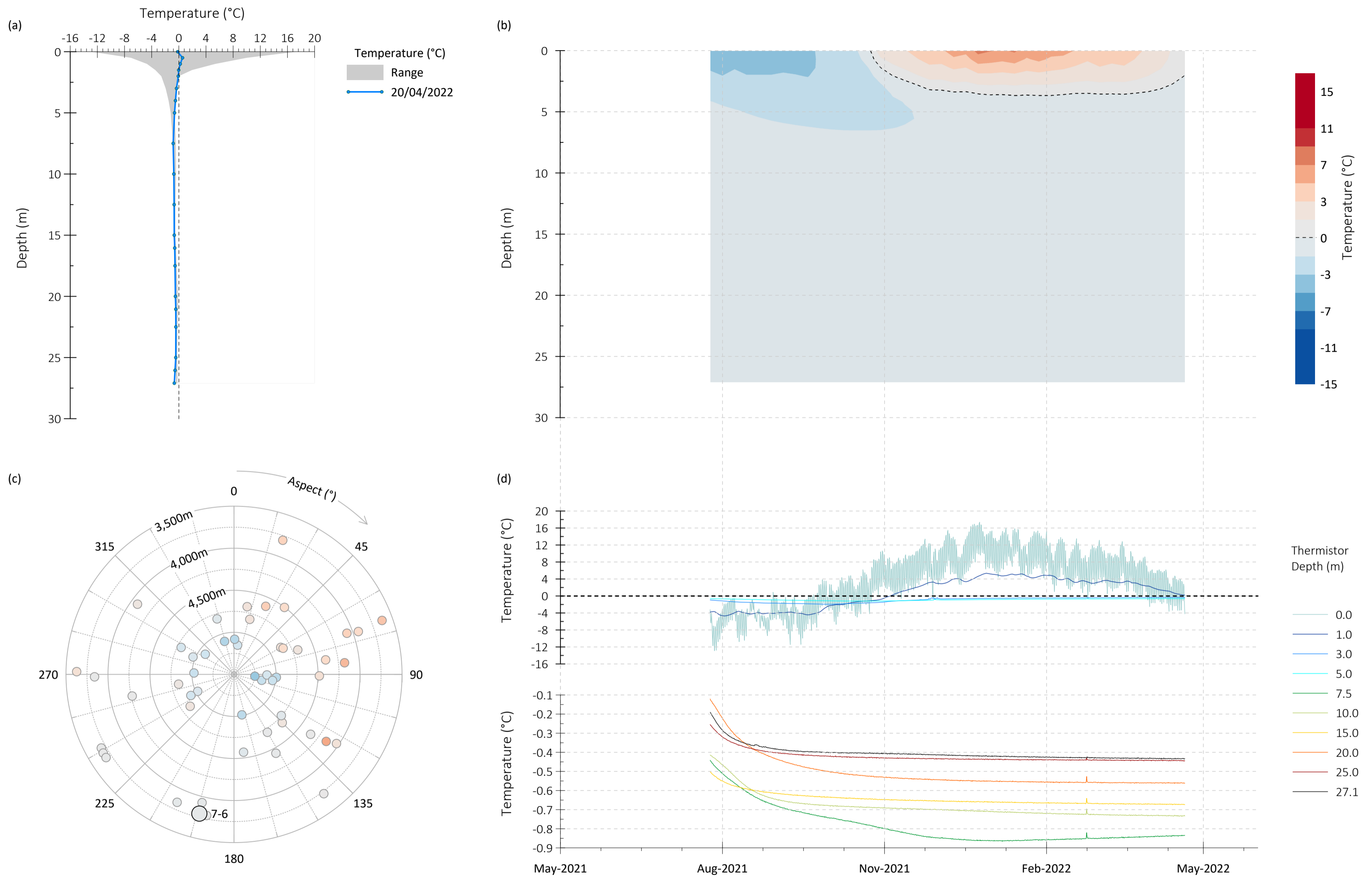
Figure S50: Ground thermal regime for Borehole 7-6 (El. = 3,794 m, Rock Glacier). Measurements collected approximately every 6 hours between 07/07/2021 and 20/04/2022. Early measurements affected by drilling.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-6 (T= -0.56 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-6. Full dataset includes measurements from 20 sensors.
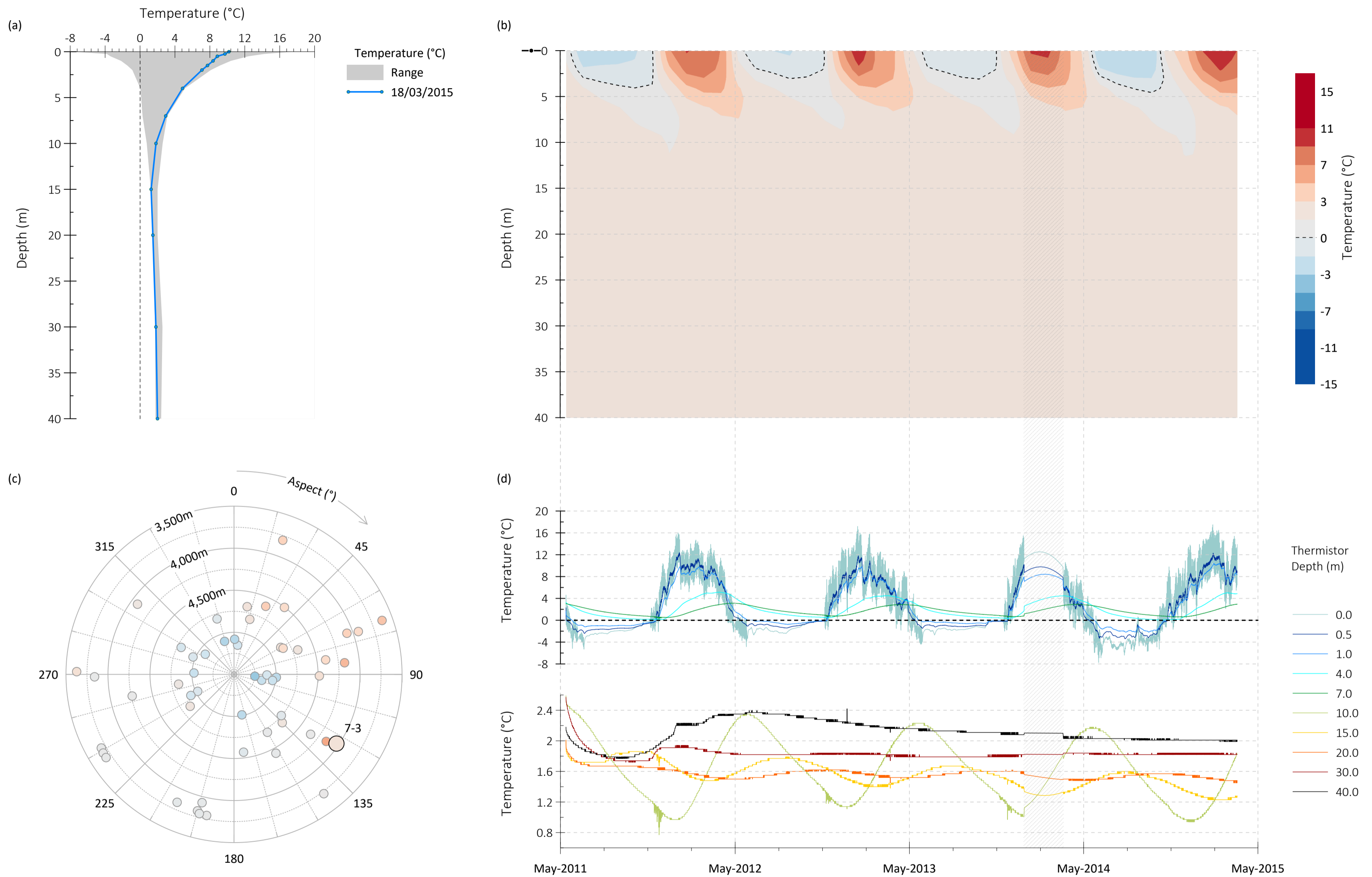
Figure S47: Ground thermal regime for Borehole 7-3 (El. = 4,029 m, Colluvium (thin veneer)). Measurements collected approximately every 4 hours between 12/05/2011 and 18/03/2015. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 7-3 (T= 1.82 °C, depth=30 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 7-3. Full dataset includes measurements from 13 sensors. Daily interpolated values are also shown.
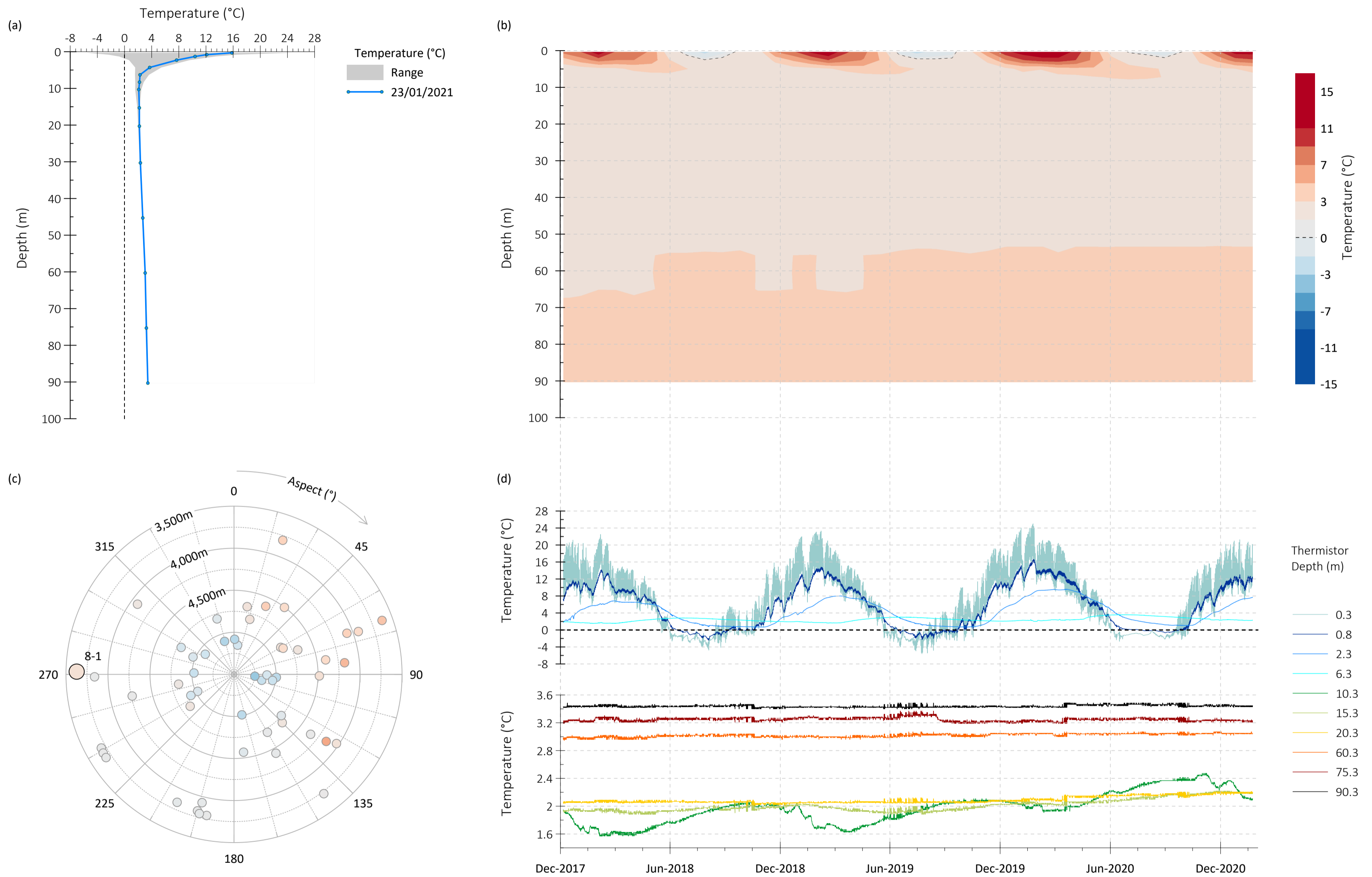
Figure S51: Ground thermal regime for Borehole 8-1 (El. = 3,627 m, Colluvium). Measurements collected approximately every 4 hours between 05/12/2017 and 23/01/2021.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.

(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.

(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 8-1 (T= 2.19 °C, depth=20.3 m) is indicated by enlarged symbol.

(d) Raw temperature time-series for selected depths at Borehole 8-1. Full dataset includes measurements from 15 sensors.
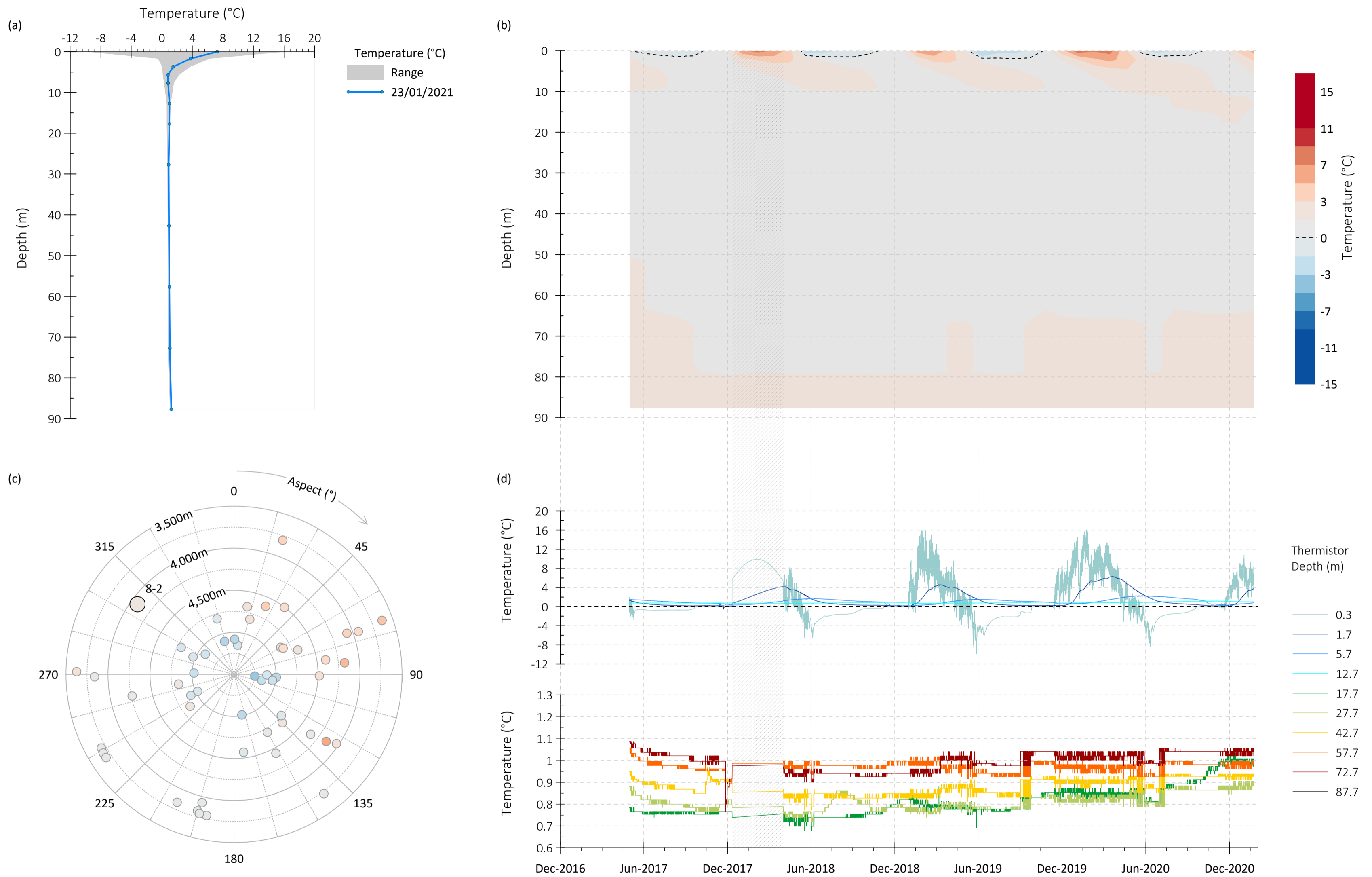
Figure S52: Ground thermal regime for Borehole 8-2 (El. = 4,080 m, Colluvium). Measurements collected approximately every 4 hours between 30/04/2017 and 23/01/2021. Interpolated data indicated by grey hatched areas.

(a) Temperature depth profile. Range estimated using hourly raw data and interpolated values. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data and interpolated values.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 8-2 (T= 0.99 °C, depth=17.7 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 8-2. Full dataset includes measurements from 12 sensors. Daily interpolated values are also shown.
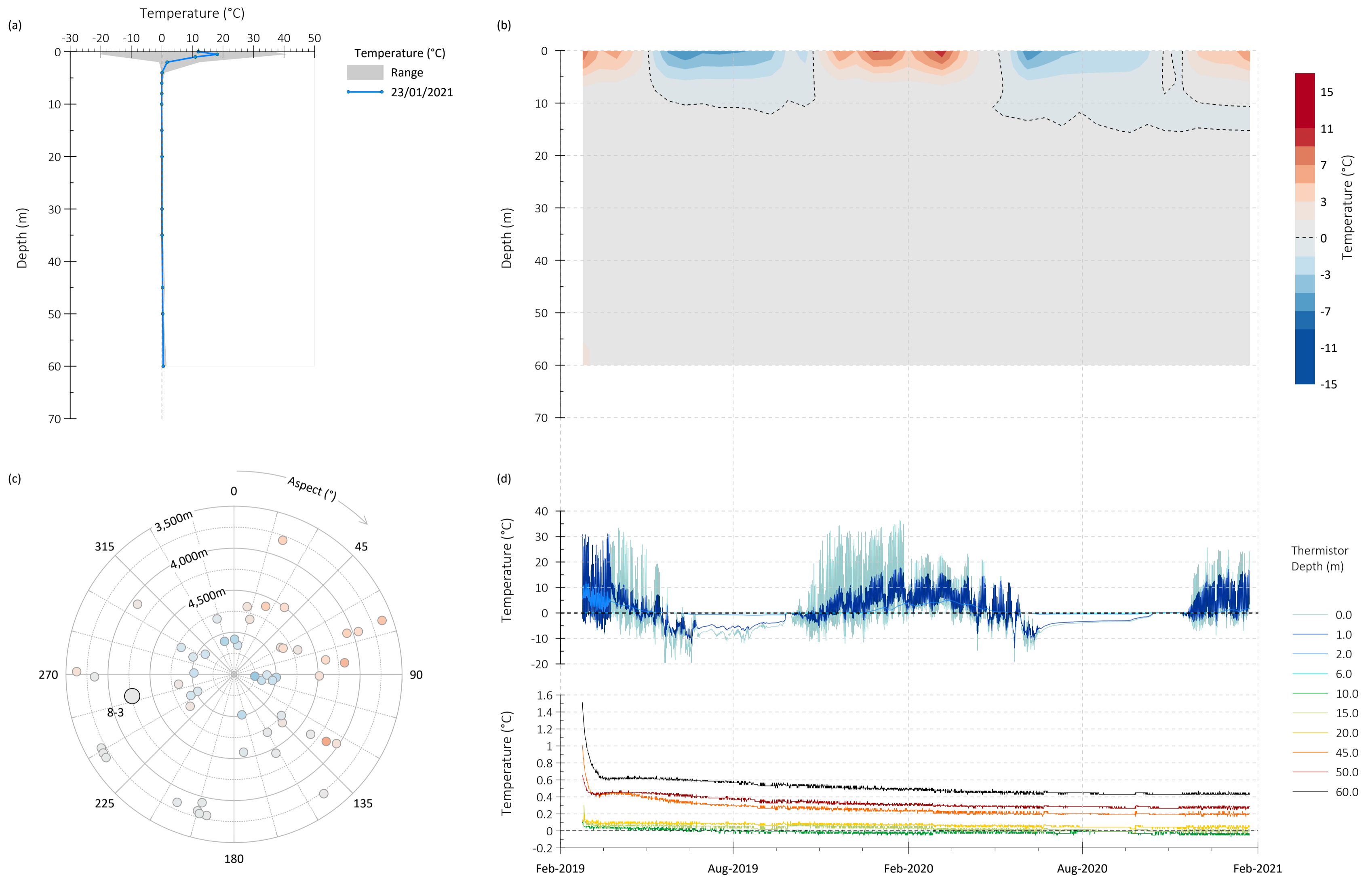
Figure S53: Ground thermal regime for Borehole 8-3 (El. = 4,261 m, Colluvium). Measurements collected approximately every 4 hours between 24/02/2019 and 23/01/2021.
Early measurements affected by drilling.

(a) Temperature depth profile. Range estimated using hourly raw data. Daily average of most recent available measurements shown in blue.
(b) Interpreted borehole temperature evolution with time. Contours estimated from hourly raw data.
(c) Aspect-elevation-temperature diagram of most recent monthly temperatures below DZAA at all boreholes; colour scale same as plot (b). Borehole 8-3 (T= 0.05 °C, depth=20 m) is indicated by enlarged symbol.
(d) Raw temperature time-series for selected depths at Borehole 8-3. Full dataset includes measurements from 15 sensors.