

Peak temperature patterns of polyphase metamorphism resulting from accretion, subduction and collision (eastern Tauern Window, European Alps) – A study with Raman microspectroscopy on carbonaceous material (RSCM)

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APPENDIX S1: Raman spectra of carbonaceous material

Figure S1: Typical first-order Raman spectra of CM showing increasing ordering with increasing peak temperature from bottom to top.

Figure S2: Peak-temperature comparison plots with calibration a on the vertical axis versus calibrations b, c and d on the horizontal axis.

Figure S3: Peak-temperature contours in fabric domains 1 and 3 (Fig. 2b) are based on the calibrations of (a) Rahl *et al.* (2005); (b) Aoya *et al.* (2010, c in Table 1); and (c) Aoya *et al.* (2010, d in Table 1).

Table S1: RSCM samples analysed in this study, as discussed in the LITHOLOGIES section and shown in Fig. 3.

## APPENDIX S1

### Raman spectra of carbonaceous material

Up to five first-order Raman bands are observed in the spectra of carbonaceous material (CM), four of which are so-called defect bands (D1-D4) and the fifth is the graphite or G band (Tuinstra & Koenig, 1970; Beyssac *et al.*, 2002a, 2003a; Nasdala *et al.*, 2004). D4 is observable only at high degrees of disorder at low temperatures (Sadezky *et al.*, 2005; Lahfid *et al.*, 2010). In general, poor ordering of CM is characterized by a prominent D1 ( $\sim 1350 \text{ cm}^{-1}$ ), a smaller D2 ( $\sim 1620 \text{ cm}^{-1}$ ) located on the shoulder of the G band ( $\sim 1580 \text{ cm}^{-1}$ ) towards higher Raman shift, a very broad D3 band ( $\sim 1500 \text{ cm}^{-1}$ ) especially at temperatures below  $350^\circ\text{C}$ , and a D4 band ( $\sim 1200 \text{ cm}^{-1}$ ) on the shoulder of the D1 band (towards the lower Raman shift: Tuinstra & Koenig, 1970; Lespade *et al.*, 1984; Nakamura *et al.*, 1990; Wang *et al.*, 1990; Cuesta *et al.*, 1994; Gruber *et al.*, 1994; Jawhari *et al.*, 1995; Dippel & Heintzenberg, 1999; Sze *et al.*, 2001). None of our spectra show D4 bands, indicating that the degree of ordering of CM is relatively high in our samples and that peak temperatures ( $T_p$ ) everywhere exceeded those of sub-greenschist-facies conditions ( $300^\circ\text{C}$ ). D3 bands are only detected in some samples at  $T_p$  of about  $350^\circ\text{C}$ . In the Eastern Tauern Subdome (ETD), lower G peaks and higher D1 and D2 peaks characterize the lower greenschist-facies, whereas the opposite peak intensities are typical of the amphibolite-facies core of the ETD (Fig. S1).

### Compilation of Alpine metamorphic minerals in Fig. 2a

Figure 2a shows the distribution of Alpine metamorphic minerals, the Bt + St isograd (Droop, 1981, 1985) and the  $500$  and  $550^\circ\text{C}$  peak-temperature lines of Hoinkes *et al.* (1999). An amphibolite-facies mineral assemblage characterizes the core of the Hochalm Dome (Höck, 1980, sample 196, Table S1, Fig. 3). Staurolite is preserved in the Permo-Mesozoic cover between the Hochalm- and Storz nappes (sample 38, Table S1; Fig. 3) and in the Glockner Nappe System of the Möll Valley (Höck, 1980). Biotite and garnet are observed in the Modereck- and Glockner nappe systems adjacent to the Subpenninic basement units, the only exception being the Mauterndorf area (Fig. 2a), where biotite and garnet are common. Chloritoid is common parallel to the Sonnblick Lamellae, to the SSE of Obervellach and the Upper Muhr Valley (Fig. 2a), as originally observed by Höck (1980). High-pressure mineral assemblages are restricted to the vicinity of the Grossglockner Pass 10 km to the east of the Gross Glockner in Fig. 2a (e.g., Dachs & Proyer, 2001; Kurz *et al.*, 2008; Pollington & Baxter, 2010).

### Comparison of RSCM calibrations (Fig. S2)

Temperature calibrations b, c and d (Table 1) against the calibration a (Beyssac *et al.*, 2002b) are plotted in order to search for systematic variations in peak-temperature estimates. A diagonal line in the temperature-temperature diagrams of Fig. S2a-c represents a perfect match in the temperature calibrations. However, a glance at these figures shows that this is never the case, and some of these variations are discussed below.

#### Calibration a and b (Beyssac *et al.*, 2002b vs. Rahl *et al.*, 2005, Fig. S2a)

For the temperature range of  $350$  to  $575^\circ\text{C}$ , the difference in estimated  $T_p$  is  $< \pm 30^\circ\text{C}$ , i.e., much less than the  $\pm 50^\circ\text{C}$  absolute error (Beyssac *et al.*, 2002b). This is almost identical to the differences that Wiederkehr *et al.* (2011) described for the Leontine area at a similar range of  $T_p$  ( $350$  to  $575^\circ\text{C}$ ). At three points along the diagonal, the calibrations yield the same temperatures ( $350$ ,  $425$ ,  $530^\circ\text{C}$ ). At  $T_p$  above  $575^\circ\text{C}$ , the difference in peak-temperature estimates increases markedly to about  $68^\circ\text{C}$  in the core the Eastern Tauern Subdome (Göss Nappe), where the calibration b yields  $680^\circ\text{C}$ . The calibration b has a much greater CI value (95% confident interval, see caption to Table S1 for detailed information) than the calibration a, primarily owing to its more complex formula (Table 1). However, the calibration a yields a smaller uncertainty than the calibration b, especially at  $T_p$  above  $575^\circ\text{C}$ .

*Calibration a and c (Beyssac et al., 2002b vs. Aoya et al., 2010, Fig. S2b)*

Aoya *et al.* (2010) provided two different calibrations (c and d in Table 1) depending on the laser wavelength and the tectonic/metamorphic history of the samples they used in their calibrations. Calibration c uses a 514.5 nm laser wavelength on samples from contact metamorphic metasediments. Calibration d uses a laser wavelength of 532 nm on regional metamorphic metasediments. These calibrations yield an almost linear systematic difference in  $T_p$  estimates over the entire range from 350 °C to more than 600 °C. The estimates for both are well below the ± 50 °C uncertainty.

There is almost no difference in  $T_p$  from 350 to 450 °C between calibrations a and c. A slight linear increase can be observed from 450 to 625 °C. At 550 °C the difference is about 15 °C. The maximum difference (28 °C) coincides with the highest temperature (612 °C: calibration a; 640 °C: calibration c). The calibration c yields a systematically higher  $T_p$  at temperatures > 450 °C. Even though the calibration c is more complex (additional the R1-value and a bimodal coefficient), the uncertainty is similar or even somewhat greater than in calibration a. Thus, the peak-temperatures estimated with calibration c are similar to those of calibration a. Note that even though contact metamorphic rocks were used for calibration c, the similarity of the estimates provided by both calibrations indicate that kinetic effects had no or only minor influence.

*Calibration a and d (Beyssac et al., 2002b vs. Aoya et al., 2010, Fig. S2c)*

Both calibrations a and d are well below the ± 50 °C uncertainty. At  $T_p$  in the ranges of 350 to 375 °C and 550 to 575 °C, these calibrations yield the same estimates. Between these two temperature ranges (at 475 °C), the  $T_p$  of calibration d are systematically lower and the difference in the maximum  $T_p$  is about 25 °C. Above 575 °C, the peak-temperature difference increases to 20 °C, with the  $T_p$  of calibration d systematically higher (632 °C) than of calibration a (612 °C). As above, the  $T_p$  obtained with calibration d are similar to those of calibration a.

Figure S1: Typical first-order Raman spectra of CM showing increasing ordering with increasing peak temperature from bottom to top. Sample numbers correspond to the list in Table S1 and the localities in Fig. 3. Bands G, D1 and D2 are marked with arrows. Spectra at the top are from the core of the Eastern Tauern Subdome, whereas spectra further down pertain to localities away from the European basement of the Tauern Window, i.e., towards the Austroalpine units.

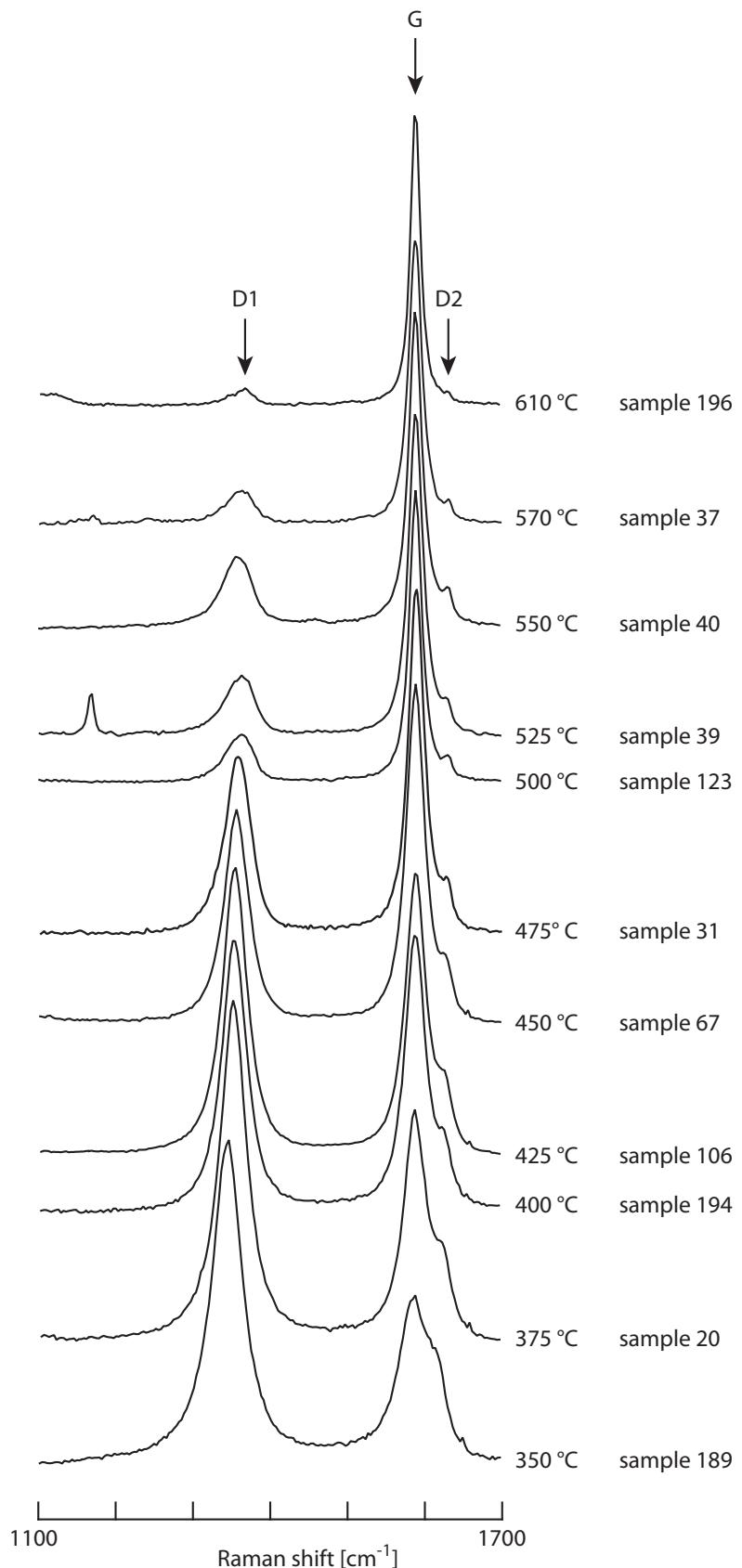


Figure S2: Peak-temperature comparison plots with calibration a on the vertical axis versus calibrations b, c and d on the horizontal axis. Calibration a = Beyssac *et al.* (2002b), b = Rahl *et al.* (2005); c = Aoya *et al.* (2010, calibration c in Table 1), d = Aoya *et al.* (2010, calibration d in Table 1). Bars mark the uncertainties at the 95% confidence interval.

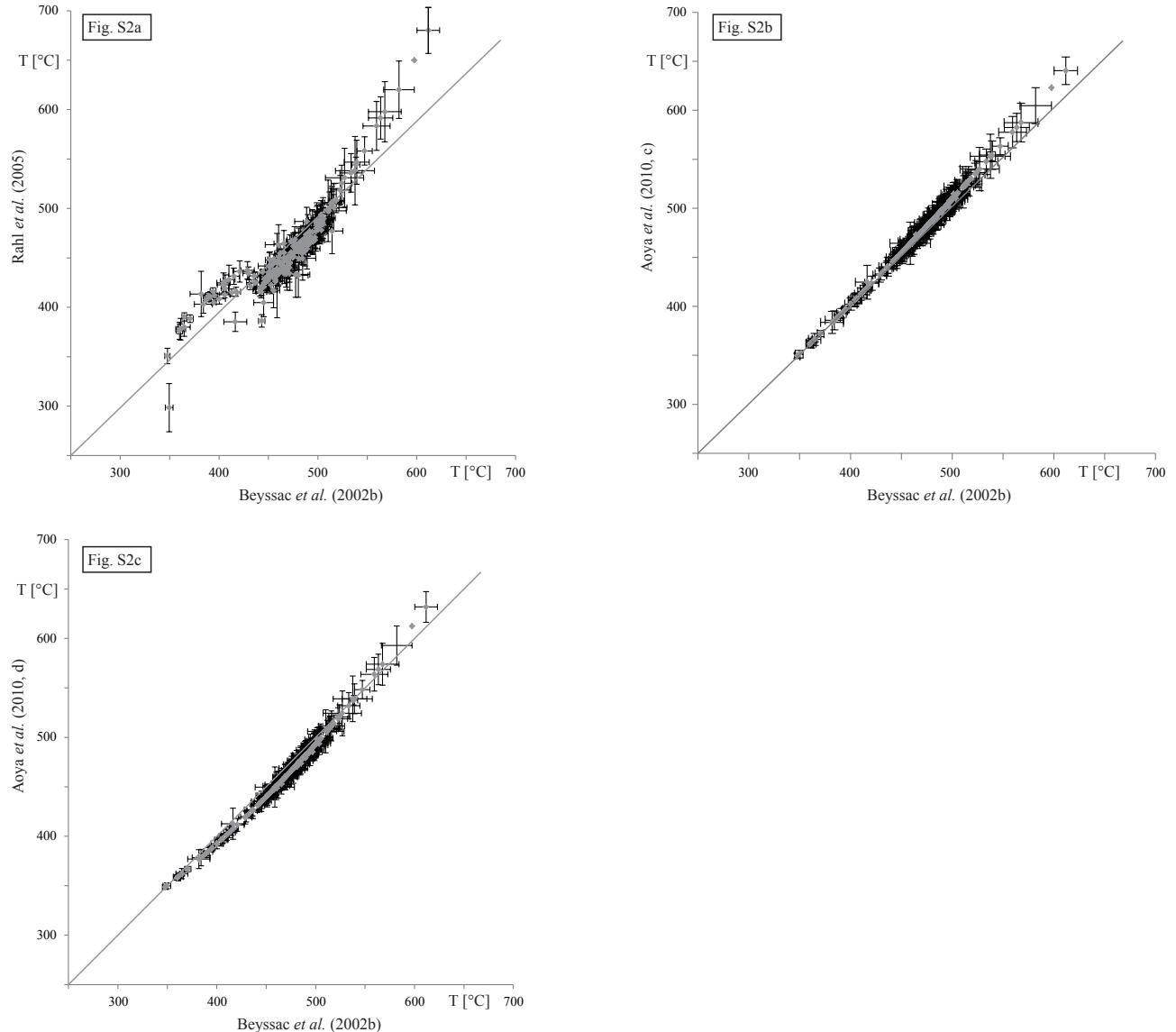
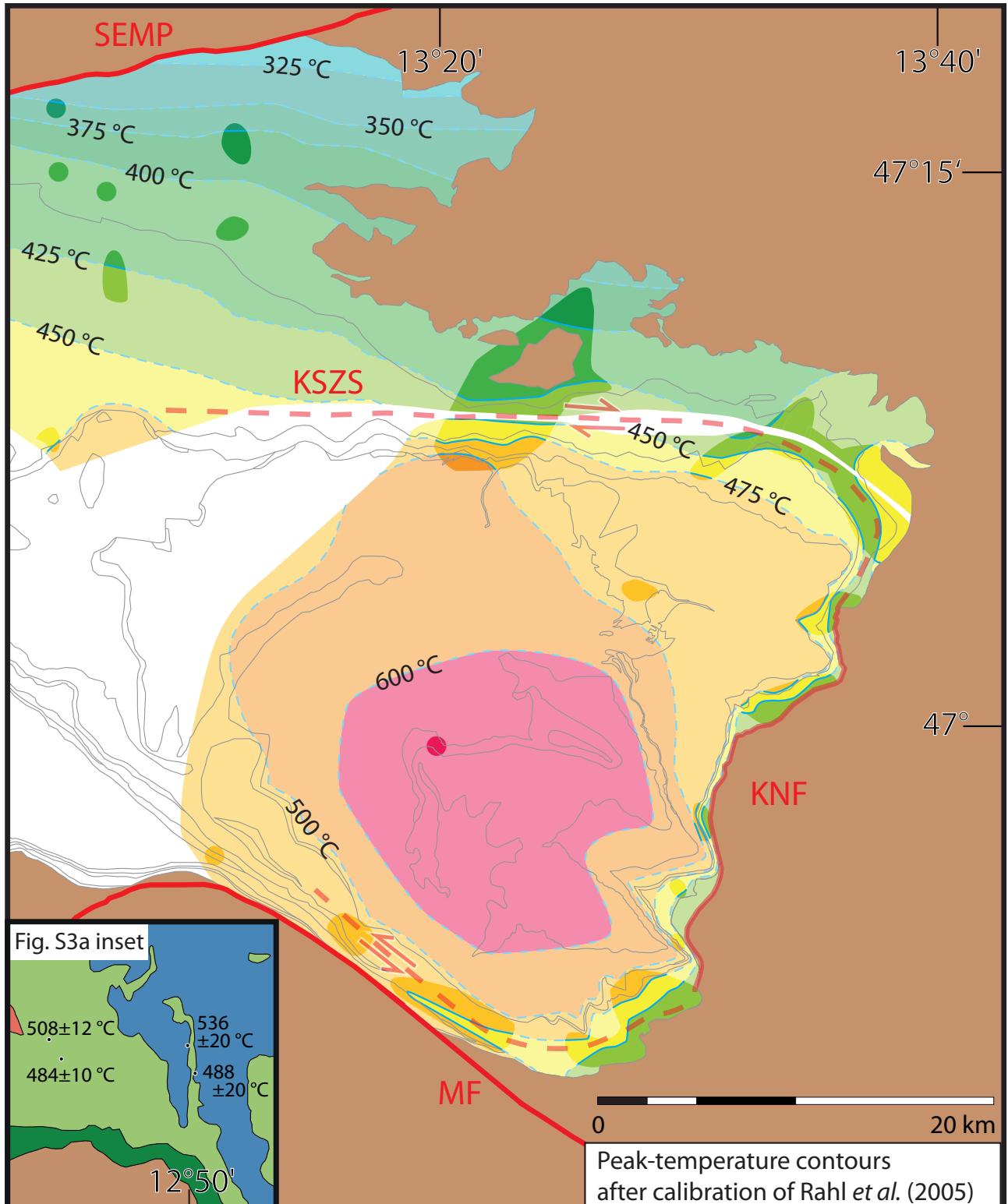


Figure S3: Peak-temperature contours in fabric domains 1 and 3 (Fig. 2b) are based on the calibrations of (a) Rahl *et al.* (2005); (b) Aoya *et al.* (2010, c in Table 1); and (c) Aoya *et al.* (2010, d in Table 1). Transparent colours and blue dashed lines indicate areas and contours where the sample density is low. Brown colours indicate Austroalpine units. The peak-temperature contours are marked in blue. Note that the peak-temperature intervals between the 525-600 °C in b and 500-600 °C in a and d are larger than the 25 °C spacing used in all other contour maps. Grey lines indicate tectonic contacts separating units of the Tauern Window as shown in Fig. 1. KNF *Katschberg Normal Fault*; KSZS *Katschberg Shear Zone System*; MF *Mölltal Fault*; SEMP *Salzach-Ennstal-Mariazell-Puchberg Fault*. Inset shows estimated peak temperatures from the four samples in fabric domain 2. The inset is not contoured due to the limit number of samples and their similar values. Therefore, the tectonic units as in Figs 2a & 3 are shown in the inset. Sample locations and data in Fig. 3 and Table S1.

Fig. S3a



certain      uncertain

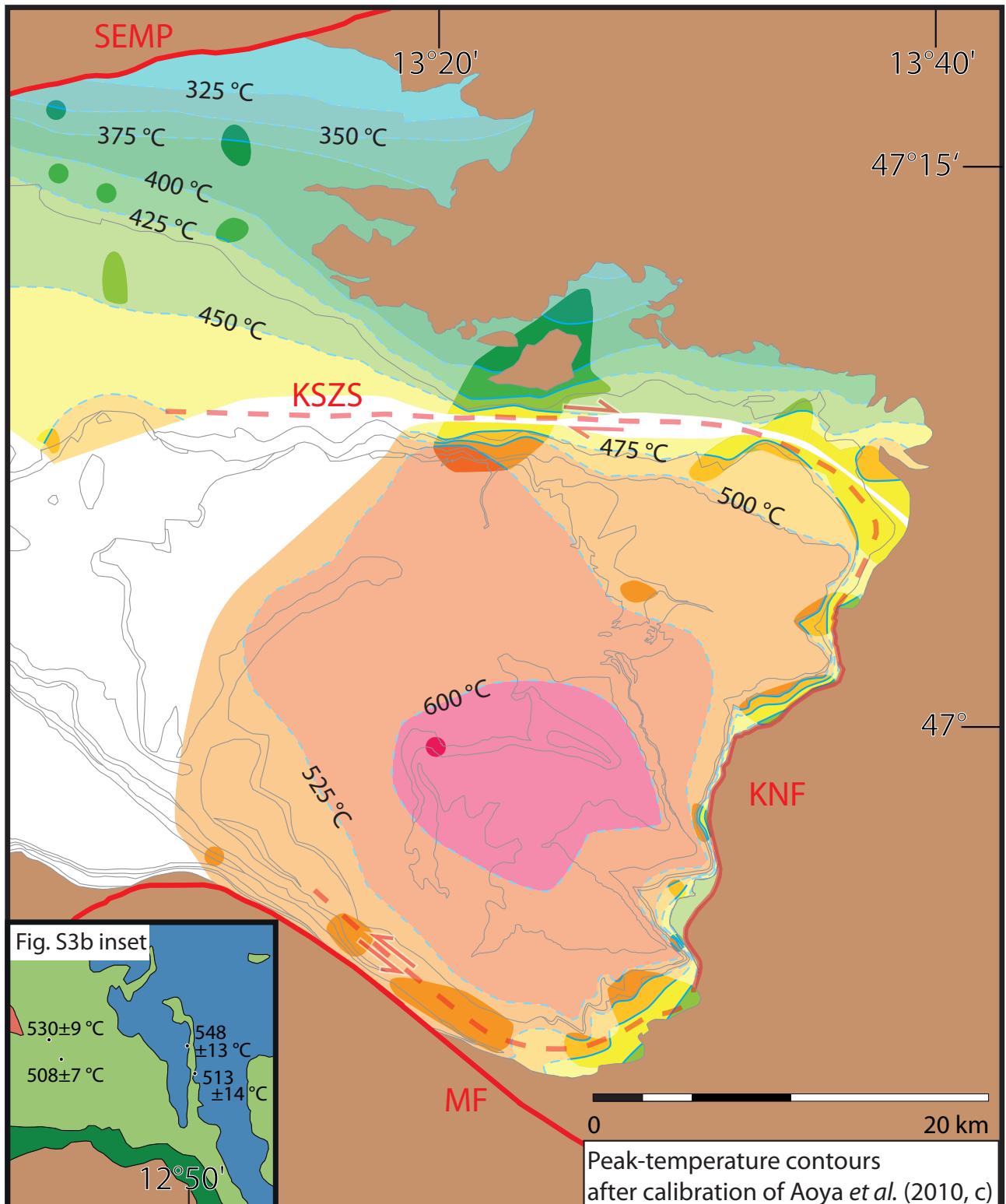
	> 600 °C
	500-600 °C
	475-500 °C

	450-475 °C
	425-450 °C
	400-425 °C
	375-400 °C

	350-375 °C
	325-350 °C

< 325 °C

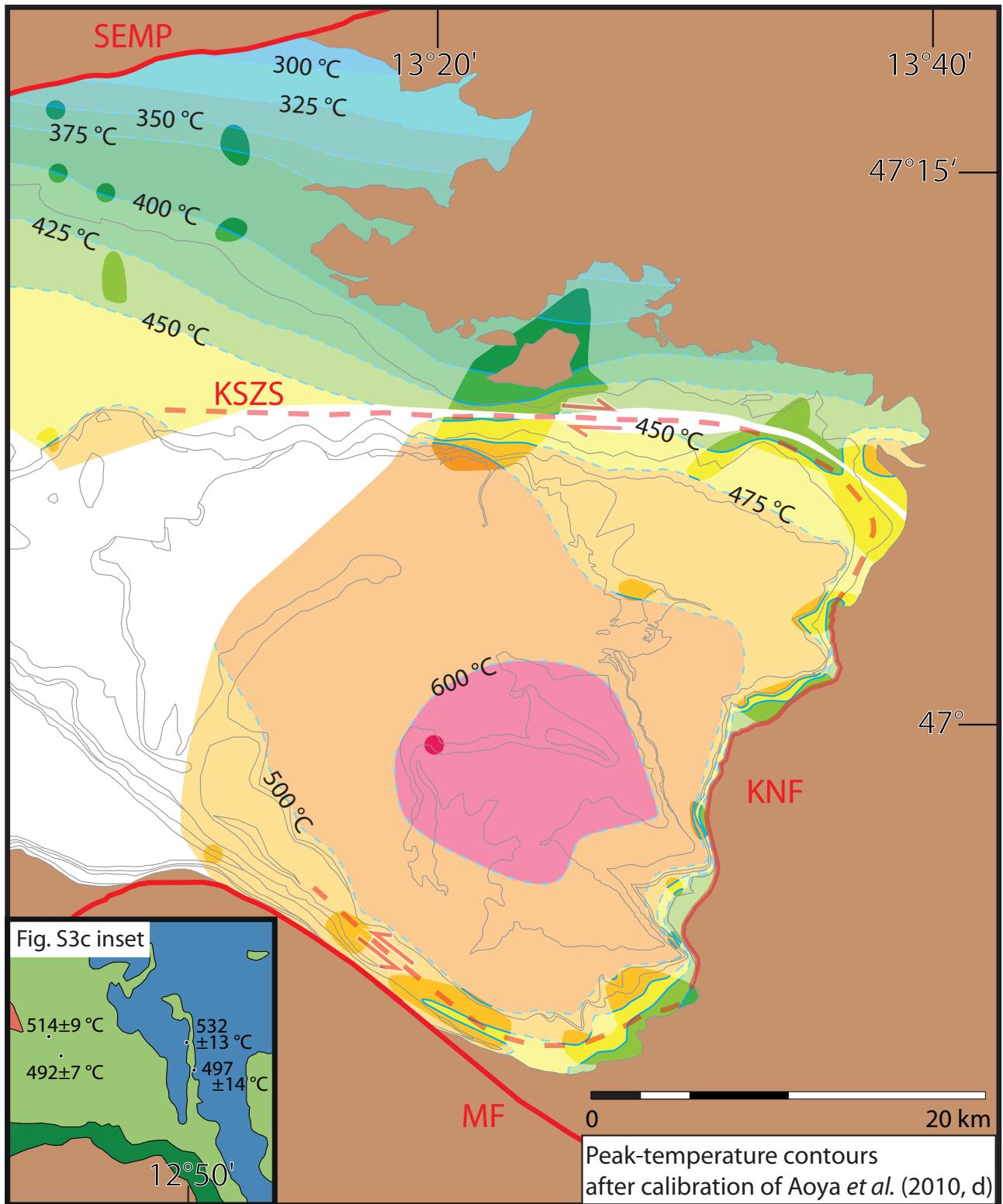
Fig. S3b



certain	uncertain
	> 600 °C
	525-600 °C
	500-525 °C

	475-500 °C		375-400 °C
	450-475 °C		350-375 °C
	425-450 °C		325-350 °C
	400-425 °C		< 325 °C

Fig. S3c



certain      uncertain

	> 600 °C
	500-600 °C
	475-500 °C

	450-475 °C		350-375 °C
	425-450 °C		325-350 °C
	400-425 °C		300-325 °C
	375-400 °C		< 300 °C

Table S1: RSCM samples analysed in this study, as discussed in the LITHOLOGIES section and shown in Fig. 3. GL *Glockner Nappe System*; GW *Grauwackenzone (Upper Austroalpine)*; HN *Hochfeind Nappe (Lower Austroalpine)*; KWN *Koralpe-Wölz Nappe System (Upper Austroalpine)*; KQ *Katschberg Quartzphyllite Unit (Upper Austroalpine)*; MA *Matrei Zone*; MO *Modereck Nappe System*; SI *post-Variscan cover*. Minerals for a given sample are listed in order of decreasing modal abundance (mineral abbreviations after Siivola & Schmid, 2007). Number of recorded Raman spectra (#spec. R1), number of Raman spectra used for peak-temperature calculation (#spec. R1\*), R1 and R2 ratios (mean value and standard deviation SD), RSCM-inferred mean temperature and uncertainty at the 95% confidence interval (CI). Temperature uncertainty was determined by dividing the standard deviation of the measurement by the square root of the number of measurements, multiplied by a parameter whose value depends on the number of measurements as well as on the chosen CI. Samples highlighted in red letters are anomalous and therefore not used to define the peak-temperature contours (see RESULTS section). Samples listed twice have more than one temperature signal. Together with samples having <10 spots per sample, these were not used for drawing the contours in Figs 4 & S3 (orange background). The last four columns show peak temperatures (yellow background) and CI values for calibrations listed in Table 1: a – Beyssac *et al.*, 2002b; b – Aoya *et al.*, 2010; c – Aoya *et al.*, 2010; and d – Rahl *et al.*, 2005.

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Table S1

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
1	AS1	47°03'14,2"	13°35'11,6"	1965	GL	Qtz, Cal, Wmca, Grt	30	30	0.40	0.12	0.39	0.07	469	11.9	438	20.6	475	13.0	460	12.5
2	AS30ab	47°03'13,3"	13°34'19,0"	2194	MO	Ab, Wmca, Qtz	20	20	0.38	0.09	0.37	0.05	476	10.0	451	14.5	482	11.1	467	10.9
2	AS30noab	47°03'13,3"	13°34'19,0"	2194	MO	Ab, Wmca, Qtz	20	20	0.27	0.12	0.36	0.05	480	9.9	432	22.1	487	10.8	471	10.5
3	AS32	47°03'15,8"	13°34'02,6"	2233	MO	Qtz, Ab, Wm	23	23	0.27	0.06	0.33	0.05	495	9.4	467	13.0	504	10.5	488	10.4
4	AS36	46°59'23,8"	13°33'20,1"	2162	GL	Qtz, Wmca, Grt, Bt, Chl	27	27	0.16	0.13	0.23	0.11	538	19.7	538	34.6	553	22.5	539	23.1
5	AS38	47°00'58,5"	13°32'36,9"	2219	GL	Cal, Qtz, Wmca, Ab	20	19	0.44	0.13	0.42	0.03	455	6.3	417	17.6	460	6.7	445	6.3
6	AS39	47°01'09,2"	13°32'27,0"	2500	GL	Cal, Qtz, Wmca, Ab	20	20	0.43	0.07	0.37	0.03	475	6.5	462	13.5	482	7.2	466	6.9
7	AS43	47°02'13,9"	13°35'54,5"	1491	KQ	Qtz, Wmca, Ab, Czo, Pl	2	2	0.05	0.01	0.10	0.03	598		650		623		612	
8	AS46	47°02'55,1"	13°34'44,2"	2018	MO	Ab, Wmca, Qtz, Czo, Grt	20	20	0.25	0.11	0.29	0.09	510	18.5	498	31.2	522	21.1	506	21.7
9	AS55	47°04'26,7"	13°36'20,4"	1734	GL	Qtz, Wmca, Cal, Ab	21	21	0.44	0.05	0.44	0.05	445	10.0	405	14.4	449	10.8	435	10.3
10	AS60	47°03'55,0"	13°36'07,6"	1805	MA	Cal, Qtz, Wmca, Ab	13	13	0.51	0.18	0.38	0.12	459	19.9	432	42.6	464	21.5	450	20.3
11	AS63	47°04'04,5"	13°27'21,6"	1905	SI	Qtz, Wmca, Cal, Czo	20	15	0.30	0.10	0.37	0.06	477	14.4	433	23.1	485	15.7	469	15.1
12	AS64	47°04'04,5"	13°27'21,6"	1905	SI	Cal, Qtz, Wmca, Ab, Czo	20	20	0.29	0.09	0.34	0.06	489	13.2	459	20.7	497	14.6	481	14.3
13	AS66	47°04'10,9"	13°36'11,0"	1701	GL	Cal, Wmca, Qtz	23	22	0.36	0.14	0.36	0.07	481	13.2	456	24.0	488	14.6	472	14.3
14	AS70	47°03'18,8"	13°36'05,1"	1853	KQ	Qtz, Wmca, Chl	20	17	0.40	0.17	0.38	0.05	472	11.6	445	28.1	478	12.7	462	12.2
15	AS71	47°03'18,8"	13°36'05,1"	1853	KQ	Wmca, Ab, Qtz	20	17	0.08	0.05	0.13	0.07	582	15.5	620	29.1	605	18.4	593	19.8
16	AS78	47°06'00,1"	13°36'24,9"	1075	GL	Cal, Wmca, Qtz	20	18	0.46	0.09	0.41	0.04	460	8.8	434	11.2	466	9.5	450	9.1
17	AS80	46°59'52,9"	13°31'44,4"	2139	KQ	Qtz, Wmca	20	20	0.34	0.10	0.34	0.06	490	13.1	475	19.0	498	14.6	482	14.4
18	AS87	46°58'04,2"	13°30'04,1"	1480	MO	Qtz, Wmca, Ab, Czo, Chl, Ep	20	19	2.81	0.64	0.65	0.02	350	3.9	299	24.4	351	3.9	350	3.0
19	AS89	47°09'11,0"	13°22'47,4"	2017	GL/MA	Qtz, Wmca, Ab	20	15	0.49	0.15	0.40	0.05	462	13.1	444	13.6	467	14.2	452	13.5
20	AS90	47°09'37,5"	13°23'10,6"	2505	MA	Cal, Qtz, Wmca	19	19	1.42	0.33	0.61	0.01	371	3.2	389	3.8	372	3.2	367	2.6
21	AS91	47°11'12,2"	13°25'44,5"	1429	MA	Cal, Wmca, Qtz, Ab	20	20	1.63	0.22	0.62	0.03	365	6.1	380	9.3	366	6.2	362	5.1
22	AS93	47°16'47,5"	13°04'34,2"	1075	MA	Cal, Qtz	20	20	2.17	0.09	0.66	0.01	348	2.7	351	7.8	349	2.6	348	2.1
23	AS94	47°12'49,3"	13°06'57,4"	901	GL	Cal, Qtz, Ab	20	20	0.69	0.12	0.46	0.04	437	8.9	425	10.7	440	9.7	427	9.0
24	AS95	47°16'16,2"	13°12'11,8"	974	MA	Qtz, Wmca, Ab	20	20	1.66	0.41	0.58	0.05	382	11.2	413	22.9	384	11.4	377	9.6
25	AS96	47°11'29,4"	13°24'02,1"	1756	MA	Qtz, Wmca, Ab	22	22	1.69	0.08	0.63	0.02	361	5.0	378	11.0	362	4.9	359	4.1
26	AS-Ka103	47°03'08,4"	13°34'38,1"	2097	MO	Qtz, Wmca, Ab, Chl, Bt, Tur	20	20	0.38	0.07	0.38	0.04	471	8.2	440	11.7	477	8.9	462	8.5
27	AS-Ka104	47°03'08,4"	13°34'38,1"	2097	MO	Cal, Qtz, Wmca	20	20	0.55	0.06	0.44	0.02	445	4.1	421	3.4	449	4.5	435	4.2
28	AS-Ka105	47°03'07,3"	13°34'50,6"	2062	MO	Qtz, Wmca, Chl	20	20	0.37	0.07	0.36	0.05	483	9.5	465	16.0	490	10.6	475	10.5
29	AS-Ka106	47°03'08,4"	13°34'54,6"	2049	MO	Cal, Qtz, Wmca	4	2	0.32	0.06	0.35	0.05	484		455		491		475	
30	AS-Ka108	47°03'11,2"	13°35'01,5"	2004	GL/MO	Qtz, Wmca, Ab	5	5	0.36	0.04	0.35	0.02	484		468		492		476	

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
31	AS-Ka109	47°03'14,3"	13°35'11,6"	1966	GL	Qtz, Wmca, Ab	20	19	0.42	0.05	0.38	0.02	473	5.0	455	7.1	479	5.6	463	5.4
32	AS-Ka110	47°03'16,5"	13°35'31,5"	1945	GL	Qtz, Wmca, Ab	20	20	0.63	0.04	0.44	0.01	444	2.7	436	2.9	448	2.9	434	2.7
33	AS-Ka113	47°03'38,6"	13°35'29,8"	1881	GL	Qtz, Wmca, Ab	20	20	0.45	0.06	0.40	0.03	462	6.1	436	8.4	467	6.6	452	6.4
34	AS-Ka114	47°03'47,1"	13°35'25,1"	1842	GL/MO	Qtz, Wmca, Cal	20	20	0.44	0.08	0.40	0.04	464	7.7	439	10.0	470	8.4	454	8.1
35	AS-Ka115	47°03'58,2"	13°35'33,9"	1831	GL/MO	Qtz, Wmca, Chl, Grt	20	14	0.42	0.10	0.39	0.05	469	12.5	446	16.7	476	13.8	460	13.2
36	AS-Ka116	47°04'02,6"	13°35'33,3"	1800	GL/MO	Qtz, Wmca, Ab, Chl	20	20	0.42	0.04	0.38	0.02	470	4.3	448	6.0	476	4.7	461	4.5
37	AS-Mu117	47°07'35,7"	13°20'12,0"	2347	SI	Qtz, Wmca, Bt	20	11	0.34	0.06	0.35	0.04	485	12.4	463	20.0	492	13.7	476	13.4
	AS-Mu117	47°07'35,7"	13°20'12,0"	2347	SI	Qtz, Wmca, Bt	20	9	0.12	0.04	0.16	0.05	568	16.6	598	30.5	587	19.7	574	21.2
38	AS-Mu118	47°07'41,6"	13°20'11,6"	2341	SI	Qtz, Wmca	20	18	0.13	0.06	0.18	0.06	559	13.7	583	24.7	578	16.0	564	17.0
39	AS-Mu121	47°08'10,8"	13°20'21,9"	2215	MO	Qtz, Wmca, Ab, Bt	20	19	0.23	0.05	0.26	0.05	524	10.6	526	18.2	537	12.1	521	12.4
40	AS-Mu122	47°07'59,6"	13°20'12,7"	2309	MO	Qtz, Wmca	20	16	0.21	0.03	0.15	0.03	547	7.8	558	14.3	563	8.7	548	9.4
41	AS-Mu123	47°08'02,2"	13°20'10,6"	2295	MO	Qtz, Wmca, Bt	20	17	0.40	0.11	0.34	0.05	489	12.1	487	14.4	497	13.4	481	13.3
42	AS-Mu124	47°08'18,8"	13°20'20,0"	2284	GL	Qtz, Cal, Ab, Wmca	20	20	0.55	0.06	0.42	0.02	455	5.0	444	5.4	459	5.4	444	5.1
43	AS-Mu125	47°08'50,6"	13°21'15,0"	2262	GL	Qtz	20	17	0.13	0.05	0.17	0.05	564	12.3	592	21.4	582	14.5	569	15.4
44	AS-Mu126	47°09'13,0"	13°21'54,6"	2161	MA	Qtz, Wmca, Cal, Chl	20	19	1.09	0.12	0.53	0.03	404	6.8	425	10.1	407	7.0	396	6.2
45	AS-Mu127	47°09'10,8"	13°22'48,4"	2020	MA	Qtz, Wmca, Ab, Chl, Czo	20	20	0.59	0.14	0.41	0.06	460	13.4	463	20.2	466	14.6	451	13.9
46	AS-Mu128	47°08'57,3"	13°22'40,0"	1795	GL	Qtz, Wmca, Ab, Chl	20	17	0.42	0.08	0.37	0.04	476	8.1	462	9.6	482	8.9	466	8.7
47	AS-Mu129	47°08'46,1"	13°23'06,2"	1722	GL	Cal, Qtz, Ab, Wmca	20	20	0.52	0.05	0.41	0.03	459	5.6	445	9.0	464	6.1	448	5.7
48	AS-Mu130	47°08'23,1'	13°23'22,5"	1666	MO	Wmca, Ab, Qtz, Chl, Tur	20	11	0.43	0.04	0.39	0.02	466	7.1	441	11.1	472	7.7	456	7.4
	AS-Mu130	47°08'23,1'	13°23'22,5"	1666	MO	Wmca, Ab, Qtz, Chl, Tur	20	9	0.22	0.08	0.26	0.06	527	19.4	531	29.8	540	22.1	524	22.7
49	AS-Mu131	47°08'07,2"	13°23'44,9"	1689	MO	Qtz, Wmca, Ab, Bt	19	18	0.24	0.05	0.28	0.03	514	7.3	506	11.3	525	8.2	509	8.4
50	AS-Ste132	47°00'58,1"	13°32'13,9"	2249	GL	Cal, Qtz, Wmca, Ab, Bt	20	17	0.24	0.05	0.28	0.04	514	9.9	506	16.6	526	11.2	509	11.4
51	AS-Ste133	47°00'51,4"	13°32'02,9"	2226	GL	Qtz, Wmca, Cal, Ab, Bt	20	20	0.34	0.04	0.35	0.02	484	4.9	461	8.2	491	5.4	475	5.3
52	AS-Ste134	47°00'40,9"	13°32'40,6"	2021	GL	Cal, Qtz, Wmca, Ab	20	15	0.54	0.08	0.43	0.03	449	7.8	427	9.7	454	8.4	439	7.9
53	AS-Ste135	47°00'42,9"	13°32'54,1"	1982	GL	Qtz, Wm, Cal, Ab	20	15	0.33	0.09	0.34	0.04	492	9.7	477	11.6	500	10.8	484	10.6
54	AS-Ste136	47°00'47,2"	13°33'16,4"	1905	GL	Qtz, Wmca, Ab, Cal, Tur, Chl	20	17	0.51	0.08	0.41	0.03	460	7.0	446	11.3	465	7.5	450	7.1
55	AS-Ste137	47°01'03,9"	13°33'55,5"	1676	GL	Cal, Wmca, Qtz, Ab	20	20	0.44	0.07	0.38	0.03	470	6.6	452	8.2	476	7.2	460	6.9
56	AS-Ste138	47°01'39,0'	13°34'51,1"	1476	GL	Qtz, Wmca, Cal, Ab	20	17	0.44	0.12	0.39	0.04	468	9.3	448	9.5	474	10.2	458	9.8
57	AS-Ste139	47°01'35,6"	13°35'01,8"	1367	GL	Qtz, Cal, Wmca, Ab	20	20	0.58	0.11	0.45	0.03	441	7.1	418	6.9	445	7.6	431	7.1
58	AS-Ka140	47°02'15,5"	13°35'51,6"	1489	KQ	Qtz, Wmca, Ab, Chl	20	18	0.47	0.12	0.41	0.05	460	11.3	435	14.1	465	12.2	450	11.6
59	AS-Ka141	47°03'27,0"	13°36'46,8"	1669	KQ	Qtz, Wmca, Ab, Chl, Bt	20	19	0.37	0.05	0.36	0.03	480	6.4	458	9.2	487	7.0	471	6.8

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
60	AS-Ka142	47°05'26,8"	13°36'39,2"	1075	GL	Cal, Qtz, Wmca	20	8	0.45	0.07	0.39	0.02	467	8.4	448	7.9	472	9.2	457	8.8
	AS-Ka142	47°05'26,8"	13°36'39,2"	1075	GL	Cal, Qtz, Wmca	20	10	0.21	0.04	0.27	0.03	523	9.7	519	14.7	535	11.0	519	11.2
61	AS-Ka146	47°04'55,8"	13°37'11,7"	1315	MA	Cal, Qtz, Wmca	20	19	0.39	0.04	0.37	0.03	475	6.1	450	10.6	481	6.7	465	6.5
62	AS-Ka149	47°06'09,3"	13°37'14,8'	1162	GL	Qtz, Wm, Cal, Tur	20	10	0.31	0.08	0.32	0.05	499	11.0	487	14.8	508	12.4	492	12.4
63	AS-Sp150	47°07'39,0"	13°37'28,7"	2416	HN	Cal, Qtz, Wmca	20	17	0.42	0.07	0.37	0.03	477	7.7	465	11.1	484	8.4	468	8.2
64	AS-Sp151	47°07'34,1"	13°37'18,7	2298	MA	Qtz, Wmca, Chl, Ab, Bt	20	17	0.24	0.05	0.29	0.04	512	9.5	500	16.4	523	10.7	506	10.8
65	AS-Sp153	47°07'20,2"	13°36'27,3"	1899	GL	Qtz, Wmca, Ab, Chl	20	17	0.46	0.06	0.38	0.02	473	5.4	467	6.3	480	5.9	464	5.7
66	AS-Sp154	47°07'00,5"	13°37'32,0"	1889	MA	Qtz, Wmca, Ab, Chl	20	18	0.60	0.18	0.43	0.05	451	11.3	442	13.6	456	12.2	441	11.4
67	AS-Sp156	47°06'27,7"	13°37'29,7"	1494	GL	Qtz, Wmca, Cal, Chl	20	19	0.61	0.04	0.43	0.02	451	4.6	448	8.3	456	5.0	441	4.7
68	AS-Sp159	47°07'22,9"	13°35'31,8"	1426	GL	Cal, Wmca, Qtz	20	16	0.53	0.05	0.40	0.02	462	5.8	455	9.3	467	6.3	452	5.8
69	AS-Sp160	47°07'52,2"	13°36'08,8"	1609	GL	Qtz, Cal, Wmca, Chl	20	15	0.40	0.09	0.37	0.05	476	13.2	455	19.8	482	14.5	467	14.1
70	AS-Sp161	47°07'55,0"	13°36'29,6"	1774	GL	Cal, Qtz, Wmca	20	20	0.55	0.07	0.43	0.02	450	4.8	433	5.6	455	5.2	440	4.9
71	AS-Sp162	47°07'35,7"	13°36'46,6"	2062	MA	Qtz, Wmca, Ab, Chl	20	19	0.53	0.12	0.39	0.05	466	9.9	464	13.3	470	10.8	453	10.1
72	AS-Sp163	47°07'05,4"	13°36'27,7"	1841	GL	Wmca, Qtz, Ab, Chl	20	20	0.57	0.09	0.42	0.03	455	6.2	448	5.3	460	6.7	445	6.4
73	AS-Sp165	47°06'52,5"	13°36'24,1"	1624	GL	Qtz, Wmca, Cal, Ab, Chl	20	20	0.55	0.08	0.43	0.04	450	7.4	431	9.7	454	8.0	439	7.6
74	AS-Sp166	47°06'25,3"	13°36'08,4"	1353	GL	Cal, Qtz, Wmca, Ab, Chl	20	20	0.48	0.10	0.41	0.04	457	7.3	433	8.0	462	7.8	447	7.3
75	AS-Zed167	47°07'58,3"	13°34'02,3"	1275	GL	Qtz, Cal, Wmca	20	17	0.40	0.09	0.37	0.05	476	10.4	456	13.7	483	11.5	467	11.2
76	AS-Zed168	47°09'10,9"	13°34'24,5"	1705	GL	Cal, Qtz, Wmca	20	19	0.71	0.09	0.46	0.02	436	5.2	432	3.7	439	5.5	426	5.1
77	AS-Zed170	47°08'48,6"	13°33'46,2"	1969	GL	Qtz, Wmca, Chl	20	17	0.49	0.10	0.41	0.04	459	9.1	439	10.7	464	9.9	449	9.3
78	AS-Zed171	47°08'27,6"	13°34'00,2"	1706	GL	Qtz, Cal, Wmca, Ab, Chl	20	20	0.57	0.08	0.44	0.04	446	7.3	425	9.9	450	7.9	435	7.4
79	AS-Zed172	47°08'29,4"	13°34'06,3"	1605	GL	Cal, Wmca, Qtz	20	18	0.52	0.05	0.40	0.02	461	3.9	451	8.5	464	4.2	449	4.0
80	AS-Zed173	48°08'10,1"	13°33'59,3"	1519	GL	Cal, Wmca, Qtz, Ab	20	20	0.70	0.06	0.47	0.02	432	3.8	421	3.1	435	4.0	422	3.6
81	AS-Zed174	47°08'12,9"	13°34'12,0"	1430	GL	Cal, Qtz, Wmca, Ab, Chl	20	19	0.51	0.11	0.41	0.04	460	8.0	447	7.7	465	8.6	450	8.2
82	AS-Zed175	47°08'14,7"	13°31'58,3"	1264	GL	Cal, Qtz, Wmca	20	14	0.48	0.09	0.42	0.03	453	8.2	422	8.6	457	8.8	443	8.2
83	AS-Zed176	47°08'08,4"	13°31'44,2"	1392	GL	Cal, Qtz, Wmca	20	20	0.57	0.06	0.44	0.02	447	4.8	430	5.2	451	5.2	437	4.8
84	AS-Zed177	47°08'02,3"	13°31'23,2"	1529	GL	Qtz, Wmca, Ab, Chl	20	18	0.53	0.09	0.43	0.04	451	9.8	429	14.1	456	10.6	441	9.9
85	AS-Zed178	47°07'48,9"	13°31'10,6"	1650	GL	Qtz, Wm, Ab, Chl, Tur	20	18	0.51	0.09	0.42	0.03	454	6.6	432	6.7	459	7.2	444	6.8
86	AS-Zed179	47°07'32,7"	13°30'59,5"	1852	MO	Qtz, Wmca, Ab, Chl	20	20	0.39	0.06	0.36	0.03	480	6.2	463	8.2	487	6.8	471	6.6
87	AS-Zed180	47°07'28,1"	13°30'46,0"	1959	MO	Qtz, Wmca, Ab, Bt, Chl	20	20	0.44	0.10	0.39	0.04	468	8.1	449	9.3	475	8.9	459	8.7
88	AS-Zed181	47°07'14,6"	13°30'07,8"	2263	MO	Qtz, Ab, Wmca, Chl, Bt	20	15	0.30	0.09	0.32	0.06	499	13.6	486	20.0	508	15.4	492	15.5
89	AS-Zed182	47°07'22,0"	13°29'56,7"	2128	MO	Ab, Wmca, Qtz, Chl, Tur	20	17	0.39	0.07	0.37	0.03	478	7.3	460	8.7	485	8.0	469	7.8

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
90	AS-Li183	47°04'03,4"	13°28'29,4"	1659	SI	Qtz, Cal, Ab, Wmca, Bt, Czo, Chl	20	20	0.23	0.02	0.28	0.02	516	3.7	507	6.7	527	4.2	511	4.3
91	AS-Li184	47°04'03,4"	13°28'29,4"	1659	SI	Qtz, Cal, Ab, Wmca, Chl, Czo	20	18	0.30	0.04	0.34	0.03	491	6.1	466	9.6	499	6.8	483	6.7
92	AS-Mu185	47°07'47,2"	13°22'09,6"	2339	SI	Qtz, Wmca, Chl, Grt	20	19	0.24	0.06	0.31	0.03	505	6.9	484	11.0	515	7.8	499	7.8
93	AS-Mu187	47°08'07,6"	13°22'15,5"	2308	MO	Qtz, Wmca, Chl	20	20	0.28	0.05	0.31	0.04	503	8.2	491	13.4	513	9.2	497	9.2
94	AS-Mu188	47°08'37,7"	13°22'29,9"	1978	GL	Cal, Qtz, Wmca, Ab	20	20	0.58	0.07	0.43	0.02	452	5.1	441	6.3	456	5.4	441	5.1
95	AS-Mö189	46°52'34,0"	13°20'21,3"	1100	GL	Cal, Qtz, Wmca, Ab, Bt	20	20	0.38	0.05	0.36	0.03	481	5.2	465	6.9	489	5.8	472	5.6
96	AS-Mö190	46°52'21,7"	13°20'43,9"	1028	GL	Qtz, Wmca, Cal, Bt, Ab	20	19	0.34	0.05	0.35	0.04	485	8.1	463	12.8	493	9.0	477	8.8
97	AS-Mö191	46°52'21,5"	13°20'25,9"	963	GI	Qtz, Wmca, Cal, Ab, Cld, Pl, Czo	20	20	0.33	0.04	0.35	0.02	487	4.8	464	6.6	495	5.3	478	5.2
98	AS-Mö193	46°50'37,8"	13°23'03,1"	613	KWN	Wmca, Qtz, Grt, Tur, Chl, Bt	20	15	0.30	0.07	0.35	0.04	487	10.3	457	14.9	495	11.4	478	11.2
99	AS-Zed194	47°09'39,1"	13°21'56,2"	2404	MA	Qtz, Wmca, Chl	20	19	1.03	0.09	0.53	0.02	406	3.6	419	6.3	408	3.7	398	3.2
100	AS-Zed195	47°09'42,0"	13°22'13,8"	2265	MA	Qtz, Wmca, Ab, Chl	20	20	1.03	0.08	0.52	0.03	410	6.0	428	14.6	412	6.3	401	5.6
101	AS-Zed196	47°09'45,8"	13°22'11,8"	2259	MA	Qtz, Wmca, Chl	20	20	1.16	0.09	0.55	0.01	395	2.9	412	1.9	397	2.9	388	2.5
102	AS-Zed197	47°09'48,7"	13°22'06,1"	2248	MA	Qtz, Wmca, Ab, Chl	20	19	0.97	0.07	0.51	0.03	415	5.4	431	8.2	417	5.6	406	5.0
103	AS-Zed198	47°09'51,4"	13°21'57,5"	2244	MA	Qtz, Wmca	20	20	1.12	0.09	0.55	0.01	395	2.5	405	1.6	396	2.6	387	2.2
104	AS-Zed199	47°10'07,8"	13°22'06,9"	2201	MA	Qtz, Wmca	20	20	1.23	0.12	0.56	0.02	391	4.7	411	5.2	393	4.8	384	4.2
105	AS-Zed200	47°10'13,3"	13°22'05,5"	2193	MA	Qtz, Wmca	20	20	0.92	0.13	0.49	0.03	421	6.8	436	10.8	424	7.1	411	6.4
106	AS-Zed201	47°10'21,3"	13°22'02,9"	2194	MA	Qtz, Wmca, Ab	20	18	0.85	0.08	0.50	0.02	417	4.6	416	4.5	420	4.8	408	4.3
107	AS-Ma202	47°10'00,9"	13°21'28,1"	2029	GL	Cal, Qtz, Wmca, Ab	20	20	0.46	0.08	0.40	0.04	464	7.6	445	8.7	470	8.4	454	8.1
108	AS-Ma203	46°58'06,8"	13°30'25,3"	1503	GL	Cal, Qtz, Wmca, Ab	20	20	0.52	0.04	0.42	0.01	455	2.9	437	3.1	460	3.1	444	3.0
109	AS-Ma204	46°58'03,9"	13°30'20,9"	1507	MO	Cal, Qtz, Wmca, Ab	20	20	0.41	0.03	0.39	0.01	468	2.9	441	4.2	474	3.2	458	3.1
110	AS-Ma205	46°58'00,3"	13°30'11,0"	1505	MO	Qtz, Wmca, Ab, Chl, Bt	20	19	0.24	0.02	0.29	0.02	511	3.6	498	6.0	522	4.0	505	4.1
111	AS-Ma206	46°58'00,7"	13°30'05,7"	1489	MO	Qtz, Ab, Wmca, Tur, Chl, Bt	20	20	0.24	0.06	0.29	0.05	513	9.6	505	15.4	524	10.9	508	11.1
112	AS-Ma207	46°58'03,2"	13°30'04,6"	1496	KQ	Qtz, Wmca, Ab, Pl, Bt	20	16	0.28	0.08	0.32	0.05	498	11.4	480	16.1	508	12.7	491	12.4
113	AS-Ma208	46°57'51,8"	13°30'53,4"	1213	GL	Cal, Wmca, Qtz, Ab	20	20	0.56	0.10	0.43	0.04	450	7.4	435	7.2	455	7.9	440	7.3
114	AS-Ma209	46°57'35,7"	13°30'29,7"	1088	GL	Cal, Qtz, Wmca, Ab	20	20	0.45	0.05	0.39	0.02	468	5.0	449	7.0	474	5.5	458	5.3
115	AS-Ma210	46°57'33,0"	13°30'29,5"	1020	GL	Qtz, Wmca, Cal, Ab, Chl	20	19	0.36	0.03	0.36	0.02	481	3.3	458	5.3	486	5.4	470	5.2
116	AS-Ma212	46°57'32,4"	13°30'25,2"	982	MO	Ab, Wmca, Qtz, Chl, Tur	20	20	0.28	0.08	0.32	0.05	500	9.7	483	14.0	510	10.9	493	10.8
117	AS-Zed213	47°09'55,6"	13°24'59,9"	2168	MA	Qtz, Wmca	20	20	0.56	0.01	1.22	0.07	394	3.0	416	3.7	396	3.1	387	2.7
118	AS-Zed214	47°09'36,4"	13°24'49,3"	2060	MA	Qtz, Wmca	20	20	0.79	0.09	0.47	0.03	430	5.7	434	6.4	433	6.0	420	5.4
119	AS-Zed215	47°09'41,8"	13°26'30,3"	1548	MA	Qtz, Wmca	20	19	0.82	0.10	0.48	0.03	429	6.8	437	8.8	432	7.2	419	6.5
120	AS-Mu229	47°07'39,5"	13°20'10,8"	2344	SI	Qtz, Wmca, Bt, Chl	20	15	0.17	0.02	0.23	0.02	539	4.0	544	7.7	553	4.6	537	4.8

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
121	AS-Ma230	46°55'59,4"	13°29'24,1"	1440	GL	Cal, Qtz, Wmca	20	18	0.34	0.02	0.35	0.04	488	5.3	473	7.8	497	5.9	480	5.8
122	AS-Ma231	46°56'02,6"	13°29'16,3"	1469	GL	Qtz, Wmca, Ab, Chl	20	13	0.35	0.03	0.06	0.07	488	12.3	471	16.2	496	13.7	480	13.5
123	AS-Ra234	46°56'05,0"	13°29'16,3"	1270	GL	Qtz, Wmca, Ab, Cal, Chl	20	18	0.32	0.11	0.27	0.05	500	8.0	480	12.6	510	9.0	493	9.0
124	AS-Ra235	46°54'31,7"	13°29'22,7"	1240	GL	Qtz, Wmca	20	20	0.27	0.04	0.31	0.03	503	5.5	488	7.8	512	6.8	496	6.1
125	AS-Ra236	46°54'30,3"	13°29'35,5"	1223	GL	Qtz, Wmca, Chl	20	19	0.47	0.06	0.39	0.03	465	5.9	450	8.9	471	6.4	455	6.2
126	AS-Gm238	46°53'15,4"	13°29'01,0"	1392	GL	Qtz, Wmca, Cal, Ab	20	20	0.41	0.03	0.50	0.07	458	5.9	438	7.2	462	6.3	447	5.9
127	AS-Gm240	46°53'19,6"	13°28'47,3"	1537	GL	Cal, Qtz, Wmca	20	20	0.40	0.10	0.38	0.02	470	7.1	442	10.5	476	7.7	460	7.4
128	AS-Gm241	46°52'57,5"	13°29'00,5"	1600	GL	Cal, Qtz, Wmca	20	20	0.37	0.10	0.36	0.06	479	6.2	457	9.4	486	6.8	470	6.5
129	AS-Gm242	46°53'29,2"	13°28'37,5"	1668	GL	Cal, Ab, Qtz, Wmca	23	22	0.44	0.02	0.43	0.03	443	3.3	386	6.3	447	3.5	433	3.3
130	AS-Gm243	46°53'44,6"	13°27'34,8"	2113	MO	Ab, Qtz, Wmca, Chl, Bt, Czo	20	17	0.36	0.03	0.33	0.07	481	7.8	449	11.4	488	8.5	471	9.1
131	AS-Gm244	46°53'18,4"	13°28'23,8"	1715	GL	Qtz, Wmca	20	20	0.35	0.00	0.36	0.01	482	4.9	460	7.6	489	5.4	473	5.3
132	AS-Gm245	46°52'56,5"	13°29'29,9"	1058	GL	Cal, Qtz, Wmca	20	20	0.44	0.03	0.58	0.08	443	5.6	421	6.2	447	6.0	433	5.6
133	AS-Gm246	46°51'44,8"	13°28'48,5"	1153	KQ	Wmca, Qtz	20	20	0.30	0.08	0.35	0.06	485	13.2	450	22.1	492	14.8	477	14.6
134	AS-Gm247	46°52'59,6"	13°27'11,8"	2000	GL	Qtz, Wmca, Ab	20	20	0.31	0.02	0.27	0.03	502	5.1	486	8.4	511	5.8	495	5.8
135	AS-Gm248	46°53'16,9"	13°26'45,9"	2120	MO	Qtz, Wmca, Bt, Ab	20	18	0.31	0.05	0.27	0.06	502	10.0	484	15.4	511	11.2	495	11.3
136	AS-Gm249	46°52'08,3"	13°27'29,3"	1616	GL	Cal, Qtz, Wmca	20	20	0.41	0.03	0.46	0.06	457	6.9	426	10.5	462	7.4	447	7.0
137	AS-Gm250	46°51'48,1"	13°27'53,4"	1290	KQ	Qtz, Cal, Wmca	20	20	0.44	0.02	0.37	0.01	477	7.8	469	13.0	483	8.6	467	8.3
138	AS-Gm251	46°51'48,1"	13°27'53,4"	1290	GL	Cal, Qtz, Wmca	20	18	0.41	0.02	0.47	0.06	457	5.3	428	9.1	462	5.7	447	5.4
139	AS-Gm252	46°51'29,3"	13°27'09,5"	1251	GL	Cal, Qtz, Wmca	20	19	0.45	0.03	0.56	0.07	443	5.5	415	6.0	447	5.8	433	5.4
140	AS-Gm253	46°51'28,5"	13°26'58,8"	1244	GL	Cal, Qtz, Wmca, Ab	20	20	0.42	0.03	0.52	0.08	454	6.6	435	7.5	459	7.1	444	6.7
141	AS-Gm254	46°51'27,4"	13°26'54,2"	1242	GL	Qtz, Cal, Wmca	20	19	0.40	0.05	0.39	0.04	468	8.7	437	16.1	474	9.5	458	9.1
142	AS-Gm255	46°51'28,8"	13°27'07,8"	1167	GL	Cal, Qtz, Wmca, Ab	21	21	0.41	0.04	0.49	0.09	457	8.1	435	10.8	463	8.8	447	8.3
143	AS-Mz257	46°56'28,4"	13°11'00,6"	810	MO	Qtz, Cal, Wmca, Chl	20	20	0.26	0.07	0.30	0.06	505	12.4	490	20.7	515	14.0	499	14.1
144	AS-Gm258	46°51'00,8"	13°27'01,7"	1160	KQ	Qtz, Wmca	20	16	0.31	0.03	0.25	0.03	505	6.8	486	11.7	514	7.7	498	7.7
145	AS-Gm259	46°51'20,9"	13°26'25,5"	1263	GL	Qtz, Wmca, Cal	20	20	0.58	0.13	0.45	0.04	443	7.7	419	6.9	447	8.2	433	7.4
146	AS-Gm260	46°51'29,2"	13°26'17,3"	1285	GL	Qtz, Wmca	20	19	0.38	0.04	0.39	0.03	468	5.7	434	9.3	474	6.2	459	5.9
147	AS-Gm261	46°51'57,4"	13°25'30,7"	1430	GL	Ab, Wmca, Qtz, Cal	20	19	0.36	0.02	0.35	0.04	482	4.5	457	6.4	489	4.9	473	4.8
148	AS-Gm262	46°51'49,2"	13°25'29,5"	1520	GL	Qtz, Wmca, Grt, Ab	20	20	0.34	0.04	0.33	0.06	490	8.5	466	10.2	495	8.0	479	7.9
149	AS-Gm263	46°51'37,6"	13°25'30,6"	1565	GL	Cal, Ab, Wmca, Qtz	20	18	0.38	0.04	0.41	0.09	473	9.4	452	11.6	479	10.3	463	10.0
150	AS-Gm264	46°51'33,2"	13°25'21,8"	1555	GL	Cal, Wmca, Qtz, Ab	20	18	0.34	0.03	0.30	0.05	490	7.4	463	11.2	498	8.25	481	8.1
151	AS-Gm265	46°51'20,2"	13°25'49,6"	1449	GL	Qtz, Wmca, Ab	20	19	0.42	0.04	0.40	0.03	464	5.4	435	9.0	473	8.8	454	5.7

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
152	AS-Gm266	46°51'21,0"	13°26'11,3"	1433	GL	Qtz, Ab, Wmca, Chl	20	20	0.49	0.03	0.39	0.01	466	2.9	455	3.9	472	3.2	456	3.1
153	AS-PI267	46°52'12,1"	13°21'04,4"	958	GL	Cal, Qtz, Wmca	20	17	0.34	0.06	0.35	0.03	485	8.0	463	11.9	492	8.8	476	8.6
154	AS-PI271	46°52'24,0"	13°22'24,0"	1611	GL	Qtz, Cal, Wmca, Ab	20	18	0.26	0.05	0.31	0.04	503	8.6	485	14.0	513	9.6	497	9.6
155	AS-PI272	46°52'16,2"	13°22'10,5"	1584	GL	Qtz, Wmca, Bt, Ab	20	17	0.33	0.02	0.29	0.29	493	4.0	470	6.9	500	5.2	484	5.1
156	AS-PI273	46°52'19,2"	13°21'46,6"	1550	GL	Bt, Wmca, Qtz, Grt	20	17	0.17	0.05	0.23	0.06	539	12.6	547	22.3	554	14.6	539	15.1
157	AS-PI274	46°52'16,7"	13°21'31,7"	1342	GL	Qtz, Wmca, Chl, Bt, Cal, Ab	20	17	0.31	0.03	0.29	0.04	503	6.0	494	9.3	513	6.5	497	6.5
158	AS-PI275	46°51'57,9"	13°21'38,7"	1080	GL	Ab, Wmca, Qtz, Bt, Cal	20	18	0.33	0.02	0.31	0.03	492	5.1	472	8.9	500	5.7	484	5.7
159	AS-PI276	46°51'40,2"	13°21'51,8"	900	GL/MO	Qtz, Wmca, Ab, Tur	20	20	0.26	0.04	0.32	0.03	497	6.1	471	10.6	506	6.8	490	6.8
160	AS-Bu277	46°53'09,6"	13°20'28,7"	1592	GL	Ab, Wmca, Qtz, Cal	20	18	0.34	0.03	0.28	0.04	492	6.2	464	9.2	499	7.0	483	6.9
161	AS-Bu278	46°53'07,3"	13°20'21,4"	1513	GL	Qtz, Ab, Wmca, Cal, Bt	19	19	0.33	0.04	0.27	0.04	495	9.3	468	13.3	503	10.7	487	10.7
162	AS-Bu280	46°52'58,7"	13°20'30,3"	1477	GL	Cal, Qtz, Wmca, Ab	20	18	0.32	0.05	0.25	0.02	497	9.7	468	8.7	501	9.9	485	9.0
163	AS-Bu281	46°52'47,4"	13°20'35,6"	1382	GL	Qtz, Wmca, Bt, Grt	20	15	0.31	0.05	0.23	0.03	504	11.5	478	11.1	510	8.5	494	8.5
164	AS-Bu282	46°52'46,1"	13°20'19,0"	1280	GL	Cal, Qtz, Ab, Bt, Wmca	20	18	0.31	0.03	0.27	0.03	503	7.7	487	10.2	513	8.7	497	9.7
165	AS-Bu283	46°52'50,2"	13°20'08,5"	1270	GL	Qtz, Wmca, Ab, Grt, Pl, Bt	20	17	0.28	0.05	0.27	0.05	514	10.8	477	23.0	526	12.2	509	12.3
166	AS-Bu284	46°52'36,3"	13°20'36,5"	1225	GL	Wmca, Qtz, Ab, Bt	20	16	0.38	0.02	0.36	0.04	471	5.7	434	8.7	478	6.2	462	5.9
167	AS-Bu285	46°52'30,8"	13°20'38,0"	1146	GL	Cal, Qtz, Wmca, Bt, Czo	20	20	0.41	0.07	0.38	0.04	474	7.3	453	9.4	480	8.0	464	7.7
168	AS-Bu286	46°52'19,6"	13°20'29,9"	958	GL	Cal, Wmca, Qtz, Ab, Bt	20	18	0.35	0.03	0.35	0.05	485	7.4	456	12.5	490	7.0	474	6.9
169	AS-Bu287	46°52'20,3"	13°20'12,3"	872	GL/MO	Qtz, Wmca, Cal	20	19	0.32	0.04	0.27	0.05	500	8.3	479	13.4	509	9.3	493	9.2
170	AS-Bu288	46°52'15,3"	13°20'15,6"	820	MO	Qtz, Wmca, Chl, Ab	19	16	0.21	0.05	0.28	0.06	516	13.3	501	24.1	528	15.0	511	15.1
171	AS-Re290	46°53'38,1"	13°18'31,8"	1114	GL	Cal, Qtz, Ab, Wmca, Ep, Bt	20	16	0.31	0.08	0.33	0.06	495	14.1	476	22.5	503	15.9	487	15.9
172	AS-Re291	46°53'28,9"	13°18'24,1"	1072	GL	Qtz, Wmca, Cal	20	18	0.32	0.05	0.30	0.07	500	11.0	486	17.4	509	12.3	493	12.2
173	AS-Re292	46°53'18,7"	13°18'20,3"	999	GL/MO	Cal, Qtz, Wmca	19	18	0.40	0.05	0.39	0.03	466	6.8	434	10.4	472	7.5	456	7.2
174	AS-Re293	46°53'12,7"	13°18'25,5"	944	GL	Cal, Wmca, Qtz	20	14	0.28	0.05	0.32	0.05	498	11.8	477	20.0	507	13.3	491	13.4
175	AS-Gm295	46°50'50,1"	13°25'29,0"	883	KQ	Cal, Qtz, Wmca	20	20	0.32	0.06	0.32	0.11	501	11.9	479	14.1	510	13.2	494	13.1
176	AS-Ke296	46°55'00,9"	13°16'48,6"	1827	GL	Cal, Wmca, Qtz	20	9	0.50	0.04	0.71	0.13	416	11.7	385	9.7	425	17.2	413	15.8
	AS-Ke296	46°55'00,9"	13°16'48,6"	1827	GL	Cal, Wmca, Qtz	20	11	0.31	0.04	0.26	0.05	501	12.4	481	17.4	515	11.6	498	11.7
177	AS-Ke299	46°54'59,6"	13°16'08,2"	1457	GL	Cal, Wmca, Bt, Ab, Qtz	20	20	0.34	0.03	0.30	0.05	490	7.1	463	11.4	498	7.9	482	7.8
178	AS-Ke300	46°55'08,8"	13°16'02,8"	1300	GL	Ab, Bt, Cal, Qtz, Wmca	20	20	0.31	0.04	0.28	0.05	502	7.7	487	12.2	512	8.6	496	8.6
179	AS-Ke301	46°54'29,0"	13°16'18,6"	1202	GL	Qtz, Wmca, Ab	20	15	0.31	0.03	0.27	0.05	505	8.6	488	12.9	515	9.6	499	9.6
180	AS-Ke302	46°54'31,0"	13°16'09,8"	1122	GL	Cal, Qtz, Ab, Wmca, Bt	20	20	0.32	0.03	0.29	0.05	500	6.6	487	9.6	510	7.4	493	7.4
181	AS-Ka303	47°03'04,2"	13°35'42,6"	1889	KQ	Wmca, Qtz, Ab	20	20	0.37	0.03	0.40	0.06	476	6.1	455	7.1	482	6.8	466	6.6

#	Sample name	GPS coordinates		elev. [m]	Tectonic unit	Mineral assemblage	# spec. R1	# spec. R1*	R1		R2		a		b		c		d	
		N	E						Mean	SD	Mean	SD	T(°C)	CI	T(°C)	CI	T(°C)	CI	T(°C)	CI
182	AS-Zed304	47°12'05,5"	13°25'14,5"	1996	MA	Cal, Qtz, Wmca	20	20	0.63	0.02	1.78	0.16	360	3.3	378	5.0	362	3.2	358	2.7
183	AS-Zed305	47°11'57,8"	13°25'22,3"	2010	MA	Qtz, Wmca, Ab	20	20	0.62	0.01	1.77	0.13	365	2.4	390	4.1	366	2.4	362	2.0
184	AS-Zed307	47°11'25,7"	13°24'04,7"	1704	MA	Wmca, Qtz	20	20	0.53	0.02	1.08	0.11	406	5.0	426	6.6	408	5.2	398	4.6
185	AS-Zed308	47°11'10,7"	13°24'52,6"	1537	MA	Wmca, Qtz	20	20	0.57	0.01	1.29	0.08	387	2.8	408	4.6	389	2.9	381	2.4
186	AS-Zed309	47°10'57,7"	13°26'12,8"	1376	MA	Qtz, Wmca, Cal	20	13	0.58	0.04	1.32	0.32	384	9.1	403	9.1	386	9.7	378	8.3
187	AS-GrA312	47°14'00,2"	13°11'24,4"	960	MA	Qtz, Wmca	20	20	1.00	0.14	0.53	0.03	406	5.6	413	3.0	408	5.7	397	5.0
188	AS-GrA313	47°14'01,6"	13°11'22,9"	1061	MA	Cal, Qtz, Wmca	20	20	1.08	0.18	0.53	0.03	404	6.1	423	3.3	406	6.3	396	5.5
189	AS-GrA314	47°16'37,1"	13°11'45,9"	1335	MA	Qtz, Wmca, Ab	20	20	0.63	0.02	1.90	0.27	360	3.2	376	8.6	361	3.1	358	2.5
190	AS-GrA316	47°18'59,2"	13°12'01,9"	871	GW	very fine-grained	20	20	0.57	0.01	1.28	0.09	389	3.1	412	3.3	391	3.2	383	2.7
191	AS-Gas318	47°08'04,1"	13°04'18,2"	1444	GL	Qtz, Ab, Wmca, Cal, Chl	20	20	0.38	0.02	0.39	0.04	471	3.9	444	5.2	477	4.3	461	4.2
192	AS-Gas319	47°08'04,8"	13°04'18,9"	1525	GL	Ab, Wmca, Cal, Qtz, Chl, Bt	20	20	0.32	0.04	0.34	0.03	489	5.4	468	8.7	497	6.0	480	5.9
193	AS-Gas320	47°11'57,8"	13°06'39,8"	1012	GL	Cal, Wmca, Qtz, Bt	20	20	0.67	0.13	0.46	0.04	436	6.0	425	5.4	440	6.3	426	5.8
194	AS-Gas321	47°14'58,0"	13°06'38,8"	989	MA	Qtz, Wmca	20	20	0.54	0.03	1.07	0.17	400	6.1	408	5.1	402	6.2	393	5.4
195	AS-Gas322	47°15'30,9"	13°04'40,3"	891	MA	Qtz, Wmca	20	18	0.51	0.03	0.92	0.17	413	5.8	415	3.7	415	6.1	404	5.4
196	AS-Gös323	46°59'53,6"	13°19'45,1"	2417	SI	Wmca, Bt, Grt, Qtz, Chl	19	14	0.07	0.04	0.04	0.03	612	11.5	680	23.3	640	14.0	632	15.5
197	AS-Glo325	47°05'03,1"	12°44'33,6"	2440	GL	Qtz, Wmca	20	15	0.27	0.07	0.31	0.05	503	12.3	488	19.6	513	13.9	497	14.0
198	AS-Glo326	47°05'04,7"	12°44'30,8"	2458	GL	Wmca, Bt, Grt, Qtz, Chl	20	20	0.30	0.01	0.32	0.01	499	6.3	484	9.7	508	7.0	492	7.0
199	AS-Glo327	47°03'09,9"	12°50'29,5"	1987	GL/MO	Qtz, Wmca, Chl, Grt	20	19	0.21	0.03	0.28	0.01	519	7.6	508	12.1	530	8.6	514	8.7
200	MH-286b	47°04'58,6"	12°50'09,7"	2695	MO	Qtz, Wmca, Grt, Chl, Bt	20	18	0.18	0.05	0.24	0.05	534	11.3	536	19.5	548	12.9	532	13.3