Geological Magazine

Strontium-, carbon- and oxygen-isotope compositions of marbles from the Cycladic blueschist belt, Greece

Claudia Gärtner, Michael Bröcker, Harald Strauss, Katja Farber

Appendix

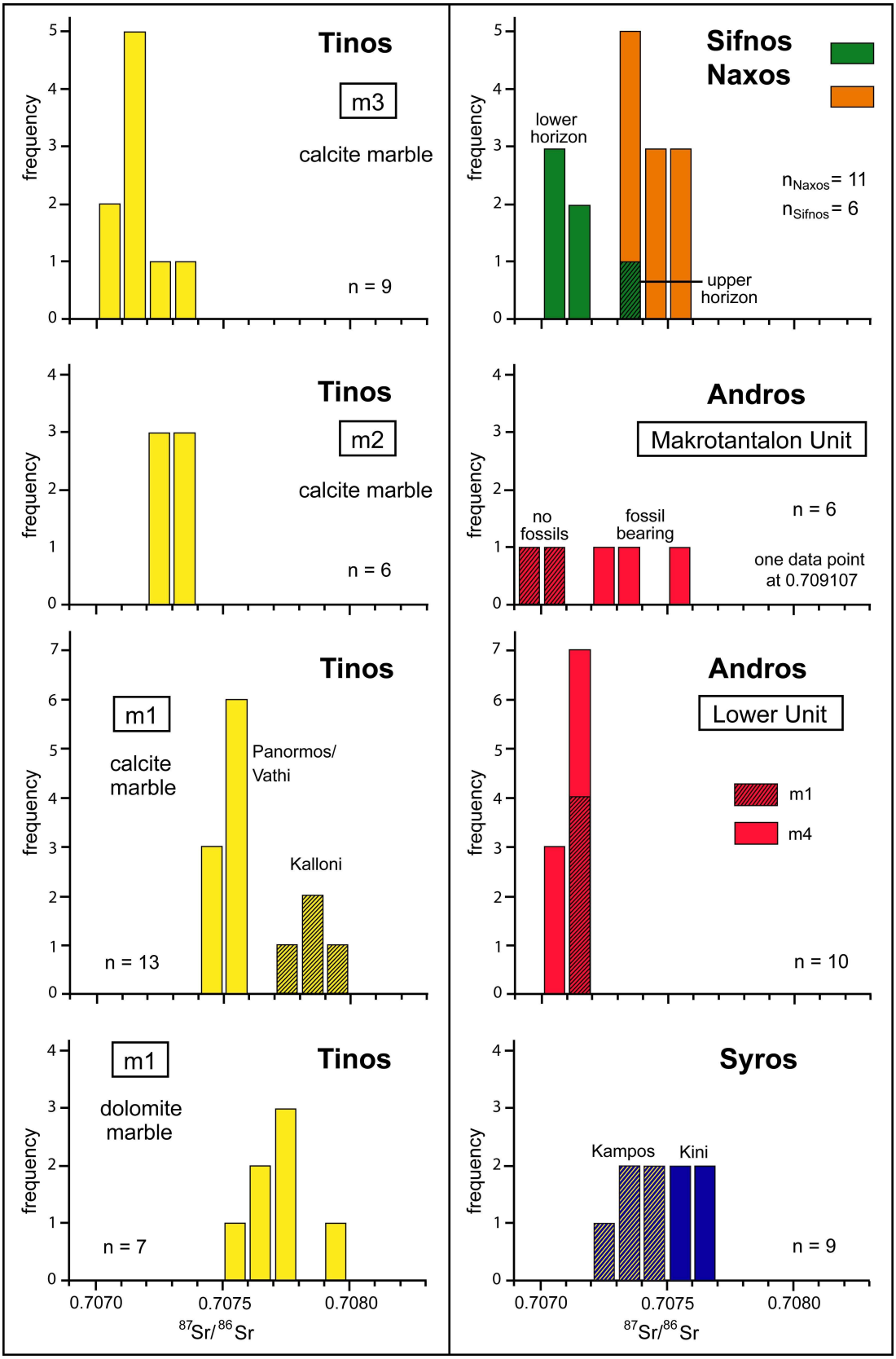

Fig. 2 Histograms showing $^{87}Sr/^{86}Sr$ values of “best quality” (= mica-free or mica poor) samples, representing various marble units of the Cycladic blueschist belt.

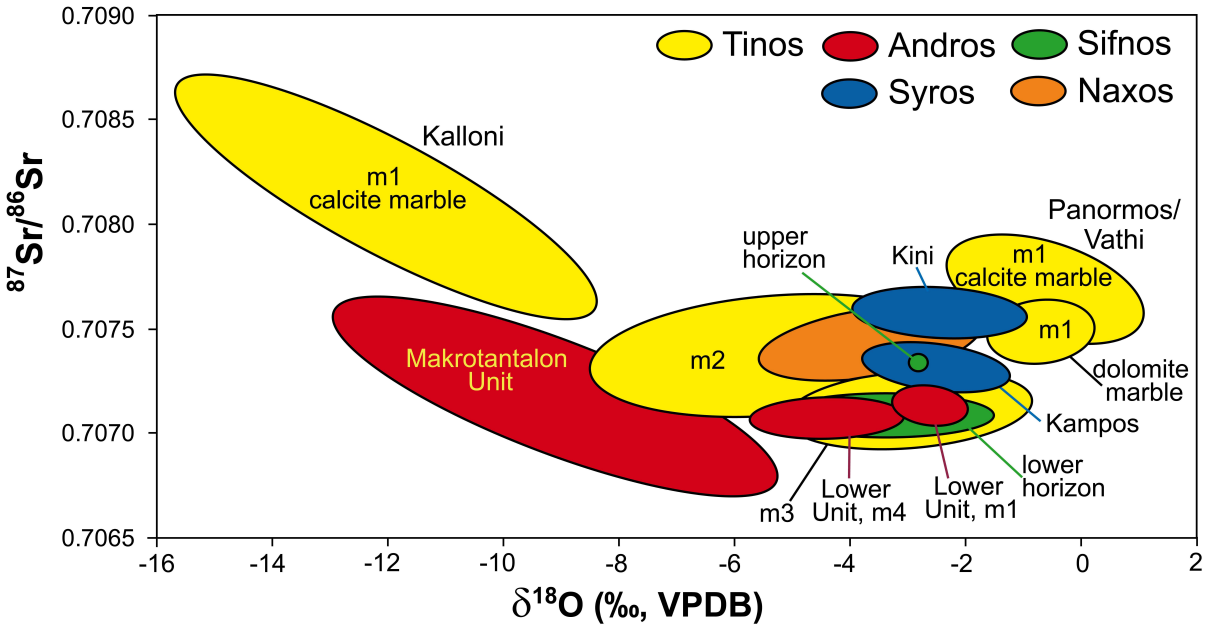

Fig. 4 $^{87}Sr/^{86}Sr$ vs. $\delta^{18}O$ diagram showing isotope data of “best quality” (= mica-free or mica poor) marbles from the Cycladic blueschist belt.

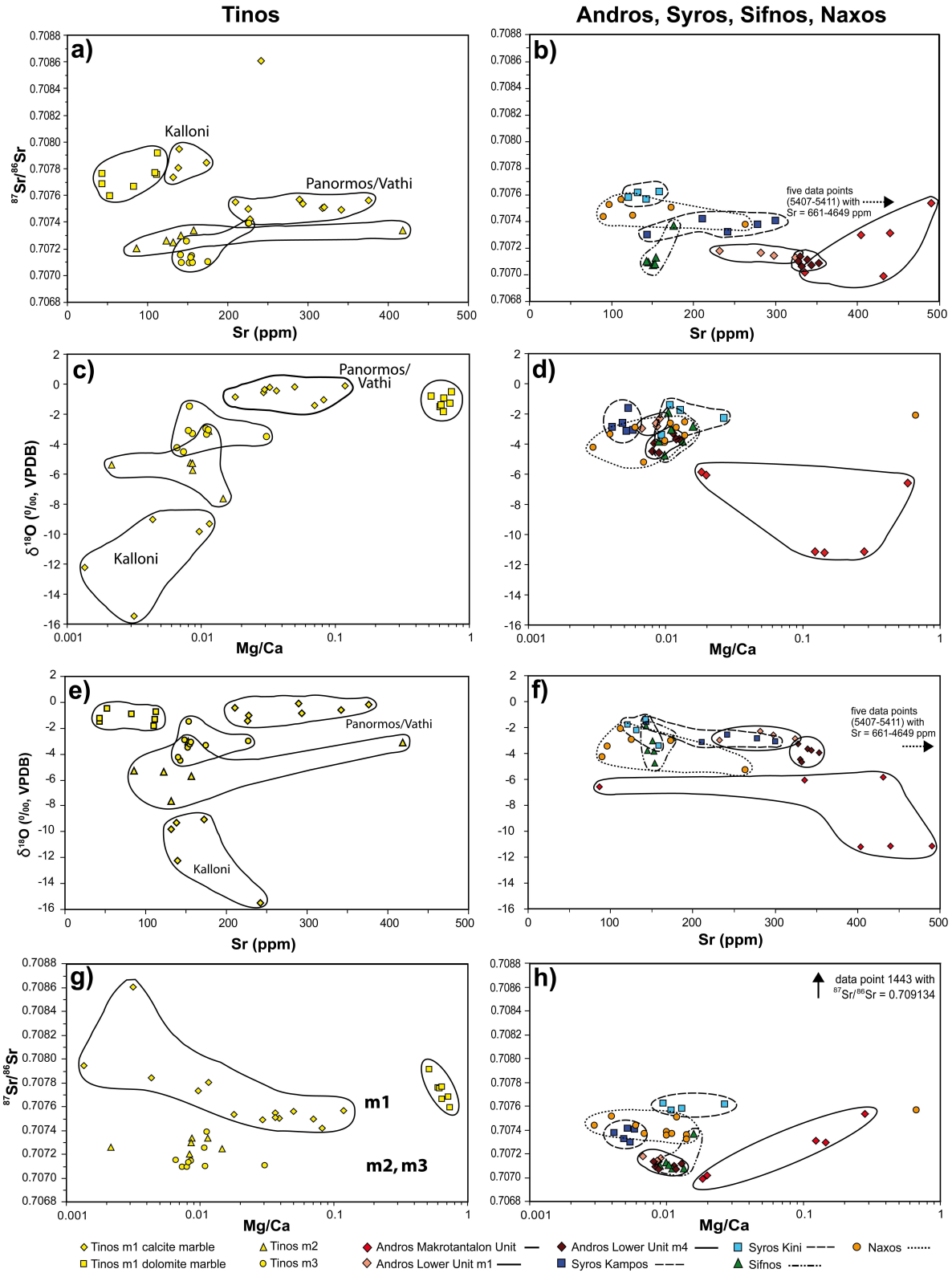

Fig. 5 Selected geochemical parameters for “best quality” (= mica-free or mica poor) marbles from the Cycladic blueschist belt. Left-hand side = Tinos; right-hand side = Andros, Syros, Sifnos, Naxos.

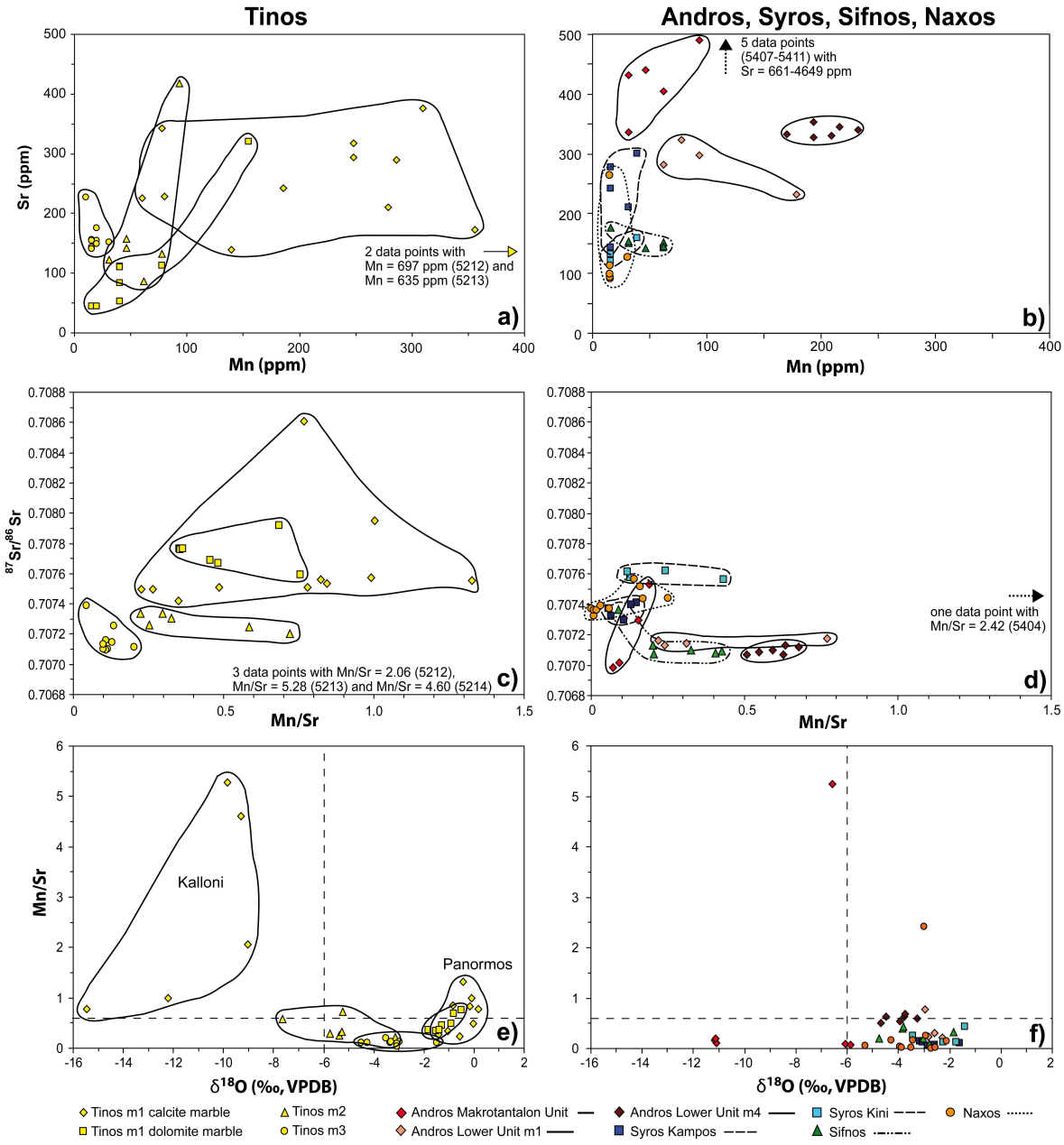

Fig. 6 Sr vs. Mn, $^{87}Sr/^{86}Sr$ vs. Mn/Sr and Mn/Sr vs. $\delta^{18}O$ diagrams for "best quality" (= mica-free or mica poor) marbles from the Cycladic blueschist belt. Left-hand side = Tinos; right-hand side = Andros, Syros, Sifnos, Naxos.

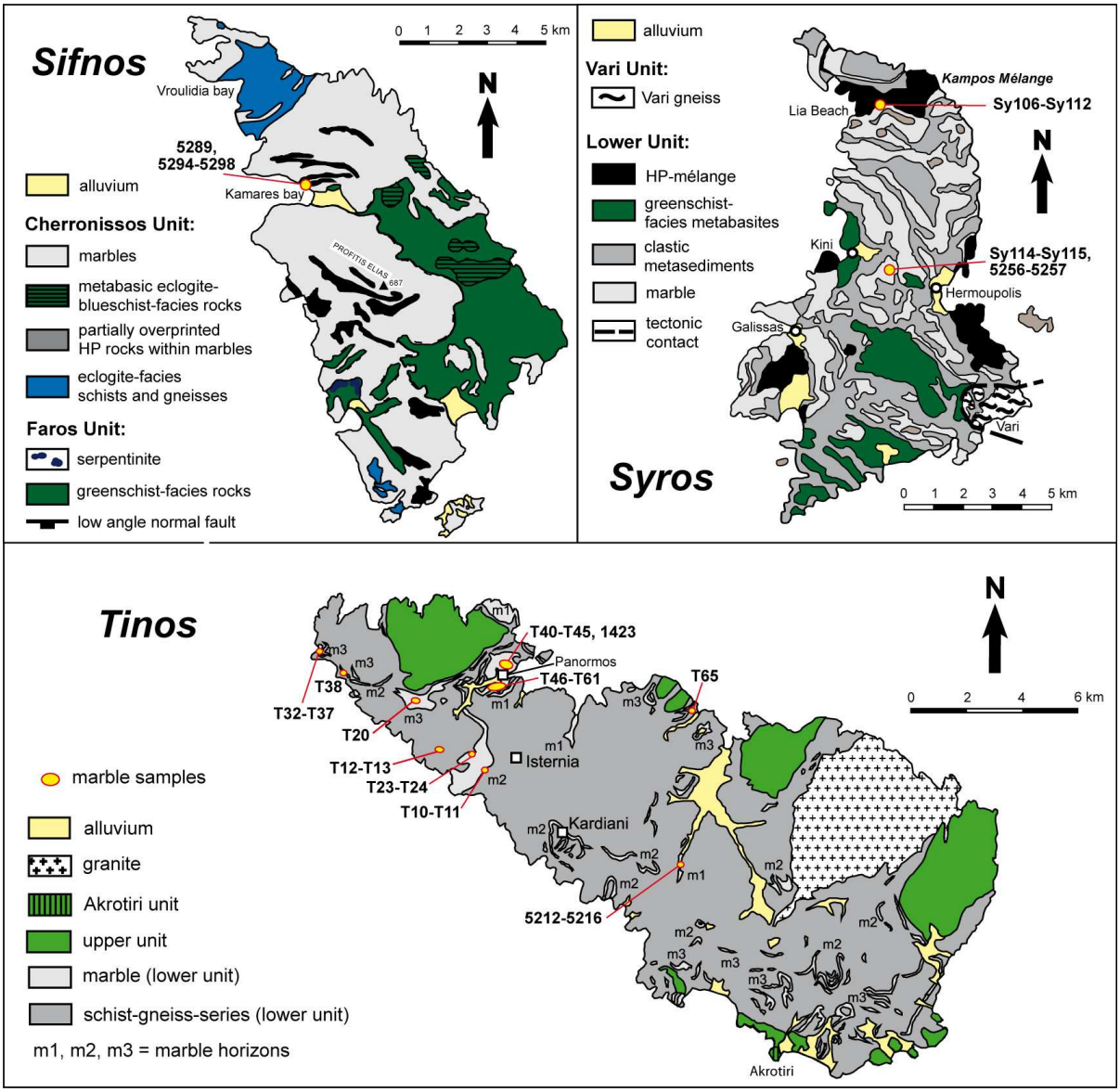

Fig. A1 Simplified geological maps of Tinos (modified after Melidonis, 1980), Syros (modified after Keiter *et al.* 2004) and Sifnos (modified after Avigad, 1993) with sample locations.

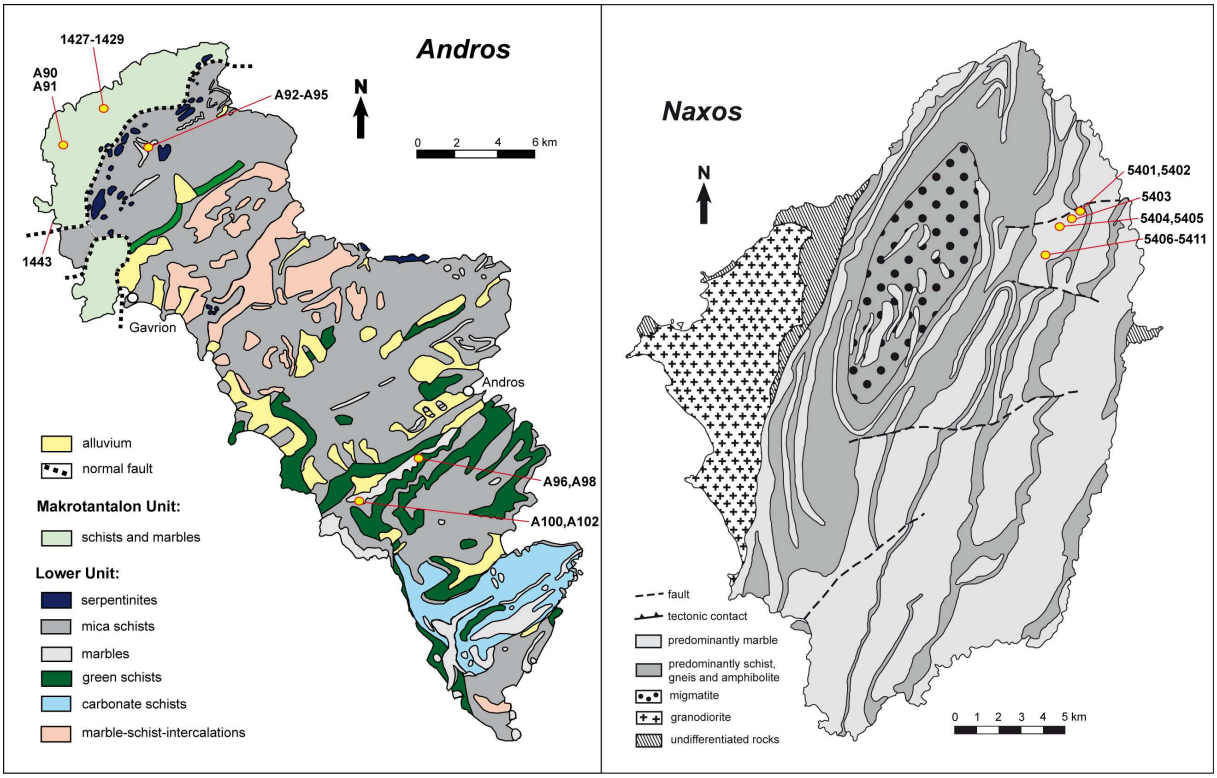

Fig. A2 Simplified geological maps of Andros (modified after Papanikolaou, 1978b) and Naxos (modified after Feenstra, 1996) with sample locations.

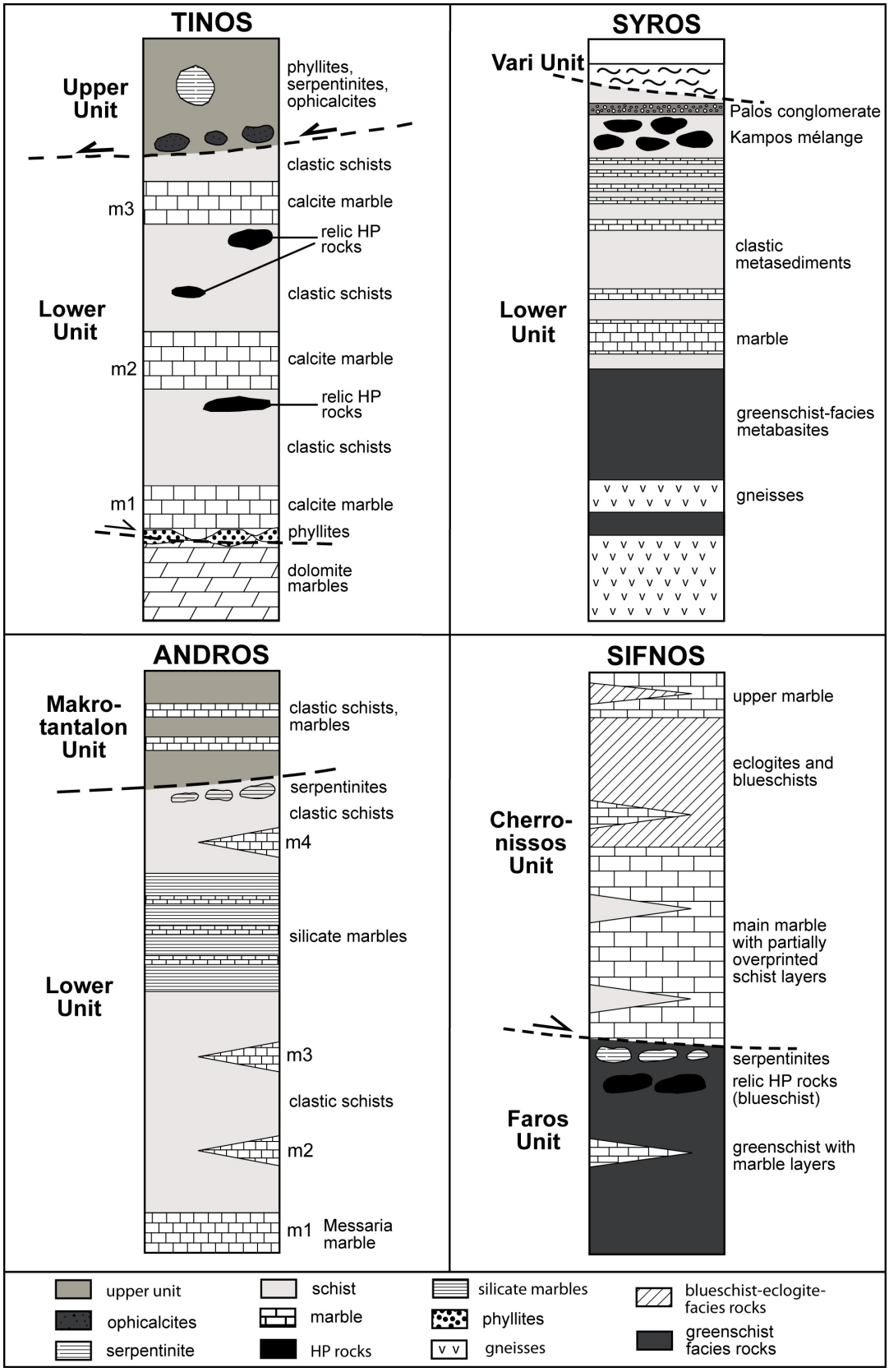

Fig. A3 Schematic columnar sections (not to scale) of the metamorphic successions exposed on Tinos, Andros, Syros and Sifnos.

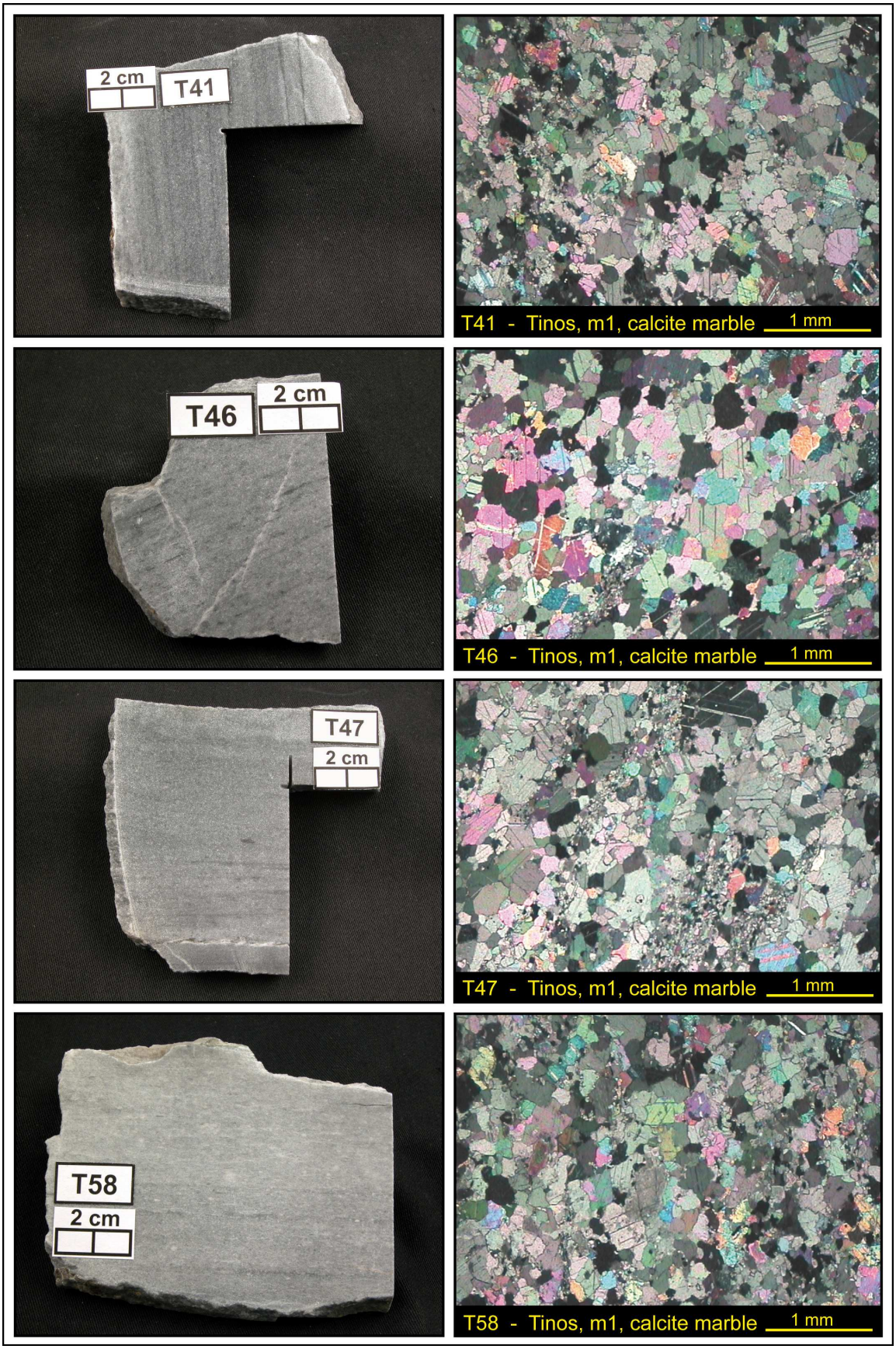

Fig. A4 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

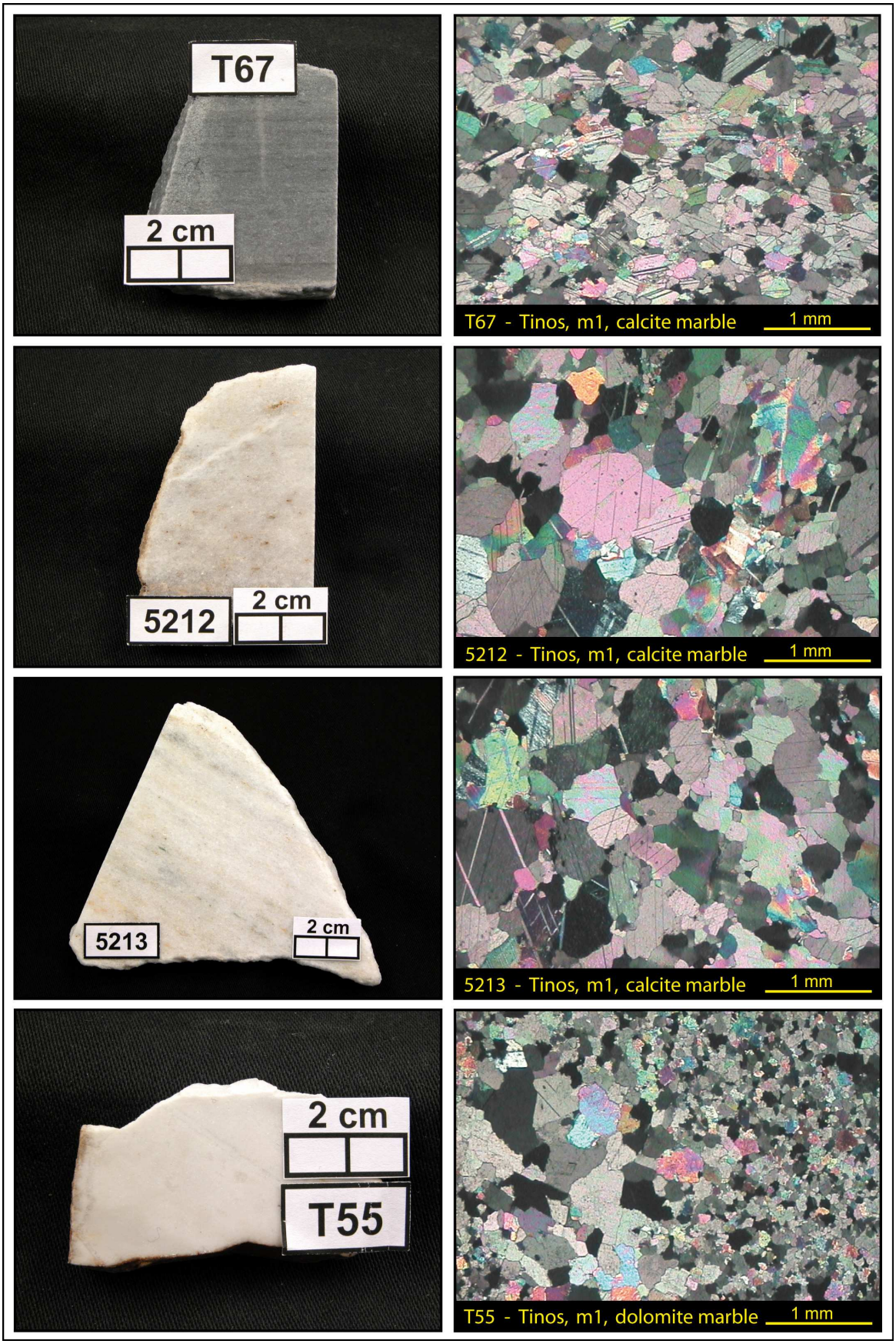

Fig. A5 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

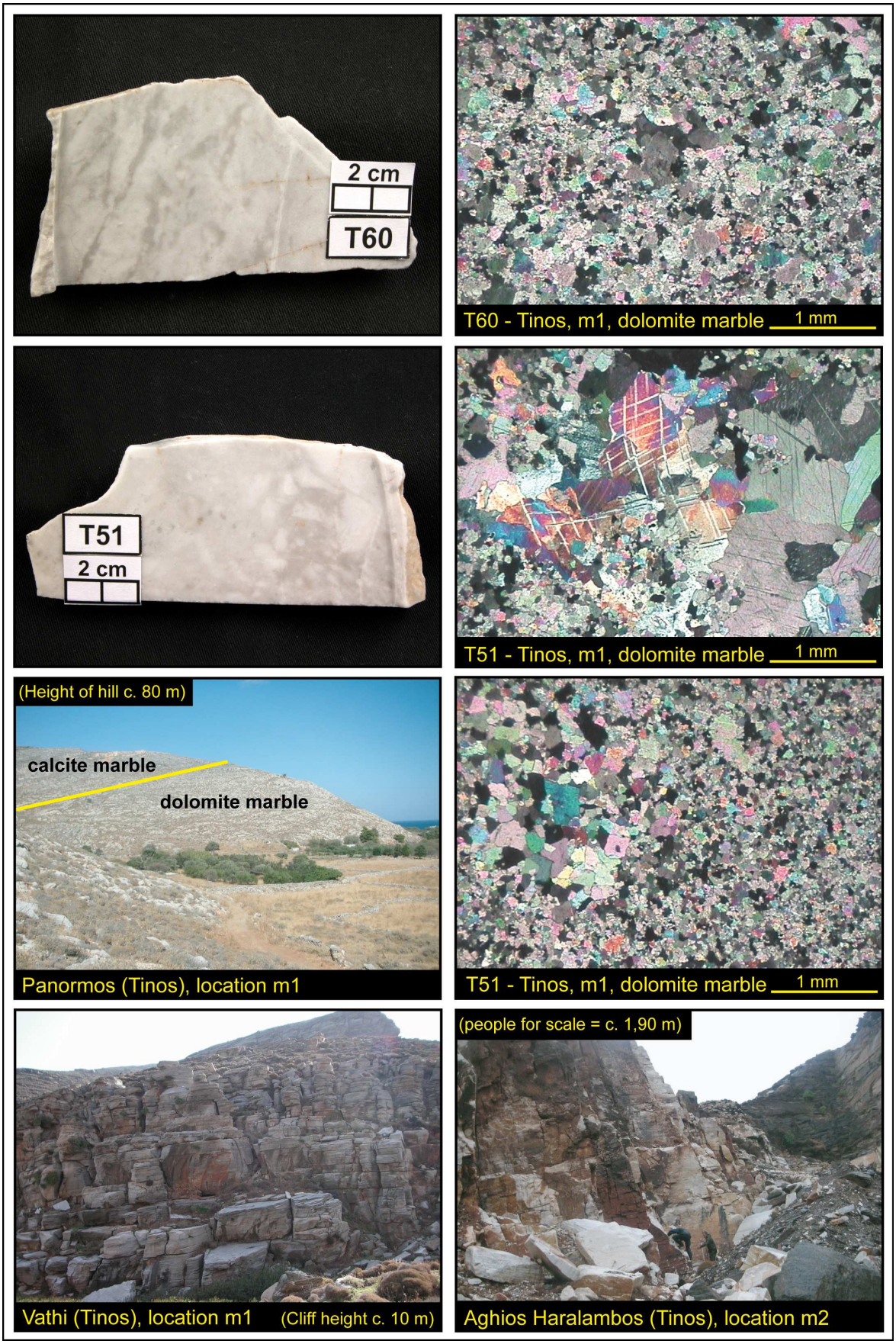

Fig. A6 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

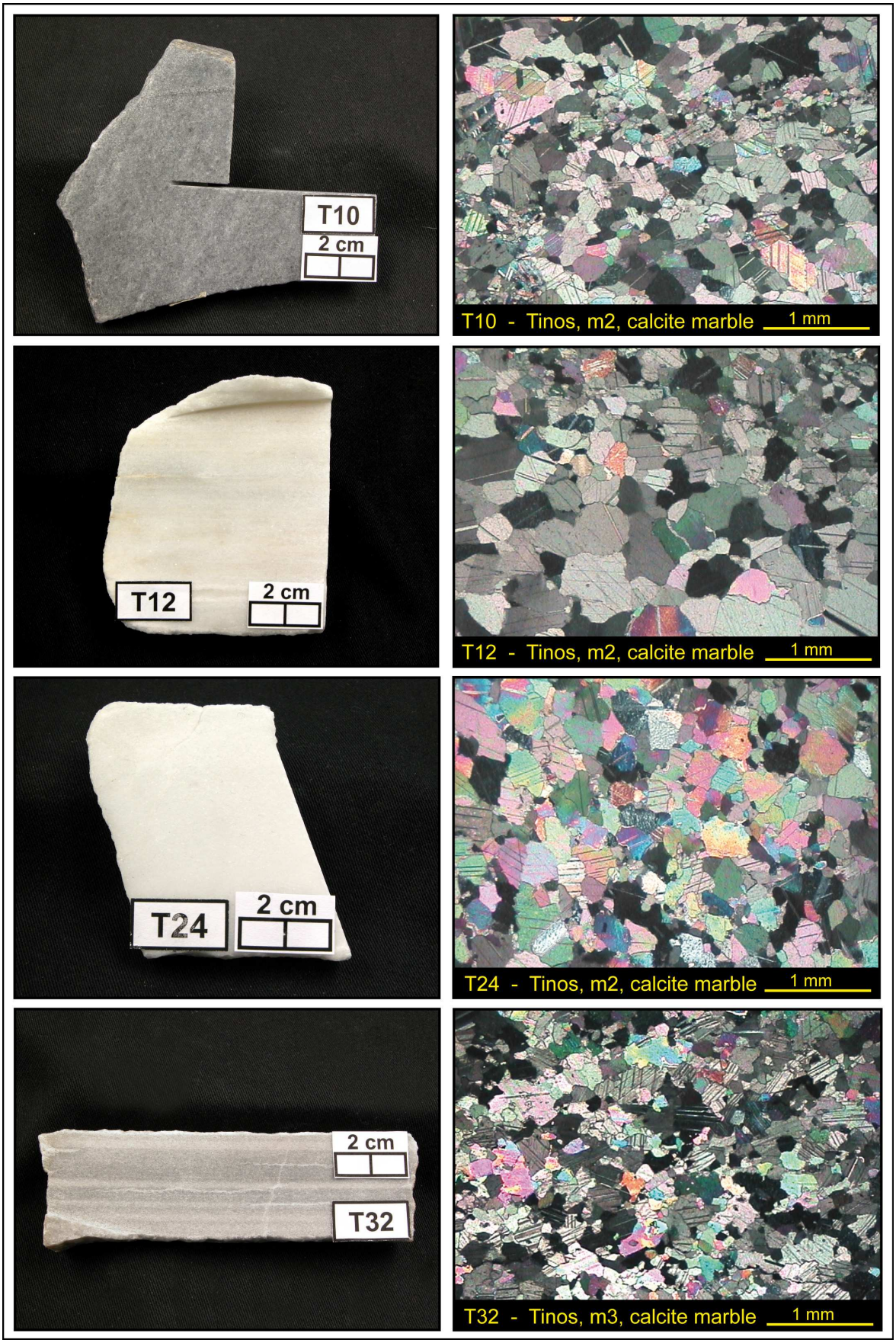

Fig. A7 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

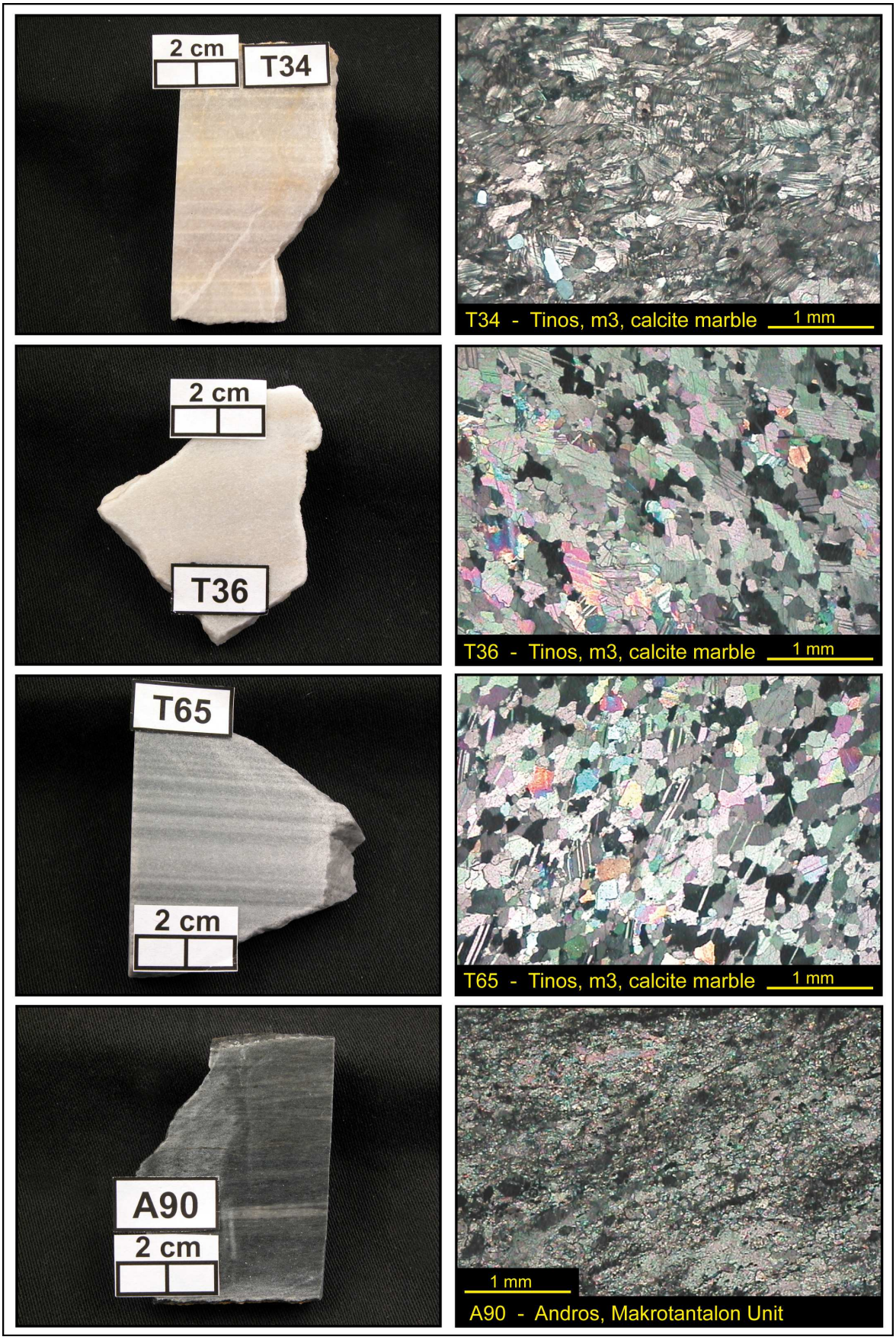

Fig. A8 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

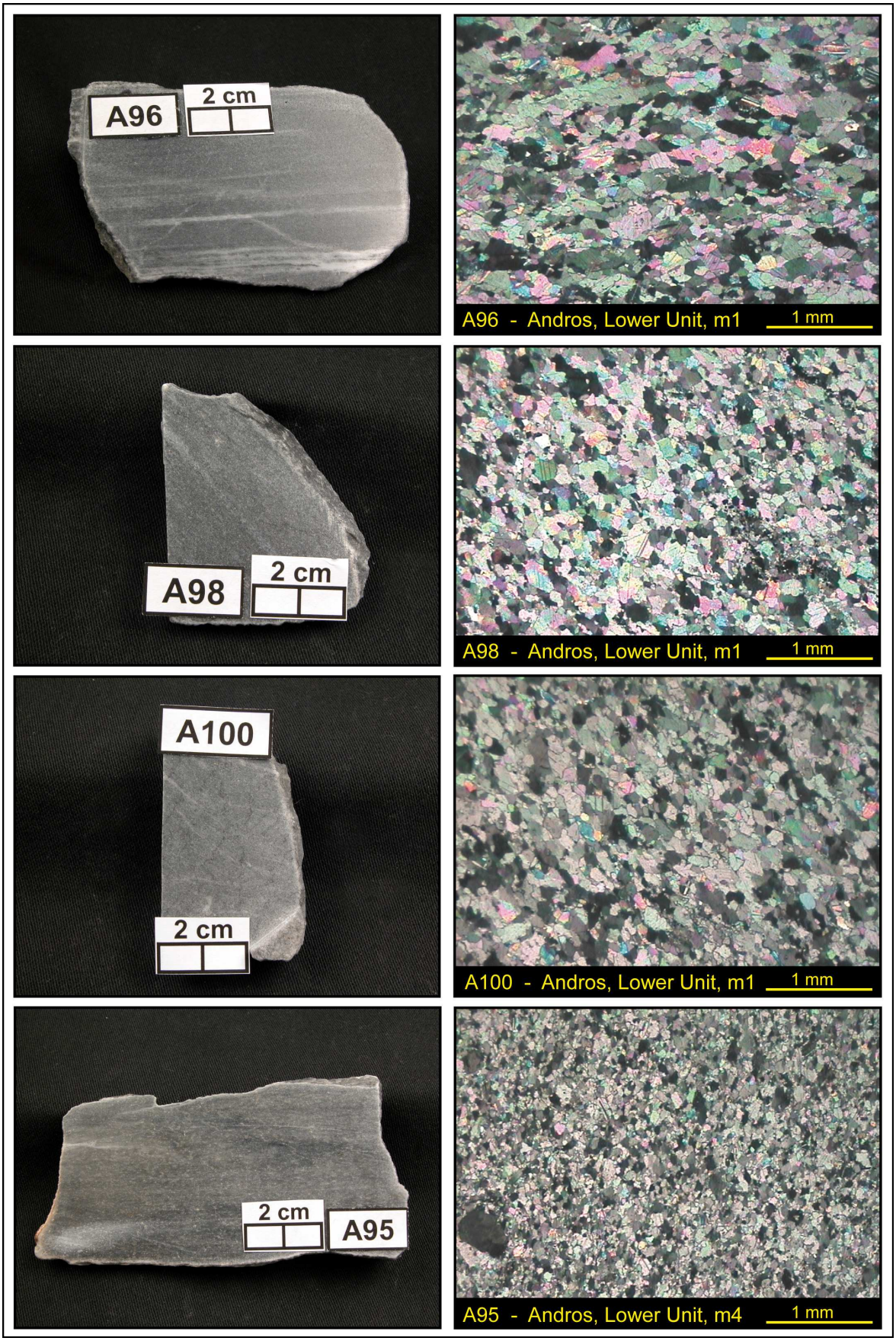

Fig. A9 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

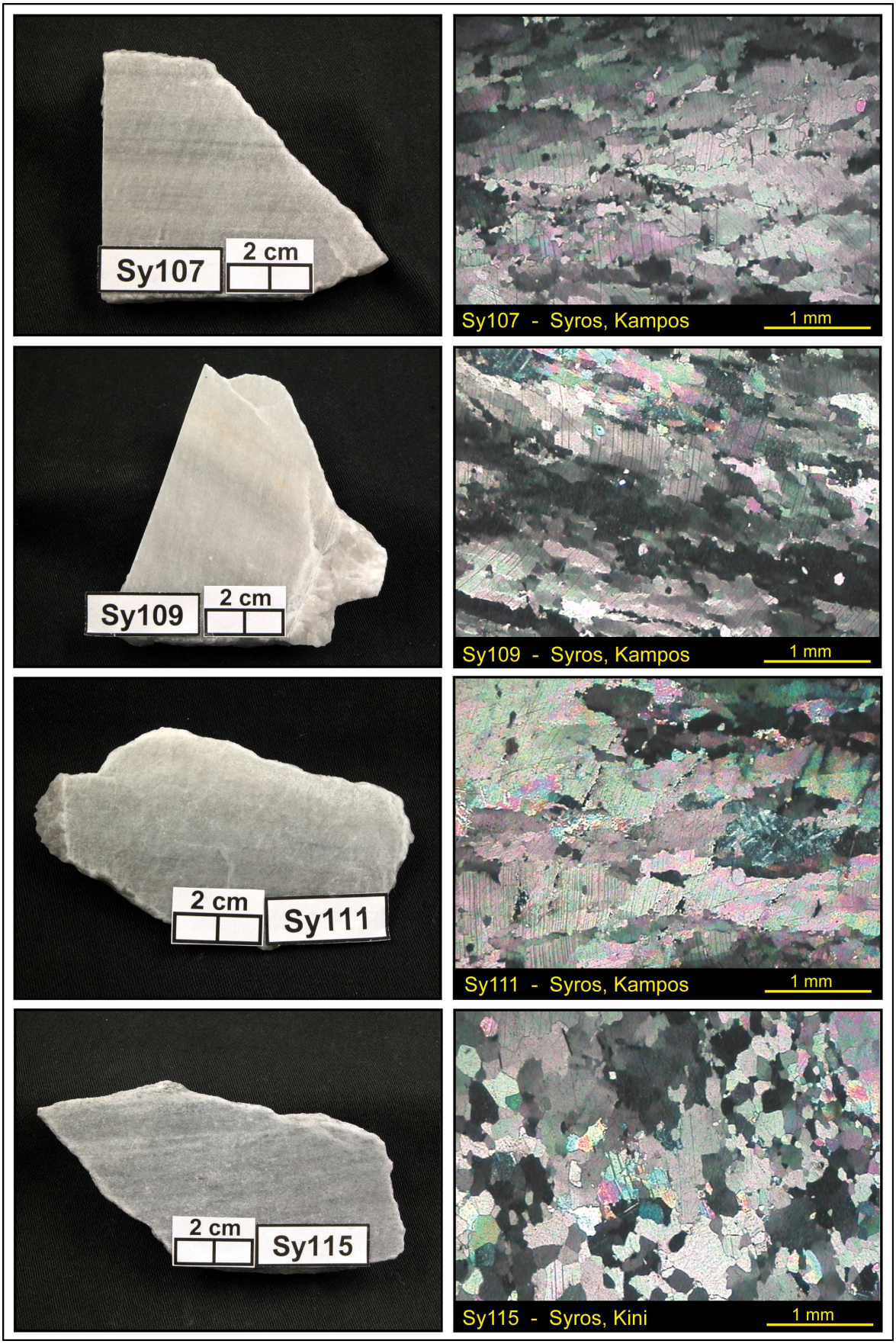

Fig. A10 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

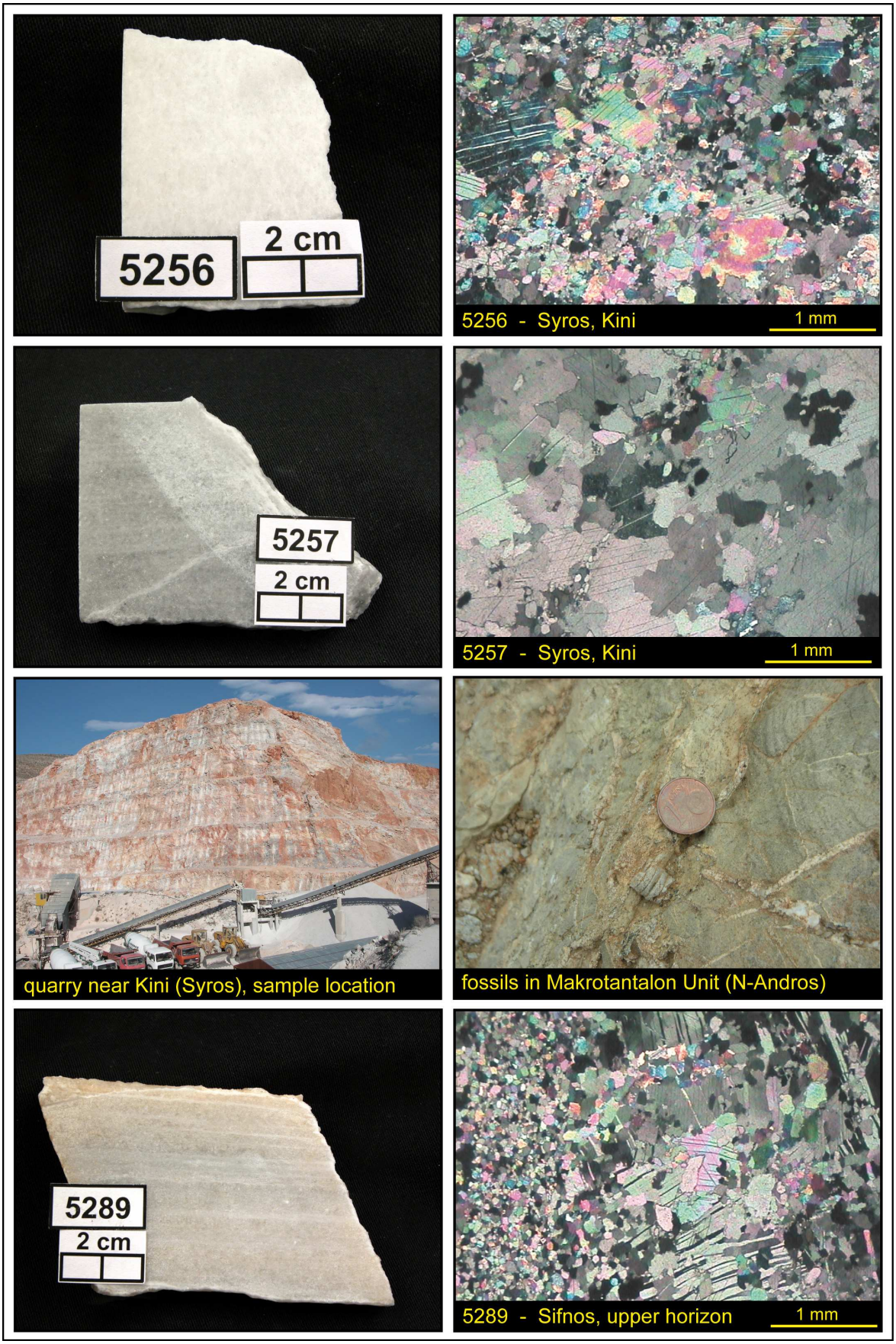

Fig. A11 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

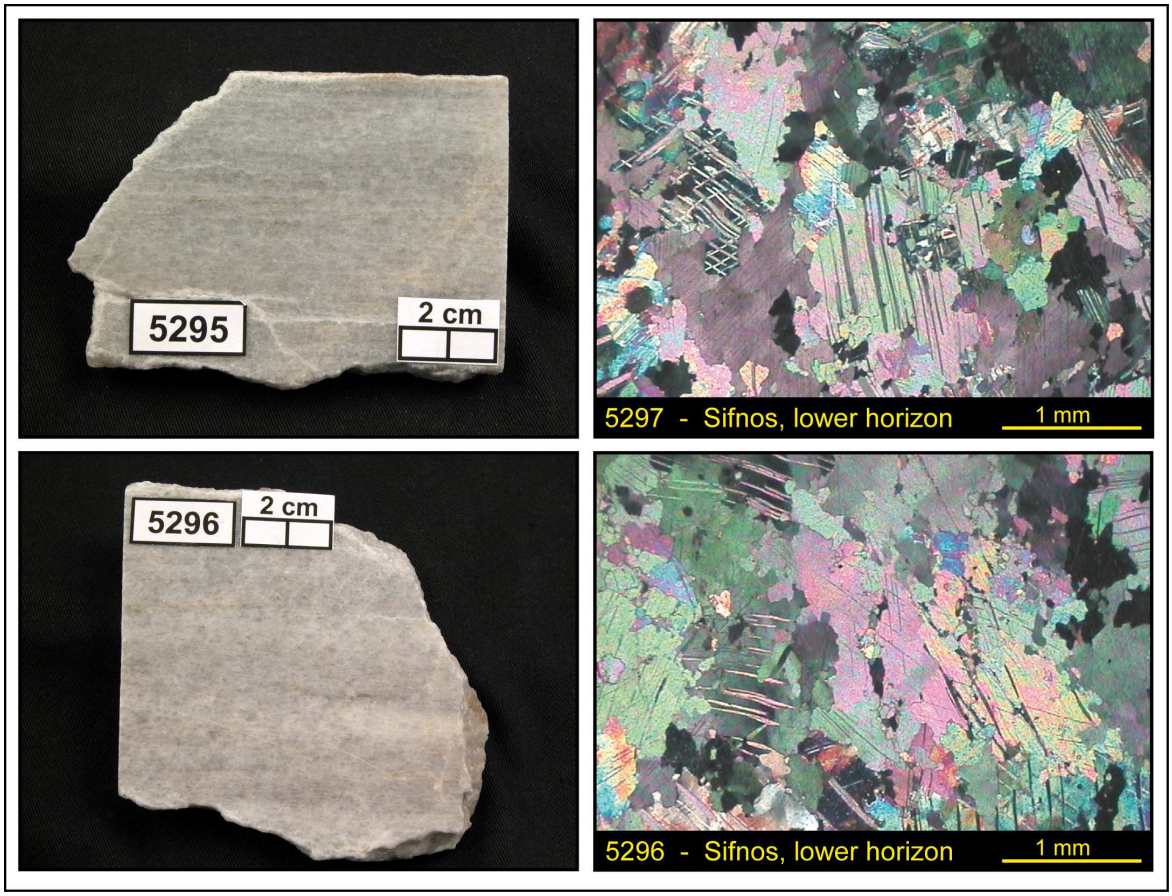

Fig. A12 Location, hand specimen and thin-section pictures of representative marble samples from the Cycladic blueschist belt.

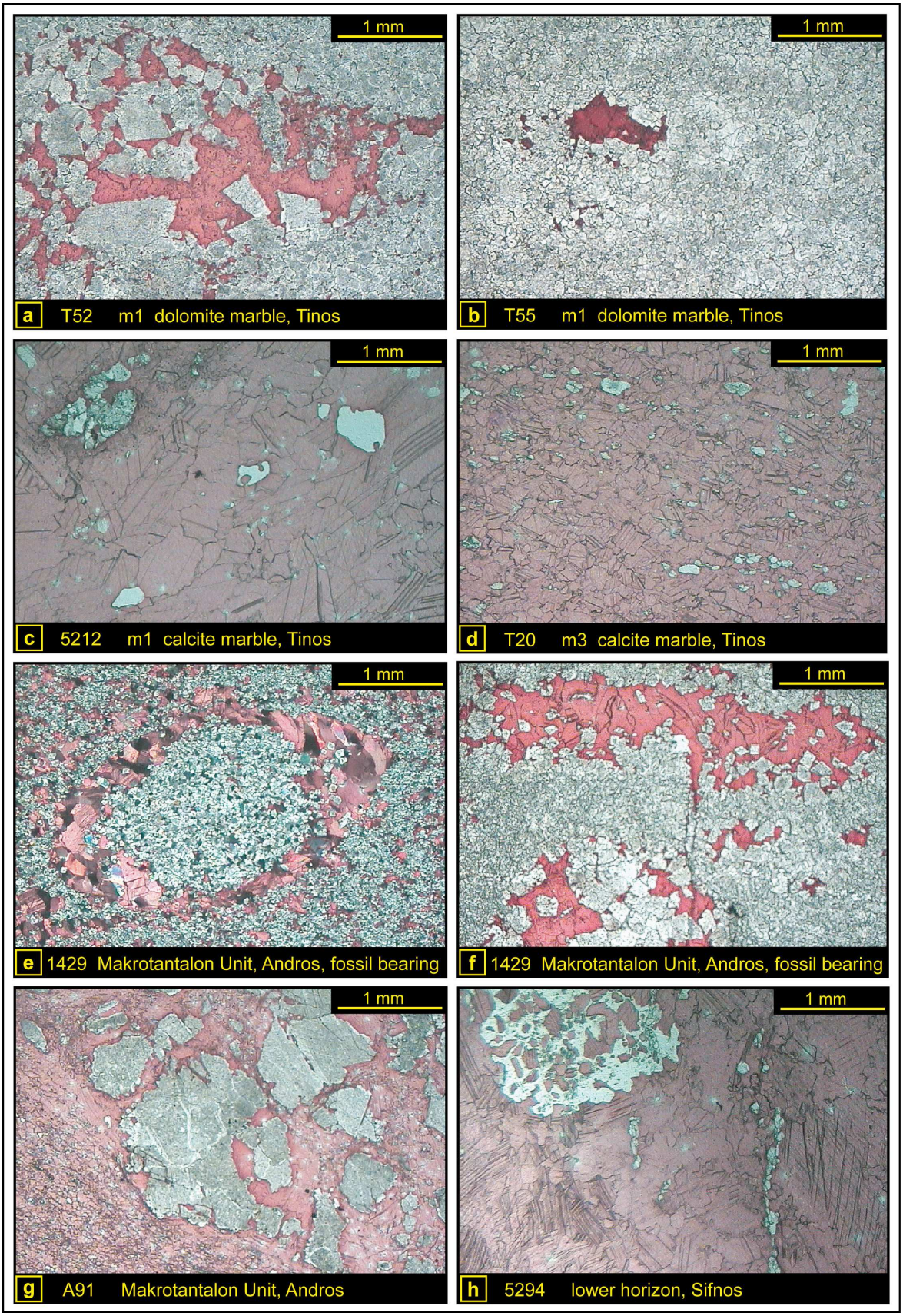

Fig. A13 Thin-section pictures of marble samples treated with Alizarin Red which selectively stains calcite red, whereas dolomite remains unstained.

Table A1. GPS coordinates of marble samples used for isotope geochemical studies.

sample	marble horizon	location	GPS	
Tinos			**latitude (N)**	**longitude (E)**
T40 T41	**m1 calcite marble**	Panormos - NE	37°39.248′	025°02.635′
T43 T45	m1 calcite marble	Panormos - NE	37°39.288′	025°02.717′
T46 T47	m1 calcite marble	Panormos - SW	37°38.853′	025°02.461'
T57	m1 calcite marble	Panormos - S	37°38.871′	025°03.023′
T58	m1 calcite marble	Panormos - S	37°38.839′	025°03.025′
T67	m1 calcite marble	Vathi	37°38.236′	025°04.747′
5212 5213 5214	m1 calcite marble	valley near Kalloni	37°35.711′	025°07.449′
5215 5216	m1 calcite marble	valley near Kalloni	37°35.763′	025°07.431′
T51	**m1 dolomite marble**	Panormos - NW	37°39.264′	025°03.071′
T52	m1 dolomite marble	Panormos - NW	37°39.304′	025°03.183′
T55 T56	m1 dolomite marble	Panormos - S	37°38.943′	025°03.024′
T60 T61	m1 dolomite marble	Panormos - SW	37°38.953′	025°02.587′
1423	m1 dolomite marble	Panormos - W	37°39.240′	025°02.600′
T1 T2	**m2**	quarry near Kardiani	37°36.064′	025°04.881′
T3 T4	m2	quarry near Kardiani	37°35.824′	025°04.515′
T10	m2	Isternia - W	37°37.450′	025°02.250′
T11	m2	Isternia - W	37°37.483′	025°02.150′
T12 T13	m2	quarry, road cut to Aghios Haralambos	37°37.763′	025°01.418′
T23 T24	m2	quarry near Isternia	37°37.715′	025°02.318′
5206 5209	m2	Kalloni, Tinos	37°36.621′	025°06.682′
5229 5230	m2	Isternia, Tinos	37°37.477′	025°02.189′
T20	**m3**	Marlas	37°38.502′	025°01.176′
T32 T33 T34 T35	m3	Kavos Manganistis - N	37°39.624'	024°58.615'
T36 T37	m3	Kavos Manganistis - N	37°39.562'	024°58.562'
T38	m3	Korakou Folia	37°39.168'	024°59.140'
T65	m3	Korelados - N	37°38.538'	025°07.434'
T72 T73 T74 T75	m3	Mavra Gremma - E	37°38.784'	025°06.494'
Andros				
A90 A91	**Makrotantalon Unit**	road cut, 2 km to Fasa	37°56.915'	024°42.278'
1427 1428 1429	Makrotantalon Unit	Kato Kalivari	37°57.900'	024°42. 500'
1443	Makrotantalon Unit	Pisolimnionas Bay	37°55.027 '	024°41.627'

Cont. Table A1. GPS coordinates of marble samples used for isotope geochemical studies.

sample	marble horizon	location	GPS	
Andros			**latitude (N)**	**longitude (E)**
A96	**Lower Unit, m1**	Falika	37°48.600'	024°54.258'
A98	Lower Unit, m1	Falika	37°48.598'	024°54.373'
A100 A102	Lower Unit, m1	quarry, S of Pliasa	37°47.481'	024°5 1.965'
A92 A93 A95	**Lower Unit, m4**	road cut from Sidondas to Kalivari	37°57.054'	024°4 4.780'
5565 5566 5567A	Lower Unit, m4	Meghalo Rema	37°57.927'	024°46.426'
Syros				
Sy106 Sy107 Sy109 Sy111 Sy112	**Kampos**	along the path to Lia Beach	37°29.568'	024°54.619'
Sy114 Sy115 5256 5257	**Kini**	quarry near Voulia	37°26.796'	024°55.142'
Sifnos				
5288 5289 5290 5291 5292 5293	**upper horizon**	Kamares	36°59.872'	024°40.163'
5294 5295	**lower horizon**	Kamares	36°59.807'	024°40.383'
5296 5297 5298	lower horizon	Kamares	36°59.810'	024°40.395'
Naxos				
5401 5402	metabauxite-horizon	road cut between Koronos and Lionas	37°07.589'	025°33.929'
5403	metabauxite-horizon	road cut between Koronos and Lionas	37°07.296'	025°33.340'
5404 5405	metabauxite-horizon	road cut between Koronos and Lionas	37°06.984'	025°32.520'
5406 5407 5408 5409 5410B 5411	metabauxite-horizon	Moutsouna, quarry	37°06.153'	0 25°32.721'

Table A2. Sample characteristics of “best quality” (= mica-free or mica poor) marbles that were selected for isotope geochemical studies.

sample	marble horizon	location	type	calcite	dolomite	colour	smell	accessories	description	
Tinos									thin section	hand specimen
T40	**m1 calcite**	Panormos - NE	1	+++	±	N6.25	+++	qtz, mica	variably grained	stripes
T41	m1 calcite	Panormos - NE	1	+++	±	N4.25	++	qtz, mica	variably grained	fine foliation
T43	m1 calcite	Panormos - NE	1	+++	±	N5.75	++	(mica)	coarse grained	massive
T45	m1 calcite	Panormos - NE	1,2	+++	++	N6	+	(mica)	fine/variably grained	massive
T46	m1 calcite	Panormos - SW	1	+++	+	N5.25	++	---	fine/variably grained	flaser structure
T47	m1 calcite	Panormos - SW	1	+++	+	N5.75	+++	(mica)	coarse/variably grained	massive
T57	m1 calcite	Panormos - S	1	+++	+	N7	+	(mica)	medium grained	irregular striped
T58	m1 calcite	Panormos - S	1	+++	+	N7.5	++	(mica)	variably grained	coarse foliation
T67	m1 calcite	Vathi	1	+++	(±)	N6.5	±	(mica)	medium/coarse grained	stripes
5212	m1 calcite	valley near Kalloni	1	+++	---	N7-7.5	---	qtz, fsp	fine/variably grained	massive
5213	m1 calcite	valley near Kalloni	1	+++	(±)	N9.25	---	qtz	variably grained	irregular foliation
5214	m1 calcite	valley near Kalloni	1	+++	(±)	N9	---	qtz, mica, chl	medium grained	massive
5215	m1 calcite	valley near Kalloni	1	+++	---	N9	---	qtz, mica	coarse grained	massive
5216	m1 calcite	valley near Kalloni	1	+++	---	N9	---	---	medium/coarse grained	irregular foliation
T51	**m1 dolomite**	Panormos - NW	2	+	+++	N8.75	-	---	heteroblastic	brecciation texture
T52	m1 dolomite	Panormos - NW	2	+	+++	N8.25	±	(mica, zrc)	heteroblastic	brecciation texture
T55	m1 dolomite	Panormos - S	2	±	+++	N9-8.75	±	(mica)	heteroblastic	brecciation texture
T56	m1 dolomite	Panormos - S	2	(±)	+++	N9.25	-	(mica, zrc)	heteroblastic	massive
T60	m1 dolomite	Panormos - SW	2	+	+++	N9	±	(mica, biot)	heteroblastic	brecciation texture
T61	m1 dolomite	Panormos - SW	2	+	+++	N9	-	(mica	heteroblastic	brecciation texture
1423	m1 dolomite	Panormos - W	2	+	+++	N3,5, 7.5	±	---	heteroblastic	conglomeratic, fossils
T10	**m2**	Isternia - W	1	+++	(+)	N6	---	(mica)	medium grained	fine foliation
T11	m2	Isternia - W	1	+++	---	N9	---	(mica)	variably grained	foliation
T12	m2	quarry, way to Aghios Haralambos	1	+++	±	N9.25-9	---	---	variably grained	foliation
T13	m2	quarry, way to Aghios Haralambos	1	+++	---	N9.25	---	---	heteroblastic, deformed	foliation
T23	m2	quarry near Isternia	1	+++	+	N8	---	(mica, qtz)	heteroblastic	stripes
T24	m2	quarry near Isternia	1	+++	±	N9.25	---	---	variably grained	massive

Type 1 = calcite marble, type 2 = dolomite marble, colour = hand specimen, after Munsell scale, smell = during crushing. Coexisting carbonates/smell: +++ = very much; + = few, ± = hardly; --- = none; accessories: (mica) = few.

Cont. Table A2. Sample characteristics of “best quality” (= mica-free or mica poor) marbles that were selected for isotope geochemical studies.

sample	marble horizon	location	type	calcite	dolomite	colour	smell	accessories	description	
Tinos									**thin section**	**hand specimen**
T20	**m3**	Marlas	1	+++	+	N7.5, 7	+	(mica)	fine grained	foliation
T32	m3	N - Kavos Manganistis	1	+++	---	N9+N7	---	(mica)	fine grained	foliation
T33	m3	N - Kavos Manganistis	1	+++	±	N8.25	---	(mica)	fine grained	stripes
T34	m3	N - Kavos Manganistis	1	+++	±	N8.5-8.25	---	(mica)	fine grained, deformed	fine stripes
T35	m3	N - Kavos Manganistis	1	+++	±	N9.25	---	(mica)	fine grained	massive
T36	m3	N - Kavos Manganistis	1	+++	---	N8.5-8.25	---	(mica)	fine/variably grained	foliation
T37	m3	N - Kavos Manganistis	1	+++	±	N6.75	±	(mica)	coarse grained	light stripes
T38	m3	Korakou Folia	1	+++	---	N9.25, 8	±	---	medium grained	irregular foliation
T65	m3	N - Korelados	1	+++	---	N7.75-6.5	+	(mica)	coarse grained	fine foliation
Andros										
A90	**Makrotantalon Unit**	road cut, 2 km to Fasa	1	+++	±	N4.25	+	qtz, mica	microcrystalline	coarse foliation
A91	Makrotantalon Unit	road cut, 2 km to Fasa	1	+++	±	N3.5	++	qtz, mica	microcrystalline	massive
1427	Makrotantalon Unit	Kato Kalivari	1+2	++	++	N5.25	+++	---	heteroblastic	--- fossils
1428	Makrotantalon Unit	Kato Kalivari	1+2	++	++	N5.75	++	---	heteroblastic	--- fossils
1429	Makrotantalon Unit	Kato Kalivari	1+2	++	++	N7.25	++	---	heteroblastic	conglomeratic, fossils
1443	Makrotantalon Unit	Pisolimnionas Bay	2	---	+++	N5.75	++	---	heteroblastic, calcitic fossils	--- fossils
A96	**Lower U. m1**	Falika	1	+++	---	N5.75	---	qtz, mica	coarse grained	foliation
A98	Lower U. m1	Falika	1	+++	---	N5-3.5	-	qtz, chl, (mica)	medium grained	little foliation
A100	Lower U. m1	quarry, S-Pliasa	1	+++	---	N5.25	±	qtz	medium grained	fine stripes
A102	Lower U. m1	quarry, S-Pliasa	1	+++	---	N6	+(+)	qtz	medium grained	stripes
A92	**Lower U. m4**	road from Sidondas to Kalivari	1	+++	---	N6.25	±	qtz	medium grained	little foliation
A93	Lower U. m4	road from Sidondas to Kalivari	1	+++	±	N4.25	++	qtz, (mica)	medium/coarse grained	veining
A95	Lower U. m4	road from Sidondas to Kalivari	1	+++	(±)	N7	---	qtz, fsp, mica	medium/coarse grained	foliation, spotted
5561	Lower U. m4	S of Aghios Thomas	1	n.d.	n.d.	N6.25	n.d.	qtz, fsp, mica	n.d.	n.d.
5565	Lower U. m4	S of Aghios Thomas	1	n.d.	n.d.	N6	n.d.	qtz, fsp	n.d.	n.d.
5566	Lower U. m4	S of Aghios Thomas	1	n.d.	n.d.	N6.25	n.d.	qtz, fsp	n.d.	n.d.
5567	Lower U. m4	S of Aghios Thomas	1	n.d.	n.d.	N5.75	n.d.	qtz, fsp	n.d.	n.d.
5571	Lower U. m4	S of Aghios Thomas	1	n.d.	n.d.	N7.75	n.d.	qtz, fsp, mica	n.d.	n.d.

Type 1 = calcite marble, type 2 = dolomite marble, colour = hand specimen, after Munsell scale, smell = during crushing. Coexisting carbonates/smell: +++ = very much; + = few, ± = hardly; --- = none; accessories: (mica) = few, n.d. = not determined.

Cont. Table A2. Sample characteristics of “best quality” (= mica-free or mica poor) marbles that were selected for isotope geochemical studies.

sample	marble horizon	location	type	calcite	dolomite	colour	smell	accessories	description	
Syros									**thin section**	**hand specimen**
Sy106	**Kampos**	path to Lia Beach	1	+++	±	N6.75	±	mica	coarse grained, scaled	foliation
Sy107	Kampos	path to Lia Beach	1	+++	---	N7.25	±	qtz, mica	coarse grained, scaled	stripes
Sy109	Kampos	path to Lia Beach	1	+++	(±)	N8.75, 7.25	±	mica	coarse grained, scaled	stripes
Sy111	Kampos	path to Lia Beach	1	+++	(±)	N7.5, 8.25	---	mica, zrc	coarse grained, scaled	colour change
Sy112	Kampos	path to Lia Beach	1	+++	±	N7.25	±	(mica, zrc)	coarse grained, scaled	stripes
Sy114	**Kini**	quarry near Voulia	1	+++	+	N7.5	-	mica, zrc	coarse/variably grained	little foliation
Sy115	Kini	quarry near Voulia	1	+++	±	N7.5	+(+)	mica	variably grained	stripes
5256	Kini	quarry near Voulia	1	+++	+	N9	+	(mica)	variably grained, partially deformed	massive
5257	Kini	quarry near Voulia	1	+++	+	N7.25	+	(mica)	variably grained	fine foliation
Sifnos										
5289	**upper horizon**	Kamares	1	+++	+	N8.75	±	fsp, (qtz)	heteroblastic	veins, coarse foliation
5294	**lower horizon**	Kamares	1	+++	±	N7.25	±	---	coarse grained	irregular stripes
5295	lower horizon	Kamares	1	+++	±	N7.5	±	(qtz, mica)	coarse grained	massive
5296	lower horizon	Kamares	1	+++	±	N7.75-6.5	±	(mica)	fine/coarse grained	coarse foliation
5297	lower horizon	Kamares	1	+++	±	N7.75	---	(mica)	heteroblastic, deformed	net-like
5298	lower horizon	Kamares	1	+++	±	N7.75	---	---	heteroblastic	stripes
Naxos										
5401	meta-bauxite	road from Koronos to Lionas	1	n.d.	n.d.	N9.5	n.d.	---	n.d.	n.d.
5402	meta-bauxite	road from Koronos to Lionas	1	n.d.	n.d.	N7.5	n.d.	---	n.d.	n.d.
5403	meta-bauxite	road from Koronos to Lionas	2	n.d.	n.d.	N9.5	n.d.	---	n.d.	n.d.
5404	meta-bauxite	road from Koronos to Lionas	1	n.d.	n.d.	N6	n.d.	fsp, mica,rutile	n.d.	n.d.
5405	meta-bauxite	road from Koronos to Lionas	1	n.d.	n.d.	N9.25	n.d.	---	n.d.	n.d.
5406	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N6.5	n.d.	---	n.d.	n.d.
5407	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N5.75	n.d.	fsp, mica	n.d.	n.d.
5408	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N8.5	n.d.	fsp, mica	n.d.	n.d.
5409	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N9.25	n.d.	fsp, mica	n.d.	n.d.
5410B	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N6	n.d.	mica	n.d.	n.d.
5411	meta-bauxite	emery mines NW of Moutsana	1	n.d.	n.d.	N4.25	n.d.	mica	n.d.	n.d.

Type 1 = calcite marble, type 2 = dolomite marble, colour = hand specimen, after Munsell scale, smell = during crushing. Coexisting carbonates/smell: +++ = very much; + = few, ± = hardly; --- = none; accessories: (mica) = few, n.d. = not determined.

Table A3. Bulk rock compositions of for “best quality” (= mica-free or mica poor) marbles from the Cycladic blueschist belt.

horizon	sample	SiO_2	TiO_2	Al_2O_3	Fe_2O_3(T)	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	Mn*	Ba	Sr	Y	Sc	Zr	Be	V	Rb
Tinos																						
m1	T40	0.39	< 0.001	0.10	0.03	0.036	2.27	52.63	0.26	0.05	0.05	43.57	99.38	279	5	210	2	< 1	< 2	< 1	< 5	< 2
calcite marble	T41	0.08	< 0.001	0.03	0.04	0.040	3.07	51.99	0.25	< 0.01	0.02	43.85	99.37	310	8	376	2	< 1	< 2	< 1	< 5	4
	T43	0.07	< 0.001	0.02	0.01	0.010	1.83	52.91	0.29	0.04	0.02	43.04	98.24	77	6	342	1	< 1	2	< 1	11	< 2
	T45	0.20	< 0.001	0.06	0.02	0.037	6.67	47.51	0.28	< 0.01	0.02	43.92	98.71	287	6	289	3	< 1	< 2	< 1	< 5	< 2
	T46	0.16	< 0.001	0.03	0.02	0.032	2.42	52.36	0.29	< 0.01	0.04	43.75	99.07	248	5	318	1	< 1	< 2	< 1	< 5	3
	T47	0.11	< 0.001	< 0.01	0.02	0.020	2.27	52.58	0.28	< 0.01	0.01	43.65	98.91	155	3	320	< 1	< 1	< 2	< 1	< 5	< 2
	T57	0.11	< 0.001	0.03	0.02	0.006	3.63	51.83	0.30	0.08	0.02	43.38	99.39	60	3	226	< 1	< 1	< 2	< 1	< 5	4
	T58	0.09	< 0.001	0.03	0.02	0.008	4.17	50.93	0.32	0.05	0.03	43.42	99.07	80	5	228	1	< 1	< 2	< 1	< 5	< 2
	T67	0.15	< 0.001	0.03	0.01	0.032	1.17	55.03	0.26	0.10	0.02	43.67	100.50	248	4	294	3	< 1	< 2	< 1	< 5	3
	5212	1.26	< 0.001	0.01	0.07	0.046	0.28	54.48	0.33	0.05	< 0.01	43.19	99.72	356	6	173	2	< 1	< 2	< 1	< 5	< 2
	5213	0.40	< 0.001	0.09	0.12	0.090	0.62	54.15	0.30	0.03	0.02	43.47	99.28	697	5	132	< 1	< 1	< 2	< 1	< 5	< 2
	5214	1.54	< 0.001	0.08	0.11	0.082	0.74	54.33	0.27	< 0.01	0.01	42.99	100.20	635	4	138	< 1	< 1	< 2	< 1	6	< 2
	5215	0.15	< 0.001	0.03	0.03	0.024	0.21	56.20	0.28	0.03	< 0.01	43.68	100.60	186	5	242	< 1	< 1	< 2	< 1	< 5	4
	5216	0.04	< 0.001	< 0.01	0.02	0.018	0.09	56.15	0.29	< 0.01	< 0.01	43.32	99.91	139	10	139	1	< 1	< 2	< 1	10	< 2
m1	T51	0.13	< 0.001	0.03	< 0.01	0.002	21.80	30.43	0.31	< 0.01	0.05	46.18	98.84	15	< 2	44	2	< 1	< 2	< 1	< 5	4
dolomite marble	T52	0.16	< 0.001	0.03	0.01	0.002	21.71	30.24	0.33	0.08	0.05	46.24	98.85	20	4	44	3	< 1	< 2	< 1	< 5	2
	T55	0.06	< 0.001	0.02	0.02	0.004	20.45	31.58	0.32	< 0.01	0.08	46.30	98.82	40	3	83	1	< 1	< 2	< 1	< 5	4
	T56	0.19	< 0.001	0.02	0.01	0.004	22.45	30.43	0.29	0.09	0.01	46.00	99.50	40	4	53	5	< 1	< 2	< 1	< 5	2
	T60	0.07	< 0.001	0.02	0.01	0.004	20.12	32.64	0.31	< 0.01	0.07	46.10	99.31	40	5	112	3	< 1	< 2	< 1	< 5	< 2
	T61	0.07	< 0.001	0.03	0.02	0.004	21.01	32.71	0.36	0.08	0.13	46.04	100.50	40	4	110	6	1	< 2	< 1	< 5	5
	1423	0.43	0.01	0.13	0.09	0.010	20.30	32.95	0.29	0.10	0.14	45.62	100.10	77	4	113	9	< 1	< 2	< 1	< 5	6
m2	T10	1.27	0.02	0.35	0.22	0.012	0.74	54.81	0.11	0.12	0.04	43.04	100.70	93	32	418	4	< 1	< 2	< 1	11	< 2
	T11	0.14	< 0.001	0.04	0.04	0.006	0.58	56.60	0.10	< 0.01	0.02	43.43	100.90	46	6	157	3	< 1	< 2	< 1	< 5	< 2
	T12	0.03	< 0.001	< 0.01	0.02	0.008	0.56	56.99	0.10	0.03	< 0.01	43.19	100.90	62	7	86	< 1	< 1	< 2	< 1	< 5	< 2
	T13	0.01	< 0.001	0.01	0.04	0.004	0.14	54.99	0.09	0.03	< 0.01	43.07	98.41	31	4	123	1	< 1	< 2	< 1	7	< 2
	T23	0.08	< 0.001	0.02	0.01	0.006	0.58	56.83	0.12	0.07	0.01	43.26	101.00	46	6	142	3	< 1	< 2	< 1	< 5	< 2
	T24	0.09	< 0.001	0.02	0.03	0.010	0.97	56.07	0.11	0.02	0.01	43.45	100.80	77	8	132	4	< 1	6	< 1	6	< 2
m3	T20	0.18	< 0.001	0.08	0.05	0.004	2.00	54.99	0.10	0.15	0.02	43.31	100.90	31	5	152	3	< 1	< 2	< 1	< 5	< 2
	T32	0.14	< 0.001	0.04	0.02	0.002	0.61	55.62	0.10	< 0.01	0.02	43.00	99.50	20	3	175	3	< 1	< 2	< 1	5	< 2
	T33	0.05	< 0.001	0.01	< 0.01	0.002	0.48	55.81	0.13	0.06	0.03	42.97	99.55	20	3	155	3	< 1	4	< 1	6	< 2
	T34	0.23	< 0.001	0.12	0.04	0.002	0.58	53.45	0.18	0.04	0.05	43.37	98.05	20	12	149	7	< 1	< 2	< 1	< 5	< 2
	T35	0.18	< 0.001	0.07	0.03	0.002	0.48	54.90	0.19	0.03	0.07	43.27	99.21	15	6	143	5	< 1	< 2	< 1	6	< 2
	T36	0.21	< 0.001	0.07	0.03	0.002	0.43	54.95	0.21	< 0.01	0.13	43.36	99.36	15	8	141	5	< 1	< 2	< 1	9	< 2
	T37	0.08	< 0.001	0.03	0.02	0.002	0.53	55.66	0.16	0.06	0.04	43.22	99.81	15	4	156	3	< 1	< 2	< 1	< 5	< 2
	T38	0.08	< 0.001	0.02	0.04	0.002	0.54	55.70	0.16	0.03	0.06	43.32	99.95	15	4	154	3	< 1	< 2	< 1	< 5	< 2
	T65	0.07	< 0.001	0.01	0.01	< 0.001	0.62	54.76	0.35	< 0.01	< 0.01	43.38	99.22	10	4	227	< 1	< 1	6	< 1	12	< 2
Andros																						
Makrotantalon	A 90	1.55	0.01	0.27	0.13	0.004	1.25	53.50	0.01	0.09	< 0.01	43.08	99.89	31	8	336	< 1	< 1	7	< 1	9	6
Unit	A 91	1.73	0.01	0.22	0.12	0.004	1.15	52.86	0.03	0.03	< 0.01	43.16	99.31	31	9	431	< 1	< 1	12	< 1	13	6
	1427	0.25	< 0.001	0.08	0.07	0.008	7.79	45.50	0.04	0.03	< 0.01	45.22	98.99	62	7	404	< 1	< 1	6	< 1	28	4
	1428	1.43	0.01	0.44	0.17	0.006	6.77	46.63	0.07	0.09	< 0.01	44.50	100.10	46	13	440	52	1	70	< 1	27	7
	1429	0.43	< 0.001	0.19	0.06	0.012	13.15	39.36	0.01	0.11	< 0.01	45.41	98.75	93	14	490	2	< 1	6	< 1	17	6
	1443	0.67	0.01	0.34	0.55	0.059	21.02	30.43	0.04	0.08	< 0.01	46.87	100.10	457	21	87	< 1	< 1	< 2	< 1	16	5
Lower Unit	A 96	0.61	< 0.001	0.10	0.06	0.008	0.59	55.09	0.02	0.03	0.02	43.40	99.90	62	9	282	6	< 1	3	< 1	< 5	3
m1	A 98	0.82	0.01	0.18	0.07	0.023	0.43	54.29	0.06	0.09	0.14	43.44	99.54	178	49	232	13	< 1	< 2	< 1	< 5	3
	A 100	0.59	< 0.001	0.12	0.18	0.010	0.56	54.78	0.03	0.03	< 0.01	43.50	99.80	77	9	324	5	< 1	10	< 1	< 5	4
	A 102	2.12	< 0.001	0.23	0.09	0.012	0.54	53.47	0.06	0.06	0.02	43.08	99.68	93	11	298	7	< 1	7	< 1	< 5	3
Lower Unit	A 92	0.81	< 0.001	0.06	0.11	0.027	0.52	54.59	0.03	< 0.01	< 0.01	43.32	99.47	209	9	330	4	< 1	< 2	< 1	< 5	2
m4	A 93	0.39	< 0.001	0.04	0.01	0.025	0.74	55.40	0.01	< 0.01	0.01	43.70	100.30	194	7	328	4	< 1	< 2	< 1	< 5	3
	A 95	0.36	< 0.001	0.04	0.04	0.025	0.53	54.12	0.03	0.03	< 0.01	43.63	98.80	194	7	353	3	< 1	< 2	< 1	< 5	4
	5566	1.51	< 0.001	0.13	0.04	0.028	0.63	54.03	0.05	< 0.01	< 0.01	42.87	99.30	217	7	344	4	< 1	< 2	< 1	< 5	3
	5567A	1.45	0.03	0.26	0.15	0.030	0.71	53.24	0.07	0.04	0.01	43.18	99.17	232	9	340	3	< 1	9	< 1	6	3
	5571	0.77	< 0.001	0.09	0.26	0.004	0.09	54.61	0.03	< 0.01	< 0.01	42.68	98.52	31	5	282	< 1	< 1	< 2	< 1	< 5	3

Major elements in wt.%, trace elements in ppm, (< = below detection limit), * recalculated from MnO concentration.

Cont. Table A3. Bulk rock compositions of for “best quality” (= mica-free or mica poor) marbles from the Cycladic blueschist belt.

horizon	sample	SiO_2	TiO_2	Al_2O_3	Fe_2O_3(T)	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	Total	Mn*	Ba	Sr	Y	Sc	Zr	Be	V	Rb
Syros																						
Kampos	SY 106	0.13	< 0.001	0.04	0.04	0.004	0.35	56.74	0.02	< 0.01	0.02	43.14	100.50	31	6	211	< 1	< 1	< 2	< 1	< 5	2
	SY 107	0.28	< 0.001	0.04	0.04	0.002	0.33	56.55	0.03	0.05	0.06	43.09	100.50	15	5	242	< 1	< 1	9	< 1	< 5	2
	SY 109	0.71	< 0.001	0.08	0.11	0.005	0.39	56.23	< 0.01	0.06	0.04	43.27	100.80	39	17	300	4	1	20	< 1	< 5	3
	SY 111	0.09	< 0.001	0.02	0.04	0.002	0.36	56.14	0.01	< 0.01	0.04	42.88	99.58	15	3	144	< 1	< 1	< 2	< 1	< 5	2
	SY 112	0.07	< 0.001	0.01	0.02	0.002	0.28	57.04	0.01	0.03	0.06	43.06	100.60	15	4	278	< 1	< 1	< 2	< 1	< 5	2
Kini	SY 114	0.43	< 0.001	0.06	< 0.01	0.002	0.85	55.38	0.03	< 0.01	< 0.01	42.56	99.32	15	5	121	2	< 1	36	< 1	< 5	2
	SY 115	0.35	< 0.001	0.04	0.16	0.008	0.70	54.37	< 0.01	0.06	< 0.01	42.86	98.47	62	12	143	3	< 1	27	< 1	< 5	< 2
	5256	0.04	< 0.001	< 0.01	< 0.01	0.002	1.70	53.90	0.01	< 0.01	< 0.01	42.82	98.49	15	6	132	< 1	< 1	< 2	< 1	< 5	< 2
	5257	0.29	< 0.001	0.01	0.09	0.005	0.63	56.35	< 0.01	0.06	< 0.01	42.90	100.20	39	14	159	2	< 1	9	< 1	< 5	2
Sifnos																						
upper horizon	5289	0.29	< 0.001	< 0.01	< 0.01	0.002	1.02	54.33	0.01	0.05	< 0.01	43.12	98.83	15	< 2	176	< 1	< 1	< 2	< 1	< 5	< 2
lower horizon	5294	0.11	< 0.001	0.03	0.02	0.004	0.71	54.84	0.01	< 0.01	0.02	43.19	98.91	31	4	151	1	< 1	19	< 1	< 5	< 2
	5295	0.60	< 0.001	0.09	0.03	0.004	0.64	54.76	0.03	< 0.01	0.03	43.24	99.43	31	7	154	2	< 1	12	< 1	< 5	< 2
	5296	0.23	< 0.001	0.03	0.21	0.008	0.86	54.18	< 0.01	0.03	0.03	42.97	98.49	62	14	153	4	2	40	< 1	12	< 2
	5297	0.10	0.02	0.02	0.16	0.008	0.58	54.90	0.01	0.03	0.02	42.97	98.82	62	4	145	2	< 1	< 2	< 1	< 5	2
	5298	0.27	< 0.001	0.07	0.05	0.006	0.68	54.99	0.03	< 0.01	0.02	42.96	99.07	46	4	143	2	< 1	5	< 1	< 5	< 2
Naxos																						
meta-bauxite	5401	0.27	< 0.001	0.03	< 0.01	0.002	0.14	55.92	0.01	0.03	< 0.01	42.53	98.92	15	< 2	90	< 1	< 1	< 2	< 1	< 5	< 2
	5402	0.27	< 0.001	0.10	0.05	0.004	0.35	55.95	0.03	< 0.01	< 0.01	43.33	100.10	31	3	126	< 1	< 1	18	< 1	8	2
	5403	0.08	< 0.001	0.02	0.02	0.002	21.27	31.85	0.02	< 0.01	< 0.01	45.49	98.77	15	< 2	112	< 1	< 1	< 2	< 1	< 5	< 2
	5404	1.45	0.03	1.00	0.29	0.054	0.63	53.88	0.03	0.12	< 0.01	42.46	99.94	418	9	173	1	2	9	< 1	10	9
	5405	0.10	< 0.001	0.03	0.02	0.002	0.25	56.47	0.02	< 0.01	< 0.01	43.21	100.10	15	< 2	97	< 1	< 1	5	< 1	< 5	< 2
	5406	0.19	< 0.001	0.03	0.07	0.002	0.40	55.83	0.03	0.04	< 0.01	43.09	99.68	15	25	264	< 1	< 1	3	< 1	7	3
	5407	0.44	< 0.001	0.11	0.15	0.002	0.59	55.01	0.08	< 0.01	0.02	43.25	99.65	15	20	4649	< 1	< 1	< 2	< 1	9	36
	5408	0.22	< 0.001	0.06	0.06	0.002	0.77	55.67	0.03	0.04	< 0.01	43.11	99.97	15	24	1807	< 1	< 1	< 2	< 1	7	14
	5409	0.74	0.01	0.21	0.11	0.004	0.58	56.16	< 0.01	0.03	< 0.01	43.21	101.00	31	22	1068	< 1	< 1	54	< 1	7	9
	5410	0.10	< 0.001	0.03	< 0.01	0.002	0.54	55.88	0.01	< 0.01	< 0.01	43.23	99.81	15	22	661	< 1	< 1	5	< 1	7	5
	5411	0.21	< 0.001	0.04	0.01	0.002	0.75	54.86	0.03	< 0.01	< 0.01	43.12	99.03	15	9	1735	< 1	< 1	< 2	< 1	< 5	15

Major elements in wt.%, trace elements in ppm, (< = below detection limit), * recalculated from MnO concentration.