

Article

Selection of Co-Belonging Ceramic Fragments from Archaeological Excavations and Their Location in Vase Bodies from Thermoremanent Magnetization

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Supplementary Files

Computation of magnetization in body fragments from vases 1–6

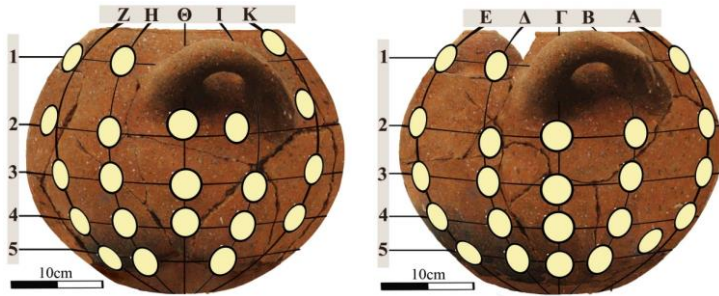
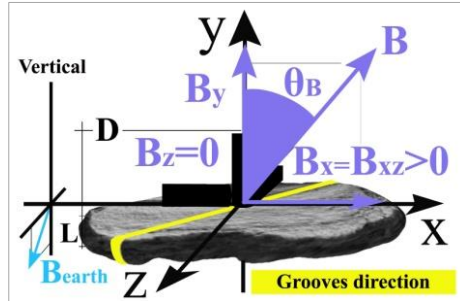
Indicative detailed experimental results with the methodology reported in Section 7 are given (**Tables 1–4**) using measurements of body fragments from **vase 6**.

For each of the remaining vases, 2 tables of measurements are presented. The first table contains measurements of the fragments' thickness, L , of the distance, D , between the measurement position and the fragment edge in the common direction of the M_{xz} , B_{xz} and the sensor readings of B_i ($i=x,z,y$), with the x-sensor aligned along the direction of B_{xz} .

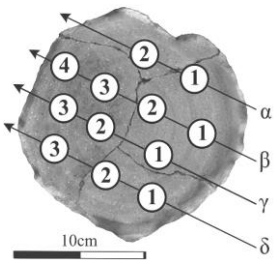
The second table contains the sensor readings of B_i ($i=x,y,z$), with the x-sensor oriented in the grooves' direction on the body fragments.

The above quantities and the relationships 4,5 are used for the calculation of magnetization components.

Table 1. Measurements D, L, and sensor readings of B_i ($i=x,z,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 6**.



Vase 6



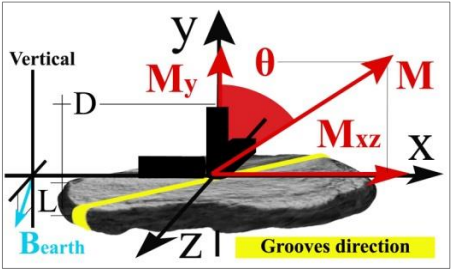
Vase 6 (Base)	λ	$\alpha^l(\text{cm})$	$\alpha^{ll}(\text{cm})$
	1.90	0.71	1.07
	± 0.01	± 0.03	± 0.02

The computed magnitude of field, B , differs, while angles, θ_B , varies in a systematic way.

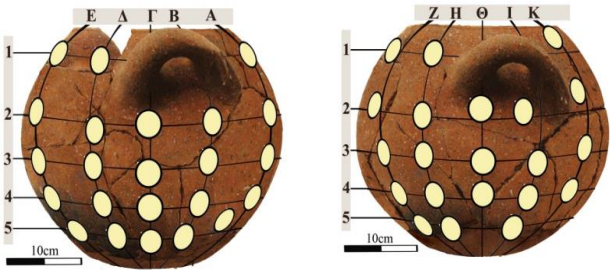
Vase 6		A	B	Γ	Δ	E	Z	H	Θ	I	K
1	D (±0.3) cm	4.2			3.4	6.2	2.2	6.2			10.6
	L (±0.1) cm	0.9			0.8	0.7	0.7	0.7			0.9
	B _{xz} (±1) nT	32			6	6	29	38			37
	B _y (±1) nT	4			17	14	7	3			-3
	B (±1) nT	32			18	15	30	38			37
	θ _B °	83±2			20±3	24±4	76±2	85±2			-85±2
2	D (±0.3) cm	2.4	14.8	10.7	1.2	6.3	4.8	3.2	2.1	3.4	2.5
	L (±0.1) cm	1.6	1.6	1.7	1.9	1.5	1.6	1.8	1.8	1.9	1.9
	B _{xz} (±1) nT	39	35	24	20	17	37	34-3	35	35	27
	B _y (±1) nT	2	6	14	16	15	2	34	-7	-7	-13
	B (±1) nT	39	36	28	25	22	37		36	36	30
	θ _B °	87±1	80±2	60±2	52±2	49±3	87±2	-85±2	-78±2	-78±2	-65±2
3	D (±0.3) cm	17.2	2.0	1.6	2.9	1.9	2.6	6.2	4.9	10.0	7.5
	L (±0.1) cm	1.5	1.7	1.7	1.5	1.4	1.5	1.7	1.9	1.8	1.8
	B _{xz} (±1) nT	35	37	37	34	31	34	32	25	18	18
	B _y (±1) nT	-5	1	4	7	7	-3	-8	-13	-16	-17
	B (±1) nT	35	37	37	35	32	34	33	28	24	25
	θ _B °	-81±2	88±2	84±2	78±2	77±2	-85±2	-75±2	-63±2	-49±2	-47±2
4	D (±0.3) cm	7.5	5.5	5.9	8.7	6.8	1.8	5.1	2.5	6.4	5.1
	L (±0.1) cm	1.4	1.3	1.4	1.5	1.3	1.2	1.4	1.5	1.5	1.6
	B _{xz} (±1) nT	31	33	39	37	38	32	26	24	7	5
	B _y (±1) nT	-8	-5	2	3	2	-7	-12	-15	-19	-18
	B (±1) nT	32	33	39	37	38	33	28	28	20	19
	θ _B °	-75±2	-81±2	87±1	85±2	87±2	-77±2	-66±2	-58±2	-20±3	-16±3
5	D (±0.3) cm	1.9	2.3	9.7	4.1	3.6	2.0	4.5		3.8	
	L (±0.1) cm	1.0	1.2	1.1	1.2	1.2	1.1	1.0		1.1	
	B _{xz} (±1) nT	25	34	33	34	34	27	23		4	
	B _y (±1) nT	-11	-7	-6	-2	-3	-12	-13		-17	
	B (±1) nT	27	35	34	34	34	29	26		17	
	θ _B °	-67±2	-78±2	-79±2	-86±2	-85±2	-67±2	-61±2		-13±3	

Vase 6		A	B	Г	Δ	E	Z	H	Θ	I	K
1	D (±0.3) cm	4.2			3.4	6.2	2.2	6.2			10.6
	d(cm)	3.6±1			0.2±0.0	0.2±0.0	1.5±0.2	4.4±1.4			5.6±1.8
	θ°	76±3			14±2	17±3	65±3	81±3			-81±3
	M _{xz} (mA/m)	51±2			15±3	16±3	48±2	61±2			59±2
	M _y (A/m)	13±3			64±4	54±4	23±3	10±3			-10±3
	M(mA/m)	53±2			66±4	56±4	53±2	61±2			60±2
2	D (±0.3) cm	2.4	14.8	10,7	1,2	6,3	4,8	3,2	2,1	3,4	2,5
	d(cm)	16±7	4.7±0.8	1.6±0.1	1.3±0.1	1.0±0.1	15±7	10±3	4.5±0.6	4.8±0.7	2.2±0.2
	θ°	84±3	71±3	44±2	35±2	33±2	84±3	-80±3	-68±3	-68±3	-49±2
	M _{xz} (mA/m)	62±2	56±2	40±2	35±2	30±2	59±2	54±2	57±2	56±2	44±2
	M _y (A/m)	6±3	19±3	42±3	49±3	47±3	6±3	-10±3	-22±3	-22±3	-39±3
	M(mA/m)	62±2	59±2	58±3	60±3	56±3	59±2	55±2	61±2	60±2	59±2
3	D (±0.3) cm	17.2	2,0	1,6	2,9	1,9	2,6	6,2	4,9	10,0	7,5
	d(cm)	5±1	32±30	8±2	3.7±0.5	3.1±0.5	8±3	3.4±0.4	2.0±0.2	1.1±0.1	1.1±0.1
	θ°	-74±3	87±3	78±3	68±3	66±3	-80±3	-64±3	-47±3	-32±2	-31±2
	M _{xz} (mA/m)	56±2	59±2	59±2	55±2	50±2	54±2	51±2	41±2	31±2	31±2
	M _y (A/m)	-16±3	3±3	13±3	22±3	22±3	-10±3	-26±3	-39±3	-49±3	-53±3
	M(mA/m)	58±2	59±2	61±2	59±2	55±2	55±2	57±2	56±2	58±3	61±3
4	D (±0.3) cm	7.5	5,5	5,9	8,7	6,8	1,8	5,1	2,5	6,4	5,1
	d(cm)	2.7±0.4	4.3±0.8	14±6	9±3	12±6	2.8±0.4	1.7±0.2	1.3±0.1	0.3±0.1	0.3±0.1
	θ°	-63±3	-73±3	84±3	81±3	84±3	-67±3	-51±3	-42±2	-12±2	-9±2
	M _{xz} (mA/m)	50±2	53±2	62±2	59±2	60±2	52±2	43±2	41±2	13±2	9±2
	M _y (A/m)	-26±3	-16±3	6±3	10±3	6±3	-22±3	-36±3	-46±3	-62±3	-58±3
	M(mA/m)	56±2	55±2	62±2	60±2	61±2	57±2	56±2	62±3	63±3	59±3
	D (±0.3) cm	1.9	2.3	9,7	4,1	3,6	2,0	4,5		3,8	
	d(cm)	1.3±0.2	2.9±0.4	3.0±0.5	10±5	7±2	1.4±0.1	1.0±0.5		0.2±0.0	
	θ°	-53±3	-68±3	-70±3	-83±3	-80±3	-52±3	-46±3		-9±2	

Table 2. Computation of the angles θ , of the distances d , and of the magnetization components M_y , M_{xz} , from the field components, B_y , B_{xz} , with the x-sensor axis aligned along the common direction of B_{xz} , M_{xz} . The values inside the colored frames ($D < d = L \cdot \tan \theta$) are computed using the sufficient length relationships (4).



Vase 6



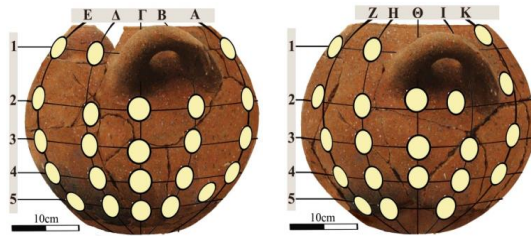
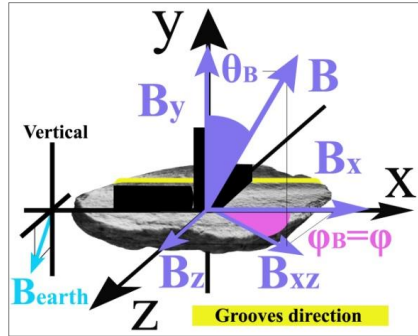
Vase 6 (Base)	M [⊥]	M ^{//}	M	γ°
	(mA/m)			
	42.5 ±0.2	39.8 ±0.2	58.3 ±0.2	

The computed magnitude, M , displays similar values in the base and body fragments. For the body fragments, angles, θ , change in a systematic way.

Αγγείο 6	A	B	Γ	Δ	E	Z	H	Θ	I	K
$B_y (\pm 1\text{nT})$	5			17	13	8	3			-4

5	$M_{xz}(\text{mA/m})$	43 \pm 2	55 \pm 2	53 \pm 2	54 \pm 2	54 \pm 2	46 \pm 2	41 \pm 2		9 \pm 2	
	$M_y \text{ (A/m)}$	-33 \pm 3	-22 \pm 3	-19 \pm 3	-6 \pm 3	-10 \pm 3	-36 \pm 3	-40 \pm 3		-59 \pm 4	
	$M(\text{mA/m})$	54 \pm 2	59 \pm 2	56 \pm 2	55 \pm 2	55 \pm 2	58 \pm 2	57 \pm 3		59 \pm 4	

Table 3. Sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 6**.

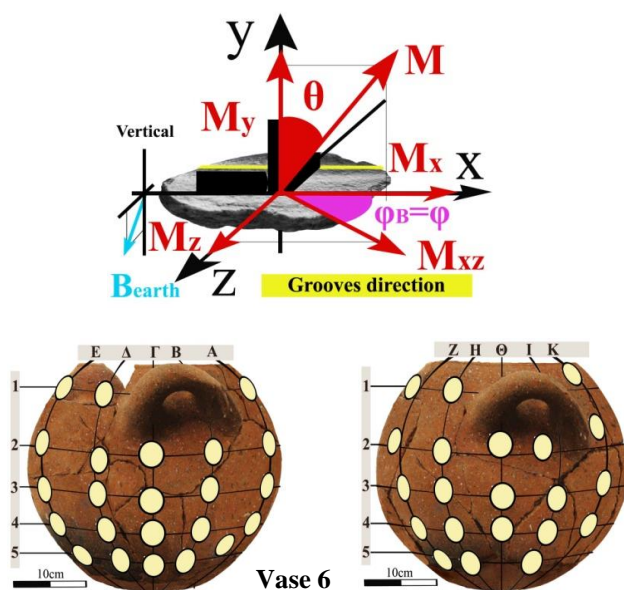


Vase 6

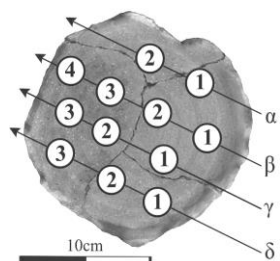
The magnitude of field, B , varies, while the angles, θ_B , ϕ_B change in a systematic way.

1	$B_x(\pm 1nT)$	-21			-3	3	23	23			1
	$B_z(\pm 1nT)$	22			7	6	21	28			34
	$B(\pm 1nT)$	31			18	14	32	36			34
	θ_B°	80±2			24±10	28±11	75±2	85±2			-83±2
	ϕ_B°	134±2			113±8	63±9	42±2	51±2			88±2
2	$B_y(\pm 1nT)$	1	7	14	17	15	2	-2	-7	-7	-13
	$B_x(\pm 1nT)$	-26	-22	-17	-5	5	25	24	15	6	-1
	$B_z(\pm 1nT)$	29	21	23	20	23	27	32	29	28	31
	$B(\pm 1nT)$	39	31	32	27	28	37	40	33	30	33
	θ_B°	88±1	76±2	64±2	51±3	58±3	87±2	-87±1	-77±2	-76±2	-68±2
3	$B_y(\pm 1nT)$	-5	2	4	8	7	-4	-7	-12	-17	-17
	$B_x(\pm 1nT)$	-27	-20	-13	-3	2	26	25	15	5	-5
	$B_z(\pm 1nT)$	27	25	26	33	34	27	25	18	20	17
	$B(\pm 1nT)$	39	32	29	34	35	38	36	26	27	24
	θ_B°	-82±2	86±2	82±2	76±2	78±2	-84±2	-78±2	-64±3	-51±3	-46±4
4	$B_y(\pm 1nT)$	-7	-5	2	4	1	-7	-12	-14	-19	-18
	$B_x(\pm 1nT)$	-25	-26	-11	-1	5	23	21	19	1	-2
	$B_z(\pm 1nT)$	24	28	31	38	38	22	14	14	3	5
	$B(\pm 1nT)$	35	39	33	38	38	33	28	27	19	19
	θ_B°	-78±2	-82±2	86±2	84±2	88±1	-77±2	-65±2	-60±3	-9±25	-17±15
5	$B_y(\pm 1nT)$	-12	-7	-5	-2	-3	-11	-13		-16	
	$B_x(\pm 1nT)$	-22	-19	-11	-8	7	23	18		3	
	$B_z(\pm 1nT)$	14	20	28	39	33	16	10		-1	
	$B(\pm 1nT)$	29	29	31	40	34	30	24		16	
	θ_B°	-66±2	-75±2	-80±2	-87±1	-85±2	-69±2	-58±3		-11±25	
	ϕ_B°	148±2	134±2	111±2	102±1	78±2	35±2	29±3		342±18	

Table 4. Computation of the magnetization components, M_i ($i=x,y,z$), of the magnitude M and of the angles θ, ϕ , from sensor readings with the x-sensor oriented in the grooves direction in body fragments of **vase 6**.



The computed magnitude, M , displays similar values in the base and body fragments, which is a criterion for finding ceramic fragments of the same vase from archaeological excavations. The angles, θ, ϕ , change in a systematic way.



Vase 6	M^*	$M^{\prime\prime}$	M	γ°
(Base)	42.5	39.8	58.3	43.3
(mA/m)	± 0.2	± 0.2	± 0.2	± 0.3

Vase 6	A	B	Г	Δ	E	Z	H	Θ	I	K
1	M_y (mA/m)	16±3		64±4	50±4	26±3	10±3			-13±3
	M_x (mA/m)	-34±2		-8±3	8±3	38±2	37±2			2±2
	M_z (mA/m)	35±2		18±3	16±3	35±2	45±2			54±2
	M (mA/m)	51±2		67±4	53±4	58±2	58±2			56±2
	θ°	72±4		17±17	20±18	63±4	81±3			-77±3
	ϕ°	134±2		113±8	63±9	42±2	51±2			88±2
2	M_y (mA/m)	3±4	22±3	42±3	53±4	47±3	6±4	-22±4	-22±4	-39±3
	M_x (mA/m)	-41±2	-35±2	-28±2	-9±2	9±2	40±2	38±2	24±2	-2±2
	M_z (mA/m)	46±2	34±2	39±2	35±2	41±2	43±2	51±2	47±2	51±2
	M (mA/m)	62	53±2	64±2	63±4	63±3	59±2	64±2	57±2	64±2
	θ°	87±4	65±4	49±4	34±8	42±5	84±4	-84±4	-67±5	-64±6
	ϕ°	132±1	136±2	126±2	104±3	78±2	47±2	53±1	63±2	78±2
3	M_y (mA/m)	-16±3	6±4	13±4	26±4	22±4	-13±4	-22±3	-35±3	-53±3
	M_x (mA/m)	-43±2	-32±2	-21±2	-5±2	3±2	41±2	40±2	25±2	9±2
	M_z (mA/m)	43±2	40±2	42±2	53±2	55±2	43±2	40±2	30±2	35±2
	M (mA/m)	63±2	51±2	48±2	59±2	60±2	61±2	61±2	52±2	63±3
	θ°	-75±3	83±5	75±5	64±5	68±4	-78±4	-68±3	-47±5	-34±6
	ϕ°	135±2	129±2	117±2	95±2	87±2	46±2	45±2	50±2	76±3
4	M_y (mA/m)	-22±3	-16±3	6±4	13±4	3±4	-22±4	-36±3	-43±3	-58±3
	M_x (mA/m)	-40±2	-41±2	-18±2	-2±2	8±2	37±2	35±2	33±3	2±2
	M_z (mA/m)	39±2	45±2	49±2	60±2	60±2	36±2	23±2	24±2	6±2
	M (mA/m)	60±2	63±2	53±2	62±2	61±2	56±2	55±2	59±3	62±3
	θ°	-68±3	-75±3	83±5	78±4	87±4	-67±5	-50±5	-44±5	-6±44
	ϕ°	136±2	133±2	110±2	92±2	83±1	44±2	34±2	36±2	72±18
5	M_y (mA/m)	-36±3	-22±4	-16±3	-6±4	-10±4	-33±3	-40±3		-55±4
	M_x (mA/m)	-38±2	-31±2	-18±2	-13±2	11±2	39±2	32±2		7±2
	M_z (mA/m)	24±2	32±2	45±2	62±2	53±2	27±2	18±2		-2±2
	M (mA/m)	57±2	50±2	51±2	64±2	55±2	58±2	54±3		55±4
	θ°	-51±4	27±6	-72±4	-84±4	-80±5	-56±4	-43±6		-7±42
	ϕ°	148±2	134±2	111±2	102±1	78±2	35±2	29±3		342±18

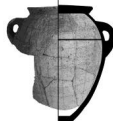
Vase 1																
		<table><tr><th>α_y^I (cm)</th><th>$\alpha_{x,z}^{II}$ (cm)</th><th>λ</th></tr><tr><td>0,82±0,04</td><td>1,42±0,02</td><td>2,0±0,1</td></tr></table>									α_y^I (cm)	$\alpha_{x,z}^{II}$ (cm)	λ	0,82±0,04	1,42±0,02	2,0±0,1
α_y^I (cm)	$\alpha_{x,z}^{II}$ (cm)	λ														
0,82±0,04	1,42±0,02	2,0±0,1														
		A	B	Γ	Δ	E	Z	H	Θ	I						
1	D (±0.3) cm	5.2	9.5	15.3	29.5	23.8	17.1	11.3	3.7							
	L (±0.1) cm	1,0	1.1	1.1	1.2	1.1	1.1	1.0	1.1							
	B_{xz} (±1) nT	50	33	18	2	15	40	55	80							
	B_y (±1) nT	23	33	33	36	31	30	25	7							
	B (±1) nT	55	47	38	36	34	50	60	80							
	θ_B°	65±1	45±1	29±2	3±2	26±2	53±1	66±1	85±1							
2	D (±0.3) cm	5.3	10.7	16.7	18.9	24.3	18.3	13.1	3.5							
	L (±0.1) cm	1.1	1.1	1.2	1.2	1.3	1.3	1.2	1.2							
	B_{xz} (±1) nT	67	33	20	9	25	38	64	83							
	B_y (±1) nT	22	31	35	35	33	31	23	5							
	B (±1) nT	71	45	40	36	41	49	68	83							
	θ_B°	72±1	47±1	30±1	14±2	37±1	51±1	70±1	87±1							
3	D (±0.3) cm	6.6	3.0	3.8	22.8	29.5	19.9	15.4	2.9							
	L (±0.1) cm	1.2	1.2	1.3	1.2	1.3	1.4	1.3	1.3							
	B_{xz} (±1) nT	71	37	22	16	31	48	73	81							
	B_y (±1) nT	20	32	35	34	31	28	18	2							
	B (±1) nT	74	49	41	38	44	56	75	81							
	θ_B°	74±1	49±1	32±1	25±2	45±1	60±1	76±1	89±1							
4	D (±0.3) cm	7.2	4.4	8.8	6.7	5.9	22.7	15.9	3.3	10.3						
	L (±0.1) cm	1.2	1.3	1.4	1.3	1.4	1.4	1.4	1.4	1.4						
	B_{xz} (±1) nT	75	55	37	32	33	54	70	83	82						
	B_y (±1) nT	17	25	31	31	33	26	19	−5	−9						
	B (±1) nT	77	60	48	45	47	60	73	83	81						
	θ_B°	77±1	66±1	50±1	46±1	45±1	64±1	75±1	−87±1	−83±1						

Table 5a. Measurements D, L, and sensor readings of B_i ($i=x,z,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 1**.

5	D (± 0.3) cm	2.8	7.9	2.5	12.8	11.4	24.0	11.7	6.1	7.9
	L (± 0.1) cm	1.3	1.3	1.3	1.3	1.5	1.4	1.4	1.5	1.5
	$B_{xz} (\pm 1)$ nT	78	63	44	37	44	66	75	81	79
	$B_y (\pm 1)$ nT	15	24	32	32	32	22	15	-6	-9
	B (± 1) nT	79	67	54	49	54	70	76	81	80
	θ_B°	79 ± 1	69 ± 1	54 ± 1	49 ± 1	54 ± 1	72 ± 1	79 ± 1	-86 ± 1	-84 ± 1

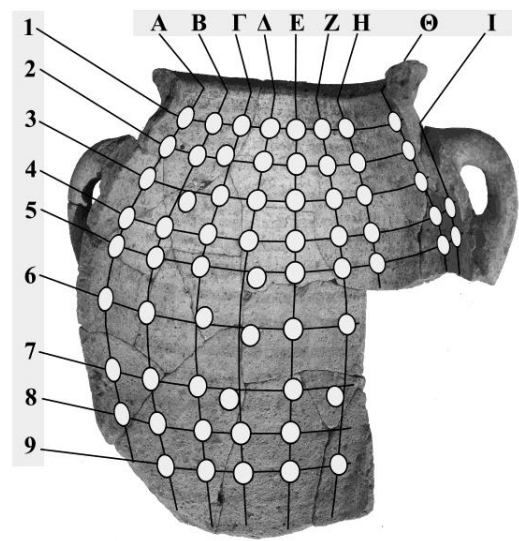
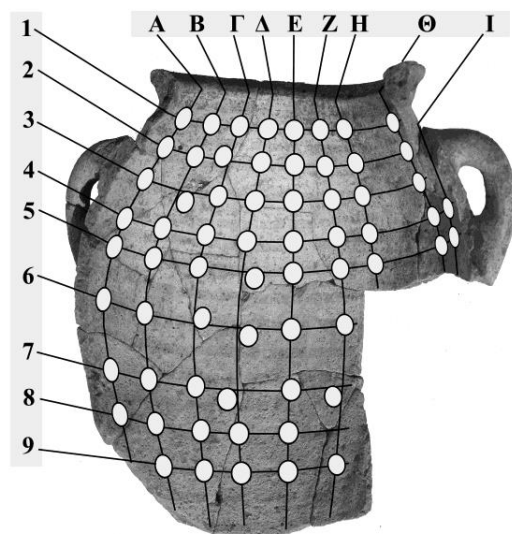


Table 5b. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 1**.



Vase 1		A	B	Γ	Δ	E	Z	H	Θ	I
6	D (± 0.3) cm	6.9	3.2	12,7	6.7	8.2	8.0			
	L (± 0.1) cm	1.6	1.5	1,4	1.5	1.6	1.7			
	$B_{xz} (\pm 1)$ nT	76	70	63	58	68	79			
	$B_y (\pm 1)$ nT	12	17	27	27	21	13			
	B (± 1) nT	77	72	69	64	71	80			
	θ_B°	81 ± 1	76 ± 1	67 ± 1	65 ± 1	73 ± 1	81 ± 1			
7	D (± 0.3) cm	7.1	4.9	5.4	11.8	3.3	3.6			
	L (± 0.1) cm	1.7	1.7	1.8	1.7	1.8	1.7			
	$B_{xz} (\pm 1)$ nT	85	78	73	66	71	81			
	$B_y (\pm 1)$ nT	2	12	19	22	20	8			
	B (± 1) nT	85	79	75	70	74	81			
	θ_B°	89 ± 1	81 ± 1	75 ± 1	72 ± 1	74 ± 1	84 ± 1			
8	D (± 0.3) cm	7.4	4.5	10.9	8.8	9.6	5.5			
	L (± 0.1) cm	1.8	1.8	1.9	1.9	1.9	2.0			
	$B_{xz} (\pm 1)$ nT	86	76	76	69	73	80			
	$B_y (\pm 1)$ nT	1	13	17	18	19	8			
	B (± 1) nT	86	77	78	71	75	80			
	θ_B°	89 ± 1	80 ± 1	77 ± 1	75 ± 1	75 ± 1	84 ± 1			
9	D (± 0.3) cm		10.2	16.9	15.2	13.8	11.2			
	L (± 0.1) cm		1.9	2.0	2.1	2.0	2.0			
	$B_{xz} (\pm 1)$ nT		79	79	76	78	82			
	$B_y (\pm 1)$ nT		5	14	16	14	4			
	B (± 1) nT		79	80	78	79	82			
	θ_B°		86 ± 1	80 ± 1	78 ± 1	80 ± 1	87 ± 1			

Vase 1		A	B	Γ	Δ	E	Z	H	Θ	I
1	$B_y(\pm 1\text{nT})$	23	32	32	35	31	29	25	7	
	$B_x(\pm 1\text{nT})$	47	33	18	-3	-19	-41	-57	-60	
	$B_z(\pm 1\text{nT})$	16	7	3	-1	5	8	23	51	
	$B(\pm 1\text{nT})$	55	46	37	35	37	51	66	79	
	θ_B°	65±1	47±1	30±2	5±2	32±2	55±1	68±1	85±1	
	ϕ_B°	19±1	12±2	9±3	198±18	165±3	169±1	158±1	140±1	
2	$B_y(\pm 1\text{nT})$	22	30	34	34	34	30	23	5	
	$B_x(\pm 1\text{nT})$	60	29	18	-3	-22	-39	-57	-62	
	$B_z(\pm 1\text{nT})$	31	9	11	9	11	14	29	49	
	$B(\pm 1\text{nT})$	71	43	40	35	42	51	68	72	
	θ_B°	72±1	45±1	32±1	16±2	36±1	54±1	70±1	86±1	
	ϕ_B°	27±1	17±2	31±3	108±6	153±2	160±1	153±1	142±1	
3	$B_y(\pm 1\text{nT})$	20	32	36	35	32	28	17	3	
	$B_x(\pm 1\text{nT})$	62	31	13	-3	-20	-47	-60	-62	
	$B_z(\pm 1\text{nT})$	40	25	17	17	21	29	38	47	
	$B(\pm 1\text{nT})$	76	51	42	39	43	62	73	78	
	θ_B°	75±1	51±1	31±1	26±1	42±1	63±1	77±1	88±1	
	ϕ_B°	33±1	39±1	53±3	100±3	134±2	148±1	148±1	143±1	
4	$B_y(\pm 1\text{nT})$	17	24	32	32	33	25	19	-6	-9
	$B_x(\pm 1\text{nT})$	59	41	19	-2	-21	-40	-58	-63	-56
	$B_z(\pm 1\text{nT})$	42	37	30	33	29	31	40	51	50
	$B(\pm 1\text{nT})$	74	60	48	46	49	56	73	81	76
	θ_B°	77±1	67±1	48±1	46±1	47±1	64±1	75±1	-86±1	-83±1
	ϕ_B°	35±1	42±1	58±2	93±2	126±2	142±1	145±1	141±1	139±1
	$B_y(\pm 1\text{nT})$	15	23	32	32	32	22	15	-6	-10
	$B_x(\pm 1\text{nT})$	54	48	21	-7	-21	-48	-58	-68	-61

Table 6a. Sensor readings of B_i ($i=x,y,z$), with the x -sensor oriented in the grooves' direction on the body fragments of **vase 1**.

5	$B_z(\pm 1nT)$	41	47	40	35	41	42	47	52	51
	$B(\pm 1nT)$	69	71	55	48	56	67	76	86	80
	θ_B°	78±1	71±1	55±1	48±1	55±1	71±1	79±1	-86±1	-83±1
	ϕ_B°	37±1	44±1	62±1	101±1	117±1	139±1	141±1	143±1	140±1

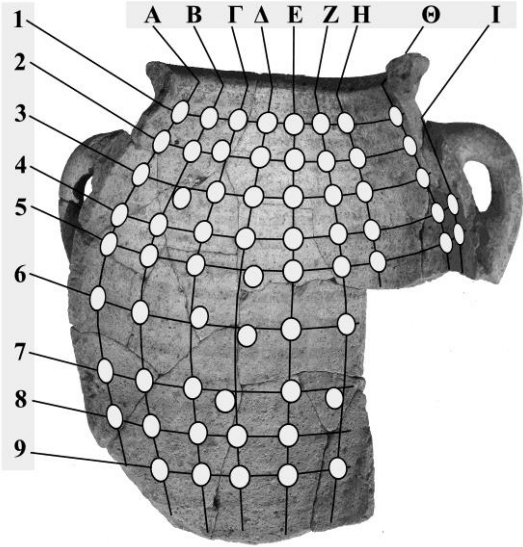
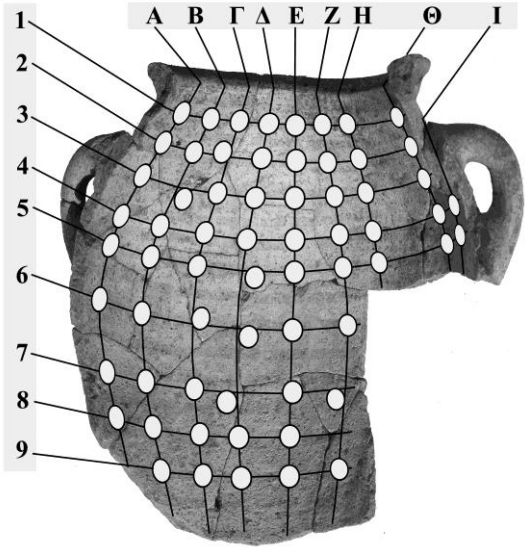
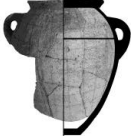


Table 6b. Indicative sensor readings of B_i ($i=x,y,z$), with the x-sensor oriented in the grooves' direction on the body fragments of **vase 1**.



Vase 1										
		A	B	Γ	Δ	E	Z	H	Θ	I
6	B _y (±1nT)	11	18	26	27	22	14			
	B _x (±1nT)	55	42	21	-1	-28	-48			
	B _z (±1nT)	51	57	54	56	60	53			
	B(±1nT)	76	76	64	62	70	73			
	θ _B [°]	82±1	76±1	66±1	64±1	72±1	79±1			
	φ _B [°]	43±1	54±1	69±1	91±1	115±1	132±1			
7	B _y (±1nT)	2	12	18	21	20	8			
	B _x (±1nT)	65	48	20	-5	-25	-52			
	B _z (±1nT)	57	63	63	61	61	61			
	B(±1nT)	86	81	69	65	69	84			
	θ _B [°]	89±1	81±1	75±1	71±1	73±1	84±1			
	φ _B [°]	41±1	53±1	72±1	95±1	112±1	130±1			
8	B _y (±1nT)	1	12	16	18	18	9			
	B _x (±1nT)	62	47	20	1	-27	-50			
	B _z (±1nT)	56	71	67	74	71	65			
	B(±1nT)	84	82	72	76	78	82			
	θ _B [°]	89±1	82±1	77±1	76±1	77±1	84±1			
	φ _B [°]	42±1	56±1	73±1	89±1	111±1	128±1			
9	B _y (±1nT)		6	14	16	15	4			
	B _x (±1nT)		44	27	-4	-29	-51			
	B _z (±1nT)		64	72	75	72	66			
	B(±1nT)		86	78	77	79	84			
	θ _B [°]		86±1	80±1	78±1	79±1	87±1			
	φ _B [°]		55±1	71±1	93±1	112±1	128±1			


Vase 2										α_y^{\perp} (cm)	$\alpha_{x,z}^{//}$ (cm)	λ
										1,15± 0,053	1,66± 0,05	2,0±0,1
		A	B	Г	Δ	E	Z	H	Θ	I		
1	D (±0.3) cm						5.7	2.5	3.4			
	L (±0.1) cm						0.9	0.8	0.8			
	B _{xz} (±1) nT						21	16	28			
	B _y (±1) nT						37	28	33			
	B (±1) nT						43	32	43			
	θ _B °						30±1	30±2	40±1			
2	D (±0.3) cm						9.3			2.0		
	L (±0.1) cm						1.0			1.1		
	B _{xz} (±1) nT						35			71		
	B _y (±1) nT						38			32		
	B (±1) nT						52			78		
	θ _B °						43±1			66±1		
3	D (±0.3) cm						13.1	11.9	10.6	3.7		
	L (±0.1) cm						1.2	1.3	1.1	1.2		
	B _{xz} (±1) nT						46	38	49	89		
	B _y (±1) nT						38	42	38	24		
	B (±1) nT						60	57	62	92		
	θ _B °						50±1	42±1	52±1	75±1		
4	D (±0.3) cm						2.8	2.6	6.4	1.7		
	L (±0.1) cm						1.5	1.6	1.5	1.5		
	B _{xz} (±1) nT						73	73	77	92		
	B _y (±1) nT						37	33	28	20		
	B (±1) nT						82	80	82	94		
	θ _B °						63±1	66±1	70±1	78±1		
	D (±0.3) cm						6.7	2.6	10.4	2.3		

Table 7a. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 2**.

5	L (± 0.1) cm						1.6	1.6	1.4	1.3
	$B_{xz} (\pm 1)$ nT						88	73	90	99
	$B_y (\pm 1)$ nT						35	33	26	15
	$B (\pm 1)$ nT						95	80	94	100
	θ_B°						68 \pm 1	66 \pm 1	74 \pm 1	81 \pm 1

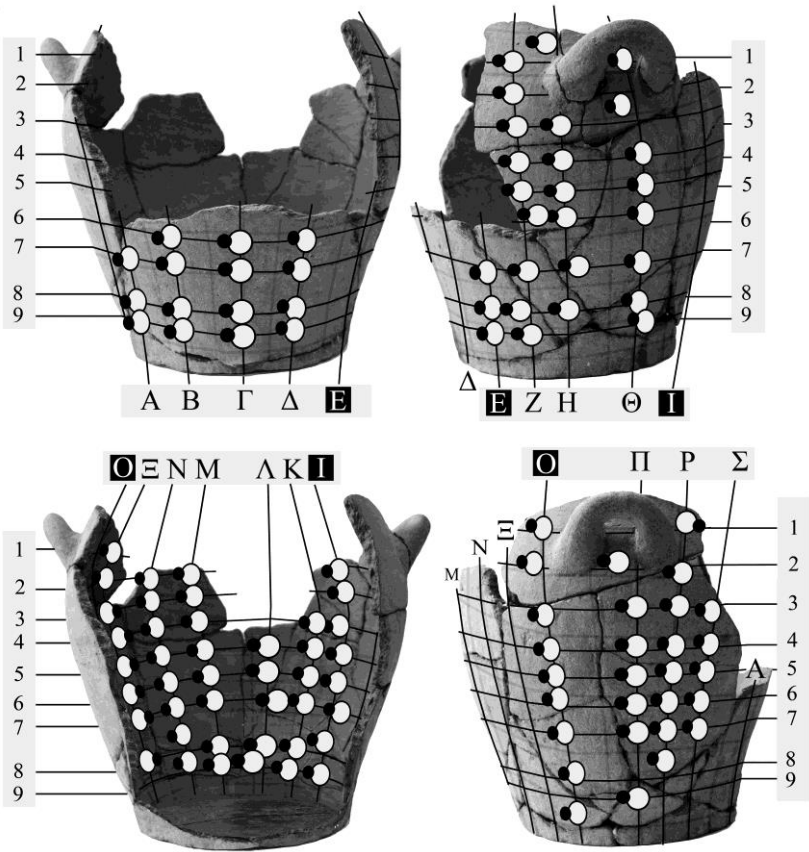
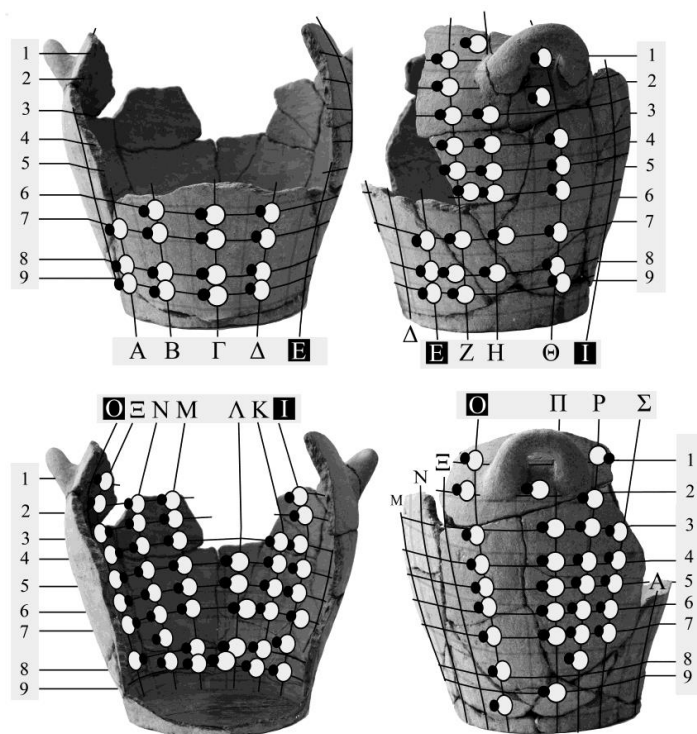



Table 7b. Measurements D, L, and sensor readings of B_i ($i=x,z,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 2**.



Vase 2										
										
		A	B	Г	Δ	E	Z	H	Θ	I
6	D (±0.3) cm		23.2	7.6	6.4		8.9	9.4	11.4	3.3
	L (±0.1) cm		1.3	1.3	1.3		1.4	1.3	1.3	1.3
	B _{xz} (±1) nT		88	105	102		93	86	93	104
	B _y (±1) nT		-26	-8	8		23	26	23	19
	B (±1) nT		92	105	102		96	90	96	106
	Θ _s °		-74±1	-86±1	86±1		76±1	73±1	76±1	80±1
7	D (±0.3) cm	27.8	21.2	14.6	11.0	8.1	3.9	2.7	14.6	3.0
	L (±0.1) cm	1.1	1.3	1.2	1.2	1.4	1.3	1.2	1.2	1.2
	B _{xz} (±1) nT	47	88	100	107	94	95	89	95	107
	B _y (±1) nT	-33	-26	-14	5	20	22	24	22	9
	B (±1) nT	57	92	101	107	96	98	92	98	107
	Θ _s °	-55±1	-74±1	-82±1	87±1	78±1	77±1	75±1	77±1	85±1
8	D (±0.3) cm	12.9	14.1	8.7	14.8	10.0	2.9	3.2	3.3	1.8
	L (±0.1) cm	1.0	1.1	1.0	1.1	1.2	1.1	1.1	1.1	1.1
	B _{xz} (±1) nT	55	87	102	104	92	86	77	85	97
	B _y (±1) nT	-36	-27	-9	9	22	25	30	27	12
	B (±1) nT	66	91	102	104	95	90	83	89	98
	Θ _s °	-57±1	-73±1	-85±1	85±1	77±1	74±1	69±1	72±1	83±1
9	D (±0.3) cm	4.9	7.6	8.7	16.6	13.0	4.1		4.4	2.4
	L (±0.1) cm	0.9	0.9	0.9	1.0	1.1	1.0		0.9	1.0
	B _{xz} (±1) nT	51	81	108	101	88	77		77	102
	B _y (±1) nT	-31	-24	-2	12	25	29		28	16
	B (±1) nT	60	84	108	102	91	82		82	103
	Θ _s °	-59±1	-73±1	-89±1	83±1	74±1	69±1		70±1	81±1


Vase 2										
		K	Λ	M	N	Ξ	O	Π	P	Σ
1	D (±0.3) cm					7.2	9.4		4.2	
	L (±0.1) cm					1.1	1.1		1.0	
	B _{xz} (±1) nT					101	101		86	
	B _y (±1) nT					-15	-16		-22	
	B (±1) nT					102	102		89	
	θ _s °					-82±1	-81±1		-76±1	
2	D (±0.3) cm			10.9	2.7	3.6	5.0	3.0	12.6	
	L (±0.1) cm			1.1	1.2	1.2	1.2	1.1	1.0	
	B _{xz} (±1) nT			105	106	95	81	71	73	
	B _y (±1) nT			-2	-10	-21	-30	-29	-32	
	B (±1) nT			105	106	97	86	77	80	
	θ _s °			-89±1	-85±1	-78±1	-70±1	-68±1	-66±1	
3	D (±0.3) cm			11.6	4.7	8.6	10.7	8.4	8.4	8.5
	L (±0.1) cm			1.2	1.3	1.3	1.3	1.2	1.1	1.1
	B _{xz} (±1) nT			103	104	92	87	67	67	73
	B _y (±1) nT			-5	-12	-23	-26	-33	-30	-30
	B (±1) nT			103	105	95	91	75	73	79
	θ _s °			-87±1	-83±1	-76±1	-73±1	-64±1	-66±1	-68±1
4	D (±0.3) cm	3.6		6.7	3.3	8.6	8.4	2.0	2.6	3.2
	L (±0.1) cm	1.4		1.6	1.7	1.7	1.7	1.6	1.5	1.5
	B _{xz} (±1) nT	103		107	97	81	65	45	50	57
	B _y (±1) nT	17		-11	-19	-30	-33	-42	-38	-40
	B (±1) nT	104		108	99	86	73	62	63	70
	θ _s °	81±1		-84±1	-79±1	-70±1	-63±1	-47±1	-53±1	-55±1

Table 7c. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 2**.

5	D (± 0.3) cm	3.0	4.0	9.9	3.9	5.4	7.9	14.8	11.7	7.6
	L (± 0.1) cm	1.2	1.3	1.4	1.5	1.4	1.5	1.4	1.4	1.3
	$B_{xz} (\pm 1)$ nT	107	109	99	90	79	52	35	31	48
	$B_y (\pm 1)$ nT	6	-3	-16	-27	-32	-40	-41	-41	-38
	$B (\pm 1)$ nT	107	109	100	94	85	66	54	51	61
	θ_s°	87 ± 1	-88 ± 1	-81 ± 1	-73 ± 1	-68 ± 1	-52 ± 1	-40 ± 1	-37 ± 1	-52 ± 1

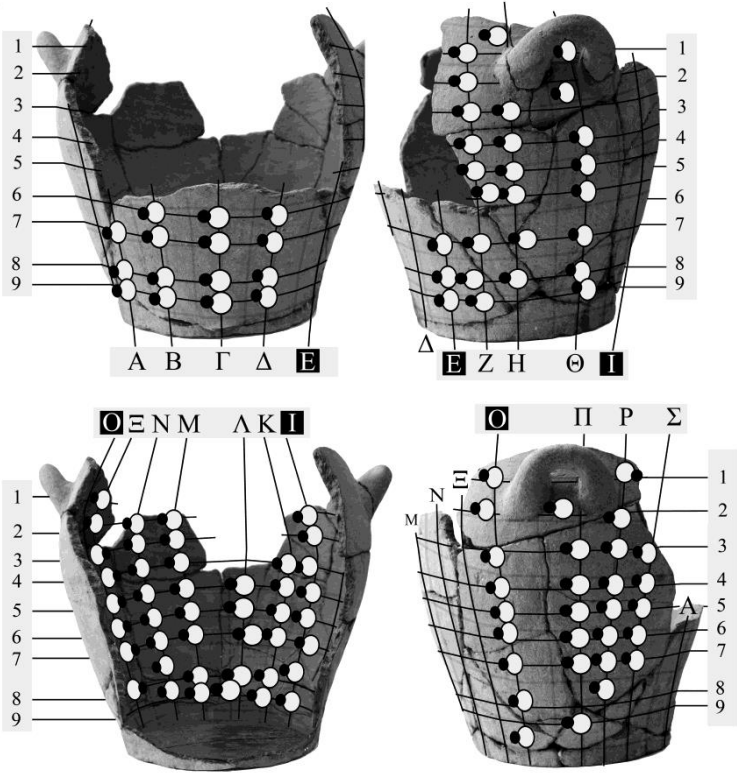
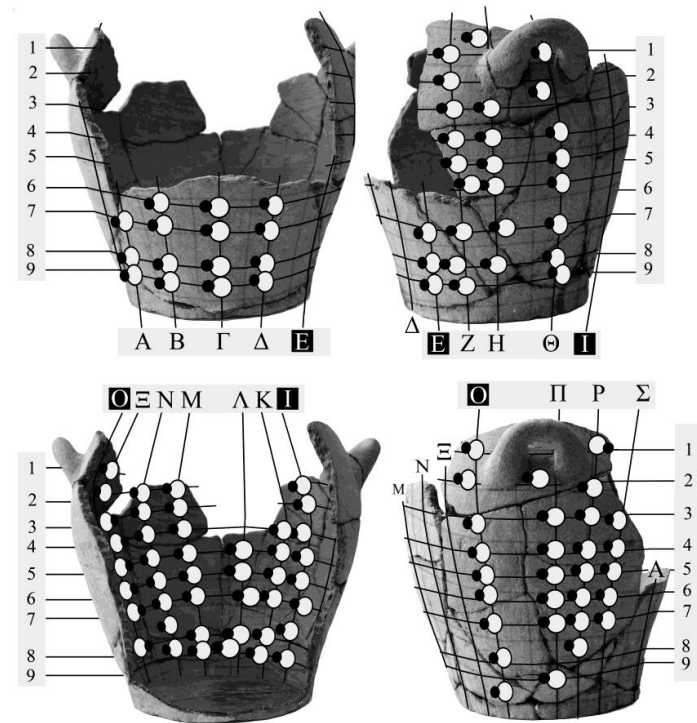


Table 7d. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 2**.



Vase 2										
		K	Λ	M	N	Ξ	O	Π	P	Σ
6	D (± 0.3) cm	7.5	3.9	8.8	3.7	6.7	5.7	9.8	7.8	4.8
	L (± 0.1) cm	1.2	1.2	1.3	1.4	1.5	1.4	1.3	1.3	1.3
	$B_{xz} (\pm 1)$ nT	104	103	99	86	68	49	27	26	36
	$B_y (\pm 1)$ nT	6	-7	-16	-25	-36	-37	-40	-40	-41
	B (± 1) nT	104	103	100	90	77	61	48	48	55
	θ_s°	87 ± 1	-86 ± 1	-81 ± 1	-74 ± 1	-62 ± 1	-53 ± 1	-34 ± 1	-33 ± 1	-41 ± 1
7	D (± 0.3) cm	7.7	10.5	8.3	3.8	8.3	4.2	5.4	5.0	2.0
	L (± 0.1) cm	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.2	1.2
	$B_{xz} (\pm 1)$ nT	108	108	96	83	57	41	17	31	31
	$B_y (\pm 1)$ nT	4	1	-20	-28	-37	-38	-43	-39	-39
	B (± 1) nT	108	108	98	88	68	56	46	50	50
	θ_s°	88 ± 1	89 ± 1	-78 ± 1	-71 ± 1	-57 ± 1	-47 ± 1	-22 ± 1	-38 ± 1	-38 ± 1
8	D (± 0.3) cm	2.3	1.8	6.6	2.7	3.8	2.0		2.0	
	L (± 0.1) cm	1.1	1.1	1.1	1.1	1.2	1.2		1.1	
	$B_{xz} (\pm 1)$ nT	108	104	104	88	63	46		26	
	$B_y (\pm 1)$ nT	4	-5	-13	-24	-34	-37		-37	
	B (± 1) nT	108	104	105	91	72	59		45	
	θ_s°	88 ± 1	-87 ± 1	-83 ± 1	-75 ± 1	-62 ± 1	-51 ± 1		-35 ± 1	
9	D (± 0.3) cm	2.1	1.8	2.7	2.5		2.1	2.7		
	L (± 0.1) cm	0.9	1.1	0.9	1.0		1.1	1.0		
	$B_{xz} (\pm 1)$ nT	103	108	105	91		48	32		
	$B_y (\pm 1)$ nT	8	-6	-12	-23		-35	-36		
	B (± 1) nT	103	108	106	94		59	48		
	θ_s°	86 ± 1	-87 ± 1	-83 ± 1	-76 ± 1		-54 ± 1	-42 ± 1		


Vase 2										
		A	B	Γ	Δ	E	Z	H	Θ	I
1	$B_y(\pm 1\text{nT})$						35	29	34	
	$B_x(\pm 1\text{nT})$						-13	-2	19	
	$B_z(\pm 1\text{nT})$						19	11	17	
	$B(\pm 1\text{nT})$						42	31	42	
	θ_B°						33±1	21±2	37±1	
	ϕ_B°						124±2	100±5	42±2	
2	$B_y(\pm 1\text{nT})$						38			32
	$B_x(\pm 1\text{nT})$						-15			51
	$B_z(\pm 1\text{nT})$						32			43
	$B(\pm 1\text{nT})$						52			74
	θ_B°						43±1			64±1
	ϕ_B°						115±2			40±1
3	$B_y(\pm 1\text{nT})$						38	41	37	25
	$B_x(\pm 1\text{nT})$						-24	-5	25	65
	$B_z(\pm 1\text{nT})$						44	41	44	59
	$B(\pm 1\text{nT})$						63	58	63	91
	θ_B°						53±1	45±1	54±1	74±1
	ϕ_B°						119±1	97±1	60±1	42±1
4	$B_y(\pm 1\text{nT})$						37	33	29	20
	$B_x(\pm 1\text{nT})$						-27	-17	36	61
	$B_z(\pm 1\text{nT})$						71	72	70	73
	$B(\pm 1\text{nT})$						84	81	84	97
	θ_B°						64±1	66±1	70±1	78±1
	ϕ_B°						1		1	
	$B_y(\pm 1\text{nT})$						34	33	25	16

Table 8a. Indicative sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 2**.

5	$B_x(\pm 1nT)$						-32	-12	35	59
	$B_z(\pm 1nT)$						81	77	82	75
	$B(\pm 1nT)$						93	85	93	97
	θ_B°						69±1	67±1	74±1	80±1
	ϕ_B°						112±1	99±1	67±1	52±1

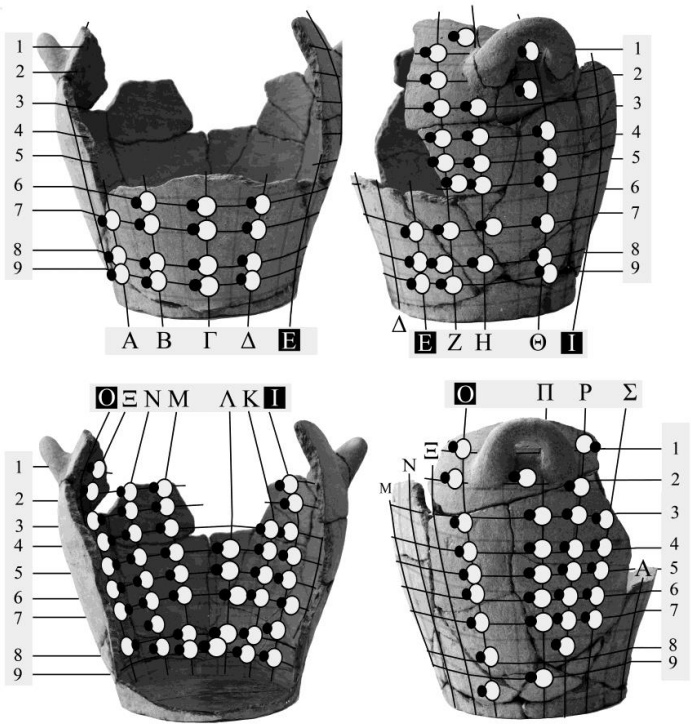
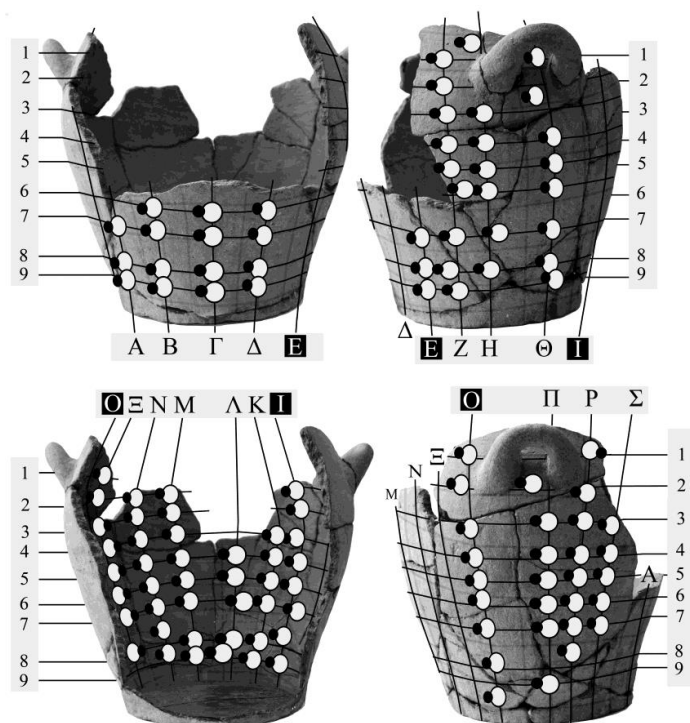




Table 8b. Indicative sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 2**.



Vase 2										
										
		A	B	Г	Δ	E	Z	H	Θ	I
6	B _γ (±1nT)		-29	-8	8		23	27	23	18
	B _χ (±1nT)		-75	-83	-75		-38	-5	31	56
	B _z (±1nT)		53	66	78		87	78	84	81
	B(±1nT)		96	106	109		98	83	92	100
	Θ _B °		-72±1	-86±1	86±1		76±1	71±1	76±1	80±1
	Φ _B °		145±1	142±1	134±1		114±1	94±1	70±1	55±1
7	B _γ (±1nT)	-33	-25	-15	5	20	22	25	22	10
	B _χ (±1nT)	-37	-76	-82	-70	-42	-22	-10	26	67
	B _z (±1nT)	24	53	61	73	87	91	83	89	80
	B(±1nT)	55	96	103	101	99	96	87	95	105
	Θ _B °	-53±1	-75±1	-82±1	87±1	78±1	77±1	73±1	77±1	85±1
	Φ _B °	147±1	145±1	143±1	134±1	116±1	104±1	97±1	74±1	50±1
8	B _γ (±1nT)	-35	-27	-9	7	22	25	29	26	11
	B _χ (±1nT)	-42	-66	-81	-67	-44	-33	-16	23	64
	B _z (±1nT)	31	45	64	77	83	86	84	89	72
	B(±1nT)	63	84	104	102	96	95	90	96	97
	Θ _B °	-56±1	-71±1	-85±1	86±1	77±1	75±1	71±1	74±1	83±1
	Φ _B °	144±1	146±1	142±1	131±1	118±1	111±1	101±1	76±1	48±1
9	B _γ (±1nT)	-30	-24	-1	13	26	28		28	16
	B _χ (±1nT)	-35	-70	-80	-78	-50	-27		29	65
	B _z (±1nT)	32	54	67	78	76	68		77	75
	B(±1nT)	56	92	104	111	95	78		87	101
	Θ _B °	-58±1	-75±1	-89±1	83±1	74±1	69±1		71±1	81±1
	Φ _B °	138±1	142±1	1401	135±1	123±1	112±1		69±1	49±1

Vase 2										
		K	Λ	M	N	Ξ	O	Π	P	Σ
1	$B_y(\pm 1\text{nT})$					-14	-17		-23	
	$B_x(\pm 1\text{nT})$					59	45		-13	
	$B_z(\pm 1\text{nT})$					83	90		89	
	$B(\pm 1\text{nT})$					103	102		93	
	θ_B°					-82±1	-80±1		-76±1	
	ϕ_B°					55±1	63±1		98±1	
2	$B_y(\pm 1\text{nT})$			-1	-10	-20	-29	-30	-31	
	$B_x(\pm 1\text{nT})$			82	70	63	42	8	-19	
	$B_z(\pm 1\text{nT})$			70	71	76	74	73	66	
	$B(\pm 1\text{nT})$			108	100	101	90	79	75	
	θ_B°			-89±1	-84±1	-79±1	-71±1	-68±1	-66±1	
	ϕ_B°			40±1	45±1	50±1	60±1	84±1	106±1	
3	$B_y(\pm 1\text{nT})$			-6	-12	-22	-26	-33	-30	-30
	$B_x(\pm 1\text{nT})$			78	77	60	46	4	-23	-33
	$B_z(\pm 1\text{nT})$			69	73	67	66	67	68	61
	$B(\pm 1\text{nT})$			104	107	93	85	75	78	76
	θ_B°			-87±1	-84±1	-76±1	-72±1	-64±1	-67±1	-67±1
	ϕ_B°			41±1	43±1	48±1	55±1	87±1	109±1	118±1
4	$B_y(\pm 1\text{nT})$	17		-10	-18	-30	-34	-41	-38	-39
	$B_x(\pm 1\text{nT})$	68		81	76	65	44	1	-23	-28
	$B_z(\pm 1\text{nT})$	66		66	63	56	53	46	50	44
	$B(\pm 1\text{nT})$	96		105	100	91	77	62	67	65
	θ_B°	80±1		-85±1	-80±1	-71±1	-64±1	-48±1	-55±1	-53±1
	ϕ_B°	44±1		39±1	40±1	41±1	50±1	89±1	115±1	122±1
5	$B_y(\pm 1\text{nT})$	6	-2	-14	-26	-32	-39	-42	-41	-38
	$B_x(\pm 1\text{nT})$	74	77	80	70	59	38	-2	-14	-30
	$B_z(\pm 1\text{nT})$	70	65	59	54	47	36	35	29	31
	$B(\pm 1\text{nT})$	102	101	100	92	82	65	55	52	57
	θ_B°	87±1	-89±1	-82±1	-74±1	-67±1	-53±1	-40±1	-38±1	-49±1

ϕ_B°	43±1	40±1	36±1	38±1	39±1	43±1	93±2	116±2	134±1
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Table 8c. Indicative sensor readings with the x-sensor oriented in the grooves’ direction on the body fragments of **vase 2**.

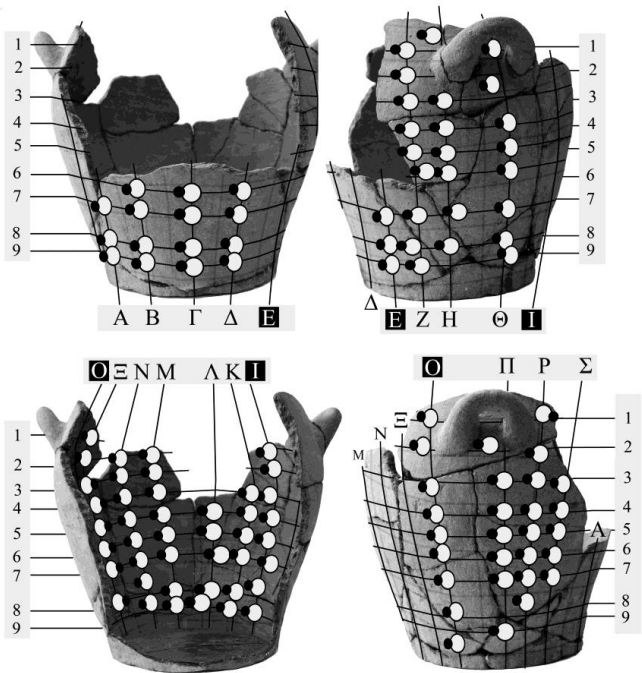
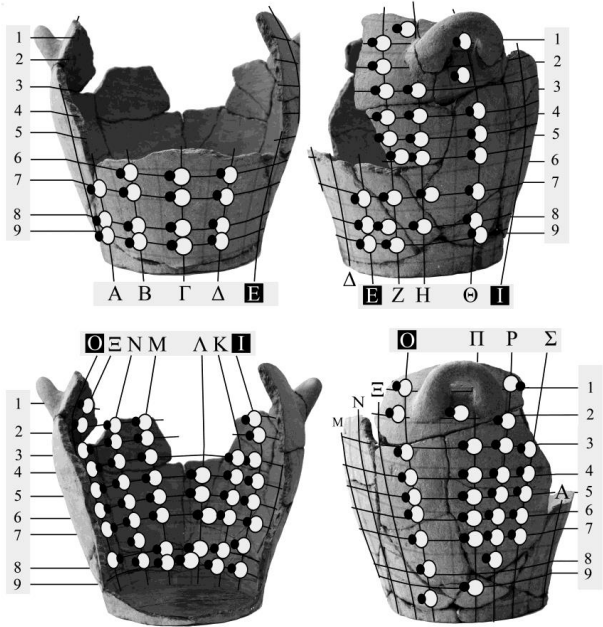



Table 8d. Indicative sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 2**.

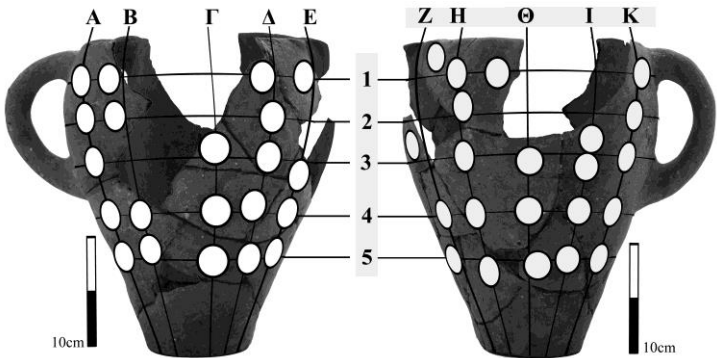


Vase 2										
		K	Λ	M	N	Ξ	O	Π	P	Σ
6	$B_y (\pm 1nT)$	6	-6	-17	-25	-34	-38	-40	-40	-41
	$B_x (\pm 1nT)$	73	80	81	71	55	41	-5	-13	-25
	$B_z (\pm 1nT)$	76	68	57	49	42	34	23	23	30
	$B (\pm 1nT)$	106	105	100	90	77	65	465	48	57
	θ_s°	87±1	-87±1	-80±1	-74±1	-64±1	-54±1	-30±1	-33±1	-44±1
	ϕ_s°	46±1	40±1	35±1	35±1	37±1	40±1	102±2	119±2	130±1
7	$B_y (\pm 1nT)$	5	1	-20	-27	-36	-39	-43	-39	-39
	$B_x (\pm 1nT)$	75	80	78	74	48	35	-1	-12	-26
	$B_z (\pm 1nT)$	74	74	50	48	33	29	19	23	23
	$B (\pm 1nT)$	105	109	95	92	68	60	47	47	52
	θ_s°	87±1	89±1	-78±1	-73±1	-58±1	-49±1	-24±1	-34±1	-42±1
	ϕ_s°	45±1	43±1	33±1	33±1	35±1	40±1	93±3	118±2	139±2
8	$B_y (\pm 1nT)$	5	-4	-15	-25	-35	-37		-38	
	$B_x (\pm 1nT)$	79	77	80	68	51	29		-11	
	$B_z (\pm 1nT)$	73	63	58	48	35	31		28	
	$B (\pm 1nT)$	103	100	100	87	71	56		48	
	θ_s°	87±1	-88±1	-81±1	-73±1	-60±1	-49±1		-38±1	
	ϕ_s°	45±1	39±1	36±1	35±1	34±1	47±1		111±2	
9	$B_y (\pm 1nT)$	7	-4	-13	-24		-36	-37		
	$B_x (\pm 1nT)$	72	81	82	68		33	3		
	$B_z (\pm 1nT)$	67	67	63	55		36	32		
	$B (\pm 1nT)$	99	105	104	91		61	49		
	θ_s°	86±1	-88±1	-83±1	-75±1		-54±1	-41±1		
	ϕ_s°	43±1	40±1	38±1	39±1		47±1	85±2		

Vase 3											
		α_y^\perp (cm)	$\alpha_{x,z}^{\parallel}$ (cm)	λ							
		1,07 $\pm 0,05$	1,61 $\pm 0,03$	2,0 $\pm 0,1$							
		A	B	Γ	Δ	E	Z	H	Θ	I	K
1	D (± 0.3) cm	5.3	4.4		2.9	4.8	4.6	7.6	4.3		2.6
	L (± 0.1) cm	1.1	0.9		0.8	1.0	1.1	0.9	9.0		1.2
	$B_{xz} (\pm 1)$ nT	29	53		105	96	90	92	105		59
	$B_y (\pm 1)$ nT	34	34		-5	-16	-17	-19	4		40
	B (± 1) nT	45	63		105	97	92	94	105		71
	θ_B°	40 ± 1	57 ± 1		-87 ± 1	-81 ± 1	-79 ± 1	-78 ± 1	88 ± 1		56 ± 1
2	D (± 0.3) cm	7.8	9.7		5.4			4.5		1.9	3.7
	L (± 0.1) cm	1.4	1.3		1.5			1.5		1.4	1.5
	$B_{xz} (\pm 1)$ nT	50	79		99			97		94	60
	$B_y (\pm 1)$ nT	36	28		-14			-22		14	38
	B (± 1) nT	62	84		100			99		95	71
	θ_B°	54 ± 1	70 ± 1		-82 ± 1			-77 ± 1		82 ± 1	58 ± 1
3	D (± 0.3) cm	8.6		4.1	3.1	5.1	3.0	12.3	4.1	4.6	8.9
	L (± 0.1) cm	1.4		1.2	1.4	1.3	1.3	1.4	1.5	1.4	1.3
	$B_{xz} (\pm 1)$ nT	94		102	76	44	38	73	95	106	96
	$B_y (\pm 1)$ nT	20		-13	-30	-40	-42	-31	-13	2	14
	B (± 1) nT	96 ± 1		103 ± 1	82 ± 1	59 ± 1	57 ± 1	79 ± 1	95 ± 1	106 ± 1	97 ± 1
	θ_B°	78		-83	-68	-48	-42	-67	-82	89	82
4	D (± 0.3) cm	4.1	5.6	5.0	2.4	2.0	3.8	8.7	2.7	8.3	15.7
	L (± 0.1) cm	1.4	1.3	1.3	1.5	1.3	1.3	1.3	1.4	1.4	1.3
	$B_{xz} (\pm 1)$ nT	102	104	87	55	52	27	52	89	99	102
	$B_y (\pm 1)$ nT	16	7	-20	-34	-35	-44	-33	-23	-1	12
	B (± 1) nT	103	104	89	65	63	52	62	92	99	103
	θ_B°	81 ± 1	86 ± 1	-77 ± 1	-58 ± 1	-56 ± 1	-32 ± 1	-58 ± 1	-76 ± 1	-89 ± 1	83 ± 1
	D (± 0.3) cm	9.8	10.7	4.5	7.4	8.4	2.3	3.2	6.8	4.9	18.8
	L (± 0.1) cm	1.3	1.2	1.1	1.2	1.2	1.1	1.1	1.2	1.2	1.3
	$B_{xz} (\pm 1)$ nT	88	95	96	71	59	39	64	101	104	95

5	$B_y (\pm 1) \text{ nT}$	19	18	-13	-30	-38	-35	-32	-12	6	18
	$B (\pm 1) \text{ nT}$	90	97	97	77	70	52	72	102	104	97
	θ_8°	78±1	79±1	-82±1	-67±1	-57±1	-48±1	-63±1	-83±1	87±1	79±1

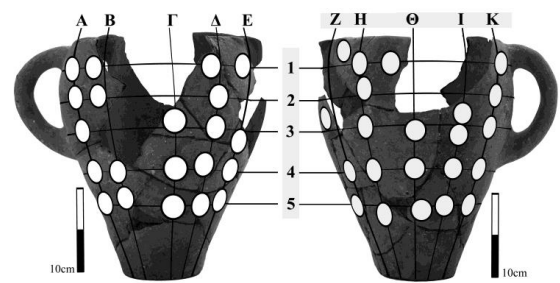
Table 9. Measurements D, L, and sensor readings of B_i ($i=x,z,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 3**.




Vase 3											
		A	B	Г	Δ	E	Z	H	Θ	I	K
1	$B_y (\pm 1nT)$	36	34		-6	-16	-17	-19	4		40
	$B_x (\pm 1nT)$	-22	-38		-60	-34	31	51	75		51
	$B_z (\pm 1nT)$	26	40		82	87	91	86	78		39
	$B (\pm 1nT)$	50	65		102	95	98	102	108		76
	θ_B°	43±1	58±1		-87±1	-80±1	-80±1	-79±1	88±1		58±1
	ϕ_B°	130±2	134±1		126±1	111±1	71±1	59±1	46±1		37±1
2	$B_y (\pm 1nT)$	36	28		-15			-22		15	37
	$B_x (\pm 1nT)$	-24	-51		-57			55		73	37
	$B_z (\pm 1nT)$	49	51		71			84		67	46
	$B (\pm 1nT)$	65	77		92			103		100	70
	θ_B°	57±1	69±1		-81±1			-78±1		81±1	58±1
	ϕ_B°	116±1	135±1		129±1			57±1		43±1	51±1
3	$B_y (\pm 1nT)$	19		-14	-31	-39	-41	-32	-14	2	14
	$B_x (\pm 1nT)$	-36		-70	-58	-31	18	48	74	65	46
	$B_z (\pm 1nT)$	84		64	43	30	33	49	65	74	94
	$B (\pm 1nT)$	93		96	79	58	56	76	99	99	106
	θ_B°	78±1		-82±1	-67±1	-48±1	-43±1	-65±1	-82±1	89±1	82±1
	ϕ_B°	113±1		138±1	143±1	136±1	61±2	46±1	41±1	49±1	64±1
4	$B_y (\pm 1nT)$	16	9	-19	-35	-35	-43	-34	-22	-1	12
	$B_x (\pm 1nT)$	-25	-55	-72	-46	-41	16	48	73	63	34
	$B_z (\pm 1nT)$	97	83	58	36	32	22	30	55	84	88
	$B (\pm 1nT)$	101	100	94	68	63	51	66	94	105	95
	θ_B°	81±1	85±1	-78±1	-59±1	-56±1	-32±1	-59±1	-76±1	-89±1	83±1
	ϕ_B°	104±1	124±1	141±1	142±1	142±1	54±2	32±1	37±1	53±1	69±1
5	$B_y (\pm 1nT)$	19	17	-15	-30	-37	-36	-33	-13	-5	17
	$B_x (\pm 1nT)$	-21	-52	-72	-49	-36	21	44	70	71	49
	$B_z (\pm 1nT)$	86	89	62	42	42	28	43	62	82	85
	$B (\pm 1nT)$	91	104	96	71	67	50	70	94	109	100
	θ_B°	78±1	81±1	-81±1	-65±1	-56±1	-44±1	-62±1	-82±1	87±1	80±1

	ϕ_B°	104±1	120±1	139±1	139±1	131±1	53±2	44±1	42±1	49±1	60±1
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Table 10. Indicative sensor readings with the x-sensor oriented in the grooves’ direction on the body fragments of **vase 3**.



Vase 4										
										
		α_y^{\perp} (cm)		$\alpha_{x,z}^{//}$ (cm)		λ				
		0.67±0,03		1.15±0,02		1.97±0,01				
		A	B	Г	Δ	E	Z	H	Θ	I
1	D (±0.3) cm			1.7	1.6		4,2		5,7	
	L (±0.1) cm			0.9	1.2		1,1		0,9	
	B _{xz} (±1) nT			37	35		40		54	
	B _y (±1) nT			16	15		17		5	
	B (±1) nT			40	38		44		54	
	θ _θ °			66±1	66±2		67±1		85±1	
	2			D (±0.3) cm			4.2		6.7	
L (±0.1) cm		1.3	1.3	1.3		1.2	1.3	1.3	1.3	1.5
B _{xz} (±1) nT		47	43	43		43	46	43	48	55
B _y (±1) nT		15	14	18		18	12	10	9	3
B (±1) nT		49	45	47		47	48	44	49	55
θ _θ °		72±1	72±1	67±1		67±1	75±1	77±1	79±1	87±1
3		D (±0.3) cm	1.9	10,6		2.0	9.1	9.9	13.9	4.4
	L (±0.1) cm	1.8	1.7	1.8	1.8	1.8	1.7	1.7	1.6	1.7
	B _{xz} (±1) nT	53	52	47	47	47	50	53	55	49
	B _y (±1) nT	5	12	13	12	14	10	7	2	-3
	B (±1) nT	53	53	49	49	49	51	53	55	49
	θ _θ °	85±1	77±1	74±1	75±1	73±1	79±1	82±1	88±1	-86±1
	4	D (±0.3) cm			1.7	2.8	3.0	2.3	7.5	3>8
L (±0.1) cm		2.1			2.1	2.0	2.1	2.1	2.0	2.0
B _{xz} (±1) nT		50			45	49	53	55	55	53
B _y (±1) nT		9			9	10	5	4	-2	-5
B (±1) nT		51			46	50	53	55	55	53
θ _θ °		80±1			79±1	78±1	85±1	86±1	-88±1	-85±1
5		D (±0.3) cm					4.8	2.6	6.6	5.5
	L (±0.1) cm	2.2	2.3	2.2			2.1	2.3	2.1	2.2
	B _{xz} (±1) nT	53	54	53			55	54	48	51
	B _y (±1) nT	6	7	6			3	-1	-6	-9
	B (±1) nT	53	54	53			55	54	48	52

	θ_s°			83 ± 1	83 ± 1	83 ± 1	87 ± 1	-89 ± 1	-83 ± 1	-80 ± 1
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Table 11. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 4**.

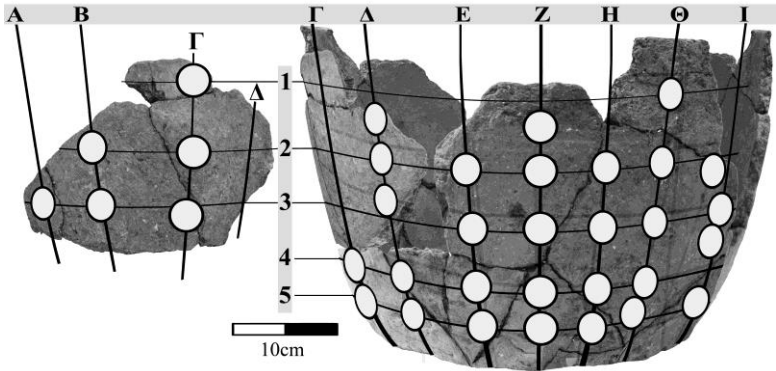
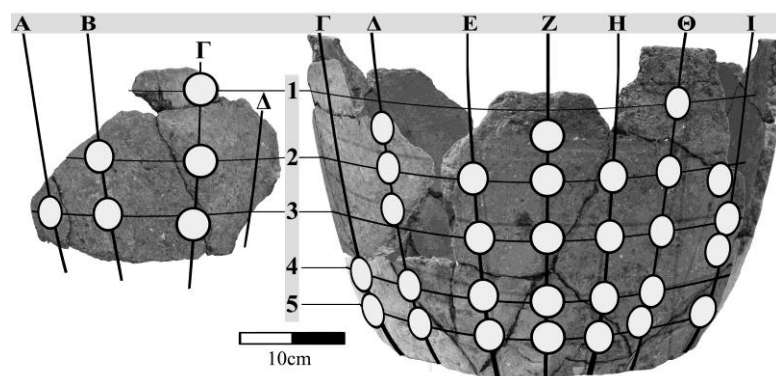



Table 12. Indicative sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 4**.

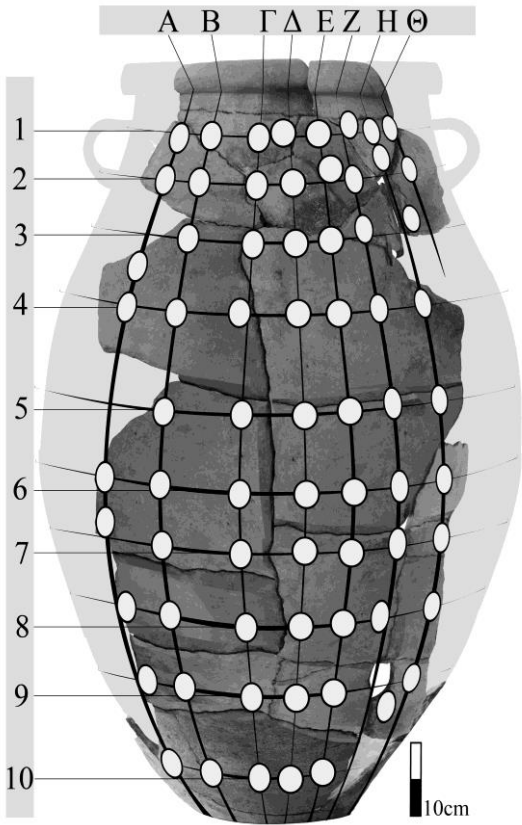


Vase 4										
		A	B	Γ	Δ	E	Z	H	Θ	I
1	$B_y (\pm 1nT)$			16	16		17		6	
	$B_x (\pm 1nT)$			10	3		-23		-39	
	$B_z (\pm 1nT)$			33	14		37		38	
	$B (\pm 1nT)$			38	38		47		55	
	θ_B°			65±1	65±2		68±1		84±1	
	ϕ_B°			73±1	85±2		122±1		136±1	
2	$B_y (\pm 1nT)$		14	15	17	18	12	10	8	2
	$B_x (\pm 1nT)$		27	13	2	-11	-16	-27	-30	-35
	$B_z (\pm 1nT)$		45	41	38	40	34	33	33	33
	$B (\pm 1nT)$		54	46	42	45	40	44	45	48
	θ_B°		75±1	71±1	66±2	66±1	72±2	77±1	80±1	88±1
	ϕ_B°		59±1	72±1	87±2	105±1	115±2	129±1	132±1	137±1
3	$B_y (\pm 1nT)$	6	11	13	12	14	10	7	1	-2
	$B_x (\pm 1nT)$	33	21	4	6	-8	-24	-32	-40	-35
	$B_z (\pm 1nT)$	37	38	40	41	43	43	43	39	32
	$B (\pm 1nT)$	50	45	42	43	46	50	54	56	47
	θ_B°	83±1	76±1	72±1	74±1	72±1	78±1	82±1	89±1	-88±1
	ϕ_B°	48±1	61±1	84±1	82±1	101±1	119±1	127±1	136±1	138±1
4	$B_y (\pm 1nT)$			9	9	11	6	4	-1	-6
	$B_x (\pm 1nT)$			12	1	-9	-26	-27	-35	-38
	$B_z (\pm 1nT)$			49	44	51	41	40	34	32
	$B (\pm 1nT)$			51	45	53	49	48	49	50
	θ_B°			80±1	78±1	78±1	83±1	85±1	-89±1	-83±1
	ϕ_B°			76±1	89±1	100±1	122±1	124±1	136±1	140±1
5	$B_y (\pm 1nT)$			6	7	7	3	-1	-5	-9
	$B_x (\pm 1nT)$			8	3	-11	-19	-32	-39	-41
	$B_z (\pm 1nT)$			51	51	48	44	43	35	33
	$B (\pm 1nT)$			52	52	50	48	54	53	53
	θ_B°			83±1	82±1	82±1	86±1	-89±1	-84±1	-80±1
				81±1	87±1	103±1	113±1	127±1	138±1	141±1

Vase 5									
									
		A	B	Γ	Δ	E	Z	H	Θ
1	D (±0.3) cm	10.4	2.2	4.7	1.8	10.4	7.6	3.3	1.2
	L (±0.1) cm	2.9	2.8	2.7	2.7	2.6	2.6	2.5	2.6
	B _{xz} (±1) nT	45	53	58	62	66	66	71	67
	B _y (±1) nT	-24	-22	-19	-17	-14	-9	-7	-6
	B (±1) nT	51	57	61	64	67	67	71	67
	Θ ₈ °	-62±1	-68±1	-72±1	-75±1	-78±1	-82±1	-84±1	-85±1
2	D (±0.3) cm	3.0	6.0	7.1	8.6	6.9	3.8	1.8	4.7
	L (±0.1) cm	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2
	B _{xz} (±1) nT	55	57	61	64	64	70	70	72
	B _y (±1) nT	-21	-20	-18	-15	-12	-6	-7	-1
	B (±1) nT	59	60	64	66	65	70	70	72
	Θ ₈ °	-69±1	-71±1	-74±1	-77±1	-80±1	-85±1	-84±1	-89±1
3	D (±0.3) cm	15.4	25.0	26.4	32.1	23.1	6.7	4.8	
	L (±0.1) cm	2.2	2.2	2.1	2.0	2.0	2.0	1.9	
	B _{xz} (±1) nT	53	60	64	66	66	68	68	
	B _y (±1) nT	-21	-19	-15	-14	-10	-11	-3	
	B (±1) nT	57	63	66	67	67	69	68	
	Θ ₈ °	-69±1	-73±1	-77±1	-78±1	-82±1	-81±1	-88±1	
4	D (±0.3) cm	7.4	12.9	4.3	20.7	20.8	13.1	6.4	
	L (±0.1) cm	2.0	2.0	1.9	1.9	1.8	1.8	1.7	
	B _{xz} (±1) nT	41	49	57	61	61	65	66	
	B _y (±1) nT	-26	-24	-20	-17	-17	-14	-11	
	B (±1) nT	48	54	60	63	63	66	67	
	Θ ₈ °	-58±1	-64±1	-71±1	-75±1	-75±1	-78±1	-81±1	
5	D (±0.3) cm		28.4	6.0	20.0	14.2	9.2	3.6	
	L (±0.1) cm		1.7	1.6	1.5	1.5	1.5	1.4	
	B _{xz} (±1) nT		38	50	51	57	62	64	
	B _y (±1) nT		-27	-23	-22	-19	-16	-14	

	$B(\pm 1) \text{ nT}$		46	55	55	60	64	65	
	θ_8°		-55±11	-66±1	-67±1	-72±1	-76±1	-78±1	

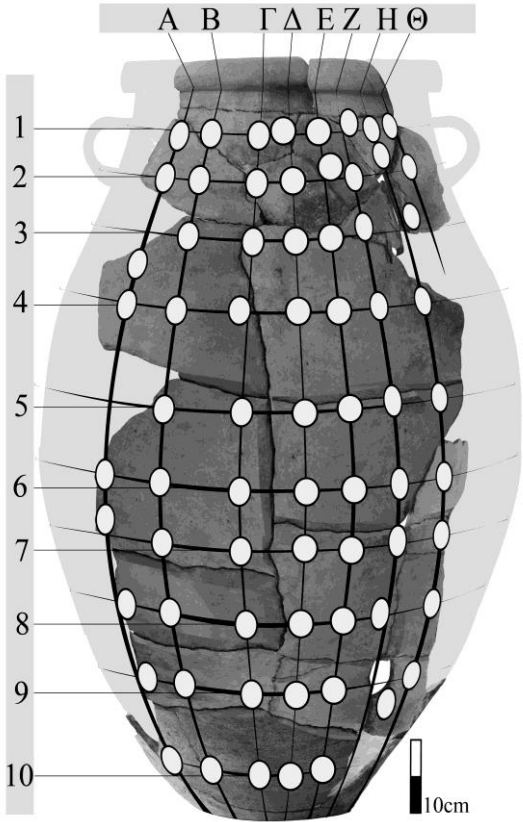
Table 13a. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 5**.




Vase 5		A	B	Γ	Δ	E	Z	H	Θ
6	D (± 0.3) cm	12.9	17.1	6.1	15.5	9.0	3.0	3.3	
	L (± 0.1) cm	1.4	1.4	1.4	1.4	1.4	1.3	1.3	
	B _{xz} (± 1) nT	21	22	34	41	51	56	59	
	B _y (± 1) nT	-29	-29	-26	-25	-21	-21	-17	
	B (± 1) nT	35	36	43	48	55	60	61	
	θ_B°	-36 ± 2	-38 ± 2	-53 ± 1	-59 ± 1	-68 ± 1	-70 ± 1	-74 ± 1	
7	D (± 0.3) cm	4.5	6.3	5.3	14.9	8.0	1.8	1.4	
	L (± 0.1) cm	2.5	1.5	1.4	1.4	1.5	1.5	1.5	
	B _{xz} (± 1) nT	16	25	27	37	53	53	51	
	B _y (± 1) nT	-30	-28	-27	-26	-22	-19	-18	
	B (± 1) nT	34	37	38	45	57	56	54	
	θ_B°	-28 ± 2	-42 ± 2	-45 ± 2	-55 ± 1	-68 ± 1	-71 ± 1	-71 ± 1	
8	D (± 0.3) cm	9.1	10.0	5.7	13.8	7.6	2.0	1.7	
	L (± 0.1) cm	1.6	1.7	1.6	1.6	1.6	1.7	1.7	
	B _{xz} (± 1) nT	8	19	28	40	47	52	54	
	B _y (± 1) nT	-32	-31	-29	-25	-24	-22	-21	
	B (± 1) nT	33	36	40	47	53	56	58	
	θ_B°	-14 ± 2	-32 ± 2	-44 ± 1	-58 ± 1	-63 ± 1	-67 ± 1	-69 ± 1	
9	D (± 0.3) cm	5.3	13.5	3.7	11.1	5.6	5.5	2.4	
	L (± 0.1) cm	1.7	1.7	1.7	1.8	1.8	1.9	1.9	
	B _{xz} (± 1) nT	11	24	34	38	44	49	56	
	B _y (± 1) nT	-31	-29	-27	-27	-26	-23	-20	
	B (± 1) nT	33	37	43	46	51	54	59	
	θ_B°	-19 ± 2	-40 ± 2	-52 ± 1	-55 ± 1	-60 ± 1	-65 ± 1	-71 ± 1	
		7.8	21.7	15.2	9.9	4.2			
		2.1	2.1	2.2	2.3	2.3			

Table 13b. Measurements D, L, and sensor readings of B_i ($i=xz,y$), with the x-sensor aligned along the common direction of B_{xz} , M_{xz} , on the body fragments of **vase 5**.

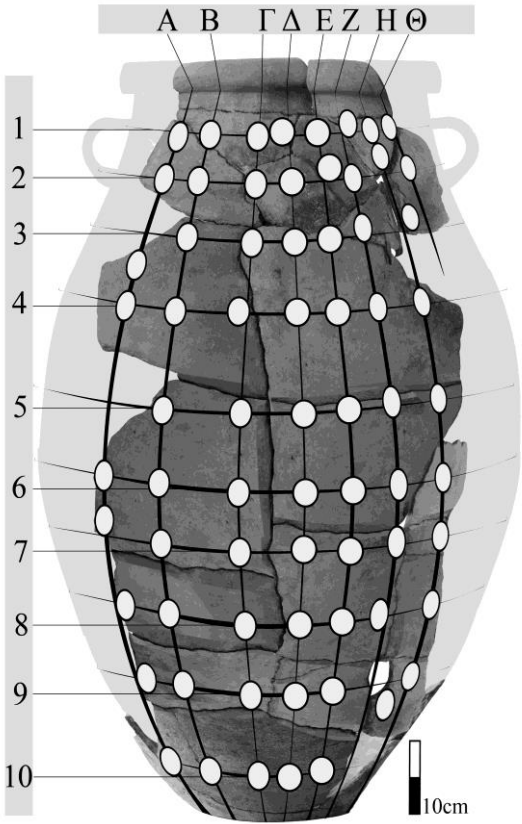
<div>1</div> <div>0</div>		17	22	31	37	43			
		-32	-31	-30	-28	-27			
		36	38	43	46	51			
		-28±2	-36±2	-46±1	-53±1	-58±1			



Vase 5									
									
		A	B	Γ	Δ	E	Z	H	Θ
1	B _y (±1nT)	-23	-23	-19	-17	-14	-9	-7	-6
	B _x (±1nT)	-11	-24	-32	-40	-49	-53	-58	-59
	B _z (±1nT)	48	45	47	45	41	42	38	38
	B(±1nT)	54	56	60	62	65	68	70	70
	Θ _B °	115±1	-66±1	-72±1	-74±1	-78±1	-83±1	-84±1	-85±1
	Φ _B °	103±1	118±1	124±1	132±1	140±1	142±1	147±1	147±1
2	B _y (±1nT)	-20	-21	-18	-15	-12	-6	-7	-1
	B _x (±1nT)	-12	-20	-35	-40	-46	-53	-53	-57
	B _z (±1nT)	56	53	47	50	47	43	43	39
	B(±1nT)	61	60	61	66	67	70	69	69
	Θ _B °	-71±1	-70±1	-73±1	-77±1	-80±1	-85±1	-84±1	-89±1
	Φ _B °	102±1	111±1	127±1	129±1	134±1	141±1	141±1	146±1
3	B _y (±1nT)	-22	-19	-15	-14	-10	-11	-3	
	B _x (±1nT)	-17	-24	-31	-45	-47	-48	-55	
	B _z (±1nT)	47	52	55	46	49	46	42	
	B(±1nT)	54	60	65	66	69	67	69	
	Θ _B °	-67±1	-72±1	-77±1	-78±1	-82±1	-81±1	-88±1	
	Φ _B °	110±1	115±1	119±1	134±1	134±1	136±1	143±1	
4	B _y (±1nT)	-26	-23	-20	-17	-16	-13	-11	
	B _x (±1nT)	-13	-23	-32	-43	-46	-54	-57	
	B _z (±1nT)	40	44	45	44	40	40	42	
	B(±1nT)	49	55	59	64	63	68	72	
	Θ _B °	-59±2	-65±1	-70±1	-75±1	-76±1	-79±1	-81±1	
	Φ _B °	108±1	118±1	125±1	134±1	139±1	143±1	144±1	
5	B _y (±1nT)		-27	-23	-22	-18	-15	-14	
	B _x (±1nT)		-21	-36	-37	-48	-50	-55	
	B _z (±1nT)		33	36	34	34	35	33	
	B(±1nT)		47	56	55	61	63	66	

	θ_B°		-56±2	-66±1	-67±1	-73±1	-76±1	-78±1	
	ϕ_B°		122±1	135±1	137±1	145±1	145±1	149±1	

Table 14a. Indicative sensor readings with the x-sensor oriented in the grooves’ direction on the body fragments of **vase 5**.



Vase 5									
		A	B	Г	Δ	E	Z	H	Θ
6	$B_y (\pm 1\text{nT})$	-28	-28	-26	-24	-20	-20	-17	
	$B_x (\pm 1\text{nT})$	-10	-16	-25	-40	-45	-48	-53	
	$B_z (\pm 1\text{nT})$	16	14	24	19	25	27	25	
	$B (\pm 1\text{nT})$	33	35	43	50	55	58	61	
	θ_B°	-34±4	-38±3	-54±2	-62±1	-69±1	-70±1	-74±1	
	ϕ_B°	122±3	139±3	136±2	155±1	151±1	151±1	155±1	
7	$B_y (\pm 1\text{nT})$	-30	-29	-27	-26	-22	-19	-19	
	$B_x (\pm 1\text{nT})$	-9	-20	-24	-35	-47	-48	-47	
	$B_z (\pm 1\text{nT})$	11	13	12	16	22	20	22	
	$B (\pm 1\text{nT})$	33	37	38	46	56	55	55	
	θ_B°	-26±5	-40±3	-45±3	-56±2	-67±1	-70±1	-70±1	
	ϕ_B°	129±4	147±2	153±2	155±1	155±1	157±1	155±1	
8	$B_y (\pm 1\text{nT})$	-31	-31	-29	-25	-23	-21	-20	
	$B_x (\pm 1\text{nT})$	-8	-21	-30	-39	-45	-51	-53	
	$B_z (\pm 1\text{nT})$	5	4	4	13	12	14	18	
	$B (\pm 1\text{nT})$	32	37	42	48	52	57	59	
	θ_B°	-17±8	-35±3	-47±2	-59±2	-64±1	-69±1	-71±1	
	ϕ_B°	148±6	169±3	172±2	162±1	165±1	165±1	161±1	
9	$B_y (\pm 1\text{nT})$	-32	-29	-27	-27	-25	-23	-21	
	$B_x (\pm 1\text{nT})$	-11	-23	-33	-38	-44	-52	-56	
	$B_z (\pm 1\text{nT})$	-10	-5	-4	0	2	5	9	
	$B (\pm 1\text{nT})$	35	37	43	46	50	57	60	
	θ_B°	-25±5	-39±3	-51±2	-55±2	-61±1	-67±1	-70±1	
	ϕ_B°	222±4	192±2	187±2	180±2	177±1	175±1	171±1	
	$B_y (\pm 1\text{nT})$	-32	-31	-30	-28	-26			
	$B_x (\pm 1\text{nT})$	-7	-21	-34	-38	-45			
	$B_z (\pm 1\text{nT})$	-14	-12	-8	-11	-6			

Table 14b. Indicative sensor readings with the x-sensor oriented in the grooves' direction on the body fragments of **vase 5**.

10	B(±1nT)	35	39	46	48	52			
	θ_B°	-26±5	-38±3	-50±2	-55±2	-61±1			
	ϕ_B°	243±4	210±2	193±2	196±1	188±1			

