

Archaeometric study of execution techniques of white Attic vases: the case of the Perseus crater in Agrigento

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		TableS11. Acquisition point, description, XRF peak net area after correction for background and Compton normalization accordingly to reference 24.													
Point	Description	Net Area													
		Al	Si	S	K	Ca	Ti	Cr	Mn	Fe	Ni	Cu	Zn	As	Sr
Clay															
8B	Ceramic body	624	4972	516	17855	62956	14609	2710	4785	553742	10264	1924	1685	1082	6680
22B	Ceramic body	685	5324	1506	9292	190095	11936	1309	4561	269091	9290	1397	1102	1167	18615
Black on white															
1A	Perseo's hair	1139	7595	1193	10908	128003	14346	1453	4494	364718	10520	1863	1602	1250	122553
4A	Point lance	1335	7688	947	18226	153782	13539	1143	20998	424095	11509	2597	1925	1432	10363
10B	Afrodite's hair	1093	5439	461	39003	71427	11407	2098	4288	608263	9334	2024	1752	940	11893
11B	Cassiopeas's hair	1392	6598	395	30038	28092	12131	1931	4422	692797	8040	1846	1681	1187	8831
12B	Cassiopeas's dress	1521	7632	394	28480	53324	14183	2287	4728	698560	9903	2123	1388	1676	10213
13B	Cassiopeas's dress	2227	9758	286	27334	35947	14142	1940	4744	721771	8158	1495	1253	4295	9794
14B	Cassiopeas's dress	2260	9634	330	29267	46343	14103	1993	4914	683643	8644	1493	1376	2841	10010
19B	Aphrodite's scepter	1397	8365	740	23668	152381	13022	1314	5675	433832	11005	1989	1480	1470	13551
20B	Black leaf slip	1274	6282	1558	34477	81105	12265	2778	4841	605825	9209	2154	2103	1097	11049
21B	Black slip decoration	1486	7917	892	24577	57622	16315	3178	5570	659834	9890	2152	2257	1181	6939
Black															
15B	Black down slip	1545	6838	53	23808	18738	10498	2036	3493	543544	6205	1130	1183	1001	4690
16B	Handle right	636	2652	12076	9006	100790	7863	1630	2627	360682	6488	1211	1416	1035	9383
17B	Foot' vase	956	3562	609	20317	32613	10821	2202	3511	483263	7128	1567	1341	1237	4484
18B	Up border	673	3063	257	20582	16823	9006	2093	3199	439555	7826	1528	1235	547	5212
White Yellowish slip															
2B	white slip	1028	6769	1237	9516	150763	11483	1015	4546	312363	11394	1929	1477	1293	10398
7A	Andromeda's dress	618	3741	1428	6738	186629	11126	1139	5336	293423	10975	2007	1469	2202	10975
8A	Andromeda's leg	971	6025	1280	7719	213820	12301	1383	4977	335527	10964	2211	1954	1773	12241
9A	Andromeda's harm	941	6634	534	8214	169128	12715	1412	5530	365469	11078	1984	1511	1497	9234
11A	White slip	1218	8320	2526	9998	219823	16330	1602	5906	333800	11651	1976	1519	1616	22007
White slip															
6B	white slip	252	2187	919	5469	126874	6160	524	2698	182331	6776	1238	1009	479	6450
7B	white slip	270	2159	1122	10308	63107	7278	1613	3035	270411	10891	2106	878	876	4812
9B	White leaf	275	2077	803	9992	40250	7946	1619	2642	285645	8095	1922	1191	543	4897
White															
1B	Afrodite's dress	1349	5106	1949	22884	87930	11382	914	4274	344135	12279	2953	2656	980	12122
5B	Afrodite's dress	1081	6124	1726	14842	191442	15156	1890	5904	488791	12088	1900	1933	2035	10500
Red															
3B	Afrodite's dress	646	5137	1159	6707	199446	12271	1400	5196	363076	10889	2019	1733	1418	11312
4B	Afrodite's dress	724	5394	1345	9014	182838	10660	1224	5030	376800	10430	1701	1401	1643	10011
Orange															
5A	Andromeda's pole	556	4039	748	10197	161383	10658	1070	4560	308950	10354	2069	1310	894	8887

6A	Andromeda's pole	260	2304	1333	7500	6593	234370	9125	1111	4741	321391	9973	1776	1616	1213
10A	Perseo's lance	837	5297	371	13266	135358	10025	875	4681	278868	10067	1875	1202	829	9837
Brown															
2A	Perseo's shoes	1745	10402	830	13670	164816	14561	1701	7312	411993	11113	2040	1558	1105	9448
3A	Rock	1674	9182	653	11697	164176	14253	1921	10998	439080	11653	2379	1967	1046	8206

The image under grazing light are reported in figures SI1 and SI2.



Fig SI1 A detail of Cassiopeia's face under grazing light. It is possible to appreciate the thickness of the pictorial layers, the superimposed details, and the roughness of the surface.

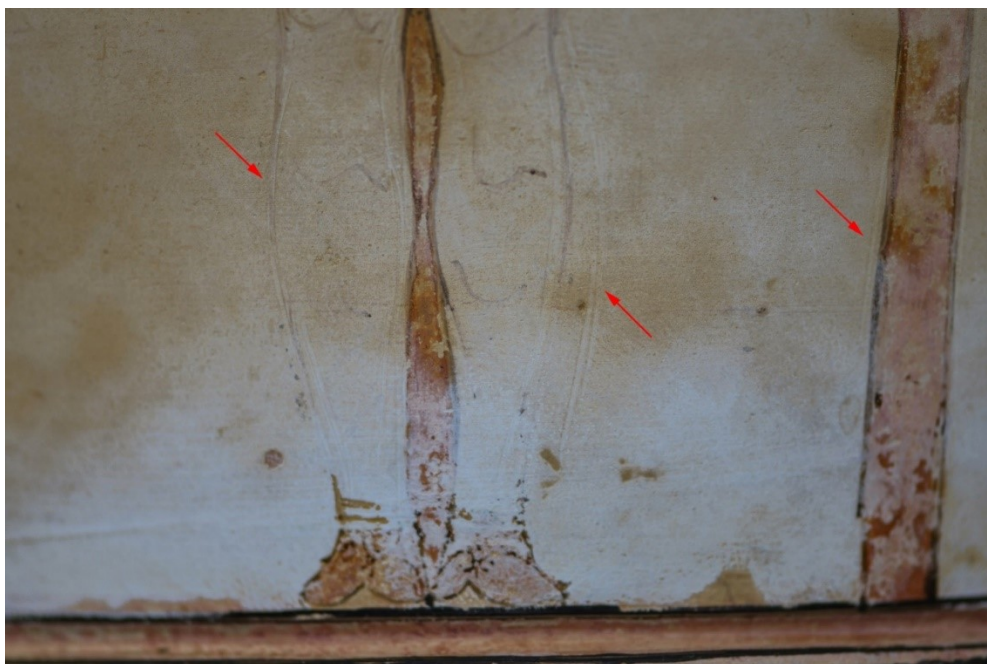


Fig SI2 Details of Andromeda's legs. The incision line of the drawing are indicated by arrows.

Table SI2. For each acquisition point band position and assignment to a vibration mode are reported.

Vibration	Band position / Wavenumber [cm ⁻¹]									
	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R
Organic overtones	5152	5179	5171	5168	5175	5171	5180			
O-H stretching	3545	3500	3533	3530	3469	3473	3640		3640	
N-H stretching	3461 3265	3271	3467	3482 3261						
C-H stretching	2925 2851	2929 2898 2853	2925 2851	2929 2851	2927 2900 2853	2927 2853	2957 2914 2846		2959 2929 2855	2957 2914 2846
SO₄ overtones	2549 2223	2524	2551	2535						
SH stretching							2511	2511		
SO₄ overtones	1990	1990	1988	1990			1995	1995	1995	
O=C=O stretching	2339	2349	2356	2346	2347	2356				
							1865	1865	1865	
Carbonyl C=O stretching	1731	1739	1737	1733	1742	1744	1739	1792	1792	1792
O-H bending of water	1682	1655	1682	1685	1680	1695	1693 1681		1693 1681	
N-H bending	1642 1599	1620 1587	1646 1584	1643 1595	1584	1584	1650 1644 1604 1567		1650 1644	1604 1567
CN-NH amide II							1551		1549	1551
C-H bending	1472	1474 1445	1474	1469	1476	1476	1484			1484
asymmetric C-O stretching	1472	1474	1474	1469	1476	1476				
NH amide III ben		1445		1427			1442			
S=O stretching	1336	1391	1378	1376			1383 1335			1383 1336
Symmetric C-O-C stretching	1244 1209	1311 1281	1268 1248	1250	1197	1181	1267	1238	1238	1238
symmetric stretching SO₄		1160					1174 1165			
asymmetric SO₄ stretching	1083	1087	1083	1085						
symmetric C-O stretching	1083	1087	1083	1085						
Si-O-Si stretching	1046	1048	1044	1046	989	966				
SO₄ stretching							1007			
O-H deformation of inner hydroxyls	907	921	907	907						
C-O split in plane bending	854	859	852	852						
symmetric stretching Si-O	787	793		807	781	773				
Perpendicular Si-O stretching	760 732 689	774 734 695	744 689	760 689	734 685	773 695	804 781 758	826 758	826 758	826 758
C-O out of plane bending	732	734	744		734					
asymmetric SO₄ bending	689 658	695	689 658	662	685	664	667	609	609	619
Al-O-Si bending	546	574		548	550	548				

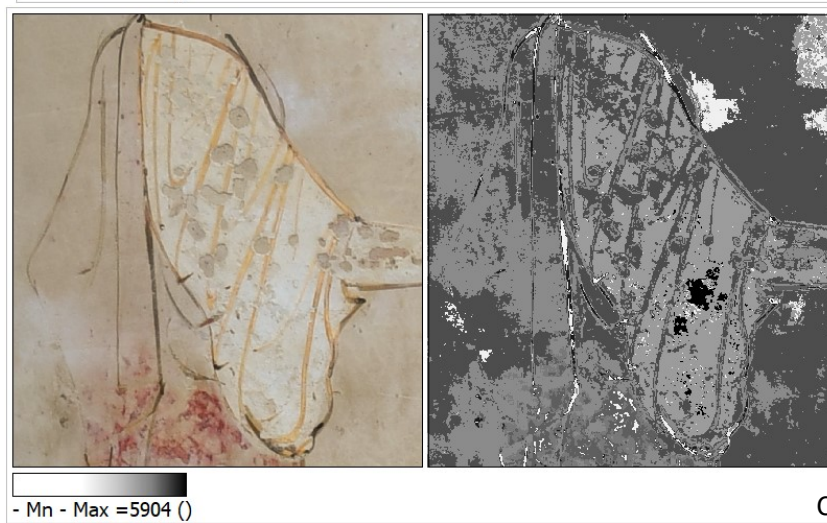
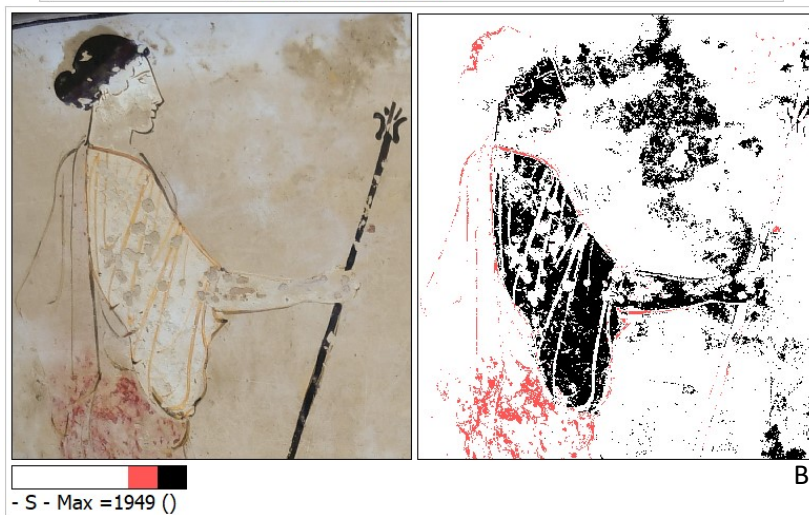
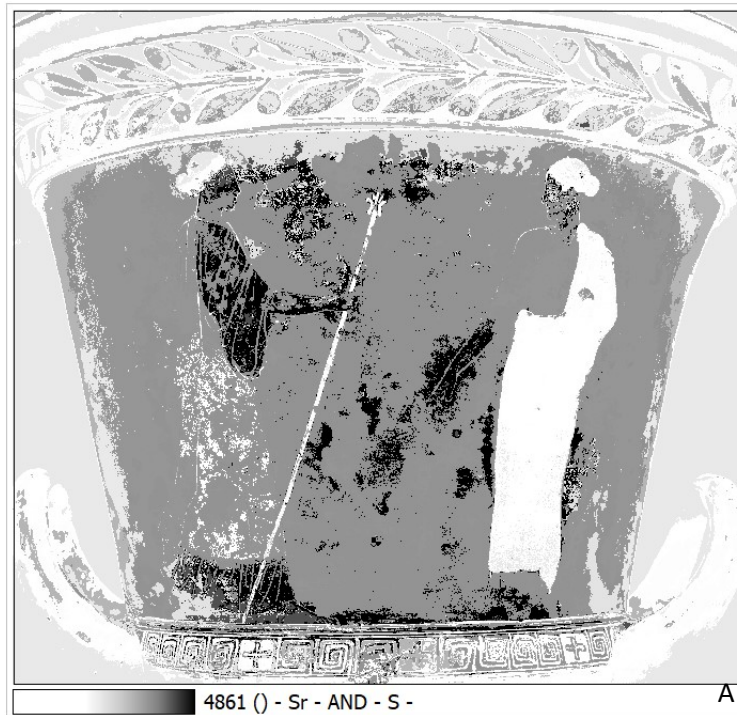


Fig. S13 – A - Map of strontium and sulphur on side A; B - Map of sulphur on a detail of side A; C - Map of manganese on a detail of side A.

Shooting under UV light of the crater are reported in figure S14.



Fig. S14 – Side A and B - The UV shot for sides A and B of the Perseus crater. The blue fluorescence is relatively heterogeneous and does not show previous restorations, fractures, or injuries.

XRF spectra for all measurements points acquired on the crater are in graphs of figures S15-S111. Data have been shown in a logarithm scale to enhance the contribution of minority and trace elements. From bottom to top, each spectrum has been added by an offset as indicated in figures.

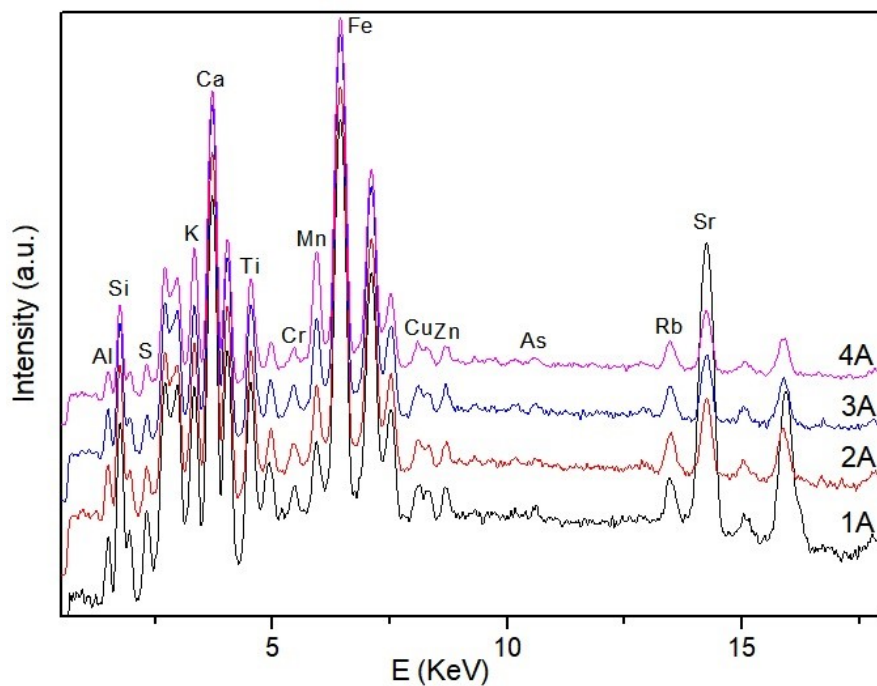


Fig. S15 XRF spectra acquired on side A on black and brown areas; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 1A) offset = 2.33; 2A) offset= 244.37, multiplier = 1.31; 3A) offset = 565.29, multiplier = 2,25; 4A) offset = 1360.12, multiplier = 2.96.

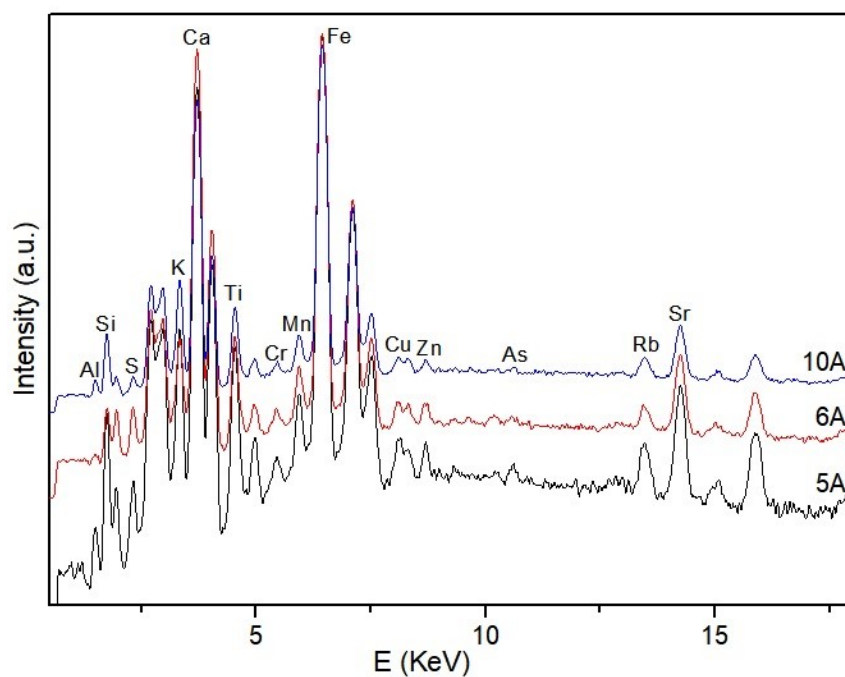


Fig. S16 XRF spectra acquired on side A on orange areas; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 5A) offset = 0.0003; 6A) offset= 386.68; 10A) offset = 912.90.

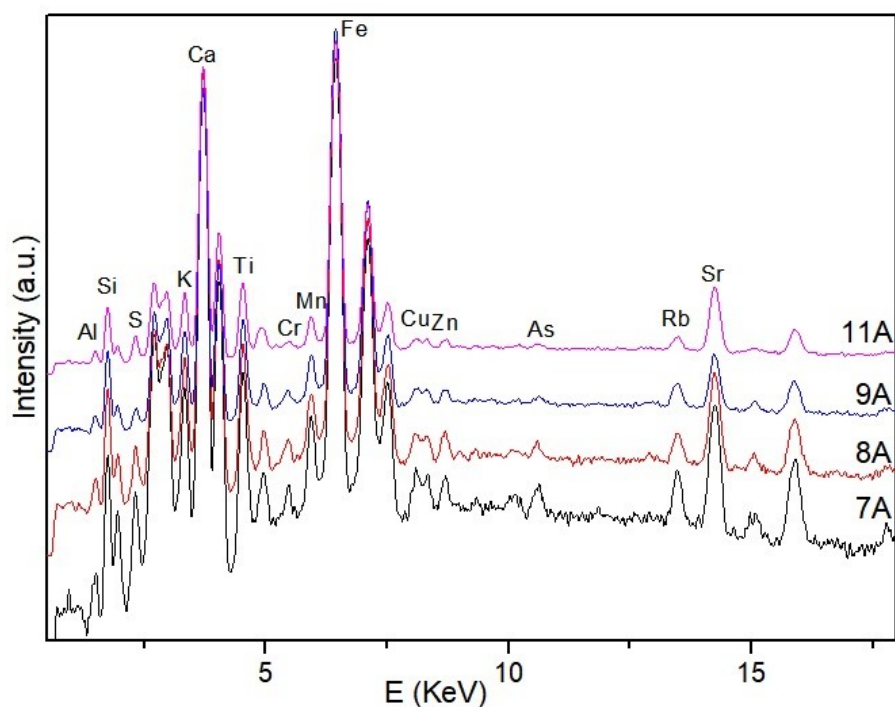


Fig. S17 XRF spectra acquired on side A on white area; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 7A) offset = 0; 8A) offset= 292.53; 9A) offset = 792.90; 11A) offset = 1656.51.

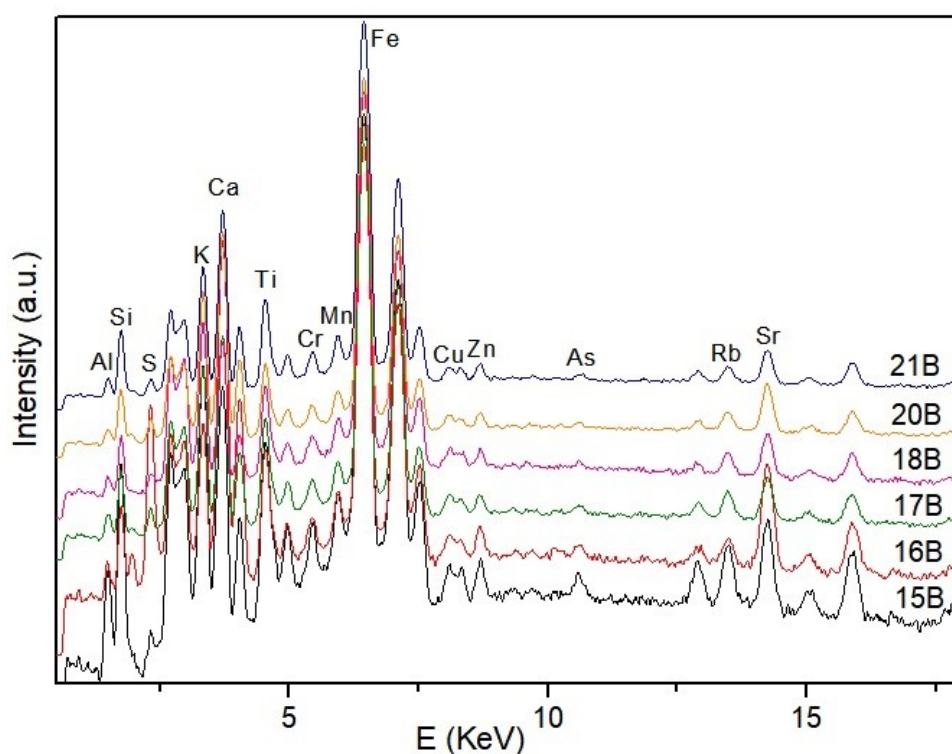


Fig. S18 XRF spectra acquired on side B on a black area; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 15B) offset = 0; 16B) offset=235.76; 17A) offset = 694.42;18B) offset = 1106.89, multiplier = 1.70; 20B) offset = 2211.28, multiplier = 1.91; 21B) offset = 3785.17, multiplier = 3.34.

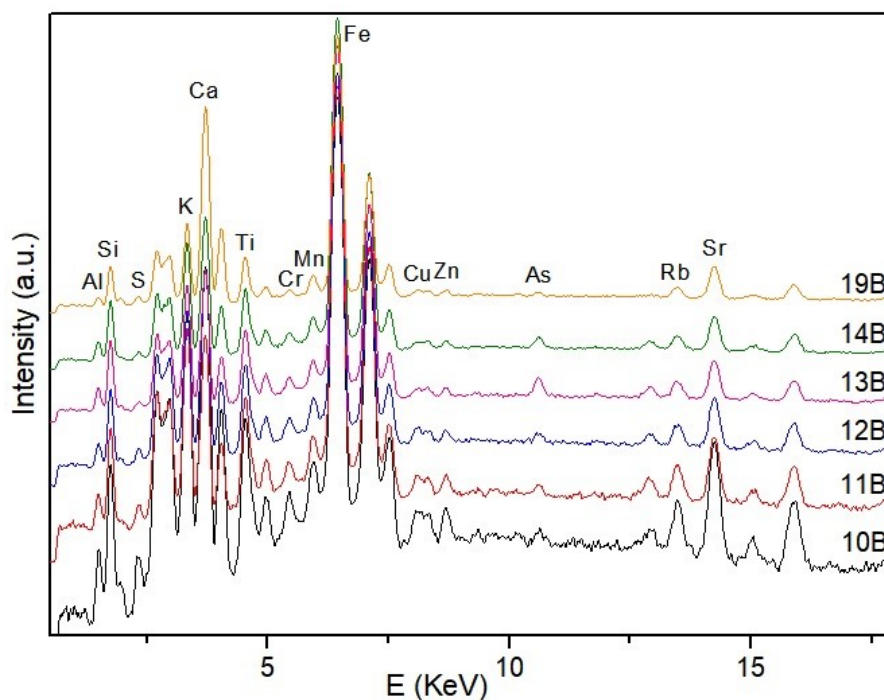


Fig. S19 XRF spectra acquired on side B on a black area; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 10B) offset = 0; 11B) offset=401.99; 12B) offset = 961.34, multiplier = 1,22; 13B) offset =1999.90, multiplier = 1,40; 14B) offset = 3656.34, multiplier = 2.16; 19B) offset = 7065.24, multiplier = 3.12.

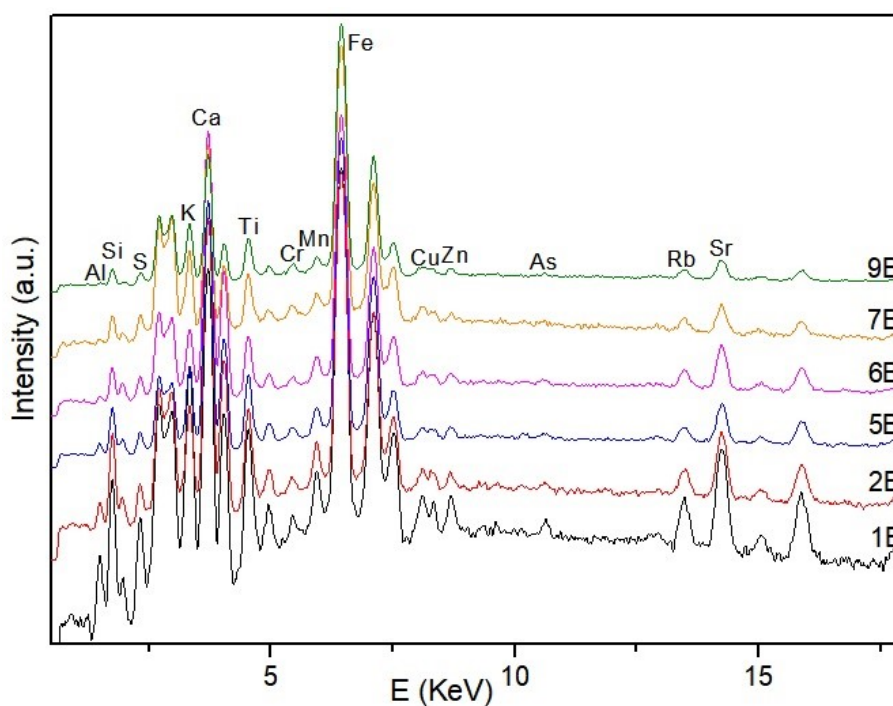


Fig. S110 XRF spectra acquired on side B on a white area; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 1B) offset = 0; 2B) offset=222; 5B) offset = 667; 6B) offset = 1248.79, multiplier = 2.01; 7B) offset = 2524.61, multiplier = 3.16; 9B) offset = 5476.14, multiplier = 3.79.

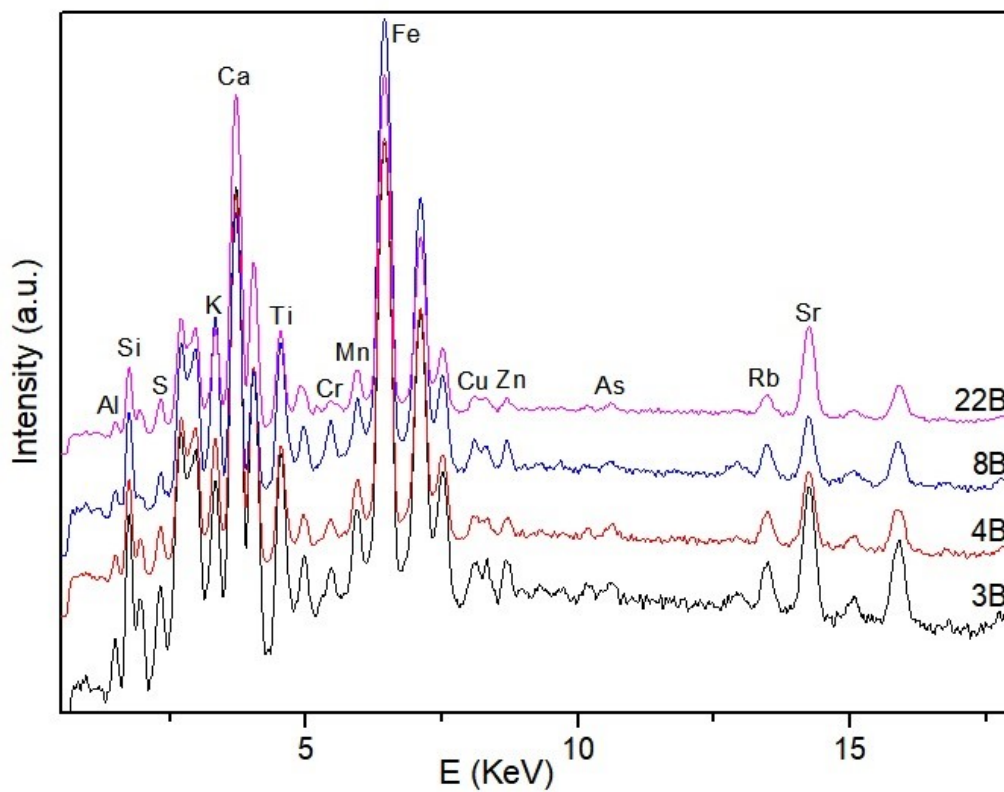


Fig. S111 XRF spectra acquired on side B on a red area and on the ceramic body; spectra have been reported on a logarithmic scale and the following offset has been added for clarity reasons: 3B) offset = 0; 4B) offset=346.35; 8B) offset = 641.61, multiplier = 2.11; 22B) offset = 1766.98, multiplier = 2.32.

TR-FTIR spectra for all measurements points acquired on the crater are in graphs of figures SI12-SI13.

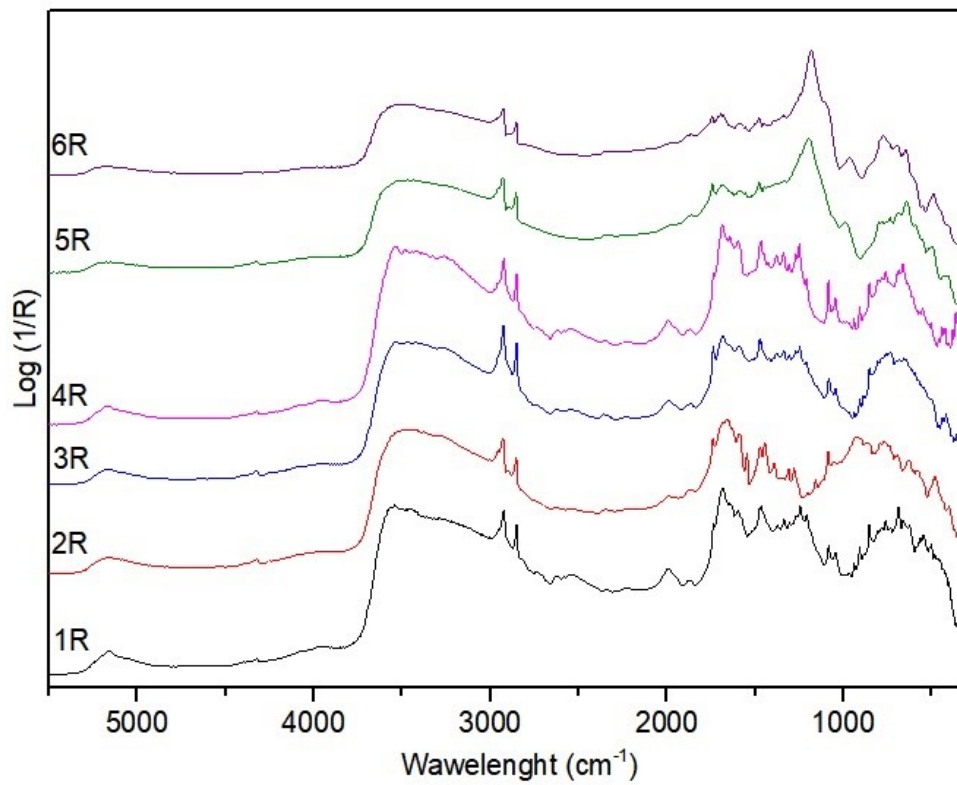


Fig. SI12 TR-FTIR spectra acquired on the white slip on side A.

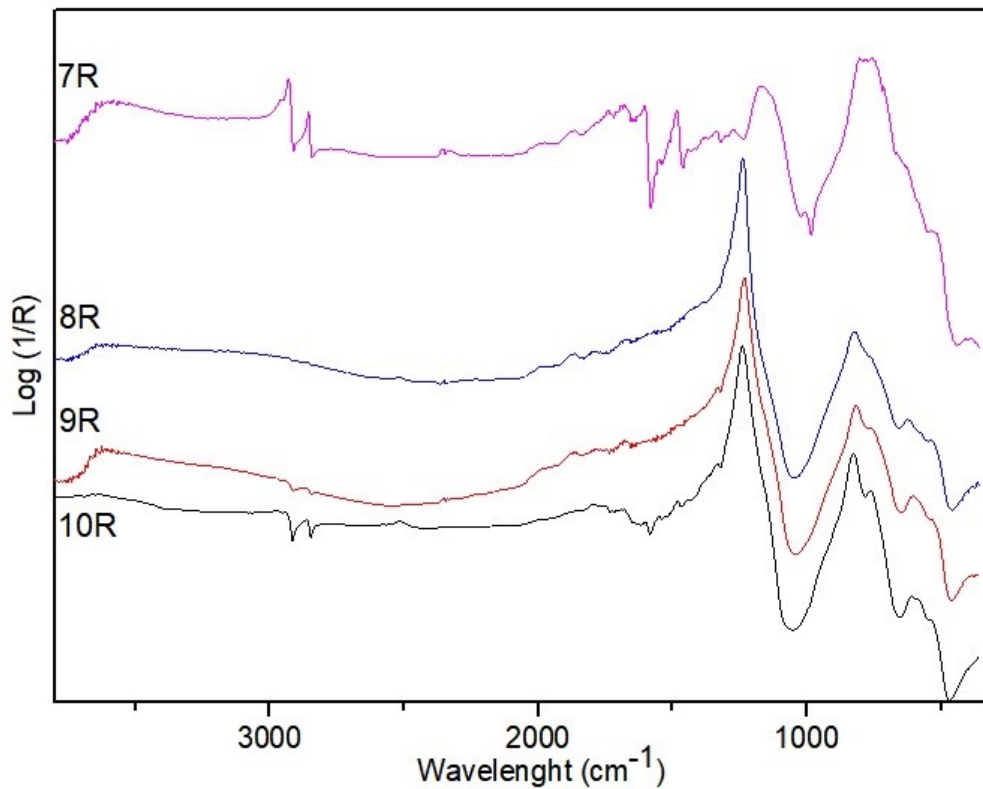


Fig. SI13 TR-FTIR spectra acquired on the black color on side A and B.

Visible images are reported in figures SI14 and SI15.



Fig. SI14 Detail of Afrodite's dress. The image shows the abrasion of red pigment, and micro gaps from which is possible to see ceramic body colors.



Fig. SI15 Detail of Afrodite's dress. The image shows the abrasion of pigment, and micro gaps from which is possible to see ceramic body colors.

Macrophotographies are reported in figures SI16 and SI17.



Fig. SI16 Detail of Andromeda's face. It is possible to deduce the succession of the painted layers, the thickness of the white pigment and its craquelure.



Fig. SI17 Detail of vase's top rim. The pictorial layer succession is appreciable, the white slip was applied directly on ceramic, and the colored areas and the details were realized and defined with dark lines.

Image acquired with DigiMicro microscope are reported in figure SI18 and SI19.

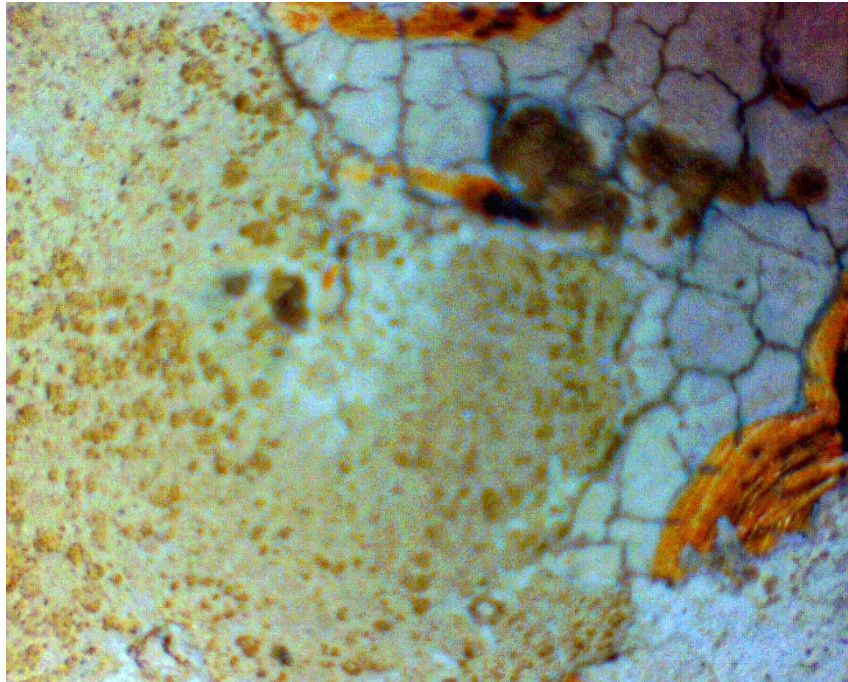


Fig. SI18 Detail of Andromeda's face. Is possible to observe layers succession, craquelure, brushstrokes and thicker white layer.

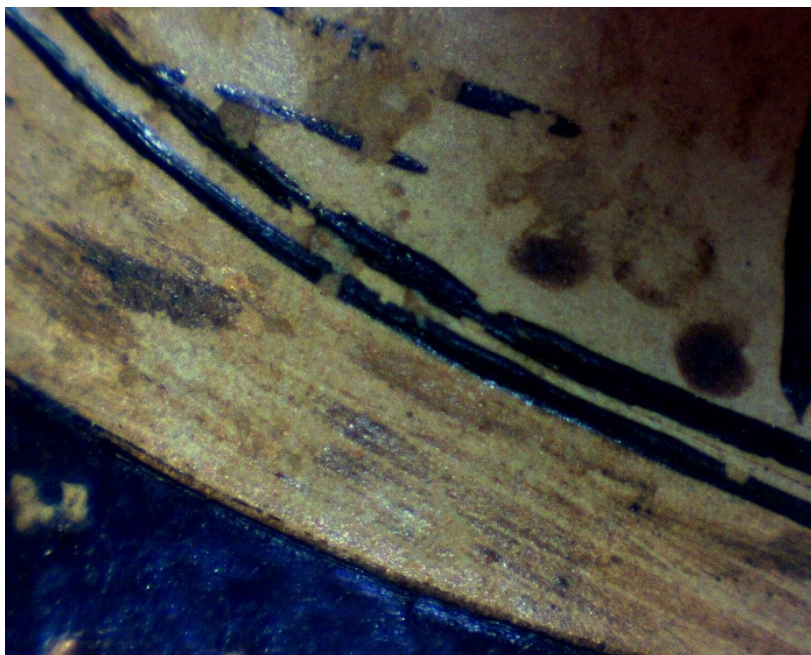


Fig. SI19 Detail of Perseus' hat. Is possible to observe layers succession and brushstrokes.