

Roman and Early Byzantine Sarcophagi of Calcitic Marble from Thasos in Italy: Ostia and Siracusa

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CONTENT

PRESENTATION	15
NECROLOGY: NORMAN HERZ (1923-2013) by Susan Kane	17
1. APPLICATIONS TO SPECIFIC ARCHEOLOGICAL QUESTIONS – USE OF MARBLE	
Hermaphrodites and Sleeping or Reclining Maenads: Production Centres and Quarry Marks <i>Patrizio Pensabene</i>	25
First Remarks about the Pavement of the Newly Discovered Mithraeum of the Colored Marbles at Ostia and New Investigations on Roman and Late Roman White and Colored Marbles from Insula IV, IX <i>Massimiliano David, Stefano Succi and Marcello Turci</i>	33
Alabaster. Quarrying and Trade in the Roman World: Evidence from Pompeii and Herculaneum <i>Simon J. Barker and Simona Perna</i>	45
Recent Work on the Stone at the Villa Arianna and the Villa San Marco (Castellammare di Stabia) and Their Context within the Vesuvian Area <i>Simon J. Barker and J. Clayton Fant</i>	65
Marble Wall Decorations from the Imperial Mausoleum (4 th C.) and the Basilica of San Lorenzo (5 th C.) in Milan: an Update on Colored Marbles in Late Antique Milan <i>Elisabetta Neri, Roberto Bugini and Silvia Gazzoli</i>	79
Sarcophagus Lids Sawn from their Chests <i>Dorothy H. Abramitis and John J. Herrmann</i>	89
The Re-Use of Monolithic Columns in the Invention and Persistence of Roman Architecture <i>Peter D. De Staebler</i>	95
The Trade in Small-Size Statues in the Roman Mediterranean: a Case Study from Alexandria <i>Patrizio Pensabene and Eleonora Gasparini</i>	101
The Marble Dedication of Komon, Son of Asklepiades, from Egypt: Material, Provenance, and Reinforcement of Meaning <i>Patricia A. Butz</i>	109
Multiple Reuse of Imported Marble Pedestals at Caesarea Maritima in Israel <i>Barbara Burrell</i>	117
Iasos and Iasian Marble between the Late Antique and Early Byzantine Eras <i>Diego Peirano</i>	123

Thassos, Known Inscriptions with New Data <i>Tony Kozelj and Manuela Wurch-Kozelj</i>	131
The Value of Marble in Roman <i>Hispalis</i> : Contextual, Typological and Lithological Analysis of an Assemblage of Large Architectural Elements Recovered at N° 17 Goyeneta Street (Seville, Spain) <i>Ruth Taylor, Oliva Rodríguez, Esther Ontiveros, María Luisa Loza, José Beltrán and Araceli Rodríguez</i>	143
<i>Giallo Antico</i> in Context. Distribution, Use and Commercial Actors According to New Stratigraphic Data from the Western Mediterranean (2 nd C. Bc – Late 1 st C. Ad) <i>Stefan Ardeleanu</i>	155
<i>Amethystus</i> : Ancient Properties and Iconographic Selection <i>Luigi Pedroni</i>	167
2. PROVENANCE IDENTIFICATION I: (MARBLE)	
Unraveling the Carrara – Göktepe Entanglement <i>Walter Prochaska, Donato Attanasio and Matthias Bruno</i>	175
The Marble of Roman Imperial Portraits <i>Donato Attanasio, Matthias Bruno, Walter Prochaska and Ali Bahadır Yavuz</i>	185
Tracing Alabaster (Gypsum or Anhydrite) Artwork Using Trace Element Analysis and a Multi-Isotope Approach (Sr, S, O) <i>Lise Leroux, Wolfram Kloppmann, Philippe Bromblet, Catherine Guerrot, Anthony H. Cooper, Pierre-Yves Le Pogam, Dominique Vingtain and Noel Worley</i>	195
Roman Monolithic Fountains and Thasian Marble <i>Annewies van den Hoek, Donato Attanasio and John J. Herrmann</i>	207
Archaeometric Analysis of the Alabaster Thresholds of Villa A, Oplontis (Torre Annunziata, Italy) and New Sr and Pb Isotopic Data for <i>Alabastro Ghiaccione del Circeo</i> <i>Simon J. Barker, Simona Perna, J. Clayton Fant, Lorenzo Lazzarini and Igor M. Villa</i>	215
Roman Villas of Lake Garda and the Occurrence of Coloured Marbles in the Western Part of “Regio X Venetia et Histria” (Northern Italy) <i>Roberto Bugini, Luisa Folli and Elisabetta Roffia</i>	231
Calcitic Marble from Thasos in the North Adriatic Basin: Ravenna, Aquileia, and Milan <i>John J. Herrmann, Robert H. Tykot and Annewies van den Hoek</i>	239
Characterisation of White Marble Objects from the Temple of Apollo and the House of Augustus (Palatine Hill, Rome) <i>Francesca Giustini, Mauro Brilli, Enrico Gallochio and Patrizio Pensabene</i>	247
Study and Archeometric Analysis of the Marble Elements Found in the Roman Theater at Aeclanum (Mirabella Eclano, Avellino - Italy) <i>Antonio Mesisca, Lorenzo Lazzarini, Stefano Cancelliere and Monica Salvadori</i>	255

Two Imperial Monuments in Puteoli: Use of Proconnesian Marble in the Domitianic and Trajanic Periods in Campania <i>Irene Bald Romano, Hans Rupprecht Goette, Donato Attanasio and Walter Prochaska</i>	267
Coloured Marbles in the Neapolitan Pavements (16 th And 17 th Centuries): the Church of <i>Santi Severino e Sossio</i> <i>Roberto Bugini, Luisa Folli and Martino Solito</i>	275
Roman and Early Byzantine Sarcophagi of Calcitic Marble from Thasos in Italy: Ostia and Siracusa <i>Donato Attanasio, John J. Herrmann, Robert H. Tykot and Annewies van den Hoek</i>	281
Revisiting the Origin and Destination of the Late Antique Marzamemi 'Church Wreck' Cargo <i>Justin Leidwanger, Scott H. Pike and Andrew Donnelly</i>	291
The Marbles of the Sculptures of Felix Romuliana in Serbia <i>Walter Prochaska and Maja Živić</i>	301
Calcitic Marble from Thasos and Proconnesos in Nea Anchialos (Thessaly) and Thessaloniki (Macedonia) <i>Vincent Barbin, John J. Herrmann, Aristotle Mentzos and Annewies van den Hoek</i>	311
Architectural Decoration of the Imperial Agora's Porticoes at Iasos <i>Fulvia Bianchi, Donato Attanasio and Walter Prochaska</i>	321
The Winged Victory of Samothrace - New Data on the Different Marbles Used for the Monument from the Sanctuary of the Great Gods <i>Annie Blanc, Philippe Blanc and Ludovic Laugier</i>	331
Polychrome Marbles from the Theatre of the Sanctuary of Apollo Pythios in Gortyna (Crete) <i>Jacopo Bonetto, Nicolò Mareso and Michele Bueno</i>	337
Paul the Silentary, Hagia Sophia, Onyx, Lydia, and Breccia Corallina <i>John J. Herrmann and Annewies van den Hoek</i>	345
Incrustations from Colonia Ulpia Traiana (Near Modern Xanten, Germany) <i>Vilma Ruppinić and Ulrich Schüssler</i>	351
Stone Objects from Vindobona (Austria) – Petrological Characterization and Provenance of Local Stone in a Historico-Economical Setting <i>Andreas Rohatsch, Michaela Kronberger, Sophie Insulander, Martin Mosser and Barbara Hodits</i>	363
Marbles Discovered on the Site of the Forum of Vaison-la-Romaine (Vaucluse, France): Preliminary Results <i>Elsa Roux, Jean-Marc Mignon, Philippe Blanc and Annie Blanc</i>	373
Updated Characterisation of White Saint-Béat Marble. Discrimination Parameters from Classical Marbles <i>Hernando Royo Plumed, Pilar Lapeunte, José Antonio Cuchí, Mauro Brillì and Marie-Claire Savin</i>	379

Grey and Greyish Banded Marbles from the Estremoz Anticline in Lusitania <i>Pilar Lapuente, Trinidad Nogales-Basarrate, Hernando Royo Plumed, Mauro Brilli and Marie-Claire Savin</i>	391
New Data on Spanish Marbles: the Case of <i>Gallaecia</i> (NW Spain) <i>Anna Gutiérrez García-M., Hernando Royo Plumed and Silvia González Soutelo</i>	401
A New Roman Imperial Relief Said to Be from Southern Spain: Problems of Style, Iconography, and Marble Type in Determining Provenance <i>John Pollini, Pilar Lapuente, Trinidad Nogales-Basarrate and Jerry Podany</i>	413
Reuse of the <i>Marmora</i> from the Late Roman Palatial Building at Carranque (Toledo, Spain) in the Visigothic Necropolis <i>Virginia García-Entero, Anna Gutiérrez García-M. and Sergio Vidal Álvarez</i>	427
Imperial Porphyry in Roman Britain <i>David F. Williams</i>	435
Recycling of Marble: Apollonia/Sozousa/Arsuf (Israel) as a Case Study <i>Moshe Fischer, Dimitris Tambakopoulos and Yannis Maniatis</i>	443
Thasian Connections Overseas: Sculpture in the Cyrene Museum (Libya) Made of Dolomitic Marble from Thasos <i>John J. Herrmann and Donato Attanasio</i>	457
Marble on Rome's Southwestern Frontier: Thamugadi and Lambaesis <i>Robert H. Tykot, Ouahiba Bouzidi, John J. Herrmann and Annewies van den Hoek</i>	467
Marble and Sculpture at Lepcis Magna (Tripolitania, Libya): a Preliminary Study Concerning Origin and Workshops <i>Luisa Musso, Laura Buccino, Matthias Bruno, Donato Attanasio and Walter Prochaska</i>	481
The Pentelic Marble in the Carnegie Museum of Art Hall of Sculpture, Pittsburgh, Pennsylvania <i>Albert D. Kollar</i>	491
Analysis of Classical Marble Sculptures in the Michael C. Carlos Museum, Emory University, Atlanta <i>Robert H. Tykot, John J. Herrmann, Renée Stein, Jasper Gaunt, Susan Blevins and Anne R. Skinner</i>	501
3. PROVENANCE IDENTIFICATION II: (OTHER STONES)	
Aphrodisias and the Regional Marble Trade. The <i>Scaenae Frons</i> of the Theatre at Nysa <i>Natalia Toma</i>	513
The Stones of Felix Romuliana (Gamzigrad, Serbia) <i>Bojan Djurić, Divna Jovanović, Stefan Pop Lazić and Walter Prochaska</i>	523
Aspects of Characterisation of Stone Monuments from Southern Pannonia <i>Branka Migotti</i>	537

The Budakalász Travertine Production <i>Bojan Djurić, Sándor Kele and Igor Rižnar</i>	545
Stone Monuments from Carnuntum and Surrounding Areas (Austria) – Petrological Characterization and Quarry Location in a Historical Context <i>Gabrielle Kremer, Isabella Kitz, Beatrix Moshhammer, Maria Heinrich and Erich Draganits</i>	557
Espejón Limestone and Conglomerate (Soria, Spain): Archaeometric Characterization, Quarrying and Use in Roman Times <i>Virginia García-Entero, Anna Gutiérrez García-M, Sergio Vidal Álvarez, María J. Peréx Agorreta and Eva Zarco Martínez</i>	567
The Use of Alcover Stone in Roman Times (<i>Tarraco, Hispania Citerior</i>). Contributions to the <i>Officina Lapidaria Tarraconensis</i> <i>Diana Gorostidi Pi, Jordi López Vilar and Anna Gutiérrez García-M.</i>	577
4. ADVANCES IN PROVENANCE TECHNIQUES, METHODOLOGIES AND DATABASES	
Grainautline – a Supervised Grain Boundary Extraction Tool Supported by Image Processing and Pattern Recognition <i>Kristóf Csorba, Lilla Barancsuk, Balázs Székely and Judit Zöldföldi</i>	587
A Database and GIS Project about Quarrying, Circulation and Use of Stone During the Roman Age in <i>Regio X - Venetia et Histria</i> . The Case Study of the Euganean Trachyte <i>Caterine Previato and Arturo Zara</i>	597
5. QUARRIES AND GEOLOGY	
The Distribution of Troad Granite Columns as Evidence for Reconstructing the Management of Their Production <i>Patrizio Pensabene, Javier Á. Domingo and Isabel Rodà</i>	613
Ancient Quarries and Stonemasonry in Northern Choria Considiana <i>Hale Güney</i>	621
Polychromy in Larisaeon Quarries and its Relation to Architectural Conception <i>Gizem Mater and Ertunç Denктаş</i>	633
Euromos of Caria: the Origin of an Hitherto Unknown Grey Veined Stepped Marble of Roman Antiquity <i>Matthias Bruno, Donato Attanasio, Walter Prochaska and Ali Bahadır Yavuz</i>	639
Unknown Painted Quarry Inscriptions from Bacakale at <i>Docimium</i> (Turkey) <i>Matthias Bruno</i>	651
The Green Schist Marble Stone of Jebel El Hairech (North West of Tunisia): a Multi-Analytical Approach and its Uses in Antiquity <i>Ameur Younès, Mohamed Gaied and Wissem Gallala</i>	659
Building Materials and the Ancient Quarries at <i>Thamugadi</i> (East of Algeria), Case Study: Sandstone and Limestone <i>Younès Rezkallah and Ramdane Marmi</i>	673

The Local Quarries of the Ancient Roman City of <i>Valeria</i> (Cuenca, Spain) <i>Javier Atienza Fuente</i>	683
The Stone and Ancient Quarries of Montjuïc Mountain (Barcelona, Spain) <i>Aureli Álvarez</i>	693
<i>Notae Lapidinarum</i> : Preliminary Considerations about the Quarry Marks from the Provincial Forum of <i>Tarraco</i> <i>Maria Serena Vinci</i>	699
The Different Steps of the Rough-Hewing on a Monumental Sculpture at the Greek Archaic Period: the Unfinished Kouros of Thasos <i>Danièle Braunstein</i>	711
A Review of Copying Techniques in Greco-Roman Sculpture <i>Séverine Moureaud</i>	717
Labour Forces at Imperial Quarries <i>Ben Russell</i>	733
Social Position of Craftsmen inside the Stone and Marble Processing Trades in the Light of Diocletian's Edict on Prices <i>Krešimir Bosnić and Branko Matulić</i>	741
6. STONE PROPERTIES, WEATHERING EFFECTS AND RESTORATION, AS RELATED TO DIAGNOSIS PROBLEMS, MATCHING OF STONE FRAGMENTS AND AUTHENTICITY	
Methods of Consolidation and Protection of Pentelic Marble <i>Maria Apostolopoulou, Elissavet Drakopoulou, Maria Karoglou and Asterios Bakolas</i>	749
7. PIGMENTS AND PAINTINGS ON MARBLE	
Painting and Sculpture Conservation in Two Gallo-Roman Temples in Picardy (France): Champlieu and Pont-Sainte-Maxence <i>Véronique Brunet-Gaston and Christophe Gaston</i>	763
The Use of Colour on Roman Marble Sarcophagi <i>Eliana Siotto</i>	773
New Evidence for Ancient Gilding and Historic Restorations on a Portrait of Antinous in the San Antonio Museum of Art <i>Jessica Powers, Mark Abbe, Michelle Bushey and Scott H. Pike</i>	783
Schists and Pigments from Ancient Swat (Khyber Pukhtunkhwa, Pakistan) <i>Francesco Mariottini, Gianluca Vignaroli, Maurizio Mariottini and Mauro Roma</i>	793
8. SPECIAL THEME SESSION: „THE USE OF MARBLE AND LIMESTONE IN THE ADRIATIC BASIN IN ANTIQUITY”	
Marble Sarcophagi of Roman Dalmatia Material – Provenance – Workmanship <i>Guntram Koch</i>	809

Funerary Monuments and Quarry Management in Middle Dalmatia <i>Nenad Cambi</i>	827
Marble Revetments of Diocletian's Palace <i>Katja Marasović and Vinka Marinković</i>	839
The Use of Limestones as Construction Materials for the Mosaics of Diocletian's Palace <i>Branko Matulić, Domagoj Mudronja and Krešimir Bosnić</i>	855
Restoration of the Peristyle of Diocletian's Palace in Split <i>Goran Nikšić</i>	863
Marble Slabs Used at the Archaeological Site of Sorna near Poreč Istria – Croatia <i>Đeni Gobić-Bravar</i>	871
Ancient Marbles from the Villa in Verige Bay, Brijuni Island, Croatia <i>Mira Pavletić and Đeni Gobić-Bravar</i>	879
Notes on Early Christian Ambos and Altars in the Light of some Fragments from the Islands of Pag and Rab <i>Mirja Jarak</i>	887
The Marbles in the Chapel of the Blessed John of Trogir in the Cathedral of St. Lawrence at Trogir <i>Đeni Gobić-Bravar and Daniela Matetić Poljak</i>	899
The Use of Limestone in the Roman Province of Dalmatia <i>Edisa Lozić and Igor Rižnar</i>	915
The Extraction and Use of Limestone in Istria in Antiquity <i>Klara Buršić-Matijašić and Robert Matijašić</i>	925
Aurisina Limestone in the Roman Age: from Karst Quarries to the Cities of the Adriatic Basin <i>Caterina Previato</i>	933
The Remains of Infrastructural Facilities of the Ancient Quarries on Zadar Islands (Croatia) <i>Mate Parica</i>	941
The Impact of Local Geomorphological and Geological Features of the Area for the Construction of the Burnum Amphitheatre <i>Miroslav Glavičić and Uroš Stepišnik</i>	951
Roman Quarry Klis Kosa near Salona <i>Ivan Alduk</i>	957
Marmore Lavdata Brattia <i>Miona Miliša and Vinka Marinković</i>	963
Quarries of the Lumbarda Archipelago <i>Ivka Lipanović and Vinka Marinković</i>	979

Island of Korčula – Importer and Exporter of Stone in Antiquity <i>Mate Parica and Igor Borzić</i>	985
Faux Marbling Motifs in Early Christian Frescoes in Central and South Dalmatia: Preliminary Report <i>Tonči Borovac, Antonija Gluhan and Nikola Radošević</i>	995
INDEX OF AUTHORS	1009

ROMAN AND EARLY BYZANTINE SARCOPHAGI OF CALCITIC MARBLE FROM THASOS IN ITALY: OSTIA AND SIRACUSA

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Abstract

Four sarcophagi in Ostia and one in Siracusa are made of marble that appears macroscopically to be from the island of Thasos. Samples were analyzed with stable isotope ratios of carbon and oxygen. In addition, the Siracusa sarcophagus was analyzed with electron paramagnetic resonance spectroscopy (EPR), and the maximum grain size (MGS) and color were measured. The analyses confirm that the sarcophagi were made of marble from Aliko on Thasos. The Ostian pieces date from the third century, and the Early Byzantine example in Siracusa can be dated to between 590-620 CE.

Keywords

stable isotopes, EPR, maximum grain size, Thasos, Aliko, sarcophagi, third century, post-Justinianic

Thasian calcitic sarcophagi in the West: previous research

Sarcophagi made of calcitic marble from Thasos were frequently exported to nearby Thessaloniki,¹ but in Italy they seem to be rarities. So far the only examples identified are unfinished chests in a cargo that sank around 200 CE off Torre Sgarrata near Taranto.² The cargo contained sarcophagi that came from both the calcitic marble quarries of Cape Fanari and the dolomitic marble quarries of the Cape Vathy-Saliara area on Thasos; the latter are well known as a source of sarcophagi for the Italian market.³ The only other previously confirmation of a calcitic Thasian marble sarcophagus in the western Mediterranean, however, is a lid from the quarries of Aliko, Thasos in Arles.⁴ Now, however, sarcophagi of

calcitic marble from Thasos can be identified in north Italy at Milan and Ravenna⁵ and on the western side of the peninsula at Ostia and in Siracusa, Sicily. It will be these latter two sites that will occupy us here.

Thasian calcitic sarcophagi at Ostia

Four sarcophagi at Ostia appeared to be of the grayish, very coarse-grained streaked and spotted calcitic marble of Thasos. One, inscribed for a Julius Tannonius Donatus, was complete to its lid (Fig. 1), while the others were fragmentary (Figs. 2-4). Samples from each sarcophagus, including the lid, were analyzed at the University of South Florida (USF), and the ratios of stable isotopes of carbon and oxygen proved to be compatible with the quarries at Aliko on Thasos (Table 1). Non-destructive pXRF analysis revealed no magnesium (Mg) and relatively low concentrations of manganese (Mn) and strontium (Sr). These data support the isotopic and other data assigning these objects to a large-grained, calcitic, Thasos-Aliko marble source.

A Thasian calcitic sarcophagus in Sicily

A Christian sarcophagus in the Galleria Regionale di Palazzo Bellomo in Siracusa⁸ is also made of a grayish marble with very large grain that appears macroscopically

1 STEFANIDOU-TIVERIOU, 2009; MANIATIS *et al.* 2010.

2 GABELLONE 2009; CALIA 2009.

3 HERRMANN 1999; HERRMANN 2014, 1289-1291.

4 HERRMANN *et al.* 2002, 345, Table 1, no. 48 (lid with masks, Cloister of S. Trophime).

5 HERRMANN *et al.*, in this volume.

6 AGNOLI 1953, 230, B29, PL. 97.

7 MAZZOLENI 1979, 81-83, Nr. 1; fig. 1; AE 1983: from the excavations of S. Ippolito, Isola Sacra. Translation: To the Manes. Iulius Tannonius Donatus has put a sarcophagus in this grave monument with the place being granted to him. But if someone puts in another body, he will pay to the treasury of the Roman people 50,000 sestertii.

8 Inv. 23545: Height 79, length 202, width 83 cm; from the chapel of San Rocco at the Civic Hospital of Siracusa, where it was used as an altar: TUSA 1995, 106, cat. no. 117, pl. 166.

USF #	location	identification	$\delta^{13}\text{C}$	$\delta^{18}\text{O}$	Mn	Sr
6145 (powder)	Ostia, Piccolo Mercato inv. SBAO46853 from Basilica of Pianabella ⁶	Strigillated sarcophagus with corner column	3.1	0.2	--	--
27859 (chip)	"	"	2.9	-0.2	low	low
6146 (powder)	Ostia, Piccolo Mercato, unnumbered	Sarcophagus with crossed legs (Cupid? Season?) and (now missing) basket	3.5	-0.1	--	--
27860 (chip)	"	"	3.5	-0.1	low	low
27856 (chip)	Piazzale dei Marmi, chest, inv. P85	Strigillated sarcophagus of Julius Tannonius Donatus ⁷	2.6	-1.7	--	--
27857 (chip)	Piazzale dei Marmi, lid, inv. P85A	Lid of preceding	3.0	-0.3	low	low
27858 (chip)	Near Porta Romana	Strigillated sarcophagus with pilasters	3.2	-0.0	low	low

Table 1. Sarcophagi at Ostia with marble from Alikı, Thasos



Fig. 1. Sarcophagus of Julius Tannonius Donatus. Ostia, Piazzale dei Marmi, P85, P85A (lid). Marble from Alikı, Thasos, 2nd half of 3rd century

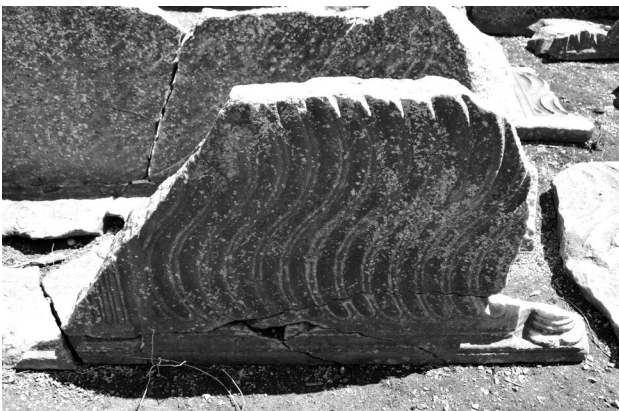


Fig. 2. Fragmentary strigillated sarcophagus, from Pianabella, Isola Sacra. Ostia, Piccolo Mercato, inv. SBAO46853. Marble from Alikı, Thasos, 3rd century



Fig. 3. Fragmentary sarcophagus with Eros or Season with crossed legs. Ostia, Piccolo Mercato, unnumbered. Marble from Alikı, Thasos, 3rd century



Fig. 4. Strigillated sarcophagus, Ostia, Via delle Tombe, unnumbered. Marble from Aliko, Thasos, 3rd century

to come from the island of Thasos (Figs. 5-6). Two small chip samples were taken and were analyzed at the Istituto di Struttura della Materia, CNR, Roma (ISM) with multiple techniques: paramagnetic resonance spectroscopy (EPR), stable isotope ratios of carbon and oxygen, maximum grain size (MGS), and color. The analyses confirmed that this sarcophagus was also made of marble from the quarries of Aliko on Thasos (Table 2, Figs. 7-8).

Probable quarry of origin for the Siracusa sarcophagus

Analysis by linear discriminant function of the 6 variables in Table 2 are shown graphically in Fig. 8. Distance represents the distance of the sample from the center point of a field. Relative probability assumes that the sample belongs to one of the groups in the selection.

Description	Site	Distance a.u.	Rel. prob.	Abs. prob.
			%	%
Sample O	Th Aliko	7.5	84	27
Sample U	Th Aliko	8.2	85	22

Table 2. Shown graphically in Fig. 8. Distance represents the distance of the sample from the center point of a field

Even if not especially high, the absolute probability is well above the threshold and confirms, in agreement with the isotopic results, that the provenance of the marble from Thasos is clear and unquestionable. The rate of success of the method is 77%. This means that 77% of the database samples are correctly re-assigned to their true quarries of provenance using the statistical classification rule. The unknown sample is assigned to the most probable quarry of

provenance and the results are deemed to be statistically reliable if the probability values are above their thresholds.

Discussion, chronology, and historical significance

The chests of the four sarcophagi in Ostia (Figs. 1-4) were clearly decorated in Ostia or Rome, probably in the 3rd century.⁹ The inscription of Tannonius has been dated to the second half of the third century. In three cases the front of the chest is strigillated, and one is carved with a pair of legs and a basket, probably from a harvest or Bacchic scene. All these motifs are Western and alien to northern Greece. The lid of the sarcophagus of Tannonius (Fig. 1), on the other hand, is very similar to lids in the north Aegean. In Thessaloniki and on Thasos, Thasian marble sarcophagi often have double-sloped lids like this one with carefully detailed roof tiles and acroteria decorated with half-palmettes.¹⁰ The Tannonius sarcophagus apparently arrived in Ostia with a finished lid and an undecorated chest; the combination is also known from Thasos itself.¹¹

In the late second and the third century, Rome imported many unfinished marble chests from the Proconnesian quarries. Thasian calcitic marble resembles Proconnesian, and the Thasian sarcophagi may represent an attempt to capture a part of the trade in low-cost,

9 On local workshops near the cemetery, see AGNOLI 2008, 203; TORRES 2008, 167.

10 STEFANIDOU-TIVERIOU, 2009, fig. 4; MANIATIS *et al.* 2010, fig. 4.

11 STEFANIDOU-TIVERIOU, 2009, fig. 4.

ISMNo.	Description, Dating	MGS mm	$\delta^{18}\text{O}$ ‰	$\delta^{13}\text{C}$ ‰	EPR Intensity %	EPR Linewidth %	Color %
1	Pal. Bellomo inv. 23545, sample O	1.7	0.07	3.18	65.9	56.8	78
2	Pal. Bellomo inv. 23545, sample U	1.7	--	--	79.5	54.8	82
1	Aphrodisias 102 samples	2.1 0.1/4	-3.53 -6.5/-2	1.36 -2.7/2.6	43.6 3/276	53.8 37/72	82 52/95
2	Ephesos 1 88 samples	1.74 0.4/4.6	-4.42 -8.3/-2.2	3.81 -0.6/5	60.0 15/51	56.4 42/73	75 41/91
3	Ephesos 2 38 samples	1.71 1.3/2.4	-3.14 -4.3/-2.6	0.35 -0.8/1.5	41.8 23/69	45.5 39/60	76 62/87
4	Herakleia 51 samples	1.62 0.4/3.5	-2.59 -3.4/-1.2	1.74 -0.1/2.9	22.6 2/123	53.2 41/74	70 39/90
5	Miletos 56 samples	1.49 1/2.5	-2.56 -4/-1	2.05 1.2/2.6	17.7 3/129	53.2 41/71	82 64/93
6	Naxos Apollonas 10 samples	3.47 2/5	-11.7 -14/-9	2.28 1.9/2.6	71.1 35/126	60.2 41/81	85 83/92
7	Naxos Melanes 33 samples	5.15 3.5/8	-5.13 -10/-2.6	1.86 1.4/2.3	113 18/599	49.4 38/73	78 69/89
8	Paros I 41 samples	1.7 1/3.1	-3.25 -4/-2.6	4.27 3/5.1	8.6 3.6/23	48.6 41/59	85 64/95
9	Paros II Cho 62 samples	2.07 0.9/3	-1.11 -2.6/-0.6	1.79 0.5/22	19.5 2/37	47.9 40/57	84 71/96
10	Paros II Ma 28 samples	2.11 1/3	-2.59 -4.2/-1.9	1.97 -0.6/3.4	9.8 4/50	52.0 42/59	80 68/930
11	Pentelicon 154 samples	0.96 0.6/1.8	-7.00 -9/-3.8	2.63 1.9/4.1	226.3 13/1009	58.2 38/100	90 68/97
12	Proconnesos 1 380 samples	1.72 0.4/3.5	-2.08 -5.2/-0.3	2.65 -0.9/3.9	6.0 0.8/46.4	57.8 37/87	77 54/95
13	Thasos Aliki 76 samples	3.84 2.4/7.5	-0.73 -4.7/0.5	2.98 1.5/3.6	131 4/523	55.7 46/69	79 59/871

Table 2. Analytical data for the two samples of the Siracusa sarcophagus inv. 23545 compared with a selection of marble groups considered to be possible provenances. Group properties include the mean and extreme values.



Fig. 5-6. Sarcophagus with three crosses, Galleria Regionale di Palazzo Bellomo, Siracusa, inv. 23545. Marble from Aliko, Thasos, ca. 600 CE

grayish marble between the Proconnesus and the West. The rather dark color of the Tannonius sarcophagus and its coarse grain, which makes reading its inscription rather difficult, may have contributed to making the Thasian less popular than the Proconnesian sarcophagi.

The sarcophagus in Siracusa (Figs. 5-6) has a Christian decoration and is much later in date than the Ostian pieces. Its front is decorated with three crosses, each mounted on two steps. Between the crosses appear disks, which were probably intended to be carved as stars or rosettes. The back of the sarcophagus has three crosses without steps or intervening disks.

The sarcophagus has been dated to the eighth century,¹² and the general composition of three Latin crosses can be paralleled on several sarcophagi of the eighth and ninth centuries in Ravenna.¹³ If eighth century in date, the decoration would have been applied long after the chest in Siracusa was shipped from Thasos; there are no indications that the marble trade between the Aegean and Italy continued at such a late date. Thasos itself was

apparently devastated by Slavic invaders around 620,¹⁴ presumably putting an end to the island's marble trade.

Both the chest and its decoration, however, appear to be before the eighth century. The chest does not appear to be reused or recut; close inspection reveals no trace of earlier carving. The decoration is rather irregular, but so is the shape of the chest. Everything seems tilted, both the crosses and the contours of the chest, so that the sarcophagus seems intended to be placed on a slope. Sarcophagi decorated with three Latin crosses also appear in Early Byzantine times; there are examples in southern Italy, at Capri¹⁵ and Messina (Fig. 9)¹⁶ that may be of the late sixth or early seventh century, and crosses are enclosed in niches and/or accompanied by lambs or peacocks in late fifth and early sixth century sarcophagi at Ravenna (Fig. 10).¹⁷ Three crosses appear sporadically in the East, but much more common is a variant with a cross or christogram in a roundel flanked by Latin crosses.¹⁸ The three-cross motif, however, is known on Thasos itself: the composition appears on an Ionic impost capital of the mid-sixth century found at the Aliko quarries (Fig. 11).¹⁹ In general, the simple crosses on the Palazzo Bellomo sarcophagus resemble Early Byzantine rather than Carolingian crosses, whose ends are usually embellished with curls.

It is likely that the Bellomo sarcophagus dates from late in the Early Byzantine period. A cross on a stepped podium seems to be a relatively late motif. The earliest example seems to be on a sarcophagus in Ravenna dated to the late fifth century (Fig. 12).²⁰ The Ravenna example is quite different from that in Siracusa; there are five steps instead of two, and two rivers of paradise flow from them. On an ambo, apparently of Proconnesian marble, in the Church of Al Mo'allaqa, Cairo a cross stands on three steps (Fig. 13).²¹ The ambo is also decorated with a shell niche that resembles niches on sarcophagi

12 TUSA 1995, 106, cat. no. 117.

13 LAWRENCE 1945, figs. 71-73; VALENTI ZUCCHINI, BUCCI 1968, cat. nos. 60, 61, 65, 66.

14 METCALF 1962; HOLTZMANN 1994, 92; GRANDJEAN, SALVIA *et al.* 2000, 33.

15 BOVINI, BRANDENBURG 1967, cat. 813. The curling ends and the outlined borders of the crosses seem post-Justinianic.

16 TUSA 1995, cat. no. 42-43, pls. 62-64; SODINI 2012, p. 82 for the 6th - 7th century date.

17 VALENTI ZUCCHINI, BUCCI 1968, cat. nos. 30, 31b, 37b.

18 KOCH 1996.

19 SODINI, KOLOKOTSAS 1984, 4, pl 2b.; VEMI 1989, cat. no. 215.

20 LAWRENCE 1945, 32, 36, 37, fig. 57; VALENTI ZUCCHINI, BUCCI 1968, cat. no. 27; KOLLWITZ, HERDEJURGEN 1979, 71-72, cat. no. B 21, pl. 8.1.

21 ATALLA 1989, 32-33.

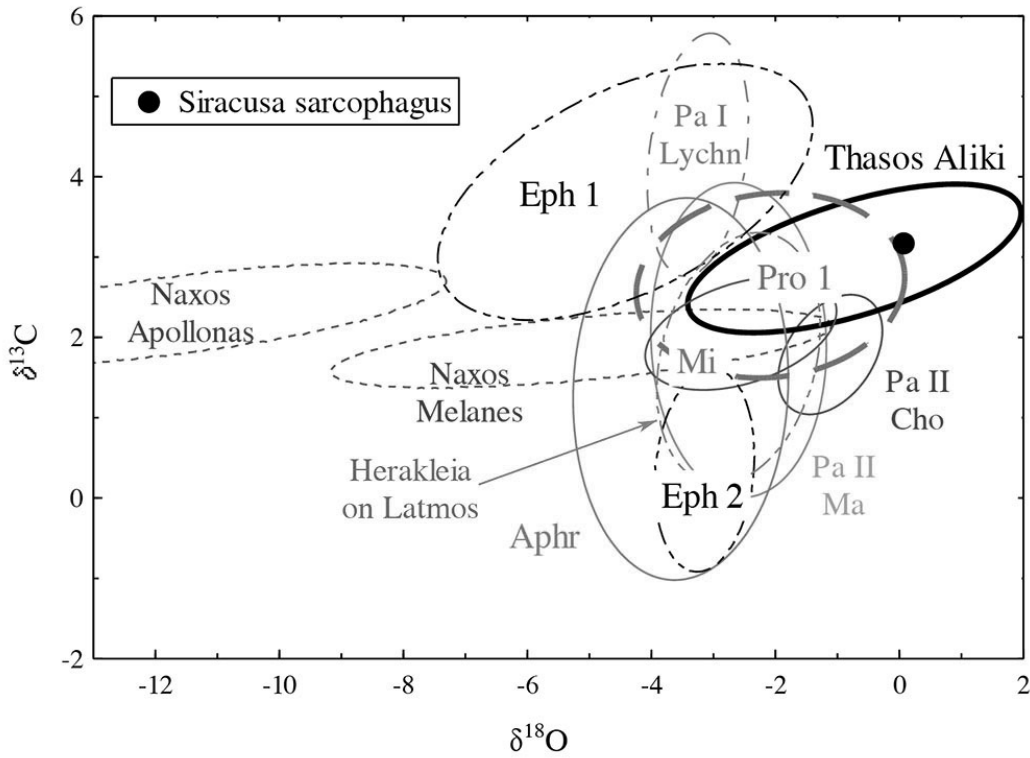


Fig. 7. Isotopic diagram for the Sarcophagus with three crosses, Palazzo Bellomo

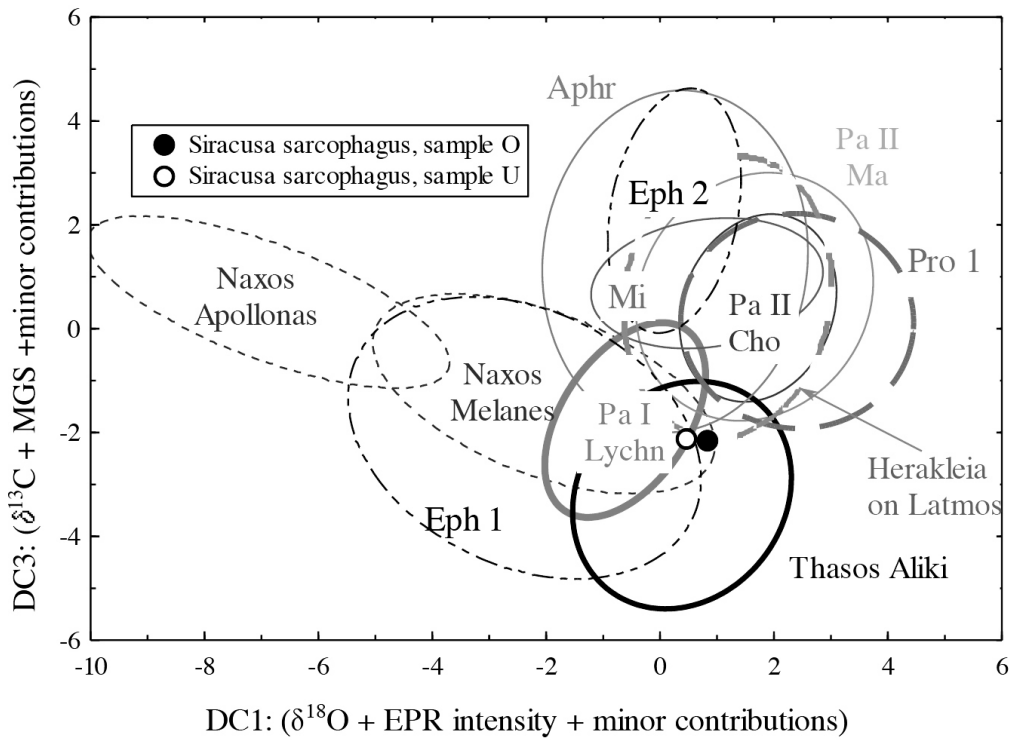


Fig. 8. Diagram of 6 variables for the Sarcophagus with three crosses, Palazzo Bellomo

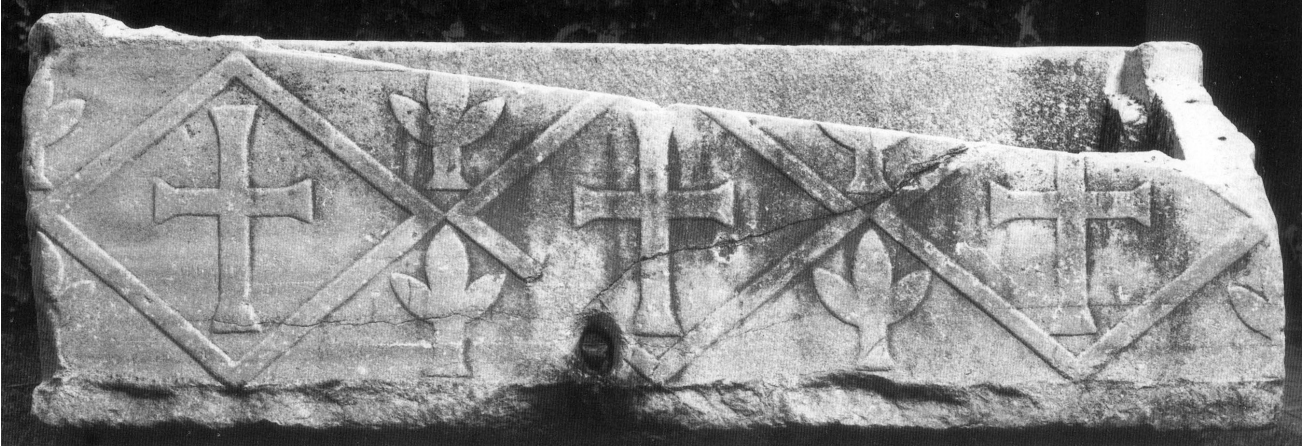


Fig. 9. Sarcophagus with three crosses in diamonds, unknown marble, reworked for Christian use, 6th or early 7th century, Messina, Museo Regionale (photo: TUSA 1995, cat. 42)



Fig. 10. Sarcophagus with three crosses in niches, probably Proconnesian marble, 500-525 CE, S. Apollinare in Classe, Ravenna



Fig. 12. Cross on steps with rivers of paradise, probably Proconnesian marble, sarcophagus of 3rd century, recut with Christian imagery, ca. 480-500 CE, S. Francesco, Ravenna



Fig. 11. Ionic Impost capital, probably Aliko marble, Aliko, Thasos, second half 6th century CE



Fig. 13. Ambo platform, probably Proconnesian marble, 500-525 CE, Al Mo'allaqa, Cairo

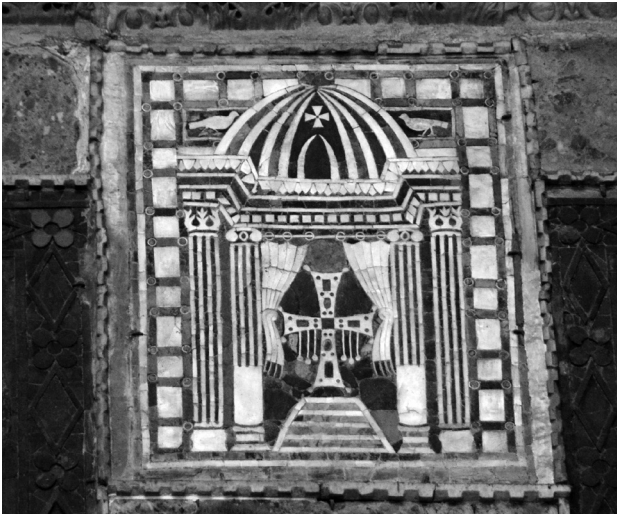


Fig. 14. Marble inlay with cross on staircase, 527-563 CE, Hagia Sophia, Istanbul

in Ravenna of the late fifth and early sixth centuries.²² A cross on steps, this time four in number, appears in an inlaid marble panel in Hagia Sophia, Constantinople, built and repaired by Justinian (527-565) (Fig. 14).²³ The main period of use of the stepped cross motif is in post-Justinianic times; a cross on four steps became a standard motif on Byzantine gold coins (solidi) from time of Tiberius II (578-82)²⁴ well into the eighth century (Fig. 15). Crosses on steps appear on ambos on Paros that have been dated around 600 (Fig. 16).²⁵ A cross on a globe above three steps appears on Byzantine silver coins (hexagrams) from 610-685 (Fig. 17) and on a 7th or 8th century Proconnesian marble parapet from Alacam on the Black Sea coast of Turkey (Fig. 18).²⁶ A cross on three steps appears in the apse mosaic of Hagia Irene, Constantinople, shortly after 753 (Fig. 19).²⁷ Stepped crosses are incised in the quarries of Proconnesus,²⁸ and



Fig. 15. Gold solidus of Constans II, Syracuse mint, 641/2 CE. Classical Numismatic Group, Triton IX, lot 1635 (photo: Coinarchives.com)

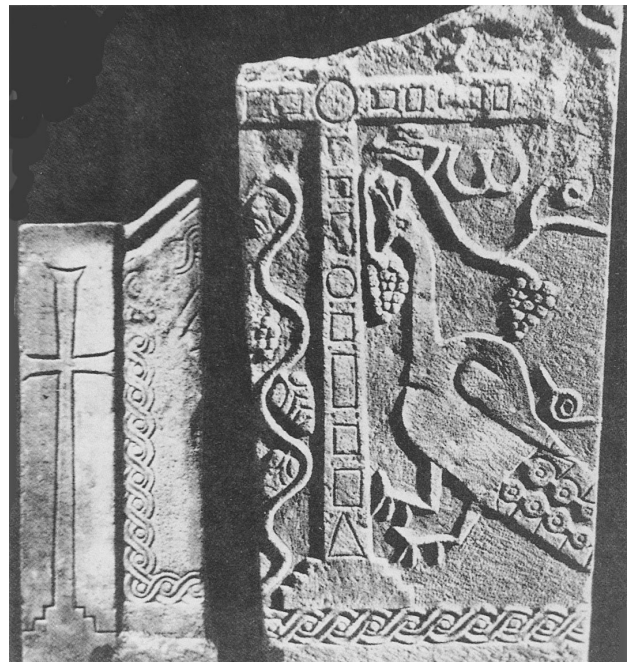


Fig. 16. Ambo fragments, probably Parian marble, 7th century, Katapoliani, Paros (photo: ALIPRANTIS 1993, Fig. 101)

several are accompanied by inscriptions and abbreviations typical of the ninth century and later.

The modest level of workmanship of the Siracusa sarcophagus probably indicates that it is not an especially early example of the cross on steps motif. Its “reduced” arrangement with only two steps also suggests a relatively late date; a two-step arrangement is seen in one of the ambo panels from Paros of ca. 600 (Fig. 12) and the chancel barrier from Alacam (Fig. 14). The Palazzo Bellomo sarcophagus then could well have been both quarried and decorated around 570-610. Since sarcophagi were usually shipped from Thasos in an unfinished state,²⁹ it is likely that the Palazzo Bellomo example was decorated in Sicily.

22 VALENTI ZUCCHINI, BUCCI 1968, cat. nos. 28-31.
 23 UNDERWOOD 1960, 206-208, fig. 1. Possibly from the restorations of 558-563. KRAUTHEIMER 1975, 215. See also <http://www.pallasweb.com/deesis/hagia-sophia-inlaid-panels.html> (with additional color illustrations). https://commons.wikimedia.org/wiki/File:Istanbul.Hagia_Sophia023.jpg.
 24 WHITTING 1973, 112; BARBER 2002, 83-87; cited in PICKETT.
 25 ULBERT 1969/70, 344, 356, pl. 69.2, cat. 26; ALIPRANTIS 1993, 134-135, figs. 101-103 114, 115, 140.
 26 EFFENBERGER 1989, 130, 136, 149.
 27 OUSTERHOUT 2001, 6, figs. 1-3; https://commons.wikimedia.org/wiki/File:Hagia_Eirene_Constantinople_2007_003.jpg.
 28 ASGARI, DREW-BEAR, 3-4.

29 GABELLONE 2009; CALIA 2009; HERRMANN *et al.*, in this volume.



Fig. 17. Silver hexagram of Heraclius with Heraclius Constantine, Constantinople mint, 610-641 CE. Classical Numismatic Group, Auction 93, lot 1344 (photo: Coinarchives.com)



Fig. 18. Chancel barrier recarved with cross on globe and steps, probably Proconnesian marble, probably 7th century, from Alacam, Turkey, Berlin Museum (photo: <http://www.turizmhaberleri.com/haberayrinti.asp?ID=24989>)

Conclusions

Macroscopic examination led to tentative identifications of sarcophagi in Ostia and Siracusa as Thasian, and isotopic analysis and analysis with EPR have confirmed these conjectures and established the origin of the sarcophagi in the calcitic marble quarries of Aliki. Previously, sarcophagi of calcitic marble from Thasos had been known only from shipwrecked cargoes, and these new identifications add substance to the trade in prefabricated

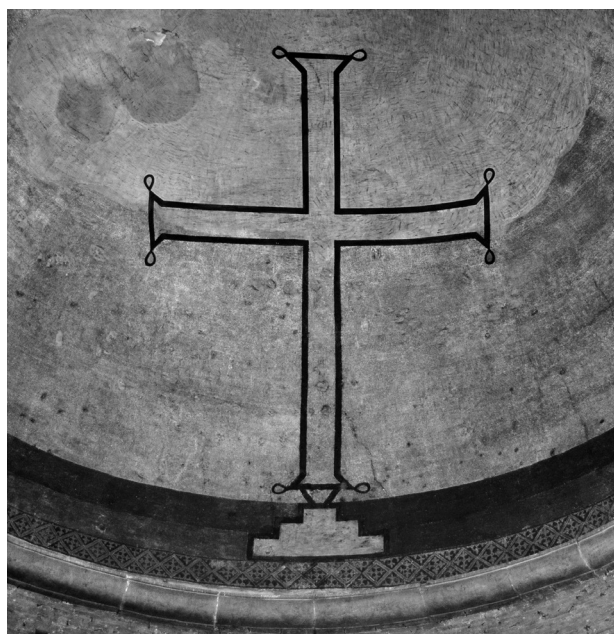


Fig. 19. Mosaic with cross on steps, shortly after 753, Hagia Irene, Istanbul

and semifinished sarcophagi from Thasos in Italy. Art historical study of the decoration and workmanship of the sarcophagi provide chronological markers. The chests in Ostia were decorated locally in the third century, but the lid of one of them seems to have been both extracted and decorated on Thasos. The sarcophagus in Siracusa was extracted and decorated on Thasos in the late sixth or early seventh century. This result is important in establishing that marble products were exported from Thasos to Italy toward the end of the Early Byzantine period and thus at a much later date than previously known.

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