The relics of Jesus and Eucharistic miracles: scientific analysis of shared AB blood type by Kelly P. Kearse - Forensic Science, Medicine and Pathology: https://doi.org/10.1007/s12024-024-00915-3 - November 9, 2024 – Abstract: "Various relics ascribed to have been in physical contact with the historical Jesus of Nazareth have been evaluated for the presence of blood, including the Tunic of Argenteuil, the Sudarium of Oviedo, and most famously, the Shroud of Turin. Interestingly, the blood type on all three textiles was found to be AB by serological testing; a similar result was observed for various modern Eucharistic miracles, in which consecrated hosts are reported to change into human cardiac tissue and blood. As AB is a relatively rare blood type, these collective observations have been used in numerous contemporary media outlets to support the idea that all such objects share a common origin. Here, the scientific validity of mutual blood type expression is evaluated. As discussed, AB antigens are not unique to human red blood cells but are also expressed in bacteria, providing a practical connection between such varied objects. Moreover, this article clarifies that the communal presence of specific and unique polymorphic markers would be required to validate that bloodstains associated with such items truly originate from a single source."

Image Formation on the Shroud of Turin - a Digital 3D Approach by Cicero Moraes – October 30, 2024 – Abstract: "Many people believe that the Shroud of Turin is the cloth that was used to wrap Jesus Christ after his death, while others consider it a medieval work or even a forgery from that period. This artifact has generated significant controversy and debate, especially with the advent of new technologies and the recent popularity of social networks. This study seeks to present a simple and objective explanation about the element of origin that imprinted in a fabric the figure of an adult man with signs of physical violence, indicating that the pattern corresponds more to a low-relief origin than to the volumetry of a real human body in a post-mortem state. The work is based on a digital environment, with free and open-source 3D modeling software."

Why the Shroud of Turin is not a Medieval Work? An Argument Map by JOSÉ L. FERNÁNDEZ-SÁNCHEZ / Scientia et Fides 12(2)/2024:123-150 – Published on academia.edu October 29, 2024 - Abstract: "The Shroud of Turin is an old linen fabric imprinted with the image of a tortured man who lies prone with his hands crossed before him. Since for many it is related to Jesus of Nazareth, this cloth is among the most studied, controversial and enigmatic of all archaeological and religious objects. Since its radiocarbon dating at the end of the eighties of the last century, it is considered by many to be an object made in the Middle Ages. The controversy is due to the fact that there are other scientific and artistic evidences that place this object outside the medieval sphere. An argument map is a critical thinking way of representing the relationships between evidences and arguments, and is used here to represent the sequences of argumentation that defend that the Shroud of Turin is not a medieval object."

New Insights on the Turin Shroud's Body Image: Face Image at Different Wavelengths and its Double Superficiality by Liberato De Caro and Giulio Fanti - Scientia et Fides

12(2)/2024:151-184 — Published online October 25, 2024 — Abstract: "Various images of the face of the Turin Shroud Man, acquired at different wavelengths, from the near infrared region to the ultraviolet, have been studied and compared. A correlation as a function of the wavelength, between the penetration depth in the fabric of the incident light and the anatomic details visible on the images, is discussed based on the physical properties of linen threads and light. In addition, the backside of the Turin Shroud, in correspondence of the region of the face, has been examined, evidencing the possible presence of a second superficial image impressed on the

backside. Notwithstanding the high level of scientific knowledge today reached, there is no known physical/chemical process which allows to ex-plain all the properties of the Turin Shroud's body image. According to our scientific knowledge, the corpse of a dead man cannot produce an energy capable to imprint on a linen cloth an image with all the microscopical and macroscopical properties discovered by analyzing the body image of the Turin Shroud, which has not yet been reproduced in any laboratory in the world. According to faith the corpse of a living Man can do it, during the resurrection, assuming a different state of matter. With this respect, the Turin Shroud can be considered as a two-thousand-old relic witnessing to the humanity, just in the age of science, the reasonableness of the faith in the resurrection."

"He Saw the Linen Wrappings Lying There" What is the meaning of 'lying'? (John 20:5 & 6) by Larry Stalley - October 16, 2024 - Abstract: "Bishop John A. T. Robinson was an accomplished theologian and an esteemed Greek scholar. In an exegetical paper delivered at the 1977 United States Conference on the Shroud of Turin, Professor Robinson made this comment about the Resurrection and tomb narrative recorded in John 20:5-8, 'The Greek is in fact extraordinarily elusive, considering the significance that the evangelist evidently attached to the detail.' While commenting on several of the Greek words in the passage, Robinson did not comment or attach any significance to the word 'lying.' Yet, the canonical author made use of that verb no fewer than four times in the passage. What did he intend for his readers to understand by that verb? This paper will seek to answer that question."

(Open Access) Shroud of Turin: What Happened to Jesus Christ's Human Body after Death? by Giulio Fanti / Journal of Biomedical Research & Environmental Sciences – October 8, 2024 – 11 pages – Abstract: "Based on the compatibility between what can be scientifically detected on the TS (Turin Shroud) - having recognized Jesus Christ in the double body image visible there - and what is reported in the CHB (Christian Holy Bible), an attempt was made to highlight the various events that followed death by heart attack and ensuing hemopericardium. This description has been divided into five phases: rigor mortis of the body of Jesus, transport to the sepulcher and wrapping in the TS, deposition in the sepulcher and subsequent absence of movements, absence of putrefaction signs, and Jesus' exit from the TS. These points proved to be critical because they seem unable to provide a scientifically plausible answer to the evidence found on the TS, namely, how to explain that a human body emerged from the TS without disturbing it. The comments section therefore, attempts to explain the phenomena in question by providing a hypothesis that is for the moment, outside of science."

The Holy Shroud as the Holy Place of the Messianic Tabernacle (Hebrews 9:11-12) by Larry Stalley – October 5, 2024 – Abstract: "In his literary masterpiece to Jewish believers, the biblical writer who penned The Letter to the Hebrews exhorted his readers to be steadfast in their faith commitment to Christ. They have suffered opposition and various hardships due to their enlightenment. The writer encourages faithfulness by detailing their ability to now have a clean conscience before God Almighty and, thereby, enter into His presence. This has become possible due to the superior status of Jesus as a high priest and His superior sacrifice offered for their redemption. In expounding upon this teaching, the writer makes mention of "the greater and more perfect tabernacle" (9:11). What exactly was that superior "tabernacle"? This exegetical paper surfaces plausible reasons for concluding the solution to that question rests with the linen burial Shroud of Christ. The exegesis surfaces strong evidence demonstrating that the Apostolic

Church was aware of the miraculous image on Christ's burial Shroud! Furthermore, this paper reveals how the early Church perceived the Shroud theologically— associating it with tabernacle theology—and also reveals the typological teaching that developed around the Shroud. The implication of this exegesis is monumental, as the authenticity of the Shroud of Turin is no longer dependent on forensic science and historical evidence. Now this text, along with other puzzlingly passages exegeted by the author elsewhere provide "proof beyond reasonable doubt" that the biblical canon itself demonstrates that the apostolic Church was quite aware of the Shroud's existence."

Major Drawbacks of Blood Species Analysis Using Human Polyclonal MNS Antisera: The Turin Shroud as a Case Example by Kelly Kearse / International Journal of Forensic Sciences – Open Access - October 3, 2024 – Abstract: "The Turin Shroud is a linen cloth that has been suggested to represent either the burial wrapping of the historical Jesus of Nazareth, or a clever medieval forgery. Previously, the observation was made that blood fibers taken from the Shroud reacted with human polyclonal antisera raised against the S antigen, located on glycophorin B. As expression of the S antigen is exclusive to humans, this finding could support the idea that human blood is present on the Shroud, a notion often promoted in various books and websites. A modern assessment of the experimental design, however, shows that such antisera were particularly prone to cross-reactivity with blood from a bountiful number of other species. Indeed, it is now established that anti-alpha galactose 1,3 antibodies are highly abundant in human sera, which recognize red blood cells of all non-primate mammals. Thus, such human polyclonal antisera could not be used to distinguish blood species of origin as the cross-reactivity potential is quite vast and would confound any potential binding observed with anti-S specific antibodies. These findings underscore the necessity of using more current serological tools in any future investigation of blood-stained artifacts such as the Shroud, particularly in relation to species determination." [Editor's notes: I had trouble accessing the link from two different browsers. However, I did a Google search on the title and was able to access it that way. This is an updated version of the paper Blood on the Shroud of Turin: An Immunological Review.]

(Open Access) Turin Shroud: Etiology of Jesus Christ's Death for Infarction Followed by Hemopericardium by Giulio Fanti and Mario Ascolese / International Clinical and Medical Case Reports Journal - Paper (13 pages) - Published September 20, 2024 – Abstract: "The news about the blood of the TS (Shroud of Turin) reported by two very recent papers, which also dealt with the consequent sufferings endured by Jesus Christ during His last hour on the cross before dying, have prompted the authors to study in detail the last twenty hours of the Passion of Christ to highlight what was the most probable cause of the death of Jesus Christ and how was its etiology. Therefore, these twenty hours of Passion suffered by Jesus Christ, have been divided into seven phases, each of which describing the particular pathological state of this Man harshly tortured in all his limbs. These aspects, fused together, have highlighted various possible causes of death, such as orthostatic collapse, asphyxia, uremia and hemothorax, accentuated by the insult that produced a heart disease from strong stress. Each of these contributing causes, if considered individually, would probably have led to the death of Jesus and obviously they severely weakened Him, but the results of this analysis indicated tamponade due to hemopericardium as the primary cause of the death of Jesus Christ."

Probable Origins of a 14th Century Turin Shroud Image (Revised) by Joseph S. Accetta - September 12, 2024. Here is the abstract: "This paper is based on the assumption that the Shroud of Turin is of 14th century origin and thus must be explained within the technology, social, cultural and geographical contexts of that era. A plausibility argument is presented to reconcile its visual and forensic properties with extant 14th century printing technology. Striking parallels are shown to exist between the general characteristics of an environmentally degraded woodprint and the Shroud image including the pseudo 3D properties. The confluence of historical and social circumstances with scientific observations makes a plausible case for the creation of a 14th century Shroud using extant techniques."

A reflection on the bruised and whip-lashed right check of the Man of the Holy Shroud by Pam Moon - September 6, 2024. Here is an excerpt from the beginning of the article: "The Man of the Holy Shroud has two injuries to the right cheek of his face; a bruise and a half-moon shaped lash from a whip. These appear on the opposite (left) side of the Shroud material, because it was draped over the body. The injuries are reversed in the black and white negative, so to work out easily which side of the body is affected, look at the black and white. Evidence for the bruised and whip-lashed right cheek is presented below in the photographic images taken by the great Shroud scholar, Barrie M. Schwortz."

FROM THE STERA ARCHIVES (1): Raymond N. Rogers' Letter to Pope John Paul II

Regarding Further Testing on the Shroud of Turin Dated December 6, 2002 – By Joseph G.

Marino – August 2024. Here is an excerpt from the Introduction: "Barrie told me in the past that Rogers had more integrity than any other scientist that he knew. I find such correspondence ultra interesting because one can get insights and information that one will never find in a peer-reviewed journal paper."

FROM THE STERA ARCHIVES (2): Raymond N. Rogers' Letter to Pope John Paul II

Regarding Restoration of the Shroud Dated December 11, 2002 – By Joseph G. Marino –

August 2024. Here is an excerpt from the Introduction: "I found in the archives another letter that Rogers wrote to the Pope, just five days later, in which he goes into further detail about the problems with the Restoration. It consisted of a cover letter and an attachment. Rogers, along with other researchers, sent their comments to shroud.com regarding it."

FROM THE STERA ARCHIVES (3): Ray Rogers' Letter to sindonologist Dorothy Crispino on Image-Formation and C-14 Dating Dated October 10, 2002 by Joseph G. Marino—August 10, 2024. Here is an excerpt from the Introduction: "Rogers originally accepted the C-14 results but began to question them after his reentry into Shroud studies. Rogers' correspondence from 2000 until his death in 2005 is voluminous. This letter is to the late sindonologist and historian Dorothy Crispino, who was publisher and editor of Shroud Spectrum International. In it he discusses a variety of topics, including the 1978 STURP examination and aspects of the image-formation process, the 1988 C-14 dating and the 2002 Restoration."

FROM THE STERA ARCHIVES (4): Dr. Robert Dinegar Letter to Prof. Luigi Gonella Dated November 30, 1987 by **Joseph G. Marino** – August 12, 2024. Here is an excerpt from the Introduction: "The cover letter you find reproduced below was written a little less than 6 months before the taking of the Shroud C-14 sample on April 21, 1988. It was written to the late Prof.

Luigi Gonella, the scientific advisor to Cardinal Ballestrero of Turin. The crux of the letter (signed forms and additional letters from signers not included here) is that many scientists, including those from representatives from 2 of the 3 labs (Oxford and Arizona) and others peripherally involved in the Shroud dating, signed a document giving support to STURP's C-14 proposal. However, most of that support dissipated later. The question is why?"

FROM THE STERA ARCHIVES (5): James Druzik Letter to Tom D'Muhala March-April 1986 – by **Joseph G. Marino** – August 15, 2024. Here is an excerpt from the Introduction: "Druzik references an inquiry made by the late Prof. Luigi Gonella, the scientific advisor to Cardinal Ballestrero in Turin, regarding how much carbon is found in linen."

FROM THE STERA ARCHIVES (6): Ray Rogers' Letter to Monsignor Severino Poletto
Regarding Future Shroud Testing Dated June 7, 2000 by Joseph G. Marino – August 17, 2024.
Here is an excerpt from the Introduction: "He had not heard yet of the invisible reweave hypothesis, which he first ridiculed and then later supported in a peer-reviewed paper. He would learn of that idea later that year. He inquired to Msgr. Poletto "Could samples have been switched in 1988?" The letter includes a discounting of McCrone's assertion that the Shroud is a painting. It's likely he never received a reply from Msgr. Poletto. He would often complain about a lack of responses from Turin to his inquiries. He notes at the end of the letter that one of the tests that STURP had performed in 1978, x-ray fluorescence analyses, had improved significantly a mere twenty-two years later."

FROM THE STERA ARCHIVES (7): Four STURP Members' Critique of McCrone's 1990 paper in Accounts of Chemical Research by Joseph G. Marino - August 19, 2024. Here is an excerpt from the Introduction: "On June 24, 1990, four members of STURP, Dr. Alan Adler, Dr. Eric Jumper, Ray Rogers and Larry Schwalbe produced a document that they intended to send to the editor of Accounts of Chemical Research, Dr. Fred McLafferty. According to a letter by Adler to the other three, also dated June 24, 1990, also found in the STERA archives, it was submitted as a letter-to-the-editor. I do not know if it was ever published, but given the credentials of the four STURP members, I thought it would be worth publishing their critique."

FROM THE STERA ARCHIVES (8): Letter from Al Adler to Ray Rogers Re: McCrone, Blood on the Shroud, and Sticky-Tape Samples Dated April 27, 1997 by Joseph G. Marino – August 24, 2024. Here is an excerpt from the Introduction: "Dr. Alan Adler was a biochemist and blood expert for the Shroud of Turin Research Project (STURP) in their 1978 investigation on the Shroud. Ray Rogers was a chemist from Los Alamos National Laboratories and was head of the chemistry section for the group.

Both men did not see eye to eye with the late microscopist <u>Dr. Walter McCrone</u>, who was loaned the sticky-tape samples that STURP had brought back with them. McCrone published a book with a chapter about Ray Rogers. Adler wrote to Rogers with his evaluation."

FROM THE STERA ARCHIVES (9): Report by MVA, Inc. on "Coated Fibers" of Two of the Raes Samples - Dated October 23, 2003 by **Joseph G. Marino** – 2024 - Excerpt from the Introduction: "I currently have access to the [STERA] archives. In the Dreisbach collection, I found an interesting short report of which I was previously unaware. According to this report, John Brown sent the two Raes segments (#7 and #14, the two that Brown mentioned in his

article) to a firm specializing in microanalysis near Atlanta called "MVA," Inc. The firm found a coating that "has a different chemical composition than the fiber." Although, they were unable to specifically weren't able to identify the coating or detect a dye, it's significant that they concluded that it the coating was chemically different form the fiber, which would be another confirmation of the hypothesis that a repair had been done in that area."

FROM THE STERA ARCHIVES (10): Letter from Textile Expert John Tyrer to Rev. H. David Sox on October 9, 1980 by Joseph G. Marino – September 19, 2024. Here is an excerpt from the Introduction: "The late British textile expert John Tyrer, who believed the Shroud was the burial cloth of Jesus, wrote a letter on October 9, 1980 to the late Rev. H. David Sox, who first had asserted that he believed the Shroud was authentic, but later stated he believed it was a forgery, in part because as far as God leaving such a relic for mankind, he said in a book that "God doesn't operate this way." Sox never explained how he could be so sure how God operates. Several articles by Tyrer can be found by going to www.shroud.com and putting his name in the search box. For more information about Sox, see my 2022 article, The Rev. H. David Sox: His Intriguing Role in the Shroud's C-14 Dating."

FROM THE STERA ARCHIVES (11): Letter from Chemist Dr. Giles Carter to Dr. Walter McCrone Dated December 20, 1982 by Joseph G. Marino – September 28, 2024 – Here is an excerpt from the Introduction: "The late Dr. Giles Carter (d. 2010) was a chemist from Eastern Michigan University. His most significant paper was "Formation of the Image on the Shroud of Turin by X-Rays: A New Hypothesis", Archaeological Chemistry III, Advances in Chemistry Series, 205, 1984; Joseph B. Lambert, ed.; Washington, D.C.: American Chemical Society, [425]-446. [Editor's note: The paper is behind a pay wall.] The late Dr. Walter McCrone (d. 2002) was a Chicago microscopist who asserted that the Shroud was a painting. McCrone, who never examined the Shroud directly was loaned the sticky-tape samples taken by the Shroud of Turin Research Project (STURP), which, based on multiple tests and direct examination of the cloth, concluded the image was not painted. (Carter was not a member of STURP.) McCrone, in his 1997 book, later referred to the samples as 'my.' For some further background on McCrone, see my article Dr. Walter McCrone's Research on the Shroud of Turin Under a Microscope. In this letter, Dr. Carter proposes alternative explanations for some of McCrone assertions. This letter was copied to STURP members, Dr. Eric Jumper, Dr. Alan Adler and Dr. John Heller. In several locations, Carter uses two scientific characters for elements that I don't know how to reproduce on computer. One looks like a subscript capital 'B' and the other looks like a subscript lower-case "a." It won't make much of a difference for most who read this! One thing that struck me about this letter is the politeness and courtesy that Carter extended to McCrone. One often doesn't find that between correspondents who have differing views about the Shroud."

FROM THE STERA ARCHIVES (12): Letter from Ray Rogers to Walter McCrone Dated May 6, 1979 by Joseph G. Marino – September 28, 2024 – Here is an excerpt from the Introduction: "Earlier this evening I posted a letter from Giles Carter to Walter McCrone (#11 in the STERA archives series). In the introduction, I mentioned that after Rogers loaned McCrone some STURP sticky-tape samples, McCrone had referred to the samples as "my." What I didn't say in the introduction (though it was mentioned in my article about McCrone that I provided a link for) was that Rogers, Eric Jumper and John Jackson had to travel to Chicago to physically retrieve the samples. In McCrone's Book Judgement Day for the Shroud (I have the 1996 ed., pages 123-124), he said, "...I was conned out of my set of tapes. Ray Rogers, John Jackson and Eric

Jumper visited my lab to 'discuss the Shroud' problem." McCrone didn't seem to realize that the problem was actually that he mistreated the samples and also wouldn't return them when originally asked. Just a short while ago, I started looking at another box of Rogers' materials owned by STERA. I saw a folder marked "Correspondence," so I pulled it out to see if I would find anything particularly interesting in it. Boy, did I. Apropos the samples sent to McCrone, I found a letter from Rogers to McCrone, which included a cover sheet; the letter is a good complement to the letter from Carter to McCrone. THE FOLLOWING TELEGRAM WAS SENT TO WALTER C. McCRONE, 8:00 AM MDT, 7 May 1979 STOP ALL USE OF MY SAMPLES IMMEDIATELY. LEAVE THEM IN CHICAGO. LETTER FOLLOWS. R.N. Rogers 398 Venado Los Alamos, NM 87544 -- Sent to Walter C. McCrone 2820 South Michigan Ave. Chicago, IL 60616"

FROM THE STERA ARCHIVES (13): Letter from Ray Rogers to Walter McCrone Dated August 23, 1979 by Joseph G. Marino – October 2, 2024 – Here is an excerpt from the Introduction: "This letter was written about three and one-half months after the previously posted letter from Rogers to McCrone (#12 in the STERA archives series.) In the first line, Rogers is seemingly responding to a letter that McCrone had written to Rogers. However, a copy of McCrone's letter was not found with Rogers' letter, so we don't know exactly what McCrone had said, but Rogers is critiquing various points of McCrone's painting hypothesis and also noting that scientific observations have to be made in the context of the whole picture and not just in isolated pieces of data. In the first paragraph, when Rogers refers to the 'newsletter,' he's likely referring to the STURP Newsletters that were published in the early 1980s. Remember that McCrone had looked at only sticky-tape samples that Rogers had sent him, whereas Rogers had been able to examine the cloth directly in Turin. McCrone had actually put forth several versions of the forgery method he proposed, and at the time this letter was written, Rogers referred to it as McCrone's 'thumb-print hypothesis'."

FROM THE STERA ARCHIVES (14): Letter from Ray Rogers to Luigi Gonella Re: Raes Threads, McCrone Data and C-14 Samples - Dated February 10, 1982 by Joseph G. Marino — October 31, 2024. Here is an excerpt from the Introduction: "In 1979, Prof. Luigi Gonella, who was scientific advisor to Turin Cardinal Ballestrero, had given some of the "Raes threads" (named after the Belgian textile expert Dr. Gilbert Raes, who had been given some threads in 1973 for textile analysis) to Rogers for research. Apparently, those threads were being considered for use in the eventual C-14 dating test. In 1988, Gonella was still the advisor, and despite a protocol having been planned at the 3-day "Turin Workshop" in September/October 1986, discussed for over an hour with Prof. Giovanni Riggi di Numana from where the C-14 sample should be taken.

Other topics were discussed in the letter, including Rogers' critique of McCrone's work and some recommendations regarding the C-14 samples, which wouldn't be taken for another six years. The recommendations are significant in light of what did happen in 1988."

(Open Access): Forcing in Christian Events: The Turin Shroud Case by Giovanni Fazio, et al. - Open Journal of Applied Sciences, 2024, 14, 2351-2359. Published online September 6, 2024. Here is the abstract: "In its totality and complexity, the theme of forcing in Christian events is almost impossible to investigate. In fact, a lot of scholars and a very long time would be necessary to analyse the numerous events. Thus, we decided to investigate such events only in

the study of the Shroud of Turin, an archaeological find known worldwide. The above topic is essential for Christianity. Furthermore, we must take into account that also among the followers of other religions, atheists and agnostics, there is a considerable interest. We think this is due to the unexpected characteristics that the Body Image, which appears on the Burial Linen of the Nazarene, shows. In this article, we would like to demonstrate that the practice of forcing is still in use. These actions, which are also present on the other side, in the non-Christian world, are the result of conflicts of religious interests. To confirm the presence of the Almighty is not necessarily the forcing. Finding a solution to these problems is not our job. However, we want to highlight them through scientific literature."

(Open Access): The Last Hour of Jesus Christ: A Case Study from Recent New Insights on the Turin Shroud by Giulio Fanti – Medical and Clinical Case Reports Journal, 2024, 2(3):420-422. Published online August 2, 2024. Here is an excerpt from the beginning of the paper: "A paper has recently been published that has presented new insights regarding the blood coming from the Turin Shroud (TS) and that has posed new interpretations on the possible physical state of the person who had that blood. In this communication the author offers a first interpretative cue on the sufferings undergone by Jesus Christ especially during His last hour on the cross that can subsequently be developed by any experts in the field interested in the subject."

Re-elaboration of the Soudarion of Oviedo and the Shroud of Turin Grids by Pedro Peinado Rocamora Alfonso Sánchez Hermosilla – August 2024 – Here is an excerpt from the Introduction: "The scientific study of the Soudarion of Oviedo (SO) and the Shroud of Turin (ST) have been the subject of great interest and debate in the scientific community for decades. However, despite the advances experienced in various disciplines, such as forensic medicine, history, archaeology, chemistry, physics, biology and mathematics, significant methodological deficits persist in the investigation of these objects of great scientific importance. One of these significant methodological deficits is graphics. Visual representation of data and results in OS and TS research has traditionally been limited and has not taken full advantage of modern visualization tools and techniques. This has made it difficult to understand and interpret the reported analyses, especially for nonexperts in the field. The lack of clear and accurate graphical representations has prevented the identification of patterns and relationships that could be key to understanding the nature and origin of the characteristics of these fabrics. By using advanced visualization techniques, this study seeks to set a referential context to improve communication between researchers and facilitate comparison and integration of results. In addition, by providing a more accurate and detailed graphical representation of the data, it may help to reveal new relationships and patterns that could have significant implications for the understanding of these archaeological objects."