

# The Shroud of Turin

The Shroud of Turin is reputed to be the burial cloth of Jesus of Nazareth because the Shroud bears a faint image of a crucified man with the same wounds that the Gospels describe for Jesus' crucifixion. These include bloodstains at the wrists and feet where crucifixion nail wounds would occur, around his head where a crown of thorns might have been placed, and at his side from an apparent spear wound.

In 1898, a surprising discovery was made when the first photograph was taken of the Shroud. Namely, it is the photographic negative that more clearly reveals the image of the crucified man.

In 1978, the Shroud was the subject of five days of intense scientific scrutiny by a team of 26 scientists from Los Alamos National Laboratory, Jet Propulsion Lab, etc. This project is known as the Shroud of Turin Research Project (STURP).

The STURP conclusions were published in various peer-reviewed scientific journals in the years following the project. These studies concluded:

- The image on the Shroud is of a scourged and crucified man.
- The Shroud contains real human blood and the blood type is AB.
- The blood was absorbed onto the Shroud before the image was made.
- No pigments, paints, stains, or dyes were found and therefore the Shroud image is not the creation of an artist.
- Computer image enhancement and analysis show that the image has three-dimensional information encoded in it.

- The scientific consensus is that the image was produced by something that resulted in oxidation and dehydration of the linen fibers, such as some form of radiation.
- The color forming the image was limited to the outermost part of each thread and did not extend to the interior of the thread.
- Scientists involved in the study could offer no suitable explanation as to the process by which the image was formed.

The results of this study sparked great interest in the Shroud and unleashed a flood of papers, studies, and articles that continue to this day. As part of the study, the team recommended that Carbon-14 dating be undertaken to ascertain the age of the cloth. Testing protocols recommended by experts and accepted by the Vatican specified that multiple samples should be taken from different areas of the cloth and sent to seven different radiocarbon testing labs. Such a study was undertaken in 1988, but only one sample from the cloth was taken and sent to just three different labs. The results from all three labs showed the date of origin of the sample to be between 1260 and 1390 A.D., thus apparently making the Shroud the work of a medieval forger.

However, questions remained. Foremost of these is the question of how a medieval forger could produce a 3-D image on the Shroud without the use of paints or dyes and be clever enough to avoid detection by modern sophisticated investigative tools. Further investigation of the sample used in the Carbon-14 dating tests was called for.

In 2004, Raymond Rogers, one of the STURP investigators from the Los Alamos National Lab, conducted a study of the sample used for the Carbon-14 dating. His study showed the presence of dye and cotton fibers in addition to the flax fibers of the original Shroud. He concluded that the sample used for the Carbon-14 tests did not come from just the original flaxen Shroud fabric, but also contained newer material that was used to repair the Shroud after it was damaged by a fire in 1532.

In addition, the top corner where the single test sample was taken is where the Shroud was held by those displaying it for various ceremonies in the Middle Ages. Thus, the Carbon-14 dating could have been contaminated by the presence of human body oils and other impurities.

Additional tests were done to certify its age. One test, based on the amount of vanillin in the flax fibers, dated the Shroud to between 1,300 and 3,000 years ago. And, two kinds of spectroscopy testing dated the Shroud from 300 B.C. to 400 A.D. A 2022 study using Wide-Angle X-ray Scattering (WAXS) showed that natural aging of linen fibers is consistent with an age of 2,000 years.

The Shroud also has two features that were not widely known in the Middle Ages. First, the Shroud shows that nails were placed through the man's wrists, not his hands as shown on medieval paintings. However, recent studies show that bones in the wrist, but not the hands, would support the weight of a crucified body. Second, the Shroud shows a man with a long ponytail and we now know this hair style was common practice for Jewish rabbis at the time Jesus lived.

Scientists have suggested the image on the Shroud was formed by a burst of ultraviolet radiation strong enough to discolor the linen fibers, but short enough to discolor only the outermost fibers and not burn the cloth, such as may have occurred at the Resurrection.

The Shroud of Turin has long been venerated as the burial cloth of Jesus of Nazareth. Except for the discredited Carbon-14 dating, numerous scientific investigations have not uncovered any evidence that this belief is unfounded.