As a child in Chicago in the early 1950s, I watched my first TV special about the Shroud of Turin---shown there on Easter Sunday. I was amazed by the mysterious linen cloth, when all we really knew was that it had the shocking image of a crucified man complete with what appeared to be blood stains and bruise marks, that the image seemed to be almost a photographic negative, and that the provenance of the Shroud was highly questionable. After all, a Bishop had written in 1389 that the Shroud was just a painting and that he knew the unnamed artist. Still, I sat there in child-like fascination staring at the image of the face on the Shroud on our old Muntz TV screen wondering how an artist could paint *that*. Over 50 years later, I'm still wondering.

As of today, a host of scientists, textile experts and others have closely examined and even carbon-dated the cloth. After all that...we may be no closer to solving the mystery of the Shroud of Turin than we were in the 1950s. There have been numerous TV documentaries since that first one I saw in Chicago. They have been shown on the commercial channels, on PBS, on the National Geographic Channel, and others. In my opinion, none of them were as thoroughly researched and presented as clearly with easy-to-understand imagery and animations as the recent Discovery Channel's "Unwrapping the Shroud: New Evidence." If you can only see one Shroud documentary, this is it. Unlike some other televised presentations, it does not subject viewers to the usual outrageous parade of skeptics and "deniers" who have made a career out of writing books and speeches ridiculing the Shroud---while studiously ignoring evidence for its authenticity and treating it like a Bigfoot sighting. Instead, the Discovery Channel presents the Shroud facts as we know them to date and lets the viewers reach their own conclusions.

Results from the so-called STURP (Shroud of Turin Research Project) group of scientists, who spent 120 consecutive hours studying the cloth in 1978 without cutting or marking it, are presented in language that a general audience will appreciate. The overwhelming consensus from a host of chemical, spectral, and X-ray measurements of the Shroud was that the image was *not* painted or dyed. There was clear evidence that the apparent blood stains were really blood; the bodily secretion bilirubin was also detected, consistent with flesh wounds. However, STURP unfortunately was unable to fulfill its major goal of explaining *how* the mysterious image of a crucified man was created---a mystery that endures to this day. Barrie Schwortz, the official STURP documenting photographer and one of the key participants in the Discovery show, has stated that if any skeptic can create an image on linen that matches the Shroud's physical and chemical properties, he would never discuss it again (Schwortz is also the Webmaster for the original Shroud of Turin website). To date, not one skeptic has come close.

After Pope John Paul II had decided it was finally the right time to carbon-date the Shroud, many believed we would get some answers at last. When a sneering panel of university professors and carbon-dating specialists announced in 1988 that the Shroud was a medieval (1260-1390!) fraud---and one of them added that those who refused to accept this result should join the Flat Earth Society---it seemed the mystery of the Shroud had ended with a thud. Well, not quite. As predicted by the skeptics, a variety of

theories to explain away the medieval date was proposed by many who had been interested in the Shroud for years and by some who were convinced it had been wrapped around none other than Jesus Christ in the First Century. Nearly all the theories to explain how carbon dating could be off by over a thousand years, some proposed by what a STURP scientist called "the lunatic fringe of believers," have been shown to be invalid. However, one of the theories seemed to require an error so unimaginable that I had dismissed it long ago. This was the notion that somehow the Turin authorities had selected a sample of the Shroud for carbon dating that was anomalous—a part of the cloth that had been repaired or rewoven in medieval times, which could explain the dating result. This theory was created because of Turin's own insistence that the samples be taken from just *one* region of the Shroud instead of from several regions, as had been originally planned.

Could the Turin Shroud authorities have made such an elementary mistake---and would the three eminent universities performing the carbon-dating have gone along with the test from only one region of the Shroud? My initial doubts about this theory have been swept away after watching the Discovery documentary, which presents chilling evidence that such a combination of mistakes and misjudgments may indeed have taken place in 1988. An unlikely pair of non-scientists, Sue Benford and Joe Marino, discovered the key evidence that the sample used for carbon-dating the Shroud to medieval times may well have been partly or wholly a rewoven patch from that era. Among numerous discrepancies identified by Benford and subsequently verified by textile experts (who examined close-up photos of the cloth without realizing it was the Shroud), Benford also observed distinct tell-tale color changes in the Shroud's chemical composition map called the "Quad-Mosaic" image that was originally produced by the 1978 STURP team. This image revealed a distinctly different color than the rest of the Shroud in the region where the carbon-dating sample was taken---suggesting a different chemical composition.

This region was immediately adjacent to one of the missing corner sections that would have been ripe for medieval relic taking as suggested by Benford and Marino in a peer-reviewed paper in *Chemistry Today*. Benford also noticed that the "herringbone weave"---so consistent over the rest of the Shroud---seemed misaligned in the region where the carbon-dating sample was taken.

Chemist Ray Rogers, who had "given up" on the Shroud after the carbon dating was announced, was certain Sue Benford and Joe Marino's theory was just another "lunatic fringe" idea---until he looked at the fibers from the area of the carbon-dating sample, compared them to the rest of the Shroud, and saw major differences. Rogers, who died several years ago, concluded their theory was correct. He is extensively interviewed in the Discovery documentary and provides key scientific data to back up Benford and Marino's observations. Rogers' compiled all his Shroud research results in an excellent book published after his death, <u>A Chemist's Perspective on the Shroud of Turin (lulu.com</u>, 2008).

In my opinion, any objective viewer of this Discovery documentary will conclude that enough questions have been raised about the 1988 carbon-dating of the Shroud that there is an urgent need to redo these tests so the "medieval fraud" claims can be confirmed or rejected, once and for all.