

RESEARCH ARTICLES (2)
IMAGE CREATION UTILISING THE MEDIUM OF LIGHT
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One of the most striking aspects of the Shroud of Turin, particularly when viewed in negative form, is how it appears to be a photograph of Jesus, but from a time long before photography existed. In the life-sized exhibition panels at Turin Cathedral, one has the strange experience of standing before Christ, as if he were there in person. Beyond the initial emotional connection that this evokes, there is the inescapable sense that some form of 'Light event' must have occurred, photographing Him at the moment of image creation. Many believe this was the moment of Resurrection.

Conventional photography, whether it be film or digital, relies either on sunlight or artificial light to capture an image. But understanding the type of Light, Energy or Radiation which created the image on the Turin Shroud is more complex. We know it was cool enough not to burn or scorch the cloth, and its directionality seems controlled - to give an aesthetically pleasing, undistorted image - front and back, with the sides of the body not imaged in the way one would expect from the natural drapes of a burial cloth around the body. It also had X-ray and 3D qualities, unlike conventional photography.

But to truly understand how differently 'Divine' light behaves from 'ordinary' light, we can look to another sacred relic held in the New Basilica of Guadalupe, in Mexico City (Fig. 1). Here we find another Holy image on cloth, this time of Mother Mary, with exceptional provenance and known around the world as 'Our Lady of Guadalupe.' As you will see from the images in Fig. 2, it looks like a painting, but when scrutinised by scientists, including Kodak technicians, it was felt to be "essentially photographic in character," and was not a painting despite its appearance.



Fig. 1. New Basilica of Guadalupe, Mexico City



Left : Sacred Image of 'Our Lady of Guadalupe' in the New Basilica of Guadalupe, Mexico City.
Above: Closer view of a Reproduction of the Sacred Image.

Fig. 2. Sacred image of 'Our Lady of Guadalupe and a closer view of a Reproduction of the Sacred image

This image has a profoundly miraculous story of its creation and an extensive record attesting to its authenticity. But it still does not give any easy answers.

The cloth the image of 'Our Lady of Guadalupe' adorns, was originally an Aztec, cloak-like garment called a 'Tilma', made of a very coarse weave of Ayate fibres from the Maguey Cactus plant. It is an extremely difficult surface to paint onto and should only have a life span of 20 years. However, the detail and beauty of the sublime image, which miraculously appeared on the tilma of a Mexican called Juan Diego, has consistently defied attempts to explain its existence.

The story is too long to relate here, but in brief, in 1531 a young Mexican called Juan Diego experienced several visitations by Mother Mary, near Mexico City. These visitations concluded with her meeting Juan below Tepeyac Hill, where she instructed him to gather flowers from the hilltop above, even though the ground was frozen and it was the wrong season for plants to flower. To his amazement, he found beautiful flowers including Castilian Roses in bloom, and was told to take them to Bishop Zumárraga in Mexico City. He gathered them up in his tilma, and after much trouble getting an audience with the Bishop, he was finally allowed to see him. The Bishop was curious because, on a previous visit, he had asked Juan for proof of the visitations he claimed to have had with the Holy Mother. Juan unfurled the cloak to reveal the blooms, and not only were the miraculous flowers revealed, but on the front of his tilma, an exquisite image of Mother Mary appeared (Fig. 3). In short, the miraculous image became a cause for the conversion of millions of Mexicans to the Catholic faith and it is still revered today.

But the image itself is almost as challenging as the image on the Holy Shroud, because it doesn't look like a photograph, it looks like a painting. Yet, when viewed under a microscope, infra-red radiation photography and computer enhanced photography, there are no brush strokes on the original image (except later over-painting). There is no sizing of the rough cloth or preliminary drawing underneath. There are no



Fig. 3. Statue of Juan Diego with the image of Our Lady of Guadalupe as it appeared on his tilma.

known dyes or pigments found when the coloured fibres are tested, and the image reflects light in a way researchers claim is more akin to the colouring of butterflies and beetle wings. Furthermore, the fabric and image have not deteriorated despite exposure to centuries of sunlight, heat, dust, moisture, candle smoke, the touch of pilgrims hands and lips, swords and keepsakes being pressed to it, and even nitric acid being spilt on it, and a bomb being detonated directly beneath it in 1921. The heavy bronze Altar Crucifix in Fig. 4 was bent in the bomb explosion and the windows broken, but the thin layer of glass protecting the tilma, was not even cracked, even though it wasn't bullet-proof glass as it is today.

As if that wasn't enough, further study has revealed that enlargements of the Holy Mother's eyes seem to contain reflections of three people who were present in the room at the time of the miracle, and are consistent with the way images are reflected on the cornea of the eye when viewed using an ophthalmoscope. Experts have even been able to tell where Mother Mary would have been standing, had she been visible, in relation to Juan Diego, Bishop Zumárraga and his interpreter, when the image formed.

So what does this tell us about the nature of Divine Light, when used in a photographic context? Science cannot replicate the effects seen on either the Shroud of Turin or the image of Our Lady of Guadalupe, so there is no way, as yet, to give a scientific answer. But, if we accept that



Fig. 4. Bronze Altar Crucifix bent by a bomb explosion in 1921

everything is comprised of energy at the sub-atomic level, and that energy can vibrate at frequencies equivalent to colours within the spectrum of visible and invisible light - could it also be possible for Divine beings to utilise this concept to leave images designed to enhance faith and give a direct experience of their presence here on Earth. By trying to understand the science behind the creation of these images, based on the medium of Light, we can learn more about how matter and light interact, and it may even lead us a step closer to understanding the broader purpose of the Shroud and the Resurrection event it potentially portrays.

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References: *The Wonder of Guadalupe*, Francis Johnston, 1993, Tan Books

