

# How the Image Was Formed

by

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# Mysteries of the Shroud

- Image
  - Why can we see the image?
  - How was the image formed?
- Date
  - What is the date of the Shroud?
  - What about the C<sup>14</sup> dating?
- Blood
  - How did it get onto the Shroud?
  - Why is it still reddish?

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- On the RESEARCH page:
- Paper 5: “Information Content on the Shroud of Turin”
- Paper 6: “Role of Radiation in Image Formation on the Shroud of Turin”
- Paper 22: “Image Formation on the Shroud of Turin”

# Why we can see the image

The information required to define the appearance of a naked crucified man has been encoded into the pattern of discolored fibers in the image.

# How the image was formed

- The required information was only inherent to the body.
- Only radiation could transport this information from the body to the cloth.
- The information was deposited on the cloth when the radiation was absorbed.
- Thus controlling the discoloration mechanism to form the image.

# STURP's Image Investigation

- Experiments on the Shroud showed:
  - No pigment, no carrier, no brush strokes
  - No clumping of fibers or threads
  - No capillarity, no stiffening of the cloth
  - No cracking of the image along fold lines
  - No body decay products
- Conclusion: image not due to:
  - Paint, dye, stain, liquid, scorch, body decay
  - Not a photographic process

# A Dead Crucified Body

- A body was wrapped in the Shroud
- The blood came from the body
- STURP in 1981: “We can conclude for now that the Shroud image is that of a real human form of a scourged, crucified man. It is not the product of an artist.”
- The image was formed by the body

# Characteristics of the Image

- Good resolution
- Negative image, i.e. light & dark reversed
- 3D / topographical information
- Image is extremely superficial
  - Only top two layers of fibers discolored
  - Discoloration thickness < 0.4 microns
  - Due to change in carbon bonding
- Conclusion: Not due to a human agent



# Why Radiation?

1. Image was not formed by someone using pigment, liquid, scorch, or photography.
2. Image was formed by the body that was wrapped in the Shroud.
3. Only radiation could transfer the required information from the body to the cloth.

# Ways to Transport Information

- Radiation: photons or particles
- Waves in a medium: sound
- Direct contact: fingers on a keyboard
- Electron flow through wires
- Diffusion of molecules: smell or taste
- Waves in a field: gravity waves

# Why Radiation?

4. Images are on the inside of the Shroud.
5. Straw-yellow / sepia color → cold scorch
6. Upper threads shield lower threads from discoloration
7. Upper fibers also shield lower fibers
8. Unique image → unique cause

# Why Radiation?

9. Front and back images have similar intensity: it is independent of weight
10. Image due to transfer of energy without substance: no image in back lighting
11. In experiments, protons & UV cause discoloration like that on the Shroud

# Why Radiation?

12. Radiation explains the good resolution
13. “ negative image
14. “ 3d / topographical information
15. “ only top two fiber layers discolored
16. “ discoloration thickness < 0.4 microns
17. “ change in carbon bonding
18. “ mottled appearance

# Other Things Could be Explained

19. C<sup>14</sup> dating would be explained if neutrons were emitted in the burst of radiation that caused the image
20. Static charge & radiation pressure might explain the apparently flat upper cloth
21. Neutron absorption in the blood might explain the reddish color of the blood
22. Burst of radiation might have transported the blood from the body to the cloth

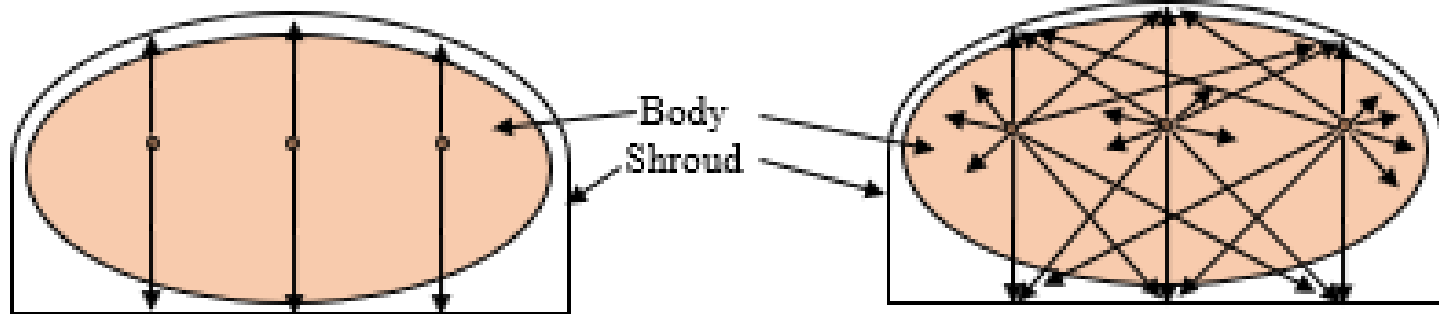
# Characteristics of the Radiation

1. Low energy charged particles or photons
2. Not neutrons or high energy radiation
3. Emitted in a burst in an extremely small fraction of a second
4. Emitted inside the body
  - Bones are visible
  - Teeth, bones in the hands, etc.

# Characteristics of the Radiation

## 5. Emitted vertically up and down (collimated)

- No side images
- No image of the top of the head
- No lens between the body and the cloth
- Good resolution → verticality of formation



Vertical emission maintains the one-to-one correspondence, resulting in good resolution.

Random emission does not maintain the one-to-one correspondence, resulting in no resolution.



# Discoloration Mechanism

- High charge on the cloth, short time span
- Static discharge from fiber high-points
- Electrical flow on fiber circumference
- Heating fiber around the circumference
- Static discharge → ozone production
- Heating & ozone → discolors cellulose
- “Lightning rod” effect creates mottling

# Discoloration Mechanism

- Time → oxidation & dehydration → color
- Causing all the unique characteristics
  - Image on the inside surfaces
  - Negative image containing 3D information
  - Extreme superficiality
  - Color due to change in electron bonding
  - Mottling of fibers with shielding of lower fibers

# Thank You

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