

# The Significance and Science of Our Lady of Guadalupe

Steve Hemler, President



# Presentation Outline

- **History**
  - Aztec Empire and Spanish Conquest
  - Juan Diego and Marian Apparitions
- **The Astounding Tilma**
  - Aztec & Spanish Symbols on the Tilma
    - Amazing Conversions
  - Physical Properties of the Tilma
    - Survived Acid Spill and Bomb Attack
- **Studies of the Tilma**
  - Image, Eyes
- **Basilica of Our Lady of Guadalupe**





# History

- Aztec Empire and Spanish Conquest





# History

- **Problems After Spanish Conquest:**
  - Great tension between Aztecs and Spanish.
    - Franciscan missionaries made little headway and conflict loomed.
  - Majority of Spanish colonists were single men who married or made concubines of native women.
    - These unions resulted in mixed race individuals known as Mestizos.
    - Eventually became majority of Mexican population.
  - Spanish lived off forced labor of indigenous peoples.
    - Horrifying instances of abuse against native peoples.



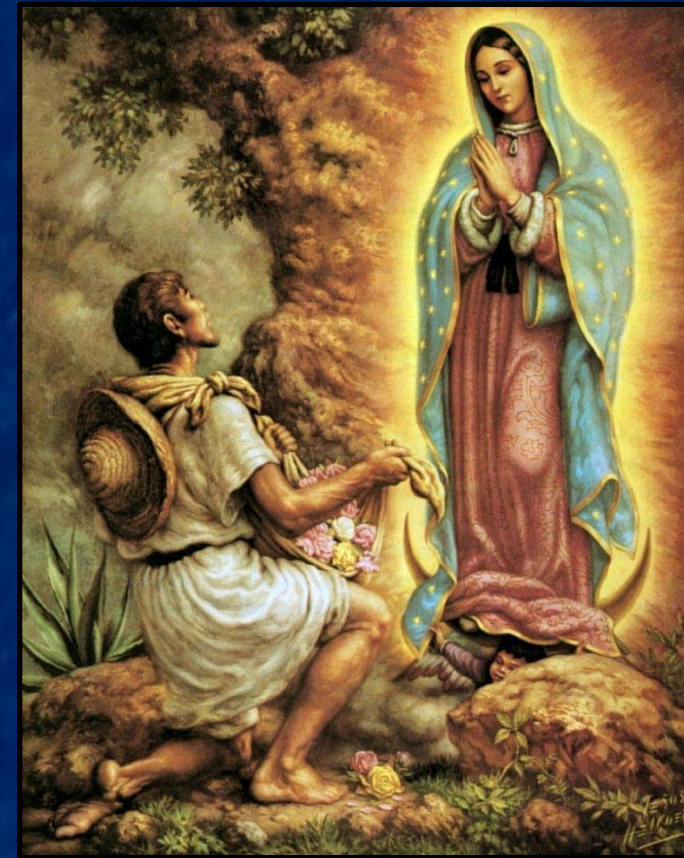
# History

- **Spanish Problems After Conquest:**
  - Spanish were fighting among themselves.
  - Bishop Juan de Zumárraga tried to defend the native peoples (“Protector of the Indians”).
    - An attempt was made on his life.
    - He excommunicated the ruling council.
    - He withdrew all priests from Mexico City.
  - He wrote letter to Emperor Charles V in 1530:  
“If God does not provide a solution from His own hand, this land is about to be completely lost.”



# History

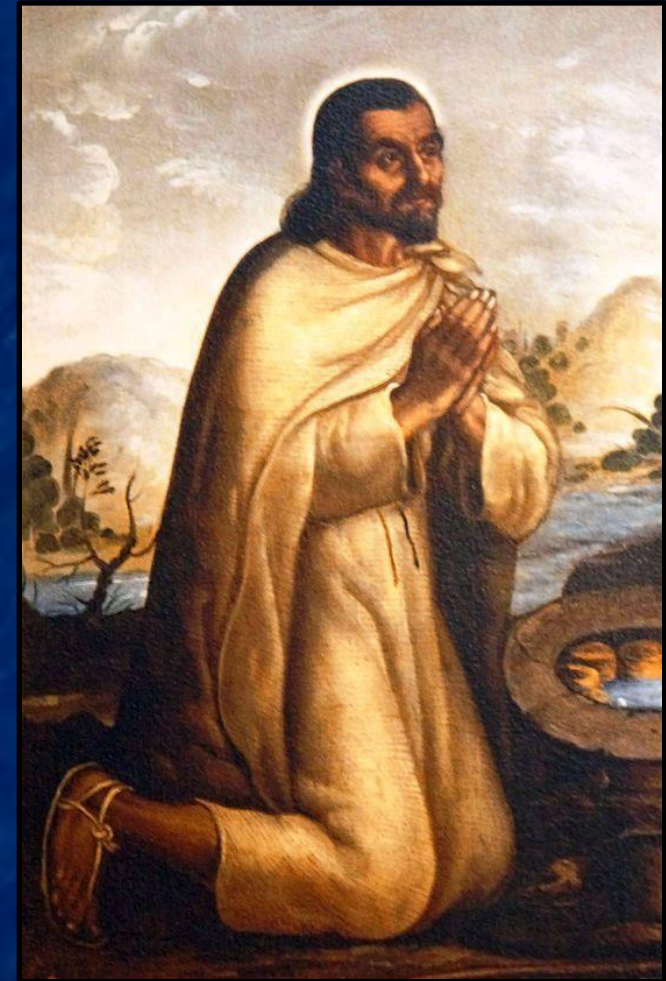
- **Juan Diego and Marian Apparitions:**
  - On Dec. 9, **1531**, Virgin Mary appeared to a poor Aztec farmer, Juan Diego, on Tepeyac Hill.
    - He and his wife were among first natives to convert and be baptized after arrival of Franciscan missionaries in “New Spain” (Mexico) in 1524.
    - Tepeyac Hill former site of shrine dedicated to Aztec goddess Tonantzin, “Our Sacred Mother.”
  - Mary appeared to Juan Diego dressed as an Aztec princess, but looking like a Mestiza.
    - Woman of mixed Aztec and Spanish descent.





# History

- **Juan Diego and Marian Apparitions (cont.):**
  - Mary addressed Juan in his native language, saying she wanted a church built on that spot.
    - *“I desire a church in this place where people may experience my compassion. All those who sincerely ask for my help in their work and in their sorrows will know their mother is near.”*
  - Juan approached Bishop Zumárraga with Mary’s request that a church be built.
    - Bishop did not believe him.
    - Asked for a sign.





# History

- **Juan Diego and Marian Apparitions (cont.):**
  - On Dec. 12, Our Lady appeared to Juan again.
    - She asked him to pick the Castilian roses he would find on Tepeyac Hill.
    - These flowers are not native to Mexico.
    - He did, bundling the flowers in his tilma (cloak).
  - Juan took the roses to the bishop. When he opened his tilma, the flowers tumbled out to the floor, but the fabric of his tilma was covered in the image of the Our Lady of Guadalupe.
  - ***Video: The Guadalupe apparitions***





**Ten years after the conquest of the Aztec capital, later known as Mexico City,**





# History

- **Historical Sources:**

- Oldest historical account of apparitions is *Codex Escalada*, written in 1548, includes illustration.
- The *Nican Mopohua (Here It Is Told)*.
  - Written about 1550 by Indian scholar and colonial official, Antonio Valeriano.
  - From personal conversations with Juan Diego.
- Another important source is *Nican Motecpana*.
  - Written between 1590 and 1600 by eminent Mexican historian, Fernando de Alva Cortés Ixtlilxóchitl.
- **Video: Historical sources**





**There are numerous written sources and local writings that mention this event (Guadalupe).**

Handwritten text in Spanish, likely a list of sources or a historical account. The text is partially obscured by a watermark and is difficult to read in full. The visible words include "SANCTA MARIA" and "SANCTA MARIA".



# The Astounding Tilma

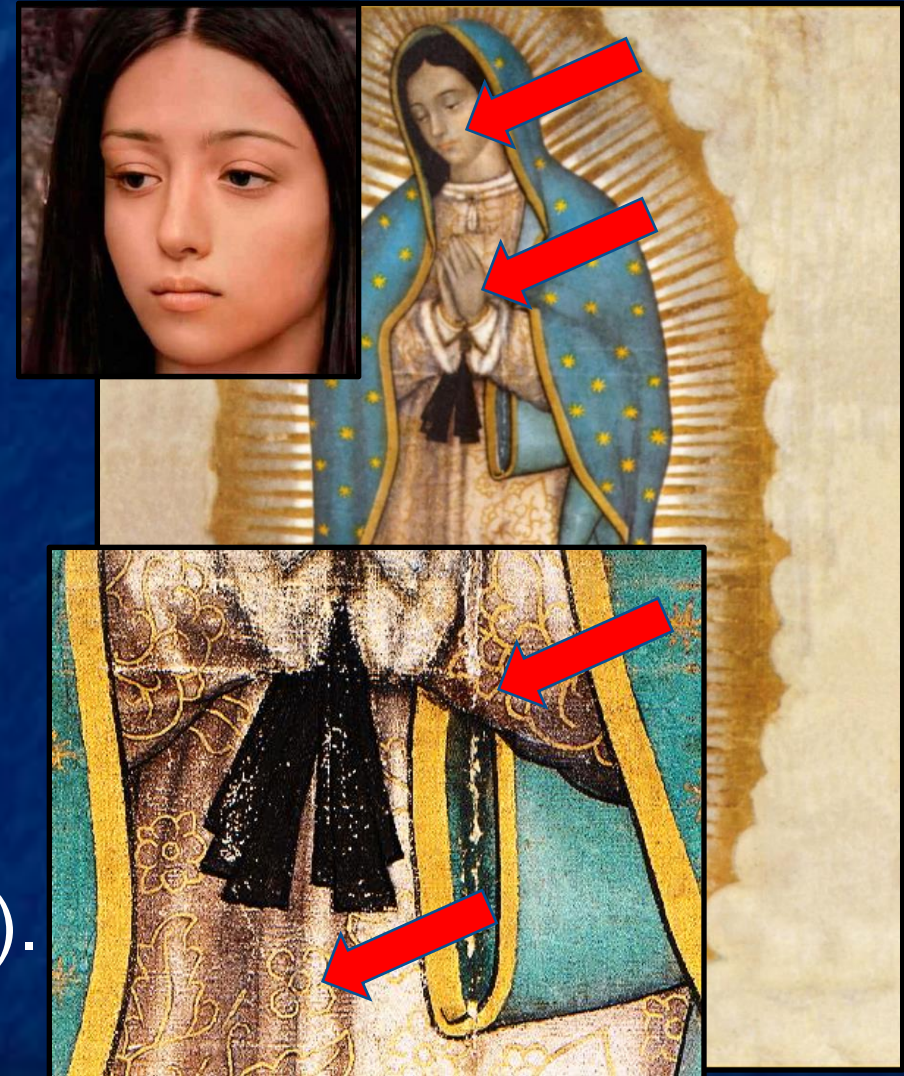
- **Aztec Symbols on the Tilma:**
  - Woman wears no mask.
    - She is human, not a goddess.
  - She wears a bluish-green mantle.
    - She is a **queen**.
  - Her hair is loose.
    - She is a **virgin**.
  - She has black sash with bow at her waist.
    - She is **pregnant**.
  - She wears a pink tunic.
    - Color of rising sun, sign of renewal of life.





# The Astounding Tilma

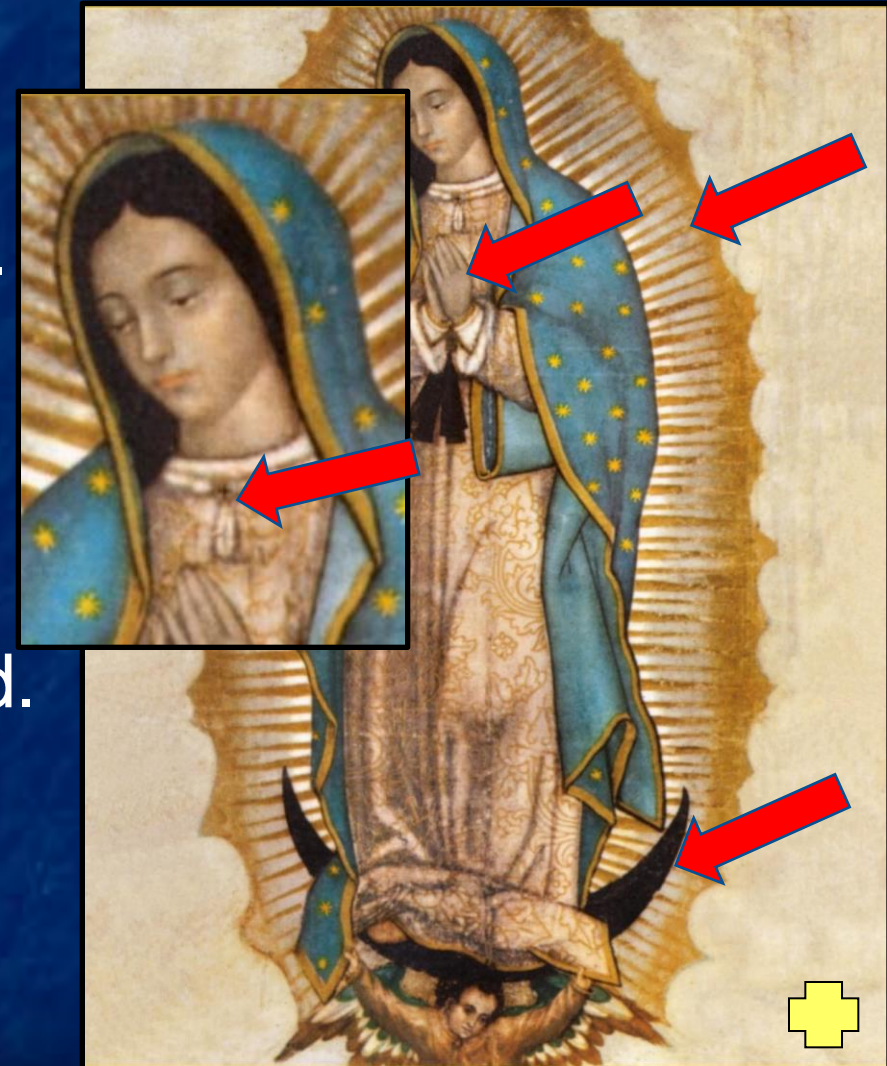
- **Aztec Symbols on the Tilma (cont.):**
  - Her hands are folded in prayer.
    - Honors someone more powerful than herself.
  - Quincunx flower over her womb.
    - Symbol of perfection and transcendence, of man meeting God.
  - Bent knee signifies dancing.
    - A form of prayer for the Aztecs.
  - Mary portrayed as a Mestizo (mixed race).
    - She has come for all, even the outcast.





# The Astounding Tilma

- **Spanish Symbols on the Tilma:**
  - Clothed with the sun and moon under her feet as per the woman of Revelation 12:1.
  - Gold brooch on her neck has a cross.
    - Cross is the symbol of Christianity.
  - Hands united in prayer, as is common to Christians, shows honor & worship to God.
    - Left hand is darker and right hand lighter, signifying the two races.
- ***Video: Symbols on the Tilma***







# The Astounding Tilma

- **Mary's message to St. Juan Diego and all of us:**



- *“Do not be disturbed or afflicted by anything.”*
- *“Am I not here for you, I who am your mother?”*
- *Are you not under my shadow and protection? Am I not life and health?*
- *Are you not on my lap and under my care?”*
- *“What else do you wish? Do not let anything worry or disturb you.”*



# The Astounding Tilma

- **Mary's message to St. Juan Diego and all of us:**



Mexican Archbishop Luis Martínez:

“Those words breathe tenderness and demand trust. Our mother in heaven has a love more intense and a tenderness more exquisite and delicate than all we know here.

With these words, Our Lady of Guadalupe asks us for a blind and unlimited trust, a trust that borders on abandonment, like the loving trust that a little child has in his mother.”



# The Astounding Tilma

- **Amazing Conversions**

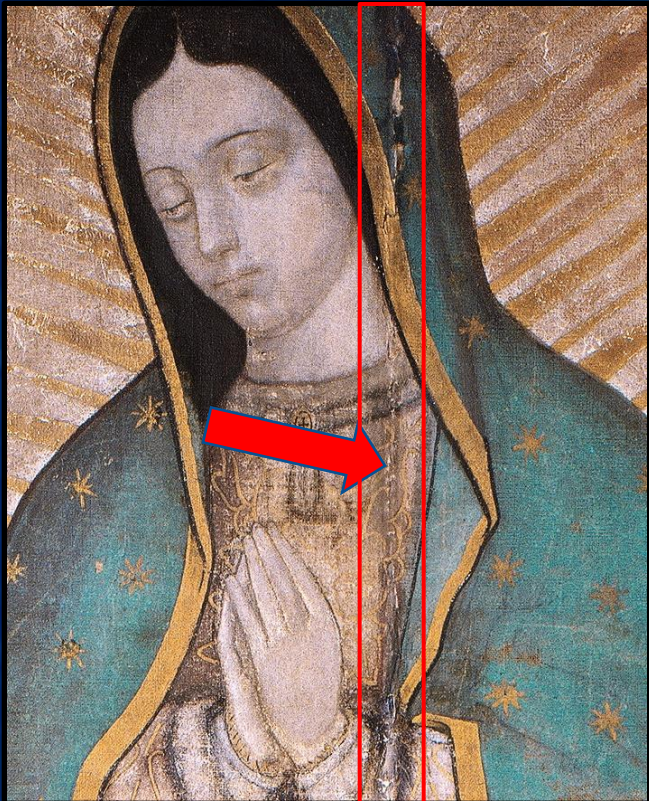
- 9 million natives converted within 8 years.
- Whole villages travelled to missions to be baptized, many with no previous evangelization.
  - Polygamy gave way to Catholic marriages.
  - People walked for miles to go to Confession.
  - Mestizos recognized as children of God and treated more equally.
  - Mary won culture-changing victory for God of love.
- When 5 million European Catholics abandoned the Faith due to Protestant Reformation.





# The Astounding Tilma

- **Physical Properties of the Tilma** (abt. 3.5 ft x 5.5 ft)
  - Made of agave fibers, have lasted nearly 500 years.
    - Normally decompose in less than 15 years.
    - Fabric shows no sign of degradation.
  - Survived first 120 years with no protection from the elements and over 370 years behind glass.
  - Has an intact seam down the middle of the fabric.
  - Survived exposure to acid in 1784.
    - Silversmith accidentally spilled nitric acid on tilma while trying to clean the silver frame.





# The Astounding Tilma

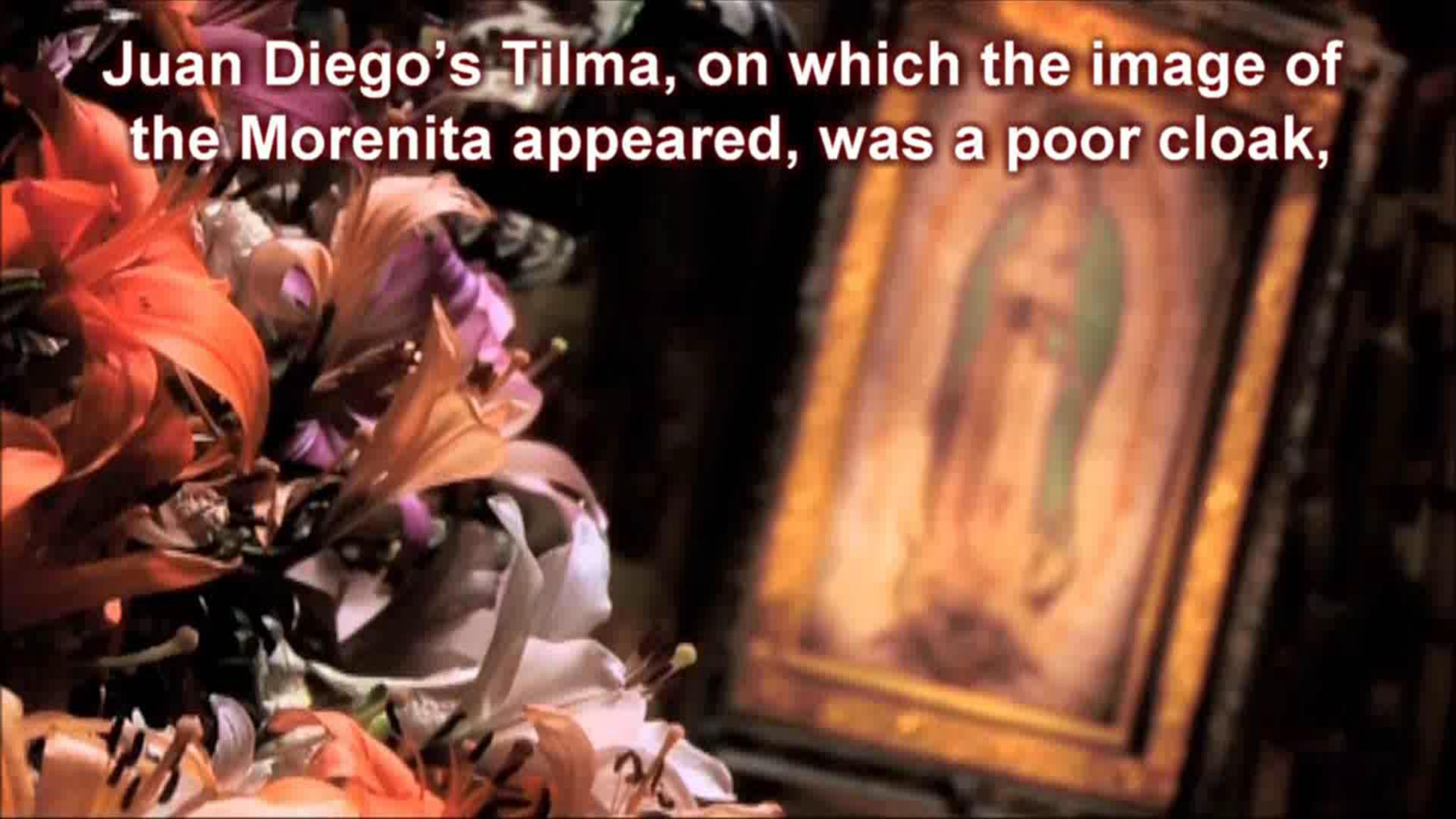
- **Bomb Attack on November 14, 1921**



- Dynamite bomb exploded at foot of altar.
  - Marble altar and marble floor were shattered.
- 75 pound bronze crucifix and candelabras bent.
  - Church windows and windows of buildings over 150 yards (meters) away were shattered.
- Neither the Tilma nor the normal glass that protected the Tilma were damaged or broken.
- ***Video: Amazing Survival of Tilma (Ayate)***



**Juan Diego's Tilma, on which the image of the Morenita appeared, was a poor cloak,**





# Studies of the Tilma

- **Image on the Tilma:**

- No preparation of fabric as for a painting.
  - No sizing/priming, no sketches, etc.
- In 1930s, Nobel Prize winning biochemist Prof. Richard Kuhn analyzed fibers.
  - Found no natural or synthetic pigment nor any trace of dye.
  - Stated colors on tilma not painted, but fibers somehow colored by unknown means.
- In 1946, Dr. Manuel Tortolero examined tilma under microscope and found no evidence of brush strokes.





# Studies of the Tilma

- **Image on the Tilma:**

- In 1979, Dr. Philip Callahan of Univ. of Florida performed infrared studies of Tilma.
  - Found added painted highlights and gold leaf that had cracked and deteriorated.
  - Original image (including rose robe, blue mantle, hands, face) not cracked or faded, unknown pigment and color “inexplicable.”
  - Face turns olive color from a distance, not from pigment but from diffraction of light, which is an impossibility for an artist.

- ***Video: The Image on the Tilma***





**The way in which the image is fixed on the fabric is still a mystery.**



# Studies of the Tilma

- **Images of people in eyes on Tilma:**

- In 1929 and 1951, photographers viewing enlarged photographs noticed upper part of a bearded man in Mary's right eye.

- In 1956, group of well-known Mexican ophthalmologists invited to examine the image, including skeptic Dr. Javier Bueno.

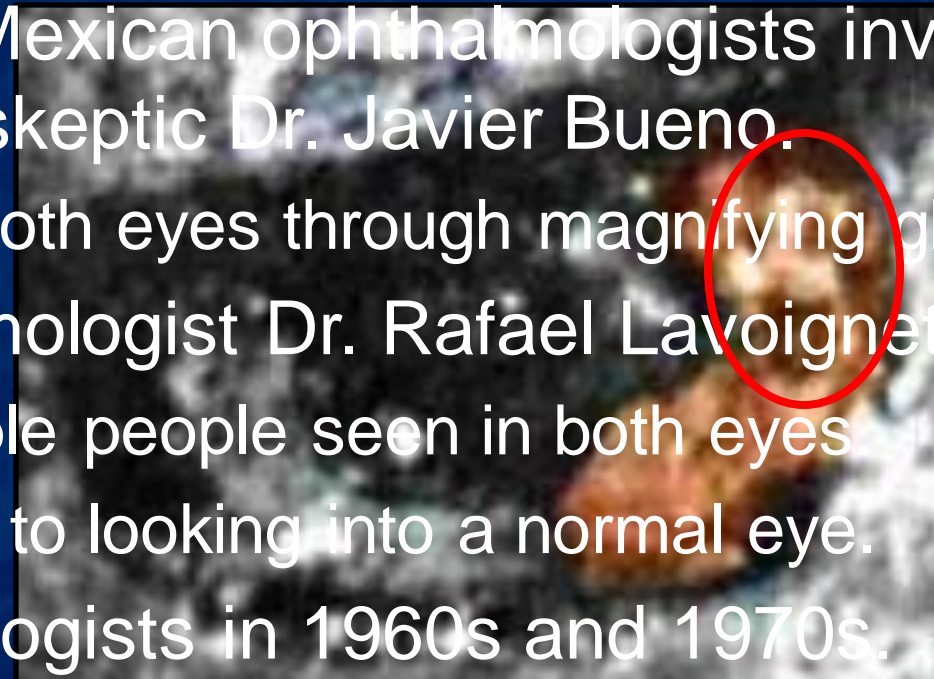
- Saw face of bearded man in both eyes through magnifying glass.

- In 1958, examined by ophthalmologist Dr. Rafael Lavoignet.

- Using ophthalmoscope, multiple people seen in both eyes.

- Distortion and image identical to looking into a normal eye.

- Confirmed by other ophthalmologists in 1960s and 1970s.





# Studies of the Tilma

- **Images of people in eyes on Tilma:**
  - In 1979, Peruvian scientist & engineer, Dr. Jose Aste Tonsmann, studied tilma using sophisticated digital imaging equipment.
    - Enlarged her eyes more than 2,000 times.
  - Other human figures seen in Mary's eyes.
    - Image of bishop & 12 other people, including a family, staring at tilma.
  - Appears to be what Our Lady of Guadalupe saw when Juan Diego presented his tilma to the bishop in 1531.
    - Permanent imprint appearing in both eyes in stereoscopic vision.
- ***Video: Images in Mary's eyes on the Tilma***





# Studies of the Tilma

- **Images of people in eyes on Tilma:**
  - Images in pupils follows curvature of the cornea precisely in same way as in a normal human eye.
  - Images also manifest Samson-Purkinje effect.
    - Color contrast differs under different light levels.
    - Completely unknown at time of image's formation.
- **Conclusion—Scientifically studied attributes:**
  - Material of the tilma and surprising lack of decay.
  - Original image on tilma inexplicable (not painted).
  - Images of people in eyes on the tilma.





# Basilica of Our Lady of Guadalupe

New Basilica of Our Lady of Guadalupe

Capuchin Convent

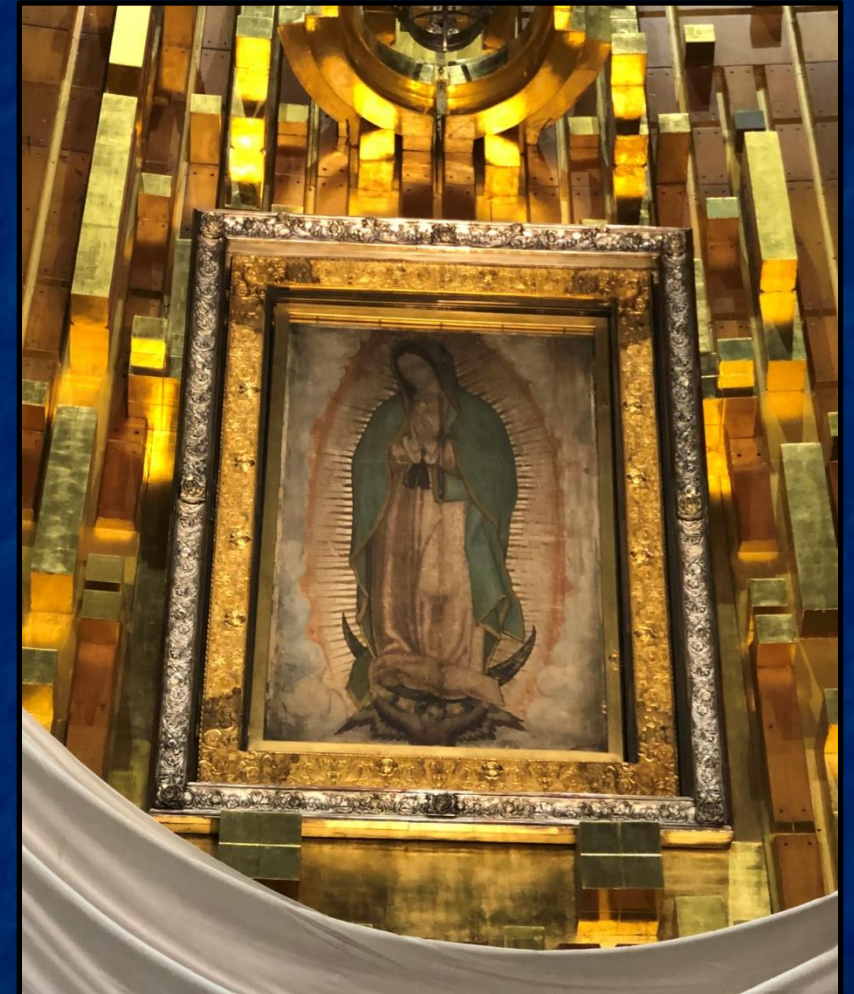


Old Basilica of Our Lady of Guadalupe

- Total over 20 million pilgrims per year.
- Over 10 million each December.



# Basilica of Our Lady of Guadalupe





# Why Pray to Mary?



- Church has always honored, not worshipped, Mary.
  - Declared “Mother of God” at Council of Ephesus in 431 A.D.
- Mary is a special grace to humanity & draws us to her Son.
  - “Mary is like the moon, for her light is always the reflection of a higher light.” (Archbishop Fulton Sheen)
- As at wedding feast at Cana, Mother Mary intercedes to Jesus on our behalf.
  - “Because she gives us Jesus, her son, Mary is Mother of God and our mother; we can entrust all our cares and petitions to her: she prays for us as she prayed for herself.”

(CCC #2677)



# Conclusion



- Why does Guadalupe still matter today?
- As Thomas Griffin stated in his recent article, *Guadalupe Should Change You*:
  - We should be changed by the fact that the Mother of God makes a point to intervene in time to reveal that she is always with us.
  - She is always desiring to communicate comfort and peace; she consistently makes it clear that our lives should be defined by her Son.
  - If listen to her and conform our lives to her message, we'll be changed forever.

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# Closing Video





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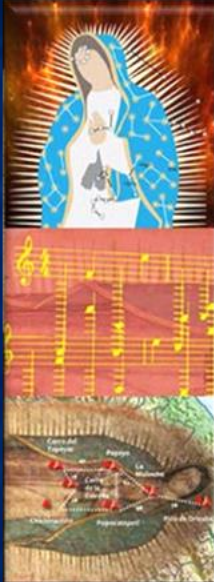


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# GUADALUPE MYSTERIES

Deciphering the Code



GAZEGORZ GÓRNY  
JANUSZ ROSIKOŃ



ignatius press



# THE REALITY OF GOD

*The Layman's Guide to Scientific Evidence for the Creator*

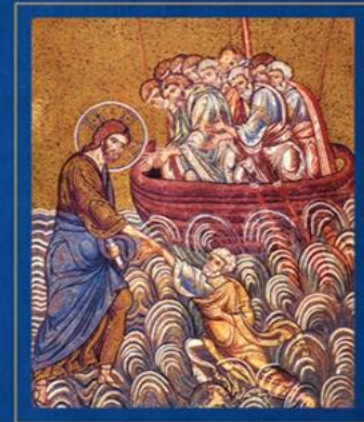
Steven R. Hemler

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## Catholic Stories *of Faith and Hope*



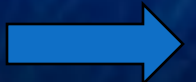
How God Brings Good Out of Suffering

AUTHORED AND COMPILED BY

Steven R. Hemler

***Questions?***

***Comments?***





# *A Prayer to Our Lady of Guadalupe*

Remember, O most gracious Virgin of Guadalupe,  
that in your apparitions on Mount Tepeyac  
you promised to show pity and compassion to all who,  
loving and trusting you,  
seek your help and protection.

# *A Prayer to Our Lady of Guadalupe*

Accordingly, listen now to our supplications  
and grant us consolation and relief.

We are full of hope that, relying on your help,  
nothing can trouble or affect us.

As you have remained with us through your admirable  
image, so now obtain for us the graces we need.

Amen.



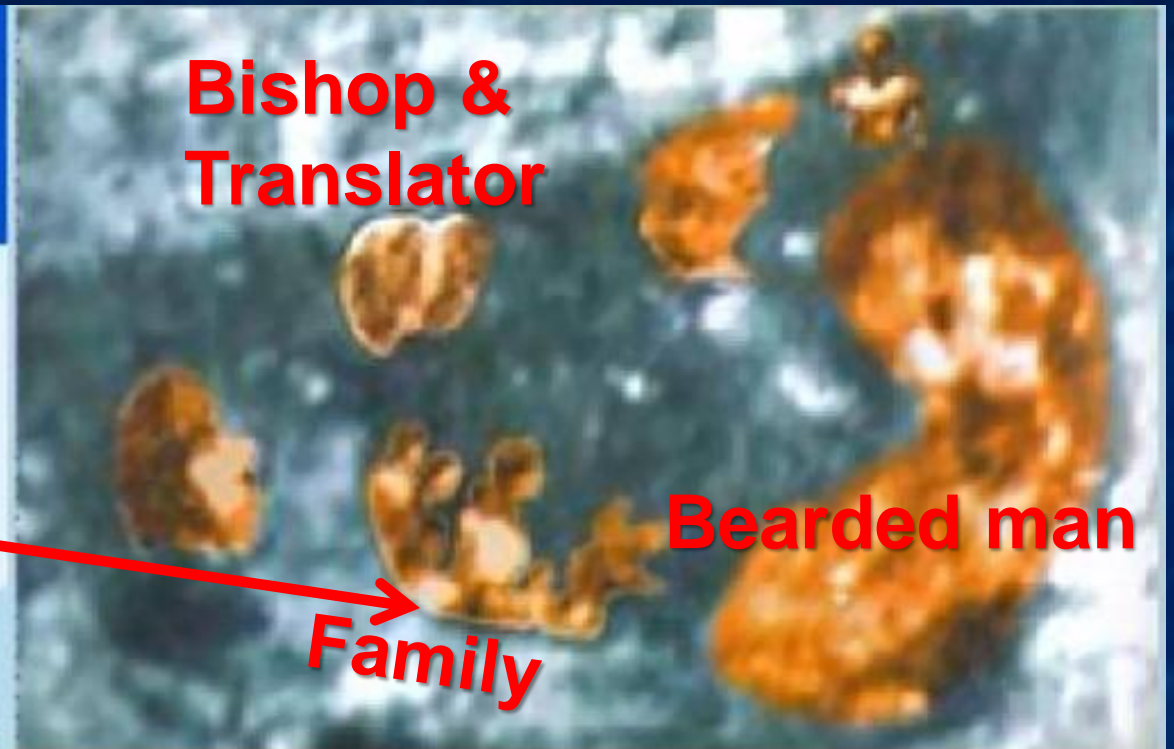
# The Significance and Science of Our Lady of Guadalupe

Steve Hemler, President













Current Guadalupe Image



Original Guadalupe Image\*



THE  
MIRACLE  
HUNTER

MiracleHunter.com

\* Based on findings of study by Dr. Philip Callahan (1979)



1570 Copy in Church of San Stephano in Aveto, Italy

