

Bruegel's
"The Wedding Dance"
Revealed

Electromagnetic Spectrum Resource



Pieter Bruegel the Elder (Netherlandish, 1525-1569). *The Wedding Dance*, 1566. Oil on wood panel. Unframed: 47 × 62 inches. framed: 57 1/4 × 72 × 3 1/2 inches. City of Detroit Purchase. 30.374



The Science of Looking

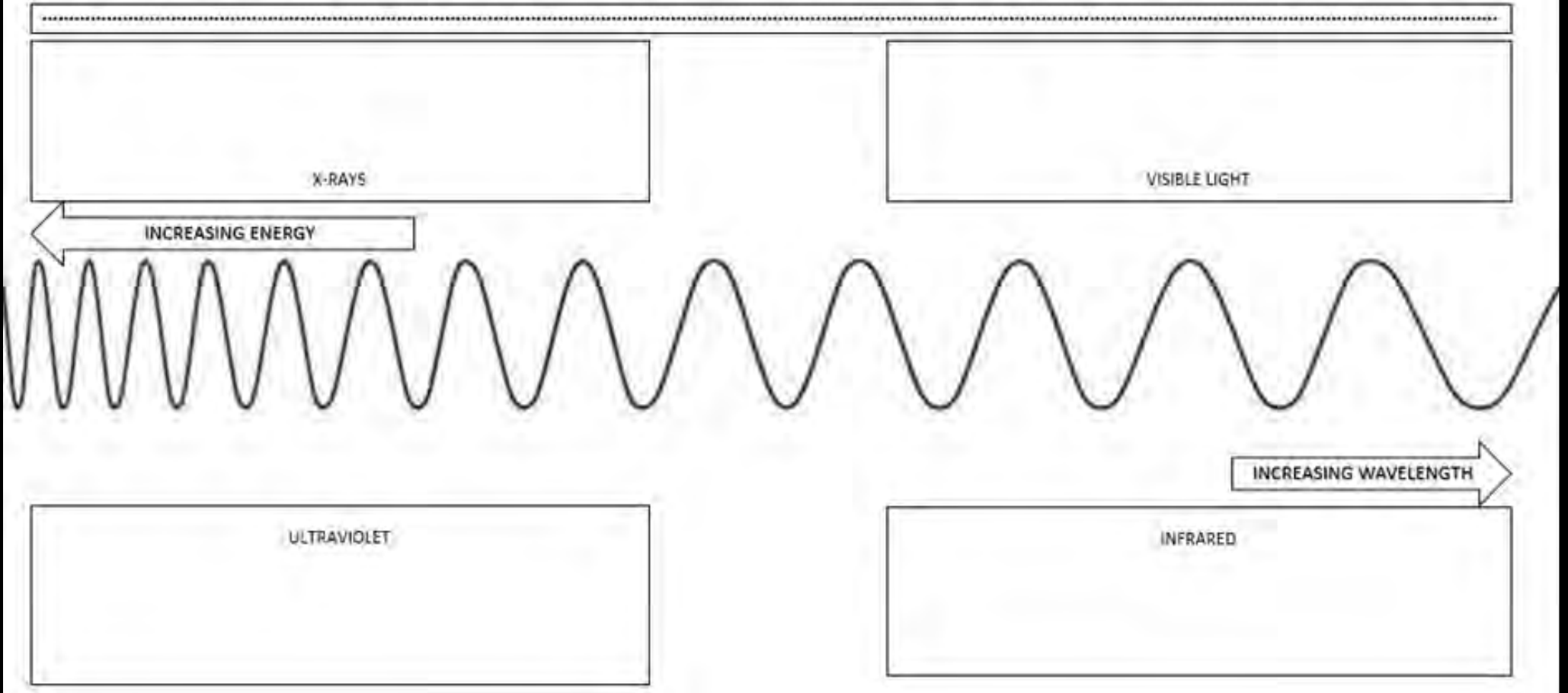
Analysis of a painting starts with close observation of its surface, the materials used to create it, and its subject matter.

When conservators reach the limits of what looking closely with their eyes alone can reveal, they turn to technology and specialized techniques.

Here we will explore the many examination methods used by conservators at the Detroit Institute of the Arts to learn more about The Wedding Dance.



THE ELECTROMAGNETIC SPECTRUM



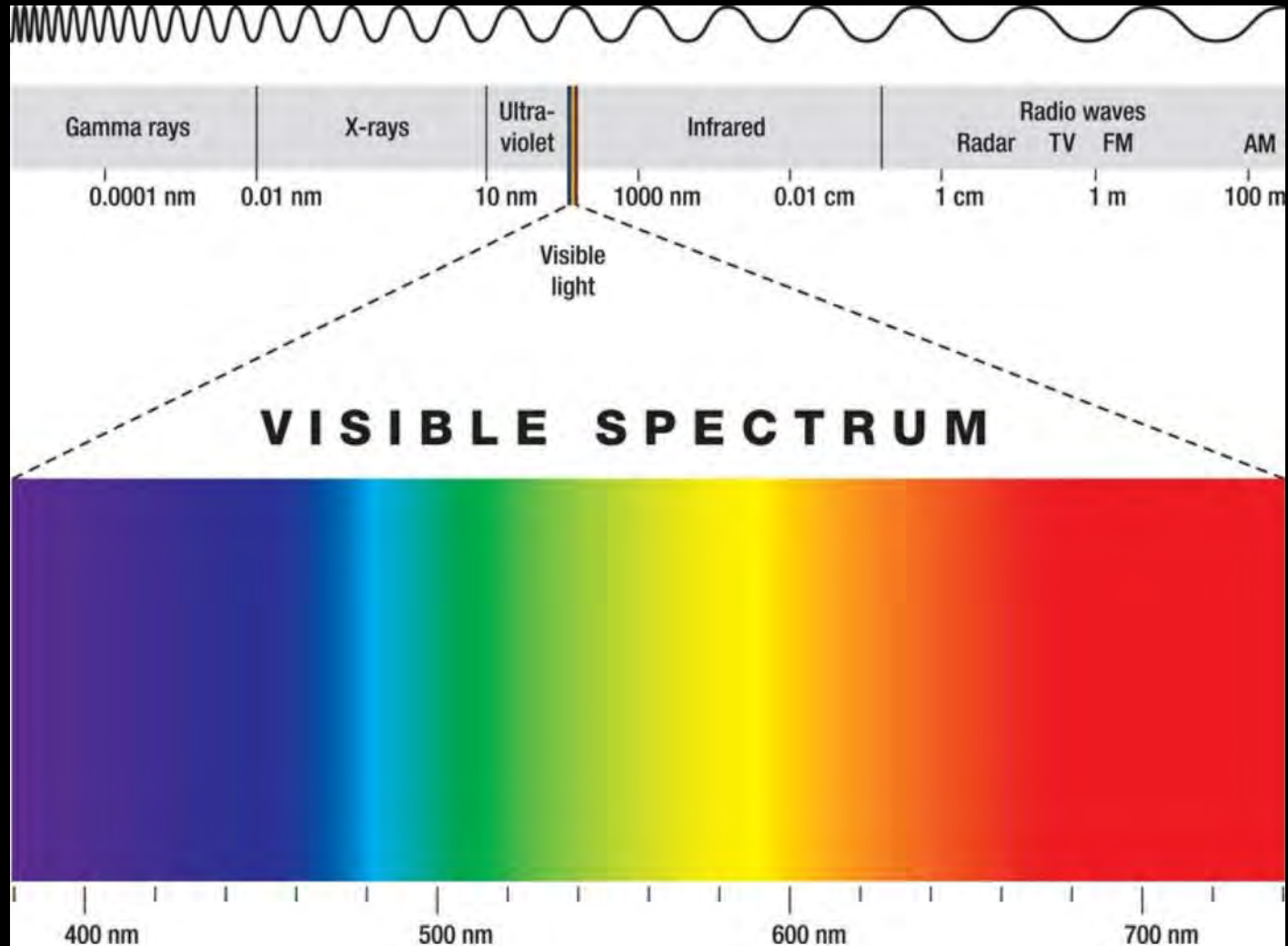
As you explore *Bruegel's "The Wedding Dance" Revealed*, look for ways in which the conservation professionals used the Electromagnetic Spectrum to learn about the artwork. Where you can, make notes in the boxes or along the wavelength image.

Be sure to note where X-rays, Visible Light, Ultraviolet and Infrared are found on the wavelength drawing in the center.



The Electromagnetic Spectrum

Conservators photographed *The Wedding Dance* with a specialized camera that detects infrared light—a type of light that humans cannot see with their eyes.



© PeterHermesFurian



Using an Infrared-Detecting Camera

Analyzing *The Wedding Dance* with an infrared-detecting camera allowed conservators to see beneath the paint.

Because every material responds differently to infrared light, much of Bruegel's paint became transparent, but the black chalk used to sketch the celebration did not.

Discovering Bruegel's initial drawing helped conservators better understand his working methods.



Using Technology to See What Lies Beneath

Like many artists, Bruegel started with a sketch called an underdrawing. As some of the paints degraded over time, the underdrawing began to show through.

Conservators used an infrared image and a high-resolution photo to make a digital tracing that approximates Bruegel's drawing.



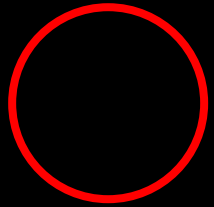
Bruegel drew the wedding guests before he painted them but sometimes changed his mind along the way.

Explore this image, taken with an infrared-detecting camera, to find out how the finished painting differs from the drawing.



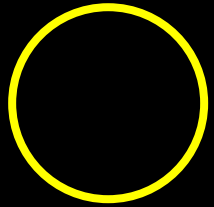
A Drawing Beneath the Paint

Bruegel experimented with several positions for this man's face.



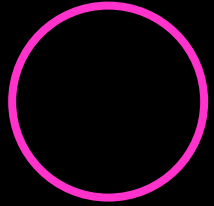
A Drawing Beneath the Paint

Bruegel drew the bride with a crown but painted her with a red headband.



A Drawing Beneath the Paint

Bruegel drew a feather on this musician's hat but decided not to paint it.



Infrared



Conservators used the infrared detecting camera to explore the question: “Why does the top section of *The Wedding Dance* look different from the rest of the painting?” Though visible in much of the painting, Bruegel’s detailed underdrawing doesn’t show through the paint anywhere along the top edge. Why not?

Bruegel's detailed underdrawing doesn't show through the paint anywhere along the top edge because it doesn't exist in this area of the painting.

Using an infrared-detecting camera to see through the paint layers, conservators found that the underdrawing stops just below the dark line.

That suggests Bruegel didn't plan for the painting to have a horizon line.

This clue, along with other information, led conservators to conclude that the top panel was added by another artist at a later date.



Analyzing Pigments

Here, the conservator is shown using a tool that looks at different substances that are present on the surface of an artwork.

Each substance that exists in the small area that is being examined can be identified based on what electromagnetic wavelengths are reflected or absorbed.

The area analyzed here reveals the pigments in the paint used in *The Wedding Dance*.



From Bug to Brush

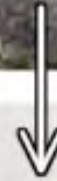
Looking at the electromagnetic spectrum, conservators discovered fascinating information about the origins of some of the pigments that Bruegel used.

Conservators found that one of the red paints contained insect dye. Further investigation revealed that the insect was an American species of cochineal (say co-chi-neal).

Cochineal has carried significant cultural and economic value for thousands of years in North and South America.



Cochineal insects

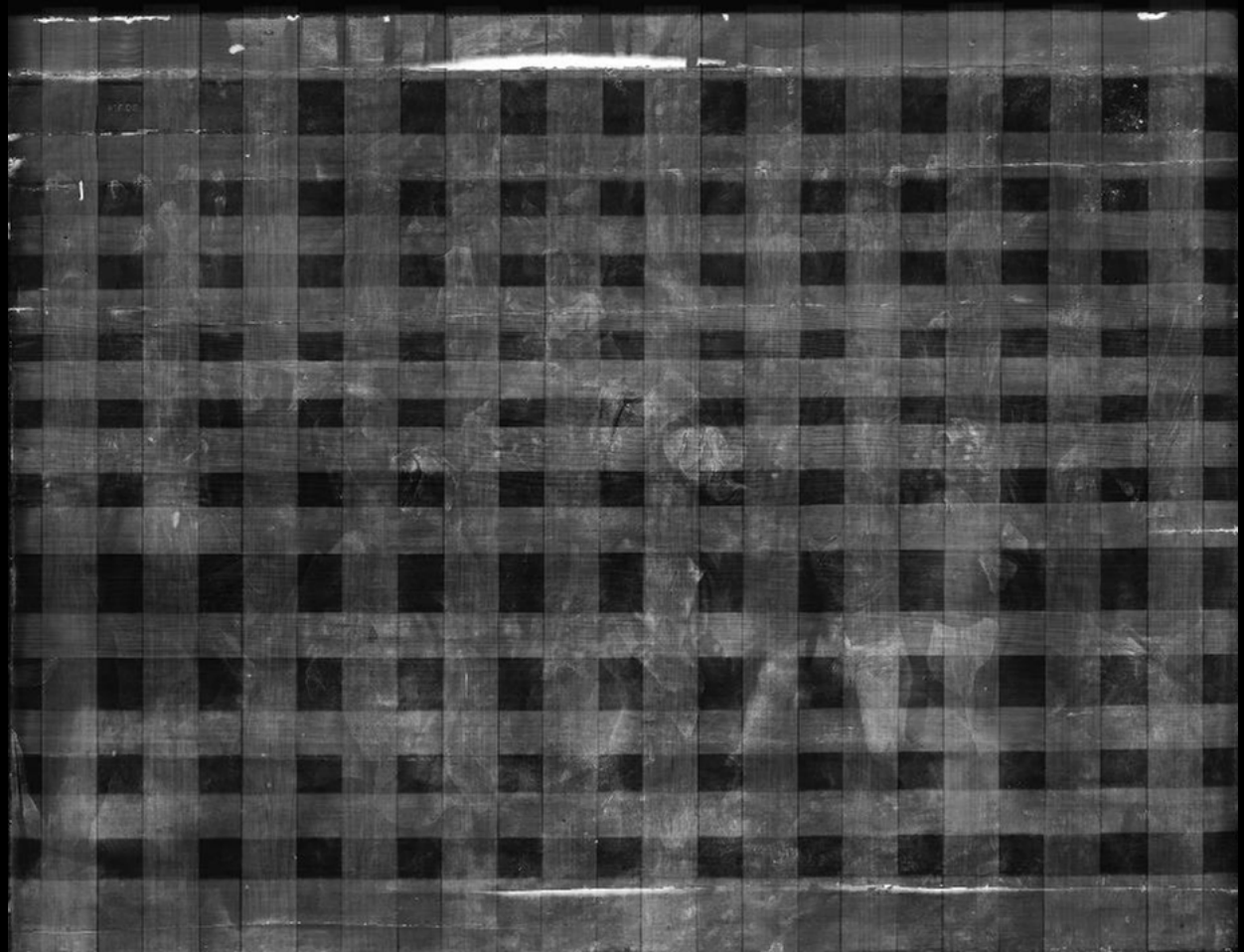


Laked cochineal pigment

Looking Inside

Take a look at this X-ray image of the back of *The Wedding Dance*.

What do you notice?

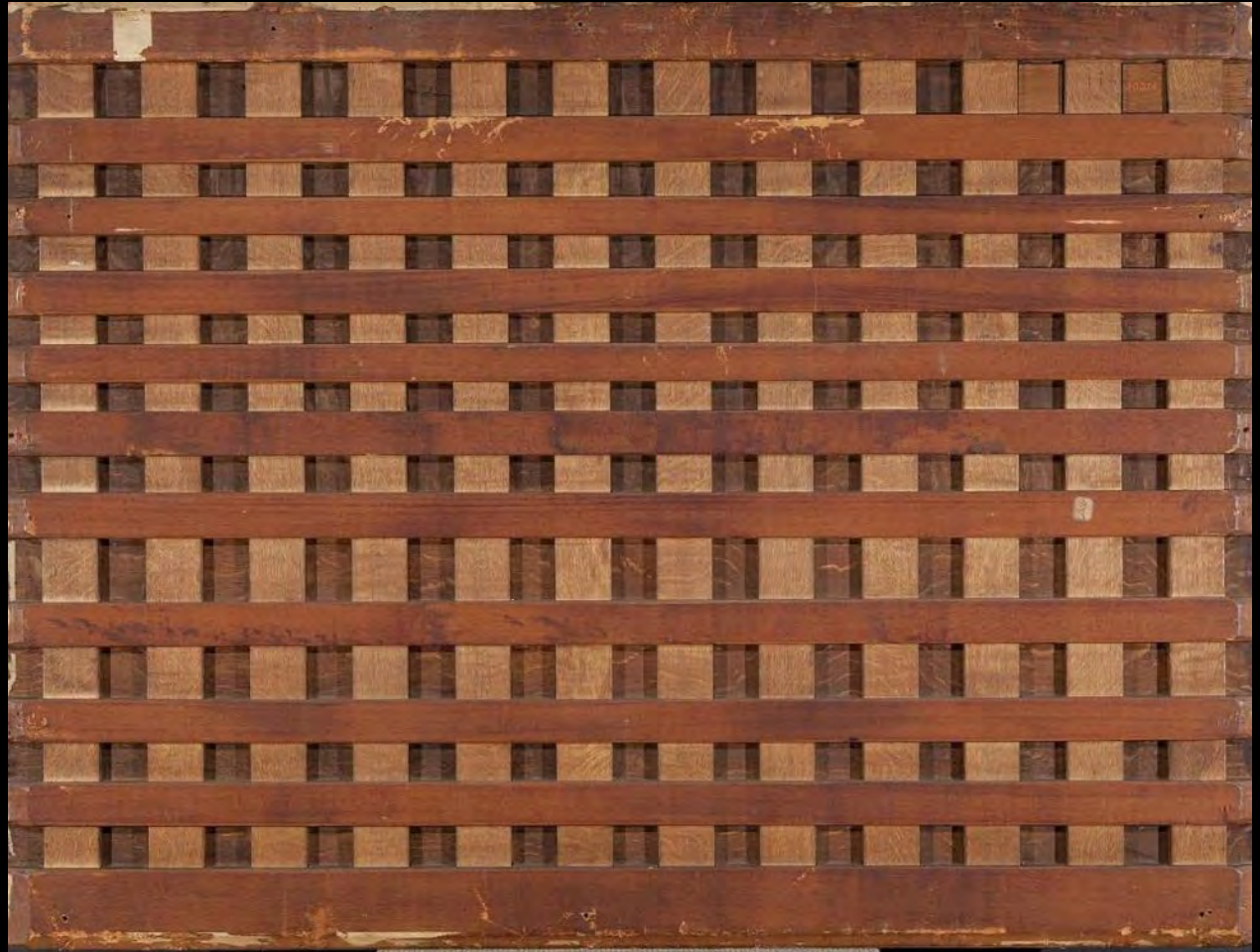


Supporting the Wood Panel

This grid-like wooden structure is called a cradle.

It was added to the back of oak panel to keep the wood from warping and cracking due to changes in temperature and humidity.

When conservators compared the cradle to those on other paintings, they found that it was made in the late 1800s.



X-Ray Analysis

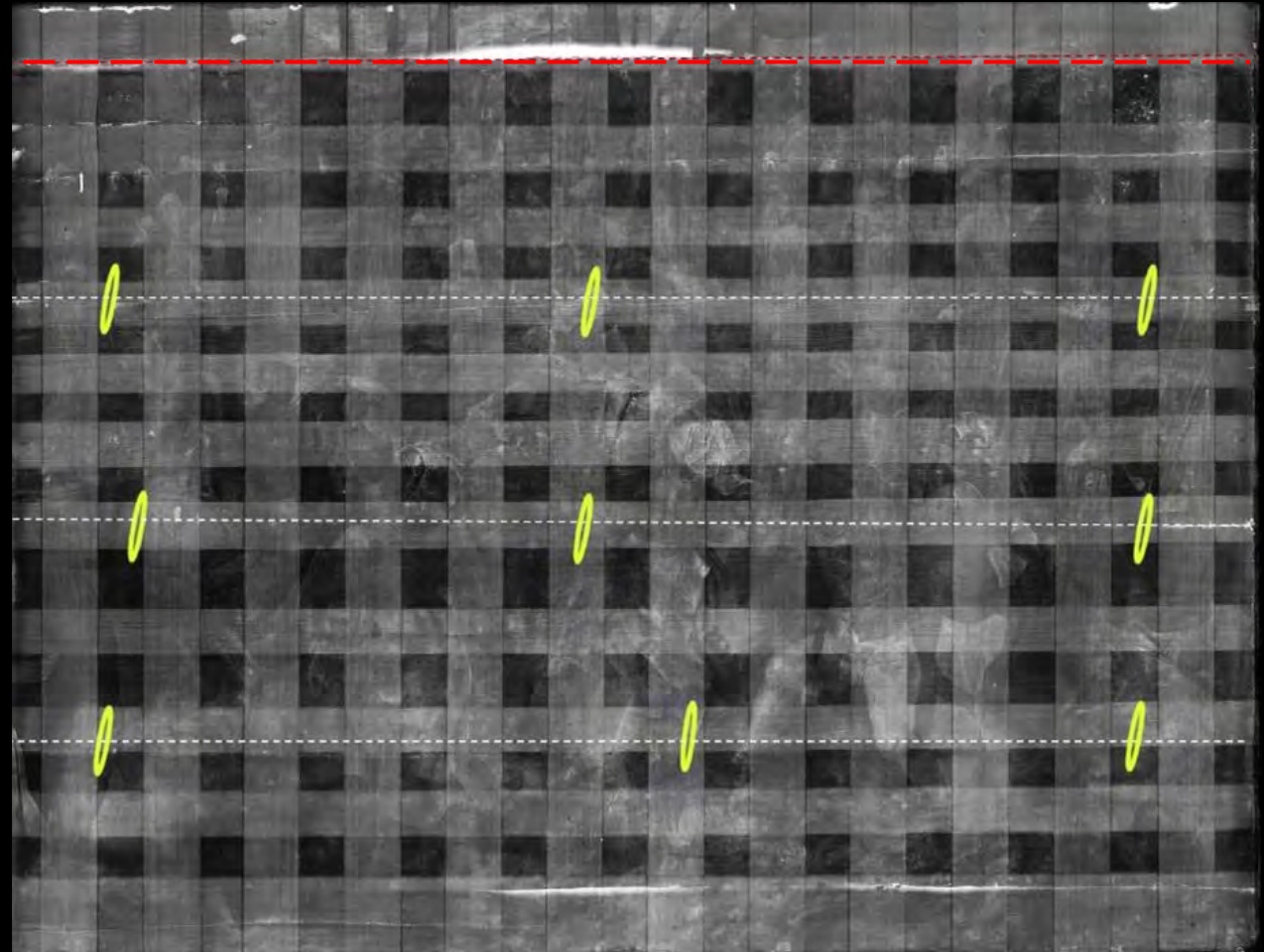
This X-ray image shows more than just the support cradle.

The dotted horizontal white lines indicate where the four boards are connected to make the single painted surface.

The topmost red dotted line shows where the additional top panel was added to Bruegel's original work.

Conservators discovered small dowels holding the painting's boards together to make one panel.

The small yellow markings indicate the location of the dowels.



These next slides use some of the techniques that harness the electromagnetic spectrum.

Each one tells conservators something different about Bruegel's work and *The Wedding Dance*.

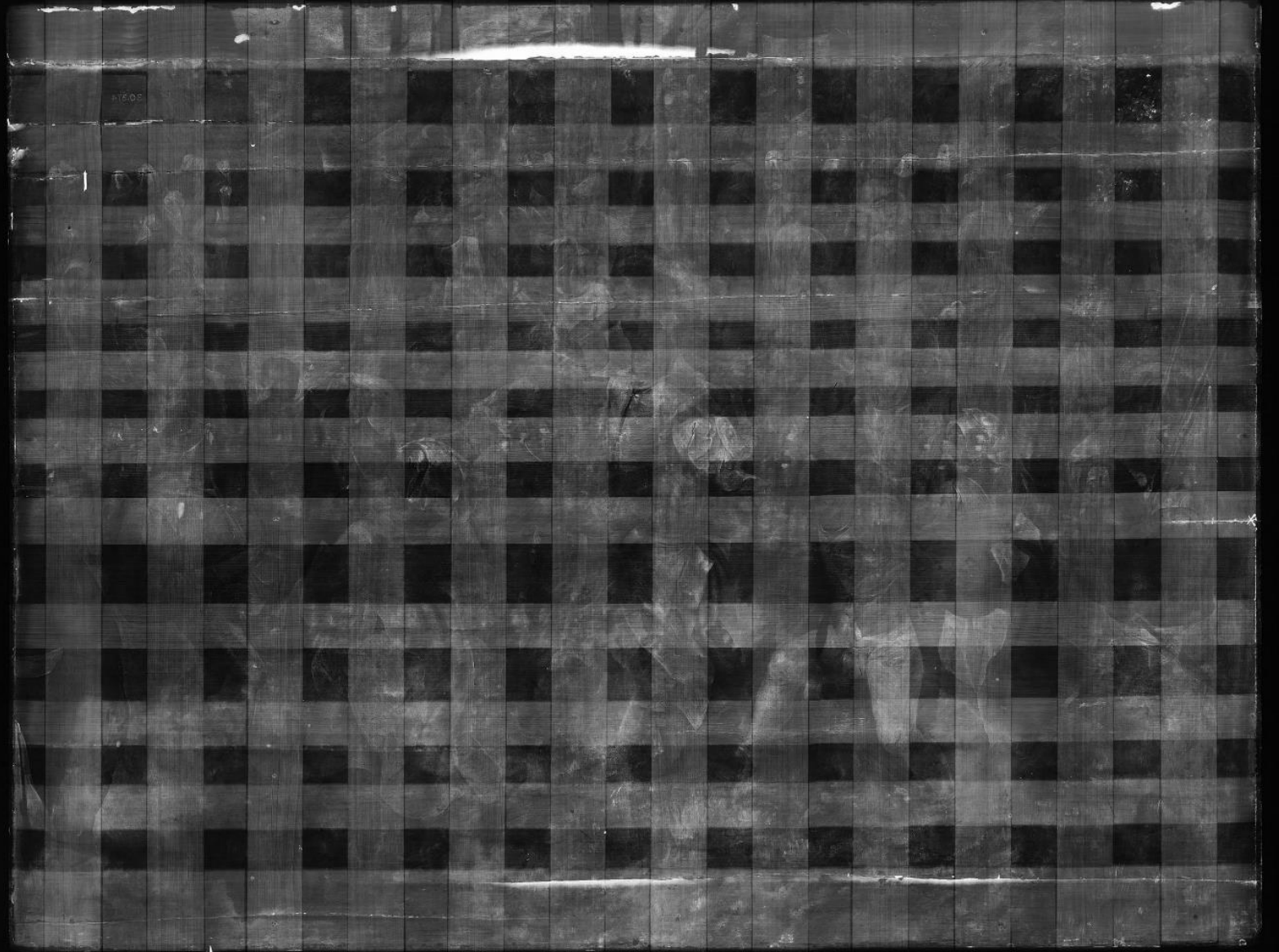
What might a conservator notice about each of these images?

What do you notice when you compare the images to one another?



X-Ray Analysis can reveal

- Changes in composition
- Painting underneath
- Brushstrokes
- Damages
- Support construction (nails, screws, cradles, dowels, etc.)



Ultraviolet analysis can reveal

- Varnishes or coatings (differences and irregularities)
- Pigment composition
- Repairs, restorations



Visible light images are the photos taken as we would see them through a standard camera.



Infrared Analysis can reveal

- Different pigments from one another
- Underdrawings
- Changes in composition
- Damage



Now it's your turn!

EMS Gallery Activity Handout

Names of Group Members: _____

Work of art title: _____ Artist: _____ Gallery: _____

Type of EMS Image: _____

(choose from X-Ray, Ultraviolet, or Infrared)

Image Set A

1. Describe one difference between the visible light image and the EMS image.

2. What do you think might have caused the difference between the two types of images? What might have happened? (see hints)

3. There might be an alternative explanation for what you see here. If you or your group members think of one, describe it here.

4. What questions could you ask a conservation professional at the Detroit Institute of Arts about this piece?



This resource was developed by Adina Rubenstein in collaboration with the Education Programs and Conservation teams.

