

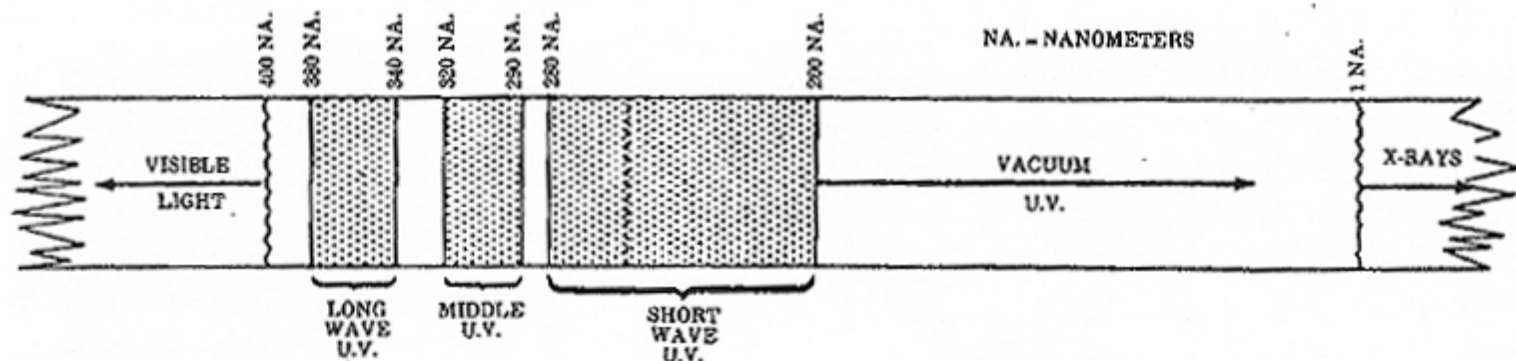
SUPPLEMENT III

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THE USE OF LONG WAVE ULTRAVIOLET LIGHT FOR INSPECTION OF WORKS OF ART

The use of long wave ultraviolet light, (in the 365 nanometer range), is unequalled in the detection of overpainting, repairs and forged signatures, in low level light conditions or complete darkness. At this wave length, many materials on the face of a painting absorb invisible ultraviolet energy and transform this energy to visible colored light, easily distinguished by the human eye. It is not reflected, but emitted light. In some cases it is absorbed without emission, making these areas appear quite dark in contrast to the fluorescent areas. This makes it an especially useful instrument in checking restoration work as it progresses. A chart at the end of this article gives several clues in the detection of altered art work.

First, a few facts concerning this mysterious invisible light called ultraviolet. It blends into visible light at one end (approximately 400 nanometers) and into X-rays at the other (approximately 1 nanometer) as illustrated in the following chart of a portion of the electromagnetic spectrum.



Long wave ultraviolet is approximately 340 to 380 nanometers; is harmless to the eyes and skin of the average healthy human and is often referred to as "Woods Light". It is the most important wave length in the examination of art and artifacts.

Middle ultraviolet is approximately 290 to 320 nanometers, being the shortest radiation to reach the earth from the sun and causing sunburn on the human skin.

Short wave ultraviolet, approximately 200 to 280 nanometers, will also cause sunburn and eye damage if not protected. It will produce fluorescence in many substances that do not fluoresce with long wave ultraviolet. It has a great many clinical and germicidal uses but its use in the art field needs more experimentation.

The long wave ultraviolet instrument used in art conservation should be a scientific instrument with all visible light filtered out. There are studio models as well as portable units. The latter are ideal for viewing art in auctions as well as museums. We have found a long wave ultraviolet light (366 nanometers) invaluable in viewing all art before appraisals or to inspect damaged paintings. Gainsborough Products Co., Ltd. is a distributor for the UVL-56, a hand held unit, and the M-16, a portable battery unit. An alert restorer or framer will find that it pays to examine all art work for hidden or concealed damage that he/she might be blamed for at a future date. The slightest erasure or alteration on a graphic or watercolor will stand out with extreme clarity. Many a forger of checks and legal documents has been apprehended by the "Magic Light".

There is also a new product, a set of eye goggles that increases the contrast and filters out the "blue haze" interference from an ultraviolet light source.

The following chart indicates what to look for when using the long wave ultraviolet light to inspect art work.