



NUCLEARON

TRINITITE VARIETIES

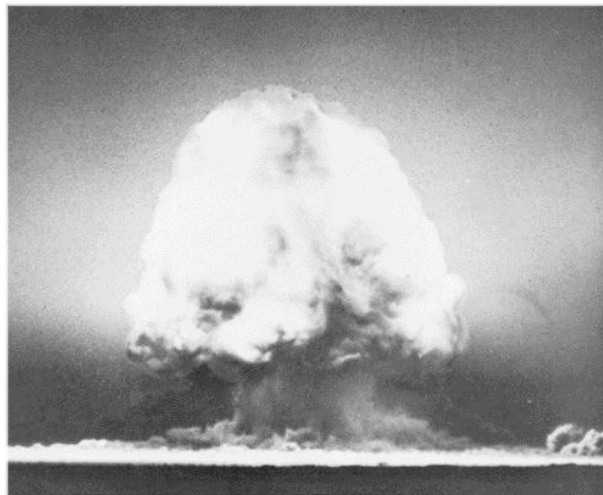
(Green, Red, Black & Pearls)

.....

**Written & compiled by
Steven L. Kay
Nuclearon**

As history has recorded, the morning of July 16, 1945 , at 5:29:45 AM “Mountain War Time” was a moment in America’s history that would bring about many changes in the way we looked at our world.

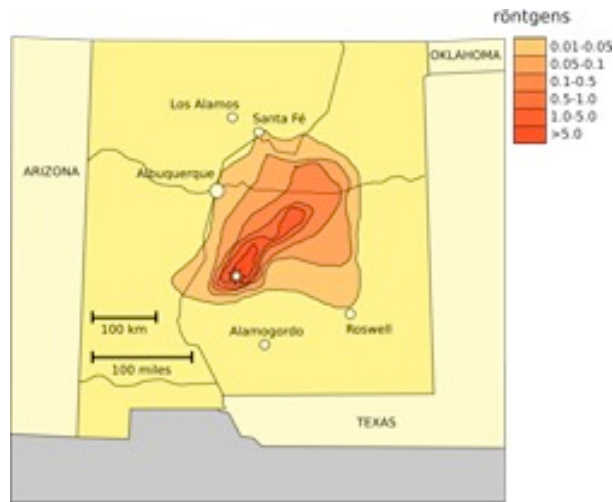
The device, or “gadget” as it was referred to was detonated on a New Mexico desert, a short distance from Socorro, New Mexico, with a energy equivalent of 20 kilotons of TNT.



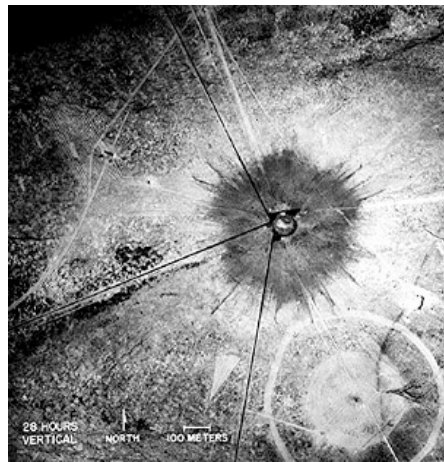
The resulting shockwaves from the detonation was felt by surrounding areas for a distance of 100 miles. The mushroom cloud was seen to rise to 7.5 miles high, and was reported to tower over the northeastern area of the test site for several hours. This was fortunate, as this allowed for most of the heavier contamination from the blast to fall in close proximity to the test site rather than spreading.

The measured results of the radioactivity of the cloud from the Trinity test was tracked and measured,

with high levels of radioactivity for a distance of 100 miles and approximately 30 miles wide as shown below (Hoffman 1947):



The first Atomic detonation, known as the “Trinity Test”, left a crater of glass in the New Mexico desert approximately 10 feet deep and 1100 feet wide. the glass was originally given the name “atomsite” , but later was called “trinitite”



As mentioned, the blast left a crater of “glass”, it became one of the more popular remaining effects of the test, and even at the time a popular souvenir of the “Trinity Test”.



NEW MEXICO ATOMIC JEWELRY is worn by Levey Pat Burdge of Fort Worth, Tex., who will reign at the "Night in Paradise" at the United Seaman's Service club in New York October. She is shown holding the palladium jewelry inset with atomsite, the substance formed on the ground at the scene of the first atomic bomb test, in New Mexico.

Handwritten signature and date: 2/25

It should be mentioned here, that at first it was thought that this "glass" or Trinitite was formed as a result of the intense heat of the fire ball simply melting the underlying desert sand, but much later studies & evidence have shown that this was, perhaps, not exactly accurate.

As recent as the Fall of 2005, two scientists from Los Alamos National Laboratory published a new theory or report on the formation of Trinitite, in an issue of "Nuclear Weapons Journal"

The two scientists, Robert Hermes and William Strickfaden, noticed from their examination of the Trinity Test area, "they were puzzled by the presence of spheroids within the trinitite itself".

"These spheroids looked like little droplets and suggested that instead of being baked below the explosion like a giant trinitite brulee, the desert sand was first scooped up into the fireball. Inside the mushroom cloud, the melted sand behaved just as water does in a regular cloud: tiny droplets aggregated into bigger droplets that became too heavy to remain suspended and fell as a rain of molten glass."

"Much of the layer was formed not on the ground, but by a rain of material injected into the fireball that melted, fell back, and collected on the hot sand to form the observed puddles of trinitite, especially within the radius of the hottest part of the event," the study concluded. "After falling to the ground, the top surface of the trinitite layer was still heated somewhat by the fireball and thus developed a smooth surface."

"It is an interesting idea that explains away some problems with the old, common-sense view that hasn't really been examined since 1945."

I suggest that anyone interested in Trinitite or collecting Trinitite, to read in full the

- **New Theory on the Formation of Trinitite** -
www.wsmr.army.mil/pao/TrinitySite/NewTrinititeTheory.htm

I also suggests all Collectors of Trinitite to familiarize themselves in general with Trinitite **before** purchasing any specimen's by reviewing:

Trinitite by wikipedia

<http://en.wikipedia.org/wiki/Trinitite>

&

Trinitite-ORNL-

www.orau.org/ptp/collection/hiroshimatrinity/trinitite.htm

The purpose here is not to offer an in-depth report on Trinitite, but rather to simply offer an overview to the reader a brief description on it's formation and variations of its physical appearances and colors as Trinitite is mostly referred to in general and publications and on the Internet as simply as the green glass formed by the first atomic bomb, and rarely is there any mention or for that matter, photo's of the other types of Trinitite .

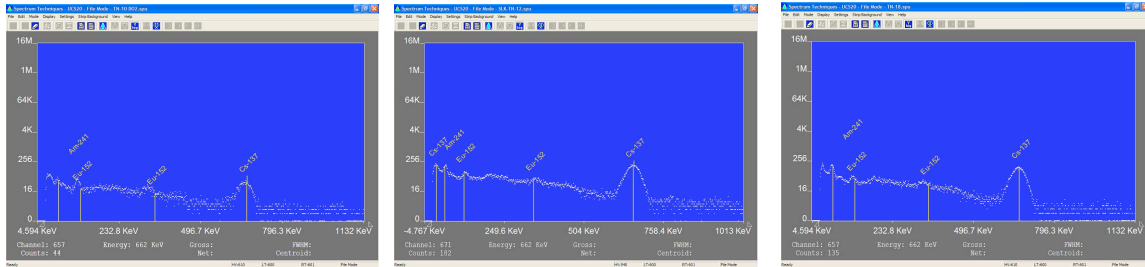
Although, to simply write that Trinitite appeared in different colors, would be a trivial subject. The fact that it indeed had these varying colors, it is interesting to note these colors were dictated by the content that was infused within this material to create the color.

It also serves as a topic of interest to anyone who collects Trinitite such as myself to know what these color variations mean, and how they came to be.

GREEN TRINITITE

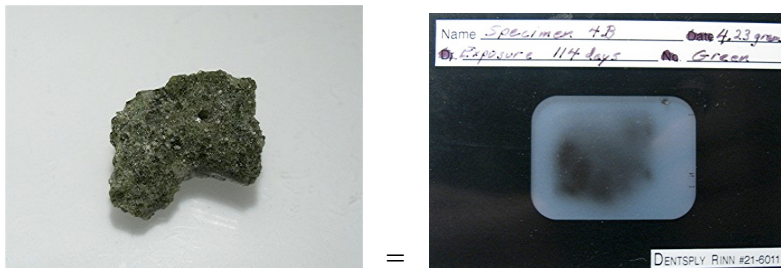
Green Trinitite was the most abundant, and therefore gives reason as to why the collector even these days can still locate a respectable piece of green Trinitite for sale, although even this is becoming more and more harder to find. The color is attributed to its content of iron.

Below each image of green Trinitite, I have included the specimen's Spectrum Analysis to show the evidence of fission byproducts still present in the specimens:



Trinitite: Steven L. Kay Collection

Below is a simple Radiograph of a 4.23 gram specimen of typical green Trinitite that was exposed face down on a plate of Dental X-Ray film for a period of 114 days.



RED TRINITITE

Red Trinitite, rarely seen and highly collectible, is practically impossible to find by the collector and if found would demand a higher price.

The color according to various sources and studies is attributed to its high content of copper. Red Trinitite such as this is due to copper inclusion from the wiring of the “gadget” itself or from the many communication cable wiring that was used in the test itself .

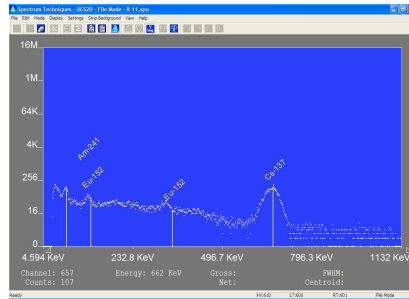
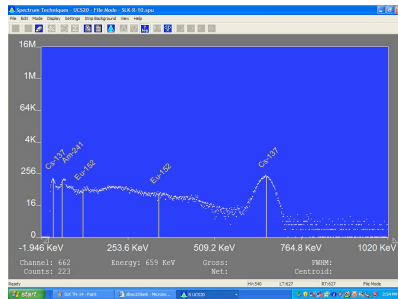
In the report by Clarence S. Ross, U. S. Geological Survey, Washington D. C. titled,

“OPTICAL PROPERTIES OF GLASS FROM ALAMOGORDO, NEW MEXICO” in this report it is stated as follows: *“One small area was characterized by glass which is “oxblood red” in a hand specimen, Thus it is evident that both the red and the gray colors are due to*

dispersed copper, the differences in color representing the degree of dispersion of the copper. The copper was probably derived from copper wire as copper minerals are not evident in the original arkosic sand”

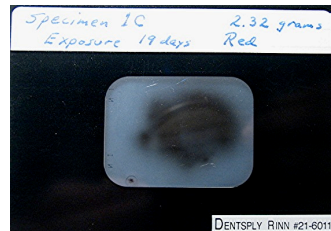
Below, are two red Trinitite specimen’s from my collection that illustrate the “Ox-Blood” coloring known as red Trinitite

I have also included the Spectrum Analysis for each specimen, again to show evidence of the fission byproducts are still present in the specimen's :



Trinitite : Steven L. Kay Collection

Below is a simple radiograph produced using a 2.32 gram specimen of red Trinitite placed face down on a plate of dental X-Ray film for a period of 19 days



BLACK TRINITITE

Black Trinitite-This color of Trinitite as far from a collector's standpoint, is hardly ever seen or obtained. I acquired one small piece for my collection from a private source & collector who had access to the site during the days when obtaining trinitite at the test site was a possibility. The deep color of a dark black is of course mainly attributed to the content of iron also, it has been mentioned from the tower itself?

TOP

BOTTOM



Trinitite : Steven L. Kay Collection

“A number of different types of Trinitite have been identified. Green is the most common form. *Black contains iron from the tower structure*. Red contains copper from the ‘gadget’ itself or from the communications cables which led away from the site. Rounded pearls are also found which come from melted silica that returned to solid form before hitting the ground.” Source [wikipedia](https://en.wikipedia.org/wiki/Trinitite)

TRINITITE PEARLS

Trinitite Pearls, these are probably the most difficult to locate for any collector, or come by and are very important specimens as they truly demonstrated the solidification of this melted silica material while airborne, before reaching the desert floor or ground level. Therefore accounting for their almost uniform round shape.



The above specimens of Trinitite Pearls are not part of the author’s collection, and therefore cannot offer a Spectrum Analysis to illustrate their activity and byproduct content.

Conclusion

I hope the above report serves as some assistance to inform the general public and collector alike as a reference of the variables in this fascinating and historical material which became the first man-made mineral, as a result of man’s endeavor to harness the power of the Atom and bringing America in to the “Atomic Age”

I also felt it was necessary and overdue for a report such as this to finally show all who are interested in Trinitite to finally have some reference to the types of Trinitite, other than just simple text description but rather to offer the reader some visual reference too.

Copyright © 2008 NUCLEARON

**No part of this page may be reproduced, published without written or expressed
consent from Author**