# Preliminary Analysis Report on Utah Uraninite Sample- Before and After Exposure to Scalar Wave Device Invented by John Hutchison
# 3 May, 2012
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## Experimental Procedure

A small (~1 cm X 1 cm X 0.5 cm) chunk of Utah uraninite was broken off of the main mass and tested for radioactivity using a CDV-700 geiger counter.
The sample was then sent to John and Nancy Hutchison. The smaller chunk of uraninite was exposed to scalar electromagnetic radiation from a device which was designed to accelerate radioactive decay. The exposure time was approximately 30 days, during which time the sample changed visibly in appearance, and became less black, with some golden yellow hues.
After exposure to the device, the smaller sample was sent back to the author and re-tested on the CDV-700 counter.
Small pieces of both the main mass of uraninite and the exposed uraninite chunk were then broken off, mounted on aluminum posts with carbon tape, and analyzed by Energy Dispersive X-Ray (EDX) elemental analysis.

## Results
## Geiger Counter Testing Data

Before exposure to the scalar radiation, approximately 75,000 counts per minute (cpm) were detected with the sample 0.5 cm from the detector tube, and the tube window open. After exposure, approximately 50,000 cpm were detected from the sample, under the same conditions as before.

## EDX Data

Figures 1 and 2 show the EDX spectra of the sample before and after exposure to the scalar radiation from John Hutchison's device. Elements detected in the sample before exposure included carbon (C), oxygen (O), magnesium (Mg), aluminum (Al), silicon (Si), calcium (Ca), vanadium (V), manganese (Mn), iron (Fe), and uranium (U).
Several more elements were detected in the exposed uraninite sample (Figure 2), including sulfur (S), potassium (K), titanium (Ti), copper (Cu), gold (Au), and lead (Pb).
Tables 1 and 2 show approximate percentages of each element detected.

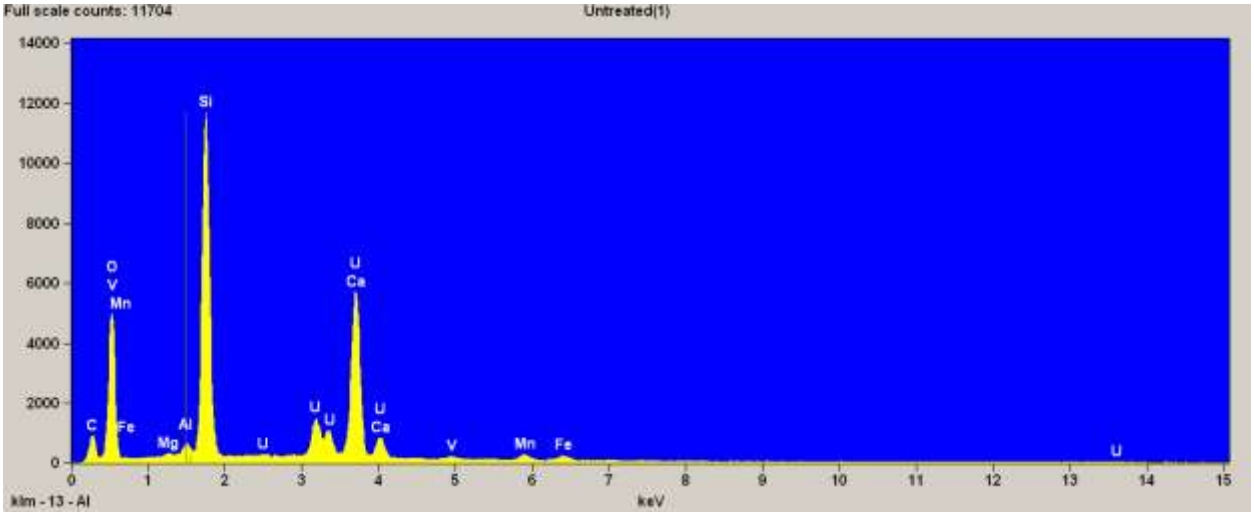


Figure 1-EDX of Uraninite Sample Before Exposure to Scalar Electromagnetic Radiation

Table 1-Quantitative EDX Data for Uraninite Sample Before Exposure to Scalar Electromagnetic Radiation

Thu Apr 26 15:14:10 2012
Filter Fit  Chi-squared value:  2.350  Errors:+/-1 Sigma
Correction Method:  Proza (Phi-Rho-Z)
Acc.Voltage: 20.0 kV  Take Off Angle: 30.0 deg

| Element Line | Element Wt.% | Wt.% Error |
|---|---|---|
| C K | 16.06 | +/-0.32 |
| O K | 59.08S | --- |
| Mg K | 0.09 | +/-0.01 |
| Al K | 0.29 | +/-0.01 |
| Si K | 10.04 | +/-0.04 |
| Ca K | 8.15 | +/-0.05 |
| V K | 0.28 | +/-0.03 |
| Mn K | 0.57 | +/-0.05 |
| Fe K | 0.52 | +/-0.03 |
| U M | 4.93 | +/-0.12 |
| Total | 100.00 | |

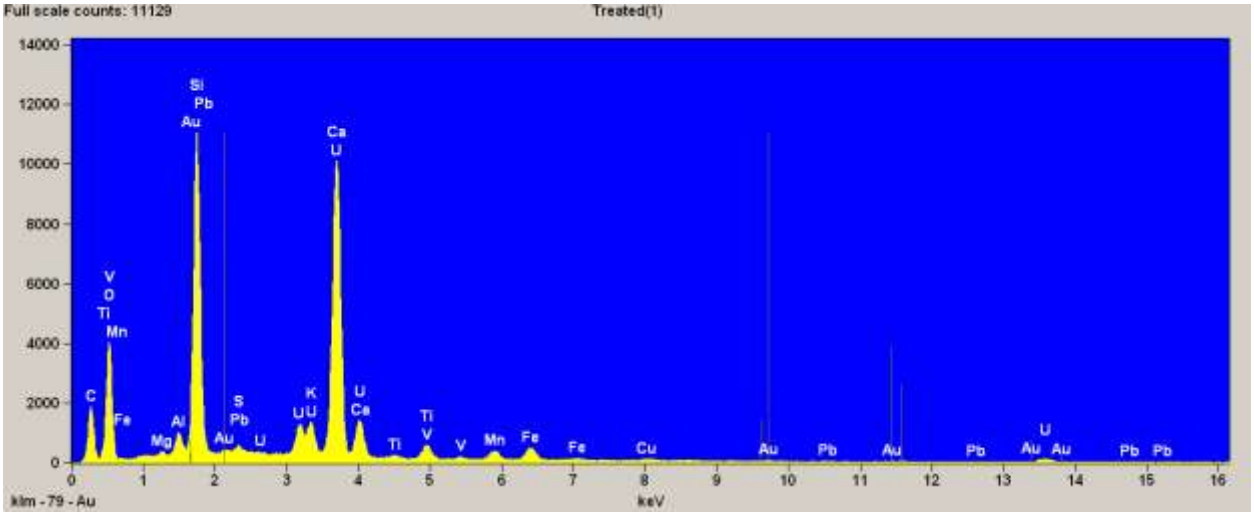

Figure 2-EDX of Uraninite Sample After Exposure to Scalar Electromagnetic Radiation

Table 2-Quantitative EDX Data for Uraninite Sample After Exposure to Scalar Electromagnetic Radiation

Thu Apr 26 15:30:43 2012
Filter Fit Chi-squared value: 2.012 Errors:+/-1 Sigma
Correction Method: Proza (Phi-Rho-Z)
Acc.Voltage: 30.0 kV Take Off Angle: 30.0 deg

| Element Line | Element Wt.% | Wt.% Error |
|---|---|---|
| C K | 39.40 | +/-0.46 |
| O K | 37.98 | +/-0.34 |
| Mg K | 0.14 | +/-0.01 |
| Al K | 0.54 | +/-0.01 |
| Si K | 7.33 | +/-0.03 |
| S K | 0.15 | +/-0.01 |
| K K | 0.31 | +/-0.01 |
| Ca K | 7.71 | +/-0.04 |
| Ti K | 0.08 | +/-0.01 |
| V K | 0.56 | +/-0.02 |
| Mn K | 0.40 | +/-0.02 |
| Fe K | 0.59 | +/-0.03 |
| Cu K | 0.13 | +/-0.02 |
| Au L | 0.26 | +/-0.05 |
| Pb L | 0.21 | +/-0.07 |
| U L | 4.21 | +/-0.30 |
| | --- | |
| Total | 100.00 | |

## Discussion

The lower specific activity of the uraninite sample after exposure to the scalar radiation is consistent with acceleration of radioactive decay of the decay products of uranium, which are responsible for most of the detected radioactivity of natural uranium samples. The level of activity in each of these samples should be confirmed using a scintillation counter, for more accurate data on specific radioactivity.

The presence of lead in the experimental (exposed) sample is also consistent with this hypothesis, as lead 206 ($Pb^{206}$) is the normal, stable, decay product of the uranium radioactive decay series (Figures 3 and 4).

The presence of gold in this sample is more difficult to explain, as gold is not normally formed in the decay of actinides, such as uranium, and its formation would require that "exotic" nuclear reactions, which do not normally occur, were active in the experiment.

The presence of gold and lead in the exposed samples should be confirmed by the use of Inductively Coupled Plasma Mass Spectrometry (ICP-MS) trace element analysis.

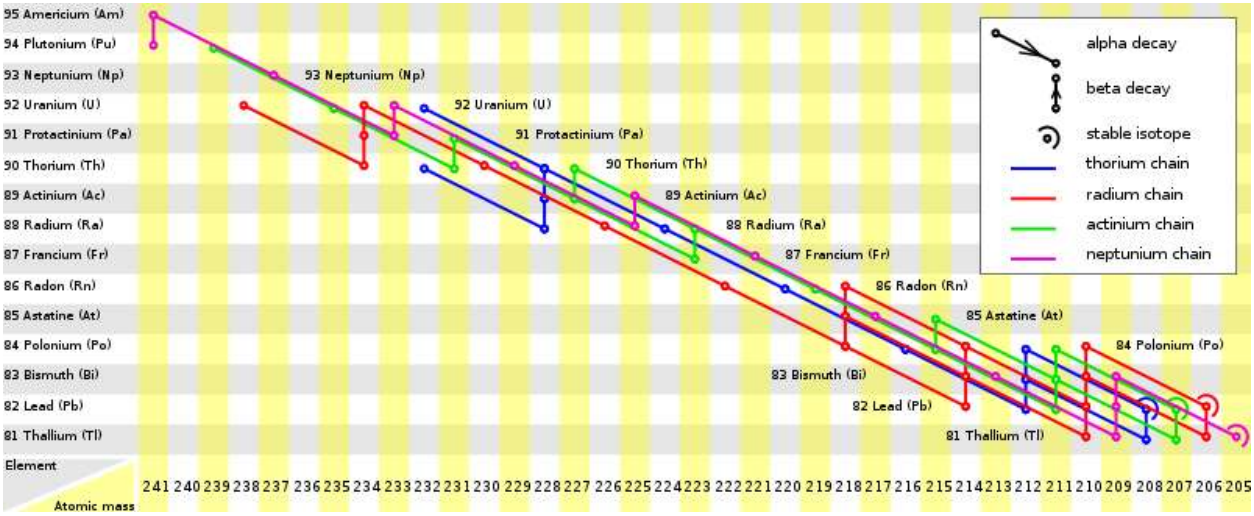


Figure 3-Known Actinide Element Radioactive Decay Chains

A possible mechanism for the production of gold from uranium would involve the gain of a proton by uranium 238 ($U^{238}$, abundance in natural uranium 99.3%), and the simultaneous loss of two neutrons by exchange with another nucleus (perhaps silicon, or potassium), producing neptunium 237 ($Np^{237}$).

This type of nuclear reaction would not normally occur at anywhere near room temperature, but similar events have been reported in the course of cold fusion research. This would be a type of low energy nuclear reaction (LENR).

If the decay of the neptunium (Figure 4) were accelerated by scalar wave bombardment, bismuth 209 ($Bi^{209}$) would result. $Bi^{209}$ is known to be an alpha emitter, with an extremely long half-life, which decays to thallium 205 ($Tl^{205}$), which is thought to be stable.

Calculations indicate that several isotopes heavier than tungsten are thermodynamically unstable, with respect to alpha decay, so it is not unreasonable to postulate that, under scalar wave bombardment, the alpha decay may continue; first, gold 201 ($Au^{201}$)would be formed, then iridium 197 ($Ir^{197}$).

$Ir^{197}$ would then beta decay to platinum 197 ($Pt^{197}$), which would also beta decay to stable $Au^{197}$ (natural gold is monoisotopic, and gold has only one stable isotope).

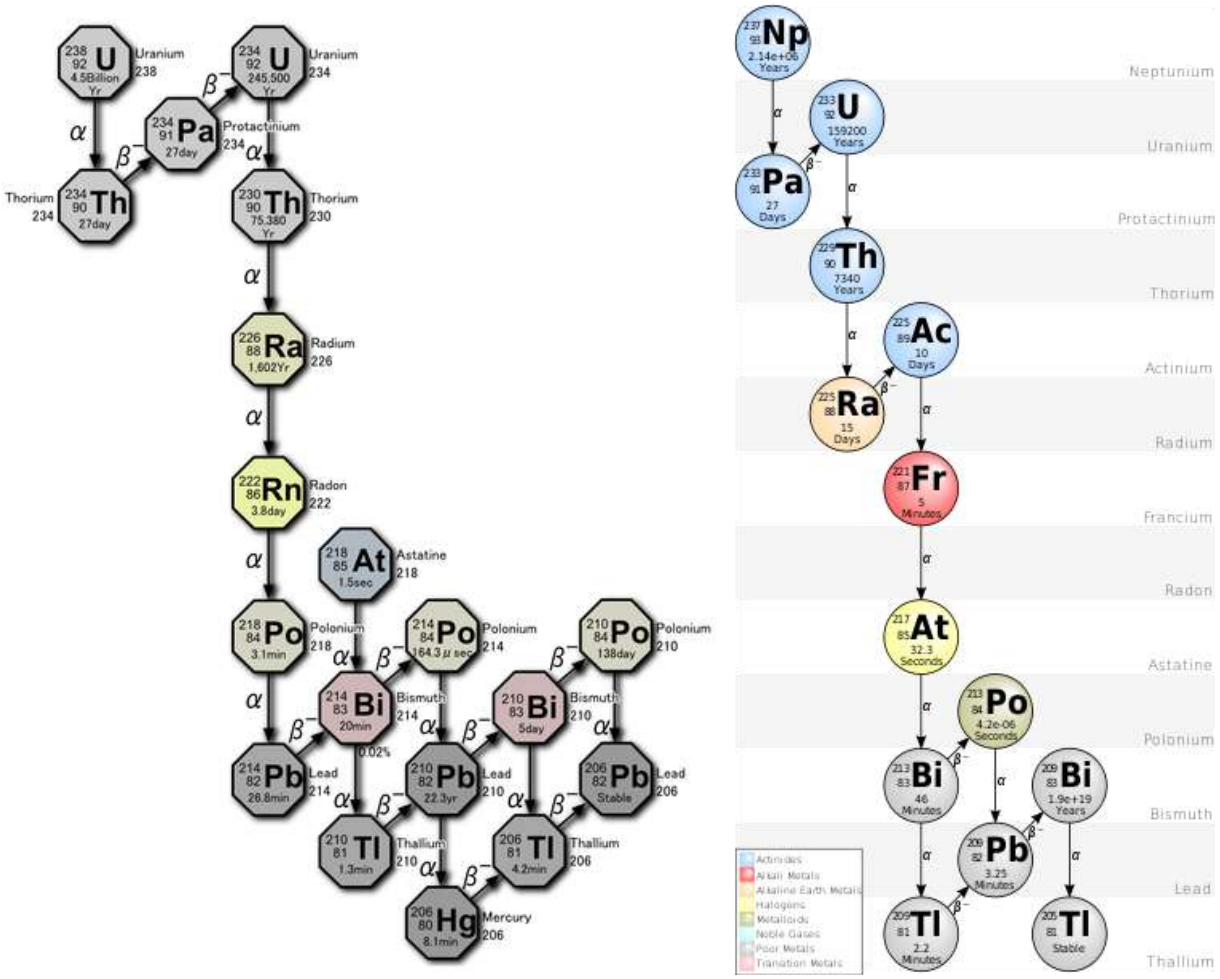


Figure 4-Uranium Decay Chain (left) and Neptunium Decay Chain (right)

## Preliminary Conclusions

1) EDX analysis indicates the presence of gold, lead, and several other elements which were not previously present, in the sample of uraninite exposed to John Hutchison's scalar wave radioactive decay accelerator device.
2) The presence of lead, as well as the lower specific activity of the sample which was exposed to John's device is consistent with an extreme acceleration of the normal process of the radioactive decay of uranium and its decay products.
3) The presence of gold is more difficult to explain, and could result from a proton-neutron exchange reaction of uranium with other nuclei to form $Np^{237}$, followed by an accelerated Np radioactive decay chain, followed by alpha decay of nuclei lighter than bismuth, which are normally thought to be stable.
4) These results should be confirmed by the use of more sensitive analyses for radioactivity and elemental concentration, such as scintillation counting and ICP-MS.