ECONOMIC AND PHYSICAL ASSESSMENT OF MANGO METAL PARTNERSHIP'S CARIBBEAN SALVAGE

BY JOE E. CHAMPION

SEPTEMBER 1996

Preface

To whom it may concern,

When reviewing this report I suggest that one applies an open mind to its contents, for without any doubt, the discovery made by Mango Metals Partnership will be a pivotal point in our social and economic history.

As we near the end of this century, many new advancements in physics are being incubated. One area of obscured research is the formation of new elements using low energy nuclear transmutation. In general terms this translates to having the ability of changing one metal to another. Yes, the ability to produce gold and other valuable metals from metals of a lesser value.

One could use the term "alchemy" and would not be far from the truth as it relates to the cargo of this unknown ship of the 1800's.

For some reason the Spanish[1] decided to carry over 40,000 pounds of material from Central or South America back to their Country, which when reviewed by science in its true singular sense has the appearance of common limestone. This material when tested in its singular state by respected laboratories shows that no intrinsic value exists to this elusive cargo. However, when this material is properly prepared and mixed with lesser metals such as lead, a transformation appears and macro quantities of gold and platinum are produced.

One may call it what they wish, but the reality of this discovery is so frightening real that if misused, could cause the economic structure of our society to collapse. One would question this by asking -- "How much gold could one produce from this cargo?" That is the incorrect question, for the importance is not in how much of this cargo is under the ocean, but can it be replicated?

The somber answer to this question is - yes. It is for this reason that I pray that this document remains intact and is not copied or circulated to third parties.

Joe E. Champion

[1] The determination of Spanish origin is based on the artifacts found at or near the wreckage.

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INTRODUCTION

THE SEVEN STEPS TO CHURCH

It is a well-established fact that the Europeans have been advanced in the art of metallurgy for centuries. The Spanish are no exception to this fact.

Having said this, the Spanish developed a series of protocols that allowed for the accelerated collection of precious metals by blending selective ore bodies. Was this the start of metallurgical science, or the foundation for low energy nuclear transmutation *(alchemy)?*

The *Seven Steps to Church is* a translation from the title of a Spanish process which utilized seven steps in the formation of precious metals, with the emphasis being gold. What one will find of interest if they study the process is that even the Spaniards recorded that during the process, they would not see the presence of any precious metals until the second step. And from that point forward the gold would appear to manifest itself.

Did they find the elixir which caused the formation of precious metals? At this time I would have to say, without question, the answer is yes. To understand the mechanisms involved, the following report provides the fundamentals of how the 40,000 pounds of material discovered by the Mango Metal Partnership plays an intrinsic role as part of the *Seven Steps to Church*

THE FOLLOWING REPORT

ECONOMIC AND PHYSICAL ASSESSMENT OF MANGO METAL PARTNERSHIP'S CARIBBEAN SALVAGE

IS THE PROPERTY OF MANGO METAL PARTNERSHIP

PREPARED BY JOE E. CHAMPION
SEPTEMBER 1996

Scope

The Mango Metal Partnership requested a concise report to determine the deposition of the material salvaged from an approximate 100 year old wreckage of one or more vessels in the Bahamas. The material consists of various types of metallic artifacts, barrels of a gray siliceous metallic matter and black rocks. It is my understanding that the material was found in less than 50 feet of water and at points throughout history the material could have been exposed to air.

Without stating, there are always estranged stories and myths surrounding archeological finds, and these myths seem to become enhanced when a shipwreck is involved. The particulars surrounding this discovery have until this point been embellished with an aura of mysticism and unknowns that have caused untold mental anguish on its discoverer and people associated with the disposition of the cargo for the past six years. Hence the purpose here is to separate the facts from fiction regarding this discovery.

Physical History

Since the purpose of this report is to determine the physical properties of the discovery, I will forgo any attempt to report its discovery and/or recovery.

As mentioned the discovery is divided into three general categories which are further defined as follows:

1) Metallic Artifacts

   a) Cannons

   b) Cannon balls

   c) Trunnions, fittings and associated metallic pieces

   d) Assorted metallic bars

2. Gray material

   a) Approximately 140 barrels with an average weight of 400 pounds of gray siliceous material.

3. Black rocks

    a) Approximately four tons of a siliceous rock which is not indicative of the local geological formation.

Since 1990, fractions from each of the pre-mentioned have been analyzed by various technologies and have indicated everything from millions of dollars of value, to the only the historical value of similar artifacts.

Analytical History

The following is based on documentation supplied by Mr. David Econopouly a principle of Mango Metal Partnership.

December 1990 -- Vern McMahon, Ph.D. of Auro Research Laboratory tested an unknown bar from the metallic artifacts. The results obtained by electromagnetic assay(?) said that the bar contained ~37.81% by weight of rhodium metal.

January 1992-- Mr. C.W. Ammens[2] reported that the bars contained an average of 38% rhodiurn metal. Type of analysis was not released.

July 1992 -- Mr. Dayne Chastian, an independent assayer and refiner reported the following:

- Cannon ball -- Gold, Rhodium and Iridium in concentrations of 30-40% with gold being the predominate metal.
- Black Rock -- Gold, Rhodium and Iridium in concentrations of 30-40%.
- Rock Samples -- Gold, Rhodium and Iridium in 3-4% quantities.

No mention was made as to the type of analytical procedure utilized in the report. However, in a subsequent telephone conversation prior to this report, Mr. Chastian reported that he used standard digestion technologies with resin collection (final collection in lead), collection in copper and electro-dligestion (also an industrial standard process) and direct scorification and cupellation

[2] C.W.Ammens is a respected metallurgist and his practices are in line with those. of the Colorado School of Mines. He is also author of "Recovery and Refining of Precious Metals", Van Nostrand Reinhold, copyright 1984

September 1992 -- Mr. Zig Bremmer and associates from Germany, all of Bremmer Technology Corporation, Scottsdale, Arizona reported the following:

Element	Cannon	Cannon Ball
Pt	67.00%	42.00%
Au	2.40%	3.40%
Pb	5.00%	3.00%
Ir	1.60%	0.21%
Rh	0.17%	0.44%
Fe	6.50%	0.10%
Ag	0.24%	0.15%
Pd	0.19%	0.11%
Sn	0.17%	0.03%
Cu	0.10%	0.13%
Ru	0.02%	0.00%

Element	Cannon	Cannon Ball
Pt	50.00%	50.00%
Au	2.10%	4.70%
Pb	4.00%	3.70%
Ir	0.70%	2.00%
Rh	0.58%	0.60%
Fe	0.33%	0.20%
Ag	0.16%	0.25%
Pd	0.16%	0.13%
Sn	0.18%	0.08%
Cu	0.00%	0.08%
Ru	0.02%	0.03%

Here one can observe a repeatability of analysis. However, please note that the samples were prepared by scorification in lead then analyzed by a Direct Coupled Plasma Electron Spectrometer (DCP).

In an explanation letter Mr. Bremmer noted that the platinum was in a form of clusters and could not be considered as "free metals." He continued by stating, if you want to break the metallic clusters it is necessary to use Bremmer Technology.

September 1992 -- The Institute for Spectrographic Research reported that samples from the cannon and cannon ball were analyzed by X-ray florescence and they found a high concentration of gold and the platinum metals.

November 1993 -- Analysis by an unnamed laboratory reported the qualitative presence of elements as follows:

- Tan Sample (clay) -- magnesium, aluminum, silicon, chlorine, calcium and a trace amount of iron
- Cannon -- iron (no other metals reported)
- Black Rock -- iron, silicon, calcium, titanium, with trace amounts of aluminum and magnesium

August 1996 -- American Society for Applied Technology located in Silver City, New Mexico performed various assays on a bar, cannon and precipitates (?). Using standard metallurgical fire assay techniques they reported no precious metals by cuppellation. Following is a Scanning Electron Microscopy (SEM) report on the cannon:

- Cannon -- iron, manganese and sulfur

August 1996 -- In a separate document the American Society for Applied Technology reported that a sample from the black rocks contained +.99% silver.

EVEN THOUGH ADDITIONAL HISTORICAL DOCUMENTATION may appear in the future, this report will not be amended, for this data establishes the fundamentals.

Summary of Analytical History

In an attempt not to dwell on the past, I find myself forced to discuss some of the anomalies. The reason will soon become obvious, for this history offers a variety of clues as to the potential worth and understanding of this estranged cargo.

Select analyses showed high values of gold and platinum metals, while others claimed the material to be basic iron. However, after talking to many of the assayers, it become obvious that there was a continuity of precious metals being reported, or, as in some cases, not reported.

In each case where precious metals were reported, an anomaly existed, the material was mixed with a base metal. In the majority of the cases it was lead. This important observation is the key into understanding the facts behind this esoteric discovery.

Physical Properties of Gray Material

The gray material was originally packaged in wooden kegs weighing ~400 pounds each. Physical observation of the material shows syreations of different colors ranging from tan to gray to white.

The material fractures easily and is pulverized without effort. Also, it readily dissociates in $HN0_3$ (nitric) and HCI (hydrochloric) acids.

An important point that should be recorded is its average density is 2.8gMS/CM^3.

Direct melting temperature is greater than 1,OOO°C, which is within the realm of normality due to the high calcium content.

Protocol for Scientific investigation

To ascertain the actual properties of the gray material a protocol was established. This protocol may appear redundant to previous data presented in the Analytical History but are necessary to establish a true baseline. The studies are on gray material supplied by Mr. David Econopouly which was pulverized and homogeneously mixed. An exception to this was one solid piece was sent for analysis as to determine the different fractions between colors by electron microscopy.

Following is the exact protocol:

A) Scanning Electron Microscopy (SEM)

B) X-ray Flourenence (XRF)

C) Inductive Coupled Plasma Mass Spectroscopy (ICP-MS)

D) Standard Fire Assay

E) Inquarting of material with lead and electrodigestion

F) Inquarting the material with silver and electrodigestion

G) Inquarting the material with mercury and retorting

The purpose of these tests may not appear logical at this time. However, its purpose is to demonstrate whether precious metal values exist within the material, or if the material acts like a catalyst to cause the formation of precious metals from base metals, or if the previous analysis were totally erroneous.

Scientific Findings

The thrust of this investigation was to determine if any intrinsic value existed to the 40,000 pounds of gray material recovered from the ocean floor. Additional tests accomplished on drillings obtained from the cannons which were found in the proximity, proved to be of great scientific interest and economic value.

Spectroscopic, Microscopic, X-ray Diffraction and General Chemistry Analyses

In any study it is important to establish a baseline. Therefore following standard scientific protocol, I opted to establish the baseline by using non-invasive testing procedures. The obvious reason being from the studies completed in the past it appears that every time estranged materials (e.g. lead) are added to this matrix there is always a formation of precious metals.

Earthtech International - Scott Little's[3] Baseline Report

Analysis of gray material pulverized to <200 mesh

Si (reported as %SiO2)	45%
Ca (reported as %CaO)	48%
MgO	6.0%
Ti (as Ti02)	0.7%
Fe (as Fe203)	5.8%
Mn	0.8%
Cu	0.04%
Br	0.03%
Sr	0.04%
Pb	0.05%

There was also about .03% Zr and possibly .01% Zn. There was no sign of Hf, Pt, Au, Ag, Sn, Sb, Mo, etc but they could have been present at <100ppm and they would have escaped notice.

This was obtained on a $100,000 system with very good sensitivity and excellent capabilities. We used standardless FP (fundamental parameters) to come up with these quantitative numbers with only one unknown sample. The values given above are within a factor of two of the actual values.

Mark Hugo's[4] Spectroscopic Analysis

Using a X-ray Diffraction system manufactured by Texas Nuclear, Mr. Hugo reported the following:

The Gray Material physically appears to have two constituents; a light tan material and darker black particles. By gravity separation, I analyzed each fraction. The tan material appears to be primarily tin with the black material being zirconium. The system was calibrated before testing and rechecked after the tests to insure its accuracy.

> Note: The material tested by Mr. Hugo is a split from the material analyzed by Mr. Higgin's and Mr. Little. At this time, I have no logical concept why this testing procedure varies from the norm.

[3] Scott Little is a senior researcher with Earthtech International. Degreed in geosciences he has devoted Over twenty years in the development of using X-rays in the detection of elements in solid. liquid and gaseous states. Scott interfaces with the University of Texas in Austin, Texas.

[4] Mark Hugo is a Senior Engineer for the Northern States Power Company, a Professional Engineer, a member of the Electrical Power and Research Institute (EPRI), and has multitudes of other credits to his name.

Atlantic Pacific Trust - William Higgin's[5] Baseline Report

Qualitative analysis utilizing a Vreeland Spectroscope showed the presence of Ca, Mg and Si as the major elements present. Iron was present and recorded as a minor element.

Detection limits of this instrument is reported at 0.3%.

William Giffin's[6] Baseline Report

Microscopic and chemical analyses were completed on the gray material and drillings supplied from the cannons. Following is his determinations:

GRAY MATERIAL

The gray material is comprised of metallic spheres ranging from a submicron to micron in diameter. It can be said with certainty that this material underwent some type of refining or processing prior to being placed on the unknown vessel.

My first thoughts were that it might be a refinement of calcium for use in the production of flexible steel for weapons such as swords. This was in high demand during the nineteenth century. However, I must state that this material was probably of some other purpose due to amount of silicon shown by the various analytical assays. Silicon associated with iron causes the steel to be brittle and the technology during the era under evaluation did not have the techniques to remove silicon from steel ores.

The material rapidly effervesces in mild acids, showing the presence of significant calcium, either in the oxide or carbonate state.

In a concluding statement regarding the physical observations of the gray material, it can be stated with certainty that whatever the intended use of the material was, it was not just mineral from a geological ore deposit. The material was processed (probably by man) prior to being placed in the barrels for shipment.

DRILLINGS FROM CANNON

Drillings from samples titled "Cannons" appeared to be a cold forged iron. The iron content was verified by various spectroscopic means prior to my review of the material.

[5] William Higgins is a certified assayer with over 30 years of experience in precious metal determination and reclamation. He now resides as the chief chemist for Atlantic Pacific Trust and Xplorer S.A. a Nevada Public Company.

[6] William Giffins is retired having +30 years of experience as being department head of numerous metallurgical laboratories His credentials include a B.S. in Metallurgical Engineering with a Masters in Mettallurgical Extraction from the Missouri School of Mines.

Microscopic studies show that the iron was cold forged, that is to say, they were formed at extremely low temperatures and it would be questionable if they would maintain their form upon operation.

No intrinsic value other than the presence of iron can be observed from these samples at this time.

Wet Chemistry Analysis of Gray Matter - Joe Champion

In an attempt to finalized the base constituents of the gray material the following test was accomplished to determine if any precious metals could be detected.

The material was dissolved in aqua regia and colimetry tests were accomplished with $SnC1_2$, NH_4CI, NaOH, KI, and Thiourea. With the use of the prementioned reagents, presence of Au, Pt and any of the associated platinum group metals could be detected if they were present in quantities greater than 1.0 ppm.

The test was conclusive, for none of the precious metal groups were detected. This battery of tests confirms previous observations as to the lack of precious metal content within the material.

Fire Assay and Extractive Metallurgical Tests of Gray Material

Western Precious Metals -- Ed Horton[7]

Mr. Ed Horton performed a scorification and cuppelation of 0.5 grams of the gray material. The ending result showed no detection of Au, or the platinum group metals.

The purpose of such a minuscule test will be discussed later.

Bill Giffin and Joe Champion

A standard fire assay using scorification methods outlined by C. W. Ammen's[8] was accomplished. The following are the results:

1) O.Og Gray Material + 100g assay lead => no detectable Ag
2) I.Og Gray Material+ 100g assay lead=> ~15 milligrams Ag
3) 10.Og Gray Material+ 100g assay lead=> ~15 milligrams Ag
4) 25.Og Gray Material+ 100g assay lead=> -15 milligrams Ag

As one can easily observe, the amount of Ag produced was independent to the amount of Gray Material. However, it is interesting to note that the "Blank Test" produced no Ag, indicating that the Pb was indeed Ag free. Numerous analogies could be formed from such, but at this time we will not concern ourselves with speculations.

[7] Mr. Ed Horton is the President of Western Precious Metals and has an excellent standing in the metallurgical field for the past 23 years
[8] C. W. Ammen, Recovery and Refining of Precious Metals, Van Norstand Reinhold, 1984

Transmutative Tests Performed Using the Gray Material

In this section I cover the subject of how this material interacts with other material as a catalyst to produce precious metals. It has been determined by historical records that the Spanish were masters in the art of combining different ore bodies in an attempt to produce copious amounts of precious metals, with gold being their primary target.

Barry Mernman[9] and Bill Higgins

Under specific instructions, Dr. Barry Merriman with the assistance of Mr. Bill Higgins performed a transmutative test on the Gray Material.

Following was the procedures utilized:

They thoroughly mixed 100 grams of lead and 20 grams of ultra pure assay silver. They heated this for a one-hour period at 1,800°F in a clay scorification dish. They then removed the dish from the furnace and slowly sprinkled 1.0 grams of the Gray Material onto the surface. The material was once again placed into the furnace for an additional 2.0 hours.

The material was removed and poured into a mold and allowed to cool. Then the material was cuppelled to remove any excess lead. The ending bead weight was 19.5 grams.

The material was then parted in a 10% $HN0_3$ (nitric acid) solution which produced a black sponge weighing slightly under 100 milligrams. This sponge was returned to Mr. Higgins who again parted the material and annealed it to verify the ending product to be gold.

Bill Giffin and Joe Champion

Using procedures as established by the historical reports and previous laboratory findings, if was determined that replication of the Spanish process was necessary to determine the value of the material as it would relate to that point in history. Technical information regarding this process can be found in Twentieth Century Alchemy[10] and Producing Precious Metals at Home[11].

To develop a protocol, I felt that by replicating a lead/silver mineral would be adequate for the testing of the material. Following is the exact procedures observed from two tests.

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[9] Barry Merriman is Research Scientist, UCSD Fusion Energy Research Program and an Asst. Prof., UCLA Dept. of Math

[10] J. Champion, "Twentieth Century Alchemy," Discovery Publishing, 1993

[11] J. Champion, "Producing Precious Metals at Home," Discovery Publishing, 1993

Gray Material Transmutation Test I

In review of this test, you will observe that if was prematurely terminated. The cause was due to a crucible breaking in the furnace.

SMELT I

200 g Pb
50 g Ag
20 g Zn
20 g Gray Powder
10 g Borax

Furnaced for 90 minutes

Products: 247 g Dore
37 g Slag

SMELT II

247 g Dore (From Smelt I)
37 g Slag (From Smelt I)
148 g PbO
37 g Gray Material
19 g Reducer (flour)
74 g Borax

Furnaced for 90 minutes

Products: 389 g Dore
107 g Slag

Cuppellation Test

28.5 g of the lead dore from Smelt II was removed and cuppelled. The resulting bead weight was 3.82 grams, or 13.40%.

Equating this to the total dore, there would be 52.166 g of combined precious metals present.

SMELT III

389 g Dore (From Smelt II)
107 g Slag (From Smelt II)
428 g PbO
58 g Reducer (flour)
214 g Borax

Furnaced for 90 minutes

Products: 609 g Dore
243 g Slog

Cuppellation Test

15.7 g of the lead dore from Smelt III was removed and cuppelled. The resulting bead weight was 2.428 grams, or 15.46%.

Equating this to the total dore, there would be 94.15 g of combined precious metals present.

An accident occurred during the final smelt of testing.

Gray Material Transmutation Test 2

SMELT I

200 g Pb
50 g Ag
20 g Zn
20 g Gray Powder
10 g Borax

Furnaced for 90 minutes

Products: 258 g Dore
30 g Slag

SMELT II

258 g Dore (From Smelt I)
30 g Slag (From Smelt I)
120 g PbO
30 g K_2CO_3
15 g Reducer (flour)
60 g Borax
10 g $Si0_2$

Furnaced for 90 minutes

Products: 375 g Dore
93 g Slag

Cuppellation Test

12.610 g of the lead dore from Smelt II was removed and cuppelled. The resulting bead weight was 1.623 grams, or 12.87%.

Equating this to the total dore, there would be 48.27 g of combined precious metals present.

SMELT III

375 g Dore (From Smelt II)
30 g Slag[12] (From Smelt II)
120 g PbO
30 g K_2CO_3
15 g Reducer (flour)
60 g Borax
10 g $Si0_2$

Furnaced for 90 minutes

Products: 408 g Dore
94 g Slag

Cuppellation Test

9.025 g of the lead dore from Smelt III was removed and cuppelled. The resulting bead weight was 0.916 grams, or 10. 14%.

Equating this to the total dore there would be 46.99 g of combined precious metals present.

SMELT IIIA

30 g Slag (From Smelt II)
120 g PbO
30 g K_2CO_3
15 g Reducer (flour)
60 g Borax
10 g $Si0_2$

Furnaced for 90 minutes

Products: 68 g Dore
126 g Slag

[12] Due to the rate of physical proliferation only 30 grams of the total 93 grams was used. See Smelt IIIA for additional analyses

Cuppellation Test

The total mass (68 grams) of the lead dore from Smelt IIIA was removed and cuppelled. The resulting bead weight was 4.98 grams.

Equating this to the total slog of Smelt 11, there would be 15.438 g of combined precious metals present. This 15.438 added to the value as found in Smelt III would equate to a total precious metal content of 62.43 grams, or an increase of 124.8%.

Dallas Testing - Dan R. York[13]

A replication of the transmutive qualities of the material was provided by Dan York in Dallas, Texas. The purpose of this testing was to assist in the validation of the findings from Arizona and California.

Gray Material Transmutation Test

The following protocol was established for the transmutive testing of the Gray Material:

200 grams lead
20 grams Gray Material
20 grams silver
20 grams borax (decahydrate)
20 grams zinc
2 grams magnesium

The above material, excluding the zinc and magnesium, was mixed and furnaced for thirty minutes at 2,000°F. At that time it was removed from the furnace and the zinc, magnesium and Gray Material was carefully sprinkled onto the surface of the molten mass.

The material was placed into the furnace for an additional hour. At this time, the material was poured into a mold.

The metal was then placed back in the furnace with additional lead and flux. No additional silver, zinc or magnesium was added.

The ending metal weight was 365.0 grams.

A representative 11.3 gram sample was removed and cuppelled. The ending bead weight was 2.0 grams. This equates to a 17.70% ratio of precious metals to lead. Using this number, the total value of precious metals within the 365.0 gram bar would be 64.60 grams, or an increase in precious metal above the original silver inquart content by 323.0%.

Baseline Transmutation Test

[13] Daniel R. York attended Stanislaus State College & University of The Pacific Santa Cruz for a degree in Electrical Engineer and is an independent computer systems and application analyst/programmer. In addition to the pre-mentioned, Mr. York now plays an active and vital role in the development of new precious metal transmutation processes

The following protocol was established for the baseline transmutive testing:

Before beginning, allow me to state that the importance of this test is to establish a fundamental increase in the known transmutive qualities when the gray material is applied.

200 grams lead
20 grams silver
20 grams borax (decahydrate)
20 grams zinc
2 grams magnesium

The above material, excluding the zinc and magnesium, was mixed and furnaced for thirty minutes at 2,OOO°F. At that time it was removed from the furnace and the zinc and magnesium powder was carefully sprinkled onto the surface of the molten mass.

The material was placed into the furnace for an additional two hours. At this time, the material was poured into a mold.

The metal was then placed back in the furnace with an additional 200 grams lead and flux. No additional silver, zinc or magnesium was added.

The ending metal weight was 191.0 grams.

A representative 11.2 gram sample was removed and cuppelled. The ending bead weight was 1.6 grams. This equates to a 14.29% ratio of precious metals to lead. Using this number, the total value of precious metals within the 191.0 gram bar would be 27.29 grams, or an increase in precious metal content above the original silver inquart by 136.42%.

Transmutative Tests Performed Using the Drillings from Cannons

In an attempt to understand if economic worth existed to the material constituents of the cannons associated with the gray material and to attempt to understand if the observations by past assayers had merit a procedure was applied 1.0 gram of drillings supplied by Mr. Econopouly

Joe Champion and Bill Giffin

Since iron has been used in various assay procedures in the past years, it was determined that if we were to mix the drillings from the cannons with lead and use an oxidizer to cause an ignition of the iron, it would be possible to observe transmutation of the iron into precious metals.

This was accomplished by mixing 1.0 gram of the drillings from the cannon with 100 grams of lead. This matrix was heated to 1,800°F and removed from the furnace. Approximately 5.0 grams of an oxidizer, $NaCl0_4$ (sodium chlorate) was sprinkled onto the surface of the molten Mass.

The material was returned to the furnace for one hour, removed and poured into a mold. The lead dore was then placed into a cuppel. A 1.4 gram precious metal bead was recovered and by colorimetric testing proved to have gold, platinum and palladium.

In addition to the above transmutive analysis of the cannon material, a 1.0 gram sample of the material was dissolved in aqua regia and was tested using standard colorimetric testing procedures for the presence of gold and the platinum metals. The results of this testing procedure was totally negative. Hence, this confirms precious analysis that the cannon is nothing but a specialty iron that when excited is a trigger for transmutation.

Transmutative Tests Performed from Synthesized Gray Material

The major question comes from the point of whether the Gray Material holds an esoteric secret, or if it is only a composition of standard chemicals which can be synthetically produced. The purpose of the following tests is to identify the value of the material.

Synthesized Gray Material Test

To synthesize the Gray Material, a compound consisting Of $Si0_2$ (silicon oxide), MgO (magnesium oxide) and $NaHC0_3$ (sodium carbonate) was selected. Following is the observed results:

SMELT I

200 g Pb
50 g Ag
20 g Zn
6 g $Si0_2$
7 g MgO
7 g $NaHCO_3$
10 g Borax

Furnaced for 90 minutes

Products: 259 g Dore 25 g Slag

SMELT II

259 g Dore (From Smelt I)
25 g Slag (From Smelt I)
100 g PbO
25 g K_2CO_3
10 g Reducer (flour)
50 g Borax
8 g $Si0_2$

Furnaced for 90 minutes

Products: 328 g Dore
84 g Slag

Cuppellation Test

14.81 g of the lead dore from Smelt II was removed and cuppelled. The resulting bead weight was 2.03 grams, or 13.71 %.

Equating this to the total dore there would be 44.95 g of combined precious metals present.

SMELT III

328 g Dore (From Smelt II)
30 g Slag (From Smelt II)
120 g PbO
30 g K_2CO_3
15 g Reducer (flour)
60 g Borax
10 g SiO_2

Furnaced for 90 minutes

Products: 402 g Dore
123 g Slag

Cuppellation Test

20.6 g of the lead dore from Smelt III was removed and cuppelled. The resulting bead weight was 4.02 grams, or 19.55%.

Equating this to the total dore, there would be 78.6 g of combined precious metals present.

Transmutation Tests using Gray Material with Gold Inquart

If one has paid close attention to the findings up to this point, it is obvious that the Gray Material has intrinsic qualities for the acceleration of a nuclear transmutation. Also, since one of the major anomalies observed has been the formation of an increase in silver, it stands to reason that one would question whether or not an increase in gold would be observed if gold was used in lieu of silver.

In the following process, we inquarted 8.4 grams of gold into the starting matrix without any silver. From the process we yielded 10.3 grams of gold from step one with an additional 19.3 grams of gold, platinum and silver from step two.

SMELT I

200 g Pb
8.4 g Au
20 g Gray Material
10 g Borax
20 g $NaCl0_4$

Furnaced fort 120 minutes

Products: 120 g Dore
84 g Slag

Cuppellation Test

The total lead dore from Smelt I was removed and cuppelled. The resulting bead weight was 10.3 grams, or 122.62%.

DUE TO THE PHYSICAL OBSERVATION OF THE CUPPEL, IT WAS DETERMINED THAT ENORMOUS LOSSES OCCURRED. THE CUPPEL WAS REDUCED TO A POWDER AND ASSAYED USING THE FOLLOWING PROCEDURES.

SMELT II

15 g of cuppel (127 grams total)
100 g PbO
10 g Reducer (flour)
100 g Borax

Furnaced for 90 minutes

Products: 64 g Dore
132 g Slag

Cuppellation Test

The total lead dore from Smelt II was removed and cuppelled. The resulting bead weight was 2.28 grams.

Equating this to the total cuppel, there would be 19.3 g of combined precious metals present.

Summary of Scientific Findings

General

Up to this point I have attempted to deliver an unbiased opinion as to the Mango Metal Partnership's discovery. However, it is obvious that one would have to draw the conclusion that the estranged cargo carried by the unknown ship will have a great effect on history as we now understand it.

As observed in the Second Low Energy Nuclear Exchange Conference held in September, 1996 by Dr. John O'M Bockris in College Station, Texas, science as a body is starting to observe that elements can be changed without the need of high energy physics. Dr. George Miley from the University of Illinois and Dr. Minzuno from the Hokkaido University in Japan presented papers on their observation of low energy nuclear transmutation. This is a sign of the changing times in science.

To better understand why this phenomena occurs, I have presented abstracts of different papers which have been prepared for publication on this subject. However, before entering the mechanics of how such feats can occur, I would like to share the following real life event of a respected research.

Dr. Stephen H. Emmens[14]

Argentaurum Laboratory
20 Central Avenue
Staten Island, New York City, U.S.A.

In 1897 Dr. Emmens self published a manuscript titled 'Argentaurana" to present his story of his trials and tribulations over on alleged new element which he thought was the intermediate matter from which Ag and Au are formed. In his method, low temperature and high pressure hammering were employed with such success that he produced some 670 ounces of GOLD bullion which was sold to the United States Assay Office in New York City. This book includes the complete correspondence with Sir William

Crookes F.R.S. and the New York Herald detailing principles and technical details for those who want to replicate this utilizing magnetic cooling and mognetostrictive ultrasonic hammering. For those interested a copy of this book resides in the British Museum.

Dr. Stephen Emmens Credentials

President of the Research Society; Member of the American Institute of Mining Engineers; Member of the American Chemical Society; Member Fendateur of the Societe Internationale des Electricians; Fellow of the Institute of A ctuaries of Great Britain and lreland; Member of the United States Naval Institute, & c., & c.

Headlines --- New York Herald
Sunday, February 26, 1899

"This Man makes Gold and sells it to the United States Mint"

"Is *Dr. Emmens a Modern Rosicrucian? "*

"Calls Product Argentaurana "

"Uncle Sam has been buying his Bricks for two years

"Is it a Golden Keely Secret?"

Included with these Headlines were large illustrations showing the innards of Dr. Emmens Laboratory.

A quote from the New York Herald follows;

[14] J. Champion, excerpt from the review of Argentaurum

"Dr. Emmens is certainly a man of more than ordinary education and scientific knowledge. He has written books and talked well At the same time few people can believe in any process for changing silver into gold by chemistry and machinery.

"Dr Emmens says he makes gold out of Mexican silver dollars, so Bryan's silver is only a disguise for a limited amount of gold. Dr. Emmens unquestionably has a head for business, as the Mexican dollar costs only forty-eight cents.

"It is necessary to have a little gold -- some metallic seed as it were -- as a 'starter' when you manufacture gold by the Emmens process. Every Mexican silver dollar contains gold and copper among other things.

"Besides such a scheme as this for turning Mexican dollars into gold where is the silver craze? In the great campaign a man voted for Bryan expecting to go home and find 640 acres of land and a mule behind the door bearing Jefferson's monogram. In Dr. Emmens campaign its all gold and no mule. "

This is a brief insight into a man we know little of However, / will continue to post different aspects of his work as they advance. In the meantime allow me to leave you with one of my favorite passages from Dr. Emmens:

'The theory and fact of transmutation is more important to the practical welfare of the human race than has been any scientific question from the dawn of philosophy down to the present time. Gold is the greatest of all influences that effect the progress of mankind; and if gold can indeed be produced at will the whole future of ourselves, our children and our children's children cannot fail to be profoundly modified, When, therefore, the leaders of science pronounce themselves on this subject, the public will do well to weigh and consider their utterance instead of blindly accepting them as dictates of recognized authority. This is why / have set out by implying that the leaders of science are more likely to be wrong than right in their assertions as to the "Laws of Nature. ""

'If the implication rested upon my mere word or opinion, / should myself be insufferably arrogant in thus making light of such men as Lord Kelvin and his many brilliant fellow philosophers of nowadays. I am, however, a mere recorder."

Point being, even though people in the past could not explain the reason of what was occurring, it is obvious to me that they were an observation of synthetic production of precious metals, or more formally recognized as Low Energy Nuclear Transmutation.

Transmutation via Hetro-reaction Schemes

Since my introduction to the phenomena of Low Level Nuclear Reactions, I have had the opportunity to observe interesting results from empirical experiments. My thrust has been to determine how nuclear fusion and fission could occur at or near ambient temperatures.

The most common goal for researchers studying this phenomena today is to ascertain the viability of low energy nuclear events as they relate to energy. In an attempt to understand observed anomalies in the formation of heat, physical studies continue into determining if new isotopes are forming. Researchers around the World are now beginning to validate my original claims of transmutation by observing the formation of new isotopes from various apparatuses.

A problem exists, for if one effectuates a nuclear transformation, one would automatically expect a release of energy. In many instances, this is not the case. Just because there is a nuclear anomaly does not mean there is energy. To explain, I have prepared the following:

NUCLEAR EXCHANGE WITHIN COLD FUSION CELLS

In the first portion of this report, I direct my attention to the anomalies observed within cold fusion cells. Since the observations and claims of Pons and Fleschmann scientists have tried to replicate the formation of energy. In their garage, P&F reported that a cubic block of palladium disintegrated on them. It was a once in a lifetime observation, for they could never make the reaction reappear. Furthermore, with sophisticated equipment, researchers are starting to observe the formation of new isotopes and heat generated from various apparatuses. Within the main front of claims one finds the CETI group sponsoring heat from the Patterson Cell concept. The prevalent questions being formed from this research are:

- What energies should be observed from such events?
- What is the trigger of such mechanisms?

Forgetting the classical theory supporting the fusion of hydrogen isotopes, we can address the following concept which allows for the formation of new isotopes. Although I have numerous references, I elect to demonstrate my theories on the findings of Tadahiko Mizuno[15] in a recent study of an electrochemical cell consisting of a Pd cathode and LiOH electrolyte.

Mizuno reported numerous anomalies associated with new elements present within the first angstroms of the Pd surface. Isotopic studies show indicated changes in the following elements:

Cu, Zn, Br, Xe, Pd, Cd, Hf, Re, Pt, Ir, and Hg

He theorized using the logic presented by others that the reactions which created these anomalies was crated by a hydrogen fusion followed by a fission of either the cathodic or anodic metal. However, if one studies the energieswhich would be released from such reactions it becomes hard to rationalize. To explain, following is Mizuno's theory of events:

$$_{46}Pd^{108} + 2D \rightarrow {}_{48}Cd^{116}$$

Calculating the energies from such a reaction, one would find an excess of 27.14 MeV/event. If this were true, it would not require many events to generate an enormous amount of energy.

However, if one studies the demographics of the isotopic distribution of the cadmium from Mizuno's study, the anomalies presented relate to mass 112, 113, and 114. It is apparent that he used 111 as a control and mass 110 and 116 were not shown as detected.

Accepting the isotopic distribution findings of Mizuno as absolute, allow me to present the real world. Everyone is looking for fusion, or direct interaction of hydrogen isotopes with lattice loading. By doing this, they have overlooked the potential of the reaction of an electrolytic metal and the cathode.

Even though it is probable that a nuclear event can be effectuated by the infusion of hydrogen into metal, the simplistic approach is to utilize the heat of formation of Li, Na, K and Sr with most metals in the absence of hydrogen. I reported this finding to John Bockris in 1992.

Returning to Mizuno's findings, he found an increase in $Cd^{112\ \&\ 113}$, with decreases in Cd^{114}, no change was indicated in Cd^{111} and there was no reporting of $Cd^{110\&116}$. Allow me to present the following logic:

% Abundance				Energy
11.14	Pd^{104}	$+ Li^{7}$	>	$Cd^{108} + T$ -0.182 MeV
22.33	Pd^{105}	$+ Li^{7}$	>	$Cd^{110} + D$ 3.802 MeV
27.33	Pd^{106}	$+ Li^{7}$	>	$Cd^{110} + D$ 1.215 MeV
26.46	Pd^{108}	$+ Li^{7}$	>	$Cd^{112} + T$ 0.399 MeV
11.72	Pd^{110}	$+ Li^{7}$	>	$Cd^{114} + T$ 1.688 MeV

In my research, I have found that a modified model alpha model of the atom exists. Hence, in review of the above, I can speculate with certainty that the Cal + T formation is most prevalent. This also explains phenomena witnessed by many inclusive of Bockris' Texas A&M team in the 1990's of high tritium production from cells without evidence of a D + D reaction. In this case, they observed the high formation of tritium with minimal excessive heat generated from the cell.

Taking this a step further, allow me to present a scenario. In a low energy nuclear event, you can have reactions which are exothermic and endothermic in nature. Without saying, a mechanism has to be established. Although in a classical presentation, Bockris was an observer of an extremely low energy exchange which produce tritium. Since he was trying to dertmine the outcome of the D + D reaction, it never occurred to him that he should be looking for Cd within the cathodic lattice structure.

Mechanisms Required for Nuclear Transmutation

To effectuate a nuclear change of Pb to Au and Pt requires that we allos two events to occur. The first is a low level nuclear fusion of Pb with a transmutive trigger. This is then followed by fission of the newly created fusion product into our precious metals.

A transmutive trigger consists of anyone of the following isotopes:

Lithium	$_{3}Li^{6}$	$_{3}Li^{7}$	
Sodium	$_{11}Na^{23}$		
Magnesium	$_{12}Mg^{24}$	$_{12}Mg^{25}$	$_{12}Mg^{26}$
Potassium	$_{19}K^{39}$	$_{19}K^{40}$	$_{19}K^{41}$
Rubidium	$_{37}Rb^{85}$ $_{37}Rb^{87}$		
Cesium	$_{55}Cs^{133}$		

The list of transmutive triggers in not restricted to the above.

As I stated, we first have a nuclear fusion, followed by a fission. Here is where things become somewhat disconcerting. For, without controls on the fission mechanism, we open ourselves for the formation of numerous metals other than Au and Pt.

In an attempt to gain an understanding of this, I have attached numerous data sheets. Each data sheet shows the probability of nuclear syntheses of lead. Bear in mind that Pb consists of four stable isotopes. These are:

$$_{82}Pb^{204} \qquad _{82}Pb^{206} \qquad _{82}Pb^{207} \qquad _{82}Pb^{208}$$

This means that we must be concerned with the reaction of each of the above. It becomes complicated when we musht now consider the natural abundance of each of these isotopes as found in nature. The following depicts such:

$_{82}Pb$	1.40%	203.973020
$_{82}Pb$	24.10%	205.974440
$_{82}Pb$	22.10%	206.975872
$_{82}Pb$	52.40%	207.976627

The above is important for all of us to understand if we want to gain maximum yield from production.

To have an understanding of how all of this applies, I have provided mathematical models in Attachment "D" and "E" which may be found in this document.

HOWEVER, since we are aware from the various tests that the most common reaction to occur is the production of platinum, it may seem logical to allow this pathway to occur. Of course, this is contrary to my previous direction of making gold, which I will attempt to explain.

When we produce platinum, we limit our production to certain isotopes. The techniques are covered in the appendices of this paper. To simplify, allow me to list them: Pt^{194}, Pt^{195} and Pt^{196}. If you would review the above you will find that Pt^{196} is generated from the most abundant isotope of lead. If goes without saying that our quantity of Pt^{196} would be high. Reviewing another fact, it is established that platinum absorbs up to 700 times its volume in hydrogen, hence, it's catalytic abilities.

Explaining this in a mathematical sense, we have newly produced platinum which has absorbed hydrogen within its lattice structure. Or,

$$_{78}Pt^{196} + _{1}H^{1} \rightarrow _{79}Au^{197}$$

Now how do we get this reaction to occur? The answer being -- pressure. The first question would be, where does the IT come from. The primary answer to this would be the (OH-) radical.

Of course, we would have various other reactions such as:

$$_{78}Pt^{195} + _{1}H^{1} \rightarrow _{79}Au^{196} \rightarrow _{78}Pt^{196} + _{1}H^{1} \rightarrow _{79}Au^{197}$$

All reactions are legal and have an end point.

To explain this, the only reason that Pt can be transformed to Au is due to its closeness in proximity with hydrogen. Since gold lacks catalytic properties, it lacks association with hydrogen, thus explaining why we have an end point of pure Au metal.

Dealing with Nuclear Isotopes Produced from Low Energy Nuclear Reactions

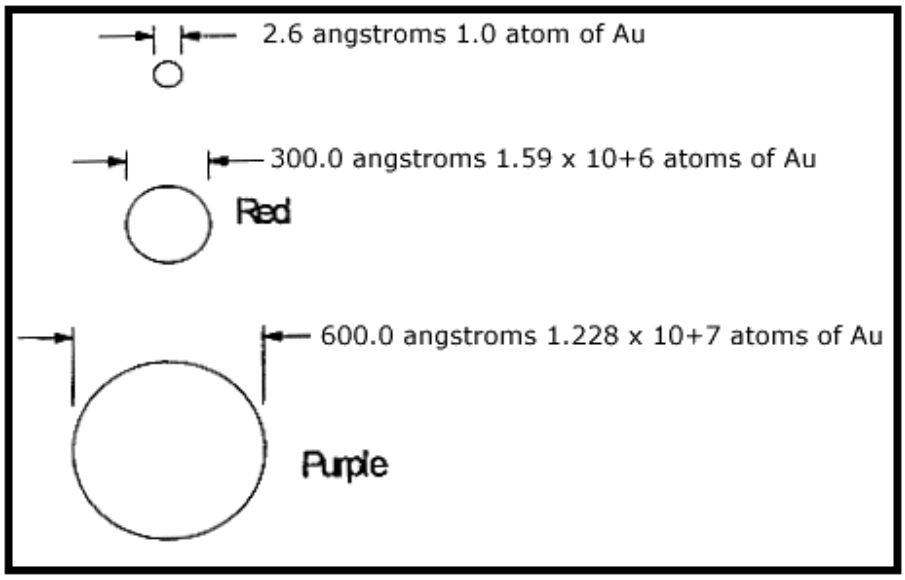
When dealing with low energy nuclear reactions, a major problem arises when attempts to segregate and reclaim the newly produced metal. This problem can be summarized by the following:

> In the process of low energy nuclear transmutation, atoms are singularly created. Under most conditions surrounding these events, the reactor (or, for that matter the reaction) lacks sufficient quanta to cause any colloidization of "like" atoms, or molecules.

Accepting this, it becomes difficult for one to ascertain by post inspection the daughter particles produced from the original event.

The problem in dealing with newly created atoms is complex. To start, before one develops a plan of attack of how do deal with these new atoms, one must be able to ascertain the elements present and their quantitative state. A metal atom in its sub-colloidal, or colloidal, state will react different to dissolution techniques to that of a post colloidal particle of like material.

Since my research has centered around the synthesis of precious metals, I would like to clarify the problems in collecting products produced from my nuclear reactions. For exemplary purposes, I would like to demonstrate the characteristics of colloidal gold. When gold is formed, the atom has a diameter of only 2.6 angstroms.



In order to gain a true reality of the relation-ship of an atom of gold to a colloidal particle, I provided the associated figure. As you can see, for one to have a particle with a diameter of 300 angstroms[16] requires that in excess of a million atoms be combined. Of course, this means that after millions of nuclear events, an energy must be present to cause such particle formation.

Once one has been able to reach the particle size of 300 Angstrom it is easy to denote that just by doubling the diameter, a colloidal requires 10 times the amount of atoms. The color denoted on the figure is equivalent to the light absorption of gold in the respective colloidal sizes. This in itself can be misleading to those who do not fully understand the parameters of micron size particles.

An example is -- if you had a 300 Angstrom particle of gold, it would settle the distance of 1.0 centimeter in a solution of water in 2.92 x 10^{+6} seconds. Assuming absolute conditions, this equates to about 33 days. Another factor to deal with is that colloidal particles of "X" size may further group together to form larger organized particles while maintaining their "original" colloidal properties. An application of this would be the introduction of an anionic flocculant to a solution containing 300 Angstrom gold sols[17]**.** Even though one can cause the Au to flocculate, the particles will remain in their state until sufficient energy is applied to solidify the volume.

One might question the use of an anionic flocullant with Au sols. This can be explained by the fact that colloids of Au become surrounded by a layer of negative ions. Applying this knowledge it is obvious that a non-symmetry exist of such particles, due to the lack of binding energy.

In this or any low energy nuclear transmutation project, we have a multitude of situations occurring. First, being the formation of new atoms. The second being the conversion of these new atoms to our targeted ending state and collection after colloidization

Computer Modeling - Jim Uban[18]

To effectuate a low energy nuclear transmutation one must apply the following three conditions:

1) The conservation of protons

2) The conversation of neutrons

3) The conservation of mass

If you do not satisfy any of the above, low energy nuclear transmutation will not occur. To assist in predetermining if low energy nuclear reactions will produce gold and platinum, Mr. Uban developed a computer model which allows for one to predetermine what elements will be produced from any given set of circumstances.

Since multitudes of tests have confirmed that the base constituents of the Gray Material are silicon, magnesium and calcium two detailed studies of how the Gray Material can transform lead into gold are encompassed with this report as Attachments "D" and "E".

Conclusion

In reality, one could spend days in the preparation of a conclusion to such a discovery, or simply say that the facts have been presented. The position I take is simple, without question the knowledge gained from this discovery assists in proving that prior to my original research, there were actual practitioners of nuclear transmutation.

Where does one go with such a discovery? The answer to this is complex, for improper handling of this information could cause the fundamental destruction of the economic structure of this planet.

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[17] sols- refers to a fluid colloidal system in which the continuous phase is liquid.
[18] Jim Uban has a Bachelor of Science in Physics with a Masters in Computer Science from MIT.

Other than that, I find myself hard pressed for words .....

ATTACHMENT "A"

PERSONAL PROFILE OF JOE CHAMPION

Summary of Direction

Research in Low Energy Nuclear Transmutation - an Obscured Area of Science

In 1989 I was fortuned to be witness of a phenomena, which for all intents and purposes, has been ruled impossible by the established scientific community. During the course of experiments being conducted by a non-scientific person. I observed what appeared to be the instant conversion of one element to another. This "conversion " occurred under conditions wherein the applied energies were lower than those previously considered possible.

Independent replication of this event, under controlled conditions, made me realize that nuclear events occur outside of the norm as established by "high energy physics.

Ever since the initial introduction to this event, I have dedicated my full efforts to determination of the cause and potential effects of this discovery. In an attempt fully comprehend my findings, I have collaborated with institutions throughout the World to solidify my position and priority.

Summary of qualifications

Discovery Publishing *1992 - Present*
Scottsdale, Arizona

Established procedures and protocols for functional testing of low energy nuclear reactions. Until recently, the major thrust of my efforts has been in the area of synthesizing precious metals from base metals. In this arena, / have attempted to maximize the effectiveness of reactions, while gaining insight as to the nuclear mathematics. To accomplish this, / have utilized researchers from academic, government and private laboratories to assist in the confirmation of my findings.

In addition, / serve as a consultant to people who are utilizing this technology for commercial gain. Information gather from research is published in books, journals and the Internet.

Work experience

Philadelphia Project *1992*
Yontville, California

Held the fiduciary position as Chief Scientist for intellectual development of events surrounding low energy nuclear change. In this position, I interacted with Dr. John O'M Bockris of Texas A&M University This was made possible from a grant given to Texas A&M from the Philadelphia Project which included the employment of Dr. Roberto Monti, Dr. Guang Lin, Dr Sunderasin and Dr. Zoran Minevski.

The primary goal was to determine if the "established scientific community" could verify the empirical data presented from my research. Secondary efforts were to collaborate on a theoretical plane as to

the mechanisms behind the nuclear events. I was able to produce tangible evidence in the form of new short life radioactive isotopes produced from various experiments.

During my tenure with the Philadelphia Project, my research was validated by Mid-States Recycling. This Chicago based company is an established firm in the refinement of precious metals. Testing inside of this facility by the employees of Mid-States provided proof that precious metals were being formed from base metals. However, the quantity of new metals produced verses the "cost of production, " proved to be non-economical.

Independent Researcher 1990-1992
Chicago, Illinois - Guanajuato, Mexico

As an independent researcher, I continued to validate my original observations of 1989. With the assistance of grants I was able to replicate tests in facilities located in Arkansas and Mexico. In Mexico, the University of Guanajuato's Institute of Scientific Investigation validated my claims of low energy nuclear reaction. Due to the lack of equipment the University was only able to observe the thermal excitation process.

Inclusive of validating the empirical-conditions of my research, Dr. Garcia Torres, Director of the Institute, concurred with me on the mathematical models of how such reactions could occur.

Consultant to Gold Spinners International 1989-1990
Cadilac, Michigan

Primary goals were to define new and novel methodologies for the reclamation of precious metals. Initially this was in areas of research provided to them under contract during my employment with the Santa e Research Center.

During this consulting contract, I was fortuned with the observation of low energy nuclear transmutation as demonstrated by Mr. Jack Keller in Seattle, Washington. Independent confirmation of this research was accomplished by Mr. Lee Smith, a chemical engineer also employed by Gold Spinners.

Due to the "potential" of this discovery Gold Spinners decided that it feel outside the realm of their public company interests in Canada. This being the case, I elected to follow the phenomena privately.

Santa Fe Research Center 1978-1989
Columbia, Tennessee

Served in the fiduciary position of Chief Scientist to develop means for the selective capture of i*ons in solution by the use of electro-magnetic resonance. The position required design of theoretical models and construction of laboratory apparatuses inclusive of computer interface and software design.*

Research was also accomplished in the area of using electromagnetic resonance in the excitation of nuclear events. This was a continuation of theoretical and empirical models developed in 1985 wherein I felt that palladium could resonate absorbed hydrogen.

Independent Consultant 1983-1987
Houston, Texas

Developed processes and procedures for various firms in the area of computer control and measurements of electronic signals. This being an adjunct to the contracts I maintained with Champion Instrument Laboratory.

Champion Instrument Laboratory 1970-1983
Clear Lake City, Texas
Atlanta, Georgia
Denver, Colorado
Seattle, Washington
San Juan, Puerto Rico

In 1970, I founded a research laboratory to fill an obvious void in the electronic and scientific arenas. The core of the original laboratory located in the Houston area consisted of the identification of physical measurement parameters as established by the National Bureau of Standards. Once firmly established in Houston, full scaled facilities were systematically opened at the pre-mentioned cities. A list of the prime contracts follows:

National Aeronautical and Space Administration
United States Coast Guard
Federal Aviation Agency
The Bell Telephone Systems of AT&T
Biomedical research and production laboratories

One of the major achievements of Champion Instrument Laboratory was the development of portable instrumentation whereby onsite testing (insitu) could be accomplished. This technology is still be used in industry today.

Professional memberships

1973 to 1983 Member of the Instrument Society of America

E d u c a t i o n

Development Years -- Born in Wood County, Texas
Attended schools In the Pasadena School district finishing at Sam Rayburn High School

Attended Cleveland Institute of Electronics for a Bachelors of Science Degree in Electronic Engineering

Intelligent Quotient -- 142

P u b l i c a t i o n s

PAPERS

Synthesis of New Elements -- June 19. 1995 by Joe Champion. Presented at the 1995 Texas A&M University Roundtable chaired by Dr. John O'M Bockris.

The Truth of Alchemy Published October 1994 by Extraordinary Science, Volume VI. Issue 4.

Modem Day Alchemy Published July 1994 by Extraordinary Science. Volume VI. Issue 3.

Alpha-not Energy Production -- June 13. 1994 by Joe Champion. Published in part by Discovery News. Volume 6. 1994.

Low Energy Synthesis of Tritium -- December 1993

Experimental Results Which Imply Low Energy Nuclear Change -- April 22. 1993 by John O'M Bockris. Robert Bush. Joe Champion and Roberto Monti. Submitted to Fusion Technology

Experimental evidence of a New Model of the Atom -- 1989. Rewritten by Joe Champion and Roberto Monti in 1992

MANUSCRIPTS

Twentieth Century Alchemy Published June 1993

Rhodium From Black Sands Published September 1993

Producing Rare Earth Elements by Nuclear Synthesis -- Publish October 1993

Producing Precious Metals at Home -- Published January 1994

Gold Without Minerals -- co-author Michael R. Thompson -- Published February 1994

Table of Nuclear Structures -- Published June 1994

Explanation of Observed Nuclear Events Associated with Cold Fusion and Similar Low Energy Nuclear Events -- Published June 1994

OTHER

Author of Discovery News -- a monthly newsletter established June 1994

Lectured at the International Tests Society July 1995 Video's available)

ATTACHMENT "B"

For years man has tried to make gold and platinum from base metals. Has anyone been successful? Logic would dictate the answer is no. However, I would like to present a challenging case. In order to accomplish such, I offer laboratory procedures wherein one Gan synthetically produce precious metals on a macro scale. No black boxes, no secret processes -- just simple laboratory procedures.

The process that I speak of encompasses the conversion of mercury to gold and platinum. There does exists an irony to this subject, for if you research the history of the mining industry you will find that such techniques have been utilized without the implementors knowing that they were making their precious metals in lieu of reclaiming them from Mother Nature!

LOW LEVEL PRODUCTION OF Au & PT FROM HG

MARCH 1995 - JOE CHAMPION

An experimental procedure was established in 1995 to determine if Pt could be formed from Hg utilizing technologies from the non-standard mining metallurgical industry.

HISTORY

In a communication with Mr. Mike Thompson in 1993 he purported a new process in the recovery of platinum from a geological deposit that he was working on in Baja Mexico. The following paragraph describes in general his findings.

In a metallurgical text, it was reported that cyanide was slow to cause the dissolution of platinum in its metallic form. In an attempt to accelerate this, it was suggested that if one were to make the compound BrCN the dissolution factor would be accelerated. To accomplish such one could easily produce their own BrCN by a simple method of electrolyzing NaCN and NaBr.

Mr. Thompson went through the process of doing such and used new compound to leach a sample of mineral. The results were phenomenal. He physically recovered metallic platinum and gold after the process. However, with my interjection, I asked Mr. Thompson to repeat the process and exclude the mineral. That is to say, I asked him to prepare his new BrCN compound and extract and attempt to extract the same gold and platinum from the new solution -without the interference of mineral contamination. The results were the same. He recovered the approximate amount of Pt and Au from just making the solution without interference of mineral.

Now one would say that this in itself is nowhere scientifically conclusive. With this I will agree. But there is more. This same test has been repeated by others throughout the United States with success. Accepting the potentials that cross contamination of starting material and other facets could be involved I only suggest that one attempt the test for themselves,

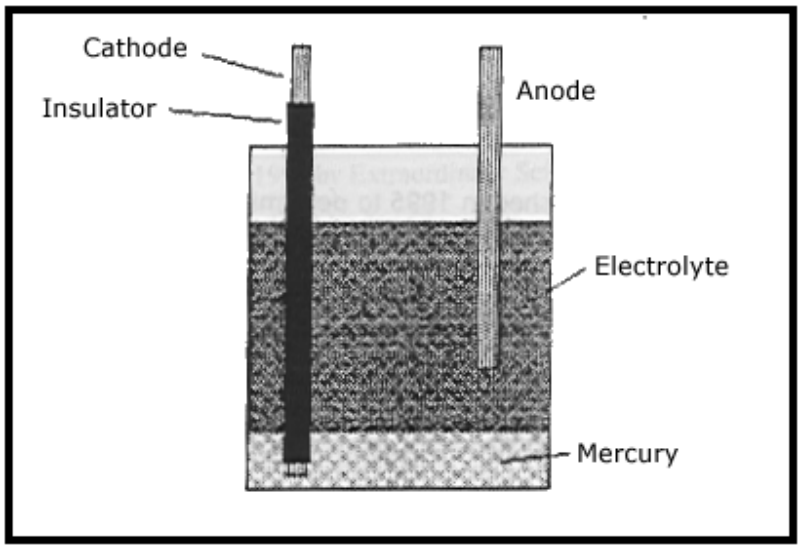
In another point in the mining history of the United States I found another example of transmutation of processes in lieu of recovery. This came shortly after the turn of the century when miners would use mercury amalgams for the process procedures in the recovery of precious metals.

It is a well known fact that Hg will wet, or amalgam Au. Although, Crookes came up with a procedure that if you excited Hg with Na metal, it would then amalgam Pt. To accomplish such a feat, miners would take their Hg and place it over a wood fire and slowly add sodium metal to the now hot Hg.

This would cause a harden Hg matt which was then placed in stamp mills (a mechanical procedure utilized at that time to pulverize mineral) to amalgam not only the Au and Ag but also Pt. Now as luck would have it, not only was Pt found in the new process, but an increased level of Au was also noted.

To make my point, try analyzing the Pt and Au levels in Hg after it has been arnalgamed with Na metal.

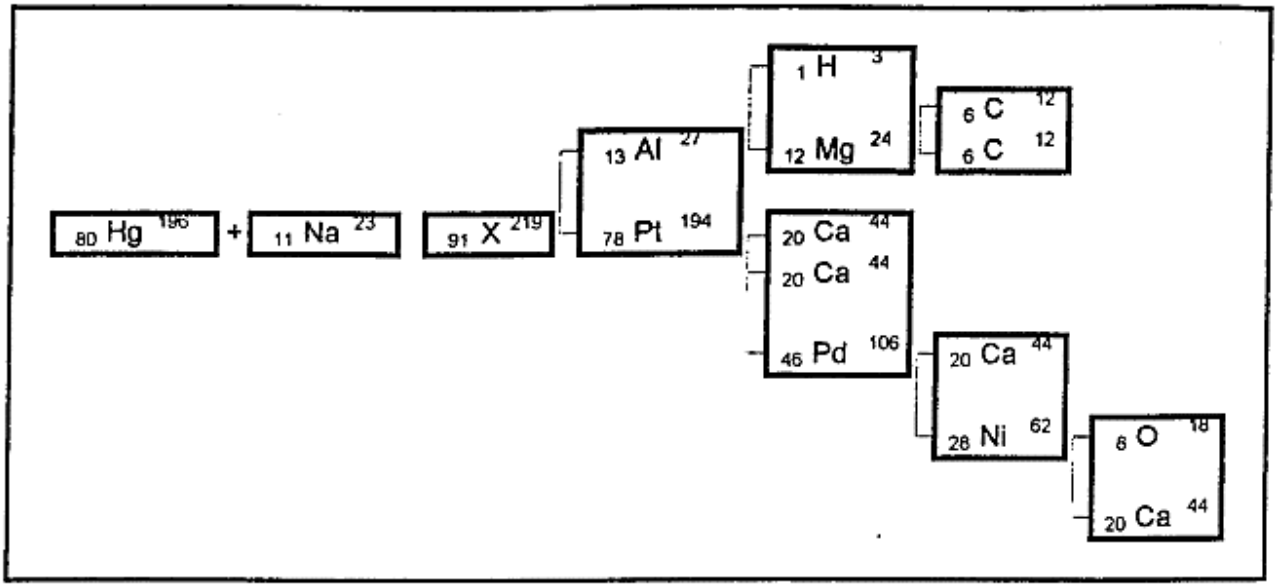
This was accomplished in a cell similar to the following:

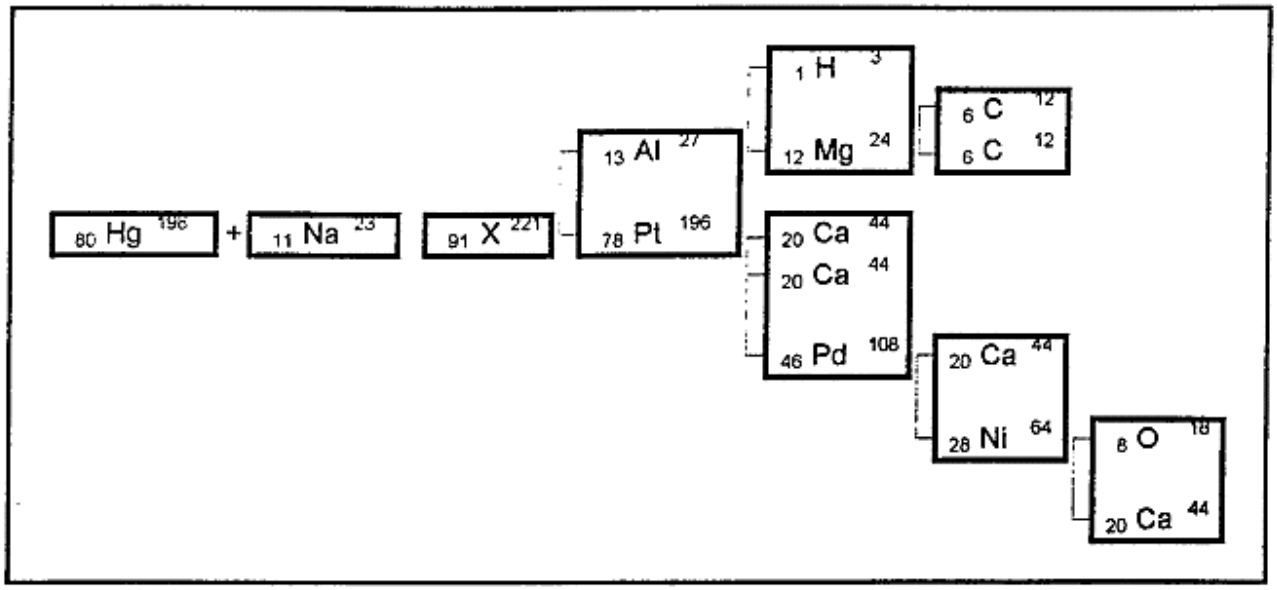


As one can see, the cell is of simple design. Both electrodes are made of carbon. In operation, the electrolyte is H20 and NaCN. When current is applied, The NaCN is electrolyzed causing the Na to come in contact with the surface of the Hg.

After a time period, NaBr is added. This causes the formation of BrCN. Now this new electrolyte is amenable to rapidly dissolve Pt, in material containing such. Select metallurgists have used this procedure for years, but they made one valued mistake -- They never checked their new solution of BrCN for precious metal content.

What occurs is when the Na comes in contact with the Hg surface, a nuclear exchange occurs. At this time you have formations similar to those shown on the next page.





The new atomic particles of Pt are amenable to the formation of $Pt(CN)_2$.

In such a reaction, you will form Pt and Au at the (nuclear) fusion rate of Na to Hg. Also, the secondary (or to some --THE PRIMARY) reaction is heat.

ATTACHMENT "C"

SYNTHETIC PRODUCTION OF PRECIOUS METALS FROM LEAD

Several mechanisms can be employed in producing precious metals from lead. Since I have explained the theory, I will be direct in process procedures.

The fastest methodology is to place lead and either sodium or potassium metals in direct contact in a crucible.

This can be accomplished as follows:

I. Melt -10.0 pounds of lead in a "reduction environment". Allow the furnace temperature to stabilize at -1600ºF.

2. Using sodium metal. drop in 150 grams in -25 gram pieces. When you do so. you will see an aggravating flash similar to that of a strobe light.

3. Stir the mixture and allow to stabilize after the addition of the sodium metal for 15 minutes. Pour the metal into a bar.

At this time the precious metals of Au. Pt. Os and Ir have been produced

To reclaim the metals. electrodigest the bar (I would suggest using a 4.0 liter beaker) in 10-20% nitric acid solution. You may have to continue to add acid during this process. Make sure that the solution remains at pH less than 2.0. You can apply upwards to 30 amps of current during this process.

What you will observe is the excess lead will go into solution (PbN03) and the solution will slowly take on a color and texture of "hot chocolate." This will occur within a hour after you start to digest. At this time you are witness to the collodialization of the atoms as I discussed earlier.

When you have dissolved enough of the bar to be satisfied that you have enough material to analyze, filter and use “any" technique to determine the quantitative state of you new metals.

FOR THE RECORD, this process will produce a larger quantity of Os than Au and Pt.

ATTACHMENT "D"

Transmute Directed Search! V4.2

Absolute value energy limit = 0.0100 mev
Minimum input abundunce = 0.0200 mev

Start/End fixed input elements:

Element Z N
Ca 20 40

Element Z N
Ca 20 44

Contribution count this range = 1

Start/End fixed input elements:

Element Z N
Si 14 28

Element Z N
Si 14 30

Contribution count this range = 1

Start/End fixed input elements:

Element Z N
Fe 26 54

Element Z N
Fe 26 57

Contribution count this range = 1

Start/End fixed input elements:

Element Z N
0 8 16

Element Z N
0 8 16

Contribution count this range = 2

Start/End fixed input elements:

Element Z N
Pb 82 206

Element Z N
Pb 82 208

Contribution count this range = 1

Start/End fixed output element search range:

Element Z N
Au 79 197

Element Z N
Au 79 197

Start 2-body out calculations…
Search for 2 outputs complete…
Start 3-body out calculations…

Starting elements:

Element Z N Abundance
Si 14 28 0.922
Fe 26 57 0.021
Pb 82 208 0.524

Total Z value = 122
Total N value = 293
Total amu in= 292.888950

Matching products

Element Z N
Au 79 197
He 2 3
Nb 41 93
Total amu out= 292.888950
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Search for 3 outputs complete...

Start 4-body out calculations...

Starting elements:

Element Z N Abundance
Ca 20 40 0.965
Si 14 28 0.922
Pb 82 206 0.241

Total Z value = 116
Total N value= 274
Total amu in = 273.913958

Matching products....

Element Z N
Au 79 197
0 8 16
Na 11 23
Ar 18 38
Total amu out= 273.913957

Delta amu out = 0.000001, mev out = 0.000931

1 Total products found

S
tarting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Pb	82	206	0.241

Total Z value = 116
Total N value = 280
Total amu in = 279.903290

Matching products....

Element	Z	N
Au	79	197
He	2	4
B	5	11
Zn	30	68

Total amu out = 279.903294
Delta amu out = -0.000004. mev out = -0.003726

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0,047
Fe	26	54	0.059
Ph	82	206	0.241

Total Z value = 142
Total N value = 333
Total amu in = 332.845627

Matching products....

Element	Z	N
Au	79	197
Ne	10	21
Cl	17	35
Kr	36	80

Total amu. out = 332.845618

Delta amu out = 0.000009. mev out = 0.008383

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0.047
Fe	26	56	0.917
Pb	82	206	0.241

Total Z value = 142
Total N value = 335
Total amu in = 334.840954

Matching products....

Element	Z	N
Au	79	197
Li	3	6
Cr	24	54
Kr	36	78

Total amu out = 334.840946
Delta amu. out = 0.000008. mev out = 0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0.047
Fe	26	57	0,021
Pb	82	206	0.241

Total Z value 142
Total N value 336
Total amu in = 335.841411

Matching products....

Element	Z	N
Au	79	197
Al	13	27
Al	13	27
Rb	37	85

Total amu out = 335.841415
Delta amu out = -0.000004. mev out = -0.003726

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	30	0.031
Fe	26	57	0.021
Pb	82	206	0.241

Total Z value = 142
Total N value = 333

Total amu in = 332.846197

Matching products

Element	Z	N
Au	79	197
F	9	19
Ca	20	43
Se	34	74

Total amu. out= 332.846187
Delta amu out = 0.000010. mev out = 0.009315

1 Total products found

Starting elements.

Element	Z	N	Abundance
Si	14	28	0.922
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 104
Total N value = 250
Total amu in = 249.946282

Matching products

Element	Z	N
Au	79	197
H	1	1
Li	3	7
Sc	21	45

Total amu out= 249.946281
Delta amount = 0.000001.mev out = 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	54	0.059
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 136
Total N value = 320
Total amu in = 319.864047

Matching products

Element	Z	N
Au	79	197
0	8	17
Ca	20	43
Cu	29	63

Total amu out= 319.864038
Delta amu out = 0.000009. mev out = 0.008383

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	56	0.917
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 136
Total N value = 322
Total amu in = 321.859374

Matching products....

Element	Z	N
Au	79	197
H	1	3
S	16	32
Zr	40	90

Total amu out = 321.859366
Delta amu out = 0.000008., mev out 0.007452

Au	79	197
0	8	18
S	16	32
As	33	75

Total amu out = 321.859367
Delta amu out = 0.000007. mev out = 0.006520

2 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	56	0.917
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 130
Total N value = 308
Total amu. in = 307.878064

Matching products....

Element	Z	N
Au	79	197
B	5	10
Si	14	29
Ge	32	72

Total amu out= 307.878054
Delta amu out = 0.000010. mey out = 0.009315

1 Total products found

Starting elements.

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	57	0.021
0	8	16	0.998
Pb	82	206	0.241

Total Z value= 150
Total N value = 353
Total amu in = 352.833601

Matching products....

Element	Z	N
Au	79	197
0	8	17
K	19	39
Ru	44	100

Total amu out= 352.833600
Delta amu out = 0.000001. mev out = 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 104
Total N value = 2 50
Total amu in = 249.946282

Matching products....

Element	Z	N
Au	79	197
H	1	1
Li	3	7
Sc	21	45

Total amu out = 249.946281
Delta amu out = 0.000001. mev out 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	54	0.059
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 136
Total N value = 320

Total amu in= 319.864047

Matching products

Element	Z	N
Au	79	197
0	8	17
Ca	20	43
Cu	29	63

Total amu out= 319.864038
Delta amu out = 0.000009, mev out = 0.008383

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	56	0.917
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 136
Total N value = 322
Total amu in = 321.859374

Matching products....

Element	Z	N
Au.	79	197
H	1	3
S	16	32
Zr	40	90

Total amu out= 321.859366
Delta amu out = 0.000008, mev out 0.007452

Au	79	197
0	8	18
S	16	32
As	33	75

Total amu out = 321.859367
Delta amu out = 0.000007. mev out = 0.006520

2 Total products found

Starting elements-.

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	56	0.917
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 13 0
Total N value = 308
Total amu in= 307.878064

Matching products....

Element	Z	N
Au	79	197
B	5	10
Si	14	29
Ge	32	72

Total amu out = 307.878054
Delta amu out = 0.000010. mev out0.009315

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	57	0.021
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 150
Total N value = 353
Total amu in = 352.833601

Matching products....

Element	Z	N
Au	79	197
0	8	17
K	19	39
Ru	44	100

Total amu. out= 352.833600
Delta amount = 0.000001 mev out = 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Pb	82	207	0.221

Total Z value= 116
Total N value = 275
Total amu in= 274.915390

Matching products....

Element	Z	N
Au	79	197
Na	11	23
Mg	12	26
Si	14	29

Total amu. out = 274.915398
Delta amu out = -0.000008. mev out- 0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0.047
Pb	82	207	0.221

Total Z value = 116
Total N value = 280
Total amu in = 279.907447

Matching products....

Element	Z	N
Au	79	197
H	1	3
C	6	12
Zn	30	68

Total amu. out= 279.907439
Delta amu out = 0.000008. mev out = 0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	54	0.059
Pb	82	207	0.221

Total Z value 142
Total N value 335
Total amu in = 334.844334

Matching products....

Element	Z	N
Au	79	197
0	8	16
Si	14	29
Nb	41	93

Total amu. out = 334.844330
Delta amount= 0.000004.mev out = 0.003726

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
Pb	82	207	0.221

Total Z value = 128
Total N vaIue = 303
Total amu. in = 302.873402

Matching products...

Element	Z	N
Au	79	197
0	8	17
Cl	17	35
Cr	24	54

Total amu out= 302.873408
Delta amu out = -0.000006. mev out = -0.005589

1 Total products found

Starting elements.

Element	Z	N	Abundance
Ca	20	44	0.029
Sl	14	28	0.922
Fe	26	56	0.917
Pb	82	207	0.221

Total Z value = 142
Total N value 335
Total amu in 334.842818

Matching products....

Element	Z	N
Au	79	197
N	7	15
S	16	33
Zr	40	90

Total amu out = 334.842810
Delta amu out = 0.000008, mev out = 0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	56	0.917
Pb	82	207	0.221

Total Z value= 142
Total N value 337
Total amu in 336.839661

Matching products

Element	Z	N
Au	79	197
Ne	10	22
K	19	41
Se	34	77

Total amu, out = 336.839663
Delta amu out = -0.000002, mev out -0.001863

Au	79	197
S	16	36
V	23	50
Cr	24	54

Total amu out = 336.839666
Delta amu out = -0.000005. mev out-0.004657

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	57	0.021
Pb	82	207	0.221

Total Z value = 142
Total N value = 332
Total amu in= 331.850786

Matching products

Element	Z	N
Au	79	197
S	16	36
K	19	41
Ni	28	58

Total amu out = 331.850794
Delta amu out = -0.000008, mev out = -0.007452

1 Total products found

Starting elements.

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	28	0.922
Fe	26	57	0.021
Pb	82	207	0.221

Total Z value = 142
Total N value = 336
Total amu in= 335.843275

Matching products

Element	Z	N
Au	79	197
B	5	11
Ar	18	38
Zr	40	90

Total amu. out = 335.843283
Delta amu out = -0.000008. mev out = -0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	30	0.031
Fe	26	57	0.021
Pb	82	207	0.221

Total Z value = 142
Total N value = 334
Total amu in = 333.847629

Matching products

Element	Z	N
Au	79	197
B	5	10
Ti	22	47
Kr	36	80

Total amu. out = 333.847624
Delta amu out = 0.000005. mev out = 0.004657

1 Total products found

Starting elements.

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	54	0.059
0	9	16	0.999
Pb	92	207	0.221

Total Z value = 130
Total N value = 307
Total amu in = 306.994169

Matching products....

Element	Z	N
Au	79	197
B	5	11
Mg	12	25
	34	74

Total amu out = .306.994160
Delia amu out = 0.000009. mev out 0.008394

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	54	0.059
0	9	16	0.998
Ph	92	207	0.221

Total Z value = 150
Total N value = 351

Total amu in= 350.939249

Matching products

Element	Z	N
Au	79	197
C	6	13
K	19	39
Pd	46	102

Total amu out = 350.839239
Delta amount = 0.000010. mev out = 0.009315

1 Total products found

Starting elements

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	56	0.917
0	8	16	0.999
Ph	92	207	0.221

Total Z value = 150
Total N value = 353
Total amu in = 352.834576

Matching product

Element	Z	N
Au	79	197
C	6	12
K	19	40
Pd	46	104

Total amu out = 352.834571
Delta amu out = 0.000005. mev out = 0.004657

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	57	0.021
0	8	16	0.998
Pb	82	207	0.221

Total Z value 130
Total N value 308
Total amu in = 307.883110

Matching products....

Element	Z	N
Au	79	197
Al	13	27
S	16	36
Ti	22	48

Total amu out = 307.883109

Delta amount = 0.000001.mev out = 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	57	0.021
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 130
Total N value = 310
Total amu in = 309.879953

Matching products

Element	Z	N
Au	79	197
Al	13	27
S	16	36
Ti	22	50

Total amu out = 309.879954
Delta amount = -0.000001. mev out = -0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	54	0.059
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 130
Total N value = 307
Total amu in = 306.884169

Matching products

Element	Z	N
Au.	79	197
B	5	11
Mg	12	25
Se	34	74

Total amu out = 306.884160
Delta amu out = 0.000009. mev out = 0.008384

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	54	0.059
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 150
Total N value = 351
Total amu in= 350.839249

Matching products....

Element	Z	N
Au	79	197
C	6	13
K	19	39
Pd	46	102

Total amu out = 350.839239
Delta amount = 0.000010.mev out = 0.009315

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	56	0.917
0	8	16	0.998
Pb	82	207	0.221

Total Z value 150
Total N value 353
Total amu in = 352.834576

Matching products....

Element	Z	N
Au	79	197
C	6	12
K	19	40
Pd	46	104

Total amu out = 352.834571
Delta amu out = 0.000005. mev out = 0.004657

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	57	0.021
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 130
Total N value = 308
Total amu in = 307.883110

Matching products....

Element	Z	N
Au	79	197
Al	13	27
S	16	36
Ti	22	48

Total amu out= 307.883109
Delta amu. out = 0.000001. mev out = 0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	30	0.031
Fe	26	57	0.021
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 130
Total N value = 310
Total amu in = 309.879953

Matching products....

Element	Z	N
Au	79	197
Al	13	27
S	16	36
Ti	22	50

Total amu out = 309.879954
Delta amu out = -0.000001, mev out = -0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value 124
Total N value 295
Total amu in 294.900641

Matching products

Element	Z	N
Au	79	197
Li	3	7
Ne	10	21

Ge	32	70

Total amu out = 294.900639
Delta amu out = 0.000002. mev out = 0.001863

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	57	0.021
0	9	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 144
Total N value = 340
Total amu. in = 339.856178

Matching products

Element	Z	N
Au	79	197
H	1	2
S	16	33
Cd	48	108

Total amu out = 339.856179
Delta amu out = -0.000001, mev out = -0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	30	0.031
Pb	82	208	0.524

Total Z value = 116
Total N value = 278
Total amu in = 277.912988

Matching products....

Element	Z	N
Au	79	197
C	6	13
0	8	17
V	23	51

Total amu out = 277.912991
Delta amu out = -0.000003. mev out = -0.002794

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0.047
Fe	26	54	0.059
Pb	82	208	0.524

Total Z value = 142
Total N value = 335
Total amu in= 334.847814

Matching products....

Element	Z	N
Au	79	197
H	1	2
Ca	20	40
MO	42	96

Total amu out = 334.847812
Delta amu out = 0.000002, mev out = 0.001863

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	54	0.059
Pb	82	208	0.524

Total Z value = 142
Total N value = 336
Total amu in = 335.845089

Matching products....

Element	Z	N
Au	79	197
0	8	17
P	15	31
Zr	40	91

Total amu out = 335.845080
Delta amu out = 0.000009. mev out = 0.008384

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
Pb	82	208	0.524

Total Z value = 128
Total N value= 304
Total amu in = 303.874157

Matching products

Element	Z	N
Au	79	197
Ne	10	21
Cl	17	37
Ti	22	49

Total amu out= 303.874160
Delta amu out = -0.000003. mev out = -0.002794

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	56	0.917
Pb	82	208	0.524

Total Z value = 122
Total N value = 292
Total amu in = 291.888493

Matching products

Element	Z	N
Au.	79	197
B	5	11
Si	14	30
Cr	24	54

Total amu out = 291.888500
Delta amu out = -0.000007, mev out = -0.006520

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	29	0.047
Fe	26	56	0.917
Pb	82	208	0.524

Total Z value = 142
Total N value = 337
Total amu in= 336.843141

Matching products....

Element	Z	N
Au	79	197
Be	4	9
Ti	22	46
Rb	37	85

Total amu out = 336.843148
Delta amu out = -0.000007. mev out =-0.006520

Au	79	197
N	7	15

S	16	33
Zr	40	92

Total amu out = 336.843146
Delta amu out = -0.000005. mev out = -0.004657

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	30	0.031
Fe	26	56	0.917
Pb	82	208	0.524

Total Z value = 142
Total N value = 334
Total amu in = 333.847927

Matching products....

Element	Z	N
Au	79	197
0	8	19
K	19	41
Kr	36	78

Total amu out= 333.847928
Delta amount = -0.00000l.mev out = -0.000931

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	30	0.031
Fe	26	56	0.917
Pb	82	208	0.524

Total Z value = 142
Total N value = 338
Total amu in = 337.840416

Matching products....

Element	Z	N
Au	79	197
Ne	10	21
Cl	17	37
Kr	36	83

Total amu out = 337.840424
Delta amu out = -0.000008. mev out = -0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	57	0.021
Pb	82	208	0.524

Total Z value 142
Total N value 333
Total amu in = 332.85l541

Matching products....

Element	Z	N
Au	79	197
He	2	3
Ca	20	40
Nb	41	93

Total amu out = 332.851541

Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Si	14	28	0.922
Fe	26	57	0.021
Pb	82	208	0.524

Total Z value = 142
Total N value = 337
Total amu in= 336.844030

Matching products....

Element	Z	N
Au	79	197
He	2	3
Ca	20	44
Nb	41	93

Total amu out = 336.844030
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 110
Total N value = 264
Total amu in= 263.934133,

Matching products....

Element	Z	N
Au.	79	197
H	1	2
H	1	2
Cu	29	63

Total amu out = 263.934141
Delta amu out = -0.000008 mev out = -0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	57	0.021
0	8	16	0.998
Pb	92	208	0,524

Total Z value 136
Total N value 325
Total amu in = 324.862018

Matching products....

Element	Z	N
Au	79	197
Ne	10	20
Ne	10	21
Rb	37	87

Total amu out= 324.862008
Delta amount = 0.000010 mev out = 0.009315

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	57	0.021
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 130
Total N value = 309
Total amu in= 308.883865

Matching products....

Element	Z	N
Au	79	197
He	2	3
0	8	16

Nb	41	93

Total amu out= 308.883865
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting, elements:

Element	Z	N	Abundance
Ca	20	40	0.965
0	8	16	0.998
Pb	82	208	0.524

Tolal Z value= 110
Total N value = 264
Total amu in= 263.934133

Matching products....

Element	Z	N
Au	79	197
H	1	2
H	1	2
Cu	29	63

Total amu out = 263.934141
Delta amu. out = -0.000008. mev out = -0.007452

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	44	0.029
Fe	26	57	0.021
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 136
Total N value = 325
Total amu in= 324.862018

Matching products

Element	Z	N
Au	79	197
Ne	10	20
Ne	10	21
Rb	37	87

Total amu. out= 324.862008
Delta amu out= 0.000010, mev out = 0.009315

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	57	0.021
0	8	16	0.998
Pb	82	208	0,524

Total Z value = 130
Total N value = 309
Total amu in= 308.883865

Matching products…….

Element	Z	N
Au	79	197
He	2	3
0	8	16
Nb	41	93

Total amu out = 308.883865
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starling elements:

Element	Z	N	Abundance
Si	14	28	0.922
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 112
Total N value = 268
Total amu in = 267.943384

Matching products…..

Element	Z	N
Au	79	197
C	6	12
Na	11	23
S	16	36

Total amu. out = 267.943390
Delta amu out = -0.000006. mev out = -0.005589

1 Total products found

Starting elements:

Element	Z	N	Abundance
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.999
Pb	82	208	0.524

Total Z value = 124
Total N value = 296
Total amu in = 295.901396

Matching products....

Element	Z	N
Au.	79	197
Li	3	6
C	6	13
Kr	36	80

Total amu out = 295.901399
Delta amu out = -0.000003, mev out = 0.002794

1 Total products found
Search for 4 outputs complete...

ATTACHMENT “E”

Transmute Directed Search! V4.2

Absolute value energy limit = 0.0001 mev

Minimum input abundunce = 0.0500 mev

Start/End fixed input elements.

Element	Z	N
Ca	20	40

Element	Z	N
Ca	20	40

Contribution count this range = 1

Start/End fixed input elements:

Element	Z	N
Si	14	28

Element	Z	N
Si	14	28

Contribution count this range = 1

Start/End fixed input elements:

Element	Z	N
Fe	26	54

Element	Z	N
Fe	26	56

Contribution count this range= 1

Start/End fixed input elements:

Element	Z	N
0	8	16

Element	Z	N
0	8	16

Contribution count this range = 2

Start/End fixed input elements:

Element	Z	N
Pb	82	206

Element	Z	N
Pb	82	208

Contribution count this range = 1

Start/End fixed output element search range:

Element	Z	N
An	79	197

Element	Z	N
An	79	197

Start 2-body out calculations ...

Search for 2 outputs complete ...

Start 3-body out calculations...

Search for 3 outputs complete...

Start 4-body out calculations ...

Search for 4 outputs complete ...

Start 5-body out calculations ...

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
0	8	16	0.998
Pb	82	207	0.221

Total Z value 136
Total N value 319
Total amu in= 318.868317

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	24
Sc	21	45
Ti	22	50

Total amu out = 318.868317
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
0	8	16	0.999
Ph	82	207	0.221

Total Z value = 136
Total N value = 319
Total amu in = 318.868317

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	24
Sc	21	45
Ti	22	50

Total amu out = 319.968317
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
Ph	82	208	0.524

Total Z value = 142
Total N value= 330
Total amu in= 329.855757

Matching products....

Element	Z	N
Au	79	197
N	7	14
Ne	10	20
Ca	20	43
Fe	26	56

Total amu out = 329.855757
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 124
Total N value = 294
Total amu in = 293.906069

Matching products....

Element	Z	N
Au	79	197
H	1	2
C	6	13
Ne	10	22
Ni	28	60

Total amu out = 293.906069
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Search for 5 outputs complete ...

Start 6-body out calculations ...

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.999
Pb	82	206	0.241

Total Z value = 150
Total N value = 344
Total amu in= 343.848495

Matching products....

Element	Z	N
Au	79	197
C	6	12
Mg	12	24
A]	13	27
Ar	18	38
Ti	22	46

Total amu out = 343.848485
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
Pb	82	206	0,241

Total Z value = 150
Total N value = 344
Total amu in = 343.848485

Matching products....

Element	Z	N
Au	79	197
C	6	12
Mg	12	24
A]	13	27
Ar	18	38
Ti	22	46

Total amu out = 343.848485

Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 144
Total N value = 332
Total amu in = 331.866473

Matching products....

Element	Z	N
Au	79	197
H	1	2
Ne	10	21
S	16	32
S	16	32
Ti	22	48

Total amu out = 331.866473
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	206	0.241

Total Z value 138
Total N value 320
Total amu in = 319.880809

Matching products....

Element	Z	N
Au	79	197
H	1	1
B	5	10
Al	13	27
S	16	33
Cr	24	52

Total amu out = 319.880809
Delta amu. out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	206	0.241

Total Z value = 138
Total N value = 322
Total amu in= 321.876136

Matching products....

Element	Z	N
Au	79	197
H	1	1
He	2	3
Ne	10	21
Ca	20	42
Fe	26	58

Total amu out = 321.876136
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
Pb	82	207	0.221

Total Z value 150
Total N value 345
Total amu in = 344.849917

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	26
Al	13	27
S	16	34
Ni	28	58

Total amu out = 344.849917
Delta amu out = 0.000000. mev Out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922

Fe	26	56	0.917
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 150
Total N value = 347
Total amu in = 346.845244

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	24
Si	14	29
Sc	21	45
Ti	22	50

Total amu out = 346.845244
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 150
Total N value = 345
Total amu in = 344,849917

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	26
Al	I 1	27
S	16	34
Ni	28	59

Total amu out = 344.849917
Delta amu out = 0.000000 mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 150

Total N value = 347
Total amu in = 346.845244

Matching products....

Element	Z	N
Au	79	197
He	2	3
Mg	12	24
Si	14	28
Sc	21	45
Ti	22	50

Total amu out = 346.845244
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	29	0.922
0	9	16	0.998
0	8	16	0,998
Ph	82	207	0.221

Total Z value= 132
Total N value = 307
Total amu in= 306.905220

Matching products....

Element	Z	N
Au	79	197
H	1	2
N	7	15
Na	11	23
S	16	32
Ar	18	38

Total amu out = 306.905220
Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 138
Total N value = 321
Total amu in = 320.882241

Matching products....

Element	Z	N
Au	79	197
He	2	3
He	2	4
B	5	11
Ca	20	42
Zn	30	64

Total amu out = 320.882241
Delta amu out = 0.000000 mev out = 0.000000

Au	79	197
He	2	4
B	5	10
Ne	10	22
Ar	18	38
Cr	24	50

Total amu out = 320.882241
Delta amu out =0.000000. mev out = 0.000000

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.999
Pb	82	207	0.221

Total Z value = 144
Total N value = 335
Total amu in = 334.863232

Matching products....

Element	Z	N
Au	79	197
He	2	3
0	8	16
Mg	12	24
Sc	21	45
Ti	22	50

Total amu out = 334.863232
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 158
Total N value = 363
Total amu in = 362.840159

Matching products....

Element	Z	N
Au	79	197
C	6	12
N	7	14
Mg	12	24
S	16	32
Sr	38	84

Total amu out = 362.840159
Delta amu out = 0.000000 mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 124
Total N value = 292
Total amu in = 291.911060

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42

Total amu out = 291.911060
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.999
Pb	82	208	0.524

Total Z value = 150
Total N value= 346
Total amu in = 345.850672

Matching products....

Element	Z	N
Au	79	197
H	1	1
Ne	10	20
Al	13	27
Ar	18	38
Cu	29	63

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	3
Al	13	27
Si	14	29
K	19	40
Cr	24	50

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
Li	3	6
Mg	12	24
Mg	12	24
S	16	34
Ni	28	61

Total amu out = 345.850672
Delta amu out = 0.000000 mev out = 0.000000

Au	79	197
N	7	14
0	8	16
Ne	10	20
Ca	20	43
Fe	26	56

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

4 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
Ph	82	208	0.524

Total Z value = 150
Total N value = 348
Total amu in = 347.845999

Matching products....

Element	Z	N
Au	79	197
He	2	3
Ne	10	20

Si	14	30
K	19	41
Fe	26	57

Total amu out = -347.845999
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
Be	4	9
A]	13	27
Si	14	30
S	16	33
Cr	24	52

Total amu out = 347.845999
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
C	6	12
Ne	10	22
Si	14	29
K	19	39
Ti	22	49

Total amu out = 347.845999
Delta amu out = 0.000000. mev out = 0.000000

3 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
0	8	16	0.998
Pb	82	208	0.524

Total Z value 124
Total N value 292

Total amu in = 291.911060

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42

Total amu out = 29 1.911060
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 150
Total N value = 346
Total amu in = 345.850672

Matching products....

Element	Z	N
Au	79	197
H	1	1
Ne	10	20
Al	13	27
Ar	18	38
Cu	29	63

Total amu out = 345,850672
Delta amu out = 0.000000. mev out= 0.000000

Au	79	197
H	1	3
Al	13	27
Si	14	29
K	19	40
Cr	24	50

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
Li	3	6
Mg	12	24
Mg	12	24
S	16	34
Nj	28	61

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

An	79	197
N	7	14
0	8	16
Ne	10	20
Ca	20	43
Fe	26	56

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

4 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.917
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 150
Total N value = 349
Total amu in = 347.845999

Matching products....

Element	Z	N
Au	79	197
He	2	3
Ne	10	20
Si	14	30
K	19	41
Fe	26	57

Total amu out = 347.845999
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
Be	4	9
A]	13	27
Sim	14	30
S	16	33
Cr	24	52

Total amu out = 347.845999
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
C	6	12
Ne	10	22
Si	14	29
K	19	39
Ti	22	49

Total amu out = 347.845999
Delta amu out = 0.000000. mev out = 0.000000

3 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
0	8	16	0.998
0	8	16	0.999
Pb	82	208	0.524

Total Z value 132
Total N value 308
Total amu in 307.905975

Matching products....

Element	Z	N
Au.	79	197
H	1	2
Li	3	7
S	16	32
S	16	33
Cl	17	37

Total amu out = 307.905975
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 144
Total N value = 334
Total amu in= 333.868660

Matching products....

Element	Z	N
Au	79	197
H	1	2
C	6	13
Ne	10	22
Ca	20	40
Ni	28	60

Total amu out = 333.869660
Delta a out = 0.000000, mev out = 0.000000

Au	79	197
He	2	3
Mg	12	25
Mg	12	25
P	15	31
Cr	24	53

Total amu out = 333.868660
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
B	5	10
C	6	12
P	15	31
S	16	33
V	23	51

Total a out = 333.868660
Delta amu out = 0.000000. mev out = 0.000000

3 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
0	9	16	0.998
Pb	82	208	0.524

Total Z value 138
Total N value 322
Total amu in = 321.882996

Matching products....

Element	Z	N
Au	79	197
H	1	2
C	6	13
Ne	10	22
Si	14	28
Ni	28	60

Total amu out = 321.882996
Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 144
Total N value = 336
Total amu in = 335.863997

Matching products....

Element	Z	N
Au	79	197
H	1	1
0	8	17
Ne	10	21
Cl	17	35
Cu	29	65

Total amu out = 335.863987
Delta amu out = 0.000000. mev out= 0.000000

1 Total products found

Search for 6 outputs complete ...

Start 7-body out calculations ...

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0,922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	206	0.241

Total Z value 158
Total N value 360
Total amu in 359.843400

Matching products....

Element	Z	N
Au	79	197
H	1	1
B	5	10
Al	13	27
S	16	33
Ca	20	40
Cr	24	52

Total amu out = 359.843400
Delta amu out = 0.000000. mev out = 0.000000

Au.	79	197
H	1	2
Ne	10	21
Si	14	28
S	16	32
S	16	32
Ti	22	48

Total amu out = 359.943400
Della amu out = 0.000000. mev out = 0.000000

Au	79	197
C	6	12
0	8	16
Mg	12	24
A]	13	27
Ar	18	38
Ti	22	46

Total amu out = 359.843400
Della amu out = 0.000000, mev out = 0.000000

3 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
0	9	16	0.998
Pb	82	206	0.241

Total Z value = 158
Total N value = 362

Total amu in = 361.838727

Matching products....

Element	Z	N
Au	79	197
H	1	1
He	2	3
Ne	10	21
Ca	20	40
Ca	20	42
Fe	26	58

Total amu out = 361.839727
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
N	7	15
Ne	10	20
Ne	10	22
Cr	24	50
Fe	26	54

Total amu out = 361.838727
Delia amu out = 0.000000. mev out = 0.000000

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.999
Pb	82	207	0.221

Total Z value 150
Total N value 347
Total amu in 346.845244

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
N	7	14
p	15	31
Ca	20	42
Mn	25	55

Total amu out = 346.945244
Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	29	0.922
Fe	26	56	0.917
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 150
Total N value = 347
Total amu in = 346.845244

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
N	7	14
p	15	31
Ca	20	42
Mn	25	55

Total amu out = 346.845244
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 144
Total N value = 333
Total amu in = 332.86790

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	17
Al	13	27
Ar	18	36
Ti	22	48

Total amu out = 332.867905

Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starling elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 158
Total N value = 361
Total amu in = 360.844832

Matching products....

Element	Z	N
Au	79	197
H	1	2
N	7	15
Na	11	23
S	16	32
Ar	18	38
Fe	26	54

Total amu out = 360.844832
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
Mg	12	24
Mg	12	24
P	15	31
K	19	41
Ca	20	42

Total amu out = 360.944832
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
He	2	4
B	5	11
Ca	20	40
Ca	20	42
Zn	30	64

Total amu out = 360.844832
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
0	8	16
Mg	12	26
Al	13	27
S	16	34
Ni	28	58

Total amu out = 360.844832
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
He	2	4
Li	3	6
Na	11	23
S	16	33
K	19	40
Ni	28	58

Total amu out = 360.844832

Delta amu out = 0.000000, mev out= 0.000000

Au	79	197
He	2	4
B	5	10
Ne	10	22
Ar	18	38
Ca	20	40
Cr	24	50

Total amu out = 360.844832
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
Li	3	6
C	6	12
CI	17	35
CI	17	35
Ar	18	38
Ar	18	38

Total amu out = 360.844832
Delta amu out ~ 0.000000. mev out = 0.000000

7 Total products found

Starting elements:

Element	Z	N	Abundance
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Ph	82	207	0.221

Total Z value = 138
Total N value= 323
Total amu in = 322.877568

Matching products....

Element	Z	N
Au	79	197
H	1	3
He	2	4
He	2	4
Mg	12	24
S	16	33
Fe	26	58

Total amu out = 322.877568
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
C	6	12
0	8	17
Ar	18	38
V	23	51

Total amu out = 322.877568
Delta amu out = 0.000000, mev out = 0.000000

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	29	0.922
Fe	26	56	0.917
0	8	16	0.998
0	9	16	0.998
Pb	82	207	0.221

Total Z value 158
Total N value 363
Total amu in 362,840159

Matching products....

Element	Z	N
Au	79	197
H	1	1
He	2	4
0	8	17
Mg	12	24
Ca	20	42
Kr	36	78

Total amu. out = 362.840159
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
H	1	1
C	6	12
Mg	12	24
Mg	12	24
Si	14	29
Se	34	76

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	1
F	9	19
Na	11	23
Si	14	29
Ca	20	44
Cr	24	50

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
Li	3	6
Si	14	29
S	16	32
Ar	18	38
Co	27	59

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
N	7	15
Na	11	23
S	16	32
Ar	18	38
Fe	26	56

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
He	2	3
He	2	4
Ar	18	36
V	23	50
Ge	32	70

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
0	8	16
Mg	12	24
Si	14	29
Sc	21	45
Ti	22	50

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
Li	3	7
N	7	14
Al	13	27
Fe	26	54
Ni	29	60

Total amu out = 362.840159

Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
He	2	4
F	9	19
Mg	12	24
Mg	12	24
Si	14	29
Zn	30	66

Total amu out 362.940159
Delta amu out =0.000000. mev out = 0.000000

Au	79	197
Li	3	6
C	6	12
Ne	10	20
Mg	12	24
Cr	24	52
Cr	24	52

Total amu out = 362.840159

Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
C	6	12
C	6	12
Mg	12	26
Si	14	29
Ca	20	42
Sc	21	45

Total amu out = 362.840159
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
C	6	12
Mg	12	24
Mg	12	26
Al	13	27
Si	14	29
Ti	22	48

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
C	6	13
Al	13	27
Si	14	29
Si	14	29
S	16	34
S	16	34

Total amu out= 362.840159
Delta amu out = 0.000000. mev out = 0.000000

13 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
Pb	82	208	0.524

Total Z value = 142
Total N value = 330
Total amu in = 329.855757

Matching products....

Element	Z	N
Au	79	197
H	1	1
He	2	4
He	2	4
S	16	33
S	16	33
Fe	26	58

Total amu out = 329.855757
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	9	16	0.999
Pb	82	208	0.524

Total Z value 150
Total N value 346
Total amu in= 345.850672

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42
Fe	26	54

Total amu out = 345.950672

Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
Pb	82	208	0.524

Total Z value 150
Total N value 348
Total amu in 347.845999

Matching products....

Element	Z	N
Au.	79	197
H	1	2
He	2	4
C	6	12
Mg	12	26
Cr	24	53
Fe	26	54

Total amu out = 347.845999
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42
Fe	26	56

Total amu out = 347.845999
Delta amu out = 0.0000001, mev out 0.000000

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	54	0.059
0	8	16	0,998
Pb	82	208	0.524

Total Z value = 150
Total N value = 346
Total amu in= 345.850672

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42
Fe	26	54

Total amu out = 345.850672
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.999
Pb	82	208	0.524

Total Z value = 150
Total N value = 348
Total amu in = 347.845999

Matching products....

Element	Z	N
Au	79	197
H	1	2
He	2	4

C	6	12
Mg	12	26
Cr	24	53
Fe	26	54

Total amu out = 347.845999
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
0	8	18
Al	13	27
Ca	20	42
Fe	26	56

Total amu out = 347,845999
Delta amu out = 0.000000. mev out = 0.000000

2 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
0	9	16	0.999
0	8	16	0,998
Pb	92	208	0.524

Total Z value = 132
Total N value = 308
Total amu in = 307.905975

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	16
0	8	18
Al	13	27
Ca	20	42

Total amu out = 307.905975
Delta amu out = 0.000000, mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 144

Total N value= 334
Total amu in = 333.868660

Matching products....

Element	Z	N
Au	79	197
He	2	4
He	2	4
0	8	17
Mg	12	25
Cl	17	37
Cr	24	50

Total amu out = 333.868660
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0. 922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value 158
Total N value 362
Total amu in = 361.845587

Matching products....

Element	Z	N
Au	79	197
H	1	1
0	8	16
Ne	10	20
Al	13	27
Ar	18	38
Cu	29	63

Total amu out = 361.845587
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
He	2	3
Ne	10	20
Mg	12	25
Fe	26	57
Ni	29	59

Total amu out = 361.845587
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
Li	3	7
S	16	32

S	16	33
CI	17	37
Fe	26	54

Total amu out = 361,845587
Delta amu out = 0.000000, mev out = 0.000000

Au.	79	197
H	1	2
C	6	13
Ne	10	22
Si	14	28
Ca	20	40
Ni	28	60

Total amu out = 361.845587
Delta amu out = 0.000000. mev out 0.000000

Au	79	197
H	1	3
0	8	16
Al	13	27
Si	14	29
K	19	40
Cr	24	50

Total amu out = 361.845587
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
He	2	3
mg	12	25
mg	12	25
Si	14	28
p	15	31
Cr	24	53

Total amu out = 361.945597
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
Li	3	6
0	8	16
mg	12	24
mg	12	24
S	16	34
Ni	28	61

Total amu out = 361.845587
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
B	5	10
C	6	12
Si	14	28
p	15	31
S	16	33
V	23	51

Total amu out = 361.845587
Delta amu out = 0.000000.. mev out = 0.000000

Au	79	197
N	7	14
0	8	16
0	8	16

Ne	10	20
Ca	20	43
Fe	26	56

Total amu out = 361.845587
Delta amu out = 0.000000. mev out = 0.000000

9 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 144
Total N value = 336
Total amu in = 335.863987

Matching products....

Element	Z	N
Au	79	197
H	1	1
H	1	1
H	1	2
He	2	4
Ti	22	47
Sr	38	84

Total amu out = 335.863987

Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0.998
0	8	16	0.998
Pb	82	208	0.524

Total Z value = 158
Total N value = 364
Total amu in= 363.840914

Matching products....

Element	Z	N
Au	79	197
H	1	1
0	8	17
Ne	10	21
Si	14	28

Cl	17	35
Cu	29	65

Total amu out = 363.840914

Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
H	1	2
He	2	3
CI	17	35
CI	17	35
Ca	20	43
Ti	22	49

Total amu out = 363.840914

Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	2
Li	3	7
S	16	32
S	16	33
Cl	17	37
Fe	26	56

Total amu out = 363.840914
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
H	1	2
Mg	12	24
Mg	12	25
Mg	12	26
Cl	17	35
Mn	25	55

Total amu out = 363.840914
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	3
C	6	12
Ne	10	20
Mg	12	26
Ti	22	48
Ni	28	58

Total amu out = 363.840914
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
He	2	3
C	6	12
Mg	12	25
Ar	19	38
K	19	41
Ti	22	49

Total amu out = 363.840914
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
0	8	16

Ne	10	20
Si	14	30
K	19	41
Fe	26	57

Total amu out = 363.840914
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
C	6	13
F	9	19
Ca	20	42
Ca	20	43
Ti	22	46

Total amu out = 363.840914
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
Li	3	6
0	8	17
Si	14	10
Si	14	30
S	16	32
Cr	24	52

Total amu out = 363.840914
Delta amu. out = 0.000000. mev out = 0.000000

Au.	79	197
Be	4	9
0	8	16
Al	13	27
Si	14	30
S	16	33
Cr	24	52

Total amu out = 363.840914
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
C	6	12
N	7	15
Si	14	29
S	16	34
Cl	17	37
K	19	40

Total amu out = 363,840914
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
C	6	12
0	8	16
Ne	10	22
Si	14	29
K	19	39
Ti	22	49

Total amu out = 363.840914

Delta amu out = 0.000000, mev out = 0.000000

12 Total products found

Search for 7 outputs complete ...

Start 8-body out calculations ...

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
0	9	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 132
Total N value = 307
Total amu in = 306.905220

Matching products....

Element	Z	N
Au	79	197
H	1	1
H	1	1
H	1	2
He	2	4
C	6	12
Ar	18	36
Cr	24	54

Total amu out = 306.905220
Delta amu out = 0.000000. mev out = 0.000000

1 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	29	0.922
Fe	26	54	0.059
0	8	16	0.998
0	8	16	0.998
Pb	82	207	0.221

Total Z value = 158
Total N value = 361
Total amu in = 360.844832

Matching products....

Element	Z	N
Au	79	197
H	1	1
H	1	1
Li	3	6
S	16	33
S	16	34
Ar	18	36
Cr	24	53

Total amu out = 360.844832
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
H	1	1
H	1	3
He	2	4
S	16	32
S	16	32
Sc,	21	45
Ti	22	47

Total amu out = 360.844832
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	3
He	2	4
He	2	4
N	7	15
Ar	18	36
Ca	20	42
Ni	29	60

Total amu out = 360.844832
Delta amu out = 0.000000. mev out = 0.000000

An	79	197
He	2	4
He	2	4
0	8	17
Al	13	27
Si	14	28
Ar	18	36
Ti	22	48

Total amu out = 360.844832
Delta amu out = 0.000000. mev out = 0.000000

4 Total products found

Starting elements:

Element	Z	N	Abundance
Ca	20	40	0.965
Si	14	28	0.922
Fe	26	56	0.917
0	8	16	0,999
0	8	16	0.998
Ph	82	207	0.221

Total Z value 158
Total N value 363
Total amu in = 362.840159

Matching products....

Element	Z	N
Au	79	197
H	1	1
H	1	1
Ne	10	20
Mg	12	25

S	16	34
S	16	34
V	23	51

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	1
H	1	1
mg	12	26
Si	14	29
P	15	31
Ar	18	38
Ar	19	40

Total amu out= 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	1
H	1	2
He	2	4
C	6	13
Ti	22	46
V	23	50
Cr	24	50

Total amu out = 362.940159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
H	1	3
He	2	4
He	2	4
mg	12	24
S	16	33
Ca	20	40
Fe	26	58

Total amu out = 362.840159
Delta amu out = 0.000000, mev out = 0.000000

Au	79	197
He	2	3
He	2	4
He	2	4
P	15	31
Cl	17	35
K	19	41
Ti	22	48

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
C	6	12
0	8	17
Ar	18	38
Ca	20	40
V	23	51

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
N	7	14
0	8	16
P	15	31
Ca	20	42
Mn	25	55

Total amu out = 362.840159
Delta amu out = 0.000000. mev out = 0.000000

Au	79	197
He	2	4
He	2	4
N	7	14
mg	12	26