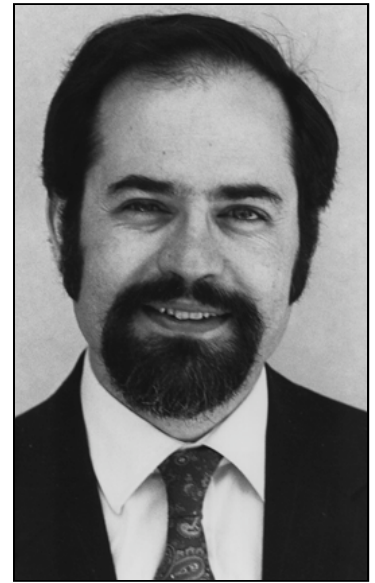


By Eugene F. Mallove, Sc.D.



## Comets, Cold Fusion, and Alchemy

**W**e live in an age of miracles. The news in this *Special Double Issue* leaves little doubt. Of the two items on the preceding page, I can't decide which is more "miraculous"—

- The long overdue, but *very welcome* letter from an important office within the U.S. Department of Energy, a formal statement that is highly supportive of cold fusion research—though not using the words *cold fusion per se*—there is no doubt that that is what they are writing about. Received by James Reding, CEO of Clean Energy Technologies, Inc., one of the emerging New Energy companies, the letter promises to send the energy-from-water (cold fusion) message throughout DOE and elsewhere!! Congratulations to those in DOE's Office of Energy Intelligence for their integrity. Perhaps this Office will now let everyone know that the DOE Cold Fusion Panel's Report of 1989 is indefensible, and that it is still being cited by the Patent Office to deny cold fusion patents. While they're at it, the Office of Energy Intelligence could look into why no one at DOE seems interested in the Claytor group's *low energy* production of *tritium* (at Los Alamos National Laboratory)—a strategic material.

### or, another "miracle"....

- The visible piece of copper in a matrix of other elements that emerged from a low-energy transmutation cell that apparently substantially reduced the radioactivity of thorium in less than an hour, cold-fusion/fissioning it (without deadly radiation!) to a range of lower-mass elements. Moreover, some of these new nuclides have highly anomalous non-natural ratios among their isotopes. There is no possibility of contamination explaining that away. Thus, we have a simple process, validated in several laboratories already,

that accomplishes in minutes or hours (for only pennies of electricity input) what Nature would take *tens of billions* of years to do. That is a genuine miracle—especially since more than 99% of the world's scientists would "know" *a priori* that such is impossible.

Well, they now will have NO valid excuse for not doing the experiment to check this out—no excuse but obstinate denial. The details of the relatively simple zirconium-chamber experiment and methods of data analysis are disclosed in this issue of *Infinite Energy*. They come from a group of inspired inventors in Ohio—*The Cincinnati Group*—which is also selling (hallelujah!) a Low Energy Transmutation Kit (LENT™-1), for those who want to get it right the first time with no fiddling around. The Cincinnati Group has applied for patent protection for its intellectual property and intends to license the process.

These Ohio inventors acknowledge their limitations. They are not trained scientists, they are clever mechanical and practical people—self-taught like the Wright Brothers. They knew very well, however, with which scientists to work and how to do experiments to develop a mountain of data that helped them make *repeatable* their transmutation experiments. We first came upon them two years ago, when they were in the early stages of this work, and were very impressed with them. They also have many other interesting energy-related technologies up their sleeves. We only wish that our own limited resources had then enabled us to help them more through difficult times.

A word about the claimed source of the Cincinnati Group's inspiration. These deeply religious, Christian people say they receive direct guidance from the Lord. On their web site (<http://web.gcis.net/cincygrp>) they

prominently display bible scripture, Jeremiah 33-3, "Call to me, and I will answer you, and show you great and mighty things, which you do not know."

Without endorsing religious views or claims, to those snickering folks who are too quick to disparage this blend of science and "revelation," let me say, quoting Hamlet, that there are "far more thing in Heaven and Earth than are dreamt of in your philosophy." If the cold fusion saga has taught us anything, it is that we must be open-minded. Furthermore, let us recall the inspired work of Kepler and Isaac Newton in celestial mechanics. Both men were driven by intense religious passion—as have been many scientists of other faiths. In fact, we must now go back and study Newton's compendious alchemy writings very carefully. He may have left us a legacy as profound as what he gave us in dynamics, calculus, and gravitation, but Newton's alchemy writings have been sidelined by the Establishment as an "embarrassment."

These transmutation results from Ohio, and *also* from CETI, which has another electrochemical radioactivity remediation process, have a lot to do with alchemy, but of the *modern* sort. They employ electrochemistry, not pure thermal energy input. CETI is about to receive a United States Patent designation (allowance of the patent has already been received). Its process was profiled in a landmark television broadcast by Dr. Michael Guillen, *Good Morning America*, June 11, 1997.

On that program, CETI revealed its long-duration hot water heating unit, pictured on the cover of this *IE*. It produces power *continuously* for *months* at 20% to 50% excess. It is in the power range: hundreds of watts to a kilowatt—affected by whatever power they wish to dial in. The recent CETI technology improvement is in dura-

tion and sustained high-power level. We hope that the staffing-up of CETI, reported in its newsletter, will lead to both duration improvements with *simultaneous* much higher power ratios—such as CETI has achieved in the past and is still able to do with other cells.

If it is virtually certain now that we are entering what I would call the *Modern Alchemy Age*, what do these wonders of cold fusion-cold fission (or *whatever* you want to call it!) have to do with comets—as in this essay's title? A lot. In recent times Earth people (and people and instruments in space) have been witness to spectacular comets—most recently, the very bright Hale-Bopp, which was so beautifully visible to the naked eye. Not far back we witnessed the cataclysmic collision with Jupiter of the fragments of comet Shoemaker-Levy. These were incredible events, but not as momentous to human civilization as what is happening in cold fusion.

Overlooked by the mass media, however, was another, probably much more important comet story. It may presage another revolution in planetary science as profound as the coming of plate tectonics and the for-decades-denied "impossible" motion of continents.

This other comet story has virtually all the hallmarks of the cold fusion controversy of the past 8-plus years. It had been a less well-known controversy, because it was not possible for

*Continued on page 6*

thousands of people all over the world to be conducting experiments on images from satellites! In cold fusion, by contrast, thousands of scientists and inventors have done experiments that will shake modern physics and chemistry to their foundations.

The comet controversy began in the mid-1980s. It involved the heretical interpretation of "black spots" in images of Earth's upper atmosphere taken by the Dynamics Explorer NASA spacecraft. To the hero of the story, Prof. Louis A. Frank, the Carver/James Van Allen Professor of Physics at Iowa State University, it appeared that these spots were *real*, not just electronic noise. He had checked the noise explanation carefully, and found that it did not hold water. Dr. Frank suggested that these spots revealed the continuous bombardment of Earth by some heretofore unknown, fluffy, water-laden mini-comets. These would be house-sized, travelling at 35,000 kilometers/hour. He estimated that there were 20 of them falling into the atmosphere every minute—10 million of them a year! He said that they must deposit huge clouds of water high in the atmosphere when they disintegrate—thus, the occurrence of those black spots from Dynamics Explorer.

Though a highly respected and very well published planetary scientist, Dr. Frank was attacked and subjected to ridicule and worse during the past decade. He became an outcast. The mini-comet hypothesis raised a huge number of questions about accepted geological and planetary science—it profoundly threatened the reigning paradigm. For one thing, Dr. Frank concluded that the mini-comets had probably deposited enough water to fill the oceans, and may have injected Earth with organic ingredients required in the origin of life. There were many other problems raised by the small comet hypothesis, too numerous to mention here.

Nonetheless, Dr. Frank stood his ground. The incontrovertible data were *to him* far more important than (1) established theories that appeared to be violated, or (2) *possible* contradictions of other observations. We can thank him for his steadfastness. Last May, Dr. Frank presented images from the ultraviolet camera aboard a new NASA satellite, the Polar spacecraft. The data was now overwhelming that the black spots seen a decade earlier were real. Large numbers of geophysicists—even former opponents—were forced to concede that. The hiatus in scientific understanding and benefit to humanity was long-delayed by the obstinate clinging of scientist to *old theories*—even in the face of *strong new data* which contradicted those theories. It was easier for establishment scientist to ridicule or ignore those data. Virtually all science journalists fell right into step with the critics in the Establishment and ignored Dr. Frank. Sound familiar? Regular readers of

*Infinite Energy* will know that this is the cold fusion story writ large, and the story of a major failure of science journalism—it just happens to be in another domain.

The comet controversy has been chronicled in an excellent book, *The Big Splash*, by Dr. Frank and science writer Patrick Huyghe (Birch Lane Press, 1990), who specializes in writing about scientific anomalies. The saga of Frank's observations and shabby treatment by his colleagues was more recently (July 13, 1997) the subject of a *Washington Post* "Outlook" piece by Dr. Frank and Mr. Huyghe.

In that piece (*get it at your library!*), Frank makes some beautiful observations: "The universe is what it is. I don't bury observations that stand in the way of conventional wisdom. I don't gloss over things I don't understand. I will not compromise my integrity. Unfortunately, this stance has made me the target of scientific vandalism."

What an extraordinary phrase—*scientific vandalism!* That is *precisely* how we should characterize many of the attackers and ignorers of cold fusion data. They are scientific vandals, i.e. ethically, if not legal-

**Continued on page 12**

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**"Breaking Through" continued from p.6**

ly—criminals. [One such senior con-artist and *science vandal*, Dr. John Huizenga, is in the news again in our *Briefs* section, after his travels were featured in *Issue #12.*] Huizenga and his ilk, such as some of the hot fusioners at MIT, not only *in effect* stole money in the form of Federal budget dollars that continue to be wasted on the doomed tokamak fusion enterprise, but they stole HOPE away from the unsuspecting citizenry of this planet. They stole *hope* for, and delayed implementation of, energy independence and an environmental renaissance. That is the vandals' most serious crime.

Dr. Frank wrote in *Outlook*, "Scientists reacted to my announcement as if I had plowed through the sacred field of established science with a bulldozer. I had." Reacting to *Nature* magazine's lunatic methods for judging his work, Dr. Frank wrote, "It was my first encounter with taking polls as a way of doing science." He should know that not only did *Nature* use the "polling method" to "peer review" cold fusion science, it also used the authors of challenged "null" cold fusion papers (e.g. the Caltech work) to reject any scientific correspondence critical of those papers.

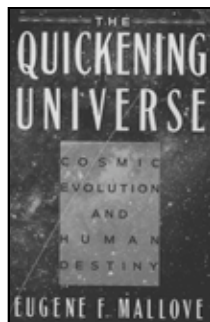
Following the July 13 *Washington Post* piece by Frank and Huyghe, we have one of Frank's critics, Dr. Alexander Dessler, a **Continued, Page 120**

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### "Breaking Through," continued from 12

research scientist at the Lunar and Planetary Laboratory of the University of Arizona, writing in *Outlook* (July 27th). What is so extraordinary about Dessler's assertions is that he thinks Frank has been treated fairly all along. He is proud to have been the editor in 1986 who published Dr. Frank's initial papers on small comets. But then he says, "Controversial papers, such as the small-comet hypothesis, that seek to overturn the conventional wisdom are almost always wrong. But not all are." Later he says, "Frank's depiction of a unitary scientific establishment working to keep out innovative ideas is as implausible as it is wrong." Sorry, Dr. Dessler, Dr. Frank is absolutely correct: scientific vandalism happened in the small-comets controversy. It also happened for cold fusion—roughly in the same time period.

Dr. Dessler astonishes us with these incomprehensible sentiments: "But for an idea to gain adherents, it must be perceived as promising—and Frank's hypothesis is not. It does not help to solve, or even aid in understanding, any existing problem in space science... Worse, it creates problems." He goes on to explain the problems for theorists that mini-comets would pose. He complains that "only Frank and his colleagues" have been able to detect the mini-comets and that there are no "confirming observations" or "supporting theories." Arrogantly invoking Nature herself, Dessler says, "Nature imposes on us the procedures we must follow if we are to find the truth." Translation: Don't bother me with data, I've got theories to defend.

Just think of what will happen to Dessler's world view when he has to face the implications of Modern Alchemy!



## THE HYPOTHESIS AND THE EQUATIONS OF THE UNIFIED MATTER FIELD

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### ABSTRACT

The purpose of this paper is to state the equations of the unified matter field which is derived from the hypothesis that any spacetime can be regarded as matter. Thus the unification of the GRT [General Relativity Theory] and the QM [Quantum Mechanics] can be approximated, the operators of spacetime magnitudes can be stated and the matter field can be described—in a Euclidean spacetime of reference—in its whole extent with spacetime wave functions. The charge space is regarded as an imaginary gravitational space which coexists with the real one, the two of them being interconnected. Thus a system of equations of space as a whole including the antimatter is stated and a possibility of application in gravitational technology is shown. A verification is given through the fractal geometry which seems to apply in many matter systems characterized by the property of selfsimilarity.

### INTRODUCTION

In the case that space and time are considered to correspond to the deeper reasons of reality, a scientific formalism is insufficient and a philosophical quest is needed. According to the process through which Godel's theorem is proved [1] we have the following statement "A": "There exists no system of axioms, those of logic included, represented in Peano's arithmetic, which will not lead into contradiction." Statement "A" is concluded on the basis of the axioms of "Principia Mathematica" [1,2], which codify the typical logic, and Peano's axioms which declare the existence of time since they claim the existence of "earlier" and "posterior." Time, however, implies space, since space must be the containing of any matter, e.g. the containing of a time-measuring system. If for reasons of communication consistency we claim the propriety of logic [3], statement "A" will constitute an application of logic in arithmetic and fur-

thermore an application of logic in statements concerning space and time. The contradiction of statement "A" implies that space and time are not simply mental categories as Kant [4] believed, but they behave as reality itself. This leads us to the hypothesis that spacetime may be matter which really is uncertain. With this hypothesis as basis, any infinitesimal spacetime behaves like a matter wave, which is—according to the spirit of this work—the basic concept of the unified matter field. It must be noted that there are many ways of approaching the unified field, as through the gauge theories, the superstring theory [5] and new axioms as the axiom of the unity of space-matter-time [6].

The present work is an extension of a previous one with title "The Hypothesis of the Unified Field and the Principles of its Dual Interpretation"[7]. This hypothesis can be stated through the following principles:

*Principle I. In the whole extent of a matter field there does not exist any privileged area, and any spacetime of it contains energy due to the spacetime itself, which is matter.*

According to the hitherto gained experience this principle can be stated as follows:

*"Any infinitesimal spacetime can be regarded as a particle wave"*

*Principle II: In the whole extent of a particle field only those consequences of the GRT are valid which are compatible with principle I.*

The only consequence of the GRT in the unified matter field is that[7]:

$$E = DE_0 \text{tr} d^3$$

which is derived from the eqn:

$$dE = DE_0 dV_0 \text{tr} \text{ or } DE/dE_0 = \tau/\tau_0 \quad (a)$$

where  $DE_0$  the energy density,  $dV_0$  the infinitesimal volume of the spacetime of reference to which  $dE$  corresponds,  $\text{tr}$  the relative time and  $\tau$  the time of a phenomenon of comparison[7]. From eqn (a) we may