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## UFO UpDates Mailing List

### Hoagland Charged With More Plagiarism & Fraud

From: **UFO UpDates - Toronto** <[updates@globalserve.net](mailto:updates@globalserve.net)>  
Date: Sat, 06 Mar 1999 09:55:51 -0500  
Fwd Date: Sat, 06 Mar 1999 09:55:51 -0500  
Subject: Hoagland Charged With More Plagiarism & Fraud

Source: Jeff Rense's 'Sightings' Homepage

<http://www.sightings.com/ufo2/remedy.htm>

Richard Hoagland Charged With More Plagiarism And Fraud

From Ralph Greenberg  
Professor of Mathematics  
University of Washington  
Seattle, WA

3-5-99

Note - As always, these serious allegations would seem to require some response from Richard Hoagland. Again, we urge him to address these issues as soon as possible. His response will be published here as soon as received.

Date: Fri, 5 Mar 1999 17:10:01 -0800 (PST)  
From: Ralph Greenberg <[greenber@math.washington.edu](mailto:greenber@math.washington.edu)>  
To: [eotl@west.net](mailto:eotl@west.net)  
Subject: Europa and Hoagland

Dear Mr. Rense,

I've noticed that you have provided a forum on your website about Hoagland's claim of credit for the Abydos glyphs. There is another issue that should be brought to the attention of the public.

As you may know, I have written a long and well-documented article on the history of the idea that Europa might have an ocean. Over the years, many people have been misled by Richard Hoagland to believe that he was the originator of that idea, as well as the idea that life might develop in such an ocean.

It has given him a tremendous amount of undeserved credibility.

Since June of 1997, I have been trying very hard to correct this distortion of history. I've informed a relatively small number of people about my article. I would like to bring it to the attention of as many people as possible. If I wrote a relatively short piece pointing out how Hoagland has distorted this

history, would you consider providing a similar forum for that?

You can find my article on my homepage here:

<http://www.math.washington.edu/~greenber/Europa.html>

It will be obvious how much work I put into writing that article. It is not intended to criticize Hoagland at all. I just wanted to set the record straight.

But my fax to Art Bell, which you can find there, will give you an idea of my futile attempt to get some honesty about this issue onto his show.

--Ralph Greenberg

Professor of Mathematics  
University of Washington  
Seattle, WA

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Fax To Art Bell Asking For Remedy

The following is the text of a fax sent to Art Bell on December 15th, 1997. A similar fax had been sent to him on December 4th, 1997 and also a few days later, all with the hope that he would at least partially read one of them to his audience.

In February and March, 1998, I sent several other faxes to Art Bell which were much shorter and which were mostly a copy of part of a letter that I received from Arthur C. Clarke.

Art Bell has never shared any of these faxes with his audience.

Dear Art,

On December 4th, 1997, Richard Hoagland was a guest on your show. I was very dismayed to hear him make the claim that he was the first person to write a "scientific paper" proposing the ideas that Europa might possibly have a global liquid water ocean and that life might possibly develop in such an ocean. This is a rather misleading and factually incorrect statement. I feel that your audience deserves to hear an accurate version of the history of those ideas and hope that you will share the following brief summary with them.

In the 1950s, the astronomer G.P.Kuiper discovered evidence that the surface of Europa and some of the other satellites of Jupiter seemed to be covered with water in the form of ice or frost. This was finally confirmed in the early 1970s. In an article published in 1971, John S. Lewis proposed and studied the possibility that Europa and other ice-covered bodies in our solar system might actually have a liquid water ocean under a crust of ice. This idea was explored in a number of articles by various scientists during the 1970s.

One important one which appeared in 1976 by John S. Lewis and G.J.Consolmagno gives rather detailed estimates of the possible thickness of the ice crust and the possible depth of an ocean that might exist on Europa and other moons of Jupiter. These estimates are based on various sets of assumptions about the early history and the composition of those bodies. For example, in one of their models, they estimate that Europa might have an ice crust 70-km thick covering an ocean of water 100-km deep, all of this over a rocky core 1400-km in radius. The underlying idea is that radioactive decay in the core might produce enough heat to maintain a liquid water ocean.

In 1979, another idea was proposed which focused attention specifically on Europa. Two NASA scientists--P. Cassen and R.T.Reynolds--together with a physicist S.J.Peale from the University of California wrote an article entitled "Is there liquid water on Europa?" Their idea was that the gravitational forces which Jupiter and Ganymede (another of Jupiter's moons) exert on Europa might generate enough frictional heat to

maintain a liquid water ocean on Europa. Under one set of reasonable assumptions, they estimate that Europa might have an ice crust under 10-kms in thickness covering a liquid water ocean with a depth of about 90-kms.

In 1979, there were two Voyager missions to the Jupiter system. This article about Europa was written about one month before Voyager 2 started sending back high resolution images of Europa in July, 1979. At the end of their article, the authors expressed hope that such images might provide some evidence, one way or the other, concerning the existence of an ocean on Europa. I think that there can be little doubt that this article was widely discussed around NASA because these very same scientists had published another article just a few days before Voyager 1 passed by Io (another moon of Jupiter) in which they made a very startling prediction that extensive volcanic activity should exist on Io. Within a few weeks, the images from Voyager 1 confirmed that their prediction about Io was correct.

The idea that a liquid water ocean under a thick crust of ice might exist on Europa and some of the other moons of Jupiter seems to have become rather widely known by the end of the 1970s. I have even found several books written for the general public at the end of that decade which discuss that possibility. To me, it seems quite obvious that the possibility of such an ocean would lead many people to speculate about the existence of life in such an environment. In fact, Carl Sagan had already included Europa and Ganymede in a short list of bodies in our solar system which he believed had some potential for the existence of life. This was in an article he wrote in 1971. He included Europa and Ganymede because of the evidence that they might have water in the form of ice or frost on their surfaces. The possibility of an ocean of water would certainly be far more encouraging. However, one obvious and serious issue is the fact that, under a thick crust of ice, photosynthesis would probably be a very unlikely possibility. There would have to be an alternative basis for the chemistry of life that could evolve in such an environment.

I have found several cases where various individuals presented such speculations to the general public or to the scientific community. The first that I found was in Scotland. There is a very active group of amateur and professional astronomers in Scotland, called ASTRA, which sponsors public lectures and discussions about all aspects of astronomy. In 1976, some of their members proposed various ideas about how life might develop on Europa and Ganymede. For example, they suggested that complex molecules might be synthesized by electrical storms in the thin atmospheres of these bodies, that such compounds might seep down into liquid water reservoirs or oceans under the surface, and that volcanic activity deep down might provide an alternative energy source to light. These ideas are reported on in a book written by Duncan Lunan, entitled *New Worlds for Old*, published in 1979.

In a delightful book entitled *Life Beyond Earth*, Gerald Feinberg and Robert Shapiro propose some general ideas about the chemistries which could be a basis for life in un-earth-like environments. Feinberg presented some of these ideas in a lecture that he gave at a conference *Extraterrestrials--Where Are They?* at the University of Maryland in November, 1979. In their book the authors discuss Europa, Ganymede, and Callisto based on the models proposed by Lewis and Consolmagno in 1976. They write that if life is to develop in the putative oceans of such bodies under a thick crust of ice, it is crucial that some energy sources exist which can provide heat in concentrated form. They mention the possibility of volcanic eruptions or upwellings of hot gases from the core. They compare such environments to those which were discovered in 1977 on Earth at places on the ocean bottom where hot springs emerge providing sites which have an abundance of living creatures. Their book, three years in the writing, was published in 1980.

Another scientific conference occurred at NASA's Ames Research Center in June, 1979, which was called *Life in the Universe*. The exobiologist Ben Clark gave a lecture at that conference where he also discussed the possibility of life developing in buried liquid water reservoirs or oceans on Europa, Ganymede and some other ice-covered bodies. Inspired by the 1977 discoveries of small, isolated ecosystems near hot springs at ocean bottoms here on Earth, he suggested that something similar might happen

on such bodies. But he pointed out that photosynthesis does in fact play some role in these ecosystems on Earth. He proposed some specific alternative chemistries, based on Sulfur, which might provide a basis for life in the possible oceans of Europa and other bodies without photosynthesis.

Finally I will mention the imaginative and inspiring article written by your frequent guest Richard Hoagland. His article, entitled "The Europa Enigma" appeared in the January, 1980 issue of Star & Sky . In that article, Hoagland discusses the possibility that an ocean might have existed and might still exist under an icy crust, summarizing some of the scientific articles that had appeared on this topic. He speculates about how complex organic compounds might develop and that undersurface volcanic activity might provide a possible energy source for life to evolve. There are many interesting ideas in that article. As many people in your audience might know, Hoagland's article inspired Arthur C. Clarke to use Europa as a background for his novel 2010: Odyssey 2.

I would like to quote one paragraph from a letter which I received recently from Arthur C. Clarke concerning Hoagland's article and the ideas that Europa might have an ocean and that life might develop there. "I am also grateful to him [Dick Hoagland] for the excellent 1980 article he wrote--my first introduction to the idea. Since then I have become aware of the fact that many others had thought of it first, as you point out."

What I've written above is a summary of a much longer survey of the history of these ideas about Europa which I wrote last May and circulated among various scientists and journalists. I also sent a copy to Arthur C. Clarke and to Richard Hoagland. I sent a second copy to Hoagland in September. Perhaps you can understand why I was quite disturbed by Hoagland's statement on your show a few weeks ago. I would be very appreciative if you could take the time to read what I've written.

Sincerely yours,  
Ralph Greenberg

Professor of Mathematics  
University of Washington  
Seattle, WA

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