The Story of Noah's Ark, Dogubayazit, Turkey: The Young-Earth Creationist's Position, the Scientific Evidence, and the Involvement of "Arkeologist" David Fasold

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INTRODUCTION

In eastern Turkey 27 kilometers south of Mt. Ararat is a rock structure that some Young-Earth Creationists (YEC) interpret to be fossilized remains of Noah's Ark. It occurs near Dogubayazit east of the village of Nasar north of the Turkey-Iran border (**Figure 1**).

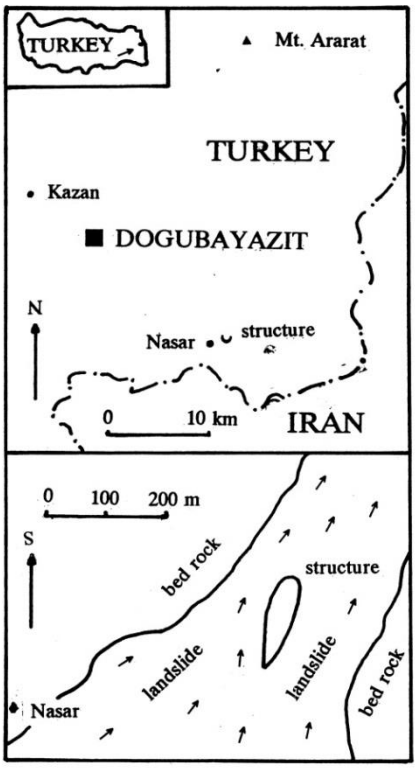


Figure 1. Top: Map showing location of ark-structure, the tiny "U-shaped symbol" east of the village of Nasar north of the Turkey-Iran border. Bottom: Lower part of the figure shows **Figure 3**. Note south arrow in this map.

See **Figure 2** for an image of this boat-shaped structure.

Figure 2. Alleged fossilized remains of Noah's Ark, showing a boat-shaped structure.

This site in eastern Turkey was investigated in the 1980s by Ron Wyatt (a YEC and amateur archaeologist), David Fasold (a United States Merchant Marine officer and member of the Plymouth Brethren Church), and Dr. John Baumgardner (a YEC with a Ph.D degree in geophysics from UCLA). Dr. Salih Bayraktutan, a geologist from the Ataturk University in Turkey, acted as a guide and host for the Turkish government during these studies. During this time, Dr. Ian Plimer, a professor of mining geology from the University of Melbourne in Australia, also examined the Ark one summer with David Fasold. Since this time many YEC, whose names are known have continued to support the belief of Ron Wyatt that this site is the fossilized remains of Noah's Ark. Their evidence and claims are discussed in this article, and then scientific arguments against this evidence are given.

YOUNG EARTH INTERPRETATION OF EVIDENCE

Different kinds of evidence used to support the YEC interpretation that this structure is the fossilized remains of Noah's Ark include the following and in the next 5 pages. Its length is 515 feet which circumstantially is the same length as 300 Egyptian cubits, and, therefore, is said to provide proof that it is Noah's Ark because Genesis 6:15 reports this dimension for the Ark. The Ark is described as landing in the mountains of Ararat (Genesis 8:4) and after landing there, YEC believe that it eventually slid down to its present position where its supposed gunnels (ribs) were exposed following an earthquake and landslide.

See: http://wyattmuseum.com/for-the-record/2011-691

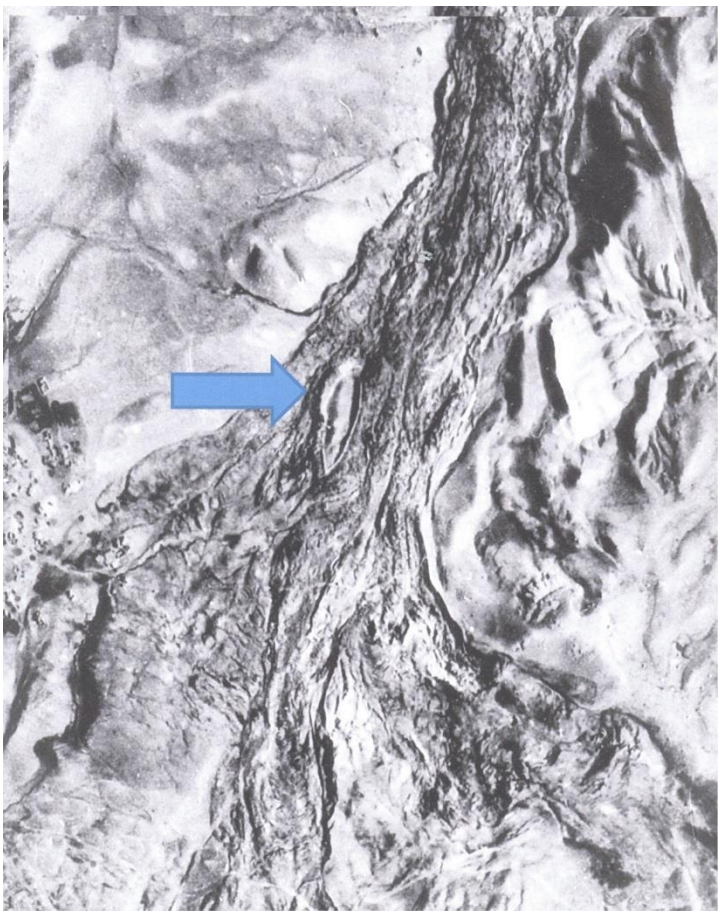


Figure 3. Aerial view of area in Turkey showing the elongate, elliptical, ark-shaped structure (near center). Debris from landslides is shown that comes from the mountains (from bottom to top of image) and extends around the Ark.

Evidence of YEC for the sliding of the Ark from a higher elevation is the presence of manganese-rich rocks in the distant mountains (**Figure 2**) that are said to be former ballast of the Ark which was scraped off from the bottom of the Ark. During the original slide from the mountains, the Ark is said to have been impaled by a wedge of white limestone (**Figure 2**, mid-section, right side, outcrop rises above the Ark surface).

Before being exposed, the Ark is said to have been covered by volcanic rock which protected it from erosion and weathering. YEC suggest that through time, water seeping through this volcanic rock-cover dissolved out various elements (iron, magnesium, manganese, aluminum, and titanium) that enabled the wood in the Ark to be converted into petrified wood so that it looks like "rock." See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

Inside the Ark are supposed remnants of rivets, washers, and iron brackets that held walls of the Ark together (**Figure 4**).

Figure 4. Example of supposed iron washer with central mashed rivet but which is a coating of cemented magnetite grains altered partly to limonite.

Because chemical analyses of these iron artifacts, measured at the Los Alamos National Laboratory by John Baumgardner and at the Galbraith Laboratory in Knoxville, Tennessee, show elemental compositions of iron (Fe), magnesium (Mg), manganese (Mn), aluminum (Al), and titanium (Ti), Noah is said to have been given the ability to make alloys of these metals in a forge when these rivets, washers, and brackets were made.

By using metal detectors, David Fasold, John Baumgardner, and Ron Wyatt recorded positions of supposed walls (traced out in yellow ribbons) along the length of the Ark in regular intervals and at right angles along the walls. See the following videos: https://www.youtube.com/watch?v=ZR8LffnS3rE
https://www.youtube.com/watch?v=w9pAjv1WgNg
https://vimeo.com/131454147
https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

Frost wedging of the eastern side of the Ark is suggested to have eroded the petrified wood in the gunnels and to have deposited the wood fragments as sand-sized particles on the land east of the Ark and to expose the former positions of these gunnels in vertical columns (arrows, **Figure 5**). See:
https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

Figure 5. Ark with eroded vertical columns of supposed gunnels (ribs). Wall of the landslide mass that slid to expose the ribs is in the foreground.

Remnants of supposed rivets and brackets were also detected by metal detectors as rusted flakes in the gunnels (ribs) of the Ark (**Figure 5**).

A rectangular block of black rock (said to be a former wood beam) was unearthed by Ron Wyatt and brought to Galbraith Laboratory for chemical analysis and microscopic study. A cut-section through this block revealed two different

layers that were described as “plywood” which were said to be cemented together by some kind of glue that had oozed out on one side. See: https://www.youtube.com/watch?v=w9pAjv1WgNg

https://www.youtube.com/watch?time_continue=1223&v=dxMPPJXkUjI

Chemical analyses of this so-called wood showed that it contained percentages of Fe, Mn, Mg, Al, and Ti as well as 0.71 percent organic carbon.

Several large supposed anchor or drogue stones for the Ark (**Figure 6**) occur near Dogubayazit (**Figure 1**), and the presence of 8 crosses on these stones is alleged to represent Noah, his wife, and family. See: https://www.youtube.com/watch?v=w9pAjv1WgNg

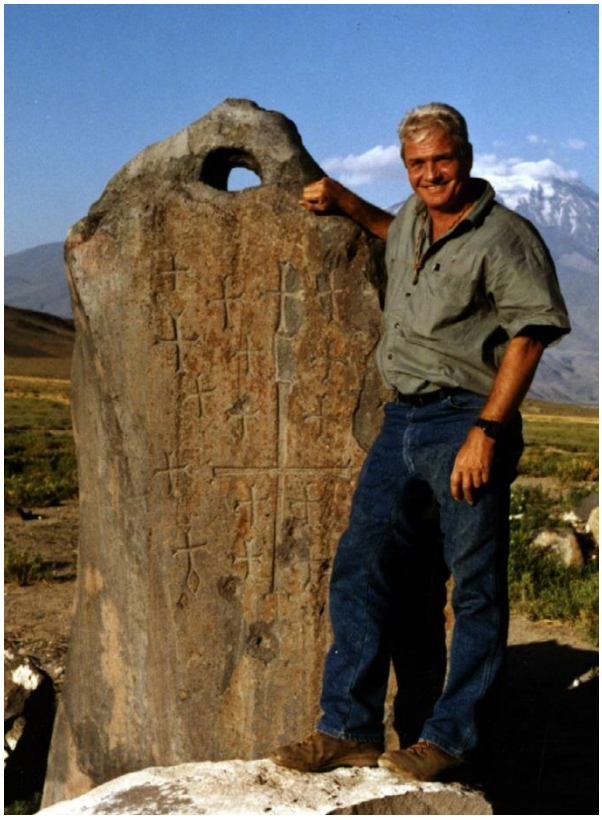


Figure 6. David Fasold standing beside an anchor or drogue stone (one of many) with crosses on its face. Wikipedia is the source of the image.

Another rock, found near Kazan (**Figure 1**) that has a rippled surface (**Figure 7**) is described as being a fossilized cast of reeds or bark of wood that were once a part of the Ark because when struck with a hammer, this rock sounds as if it were hollow. See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

Figure 7. Crinkled rock surface of supposed bark of wood or reeds in Noah's Ark.

SCIENTIFIC EVIDENCE FOR THE ARK-STRUCTURE NOT BEING NOAH'S ARK

(1) Petrified wood

After being told by Ron Wyatt and other YEC that the various black rocks exposed in the Ark were petrified wood, "arkeologist" David Fasold began to have some doubts about this identification and collected 12 samples from various places along its length and brought them to me for verification. I made thin sections of each sample and discovered that each was composed of either basalt or andesite

volcanic rock. I also brought David to my laboratory so he could see these thin sections under the microscope. I also showed him what verified petrified wood looked like under microscopic examination, as well as many samples of other volcanic rocks of similar composition. Afterwards, there was no doubt in his mind that all black rocks at the Ark were volcanic rocks. See **Figure 8** as an example of one of these volcanic rocks under the microscope.

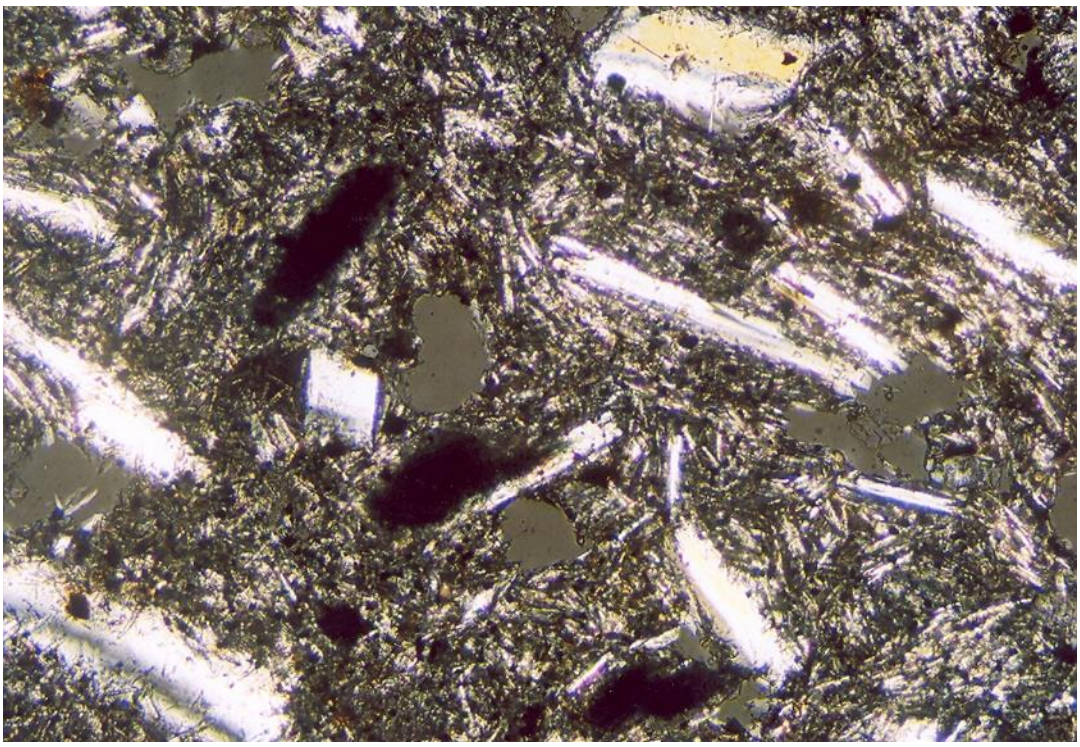


Figure 8. Basalt (40x magnification) showing magnetite grains (black) and elongate rectangular plagioclase feldspar laths (white and yellow). Grey areas are places where friable minerals eroded out during thin section preparation.

Whether a volcanic rock is named a basalt or andesite depends on whether the plagioclase in it has more calcium (Ca) than sodium (Na) in its composition. That is, a very small difference in the amount of calcium and sodium can change its name. For example, the plagioclase composition could be 51% Ca and 49% Na and make the rock basalt or be 49% Ca and 51% Na and make the rock andesite. That slight change gives the rock a different name. In outward physical appearance, however, they can both have the same black color and look like they are the same rock.

In addition to **Figure 8,** the other eleven thin sections show a broad range of textures and mineral compositions. In addition to magnetite and plagioclase, some of the basalt and andesite rocks contain pyroxene (a calcium-iron-magnesium silicate mineral), apatite (a calcium phosphate mineral), clay (hydrated aluminum-bearing silicates), interstitial or veins of calcite (a calcium carbonate mineral) or siderite (an iron carbonate mineral), and veins of cryptocrystalline quartz (chalcedony). On that basis, the glue that is said to have formed the cement between two wood layers in the plywood beam is likely a vein of calcite or siderite and, therefore, all the carbon in either of these two carbonate minerals can only be of inorganic origin and *cannot* be dated by the C-14 methods to reveal an organic origin for the so-called wood.

https://www.youtube.com/watch?time_continue=1223&v=dxMPPJXkUjI

Two examples of black rock identified by Ron Wyatt as petrified wood can be seen in the following video. See:
http://www.arkdiscovery.com/Noah's%20ark2.htm

In one of these samples tiny white plagioclase feldspar laths can be seen, which shows that this rock cannot be petrified wood. In an hour-long video program presented by National Geographic (titled: "*The Truth Behind Noah's Ark*"), a creationist can be seen pointing to a large black outcrop of rock and claiming that it is petrified wood. On this outcrop a yellowish-green mineral called epidote can be seen coating the surfaces of some of the fractures in this rock. Epidote is a hydrated calcium-aluminum-silicate alteration product of basalt where steam has moved through the fractures, and it does not form on petrified wood which is nearly 100 percent silica (microcrystalline quartz). Therefore, this YEC simply misidentified this outcrop.

Another YEC person suggested in an email message to me that the trees that Noah used to make the Ark were trees that God actually spoke into existence as compared to those that might have grown after the Flood, and that God made them with wood that only looked like rock. This same person also explained that there was a lack of rings in the wood because seasonal changes in tree rings would not have existed in the pre-flood environment, and, thus, dendrochronology cannot be used to determine the age of wood in the Ark because there were no tree rings. But to my knowledge all petrified wood produced from trees that grew prior to the Flood (about 2900 BC) contain cellular structure and are nearly 100 percent

silicified even though they do not necessarily exhibit annual rings of growth. However, not one sample of supposed petrified wood at the Ark site in eastern Turkey has the composition of nearly 100% silica. Instead, they have the texture and mineralogy of basalt whose composition ranges from 47 to 51% silica.

(2) Chemical analyses of so-called petrified wood

Ron Wyatt, unfortunately for the YEC case, made an uneducated decision in choosing Galbraith Laboratory to do the chemical studies of the supposed wood plank that he gave the lab's chemists to analyze. Chemists at Galbraith Laboratory do very competent work when analyzing samples from the food industry and from organizations dealing with environmental problems. But this laboratory is not a place where geologic samples of rock are normally submitted for chemical analysis. There are other labs that specialize in this kind of work. In the kinds of reports that Galbraith Laboratory makes, chemical analyses are generally given in percentages of elements rather than as oxides because people want to know what trace elements are in the submitted samples; e.g., the trace elements that are either contaminating areas or are poisoning foods. But when Ron received the chemical analyses from this lab as percentages of elements that were in samples of supposed fossilized wood or supposed rivets, washers, and a bracket, he interpreted these elements as being real metals and not as ionic components of natural minerals. This misunderstanding has caused YEC to think that Noah was able to make unusual alloys of iron (steel) with manganese, titanium, magnesium, and aluminum and that these elements as native metals could also be found in petrified wood – which, by the way, never occurs.

In one of the YEC videos, chemical analyses by Galbraith Laboratory of the supposed wood plank also list the presence of 11.54 percent aluminum, supposedly in the form of aluminum metal (as well as other metals). See:

http://www.arkdiscovery.com/Noah's%20ark2.htm

But if the wood plank were to be basalt, rather than petrified wood, this amount of aluminum makes sense. Basalt generally contains about 75 percent plagioclase feldspar crystals (see **Figure 8** that shows the many tiny white plagioclase crystals). Plagioclase has a variable composition that ranges from a pure sodium-

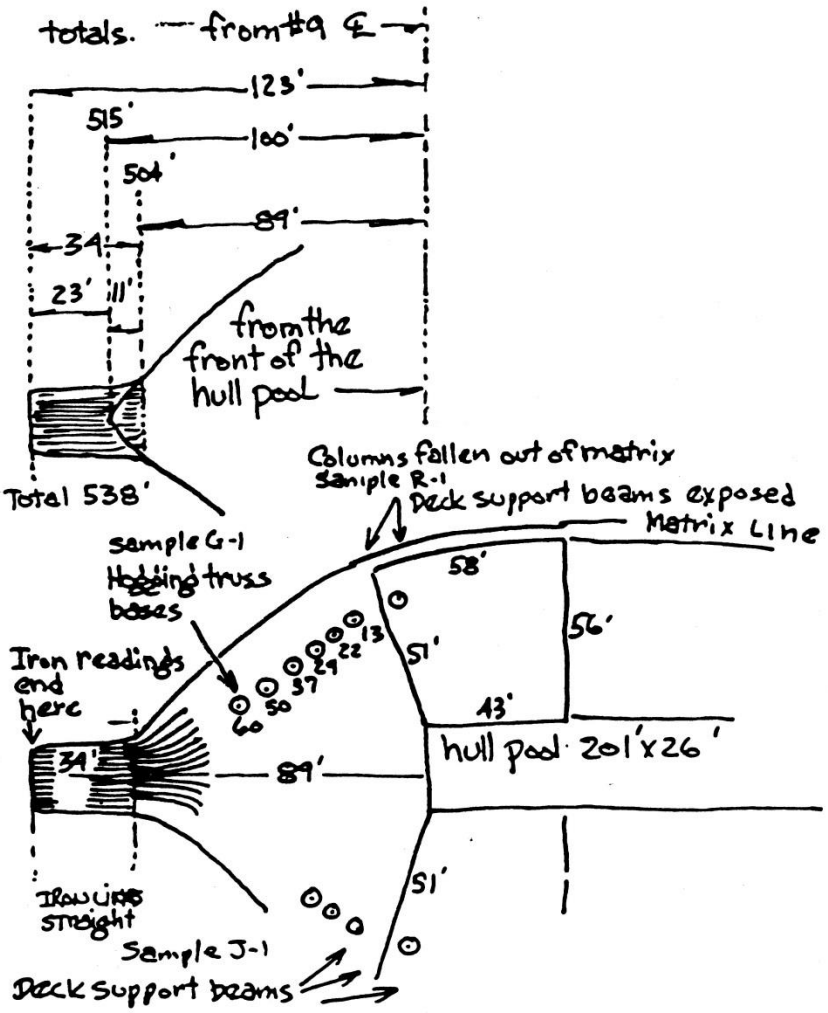
rich variety to a pure calcium-rich variety. Across this compositional range, the aluminum content ranges from about 12 percent to about 19 percent. If the wood plank is basalt that has plagioclase in it with an aluminum content of about 15 percent, and if the basalt has 75 percent plagioclase with 15 percent aluminum in it, the rock analysis would show 11.24 percent aluminum. That percent correlation of aluminum in the theoretical rock to the 11.54 percent aluminum in the analyzed rock is a strong indicator that the rock sample is *not* petrified wood. Petrified wood might contain micro-traces of aluminum but never 11.54 percent.

This same rock analysis reported 0.005 percent copper. The occurrence of copper is not unexpected because many of our major copper ores are found associated with basalt.

John Baumgardner also reported the analyses of the supposed iron bracket as elements because at the time he did these analyses he thought that he was analyzing iron metal in a bracket. Otherwise, the standard reporting of a chemical analysis of a rock is given in percentages of metal oxides. His method of analysis by an electron-microprobe would not have been able to determine whether the iron was native wrought-iron metal. In any case, (a) the reported percentages of Fe, Mg, Mn, and Ti would have been part of the natural composition of the magnetite grains, (b) the Al would have been part of interstitial clay minerals, and (c) the Ca would have been in the calcite veins and interstitial cement, and none of these elements would have been used by Noah in a forge to form metal alloys in rivets, washers, and brackets.

(3) Length of the Ark

Although the length of the Ark is said to be 515 feet (300 cubits) long, if all parts of the Ark site which have places where iron is detected are included, then the total length would add up to 538 feet. See **Figure 9**.



Field book sketch of bow section.

Figure 9. Bow section of Ark showing positions of iron readings. From David Fasold's book *The Ark of Noah*. Iron readings were found using a metal detector. The sketch represents the rounded portion of the bow end of the Ark (**Figure 2**).

David Fasold does not explain why the iron readings extend beyond the end of the boat because such does not fit his model of how the Ark was constructed (**Figure 10**). Likely, they are streams of elongate placer deposits of iron-rich magnetite grains that were eroded out of the rock layers in the interior of the Ark. He also does not explain why there are seven iron-rich mounds on one side of the Ark and four iron-rich mounds on the other side. He suggests that the iron mounds

are places where deck support beams were anchored, perhaps by iron brackets. The lack of an explanation is likely because the unequal numbers of anchor sites would not fit his model for the construction of the Ark (**Figure 10**).

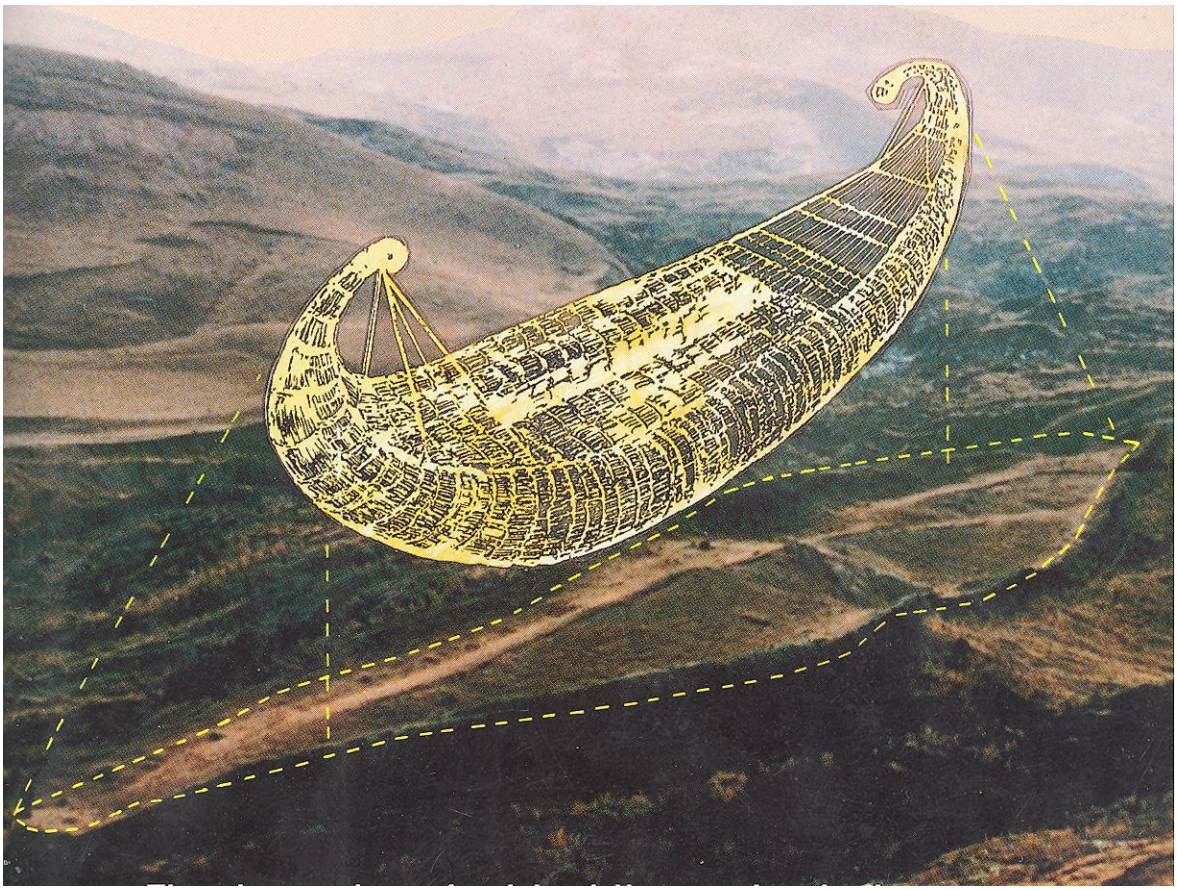


Figure 10. Fasold's model for the construction of Noah's Ark. Image from portion of book cover for David Fasold's book The *Ark of Noah*.

(4) Interior walls of the Ark

The regular alignment of iron-rich layers along the length and width of the Ark that were located by iron detectors and marked with yellow ribbons can be explained as the result of erosion of the volcanic and sedimentary rocks in the interior of the so-called Ark. Rain and melting snow, seeping down into rectangular-oriented joints and carrying tiny grains of magnetite in the water in it, could have concentrated the magnetite in the fractures where they would eventually be oxidized as iron-rich limonite. Some of these concentrations at intersections of the rectangular joints could look like iron brackets. (See section **(8) Iron bracket**.) A side view of these same regularly spaced vertical joints can

be seen in **Figure 2** where the columns of supposed Ark ribs occur, as discussed in the next section.

(5) Gunnels or ribs of the Ark

The supposed gunnels or ribs of the Ark (**Figure 5**) are said to have been modified by frost wedging so that the petrified wood was torn apart and deposited as sand below the side of the Ark. See: http://www.arkdiscovery.com/Noah's%20ark2.htm

(a) It is true that frost wedging can tear rocks apart because of the 9-percent volume increase when water freezes, but this water must fill a crack for it to expand to do the mechanical destruction of the rock. Also, it is hypothesized by YEC that the frost wedging can result in the production of sand that falls below the gunnels, but fractures in rocks are seldom, if ever, so closely spaced that water can enter them and freeze to wedge the rock apart to produce sand grains.

(b) Frost wedging, even at a small scale, does not destroy the composition of the rock. It merely breaks the rock into smaller pieces. Therefore, if these ribs were truly petrified wood, each small sand grain would still have the cellular structure of the wood still preserved in them and could be easily be seen in thin section. Such has not been demonstrated.

(c) The appearance of ribs in the side of the supposed Ark (**Figure 5**) is not because of frost wedging but because of differential weathering and erosion of the rock along evenly-spaced vertical fractures. Water from rain and melting snow seeps down through the walls of the vertical fractures and soaks into the sedimentary rocks on both sides to alter the plagioclase feldspar grains into clay minerals. In those places with more clay, the rocks are much softer and more easily eroded. Therefore, columns of lesser altered and greater altered volumes of rock are created that make the appearance of "ribs" in the Ark site. So, it is the differential erosion of the sedimentary rocks (hard versus soft) along these vertical fractures that creates the *illusion* of a former rib structure of the Ark.

As pointed out in the previous section, seeping water that changed local concentrations of magnetite in the rectangular joint systems would also alter

magnetite concentrations in the "ribs" and produce the abundant limonite flakes that were detected by the use of iron metal detectors in these places.

(d) A video given to me by David Fasold shows the side of the Ark with the gunnels to be composed of sedimentary layers of different compositions and thicknesses that extend nearly horizontally along the face of the steep wall of the exposed side. A lighter-colored layer at the top of the so-called ribs can be seen in **Figures 2** and **5,** and these layers are inclined at a gentle angle (5 degrees) from the white limestone down toward the lower end of the Ark structure. Here, this light-colored upper layer intersects the topographic surface. Two darker layers can faintly be seen below the upper lighter layer. At the lower end, one of these layers has a small stream channel that cuts into the layer where stream cobbles fill the channel. This sedimentary layering and the stream channel (5 feet wide and 5 feet deep) were totally ignored by Ron Wyatt and other YECs because it was not anything that they were looking for, and because their presence would not fit into their model of this site being Noah's Ark. Moreover, such sedimentary layers would not be something that should exist in a fossilized remains of Noah's Ark such that these layers would be stacked on top of each other from the bottom to the top.

(6) Washer and rivet

The supposed iron washer and rivet (**Figure 4**) are found on top of a thick (1/2 inch) black plate or a rock more than 3 inches in diameter that YEC presume is petrified wood. The rivet is supposed to have penetrated into the wood by being struck very hard with a hammer. However, in a video in which the back side is shown before it is turned over to see the above image, there is no evidence of any rivet coming through to that side. Moreover, in this image (**Figure 4**) below the edge of the supposed washer, along the right side, and in some places in the upper areas, tiny white laths of plagioclase feldspar can be seen that look like some of the large plagioclase laths in **Figure 8**. The image (**Figure 4**) clearly shows that the plate is basalt and not petrified wood. No cellular structure of wood is visible. See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

https://www.youtube.com/watch?v=iCyOVGBnNp8

https://www.youtube.com/watch?time_continue=1223&v=dxMPPJXkUjI

Note also that the supposed washer has very little thickness and is not flat as a washer would be expected to be. Even tiny white plagioclase laths show through the washer. Instead of an iron washer, this material likely consists of magnetite grains that are cemented together on top of a curved fracture surface on basalt.

A thin section through this washer would show whether it is rusted wrought-iron metal or cemented magnetite grains altered to limonite. Moreover, a diamond saw-cut through the supposed rivet would demonstrate whether a metal rod extends down into petrified wood below the washer or whether this is an unusual surface deposition of magnetite grains that has no depth beyond the surface layer. In science, such a saw-cut and a thin section would have been made immediately to confirm which the correct model was. Just claiming that it is a rivet and washer is not sufficient evidence for the belief in its being a man-made rivet and washer.

(7) Organic carbon

In one of the videos, the claim is made by chemists at Galbraith Laboratory that 0.71% carbon was found in the so-called wood plank of which 0.01% was inorganic and 0.70% of this carbon was organic in origin.

See: https://www.youtube.com/watch?v=QrigRmKArSE&list=PLDlCjQzVh42-zxc-5K_hMw9aZBsC0EiLa

https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

Therefore, Ron Wyatt claimed that the plank had an organic origin. Scientifically, this is a totally unjustified claim. Just a straight chemical analysis of carbon cannot determine whether this carbon is organic or inorganic. Whether carbon atoms come from organic plants or inorganic limestone or calcite (calcium carbonate) cannot be distinguished by just making a chemical analysis. So, based on the analysis of Galbraith Laboratory, the claim of YECs that they can make such a distinction is nonsense. Carbon in such an analysis is just carbon.

The only way in which organic carbon can be determined to be present is by doing isotopic studies on the carbon – in this case on the so-called petrified wood. When plants utilize carbon dioxide from the air in which oxygen is produced by

photosynthesis, some of the carbon atoms in the carbon dioxide are the lighter C-12 isotopes while others in carbon dioxide are the heavier C-13 isotopes. The plant preferentially utilizes more of the carbon dioxide with the lighter isotopes than the heavier isotopes. Therefore, the ratio of C-12 to C-13 in an unknown sample can be used to determine whether this sample had an organic origin. Plant remains contain proportionately higher amounts of C-12 than what occurs in inorganic materials. The Galbraith Laboratory was not asked to make such an isotopic study; therefore, the YEC claim of organic carbon in Ron Wyatt's sample has no scientific support. On that basis, there is an equal chance that all carbon in this sample came from either calcite (calcium carbonate) or siderite (iron carbonate).

(8) Iron bracket

A thin section cut through a supposed iron bracket (**Figure 11**) shows that the bracket has no metallic metal at all in it. Instead, it is composed of altered magnetite grains that are cemented together with limonite. Limonite is an oxidized and hydrated alteration product of the magnetite grains. (Limonite is what gives metallic iron the appearance of rust on its surface.) Where the magnetite grains are not cemented together by limonite, interstitial clay and calcite surround the magnetite grains (**Figure 11,** right side). The thin section shows that the supposed iron bracket has a "right-angle" bend in it. However, note that the parts of the supposed iron bracket are not uniformly thick. The right bottom slanted-side is relatively thin, but the left side becomes thicker and has still greater thickness on the top left side. Moreover, additional bending shown on the top left side should not be present if it were intended to be a brace for a wall in the Ark. See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

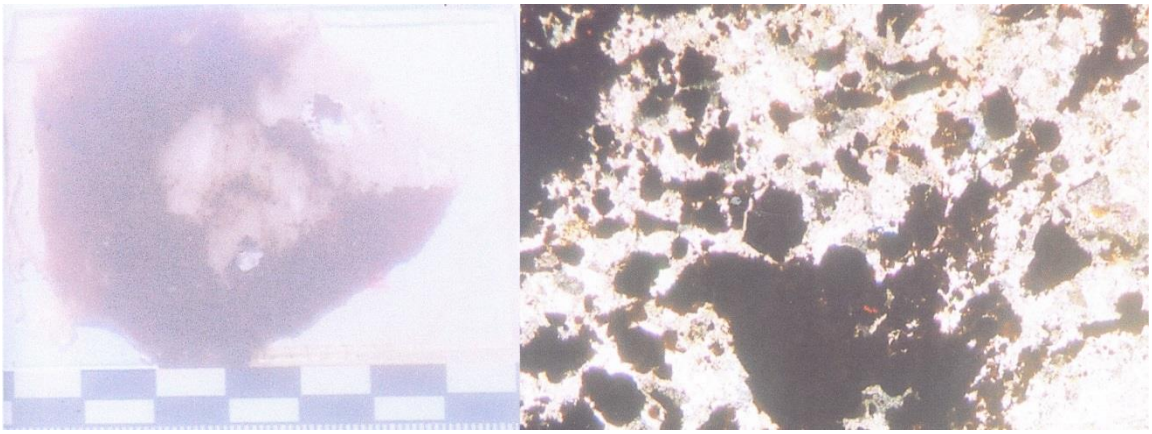


Figure 11. Left side: Thin section cut through a supposed iron bracket. Scale is in centimeters. Right side: Image (40x) shows magnetite grains altered to limonite in a matrix of calcite and clay in a part of the thin section on the left side.

(9) Understanding the geology of magnetite

Magnetite is composed mostly of iron oxide and is relatively abundant in the basalt and andesite volcanic rocks in this part of Turkey. (See black grains in **Figure 8.**) During the weathering of these rocks, the tiny magnetite grains are loosened and transported by streams. Because of their heaviness (density = 5 g/cm^3) and magnetic attraction for each other, the magnetite grains tend to be deposited like placer gold nuggets in fractures and to become concentrated in localized sites at the bottom of stream beds. In contrast, other stream-transported grains, such as particles of clay, silt, and quartz sand, have densities near 2.7 g/cm^3. Therefore, the magnetite grains tend to sink to the bottom of streams and become concentrated there in patches (or mounds).

Studies of the mineralogy of magnetite explain why its composition is variable. The iron atom (ion) has a certain atomic size that fits into a hole of a particular radius in the lattice structure of this mineral. Nature does not make pure compounds as is done by industrial chemists. Instead, magnetite in nature accepts any elements whose normal atomic (ionic) radii are within 15 percent of the same size as the iron atom (ion). Included among such elements of similar size are magnesium, manganese, and titanium. The aluminum atom (ion) is the wrong size to fit into this magnetite mineral structure. The aluminum atom (ion) goes into another sized hole that occurs in plagioclase feldspar or clay. The ability of magnetite to accept ions of magnesium, manganese, and titanium in its lattice

structure explains why these elements are found in the so-called alloys that occur in the supposed washers, rivets, and brackets. See:
https://www.youtube.com/watch?v=iCyOVGBnNp8

(10) Anchor or drogue stones

Several kinds of evidence indicate that the stones with holes at the top are not anchor stones for the Ark. See:

https://www.youtube.com/watch?v=w9pAjv1WgNg
https://www.youtube.com/watch?v=iCyOVGBnNp8

(a) The stones weigh as much as 10 tons so that the positioning of the holes at their tops close to the outer surface leaves too little enclosing-stone to support their heavy weights if hung vertically from a strong rope without breaking the rock.

(b) A thin section of one of these supposed anchor stones shows that it consists of magnetite-bearing anorthosite which is a rock type found in Earth's upper mantle and which does not occur anywhere in Mesopotamia where Noah is said to have built the Ark. Such mantle rocks, however, are common in this part of Turkey as is reported in the next section. Therefore, these stones were likely obtained from a quarry local to where the "ark" resides, not from a quarry in Mesopotamia that was made into anchor stones when Noah built the ark. Rather, the holes at the top of the stones were likely used to insert ropes that would enable them to be pulled on sleds or in winter on slick snow or ice to where they were erected − perhaps as memorial stones.

(c) Many of the stones have up to 23 crosses engraved on them, so the 8 crosses shown on the stone (Figure 10) do not necessarily represent Noah, his wife, and family but are perhaps merely symbolic of Christians who lived in the area.

(11) Supposed reed casts or bark on wood in the Ark.

A thin section of the rock that looks like a cast of reeds or possible bark on wood (**Figure 7**) shows that this rock consists of crinkled layers of pyroxene and olivine crystals that were once part of peridotite − a rock type that is found in the Earth's upper mantle. Because the rock shows no weathering or alteration and the

crystals are well interlocked with each other, the rock vibrates with a hollow sound when struck with a hammer instead of making a dull thud-sound when hit. Such mantle rocks are found in other places in this part of Turkey where plate tectonics has brought them to the Earth's surface. Therefore, this rock is not a former part of the supposed Ark.

(12) Ballast rocks

The rocks that consist mostly of manganese and are said to be ballast, and those found at higher elevations in the mountains above the Ark site location lack any evidence of supposed petrified wood in an enclosing hull that should be present at the bottom of the Ark. Such manganese-rich rocks are commonly found on basaltic ocean floors of the earth's crust due to the mineralization associated with plate tectonics. Because many other oceanic crustal rocks are found in this region of Turkey, it is not unreasonable to suggest that these manganese-rich rocks have a natural local origin. See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4

(13) Limestone wedge and bedrock

Drill cores in the Ark structure show that the white limestone outcrop in **Figures 2** and **5** is not just a sharp pointed wedge that penetrated the side of the Ark. Instead, the limestone occurs in a continuous layer that extends to the other side of the Ark structure. Also, the limestone contains micro-fossils that also occur in limestone outcrops near the Park's Visitor Center as well as in outcrops on the other side of the Ark structure. The age of the limestone is not known and the kinds of micro-fossils have not been identified to the author's knowledge. Other drill core and seismic studies show that in several different places in the subsurface the limestone coexists with large masses of basalt. Therefore, this structure also cannot be Noah's Ark. In the article about the bogus Ark (http://www.csun.edu/~vcgeo005/bogus.html), I speculated that the Ark-structure might be an eroded doubly-plunging syncline, but this was an error. Its stream-lined shape is the result of a large landslide that came against resistant bedrock and split to flow on either side of this mass to form the boat-shape structure. Erosion of the softer limestone layer by debris in the landslide can be seen where an indentation occurs on the side of the boat-shaped structure (**Figure 2**).

(14) Production of metal alloys and elemental metals in petrified wood

YEC in their model suggested that Noah had the capability of making metal alloys in a forge in order to make the supposed washers, rivets, and iron brackets. That certainly could be possible, but if true, the production of metal alloys with iron requires temperatures in the forge to be far in excess of 700 degrees Centigrade. What YEC do not seem to realize is that to form those same metals as native elements in petrified wood in trees that look like rock requires those same high temperatures. Furthermore, such high temperatures are also required to produce the plagioclase crystals in these rocks that are said to be petrified wood (**Figure 8**). Thus, the chemical replacement processes that YEC say occurred to allow water seeping through a former volcanic-rock-cover over the supposed Ark – water that dissolved out elements to be deposited as native elements in newly formed rock as petrified wood − must also have been at temperatures in excess 700 degrees Centigrade. Obviously, those high temperature conditions did not occur during the weathering of this volcanic rock cover. The Creator's own physical laws prevent this kind of petrified-wood-making-process from happening.

EXTENT TO WHICH YECs WILL GO TO PROTECT THEIR VIEWS

This section is written to honor the integrity of David Fasold (**Figure 12**) in contrast to the shameful actions of the YEC.

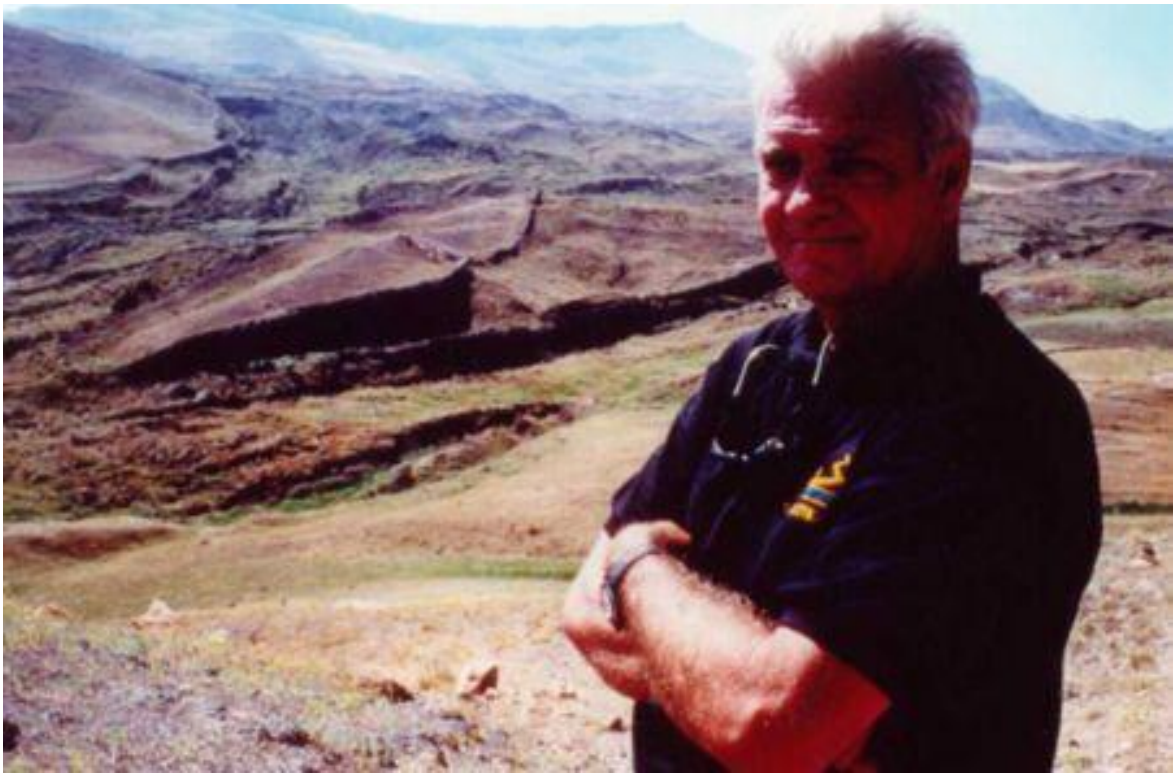


Figure 12. Photo of David Fasold in front of the supposed Ark in the distance (provided by David Fasold).

David Fasold died with a brain tumor in 1998 which likely was caused by his addiction to cigarette smoking. When I had convinced him that the black rocks at the Ark site were basalt instead of petrified wood, he agreed to write an article about this site with me as a co-author, and this article appeared in the Journal of Geological Education. See http://www.csun.edu/~vcgeo005/bogus.html. At that time the publisher of his book (*The Ark of Noah*) was translating his book into five different languages. His book was selling at such a high volume that Fasold said that it was number 15 in world sales. He cancelled all further publications, however, because he knew that his book was no longer true. So, I likely cost him thousands of dollars in royalties. But he just wanted the truth and had become irritated by the way YEC were using him. He had invested his savings and sold his house in order to study the Ark site for eight years. Unfortunately, he died essentially penniless, unable to even pay for his hospital care.

Early in David's studies of the supposed Ark site, Dr. Ian Plimer (a geologist from Australia with more than 80 publications in refereed geological journals) came to this site with David Fasold to sample any petrified wood he could find there to do C-14 analyses to date the Ark. However, Dr. Plimer could not find any wood at this site – only volcanic rocks. At that time Dr. Salih Bayraktutan from a

Turkish university was also there to host the investigations being made by David Fasold. So, Dr. Plimer said to Dr. Bayraktutan, as one professional geologist to another: "What is going on here? There is no evidence for any petrified wood." Dr. Bayrakatutan agreed and said that the Turkish geologists all knew that this site was not the fossilized remains of Noah's Ark but that the Muslims in their Bible (the Quoran or Koran) have a Flood story with a man whose name was Nuh (similar to Noah) and a similar large boat to which pairs of animals were brought. Because of the beliefs of the conservative Muslims that this site was their fossilized Ark, the Turkish geologists were protecting the site and planned to establish a national park and erect a Visitors Center to collect money to support their geologic research. This observation makes sense because if the Turkish geologists, who had full access to the site, really believed that it was Noah's Ark, they would have published on it long ago in a refereed geological journal to obtain fame for themselves. See: https://www.youtube.com/watch?v=uPRo7Q-7yQQ&list=WL&index=4
https://www.youtube.com/watch?v=iCyOVGBnNp8

About a month before he died in a hospital in Oregon, David called me to say that five YEC were in his room every day, pressuring him to say that he had made a mistake and that I had duped him. He was crying on the phone, not because of what he was saying, he said, but because of the medicine that the doctors had given him for pain made him emotional. I told him to tell the five YEC anything that they wanted to hear, and not to worry about it, even though he said he was sure that I was right. I wanted to enable him "to get them off his case" so that he could die in peace. I learned later that the five YEC reported on their "talk" sites that I duped him. Wikipedia confirms that he supposedly changed his mind and again believed that the site in eastern Turkey was Noah's Ark. NOT TRUE!!! At any rate, it is clear that the YEC were willing to do anything to protect their false model.

Some other YEC had also used his video coverage of the Ark without his permission and did not reimburse him for the enormous amount of costs in doing his 8 years of research studies and producing the video. He had to file a lawsuit to prevent further sales of this video, which he won. A lawyer said that he would take the case for free but later charged David for all his costs. The YEC group that sold the video did cease production but continued to sell videos until the stock had been sold out.

He also filed a joint lawsuit in 1997 with Dr. Ian Plimer against Allen Roberts, a YEC in Australia, who claimed that all David's research and photos on this Ark site were done by this Australian creationist. David won his part of the lawsuit and received a sum of $25,000 but this amount probably just paid for his

expenses. Dr. Plimer lost his case because of technicalities in Australian business law. Because of all these self-promoting actions and shameful behavior by the YEC, David told me during our phone conversation that he had lost his Christian faith. So, I honor David as someone who really demonstrated integrity at the end of his life, always willing to accept the truth no matter how much it cost him.

FINAL WORDS

In this article no personal attack has been made on any YEC individual. They are all sincerely committed Christians. All that has been done is to present some scientific knowledge to help show that the boat-shaped structure in this site cannot be Noah's Ark. It could be found in another location, but it just does not occur at this site in eastern Turkey. This article also does not denigrate the Bible or deny that Noah could have been built an Ark prior to a large flood. In fact, I have written an article that such a large flood occurred except that it was local and not global in extent. See: http://www.csun.edu/~vcgeo005/Collins2.pdf.

Dr. John Baumgardner now agrees that this boat-shaped object in eastern Turkey (**Figure 2**) is not the fossilized remains of Noah's Ark. Andrew Snelling from AiG, also wrote an article in 1992 exposing the errors in the work of the YEC in their analysis of the supposed Noah's Ark. See: http://www.answersingenesis.org/creationism/arguments-to-avoid/special-report-amazing-ark-expose

Normally, in scientific studies complete cooperation is given to other investigators to make tests of hypotheses to confirm their conclusions and applicability. YEC, however, have refused to provide any samples of supposed petrified wood or washer/rivets for thin-section analysis, even when such studies are offered free of charge. The YEC are shamefully protecting their own false conclusions which they want to believe so badly they exemplify both non-Christian and non-scientific behavior regarding Noah's Ark. This is not the kind of behavior that should be expected from Christians, and such behavior caused David Fasold to lose his Christian faith. Other intelligent people have also chosen to become atheists because their knowledge of science differs from the YEC interpretation of the Bible. If YEC want people to join them in their belief in modern times when the knowledge of science exists, they need to conform to the way in which the Creator has truly designed the universe. Otherwise, YEC will only appear to be

foolish to those who do know the scientific evidence, and will cause people (like David Fasold) to lose their Christian faith.