



paleoSETI

The magazine for Ancient Astronaut & Lost Civilizations research
ANCIENT TECHNOLOGIES, CULTURES AND ADVENTURE

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NAZCA

Signs for the Gods

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THE MYSTERY OF THE ANDES

TIWANACU & PUMA PUNKU

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The Case for
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EISENGRUBER
PUBLISHING

The strange Lines of Nazca, Peru

Letter from the Editor

Dear readers,

Let me take a moment to express my heartfelt thanks for your support and your input for our young publication. It is refreshing to know that there are so many open minded and adventurous people like you out there.



Your very positive input and encouragement will be reflected in the coming issues of PaleoSeti Magazine.

The first change you will see in this issue is that the page count more than doubled since the last issue. Target size for the magazine will be between 30 and 50 pages, as we feel it is a good balance of information, photographs and download size. But like every publication, we want to make it right for our readers. If you have feedback regarding the length and depth of our articles as well as technical issues that you experience, don't be shy and provide it.

In this issue of PaleoSeti Magazine we want to take you with us to the South American continent and take a look at two of the biggest mind-benders archaeology has to offer: Nazca in Peru and Tiwanacu in Bolivia. We hope that the articles in this issue will stimulate your curiosity.

Many books and opinions have been published about those two sites over the last hundred years, yet every time I read the literature I get the feeling that every author is writing about a completely different site. Of course, every author sees only the things they want to see in order to prove a thesis or theory, but both sites seem to polarize researchers' opinions second to only – maybe – the Great pyramids in Giza.

Sincerely Yours,

Herbert Eisengruber
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Feedback and Contributions:

PaleoSeti Magazine welcomes feedback.

We would love to introduce a "Letters to the Editor" section in our next issue.

Please send your feedback to the above Email address. Please keep your feedback related to the PaleoSeti (Ancient Astronaut) and Lost Civilization Theories.

If you like to contribute an article to PaleoSeti Magazine, please contact us at the email address above including a short description of what your article will be about.

Please do not send us articles and/or photos before we get in touch with you.

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Hopi Katchina Doll

figure

Nazca

Signs for the Gods

Article by Herbert Eisengruber

Once in a while you come across something that just makes sense if you look at it a certain way. If you don't, it will stay a mystery forever. The Nazca lines are one of those mysteries.

The Discovery

In 1927 a Peruvian archaeologist by the name of Toribio Mejia-Xesspe worked on some Pre-Incan ruins near the Nazca plain, when he noticed curious straight lines in the dark grey desert sand. In the beginning, he didn't really pay attention to his find as he thought the lines were older paths of the Inca. After a while, he thought it

“ONCE IN A WHILE YOU COME ACROSS SOMETHING THAT JUST MAKES SENSE IF YOU LOOK AT IT A CERTAIN WAY. IF YOU DON'T, IT WILL STAY A MYSTERY FOREVER. ”

would be a great idea to investigate these lines a bit more closely. Thirteen years after his discovery, Mejia-Xesspe published his findings during a scientific congress in 1940.[1]. One year later, Dr. Paul Kosok - an American historian at the Long Island University of New York - conducted research in the Nazca area. Originally, he wanted to look for other Incan and pre-Incan artifacts. For this he wanted to use an airplane in order to get a better view of the area. When the pilot flew over the Nazca plain, Kosok looked out of the window and saw what appeared to be an airplane landing strip [2]; however, he wasn't aware of any airport out here in the desert. Nevertheless, more and more of

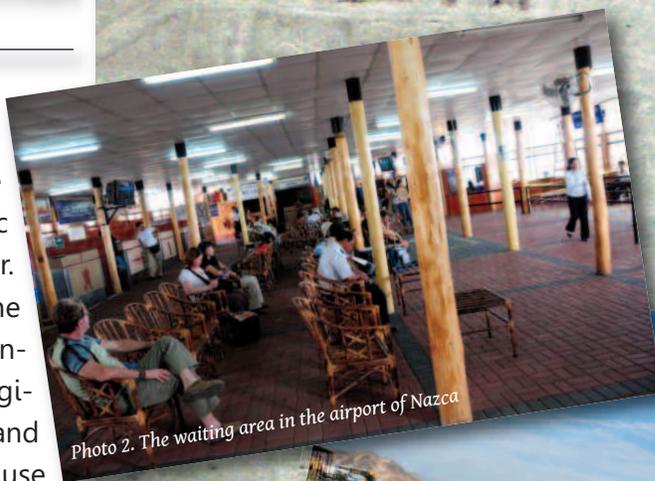


Photo 2. The waiting area in the airport of Nazca



Photo 3. The flights over the lines are carried out with small Cessna airplanes. The banking can be quite severe.

these strange lines appeared on the ground. Some of them ran parallel and some looked like roads that disappeared into nowhere. Then he came across a giant spiral and a little further he spotted the outline of a giant bird and a monkey carved into the ground. After another few minutes, the plane flew over a giant human figure that held up its arm to greet.

After he landed, Kosok knew that he had stumbled upon something special. He consulted with archaeologists, but they couldn't really help him as they didn't know anything about these strange lines. By coincidence, Kosok met German mathematician and teacher Maria Reiche whom he told about the lines. Reiche was immediately captivated and offered to assist Kosok to map and measure them. Maria Reiche had found her destiny. From this moment on, she dedicated her whole life to the lines. She fought for their protection which eventually led to their UNESCO world heritage status. Never tiring, Reiche stayed in a tiny house and office near the town of Nazca. When she got too old to do daily research, she was given a permanent room in the Hotel 'Nazca Lines', the best hotel in town. Here she died in 1998, at the age of 95. Reiche's contributions to the site are incredible. Her book "Geheimnis der Wüste. Mystery on the Desert. Secreto de la Pampa" [3], is a must read for anybody interested in the Nazca lines.

But Nazca gained its biggest popularity through the 1969 book 'Chariots of the Gods' [4] by Erich von Däniken, in which he proposed that the lines could have had something to do with extraterrestrials who had the ability to fly and visit earth, at the dawn of human history.

The Nazca lines can generally be divided into three categories:

1. **Simple, straight lines** that run between several hundred meters and several kilometers. The longest is over 23 kilometers long. The locals call them "las líneas" [Photo 4]
2. **Huge, road like trapezoids and rectangles**, which resemble landing strips of modern airports if seen from the air. This "landing strip" description was mentioned for the first time in Erich von Daniken's bestseller [4]. Ever since then, the locals refer to them as 'las pistas'. [Photo 4]

3. **Gigantic drawings – so called *geoglyphs*** – of animals, figures and other, more abstract motifs. These drawings are the most famous among casual visitors and are considered the 'main attraction' if you book a flight over the lines. [Photos 8, 9, 10]

Only visible from the Air?

There are so many theories and sometimes so much nonsense published about the Nazca lines, it will turn your stomach once you have visited the area for yourself. It is impossible to present every theory in this article in detail, but after an extensive visit to the area, it should become clear to even the most hardcore critic that the ancient astronaut theory has to be taken into consideration. I will give you an example of the nonsense that is published. The Wikipedia article about the Nazca lines states: "*Contrary to the popular belief that the lines and figures can only be seen with the aid of flight, they are visible from atop the surrounding foothills [citation needed].*" [5]



Photo 4. This is a good example of the complexity of the lines. You can see the rectangular shapes, that locals refer to as 'las pistas' and the straight lines.

While Wikipedia articles are sometimes to be taken with a grain of salt, this statement is important and interesting as it is - in my opinion - specifically designed to counter the Ancient Astronaut Theory. If it turns out that the lines and figures can only be seen in their entirety with the ability of flight, most other explanations will have a difficult stand.

That's why we have to look at the validity of this state-



Photo 5. This photo shows a closeup of one of the lines as seen from the ground. The Nazca plain is off-limits for tourists and one requires special permission to enter the protected area.

climb one of these foothills. Very quickly it became clear what one can or cannot see. During the ascent to one of the hills, one can make out lines that run to the horizon without end [Photos 5&6]. Once you reach the



Photo 6. As one climbs higher on one of the foothills, more lines become apparent, but the Geoglyphs and the full extent of the lines are never visible from the ground.

ment first. For the casual visitor it is hard to check the above statement as the plain of Nazca and the surrounding foothills are strictly off limits to them. In this article I'm glad to be able to show you some rare photos of what can be seen from the ground and the surrounding foothills. During our visit in 2009, my wife and I had the privilege to get a rare insight by having been able to enter the 'forbidden zone' and



Photo 7. This photo shows what is visible from the surrounding foothills. It also illustrates well how vast and flat the Nazca plain is. This photograph alone disproves the notion that the lines and geoglyphs are visible from the surrounding mountains.

summit [Photo 7], you can see more lines and – in the distance – you can barely make out that there are lines that are straight and some that are not. It is absolutely impossible to make out any of the figures from any of the foothills surrounding the Nazca plain.

Because of this, Maria Reiche – the grand old dame of Nazca research – spent her own money in the 1970s to construct a watchtower right next to the 'Panamericana' Highway from which you can make out parts of the 'hands' and the 'flower' geoglyphs [Photo 8]. You can be sure, Reiche wouldn't have gone through this expense - with her already meager income - if visitors could see them from the surrounding hills. For the interested reader, I recommend a visit to Google Earth and check for yourself.

As we will later see, some of the geoglyphs are located on top on flattened mountain tops [Photo 13], the highest spots in the area which is the final nail in the coffin of the Wikipedia Statement above.

No, the lines and geoglyphs were specifically designed to be viewed from the air, no matter how some people try to twist the facts.

That being established, we have to look closer at how many lines are actually in the area. Most articles and books about the Nazca lines just talk about a relatively small area adjacent to the town of Nazca, the so called Nazca plain. This is also the area where most of the tourists are flown over if they embark on a small air-



Photo 8. This aerial photo shows the watchtower (on the right), Maria Reiche built, so that visitors that can't board an airplane, get a glimpse of the lines and geoglyphs. From this tower one can see the glyphs: The Hands and the Tree.

plane [Photo 3].

Nazca has a small, but lively airport [Photo 2] from which daily flights over the area are offered. What most people don't know is that there are two different flight routes. The most popular route is the shorter flight that leads over the plain closest to the town and airport. All the agencies offer these flights and 90% of tourists book this trip. The lines you can see from those tours are also the ones you will see in most TV documentaries.

But some agencies offer a longer flight and include the 'Palpa lines'. Those lines are further away from Nazca and actually closer to the town of Palpa, hence the name. The geoglyphs here are not photographed often and are also not as well known to the public.

THE LINES AND GEOGLYPHS WERE SPECIFICALLY DESIGNED TO BE VIEWED FROM THE AIR, NO MATTER HOW SOME PEOPLE TRY TO TURN AND TWIST THE FACTS.

During two visits in 2005 and 2009, my wife, Beth, and I were able to fly extensively on both routes and document several thousand photographs of the lines and geoglyphs.

It is interesting to note that the popular geoglyphs are, in fact, the youngest of the lines. And you don't need

to read a lot of literature to figure this one out. All you need to do is look at the lines themselves. The geoglyphs are running on top of the lines and pistas in many cases, hence they have to be made later.

Flights over the Nazca lines are carried out by experienced pilots in small Cessna airplanes. Some of the planes have seen better days, but like many other things (like Taxis) in South America it turns out that we Westerners are just too safety conscious. The Pre-Flight checklist, more often than not, consists of nothing more than a quick prayer and a rosary in the shirt pocket or a

picture of the "Virgin of Guadalupe" glued to the dashboard. It helps! At least 99% of the time.



Photo 9. A geoglyph among the Palpa lines group on the side of a mountain range. These glyphs are older and much less explored compared to the glyphs on the Nazca plain. Nevertheless, they are just as mysterious. Look at the faint bird symbol on the chest of the figurine - symbolizing flight.

The first geoglyph one will come across after takeoff is officially called (how ironic for the critics) "El astronaut" – the Astronaut [Photo 11 & 21]. It is a giant figure on a mountain side facing skywards with a round head, holding his arm up to greet visitors - the universal sign since the dawn of mankind.

But "El Astronauta" is only the beginning of every tour.



Photo 10. 'El Astronauta' has been greeting flying visitors for thousands of years.

What follows is an overwhelming display of gigantic ancient ingenuity. Kilometer upon kilometer the planes fly over lines that run parallel for a while then abruptly stop. Some lines are single and go on and on. They don't stop in front of mountains, they run straight over them. In between the lines are gigantic drawings of animals, hands and spirals. On our flights, we sometimes flew over L shaped formations and circles. The lines crossed each other or several lines connected into one spot. The warm air rushed into the tiny airplane and if you looked out to the horizon you could see nothing but desert and mountains. It was like you were on a different planet. In order to give the passengers a good view of the lines, the pilots have to bank their planes hard.

We were getting pressed into our seats with quite a bit of G-Force. That's why every plane carries a good number of barf-bags for the end result of motion sick-

ness. Sensitive people should definitely take some motion sickness pills before embarking on a plane in Nazca. If you go, don't tell me I didn't warn you!

The regular tour which most tourists take over the Nazca plain takes about 30 minutes. But we also wanted to see the Palpa lines that are about one hour away from the Nazca airport. On our way there, we could see lines – some very faint and untouched for thousands of years – on the ground. The whole area – over 535 square kilometers in total – was covered with lines and geoglyphs. The mountain slopes were covered with strange beings wearing helmets, hats and antennae. Then there was a whole mountain which had its top shaved off; on the plain left behind were lines and rectangles. The pilot made an approach as if he wanted to land here. He screamed over of the wind that rushes into the open window "Look! Looks like airport landing strip!", he had a big grin on his face.

After a while he pointed down and said: "Look down, this is very nice!" He banked so hard that I hoped the old Cessna we were in would not fall apart. He wasn't kidding. What was lying below us was simply stunning! A giant – what can be best described as – a Mandala was carved into the mountain top with absolute precision. [Photo 12] The geometrical accuracy was remarkable and I couldn't help but think about some crop circle formations that appear in England since the



Photo 11. Many of the kilometer long lines intersect in certain spots, form rectangles and trapezoids.

late 1980s. But this is Nazca, and the shapes we saw here are thousands of years old.

No matter what the direction the airplane banked to

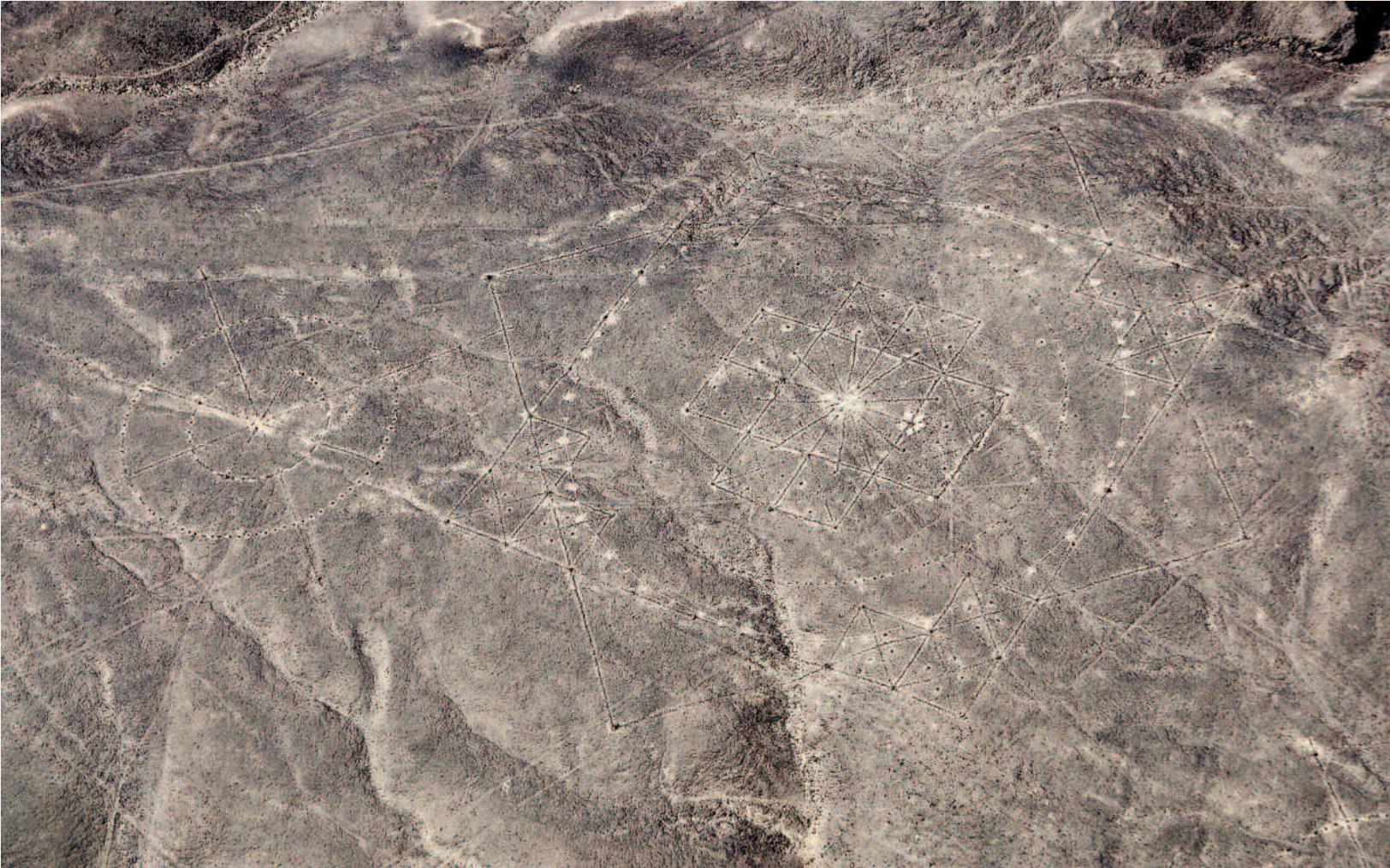


Photo 12. This gigantic 'mandala' like geoglyph is one of the strangest and most enigmatic carvings of Nazca. The geometric precision is stunning, the purpose, a mystery.

here, there were geoglyphs everywhere. On mountain slopes, plains and hilltops. An amazing puzzle that seems to defy any explanation.

Pretty much every year, new lines and geoglyphs are discovered further and further away from the original Nazca plain.

Many Theories...

So what are the explanations and theories? Like I mentioned before there are as many explanations and theories about Nazca as there are lines. Every year there is at least one publication that claims to have finally 'unlocked' the secrets behind them. The list is so long it would fill several magazine pages, if I would list them all. Here are just ten examples:

1. **A sports complex.** Native runners had to run up and down the lines and around the geoglyphs. Proposed by Georg A. von Breunig and Prof. Hoimar von Ditfurth
2. **Astronomical Calendar.** Proposed by Maria Reiche and Simone Waisbard.
3. **Water cult.** The lines mark underground water lines,

and the geoglyphs were used for ceremonial dances. Proposed by Prof. Anthony Aveni

4. **A place to track solar eclipses.**
5. **A map of the world.**
6. **Gigantic writing system.** Essentially making it the biggest graffiti site in the world)
7. **Clan signs and territory markers.** The area around the monkey the rulers gave them something to do in order to prevent naughty thoughts!
10. **Use of hallucinogenic drugs.** Shamans took powerful drugs and saw wonderful things, which the common folk had to draw into the sand afterwards

Some theories make more sense than others (how an ancient 'Olympian' would sprint around a geoglyph that is on a steep mountain slope without us seeing the skid-marks, is beyond me) but they all have one thing in common: While they might explain a portion of the mystery, they fail miserably with others.

Most theories have a problem because they don't acknowledge the fact that the lines and geoglyphs can only be seen from above; It's refreshing to see that this fact is slowly sinking in even with non Ancient As-



Photo 13. An example of lines on hill tops.

tronaut or Lost Civilization theorists. A step in the right direction was made by Mr. Jim Woodman [6] who theorized that the ancient Nazca people might have used the help of hot air balloons to create the lines. In true Thor Heyerdal [7] fashion, he constructed a balloon out of fabric that was available to the ancient Nazca people and successfully launched it with two passengers. It doesn't matter if one agrees with his theory, he has to be applauded for acknowledging that we have to assume ancient flight in order to solve the mystery of Nazca.

Another step in the right direction would be to see Nazca in a more global context, as it is not the only site in the world where gigantic geoglyphs can be found. They occur in many countries all over the world and modern satellite imagery reveals new discoveries every year. We can find examples of giant geoglyphs in England, Russia, Saudi Arabia, Chile and the so-called serpent mounds on the North American continent; we will discuss in more detail in one of the next issues of Paleoseti Magazine.

Why would our ancestors all over the world go through the painstaking process of creating images

which they wouldn't have been able to see after completion? The answer is simple: They wanted to communicate with their 'gods'. And those 'gods' had the ability to fly! If you think about it, it is fairly logical to carve giant animals and humans into the ground if you want to communicate with and 'please' the flying gods. However, it is true, you don't necessarily have to assume extraterrestrials in flying machines and space crafts; all you need to assume is that our ancestors had a good imagination which led to the belief in some deity living in the sky or heaven.

But what about the lines, rec-

tangles and 'landing strips'? Why on earth would anybody get the idea to carve those for many kilometers over plains and hills? As mentioned before, some of the lines run parallel, stop all over sudden and cross each other at random.

The solution to the problem is surprisingly simple. All we have to do is keep an open mind and – most importantly - look up! We see the original Nazca Lines almost every day when it's nice and sunny out.

We modern people have the big advantage to have the ability to fly using technology. Aircrafts come in many shapes and sizes and their propulsion methods vary greatly. Since the advent of intercontinental travel for which aircrafts have to fly at certain heights, we are accustomed to a phenomenon that nobody really pays attention to anymore: Contrails.

Wikipedia describes contrails and their formation as follows: "*Contrails* (/ˈkɒntreɪlz/; short for "condensation trails") or *vapor trails* are long, thin artificial (man-made) clouds that sometimes form behind aircraft. Their formation is most often triggered by the water vapor in the exhaust of aircraft engines, but can also be triggered by the changes in air pressure in wingtip vortices or in the air over the entire wing surface.[1] Like all clouds, contrails are made of water, in the form

of a suspension of billions of liquid droplets or ice crystals.

Depending on the temperature and humidity at the altitude the contrail forms, they may be visible for only a few seconds or minutes, or may persist for hours and spread to be several miles wide. The resulting cloud forms may resemble cirrus, cirrocumulus, or cirrostratus, and are sometimes called cirrus aviaticus. Persistent spreading contrails are thought by some, without overwhelming scientific proof, to have a significant effect on global climate.”[9]

If you live in the area of a major flight route, you will know that if the conditions are right, contrails can last for many hours and depending on how many aircraft



Photo 14. An airplane creating contrails. Photo: Wikipedia commons.

are flying that day, many lines can stay ‘painted’ on the sky at once. High winds then spread the trails and the can take on other shapes like [Photo series 14-18] trapezoids or become even more complex shapes.

Is this what the ancient Nazca people were trying to imitate? Where the flying ‘gods’ ‘painting’ lines in the sky that morphed into other shapes and forms over time? What an awesome impression this – for us – mundane spectacle would have to have made on the ancient Nazca people. They would have thought those lines must be messages for them and the messages have would to be answered! So, they would start going out in the plain, carve those same lines into the sand as they have seen in the sky. The lines in the sky crossed, so this is how it would have to be on the ground. The lines in the sky didn’t stop for mountains,

so the ones on the ground would have to run over them as well.

Day after day the ‘gods’ painted ever new shapes and lines into the sky. So they had to be copied on the ground. Over and over again. This could be why we see many layers of lines on top of each other on the ground. Sometimes one of the ‘gods’ landed and the vehicle left behind tracks in the sand. This would have to be holy ground.

After a while, the lines in the sky stopped and none of the ‘gods’ came back. Were the ‘gods’ angry? Why didn’t they paint the sky anymore? Why didn’t they come and land? What could the ancient Nazca people do to please these ‘gods’, so they would return once again. The priests and kings might sit together and discuss the next steps. It would be decided to instruct their people to carve giant animals and figurines on the ground and mountain slopes. Animals that please the ‘gods’, a monkey, a spider. After that didn’t work, a whale, a human hand. Maybe it would help if they carved one of the ‘gods’ they saw wearing a helmet

DAY AFTER DAY THE ‘GODS’ PAINTED EVER NEW SHAPES AND LINES INTO THE SKY. SO THEY WOULD HAVE TO BE COPIED ON THE GROUND. OVER AND OVER AGAIN.

and other strange clothes on one of the Mountain sides with the arm raised in a greeting.

Meanwhile, another group might be instructed to carve more and more lines into the ground. After many decades, the ‘gods’ didn’t return. Over hundreds of years the legend of the ‘gods’ painting the sky was told by

generations of inhabitants and on and off, additions were made. After many hundreds of years, when the 'gods' did not return, the lines were eventually abandoned.

A message from the Gods?

Another interesting attempt for an explanation can be found on the internet [8].

Unfortunately, no author is listed on the site, but I think it is a brilliant attempt to piece the puzzle together.

In 1972 and 1973, the USA launched two spacecrafts, Pioneer 10 and 11, the first spacecrafts (built by humans) that left the solar system. While many scientists have to be skeptical by trade regarding extraterrestrial life, the designers for these missions were refreshingly optimistic. They included two plaques made out of gold-anodized aluminum as a message from humankind in-

Photo 18. When conditions are right, contrails can stay in the sky for hours. They can create more and more complex patterns, especially lines and squares.

See also Photo 15



Photo 16 (top). After awhile, the contrails 'evolve' into the same pattern as we can see in Nazca (Photo 17, bottom). The 'gods' painted the sky!



tended for extraterrestrials. The team had the task to design a message that could be universally understood by beings with scientifically advanced intelligence. Therefore, the message had to be simple to look at and understand, yet sophisticated enough to deliver what we wanted to say as a species. Not an easy task. But the outcome was quite ingenious [Photo 19]. The Plaque shows a naked man and a woman standing in front of the outline of the spacecraft it was attached to. The key to decipher the plaque is the symbol on the top left corner. It shows the "hyperfine transition of neutral hydrogen". Wikipedia describes it as follows: *'At the top left of the plate is a schematic representation of the hyperfine transition of hydrogen, which is the most abundant element in the universe. Below this symbol is a small vertical line to represent the binary digit 1. This spin-flip transition of a hydrogen atom from electron state spin up to electron state spin down can specify a unit of length (wavelength, 21 cm) as well as a unit of time (frequency, 1420 MHz). Both units are used as measurements in the other symbols.'* [10]

With this information the rest of the image can be decoded and even put to scale. On the bottom of the plaque is a stylized version of our solar system, and it shows what planet the probe is from. One of the most important pieces of the plaque is the prominent star-like pattern in the left half. Again, Wikipedia explains it best: *'The radial pattern on the left of the plaque shows 15 lines emanating from the same origin. Fourteen of the lines have corresponding long binary numbers, which stand for the periods of pulsars, using the hydrogen spin-flip transition frequency as the unit. Since these periods will change over time, the epoch of the launch can be calculated from these values.'*

The lengths of the lines show the relative distances of the pulsars to the Sun. A tick mark at the end of each line gives the Z coordinate perpendicular to the galactic plane.

If the plaque is found, only some of the pulsars may be visible from the location of its discovery. Showing the location with as many as 14 pulsars provides redundancy so that the location of the origin can be triangulated even if only some of the pulsars are recognized.

The data for one of the pulsars is misleading. When the plaque was designed, the frequency of pulsar "1240" (now known as J1243-6423) was known to only three significant decimal digits: 0.388 second.[1] The map lists the period of this pulsar in binary to much greater precision: 100000110110010110001001111000. Rounding this off at about 10 significant bits

(100000110100000000000000000000) would have provided a hint of this uncertainty. This pulsar is represented by the long line pointing down and to the right. The fifteenth line on the plaque extends to the far right, behind the human figures. This line indicates the sun's relative distance to the center of the galaxy.'

As you see, a lot of thought and science went into the design of the Pioneer plaques.

Now please compare photos [20] and [21] with this message we sent to the stars in the 1970s.

Could Nazca be a message from somebody that wants to give us a hint of where they came from? Is history repeating itself? And are we finally starting to look into the right direction?

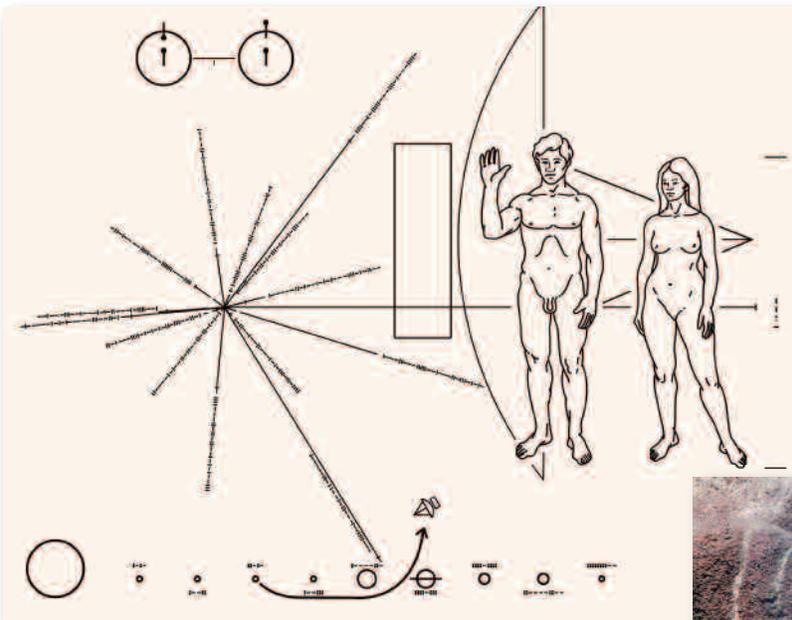


Photo 19 (top). Our message to the universe from Pioneer 10 and 11. Source Wikipdia Commons. Author NASA
Photo 20 (right) and 21 (bottom): Is Nazca a similar message for us?



Further reading:

[1] Däniken, Erich von; "Zeichen für die Ewigkeit"; Bertelsmann Publishing 1997 ISBN3-570-01730-3 (English title "Arrival of the Gods: Revealing the Alien Landing Sites of Nazca")

[2] LIIFE Magazine, Issue July 1947; "Pre-Inca markings in Peru"

[3] Reiche, Maria; "Geheimnis der Wüste. Mystery on the Desert. Secreto de la Pampa", Publishing Maria Reiche, Stuttgart-Vaihingen, 1968

[4] von Däniken, Erich "Erinnerungen an die Zukunft", Econ Verlag 1968. English title "Chariots of the Gods?"

[5] http://en.wikipedia.org/wiki/Nazca_lines

[6] <http://www.nott.com/Pages/projects.php>

[7] Heyerdahl, Thor; "The Kon-Tiki Expedition", George Allen & Unwin Ltd.; 1950

[8] http://www.bibliotecapleyades.net/nazca/esp_lineas_nazca_2.htm

[9] <http://en.wikipedia.org/wiki/Contrails>

wiki/Contrails

[10] http://en.wikipedia.org/wiki/Pioneer_plaque

The Case for Ancient Astronauts Part 2

“SCIENCE IS BASED ON EXPERIMENT, ON A WILLINGNESS TO CHALLENGE OLD DOGMA, ON AN OPENNESS TO SEE THE UNIVERSE AS IT REALLY IS. ACCORDINGLY, SCIENCE SOMETIMES REQUIRES COURAGE - AT THE VERY LEAST THE COURAGE TO QUESTION THE CONVENTIONAL WISDOM.” — CARL SAGAN

Article by Herbert Eisengruber

In the last issue of Paleoseti Magazine [1], we looked at the possibility of interstellar space travel as the basis of the Ancient Astronaut or Paleoseti Theory. After looking at different proposed concepts, we concluded that it would be possible to achieve interstellar flight. The most likely candidate for this would be the so-called “generation spaceships” or “interstellar arcs” which could allow their inhabitants to embark on a journey lasting several hundred years (or even longer), to a planet that would be pre-selected for its likelihood to sustain life.

I think it would be a great mental exercise to further explore this possibility and take a closer look at how life on a generation spaceship could look like, and what mindset a society embarking on such a journey would have to have. It would also be interesting to look at what technologies would be necessary to make a spaceship like this function. I'm fully aware that most of these thoughts will sound like science fiction. However, history tells us that today's science fiction will be tomorrow's reality, as anybody who has ever read Jules Verne should know.

From studies [2,3,4] we know that a generation spaceship would have to be gigantic in size, for several reasons. First of all, it has to accommodate the needs of a large, genetically diverse population of space travelers. In order to grow healthy and sustainable food sources, such ships would need a good variety of climate zones

and offer quite a few different areas for farming. As we know from thousands of years of agricultural experience here on earth, fields for different types of crops can't be farmed continuously for an unlimited amount of time; they have to be farmed with certain rotations so that they can recover.

This requires additional space that is not always useable for the production of food, but would be essential for production of oxygen. As outlined in the Spring issue [1] of Paleoseti Magazine, large scale experiments for such a self-contained biosphere have already been undertaken successfully.

But critics – some of them well known astronomers – are pointing out that spaceships like these are unrealistic; not only for their incredible size. Another problem would be the hostile environment in space itself. They point out that space is far from empty and micro meteorites could cause impacts to the spaceship's hull.

The ship's inhabitants would also have to be shielded from harmful radiation which can be quite aggressive in outer space. In the 1950s and 60s when the US moon landing program was rolled out, it was questioned if a trip to the moon would be possible because of the radiation. However, we all know how this turned out. Today we know that astronauts can live on space stations for extended periods of time, and they can survive this radiation quite well. Professor Harald Lesch from the Ludwig Maximilian University of Munich in Germany, points out [5], that in order to shield the ship and its inhabitants from the harmful effects of radiation and impact from micro-meteorites, the hull would have to be several meters thick and made of dense rock. Therefore, the mass of such a ship would exceed anything that we could ever build, let alone accelerate to a speed with which it could reach its destination.

It is puzzling to hear people like Professor Lesch talk about how unrealistic interstellar travel is – because of current technological restrictions - while the rapid de-

velopment in technology enabled advances in astronomy and science which wouldn't even have been dreamed of two hundred years ago. Professor Lesch and his colleagues don't sit in front of Galileo's simple telescope anymore!

Given the rapid development in technology, what might the future bring in two hundred, five hundred or even a thousand years?

Here are some examples of technologies that are just around the corner and could very well be utilized on Generation Spaceships:

For quite a few years now, physicists all over the world are experimenting with so called Nanomaterials. Among them are applications called "Ductile, machineable Ceramics". These materials are much stronger than plastic or plexiglas and some of them are only 50 atoms (!) thick. You can imagine that the use for such materials would be endless [6] [7].

The Hybrid Materials group at the University of Toronto [8] in Canada describes its research field as follows: "The Hybrid Materials Group develops new classes of structural nanomaterials in which the density of the parent

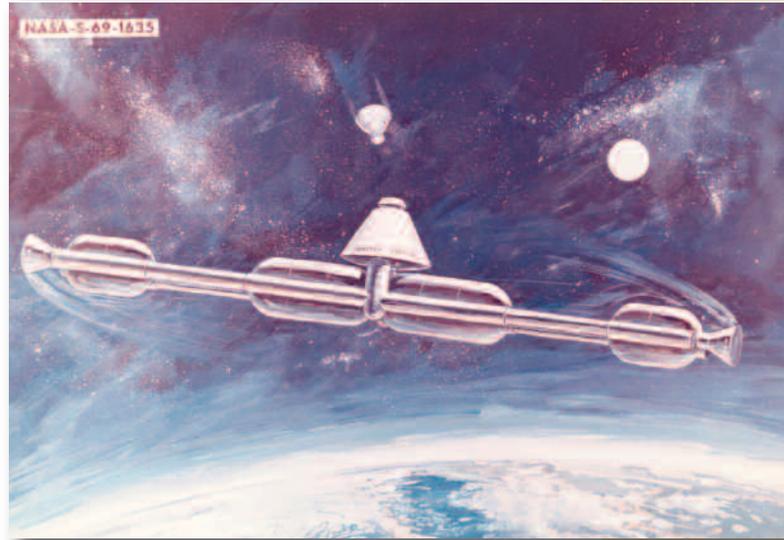


Photo 02: NASA artificial gravity study from the 1960s. In this concept, the whole spaceship is put into rotation to create gravity. Source: Wikipedia Commons, Author: NASA

The application of structural nanomaterials is especially significant in the automotive and aerospace industries, where the increase in engineering material performance while decreasing its density/weight can have a drastic impact on fossil fuel requirements."

We can be certain that within the next 100 years, great breakthroughs will be made regarding exciting new materials which will enable the construction of spaceships featuring hulls that protect its inhabitants from impacts and radiation.

If in doubt, just compare equipment from extreme mountaineers from the 1950s and today. Materials like Goretex would not have been dreamed of back then.

Missing gravity?

Another problem pointed out by critics is the missing gravity on a spaceship. We know from long time inhabitants of Earth-orbiting space stations, that missing gravity is a threat to the astronaut's health. Limbs start to grow, the heart gets weaker and the overall circulation system of the body gets out of sync over extended periods of time. This is the reason why modern day astronauts have to go through a closely monitored exercise program if they stay on a space station for a prolonged amount of time. So it is clear that longer trips into space would require some form of artificial gravity. This can be overcome relatively easy by putting the spacecraft (or parts of it) into rotation. Solutions to this problem exist since the 1960s [Photos 01 and 02].

It has been argued that the biggest problem to sustain

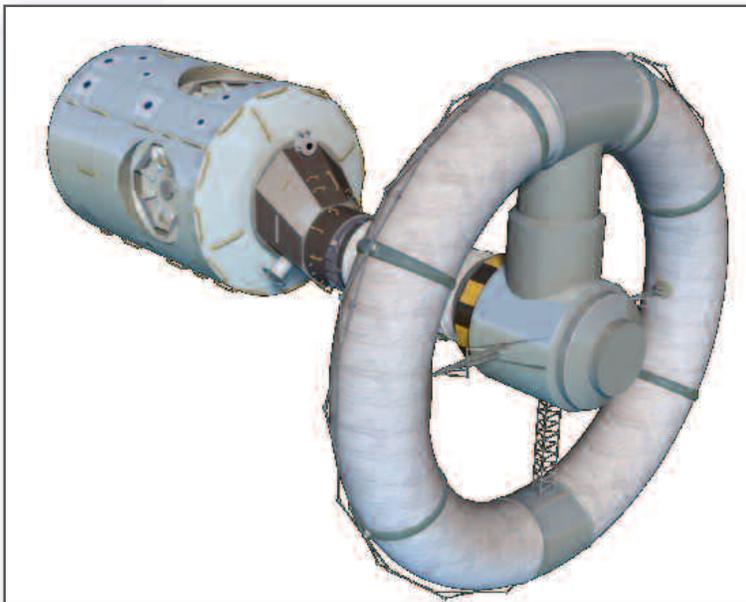


Photo 01: NASA artificial gravity study. In this concept, the donut shaped part of the spacecraft is put into rotation to create gravity. Source: Wikipedia Commons, Author: NASA

material is drastically reduced by incorporating a periodic cellular architecture of open space.

Electrodeposited nanocrystalline material deposition techniques are also employed to create cellular hybrids, thereby increasing mechanical performance while decreasing material density.

a large population of people on a spaceship would be reliable and continuous food sources. This is certainly true, as any farmer knows that every year is not the same in regards to production. On an isolated spaceship, pests, mutations and other unexpected problems would be especially catastrophic. That's why on such a ship, reliable backup and supplementary food supplies would have to be in place. This would be no different for space travelers as it is for many societies here on Earth. We know that many societies live on very limited food sources during times of drought. Humans have always developed excellent food preservation techniques during the millennia; today we can preserve food with dehydration and other techniques that can last decades.

Several companies and researchers all over the world are exploring the possibility of utilizing certain species of algae, grown in completely artificial production facilities, as a food source for places on Earth where nothing else will grow. This is a young, but growing industry as algae have been discovered to have many amazing properties. Two promising species of algae are *Chlorella* and *Spirulina*. *Spirulina* was the subject of two studies from NASA and the European Space Agency (ESA) to see if it would be suitable as a dietary supplement for prolonged space missions.



Photo 03: Photobioreaktor. Source Wikipedia Commons, Author: IGV Biotech

But not only are algae considered as food sources, but they could be a solution for many other problems as well. One would be the production of Oxygen for city environments as proposed in a concept by Architect Adam Miklosi [9].

The Japanese inventor team Keiun Kodo, Yasumasa Kodo and Makoto Tsuruoka, even filed a patent for a purification system of polluted air, using algae as the central technology [Photo 05].

These processes and examples would be great solutions on generation spaceships.

Is humanity not suited for such trips?

The other problem that opponents of the generation spaceship idea like to bring forward, is the social implications and difficulties which a society living on such a spaceship would face. It is argued that humanity has difficulties living in peace and that greed, war and distrust among different peoples and religions is just too great to overcome. If we have these problems here on Earth, it would be amplified in a smaller space like a generation spaceship. But is this really true?

Let's take a closer look at this problem. First of all, we have to look at ourselves, if we humans are – in the grand scheme of things – really these greedy, war-mongering, self-centered, environment destroying monsters that some people make us out to be.

During the 1980s, when I was a teenager, everybody lived in constant fear of a nuclear holocaust. Back then



Photo 04: Spirulina Dietary supplements in tablet form. Source: Wikipedia Commons.

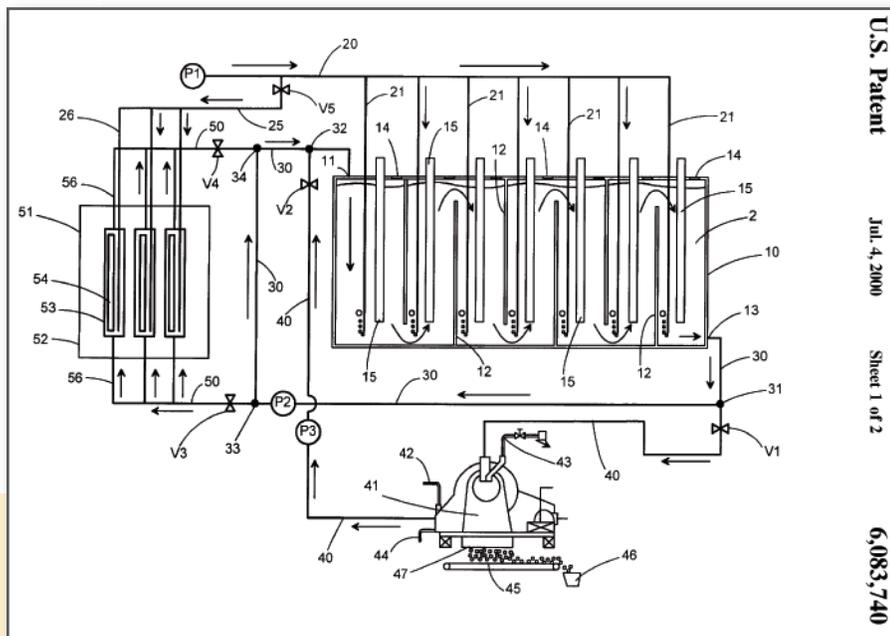
– during the height of the cold war between the USA and the Soviet Union and their respective allies – was a difficult time for anybody that was thinking rationally. Billions upon billions of dollars were pumped into war machines that could have destroyed the world many times over. And there were those who numerously predicted the end of the world by nuclear fall out. But – thank God – it didn't happen. Also, during this time was the beginning of a strong environmental movement. I vividly remember, when I was 15 years old, I was sitting in a class watching a documentary that was brought in by a concerned teacher. This documentary predicted that by the year 2000 the number of human beings will be so great that the planet will not be able to feed us all. The climate will be so hot because of greenhouse gases that the Earth will be pretty much a scorched rock, and humanity – and the whole planet for that matter – will be dead by 2020 at the latest. Now we are writing the year 2014 and none of these gloomy predictions have come true. Yes, we have environmental problems, nobody is denying that; but most problems have a solution if we tackle them in a positive manner. If history

has taught us one thing, it is that changes and positive progress have never been initiated by negativity. We have problems in hand and we will overcome them, just like humanity has done in the last one hundred thousand years.

Yes, humanity went through a lot of wars and turmoil during its rocky history, and if you turn on the news every day, one could think that the end truly is near. But we are a collection of individuals and all of us have to be seen as such. I think it's wrong to draw this gloomy black and white picture of us as a species, and it has become fashionable to be pessimistic.

It's a fact that humanity has lived a lot longer in peace than at war. We just tend to remember the war times much more vivid, for obvious reasons. And for anybody that has traveled extensively, it will be clear that most human beings love their families and children and have a desire to live in peace with their neighbors, no matter how many bad apples seem to prove the opposite.

I'm confident that if we would ever face the challenge – or opportunity – to build a generation spaceship we would overcome our differences quickly. It would also



U.S. Patent Jul. 4, 2000 Sheet 1 of 2 6,083,740

Photo 05: A system for purifying a polluted air by using algae such as Spirulina is capable of reducing carbon dioxide (CO₂), nitrogen oxide (NO_x) and/or sulfur oxide (SO_x) in the polluted air and generating oxygen. That is, this system comprises a culture tank filled with a culture fluid including the algae, an air supply unit for forcing the polluted air into the culture fluid to dissolve carbon dioxide and nitrogen oxide and/or sulfur oxide in the culture fluid, and a lighting unit for radiating a light to the culture fluid. By radiating the light to the culture fluid in the presence of carbon dioxide, photosynthesis of the algae is promoted to convert carbon dioxide into oxygen. In addition, the algae use the nitrogen oxide and/or sulfur oxide as a nutrient during the photosynthesis. As a result, the present system can efficiently purify the polluted air to generate a purified air, which is rich in oxygen.

Inventors: Keiun Kodo, Yasumasa Kodo, Makoto Tsuruoka; Original Assignee: Spirulina Biological Lab., Ltd. Image source: Google patents; Publication number: US6083740 A

be likely that a society that assembles a one or more generation spaceship, would choose its inhabitants carefully and make sure only certain people with a very specific mindset would embark on such a journey. Our society is doing such a selection process in many forms, every day and in multiple aspects of life.

I'm aware that questions like, "Will our society ever be ready for such a step?", are very philosophical and can be argued to death, but I think while we certainly shouldn't make ourselves -as a species- bigger than we are, we should also be proud of what we have achieved and the problems we have overcome. Today's societies, in most parts of the world, are not the same as they were 1000 years ago and we can only speculate where we will be in 500 years. Especially within the last 100 years, humanity has made huge progress – if you look at the big picture - in terms of human rights. Slavery is pretty much eradicated (at least officially) and even in

traditionally patriarchal societies, women are more and more seen as equals – one of the most important resource for progress that humanity has ever experienced. Certainly, there are still huge gaps, but I'm confident that they will be filled, although it seems like it takes a long time.

Not enough to do?

Another big stumbling block critics point out against generation spaceships is that its inhabitants would get bored on a limited size spacecraft. There would not be enough room even on gigantic ships to keep many generations of inhabitants 'entertained'. They argue that the ship would eventually feel like a prison.

During the time of the great explorers like Magellan and James Cook, ship's crews spent many years at a time on comparatively tiny ships. They had no entertainment on board, limited food and other supplies. They didn't have their families with them either. Yet, many of the seamen who undertook great voyages back then, went back and did them over and over again. Some of them spent their whole adult life on ships that are about the size of a large single family home. If we look at our own, modern lives, how much radius of living do we really have? If we live in a city, how often do we actually leave it and for what reasons? Visiting family? Going on vacation? Ask yourself that question.

I'm one of the fortunate individuals who had the opportunity in life to travel extensively. During my travels, I found out that the vast majority of people in many cultures grow up, live and die within a 50 mile radius. In fact, to travel and explore the world is a pretty unusual idea which only became popular within the last one hundred years. Before that time, one traveled for very specific reasons only, most of which were purely practical. You needed something that wasn't available in your village for example, so you had to go to the next one. There are lots of people all over the world in rural areas that never even leave a 10 mile radius.

How many 'city dwellers' today choose to vacation on a cruise ship, the ultimate confined space? No, we do not necessarily need huge spaces if we think about it.

In the last 20 years, we discovered the joys of virtual entertainment. What many still call video games are, in fact, artificial, virtual worlds that offer many people an escape from reality for extended amounts of time. Many

individuals get more relaxation out of a \$50 video game than others with a \$5000 vacation. And we are only at the beginning of what is possible with virtual entertainment. Within 20 years, the video game industry managed to go from 'Pac Man' to 'Second Life' and other complex artificially created worlds that even feature a virtual currency. What will the industry develop in one or two hundred years from now? We can only speculate, but a complete virtual reality experience where you can interact physically is not out of the question anymore. And this is not only a Star Trek fantasy. Holographic projections of singers long dead are already entertaining millions of fans during concerts, and in the movies we are looking at realistic 3D images in color. In many ways, our reality already exceeds science fiction ideas from the 1950s and 60s. And we did it in 50 years!

No physical law opposes the idea of generation spaceships. So they will be built. It's only a question of when. In part 3 of this ongoing series, we will have a closer look at Bio-Medical and ethical questions which would be required to be addressed when running generation spaceships.

Further reading:

- [1] PaleoSeti Magazine Issue 1, Spring 2014, ISSN 2292-8251, "The Case for Ancient Astronauts - Part 1"
- [2] HEIN, PAK, PÜTZ, BÜHLER, REISS; "WORLD SHIPS – ARCHITECTURES & FEASIBILITY REVISITED", JBIS, Vol 65 pp. 119-133, 2012
- [3] A.R. Martin, "World Ships – Concept, Cause, Cost, Construction and Colonisation", JBIS, 37, pp.243–253, 1984.
- [4]. A. Bond and A.R. Martin, "World Ships – An Assessment of the Engineering Feasibility", JBIS, 37, pp.254–266, 1984.
- [5] Lesch, Harald; "Alpha Centauri," 1999, Episode "Can we travel to the stars?"; Copyright Bavarian Broadcasting corporation
- [6] <http://www.azom.com/article.aspx?ArticleID=1066> "Nanomaterials and Their Applications"
- [7] Sastry, S.V.A.R. ; Chem. Eng. Dept., M.V.G.R. Coll. of Eng., Vizianagaram, India; ISBN: 978-1-4673-2267-6; Applications of nanotechnology in the field of environment
- [8] <http://nano.uoftengineering.com/>
- [9] <http://www.adammiklosi.hu/project/150/>

Tiwanacu & Puma Punku

THE MYSTERY OF THE ANDES



Article by Herbert Eisengruber

Hardly any other archaeological site in the world is surrounded by as much mystery as Tiwanacu in Bolivia. Located on a high plateau in the Andes mountains, at an altitude of nearly 3500m above sea level, it is one of the main places to visit if you are interested in the Ancient Astronaut or Lost Civilization Theories. Most visitors arrive at Tiwanacu with guided tours from the fascinating

overnight in the nearby town of Tiwanacu, which can be a bit of an adventure on its own. Hotels here are very basic (bring your own sleeping bag or liner!), but the added time you will be able to spend at the ruins is definitely worth it. It's also worth mentioning that while the modern village of Tiwanacu is nothing to write home about, a lot of its buildings have been constructed with stones from the ancient archaeological site; therefore, you will stumble across strange stones here as well.

When tourists arrive at the ruins of ancient Tiwanacu, a UNESCO world heritage site, they are sometimes a bit disappointed at first. Most believe they will see huge temples or pyramids á la Egypt and Mexico, which is not the case. To appreciate the mystery of the Tiwanacu ruins one has to take the time and look closer. As with many ancient sites, only small parts of the ruins have been excavated here. They can be divided into two major areas: The main ruins of Tiwanacu and the so called 'pyramid' of Puma Punku. It has

to be mentioned that Tiwanacu has always been the victim of outrageously bad 'reconstruction' work; sometimes it would seem that things which don't fit in with conventional explanation models have been deliberately hidden or 'reconstructed' away. More about this later. That's why it is very valuable to look at old images taken before the 'reconstructions' took place. But before we come to that, I would like to show you how the



Photo 1. The Gate of the Sun. The most famous artifact of Tiwanacu.

city of La Paz. These tours usually have a tight agenda and the interested visitor should take care to not be rushed by tour guides who get paid by the day and tour; the earlier they get home, the more spare time they have. It's highly recommended to take the regular bus or an independent Taxi to the site and – ideally – stay

Photo 02. provides an overview of the main temple enclosure of Tiwanacu. For a more detailed orientation of where things are located on this image, go to: <http://www.paleoseti.com/tiahuanacu.htm>



site presents itself today.

The Main Site

As soon as you enter the main archaeological site of Tiwanacu, you will recognize that many of the ancient stones have been taken out of context; stones that have nothing to do with each other are collected in piles right and left to the paths. The main site is now a rectangular and walled enclosure. The non-informed tourist is led to believe that this wall was once a main part of

Photo 03. - Photo from ca. 1890 [1]



Modern (color) and historic (black and white) images of the main site of Tiwanacu show how the site appeared in the late 1800s to German researchers Alphons Stübel and Max Uhle [1] compared to what is visible today. One can clearly see that the historic photos do not show a wall, but only the main big blocks that form a rectangle. The walls that are visible today [Photos 02 and 05] are modern time reconstructions, fantasy products of 1960s archaeology.

Photo 04. - Photo from ca. 1890 [1]



Photo 05. Shows the 'reconstructed' wall. In the 1960s, the gaps between the bigger columnstones were filled with smaller stones to form the wall we see today. Nobody really knows if there ever really was a wall.

the site. In reality the wall as seen today is a product of archaeological fantasy from the 1960s, a time when Archaeologists were desperate for explanations. Also, during this period the Bolivian government wanted to increase tourism to the country. Archaeologists were pressured to produce "something to look at" quickly,

with a very small budget. A closer look at the wall and many other reconstructions will quickly show how poorly they were done. In order to fully understand this, we have to go back in time to the late 1800s when two German researchers, Alphons Stübel – a geologist and volcanologist – and archaeologist Friedrich Max Uhle, worked at the site. They published their findings in 1892 in their groundbreaking book "Die Ruinenstätte von Tiahuanaco im Hochlande des alten Peru, (The ruins of Tiahuanaco in the highlands of ancient Peru)" [1]. This publication is an absolute masterpiece and is still considered one of the most important works about Tiwanacu and Puma Punku; it features incredibly detailed – almost CAD like - drawings of some of the strangest and most complex rock carvings as well as some of the earliest photographs of the unrestored site. If you are interested in Tiwanacu this book is an absolute must read. Only a few copies still survive in some selected libraries all over the world and when they come up for sale from private

hands, they fetch several thousand dollars in collector's circles. Many years ago I was lucky enough to get a hold of a copy from a library in the German capital of Berlin.

Another early researcher who studied Tiwanacu in detail was Arthur Posnansky, an Austrian archaeologist and explorer (which at the time was pretty much synonymous). At the end of his work at Tiwanacu, which spanned many decades, Posnansky concluded that the site was at least 17000 years old, if not older. This date, of course, does not sit well with today's archaeologists. Posnansky considered Tiwanacu to be the cradle of South American civilization.

Posnansky's books also include detailed maps and drawings; many of which are still unsurpassed. The photographs and drawings from the late 1800s enable us to compare the site to how it presents today which is the key for trying to understand Tiwanacu.

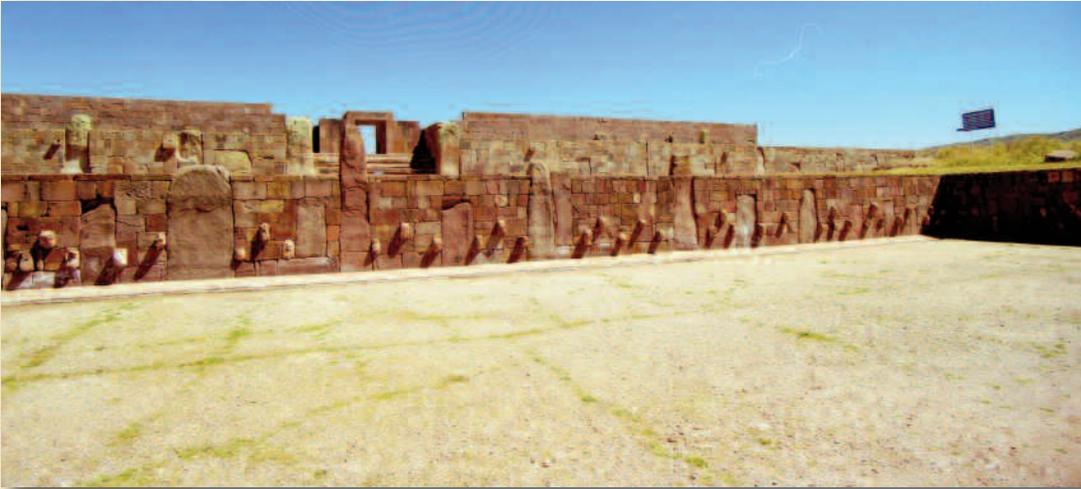


Photo 06. Inside the semi-underground temple.

It is important to know that there are three different types of stone used in Tiwanacu and Puma Punku for buildings, statues and monoliths. The first is red sandstone, a rather soft and relatively easy material to work with. The other two are granite and diorite, two ultra hard kinds of rock. In fact, they are among the hardest rock types human beings have built structures with. As any stone mason will tell you, granite is hard to cut into rectangular blocks, but even harder to carve in intricate detail. Without modern metal tools or diamond cutters, carving granite and diorite would take a very long time. The only known way to cut and carve granite without modern devices is to use sand that contains quartz, one



Photo 07 (top) The entrance to the temple as it appeared around 1890 (unknown photographer) and Photo 08 (right) as it appears today. Today's 'reconstruction' is based on nothing else, w but the imagination of scholars from the 1950s and 1960s.

of the hardest materials known. But this method is so time consuming, that just carving the granite at the ruins would have taken hundreds of years. Two of the most prominent features of Tiwanacu are the "semi-underground temple" [Photo 06] and the main temple above ground [Photo 08] which has a relatively bland entrance gate with steps. If you look



around here, it quickly becomes apparent, that 'reconstructions' ripped pretty much everything out of its context. The walls look out of place and have nothing to do with the original gigantic stones that were documented in the old photographs of the late 1800s. During excavations, dozens of mysterious stone heads – all

with different racial features - were found here. Archaeologists had no idea what these heads meant nor where they came from; so they just incorporated them

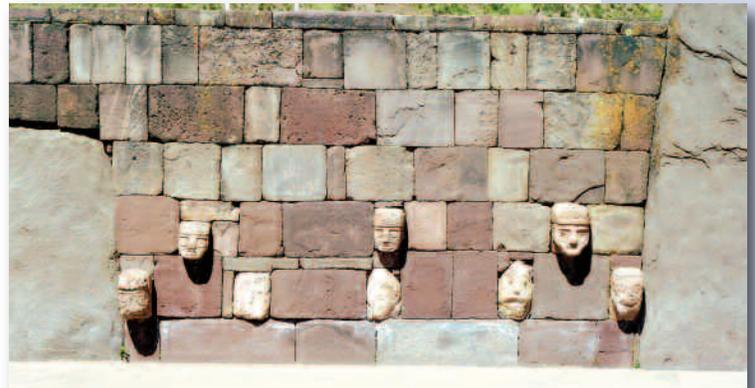


Photo 09. The mysterious stone heads that are now randomly distributed into the walls of the semi-underground temple. Are these the faces of the original builders of Tiwanacu and Puma Punku?

randomly into the reconstructed walls [Photo 09]. If I would work like this in my day job, I would have been fired a long time ago! However, it seems that in official archaeology you can do whatever you want, as long as you don't doubt official dates. Unfortunately, the quality of the reconstructions don't stop at the semi-underground temple. The wall that surrounds, what is now the main site of Tiwanacu, is reconstructed in the same manner minus the stone heads. If you compare the old photograph from the late 1800s with today, as shown on the previous page, this will become clear. The only structures which were always there are the big columns that have been arranged in a rectangle. Archaeologists just assumed that the columns were part of a wall. That, too, is complete fantasy which can be seen if you look more closely at the columns in the old photograph from Uhle and Stübel's book [Photo 03, 04]. On the inside of the columns you can

randomly into the reconstructed walls [Photo 09]. If I would work like this in my day job, I would have been fired a long time ago! However, it seems that in official archaeology you can do whatever you want, as long as you don't doubt official dates. Unfortunately, the quality of the reconstructions don't stop at the semi-underground temple. The wall that surrounds, what is now the main site of Tiwanacu, is reconstructed in the same manner minus the stone heads. If you compare the old photograph from the late 1800s with today, as shown on the previous page, this will become clear. The only structures which were always there are the big columns that have been arranged in a rectangle. Archaeologists just assumed that the columns were part of a wall. That, too, is complete fantasy which can be seen if you look more closely at the columns in the old photograph from Uhle and Stübel's book [Photo 03, 04]. On the inside of the columns you can

see very pronounced grooves that make no sense if they would have been a part of the wall which is 'reconstructed' today. Unfortunately, the 'reconstructions' hide many of the strange grooves on the side of the columns.

The Sun Gate

Undoubtedly, the most famous structure at Tiwanacu is the Sun Gate [Photos 01, 10 and 11] with its exquisite and enigmatic carvings. Their meaning is still a mystery and interpretations are as numerous as the researchers writing books about this subject. Until the late 1800s, the gate was broken into two pieces and partly buried in the ground. The main feature of the gate is a frontal carving of a humanoid creature whose head is surrounded by rays. The creature is holding a long object in each hand. Official archeology describes this depiction as the sun god, Viracocha. The main carving is surrounded by 64 smaller - 32 on each side - winged creatures which also hold a long object in their hands. If we look closer, we can see that the outermost 9 depictions on the left side of the gate have not been finished. The carving underneath the creatures, which archaeologists say are just ornaments, is very interesting. To me, these 'or-

naments' look eerily technical. After working with computer technology for many years, they remind me of stylized circuit and PCB boards [Photos 12, 13 and 14]

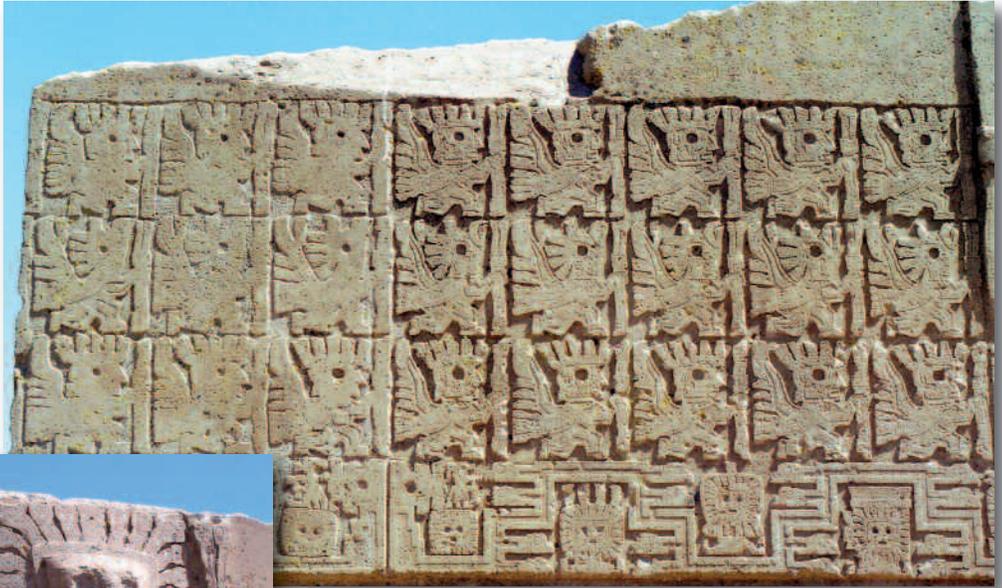


Photo 10 (top) The left side panel of the Sun Gate in detail as seen from the front. You can clearly see the left side of the panel remains unfinished. There are three rows of carved figures, their wings clearly indicating their connection to the sky. Note that only the middle row of figures is looking up.

Photo 11 (left) The Central motif of the Sun Gate is this enigmatic carving.

I am convinced that if we want to get closer to solving Tiwanacu's mysteries, we have to free our minds, be open to new explanations, look at the ruins with modern eyes and start afresh. One thing that everybody will be aware of if they enter the site is the strangely shaped stones that are lying around everywhere. Many of them are cut in very rectangular shapes with unusual grooves, cutouts and carvings. They are not your usual stones to be found in ancient sites all over the world. One can find the most amazing collection of them on a hill nearby.

Photo 12 (bottom): Detailed shot of the ornaments of the Sun Gate

Photo 13 (right): A modern circuit board. Unknown photographer.

Photo 14 (far right): A modern PCU board with a Microprocessor. Note the similarity between the stylized ancient carving on the Sun Gate;

Source: Wikipedia Commons, Author: Yaca2671

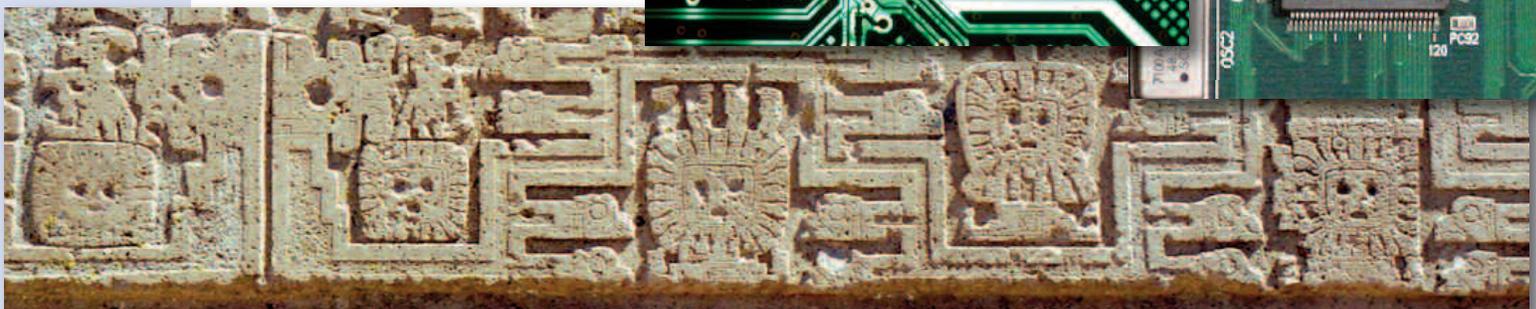
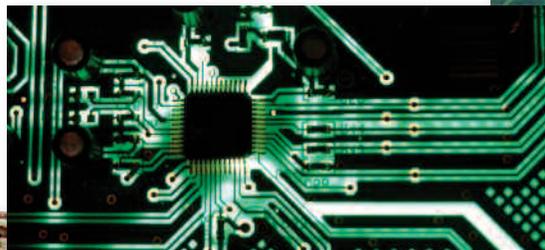


Photo 15: The base stones in Puma Punku weigh up to 600 tons! How were they transported here and what incredible force shattered them, creating the chaos we see today?



Puma Punku

The real mystery of Tiwanacu are the ruins of nearby Puma Punku. Here the stones and ruins were too massive to be transported off by locals or the Spanish, to be used as building material for houses and the church in the nearby town of Tiwanacu.

Puma Punku is currently undergoing massive restorations, so time will tell if some of the mysteries will be 'restored away' as they always have been in Tiwanacu. The following description refers largely to how the site presented in the year 2005. At that time the site was

pretty much unchanged since recorded history. Another visit in 2011 has already shown quite a few alterations, and it seems that there is a very quiet "cleanup" underway, which will change the site sig-



Photo 17 (top): This massive block shows multiple signs of a once highly sophisticated technology. On top are remnants of braces that held it together with other blocks. Some intricate carvings are shown in the front, while other sides are highly polished. How much force does it take to break this block the way we see it today?

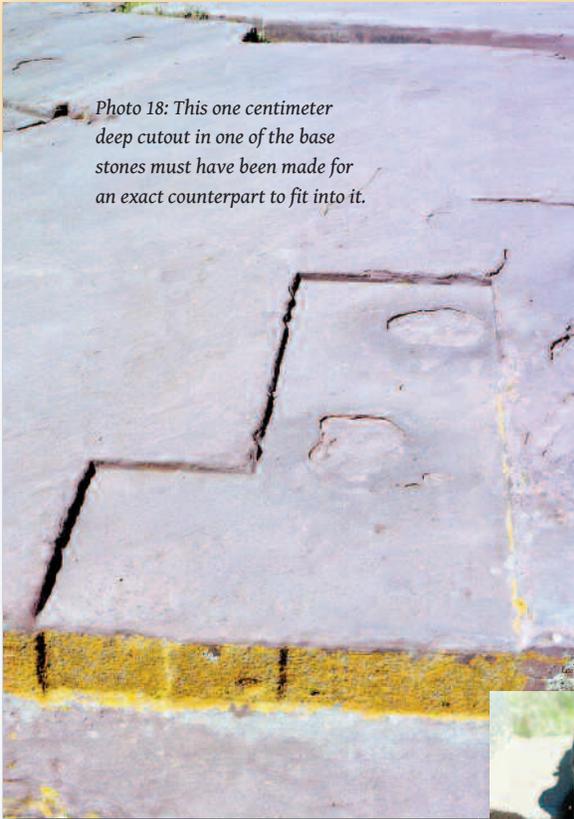
Photo 16: Puma Punku as it appeared in 2005. Will future generations be granted to see the site's mysteries and draw their own conclusions, or will inconvenient stoneworks be 'reconstructed' away?



nificantly.

The first thing a visitor of Puma Punku will see is the massive scale of some of the stones here. There is a platform that weighs several hundred tons [Photo 15]. Many stones are lying on top of each other in a puzzling chaos that seemingly makes no sense at all

Photo 18: This one centimeter deep cutout in one of the base stones must have been made for an exact counterpart to fit into it.



[Photo 16]. Another first impression is the precision with which these huge stones and platforms have been cut. Just by looking around, it becomes apparent that a catastrophic destruction

Here in Puma Punku, even the monumental base stones have been shifted, mixed around and left in this amazing chaos. If you look closer, you can see massive stones that are cleanly broken apart, as if someone or something snapped them in half [Photo 17]. However, in between the ruins and chaos, one can clearly see a sophistication of stone masonry that is nothing short of stunning; it simply doesn't fit with anything that the Aymara Natives – the tribe which archaeologists claim was responsible for Tiwanacu – could have built. No matter where one looks, signs of incredible technological sophistication are apparent. Here are some examples:

1. **Photo 18:** A one centimeter deep groove is cut out of

this platform. It looks like another building element was once sitting in this groove. An ingenious and very modern solution. These type of building techniques were only applied by the most sophisticated civilizations like the Egyptians and Romans, or they can be found in modern times. It is completely out of place for the Aymara.

2. **Photo 19:** Look at the cutouts on this block. On the left, you can see a deep cutout. To the right of it is a very precise carving that looks like a modern arrow pointing towards the deeper cutout.

3. **Photo 20, 21 and 22:** This rather small block, with a height of about one meter, has got to be the "Mother of all Mysteries". A mystery that – I'm convinced – will never be solved if the Ancient Astronaut or Lost Civilization Theories are dismissed by official archaeologists. Let's have a look at it: The block is square and has two solid longer sides. The only carving, on the solid side of this block, is most puzzling. One can see a very thin, fine line carved out. It is as straight as can be and runs from the top of the block to the bottom. Now, the precision of this carved line by itself is very unusual. But if you examine it closer, [Photo 21]

had to have taken place here. This goes beyond what invaders would do when they deliberately destroy a city, as it has occurred in human history several times. When that happens, buildings are tumbled and single rocks are displaced. But in such cases, the fundamental structures of the buildings are left intact, especially when they are of massive scale. A good example of this would be the destruction of the temple in Jerusalem which was destroyed by the Romans around 100 AD. The temple was demolished, but it was just too difficult – even for the very sophisticated Romans – to destroy the fundamental structures of the temple like the Western Wall.



Photo 19

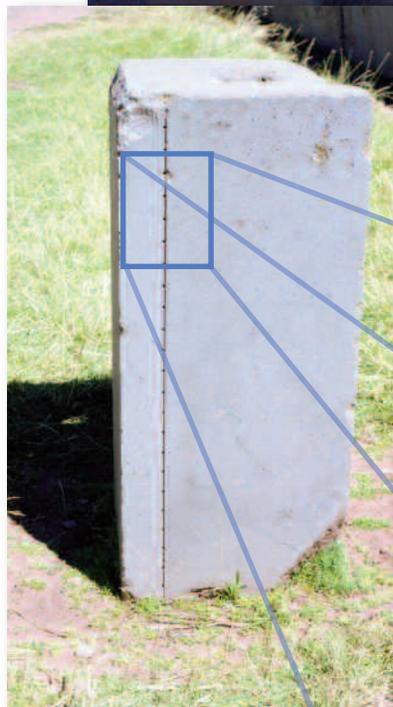


Photo 20 and 21: Incredible precision! The holes look like they were made with a modern drill. What would natives - that basically lived in the stone age - possibly have used this block for?





Photo 22: The mysterious block from the other side.

would an ancient people – that according to official archeology, lived in the stone age – need fine carvings and drill holes like the ones shown here?

The opposite side of the block is no less mysterious. [Photo 22] There is one big square hole with an opening to the top that looks like a vent of some sort and three smaller holes, also carved in a precise manner.

4. Photo 23 and 24:

These blocks were featured many times in different publications [6,7] and TV programs [2]; no article about Puma Punk

is complete without them. They are blocks shaped a little bit like the letter H, if seen from the 'front'. Quite a few of these blocks are about the area, and the ones I photographed in 2005 are standing right next to each other. There are two types of these blocks. What differentiates them is on the 'back' (it is uncertain what the

you can see that there are small holes drilled inside the line running all the way down. The holes are drilled in a way that makes them indistinguishable from ones made with a modern drill. Keep in mind, we are talking about Granite here, a rock that is extremely hard to work with. We don't have to ask ourselves, so much, the question of how these holes and grooves in this block have been made the way they present, but why. Why

back or the front side of the blocks is). You can see in photo 24 that one type shows a cross like shape, while the others are more straight with just a carved out groove on the side. In computer simulations, it has been determined that these blocks interlink with each other to form a super-strong wall, once connected. This means that the blocks must have been pre-fabricated



Photos 23 (far top) and 24 (top). A row of pre-fabricated building blocks. While the front of the blocks is pretty much the same, there are two different backs. Computer simulations showed that the two types of blocks interlock with each other to form a very rigid and strong wall. It's like Lego with granite, and it reminds me of modern pre-fabricated building blocks (Photos 26 & 27).

before assembly! Modern building projects work with methods like this all the time, especially large public construction projects. The difference between modern pre-fabricated building blocks and the ancient ones from Tiwanacu, is that modern blocks are made from concrete poured into forms, while the Tiwanacu blocks

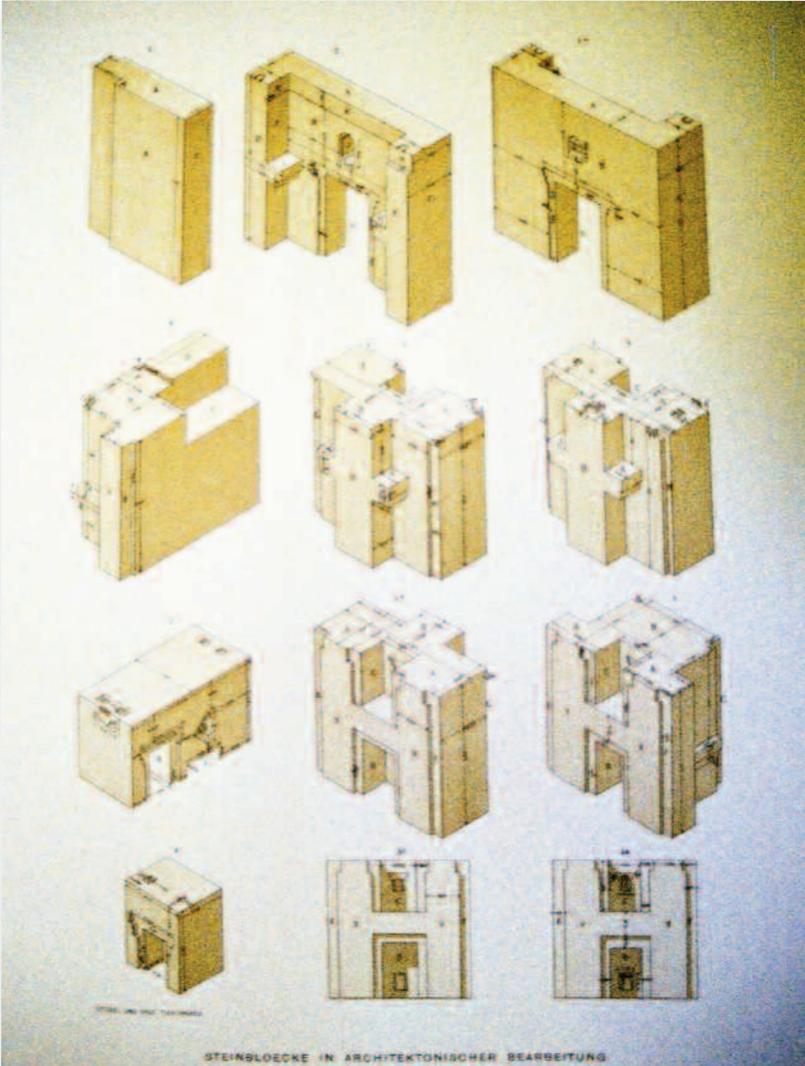


Photo 26 (top) and 27 (bottom): Modern interlocking, pre-fabricated building blocks are widely used especially in public building projects. They provide quick assembly, high structural strength and flexibility. Note, that compared to the ancient blocks of Puma Punku, Photo 25 (right), the modern counterparts look rather primitive.



Photo 25: In the late 1800s, German Archaeologists Alphons Stübel and Max Uhle, were so fascinated with the site that they documented the most complex blocks in incredible detail. The handmade drawings that they created are CAD like and show the sophistication of the blocks of Puma Punku. [1]

are carved out of hard granite. In Tiwanacu, there are also other advanced building techniques to see, which just don't fit into the Aymara culture. One of the blocks has a strange hole carved out in its top half. [Photo 28]. The hole is carved right through the stone, but has an odd shape. Many Tourists will casually walk by this rock without paying much attention. Judging by all the other blocks throughout the site and the ruins that surround them, one can see that whoever built Tiwanacu must have been capable of drilling a perfectly round hole through the rock. Upon closer inspection, it be-

Photo 28. This rather bland looking block has amazing acoustic properties.



comes clear that the strange way the hole was carved was done on purpose, as the inside was carefully polished.

While I was standing there, taking photographs of the block, a guard walked over to me and said in broken English: "Senōr, this rock is special, not a lot of people pay attention! Is funny! Let me show you...". He knelt down on the opposite side of where I was standing and put his face close to the hole. Then he started speaking loudly in Spanish. The effect was astonishing! His voice was extremely distorted and sounded like it was

filtered by a computerized Synthesizer. The distortion is hard to describe, but if you have ever heard the effect of a Vocoder in electronic music, you can imagine a sound that comes close.

The guard grinned while I was standing there with an open mouth. "Wait, Senōr!", he said, "there is more!". "Put [your] ear here," he pointed to the hole on the side he was standing at, "and listen." I knelt down and put my ear to where he said. He was getting really excited and ran away. He walked about hundred meters away in a straight line. Then he said something. I could hear him clearly. He said "Senōr, I'm saying these words in a very soft voice." I was absolutely blown away. When he came back, he was very excited and had a smile on his face. And rightly so. The block clearly showed technical properties that are unusual at the very least. Like most

of the ruins here, it had unfortunately been ripped out of its original context and is now partly integrated into an amateurishly re-

Photos 29-31: The strange pipelines of Tiwanacu show incredible precision. Sometimes they were found without the bottom halves.



constructed wall.

This block and its acoustic properties just begs to be checked out more closely, with more sophisticated equipment. This would fall

into the pretty recent field of archaeo-acoustics, the study of acoustic and sound properties of ancient sites, something that has been neglected by official archaeology for hundreds of years. The best work about this subject is the book *'Stone Age Soundtracks: The Acoustic Archaeology of Ancient Sites'* by Devereux and Richardson [3].

In his 1969 book, "Chariots of the Gods" [4] and other

books that followed [5,6], Erich von Däniken described what official archaeology calls water pipelines which are sticking out of the ground. But some of the pipelines seemed to have only upper halves. A water pipeline without a bottom doesn't make sense, therefore, he suggested that those 'pipelines' must have been for something else, e.g. enclosures for power or energy lines. Of course, this suggestion sparked outrage and ridicule in the scientific community. But von Däniken's questions about the missing bottom halves for the pipelines, could not be answered and a good way of dealing with questions without answers is to ignore them. So pretty soon after von Daeniken's suggestions, the water pipeline problem was solved by burying them again. If nobody sees them, nobody can ask uncomfortable questions. However, very briefly - during reconstructive work in 2011 - pieces of these

pipelines were visible once again. I'm happy to present to you rare photos of these pipelines [Photos 29-31]. Like the

rest of the ruins, the pipelines' workmanship is exquisite and doesn't fit in the picture. In the late 1960s, von Däniken was also able to photograph bigger and more complex pipeline pieces that formed a 90 degree elbow. The pieces were especially strange as they were split in half. While someone could argue that the

pieces where only top halves had been found, were, in fact, somehow twisted tops and bottoms. This doesn't work with elbow pieces which require left and right counterparts. If the pipelines would have been waterlines, it would, furthermore, have been extremely disadvantageous to split the elbows in half, as the water would always have leaked through the crack in the middle. This design wouldn't have mattered, though, if it

was used for something else: Energy- power- or fiberoptic lines for example. What seems far fetched at first, makes sense if we look at the rest of the ruins that show a level of sophistication that can only be rivaled by our own modern buildings.

All the blocks and ruins here in Tiwanacu and Puma Punku look like they have once been part of a very complex, technologically advanced structure, which has been ripped apart by a giant catastrophe.

It wouldn't surprise me at all if the blocks shown in this



article and others will, all of a sudden, disappear into a 'reconstructed' wall or something similar. Just too many questions that cannot be answered with 'conventional' theories are surrounding Tiwanacu. I'm aware that this sounds like a conspiracy theory, but one can't help it, given the horrible reconstructions on the main site which I described earlier. The steadfast refusal of official archeology – if there even is such a thing – to acknowledge that there is something not quite right with the recognized theories is disheartening. There is something about the carvings and construction techniques in Puma Punku and Tiwanacu that requires us to think outside the conventional box; this becomes clear, pretty much immediately after taking a closer look, for anybody with an open mind, not just for archaeologists. Even if we could somehow solve how all the carvings and holes have been made at the site, their purpose will continue to allude us if we are not taking a more advanced culture or ancient astronauts into consideration. I'm sure we will re-visit Tiwanacu and Puma Punku in future issues of Paleoseti Magazine as the site holds too many mysteries for one article. Stay tuned for more. On the left, you will find some more un-commented photos of details in Puma Punku.

Further reading:

[1] Stübel, Alphons; Uhle, Max: *Die Ruinenstätte von Tiahuanaco im Hochlande des alten Peru, (The ruins of Tiahuanaco in the highlands of ancient Peru)*; Hierseman Publishing, Dresden, Germany 1892

[2] Ancient Aliens, Season 4, Episode 6 "Mystery of Puma Punku"

[3] Paul Devereux and Tony Richardson, 'Stone Age Soundtracks: The Acoustic Archaeology of Ancient Sites', Vega, 2001

[4] Däniken, Erich von "Erinnerungen an die Zukunft", 1969 Econ Publishing (English title "Chariots of the Gods")

[5] Däniken, Erich von " Zurück zu den Sternen", 1969 Econ Publishing (English title "Return to the Stars")

[6] Däniken, Erich von "Reise nach Kiribati"., 1981 Econ Publishing (English title "The stones of Kiribati")

[7] "Kontakt mit dem Universum" (Contact with the Universe), CD-ROM, Markt und Technik Interactive, Munich, Germany

Book & Film Recommendations

In every issue, we are going to suggest book and/or film titles that are of interest to the PaleoSeti or Lost Civilization Theories.

Terrance F. Johnson

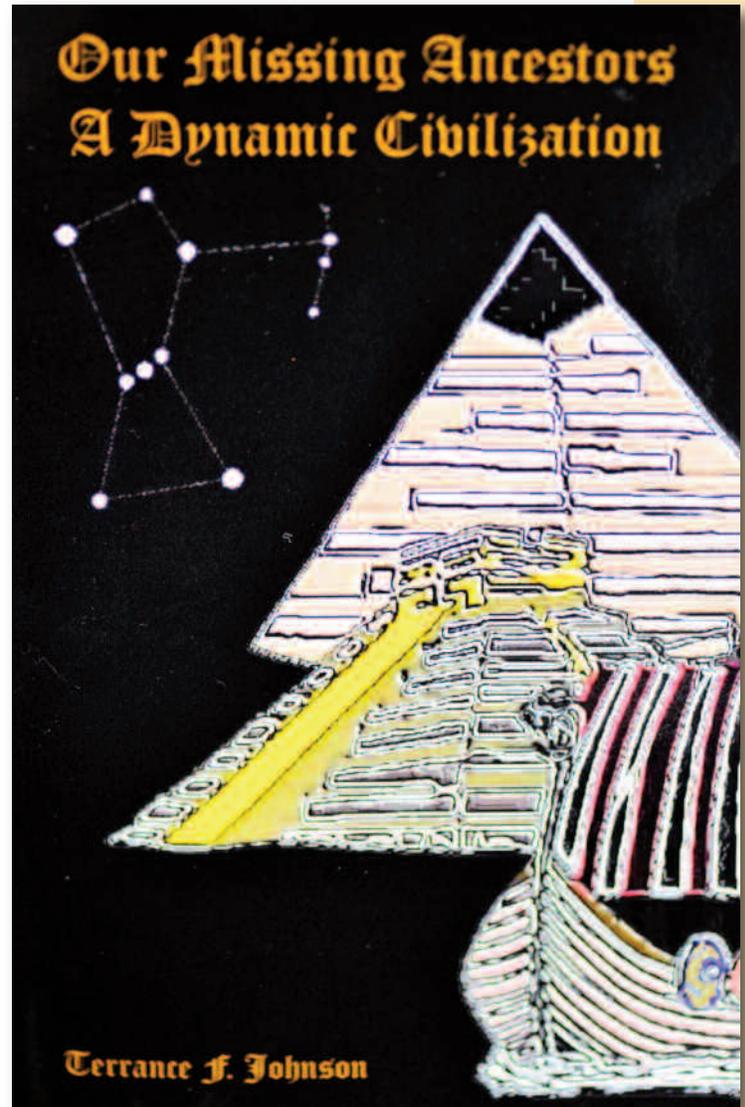
Our Missing Ancestors: A Dynamic Civilization

In this issue's book review, I would like to talk about a small book from a previously unknown author, published by a small publishing house in the US.

Our Missing Ancestors: A Dynamic Civilization by Terrance F. Johnson is the author's first work.

In the first three quarters of the book, Johnson leads the reader into the the lost civilization and ancient astronaut theories by extracting information from some of the major works in the fields, focusing on Erich von Daniken, Zacharia Sitching, Robert Temple, Robert Bauval and many others. Johnson is doing a great job in connecting the dots between those authors to describe – what he calls – a 'Dynamic Civilization' which is being missed by mainstream archaeology. Refreshingly, he keeps an open mind and does not exclude or favor the ancient astronaut theory or the lost civilization theory, as both theories are sharing very similar research goals. He asks the reader to do the same. This is quite a rarity as similar works in the fields are usually focusing on one or the other.

The book is a pleasant surprise, especially from an author previously unknown in the field. The book is very well written and easy to understand and follow. It delivers an excellent overview about parts of the Ancient Astronaut and Lost Civilization Theories alike, without favoring or dismissing one over the other. While readers that have more experience and knowledge on the subjects, will most likely be familiar with a lot of what Terrance F. Johnson is presenting, the book does a good job in 'pulling' different authors together in a form that I have rarely seen. This makes the book especially valuable for 'newcomers' to the theories as it provides an excellent overview of what is out there and it can serve as a reference for further reading. Although the book features no illustrations, it is never



boring for casual readers as Johnson writes eloquently and understands how to keep the reader engaged. I enjoyed this book tremendously and hope to see more of this author's work down the line.

The book is available from the following retailer:
http://www.virtualbookworm.com/bookstore/product/Our_Missing_Ancestors.html
and on Amazon:
<http://www.amazon.com/Our-Missing-Ancestors-Dynamic-Civilization/dp/1621373282>

Missunderstood technology? Strange objects in Peru

Article by Herbert Eisengruber

During a stroll through the anthropological museum in Lima, Peru, I was amazed when I came around a corner and spotted an object that looked completely out of place among the other artifacts on display. The object was shiny and looked like it was made from stainless steel [Photo 1]. I was standing in front of this



artifact, for about half an hour; I looked at it closely from all angles possible when an object stands behind glass. The shape of the object was very unusual; it was about 30 cm long, round and had an opening on each end. The object looked very technical and modern. As there was no description to explain what the item's believed identity was, I asked a tour guide who was leading a group of tourists through the museum, if he knew what this artifact was supposed to be. The answer was, "A ceremonial cup". It is quite possible that such an object could, over the years, be used as a ceremonial cup, when its initial function had been lost. However, this 'cup' was certainly unlike any I have ever seen. Back home, I posted a photo of the object on the

website www.paleoseti.com and challenged readers to come up with suggestions and explanations as to its purpose and identity. Holger Isenberg, a reader from Germany and IT specialist, sent this email to me: "It could be a reconstruction of a resonance jet engine. Those are available with uncontrolled valves or valve free. See here:

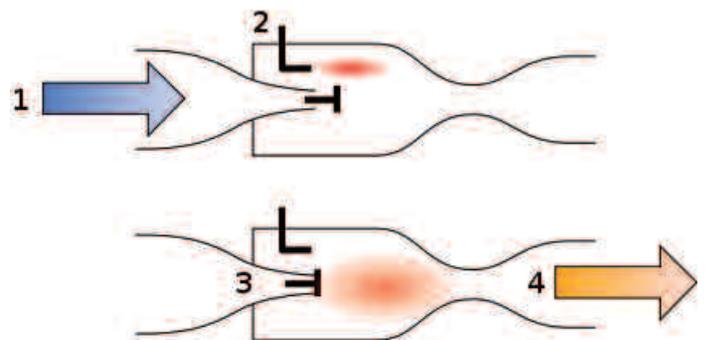
<http://www.aardvark.co.nz/pjet/>

http://en.wikipedia.org/wiki/Pulse_jet

Exactly this type of engine would be built by engineers who stranded on a planet with a lot of knowledge but little equipment. Or human astronauts who survived a catastrophe and return back to earth after a few years from a space station. I would build something like this even if I couldn't return to where I came from with it, just because I could impress the locals with noise and the fire it could produce."

An excellent suggestion!

Now, to avoid any confusion by thinking it is suggested here that the discussed artifact is a Pulse Jet, I would like to clarify that this article proposes the possibility that objects like this are actually misunderstood



Schematic drawing of a Pulse-Jet. (1) Fresh air rushes in the chamber, (2) Fuel gets injected into the chamber, (3) a valve closes and ignition takes place and (4) the exhaust gets expelled, hence propelling the device forward. Source: Wikipedia commons

technology and have been copied from long lost originals as ceremonial objects for millenia.

The 'locals' or 'natives' might not have understood what they were seeing and tried to copy the observed technological device with materials they could work



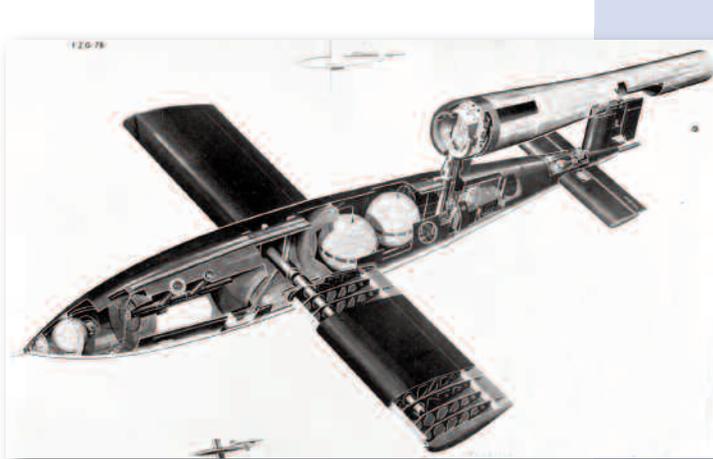
Photo 3 & 4 (top, bottom): Similar objects in various stages of preservation in museums in Lima, Peru. The objects were obviously of great significance as the ornaments and the workmanship suggest. What was the original purpose of the objects before they 'morphed' into ceremonial cups?



with. We have seen this kind of effect all over the world in modern times whenever cultures with a higher technological development came into contact with technologically lesser advanced societies.

It would be easy to dismiss the object as an unusual and inexplicable oddity, if it would be the only one of its kind. Let us, for a second, assume it is a copy of a jet engine that was used by the 'gods' in the past. It must have had a profound impact on the natives. That would mean that it would have been copied and worshipped many times instead of only appearing once. Objects like these will quickly morph into religious items of enormous significance. We know of many such important items from our past (e.g. Christian cross or Jewish menorah); and we don't just see one example of each, but many.

Well, this is exactly what we can find with the curious object from the Lima museum. In 2009, during another visit to Peru's Capital and in a different museum, my wife and I came across similar objects to the one we had previously seen [Photos 3&4]. They were all in dif-



The propulsion of the German V1 flying bomb, which brought terror to Great Britain during World War II was based on the Pulse-jet engine design. Source: Wikipedia Commons

ferent stages of preservation and condition; some also showed nice ornaments. What they all shared was the same basic shape.

And indeed, if you compare modern Pulse Jets with the ancient Peruvian artifacts discussed in this article, you will see amazing similarities. The first Pulse Jet engines date back to the late 1800s and several inventors had patented different designs. It wasn't until the end of the Second World War, however, when Pulse Jet engines sadly became famous through the V1, an unmanned drone - basically a cruise missile - which Nazi Germany fired against the British population. Pulse Jet engines are a relatively simple design; so much so, that they are very popular among hobbyists and model airplane enthusiasts today.



A modern CAD rendering of a Pulse-Jet. Image courtesy: www.turbosquid.com

It could very well have been possible that a crew of stranded ancient astronauts, who only had rudimentary technology left from many years of being cut off from parts sources, would have resorted to such technology to 'impress' the native population as Mr. Isenberg suggested.



Photo xx: Chichen Itza in Mexico during at night.

Feedback wanted!

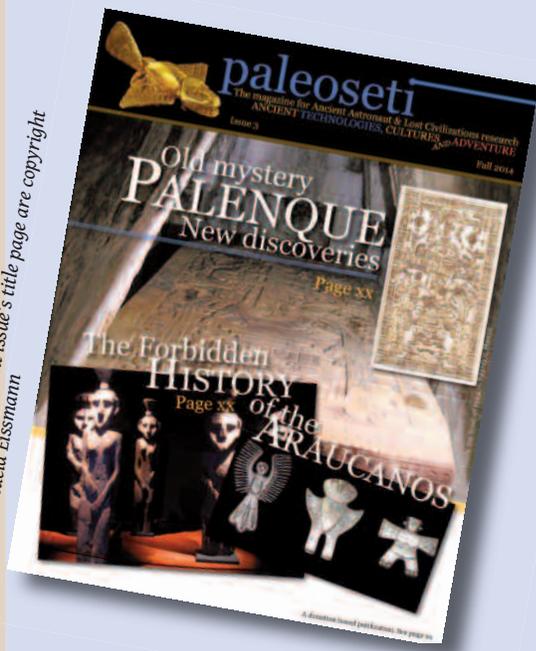
PaleoSeti Magazine wants your feedback. Tell us what you liked and what you didn't like about this issue. We are open to constructive criticism.

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Would you like to contribute to PaleoSeti Magazine? No problem. Get in touch with us with the email provided in the Masthead on page 2, and tell us a short overview of what your contribution or article will be about. Currently we can't pay any fees for submitted articles that are published in PaleoSeti Magazine, but that might change in the future. Your article should have a clear connection to archaeology, the Ancient Astronaut or Lost Civilization Theories.

Webpage

Please check out our website at www.paleoSETI.com for more background information and much more PaleoSeti research. www.paleoSETI.com is in its 15th online year and one of the longest running websites dealing with the Ancient Astronaut Theory.



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Next Issue, Fall 2014

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The Case for Ancient Astronauts - Part 3

... and more!

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