

## Prehistoric E.T.: The Fantasy of Ancient Astronauts

I thought I had just flipped onto the History Channel in my unending search for anything decent on cable. After all, the screen did read "History Channel." The narration sounded real enough, too, at least initially: "A lot has been written about the first Thanksgiving between Pilgrims and Native Americans. But what really happened at that first historic dinner?" The accompanying video looked authentic, if a little cheesy, but the next thing that appeared made it clear I was watching, not the History Channel, but a Comedy Central parody of one of the shows on the History Channel. In fact, I was watching an episode of *South Park* in which the kids were watching the History Channel for a Thanksgiving report. Cartman put it pretty clearly and, as he always does, bluntly: "Who needs to read a bunch of stupid books when we've got History Channel?" Returning to the faux History Channel narration: "We know the first Thanksgiving was in the fall of 1621, but new evidence suggests that the first exchanging of food between the pilgrims and Native Americans may have been visited by Aliens . . ."

Aliens! The extraterrestrial kind! It was hilarious. Matt and Trey had produced a spectacular send up of the complete lunacy of the actual *Ancient Aliens* series on the actual History Channel (<http://www.southparkstudios.com/full-episodes/s15e13-a-history-channel-thanksgiving>). I bet you didn't know that the presence of stuffing at the first Thanksgiving was evidence of an alien technology. Having seen a couple of episodes of the actual *Ancient Aliens* show, it was clear that Matt and Trey had done their homework. *A History Channel Thanksgiving* was spot on and, to be honest, only slightly sillier than the real show. The claims made in the parody were only a step or two beyond the actual claims made by the supporters of the hypothesis that extraterrestrial aliens were responsible for the technological achievements of ancient human beings. Finally, the evidence presented by Stan, Kyle, Cartman, and even Kenny in the show was

every bit as convincing as that offered by the real ancient aliens crowd. In other words, they presented no convincing evidence whatsoever. So, what is the deal about the “ancient-aliens-visited-earth” claim? Can we dismiss it even without considering the possibility? Certainly not. The only important issue here concerns evidence. What does the archaeological record tell us about ancient aliens?

## Ancient Astronauts: The Source of the Idea

It was a remarkable, even audacious, suggestion when first made in an article published in 1963. It began with the proposition that even under the most conservative of scenarios, the universe likely is teeming with life. The author based this optimistic assumption on the work of Frank Drake (2003), an astronomer who, in 1961, proposed a simple equation that allowed for a sort of back-of-the-envelope calculation of the number of intelligent life forms that might have evolved throughout our galaxy. It was all guesswork, to be sure, a series of probabilities (the fraction of stars that are circled by planets, the fraction of those planets where life evolved, the fraction where that evolved life developed great intelligence, the fraction that developed technologies sophisticated enough to allow for their exploration of the galaxy, etc.) all multiplied together and then by the number of stars in our galaxy. Though these fractions all might be quite small, the number of stars in our galaxy is enormous, something in the neighborhood of 100 billion. As a result, depending on the numbers you insert, you can still derive a very large number reflecting the possibility that the universe is filled with intelligent life forms who may one day contact us, or we them.

Though the author of the 1963 article admitted there is no evidence that these extraterrestrial civilizations are currently visiting Earth, he went on to maintain that there was a strong likelihood that, at some time during the evolution of the human species, they had explored our planet and that “It is not out of the question that artifacts of these visits still exist” (p. 496). The author was making the incredible suggestion that, perhaps, ensconced in the archaeological record there might be archaeological artifacts that were direct evidence of these extraterrestrial visitations: pieces of Mr. Spock’s communicator, Luke Skywalker’s light sabre, or even E.T.’s bones.

It was amazing, indeed—an extraterrestrial archaeology on Earth. Who would make such a bold suggestion? Was it a UFO aficionado? A believer in flying saucers, extraterrestrial abductions, and alien invasions? In fact, no. This scenario was drawn up by none other than the late Carl Sagan (1963)—brilliant scientist, prolific writer, noted rationalist, and supreme skeptic (Poundstone 1999; Sagan, 1996).

## Gods in Fiery Chariots

Sagan's article, published in a technical journal, *Planetary and Space Science*, read only by astronomers and astrophysicists, made no impression on the nonscientist public and is long forgotten. But five years after its publication, the notion that extraterrestrials had visited Earth at some time in the distant past, leaving evidence of their prehistoric visits in the form of archaeological artifacts, became wildly popular.

The ancient astronaut bubble began inflating in 1968, first in Europe with the publication in German of a book titled *Erinnerungen an die Zukunft* (*Recollections of the Future*) and then in the United States with the publication in English of the same book, now with the question-mark-bearing title *Chariots of the Gods?* The Swiss author of the book, Erich von Däniken, proposed that there was indisputable and copious archaeological support for his claim that extraterrestrial aliens had visited Earth in prehistory and had played a significant role in the development of humanity.

In *Chariots of the Gods?* it seemed that Sagan's remarkable suggestion had been blown up into a full-scale anthropological fairy tale (though von Däniken does not cite Sagan's article in his book).

There seemed to be three implicit hypotheses behind von Däniken's ideas as he has presented them, relentlessly, for more than forty years in his twenty-nine books which, translated into thirty-two languages, have sold more than 63 million copies (figures take from von Däniken's website: <http://www.daniken.com/e/index.html>) (1970, 1971, 1973, 1975, 1982, 1989, 1996, 1997a, 1997b, 1998, 2000, 2003, 2009, 2010):

1. All over the world there are prehistoric pictorial and three-dimensional representations—drawings on cave walls, pottery, and sculptures—as well as early written accounts that most reasonably can be interpreted as the drawings, sculptures, or literary descriptions by primitive people of actual extraterrestrial visitors to Earth.
2. The biological evolution of the human species cannot be understood unless we assume the involvement of a scientifically advanced extraterrestrial civilization.
3. Some ancient artifacts and inventions are far too advanced and complex to have resulted from simple, prehistoric human intelligence and ingenuity. These advanced artifacts and great inventions must instead be the direct result of purposeful introduction by extraterrestrial aliens.

It's more than forty years since von Däniken published his first book, but, as the cliché goes, the song remains the same. For example, in *Prometheus*, the latest Ridley Scott blockbuster sci-fi movie, released in the spring of 2012, archaeologists encounter cave paintings in Scotland that

show giant aliens visiting the Earth in antiquity. Later in the movie, a host of well-known actual archaeological artifacts are explained as somehow directing humans to the home of these aliens. It's no coincidence; Scott has freely acknowledged that von Däniken's work inspired the underlying theme of the movie, which, by the way, is an incomprehensible suck-fest. And there's more. The three hypotheses I just described underpin the *Ancient Aliens* series currently on cable, this time as espoused by Giorgio Tsoukalos, the current representative of von Däniken's nonsense. Tsoukalos is so over the top and relentless and his claims so absurd, he and they have even become the focus of an entire industry of Internet parodies.

Let's assess the three hypotheses I just enumerated and that so inspired Ridley Scott and Giorgio Tsoukalos one at a time.

### *The Inkblot Hypothesis*

The first implicit claim concerns the existence of prehistoric drawings or sculptures of aliens from outer space and early writings about their visits. It is an intriguing thought. Hundreds, thousands, even tens of thousands of years ago, spaceships landed on our planet in a burst of fire and smoke. Out came space-suited aliens, perhaps to take soil samples or study plant life (just like E.T. in the Spielberg movie). On completion of their mission, they got back into their spaceships and took off for home.

Secreted in the bushes, behind the rocks, an ancient human sat transfixed, having watched the entire scene unbeknownst to our alien friends. This prehistoric witness to extraterrestrial visitation rushed home to tell others of the marvelous sight of the fiery "chariots" of the "gods" (thus, the English title for von Däniken's book) that had come down from heaven. He or she would tell of how the gods had silver skins (space suits) and bubble-heads (space helmets) and wielded marvelous devices (communicators, lasers, and so forth). Artistic renderings would be made on cave walls and pots. Descriptions would be passed down from generation to generation, especially if the space gods came back again and again, reinforcing the entire idea of gods from the heavens. Descriptions would be written of the wondrous spectacle of the gods coming to Earth. Our ancestors would wait for their return, as perhaps we wait to this very day.

Fascinating? Undoubtedly! Wonderful, if true? Absolutely! Would this forever alter our understanding of our place in the universe? Definitely. Backed up by evidence and proof? Absolutely not.

This first von Däniken scenario can be called the *Inkblot Hypothesis*. I am sure you are familiar with "inkblots" used in psychological testing (called Rorschach tests after their originator). A person looks at a series of inkblots (images made by dripping ink on paper, which is then folded and pressed while the ink is still wet) and then describes what he or she sees. The rationale for such an exercise is quite simple. Because there really are no specific,

identifiable images in the random inkblot pictures, the image you recognize comes entirely from your imagination. Therefore, your description of what you see in the inkblots should give a psychologist an idea of what is going on in your mind. It might tell him or her something about your personality, feelings, and so on.

The point is that the picture seen in an inkblot is entirely dependent on the mind of the viewer. The images themselves are not necessarily anything in particular. They are whatever you make them out to be, whatever you want them to be.

Von Däniken's approach is analogous to an inkblot test. Although he is describing actual images, these images belong to a different culture. Without an understanding of the religious, artistic, or historical context of the drawings or images within the culture that produced them, von Däniken's descriptions of the images tell us more about what is going on in his mind than about what was in the minds of the ancient artists.

For example, an image identified by von Däniken as an astronaut with a radio antenna might be more easily explained as a shaman or priest with an antler headdress or simply a mythical creature (Figure 9.1). Von Däniken sees spacemen because he wants to, not because they really are there.

Here is another example. On the desert southern coast of Peru, prehistoric people called the *Nazca* constructed a spectacular complex of shapes (Kosok and Reiche 1949; McIntyre 1975; Reiche 1978). Most are long lines, etched into the desert surface, criss-crossing each other at all angles. The most interesting, however, are about three hundred actual drawings, rendered on an enormous scale (some are hundreds of feet across), of animals such as fish, monkeys, birds, snakes and a spider (Figure 9.2).

The figures and lines were made by clearing away the darker surface rocks, exposing the lighter desert soil beneath. They are remarkable achievements because of their great size, but certainly not beyond the capabilities of prehistoric people. Remember, these drawings were not carved into solid rock with extraterrestrial lasers; they were not paved over with some mysterious substance from another world. They were, in essence, "swept" into existence. Science writer Joe Nickell, an investigator of extreme claims whom we will encounter again when we examine the Shroud of Turin in Chapter 12, has duplicated the technique of making Nazca-like designs. With a crew of six people and several bags of lime (the white powder farmers and backyard landscapers use to cut soil acidity; it's also used to lay out lines on athletic fields), Nickell was able to outline a nearly perfect replica of a 120-meter-long (400-foot) Nazca bird in a single day. The other raw materials were some rope and a few pieces of wood (Nickell 1983).

Recent excavations have revealed the presence of raised platforms and tall posts at the endpoints of some of the Nazca lines, providing, in all likelihood, high points from which construction of the patterns could have been directed and also from which the images could have been viewed





**Figure 9.1** Applying von Däniken's perspective to artifacts like this ancient rock art (petroglyphs) from Utah (a) and California (b), one might conclude that they depict space-helmeted aliens, complete with antennae. Could they be? Maybe. But application of Occam's razor demands that we first consider more mundane explanations. Perhaps the "antennae" in the Utah example are merely headdresses used to mimic the look of a bison or other horned animal. The images from California may be representations of spirit beings or gods. The jump from "spirit being" to "ancient alien" is enormous. (K. Feder)





**Figure 9.2** This Nazca geoglyph, or earth drawing, depicts a giant spider. Large-scale drawings like those at Nazca are known from a number of places in the world. They likely were intended to please the gods and may have been constructed with the use of scale models. They certainly did not require the intervention of extraterrestrials—and why would aliens from outer space instruct humans to draw giant spiders (and monkeys, condors, snakes, birds, and the like) in the first place? (© Keren Su/Corbis)

(Curry 2007). Beyond this, excavation has also revealed the presence of what appear to be ceremonial activities such as animal sacrifice and offerings including seashells, guinea pigs, crayfish, and maize kernels (Curry 2007:447). Further, the archaeological record shows clear evidence of the kind of social hierarchy that would have made possible organizing the labor of the builders of the Nazca geoglyphs. The elaborate graves of the Nazca elite class have been found at a site called La Muna.

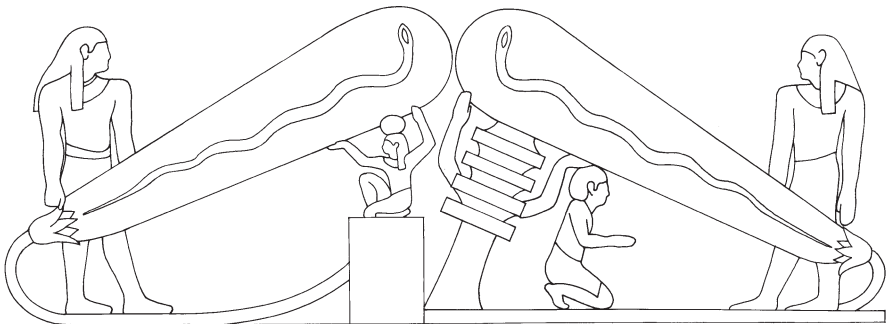
The Nazca markings and drawings are spectacular and exotic-looking, especially to our Western sensibilities, but they were clearly part of a local cultural tradition of ceremony and worship, and well within the capabilities of the ancient people of South America.

What does von Däniken have to say about the Nazca markings? Almost yielding to rationality, he admits that “they could have been laid out on their gigantic scale by working from a model and using a system of coordinates” (1970:17), which is precisely how Nickell accomplished it. Not to disappoint us, however, von Däniken prefers the notion that “they could also have been built according to instructions from an aircraft” (p. 17). Relying on the “ink-blot approach,” he says, “Seen from the air, the clear-cut impression that the 37-mile-long plain of Nazca made on me was that of an airfield” (p. 17).

Please remember Occam's razor here. On one hand, for the hypothesis that the ancient people of South America built the lines themselves, we need only assume that they were clever. For von Däniken's preferred hypothesis, on the other hand, we have to assume the existence of extraterrestrial, intelligent life (unproven); assume that they visited Earth in the distant past (unproven and not very likely); assume that they needed to build rather strange airfields (pretty hard to swallow) and then, for added amusement, instructed local Indians to construct enormous representations of birds, spiders, monkeys, fish, and snakes. Those assumptions are bizarre, and the choice under Occam's razor is abundantly clear.

We can go on and deduce some implications for our preferred hypothesis: We should find evidence of small-scale models, we should find the art style of the desert drawings repeated in other artifacts found in the area, and we might expect the Nazca markings to be part of a general tradition in western South America of large-scale ground-drawings called "geoglyphs." When we test these predictions, we do find such supporting evidence: For example, Wilson (1988) has reported on a more recently discovered set of large-scale Earth drawings in Peru. Archaeological and historical information indicates that the lines were ceremonial roads leading to sacred origin places for families or entire communities. Far from being entirely enigmatic or without any cultural or historical context, they were made and used by some local native groups until fairly recently as a regular part of their religious festivities (Bruhns 1994).

Consider another example of the inkblot approach from a more recent von Däniken book, *The Eyes of the Sphinx* (1996). Deep in one of the subterranean chambers of the Egyptian temple dedicated to Hathor, goddess of music, love, and dance, located in Dendera, is a relief sculpture depicting two strange objects (Figure 9.3). In each, a slightly sinuous snake emanates



**Figure 9.3** Image from a wall deep in the temple of Hathor at Dendera, Egypt. These objects can be interpreted as representations of ancient lightbulbs only by applying von Däniken's inkblot approach. Absolutely no physical evidence supports the claim that ancient Egyptians produced electrically powered lightbulbs.



from a flower and is enclosed in an elongate object attached to the flower. Altogether, the relief looks like two giant eggplants with enclosed snakes facing off against each other. A strange image, to be sure, but what does it mean?

To answer this riddle, von Däniken considers the challenge of providing enough light for Egyptian artisans to have produced the wall reliefs deep in the temple and postulates an extraordinary light source. Egyptologists assume, rather unimaginatively, that these workers used oil lamps and torches to light their way. From Egyptian sources we know that pieces of linen were soaked in oil or animal fat and then twisted into wicks, which, when lit, provided a bright light. Salt was applied to these wicks to reduce smoke and soot. Lamps that burned oil or animal fat also were used; again, salt was added to the mix to cut down on smoke. Beyond this, the ancient Egyptians made candles to light their way in the darkness of subterranean rooms and pyramid tombs. These candles were manufactured to burn a predetermined amount of time. Pyramid and tomb workers knew their shift was complete when the candle began to burn down to its base. Finally, there also is clear physical evidence that the Egyptians constructed clever arrays of polished metal mirrors to bring reflected light down inside deep corridors.

Not one to accept such simple explanations, von Däniken complains that absolutely no lamp soot was found on the walls or ceilings and that the light reflected by mirrors would have been too weak. Occam's razor forces a scientist to suggest the rather mundane possibility that salt was effective in reducing the amount of soot produced and that workers cleaned the soot that was produced from the chamber's surfaces when they were done. Also, experimental testing of mirror replicas shows that they work quite well, and these produced no soot at all.

Von Däniken, however, is not bound by Occam's razor, experimental testing, or any other rule of logic or method of science. His suggestion? The snake encased in an eggplant motif is a depiction of an electric lightbulb! The flower is its socket, the snake the filament, and the eggplant its glass enclosure.

Electrical lights more than 4,000 years ago in ancient Egypt? That is an extraordinary hypothesis. However, like any hypothesis, extraordinary or otherwise, it can be—in fact, must be—tested through the scientific method. Electrically powered lightbulbs in ancient Egypt or anywhere else must have been invented, manufactured, and used within a broader context. What are the deductive implications of the hypothesized existence of such lighting devices in ancient Egypt? What should we find in archaeological excavations to support this interpretation? Even modern lightbulbs burn out or break, so we would expect to find in archaeological excavations in Egypt dead but, perhaps, intact bulbs, fragments of broken glass bulbs, metal sockets, pieces of the necessarily durable filaments, and stretches of the electric cable needed to bring electricity to the bulbs from its source.

This last requirement leads us to the most important and most problematic deduction—we also must find evidence for the production of electric power by ancient Egyptians for these lightbulbs.

Little of this seems to occur to von Däniken, although using a thoroughly discredited interpretation of a 2,000-year-old artifact from Iraq he does claim that electricity was produced in the ancient world (Eggert 1996). (See the Frequently Asked Questions section in this chapter.)

Is there any hard, archaeological evidence of the kind just listed that ancient Egyptians produced electricity and manufactured lightbulbs? The answer is no. In his analysis of the images on the wall in Hathor's Temple in Dendera, von Däniken does not even ask whether such evidence exists. He certainly doesn't prove that Egyptians had electric lighting but merely that his inkblot speculations have become even more wildly imaginative in recent years.

The most infamous example of inkblot hypothesis is von Däniken's interpretation of the sarcophagus lid from the Maya site of Palenque (Figure 9.4). It's one of the ancient artifacts highlighted in a scene in the movie *Prometheus*, as alluded to earlier. Does it evoke in your mind any extraterrestrial images? Probably not. Yet, for von Däniken, the coffin lid is a clear representation of a space-suited alien piloting a spacecraft (1970:100–101).

The inkblot principle is at work again. When you are unfamiliar with the culture, you can make just about anything you want out of these images, but you are most decidedly not practicing science. Von Däniken does not understand the cultural context of the Palenque artifact. He does not recognize the Maya symbols in the carving of the Ceiba Tree and the Earth Monster. What are mysterious devices for von Däniken are simply common artistic representations of Maya jewelry, including ear and nose plugs. Again, not understanding the context of the artifact, von Däniken apparently does not think it important or even relevant that the person depicted on the sarcophagus lid was a dead Maya king represented in a position between life, the Ceiba Tree above him, and death, the Earth Monster below (Robertson 1974; Sabloff 1989).

As for the individual depicted on the lid and buried in the tomb, he is anything but some mysterious, out-of-place enigma whose origins can be traced to outer space. In fact, we know a great deal about him; the information was provided by the Maya themselves (Schele and Freidel 1990). He was Pacal, ruler of the ancient city of Palenque from A.D. 615 until his death and placement in the tomb at the base of an impressive pyramid in A.D. 683 (Figure 9.5).

Fortunately for students of Maya history, Pacal had a detailed king list inscribed in the temple atop his pyramid tomb, and an additional listing placed on his sarcophagus. We know the names of his ancestors and the names of his descendants. We know what he accomplished during his



**Figure 9.4** Using what we here call the inkblot approach, von Däniken interprets the image on the sarcophagus lid from the Temple of Inscriptions at the Maya site of Palenque as depicting an astronaut with antennae and oxygen mask, peering through a telescope and manipulating the controls of a rocket. Maya archaeologists prefer to interpret this scene within the context of Maya cosmogony—a king poised between life and death in his journey to the afterlife. (© 1976 Merle Greene Robertson/Pre-Columbian Art Research Institute)





**Figure 9.5** The magnificent Temple of the Inscriptions, the final resting place of Pacal, ruler of Palenque. Pacal's tomb with its famous sarcophagus lid was found at the bottom of a staircase leading from the top to a point beneath the pyramid. (D. Normak/PhotoLink/Getty RF)

reign as ruler of Palenque. And we have his physical remains in the coffin. Although he was once the all-powerful ruler of a splendid society, nothing is left of Pacal save his very human bones.

Pacal's story needs no tired speculation about extraterrestrial visitors to Earth. Pacal was a dynamic and vibrant historical personage, a real human being who lived, ruled a great city, and died more than 1,300 years ago, and whose story has been revealed by archaeology and history.

One needs to be familiar with Maya cosmogony, writing, and history to recognize the context of the Palenque stone within Maya culture. Von Däniken and his followers, however, seems wholly ignorant of Maya beliefs and therefore can come up with such an unsupported speculation concerning the image on the coffin lid.

### *The Amorous Astronaut Hypothesis*

Von Däniken's second hypothesis suggests that extraterrestrial aliens played an active and important role in the actual biological development of our species. There has been some controversy on this particular point. An episode



of the public television series *Nova* ("The Case of the Ancient Astronauts" 1978) focused on von Däniken's ideas. During an interview that was part of the episode, he maintained that he never really made such a claim. Let's see.

In *Chariots of the Gods?* von Däniken proposed the following scenario. A group of extremely advanced, interstellar space travelers land on Earth, for the first time perhaps millions of years ago. They find a primitive race of creatures, very apelike, with small brains, but with a lot of potential. Then, von Däniken claims, "A few specially selected women would be fertilized by the astronauts. Thus a new race would arise that skipped a stage in natural evolution" (1970:11).

If the previous claim can be called the *Inkblot Hypothesis*, I can call this one the *Amorous Astronaut Hypothesis*.

According to this hypothesis, extraterrestrial aliens have streaked at near light speed to get to Earth. The speed of light is fast (186,000 miles per second), but the universe is large, and our spacemen (for von Däniken, the extraterrestrial visitors always seem to be males) have been cooped up in their spaceship, perhaps in suspended animation, for more than four years. The star (Alpha Centauri) nearest to our sun is about 4.3 light-years away, and so—even traveling at the speed of light—four years is the absolute minimum. Our extraterrestrial friends land, are wakened from their deep sleep, and exit their spaceship to explore the new frontiers of an unexplored planet in an alien solar system. And what do you think they do? They look for females to "fertilize." The human species is not the product of evolution, but of interstellar miscegenation.

Even von Däniken's most ardent supporters must admit that he has some very strange ideas concerning the ability of different species to mate and produce offspring. For example, the mummy of ancient Egyptian priestess Makare, daughter of Pharaoh Pingdjem (c. 1075 B.C.), was placed in her tomb with a small mummified bundle. It had been assumed that the bundle was her child until it was x-rayed in 1972. The small mummy turned out to be that of a baboon. This was not so surprising. Egyptians commonly mummified animals, and most Egyptologists assumed that the baboon baby was Makare's pet or, perhaps, a symbolic child entombed with Makare as a surrogate for a human baby. Von Däniken (1996:63) suggests, instead, that Makare may have actually given birth to what he implies was a human-baboon hybrid. Von Däniken recognizes that humans and baboons cannot mate and produce offspring, so he proposes that extraterrestrial aliens conducted genetic experiments, hybridizing a wide variety of earth species. Makare's baby baboon is just one example. The many mythological creatures seen all over the ancient world—Pegasus, the Sphinx, griffins—are not mythological at all for von Däniken but are accurate depictions of these hybrids! Why did ancient astronauts conduct these seemingly bizarre genetic experiments? According to von Däniken (1996), it was solely for entertainment: "The extraterrestrials had found a way to keep themselves

busy. They merrily invented one monster after another . . . and they observed with much amusement the reactions of the flabbergasted humans" (p. 58). The extraterrestrials appear to have had a rather twisted sense of humor, if you ask me.

The possibility of two species that evolved on different planets in two different solar systems even having the appropriately matching physical equipment for mating, much less having matching DNA necessary to produce offspring, is so incredibly unlikely that it is beyond calculation. Yet these are precisely the implications that must be deduced from von Däniken's hypothesis. As Carl Sagan pointed out in "The Case of the Ancient Astronauts," a human ancestor would likely have been more successful mating with a petunia than with a creature from outer space; at least the human ancestor and the petunia both evolved here on Earth. Extraterrestrial astronauts, amorous or not, simply could not have mated with our ancestors to produce us.

### *The "Our Ancestors, the Dummies" Hypothesis*

This leads us to the final von Däniken hypothesis, the notion that the archaeological record is replete with evidence of highly advanced artifacts beyond the capability of ancient humans. This can be called the *Our Ancestors, the Dummies Hypothesis* (after Omohundro 1976). Von Däniken is claiming that our human ancestors were too dumb to have, all by themselves, using their own creative abilities, intelligence, and labor, produced the admittedly spectacular works of engineering, architecture, mathematics, astronomy, botany, and zoology evidenced in the archaeological record.

Mind you, von Däniken is not saying that archaeologists are hiding the physical evidence of ancient flying saucer parts or photon torpedoes found at prehistoric Indian villages or ancient Chinese temples. That would be an easy claim to check scientifically; such artifacts either exist or they do not. No, instead, von Däniken simply points to artifacts such as pyramids or temples, statues, or carvings. He makes reference to prehistoric accomplishments such as the domestication of plants and animals, the development of metallurgy, and especially astronomical abilities—all things for which archaeological evidence is abundant. Von Däniken simply cannot understand how, and therefore doesn't believe that, prehistoric people could have managed all this without some sort of outside help. This help, for von Däniken, comes in the form of aliens from outer space.

### *Extraterrestrial Calendars?*

For example, in his third book, *Gold of the Gods* (1973), von Däniken makes reference to the hypothesis of science writer Alexander Marshack (1972). Marshack maintains that some inscribed bone, antler, and ivory tools from

Paleolithic Europe, dating from 30,000 to 10,000 years ago, represent the oldest calendars in the world. He hypothesizes that these first calendars were based on the cycle of changes in the phases of the moon. Amazed as always, von Däniken asks:

Why did Stone Age men bother about astronomical representations? It is usually claimed that they had their hands full just to procure sufficient nourishment on endless hunts. Who instructed them in this work? Did someone advise them how to make these observations which were far above their "level"? Were they making notes for an expected visit from the cosmos? (1973:203–4)

Von Däniken has lots of questions, but precious few answers. Let's look at one of these artifacts and see if it indeed looks like something only an extraterrestrial alien might have devised. Probably the most famous of the artifacts in question is the Abri Blanchard antler plaque found in southern France and dated to about 30,000 years ago (Figure 9.6). This ancient piece of ivory has close to seventy impressions carved into it along a sinuous arc. If you begin in the center of the antler and work your way along the arc, a rough pattern emerges. Each design element appears to be a fraction of a circle. As you follow the arc of impressions, the marks seem to grow in terms of the proportion of a circle represented and then, once a whole circle is produced, to diminish. The similarity between the sequence of impressions and the phases of the moon is apparent. It is Marshack's



**Figure 9.6** Von Däniken sees evidence for knowledge far beyond the capabilities of ancient people in 30,000-year-old bone implements of the Upper Paleolithic. But perhaps the best known of these, the antler plaque at Abri Blanchard in France, though a compelling argument for the great intelligence of our prehistoric ancestors, is really just the simple depiction of lunar phases. The pattern of lunar waxing and waning was likely well known to these people. (© President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, 2005.16.318.38)

well-reasoned, though still-debated, hypothesis that this is precisely what these ancient people were trying to convey.

No one can deny that it is fascinating to think that 30,000 years ago prehistoric people may have looked at the mysterious light in the night sky and wondered about it. Based on this and similar artifacts from the period 30,000 to 10,000 years ago, it appears quite possible that these ancient people recognized the cyclical nature of the lunar phases. But as interesting as it might be, does the antler plaque look like the calendar of an extraterrestrial alien? Wouldn't their calendars and to-do lists be kept on their iPads, and wouldn't archaeologists find those devices? (They're Apple products, so they'd probably still be working!)

Certainly it took intelligence to watch the nightly change in the moon's phases and conclude that it was not random, that it was patterned and predictable. But remember, these were people who, of necessity, were attuned to the natural world around them. Their very survival depended on their observations of nature, and nature is filled with predictable cycles. Day followed by night followed by day is an unending, constant pattern that is easily recognized. The fact that summer follows spring, is replaced by fall and then winter, which leads inevitably back to spring, was a cycle that had to be known, followed, and relied on by our prehistoric ancestors. Long before 30,000 years ago their brains had become as big as ours, and they were just as intelligent as we are. The fact that they may have recognized the phases of the moon as another cycle in nature and that they recorded these changes to be used, perhaps, as a kind of calendar is a wonderful achievement, but not really so unexpected.

### *Extraterrestrial Aliens in the Pacific?*

Easter Island is one of the most remote places on Earth, 3,200 kilometers (2,000 miles) west of the coast of South America and 2,000 kilometers (1,250 miles) southeast of the nearest inhabited Pacific island (Bloch 2012). Called Rapa Nui by its inhabitants, Easter Island was first settled in about A.D. 1200 by Polynesians as part of their own remarkable "age of exploration," the equivalent of the European spread across the Atlantic in the fifteenth and sixteenth centuries.

On the island, more than 950 large stone statues called Moai have been located (Hunt and Lipo 2011). Carved from a relatively soft volcanic rock called *tuff*, they are impressive indeed. The largest is more than 10 meters (33 feet) high and weighs about 72,000 kilograms (80 tons). The "average" statue is more than 14½ feet high and weighs 14 tons. Even the smaller statues would have taken considerable labor to quarry, sculpt, transport, and erect (Figure 9.7).

Not surprisingly, von Däniken does not believe that the Easter Islanders could have accomplished these tasks by themselves. In *Gods from Outer Space* (1971), he suggests that the statues (or at least some of them) were erected





**Figure 9.7** Left The remarkable Moai of Easter Island number in the hundreds and reflect the great intelligence, technical skill, and organizational abilities of so-called primitive people. The photograph on the right shows a Moai that was not finished, still lying in place in its quarry. No laser burns have been found in the quarries, only the stone tools the Easter Islanders used to carve out the statues from the surrounding rock. (Courtesy Sonja Gray)

by extraterrestrial aliens marooned on Easter Island. What was their motive for erecting the statues? According to von Däniken, it was simple boredom (p. 118). Between conducting genetics experiments for giggles and carving statues out of a sense of boredom, these extraterrestrials appear to have had way too much time on their hands, and they certainly mucked things up for us archaeologists trying to figure out the human past.

Intensive archaeological investigations have been carried out on Easter Island since 1955 (see Van Tilburg 1994 for a detailed discussion of this work). Quarries with partially completed statues have been discovered—along with hundreds of stone picks, hammers, and chisels used to quarry the rock and carve the images.

Okay, but how were the multi-tonned statues moved as much as 17 kilometers (11 miles)? Archaeologist often use replicative experiments to test hypotheses about how ancient people may have accomplished a task, from something as simple as making a spear point to something quite a bit more challenging and complex like moving a Moai. Among the rules underlying such experiments are the requirements that the replication actually

works—you can accomplish the task—and that the archaeological and historical data conform to the results of the experiment.

One of the most interesting attempts at transporting a Moai has been conducted by archaeologists Terry Hunt and Carl Lipo (2011). Unlike some other researchers who believe that the statues were moved on wooden sleds, on their backs, Hunt and Lipo hypothesize that the statues were transported from the quarry in an upright position in a technique they call a “refrigerator walk.” If you’ve ever moved a large, bulky refrigerator, you’ll know what that means. Using the fact that the refrigerator has a low center of gravity, you can tilt it from side to side, and twist it at the same time, slowly and safely moving it a little forward with each tilt and twist. Hunt and Lipo showed that with a relatively small crew and ropes, you can build up a pretty good pace of moving a Moai in its upright position using the refrigerator walk approach.

Like all replicative experiments in archaeology, merely being able to accomplish a task using a particular technique does not guarantee that ancient people did it the same way. However, Hunt and Lipo also note actual evidence that conforms to their hypothesis. For example, the statues show grinding wear on their bases, which is what you’d expect if they were moved in an upright position. Also, like a refrigerator with its motor on the bottom, the Moai have a low center of gravity, the result of the potbellies most of them exhibit. Their interesting body shape may have been intentional; a more top-heavy statue would be more likely to fall during transport. Also, a number of statues did break during their trip from the quarry to the shoreline, but the way they broke is interesting. They don’t all lie on their backs, as you might expect they would had they been transported that way. While some are found broken on their backs along the many roadways that cross the island from the quarry to the shore, some are found face down. Hunt and Lipo point out that this broken positioning isn’t random; statues tend to be found on their backs when they broke while being transported uphill—in other words, they look like they fell backward because of the slope. Broken statues tend to be found face down if they broke during a downhill section of their trip, appearing to have broken in a big, sad face-plant (2011:83). That’s exactly what you’d expect to find if the statues were being moved in a vertical or upright position, but not if they were supine during transport.

Along with conforming to the proportions of the statues, the basal grinding, and the correlation between slope and the positioning of broken Moai, the upright transportation hypothesis also conforms to another significant source of evidence—the stories told by the Rapanuians themselves. Islanders have long claimed that the statues “walked” from the quarry to the coast. Though they go on to assert that their ancestors accomplished this through magic, we can suggest that it wasn’t magic, but ingenuity on their part. Either way, there’s no need or room for anti-gravitation devices wielded by extraterrestrial statue makers.

### *A Real Mystery*

But the absurdity doesn't end there. Not content merely to write preposterous books, von Däniken devised another way to spread the gospel of the ancient astronauts. *It's a theme park!* Disney proclaims Mickey's Magic Kingdom "The Happiest Place on Earth," and I see no reason to dispute that. I would like to here proclaim von Däniken's Mystery Park the *silliest* place on earth, and I dare anyone to dispute that (Powell 2004)! Von Däniken was able to convince a number of major corporations, including Coca-Cola, Sony, Fujitsu, and Swatch, among others, to bankroll (to the tune of \$62 million) his Mystery Park, a sort of world's fair of silliness, dedicated to the ancient astronaut hypothesis. Unfortunately, for von Däniken anyway, he apparently wasn't able to convince enough tourists to actually visit the park. Opened in 2003, Mystery Park closed its doors in November 2006 as a result of poor attendance. Mind you, lots of people bought tickets and visited the park—in fact, more than 440,000 in 2004 (its best year)—but the yearly numbers dramatically declined in 2005 to less than half that (Künzle 2006). The park reopened briefly in 2009, closed again, and has now opened under new management. No longer "Mystery Park," "Jungfrau Park" (the park has been renamed after a nearby mountain; "jungfrau" literally means "young girl" and is usually used to signify a virgin in German), the owners are now appealing to a younger audience, adding a small petting zoo, go-karts, and "bouncy castles." The animals in the small zoo include llamas and goats, but nothing extraterrestrial. It remains to be seen whether this rebranding will improve the park's attendance numbers or if it will lead to the fulfillment of von Däniken's expressed wish to open a series of "von Däniken Lands" (okay, that's my snarky name for them) in North America, Thailand, Singapore, and the United Emirates.

The park was built with seven major attractions, each one constructed to represent what is, to von Däniken, a great mystery of the ancient world. For example, one pavilion was built in the shape of an Egyptian pyramid (see Chapter 10), another mimicked the Maya Pyramid of the Feathered Serpent in Chichén Itzá (see Chapter 13). Each pavilion's name represented its theme in von Däniken's universe of absurdity: Maya, Orient (focusing on Egypt), MegaStones (Stonehenge and the like), Contact, Challenge, Nazca (South America), and Vimana (ancient India). Each pavilion's exhibit consisted of a movie, dioramas, and artifacts. The seven main pavilions formed a ring around a central Earth base for the ancient astronauts; von Däniken himself maintained an office and library there. Oh, and don't forget the Mystery Park mascot, "Mysty" (get it?), a bluish, sort-of-extraterrestrial critter who showed up on the website and some of the Mystery Park merchandise.

The park was filled with bizarre juxtapositions and incredible anachronisms. For example, among the exhibits of ancient Mesoamerican cities

and Maya stelae within the Maya pavilion, there also was a diorama of a mariachi band (Powell 2004). What, exactly, was von Däniken trying to tell us (or sell us) here? Mariachis of the gods?

As deliciously bizarre as this all was, writer Eric Powell, who attended the grand opening of the park for *Archaeology* magazine, points to a far more serious, depressingly familiar von Däniken theme that permeates Mystery Park. It's "our ancestors, the dummies" all over again. Powell notes that the foundation of amazement that underlies Mystery Park doesn't honor the great capabilities of our ancient human ancestors, but, instead, reflects an assumption of their intellectual incompetence. The great engineering and intellectual achievements of the ancient world were made possible not by human ingenuity and brain power, but by extraterrestrial tutoring. Powell's (2004:66) description of the Mayaland movie reveals the core of the von Däniken mind-set: Ancient astronauts land on Earth, abduct a band of children from the primitive native people, take them to their home planet, instruct them in the ways of pyramid building and calendar making, and then return them to the Mesoamerican jungle where they share their newfound knowledge, pulling their people from a life of savagery up to the pinnacle of intellectual, civilized life. It would be funny, if it were not fundamentally an egregious libel against the human species. I'd like to believe that this is why the park couldn't attract enough visitors to survive; people are too smart to fall for such nonsense.

## The Archaeology of Mars

As the result of a single photographic exposure taken by the camera on board the U.S. Viking spacecraft orbiting Mars in 1976, some proclaimed that there is mind-boggling archaeological evidence of monumental proportions for life there in the past (DiPietro and Molenaar 1982). On exposure 35A72, in a grainy pastiche of shadow and light, is the image at the heart of this extraterrestrial archaeological controversy (Figure 9.8). It is called, simply, "the Mars Face," and it is enormous, roughly a mile long from the top of its head to its chin.

Undeniably, it does look like a human face, or at least a part of one. But it also seems to be explainable as an interesting and coincidental play of light and shadows, the kind of image trickery that causes us to see faces, animals, or even household appliances in rock exposures, cave formations, and clouds. These images do not really exist except for our mind's tendency to coax familiar pictures out of natural features. I have been in countless underground caverns where the tour guides have pointed out features like "the Capitol Dome," "Two Eggs, Sunnyside Up," and the "New York City Skyline." A rock face in Wisconsin presents a lifelike, entirely natural profile



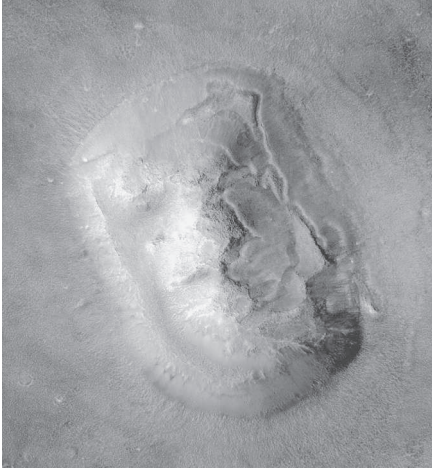


**Figure 9.8** The so-called Mars Face (upper right) is almost certainly a natural product of Martian geology—a natural feature of the landscape that happens to look like a human face under the right lighting conditions—and not a monument built by an ancient Martian civilization. (Courtesy NASA)

of the Indian leader Black Hawk. None of these often astonishingly real-looking images were conjured up by some ancient geological intelligence. There's a term for seeing patterned images in random wisps of clouds, in geological formations, in dental x rays, or even on a piece of toast: pareidolia (Poole 2007). You might remember a few years ago a woman sold half a grilled-cheese sandwich on eBay for \$28,000 because it had what some interpreted to be a miraculous image of the Virgin Mary on the toasted surface of the sandwich. That's pareidolia.

Most geologists who viewed the original Mars Face photograph ascribed it to something like the inkblot effect. Sure, it sort of looked like a face, but so what? The resolution of the image—each tiny pixel on the photograph corresponds to a whopping 43 meters (141 feet) on the ground—is far too low to accurately determine what the feature actually looks like (Malin 1995).

At least partially as a result of public interest about what the photograph depicted, additional images of the Cydonia region were taken in April 1998 by another interplanetary voyager, the Mars Global Surveyor (MGS) satellite. The 1998 photographs taken by the much more sophisticated camera on board were of a resolution ten times higher than that of the original Viking images; each pixel represents only 4.3 meters (14.1 feet) of the Martian surface. This much sharper photograph showed that the feature looked nothing at all like a face, but more like an eroded mesa, entirely natural in



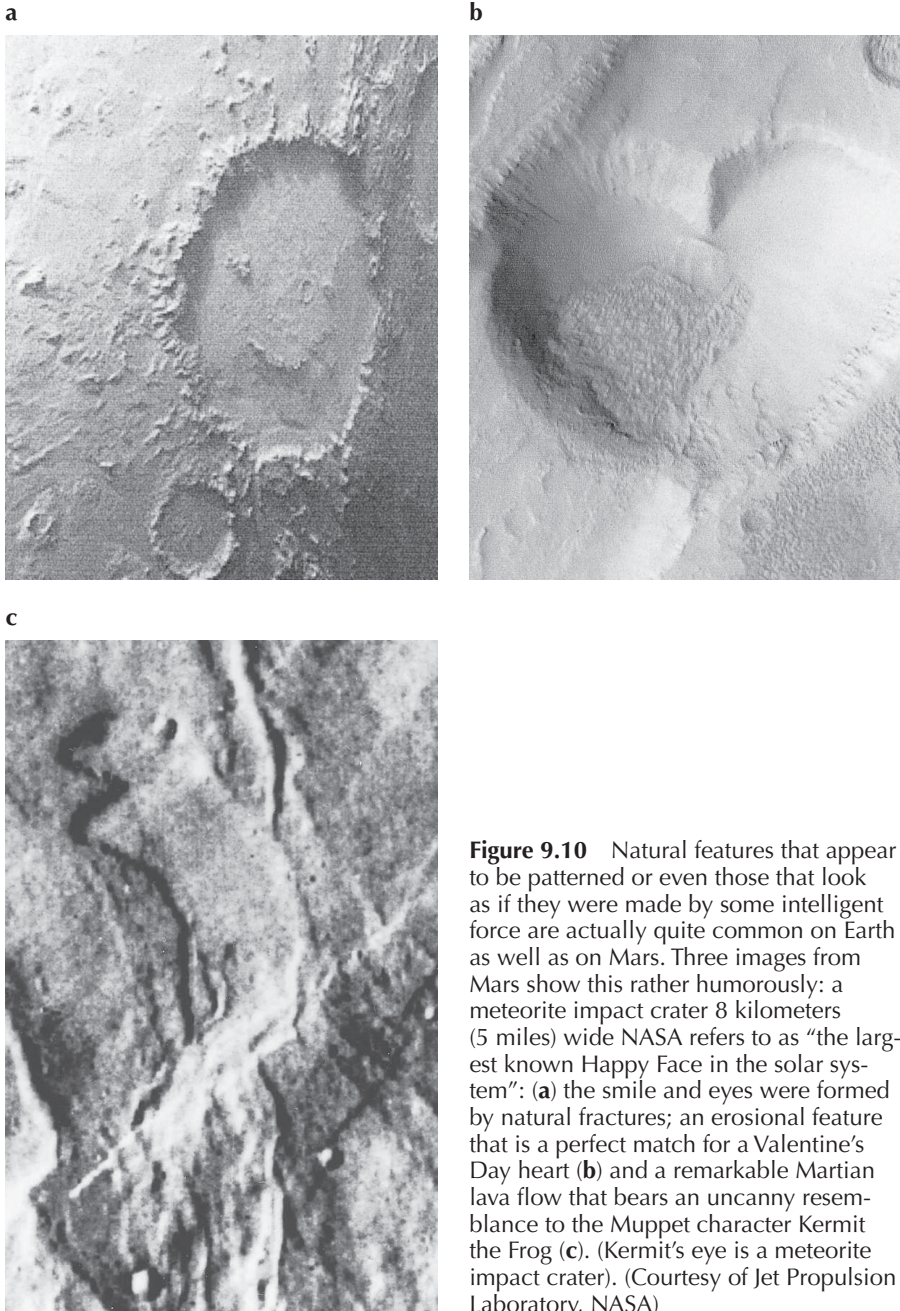
**Figure 9.9** The Mars Global Surveyor photographed the Mars Face again in April 2001, producing the highest possible resolution with the camera on board. An object the size of a small building would be discernible in the photograph; genuine cultural features, like a giant, mile-long sculpted face, would be easily recognized. But no such feature is present in the new photograph; the Mars Face has disappeared completely. (Courtesy NASA)

appearance. Then, on April 8, 2001, the MGS photographed the region yet again. The resulting photograph has an even higher resolution than the April 1998 image, with each pixel now representing only about 1.56 meters on the ground (about 5 feet, the maximum resolution possible with this camera; Figure 9.9). According to NASA (2001), an object the size of a small building would be discernible in the photograph; genuine cultural features, like a giant, mile-long sculpted face, would be easily recognized. But no such feature is present in the new photograph; the Mars Face has disappeared completely. All that is left is an eroded mesa with an irregular depression where the “eye” was located and a valley where people saw a mouth. NASA scientist James Garvin (2001) has even determined the easiest trail to the top of the mesa, should astronauts ever make it to Mars and have a desire to stroll around the geological feature once called the Mars Face.

There are other interesting features on the Martian landscape. One looks like the “happy face” symbol (Gardner 1985), but it is simply a meteorite impact crater about 215 kilometers (134 miles) across with fortuitously positioned smaller features located inside it: a smaller crater and a cluster of eminences for eyes and a curved cliff for the smiling mouth (Figure 9.10a).

In June 1999, the Mars orbiter camera photographed a geological feature on Mars that specialists identified as a natural pit formed by collapse within a straight-walled trough. Though it was a bit late for the holiday, the 2.3-kilometer- (1.4-mile-) wide feature looked remarkably like a Valentine’s Day heart (Figure 9.10b).

Finally—my personal favorite—another photo of the Martian surface shows a lava flow that bears a remarkable resemblance to Kermit the Frog (Figure 9.10c)! No one has claimed, at least not yet, that this is evidence of an extraterrestrial origin for the Muppets.



**Figure 9.10** Natural features that appear to be patterned or even those that look as if they were made by some intelligent force are actually quite common on Earth as well as on Mars. Three images from Mars show this rather humorously: a meteorite impact crater 8 kilometers (5 miles) wide NASA refers to as “the largest known Happy Face in the solar system”: (a) the smile and eyes were formed by natural fractures; an erosional feature that is a perfect match for a Valentine’s Day heart (b) and a remarkable Martian lava flow that bears an uncanny resemblance to the Muppet character Kermit the Frog (c). (Kermit’s eye is a meteorite impact crater). (Courtesy of Jet Propulsion Laboratory, NASA)

To scientists, the Face, the “happy face,” the Valentine heart, and Kermit the Frog are rare, but by no means unique, images of landscape features on a planetary body; the images look artificial, but they are entirely natural.

## Current Perspectives: The von Däniken Phenomenon

Adherents of the Ancient Aliens hypothesis repeatedly underestimate the intelligence and abilities of our ancestors and then proposes an extraordinary hypothesis to explain the past. That is clear. However, what is not so clear is the second reason I have suggested for von Däniken’s inability to accept prehistoric peoples’ ability to produce the great achievements seen in the archaeological record (the first was simple ignorance). I have already mentioned it briefly—European ethnocentrism.

What I mean by this becomes clear when you read *Chariots of the Gods?* It is curious that von Däniken is ever ready to provide examples as proof of his third hypothesis (Our Ancestors, the Dummies) from archaeological sites in Africa, Asia, North America, and South America; but he is curiously and atypically silent when it comes to Europe. My feeling about this was so strong on reading *Chariots of the Gods?* that I actually went through the book and tallied the specific references to amazing accomplishments of prehistoric people that von Däniken believes were too advanced, too sophisticated, or too remarkable for mere humans to have produced. I paid careful attention to where in the world (which continent) these specific examples were from. The following chart resulted (Feder 1980a):

The great majority of von Däniken’s examples here are from places other than Europe. It appears that he is utterly astounded by the archaeological records of ancient Africa, Asia, and North and South America. He is so astounded, in fact, that he thinks that only through the assistance of men from outer space could native Africans, Asians, and Americans have produced the prehistoric works that archaeologists find on these continents.

It is curious that von Däniken never wonders who helped the ancient Minoans build the great temple at Knossos or the Greeks the Parthenon, or which spacemen instructed the Romans in constructing the Colosseum. Why not? These monuments are every bit as impressive as those that von

Table 9.1

Continent of the Example	Number of Examples	Percentage
Africa	16	31
Asia	12	23
Europe	2	4
North America	11	22
South America	10	20
Total	51	100



Däniken does mention. The temple at Knossos is more than 3,500 years old, the Parthenon is almost 2,500 years old, and the Colosseum is close to 2,000. Even in the case of Stonehenge in England, von Däniken is strangely quiet and only briefly mentions it in *Chariots of the Gods?*—though he finally does get around to Stonehenge in a more recent book, *Pathways to the Gods*.

Many people are aware of phenomena like the pyramids of Egypt, the ruins of Mexico, and the ancient Chinese civilization. Some, however, may wonder how the prehistoric ancestors of contemporary people whom they consider to be backward and even intellectually inferior accomplished such spectacular things in the past. After all, today Egypt is a developing nation, many Indians of Mexico are poor and illiterate, and the Chinese are just beginning to catch up with the technology of the modern world. How could the ancestors of such people have been advanced enough to have developed pyramids, writing, agriculture, mathematics, and astronomy all by themselves?

Along comes von Däniken with an easy answer. Those people did not produce those achievements on their own. Some sort of outside help, an extraterrestrial “peace corps,” was responsible. If I am correct in this suggestion, it really is a pity; human prehistory is a spectacular story in its own right. All peoples have ancient pasts to be proud of, and there is no place for, nor any need to fall back on, the fantasy of ancient astronauts.



## FREQUENTLY ASKED QUESTIONS



1. *Carl Sagan predates von Däniken in publishing the suggestion that there might be archaeological artifacts that bear witness to the visitation and exploration of our planet by extraterrestrial astronauts sometime in the distant past. Does that make Sagan a pseudoscientist?*

Of course not. Merely suggesting a potentially fruitful line of investigation—even if other scientists are skeptical—doesn’t make somebody a pseudoscientist. Sagan recognized, of course, the kind of evidence needed to uphold his hypothesis and clearly concluded, in the years following his suggestion, that the requisite evidence was not found. Read any of Sagan’s more recent works, especially *The Demon-Haunted World* (1996). One of Sagan’s great wishes was that, during his lifetime, there would be proof that we are not alone, that our Earth is not the only repository of intelligent life forms in the universe. Disappointed he may have been that this did not happen, but deluded he was not. There is no archaeological evidence for ancient extraterrestrial visits to Earth; Sagan knew and accepted this fact.

2. *Is there any evidence for the use of electricity by ancient people?*

No, but the claim has been made that a primitive 2,000-year-old electrical battery was found in Iraq (Eggert 1996). No one knows precisely

what this object was used for, but it certainly was not producing any electrical power when it was found in 1936. The so-called Baghdad Battery is a ceramic vase with a closed bottom, a cylindrical tube of copper inserted through the neck, and a rod of iron inside the copper tube. The metals were held in place with a plug of asphalt. A number of modern experiments, often with inaccurate models of this object, have produced mild and short-lived electrical currents when an appropriate electrolyte (liquid that conducts electricity) is poured into the vessel. However, this will happen whenever two different metals are immersed in an electrolyte, and there is no evidence that any such liquid was ever placed into the original jar. In what has to be considered the definitive experiment with a Baghdad Battery replica, Adam Savage and Jamie Hyneman, the guys from the Discovery Channel's *MythBusters* show—the best show on television at casting a skeptical eye at all sorts of extraordinary claims—along with their “co-busters,” made a replica Baghdad Battery from scratch. Their working model actually did produce electricity—all of about 0.269 volt (Packard 2006:122). A single AA battery produces about five-and-a-half times more voltage than that (and most flashlights require more than one of those). The set-up may have been used in electroplating, but there just is no way that the Baghdad Battery could have produced enough juice to power a system of illumination sufficient to light the interior of a pyramid. That part of the myth, indeed, is busted.



## BEST OF THE WEB



### ANCIENT ALIENS

<http://www.dumbassguide.info/>

Okay, it has a really unfortunate name, but the Dumbasses Guide to Knowledge is a terrific place to find a point-by-point refutation of the claims made in the *Ancient Aliens* series. It's a lot of fun, well written, and spot on.

### EASTER ISLAND

<http://www.netaxs.com/~trance/rapanui.html>

Especially useful for an extensive series of links to Easter Island websites as well as breaking news about archaeological work on the island and potential threats to the Moai as a result of recent plans to develop parts of the island.

<http://www.pbs.org/wgbh/nova/easter/>

PBS companion web page to the *Nova* “Secrets of Easter Island” documentary.

## MARS FACE

**<http://www.msss.com/education/facepage/face.html>**

Web page dating to 1995 presenting a discussion of the Mars Face based on the 1976 Viking *Orbiter 1* photograph.

**[http://mars.jpl.nasa.gov/mgs/msss/camera/images/4\\_6\\_face\\_release/](http://mars.jpl.nasa.gov/mgs/msss/camera/images/4_6_face_release/)**

NASA web page revisiting the Mars Face phenomenon on the basis of new, high-resolution photographs taken by the Mars Orbiter camera.

**[http://www.msss.com/mars\\_images/moc/extended\\_may2001/face/index.html](http://www.msss.com/mars_images/moc/extended_may2001/face/index.html)**

Web page presenting the May 2001 NASA press release announcing the most recent (April 2001) image of the Mars Face. The download is quite amazing, but there's not even a hint of a face.

**[http://science.nasa.gov/headlines/y2001/ast24may\\_1.htm?list540155](http://science.nasa.gov/headlines/y2001/ast24may_1.htm?list540155)**

NASA web page presenting a brief history of the Mars Face phenomenon, including the April 2001 photographs taken by the Mars Global Surveyor, the highest-resolution photos yet taken of the feature. Scroll down to the end of the site for James Garvin's trail map to the top of the mesa.



## CRITICAL THINKING EXERCISE



Using the deductive approach outlined in Chapter 2, how would you test this hypothesis? In other words, what archaeological and biological data must you find to conclude that this hypothetical statement is an accurate assertion, that it describes what actually happened in the ancient human past?

- The prehistoric record contains evidence of enormous and unexpected leaps forward in science and technology—agriculture, pyramid building, writing, and so on. These leaps are evidence of the introduction of such innovations by extraterrestrial aliens.