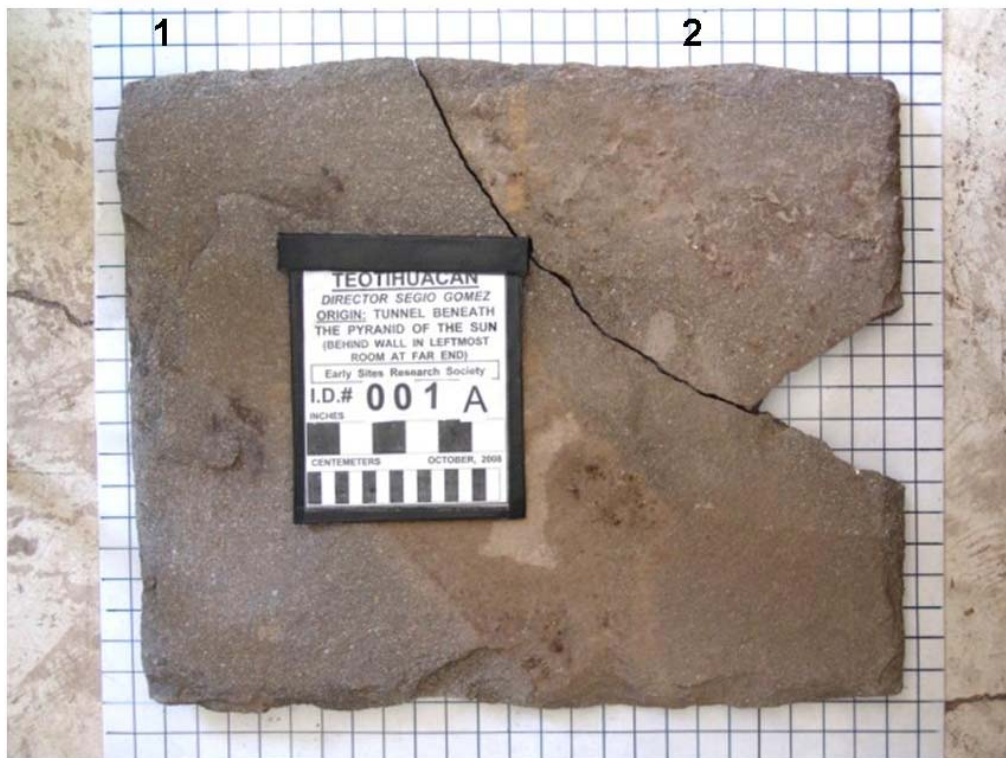


The Catalogue of the Stone Slabs from the Tunnel Underneath the Pyramid of the Sun at Teotihuacán

By Neil Steede 2010

David Brown, Editor

Funded by Hill Cumorah Expedition Team, Inc.



The Catalogue of the Stone Slabs from the Tunnel Underneath the
Pyramid of the Sun at Teotihuacán

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Introduction

When compiling this report I began to realize that the general public and even the Mesoamerican School of Archaeology knows very little concerning the mysterious cave underneath the Pyramid of the Sun at Teotihuacán. I afterward felt it was best to recite some of the newly discovered information concerning the excavation of this tunnel that has been shrouded in mystery. While this report is not earth-shattering, the collection of information concerning the history of the tunnel is both intriguing and disturbing. For these reasons a short synopsis of the available information is provided here for the reader. Without the background for this study I would only be able to offer more questions than answers. Therefore, the Antecedents section of this study is quite large. While most of it is not directly germane to the study itself, the need for the recitation of this information seems obvious as it is my hope to establish the history of the tunnel from discovery to the most recent reports given here. There are future investigations planned for this tunnel which, in part, will be founded on this study.

Synopsis

Forty years after the discovery of the tunnel under the Pyramid of the Sun at Teotihuacán more than ninety “missing” artifacts are finally revealed. These “found” artifacts are worked stone slabs in the form of disks or of squared slabs. These slabs vary from 8” to 14” in diameter for the disks and from 18” x 10” to 30” x 30” for the squared slabs. All have a thickness ranging from ¾” to 2”. Most had pyrite sheets glued to one side and were either painted or carved on the other side. While it seems certain that most served as some type of mirror, other functions are indicated.

Non-personal Antecedent Part I; The Discovery and Excavation Rumors

While I was a student at the University of the Americas in the 1970s it was reported that a tunnel was found underneath the Pyramid of the Sun at Teotihuacán. The world of Mesoamerican Archaeology was extremely excited. Up to that time no tombs of Teotihuacán rulers had been found and it was hoped that this tunnel might hold royal remains. Alas, no report of the contents of the tunnel was ever forthcoming. Within several years it began to be rumored that the tunnel had been sacked and was now empty. The following is a synopsis of the rumors that I have gathered over the years. I can substantiate none of the following with hard evidence as it is only relayed to me in the form of hearsay from individuals having peripheral connections to the early history of the tunnel. However, I do feel that it is important to include this information as part of the antecedents because of the delicate nature of accusations of theft no sources of the hearsay reported here will be given. The sources range from workers and janitorial people who were present to INAH officials who were not. All have given this information off-the-record.

There are parts of this story that I highly question and those questions will be aired here. Also, I will use no names of any individual which is known to have been a part of this tunnel fiasco. Because all that follows in this segment is gossip, I refuse to malign anyone personally—it is both unfair and unprofessional to do so. Therefore, all players shall remain anonymous in this segment of the report. Even time designations such as the years when these events took place are deliberately left vague.

Many people are totally ignorant of this tunnel's existence let alone its contents and history. In the 1970s it is said that a Teotihuacán archaeologist noticed a depression that had formed in front of the Pyramid of the Sun after heavy rains in the area. This archaeologist excavated the depression down to bedrock and found the entrance to the tunnel which is there today. Just before he was about to open the tunnel he was called away to Palenque for a week. During that week his assistant and his chauffer decide to open the tunnel.

The tunnel was full of artifacts according to the people present. Of the myriad of interviews I have conducted over the years I have been consistently told that no gold was found. Apparently all the artifacts consisted of fired figurines, stone figurines, and stone tablets. I have received two reports of a large stone box full of mercury. It seems as though the search was conducted in a frenzied manner and all the figurines and stone slabs were reportedly thrown in a pile close to the entrance. It is said that when the archaeologist returned he saw what had been done and became very angry. It is also said that when he saw the remaining pile of rubble he threw up his hands and demanded that everything to be thrown away, which is reported to have been done.

Descriptions of the artifacts vary from statues three and four feet tall (1.5 meters) to polychrome painted ceramics by the thousands. This much I can personally verify; the floor of the tunnel was covered with a drainage system that consisted of two types of stones. The lower stones were basic troughs carved to overlap one another. Each section of the trough was about three feet to four feet long and about eighteen inches wide (1 – 1.5 meters long and 40 – 45 centimeters wide). Each trough was carved with a 90° inset edge about one inch (3 cm.) wide. These insets ran the length of each trough on each side of the drain. A series of perforated stone slabs laid in the insets which served as the flooring above the drain. Upon my first visit to the tunnel in the 1990s, only one drain stone remained.

I have a lot of questions that about these reports. First, I can find no evidence that anyone was ever charged with defiling this excavation. I find that to be extremely strange. Why would the archaeologist not pursue his assistant and chauffer for “sacking” the tunnel? Was he in on it?

Second, the stories of the archaeologist throwing everything away does not seem compatible with reality either. The evidence that this rumor is not true can be found in a following segment. Here it will be demonstrated that a series of stone disks did come from the tunnel and was recently found by a student in one of the many INAH warehouses. After the alleged sacking occurred a single report did finally appear and that report will be given in the next segment of Antecedents.

Non-personal Antecedent Part II; The Heyden Report

This report gives some insight into the tunnel location and shape. While there are aspects of interpretation with which I disagree they can be dealt with under another cover. However, the report is important to be read, thus the information for finding it can be found below:

Heyden, Doris; "An Interpretation of the cave underneath the Pyramid of the Sun in Teotihuacán, Mexico" *American Antiquity*, Vol. 40, No. 2, April 1975, pp 131-147.

Non-personal Antecedent Part III; The Tomas Villas Report

During my several sequential expeditions to complete this study, I had the great pleasure of meeting Tomas Villas. As explained in the segment of this study entitled Personal Antecedents a general sweeping overview of Tomas' study is given. Entitled Los Tezcacuitlapilli de la Pirámide del Sol, it is a very comprehensive study. This four-hundred plus page thesis is a must read for anyone truly interested in this project.

The apparent remains of fourteen disks were found by Villas in an INAH warehouse. The disks described in the Personal Antecedents section of this report are of great interest. One of the most interesting aspects for me is that one of the disks has a hole that was anciently drilled and then it was plugged. Tomas eventually opened this plug and inside found a single cotton fiber. According to his verbal report to me that fiber was a hybrid between long-fiber and short-fiber cotton. This find is most significant. Up until this time it was thought that cotton hybridization did not take place until centuries later. Moreover, this is why the next non-personal antecedent is included.

There are many other aspects of Villas' thesis that are extremely interesting. And I am not attempting to "scoop" him here. But, I believe that the importance of the cotton fiber and why it was put there has eluded him.

Non-personal Antecedent Part IV; The Carter Studies

The late Dr. George Carter of Texas University A&M performed years of study on the botany and zoology of ancient America. Most of those studies were aimed at showing transoceanic migrations between the Old and New Worlds in Pre-Columbian times. Several of his studies are about short-fiber and long-fiber cotton and the resulting hybrid of the two. Finding such old cotton fiber, as mentioned in the previous segment, might prove extremely valuable in confirming or denying Dr. Carter's conclusions.

Summary of George Carter's Works on Cotton

- 1988a Cultural Historical Diffusionism; The Transfer and Transportation of Ideas and Material Culture. College Station, Texas A&M.
- 2003/
2004 How Cotton Cytogenetics Helped Me to See That Sir Grafton Elliot Smith Got It Right (Mostly). *Pre-Columbiana* 3(1&2):72-76.
- 1988b Textiles in America. *Needle's Point*, OCT: 8-9.
- 1990 Reports from Dr. Carter, 1989. *Mythmakers: Epigraphic Illusion in America*. Ed. James P. Whitall Jr., *Epigraphic Series* 1:56-57. Rowly, MA. Early Sites Research Society.
- 1991a You See What You Are Prepared to See. *Epigraphic Society Occasional Publications*, 20(2):238-240
- 1991b The George Carter Letters. ED. CYR. *Stonehenge Viewpoint*, 91-92:14-20.
- 2003 [Neil Steede] Telephone conversations with Dr. Carter. Not published.

Personal Antecedents

Around 1995 I requested Dr. Mario Perez Campa to ask if I could receive a tour of the tunnel found during the 1970s under the Pyramid of the Sun at the archaeological site of Teotihuacán. A former student of Mario, Dr. Alejandro Sarabia was at the time of my request the director of that tunnel's exploration and generously obliged to Mario's request on my behalf.

Upon arrival at the end of the tunnel we stood at the junction of the final four alcoves. At this point I noticed that the left-most alcove had a stack of stone slabs located in the rear wall. As I recall (photos were not allowed) the stack reached from floor to ceiling (about six feet or 1.8 meters) and was approximately 2 feet or 60 cm. wide. The slab edges were exposed showing them to average between $\frac{3}{4}$ of an inch to $1\frac{1}{2}$ inches (3 cm to 6 cm) in thickness. The lengths of the slab edges also varied from 18 inches to 24 inches (40 cm to 60 cm) long. It must be made clear that all of these estimates are very rough estimates taken from a memory that is now about fifteen years old.

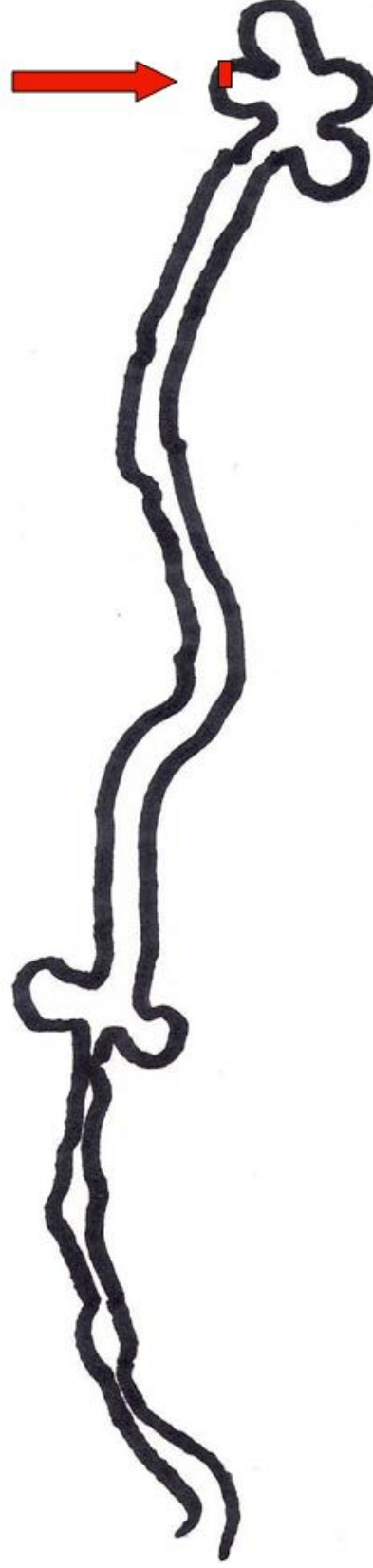
Seeing that there was no evidence of mortar between the slabs, and also being aware that this particular point of the tunnel was not located directly underneath the apex of the pyramid, I inquired if these slabs were blocking a possible continuation of the tunnel. I was told that probes had shown that there was no continuation and that these "paving stones" had simply been stacked by the wall. Now my curiosity was peaked.

By 1998 the use of Luminol to detect latent blood traces had been developed by the FBI. At that time it was difficult to obtain for commercial or public usage. I was able to order some of this material through a friend who served as a lab technician at a local police station. At that time the Luminol mix could only be obtained in quart bottles and had to be mixed at the time of use as its life span was only about 15 minutes once mixed. I obtained one-half gallon (about 2 liters) of the liquid.

Once again I obtained permission from Dr. Sarabia to enter the tunnel and use the Luminol to test the tunnel walls for blood spatter traces. The tests resulted positive, but at that time I checked and the stone slabs were still in the same position where I had observed them before. I was informed, however, that those slabs would soon be removed and stored in the on-site warehouse.

I tried to maintain updated information on the status of the slabs and by 2004 I learned they had been removed and were now in a warehouse. At this point Dr. Sergio Gomez (Director of Excavation at Teotihuacán) informed me that the slabs had holes on one edge and were apparently made to be hung. By 2006 I obtained permission from Dr. Gomez to view the stone slabs. On that visit I was shown a single slab from the warehouse. That slab was approximately 30" x 30". It seemed to be made from limestone shale and had two holes drilled on the face which connected with two holes drilled from the edge. This particular slab was broken in half.

LOCATION OF STONE SLABS WITHIN THE TUNNEL



DRAWING: NEIL STEEDE

A worker at the warehouse informed me that the rest of the stone slabs were located on a nearby patio. Upon observation I could readily see that most, if not all, of the slabs were broken in some way. General photographs were taken and another trip was planned. At that time Dr. Sarabia granted a permission to return.

By now I was beginning to develop a theory that the possible use for the slabs had been chimes. If, in fact, all of the slabs had holes and were meant to hang, it seemed feasible that each slab had been cut for a particular sound. Such stone chimes can be found in use today in Confucian Temples across Asia. I must underline that this was only a working hypothesis. I decided to test this hypothesis on the next trip.

Another event to report from this particular trip is information I received from Dr. Sergio Gomez who informed me that a graduate student of UNAM (Universidad Nacional Autonoma de Mexico) had notified him that he had found several stone disks that originated from the tunnel beneath the Pyramid of the Sun. The student had reported to Dr. Gomez that the disks were carved in bi-relief on one side, had fool's gold (pyrite) plating on the other side and had holes drilled on the edges.

In 2006 another trip was made during which the following information was retrieved. A cursory re-examination of the slabs located on the patio revealed that there were at least two slabs that were complete and unbroken. It was also found that those slabs were beveled on the edges (one side having a bevel more blunt or abrupt than the others). It was also noticed that both slabs seemed to have a narrow width at less than halfway down from what I assumed to be the upper edge. This might imply that these slabs were hung by a lasso because they had no holes. Moreover, I noticed that the slabs had remnants of paint on one side. In one case a red stripe and in the other a yellow patch. The other side seemed to have some unknown material adhering to the central surface.

By this time Dr. Gomez had discovered the "air shaft" to another tunnel at the site. That tunnel ran from the center of the Citadel of Quetzalcoatl Plaza to underneath the Temple of Quetzalcoatl—a distance of about 300 feet or 100 meters. Going back into the records of Teotihuacán excavations, Dr. Gomez had discovered that an excavation had taken place some years before close to the new tunnel entrance. During that excavation another single stone slab had been found. That stone slab was about 20 inches by 20 inches by 1 ½ inches (40 cm by 40 cm by 4 -5 cm) and was beveled on all four sides with one bevel being more blunt than the others; it had no holes, but it had a single red stripe on one side. Now Dr. Gomez and I proceeded to Mexico City to see the carved stone disks that we had heard about a couple of years before.

Upon arriving at the INAH center we met Tomas Villas, the student performing the study on the stone disks. There we were shown pieces of what was estimated to be fourteen stone disks. The disks ranged in size from 8 inches to 14 inches in diameter (20 to 35 cm) and they were about ¾ of an inch thick (2 -3 cm). All were made from shale and had been covered with pyrite on the back side. The front sides had various bi-relief sculpturing. Interestingly each bi-relief style seemed to represent a different Mesoamerican Culture. Even more interesting was that the largest disk (actually an oval) had a anciently drilled hole that had been plugged. As of that visit the plug had not been removed.

In 2008 a team of six people were organized under Early Sites Research Society (ESRS) to travel to Teotihuacán and photograph all of the stone slabs. The group was made up of Margaret Kohl, Barbara Clavey, Tim Brown, Gary Woods, Don Beebe, and myself. The stones on the patio were photographed and the anciently drilled stone from the warehouse was photographed. It was during this session that we realized we needed to perform a more detailed photographic session.

2008 TEAM



**TIM BROWN, GARY WOODS, NEIL STEEDE
BARBRA CLAVEY, MARGARET KOHL, DON BEEBE**

Upon request Dr. Alejandro Sarabia gave us permission to cast molds of the two more complete slabs and we did.

CASTING MOLDS OF STONE SLABS



STARTING TO POUR

FINISHING THE POUR



REMOVING MOLD BOX

EDGE VARIANCES

SHARP BEVEL



BLUNT BEVEL



SQUARED OFF



STONE FACE EXPOSING DIFFERENT TYPES OF BEVEL



OBVERSE AND REVERSE SIDES



**MANY OF THE
OBVERSE SIDES OF
THE STONES HAVE
REMNANTS OF GLUE
AND PYRITE STILL
VISIBLE**



**MANY OF THE
REVERSE SIDES HAVE
PAINT ON THEM**

PATIO STORAGE



**NO APPARENT
ORGANIZATION**

At this time the more complete slabs (3) and the slab from the tunnel entrance to the Citadel of Quetzalcoatl were hung and tested for sound readings. All of the slabs were carved from basalt rock with a single exception of the shale slab. None of the stones were found to have holes except for the shale slab. Because of breakage no sound could be recorded from the shale slab. Of the three basalt slabs, two recorded at a pitch of A# and one at a B#. The slab from the citadel recorded at a pitch of D#.

The team then moved to Mexico City to visit Tomas Villas and requested permission to photograph his stone disk. Permission was denied since he had not yet published his thesis which was based on these stones. However, he allowed the group to observe all of the pieces and spent the afternoon explaining what he knew concerning the disks to that point.

Dr. Sergio Gomez agreed to help us make a formal written request to the Teotihuacán Archaeological Board on the behalf of Hill Cumorah Expedition Team, Inc. to create a catalogue of the stone slabs from the tunnel underneath the Pyramid of the Sun. This request was granted and performed in March of 2010. The result of that study is between these covers.

The 2010 Expedition

In March of 2010 Hill Cumorah Expedition Team, Inc. (HCETI) sponsored an expedition to Teotihuacán to photograph the stone slabs from the tunnel underneath the Pyramid of the Sun. This expedition consisted of four members. They were David Brown as secretary/recorder, Don Beebe as photographer, Gary Woods as sound technician, and myself as crew chief and archaeological consultant. Our only goal at this time was to photograph all of the stone slabs from the tunnel under the Pyramid of the Sun. We met with Dr. Sergio Gomez at the site who had facilitated our permit through Dr. Alejandro Sarabia and were escorted to a room in the site warehouse.

We had prepared a laminated white backdrop with a black grid arranged in 1 inch squares (3 cm by 3 cm) upon which we photographed the stones. The following segment contains the catalogue of photographs.

Because the stones bear no unique distinctions making them difficult to identify, a series of numbers were prepared so that each photograph could display a unique number. Photographs with the letter “A” following the number are the obverse side of each stone and photographs with a letter “B” are the reverse side of each stone.

Because our time was limited the process was speed up by photographing the largest stones alone, but when more pieces would fit on the prepared background mat as many as six would be taken in the same photograph.

The camera was set on a tripod above the laminated background that was placed on the floor. Most of the shots (two exceptions) were taken from the same exact position. The two shots that were exceptions had to be taken from a little bit further away (higher), but the backdrop grid work remained constant.







The attempt was made to always flip each stone from left to right and in most cases this was done. With only one exception no attempt was made to piece different stones together. The first two pieces photographed obviously went together and was photographed in that manner.

An attendant who was assigned to us brushed each stone before it was photographed. So as to avoid clouds of dust blurring the images he very conscientiously did the cleaning outside the room being used for the photography. We greatly appreciated his help.

The photographic session lasted just under three hours only because Dr. Sergio Gomez and his colleague had already gathered all the stones into the room we used. After our photographic session they returned the stones back to the main warehouse.

Though prepared to do so, none of the stone slabs were complete enough for tonal recording. Therefore, on this expedition Gary Woods took no tonal readings.

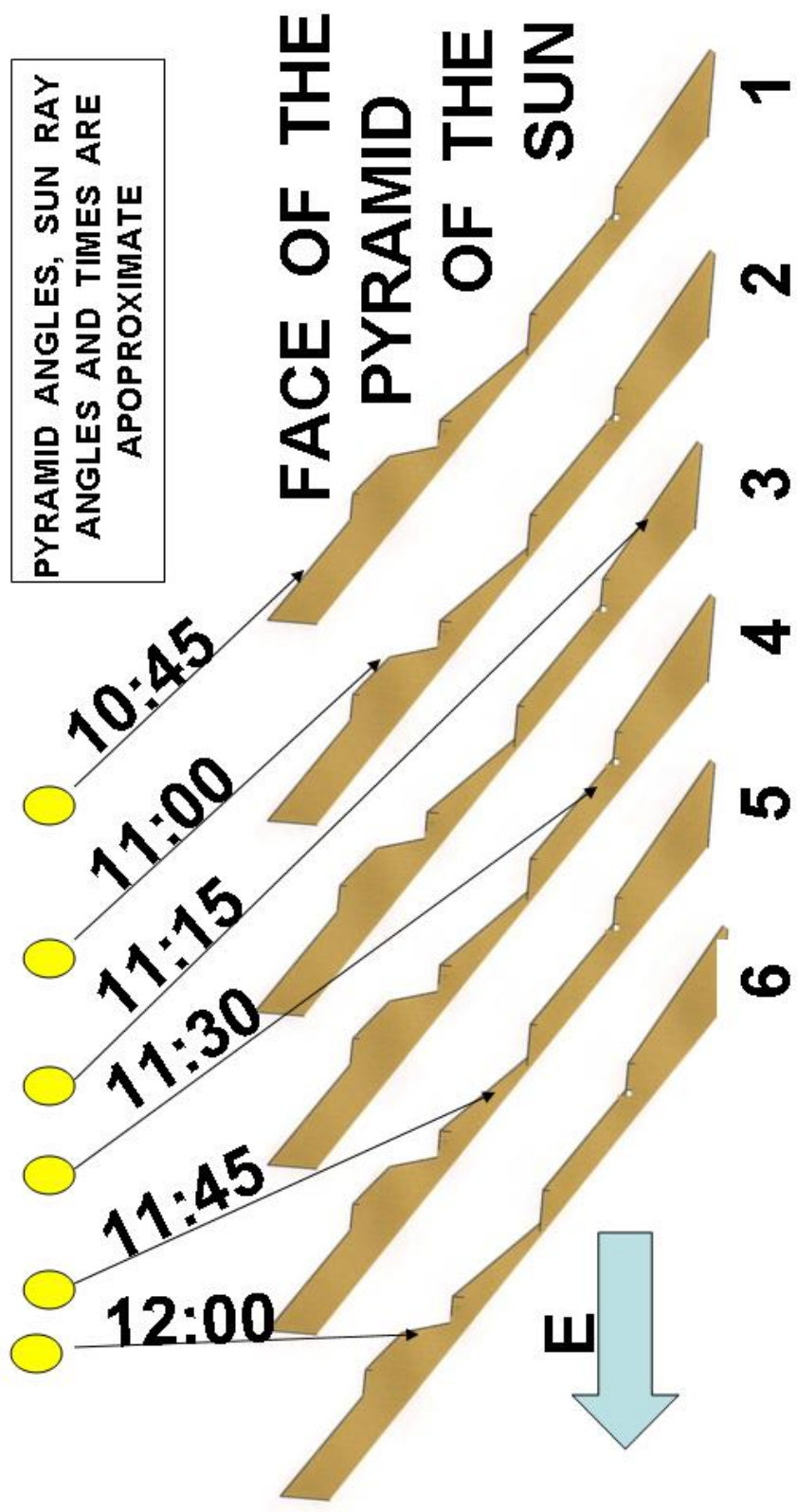
The Pyramid of the Sun at Equinox

The importance of this observation will become apparent when one reads the segment entitled "Theories."

The spring equinox occurred during the 2010 expedition visit at Teotihuacán. Thanks to Dr. Alejandro Sarabia, my group filmed the face of the Pyramid of the Sun at Teotihuacán from 8 AM until 1 PM on the day of the equinox. The plan was to record any shadow affect on the face of the pyramid on this important day if any should occur. While several somewhat questionable observations were made, seemingly the most constant observation was what appears to be a countdown before the moment of the actual equinox. Possibly the following observation is not reasonably thought out, but it certainly merits more examination.

It is known that the surfaces of the Pyramid of the Sun were originally plastered completely smooth. It is also known that each angular surface on the pyramid is slightly different from the others. This arrangement may be haphazard, but it might have been purposeful.

ORDER IN WHICH SUN STRIKES SURFACES OF THE PYRAMID OF THE SUN ON EQUINOX



As can be seen by the illustration the angles seem to be random, however, an interesting if not purposeful event occurs on the equinox. As the Sun's rays begin breaking over the peak of the pyramid, different portions of the pyramid begin to receive and reflect that light; the less steep and somewhat rounded top layer is the first to reflect the light.

Following the 5th and upper layer, the 4th layer begins to reflect the sunlight. But, it is only the upper half of the 4th layer that reflects the light. Since the lower half of the face of the 4th layer (or tier) is almost vertical it reflects no light, but it remains in shadow. Now the top half of tier 4 being lit has a tendency to make the lower half of layer 4 look darker than it really is. This occurs because of the contrast with the upper half which is now reflecting the Sun's rays.

The next surface to be struck by the Sun's rays is the bottom layer I call tier 1. This now creates the illusion that the upper portions of the pyramid are floating. The illusion is caused because the lower layer is so distinctively lighter in color as opposed to the upper layers which are still in shadow. The 2nd layer then lights followed by the 3rd, thus the only shadowed part of the pyramid's face is the relatively small strip which is the bottom half of the 4th tier.

As the Sun's rays strike more directly on the exposed surfaces, the single unexposed and still shadowed 4th tier creates the illusion of becoming absolutely black. This is due to the great contrast of the different surface colors. Finally, at noon the bottom of the 4th tier lights and the moment of the equinox has passed.

In my opinion, the most interesting aspect of this entire phenomenon is that the intervals of each surface changing from shadow to light are about equally spaced; that is to say that just about every half-hour one of the surfaces lights up. This seems far too coincidental to have been created by happenstance. Is this a "countdown" to equinox?

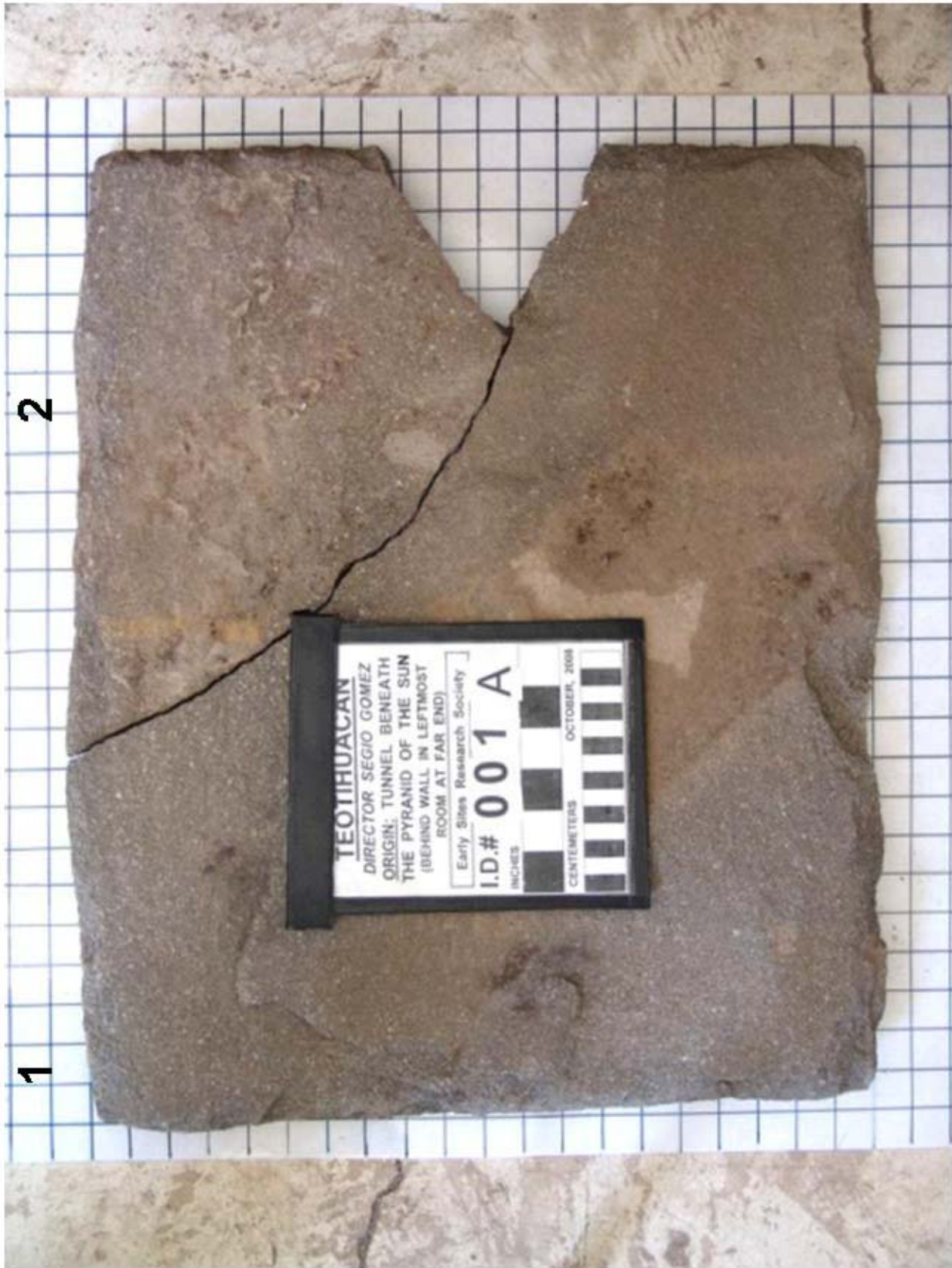
I propose that, in fact, the "countdown" is purposeful as the countdown does have an order to it. However, there are some problems demonstrating this with absolute certainty. The plaster is gone and there are no more smooth surfaces. While one might be able to calculate where the original plaster surfaces were it would be extremely theoretical to suggest that each tier was completely even so as to completely light up all at once.

While theoretical at the moment, there are other theories that exist that seem to more than strongly suggest that the celestial sky was being portrayed by the different construction on the site (see Brown, David).

To have built a structure like the Pyramid of the Sun so perfectly was no small task. To calculate its great surfaces boggles the mind. But, the stela of the Astronomical Cave works in this same fashion and has been shown to mark particular days with precision. Thus, the "countdown" must be considered being at the very least a feasible theory. And the shadow to light changes occurring in equal phases of every half-hour does support the theory that this was planned.

The Stone Slab Catalogue

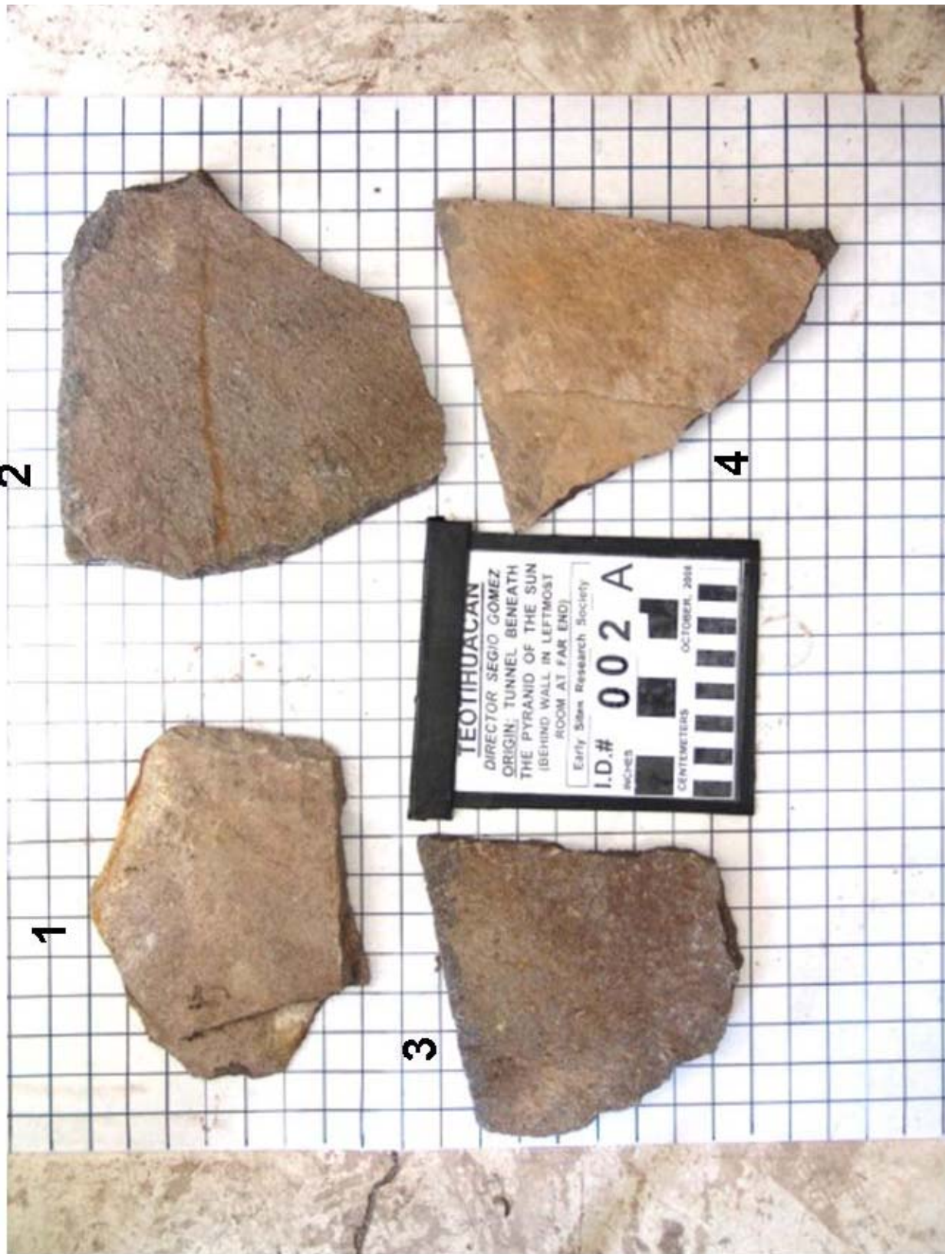
The following 86 pages are a frame-by-frame presentation of the slabs as they were catalogued and photographed for future reference. Please note that each frame has a reference number to distinguish the slab or slabs in the photograph; with a designation letter of “A” or “B” to distinguish obverse from reverse presentations. Also note that for photographs with more than one slab there is an additional number provided to identify a specific stone within the frame.

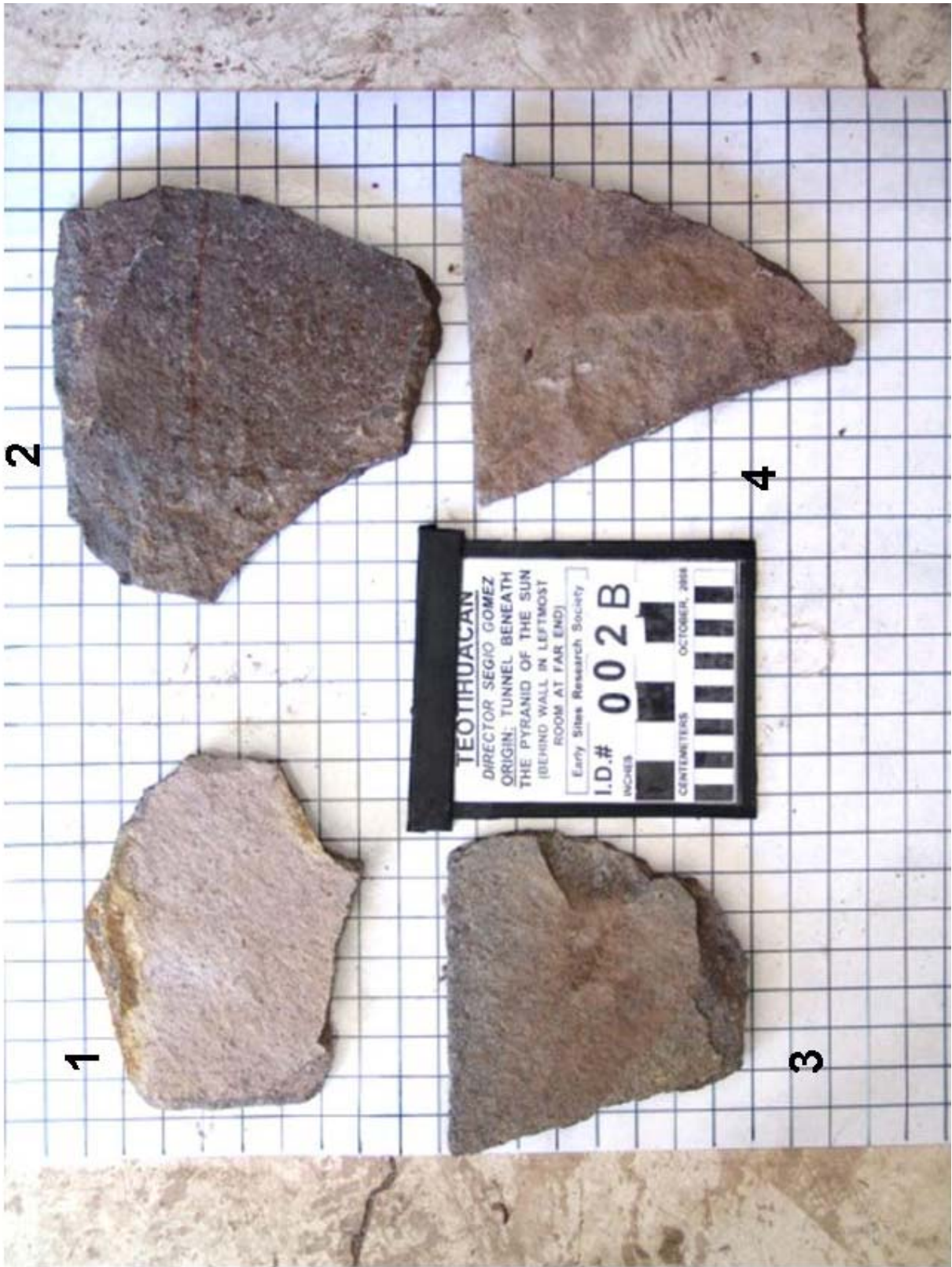


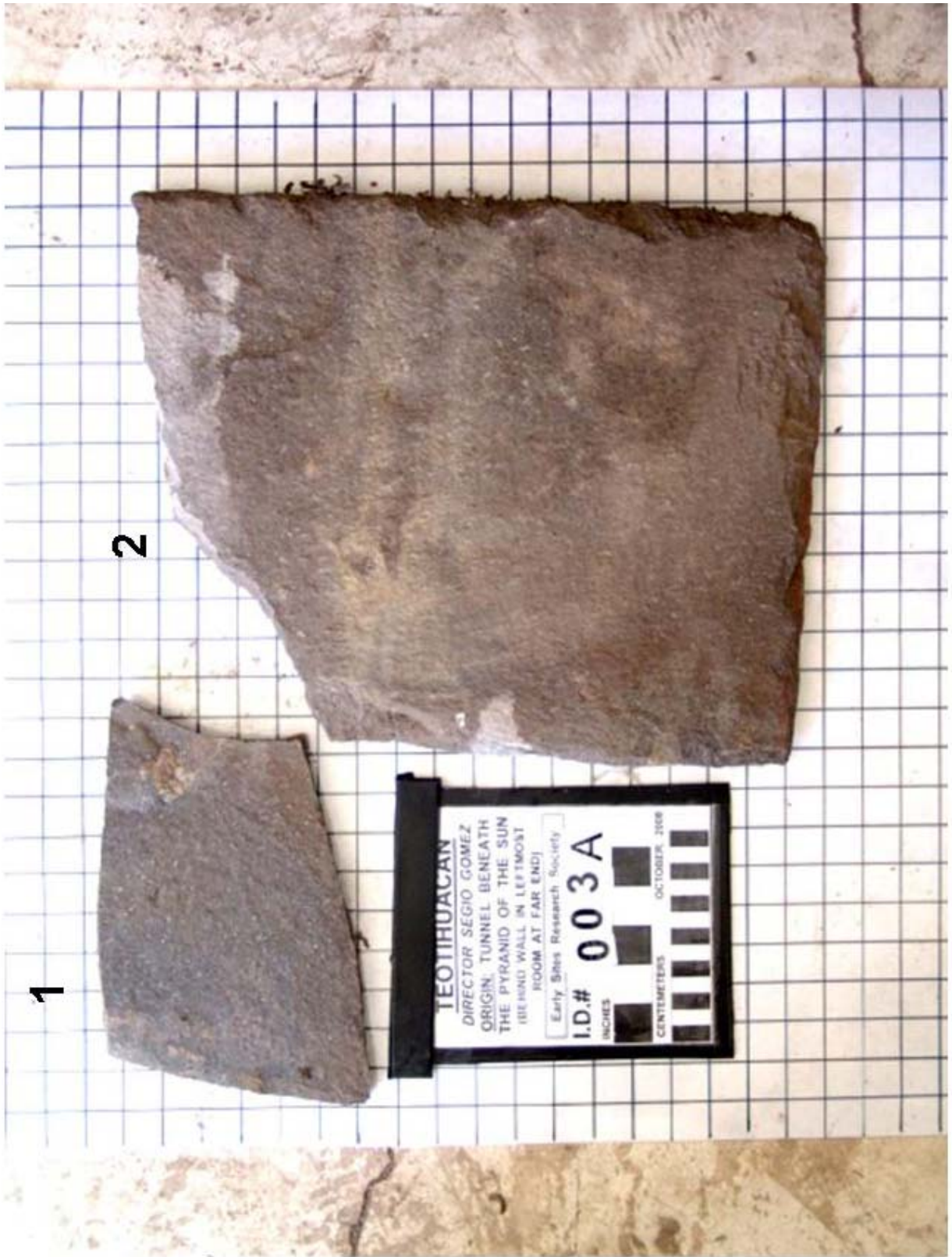
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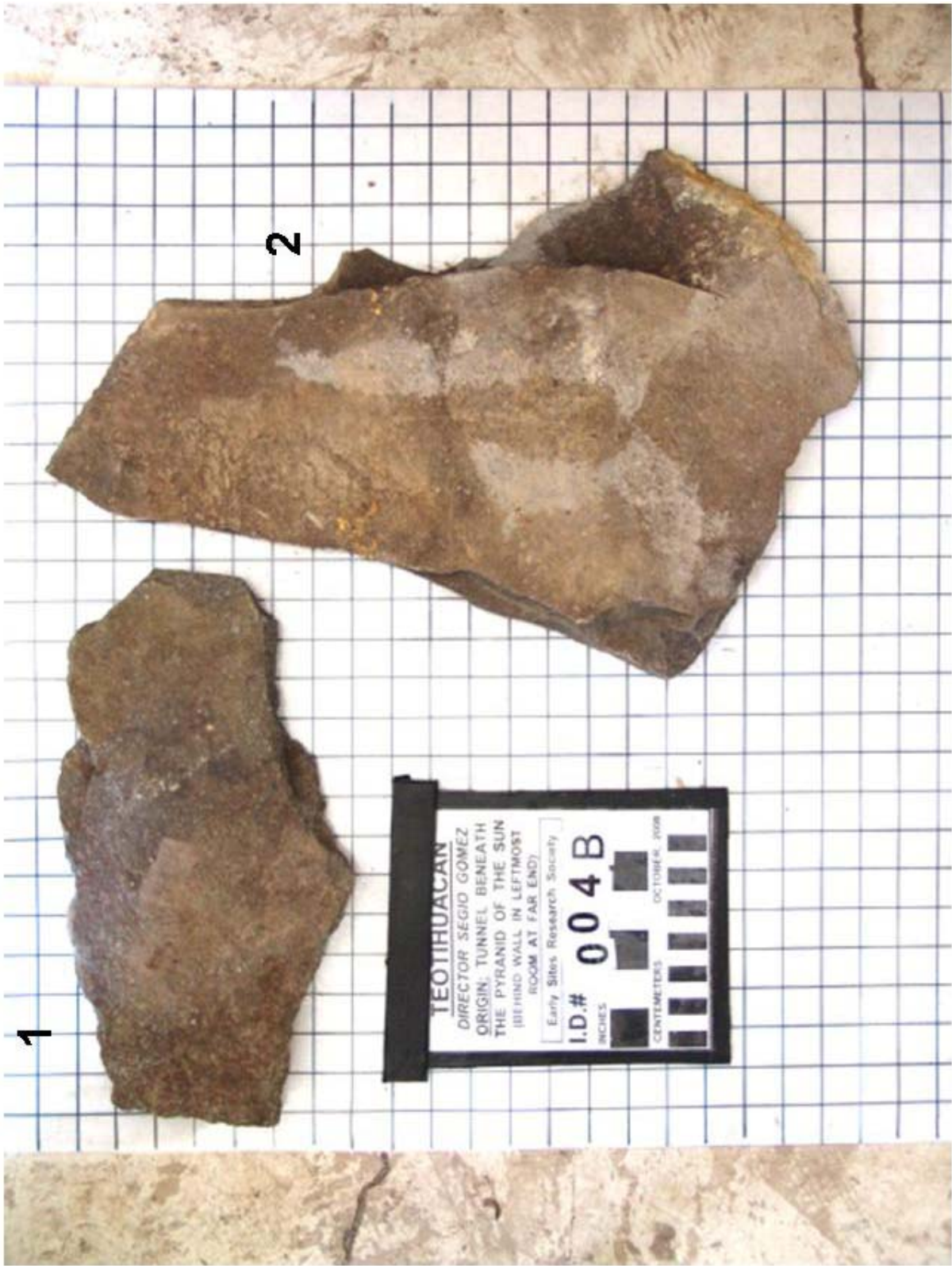




























TEOTIHUACAN

DIRECTOR SEGIO GOMEZ
ORIGIN: TUNNEL BENEATH
THE PYRAMID OF THE SUN
(BEHIND WALL IN LEFTMOST
ROOM AT FAR END)

Early Sites Research Society

I.D.# 008B

INCHES

CENTIMETERS

OCTOBER, 2006



TEOTIHUACAN

DIRECTOR SEGIO GOMEZ
ORIGIN: TUNNEL BENEATH
THE PYRAMID OF THE SUN
(BEHIND WALL IN LEFTMOST
ROOM AT FAR END)

Early Sites Research Society

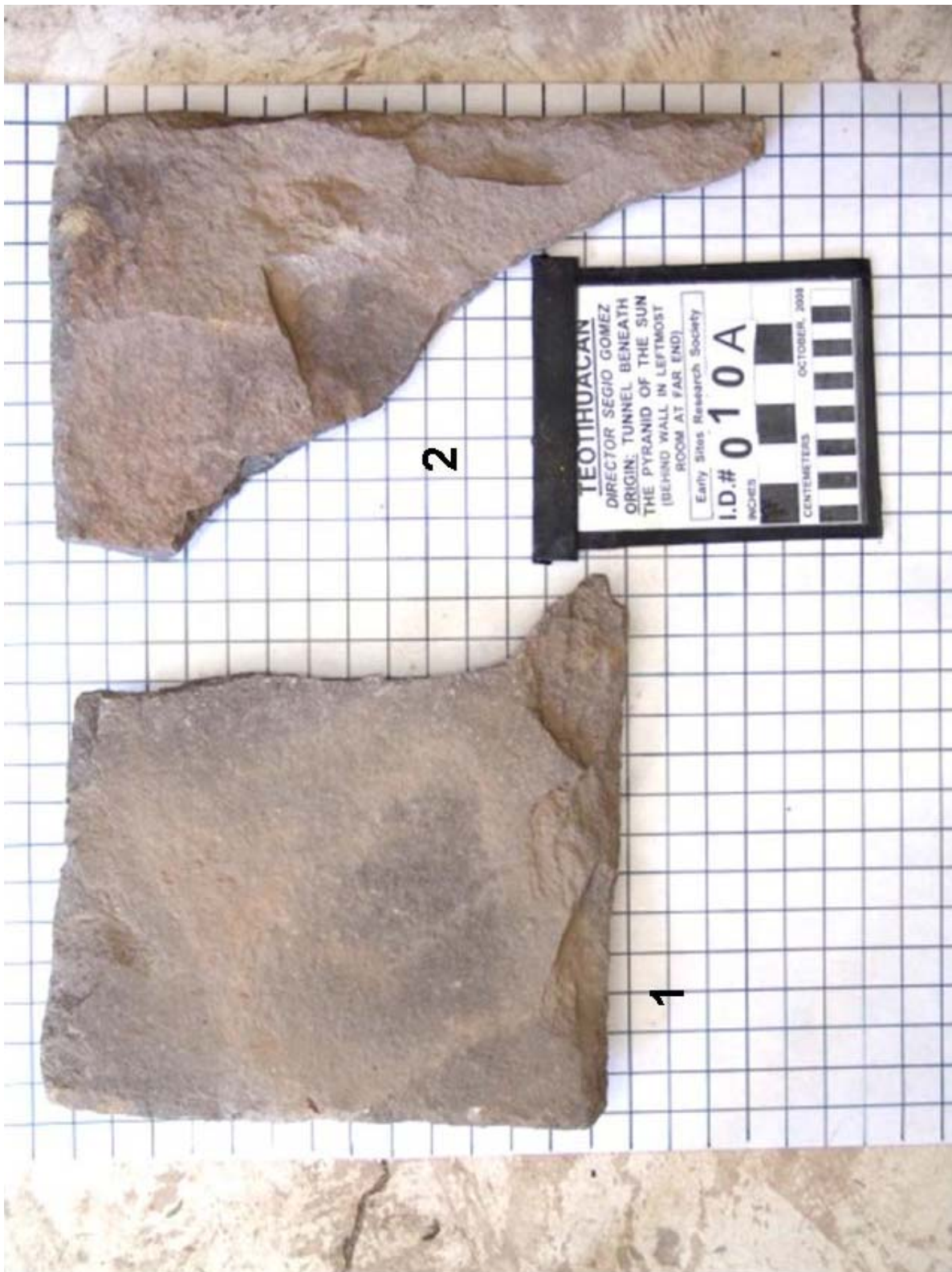
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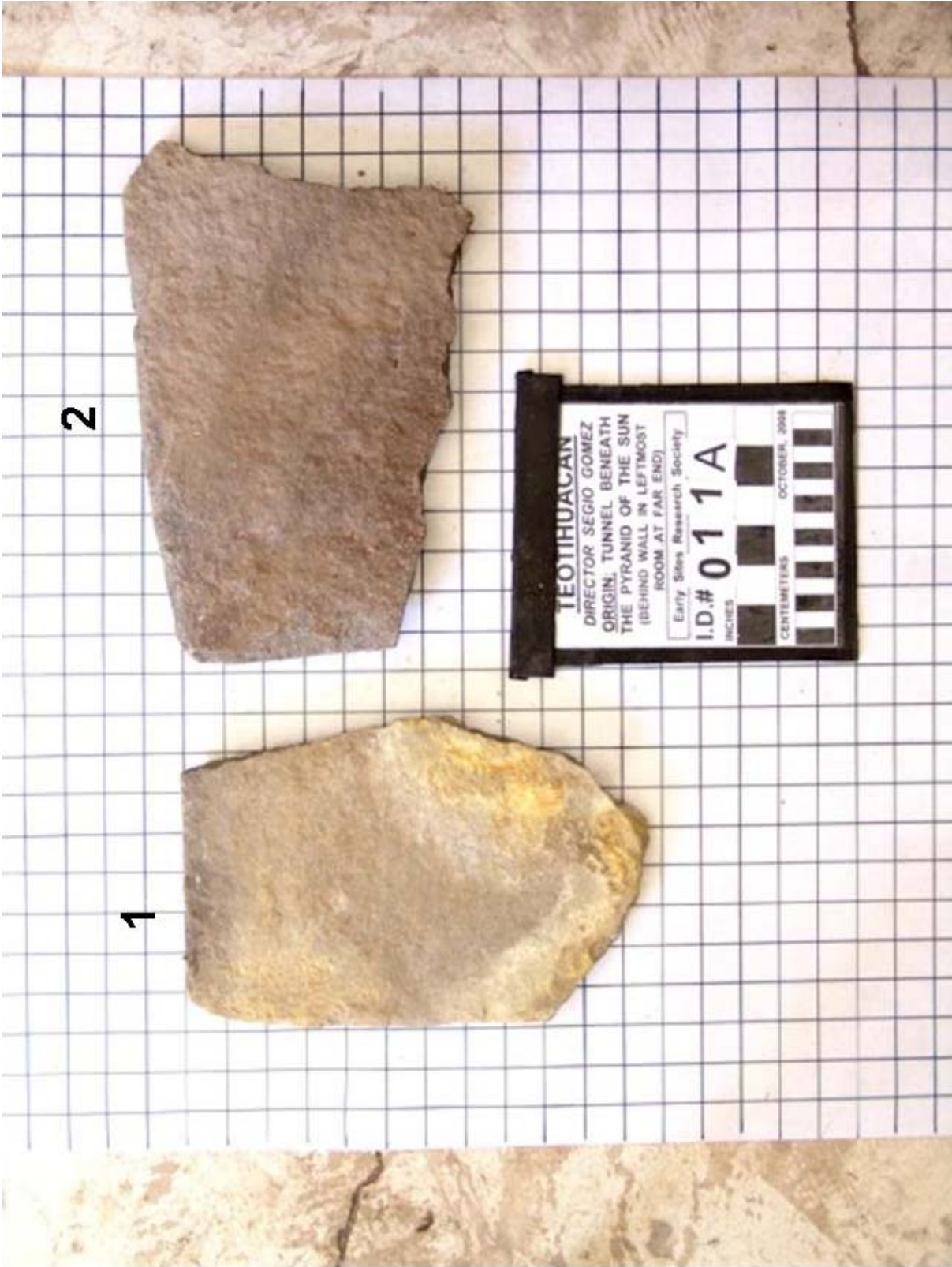
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OCTOBER, 2008





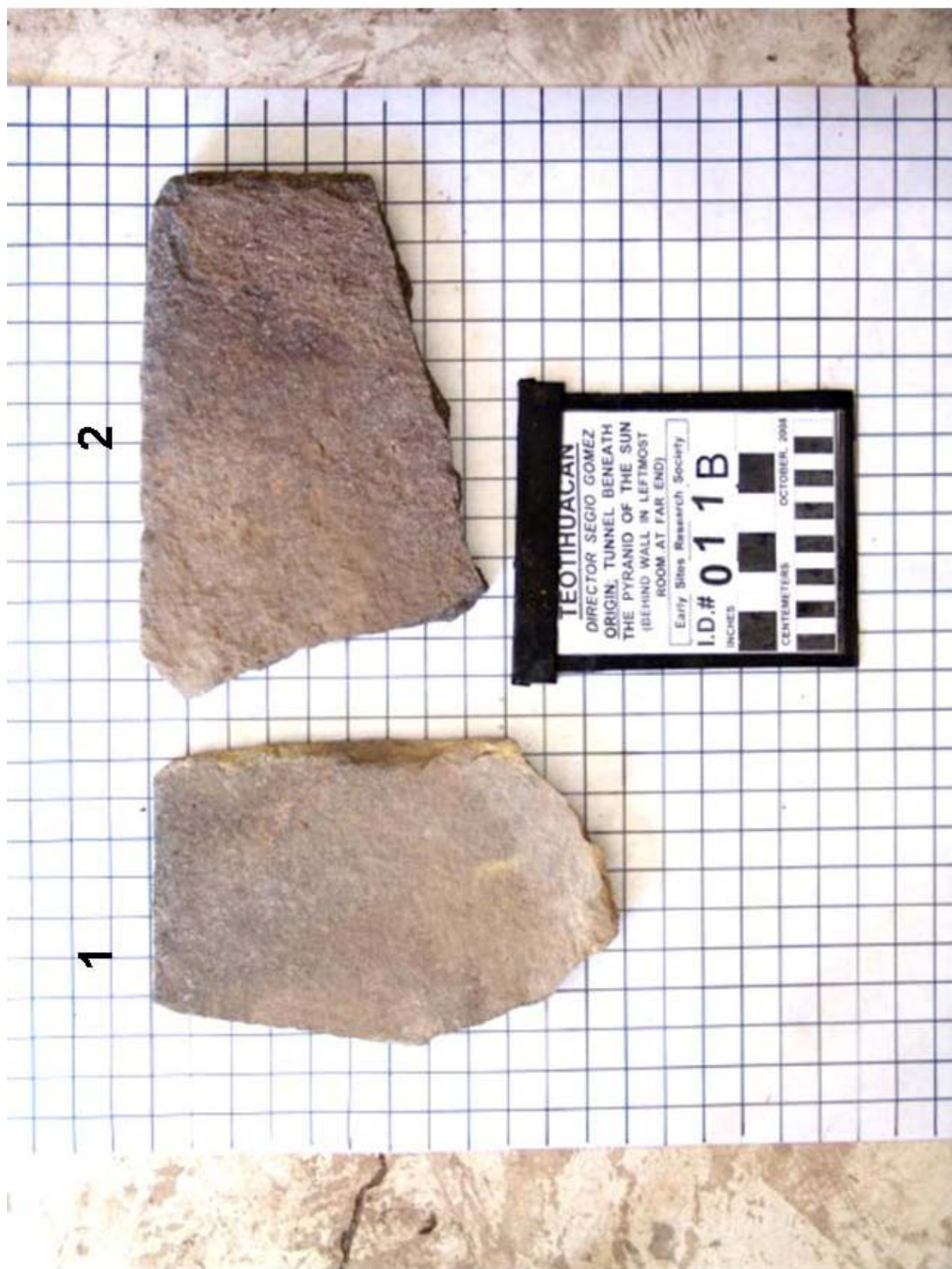




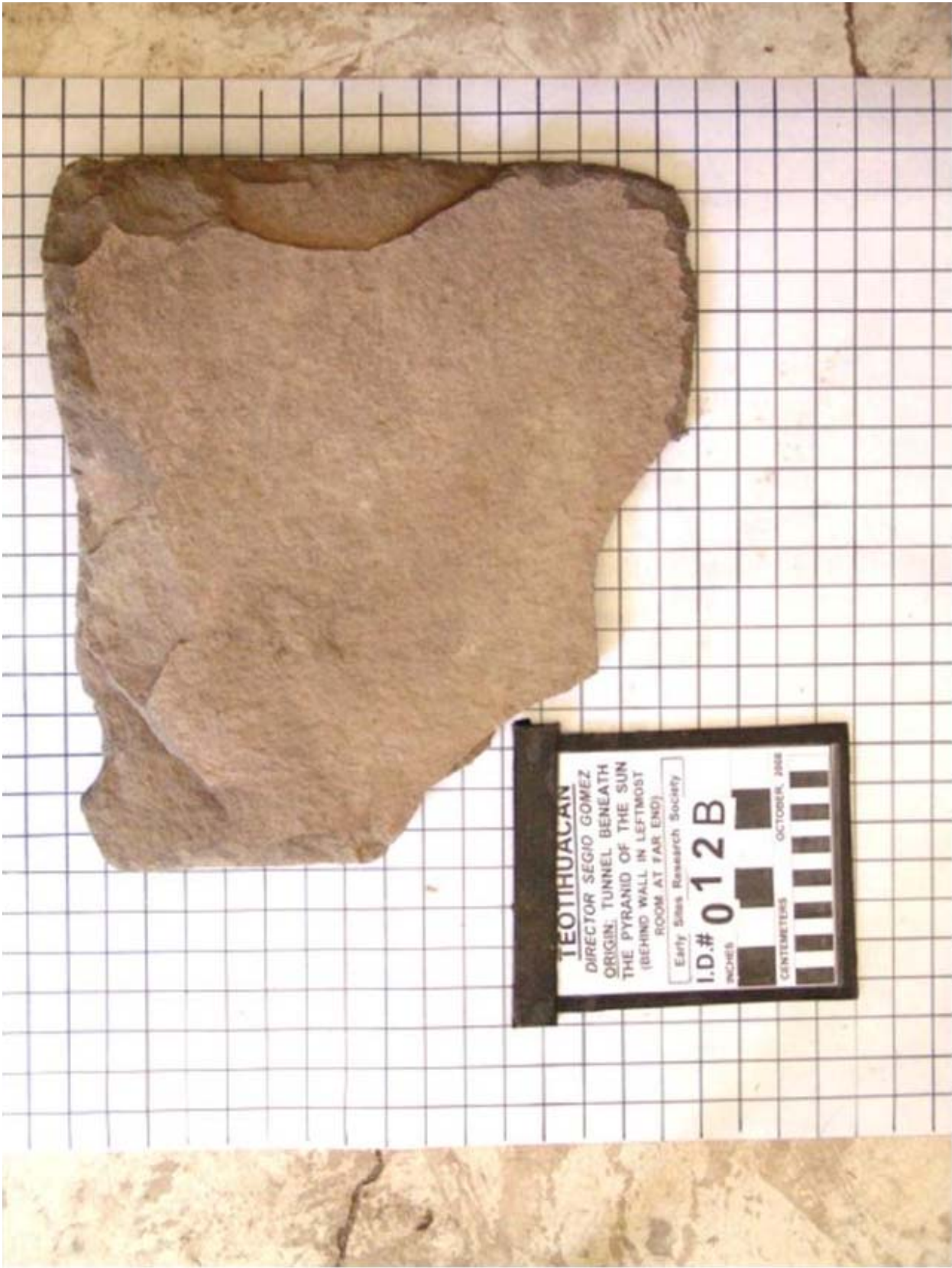
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1

TEOTIHUACAN
DIRECTOR SEGIO GOMEZ
ORIGIN: TUNNEL BENEATH
THE PYRAMID OF THE SUN
(BEHIND WALL IN LEFTMOST
ROOM, AT FAR END)
Early Sites Research Society
I.D.# 011A
INCHES
CENTIMETERS
OCTOBER, 2004



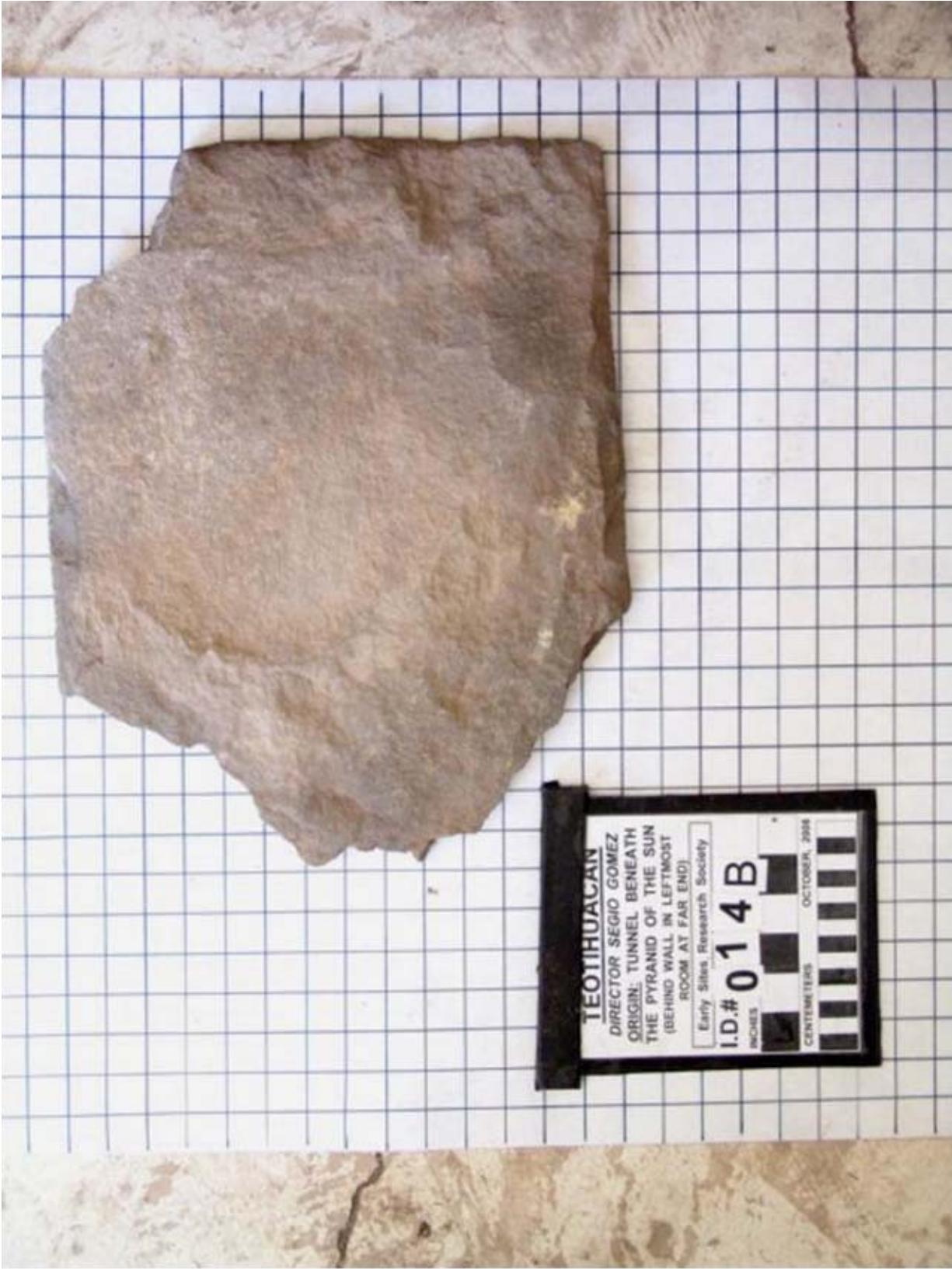




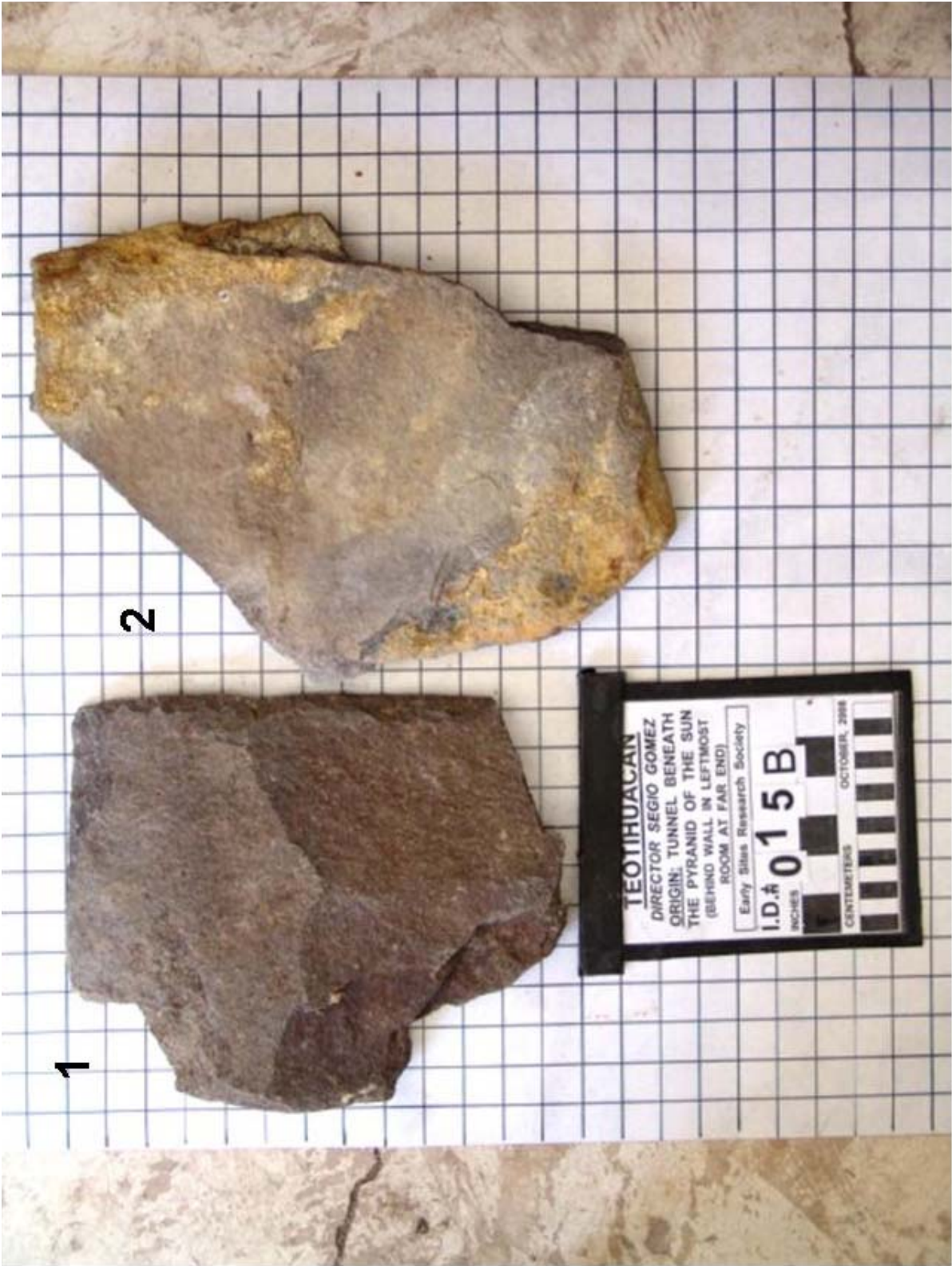


















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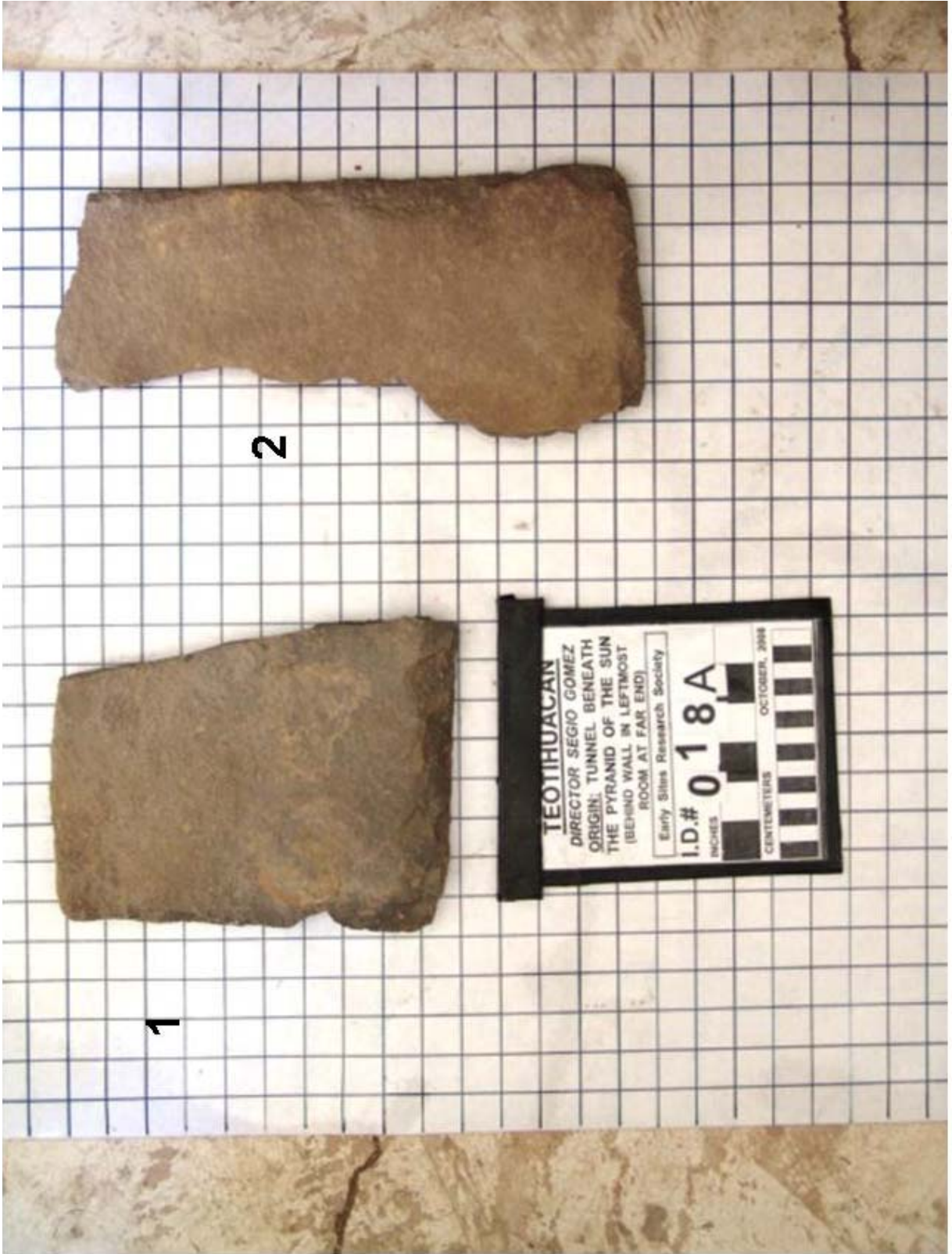
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DIRECTOR SEGIO GOMEZ
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THE PYRAMID OF THE SUN
(BEHIND WALL IN LEFTMOST
ROOM AT FAR END)
Early Stas Research Society
I.D.# 017B
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CENTIMETERS OCTOBER, 2006



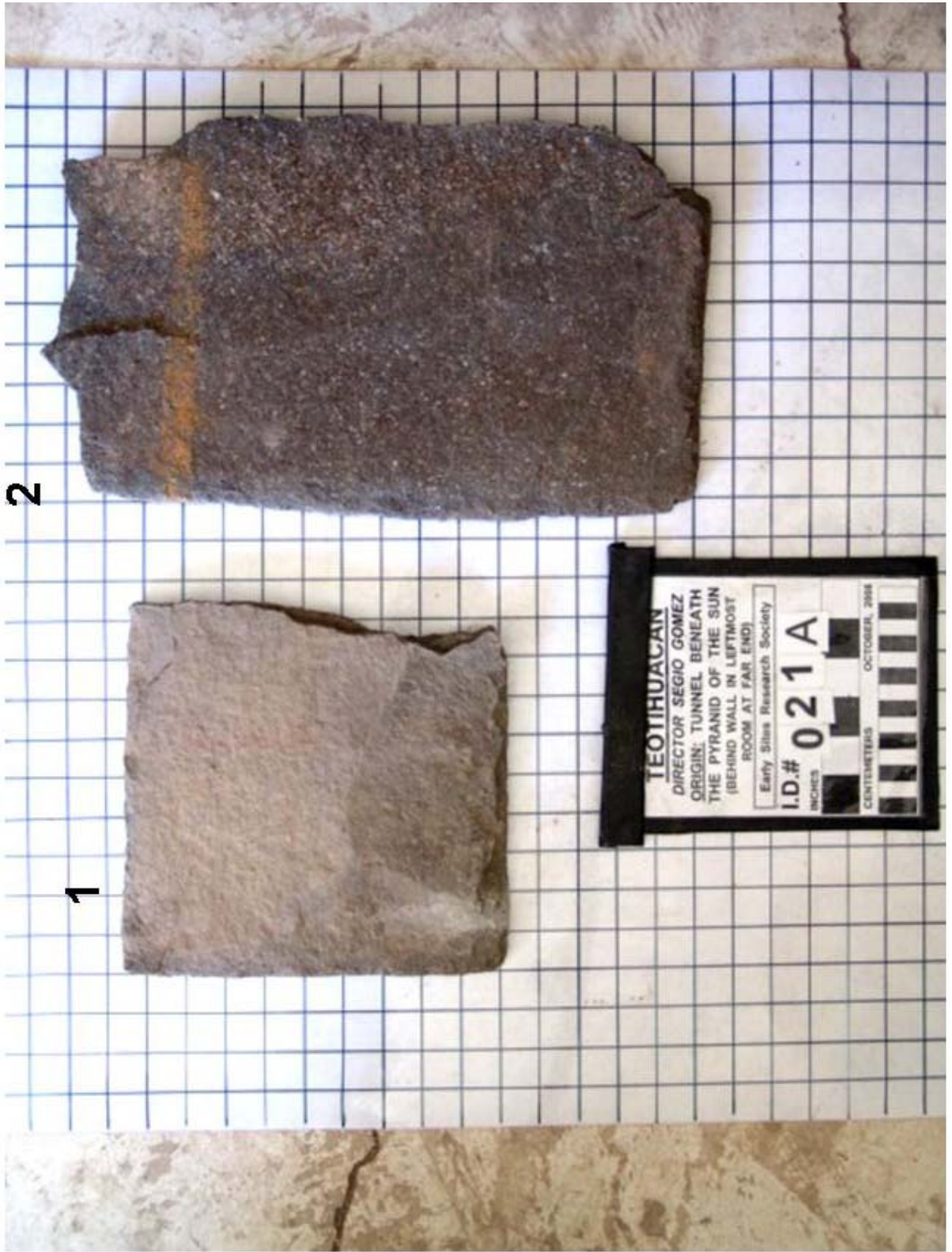








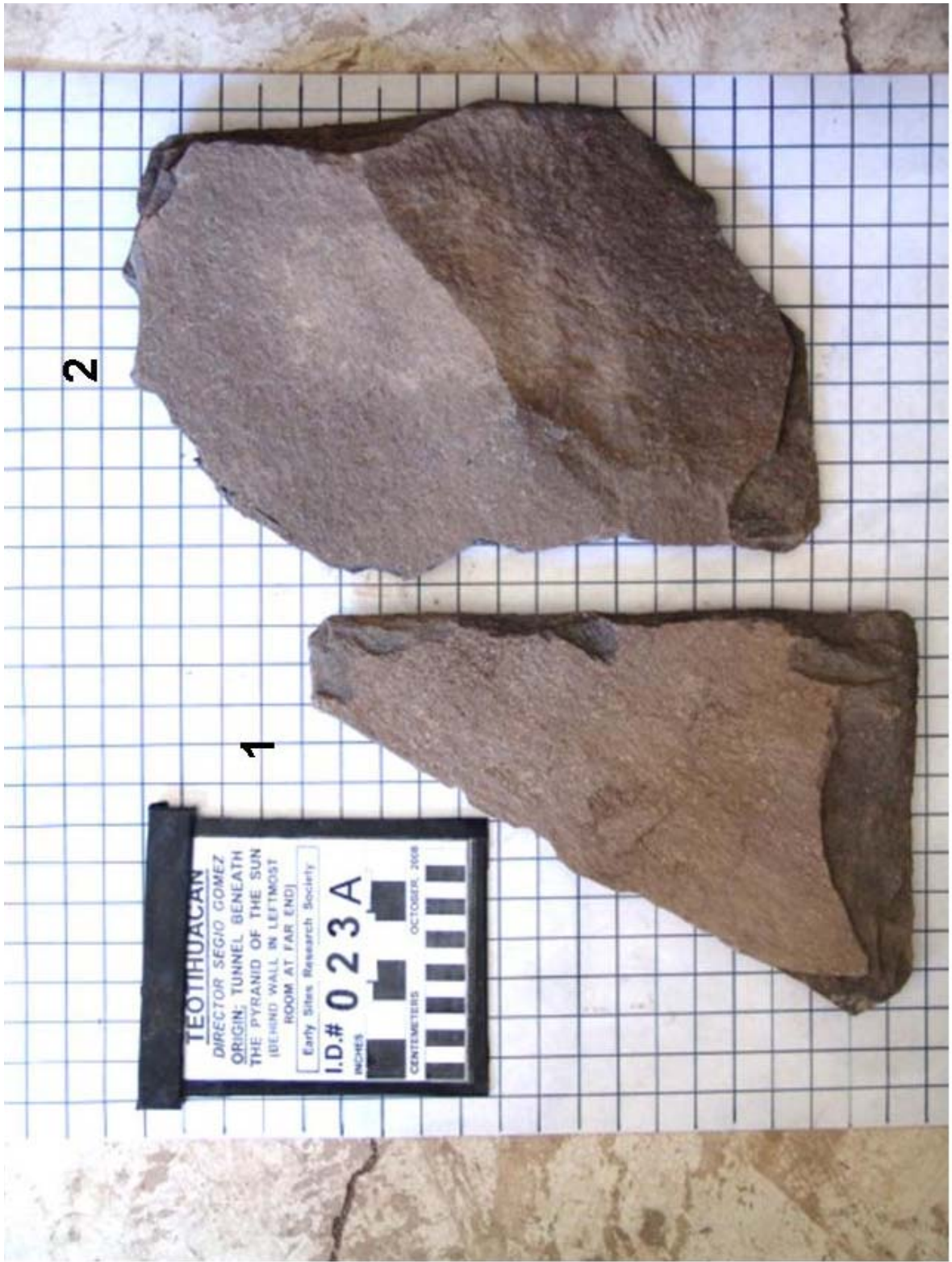


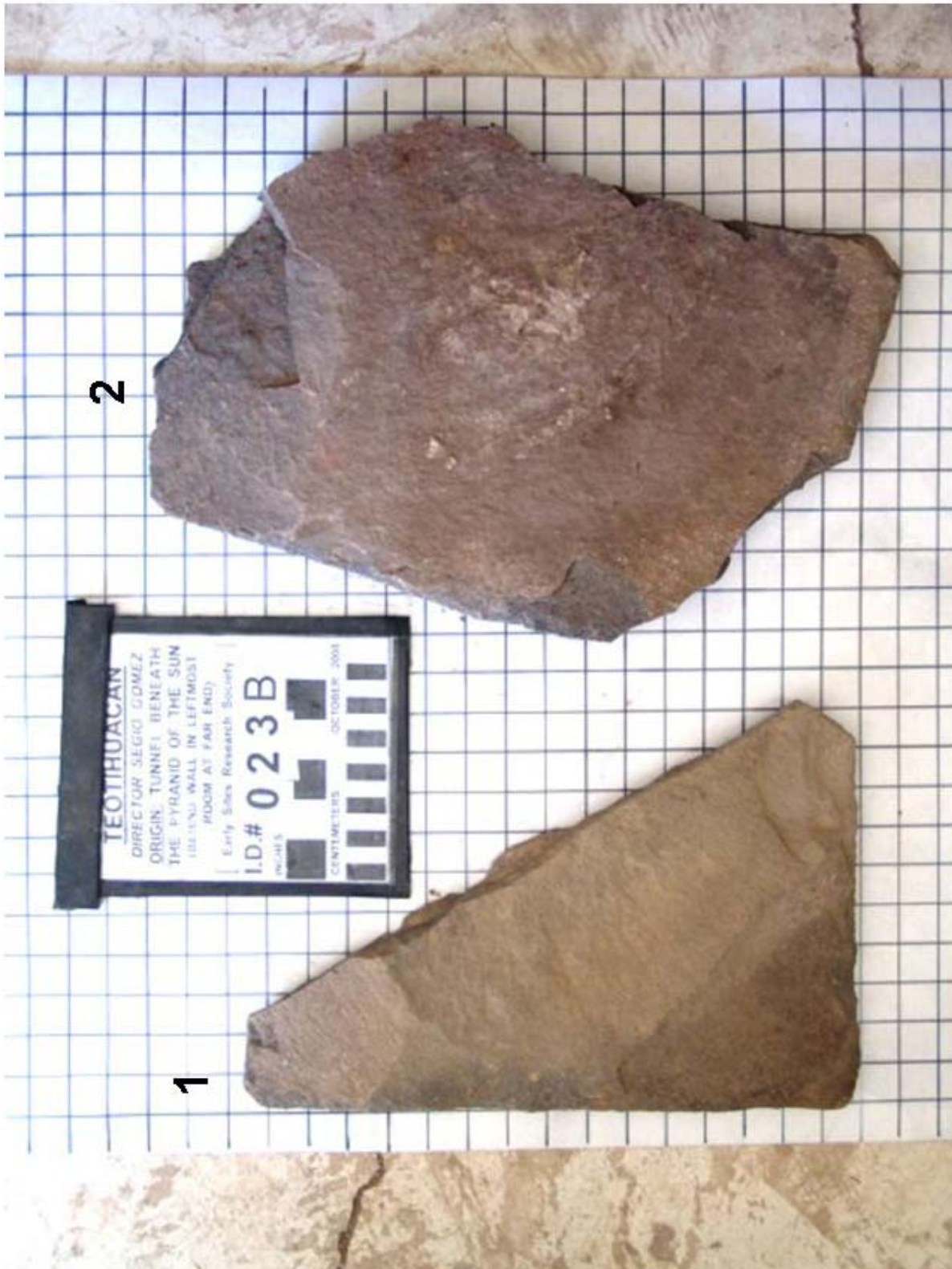






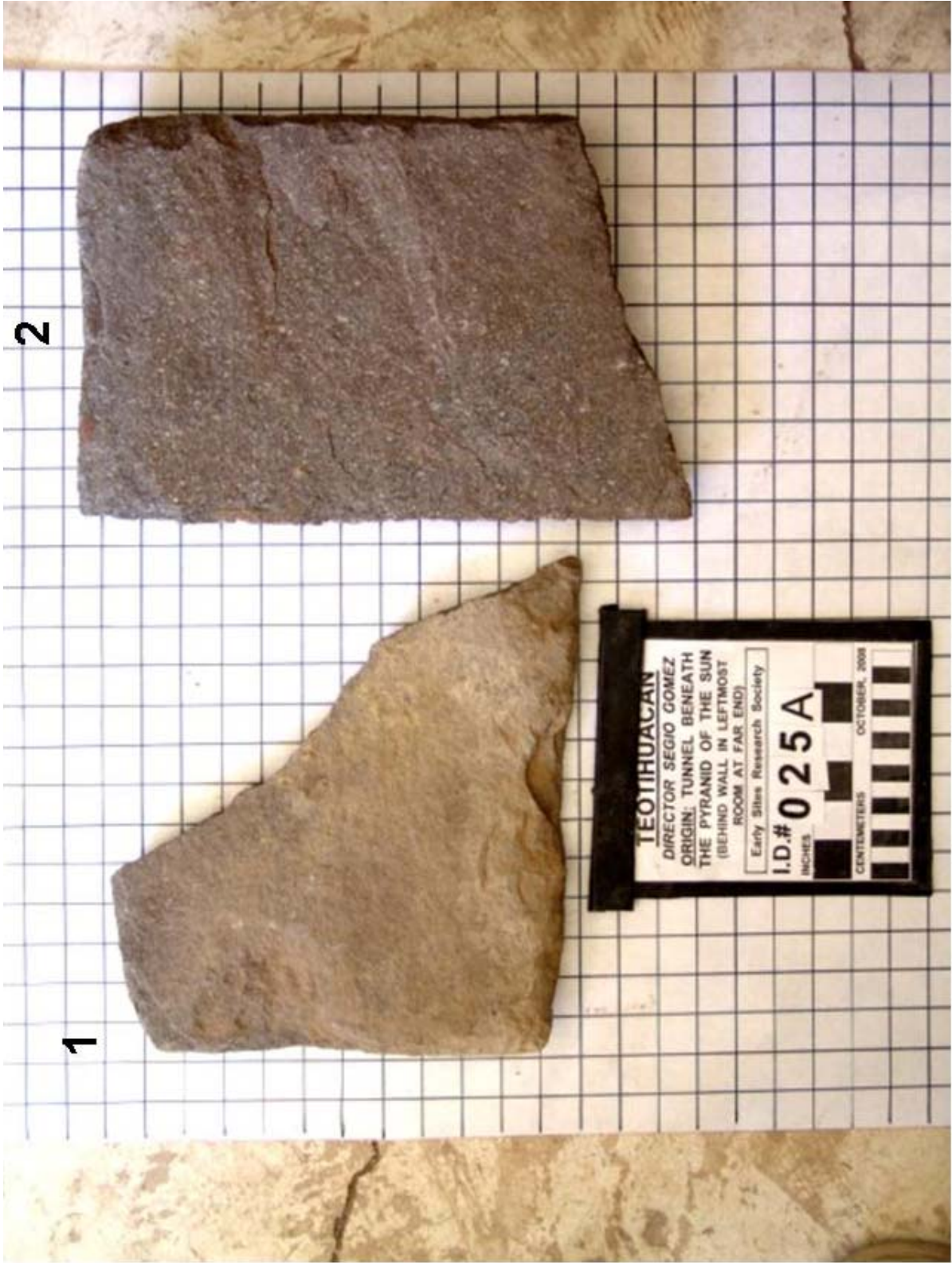




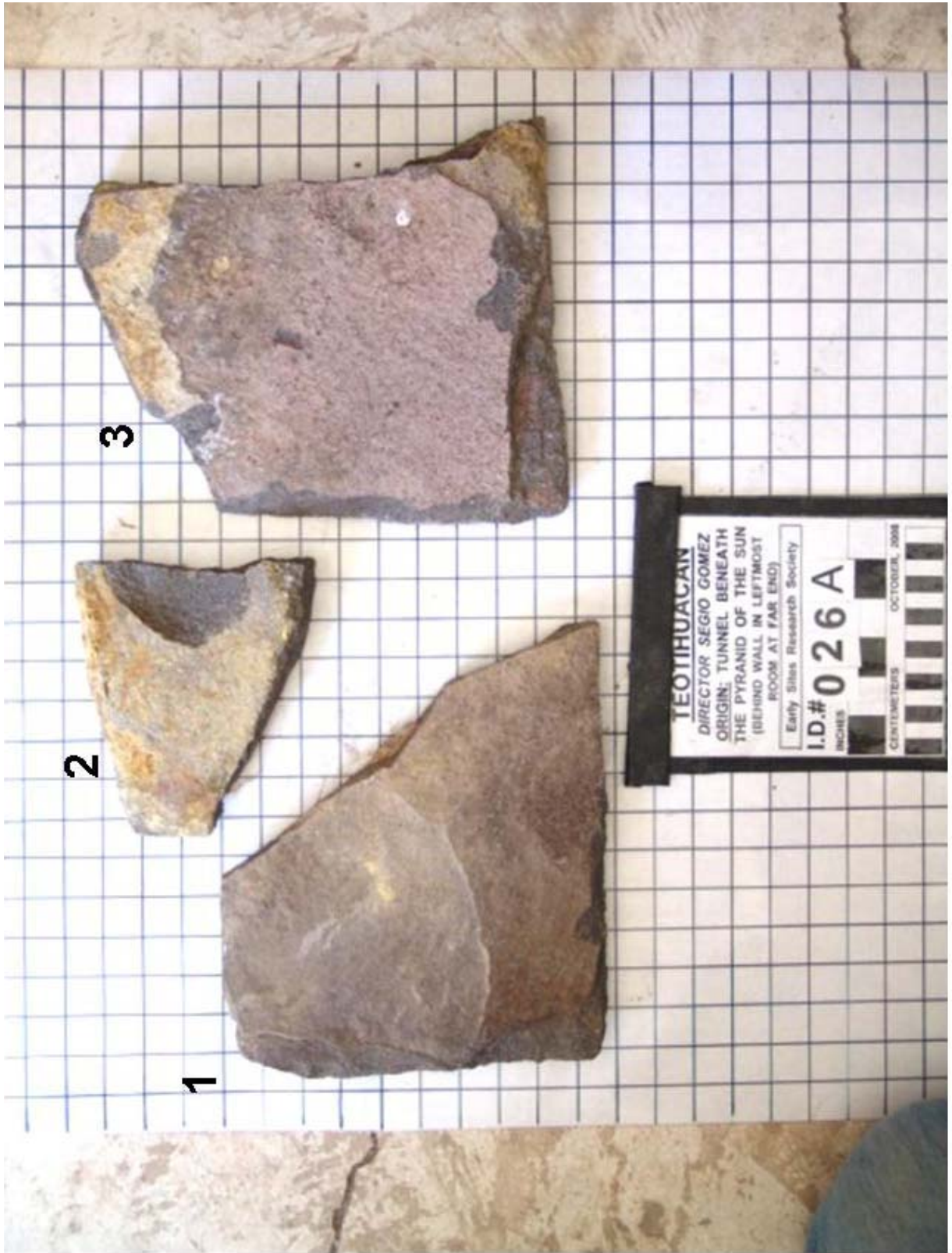


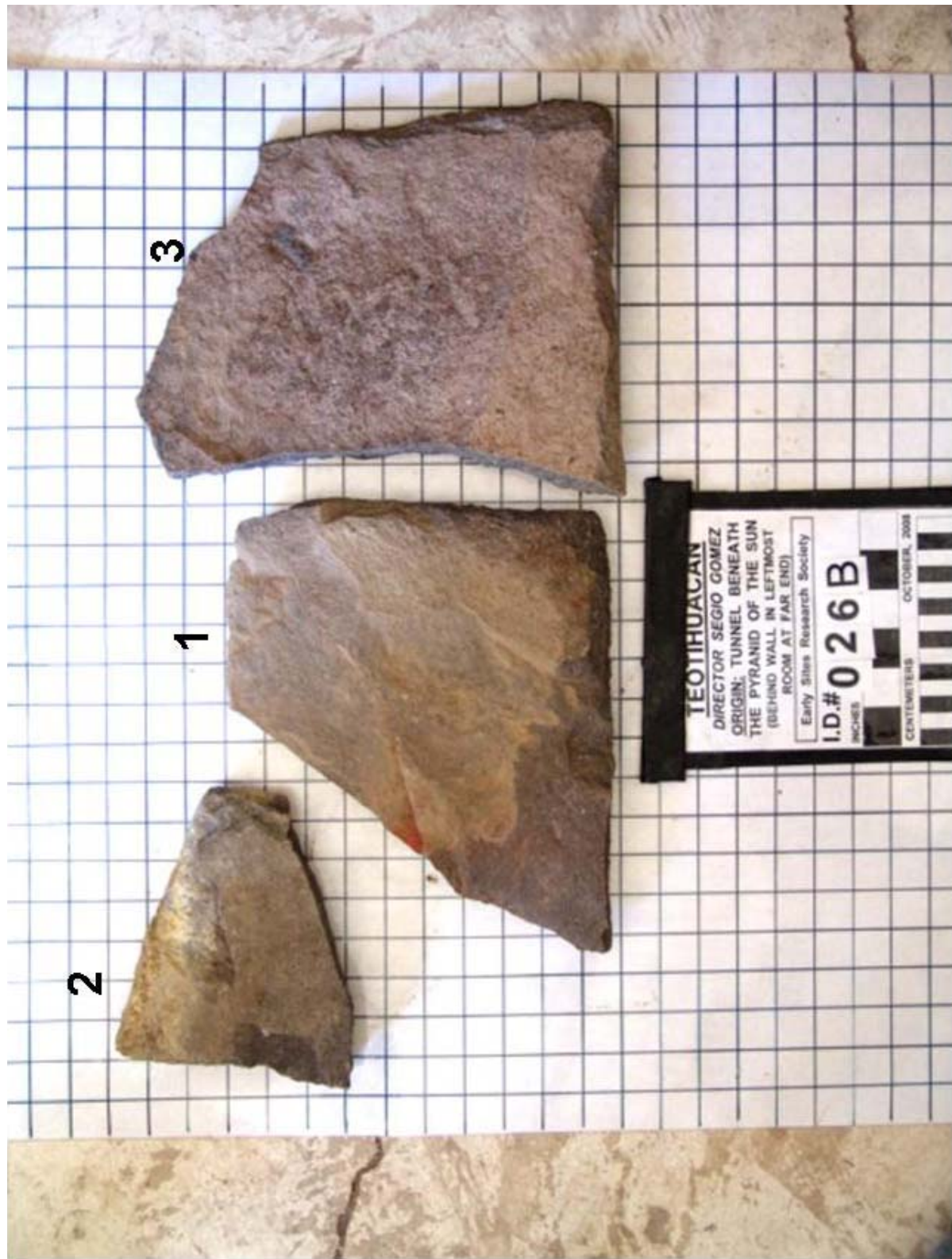




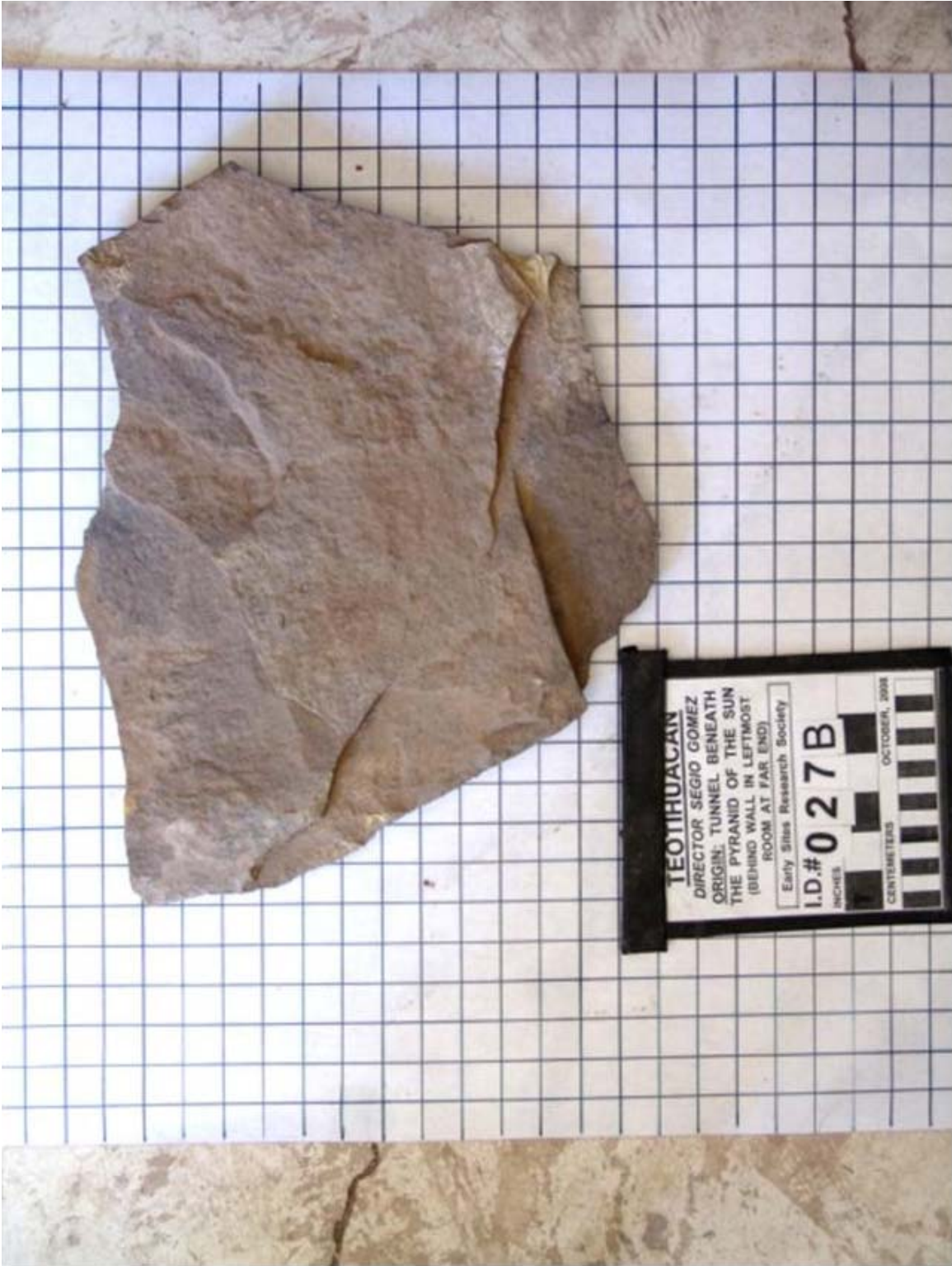


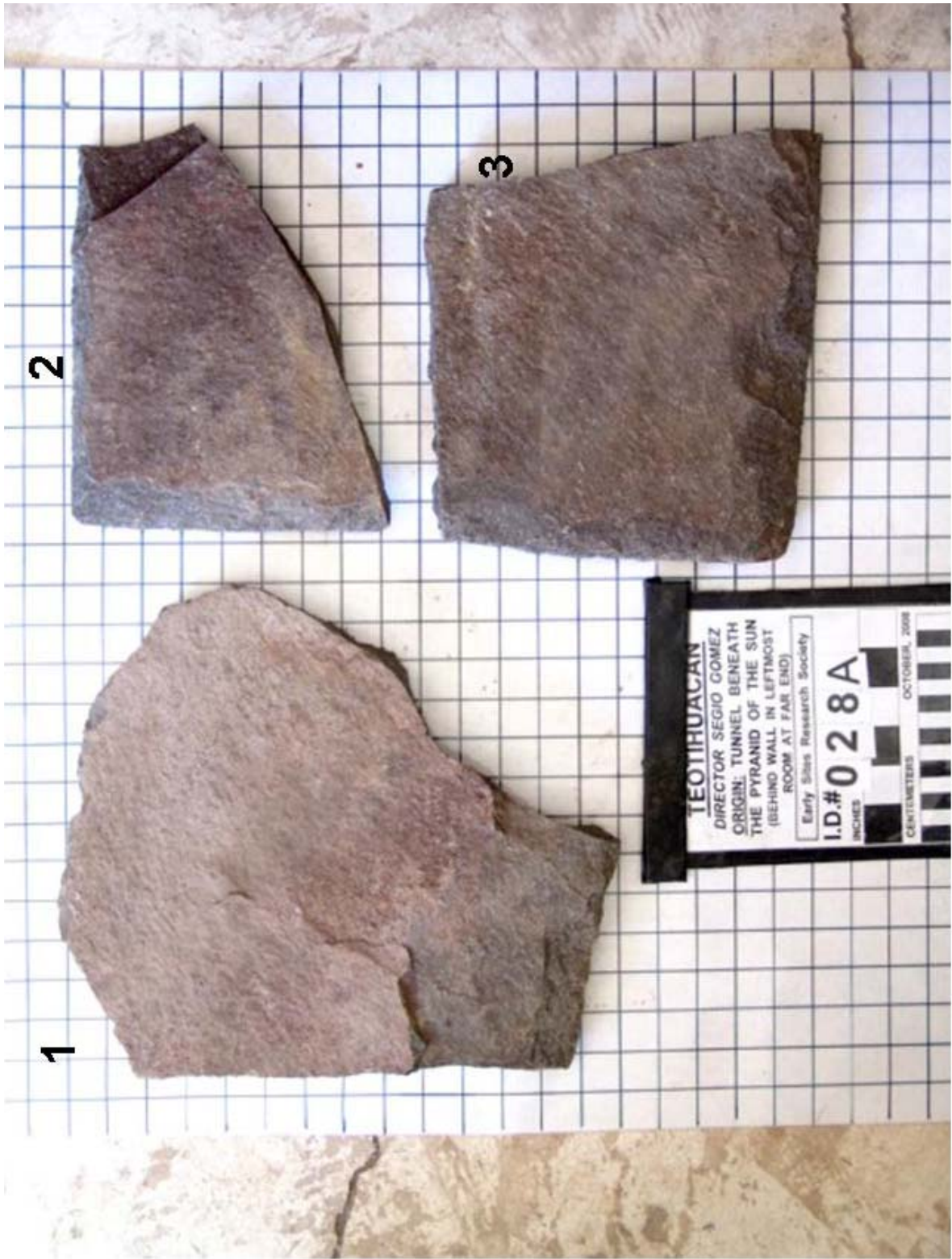






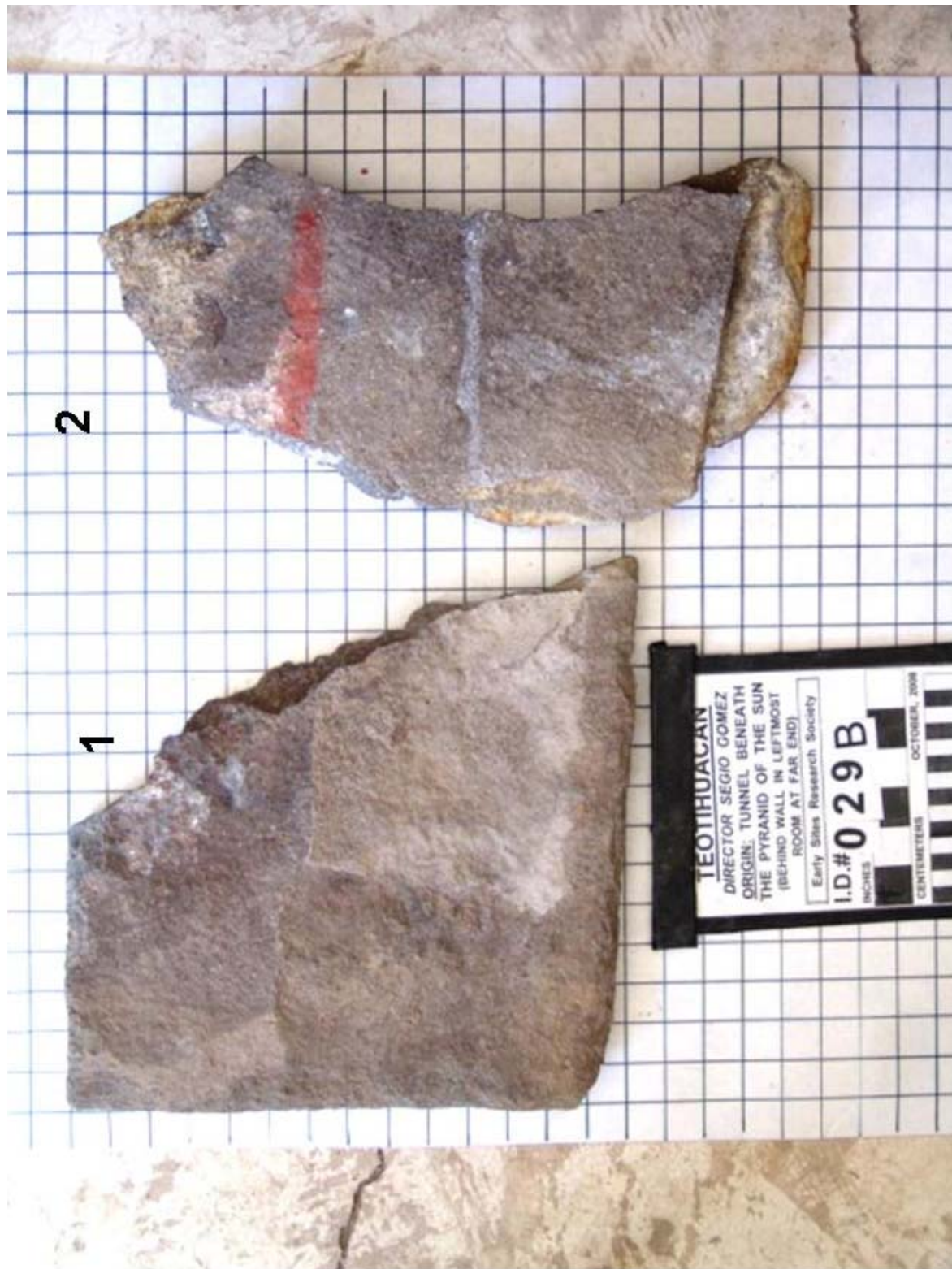


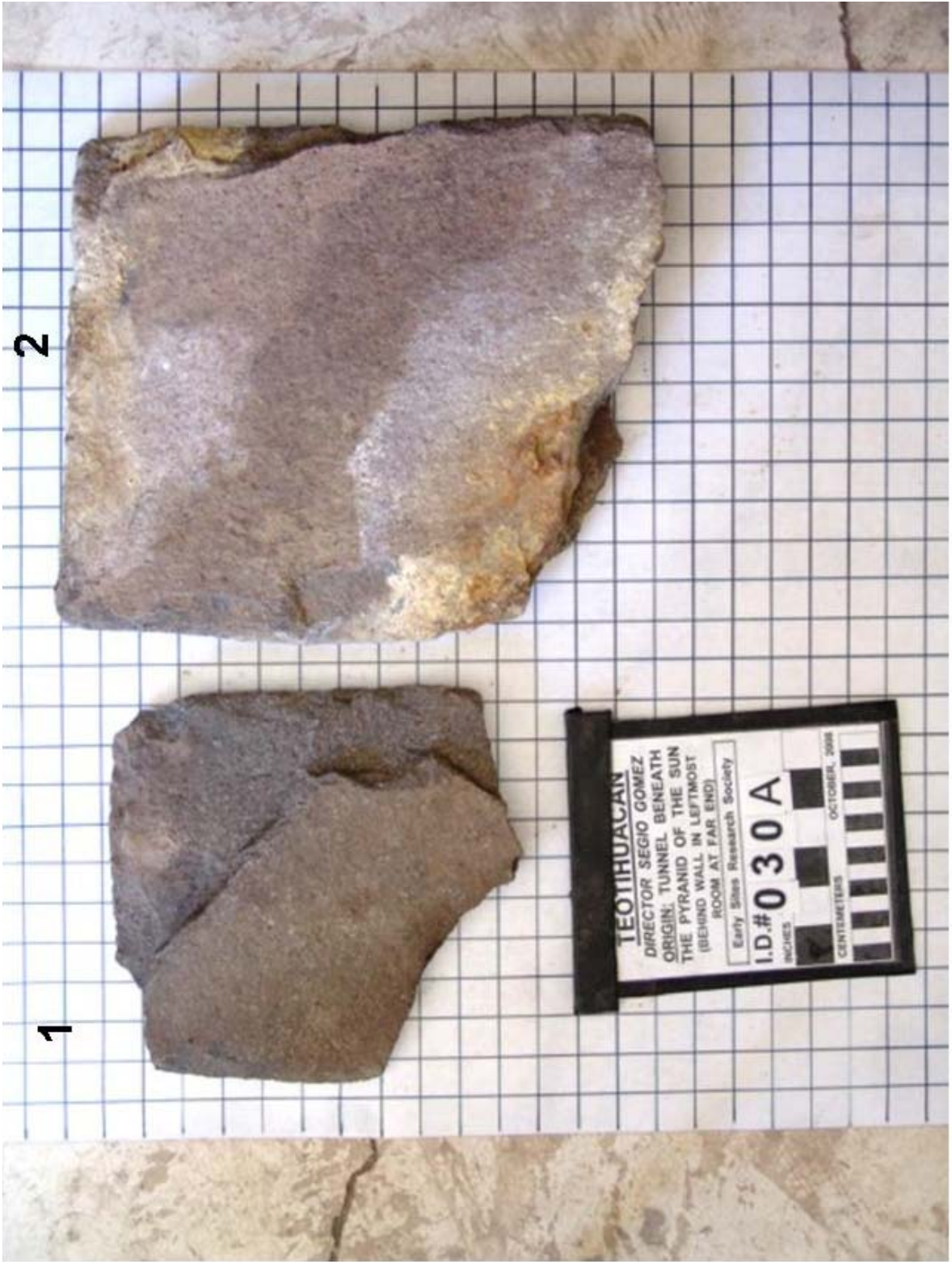


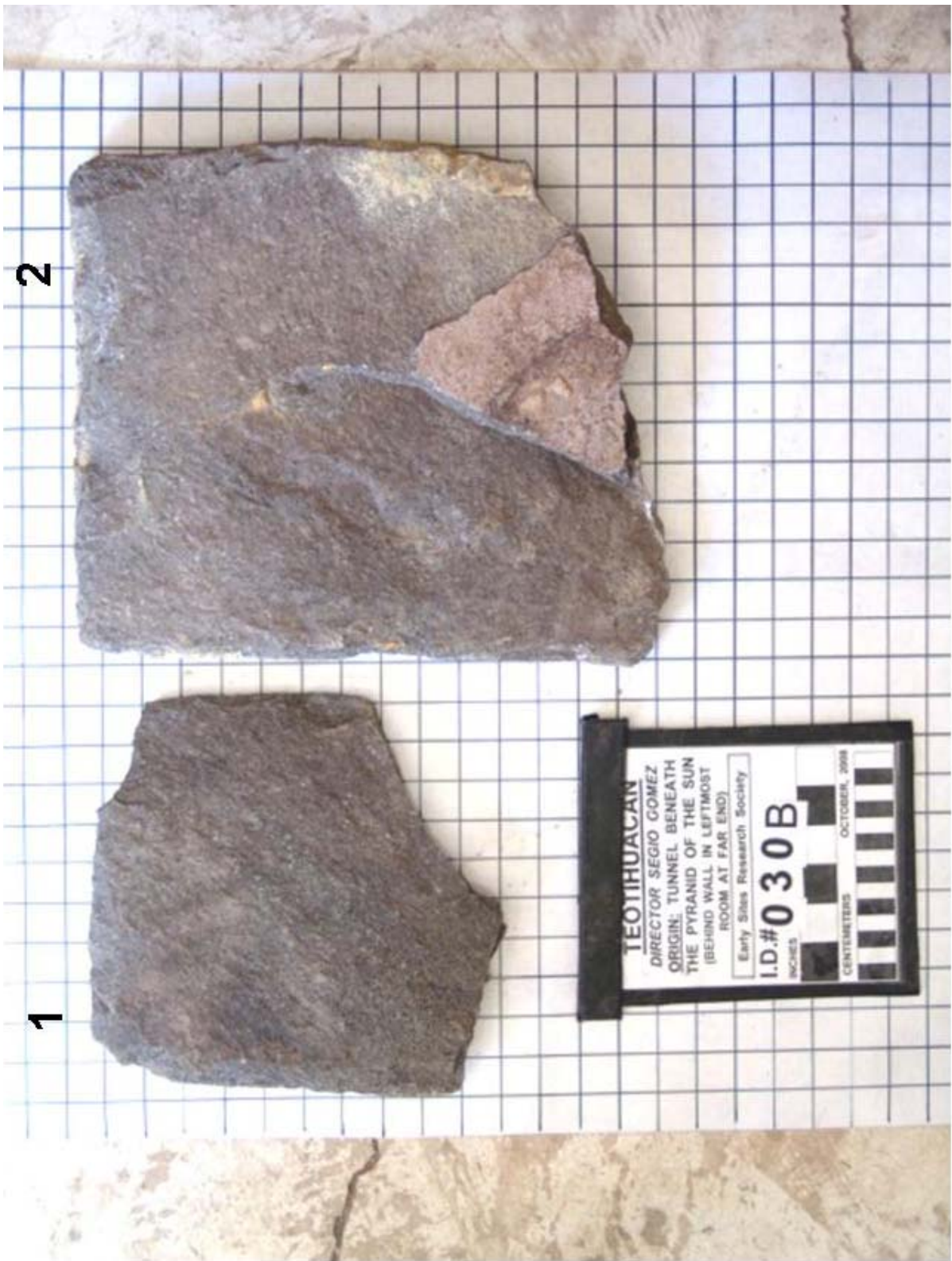


















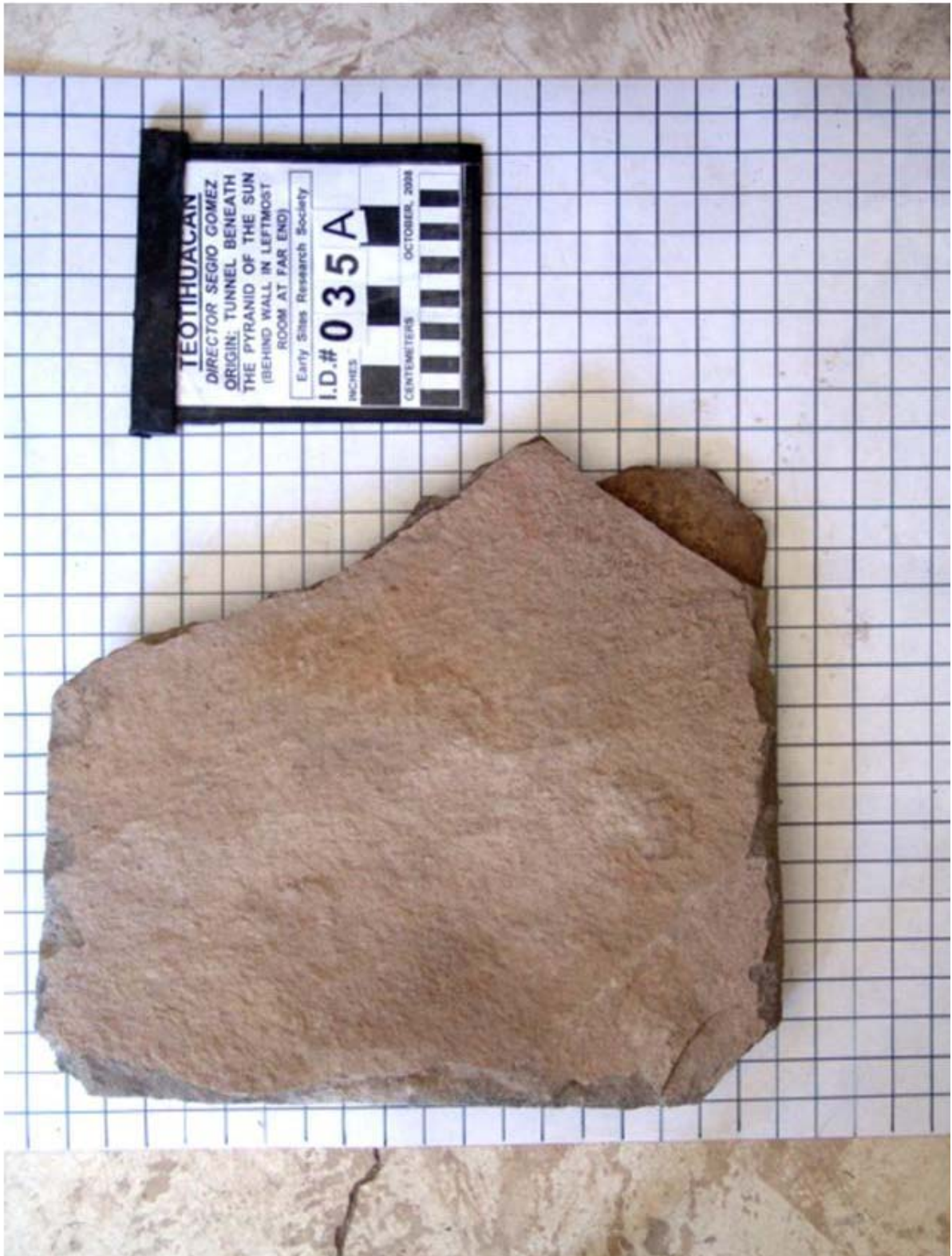








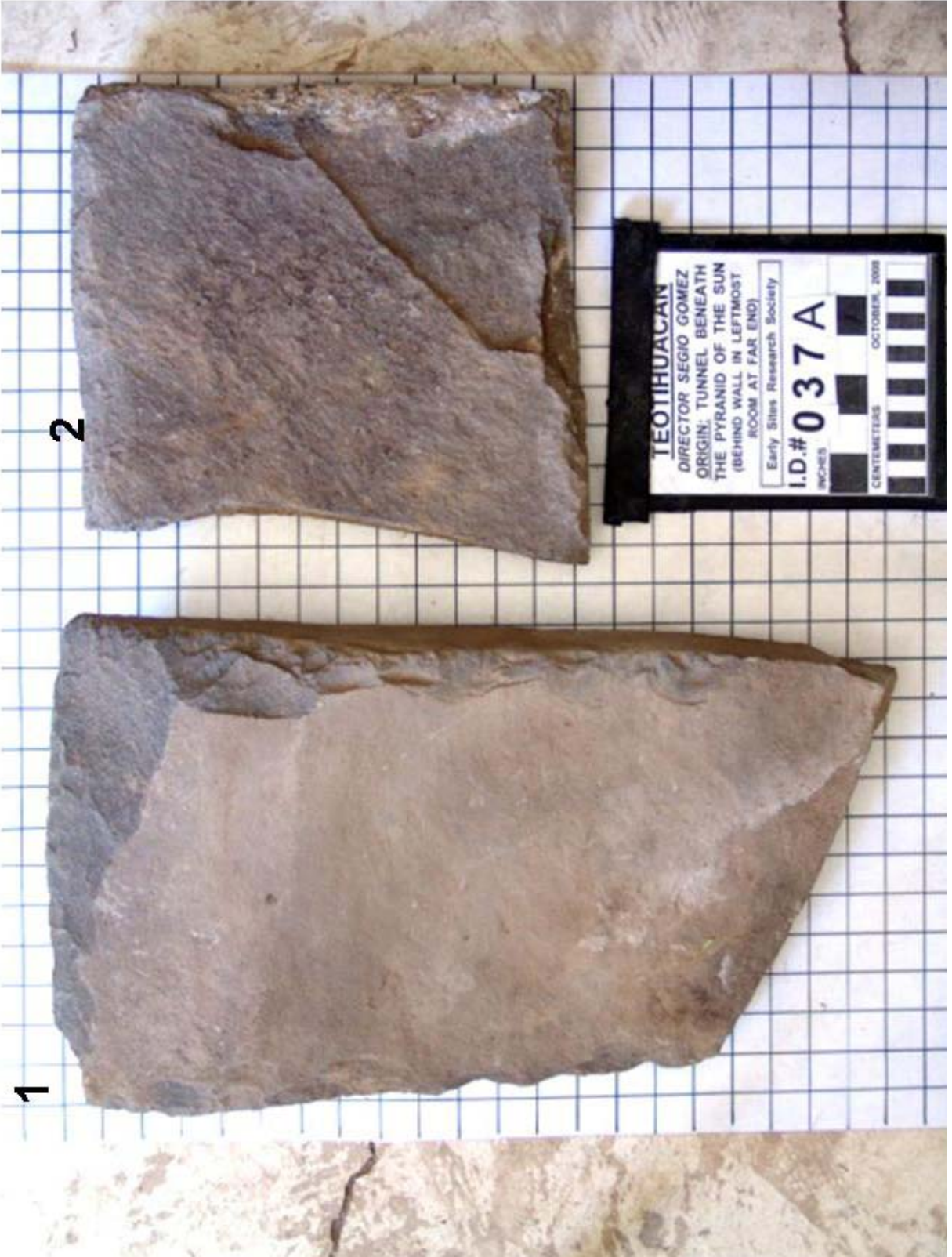












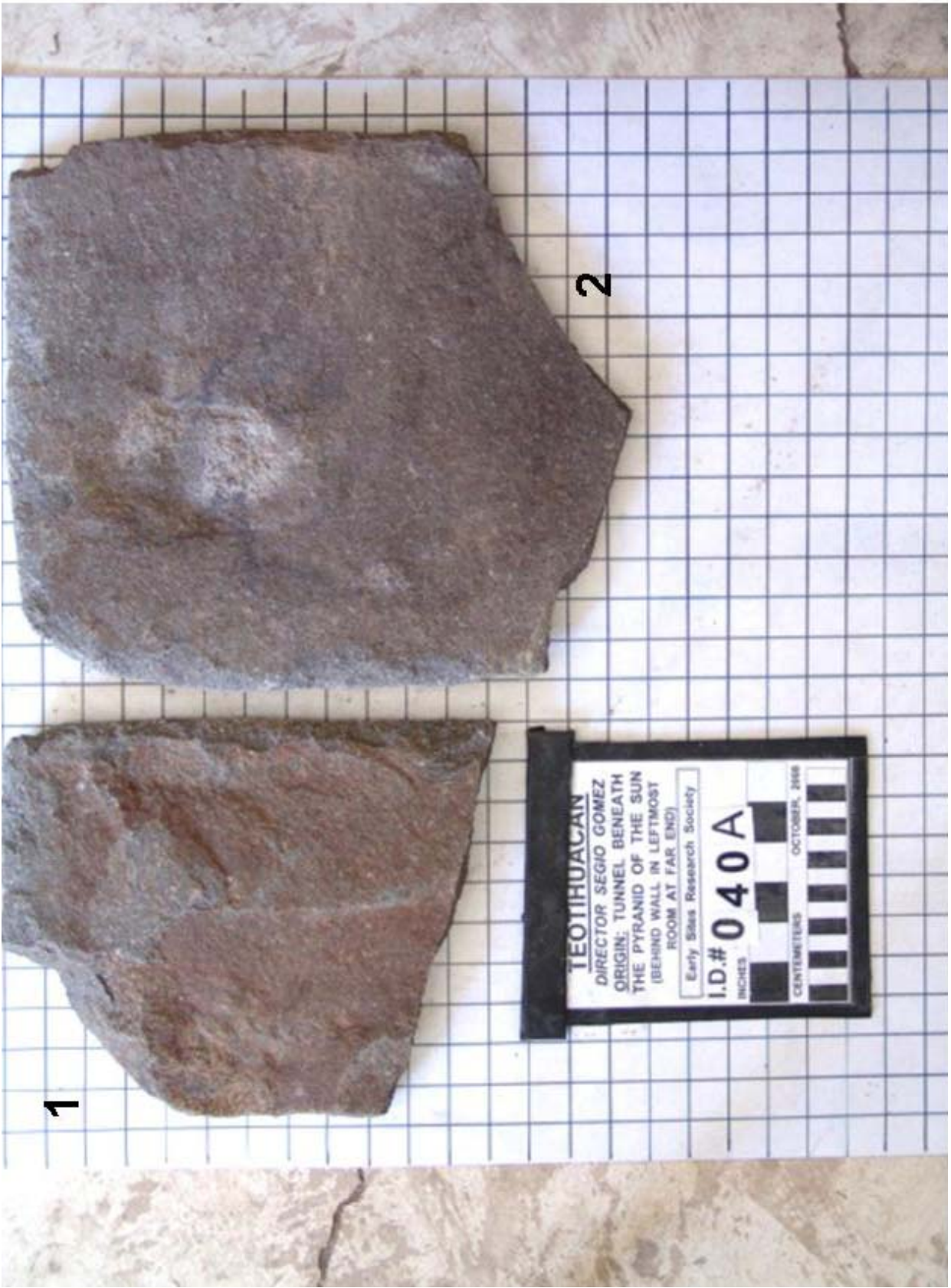


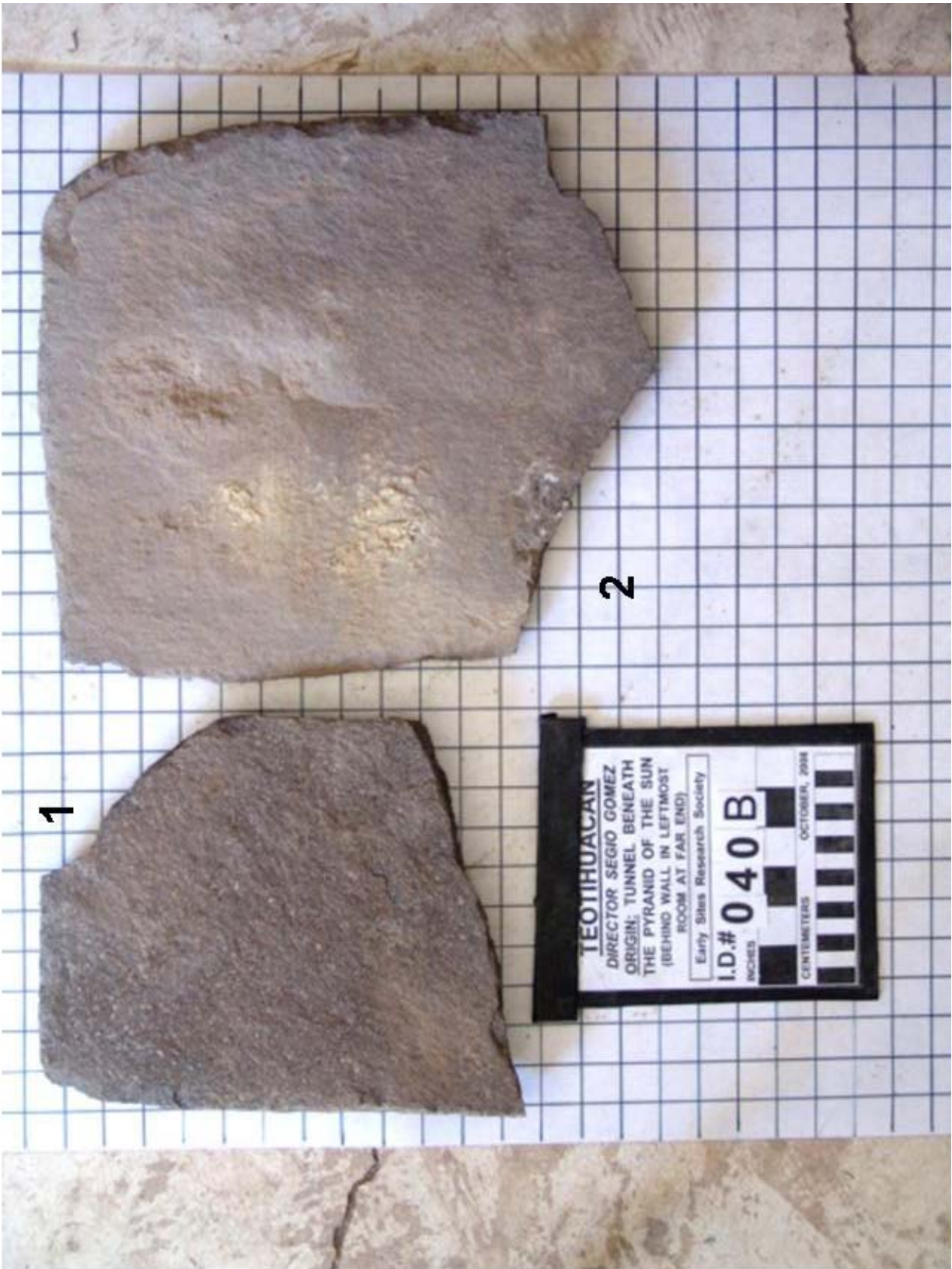


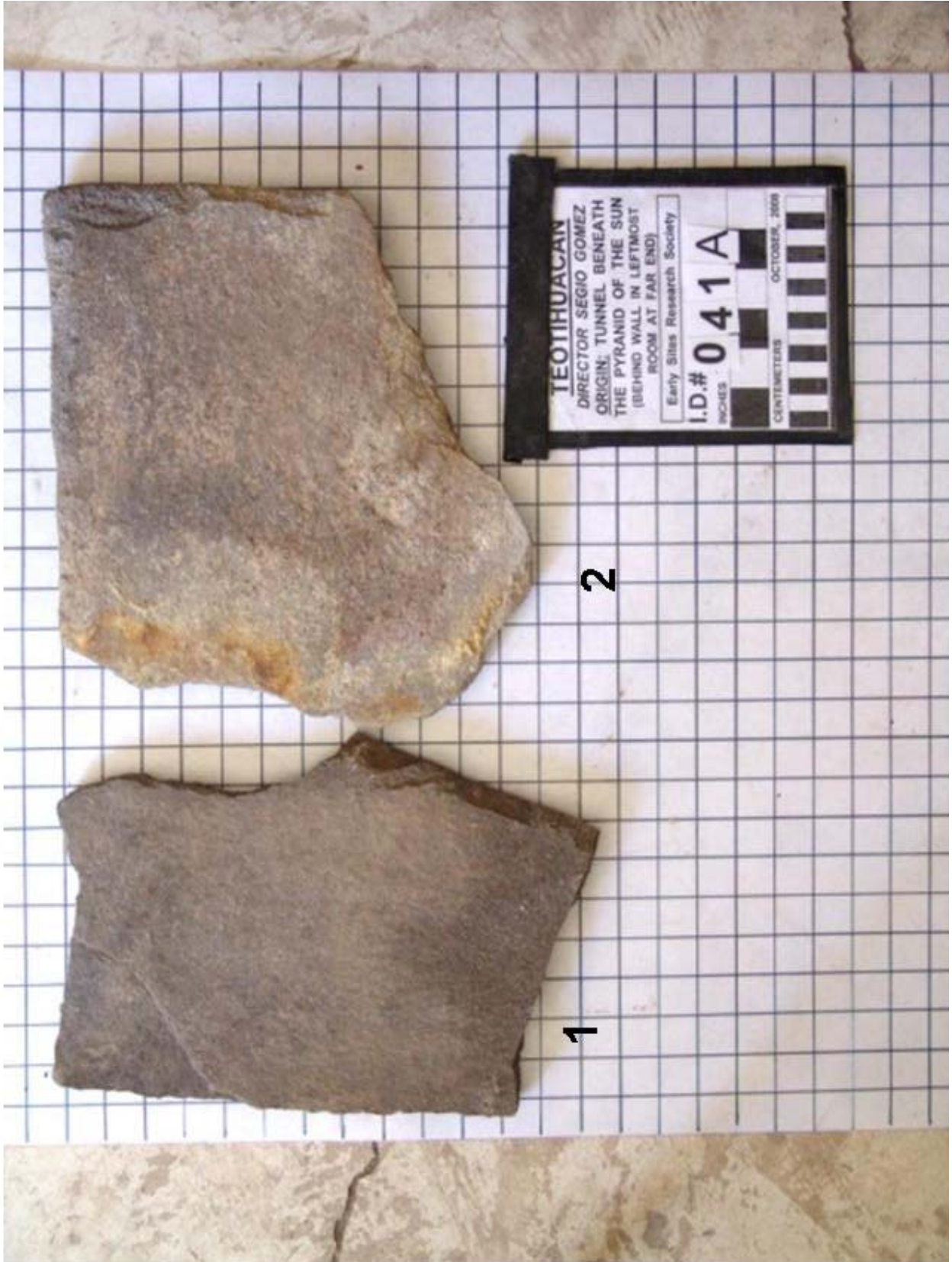




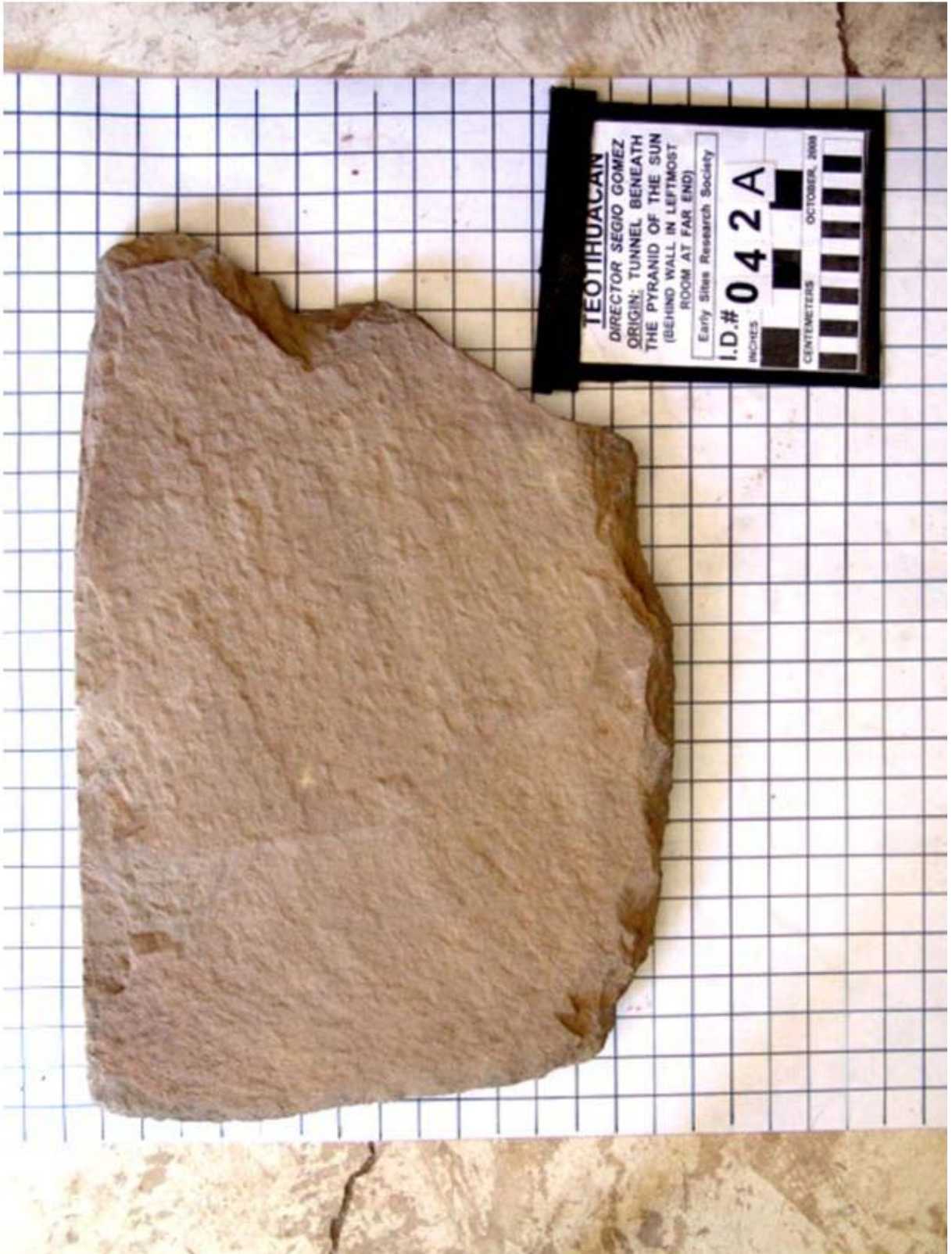


















Specific Observations

The stone slabs vary in material from basalt to shale. The sizes vary from 30 inches (70 cm) square, to 18 inches by 10 inches (45 cm by 20 cm) rectangular. The variance of thickness runs from 1 to 2 inches (3 – 6 cm), though roughness causes a variance in each individual stone.

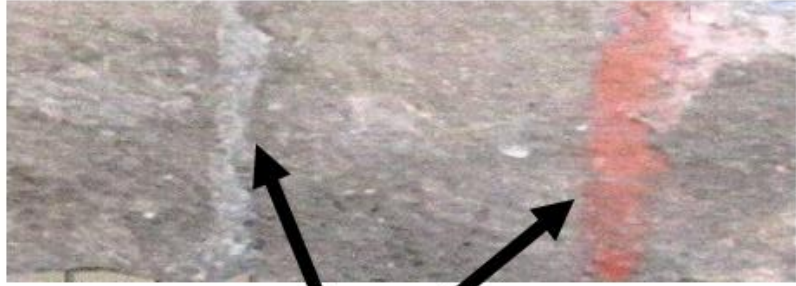
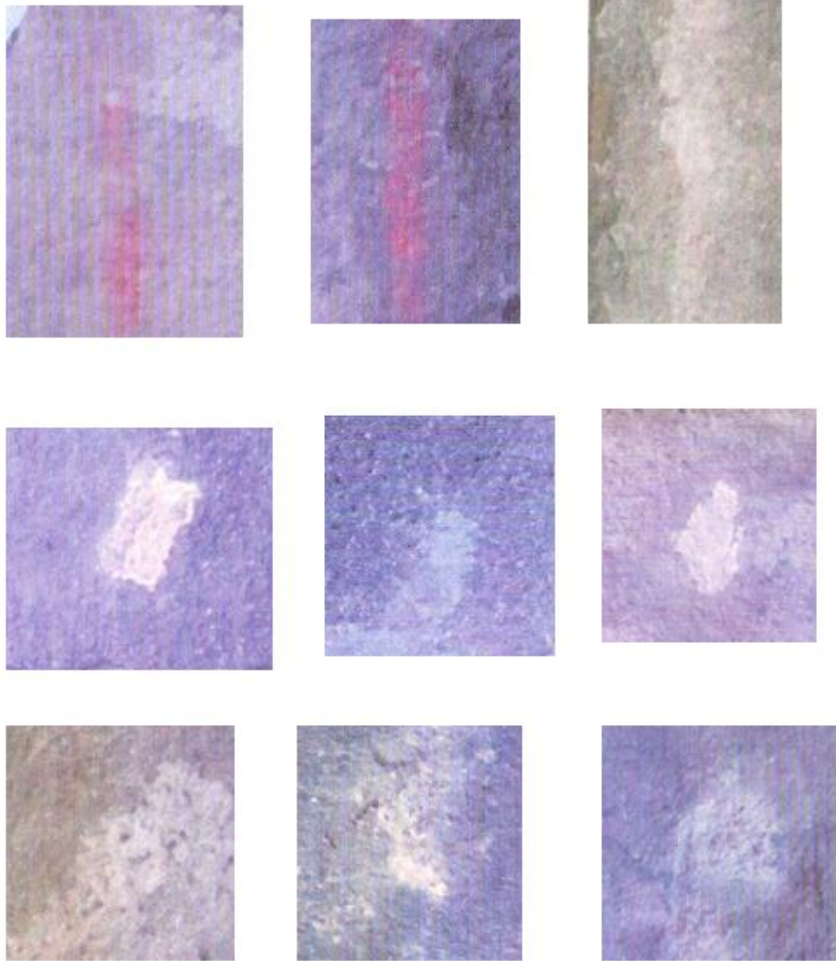
It is also noted that some stones appear to be deliberately more concave or more convex. Though, again, because of the lack of smoothness it is difficult to assess many stones.

On the obverse sides more than half of the stones have the evidence of a residue that has an extremely similar appearance to the residue found on the stone disks studied by Villas. I assume that it is the same material.

The reverse side of many stones has some type of paint present. The colors vary from white, red, blue, black, yellow (or beige) to a possible green. The application of the paint also varies. There are stripes which for the most part run the length of the stone upon which they are painted to square patches and round patches. No stone has more than one mark or more than a single color on them. Some apparently have no markings.

The slabs are elaborated in various ways. Some have square edges while others have beveled edges. Some of the beveled stones have a “blunt” beveled edge. In fact, of the few stones on which four beveled edges are found, there is always one edge blunter than the other three.

PAINT APPEARS IN CIRCLES, SQUARES AND LINES



**UNUSUAL
DOUBLE
LINED
STONE
SLAB**

Theories

Several theories cropped up during the performance of this study. During one of the visits to the tunnel in the 1990s an INAH employee stated that some thought that the stack of stone slabs located at the left most rear of the alcove at the back of the tunnel were “paving stones.” As this study developed it became clear to me that the stone slabs could not be paving stones. There were several reasons as to why the Paving Stone Theory was rejected.

While there are hundreds of thousands of paving stones found on the flat areas of Teotihuacán, and while they vary in size, those sizes are more uniform than the slabs found in the tunnel. It must be made clear that I am not personally aware of any particular study made on Teotihuacán’s paving stones. And I have only made a cursory observation of paving stones in several small areas of the site. However, I have found no paving stones at Teotihuacán similar to the stone slabs from the tunnel. Moreover, after making this observation I consulted Dr. Sergio Gomez who whole-heartedly agreed that the stones studied here were not paving stones. At this point it must be made clear that though Dr. Gomez does agree that the stones are not paving stones—he goes no further than that statement. All theories presented here are of my doing. My reasons for not accepting the stone slab theory follow.

First, the fact that these stone slabs were so carefully stored by the ancients at the rearmost portion of the tunnel seems in and of itself contrary to the Paving Stone Theory. I cannot imagine the ancients excavating a 300 foot tunnel to use as a pavement stone warehouse. But, there are many more reasons.

Most of the stone slabs found in the tunnel are beveled on the edges and normal paving stones are not. The detail on the beveling of the stones was covered in the segment entitled Observations. The paving stones are obviously squared on the edge to create a consistently flat and strong surface. This could not be done efficiently with bevel edged stones.

A secondary consideration is the point found on one side and the remnant substance found on the reverse side of the tunnel disks. More detail on these observations can be found in the segment titled such. However, this observation can only be considered at a secondary level because in theory all of the present paving stones at Teotihuacán could have had paint of which the residue has eroded off during the centuries. In my opinion, this latter scenario is highly unlikely.

So if the stone slabs were not paving stones, what could they be? On the surface only three theories have emerged. The first is actually based on Tomas Villa’s thesis.

The Mirror Theory

In the section on observations I stated that many of the stone slabs carried a residue on what I called the obverse side. Having studied the stone disks with which Tomas worked, the same residue was noticed. Tomas reported in his thesis that laboratory analysis has shown that pyrite (fool’s gold) had been glued to the “obverse” sides of the disks. An analysis of the “glue” was not extremely revealing. No lab tests of this kind have been performed on the stone slabs, but I assume that the material on the obverse side is the same. At least visually it appears to be. Tomas goes to great lengths to demonstrate that the stone disks in his study were mirrors made of polished pyrite on the obverse sides. The reverse sides of these disks are carved bi-relief. Because a similar material can be found on many of the stone slabs from the tunnel then it can be theorized that they too were mirrors. There are some problems with this theory however.

Whereas all of the disks have several holes that perforate the upper edge of them so that they can hang, the stone slabs do not have such holes. It is conceivable that the slabs were only hand held, but there are more problems yet. Many of the stone slabs are beveled on the edges. Because of their weight this would make them very uncomfortable to hand hold (note that the beveling is chinked and not sanded, thus the edges are rough and sharp). So while mirrors seem probable, they are unlike the normal Mesoamerican mirror.

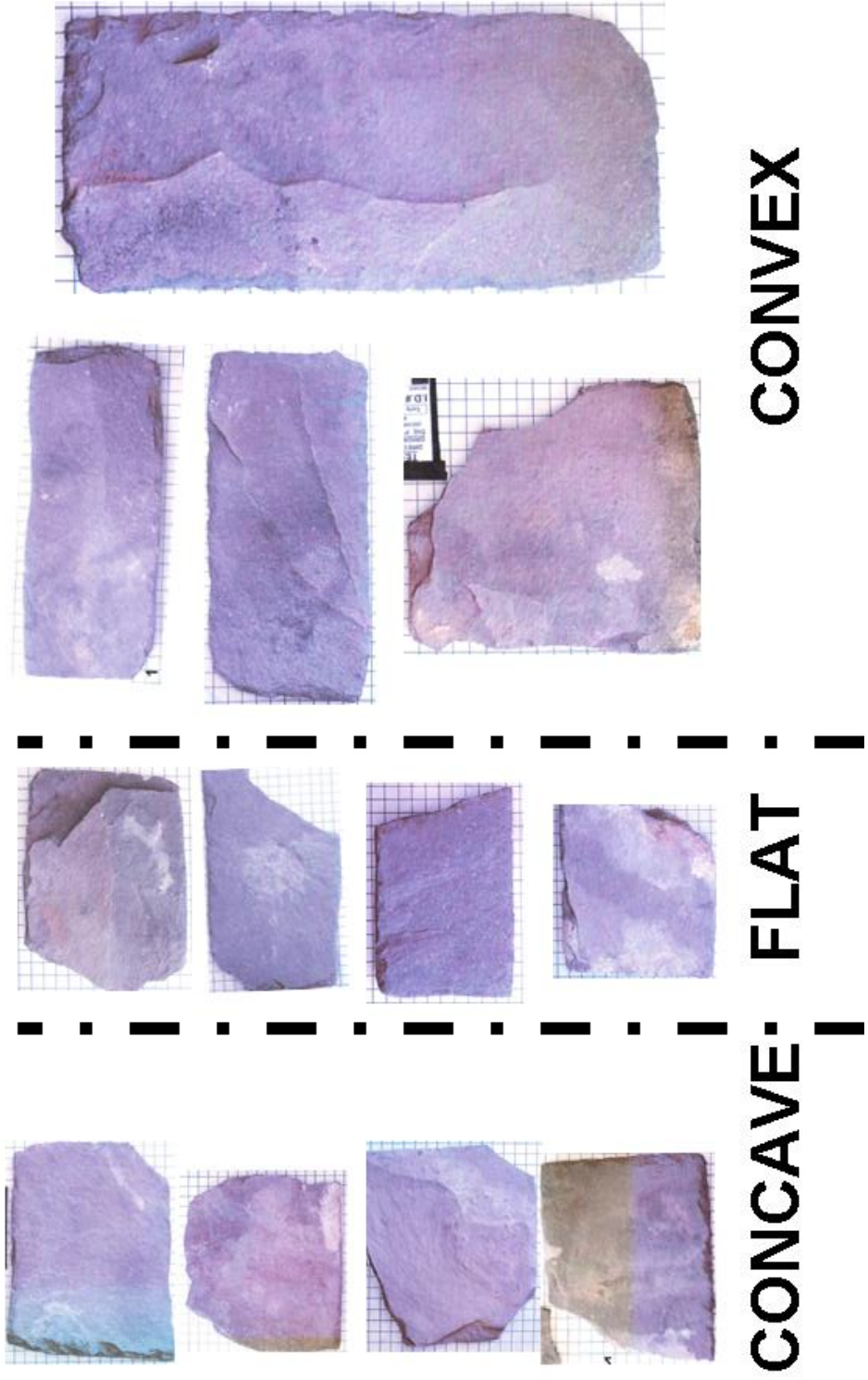
This theory in conjunction with the shadow countdown report given earlier brings the need for an additional lab test on the stela mirror being used during the equinox on the face of the Pyramid of the Sun. If a stela mirror was set up at the base of the front face of the Pyramid of the Sun on equinox in the appropriate location and at the correct angle an interesting light show would occur.

Upon the cresting of the Sun over the top of the pyramid, the fifth and highest layer of the pyramid changes from shadow to light. At that time the mirror stela would reflect a sunbeam to the lower first layer. As the Sun rises, the beam of sunlight reflected from the mirror rises on the face of the lower level. When the Sun reaches the point of lighting the lower layer the reflected beam has now moved upward to the second layer which is still in shadow. The reflected beam stands out as it is being directed into a still shadowed area. As the Sun moved toward its zenith the reflected beam continues to move upward. By the time that the second tier is lit the shadow has moved up to the still shadowed third layer. By the time of the equinox the beam is at the fourth tier where it disappears exactly at equinox. Actually it only has the appearance of disappearing because the surface upon which it is being reflected is now in total sunlight with no shadows.

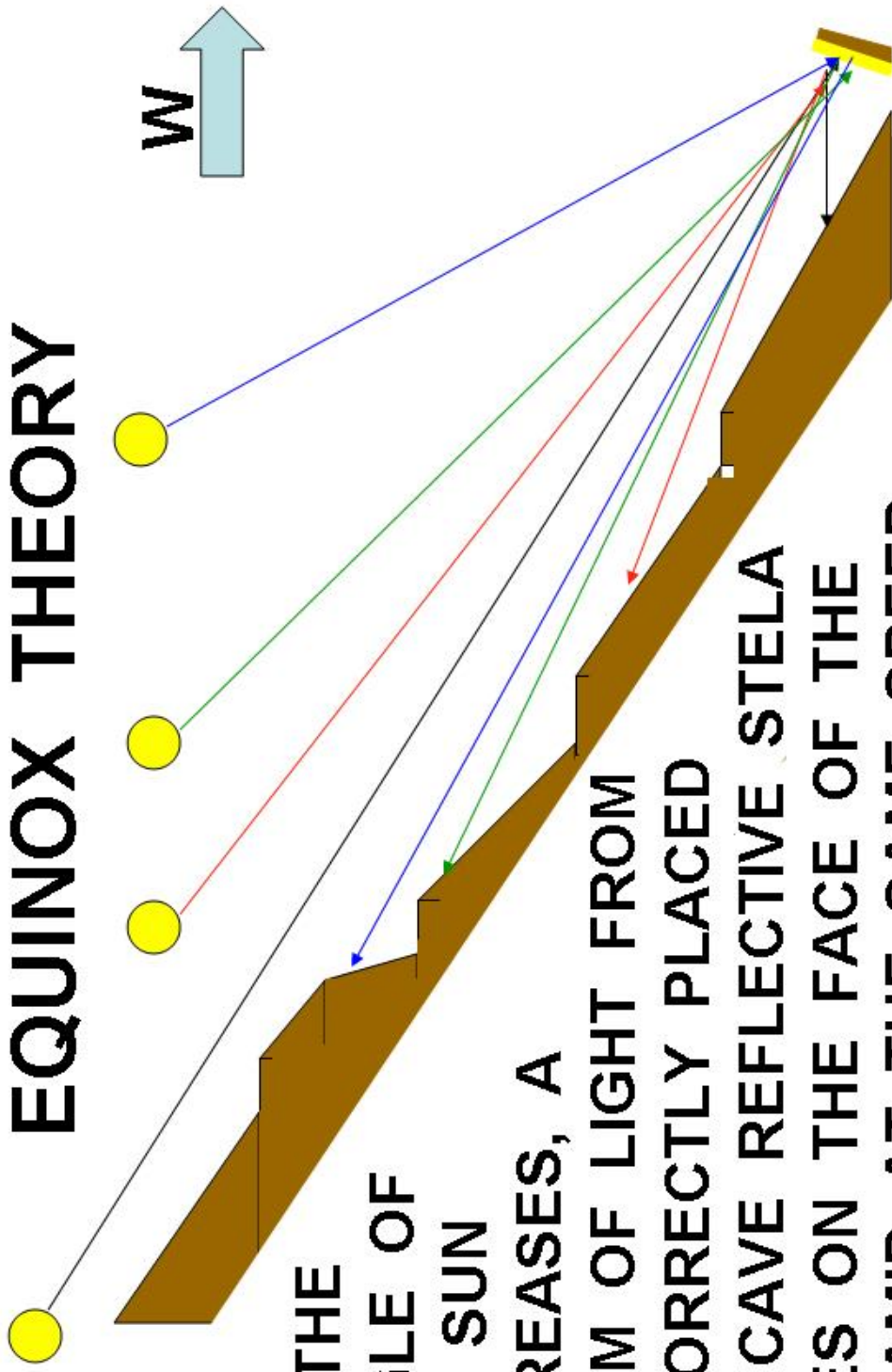
Contemplating this theory moved me to recreate this set of circumstance artificially at home. It can work. That doesn't mean that this scenario was ever performed at ancient Teotihuacán, but it does demonstrate the possibility.

One more observation should be made at this point. Many of the stone slabs have a slightly convex or concave surface. If covered with reflective pyrite those surfaces would have a tendency to focus the beam of light to a smaller stronger beam or to a wider more dispersed beam. And that aspect might explain why the convex and concave surfaces were shaped in that way.

**THE FACES OF THE STONE SLABS VARY
FROM SLIGHTLY CONCAVE TO FLAT TO
SLIGHTLY CONVEX**



CONCAVE REFLECTIVE STELA AT EQUINOX THEORY



AS THE ANGLE OF THE SUN INCREASES, A BEAM OF LIGHT FROM A CORRECTLY PLACED CONCAVE REFLECTIVE STELA RISES ON THE FACE OF THE PYRAMID AT THE SAME SPEED THAT THE SHADOWS RECEDE.

It might also be considered that this type of technology had already been known for centuries. The evidence can be found in the studies on Olmec mica concave polished stone that happen to have the ability to focus sunrays enough to start fires. The transfer of such technology from Olmec to the people of Teotihuacán could have occurred when Cuiculco was abandoned and part of that group moved to the Teotihuacán area. This last bit of information was discovered by Dr. Mario Perez Campa during his excavating at Cuiculco (private communication).

The Chime Theory

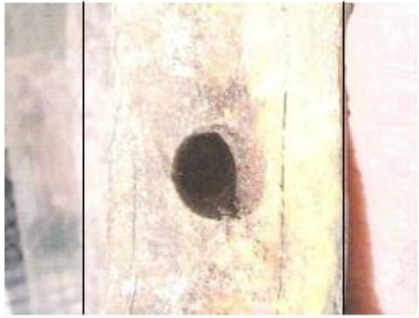
This theory was born with the observation of the shale slab stone. This stone has no evidence of paint or glue on either side while it is possible that this particular slab had everything on both sides eroded away. However, not only are the edges squared, but the two holes are curiously drilled straight through the thickness of the slab, the holes turn at a right angle towards the edge. That is to say a hole was drilled into the edge and a hole was drilled into a face and they met each other within the body of the stone. This type of hole boring did not occur on the stone disks. Rather, they were drilled straight through from face to face.

POSSIBLE STONE CHIME



DRILLED HOLE IN POSSIBLE CHIME STONE SLAB

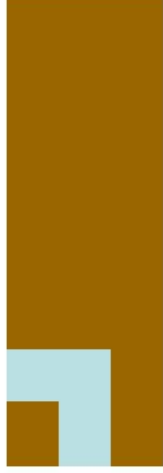
EDGE HOLE



FACE HOLE



CROSS-SECTION



What could be the purpose of drilling at right angles as appears on this slab? One possibility is that by creating the holes at right angles one entire face of the slab is left intact. This is similar to stones used in Confucian Temples today. Those stone chimes are left with one intact so that the stone might resonate more clearly and not have the hanging cord muffle its note.

The problems with this theory is that the particular shale stone is the only one known to have had holes like this drilled into it. However, even with such little evidence several laboratory experiments were created to test that theory. These experiments and results are reported in the segment entitled Laboratory Tests.

A possible support for this theory is the markings on the stones. Stripes, squares and dots in different colors might be to differentiate the different sounds made by each stone. On the other hand, while not studied microscopically, no evidence could be ascertained as to whether or not any of the slabs were beaten repeatedly as such percussion instruments would have been.

The Reflective Stela Theory

There have been numerous erected stone slabs found at Teotihuacán. The true purpose of these mini-stela have not been resolved.

Since the stone slabs from the tunnel very often have a blunted beveled edge, then the possibility exists that these slabs were intended to be erected on the blunt side and serve as mini-stela. If this is so, why is the pyrite placed on the obverse face? Is it possible that they were reflective mini-stela? If such stela were made and erected what would be the purpose?

Since it is accepted that there are stellar alignments represented at Teotihuacán, the theory of solar shadow play does seem likely. If small stela mirrors were set up, perhaps their pyrite reflections could be used to mark solar events (i.e. equinoxes and solstices) much as the workings of the stela in the Astronomical Cave.

COULD THEY BE “REFLECTING” STEEA ?



Combination Theory

Of course, if any of the above theories are true, it is possible that they are all true and the slabs served several purposes at once. Part of the problem in finding a resolution is that the final order of the slabs is not known. Moreover, the shale slab, which more readily implies a chime, was apparently in the same stack as the mini-stela slabs. So for now I can find no resolution.

The Laboratory Tests

Because the theory arose as to the stone slabs actually serving as chimes the following experiments were done at the home base in Independence, Missouri (USA) after the 2010 expedition. Though it was probable that these tests would prove nothing they are reported as part of this record so that if meaningful the information will be available.

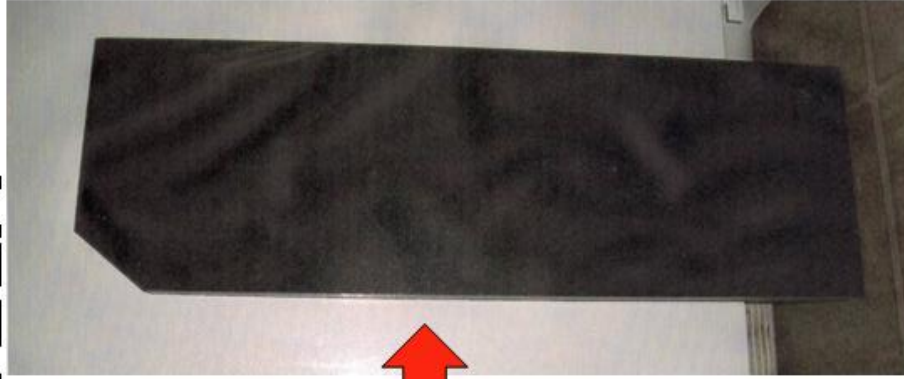
A short clarification should be made at this point. These experiments are not performed to the degree which they could be by using truly professional equipment and a professional sound technician in a controlled environment such as a studio. These aspects could not be covered because of lack of available financing. Therefore, knowing that the correct way to report these findings would be using Hertz terminology, the lack of professional equipment did not allow for this. So simple note names (A, B, C, D, E, F, G) are being used with the symbols of sharp (#) and flat (b) being applied. The largest problem is to know what octave is being expressed. So as a general rule of thumb the replica stone pitches are two octaves higher than the actual stone slabs.

The first experiment was to produce stone slabs similar to the ones found in the tunnel beneath the Pyramid of the Sun for the purpose of replicating a chime. The most complete slab was the one shown to us by Dr. Sergio Gomez. Though not harvested from the tunnel itself, there was no stone slab from the Pyramid of the Sun's tunnel which did not have some type of breakage, thus any note created by such a slab would be slightly sharper or flatter than originally intended. Dr. Gomez's slab was the only one perfectly intact. Thus, that stone slab was chosen to be used for the base of the following experiment.

REPLICATION OF THE CITADEL STONE FROM GOMEZ



REPLICATING THE ASTRONOMICAL STELA



The intact stone slab was tested and found to resonate at a D#. A rough replica was created and also tested for its resonance. I fully realized that the replica would not resonate at the same tone as the original. This would not occur for several reasons. The replicas were made from Indiana Black Granite whose stone grain was judged to be close to the original basalt slab. However, it was understood that since the original and the replica were of different materials that they would resonate at different tones. In theory, however, the difference between the resonations would set a standard to be used in other tests.

Another difference between the originals and the replicas would be that the replicas, while basically true to the thickness of the original, was not perfect to the original. Nor were the replicas made with beveled edges. However, the reasoning was if a standard of difference would be at least indicated, a later test could be done with another complete original in reverse order to check the standard. (This will be set up with the third experiment).

If Dr. Gomez's original stone slab resonated at D# and the replica slab resonated at C# or E# for example, it could then be demonstrated that the probable difference between the original and the replica would for example be a whole note or possibly two whole notes sharper or flatter than the original. Upon testing the replica it was found to resonate at a tone known as G.

The second experiment was to find out if the pyrite glued to the original had any affect on the original tone. In this case several factors had to be considered. How thick the pyrite was and what type of glue had been used. Though no actual remains of any pyrite in its original state on the slabs was found, a rough estimate of its thickness was made. Since the tunnel had been flooded several times over the centuries the pyrite crystals had grown and distorted greatly from the original. Moreover, much had flaked off, so I based the pyrite thickness on the obverse side of Villa's stone disks. This was accomplished by estimating the thickness of the retaining edged of the disks. It was judged on the average to have retained sheets of pyrite about 1 centimeter thick. Sheets of heavy duty aluminum foil were amassed together to recreate the pyrite sheet. Now the problem remained of attaching this "replica pyrite" to the stone.

A final analysis of the material that served as the glue never revealed the specific material used for the glue on Villa's disks. In my opinion it didn't matter what the material was so much as what its hardness was.

For example if the glue was sap from a pine tree then the glue would harden to the point of being able to possibly carry the sound and reverberate with the stone slab. However, if a type of tar or pitch was used the reverse might be true and the result would only be a muffling affect. I actually believed before the experiment that no difference in the tonal resonance of differently treated replicas would be noticeable.

Elmer's Glue was used to replicate the hard and stiff glue and Rubber Cement was used to replicate the soft glue. Three replica stones were tested. First was the no glue or naked (N), the second with soft glue (S), and the third with hard glue (H). The tonal differences were recorded below:

- The naked replica (N).....G
- The soft glue replica (S).....G
- The hard glue replica (H).....G

To me it was surprising that the replica stones resonated on the same note no matter whether they had a facing attached or not. In fact, it did not even matter if the stone was struck on the covered or uncovered side. Nor did it matter if the stone was hung or if it was set in a stela box to hold it upright. It is probable that a true sound man would have already known these results, but it surprised us.

NAKED STONE REPLICA





**ALUMINUM SHEETS
BEFORE COMPILATION**

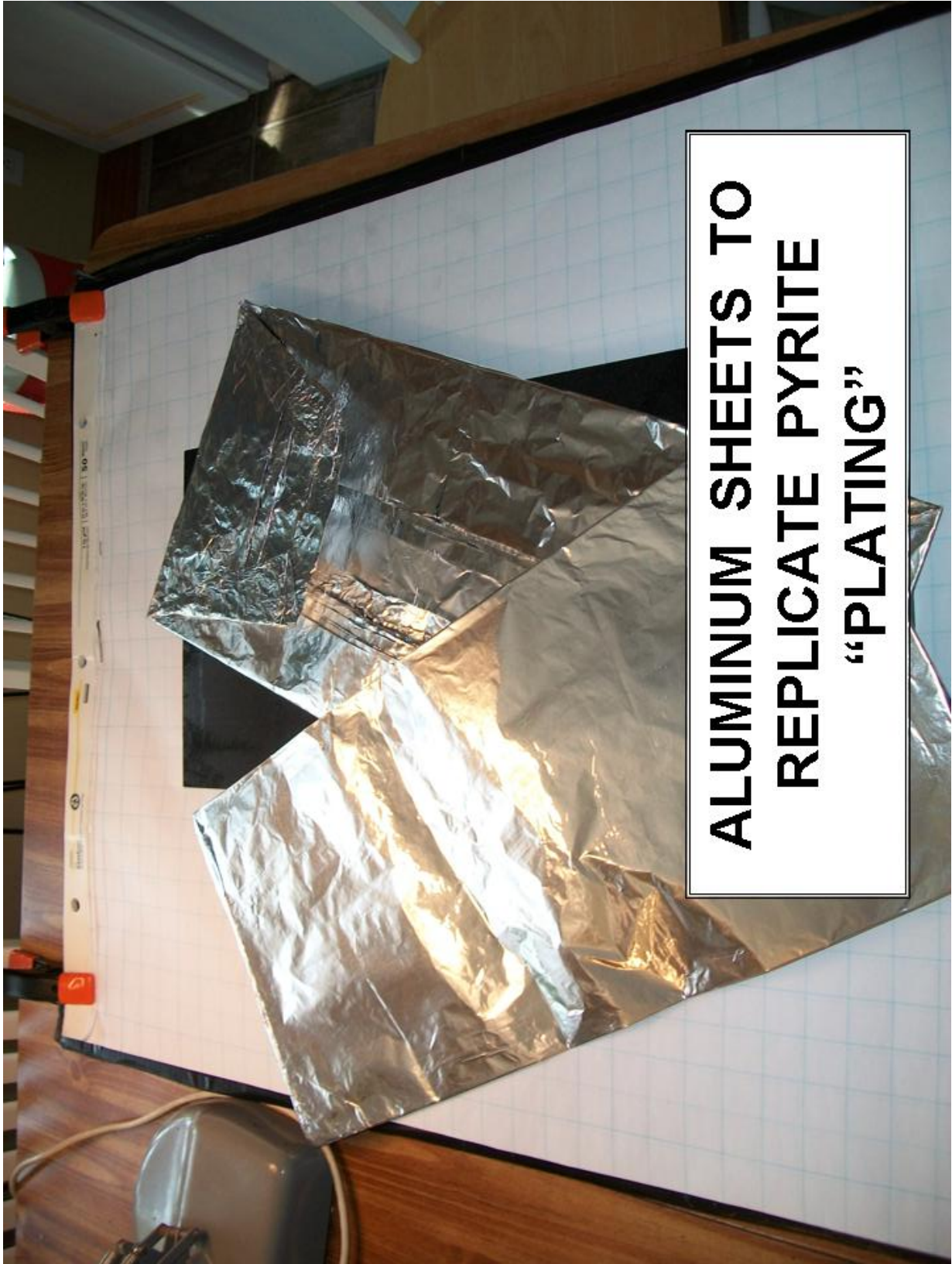


**ALUMINUM SHEETS
BEFORE COMPILATION**





PREPARED ALUMINUM SHEET



**ALUMINUM SHEETS TO
REPLICATE PYRITE
“PLATING”**



**REPLICA STONE SLABS
DRYING**

GLUES USED





**REPLICA
GOMEZ
STONE**

**REPLICA
SHALE
CHIME
STONE**

**REPLICA
ASTRONOMICAL
CAVE STELA**



“HAMMER” STONE

The third experiment was to test a hung stone from a standing stone and to also test a well known standing stone which was still in its original location. The stone chosen was the Astronomical Cave stela. Obviously, I had no desire to go beating on the original stela. Thus, measurements were made, a replica created, and the stone was tested for resonate tone while being hung and being placed in a stone stela box. The results were identical as previously mentioned. Finally, it seems as though all of the replica stones are about two octaves and one-half step higher than the originals.

CHART ON RECORDED NOTES

<u>IDENTIFICATION OF SLAB</u>	<u>SLAB NOTE</u>	<u>REPLICA NOTE</u>
CITADEL	D [#]	D + 2 OCTIVES
CHIME	G ^b - 2 OCTIVES	G
ASTRONOMICAL STELA	C ^b - 2 OCTIVES IN THEORY	C
<hr/> <hr/>		
REPLICA STONE SLAB – no glue.....		G
REPLICA STONE SLAB – soft glue.....		G
REPLICA STONE SLAB – hard glue.....		G

Conclusions

How do I draw conclusions at this point? I want to have my eyes open, but at the same time I do not want to be a fool. At the moment I only have two relatively small collections from the tunnel in our possession. A rough estimate indicates that far less than 1% of the tunnel's original content is in our possession. Yet, can conclusions actually be drawn from such a small array of material? I believe they can, and I will attempt to do this in the following pages. The point here is that without taking the years of work nothing would be known and it is somewhat overwhelming when I consider the great amount of information collected from so little substance. Conclusions can not be drawn from such a small fraction except for the very few things that become apparent. The tunnel was not a tomb. Apparently it was a storage area for things which the people of Teotihuacán thought were important. To them it was apparently one of the most sacred.

As far as the stone slabs, no real and meaningful conclusion can be reached. There is not enough evidence to say for certain what the intended use of these tablets were. But, there is yet hope as another tunnel waits for exploration.

Our best assessment is that there are three types of stone slabs; mirrors, chimes, and stela. It also seems as though the tunnel has yielded a mixture of the three types that overlap from one classification to another. If I was forced to provide an opinion I would state the following final analysis: Villas' disks were used as ceremonial mirrors.

The pile of stone slabs at the back of the tunnel were apparently rearranged and possibly broken in the transfer to the warehouse. Tentatively, since most of them had pyrite glued to them and had a blunt beveled edge, they would be used as reflective stela; if so why the painted marking on the back? Possibly the marking would be to indicate where that stela should be located. At the moment that seems to be the most reasonable explanation.

A follow-up study could be done on gathering reports of stela boxes or slits that have been found around the site of Teotihuacán. Such a distribution of mirrors and their reflections onto shadowed areas of the structures at Teotihuacán on certain days would be the ancient equivalent to a lazer light show.

As for their storage; it seems to be reasonable to assume that the ancients would not want such reflective stela mirrors to constantly be exposed to the elements. Therefore, to store them when not in use would protect them from weathering and vandalism. The best response that can be made at this point is a careful recording of any such future caches, the order in which they lie, and the sounds which they produce. Hopefully, answers to the existing questions can be found in the future.

Importance of Study

Now, more than forty years after the discovery of the tunnel underneath the Pyramid of the Sun, several pieces of the enigmatic puzzle can be put together. It is now apparent that nothing can be done concerning the tragic fate of the original tunnel contents. However, there is now a new tunnel on the horizon (the second tunnel at the Citadel of Quetzalcoatl). It is hoped that this second tunnel will provide enough new information from which those in charge can better interpret the extremely meager artifacts that remain from the first. And, in my opinion, Dr. Gomez is the appropriate person to be in charge of this future excavation.

For the moment a short conclusion concerning the collection of stone slabs and the stone disks will be drawn. And, surprisingly much can be learned.

First, I wish to address the importance of what has been accomplished up to this point. A myriad of information was lost from the first tunnel excavation. Yet, forty years later it is obvious even with the meager amount of artifacts in our possession that the tunnel under the Pyramid of the Sun was considered to be something of a “Sacred Warehouse” for the ancient people at Teotihuacán. Though the title Sacred Warehouse may seem to be grandioso for many, that conclusion seems to be somewhat inescapable.

What now needs to be done is to apply what has been learned. If any such stash of stone slabs is found in the new tunnel at the Citadel of Quetzalcoatl their exact positioning must be recorded. What if the marking on the slabs that we do have are indications of notes and scales? An ascending or descending order might establish that fact. Those markings are a key, but for now the door is closed. If it opens up in the next excavation, let's not allow the door to be closed again.

Notes

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