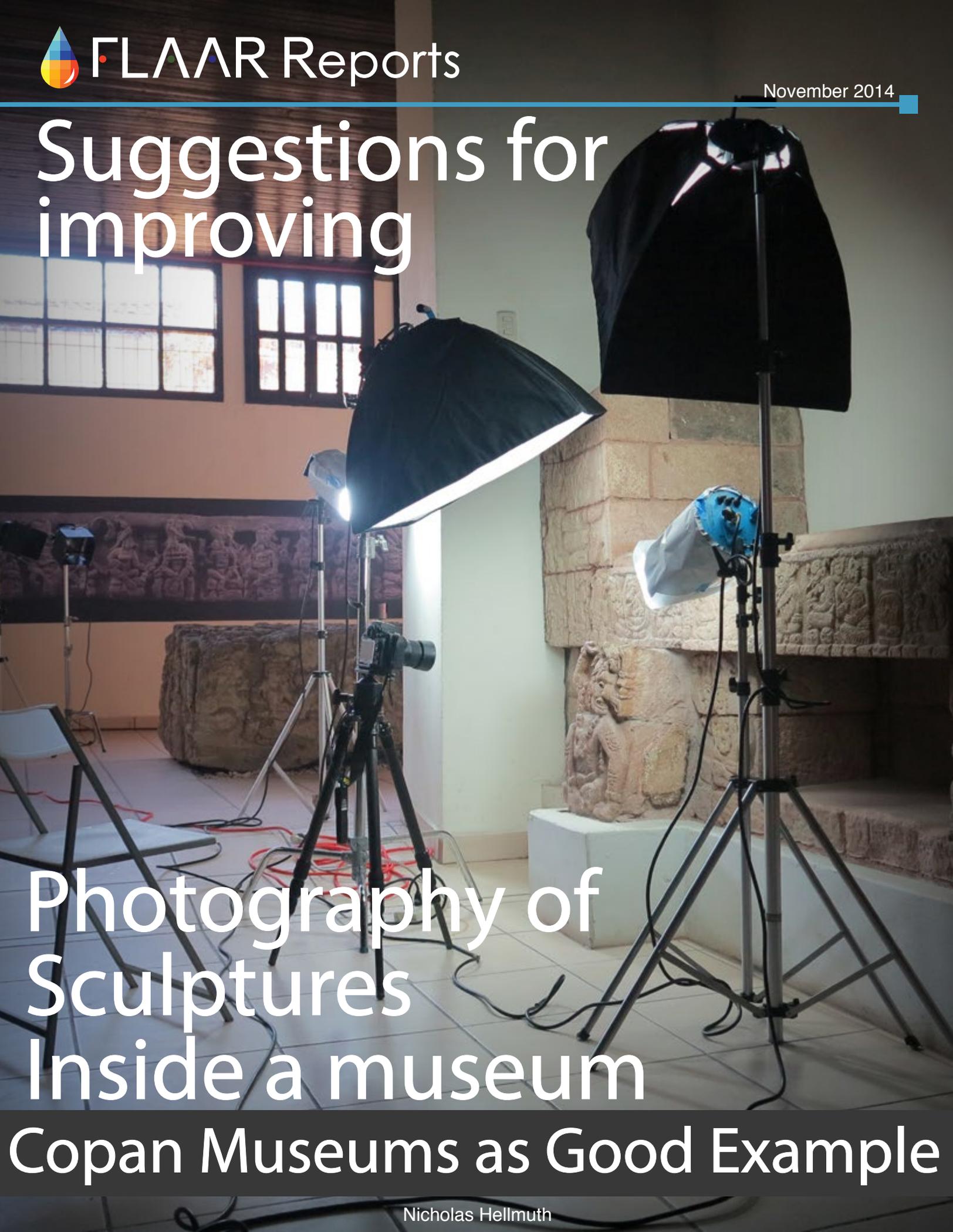


Suggestions for improving



Photography of Sculptures Inside a museum Copan Museums as Good Example

Indoor lighting at archaeological sites



About every three or four years, over the past 40 years, FLAAR has provided photography to the Copan museums. We provided transparencies in the days of film, and we provide digital files since circa 1999. For many years the posters of the Honduras department of tourism were using photographs of the ceramic incensarios and other art of Copan which we provided them.

Plus we have encouraged tourists to visit Copan Ruinas since this provides jobs for local people.

During the 40 years that we have photographed we have utilized many different camera technologies and for each camera technology different lighting. We have special studio lighting for small figurines and currently we are developing lighting for photographing large monuments. Each size and shape of artifact can be better photographed if you select a size and shape of lighting fixture which is most appropriate. The present report is on photographing stone sculpture of the Maya, normally in a museum (the two different museums at Copan).



Indoor lighting at archaeological sites



With the white cloth removed you can see the reflectors inside the softboxes. Note the computer in the background, so we can see our results in real-time.



Here are the softboxes (the black cloth fixtures).

Indoor lighting at archaeological sites

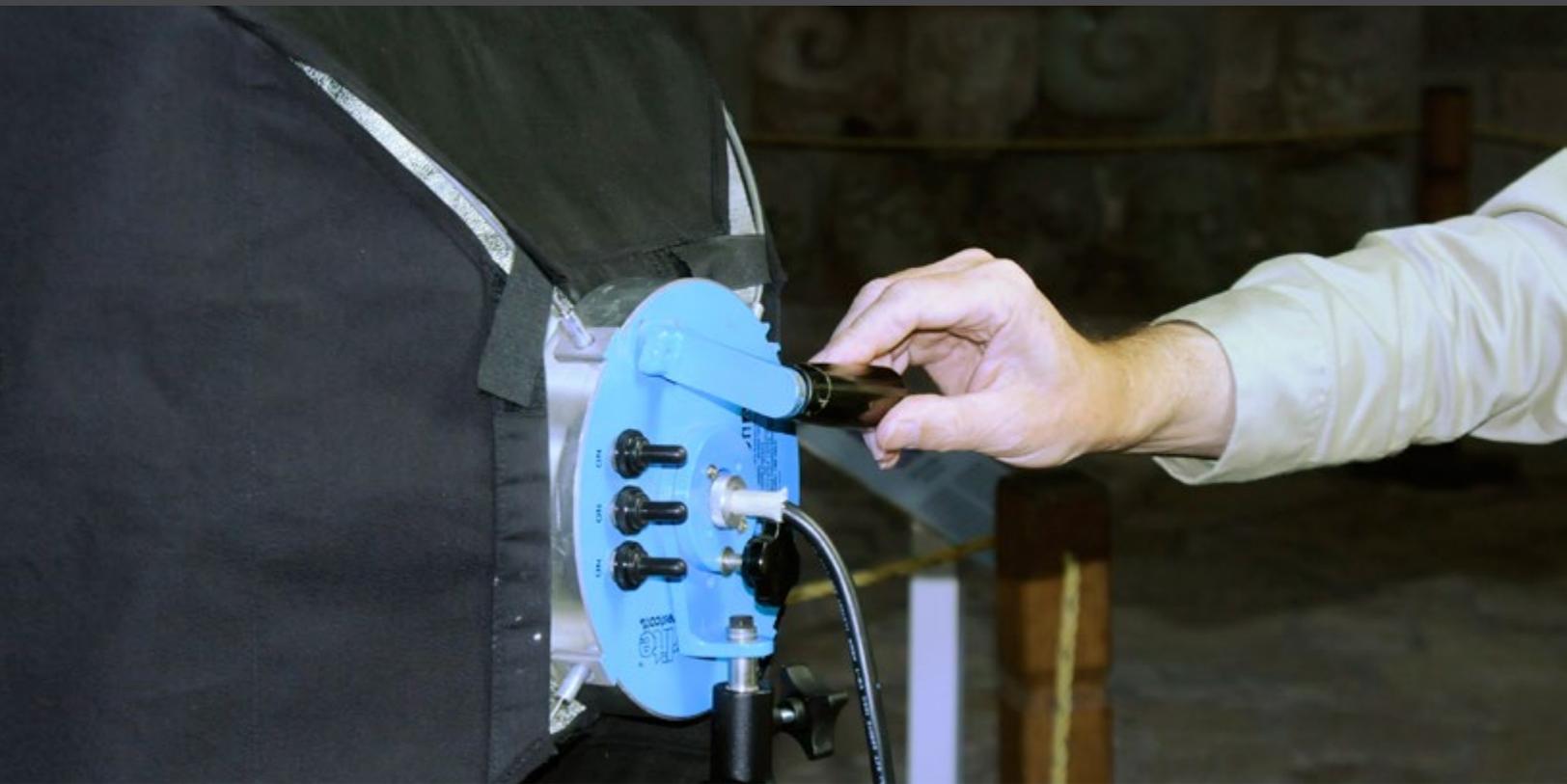
Here we are photographing an altar in the Copan museum many years ago. These were tungsten halogen lights, which frankly produce an awesome result. But we rarely use tungsten lights any more.



This is the reliable Cambo 4x5 view camera with a sliding back system for a medium format digital back. Notice the professional sized Manfrotto geared tripod head.

Indoor lighting at archaeological sites





Indoor lighting at archaeological sites

Here are tungsten halogen lights from Lowell. We had great results from these for over three decades. But now we use fluorescent lighting.





Indoor lighting at archaeological sites

Here are the results of our lighting style (over five years ago, with tungsten halogen lamps). By using "raking light" it is much easier to see the detail on this relief sculpture.





Indoor lighting at archaeological sites





Sometimes you need light from the bottom. This is not easy with normal studio light fixtures. (this is about three years ago). Now, in 2014, FJ Westcott offers an "ICELIGHT" which can be placed under anything (and shine upwards). Now (circa 2012) we use fluorescent lighting from FJ Westcott.





Indoor lighting at archaeological sites





Some museums ask that people not use flash. Other museums ask that photographers not use tungsten halogen (these museums prefer flash). But since the stelae are not painted with dyes, the light will not affect any coloration on the stone monument (and ceramics are generally not painted with dye colorants either, but with pigments (minerals), and will unlikely be affected by normal photography).

Then came the digital era, and then came an improved lighting technology, fluorescent lighting. This new lighting style has only two disadvantages, that there are not as many brands available and no directional systems such as Dedolight for small artifacts. If you have to photograph figurines or small sculptures, Dedolight was an absolutely outstanding system. But they are tungsten and also they do not work with tri-linear sensors (for large format digital cameras such as Better Light). For any tri-linear scanning CCD sensor your lights can't fluctuate even an iota. Dedolights constantly fluctuate (they are not constant). You have to add an expensive constant voltage system. These systems are very heavy and thus not realistic to take on an airplane. We had to install a constant voltage system in every location where we used a tri-linear scanner with night lighting. During the day, with sunlight, obviously you don't need to regulate any electricity!





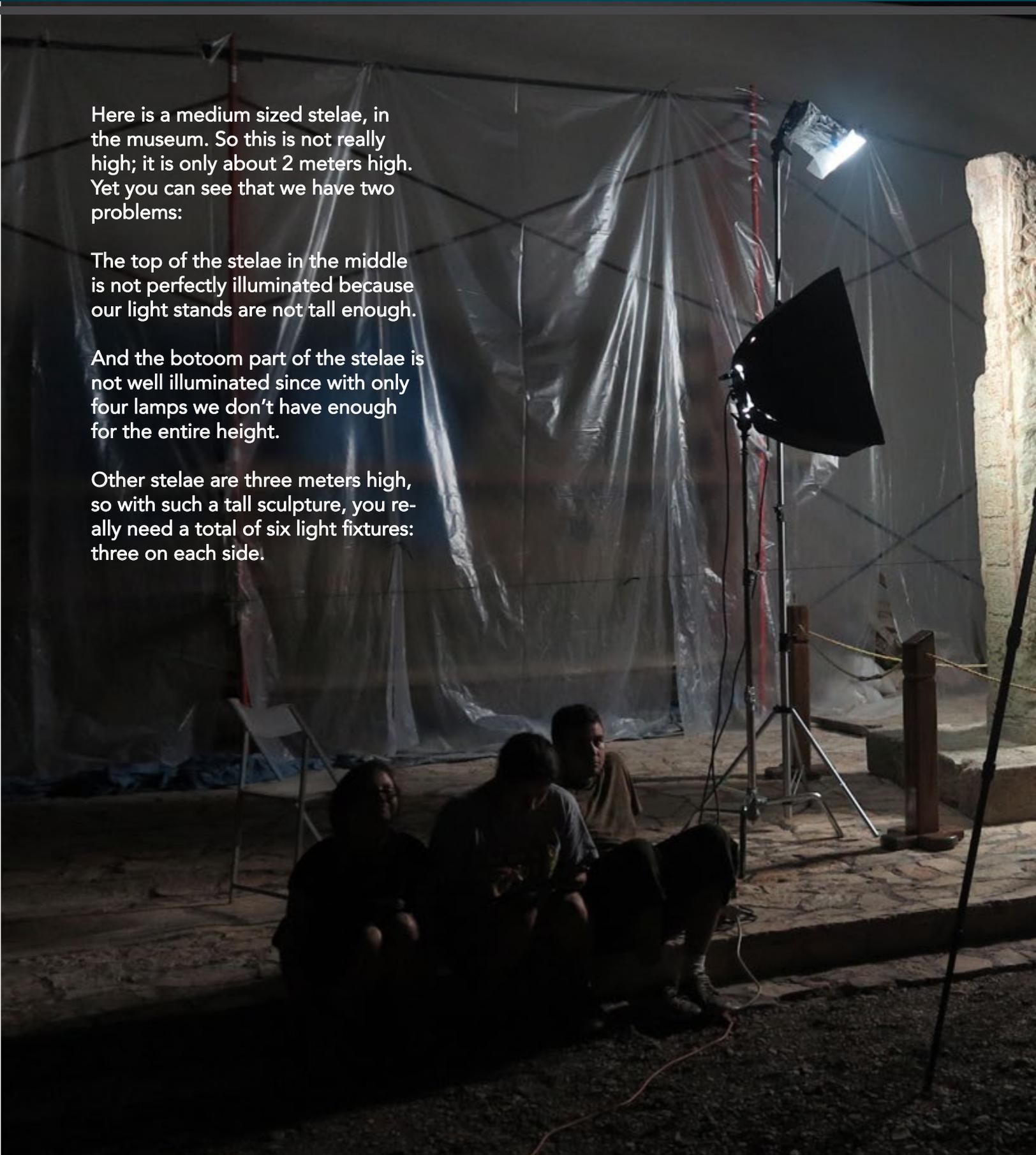
Indoor lighting at archaeological sites

Here is a medium sized stela, in the museum. So this is not really high; it is only about 2 meters high. Yet you can see that we have two problems:

The top of the stela in the middle is not perfectly illuminated because our light stands are not tall enough.

And the bottom part of the stela is not well illuminated since with only four lamps we don't have enough for the entire height.

Other stelae are three meters high, so with such a tall sculpture, you really need a total of six light fixtures: three on each side.





The advantages of modern fluorescent lighting systems for digital photography are:

- No heat, almost no heat whatsoever.
- Bulbs last almost forever
- Bulbs don't break easily and if they do break are cheap to replace
- You can buy these bulbs at any grocery or hardware store (through we recommend you get the higher quality ones from the studio lighting brand, such as F.J. Westcott).

Since you are going to do a gray balance anyway, nowadays it does not really make as much difference what the color temperature of your lamps is. 40 years ago it was necessary to use color filters on the lamps and/or color filters on the lens. I have not used a color filter since circa 1996 when we "went digital" and threw away our Leica and Hasselblad and Linhof 35mm, medium format, and large format film systems (except that we returned the Hasselblad and Linhof to service since you can put a Phase One, Leaf, or Hasselblad digital back onto even a 40 year old Hasselblad camera body, and you can put a large format digital tri-linear scanning CCD onto a Linhof or Cambo or any good large format view camera).

Indoor lighting at archaeological sites

The present report shows the new digital fluorescent lighting technology. I would estimate these Westcott Spiderlite TD5 light system is about second generation. A third generation, Spiderlite TD6 (which we do not yet have) is Westcott's next generation. Recently I have seen a newer version of the 5-bulb system, now called Westcott D5.

So if you are a museum curator, or director of an archaeological project, we recommend you consider the new D5. Here is the set you should order:

- Six D5 units, each with a softbox (which we list below)
- Two 16 x 40" Strip for Westcott D5
- Two 24 x 32" Softbox for Westcott D5
- two 32" Octabox for Westcott D5





This long throne front is one of my favorites. The top panels show anthropomorphic representations of the Moon Goddess and her Rabbit Companion and other celestial images.

It would take an ICELIGHT to properly illuminate the seated personages at the lower level. The ICELIGHTS did not exist when we did this photography about three years ago.

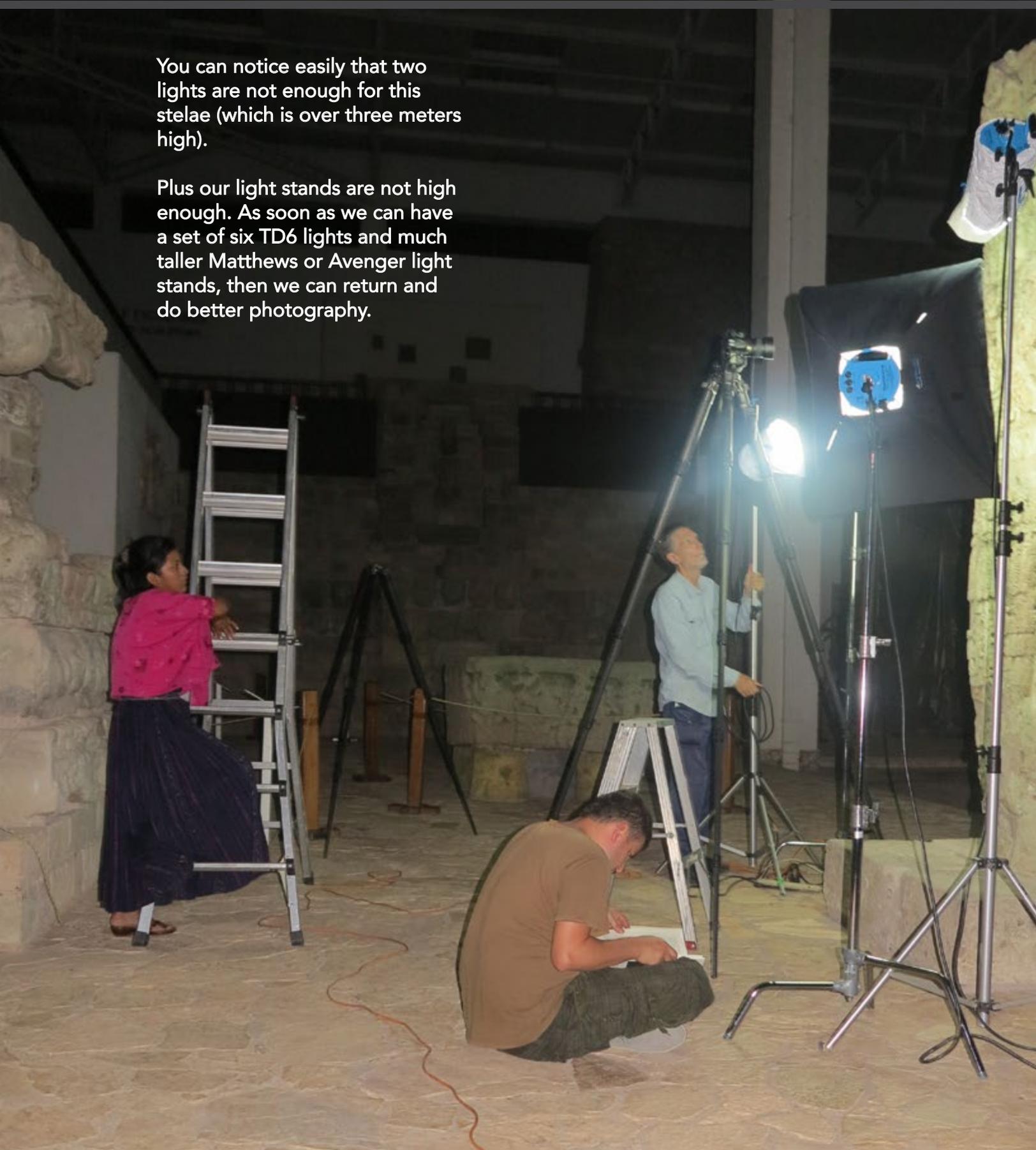




Indoor lighting at archaeological sites

You can notice easily that two lights are not enough for this stela (which is over three meters high).

Plus our light stands are not high enough. As soon as we can have a set of six TD6 lights and much taller Matthews or Avenger light stands, then we can return and do better photography.





Indoor lighting at archaeological sites

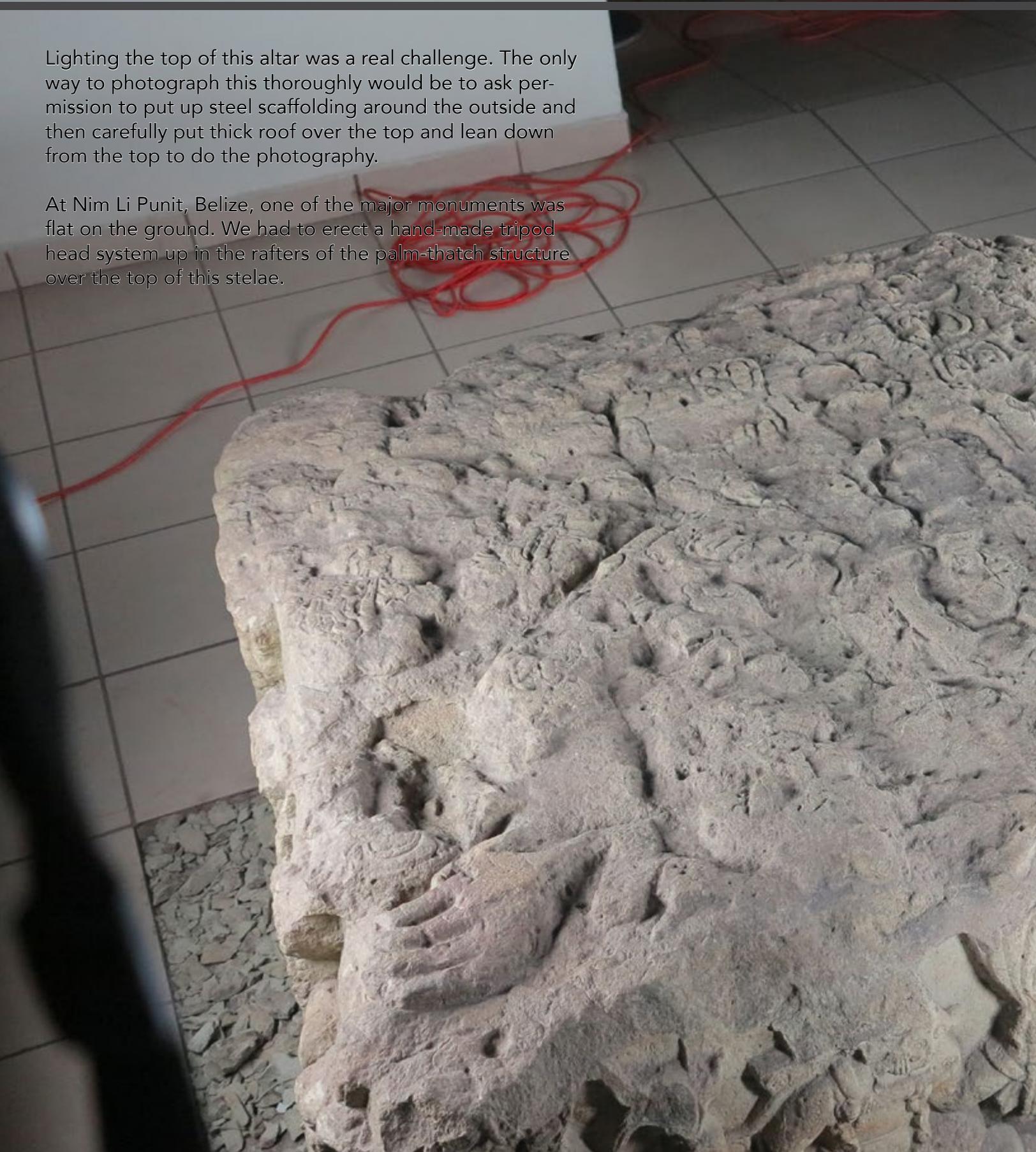




Indoor lighting at archaeological sites

Lighting the top of this altar was a real challenge. The only way to photograph this thoroughly would be to ask permission to put up steel scaffolding around the outside and then carefully put thick roof over the top and lean down from the top to do the photography.

At Nim Li Punit, Belize, one of the major monuments was flat on the ground. We had to erect a hand-made tripod head system up in the rafters of the palm-thatch structure over the top of this stela.









Indoor lighting at archaeological sites



The lack of heat is an important feature of Westcott lamps

I have adapted a spider who lives behind the fluorescent light bulb over my desk. Yes, his nest is directly above me as I write this. The spider is about 3 or 4 years old. His or her babies now have nests throughout the office (they help capture mosquitoes and flies, so we do not tear down their spider webs). But several of these spiders live directly behind the fluorescent bulb (where the socket is connected to the ceiling, there often is a tiny space; this is where the spider crawls in to rest during the day. When I turn off my lamp at night, he or she comes out.

The fluorescent bulb lighting my desk as I write this report is identical to the one in my Westcott studio kit.

This spider would not survive if this were a tungsten halogen lamp, and I am not even sure it would survive if the bulb were the normal kind that everyone used 10 years ago in their homes.

Here is a PDF on the spiders which we facilitate in our office, as there is no need to destroy insects when they are providing a helpful service.







Indoor lighting at archaeological sites









Indoor lighting at archaeological sites





Indoor lighting at archaeological sites





The advantage of the Spiderlite TD6 is that you can use either daylight fluorescent or tungsten halogen lamps.

Spiderlite TD6 come with a 36 x 48" Pro Shallow Softbox.

Decades ago I decided that I prefer softbox style to an umbrella reflector.

What we would like to evaluate next?

During our last trip to Copan (about two years ago), we had four Westcott TD5 units, but only two softboxes. We appreciate these units kindly provided by FJ Westcott for our annual reports every year.

What we found at Copan was that for the tall stone stela, it takes three units on each side, so a total of six units would be essential. Since the TD6 is newer technology, this is what we would like to evaluate, since our 100,000+ readers.

So if you are an archaeological project, or a museum, you should consider either the D5 or the Spiderlite TD6, each with softboxes.

On our next trip to Copan Ruinas, Honduras, the ideal system would be six TD6's, each with their own softbox.

Museum at the Copan archaeological park. This bas-relief stone architectural façade is nicely illuminated with four Westcott TD5 units. The two lower ones have a softbox, but somehow we do not have a softbox for the upper units.

Indoor lighting at archaeological sites

Here we are photographing the fascinating humanoid animal monster creatures on the side of this giant altar. On the back wall of the museum here you can see a 1:1 scale full size rollout photograph of Copan Altar 16. These are our photographs from a previous session, which we donated to IHAH and which they utilized to help show visitors to the museum what the entire dynastic sequence looked like.





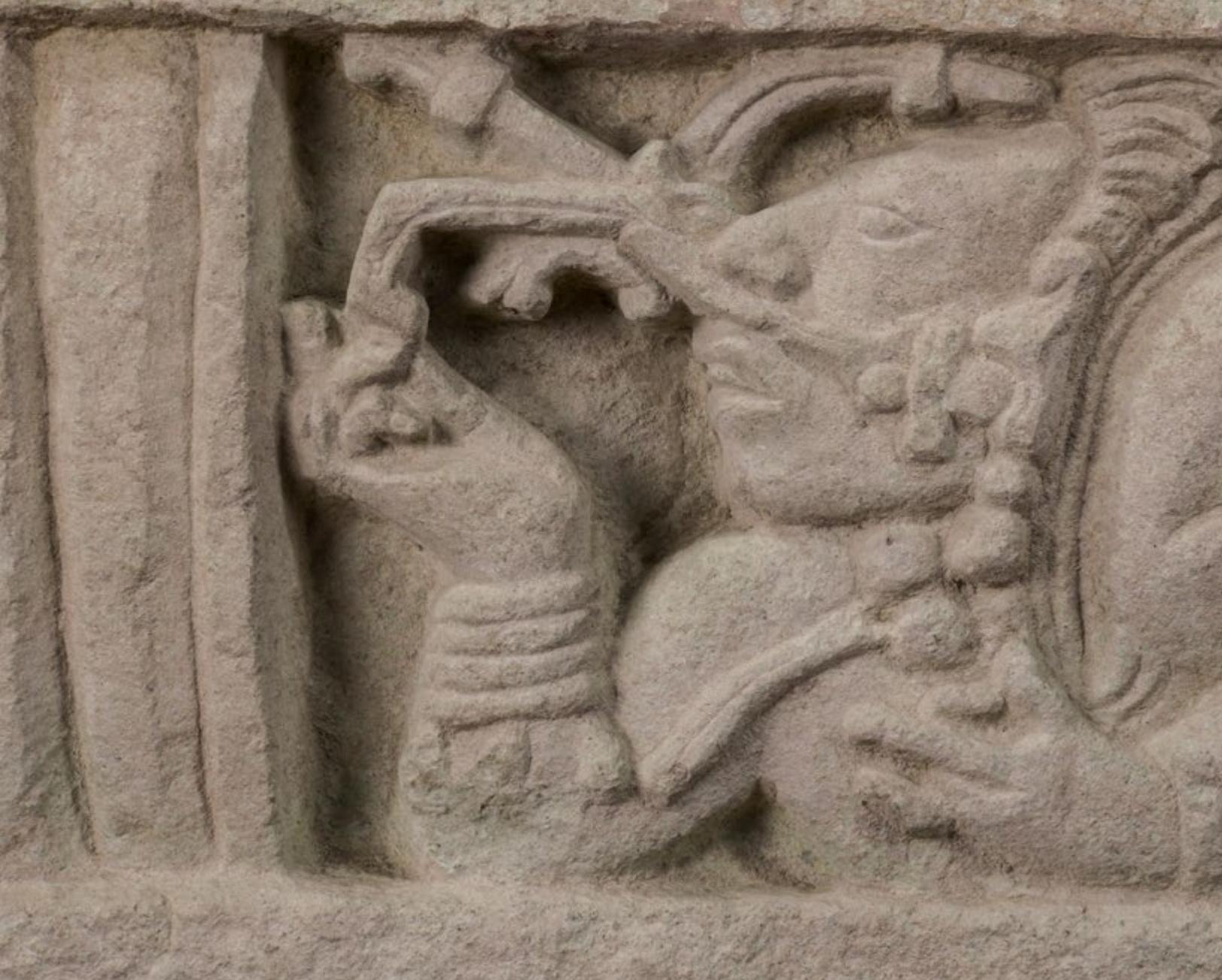




Indoor lighting at archaeological sites

To obtain good photographs of archaeological sculpture
It helps to devote some time and thought to learning about
which equipment is better.

During 40 years of photography at Copan we have used a diverse range of cameras, lenses,
and lighting equipment. Now that new equipment is available from FJ Westcott, we would
like to return with:



- A set of six Spiderlite TD6 units, each with a softbox
- A set of four ICELIGHTS (since we would need to have a row of them due to the size of the sculptures at Copan).

We believe the brand new Westcott FLEX LED panels also have considerable potential in archaeological photography, and also for photographic flowers (since flowers wilt if lighting is too hot). There are many archaeological artifacts which should be test-photographed with the FLEX system to evaluate the potential.

