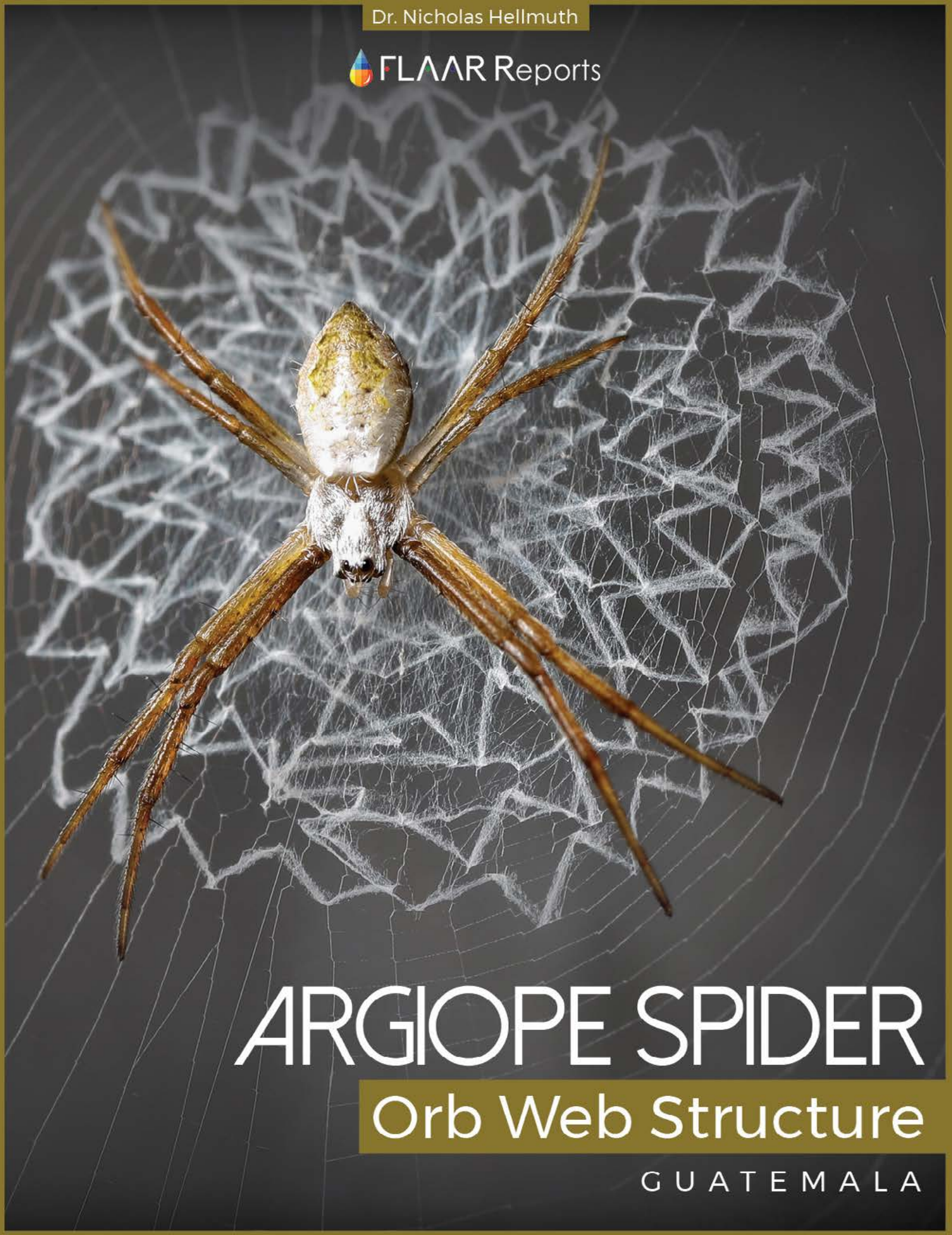
Dr. Nicholas Hellmuth

FLAAR Reports



ARGIOPE SPIDER

Orb Web Structure

GUATEMALA

Arigope Spider
Orb Web Structure

Photographs: Erick Flores (FLAAR).
Layout and graphic design of the PDF: Su Lin Chang (FLAAR).
Genus identification: Marcella Sarti (FLAAR).

FLAAR MESOAMERICA 2017

This is the snapshot I received

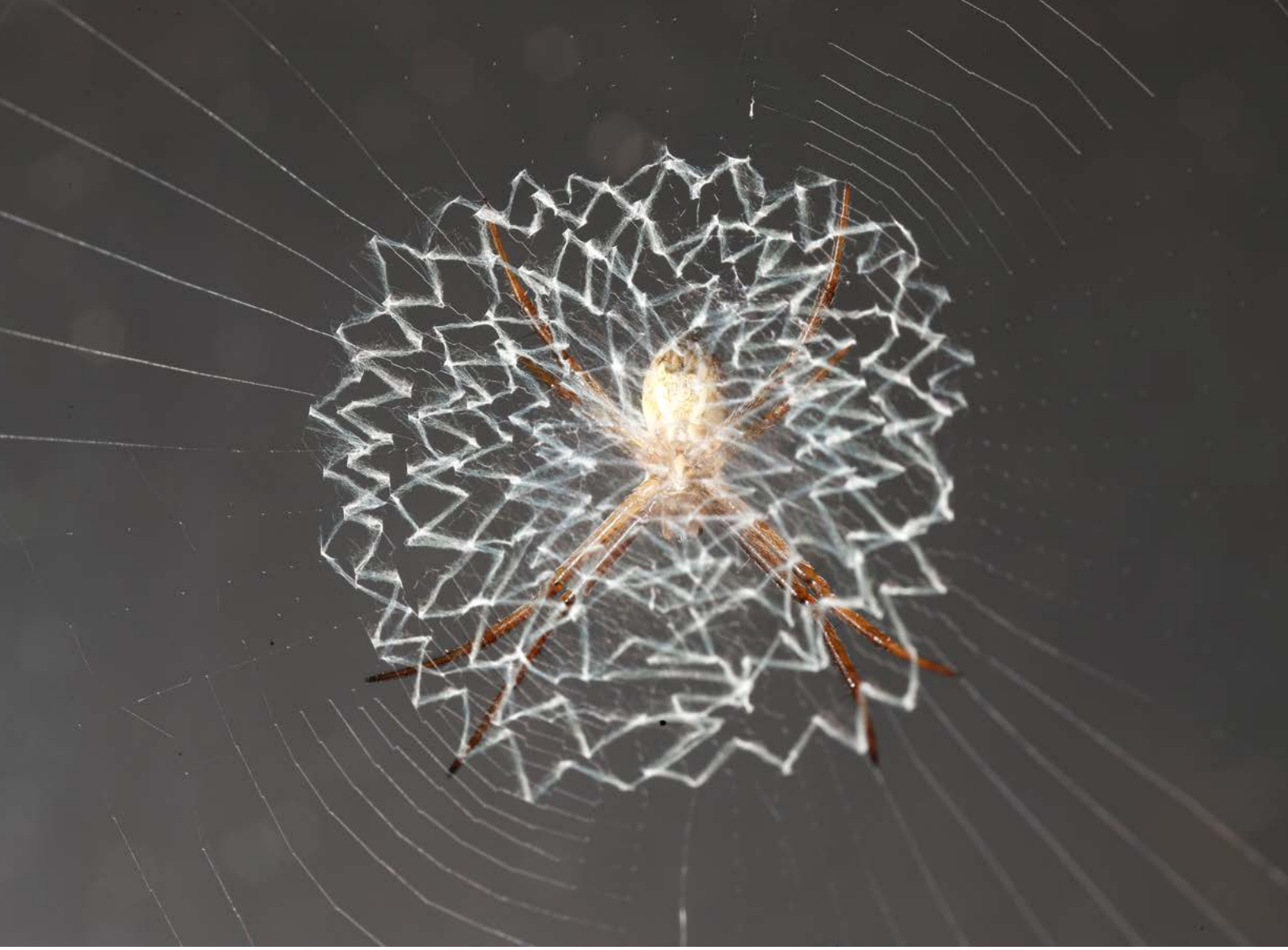
On Sunday I received a cell phone snapshot of a spider. The geometric pattern was so unexpected that I decided to rush to photograph this web before the seasonal rains would wash it away. So by Monday noon we were standing in front of the spider and its web.

My first shock was to notice that the visible part of the web was only about 1 to 1.3 cm in diameter. I had assumed the spider web was “spider web sized.” We learned that the spider was a juvenile, and that it (and its web) would be a bit larger as it got older.

Here is the spider removed (digitally) from the web, so you can see how its eight legs are in four groups.

In addition to the remarkable web, the spider itself was noteworthy since it kept each pair of legs closely together. So the overall result looks like a "4-legged spider."

Canon EOS-1D X Mark II, MP- E 65mm f/2.8 1-5x Macro , speed 1/80, f /11, ISO 160



Canon EOS-1D X Mark II, MP- E 65mm f/2.8 1-5x Macro , speed 1/80, f /11, ISO 160

This is the back of the spider, seen through the web. Since there is a thick window, the view can't be direct. The spider web was several millimeters in front of a window of the house. So when you photograph the front of the web, you often get a reflection from the window glass. When you photograph the back, your camera is inside the house looking through the glass.

When you read about spiders of the Argiope genus, you notice that the bright-white area of their webs is usually just the diagonal strands where the spider puts its legs. But our Argiope spider had made its entire central portion bright-white. Perhaps this is because it is a juvenile?

Canon EOS-1D X Mark II, MP- E 65mm f/2.8 1-5x Macro , speed 1/80, f /11, ISO 160

Here the lighting is different, to emphasize the bright white aspect of the center of the orb web.

When I first saw the snapshot from a mobile phone, all I could see was this central portion; I had no idea there was a much larger web because only the center was visible. The rest of the web was, literally, the most invisible web I have seen.

But if you are a good lighting specialist (Erick, plus camera assistant Senaida Ba) you can make an "invisible" web visible if you put your lighting at the correct angle.

Canon EOS-1D X Mark II, MP- E 65mm f/2.8 1-5x Macro , speed 1/80, f /11, ISO 160

Photography of the Spider

This lighting reveals the spider, the “bright white” area, and the structure of the orb web nearby.

Since there is no 2X Nikon macro lens, I did not photograph this spider. Canon has a 5X macro lens (MP-E 65mm f/2.8 1-5x macro), so Erick Flores did the photography. I spent my day photographing large Nephilia spiders in the same garden (mostly with a 200mm micro-Nikon lens).

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Erick Flores explains why he did not use a tripod for these macro close-ups of the tiny spider.

For the photos in this report there was no use of a tripod, I feel more comfortable without one. If the spider moves I can catch the movement or the moment that happened, otherwise the lens I used (Canon macro MP-E 65mm) has a focusing ring that needs a focusing rail to have a better focusing capture. In my opinion it’s better to do it manual and without a tripod. If you use a tripod for a moving insect you can’t move the camera fast enough to capture the insect’s new position.

These two photographs show the head and forelimbs nicely focused.

Nikon D810, AF-S Micro Nikkor 200mm f/4, speed 1/250, f /4.5, ISO 640

Marcella Sarti identified

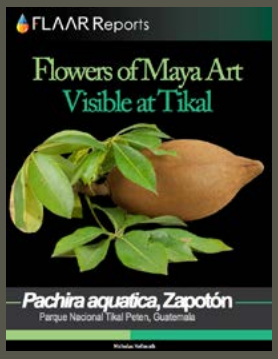
Spider as *Argiope*

What was remarkable is that the “invisible to the eye” part of the web because visible when the ringlight was used. But to get good effect in some cases it helps hold the ringlight in your hand (so not always screwed to the front of the lens).

Since this is a juvenile spider it does not yet have the shape and coloration of an adult. Thus we have not yet identified its species. Here are the potential species for Guatemala:

- Argiope argentata
- Argiope blanda
- Argiope aurantia
- Argiope savignyi
- Argiope submaronica
- Argiope trifasciata

Nikon D810, AF-S Micro Nikkor 200mm f/4, speed 1/250, f /9.0, ISO 640



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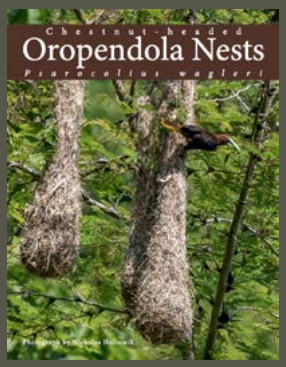

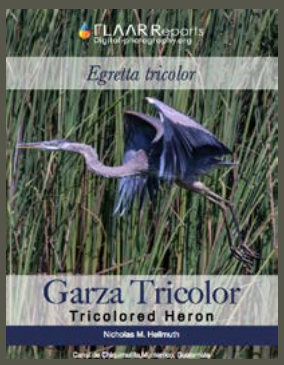

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