

200 inch Telescope on Mt. Palomar

Where the Earth Meets the Sky - Part II

Last month I talked about our trip to Mt. Wilson to see, what was once, the world's largest telescope, the 100 inch reflector as well as the night we spent looking through the 60 inch telescope there. This month we continue our trip south of Pasadena and Los Angeles to the place that took the title of "World's Largest Telescope" away from the 100 inch scope at Mt. Wilson - the 200 inch telescope on Mt. Palomar.

Editorial Staff:

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Bryan Snow, Editor
Dawn Snow, Creative Director, design and production.

Contributors:

Bryan Snow; David Orbock;
Fran Gardino; George Pearl

IAPP e-Monitor

The IAPP e-Monitor was designed to give our membership a quick look at what is going on with the IAPP and with panoramic photography in general. It was originated to give our membership quicker information while they await the release of the PANORAMA.

We welcome any and all articles and photos from IAPP members for inclusion into the IAPP e-Monitor. This is a publication for the IAPP, by the IAPP, and about the IAPP.

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This telescope was also the brainchild of George Ellery Hale, the man who spearheaded the construction of the 100 inch. To delve deeper into



the mysteries of the universe and to view what the universe was like billions of years ago, a bigger and more powerful instrument was needed and it took the form of the 200 inch telescope on Mt. Palomar.

The larger the telescope's mirror, the more light it can capture. The more light it can capture, the

fainter objects that can be imaged. The fainter objects that can be imaged, the farther back into time we can see. We can understand this because the light we see through these telescopes travels at a finite speed - approximately 186,000 miles per second or 300,000,000 meters per second. So everything we see, we see, not as it is at this moment in time, but as it was when the light left the object that we are looking at. A classic example is the Sun. Our star is 93 million miles away and when we look up at it in the sky we see the light from it that left the Sun 8 1/3 minutes ago. During those 8 plus minutes it has been traveling those 93 million miles at 186,000 miles per second. So if you divide 93 million miles by 186,000 miles/sec, you get 500 seconds, and dividing 500 seconds by 60 seconds/minute you get 8.33 minutes. The fact that light travels at a finite speed, and we know that when we see galaxies that are millions or billions of light-years



Great Andromeda galaxy

distant, then, if we divide the distance to the galaxies by this finite speed of light, we can tell that what we are seeing now, through those telescopes are the way those galaxies looked millions or billions of years ago, when the light from those stars in those galaxies left. *These telescopes are, in essence, time machines, that let us look back into time as we gaze at the faintest, most distant objects that can be imaged.*

NOTE: A light-year is not a measure of time but rather a measure of distance. It is the distance that a beam of light, traveling at 186,000 miles/second travels in one year. It is equivalent to a distance of 186,000 miles/sec times the number of seconds in a year (31,536,000 seconds). This equals 5,865,696,000,000 miles in a light-year.

While I was taking in the history behind the architecture of the observatory buildings on Mt. Palomar and remembering many of the discoveries that were first made on this mountain over the past six decades, I also took some time to take some panoramas of the dome and its surroundings as well as images of the telescope itself. One of the apps I put on my new Apple iPhone 5 is called **645 Pro** by Jag.gr. You can get more information at their website at <http://jag.gr/>.

One of the best features of this software app is its ability to change the aspect ratio of your iPhone's 8 Mb camera. By rotating a virtual selector on the app you can select from a number of different "interchangeable backs". You can choose between 6x6, 6x7, 6x7+, 645, 6x9, 6x12, or 6x17. These give you, not a medium format size but a similar aspect ratio, that is: a 6x6 (1:1 ratio), 6x7 (1:1.17), 6x7+ (prints straight on 8x10), 645 (4:3), 6x9 (2:3), 6x12 (1:2) and 6x17 (1:2.83). You can also rotate a virtual selector that allows you to change "film modes". According to

the **645 Pro** manual - “You can choose between **F4** (subtle, fine-grain B&W), **H5** (high-contrast, high-grain B&W), **T3** (classic medium-grain medium-contrast B&W), **C42** (fine-grain color ideal for portraits), **E6K** (a cooler transparency), **FC5** (rich, saturate; great for nature), and **K14** (warm as toast, with intense blacks)”. These are, of course, digital versions of the old traditional film renditions.

You can also interchange focusing screens automatically by toggling a virtual switch to choose between crosshairs, Rule of Thirds, or an architectural grid. It likewise offers a histogram and a display showing the ISO and shutter speed, battery status and whether the camera’s flash is on or off. You can choose between multi-zone metering or spot metering.

There are a number of other features and the best way to get more information is by going to their website or check out the app on iTunes.

For this article I shot a couple of panoramic images of the observatory just to see how well the app worked. Standing in the same location I was able to shoot an image of the observatory

and its surroundings at the 612 setting and the 617 setting. Now, it doesn’t give a larger panoramic image as does an actual medium format panoramic camera where the 617 gives a bigger physical size than would a 612 back on a medium format camera. Instead, it just starts with the optimum size and masks down that full sized image to the proper aspect ratio. So it actually gives a smaller sized image the greater the aspect ratio. The good thing about this is that it does give you a panoramic image in one shot rather than shooting several larger size single images that are overlapped and stitched together to form a larger panoramic image. This does away with the problems of breezes moving leaves and branches that never quite align when stitching together the separate digital images. One shot and it’s “in the can”. The results are not going to give you an image that can be blown up to fill a wall but for



iPhone 5, **645 Pro** app. 612 panorama



iPhone 5, **645 Pro** app. 617 panorama

electronic images or printed images that are maybe 10 or 14 inches wide, it gives a reasonably good image.

I also took the opportunity to generate a panorama of the Observatory with my 45mm T/S lens on the panoramic adapter. Stitching it together gave a “normal” panorama with which to compare it with. Inside the observatory we got a private tour of, not only the telescope, but also the tons of I-beams that supported the gigantic telescope a level above the ground floor. The giant rotating dome that covers the telescope rolls on polished wheels similar to those on railroad cars. The movement is so smooth and silent that, when standing on the dome you cannot tell that you are moving but, instead, the surrounding trees and buildings seem to move silently in the opposite direction.

The views atop Mt. Palomar are lush and green in October and are reminiscent of pastures rather than the craggy rocks of other mountain ranges. At only 6,000 feet (1,800 meters) it is not what most people think of when imagining mountains, but due to exceptionally clear and steady air, the images

through the telescopes have given our generation a truly amazing view of Where the Earth Meets the Sky.

Next month we will examine the location where the giant optics of the next generation of telescopes are being made - The Steward Observatory Mirror Laboratory at the University of Arizona in Tucson.

ARTICLES FOR THE E-MONITOR are constantly be accepted from any and all IAPP members. Written articles should be sent in document (.doc) form. Images should NOT be put in the document but should be separate, with locations in the body document as to where the images should be placed. All images should be jpegs and sized at 300 dpi and 7 inches at their longest side. Articles or images not corresponding to these requirements will not be accepted.



Palomar Observatory shot with Canon 5D and 45mm T/S lens on panoramic adapter



I-beam support structure of the 200 inch telescope



Main Square under construction - Tirana, Albania

The Balkans - Part V

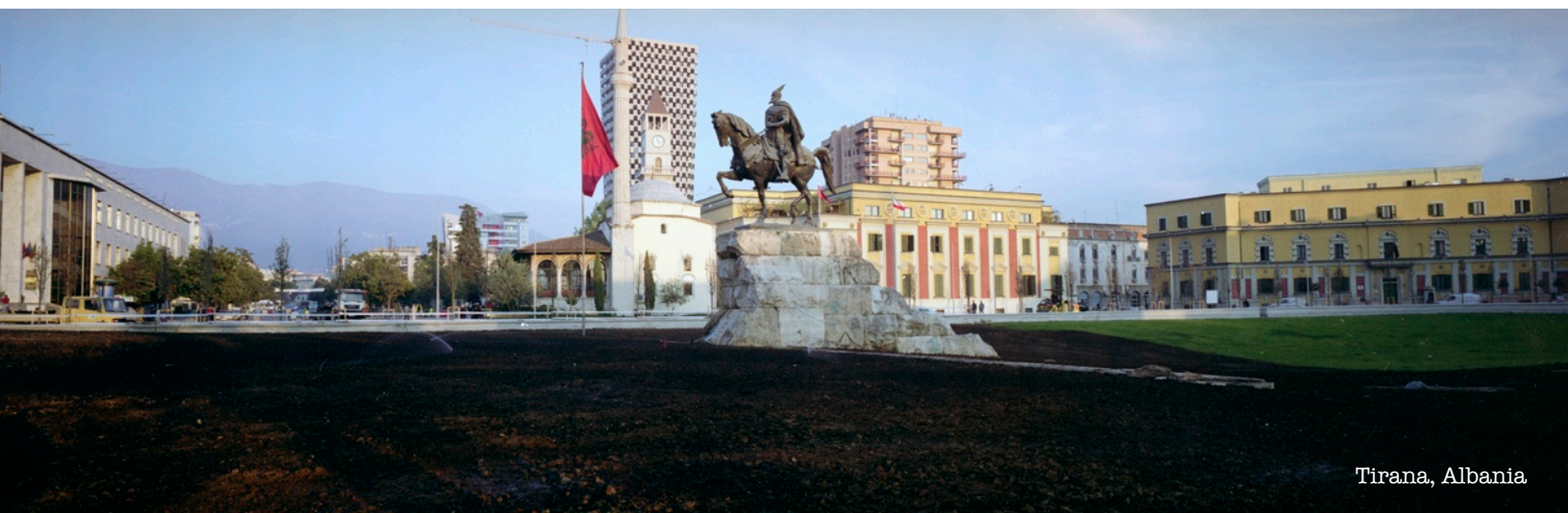
by David Orbock

I arose in 5 AM darkness, gathered my belongings and headed down the hill to the TRIM market to catch a cab to the bus station in Struga. When the taxi arrived three passengers (including myself) got in; however, the driver waited another 30 minutes for additional fares. When none arrived he proceeded to the bus terminal which was 45 minutes away. Along the route he picked up and discharged passengers - almost like a local bus. We arrived at the terminal at 8 and had plenty of time to spare since the bus to Tirana didn't leave until 9:30. After purchasing my ticket I passed the time in the small cafe drinking coffee, eating a small roll and bringing my log up to date. The bus arrived right on time and not surprisingly was less than half full.

The road to Tirana is over a mountain range and although the mountains aren't very high the bus struggled up the hills, especially on the hairpin turns. Coming down was faster, but definitely not safer due to the added speed on the curves. Along the way I observed that almost every building had

a water barrel for emergency or to compensate for low water pressure. Tending of farm animals was left to the elderly members of the family. It wasn't unusual to see one old person with a sheep or cow; or a hundred or more animals being herded by one senior accompanied by one or two dogs. In business areas, small Ma & Pa shops were squeezed between larger furniture, hardware and construction material stores. Although there were a fair number of service stations, most of which had facilities for washing all sorts of vehicles (the roads were very dusty), very few had customers.

We had no problem at the border crossing and arrived in Tirana shortly after noon on a warm sunny day even though it was early November. The main square was under construction and from the look of it was going to be beautiful when completed. The government was still undecided as to whether vehicles would be allowed or whether it would be only for pedestrians. According to one person I talked to, the square has been under construction for over three years and he ventured



Tirana, Albania



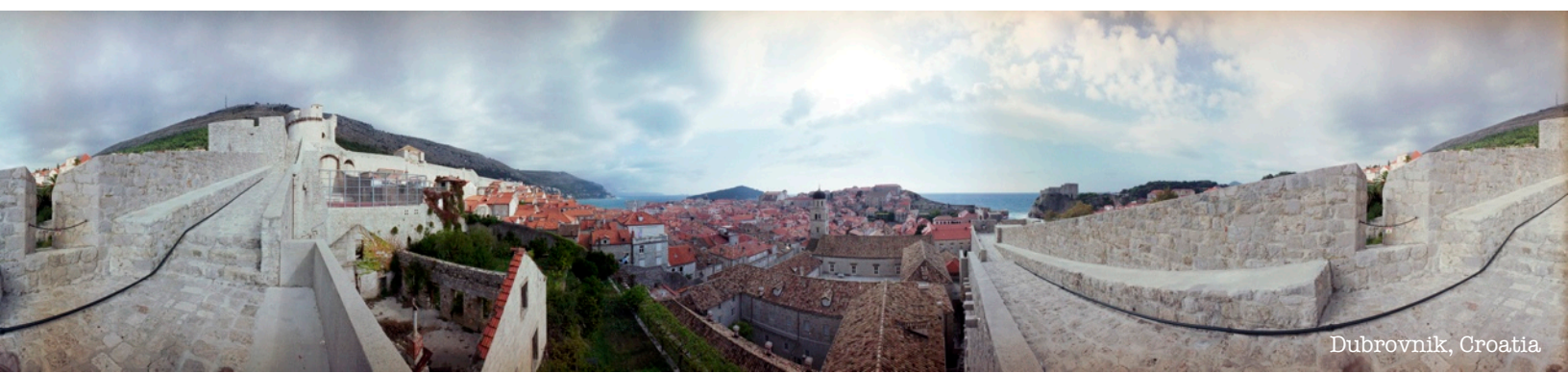
Tirana, Albania



Dubrovnik, Croatia



Dubrovnik, Croatia



Dubrovnik, Croatia



Dubrovnik, Croatia



Dubrovnik, Croatia

that it would be another two before it was completed.

I strolled up a side street leading from the square, following the directions I had been given to the Hostel Albania - "located in an alley off of another alley off of the side street leading from the main square". Half way up the first alley was a very small store staffed by a woman who nodded as I passed by and pointed toward the second alley; indicating that the hostel I was looking for was up there. Since the hostel was only partly filled I had my choice of rooms. I chose a lower bunk in one of the six bed rooms and after registering grabbed my cameras and headed out in the direction of the main square.

Downtown Tirana was much like many of the other cities in the Balkans - wide streets and loads of buses and taxis (most of which were Mercedes). There was an abundance of small shops, but very few large department stores and lots of people resting in the chairs in the main square. ready to keep an eye on the foreigner with a tripod. Right off the square was a small amusement park with rides, set up much like our traveling carnivals, Although it wasn't yet open, I suspected they were waiting for the school children to arrive. On the way back, I bought some cookies from the nice lady in the alley and thanked her for directing me to the hostel.

Since my side trip to Albania was a late decision I only stayed in Tirana for 1 1/2 days figuring I would return in a few years to explore more in depth. So after two nights I got up early again and headed to the other end of town for a mini bus that would take me to Shkoder where I would catch another bus to Ulcinj. The mini bus was scheduled to leave at 7 AM but even so I had a leisurely hour walk. I had good directions but since the mini bus was an unlicensed cab it was tucked away in an alley behind an office building.

As I approached the alley I could see that the man standing there was looking for fares. He directed me to where four other passengers were already waiting. Twenty minutes later, with a full bus load, we headed to Shkoder. Unfortunately in Shkoder, I missed the connection to Ulcinj and would have to wait till morning for the next bus.

Not wanting to wait another day, I hired one of those Mercedes cabs to take me to the border with Montenegro where I was hoping to get a ride to Ulcinj. I proceeded through the checkpoint without a problem and started walking. Since it was a nice day and traffic was very light, I was looking forward to a leisurely trek through the country side, planning to eventually hail a bus or cab. However, I wasn't having any luck and after more than four miles I began wondering if I was going to have to spend the night in a farmer's field. On the opposite side of the road I spied a young schoolgirl and asked her if there was a local bus. To my amazement, in the middle of this strange and foreign land, she told me in perfect English that no buses came this far. Fortunately, after trudging another couple miles a cabbie stopped and asked if I wanted a ride. I did not hesitate, got in and paid the requested 5 euro fee. We arrived in Ulcinji just in time for me to purchase a ticket and board the bus for Budva.

Since the bus would arrive in Budva around 9 PM, I would have to find lodging when I got there. Luckily, I found another cabbie who knew of a hostel that was not too far from the terminal. Arriving at the Sun Hostel he waited until I confirmed that they had room for me (I think I was the only guest registered). I also booked the cab for early the next morning to take me back to the bus terminal where I would catch the 6 AM bus to Dubrovnick.

The ride from Budva to Dubrovnik was, as usual, on one of those large tour buses that frequent the Adriatic coast. The highlight of the trip was the part that followed the Bay of Kotor. The view at sunrise was particularly beautiful. Barb and I had been there in 1983 soon after a devastating earthquake left Kotor and other cities in the region

in ruins. Many villages were leveled and never rebuilt, but Kotor was restored and has prospered as a vacation destination. You knew you were in tourist country due to the proliferation of room, zimmer, and camare signs along the road.

The bus terminal in Dubrovnik, Croatia, is located next to the harbor, an advantage for the many passengers who arrive on large tour boats.

Since I wasn't in a hurry to check in at the Fresh Sheets Hostel, I walked around the harbor before heading to the old town. To my amazement, Dubrovnik looked exactly the same even though it was shelled during the war with

Serbia after the breakup of the former Yugoslavia. The old town (stari grad) is a completely walled section of Dubrovnik and for five euros you can walk entirely around on the wall. I spent the next two days visiting small shops, taking bushels of pans from the wall and trying to get some acceptable night images of the main street. I'm not a foodie, but I had the best meal of my trip there, in a small outdoor restaurant. The night was cool, but the meal of grilled calamari melted in my mouth.

Having been to Dubrovnik on three previous occasions ('83, '84, & '90), I was very familiar with the layout of the old town and its places of interest. As with other places in the Balkans, whenever I set up my tripod with the panoramic camera, I was asked what I was doing and then asked to explain the process of making a panoramic image with a rotating camera. Usually I say, "I won't tell you, but I'll show you". I let the camera rotate, do a bit of explaining and then pull out a bunch of contact pans from my camera bag and hand them out to the onlookers.

Time passed quickly and before I knew it I had to pack my bags and head back to Bela Crkva. However, the bus schedule would still allow a short stay in Sarajevo, Bosnia, and an afternoon in Belgrade. I rose early the next morning and walked to the local bus stop along with Marty whom I met at the hostel. Marty was on a two month tour of the Balkans and was also going to Sarajevo. The bus left promptly at 7 AM and would take a route that went north along the Adriatic to Split and then head inland to Mostar and Sarajevo, both cities in Bosnia. The trip, including three stops, would take seven hours.

As we headed inland, the land on both sides of the road was very swampy; however, many farmers had filled in the ground and were growing oranges. Many also had roadside stands where you could buy their oranges and other produce. Houses along the road were typically made with a concrete framework with tiled roofs. Openings in the concrete were often filled with terra cotta tiles. A large number of unfinished buildings lined the road but no one seemed to be working on them.

We arrived in Sarajevo at around 2 PM and took a street car to the hostel. After checking in, I grabbed my camera and headed to the center of the old town which was only about a 15 minute walk. It was chilly, but the streets were filled with shoppers and people returning home from work. I



Dubrovnik, Croatia

spent an enjoyable 30 minutes chatting with a couple who inquired about the camera. Before parting, I gave them a pan of Dubrovnick. Farther on, a group of chess fans was gathered in a small park observing a chess game being played with over-sized pieces.

As darkness fell, on the corner of Marshall Tito Street, Sarajevo's eternal flame glowed brightly in tribute to the soldiers and civilians who died during

the Nazi occupation in the WWII. It was late when I arrived back at the hostel and I was tired after a full day of new experiences. However, I needed to rise early the next day and catch a bus to Belgrade for the last part of this stupendous journey.



Typical Bus Stop



Sarajevo, Bosnia



Sarajevo, Bosnia



Sarajevo, Bosnia.



Chess Game



Sarajevo, Bosnia.

Member's Notes:

Hello Friends of Fran,

As you may know, it has been an exciting year for me which started with my self-publishing a photo book named "Touch the Sky" on Blurb in conjunction with a solo show of 30 cloud photos on canvas at the Midland (MI) Museum of Science and Art in the spring.

Next, my wife, my daughter, my cousin and I travelled to Sicily in celebration of the 100th Anniversary of my grandfather emigrating to Boston. I took over 750 GB worth of photos during the trip and have yet to edit a good portion of them.

In July, I participated in the Danforth Museum (Framingham) "Off the Wall " show with my 10-foot long Revere Beach Sunset photo juried by Cody Hartley of the Boston Museum of Fine Arts. The photo is now part of a corporate collection here in Brighton.

In August, I had a one man show at the Marblehead Art Association titled "At the Ocean's Edge" which included several of my images from my Sicily trip earlier this year. It was a great experience to show some new photo prints on Unryu and Bamboo paper.

In September, two of my photos were accepted and displayed at the Peabody Essex Museum Carriage House in a Salem Art Association show concurrent with the museum's "Off the Top of Your Head" exhibit. I have also shown at the annual Photographic Resource Center Auction at Boston University and at the annual Newton Open Studios show juried by Paula Tognarelli of the Griffin Photo Museum in Winchester.

So, as you can imagine, it is a great feeling to have my work (temporarily) in three highly reputable museums and the show in Marblehead MA.

Sincerely,

Fran Gardino

Observation:

I was reading about this new camera being developed and thought the members might like to see what is coming down the line at them. So far the camera is quite big and bulky and it takes about twenty seconds to make a snapshot, but in time this will be compressed into a hand-held camera and will be an extremely powerful tool. I wish it would record at least 180 degrees, but for now we have to put up with just 120. It is interesting though. Here is the link:

<http://online.wsj.com/article/SB10001424052702304441404577478182111367056.html#project%3DCAMERA0620>

George Pearl

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Offer to Membership

I have a few first edition copies of my book "Glacier Panorama" left in inventory, while the second edition is still selling quite well. [Amazon.com](https://www.amazon.com) has used copies that often go for more than the original selling price of \$50.

I would like to donate autographed copies to any IAPP member contributing \$100 to the IAPP general fund as an assist in getting the next conference committed and scheduled.

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