nightwatch
Newsletter of the Pomona Valley Amateur Astronomers

The sky is filled with stars, invisible by day.
Henry Wadsworth Longfellow

Volume 32 Number 06 ***nightwatch*** **June 2012**

President's Message

Busy days right now, both in the heavens and here on Earth. I've heard lots of good reports of people successfully viewing the eclipse on May 20. My own eclipse trip to Page, Arizona, was a smashing success. The lunar eclipse early in the morning on June 4 was clouded out, at least here in Claremont. By the time you read this, the transit of Venus across the face of the sun on June 5 will already have happened. I hope you got a chance to see it—it won't happen again until 2117.

We also have some great club events coming up. Our speaker for the June 8 general meeting is Robert Stephens (http://planetarysciences.org/stephens.html), who will give us "A Journey Through the Asteroid Belt". On June 16 we'll have a star party at White Mountain. My annual curse has struck again—I'll be in New York looking at fossils instead of on White Mountain looking at stars, but I hope you all have fun without me. We have another star party just a week later, on June 22, at Cottonwood Springs. That one is a joint venture with the Palm Springs Braille Institute—astronomy outreaches for the visually impaired have been a focus for the club since Frank Busutil started Project Bright Sky several years ago. Finally, on July 2 there is a school star party at Colony High School in Ontario.

One more thing: according to Don Slaven, the head of the Claremont Public Library, the waiting list for the Library Telescope Program is now 20 weeks long, so that's going even better than expected.

Summer always seems to go by too fast. I hope you get some time to slow down, look up, and watch the worlds go by. Clear skies!

Matt Wedel

Club Events Calendar

June 8 - General Meeting – Speaker Robert Stephens - "A Journey Through the Asteroid Belt"
June 16 - Star Party - White Mountain
June 22 - Star Party - Cottonwood Springs - joint with Palm Springs Braille Institute

July 2 - School Star Party - Colony High School, Ontario
July 5 - Board Meeting, 6:15
July 13 - General Meeting
July 21 – Star Party – Cottonwood Springs
July 24 - Ontario Library Main Branch - Dark to 9pm
July 25 – Star Party – Orange County Braille Institute, Anaheim

August 2 - Board Meeting, 6:15
August 10 - General Meeting
August 18 - Star Party - Mojave River Forks Regional Park
August 30 - Board Meeting, 6:15

September 7 - General Meeting
September 15 - Star Party - To Be Announced
September 20-21 - PATS Astro Imaging Workshop
September 22-23 - PATS
September 27 - Board Meeting, 6:15

October 5 - General Meeting
October 13-Star Party–Nightfall/Anza-Borrego Desert State Park
October 23 – Ontario Library Main Branch 7 – 9pm
October 25 - Board Meeting, 6:15

November 2 - General Meeting
November 10 - Star Party - To Be Announced

The Transit of Venus from Downtown Claremont

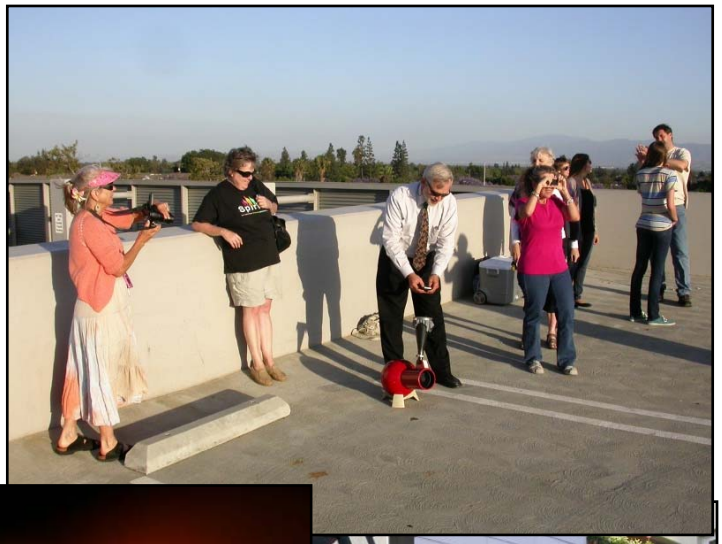
The transit of Venus yesterday was spectacular. A friend and I went downtown and set up a couple of scopes in the public square in front of the theater. One was my son's Astroscan projecting the image using a sun funnel, and the other was a small refractor with a solar filter for direct viewing. I also had several pairs of eclipse shades and a piece of #14 welder's glass so people could observe the sun directly.

We got set up just in time and got some great pictures of the infamous “black drop effect” that so bedeviled observers in the 18th and 19th centuries. Soon after we had a steady stream of visitors of all ages, from school kids out for the afternoon to retirees.

At 6:30pm the sun was going down behind the theater so we relocated to the top level of the parking garage across the street. By this time the word was out on Facebook and elsewhere on the internet that there was a public transit viewing going on, and we had several people come by who had found out about it that way. In all, about 85 people saw the transit on one of our scopes, of which about 30 were kids.

As the sun set we could see airplanes going in and out of LAX flying across its disk, but we weren't fast enough to get any pictures. The sun went behind some trees as it was setting, but it reemerged below the branches for just long enough that we got to watch Venus set behind the western horizon. All in all, a fantastic day.

Matt Wedel



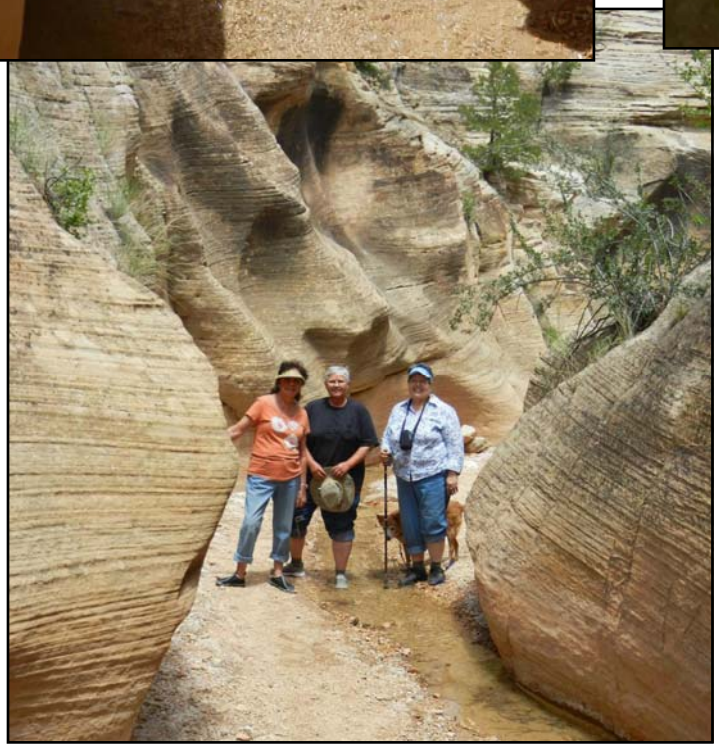
Eclipse Experiences

Jean Mueller and I (and our friend Carmen) went to Kanab Utah and had beautiful canyons to walk before the day of the eclipse. Then on eclipse day we set up on the front porch of the house we rented and had our primo view of the whole eclipse. Wonder- full!!

Billie Chandler

Ellie and I took my 90mm mak-cas up to the top of a nearby hill with a commanding view of the horizion South to North. There was a gentleman with a refractor etx and a number of friends and neighbors. However he had only a wide-angle eyepiece and the view was not much better than the sighting filters in use by several people. As a result, my scope was used like an outreach event, which was quite a bit of fun.

William (Bill) Connelly



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What's Up? - Music From The Milky Way

When the Summer Milky Way passes overhead you can see the only constellation named for a musical instrument. It's Lyra (the Lyre), an instrumental part of the Summer Triangle formed by three apparently similar first magnitude stars. But whereas Vega in Lyra is 25 light years and Altair in Aquila is 17 ly, Deneb in Cygus is 3,000 ly. Deneb is huge and the farthest of all first magnitude stars. Appearances are deceiving.

All three constellations in the Summer Triangle were birds in flight in ancient times. Cygnus as a swan (Arabs saw it as a chicken), Aquila as an eagle, and Lyra as a vulture on Arab charts. But the vulture wasn't romantic enough for the Greeks who turned it into the musical harp of mythical Orpheus. The white hot star Vega (only star with a car named after it) probably derives its name from a swooping vulture. Although the names have become corrupted, Altair relates to an eagle's flight, and Deneb means tail.

In Lyra is a concise planetary nebula, M57 the Ring Nebula. At 8th magnitude it's a crisp cheerio in small telescopes that becomes a complex smoke ring of expanding gas in Hubble photos. Close by in Vulpecula (Fox) is M27, the Dumbbell Nebula. The largest of planetary nebulas it represents a side view of a PN form determined by the collapsed star's magnetic field. The ring shape is seen as a polar view. Side and polar these are the two brightest (of three) catalogued by Messier.

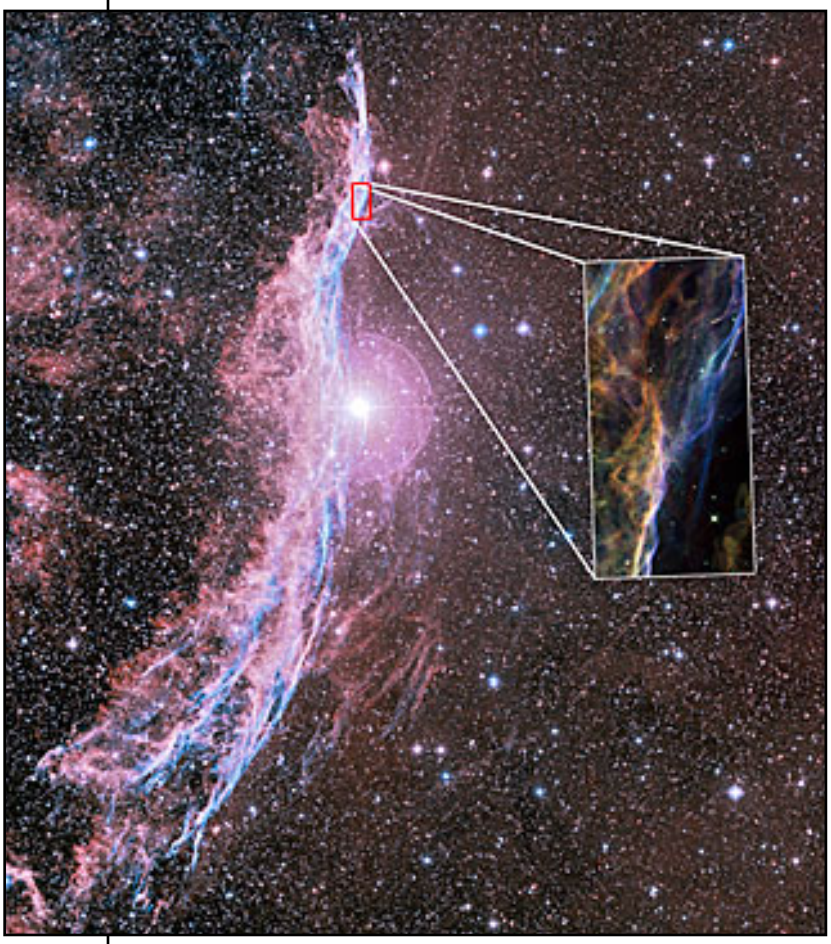
Another visually rewarding object in Lyre is "double-double" Epsilon Lyrae near Vega. This four star object reminds us that a high percentage of stars are multiple systems. Zeta Lyrae is also a double and Beta Lyrae (Sheliak) is an eclipsing or variable double.

Not far from Lyrae in the swan's head is the most admired of double stars, Albireo. This color double is a striking orange and blue. Nearby is a distant globular cluster, M65.

But let's examine four little constellations that lie in the Summer Triangle's realm. I already mentioned Vulpecula, a formless 17th century fill-in constellation that was originally the Fox and Goose (the goose got cooked). Besides M27 it also contains a popular little cluster aptly named The Coathanger (Brocchi's Cluster). This leads us to a tiny but ancient constellation, Sagitta (Arrow) that lives up to its name. Along the arrow shaft of Sagitta is M71, a small globular cluster.

Here is another humble and more time honored constellation, Delphinus (Dolphin). Known Biblically as "Job's Coffin" in England for the diamond shape that is also its dolphin's head, it's two brightest stars are called Sualocin and Rotanev. They are the reversed names of Nicolas Venator a 19th century Italian astronomer and chart maker who (modestly?) named them after himself. Then there's the 2nd smallest constellation Equuleus (Little Horse). Just a little horse, but globular M15 lies near by.

Returning to constellation Cygnus (Swan) we find a wealth of deep space objects. Here is Cygnus X, an invisible black hole orbiting a giant star. The dim Crescent Nebula is the result of a Wolf Rayet star. This is a very massive star that sheds its outer envelope. It's like a periodic planetary nebula that will eventually go nova. Here also is the lacy Veil Nebula, so big it has two NGC numbers. It's the remains of a supernova explosion some 50,000 years ago. Now super telescopes can enlarge parts of the Veil for examination (pictured). A bigger gas emission shape is the North America Nebula and the Pelican Nebula. Far off and faint is the Cocoon Nebula, a star nursery like the Orion Nebula. It's near open cluster M39. Two planetary nebula in Cygnus are the Egg Nebula (a first stage PN) and the Blinking Nebula which is so faint it blinks in and out of vision. New objects are still discovered here. We had a speaker, Dave Jurasevich, who discovered a Bubble Nebula in 2008. A dwarf star, Piazzi's Flying Star has a lot of proper motion because it's only 10 light years away. The Summer Triangle has rich star fields with dark clouds like the Northern Coalsack.



Aquila (Eagle) has fewer stellar objects, however just south is Scutum (Shield) which once had the political name of Sobieski's Shield to honor a popular Polish hero. Here's an interesting open cluster M11, the Wild Duck Cluster. It has a tight globular-triangular shape which has been compared to a flight of wild ducks winging across the heavens.

The Summer Triangle, bridged by the Milky Way, is a region so abundant in deep sky objects that many more are sure to be discovered in years to come. .

Lee Collins

Annular Eclipse Report

For the annular eclipse of the sun on May 20, our family drove to Page, Arizona. Page is just south of the Utah-Arizona border and about two miles from the center of the eclipse track. It also has the least average cloud cover of any US cities on the eclipse path.

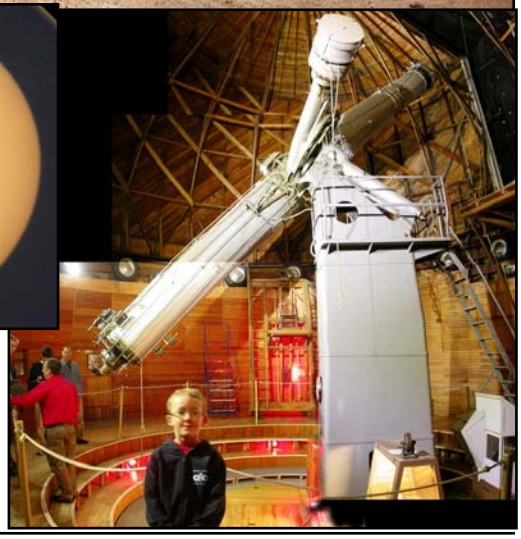
We arrived at our hotel, the Courtyard Inn, a couple of hours before the eclipse was set to begin. The hotel is perched high on a west-facing slope at the northwest edge of town, so it had a commanding view of the Glen Canyon Dam and the gorge of the Colorado River, and a good western horizon.

I had ordered a full-aperture solar filter for my 5" Maksutov but it was backordered (and in fact it still hasn't arrived!), so I took my son's AstroScan and the Sun Funnel I had built following the instructions at http://transitofvenus.nl/wp/observing/build-a-sun-funnel/. Our hotel room had a west-facing window so I set up the scope and tested the Sun Funnel in the room before heading outside.

There was a nice grassy lawn west of the hotel building where we set up our lawn chairs, cooler with cold drinks, and scope. At first it was just the three of us—Vicki and me and our son, London—but we had staked out one of the best spots and soon other eclipse watchers joined us. There were a handful of people with cameras trained on the sun and one or two other scopes, but most people were armed only with eclipse glasses (which the hotel was giving to everyone who checked in).

The Sun Funnel worked very well, projecting a 4-inch image and showing the sun in sufficient detail that we could easily distinguish the penumbras of several sunspots from the darker central umbras. It was also a big hit with passersby—about 60 people ended up watching some or all of the eclipse in the Sun Funnel.

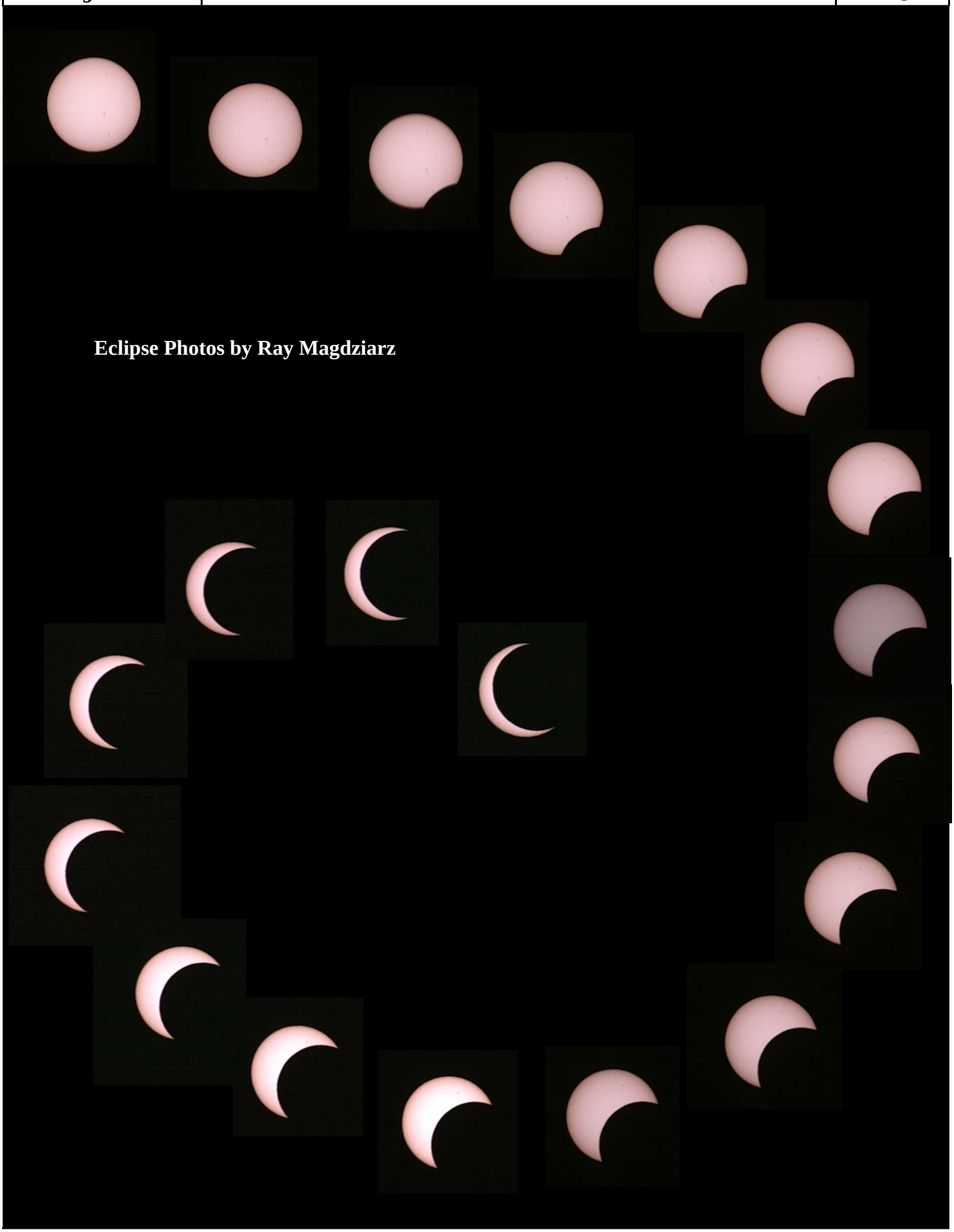
Our astronomical adventures didn't end with the eclipse. A few days later we visited Meteor Crater and the Lowell Observatory in Flagstaff, and got to go into the dome and take pictures of the big 24-inch Clark refractor that Percival Lowell used to map Mars (illusory canals and all). Unfortunately it was too windy to open the dome the night that we were there, so we didn't get to look through the big scope, but it was still amazing to see the grand machine, which turns 116 this year. Both of these side-trips were well worth the time and minimal expense.



All in all, it was a fantastic trip, and we'll certainly chase the next eclipse that comes within affordable distance—the next one visible from the continental US will occur in 2017.

For more details and pictures, please see my blog, http://10minuteastronomy.wordpress.com/.

Matt Wedel



Eclipse Photos by Ray Magdziarz