

The High Desert Observer

September 2017



The Astronomical Society of Las Cruces (ASLC) is dedicated to expanding public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties and provides opportunities to work on Society and public educational projects. Members receive the *High Desert Observer*, our monthly newsletter, plus membership to the Astronomical League, including their quarterly publication, *Reflector*, in digital or paper format.

Individual Dues are \$30.00 per year

Family Dues are \$36.00 per year

Student (full-time) Dues are \$24.00

Annual dues are payable in January. Prorated dues are available for new members. Dues are payable to ASLC with an application form or note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004. Contact our Treasurer, Patricia Conley (treasurer@aslc-nm.org) for further information.

ASLC members receive electronic delivery of the HDO and are entitled to a \$5.00 (per year) Sky and Telescope magazine discount.



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Masthead Image: February 10, 2017 From Las Cruces, Moon rising over the Organ Mts in Penumbral Eclipse.

September Meeting --

Our next meeting will be on **Friday, September 22**, at the Good Samaritan Society, Creative Arts Room at 7:00 p.m.

The speakers will be ASLC members sharing stories and images from the August Solar Eclipse.

Member Info Changes

All members need to keep the Society informed of changes to their basic information, such as name, address, phone number, or email address. Please contact Treasurer@aslc-nm.org with any updates.

Events

ASLC hosts deep-sky viewing and imaging at our dark sky location in Upham. We also have public in-town observing sessions at both the International Delights Cafe (1245 El Paseo) and at Tombaugh Observatory (on the NMSU Campus). All sessions begin at dusk.

At our Leasburg Dam State Park Observatory, we hold monthly star parties. Located just 20 miles north of Las Cruces, our 16" Meade telescope is used to observe under rather dark skies. Please see *Calendar of Events* for specific dates and times.

What's Up ASLC?

September 2017



Our August observing session at Leasburg Dam State Park was unfortunately cancelled because of bad weather. But, we enjoyed a nice crowd at our Moon Gaze event in front of the International Delights Cafe since the moon, Saturn, and Jupiter were all available for observation. I was pleased to see a few more ASLC members at our monthly event to offer support with their personal telescopes and astronomical expertise.

At last month's Moon Gaze, we talked about the upcoming solar eclipse on 21 August. During this month's outreach, we shared post-eclipse stories. Several club members traveled 1000 miles or more to stand in the shadow of the moon. My wife, Maya, and I originally planned to spend the night in Fort Collins,

Colorado on the night before the eclipse, thinking we could easily drive up to Glendo, Wyoming for the eclipse on the morning of 21 August. At the last minute, though, we decided to take our motor home instead. The motorhome turned out to be a great decision.

We left Las Cruces on 18 August and reached Denver on the first leg of our journey. After a night's sleep, we made Casper by the end of day two. In Casper, we went to the Walmart on Second Street and found many other eclipse seekers already planted in the upper parking lot although we were a day early. Walmart was a great location since they do not charge for camping or Internet. There were also several nice restaurants and a movie theater within walking distance of our campsite. On the 20th, we rested after our 950-mile drive. We also met some of the amateur astronomers camped around us, which included a family from Germany. Australia was also represented.

On the morning of the eclipse, we had some scattered thin clouds and smoke from the regional forest fires, but I did not complain since we had a very good chance of seeing the eclipse. I setup one of ASLC's H-alpha solar scopes and treated passersby to views of the sun after first contact. About 1.5 hours later, the moon blocked the sun, and Maya and I saw our first total solar eclipse. It was truly an incredible sight and certainly worth the drive. Speaking of drive, we left Casper about two hours after totality, but the drive home proved to be very difficult.

The population of Wyoming is about 500,000. But, during the eclipse, the number of people in the state increased to >1.5 million. This numbers bump was hardly noticed as we, the eclipse chasers, trickled into Wyoming over a four to five-day period before the eclipse, yet I-25 turned into a parking lot for hundreds of miles when we all tried to leave post eclipse. The drive from Casper to Glendo is normally about one hour. With the eclipse traffic, however, we were on the road for FIVE hours in a bumper-to-bumper parking lot. We decided to stay the night in Glendo and found a man that let us park our motorhome in a field next to his house at no charge. The next morning, the traffic had disappeared, and the rest of our trip was uneventful. The 2017 eclipse was a great adventure, and we're already making plans for 2024.

Howard Brewington
ASLC President
September 2017

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Outreach

Outreach is a very important part of ASLC. We are always looking for more volunteers to help us educate the public. Even if you do not have a portable telescope to bring to the events, please consider attending our public outreach programs to help answer questions, share knowledge and point out objects in the sky.

Outreach Events

August Report

by Jerry McMahan

Leasburg, Saturday, August 12

More from the Dona Ana Rainforest. It looked like it might be clearing, looking South and East from my place, so I loaded the ETX 125 into the car and headed to the park for the open house. When I got there, I was told that Sid Webb and Chuck Sterling had been there and canceled the event. It was a good call since it was raining when I got there. The music program had also been canceled due to nearby lighting.

Partial Solar Eclipse, Monday, August 21

This was not an official club event, but some of our members did travel to observe the total eclipse and some observed the partial from Las Cruces.

I took the ETX, with a white light filter, to the Dona Ana Community College central campus. I had previously set up there for the Mercury transit of the Sun. At that time I set up my chair in the shade and did not have a lot of viewers. I thought I would do the same this time. I was wrong. I had huge crowds, including teachers who let their classes out to observe the event.

I did have help. I had 4 pair of eclipse glasses that Rita Gonzalez, the chair of the math department, helped pass out to observers. I also had white light filters for an 8 inch scope and a 5 inch filter that I have for my refractor. The new Dean of the General Studies section, Dr. Murphy, passed those around for people to look through.

Steve Shaffer also drove around, stopping to call over people to look through eclipse glasses. That included a stop on a street called Eclipse Drive.

Chuck Sterling took pictures from his house. I am sure others were also sharing views, that I don't know about. I know that Rich Richins had pictures, including the Diamond Ring effect, from the total eclipse area. We will probably hear more from members that did travel up North.

ED Note: Also on August 21, Charles Turner and Kevin Brown went to Silver High School in Silver City and set up 3 solar scopes on the football field by prior arrangement with a science teacher. The science teacher sent students out to the field to view the eclipse. We probably had over 150 students and a few teachers and other adults. The kids were interested in viewing through the telescopes, even though it had nothing to do with music or fashion. A good time was had by all and the science teacher said he might ask us to come back sometime.

Moongaze, Saturday, August 26

The sky was clear! We had a successful observing evening. We saw the Moon, Jupiter, and Saturn. Howard Brewington set up the club's 4 inch Unitron refractor. Steve Shaffer brought his small Dobsonian. I had the ETX 125. Chuck Sterling, not yet able to lift a telescope, was still there to help out. New member, Jerry Gabriel, also attended along with new members Lloyd and Gacy Lindeck.

* * *

Calendar of Events (Mountain Time - 24 hr. clock)

Sept	01	19:31	Sun Sets
	04	00:00	Labor Day
	04	23:11	Neptune Opposition: Mag +7.8, Size 2.3 arcsec
	06	01:04	Full Moon
	13	00:25	Last Quarter Moon
	16	19:30	OUTREACH; Dark Sky Observing at Leesburg Dam State Park
	16	20:00	Okie-Tex Starparty Sept 16 to 24
	19	23:30	New Moon
	22	14:02	Autumnal Equinox - Summer is over!
	22	19:00	ASLC Monthly Meeting; Good Samaritan Society, Activities Meeting Room
	27	20:54	First Quarter Moon
	29	20:00	OUTREACH; Tombaugh Observatory open at NMSU
	30	19:00	OUTREACH; MoonGaze, International Delights Café
Oct	01	18:56	Sun Sets
	05	12:41	Full Moon
	12	06:26	Last Quarter Moon
	14	19:00	OUTREACH; Dark Sky Observing at Leesburg Dam State Park
	19	12:00	Uranus at Opposition
	19	12:11	New Moon
	26	12:00	Jupiter at Conjunction with the Sun
	27	16:22	First Quarter Moon
	27	19:00	ASLC Monthly Meeting; Good Samaritan Society, Activities Meeting Room
	27	20:00	OUTREACH; Tombaugh Observatory open at NMSU
	28	18:30	OUTREACH; MoonGaze, International Delights Café

Be sure to visit our web site for ASLC information: www.aslc-nm.org

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Announcements

1. The program for the September meeting will be a presentation by ASLC members sharing eclipse stories and images. Let Howard know if you want to present and how much time you need.
2. Road-Trip to Mount Graham, Saturday, July 15 was cancelled due to forest fires around the observatories. Mike Nuss is attempting to arrange a new time next year in May or June. If you need more info, contact Mike Nuss (nuss1419@msn.com)
- 3 The agreement to use the facilities at Good Sam for our meeting prohibits members from bringing in ANY food or beverages, except water in a container with a screw lid. Take note: no more Starbucks or Saturn Cookies!
4. Please note that the HDO editor has a new email. Send all correspondence and submissions for the HDO to turner@milkywayimages.com.

* * *

Meeting Minutes
ASLC Monthly Meeting
August 2017 Minutes

Show & Tell:

Glenn Brookshear brought two 6" Pyrex glass mirror blanks that he wanted to give away. After some cajoling, both were taken.

Call to Order:

Howard Brewington, President, Astronomical Society of Las Cruces (ASLC, the Society), called the July 2017 business meeting to order at 7:09 pm, 28 June 2017, Creative Arts Room, Good Samaritan Society Las Cruces Village, 3011 Buena Vida Circle, Las Cruces, New Mexico.

President's Comments:

Howard Brewington, President, welcomes Jerry Gariel (guest). He wants to learn how to use a telescope. Colleen Carlson (guest) also introduced, and Howard asked all members to sign in on the rosters at the rear of the room. Howard thanked Charles Turner for the August edition of the High Desert Observer (HDO). The minutes of the June 2017 meeting were published in the HDO. If there are no corrections or discussion, Howard asked that the minutes be accepted as submitted by acclamation; they were.

A Nominating Committee for 2018 club officers was formed. Volunteers for the committee were requested. John Kutney, Jerry McMahan and Rich Richins accepted the job. All current officers have expressed a willingness to continue, so only one Director position needs to be filled (due to term limits). Steve Barks expressed a willingness to serve as a Director for 2018, so the committee's work should be very easy this year.

There was some discussion regarding the date of the September meeting. The normal 4th Friday falls on the week of Okie-Tex, so there was a thought to move the meeting to the 3rd Friday (Sept 15). Steve Barks mentioned that some people may start their drive on Friday (Sept 15) to reduce the driving time on Saturday which would conflict with the moved meeting date. Howard announced that he would review the info and make a decision regarding the September meeting soon (and communicate that decision). Howard subsequently announced that the meeting will be the normal 4th Friday, September 22nd at the usual time and place.

New Video Projector. Howard Brewington announced that he has purchased a new projector to replace our current one. The current one will serve as a back-up.

Howard also bought an alarm for the observatory at Leasburg. Howard and Ed will install it sometime next week, and will communicate to the club when that is completed (so we don't set off the alarm). Charles Turner commented that he felt this was a good use of club money.

Howard announced that Vince Doveydaitus just donated all of his equipment to the club. It amounts to a huge amount of stuff. There are at least 5 telescopes including a 12" LX200, and a Ha solar telescope. There are also many parts. The items will be inventoried and priced. Members will get first shot at purchasing the stuff (proceeds to go to the club). Anything that doesn't sell will be sold via eBay (or equivalent). Help is needed on Tuesday, August 29 at 1:30 pm to get more stuff from Vince's garage. ASLC will rent a storage space for a few months until we can find homes for all of this stuff.

Outreach:

Chuck Sterling, Outreach Coordinator, reported that there would be a Moongaze tomorrow night (26 August) at International Delights. Okie-Tex begins on 16 Sept. and runs thru 23 Sept. The next

Leasburg dark sky observing session is on 16 Sept. The next Moongaze will be on 30 Sept. Tombaugh Observatory has resumed operation, and will be open on 29 Sept

Treasurer's Report:

Trish reported that no checks were written in July. \$148.50 was deposited to our account bank (member fees). All of the solar glasses were sold and ASLC made enough profit to pay for the alarm system.

Trish also reported that she wants to get a head start on the 2017 Renaissance Faire. The dates are 04-05 Nov. Trish will be communication point for volunteers.

Business meeting was declared ended by Howard, and the feature presentation by Dr. Nancy Chanover ensued.

Respectfully submitted by Rich Richins (VP) on August 31, 2017.

* * *

Back at the Telescope

by Bert Stevens

Galaxies are composed mostly of dust and gas, but what makes them visible are the stars formed from that dust and gas. The stars act like tiny light bulbs illuminating the galaxy and outlining its features. Without the stars, a galaxy would hardly be visible to us at all.

Stars have very specific evolutionary tracks depending on their mass. The larger the star, the faster it matures and reaches old age. Even the death of the star depends on its mass. The largest stars expend up all their fuel in just a few million years. Their death knell is a supernova explosion that blows the star apart as the core collapses forming a black hole.

Smaller stars will also find that they cannot keep up their fusion processes forever and they will slowly lose most of their atmosphere. The remainder of their core will become a tiny and intensely hot white dwarf star. Even so, a star that has reached the end of its life emits much less light than in its youth.

In a living galaxy, stars are forming and dying at roughly the same rate. While it is not a necessary condition for stellar formation, a shockwave from a supernova that impacts a gas cloud can cause the cloud to start to collapse. The collapsing gas cloud will eventually form a cluster of new stars that will

help to brighten the host galaxy. Indeed, it is thought that our Sun was formed after a nearby supernova explosion. As long as there is sufficient dust and gas in the galaxy to form the new stars, the galaxy will continue to glow brightly in the sky.

However, eventually the free gas in a galaxy will become too scattered or it will be locked up in the black holes, neutron stars, and white dwarfs to allow it to form new stars. Without these new stars, the galaxy will slowly dim. There is not a precipitous end to stellar formation, but the number of stars forming slowly diminishes as the free gas in the galaxy is consumed.

The number of blue massive stars (spectral classes O, B, and A) in the galaxy will be the first to decline as fewer massive stars are formed and the existing ones explode into black holes. These stars provide much of the illumination in the galaxy, but they are greatly outnumbered by the smaller, more yellow, stars. This causes an elder galaxy's color to drift toward the yellow. The fewer the massive stars, the more yellow the galaxy.

The process does not stop there, but it does slow down. The smaller, yellower stars (spectral classes F, G) take much longer to dwindle in number than the massive stars. With lifetimes in the ten billion year range, the yellow stars will continue to burn as the massive stars are extinguished. Eventually, their end comes as well.

With the yellow stars falling in number, the galaxy continues to dim. Now the low-mass red dwarf stars (spectral classes K, and M) dominate the much dimmer light in the galaxy. The color of the galaxy now shifts from the yellow toward the red. These stars are very low mass (substantially less than that of our Sun). Their surface temperatures are low by stellar standards, shifting the peak light output from the yellow into the red. The galaxy now looks more reddish than yellow.

There are more of red dwarf stars than all the other spectral classes put together, but their light output is so low that they are overwhelmed by the brighter, but less numerous yellow and blue stars. Part of the key to their long life is that the atmosphere of these stars is not stratified. Fusion byproducts like helium are carried upward from the core by convection while cooler hydrogen fuel sinks toward the core to be fused

to keep the star running. This allows most of the hydrogen in the red dwarf to be fused before fusion stops. These stars are so long-lived that none of them have stopped fusing hydrogen during the life of the universe.

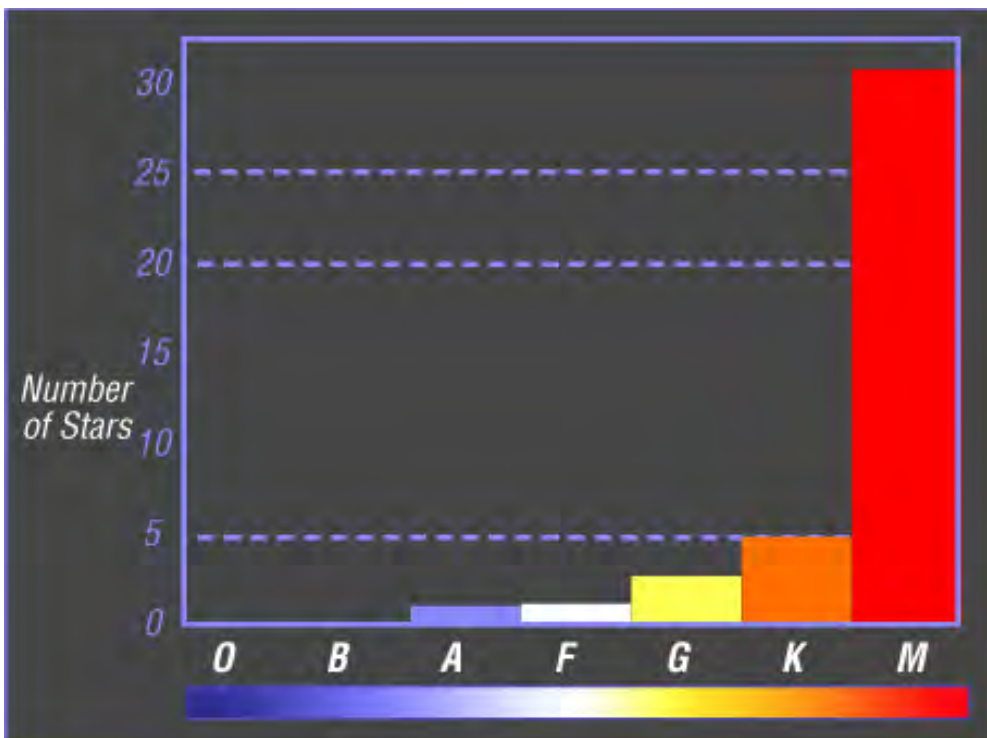


Figure 1: M-class red dwarf stars outnumber all the other stars in our galaxy. These low-mass stars form more readily and last much longer than the more massive stars. None of these stars has burned out in the lifetime of our universe. This graph shows the number of stars in our galaxy by spectral class..

Therefore, it will take a very long time for these red stars to exhaust their hydrogen fuel and become black dwarf. A galaxy that has not formed new stars for a long time will look very reddish compared to galaxies that are still forming stars. When astronomers see a red galaxy, they know it is not forming stars any more.

The Hubble Space Telescope's observations are stored in archives for researchers to use as they perform new research. One archive kept by the Cluster Lensing And Supernova survey with Hubble (CLASH) provided a surprising view of an ancient galaxy. This view was only possible because of gravitational lensing.

Gravitational lensing is possible because of Einstein's Theory of Relativity, predicts that high mass concentrations will bend light passing near it. If a background galaxy is behind a massive galaxy cluster, the light from the distant galaxy can be bent just as a lens would do. This results in the light from the distant galaxy being focused in our direction, making the distant galaxy brighter and larger than it would be otherwise. However, it is an imperfect lens, distorting the distant galaxy's image.

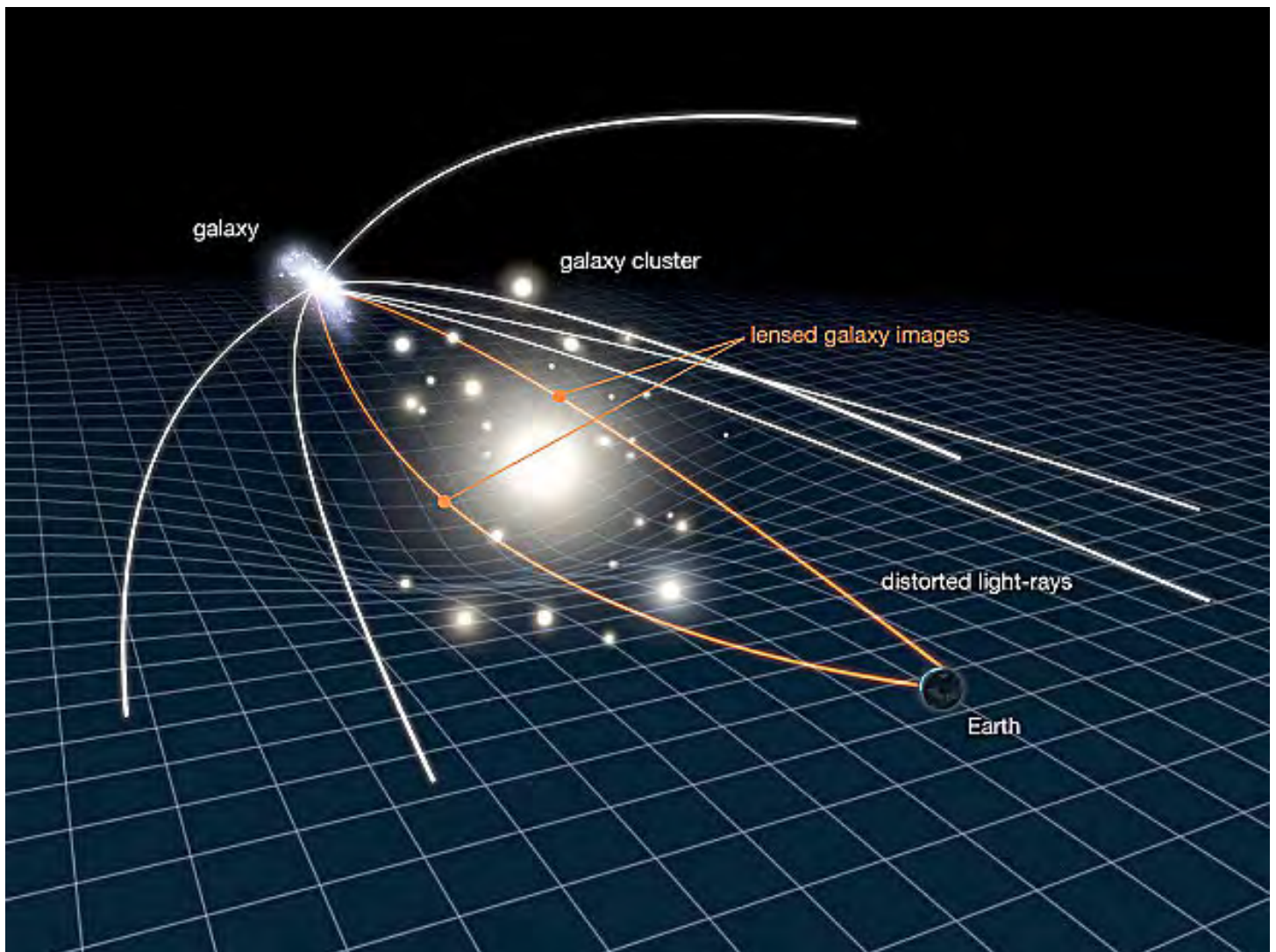


Figure 2: Gravity affects not only physical objects, but light as well. A galaxy cluster, with its attendant dark matter can bend the light passing it inward much as a lens would do. The result is a distant galaxy can be magnified and its brightness intensified. The bending of light was predicted by the Theory of Relativity.

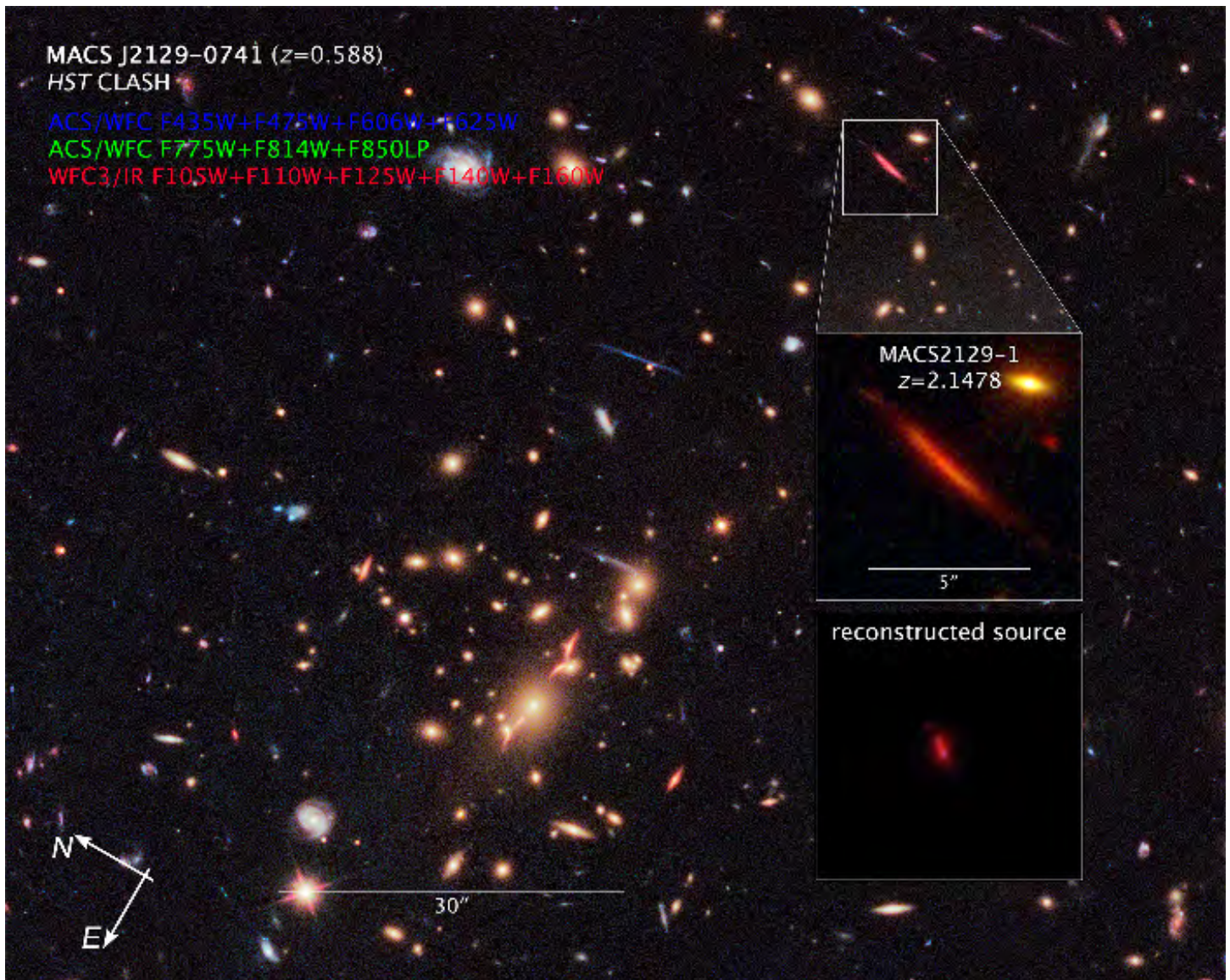


Figure 3: Galaxy cluster MACS J2129-0741 is 5.7 billion light-years away from us. This composite image of this cluster was made by using images taken between May 2011 and August 2011 with different Hubble instruments and bandwidth filters. The images were taken in a series of narrow wavelength bands covering part of the visible and infrared spectrum. To make this color image, the narrowband images were combined to cover each color. The color assignments used were Blue: ACS/WFC F435W+F475W+F606W+F625W; Green: ACS/WFC F775W+F814W+F850LP; and Red: WFC3/IR F105W+F110W+F125W+F140W+F160W. Among the galaxies in this image is the dead galaxy MACS2129-1, which is 10.6 billion light-years away from us.

The Theory of Relativity allows astronomers to compute exactly how the light was bent and reconstruct the original size and shape of the distant galaxy. The Hubble imaged the galaxy cluster MACS J2129.4-0741 that is 5.7 billion light-years away from us. Buried among the galaxies in this cluster, they found a more distant galaxy that was being lensed by the closer cluster. Dubbed MACS2129-1, the more distant galaxy is 10.6 billion light-years away. It is also a “dead” galaxy, with no blue regions of recently formed massive stars and a general reddish color, indicating that star formation has stopped in this galaxy.

MACS2129-1 is a reddish galaxy that appears very distorted, as is often the case for a lensed object. This galaxy has ceased to create new stars, even though it is three times more massive than the Milky Way galaxy. Once the distortions of the gravitational lensing were removed, the picture of a compact

galaxy appeared. Even more surprisingly, it is not an elliptical galaxy, which is the typical shape of an old dying galaxy, but a disc galaxy, like the Milky Way.

Researches collected data on this galaxy from the Hubble and from the Very Large Telescope (VLT) facility operated by the European Southern Observatory on Cerro Paranal in the Atacama Desert of northern Chile. They determined that MACS2129-1 had already stopped forming new stars when the universe was just three billion years old.

While this galaxy has three times the mass of the Milky Way, it is only half its physical size and spins twice as fast. This is another surprising finding about this galaxy. In making a careful analysis, there are also hints that there are spiral arms in the disc of this galaxy. This gives us a galaxy that appears to be a normal spiral galaxy, except that all the massive and supermassive stars have already ceased to fuse, and the dwarf stars (like our Sun) and red dwarfs have taken over the job of illuminating the galaxy. But even they are slowly going dark since no new stars are being formed to replace them.

The astronomers studying this galaxy theorize that it was being fed by streams of cold gas flowing into the galaxy from intergalactic space. These streams managed to penetrate the hot gas of the galaxy's halo to reach the inner disc. They provided the material to form new stars directly in the disc of the galaxy. While many galaxies undergo rapid star formation when they absorb a nearby dwarf galaxy, this galaxy seems to have simply formed the new stars in the disc from the cold-gas streams.



Eventually, these streams were cut off by a shock wave from the dark matter halo. As the incoming stream enters the galaxy, it starts to slow down as it meets resistance from the

Figure 4: This artist's concept compares the Milky Way galaxy on the left with the young, dead, disc galaxy MACS2129-1 on the right. MACS2129-1 is spinning more than twice as fast as the Milky Way and it is just half the Milky Way's size. MACS2129-1 is also three times the mass of the Milky Way. Note that regions of Milky Way are blue from the bursts of blue, massive, star formation, while the young, dead galaxy is yellow, signifying an older star population and no new star birth.

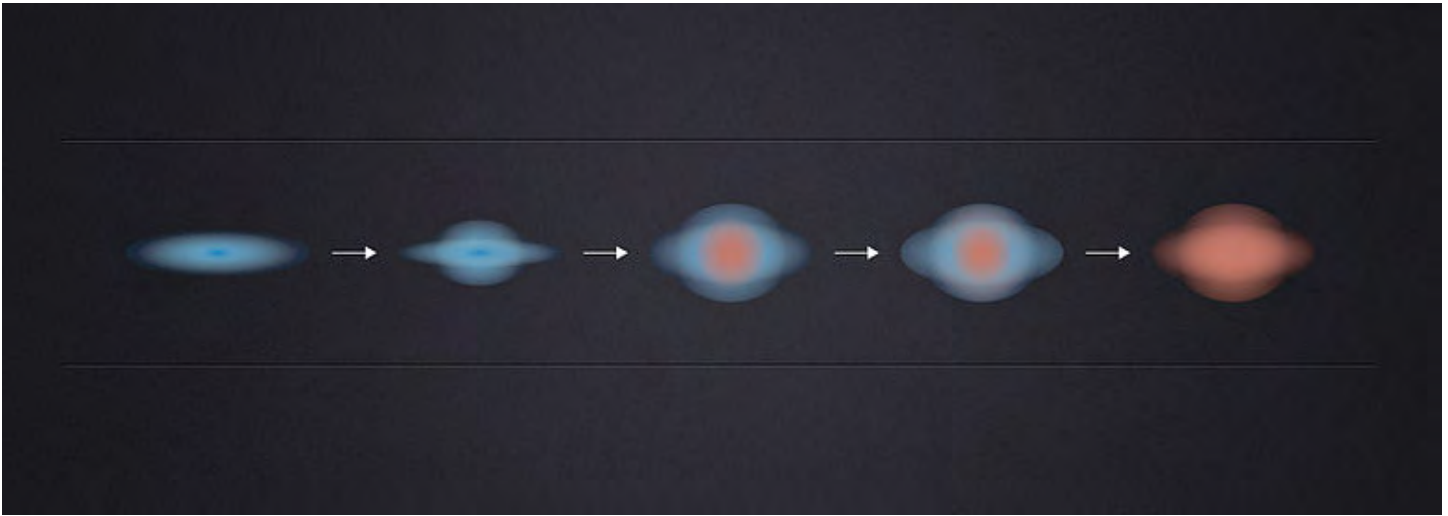


Figure 5: This diagram shows the evolution of a galaxy. The galaxy at the left is from just after the formation of the universe and those further to the right depict the galaxy as it evolves. Blue areas show active star formation, while red areas are no longer forming stars. “Dead” galaxies do not die all at once. Observations have shown that the star formation stops near the core first where only the long-lived red dwarfs continue to fuse hydrogen. The core of the galaxy is the first area to be starved of incoming gas and star formation there ceases. The gas streams are eventually blocked throughout the galaxy moving out from the core. The resulting giant spheroidal galaxy is then dead, as depicted on the right.

existing internal intragalactic gas. The gas further back in the stream is still travelling at the higher speed and runs into the slower gas creating a shock wave. Eventually, the incoming gas cannot get past its earlier-arriving cousins and the flow of gas into the galaxy stops completely, starving the galaxy of the material needed to make new stars. Without the gas streaming in, the galaxy begins a slow death.

MACS2129-1 is a galaxy where gravitational lensing has allowed us to view back in time to just three billion years after the universe formed. This early galaxy had already stopped forming stars before our Sun was born. The observations came from both space-based and Earth-based high-technology telescopes that provided a detailed look at this galaxy, its spectrum, and what it can tell us about the early universe.

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A PRIVATE OBSERVATORY

Fred Pilcher

Tim Wetherell, in *Sky and Telescope*, October, 2017, pages 31-33, describes a private observatory built for his own preference of artistic beauty and practicality for observing. At the end of his article, he states “Not everybody is lucky enough to have the ability to build an observatory, but if it’s feasible for you to do so, I would highly recommend it. Having a permanent home for your telescope will significantly increase your observing time.”

I do not have the ability to build an observatory. But I was able to determine all specifications required for the observatory to do the asteroid CCD photometry for which the observatory was intended. A local contractor, who closely consulted with me, designed and then built the observatory in accordance with these specifications. It also features harmonious architectural compatibility with houses in the neighborhood. The office part of the observatory including the control computer is in the same style as the house, and the part housing the telescope has stone walls of the same style as enclosed back yards of most of the houses in the neighborhood.

Asteroid CCD photometry requires all night unattended computer controlled observation of the same object while the astronomer sleeps. This recommends a sliding roof to avoid the complication of frequent rotation of a dome to keep the target within the slit. Photometry is less accurate at altitudes below 25 degrees. An inability to view objects below this altitude is not important. The dimensions of the observatory are calculated by the two needs for the flat roof to close over the top of the telescope and for unobstructed view to altitude 25 degrees.



Photo of the Month



OBJECT Sharpless 254 (Sh2-254) - Large emission nebula on right Distance: 8000 light years
Telescope Takahashi TOA-130F @ f/7.7 **Mount** Takahashi EM200 Temma II
Camera QSI 540wsg @ -15C
Filters Astrodon Ha (3nm), Astrodon Tru-Balance I-Series LRGB Gen 2
Guider SX Lodestar
Settings 6x20min Ha, 2x5min L (bin1x1); 2x5min ea RGB (bin2x2); AstroArt5, CS4 (slightly cropped, 10xdarks/flats/fdarks/bias)
Date/Location 1 February 2017 - Las Cruces, NM
Notes This image is LHaRGB, where Ha was used in combination with Luminance and Ha:R (80:20) was used for the Red channel. This image contains 5 identifiable emission nebulas. Starting with very small object left of center and below other objects: Sh2-258. Above, to the right, and larger object is Sh2-255 (aka, IC 2162). Object of similar size and to the right of Sh2-255 is Sh2-257. Just slightly below and to the right (and smaller) is Sh2-256. The last object to the right, and the largest object, is Sh2-254. Copyright Jeffrey O. Johnson

Photo of the Month



M 101 The Pinwheel Galaxy

DSW RCOS 14.5" STX-16803

R	17 x 1200"
G	14 x 1200"
B	12 x 1200"
L	25 x 1200"
Ha	19 x 1800"

Total ~23 hrs

Image width ~22'

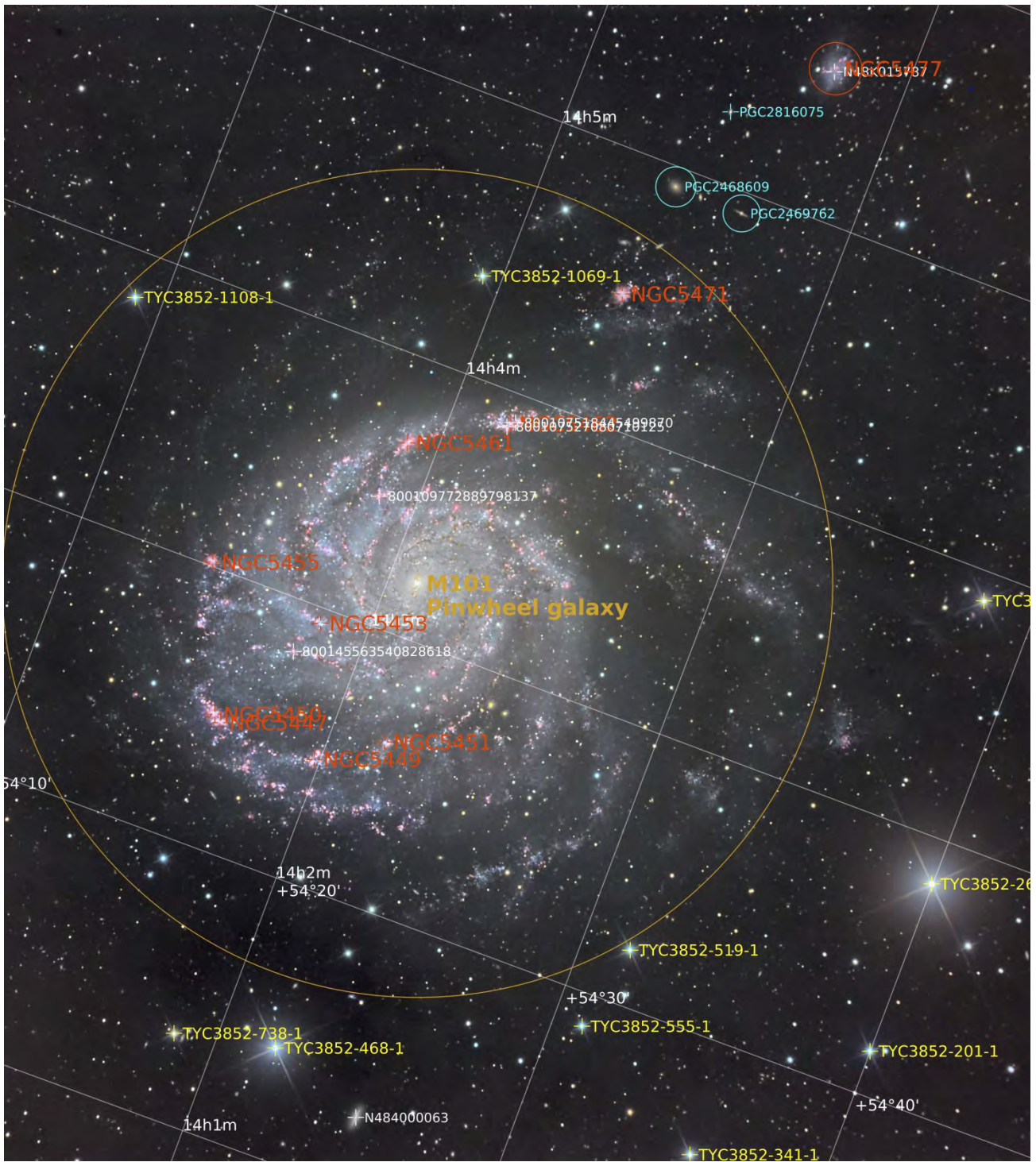
A spiral galaxy at ~21M light-years. It's size is about 70% larger than our Milky Way. Many obvious H-alpha appear as red smears in the arms of M 101; these are areas of high star birth (see next slide). The blue regions are caused by hot, blue young stars.

Processed in PixInsight

Alex Woronow

Faint Light Photography

Photo of the Month



NGC 5471, 5461, 5453, etc.

These are star-forming clouds in the Pinwheel Galaxy. NGC 5477 is a dwarf galaxy, which is a member of the group of galaxies (5 of them) that is dominated by M101.

Photo of the Month



vDB 141 “Ghost Nebula” DSW RCOS 14.5” STX-16803

vDB is a reflection nebula located in the constellation Cepheus. Reflection nebulae shine because they reflect the light of nearby stars. The background stars shine through a general haze from the nebula causing them to appear brownish in color. This rendition has been color-calibrated, meaning it has roughly the correct color hues, although the color intensity has been significantly augmented.

R 17 x 600” G 19 x 600” B 18 x 600” L 42 x 1200”

Total 23 hours Image width ~25’

Processed in PixInsight Alex Woronow

Faint Light Photography

Photo of the Month



M51 - The Whirlpool Galaxy: M51 is an 8th magnitude galaxy in the constellation Canes Venatici at a distance of about 28 Mly. It is about 13.8 x 11.8 arcmin in size. The connected companion galaxy is NGC 5195 at Mag 9.6. The bright star on the left is HD117815 at about mag 7.

This was acquired on 2017/05/23 from Rusty's RV Ranch near Rodeo, NM, using an Astro Tech f/4 Imaging Newtonian with a Canon 60Da camera set at ISO1600 and 60 seconds, taking 36 images, mounted on a Celestron CGE.

Chuck Sterling, Las Cruces, NM