



# The High Desert Observer June 2015



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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](mailto: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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### June Meeting --

Our next meeting will be on **Friday, June 19**, at the DACC Main Campus, Room 141, Technical Studies Building, starting at 7:00 p.m. Please note this meeting is one week earlier than usual, due to construction at DACC.

No speaker is scheduled for the June meeting. Somebody step up with a show and tell.

### ASLC Board of Directors, 2015

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President: Daniel Giron; [President@aslc-nm.org](mailto:President@aslc-nm.org)

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### Committee Chairs

ALCor: Patricia Conley; [tconley00@hotmail.com](mailto:tconley00@hotmail.com)

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HDO Editor: Charles Turner; [turnerc@stellanova.com](mailto:turnerc@stellanova.com)

### New & Existing Member Package

Membership Chair, Judy Kile has sent member packages to all current members before the June meeting. These were sent via Yahoo!Groups email. If you did not receive your package, please let her know ([jkile@elp.rr.com](mailto:jkile@elp.rr.com)) and she will send you a regular email with the package.

### 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 constellations in the sky.

### 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.

## ***From the Prez***

June 2015

### ***“To Be or Not to Be?”***

Recently we have received unfortunate news from the Silver City Astronomical Society in which, unless things change for the better, they may dissolve as an organization. An ASLC member, after learning about this, was very concerned about the fate of the SCAS and asked me if this could be the fate of the ASLC as well.

For me, the continued stability and longevity of the ASLC rests upon the maturity of all of its members, mutual respect for one another and a strong commitment in letting the public know that astronomy is for everyone and that there are many ways to participate.

There are many valid reasons why people join societies like ours and Silver City's but, I think I would be safe in saying that, as individuals, we don't need to be part of an organization to enjoy astronomy. Astronomy can be a very satisfying personal activity.

However, as an organization, we can put our talents together and be very effective in promoting science and science literacy in the classroom and among the general public through activities in astronomy. We can also be effective politically in engaging the public and municipal governments about the value of modifying outdoor lighting to increase safety on the ground and as an added benefit, although not as a selling point, have darker skies in which people can enjoy the things they have been missing for so long.

One or two people leading the charge can make a difference but, they can only do so much. It is only when others see a value in what is being promoted and get involved that we can make a greater impact. An example of this is ALCON. One person led the charge but, it was others, seeing the benefit of being the host organization and what this could bring to Las Cruces, who made the difference. Without them ALCON would not come to Las Cruces. So, even though as individuals, we can pursue astronomy on a personal level without any interaction with anyone else, collectively we can do so much more.

I believe that the ASLC will continue for a very long time. But, I do think that everyone of us should step back and contemplate on the things we want to accomplish and how we can work together. The question of “To be or not to be?” rests with everyone.

Daniel Giron

\* \* \*

### ***Outreach Events***

by Jerry McMahan

#### ***Moongaze, May 23, 2015***

Chuck Sterling set up his 100mm refractor. I had the ETX 125. Spence Lunbeck brought his 12 inch Dobsonian which he also had at the previous Leasburg event. Christina Lugo had her 4.5 inch Dob. Andrew Messent, Robert Westbrook and Daniel Giron also joined us as did Juan Munoz from Juarez.

Targets included Venus, Jupiter, Saturn and the Moon. Christina gave assignments to kids using her scope. She had them draw what they were seeing on the Moon. She and Daniel had to leave early for work. The session lasted until nearly 11:30 since Saturn had cleared the building. Spence reported seeing at least 4 of Saturn's moons. It was great having so many people assisting at the Moongaze.



***The Curse of Leasburg continues, Saturday, June 8***

Bob Armstrong and Dave Doctor were in the observatory. Other participants included Ron Kramer, Judy Kile, Christina Lugo, Daniel Giron, Andrew Messent, Sid Webb, Chuck Sterling and Jerry McMahan. Number of targets, 2. Number of clouds many. Raindrops, a few.

Clouds prevented any observing other than brief views (very brief) of Venus and Jupiter. The only real observing was done by Christina when she set up two scopes for solar observing. It seemed promising until it started to get dark and the clouds rolled in. I was putting my scope up at about 9:30, when it started to rain. Christina is always prepared for every thing. She brought over an umbrella. The rain decided to stop when it saw the umbrella. The sprinklers did not come on this time, but we still couldn't avoid water completely.

Chuck and his wife entertained one of his co-workers and his wife. Chuck was under doctor's orders to not do any lifting. He was in the hospital the day before. He still tried to help me put things up, but Daniel and Christina took over that job.

***Some random thoughts on Dwarf Planets*** by Jerry McMahan

Fred Pilcher gave a very interesting talk about Dwarf Planets at the last club meeting. I hope I am remembering, correctly, about the Astronomical Union's decision to demote Pluto.

Like several club members, my biggest complaint is about their definition of a planet, but I have no objection to the the creation of a new class of planets called Dwarfs. Part of the problem is with the wording when the Union declared Pluto a Dwarf Planet and then added that the meaning was that Pluto was not a planet, but still called it a Dwarf Planet. If that comment, suspicious in itself, had been left off, there would be no argument about Pluto being demoted, rather that re-classified. Maybe they were afraid that leaving off the word planet would offend little people around the world. It also made them look bad when the vote was taken after most of the attending Astronomers had left and their own committee, which had the responsibility for coming up with a definition of a planet, was ignored.

The committee defined a planet as being round and not a moon of another planet. This would have given Ceres back its status as a planet and Pluto and Charon would be declared a double planet. The reasoning being that the two revolve around a common center of gravity that is not located inside of Pluto. They revolve around each other, so Charon is not a moon.

Another complaint that I have, is the the Union later said that their definition of a planet does not apply to planets around other stars. That is disappointing. I like the idea of that 10 Jupiter mass Dwarf Planet that has not cleared its orbit.

The main reason that I decided to write this goes back to the Pluto and Charon situation. Charon is larger than the Dwarf Plant/Asteroid Ceres. Should the two not be considered a binary Dwarf Planet? That would be justified and add a little more interest in teaching planetary astronomy to the public.

Go New Horizons!!!

\* \* \*

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

JUN 01		Venus 46.3° east of Sun
01	14:02	Moon-Saturn Conjunction
02	10:19	Full Moon
06	18:30	OUTREACH; Music & the Stars, Leasburg Dam State Park; entertainment by Paul Walter Kimble
09	09:42	Last Quarter Moon



13	02:59	Venus-M44 Conjunction
16	08:05	New Moon
19	19:00	ASLC Monthly Meeting; DACC Main Campus, Room 141 (Technical Svcs. Bldg.) <b>NOTE: Meeting date has been moved up 1 week due to construction on campus.</b>
20	05:28	Moon-Venus Conjunction
21	10:38	Summer Solstice
23	03:39	Mercury-Aldeberan Conjunction
24	05:03	First Quarter Moon
25	17:30	Museum of Nature & Science for Science Cafe: New Horizons Approaches Pluto by NMSU Astronomy (Sponsored by Sigma Xi.)
27	20:52	OUTREACH; MoonGaze, International Delights Café
28	19:27	Moon-Saturn Conjunction
30	20:14	Venus-Jupiter Conjunction ( 0.3 degrees )
JUL 02	02:20	Full Moon
06	08:00	ALCON begins; Tours 1 & 2
06	19:00	ALCON Registration Opens 19:00-20:30
06	21:00	Star Party at EMI Technologies
06	16:00	Pluto at opposition
07	09:00	ALCON: Tour 4
07	10:00	ALCON Registration Open 10:00-14:00
07	21:00	Star Party at EMI Technologies
08	20:24	Last Quarter Moon
08	09:00	ALCON: AL Meeting 09:00 - 17:00
08	10:00	ALCON Registration Open 10:00-13:00 and 19:00-20:30
08	21:00	Star Party at EMI Technologies
09	09:00	ALCON: Welcome, Speakers 10:00-18:10
09	09:00	ALCON: Vendor Area Open 09:00-17:00
09	10:00	ALCON Registration Open 08:00-13:00 and 14:00-17:00
09	21:00	Star Party at EMI Technologies
10	09:00	ALCON: Speakers 10:00-17:10
10	09:00	ALCON: Vendor Area Open 09:00-17:00
10	17:30	Depart for Star-B-Que at Leesburg Dam State Park (via buses)
11	09:00	ALCON: Speakers 10:00-18:10
11	09:00	ALCON: Vendor Area Open 09:00-17:00
11	10:00	ALCON Registration Open 08:00-13:00
11	19:30	ALCON: Awards Banquet and Keynote Speaker, Pat Hynes
14	18:50	New Horizons closest approach to Pluto
16	01:24	New Moon
19	01:00	Venus-Moon Conjunction (0.4 degrees )
24	19:00	ASLC Monthly Meeting; DACC Main Campus, Room 102 <b>NOTE: Meeting location has been moved to Room 102 main campus. Check the club website for directions/maps.</b>
24	04:04	First Quarter Moon
25	20:42	OUTREACH; MoonGaze, International Delights Café
25	08:00	Ceres at opposition
31	10:43	Full Moon

Be sure to visit our web site for the latest updates: [www.aslc-nm.org](http://www.aslc-nm.org)



volunteers, particularly for registration on Wednesday evening, 08 July, which will include walk-in registrations. Ron noted there will be several big star party events during the convention. More information and on-line registration are available through the ALCON web site.

### **The Observatory at LDSP**

Chuck Sterling, Observatory co-chairman, had no report

### **Tombaugh Observatory**

Steve Shaffer, coordinator, reported that a new fence has been erected that limits access to the on-campus observatories. He is working on arranging access through the gate.

Daniel reported all other committee reports had been published in the *HDO*.

### **Old Business**

- 1. HDO (Newsletter) Editor** – Ron Kramer announced Charles Turner will be taking over as HDO editor starting with the June issue. Please submit articles and reports to him no later than 10 June.
- 2. Apparel** - Ron Kramer noted that a replacement coordinator (quartermaster) is still needed. Please contact him if you are interested.
- 3. LDSP Outreach** – Volunteers for the 06 June event are still needed.
- 4. Loaner Telescope** – Frank Fiore, program coordinator, is working with Bob Kimball to arrange for an imaging setup while Bob's telescope is being repaired.
- 5. Speakers/Presenters** - Although traditionally a responsibility of the serving Society Vice-President, Daniel could use assistance arranging meeting presentations, particularly for the next three monthly meetings. He suggested one could be a presentation by Texas Star Party (TSP) 2015 participants. Steve Barks will check with the NMSU Astronomy faculty for interested parties.

### **New Business**

Daniel Giron had no new business to present to the membership. He opened the session to the floor.

- 1. Cosmic Campground Star Party** - Steve Barks asked for an indication of interest in having a Society star party/outing 13 14 June. 8-10 members present expressed interest.
- 2. Pluto/New Horizons Encounter** – Charles Turner asked about any plans to recognize this “once-in-a-lifetime” event coming in mid July. Sid Webb noted he had talked to the Public Information Office (PIO) for the City of Las Cruces. The city is sponsoring a “Pluto-palooza” beginning 05 June. There will be a presentation on New Horizons on 06 June and a Science Café the end of June. Charles encouraged more Society involvement in this event, noting the Pasadena Events for the Voyager Spacecraft had nearly 35,000 members of the public for the “closest” approach events years ago. Bert Stevens added some details of the city's activities.

### **Announcements**

Winifred Jahnke is looking for an “astronomy buddy” for Jeff Barker, who works for the Safe Haven Animal Shelter. Rich Richins and Fred Pilcher volunteered to be contacted by Jeff.

Bob Kimball had a series of images from TSP 2015. Unfortunately, they could not be shown on the equipment available at tonight's meeting.



Astronomer Michael Brown, who discovered Eris, has also identified six additional objects that are almost certainly dwarf planets: 2007 OR10, Quaoar, Sedna, Orcus, 2002 MS4 and Salacia. With the exception of Ceres, all of these objects are beyond the orbit of Neptune, so-called Trans-Neptunian Objects (TNOs). All the other smaller objects in the solar system that do not emit gas and dust (comets) are still considered minor planets. Taken as a group, all these objects are collectively called Small Solar System Objects (SSSO).

Since Pluto and Eris are about the same size, you might be wondering why Pluto was discovered in 1930 and Eris was discovered seventy-five years later in 2005. The answer is actually rather easy. Pluto's orbit is much closer to the Sun, so it is a bright 14th magnitude as compared to Eris's almost 19th magnitude.

New Horizons was launched on January 19, 2006 on an Atlas V (551) rocket. As it left the Earth, it was the fastest manmade object ever launched. Still, it has taken over nine years to travel the 32.64 astronomical units (over 3 billion miles) to Pluto. Eris is 97.02 astronomical units away, almost three times farther away. If we wanted to explore Eris, it would take over 27 years for a spacecraft to reach it. Even though our spacecraft are very reliable, a spacecraft traveling for 27 or more years is much more likely to have a major malfunction than one making the nine years to Pluto.

With just over a month to closest approach on July 14, 2015, we are starting to get back images of Clyde Tombaugh's discovery. In addition to all the scientific instruments, there is about an ounce of Clyde's ashes that will be flying past Pluto. An object that had been nothing more than a speck in the telescope is now starting to take shape as a dwarf planet.

New Horizons is already sending back images of Pluto and its largest moon, Charon. The first color image from the spacecraft was a portrait of these two taken April 9, 2015, when New Horizons was still 71 million miles away from the pair. Since then, New Horizons has been getting closer and taking more detailed pictures of Pluto. As the spacecraft gets closer to Pluto, the planet is getting larger in the images. The larger Pluto gets, the more pixels it covers and the more detailed the images will be.

Planetary astronomers all over the world are very excited about this close encounter. With ALCon just a week ahead of the encounter, we tried to get a planetary expert to present a talk about the close encounter, but they were anxious to stay up-to-date on the latest images from Pluto and could not attend.

We, too, have our own build-up to the close encounter here in Las Cruces. The Branigan Cultural Center in downtown Las Cruces is presenting "Beyond Pluto: The Clyde Tombaugh Story". It explores Clyde's passion for astronomy and the discoveries his dedication brought to fruition. Opening night for the exhibit will be from 5:00 p.m. to 7:00 p.m. on Friday, June 5. The exhibit runs through July 25.

Saturday, June 6, will see Family Astronomy Day, celebrating the science of astronomy through hands-on activities in the Branigan Cultural Center Courtyard from 10:00 a.m. to 1:30 p.m. Activities will include solar telescopes from NMSU, cooking up a comet, a solar system model, Kuiper Belt information, "What is a Planet?" trivia and more.

Also, at 2:00 p.m. that day, Dr. Marc Buie of the University of Colorado at Boulder, Lowell Observatory and a member of the New Horizons team will present a talk on what we have learned so far and what we hope to discover as the mission nears Pluto.

On Saturday, June 20, the Museum of Art will present the Celestial Art Studio Event at 11:00 a.m. for people at least six years old. Those participating will explore images from the Hubble Space Telescope's twenty-five year mission and create a celestial artwork to take home.

Later that day, at 2:00 p.m., the Branigan Cultural Center will have an Archeoastronomy Lecture where the museum staff will detail how archaeological techniques can be used to learn how the ancestral Pueblo people studied the night sky.

The Museum of Nature & Science will host the NMSU Astronomy staff presenting Science Café: New Horizons Approaches Pluto. The talk will start at 5:30 p.m. on June 25. This event is sponsored by Sigma Xi.

Saturday, June 27, the Museum will take a tour of the New Mexico Museum of Space History to look at the long history of space exploration in New Mexico. The tour will visit the exhibits, see a film in the newly refurbished Tombaugh Theatre and enjoy a demonstration on gas laws presented by museum staff. (FEES APPLY)

During the week of June 29, the Museum of Art will present a workshop on Youth Capture the Colorful Cosmos for middle school students where they will have the opportunity to remotely control a telescope to take an image of a celestial object. On the second day, students will process the raw data into a visible image. On the final day, students will create an art project based on their telescopic image. The resulting art pieces will be displayed at the museum through the remainder of July for visitors to see. Contact the museum for a detailed schedule.

On Saturday, July 11, at 2:00 p.m. the Branigan Cultural Center will present a workshop for adults (ages 15 or older) called Glass & Mirrors. They will investigate the interior of a telescope while exploring lenses, filters and focal length.

The Museum of Nature & Science will present another Science Café on Thursday, July 16, at 5:30 pm. This one is titled “New Horizons Has Arrived!” presented by the NMSU Astronomy staff and sponsored by Sigma Xi.

There will be a Star Party on Saturday, July 18, at the Las Cruces Railroad Museum from 9:00 p.m. to 11:00 p.m. Join museum staff and the NMSU Astronomy Department as they explore the night sky through telescopes.

From Tuesday, July 21, through Thursday, July 23, there will be a workshop for 3rd through 5th grade students at the Museum of Nature & Science. Space Weather Action News will teach students about the Sun and its effect on the Solar System while they assemble a space weather station to take home. On the final day, everyone will prepare a space weather forecast which will be filmed and presented at the museum.

For adults (21 and over), Saturday, July 25, will see the Night Under the Stars event at the Branigan Courtyard. Running from 6:30 p.m. through 10:30 p.m., celebrate the historic fly-by of the New Horizons mission to Pluto with the museums. See the latest images of this tiny, distant world while enjoying a cash bar provided by the High Desert Brewery and Amaro Winery. You can try your hand at one of our hands-on activities, and take this final chance to see the exhibition Beyond Pluto: The Clyde Tombaugh Story at the Branigan Cultural Center and end the evening with a close up view of the night sky with telescopes provided by the museums.

So there are many events at you can attend in the next six weeks to celebrate the New Horizons flyby of Pluto. I urge you to take advantage of what our Museum System has to offer.

## DISCOVERY OF THE PLANET PLUTO



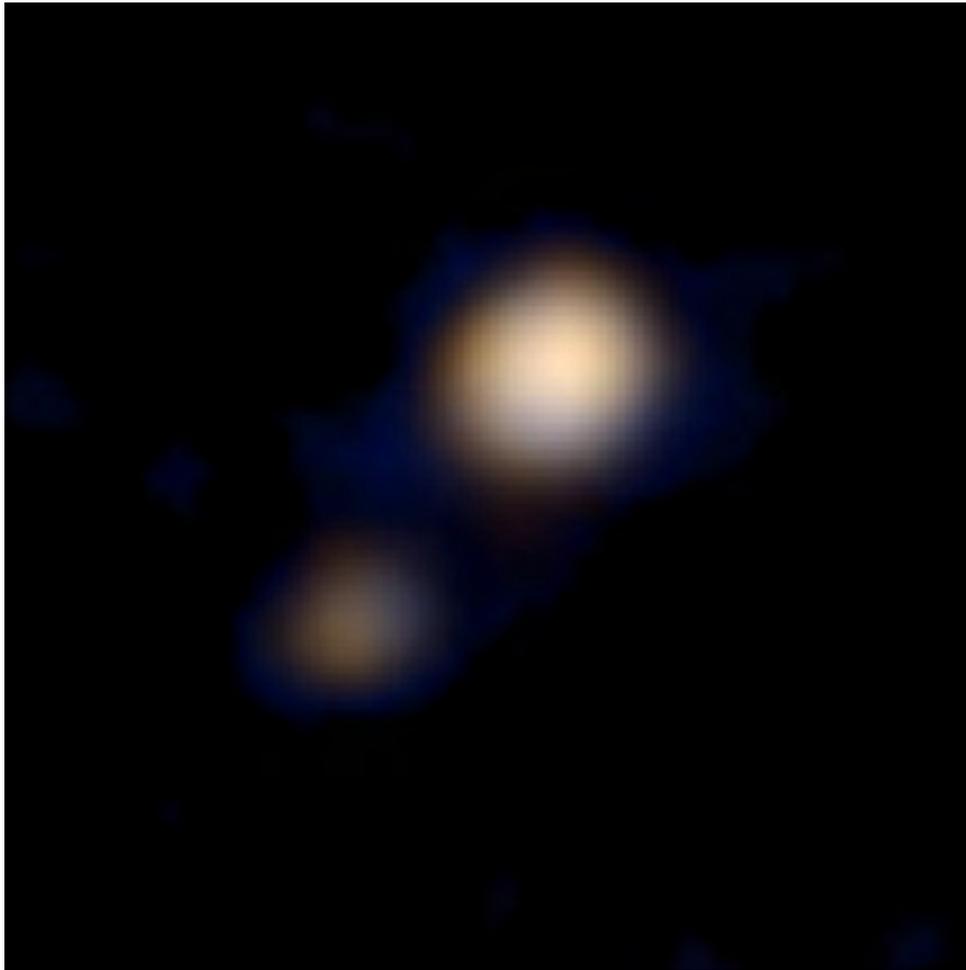
January 23, 1930



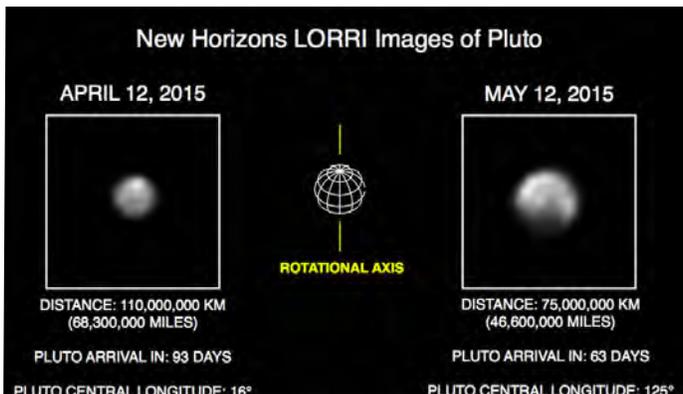
January 29, 1930

### **Pluto Discovery Plates**

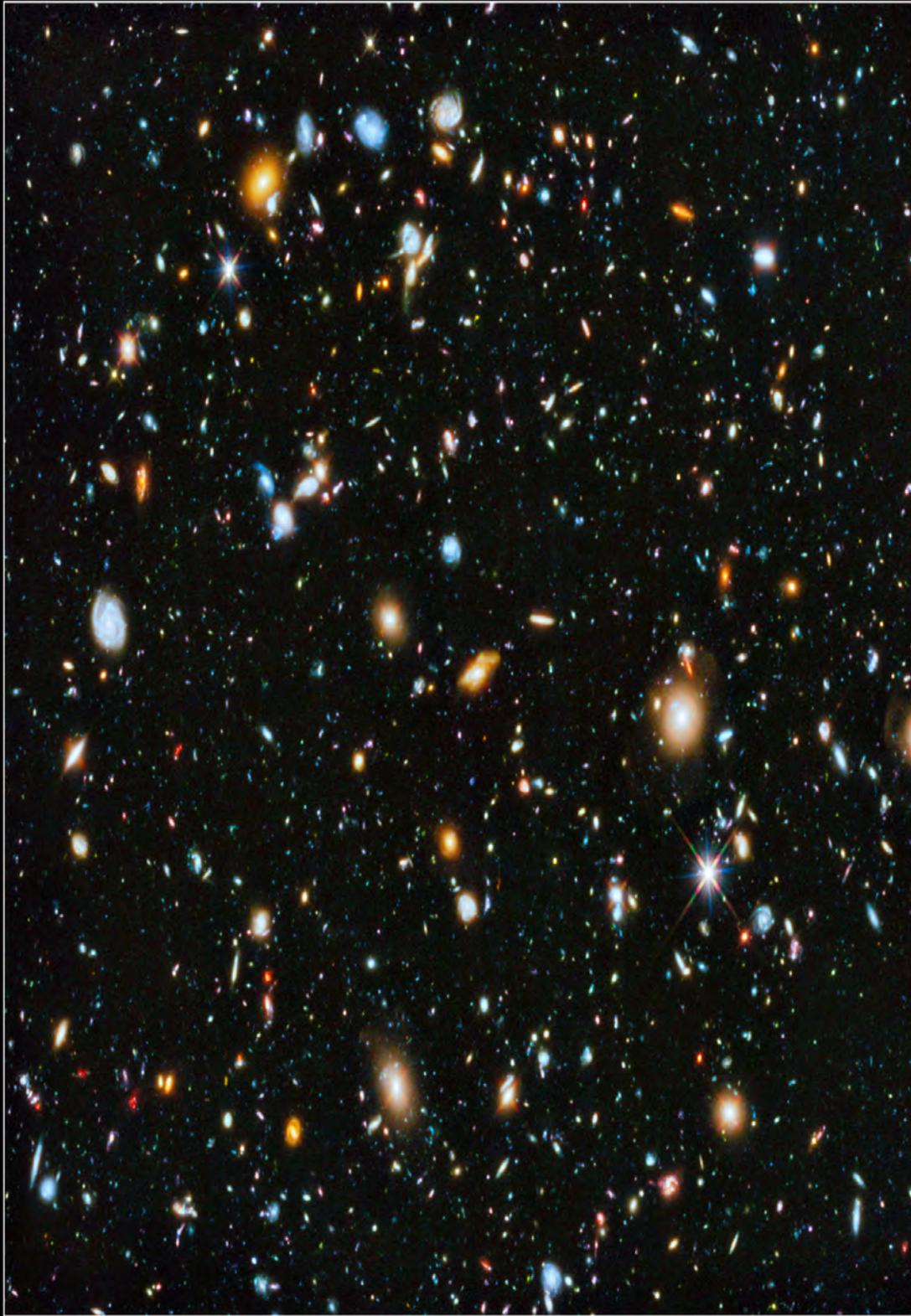
*The original discovery images of Pluto. Clyde Tombaugh looked at these images in a blink comparator that caused Pluto to jump back and forth as the device alternated between the two images. This made searching for the so-called Planet X much easier, but it still needed to be confirmed by later images. (Credit: Lowell Observatory)*



*This is the first color image from the RALPH color imager on the New Horizons spacecraft. Taken on April 9, 2015, this image shows Pluto and its largest moon, Charon. Later images will have more detail as New Horizons gets closer to Pluto. (Credit: NASA)*



*This is a comparison of two images of Pluto from the New Horizon spacecraft taken a month apart. The images will continue to grow in size and detail as the spacecraft gets closer to the planet. (Credit: NASA)*



**Hubble Ultra Deep Field 2014**  
*Hubble Space Telescope • ACS • WFC3*

I love this image because of what it represents. Remember, astronomers wanted to take a very deep image at this location in Fornax because they did not expect to find anything. Earth-based telescopes were not seeing any objects!

This is the latest version, which include Ultraviolet, Optical and Infrared images.

There are about 600 hours of exposure.

Imagine the surprise of astronomers when they first looked at these Hubble Ultra Deep Fields. Instead of “nothing,” there found about 10,000 galaxies visible.

Anyone with an interesting, unique, educational or otherwise worthy of the attention of our members may submit a **Photo of the Month** to [turnerc@stellanova.com](mailto:turnerc@stellanova.com).

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