



The Starry Messenger

The Official Newsletter of the
Palomar College Planetarium

Fall 2022

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Do you have questions?

The planetarium can be
reached at:

planetarium@palomar.edu

Did you know?

- The original Palomar College Planetarium opened in 1965 and was the *first* planetarium in San Diego County?
- We have free telescope viewing on the patio each Friday? (weather permitting)
- It takes just three computers to create the display on the dome? The software that is used is called "Digistar 7" from Evans and Sutherland

We're Back! by Mark Lane (Planetarium Director)

After more than two-and-a-half years, the planetarium has finally re-opened! As the COVID-19 pandemic was beginning to take over the world in early 2020, we gave our last public show on March 13th of that year. For more than a year, the college campus was closed to visitors, faculty, and staff, as we weathered the waves of the pandemic. It soon became clear that the closure would drag on and since we were not allowed on campus except for emergencies, we decided to completely shut down and unplug all computers and projection equipment we rely on to run our presentations. The planetarium was in deep hibernation for nearly two years...

In January of this year, we returned to the planetarium to do an assessment and hopefully resurrect our systems. The original plan was to reopen by mid-April, in time for our 10th anniversary. Unfortunately, many of our computers did not survive the prolonged shut-down and were either very unhappy or just plain dead.

Luckily, our Division Dean (Patricia Menchaca) approached me with the opportunity to use one-time pandemic relief funding to recover lost revenue from our 2+ year closure. By February we had secured the nearly \$150,000 needed to replace our aging (and ailing) hardware with a brand new system including an updated version of Digistar (our presentation software).

After a lengthy delay due to payment processing and site visit scheduling with our vendors, we finally completed our upgrade in mid-August. After more than 10 years in this current planetarium we are now completely upgraded once again to state-of-the-art status with brand new presentation technology!

On Friday, September 16th, we re-opened to the public with near-capacity crowds in attendance to see our inaugural presentations

using our newly installed Digistar 7 (D7) system. Crowds were treated to an updated visual journey through the evening sky, highlighting the upgraded graphics capabilities of our new D7 system.

After the long hiatus, we are certainly glad to be back, and our visitors seem very happy to return. You can read more about the equipment upgrades and details about our new D7 system on page 2 of this newsletter.

The other bit of news is our newest full-dome features: "EXO: Are We Alone?" and "Voyager: The Never Ending Journey". As part of the funding sourced to reopen the planetarium, we purchased two new full-dome shows to present to our Friday audiences as part of our reopening. Each show is created just for the unique immersive experience that audiences get by sitting under the 50-foot dome of our theater. The presentation happens above you and all around making the audience feel like they are part of the show. Each new show covers a different topic and details of these new shows are on page 2 of this newsletter. They are both terrific new shows that are now in regular rotation with our other two popular features. I encourage you to come by and check them out!

Finally, I want to remind our regular visitors that as the holidays approach, the Planetarium will be open on most Fridays this time of year. This year we will be closed on the Friday of Veterans Day weekend, and as usual we will be closed on Black Friday and the Fridays surrounding Christmas and New Years. But, if you are looking for something fun to do and you want to learn about the Autumn/Winter skies, I encourage you to come on by and learn about what's up in our current night sky.

So, welcome back! We missed you. As always, I hope to see you at the Planetarium!

Introducing Digistar 7!

by Scott Kardel (Assistant Planetarium Director)

Bringing the planetarium back to life after the long closedown presented some major challenges, but it also brought us the opportunity to upgrade our system from Digistar 5 to Digistar 7, the latest and greatest planetarium presentation software. If you've been to the planetarium since we've re-opened you have hopefully noticed that our sky has a new, more vivid look. The new Digistar 7 system allows us to bring the universe to you in ways we've never been able to do before.

The new software has been optimized by the planetarium staff to show you a more vibrant Milky Way and far more color than we were previously able to present in the planetarium's sky. The next time you are in the theater see if you can spot the color of the Red Planet Mars, the orange of the star Antares

or the blue of Lyra's Vega. We think that our new sky looks more like the real one (minus the light pollution) than ever before. Digistar 7 also renders the surfaces of planets and other astronomical objects with an amazing attention to detail. An early favorite object to show off is the asteroid Bennu, which was visited by the OSIRIS-REx spacecraft. The spacecraft orbited this asteroid and revealed it to be a diamond-shaped "rubble pile", essentially a collection of rocks that are loosely held together by their own gravity. Our Digistar 7 system accurately renders the asteroid in 3D showing it in amazing detail. It's not just asteroids that we are excited about. Planets with atmospheres are also rendered with greater accuracy, revealing a beautiful thin ring of atmospheric glow that can be seen as we orbit around a planet's night side. When the angles are just right you'll be able to see sunlight reflecting off of Earth's ocean waters giving audi-



ences a view that's almost as good as what the astronauts see, but without having to go through all the training.

The planetarium can accurately render a 3D display of not only Earth's surface, but all the major worlds of the solar system. This means we can show the landscape of the Apollo landing sites on the Moon, or even Jezero Crater where the Perseverance rover is exploring Mars. From any location we can zoom outward and into the cosmos at velocities far in excess of the speed of light. With one continuous zoom we can head upward to reveal an entire planet and then continue right out of our solar system and across and even out of our Milky Way galaxy. From there we can head outward still farther into the realm of the galaxies or reverse course and head right back home, ending where we started at the

planetarium. We are still working on the best ways to incorporate things into our regular Friday The Sky Tonight shows, but you should be flying across the universe with us soon!

Our upgrade wasn't just with the Digistar software, but also with the computers that run it. In our old system it took nine computers (one for the planetarium operator and eight to generate visuals on the dome) to run the show. In a case of 'less is more' we are now running our system on just three computers that are much more powerful than what we had before.

It will still take a little time for our staff to fully utilize the full power of our new Digistar 7 system, but we are excited to have all these new features available for you to enjoy and we look forward to rolling them out in our shows this fall. Stay tuned!

Now Playing at the Planetarium:

"EXO: Are We Alone?" & "Voyager: The Never Ending Journey"

We have TWO new fulldome shows in the rotation at the planetarium this Fall! Here is the description of "EXO: Are We Alone?" - Humankind has always sought to understand the mysteries of the Universe and speculated about the possibility of extraterrestrial life. Today we know of thousands of exoplanets - planets located outside our Solar System - that offer valuable information about our own planet, its origins and life on Earth. We're on the cusp of making some fascinating discoveries. But how will they change our lives?

Our second new addition is "Voyager: The Never Ending Journey" - In 1977 two space probes were launched to explore the farthest planets of the Solar System: Jupiter, Saturn, Uranus and Neptune along with their moons. These spacecraft greatly enriched our knowledge of the distant worlds. Now, after four decades, they explore interstellar space like two bottles launched into a cosmic ocean, carrying "The Golden Record" an interstellar message intended for any alien civilization.

Both of these new additions are now in rotation with two of our favorites, "Faster Than Light" and "Moons: Worlds of Mystery". Each Friday offers a one of the four shows and the rotation repeats approximate every month. Visit our website for information about show dates—www.palomar.edu/planetarium. We hope to see you there!



Join the “Friends of the Planetarium”

Your membership will help support Public Outreach!

The planetarium at Palomar College is a beautiful facility built to serve Palomar College and the Community of San Diego. However it is very expensive place to operate — operational costs are paid for only from our weekly revenue. We take great pride in offering a quality educational and entertaining presentation to all visitors to the planetarium while keeping our ticket prices low and affordable - offering many discounts to kids, seniors, military, and students. With the exception of the salary of the Planetarium Director, there is NO regular funding provided by the College. As you may know the College is facing one of the most difficult financial times of its 70+ year history and additional funding for the planetarium is hard to come by. Therefore, the Planetarium must be self-supporting and so relies on revenue from ticket sales and, more importantly, we rely on the generous donations made by the community.

Your donation can help support the Planetarium!

Student Workers

The planetarium support staff is composed of student workers from Palomar College and other local colleges. These workers learn valuable skills related to running a public outreach venue, operating telescopes, and using the Digistar 7 presentation technology. Your donation helps us pay the hourly wages of these student workers and provides an income while they are attending college courses.



Public Outreach

Public outreach is one of the main missions of the planetarium. Most of the public outreach events that we offer are free to the public but have certain inherent costs involved that become difficult when we offer an event to the public for free, but still pay our student workers and pay for refreshments and other costs involved. Your donation helps us offset these costs and allows us to offer more events for you to participate in!

Here are a few ways your donation helps our public outreach mission:

- **Providing opportunities for the public to participate in timely astronomical events**

The planetarium opens its doors to the public when there are astronomical events that can be observed by the public. We set up telescopes and provide programming in the planetarium theater to help the public learn more about the event.

- **Guest Speaker Program**

Your donation pays for logistical support of inviting guest speakers and paying for the related costs such as honoraria, lodging, refreshments, etc.

- **Purchasing telescope equipment that is used on our Public Nights and other public events**

Each Friday we set up our telescopes to allow the public to view the various celestial objects that are visible for that night. We are

always in need of additional equipment to go with the telescopes (such as eyepieces, filters, finders, charts, etc.) Your donation helps us pay for this equipment.

Full Dome Features

Each week we offer a full dome feature that is a visually immersive way to take the audience on an astronomically related journey. These shows are critically acclaimed and professionally produced by Hollywood caliber production studios. However licensing these features is expensive - often costing \$12,000 or more to license them so that we can offer them to you. Your donation helps us come up with the funds to acquire more shows and offer a richer variety of features to the public.



How To Make A Donation

Just by attending any of our planetarium shows you are supporting the planetarium with your ticket purchase. However if you are interested in supporting public outreach at the planetarium your donations are tax-deductible and can be made to the planetarium in any amount. Here are a few ways to make a donation:

Join the “Friends of the Planetarium” - By joining the Friends of the Planetarium you will become part of our planetarium family. Members enjoy discounted or free show tickets, early seating for planetarium shows, discounts in the gift shop, invitations to members only events at the planetarium and more. Your membership is tax-deductible. More information is found at www.palomar.edu/planetarium/FOP.htm

Mail us a check - Make the check payable to "Palomar College Foundation" and put in the memo "Planetarium". Mail it to: Palomar College Planetarium, 1140 West Mission Road, San Marcos CA 92069. Once the check is received we will send you a thank you letter with information for your taxes.

Donation Made Through Our Website - Donations can be made with a credit/debit card through our planetarium website.

Donation Made When Purchasing Tickets - During the online ticket purchase procedure there is an option to make a donation to the planetarium in any amount.

Donation Made In Person - We have a donation box in the lobby of our planetarium. Every dollar donated helps us reach our public outreach goals!

We thank you for considering a donation to the Palomar College Planetarium. Your donation will support the public outreach mission of the planetarium and help us keep this wonderful facility a dynamic place that offers a quality experience and educational shows to the students and public of the Palomar College community!

Come Join Us at the Planetarium

The Planetarium at Palomar College is open to the public each Friday evening

Each Friday evening we offer two types of shows for the general public. *The Sky Tonight* is a live tour of our current night skies using our Digistar 7 projection system. The audience is taken on a visual journey exploring current constellations, visible planets, and the astronomical news & events of the week.

Our *Fulldome Feature* uses the full-dome capabilities of the planetarium projection system to present a featured show that explores various astronomically themed topics that are both educational and entertaining for our audiences.

Additionally, we offer free public telescope viewing on our patio. Join us as we use our telescopes to view many of the objects discussed inside the theater. Typically the Sun, planets, and the Moon are visible in our urban skies (weather permitting).



www.palomar.edu

*Two Great Shows -
One Memorable Evening of
Science and Fun!*

Each Friday Evening We Offer:

7pm

The Sky Tonight

- Discover constellation patterns and their mythology as we tour our current night sky
- Prominent celestial objects currently in San Diego skies are highlighted
- Journey away from Earth and into the cosmos visiting other worlds along the way

8:15pm Fulldome Feature*

Fulldome Digistar productions presenting various astronomical topics that are educational and entertaining

* Titles will vary. See website for current shows

Plus:

Free telescope viewing on the patio
(weather permitting)

All shows are suitable for all audiences 5 years old and older.
Sorry, group sales are not available for our public nights.

Tickets are affordable
and discounts are available!
(tickets can be purchased in advance—online)

www.palomar.edu/planetarium



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PLANETARIUM

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