NASA’s New Horizons spacecraft is rapidly closing in on the Pluto system, speeding across another 5.5 million miles of the outer solar system each week. The long-awaited 6000 mile closest approach to Pluto is coming up July 14, but the spacecraft is already well into its yearlong scientific encounter. It has been collecting data on the planet’s plasma and dust environment, along with frequent black and white images of the system. The images are to ensure New Horizons remains on course and also to search for potential hazards that could trigger flying one of several alternate trajectories. The January and February images already show three of Pluto’s moons: Charon, Nix, and Hydra. They keep getting sharper and sharper as the distance closes, in a slow and steady opening of the door to reveal Pluto and its satellite system in exquisite detail.

The first color images were taken in April. As leader of one of four New Horizons science theme teams, these observations are especially interesting to me. The Composition theme team, consisting of about a dozen scientists from all over the country, aims to understand what the bodies in the system are made of and how those materials interact and shape their interiors and surfaces. Color and infrared spectral observations are our primary tools. Although Pluto and Charon will just be point sources in the still-distant April observations, they will be our team’s first composition-related data from New Horizons in the Pluto system.

Along with the other three science theme teams (focused on atmospheres, geology, and the plasma environment) we are all working hard to ensure everything is ready for the historic encounter. Immediately following launch in 2006, our attention was on planning the 2007 Jupiter flyby, followed by the December 2008 encounter between Pluto and Neptune. Now, our attention is thoroughly focused on the landing of New Horizons at Pluto. The first images from New Horizons will arrive just as the New Year begins, January 1, 2015. The New Year images will be the first true views of Pluto and Charon from a spacecraft. Pluto and Charon will be the subjects of several of the New Horizons papers that will be submitted to the American Astronomical Society meeting in Seattle, Washington, July 14-18, 2015.
This newsletter seems especially full of reasons Lowell is such a fine place. Below, you’ll see news about the Alvan Clark telescope, which will soon be back in service. It is going to be magnificent, thanks to Ralph Nye and the entire restoration team. Our feature article is about Pluto, and by the time you read the next Observer, New Horizons will have made its flyby of Pluto, and we’ll be getting our first of what will be stunning images of Pluto and its moons. We’ll have a celebration of all things Pluto at our Annual Gala on June 13 – I hope you’ll join us and support Lowell through your ticket. You’ll hear the latest directly from our astronomers Will Grundy and Henry Roe about the world we discovered here 85 years ago. If you can’t make the Gala, stop by our Visitor Center and see the fine new Pluto exhibit Samantha Thompson has created, made possible by an exceptionally generous gift from Ralph and Barbara Rockow. I’m also pleased to welcome Lisa Actor, our new Deputy Director for Development, to the team. Lisa comes to us from Westminster College in Utah; she has hit the ground running and is eager to bring our story to all of you in new and interesting ways. Finally, look over The Observer itself. Sarah Conant has given it a nice makeover that matches our new website at www.lowell.edu, which rolled out on February 1. It is an interesting and exciting year, and we’re glad to have you on the journey of discovery with us.

Clark Renovation Nears Completion

We are pleased to announce that work on the Clark Telescope is winding down and the instrument will soon be back in operation. Ralph Nye and his crew of Peter Rosenthal, Jeff Gehring, Dave Shuck, Glenn Hill, and Rich Oliver have painstakingly repaired, rebuilt, or refinished virtually every part of the telescope and dome. The result is a facility that looks and performs better than ever! On May 16 we will hold a private reopening celebration for donors to the renovation project. The public reopening will follow soon afterward; stay tuned to our website and social media outlets for more details. In addition to hosting these reopening ceremonies, we are also producing a documentary about the renovation project and a coffee table book highlighting the history of the Clark, from its construction in the 19th century to renovation in the 21st. We expect both of these to be completed by the end of this year.

Lowell brought in Southwest Industrial Rigging to lift parts of the Clark back into the dome piece by piece. The mount assembly, including three counterweights, weighs 11,000 pounds!
Registration is now open for Lowell Observatory Camps for Kids (LOCKs) summer programs. Camps are available for students entering grades 1 through 9 in the fall. Topics include The Solar System (grades 1-2), Galaxies (grades 3-4), Life on Other Worlds (grades 5-6), and Introduction to Astronomy (grades 7-9). Tuition is $200 for members and $225 for non-members. Scholarships are available. Please visit our website www.lowell.edu/outreach/elementary-camp for more information.

Children will be able to perform hands-on science experiments to learn the elements of STEM: Science, Engineering, Technology, and Math.
Will Grundy is a planetary scientist specializing in Pluto and other outer solar system bodies. Dr. Grundy serves as a Co-Investigator of the New Horizons mission. He is seen here at the opening of Pluto at 85: From Discovery to New Horizons.

Discovery Channel Features Evgenya Shkolnik and DCT

All you Discovery Channel fans be on the lookout. Discovery has created a series of brand campaign spots to celebrate the company’s 30th anniversary, focused on the science they promote. Discovery chose Lowell Observatory to be part of this exciting project and developed a segment featuring DCT and Dr. Evgenya Shkolnik. We spent the early part of March scouting and filming the locations for the shoot and filming took two full days with a crew of nearly 20 people. Some of the imagery includes time-lapse videos of DCT, historic items in our archives, and stunning shots of the night sky. It was a grueling two days, but we had great help from Curator Samantha Thompson, Archivist Lauren Amundson, and the DCT staff, who helped to provide guidance and care to the equipment and artifacts being used. We hope you enjoy it. Click here to watch the video.

Welcome Lisa Actor

On March 31 Lisa Actor joined the Lowell staff as our new Deputy Director for Development.

Lisa brings a solid background in fundraising, including the past 16 years on the development staff at Westminster College in Salt Lake City. She took on several roles at Westminster, including Director of Foundation and Government Relations, Director of Gift Planning, Development Director, and Associate Vice President for Institutional Advancement. Lisa earned a B.S. in biology from the University of the South in Tennessee and worked for the National Oceanic & Atmospheric Administration (NOAA) for five years, serving as deck officer/survey party chief on a ship charting the waters of Alaska and Hawaii. Lisa has also written a children’s book, Rebel Raiders. At Lowell, Lisa will oversee our fundraising and affiliated membership efforts.
Titan Monitor Upgrade

A $136,000 gift from the Robert Martin Ayers Sciences Fund, along with a $50,000 matching gift from the John and Maureen Hendricks Charitable Foundation, is enabling a significant upgrade to the Titan Monitor. This 0.5-m robotic telescope is located on Mars Hill and is designed to study weather on Saturn’s moon Titan. The new infrared camera and prisms for spectroscopy will make the Titan Monitor significantly more sensitive to Titan’s clouds, as well as enable additional projects when Titan is not being observed.

New infrared camera and prisms for spectroscopy will make the Titan Monitor significantly more sensitive to Titan’s clouds, as well as enable additional projects when Titan is not being observed.
On June 13th, 2015 we will be hosting our 4th Annual Gala, Pluto and Beyond, to be held at the High Country Conference Center here in Flagstaff. We invite you to be a part of this event!

The black-tie optional Gala begins at 5:30 p.m. with the Kuiper VIP Champagne and Cocktail Reception in the 1899 Bar. The doors to the High Country Conference Center will open at 6:00 p.m. to a non-hosted bar and a gourmet sit-down dinner at 7:30 p.m. The evening’s program will include festive music provided by Mogollon and special presentations recognizing the discovery of Pluto, the significance of the New Horizons Mission and what it means for the future of Pluto. We will conclude the evening with our popular Live and Silent Auction. Please contact Mica Gratton 928-255-0229 (mica@lowell.edu) for more information.

Recent Publications

Keep up with our astronomers’ research by reading their recent publications. Below is just one example of their work. See our website for more.

Knight, Matthew M. ; Schleicher, David G. (2015). Observations of Comet ISON (C/2012 S1) from Lowell Observatory. The Astronomical Journal, Volume 149, Issue 1, article id. 19

Image: Neugent/Massey/Lowell Obs./NSF
Carl Otto Lampland, one of Lowell Observatory’s unheralded astronomers, had a long history on Mars Hill. Hired by Percival Lowell in 1902, Carl would remain at Lowell until his death in 1951. For the past year I have been reviewing 21 boxes of Lampland’s correspondence and updating Lowell Observatory’s archive database with the subject matter of each letter.

Carl was an astronomer, inventor and jack-of-all-trades. He designed, constructed and maintained astronomical cameras, telescopes, thermocouples and other instruments that were used in Percival Lowell’s studies of Mars, Clyde Tombaugh’s search for “Planet X” and V.M. Slipher’s discovery of the expanding nature of the universe. He also did his own nebulae and planetary research and eagerly assisted other astronomers in their work. The reason he is virtually unknown is that he rarely published his work.

Although much of the correspondence I have reviewed involves the mundane, day-to-day operation of the observatory, there have also been some remarkable finds. During the almost 50 years Dr. Lampland worked at Lowell there were significant world events that had an effect on the observatory: both World Wars, the Great Depression and the Bolshevik Revolution, to name a few. I have found references to deprivation and heartache these events caused.

In 1919 Carl was inquiring whether a publication, The American Practical Navigator, was available at the U.S. Department of the Navy. He sent his inquiry to Senator Henry Ashurst (one of Arizona’s first two senators) who forwarded it to the Navy. The then Assistant Secretary of the Navy, Franklin Delano Roosevelt, replied that due to the war it was not available; his signature is bold and almost presidential.

In 1925 Carl received a letter with a petition signed by many notable Russian expats including the composer Sergei Rachmaninoff and the famous Bolshoi choreographer Mikhail Fokine, imploring scientific and cultural institutions in the West to help Russian artists and scientists who were unable to make a living under the Bolshevik regime. In many cases the Russian intelligentsia was starving due to total neglect of the arts and sciences by the Bolsheviks, or they were shipped off to the gulags.

On the lighter side, there is Carl’s voluminous correspondence with Constance Lowell, Percival’s wife, after Percival’s death. It is possible that Carl was the only one on Mars Hill to have a cordial relationship with Constance considering the dispute over Dr. Lowell’s estate that lasted many years. Her observations and gossip are, at times, very entertaining.

I still have seven boxes to review and I wonder what surprises lie within ‘P’ through ‘Z’. 😊
RECURRING EVENTS

2nd Friday Science Night | MAY 8 (Chemistry I), JUNE 12 (Chemistry II), JULY 10 (Electricity and Magnetism I) | Shows at 6, 7, and 8 p.m.

Stars on Mars Hill | MAY 27 (Scott Sheppard, Carnegie DTM, Topic: KBO 2013 VP113), JUNE 24 (Henry Roe, Lowell Observatory, Topic: Pluto Before New Horizons) | 6 p.m. | FREE

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MAY

TUE 5 | Eta Aquarid Meteor Shower Activities

(6 - 10 p.m.) Special meteor shower programs and activities

18-24 | Saturn Week

(Mon - Sun, 6 - 10 p.m.) Special Saturn programs and activities

SAT 23 | Coconino Astronomical Society Meeting

(6:45 - 8 p.m. | FREE) John W. Briggs (ATS, FOAH Obs., NM) will speak about “The Magnificent Solar Telescopes of George Ellery Hale”

SUN 25 | School is Out and Kids are Free

(10 a.m. - 5 p.m.) Special programs and activities; free for kids until 5 p.m.

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JUNE

SAT 13 | Lowell’s 4th Annual Gala: Pluto and Beyond

(Doors open 6 p.m.) Celebrate Pluto and Beyond at Lowell Observatory’s 4th Annual Gala at the High Country Conference Center

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JULY

11-19 | New Horizons Week

(Sat - Sun) Special programs and activities

TUE 14 | New Horizons Flyby Celebration

(10 a.m. - 10 p.m.) Special programs and activities

SAT 25 | Coconino Astronomical Society Meeting

(6:45 - 8 p.m. | FREE) Ken Zoll (Ex. Dir. Verde Valley Archaeology Ctr.) will speak about “Ancient Native American Astronomical Practices”

TUE 28 | Delta Aquarid Meteor Shower Activities

(6 - 10 p.m.) Special meteor shower programs and activities

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For more special event information visit:

www.lowell.edu/outreach/special-events