

Next-Generation Researcher Helps Continue UA Space Legacy

University Relations - Communications
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It's been 45 years since the United States took one small step for man, one giant leap for mankind.

On Sunday, the UA will celebrate the anniversary of the Apollo 11 moon landing with an **open house** ^[1] at the University's **Lunar and Planetary Laboratory** ^[2].

Among the scientists available to answer questions at the free public event will be **Veronica Bray**, an associate staff scientist in the Lunar and Planetary Laboratory.

Thirty-two-year-old Bray, who was born more than a decade after man set foot on the moon, studies lunar impact craters not only on Earth's moon, but also on the moons of Saturn and Jupiter.

She and five other UA scientists will be on hand at Sunday's open house to answer questions about the UA's past, present and future contributions to lunar research.

The event, which takes place from 10 a.m.-4 p.m. also will feature exhibits, lectures, tours and a screening of the UA student-produced documentary "Desert Moon," which explores the UA's role in the Apollo 11 mission and the founding of the University's Lunar and Planetary Lab under renowned astronomer Gerard Kuiper.

The UA has a long legacy in lunar and space exploration, and thanks to new, young researchers like Bray, it also has a promising future.

Bray, who joined the UA in 2008 after earning her doctorate in planetary science from Imperial College London in the United Kingdom, recently talked with Lo Que Pasa about her work.

What attracted you to the UA?

I don't think anyone in the UK has heard of Tucson unless they are interested in planetary science. If they are, then they will know that the Lunar and Planetary Laboratory is one of the greatest places in the world to come and work.

When and how did you become interested in space exploration?

Images of the ice giant Neptune reached Earth from the Voyager spacecraft in 1989. I was 8. I was awed by how strikingly blue it was, the details in its atmosphere and how starkly it contrasted the green of the other ice giant Uranus. I wanted to know why there was a difference. I had also been interested in rocks and crystals for some time and announced to my family that I wanted "to do something spacey, with rocks."

What is the focus of your current research?

I specialize in the study of the craters formed by asteroid and comet impact. Because impact craters can be found on all but one solid body in our solar system, this subject allows me to research many places. My current projects include looking at the rocks that have been melted by asteroid impact on the moon, how the presence of sub-surface oceans can cause the strange crater shapes that have formed in the icy crusts of Jupiter's moons, Saturn's moons and Pluto, and using high-resolution images and spectral data to work out what types of rocks are exposed by craters on Mars.

What is the most exciting part of your work?

Getting to see the pictures of different planets! Especially if they are new, and not many ? or any ? people have seen them before. In addition to my research I am also a targeting specialist for the HiRISE camera onboard the Mars Reconnaissance Orbiter satellite. As a targeting specialist I collect suggestions from both the public and scientists and instruct the camera on which areas of Mars to take pictures. That is exciting as I'm actually getting to "push the button" and take the pictures of Mars. I'm also on the Arizona State University-led LROC (Lunar Reconnaissance Orbiter Camera) team and I suggested targets that the LROC has now imaged.

Who do you look up to in your field and who are some of the most inspirational researchers you've had a chance to work with on campus?

The big two are Alfred McEwen and Jay Melosh. Alfred is primary investigator ? PI equals the big boss ? of the HiRISE camera and has been involved with many space missions involving a number of different planets and moons. He has a vast array of knowledge. He is also a surprisingly laid back PI, which makes working and researching with him very enjoyable. Jay Melosh, who relatively recently moved to Purdue after a great many years at UA, is the biggest name in impact cratering. So as an impact cratering scientist, it was amazing to get to work with him. Being able to call big-name scientists like Jay and Alfred "colleagues" now instead of still viewing them as untouchable science gods is something I'm proud of. LPL is very good at mixing their professors and students with field trips and social events to help everyone make the move toward being "colleagues."

It's been 45 years since we landed a man on the moon. How far has space exploration come since then, and where do you think it's going next?

Since landing on the moon, the amount of human space exploration has obviously not increased. We've not set foot on anything else yet. But our advances in robotic exploration are amazing. We used to have trouble getting to and landing on Mars ? many bad crashes, power failures or just missing the planet entirely ? but we seem to have got it right now to the point of landing a car-sized rover on the surface, the Mars Science Laboratory. We've imaged most of the planets and large moons within the orbit of Pluto and are on our way to Pluto right now for a closer look; New Horizons reaches Pluto next year. We've sent spacecraft to the edge of our solar system and beyond (Voyager), and have also been peeking at the far away planets of other star systems (Kepler). We really are reaching out into space, robotically speaking. The next step for actual human travel? Perhaps going back to the moon for a jumping off point, then to Mars or an asteroid.

Related coverage:

- *Celebrating Apollo 11 ? UA?s Role in the First Manned Lunar Landing and Space Exploration Since* ^[3]
- *A Photographic History of the UA's Role in NASA Missions* ^[4]
- *Apollo 11: Reaching for the Moon* ^[5]
- *Apollo 11: Remembering One of the Most Important Moments in Human History* ^[6]
- *Documentary Explores How the UA Helped Land a Man on the Moon* ^[7]

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Links

[1] <http://www.lpl.arizona.edu/spotlight?ID=126>

[2] <http://www.lpl.arizona.edu/>

[3] <http://uanews.org/story/celebrating-apollo-11-ua-s-role-in-the-first-manned-lunar-landing-and-space-exploration-since>

[4] <http://uanews.org/photos/photographic-history-uas-role-nasa-missions>

[5] <http://uanews.org/blog/apollo-11-reaching-moon>

[6] <http://uanews.org/blog/apollo-11-remembering-one-most-important-moments-human-history>

[7] <http://uanews.org/story/documentary-explores-how-the-ua-helped-land-a-man-on-the-moon>