

## HEAVENLY NEWS

### "MOON OVER PLACERVILLE"

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Last summer, while visiting San Francisco, I purchased a postcard that appeared to be a picture of the full Moon rising over one of the city's neighborhoods. I say appeared because the Moon was not the Moon you would see in the sky from the Earth. It was a spacecraft image that showed part of the side of the Moon you could see from the Earth and part of the side that always faces away from the Earth (sometimes referred to as the "dark side of the Moon" even though it isn't always dark). This particular image has also been used in many movies where they want to show the full Moon rising in our sky. Apparently very few people notice the difference between that view of the Moon and the view we see in the sky.

It shows how little attention many people pay to the familiar Moon in the sky. That's a pity because the Moon, our nearest celestial neighbor, reveals many interesting aspects when observed with the naked eye and even more when observed with binoculars or a telescope.

Even without optical aid we can see the part of the crescent Moon not lit by the Sun is illuminated with a bluish green light. With binoculars or a telescope many of the Moon's familiar features can be seen within that bluish green light. The source of that light is the blue and white Earth. Since the Earth has 4 times the width and 16 times the area of the Moon in our sky and is much more reflective, a nearly "full" Earth really lights up the Moon. Not only is it a beautiful sight, but measurements of the brightness of Earthshine help us to measure the Earth's changing cloud cover.

As the Moon waxes (the illuminated portion increases) many features of the lunar surface become visible, even with a small telescope. Visitors to the Community Observatory can see the Moon's numerous craters. Each crater is the result of a collision with a piece of space debris traveling at several miles per second. The Earth was also hit by many crater-forming objects; but most of Earth's craters were subsequently destroyed by erosion and mountain-building. The Moon, lacking wind, rain, or plate tectonic processes, preserves craters from billions of years ago.

After the peak of crater formation, dark lava welled up from the lunar interior. Those dark-lava plains, which mostly filled in the largest craters, form the pattern we know as the "Man in the Moon". Through a telescope we see these seas of frozen lava are sparsely cratered. We can see places where mountains and the rims of craters that were only partly flooded protrude from the lava seas. What looks like river canyons were carved by flowing lava, not flowing water and steep cliffs where parts of the Moon's surface rose along great faults.

As the Moon approaches its full phase there are few shadows and it's hard to see the craters and mountains. Now we can see the "rays", long bright streaks caused by impact debris splashed across the Moon by giant impacts.

Although we can't see the spacecraft or astronauts' footprints we can easily locate where the Apollo spacecraft landed on the Moon by comparing a lunar map with what we see through the telescope. Who knows...someday tourists may visit the Moon and get to see Neil Armstrong's footprints up close. Until then the Moon and

many other celestial sights can be seen Friday, Saturday, and Sunday nights after sunset at the Community Observatory. Special sessions for classes and community groups can also be arranged. For more information and driving directions go to [www.communityobservatory.com](http://www.communityobservatory.com).