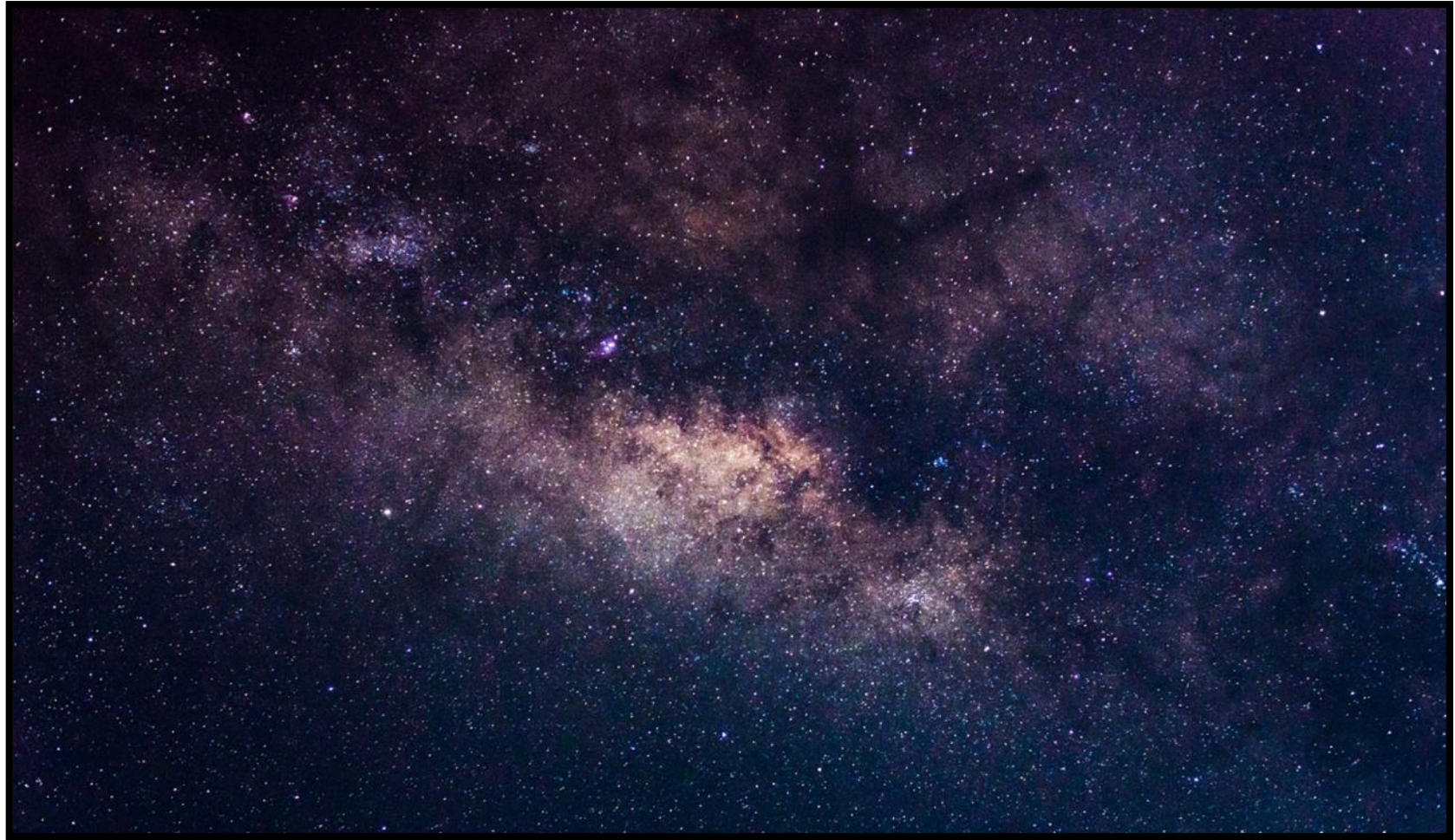




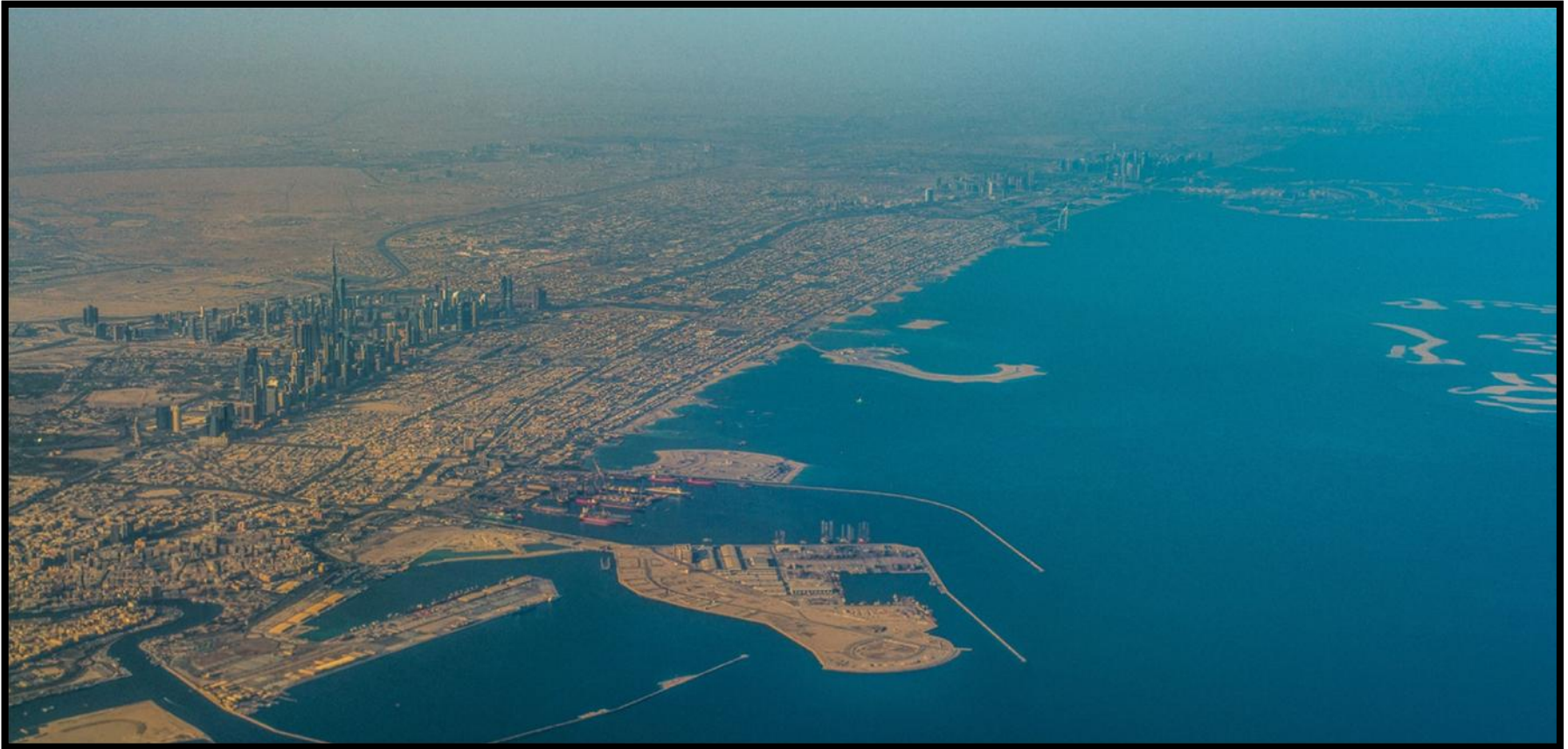
Iris' Cloak by Christopher Hendriks

Refraction and diffraction by smaller ice crystals or water droplets inside clouds are the main causes of the colorful display of this iridescent cloud. Aptly named irisation, after the rainbow goddess Iris, the phenomenon most often occurs on clouds that are near the sun. This particular cloud's coloration was striking enough to be fully visible with the naked eye, without the need to block the sun. Photo taken in late summer.



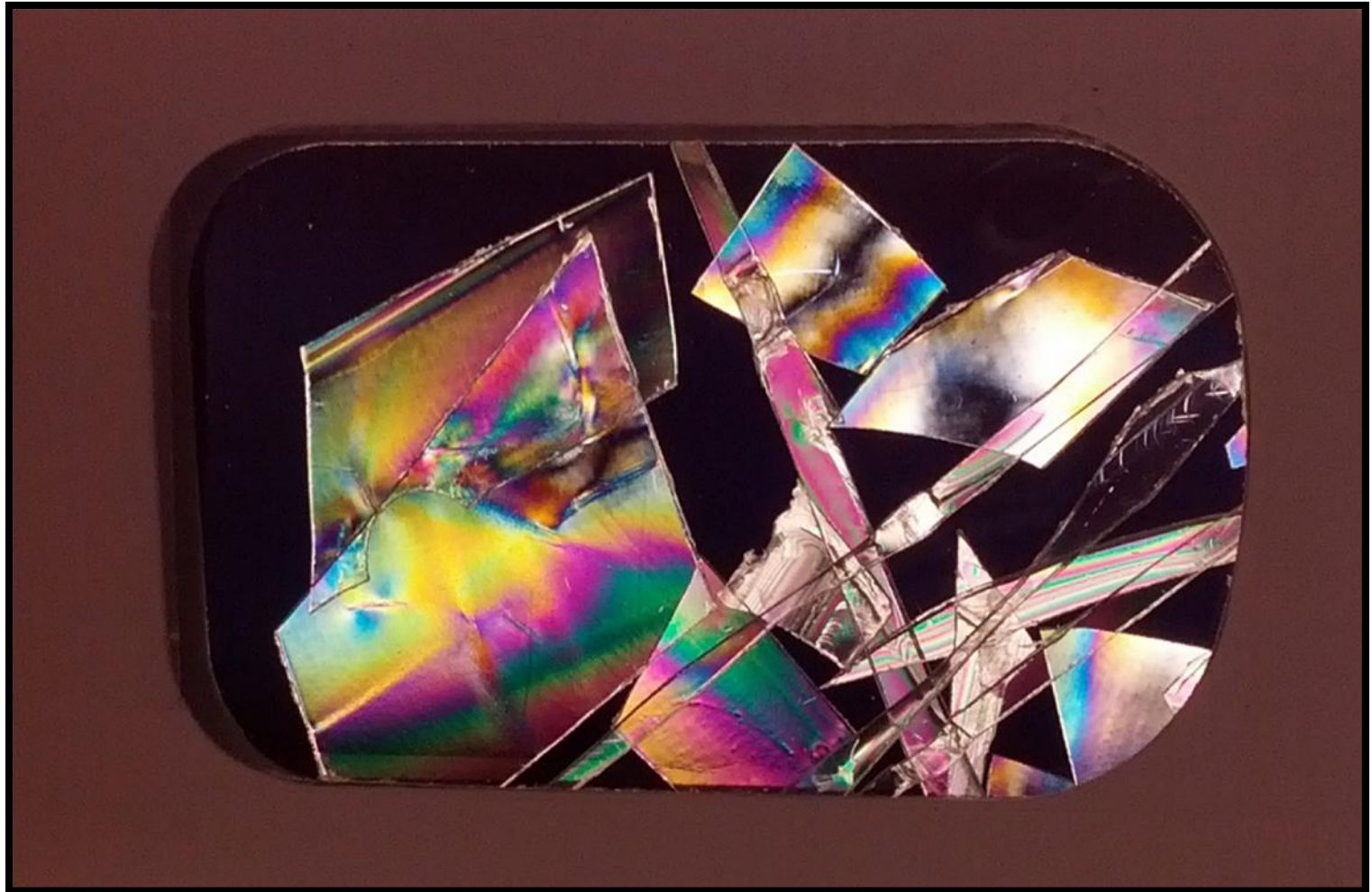
The Galaxy We Live In by Bowen Zhang

This is a photo of the Milky Way, the galaxy that contains our Solar System. I took this photo on an island in South China Sea. We live on Earth, a tiny planet in the universe. From the very beginning of the Human civilization, we start to wonder what the universe is. This is a huge motive for the development of the science. It drives people to seek the truth of this world. This beautiful Milky Way, is one reason why we learn physics.



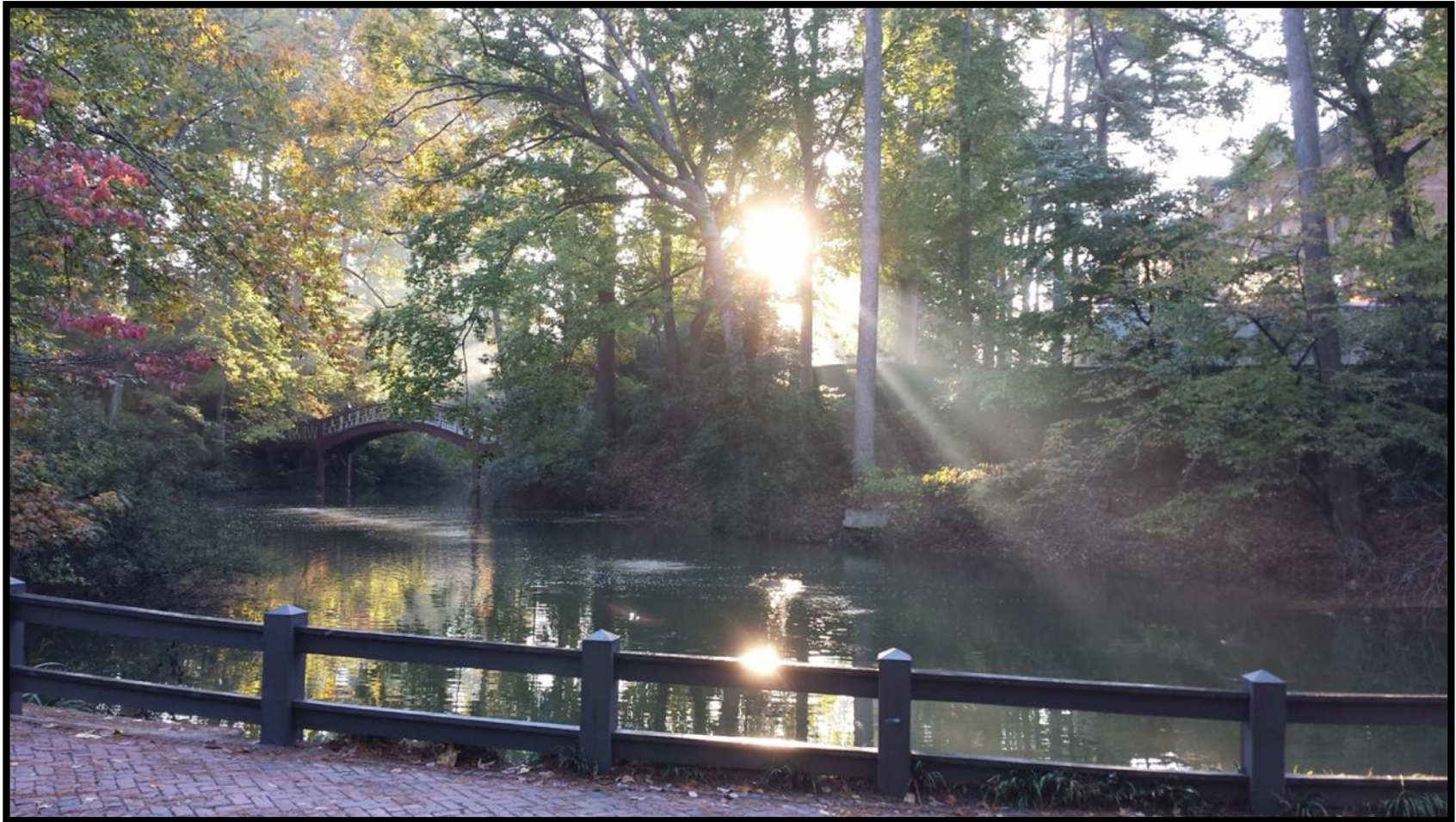
The Tiny Burj Khalifa by Bowen Zhang

This photo is taken on a plane above the Dubai. I was excited to see the highest building in the world, Burj Khalifa. With a height of 829.8 m, it reaches a new level that skyscrapers have ever done. Also, on the right corner of this photo is the Palm Islands. However, when seen on a plane, they look so small, compare to the sea, the earth and to this world. The development of physics make this kind of artificial construction possible, but still nothing compare to the nature, to this universe.



Jewels from junk by Irina Novikova

Worthless plastic shards are transformed into brightly-colored jewels when placed between two crossed polarizers. Since plastic rotates light polarization depending on its stress and thickness, different colors are transmitted through the polarizer for different pieces.



Light Rays Over The Crim Dell by Scott Mundy

When the conditions are just right, you can see rays of sunlight diffracting through tree branches making for an awesome view.



Geophysics in Action at Yellowstone by Dmitriy Zhigunov

Geysers indicate a magma chamber under the surface of the ground. The magma chamber heats up the surrounding rocks. Rainwater and melted snow work their way through fractures in the rock, and rises back to the surface when it reaches the hot rock. As it begins its ascent, it passes through lava rich in silica. The silica dissolves in the hot water, and is carried upwards. This forms a constriction in the rock crevices, which forms the geyser's pressure-driven plumbing system. When this superheated water reaches the surface, its pressure drops, and the water turns into steam. We see this "shooting" out of geysers.



Coexistence by Christopher Hendriks

At normal atmospheric pressure, water is known to exist in liquid, solid or gaseous form, or phase, depending on the temperature. Below 0 degrees centigrade, liquid water solidifies into ice. However, if the temperature is very close to this boundary, the water can exist in both the liquid and solid phases without favoring either, as in the case pictured here. Ice covered the lake during a cold night then mostly melted the next day, but enough remained by sunset, when temperatures again reached freezing. Photo taken in winter.



WWII Memorial by Zhener Zhang

The image of Washington Monument is reflected in the Lincoln Memorial Reflecting Pool. Reflection of light works the same way as the tourists on the left turn on their camera flash.



Uncertainty Principle by Vanessa Lin

This photo of the hummingbird hovering over a flower represents Heisenberg's Uncertainty Principle-- "there is a fundamental limit on the accuracy with which certain pairs of physical properties of a particle, like position and momentum, can be simultaneously known." In other words, when more precisely one property is measured the less exact the other can be determined. In this picture of the hummingbird, one can see the location of the bird but no information on how fast those wings are fluttering. Heisenberg , a German theoretical physicist, won the Nobel Prize for Quantum Physics in 1932.



Streamline Shape for Supersonic Flow Physics by John Lin

The photo shows a Northrop T-38 Talon aircraft on display at NASA's Kennedy Space Center. This beautiful streamline aircraft was the world's first supersonic trainer. NASA operates a fleet of these aircraft as a jet trainer and as a chase plane. To fly at supersonic speed, or faster than the speed sound (~ 761 mph at sea level), the aircraft needs to have a streamline shape to reduce air resistance.



Big Bang Theory by Trevor Sleight

Fireworks are an excellent example of the conversion of energy between various forms as the rocket starts with a lot of chemical energy that is transferred into gravitational potential energy and kinetic energy. Then as the firework explodes due to chemical reactions occurring inside the head of the rocket a lot of energy is transferred into heat, light, and noise. The symmetry of the explosion is due to another law of conservation that states momentum is always conserved.



Rime Ice on an Evergreen by Dmitriy Zhigunov

Supercooled water droplets are droplets of water that exist in a liquid state at temperatures below freezing. When temperatures fall below freezing on tall mountains, these water droplets, suspended in the clouds that encase the summit, freeze on contact with any solid they touch. This is called rime ice. Rime ice grows in the direction of the wind, forming feathery, delicate structures.



San Diego Beach by Yiyu Zhou

Not only the color, but also the stunning details of the ocean wave are impressive



Camping out under Starry Night
by Trevor Sleight

The Perseid shower originates from a Halley-type comet, Swift-Tuttle and is the result of the gravitational force of the earth causing the meteorites once part of the comet to accelerate through the earth's atmosphere. Once they enter the earth's atmosphere they experience air resistance a form of friction that causes them to ignite creating the visible shooting stars that streak across the sky. The Milky Way behind is seen behind the faint meteorite trail.



Blossoms by Stephanie Wang

The vivid hues in this photograph are due to light! Certain wavelengths of light from the visible spectrum reflect or refract depending on the composition of the material it hits. This lets different objects have different colors.



Pray by Yiyu Zhou

The lights are like people looking upwards to something or praying for something.



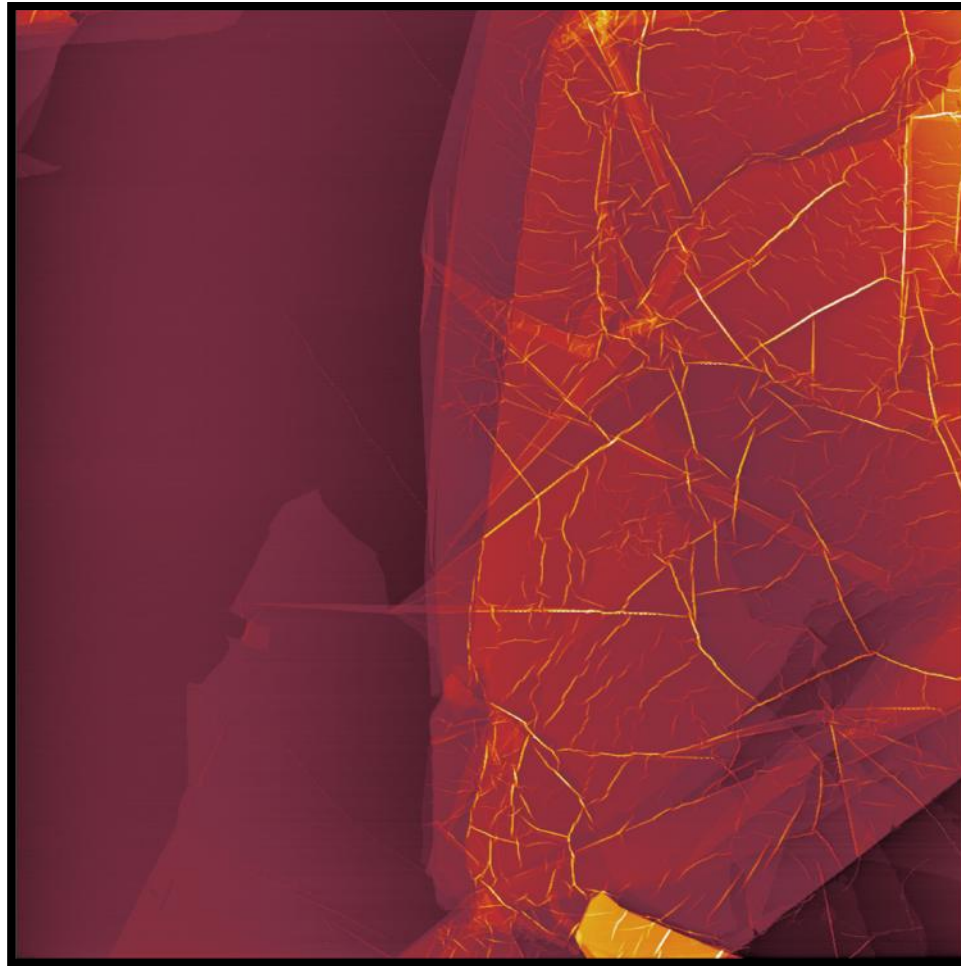
Sunset Over Idaho by Dmitriy Zhigunov

On a clear day we see a blue sky since blue wavelengths are scattered in all directions by the atmosphere. However, during a sunset, the light rays have to travel much further. In this case, the blue rays have already scattered, and only the longer red and yellow rays reach our eyes.



Hercules globular cluster by Jacob Gunnarson

This cluster is one of about 150 globular clusters that orbit around our galaxy. They are ancient, having formed about 13 billion years ago with the Milky Way. A star at the center of a one of these dense spherical clusters has around 7,000 times the number of stars surrounding it than the sun does, which would make for a spectacular night sky for any life forms living on a planet circling one of those suns. In fact, the stars would be so bright at night that you could comfortably read a book by their light.



Graphene Oxide Sheets by William Dickinson

Stacked like crinkled tissue paper, it's hard to believe that these graphene oxide sheets are only about one nanometer tall! Oxidizing sheets of carbon atoms increases the interlayer spacing, making it easier to overcome the van der Waals forces holding them together. This allows them to be more easily separated and incorporated into nanocomposites.

This image was taken with an atomic force microscope and is topographical in nature, with brighter colors indicating greater height. The image is 30 microns square, with a maximum height of 36 nm.



London by Yiyu Zhou

I was thinking of getting some impressive photo at the Big Ben and I got this - The Big Ben and the Red Bus.



Cloudy with a Chance of Physics by Stephanie Wang

The clouds here display the red light of sunset. Though typically the sky is blue, during sunset these high-frequency wavelengths are absorbed by the longer, evening voyage through the atmosphere, leaving only the signature reds for our eyes.



Rainbow by Ale Lukaszew

You don't need a storm for every rainbow



This high-resolution mosaic of the moon was made by stitching together several photos taken with a DSLR through the telescope on top of Small Hall. The heavily cratered highlands are very prominent in the southern hemisphere, whereas the north is dominated by flat plains of dark basalt called maria or "seas". They formed during a period of intense volcanism about 3 billion years ago and occur almost exclusively on the side of the moon that faces earth.

Lunar mosaic by Jacob Gunnarson



Reflections by Stephanie Wang

When light moves from one medium to one with a different index of refraction, it reflects. Here, the lake resembles a mirror. We can note that there are visible "ripples" in the reflected image which correspond to the light rays being reflected at augmented angles due to disturbances in the water. Furthermore, we can note that the reflected images are dimmer than the original objects. This is a result of the water transmitting some of the light through it, hence only a fraction of the light is reflected.



Light refraction in water and glass facets create an illusion of a single straw being split into separate pieces.

One straw, two straws... by Irina Novikova



Spectral Arrow by Christopher Hendriks

Significantly zoomed in capture of the right-hand side of the phenomenon called parhelia, or sundogs. Caused by the refraction of light by relatively large ice crystals in the atmosphere, sundogs appear horizontally parallel to the sun, rising and falling together with their master. The timing and form of clouds present at the moment of capture conspire to form a spectacular display of color in an arrow-like shape. Photo taken in late winter.



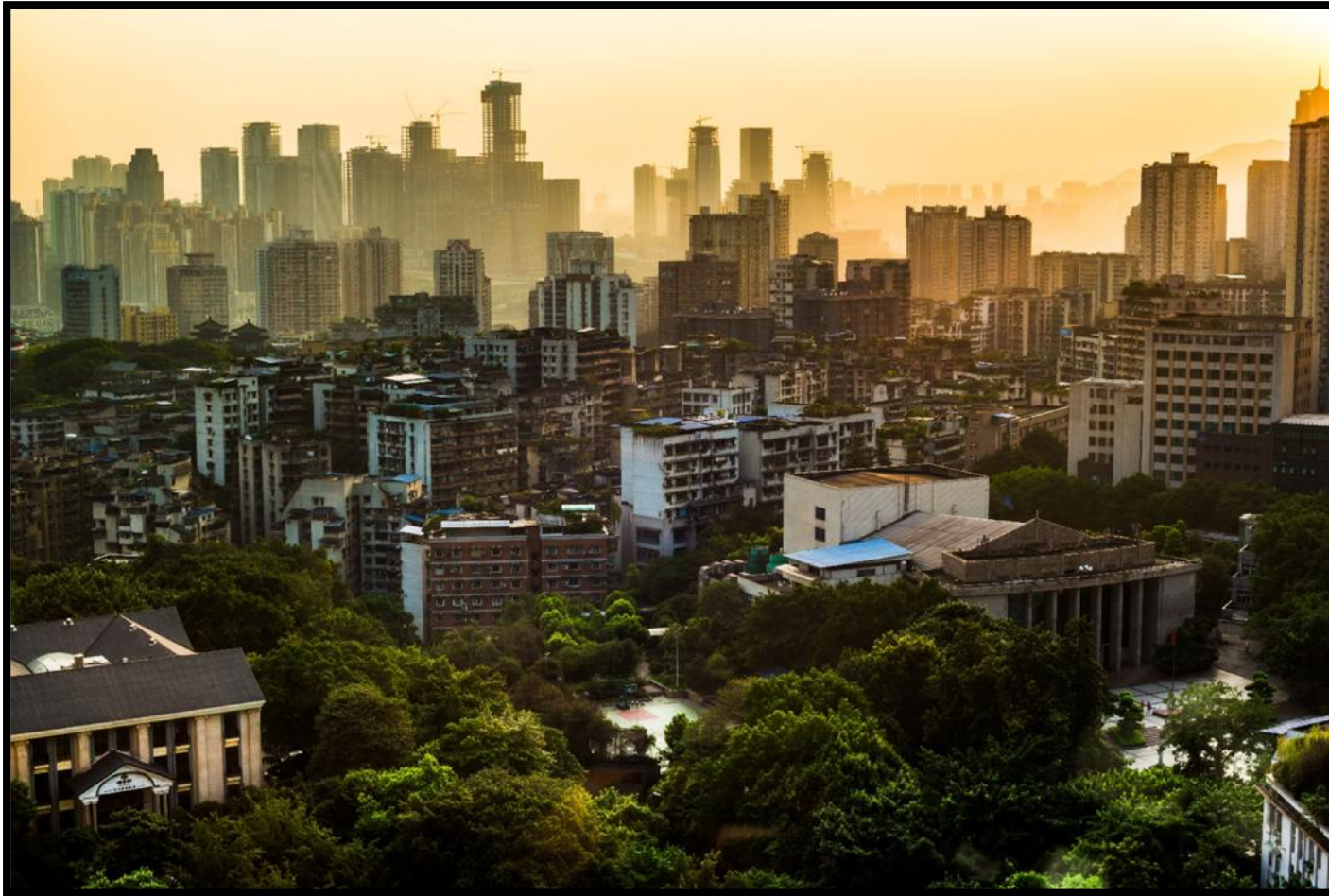
Long Exposure W&M light painting by Zhener Zhang

Students express their love for W&M by light painting with flashlights on their phones. The camera sensor recorded the trails of photons as they hit the sensor.



Pillars of Creation by Jacob Gunnarson

The Eagle Nebula is a star-forming nebula about 7,500 light years from earth. Made famous by Hubble, the nebula contains the “pillars of creation”, massive columns of cold gas and dust inside which new stars are forming. The red glow comes from hydrogen ionized by the intense light of the young stars inside the nebula. In reality, these pillars are long gone, likely destroyed by a supernova shockwave over 5,000 years ago, but the light from that event has yet to reach us, so we see them unperturbed.



Aurora of the City Chongqing by Bowen Zhang

This picture was taken in Chongqing, one of the major cities in China. With a total population of 32 million people and a mountain topography, this city have to build so many tall resident buildings on hills. This is how the city looks like at dawn. Physics is meant to improve people's life quality and in such a huge city in mountains, physics is widely used in city plan and construction. Also, this beautiful sight is caused by the diffraction and refraction of the sunlight when sun is still below the horizon.



Star Trails at W&M football field by Zhener Zhang

Stars are always rotating. This astronomical wonder is captured by combining 180 photos. Each photo has a 30-second exposure time.