UCCI Observatory Stamp Issue brochure comments:

The UCCI Observatory:

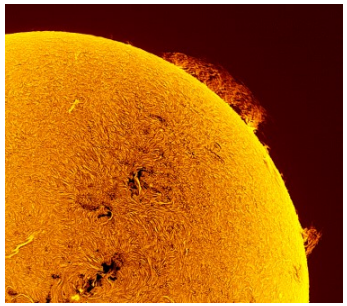
The University College of the Cayman Islands (UCCI) Dr. Wm. Hrudey Observatory was opened in February 2012. With funds raised from Cayman Service Clubs and Corporate entities amongst others, a Classroom/Observing deck was constructed to house the 12.5" Newtonian reflector telescope which had been designed, constructed and donated by Dr. Hrudey. Over time, the instrument inventory has grown with special interest evolving in Digital Solar Imaging. Equipped with a Lunt 60 PTDS hydrogen alpha scope, a 115 mm APO refractor with Baader Herschel wedge and, a custom designed and built 8" Solar Newton scope capable of high resolution white light imaging, the Observatory is able to acquire a wide range of solar images. Utilizing a powered roll-off roof rather than conventional dome, the Observatory can operate several scopes simultaneously in comfort.

All imaging is done with digital devices controlled through a powerful desktop computer. Rather than taking a single image, 300 frame AVI sequences are captured and processed with special software to tease out fine detail before false color is added with photo editing software.

Basic Astronomy courses have been provided through the Cayman Islands Astronomical Society as well as more comprehensive digital imaging programs by the Observatory's director. Thousands of students of all ages have been able to tour the Observatory and learn about its equipment and use. In addition, several students from other Caribbean Universities have travelled to Cayman to study Solar Digital Imaging techniques.

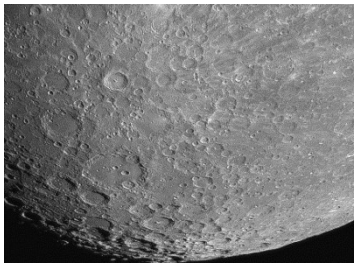
As an outgrowth of the Observatory, annual STEM Conferences have been held with both local and International science related speakers. The three day conferences have been a great success and serve to expose and inspire young students and the general public to the wonders of Science.

The Sun:



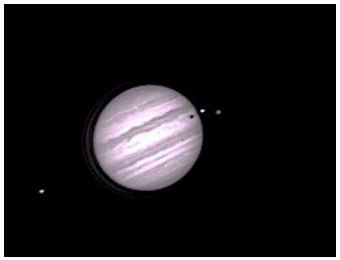
The sun, our closest star, is located some 93 million miles from earth and, is 109 times earth's diameter at 864,950 miles. Thought to be some 4.6 million years old, it is composed mostly of hydrogen which fuels its core fusion furnace. Surface temperatures reach 6,000 plus degrees C and, with suitable telescopes, the surface can be seen to be quite active and dynamic. When imaged in white light, sunspots and surface granules are visible. When imaged in hydrogen 1 alpha, filaments, sunspots, and prominences can also be seen. This stamp image is in hydrogen 1 alpha and displays a large "Hedge row" prominence extending some 70,000 km above the solar surface. Our Earth would be lost within this prominence. NOAA monitors the sun's behavior 24/7 given concerns over Coronal Mass Ejections which could devastate electronic infrastructure on Earth. In another 4.5 billion years, the sun will have used up all of its hydrogen fuel and become a Red Giant rendering the Earth inhabitable.

The Moon:



Earth has only one Moon in contrast to larger planets with multiple moons. Our moon is less than 25% the size or Earth with a diameter of 2,159 miles and orbits every 28 days at an average distance of some 240,000 miles. Its rotation is synchronous thus, we only see the near side of the moon although, the far side had been imaged by the Soviet Union's Luna 3 probe in October 1959. Thought to be younger than the Earth, it is estimated that there are some 300,000 craters larger than 1 km in diameter on its surface. The Moon plays a major role in Earth's tides which can be predicted in Tide Tables. In July of 1969, Neil Armstrong became the first man to step foot on the Moon – a major achievement during the Cold War. His footprints undoubtedly remain as the moon has no atmosphere or weather. The last man to walk on the moon was Gene Cernan in December 1972.

Planet Jupiter:



Jupiter is the 5th planet from the Sun at a distance of some 778 million miles and diameter of 88,846 miles. It is known as a Gas Giant since it does not have a solid surface. It is composed mostly of hydrogen with horizontal bands on its surface as well as the Great Red Spot which has been present for several centuries and thought to be a large storm rotating anticlockwise. Jupiter has some 67 moons although only 4 can be routinely visualized. This stamp image shows 3 moons with one of them casting a shadow on Jupiter's surface in addition to the horizontal banding. Numerous NASA probes have visited Jupiter including the Pioneer and Voyager series and more recently, New Horizons. These have provided invaluable physical data and stunning images including a faint ring structure encircling the planet.

Planet Saturn:

The planet Saturn, our solar system's 6th planet and second largest, is remarkable for its rings which are composed largely of ice and rocks. Saturn's rings extend from 4,120 miles to 75,00miles above its surface and are quite thin, averaging 65 feet in thickness. These rings occur in concentric bands with the most noticeable dark one being the Cassini ring. With a diameter of almost 75,000 miles and a distance from the Sun of some 890 million miles, Saturn too is a Gas Giant without a solid surface. Its composition is 96% hydrogen and like Jupiter, displays horizontal banding on its surface. Saturn is known to have 62 moons although, most are difficult to visualize.