

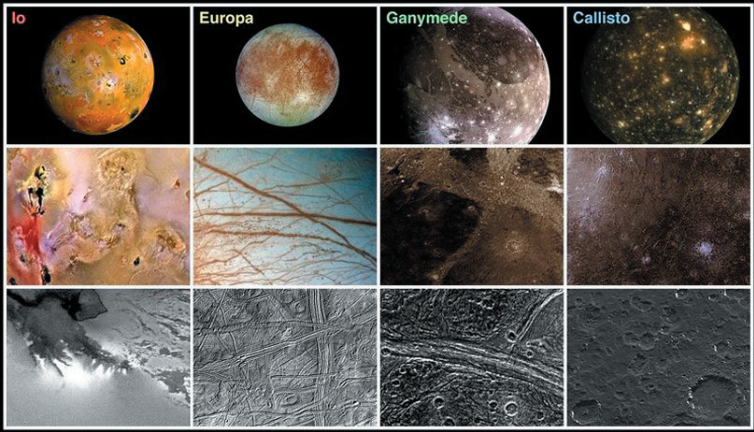


NEWSLETTER

RITTENHOUSE
ASTRONOMICAL
SOCIETY

Founded 1888 WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG January 2007

OPEN TO PUBLIC AND STUDENTS
Upcoming Meeting on January 10th at
7:30 PM
Fels Planetarium
The Franklin Institute
20th Street and Benjamin Franklin Parkway



January's Meeting:
From Earth to the Moon(s)

Dr. Chris Sommer - Presentor

Looking through the solar system for possible locations for life to exist and thrive will drive this months presentation entitled "From Earth to the Moon(s)" Dr. Chris Sommer from the Bucks Mount astronomical society will be joining us to present at the January 10th meeting. Join us to develop an understanding of how microscopic life can survive in extreme environments found here on earth, and apply that knowledge to our search for life in our solar system and beyond. Some of the diverse conditions found on Moons throughout our solar system may be the best bet for finding similar extreme environmental conditions that may also harbor and support life.

Meeting Agenda

Student Check In	7:15 - 7:30 pm
Astronomy Lesson	7:30 - 7:50 pm
Call to Order: Dr. Milton Friedman	
Sky Tonight: Alan Daroff	
Guest Speaker	
Rooftop Observing: Weather Permitting	

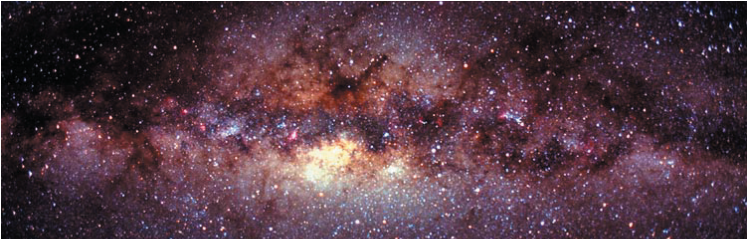
Student Lesson: The Milky Way

So far this year we have investigated circumpolar stars and compared them to stars along the ecliptic plane. Circumpolar stars resulted from your location on earth and the earth's rotation. In November we found how to spot planets in the night sky and investigated the constellations of the ecliptic plane. At our last meeting we talked about how different real motions of the Earth and the planets cause apparent motions that have an effect on what one observes in the sky.

Now that we have a basic understanding of how observing the sky from a spinning planet effects what we see, and we know where other members of our solar system can be observed, we are ready to gaze deeper into space. We are ready to tour the Milky Way Galaxy.

Our January lesson will help us spot constellations that point out the rest of the stars of the Milky Way normally visible from a dark location. They will act as a guide to help visualize our galaxy. We hope to impart a basic understanding of the structure of the Milky Way Galaxy and how one can find it observing from their back yard. Some telescopic highlights of the winter sky will be featured, and tips on spotting them with either binoculars or telescopes will be provided.

~Ted Williams



Message from the President:

In 2007, we should make a New Year's resolution to tune into our glorious astronomical heavens. A lunar eclipse will be visible at sunset on March 3 and another on August 28 at early morning sunrise. Meteors will flash across the sky as Lyrids in April, Perseids in August, Leonids in November and Geminids next December. Meanwhile the stars and planets will continually dance across the nighttime sky.

Things are looking up! Have a Happy New Year.

December's Meeting:

Earth to the Moon and Back in 2.6 Seconds/ Tick-Tock, Tick-Tock - David Rittenhouse

What can one say about a clock? How interesting could that be? These were my initial thoughts which were answered with great interest and enthusiasm at our December meeting by our own Vice President Alan Daroff. First, you need to know that Alan did not talk about just any clock; he was speaking on a world famous clock made by David Rittenhouse. World famous due to it possibly being the most complex clock ever built. Even more surprising, is that it was made in 1773, just before our country declared its independence.

Eric Wilson (the clocks conservator) said "it is the finest clock made in Philadelphia since the 18th Century. It was long regarded as the most important American Clock in existence." "It was originally built for Joseph Potts, who paid \$640 for it," said Jacqueline Degroff, curator for The Drexel Collection. "Mr. Potts refused the clock, saying it was too elaborate,"

So what made this clock so elaborate? An orrery, which is a mechanical model of the solar system, sits atop the clock face. This provides indication of the orrery contains the only six known planets of the time. A lunarium, which indicates the phase of the moon, sits below the orrery. On the clock-face, minutes and seconds, but the day of the week has an indicator that corresponds to within the zodiac, and the lower left corner has a sliding bar on the clock will chime. It can chime as often as every quarter hour or be turned off completely.

Its chimes are another intriguing feature. This Rittenhouse clock features 10 different English tunes with a sliding bar to indicate which songs are to be played.

Alan's talk was highlighted by many pictures not available to the public provided by fellow society member, Alan kept our interest, explained the unique attributes of this mechanical masterpiece with the flair of a true historian.

Our field trip this June will be a visit to Drexel University. Members and guests will get to check out this timepiece first hand. Maybe we can convince Alan to review some highlights of its unique features again this June, as we see this mechanical masterpiece first hand

The first part of our evening presentation was a talk on the Retro-reflector placed by the Apollo 11 astronauts on the moon's surface. We learned that the "lunar laser reflector" (which requires no power to operate) is still in use today (38 years after initial placement) and helps us to determine the exact distance to the moon.

Three more reflectors have been left on the moon since the initial installation completing what is referred to as the Lunar Laser Ranging Reflector Array. The subsequent retro-reflectors were placed by the astronauts on the Apollo 14 and Apollo 15 missions.

The array helps to provide the proof that the moon is slowly moving away from the Earth. It provides accurate knowledge is obtained by the array's ability to reflect the light cone when it reaches the moon and back to the earth was quite enlightening. Alan

Alan's demonstration on laser light, the light cone when it reaches the moon and back to the earth was quite enlightening. Alan assisted by visiting students, showing us how we utilize the reflector, and it's effect on the laser light that returns back to earth.



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the moon is slowly moving away from the Moon's orbit and orientation. This pulses of laser light fired from the Earth. moon within 2 centimeters.

corner reflectors, and the information on its increase in size as it subsequently travels coupled his talk with a laser demonstration,

and it's effect on the laser light that returns back to earth.

Review: An Inconvenient Truth

This is MUST SEE film for everyone!

As amateur astronomers, we spend much time observing our universe. Basking in the wide variety of objects to

observe, the stars, planets, the Milky Way Galaxy and other galaxies in the vastness of the universe. It is truly enticing and wondrous to behold.

However, having recently watched a movie entitled "An Inconvenient Truth" I have rudely been awakened to the fact, that maybe we need to spend some more

time observing our own special planet which provides us a place to live. No matter what your political persuasion may be, it is undeniable that our planet Earth is in serious trouble, and future generations may not have a planet that can support their existence.

I had always believed that global warming existed, but even I had not truly understood to what extent global warming has progressed.

I encourage everyone to rent the movie or buy the book and share it with a loved one, families or friends.

We all need to be a part of the solution. This can't be left to "others" to solve, we all need to do our part to make this work!

~Ruth M List



Visible Planets 01/10/2007

	Rises	Transit	Sets
Mercury	07:40 am	12:18 am	04:56 pm
Venus	08:31 am	01:25 pm	06:19 pm
Mars	5:44 am	10:21 am	02:58 pm
Jupiter	04:29 am	09:16 am	02:02 pm
Saturn	07:32 pm	02:25 am	09:18 am

HELP SAVE OUR PLANET!



Here are just a few things that you can do to get started.

- Reduce your carbon emissions
- Buy energy efficient appliances/light bulbs
- Change your thermostat to programmable
- Weatherize your house
- Recycle, recycle, recycle
- Buy a hybrid car
- When you can, walk, or ride a bike, take mass transit
- Switch to renewable sources of energy
- Plant trees, lots of trees!!
- Speak up in your community
- Insist that America freeze CO₂ emissions
- Reduce our dependence on foreign oil
- Raise fuel economy standards
- Encourage everyone you know to see this movie
- Learn as much as you can about the climate crisis
- www.climatecrisis.net

Our Mailing Address:

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1970



2000



2005

The Snow cap on Kilimanjaro is Disappearing