



NEWSLETTER

# RITTENHOUSE ASTRONOMICAL SOCIETY

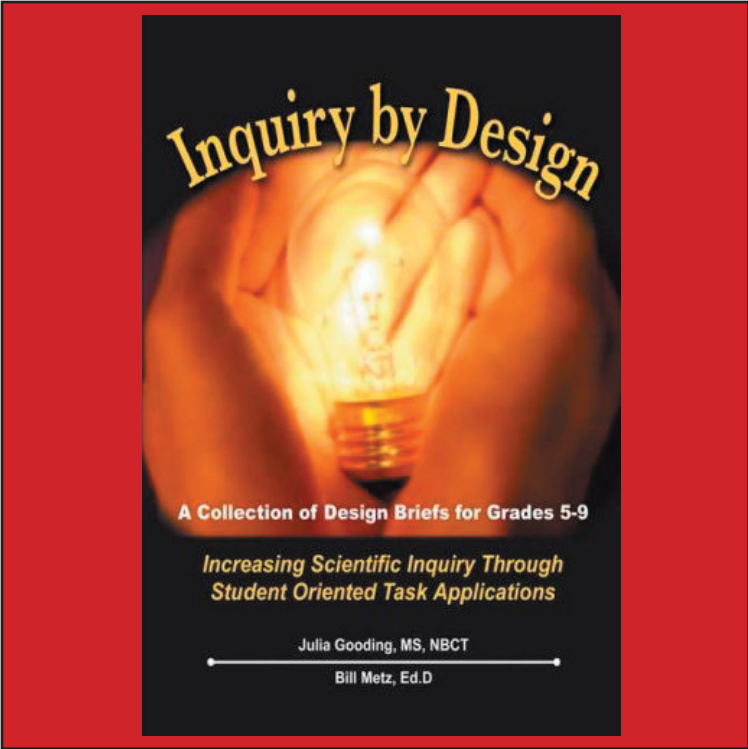
Founded 1888 WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG

March 2011

OPEN TO PUBLIC AND STUDENTS  
Upcoming Meeting on March 9th  
7:15 PM  
The Franklin  
20th Street and Benjamin Franklin Parkway

### Visible Planets 03/09/2011

	Rises	Transit	Sets
Mercury	06:51 am	12:53 pm	06:56 pm
Venus	04:36 am	09:38 am	02:41 pm
Mars	06:11 am	11:46 am	05:21 pm
Jupiter	07:18 am	01:29 pm	07:41 pm
Saturn	08:02 pm	01:52 am	07:41 am



### April's Meeting

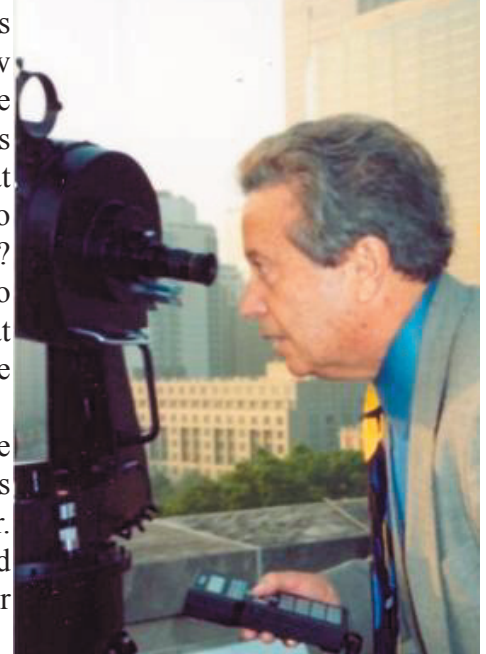
Dr. Milton Friedman

### Prescription for Space

### Medical Implications of Space Travel

Dr. Milton Friedman will share with us his views on the medical implications of space travel. How does it effect the different systems of our body? What do we need to do to protect ourselves? What is needed to travel to Mars? What do our bodies require for space travel?

Come and explore these questions and others with Dr. Milton Friedman and other members of our society in April.



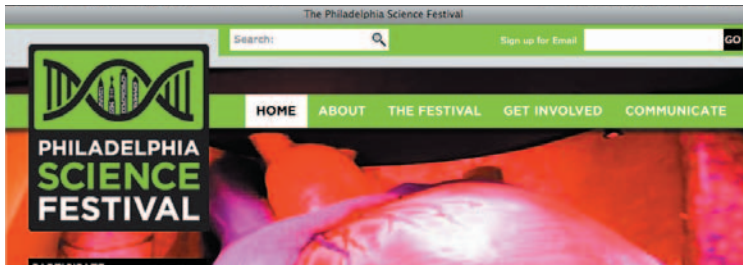
### March's Meeting

Dr. Bill Metz started his career first as a teacher and later became the Science Coordinator for Philadelphia School District. Dr. Metz has inspired dozens if not hundreds of science teachers as he also was an instructor of education at what is today the Arcadia University.

His recent book co-authored with Julia Gooding titled "Inquiry by Design" is a practical way to teach science education through what we now call discovery learning. A hands on approach to everyday problems introduce scientific logic and thinking to students through practical applications. Dr. Metz will address the state of astronomy education in today's schools and how it can be used to teach scientific concepts to students.

### Meeting Agenda

- 7:15 - Introduction
- 7:30 - Astronomy Lesson
- President's Message
- Sky This Month
- Guest Speaker
- Observatory/Q&A/Social Mixer



## Philadelphia Science Festival Update

*Derrick Pitts*

Greetings of the Season to Everyone!

Hopefully you've all heard about the exciting city-wide Philadelphia Science Festival now scheduled to take place April 15 to April 28 all across the Philadelphia area. The Festival is a two-week, community-wide celebration of science that will take place annually in April, featuring lectures, debates, hands-on activities, special exhibitions and a variety of other informal science education experiences for Philadelphians of all ages. You can find more information about PFS here:

<http://www.philsciencefestival.org/>

Philadelphia Science Festival would like to invite your Astronomy Club to take part in a city-wide 'Astronomy Night' on Thursday, April 21st. At the moment, the early plan is to locate amateurs with telescopes in various city neighborhoods that evening in an effort to engage and involve citizens who, for one reason or another, don't realize what can be seen telescopically in an urban environment, or don't know about or cannot get to a club star party or an observatory. The Philadelphia Science Festival is striving to 'take science to the citizens' and I can think of no better way to connect people with the one science that everyone seems to enjoy, regardless of their level of experience. You all know what it does to people to see some stunning astro object through a telescope for the first time and you all also understand that generations of kids are growing up with their primary astronomical experience being what they can 'Google' online. This 'Astronomy Night' will provide an opportunity for us to show viewers the real wonder of looking through a telescope at the real thing. Astronomy is an important part of the fabric of science around the region. The role that amateurs play in introducing viewers to the night sky is a significant one and PSF wants your organization to help connect people to science in the way that you do it best.

Sunset is at 7:45 that evening and twilight ends at 8:13. Saturn will be well-placed in the ESE sky that evening. The

event would run from 8 to 10 p.m. or with a proposed rain-date of Tuesday, April 26th.

So far, 5 college and university observatories have agreed to open their facilities that evening and we'd like to make this event the biggest of the entire Festival. It could be quite a regional event if we could all join together in a one-night, region-wide star party. We expect good press coverage since it will be a unique event, rarely attempted in this region before. Obviously, your participation would be well-promoted as the event approaches.

The intention is to locate 2-3 amateurs (or more) with a telescope or two (or more) out away from the downtown area at SAFE, strategic locations in safe neighborhoods around the city. I can understand that participants could be concerned about their safety. To that end, we are pulling together a list of SAFE locations where we have an established program partner with a facility like a library, school, neighborhood recreation center, church, police station, etc. for participants to choose from. We would like to establish at least 10 locations around the city. We'll provide signage for each group at each location and PSF 2011 T-shirts for all participants.

If you think your club would be interested in participating in the 'Astronomy Night' event, please let me know. If you have suggestions about how to help make this effort successful, please let me know.

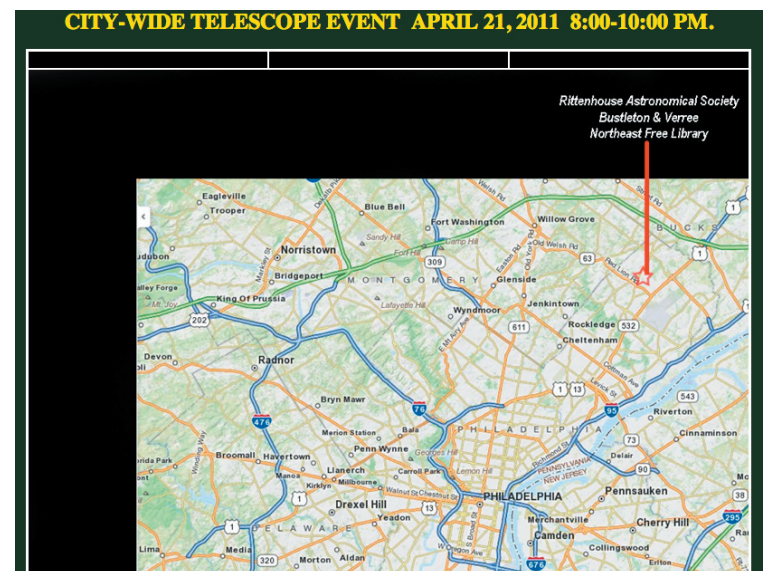
Rittenhouse Astronomical Society has a page dedicated to PFS on their website. You can access it at:

<http://www.rittenhouseastronomicalsociety.org/Pages/SciFest.htm>

The observing sites will be posted here and we'll list who's selected what site. If you have ideas for sites please let us know.

Thanks,

Derrick



## President's Message

*Dr. Milton Friedman*

Life was easy a generation ago. In astronomy of past years, it was not only less expensive; there were fewer decisions to make. Today, to learn what's going on in the sky, astronomers can receive the vast amount of information beaming back to Earth from the many space probes visiting planets in our solar system and the sun. Amateur astronomers get views and amazing photographs with their superior equipment that was not available from 1950 to 1990. To gather the latest happenings in the sky from a backyard, all an amateur astronomer needs is lots of money.

Back in the last century, a Celestron-8 cost approximately \$600 which included a couple of eyepieces and a built-in equatorial support with a motor. The North Pole was located, the scope was aligned and a night of observing was the reward.

In contrast to a stress-free astronomical life in the late 1950s to the 1990s, modern amateur astronomers have endless choices, each requiring spending more dollars. Every piece of a telescope has a choice of standard equipment or more advanced equipment for additional money. To get a better view means you better come up with more dollars. A loaded credit card will let you reach farther and clearer.

Everything is confusing. You have to become an expert in alphabet soup to know what you're buying. Meade has LX, LS and LT. SC and ACF and RC and others. Celestron has Edge HD, CGEM, CGE PRO, Advanced Series GT and others. As you study the inventory of other companies, the alphabet soup become more difficult to swallow. And don't forget the accessories you'll need.

Buying astronomical equipment today requires money and trying to predict the future: Do you want to be a serious astronomer or just use the equipment to show a friend what's up there? Will you only use it in the center of a city or will you take it out to the pitch-black suburbs? Will this be your first scope or something advanced enough to see deep sky objects?

Will the motto of amateur astronomers of the coming years be: "too many choices and too little money?"

Upcoming Speakers	
April	Dr. Milton Friedman - RAS President
May	Dave Walker - Franklin Institute, Fels Planetarium
June	Members Night: Members Presentations



*IMG\_3824\_STS133\_Ken Kremer*  
 Space Shuttle Discovery poised for launch at pad 39 A at the Kennedy Space Center. Credit: Ken Kremer

## Space Shuttle Discovery Blasts Off On Final Mission

*Dr. Ken Kremer*

In a truly dramatic finale to her very last launch, Space Shuttle Discovery blasted off to space at 4:53 p.m., Thursday, Feb. 24, with just two seconds to spare after an unexpected last minute computer glitch with Air Force tracking computers threatened to delay the liftoff yet again despite otherwise perfect launch conditions.

Air Force officials suddenly reported a "NO GO" for launch just 20 minutes before the planned liftoff at 4:50 PM. Critical range safety computers that track the shuttle after launch and ensure the safety of the public abruptly malfunctioned, forcing the Air Force to scramble for a quick solution to fix the mysterious problems.

Meanwhile NASA's Shuttle Launch Director Mike Leinbach ordered the insertion of an unplanned hold at T minus 5 minutes into the countdown to try and buy some time.

With the clock ticking down relentlessly to the very end of the narrow 10 minute launch window and no word of a rapid resolution from the Air Force, it seemed as though everyone's hopes would be dashed and the launch would again be scrubbed. The shuttle cannot launch without a fully functional range safety tracking system and approval from the Air Force.

All systems on board Discovery, the payloads and the weather had at last coalesced perfectly to support a blast off following numerous technical delays over the past three and one half months.



*IMG\_4359a\_STS 133\_Ken Kremer*

*Launch of Space Shuttle Discovery on Feb. 24 at 4:53 p.m. from launch pad 39 A at the Kennedy Space Center.*

*Credit: Kenneth Kremer*

Large crowds of excited spectators had gathered along the beaches, parks and roadways of Florida's Space Coast in expectation of a fabulous viewing experience for this historic final launch of Discovery. The Kennedy Space Center (KSC) alone was packed with more than 40,000 onlookers from all across the globe. The crowds have been increasing in size as the remaining shuttle launches dwindle to a few.

It was a nail biter to the last second as the Air Force worked on the computer issues in the few minutes remaining and no information was forthcoming.

Finally, the Shuttle integration manager Mike Moses received a verbal OK from Air Force officials that the computer problems were fixed and NASA could resume the countdown just seconds before the launch window would have expired.

In all the history of the Space Shuttle program, this type of problem with the Air Force range safety system had never occurred so close to the final moments of a shuttle launch.

"Well, it was kind of an exciting last few minutes of this countdown," Leinbach told reporters at the post launch news briefing.

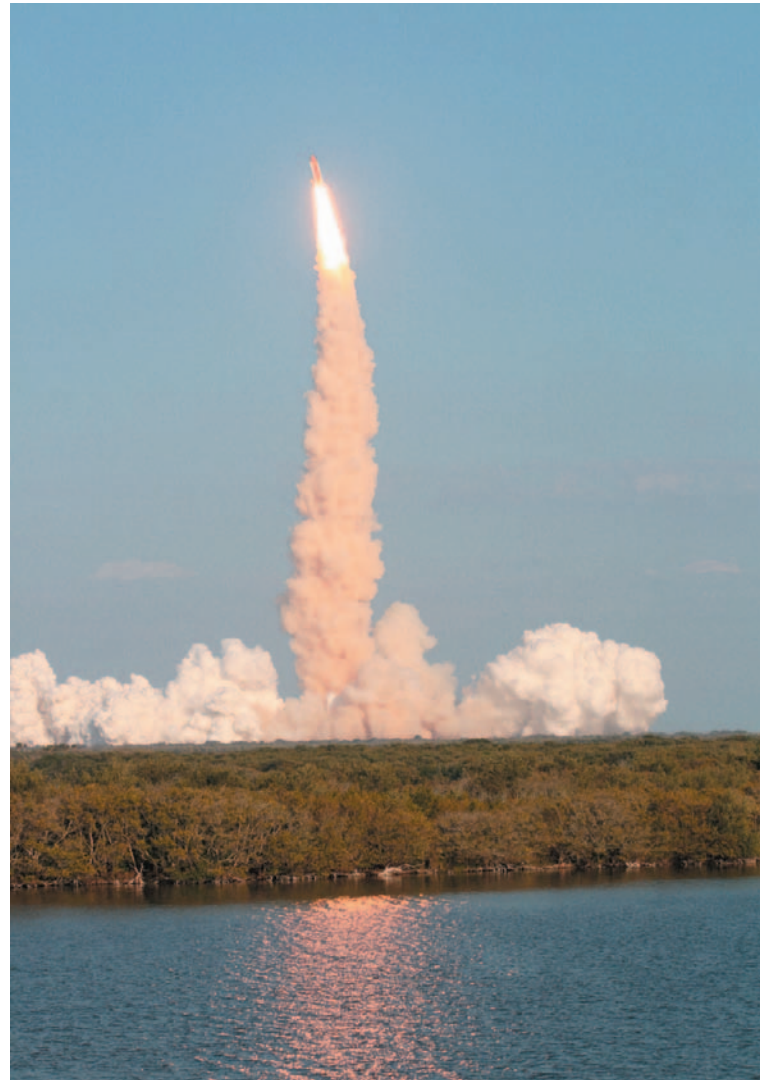
"Several of us have been around for many, many countdowns and this was one for the record books. ... This was Discovery's last (launch), a great way to go out. She gave us a little bit of a fit today, but it's a great way to get [Shuttle Commander] Steve Lindsey and his crew on orbit."

"I'm very, very proud of my launch team and all the rest of the people who worked so hard on Discovery."

After the months long wait, Discovery's final liftoff was absolutely spectacular. The solid rocket boosters and shuttle main engines ignited and thrust Discovery on a thunderous ascent off the launch pad into a gorgeous clear blue sky.

The near deafening sounds were even louder than usual. The blazing orange flames from the rocket engines were astonishingly bright like a giant blow torch burning right through the heavens.

The all veteran astronaut crew of five men and one woman aboard Discovery achieved orbit after the eight and one half minute climb to space on the orbiters 39th mission. Also aboard was the R2 Robonaut which is the first humanoid robot in space. R2 will become an official member of the crew.



*IMG\_4376a\_STS 133\_Ken Kremer*

*Discovery streaks skyward on Feb. 24 on 39th and final flight to space.*

*Credit: Kenneth Kremer*



IMG\_4434a\_STS 133\_Ken Kremer

Discovery's arc to orbit on Feb. 24.

Credit: Kenneth



IMG\_3928a\_STS 133\_Ken Kremer

The twin brother of the R2 Robonaut awaits launch of Space Shuttle Discovery on the STS-133 mission, its 39th and final flight to space.

Credit: Ken Kremer

The primary goal of the STS-133 mission is to deliver the "Leonardo" Permanent Multipurpose Module to the ISS. Leonardo will be attached to the ISS as a new and permanent habitable module that will provide extra storage and living space for the six person ISS crew.

Discovery is set to dock at the ISS at 2:16 p.m. on Saturday, Feb. 26. The mission's two spacewalks will focus on outfitting the station and storing spare components outside the complex. The 11 day flight is due to conclude with a landing back at KSC on Monday, March 7.

Read my STS-133 articles online at Universe Today & The Planetary Society

Nice images of Discovery's launch

<http://planetary.org/blog/article/00002930/>

Discovery and Robonaut Unveiled for February 24 Blast Off

<http://www.universetoday.com/83499/discovery-and-robotaut-unveiled-for-february-14-blast-off/>

Discovery GO for February 24 Launch

<http://planetary.org/blog/article/00002927/>

Discovery's Final Countdown Restarts

<http://planetary.org/blog/article/00002924/>

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IMG\_4172a\_STS 133\_Ken Kremer

The six person crew of Space Shuttle Discovery in their orange launch and entry flight suits wave to spectators before heading to the launch pad in the Astrovan. From left are Mission Specialists Nicole Stott, Michael Barratt, Alvin Drew and Steve Bowen; Pilot Eric Boe; and Commander Steve Lindsey. Discovery will deliver the Permanent Multipurpose Module, packed with supplies and critical spare parts, as well as Robonaut 2 to the ISS.

## Astronomy Outreach:

*Dr. Ken Kremer*

Please contact me for more info or science outreach presentations by email. My upcoming Astronomy talks include:

•**Masonic Lodge Evening Gala:** Pennington, NJ, Mar 13, 6 PM, “7 Years of Mars Rovers and the Search for Life in 3 D”.

•**Rittenhouse Astronomical Society (RAS) at the Franklin Institute:** Philadelphia, PA, Apr 13, Wed, 7 PM. “Opportunity Mars Rover Update”, “ NASA Flybys of Comets Hartley 2 & Temple 1” Website: <http://www.rittenhouseastronomicalsociety.org>

•**International Astronomy Day at the Franklin Institute:** Philadelphia, PA, May 7, Sat

•**Amateur Astronomers Association of Princeton:** Princeton, NJ, May 10, Tue, 8 PM: “Whats Beyond for NASA: Shuttle, Station, Orion, SpaceX & Robots”. Website: <http://www.princetonastronomy.org/>

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**Spaceflight Magazine & The Planetary Society**  
<http://www.rittenhouseastronomicalsociety.org/Dr.Kremer/K.htm>



A stunning visual and musical presentation of Holst The Planets, Friday May 13, 2011 at 7:00 in Verizon Hall. Ticket prices vary from low \$15.00 up to about \$55.00. At this point, seats are still available. [www.ticketphiladelphia.org](http://www.ticketphiladelphia.org), [kimmelcenter.org](http://kimmelcenter.org) or call 215-893-1999.

How about a group event? Please purchase your tickets individually as needed and those who attend can either meet before the concert or afterward at a local bar or club. If you sign up on our Members Network and RSVP to this event notice, we will know who plans to attend. Remember, purchase your tickets individually now to assure you have a seat!



**February 24 - March 3**  
**Orion Nebula M42, Orion**

Is there an elephant in the room?. Is there a sight you have been looking at on every night of our challenge since we began. O.K. I have. The Great Orion Nebula, and great the view is! I'll bet others who follow along here have also been looking at one of the grandest of celestial sights. With a little understanding of what is happening in this stellar nursery, the appreciation of it's beauty only grows.

It is visible by naked eye in suburban locations, easily seen with binoculars in urban areas, and has been viewed in Bloom Observatory with a good amount of detail.



**International Astronomy Day:**  
*Saturday, May 7th 2011*

Mark your calendars, RAS member volunteers will be needed, consider getting involved!

Our Mailing Address:

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