



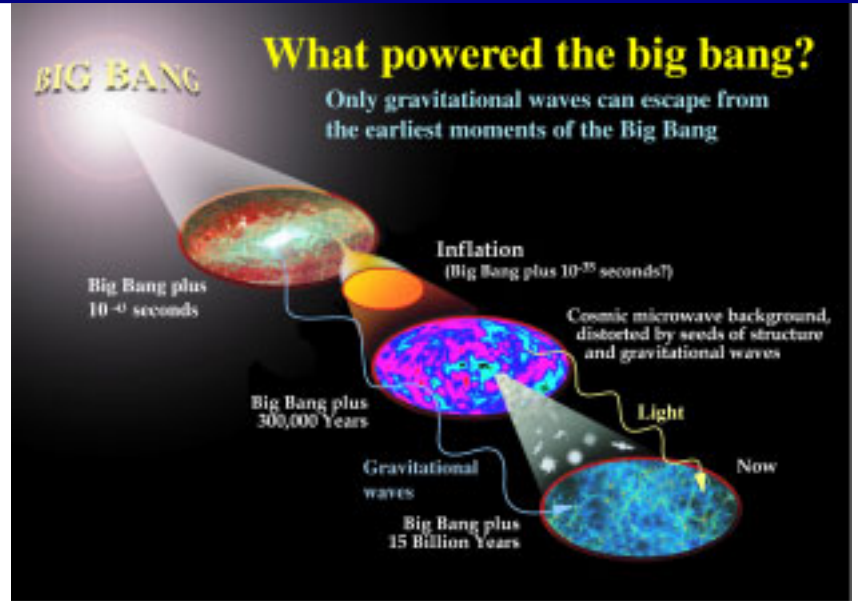
CONSTELLATION

December 2005, No. 4



“I do not know what I may appear to the world, but to myself I seem to have been only a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary. Whilst the great ocean of truth lay all undiscovered before me.”

— *Isaac Newton*



Voices from the Cacophony

By Trudy E. Bell and Dr. Tony Phillips

Around 2015, NASA and the European Space Agency plan to launch one of the biggest and most exacting space experiments ever flown: LISA, the Laser Interferometer Space Antenna.

LISA will consist of three spacecraft flying in a triangular formation behind Earth. Each spacecraft will beam a laser at the other two, continuously measuring their mutual separation. The spacecraft will be a mind-boggling 5 million kilometers apart (12 times the Earth-Moon distance) yet they will monitor their mutual separation to one *billionth* of a centimeter, smaller than an atom’s diameter.

LISA’s mission is to detect gravitational waves—ripples in space-time caused by the Universe’s most violent events: galaxies colliding with other galaxies, supermassive black holes gobbling each other, and even echoes still ricocheting from the Big Bang that created the Universe. By studying the shape, frequency, and timing of gravitational waves, astronomers believe they can learn what’s happening deep inside these acts of celestial violence.

The problem is, no one has ever directly detected gravitational waves: they’re still a theoretical prediction. So no one truly knows what they “sound” like.

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A Note from the President

It's solstice time... and holiday time. At work, maybe things are busier with multiple holiday shows and end-of-the-calendar-year budget decisions.

At home, maybe you are scurrying about just trying to get the house ready for visiting relatives or to find that last-minute "perfect" gift. Personally, I am just about frazzled trying to keep all aspects of my life somewhat organized (although the dust bunnies in my living room laugh at my attempts!).

Sometimes it seems like I can't get a handle on everything that's going on, and then I pick up my latest issue of the *Constellation*. I smile when I think of how, in a few months, I will be among my friends and colleagues again. I don't know about for you, but for me, the conferences give me a chance to regroup.

Yes, I am sure that half of the great ideas that I pick up from the conference will never be implemented for one reason or another. I probably will never talk our school system into buying the latest and greatest technology I learn about. But the re-focusing of my dedication to this field and to my colleagues is the reward I bring back with me each year. I am sure that reason wouldn't fly in my justification statement I have to write in order to attend the conference. I'll come up with something about the Standards and the Voluntary State Curriculum.

But the truth of what I gain is what makes me proud to serve as your president - even at my most frazzled. I hope to see you at Toms River in May so that we can regroup together - what a plan for the New Year! Enjoy the holidays!

Patty

*Patty Seaton
President*

Old MAPS

John T. Meader
Northern Stars Planetarium
Fairfield, Maine

It's Time to Collect those Stories

Greetings from the archives! I've been way to lax with this column and it's been bugging me, so I'm back and I'll try to be more regular with bits and pieces of our past to share. This fall I've been enjoying a new regular piece featured on National Public Radio's Morning Edition. It's called the Storycorps Oral History Project. In this radio project sponsored by NPR and the American Folklife Center at the Library of Congress, there are mobile recording studios traveling around the country allowing anyone to interview someone important in their lives and share their stories with the world. The stories have been fascinating. We need to do this too within MAPS.



As many of you know, I've always harbored a secret love for oral history. I wrote and published an oral history/biography of my grandfather entitled "Dell Turner, The Stories of his Life" through the auspices of the Maine Folklife Center at the University of Maine in 1988. I promised myself to do more in that field. In 1999 at the Lancaster MAPS conference I started an oral history project within MAPS. I interviewed Sam Storch, Tom Stec, Laura Deines Meader, Norm Dean, and the late Charlie Walker. Those interviews are now part of the MAPS Archives. They are filled with great stories about the early days of MAPS, anecdotes, and stories of how our business of teaching astronomy and running planetariums has changed in the past 30+ years.

Our membership is changing, aging, and evolving. There are a lot of stories that will be lost without your help. I would like to encourage you to interview your colleagues, especially the ones nearing retirement or who have recently retired. This is not to say that younger members don't have interesting stories to add too; if you know a younger colleague whom you think should be interviewed, by all means record their voices, stories, and commentary. Anyone can become part of the archives.

What you will need to conduct an interview:

- ◆ Some sort of recording device, a microphone and a quiet environment. Use the best equipment you have available, the quality of your recording depends on it. Clarity is really important.
- ◆ Come up with a list of questions, but remember to let the interviewee do most of the talking (it's easy to want to fill in the gaps, but let those gaps in the conversation egg-on your interviewee to some new interesting thought or tangent).
- ◆ Get a signed release for the interview. This tells the person you are interviewing that you will use their words and thoughts responsibly, and it gives them some control as to how the interview is used.
- ◆ When your interview(s) are complete, please send copies to the MAPS archives, c/o John Meader, Northern Stars Planetarium, PO Box 302, Fairfield, ME 04937.
- ◆ Be sure to include the recording (preferably on cassette or CD), a transcript if you made one--that would be great, and the signed release form.

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ELECTIONS

Election Ballots for the MAPS Board of Directors will be mailed out in January 2006. Please do not delay in returning them. It is always best to have a high percentage turnout. The elected individuals will be notified in February and will begin their two year term as advisors at the conclusion of the Annual Spring 2006 meeting in Toms River New Jersey.



What are the Board member's duties? Members of the Board of Directors are expected to assist the officers in running the organization by being active in committees and conference planning. They attend Board meetings, which are generally held at the site of the annual conference. One is held in the spring typically on the first day of the conference, and another is scheduled for the fall to review the site and plans for the upcoming conference.

Any questions or last minute nominations can be directed to:

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 jvinski@raritanval.edu

Save the Date:
MAPS 2006 Conference
May 17-20, 2006
Robert J. Novins Planetarium
Ocean County College
Toms River, NJ

Conference Hotel:
Quality Inn Toms River
www.qualityinntr.com

Conference Host:
 Gloria A. Villalobos
 Director, Robert J. Novins Planetarium
 Ocean County College
 Toms River, NJ
 gvillalobos@ocean.edu
 (732) 255-0343

Upcoming Events January 2006

- ◆ Jan 01 - 205th Anniversary, Guiseppe Piazzi's Discovery of the First Asteroid (Ceres)
- ◆ Jan 03 - Quadrantids Meteor Shower Peak
- ◆ Jan 04 - Earth At Perihelion (0.983 AU From Sun)
- ◆ Jan 11 - New Horizons Launch (Pluto Mission)
- ◆ Jan 15 - Stardust, Capsule Return To Earth
- ◆ Jan 15 - Cassini, Titan Flyby
- ◆ Jan 23 - Glenn Research Center's 65th Birthday
- ◆ Jan 24 - 20th Anniversary, Voyager 2, Uranus Flyby
- ◆ Jan 27 - Saturn at Opposition
- ◆ Jan 28 - 20th Anniversary, Challenger Accident
- ◆ Jan 28 - Johannes Hevelius' 395th Birthday
- ◆ Jan 29 - Chinese New Year
- ◆ Jan 31 - 35th Anniversary, Apollo 14 Launch
- ◆ Jan 31 - 40th Anniversary, Luna 9 Launch
- ◆ Jan 31 - 45th Anniversary (1961), Mercury-Redstone 2 Launch (Ham The Chimpanzee)

*Source: NASA Space Calendar
www2.jpl.nasa.gov/calendar*

A Journey through China and Tibet

Steve Berr

Mid-Atlantic Starlab Sales

1-800-STAR-960

My wife and I just got home from a three week journey through China and Tibet. The trip was wonderful, and I thought I would pass a few observations on to you before the December newsletter deadline passes.

1. Most of the cities in China have very strong lighting and views of the night sky were minimal. Hong Kong has so many sky scrapers it puts New York deep in the shade; with a downtown shopping area like twenty Times Squares and Las Vegas rolled into one.
2. The skies of Tibet were wonderful! It really was the only time when I could see the night sky at all. Other cities were either clouded out, or too brightly lit. I was surprised when I saw Canopus shining so brightly in the late night sky below Orion, and realized just how far south Lhasa is.
3. The planetarium in the Hong Kong Space Museum (FORGET the night sky in that dazzling city!) was warm and welcoming. Mr. Samuel Chui, an Assistant Curator, was very kind and seated my wife and myself for the show after giving us a backstage look. They have a Zeiss Mark VI, with many slide projectors around the theater, controlled by their own automation system. The show was a pretty rigorous program celebrating the Einstein centenary, and detailing many of the ideas of time dilation and other effects of relativity.
4. The "Ancient Observatory" of Beijing was fascinating. There, atop a building in downtown Beijing, were many large instruments used for determining positions of celestial objects and directions on the earth. The garden was filled with other examples of sundials and armillary spheres, and there were side rooms with exhibits celebrating and commemorating ancient Chinese astronomers. I was able to purchase several items: a small mirror that projects an image of the Sun with sunspots, superimposed with an image of Buddha; a replica of the most ancient compass known - a small shoe shaped piece of lodestone that balances on a copper plate and points south; and a device that can be used to determine north using the shadow of the Sun.
5. The people are warm, friendly and welcoming. Joining over 50,000 Chinese one morning, all lined up in an orderly fashion to view Chairman Mao in his crystal coffin is an experience I won't soon forget, and the Three Gorges Dam is awesome in its size, as well as the realization that such a project, affecting so many millions of people, would probably never be able to be done here in today's US.
6. China is no longer a sleeping giant. It has awakening rapidly, and it is frightening to realize how quickly it will become the world's largest producer of goods and consumer of energy. It is a juggernaut of awesome proportions.



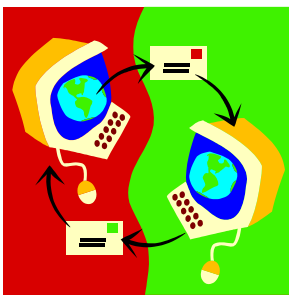
I look forward to the May Conference, and hopefully by then I will have sorted through the over 1,000 digital images I took during our trip. Perhaps I will have something to say and show at that time.

Pin the Tail on the Comet!



Looking for a way to use those posters from JPL? While searching for an alternative to "Pin the Tail on the Donkey" for his son's birthday party, John Meader (Northern Stars Planetarium) happened upon a Deep Impact poster. As a result, Forrest Meader, left, and his cousins played their very first game of "Pin the Tail on the Comet"!

Join MAPS-L!



Remember to subscribe to the MAPS e-mail list "MAPS-L." Send a blank e-mail to:
maps-l-subscribe
@yahoogroups.com

Or visit: groups.yahoo.com/group/maps-l/join

If you register for a Yahoo ID, you can access other features such as an archive of messages, files and a calendar. See: groups.yahoo.com/group/maps-l

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OLD MAPS

(Continued from page 3)

A release form designed for this project is available as a PDF file at:
www.northern-stars.com/maps_archives.htm

If you have any questions, please feel free to contact me via phone (207)453-7668, or email jmeader@midmaine.com

I hope to hear great stories coming my way from some of you soon! I want to have some great additions for the MAPS archives to report about in the spring issue, and maybe a story to share too.

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DEADLINES

The Constellation is published quarterly near the solstices and equinoxes.

Issue	Deadline
Dec. 2005	Nov. 18
March 2006	Feb. 24
June 2006	May 28
Sept. 2006	Aug. 25

Please send articles, reviews, photos and other items to:

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Science Songs

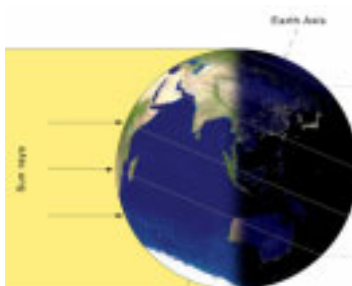


The *Math And Science Song Information, Viewable Everywhere* (or MASSIVE for short) database contains information on over 2000 science and math songs.

You'll find such would-be hits as "The Ballad of Sir Isaac Newton and the Three Laws of Motion," "Call Me Mean (I'm Just Average)" and "Don't Take This Rock for Granite."



See:
science-groove.org/MASSIVE



HAPPY WINTER SOLSTICE!

Dec. 21, 2005
 1:35 p.m. EST

Voices from the Cacophony

(Continued from page 1)

Furthermore, theorists expect the Universe to be booming with thousands of sources of gravitational waves. Unlike a regular telescope that can point to one part of the sky at a time, LISA receives gravitational waves from many directions at once. It's a cacophony. Astronomers must figure how to distinguish one signal from another. An outburst is detected! Was it caused by two neutron stars colliding *over here* or a pair of supermassive black holes tearing each other apart in colliding galaxies *over there*?

"It's a profound data-analysis problem that ground-based astronomers don't encounter," says E. Sterl Phinney, professor of theoretical physics at the California Institute of Technology in Pasadena.

Profound, but not hopeless: "We have lots of good ideas and plans that work—in theory," he says. "The goal now is to prove that they actually work under real conditions, and to make sure we haven't forgotten something."

To that end, theorists and instrument-designers have been spending time together brainstorming, testing ideas, scrutinizing plans, figuring out how they'll pluck individual voices from the cacophony. And they're making progress on computer codes to do the job.

Says Bonny Schumaker, a member of the LISA team at the Jet Propulsion Laboratory: "It's a challenge more than a problem, and in fact, when overcome, a gift of information from the universe."

For more info about LISA, see lisa.nasa.gov. Kids can learn about black holes and play the new "Black Hole Rescue!" game on The Space Place Web site at spaceplace.nasa.gov/en/kids/blackhole.

In This Issue...

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