

The W.A.S.P. newsletter

November 2005



The Warren Astronomical Society Paper

P.O. Box 1505

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www.warrenastronomicalsociety.org

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2005 WAS OFFICERS

// November, 2005

President
1st VP (program chairperson)
2nd VP (observatory chairperson)
Secretary
Treasurer
Vince Chrisman
Marty Kunz

Ken Bertin
Norm Dillard
Riyad Matti
Bob Berta
Jim Shedlowsky
Director, Publications
Director, Public Relations

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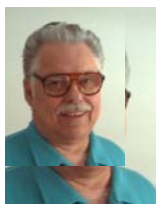
The WASP (Warren Astronomical Society Paper) is the official monthly publication of the Society. Each new issue of the WASP is mailed to each member and/or available online www.warrenastronomicalsociety.org. Requests by other Astronomy clubs to receive the WASP, and all other correspondence should be addressed to the editor, Cliff Jones, email: cliffordj@ameritech.net

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the first of each month. Any format of submission is accepted, however the easiest forms for this editor to use are plain text files. Most popular graphics formats are acceptable. Materials can be submitted either in printed form in person or via US Mail, or preferably, electronically via direct modem connection or email to the editor.

Disclaimer: The articles presented herein represent the opinions of the authors and are not necessarily the opinions of the WAS or the editor. The WASP reserves the right to deny publication of any submission.

Astro Chatter

by Larry Kalinowski



It's now official. The new officers for 2006 are Norman Dillard for President, Riyad Matti for First Vice Pres., Bob Berta for Second Vice Pres., Dale Partin for Secretary, Dr. Phil Martin for Treasurer, Steve Uitti for Director of Publications and Marty Kunz for Director of Public Relations. I have to give our 2005 officers a great big hand for the job they've done over the past year. Especially Ken Bertin, our president. He's done much to hasten business meetings and present a greater number of speakers for our enjoyment. When called upon to speak at public gatherings, he never says no. He's probably the most visible president the club has ever had. Well done Ken, I hate to see you go, as well as the others leaving office.



One of our long time members, Kimble D. Dyer, passed away in September. Active until about four years ago, he was always concerned with helping beginners get a start in amateur astronomy.

He and some members of the Detroit Astronomical Society helped the Warren society get a good start in the telescope building hobby back in the early 1960's, just after the club was formed and started meeting at Lincoln High School in Warren, MI. Kim had a hand in many of the niceties that we enjoy at our own Stargate Observatory. After getting tired of waiting for the club to make our observatory sight a little darker, he took it upon himself to install an on-off switch on the southern light pole that bothered so many of us while we were observing. He took charge of more than one solar eclipse expedition group in the seventies, and one in the nineties. Even with failing eyesight, he showed new members the way to enjoy and measure the changing brightness of variable stars and how to track asteroids and comets. At the society meetings

Lunar Eclipse by Phil Martin

Book Review

Stephen Uitti

"The First Three Minutes" book review

"The First Three Minutes" was written by Steven Weinberg in 1976. It's the evolution of the Universe from one one-hundredth of a second to present. The main thermodynamic eras are described as frames of a movie. At 00 billion degrees Kelvin, electrons, positrons, photons, neutrinos and antineutrinos bump into each other rapidly, changing form. From 0.01 seconds to 0.11 seconds, the Universe cools to 30 billion degrees Kelvin and protons and neutrons appear. And so on, through the seventh and current stage. At each frame, the general character of the Universe is fundamentally different. The book could have been called "The Thermodynamic History of The Universe".

For a book based on thermodynamics, the math is easy. The hardest math is segregated into an 11 page supplement, which can be ignored.

I liked how he sets you up with just enough background to cover the science. I liked the chapter covering the historical perspective of the discoveries. Also, there is limited mention of God. He develops the interesting philosophical statement, "The effort to understand the universe is one of the very few things that lifts human life a little above the level of farce, and gives it some of the grace of tragedy."

A fear is that the cutting edge 1976 science would now be obsolete. It didn't happen. None of the broad outlines have changed. The First Three Minutes, available in the WAS library, still presents an excellent overview of how the Universe works. For an update, the WAS library also has Dr. Filippenko's excellent What's New In Astronomy,

2003 on twelve VHS tapes.

Board Meeting Minutes 10/2/05 Cranbrook

By Bob Berta

Meeting started at 6:51

Members in attendance:

Jim Schedlowsky

Norm Dillard

Bob Berta

Marty Kunz

Riyad Matti

Norm filled in for Ken as president.

Jim – No insurance on trailer...decided that liability is covered by whomever tows the trailer. Cost of insuring the trailer itself is so expensive that it would quickly be more than the cost of the trailer.

Suggested making any banner removable to make less tempting of a target when stored. Not necessary as is in a secure area at Dennis's house. But might be a good idea so banner could be used for other purposes.

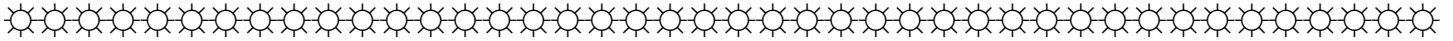
Reminded all that we are tax exempt so make sure we don't pay tax on any purchases.

Suggested we need to have a committee or process to select people for recognition at the banquet. Banquet is Dec. 14th. Tickets are available at the meetings or obtain from Bob Watt.

Riyad reminded that a huge scout event is planned for Oct. 14th. Need people to assist.

UPDATED SPEAKER LIST FOR 2005

11/7/2005	MONDAY	KEN BERTIN	HISTORY OF ASTRONOMY
11/17/2005	THURSDAY	ALAN KAPLAN RICHARD	STELLAR EVOLUTION
12/5/2005	MONDAY	SZUMANSKI	T.B.D.
12/15/2005	THURSDAY		AWARDS BANQUET



A Wrinkle in Space-Time

By Trudy E. Bell

When a massive star reaches the end of its life, it can explode into a supernova rivaling the brilliance of an entire galaxy. What's left of the star fades in weeks, but its outer layers expand through space as a turbulent cloud of gases. Astronomers see beautiful remnants from past supernovas all around the sky, one of the most famous being the Crab Nebula in Taurus.

When a star throws off nine-tenths of its mass in a supernova, however, it also throws off nine-tenths of its gravitational field.

Astronomers see the light from supernovas. Can they also somehow sense the sudden and dramatic change in the exploding star's *gravitational field*?

Yes, they believe they can. According to Einstein's general theory of relativity, changes in the star's gravitational field should propagate outward, just like light—indeed, at the speed of light.

Those propagating changes would be a gravitational wave.

Einstein said what we feel as a gravitational field arises from the fact that huge masses curve space and time. The more massive an object, the more it bends the three dimensions of space and the fourth dimension of time. And if a massive object's gravitational field changes suddenly—say, when a star explodes—it should kink or wrinkle the very geometry of space-time. Moreover, that wrinkle should propagate outward like ripples radiating outward in a pond from a thrown stone.

The frequency and timing of gravitational waves should reveal what's happening deep inside a supernova, in contrast to light, which is radiated from the surface. Thus, gravitational waves allow astronomers to peer inside the universe's most violent events—like doctors peer at patients' internal organs using CAT scans. The technique is not limited to supernovas: colliding neutron stars, black holes and other exotic objects may be revealed, too.

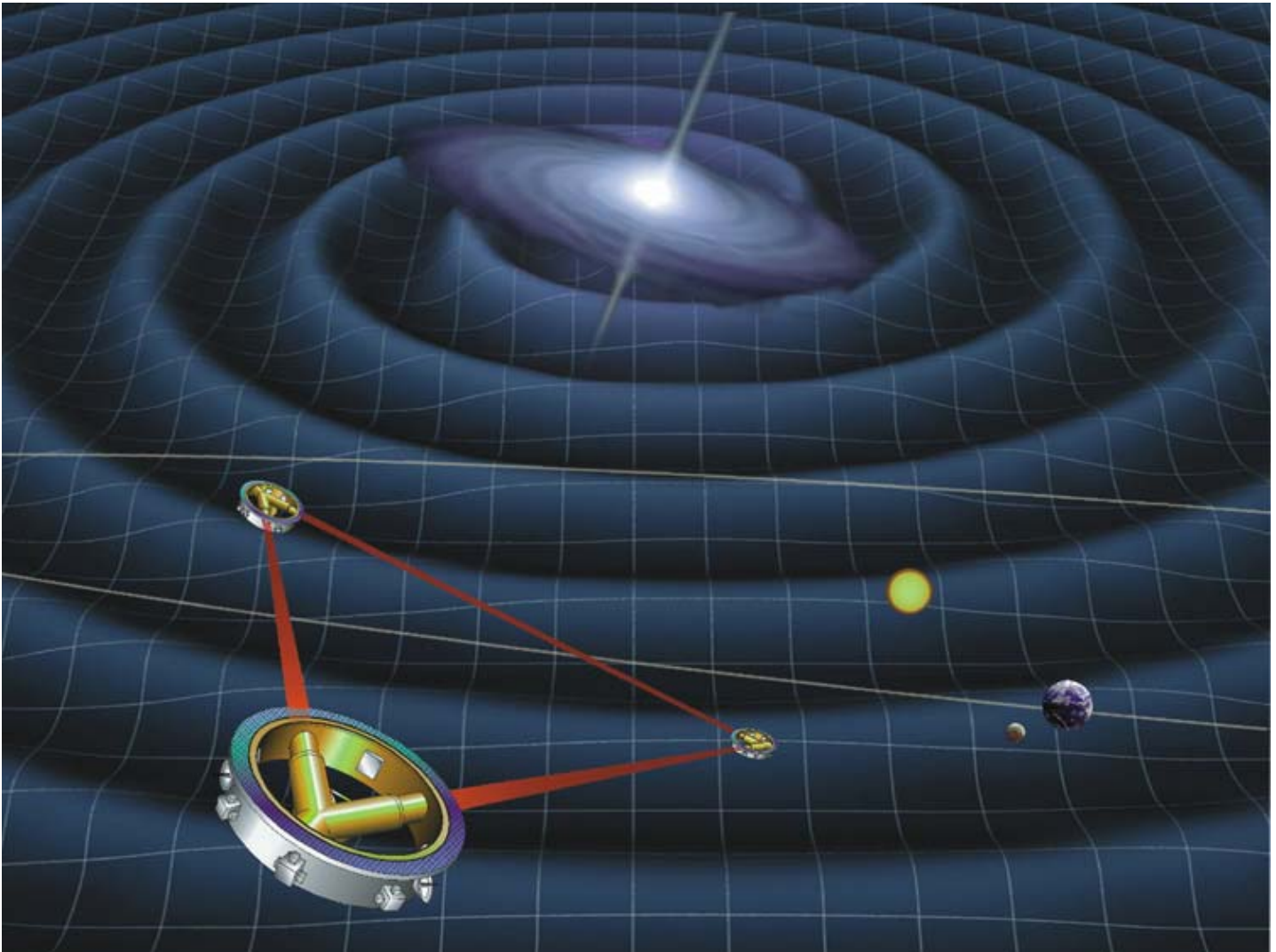
NASA and the European Space Agency are now building prototype equipment for the first space experiment to measure gravitational waves: the Laser Interferometer Space Antenna, or LISA.

LISA will look for patterns of compression and stretching in space-time that signal the passage of a gravitational wave. Three small spacecraft will fly in a triangular formation behind the Earth, each beaming a laser at the other two, continuously measuring their mutual separation. Although the three 'craft will be 5 million kilometers apart, they will monitor their separation to one *billionth* of a

centimeter, smaller than an atom's diameter, which is the kind of precision needed to sense these elusive waves.

LISA is slated for launch around 2015.

To learn more about LISA, go to <http://lisa.jpl.nasa.gov>. Kids can learn about LISA and do a gravitational wave interactive crossword at <http://spaceplace.nasa.gov/en/kids/lisaxword/lisaxword.shtml>.



LISA's three spacecraft will be positioned at the corners of a triangle 5 million kilometers on a side and will be able to detect gravitational wave induced changes in their separation distance of as little as one billionth of a centimeter.

You're invited
to celebrate...

WARREN ASTRONOMICAL SOCIETY ANNUAL AWARD BANQUET

with
Robert Naeye

SENIOR EDITOR OF SKY & TELESCOPE
EXOPLANETS

WHEN: THURSDAY, DECEMBER 15, 2005

WHERE: DECARLOS BANQUET CENTER
6015 E. 10 Mile Rd
Warren, MI 48091

SCHEDULE: COCKTAIL HOUR - 6:30 PM
Dinner - 8:00 PM
Open Bar - 6:30 - 9:30 PM

DRESS: BUSINESS CASUAL (JACKET FOR MEN SUGGESTED)

DRIVING DIRECTIONS: EAST OF MOUND RD.

TICKETS: \$23.00/PERSON
Bob Watt
22525 Audrey
Warren, MI 48091
rdwatt@comcast.net
(586) 757-4741

WARREN ASTRONOMICAL SOCIETY

MEMBERSHIP/RENEWAL APPLICATION



New Member Renewal

Name: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Home Phone:(____) _____ Cell Phone:(____) _____ Work Phone:(____) _____

E-mail address: _____ (please print clearly)

MEMBERSHIP DUES:

Regular Membership: \$30
Additional Family Membership: (Immediate family of regular member, residing at same address)
 Names: _____ (\$7 for all) \$7

OR

Sr. Citizen: (One person 65 years of age or older) \$22

College Student: (One person attending College or University) \$22

Student Membership: (Individual students, through High School) \$17

AND

Magazine Subscription and Renewals: (At special WAS annual discount rates)

Astronomy (1 year, 12 issues at \$29.00) New Renewal \$29.00
Sky & Telescope (1 year, 12 issues at \$32.95) New Renewal \$32.95

TOTAL AMOUNT: (Please provide a single check payable to *Warren Astronomical Society*) Thank you! \$

OPTIONAL INFORMATION:

Where did you hear of our Society? _____

Experience level:

Beginner Intermediate Advance Professional

Telescope(s):

New/Dobsonian New/Equatorial Refractor SCT Radio
 Binoculars Other: _____

Make/Model: _____

Aperture: _____ Inches Millimeters f/Ratio: _____

Area(s) of interest:

Beginner Deep Sky Variable Stars
 Lunar and Planetary Meteor Observing Comets and Comet Hunting
 Solar Computer Radio Astronomy
 Astrophotography (Film, Video or CCD) Field Trips Public and Youth Astronomy Outreach

Send completed application with your check to:

Warren Astronomical Society Membership, P.O. Box 1505, Warren Michigan 48090-1505