

Martian Chronicles

Volume 21, Issue 11

November, 2005

Deep Space
Mysteries 2005
Calendar on sale
Price \$6.00

Membership
Dues
\$15 for single
\$20 for family

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Up Coming Events

November 2005

11th: M.A.R.S. Club Meeting

Program: Through the Eyes of Hubble

by: Frances Ferguson

12th MOSI SkyWatch

December 2005

9th: M.A.R.S. Club Meeting

Program: Christmas Party

10th: MOSI SkyWatch

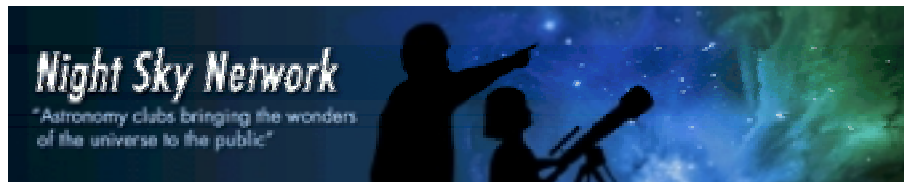


If you have not paid your dues, this will be your last copy of the "Martian Chronicles"

IMPORTANT

Joe Car has graciously consented to allowing the club to use part of the books (and other items) as a reward to all paid up members. Therefore at

the November meeting of MARS, all present, paid up members will have the choice of one of these items.



StarHopping for Beginners – Planets and Meteors by Tanja Diederich

Some great websites:
heavens-above.com
spaceweather.com
<http://www.meteorscatter.net/metshw.htm>

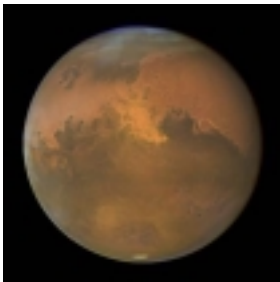
November 2005 will be great for observing planets, and if you're lucky maybe you'll catch some meteors too. After the Sun sets, the first object you see in the west will be Venus. Watch for the Moon to pass Venus in the west as it rises a little higher each night in the beginning of November. Then turn around and see Mars in the east. Mars is a golden coppery color and just a little dimmer than Ve-

nus.

On November 17/18 the Leonid Meteor shower will peak with about 20 meteors per hour (assuming you have a dark clear sky). After midnight stretch out on a blanket and get comfortable. Look up and allow your eyes 20 minutes to adjust to the darkness. The meteors will seem to trace back to Leo the Lion.

Jargon can be very confusing. So here's a quick explana-

tion of the "M" words. Meteoroids are the bits of rock traveling in space. Meteors are the streaks of light we see, when meteoroids go through the atmosphere. Meteorites are the meteoroids from space that hit the Earth. Meteors that come from comets don't become meteorites. They have the consistency of cotton candy and incinerate when they hit the atmosphere. Happy Planet Hunting!



Credit: NASA, ESA, The Hubble Heritage Team (STScI/AURA), J. Bell (Cornell University) and M. Wolff (Space Science Institute)

Mars Kicks Up the Dust as it Makes Closest Approach to Earth (HUBBLESITE.org)

NASA's Hubble Space Telescope snapped this picture of Mars on October 28, within a day of its closest approach to Earth on the night of October 29. The large regional dust storm appears as the brighter, redder cloudy region in the middle of the planet's disk. This storm, which measures 930 miles (1500 km) has been churn-

ing in the planet's equatorial regions for several weeks now, and it is likely responsible for the reddish, dusty haze and other dust clouds seen across this hemisphere of the planet. Hubble's Advanced Camera for Surveys High Resolution Imager took this image when the red planet was 43 million miles (69 million km)

from Earth. Mars won't be this close again to Earth until 2018. Mars is now in its warmest months, closest to the Sun in its orbit, resulting in a smaller than normal south polar ice cap which has largely sublimated with the approaching summer.

Minutes of the October 2005 Meeting

Record by Mildred Simpson

Craig MacDougal presented a program on Mars.

Mildred Simpson conducted the business meeting

Old Business

Astronomical Society

Calendars are still available.

Club Membership All dues due as of September.

Star Party Jim Viggiano reported that the gun club (located outside of Bartow) would not charge for camping over night. We need to set a date.

MARS watch at MOSI Dick said the museum will need help on the 29th. Set up is at 7:00pm.

New Business

New Constellation Stamps are in Post Offices.

Liz Mueller informed us that the dates for the library talks in the newsletter are wrong.

Dennis Farr talked about the clubs web site

From the Keeper of the Frog Scope

I am recovering from my surgery and will be at this month's meeting. Soon I will have to return to work.

We are looking for members to serve as an officer for the

2005 year. I will not be accepting the president position this year. We need people willing to take a leap and commit for a year in an office. We would like to hear nomina-

tions for all officers for all open positions.

Be thinking about a date in February for the clubs Start party in Polk county. I want to Thank Jim and Carol for arranging the location.

Elections are coming and we need you to serve.

Pluto's new moons???

NASA's Hubble Space Telescope has spotted two possible new moons orbiting Pluto, the ninth planet in our solar system. If confirmed, the candidate moons could provide new insight into the nature and

evolution of the Pluto system and the early Kuiper Belt. The Kuiper Belt is a vast region of icy, rocky bodies beyond Neptune's orbit.

These Hubble Space Telescope images reveal Pluto,

its large moon Charon, and the planet's two new candidate satellites. Between May 15 and May 18, 2005, Charon, and the putative moons all appear to rotate counterclockwise around Pluto.



Descriptions of Club Officers Duties.

President : Duties, To preside over each meeting, seeing it runs smoothly and stays on track. This person also works with other officers in the performance of their duties.

Vice President: Duties, To schedule programs for the monthly meetings and arrange speakers on the various program subjects. The VP presides over the monthly meeting if the president is not available.

Secretary: Duties, To record the events of each meeting and presents them either electronically or in printed form, to the newsletter editor for publication in the next club newsletter.

Treasurer: Duties, To collect the money given to the club and control the distribution of these funds for club expenses. The treasurer also keeps track of the membership and maintains an updated list. In addition this person presides over the monthly meeting, or designates someone to preside, if the president and vice president are not available.

Newsletter Editor: The editor is responsible for publishing the *Martian Chronicles* monthly. They are also responsible to insuring that newsletters are mailed to members.

Web Master: Duties, Maintaining the Club's web site.

Education Outreach Coordinator: Duties, Coordinating activities outside of the club meeting.

Astronomy Day Coordinator: Duties, Coordinating the annual Astronomy Day activities.

Librarian: Duties, Responsible for controlling the borrowing of library material and designating someone to perform this duty in their place if they are not able to attend a meeting.



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.

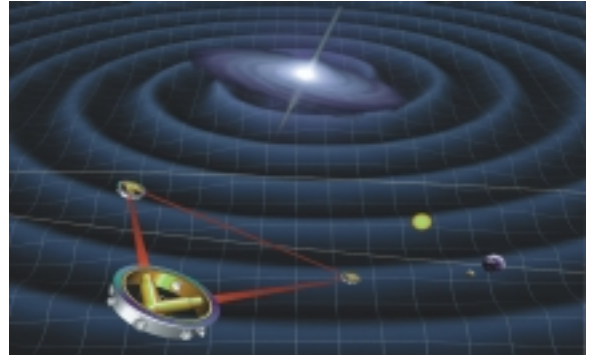
Those propagating changes would be a gravitational wave.

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

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Newsletter of the Museum
Astronomical Resource Society

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We're on the Web
www.marsastro.org

Newsletter of the Museum Astronomical Resource Society

Martian Chronicles is published monthly by the Museum Astronomical Resource Society (also known as M.A.R.S. Astronomy Club), to provide club news and other items of interest to its member. MARS is sponsored by MOSI Tampa Florida. Annual club membership dues are \$15.00 single and \$20.00 for families. Dues can be paid to any club officer at a meeting or event or mailed to the Club Membership/Renewal Address listed below. Newsletters are available to nonmembers by requesting a complimentary issue. Please send all inquiries, comments and newsletter contributions to the address below. The deadline for submitted contributions is the 25th of the month prior to the next issue. Contribution may be delayed in publication due to available space.

*Membership/Renewal
Make checks payable to: Mildred Simpson, (Club Treasurer)
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2005 M.A.R.S. Club Officers

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Newsletter— Frances Ferguson

Web Master— Dennis Farr

Education Outreach Coordinator—

Jimmy Thomas, 813-88-7187

Astronomy Day Coordinator—

Librarian—Douglas Ordetx

MOSI Contact—813-987-633,



November 2005

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11 MARS Club Meeting	12 MOSI SkyWatch
13	14	15	16 Full Moon	17	18	19
20	21	22	23 Last Quarter Moon	24 Thanksgiving	25	26
27	28	29	30	New Moon		