

Martian Chronicles

Volume 24 Issue 7

July, 2005

***What's Up:
Astronomy for Today,
Comets and the NASA
Deep Impact Mission***

- Presented by Jimmy Thomas
- In this presentation we will review the study of comets, those "dirty snowballs" of rock and ice that visit us from the Oort Cloud and Kuiper Belt. We will also review the latest information from NASA's Deep Impact mission, which sent an impactor into Periodic Comet Tempel 1 on July 4th.
- When: Thursday, July 7th, 7:00 pm
- Where: Saunders Planetarium at MOSI

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Up Coming Club Events

July 2005

7th : Science Library Talk "What's Up: Astronomy for Today?"

by Jimmy Thomas

7:00 pm in the Planetarium

8th :M.A.R.S. Club Meeting

Program: Night Sky Network's "PlanetQuest"

by Frances Ferguson

7:30 pm at MOSI

16th: MOSI SkyWatch

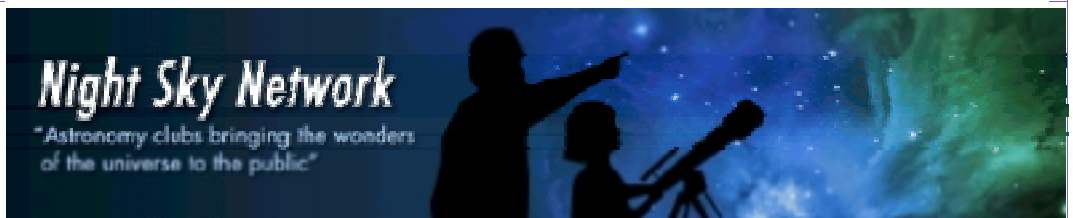
8:00 pm at MOSI if you want to know how the weather is on Sky watch Saturdays e-mail

August 2005

12th: M.A.R.S Club Meeting

Program: ?? We need volunteers to present the next 4 months.

13th: Possible Star Party



The M. A. R. S. Club as been accepted into the Night Sky Network. During the July Club meeting we will be observing a training video and discussing how we can use the resources and materials to provide better outreach opportunities for the club.

Question: How do astronomers find planets orbiting stars?

Starhopping For Beginners

By Tanja Diederich

Catch your final glimpse of Saturn as it races towards the western horizon at sundown. On July 8 look for Mercury, Venus and a thin crescent Moon gathered low in the sky. Jupiter will be high above all month. As Mercury fades away, Mars will be creeping into the sky at midnight.

Summer is a great time to look for the Big and Little Dippers hanging in the north. Draco's

tail starts between Duhbe in the Big Dipper's bowl and the North Star in the Little Dipper. It winds around the bowl of the Little Dipper and twists towards the bright star Vega in Lyra the Harp with Draco's angular head formed by four stars.

In the south Sagittarius chases Scorpius through the sky. Watch for the Moon to come very close and maybe even occulting Antares on July 17.

Look carefully and you'll see the archer's arrow pointed straight at Scorpius' red "heart" Antares, which means "not Mars". One myth states that Sagittarius was Orion's friend and protector, and Scorpius was sent to kill Orion; therefore, you'll never see them in the sky together. Our galactic core lies between Scorpius and Sagittarius in the Milky Way.

Happy Starhopping!

Minuets of June 2005 Meeting

Thirteen members and guests were present. James Daggett started the meeting with the program "The Evolution of the Eyepiece"

Old business: The "What's Up: Astronomy For Today" will continue to take place in the planetarium until further notice.

New business: Rocky Rodenbach volunteered to e-mail anyone who wants to know what the weather was like in the MOSI area before the SkyWatches. Dennis Farr volunteered to be the Web Master and he was referred to Jimmy

Thomas, the designer of the site.

Discussion about the club having a star party took place. Tanja said she had a place in mind and would e-mail Frances the name of the person to contact. Jim Zachary said he would inquire about a place in the Mulberry area.

Liz Muller asked if anyone had any ideas for a new science program she will be starting at the library to talk to her. Any

science subject can be included.

Tanja provided an updated on the total number of moons around the gas planets: Jupiter has 63, Saturn has 47, Uranus has 27 and Neptune has 13.

Mildred is taking orders for the Deep Space Mysteries 2006 Calendar, Cost \$6.00 for members.

Meeting adjourned at 9:00 pm.

Treasure Report
The Club has \$635.86 in our regular account. And \$20792 in the reserve account.

From the Keeper of the Frog Scope

By Frances Ferguson, President

Thank You, James Daggett for your presentation "The Evolution of the Eyepiece". I found it interesting. I hope more members follow your example and provide programs for the meetings.

With half of the year over, the Club Members needs to start thinking about running for office. All position

needs to have two people willing to serve to have a real election.

I have e-mailed Karen Pate from the Crystal Spring Preserve inquiring about the Club having a star party. As of publication date I have not heard back from her. Bring your ideas on where we can hold a

star party for the Club. A volunteer to coordinate the event would be nice.

If you are coming to the library talk Thursday night you may want to come early to find parking. MOSI is Opening the Kids In Charge building and they are expecting a crowd. That event runs from 4 to 8 pm.



Moving a Mountain of a Dish

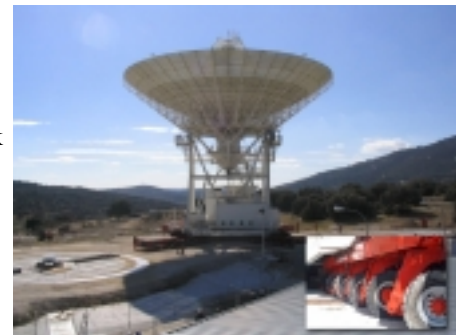
by Patrick L. Barry

Your first reaction: “That’s impossible!”

How on earth could someone simply *pick up* one of NASA’s giant Deep Space Network (DSN) antennas—a colossal steel dish 12 stories high and 112 feet across that weighs more than 800,000 pounds—move it about 80 yards, and delicately set it down again?

Yet that's exactly what NASA engineers recently did.

One of the DSN dishes near Madrid, Spain, needed to be moved to a new pad. And it had to be done gingerly; the dish is a sensitive scientific instrument full of delicate electronics. Banging it around would not do.



Giant Deep Space Network antenna in Madrid is moved using four 12-axle, 24-wheel crawlers.

“It was a heck of a challenge,” says Benjamin Saldua, the structural engineer at JPL who was in charge of the move. “But thanks to some very careful planning, we pulled it off without a problem!”

The Deep Space Network enables NASA to communicate with probes exploring the solar system. Because Earth is constantly rotating, a single antenna on the ground can communicate with a probe for only part of the day, when the probe is overhead. By placing large dishes at three locations around the planet—Madrid, California, and Australia—NASA can maintain contact with spacecraft around the clock.

To move the Madrid dish, NASA called in a company from the Netherlands named Mammoet, which specializes in moving massive objects. (Mammoet is the Dutch word for “mammoth.”)

On a clear day (bad weather might blow the dish over!), they began to slowly lift the dish. Hydraulic jacks at all four corners gradually raised the entire dish to a height of about 4.5 feet. Then Mammoet engineers positioned specialized crawlers under each corner. Each crawler looks like a mix between a flatbed trailer and a centipede: a flat, load-bearing surface supported by 24 wheels on 12 independently rotating axes, giving each crawler a maximum load of 194 tons!

One engineer took the master joystick and steered the whole package in its slow crawl to the new pad, never exceeding the glacial speed of 3 feet per minute. The four crawlers automatically stayed aligned with each other, and their independently suspended wheels compensated for unevenness in the ground.

Placement on the new pad had to be perfect, and the alignment was tested with a laser. To position the dish, believe it or not, Mammoet engineers simply followed a length of string tied to the pad’s center pivot where the dish was gently lowered.

It worked. So much for “impossible.”

Find out more about the DSN at <http://deepspace.jpl.nasa.gov/dsn/> . Kids can learn about the amazing DSN antennas and make their own “Super Sound Cone” at The Space Place, <http://spaceplace.nasa.gov/en/kids/tmodact.shtml>.

HYBRID ECLIPSE EXPEDITION

by Gregory T. Shanos

MARCH 30, 2005

Excursion began with a short flight from Tampa International Airport to Miami International Airport. From Miami, Florida to Quito, Ecuador took only four hours by plane. Overnight stay at the Four Points Sheraton Hotel in Quito with an elevation of 9,280 ft. Felt the altitude, had to move slowly.

March 31, 2005

Flew from Quito to Guayaquil, which was at sea level. Then boarded an AeroGal 727 jet to the Galapagos. The flight took approximately three hours. Arrived at Baltra and then boarded our ship the Galapagos Legend. There were only 85 passengers with ASTRONOMICAL TOURS. There were such notable passengers as Jay Pasachoff PhD, Williams College Mass, Fred Espenak PhD NASA Goddard Maryland, Dave Levy co-discoverer of the Shoemaker-Levy Comet of 1994. Other notable attendants were David Eicher Editor-in-Chief of ASTRONOMY magazine and Dava Sobel author of Longitude and Galileo's Daughter. Eli Maor PhD author of five books on mathematics was also present.

The Legend took off for Bartolome Island. The Galapagos Archipelago had been home to pirates, whalers, and settlers from around the world. The Galapagos are also famous for inspiring Charles Darwin to develop the theory of evolution. We arrived at Bartolome late in the afternoon. A short hike revealed a beautiful volcanic landscape. At the peak summit of the island was a beautiful landscape featured in the movie "Master and Commander". Pinnacle rock was a sight to see. Animals seen were pelicans, blue-footed boobies, lava lizards and even a penguin! Yes, there is a penguin on the equator that is endemic to the Galapagos. Later that day, I snorkeled to witness the natural treasures under the waters of the Galapagos.

Evening concluded with Southern sky observing with Dave Levy's 6 inch f4 reflector set up on deck of the ship. The boat rocked back and forth. Observed the eta carinae nebula, jewel box, omega centauri along with many other celestial delights.

April 1, 2005

Today we visited the Island of Santa Cruz with its giant land tortoises. We visited El Chaco Tortoise Reserve and witnessed land tortoises in their natural habitat. Many were taking mud baths to rid themselves of parasites. The giant tortoises were really a sight. Next on the agenda was Darwin Center, a place where tortoises are studied and bred. "Lonesome George" the only surviving subspecies from the island of Pinta is a rather famous resident. George is a 70 years old male tortoise with a group of three females from neighboring islands. However, George is not interested. We concluded with a visit to a lava tube in the highlands. This lava tube was enormous, at least as tall as a two story building. We walked inside the tube and witnessed several small stalactites on the walls. The lava tube was a real geological treasure. We then boarded the boat at Puerto Ayora a harbor town on Santa Cruz. Purchased some T-shirts but that was about it. No April fool. The sky was essentially overcast and the ship was moving at 20 knots yet Dave Levy still had his telescope aimed at the heavens above. No one saw anything but somehow the evening was still an eventful one.

April 2, 2005

Today we visited Espinoza Point on Fernandina Island in the morning. This Island is uninhabited and host to a many animals native to the Galapagos. Fernandina Island is home to the worlds only Marine Iguana (the model for Godzilla). Marine Iguanas flock in large numbers as they sun themselves on the lava fields of Fernandina. Other animals seen today included Sea lions, flightless cormorants, red Sally Lightfoot Crabs and Darwin Finches.

In the afternoon we sailed to Tagus Cove on Isabella Island. Isabella is the largest island of the Galapagos archipelago. We hiked up to Darwin Lake, an ultra saline lake where few organisms survive. Snorkeled twice first time off the shores of Fernandina Island. Once in the water I saw a green sea turtle. Then two more! I took many photographs. Second time at Isabella Tagus cove saw and swam with sea lions. They came really close to me. Also a green sea turtle to my right. In the evening the stars were out in a clear moonless sky. Deep sky observing with Dave Levy as usual!

April 3, 2005

In the morning we hiked near Urbana Bay on Isabella Island in search of land iguanas. In contrast to marine iguanas, the land iguanas are more solitary and brighter in color. A dingy ride along the shoreline revealed penguins, marine iguanas, blue-footed boobies, brown pelicans and flightless cormorants. In the afternoon we visited Moreno Point, also on Isabella Island. This area was covered in sharp fragile lava, with large lagoons of water with fields of grass dotted throughout the landscape. We saw four flamingos in the lagoons! In addition, a white tipped shark was also visible in a lagoon near the ocean. What a wonderful place! Perfectly clear night. The Large Magellanic cloud was low in the sky. Tucane nebula clearly visible in 10x50 binoculars. Dave Levy was once again out with his scope.

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April 4, 2005

Set out for eclipse path in the open Pacific Ocean. Boat was moving fast and rocked allot. Felt very nauseated today. Denise is sick coughing and sneezing. A morning lecture by the captain on the use of a sextant was rather interesting. Two afternoon lectures on eclipses today. One was by Jay Pasachoff PhD and the other by Fred Espaneck PhD. Video taped both lectures. Evening was perfectly clear once again. Dave Levy and Dave Eicher were there showing us the celestial wonders of the universe. Had most of the books autographed today.

! Observing was thus terminated for the evening.

April 5, 2005

Lecture by Dave Levy entitled King Lear's eclipse. Jay Pasachoff also gave a talk on the transits of Mercury and Venus. Had the remaining books autographed by the authors. Evening observing was clouded out. Dave Levy was still out there with his telescope. Denise is feeling better and socializing.

APRIL 6, 2005

Lecture by Fred Espenak on the current Hybrid eclipse. The planet Venus will be visible near the corona. Evening was partly cloudy tonight. I was in awe to see the clouds cover the stars of the southern Milky Way. It appeared as a black void in space! No light pollution illuminating the clouds from below. It was as if Mordor from "Lord of the Rings" was approaching! Observing was thus terminated for the evening.

April 7, 2005

Three lectures today. First lecture was on the solar corona by Dr. Rusin from Slovakia. Second was by David Levy on how to observe an eclipse for beginners and the last one was by Fred Espenak on Eclipse Photography 101. Just before lunch Wendy Levy had a stretching session for beginners. Everyone was amazed at my flexibility. At 4:00 pm everyone set up their equipment and performed a test run. The sun was very high in the sky approx 60 degrees.

At 4:17pm local time the sky was overcast and we would have missed the total phase of the eclipse if this had been eclipse day. Within a half hour the sky cleared up again. I tested my camcorder against the sun. Using a tripod was useless due to excessive boat rocking. Instead I hand held the camcorder. This worked much better. The sky was overcast this evening at 9:00 pm. Very windy with slight drizzle. The boat continued to rock back & forth back & forth. I am having trouble sleeping tonight, eclipse anxiety you know!

April 8, 2005 Eclipse day with overcast skies. Boat is heading south of the centerline in search of a clearing. Seas are becoming rougher. This is the boat ride from hell! A miracle then occurred at approx 2:00pm, the clouds began to clear. Denise and I were set up on reclining chairs eagerly awaiting the sun. At 2:40 pm ship time first contact began- the sun was visible through thinning cloud cover. The sky conditions kept improving for the next hour and a half. During totality the sky was perfectly clear! What an incredible sight. I video taped the eclipse while hand holding my Sony Digital 8 camcorder. Venus was visible 2 1/2 degrees above the sun. What a sight! The boat was rocking thus I held the camcorder as steady as I could. Overall the eclipse was a success! The partial phases then concluded under clear skies. I also videotaped the sky getting dark and the ship rocking with my Cannon mini DV camcorder. After the eclipse- the ship celebrated the event! Dave Levy gave a lecture that evening. On the down side I developed bronchitis and am currently taking the antibiotic ciprofloxacin. Slept well this evening!

April 9, 2005

Slept late and missed a wonderful lecture by Jose (a guide) on tectonic formations and geology of the Galapagos. I only heard the questions and answers at the conclusion of the talk. Then to Wendy Levy's stretching exercises. Denise accompanied me on this occasion. Later that day a lecture (book read) by Naomi Pasachoff on Marie Curie and Neils Bohr, then came Dave Eicher and Dave Levy on Deep Sky Observing. Very comical! The best lecture of the evening came after dinner by James Downing on Voyage the Beagle.- Videotaped this Lecture. It was filled with information. Rained most of the night. I did not sleep well this evening since the boat was really rocking and rolling.

APRIL 10, 2005

Morning lecture by one of the guides on the early settlers of the Galapagos. We missed Wendy Levy's stretching class since the lecture went for 90 minutes, we arrived just as the class was terminating. Klipsi then gave a talk on his traveling experiences with eclipses and storm chasing. Took a nap this afternoon. Dave Levy and Dave Eicher gave a talk on meteorites. They had actual samples. I mentioned the importance of the organic compounds of the Murchison meteorite during the question and answer session. The lectures were concluded with a presentation of the Dynamic Sun. Evening started out cloudy then cleared up.

APRIL 11, 2005

Dave Levy interviewed Jay Pasachoff and his student Shelly for the Let's Talk Stars internet series. Then came the presentation by Dava Sobel on Galileo's Daughter. This too was recorded for the Lets Talk Stars series. Then off to Wendy Levy's stretching class. At the conclusion of class I had a photo taken with Dave & Wendy Levy- what a thrill. Ice cream social at 4:00 pm. Then at 9:00 pm was a time where every one showed off there photos of the eclipse on a big screen. I presented my video of the eclipse! Everyone was impressed. Eli Maor stated that mine was the best! Closest thing to re-living the eclipse. Evening concluded with observing at the deck of the ship.

APRIL 12, 2005

Last stretching class with Wendy Levy. Afternoon movie about Galapagos Interesting birds around the boats. NASCA booby seen. Petrel birds noted. The day was warm and sunny. Low humidity. Late afternoon land was visible! Isabella Island- we have arrived at the Galapagos. Anchored off Salvador Island as the sunset. After dinner Neptune's Adventure. A cute spoof followed by dancing. Evening was cloudy. In fact it rained during Neptune's adventure. Sea lions and flying fishes were visible from the boat this evening.

APRIL 13, 2005

Arrived at Puerto Egas on Santiago Island this morning after a short hike we snorkeled on the island. During the hike on a tidal pool flat we noted sea lions, marine iguanas cacti, and an Oyster Catcher Bird. During the snorkeling adventure, I swam with three sea lions and a green sea turtle! Other snorkelers saw sharks and rays, however, I did not. Then we headed back to the boat for lunch. Four hours later we arrived on the island of Rabida. Rabida was very red due to the presence of cinder. The island was covered with aromatic Palo Santo Trees. There were many cacti. Saw a cactus finch nest. Very scenic overlooks. Snorkeled later. Only sea lions this time. Group photo by the pool before dinner. Farwell announcements. Last observing session with Dave Levy tonight. Sky was clear. Crescent moon in the west.

APRIL 14, 2005

This morning departure for North Seymour Island. What a fantastic place. It is a bird sanctuary. One can see blue footed boobies nesting as well as performing their courtship dance. Then we saw magnificent frigate birds. The males had the impressive red pouch. All the birds were only a foot or two away from me! In addition there were sea lions land and marine iguanas. Took many digital photographs with my Nikon D70 camera. We boarded the boat and headed for the airport. Stopped at Guayaquil. The day was rather cloudy. After an hour and a half or more layover, we boarded and headed for Quito at 4:00 pm. Arrived in Quito at 6:00pm. Checked into the Four Points Sheraton Hotel once again. Starting to feel the high altitude. I did not get a restful sleep tonight.

APRIL 15, 2005

Felt the Four Points Sheraton and arrived at Quito Airport. Flew from Quito, Ecuador to Miami, Florida. Checked through Customs and then boarded a flight to Tampa, Florida. Arrived in Tampa at approximately 2:30pm. My in-laws were there to pick us up. Then another hour and a half drive to Sarasota. We were home! Thus concludes this essay on the Hybrid Solar Eclipse Expedition.

MOSI SkyWatch Schedule

July 16th
August 13th
September 10th
October 8th
November 12th
December 10th

NASA DEEP IMPACT MISSION WEB SITES

<http://deepimpact.jpl.nasa.gov/mission/>

<http://deepimpact.umd.edu/home/index.html>

www.space.com/deepimpact/

www.ballaaerospace.com/deepimpact.html

Www.news.nationalgeographic.com/news/2005/06/0622_o5o622_deep_impact.html

NEWSLETTER OF THE MUSEUM ASTRONOMY
RESOURCE SOCIETY ASTRONOMY CLUB

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**M.A.R.S Club's
Website
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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Web Master— Dennis Farr

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Jimmy Thomas, 813-88-7187

Astronomy Day Coordinator— Your name could be here

Librarian—Douglas Ordetx

MOSI Contact—813-987-633,

July 2005

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4 <i>Deep Impact</i>	5 <i>Earth is at Aphelion</i>	6 <i>New Moon</i>	7 <i>"What's Up in Astronomy" 7:00 pm</i>	8 <i>MARS Meeting 7:30 pm</i>	9
10	11	12	13	14 <i>First Quarter Moon</i>	15	16 <i>MOSI SkyWatch 8:00 pm</i>
17	18	19	20 <i>Moon Day Apollo 11 lands on the moon 1969</i>	21	22 <i>Full Moon</i>	23
24	25	26	27	28 <i>Last Quarter Moon</i>	29	30

31 *1st rover on the Moon 1971*