

STARSCAN

*Johnson Space Center
Astronomical Society*

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March 2006



Important Information About The March Meeting! See Page 22

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Family Space Day

Matt Hommel

Family Space Day for February, 2006 focused on the gas giant planets. The kids got to make solar system collages and mobiles. The favorite activity was undoubtedly "Build a Candy Planet". This activity allowed kids to build a model of a planet with a cotton candy atmosphere, hard candy core, sugar crust, and of course taffy moons. Wouldn't you know my kids remembered that Jupiter has 63 moons.

Other activities included coloring and the traditional paper airplane making. The paper airplanes were as much fun for the adults as they were for the kids.

There were about 65 people in attendance. A great time was had by all.



Family Space Days

Children between the ages of 5 and 8 are invited to bring their families to explore space science!

FREE!

When: From 10:00 am to 1:00 pm on the third Saturday of each month.

Families are encouraged to bring lunch on sunny days and to enjoy a picnic on the Lunar and Planetary Institute's grounds.

Where: The Lunar and Planetary Institute!

The Institute is located at the USRA Center for Advanced Space Studies (CASS), 3600 Bay Area Boulevard, Houston, Texas 77058. A map of the region and the LPI location is available for download.

Events: Hands-on activities and demonstrations will allow the children and their families to explore the theme of the day for themselves. Read stories! Color pictures! Get messy with theme-based crafts!

Upcoming Events: March 25th – Sun Earth Day/Eclipse

Please note: Each child must be accompanied by a responsible parent or adult the entire time they are visiting the LPI.

For more information contact Mike Madera, Education Specialist, 281-244-2040, or madera@lpi.usra.edu.

Adopt a Star

Becky Ramotowski

I've been thinking about opening a foster home for stars. Yes indeed. Been thinking long and hard about it too. Okay, truthfully only for about as long as it's going to take to type this out.

The reason is that it really bothers me that unsuspecting folks are paying their hard earned dollars to purchase stars when they don't need to. (I hear ads to purchase stars on the radio fairly often).

Why should anyone pay for a star, when they can have one for free? Or several stars, or a whole constellation for that matter.

Save your money and spend it on a pair of binoculars. Or buy a subscription to one of the astronomy magazines and have change left-over. Or how about a red LED flashlight? Spend your money on something you can use to look at the stars.

Anyone can adopt a star, or a whole asterism's worth. I've adopted all of the stars I've seen, and I haven't paid for one yet! I have even adopted Venus and Mercury. No charge! I'd like to adopt Jupiter, but it's so big it scares me!

And get this. If you only want to adopt one star, chances are you'll get two, since most stars are doubles. You may even wind up with triplets or quads or even septuplets if you pick out your star carefully.

I wonder if those folks selling stars tell their customers they can get a two-for-one deal when they are taking down those credit card numbers and making up those fancy certificates of ownership. Heck, send me some money, and I'll make you a certificate.



Becky Ramotowski at TSP 2005
Image by Ken Lester

So if you would like to adopt a star, just pick one out some night. That's all there is to it. And if you adopt one that only has a number, like HD 157927, give it a proper name if you want to. You know, like Frank, or Dave or Beatrice. Something more personal than a number. After all it's your family member now.

As an addition to this little tirade here, I decided to go online and check out how a person could purchase and name a star if they so desired. It's easy enough, and after completing just a few blanks with vital info (your credit card number is one of them of course) you can name a star. So I decided to see if I could name my star Betelgeuse. Yah, yah, I know, there's already one of those, but guess what? The blank field I had to fill in took the name without blinking. Ha! Imagine that! I can buy a whole sky full of stars and name every one of them Betelgeuse.

★ STAR KITS

Found on the Internet

Ultimate Star Naming Kit
Name a Star, that's right, an actual star! International Star Registry is your star naming resource! What do you get for the person who has everything?

Order Today! \$139.00 Plus S&H

[CLICK HERE TO NAME A STAR](#)

The International Star Registry gift package includes a beautiful 16" x 12" parchment certificate, available framed or unframed, with the name of your choice, dedication date, and telescopic coordinates of the star. You'll also receive an informative booklet with charts of the constellations plus a larger, more detailed chart with the star you name encircled in red.

- A beautiful 16" X 12" full color parchment certificate personalized with the star name, date and coordinates.
- A Personalized 16" X 12" sky chart containing the star name, star date, the constellation and the location circled in red where the star is in the sky.
- A booklet on astronomy written by a professional astronomer with additional sky charts.
- The frame measures 20" X 16" and was designed specifically for the gift package.
- The certificate is framed (not the star chart) for the deluxe package.
- The certificate comes beautifully double matted in a gold metallic frame. The outer mat is a cream colored "flannel" and the inner mat is a dark delft blue which matches the colors in the certificate.
- The package also includes a complimentary personalized wallet card imprinted with the star name and coordinates.
- The personalized star chart is framed also in this package. The frame measures 20" X 16" and matches the frame in the Deluxe package.
- The package also includes a complimentary personalized wallet card imprinted with the star name and coordinates.
- A letter of congratulations/memorial for the recipient.

*Star Chart Not Shown to Scale.

(Continued from page 4)

Now wouldn't this be interesting? I've bought 50 stars, named them all Betelgeuse and one of them blows up. And the one that blows up isn't the bona-fide, Real-McCoy Betelgeuse. It's some distant cousin living in Cygnus instead.

Okay, this has gone on long enough, but you get the gist of this.

Happy Adopting!

****Now don't go and call those star salesmen and tell them you should have your star for free. It won't get you anywhere. They are providing a unique service that comforts some people by making a memorable gesture for a loved one.**

And if your money is just burning a hole in your pocket for a stellar purchase, go ahead and get yourself one of those PhD's in Astronomy online for \$29.95.

Build Your Own Solar Filter

Ken Lester

Dan Beaver made a solar filter using Baader Planetarium AstroSolar Safety Film Density 5 (suitable for direct visual use). The filter was made by sandwiching the film between plywood rings. Dan fastens the filter to the scope using a few paper clips. According to Dan, first light revealed a sunspot. "It didn't look like a very big spot, but it's the first one I've ever seen 'live!'". Dan took a picture of the Sun through the eyepiece with his point-n-shoot Sony DSC-S60. "The spot looked a lot clearer in the eyepiece, but the image shows how big the spot was".



Images by Dan Beaver

Upcoming Events

2006 Texas Star Party will be held April 23rd through 30th at the Prude Ranch. Visit their web site at : <http://www.texasstarparty.org/> for more information.

Dates for the **23rd Annual Okie-Tex Star Party** have been announced. Astronomers will return to Camp Billy Joe on September 16th through 23rd. For more information visit <http://www.okie-tex.com/>.

Visual Observing—March 2006





Chris Randall

★SSO: (Solar System Objects) Summary for the 15 March 06

| Object | Const | Mag | % Ill | Rise Time | Transit | Set Time |
|------------------------|-------|-------|----------|-----------|---------|----------|
| Sun | Psc | -26.7 | 100 | 06:30 | 12:29 | 18:27 |
| Moon | Vir | ---- | 99 | 19:19 | 00:39 | 06:50 |
| Mercury | Psc | 3.7 | 3 | 06:00 | 11:57 | 17:54 |
| Venus | Cap | -4.5 | 44 | 04:05 | 09:31 | 14:57 |
| Mars | Tau | 1.0 | 90 | 10:34 | 17:35 | 00:40 |
| Jupiter | Lib | -2.3 | 99 | 22:31 | 03:55 | 09:19 |
| Saturn | Cnc | 0.5 | 100 | 14:26 | 21:19 | 04:08 |
| Uranus | Aqr | 5.9 | 100 | 05:57 | 11:40 | 17:24 |
| Neptune | Cap | 8.0 | 100 | 04:46 | 10:12 | 15:38 |
| Pluto | Ser | 13.9 | 99 | 01:10 | 06:35 | 11:59 |
| C/2005 E2 McNaught | Psc | 9.2 | 97 | 07:17 | 14:00 | 20:47 |
| Pojmanski C/2006 A1 | Vul | 7.7 | 62 | 02:51 | 10:04 | 17:17 |

Highlighted times denote daylight events

Lunar phases for March 06

| | | | |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| First  | Full  | Third  | New  |
| 6 th 14:16 | 14 th 17:35 | 22 nd 13:11 | 29 th 04:15 |

Central Standard time

★BSO: (Bright Sky Objects)

IC 2391 (Cr 191, C-85) - Open Cluster in Vela, Magnitude 2.5, Size 50', Stars 30.

NGC 2546 (Cr 178) - Open Cluster in Puppis, Magnitude 6.3, Size 40.0', Stars 40.

NGC 2506 (Cr 170, C-54) - Open Cluster in Monoceros, Magnitude 7.6, Size 6', Stars 150.

NGC 2670 (Cr 200)- Open Cluster in Vela, Magnitude 7.8, Size 9.0', Stars 30.

★DSO: (Dark Sky Objects)

NGC 3031 (M-81) - Galaxy in Ursa Major, Magnitude 6.8, Size 26' x 14'.

NGC 3034 (M-82, Arp 337) - Galaxy in Ursa Major Magnitude 8.4 Size 11' x 4.6'.

NGC 2997 - Galaxy in Antlia Magnitude 9.5 Size 8.1' x 6.5'.

NGC 2903 - Galaxy in Leo Magnitude 9.6 Size 13 x 6.

★CDMP: (Chris' Don't Miss Pick)

NGC 2632 (Cr 189, M-44) Beehive Cluster - Open Cluster in Cancer, Magnitude 3.1, Size 95.0', Stars 50.

(Continued on page 7)

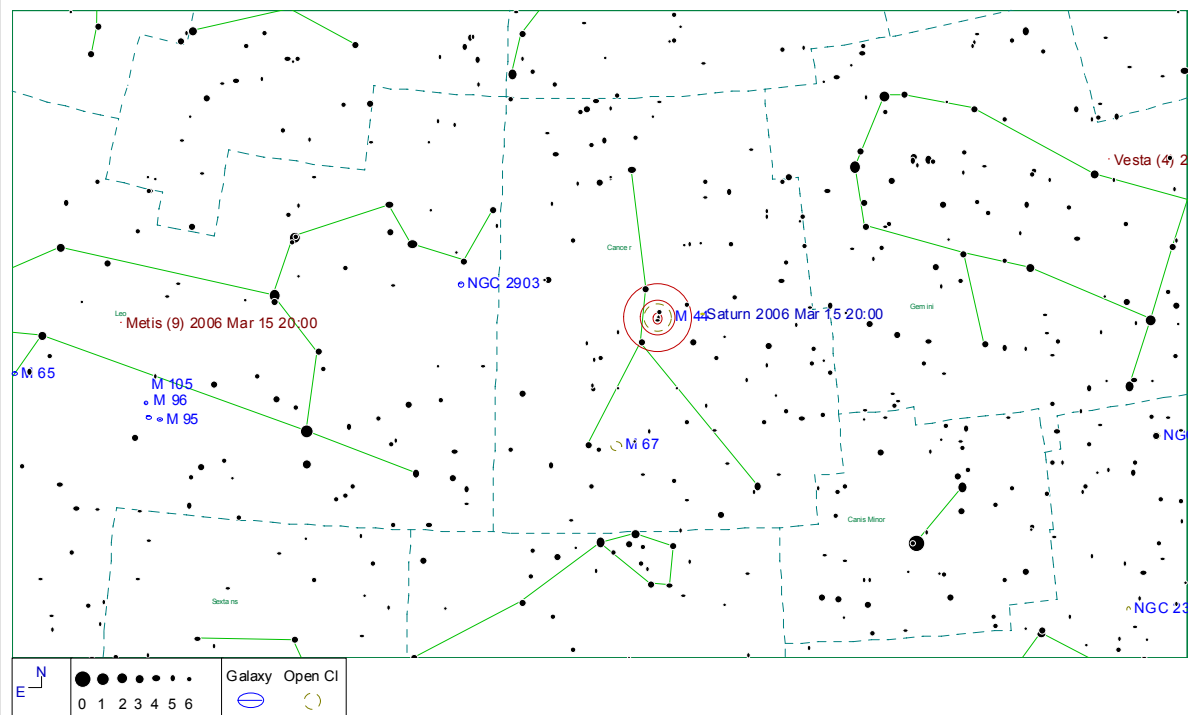
(Continued from page 6)

This is a 730 million years old large open cluster of over 350 stars (confirmed as members by their common motion). It is located in the heart of Cancer about 577 light-years from Earth as determined by ESA's astrometric satellite, Hipparcos. It is one of the objects easily visible to the naked eye, and thus has been known since prehistoric times. The origins of the popular name, "The Beehive" is not known. To the Greeks it was known as Phatne. The Latin translation for Phatne is Praesepe, which means "manger". The Greeks and Romans saw this "nebula" as a manger, with two "Asselli" (asses) eating from it: Assellus Borealis (the Northern Ass, 43 Gamma Cancri) and Assellus Australis (the Southern Ass, 47 Delta Cancri). Eratosthenes reported that these were the asses on which the gods Dionysus and Silenus rode into the battle against the Titans, who were so frightened by the animals' braying that the gods won. As a reward, the asses were put in sky together with Phatne.

Ancient recordings came from Aratos, Hipparchos, and Ptolemy. Aratos (260 B.C.) a Greek poet was the first who recorded this beautiful open cluster as "Little Mist", Hipparchus included this object in his star catalog and called it "Little Cloud" or "Cloudy Star." Ptolemy mentions it as one of seven "nebulae" he noted in his Almagest, and describes it as "The Nebulous Mass in the Breast (of Cancer)". According to Burnham, it appeared on Johann Bayer's chart (about 1600 A.D.) as "Nubilum" ("Cloudy" Object). In 1609, Galileo has first resolved this "nebulous" object with the help of his telescope, and reported: "The nebula called Praesepe, which is not one star only, but a mass of more than 40 small stars." It was probably later seen and partly resolved in 1611 by Peiresc and observed as a cluster by Simon Marius in 1612. Charles Messier added it to his catalog on March 4, 1769.

Go to <http://www.backyard-astro.com> or <http://www.seds.org/> for more information on M44.

Don't Miss **Saturn** it's 2.8 degrees west of the cluster and is about 64 light-minutes away as compared to 577 light-years for M44.



Star Party News

Ken Lester

Don't forget the Moody Gardens Star Party on March 4th. Be sure to check the list server that Saturday for the go/no-go announcement. For those who have not been to our Moody Gardens star parties, follow the map below. The best path to reach the parking area is shown by the red line.



| Event | Date | Sun Set | Moon | | | Jupiter | | Saturn | | Mars | | Venus | |
|----------------------------------------------------------|----------------|---------|--------|-------|-------|---------|-------|--------|-------|-------|-------|-------|-------|
| | | | Illum. | Rise | Set | Rise | Set | Rise | Set | Rise | Set | Rise | Set |
| 2006 | | | | | | | | | | | | | |
| Moody Gardens | Mar 4 | 18:20 | 27% | 9:37 | 23:50 | 23:15 | 10:03 | 15:12 | 04:53 | 10:53 | 00:54 | 04:10 | 14:57 |
| Fort McKavett | Mar 30 - Apr 2 | 18:56 | 2% | 07:11 | 20:42 | 21:49 | 08:34 | 13:41 | 03:29 | 10:23 | 00:40 | 04:17 | 15:19 |
| Haak Winery | Apr 22 | 19:50 | 34% | 03:32 | 14:28 | 20:46 | 07:39 | 12:56 | 02:38 | 10:36 | 00:45 | 04:45 | 16:23 |
| Texas Star Party | Apr 23 - 30 | 20:27 | 23% | 04:46 | 16:12 | 21:19 | 08:09 | 13:25 | 03:11 | 11:06 | 01:22 | 05:20 | 16:59 |
| Moody Gardens | Aug26 | 19:47 | 7% | 09:17 | 21:18 | 12:13 | 23:12 | 05:40 | 19:03 | 08:20 | 20:45 | 05:37 | 19:02 |
| Haak Winery | Sep 23 | 19:13 | 1% | 08:05 | 19:48 | 10:44 | 21:37 | 04:05 | 17:20 | 07:53 | 19:45 | 06:28 | 18:52 |
| Fort McKavett | Oct 19 - 22 | 19:02 | 6% | 05:28 | 17:47 | 09:48 | 20:28 | 02:52 | 16:08 | 07:51 | 19:09 | 07:35 | 19:03 |
| Astronomy Day | Oct 28 | 18:35 | 36% | 13:31 | 23:46 | 08:59 | 19:42 | 02:02 | 15:12 | 07:22 | 18:30 | 07:30 | 18:38 |
| Moody Gardens | Oct28 | 18:35 | 36% | 13:31 | 23:46 | 08:59 | 19:42 | 02:02 | 15:12 | 07:22 | 18:30 | 07:30 | 18:38 |
| Haak Winery | Nov11 | 17:25 | 61% | 23:17 | 12:33 | 07:18 | 17:54 | 00:11 | 13:20 | 06:12 | 17:04 | 06:58 | 17:38 |
| October 28 th Moody Gardens to be rescheduled | | | | | | | | | | | | | |

Sky Publishing Completes Sale to New Track Media LLC

February 13, 2006
Sky Publishing Press Release
<http://skyandtelescope.com>

Cambridge, MA — Sky Publishing Corporation, the privately held publisher of astronomy periodicals and books, announced today that it has completed the sale of its business to New Track Media LLC, an entity formed in the fall of 2005 by Stephen J. Kent and Boston Ventures. Terms of the transaction were not disclosed.

Sky Publishing Corp. was founded in 1941 by Charles A. Federer Jr. and Helen Spence Federer, the original editors of Sky & Telescope magazine. Sky & Telescope is the world's most respected astronomy magazine, serving amateur astronomers around the globe. In addition to Sky & Telescope and SkyandTelescope.com, the company publishes Night Sky magazine (a bimonthly for beginners with a Web site at NightSkyMag.com), two annuals (Beautiful Universe and SkyWatch), as well as books, star atlases, posters, prints, globes, and other fine astronomy products. For New Track Media, which is based in Cincinnati, Sky represents its first transaction in a broader plan that calls for building a portfolio of consumer enthusiast properties, not all science-related, and largely through acquisition.

Key members of the Sky Publishing senior management are keeping their roles. Susan Lit, president and publisher, and Richard Tresch Fienberg, editor in chief, have both agreed to continue in their positions under the new ownership. Ms. Lit emphasized that Sky had not been considering a sale but saw this as an opportunity to associate with a group that has broader ambition for growth along with a proven track record in publishing. "I have known Stephen [Kent] for years," said Lit, "and when he announced his plans with Boston Ventures, this seemed like an opportunity to become a central piece of a new and exciting company. As an employee-owned company for 65 years we had to be assured that a new owner would value our independence and history, and at the same time be committed to our growth. New Track Media offered the growth opportunities and shared vision of entrepreneurial spirit." The company will continue to operate out of its offices in Cambridge, with plans to relocate to new offices in the Boston area within the next year.



Editor in chief Rick Fienberg, CEO Stephen J. Kent, and president Susan B. Lit following the closing of the sale of Sky Publishing's assets to New Track Media.
S&T photo by Dennis di Cicco.

New Track Media was formed in the fall of 2005 by Kent, with support from Boston Ventures, an established private equity firm with a longstanding media focus. Kent, who was most recently CEO of F+W Publications, is chief executive officer of New Track Media, LLC. "We couldn't have asked for a stronger brand to launch our new venture," said Kent. "Sky & Telescope has a rich history and established editorial authority in a category that is everlasting. We are proud to make it the cornerstone of New Track Media." According to Kent, "With the Sky acquisition complete, we are now eager to bring other prominent special-interest properties into the portfolio and hope that this will help others see that we're a buyer who can work quickly and confidentially toward completion."

NASA's Spitzer Finds Violent Galaxies Smothered in 'Crushed Glass'

February 15, 2006

Jane Platt, Gay Hill Jet Propulsion Laboratory
jpl2006-022; ssc2006-06

NASA's Spitzer Space Telescope has observed a rare population of colliding galaxies whose entangled hearts are wrapped in tiny crystals resembling crushed glass.

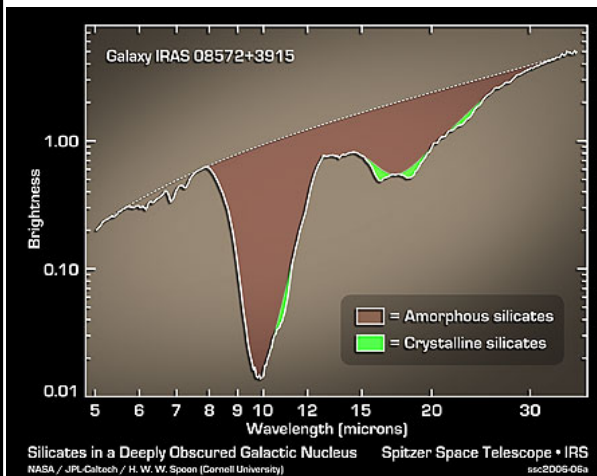
The crystals are essentially sand, or silicate, grains that were formed like glass, probably in the stellar equivalent of furnaces. This is the first time silicate crystals have been detected in a galaxy outside of our own.

"We were surprised to find such delicate, little crystals in the centers of some of the most violent places in the universe," said Dr. Henrik Spoon of Cornell University, Ithaca, N.Y. He is first author of a paper on the research appearing in the Feb. 20 issue of the *Astrophysical Journal*. "Crystals like these are easily destroyed, but in this case, they are probably being churned out by massive, dying stars faster than they are disappearing."

The discovery will ultimately help astronomers better understand the evolution of galaxies, including our Milky Way, which will merge with the nearby Andromeda galaxy billions of years from now.

"It's as though there's a huge dust storm taking place at the center of merging galaxies," said Dr. Lee Armus, a co-author of the paper from NASA's Spitzer Science Center at the California Institute of Technology in Pasadena. "The silicates get kicked up and wrap the galaxies' nuclei in giant, dusty glass blankets."

Silicates, like glass, require heat to transform into crystals. The gem-like particles can be found in



This graph of infrared data from NASA's Spitzer Space Telescope tells astronomers that a distant galaxy called IRAS 08752+3915 is experiencing a storm of tiny crystals made up of silicates. The crystals are similar to the glass-like grains of sand found on Earth's many beaches.

Credit: NASA/JPL-Caltech/H. W. W. Spoon (Cornell University)

the Milky Way in limited quantities around certain types of stars, such as our sun. On Earth, they sparkle in sandy beaches, and at night, they can be seen smashing into our atmosphere with other dust particles as shooting stars. Recently, the crystals were also observed by Spitzer inside comet Tempel 1, which was hit by NASA's Deep Impact probe.

The crystal-coated galaxies observed by Spitzer are quite different from our Milky Way. These bright and dusty galaxies, called ultraluminous infrared galaxies, or "Ulrirs," are swimming in silicate crystals. While a small fraction of the Ulirgs cannot be seen clearly enough to characterize, most consist of two spiral-shaped galaxies in the process of merging into one. Their jumbled cores are hectic places, often bursting with massive, newborn stars. Some Ulirgs are dominated by central supermassive black holes.

So, where are all the crystals coming from? Astronomers believe the massive stars at the

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galaxies' centers are the main manufacturers. According to Spoon and his team, these stars probably shed the crystals both before and as they blow apart in fiery explosions called supernovae. But the delicate crystals won't be around for long. The scientists say that particles from supernova blasts will bombard and convert the crystals back to a shapeless form. This whole process is thought to be relatively short-lived.

"Imagine two flour trucks crashing into each other and kicking up a temporary white cloud," said Spoon. "With Spitzer, we're seeing a temporary cloud of crystallized silicates created when two galaxies smashed together."

Spitzer's infrared spectrograph spotted the silicate crystals in 21 of 77 Ullirs studied. The 21 galaxies range from 240 million to 5.9 billion light-years away and are scattered across the sky. Spoon said the galaxies were most likely caught at just the right time to see the crystals. The other 56 galaxies might be about to kick up the substance, or the substance could have already settled.

Others authors of this work include Drs. A.G.G.M. Tielens and J. Cami of NASA's Ames Research Center, Moffett Field, Calif.; Drs. G.C. Sloan and Jim R. Houck of Cornell; B. Sargent of the University of Rochester, N.Y.; Dr. V. Charmandaris of the University of Crete, Greece; and Dr. B.T. Soifer of the Spitzer Science Center.

The Jet Propulsion Laboratory manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center. JPL is a division of Caltech. Spitzer's infrared spectrograph was built by Cornell University, Ithaca, N.Y. Its development was led by Dr. Jim Houck.

Stardust Status Report

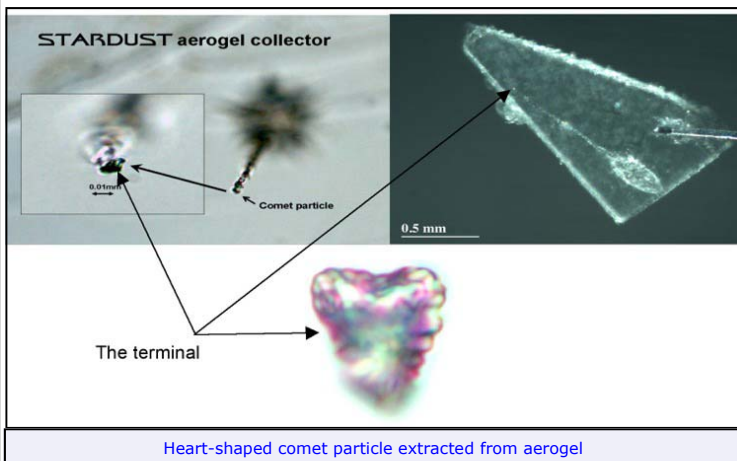
February 21, 2006

Dr. Peter Tsou, Stardust Deputy Principal Investigator

Happy Valentine's from Stardust!

As part of the first Sample Processing Cycle, the keystone of the first released particle was taken to the National Synchrotron Light Source at Brookhaven National Laboratory in New York and examined by the far-IR beam. The particle was shown to be definitely a cometary mineral and not secondary debris. As part of the second Sample Processing Cycle, the terminal particle - the particle at the end of the tract - was removed from the keystone for further analyses on Valentine's

Day. To our surprise, we found the particle to be heart-shaped! Happy Valentine's to the world from Stardust! I have been assured that this is the real shape of the particle!

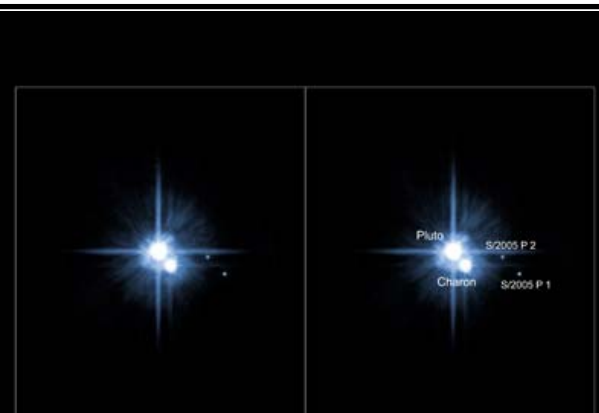


This particle will be embedded in sulfur first with few wafers removed for mineralogy and petrology studies, and then the remainder of the particle will be pressed into Au foil for isotopic studies.

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During the second Sample Processing Cycle, we removed four additional Wild 2 aerogel cells with relative ease, after having made some adjustments learned from the first Cycle. All four cells are being scanned by the binocular microscope as well as the compound microscope to capture more of the smaller particle tracks. More keystones, quickstones and microtome slides are being made to supply the eagerly awaiting analysts around the world. We have also taken a sample from the largest capture tract without removing the cell from the Wild 2 tray, to provide definitive proof that the largest particles are from Wild 2 and are not secondary debris.



Credit: NASA, ESA, H. Weaver (Johns Hopkins University/Applied Physics Laboratory), A. Stern (Southwest Research Institute) and the HST Pluto Companion Search Team

Hubble Confirms New Moons Of Pluto

Embargoed Until: 1:00 pm (EST) February 22, 2006

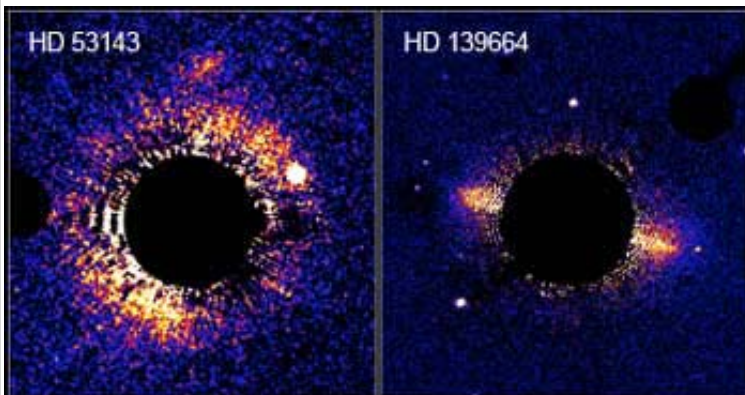
Photo No: STScI-PRC06-09

Astronomers using NASA's Hubble Space Telescope have confirmed the presence of two new moons around the distant planet Pluto. The moons were first discovered by Hubble in May 2005, but the Pluto Companion Search team probed even deeper into the Pluto system with Hubble on Feb. 15 to look for additional satellites and to characterize the orbits of the moons. In the image, Pluto is in the center and Charon is just below it. The moons, provisionally designated S/2005 P 1 and S/2005 P 2, are located to the right of Pluto and Charon. The initial discovery is being reported today in this week's edition of the British science journal Nature.

Dusty Planetary Disks Around Two Nearby Stars Resemble Our Kuiper Belt

STScI-PRC2006-05a

These two bright debris disks of ice and dust appear to be the equivalent of our own solar system's Kuiper Belt, a ring of icy rocks outside the orbit of Neptune and the source of short-period comets. The disks encircle the types of stars around which there could be habitable zones and planets for



Credit: NASA, ESA, and P. Kalas (University of California, Berkeley)

life to develop. The disks seem to have a central area cleared of debris, perhaps by planets.

The new disks, each about 60 light-years from Earth, bring to nine the number of dusty debris disks observable at visible wavelengths. The new ones are different, however, in that they are old enough — more than 300 million years — to have settled into stable configurations akin to those in our own solar

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system, which is 4.6 billion years old.

The wide disk on the left, which is inclined obliquely to the line-of-sight, surrounds HD 53143, a K star slightly smaller than the Sun but about 1 billion years old. The narrow disk on the right, which is tipped nearly edge-on encircles the star HD 139664, an F star slightly larger than the Sun but only 300 million years old. The sharp outer edges of the narrow belt may be telltale evidence for the existence of an unseen companion object that gravitationally keeps debris gravitationally corralled, in the same way that shepherding moons trim the edges of debris rings around Saturn and Uranus.

A survey by NASA's Hubble Space Telescope shows that such disks fall into two categories: those with a broad belt, wider than about 50 astronomical units; and narrow ones with a width of between 20 and 30 AU and a sharp outer boundary, seemingly like our own Kuiper Belt. An astronomical unit, or AU, is the average distance between the Earth and Sun, about 93 million miles. Our Kuiper Belt, for example, is thought to be narrow, extending from the orbit of Neptune at 30 AU to about 50 AU.

The false-color images were taken with Hubble's Advanced Camera for Surveys in September 2004. The black central circle is an image artifact produced by the camera's coronagraph which blocks the glare from the central star to allow the much fainter disks to be seen. A smaller black circle at the edge of each photo is a "coronagraphic finger" also used to block light from a bright object in the field.

Launch Result of ASTRO-F/M-V-8

February 22, 2006 (JST)

Japan Aerospace Exploration Agency (JAXA)



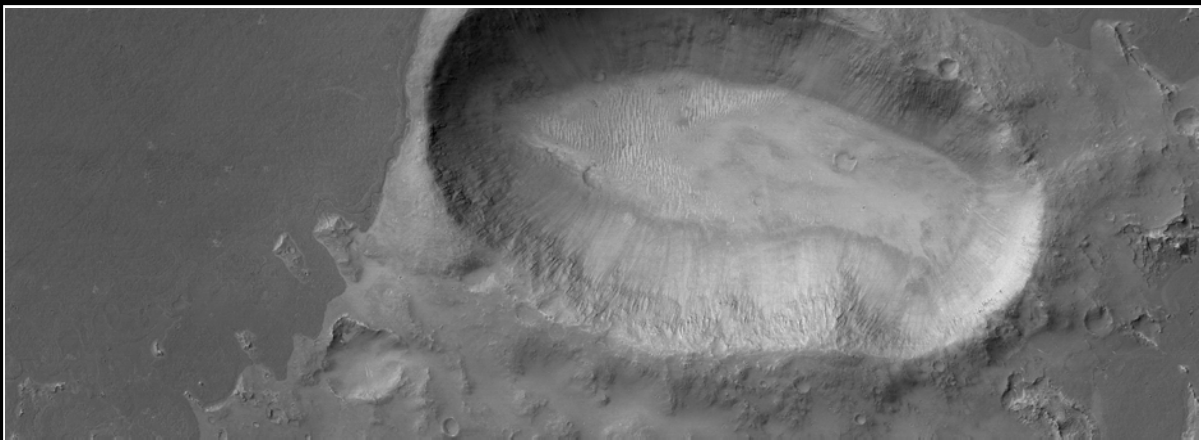
Credit: Japan Aerospace Exploration Agency

The Japan Aerospace Exploration Agency (JAXA) launched the 21st Scientific Satellite (ASTRO-F) aboard the M-V Launch Vehicle No. 8 (M-V-8) at 6:28 a.m. on February 22, 2006 (Japan Standard Time, JST) from the Uchinoura Space Center (USC). The launcher was set to a vertical angle of 81.5 degrees, and the flight azimuth was 143.0 degrees.

The launch vehicle flew smoothly, and after the third stage engine burnout, it was confirmed that the satellite was safely injected into its scheduled orbit of a perigee altitude of approximately 304 km and an apogee altitude of approximately 733 km with an inclination of approximately 98.2 degrees.

JAXA started receiving signals from the ASTRO-F at 6:43 a.m. at the Perth Station, and from those signals we verified that the ASTRO-F had successfully separated.

The in-orbit ASTRO-F was given a nickname of "Akari" (meaning a "light.")



Kidney Shaped Impact

NASA/JPL/Malin Space Science Systems

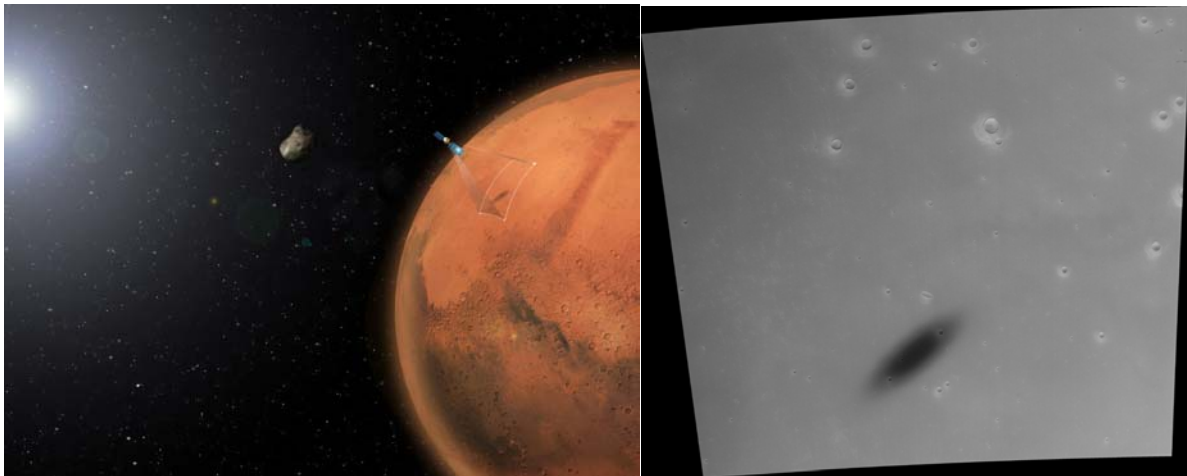
This Mars Global Surveyor (MGS) Mars Orbiter Camera (MOC) image shows an unusually-shaped (not circular) impact crater in the Elysium region of Mars. A dark-toned lava flow surface is seen in the southern (left) portion of the image. Location near: 5.9°N, 220.0°W ; Image width: ~3 km (~1.9 mi) ; Illumination from: lower left ; Season: Northern Winter

Phobos' Shadow on Mars

ESA/DLR/FU Berlin (G. Neukum)

The HRSC on ESA's Mars Express spacecraft took this image (right) of Phobos' shadow on the surface of Mars during orbit 2345 on 10 November 2005. This is a nadir view (i.e., vertical view).

Left image: this artist's impression shows ESA's Mars Express spacecraft scanning the fast-moving shadow of the moon Phobos as it moved across the Martian surface.

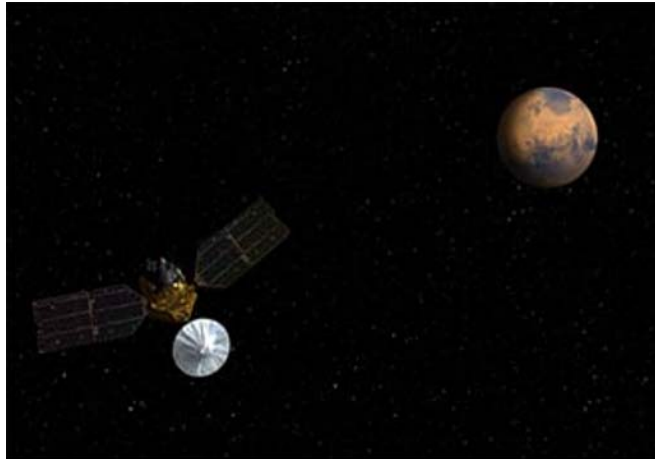


On February 20th, Space Adventures, Ltd., together with a Singapore-based consortium, announced that it plans to develop an integrated spaceport in Singapore that will offer suborbital spaceflights, as well as operate astronaut training facilities and a public education and interactive visitor center. For more information visit <http://www.spaceadventures.com/>.

NASA's Next Leap in Mars Exploration Nears Arrival

News Release: 2006-026

As it nears Mars on March 10, a NASA spacecraft designed to examine the red planet in unprecedented detail from low orbit will point its main thrusters forward, then fire them to slow itself enough for Mars' gravity to grab it into orbit.



Ground controllers for Mars Reconnaissance Orbiter expect a signal shortly after 1:24 p.m. Pacific time (4:24 p.m. Eastern time) that this mission-critical engine burn has begun. However, the burn will end during a suspenseful half hour with the spacecraft behind Mars and out of radio contact.

"This mission will greatly expand our scientific understanding of Mars, pave the way for our next robotic missions later in this decade, and help us prepare for sending humans to Mars," said Doug

McCuistion, Director of NASA's Mars Exploration Program. "Not only will Mars Science Laboratory's landing and research areas be determined by the Mars Reconnaissance Orbiter, but the first boots on Mars will probably get dusty at one of the many potential landing sites this orbiter will inspect all over the planet."

The orbiter carries six instruments for studying every level of Mars from underground layers to the top of the atmosphere. Among them, the most powerful telescopic camera ever sent to a foreign planet will reveal rocks the size of a small desk. An advanced mineral-mapper will be able to identify water-related deposits in areas as small as a baseball infield. Radar will probe for buried ice and water. A weather camera will monitor the entire planet daily. An infrared sounder will monitor atmospheric temperatures and the movement of water vapor.

The instruments will produce torrents of data. The orbiter can pour data to Earth at about 10 times the rate of any previous Mars mission, using a dish antenna 3 meters (10 feet) in diameter and a transmitter powered by 9.5 square meters (102 square feet) of solar cells. "This spacecraft will return more data than all previous Mars missions combined," said Jim Graf, project manager for Mars Reconnaissance Orbiter at NASA's Jet Propulsion Laboratory, Pasadena, Calif.

Scientists will analyze the information to gain a better understanding of changes in Mars' atmosphere and the processes that have formed and modified the planet's surface. "We're especially interested in water, whether it's ice, liquid or vapor," said JPL's Dr. Richard Zurek, project scientist for the orbiter. "Learning more about where the water is today and where it was in the past will also guide future studies about whether Mars has ever supported life."

A second major job for Mars Reconnaissance Orbiter, in addition to its own investigation of Mars, is to relay information from missions working on the surface of the planet. During its planned five-year prime mission, it will support the Phoenix Mars Scout, which is being built to land on icy soils near the northern polar ice cap in 2008, and the Mars Science Laboratory, an advanced rover under development for launch in 2009.

However, before Mars Reconnaissance Orbiter can begin its main assignments, it will spend half a

(Continued on page 17)

(Continued from page 16)

year adjusting its orbit with an adventurous process called aerobraking. The initial capture by Mars' gravity on March 10 will put the spacecraft into a very elongated, 35-hour orbit. The planned orbit for science observations is a low-altitude, nearly circular, two-hour loop. To go directly into an orbit like that when arriving at Mars would have required carrying much more fuel for the main thrusters, requiring a larger and more expensive launch vehicle and leaving less payload weight for science instruments. Aerobraking will use hundreds of carefully calculated dips into the upper atmosphere -- deep enough to slow the spacecraft by atmospheric drag, but not deep enough to overheat the orbiter.

"Aerobraking is like a high-wire act in open air," Graf said. "Mars' atmosphere can swell rapidly, so we need to monitor it closely to keep the orbiter at an altitude that is effective but safe." Current orbiters at Mars will provide a daily watch of the lower atmosphere, an important example of the cooperative activities between missions at Mars.

Additional information about Mars Reconnaissance Orbiter is available online at:

<http://www.nasa.gov/mro>

Hubble's Largest Galaxy Portrait Offers a New High-Definition View

Photo No.: STScI-PRC06-10a

Giant galaxies weren't assembled in a day. Neither was this Hubble Space Telescope image of the face-on spiral galaxy Messier 101 (M101). It is the largest and most detailed photo of a spiral galaxy that has ever been released from Hubble. The galaxy's portrait is actually composed of 51 individual exposures taken with Hubble's Advanced Camera for Surveys and the Wide Field and Planetary Camera 2 in March 1994, September 1994, June 1999, November 2002, and January 2003. The newly composed image also includes elements from images from ground-based photos. The final composite image measures a whopping 16,000 by 12,000 pixels.

The image may be downloaded from:

<http://hubblesite.org/newscenter/newsdesk/archive/releases/2006/10/image/a>



Credit for the Hubble image:
NASA and ESA

Acknowledgment: K.D. Kuntz (GSFC),
F. Bresolin (University of Hawaii), J.
Trauger (JPL), J. Mould (NOAO), and
Y.-H. Chu (University of Illinois, Urbana)

Credit for the CFHT image: Canada-
France-Hawaii Telescope/
J.-C. Cuillandre/Coelum

Credit for the NOAO image: G. Jacoby,
B. Bohannan, M. Hanna/
NOAO/AURA/NSF

Member Recognition

Our congratulations to **Becky Ramotowski** who has been hired by Sky Publishing to write a beginners' book on stargazing. Becky is a past JSCAS president, writes the weekly Sky Watch column for San Antonio's Express-News, and is currently vice-president of The Albuquerque Astronomical Society (TAAS). Becky has a life-long passion for the stars and is an accomplished observer. Becky is a true ambassador for our hobby.

Congratulations go to **Triple and Karen Nickel** on the birth of their first grandchild, Emily Jean Corr, born at 10pm on February 15th. She weighed in at 8 lbs 5 oz and 20" long.

Brian Zemba, who for years hosted the Armand Bayou Star Parties at the Krauss Observatory, is now vice president of the Colorado Springs Astronomical Society.

Sky & Telescope and now Astronomy Magazine Subscriptions – Don't Forget about the Club Discount!

Sky & Telescope offers a "Club Discount" on subscriptions. You can subscribe to Sky and Telescope for \$10 off the normal price (\$32.95 with the club discount). Astronomy magazine is also offering a club discount. JSCAS members can subscribe to Astronomy for \$34 a year. We need to have a minimum of five subscribers to take advantage of the discount. If you are a current subscriber, *please* contact me so I can put you on the list for the club discount when your subscription is due for renewal!

Contact me by the email listed on the JSCAS web site, catch me at a meeting, or send your check and renewal form to my home address: 2407 Elkton Ct., Pearland, TX, 77584. I'll put your renewal in the mail within 48 hours after I receive it.

David Haviland
Vice-president and Secretary

HOUSTON AREA ASTRONOMY CLUBS

Brazosport Astronomy Club

Meets the Third Tuesday of the month, 7:45 p.m.

At the Planetarium

400 College Drive

Clute, Texas

For more information, contact Judi James at the Planetarium

979-265-3376

Fort Bend Astronomy Club <http://www.fbac.org/>

Meets the third Friday of the month, 7:00 p.m.

First Colony Conference Center

3232 Austin Pkwy

Sugar Land, Texas

Houston Astronomical Society <http://spacibm.rice.edu/~has/>

Meets the first Friday of the month, 8:00 p.m.

University of Houston, University Park

Science and Research Building, room 117

North Houston Astronomy Club <http://www.astronomyclub.org/>

Meets the fourth Friday of the month, 7:30 p.m.

In the Teaching Theater at Kingwood College

20000 Kingwood Drive

Kingwood, Texas

Help turn off the lights...

Join the
International Dark-Sky Association (IDA)

<http://www.darksky.org>

"To preserve and protect the nighttime environment and our heritage of dark skies through quality outdoor lighting."



Ben Jones Honored

Ben Jones, Barbara Wilson's grandson and an active Texas IDA member has been chosen Texas Honoree for the Prudential Spirit of Community Award for his work on light pollution. State honorees earn \$1,000 awards, silver medallions and a trip to the nation's capital. The 102 State Honorees and 234 Distinguished Finalists were announced February 14, 2006.

The Prudential Spirit of Community Awards honor young people in middle level and high school grades for outstanding volunteer service to their communities. Created in 1995 by Prudential Financial in partnership with the National Association of Secondary School Principals (NASSP), the awards constitute the United States' largest youth recognition program based solely on volunteering. Over the past ten years, the program has honored more than 60,000 young volunteers at the local, state and national level.

If Ben is chosen as a National Honoree, he will receive \$5,000, an engraved gold medallion and a crystal trophy for his school. In addition there will be a \$5,000 grants from the Prudential Foundation for nonprofit charitable organizations of his choice.

Memorial Herman Sugar Land Hospital Non-compliant with Lighting Ordinance

In a February 10th story by Bob Dunn, FortBendNow Inc., it was reported that the Memorial Herman Sugar Land Hospital project doesn't comply with Fort Bend County's lighting ordinance. Building construction of the \$93 million dollar project is well underway with many of the parking lot lights already erected.

Plans submitted to the county included fixtures which were compliant with Fort Bend's lighting ordinance. However, The fixtures which are being installed have lenses which extend below the housing and are not in compliance.

"On the plans, they have it right, but what they installed is different," said Fort Bend County Precinct 1 Commissioner Tom Stavino. "They did admit to a mistake. They are out of compliance."

Louis Hood of the County Engineer's office said problems with the hospital parking lot lighting "has to do with the shielding of the light fixtures and the wattage of the bulbs. ...The lenses extend below the housing, below the light fixture."

Officials say that the existing lighting fixtures and lenses already installed will likely have to be replaced.

Wal-Mart Denied Variance

Mr. Dunn story also mentions that Wal-Mart Stores Inc. was denied a variance from the lighting ordinance for a store planned near Cinco Ranch off the Grand Parkway.

At one point the company threatened to walk away from the proposed store site.

"It was left for us to go back to the drawing board," County Engineer Jesse Hegemier said of Wal-Mart. "We're not talking to them; we're waiting for them to come back to us" with revised plans.

"Wal-Mart is just being Wal-Mart," Stavino said. "That's a prime location. They're not going to let a lighting issue stop the store."

Visit the homepage of the Texas IDA affiliate of the International Dark-Sky Association. Their web site is at: <http://www.texasida.org/>.

MEMBER'S GALLERY



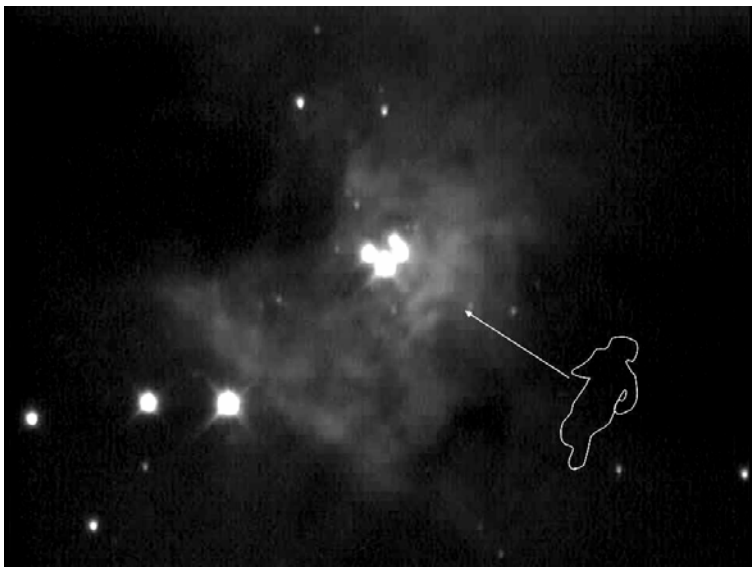
M42▲

©Glenn Schaffer

According to Glenn: "I finally got to do some imaging tonight with my new Canon 20D hooked to my 20" Obsession scope. After getting aligned and my autoguider guiding, I started testing my new setup. I shot some quick 30 sec shots of M42 & M43 (of course) for my "first light". After about 10 shots or so the clouds moved in. Anyway, I started processing some of the images and noticed something strange....even spooky. Some of the experienced astro-imagers probably have seen this before but it was new to me. I zoomed in on the Trapezium region and noticed what appeared to be a man embedded to the right of the Trapezium with his back to me looking over his left shoulder into the sky! And... I think he's "necked"! I know ya'll think I've lost it but look for yourself!"



It seems that the Hubble also caught this ghostly apparition (left). The undated NASA/HST image was found at:
http://sed.s.lpl.arizona.edu/messier/more/m042_hst3.html



◀ **M42**
©Tim Lawrence

Here is a composite of 61 video frames (2 seconds) of the "Orion Man" imaged by Tim Lawrence. The video was made using an 18" F4.45 with a PC164C-EX 600 line black/white video camera. The luminance's were processed with AIP4WIN.

Editor: The intensity and contrast of Tim's original were tweaked in MS Draw before publication to bring out the "man".

ARP 155 ▶
▼ ARP 27 ARP 263 ▼
©Dick Miller

These images were taken at Dick's observatory in West Point at the end of January. The images were taken using a 10" Newtonian with a MX716 camera. The total exposure times were 26 minutes for Arp 27; 25 minutes for Arp 155; and 29 minutes for Arp 263.



Johnson Space Center Astronomical Society

An association of amateur astronomers dedicated to the study and enjoyment of astronomy. Membership is open to anyone wishing to learn about astronomy.

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March Meeting Agenda

Our normal meeting location, the Center for Advanced Space Studies/Lunar Planetary Institute, is unavailable to us in March. Our backup locations are also unavailable at this time. Our president, Bob Taylor, will put a message out on the list server as to either the location of the next meeting or a cancellation notice.

Stay tuned to the list server for further details.

Starscan Submission Procedures

Original articles of astronomical interest will be accepted up to **6 P.M. March 25th**.

The most convenient way to submit articles or a Calendar of Events is by electronic mail, however computer diskettes or CDs will also be accepted. All articles should include author's name and phone number. Also include any picture credits. The recommended format is Microsoft Word. Text files will also be accepted.

Submitter bears all responsibility for the publishing of any e-mail addresses in the article on the World Wide Web.

Editor's electronic address is: lesteke@swbell.net. Be sure to include the word Starscan in the subject line for proper routing of your message.

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| | |
|-------------------|-----------------------------|
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Cover Image

Cosmic Tornado: Herbig-Haro 49/50

Credit: Spitzer Space Telescope NASA/JPL-Caltech/J. Bally (Univ. of Colo.)

The tornado-like feature is actually a shock front created by a jet of material flowing downward through the field of view. A still-forming star located off the upper edge of the image generates this outflow. The jet slams into neighboring dust clouds at a speed of more than 100 miles per second, heating the dust to incandescence and causing it to glow with infrared light detectable by Spitzer. The triangular shape results from the wake created by the jet's motion, similar to the wake behind a speeding boat.