



This picture of the Witch Head Nebula (IC 2118) was taken by Bill Patterson on 9/28/03 near Mt. Pinos, CA. It may be viewed in glorious color at the Anacortes Telescope and Wild Bird Photo Gallery: http://www.buytelescopes.com/gallery/view_photo.asp?pid=792 and in the Image Gallery at the Orange County Astronomers website.

OCA CLUB MEETING

The free and open club meeting will be held Friday, November 14th at 7:30 PM in the Irvine Lecture Hall of the Hashinger Science Center at Chapman University in Orange. The featured speaker this month is yet to be announced as of press time.

STAR PARTIES

The Anza star party is on November 22nd. The Black Star Canyon site will be open this month on November 15th. Members are encouraged to check the website calendar, for the latest updates on star parties and other events.

Please check the website calendar for the outreach events this month! Volunteers are always welcome!

You are also reminded to check the web site frequently for updates to the calendar of events and other club news.

COMING UP

The next session of the Beginners Class will be held on Friday November 7th (and next month on December 5th) at the Centennial Heritage Museum (formerly the Discovery Museum of Orange County) at 3101 West Harvard Street in Santa Ana.

ETX SIG: Nov. 3rd
Astro-Imagers SIG: Nov. 18th
The EOA SIG: Nov. 19th
Astrophysics SIG: Dec. 19th

President's Message

By Barbara Toy

The year races on, and those of us who persist on being up at "O-dark-thirty" (to borrow Chris Butler's popular phrase) have our own ways of telling that winter is on its way - as I write this, the day after the final "Explore the Stars" program for 2003, the Orion nebula was high enough to show a nice amount of detail around 1:00 a.m., and we were having fun with Saturn when the remnants of the group decided we were all too tired to continue. The bright winter constellations are rising earlier, and, by the time you see this, we'll be off daylight savings time. Here's hoping all the darkest nights this winter are also clear!

Farewell to Liam as Webmaster...

We've been very fortunate in the time I've been associated with the club to have had two excellent webmasters. Liam Kennedy took over responsibility for what was already a good site from Russ Sipe in 1999, and, as anyone who's visited the site recently knows, has since built it up in ways and added capabilities to it that nobody even imagined us having when he took it over. His most recent innovations include ways members can upload their own pictures to the Image Album and can upload their own announcements and other documents through the new Articles feature.

Unfortunately, even with these features that allow members to upload content directly, with minimal involvement of the webmaster, overall maintenance and updating of the site takes time and energy. With all the other calls on his time, Liam had to make some tough decisions about where he needs to limit some of his club activities, and he decided that the

time had come for him to pass on primary responsibility for the website to someone else. He remains an important resource for advice and technical assistance, which is very much appreciated.

We are, of course, extremely sorry that he found it necessary to leave the webmaster position, and very grateful for all that he's done to make the club website so useful to us as members as well as such a good introduction to the club for those who aren't familiar with us. And I'm happy to report that he intends to remain active doing Outreach activities as well as his video work - and maybe he'll even be able to do some observing!



...and Welcome to Russ Sipe as Interim Webmaster

As I said, Russ Sipe was our webmaster before Liam, and he made a lot of changes to the site himself, professionalizing it, adding a lot of content, and establishing a solid foundation for Liam's many innovations. As many of you may know, he was involved in a major renovation to the website for Sky and Telescope during the time he was their webmaster, and he's worked on websites for a number of different organizations he's been associated with, as well, in addition to building and maintaining his own multi-faceted site that reflects the

wide range of his interests (www.sipe.com).

Needless to say, I was delighted and relieved when Russ decided, due to an otherwise unfortunate change in his own circumstances, that he would be both interested in and able to step in as at least Interim Webmaster. In the discussions that took place during this transition, we realized that we really need a new approach to managing the website, as it takes a lot of specialized knowledge and time to deal with the technology that keeps the site running, and it also takes a lot of very different skills as well as time to deal with the content side, including organizing it, keeping current information updated, developing and posting new information, and so on. Russ's expertise and main interests are with website content (along with his past webmaster-type activities, he's done a lot of Internet publishing), and I am happy to report that we have a couple of members who have volunteered to work on the technical side of the site. We are definitely in a state of transition here, and, if all goes well, the details of how the different responsibilities associated with the site will be handled will be worked out before the next President's Message is due, so I'll be able to share them with you then.

If you're wondering what happened to change Russ's circumstances, his long association with Sky and Telescope has, to the sorrow of both sides, come to an end. He assures me, however, that he remains on excellent terms with Rick Feinberg and the others he worked with at S&T, and that this was purely the result of current economic realities, so those of us who subscribe needn't feel guilty about enjoying the magazine. And the bright side for us is that he now has the time to take on the website during this transitional

period and to spearhead the reorganization of the overall site management – it would be hard to find anyone who has better qualifications for seeing that job through to a successful conclusion.

So, thank you, Russ, for taking this on – and good luck in finding a new position that will allow you to continue working with our website!



More Changes - Telescope Loaner Program

One of the more unusual member benefits offered by the club is through the Telescope Loaner Program. For those who may not know about this, we have a group of telescopes owned by the club that are available for club members to borrow without any charge. This gives people a chance to get some hands-on experience using a telescope without having to buy one. Different people have used this in different ways – some to help them decide what kind of telescope to buy when they're ready to make a purchase, some to try out different types of telescopes from what they otherwise use, and some who can't

afford to own one to have the ability to do some viewing on their own without having to "borrow time" on other people's equipment.

Henry Fry has been the coordinator of the Loaner Program for a number of years now, and can take full credit for building it into the successful program we currently have. When he became the

coordinator, the program had been inactive for a long time. He started off by tracking down and recovering the telescopes that were supposed to be in the program, which took a lot of determination and detective work. He's added several new scopes, made a lot of repairs, and added equipment such as eyepieces, Telrads and Barlows, and he also developed a tracking system for each telescope in the program. The result of his efforts has been a very active program that has given a lot of people a tremendous amount

of enjoyment and experience – a great service to all concerned and to the club as a whole.

Henry has now decided that it's time for him to retire as Coordinator of the program, so we're now looking for someone to take over this position. We are very sorry to be losing Henry as Coordinator, and we are very grateful for all that he's done with the Loaner Program. He assures us that he'll still be available to his successor by telephone or email.

If you are interested in the position or want more details about the program, please contact me at btoy@cox.net or Henry Fry at henryfry@hotmail.com.

Explore the Stars

As still another change in the club lineup, Richard Cranston, who has been the Coordinator for Explore the Stars for the last few years, is finding that the travel required in his current job makes it very hard for him to continue doing the work required for the position, so he'd like to hand that responsibility over to someone else. Richard has been doing a great job under circumstances that have been increasingly difficult for him, and we are very grateful for all he's done for the program, as Coordinator and as a volunteer himself.

Explore the Stars was started by Russ Sipe and Fred Coe of the Forest Service as a joint program to introduce people visiting Palomar Mtn. to various aspects of astronomy (through talks and other activities) and to give them a chance to see objects for themselves through volunteer telescopes. Although the organizations that have been most actively involved have been OCA and the Forest Service, we've had a lot of participants from other clubs, as well. The program has received an additional boost this last summer through the active support of Scott Kardel, who is now in charge of Public Relations for the Palomar Observatories, and by the arrival of Chris Nyce as the new Ranger for the area. For more information about the background of ETS, check out its website: <http://www.sipe.com/explore/>.

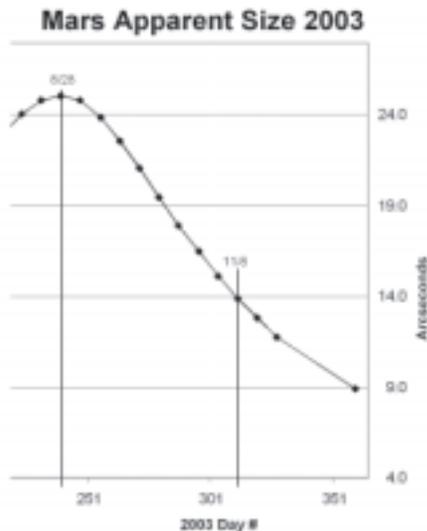
This is a truly unique program, and one with a tremendous ability to educate the public about the importance of protecting the skies in the Palomar area (which – not

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Virtual Astronomy

Dave Kodama

The end of October has brought with it some very warm weather, conveniently extending our warm astronomy weather well into the Fall, an especially convenient break for diehard Mars observers. But clouds will inevitably take over and Mars is rapidly dwindling in size, so it's a good time to switch back to "virtual" astronomy



and recap the great Mars viewing season that's coming to a close.

The Great Mars Opposition of 2003

With the quadruple convergence of the closest Mars approach in recorded history, the low-cost availability of video cameras, software to make processing video easy, and fast computers, this summer season yielded a huge number of excellent images of Mars on the Web. Had this not been the case, we would probably all have been focusing on just Hubble images of Mars, but the huge number of fine images from amateurs seem to have completely swamped the few professional images of Mars that were taken.

To begin with, I should point out the large number of images posted by our own OCA members (these are just the ones I know about with web sites):

- <http://marcush.net/astronomy/mars.html> - Marc Huber
- http://www.laastro.com/Mars_Opposition.html - Bill Patterson
- <http://www.astropics.com/mars/> - Wally Pacholka
- http://home.earthlink.net/~pjstok/wp11a_planet.html - Pat Stoker
- <http://www.eanet.com/kodama/astro/2003/mars/> - Dave Kodama
- <http://www.ocastronomers.org/astroimages/album.asp?cat=Solar%20System\Mars> - OCA Gallery

With the timely implementation of a self-managing image gallery on the OCA web site by Liam Kennedy (see last link above), members who do not have web sites were

still able to contribute their images. These include members such as Leon Aslan, Bill & Suzanne Hall, Bruce Waddington, Matt Ota, Craig Bobchin, Dan Schechter, John Sanford, Jim Windlinger, and many more! Thanks for posting those Mars shots!

More Mars shots from around the world are listed below. Note that some of the best shots are taken from locations near or below the equator, where Mars appeared high in the sky:

- <http://www.astropics.co.uk/solar%20system.htm> - Eddie Guscott (UK)
- <http://mars.cstoneind.com> - Christopher Go (Philippines)
- <http://www.astronomie.de/sonnensystem/mars-2003/galerie/dodi/dodi.htm> - Dodi Dierick (Belgium)
- <http://planets.lamost.org/EPlanets2002.htm> - Gu Yu (China)
- http://homepage3.nifty.com/~cmomk/2003/index_ENg.html - Eric Ng (Hong Kong)
- <http://www.sg-planets.org/mars.html> - Tan Wei Leong (Singapore)
- <http://www.ghg.net/egrafton/> - Ed Grafton (FLA)

As you may have already noticed, the majority of Mars images were taken using video webcams or camcorders. These have proven to have a decisive advantage over the traditional film medium due to the fact that exposures can be very short, and thousands of frames can be collected in a few minutes at a very low cost. These sequences can then be culled for the best frames and combined to increase the signal-to-noise ratio to produce amazingly sharp final images. Nevertheless, a few amateurs tried their hand at capturing some film shots, some to provide some interesting comparison examples:

- http://web.tampabay.rr.com/jsuro/mars_film-09122003.htm
- http://home.comcast.net/~jeboud/film_mars.htm - film/video comparison

The ease with which large number of images can be produced using video techniques also encouraged many to go to the next step and produce animations of Mars' rotation:

- <http://www.mars03.de/anim.htm> - Team Mars03
- <http://www.threebuttes.com/Mars.htm> - Gary Honis
- <http://marcush.net/astronomy/mars.html> - Marc Huber (OCA)
- <http://www.guidescope.net/solarsys/mars03.htm> - Tom Matheson
- <http://hubblesite.org/newscenter/archive/2003/22/video/a/> - Hubble animation

Note that while some animations were produced by simply combining shots taken at regular intervals, the last two examples above involved mathematically mapping the images which were taken onto a sphere, and then re-sampling the mapped sphere into an animation sequence.

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NASA SPACE PLACE

Hurricane Team Work

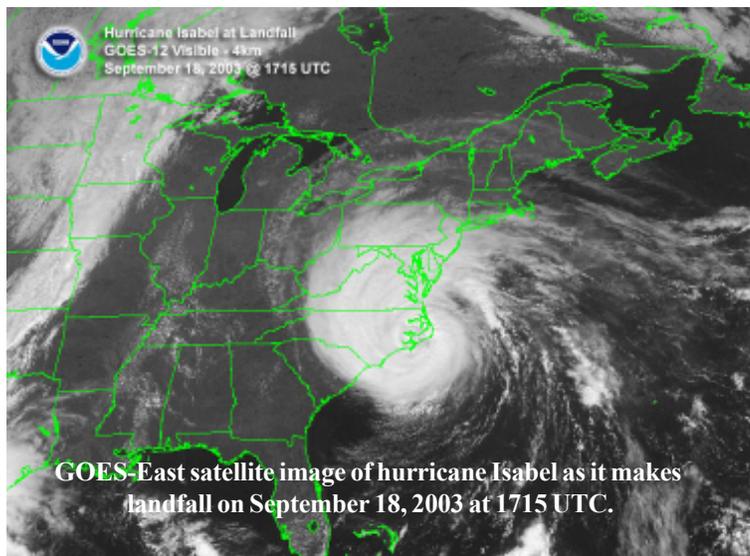
by Dr. Tony Phillips

On a gray breezy day last month thousands of people got in their cars and reluctantly left home. U.S. east coast highways were thick with traffic. Schools were closed. Businesses shut down.

Perfect!

When powerful Hurricane Isabel arrived some 38 hours later nearly everyone in the storm's path had fled to safety.

Days later Vice Admiral Lautenbacher, in a briefing to President Bush, praised the National Atmospheric and Oceanic Administration (NOAA): "Without NOAA's excellent track forecasts, hurricane Isabel's toll on lives and property would have been even more devastating. This is NOAA's first year of providing 5-day forecasts-and the 5-day forecast for Isabel was as good as our 2-day forecasts have been over the last decade."



Many people in NOAA played a role. A team of pilots, for instance, flew Gulfstream-IV High Altitude Surveillance jets right up to the approaching hurricane, logging 25,000 miles in the days before landfall. Their jets deployed devices called dropsondes-little weather stations that fall toward the sea, measuring pressure, humidity, temperature and wind velocity as they plummet. The data were radioed back to the aircraft and transmitted to forecasters on shore.

While two Gulfstream-IV crews flew night and day around the storm, a NOAA satellite named GOES-EAST monitored Isabel from above. (GOES is short for Geostationary Operational Environmental Satellite.)

From an orbit 22,300 miles above the Atlantic Ocean, GOES-EAST had a unique view. "It could see the entire hurricane at once," says Ron Gird of NOAA. "Scientists used infrared spectrometers onboard the satellite to estimate the height of the storm clouds, their temperature and water content. GOES can also measure the temperature of the ocean surface-the source of power for hurricanes."

Constant streams of data from GOES and the Gulfstream aircraft were fed to supercomputers at NOAA's Environmental Modeling Center in Maryland where sophisticated programs, developed over the years by meteorologists and programmers, calculated the storm's most likely path.

Supercomputers. Satellites. Jet airplanes. Scientists. Programmers. Pilots. It took a big team using a lot of tools to predict where Isabel would go-accurately and with time to spare.

Says Vice Admiral Lautenbacher: "I hope everyone at NOAA shares the pride of being part of a team effort that so effectively warned the public of impending danger and enabled citizens to take action to protect themselves and their loved ones."

Well done, indeed.

To learn more about the GOES, see www.oso.noaa.gov/goes/ . For kids, the SciJinks Weather Laboratory at scijinks.nasa.gov has lots of fun activities and fascinating facts about the wild world of weather. *This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

Guest Article: A 'Star-B-Que'

Mike Molitor, Albany Area Amateur Astronomers

Like you, I'm always interested things going-on in the sky. Planetary conjunctions, lunar occultations, meteor showers are clearly astronomical, while halos and other phenomenon are clearly atmospheric. When I travel, I'm also on the look-out for more earthly astronomical sites and happenings, such as observatories and planetariums that I can visit. A recent business trip west left me in Irvine, California for the weekend. Irvine is a city southeast of Los Angeles. It was close to new moon and had I been at home in Albany, I would have attended one of our weekend star-watches. Despite the articles in Sky and Telescope that have individuals globe-trotting with compact Dobsonians or apochromatic refractors and performing dark sky feats of observing or imaging, I find that traveling by air makes it difficult to carry any substantial telescope. Especially when the trip is primarily a business trip, binoculars are about all the equipment that I can manage.

Irvine is home to the Orange County Astronomers (OCA), a very large astronomy club with membership in excess of 800 individuals. OCA was holding an observing session at their dark-sky site the weekend that I was there. Billed as a "Star-B-Que", the membership was holding a cook-out starting at 5pm, with a night of observing to follow. I contacted Barbara Toy, the president of OCA, before I left Albany and introduced myself. I asked if I might attend and I was told that I was welcome. Saturday afternoon I set out with my trusty binoculars and directions provided by Barbara. The OCA dark-sky site is some two hours by car southeast of Irvine and is situated near Anza between Temecula and Palm Springs. The site is in a rural location, at an altitude of 4000 feet, and covers about 20 acres. It is surrounded by what I would describe a small ranches, (hobby ranches?). The vegetation is mostly arid scrub, and the terrain is slightly hilly and rocky.

Upon arriving I introduced myself to a couple of members. They were aware that I might be attending. We spoke about some of their equipment, and then I was directed toward the club's observatory, which was food-central for the Star-B-Que. On my walk toward the top of the hill, I passed member observatories. There were some that were unimproved, or simple concrete pads to park and set-up. Still others sported permanent piers with power and structures for storage. A few more had entire observatory buildings with dome, clamshell, or roll-off roof variations. Mostly I saw commercial scopes, but there

were a few custom and owner-built ones, too. When I reached the main observatory there was an abundance of cook-out food and many folks having a good time. I found my host and introduced myself and got introduced to Tim Hogle and a lot of other people (most of whose names I almost immediately could not recall). I got a quick look at the main observatory and proceeded toward still higher ground. It was here that I found some hard-core equipment fanatics with 12 and 16 inch home made Newtonians on hand-crafted mounts. Really nice stuff. A few members have joined together privately to purchase an adjacent property with a home. They have set-up a 24-inch scope and have future plans for a meter-class scope. They have a roll-off roof observatory about the size of a two car garage.

As darkness was fast approaching, I returned to the main observatory area. I met with Russell Sipe and got a tour of his "StarCruiser" observatory sporting a custom 16-inch Newtonian and enormous CCD. Russell can operate his observatory remotely from his home, back in the LA area. The club's main observatory is next-door to Russell's and is a roll-off structure housing a 10 inch and a 12 inch SCT, with the main instrument a custom 22-inch Cassegrain on a massive fork mount. The Kuhn Scope,

as it is named, is operated by sitting at the control desk and locating a target on the screen of a PC. I didn't ask what software was being used, but the display was similar to most commercial planetarium software available for PCs.

Once the target is selected, the scope slews to the location. GoTo on a large scale, but very quiet. I'm sure it took a lot of hard work and customization to get this non-commercial scope operational. I

got some nice views of some Messier globulars, along with a brief tour of some Scorpius and Sagittarius showpieces. The southern latitude of the site provided my biggest joy - viewing the southern reaches of Scorpius and the Milky Way through my binoculars. The d-Aquarid meteor shower provided a good display throughout the evening. With a two hour drive back to my lodging and Mars glowing in the east, I departed around midnight.

The investment OCA members have made in this site is overwhelming. But it is worth it when you consider the climatic conditions ... vanishingly brief snow falls, most nights are clear, and no mosquitoes (though I was told that there are rattlesnakes). I'm looking forward to a time when I can return and spend a more time getting to know the great people of OCA, and perhaps doing more observing at their dark-sky site. By the way, check out their huge website to get a sense of this fantastic club.



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President's Message by Barbara Toy

to be too selfish – is a significant concern to us for our own Anza site) as well as to educate members of the general public about astronomy. If you are interested in the position of Coordinator for the program or want more information about it, please contact Richard Cranston (rcranston@ix.netcom.com), Russ Sipe (sipe@sipe.com) or me.

Upcoming "How to Use Your Telescope" Class

In the hope that this reaches you before November 7, this is a reminder about the upcoming "How to Use Your Telescope" class. We're getting flyers out to all of the local astronomy stores as well as to the customer support people at Meade and Celestron, and expect that it will be well-attended, especially as all of the people I've talked to at all of the places I've left flyers have confirmed that a lot of the people who bought new telescopes to see Mars keep calling them for assistance with them. So, any of you who can come out as volunteers – we need you! And, any of you who're having problems with your own equipment – here's your chance to get some help with it!

This session is on November 7 at 7:30 p.m. at the Centennial Heritage Museum, which is in the first block west of Fairview on Harvard in Santa Ana, between Warner and Edinger. For more information, please contact Antonio Miro (tycmiro@aol.com or 714/898-967) or me.

The "How to Use Your Telescope" class is now a regular part of our Beginners Class, and we'll be doing it again in April. It's always a lot of fun – I hope to see you there!

Election

Another reminder – we'll be taking nominations for the Board and officer positions at the November and December meetings, and the election itself ends at the end of the January meeting. Running for the Board is a great way to get more involved with the club – speaking from my own experience, it's amazing what that simple step can lead to!

Stephen Eubanks kindly pointed out that I made a significant misstatement in the last President's Message as to the qualifications for people to run for the officer positions – the requirement about serving for one year on the Board applies only to the offices of President and Vice President, not to the offices of Secretary and Treasurer. As to the positions of President and Vice President – I know there are a lot of people out there who have that qualification, so don't feel shy about throwing your hat in the ring and

running for those offices!

For those who weren't at the October General Meeting, or who didn't take notes, the members of the current Board who've confirmed that they'll be running again are:

For Trustee: Bob Buchheim, Dave Radosevich, Gary Schones, Joel Harris.

For Officer positions: Charlie Oostdyk (Treasurer), Bruce Crowe (Secretary), Barbara Toy (President).

At a minimum, we need at least one candidate for Vice President, and some candidates for Trustee – so, if you've any interest in the club and its future at all, please do consider running!

The OCA Banquet

Well, the 2003 OCA Banquet is now behind us, and I hope the other people who attended had as good a time as I did! Stephen Edberg gave us an excellent talk on the Cassini Project and what they hope to find when they get to Saturn (with the warning that all of the information he was giving us about Saturn itself would probably be found to be incomplete or totally wrong in six months). We were also honored by having Galileo Galilei as a guest. Besides proving to be a charming and interesting conversationalist, he favored us with some comments about the optics in the telescopes he used, comparing them with modern telescopes of similar size.

We are very grateful to Celestron for the generous donation of a refractor telescope as a door prize, which Galileo delivered for them. We are also very grateful to Scope City for the generous donation of two \$50.00 gift certificates and a 2" Parks ALP filter. Pam Brandt, who, with Tom Drouet, arranged for Galileo's visit, also generously donated several very nice books. The drawing for the door prizes capped a great evening – if you missed it, do plan to come next year!

A special thanks is due to Joel Harris, who worked very hard on all of the arrangements needed to make this event the success it was, and to his wife, Patti, who helped with general advice and such important touches as decorating the tables.

Postscript...

Although there's a lot more that I could add – for instance, our venture into a group purchase of tickets for the performance of "Sun Rings" – I'll close here, so Steve Condrey, our new editor, has a fighting chance of fitting it all in... I hope there won't be quite so many changes in the club to report on next month!

ASTROSPACE UPDATE

November 2003

Gathered by Don Lynn from NASA and other sources

To find out more on these topics, or those of past months' columns, through the World Wide Web, send your Web browser to our OCA Web site (<http://www.ocastronomers.org>), select Space Update Online, and the topics are there to click on.

Expansion slowed down - About 5 years ago the results of the study of distant supernovae were announced that showed that during the last few billion years the expansion of the Universe has been speeding up, contrary to expectations. It was assumed that earlier the expansion was slowing down, as gravity should do. A new study, again using the Hubble Space Telescope, extending the same techniques to farther supernovae, and therefore ones whose light took more billions of years to get here, verified this assumption. Before the time that the Universe was 5 billion years old, the expansion was slowing down.

Transparent Galaxy - Astronomers have announced the discovery of a new galaxy, which is a satellite to the Andromeda galaxy. It is being called Andromeda VIII. It was overlooked before because it is superimposed on the edge of Andromeda, and the new galaxy is so thin that we see Andromeda through it. Mapping the velocities of individual stars allowed astronomers to recognize it as a separate galaxy. The galaxy is being torn apart into streams of stars by the gravity of Andromeda. The total brightness is about that of nearby M32, but it is spread out over at least 10 times the area.

Relativity - Tracking the radio signals from the Cassini spacecraft (mission nearing Saturn) as it passed behind the Sun shows that the bending of light by gravity agrees with Einstein's General Relativity 50 times more precisely than ever measured before. What made this possible was improved radio technology that tracked the signal better in spite of the Sun's huge radio noise, and better analysis of all the other factors (such as the Sun's atmosphere and interplanetary material) that also affect radio signals. The previous best measurement was made in 1979 using the radio signals from the Viking Mars landers.

More Relativity - Several phenomena found in recent years have appeared to show something traveling faster than light, against the principle of Special Relativity that says no information can be transferred faster than light. One of these phenomena was that certain light pulses through pumped potassium vapor appeared to be going too fast. In a recent experiment, information was placed on those pulses (similar to how voice is placed onto radio signals). The information traveled exactly at the speed of light, as opposed to the pulse itself. Einstein was right again.

Milky Way eating a galaxy - Study of the data from the 2MASS infrared survey of the sky shows that our Milky Way galaxy has stripped thousands of stars from the nearby Sagittarius dwarf galaxy over the last 2 billion years. The Milky Way is 10,000 times the mass of the dwarf. Even though it is the closest satellite galaxy to ours, it was discovered only 9 years ago. The shape of the debris shows that the Milky Way's unseen dark matter is distributed in a sphere about the flat disk of visible galaxy.

Possible Titan lakes - Radar from the Arecibo radio telescope was used to penetrate the constant clouds hiding the surface of Saturn's largest moon Titan. Areas were detected with specular (mirror-like) reflection, and liquid lakes best fit the radar signal, although it is possible that frozen surface caused them. It has long been known that the temperature (minus 290 Fahrenheit) at the surface of Titan is about the freezing point of some common hydrocarbons, so lakes, rain, ice and snow composed of these chemicals could exist there. Titan is the only moon in the Solar system with a substantial atmosphere, in fact a bit more dense than Earth's. Next year the Cassini spacecraft will go into orbit about Saturn, and will release its Huygens probe to land on Titan.

Chandra (X-ray observatory) has imaged gas being swept out of the galaxy M86, forming a tail more than 200,000 light years long. It is caused by the galaxy plunging through the huge cloud of hot diffuse gas trapped by the gravity of the Virgo galaxy cluster. This explains why M86 is relatively gas free, compared to other galaxies. M86 is one of the few galaxies that is approaching us, since its orbital motion around the Virgo cluster happens to be toward us, overcoming the expansion of the Universe that carries essentially all galaxies away from us.

Hermes found - In 1937 the close pass by Earth of an asteroid roughly a mile across caused quite a sensation. It got too dim for technology of that day to see it after only 5 days, not long enough to get sufficient observations to calculate an accurate orbit. So it was never given an official asteroid number, and should not have been named, but it was named Hermes anyway. It was not knowingly seen again until it was picked up in the LONEOS and LINEAR asteroid survey programs last month. Although the orbit of the newly observed object was quickly seen as suspiciously close to that of the long-lost Hermes, it took a lot of detective work with orbit computer programs to prove that they were indeed the same object. Hermes has made 8 close approaches to Venus and Earth in the intervening years, altering its orbit somewhat, and that made it quite difficult to calculate the path it followed since 1937 that matched observations. It can now be predicted that Hermes will not approach Earth closer than 8 lunar distances within the next century.

Swallowing planets - The solution to what caused a star known as V838 in Monoceros to suddenly become much brighter has been found: the star is expanding into its red giant phase, and the expansion engulfed one of its planets. Examination of the star's surroundings showed that this star has swallowed 3 planets.

China manned launch - On October 15, China became the third country to launch a person into space, 42 years after the Soviet Union, followed by the United States 23 days later, did so in the Cold War space race. Yang Liwei became the 431st person launched into space, then landed safely 21 hours later. China has dubbed their space explorers taikonauts, joining cosmonauts and astronauts.

New telescope - Lowell Observatory and Discovery Communications have begun work on a 4-meter telescope with the widest field of view (2 degrees) for any telescope larger than the 1.2 meter Schmidts. It will be used to continuously survey the entire Arizona sky to much dimmer magnitudes than now possible. It will be completed in 2008, and will be used to discover near-Earth asteroids, Kuiper Belt objects, planets orbiting other stars, and any other celestial phenomena that change between images made days or weeks apart. The telescope will have 36 CCDs in its 300 mega-pixel camera. It will be called the Discovery Channel Telescope.

Instant AstroSpace Updates:

Astronomers are imaging hundreds of nearby galaxies with the Hubble Space Telescope (HST) in hopes that some of the stars imaged will eventually become supernova, and then they can go back and identify what kind of star it was before. Only 2 supernova have ever been identified on images of the star taken before the explosion.

Two new moons have been found orbiting Uranus by the HST; they are only 8-10 miles across, and orbit closer to the planet than the 5 major moons.

The European spacecraft SMART 1, targeted to orbit our Moon in 2005, fired its ion engine for an hour test late in September, a few days after being launched into low Earth orbit. This is only the second spacecraft ever powered by an ion engine.

On October 18, a Russian Soyuz spacecraft launched with a replacement crew of 2 for the International Space Station, standing in for the grounded Space Shuttle that was to take up crews of 3. An astronaut from Spain is also aboard the Soyuz, but returns in about 10 days with the returning station crew.

On September 27, an asteroid only 3 to 6 yards across came 4 times closer to Earth than our Moon, the closest ever measured without hitting our atmosphere. It was discovered by the LONEOS near-Earth asteroid survey at Lowell Observatory, and appears to be the smallest asteroid for which an orbit has been calculated.

In late September a meteorite weighing about 40 pounds struck a house in New Orleans, penetrating both floors, and shattering in the ground below the house. No one saw or heard it, but the homeowner was in for a shock when he returned later that day.

The investigation into the loss (in August 2002) of the CONTOUR (comet mission) concluded that the most likely cause was that the plume from the rocket firing taking it out of low Earth orbit likely overheated the spacecraft, causing a structural failure. Other possibilities could not be ruled out, since the spacecraft was out of contact with Earth when it failed.

... continued from page 4. **Virtual Astronomy** by Dave Kodama

And finally, in July, the Moon and Mars combined to give us a special treat in the form of an occultation visible in Florida:

http://www.guidescope.net/solarsys/moon_mars.htm - Tom Matheson

http://skyandtelescope.com/news/article_1006_1.asp - Sky & Telescope: Mars Meets the Moon

<http://www.palmbeachastro.org/mmq.htm> - Fred Lehman

<http://www.astronet.ru:8105/db/msg/1191705/eng/> - Ron Dantowitz

<http://www.andrewchaikin.com/Occultation.html> - Andrew Chaikin

So what will happen to all those video cameras and webcams now that Mars is fading? I hope they won't end up in the closet! Saturn and Jupiter are now coming up out of the morning glow, so I expect to see more great planetary images in the coming months.

Notes From The Editor

by Steve Condrey

This is the first issue of Sirius Astronomer I've done entirely on my own, and I want to first of all thank Liam Kennedy and Barbara Toy for their invaluable advice and assistance. While I have done newsletters before, this is easily the most complex and challenging project I've taken on. However, I have enjoyed every minute of it and look forward to many issues to come.

Most of you probably don't know me, but I've been a member of OCA since moving to Orange County from the San Diego area in 1994. This is by far and away the most accessible and most productive amateur astronomy organization I've ever experienced, and I think it's important that the newsletter continue to reflect that.

Please by all means continue to send in whatever you'd like to see in the newsletter: equipment and book reviews, stories about astronomy-related places you've been or events you've attended, particularly noteworthy observing sessions, tips for new (and not-so-new) observers...you get the idea. Space permitting, I will even accept within reason witty poems, anecdotes, cartoons, etc. relating to our hobby. Everything I receive will be run in either the next or a future issue.

Most of all, I want to emphasize that any member of the club (or for that matter, any reader from another club, as we saw in this month's issue) is welcome to contribute. If you've got something you want to share, we want to hear from you!

The deadline shall remain the 20th of each calendar month, unless something should happen to cause me to alter the deadline in which case I will at minimum announce it via the OCA e-list and if possible announce it at the general meeting. Page 11 of the Sirius Astronomer shall be reserved for announcements (e.g., the annual banquet) and requests by club members.

Now that this first issue is over with, hopefully most of the bugs are worked out and any deviation from the quality you've always expected from the Sirius Astronomer will be rectified with the following issue. Clear skies and happy reading!



The Running Man - NGC 1977 (Photo by Arnie Rosner 10/19/03)

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