Spitzer and the Whirlpool

By Tim Thompson

One of the many rewards reaped from the Spitzer Space Telescope is its ability to provide new views of old friends. The Whirlpool Galaxy, also known as M51, the 51st entry in Charles Messier’s list of things that bothered him, is a well known object to all astronomers, amateur and professional alike. Figure 1 shows M51 in a familiar view from Kitt Peak National Observatory, as well as in an unfamiliar view from Spitzer. The ability of Spitzer to see into the infrared, invisible to our eyes, reveals unexpected results.

Since the infrared wavelengths visible to Spitzer are invisible to us, they are color coded into the 4-color image seen here. The image comes from the (Continued on page 8)

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EDITOR’S NOTE:
Notes, corrections, questions, ideas, articles? All are welcome at: iaas_editor@yahoo.com.
Remember, no matter where you go ......................... there you are.
It is a Glorious Day for the LAAS Bulletin with the advent of a New Bulletin Editor. **Dave Nakamoto** has generously decided to donate his time and skills as the new LAAS Bulletin Editor. Many thanks go out to you, Dave. Now, in addition to sending your articles to laas_editor@yahoo.com, you can also send them to david.nakamoto@verizon.net. Both will get to him. But try to make this tough job a little easier by sending in your articles now.

This month’s LAAS bulletin has, like always, interesting and pertinent articles, announcements and messages from the leadership of the society and from members like you. For the articles, we have a continuation of the Spitzer reports from the illustrious Tim Thompson and our new

(Continued on page 7)

**Telrad’s NEEDED**

Some of the LAAS Loaner scopes need Telrads on them. If you have a Telrad looking for a good home where it will see good use, contact Dave Sovereign about donating it to the LAAS Loaner program. These would really help out beginners in learning the sky with the Loaner scopes. Proper usage instructions will be given to the users and the Club would really appreciate your donation.

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Membership Annual Dues:

- Youth: $20.00
- Regular (18-65): $35.00
- Senior Citizen (65 and up): $20.00
- Senior Family: $30.00
- Family: $50.00
- Group or Club: $50.00
- Life: $500.00

Additional fees:

- Charter Star member: $30.00
- Star member, with pad: $70.00
- Star member, no pad: $60.00

(Membership due date is indicated on the mailing label)

LAAS Home Page: [http://www.laas.org](http://www.laas.org)
LAAS Bulletin Online: [http://www.laas.org/bulletin.html](http://www.laas.org/bulletin.html)

**HANDY PHONE LIST**

- LAAS Answering Machine: (213) 673-7355
- Griffith Observatory
  - Program: (323) 664-1191
  - Offices: (323) 664-1181
  - Sky Report: (323) 663-8171
- Lockwood Site: (661) 245-2106
  - (not answered, arrange time with caller)
- Outgoing calls – collect or calling card

Mt. Wilson Institute: (626) 793-3100
LOANER CORNER

Mars is coming into opposition later this year and warmer evenings mean that star parties are in full swing, both at Lockwood Valley and the Griffith Observatory Satellite. Check out one of the telescopes from the LAAS collection of fine instruments. All are easy to use and are fully equipped with eyepieces. In the case of reflectors, this includes a collimation tool. In the case of the refractors, this includes a star diagonal.

LAAS-1 - 4.5” f/8 Celestron reflector on a solid Polaris equatorial mount. It comes equipped with a Kellner eyepiece, two Othoscopics, and a collimation tool. These 4.5” reflectors are small enough to be easily carried and set up, but with enough aperture to provide good views.

LAAS-2 - 4.5” f/8 Tasco reflector on a motorized Edmund equatorial mount. This telescope has been upgraded with 1.25” accessories, a 6x30 finder, and very solid wooden legs. It comes fully equipped with a set of three Kellner eyepieces and a collimation tool.

LAAS-4 – 6” f/5 reflector by Telescopics on a low Dobsonian mount.

LAAS-7 – 80mm f/15 Meade refractor on an Orion Sky View Deluxe equatorial mount. It is equipped with two Plossl eyepieces and an Orthoscopic. This will be ideal for the opposition of Mars.

LAAS-9 – 8” f/4.5 reflector on a Dobsonian mount that is motorized with a Dob Driver II. This has been taken off line to be sold. However if someone wants to check it out, it is still available.

For further information concerning these loaner telescopes call: David Sovereign at (626) 794-0646.

The real wanderers of the Solar System are the comets. Their orbits are tilted at all orientations to the ecliptic, with perihelion (closest point to the Sun) and aphelion (furthest away from the Sun) distances that can take them closer in than Mercury to beyond Pluto, and whose paths are normally anything but circular. Because of their spectacular appearance when they get close enough to both the Sun and earth to be plainly visible, they attract the attention of nearly all amateur astronomers.

About the only thing predictable about comets are their orbits, and even then those can change more than any of the other Solar System denizens. Comets are affected by close encounters with planets more than other object. Both Hyakutake and Hale–Bopp were affected by Jupiter’s gravitational influence, which shortened their orbits. This led the some confusion in the popular press concerning when either last visited the Solar System and when they would return. In fact, Hyakutake was one of those comets that passed close enough to earth that our planet also affected its orbit.

History has shown that most of the spectacular comets have been by “one hit wonders.” These comets either passed only once by the Sun, or they had such long periods that thousands of generations must pass before they will be seen again. This means that all of them were unknown before their first appearance. One of the most spectacular was Donati’s comet, seen in this painting. The enormous size and

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PRESIDENT’S PARAGRAPH

Dave Sovereign

On July 2nd a special star party was held to witness the Temple-1 impact mission was very well attended and the impact produced a flash that was easily seen. Speaking of star parties at Lockwood, a disturbing incident was reported that prompted the Board of Directors to develop an incident report form that covers both infractions and accidents. If a member or visitor is involved in or witnesses an incident, report it to a board member and fill out the form so that the issue can be resolved. Hopefully the forms will collect dust and everyone will enjoy the evening observing under dark skies. On the brighter side, the 31” Tombaugh reflector is being fine tuned and will soon be available for member use. Also our 17.5” reflector is nearing completion in the Monterey Park shop. Mars will be putting on a good show during its opposition later this year. It will not be as close as it was in 2003, but it will be higher in the sky. Since we will be looking through less atmosphere, the image should be much clearer. Also we are scheduling two special 60 inch nights on Mount Wilson for Mars. It will be worth signing up for one of these nights.

Good Seeing!

Monthly Quiz

AUGUST CONTEST, By Mary Brown

For the last few weeks there has been a lot of solar activity, although there has not been many sunspots, the sunspots have been very large. The number of sunspots that occur is not constant; it fluctuates over a period of time. This fluctuation is called the solar cycle. How long is the solar cycle?

1. What is the altitude of the North Star from Griffith Observatory Los Angeles, CA?
2. What is the altitude of the North Star from Steve Kufeld Astronomical Site in Lockwood Valley CA?

Rules:

1. Letters must be postmark by or before last day of the month.
2. Email also accepted by last day of the month: nwwrgz@yahoo.com
3. Winner will receive prize at the general meeting.
4. Winner will be selected from all correct answers by a drawing.
5. Only winner will be notified.
6. Correct answer will be in the following month’s bulletin.
7. Rules can be changed if necessary, notice will be given of any changes.

Along with your correct answer send us your name, address and phone number

By mail send to:
Los Angeles Astronomical Society
4800 Western Heritage Way
Los Angeles, CA 90027
By email nwwrgz@yahoo.com

Map to Monterey Park Observatory

“The Shake-It” flashlight requires no batteries. It uses Faraday’s Principle of Magnetic Induction and a bright LED to produce light without batteries. A 30-second shaking can recharge the capacitor to produce enough energy to provide about 5 minutes of light. Larry Guerra has also added a red filter behind the front lens and shield around the LED to make the flashlight night observing compatible. The flashlight come in two version, one is decorated with LAAS club name or Logo, one is undecorated. It is sold at $12 –profits go to the LAAS– (compare to $13-15, plus shipping online or $19 at Big 5 Sporting store, which comes without red filter, shield, or LAAS logo). Orders can be placed by sending a check or money order in the amount of $12.00 + $2.00 S&H paid in the order of Rachel Llamas at P.O BOX 1320 SOUTH GATE, CA 90280
crease. In time this will make the comet fainter. The hope in 2006 is that fresh surfaces exposed during the partial breakup of the nucleus during the 1995 apparition will produce a good show. Magnitude estimates place the brightness at anywhere from 8th to 2nd mag, although the latter is definitely overly optimistic. But after this apparition Schwassmann–Wachmann 3 might not even be visible, so this is our last chance to see what it might do.

Although chances are very slim that SW3 will become bright enough to see with the unaided eye, it should present an interesting sight in large telescopes or those equipped with film or CCD cameras, especially those with cooled sensors.

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Call for Designs of New LAAS T-Shirt

The 80th anniversary of LAAS is coming up (next year), coinciding with the re-opening of Griffith Observatory after its major renovation. The LAAS board is appealing to all LAAS members to submit your designs for LAAS club T-shirt to celebrate these special occasions. All formats of designs (photos, graphic arts, hand drawing, etc.) are welcome. Please submit your design by mailing it to:

Los Angeles Astronomical Society
Griffith Observatory Satellite
4800 Western Heritage Way
Los Angeles, CA 90027

Alternatively (and more convenient for us), email your design (jpg, psd, tiff, pdf files are all acceptable, jpg is preferred) to: laas_editor@yahoo.com. Please submit your creative ideas as soon as possible but no later than October 1st. All designs will be examined and pre-selected by the board at the October board meeting, and a list of candidates will be voted on at the October general meeting.

Minghua Nie

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Mt Wilson 60” Nights

The Mount Wilson 60” nights are back! The dates for the nights are as follows:

**August 13th**  This is a half night and has a little moon for some 60” Moon shots

**October 30th**  This one is going to fill up ASAP. Big Time MARS night. It’s a Sunday but this Mars Opposition is far superior to the last one. (SOLD OUT!!!)

**November 4th**  MARS Opposition again. Not many spots left! Sign up Soon!

Only LAAS members are allowed to sign up. If there is still room two (2) weeks prior to the date, paying guests will be permitted. Be sure to let Jim Hunter know the names of your guests as he is keeping a waiting list. (First Come, First Serve)

Any LAAS member who has not been to a 60 inch night at Mount Wilson should consider it as an opportunity to visit astronomy history. To see the location and equipment used by giants such as Wilson and Hubble, will add to your appreciation of their contributions.

“The June 10th night was incredible. The marine layer moved in, keeping the LA lights down below, well, down below. Though we had a full complement of people there, a fair number left by 2 am. Leaving the scope available for those who remained. We basically went through the entire sky, spending all the time we wanted on each object. Very impressive. I’m definitely going again!”

—Satisfied LAAS member

We already have reservations for each of the nights, so don’t delay and miss a unique opportunity to socialize with other members and view objects you only see in publications.

Send your check payable to LAAS, for $50 per person per night - $25 for the half night on August 13, to Jim Hunter, 2178 Kenilworth Ave., LA 90039. Please specify the nights and names of attendees.
September Speaker—

Shelly R. Bonus

Bonus, sky teacher, astronomical lecturer - historian-archivist, creator/performer of the "Janet Planet Planetarium Shows and Lecture," author of custom Autostar Tours of the Night Sky for Meade Instruments, and Telescope operator at the Mt Wilson Observatory. A recipient of a NASA Group Achievement Award for her work in astronomy education, Ms. Shelley was recently honored by having Asteroid 10028BONUS named after her by the International Astronomical Union, which names asteroids, comets, and craters on the Moon after individuals, based on merits judged by astronomers in the IAU.

For centuries, people of all cultures looked to the sky to try to understand themselves and how humans fit into the cosmic order of the universe. Join Shelley at the LAAS General Meeting on Sept 12th at Griffith Observatory Satellite as she explores the myths and sky lore of the Milky way and various summer constellations, such as Hercules the Hero, Cygnus the Swan, Lyra the Harp, and Scorpius the Scorpion. Learn how ancient cultures tried to explain what they saw as they gazed at the celestial wonders of the night.

And finally, don’t forget that she officiated the wedding between our former President (James Strogen) and Vice President (Virginia Bogdanovich, and now Virginia Strogen) at last year’s RTMC (see the July 2004 issue of LAAS Bulletin).
striking multiple tails were incredible. Both Hyakutake and Hale–Bopp fit this rule. In Hale–Bopp’s case it unfortunately didn’t pass close to earth, but it had a large nucleus that showed jets and hoods in even small telescopes, as shown in my image here.

In contrast, the appearance of any of the shorter period comets can be determined with a fair degree of certainty. The uncertainties are due primarily to two factors; the gravitational influences of the major planets, and the jets when they get close enough to the Sun, which act like reaction jets, changing the course of the comet. Once a comet has been located and followed for some time, its orbit can be determined accurately.

Short period comets are usually intrinsically faint. Repeated visits to the inner Solar System evaporate the finite supply of volatile chemicals and dust that form the atmosphere of the comet. Eventually the production of the atmosphere slows down, and the comet doesn’t become as bright as it had before. This effect has been observed in comet Encke, which has been fading steadily ever since it was first observed. And remember, what we see of comets is almost all gas and dust. Ironically, the comets with the most predictable behavior are generally the fainter ones. There are exceptions from both camps of course, but this Rule of Thumb is quite good as a guide.

A possible exception might appear in May and June of 2006, when the short period comet Schwassmann–Wachmann 3 C/73P comes around again. This comet has an orbit that shadows earth at perihelion such that it can approach within 6 million miles of earth, while at the other end it’s further away than Jupiter, as shown here. The comet’s motion follows the earth’s during the 2006 apparition.

Based on a preliminary set of orbital elements, the comet starts off ahead of the earth on the early morning side at the end of 2005. Earth is actually moving faster than the comet at this time, so the comet slowly rises...
The Spitzer Space Telescope, Continued from page 1

IRAC instrument. Its 4 wavelengths, 3.6, 4.5, 5.8 & 8.0 microns, are represented as blue, green, orange, and red, respectively, in this image. Our own eyes center on about 0.5 microns, and cannot see wavelengths beyond about 0.7 microns. So, IRAC can see wavelengths as long as about 10 times the longest wavelengths we can see.

Perhaps the most striking element of the image is the small companion galaxy, at the top of the image, and in the process of being gobbled up by the main spiral of M51. It is blue, with little hint of any other colors. That means it is visible only in the 3.6 micron band, and essentially invisible in the other IRAC wavelengths. And that means the light from the companion is composed almost exclusively of starlight, with no sign of interstellar dust, and no sign of active star formation. On the other hand, the spiral shows a great deal of orange & red, which means a great deal of emission at 5.8 & 8.0 microns, which means it has a lot of dust. And not just any dust, but warm dust, heated from the inside, by newly forming stars. The warm dust traces active star formation, and shows us that while the companion as ceased to form new stars, the main spiral is busily at work to pick up the slack. And you can see that the bright, orange color in the Spitzer image coincides with the dark dust lanes in the spiral arms of the Kitt Peak image, which means that the most active regions of star formation are embedded in those dust lanes, as we expected.

The Whirlpool Galaxy has an interesting legacy in astronomy. It was discovered by the French astronomer, Charles Messier, in October 1773. Messier was observing a comet at the time, and did not appreciate being distracted by all those faint fuzzies that were not comets. He made a list of them, so he could refer to it and not accidentally report them as comets. It was a list of things he did not want to waste time looking at, and yet, today, it is the only thing he is really remembered for in astronomy!

The Whirlpool Galaxy has also been known as Rosse’s Galaxy, after William Parsons, the Third Earl of Rosse, who had a 72 inch (!) speculum mirror mounted in an enormous telescope known as the “Leviathan of Parsonstown”. It was Rosse who first discovered the “spiral” part of what came to be known as “spiral nebulae”, and are now called galaxies. And he made that discovery while looking at M51, in April of 1845. The small companion was easily seen by Rosse, but was invisible to Messier, whose telescope was not good enough to show it. The companion was discovered by Pierre Mechain in 1781, and bears the designation NGC5195 (M51 is NGC5194). M51 is 37,000,000 light years distant, in the constellation Canes Venatici, and is a common guest in amateur telescopes.

Lockwood Valley Report

There were two Dark Sky Parties in the Month of July and both were fantastic. On July 3rd, NASA flew an 800 pound chunk of finely machined copper into Comet Tempel 1. A group of around 50 dedicated LAAS members were on hand at the LAAS Dark Sky site to witness the event live. The telescope field had scopes of all types and sizes from 7” refractors to 31” Newtonians and everything in between. Once we were able to actually find the comet, everything went smoothly. The atmosphere was charged as the impact time neared and people were impressed with the awesome difference in brightness that was seen from before and after the impact. It was agreed to by all that the comet’s brightness dramatically increased and that the core became clearly visible through the scopes on the field. The 31” showed off its stuff with its impressive light gathering power but smaller scopes fared quite well under the dark skies away from the city. Dave Beraru’s 20” Obsession gave nice views as did the 16” from the onsite dome. You could even see the comet through some of the 8” & 10” scopes on the field.

The Official July Dark Sky Party occurred just one week later and was still filled with people, energized by amateur astronomy. The skies were clear and the seeing was quite good. As it is still summer, the temperatures were quite nice, not too cold but not too hot either. A minor issue about the 31” needs to be brought to people’s attention. Usually until around 11pm, the scope will be undergoing maintenance and tuning. After that time, it will be put onto objects that are interesting to see. It takes at least until 11pm for the primary mirror to cool to a degree such that it can deliver properly focused images anyway.

Peter De Hoff
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Bonus, sky teacher, astronomical lecturer - historian-archivist, creator/performer of the "Janet Planet Planetarium Shows and Lecture," author of custom Autostar Tours of the Night Sky for Meade Instruments, and Telescope operator at the Mt Wilson Observatory. A recipient of a NASA Group Achievement Award for her work in astronomy education, Ms. Shelley was recently honored by having Asteroid 10028BONUS named after her by the International Astronomical Union, which names asteroids, comets, and craters on the Moon after individuals, based on merits judged by astronomers in the IAU.

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earlier in the morning from November of 2005 to March of 2006. However, just as earth starts to catch up to the comet in March, as the comet almost reaches the Meridian at midnight, it gains speed as it approaches perihelion, and starts to move ahead of the earth and back into the early morning sky. As it does so, it leaves the vicinity of Virgo and heads north through Hercules and into Cygnus. It picks up speed as it does so, passing through the neck of Cygnus as it approaches closest to earth in early May. It then dives in front of earth along earth’s orbit and below the ecliptic as it moves towards perihelion, passing through the neck of Pegasus. It then backs up a bit, finally settling down in Cetus the Whale and fades away from both the Sun and earth as 2006 ends. As a result it finally stops its strange dance in the morning sky and moves slowly into the evening sky, but it will be quite faint and probably unobservable. Quite a celestial race! The winners in this case might be the earth bound observers should the comet get bright, and therein hangs an interesting tale.

During the 1995 apparition, this comet appeared to cast off parts of its nucleus. Some of these fragments were seen during the 2000 apparition despite the unfavorable observing conditions. The elongated nucleus was an early sign of the partial breakup of the comet. If there are still fresh surfaces from which both gas and dust can erupt from the comet, the comet might brighten considerably. But as with all comet predictions, this one is fraught with uncertainty. How much extra gas and dust, if any, cannot be estimated with any certainty, but the comet will pass within 7 million miles of earth, the closest it has come since its discovery in 1930. We’ll know soon enough how well the comet will perform when SW3 passes by the earth this time next year.

This is the last time we’ll see this comet clearly. SW3’s orbit takes it near Jupiter’s orbit, so sooner or later a close encounter will occur and alter the comet’s orbit. Such a thing will actually happen twice to SW3 in this century. In each case the orbit will widen and perihelion distance will in-
crease. In time this will make the comet fainter. The hope in 2006 is that fresh surfaces exposed during the partial breakup of the nucleus during the 1995 apparition will produce a good show. Magnitude estimates place the brightness at anywhere from 8th to 2nd mag, although the latter is definitely overly optimistic. But after this apparition Schwassmann–Wachmann 3 might not even be visible, so this is our last chance to see what it might do.

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4800 Western Heritage Way
Los Angeles, CA 90027

Alternatively (and more convenient for us), email your design (jpg, psd, tiff, pdf files are all acceptable, jpg is preferred) to: laas_editor@yahoo.com. Please submit your creative ideas as soon as possible but no later than October 1st. All designs will be examined and pre-selected by the board at the October board meeting, and a list of candidates will be voted on at the October general meeting.

Minghua Nie

Mt Wilson 60” Nights

The Mount Wilson 60” nights are back! The dates for the nights are as follows:

August 13th This is a half night and has a little moon for some 60” Moon shots
October 30th This one is going to fill up ASAP. Big Time MARS night. It’s a Sunday but this Mars Opposition is far superior to the last one. (SOLD OUT!!)
November 4th, MARS Opposition again. Not many spots left! Sign up Soon!

Only LAAS members are allowed to sign up. If there is still room two (2) weeks prior to the date, paying guests will be permitted. Be sure to let Jim Hunter know the names of your guests as he is keeping a waiting list. (First Come, First Serve)

Any LAAS member who has not been to a 60 inch night at Mount Wilson should consider it as an opportunity to visit astronomy history. To see the location and equipment used by giants such as Wilson and Hubble, will add to your appreciation of their contributions.

“The June 10th night was incredible. The marine layer moved in, keeping the LA lights down below, well, down below. Though we had a full complement of people there, a fair number left by 2 am. Leaving the scope available for those who remained. We basically went through the entire sky, spending all the time we wanted on each object. Very impressive. I’m definitely going again!”

—Satisfied LAAS member ♡

We already have reservations for each of the nights, so don’t delay and miss a unique opportunity to socialize with other members and view objects you only see in publications.

Send your check payable to LAAS, for $50 per person per night - $25 for the half night on August 13, to Jim Hunter, 2178 Kenilworth Ave., LA 90039. Please specify the nights and names of attendees. ♡
PRESIDENT’S PARAGRAPH
Dave Sovereign

On July 2nd a special star party was held to witness the Temple-1 impact mission was very well attended and the impact produced a flash that was easily seen. Speaking of star parties at Lockwood, a disturbing incident was reported that prompted the Board of Directors to develop an incident report form that covers both infractions and accidents. If a member or visitor is involved in or witnesses an incident, report it to a board member and fill out the form so that the issue can be resolved. Hopefully the forms will collect dust and everyone will enjoy the evening observing under dark skies. On the brighter side, the 31” Tombaugh reflector is being fine tuned and will soon be available for member use. Also our 17.5” reflector is nearing completion in the Monterey Park shop. Mars will be putting on a good show during its opposition later this year. It will not be as close as it was in 2003, but it will be higher in the sky. Since we will be looking through less atmosphere, the image should be much clearer. Also we are scheduling two special 60 inch nights on Mount Wilson for Mars. It will be worth signing up for one of these nights.

Good Seeing!

“Shake-It” flashlight requires no batteries. It uses Faraday’s Principle of Magnetic Induction and a bright LED to produce light without batteries. A 30-second shaking can recharge the capacitor to produce enough energy to provide about 5 minutes of light. Larry Guerra has also added a red filter behind the front lens and shield around the LED to make the flashlight night observing compatible. The flashlight come in two version, one is decorated with LAAS club name or Logo, one is undecorated. It is sold at $12 –profits go to the LAAS– (compare to $13-15, plus shipping online or $19 at Big 5 Sporting store, which comes without red filter, shield, or LAAS logo). Orders can be placed by sending a check or money order in the amount of $12.00 + $2.00 S&H paid in the order of Rachel Llamas at P.O BOX 1320 SOUTH GATE, CA 90280

Monthly Quiz

AUGUST CONTEST, By Mary Brown

For the last few weeks there has been a lot of solar activity, although there has not been many sunspots, the sunspots have been very large. The number of sunspots that occur is not constant; it fluctuates over a period of time. This fluctuation is called the solar cycle. How long is the solar cycle?

1. What is the altitude of the North Star from Griffith Observatory Los Angeles, CA?

2. What is the altitude of the North Star from Steve Kufeld Astronomical Site in Lockwood Valley CA?

Rules:
1. Letters must be postmark by or before last day of the month.
2. Email also accepted by last day of the month: nwwrgz@yahoo.com
3. Winner will receive prize at the general meeting.
4. Winner will be selected from all correct answers by a drawing.
5. Only winner will be notified.
6. Correct answer will be in the following month’s bulletin.
7. Rules can be changed if necessary, notice will be given of any changes.

Along with your correct answer send us your name, address and phone number.
By mail send to:
Los Angeles Astronomical Society
4800 Western Heritage Way
Los Angeles, CA 90027
By email nwwrgz@yahoo.com
LOANER CORNER

Mars is coming into opposition later this year and warmer evenings mean that star parties are in full swing, both at Lockwood Valley and the Griffith Observatory Satellite. Check out one of the telescopes from the LAAS collection of fine instruments. All are easy to use and are fully equipped with eyepieces. In the case of reflectors, this includes a collimation tool. In the case of the refractors, this includes a star diagonal.

LAAS-1 - 4.5” f/8 Celestron reflector on a solid Polaris equatorial mount. It comes equipped with a Kellner eyepiece, two Orthoscopics, and a collimation tool. These 4.5” reflectors are small enough to be easily carried and set up, but with enough aperture to provide good views.

LAAS-2 - 4.5” f/8 Tasco reflector on a motorized Edmund equatorial mount. This telescope has been upgraded with 1.25” accessories, a 6x30 finder, and very solid wooden legs. It comes fully equipped with a set of three Kellner eyepieces and a collimation tool.

LAAS-4 – 6” f/5 reflector by Telescopics on a low Dobsonian mount.

LAAS-7 – 80mm f/15 Meade refractor on an Orion Sky View Deluxe equatorial mount. It is equipped with two Plossl eyepieces and an Orthoscopic. This will be ideal for the opposition of Mars.

LAAS-9 – 8” f/4.5 reflector on a Dobsonian mount that is motorized with a Dob Driver II. This has been taken off line to be sold. However if someone wants to check it out, it is still available.

For further information concerning these loaner telescopes call: David Sovereign at (626) 794-0646.

The real wanderers of the Solar System are the comets. Their orbits are tilted at all orientations to the ecliptic, with perihelion (closest point to the Sun) and aphelion (furthest away from the Sun) distances that can take them closer in than Mercury to beyond Pluto, and whose paths are normally anything but circular. Because of their spectacular appearance when they get close enough to both the Sun and earth to be plainly visible, they attract the attention of nearly all amateur astronomers.

About the only thing predictable about comets are their orbits, and even then those can change more than any of the other Solar System denizens. Comets are affected by close encounters with planets more than other object. Both Hyakutake and Hale–Bopp were affected by Jupiter’s gravitational influence, which shortened their orbits. This led the some confusion in the popular press concerning when either last visited the Solar System and when they would return. In fact, Hyakutake was one of those comets that passed close enough to earth that our planet also affected its orbit.

History has shown that most of the spectacular comets have been by “one hit wonders.” These comets either passed only once by the Sun, or they had such long periods that thousands of generations must pass before they will be seen again. This means that all of them were unknown before their first appearance. One of the most spectacular was Donati’s comet, seen in this painting. The enormous size and

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Editors’ Message

It is a Glorious Day for the LAAS Bulletin with the advent of a New Bulletin Editor. Dave Nakamoto has generously decided to donate his time and skills as the new LAAS Bulletin Editor. Many thanks go out to you, Dave. Now, in addition to sending your articles to laas_editor@yahoo.com, you can also send them to david.nakamoto@verizon.net. Both will get to him. But try to make this tough job a little easier by sending in your articles now.

This month’s LAAS bulletin has, like always, interesting and pertinent articles, announcements and messages from the leadership of the society and from members like you. For the articles, we have a continuation of the Spitzer reports from the illustrious Tim Thompson and our new Telrad’s Needed

Some of the LAAS Loaner scopes need Telrad’s on them. If you have a Telrad looking for a good home where it will see good use, contact Dave Sovereign about donating it to the LAAS Loaner program. These would really help out beginners in learning the sky with the Loaner scopes. Proper usage instructions will be given to the users and the Club would really appreciate your donation.

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Events Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
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<tr>
<td>Aug 6th, 2005 (Sat)</td>
<td>LAAS Star Party</td>
<td>Lockwood Valley</td>
</tr>
<tr>
<td>Aug 8th, 2005 (Mon, 8 pm)</td>
<td>General Meeting</td>
<td>Griffith Observatory Satellite</td>
</tr>
<tr>
<td>Aug 13th, 2005 (Sat)</td>
<td>Public Star Party</td>
<td>Griffith Observatory Satellite</td>
</tr>
<tr>
<td>Aug 13th, 2005 (Sat)</td>
<td>60” half night</td>
<td>Mt. Wilson Observatory</td>
</tr>
<tr>
<td>Sept 3rd, 2005 (Sat)</td>
<td>LAAS Star Party</td>
<td>Lockwood Valley</td>
</tr>
<tr>
<td>Sept 10th, 2005 (Sat)</td>
<td>Public Star Party</td>
<td>Griffith Observatory Satellite</td>
</tr>
<tr>
<td>Sept 12th, 2005 (Mon, 8 pm)</td>
<td>General Meeting</td>
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</tr>
</tbody>
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Membership Annual Dues:
- Youth $20.00
- Regular (18-65) $35.00
- Senior Citizen (65 and up) $20.00
- Senior Family $30.00
- Family $50.00
- Group or Club $50.00
- Life $500.00

Additional fees:
- Charter Star member $30.00
- Star member, with pad $70.00
- Star member, no pad $60.00

(Hardship fees are available upon request.)

Handy Phone List

LAAS Home Page: http://www.laas.org
LAAS Bulletin Online: http://www.laas.org/bulletin.html

Volunteers:
- Library .............................................Mary Brown nwwrgz@yahoo.com
- Outreach ...........................................TheGalileoGuy TheGalileoGuy@aol.com
  & Don DeGregori Don1mh@earthlink.net
  Outreach@laas.org
- Loaner Scopes .................................Dave Sovereign (626) 794-0646
- Messier Program ...............................Norm Vargas (626) 288-4397
- New Members ....................................TBA
- Speakers Bureau .........................Virginia Strogen laas1926@hotmail.com
- Youth Liaison .................................Leah Hotz (626) 284-1779
- LAAS Bulletin Editor ...................David Nakamoto david.nakamoto@verizon.net
- Senior Bulletin Editors ........ Peter De Hoff & Minghua Nie laas_editor@yahoo.com
- Contributing Editors: Mary Brown  nwrgz@yahoo.com

LAAS Officers:
- President ............................................David Sovereign (626) 794-0646
- Vice President ...............................Peter De Hoff laas_editor@yahoo.com
- Treasurer .....................................Jim Hunter laas_editor@yahoo.com
- Secretary ............................................Penny Hunter (323) 664-9781
- Recording Secretary ..............PJ Goldfinger (323) 953-6869

LAAS Home Page: http://www.laas.org
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Volume 79, issue 8
Spitzer and the Whirlpool

By Tim Thompson

One of the many rewards reaped from the Spitzer Space Telescope is its ability to provide new views of old friends. The Whirlpool Galaxy, also known as M51, the 51st entry in Charles Messier’s list of things that bothered him, is a well known object to all astronomers, amateur and professional alike. Figure 1 shows M51 in a familiar view from Kitt Peak National Observatory, as well as in an unfamiliar view from Spitzer. The ability of Spitzer to see into the infrared, invisible to our eyes, reveals unexpected results.

Since the infrared wavelengths visible to Spitzer are invisible to us, they are color coded into the 4-color image seen here. The image comes from the

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