Volume 1, Issue 1 January, 2007

Central Arkansas Astronomical Society

The Observer

Thor's Helmet in Canis Major, details on page 2

Inside this issue:

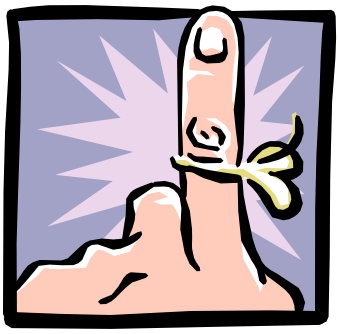
Welcome to the Reintroduction of the C.A.A.S Monthly Newsletter—The Observer

After several years on vacation, The Observer is tan and fit and ready to go again.

Each month we will bring you, the reader, news about C.A.A.S. and her members, space exploration, astrophotography, tips and techniques, and anything else we think you would be interested in.

Each month we will include articles on different topics from different people but we will also include a continuing standard set of articles such a monthly sky chart and calendar of events, meeting minutes, and a Picture of the Month from a C.A.A.S. member.

CAAS Membership Dues for 2007 are Due



Types of Membership

- **Student and First Year Membership**- $20.00 annually. Student and first year members have all the privileges of regular members, including a subscription to *The Reflector* and use of the C.A.A.S. facility.
- **Regular Membership** - $50.00 annually. Regular members receive a subscription to *The Reflector* and use of the C.A.A.S. facility.
- **Sustaining Membership** - $100.00 annually. Sustaining members help the society provide additional resources to its members. Sustaining members receive a subscription to *The Reflector* and use of the C.A.A.S. facility.

Dues should be sent or given to Treasurer Pat Morris.

The Observer Needs You!

This newsletter needs your help. It won't survive unless people like you send us stories and pictures and other content. You don't have to commit to a permanent position or obligation but think about what you would like to see and suggest an article or what you think others would like to see and write it. We want stories on telescope and other equipment making, reviews, imaging, visual, observing sessions, you name and I do mean you.

Constellation Hunter

The Astronomical League offers observing programs in most areas to hone your observing skills and give you objectives in your journey into Astronomy. One of the newer introductory courses is Constellation Hunter. This is one that requires no equipment other than a red light and star atlas, planisphere, or planetarium program for your computer (for free ones go to **http://freeware.intrastar.net/planetarium.htm**). Even though it is an introductory course it offers a challenge to even the most seasoned amateur. Which of us have ever traced out the delicate patterns of Aquarius, Pisces, Leo Minor, Lynx and many other faint constellations that the ancients saw? Have you ever noticed the large shield of Orion or the kids in Auriga?

Continued on page 3.

On the Cover—Thor's Helmet

NGC 2359 and NGC 2361, in Canis Major by Don Lewis.

Optics: Takahashi FS-102 @ f8 Date: 1/3/2006 Time: 07:27 UT. Exposure: 3 images x 600 seconds each exposure, RGB and 2 images x 600 seconds Luminance. Resolution: 1600x1200 cropped to 1532x1154 and this page about 800x600. Guiding: SBIG ST-2000xm (TC237 guider). Acquisition: SBIG ST-2000XM camera and CFW8-A (Custom Scientific) filter wheel

Software: SBIG CCDOPS version 5.40 build 6NT.

notes: Autodark added to each image. Images added in CCDOPS. Luminance added, levels and curves in PaintShop Pro v6.

Constellation Hunter (continued from page 2)

To start go to the link: **http://www.astroleague.org/al/obsclubs/consthunt/const.html** from which you can review the requirements and print out the observing checklist for the Northern Constellations. Start a notebook with the checklist and blank pages for your constellation sketches. Start with some bright constellations that you are familiar with – Orion or Taurus would be good choices this time of year. Review where the boundaries are and go out and sketch it. Now using your Atlas fill in the brighter star names and any other information you want to add.

It will take some time to complete because not all constellations are visible every night. You also may have to go to a dark site for some of the dimmer constellations. Once complete you can get a nice pin and certificate. You must be a member of the Astronomical League. If you belong to CAAS you belong to the AL and are entitled to its benefits.

Minutes from the Last Meeting

The 2006 CAAS Annual Meeting was held at the home of John and Carol Reed. As this was simply an excuse to have a season related potluck, we were not sticklers for parliamentary rules. Perhaps 25 members and family were in attendance.

The major order of business was the election of officers and board members. The election results are as follows:

- President: Rocky Togni
- Vice President: Don Ferren
- Treasurer: Pat Morris
- Secretary: Stacy Edwards
- Favorite Food Network Host: Rachael Ray
- Immediate Past President: Stacy Edwards
- Board Member: Carl Freyaldenhoven
- Board Member: John Reed
- Board Member: Don Lewis
- Board Member: Jim Dixon

After the elections, Pat gave the treasurer's report.

Stacy has scheduled a work party for the afternoon of the next regular meeting weather permitting. The work to be done includes the perennial fighting back of the forest and also the installation of a security door in the front building to isolate the equipment storage area from the public access area. The work party is to start around noon on Saturday, January 13th. Be sure to confirm the work party before heading out.

Finally, I'd like to wish David Reynolds good luck in his move to Boston. David has been an active member of CAAS for a long time and we will miss him.

Submitted by your departing secretary, Jim Dixon.

Martian Devils by Dr. Tony Phillips

Admit it. Whenever you see a new picture of Mars beamed back by Spirit or Opportunity, you scan the rocks to check for things peeking out of the shadows. A pair of quivering green antennas, perhaps, or a little furry creature crouched on five legs…? Looking for Martians is such a guilty pleasure.

Well, you can imagine the thrill in 2004 when scientists were checking some of those pictures and they *did* see something leap out. It skittered across the rocky floor of Gusev Crater and quickly disappeared. But it wasn't a Martian; Spirit had photographed a dust devil!

Dust devils are tornadoes of dust. On a planet like Mars which is literally covered with dust, and where it never rains, dust devils are an important form of weather. Some Martian dust devils grow almost as tall as Mt. Everest, and researchers suspect they're crackling with static electricity—a form of "Martian lightning."

NASA is keen to learn more. How strong are the winds? Do dust devils carry a charge? When does "devil season" begin—and end? Astronauts are going to want to know the answers before they set foot on the red planet.

The problem is, these dusty twisters can be devilishly difficult to catch. Most images of Martian dust devils have been taken by accident, while the rovers were looking for other things. This catch-as-catch-can approach limits what researchers can learn.

No more! The two rovers have just gotten a boost of artificial intelligence to help them recognize and photograph dust devils. It comes in the form of new software, uploaded in July and activated in September 2006.

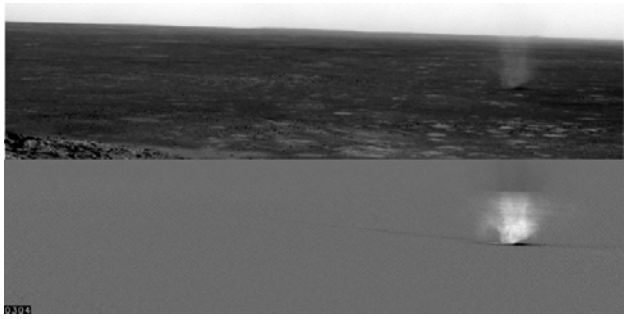
"This software is based on techniques developed and tested as part of the NASA New Millennium Program's Space Technology 6 project. Testing was done in Earth orbit onboard the EO-1 (Earth Observing-1) satellite," says Steve Chien, supervisor of JPL's Artificial Intelligence Group. Scientists using EO-1 data were especially interested in dynamic events such as volcanoes erupting or sea ice breaking apart. So Chien and colleagues programmed the satellite to notice change. It worked beautifully: "We measured a 100-fold increase in science results for transient events."

Now that the techniques have been tested in Earth orbit, they are ready to help Spirit and Opportunity catch dust devils—or anything else that moves—on Mars.

"If we saw Martians, that would be great," laughs Chien. Even scientists have their guilty pleasures.

Find out more about the Space Technology 6 "Autonomous Sciencecraft" technology experiment at nmp.nasa.gov/st6/TECHNOLOGY/sciencecraft_tech.html, and the use of the technology on the Mars Rovers at nmp.nasa.gov/TECHNOLOGY/infusion.html. Kids can visit spaceplace.nasa.gov/en/kids/nmp_action.shtml and do a New Millennium Program-like test at home to see if a familiar material would work well in space

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



Caption: *The top half of this image is part of a series of images of a passing dust devil on Mars caught by Spirit. In the bottom half, the image has been filtered to remove everything that did not change from one image to the other. Notice the faint track left by the dust devil. Credit NASA/JPL/Mark T. Lemmon, Univ. of Arizona Lunar and Planetary Laboratory.*

Next Meeting

The January CAAS meeting will be at the club property near Little Italy on Saturday, January 13 at 7:00. Don Lewis will be presenting this months program on "General Imaging "What it takes"" Short Version.

This will be a work day so anyone who can - come out early (12:00 pm or after). A list of what we need to work on will be put out on the email list at least a few days before so we can bring the right tools. We will have our usual (delicious) pot luck starting 5:30-6:00 pm.

January 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3 Full Moon	4	5	6
7	8	9	10	11 Last Qtr Moon	12	13 CAAS Meeting
14	15	16	17	18 New Moon	19	20
21	22	23	24	25 First Qtr Moon	26	27
28	29	30	31			

Schedule of Events

- 3 Full Moon.
- 10 Moon is at apogee.
- 11 Last Quarter Moon.
- 13 Work Party weather permitting from 12 till ?
- 13 CAAS Regular Meeting at River Ridge Observatory at 7 PM.
- 18 New Moon.
- 22 Moon at perigee.
- 25 First Quarter Moon.

Website: www.caasastro.org
E-mail: info@caasastro.org

The Central Arkansas Astronomical Society strives to connect the people of Central Arkansas with their universe by promoting amateur activities for its members and by providing information and programs to the general public. Membership offers monthly programs, special outings, and the opportunity to share this hobby with others. No one is under qualified for membership. Experience levels range from novice sky watchers to skilled observers. C.A.A.S. is a proud member of the Astronomical League and the Night Sky Network.

The Sky in mid January 2007 at 8 PM CST from 35° North latitude