Longmont Astronomy Society Newsletter
February 2008
(pic by Brian Kimball)
From the President:
The LAS banquet in January was a great success. Special thanks to Bill Possel and Dr. Bob Stencel for two great presentations. Thank you to Bob Spohn for all his work making arrangements for the banquet. Thanks also to Julie Carmen for making the table cloths. Successful events don’t just happen; they require work in advance from a number of people.

Don’t miss the lunar eclipse this Wednesday, February 20th. In Longmont we’ll setup near the shelter by the duck pond at the southern part of Sandstone Ranch Park, 2525 E Highway 119. See the LAS website for map and directions. Thanks to Bill Paul, supervisor for the Sandstone Ranch from City Longmont for suggesting the site. He’s also arranging to have restrooms open for us.

We’ll also be at Community Park, 955 Bella Vista Drive in Louisville. We’ll set just east of the Pavilion. Restrooms will be available as well as power. Thanks to Julie Kovash, Louisville Culture Council, for making the arrangements with the City of Louisville parks department, having an event poster designed, and for advertising on the Council’s newsletter.

Volunteer are needed for both events! Contact Gary Garzone or Vern Raben if you can arrange to spend a few hours. Come out anyway and enjoy the eclipse, even if you don’t have a scope.

Volunteers are also needed for the Carrie Martin Science Fair in Loveland on Feb 29th from 5:30 to 8:00 pm, contact Gary if you can make it that evening.

Be sure to come to the meeting next Thursday. There will be two great presentations. The first one at 7 pm will be by David Gingerich, Lockheed Martin Space Exploration Systems. He was principal flight software engineer on the Stardust and Genesis space missions and will share his experiences.

At 8 pm, Dr. John Stocke, Center for Astrophysics and Space Astronomy, will give a presentation about the Cosmic Origins Spectrograph which will be installed on the Hubble Space Telescope later this fall. See the LAS website for more information.

Speaking of which, the website has a new look. Most of the content of the old site has been moved to the new one; we should get the rest moved shortly. Some new content has been added such as information on upcoming star parties. Past newsletters are now online as well. Also, members can have their own image galleries and file observing reports. Thanks to Dieter Kurtz and Steve Albers for their help in making this happen.
Fiske Planetarium:
7:30pm Friday, Feb. 22: "Spirits from the Sky" starshow -- Learn Pawnee cosmology from tribal elders themselves.
7:30pm February 28 & 29 -- "Seven Ways a Black Hole Can Kill You" live talk: Join celebrated author Dr. Phil Plait for a leap (on Leap Day) into nature's most gravitationally massive objects.
7:30pm March 4 -- Forum Astronomique -- Enjoy scintillating conversation and light refreshments as you discuss recent discoveries in astronomy! Bring your own images (on CD or thumbdrive) to project on the planetarium dome!

Thursday, 3.6.08, at 7:30 pm
Enjoy a tour of the night sky with Elin Deeb, then explore the wonder and beauty of galaxies.
7:30pm March 13 & 14 -- "Back to the Moon, Back to the Future" live talk: Investigate the science that can be done on the far side of the moon with space policy expert Dr. Jack Burns and see why it's worth the effort!
**Eclipse Viewing on February 20:**

**Louisville Report:**
We had a good turn out here in Louisville, around 90, maybe more, people showed up. Great enthusiastic crowd, lots of kids who asked many questions. Unfortunately we were mostly clouded over for most of the eclipse. Just some glimpses of the lunar disk now and then until about 9. It did clear some after 9 so a few got a good view of the bright limb re-appearing. Mike showed them Saturn too. Special thanks to Glen Frank, Mike Hotka, and Shawn Curry for bringing there scopes out on such a marginal night. Great support from Julie Kovash and the Louisville Cultural Council who sponsored the event, coordinated with the City, made posters, and got the word out to everyone in their group -- they even brought hot chocolate and coffee for everyone! Vern

**Boulder Report:**
Congratulations to LAS volunteers! What a way to reach out and keep up the spirit! Marc and I were at the Boulder site, and we were able to talk about involvement in astronomy clubs. Many newcomers, mainly women, were open with us on how they felt like they wouldn't fit in at an astronomy club meeting because they don't know much about astronomy or science. However, after further discussion, it was clear that they had enthusiastic interest in dark sky objects and were thrilled to look through scopes. It will be great they take a look at our web sites and are brave to attend a meeting or two. We had approximately 130 to 150 visitors to the Sommers-Bausch Observatory. LAS, DAS, and BASS were discussed often as were their web sites.

Steve Hartung or Keith Gleason may post a better report later. Marc and I took no pictures last night, but the ones that have been posted here are amazing with the cover of clouds we had.

One of our volunteers, Will Thornburg (sp?), had some clever teaching tools with him. He brought a large planisphere, and put his headlight on it and showed visitors how to use a planisphere. In addition he used the color constellation booklet that has the film that can be removed, showing a picture of the star constellation naturally in the sky, and then placing the traced drawing over the constellation to better see the form. These were two great tools that we will remember the next time we are doing education outreach. Definitely nice to have as a back up when there isn't a lot to see. Well done Will!

Julie

**Longmont Report:**
I was glad to see I was not the only optimist in the club. I told you guys not to listen to the weather man. We got several objects viewed at Sandstone Ranch. Clouds moved in and out, We jumped around the sky the whole time. First Rigel, then Orion Nebula, then Moon in clouds, then Saturn opened up, then back to moon, was not as bad as it looked. I even took pictures, here are a few.

We had over 80 people there probably closer to 100, thru the night, some came and went earlier. (Editor: at one time after 8, I counted 63 and probably missed a few) I talked with newspaper guy to do write up in Longmont's Times Call. Sandstone Ranch is a great spot.
for viewing, if no baseball lights on, it could be our new local viewing spot for public events, big enough area and darker skies than right in town.
Thanks Bill Possel, Larry Bloom, Birch, Bob Spohn, Nancy Crispe for directing traffic, and myself for keeping the crowds entertained. I was amazed to see so many kids and parents, it was like we were doing a school night. We also got John Minor, FRCC astronomy teacher's classes and himself to visit. We did manage to pull off quite the night after all. Thanks Volunteers who never say die. Lots of people asking about the next public star party. I had lots of people thanking us, kids loved it it too, Saturn is always the one that gets them hooked. later, Gary
Anyone who wants to give the new site a ‘test’, enter Sandstone Ranch (on 119 east of County Line Rd) at the east entrance next to the Chevy dealer. Go all the way up the hill to the end. Nice paved parking lot with spaces for 40-50 cars, no lights in the lot, and dark sky to the East. When the softball season starts, seeing will probably go downhill with another dozen light clusters down the hill, we’ll have to wait to verify that.

In the sky this month:
Meteor Showers
Planets:
Mercury: greatest elongation on March 3rd (27 degrees) as a morning star. Uranus and Neptune are nearby the end of March if you want a telescope challenge. Venus: fading fast as it gains on the Earth and goes to the opposite side of the Sun. Venus and Mercury are doing a little dance in the morning sky from now thru March 2nd (within 2 degrees). Only 1 degree apart on Feb 27th for the best viewing. Mars: High in the south at nightfall, it’s starting to fade. Around March 10th, it within 2 degrees of Messier 35 and should be a fine view at low power. Jupiter: improving in the morning low in the southeast. Saturn: Opposition is February 24th, in retrograde motion. Rings will continue to open slightly thru April. It was a fine sight next to the eclipsed Moon, and we introduced a whole bunch of kids to their first Saturn view last night. (That’s something everyone always remembers)
Interesting Stars/Galaxies: Sky & T recommends M36, M37, and M38 in Aurigae, plus M41 to the south of Siruis.
In early March the crescent Moon passes Jupiter on the 2nd and 3rd, and parks itself next to Venus and Mercury on the 5th. During the afternoon of the 5th, the thin lunar crescent occults (hides) Venus for viewers in central Canada and most of the United States. It’s a daytime event, so you’ll need a telescope to see it. But be very careful not to point your telescope at the Sun nearby, or you may be blinded for life.

**Club Calendar:**
Messier marathon time coming up – plan the attack at www.messiermarathon.com and www.seds.org/messier
Feb 21: monthly meeting at FRCC Double Bonus night: First Speaker is Dave Gingerich
A nice bio. for Mr Gingerich can be seen at: http://stardust.jpl.nasa.gov/news/bio_gingerich.html
Then Dr. John Stocke, Center for Astrophysics and Space Astronomy, will give a presentation about the Cosmic Origins Spectrograph which will be installed on the Hubble Space Telescope later this fall as the second speaker.

Feb 25 – Mar 8: Globe at Night project. Visit www.globe.gov/GaN/index.html for the directions, then go outside and count how many stars you can see inside the ‘square’ of Orion to report with your naked eye.

Mar 20: monthly meeting at FRCC – design of the QuickBird Telescope
Mar 29: Lights Out America (www.lightsoutamerica.org) Encourage everyone in America to turn out their lights for an hour on Saturday March 29th, then grab your telescope and head for the back yard!

**In the News:**
Sun-like star flips its mag field:
An international group of astronomers that includes the University of Hawaii's Evgenya Shkolnik reported today that they have discovered that the Sun-like star tau Bootis flipped its magnetic field from north to south sometime during the last year.

It has been known for many years that the Sun's magnetic field changes its direction every 11 years, but this is the first time that such a change has been observed in another star. The team of astronomers, who made use of Canada-France-Hawaii Telescope atop Mauna Kea, are now closely monitoring tau Bootis to see how long it will be before the magnetic field reverses again.

Magnetic field reversals on the Sun are closely linked to the varying number of sunspots seen on the Sun's surface. The last "solar minimum," the time when number of sunspots was the lowest and the magnetic flip occurred, was in 2007. The first sunspot of the new cycle appeared just last month.

The magnetic cycle of the Sun impacts the Earth's climate and is believed to have caused the little ice age in the seventeen century. The Earth's magnetic field also flips, although much less frequently and more erratically.
The international team led by Jean-Francois Donati and Claire Moutou of France caught tau Bootis in the process of flipping its magnetic field while they were mapping the magnetic fields of stars.

What makes tau Bootis even more interesting is that it harbors a giant planet orbiting very close to the surface of the star. The planet is actually so close (only one twentieth the distance between the Sun and Earth) and so massive (about 6.5 times the size of Jupiter) that it succeeded in forcing the surface of the star to co-rotate with the planet's orbital motion through tidal torques. This is the same effect that causes the moon to co-rotate around Earth so that we see only one side of the moon.

Since the astronomers managed to catch tau Bootis in this state of magnetic flipping during just 2 years of observations, it is likely that this event is much more frequent on tau Bootis than it is on the Sun. It is possible that the giant planet that has already managed to speed up the surface of tau Bootis is also spinning up the magnetic engine of its host star. The astronomers will keep their telescopes focused on tau Bootis in coming years to make sure they catch the star's next magnetic turnover. Their goal is a better understanding of how magnetic engines work in stars, including our Sun.

Slightly hotter and 20 percent more massive than the Sun, tau Bootis is fairly bright and visible with the naked eye and located only 51 light-years away from us. It is currently rises about midnight and is visible for most of the night near the bright star Arcturus in the constellation Bootis in the northeast part of the sky.

**Upcoming Space Missions:**

NASA is getting ready to launch GLAST to look at the gamma ray bursts in the Universe. More details at: [http://science.nasa.gov/headlines/y2008/24jan_glast.htm?list937934](http://science.nasa.gov/headlines/y2008/24jan_glast.htm?list937934) They release as much energy as the entire Universe (!), but only last a few seconds at most, so the satellite has to be pretty quick on the trigger. Nothing like a couple merging black holes to really pump out the ergs….(one possible source, along with merging neutron stars, etc)

[http://glast.sonoma.edu/glastname/](http://glast.sonoma.edu/glastname/) NASA announced Thursday that members of the general public from around the world will have a chance to suggest a new name for the cutting edge Gamma-ray Large Area Space Telescope, otherwise known as GLAST, observatory before it launches in mid-2008. The satellite will observe some of the most powerful forces known in the universe. How about gLAST? Or FastSat?

**Internet Resources:**

Messenger stuff
[http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=1973-085A](http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=1973-085A) website for Mariner 10, the only previous mission to Mercury. Technology has improved since the early seventies, and maybe the camera, too?
Browse the pictures at [http://messenger.jhuapl.edu/](http://messenger.jhuapl.edu/) (just hit the ‘gallery’ button on the left) for pictures from the first Messenger flyby. Next flyby will be in October. Since this one went over an area not imaged by Mariner 10, knowledge is advancing.

*Astronomy magazine* – podcasts this month include a discussion of why Astronomer Brad Hansen thinks there’s TWO big black holes at the center of the Milky Way. Wonder if the 3 million solar masses would be split in two?

**Space Missions:**

**A Bird's-Eye View of the Sun**

Just as the Sun is revving up for another run toward solar maximum, a "veteran" spacecraft is passing over our star's north pole.

![Ulysses spacecraft](image)

The Ulysses spacecraft, launched in 1990, is making its third (and likely final) pass over the Sun's polar regions. Click on the image for a larger view.

*Source: European Space Agency*

From a maximum solar latitude of 80° (which it reached this week) and at a safe distance of some 200 million miles, Ulysses will try to discern differences between the Sun's north and south poles. It swept over the southern region about this time last year. This solar probe will also determine what's changed, if anything, since its last north-polar pass seven years ago.

Built by the European Space Agency, with scientific collaboration from NASA, Ulysses rocketed *away* from the Sun, toward Jupiter, in October 1990. After leaving Earth, the craft made a close flyby of Jupiter in February 1992 that redirected it back toward the Sun on a new, highly inclined, 6.2-year orbit. Its first polar sweep came in 1994–95, when the Sun was near the minimum of its 11-year activity cycle, and again in 2000–01, during the most recent solar maximum.

You'd think that that Sun's top and bottom would have identical characteristics, but not so. During its mid-1990s pass, Ulysses found that the coronal gas over the northern pole was roughly 80,000°F cooler than the southern one. At that time Ulysses also discovered
that the Sun's magnetic equator was 10° south of its rotational equator.

ESA's website has more details about what's expected during Ulysses's third and likely final mad dash under and over the Sun. While you are at this website, click on ‘multimedia’ on the left and have some fun with the movies!

**Humor Dept:**

Those not familiar with astronomy terms, may interpret the below statements as being naughty or suggestive. Shame on you! Astronomers are never naughty...or are they?

Things Astronomers Say that Sound Dirty, but Really Aren't . . .

1) "Exactly how long is your tube?"
2) "I need a friend to help me grind this thing..."
3) "I want to get in a little naked-eye action."
4) "I want to look at Uranus?"
5) "You need a bigger unit so you can go deeper..."
6) "What's the best way to mount a Short-Tube?"
7) Reasons why smaller apertures are better...
8) Are you going to shoot the Virgin tonight?
9) She looked in awe as it rose higher and higher
10) "Mine is bigger than yours"
11) "Who says size doesn't matter?"
12) "We do it in the dark"
13) "We sometimes do it all night long"
14) EYEGASMS!
15) "I use shower caps over the end of my 6 and 10 inch..., you will need the extra large size for your 12.5 inch."
16) "Do you have your angle of the dangle correct?"

17) "I enjoy viewing heavenly bodies through my telescope...especially during showers"

18) "I love going deep ...."

9) "The deeper the better"

20) "Bigger almost always performs better"

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