



#### Unusual Cratering Pattern on Dione

The trailing hemisphere has more craters than the leading one. Scientists think that one of the later impacts rotated the moon into a reverse position.

Image from the Cassini mission

**Longmont Astronomy Society Newsletter**  
**August 2007**

**From the President:**  
**Coming....**

**In the sky this month:**

Meteor Showers:

On the morning of September 1<sup>st</sup>, the Aurigids are predicted to fly. The Aurigids are the leftovers from Comet Kiess's pass in 82 BC. The Aurigids last were seen in 1935, 1986, and 1994. Needless to say, this might never happen.... But if you're an optimist, go look high in the northeast on September 1<sup>st</sup> at 5:37 AM MDT, +/- 20 minutes. ZHR is predicted to be 20 to a few hundred, depending on how much the predictor wants to see it. [http://science.nasa.gov/headlines/y2007/08aug\\_aurigids.htm?list937934](http://science.nasa.gov/headlines/y2007/08aug_aurigids.htm?list937934) for details

Visible Planets:

Mercury: deep in the glow, low and hard to see. If you really want to watch, Mercury will approach Spica (5 arcminutes) on Sept 22<sup>nd</sup>.

Venus: low in the east at dawn, but by the end of September it's rising 3.5 hours before sunrise and improves to a magnitude of -4.8.

Mars: rises in late evening, brightens to mag 0.0 by the end of September. Passes the Crab on Sept 16/17 (1 degree).

Jupiter: magnitude -2.1 in the southwest at sunset, is sinking fast. At the end of September, it will set at 10 PM, so take a look while you can.

Saturn: barely emerging before sunrise by the end of September, you're going to have to wait awhile to see this again.

Asteroids:

Vesta will pass Jupiter (24 arcminutes to the north) on the 29<sup>th</sup> of August, magnitude 7.2, so you need a small scope.

Interesting Stars/Galaxies

**Club Calendar:**

**Sep:**           New Moon: 15th – Pawnee  
                  Meeting: 20th– Topics: TBA

**Little Thompson Observatory:**

Our star night this week (Friday, August 17) will feature the pre screening of a new PBS movie titled "Seeing in the Dark" by Timothy Ferris. We will be doing this in the High School Auditorium next to the LTO. We have arranged for a 1080p projector and HDCam tape, so the quality of the movie will be stunning on a 26 x 14 foot screen.

**Fiske Planetarium:**

Fiske Planetarium will take a two-week hiatus from public evening shows and Friday night laser shows during mid-August to refurbish equipment and conduct routine maintenance in our theater. During the day, you are welcome to enjoy Science on a Sphere and hands-on exhibits in our

lobby -- admission is always FREE!

+ Colorado Skies: Lunar Eclipse (August 30, 2007, 7:30 pm)

<http://fiske.colorado.edu/calendar/moreinfo.php?id=152>

Enjoy this guide to the night sky under the Fiske Planetarium dome, presented by Elin Deeb. Come for a current look at Colorado's skies with a special focus on the lunar eclipse.

+ Mars Exploration Rovers Update (September 6 & 7, 2007, 7:30 pm)

<http://fiske.colorado.edu/calendar/moreinfo.php?id=153>

with Dr. Bill Farrand. Spirit and Opportunity arrived on Mars for a 3-month mission in 2004 - 3 years later they are still going strong!

+ Colorado Skies: Celestial Mechanics (September 13, 2007, 7:30 pm)

<http://fiske.colorado.edu/calendar/moreinfo.php?id=79>

Enjoy this guide to the night sky under the Fiske Planetarium dome, presented by Matt Benjamin. Come for a current look at Colorado's skies with a special focus on navigation and Earth's place in space using what you can see with your naked eye.

+ Colorado Skies: Autumn Skies (September 20, 2007, 7:30 pm)

<http://fiske.colorado.edu/calendar/moreinfo.php?id=141>

Enjoy this guide to the night sky under the Fiske Planetarium dome, presented by Elin Deeb. Come for a current look at Colorado's skies with a special focus on autumn observing.

You may download Fiske's FALL 2007 schedule from our website at <http://fiske.colorado.edu/> -- it is directly under the Astronomy Picture of the Day on the right side of the page.

### **Internet Resources:**

Internet resources: At the July meeting, I mentioned that there is a "movie" showing the motions around the black hole at the center of the Milky Way. Here's the link

<http://www.eso.org/public/outreach/press-rel/pr-2002/video/vid-02-02.mpg>

Given the distance and the velocity, you can calculate the mass of the black hole at about 3 million Solar masses. (There are bigger ones out there....)

Meteor shower predictions: The Aurigid prediction for September 1 made me curious, so I looked up some material. Try

[http://www.space.com/spacewatch/060817\\_meteor\\_shower.html](http://www.space.com/spacewatch/060817_meteor_shower.html) for the Aurigids, and

<http://www.metaresearch.org/solar%20system/perseid/perseids.asp> is a writeup about predicting the Perseids, with graphs and all. Note: I haven't decided if "metaresearch" is a legitimate organization - a few things they say are suspect....

Got that fancy new iPod? Want to watch some podcasts from the Chandra telescope?

Go to <http://chandra.harvard.edu/resources/podcasts/> and see how black holes form, etc.

This site is interesting, and very big. [www.scitalks.com](http://www.scitalks.com) then search for your selected topic. Astronomy, for instance, will get you talks on Dark Energy, Art and the Hubble, the asteroid threat in the next 100,000 years (betcha we get hit...), and a hundred or so others. Each one can be an hour - maybe download them as podcasts, and listen to them while observing?

Saturn's 60<sup>th</sup> moon has been discovered in images from Cassini – you can watch the movie (really a series of still pictures) at [http://saturn.jpl.nasa.gov/multimedia/videos/movies/PIA08369\\_full\\_movie.mov](http://saturn.jpl.nasa.gov/multimedia/videos/movies/PIA08369_full_movie.mov) , and for your homework: Memorize the names of all 60!

### **This month's field trip:**

Goddard Space Flight Center is in Greenbelt, Maryland – one of the suburbs of Washington. Outside the small visitor center is the usual stock of a half dozen left over rocket bodies from the missile/space program (nothing unique or very big). Inside is a couple of vaguely interesting posters and blowups of satellite pictures – Goddard's main interest is in Earth photography projects. Most of their jobs have been taken over by other NASA centers and universities, and it shows. It does have the best educational resource center of all that I've visited. One of my ex-students is a researcher there, and visiting her was the main object of my trip.

### **TV Tips:**

“Seeing in the Dark” by Timothy Ferris. September 19<sup>th</sup> at 8 PM EDT, 6PM MDT on PBS. A lot of visiting with the technology crowd at Stellafane. Companion website is [www.pbs.org/seeinginthedark](http://www.pbs.org/seeinginthedark) After seeing the program, go on Amazon and buy a few of Timothy Ferris's books. “Coming of Age in the Milky Way” is probably his best, a history of astronomy.

Miss the showings of “The Elegant Universe” on PBS? Saw it, want to see it again? If you have a fast internet connection, all the episodes are online at <http://www.pbs.org/wgbh/nova/elegant/program.html> - at last, you'll be able to discuss string theory!! Or why there is 11 dimensions!!

### **Upcoming Space Missions:**

**2007 August 3 - [Phoenix Scout Mission](#)** - Launch of Mars Lander – on it's way. Check out the mission pages at [http://www.nasa.gov/mission\\_pages/phoenix/main/](http://www.nasa.gov/mission_pages/phoenix/main/) The Phoenix lander is destined for the polar region of Mars, where it will scoop up some “soil” and look for signs of water and life. In a related story, scientists have gotten bacteria that were frozen in ice in Antarctica for 100,000+ years going again.... Try <http://www.resa.net/nasa/antarctica.htm> for some details.

2007 August 8 – STS 118/Endeavour Mission is to install the S5 truss segment, repair another gyroscope, and resupply/remove about 5000 pounds. The shuttle will plug into the power supply of the ISS to stay longer. You can watch the mission 24/7 at <http://www.nasa.gov/multimedia/nasatv/> although you usually won't be able to figure out what's going on! NASA is usually pretty good at posting video highlights on the web – try <http://spaceflight.nasa.gov/gallery/index.html> . Currently, the shuttle is in orbit attached to the ISS, which kicks up the visual magnitude by 1 or so from Vern's numbers (The shuttle is generally oriented with its white top facing us, which helps). When the

shuttle detaches (scheduled for August 20), if you're lucky we can see both objects in the same orbit on the 20<sup>th</sup> and 21<sup>st</sup>. The shuttle has a couple dings from foam during takeoff (one pretty serious, all the way through one insulating tile) and we'll have to watch for later details on that.

**2007 September** - [SELENE](#) - Launch of ISAS Orbiter Mission to the Moon

**2007 September** - [Dawn](#) - Launch of NASA mission to asteroids Ceres and Vesta

**2007 September** - [Chandrayaan 1](#) - Launch of ISRO (India) Lunar Orbiter

**2007 September** - [Chang'e 1](#) - Launch of Chinese Lunar Orbiter

**Perseid report:** up at 3:30 AM on Mon Aug 13 for a Perseid solo party. Saw an average of 1/minute, and that's from my backyard in Longmont, with streetlights and my neighbor's stupid mercury yardlight. Hazy to the south, which reflected lots of streetlight radiation from Denver/Boulder. Mostly grazers passing overhead. My funniest Perseid report: in about 1985, my son and I traveled 200 miles to a provincial park in Canada on the shore of Lake Huron. Set the alarm for 3:00 to watch at the peak. Woke up, and what did we hear? Foghorns.....

### **Telescope Trivia from Vern:**

The first patent application for the invention of the telescope was filed in 1608 by spectacle maker Hans Lippershey. His patent was not approved by the Dutch government, although they employed him to make binocular versions of the telescope. Galileo Galilei obtained sketchy descriptions of the telescopic device later the same year and made several, improving the design. He demonstrated the telescope to Venetian merchants in 1609. The following year he published "Sidereus Nuncius" (Starry Messenger) where he described his observations of the Moon, stars, and the moons of Jupiter.

## Deadman Lives!

For the first time this century, my old faithful 13" and I returned to the holy ancestral LAS gazing grounds at the Deadman site, and it was indeed a religious experience.

For you newcomers and whipper-snappers out there, the Deadman site is approximately 16 miles as the road turns west of Red Feather Lakes. The fact that it is 16 miles of dirt road has been an increasing deterrent to stargazers, given the good road to Fox Park.

Two days before the trip, I received an e-mail out of the blue from former member and good gazing buddy Paul Hale, who was anxious to blow the cobwebs out of his scope as well, and so we made our plans, and I would meet him there.

I remember all the landmarks of that pretty 16 mile drive (it really is beautiful), so imagine my chagrin when things didn't look right when the pavement ended, and nothing looked familiar. Four miles down the wrong road, then backtracking, I realized that sometime in the past decade the intersection was changed, and you had to make a hard left turn to get on Deadman road! From then on, it was enjoying the familiar sights along

the way: the first couple switchbacks, the Killpecker fire area (which is recovering and growing back very nicely) with its nice vistas, the Lone Pine overlook, the Sand Creek road valley, the “Cathedral” – the only long stretch of straight road bordered by towering pines on each side, then finally the last few curves and the subtle turnoff onto road 303 and the short ride to that beautiful meadow.

I pulled up to the site in jubilant expectation of seeing more stargazers, but was met only by a family of ATV campers (who actually turned out to be pretty decent people!). Where was Paul? I selected my observing site – quite possibly the very spot I used many times before – unloaded a few things, and then went to set up camp. The tent was up by the time Paul and his friend Rod pulled up; turns out he made the same wrong turn I did, but needed a few more miles to be convinced he needed to turn around!

Well, since Deadman is just shy of 10,500 feet, it is about 25 degrees cooler than on the flats, and after you stop setting up camp and the scope, you realize how chilly you are. After shivering through a sub sandwich and coffee, it was time to put on the sweatshirt and collimate the scopes. The few clouds in the sky were leaving, and Jupiter was the first target of the night. I was so happy to be back under the stars at my favorite site, I decided to forego any thought of pursuing serious observing, and just have some fun. In addition to his 10”, Paul also brought along a nice refractor, so we were all set for the night.

The Milky Way glowed from horizon to horizon, and so many Messiers were naked-eye objects. Our neighbor’s unobtrusive little campfire was out by 10 pm, and the father and son came over to gaze for while, just before it clouded up for about an hour! They went back to their warm, cozy motor home, and the skies cleared! We spent the rest of the night staring at all of the usual suspects, with many breaks for the many bursts of meteors. It seemed like a fair amount of them were non-Persids – did it seem like that to you, too? It was a good night for pushing the power on a lot of objects, but we agreed our favorite view was the Veil nebula through the 13 with a filter – boy oh boy, was that nice. Yours truly was starting to lose it a little by about 3:30, but Paul’s encouragement kept me going. Zodiacal light was obvious by then, but we stayed up long enough to bid adieu to a satisfying evening by looking at the Orion nebula – a fitting end to a magnificent night.

This is truly a pilgrimage that deserves to be undertaken at least once a year. For you old-timers who remember: “But August is August, and Deadman is here...”

Respectfully submitted,  
Jake Views