The Pleiades (M45)
by LAS member Brian Kimball (real purty...)

Longmont Astronomy Society Newsletter
January 2010
From the President:

This past year has been a challenging one for almost everyone. The national economy has remained in severe recession; several members lost their jobs; and many of us have seen declines in our personal incomes due to work cutbacks. Looking back though it appears to me that as an organization we're still doing quite well.

LAS accomplishments for the last year:

- We had many excellent speakers for our meetings. Dave Gingerich on the Phoenix and Stardust Next missions; Dr. Bob Stencel on Epsilon Auriga; Dr. Sean Raymond on formation of terrestrial planets; Dr. Doug Beisecker on STEREO satellite discovers; Dr. Suzanne Metlay on amateur tracking of satellites, asteroids, and space debris; Alan Jeeter on astro-imaging; Bryan White on aurora photography; Dr. Ebbets on the Hubble Space Telescope; and Andrew Planck's final chapter on Earth's Moon.

- We published an excellent newsletter each and every month

- We held a workshop on enhancing images with Photoshop

- We visited Science on a Sphere and Space Weather Environment Center in Boulder

- We scheduled 11 or so local school star parties. Unfortunately most were canceled due to weather. Several were rescheduled multiple times. I believe only Longmont High School, Loma Linda, Skyline High School, and Twin Peaks Charter Academy were able to observe through scopes.

- We started scanning old newsletters and making them available on the website to preserve memories of past years astronomy adventures

Last year's disappointments:

The effort to get a dark site at Crow Valley Recreation area didn't work out. New yard lights from a nearby house in combination with lights from campers eliminated all viable locations.

Coming up this year:

The dark site project remains on this year’s "to-do" list. We're planning on having an initial planning meeting in February. We intend to take a comprehensive look at site design, site selection, funding, club charter changes, and look at starting an observatory/scope construction team.

In the sky this month:

Meteor Showers
Well the Quandratids went right on by with little notice on the 3rd-4th. Here's the entire list for the year, so get your calendar out and write them down, eh?

<table>
<thead>
<tr>
<th>Shower</th>
<th>Radiant and direction</th>
<th>Morning of maximum</th>
<th>Hourly rate</th>
<th>Parent body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadran tid*</td>
<td>Draco (NE)</td>
<td>Jan. 4</td>
<td>100</td>
<td>2003 EH₁</td>
</tr>
<tr>
<td>Lyrid</td>
<td>Lyra (E)</td>
<td>Apr. 22</td>
<td>10-20</td>
<td>Thatcher (1861 I)</td>
</tr>
<tr>
<td>Eta Aquarid *</td>
<td>Aquarius (E)</td>
<td>May 6</td>
<td>20-40</td>
<td>1P/Halley</td>
</tr>
<tr>
<td>Delta Aquarid *</td>
<td>Aquarius (S)</td>
<td>July 29</td>
<td>20</td>
<td>96P/Machholz</td>
</tr>
<tr>
<td>Perseid</td>
<td>Perseus (NE)</td>
<td>Aug. 13</td>
<td>60</td>
<td>109P/Swift-Tuttle</td>
</tr>
<tr>
<td>Orionid*</td>
<td>Orion (SE)</td>
<td>Oct. 21</td>
<td>10-15</td>
<td>1P/Halley</td>
</tr>
<tr>
<td>Leonid*</td>
<td>Leo (E)</td>
<td>Nov. 18</td>
<td>10-20</td>
<td>55P/Tempe1-Tuttle</td>
</tr>
<tr>
<td>Geminid</td>
<td>Gemini (S)</td>
<td>Dec. 14</td>
<td>100</td>
<td>Phaethon</td>
</tr>
</tbody>
</table>

- *Moonlight will wash out fainter meteors in these showers.*
Planets
Mercury: switching over to a morning star; maximum elongation on the 25th if you want to take a look.
Venus: on the far side of the Sun, visible in another month
Mars: still improving, in opposition about February 1st
Jupiter: starting to get hard to see in the western sky at sunset
Saturn: rises about midnight currently and straight south at dawn for the early rises.

Other objects:
Prometheus picture – Prometheus is one of the shepherd moons for the F ring, and its slight orbital eccentricity makes it dive into the F ring every orbit (15 hours). You can see the results – the surface has been severely sanded down. Picture taken by the Cassini mission cameras on December 26, 2009 – fresh out of the box!
Club Calendar:
The 2010 Longmont Astronomical Society annual banquet will be on Saturday, January 23rd at the IHOP restaurant, 2040 Ken Pratt Boulevard, Longmont, CO. We have a room reserved from 5:30 pm till close. Dinner will be served at 6:00 pm.

Price per person is $15 per person which includes a beverage. IHOP does not have a liquor license, so they cannot serve alcohol. The prez will bring the "traditional" LAS cake for desert as well.

We need to have everyone's order for a final count by Thursday evening, January 21st. We've arranged this for a fixed price with the IHOP, so sorry no cancellations or additions after that date.
You may pay online at [http://www.longmontastro.org](http://www.longmontastro.org) with Visa, Master Card, American Express, Discover Card or Pay Pal at the LAS website. (First time we've done this, let me know if you have any problems).

You may also send a check to:

LAS  
PO Box 806  
Longmont, CO 80502-0806

If you send a check, be sure to send me an email with your entre selections as well to make sure we get your reservation in time.

**Internet Resources:**  
[http://www.nasa.gov/mp4/415549main_Pulsar2_HD_LARGE_QT_Video_1.mp4](http://www.nasa.gov/mp4/415549main_Pulsar2_HD_LARGE_QT_Video_1.mp4)  
The Fermi satellite has found 17 new millisecond pulsars to add to the 60 already discovered, so you might want to watch this dandy NASA animation of how the pulsars spin up from added mass.

Sky & Telescope has published an index to ALL the articles it's published since issue #1 in 1941. You can download the index at [http://www.skyandtelescope.com/community/skyblog/newsblog/80282957.html](http://www.skyandtelescope.com/community/skyblog/newsblog/80282957.html) and finally locate that elusive article on string theory that you've been looking for.... It's a 4 Meg .csv file so anything will read it.

**Epsilon Aurigae: Big Step in Solving a Stellar Mystery**

Astronomers today announced a significant advance in solving the long mystery of Epsilon Aurigae, an enigmatic star that, every 27.1 years, loses half its light for almost two years. The star has mystified astronomers for nearly two centuries despite the fact that it’s easily visible to the naked eye and has been intensively observed by professional and amateur astronomers for decades.


**Space Missions:**

Spirit might be on the ropes, after 6 years of scientific discovery. Details at [http://science.nasa.gov/headlines/y2009/31dec_uncertainfuture.htm?list937934](http://science.nasa.gov/headlines/y2009/31dec_uncertainfuture.htm?list937934)

NASA’s Kepler Space Telescope Discovers its First Five Exoplanets  
Announced on 01.04.10, as promised in our presentation last summer. More to come.... (lots more) – these are the “hot Jupiters” and easy to find. Kepler’s high sensitivity to both small and large planets enabled the discovery of the exoplanets, named Kepler 4b, 5b, 6b, 7b and 8b. The discoveries were announced
Monday, Jan. 4, by the members of the Kepler science team during a news briefing at the American Astronomical Society meeting in Washington.


As long as you're planning ahead, here's the paths for the next few solar eclipses. Save August 12, 2045 on your calendar! And prepare to travel on August 21, 2017.
And some of the nice pictures from the club members to use up some space and show the other clubs that we're having fun. Brian Kimball got the Horsehead Nebula.
Gary Garzone got M42 and M2.