



It's "spot the supernova" time in M51 (Whirlpool)
Longmont Astronomy Society Newsletter
June 2011

From the President:

LAS Meeting – Thursday June 16th

The June meeting of the Longmont Astronomical Society is this Thursday, June 16th, at the IHop Restaurant, 2040 Ken Pratt Blvd., Longmont, CO. Please join us for dinner around 6 pm at the restaurant. The general meeting will begin at 7 pm.

The speaker will be Randy Cunningham of AstroSystems <http://www.astrosystems.biz>. Randy will demonstrate some short f/ratio truss Newtonian telescope components. Short focal length telescopes present several challenges; most are related to the need to achieve greater relative accuracy of collimation, or optical alignment, and holding it. This requires new tools and techniques for collimating, optical support components that give easy, accurate alignment and hold it, and a support structure utilizing optimized materials and engineering to meet these demands.

All Sky Camera Status

As many of you know the LAS all sky camera failed on March 14. Due to the huge amount of snow it was not possible to access it for repairs. Brad was able to retrieve camera from the NOAA tower on Niwot Ridge last week. The video camera, thermostat, dome, and video cable are all in great shape. The computer is working as well. It turned out that the video frame grabber card failed. We'll get that replaced and possibly get it back in operation sometime in July.

Upcoming Star Parties and Events

- Astronomy in the Park at Upper Beaver Meadows, Rocky Mountain National Park on June 24
- ALCON 2011, Bryce Canyon, Utah on June 29 – July 3
- Rocky Mountain Star Stare on June 29 – July 2
- Astronomy in the Park at Upper Beaver Meadows, Rocky Mountain National Park on July 8
- WUTS 2011, Fox Park, WY on July 28 – 30
- Nebraska Star Party, Merritt Reservoir, NE on July 31 – Aug 5

ALCon 2011 - Update

According to Lance at Ruby's Inn they have no more rooms as of today (June 14). They expect to get 4 or 5 for us in the next few days but not for July 1st or 2nd.

The Bryce Canyon Resort has 9 rooms left at the conference rate (\$80/night) -- they might open another block.

There are no RV spaces left at the conference rate, though there might be some still available, check with Rubys Campground 1-866-878-9373. I don't know anything about the tent campsites -- I gave up trying to understand how that works several months ago.

As of this evening 251 people have completed registration; about another 18 or so are pending (checks either not received or not yet posted). We continue to get a couple more each day.

As of last night there were only one or two slots left for telescopes at both the public and private star parties. I've heard rumors that they might open another area once those are filled (there are some open fields near Rubys outside the park). If you are going to Bryce and taking your scope be sure to contact Ann House ann@annhouse.org (she is in charge of the private star parties).

If you are interested in attending Star-B-Que or Awards Banquet be sure to sign up before 11 pm MDT this Friday. The food orders need to be placed so signup for them will be shut off. BTW Keynote speaker at the awards banquet is Carolyn Shoemaker so don't miss hearing her if you at the ALCon.

There will be onsite registration throughout the conference.

Vern

In the sky this month:

Meteor Showers – nothing much in June when it's nice and warm, but a couple coming in late July.

Planets

Mercury: in line with the Sun right now, wait a bit

Venus: fading as it rounds the Sun

Mars: SSE of the Pleiades in the morning sky

Jupiter: rises about 2:30 in the east, bright at sunrise about 30 degrees up

Saturn: high in the south at sunset, still plenty bright as the rings continue to open

Interesting Stars/Galaxies

June is always a nice time to go outside and look at Scorpio low on the southern horizon, with its reddish Antares “heart”

Club Calendar:

Fiske Planetarium: Admission costs \$3.50 for kids and seniors and \$6 for adults

June 17: One Mile Nearer the Heavens: A History of Colorado Astronomy: Keith Gleason

Join Keith Gleason, manager of CU's Sommers- Bausch Observatory (SBO), in this tribute to the Colorado astronomical and space community as we celebrate NASA's 50th anniversary.

June 24: Where will our next ‘giant leap’ take us, and what will we do when we get there? : Addie Dove

It has been almost 40 years since a human last set foot on another planetary surface. Now that the space shuttle is retiring, it's time to pick our next location to explore. In this talk, we'll take a tour of the inner solar system to look at some of the destinations that are

being discussed as the next step in human exploration, and what we can learn while we're there.

July 15: Stranger Than Fiction: What we know about black holes: Susanna Kohler
You've seen them in books, movies, and TV shows — but the truth about black holes can be even stranger than the stories made up about them! Where do black holes come from? Are wormholes real? What effect do black holes have on their surroundings? Should we worry about scientists creating mini black holes? CU's Susanna Kohler will answer these questions and more in this exciting overview of what we know about black holes today.

Internet Resources:

SN 2011dh (on the front newsletter page)

From Wikipedia, the free encyclopedia

SN 2011dh	
Observation data (Epoch J2000)	
Supernova type	IIb ^[1] ^[2]
Host galaxy	Whirlpool Galaxy (M51)
Constellation	Canes Venatici
Right ascension	13 ^h 30 ^m 05.08 ^s ^[3] ^[4]
Declination	+47° 10′ 11.2″ ^[3] ^[4]
Discovery date	31 May 2011 ^[5]
Peak magnitude (V)	12.8 ^[6]
Physical characteristics	
Progenitor	?
Progenitor type	yellow supergiant ? ^[7]
Colour (B-V)	?

SN 2011dh is a [supernova](#) in the [Whirlpool Galaxy \(M51\)](#). On 31 May 2011 an [apparent magnitude](#) 13.5 [type II supernova](#) (the explosion of a single massive star) was detected in M51 at coordinates 13:30:05.08 +47:10:11.2.^[3] It was discovered by Amédée Riou and confirmed by several sources, including the [Palomar Transient Factory](#).^[4] A candidate progenitor has been detected in [Hubble Space Telescope](#) images at coordinates 13:30:05.119 +47:10:11.55.^[8] The progenitor may have been a highly luminous [yellow supergiant](#) with an initial mass of 18-24 [solar masses](#).^[7]

[Emission spectra](#) from [W. M. Keck Observatory](#), obtained by Palomar Transient Factory indicate that this is a [type II supernova](#) with a relatively blue continuum with [P Cygni](#) profiles in the [Balmer series](#).^[3] This is a unique event, because it occurs in a galaxy that

is imaged almost constantly. It is expected to be observable for northern hemisphere observers for several months.[\[3\]](#)

This is the third supernova to be recorded in the Whirlpool galaxy in 17 years (following [SN 1994I](#) and [SN 2005cs](#)) which is a lot for a single galaxy.[\[9\]](#) The galactic supernova frequency is estimated to be around one event every 40 years.[\[10\]](#)

Guest Column: our own Michael Hotka

What Am I Going to Observe Tonight?

By Mike Hotka

Have you ever asked yourself the question, what am I going to observe tonight? Even worse, did you ask yourself this question after you have your scope setup and evening twilight is ending?

If you are working towards an Astronomical League observing club certificate, you will have the answer to this question. There are currently 111 members, active and past, who have completed 10 or more Observing Clubs to receive the Master Observer Observing Club certificate. Ten current members have received 20 or more Observing Club certificates, three of those with 30 or more certificates. The top Observing Club certificate holder has 35 Observing Club certificates to his name.

Why should you complete more Observing Clubs? Here is how the top 10 certificate holders answered a questionnaire sent to each.

When asked: What motivates you to start and complete so many Observing Clubs?, Brad Young (Astronomy Club of Tulsa) said “the structure of the clubs allows me to plan, set goals, and feel accomplishment when I am finished.” Robert Pitt, (Birmingham Astronomical Society) likes “the challenge of the club requirements which gives direction to my limited viewing opportunities.” Mike Ramirez (Northeast Florida Astronomical Society) said “by starting with an Observing Club plan and setting goals to achieve that plan, I was able to keep going and complete the Observing Club”. Doug Brown (Minnesota Astronomical Society) indicates that “it’s a good structured way to observe. For me, if I don’t have a plan for observing, I tend to gab too much instead of observing”. “There’s never an evening sunset when I don’t know what I’ll be hunting down that coming night” said Scott Krantz (Astronomical Society of Kansas City).

For Mike Hotka (Longmont Astronomical Society), the motivation for completing so many Observing Clubs is “I like the hunt. Finding objects and actually seeing them.” For Aaron Clevenson (North Houston Astronomy Club), “I want to see it all! The problem is there are thousands and thousands of things to see. Where do I begin? The Observing Club lists obviously.” John Goar (Olympic Astronomical Society) said “There is something exciting about hunting down a list of related objects”. “Without the Observing Clubs I would be stuck in the mode of observing the same things over and over again”, said Young. For Krantz, “The Observing Clubs keeps me looking at new and off-the-beaten-track objects.”

When the top 10 certificate holders were asked: What Observing Club did you like the best?, Brown likes the Messier Observing Club the best. For Young, he liked the Asteroid Club, while Hotka liked the Lunar II Club. "I had no idea you could see all kinds of subtle features on the lunar surface if the Sun angle was low enough. Shadows reveal a ton of lunar detail.". Clevenson's favorite Observing Club was the Planetary Observer's club. Ted Forte (Back Bay Amateur Astronomers) liked "the Herschel 400 the best. The main reason is this club was best suited to my usual observing style. I liked the varied types of objects represented and the broad range of difficulty embodied in the objects". Pitt likes all the Observing Clubs he has completed, while Ramirez liked "two, one personal and one for the teacher in me. First the personal club was Lunar I Club because I love to gaze back into time as to how Earth and other planets were formed. The second, which encompasses the first, is the Outreach Club, for I love sharing the lunar features with people and to see in their faces the awe that I see every time I look into the eyepiece". Krantz liked the Globular Cluster club the best. For Goar, "the Comet Observers Club was my favorite". Jim Ketchum's (Astronomical Society of Kansas City) "favorite was the Globular Cluster Club. It was relaxing, enjoyable and I'm partial to Globular Clusters".

Most of these ten observers all started out by receiving their Messier Certificate first. Since then, they have kept on going. And by completing more and more Observing Clubs, these people have become seasoned observers. Each Observing Club has something to teach you, whether you are more enlightened about the subject/objects or you learn new observing techniques to aid in your observing efforts.

When asked: What Club taught you the most? Hotka said "the Open Cluster Observing Club. It taught me to make sure I have what I need in the field to find and observe faint objects. If I know I will be looking for faint objects, I will make sure I have a picture of the star field or other references to help me find the faint fuzzy I am looking for". The Sunspotter Program taught Krantz "the most about the observing subject. I learned to categorize sunspots and sunspot groups. I learned that there was a lot more to see on the Sun than just random dark spots." As was the case for Clevenson. He indicated "although I know many things about many objects, I really found that I knew rather little about the Sun and its surface". Forte too liked "the Sunspotter Club, without a doubt. I found myself rather well versed in the particulars of the other clubs that I have done. Still, I was no stranger to the Sun either, for I had been casually observing the Sun for years. Doing the Sunspotter Club, however, opened up new questions for me and I became more interested in the mechanics of sunspots and the solar cycle. It made me a much bigger fan of our star." "The Earth Orbiting Satellite Observing Club, although the Dark Nebula Club was a very close second" said Young as he "had ignored both before the clubs were announced." Ketchum liked "both the Lunar and the Lunar II for they taught me so much about our closest neighbor. There is such a rich array of craters, mountains and plains that you can readily see and appreciate". Goar was able to "honed my star-hopping skills the

most by completing the Herschel 400 Club. But just about every club taught me a unique skill, which I think is the most valuable thing about completing these programs.” “The Messier Club primarily because it was my first attempt to learn how to use charts and star hopping techniques. It taught [Ramirez] to become proficient in navigating the night sky.” According to Pitt “both the Planetary Observer’s and Open Cluster Observing Clubs taught me the most about those objects. I liked the observing guides for these clubs and the descriptions of the characteristics to be documented. I appreciated the variety of these objects much more after gaining a better understanding of the classical descriptors applied to these objects and learning what features to look for when comparing different examples.”

Next, the top 10 were asked: What new techniques were learned while completing so many Clubs? “Doing these clubs has made [Forte] a much more disciplined note taker and has encouraged me to sketch objects much more than I ever had before. ” Goar has “learned the sky well. I am able to star-hop with ease wherever I want to go.” As is the case for Ramirez who “learned how to use charts and star hopping techniques. I have become proficient in navigating the night sky”. Ketchum “learned how to read star maps, whether hard copies or on a computer screen, to be able to pinpoint the exact location of some of the really hard objects to see. I learned how to coax an object out of the dark sky by using Averted Vision techniques. Both take lots of practice, but pay huge dividends”. For Hotka, “just being prepared for my observing session and making sure I have all the tools and references I need in the field to help me find faint objects.” Clevenston has “perfected the techniques of finding faint fuzzies. And although I am no artist, I sketch everything. If you are not sketching, then you are missing much detail.” “I have become more proficient at star hopping, averted vision, sketching, eyepiece / filter selection, planning, and the tracking and predictions required for satellites” said Young, but “most of all, I just have more confidence that I can see things that I might otherwise think too difficult.” For Brown, it was “learning how to use equipment to its best advantage”. Pitt learned that “patience and planning are the most important techniques that I have learned, along with dealing with frustrations. Most objects will come around again next year if you miss them this year. Many of my observing skills, including patience, were dramatically improved with the experience gained from the different clubs.” Krantz learned some valuable techniques he summarized as follows: “While hunting down faint and elusive objects, I learned scope tapping to get some movement in the field of view. Move your eye around the desired object to find your averted vision *sweet spot*. Use an eye patch on your non-observing eye and keep that eye open. Keep breathing! Without thinking about it, many times you’ll hold your breath trying to find something. Use a detailed image or digitized sky survey image in conjunction with a chart. Never give up! If you can’t see it tonight, try again tomorrow night.”

The Astronomical League has many great Observing Clubs for you to complete. All the information about these Clubs is on the League’s website. By looking at all

the choices and picking those Clubs that you are interested in, you too will be on your way to becoming a Master Observer, and beyond.

Thanks, Mike!

Humor Dept: We're all doomed!

WASHINGTON (AFP) – For years, scientists have been predicting the Sun would by around 2012 move into solar maximum, a period of intense flares and sunspot activity, but lately a curious calm has suggested quite the opposite.

According to three studies released in the United States on Tuesday, experts believe the familiar sunspot cycle may be shutting down and heading toward a pattern of inactivity unseen since the 17th century.

The signs include a missing jet stream, fading spots, and slower activity near the poles, said experts from the National Solar Observatory and Air Force Research Laboratory.

"This is highly unusual and unexpected," said Frank Hill, associate director of the NSO's Solar Synoptic Network, as the findings of the three studies were presented at the annual meeting of the American Astronomical Society's Solar Physics Division in Las Cruces, New Mexico.

"But the fact that three completely different views of the Sun point in the same direction is a powerful indicator that the sunspot cycle may be going into hibernation."

And some room for another picture from member Gary Garzone



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