

SPECTRUM

Northern Cross Science Foundation Newsletter

February 2005

LOOKING UP

February 3 Thursday

Annual NCSF Banquet
6:00 p.m. Cash Bar
7:00 p.m. Dinner
Klug's Creekside Inn

February 5 Saturday

Candlelight Ski
6:30 p.m.
Harrington Beach S. P.

February 12 Saturday

Candlelight Ski & Stars
6:00—9:00 p.m.
Pike Lake State Park

February 17 Thursday

Board Meeting
7:30 p.m.
Home of Jeff Setzer

March 3 Thursday

General Meeting
6:30 p.m. Astronomy 101
7:30 p.m. Business Meeting

March 11 & 12 Friday & Sat.

Messier Marathon
Dusk
Harrington Beach S. P.

March 17 Thursday

Board Meeting
7:30 p.m.
Home of Jeff Setzer

Some Pointers on the Use of Laser Pointers By Richard Tresch Fienberg

A recent addition to the backyard astronomer's toolkit has been flagged as a potential weapon in the terrorist's arsenal. The humble laser pointer, used by thousands of sky-gazers to show beginners the way to stars and constellations, is coming under fire from US federal and state authorities following several recent incidents in which laser beams have "painted" aircraft in flight.

In the most notorious case, on January 4, 2005, a New Jersey man was arrested after allegedly shining a laser at a small passenger jet on approach to a nearby airport. The suspect claims he had been showing his daughter around the night sky, using his laser pointer to direct her gaze at particular stars and planets. Now he faces a possible jail term and six-figure fine. The incident sparked a media frenzy, with many articles appearing alongside other news from the War on Terror.

Depending which newspapers you read or which television stations you watch, you may hear that handheld laser pointers — commonly available for less than \$100 from a host of retailers and online dealers — are either perfectly harmless or capable of bringing down a jumbo jet. Naturally, the truth lies somewhere in between. Used properly, laser pointers are quite safe. But used improperly or maliciously, they can be dangerous indeed.

Here is some basic information about the laser pointers typically used by amateur astronomers, along with some tips on using them safely.

Laser-Pointer Basics

The pointers favored by stargazers use a

neodymium diode laser and emit a green beam at a wavelength of 532 nanometers. At a given power setting, such lasers appear much brighter than the older helium-neon lasers, which produce a red beam at wavelengths longer than 630 nm. The reason is simple: the human eye is much more sensitive to green light than red light.

Except on nights of exceptional clarity and near-zero humidity, if you shine a green laser pointer into the sky, you can follow the beam hundreds of meters up. To you and anyone standing around you, it looks like the beam ends at whatever star or planet you're aiming at. This makes it really easy to show someone a particular celestial object. Just point the laser at it and say, "Look there!"

Most laser pointers shine only as long as you hold down a button. But some models have a "constant-on" setting. These are becoming popular as pointing aids for telescopes. Once the laser is mounted and co-aligned with the scope, you just move the scope around till it's pointing at your target star, and when you look in the eyepiece, there it is!

The green laser pointers in common use among astronomers and the general public have a power output of 5 milliwatts. Compared with incandescent light bulbs, which draw tens to hundreds of watts (not milliwatts), this sounds like very little. But laser light is highly concentrated into a very narrow beam. Moreover, this beam is highly collimated, meaning it diverges (spreads out) very

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January Meeting Minutes By Kevin Bert

The January business meeting of the Northern Cross Science Foundation was held at the Unitarian Church North in Mequon. President Jeff Setzer opened the meeting at 8:30 p.m. to 46 members and guests.

After Jeff welcomed all members and guests he said that he was pleased to see such a good turnout. He then asked for standard reports.

Secretary Kevin Bert held up the latest issue of the Reflector and told all members that they should have one too. If they have not received one they should see him after the meeting.

Kevin recognized Kathy Bates a new member that had just joined with her husband. Kathy said that they had attended the how to buy a telescope class last month and are looking for direction on how to use their telescope.

Treasurer Rob Powell said that there was a balance of \$513 in the checking account after standard transactions of newsletter expenses and deposits for calendars and membership dues. He asked all members that have not paid dues and are due to pay in January to get the proper amount to him after the meeting or by mailing him.

Jeff Setzer explained that there are three positions available in the club that are each in need of a person or two. You are asked to contact any board member if you are interested.

Club Historian: After going through the clubs filing cabinet, there had been set aside a stack of club-related information and newspaper clippings that would be appropriate to place in a scrapbook. One already exists and another would be purchased.

Publicist: An individual that would closely work with the board to reach the various publicity outlets with information on upcoming events. A combination of letters, e-mails, and faxes could be used.

Program Coordinator: An individual or group of members that would set up the main programs throughout the year. They would look for program materials, facilitators among the membership and guest speakers.

Under new business Joyce Jentges told the membership that the deadline for getting in reservations for the Annual NCSF banquet on February 3rd was January 20th. It will again be held at Klug's Creekside Inn in Cedarburg. At 6:00 p.m. the cash bar will be open

and the dinner will start at 7:00. Jeff reminded members not to accidentally show up at the Unitarian Church North for the February meeting. The dinner will take the place of the meeting.

Jeff Setzer told the membership that at the last board meeting they had elected officers. There are no changes from last year. Check out the back cover of this month's Spectrum to see the listing.

Jeff gave the list of upcoming events for the next few months. January 7 and 8 at Harrington Beach for Comet viewing. February 5th for Candlelight Ski and Scopes at Harrington Beach, and February 12th at Pike Lake for Ski and Stars. Jeff said a lot of the years scheduling will be done at the next board meeting so look for it in the newsletter.

With no further new business, Jeff closed the business meeting at 9:10 p.m.

Respectfully submitted,
Kevin Bert, secretary

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slowly. Laser pointers typically emit a beam about a millimeter in diameter. Even as far as a kilometer away, the beam is no more than a meter across.

According to engineer Samuel M. Goldwasser, who maintains an extensive Web site about lasers called Sam's Laser FAQ, if you were to look directly into a laser-pointer beam from a mile away, it would appear as bright as a 100-watt bulb seen at a distance of less than 100 feet. Most people would find such a bright light very uncomfortable and would instinctively blink and/or turn away.

Lasers used in industrial applications and outdoor light shows are vastly

more powerful than personal handheld units. There is no question that such lasers can be harmful to pilots, so their use is regulated, and airline pilots are trained to avoid them. The problem with personal laser pointers is that there are millions of them in consumers' hands, and there is no way to guarantee their safe use. In many states, it is already a misdemeanor to shine a laser pointer at a person or vehicle. Now that these devices are being talked about in the context of airplanes and terrorists, there's a very real chance that they will be outlawed. Indeed, 5 mW green lasers are already banned in the United Kingdom.

Safety First

Direct viewing of a laser-pointer beam, even briefly and at a distance of a kilometer or two, has the potential to cause temporary flashblindness — the same effect you get right after a flash photo is taken — or afterimages. These effects last anywhere from seconds to minutes. Glare, which is a reduction or loss of central vision, lasts only as long as exposure to the beam. All these effects could be disastrous if they struck a person operating machinery, driving a car or truck, or flying a plane. Fortunately, there have been no reports of laser-related accidents of this type so far.

To help keep it that way, we offer the following safety tips for amateur as-

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From The Editor

By Joyce Jentges

Despite the clouds and cold weather, I hope that you have been able to get out and catch a glimpse of Comet Machholz. Speaking of comets, I am still thinking about how neat Kevin Bert's program was at the January meeting. With the help of Rob Powell, he made a "Kitchen Comet". I have included several pictures taken from the presentation that night. I hope you enjoy them!



Enclosed in this newsletter, you will find a calendar of upcoming observing events. The list includes public events, member nights and national star parties that some of us like to go to. This is a pretty ambitious schedule. If you want

to have a members night at your house, now is the time to pick your date! See a board member to have your date added to the calendar.

I am pleased to announce that Charlotte DuPree has accepted the position of Publicity Director. We appreciate her taking on this role, as publicity is one of the keys to successful events.

As I write this, we have 22 members signed up to attend the banquet on Feb. 3rd. I look forward to seeing you at the banquet for some good food and fellowship.



Volunteer Help Wanted:

A creative person with an interest in history to serve as club historian. You would take photos of club events, and collect photos and news clippings or video clips about our club. Scrapbooking experience is helpful but not required.

Also needed is someone to arrange monthly programs for the general meetings. This would involve arranging speakers (club members or outside people) to speak on a variety of topics, or finding videos that can be used for a program. If you like a challenge, or have a lot of local contacts, this would fit you to a tee!

See a board member if you are interested in any of these positions. We need your help to make things happen in 2005!!!



(Pointers from page 2)

tronomers and anyone else using a laser pointer. These are based on suggestions from the Laser Institute of America

Laser pointers are designed to illuminate inanimate objects. Never shine a laser pointer toward any person, aircraft, or other vehicle.

Never look directly into the beam of a laser pointer of any type.

Do not allow children to use a pointer unsupervised. Laser pointers are not toys.

If your telescope is equipped with a laser pointer that has a "constant-on" setting, do not leave the instrument unattended with the laser switched on.

Do not aim a laser pointer toward mirrors or other shiny surfaces.

The reflected beam may inadvertently strike someone in the eye.

Do not aim a laser pointer skyward if you hear or see an aircraft of any kind flying overhead.

Be aware of irresponsible uses of pointers so that the psychological effect will be minimized if you happen to be illuminated by one.

Do not purchase a laser pointer if it does not have a "caution" or "danger" sticker on it identifying its class. Report suspicious devices to the authorities.

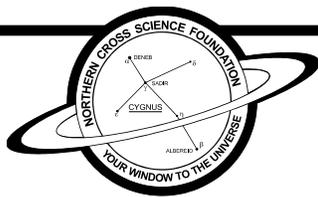
"Green laser pointers are the best way we have found to point out objects in the night sky to the public," says Monty Robson, a commercial airline pilot and avid amateur astronomer. He regularly conducts observing sessions for high-school students and their families at the John J. McCarthy

Observatory in Connecticut. "I would be very disappointed," Robson adds, "if these useful educational tools became restricted by law." Amateur astronomers can help minimize the risk of such an outcome by using common sense, following the safe practices outlined above, and educating others about the safe use of laser pointers.

Rick Fienberg is editor in chief of Sky & Telescope. He enjoys using a laser pointer to introduce the constellations to friends and relatives who visit his dark-sky observatory in New Hampshire.

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Lists for \$306 (\$279 + \$27 shipping). Contact NCSF member Rob Powell if you're interested. (262) 243-5141 or robert.powell@metavante.com

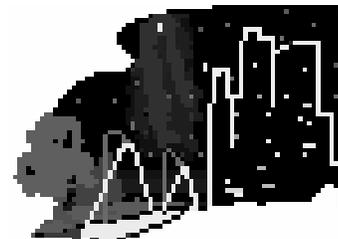


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<http://www.ncsf.info>