

Longmont Astronomical Society

November 2005



NGC 7635 Courtesy of Brian Kimball

*The Home Planet Stellar Views
Calendar*

October Meeting Notes

Could somebody answer a couple of questions for me, please?

Night Sky Network Update by Marni Berendsen

Star Party at Crest View Elementary by Philippe Bridenne

Classified

The LAS Warehouse

December Sky Map

The Home Planet Stellar Views

Hello astronomy friends,

Mars has been big and bright, but a tuff time trying to get a descent seeing night here, the last two weeks have been horrible. We had mostly clouds and poor seeing conditions right when Mars was at opposition from the sun. Easily see surface features and dark markings, even in my 8 inch scope on good nights. I will be watching every night till we get another good night of seeing for more pictures. Mars will be getting smaller but still will be good for a month at least. Next opportunity will July 31st, 2018.

The Home Planet Stellar views have not been good this past month. I always try for the new moon dark skies adventures at Pawnee or somewhere else, but we missed out this month because of poor weather again. The following weekend might have worked but windy and cloudy again then too. We will be doing more yard views of Mars to make up for it. I stopped by Brian Kimball's on Saturday night for web camera help. He has a very nice set up in yard observatory. Roll off roof and your ready to turn on scope and equipment. We took moon shoots for testing out Registax, I am still learning. You need a good scope like his to make it easier to keep object in view in center and time to focus and adjust before starting the capture sequence on laptop. Something to be said about a good tracking scope, something us big dob owners wish we had. Mine does work somewhat but not good enough for long exposure pictures.

Thanks Terry Frazier and Andrew Planck for helping out at star party LAS gave for FRCC at their Westminster campus. Clara and Steve from school there had pretty good crowd of people show up on a Thursday night. Clear all day then at night cloud right over us for most of the time. We did show off Mars which was actually my last best seeing night of Mars. My 16 inch scope, 8 inch and Andrew's 14.5 inch really showed off Mars very nicely. Clara and Steve had several other scopes from the school. She had parking lot lights turned off and parking lot coned off to keep other cars out. Coffee and hot chocolate was nice that they served to keep your spirits up and awake. I always enjoy doing these star parties for the public. Andrew brought his green laser and we used it to point to stars to let people know where we were pointing scopes, fun little toy. We have one that club owns so if anybody wants to borrow it they can to try out. Green meteor zipped to the north, very good one, we did manage to see some good ones when we were watching the skies, always a bonus treat when you are out star gazing.

Mike Hotka has agreed to help with LAS club's VCR tape collection and turn them into DVD's instead to maintain an easier and better viewing collection. So if anybody wants to take out books or tapes we got some very good ones. I got the complete Great Courses tapes on astronomy, 40 hours of lectures. I started the series, lots of info, jam type course. Bob Spohn's dad donated the same series I think. Anyway take some of this home if you are interested. We are giving away old Magazines, if nobody wants them we are going to get rid of them. We need to clean up library stuff. This meeting is swap night so hope to swap lots out the doors.

LAS officer election is also coming up. So if anybody wants to run for any offices let me or executives know. We need a treasurer. Julie is too busy to continue. It is an easy job and we need someone to help keep the paper work right. I consider it a privilege to help out club and those who do help are the ones that make this club as good as it is. We are the most active bunch of astronomy geeks I know of. They always look to us for the Star parties for public viewing and we have come through. This has been a very good year for LAS and hope to see us continue to grow and learn.

Banquet is coming up in January, so get your dinner choices made, send check and sign up with Julie Carmen. We are still working on a guest speaker for Banquet, will keep you posted.

The Mars party here in my yard was a clouded out night, darn ,but the few die hards who showed up anyway got to see some very awesome pictures from Walter Whitehead, works for Ball . He had access to full color prints , 24 x30 inch and bigger, Hubble shots in uncompressed full mega pixel glory, wow! Prints like that I have never seen before. Galaxies, planetary nebula, deep space galaxies, some of my all time favorites! You had to be there to appreciate how good.

Keep looking at Mars, for it will be all over soon, but then it will be Saturn the queen of the universe and giant Jupiter for viewing again. The skies are alive with many wonders waiting for you to check out, enjoy them when you can, see you in the dark maybe? bye, Gary

Calendar

November	Meeting:	17 th – Swap Meet
December	New Moon:	3 rd - Pawnee
	1st qtr:	10 th – Flanders Park
	Meeting:	15 th – Ray Warren – Stardust Return + Michael Hotka Observing Astro League
January	Banquet	21 st - Berthoud (Changed from the 14 th)
	Meeting	19 th – Jim Voss interview – Bob Dornan
	New Moon	29 th
February	Meeting	16 th
	New Moon	27 th
March	Meeting	16 th
	New Moon	29 th
April	Meeting	20 th
	New Moon	27 th
May	Meeting	18 th
	New Moon	27 th
June	Meeting	15 th
	New Moon	25 th
July	Meeting	20 th
	New Moon	25 th
August	Meeting	17 th
	New Moon	23 rd

October 2005 Meeting notes

Welcome by club President Gary Garzone. Busy month for LAS!

Introduction of guests: Apu, colleague of Philippe visiting from India. Dave Blume is with us again.

Vice President report: Dick Mallot was absent.

Secretary report by Mark Propp apologized for the email box overflowing, as he is trying to get caught up on communication. The servers are going well. Mark is working on update for rosters, coming imminently.

Treasurer report by Julie Carmen: Julie is working on renewals and magazine subscriptions. Do it whenever, but helpful if we do it together in a big batch, your subscription will just extend. Canadian observer handbook, usually \$20, we can get it for \$17 if we get 15 orders or more? It has charts of astronomical events for every month. It is one of the better handbooks out there.

Newsletter Editor report by Philippe Bridenne: report on DSES big dish antennae event. Report on Burlington Elementary school. Philippe announced an iridium flare at exact time, got nervous bit it came! It was a fairly long flare, perhaps 15 seconds. Philippe passed around a thank you card from Nancy Ferraro. Also report on Lyons we had perhaps 50 or 100 kids had flashlights at the star party to do their reports, not good! Julie reported next year they will put red film over their flashlights. Night sky, conference call with Dr. Squyres talked about the two rovers which are still roving, getting stuck in sand dunes, etc. Newsletter has link to audio and transcript of conference, including question asked by Philippe regarding glitch in computer, response was that flash memory got corrupted, got into boot and crash cycle, day, night, continuously. Software engineer remembered he had a backdoor to cause system to boot from RAM. This saved the rovers! Mission was for 90 days, now well over a year and half? Great newsletter, thanks for your contribution! Philippe has DVD of Dr. Chapman's presentation at last year's banquet. Let him know if you are interested.

Publicity and fundraising report by Ray Warren. We have 110 planispheres for Crestview Elementary School, their second order.

Patty is here to receive her order! Patty, we are having our star party next Wednesday night, and we need volunteers. Patty is going to Australia, hoping to take "down under" planispheres with her. She organized an accelerated star party to be before she leaves. All 3 third grade classes coming, some 90 students, plus 5th grade class. Some members from BASS will be helping. Suzanne will be coming, some CU students. Ray thanked those (including Mike Hotka) who helped burn the midnight oil to finish the planetarium project. We setup an assembly line which was very efficient. Nelda's finger is better, still works and has feeling! Nelda helped with the previous batch for CU. No blood on the parts. Halloween version is ready for 2nd printing. Put your order in now! Seeing here for first time, only have five, the southern hemisphere planisphere proofs! The stars are better down under! Store is open at break time. Ray reported about his trip to Australia a few years back, stars were popping out, very dark! Sagittarius directly overhead, awesome!

Webmaster report by Steve Albers. Some new content on the web site thanks to hard work of Mike Hotka. Steve added the Equipment and Library Report (thanks to Monica Martens!) He also added the descriptions of books and materials. He added Observing section, including first link: Observing Hints, Tricks, and Guidelines. It includes Dick Mallot's presentation on preparation, and detailed list of observing sites. You can submit your own observing reports! It is great to have this information in one place. Steve demonstrated his latest images and maps for Science on a Sphere, including Dione (check out cyclops) and Saturn.

The LAS has now a green laser and myopia glasses. Mike Hotka told us about it: Article in Sky and Telescope last Spring, bought a set of these. Demonstrates night myopia, four combinations, hold in front of your prescription, help you adjust your prescription. Mike practiced while driving a car! Added to club equipment, you can check them out. Might not work for you if you don't have the night myopia (changes focal point on your retina) Also bought a green laser pointer for the club, also added to the equipment list Gary comment that the laser pointer is great, really helps in big groups to show objects, like the iridium flare.

Monica announcement about the library: equipment is going to Mike's house tonight to finish inventory, but neither of us have time to be fulltime permanent librarians, so we are looking for help from club members. We are hoping to find a place to store the equipment for the future. Clean out stuff we really don't want.

Mike Hotka: table full of free stuff in the back, help yourself!

ALCOR report by Bob Spohn. We have the 1.25" laser collimator for the club scope and members. Banquet is scheduled for January 21st, Saturday. Same menu as we have had the last two years. We got the same prices same, despite threat to raise prices. Bob send an invitation to Dr. Caroline Porko to speak, program

manager for Cassini. Last year she was busy with Huygens probe landing. Looking to get people signed up in advance for head count.

Tonight we are finishing up our tour of the Messier catalog.

A Tour of the Messier Catalog in Eight Spellbinding and Enlightening Episodes.

This being episode eight: The Voyage Home.

Remember back to February, M45 was our first object. Down through Pices, M33 and M31 neighborhood. Some opens, some planetaries. Thin slice of sky, great to end with.

Cebus, not as familiar, but easy to find. Tail of the whale. Our first object: M77.

M77: spiral galaxy, Cetus the Whale. Very large galaxy, one of the largest Messier galaxies. Very tight, compact spiral. Major member of a small galaxy cluster, about 10 galaxies. Strong radio source Cetus A in the nucleus.

M74 in Pisces. Spiral Galaxy, one of the fainter Messier objects. Contains 193 known H2, or star-forming regions. Bright, dense core, good conditions are needed to make out the arms.

M33: The "Pinwheel" galaxy, spiral galaxy in Triangulum. Very large, but low surface brightness. Naked-eye in very dark skies. Third largest galaxy in our local group, behind Andromeda and Milky Way.

M34: Open cluster in Perseus. Contains about 100 stars; about 20 brighter stars surrounded by fainter members. A little larger across than the full moon.

NGC891: Edge on Spiral Galaxy. This is NOT a Messier object, but it is so cool, it should be! This is a "must see" in the neighborhood.

A great example of an edge-on spiral galaxy. The thick dust lane can be traced across its entire length. Discovered by Caroline Herschel, sister of William Herschel.

M31: Spiral Galaxy in Andromeda. Wow! The Great Andromeda Galaxy.

Easy naked-eye spiral, our closest major neighbor in the Local Group. Can be traced out to 4 degrees. Great photo by Brian Kimball!

Several bands of dark dust lanes visible, as well as brighter H2 regions.

Companions M32 and M110 in same low-power field.

M32 is closer to us, may have come through Andromeda in the past. Also M110 companion.

M32, elliptical galaxy in andromeda. Type E2 dwarf elliptical galaxy.

M110 galaxy in Andromeda, the largest of M31's satellite galaxies. Peculiar elliptical.

M76: The "Little Dumbbell" Nebula. One of the faintest Messier objects. Irregular shape contains two fainter wings or bubbles, plus bright central region rectangular in shape.

Cassiopeia, W or M depending on time of the year. Last two M's, both open clusters. There are a ton of open clusters in Cassiopeia.

M103, open cluster in Cassiopeia. Loose open, population estimates range from 40 to 170 stars (seems like a wide spread!). Striking field of bright stars, dominated by a large red star in the center.

M52, open cluster in Cassiopeia. Rich and compressed open cluster. Contains about 200 members. Nearby is the "bubble nebula," peculiar because of hard edges and bright spot, like soap bubble reflecting light. Emission nebula like this require good skies or O2 filters.

Credits and acknowledgements: Star Maps from Night Vision, courtesy of Brian Simpson. Text: Burnhams Celestial Handbook, National Optical Astronomy Observatory, SEDS University of Arizona. Photos: Brian Kimball, National Optical Astronomy Observatory.

New business: Star party at Crestview. LAS been active helping with the elementary school star parties. Some of the kids really show some interest and brains. Cactus Flats (Pawnee) the 29th! Dark skies are great. Mars approaching closest approach. Imagine Venus at -3 magnitude! Amazing, better than Venus at -2 sometimes. Because of angle, Mars higher in the sky, better viewing than 2 years ago when approach was closer (25 arc seconds across, 20 this year at max). 8" scope works great, of course 30" is better!

Don Cerow back with us! Fiske doing mythology presentations again, 7pm, Saturday and Monday. Already done 3 shows, doing 2 more. Drove 1200 miles for this from Santa Cruz! Alpha Draconis (Thuban) was pole star, source for much mythology.

--- BREAK ---

Steve Albers, quick demo of the "Celestia" package. Allow you to see any planet, from any other planet. Also allows tracking of spacecraft. November 11 Dione flyby from Cassini. Wow! Can do it in real time, or speed up, reverse time. Free download. Follow links from resources on our web page.

Bob Spohn, trip to Arizona June 4th, visited the very large binocular array in Safford AZ. Mount Graham International Observatory.

Observatory at 10.5 thousand feet, same as Deadman observing site!

One of the highest lightning strike areas in the country, a lot of forest fires, and bug infestation killing trees as well. "Trees and Telescopes", John Ratje Site Manager MGIO, took his slides and edited.

Also short video of what we saw there.

Star Party at Crest View Elementary by Philippe Bridenne

On Wednesday 26th of October, Mike Hotka and a friend met in the parking lot of Crest View Middle School in Boulder.

It was a beautiful evening, clear skies, warm temperature...excellent for a Star Party organized by Patty Fawcett.

We had to wait to Patty to show up to move to the setup location.

Venus was high and we started to have lines of kids to watch through our telescopes. Since it was too early to align the telescope with stars, I had to re-align the view after 2 or 3 kids (depending how long they watched the planet).

Before it came dark, we had about 8 to 10 telescopes setup and the lines were getting smaller.

The laser pointer was again a great educational tool to point at constellations and celestial objects.

Then the planet Mars came up and lines formed again to see the red planet.

I met a young girl who looked very interested in astronomy. Her first name was...Phoebe. What a beautiful first name for someone interested in astronomy. I gave her pointers to our web site and in particular the free Celestia application which a great tool to start navigating through space. (Steve thanks again for the demo!)

Patty gave my email address to Stephen Schaller, who took pictures of this fun event. (see below)

According to Patty "*It was a great success, thanks to the LAS outstanding support!! The kids are still talking about it...*"

She wrote me that she will try and come to the next meeting and give her special thanks. "*It was wonderful!*"



Happy observers at Crest View Middle School

Night Sky Network Update by Marni Berendsen

NASA appreciates you and we're listening: Check out the changes to the Night Sky Network website!

Three NEW Night Sky Network Website Features:

- * NEW Feature: Stars in the Night Sky Network! Is your club one of them?
- * NEW Event Logging Feature #1: Log events where you used NSN resources other than ToolKits
- * NEW Event Logging Feature #2: Log ALL your astronomy events!

November Telecon & Announcements:

- * Have you ever wanted to be an astronaut? NSN Telecon: Talk with a Shuttle Astronaut
- * Five Clubs Win a Globe of the Red Planet!
- * Welcome 26 new Night Sky Network Clubs!
- * Tips on Publicizing Your Astronomy Events: Advice from a NASA Expert
- * Mars Viewing and JPL's Museum Alliance
- * Next ToolKit in January: "Telescopes: Eyes on the Universe" and ANNUAL Award

NEW Feature: Stars in the Night Sky Network! Is your club one of them?

Go to the Night Sky Network home page and click on the NEW "Stars in the Night Sky Network" link. You will see a list of the clubs who have logged four or more public astronomy events in the previous six months using NASA Night Sky Network ToolKits and resources.

<http://nightsky.jpl.nasa.gov/>. The list can be sorted by any of the displayed columns by clicking on the column heading.

This list is updated in real time. Watch your club climb in the list as you log each event!

NEW Event Logging Feature #1: Log events where you used NSN resources other than ToolKits!

In response to several requests, a new "ToolKit" category has been added to "Log an Event": Other NSN Resources (Telecons, Discussion Board, etc). In your astronomy events, if you use information from Telecons, an idea from the NSN Discussion Board or an NSN news article, Downloads, or other resource obtained from the Night Sky Network website, you can log it as a Night Sky Network event, even if the event did not include activities from the ToolKits.

These events count the same as events in which ToolKits were used.

NEW Event Logging Feature #2: Log ALL your astronomy events!

Again, in response to several requests, those of you who would like to share more of the astronomy events you hold, another new feature has been added to "Log an Event". If you wish, you can log events where no Night Sky Network resources were used.

If you hold a particularly unique or interesting event that did not include NSN materials or resources, please feel free to share your experiences with the other member clubs. When you come to the page where the Log an Event form asks which Toolkit was used, simply click on the button "No NSN Outreach ToolKits or Resources Used".

PLEASE NOTE: These events will be informational only. They will NOT apply to:

- * Your club's annual five-NSN-events-a-year membership requirement.
- * Quarterly and annual prize drawings
- * The Event Counter
- * Your club's total on the "Stars in the Night Sky Network" listing
- * Earning new ToolKits

The event WILL be displayed when NSN members use the "Find Events" function to read about events other clubs have held. On "Find Events" there is now the option to include (or not) non-NSN events in the resulting list.

Have you ever wanted to be an astronaut? NSN Telecon: Talk with a Shuttle Astronaut

Mark your calendars for Wednesday, November 30, 2005, 6:00 pm Pacific, 9:00 pm Eastern, for the next Night Sky Network Telecon.

Dr. Janice Voss, a veteran astronaut of five Space Shuttle flights, is our guest speaker. Dr. Voss has logged over 49 days in space, traveling 18.8 million miles in 779 Earth orbits. She will discuss her experiences and is looking forward to discussing your questions about human space flight.

Toll-free conference call line: 1-877-917-1549. Call anytime after 5:45 pm the evening of the teleconference.

An operator will answer and:

- You will be asked for the passcode: NIGHT SKY NETWORK
- You might be asked for the call leader: MICHAEL GREENE
- You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

More details will be posted on the Night Sky Network at least two weeks before the telecon. Save the date for the teleconference: November 30! Be sure to let the rest of your club members know - especially those who have dreamed of traveling into space!

Five Clubs Win a Globe of the Red Planet!

Almost 400 events were logged on the Night Sky Network between July 1st and September 30th, 2005! On October 5th, the quarterly drawing was held. Five events hosted by five different clubs were randomly selected from all the events to win Mars Globes, donated by the Astronomical Society of the Pacific:

- * Astronomical Society of Northern New England in Maine,
- * Eisenhower Astronomy Club in Minnesota.
- * Evansville Astronomical Society in Indiana.
- * Northern Sky Astronomical Society in North Dakota.
- * Southeast Ohio Astronomical Society in Ohio.

Congratulations! For more information and how to qualify for the next drawing, see the article in the News Archive on the Night Sky Network after you log in.

http://nightsky.jpl.nasa.gov/club/news-display.cfm?News_ID=112

Welcome 26 new Night Sky Network Clubs!

Please welcome the newest member clubs of the Night Sky Network!

Joined in June 2005 (Seven of these clubs, marked with *, have already made the "Stars in the Night Sky Network" list!):

- * Amateur Astronomers Association of Pittsburgh of Glenshaw, PA
- Brazosport Astronomy Club of Clute, TX
- * Carolina Skies Astronomy Club of Greenville, NC
- Catskills Astronomy Club of Livingston Manor, NY
- * Columbus Astronomical Society of Columbus, OH
- * Fort Worth Astronomical Society of Fort Worth, TX
- Longmont Astronomical Society of Longmont, CO
- Louisiana Delta Community College Science Club/Ouachita Valley Astronomy League of Monroe, LA
- Marquette Astronomical Society of Marquette, MI
- Museum Astronomical Resource Society of Tampa, FL
- * Pegasus Astronomical Society of Edmond, OK
- Project ASTRO San Diego of San Diego, CA
- San Francisco Bay Area Project ASTRO of San Francisco, CA
- Sangamon Astronomical Society of Springfield, IL
- * Seven Ponds Astronomy Club of Dryden, MI
- Sirius Stargazers Club of S. Rockwood, MI
- Tallahassee Astronomical Society of Tallahassee, FL
- University of Toledo Society of Physics Students of Toledo, OH

- * Warren Rupp Observatory of Mansfield, OH
- Whatcom Association of Celestial Observers of Ferndale, WA

Joined in September 2005:

- Brevard Astronomical Society of Cocoa, FL
- Champaign-Urbana Astronomical Society of Champaign, IL
- Latin School Sidewalk Astronomy Club of Chicago, IL
- Phoenix Astronomical Society of Phoenix, AZ
- Lake County Astronomical Society of Ingleside, IL
- St. Louis Astronomical Society of St. Louis, MO

Tips on Publicizing Your Astronomy Events: Advice from a NASA Expert

Log into the Night Sky Network and read the lead article about publicizing your events.

<http://nightsky.jpl.nasa.gov/>. Includes tips from the press release experts at NASA.

Contribute your own ideas for publicity!

Mars Viewing and JPL's Museum Alliance

JPL's Mars Public Engagement team is encouraging members of their Museum Alliance to contact local Night Sky Network astronomy clubs for potential telescopic viewing opportunities. They greatly appreciate your help in educating the public about Mars!

Please look for new materials about the Mars opposition that will be posted on the <http://mars.jpl.nasa.gov> website on October 21.

Next ToolKit in January: "Telescopes: Eyes on the Universe" and ANNUAL Award!

"Telescopes: Eyes on the Universe" Outreach ToolKit is shipping in January!

Amateur astronomers use telescopes to help people directly experience the universe. This ToolKit will help answer questions you often hear at the telescope:

- What power is your telescope?
- Can you see the flag on the Moon?
- Why doesn't it look like the photos?

The kit also includes props to help your visitors prepare for and better appreciate their view through the eyepiece. Woven into the activities are easy ways to show how NASA scientists use telescopes to help us understand the universe.

What are the clubs saying who recently concluded the initial testing of the ToolKit?

"I really enjoyed testing the toolkit . . . the demos really made the concepts in astronomy and telescopes so much clearer and easier to understand."

(At a club meeting) "The group was very involved in this activity and lots of discussion ensued. We could have spent an entire evening just doing this activity and information related to it."

"I attended the Georgia Association of Planetariums meeting and thought what better group to test a couple activities with . . . They were really amazed at how simple it was to demonstrate the concepts."

(At a community fair) "I was surprised by a number of young children who came back throughout the day to ask more questions about telescopes."

"This kit really works since telescopes are a prime area of many misconceptions for astronomy!"

Your club only needs to log two events after receiving the Black Hole Survival ToolKit to be eligible to receive this one!

Special thanks to Terry McLawhon of the Tar River Astronomy Club for suggesting the name of the ToolKit.

ANNUAL AWARD: Coronado Personal Solar Telescope

In recognition of your amazing outreach efforts in 2005, and in keeping with the theme of the new Telescope ToolKit to be released in January, the Night Sky Network is privileged to offer a special award for our annual drawing for clubs who logged at least five Night Sky Network outreach events during 2005: each of five different NSN clubs will receive a Coronado Personal Solar Telescope for use at their astronomy outreach events.

On January 16th, we will draw the names of five clubs who have successfully logged at least FIVE qualifying Night Sky Network outreach events between January 1 and December 31, 2005. Each qualifying event your club logs counts as a "ticket" in the drawing.

Awards are provided by the Astronomical Society of the Pacific.

Clear skies!

Marni Berendsen
Astronomical Society of the Pacific
nightskyinfo@astrosociety.org

Could somebody answer a couple of questions for me, please?

1) When the book says that the smallest object a telescope can resolve (let's say a 4" refractor to keep things simple) is about one arc-second, does that also mean that in order to resolve one arc-second you must also be using the maximum power for that telescope (in this case 200x)--i.e., on the steadiest of nights does it mean that if I wanted to see a one-arc-second crater on the moon I could NOT see it using 180x but could barely make it out at 200x?

A normal human eye can resolve about one arc minute. To resolve one arc second you would need magnification of $60 \text{ seconds} / 1 \text{ minute} = 60$ power under the best of conditions, and an objective lens that will resolve one second.

Good rule of thumb for practical resolving power of lens: Use 1X magnification for each mm of diameter. In other words, a magnification that equals 0.5 times it's diameter in millimeters renders about 80% of the lens' resolving power. Magnification that equals 1.0 times it's diameter in millimeters renders about 95% of the lens' resolving power.

So, to see that one arc second gizmo, 60mm is a practical minimum objective diameter to get 60X magnification, assuming good conditions, a healthy eye, and a contrasty target.

2) Do I understand correctly that at the distance of the Moon, one arc-second equals a distance of one mile?

Another rule of thumb:

One degree = 62.828 inches at 100 yards

One arc-minute = 1.047 inches at 100 yards (close enough to one inch)

One arc-second = 0.174 inches at 1,000 yards

To answer the exact question:

Mean distance from the Earth to the Moon = 238,855 miles or 384,400 km
One arc-second = 1.158 miles or 1.863 km

3) When I am looking at extended objects, the reported visual magnitudes for those objects are useless for predicting whether I can actually see those objects and how bright they may appear in the eyepiece. Is there a way to convert the reported visual magnitudes into a figure that actually has meaning for the visual observer?

Bingo! Actual visibility of extended dim objects is drastically affected by things as simple as moisture and dust content of the air and the amount of waste light illuminating the air overhead. Those "magnitude" estimates are to be used only as ballpark generalities.

Classified

To buy:

Wanted: Large dob, say 14-15 inches, in good working order, preferably with digital settings circles. Thanks!
Bill Travis, 303-530-5010, wtravis@colorado.edu

To sell:

I am trying to sell a Celestron Ultima 9.25. If the deal were local I would expect closer to \$1,600 or so and accept credit cards.

<http://www.astromart.com/viewad.asp?cid=233874>

Jared Workman

I got a new (800mHz) computer & wish to sell my 3rd computer. It's a 433mHz, 64meg RAM, 9 Gig HD space, 33.6K modem, and SoundBlaster sound card, with a 15" monitor, programmable keyboard & MS mouse, with Windows 98 SE for sale. \$180. No problems with it what-so-ever. Will deliver & setup within 30 miles of Ft. Collins. It would be great for a stand-alone application or a kid's computer.

Contact Tom Teters tomt@starmon.com

Orion telescope EQ 120mm 4.7" lens achromatic refractor; F/8.

This telescope is one year old and is in great condition.

All the following items are included with the telescope:

- ✓ True track dual axis DC motor drive tracking system (is great for doing long exposure astrophotography)
- ✓ EQ mount
- ✓ Tripod
- ✓ Telrad with dew shield
- ✓ 1.25" diagonal mirror (also accept 2" eyepieces)
- ✓ 6X30 Finder Scope
- ✓ Collimation eye piece
- ✓ 25 mm & 4mm eye pieces
- ✓ Astrosystems new waterproof cover
- ✓ A JMI refractor hard case, is able to fit a 5" or 6" refractor. There is a lot of storage space for all types of accessories such as eyepieces, etc..

This is a great and wonderful telescope for any beginner or intermediate astronomer.

All for \$1,000 firm! Contact Marc and Julie at (303) 210-3966 (Cell) or (303) 682-5428 (Home) or email if interested; marcwiley@wildmail.com

Couch Potato Binocular chair. It all collapses down for transportation. I built this and it works great.

\$120.00. Contact Mike Hotka (mhotka@yahoo.com) with questions or comments.

Binocular parallelogram I built. Works great. Tripod not included. \$70.00. Contact Mike Hotka (mhotka@yahoo.com) with questions or comments.

I have an ORION SKYVIEW 4.5" Reflector telescope with finder scope; equatorial mount tripod, with 9mm and 25mm lenses, 1.25 mm Barlow and extra filters. The telescope is in great condition, just toooo advanced for my amateur status. All for \$500!

Contact Anna Vayr at 303-776-7167 or via email at anna.vayr@spot.colorado.edu

To give:

FREE: Monitor, HP D1195A 15" CRT, will display 1024x768.

Clean, like new, works. Contact: Bob Noble nobler@att.net

If you have astronomy stuff to buy or to sell, send an email to your newsletter editor philippe_bridenne@yahoo.com

The LAS warehouse

LAS logo T-Shirts:

Crewneck, navy blue, 8" white LAS logon on front

\$10 - S, M, L, XL

\$12 - 2XL

\$13 - 3XL

\$14 - 4XL

\$2 - 5" LAS vinyl sticker, black or white

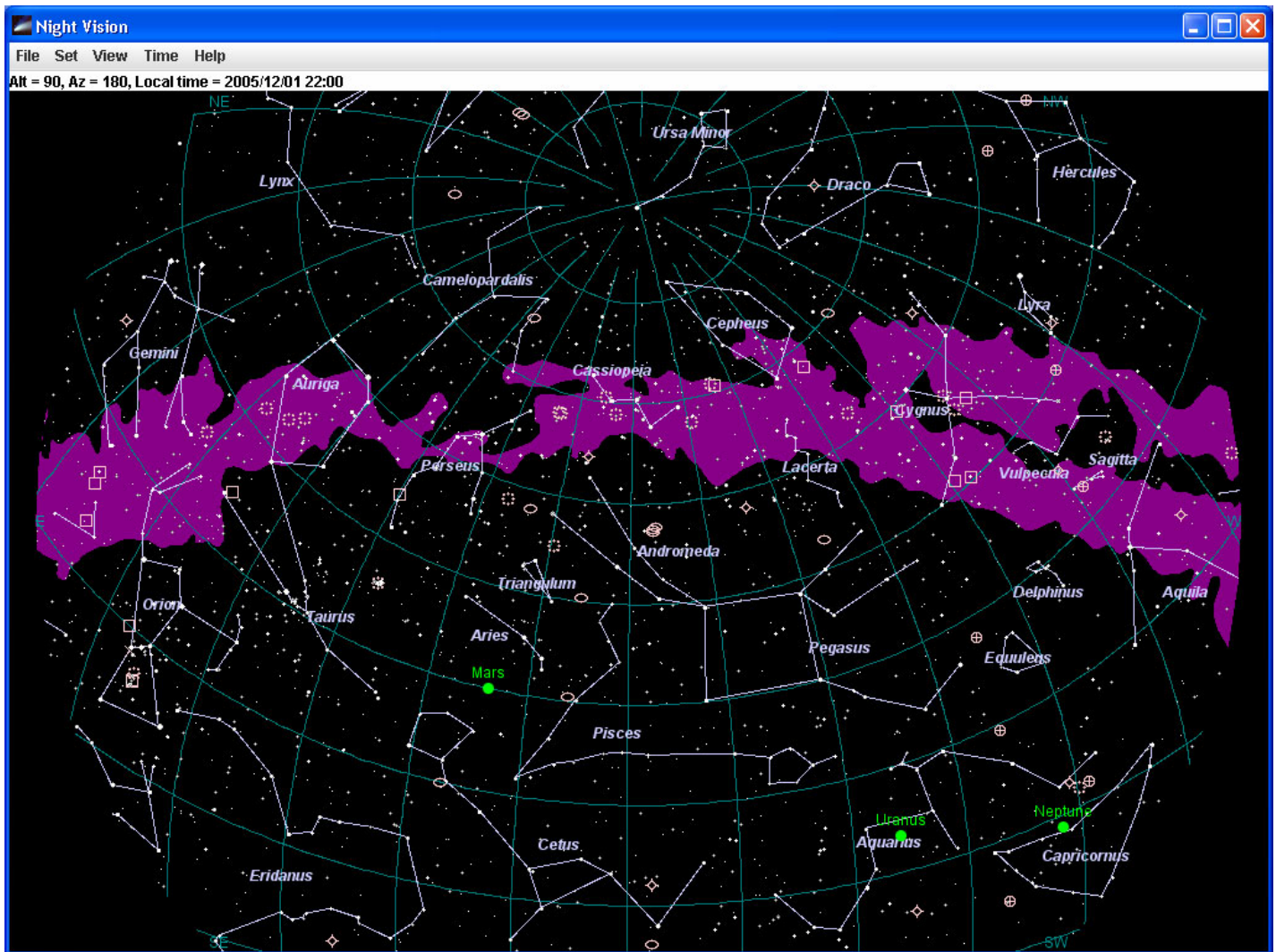
\$5 - 4" LAS embroidered patch

\$5 - VHS tape, "An Evening With David H. Levy", 3 January 2004

\$1 - LAS Planisphere

2/\$1 - LAS un-bumper sticker

December Sky Map



South Africa launched the largest telescope in the southern hemisphere and aims to put itself on the map as a destination for star-gazing tourists.

SALT is a massive hexagon 12 meters in diameter which is comprised of many smaller mirrored hexagons.

SALT will enable scientists to view stars and galaxies a billion times too faint to be visible to the naked eye.

President Thabo Mbeki will formally initiate the Southern African Large Telescope (SALT) on Thursday at an observatory near the town of Sutherland in the remote and arid Karoo region, famed for its big skies.

"This puts us on the map as an astronomy destination. We are able to use our geographic advantage as the Karoo is very dry and clear and good for observing the universe," said Science and Technology Minister Mosibudi Mangena.

"There are also certain areas of the universe that are better viewed from the southern hemisphere," he told Reuters in a telephone interview.

The large and small Magellanic clouds, galaxies which orbit our own Milky way, can be seen from the southern hemisphere but not the northern and are close enough for detailed study.

"We see a lot of scientists coming this way but also ordinary people who are coming to Sutherland to see our telescopes," Mangena said.