

# Longmont Astronomical Society

## March 2005



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## The Home Planet Stellar Views

Hello dark sky marines,

April is coming up fast now for the annual dark sky Sterling Star Party. It's on the 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> of April. All are invited again. For info check our web site for maps and directions.

Several of the die-hards made it out to Pawnee on the 4<sup>th</sup> Friday and again some on Saturday. I did not make it out there. I have been working on getting tracking on my 30 inch Dobsonian working better. I will let you know when it is right. I was hoping for this Saturday 12<sup>th</sup> at Pawnee but it was very windy here and for me that shuts me down from viewing, with gas prices up I will want to be pretty sure of clear skies before I make the drive out there. I will be watching the weather as usual.

I got LAS member Jim Crane to agree on giving a talk on Deep Impact for LAS club. Jim works for Ball and was at launch of rocket in Florida, has been working many hours on the project, so that is why we have not seen him at meetings. Jim said he has awesome pictures and news. Not sure exact date, he may do May or even June we will have to make a time slot for him. I would do my Lunar talk some other month and he can do it in June 1<sup>st</sup> month before Deep Impact

This will be before our extreme astronomy, Deep Impact trip on July 3<sup>rd</sup>, Sunday night is the official date set now, to summit of 14,000 ft Mt Evans with our old friend Dr. Bob Stencel from DU in Denver. Deep Impact will probably not be visible from Colorado, very low in horizon, 11:59 PM is Impact timing. We will see the comet earlier in evening, about 9.7 magnitude, easy for 28 inch scope at 14,000 ft. We will be doing other views of course so bring your lists of what you want to see from there. DU owns the scope, Wobble/Meyer, Twin 28 inch mirrors in beautifully done dome building that really blends into area. Those who want to come need to sign up or e mail me to get on the list. We will be doing this for club members only, serious astronomers, for space inside the dome is very limited. I will bring my 16 inch for viewing outside also, all are welcome to bring theirs too, set up in viewing area right next to your car. I may reserve a room at hotel or something near by. I was hoping for a long night, but many might come down sooner and need a place to sleep without driving home at those hours.

Astronomy day is also coming up, we will need Volunteers again. Thanks to many it makes it a fun day. Ray Warren loves selling and giving away stuff, we will try to encourage him for he is making the club money, now what to do with it?

During their planning meeting executives agreed to get a weekend star party at CU Mountain. Research station going in joint effort with BASS. We can rent dorms to sleep in, kitchen, and conference rooms to use for short guest speaker topic, then afternoon checking out scopes and buildings, we get a dark sky night at 10,000 ft. location is pretty good for local short trip. This could be like a field trip and we car pool up there or whatever. BASS, the Boulder club, and LAS money would pay for Kitchen and Conference room and the rest of us pay for rooms, four to a room but two would be better or family could share to keep expenses down. Julie Carmen is working on this for us, Thanks Julie.

The Home Planet Stellar views have been very good again this last month despite me not getting to dark sky places. Yard views are way better than no views I always say. Saturn on good seeing nights has been some of the best in long time. It's goodbye to Saturn for good views soon, but Jupiter will be ruling the skies again, already up high early now. Galaxies are some of my favorites in large aperture scopes, M104 in Virgo and other, Coma Berenices, NGC 4565, all those small ones, M53,85, 88,91,98,99,100, M64 black-eyed galaxy. You got the picture, lots of those M numbers for your Messier Certificate, right Bob S.

Astro pictures from Brian Kimball are getting way better, he has it all working right now it seems and new Camera to boot. We love getting his pictures. Enough of my ramblings, this is what's up, astronomy is a life long adventure, see you in the Dark? bye, Gary

## Calendar

Mar: New Moon: 12th - Pawnee  
1st qtr: 19th – Flanders Park  
Meeting: 17th – Dick Mallot – Astronomy History  
Crestview Elementary – 31st – North Boulder – Patty Fawcett 5:30?

Apr: New Moon: 8th & 9th – Sterling Star Party  
1st qtr: 16th – Astronomy Day at Twin Peaks Mall & Flanders  
Meeting: 21st – George Hypes – star slide show  
Lyons Elementary – April 15th

May: New Moon: 7th - Pawnee  
1st qtr: 14th – Flanders Park  
Meeting: 19th – Deep Impact – Jim Crane? Gary’s friend?

Jun: New Moon: 4th – Members’ choice!  
1st qtr: 11th – Flanders Park  
3rd qtr: 25th – Tri-Town Party  
Meeting: 16th – Gary Garzone – Lunar presentation  
Andrew Planck Star Party – 3rd & 4th  
LAS/BASS/URSA private party at CU Mountain Research Station - 10th – 11th

Jul: New Moon: 7th – 10th: Rocky Mountain Star Stare  
1st qtr: 9th – Flanders Park  
Meeting: 21st – Shuttle return review/Perseid review – Ross/Johnston  
Deep Impact on Mt. Evans - 4th

Aug: New Moon: 4th – 6th: Weekend Under the Stars – Fox Park  
1st qtr: 13th – Flanders Park  
Meeting: 18th – Fiske or NOAA – Steve Albers sphere mapping project

Sep: New Moon: 3rd  
1st qtr: 10th – Flanders Park  
Meeting: 15th

Oct: New Moon: 1st  
1st qtr: 8th – Flanders Park  
Meeting: 20th

Nov: New Moon: October 29th  
1st qtr: 5th – Flanders Park  
Meeting: 17th

Dec: New Moon: 3rd  
1st qtr: 10th – Flanders Park  
Meeting: 15th – Ray Warren – Stardust Return

## February meeting notes

45 attendees

Meeting called to order by Dick Mallott, substituting for President Gary Garzone, recuperating from knee surgery.

Secretary report by Mark Propp: If you have astro-images you want to post on the website, send to [webmaster@longmontastro.org](mailto:webmaster@longmontastro.org). We are working on a method for you to upload images yourself. Anyone not receiving emails from the list?

Treasurer Report, Julie Carmen: main fund balance. Name Badges: showed old badges, and new badges available from Fiske for approximately same price \$5 or \$6. Uses magnet instead of clip? Julie passed around example for feedback.

Fiske Planetarium Report, Julie Carmen: Coming up, Paranormal Universe -- Dr. ? Astrojaz last Saturday was awesome, Jazz and Blues. New book at cost from Planetarium, Sticky Night Skies. Buy a few books a year? Feedback desired.

Report from Michelle Lavers: She is working on Astronomy Day, Sat. April 16th at Twin Peaks Mall. She has been soliciting sponsors for two weeks, seen some return already. She is sending out letters and looking for more companies looking to sponsor our non-profit club. Obtained a massive box of posters from Fiske Planetarium, thanks Julie! Mike's Camera donating \$350 worth of gift cards to give away at Sterling and Astronomy day! Astronomy magazine has sent us 6 cases of their fliers. Sign up sheet for Astronomy day helpers. 3 hours increments, explain to people what we do, pass out pamphlets. It is fun to get out in the public.

Sterling star party is scheduled the weekend before April 16th. Gary working on it, should be great.

Publicity Chair report by Ray Warren. There is a table in the back for building planetariums. Tonight, we have three more trained people, they can show you how it is done! New David Levy books and videos as prizes. Thanks to Michelle for all your help! Nancy report, media notification of events, starting with March, letting Longmont media know about LAS. Patty Fawcett, Crestview Elementary Planispheres, 100 of them! Patty presented LAS a check with bonus! Crestview elementary star party coming March 31st (Thursday evening). Perfect site right outside of the classroom, north Boulder in a pretty dark. Asphalt pad. 40 to 60 kids, hope we get some scopes! We have a new design for our own planispheres, design on the back: game building a solar system scale model. Uses the disk as the size of the sun, planets are to scale. Have a demo but we are out of time. Another new thing: the Whizzy Wheel! This is a big deal! They calculate magnification given eyepiece and focal length, works like the old circular slide rules. On back, for your pleasure, some more calculations for calculating focal resolution, magnitude limits. Future products thinking about, LED flashlight is great, we will see when we can produce. Club CD, screensaver, NightVision astronomy program. T-shirt orders have arrived. Tonight starting the Astronomy Day drawing because we have new tickets.

ALCOR rep report by Bob Spohn: A Tour of the Messier Catalog in Eight Spellbinding and Enlightening Episodes, this being Episode One: The Sky from 3 to 7 hours (give or take a few minutes). 16 objects you can look at before next month's meeting. Sky chart for Saturday March 15<sup>th</sup>. Rules for Messier certificate regarding observing and logging. Need to note date and time, seeing conditions, size of telescope, power, and short note describing observation. Log 70 of 110 get certificate, all 110 get honorary. Don't bother stopping, get them all. Must star-hop, no electronic guidance. Learn your way around the sky. M79 Globular Cluster, Lepus constellation into Orion Cluster, M42 and M43, Great Nebula

M78 Reflection Nebula in Orion Constellation. Orion inundated with dark dust clouds. M45 Pleiades Open Cluster -- Subaru in Japanese, Taurus constellation. Auriga the Charioteer, bright star of Capella, shares a star with North Horn of Taurus the bull. M38 Open Cluster, over 100 stars different magnitudes. M36, smaller open cluster. M37 Open cluster has a bright star in middle, like ruby in a field of diamonds. M35 out in the middle of nowhere, above Orion's club. M35 open cluster in Gemini, NGC not Messier, should be naked eye object. M1 Crab Nebula, awesome, just blazes, Taurus, supernovae remnant Jul 7 4 1054 Chinese recorded, native American pictographs seem to record as well, expanding 600 miles per second, Burnham Celestial Handbook pictures show edge of Nebula see expansion few years apart. M50 Monoceros constellation (Unicorn), open cluster, neat patterns, 1/3 of way Procyon and Sirius. M41 open cluster in body of Canis Major, below Sirius, 4.5 magnitude easy naked eye object, some red giants in there, mentioned by Aristotle about 325 B.C. as a cloudy spot in the sky. M93 in Puppis (poop deck of argo ship). M47. M46 rich open cluster in Puppis, you are going to love this one, 150 stars magnitude 10-13 in a population of over 500 stars, with planetary nebula in the field of view, halfway between us and the cluster. M48 Hydra, missing Messier object, no one could find it due to a 5 degree error, magnitude 5.5 could be a naked eye object, open cluster. That's your first assignment. This presentation posted on the web site. Thanks to Brian Simpson for the NightVision software. Some text from Burnhams, thanks to Brian Kimball for images.

Webmaster report from Steve Albers. No network access, so we have a verbal web report. LAS sponsors going on the web site. Astroimages growing and evolving, images from Brian. Neat to see images of Saturn's moons from Cassini. 23.5 hours ago! Some fantastic photos. Using the Celestia software package to visualize it, sometime we can do a demo of it.

Don, equipment report. Not a lot of progress to report.

New business items: Julie came across something interesting, want to gauge interest. Mountain Research Station between Nederland and Ward, belongs to CU. There is a telescope up there, 12" Mead LX200 (Hi Vern!) They just built a new dormitory up there 32 people can sleep, full length bunk beds. Education groups can rent it, one night kitchen rental \$40. Two night star party up there, invite BASS if room, we can rent. To sleep there would be \$11 per night per person. No camping up there. Dark skies, close to home, not too much money. Something to think about. Looking at a couple of weekends in May, Memorial weekend, or 2nd weekend in June another possibility. First weekend in May would be good, newest moon, 18 hour window. Up at 10,000 feet, clear shot of western horizon. Snow conditions up there?

Andrew Plank, quick follow-up on astronomy camp Julie has alluded to. Thanks to LAS and Mike Hotka, 60 cool packets with planispheres and fascinating paraphernalia. Somewhat disappointing wrinkle, they have limited the total number of volunteers who can come without paying to 8, other volunteers staying up the night would have to pay what the kids pay \$120. Month ago sent out some email to volunteers, took first members who responded: Andrew, Jeff Laux?, Mark and Julie, Gary Garzone, Bob Spohn, two teachers from school. You can come up with scope for the evening for free, let Andrew know if interested. One other bureaucratic hoop, get copies of everyone's insurance card.

15 minute break, start up again at 2025 hours. Store is open, we have 10 more planispheres to build.

Presentation by Randy Howe MS Remote Sensing. Plug in for AAVSO, made this presentation possible. Las Cruces, March 21st through 26th, talking about Gamma Ray Burst, magnetars, form of pulsar, neutron star pulsing at 30 times per second. Tour to very large array.

A Long-Term project to setup up:

- on-line
- real time
- continuously reported

- internet connected
- web-accessed
- series of experiments

A computer model to assist in GRB detection  
- rescale GRB energies to VLF receivers

world map showing transmitter stations, transmitting to submarines. Very low frequency, like 14 km waves, 25 kHz, way down there. Low frequency waves penetrate through the oceans and earth, and bounce off of ionosphere. String very long cables across a valley. Jim Creek antennae in middle of mountains. Using earth as a bell, when gamma rays hit rings a bell by pressing on the ionosphere. The signals fluctuate so you can detect. Site outside Longmont up on the hill.

Using two different receivers to validate data collection.

Low volume, 1 second sample rate, < 93,000 samples per day, inexpensive hardware and software. Showed image of 2nd generation E field active antenna. Showed schematic of antenna. Takes about a day to construct. Amplifies the signal to a data recorder, in a computer.

Showed image of 24 turn 1.5 meter loop H Field Antenna, hexagon shape. Tunes down to about 27 kHz. Directional antenna. Showed image of internals, and schematic for diode detector receiver. Parts obtainable from radio shack.

Showed graph of 24 hours of data "Importance of Having Friends". Signal drops as sun comes up, spikes up again for the nighttime. Sun disassociates everything, causes free electrons, which suppresses the energy. Solar flare causes renormalization, dip or spike, depending on your distance from transmitter. Sudden ionospheric disturbances. Lots of solar activities (SID).

Data from Doug Welsh, month worth of data.

Are these VLF receivers sensitive enough to detect distant supernova explosions? Computer models may help answer this.

Question: daytime signals or nighttime signals best for detection? Seems to get better data during day, less noisy.

Slide of EM Wave Propagation. Inverse Square Law.

Transmission skip, can receive from great distance, waves bounce off the ionosphere. Ionosphere structure. Density vs. Altitude. Rescaling GRB energy to VLF reception in the ionosphere. Mapping disturbances. Stanford university. Importance of collaboration. Incoming gamma ray causes waves. Geometry for incoming gamma ray for receiver to detect. Magnator close to center of galaxy had a flare on Dec 27, shot gamma rays, recorded in Colorado, people in Germany could not see it, on other side of the world.

2D model of a GRB Supernova explosion. nonlinear differential state transition equations for internal SN evolution and gamma ray burst emissions.

GRB detection starts with the satellites: HETE2 INTEGRAL, Swift and Wind Satellite triggers. Determine where gamma ray bursts are coming from. Optical observations can see the afterglow with bigger scopes, 14 to 20 magnitude.

Day time detection by Peter Schnoor and Price

Night time detection of a near by GRB 030329?

Making a magnetar, Dr. Chryssa Kouveliotou

Making a neutron star, and a magnetar, starts with a massive star that has burned up all of its fuel, then collapses and causes a pulsar, incredible rotating magnetic field.

SGR1806: detection of a sudden ionospheric distribution, right down the center of Sagittarius. Very large, repeats itself, detected since 1989.

The observing method employs the monitoring of distant powerful VLF radio transmitters. Sensitive monitor of the state of the lower ionosphere.

Difficulty in declaring detection with VLF. Nighttime tough to detect, because of noise.

Introduce Paul. Recruiting help for Deep Impact project, taking images of Temple 1. Interested in CCD image. 10 or 12 inch scope, record data before and after impact, spectrum in R and I. July 4th, viewable from the Pacific.

Research done on Hale-Bopp and Haley's comets, 1.6 GHz range. LINEAR, NEAT. Temple 1 visible now above Virgo, near Jupiter, visible near midnight, 15th magnitude, need a good scope. Not detectable until 1.6 AU from the sun. Disassociate with water, hydroxyl, emitting like a MASER. Look at radio sources behind comet, in path of comet, see absorption of emission lines.

Paul talk about our group, been around about 10 years, not a lot accomplished. Problems with being small and under funded. Big dishes with a lot of problems. Got one dish to work, working well, and beginning on other one so we could have interferometer in a few years. Quote from Sean McKenna, radio astronomy. Radio Astronomy born 1941 Carl Jansky discovered radio noise from outside the solar system. Importance not recognized until after ww2. Significant information from the universe in different EM spectrum. Initially the resolving power of radio telescopes was not very great. 20 times inferior to the resolving power of the human eye. Overcome by linking several radio telescopes into interferometer. Modern interferometer arrays include Very Large Array in New Mexico. Resolution few hundred seconds of arc. 10 to 100 times superior to that obtained with a large optical telescope. Come a long way in a short time. Aricebo in December, regional meeting of Radio Astronomers. 18 acres of aluminum panels. Really huge!

List of some additional things accomplished at Aricebo: study of distant galaxies, radar system 1.5 megawatt transmitter at 2 GHz. radar maps of the moon mapped down to 1km resolution. Pictures of asteroids with radio interferometer, maps, rotation of Mercury. Jupiter, rings of Saturn and titan with radar. Discovered the first extra solar planets. Studies of chemical and molecular makeup. Our group DSES Deep Space Exploration Society, Colorado non-profit, applied 501c3 status. Years ago there were just hams out there, now it is radio quiet zone. Doing at the moment 14 20 MHz hydrogen line surveys. Track space craft deep space tracking, may look at some data from deep impact. Also track the USSS Deluth? flights, edge of space sciences folks are early spin off group. Launched 87 missions so far, we tracked about half of them. Mars glider prototype. New web site: <http://deep-space.org>. Come visit us any Sunday afternoon. Call this number, tell us when you arrive at gate on Nelson road. 303-442-1118. If someone answers, someone is there at the site! Call on cell phone from the gate, on Nelson road. Sign says: National Telecommunications Table Mountain site. <http://naic.edu> for big time radio astronomy. Good information there.

## **Cactus Flat report by Vern Raben**

Friday was quite mixed weather wise. Sometimes totally clouds and no wind -- sometimes mostly clear and very windy -- and just about every combination you could come up. We just had to wait a half or so and conditions would change. A good group from local astro clubs present. I didn't take head count, but I'd guess 10-12 or so. Too windy for me to do any time exposures, I spent the evening hopping between Jupiter, Saturn, and around 20 M-objects, M-51 and NGC 5195 in particular was gorgeous. I took a number of images of the Leo galaxies with a Stellacam2 -- I haven't processed them yet -- but with the wind vibrating things most of the time I'm not optimistic. (They looked good last evening, but I've been disappointed before).

## **Messier Marathon by Mike Luckow**

In case anyone is interested in hearing it, here's a report on the Messier Marathon I attempted Friday night with some friends at Cactus Flats.

I'm pretty new to astronomy, so I used a Meade LX200 SCT "go to" scope for it. I know that it's considered "cheating" by some people to use a go to scope for a Messier Marathon, and I know that Messier Marathons aren't even "real" astronomy. I just thought that it would be fun to see all those objects in one night anyway, and it was! The friends who participated in the marathon with me were Jim Adams, who's also a BASS member, and Shane Rea. Also, Bill Travis was kind enough to hang out with us off and on until almost midnight, too, and he helped us identify a few of the objects. Thanks, Bill!!

Altogether, we managed to see 105 or 106 of the 109 Messier Objects. (Apparently, M102 is the same as M101, according to a recent article in Sky and Telescope, so the total number of Messier Objects is 109.)

We started as soon as it was dark enough to see anything, and there were some clouds to the west, but we eventually picked up all the Messier Objects in the western sky through holes in the clouds except M74, unfortunately.

Working our way from the west to the east horizon, we were able to see about 70 objects by the time we went to bed at 1:30 a.m. Vern Raben was just leaving about that time, too. We dragged ourselves out of bed at 3:30 to start looking for the rest of the objects. We knew ahead of time that we wouldn't be able to see M30 because it was rising just before sunrise, but we weren't able to see M73, either, because it was too light when we were trying to find it near the eastern horizon, unfortunately. Jim was able to see M72, which was near M73, so he saw a total of 106 objects, but Shane and I weren't able to see M72, so we saw 105 altogether.

Anyway, it was a lot of fun even though there was some wind and blowing dust at times. I'd definitely like to try it again, and hopefully I can see all 109 of them in one night. We learned a few tricks that will help us be a little more efficient next time.

## **North Sterling Star Party on April 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup>**

Hello dark sky Astronomers, We have all agreed on new moon weekend of April 7, 8, 9th as the official dates for the North Sterling Reservoir Star Party. North Sterling park ranger, Bob Loomis has done us good deal again with Free camping, just state park pass, 5 dollars is asked of us. I like this place for a star party, as it can handle lots of people. It is early in the year but we will take the chance for good weather. This is the first of the summer months star parties. I hope lots of people can make it out once again. The last of the dark sky places left in America await those who do the drive. It is a very nice setting on top of bluff overlooking 3000 acre lake and trails around place. Bath house with hot showers will be open also. I plan to do all three nights if at all possible,. My old motto." have scope will travel", see you in the dark. later, Gary

## **Fiske Planetarium News**

Explore past Pluto! Thursday 7:30pm "Colorado Skies: Kuiper Belt Objects" with Dr. Suzanne Traub-Metlay -- CU students with ID admitted FREE! Friday 7:30pm "Deep Impact", 9:30pm "Laser Metallica", 10:45pm "Pink Floyd: Welcome to the Machine" laser show. Saturday 2:00pm "Stars and Lasers", 3:15pm "The Great Space Chase". Next week, celebrate Sun-Earth Day Monday March 21 at 7:00pm: FREE talk and "Space Storm" show! FAMILY SHOWS 3x/DAY DURING SPRING BREAK!

### **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](mailto: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

Wil Tirion's Sky Atlas 2000.0, Deluxe Edition. Stars are black while deep sky objects are colored by type. Spiral bound. Pages unfold to 21 by 16 inches. \$40.00. Contact Mike Hotka.

A complete set of the 1st Edition Uranometria star chart books plus the field guide. A \$160 value if you purchased them today through Willman-Bell, plus their shipping and handling. I will sell all 3 for \$100. I will only sell them as a set. Contact Mike Hotka.

JMI NGF-DX1 focuser. Has 2 inch to 1 ½ inch adapter. \$150.00. Contact Mike Hotka at [mhotka@yahoo.com](mailto:mhotka@yahoo.com)  
All...

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, 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](mailto:tomt@starmon.com)

If you have astronomy stuff to buy or to sell, send an email to your newsletter editor  
[philippe\\_bridenne@yahoo.com](mailto: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

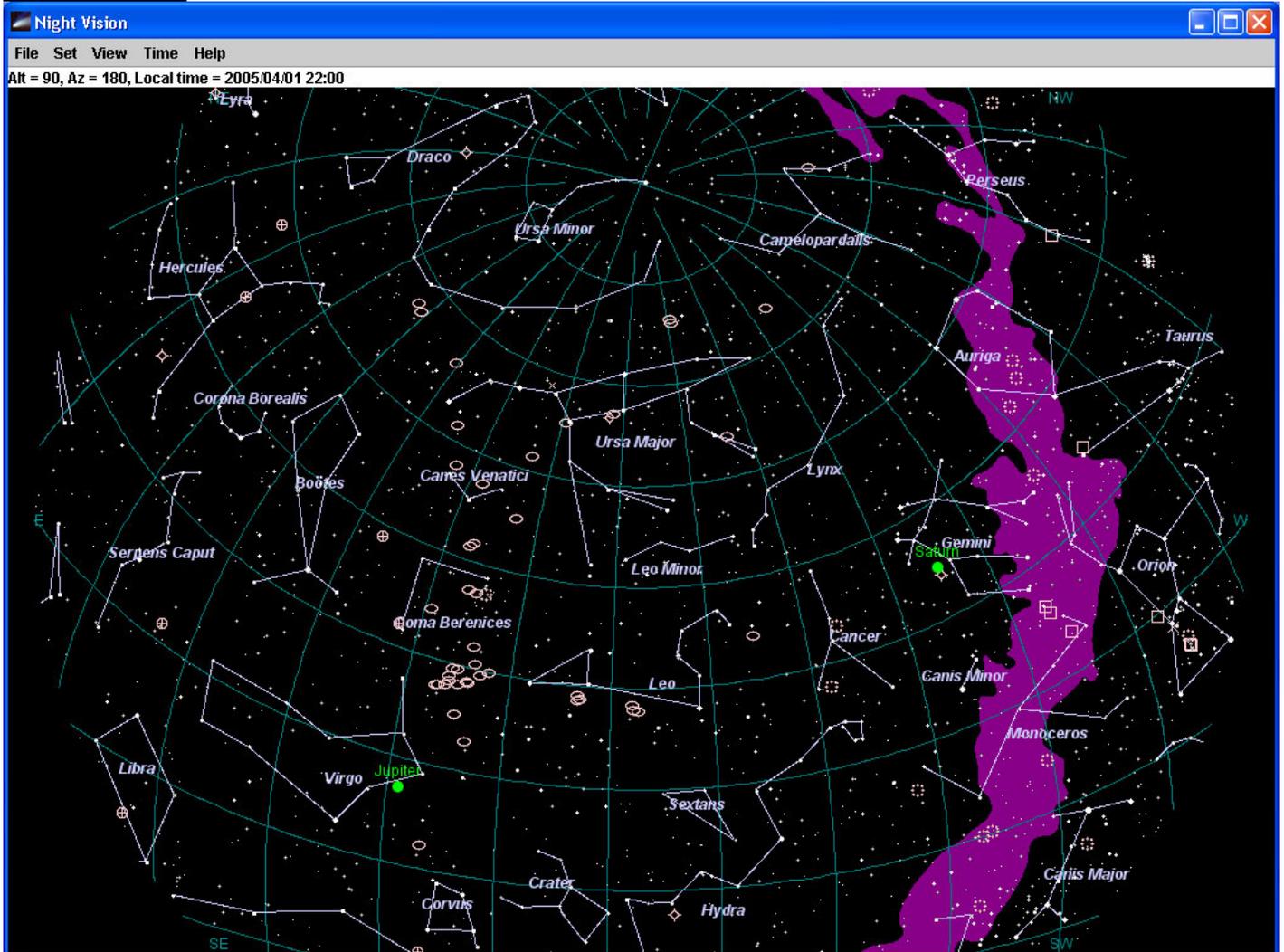
\$5 - 4" LAS embroidered patch

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

\$1 - LAS Planisphere

2/\$1 - LAS un-bumper sticker

## April Sky Map



## **A comprehensive listing, by month and state, of all the major U.S. Star Parties**

All of the major US Star Parties for amateur astronomers can be located at <http://www.chartmarker.com/>

Please contact us at [chartmarker@cox.net](mailto:chartmarker@cox.net) if we missed any. If you sponsor a Star Party, send us your dates and URL so we can update our list.

We will also list and link to selected special events in the Southwest area on our homepage. Send information about your event and URL for a listing.