STARSCAN

Johnson Space Center Astronomical Society

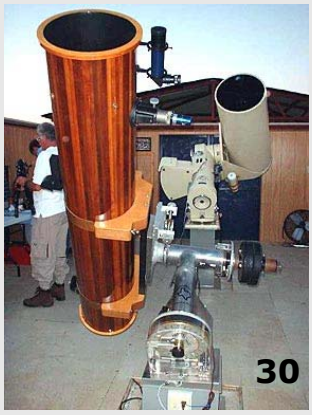
VOLUME 20, NUMBER 3

March 2004

Ft. McKavett Star Party

MEETING LOCATION & TIME CHANGES

IN THIS ISSUE



Transit of Venus Time Capsule and JSCAS History Page — Paul Maley presents two ideas to JSCAS members. Page 22

American Astronomical Society Meeting in Atlanta — Kelley Knight recalls her experiences at the "Super Bowl of Astronomy". Page 23

Member's Gallery — The Horsehead and Flame Nebulas as you've never seen them. Plus images taken at Fort McKavett. Page 25

Observatory Operator Needed — Call for volunteers at the Kraus Observatory. Page 27

Dear Visitor, Voices of McDonald Observatory — Kelley Knight reviews this book about life at the McDonald Observatory. Page 27

Unclaimed JSCAS Shirts — If you've ordered a shirt from Eleta, now is the time to claim it. Page 28

Meade Meets WORF — Ed and Eleta loan their 8" LX-200 for testing of the Window Observational Research Facility to be flown on the IIS. Page 29

CEN-TEX Astronomy Weekend — The Austin Astronomical Society invites JSCAS members to their March event at Canyon of the Eagles Lodge and Nature Park. Page 30

Ft. McKavett Star Party

Our Spring Fort McKavett Star Party will be held March 18th through March 21st. Twice a year, our club makes the 6½ hour drive down I-10 to Fort McKavett State Historical Site for 3 wonderful days and nights of camaraderie and observing.

The fort is located north-west of Junction, Texas, in the small town of Ft. McKavett. The fort was originally called Camp San Saba, because it overlooks the headwaters of the San Saba River. It was established by five companies of the Eighth Infantry in March of 1852 to protect frontier settlers and travelers on the Upper El Paso Road. The camp was later renamed for Capt. Henry McKavett, killed at the battle of Monterey on September 21, 1846. The fort was abandoned in March of 1859. It was reoccupied in April 1868. By 1880, the fort was no longer needed and was abandoned on June 30, 1883. Fort McKavett was once called "the prettiest post in Texas" by General William T. Sherman

Buddy Garza, Park Superintendent

(Continued on page 5)

In Memory of J.C. Meador

November 10, 1923 — February 13, 2004

There will be a memorial at the Spring Ft. McKavett Star Party honoring our friend, frequent Ft. McKavett attendee and fellow JSCAS member, J.C. Meador. J.C. passed away on February 13; losing his fight with lung cancer.

Born in West Virginia, he was the youngest of four children. By age ten, he had already experienced his first airplane ride, fueling his life-long fascination with flight.

Upon graduating from high school and trade school, J.C. went to Baltimore, Maryland, where he began working for Glenn L.

(Continued on page 9)

(Continued from page 4)

Our observing field is on the parade grounds near barracks #4. An effort has been underway for several years to shield the lighting around the fort giving us some very dark skies.

The star party begins on Thursday as people begin arriving and setting up scopes and tents and getting settled in. The nearest restaurant, The Outback, is about 20 minutes away. On Thursday night, you can either eat out of a can or join some of your friends there for chicken fried steak or a burger.

Thursday night we have the park to ourselves. Buddy Garza, the park superintendent, shuts down the park to visitors at 5 p.m. on Thursday and Friday night. Buddy also leaves the restrooms, located at the hospital building, open all night for our convenience. It's a small walk to get there, but there are Port-a-potties near the barracks if you don't want the walk.

Each night, or morning if you spent the night observing, before you leave the observing field, please pick up your trash, cover your scopes, and police your area so the fort will be ready for visitors the next day. I don't recommend leaving your eyepieces on the observing field.

The park reopens at 8 a.m. each morning. Be aware that visitors will be touring the buildings during the day and may pop their heads in while we are sleeping.

On Friday afternoon, JSCAS usually visits one of the area elementary schools to present an astronomy program to the children. Since our star party occurs during the student's spring break, there will be no school outreach this spring.

Early Friday evening, the fire pits near the barracks are fired up for a "cook-your-own" meal. You can grill a steak, burger, chicken, kabobs, or bake potatoes. Bring a side dish to share with the other club members.

Friday evening brings more dark skies. Once again we will have the park to ourselves. In the early morning hours you can see a cloud rising over the roof of the barracks only to realize that it's the Milky Way. Way cool!

For astronomers, Saturday starts out early with a great BBQ at noon. The Friends of Fort McKavett go all out to ensure that we are well fed. There is usually BBQ brisket, goat, links, salads, beans, drinks and deserts. Your $10.00

(Continued on page 6)

(Continued from page 5)

donation to the Friends of the Fort is money well spent.

We take a group picture right after lunch. Right after the picture we can take a nap, or explore the surrounding area. Sonora has the Caverns of Sonora, Brady has antiques, and Eldorado has a wool museum. You can get ice and drinks at the Trading Post down the road. Groceries can be purchased in Menard about 30 miles away. Bigger items can be purchased at the Brady Wal-Mart or in San Angelo, both about an hour drive.

Around three, we will have lectures in the school house for anyone who shows up early for the public star party. At dusk, the Friends of the Fort will usually be selling BBQ sandwiches, hot dogs and drinks near the hospital. Public viewing begins at dark. If the skies have been clear all day, we should have a very good crowd of people. Some people travel long distances to these star parties. By midnight, the public will have left and we will be free to observe or image to our hearts content.

Sunday morning, we roll out of bed and start packing for the trip home. Most people will have left by noon.

The star party runs from Thursday through Sunday. In the past, some members have come early or stayed late. If you want to do that, we **require you to call ahead** to the fort and obtain permission for the extended stay. Often the fort will have activities immediately before or after our event where our presence might prove to be an inconvenience.

The Fort McKavett Star Parties are one of the best bargains around. The cost to attend is zero! The cost of housing is zero! Your only expense is gas to get there, food, and the $10 contribution for the Friends of the Fort BBQ. Our only obligation is to host a public star party for a few hours on Saturday night.

Ken Lester

WHAT TO BRING — WHAT NOT TO FORGET

- Bedding — Don't forget to bring sheets, pillows, blankets or sleeping bags. If you are staying in the family areas, wooden "army" cots will be available. Bring your own cot with air mattress if you prefer. If you are staying in the barracks, cots with wooden slats and straw mattresses are available. It is suggested that you bring an air mattress instead of using the straw mattress.

(Continued on page 7)

(Continued from page 6)

- Food—Be sure to bring your own main course and a side dish to share for the Friday night group cookout. The noon BBQ on Saturday is at the schoolhouse. A $10.00 donation to the Friends of the Fort is recommended to cover the cost of the meal. Saturday night there will be BBQ sandwiches and/or hot dogs available to purchase at the Hospital. You provide for all other meals.

- Tent campers, don't forget stakes, rope, camp stoves, cots and any other camping supplies you normally use for camping. No open camp fires are permitted. Remember that this is a star party, so be sure to have red shielding for your camp/tent lights.

- Lawn chairs — During a long night of observing, you will occasionally need to rest your feet.

- Telescope — This may sound silly, but in your haste and excitement to get to the fort, you might just forget a key component to your telescope. Here is a list of things which have been forgotten in the past: mirror, truss tubes, nuts/bolts/or other fasteners, hand controller, Telrad, eyepieces, red flash lights, charts, batteries, binoculars, and log books. I'm sure there are lots of other things people have forgotten. Make yourself a check list.

- Warm clothes — The weather at the fort can be unpredictable. Be sure to bring warm clothes for the night and cool clothes for the day.

- Extension cords — JSCAS will provide hook ups for your extension cord on the observing field. If you require multiple connections, please bring a 3 way splitter for use at your telescope. In the event that many people will need electricity, please be prepared to limit yourself to one connection to the main line.

- Towels — The fort has an open roofed shower with plenty of hot water; you add the soap. The shower is located across from Buddy's house in the Maintenance Area.

FORT MCKAVETT STATE HISTORICAL SITE — VISITOR GUIDELINES

Special care must be taken to ensure the preservation of this beautiful State Historical Site as well as ensuring our continued use of the facilities. If the grass is brown, brittle, and dying, then extra precautions must be taken to ensure the safety of the fort. JSCAS, in cooperation with park superintendent Buddy Garza, have adopted the following guidelines for the park's usage during our stays at the fort.

- Drive on designated park roadways only. These are the gravel roadways. Remember, 10 MPH speed limit.

- Park in designated areas. These are behind barracks #4 and on the north side of the ruins of barracks #3. RVs may be parked at the north end of the barracks.

- Driving on the parade grounds is allowed for loading/unloading if the ground is not too wet or too dry. Check with Lisa Lester or Park Rangers before driving on parade grounds. No cars or trailers may be left on the parade grounds after unloading.

- Vehicle access to the parade grounds is by the south side of the barracks (see map).

- Avoid the beaten path. We are welcome to tour the facilities but try to avoid walking in the same old line to prevent the creation of unwanted paths.

- Tents must be placed in or along the north side of the ruins as outlined on the map. No tents are allowed on the parade grounds.

- Do not use the fireplaces in any of the buildings – bring warm sleeping bags and clothes instead. Air mattresses offer great insulation from the cold ground.

- Be extremely cautious when using gas stoves or the park's big charcoal grills to prepare food. Use of the charcoal grills may be restricted should conditions warrant. Never leave open flames unattended. Be sure to

(Continued on page 8)

(Continued from page 7)

prevent food from spattering over floors, tables, and walls within the historic structures when cooking.

- Fully extinguish all cigarettes, cigars, and pipes. Properly dispose of all smoking materials in the metal trashcans.

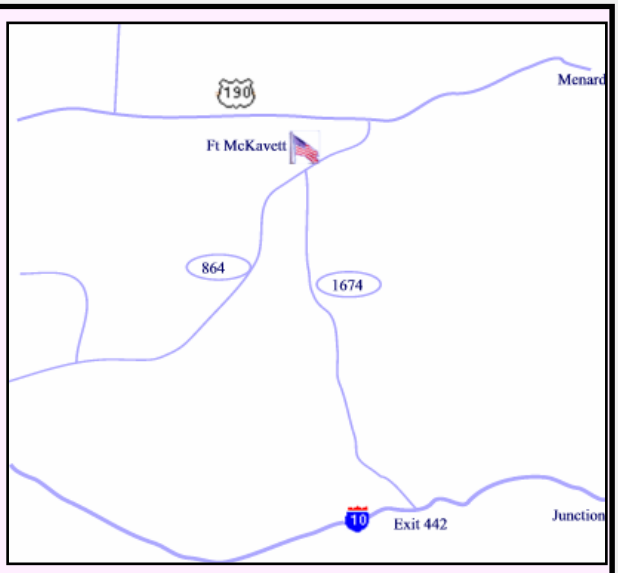
- Pick up all trash before leaving the observing field. Remember the park opens at 8 a.m.; do your part to ensure the park is presentable to visitors.

Your cooperation is essential to a successful star party and our continued 'favored guest' status. Should you have any questions concerning these guidelines or have any additional suggestions, contact either Hernan Contreras, our ambassador to Ft. McKavett, or Lisa Lester, Star Party Chairperson.

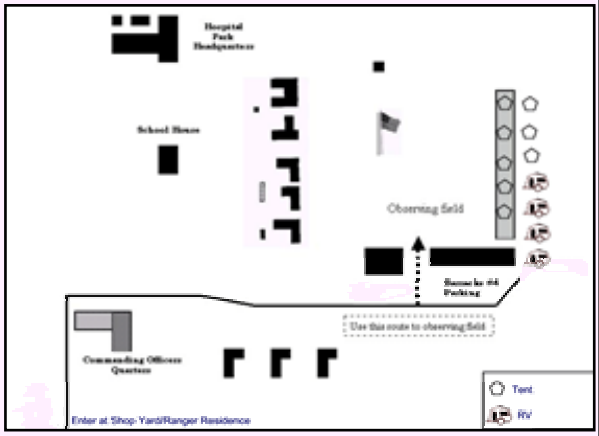
HOW TO GET THERE

From Houston, head west on I-10 past Junction, Texas. Take Exit 442 about 15 miles past Junction. Go west on the feeder road a short distance to the first road to the right. This is ranch road 1674. Take 1674 for about 28 miles until it intersects with Ranch Road 864. Ft. McKavett is in front of you. The main entrance to the park is to the left, but we're using the maintenance entrance, which is to the right just past the small Episcopal Church on the left. The maintenance road is between the park superintendent's house and the maintenance building. If you see the post office or "Trading Post" on the left or an abandoned church on the right, you've gone too far.

The gate may be closed, but it will not be locked. As you go through the gate you will see the Ranger's home on the right and the maintenance building on the left. Follow the road as it curves to the right between the ruins of the two story



commanding officer's quarters on the right and some ruins on the left. Just past the ruins is a road to the left. Don't turn left or you will end up at the hospital. Go straight on the service road to the last building on the left. You can park anywhere behind the barracks. The observing field is the parade grounds in front of the barracks.



CAUTION: There are a lot of deer in the last twenty something miles. Be very careful driving, especially at night and at dusk.

Change Your Bookmarks

Due to unresolved problems with SBC Internet Services, the location of the JSCAS Star Party, Starscan, and Library web pages have changed.

- http://www.riverofstars.net/JSCAS/StarParties/starparty.htm
- http://www.riverofstars.net/JSCAS/Starscan/starscan.htm
- http://www.riverofstars.net/JSCAS/Library/Library.htm

(Continued from page 4)
Martin Manufacturing Plant, outfitting B-26 bombers for the war effort. J.C. then enlisted in the Army Air Corps. He completed basic training and college prep coursework, and proceeded to flight training as a cadet at the W & B Flying School in Chickasha, Oklahoma. There he met his future wife, Dorothy DeKinder, whom he married on October 26, 1946.

At the conclusion of WWII, J.C. joined Spartan Aviation in Tulsa, Oklahoma, converting military aircraft for commercial and civil aviation use. He was later hired by Texas Eastern Transmission Corporation as their first aviation mechanic and subsequently moved to Shreveport, Louisiana. He was later transferred to Houston, Texas. J.C. retired from Texas Eastern in 1985.

J.C. was a founding member and first president of the local chapter of the Professional Aviation Maintenance Association. In 1986 he was the recipient of the Joe Chase Award for outstanding personal efforts in improving knowledge of aircraft technicians, and inspiring others to enhance aviation safety through self-education. J.C. was also active in the Balloon Federation of America, holding pilot licenses for both hot air and gas balloons.


J.C.'s 8" Dob, binocular chair and observing stool

When J.C. hit 70, he decided that it was time to study astronomy. Like everything he did in life, he threw himself into the hobby. Being a gifted and innovative woodworker, he built his own 8" Dobsonian, binocular chair, and observing stool. Last November, J.C. turned 80 and told me that he had to give up observing due to dark induced vertigo problems.

Our condolences go out to his wife Dot, their children, and grand children.

Ken Lester

J.C. has a star named for him in Scorpius. RA 15h 47m 25s Dec –23° 4'

Member Recognition

Past president, Becky Ramotowski, was one of three people featured in an article by Stephen O'Meara which appears in the April issue of Sky & Telescope. O'Meara's article reflects on people doing the unexpected at TSP 2003. In Becky's case, it's about her imaging instead of visually observing.

Ed Grafton, long time JSCAS member, has an image of Saturn showing a Terby White Spot in the March issue of Sky & Telescope (page 116). A Terby White Spot is an illusion that appears on Saturn's rings adjacent to the black shadow cast by the planet.

Triple Nickel was interviewed by David and Wendy Levy for their radio talk show, *Let's Talk Stars*. Triple spent an hour answering David's and Wendy's questions for the program which aired February 10th. The entire interview is available over the Internet at www.letstalkstars.com.

Congratulations to Becky, Ed and Triple!


Photo: Triple at Ft. McKavett by Ken Lester

"Electric Screwdriver" Equatorial Platform

by Glenn Schaeffer

When I received my 20" Obsession from Dave Kreige at Obsession Telescopes back in Christmas of 1999, I was amazed at the views I could see. The silky smooth bearing surfaces and the ease of manually tracking objects was one of the many attributes that Obsession Telescopes are well known for. As my observing skills improved and I was attending more public star parties, I soon realized that constantly having to track an object by hand had its drawbacks, especially if I'm viewing objects at 600X-plus magnification. At star parties, a big scope equates to long lines. By the end of the night, I would be worn out just from climbing up and down the ladder.

So for the last 3 years, I've been tempted to purchase a drive system for my scope. I wanted something that would not require modifying the original design of my telescope. I also wanted to do some basic astrophotography. Those who know me know that I love to star-hop. So, no digital setting circles or computer control was in the future for my scope! With that said, I only had one choice; an Equatorial Platform.

When I began pricing commercial units, I was blown away at the prices. They ranged from $500 to upwards of $2500!! I knew I could build one if I just took the time to do it! Finally, after months of studying different designs and construction techniques, I decided to build it; and I built it for less than $100! I used Chuck Shaw's website to learn how to cut the sectors for the mount. By using a jig similar to the way he ground his platform sectors, I was able to make conical sectors out of the perpendicular north bearing. Kurt Maurer's website offered me the best way to polar align the platform so I could preset my alignment tool. Finally, the actual "look" of the platform was modeled after Tom Osypowski's design. His platform uses a roller drive and perpendicular north bearings which gives an extremely stable ride.

The platform is made from Baltic Birch plywood and hardwood purchased locally. The drive circuit controlling the stepper motor was built from the plans found at the following web site: http://w1.411.telia.com/~u41105032/Stepper/Stepper.htm. Even though I've built electronic circuits before, this was the first time that I've etched a printed circuit board. The web is great! Just about anything you want to do or learn can be found, including etching circuit boards. Anyway, I modified the original circuit board design slightly to provide a hand controller and speed control for single axis operation.

Finally, the actual drive gearing and roller was from a 16 year old Black & Decker electric screwdriver, hence the name "Electric Screwdriver" Equatorial Platform.

(Continued on page 11)

Neutrino Presentation by Triple Nickel

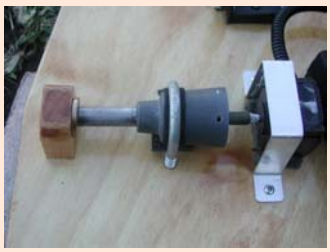
Triple Nickel is scheduled to present his neutrino brief to the Houston Astronomical Society on May 7th at 7 p.m. If you haven't heard this presentation, then make plans to be there.

(Continued from page 10)

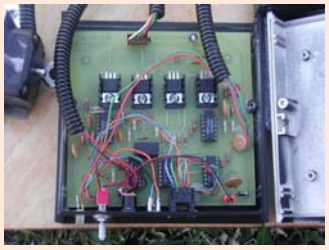
The platform carries very well. It's very lightweight. Notice the black winged bolts holding the platform together during transport. I had thought about installing a handle, but the platform support brace actually makes a great handle. My hand fits nicely in the open slot.

Here's a view of the bottom of the top board (left) and top of the ground board (right). Notice I beefed up the top board with solid birch boards. Also, notice the no-slip tape I placed on one of the north bearing surfaces. I had to install this because the platform would slip sometimes as I was moving the telescope around. I was concerned that the tape would introduce vibrations at the eyepiece due to the rough surface. But after using it a couple of times, the rough surface had been ground down just enough to still grab but give silky smooth views at the eyepiece.

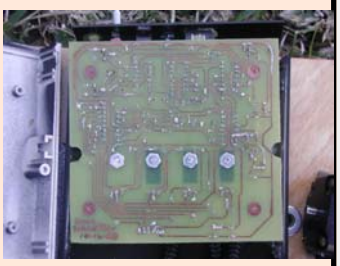
I incorporated 2 micro-switches to sense the beginning and ending platform travel points. I get just over an hour of tracking and it resets itself in about 30 seconds. Then it's ready for another hour, all fully automatic! The right image shows a side view of the business end. Notice the circuit box, stepper motor and mounting, electric screw driver head and mounting, and the brass bearing and support.



The stepper motor was encased in rubber tubing surrounded by an aluminum bracket as shown. The shaft was connected to the driver head gear with rubber tubing. All of this allows the stepper motor to be virtually silent with no vibrations at the eyepiece. Notice on the right that I sliced very small grooves in the screwdriver shaft in an attempt to prevent slippage. The combination of the no skid tape on the bearing surface of the platform itself and the fine grooves gave it just the traction I was looking for.



Here is the circuit board I etched for the drive circuit for the stepper motor. It was a lot of fun etching my own PCB! The circuit board was copied from David Bevel and Nils Olof Carlin. I modified the design to incorporate a hand controller to allow single axis control.



(Continued on page 12)

(Continued from page 11)

Here is the front of the control box. The power LED is green when the power is on and the battery is above 9VDC. I usually use a 12VDC transformer at home. The LED turns red if the voltage from the battery drops below 9VDC. Next is the on/off switch, then the 12VDC transformer jack. Next is the high speed controller for the rewind. Finally, the jack for the control box is shown. The control box is pictured to the right. It has push buttons for forward and reverse and a variable resistor to control drive rate.

To the left is the south bearing. I like simple things and this was pretty simple. I used an L-shaped aluminum blank, some skateboard bearings, and voila! Getting the angles right took some time but it works great. Also note the altitude adjuster for the south bearing. To the right is the ramp I made to get the scope on the platform by myself. Below illustrates how easy it is to load the telescope on the platform with the ramp.

I built this tool to make polar alignment easier. After I did a star drift alignment, I attached this tool to the south bearing. Then I adjusted it to line up with Polaris. Very repeatable! As a matter of fact, with this tool, I can keep an object in the FOV for more than 15 minutes at more than 600X!

(Continued on page 13)

Help turn off the lights...

Join the
International Dark-Sky Association (IDA)
http://www.darksky.org
"To preserve and protect the nighttime environment and
our heritage of dark skies through quality outdoor lighting."

The Fort Bend Lighting Ordinance is still pending. The Commissioners Court decided to postpone the vote until March 16th to allow for more input. Visit Phil Inderwiesen's web site for more information:
http://people.txucom.net/tovinder/light_ord.htm.

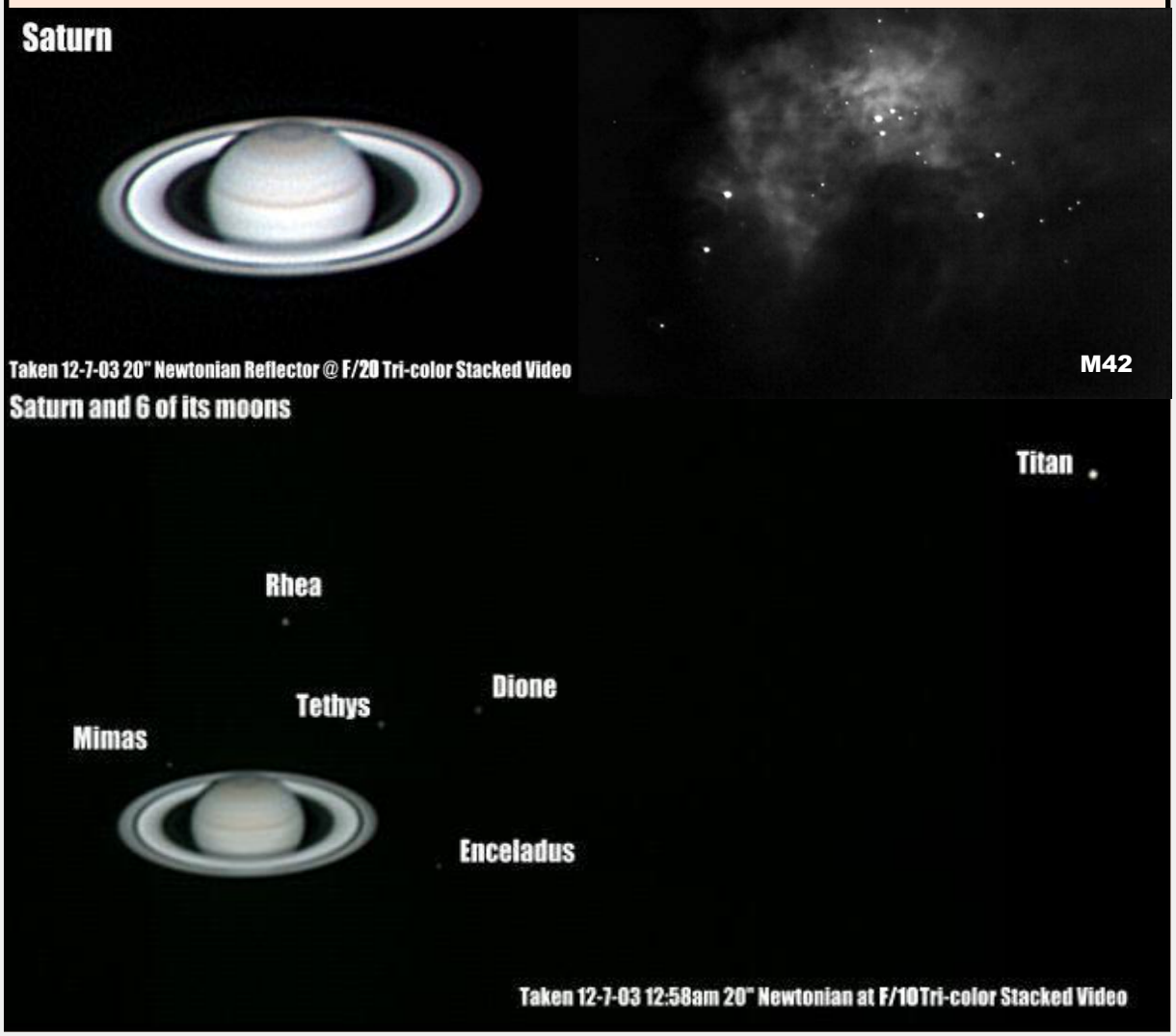
(Continued from page 12)

Glenn's Obsession on his equatorial platform

So there you have it! Everything needed to do an observing session without having to constantly manually track. After over 3 years with this scope, I can finally relax and observe an object without having to constantly track the scope by hand. It's amazing the amount of detail I can detect, especially with the planets.

You may go to my website to see higher resolution pictures. If you have any questions about construction techniques, cutting the sectors, circuit board modification, etc…, please feel free to email me at GlennSchaeffer@houston.rr.com.

Below are a few pics I have taken recently with this setup using a B/W CCTV camera and stacking the video using RegiStax software. Not quite the resolution that Ed Grafton (you know, the guy that the HST looks up to) has achieved, but for a $30 camera I got from EPO, I'm finally able to use the platform to track well enough to start doing some astrophotography.

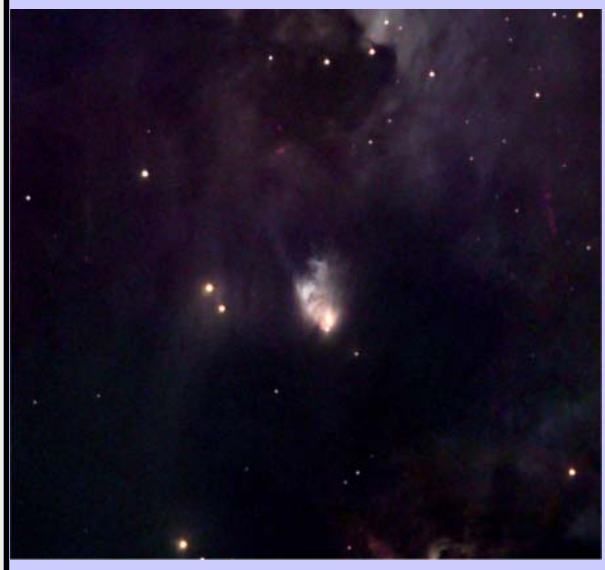


Current Events

NEW NEBULA IN ORION

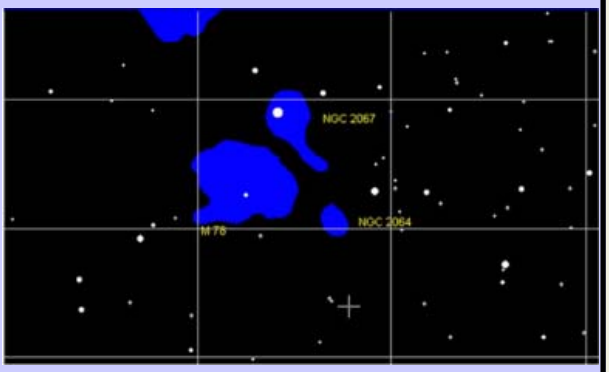
Jay W. McNeil of Paducah, Kentucky, has reported to the Central Bureau for Astronomical Telegrams the discovery of a previously unknown nebula near M78 in Orion. The nebula is located at R.A. 5h 46m 14s, Dec. -00 05 .8. The discovery was made from an unfiltered 90 minute CCD luminance frame taken on January 23, 2004, using a 3-inch Takahashi FTC-76 refractor and ST-10XME camera. Estimated magnitude of the nebula is between 15 and 16. The nebula is about an arc-minute across. Bo Reipurth of the University of Hawaii has confirmed that the nebula is the result of an outburst from IRAS 05436-0007, illuminating the cloud of dust and gas in the region.

Two images of the nebula can be found on Jay McNeil's web site (http://wkaa.net/gallery/mcneil - page 2). I compared his images, which have the new nebula marked, with several other images of M78 I found on the web. Russell Croman, of Austin Texas, has an image of M78 which clearly shows the new nebula. Croman's image was taken almost a month earlier, on December 30, 2003. The nebula is missing from a Jerry Lodriguss image taken in 1998. There were lots of undated images of M78 on the web which included the area where the new nebula was found; some showed the new nebula, some did not. The star chart below shows the position of the new nebula (marked with a '+').



©Adam Block/NOAO/AURA/NSF
(http://www.noao.edu/outreach/aop/)

20in RC Optical Systems telescope operating at f/8.4; Paramount ME Robotic Telescope Mount; SBIG ST10XME CCD camera with color filter wheel; Luminance = 90 minutes binned 1x1; Red = 15 minutes binned 2x2; Green = 15 minutes binned 2x2; Blue = 15 minutes binned 2x2



According to Jay in a letter posted on the HAS web site; "Preliminary data points to this being a very rare FU Orionis or EX Lupii type outburst of the deeply imbedded IRAS 5436-0007, which has also been noted as the radio source LMZ 12. According to the latest research, LMZ 12 is thought to be an obscured dense dust core with a healthy accretion disc."

Congratulations to Jay McNeil. I wonder how many more unknowns are waiting to be found by amateurs willing to compare their new images to existing ones.

Ken Lester

PLANETOID FOUND IN KUIPER BELT

Mike Brown, associate professor of planetary astronomy at Caltech, Chad Trujillo, Gemini North observatory in Hawaii, and David Rabinowitz, Yale University, have discovered what could be the largest Kuiper Belt object to date. Using the 48" Samuel Oschin Telescope at the Palomar Observatory and the recently installed QUEST CCD camera the new object was discovered on images taken February 17th., 2004. The new object has been given the temporary name 2004 DW.

The size of 2004 DW is not yet certain. Based upon its distance of 45 AU (about 7 billion kilome-

(Continued on page 15)

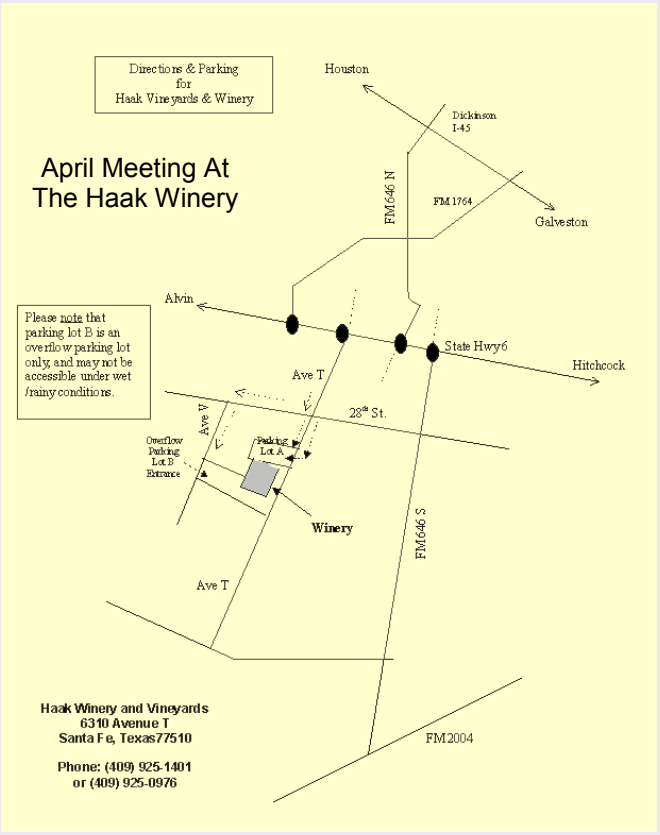
(Continued from page 14)
ters), its luminosity, and using the same albedo (reflectivity) as Quaoar, Brown estimates a size of about 1,400 kilometers. Quaoar's albedo is about 10 percent. If 2004 DW is similar, the 1,400-kilometer estimate should hold. If the albedo is lower, then it could actually be somewhat larger; or if higher, smaller.

Preliminary analysis indicates the new object's orbit is tilted 20°. Chad Trujillo states "Since its discovery ... , we have been trying to locate serendipitous images of the object in old datasets. We have so far traced its orbit back to 2002. All indications are that it is a 'Plutino' --- that is a Kuiper belt object in an orbit very similar to Pluto's: Pluto goes around the sun twice for every 3 times that Neptune goes around the sun. The same is true of 2004 DW. Also, the longitude of perihelion is close to Pluto as well. Pluto's twin? Not quite, but not too far off!"

NAMING NEW OBJECTS ORBITING THE SUN

According to the rules set by the Minor Planet Center and the International Astronomical Union, new discoveries are given a "code name". This name is the year of discovery, followed by the half-month of discovery (A = the first half-month of the year, B = the second half-month of the year, etc.) and then the next letter is assigned sequentially. Once the orbit is better known then the object is given a number. After the object is numbered, then the discoverers have one decade to propose a name to the International Astronomical Union. There are even more rules about the name of the object. 2004 DW, for instance, must be named after an underworld deity because it is in a Pluto-like orbit.

MEETING LOCATION & TIME CHANGES



Due to activities associated with the 35th Lunar and Planetary Science Conference at LPI, the location of the March JSCAS meeting has been moved. The meeting will be held at Space Center Houston on March 12th. Please note that only the location has changed, not the date. Space Center Houston is located at 1601 NASA Road 1, approximately 25 miles south of downtown Houston in the NASA/Clear Lake area.

Our April meeting will be held in conjunction with the Haak Winery Star Party on April 17th. This is a change in location and date. The meeting and star party will be held the third Saturday of the month. Current plans are to enjoy a nice dinner (that you bring) during the meeting; then enjoy the stars with the Haak Winery guests. The address is 6310 Ave. T, in Santa Fe, Texas. The winery is located 1.8 miles south of State Highway 6 between Alvin and Galveston, Texas. Details of the April meeting will appear in the April edition of the Starscan and be announced during the March meeting at Space Center Houston.

Astronomy 101

Remote Imaging and CCD Workshop For Beginners

The feature story in January's Starscan was about remote imaging using robotic telescopes near Cloudcroft, New Mexico. These robotic telescopes are high end 12" Takahashis; one is a

Dall-Kirkham, the other a Richey-Chretien. The scopes are owned by Arnie Rosner and are rented out for remote imaging through his company Rent-A-Scope. Primarily as a result of that article, Arnie donated to JSCAS some scope time. At Al's suggestion, a group "remote imaging and CCD workshop" was organized.

While the session was open to anyone, it seemed the majority of people who responded were beginners to the field of CCD imaging.

Al selected the night of January 24th to hold the workshop. Being close to a new moon and on the weekend, it seemed like an opportune time. It just so happened that the 24th was also the night of our first JSCAS star party of the year. However, either the weather gods were angry or someone in the club got a new telescope for Christmas because Houston experienced heavy rains that night. So while the rain fell, a small group of members met at Al's home in Friendswood with hopes of seeing some astronomical magic from New Mexico.

Upon arriving at Al's I found out that the weather in New Mexico was iffy. A low pressure area over New Mexico was bringing in bands of clouds and possibly some moisture. The dome covering the telescope was closed.

I was soon joined by Randy Brewer, Ed and Eleta Malewitz, and James and Nubia Eisenlohr. While we kept watch on the weather, Al started showing and explaining to the group some of the magic of image processing. When the skies over Cloudcroft cleared up, we got a call from Arnie that the dome was open and we could begin our imaging session. I was quite surprised at how sophisticated and user friendly the Internet interface was.

Al entered the object we wanted to image, planetary PK164+31.1, on the sky map screen. Unfortunately, it was not in their database. Al was prepared for that event. He already had his star charting program running on the computer showing our target planetary. There was an NGC galaxy not far off from our planetary. He entered the galaxy's name and the scope slewed to the new target. After a brief 5 second snapshot, the galaxy's image was displayed up along with its associated star field. Al merely star hopped from that galaxy to the planetary. After about 4 tries the planetary was spotted. Al carefully centered

(Continued on page 17)

(Continued from page 16)
the target and began his imaging session.

While the CCD camera in Cloudcroft collected photons, Al continued his explanations about image processing. Al would periodically check the images to ensure that the scope was guiding correctly. During one such check, the image was gone. Al checked and found that the dome had closed. The sophisticated hardware is designed to detect excessive moisture and automatically close the dome to protect the equipment.

While we waited for the dome to reopen, we watched a NASA Internet feed of the control center for the Mars rover mission. The Opportunity mission was scheduled to bounce to a landing that night.

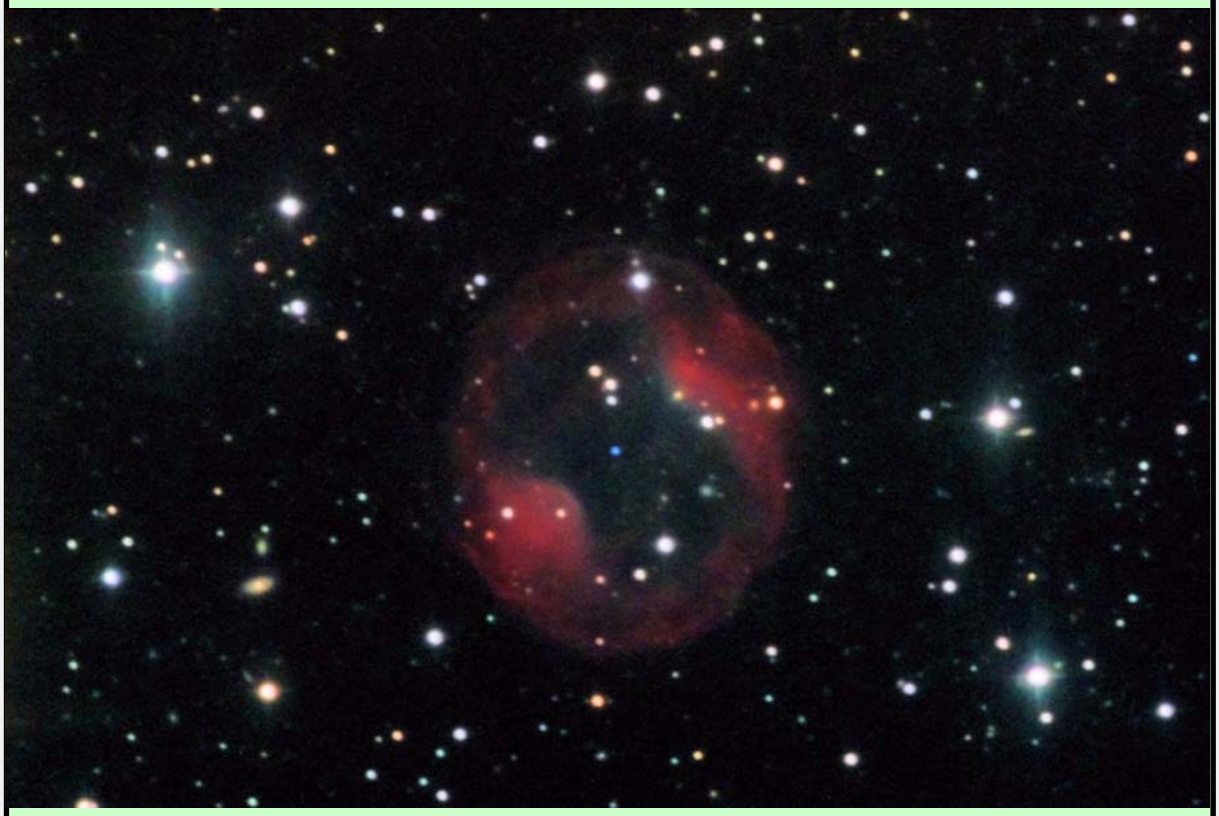
After the dome reopened, we once again star hopped to our planetary. The imaging session was restarted. We kept checking back to the NASA feed to get an update of the Mars mission. We watched as the space craft entered the atmosphere, deployed its parachute and bounced to a stop. The end of a long trip and a glorious beginning to Opportunity's Mars mission.

It was quite late when all the images had been collected. Al processed the images and posted the results the next day.

I truly believe that I could operate the robotic camera/telescope set up in Cloudcroft, but I don't think I'm quite to the point that I could process the image without some additional guidance. Hopefully Al will have more of these sessions in the future so more beginners can learn from his experience.

We wish to thank Arnie Rosner for donating scope time for our learning experience.

By Ken Lester



The object of the imaging session is planetary nebula PK164+31.1 in Lynx. This is a very large, dim planetary not often imaged by amateurs. We used the 12" Takahashi RC scope with SBIG ST8E CCD camera. Total images were twelve 300-second clear-filtered images for luminance, four 300-second red-filtered images, four 300-second green-filtered images, and five 300-second blue-filtered images.

Visual Observing

By Chris Randall

Fort McKavett Challenge List for March 2004

This list covers many areas of the sky and object types. No formal logging is required for this program, just observe and enjoy the night sky. This list contains objects for both beginners and experts and should be a fun or a serious challenge, whichever you choose.

Rules:

- Select from the lists below at least **30** objects to observe.
- Find and observe your selected objects, mark the date and time observed and what instrument you used. For example; Naked Eye, 10x20 Binoculars, 4" Refractor, 22" Dob, or something with a hole in it.
- Although not required, **share** your view of the objects with others on the field, especially the tough ones, and help others find these objects if they have trouble. So they can log on their log sheet.
- Helping each other is welcome, but **Light Leach Logging is not permitted**.
- All Observations must be done during the March 2004 Fort McKavett Star Party.
- When you have completed the required observations turn them into Chris Randall, you will receive a special 2004 Fort McKavett Observing Certificate. Don't forget to put your name on the sheet. The logs will be returned to you.
- Most important, have **FUN** observing at the Fort.

Solar System Objects (28 listed)

Solar System objects are a varied class of objects that just happen to be in our local neighborhood. Just find as many of the listed features below but take the time to enjoy the views.

Venus is big and bright, why see it at night. Look for it during the day — it is 40° from the sun.

Comet Linear C/2002 T7 should be 6.9 magnitude and visible at sunset in Pegasus near Algenib (γ Peg).

Saturn and **Jupiter** are more than just bright objects in the sky. Look deeper into their features and take the time to sketch them. You will watch the details pop out before your eyes. Here are features to look for (with magnitudes):

Saturn:	
Mimas	13.0
Enceladus	11.8
Tethys	10.3
Dione	10.2
Rhea	9.8
Titan	8.4
Hyperion	14.3
Iapetus	11.2
A Ring	
B Ring	
C Ring	
F Ring	
Cassini Division	
Encke Division	
Ring Shadow on the planet	

Jupiter:

Io
Europa
Ganymede
Callisto
The Great Red Spot
Moons playing Hide and Seek
Moon Shadows on the planet

(Continued on page 19)

(Continued from page 18)
Many bright **asteroids** are visible. Just pick one and watch the 'star' move over hours or days.

Man-made **Satellites**, both in low earth orbit and geo-stationary orbit, are visible. Many can be seen just by looking in the north with your telescope or binoculars. In order to count at the fort, you have to know which one you are watching. Start early as they can generally only be see within 2 hours of sunset or sunrise. Don't forget to bring a target list. You can use http://www.heavens-above.com to get your list. Ft. McKavett is at 30.82N, 100.06W.

Pluto, faint and star like, is hiding in Serpens (17h 26.8m –14° 29.8). The 13.9 magnitude planet rises at 02:45 in the morning and nears zenith at dawn.

Mercury, if you can catch it, is visible in the morning just before Sunrise. Don't be blinded by the Sun.

Binocular Objects (10 Listed)

Object	Type	RA	Dec	Mag	Size	Con	Sky Atlas	Common Name
Stock 2	OC	02h 15m	+59° 15'	4.4	60'	Cas	1	
M 42	BN	05h 35m	-05° 25'	3.0	60'	Ori	11	
NGC 2237 NGC 2238	BN	06h 32m	+05° 04'	--	80' x 60'	Mon	12	
NGC 2264	OC	06h 40m	+09° 53'	3.9	30'x60'	Mon		Christmas Tree
NGC 2632 M44		08h 40m	+19° 40'	3.1	95'	Cnc	13	
Cr 256	OC	12h 25m	+26° 07'	1.8	275'	Com	7	
NGC 5139	GC	13h 27m	-47° 29'	3.9	55'	Cen	21	Omega
NGC 5272 M3	GC	13h 42m	+28° 23'	5.9	16'	CVn	7	
NGC 6121 M4	GC	16h 24m	-26° 32'	5.8	26'	Sco	22	
NGC 6705 M11	OC	18h 51m	-06° 16'	5.8	13'	Sct	15	

Just for Fun (Asterisms) (9 Listed)

Just some unusual "non-objects" found through my research for observing lists. Many of these came from other lists and I have not seen them. So they will be new to me as well. If you know of others write them in and observe them as well.

Common	RA	Dec	Mag	Size	Con	
NGC 457	01h 20m	+58° 17'	6.4	13'	Cas	ET
Kemble's Cascade	03h 57m	+63° 04'	5	2.5°	Cam	
NGC 2169	06h 08m	+13° 56'	5.9	7'	Ori	'37'
IGLOO	07h 28m	+21° 27'	--	35'	Gem	
STARGATE	12h 36m	-12° 03'	--	12'	Crv	
PLOUGH	12h 37m	+56° 42'	--	20'	UMa	
JAWS	12h 39m	-11° 32'	--	14'	Crv	
Mini-Coathanger	16h 29m	+80° 17'	--	18'	UMi	
Cr 399	19h 26m	+20° 06'	3.6	60'	Vul	Coathanger

(Continued on page 20)

(Continued from page 19)

Telescopic Objects (10 Listed)

Object	Type	RA	Dec	Mag	Size	Con	Star Atlas	Common Name
NGC 2903	Gal	09h 32m	+21°30'	9	13.3'x6.0'	Leo	6	
NGC 3242	PN	10h 24.8m	-18° 38.6'	8.6 (P)	75.0"	Hya	13	Ghost of Jupiter
M 98 **NGC 4192**	Gal	12h 13.8m	+14° 54.0'	11.0 (B)	9.8'x2.7'	Com	14	
NGC 4565	Gal	12h 36.3m	+25° 59.2'	10.4 (B)	15.9'x1.8'	Com	7	
M 83 **NGC 5236**	Gal	13h 37.0m	-29° 52.1'	8.2 (B)	12.8'x11.4'	Hya	21	
M 9 **NGC 6333**	GC	17h 19.2m	-18° 30.98'	7.8	12.0'	Oph	15	
M 14 **NGC 6402**	GC	17h 37.7m	-03° 14.75'	7.6	11.0'	Oph	15	
NGC 4039 **NGC 4038**	MGal	12h 01.8m	-18° 53.5'	11.1 (P)	4.0'x2.2'	Crv	14	
NGC 3628	Gal	11h 20.3m	+13° 35.4'	10.3 (B)	14.8'x2.9'	Leo	13	
M65 **M66**	Gal	11h 18.9m	+13° 05.6'	10	9.8'x2.8'	Leo	13	

Extreme Challenge Objects (5 Listed)

Object	Type	RA	Dec	Mag	Size	Con	Star Atlas	Common Name
IC 3568	PN	12h 33.1	+82° 33.8’	11.6p	10”	Cam	2	Baby Eskimo
Minkowski 2-9	PN	17h 05.6m	-10° 08.5'	13.2 (IR)	50"x20"	Oph	15	
AGCS 373	Gal Clstr	03h 38.5m	°-35° 27.0'	10.1 (V)	180'	For	18	Fornax Gal. Cluster 18 – 20 galaxies
NGC 2359	BN	07h 17m	-13° 13’	--	8’	CMa	12	Thor's Helmet
Abell 1656	Gal Clstr	12h 59m	+27° 59’	11	120'	Com	7	Coma Galaxy Cluster

Ghost of Jupiter ©Al Kelly

Thor's Helmet ©Randy Brewer

Transits of Jupiter's Moons

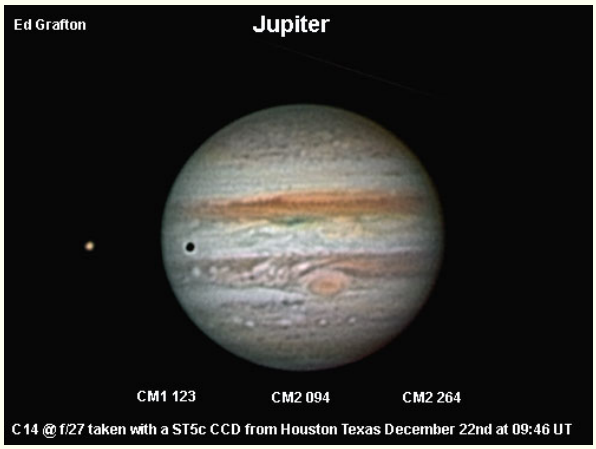
Ken Lester

In March there will be several opportunities to observe not just one transit across the face of Jupiter, but two transits at once. A transit occurs when a moon crosses the face of Jupiter. Transits are accompanied by the shadow of the moon being cast upon the cloud tops, a Jovian solar eclipse! A keen eyed observer may be able to see not only the moon's shadow but the moon as well.

On March 28th, if the sky is clear and you're up around 2 a.m., there will be an opportunity to observe two moons transiting and the shadow of three moons at the same time.

The chart below was derived from the March issue of Sky and Telescope. All times and dates are in local (CST) time. The number beside each entry represents the number of objects you can see going across Jupiter at one time. Those lines in red represent events that occur before Jupiter rises or after it sets. Those lines in blue represent events occurring after the Sun rises or before it sets.

Date	Time	Event	Visible
4-Mar	23:05	Europa Transit Begins	1
4-Mar	23:08	Europa Shadow Enters	2
5-Mar	1:20	Io Transit Begins	3
5-Mar	1:22	Io Shadow Enters	4
5-Mar	1:55	Europa Transit Ends	3
5-Mar	1:59	Europa Shadow Exits	2
5-Mar	3:36	Io Transit Ends	1
5-Mar	3:38	Io Shadow Exits	0
12-Mar	1:21	Europa Transit Begins	1
12-Mar	1:44	Europa Shadow Enters	2
12-Mar	3:04	Io Transit Begins	3
12-Mar	3:16	Io Shadow Enters	4
12-Mar	4:10	Europe Transit Ends	3
12-Mar	4:36	Europa Shadow Exits	2
12-Mar	5:19	Io Transit Ends	1
12-Mar	5:31	Io Shadow Exits	0
19-Mar	3:37	Europa Transit Begins	1
19-Mar	4:21	Europa Shadow Enters	2
19-Mar	4:48	Io Transit Begins	3
19-Mar	5:10	Io Shadow Enters	4
19-Mar	6:27	Europa Transit Ends	3
19-Mar	7:03	Io Transit Ends	2
19-Mar	7:12	Europa Shadow Exits	1
19-Mar	7:25	Io Shadow Exits	0
20-Mar	20:25	Ganymede Transit Begins	1
20-Mar	22:01	Ganymede Shadow Enters	2



Ed Grafton©

Date	Time	Event	Visible
20-Mar	23:14	Io Transit Begins	3
20-Mar	23:38	Io Shadow Enters	4
20-Mar	23:45	Ganymede Transit Ends	3
21-Mar	1:25	Ganymede Shadow Exits	2
21-Mar	1:29	Io Transit Ends	1
21-Mar	1:54	Io Shadow Exits	0
22-Mar	16:45	Europa Transit Begins	1
22-Mar	17:39	Europa Shadow Enters	2
22-Mar	17:40	Io Transit Begins	3
22-Mar	18:07	Io Shadow Enters	4
22-Mar	19:35	Europa Transit Ends	3
22-Mar	19:55	Io Transit Ends	2
22-Mar	20:22	Io Shadow Exits	1
22-Mar	20:30	Europa Shadow Exits	0
27-Mar	17:52	Callisto Transit Begins	1
27-Mar	20:59	Callisto Transit Ends	0
27-Mar	22:59	Callisto Shadow Enters	1
27-Mar	23:44	Ganymede Transit Begins	2
28-Mar	0:59	Io Transit Begins	3
28-Mar	1:32	Io Shadow Enters	4
28-Mar	2:00	Ganymede Shadow Enters	5
28-Mar	2:19	Callisto Shadow Exits	4
28-Mar	3:05	Ganymede Transit Ends	3
28-Mar	3:14	Io Transit Ends	2
28-Mar	3:48	Io Shadow Exits	1
28-Mar	5:23	Ganymede Shadow Exits	0
29-Mar	19:03	Europa Transit Begins	1
29-Mar	19:25	Io Transit Begins	2
29-Mar	20:01	Io Shadow Enters	3
29-Mar	20:16	Europa Shadow Enters	4
29-Mar	21:40	Io Transit Ends	3
29-Mar	21:53	Europa Transit Ends	2
29-Mar	22:16	Io Shadow Exits	1
29-Mar	23:07	Europa Shadow Exits	0

Sky & Telescope Magazine Subscriptions – Don't Forget About the Club Discount!!

Many of us in this group look forward to "that special moment every month" when you know there is a shiny new copy of "Sky and Telescope" waiting for you in your mailbox. Speaking for myself, I tend to go into withdrawals when it hasn't shown up within an expected time frame. But as we know, Sky &Telescope does not come cheap. At $42.95 per year - its subscription cost is a bite in anyone's budget.

In years past, our club secretary-emeritus, Randy Moore, established contact with Sky & Telescope publishers to obtain the "Club Discount". Many of you, including myself, took advantage of that. Well, after untold years of devoted service to JSCAS, Randy has retired from the position of secretary. With his retirement, the position of secretary is open. Since the snail-mail and on-site distribution of the Starscan is no longer needed, the job of club Secretary is pretty much undefined. So in the interim and foreseeable future, I have informed Bob Taylor (our so-far scandal-less President) that I'll take on the duties of Secretary, to ensure the discounted subscription rates for Sky and Telescope for our group.

So what I ask of all of you is simple: If you are currently taking advantage of the club discount, I would like to know who you are, strictly for reference. We need to have at least **five** subscriptions through the club in order to get the "Club" rate.

I would also like to remind those of you that are not taking advantage of the discount that you can subscribe to Sky and Telescope for $10 off the normal price ($32.95 with the Club Discount). This goes for renewals as well. Sky &Telescope has the Club subscription paperwork in the mail to me, so anytime from the March meeting on, email me (tcell@hal-pc.org) or catch me at a meeting, and I'd be happy to send in S&T subscriptions for anyone in our group!

Clear skies!
David Haviland

Transit of Venus Time Capsule and JSCAS History Page

Paul Maley

The next JSCAS RING OF FIRE EXPEDITION is to observe the transit of Venus across the sun on June 4. I plan to set up an observing station at one of the two British observation sites used in 1874 on the island of Mauritius. My thought was to establish a time capsule from the JSCAS so that the next time a transit is seen from that region (maybe the year 2117), it might get dug up. In April 1995 we had an expedition to Puinahua, Peru in the Amazon. We carved a balsa wood plaque which was left hanging at our jungle hotel--not quite a time capsule, yet still a record that the "JSCAS was here!".

If I'm looking for suggestions as to how such a time capsule might be best constructed, and what sort of marker might best remain undisturbed for over a century. This is not a trivial task. Please email me to pdmaley@yahoo.com with suggestions on the size and kind of stuff we might insert.

In recent weeks I stumbled across a set of photos that I shot from a JSCAS instrument-fest held at the old Lunar and Planetary Institute in 1972. I scanned 10 of them and sent Chris Randall these images for use on a proposed JSCAS history page. If any other members who were around at that time have anything similar that might be of interest, please forward them to Chris. If there are any events that have been photographically documented over the past ~39 years of JSCAS existence, we should make an attempt to preserve some of them at least on the web site. If I am not mistaken, the JSCAS 40th anniversary will be in 2005.

American Astronomical Society Meeting in Atlanta by Kelley Knight

The Winter Meeting (203rd Meeting) of the American Astronomical Society or the "Super Bowl of Astronomy", as some would say, had me busy taking photographs and learning about the new discoveries in various genres.

While there, I met some famous astronomers and ran into a few former members of the Austin Astronomical Society, who were giving presentations. It was neat meeting Fred Espenak, Margaret Burbridge and Dr. Hoskins. Dr. Hoskin's talk on the "real" Caroline Herschel was fantastic.

The cavernous exhibit halls were lined with rows and rows of display panels that had summaries of dissertations posted to them. These are called posters; envision just the documentation of a science fair experiment being displayed. One curious poster was about the space elevator. As one who has seen a million pounds of pull put on a deep water mooring rope and other cables at Holloway Houston (http://www.hollowayhouston.com/ has video of this), I can't fathom how they plan to pull this off. Perhaps the cabling will be made of advanced materials such as the carbon nanofibers now in laboratory study. I guess nanotechnology will become our friend. If anyone is interested, I have a hard copy of the space elevator presentation.

Dr. Brad Schaeffer, former Austin club member who is now with LSU, gave talks and moderated several of the discussions. He was able to have two posters and made two presentations, one in the Gamma Ray Bursts division, the other in the Historical Astronomy Division.

There was just too much science for me to see everything. A full list of all the topics is available at http://www.aas.org. Click on "meetings", then click on the "203rd" link. Other links will take you to the discussion papers and poster sessions. Each of those links have links to additional information.

James Bryan, past-president of the Austin club and discover of several extra-galactic supernovae through the club's 12.5-inch Harlan Smith Telescope, also attended. He presented a truncated and updated version of a talk he gave to the Austin group regarding the visual discovery of SN Andromeda 1885 by Stephen Moore, an amateur astronomer from Texas. According to writings by Barnard and Moore, Moore was one of the first to visually spot this new phenomena. Bryan's talk also discussed how Barnard determined the magnitude of objects. It was a nice surprise seeing Bryan and his wife in the crowd.

During these meetings, when you volunteer in the pressroom, you get to see how the astronomy headlines are created. It was quite funny that

Top to bottom: Bob Nemiroff, of APOD fame, shows the #1 image download from APOD. BadAstronomy.com creator, Phil Plaitt, discusses the XMM Satellite during the last poster session of the conference. Jeff Kanipe is past AAS member and noted astronomy writer and possible presenter during the next Central Texas Astronomy Weekend. Jay Pasachoff, eclipse chaser, was the Education Prize winner. Brad Schaeffer, former UT professor and Austin club member, gave several presentations. This one was about astronomical lore. It was similar to the 2-hour constellation of the month (COM) given at the Austin club (COMs normally last 7 minutes).

(Continued on page 24)

(Continued from page 23)

some of the e-mails and such I pulled off the various list servers caught the attention of a few of the media. I was reading Triple's e-mail about seeing Spirit land and the first images coming across. Paul Recer, Associated Press, was behind me and he muttered, "must have been really cool to see those images on the huge screen of Mission Control." Some members of the media were curious when we chattered about Mars. When I displayed Mars images that various amateurs had taken on my computer screen, people would pause and look, but they never asked who took them.

I managed to get a few snapshots of some infamous astronomy personalities; like Bob Nemiroff, from Astronomy Picture of the Day, who unveiled is new book, *Universe 365 Days*. It was a very nicely produced book. Phil Plaitt, of BadAstronomy.com fame and a member of the XMMNewton team, joked with the Chandra team as to who had the better X-Ray telescope. I think it is funny that every time I took his photo I caught him with his mouth open. I also took a picture of Fred Espenak, who led a session just for science writers about the Venus Transit this summer. Another infamous eclipse/transit chaser, Jay Pasachoff, received the Education Award.

One of the scientists I met is one of the most famous women astronomers, Margaret Burbridge. She sounded a lot like Julia Childs.

It was interesting meeting some of the scientists from Max Planke Institute. Through conversations with Jeff Kanipe and a few of the Planke Institute astronomers it became apparent that Hubble and Arp did meet and that Hubble recommended Arp to his position at Palomar (I think that's the right observatory...kind of fuzzy on that fact).

The next meeting of the AAS is in Denver, May 30th through June 3rd. Our Colorado members might consider determining how you can become a volunteer. I know many of y'all would like to attend or volunteer. Unfortunately, I will not be in Denver. I will be welcoming the first new blood related Knight in 30 years, which to me is a much better thing. I cannot wait to become Aunt Kelley.

(top) Fred Espenak, Mr. Eclipse, darkened by the penumbra of the LCD projector, helped science writers understand how to communicate about the upcoming Venus Transit. (bottom) Dr. Margaret Burbridge finishes up her discussion of *The Nature of Ultra-luminous X-Ray Sources (ULX) Very Near or Inside Galaxies*.

Houston Area Astronomy Clubs

Fort Bend Astronomy Club http://www.fbac.org/
Meets the third Friday of the month, 7:00 p.m.
First Colony Conference Center
3232 Austin Pkwy
Sugar Land, Texas

Houston Astronomical Society http://spacsun.rice.edu/~has/
Meets the first Friday of the month, 8:00 p.m.
University of Houston
Science and Research Building, room 117

North Houston Astronomy Club http://www.astronomyclub.org/
Meets the fourth Friday of the month, 7:30 p.m.
In the Teaching Theater at Kingwood College
20000 Kingwood Drive
Kingwood, Texas

Member's Gallery

Horsehead and Flame Nebula Region in Orion
Randy Brewer©

This is a wide field shot taken with a Sky 90 and ST-10XME from Baytown, Texas on February 2, 2004. It is a combination of 4 - 15 minute shots in H-Alpha. "It constantly amazes me how much 'stuff' is around there..." Randy Brewer

M 63 — NGC 5055
Galaxy in Canes Venatici
Randy Brewer ©

It is a beautiful galaxy with a lot of structure in the arms. Taken at Fort McKavett, Texas, on March 16th, 2002, using an FCT-150 @ F/7. (LRGB = 35:15:15:15 color was Bin 2)

NGC 4565
The Needle Galaxy
Al Kelly ©

WCMY image taken March 3, 2000 with a C-8 at f5.6 from Fort McKavett, Texas. The unfiltered, cyan, magenta, and yellow exposures were 25, 13, 15, and 17 minutes respectively.

Observatory Operator Needed

JSCAS is looking for volunteers to operate the Kraus Telescope located at Armand Bayou Nature Center (ABNC). The Kraus Telescope was built by JSCAS member Gary Kraus. It is a 12.5" Newtonian on a German Equatorial mount. When Gary Kraus died, the scope was donated to JSCAS by the Kraus family. JSCAS worked out an arrangement with the Nature Center to allow the club to build an observatory to house the telescope. In return, the nature Center makes the scope available to the public in the form of star parties and as a tool for their scout programs.

In 2003, Kurt Maurer, Leslie Logan, Ken Lester and Brian Zemba, made repairs and performed maintenance to the roll off roof, optical tube and equatorial mount. The mirrors were sent to Clausing for recoating. The recoated mirrors give exceptional views despite the light polluted environment around the Nature Center. Bob Taylor will soon lead a group of volunteers to the observatory to see if additional repairs are needed.

Brian Zemba has been the observatory's celestial guide since the scope was dedicated in July, 1995. Brian is seeking a replacement (or replacements) who will be willing to donate one Saturday a month in the spring and fall months to operate the scope. The number of guests who come to the ABNC star parties is very manageable for a single telescope. However, since advanced reservations are required, there will be advance warning if a large turnout is expected. A call for help can then be put on the list server for additional scopes. We thank Brian for his years of service. He has been an excellent representative of our club. Please contact Bob Taylor if you are interested in volunteering.

Dear Visitor, Voices of McDonald Observatory

A Book Review by Kelley Knight

To most people, the words "historical astronomy" bring images of the 1892 comet or the first visually discovered supernova or even the relationship between Edwin Hubble and Alton Arp. In Karen Winget's book, *Dear Visitor, Voices of McDonald Observatory*, everyday living becomes historical astronomy. The stories about astronauts, astronomers, politicians, townsfolk, and how things came to be on top of Mount Locke kept me interested.

The book includes the story of Otto Struve, director of the Yerkes and McDonald Observatories. At the turn of the 20th Century, Struve was in the Cossack army. During that time he met a Russian Red Cross worker who after discovering he was an astronomer, got in touch with the staff at the Yerkes Observatory. This led to Struve obtaining a position at Yerkes.

While stories about everyday life don't normally capture my attention, stories such as the one about flying into Alpine in the early days of the observatory and getting the staff's children to school everyday, had me giggling.

The book costs $15 without tax and is well worth it. You can purchase the book from McDonald's gift shop on-line at: http://mcdonaldobservatory.org/giftshop.

Unclaimed JSCAS Shirts

By Eleta Malewitz

We still have some unclaimed JSCAS shirts from earlier orders. If you ordered one and have not picked it up yet, please get in touch with Ed or me to make arrangements to get your shirts. If you no longer want it, or if we don't hear back from you by the April meeting, we will put these up for sale to whoever wants them. (None of these are paid for.) These have the old logo (no star) and are printed rather than embroidered, with a small logo on the front and a large logo on the back. They are top-quality shirts and are for sale at our cost. We would like to get the last of these to the people who ordered them, as we have quite a bit of money tied up in them. This may very well be our last order of printed shirts, so long as we are able to get the embroidered ones at such a good price, and so long as Triple is willing to fly out to pick them up! It takes so long to get enough orders together to make the minimum (12 of each style) for the printed shirts that many people are not willing to wait the year or more between the time they place the order and the time we get it. So these may become collectibles! (Soon to be seen on an episode of Antiques Road Show.) Those of you who ordered sweatshirts, be sure to get yours before Ft. McKavett and TSP -- you'll need them!

To claim a shirt, or to tell us you don't want yours so we can put it up for sale, call 281-488-1959 or e-mail us at emalewitz@sprynet.com

NAME	QTY	SLEEVES	STYLE	SIZE
Carillo, Laurie	1	Short	T-Shirt	S
Casella, Randal	1	Short	T-Shirt	XXL
Ray, Glenn	1	Short	Polo	M
Ray, Glenn	1	Long	Sweatshirt	L
Cate, Jim	1	Short	Polo	XL
Williamson, J.B.	1	Short	Polo	L
Miller, Dick	1	Short	T-Shirt	L
Miller, Dick	1	Long	Sweatshirt	L
Matassa, Mike	2	Short	T-Shirt	L
Matassa, Mike	2	Long	Sweatshirt	L
Wille, Peggy	1	Short	T-Shirt	M
Moore, Wally	1	Short	T-Shirt	L
Graham, Susan	1	Short	T-Shirt	XL
Graham, Susan	1	Short	Polo	L
Graham, Susan	1	Short	Polo	XL
Pfeiffer, John	1	Short	T-Shirt	XL
Pfeiffer, John	1	Long	Sweatshirt	XL
Bishop, Brian & Cathy	1	Short	T-Shirt	M
Bishop, Brian & Cathy	1	Short	T-Shirt	XXL
Doucet, West	1	Short	T-Shirt	XL
Drake, Kenneth	1	Short	Polo	XL
Urdiales, John	1	Short	Polo	M
Urdiales, John	2	Short	Polo	L
??? (Invoice missing, no name)	1	Short	Polo	M
Extras	2	Short	T-Shirt	L
Extras	2	Short	T-Shirt	XL

Meade Meets WORF

By Ed Malewitz

On October 28, 2003, I received an email from a coworker, Dean Eppler, PhD., ISS Payloads, with a request for use of a telescope. Dean and his optics expert, Karen Scott, were looking for a telescope to perform an experiment for the International Space Station, WORF (Window Observational Research Facility). Dean had looked at one scope, but wrote:

"We've looked at one 8" reflector, but it was huge (between 4' and 5' long), which is too big for what we're trying to do. Is your Meade any smaller than that?"

They had obviously seen one of those "Old-Style" reflectors with the diagonal mirrors. I assured them that my modern Meade LX-200 was much more compact and suitable for space flight.

Dean and Karen came by our house in early November and borrowed our 8" LX-200 over the weekend and part of the next week. The weather was horrible, no star parties were scheduled and I have 4 other scopes as backups, so the temporary loss of telescope wasn't noticed.

They returned the telescope in better shape than it was when they borrowed it, having taken it to their machine shop and cleaned up the threads on the mount's threaded rod, and said they'd let me know the results of the experiment.

Last week, Dean sent us a packet of patches, decals, and coasters bearing the WORF logo, and the following explanation of the project:

In 2005, the ISS Program will be flying the Window Observational Research Facility rack, which will take advantage of the United States Laboratory research window, the optically best window ever flown. This rack will be devoted to flying crew-served and autonomous remote sensing payloads. In order to take advantage of the quality of this window (sufficient to fly an 8"-12" reflecting telescope without degradation of the incoming light waves) (for the optics guys in your audience, the window has a wavefront error of about 1/10 of a wave over 6 inches with a wavelength of 632.8 nm), we need a stable optical platform and a stable optical path. The WORF rack is our stable optical platform, incorporating a 1 1/8" thick solid aluminum plate on which to mount remote sensing payloads. However, our optical path is problematic, as we have to contend with the tendency of windows to fog in potentially cold environments. In some configurations, the window will have a heated protection pane on it, but for optically large payloads, that pane will be removed, resulting in condensation prevention by using blown air, similar to how your car handles fogging windows. We borrowed Ed & Eleta's wonderful telescope in order to see if that blown air will lead to a degradation in the optical path.

Using a ground test WORF rack, we mounted the telescope on the payload shelf and focused it on a spot approximately 70feet away on the wall of Building 9 at Johnson Space Center. We affixed a US Air Force Tri-bar target to that point, and then observed any changes that occurred when heated air was blown through the "defogging" system of the rack.

T*he results showed that a degradation did occur, which will lead to a re-thinking of our operations when large telescopes are mounted in the rack. The Malewitz's gracious loan of their telescope allowed us to do a simple test with non-flight hardware which pinpointed the problem and allowed us to save money by not having to set up an expensive test at Kennedy Space Center with flight hardware.*

Thus, the scientific method wins again and theory was not confirmed by experiment. Dean used real optics to prove that the engineering plan was not going to work and saved our space program money. It was great to support this effort, even indirectly.

CEN-TEX ASTRONOMY WEEKEND

The Austin Astronomical Society (AAS) operates the Eagle Eye Observatory in Canyon of the Eagles (COE) Lodge and Nature Park, on Lake Buchanan. We are planning the Cen-Tex Astronomy Weekend on March 12 and 13, 2004. The gathering of astronomy clubs, space science organizations, astronomy related vendors, and the public will be similar to the Astronomy Day event at the George Observatory.

Cen-Tex astronomy Weekend would not be the same without participation from the Johnson Space Center Astronomical Society (JSCAS). We hope you will attend.

Cen-Tex Astronomy Weekend is free, except for lodging. The park's day-use fee has been waived for your members to attend and there are no additional fees to participate in this event.

As noted above, this is a public event. The public has been encouraged to attend to learn more about astronomy, our observatory, stargazing and star parties.

During the day, participating astronomy clubs are invited to set up a display or conduct a hands-on activity for beginning astronomers, such as solar viewing or how to operate a telescope. An activity should last between 20 and 30 minutes and repeat so people have time visit all the activities and displays. In the evening attendees will be ferried by hayride from the COE Lodge to the observatory area.

On Saturday evening, from 8:00 - 10:00, astronomy clubs are invited to join AAS members in guiding the public on a tour around the universe. Each participating club will be assigned a type of deep-sky object (i.e. planets, stars, galaxies), set up objects of that type in their telescopes or binoculars, and assist the public in viewing the objects. The universal travelers will have a "Passport to the Universe" that the "Guide" will stamp to verify they viewed that type of object. Persons with a completed passport will receive a certificate. After 10:00, with the public gone, and the equipment already set up, the field will be reserved for serious (or not so serious) observing.

This is a tentative Cen-Tex Astronomy Weekend schedule:

Friday, March 12	
8:00 P.M. - 11:00 P.M.	Public Star Party at the Eagle Eye Observatory
Saturday, March 13	
2:00 P.M. - 4:30 P.M.	Astronomy Displays and Activities
4:30 P.M. - 5:00 P.M.	Break!
5:00 P.M. - 6:30 P.M.	Concert & Picnic by the Waterfront
7:00 P.M. - 8:00 P.M.	Presentations at Observatory: "Effective Outdoor Lighting", "What's Up in the Night Sky", Hayrides to the Observatory Begin at the Waterfront
8:00 P.M. - 10:00 P.M.	Around the Universe in One Night: An experienced observer will guide your travel around the universe through a telescope. Visit planets, stars, galaxies, and more. Get your "Passport" stamped & continue your Trip Around the Universe.
10:00 P.M. - Midnight	Event Wrap Party for Volunteers

After the hayrides end for the evening, astronomers can take advantage of one of the "best places to stargaze", as mentioned in the August 1, 2003 USA Today article. The observing field has 30 tables with power. There is potable water and toilet facilities are available. Participants should furnish any additional supplies and equipment.

For more information contact Kelley Knight, Events Coordinator, Austin Astronomical Society at 512-447-1163 or by e-mail at kelleyknight@yahoo.com.

Johnson Space Center Astronomical Society

An association of amateur astronomers dedicated to the study and enjoyment of astronomy. Membership is open to anyone wishing to learn about astronomy.

OFFICERS

President
Bob Taylor
Vice President
David Haviland
Secretary
To be announced
Starscan Editor
Ken Lester
Star Party Chairperson
Lisa Lester
Librarian
Lisa Lester
Historian
Susan DeChellis
Scientific Expeditions
Paul Maley
Web Master
Chris Randall

SIGS

Observing Awards
Triple Nickel
CCD Imaging
Al Kelly
Binocular Observing
Leslie Eaton
Telescope Making
Bob Taylor
Deep Sky Observing
Chris Randall

March Meeting Agenda

March 12th, Space Center Houston
1601 NASA Road 1

- Welcome!!!
- Guest Speaker — Jennifer Lorenz; Executive Director, Legacy Land Trust
- Danciger Observatory — Al Kelly
- Kraus Observatory
- Break
- SIG reports
- Charlie's Challenge
- Astronomical Oddities — Hernan Contreras

Any unfinished discussions can be continued at Double Dave's Pizza after the formal meeting.

Note Change of Location!

Starscan Submission Procedures

Original articles of astronomical interest will be accepted up to 6 P.M. March 25th.

The most convenient way to submit articles or a Calendar of Events is by electronic mail, however computer diskettes or CDs will also be accepted. All articles should include author's name and phone number. Also include any picture credits. The recommended format is Microsoft Word. Text files will also be accepted.

Submitter bears all responsibility for the publishing of any e-mail addresses in the article on the World Wide Web.

Editor's electronic address is: lesteke@swbell.net. Be sure to include the word Starscan in the subject line for proper routing of your message.

Starscan Staff

Editor	Assistant Editors
Ken Lester	Sheila Steele
	Ken Steele

Cover Image

By Becky Ramotowski
Taken with a Pentax K1000 camera

Becky took this in 2003 when she and Shane made a trip out to Fort McKavett just to relax and take some astrophotos.