Starscan

Johnson Space Center Astronomical Society

Volume 26, Number 11 November 2010

Fort McKavett October 2010

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Un mensaje del Presidente
(A message from the President)

Greetings:

OK Folks... I am a little late this month for a variety of reasons. None the less, we have a lot to be thankful for! — We had an outstanding trip to Fort McKavett. I couldn't argue with the skies. Personally, I chose to leave the big complex scope at home and just observe with my old 6" Dob. I like to think our Friday night pot luck and Saturday noon festivities turned out pretty well. I don't think anyone walked away hungry. We finished the event with a well received Star Party. I don't know about anyone else but I had a lot of questions about telescopes and astronomy in general.

Then came the All Clubs and ADAY the very next weekend. Although we had a smaller than usual crowd at the HCC auditorium, the All Clubs meeting went off without a hitch and was well received by those in attendance. Frankly, if you missed it, you missed a good meeting. Dr. David Talent from UHCL was our keynote speaker and with his entertaining dry-wit, he pretty much had the crowd in stitches every 5 minutes. Although he and JSCAS hooked up previously, and we were fortunate that he accepted the offer to speak, the success of the All Clubs this year was combined HAS/NHAC effort. As for ADAY, it too went off without a hitch. The official tally from Barb Wilson's desk was 2950 in attendance and I'd believe it based on what I saw. I extend my heartfelt thanks to those of JSCAS that made it and volunteered that very busy day. I also thank Chris for "floating" around and helping me with some of the outdoor talks and the tent. Chris's photo credits definitely include the 'ADAY 2010" which is on the cover.

We have a lot up this month... as this is November, we have our elections. After three years at the helm, I'd like to sit in the cheap seats again if that's OK with the rest of you. But before that we have a star party request on Nov 17th at Friendswood High School. A big star party at the LPI on November 20th from dusk to about 10pm, and then on December 3rd we have a BIGGIE at the Gilruth Center. Seems JSC and it's contractors are hosting a team building event there and are going to have upwards of 120-150 people camping on site. The speaker's list for this event reads like a "who's who" of the space program and we've had some large support for this event over the Netslyder. This could lay inroads into new members.

As I said, another busy month. Hope to see you all there....

David Haviland

LETTER FROM THE EDITOR By Connie Haviland

Hi everyone!!

Nothing has changed. I will be back in December with new things for the kids section and Dave and myself doing the Starscan. Until next month….

Hope you have clear skies,

Connie Haviland

LETTER TO THE EDITO

Star Parties for 2010
Bob Taylor



Friendswood HS, Nov 17th

November 20th, 7p.m. LPI—Jupiter

Dec 3rd, Gilruth

Need volunteers

What's Happening at the George!!!

Saturday Public Observing – All times are dusk to 11:00 p.m..Please contact the following building manager teams to volunteer:

Nov 6th Building Managers - Barbara and Buster Wilson Wilson / Wilson gobserve@consolidated.net

Nov 13th Building Managers - Cynthia Gustava (cynm31@att.net) / Justin McCollum (mccollumjjj@gmail.com)

Nov 20th Building Managers - Jack McKaye (jemckaye@comcast.net)/ Justin McCollum (mccollumjjj@gmail.com)

Nov 27th Building Managers - Tracy Knauss (birdbarn2000@yahoo.com)/ Keith Rivich (icgalaxies@cs.com)

November 20th, 7-10pm, Jupiter and Others...

For more information e-mail Spaceday@lpi.usra.edu or call 281-486-2106.

For more information, go to
http://www.lpi.usra.edu/education/space_days/
Or call Katy at (281) 486-2106
3600 Bay Area Boulevard, Houston, Texas

BE INSPIRED

BE CREATIVE

BE HEARD

Announcing the Opening of

The Humans in Space Symposium

International Youth Art Competition

What is the future of human space exploration and *why* is it important?

Witness, shape and participate in the *"Next Golden Age of Human Space Flight"*

Who: 10-17 year olds anywhere in the world

How: Express yourself through:

- Visual Art
- Literary Art
- Musical Composition
- Video Art

When: Submit your entry by December 3, 2010.

Why: Win and have your art displayed in the Online Gallery and at the April 2011 Humans in Space Symposium in Houston, Texas. Show current human space exploration leaders, including astronauts and scientists, what *you* have to say!

Visit www.humansinspaceart.org to enter and submit your art!
[Direct website address is: http://www.dsls.usra.edu/meetings/IAA/artContest/]

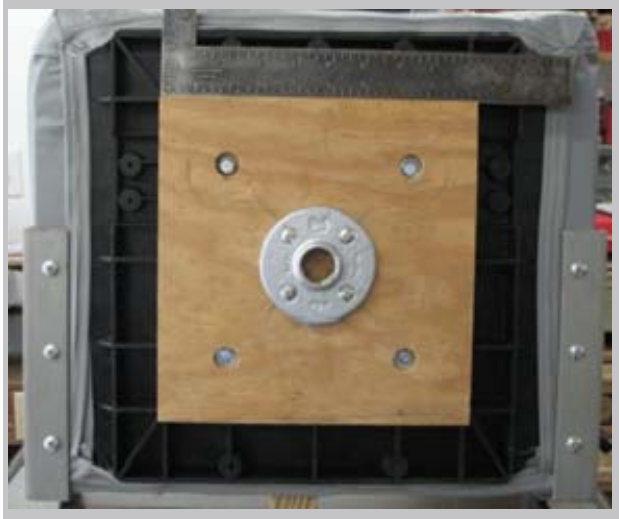
(Editors note: Part 3) Continuing on with the construction of an Astronomer's chair. By Jim Wessel

This month we will cover the seat attachment site, and the construction of the armrests and footrest.

A place for everything, and everything in its place

Since I elected to use a boat seat as the basis for my Astronomer's stool, I feel it's important to discuss the design of the attachment site in detail. This is the 2nd of the two very important spots on the stool that needs to be particularly well made, and failure to do so could have injurious repercussions. We didn't take the seat apart to confirm, but we suspect that the internal screw threads where the retaining screws attach are made of plastic, and likely susceptible to either deforming under pressure, or completely ripping out if enough torque stress were to be applied. Needless to say, we intended this part of the construction to be a 'one and done shot' with no re-dos. We were fortunate that this turned out to be the case in our build out. I don't know if boat seats are uniform in their location of screws on the underside of the chair, but I will say that the screws that came with the chair were not satisfactory for our purpose of creating an astronomer's stool, as they were just too short. The original screws were intended to penetrate and hold onto the thin metal "Lazy Susan" either on a johnboat type seat, or at the top of a fixed pedestal. In our case, the screws need to be long enough to hold the chair onto a nice thick piece of plywood (I used ¾" plywood). For the reader's information, the screws needed are going to vary dependent on the manufacturer's design of the boat seat (actually the internal screw housing [depth] inside the side), and your choice of plywood thickness, so plan accordingly. Here is an image of the plastic underside of the boat seat to give you an idea of a starting place for my build out:

If you will compare the previous picture with the following one, you will discern that we measured and cut the plywood square to exactly fit (mine was 9" x 9.5") onto a set of plastic 'ribs' on the underside of the seat. This was planned, and we thought that it would provide the maximum amount of stability (wood against the hard plastic) while minimizing the weight of the plywood. One of the post construction comments addresses this point in greater detail, later. The sizing of this particular piece of plywood is really dependent on the underside of the seat that you decide on. Obviously, we measured and drilled the holes to match the placement of the seat's retaining screws. Here I changed from the original machine to hex head screws, and they were countersunk. In the picture below, you can also see the original pencil marks that were used to determine the exact center of the four screws, which in turn, is the center of support for the seat. The 3/4" pipe floor flange was attached using T-nuts preinstalled on the back side of the plywood before mounting it to the seat bottom. Use of T-nuts prevents having to cut out spaces in the plastic bottom to accept standard nuts and washers.



The following picture shows the integrated unit, with the pipe going into the seat attachment site on the piece of plywood.

The second major use of this plywood square on the underside of the seat is as a place to attach desired armrests, since the boat seat did not come with them originally. In order to fabricate a reasonable set of armrests, we first needed to determine the optimum width for the supports (where my elbows would naturally rest in the lateral plane) and what height would be comfortable. We made this measurement by me simulating armrests on a scrap piece of plywood (it was wider than any conceivable width I might choose) and changing its height by stacking 2" x 4"s underneath it (all resting in my lap), then measuring both the height and the width from the attached ¾" plywood, via a side view. This or a similar measuring effort will reflect a personal preference for the eventual armrest positions that the reader needs to figure out for himself. Post construction, the right angle measurements of resultant width and height of the armrest supports for my chair are 19" and XX respectively.

I originally bought a pair of 1" x 1/8" metal flats which were bent by hammering in a vise to the desired shape for the armrest supports (see below). After loosely attaching the top wooden piece to the metal support and resting my arms' weight on them, we found that the supports were very susceptible to outward flexing with a minimal amount of weight or pressure. This was a critical design flaw and needed to be addressed immediately.

We countered this problem in two ways. The first was to get a pair of much heavier and harder to bend 3/16" x 1" x 4' steel flats for the arm supports, and the second was to plan on placing an even heavier 1/8" x 1.5" x 6' steel flat around the top of the two side supports and around the back rest of the chair. The addition of the 3 larger metal supports really solidified the rigidity of the armrests. As a result, the armrests now easily support my arms' weight without outward flex, and even better, they will handle the increased load of the sketch desk as well (its construction will be covered later in the description). However, this is not to say that the armrests alone will support my weight (they certainly won't). If I have to adjust my positioning in the chair I have to reach down outside the armrests to the seat itself and lift my weight through my arms pressing against the seat. To start attaching the armrest supports, the chair was inverted, the supports placed in their correct positions, and measurements were taken to evenly distribute the drilled locations for the screws (see following picture). We then countersunk the screw heads into the steel flats to ensure that there were no sharp edges to cut an unwary finger in the dark.

We decided on #8 x 3/4" flathead wood screws to attach the armrest supports to plywood on the underside of the chair. Pilot holes insured that the screws seated correctly and ended up flush with the surface of the metal without additional wood damage (see picture below). At this time, the top pieces of wood (which were already sanded, and notched to sit on top of the lateral supports) were permanently attached to the metal supports by four #8 1/2" screws, (predrilled to prevent splitting of the thin small pieces of wood), and again countersinking them for safety.

After the lateral armrests were complete, we started measuring the needed length of the top restraining steel flat. Determining where the two bends were to occur was challenging as the seat back needed to be accounted for in its fully upright position, and we did not make the final bend or cut on the steel flat until we were 100% sure they were both exactly correct. Four 1/4-20 x 1/2" screws and nuts were used to connect the overlapping pieces of metal, and any portion protruding past the nut was cut off and ground smooth. A side view and 3/4 view of this step are shown below.

The third and final use of the plywood attachment site under the chair was to support a hanging footrest. A footrest was not an original consideration in the design of the astronomer's stool, but rather something I found out that needed to be addressed when I sat in the chair when it was at full extension. When I was high up in the air, I realized that the weight of my legs was going to eventually crush down the front edge of the foam inside the seat, and cause an uncomfortable pressure point for the back of my upper legs. As a result, we had to brainstorm to think up a suitable method to account for this problem. We considered a wide metal loop, sort of like a stirrup, but noted that it would be a problem for disassembling the stool and putting it in the trunk of my car for transportation to a dark site. We also thought of a simple piece of rope, but found that it was not very comfortable for my legs or feet for long periods of time. So we settled on a combination of a stiff footrest and a flexible hanging system, all of which was attached to the underside of the chair. The following picture will help with the description of the attachment site build out as well as the two ends of the rope which holds the footrest.

As you can see, we drilled two holes through the front steel flat and the underlying plywood for the 2, #2 screw eyes that provide the points of attachment for the 2, "S" hooks at the ends of the piece of rope. The total length of rope necessary was determined by attaching one fixed (completed with a tied-on spring hook) end to the eye screw, the footrest was then placed under my feet, and the other end of the rope fed through the other eye screw – with the rope being pulled and adjusted to different lengths (equaling heights of the footrest) until a comfortable position was found. The rope was then cut and the second "S" was tied onto the free end. To prevent the footrest from sliding along the length of the rope, I placed the footrest at the optimal position, then opened the weave of the nylon and inserted a bolt through it, and then attached a washer on the backside. The same process was repeated for the rope at the other end of the footrest, and as a result, movement is minimal.

But let's not get ahead of ourselves, before you make the end connections on the rope you need to have the footrest in between, and that design process is outlined here. To make footrest, we took a scrap piece of 2" x 4" and visualized what would be the maximum width I would need for a comfortable placement of my feet. My measurement was found to be 18", and we took a 1/2" X 18" drill bit, and drilled through the center of the board lengthwise from both ends. This wasn't an easy task, as a long drill bit is prone to torque and curving along its length, and we eventually had to repeat the whole process a second time as the bit broke through the side of the board on the first attempt. Afterwards, we threaded a 4' section of nylon rope through the hole to get to the stage of construction shown in the picture below.

Since we had previously built out the supports for the pedestal we had a fair idea of where the hanging footrest would come into contact with the plywood supports for the pedestal. As you can imagine, a moveable 2" x 4" swinging into and hitting on the edge of a piece of plywood is going to cause considerable damage to both pieces of wood. We fixed this issue by putting ½" angle onto the four long corner edges of the footrest (similarly, the plywood had 3/8" channel put on its outside edges for its protection). You can get a better idea of the completed hanging footrest in the following picture.

Next Month: Construction of the supporting 'legs' and 'feet'.

Scientists Watch for a "Hartley-id" Meteor Shower

From:http://science.nasa.gov/science-news/science-at-nasa/2010/27oct_hartleyids/

Oct. 27, 2010: This month, Comet Hartley 2 has put on a good show for backyard astronomers. The comet's vivid green atmosphere and auburn tail of dust look great through small telescopes, and NASA's Deep Impact/EPOXI probe is about to return even more dramatic pictures when it flies past the comet's nucleus on Nov. 4th.

Comet 103P/hartley 2 photographed on Oct. 20th by Mike Broussard of Maurice, Louisiana.

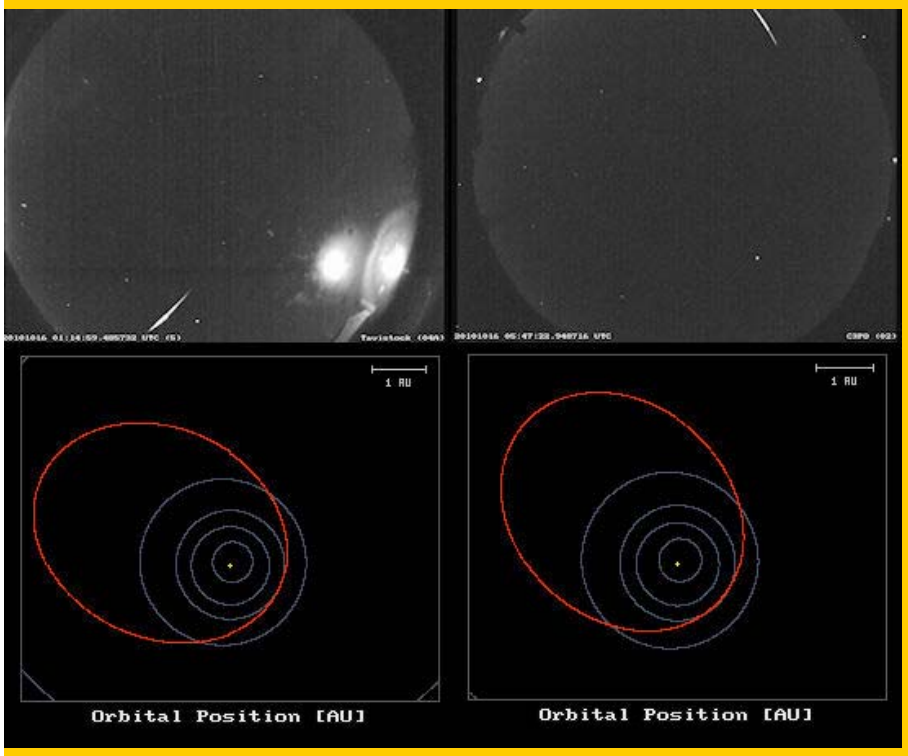
Another kind of show might be in the offing as well. Could this comet produce a meteor shower?

"Probably not," says Bill Cooke of NASA's Meteoroid Environment Office, "but the other night we saw something that makes me wonder."

On Oct 16th, a pair of NASA all-sky cameras caught an unusual fireball streaking across the night sky over Alabama and Georgia. It was bright, slow, and--here's what made it unusual--strangely similar to a fireball that passed over eastern Canada less than five hours earlier. The Canadian fireball was recorded by another set of all-sky cameras operated by the University of Western Ontario (UWO). Because the fireballs were recorded by multiple cameras, it was possible to triangulate their positions and backtrack their orbits before they hit Earth. This led to a remarkable conclusion:

"The orbits of the two fireballs were very similar," Cooke says. "It's as if they came from a common parent."

There's a candidate only 11 million miles away: Small but active Comet Hartley 2 is making one of the closest approaches to Earth of any comet in centuries. It turns out that the orbits of the two fireballs were not only similar to one another, but also roughly similar to the orbit of the comet. Moreover, meteoroids from Comet Hartley would be expected to hit Earth's atmosphere at a relatively slow speed--just like the two fireballs did.



Two fireballs with "Hartley-esque" orbits observed on Oct. 16th by cameras in western Ontario (left) and the southeastern USA (right). Credit: UWO/ NASA/Bill Cooke.

Cooke stresses that this could be a coincidence. "Thousands of meteoroids hit Earth's atmosphere every night. Some of them are bound to look like 'Hartley-ids' just by pure chance."

Even so, he plans to keep an eye out for more in the nights ahead, especially on Nov. 2nd and 3rd. That's when a potential Hartley-id meteor shower would be most intense, according to calculations by meteor expert Peter Brown of UWO.

The comet was closest to Earth on Oct. 20th, but that's not necessarily the shower's peak-time. Cooke explains: "The comet has been sputtering space dust for thousands of years, making a cloud that is much bigger than the comet itself. Solar radiation pressure and planetary encounters cause the comet and the dust cloud to diverge—not a lot, but enough to make the date of the shower different from the date of the comet's closest approach."

If there is a Hartley-id shower—"that's a big IF," notes Cooke--it would emanate from the constellation Cygnus the Swan, visible to observers in the northern hemisphere almost directly overhead after sunset in early November. Lunar interference should not be a problem. On Nov. 2nd and 3rd, the Moon will be a slender crescent, providing dark skies for a meteor watch.

"I'll definitely have our cameras turned on," says Cooke. "It's probably going to be a non-event. On the other hand," he points out, "we might discover a whole new meteor shower."

Author: Dr. Tony Phillips | Credit: Science@NASA

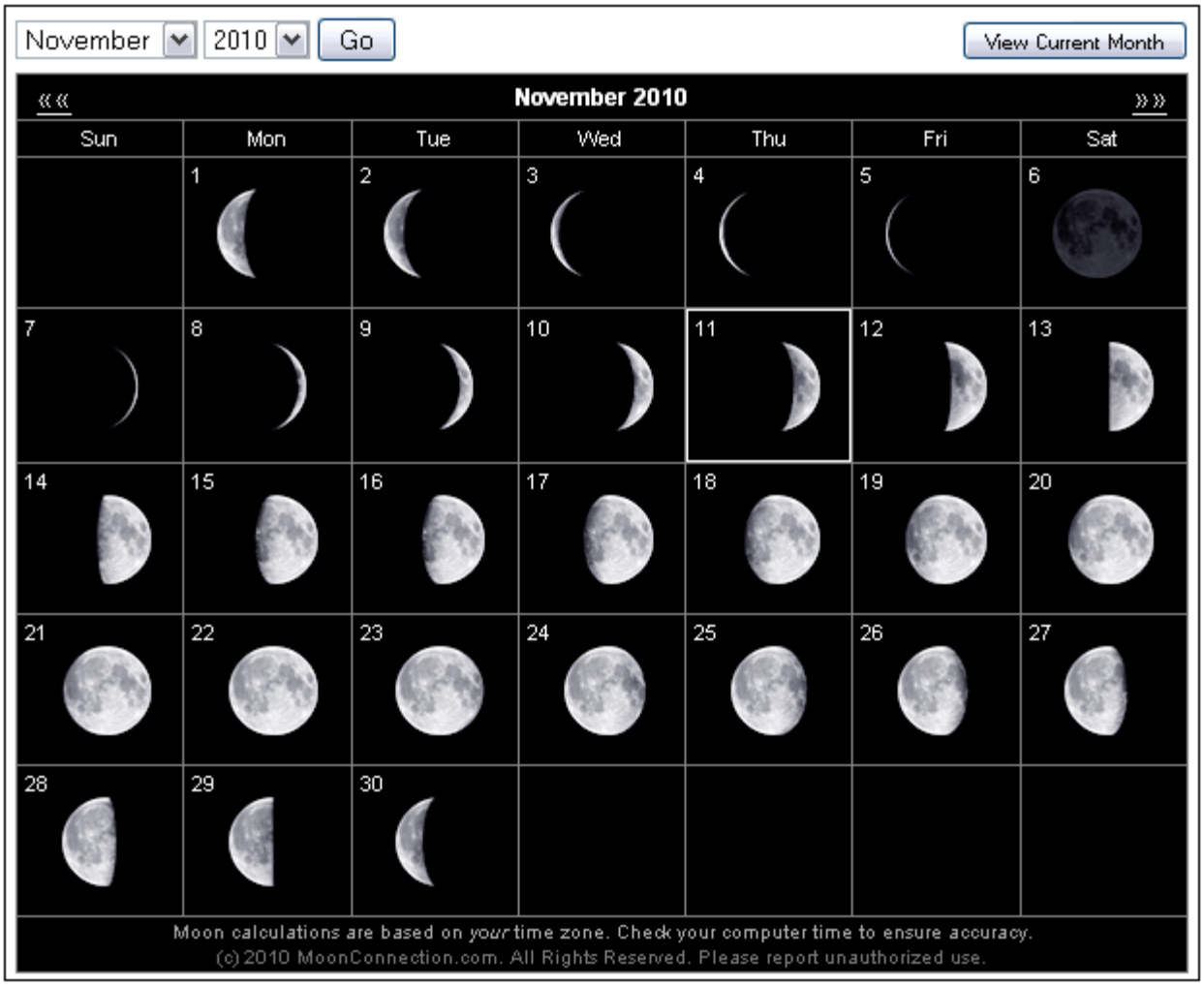
Fort McKavett October 2010

All Clubs Meeting and ADAY

(Photo Credits: Chris Randall)


Astronomy Day T-Shirts
$15.00
(Cash or Checks Only)

PHASES OF THE MOON FOR THE MONTH OF NOVEMBER -2010



SUNRISE AND SUNSET SCHEDULE FOR

OCTOBER -2010

November 2010

Houston, Texas

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Sunrise: 7:34am Sunset: 6:35pm Moonrise: 2:36am Moonset: 3:24pm	2 Sunrise: 7:35am Sunset: 6:34pm Moonrise: 3:41am Moonset: 4:00pm	3 Sunrise: 7:36am Sunset: 6:34pm Moonrise: 4:47am Moonset: 4:37pm	4 Sunrise: 7:37am Sunset: 6:33pm Moonrise: 5:54am Moonset: 5:17pm	5 Sunrise: 7:37am Sunset: 6:32pm Moonrise: 7:02am Moonset: 6:00pm New Moon: 10:52pm	6 Sunrise: 7:38am Sunset: 6:31pm Moonrise: 8:09am Moonset: 6:49pm
7 DST Ends Sunrise: 6:39am Sunset: 5:31pm Moonrise: 8:15am Moonset: 6:42pm	8 Sunrise: 6:40am Sunset: 5:30pm Moonrise: 9:16am Moonset: 7:39pm	9 Sunrise: 6:41am Sunset: 5:29pm Moonrise: 10:11am Moonset: 8:39pm	10 Sunrise: 6:41am Sunset: 5:29pm Moonrise: 10:59am Moonset: 9:38pm	11 Sunrise: 6:42am Sunset: 5:28pm Moonrise: 11:41am Moonset: 10:35pm	12 Sunrise: 6:43am Sunset: 5:27pm Moonrise: 12:17pm Moonset: 11:31pm	13 Sunrise: 6:44am Sunset: 5:27pm Moonrise: 12:49pm Moonset: none First Qtr: 10:39am
14 Sunrise: 6:45am Sunset: 5:26pm Moonrise: 1:19pm Moonset: 12:25am	15 Sunrise: 6:46am Sunset: 5:26pm Moonrise: 1:48pm Moonset: 1:17am	16 Sunrise: 6:46am Sunset: 5:25pm Moonrise: 2:16pm Moonset: 2:09am	17 Sunrise: 6:47am Sunset: 5:25pm Moonrise: 2:46pm Moonset: 3:01am	18 Sunrise: 6:48am Sunset: 5:24pm Moonrise: 3:18pm Moonset: 3:55am	19 Sunrise: 6:49am Sunset: 5:24pm Moonrise: 3:54pm Moonset: 4:51am	20 Sunrise: 6:50am Sunset: 5:24pm Moonrise: 4:34pm Moonset: 5:49am
21 Sunrise: 6:50am Sunset: 5:23pm Moonrise: 5:21pm Moonset: 6:49am Full Moon: 11:28am	22 Sunrise: 6:51am Sunset: 5:23pm Moonrise: 6:13pm Moonset: 7:48am	23 Sunrise: 6:52am Sunset: 5:23pm Moonrise: 7:12pm Moonset: 8:44am	24 Sunrise: 6:53am Sunset: 5:22pm Moonrise: 8:14pm Moonset: 9:37am	25 Sunrise: 6:54am Sunset: 5:22pm Moonrise: 9:19pm Moonset: 10:25am	26 Sunrise: 6:54am Sunset: 5:22pm Moonrise: 10:24pm Moonset: 11:08am	27 Sunrise: 6:55am Sunset: 5:22pm Moonrise: 11:29pm Moonset: 11:48am
28 Sunrise: 6:56am Sunset: 5:22pm Moonrise: none Moonset: 12:24pm Last Qtr: 2:37pm	29 Sunrise: 6:57am Sunset: 5:22pm Moonrise: 12:32am Moonset: 1:00pm	30 Sunrise: 6:58am Sunset: 5:21pm Moonrise: 1:36am Moonset: 1:35pm				

Courtesy of www.sunrisesunset.com

Folks:
In times past, people that have wanted to take advantage of the club discount have had to write their check, put it in with the renewal slip, and then either mail it to me at my home or chase me down at a meeting. In most cases, within a week, I have sent out the renewal. Sometimes, and I don't really mind, the renewals have gone out at my expense for the postage. Without hesitation, question, or fail, it is not the most efficient means to maintain club subscriptions. So as secretary, I'd like to try something new...

You get all your stuff ready for the subscription, whether it be Astronomy or Sky & Telescope, you keep it - you hang on to it. Email (most reliable) or tell me when you see me that you want to take advantage of the club discount for either or both of these publications and that you need a supporting letter. What I'll do is get the letter together and email the "letter from the treasurer/secretary" back to you as a PDF. You print it off, and enclose it with your renewal. For this to work your computer must have Adobe Reader (which is free) and a means to print it. I would like this procedure to become the "Standard Operating Procedure" for Astronomy/S&T discounts through JSCAS. For those still not in the computer age, we can process things as we have in the past.

Clear skies,
David Haviland

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Webpage is under construction, but will be up soon and I take PayPal as well.

ACTUAL PICTURES OF WHAT I HAVE DONE BOTH LIGHT AND DARK BACKGROUNDS

Light pollution:

Any adverse effect of artificial light including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste.

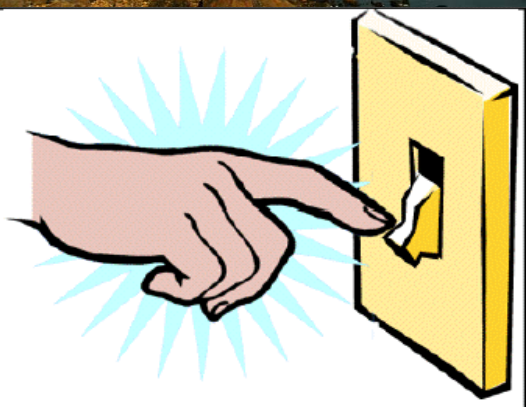
.Do you have a question about light pollution, protecting the night sky, or IDA's resources? **Get Help from IDA** http://www.darksky.org/mc/page.do?sitePageId=56399

Photograph © Phil Hart

IDA
THE LIGHT POLLUTION AUTHORITY

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."



Houston Area Astronomy Clubs

Brazosport Astronomy Club
Meets the Third Tuesday of the month, 7:45p.m.
At the Planetarium
400 College Drive
Clute, Texas (For more information, contact Judi James at the Planetarium 979-265-3376)

Fort Bend Astronomy Club http://www.fbac.org
Meets the third Friday of the month, 7:00 p.m.
Houston Community College Southwest Campus—Main Lecture Hall
10141 Cash Rd
Stafford, Texas 77477

Houston Astronomical Society http://spacibm.rice/edu/~has
Meets the first Friday of the month, 8:00 p.m.
University of Houston, University Park
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 Theatre at Kingwood College
20000 Kingwood Drive
Kingwood, Texas

Galveston Stargazers
Meets the first Wednesday of the month At Home Cut Donuts, 6807 Stewart Rd, Galveston, TX
From 7PM to 9PM.
Contact: Jim Gilliam at Jim.Gilliam@dars.state.tx.us or
At (409)795-3620, M - F, 8AM to 5PM

Starscan Submission Procedures

Original articles of some relation to astronomy will be accepted up to 6 p. m. (18:00 hrs) on the 25th of each month. THE most convenient way to submit articles or a Calendar of Events is by email and is preferred, but hard copies (CD, disk) are also accepted. All articles must include author's name and phone number. Also include any picture credits. Word, WordPerfect, and text files will be accepted. I have set up a special email account so that I can keep all of the Starscan articles, pictures, information, etc, separate from all of the other email I get. This makes is much easier to edit and set up the Starscan

Please send all submissions to:
conniesstarscanaccount@gmail.com

The author of individual articles bears all responsibility for publishing any e-mail addresses in the article on the World Wide Web

Johnson Space Center
Astronomical Society

2008-Club Officers

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Vice President – Chris Randall
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Star Party Chairperson –
Librarian – Bob and Karen Taylor
Historian – Chris Randall
Scientific Expeditions – Paul Maley
Web Master—Chris Randall

SIGS

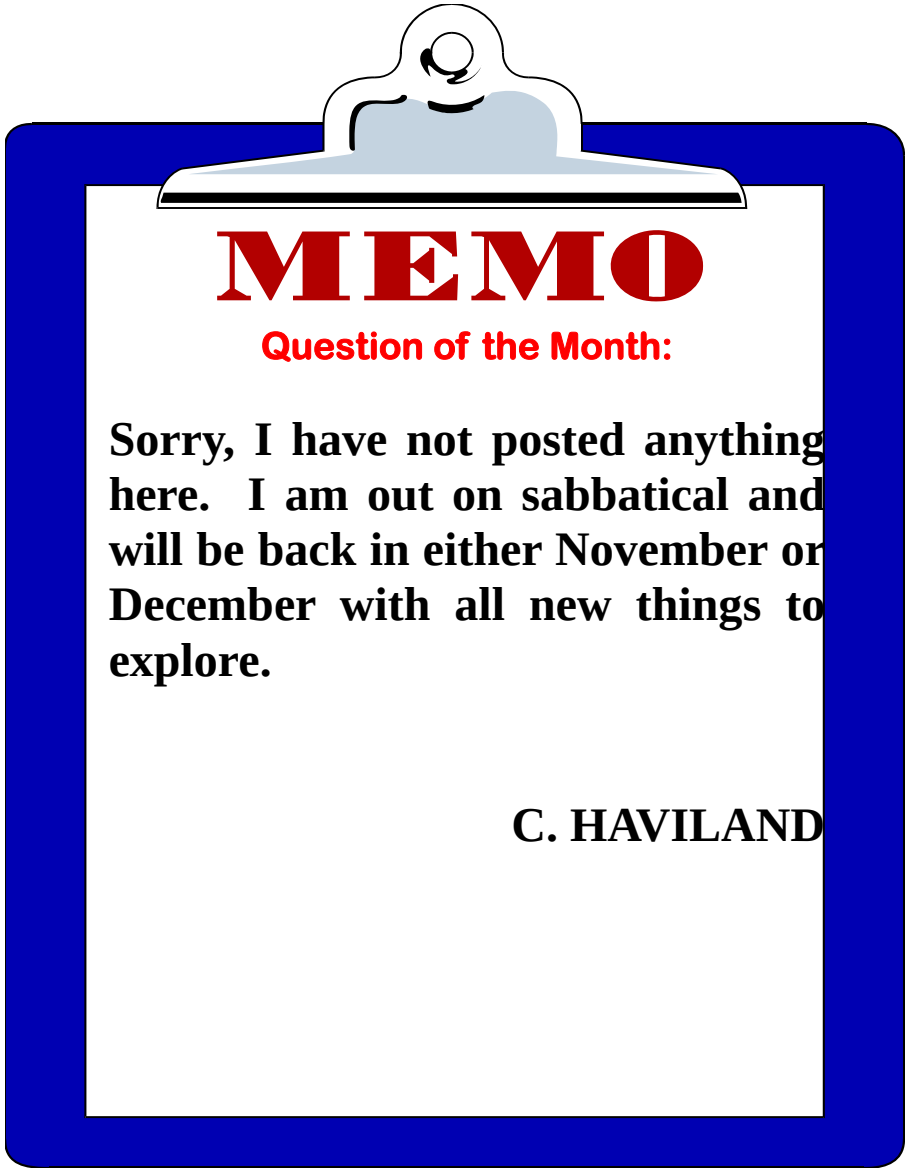
Observing Awards – Triple Nickel
Astronomy 101 — Triple Nickel
CCD Imaging – Al Kelly
Binocular Observing – "OPEN"
Telescope Making – Bob Taylor
Deep Sky Observing – Hernan Contreras

WHO SAID ASTRONOMERS DO NOT HAVE A SENSE OF HUMOR?

"It's black, and it looks like a hole.
I'd say it's a black hole."

Astronomy and Kids

This is the section strictly for kids (or kids at heart). We will be including information, stories, ideas, puzzles or anything that has to do with astronomy. The only difference here is, it will be directed for children. We don't discourage parents or any other adult to get involved. In fact, we encourage it strongly. So we hope you enjoy this section and if it touches a child's interest in astronomy, our goal has been achieved. Enjoy!!



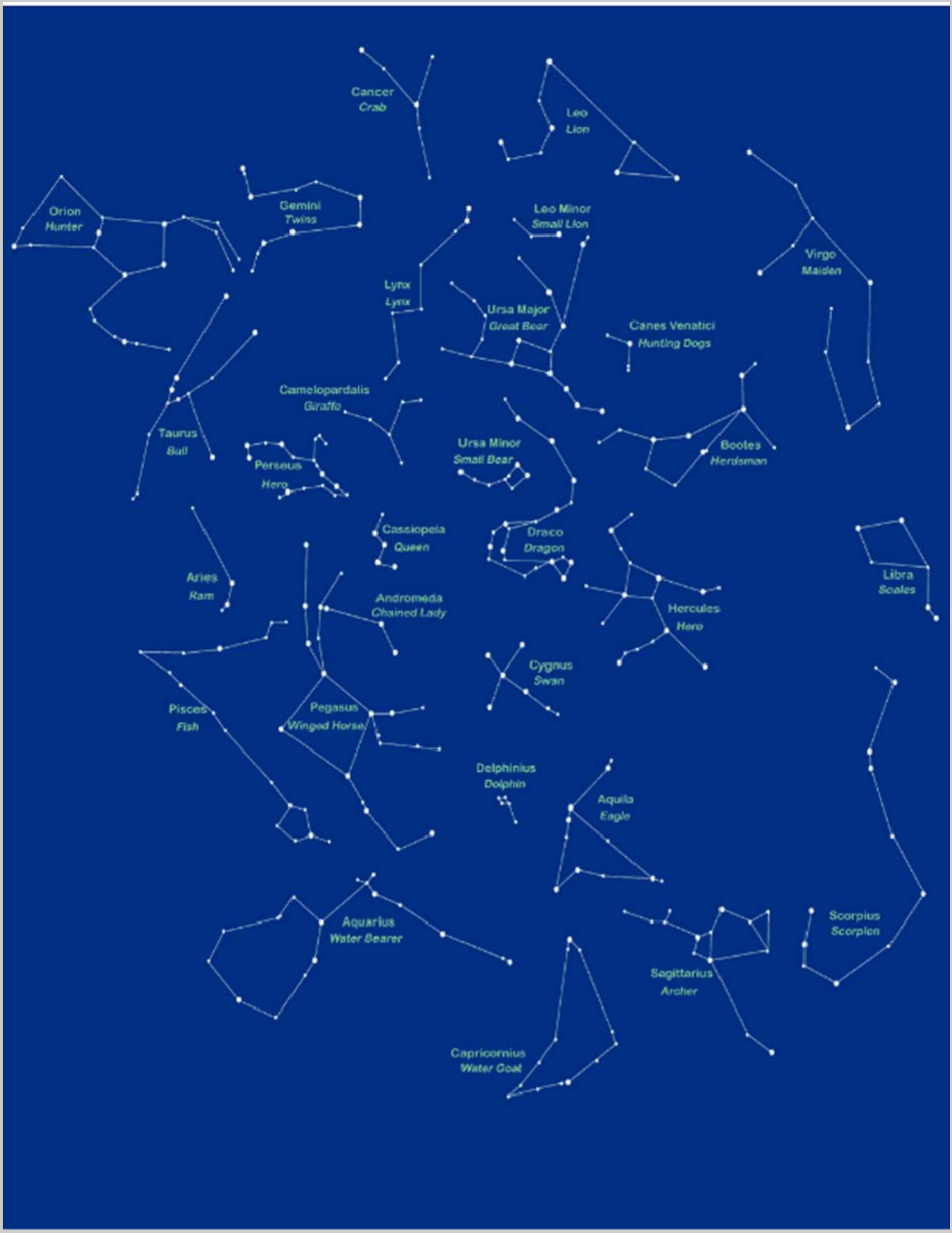
MEMO

Question of the Month:

Sorry, I have not posted anything here. I am out on sabbatical and will be back in either November or December with all new things to explore.

C. HAVILAND

LEARN YOUR CONSTELLATIONS



Snoopy says, never stop looking up..reach for the stars and may you always have clear skies!!!!