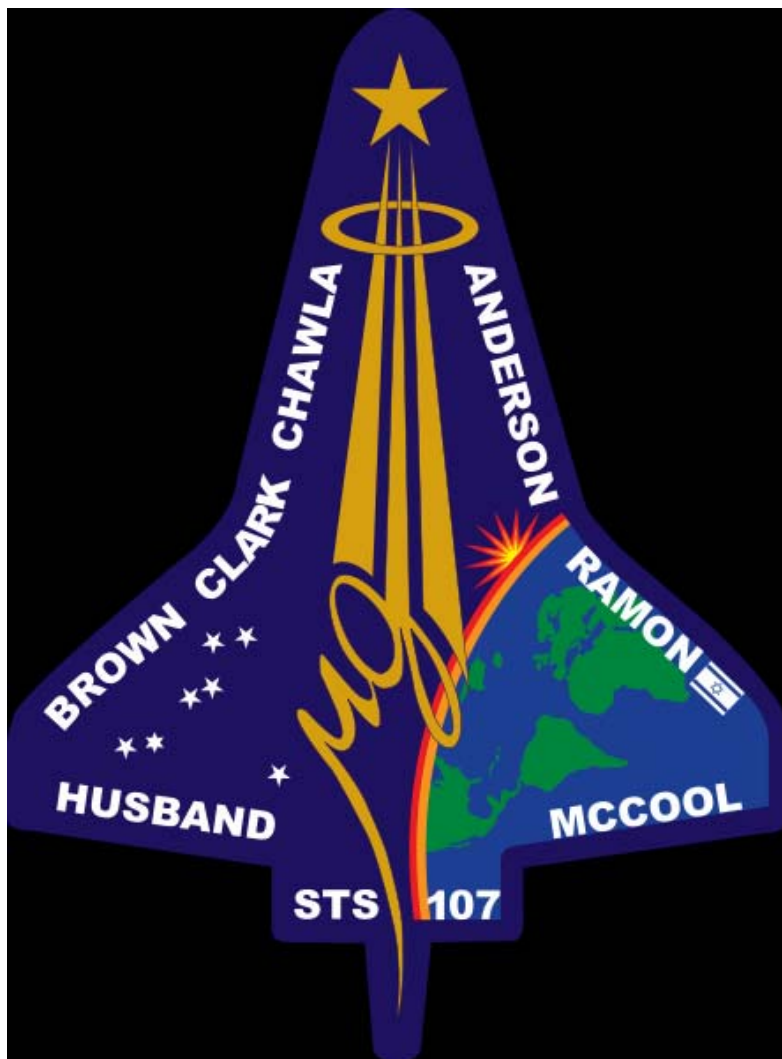




Starscan

Johnson Space Center Astronomical Society

Volume 24, Number 2 February 2008



**YOU ARE STILL IN OUR
HEARTS AND MEMORIES**

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Message from the el Presidente

Greetings Everyone!!

In my view, January has been a "bummer" of a month when it comes to clear skies and February tends not to be much better. Too many clouds, too much rain, too much mud, all making for some "yucky" viewing. We can only hope it gets better soon as my sense from the List-serv is that people are ready to start imaging again – myself included at the novice level. On the bright side, Al Kelly is planning on a newbie CCD introduction and I for one, am more than happy to be there. Matt Hommel continues in his efforts to do his own mirrors and scopes and I'm wondering if this is something other clubs would be interested in? The more the merrier? In this month we have a total lunar eclipse to look forward to on Feb 20th and then a Haak Winery star party on March 1st.

On a sad note, many of us know that we are losing Ed Malewicz. This saddens me, in particular, as Ed and Eleta were one of the major "welcoming folk" that took the time to talk to me at the first star party that I attended (Challenger Park). We spoke at length about telescopes and astrophotography (film based, I might add). Ed has served this club in an outstanding manner and I like to think I speak for the group when I say that "WE" are indebted to his devotion and dedication to this club. Ed, we thank you!! He and his bride to be, Brenda, are headed to California, specifically Torrance, not far from where I once lived. I couldn't be happier for Ed and Brenda and I wish them well in the future. Ed, you will be missed! Perhaps Ed could be a member of the FORT out in California?

We have a lot going on and a lot to look forward to, and I welcome your thoughts, until next month...

David Haviland

Letter from the Editor

By Connie Haviland

This month we want to recognize those who were in Columbia disaster, February 1, 2003. I do not want to go without mentioning that Columbia was one of three accidents that NASA (and the world) had to witness. There was the Apollo (later named Apollo 1-Jan 27, 1967) and Challenger (Jan 28, 1986). I can't look at these dates and not worry about the time of year they happened. That being said, I want to say that I chose Columbia because of the personal connection we had with a special member of that crew, David Brown. This month's edition is dedicated to the memory of Dave and the rest of the crew.

Letters to the Editor



I ran into one of my old work buddies the other night, Frank Brody, who is Chief of the Spaceflight Meteorology Group at JSC. Frank mentioned that his wife is Director of Mentoring Programs at the North Pasadena Community Outreach and is seeking assistance in mentoring a group of gradeschoolers in astronomy. This might be a group star party session (or sessions) or whatever else works best.

Would anyone care to contact Mrs. Brody to discuss this? I told Frank that I would e-mail the JSCAS with the request. She can be e-mailed at janicebrody@yahoo.com or reached on her cell at 713-591-5941.

Al Kelly

Star Parties for 2008

By John Erickson

FEBRUARY

February 15 - Bay Area Charter School Lecture (possible look at FQ moon)

February 21 - Total Lunar Eclipse

MARCH

March 01 - Haak Winery Star Party

March 08 - Moody Gardens Star Party

APRIL

April 03 to 06 - Fort Mckavett Star Party

MAY

May 10 - Lunar Occultation (Seabrook)

JUNE

June 01-08 - Texas Star Party

June 28 - Moody Gardens Star Party

JULY

July—No Star Party

AUGUST

August—No Star Party

SEPTEMBER

September 06 - Moody Gardens Star Party

September 27 - Haak Winery Star Party

OCTOBER

October 18 - Astronomy Day @ George Observatory

October 23 to 26 - Fort Mckavett StarParty

NOVEMBER

November 01 - Haak Winery Star Party

DECEMBER

December 12 - No Star Party

Farewell, my dear friend, farewell



COURTESY PHOTO

Memories of better times—Eldorado's Susan Buchholz is pictured here with Columbia astronaut Dave Brown as they shared a meal at the Ft. McKavett Country Club Cafe. Brown was at Ft. McKavett to assist with a semi-annual Star Party. Tragically, he and his crewmates were lost Saturday when the Space Shuttle Columbia broke up during re-entry.

Twinkle, twinkle little star

*How I wonder what you are
Up above the world so high
Like a diamond in the sky
I wish I may I wish I might
Have this wish I make tonight...*

by Susan Buchholz

It is said that Eskimo people, when gazing up at the bright night sky, imagine the stars to be the spirits of departed loved ones. Small holes are made in the fabric of the night, allowing the loved ones shine down so that we here on Earth may see that all is well. David Brown liked to view the Texas night sky from the parade ground at Fort McKavett. During the dark of the moon each March and October the Johnson Space Center Astronomical Society, whose logo is the space shuttle, trek out from Houston for a long week-end of fellowship and star viewing.

At the Fort, Buddy Garza, Alfredo Munoz, Gabe Schooley, and Robin Street would work to see that everything was shipshape before the first trailer arrived. Usually, a barbecue was planned and the friends of Fort McKavett made lots of salads and desserts. The park staff has become close friends with the NASA night owls and happily anticipates each reunion. Sometimes, as many as thirty telescopes would point into the velvet night. And, the telescopes were as unique as their owners. The lens on this one has been hand ground by its owner/designer, the barrel of that one has been constructed of hockey sticks from the pro-teams...and this one cost so much that it has a first name.

Members of the society, including crew chief Bob Taylor, a NASA pilot named "Triple Nickle," and other volunteers arrive early for these semiannual Star Parties. Their mission is to visit West Texas school children, reach out to the young minds, and perhaps expand a few horizons. Their generosity with knowledge, time and talent is modestly shrugged off. "We feel that we are the lucky ones coming out to this beautiful country," they would say. Later, they would make jokes about driving on "Toenail Trail."

To me, these men and women represent America's real heroes in a time when heroes and role models are few and far between. NASA astronaut Dave Brown was one of these special people. He dearly loved flying his "pud-dle-jumper" from Houston to Menard for the star gazing at Ft. McKavett. Once here, he always wanted to go over to the Ft. McKavett Country Club Cafe for a huge chicken fried steak. He truly enjoyed being with "down home people."

The last time I saw Dave, I noticed that the West Texas sun had burned his face. As we sat around joking and telling stories, his laughing eyes wore the outline of his aviator sunglasses. Saturday night, after a long day of trying to absorb the news about the Space Shuttle Columbia, and coming to grips with the fact that its crew, including my friend Dave Brown, was lost, I found it difficult to sleep. About three o'clock I got up to let the dogs out and followed them out into the silence. As I looked to the sky to see if maybe any clouds were coming, I felt a slight tug at my heart. There, near the big dipper, I imagined were seven new stars, looking down on us all — Good-bye.

Sent to us by Bob Taylor

Columbia, STS-107

Image right: The STS-107 poses for a group shot in a photo recovered from Columbia's wreckage. In blue shirts, from left: Dave Brown, Willie McCool, Michael Anderson. In red shirts, from left, Kalpana Chawla, Rick Husband, Laurel Clark, Ilan Ramon. Photo credit: NASA



The Columbia STS-107 mission lifted off on January 16, 2003, for a 17-day science mission featuring numerous microgravity experiments. Upon reentering the atmosphere on February 1, 2003, the Columbia orbiter suffered a catastrophic failure due to a breach that occurred during launch when falling foam from the External Tank struck the Reinforced Carbon Carbon panels on the underside of the left wing. The orbiter and its seven crewmembers (Rick D. Husband, William C. McCool, David Brown, Laurel Blair Salton Clark, Michael P. Anderson, Ilan Ramon, and Kalpana Chawla) were lost approximately 15 minutes before Columbia was scheduled to touch down at Kennedy Space Center.

You can go to <http://history.nasa.gov/columbia/index.html> to read more about STS-107.



Background Information on the Columbia Space Shuttle Mission STS-107 (<http://www.nasa.gov/columbia/mission/index.html>)

STS-107 Mission Summary
STS-107 Flight: January 16-February 1, 2003

Crew:

Commander Rick D. Husband (second flight),
Pilot William C. McCool (first flight),
Payload Specialist Michael P. Anderson (second flight),
Mission Specialist Kalpana Chawla (second flight),
Mission Specialist David M. Brown (first flight),
Mission Specialist Laurel B. Clark (first flight),
Payload Specialist Ilan Ramon, Israel (first flight)

Payload:

First flight of SPACEHAB Research Double Module; Fast Reaction Experiments Enabling Science, Technology, Applications and Research (FREESTAR); first Extended Duration Orbiter (EDO) mission since STS-90. This 16-day mission was dedicated to research in physical, life, and space sciences, conducted in approximately 80 separate experiments, comprised of hundreds of samples and test points. The seven astronauts worked 24 hours a day, in two alternating shifts.

First flight:

April 12-14, 1981 (Crew John W. Young and Robert Crippen)
28 flights 1981-2003.

Most recent flight:

STS-109, March 1-12, 2002 Hubble Space Telescope Servicing Mission

Other notable missions:

STS 1 through 5, 1981-1982 first flight of European Space Agency built Spacelab. STS-50, June 25-July 9, 1992, first extended-duration Space Shuttle mission. STS-93, July 1999 placement in orbit of Chandra X-Ray Observatory.

Past mission anomaly:

STS-83, April 4-8, 1997. Mission was cut short by Shuttle managers due to a problem with fuel cell No. 2, which displayed evidence of internal voltage degradation after the launch.





Rick D. Husband, Commander
Rick Husband's childhood dream was to become an astronaut.

William C. McCool, Pilot
Willie McCool loved to see "the eyes light up when you talk to kids" about space.



Michael P. Anderson, Payload Commander
"Very early on," Michael Anderson "thought being an astronaut would be a fantastic thing to do."

David M. Brown, Mission Specialist 1
As a kid, David Brown thought of astronauts as "movie stars."



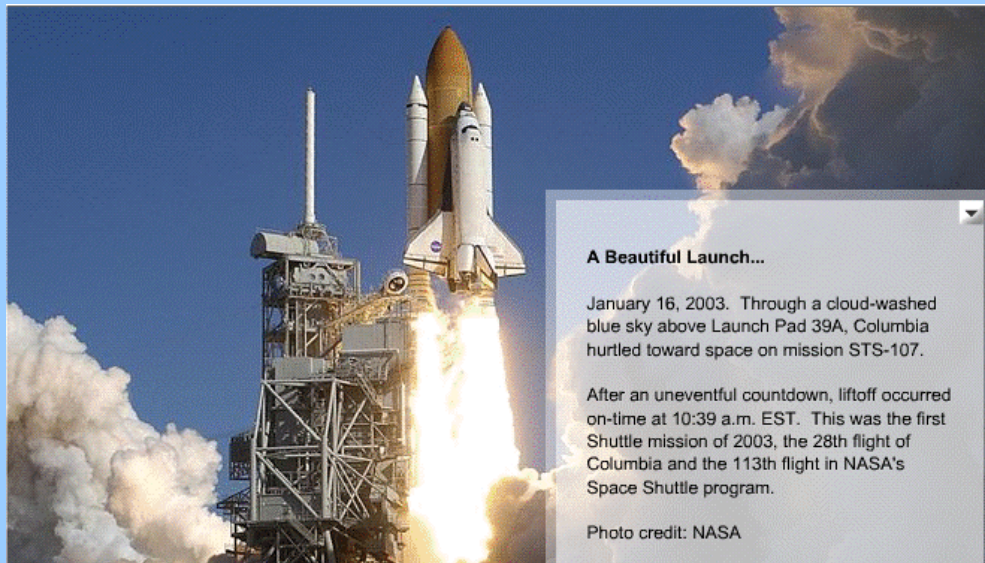
Kalpana Chawla, Mission Specialist 2
Kalpana Chawla's path to become an astronaut began in Karnal, India.



Laurel Blair Salton Clark, Mission Specialist 4
Laurel Clark felt "incredibly lucky" to see Earth from the unique vantage point of space.

Ilan Ramon, Payload Specialist 1
Son of a Holocaust survivor, Israel Air Force Colonel Ilan Ramon was that nation's first astronaut.





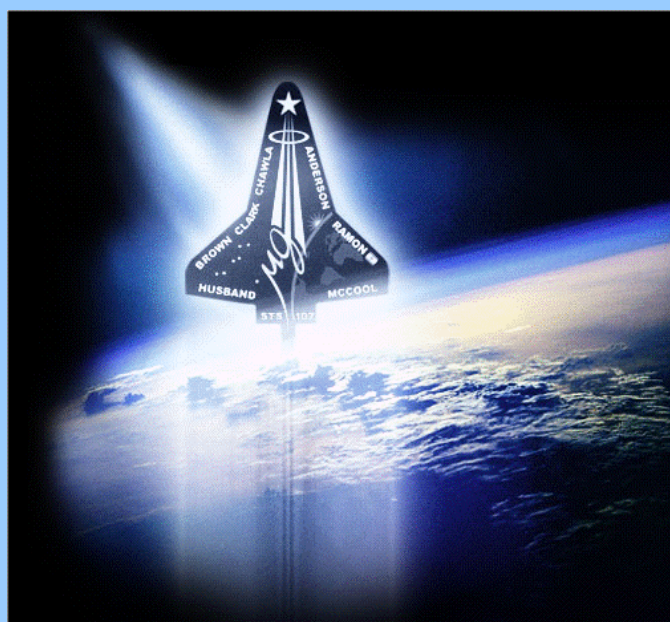
A Beautiful Launch...

January 16, 2003. Through a cloud-washed blue sky above Launch Pad 39A, Columbia hurtled toward space on mission STS-107.

After an uneventful countdown, liftoff occurred on-time at 10:39 a.m. EST. This was the first Shuttle mission of 2003, the 28th flight of Columbia and the 113th flight in NASA's Space Shuttle program.

Photo credit: NASA

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*From our orbital vantage point,
we observe an earth without borders,
full of peace, beauty and magnificence,
and we pray that humanity as a whole
can imagine a borderless world as we
see it and strive to live as one in peace.*

*Willie C. McCool
January 29, 2003*

Where Were You and What Were You Doing, February 1, 2003, When Columbia Went Down?

Eleta and I had walked down the street to the Middlebrook Park, where we watched to the north to see the ion trail. We glimpsed something through the low clouds. It was a bright object moving fast in the right part of the sky. But instead of a sharp object, it looked hazy. And I saw two bright objects near it. Then they were hidden by the clouds.

We walked back to our house, and stopped in our front yard to admire the pink rose blossom on our rose bush. It was our 25th anniversary. We went inside and Eleta logged on to the internet: Space.com was announcing that the shuttle had not arrived on time. We rushed to the TV and watched the whole tragedy as it was reported.

The bright blob was Columbia coming apart. The bright objects were the wings. And we knew that we had lost friends and possibly our careers.

Ed Malewitz

It was a Saturday, and I had packed up my telescope and driven to the George Observatory to volunteer. I don't remember why, but I had not tuned my car radio to the news station KTRH, as I often do. One of the volunteers in the building below the observatory told me about the disaster.

Charlie Hudson

It was one of those unusual Saturdays that I decided to put in some extra time at work. I was sitting at my desk with the radio on very low and this news alert came on. I sat there in disbelief, while hearing about Columbia. I had made plans to meet everyone in the club, that next day, at Ellington. We were going to cheer the crew on as they came home to Houston. After I was able to gather myself together, I called David (Haviland) and asked if he had been listening to the radio or watching television. I then told him what I heard on the radio. I don't normally recall where I was when various disasters happen, but this one will leave a spot in my memory. We had lost very brave men and women, but they will never be forgotten.

Connie Haviland

STAR PARTY SUPPORT

By Walt Gardiner

On January 19, 2008, The Lunar Planetary Institute's Family Space Day theme was about making a telescope with a side helping of mirror grinding, solar viewing, and the importance of never viewing the sun unless you use a solar filter. The event was attended by more than eighty children accompanied by one or both parents. This event was supported by six JSCAS club members with three telescopes; Chris Randall provided his 10 inch SC Meade and a Coronado Hydrogen Alpha scope and Walt Gardiner provided his 8 inch SC Meade. Both the 10 and 8 inch scopes utilized type 2 solar filters. Matt Hommel gave the mirror grinding presentation while, Lisa and two girls were there lending a helping hand with the overall event.

You are invited to come out and meet Dr. Bill Bottke, Senior Research Scientist at the Southwest Research Institute, as he talks about *Forming the Planets: What's New with the Oldest Events in the Solar System*. Bottke will discuss the most recent advances that are rewriting the history of the solar system as we know it. He will share how it was previously thought that planets remained in the same location as where they were originally formed. Bottke's models and animations illustrate how the planets migrated to new locations a half billion years after their formation.

Please feel free to pass along this information to anyone who may be interested. I have attached a flyer for you to print out and post or forward.

Thank you,

Kristie Smith
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Universities Space Research Association
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Houston, TX 77058
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Fax: (281) 486-2127
E-mail: ksmith@lpi.usra.edu

The Lunar and Planetary Institute Introduces
**COSMIC EXPLORATIONS:
A SPEAKER SERIES**

February 7, 2008

*FORMING THE PLANETS: WHAT'S NEW WITH THE
OLDEST EVENTS IN THE SOLAR SYSTEM*

How did the planets form? How can the Moon tell us about these events? Research scientist Dr. Bill Bottke discusses recent advances in our understanding of planet formation that are challenging long-held views, with the strongest models suggesting that several planets did not form where we see them today!

This FREE presentation at 7:30 p.m. is geared for all inquisitive adults and will be followed by a light reception and an opportunity to meet Dr. Bottke.

Speaker presentations held at
USRA's Lunar and Planetary Institute
3600 Bay Area Boulevard, Houston TX

For more information, please call
281-486-2135 or visit
www.lpi.usra.edu/education/lectures






FEBRUARY OBSERVING

★ SSO: (Solar System Objects) Summary for the 15 Dec 07

Object	Const	Mag	% Ill	Rise Time	Transit	Set Time
Sun	Oph	-26.7	100	07:08	12:15	17:22
Moon	Aqr	----	36	11:26	17:14	23:03
Mercury	Oph	-1.2	100	07:10	12:12	17:15
Venus	Lib	-4.1	71	03:56	09:27	14:58
Mars	Gem	-1.6	100	18:05	01:13	08:20
Jupiter	Sgr	-1.8	100	07:36	12:41	17:47
Saturn	Leo	0.6	100	23:04	05:28	11:53
Uranus	Aqr	5.9	100	12:02	17:49	23:39
Neptune	Cap	7.9	100	10:46	16:13	21:43
Pluto	Sgr	14.0	99	07:16	12:38	18:03
Comet Holmes 17P (outburst)	Per	17.6 1.2	98	13:12	21:48	06:19

Highlighted times denote daylight events.

Lunar phases for December 07

Third 	New 	First 	Full 	Third 
01st 06:44	09th 11:43	17th 04:17	23th 19:16	31st 01:51

Central Standard Time

★ BSO: (Bright Sky Objects)

Mel 20 (Alpha Persei Association, Cr39) – Open Cluster in Perseus, Magnitude 1.2, Size 185', #Stars 50.

NGC 869 + 884 (C 14, Cr 24+25, Mel 13+14) – Open Clusters in Perseus, Magnitude 5.3+6.1, Size 30' ea, #Stars 200+150.

NGC 1039 (M 34, Cr 31) – Open Cluster in Perseus, Magnitude 5.2, Size 35', #Stars 60.

NGC 1342 (Cr 40, Mel 21) – Open Cluster in Perseus, Magnitude 6.7, Size 14.0', #Stars 40.

★ DSO: (Dark Sky Objects)

M 77 (Arp 37) – Galaxy in Cetus, Magnitude 8.8, Size 6.9' x 5.9'.

IC 342 (C 5) – Galaxy in Cam, Magnitude 9.2, Size 18 x 17

NGC 925 – Galaxy in Triangulum, Magnitude 10, Size 9.8'x6.0'

NGC 1232 (A-41) – Galaxy System in Eridanus, Magnitude 10.5, Size 7.4' x 6.4'

★ CDMP: (Chris' Don't Miss Pick)

Abel 426 – Galaxy Cluster in Perseus, Magnitude 12.5, Size 190.4', #Galaxies 88.

George Abell compiled a catalog of galaxy groups in the 1950's. Abell surveyed the then recently completed Palomar Sky Survey plates to find clusters of galaxies. He assigned numbers according to richness of the number of galaxies and the distance of the cluster. He found that the magnitude of the 10th brightest galaxy was a good indicator of the relative brightness of the cluster. This ground breaking work has stood the test of time as a valuable system for evaluating galaxy clusters.

There are 88 galaxies that compose this cluster, but there are several viewable in nominal amateur equipment. These are NGC 1272 through NGC 1278 and IC 1907. These will be a challenge, but will be well worth it when you find them.

For this and more information go to <http://www.saguaroastro.org/content/Abel-Galaxy-Clusters.htm>



When I was in high school I took drivers Ed. The textbook contained a diagram of an automatic transmission, which worked based on fluid flow. I think perhaps the Buick Dyna-flow transmission was the best known of this type. It

was widely said that automatic transmissions were not as efficient as standards. The last time I was shopping for a new car, I asked the salesman to see one with a standard transmission out of concern for fuel economy. He replied that he did not have one.

This month's challenge: Do automatic transmissions still employ fluid flow? Are modern automatic transmissions more fuel efficient or less so than standards?

*****I researched some info and this is what I found so that others (well some of you may not know what this is..ok?) can see what Charlie is talking about (C.Haviland)*****

Dynaflow was the trademark name for an automatic transmission developed and built by General Motors' Buick Motor Division from the late 1940s to the mid 1960s.

Dynaflow, which was introduced for the 1948 model year, got some early, heavy-duty testing in the M18 Hellcat tank destroyers, built in Buick's Flint plant during World War II.

The Dynaflow initially used a five-element torque converter (with two turbines and two stators, and a planetary gearset), providing two forward speeds plus reverse. In normal driving, Dynaflow started in high gear (direct drive), using the converter for torque multiplication. Low gear, obtained via the planetary gearset, could be manually engaged and held up to approximately 40 mph (65 km/h), improving acceleration, but the transmission would not automatically upshift to high gear.

Despite its smooth shifting capability, Dynaflow developed a reputation for being slow when compared to other GM divisions' Hydramatics and Chrysler's TorqueFlite. Dynaflow was also an inefficient transmission by virtue of its initial design. In 1953 Buick redesigned Dynaflow as the Twin Turbine Dynaflow, incorporating two turbines but only a single stator, which resulted in a higher level of performance and greater efficiency of transmitted energy. Buick also incorporated variable-pitch stators in 1955 for improved flexibility. A variant appeared in 1958, the Triple Turbine (Flight Pitch Dynaflow). This unit is similar to the Twin Turbine in theory, but bears many operational differences. A few identifying features: Twin Turbine can be push-started, engages L up to 40 mph, and has a shift quadrant that reads P-N-D-L-R. Triple Turbine cannot be push-started, engages low up to 45 mph, and has a shift quadrant that reads P-R-N-D-G (where "G" stands for Grade Retard).



The Dynaflo's were discontinued in favor of the Super Turbine 300 two-speed and the much more efficient Super Turbine 400 three-speed automatics (the latter being Buick's trade name for the Turbo-Hydramatic) starting in 1964. Elements of the Dynaflo continued a few years longer, as full-size Buicks (along with full-size Oldsmobiles and some Cadillacs) used a variable-pitch torque converter variant of the Turbo Hydramatic from 1965 through 1967. (<http://en.wikipedia.org/wiki/Dynaflo>)

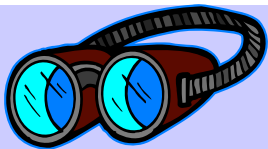
RESPONSE TO LAST MONTH'S CHALLENGE

Provided by ??

CHARLIE'S CHALLENGE LAST MONTH: The new orbiter would be a good subject for a future JSCAS program, but I would appreciate a brief explanation of the planned advantages of the replacement in the next Starscan.



GUESS YOU STUMPED THEM CHARLIE!!!



FORT (Forward Observing Recon Team)

By Ken Lester (special operations team)

Taken from:

Fort McKavett State Historic Site

Originally called Camp San Saba because it overlooks the headwaters of the San Saba River Valley, Fort McKavett State Historic Site was established by five companies of the Eighth Infantry in March 1852 to protect frontier settlers and travelers on Upper El Paso Road. The camp was later renamed for Capt. Henry McKavett, killed at the battle of Monterey on Sept. 21, 1846. The fort was abandoned in March 1859 and reoccupied in April 1868. By 1880, the fort was no longer needed and it was again abandoned on June 30, 1883. Gen. William T. Sherman once called Fort McKavett "the prettiest post in Texas."

Open

Friday–Monday, 8 a.m.–5 p.m.

Fees

Adults: \$3

Students: \$1

12 and under: free

School tour rates vary; contact the site for more information.



What's Happening at the George!!!

Cynthia Gustava

Need volunteers



George Observatory February Events

February 1 – Girl Scout Sky Search and Overnight – Full w/45 girls. Deck scopes are needed. Be sure to bring laser pointers and help the girls identify constellations and bright objects!

February 8 – Friday Night Group: Austin High School – 45 kids and parents. Volunteers will be needed for domes and deck scopes.

February 22 – Friday Night Group: Foster High School LCISD Cadets – 44 kids and parents. Volunteers will be needed for domes and deck scopes.

February 29 – Friday Night Group: Cub Scouts Pack 1774 – Anywhere from 40 to 100 scouts and chaperones. Volunteers will be needed for domes and deck scopes.

Regular Saturday night public viewing will be throughout the month. Volunteers from all the clubs in the Houston area are always welcome and appreciated!

Contact Cynthia Gustava at cym31@comcast.net to volunteer for any of these events. Thanks!

YOU CAN ALSO GO TO:

<http://209.34.11.207:8010/cgi-bin/calcium.pl?>

Calendar-

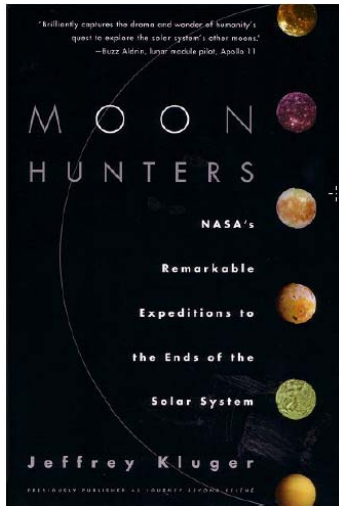
[Name=GeorgeObs_Event_Cal&Op=ShowIt&Amount=Month&NavType=Both&Type=Block&Date=2008/1/29](http://209.34.11.207:8010/cgi-bin/calcium.pl?Name=GeorgeObs_Event_Cal&Op=ShowIt&Amount=Month&NavType=Both&Type=Block&Date=2008/1/29)

AND SEE THE CALENDAR FOR FEBRUARY



JSCAS LIBRARY & BOOK REVIEW

Bob & Karen Taylor



Earth's moon is a gray, lifeless place, interesting geologically but perhaps a little disappointing to those of us looking for strange, colorful new worlds.

But our moon is only one of more than 60 planetary satellites in the solar system, most of which are entirely unexplored. In *Moon Hunters* (published in hardcover as *Journey Beyond Selene*), Jeffrey Kluger chronicles these unsung places and the heroes who explore them: the Jet Propulsion Lab's staff of dedicated adventurers, who build and fly sleek, unmanned spacecraft to investigate other moons. "When astronauts finally did reach the moon," Kluger writes, "the lean, fleet ships of the Jet Propulsion Laboratory had already gone elsewhere."

Why explore the satellites of other planets when the planets themselves remain mysterious? Kluger describes astronomers' first realization that in contrast to the lifeless gas giant Jupiter, its moons were a veritable scientific playground:

There were big moons and small moons, patterned moons and plain moons, brightly colored moons and pasty-pale moons.... There were moons that could have atmospheres, water, and even, perhaps, a spark of internal heat. Put them together, and

you had moons that could, in theory, harbor life.

Moon Hunters chronicles the history of a little-understood aspect of humanity's quest to discover new worlds. From the early Ranger orbiters through the incredible journeys of Voyager and Galileo, Kluger gives credit where credit is long overdue. They may not be astronauts, but these space jockeys have the right stuff. --*Therese Littleton*

Review

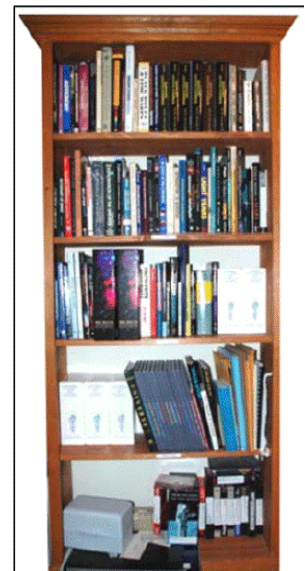
Carolyn T. Hughes *The New York Times Book Review* Entertaining...Kluger does a fine job chronicling...the scientists and engineers at the Jet Propulsion Laboratory [who] are in the business of making the seemingly impossible somehow possible.

Book Description

In *Moon Hunters*, bestselling author Jeffrey Kluger tells the thrilling story of some of the most remarkable heavenly bodies known -- the solar system's sixty-five moons -- and the extraordinary people who have explored them all. Chronicling lunar exploration from the first attempts by NASA's Jet Propulsion Laboratory to explore our own moon to the triumphant conquest of the outer planets, *Moon Hunters* is an adventure story full of drama, danger, and suspense. While taking the reader on a spellbinding journey to the eerie landscapes of the moons themselves, *Moon Hunters* offers a riveting account of the scientists and spacecraft responsible for unlocking the secrets of the cosmos -- and perhaps of life itself.

About the Author

Jeffrey Kluger is a senior writer at *Time* who specializes in science and the space program. He is the coauthor with Jim Lovell of the bestseller *Apollo 13* and a former contributing editor and columnist for *Discover* magazine. He lives in New York City with his wife Alejandra and their daughter Elisa.





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JSCAS Mirror Lab

Matt Hommel
 PROGRESS REPORT



Well I finally have the ability to test mirrors with my interferometer. The software is easy to use and the interferograms are relatively easy to learn. I tested a 4 inch spherical mirror I got off E-bay years ago and it has a Strehl Ratio of .939. Not bad for \$10. I was a bit disappointed when I tested the mirror I had ground only to find that it was not nearly parabolic, so I have been figuring it furiously and watching it take shape as I go by checking the Interferometer output. I plan to build a second interferometer because I would like the ability to make minor adjustments to the beam splitter. My current design has everything glued solid.

Bob and I have started researching adjustable mirror cells for the coating machine and hopefully we'll have that done by next months update. I'll need to purchase a "plasma generator" for the chamber but those are not as high tech as they sound and they are not that expensive. I have decided to go into carbon fiber fabrication as well, so I'll be reporting on those results in the next issue hopefully.

Cheers,
 Matt.



Guess What I Got? A New Toy!!!

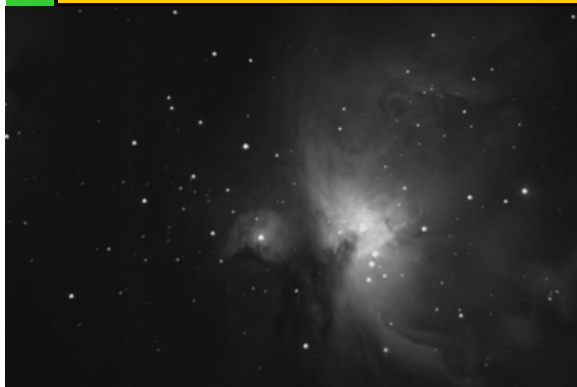
By Bob Taylor



Santa Claus brought me a new 2", 30 mm, 80 degree FOV eyepiece for Christmas!! I've only had a couple of opportunities to use it so far (weather) but it's like sticking your head out a porthole to look at the sky. It should be great for star parties since it has a lot of eye relief. Santa also brought me the Orion Bino-Viewer with a pair of 30 mm Possls. The set came with a carrying case and small Barlow. If the sky ever clears I'll get a chance to report on their performance. I used a bino-viewer on my scope at TSP one year and was amazed how the images looked almost three dimensional. Chuck Shaw has been coaching me along with the new SiTech tracking system I installed last December. I think I'm about 98% complete with that upgrade and so far it's proving to be a great upgrade for the cost.



Members' Gallery—February 2008
Matt Hommel and credit for the processing goes to Chris Wells



M42, LuminancePS
Taken at Ft.
McKavett—October
2007



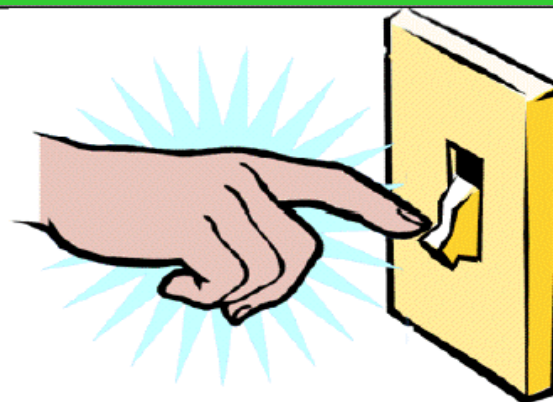
10 inch LX200GPS UHTC and SBIG STL-11000 camera with Custom Scientific LRGB filter set.

Total exposures were 8:2:2:2 minutes LRGB respectively. RGB were binned 3x3. One interesting note is that this picture shows inarguably that a 10 inch LX200 can and does fill the entire 35mm chip in the STL-11000.

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."



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.
First Colony Conference Center
3232 Austin Pkwy
Sugarland, Texas

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

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Astronomy

Clubs

Johnson Space Center Astronomical Society

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Starscan Editor – Connie Haviland
Star Party Chairperson – John Erickson
Librarian – Bob and Karen Taylor
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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 – Chris Randall

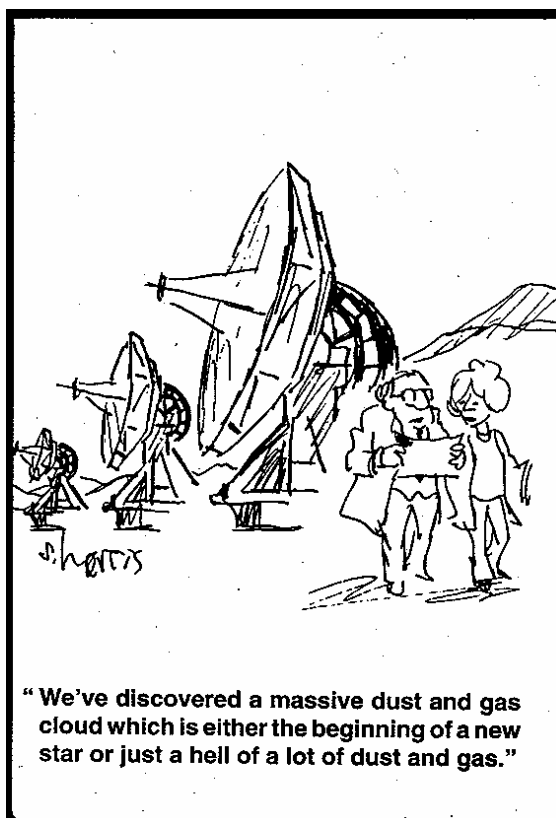
Starscan Submission Procedures

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 it much easier to edit and set up the Starscan

Please send all submissions to:

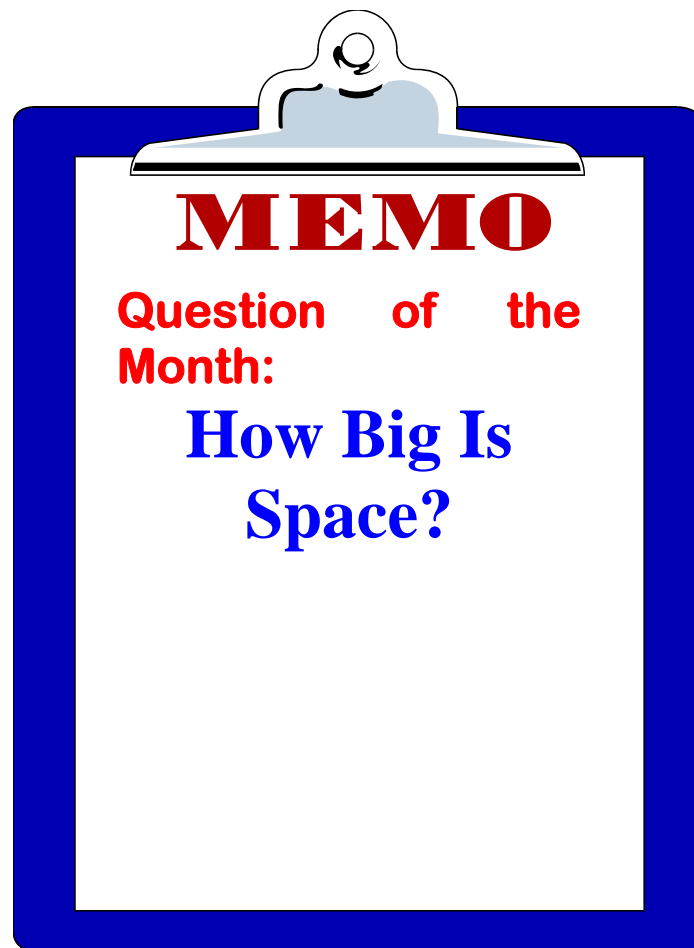
conniesstarscanaccount@gmail.com

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



Astronomy and Kids

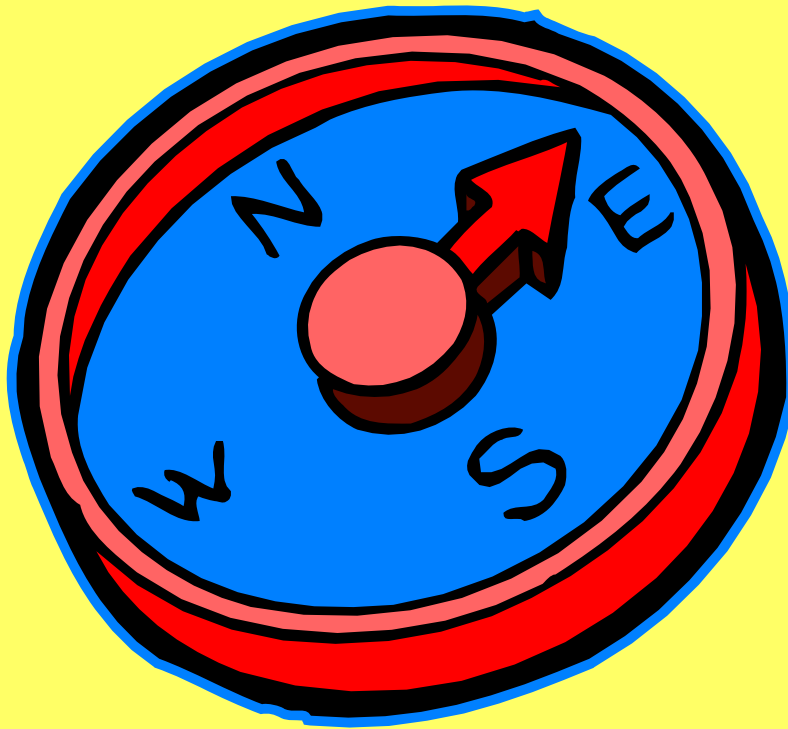
This is the section strictly for kids (or kids at heart). We will be including information, stories, ideas, puzzles or anything that has to do with astronomy. The only difference here is, it will be directed for children. We don't discourage parents or any other adult to get involved. In fact, we encourage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



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**LOOK FOR NEXT MONTH'S WORD SEARCH
SOLUTION**

KidsAstronomy.com: The Stars Tonight 5.2

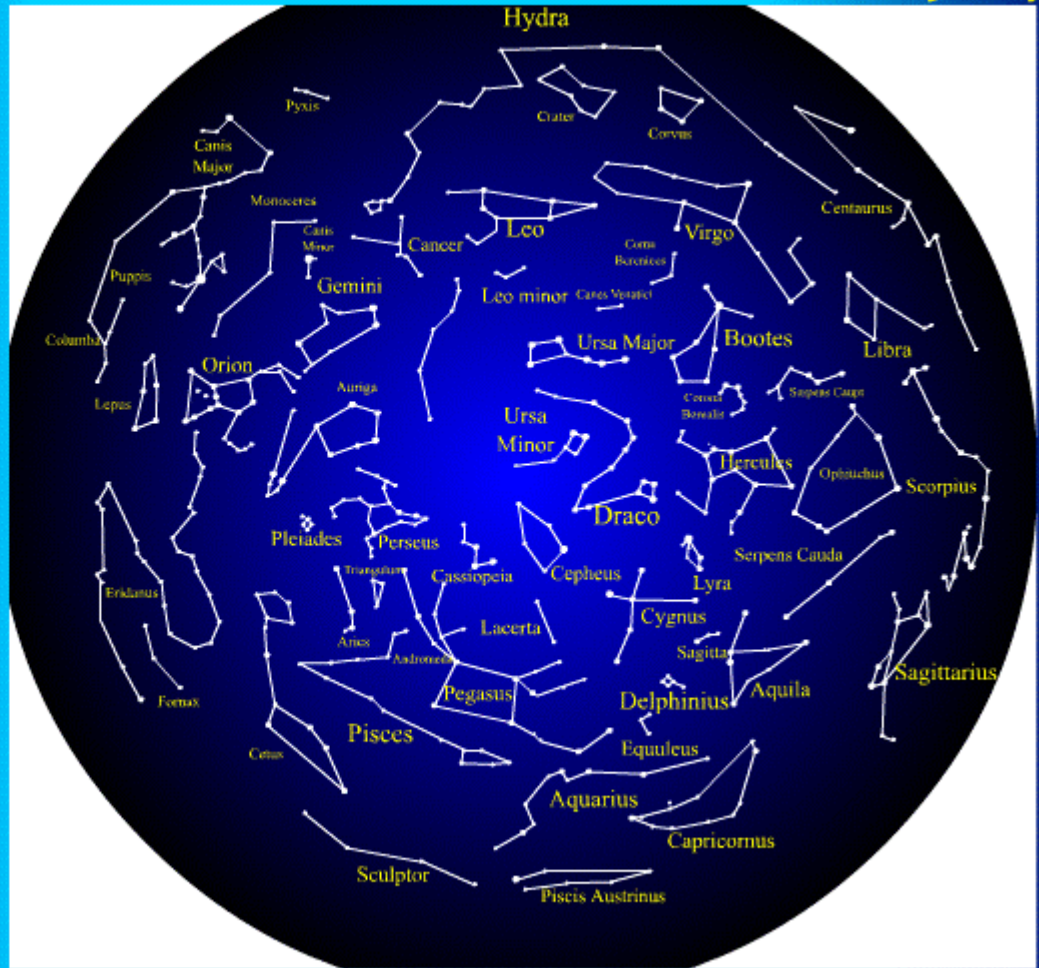
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GO TO KidsAstronomy.com AND PUT IN THE DATE AND PRINT OUT YOUR OWN SKY-MAP...I FOUND IT AT THIS WEBSITE... <http://www.kidsastronomy.com/astroskymap/constellations.htm>

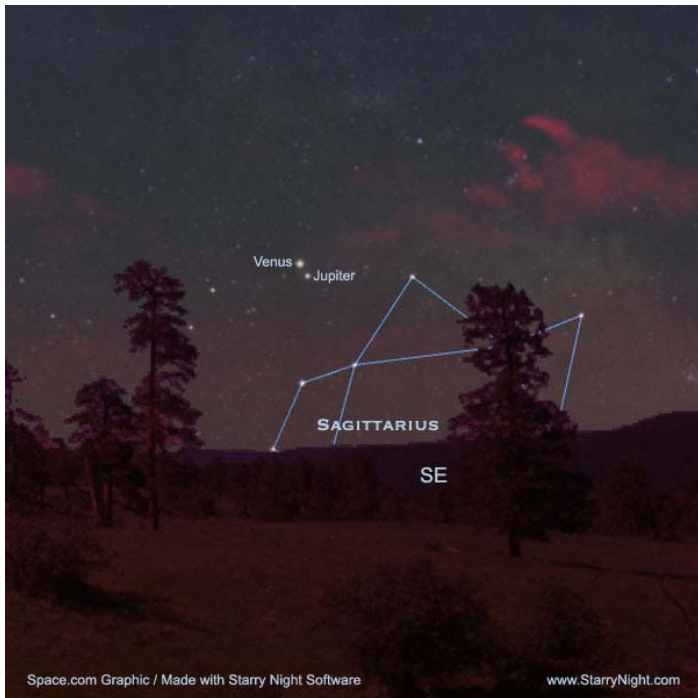
CROSSWORD PUZZLE & SOLUTIONS

We Will Never Forget

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Before sunrise on February 1, Venus and Jupiter will appear low in the southeastern sky, as seen from mid-northern latitudes.

Before sunrise on February 4, Venus and Jupiter will be joined by a thin crescent Moon, as seen from mid-northern latitudes.



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

