Volume 26 Issue 8

August 2012

The Observer

East Valley Astronomy Club

From the Desk of the President

by David Douglass

A large Thank You to Ed Thomas for handling the July EVAC meeting. And he gets to do it again in August. That is because Jan and I are "on the road" for the summer. We are currently up in beautiful south-western Oregon. The days are cool, and the nights are even cooler. I can't complain too much, as the skies have been mostly clear, and the night time views of the stars are fantastic.

Jan grew up in a small community west of Roseburg, OR, known as Camas Valley. We are staying at her brothers property, which is about 46 acres, out in the middle of a very dark area. Yup… you can see the milky way with the naked eye, with no problem. And, you bet, I have a telescope and astro camera with me.

But I must tell you that I discovered something else up here. I am learning about DEW !!! Lots and lots of DEW.

The first night, I was not prepared for that, and I had enough DEW to pour into a large glass. YIKES !! Well, after that evening, I got the observing tent out, we made some temp dew shields, and things have been much better.

The Oregon Star Part is August 14-19. Can you believe it? Six nights of observing in the Oregon mountains, at an elevation of about 4800 feet.

And you guessed it… Jan and I will be there. It will be interesting to compare their event with our gatherings. This is their 25th anniversary.

I have been reading about the Arizona monsoons. Hopefully, you will all get a chance to get out and do some observing too this month. I'll keep this one short. Current information is located elsewhere in the newsletter. Let's all keep "Looking Up" !

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The Backyard Astronomer

North Rim GCSP: I Got It, I Got It, I Don't Got It

by Bill Dellinges

I have good news and bad news. The good news is during my five days and nights at the Grand Canyon Star Party - North Rim (GCSPNR), there wasn't a cloud in the sky. This had not been the case in my twelve previous star parties there.

The bad news is that I had a little accident the first night I attempted to set up. In the past I had brought my trusty and very manageable 1974 Celestron C-8. This year I decided to bring my CPC-11.

To transport this 65 pound beast from the front of the lodge, 200 feet down to the setup area on the veranda – which includes a stone staircase – I had formulated a brilliant plan! My wife Lora would station herself midway with a barstool on which I would rest the telescope to take a brief breather. Then on to the veranda!

Never mind that both staff and fellow gazers had offered help in transporting my scope to the observing area.

The midpoint rest stop worked as planned. The tripod was waiting below for the Eagle to land. Only a dozen irregular stone steps zigzagging down

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Upcoming Events:

Public Star Party - August 10

Local Star Party - August 11

General Meeting - August 17

Deep Sky Observing - August 18

Check out all of the upcoming club events in the Calendars on page 8

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The Backyard Astronomer

Continued from page 1 to the veranda separated me from "Mission Accomplished". It was not to be.

One or two steps from the bottom of the staircase, something went horribly wrong. One second I had it, the next I didn't. I can't clearly recall what happened but I realized I was going down towards the ground. I never let go of the telescope until both man and beast made a thud upon impact. I never heard glass break. I was stunned and mystified at what had happened.

I looked at my right hand and saw two nasty cuts under my fingers dripping blood. My wife gave me several Kleenex tissues to stop the bleeding and I closed my hand around them.

A ranger had been giving a lecture nearby and rushed over. She radioed for EMTs and two quickly arrived to assess my condition. It was determined I'd need stitches and x-rays to determine if my left wrist was broken. The nearest place this could be done was Kanab, Utah, 80 miles to the north (believe it or not). And so it was I experienced my first ambulance ride.

The veranda at North Rim

Lora followed in our car. An hour and a half later we were in beautiful downtown Kanab. Wheeled into the hospital, I was attended to by a doctor and three nurses (it was a slow night). The doctor told me x-rays showed no broken wrist but a broken right middle finger. A dozen stitches closed the cuts to my right fingers and a splint was applied to the broken finger. The nurses cleaned and bandaged the road rash on my left arm. We were given instructions on changing dressings, pain reducing pills, antibiotics, and discharged. It was 10 pm now, Utah time, and being pretty burned out by then, we decided to stay the night in Kanab.

The next day back at the North Rim, I took a look at the telescope. Amazingly the mirror and corrector plate were intact. The only outward damage was a small ding on top of the tube, a scuff mark near the bottom of the left fork, a few scratches on the silver base, and a slight binding in the Feather Touch focuser. How did it avoid being totally trashed?

My guess is that in refusing to let go of the scope, I had crumbled to the ground in such a way as to protect it from more serious damage. Thus I sustained more injury than it did. And through it all, my Timex was still ticking! I sure would like to see a video of that fall.

There is an interesting side story to this incident. Condor sightings are rare, even around the Grand Canyon. But two were seen hovering over me! A ranger told me later they are keen spotters of helpless prey and can smell blood a long ways off. As it turned out, after I was carted off, guests attending the daily condor lecture on the veranda were treated to the spectacle of a pair of condors perched on the lodge's roof (perhaps the same two that had been hovering over me earlier?). At least something positive came out of this debacle.

I assumed at the minimum the scope's collimation would be out, but I was in no condition to use it anyway. It sat covered off to the side of the veranda during our stay. I used my 7x50 binoculars from time to time and also helped out by fielding questions from the public as they waited in the longer lines.

As usual, they were more impressed with my laser than my answers! On the morning of our departure, SAC's Chris Hanrahan was kind enough to carry the wounded 11" to our car. The telescope has since been serviced and appears to be OK. I will check its performance this fall or whenever I can carry it again – whichever comes first.

NASA Science News

NASA'S Space Launch System Passes Major Agency Review, Moves to Preliminary Design

The rocket that will launch humans farther into space than ever before passed a major NASA review Wednesday. The Space Launch System (SLS) Program completed a combined System Requirements Review and System Definition Review, which set requirements of the overall launch vehicle system. SLS now moves ahead to its preliminary design phase.

The SLS will launch NASA's Orion spacecraft and other payloads, and provide an entirely new capability for human exploration beyond low Earth orbit.

These NASA reviews set technical, performance, cost and schedule requirements to provide on-time development of the heavy-lift rocket. As part of the process, an independent review board comprised of technical experts from across NASA evaluated SLS Program documents describing vehicle specifications, budget and schedule. The board confirmed SLS is ready to move from concept development to preliminary design.

"This new heavy-lift launch vehicle will make it possible for explorers to reach beyond our current limits, to nearby asteroids, Mars and its moons, and to destinations even farther across our solar system," said William Gerstenmaier, associate administrator for the Human Exploration and Operations Mission Directorate at NASA Headquarters in Washington. "The in-depth assessment confirmed the basic vehicle concepts of the SLS, allowing the team to move forward and start more detailed engineering design."

The reviews also confirmed the SLS system architecture and integration with the Orion spacecraft, managed by NASA's Johnson Space Center in Houston, and the Ground Systems Development and Operations Program, which manage the operations and launch facilities at NASA's Kennedy Space Center in Florida.

"This is a pivotal moment for this program and for NASA," said SLS Program Manager Todd May. "This has been a whirlwind experience from a design standpoint. Reaching this key development point in such a short period of time, while following the strict protocol and design standards set by NASA for human spaceflight is a testament to the team's commitment to delivering the nation's next heavy-lift launch vehicle."

SLS reached this major milestone less than 10 months after the program's inception. The combination of the two assessments represents a fundamentally different way of conducting NASA program reviews. The SLS team is streamlining processes to provide the nation with a safe, affordable and sustainable heavy-lift launch vehicle capability. The next major program milestone is the preliminary design review, targeted for late next year.

The first test flight of NASA's Space Launch System, which will feature a configuration for a 70-metric-ton (77-ton) lift capacity, is scheduled for 2017. As SLS evolves, a three-stage launch vehicle configuration will provide a lift capability of 130 metric tons (143 tons) to enable missions beyond low Earth orbit and support deep space exploration.

NASA's Marshall Space Flight Center in Huntsville, Ala., manages the SLS program. Across the country NASA and its industry partners continue to make progress on SLS hardware that will be integrated into the final design. The RS-25 core stage and J-2X upper-stage rocket engine in development by Pratt & Whitney Rocketdyne of Canoga Park, Calif., for the future two-stage SLS, will be tested at NASA's Stennis Space Center in Mississippi. The prime contractor for the five-segment solid rocket boosters, ATK of Brigham City, Utah, has begun processing its first SLS boosters in preparation for an initial qualification test next year, ahead of their use for the first two exploration missions. The Boeing Co. in Huntsville is designing the SLS core stage, to be built at NASA's Michoud Assembly Facility in New Orleans and tested at Stennis before being shipped to Kennedy.

For more information about the Space Launch System, including the newest proposed rocket configurations, visit: http://www.nasa.gov/sls

NASA Mars Orbiter Repositioned to Phone Home Mars Landing

NASA's Mars Odyssey spacecraft has successfully adjusted its orbital location to be in a better position to provide prompt confirmation of the August landing of the Curiosity rover.

The Mars Science Laboratory (MSL) spacecraft carrying Curiosity can send limited information directly to Earth as it enters Mars' atmosphere. Before the landing, Earth will set below the Martian horizon from the descending spacecraft's perspective, ending that direct route of communication. Odyssey will help to speed up the indirect communication process.

NASA reported during a July 16 news conference that Odyssey, which originally was planned to provide a near-real-time communication link with Curiosity, had entered safe mode July 11. This situation would have affected communication operations, but not the rover's landing. Without a repositioning maneuver, Odyssey would have arrived over the landing area about two minutes after Curiosity landed.

A spacecraft thruster burn Tuesday lasting about six seconds has nudged Odyssey about six minutes ahead in its orbit. Odyssey now is operating normally, and confirmation of Curiosity's landing is expected to reach Earth at about 10:31 p.m. PDT Aug. 5, as originally planned.

"Information we are receiving indicates the maneuver has been completed as planned," said Gaylon McSmith, Mars Odyssey project manager at NASA's Jet Propulsion Laboratory (JPL), in Pasadena, Calif. "Odyssey has been working at Mars longer than any other spacecraft, so it is appropriate that it has a special role in supporting the newest arrival."

Continued on page 4

title

Continued from page 3

Two other Mars orbiters, NASA's Mars Reconnaissance Orbiter (MRO) and the European Space Agency's Mars Express, also will be in position to receive radio transmissions from MSL during its descent. However, they will be recording information for later playback. Only Odyssey can relay information immediately.

Odyssey arrived at Mars in 2001. In addition to its own scientific observations, it has served as a communications relay for NASA's Spirit and Opportunity Mars rovers and the Phoenix lander. Spirit and Phoenix are no longer operational. Odyssey and MRO will provide communication relays for Curiosity during the rover's two-year prime mission.

Odyssey and MSL, with its Curiosity rover, are managed by JPL for NASA's Science Mission Directorate in Washington. Curiosity was designed, developed and assembled at JPL. The Odyssey spacecraft is operated by JPL and Lockheed Martin in Denver. Lockheed Martin Space Systems in Denver built Odyssey.

For more information about Mars Odyssey, visit: http://mars.jpl.nasa.gov/odyssey

For information about the Curiosity landing and other NASA Mars missions, visit: http://www.nasa.gov/mars

NASA Invites Media to View the Morpheus Lander at Kennedy

Media representatives are invited to view NASA's Morpheus lander at the agency's Kennedy Space Center at 3 p.m. EDT Wednesday, Aug. 1. The vehicle arrived at Kennedy Friday to begin a series of tests during the next three months.

Morpheus is a prototype lander engineers can use to integrate technologies for future spacecraft that could land on a variety of destinations in our solar system. The technologies include a new propulsion system that uses liquid oxygen and methane, two "green" fuels that could be manufactured on other planetary bodies. Morpheus also is testing technology capable of identifying and avoiding surface hazards to enable a safe and accurate landing anywhere on a planetary surface and under any lighting conditions.

Morpheus is one of 20 projects comprising the Advanced Exploration Systems (AES) program in NASA's Human Exploration and Operations Mission Directorate. AES projects pioneer new approaches for rapidly developing prototype systems, demonstrating capabilities and validating concepts for future human missions beyond Earth orbit.

The lander underwent testing at NASA's Johnson Space Center in Houston for almost a year in preparation for its first free flight at Kennedy. Once Morpheus has performed several successful free flights there, it will fly about a half a mile -long approach that simulates avoiding hazards in a landing field. Teams have spent the last two months creating a hazard field of craters and rocks at the end of the runway of Kennedy's Shuttle Landing Facility (SLF).

Repurposing the SLF for Morpheus testing is one of many projects under way at Kennedy. Across the space center, teams are preparing for the next generation of launch vehicles and spacecraft. The preparations include upgrading launch pads and the space shuttle crawler transporter, and modifying and refurbishing the Vehicle Assembly Building.

Journalists can photograph Morpheus, the hazard field and the mobile control center for the vehicle. NASA officials also will be available for interviews.

Media should arrive at Kennedy's Press Site by 2:30 p.m. for transportation to the SLF. Journalists without Kennedy accreditation must to apply for credentials by 4 p.m. July 31. International media accreditation for this event is closed. Badges for this specific event can be picked up at the Kennedy Space Center Badging Office on State Road 405 on Merritt Island. Media must apply for credentials online at: https://media.ksc.nasa.gov

For more information about Project Morpheus and videos of past tests visit: http://go.nasa.gov/OmxmBP

For more information about NASA's Advanced Exploration Systems projects, visit: http://go.nasa.gov/OjU0fQ

NASA'S Chief Technologist, Space Tech Head Visit Houston's Oceaneering Space Systems

NASA's Chief Technologist Mason Peck and Space Technology Program Director Michael Gazarik will visit Oceaneering Space Systems in Houston at 1 p.m. CDT, Wednesday, Aug. 1.

Reporters are invited to join Peck, Gazarik and Oceaneering officials during the hour tour of the company's facility at 16665 Space Center Blvd. in Houston, which is near NASA's Johnson Space Center. Officials will be available to speak with reporters during the event. There also will be a photo opportunity with officials during the tour.

Oceaneering develops cutting edge technologies and provides innovative solutions for NASA's technology challenges. The company provides robotic systems, spacesuits, tools and equipment for spacewalking, thermal protection systems (heat shielding) and other engineering and technical solutions. These technologies enable NASA's current and future missions -- technologies that also have commercial applications on Earth.

To attend the tour, media representatives must arrive at Oceaneering by 12:45 p.m., Wednesday for clearance. For information about the company, visit: http://tinyurl.com/comojl7

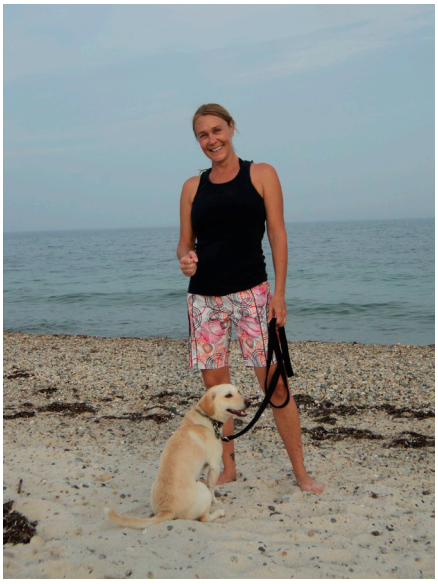
August Guest Speaker: Dr. Melissa Morris

Dr. Melissa Morris will give a talk on: "Which came first: the chondrule or the planet?"

Dr. Morris is the Assistant Director for the Center for Meteorite Studies at Arizona State University. She is a past Goldwater Scholar and was one of the first Exploration Postdoctoral Fellows in the School of Earth & Space Exploration at Arizona State University.

Dr. Morris has been a visiting assistant professor in the Physics and Materials Science Department at Missouri State University, as well as a lecturer in the School of Earth & Space Exploration at ASU.

Dr. Morris's research focuses on star and planet formation, in particular the use of astrophysical modeling to determine conditions during the birth of planetary systems. Her particular interests include hydrodynamic modeling (including radiative transfer) of protoplanetary disks and disk processes during planet formation, mainly through the application of mineralogical data of planetary materials. The oldest known material in our own planetary system can be found in meteorites and, by combining meteoritic data and the results of astrophysical modeling, Dr. Morris endeavors to further our understanding of the conditions that existed in the early solar nebula and exist in extrasolar disks today.



Full Moon on August 1 at 20:28

Last Quarter Moon on August 9 at 11:56

New Moon on August 17 at 08:55

First Quarter Moon on August 24 at 06:54

Upcoming Meetings

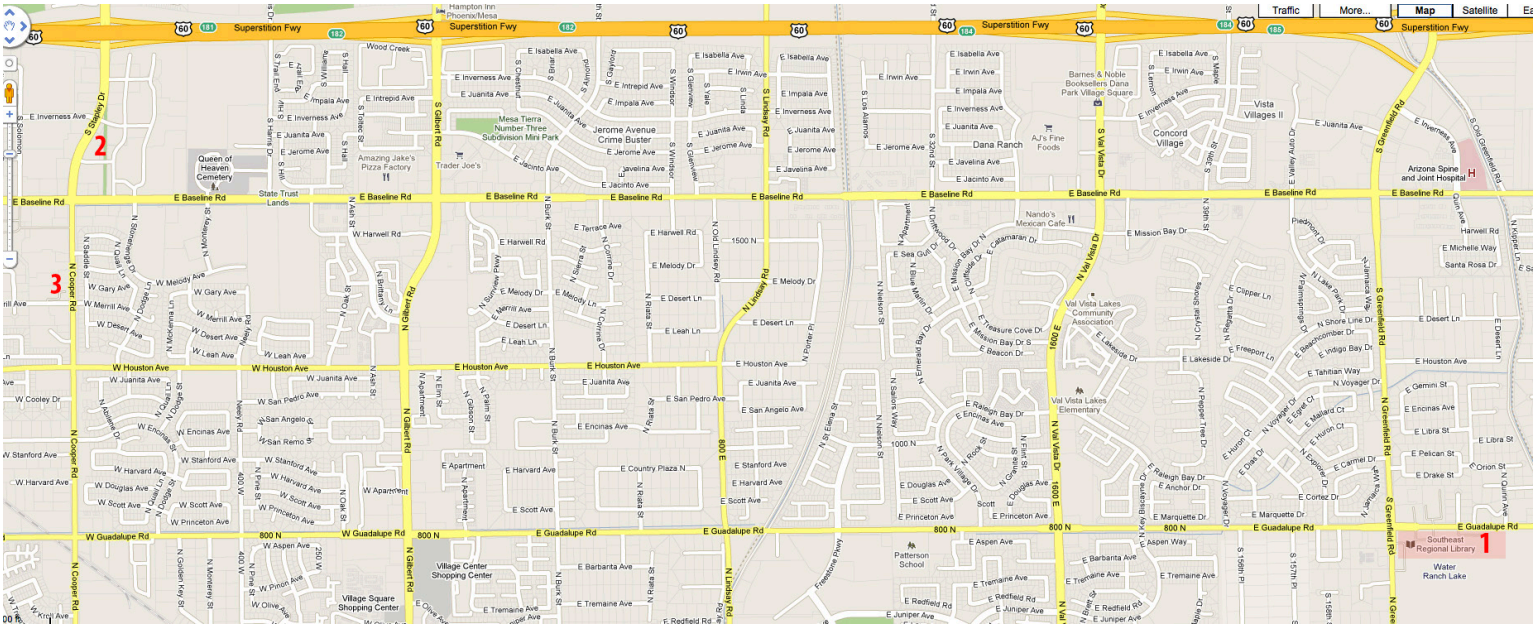
August 17
September 20
October 19
November 16
December **Holiday Party**
January 18

The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

All are welcome to attend the pre-meeting dinner at 5:30 pm. We meet at Old Country Buffet, located at 1855 S. Stapley Drive in Mesa. The restaurant is in the plaza on the northeast corner of Stapley and Baseline Roads, just south of US60.

Visitors are always welcome!



2 Old Country Buffet
1855 S. Stapley Drive
Mesa, Az. 85204

1 Southeast Regional Library
775 N. Greenfield Road
Gilbert, Az. 85234

August 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	**7**	8	9	**10**	**11**
12	13	14	15	16	**17**	**18**
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 10 - Public Star Party & SkyWatch

August 11 - Local Star Party at Boyce Thompson

August 17 - General Meeting at SE Library

August 18 - Deep Sky Observing Night

September 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	**8**
9	10	11	12	13	**14**	**15**
16	17	18	19	20	**21**	**22**
23	24	25	26	**27**	28	29
30						

September 8 - Local Star Party at Boyce Thompson

September 14 - Public Star Party & SkyWatch at Riparian Preserve

September 15 - Deep Sky Observing Night

September 21 - General Meeting at SE Library

September 22 - Arizona Museum of Natural History Star Party

September 27 - Dobson Academy Science Night

East Valley Astronomy Club -- 2012 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

Select one of the following:

☐ New Member ☐ Renewal ☐ Change of Address

New Member Dues (dues are prorated, select according to the month you are joining the club):

☐ **$30.00 Individual** January through March

☐ **$35.00 Family** January through March

☐ **$15.00 Individual** July through September

☐ **$17.50 Family** July through September

☐ **$22.50 Individual** April through June

☐ **$26.25 Family** April through June

☐ **$37.50 Individual** October through December

☐ **$43.75 Family** October through December

Includes dues for the following year

Renewal (current members only):

☐ **$30.00 Individual** ☐ **$35.00 Family**

Name Badges:

☐ **$10.00** Each (including postage) Quantity: _____

Name to imprint: _____

Total amount enclosed:

Please make check or money order payable to EVAC

☐ Payment was remitted separately using PayPal ☐ Payment was remitted separately using my financial institution's online bill payment feature

Name: Phone:

Address: Email:

☐ Publish email address on website

City, State, Zip: URL:

How would you like to receive your monthly newsletter? (choose one option):

☐ Electronic delivery (PDF) *Included with membership* ☐ US Mail **Please add $10 to the total payment**

Areas of Interest (check all that apply):

☐ General Observing ☐ Cosmology

☐ Lunar Observing ☐ Telescope Making

☐ Planetary Observing ☐ Astrophotography

☐ Deep Sky Observing ☐ Other

Please describe your astronomy equipment:

Would you be interested in attending a beginner's workshop? ☐ Yes ☐ No

How did you discover East Valley Astronomy Club?

PO Box 2202
Mesa, AZ 85214-2202
www.evaconline.org

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

Liability Release Form

In consideration of attending any publicized Star Party hosted by the East Valley Astronomy Club (hereinafter referred to as "EVAC") I hereby affirm that I and my family agree to hold EVAC harmless from any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), which may directly or indirectly be connected to EVAC and/or my presence on the premises of any EVAC Star Party and related areas.

I further agree to indemnify any party indicated above should such party suffer any claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney fees), caused directly or indirectly by my negligent or intentional acts, or failure to act, or if such acts or failures to act are directly or indirectly caused by any person in my family or associates while participating in an EVAC Star Party.

My signature upon this form also indicates agreement and acceptance on behalf of all minor children (under 18 years of age) under my care in attendance.

EVAC only recognizes those who are members or invitees and who also have a signed Liability Release Form on file as participants at an EVAC Star Party.

Please print name here ***Date***

Please sign name here

PO Box 2202
Mesa, AZ 85214-2202
www.eastvalleyastronomy.org

Don't Be a Lightning Rod

A lightning storm is one of the most dramatic shows of nature. You may feel like rushing outside to experience the blinding bolts, with the loud CRACKs and rumbles of surround-sound thunder following close behind.

But don't.

Lightning is dangerous. Stay inside.

Each year there are around 25 million lightning flashes in the United States. That's a lot of chances to be a lightning victim.

Although most people who are struck by lightning survive, many are badly injured, some permanently.

But what causes lightning? And how can we stay safe? Lightning starts inside a storm cloud.

Strong winds inside the cloud toss ice particles and water drops around like underwear in a clothes dryer. The ice and water particles rub together, which builds up static electricity. Sometimes the same thing happens to your underwear in the dryer! But in a cloud, it's on a humongous scale.

In this storm over Boston, Massachusetts, lightning is find lots of tall objects to strike. NOAA's National Weather Service (NWS) Collection, photo by Boston Globe.

The strong static electrical charge that builds up in the cloud "wants" to discharge. So it seeks out something with the opposite kind of charge, which is usually another cloud. But often it is the ground. The charge—in the form of a lightning bolt—travels along the easiest route to the ground. That usually means the nearest, tallest, or most conductive object—such as a tree or a lightning rod. Don't let that lightning rod be you!

People have been struck by lightning while talking on a corded phone, while leaning on freezer in their garage, while working on plumbing in the house, while sailing, while camping, while playing golf (this one is a no-brainer!), and while doing any number of other activities outside. One poor park ranger just doing his job over the years was struck by lightning seven times!

Understanding how lightning behaves will help you keep safe before, during, and after a storm. If you cannot reach shelter inside, at least you will know, for example, not to stand under or near a tree or a metal pole or fence. Metal is a great conductor of electricity and invites lightning looking for a fast, easy way to the ground.

Find out more about lightning and lightning safety at the NOAA/NASA SciJinks website at http://scijinks.gov/lightning. It is by the same people who bring you The Space Place (http://spaceplace.nasa.gov).

This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the

If It's Clear...

by Fulton Wright, Jr.
Prescott Astronomy Club

August 2012

Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. Remember, the Moon is ½ degree or 30 arcminutes in diameter. All times are Mountain Standard Time.

On Wednesday, August 1, at 7:07 PM (25 minutes before sunset), the Full Moon rises, spoiling any chance of hunting for faint fuzzies for the night.

On Thursday, August 9, at 11:41 PM, the last quarter Moon rises.

On the night of Saturday, August 11, you might see some Perseid meteors. Things start to happen about 11 PM. You are more likely to see them after midnight. The crescent Moon rises at 1:10 AM (Sunday). You can still see them till about 4:30 AM when twilight begins to interfere. The next night (12th-13th) might also be good.

On Monday, August 13, at 1:40 PM (yes, during the day) you can see the Moon occult Venus. Finding the pair won't be easy. See Sky & Telescope, August 2012, p. 51 for some hints. You will probably want a small (3 inch) telescope to observe the event. Venus reappears at the dark limb at 2:49 PM.

On Monday, August 13, about 8:15 PM, you can see Saturn, Mars, and Spica lined up just above the western horizon. The alignment is also good the next night.

On Wednesday, August 15, Venus is at greatest western elongation. The next day, Mercury is. That means they both should look "last quarter" phase. Look for the two of them in the east, Venus high and bright, Mercury low and dim, about 4:50 AM.

On Friday, August 17, it is new Moon and you have all night to hunt for faint fuzzies.

On Tuesday, August 21, about 8:10 PM, you can see Saturn, Mars, Spica, and the thin crescent Moon clustered near each other near the west-southwest horizon.

On Thursday, August 23, at 10:59 PM, the first quarter Moon sets.

On Thursday, August 30, at 6:16 PM (42 minutes before sunset), the full Moon rises, spoiling any chance of hunting for faint fuzzies tonight. That is the second full Moon this month.

Looking for that perfect weekend activity?

Why not resolve to getting involved?

Contact Dave Coshow to join the staff at GRCO

Email: grco@evaconline.org

Sally Kristen Ride (May 26, 1951 – July 23, 2012)

In a space agency filled with trailblazers, Sally K. Ride was a pioneer of a different sort. The soft-spoken California physicist broke the gender barrier 29 years ago when she rode to orbit aboard space shuttle Challenger to become America's first woman in space.

"Sally Ride broke barriers with grace and professionalism – and literally changed the face of America's space program," said NASA Administrator Charles Bolden. "The nation has lost one of its finest leaders, teachers and explorers. Our thoughts and prayers are with Sally's family and the many she inspired. She will be missed, but her star will always shine brightly."

"Sally was a personal and professional role model to me and thousands of women around the world," said NASA Deputy Administrator Lori Garver. "Her spirit and determination will continue to be an inspiration for women everywhere."

Ride's contribution to America's space program continued right up until her death at age 61 this week. After two trips to orbit aboard the shuttle, she went on an award-winning academic career at the University of California, San Diego, where her expertise and wisdom were widely sought on matters related to space. She holds the distinction of being the only person to serve as a member of both investigation boards following NASA's two space shuttle accidents. She also served as a member of the Review of U.S. Human Spaceflight Plans Committee, also known as the Augustine Committee, in 2009, which informed many of the decisions about NASA's current human spaceflight programs.

"The selection of the 1978 Astronaut Class that included Sally and several other women, had a huge impact on my dream to become an astronaut. The success of those woman, with Sally paving the way, made my dream seem one step closer to becoming a reality," said Peggy Whitson, Chief of the NASA Astronaut Office.

However, Ride's place in history was assured on June 18, 1983, when she rocketed into space on Challenger's STS-7 mission with four male crewmates.

"The fact that I was going to be the first American woman to go into space carried huge expectations along with it," Ride recalled in an interview for the 25th anniversary of her flight in 2008. "That was made pretty clear the day that I was told I was selected as a crew. I was taken up to Chris Kraft's office. He wanted to have a chat with me and make sure I knew what I was getting into before I went on the crew. I was so dazzled to be on the crew and go into space I remembered very little of what he said."

"On launch day, there was so much excitement and so much happening around us in crew quarters, even on the way to the launch pad," Ride said. "I didn't really think about it that much at the time . . . but I came to appreciate what an honor it was to be selected to be the first to get a chance to go into space."

Ride joined NASA as part of the 1978 astronaut class, the first to include women. She and five other women, along with 29 men, were selected out of 8,000 applicants. The class became known as the "Thirty-Five New Guys" and reported to the Johnson Space Center the next summer to begin training. Ride trained for five years before she and three of her classmates were assigned to STS-7. The six-day mission deployed two communications satellites and performed a number of science experiments.

Following that historic flight, Ride returned to space on another shuttle mission, STS-41G in 1984. The 8-day mission deployed the Earth Radiation Budget Satellite, conducted scientific observations of Earth, and demonstrated potential satellite refueling techniques. She was assigned to a third flight, but transitioned to a role on the Rogers Commission that investigated the Challenger accident after that shuttle was lost in January 1986. When the investigation was completed, she accepted a job as a special assistant to the NASA administrator for long range and strategic planning.

Ride left NASA in August 1987 to join the faculty at the University of California, San Diego, as a professor of physics and director of the University of California's California Space Institute. In 2001, she founded her own company, Sally Ride Science, to pursue her long-time passion of motivating girls and young women to pursue careers in science, math and technology.

A native of Los Angeles, Ride graduated from high school there in 1968 and enrolled at Stanford University. At Stanford, she earned four degrees, including a doctorate in physics in 1978. She also was an accomplished athlete who played varsity tennis at Stanford after being nationally ranked as a youth.

Ride received numerous honors and awards during the course of her career. Most notably, she was inducted into the National Women's Hall of Fame and the Astronaut Hall of Fame, and received the Jefferson Award for Public Service, the von Braun Award, the Lindbergh Eagle, and the NCAA's Theodore Roosevelt Award.

The Deep Sky Object of the Month

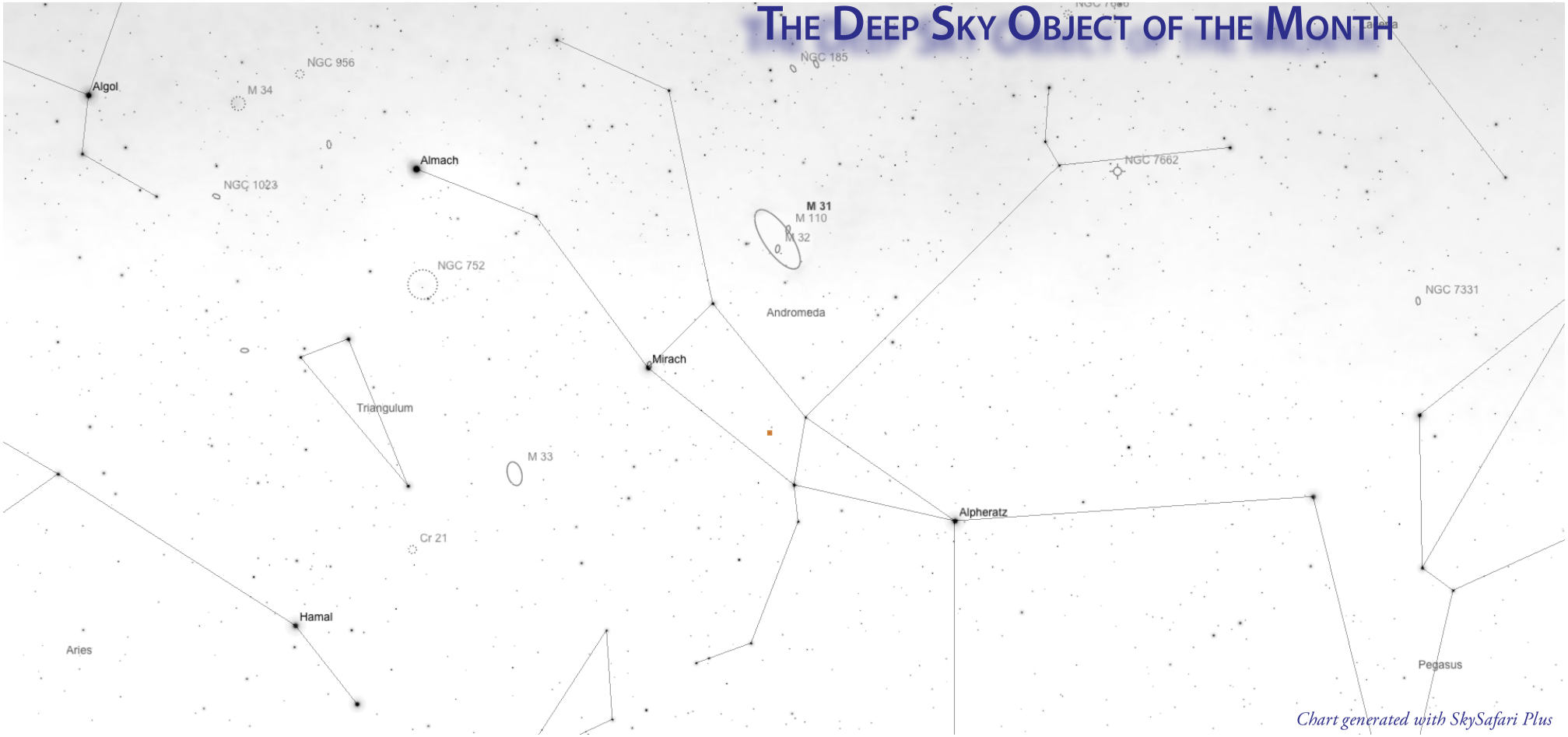


Chart generated with SkySafari Plus

The Great Andromeda Galaxy, Messier 31, is the nearest spiral galaxy to our own. Visible as a faint smudge on moonless nights, it is one of the farthest objects visible to the naked eye. As a mirror image of the Milky Way, this huge aggregation of stars, gas, and dust allows us to study all the features of our own galaxy that we cannot observe because we are inside it.

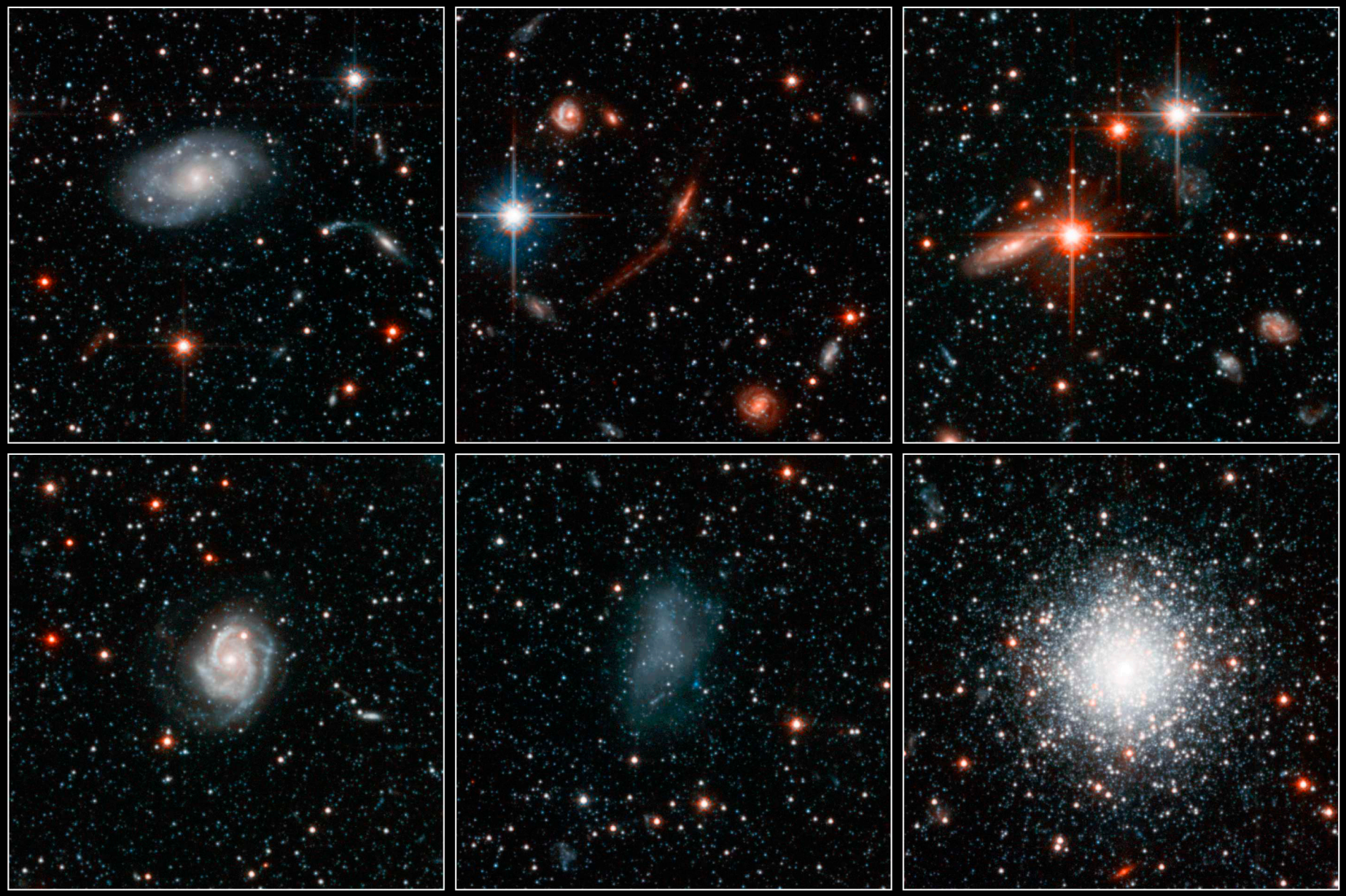
The "Great Andromeda Nebula" was long believed to be one of the nearest gaseous nebulae. In 1785, William Herschel wrote (incorrectly) that, based on its color and magnitude, the distance of the great nebula "would not exceed 2000 times the distance of Sirius" - about 17,000 light years. He viewed M 31 at the nearest "island universe" like our Milky Way, which he assumed to be a disk of 850 times the distance of Sirius in diameter, with a thickness of 155 times that distance.

William Huggins, the pioneer of spectroscopy, observed the spectrum of M 31 in 1864. The Andromeda "nebula" displayed a star-like, continuous spectrum, unlike the line spectra of gaseous nebulae. From this, Huggins deduced that M 31 had a stellar nature.

The first photographs of M 31 were taken in 1887 by Isaac Roberts from his private observatory in Sussex, England. His long-duration exposures allowed the spiral structure of the "nebula" to be seen for the first time. But Roberts mistakenly believed that it was actually a solar system in formation, with its satellite galaxies as nascent planets.

M31 (Andromeda Galaxy, NGC 224) Spiral Galaxy in Andromeda

RA: 00h 43m 30.45s Dec: +41° 20′ 40.2″ Size: 189.1′ x 61.7′ Magnitude: 3.40



Andromeda Galaxy Halo Details

Hubble Space Telescope • Advanced Camera for Surveys

NASA, ESA and T. Brown (STScI) • STScI-PRC03-15b

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East Valley Astronomy Club
PO Box 2202
Mesa, Az. 85214-2202