Skylights

Newsletter of the Astronomical Society of Northern New England

AUG 2018

Member of NASA's

Astronomical League

ASNNE MISSION

ASNNE is an incorporated, non-profit, scientific and educational organization with three primary goals:

1) To have fun sharing our knowledge and interest with others.

2) To provide basic education in astronomy and related sciences to all who are interested.

3) To promote the science of Astronomy.

What's Up in August

By Bernie Reim

The beginning of this month marks the halfway point of summer. The nights continue to get longer as we slowly approach fall, offering us more time under the stars and planets and other celestial wonders always happening above us.

This month is packed with more than its usual share of highlights, so spend as much time as you can enjoying, observing, and understanding these events. All four of the brightest planets will grace our evening skies all month long. They will be nearly evenly spaced across the sky and all visible at the same time, which is quite unusual. Not only are they all visible at once, but all of them are also close to opposition, when they are at their best and closest to Earth.

The Perseid Meteor Shower will have optimal conditions this summer near new moon. You can expect about 50 meteors per hour under dark skies. As a bonus, another comet enters our field of view. This one is called 21P/Giacobini-Zinner and it returns every 6.5 years. It may brighten to naked-eye visibility, but you will probably need binoculars or a telescope to see it. A partial solar eclipse will happen over parts of northern Europe and Asia at new moon this month, since we are in an eclipse season again.

We begin our evening tour with Venus. Our sister planet continues to brighten as it is catching up with us in our orbits around the sun. It will reach greatest eastern elongation from the sun on the 17th. That means it will be exactly half-lit, similar to a last quarter moon, but it will continue to get brighter and larger after that time even as it is getting less illuminated by the sun. Watch as Venus catches up with Spica in Virgo. The pair will be only a degree apart on the last day of the month half an hour after sunset low in the western evening sky.

Then continue along the ecliptic one constellation to the east and you will run into Jupiter in Libra. The King of the Planets is the farthest away from opposition of that great quartet of bright planets all visible at once all month long. Jupiter was at opposition back on May 10, so it is getting a little smaller and fainter now as we are leaving it farther behind in our respective orbits around the sun.

Be aware that we recently discovered 12 more moons of Jupiter while looking for new planets at the edge of our solar system. One of those moons is orbiting the planet in the opposite direction of a large group of moons orbiting farther out from Jupiter, so it will probably crash into one of those moons soon. All the new ones are just one to two miles across. So we are up to 79 moons now, the most around any planet in our solar system. Juno is still getting great images and sounds from Jupiter and it should be there until 2021.

Then keep going another 25 degrees east along the ecliptic through Scorpius into Sagittarius, and your eyes will land on Saturn. Just a month past opposition, the ringed planet is still in retrograde or westward motion. Notice that it will fall just short of reaching the beautiful Trifid and Lagoon

"Continued on page 2"

Inside This Issue

Club Contacts

Officers:

President:
Ron Burk
rdavidburk@yahoo.com

Vice President:
Joan Chamberlin
starladyjoan@yahoo.com

Secretary:
Carl Gurtman
carlgurt@msn.com

Treasurer:
Ian Durham
idurham@anselm.edu

Board of Directors:

Gary Asperschlager
gasperschlager@gmail.com

Larry Burkett
larrybu32@yahoo.com

Chase Delaney
horsiedonkey@yahoo.com

Star Party Co-ordinator:

TBD

Skylights Editor:

Paul Kursewicz
pkursewicz@myfairpoint.net

Website Manager:

Nan Musgrave
mzgrvz@outlook.com

NASA Night Sky Network Co-ordinator:

Joan Chamberlin
starladyjoan@yahoo.com

JPL Solar System Ambassador:

Joan Chamberlin
starladyjoan@yahoo.com

What's Up "*Continued from page 1*"

Nebulae along one arm of the Milky Way just above the center of our galaxy, located 30,000 light years away. These two fuzzy patches of our sky are visible even without a telescope. However, I recommend using a telescope or a good pair of binoculars to better appreciate these colorful stellar nurseries located about 5000 light years away.

Then continue another 20 degrees or so into the neighboring constellation of Capricorn and you will encounter a most amazing spectacle. As Mars rises out of the ocean around sunset, it can almost be considered as a second sun, even though it is over 100 times smaller. Its remarkable golden-orange hue will be farther reddened by our atmosphere until it gets higher in our sky as the earth keeps rotating. At just 35.8 million miles away, Mars is closer and bigger and brighter now than it was any time since August of 2003, when the red planet was at its best in 60,000 years, about the time modern humans started leaving Africa.

Mars will remain brighter than Jupiter all month long, which is also very unusual. The last time I looked at it through a telescope I saw some dark markings on its surface along with a hint of both polar ice caps. Try to catch some of these details soon before huge dust storms engulf those features. This is called a perihelic opposition, because Mars is also closest to the sun at the same time it is closest to the earth. Although Mars will reach its next opposition in just 26 months in October of 2020, when we will also launch the next mission to Mars, it will not be as close as it is now until August of 2287.

Catch as many Perseids as you can this month. Caused by Comet Swift-Tuttle, you could expect up to 50 meteors per hour at its peak during the early morning hours of Sunday the 12th. This comet only returns once every 133 years, and it last returned in 1992. That means we will not have enhanced rates of meteors caused by the proximity of the actual comet, but at least there will be no moon to interfere with our viewing of one of nature's great spectacles.

Watch as these tiny sand grain-sized pieces of comet dust burn up high in our atmosphere, leaving brilliant streaks of ionized light caused by their great speed of 40 miles per second, or twice the speed that we are orbiting the sun. Perseids can be seen anytime during this month, but they will peak on the 12th. If you can trace the meteor back to Perseus in the sky, rising about 11 pm in the northeast, you know it was caused by this comet as we pass through its dust and debris trail every year.

A partial solar eclipse will happen at new moon this month over northern Europe and Asia. Only 75% of the sun will be covered at most, so it will be nothing like the uniquely American Total Solar eclipse of last summer. Seeing and photographing that eclipse gave me a much more real sense of where we are in the solar system and the extremely fast and continuous motion that we are always going through. The incredible power of our sun dominated the whole other-worldly scene as its shimmering, ethereal corona sent streamers extending millions of miles into space, many times the diameter of its source. I felt the enormous moon's shadow sweeping over me and the entire landscape in the high mountainous Teton Valley in eastern Idaho at nearly 3 times the speed of sound. That only set the stage for the next 139 seconds of the most sublime experience you could ever imagine. The planets and some stars instantly emerged with a 360-degree sunset all around us, giving me a complete sense of the life-giving atmosphere of the earth all at once, far different from any sunrise or sunset, no matter how gorgeous it might be. I was transported right off this familiar planet into a whole new world as all man-made time stood still in this eternal moment of all-inclusive beauty and grace. An infinitely luminous and numinous universe so far above any human comprehension revealed itself just for a moment. No one can remain unchanged after such an experience.

Aug.1. Maria Mitchell was born on this day in 1818. She established the orbit of a new comet and made many other significant contributions to astronomy, becoming America's first female professional astronomer.

Aug. 4. The Phoenix Mission to Mars was launched on this day in 2007. Last quarter moon is at 2:19 p.m.

Aug. 6. The Curiosity Rover was launched to Mars on this day in 2012.

Aug.11. New moon is at 5: 59 a.m. EDT.

Aug.12. The Perseid meteor shower peaks this Sunday morning.

Aug.13. The moon is just above Venus tonight.

Aug.18. First quarter moon is at 3:50 a.m.

Aug.20. The moon is close to Saturn tonight.

Aug. 25. The Spitzer infrared telescope was launched on this day in 2003.

Aug.26. Full moon is at 7:51 a.m. This is also called the Sturgeon or Grain Moon. Mercury can be seen low in the eastern morning sky.

Aug.31. Venus is just one degree below Spica in Virgo this evening 30 minutes after sunset.

Moon Phases

Aug 4
Last Quarter

Aug 11
New

Aug 18
First Quarter

Aug 26
Full

Moon Data

Aug 3
Uranus 5° north of Moon

Aug 10
Moon at perigee

Aug 14
Venus 6° south of Moon

Aug 17
Jupiter 5° south of Moon

Aug 21
Saturn 2° south of Moon

Aug 23
Moon at apogee

Mars 7° south of Moon

Aug 27
Neptune 2° north of Moon

Submitted by Glenn Chaple

Sky Object of the Month – August 2018

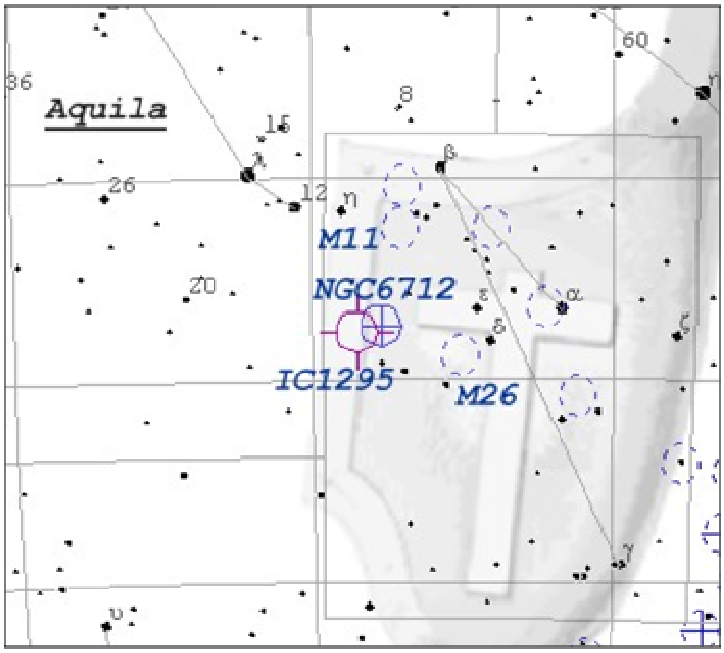
(Courtesy LVAS Observer's Challenge*)

IC 1295 – Planetary Nebula in Scutum (Mag. 12.7; Size 1.7' X 1.4')

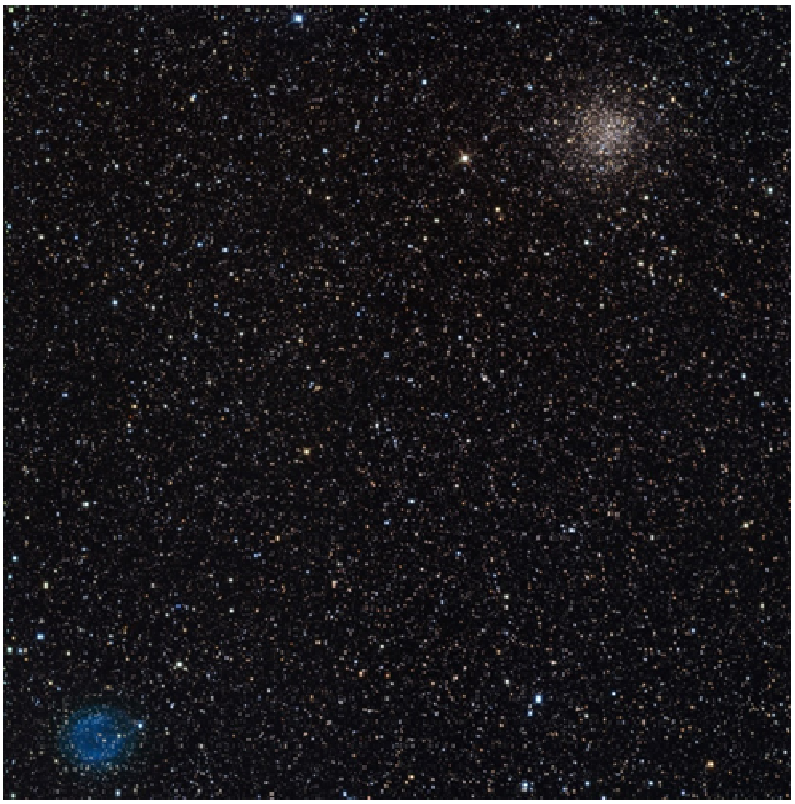
This little-known planetary nebula was discovered by American astronomer/mathematician Truman Henry Safford on August 28, 1867. Its listed magnitude of 12.7 might cause backyard astronomers to shy away, but IC 1295 has a high surface brightness and may be glimpsed from dark-sky locations with telescopes as small as 6 inches in aperture. An OIII filter and moderately high magnification are essential if you want to visually detect IC 1295, let alone pick out any detail. A bonus is the presence, just 0.4 degrees west-northwest, of the 8th magnitude globular cluster NGC 6712.

Your challenges: What is the smallest aperture with which IC 1295 can be seen? Can you detect any detail when using a large-aperture scope? Finally, can you see (or image) the 17th magnitude central star?

"Continued on page 4"



www.astrostuff,com



www.capella-observatory.com

Principal Meteor Showers in 2018

January 4
Quadrantids

April 22
Lyrids

May 6
Eta Aquarids

July 30
Delta Aquarids

August 12
Perseids

October 9
Draconid

October 21
Orionids

November 9
Taurids

November 18
Leonids

November 26
Andromedids

December 14
Geminids

December 22
Ursids

Note: Dates are for maximum

RED ALERT — Downward Pointing Lasers

NASA is planning to use (or is already using) downward pointing lasers which are mounted on their spacecrafts. For those of us who look at the night sky through a telescope, or a pair of binoculars, this is a potential hazard. If a laser beam enters our instrument at the very time we are viewing, eye injury or blindness could occur. Contact physicist, Dr. Jennifer Inman, jennifer.a.inman@nasa.gov and tell her your concerns about this perilous issue. Why should we have to live in fear each time we look into a telescope or a pair of binoculars? This is unacceptable!

The latest issue of the Space Place Newsletter: News and Notes for Formal and Informal Educators can be found at: http://spaceplace.nasa.gov/en/educators .

Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

Check out our great sites for kids:

The Space Place website (http://spaceplace.nasa.gov)

The *SciJinks Weather Laboratory* at http://**scijinks.gov**

NASA Climate Kids at http://**climate.nasa.gov/kids**

Our Club has Merchandise for Sale at: www.cafepress.com/asnne

All money raised goes to our operating fund.
Any design can be put on any item.
Just let our club member, David Bianchi, know.

This article is provided by NASA Space Place.
With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit **spaceplace.nasa.gov** to explore space and Earth science!

The Best Meteor Shower of the Year

By Jane Houston Jones and Jessica Stoller-Conrad

If you're a fan of meteor showers, August is going to be an exciting month! The Perseid meteor shower is the best of the year, and in 2018, the peak viewing time for the shower is on a dark, moonless night—perfect for spotting meteors.

The best time to look for meteors during this year's Perseid shower is at the peak, from 4 p.m. EDT on Aug. 12 until 4 a.m. EDT on the Aug. 13. Because the new Moon falls on the peak night, the days before and after the peak will also provide very dark skies for viewing meteors. On the days surrounding the peak, the best time to view the showers is from a few hours after twilight until dawn.

Meteors come from leftover comet particles and bits from broken asteroids. When comets come around the Sun, they leave a dusty trail behind them. Every year Earth passes through these debris trails, which allows the bits to collide with our atmosphere and disintegrate to create fiery and colorful streaks in the sky—called meteors.

The comet that creates the Perseid meteor shower—a comet called Swift-Tuttle—has a very wide trail of cometary dust. It's so wide that it takes Earth more than three weeks to plow all the way through. Because of this wide trail, the Perseids have a longer peak viewing window than many other meteor showers throughout the year.

In fact, this year you should be able to see some meteors from July 17 to Aug. 24. The rates of meteors will increase during the weeks before Aug. 12 and decrease after Aug. 13. Observers should be able to see between 60 and 70 meteors per hour at the shower's peak.

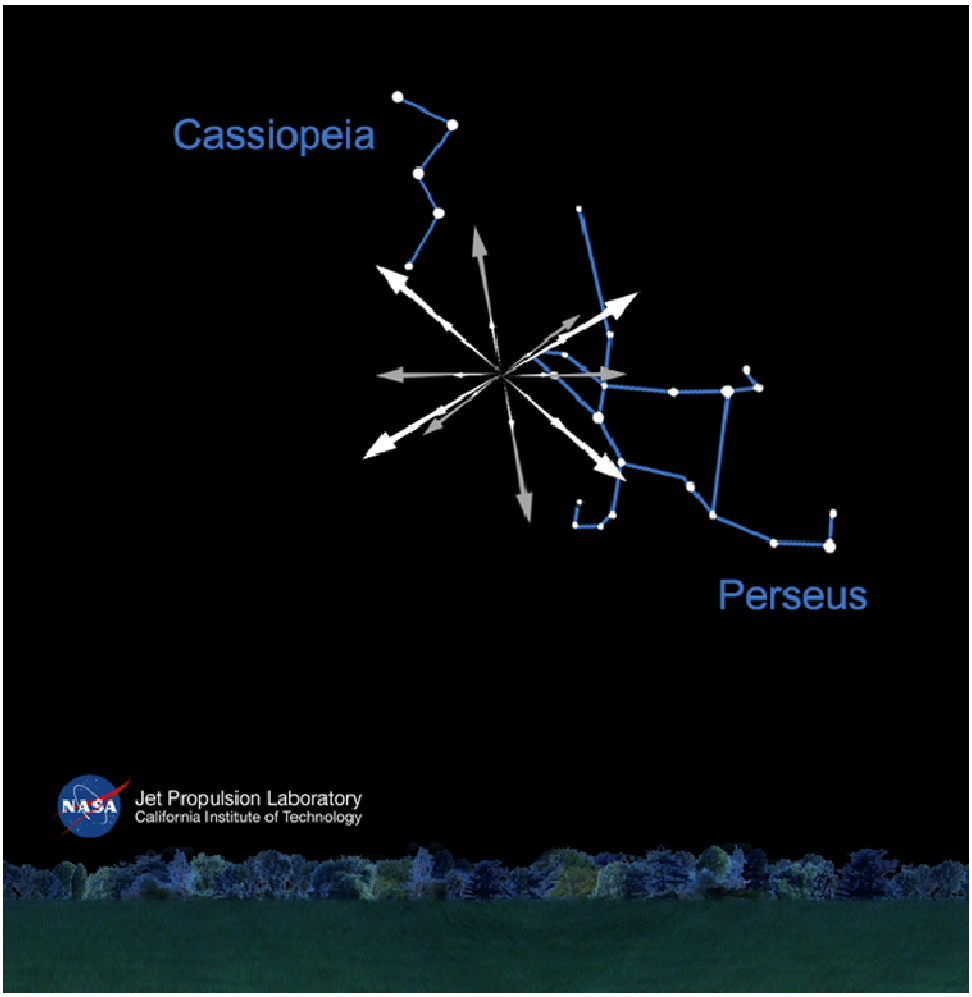
"Continued on page 7"

The Perseids appear to radiate from the constellation Perseus, which is where we get the name for this shower. Perseus is visible in the northern sky soon after sunset this time of year. Observers in mid-northern latitudes will have the best views.

However, you don't have to look directly at the constellation Perseus to see meteors. You can look anywhere you want to; 90 degrees left or right of Perseus, or even directly overhead, are all good choices.

While you're watching the sky for meteors this month, you'll also see a parade of the planets Venus, Mars, Jupiter and Saturn—and the Milky Way also continues to grace the evening sky. In next month's article, we'll take a late summer stroll through the Milky Way. No telescope or binoculars required!

Catch up on all of NASA's current—and future—missions at www.nasa.gov



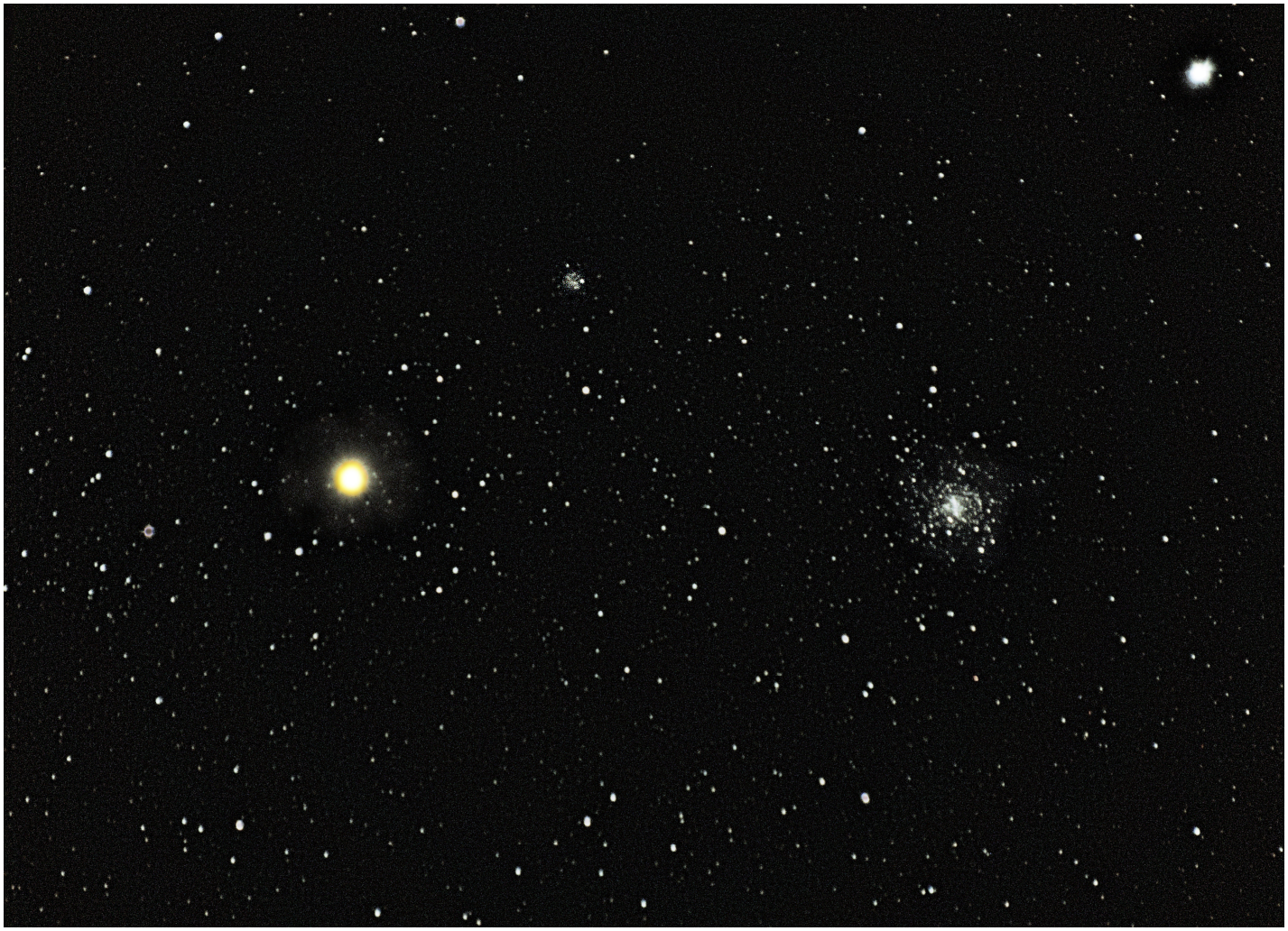
Caption: The Perseid meteor showers appear to radiate from the constellation Perseus. Perseus is visible in the northern sky soon after sunset this time of year. Credit: NASA/JPL-Caltech

Point and Shoot Camera Astroimaging

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Antares—M4—NGC 6144 **Specs: FL unknown, ISO 800, 29 x 1min exposures, 07-06-18**



I took this picture during the night of our July club picnic at Starfield. Antares is the bright yellow-orange star and to its right is M4, a bright Globular Cluster. And because it's so close to Antares, it's one of the easiest Globular Clusters to find. A smaller Globular Cluster known as NGC 6144 is to the upper right of Antares. All three are located in the constellation Scorpius. Antares is a red supergiant star and is among the 20th brightest in the night sky, is 700 times the Sun's diameter and 604 ly away. It's also known as the rival of Mars. M4 measures 75 ly across, is 7,200 ly away and has an estimated age of 12.2 billion years. NGC 6144 is 33,000 ly away. It's over 3 times farther away than M4 and makes it appear around 3 times smaller.

Submitted by Chase Delaney

TIDES author, Jonathon White, will be presenting a talk in a combined ASNNE~SMA event, August 3rd, at USM, Portland

Talk Title: TIDES: THE SCIENCE AND SPIRIT OF THE OCEAN

Author: Jonathon White

Talk Description:

After nearly losing his 65' wooden schooner in a large Alaskan tide, writer, sailor, and surfer Jonathan White vowed to understand the tide. He knew the moon had something to do with it, but what exactly? He read a book, then two. Ten years later, he had read three hundred books and criss-crossed the seven seas to see the largest, fastest, scariest, and most amazing tides in the world. In China he confronted the Silver Dragon, a twenty-five foot tidal bore that races eighty miles up the Qiantang River; at London's Royal Society, he dug into the earliest Western tide science, which preoccupied thinkers from Da Vinci to Galileo to Newton; and in the Arctic he followed an Inuit elder down a small hole through thick winter ice to gather fresh blue mussels in the cavities left by low tide. With photographs, stories, and short readings, Jonathan takes his audiences on an enthralling journey into the surprising and poetic workings of the tide.

Event location: Southworth Planetarium, USM Science Building, Room 165, 70 Falmouth Street, Portland ME. Date and time: Friday, August 3rd, 7:30 pm.

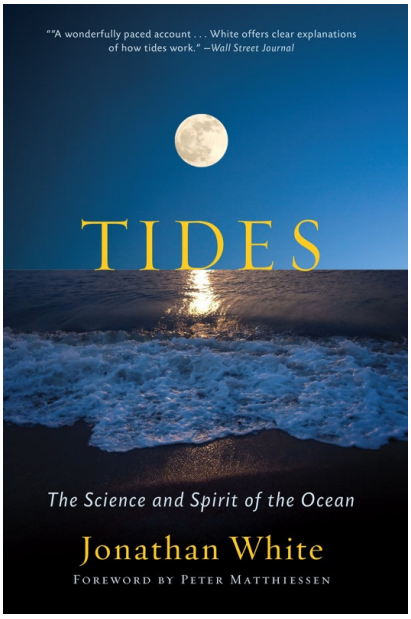
About the Author (also available on website Jonathan White):

Jonathan White has written for the *Christian Science Monitor*, *Sierra*, *The Sun*, *Surfer's Journal*, *Orion*, and other publications. His first book, *Talking on the Water* (Sierra Club Books), is a collection of interviews exploring our relationship with nature. White is an active marine conservationist, holds an MFA in creative nonfiction, and lives with his wife and son on a small island in Washington State.

Please see the following link for more in depth info on Jonathon's background and his award winning book, TIDES.. http://jonathanwhitewriter.com/

"Continued on page 10"

A TALK & BOOK SIGNING



JONATHAN WHITE

TIDES

The Science and Spirit of the Ocean

Author, sailor and surfer Jonathan White takes readers across the globe to discover the science and spirit of ocean tides

www.jonathanwhitewriter.com

Southern Maine Astronomers & Astronomical Society of Northern New England

Southworth Planetarium, USM Science Bldg 165, 70 Falmouth Street, Portland ME

7:30 pm - Friday, August 3

Club Meeting & Star Party Dates

Date	Subject	Location
August 3	**ASNNE Club Meeting:** **Meeting Agenda** **NOTICE: The August meeting will not be at The New School. It will take place at Southworth Planetarium in Portland, Maine.** The meeting is a combined event with ASNNE and SMA. **Guest speaker: Jonathan White** will be the speaker and his talk will begin at 7:30 pm. For details see pages 9 and 10.	Southworth Planetarium, USM Science Building, Room 165, 70 Falmouth Street, Portland ME.
TBD	Club/Public Star Party *Check List-serve / website for updates and or cancellations*	Starfield Observatory, West Kennebunk, Me.

Directions to ASNNE event locations

Directions to The New School in Kennebunck [38 York Street (Rt1) Kennebunk, ME]

For directions to The New School you can use this link to the ASNNE NSN page and then click on "get directions" from the meeting location. Enter your starting location to generate a road map with complete directions. It works great. http://nightsky.jpl.nasa.gov/club-view.cfm?Club_ID=137

Directions to Starfield Observatory [Alewive Road, Kennebunk, ME]

From North:
Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for the ASNNE sign on the pole.

From South:
Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory site at the last telephone pole along the field. Look for the ASNNE sign on the pole. If you come to a very sharp 90 degree right turn you have just passed the field.

To join **ASNNE**, please fill out the below membership form. *Checks should be made payable to: Astronomical Society of Northern New England (A.S.N.N.E).* For more details, please visit our website: **http://www.asnne.org**

Astronomical Society of Northern New England
P.O. Box 1338
Kennebunk, ME 04043-1338

2018 Membership Registration Form

(Print, fill out and mail to address above)

Name(s for family): _____

Address: _____
City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):
Individual $35 _____ Family $ 40 _____ Student under 21 years of age $10 _____ Donation_____

Total Enclosed_____

Tell us about yourself:
1. Experience level: Beginner____ Some Experience ____ Advanced_____

2. Do you own any equipment? (Y/N) And if so, what types?

_____
3. Do you have any special interests in Astronomy?

_____
4. What do you hope to gain by joining ASNNE?

_____
5. How could ASNNE best help you pursue your interest in Astronomy?

_____
6. ASNNE's principal mission is public education. We hold many star parties for schools and the general public for which we need volunteers for a variety of tasks, from operating telescopes to registering guests to parking cars. Would you be interested in helping?
Yes_____ No_____

7. ASNNE maintains a members-only section of its web site for names, addresses and interests of members as a way for members to contact each other. Your information will not be used for any other purpose. Can we add your information to that portion of our web site?

Yes_____ No_____