



# Celestial Observer

[www.aosny.org](http://www.aosny.org)

OFFICIAL NEWSLETTER

March 2021

## The Amateur Observers' Society of New York

### The Amateur Observers' Society

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The **Celestial Observer** is the the Official Newsletter of the Amateur Observers' Society of NY, Inc. A 501(c)3 organization.

Visit us at [www.aosny.org](http://www.aosny.org) and join us on [Facebook](#).

The AOS expresses its deepest appreciation to the Custer Institute for hosting our Observatory, and the [Sierra Club Long Island Group](#) for the 20" telescope.



## This Month's Issue

President's Message  
Nominations News  
Messier Marathon  
Heavens Happenings

## Next Meeting (online): Sunday March 7th, 1:15PM

Contact [AOSSecretary@aosny.org](mailto:AOSSecretary@aosny.org) for a meeting invitation

## The President's Message

By Sue Rose

Happy Spring, I hope. I'm really getting tired of all this snow. Malverne Mel says Spring is on the way and I think he has a better track record for our area than Punxsutawney Phil. Spring, of course, means that the Sun is continuing to rise higher in the sky as our observing hours decrease so get in those winter constellations before it's too late. I hope you've been following my weekly Constellation Hunter Series. Let's see how many of those awards we can get from AL in the next year. Remember, only half that amount is needed

for an AOS observing award. Spring is the change of season brought about as the Sun rises from below the ecliptic, the Earth's equator projected onto the sky, and crosses north on its way to the Summer Solstice. This Vernal Equinox occurs on March 20. Since the Earth is not tilted either toward, or away from, the Sun, the day and night hours are equal. [See this diagram at the Encyclopedia Britannica site](#). It's significant because the dates for Easter and Passover are based on the Moon in relation to the equinox. Also watch for a Lunar X around 11pm, just before it sets.

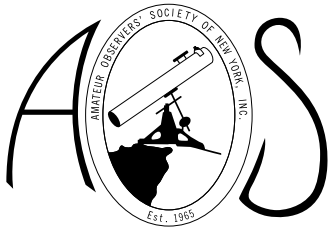
Many thanks to **Adam Block** from

the University of Arizona for his presentation on astrophotography. It's not as simple as point and shoot anymore. The tweaking that takes place after the shutter clicks is the real key to a special astrophoto. If you missed it, contact **Jason C** for a link to the recording. You can watch another of his presentations on the [Sky & Telescope author series](#).

I hope you were able to watch the live broadcast of the Mars rover landing on Feb 18. It was amazing. The first pictures came so



quickly. I wasn't ready for that. The next day brought a photo from the sky crane as it was lowering the rover. I can't wait to see what happens with the helicopter. They've already hit a home run. That will be a Grand Slam. Are they going to find stromatolites or maybe little fossil trilobites? I'm on pins and needles. Go NASA! Perfect timing for **Steve B's** presentation on Mars-Mythology and Science Fiction. Anyone ever been to Grover's Mill, NJ? I had no idea that Martian science fiction was so prolific. I guess the red planet has caused feelings of dread deep in the human soul for centuries. Will finding tiny



remnants of life make a resurgence? Only time will tell.

For links to a recording, contact **Jason C**. We greatly appreciate all those who have graciously given us their time on a Sunday afternoon and for those who we will visit with in the upcoming months. If you, or someone you know, would like to give a presentation, please contact me or Jason.

*Friends are like stars.  
You don't always see them,  
but you know they are  
always there!*

Hoping to see everyone at our online meetings, **March 7 & 21**, 1pm. Guest speakers are: March 7th - **Han Kleijn** from the Netherlands - Creator of his own [Planetarium & Plate Solving Program](#); March 21st - **Justine Haupt** - Science Associate at Brookhaven Labs - Creator, Inventor & Scientist. Clocks move ahead on March 14th which means stargazing starts an hour later! Please note the April meeting is rescheduled for April 11 due to Easter, until then,



## Nominations & Election

It is usual for us to begin nominations for the board every March, with the election in May. Due to the current health crisis, it's difficult to get to know people through online meetings with no time to socialize. Therefore, unless there are major objections, the Board has taken the extreme measure to extend the term of

office for all Board members by 1 year. This means that the At-Large positions which are normally 2 years, will now, for the current group only, be 3 years, and so there will not be an election in May. This extreme measure will not be a change to the By-Laws.

## Observing Sites

During this crazy time, our intrepid Director of the Susan Rose Observatory on the grounds of Custer Institute in Southold, **Bill C**, with help from **Jason C** and **Bill B**, has continued to bring the night sky objects into view for the public using digital means to project images captured by our C14 within the dome to a monitor outside. He can always use extra help. Since this experiment has worked so well, and been well received by the visitors, we will be continuing to use this even after in person viewing resumes. To that end, we are purchasing new digital equipment. Donations received in memory of member **Bryan B**, an avid astrophotographer and twin brother of our Corresponding Secretary **Bill B**, will help to pay for these items. If anyone would like to donate toward this project, please contact Treasurer **Harvey M**.

Sagamore Hill is patiently awaiting our return to bring the night sky views back to their visitors, as is the new Jones Beach Nature Center. We are hoping that at some point in the not-too-distant future we will be back there with all our equipment. In the meantime, we are working on the return of member nights.

## Way to go!

Congratulations to **Nancy R** who, once again, has an outstanding photo published, this time in AAA magazine's February issue. You are amazing.



Congratulations to **Tom L** who not only oversees our Library Telescope program but coordinates the Library Telescope Award for the Astronomical League. He also runs a highly successful Sidewalk Astronomy program in Lynbrook and helped **Linda P** establish the website and Facebook for her City of Stars tour of NYC. Way to go Tom.

Congratulations to **Joe R** who has spent the last 14 months working on a technical paper dealing with the possible outburst of meteors occurring on the night of May 30-31, 2022, resulting from the break-up in 1995 of Comet 73P/Schwassmann-Wachmann 3. It will be published in *Werkgroepnieuws* ("WGN"), the Journal of the International Meteor Organization, date TBD. Can't wait to see if he is correct. It will be quite a show. Well done Joe.

## Stargazing in the NYS Parks

Until we obtain club observing permits, we suggest that you purchase a StarGazing permit [online from the NYS Parks Dept.](#) for \$35 until March 31st.

**Please note: Due to COVID-19 restrictions, you cannot purchase a permit in person.**

There seems to be a lengthy delay in getting the permits, so, thanks to **Gene Z**, if you have your 2020 permit, and the email showing you paid for 2021, you may use that for observing. Be aware, the restrooms are not open during the cold months. The permit is good from Jan 1-Dec 31 each year and is for the vehicle, regardless of the number of occupants. Just be sure you have some star gazing equipment, like a star map. The permit allows you to go anytime you want which is a great advantage.

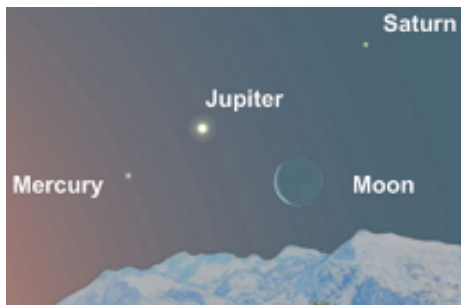
It's a good idea to put a note on the hotline and let others know you're going so you might get

some company, socially distanced of course.

No eyepiece sharing. ALWAYS tell someone where you will be. You might also call the NYS Police at 631-669-2500 to let them know you'll be there. PLEASE, make sure it is in your cell phone in a speed dial. This may be your only place to observe for the foreseeable future.

## March Observing Highlights

Beginning March 1st, find yourself a good eastern horizon to view starting at 5:30am. That's when you can see Jupiter rise and join up with nearby Mercury and Saturn. As the days go by, Jupiter will rise higher into the visible night sky, passing within just 0.35° of Mercury on the 5th. On Mar 6, Mercury will be at greatest western elongation, 27° from the Sun, so it's a very good time to observe the half-illuminated planet. Yes, Mercury has phases just like the Moon. That's another proof that the planets orbit the Sun.



On March 9 & 10, you'll see an impressive cosmic huddle as four worlds cluster in the southeast morning sky. Mercury, Jupiter, and Saturn will all appear in near-perfect alignment, while the nearby crescent moon will frame the trio of planets.

Each planet will appear as a brilliant dot, with Mercury being the faintest and Jupiter the brightest—all easily visible to the naked eye. Through binoculars, stargazers will be able to spot Jupiter's four largest moons, while

a small telescope will reveal Saturn's rings.

The Moon will be in conjunction with Mars after sunset on Mar 19. Watch for the Lunar X before the Moon sets on Mar 20.

## Observing Projects and Useful Websites

Keep the dates-In 2 years, there's a hybrid eclipse over Australia/Indonesia. In 2.5 years, there will be an annular solar eclipse over the south and mid-west US. In 3 years, the US will once again be treated to a total solar eclipse, this time stretching from Mexico, up though the center of the country into Canada, over Buffalo, etc. It's time to start making plans. Who wants to help with this? Contact Sue. Luckily, the partial annular on June 10, 2021 will be visible locally at sunrise. We will be there.

[Skyscrapers Observing Projects for February](#)

[The Night Sky This Month](#)

[Astronomy Magazine Sky This Week](#)

[Sky & Telescope Magazine](#)

[In-the-Sky.org](#)

[Globe at Night](#)

[EarthSky](#)

[NASA JPL: What's Up Each Month](#)

[Comet Watch 2021](#)

[NASA Extends Juno, InSight Missions](#)

[Neil Armstrong's footprint \(and other lunar artifacts\) are now protected by U.S. law](#)

## AOS Member Observing Challenge

Sue Rose

So far, we've included the following constellations- Andromeda, Aries, Auriga, Canis Major & Minor, Cassiopeia, Gemini, Lepus, Monoceros,

Orion, Pegasus, Perseus, Taurus and Triangulum. If you'd like to catch up, you can find my posts in the hotline messages or send me an email.

## 2021 Messier Marathon March 13

It's unfortunate that we won't be trying this as a group this year. Fingers crossed for next year. The Messier Marathon is a short period during the new Moon around the Vernal Equinox when you can observe all 110 of the Messier objects if you begin at sunset and stick it out till sunrise. Weekend dates are always selected due to most people working so don't feel confined to this 1 day. A few days before and after will yield most, if not all of the 110. You are welcome to use any dates in March or early April. The Marathon can be done with naked eye, binoculars, telescopes or any combination. There is an Astronomical League Messier Marathon Participation Certificate and AOS Observing Certificates.

For those interested in trying the Messier Marathon, there are award certificates to be received-AL participation and AOS observing

All observations must be made during the same nightly observing session. Document when, where and through what equipment you observed. Descriptions and/or drawings are not required. Submit all reports to the Awards Director, Chris Hewitt, within 30 days. Consider the resources at <http://www.messier.seds.org/xtra/marathon/marathon.html> and <https://tinyurl.com/193pf61e>.

If you'd like to add a little extra, someone has come up with a combo of the Messier and nearby Caldwell objects. See <https://messiercaldwellmarathon.blogspot.com/>.

# of objects viewed in one night	Award Level
5	Micro-Mini Marathon
10	Mini Marathon
20	Novice
40	Intermediate
75	Expert
100 or more	Master

## An International Astronomy Outreach Event: March 10-16, 2021

You are formally invited to join the Unistellar Marathon, a friendly competition to inspire the world's stargazers to learn about astronomy while creating (virtual) human connections under the cosmos. [Learn more.](#)

## Free Online Course on The Sun at The Open University

The Sun dominates our lives by defining our day, but how much do you know and understand about it? [This free course](#) will help you to explore the workings of what, from Earth, appears to be the brightest star in our universe by looking at its structure and the main processes taking place within it. You will also examine the phenomenon of sun spots. Visit their site for [other free astronomy courses.](#)

## AIAA Lucy in Space Contest The deadline is March 16

The contest challenges students to bridge the human drive for discovery and exploration of our Earth origins to solar system exploration. It is part of NASA's efforts to engage students in this solar system STEM enterprise of exploration to inspire interest in science, technology, engineering and mathematics. [Learn more.](#)

## Total Solar Eclipse Cruise to Antarctic

<https://www.chimuadventures.com/en-au/antarctica/ocean-endeavour-solar-eclipse-voyage>

[com/en-au/antarctica/ocean-endeavour-solar-eclipse-voyage](https://www.chimuadventures.com/en-au/antarctica/ocean-endeavour-solar-eclipse-voyage)

Contact James McAloon at [james.mcalloon@chimuadventures.com](mailto:james.mcalloon@chimuadventures.com)

## Upcoming Online Presentations

Stony Brook University Online Astronomy Night March 5, 7:30pm-Prof Alan Calder "An Update on the Search for Life in the Universe" [Learn more.](#) [Register here.](#)

## NASA & Astronomical League Special Observing Challenge

Landing of the Perseverance Rover on Mars Feb 18. Follow the instructions at <https://www.astroleague.org/programs/nasa-observing-challenges-special-awards-introduction>

If you observed the recent conjunction of Jupiter and Saturn, or the total solar eclipse in 2017, among some other special events, go to <https://www.astroleague.org/content/downloadable-certificates>

## Comet Watch 2021

If you own an 8-inch or larger telescope you might see more than a dozen new and returning comets this year, including one potential naked-eye candidate. <https://skyandtelescope.org/astronomy-news/observing-news/comet-watch-2021/>

## Northern Hemisphere Astrophotography Competition Jan 1–Mar 31

nPAE invites you to enter any two astrophotos taken either by yourself or a group effort with your friends into our annual Northern Hemisphere Competition! Not only can you win USD270 / GBP200 cash, there is also amazing nPAE gear up for grabs. [See the website competition page for full details](#)

[on how to enter.](#) Once the 2021 North and South competitions have been won, they will, along with the 2020 World Champion, go head-to-head in a public vote to decide who will become the 2021 nPAE World Champion Astro Photographer!

## Amazon Smile Donation to AOS

Thanks to everyone who make their purchases through Amazon Smile. It costs nothing extra for you and AOS gets a small donation from every purchase. If you have questions, please contact our Treasurer, Harvey M. Thank you.

## Mars Year 36 Atlas and Calendar

"Mars 36", a new Atlas of Mars, created for amateur and professional students of planetary science and astronomy. This is the first to present a planetary surface with physical geographic thematic layers. The landforms created by lava, wind, water and ice are shown separately on a topographic base map. It will be introduced during the Lunar and Planetary Science Conference 2021.

The Atlas is available via Etsy: <https://www.etsy.com/listing/955444239/mars-36-pocket-atlas>

Questions, comments and suggestions can be sent to: [planetarymaps@gmail.com](mailto:planetarymaps@gmail.com)

## Northeast Astronomical Forum-NEAF, and Rockland Summer Star Party

The Rockland Astronomy Club, RAC, has advised that due to the ongoing pandemic, the World's Largest Astronomy & Space Expo has been rescheduled as a Free Virtual Experience for April 10, 2021. See details at <http://www.rocklandastronomy.com/neaf1>.

[html](#). Summer Star Party canceled.

### Quick Hits...

- Possibly naked eye next Dec, Comet C/2021 A1 Leonard
- A Massive Asteroid Is About to Whiz Past Earth on March 23 – Here's How to See It
- From Cloudynights, an online site is running a special on Astronomy Magazine subscriptions, new or renewal, \$12.99/yr.
- The Bayeux Tapestry is a 70-meter-long embroidered canvas which tells the story of the conquest of England in 1066.
- Why should you care about England over 1000 years ago? Go to the area labeled 32 and look carefully. Give up? See. It is a magnificent work of art if you ever get the opportunity to see it in person, on your next trip to Normandie, France.
- Exploring Luna from your Backyard

Don't forget that the Astronomical league has several Lunar observing programs:

- <https://www.astroleague.org/al/obsclubs/lunar/lunar1.html>
- <https://www.astroleague.org/al/obsclubs/lunarll/lunarll1.html>
- <https://www.astroleague.org/content/lunar-evolution-observing-program>

### Heavens Happenings: June–December

June 1 [Conjunction of the Moon and Jupiter](#)  
 June 2 [View M13](#)  
 June 3 [View M12](#)  
 June 5 [View M10](#)  
 June 5 [View M62](#)  
 June 10 [Mercury at inferior](#)

[conjunction, annular solar eclipse](#)  
 June 11 [View M82](#)  
 June 12 [Conjunction of the Moon and Venus](#)  
 June 13 [Conjunction of the Moon and Mars](#)  
 June 16 [View M6](#)  
 June 20 [View M7](#)  
 June 23 [Close approach of Mars and M44](#)  
 June 27 [Conjunction of the Moon and Saturn](#)  
 June 28 [Conjunction of the Moon and Jupiter](#)  
 July 1 [View M22](#)  
 July 3 [Close approach of Venus and M44](#)  
 Jul 5 [Mercury at greatest elongation west](#)  
 July 8 [Conjunction of the Moon and Mercury](#)  
 July 12 [Conjunction of the Moon and Venus, Conjunction of the Moon and Mars](#)  
 July 13 [Conjunction of Venus and Mars](#)  
 July 17 [View M55](#)  
 July 24 [Conjunction of the Moon and Saturn](#)  
 July 25 [Conjunction of the Moon and Jupiter](#)  
 Aug 1 [Mercury at superior conjunction](#)  
 Aug 2 [Saturn at opposition](#)  
 Aug 9 [Conjunction of the Moon and Mars](#)  
 Aug 11 [Conjunction of the Moon and Venus](#)  
 Aug 12 [Perseid meteor shower](#)  
 Aug 14 [View M15](#)  
 Aug 15 [View M2](#)  
 Aug 19 [Conjunction of Mercury and Mars](#)  
 Aug 20 [Conjunction of the Moon and Saturn](#)  
 Aug 22 [Conjunction of the Moon](#)

[and Jupiter, Blue Moon](#)  
 Sept 8 [Conjunction of the Moon and Mercury](#)  
 Sept 9 [Conjunction of the Moon and Venus](#)  
 Sept 13 [Mercury at greatest elongation east](#)  
 Sept 14 [Neptune at opposition](#)  
 Sept 16 [Conjunction of the Moon and Saturn](#)  
 Sept 18 [Conjunction of the Moon and Jupiter](#)  
 Sept 24 [Close approach of the Moon and Uranus](#)  
 Oct 1 [View M110](#)  
 Oct 2 [View M31 & 32](#)  
 Oct 8 [Mars at superior conjunction](#)  
 Oct 9 [Mercury at inferior conjunction, Conjunction of the Moon and Venus](#)  
 Oct 14 [Conjunction of the Moon and Saturn](#)  
 Oct 15 [Conjunction of the Moon and Jupiter, View M33](#)  
 Oct 21 [Orionid meteor shower, Close approach of the Moon and Uranus](#)  
 Oct 24 [Mercury at greatest elongation west](#)  
 Oct 29 [Venus at greatest elongation east](#)  
 Nov 3 [Conjunction of the Moon and Mercury](#)  
 Nov 4 [Uranus at opposition](#)  
 Nov 8 [Conjunction of the Moon and Venus](#)  
 Nov 10 [Conjunction of the Moon and Saturn](#)  
 Nov 11 [Conjunction of the Moon and Jupiter](#)  
 Nov 17 [Leonid meteor shower, View M45](#)  
 Nov 28 [Leonid meteor shower, Mercury at superior conjunction](#)  
 Dec 2 [Conjunction of the Moon and Mars](#)

Dec 6 Conjunction of the Moon and Venus

Dec 7 Venus at greatest brightness, Conjunction of the Moon and Saturn

Dec 8 Conjunction of the Moon and Jupiter

Dec 14 Geminid meteor shower

Dec 22 Ursid meteor shower

Dec 28 Conjunction of Venus and Mercury

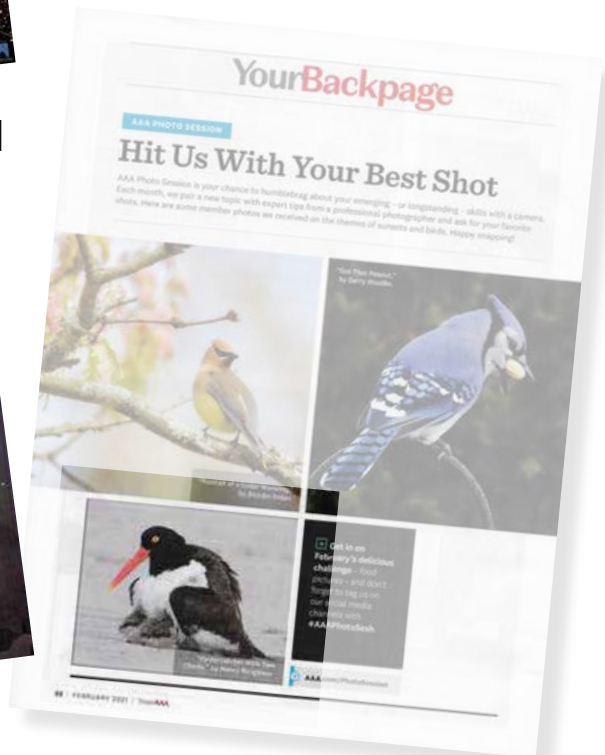
Dec 31 Conjunction of the Moon and Mars



**IC443 by Steven B**



**Barnard 72 by Joe M**



**AAA Magazine Entry by Nancy R**



**M42 by Joe M**



## Taking the Dog Stars for a Springtime Walk: Sirius and Procyon

By David Prosper

March skies feature many dazzling stars and constellations, glimmering high in the night, but two of the brightest stars are the focus of our attention this month: Sirius and Procyon, the dog stars!

Sirius is the brightest star in the nighttime sky, in large part because it is one of the closest stars to our solar system at 8.6 light years away. Compared to our Sun, Sirius possesses twice the mass and is much younger. Sirius is estimated to be several hundred million years old, just a fraction of the Sun's 4.6 billion years. Near Sirius - around the width of a hand with fingers splayed out, held away at arm's length - you'll find Procyon, the 8th brightest star in the night sky. Procyon is another one of our Sun's closest neighbors, though a little farther away than Sirius, 11.5 light years away. While less massive than Sirius, it is much older and unusually luminous for a star of its type, leading astronomers to suspect that it may "soon" - at some point millions of years from now - swell into a giant star as it nears the end of its stellar life.

Sirius and Procyon are nicknamed the "Dog Stars," an apt name as they are the brightest stars in their respective constellations - Canis Major and Canis Minor - whose

names translate to "Big Dog" and "Little Dog." Not everyone sees them as canine companions. As two of the brightest stars in the sky, they feature prominently in the sky stories of cultures around the world. Sirius also captures the imaginations of people today: when rising or setting near the horizon, its brilliance mixes with our atmosphere's turbulence, causing the star's light to shimmer with wildly flickering color.

This vivid, eerie sight was an indication to ancient peoples of changes in the seasons, and even triggers UFO reports in the modern era!

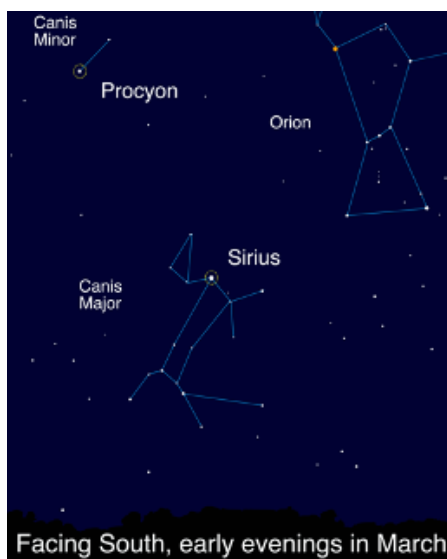
Both of these bright stars have unseen companions: tiny, dense white dwarf stars, the remnants of supermassive companion stars. Interestingly, both of these dim companions were inferred from careful studies of their parent stars' movements in the 1800s, before they were

ever directly observed! They are a challenging observation, even with a large telescope, since their parent stars are so very bright that

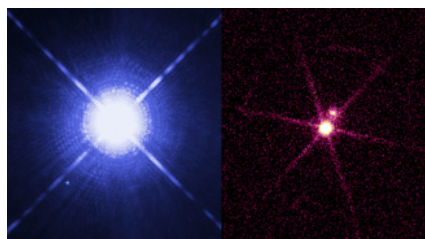
their light overwhelms the much dimmer light of their tiny companions. The white dwarf stars, just like their parent stars, have differences: Sirius B is younger, brighter, and more energetic than Procyon B. Careful observations of these nearby systems over hundreds of years

have helped advance the fields of: astrometry, the precise measurement of stars; stellar evolution; and astroseismology, the study of the internal structure

of stars via their oscillations. Discover more about our stellar neighborhood at [nasa.gov](http://nasa.gov)!



Facing South, early evenings in March  
Sirius and Procyon, the loyal hunting dogs of nearby Orion the Hunter! What other stories can you imagine for these stars? Learn about "Legends in the Sky" and create your own with this activity: <https://bit.ly/legendsinthesky> Image created with assistance from Stellarium.



Sirius A and B imaged by two different space telescopes, revealing dramatically different views! Hubble's image (left) shows Sirius A shining brightly in visible light, with diminutive Sirius B a tiny dot. However, in Chandra's image (right) tiny Sirius B is dramatically brighter in X-rays! The "Universe in a Different Light" activity highlights more surprising views of some familiar objects: <http://bit.ly/different-light-nsn>  
NASA, ESA, H. Bond (STScI), and M. Barstow (University of Leicester) (left); NASA/SAO/CXC (right)

This article is distributed by NASA Night Sky Network- The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](http://nightsky.jpl.nasa.gov) to find local clubs, events, and more!



## Perseverance reveals the sights and sounds of Mars

Dr. Michael West

Hi everyone,

By now you've undoubtedly heard the exciting news that the Perseverance rover successfully landed on Mars a few days ago. NASA has already begun releasing the first of what's sure to be a treasure trove of images, videos, and even sounds from the red planet.

It required an incredibly complex series of maneuvers for Perseverance to arrive safely on



the surface of Mars. Click on the video to the left to learn more about the spacecraft's "seven minutes of terror."

Unlike previous rovers, Perseverance was capable of looking and determining the safest spot to land while it descended.



Today, NASA released actual video footage of Perseverance descending and landing on the Martian surface. We're truly living in amazing times!

Perseverance has already begun sending back photos of its new home.

And - perhaps most amazing of all - you can HEAR the sounds of Mars for the first time thanks to microphones onboard the rover. Click below if you'd like to hear the wind and the whirring of Perseverance itself.

This is only the beginning of what promises to be a very exciting new mission to Mars. Perseverance even has a companion - a small helicopter named Ingenuity that will fly in the planet's thin air. If successful, future flying machines like this will be used to help rovers find the safest routes and to search for the most interesting places to explore.

Perseverance's discoveries are sure to yield new insights into the possibility of past or present life on Mars. Percival Lowell, whose intense curiosity about the possibility of Martian life lead him to found the observatory that bears his name, would have been proud. It's especially fitting that the newest rover spacecraft on Mars has been nicknamed "Percy."

If you'd like to know more, you can keep up with all the latest Perseverance news at [NASA's Mars Perseverance Rover website](#).

Stay safe, Michael



Dr. Michael West is Lowell Observatory's Deputy Director for Science. Follow his AstroAlerts to receive breaking news stories from the world of astronomy, odd bits of astronomical lore, and more. If you have questions, you can reach him at [mwest@lowell.edu](mailto:mwest@lowell.edu) or follow him on Twitter @curatedcosmos.

