



PAStimes

Phoenix Astronomical Society

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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

Klaus Brasch to Speak at PAS Meeting

By Klaus Brasch

“The Search for Life in the Universe”

The search for life in the universe has become a driving force behind much current space exploration, including current and planned missions to Mars, Europa, Enceladus and other solar system bodies. It is also a seminal question for humanity, “Are we alone in the cosmos?” Yet, in spite of tremendous advances in molecular and paleo-biology, we are still largely ignorant as to how, when and where life originated on Earth and, by extension, possibly on some of the many earth-like exoplanets recently discovered. We shall examine some of the aspects relating to these complex and ever-fascinating questions.

Klaus Brasch is a retired biomedical scientist and volunteer at Lowell Observatory in Flagstaff, AZ. Born in Germany, his

family emigrated to Canada in 1953. He joined the Montreal Center of the Royal Astronomical Society of Canada in 1958 and has been an avid amateur ever since. After earning a Ph.D. at Carleton University in Ottawa, he joined the biology faculty at Queen’s University in Kingston, Ontario. There he teamed with noted radio astronomer, Alan Bridle, to offer the first course in astrobiology in Canada. In 1990 he joined California State University, San Bernardino, where he served as department chair, dean of science and director of campus research. He has translated popular French astronomy books into English, lectured widely on topics ranging from life in the universe to astrophotography and published numerous articles in *Astronomy*, *Sky & Telescope*, *Sky News*, *JRASC* and elsewhere. Asteroid 25226 Brasch, was recently named in his honor by Lowell

Observatory.



Klaus Brasch is a returning and much appreciated PAS guest speaker. You will want to attend this meeting. Photo provided by Klaus.

November 4th PAS Meeting

By Terri, Event Manager

Let’s welcome back Klaus Brasch to give a talk at our November 2021 PAS Meeting. He has presented to PAS several times in the past and each time he is full of

enthusiasm and excitement for the topic he is presenting. You won’t want to miss this meeting. Tune in at Zoom at this link: <https://us02web.zoom.us/j/82287947901?pwd=QTIKS2VYNDVxaW9lYkVTdytQZWxJdz09>

[wd=QTIKS2VYNDVxaW9lYkVTdytQZWxJdz09](https://us02web.zoom.us/j/82287947901?pwd=QTIKS2VYNDVxaW9lYkVTdytQZWxJdz09)

It will be a fun, informative and fantastic meeting. Bring everyone you know!

PAS Meeting of October 7th

By Terri, Event Manager

James Lynch did a fantastic and informative presentation for sixteen attendees. The meeting ended about 8:45pm and Past President Mike Marron took over to talk about String Theory.

It was a very fun evening. If you missed this lecture and you wish to enjoy it, the link to the recording of this meeting is here: <https://www.pasaz.org/pas-monthly-meetings/videos-of-speaker-presentations>

Enjoy!

Many thanks to James for his interesting talk. The audience was really into this topic. We hope to have James Lynch return for another presentation in the future. He’s got some great talks to share with PAS. Thank you also to President Stu for hosting this meeting. And thank you to everyone who attended this night.

James writes: Hi, Terri, Thanks! I really enjoy giving such talks, as they push

See "Oct 7th Meeting" on top of page 3



James Lynch was the October 7th Guest Speaker for PAS. It was a fantastic presentation. Photo provided by James.

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Past PAS Recorded Presentations

By Terri Finch, Event Manager

Did you miss a PAS Meeting and wish you could see it? You can get to the link of Past Recorded PAS Meetings with Guest Speakers any time by going to the left hand navigation tool on the PASaz.org website and clicking on "PAS Monthly Meetings." From there a drop down item will appear

and please click on "Videos of Speaker Presentations." You will then find recordings of Past PAS Meetings for your viewing pleasure. The collection is in oldest to newest order. Please work your way to the bottom of the collection to find the most recently recorded PAS Guest Speaker Presentation.

As long as PAS can record the PAS Meetings, PAS will continue to add more recordings to this page. Here is the direct link to the recorded PAS Meetings collection: <https://www.pasaz.org/pas-monthly-meetings/videos-of-speaker-presentations>. Enjoy!

Fall 2021 PAS GUEST SPEAKERS

By Terri Finch, Event Manager

Events@pasaz.org

Due to the Covid-19 pandemic, PAS Meetings are being held via Zoom over the internet. The Zoom link has been added to the calendar listing for that night's meeting and in the Newsletter in the article about the next PAS Meeting. Please visit the PAS calendar at PASaz.org to find out more about these upcoming Meetings and Guest Speakers. If a Meeting will happen

In-Person, the Calendar Listing will give you that info. For a complete list of Guest Speakers, visit: <https://docs.google.com/document/d/1OO-UpaYNvw3p7JCRXCKSjDcbsK60DnvWOoifbqPrNp8/edit?usp=sharing>

Do you have an idea for a guest speaker? Email Paul Facuna VicePresident@pasaz.org the details and contact info for that possible Guest Speaker.

Here are the next scheduled guest speakers

at PAS:

V = Virtual Meeting through Zoom

P = In Person at PVCC Main Campus

Dec 2: David Williams, "Exploring Strange New Worlds"

Jan 20, 2022: TBA

Feb 3: Alex Woronow, "The Stellina Telescope"

What's Up For November? November 15, 2021

By Don K. Boyd, PAStimes Editor

Name	Date	Rise	Set
Mercury	11-15-21	06:24	17:02
Venus	11/15/21	10:45	20:14
Mars	11-15-21	06:01	16:45
Jupiter	11-15-21	13:10	11:55
Saturn	11-15-21	12:20	22:39
Uranus	11-15-21	16:44	06:13
Neptune	11-15-21	14:25	02:07
Pluto	11-15-21	11:38	23:34

All Times Arizona Time

Bold means the object is "visible" in the evening

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Sunrise: 07:00

Sunset: 17:25

New: November 4

Q1: November 11

Full: November 19

Q3: November 27



(Continued from page 1)

me a bit harder to learn and understand topics I'm interested in. (Like a shorter version of teaching a course.) And I'd be happy to give another talk "down the line." I have an especially good one on Drake's Equation that I've given and can upgrade for the future. (And many others...I've been a "fill-in" speaker for CCAS more times

Oct 7th Meeting

than perhaps I should have been.)

In return, the audience was great, and I'm still mulling over the one question about "if you united GR and QM, would that be "good enough" understandin". I presently think that it would be a start, but there would still be many things to learn. Just having a "master equation " doesn't fill

in all the details of specific systems. Jim

Stella Pope Duarte, PAS Member writes: I had a couple of questions for our speaker last Thursday but didn't find an opportunity to ask them. He did a wonderful job and was also gracious with everyone. All my best, Stella

Appointment of Alex Vrenios as "Acting Secretary" of PAS

By President Stu Brackney

I am happy to inform the Board that you, the PAS Board, have agreed with my intention to appoint Alex Vrenios as our Acting Secretary. I waited until tonight to inform you as I wanted all board members to have the opportunity to express their opinion. Therefore as of this date, October 14, 2021, I am appointing Alex Vrenios as our Acting Secretary, until such time when we have other candidates who wish to run for this office.

From all of us to you, Alex, thank you for volunteering to serve our organization yet again.

Respectfully,

Stuart Brackney, President PAS

By Dr. Alex Vrenios

I first joined PAS in 2012. Since then, I've contributed several articles to the club's newsletter and made many presenta-

tions to the PAS membership. I've served as Member-At-Large, and later as Vice-President. I am a Lifetime member of both PAS and the Astronomical League, where I've completed over a dozen observation programs. I am a retired computer scientist with a doctorate in the field. I've published over a dozen technical papers and a book about Linux Cluster computing. I am also a Life Senior Member of the IEEE, an international organization of engineering professionals.

The position of PAS Secretary is a lot of responsibility, as described in Article 2, Paragraph d, of the PAS Bylaws. I will be responsible for those Bylaws, the agendas and minutes of PAS business meetings, and the integrity of PAS elections. I must also maintain contact with other astronomy clubs and serve as public relations liaison with local media for applicable PAS events. I consider it to be an honor to serve as your PAS Secretary.



Dr. Alex Vrenios was appointed PAS Secretary October 14, 2021. Congrats Alex! Photo provided by Alex.

Anna Engle at Sept 2nd PAS Meeting

By Terri, Event Manager

PAS had 27 in attendance at this meeting! Thank you all for attending. Anna shared with the attendees the wonders of what has been found on Titan, a moon of Saturn. It was a very intriguing and informative meeting. Many thanks to Anna for doing this presentation. The audience was captivated through the whole presentation, and a bunch of great questions were asked afterwards.

If you missed this presentation, please find the recording here on the PAS website: <https://www.pasaz.org/pas-monthly-meetings/videos-of-speaker-presentations>

Anna writes: Hi Terri, Thank you for having me, and I'd love to do a return visit with another topic! It sounds like my talk was a bit too technical in some spots, so I will be sure to include more of the planetary

implications in the future and less of the plots :)



Anna Engle did a spectacular presentation. Photo by Don Boyd.

PAS Meeting of Apr 15th

By Terri, Event Manager

This meeting had some hiccups. Stu, the Meeting Host and the Host of the Zoom Meeting was having computer issues. With help from William Finch, the three of us figured out the situation and got the meeting opened at 7:31pm. Thanks to everyone who waited patiently for the meeting to open.

Stu set up the meeting while Mike and everyone attending, asked our Spectacular Guest Speaker Alex Woronow some questions. Then, when Stu was set up, the meeting started at 7:50pm.

Stu opened the meeting with a Remembrance of Sam Insana at 7:52pm. Everyone at the meeting took a few moments of silence to remember Sam. Then Stu talked about the PASaz.org website and how to use the Chat Button for Questions during this meeting, as well as asking everyone to mute their microphones and turn off their device cameras so that we could give Alex our total attention. Stu provided a great introduction of Alex.

Dr. Alex Woronow took the floor at

7:55pm and at that time there were 16 attendees. Dr. Woronow began with a brief history of Artificial Intelligence and how it works. Then he covered some programs that can be purchased to do Artificial Intelligence adjustments to your astrophotos.

It was a very informational talk about Astrophotography. Alex was very good at explaining the different programs he uses to enhance his astrophoto images using programs that are run by Artificial Intelligence to fix his photos. He had some really awesome astro photos to share with the audience. Alex was very knowledgeable, interesting and provided a super presentation. The meeting concluded at 8:50pm. If you missed this meeting or would like to see it again, please check out the recording of it at this link on the PASaz.org website: <https://www.pasaz.org/pas-monthly-meetings/videos-of-speaker-presentations>. Enjoy!

Many thanks to Alex Woronow! And thanks to everyone who tried until they exceeded to get into the Zoom meeting. See you at the next meetings!

Exciting News: Alex has agreed to do another presentation titled: "The Stellina Telescope—The future of amateur astronomy has arrived" on Feb 3, 2022!

Tim Clapp writes: I was absolutely thrilled with Alex's presentation, and will plan to attend all future presentations! I'm brand new to PAS, but am quickly learning that you guys have A LOT to offer!

Paul Facuna, Vice President writes: Stu, Thank you for the very nice, thoughtful, and appropriate remembrance of Sam, presented during this meeting.



Dr. Alex Woronow did a spectacular presentation at the April 15th PAS Meeting. Everyone was on the edge of their seats. Photo by Terri Finch.

Place your Astronomy Equipment Ad Here

Do you have some astronomy-related items you'd like to sell? Prepare an ad and send it my way so that Don and I can help you sell it through the club newsletter. PAS Members get this service for free. Items you may wish to sell: Books, Star Charts, Telescopes, Eyepieces, Finder Scopes, and more. As long as it is astronomy related, I will happily add it to the newsletter. Please include all items you wish to sell, and what is included with those items. Price them, and provide contact info for the way you wish to be notified, such as email or phone number. I await your submissions to Starstuff@gmail.com.

Ads for items for sale listed in PAStimes Newsletter are written by the seller. PAS is not responsible for the ads and does not guarantee the quality of the items for sale. PAS reminds everyone, you purchase at your own risk, so do your research beforehand.

Ads in PAStimes run for one month and may be renewed on a month-to-month basis, space permitting, as long as the request to run the ad again is submitted by deadline (10th of month). Ads in PAStimes are FREE for PAS members. Non-members are asked to make a small donation to PAS. Non-members may email Terri, Assistant Editor at Starstuff@gmail.com to place their ad and get details on where to send a donation, via check or money order, made out to Phoenix Astronomical Society.

The deadline for the December issue will be Nov 10th. These items can also be seen with photos on the [PASaz.org](https://www.pasaz.org) website here:

<https://www.pasaz.org/items-for-sale>

For Sale: A lot of Astronomy Equipment.

- * Asking \$1800.00 Takahaski scope
- * \$250.00 Takahaski Finder Scope #552
- * \$400.00 Takahaski Extender-Q 1.6x
- * \$120.00 Takahaski Tube holders of which there are two and a small one
- A Starlight 2" Feather Touch Focuser \$344.00
- B Celestron #94175 Reducer \$110.00
- C TeleVue 2" Mirror Diagonal DPC- 2002 \$120.00
- D Meade #918A Diagonal Prism \$25.00
- E Meade Series 4000 8-24mm Zoom Eyepiece \$66.00
- F Meade #918A Diagonal Prism \$24.00
- G Meade Ultra-Wide angle 8.8 \$40.00
- H Celestron # 93506 1 1/4 Japan \$60.00
- I Meade #8x50 Finder scope #544 Blue Japan \$34.00
- J Mack 111 Hyperion Zoom 8-24m \$266.00
- K Orion 9x50 Right-Angle Image finder \$54.00
- L ScopeTronix MaxView 40mm Eyepiece \$34.00
- M Orion Black Right-Angle Correct Image \$30.00
- N Vixen LV 15mm Lanthanum EyePiece 08626 \$36.00

* Celestron Mount with Pelican Case. Also has a Pier made of 1/4" heavy case pipe. The plate is 1/2 inch. Asking \$1800.00 for all three.

Contact Marge at lovins50@aol.com to set up a visit to see the items you are interested in. Pick up location will be near McDonald Drive & Granite Reef Rd in Scottsdale.

See ad with photos at this link: <https://www.dropbox.com/sh/wwwylpfbk11jn9/AABMsoxs-cvpcagtEhqNnVSa?dl=0>

FOR SALE: Meade RCX-400 14-inch telescope. Condition is "like new". Prices listed are the original purchase price – asking price is at end of this Ad:

1. Enhanced diagonal 2-inch Series 5000 (\$180)
2. Meade 24mm wide angle eyepiece (\$225.00)
3. Meade Model 1220 Field De-Rotator (\$600)
4. SBIG ST-7XME CCD Dual Sensor USB Camera with case \$2000
5. Meade manual and other pertinent manuals/software.

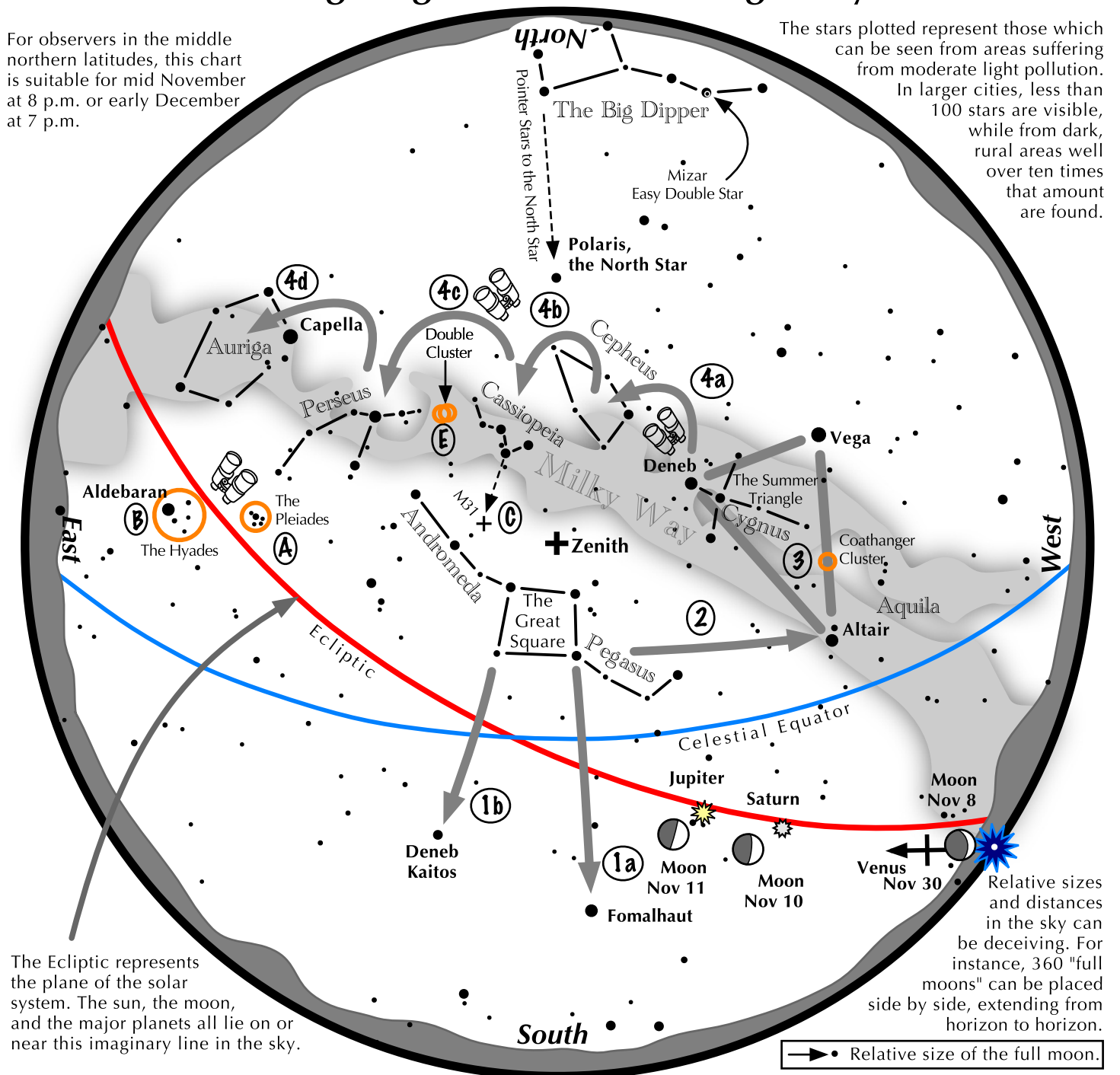
Equipment can be seen and picked up from a location in North Scottsdale, Arizona. Prefer not to ship. Local Pickup please.

I will be glad to answer any questions. Total Asking Price for all items listed above is \$5,000.00 plus any shipping/packing costs if required. Contact: Richard rjkarizona@cox.net

Navigating the November Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid November at 8 p.m. or early December at 7 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Navigating the November night sky: Simply start with what you know or with what you can easily find.

- 1 Face south. Almost overhead lies the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend a line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the south. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second brightest star in the south.
- 2 Draw a line westward following the southern edge of the Square until it strikes Altair, part of the "Summer Triangle."
- 3 Locate Vega and Deneb, the other two stars of the Summer Triangle. Vega is its brightest member, while Deneb sits in the middle of the Milky Way.
- 4 Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, then to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas. **E:** The Double Cluster.





Weird Ways to Observe the Moon

By David Prosper

International Observe the Moon Night is on October 16 this year— but you can observe the Moon whenever it's up, day or night! While binoculars and telescopes certainly reveal incredible details of our neighbor's surface, bringing out dark seas, bright craters, and numerous odd fissures and cracks, these tools are not the only way to observe details about our Moon. There are more ways to observe the Moon than you might expect, just using common household materials.

Put on a pair of sunglasses, especially polarized sunglasses! You may think this is a joke, but the point of polarized sunglasses is to dramatically reduce glare, and so they allow your eyes to pick out some lunar details! Surprisingly, wearing sunglasses even helps during daytime observations of the Moon.

One unlikely tool is the humble plastic bottle cap! John Goss from the Roanoke Valley Astronomical Society shared these directions on how to make your own bottle cap lunar viewer, which was also suggested to him by Fred Schaaf many years ago as a way to also view the thin crescent of Venus when close to the Sun:

"The full Moon is very bright, so much that details are overwhelmed by the glare. Here is an easy way to see more! Start by drilling a 1/16-inch (1.5 mm) diameter hole in a plastic soft drink bottle cap. Make sure it is an unobstructed, round hole. Now look through the hole at the bright Moon. The image brightness will be much dimmer than normal — over 90% dimmer — reducing or eliminating any lunar glare. The image should also be much sharper because the bottle cap blocks light from entering the outer portion of your pupil, where imperfections of the eye's curving optical path likely lie." Many report seeing a startling amount of lunar detail!

You can project the Moon! Have you heard of a "Sun Funnel"? It's a way to safely view the Sun by projecting the image from an eyepiece to fabric stretched across a funnel mounted on top. It's easy to make at home, too — directions are here: bit.ly/sunfunnel. Depending on your equipment, a Sun Funnel can view the Moon as well as the Sun— a full Moon gives off more than enough light to project from even relatively small telescopes. Large telescopes will project the full Moon and its phases, with varying levels of detail; while not as crisp as direct eyepiece viewing, it's still an impressive sight! You can also mount your smartphone or tablet to your eyepiece for a similar Moon-viewing experience, but the funnel doesn't need batteries.

Of course, you can join folks in person or online for a celebration of our Moon on October 16, with International Observe the Moon Night — find details at moon.nasa.gov/observe. NASA has big plans for a return to the Moon with the Artemis program, and you can find the latest news on their upcoming lunar explorations at nasa.gov.

Sun Funnels in action! Starting clockwise from the bottom left, a standalone Sun Funnel; attached to a small refractor to observe the transit of Mercury in

2019; attached to a large telescope in preparation for evening lunar observing; projection of the Moon onto a funnel from a medium-size scope (5 inches).

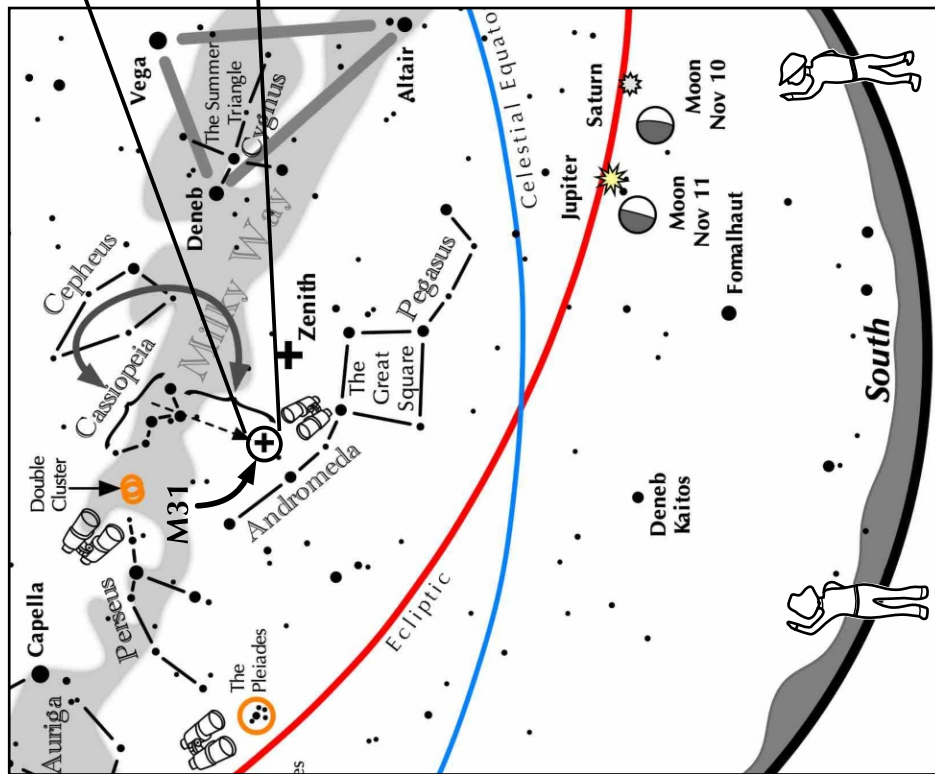
Safety tip: NEVER use a large telescope with a Sun Funnel to observe the Sun, as they are designed to project the Sun using small telescopes only. Some eager astronomers have melted their Sun Funnels, and parts of their own telescopes, by pointing them at the Sun — large telescopes create far too much heat, sometimes within seconds! However, large instruments are safe and ideal for projecting the much dimmer Moon. Small telescopes can't gather enough light to decently project the Moon, but larger scopes will work.

You can download and print NASA's observer's map of the Moon for International Observe the Moon Night! This map shows the view from the Northern Hemisphere on October 16 with the seas labeled, but you can download both this map and one of for Southern Hemisphere observers, at: bit.ly/moonmap2021 The maps contain multiple pages of observing tips, not just this one.

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 to find local clubs, events, and more!



If you can observe only one celestial scene this month, consider this one:



**North South
90 minutes after sunset
throughout November**

**View
through
10x50 binoculars**

*Mu
Andromedae*

**Have you ever seen M31,
the famous Andromeda Galaxy?**

Look along the North South line (meridian) 90 minutes after sunset throughout November.

Face North and look nearly overhead for the "w" (or "m") shaped constellation Cassiopeia. Its five major stars are slightly dimmer than those of the Big Dipper.

Or ... face south and look past directly overhead (Zenith) for Cassiopeia. Harder on the neck!

Draw an arrow south through the three westernmost stars of the "w."

Extend that arrow the same length that Cassiopeia is wide.

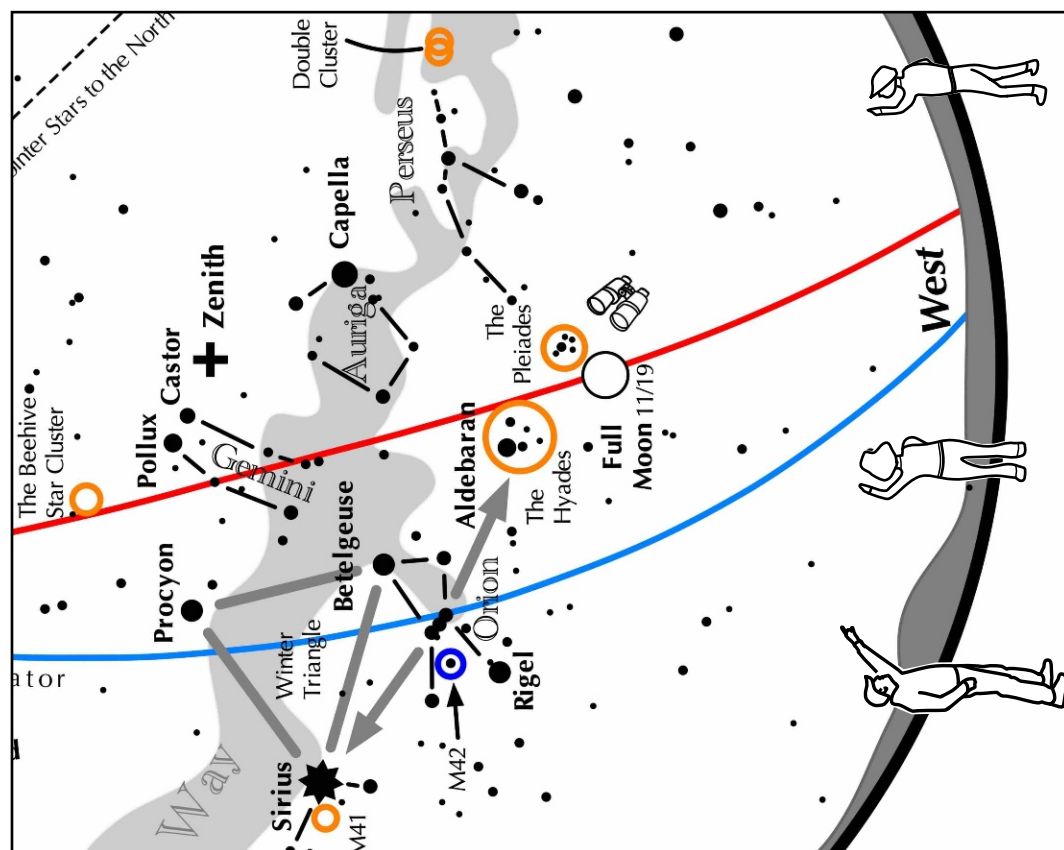
Bingo! It ends on the Andromeda Galaxy, also called M31.

Gaze at its dimly glowing, fuzzy appearance through binoculars for a much better view.

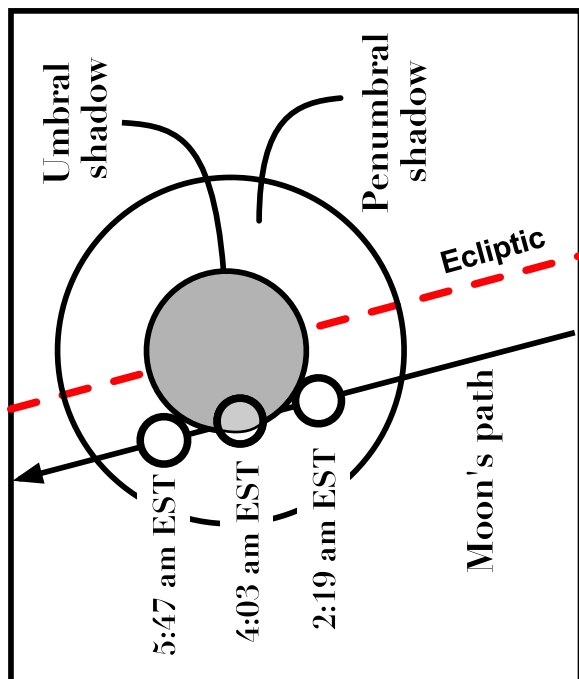
If you are in a very dark site and hold binoculars very steady, you might be able to spot M31's small companion galaxy, M32.

For a bonus, look immediately east of Cassiopeia, between it and the stars of Perseus for the shimmering lights of the Double Cluster.

In the early morning of November 19, try this challenge:



**View to the west
on November 19
at 4 am EST,
1 am PST**



The Moon slides through an almost total eclipse

In the early morning hours of Nov. 19 for east coasters, and after 11 p.m. on the 18th for west coasters, the brilliant full moon slides into Earth's shadow. But the moon's surface isn't completely covered, just 97% of it at maximum eclipse.

Even though the partial umbral eclipse begins at 2:19 EST, darkening may not be noticed for another 5 minutes.

At mid eclipse, can you see that the southern limb of the moon is not in full darkness?

At mid eclipse, what color is the moon? How red is it?

Before the eclipse begins, the moon's sky glow blocks viewing the Pleiades star cluster. How close to mid eclipse are the Pleiades still visible?