



PAStimes

A Publication of the Phoenix Astronomical Society

Stu's Views • Stu Brackney, President PAS

I have much to share during one of Arizona's hottest summers, so here we go:

1. The Board of Directors has approved the sale of some donated telescopes from our current inventory of the Loaner Program. You should have already received an email listing the scopes up for sale to members only. All these scopes are in excellent condition and ready for use. The best part of this decision by your board for you, the members, is the price...most are one-half (50%) off the current market value for these used scopes. It is a first come, first served offer to you the member. Need I say more? The proceeds will be placed in our PAS Sam Insana Student Scholarship Fund. See the advertisement in this edition of our PASTimes.



2. The Valley of the Sun has discovered PAS and they want us. Yep, they are asking our Star Tours Program to provide demonstrations more often now than ever. We do not want to let them down, so if you own a telescope or have a meteorite collection you should contact our Start Tours Manager Andrew Stone starttours@pasaz.org. If you are selected to do demonstrations you will be paid for your time and expertise. We REALLY NEED some more Star Tours presenters.

3. Show your colors! Once again, your busy Board of Directors has finalized a sew on patch with the PAS logo on it for your use. Looks great on a black baseball cap! You (members only) can purchase these beautiful patches and the new name badges by using a link I sent you last month and I will do so again this month. When I send you your patch(s) I will also include some of our PAS business cards for your use when telling others about our busy organization.

4. October 3. Mark your calendars. On that date we will be having a private pizza social for members and families. Like all other events please use this link so we have enough goodies for everyone: [PAS Social](#) This event will be your chance to meet and greet your fellow amateur astronomers!

FINALLY... I am guilty, so sorry. I cannot read your mind. Nope, so I need to ask you. What do you want from PAS? Email me stuartbrackney@pasaz.org

Clear skies all and see some of you at our next event.

Stu



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August Upcoming Events

During the summer months we generally do not hold lectures or our telescope workshops. We do, however, schedule one star party each month that is held at a dark sky site generally north of Phoenix (also somewhat cooler).

August 3rd – Dark Sky Star Party – Doney Park - Flagstaff

Regrettably, this site is very small and only has room for approximately 11 vehicles. As of this publication, the event is fully booked with several members on the waiting list.



For more information and to register for these events, go to the [PAS Event Calendar and Registration Site](#). It is important to register for all events. In case of an event change or cancellation, you will be notified via email.



June, July, August Lecture Series-Cancelled



July Outreach Events

The PAS outreach program had only one event scheduled for the month: **Star Party – Dark Site**

We had a very large group registered for the July star party that was held at one of the dark sky sites north of Phoenix. This turned out to be the most popular event of the entire season with over 40 members and guests registered. The Bronco Trailhead site, north of Cave Creek, turned out to be ideal with ample parking and room for dozens of telescope setups. The night sky cooperated and a wonderful evening of viewing was had by all in attendance.



STAR Party-Dark Site Bronco Trailhead



Member Astro Images



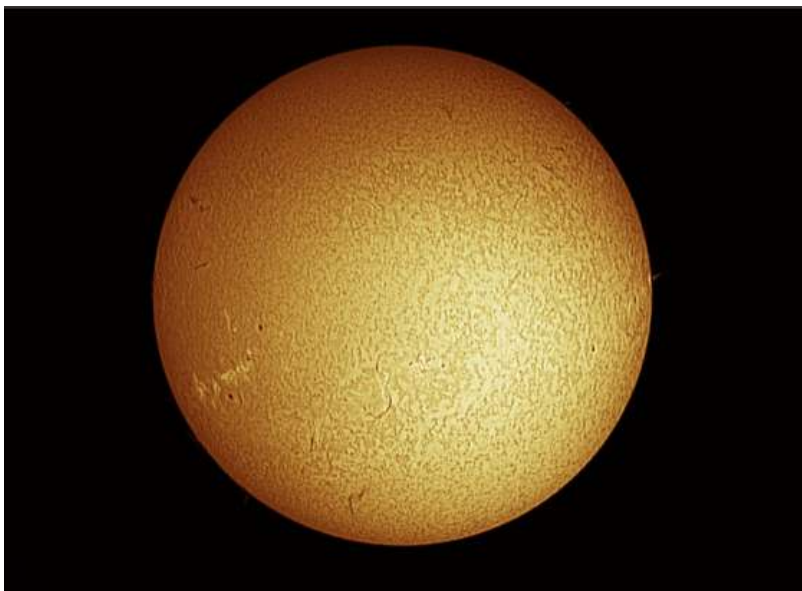
*ngc7000 cygnus loop
askar 103 apo
refractor on a zwo
ams mount
zwo asi2600mc pro
camera*

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sauerbrun*



*ngc6990 veil nebula
askar 103 apo refractor
on a zwo ams mount
zwo asi2600mc pro camera*

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sun

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Beginner Advice From the PAS Board of Directors

Stu Brackney

How did you first become interested in astronomy?

My dad, when I was a little boy, built his own telescope. Therefore from that time I was curious, but it was not until 2018 I heard about PAS and went to a fantastic meeting at PVCC.

What resources or tools did you find most helpful when starting out?

Listening to members at star parties got me hooked.

What was your first telescope, and do you have any tips for choosing one as a beginner?

A friend gave me an 11' Celestron 1989 old vintage scope. It was a start but too big and mostly designed for astrophotography.

What are some common mistakes or pitfalls beginners often encounter when starting out in astronomy, and how can they be avoided?

Buying too big too soon.

How did you learn to navigate the night sky and identify celestial objects?

I am not very good at that, as I fell prey to the hand held app that many now use to id objects.

What resources or tools did you find most helpful when starting out?

I checked out YouTube videos and purchased Great Courses videos on astronomy.

Are there any lesser-known or underrated aspects of astronomy that you think beginners should explore?

Binoculars. They can be all that so many need or want, but overlook.

Are there specific observing tips or techniques you would recommend for beginners to improve their stargazing experiences?

Use the internet to find out what is viewable that night, then go find them with your scope.

What are some of the best apps or software tools that beginners can use for identifying celestial objects and planning observing sessions?

Skyview.com Stellarium Clearoutside Planets cellphone compass

For beginners interested in astrophotography, what are some entry-level techniques or equipment recommendations you would suggest?

Too soon for me to answer this one. But perhaps after I find myself in the bottom of the rabbit hole I will.

Mark Johnston's generic advice for a beginner:

Attend both local and deep sky star parties. Look in lots of different kinds of telescopes and lots of different objects (the Moon, planets, double stars, star clusters, galaxies, nebulae etc). Ask the operator why they bought that scope and what they like to look at. Once you've done that, take advantage of the telescope loaner program. See if you're comfortable using a telescope on your own.

See which types of objects capture your interest. You might find for example you like finding nebulae. That would suggest you need to consider a telescope that is portable so you can take to a darker site where nebula are more easily seen. Or, you might be interested in double stars. Those are easy to see from the city. These types of decisions will help drive what kind of telescope you might consider - aperture, portability, ruggedness, etc.

If you have a small refractor you can also consider getting a low cost broadband solar filter and using it to track sunspots and activity on the Sun.

Richard Sauerbrun

What resources or tools did you find most helpful when starting out?

I took an Astronomy course at my local community college

What was your first telescope, and do you have any tips for choosing one as a beginner?

From our own Joe Sandy ... <https://www.youtube.com/watch?v=9ca5JF9irvQ&t=49s>

What are some common mistakes or pitfalls beginners often encounter when starting out in astronomy, and how can they be avoided?

Using the highest power eyepiece or a barlow lens. Far too small a field of view to find your first target. Use a wide-field telescope with the highest number eyepiece you have.

What resources or tools did you find most helpful when starting out?

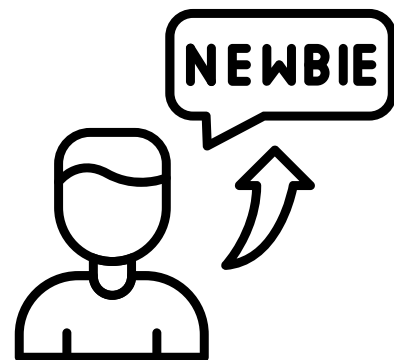
YouTube

What are some of the best apps or software tools that beginners can use for identifying celestial objects and planning observing sessions?

Stellarium

For beginners interested in astrophotography, what are some entry-level techniques or equipment recommendations you would suggest?

Start with a planetary camera and use the moon to get started. Then move to Jupiter & Saturn, and then to deep sky objects.

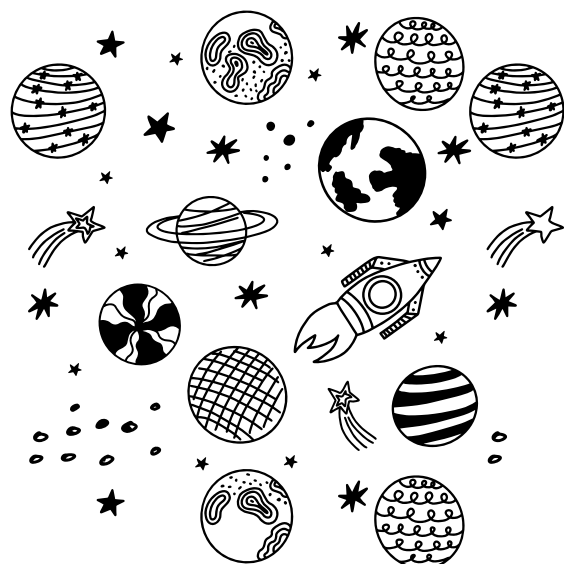


7 Telescope Targets for August

Each month we feature 7 good targets for small telescopes that should be visible in the evening

1. M57 The Ring Nebula Brightest and easiest to find planetary nebula in the sky, looks like a faint smoke ring between the two end stars in Lyra
2. Epsilon Lyra Excellent test for your telescope's optics. High power will reveal each star in the 'pair' is itself a tight double
3. T Lyra carbon star Looks like a 'stoplight' in space. My favorite summer carbon star
4. M22 Globular Cluster Beautiful globular cluster in the southern sky
5. M8 Lagoon nebula Largest and brightest emission nebula. Star nursery
6. M20 Trifid nebula Rare combination of a star cluster, emission nebula, dark nebula, and reflection nebula
7. M17 Omega nebula Large emission nebula with similar geometry to the Orion nebula except we are seeing this on edge on

Cosmic Classroom (CC)



What telescope is best for me?

The best telescope for you is the one that you will use!



1 Consider trying binoculars first.

- ★ Easy to use, easy to store, ultra-portable.
- ★ Can see large sections of the sky at once.
- ★ Can use them for daytime activities.



An excellent size is 10 x 50:
10 = magnification
50 = the diameter in millimeters of the front lens.

2 Before buying a telescope, ask yourself these questions...

- ★ How well do you know the night sky? Finding objects is not easy without practice. A quality "go-to" computerized telescope is costly and its operation must be mastered.
- ★ How hard is the scope to assemble? If it is too complicated, you won't use it.
- ★ Where will you do most of your observing? A city resident will likely need to cart it to a dark site.
- ★ Where do you think you'll be in the hobby in three years? If you really like astronomy, you'll outgrow a small scope in six months.
- ★ Will you eventually pursue astrophotography? You'll need a sturdy, motor driven mount that tracks accurately.

★ Common Telescope Designs ★

Reflector

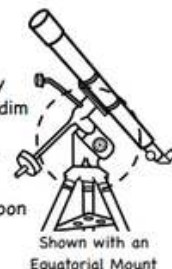
- ★ Easy to use
- ★ Least expensive scope design
- ★ Great for clusters, nebulae, and galaxies
- ★ Can be bulky
- ★ Generally not suitable for astroimaging



Shown with a Dobsonian Mount

Refractor

- ★ Easy to use
- ★ Tend to be costly
- ★ Not suitable for dim objects
- ★ Can be used for astroimaging
- ★ Great for the moon and planets



Shown with an Equatorial Mount

★ Telescope Diameter Dilemma ★

Since most sky objects are relatively dim, a telescope needs to gather large amounts of light. Therefore, larger diameter telescopes are better than smaller ones. However, they are also bulkier – and less likely to make it outside in cold weather!

3 Telescope and observing tips:

- ★ Magnification – low power is used for most objects.
- ★ Finder scope – a small one is nearly useless.
- ★ The larger the telescope's diameter, the better views it gives, but the less portable it is.
- ★ If the scope has poor optics or a wobbly mount, it will be frustrating to use. Hence, it won't be used.
- ★ Finding celestial objects requires practice and patience.
- ★ Never point the telescope at the sun without the proper filter installed ON THE FRONT of the scope.
- ★ Don't expect what you see in the eyepiece to closely resemble what you see in photographs.



Schmidt-Cassegrain

- ★ Portable, but heavy
- ★ Tend to be costly
- ★ Good for astroimaging
- ★ All purpose scope

4 Visit your local amateur astronomy club!

- ★ You can see and try the various sizes and types of telescopes.
- ★ Some clubs have programs for lending telescopes.
- ★ Members will be happy to guide you through the scope selection process.

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Helpful Astronomy Websites

by Mark Johnston

The following websites are great free resources to help you plan and enjoy your astronomy adventures

Astromart: astromart.com/

This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. A small fee is required.

Astrometry.net: <https://nova.astrometry.net/>

This site will take any astronomy image you send it (galaxy, starfield, nebula, etc) and then tell you what it is and where it is in the sky.

Astronomy Tools: astronomy.tools/calculators/field_of_view/

This site has a lot of capabilities but I use it primarily to figure out how a target (e.g. the Helix nebula) will look in my eyepiece or astronomy camera. You pick your scope, camera, eyepiece and target and the site does the rest.

Astrospheric: www.astrospheric.com/

Probably the best short term astronomy weather forecasting tool, providing predictions of clouds, transparency and seeing.

Clear Sky Charts: www.cleardarksky.com/

Excellent source of astronomy seeing conditions forecast. Also a great tool for finding observing sites with lower light pollution.

Cloudynights: www.cloudynights.com/

This is one of the top two sites for buying and selling used astronomy gear, product reviews, and forums where you can discuss any aspect of astronomy with other enthusiasts. Free.

Dark site finder: darksitefinder.com/map/

Great website for finding a dark observing location.

Heavens above: heavens-above.com/

Top site for predicting naked eye observations of satellites. See when the ISS is visible in your neighborhood!

Jupiter transits: shallowsky.com/jupiter/

For anyone with a small telescope, this is a great site. You can find out when the Great Red Spot and Jupiter's satellite transits are visible.

Solar Dynamic Observatory (SDO): <https://sdo.gsfc.nasa.gov/data/>

Find out how the Sun looks right now, at various wavelengths. If you own a solar telescope, this site coupled with Astrospheric is all you need to plan fabulous solar observing!

Telescopius: telescopius.com/

This site is very helpful in planning an observing evening. It will tell you when any particular target is rising and setting and when is the best time to observe it. This allows you to sequence your observing in a planned manner.

This is a first come, first served offer.
 Review the list. Decide what you want.
 Email stuartbrackney@pasaz.org what you want.
 He will set up a day/time for you to come to his location to purchase.
 Bring your check payable to Phoenix Astronomical Society or cash ... no credit cards please.



Orion 6" F/4 Newtonian Astrograph Telescope

- Fast 6"-aperture Newtonian lets you take short exposure images with bright, high-resolution results
- Precise 2" Crayford speed (10:1) linear-motion Crayford focuser uses 7" back in the optical tube to block stray light and boost contrast
- Orion-exclusive heli-spring design provides user eliminates flexure with heavy imaging gear attached

- Compact 28.5" length and light 12.7 lb. assembled weight doesn't require an enormous mount
- Includes two heavy-duty hinged tube rings, 12V DC cooling accelerator fan, and more

Member Price: \$250 / Non-Member Price: \$400

Orion 8" F/4 Newtonian Astrograph Telescope with GoTo Mount and Tripod

- Affordable 8"-class Newtonian telescope optimized for wide-field astrophotography
- The 200mm (7.9") aperture f/4 parabolic primary mirror is made from high-quality BK7 glass with enhanced aluminum coatings to provide >92% reflectivity for bright, vivid images
- Its short focal length and big aperture let you capture more light from deep-sky objects in less time, greatly improving your imaging efficiency
- Compact and lightweight at just 28" long and 16 lbs., can be supported on a mid-sized equatorial mount.
- Includes 8x50 finder scope, hinged tube rings, 12V DC cooling accelerator fan, and a quick-collimation cap. A coma corrector (sold separately) is recommended for optimal flat-field performance.

- GoTo Mount, controller and tripod are included

Member Price: \$450 / Non-member Price: \$800



Orion SkyQuest XT8 8" Dobsonian Telescope

- Simple hands-on, point-and-view navigation without complicating counterweights, gears, clutches, polar alignment, or the need to balance the tube. Easy and fun!
- Large 8"-diameter parabolic mirror excels for deep-sky viewing of nebulae, galaxies, and star clusters, and serves up jaw-dropping views of the planets and Moon
- Features a precision 2" Crayford focuser with 1.25" adapter, allowing use of 1.25" eyepieces or optional 2" eyepieces
- Stable Dobsonian base provides vibration-free images even when viewing at a high powers, and features smooth motions to make manual tracking of celestial objects a breeze
- Includes 2 eyepieces

Member Price: \$200 / Non-Member Price: \$350



Orion SkyQuest XT10 10" Dobsonian Telescope

- Big 10" (254mm) aperture reflector telescope gathers loads of light for bright views of nebulae, galaxies, star clusters, and close-up study of the Moon and planets
- Stable support provided by the wooden Dobsonian telescope base and CorrecTension adjustment knobs keep the telescope optical tube balanced in any viewing position
- Simple Dobsonian point-and-view ease of use plus IntelliScope smart equals a reflector telescope for a lifetime
- Includes 2" Crayford focuser, two 1.25" Sirius Plossl telescope eyepieces (25mm and 10mm), a 9x50 right-angle correct-image finder scope, eyepiece rack, collimation cap, and Starry Night software

Member Price: \$300 / Non-Member Price: \$500





Telescope Items For Sale



Orion SkyQuest XT10i 10" Dobsonian Intelliscope

- This clever push-to computerized Dobsonian reflector telescope can lead you to more than 14,000 celestial objects with its included IntelliScope Object Locator
- Big 10" (254mm) aperture reflector telescope gathers loads of light for bright views of nebulae, galaxies, star clusters, and close-up study of the Moon and planets
- Stable support provided by the wooden Dobsonian telescope base and CorrecTension adjustment knobs keep the telescope optical tube balanced in any viewing position
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Member Price: \$400 / Non-Member Price: \$650



Meade ETX 70

- 70 mm Exclusive multicoated, air-spaced achromatic objective lenses
- Razor-sharp images of both astronomical and terrestrial subjects
- Extremely portable at only 6.8 pounds
- Telescope can be used on any flat surface

Member Price: \$70 / Non-Member Price: \$125



Meade ETX 125 Maksutov - Cassegrain

- OTA and fork mount seem to be in excellent condition
- The hand controller is missing – so we are unable to verify the operation of the mount
- The optics of this telescope are highly rated
- No Tripod
- Meade is no longer in business

Member Price: \$150 / Non-Member Price: \$250

Meade 8" Schmidt Cassegrain with Equatorial Wedge Mount and Tripod



- 8" LX90 OTA
- Meade Equatorial Wedge Mount and Tripod
- Goto hand controller
- Mount needs work

Member Price: \$400

Non-Member Price: \$700

Various Filters – 1.25"

- Red
- Yellow
- Blue
- Green
- Multiple O3 filters

Member Price: \$100 / Non-Member Price: \$200