FBAC Club Member Profile: Alicia R. Tristan
by Cynthia Gustava

Alicia has been homeschooled since first grade. Her knowledge of astronomy has been almost entirely self-taught.

Much encouragement and inspiration has come from the wonderful group of mentors she has met through the Fort Bend Astronomy Club, the George Observatory, and Houston Community College.

You started studying astronomy at a very early age! What peaked your interest and got you started?

Yes, I started studying astronomy at age 6. It's rather difficult to pinpoint exactly how it started! I've been studying astronomy for about 12 years now so it seems like it's always been a part of my life.

When I was in the first grade, I found a very special astronomy book in the library at my elementary school titled: "The Stars: A New Way to See Them," by H.A. Rey. While reading this book, I learned all about the constellations, the distances of the stars, and the seasonally-changing appearance of the night sky; all topics which I'd never before considered or even imagined.

At about the same time, I was an avid reader of my older brother's Boy Scout Handbook, and enjoyed learning about first aid, cooking, navigation, plants and animals, etc. This book also happened to have a seven-page section on astronomy with a few basic star charts and bits of information. I loved reading that section most of all, and to this day, the book still opens automatically on that section! Finally, in that year (1997) Comet Hale-Bopp made its historic and spectacular appearance. I distinctly remember being able to walk outside at sunset, look up without any visual aid, and see it glowing in the sky above the rooftops of the neighbor's houses. It was such an amazing feeling to be able to witness that, and even as such a young child, it had a strong impact on me.

Were you also looking through telescopes at that age and what objects in particular fascinated you?

I received my first telescope, a 4-1/2 inch Celestron Star Hopper reflector, for Christmas 1997. I also would occasionally borrow my Dad's binoculars. However, most of my first observations were unaided, as I was learning to recognize the constellations and the brightest stars. It became a mission of mine to see as many as I could, and I kept a checklist of which ones I had seen. I also had a fascination with M31, the Andromeda Galaxy. One of the notes on my checklist even mentions one of my first observing goals, where I wrote in a childish scrawl: "i'm GOiNG TO see the ANDromEDA Galaxy…!"

Do you remember the first telescopic object that you observed in the night sky?

I'm pretty sure that the first object I observed was the Orion Nebula. At the time I first got my telescope, I had been reading about it while studying the constellation Orion, and knew the location of the nebula by heart before I had even ever searched for it. So with the help of my Dad and my brother, we set up the telescope and successfully located it a short while later. Some of the first objects we saw were that nebula, the Pleiades, and Vega. We even spent a whole night searching for nothing but the Andromeda Galaxy until we found it.

When did you start volunteering for the George Observatory?

I have been volunteering since 2004. My volunteering nights include special groups on Friday nights, Saturday Public Nights, and annual Astronomy Day activities. I have logged 100+ volunteer hours in 2006, 2007, and 2008. I also volunteer for the Fort Bend Astronomy Club's *Astronomy on Wheels* program, and mobile star parties through both HCC (Houston Community College) and TORRE (Texas Observatory for Remote Research and Education).

When you volunteer at the George, what astronomical equipment do you use?

When I volunteer out at the George Observatory, I like to borrow my favorite deck telescope, a 13.1" Coulter reflector. It's a wonderful telescope with great optics, and is just the right height for many of the visitors. Sometimes I also bring my own equipment out, in which case I set up either my 4-1/2" or my 6" reflector, depending on which objects I plan to show.

Do you find young people are interested in the current and future robotic use of telescopes?

Very much so. The Texas Observatory for Remote Research and Education (TORRE) is a partnership of Rice University and Houston Community College. They are doing their part to help bring access to these instruments to students, with a special consideration for women, minorities, and the economically disadvantaged. Through programs such as this, robotic telescope technology is effectively working to promote and popularize astronomy by making it more readily available to the public. As internet-controlled remote telescopes become more sophisticated, they will likely prove to be a valuable opportunity and resource for all those who otherwise might not have access to instruments of that caliber. Remote telescopes have long been used by professional observatories, and now are poised to become the next great advancement in amateur astronomy, as well as the means to make this science available to all. TORRE is just one of many programs designed to further that potential.

What do you do for the TORRE program?

Through TORRE, I have written a robotic telescope users manual and am currently working on an astronomy lab curriculum for students at HCC.

How do you envision amateur astronomy in the next 25 years as it pertains to your developing expertise with robotics?

As I see it, with the steadily growing resource of remote telescopes and the invention of ever more sophisticated space telescopes, robotics will very likely play a large role in of the future of astronomy, for both amateur and professional astronomers alike. Depending on what sort of turns my career in astronomy takes, a background in robotics may be knowledge which will prove extremely useful if I'm involved in the operation, construction, or repair of such instruments. Robotics has always been on the cutting edge of technology, and I think that in astronomy – and in all of the sciences – it's going to help pave the way for the next great discoveries and advancements.

Do you find the science of astronomy is active in young people's minds?

Definitely! Astronomy does indeed seem to be very present in the minds of the younger generations. Actually, it often seems as though astronomy is more of a part of mainstream culture than it ever was before, since we are now living in a time where space travel is commonplace, and amazing images of the universe such as those taken with the Hubble Space Telescope can be found everywhere.

Speaking from the viewpoint of one of the "young people," I find it difficult to imagine a time before all of that! It's just such a big part of everyday life. I witness this outlook all the time when volunteering at the George, as entire families often come to view through the telescopes, and many times even the youngest of the children know what Saturn looks like, and are so excited at the prospect of seeing it with their own eyes. They have a genuine interest in learning about astronomy and the universe, and some of the best astronomical questions I've heard have been asked by kids and young adults.

How does "star hopping" fit in to your work during a typical observing session at the George Observatory?

I've always been an avid star hopper, and it's almost always my preferred method of locating objects. Initially, it does take longer to learn how to find objects than by other means (such as "go-to" computer systems), but it's a practice-makes-perfect sort of thing. And eventually, an experienced star hopper can locate previously found objects faster than any computerized telescope! This sort of versatility is especially useful for deck telescope operators at the observatory, who often attempt to locate planets, stars, and other objects quickly through passing gaps in the clouds, so that visitors can see some of the wonderful sights even on a considerably cloudy night.

For you, what is the most rewarding aspect of this hobby?

In my own observing, the most rewarding part is locating objects I've never observed before. It's such a "eureka" moment when you first see them in the eyepiece! Plus, you never know quite what they're going to look like, as their appearance may vary depending on what telescope you're using, what the weather is like, etc. Often, even if you research an object beforehand; you're bound to be surprised by what you see when you find it. Another part of astronomy that I find particularly rewarding is volunteering at star parties and other public observing events. Often, a great number of the people at these events have never looked through a telescope before, and are truly amazed by what they see. There's nothing quite like showing someone an object like Saturn's rings for the first time and hearing their gasps of astonishment, along with exclamations like "Wow, I didn't know you could see that!"

Do you have an amateur observing mentor?

I've had the privilege of knowing many very talented observers, both in the Fort Bend Astronomy club and from volunteering at the George Observatory, and have learned so much

about astronomy from all of them. They've all been very kind and welcoming, and are always more than happy to share their experience, skills, and advice. On more than one occasion, they've even gone out of their way to locate various astronomical objects that I'd always wanted to see, so that I can get a good look at them for the first time!

Tell us about a typical observing session. Do you observe with a team, solo, or both?

All of the above, depending on the event. Many of the observing sessions I attend are for public and community star parties through the Fort Bend Astronomy Club and the Houston Community College S.T.A.R. Squad, where I observe with a team of fellow astronomy club members. However, for my own personal observing it's usually either solo, with a friend or family member, or with a small group of other observers.

Where is most of your observing done?

Much of my observing is "urban" observing at the star parties mentioned above, which are held in and around the Houston area. However, most of my personal observing is done from either the George Observatory or at the annual Texas Star Party in West Texas. I've always been fond of backyard observing as well, and often set up my telescope in my own driveway for a glimpse of the Moon or the planets.

What helpful advice would you pass on to observers just starting out in astronomy?

I would say that the best way to start out would be to invest in some basic constellation charts and a pair of binoculars or a small telescope. Becoming familiar with the constellations is one of the best ways to learn the night sky, as the whole sky is subdivided into them, like a puzzle. By learning the constellations, one "piece" at a time, the sky slowly becomes more and more familiar, until eventually it all fits into place. Binoculars or telescopes are also a worthy investment, as you can see many objects with them that are not visible with the unaided eye. This is a useful resource to have access to as your knowledge progresses. Other great resources are your local astronomy clubs. There are many that are based in and around Houston, and they hold monthly meetings, star parties, and other astronomy-related events. They also have lots of other members who are more than happy to answer questions or share their experience with beginning observers.

Tell us more about "Students for the Exploration and Development of Space" and how you got involved in this?

Students for the Exploration and Discovery of Space (SEDS) is an organization comprised of various chapters, based at universities and colleges throughout the U.S. and the world. Their mission is to promote the exploration and development of space through education, which they accomplish through a variety of activities, including outreach and observing trips.
I'm not a member myself, but I've always been a big fan of their website, as it has wonderful reference information and links to other great astronomy sites. One day, while browsing their Messier Object Database, I found a link to a page containing some of the common names

assigned to some of the more famous deep sky objects. While looking through the list, which included many of the well-known objects such as the Saturn Nebula, the Pinwheel Galaxy, and other such imaginative monikers, I noticed that one of my favorite named objects was missing from the list – NGC 1535, "Cleopatra's Eye" nebula. On the page, I noticed that their readers were invited to submit additional names for the list, so I set about contacting them. I sent in the information for NGC 1535, as well as my own name suggestion of the "Silver Sliver," a nickname I'd come up with a few days earlier for my favorite galaxy, NGC 891. To my great delight, both names were added to the list!

And what do you plan for your future? Teach astronomy? Write books? Be a professional astronomer?

Many, if not all, of the above! After earning my associate's degree in Science from Houston Community College, I'm planning to transfer to a 4-year university to earn my bachelor's in astronomy. After that, I'll either pursue a higher degree or start working towards my career, depending on what opportunities are available. I'm hoping to eventually teach, participate in research, and write books on observational astronomy. At the moment, most of my plans are based on the world of amateur astronomy, so I'm not planning on going professional. But if there's one thing astronomy's taught me, it's to keep an open mind and to "never say never." So it's still a possibility which I may pursue after all, if the opportunity presents itself.

Just recently, you received the prestigious "Jack Horkheimer/Parker" Award. How did that come about?

There are four Jack Horkheimer Awards presented to an Astronomical League member under the age of 19 on the date of the application. The Award is based upon service to the League, either directly or through service to any Astronomical League society. Service could be in the form of educational outreach, knowledge and skills at public star parties or other astronomical service.

The Horkheimer/Parker Award is a new award named in honor of Dr. Donald Parker. Don Parker, a retired physician from Coral Gables, Florida, has had a lifelong interest in astronomy, and since 1953, has built a number of telescopes ranging in diameter from three to sixteen inches. Over the years, Dr. Parker came to specialize in Solar System research and planetary photography. He has taken over 20,000 photographs and electronic images of Mars and Jupiter, as support for professional astronomers at NASA, JPL, and various observatories.

My name was submitted by the Fort Bend Astronomy Club as a young astronomer who has provided exemplary service to the club and for volunteering at the George Observatory, and as a talented young observer.

Alicia Tristan Accomplishments:

- Member Fort Bend Astronomy Club (FBAC) since 2004
- Secretary FBAC, 2008 and 2009 terms
- Trained on 18" East Dome telescope at George Observatory (earned certificate 2006, refresher course 2007)
- Completed FBAC Planetary Nebula Observing List (earned certificate 2006)

- Developed Open Cluster Observing List for FBAC (2007)

- Developed Carbon Star Observing List for FBAC (2008)

- Developed and presented *Seeing Red: An Introduction to Carbon Stars* to FBAC, NHAC (North Houston Astronomy Club); and HAS (Houston Astronomical Society)

- Developed Carbon Star Observing Program, submitted proposal to The Astronomical League, currently under review

- Compiled comprehensive list of carbon stars mag. 8.5 to 14 visible from North America

- Suggested common name *Silver Sliver Galaxy* for NGC 891 to Students for the Exploration and Development of Space (www.seds.org). The name was adopted there and also at The Night Sky Atlas (http://skyatlas.rgbstore.com), and DeepskyLog Vereniging Voor Sterrenkunde (http://www.deepskylog.org)

- Attended Texas Star Party 2007 - completed Shapley-Ames Galaxy List
- Attended Texas Star Party 2008 - completed Globular Glory List, and Local Group Galaxies Advanced List (second youngest in TSP history to complete the advanced list)
- Attended Texas Star Party 2009 - completed Texas Star Party 5x5, and Galaxy Groups-Clusters-Superclusters Advanced List

- Currently taking dual-credit classes at Houston Community College (4.0 GPA)

- President Houston Community College Star Squad Astronomy Club, 2008/09 term

- Working with remote robotic telescopes with the Tzec Maun Foundation (http://www.tzecmaun.org) through HCC - advisor, Don Wells
- Images - http://www.flickr.com/photos/capella_891/

- Working as a part-time technician in Telecommunications and Instructional Computing Support dept. at HCC under Roland Fields

- Accepted research assistant fellowship offered by Dr. Juan Carlos Reina - Director Title V Faculty Leadership Program (http://sophia.hccs.edu/TitleV), Professor of Physics and Astronomy at Houston Community College; working with a team of professors and students in project TORRE (Texas Observatory for Remote Research and Education); in partnership with Rice University, University of Texas, and the McDonald Observatory; funded by the National Science Foundation (TORRE - http://www.torreonline.org)

- Alicia's other interests include Photography, Geology, Meteorology, and Biology