

The ECLIPSE

March
2026

The Newsletter of the Barnard-Seyfert Astronomical Society



Happy Anniversary, Salyut 1

by Robin Byrne

This month we celebrate the anniversary of the launch of the world's first space station. In 1966, the Soviet Union began developing a secret space station, intended for military use, called Almaz, which would be launched in 1973. After the U.S. successfully landed men on the Moon in 1969, the program shifted to being a civilian space station that would be occupied by two or three cosmonauts. By combining the shell originally designed for Almaz with components already in use by the Soyuz capsules, they were able to complete the construction two years earlier than originally planned for Almaz.

The completed space station was 66 feet long, weighed over 40,000 pounds, and had 3,500 cubic feet of habitable space inside (about the size of a large backyard swimming pool). It would be launched unmanned, and the cosmonauts would travel in a separate Soyuz capsule to the station. The station included a transfer compartment where the Soyuz would dock with the station and then the cosmonauts would be able to move from the capsule to the station. Prior to this, the Soviet cosmonauts had to perform spacewalks to move from one craft to another.

The main compartment was 13 feet in diameter and housed their work stations and control panels. There were also about 20 porthole windows for viewing Earth and space. Walls were painted with different colors to provide a way for the cosmonauts to orient themselves in the weightless environment.

Another pressurized compartment was home to most of the equipment that kept the space station functional: life support, communications, space station controls, and the power supply.

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Contact BSAS officers at
bsasnashville.com/contact, or email info@bsasnashville.com

About BSAS

Organized in 1928, the Barnard-Seyfert Astronomical Society is an association of amateur and professional astronomers who have joined to share our knowledge and our love of the sky.

BSAS meets on the third Wednesday of each month at the Warner Park Nature Center in Brentwood. Experienced members or guest speakers talk about some aspect of astronomy or observing. Subjects range from how the universe first formed to how to build your own telescope. The meetings are informal and time is allotted for coffee and hanging out. You do not have to be a member to attend the meetings.

Membership entitles you to subscriptions to *Astronomy and Sky & Telescope* at reduced rates; the club's newsletter, the *Eclipse*, is sent to members monthly. BSAS members also receive membership in the Astronomical League, receiving their quarterly newsletter, the *Reflector*, discounts on all astronomical books, and many other benefits.

In addition to the meetings, BSAS also sponsors many public events, such as star parties and Astronomy Day; we go into the schools on occasion to hold star parties for the children and their parents. Often the public star parties are centered on a special astronomical event, such as a lunar eclipse or a planetary opposition.

Most information about BSAS and our activities may be found at bsasnashville.com. If you need more information, write to us at info@bsasnashville.com.

Free Telescope Loans!

Did someone say free telescopes to borrow? Yes, you did read that correctly. The BSAS Equipment & Facilities Committee has telescopes ranging in size from 2.6" to 8" that current members can actually have to use for up to 60 days at a time. We also have some other items in the loaner program such as a photometer, H-alpha solar telescope, educational CDs, tapes, DVDs, and books. Some restrictions apply. A waiting list is applicable in some cases. The BSAS Equipment Committee will not be held responsible for lost sleep or other problems arising from use of this excellent astronomy gear. For information on what equipment is currently available, contact info@bsasnashville.com.

President's Corner

by Steve Hughes

Greetings Astromites!

So we **FINALLY** had our first ever joint-venture **BSAS/DYER Star Party** on Saturday, February 28th at Shelby Bottoms Nature Center! Around 500 guests joined us for about 3 hours of astro-nomical fun! Mostly clear skies, mild temps, and around 15 scopes and astronomers who amazed the crowd with incredible views and witty banter!

The BSAS and Dyer welcome tables were at **FULL** capacity, and vendor trucks kept the human-fuel flowing! All-in-all a huge success! Many thanks again to everyone who came out and helped make this one of the biggest BSAS events ever!

The joint-venture BSAS/Dyer star parties will continue for the next few months, at least until Dyer reopens. After that, they will still continue though maybe on a less frequent basis. Be sure to join us at our **next BSAS/Dyer Star Party this Saturday, March 21st in Fairview**. The Fairview Nature Park is still closed due to storm damage, so stay tuned for exact location.

For you ZOOMers out there, we haven't forgotten about you!.. We're still in the process of getting some technical issues sorted out, but a new and improved zoom experience is coming soon!

As always, if you'd like to come help us out we'd love to hear from you! (Specifically we could really use some help with the monthly meetings setup!) Just shoot us an email at info@bsasnashville.com!

Be safe, be kind, and keep looking up!

Steve Hughes
President, BSAS

"Every star may be a sun to someone..." — Carl Sagan

The BSAS 2026 Member Wall Calendar has LANDED!!

The BSAS 2026 Member Wall Calendar is HERE!!! VERY special thanks to all the BSAS members who shared some of their amazing images to make this project possible!! We still have a few in stock, available at any event or on the BSAS website. Calendars are \$20 for members, \$25 for non-members. Click or Copy and paste the link below for a preview.

<https://photos.app.goo.gl/gU2dxM3iM5vEpqcW6>

Upcoming Events & Activities

April Member Meeting

- **Wednesday, April 15**
- **7:00 - 9:00p.m. (ish)**
- **7311 Tennessee Highway 100**
- **Nashville, TN 37221**

Other Upcoming Events

The joint-venture BSAS/Dyer star parties will continue for the next few months while the observatory is undergoing renovations. Be sure to join us at our next BSAS/Dyer Star Party **this Saturday, March 21st**, in Fairview. The Fairview Nature Park is still closed due to storm damage, so stay tuned for exact location.

Call for Volunteers!!

BSAS is a non-profit, 100% volunteer operated organization. Please consider giving us a hand if you can!

Specifically, we could use some help with the following:

- > Monthly Meeting Setup: Help set up the space and tech for the meetings.
- > Program Committee: Help research content for our monthly meetings.
- > Event Crew: Help with setting up our various events.
- > Newsletter: Help write and curate The Eclipse newsletter

If you have an interest in helping with any of the above, or in any other way, please email us at info@bsasnashville.com.

Missing NSN Articles?

The NASA Night Sky Network (NSN) is still in operation, but has ceased publication of monthly articles for astronomy clubs due to government-mandated budget cuts in 2025. NSN has activated an archive of “evergreen” pieces, anew we will be posting those in future newsletters as space permits!

The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.org to find local clubs, events, and more! You can catch up on all of NASA's current and future missions at nasa.gov. With articles, activities and games NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

Looking For Meeting Minutes?

Regular- and Board-Meeting minutes are stored on the BSAS Google Drive, and available for review once posted.

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The last section was unpressurized, and was where the engines were housed. While on the exterior of the space station were solar panels for power and equipment used to control the spacecraft's orientation.

One of the main goals of the Salyut space station was to perform scientific experiments in Earth orbit. The station was equipped to study how long-term weightlessness affected people, including various devices intended to counteract the loss of muscle mass, such as a treadmill, elastic bands, and a negative pressure garment that provided stress on the muscles. There were also telescopes for studying the Earth, the Sun, and stars. And, for the first time, there was a refrigerator to hold a wider variety of foods than had been previously available on a spaceflight.

Originally, the station was going to be named Zarya, which means "dawn," to symbolize the start of a new era in their space program. However, the Soviet Flight Control Center was already using Zarya as a radio call sign. So, ten days before launch the station was renamed to Salyut, meaning "salute." Meanwhile, the word "Zarya" had already been painted on the module, so the name did go with it into space.

On April 19, 1971, at the Baikonur Cosmodrome, a Proton rocket carried Salyut 1 into Earth orbit. Once in orbit, the solar panels and the communication antennas deployed. Unfortunately, a protective cover didn't fully detach, which prevented some of the Earth observations to take place.

Three days later, Vladimir Shatalov, Aleksei Yeliseyev, and Nikolai Rukavishnikov launched aboard the Soyuz 10. After almost 24 hours, they rendezvoused with Salyut 1 and completed a soft-dock. However, after over five hours of effort, they were unable to achieve a hard-dock. With the Soyuz spacecraft unequipped for a longer flight, they had to reluctantly abort the mission and return to Earth on April 24.

In the following month, Soviet engineers quickly fixed the problem with the docking mechanism, allowing the next crew to make an attempt. On June 6, 1971, Georgy Dobrovolsky, Vladislav Volkov, and Viktor Patsayev launched aboard the Soyuz 11. Within three hours of launch, they had successfully docked with the station, becoming the first people to inhabit an earth-orbiting space station.

For the next 23 days, the crew tested out the space station's equipment, performed medical tests, and conducted astronomical observations. For the astronomical observations, they used the Orion 1 Space Observatory, which was a reflector telescope equipped with an ultraviolet spectrograph. Becoming the first man to use a telescope in space, Viktor Patsayev obtained ultraviolet spectra of the stars Vega and Beta Centauri. Also during the flight, Patsayev became

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Become a Member of BSAS! Visit bsasnashville.com to join online.

All memberships have a vote in BSAS elections and other membership votes. Also included are subscriptions to the BSAS and Astronomical League newsletters.

Annual dues:

- Regular: \$25
- Family: \$35
- Senior/Senior Family: \$20
- Student:* \$15



*** To qualify as a student, you must be enrolled full time in an accredited institution or home schooled.**

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the first person to celebrate a birthday in space. There were several classified military experiments on board, which, presumably, the crew also performed. There was a scare during the mission, when on June 16 one of the control panels began to smoke. Fortunately, turning off the unit solved the problem.

The mission ended up being cut short due to other technical issues arising. So on June 29, 1971, after spending a record 23 days in space and completing 363 orbits of Earth, the crew returned to the Soyuz 11 capsule, undocked, and parachuted back to Earth. When the recovery team opened the capsule, they found that all three crew members were dead. The subsequent investigation discovered that a pressure valve had malfunctioned, causing the cabin to lose atmospheric pressure. At this time, cosmonauts did not wear pressure suits in the Soyuz capsule, which could have saved their lives. The three men, Georgy Dobrovolsky, Vladislav Volkov, and Viktor Patsayev, have the unfortunate distinction of being the only people to have died in space.

Following the tragedy, many things changed. First, it was determined that all future Soyuz missions would require the cosmonauts to wear pressure suits. Second, all missions were put on hold while the Soyuz spacecraft was redesigned to accommodate the pressure suits, as well as, to be sure such an equipment failure never occurred again.

At first, the Salyut station was moved to a higher orbit, in the hopes that everything would be fixed in time to send another crew. However, the redesign took too long for that to be a reality. So, after six months in orbit, and with fuel running out, it was decided to de-orbit the Salyut Station on October 11, 1971, causing it to burn up over the Pacific Ocean.

While Salyut 1 ended prematurely, it wasn't the end of the Salyut program. More Salyut stations were placed in orbit, including what would become the Mir Space Station, as well as the Zvezda module of the International Space Station.

Here we are, 55 years after the first space station. We've come to the point where people living and working on the International Space Station is barely newsworthy, and now some private companies are making plans to place their own stations into Earth orbit. We owe a great debt to Georgy Dobrovolsky, Vladislav Volkov, and Viktor Patsayev, who tragically lost their lives after proving that we could, indeed, live and work in space.

References:

Salyut 1 - Wikipedia

https://en.wikipedia.org/wiki/Salyut_1

50 Years Ago: Launch of Salyut, World's First Space Station by John Uri, April 19, 2021

<https://www.nasa.gov/missions/station/50-years-ago-launch-of-salyut-the-worlds-first-space-station/>

Salyut 1: The First Space Station by Nola Taylor Redd, July 26, 2012

<https://www.space.com/16773-first-space-station-salyut-1.html>

Cover: Illustration of the Salyut space station with a Soyuz crew transport spacecraft approaching at upper left.

Credit: *Image courtesy of RIA-Novosti.*



In honor of the club's 90th anniversary we partnered with Hatch Show Print to create a unique poster that would honor the achievement of the club. For those who don't know Hatch Show has been making posters for a variety of events and concerts for 140 years. In all that time we are their first astronomy club.

On the poster at the center is the moon. This was made from a wood grained stencil that the shop has used for over 50 years. To contrast that the telescope that the people are using is a brand new stencil made for our poster.

The poster has three colors. First the pale yellow color of the moon was applied. Next the small stars, circles, and figures at the bottom were colored in metallic gold. The third color is a blue for the night sky.

Where it overlaps with the metallic gold it creates a darker blue leaving the figures at the bottom looking like silhouettes.

This was a one-time printing so the 100 that we have are all that will be printed.

The prints are approximately 13 3/4" x 22 1/4" and are available for \$20 at our membership meetings, or \$25 with shipping by ordering through bsasnashville.com. Frame not included.



Next BSAS meeting
Wednesday, April 15, 7:00 p.m.

Warner Park Nature Center
 7311 Tennessee Highway 100
 Nashville, TN 37221