

The ECLIPSE

January 2026

The Newsletter of the Barnard-Seyfert Astronomical Society



Happy Birthday Mercury-Redstone 2

by Robin Byrne

This month, we celebrate the anniversary of an important milestone in the history of manned spaceflight, even though no human was on the mission. Before sending a person into space, many test flights were necessary. Some of those flights involved just the rockets and space capsule mock-ups, while others included non-human passengers. The Soviet Union used dogs for their test flights, but in the United States, monkeys and chimpanzees were the preferred test animals.

One of those chimps was known as “Number 65.” He was born in 1957 in French Cameroon, where he was caught by trappers. He then lived in Florida on a rare bird farm, before being sold in 1959 to the U.S. Air Force. This was when he was moved to the Holloman Air Force Base in New Mexico to become one of 40 chimps being trained for the space program.

Chimps were chosen due to being physically similar to humans, as well as being intelligent. The chimps were trained to perform simple procedures, such as pulling levers at designated times. In this way, they could be used to test how well a future astronaut would perform tasks in the space environment. The training involved the chimps receiving banana pellets when they did the correct procedure, or a small electric shock if they did not. And, like their human counterparts, the chimps were placed in g-force simulators and flown on zero-g trajectories to desensitize them to those environments.

At the same time that the chimps were being trained, NASA was testing their launch vehicles. The first flights were going to be sub-orbital missions, in which the astronaut would be launched almost straight up into space, and would then return almost straight back down to Earth, without ever entering orbit. The rocket that would be able to lift the capsule up to this height was the Mercury-Redstone (MR). In November of 1960, the first test mission, MR-1, was unsuccessful, with the rocket lifting only a few inches when a faulty

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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 fellowship. 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 astro-sapiens! As we say goodbye to 2025, let me say thank you to everyone who has contributed to BSAS over the years! BSAS has brought space and astronomy closer to literally thousands of people, and it's been a blast and a privilege to be a part of it! As the new president, I'll do my best to keep things in focus, and try not let it get too far out of collimation.

I'd also like to ask everyone to join me in giving an "astronomical" thank you to our outgoing president, Tom Beckermann! Tom has been instrumental in guiding the ship and keeping BSAS sailing smoothly for the last four years! Thank you for all your hard work Tom!

Looking ahead, we've got some exciting things planned for 2026! A new meeting location at the **Warner Park Nature Center**, joint star parties with the **Dyer Observatory**, more Telescope Workshops throughout the year, amazing guest speakers, the **BSAS 2026 Member Calendar** ... just to name a few!

Whether your a pro or a newbie, BSAS "is" it's members, and we're glad to have each and every one of you! If there's ever anything myself or the board can help with, or if you have any questions, comments or suggestions, please don't hesitate to reach out 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!!

Calendars will be available at the Wednesday, Jan. 21, meeting, and are **\$20 for members, \$25 for non-members**. Calendars will also be available for purchase on the BSAS website soon!

Click or Copy and paste the link below for a preview!

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

Upcoming Events & Activities

January Member Meeting

Our first club meeting of 2026 is just around the corner! I hope everyone can join us for the first BSAS meeting of 2026 at our *NEW* location, the **Warner Park Nature Center!!**

- **Wednesday, January 21**
- **7:00 - 9:00p.m. (ish)**
- **7311 Tennessee Highway 100**
- **Nashville, TN 37221**

This month: Annual Public Telescope Workshop! (And mini-star party!)

Need some help with your telescope or rig? Want to learn how to collimate your scope? Can't figure out your back focus? Well bring your scope, because this month is for YOU!! Several BSAS "experts" will be on hand to answer questions and assist in any way they can! And feel free to bring your telescope (or not, lol) if you'd just like to join us for a "mini-star party," as we have the park until 11 p.m.! (Weather permitting of course.)

Joint BSAS / Dyer Observatory Star Party!

Join us **Saturday, January 24**, as **BSAS** and the **Dyer Observatory** join forces to host one of the **biggest Nashville Star Parties of the year!!** See and experience expert-guided telescope views of amazing winter gems like the Moon, Jupiter, Saturn, Orion Nebula, Pleiades, Andromeda Galaxy, and more!!

***** This is a weather dependent event! Please check here for last minute info!! *****

***** Rain date, Saturday, January 31! *****

Everyone is welcome! Kids and adults alike! There will be several telescopes set up for visitors to look through and check out. If you have a telescope you are welcome to bring it, but you don't have to. Just bring your curiosity and enthusiasm for space and astronomy!

Vendors will also be on hand offering hot/cold drinks, pizza, and donuts!!

YOU DO NOT NEED TO REGISTER WITH DYER!! This is a public event, open to all! Join us!

Missing Minutes?

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

Mercury-Redstone 2, continued from Page 1

signal shut off the engine, causing it to drop back down to the launch pad. Since the rocket was intact, NASA was able to reuse it for a second test, now named MR-1A. On December 19, 1960, it successfully launched, but the trajectory was steeper than planned, and the g-forces were too high for a human to survive.

It was quickly determined that the issues were due to how the electrical wires were configured, which was easily fixed. So, the next test of the MR would have an occupant in the Mercury capsule - a chimpanzee. If this mission, MR-2, was successful, then the next flight after that would take a man into space.

On January 2, 1961, six chimps from Holloman Air Force Base were moved to a building at Cape Canaveral, Florida. Over the next three weeks, all six went through testing in Mercury capsule simulators, each of the chimps becoming experts at their tasks. It wasn't until the day before the scheduled launch that the prime candidate and their backup were chosen. The backup was a female chimp, who was dubbed Minnie. The prime candidate was a male, Number 65, who was given a new name - Ham, named for the Holloman Aerospace Medical Center.

The day before launch, both chimps were put on a "low residue" diet (to minimize the chances they would defecate during the flight). On the morning of January 31st, both chimps were fitted with biosensors, put in their space suits, and strapped into their pressurized couch-cabins. Ninety minutes before the scheduled launch, Ham, in his pressurized cabin, was placed in the Mercury capsule. After nearly four hours of launch delays, MR-2 and Ham lifted off.

More than one issue quickly occurred. About 2 minutes after launch, a loose pin caused the air inlet valve to open, resulting in a loss of air pressure. Luckily for Ham, his pressurized couch-cabin protected him from any danger.

Another issue was the flight path. The angle was too high, resulting in a faster speed, a higher altitude, and greater g-forces than expected (as high as 14.7 g's). With the higher altitude, Ham experienced weightlessness for over 6 minutes, instead of the 4.9 minutes that had been planned. This all led to splashing down 130 miles from the expected landing area in the Atlantic Ocean. Despite the complications, Ham performed all of his tasks well. The entire flight lasted only 16 minutes and 39 seconds.

Because of splashing down so far from the planned recovery area, it took 27 minutes before a search plane spotted the spacecraft. Meanwhile, there were more problems arising while Ham waited. When it splashed down, the heat shield had been jarred against the bottom of the capsule, puncturing it in two places. The capsule was floating on its side, and water was entering it through the holes, as well as through the air inlet valve that opened during the flight. The helicopter crew that picked up the capsule estimated there was about 800 pounds of water inside the spacecraft

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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.**

Mercury-Redstone 2, continued from Page 5

when they first lifted it out of the ocean. After lowering the capsule onto the USS Donner, it was opened to find Ham in reasonably good shape. He happily ate an apple and half an orange that he was given. He even shook hands with the commander of the vessel. Later in the day, after returning to Cape Canaveral, he was not as calm, and was visibly upset when brought in front of the press, probably due to all the noise and camera flashes.



Once back in familiar territory, Ham was given a complete medical examination. Other than being tired and dehydrated, he was in good shape. Analysis of his performance in space showed that his reaction times were just slightly slower than on Earth. Ham proved that astronauts can indeed function well in a weightless environment.

The original plan was for the next flight to carry America's first astronaut into space. However, because of the issues that occurred, it was determined that one more test flight would be needed, called Mercury-Redstone Booster Development (MR-BD), which launched on March 24, 1961. That delay led to Alan Shepard's flight being postponed to May 5 of that year. Meanwhile, the Soviet Union sent Yuri Gagarin into orbit almost a month earlier, on April 12, winning the race for first man in space.

Ham's reward for his excellent performance was a move to the National Zoo in Washington, D.C. He lived there until 1981,

when he was moved to a colony of chimpanzees in North Carolina. Ham died on January 19, 1983, at the age of 26. His grave can be visited at the New Mexico Museum of Space History in Alamogordo. You can also see his spacecraft on display at the California Science Center in Los Angeles.

Ham's flight on MR-2 helped prove that astronauts would be able to function in space, and it showed that our space technology could work well even when things went wrong. NASA's priority of ensuring the safety of the astronauts did cause us to lose the race for first man in space, but that approach also got us safely to the Moon. In many ways, we would not have made it that far if not for Ham and MR-2.

References:

[Mercury-Redstone 2 - Wikipedia](#)

[Mercury Primate Capsule and Ham the Astrochimp, National Air and Space Museum, Nov. 10, 2015](#)

'We Gave It Away': Remembering the Unhappy Flight of Ham the Chimp, 60 Years On; *America Space* by Ben Evans, 2021



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, Jan. 21, 7:00 p.m.

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