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# ZOG-43

Official Publication of NARHAMS  
July / August 2024





**Volume 46 ; Number 4  
July / August 2024**

Official Newsletter of NARHAMS model rocket club  
Editor: Alex Mankevich  
Associate Editor: Thomas Henderson

ZOG-43 is dedicated to providing current information about NARHAMS' activities, which includes outreaches, sport launches, competitions and club business. We aim to provide updates on model and real world rocketry, outreaches, educational material, and some entertaining information. We try to appeal to model rocketeers of all ages, abilities, and interest. We like to share the talents and accomplishments of our members. The ZOG-43 is authored by real people, no AI-generated content here.

ZOG-43 is published bimonthly and is available to all paid up members of NARHAMS. Club membership is open to all, dues are 10 cents per week. The content of ZOG-43 is copyrighted. Free and unlimited reproduction is granted with the proper credit to the author and/or ZOG-43.

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**About NARHAMS:**

The National Association of Rocketry Headquarters Astro Modeling Section, or NARHAMS, serves Baltimore, the state of Maryland, Washington, DC and the surrounding Metropolitan areas. The club is a section (#139) of the National Association of Rocketry (NAR). We are the oldest continuously active model rocket club in the United States, first established as a high school club in 1963, changing our name to NARHAMS when chartered as a NAR section in 1965. NARHAMS is the only seven-time winner of the NAR "Section of the Year" award (1997, 1998, 1999, 2001, 2004, 2006, and 2007).

NARHAMS members regularly fly their model rockets at NASA's Goddard Space Flight Center in Greenbelt, MD. and at Krimgold Park near Woodbine, MD. NARHAMS welcomes all to our monthly meetings and launches.

For details, dates and directions to our club, meetings and launches, go to:  
<http://narhams.org>

**From the Editor:**

NARHAMS participated in two major outreach events during the past few months. We attended the first ever Open House hosted by the Maryland Wing, Civil Air Patrol (CAP) at the BA-79 Nike Missile Site near Granite, Maryland. We also conducted our annual commemoration of the Apollo 11 moon landing at the NASA Goddard Visitor Center.

The sport launches at Krimgold Park resumed although at a seemingly random cadence. We have reports of both these launches.

This issue contains two remembrances of Apollo astronaut William Anders. Anders will forever be best remembered for taking the famous "Earthrise" photo he took from lunar orbit during the Apollo 8 mission in December 1968.

Kindly read the report of the August business meeting on page 16. There had been shift to launching at the NASA Goddard Visitor Center to Saturdays as part of NASA budget cutting measures.

**Contributing to this issue:**

**Reporters:**

Alex Mankevich, Ole Ed Pearson, Thomas Henderson, James Miers, Fabrice Derullieux, Alan Williams.

**Photographers:**

Ole Ed Pearson, Eric and Thomas Henderson, Sarah Jackson, James Miers, Michael Cochran, George Crombie, Mrs. Burd and Alex Mankevich.

**Covers Credits:**

Front Cover: The check-in queue for the August 2024 First Sunday Goddard launch. Credit: Eric and Thomas Henderson

Back Cover: James Miers and Edward Jackson were engaged in a lively discussion prior to the start of the Goddard Contest. Hopefully, they were not arguing over the desired direction of a model rocket's flight. Credit: Alex Mankevich

**ZOG ROYAL COURT  
(NARHAMS OFFICERS)**

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**VICE ZOG (Vice-President)** Alan Williams

**COLLECTOR OF THE ROYAL TAXES  
(Treasurer)** Sarah Jackson

**KEEPER OF THE HOLY WORDS  
(Secretary)** Brian Beard

**COURT JESTER  
(Section Advisor)** James Miers



## Open House at the Granite CAP Nike Missile Site

Reported by: Alex Mankevich  
ZOG-43 Editor



Sarah Jackson was all smiles at the NARHAMS display table. Credit: Ole Ed Pearson



Ole Ed Pearson brought out his display goodies for the NARHAMS table. Credit: Alex Mankevich



Bill Handy posed at the NARHAMS display table. Credit: Ole Ed Pearson



The BA-79 Nike Missile Site is located on Hernwood Road near Granite, MD. Credit: Alex Mankevich



Edward Jackson (R) was out front of the NARHAMS display to talk with the visitors. Credit: Sarah Jackson

The Maryland Wing, Civil Air Patrol (CAP) collaborated with the Patapsco Heritage Greenway to host an Open House at the BA-79 Nike Missile Site near Granite, Maryland on Sunday June 23, 2024. The BA-79 missile site employed both Nike Ajax and Nike Hercules missiles in underground magazines to defend the Baltimore region against long range, nuclear-armed Soviet bombers. The site was active from 1954 to 1974.

The CAP currently leases the missile site in return for restoring and maintaining the site's buildings, magazines and launching area. The CAP began a program of conducting Open Houses this year in order to introduce the local community to the Nike Missile Site, and to encourage donations to support the CAP's restoration efforts.

The CAP had contacted NARHAMS several months prior in order to arrange for a demonstration launch when this event was originally scheduled for March 23rd. Poor weather caused the original Open House to be rescheduled.

The Open House program included briefings on the history of the site and the Nike missile program, CAP cadet color guard demonstrations, and table displays by community organizations. Senator Ben Brooks (MD 10th Legislative District) presented a citation from the Maryland General Assembly to Col. Brenda Reed. Arguably, the highlight of the Open House was the model rocket launch demonstration by NARHAMS. However, the guided tours of the underground missile magazines, warhead assembly building, missile assembly building and launching area were popular as well.

NARHAMSters participation in the Open House were Edward and Sarah Jackson, Ole Ed Pearson, James Miers, Michael Cochran, Bill Handy, George Crombie, Chris Greco, Alex Mankevich and DJ Emmanuel. Edward Jackson arranged for two racks of launches set up on the missile site's asphalt launching area. The first rack was a demonstration of motor size ranges, and the second rack was a demonstration of various model rocket types. There was an appropriate launch of Chris Greco's Nike Ajax. The Nike Missile Site is somewhat small for a model rocket launch. Consequently, we lost Edward Jackson's Deuces Wild model which floated over the site's fence line.

(continued)





# Open House at the Granite CAP Nike Missile Site - continued



Edward Jackson served as firing officer and commentator for the demonstration launch. Credit: Michael Cochran



The launch of Chris Greco's Nike Ajax was appropriate for the Nike Missile Site Open House. Credit: Alex Mankevich



David Zuchero (L) discussed his 1/2 scale Nike Hercules build that is on-going at the Nike Missile Site. Edward Jackson (R) listened in to David's lecture. Credit: Ole Ed Pearson



The launch spectators had to endure a very hot day (without shade) at the Nike Missile Site Open House. The demo launch was from the asphalt-covered launching area. Credit: Alex Mankevich



Access to the underground missile batteries was down a steep, decades-old rusty stairway that was not exactly ADA-compliant. Credit: Ole Ed Pearson



The flooded underground missile batteries needed to be pumped dry before they could be accessed. Credit: Alex Mankevich

An interesting aspect for model rocketeers is the effort by David Zuchero to construct a 1/2 scale model of the Nike Hercules missile. His construction is taking place on the Nike Missile Site in the Missile Assembly Building. Boyce Aerospace Hobbies provided a 3-D printed transition part, and the Chicago Mailing Tube Company had donated body tubes to aid David's efforts.

The CAP later reported that nearly 250 visitors turned out for the Open House. Not bad attendance for a very hot day.



Goddard Launch Report

July 2024

Reported by: Alex Mankevich

ZOG-43 Editor



Connecting the microclip leads requires focus and determination as performed by this young modeler. Credit: Michael Cochran



Everyone loves a short walk to retrieve your model rocket after its flight. Credit: Alex Mankevich



A model (top) narrowly missed a guy wire to the white Delta rocket. Credit: Ole Ed Pearson

The valiant NARHAMS range crew endured a hot and muggy summer Sunday. The heat-aware range crew set up two EZ-Up tents at the safety check station, along with a dispenser of cold water, in efforts to reduce the heat stress on the launch participants. July is historically the hottest month of the Mid-Atlantic summer. So, after all was said and done, it was good to see this launch in the rear-view mirror.

Amanda Harvey produced volunteers to assist the NARHAMS range crew. Thomas Henderson and Brian Beard performed the safety checks and launch rail assignments. Several models such as the Wizard and Yankee were launched on "C" class motors. Many of these flights floated off to parts unknown. Sadly, an Astrocam rocket was among these victims. Those models that managed to stay over NASA Goddard property were recovered by DJ Emmanuel.

July Goddard Launch By the Numbers:

Total Rockets Launched:	80
Adults in Attendance:	220
Youths in Attendance:	170
Total Visitors at VC:	390
First Time Flyer Certificates:	23



Thomas Henderson (seated) and Brian Beard (standing) assigned the launch rails. Credit: Eric & Thomas Henderson



Michael Cochran (L) called for a model rocket to be assigned to launch rail six. Credit: Eric & Thomas Hendeson



Pictures of yourself and your model at the launch rack are de rigueur at the Goddard Launches. Credit: Alex Mankevich

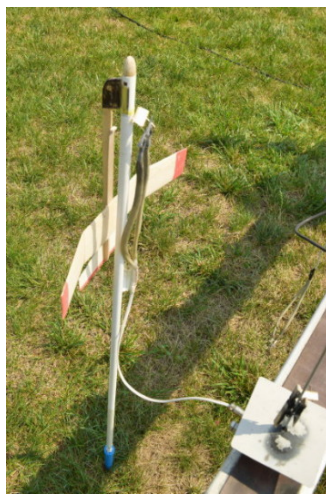


# Krimgold Sport Launch Report July 2024

Reported by: Alex Mankevich  
ZOG-43 Editor



Ed Jackson did a double check to make sure that the correct end of his Patriot model was pointing upwards. Credit: Alex Mankevich



Ethan Goldberg flew S4 rocket glider flights on A3-2T motors. He got excellent duration times. Credit: Alex Mankevich



Ed Jackson's Dark Silver model was one of several 'intergalactic' styled models that launched. Credit: Alex Mankevich

Due to the random nature of scheduling with the Carroll County Parks and Recreation, this was a Sunday (rather than a Saturday) sport launch at Krimgold Park. It was hot and muggy - just what we expect for a Mid-Atlantic summer day. We were for the first time permitted to have EZ-Up tents in the park. We did not have to compete with any other athletic activity in the park.

NARHAMS ambitiously set up two launch racks and two away pads. EZ-Up tents were erected over the launch control and safety check-in. Edward Jackson and Alex Mankevich took turns as firing officers.

We had several "intergalactic" style of models of eye-catching designs. Edward Jackson flew his Patriot missile model, which normally functions as a hands-on exhibit at our outreaches.

Heart palpitations were induced when an "F" class motor's mount failed and the motor blew through the body tube. The motor spun through the air for a few seconds before tumbling to the ground away from the astonished spectators.

Among the "busy bodies" at this launch were Brian Beard with five flights, Brett Jurd with six flights and Nora Saboe with seven flights. All were eclipsed by the Stec team of Faye and Bill who combined for a total of fifteen flights.

A sudden rain shower at around 2:00 pm brought the launch activity to a halt. The modelers took cover as best as they could. The scene could best be described as akin to Napoleon's epic retreat from Moscow in October of 1812.



Brian Beard got under the chassis to connect the microclip leads to his Oatmeal x4 rocket. Credit: Eric & Thomas Henderson



Brian Beard checked the altimeter readout after a flight on an E30 motor. Credit: Eric & Thomas Henderson



A Mean Machine lifts off on a D12 motor at Krimgold Park. Credit: Eric & Thomas Henderson



Alex Mankevich (L) checked for launch pad availability as the modelers gathered for safety checks and rail assignments. Credit: Eric & Thomas Henderson



Goddard Launch Report

August 2024



New member Louise McMahon assisted a visitor to connect his Saturn V model. Credit: Eric and Thomas Henderson



Launch pad assistant extraordinaire Michael Cochran gave the universal "Go For Launch" thumbs up. Credit: Eric and Thomas Henderson

The August Goddard launch was hot and humid, but luckily not rainy. The sun was in and out of clouds and an ominous thundercloud hovered on the horizon all day, but the predicted storms held off till after closing time.

The launch was well-attended but not mobbed, with full racks almost all day but plenty of opportunity for folks to make second and third flights. A large group had Estes Generics decorated in various colors with crayons while another had Alpha Is. We had plenty of the usual types from the gift shop, as well as some other models including a Baby Bertha, a Mosquito, some Crossfire ISXs, one of which was a returning winner from last year's Goddard contest, and an Astrocam which lawn-darted on a C engine, but which DJ Emmanuel retrieved from beyond the fence with its camera intact and some very cool video. The final tally was about 110 launches.

In addition to the Astrocam, light but variable winds meant DJ had to rescue about a dozen models from the trees, the fence, and the roof. One landed on top of the A/C unit and another snagged all the way at the top of one of the Delta's guy wires (it eventually came loose).

Ed Jackson commentated, Mike Cochran did pad-assistant duty, and Thomas Henderson ran check-ins. Sarah Jackson and Ole Ed Pearson helped modelers get their rockets ready to go, including a group with Bandits who just barely managed to get most of their rockets off before the 3:00 PM deadline--luckily that last rack went 6 for 6 with no misfires.

New member Louise McMahon learned the ropes at various duties as well as making her own first model rocket flight with one of Ole Ed's kitbashes, a gray and marble-colored rocket with an action figure in the payload bay.



KesUranNu Baylor's Estes AstroCam pranged. Here he reviews the flight on a tablet. (The NJ college student is getting his own NAR section started). Credit: Ole Ed Pearson

Sarah Jackson (L), along with Ole Ed Pearson, had a busy day to assist the modelers to get their rockets assembled. Credit: Eric and Thomas Henderson



Thomas Henderson (seated) did a solo act at the check-in station. Due to the threat of rain, the check-in station was positioned along the Astrobiology Walk. Credit: Eric and Thomas Henderson





## Goddard Contest - 2024

Reported by: Alex Mankevich  
ZOG-43 Editor

This year's Goddard Contest marked the 55th anniversary of the Apollo 11 moon landing in 1969. NARHAMS President Edward Jackson again served as Contest Director (CD). Edward devoted much time and effort to arrange for the contest trophies and to plan how the range would be set up and how the contest would be directed.

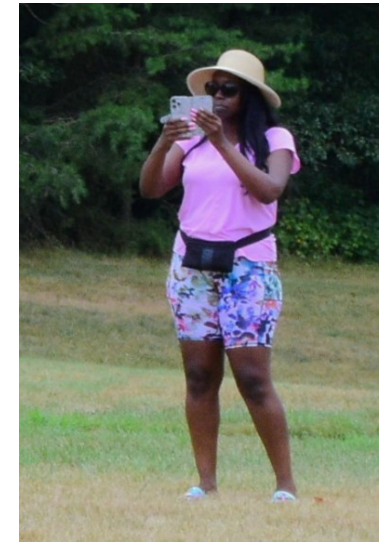
The contest participants showed up steadily throughout the day. The early contest rounds saw only a few rockets land within the qualifying circle. CD Jackson later decided to allow two rounds of flights per contestant. The contestants took this opportunity to fine-tune their motor selection and launch rod angles to improve their results. The later contest rounds saw as many as four flights per round land within the qualifying circle.

NARHAMS members serving as contest volunteers were Ole Ed Pearson, Edward Jackson, Sarah Jackson, Brian Beard, Michael Cochran, Fabrice Derullieux, DJ Emmanuel, Chris Greco, Thomas Henderson, Eric Henderson, Brett Jurd, Kevin Johnson, Alex Mankevich, James Miers and Daniel Solomon. Kindly take a moment to consider that these volunteers came out for up to six hours under hot and humid conditions as they devoted their time and energy so that others can enjoy a free model rocketry contest that awarded fabulous prizes to the winners. The NARHAMsters' efforts also honor those who made the Apollo missions possible.

CD Jackson did the announcing of the contest rules and the launch countdowns. James Miers served as firing officer. Sarah Jackson handled the contest registration and results tabulation. Sarah offered Apollo 11 commemorative coins to all the registrants. Ole Ed Pearson assisted contest participants to ready their models. DJ Emmanuel retrieved some of the models that went wayward over the fence. Alex Mankevich and Eric Henderson performed the event photography. Members of the two measuring teams were Brian Beard, Fabrice Derullieux, Thomas Henderson, Brett Jurd and Daniel Solomon. Rocket check-in was handled by Thomas Henderson, Kevin Johnson, Brain Beard and Brett Jurd. The pad assistants were Chris Greco and Michael Cochran. Michael earned the day's "wounded warrior" award as he was noticeably limping to and from the launch racks for motor igniter replacements.



An intrepid group of fifteen NARHAMS members made up the contest range crew for the 2024 Goddard Contest. Credit: Eric & Thomas Henderson



Voiceover artist Chrislene Bright created a video of this year's Goddard Contest. Credit: Alex Mankevich



Sarah Jackson (seated) ran the contest registration station and tabulated the contest results. Credit: Alex Mankevich



Kevin Johnson helped a Canadian visitor assemble an Estes Helios. The visitor powered the model with a B6-2 and won a second place trophy to take home in her luggage. Credit: Ole Ed Pearson





## Goddard Contest - 2024 (continued)

This year's contest was showcased by voiceover artist Chrislene Bright. She was invited behind-the-scenes to videotape the contest highlights and lowlights. She later produced a two-minute video that documented the contest from its humble beginnings through the awards ceremony.

Some anecdotal tidbits to share about this year's contest: a scale model of the Saturn V flew during the contest, the adult second place winner was from Canada, and another adult winner was from California.

NARHAMS wishes to thank the NASA Goddard Visitor Center for providing the outstanding venue to host the Goddard Contest. Thanks also go to the Maryland Space Business Roundtable for their financial support. A tip of the NAR hat goes to CD Jackson for his contest organization and assembly of the trophies and prizes.



Contest Director Edward Jackson arranged for an impressive array of trophies and model rocket kit prizes. Credit: Alex Mankevich



Fabrice Derullieux (R) recorded the distance (in meters) measured by Thomas Henderson (L). Credit: Alex Mankevich



Thomas Henderson (kneeling) measured the eventual youth division winning flight. Fabrice Derullieux recorded the winning measurement. Credit: Eric & Thomas Henderson

## Adult Division Winners:

- |                   |        |
|-------------------|--------|
| 1. Parthiv Desai  | 1.74 m |
| 2. Arlene Nijjar  | 2.27 m |
| 3. Brett Jurd     | 2.74 m |
| 4. Benjamin Grimm | 4.54 m |
| 5. J.R. Regalado  | 5.50 m |

## Junior Division Winners:

- |                         |        |
|-------------------------|--------|
| 1. Eleanor & James Burd | 1.90 m |
| 2. Chaim Berkovitz      | 3.15 m |
| 3. Ben Thunstedt        | 5.33 m |
| 4. Eddie (LNU)          | 6.36 m |
| 5. Joey Anglin          | 7.56 m |



Contest Director Edward Jackson (top center) presided over the Awards Ceremony that gave trophies and model rocket kit prizes to the top five youth and adult winners. Credit: Eric & Thomas Henderson



James and Eleanor Burd posed with their first place trophy and their helper Ole Ed Pearson. Credit: Mrs. Burd



Contest rules don't require that the contestants be able to place their model down the launch rail. Michael Cochran (R) assisted at the launch rack. Credit: Eric & Thomas Henderson





# Goddard Contest - 2024 (continued)



A contestant kept a close eye as his flight measurement was taken by Brett Jurd (L) and Brian Beard (R). Credit: Alex Mankevich



Brian Beard (L) and Brett Jurd (R) checked in Chris Greco's X-15 model. Credit: Ole Ed Pearson



Daniel Solomon (L) and Thomas Henderson (R) measured a model that landed just inside the qualification circle. Credit: Alex Mankevich



The contestants eagerly awaited their flight results at the contestant tent. Their electronic devices were recording the contest action. Credit: Alex Mankevich



Pad assistant Chris Greco (R) advised the contestant not to let the microclip leads touch each other. Credit: Eric & Thomas Henderson



James Miers served as firing officer at the control panel. Credit: Eric & Thomas Henderson



Ole Ed Pearson adjusted the launch rod angle in the hopes of getting close to the flag. Credit: Eric & Thomas Henderson





Bill Stec readied a Centuri model rocket for launch. Credit: James Miers



Fabrice Derullieux served as launch manager for the impromptu August Krimgold Park sport launch. Credit: James Miers



Dr. George Crombie focused on the microclip hook-ups and not on the threatening rain clouds gathered over his shoulder. Credit: James Miers

**Note:** This Krimgold Park sport launch was held on the same day as August's First Sunday public model rocket launch at the NASA Goddard Visitor Center. NARHAMS had to split up its work force to host both events simultaneously. Thanks to Mr. Derullieux and Mr. Miers for managing this Krimgold Park sport launch.

This was somewhat of an impromptu launch, the club having decided at its July meeting not to schedule for multiple locations on the same day, however, shortly afterwards, Fabrice Derullieux volunteered to run the Krimgold launch himself, so we were on again. We had scheduled hours 10:00 – 4:00, with the 10:00 to noon slot reserved for club members, our usual practice.

Being a hot and sunny day, we took advantage of the new relaxed park regulations and set up two pop-ups to work under. As we were not expecting a huge turnout, Fabrice settled on the single rack (5x 1/8" and a 3/32"), as well as a pair of launchers for mid-power (the usual 10/10 rail plus a quarter inch rod - both sharing away rail one). I thought at the time the quarter inch would prove superfluous, but as turned out we had several flights off it so it was well we had it available.

Despite the limited publicizing, the conflicting Goddard launch, and the distant NARAM, we had a decent turnout. Along with Fabrice and myself, I note Bill Stec, George Crombie, and Brett Jurd from the club, and several guests, including NARHAMS friend Mike Kelley. Several of our guests were moved join the club, so we are delighted to welcome new NARHAMS members Steve Magruder and the Cessaro family.

I should note among the guests, a young man named Ben (pushing six years old), who displayed a remarkable grasp of many things rocketry related as well as boundless enthusiasm. Bill Stec provided him a rocket for his own and he was able to launch and recover four flights during the afternoon.

Overall the launch logged fifty-three flights for the day, from A to F impulse, mostly parachute recovered. I believe there were none lost to trees or ponds as the winds were very light and most flights kept to lower altitudes.

We were indeed blessed for the day with very light winds and no other organized activities in the park, which made for excellent flying conditions, although we were interrupted by an early afternoon light rain shower that passed over.

The launch continued through the rain, however by 2:00 we were beginning to hear thunder rumbling off in the distance, and while we held it unlikely even the mid-power pads standing alone in the middle of the open field would make effective lightning rods, nobody was interested in testing this the hard way, so we packed up early, to the disappointment of a couple of flyers who were just arriving. There were rain squalls wandering about the whole area with increasing frequency from early afternoon on, likely the field was untenable by the time we were scheduled to close down.

In conclusion this all came together for an excellent day on the range; lots of good flights (and one or two not so good), decent weather on the whole, and most importantly the company of friendly, enthusiastic people who met for a day's flying. We took in \$45 in donations, and gained five new paid NARHAMS members.



Astronaut William Anders passed away on June 7, 2024. He went down in the San Juan Channel while piloting his vintage Navy T-34 Mentor trainer off the coast of Washington State. He was the only occupant.

Anders is best known for his role as Lunar Module Pilot of Apollo 8 in December 1968. This was the first crewed mission of Apollo to fly the gargantuan Saturn V booster vehicle and the second crewed flight of the Apollo spacecraft itself. Originally an Earth-orbiting test of Apollo spacecraft systems, the mission plan underwent a drastic change in early summer of that year. A major flight objective was that Anders would put his LM through its paces while orbiting Earth. But it became clear that Grumman's Lunar Module team was nowhere near ready for a test of such magnitude.

More worryingly, the CIA was seeing strong indications that the Soviet space program was straining for some form of lunar mission spectacle late in the year. They were close to testing their own new heavy lift boosters and could be counted on to try something to embarrass the capitalist sky-pirate space pig-dogs if possible.

The NASA management team boldly decided to secretly throw out the announced Earth-orbit test mission and do a demanding circumlunar flight instead. There would be no lunar lander aboard; instead, a mass simulator replaced it. The planning team realized that a problem aboard the Apollo was really no more likely around the Moon than in Earth orbit, so the level of risk was essentially equal. The tricky part was that everyone in the know needed to keep quiet until the Russians could not respond. The team had to maintain the outward appearance of the original flight plan, while training the crew for the actual-new mission-goals. And all of this had to move forward before the first space test of the Apollo spacecraft had even flown.

Apollo 8 would be the first manned human craft to visit another celestial body. In many ways, it was a gigantic step in both the American space program and humanity's understanding of our place in the universe. Following the successful proving flight of Apollo 7 that October, the wraps came off the true aim of the "8" mission. Some of you may remember the thunderous late-December dawn launch, lunar orbit insertion, and those thrilling live TV images as Apollo 8 swept majestically around the moon.

For the first orbits the crew was looking down at the surface to get quick-view science and landing area imagery. With a spacecraft aiming to change during the fourth pass, Anders could see as Earth came over the lunar horizon. Quickly he grabbed his large-format Hasselblad camera, mounted a color film magazine supplied by crewmate Jim Lovell, then composed his shot. And took the image known as "Earthrise."

A moment's work would record one of the most familiar, yet alien vistas in existence. How many times you have personally seen it. Hundreds? Thousands? Think on it. In that one frame is all life that we can confirm exists! All on that little eight-thousand-mile-wide ball hanging above the Moon.

Of more immediate popular impact was the last orbit reading from the Book of Genesis by the crew members, followed by their return home. The Earthrise image would sleep as a 2 -1/4inch wide latent Ektachrome image before being processed some days after their landing. As soon as NASA saw what they had, they released it. A slow lightning bolt spread through mankind's collective consciousness. (As an official NASA image, it isn't subject to copyright or other interference to its use. So, it went Everywhere!) T-shirts, book covers, billboards, stamps, lunch boxes! For my money, Anders' work is perhaps the most powerful photo ever taken - it says we can't lie to ourselves anymore.

Anders and Borman would end their NASA flight careers after Apollo 8; each for different reasons. Lovell continued with other missions. He became another of America's most respected space travelers.

Following the success of Apollo 8, Anders would transition into other positions within aerospace. Famously, he headed the Atomic Energy Commission and General Dynamics. Work with the National Space Council and other positions in science followed. At appropriate times the Apollo 8 crew members would give lectures commemorating the mission's events. Some of our NARHAMS members attended one at Air and Space's downtown museum on the fortieth anniversary of the flight. Even more, John Glenn was the host! We were thrilled to be sitting within "spitting" distance of these American heroes. It is a cherished memory.

Air Force Major General Anders is survived by his wife Valerie, sons Greg, Alan, Glen and Eric, as well as daughters Gayle and Dianna. Our thoughts are with them.



## Meeting Bill Anders

**Reported by: Ole Ed Pearson**

Bill Anders was the first astronaut Paul Conner and I met. Initially our encounter was brief, close, exhilarating, impersonal and unsettling. This was sixty years ago, this July at NASA/Goddard's Wallops Station in Virginia. We were tracking models (\*see below) at NARAM-6 beyond the facility's main base runway when Bill Anders roared by in his NASA training jet. NASA sent Anders to Wallops to see the rocketeers. He flew low to the deck; Paul said we felt the effects of the afterburners. I just remember it was hot regardless and his jet was close and loud.

Upon landing, the NARAM assemblage greeted him. I asked Anders what mission he was assigned. He said he was an Apollo astronaut; I didn't know what he was talking about. We (the US) had just completed Project Mercury (with tons of publicity) and now were into Project Gemini. What was Apollo, though, missions near the Sun? That's about all my memory allows (oh, he signed the gliding first-stage of my Centuri Black Widow model).

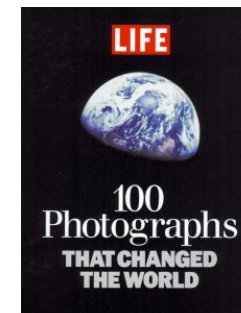
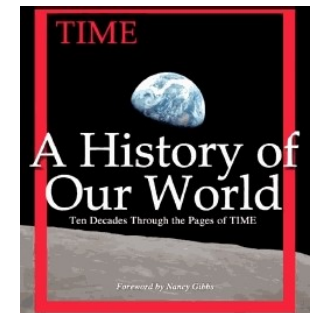
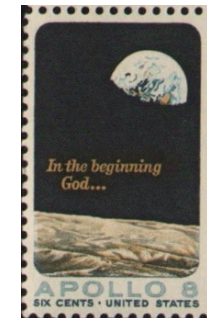
Four years later Anders went up on his only space mission, Apollo 8. He will be remembered for the Earthrise photo. His mission, though, was essentially the end of that era's Cold-War space-race to the Moon. I remember that and him from NARAM.

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\* *Theodolites were used before altimeter altitude determination with one, two or even three people at a scope. Angles from two scopes allowed you to calculate altitudes; if signs/sines were right, but now I'm getting off on a tangent.*



Anders' "Earthrise" photograph taken during the Apollo 8 mission in December 1968 arguably became the most iconic image recorded during the 20th century. It has been reproduced countless times.





**This article covers events from June 14 to August 19, 2024.**

Starliner Calypso, now in the third month of its eight-day mission, remains docked to the International Space Station while NASA and Boeing review its helium leaks and faulty thrusters. NASA still expects astronauts Sunita Williams and Barry Whitmore to return to Earth on Calypso in the next month, but if they are unable to do so, SpaceX Crew-9 will be launched with two empty seats to accommodate them. In the meantime, they are acting as part of the station's regular crew. [Update: As of August 24, NASA now plans to land Calypso empty while Williams and Whitmore return with Crew-9 next February.]

SpaceX flew NASA weather satellite GOES-U on a Falcon Heavy on June 25 as well as 21 Falcon 9 missions, including 14 Starlinks and 7 other missions. Notable was the Starlink launch of July 12, which left its satellites in an unusable orbit after the second stage failed to relight. The launch was the Falcon family's first mission failure since 2016. Also notable were the launches of Cygnus resupply ship NG-21 SS Francis R. "Dick" Scobee to the ISS on August 4 and rideshare mission Transporter-11, which included the first satellite of Senegal among its 116 payloads, on August 11.

Other American launches included 3 flights of Rocket Lab's Electron and one each of Firefly's Alpha and ULA's Atlas V. The Atlas launch, USSF-51, was the last national security launch of that rocket, with future missions expected to fly on Vulcan-Centaur. NASA also launched a Terrier-Improved Malemute sounding rocket from Wallops Island on August 13.

Chinese lunar probe Chang'e-6, launched in May, successfully returned its samples from the far side of the Moon on June 25. China flew 7 missions of various Long March rockets. While all the flights were reportedly successful, the upper stage of the LM-6A of August 6 apparently broke up after payload deployment, leaving debris in orbit. A commercial launch of the solid-fuel iSpace Hyperbola-1 on July 10 was unsuccessful. A static fire of the private liquid-fuel Space Pioneer Tianlong-3 resulted in an unintended launch when the rocket detached from its test stand and flew some distance before crashing into a nearby mountain. No injuries were reported.

Japan launched the H3 rocket on its first operational mission on July 1st carrying an Earth observation satellite.

Europe made the first flight of its Ariane 6 rocket on July 9. While the rideshare missions were deployed successfully, a failure of the the third relight of the rocket's upper-stage engine prevented the planned testing of reentry capsules.

Russia sent resupply ship Progress MS-28 to the ISS on a Soyuz-2.1a rocket on August 15.

India flew one mission of its SSLV rocket with an Earth observation satellite on August 16.



Europe's Ariane 6 lifts off on its first flight. Credit ESA-S Corvaja

### Upcoming in August, September, and October

- NET August 26: SpaceX launches private mission Polaris Dawn on a Falcon 9 rocket. The mission was delayed from July after the Falcon 9 second-stage failure of July 12.
- August 28: CASC of China makes the first flight of its Long March 12 rocket.
- September 11: Roscosmos sends Soyuz MS-26 to the ISS.
- September 24: SpaceX launches Dragon Freedom on mission Crew-9 to the ISS. Planned for August, this mission was delayed to allow Starliner Calypso to leave the station before it launches.
- September 29: First flight of Blue Origin's partially-reusable New Glenn rocket.
- October 10: A SpaceX Falcon Heavy launches NASA probe Europa Clipper to Jupiter.
- Sometime soon: SpaceX launches the fifth integrated test of its Starship rocket, which may include the first tower landing of the booster.





# NARHAMS Miscellanea

## Dr. George Crombie Flies High!

Dr. George Crombie had a notable high altitude launch at the Maryland Delaware Rocketry Association (MDRA) event on Sunday June 30, 2024.

Dr. Crombie flew a model he calls the "Big Kat", which is an upscaled Apogee Components Katana model. It flew on an Aerotech K535 motor to 2865 feet (and we have pictures to prove it). Dr. Crombie used two Rocket Recovery Controller 3 barometric dual-deploy altimeters in a redundant configuration, and both devices reported the same altitude.

Dr. Crombie noted that at that height you can see the drogue deploy and if you have a mylar sheet (which he did) you can see the sheet reflect.

Luck was in Dr. Crombie's favor as the wind was blowing away from the rocket-eating trees and towards the big open field.



Well, as they say - "Pics or it did not happen".  
BTW: One-half mile is 2640 feet. Credit: George Crombie



The Big Kat and its modeler before the epic launch. Don't fret about the big trees in the background - they didn't factor into the recovery. Credit: George Crombie



And we have lift-off of the Big Kat at MDRA. Credit: George Crombie

## Ignition - a Book Review By James Miers

**Ignition** - Author: John D. Clark

Published originally 1972, recently reprinted by Rutgers University Press.

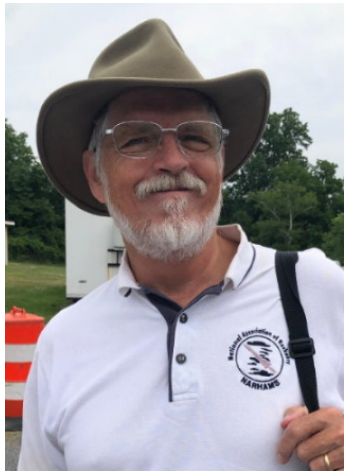
The later nineteen sixties saw the end of two decades of intense research into the chemistry of liquid rocket propellants, which began in the post-war years with little known and much to be discovered. Within the United States, much of the research was accomplished by a small community of brilliant, dedicated, and often eccentric personalities who, in laboratories across the nation, compounded and tested thousands of combinations of esoteric chemicals, often at considerable personal risk, and all in search of propellant chemical combinations designed to meet the exacting needs of military and civil users.

By the end of this period, with much accomplished and the level of research being scaled back, author and researcher John Clark was inspired to write out his history of that activity. **Ignition** is a technically rigorous, if sometimes irreverent, story of the engineering and science, the politics and history, and of the personalities involved in the research programs conducted within the United States into the development of liquid rocket propellants for military and non-military applications. The author worked as a research chemist and was intimately acquainted with many of the individuals, governmental departments, and businesses involved with developing the propellants with which many of us will be familiar.

A warning to the reader; there is a fair amount of hard science in this book, with a great awful lot of chemical equations and some mechanical physics as well which will test the reader on how well they recall basic college science. I believe the reader could ignore much of the technical work and still learn a great deal from this book, but having that additional knowledge certainly adds spice to the story.

But beyond the science and technology, **Ignition** is a very human story of researchers engaged in hard, tedious, and often dangerous work, sometimes carried on for years, and that almost always ended in failure, and generally for little reward and little recognition.

Taken by itself, **Ignition** is only peripherally concerned with the hobby of sport rocketry, and is unlikely to improve your design, building, or flying skills. But it is a fascinating history and account of how science and technology often work in real life, and I highly recommend it for anyone with an interest in rocketry at any level.



The honest, unbiased, fair and trust worthy face of book reviewer James Miers. Credit: Ole Ed Pearson





## NARHAMS News

### **NASA Goddard Visitor Center Launches:**

***Please note that due to a change in operations at the Goddard Visitor Center the monthly launch at Goddard will now be the first Saturday of the month starting on October 5th. The launch on Sunday, Sept 1st will be the last Sunday launch.***

### **NARHAMS Annual Independence Day Picnic a Success**

Reported by: Alex Mankevich

The NARHAMS July Business Meeting is a much-anticipated event in that it also serves as our annual Independence Day picnic. It is a chance for the Section to socialize and feast, and not to worry about prepping our model rockets or setting up a launch range.

Section Advisor James Miers graciously agreed to provide the grill for the occasion. Members served up an array of meats to be grilled. We had all the fixings to garnish the dogs and burgers. The deserts were sweet and plentiful.

Michael Cochran's Corgi Arrow consented to serve as "clean up" for any bits and pieces that were left over on the plates.

It was not too hot to gather outside to watch Mr. Miers do his magic at the grill. It was nice (for once) not to have to dodge raindrops at this picnic.



Jim Miers cooked burgers and "dawgs" for the club's annual July meeting/picnic. Also, from left are Arrow Corgi-Cochran, Daniel Solomon and Thomas Henderson. Credit: Ole Ed Pearson

### **August Business Meeting**

Reported by: Ole Ed Pearson

The topic for the August monthly meeting was a build session for rockets salvaged from the Goddard launches. Sarah and Ed Jackson provided the refreshments. A number of subjects are in flux at the moment. NARHAMS may move its October business meeting to the 12th to avoid College Park Day (whatever it's called) scheduled for October 5th. DJ Emmanuel reported that the Goddard Visitor Center is to cut staff 50% in October. The Visitor Center asked if NARHAMS could do our monthly public launches on Saturday as opposed to Sunday starting in October.

James Miers and Ole Ed Pearson will represent NARHAMS at the Greenbelt Labor Day festival set for Saturday August 31st.

The meeting paused for members to go outside and "oo and ahh" at rainbows.



New member Louise McMahon.  
Credit: Ole Ed Pearson



Sarah Jackson and her Estes snap-together Mini Bertha.  
Credit: Ole Ed Pearson



Members took a break from the meeting to admire a rainbow. Credit: Eric & Thomas Henderson





## National Association of Rocketry (NAR) News

### National Sport Launch East 2024

**Host:** Southern Area Rocketry—SoAR (NAR Section 571)

**Date:** November 23, 24, 25, 2024 (the weekend before Thanksgiving).

**Location:**  
346 Lee Wilson Road  
Nashville, GA 31639

**Rumor:** SoAR will serve a side of Turkey & GRITS

### 2024-2025 National Rocketry Competition (NRC)

The new contest year started on August 10, 2024 immediately following the close of NARAM 65.

#### 2024-2025 NRC events

$\frac{1}{4}$  A Streamer Duration

$\frac{1}{2}$  A Altitude

A Payload Altitude

B Rocket Glider Duration

B Helicopter Duration

D Dual Egg Lofting Altitude

### The 2024 Section Website Excellence Award Winners

The winners were announced during the NAR Town Hall meeting in August. There winners are:

- 1st Place - Wisconsin Organization Of Spacemodeling Hobbyists (WOOSH) #558  
Paul Kinzer - Webmaster

- 2nd Place - Summit City Aerospace Modelers (SCAM) #282  
Dave Porter - Webmaster

- 3rd Place - Music City Missile Club (MC2) #589  
James Allen Hall IV - Webmaster

- 4th Place - South Western (Ontario) Association of Rocket Modelers (SWARM) #752  
Chris Halinaty - Webmaster

Each Webmaster will be receiving a plaque as well as a badge to add to their website.



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