

THE ZOG-43

The Newsletter of NARHAMS, NAR Section #139.
NAR National Champions 2001, 2004



A Clean Sweep for NARHAMS

Kudos from the President

By Jennifer Ash-Poole, NAR61415

Triple Crown! That is what JoAnn Rachor called it. The Triple Crown. Our wonderful club won the National Championship, the Section of the Year and the LAC Award!

We would not have won these if it wasn't for the hard work of each member of the club.

For the section of the year, it was all the outreach we did. Bill Stine came up to me and said "We need to talk. Any club that is doing 58 outreaches a year can use some help from Quest." So THANK YOU to the following for doing outreach (And if I forget anyone, I'm sorry!): Kevin Johnson, Paul Miller, Garrett Miller-Moskal, Chris Kidwell, Alan Williams, Ed Pearson, John McCoy, Mary McCoy, Tom Bagg, Jim Miers, Vince Pearman, Don Brown, Mike Mangieri, Khim Bittle, Richard Hickok, Steve Humphrey, Roy Lappalainen, Chad Blair, Angela Blair, Jim Filler, Matt Filler, Tom


Lyon, Tom Ha, and Doug Pratt. Whew!

For the National Championship, we could not have done it without the kids. So thanks to: Kate Bittle, Kindra Bittle, Kris Bittle, Katherine Humphrey, Mike Humphrey, Matt Filler, Alistair Andrulis and Anita Rogers for coming to NARAM and competing all year. Contests are an all year thing, so thanks to those kids who couldn't make it to NARAM, but competed for NARHAMS:

Andrew Cochetti, Emmett Cochetti, Dan Dague, Chris Eacho, Shawn Eacho, Connor Gold, Christopher Ha, Zachary Ha, Robin Harris, Daevin Hugh, Jeeven Hugh, Jesse Lynch, Jenry McArdle, Matthew Mehalick, James Mehalick, and Karl



Notturmo. Way to go! We would not have been able to win if any of you had decided not to compete.

Last, but not least, is the LAC award. Zog-43 has now won it 8 times. Kevin has done a phenomenal job of getting people to submit plans, articles, pictures. He has the job of editing, but you, the club give him the stuff. Good job Kevin! 

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ZOG-43

Volume 26 Number 8
August 2004

ZOG-43 is the official newsletter of NARHAMS the National Association of Rocketry Headquarters Astro Modeling Section # 139

NARHAMS is the oldest model rocket club in the United States!

ZOG- 43 is dedicated to model rocketeers of all ages, abilities, and interest. We are committed to providing the most current, up-to-date information on model and real world rocketry, and to provide educational material as well as entertaining information. ZOG -43 is published monthly and is available to anyone on a subscription basis. Current rates are \$10 for meeting pickup or email or \$15 for postal mail U.S. Funds for 12 issues a year, payable to NARHAMS

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For more information.....

If you have any questions about ZOG-43 or NARHAMS, or if you have any comment(s), correspondence, free merchandise or if you'd like to submit an article, send them to :

ZOG-43, 5269 Rivendell Lane, Apt 5,
Columbia, Md. 21044
E-Mail ZOG-43 at:
zog43editor@yahoo.com

ZOG-43 is edited by Kevin Johnson, and is an eight-time winner of the NAR/LAC "Rockwell" Trophy, recognized as the best NAR section newsletter.

Years won: 1969, 1973, 1975, 1990, 1991, 1992, 2003, & 2004

Zog-43 staff typist is none other than Jennifer Ash-Poole a.k.a. Secretary to the Stars !

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NARHAMS ON THE WEB

<http://www.narhams.org>

Send and receive E-mail with other NARHAMS members through NARHAMS Web page grouplist via yahoo-groups.



NARHAMS serves Baltimore, the state of Md., Washington DC and the surrounding Metropolitan areas. The club is a section of the National Association of Model Rocketry (NAR) and 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 five time winner of the NAR "Section of the Year" award.

Years won: 1997,1998,1999, 2001, 2004

NARHAMS members regularly fly their model rockets at NASA's Goddard Space Flight Center on Soil Conservation Rd. in Greenbelt Md. The launches are open to the public and are held the first Sunday of every month (weather permitting), starting at 1 PM.

Sport Launches are usually held the second Saturday of every month at Middletown Recreation Park in Middletown Md. Check the web page for updates.

NARHAMS welcomes all prospective new members to our monthly meetings. They are held on the first Friday of the month from 7:30 to 9:30 PM at the College Park Airport Annex Building. Dues are 10 cents a week, with an initial 50 cents up front (good for 5 weeks) as a sign of good faith.

NEW: Monthly meetings available on-line via chat-room , simply go to the NARHAMS homepage and click on the link.

ZOG ROYAL COURT

(NARHAMS OFFICERS)

ZOG (President)

Jennifer Ash-Poole
410-674-6262

VICE ZOG (Vice-President)

Jim Filler

COLLECTOR OF THE ROYAL TAXES (Treasurer)

Ed Pearson 301-577-7775

KEEPER OF THE HOLY WORDS
(Secretary)

Chris Kidwell 571-434-7507

COURT JESTER (Section Advisor)

Khim Bittle 301-293-2399

Directions to College Park Airport:

Follow I-495 to Kenilworth Ave. South. Make a right onto Paint Branch Parkway, then make a right on Cpl. Frank S. Scott Dr. At the airport entrance go straight to the Operations Building, the annex building is adjacent to the "Ops" building.



August President Musings

I do have other hobbies, and one of them is quilting. In our quilt guild, we are having a challenge. Since the quilt guild is 25 years old, there is a challenge to make 12 different blocks and put them into a quilt by June 2005. We have to use all 12 blocks, but they don't have to be the same size. This got me thinking.

March 2005 is NARHAMS 40th anniversary. So in honor of this, I am going to initiate a rocket model challenge. Let's pick a plan from Peter Alway's Little Book of Goofy Rockets, and build one. Kevin and I discussed with Peter having everyone do ONE model, and they could scale it as they wanted, but we couldn't decide on which one at NARAM. When we do, you'll see the plan later in the Zog, courtesy of Peter Alway. The idea is that you do NOT have to build it per the original scale. I expect John McCoy to build a MicroMaxx version, and Don Brown or Vince Pearman to scale it up to an E or F engine. If anyone has any suggestions on which plan to build as a club, let me know at a meeting or a launch. Kevin will take his copy of the book so you can page through the plans. Since March is our 40th Anniversary, let's see if we can get them done and fly them for March.

Also note, next month is elections and staging. (No, not staging elections...) If you want to run for an office, please let me know. We should have our nomination committee figured out by then. Thanks.

Zog Bubbles 

In Memory of David "Ducky" Klouser

On Saturday July 24, David Klouser was interred in his family's plot at the Stewartsville Presbyterian Cemetery in New Jersey. Bruce Canino and Bob Stott, fellow rocketeers were in attendance, as well as his two brothers (Steve and Matthew), sister (Leslie), parents (Lester and Barbara), maternal grandmother (Rose Fox), other relatives and many family friends.

Flowers were received from rocketeers and many people in the NAR and spacemodeling community sent e-mails or called in the days before the funeral. Tony Reynolds passed on to Steve Klouser a nice note Srdjan Pelegic sent to the FAI community remembering Ducky. Bunny also sent notes to the family on behalf of NAR. It was really nice to see that so many people remembered David and took time to wish the family sympathy. The family expressed appreciation for all the support and messages received.

Ducky looked serene during a viewing prior to the memorial service held at the Rupell Funeral Home in Phillipsburg, New Jersey. He was buried in a spacemodeling team shirt (1992—his first world championships) and with a pillow embroidered with ducks.

There was obvious love and affection for this fine modeler who is at peace at last.

At our next launch at Goddard (this Saturday, July 31), a model rocket will be launched in Ducky's memory. You may wish to similarly commemorate and celebrate Ducky's life, fellowship and contributions the next time you have a launch.

Financial expressions of sympathy in David Keith Klouser's name can be made to the Stem Cell Research Foundation. Their address is Stem Cell Research Foundation, Development Department, 22512 Gateway Center Drive, Clarksburg, Maryland 20871. Telephone 1-877-842-3442. Online, their web site is <http://www.stemcellresearchfoundation.org/>. Donations are tax deductible.



Photo of Ducky taken in 2000 by George Gassaway.

Forty Years Ago (Part One)

by Ed Pearson, NAR Senior 5694
[Ed tells me that Part Two will come out after NARAM 47, and Part Three after NARAM 48. -kj]

NARAM-46 was a milestone for NARHAMS (and the NAR). It represented the first time a section earned the LAC Newsletter trophy, the Best NAR Section plaque and the National Champion Section banner. It earned crowing rights, unnecessary as the achievement speaks volumes: a culmination of year-long effort by so many people in so many areas in such positive ways. In a way it is humbling.

I'd like to take you back now for a moment to our humble beginnings forty years ago and give you a glimpse of NARAM-6. This too was a milestone for our club.

First as background, the club has its roots with the Northwestern (High School) Model Rocket Club which was started in 1963 because of the efforts of Doug Frost. Doug was an NAR member who came to the Hyattsville, Maryland area from North Carolina (I believe he was a founder of the NC Catawba Valley Rocketeers).

By the summer of 1964 four club members traveled to NASA's Wallops Station (now Wallops Flight Center) to participate in NARAM-6. Doug Frost was a contestant and was housed on-base in their barracks (\$2.00/day fee). Paul Connor, Rusty Rice and I traveled separately—my mom drove us down in a '63 Chevy Impala convertible—we were range crew and commuted daily from Chincoteague, about seven miles away.

The contest was held adjacent one of the station's runways. If I recall correctly there were about as many contestants there as there were at

NARAM-46. Dr. Bill Rich (who died a few months ago at the age of 93) of NASA HQ and the NAR treasurer was the contest director. Virginia's first NAR section, NOVA, whose president was Frank Bittinger hosted the event. Barbara Stine did the data reduction. Paul, Rusty and I tracked using optical theodolites in the grass fields. There may have been mosquitoes present, yes I believe there were.

On the field we met Vern and Gleda Estes and their two daughters. They were and are still lovely and personable people—the whole Estes crew. We met the Guills of Connecticut, Charlie Dueffler (the UN weapons inspector in the mid-East you now see on TV) also of CT, Gordon Mandell from NY, and so many more NAR people.

We met Harry there. Doug and NAR #2 didn't get along. Each had strong personalities and those two clashed frequently. I guess it also had to do with the times, the young adults demanding freedom to run their own lives and the NAR's culture at the time being as "Uncle" Bob Atwood (Annapolis Association of Rocketry leader) expressed eloquently a few years later as, "This is an organization OF kids RUN by adults." Harry wasn't about to give ground to the young bucks.

Our first time seeing Harry came after the first day of contest flying. The gathering point was the base's dining hall (breakfast, lunch, dinner, meetings and endless, yes boring, soundless movies of what James Duffy calls rocket porn—target camera shots of rolling flights of sounding rockets).

Harry arrived and gave the group a stormy talk. Essentially he was saying that we were in competition with Eastern Europe (Russia and its

satellites) and that our models wouldn't stand up to those overseas. He excoriated us and demanded we get on the ball and build better rockets. At the time he was right; the reasons possibly the subject of a separate article.

Later, Jim Kukowski introduced us personally to the NAR legend later. Harry looked over NMRC's launch panel, which Paul made, and we brought down. It was similar to the NOVAAR panel we used at TARC-2; toggle switches for each of the firing positions, continuity light, and the firing button. We got to talk to Harry for awhile and know him a bit better.

Jim Kukowski was NAR's executive director who worked at NAR's headquarters in Washington (first on Vermont Avenue, later at DC's AMA headquarters, and later still in Jim's houses). He set up a meeting in the barracks one evening for Jay Apt, Pat Stakem, and myself so we could get to know each other and outlined that he wanted Jay to start a section in Pittsburgh (Jay was already on the way doing so), Pat to start one in Cumberland (he did and NARHAMS participated in two wild Battles of Cumberland in the following years), and encouraged a NAR section in the Hyattsville area. Casey, as Jim is known, pushed hard on us.

We also met two other notables at the meet. Willy Ley was there and we talked awhile (I met him again a couple months later at the fifth world science fiction convention in DC). Willy Ley was a contemporary of Von Braun, a member of Hermann Oberth's rocket club in pre-war Germany, and a famous science/rocketry writer. You may still see some of his 1950s writings referenced or be the fortunate owner of one of his books.

The other fellow who made a fiery entrance was Bill Anders. He flew a jet close to the deck at NARAM and turned on the afterburners. Paul, Rusty and I, however, were in the field manning the scopes when this occurred. Anders gave us an experience seemingly meters above our heads that few have known. He also substantially calmed the mosquitoes for a few seconds.

He was introduced to the NARAM participants as an Apollo astronaut,

although at the time since we had completed the Mercury Program and were now into Gemini, I was baffled about Apollo. What was this, a mission to the sun? I got his autograph on a booster stage of a model I brought.

We returned home after a week, sunburned, bit up, exhausted, and yet exhilarated and eager for more. The next year, we formed a club named NARHAMS. ✨

highlight about 60 minutes after sunset on the eastern horizon- the Great Square of Pegasus looms above it. Watch this beautiful Moon majestically move across the sky through the evening. Think orange, round, and beautiful as it makes its shallow journey the evenings of the 27th to 29th.

A nice telescopic target for September is the constellation Lyra, the Harp. It's easy to find since it is directly overhead, a.k.a. our zenith. The brightest star you see is Vega, Lyra's alpha star. Vega, Deneb, and Altair form the star trio known as the Summer Triangle. Facing south, just below Vega is the beautiful Ring Nebula. The Ring is quite small so a good telescope is necessary for best viewing results. The planetary nebula looks like a little oval smoke ring or a ghostly doughnut. You will never forget the first time you see it.

The September issue of *Sky and Telescope* is one of the best in recent memory. I've read *S&T* for over 50 years and this one simply excels. *Astronomy* has a nice article on Cassini and Saturn this month, but *S&T* is chock full of goodies. Included is a test report on an "Astronomer's Watch" for about \$40, and an article on Wernher von Braun founding an astronomy club in Huntsville, AL 50 years ago.

Always remember, you can get an online sky chart customized for your location at any time at <http://skyandtelescope.com/observing/skychart> on the web.

Ad astra! ✨



Jim Kukowski and Ole Ed rememebtr NARAM's past at Great Meadow.

The September Astrobulletin

By Paul Miller, NAR Senior 51615

September is full of sky surprises. Venus is the Morning Star. On the 1st, it's moving away from a close conjunction with Saturn- a finger's width held at arm's length. About the 10th, a crescent Moon, Venus and Saturn form a dramatic trio about 60 minutes before sunrise, just look to the east in the constellation Gemini.

Look for Mercury on the 10th as well, near the eastern horizon 45 minutes before dawn. With

binoculars or a small 'scope, Mercury can be seen close beside the bright star Regulus in Leo. Mercury has its best morning apparition of the year until the 23rd. This is an excellent opportunity to see the small planet.

Mars and Jupiter pass through conjunction with the Sun in mid-September so they are not really observable this month.

The Autumnal Equinox occurs at 12:30 p.m. EDT on the 22nd. The famous full Harvest Moon rises on the 28th. Check out this lunar

NARAM 46 Pictures I haven't had a chance to share pictures with anyone else, so these all came from my camera at some point during the week. Look for more photos in later issues!



SEMROC Offers Great Kits, Great Prices

By Tom Lyon, NAR Senior 16558

Those of us that went to NARAM got to see the various manufacturers, one of which was SEMROC. Well SEMROC had a deal for the month of August that gave a 20% discount for NARAM participants that ordered online.

I browsed the web site since I was interested in several of their kits. These kits were all of their “retro-reproduction” series, basically remakes of kits from the past like Centuri, FSI, etc.

Last Thursday, Aug 12, I placed an online order for 5 kits. The retail total was \$62. This also put me into the “free kit” category, so I selected the Swift. When I typed in the discount code (“NARAM- 46”), it gave me the 20% off and the total was just under \$50... and shipping was free!

The automated order reminder system generated notices to my email that the order was “in process”, a few hours later I got another notice that the order was “ready to ship”. On Friday Aug 13, I got the “shipped” notice. And voila... on Monday Aug 16th the order arrived at my door step. Talk about excellent service!!!

This was just like being a kid on Xmas morning. I couldn't have been more happier with the quick service. And from looking at my six new kits of old models, the quality is excellent, probably even better than the originals. Fins are laser cut and the balsa nose cones are excellent quality. So expect a review or two when I get into my next building frenzy. ✨

Calendar of Events for 2004

Sep 3- Monthly meeting, elections, staging discussion

Sep 5- Public launch, Goddard Space Flight Center

Sep 11- Sport launch, night launch and glider theme

Sep 19- AIAA picnic and demo launch

Oct 1- Monthly meeting, scale model discussion

Oct 3- Public launch, Goddard Space Flight Center

Oct 9- Sport launch, Oktoberfest,

non-US scale model theme

Oct 9-10- Steel City Smoke Trails 4, regional meet, Jonesburg PA

Oct 23- Planning meeting 10-4

Nov 5- Monthly meeting, helicopter design/building session

Nov 7- Public launch, Goddard Space Flight Center

Nov 13- Sport launch, no theme

Dec 3- Monthly meeting, pot luck dinner

Dec 5- Public launch, Goddard Space Flight Center

Dec 11- Sport launch, no theme

Sport launches are held at Middletown Park from 10am-4pm, waiver up to 3.3 lbs and “G” motors not exceeding 62.5 grams of propellant. All flights “E” power and above are restricted to 5 degrees from vertical and between the hours of noon and four PM. Call ahead to confirm launch and waiver availability.

Business meetings are held at the College Park Airport Annex Building, **except where noted above**. Meetings begin at 7:15pm with building sessions or presentations and last until 9:00pm or so. Regular Business meetings follow until 10:00pm. If no presentation or building session is scheduled, please bring whatever project you are working on currently.

Questions? Call Club President Jennifer Ash-Poole at 410-674-6262 or visit NARHAMS online at <http://www.narhams.org>



NARHAMS

Goddard Rocket Demonstration a Success!

By Alan Williams, NAR Senior 14137

Late July was certainly busy for NARHAMSters! Most of the contest oriented members worked on the final conquest of the foeman on the Plans of NARAM (Slay them as we would the Kine of the field, Say I! May their cities burn and the stones be ground to make bread, their families to feed thereby and dust fill the air about their lands; may foemans blood fall from the sky like unto the deluge. May the sweetest of their meadows become in this all foul and unclean. Cast them down, say I! Go NAHRAMS! Yippee!) *[It's nice to have Alan channeling Atilla the NAR-HUN every now and then. -kj]* As they sharpened their "modeling" knives, a few of us prepared for the first NASA Goddard Community Day in three years.

Because of the NARAM conflict, we would be extremely short-handed. I had intended to use a donated group of Quest Falcons from the canceled 2001 College Park Airfair, but humidity problems during the week meant death to any painting I would have done. Instead a lot of my old air show Eagles came out of storage to fill out the routine. I repaired a lot of old hangar queens, built a BT-80 Astrobee 1500 and created a 30 inch tall Nike Tomahawk with parts donated by Estes and Quest. Jim Miers stepped up with his usual group of beautiful scratch-built single, multi and cluster engined models. For a time, Ole Ed thought he would be free to help, but last-minute personal considerations forced him to drop out. Regular Goddard family Ian and Micheal Cochran joined the team with an assortment of Estes and Quest products. Finally, a high school kid (whose name I never got right; sorry!) helped out with a small group of rockets to pad our flight totals.

Saturday the 31st broke hot and humid. Me likewise, with one of those stinkin' summer colds that makes you feel as if Blackwater fever was making a comeback. My hair hurt in places hair ain't been in years! To bypass the gate

closings, everyone arrived before 10 a.m. That way we could prepare birds more carefully and have the guys tour exhibits, have lunch, and still be back before 1:30 to get ready for the show.

The Skylancers control line airplane group had their flight demo scheduled till 2:00. They loved our Apollo contest spot landing circle. It made a perfect runway for them. When I asked if the could help us out by ending 15 minutes early, they laughed in my face. And then they did it! They even re-strung their crowd control ropes for us so we wouldn't lose time from our launch! Thank you, ladies and gentlemen all.

Our first rack was a firepower Falcon demo from A to F power. Just as I began the launch a reporter from NBC showed up. (Did anyone see any coverage?) I gave my usual restrained intro ("the puissant projectile pustules of power...") and got the usual laugh when the A powered rocket did 80 ft. The B model was about to go when a most unwanted noise filled the air from the southwest. Within 15 seconds, 2 Army Blackhawk helicopters were sliding right over us in trail formation at almost 200 ft. The lead copilot had \$17.53 in change in his front cargo pocket. Nah, they worn't close at 'al.

After the interruption, I reset the B flight; up it went and the crowd was much more impressed. The C flight was about to go when from across the road, the Prince George's County Police helo lifted off and then took a run on us from the northeast at about 150 ft. I'm thinking (1) Is there a Sea Stallion coming up next? And (2) Cool fever dream! When he cleared the area and we could resume the flights, the crowd quickly got the trend on altitudes. I don't think the letter F got as many "oohs" at the last Sesame Street awards show.

Rack 2 was themed sport flights. Jim flew a 2 stage B power Aztec, then a 3 D cluster off his remote launcher. Mike and Ian flew a Firestreak, that foam bocci ball-sized Star Wars Death Star that breaks in to streaming sections. The crowd loved the tangled parts all

thrashing down together. I finished the rack with a Centuri Nomad E.R. I built 30 years ago (whoa!) and my 2.5 x scale buildup version for D/E power.

We showed contest concepts next with parachute duration, super roc and other contest flights. Jim's PD bird had a 4 ft. chute but couldn't catch enough air to open. The high school guy fired some mini models for contrast. We scratched the boost glider as the wind kicked up, then ended with a QCR #90 helicopter duration model by Her Serene and Divine Royal Destructiveness, Bubbles the Terrible. Of course, it flew perfectly.

A short Oddball rack of UFO's and such went well until my DC-X. I goofed on the nose weight and gave the crowd a very short master class on dynamic stability. That was the only flight problem of the day.

The last rack was dedicated to Scale and Fantasy Scale models. A Centuri IRIS, flown near the last remaining example of the real rocket drove home the reason we do scale modeling. I told the Wallops Island story, explained how the work there changed the world. We fired the Nike Tomahawk, and Astrobee 1500 models telling the important story of the rocket programs no one ever hears of, and the people whose work we honor with these flights. We also flew an SLV93 Geosat in honor of "Ducky" Klouser, one of America's best rocketeers, who shall not fly for us again.

We finished with Jim's Red White and Blue on an Aerotech F25. When they realized how high it reached, there were gasps from the crowd! When they saw that it wasn't coming back, they were even more impressed! Jim got a nice ovation for his work.

The crowd estimate was 500+ with over half staying through the withering heat and humidity. Many told me how the launch had impressed them, and how proud the little history segment made them feel. Jim and the other guys tore down the range while I collapsed under a cold air duct, sucking down aspirin. I thank all of the range crew for the whole day's hard work; the Skylancers model

Continued next page



Waiting for Cassini's "Safe Arrival" Call

By Diane K. Fisher

The evening of June 30, 2004, was nail-biting time at Cassini Mission Control. After a seven-year journey that included gravity assist flybys of Venus, Earth, and Jupiter, Cassini had finally arrived at Saturn. A 96-minute burn of its main engine would slow it down enough to be captured into orbit by Saturn's powerful gravitational field. Too short a burn and Cassini would keep going toward the outer reaches of the solar system. Too long a burn and the orbit would be too close and fuel reserves exhausted.

According to Dave Doody, a Cassini Mission Controller at the Jet Propulsion Laboratory (JPL) in Pasadena, California, there was a good chance the Earth-bound Cassini crew would have to wait hours to learn whether or not the burn was successful. Of the three spacecraft-tracking Deep Space Network (DSN) complexes around the globe, the complex in Canberra, Australia, was in line to receive Cassini's signal shortly after the beginning of the burn. However, winds of up to 90 kilometers per hour had been forecast. In such winds, the DSN's huge dish antennas must be locked into position pointed straight up and cannot be used to track a tiny spacecraft a billion miles away as Earth turns on its axis. "The winds never came," notes Doody.

The DSN complex at Goldstone, California, was tracking the carrier signal from Cassini's low-gain antenna (LGA) when the telltale


Doppler shift in the LGA signal was seen, indicating the sudden deceleration of the spacecraft from the successful ignition of the main engine. Soon thereafter, however, Goldstone rotated out of range and Canberra took the watch.

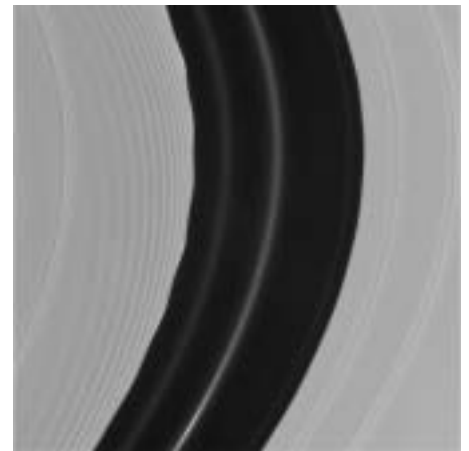
After completion of the burn, Cassini was programmed to make a 20-second "call home" using its high-gain antenna (HGA). Although this HGA signal would contain detailed data on the health of the spacecraft, mission controllers would consider it a bonus if any of that data were actually captured. Mostly, they just wanted to see the increase in signal strength to show the HGA was pointed toward Earth and be able to determine the spacecraft's speed from the Doppler data. If possible, they also wanted to try to lock onto the signal with DSN's closed-loop receiver, a necessary step for extracting engineering data.

Normally it takes around one minute to establish a lock on the HGA signal once a DSN station rotates into range. Having only 20 second's worth of signal to work with, the DSN not only established a lock within just a few seconds, but extracted a considerable amount of telemetry during the remaining seconds.

"The DSN people bent over backwards to get a lock on that telemetry signal. And they weren't just depending on the technology. They really know how to get flawless performance out of it. They were awesome," remarks Doody.

Find out more about the DSN from JPL's popular training document for mission controllers, Basics of Space


Flight (www.jpl.nasa.gov/basics) and the DSN website at deepspace.jpl.nasa.gov/dsn. For details of the Cassini Saturn orbit insertion, see www.jpl.nasa.gov/basics/soi. Kids can check out The Space Place at spaceplace.nasa.gov/en/kids/dsn_fact1.shtml to learn about the amazing ability of the DSN antennas to detect the tiniest spacecraft signals. 



Right after entering Saturn orbit, Cassini sent this image of the part of the Encke Gap in Saturn's rings. Image credit NASA/JPL/Space Science Institute.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Goddard Day, from page 8
airplane team for their generous assistance; the Community Day staff and volunteer team for crowd control; Ed, whose advice helped guide and focus our work throughout the day. Thank you all.

And then the next day, Jim and I did it again for the regular August Sunday launch at the Visitor Center. 

A Summer School Rocket Demonstration

By Garrett Miller-Moskal, NAR Junior 81621

Mrs. LaValle, my second grade teacher, called me on the phone and asked me to tell her summer school students about rockets. So on July 16, 2004 Grand (Paul Miller) and I went to Piney Orchard Elementary School in Odenton, MD with my rockets.

There were 85 kids and 10 adults in the media center (what Grand used to call a library). Even Dr. Bokee, my principal, was in the room. I used my Estes V-2 to show everybody the parts of a model rocket. The V-2 is retired, which means I can't fly it anymore. It has flown 24 times and is signed by Vern Estes, a famous model rocket person.

I used the V-2 and a launch pad to explain the steps to safely fly a model rocket. I showed everybody the four

flying saucers I used in our [Garrett and his Grand make up the Raging Rocketeer team. -kj] R&D project. I answered lots of questions about rockets. Before we went outside to the playground, I told them about the NAR rules to follow when we fly rockets.

Dr.Bokee held the door for everybody to go outside. He wished us good luck. When everyone was lined up a safe distance away, we started to fly the rockets. I introduced each rocket and led a countdown. We flew the Mini Mars Lander, the Wizard, the #2 Pencil Rocket, the Dart, and the Heat Seeker. I think they liked the Pencil Rocket the most. Grand launched the rockets for us with a Quest launch controller.

We lined up the four flying saucers on the ground. We had the old Estes Flying Saucer, the Snitch, the Area 51 Quest UFO, and Matt Filler's AAR Delta Flying Saucer. I

explained that we were going to find out which saucer would fly in the air the longest. We used stopwatches to measure the flights duration of each saucer. Everybody cheered. The AAR Delta won, it stayed up for 13 seconds. We wrote down the flight times on a clipboard.

When we were done, Mrs. LaValle and the other teachers handed out red, white and blue rocket popsicles. The red tasted best. I think this was out best rocket demonstration yet. ✨

Big NARHAMS Decals?

By John McCoy, NAR Senior 15731

A couple folks have ask about getting one or two of the 11.75" NARHAMS Logo decals before Naram. I got the boss to give me a break, the club will only be charged for materials, machine and laminator time.

I have to get a minium of 20 pieces (minimum material run) for \$120.00....12 bucks a pair! That's better than half of what I paid for my pair.

The self-adhesive white vinyl are printed in two colors with UV clear vinyl laminate overlay. These well be the same size as on my van. If we can get 10 families to pre-order a pair, I'll have them printed.

Pass the word and let me know who'd like a set. ✨



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NARAM-46: Adventures Relived By Chad Blair

Having a NARAM practically in my backyard made it possible for me to finally participate in this notable event. Among the things I've heard about NARAM was that it has become a gathering for friends, some old and some new. For me, it was a chance to meet people I'd only corresponded with via email or seen on a website, plus a chance to catch up with some folks from my earliest days in the NAR, including Matt Steele and George Gassaway.

In March of 1978, contest season approached and I busily arranged to spend my Spring vacation in building sessions with George Gassaway to prepare for the Alabama Regional Contest 7 in Birmingham, AL. While making our plans we got some extraordinarily good news for the space fanatics we were - NASA was going to transport the Space Shuttle Orbiter Enterprise to Marshall Space Flight Center in Huntsville for testing. A quick check of the calendar revealed it would be on the Monday before ARC-7! George immediately made arrangements for press passes so that we could 'cover the event' for the NAR... My dad, Herb Blair (also

incident and proceeded to the landing strip. We rode a blue government bus to the airstrip where we found a tremendous crowd awaiting the first public display of the new space machine.

We merely expected the 747 & Orbiter to just come in and land, but NASA clearly knew it would be a great



photo op. The combo gracefully swept in from the southwest turning north to fly over the city of Huntsville, then turned towards us to line up for landing. What surprise for us; they did



External Tank, and some SRB components on display. Again, most of the pics are apparently long gone...

At NARAM-46, Tuesday was reserved for a tour of the Udvar-Hazy Center at Dulles. For me, it presented a unique opportunity - not only was George going to be there,

but my dad was in town, too. Pop and I rode over to the museum and awaited the start of the guided tour. While we waited, Pop spotted George, whom he hadn't seen in 25 years, and we started chatting. George

remarked that we were going to have the chance to "re-live our great adventure" of seeing the Space Shuttle Enterprise.

After the tour wound down, Pop and I went back to look at the Enterprise more closely and found George and Chris Taylor on the balcony overlook in the space hangar. Chris snapped a shot for each of us on our respective cameras.

A great adventure relived... 🚀



known as 'Pop'), offered to haul us to Huntsville for the day - and so it was set.

I remember it being a cool morning. We arrived at MSFC, managed to get our passes and press packets without

a flyby at 500 ft, turning to give everyone a great view of the Enterprise. Then they brought it into land. We spent an hour walking around the 747, marveling at the spaceship riding on its back. I shot several rolls of C110 film (yech), Pop shot a whole roll of just the people gathered around (!) and George shot super8 movies of the event. Sadly, we did not get any pics of ourselves (go figure that) and many of the pictures are now "lost".

The following Sunday, all of the ARC-7 contestants rode up to Huntsville to see the Enterprise, an



NEXT ISSUE'S SUBMISSION
DEADLINE IS AUGUST 30!

Oct 3rd

1:00PM-2:00PM

Visitor's Center

Goddard Space Flight Center

PUBLIC LAUNCH

Sep 11th

12:00PM-9:00PM

Middletown Park

Glider Theme

SPORT/NIGHT LAUNCH

Sep 5th

1:00PM-2:00PM

Visitor's Center

Goddard Space Flight Center

PUBLIC LAUNCH

Launch Schedule

ZOG - FORTY THREE
5269 RIVENDELL LANE, APT 5
COLUMBIA, MARYLAND 21044



NARHAMS Model Rocket Club Newsletter