THE 206-43

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

Febuary 5, 1971 - Apollo 14 Lands on the Moon
The first moon landing after the nearly tragic Apollo 13 spacefilight
www.astronautix.com

Cub Scout Building Session January 14

Jennifer Ash-Poole NAR 61415

Zach and his finished Deltie

Right

On Saturday, January 14, Tom, Chris and Zach Ha and myself helped a den build Edmonds gliders.

The build session started out with the power out in the church where we were meeting. The adults brought over a generator and a bright light so meeting could go on (including building in the semi-dark.). Luckily, the power came back on, and Tom Ha walked in with his kids.

The den wanted to build Delties, but the supplier didn't have 56, so he sent 4 different kits. The older cubs built the Deltie and the Elcie (Both boost gliders.) The younger cubs built the Tinee and the Cici (both rocket gliders.) This worked out really well, for both the den and the helpers. Each of us took a kit. Zach taught his group the Delties, I got the Elcies, Chris took the CiCis, and that left Tom with the Tinees, which 3 of the dens were building. Almost everyone got finished building within the hour.

The group has yet to fly them, but they were impressed with the kits, and the kids couldn't wait to fly their rockets.

Chris working with his group of scouts

Upper left

FEBRUARY 2006
VOL 28 ISSUE 02

Inside this issue:

ZOG-43

Volume 28 Number 02

February 2006

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 Material in ZOG -43 is not copyrighted. Free and unlimited reproduction is granted with the proper credit to the author and/or ZOG-43.

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 :

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ZOG-43 is edited by Roy Lappalainen, 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 & 2005

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

Photographs: by Roy Lappalainen, except where noted.

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This Edition: ***30 copies***

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 Saturday of the month from 5:30 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

PRINCE ZOG (Vice-President)

Roy Lappalainen 410-653-6087

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)

Jim Filler 301-524-4447

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.

February
Presidents Message

Winter is a good time to clean out the rocket room and plan some building. I am amazed at how busy I get during the winter season, when I know I am not going to be flying that often. I have plans to try out my new airbrush; I have a few models I need to finish (and a few I want to get started!) You would think that winter would slow down, but it hasn't.

Of course, having the great flying weather the past few months hasn't helped. Luckily, it did snow and I have proof that it snows usually around our February sport launch). So what did you do during our snowstorm?

We lost electricity, but only for a few hours. I had a lot of things planned for when I was snowed in, but couldn't get to them. I hope you didn't lose electricity, and if you did, it was only out a few hours.

So, take a break from all that winter stuff and do some building. You'll have new models to fly when spring comes. In fact, our March building session is to build a bertha! So go to the hobby store, find a bertha, and come build it. You'll have at least one new model!

Zog Bubbles

Calendar of Events for 2006

Jan 07	05:30 – 10:00 pm	Monthly meeting, Build-A-Building building session
Jan 21	12:00 – 04:00 pm	Sport Launch
Feb 04	05:30 – 10:00 pm	Monthly meeting, Spot Landing discussion
Feb 05	01:00 – 02:00 pm	Goddard public launch
Feb 18	12:00 – 04:00 pm	Sport Launch, Fly-A-Building 2 pm
Mar 04	02:00 – 04:00 pm	Cadet building session
Mar 04	05:30 – 10:00 pm	Monthly meeting, Bertha bash building session
Mar 05	01:00 – 02:00 pm	Goddard public launch
Mar 10-12		NARCON, UWI Kenosha, WI
Mar 18	10:00 – 10:00 pm	Sport Launch, HSQM-39, Night Launch
Apr 01	02:00 – 04:00 pm	Cadet building session
Apr 01	05:30 – 10:00 pm	Monthly meeting, Unfinished projects building session
Apr 02	01:00 – 02:00 pm	Goddard public launch
Apr 15	10:00 – 04:00 pm	Sport Launch, Bertha fun event 2pm
May 06		Build-and-Blast, Hobbytown USA, Frederick, MD
May 06		Maryland Science Center Space Day, Balt., MD
May 06	05:30 – 10:00 pm	Monthly meeting, club history discussion
May 07	01:00 – 02:00 pm	Goddard public launch
May 13	10:00 – 04:00 pm	Sport launch, Record Trial-2
May 20	06:00 – 06:00 pm	Team America Finals, Great Meadows, VA
May 27-28		RAMTEC
May 27-28		National Sport Launch (NSL), McGreger, TX
Jun 03	05:30 – 10:00 pm	Monthly meeting, missile building session
Jun 04	01:00 – 02:00 pm	Goddard public launch
Jun 17-18	10:00 – 04:00 pm	ECRM-33
Jul 01	05:30 – 10:00 pm	Monthly meeting, sci-fi discussion
Jul 02	01:00 – 02:00 pm	Goddard public launch
Jul 15	10:00 – 04:00 pm	Sport launch, paratrooper spot landing 2pm
Jul 16		Goddard Contest
Jul 30-Aug 04		NARAM,Rainbow Valley, AZ
Aug 05	05:30 – 10:00 pm	Monthly meeting
Aug 06	01:00 – 02:00 pm	Goddard public launch
Aug 19	10:00 – 04:00 pm	Sport Launch
Sep 02	05:30 – 10:00 pm	Monthly meeting odd-roc, NARAM review
Sep 02-03		RAMTEC
Sep 03	01:00 – 02:00 pm	Goddard public launch
Sep 16	10:00 – 10:00 pm	Sport Launch, night launch, R/C fun fly 2 pm
Sep 19-26		World Space Modeling Championships
Oct 01	01:00 – 02:00 pm	Goddard public launch
Oct 07	05:30 – 10:00 pm	Monthly meeting, "Tactical Turkey" building session
Oct 21	10:00 – 04:00 pm	Sport launch sci-fi 2 pm
Nov 04	12:00 – 05:00 pm	Planning meeting
Nov 04	05:30 – 10:00 pm	Monthly meeting, R/C and glider building session
Nov 05	01:00 – 02:00 pm	Goddard public launch
Nov 18	10:00 – 04:00 pm	OPOSSUM-11, "Tactical Turkey" 2 pm
Dec 02	05:30 – 10:00 pm	Potluck Dinner
Dec 03	01:00 – 02:00 pm	Goddard public launch
Dec 16	10:00 – 04:00 pm	Sport launch

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

January Sport Launch Report

by Launch Manager Jennifer Ash-Poole, NAR 61415

The weather couldn't make up its mind what it wanted to do. I kept seeing it go back and forth between cloudy, and rain. I decided to go for it, and made the launch a go.

When I showed up at Middletown at 11:15, Kevin had sent one of his teams up to help me. I put the boys to work marking my flight line with flags, showing them how to set up the launch system, and putting the paperwork out. The temperatures were in the upper 50's, and there was no wind.

We had 4 TARC teams come up to fly. Long Reach had two, Middletown and the Explorers troop. There were a few individuals, but the away pad on 6 got the most workout. Tom Ha came down just to help, so I did safety check while he RSOd. The most popular motor of the day was D12-5, with 10 going off. Marck Petrovich had the most flights of the day at 6, even after taking some timeto fly his RC glider.

Around 2:45 -3pm, the cold front moved through and the wind started to pick up. Most of the teams had finished flying, so we shut down the range. The fun part began when one of the Long Reach team members locked his keys into the car. Kevin and I, along with Robert Edmonds, who showed up for one flight, went to work trying to figure out how to get the keys out. An old Estes launch rod, taped to another launch rod, proved to be the correct instrument. After a half hour of trying the door locks, trying the push locks, first Kevin got the gas cover to pop, then the trunk. The boys started emptying out the trunk, figuring out how they were goingto get in via the trunk.

After the emptyng of the trunk, a Dog-opoly sat on the ground. I was standing back there, watching the boys think, when the lid came off. I yelled, and pushed down as much money as I could before most of it flew off. Kevein said later that he heard me say something,then was surrounded by paper money.

Luis, the owner of the car without keys, decided to push on the back seat with hs feet, while one of the kids with long arms put in his hand topush on the seat button. This was about the time Kevin brings out his phone for a photo. The team leader says. "Mr. Johnson, I don't think this is the time for pictures." Kevin answered. "This is the perfect time for pictures." After much wrangling, the back seat was pushed, and the car was opened. There was much rejoicing. I did hear another team member go "The keys had better be in there, dude."

So around 4:10, with all team members, car keys and launch equipment accounted for, we left Middletown Park. This team had just gone through a good team building exercise with a dose of troubleshooting skills. It was a good day.

January Sport Launch

Engine Stats:

1/2A	3
A	1
B	13
C	7
D	20
E	8

Indian Space Research Organization Representative Speaks at Visitor Center

By Alan Williams NAR 14137

In late January, the local IEEE section met at the Goddard Visitor Center. The guest speaker was Mr. Virender Kumar, Counselor on Space Affairs to the Indian Embassy in Washington, D.C. Formerly a communications satellite engineer, he spoke on the history and development of India's national space research program.

In the 1960's India was the most populous nation on Earth, with a total of just under one billion inhabitants. Recently independent of British rule, it saw the exploration of space technology as promising new growth and prosperity for its citizens. Receiving assistance from NASA's Goddard Space Flight Center and other international partners, the Indian government set up a sounding rocket range near the village of Thumba on the southwestern coast. The team there developed skills in design, production and flight operations of small indigenous rockets, the "Rohini" series. In the early1970s a Goddard expedition brought Nike-Apache vehicles to help train them in handling more complex flight programs.

By the end of the decade, India was ready for the next step. A new orbital launcher was produced under the SLV designation. While easily mistaken for the American L. T. V. Scout, the vast majority of its hardware and design were produced by increasingly sophisticated Indian aerospace companies and government labs. Like any first orbiter, it met with mixed success, but gave its builders much practical experience.

With remarkable speed, the Indians have progressed to high energy solid and liquid propellants, plus cryogenic engines based on Russian designs. There are now over 40 facilities and institutes feeding the technology drive. Their latest rocket, the Geostationary Satellite Launch Vehicle carries 1ton+ satellites into geo-sync and polar orbits. G S L V bears some resemblance to the Chinese "Long March" rocket in appearance and size.
Because of India's relative economic ranking, the I S R O tends to get as much out of each satellite as it can. Thus, a communications payload will often also serve in remote sensing, meteorological, or astronomy roles. The data quality I saw during the talk compares well with similar Goddard missions.

Innovation in space resource usage has always been a hallmark of the I S R O program. The first direct-broadcast satellite, the NASA- Goddard A T S -6 was used by the Indian government to send health and education broadcasts into remote villages across the country. The Indian government continues similar programs today. (There is an N A R connection to this story. The much beloved Howard Galloway went to India twice to administer and observe the ground station operations. His love of the Indian people and the tragedy of his heart-related death there were the inspiration for the NAR Service Award that bears his name.)

Indian space technology has come a very long way in 25 years of orbital operations. Today they are preparing a Lunar Polar Orbiter so promising that NASA is contributing two instrument packages. Launch is projected for mid-2007. The Indian people and I S R O can be quite proud of their past and future contributions to exploration of space.

Shall We Live … So Long
By Ole Ed (NARHAMS Treasurer)

It must have been a dozen years ago when Jerry Flynn handed me a $20 bill and said use it ALL for his dues. I laughed and returned it to him. My Franklin Planner calendar didn't go that far into the future to calculate when his dues would expire! We agreed to pay forward for some lesser amount, and I gave him his change.

But with Chris Kidwell putting dues notations online and access to computer calendars, a number of years later I was able to handle a double sawbuck for John McCoy (he is still good for another year).

Then when the dues bonanza came in at the end of last year (that's what I call the holiday party where members typically tender their (dues) in an envelope and make snide comments about Jamaica vacations-hey I grew up in Jamaica, and I don't remember New York City being that nice), Kevin Johnson wrote a check for half a C note (I am pretending to be Damon Runyon, hence the use of patois)(wait maybe I'm Charles Dickens-when was the last time you endured such a long sentence) he earned the right to have his dues expire in 2016.

Now I don't know about your nickname, but I've been called Ole Ed for almost 43 years now and sooner or later I am going to kick the bucket. *Editors note: Ed, we all hope it is much, much later!* Putting down Kevin's dues in the books reminded me of my own mortality… soon I'll be putting in entries in the future for a time I'll never even see. Did that scare me? No, but got me a bit reflective, hence this article.

So this past weekend, I received Steve Humphrey's check for dues. Another half C plus more for Michael and Katherine and a ZOG-43 subscription! After some calculations, Steve is good now for dues until sometime in February 2017. Will I ever live to see the day? Thank you members for being so diligent in paying your dues. It really helps. Best wishes to you all from the sunny Bahamas.

Ole Ed

Upcoming Events!

Bertha Bash!
Mar 4th 5:30pm

Celebrate Berthas by building or bashing a Bertha

HQSM-39 and Night Launch
Mar 18th 10am

B Parachute Duration (MR)
C Egg Loft Duration
Predicted Duration
Open Spot Landing

February 2006 Meeting Minutes

Discussionby Jennifer Ash-Poole on spot landing and predicted duration Super-8 movies by Kevin Johnson: ECRM-30 and STS-1. The meeting was called to order at 7:15 pm by Jennifer Ash-Poole.

Members attending:

Jennifer Ash-Poole, Scott Branche, Jim Filler, Tom Henderson, Kevin Johnson, Chris Kidwell, Roy Lappalainen, John McCoy, Jim Miers, Paul Miller, Mark Petrovich

Outreach:

Chris Kidwell met with the River Bend MS TARC team. Kevin Johnson: 3 teams Long Reach, 1 team Limekiln, 2 teams Mount View MS. Tom Bagg: 10/28/05 launched 70 rockets at Westowne ES Jennifer: Jan 14: Cub Scout building session. Jennifer: Jan 28: helped Sean Hill science project (launched Yankee 9x with altimeter). Feb 1: Arundel MS Baby Bertha launch (TARC)

Minutes from January meeting read. Corrections: Motion to attend RAMTEC was not an official motion, per Jennifer. Motion to accept as corrected (Alan Williams/Paul Miller) passed.

Old Business:

Jennifer presented proposed budget for 2006.

See Page 9

Motion to accept budget as presented (Alan Williams/Jim Filler) passed.

Cadet program started today. We have 12 this year (one returning).

Today 8 built Couriers, 4 build Polaris. Launch tomorrow at Goddard at 1 pm.

Jim Filler: Paperwork for Middletown launches through July is approved, as is Old National August through December. Night launches in March and September were also approved. FAA waivers and NOTAMs have been filed for Middletown, but not yet received. Jim will write an article for next month's ZOG-43 with directions.

Motion to buy 2x 4-foot plastic tables, not to exceed $100, and trash the old 8-foot table (John McCoy/ Roy Lappalainen) passed.

Jim Filler has quotes for new TARC-style polo shirts, with embroidered logo. White, with blue collar and cuffs. Quote for 20+ is 17.50 each. Rough count at the meeting is for 20. Jim will be back in touch to see about getting a sample. Target delivery date around May 1.

RAMTEC will be Memorial Day weekend. Motion to attend as a club (Chris Kidwell/Alan Williams) passed.

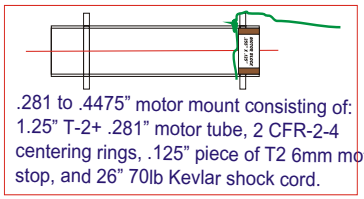
Continued on Page 10...

McCoy's Micro Wonder Works

Micro Big Bertha 06-12-03 - 3.658 10.5mm Down Scale

Model 297 Complete: 06-25-06 multiplier= .2733659

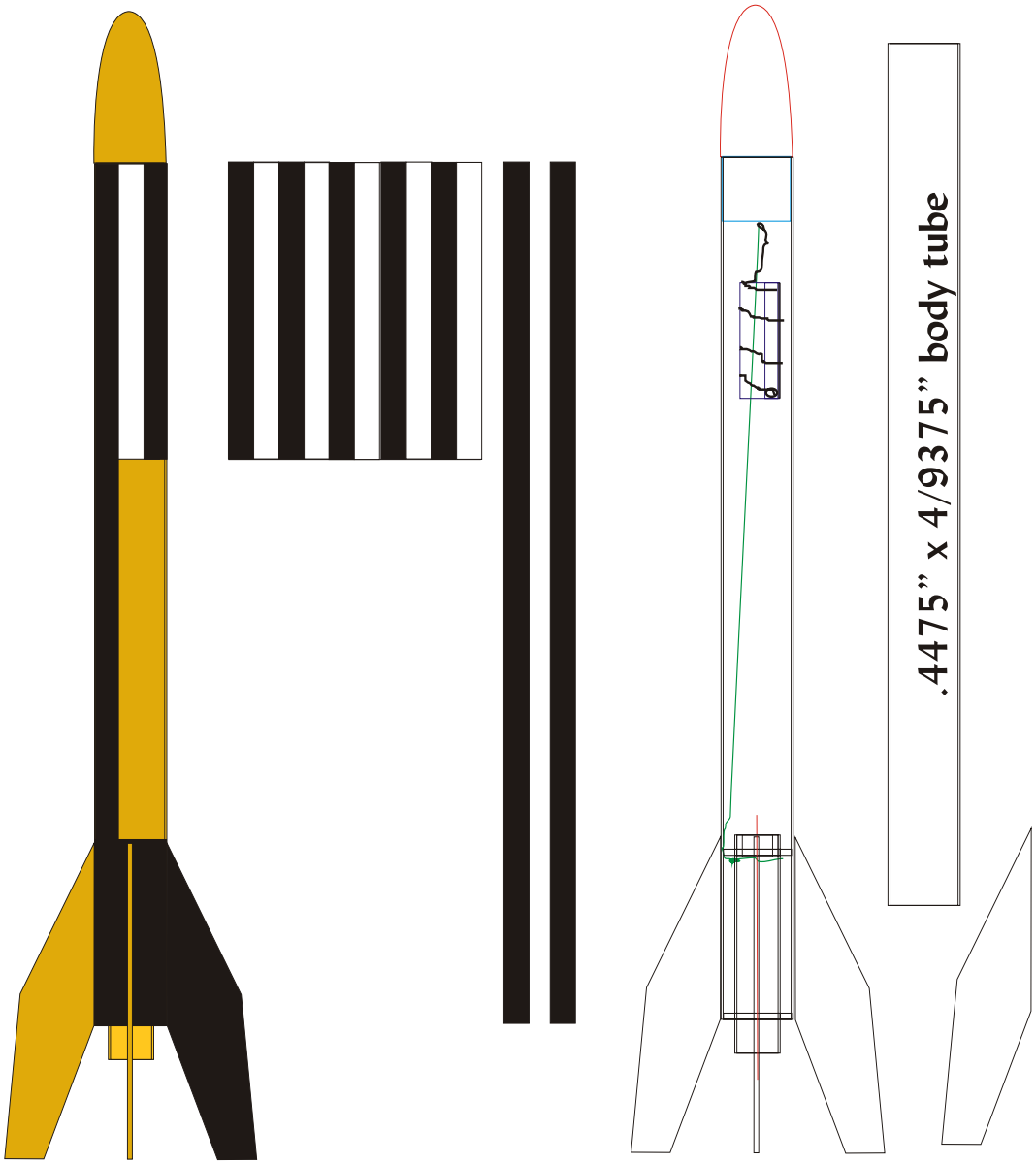
1 inch square



.281 to .4475" motor mount consisting of: 1.25" T-2+ .281" motor tube, 2 CFR-2-4 centering rings, .125" piece of T2 6mm motor stop, and 26" 70lb Kevlar shock cord.

Basswood .4475" x.875"

.4215" x.375"



CHEAP ROCKETRY - PART 2
By Tom Ha

This is part two in an ongoing series on ways to get your rocketry kick without the high cost of buying every item. Each article will focus on a particular part of rocketry, so you can mix and match from whatever you already have with the things from these articles.

Fins are a relatively easy item to find when you are looking for low-cost or free substitutes. My most common cheap fin stock comes from the fake credit cards I get in the mail. I had thought about calling each of the credit bureaus and making them stop giving out my information, but I changed my mind (at least temporarily) when I realized what a great source of fin material they provide. The nicest ones are the translucent blue Discover cards, followed by the American Express cards, in green, gold and "platinum". In the six months I've been collecting them, I have collected over 30 cards!

Another similar fin material is the hotel room door key. I have a pair of these from the Flamingo Las Vegas that are very bright and colorful. I started keeping these keys/cards when the news was full of headlines about the data that can be stored on them, including credit card numbers, addresses and other information.

2006 Budget

Expenses:		Income:	
ZOG-43:	$450	**ZOG-43:**	$300
ECRM:	$500	**Dues:**	$250
Night launch:	$20	**Raffle:**	$375
Rockville Consortium:	$70	**Donations:**	$250
FROG award:	$65	**Interest:**	$10
Planning meeting:	$20	**Cadets:**	$600
Mailing:	$50	**Contest feets:**	$150
ROMAC:	$300	**Fannie Mae:**	$500
Holiday party:	$25		
Section renewal:	$50	**Total:**	$2435
Contest sanctions:	$20		
Ribbons:	$100		
Cadet program:	$700		
Goddard contest:	$300		
Refreshments and other:	$50		
Total:	$2720		

Minutes Continued...

New Business

Annual NAR Needs Fixin Survey is due Feb 15. Jim Filler is filling it out, so if you have any input, send it to Jim. Comment from John: recinde process of decertifying motors based on date.

Comment from Jim: publish accurate and up-to-date contest certification list.

Wood Acres (Bethesda) Space Night is Thursday, March 30. Need someone to be in charge.

Email from Roger Brow: cub scout camp June 26-30 in Bowie. Theme is “Wings of Wonder”. Need 1hour demonstration talk/launch one day. Need to have a directive from city parks department that allows model rockets.

Space Day at Maryland Science Center is May 6. John McCoy will be in charge, Paul Miller will help. Asked for 4 tables to do more of a standard display, instead of Centennial of Flight display as in the past. MDRA will also be there with high power stuff. Planning MicroMaxx launch outside.

Susan Fite at College Park Aviation Museum wants us to do another building session this fall. We can use that venue to promote the 2007 Cadet program.

New members: Gavin, Matt, Angela, Alice, Ken

Paul nominates John McCoy for the 2006 FROG award for his many contributions to the hobby of

Motion (Paul Miller/Scott Branche). Motion to close nominations (Alan Williams/Paul Miller). Passed

Treasurer’s Report

In Jan, collected 116 and spent 49.86

Income: 80 dues, 26 raffle, 10 ZOG-43

Expense: 49.86 ROMAC

Cash: 604.90

Bank: 1254.13

Total: 1859.03

Motion to accept (Paul Miller/Scott Branche) passed

Motion to adjourn (Kevin Johnson/Jim Miers) passed. Adjourned at 8:23 pm

NASA Space Place

Micro-sats with Macro-potential

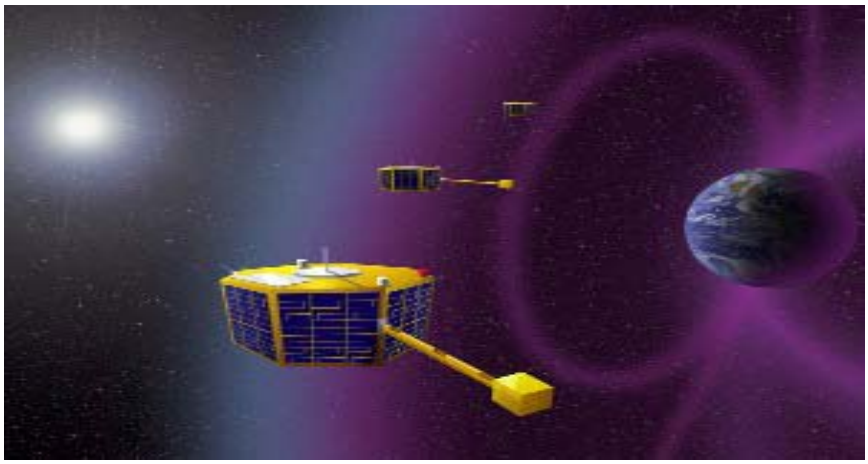
By Patrick L. Barry

Future space telescopes might not consist of a single satellite such as Hubble, but a constellation of dozens or even hundreds of small satellites, or "micro-sats," operating in unison.

Such a swarm of little satellites could act as one enormous telescope with a mirror as large as the entire constellation, just as arrays of Earth-bound radio telescopes do. It could also last for a long time, because damage to one micro-sat wouldn't ruin the whole space telescope; the rest of the swarm could continue as if nothing had happened.

And that's just one example of the cool things that micro-sats could do. Plus, micro-sats are simply smaller and lighter than normal satellites, so they're much cheaper to launch into space.

In February, NASA plans to launch its first experimental micro-sat mission, called Space Technology 5. As part of the New Millennium Program, ST5 will test out the crucial technologies needed for micro-sats—such as miniature thrust and guidance systems—so that future missions can use those technologies dependably.



Measuring only 53 centimeters (20 inches) across and weighing a mere 25 kilograms (55 pounds), each of the three micro-sats for ST5 resembles a small television in size and weight. Normal satellites can be as large and heavy as a school bus.

"ST5 will also gather scientific data, helping scientists explore Earth's magnetic field and space weather," says James Slavin, Project Scientist for ST5.

Slavin suggests some other potential uses for micro-sats:

A cluster of micro-sats between the Earth and the Sun—spread out in space like little sensor buoys floating in the ocean—could sample incoming waves of high-speed particles from an erupting solar flare, thus giving scientists hours of warning of the threat posed to city power grids and communications satellites.

Or perhaps a string of micro-sats, flying single file in low-Earth orbit, could take a series of snapshots of violent thunderstorms as each micro-sat in the "train" passes over the storm. This technology would combine the continuous large-scale storm monitoring of geosynchronous weather satellites—which orbit far from the Earth at about 36,000 kilometers' altitude—with the up-close, highly detailed view of satellites only 400 kilometers overhead.

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

ZOG - FORTY THREE
700 CLIVEDEN ROAD WEST
BALTIMORE, MD 21208

Launch Schedule

PUBLIC LAUNCH
Goddard Space Flight Center
Visitors Center
1:00PM - 2:00PM

February 5th

SPORT LAUNCH
Middletwon Park
Noon - 4:00PM

February 18th

PUBLIC LAUNCH
Goddard Space Flight Center
Visitors Center
1:00PM - 2:00PM

March 5th