

STARDUST

The newsletter of the ASTRE Model Rocketry club

www.astre471.org

Volume 17, Issue 1

Jan/Feb/Mar 2003

Northeast Airshow 2002

By Mark Hutchinson
and Alex DeMarco

On Memorial Day weekend, 2002, Schenectady County Airport played host to the Northeast Airshow. This is typically a show held closer to the end of September, but the air show committee was offered the Blue Angels, and only able to get them in May. That's a chance you just don't turn down. With total weekend crowds expected at 40,000, and coming in over 60,000 people, you know why!

Did you know that ASTRE hosted a booth at the event?



Photo by Dave Dunster - <http://www.skybluephoto.com>

DAY #1 (Saturday) Report:

It's funny to think that I used to live less than a half-mile from the Schenectady Airport where the Airshow is held, and never really went to it. Plenty of weekends were spent on the roof watching the circling flights, though. Now I live 40 minutes away, and I'm not only going, but displaying, too.

I arrived Saturday morning at 8:45 am, and already the parking lots had people waiting. With the storms during the week, there was a limit on where people could park. Luckily, I was allowed to pull onto the tarmac, and back up to the hangar door and unload.

First, several big boxes of display items, built rockets, rocket kits, spent engines, magazines, and the like were unloaded. Our table was close to the

hangar door without being in the sun. It was chilly inside, and I actually wore long pants!

I set up the table complete with a TV/VCR, samples of newsletters, magazines, and whatnot... Several club members stepped forward and lent the effort a number of completed models.

Thank you!

It didn't take long for the hangar to fill up with people. I was still putting the finishing touches on the booth when I looked up and counted FIFTEEN people checking out the display! We had non-stop visitors from 9:00 am until after the show was over! We only had one break, and that was when the Blue Angels were in the air...

Doug Hallenbeck and his two sons Aaron and Tim helped at the display, and much needed lunch and

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Stardust is published bimonthly by the Albany, Schenectady, Troy Rocket Enthusiasts (ASTRE), Section #471 of the National Association of Rocketry (NAR).

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Dr. Tony Phillips /NASA-JPL

Editor's Thermal:



Stardust Rebuked

Wow, what a weird year for ASTRE flying rockets!

First, I feel I must apologize to the club for the lack of the newsletter. Trying to push 6 issues a year was one thing, and with a club our size, we just aren't ready (again). We also NEED people to submit articles and ideas for the newsletter. Without you, this is just a bunch of paper with a stamp on it.

There were a lot of other personal things that happened, and if it's going to be a problem again, I'll make sure that there is better newsletter staffing coverage. 'Nuff said.

Considering we had a lot of launch dates cancelled/delayed because of bad weather, ASTRE club members did a lot more outreach in 2002, and that's good. Taking part in school show-and-tell exposes the hobby to fresh flyers. Going out to the community shows it to more people.

Perhaps we should take a cue from a local sky-diving club, who has a stuffed and mounted sky diver on the roof. Driving around town, with a fake missile coming out of the hood and roof might be another way to draw more people into our hobby. Can anyone donate a vehicle to the cause? Any good lines to tell the police when they pull you over?

— Mark Hutchinson

Topics:

Want to write an article, but don't know what to write about? Here's a list of the topics/items you'll find in most issues:

- NAR / Hobby News
- Upcoming Event Calendar / Results / Info
- Competition Corner / Event Hints
- New Releases
- Product Review
- Tech Tip / Tips + Tricks
- Plan / JimZ Archive
- Websites
- Flashback
- Club/Member Projects

Stardust Schedule of Publishing:

<u>Stardust Issue</u>	<u>Submissions by</u>	<u>Print Date</u>
1-Jan/Feb/March Issue	Jan 25	Feb 10
2-April/May/June	April 25	May 10
3-July/August/September	July 25	Aug 10
4-Oct./Nov./Dec.	Oct 25	Nov 10

Club members who wish to may have ads, pictures or messages printed in Stardust, space permitting. Copy must be in good taste, with editor having final cancel option. Non-member or commercial ads will currently be handled at a mutually agreed compensation rate.

(Continued from page 1)

bathroom breaks were taken, rotating people around. Crowds on the “Flight Deck” were congested, and moving around was difficult and slow. The crowd did seem to be understanding of the high head count...

Amongst the early entertainment, were the Iron Eagles, International Aerobatic Champion Nikolay Timofeev, The Mad Bomber (An A-10 bombing Demo team), a 407 mph fire breathing, Jet powered fire truck called the Hawaiian Eagle.

The Blue Angels made their presence known loudly in the afternoon. Roaring over the hangar where the ASTRE display was held, there was a definite shock wave when the jets cleared the roof.

Leaving the show on Saturday was an exercise in patience. Alex came up to check out the digs. Traffic was still backed up more than an hour after the airshow was over. As I was headed to camp after the show, I helped Alex pack everything into his van. All in all this was a really cool thing to do, and I'd do it again.

- Mark Hutchinson

DAY #2 (Sunday) Report: Alex

On Sunday I started out bright and early at 7 am. Packed the car, stopped at Dunkin Donuts and I was good to go. I arrived at the airport around 8:30 am to an overcast sky and chaos in the hangar. All the tables and chairs had been pushed back to the walls and the items that we left overnight were all over the place. After repositioning the table and chairs, I started to unpack the van. Shortly after I began unloading, it started to rain. I had placed 2 models on their stands behind the table and headed back to

the van to get the remaining 2 models. When I returned to the hangar I found both models on the floor broken. The wind had whipped up creating a swirling effect inside the hangar, and the metal booth dividers behind each booth fell down knocking the models of their stands. Arrrgh! The air show officials closed down two of the three hangar doors to protect the inside from more damage. The storm lasted for about 20 minutes, after it passed it remained overcast outside and raised questions as to weather the show would go on..

Later on that morning my booth mates John Sicker and one of our newest members Sarah Majot arrived. They immediately started fielding questions and handing out flyers and magazines.



ASTRE Display Booth, Northeast Airshow—with Doug Hallenbeck

The turn out was not as great as Saturday, but with fewer people crowding the table it made it easier to chat with everyone that stopped by. It also allowed us to take in a little bit of the show. We all took turns taking in some of the show. The hangar cleared out when the Blue Angles

were performing, so we were able to see quite of bit of them. Due to the low cloud level they performed much of their show right in front of the crowd at low levels which was pretty cool.

At about 4:30 pm we started packing up. After that I stuck around to watch the F16 and a cargo plane leave. There was no sense in rushing as I would only sit in traffic.

I think it was a great weekend for ASTRE and the Air show. Attendance at the show was the best it has been in years and our exposure will hopefully gain us some new members.

- Alex DeMarco

Red Mill Rockets

By Alex DeMarco

In June of 2002 I was invited back to my daughters 1st grade class to finish a rocket presentation I started in October. In October, I had brought in several models to show the class. After my discussion I had planned to launch some models in the school yard, but unfortunately the weather was not cooperating so outdoor activity was scrubbed. With winter settling in, my return was postponed until warmer weather arrived.

This time, I brought 2 flying saucer models and a small Quest kit. I figured the saucers would be neat since I could put them up on bigger motor without the fear of losing them, plus I could make a lot of NOISE to get the kids attention.

I flew my STYRO Fro Jr. on a C6-3, my Art Applewhite Saucer on a D12... That got the attention of the whole school!



Red Mill School, E. Greenbush—A proud Marie DeMarco on the right.

After the launching was done I had time to take this picture...

The kids had a great time... As did I..

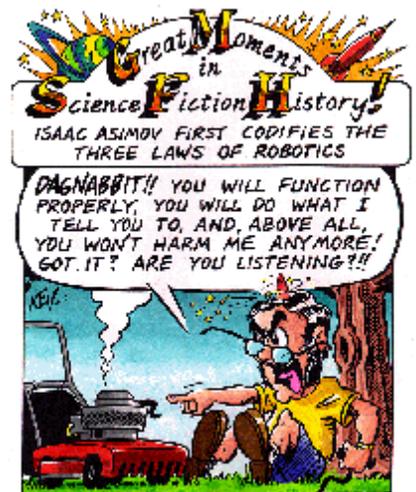
- Alex

Cartoon Corner



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Upcoming events & Challenge!

By Mark Hutchinson

April 26th ASTRE Sport Launch

Our Season opener is in April this year. As usual, our first launch is for sport flights only.

To encourage some new models, I'm going to run a little challenge. Take a look at the artwork to the right. Let's see how close each of us can get. I'll have a prize for first place, and something for second and third.

Now, there just HAPPENS to be a little scratch building article in this issue, to give you a few helpful ideas.

The only real rule is that the rocket you build **MUST** fly, and be recovered. Contestants will have photos printed in the following **STARDUST** issue.

Old and new are welcome to the challenge!

Mark Hutchinson



Events with FAA NOTAMS

By Alex DeMarco

Some background first. As you know, we have been limiting flights at our Johnstown field to models that weighed less than one pound. Due to our close proximity to the airport we are not able to obtain an FAA Waiver which would allow us to fly any sized model as long as we stayed within the waiver's maximum altitude. And since our field isn't that big, flying the smaller stuff increases our chances of getting them back. However, by posting notification to the FAA and the Johnstown airport we can fly models up to 3.3 lbs. and engines with 62.5 grams of propellant or less (G motors).

Given our close proximity to the airport and the size of our field we have imposed the following rules and procedures for flying models that are above 1 lb. but less than 3.3 lbs.

Flying Rules

- Please park in the designated parking area.
- Maximum Impulse G (62.5 grams).
- Max Altitude 2000 ft. substantiated either by a RockSim printout or vendor supplied data. (YOU MUST HAVE THIS TO FLY!)
- Only currently certified listed motors shall be flown.
- Only NAR and Tripoli members in good standing can fly F & G, you must have your membership card.
- Sport Flight Cards for all F & G flights **MUST** be filled out, including repeat flights.
- Given the varying wind conditions the LCO has the option to cancel any F & G flight at any time.
- Each model will go through a thorough safety inspection before each flight and will be weighed.

Customizing Rockets

...with everyday household items.
By Kelo Waivio #72132 / SMASH

I've always enjoyed building rockets of my own design and since becoming a "Born Again Rocketeer", or BAR I've started to expand on those designs. One type of scratch built model that I particularly enjoy are those that represent some type of space craft either a "scale model" of something from science fiction or from the my own imagination.

The problem with making your own space fighter or deep space exploration ship is often finding the right parts to express your



creativity or to add some unique aspect to a particular design. There have been some exotic nose cones available commercially in the past, from Estes and from other manufacturers. Most of these are no longer in production so the model maker is left to their own devices. Likewise other sci-fi-ish components must be built from the ground up to really customize your model. Recently I've discovered a few interesting ways to use some different household items to jazz up some of my designs.

One morning I was removing the plastic cap from a new stick of Right Guard deodorant, and for some reason paused to look at this elliptical bubble like bit of plastic. It looked a lot like a bubble canopy one would see on a contemporary fighter plane.



Left: Wire nut and Copperhead tube engine pod details. Deodorant caps unmodified and trimmed to fit.
Right: PNC-60 with deodorant cap canopy in place.

With this thought in mind I saved it. Likewise the small plastic guard from a disposable razor also looked a lot like an instrument fairing or a star-drive intercooler device and I saved a couple of them too.

Later, I began working on a futuristic fighter like design that

was in part inspired by the Star Fury fighter from the Babylon 5 TV series. I needed a cockpit on the Estes PNC-60 nose cone I had selected and went and dug out the deodorant cap. I trimmed the thick edge from around the perimeter and gently shaved off some raised lettering on the cap. I glued the cap onto the nose with medium CA and filled the gaps with thick CA followed by a little Testor's plastic model putty. The result? An almost instant fighter cockpit.

I then needed something to make the wing tip "engines" more interesting. Looking around in my work shop I settled on wire



Left: Finished canopy on nose cone.
Right: Engine pods mounted. Wire nut/centering ring units were recessed to appear more like intakes.

nuts. The yellow ones I had fit nicely into the center hole of some 13mm x 18mm centering rings. These were then glued into the forward end of the BT20 engine pods for a jet intake-like look. I scrounged up some old Copperhead igniter tubes, cut them off to 3/4" long, clustered them up and glued them into the aft end of the tube to complete the engine pods. For a fairing on the rear of the main fuselage I used a plastic guard from a disposable razor.



Left: Parts for one leg tip pod.
Right: Leg tip pods, a ping pong ball fairing and the Blister before painting.

There are several other items I have since scrounged from around the house and applied to a my home grown "Lander"

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Customizing Rockets (cont'd.)

...with everyday household items.
By Kelo Waivio #72132 / SMASH

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design. Once again wire nuts added some detail to the leg tip pods, which were made from spent engine casings. A ping-pong ball cut in half became bulge like fairings on the fuselage. One of the small blister packages my disposable contact lenses come in became a porthole on the "door". The biggest item of all on this model was the tapered body, which started life as a 32 ounce drink cup from Blimpie's.

Some other everyday items that have yet to make it into a model include a top from a toilet bowl cleaner bottle and some clear plastic caps from the numerous bottles of hair spray I seem to find in every bathroom in the house (I have two teenage girls). Many products come in clear plastic blister packaging. Elliptical or spherical sections of these could be utilized as canopies or fairings on the fuselage or pods on the fins. These thermoformed blisters should be light enough to use on most

...items that have yet to make it into a model include a top from a toilet bowl cleaner bottle and some clear plastic caps from the numerous bottles of hair spray I seem to find in every bathroom in the house (I have two teenage girls).

models and large enough to be useful on mid and high power rockets too. As can be seen with the lander, the whole shape of a rocket can be drawn from otherwise non-rocketry materials and parts. And this doesn't include the various "Odd-Rocs" that some flyers have built. So the next time you go to empty the trash, expend a little bit of imagination first. You never know what cool looking rocket part you might be saving from the landfill.

Visit SMASH at:

smashnar500.homestead.com

(The Editor would like to personally thank Kelo Waivio for allowing Stardust to run this article. There are certainly going to be more rocket parts available to this modeler. The editor would further like to congratulate Alex DeMarco for having an abundant future source of hair spray caps and such from his *three* girls. - MH)



Unfinished Lander

Recognize what the outer part of the body is made from?



The finished Lander

NASA's Space Place

Frisbees in Space
By Dr. Tony Phillips

When Pete Rossoni was a kid he loved to throw Frisbees. Most kids do-it's pure fun. But in Pete's case it was serious business. He didn't know it, but he was practicing for his future career " in space exploration.

Grown-up Pete Rossoni is now an engineer at NASA's Goddard Space Flight Center. His main project there is figuring out how to hurl spacecraft into orbit Frisbee-style.

The spacecraft are small-about the size of birthday cakes. "This wouldn't work with big satellites or heavy space ships like the shuttle," notes Rossoni. But a cake-sized "nanosatellite" is just right.

Nanosatellites - nanosats for short - are an exciting new idea in space exploration. Ordinary satellites tend to be heavy and expensive to launch. The cost alone is a deterrent to space research. Nanosats, on the other hand, can travel on a budget. For example, a Delta 4 rocket delivering a communications satellite to orbit could also carry a few nanosats piggyback-style with little extra effort or expense.

"Once the nanosats reach space, however, they have to separate from their ride," says Rossoni. And that's where Frisbee tossing comes in".

Rossoni has designed a device that can fling a nanosat off the back of its host rocket. "It's a lot like throwing a Frisbee," he explains. "The basic mechanics are the same. You need to impart the spin and release it cleanly-all in about a tenth of a second." (The spinning motion is important because it allows the science magnetometer to measure the surrounding field and lets sunlight to play across all of the nanosat's solar panels.)

The ST5 nanosats are designed to study Earth's magnetosphere-a magnetic bubble that surrounds our planet and protects us from the solar wind. But their primary goal, notes Rossoni, is to test the technology of miniature satellites.

"We haven't done anything like this before," says Rossoni. Soon, however, the concept will be tested.

A trio of nanosats is slated for launch in 2004 on the back of a rocket yet to be determined.

The name of the mission, which is managed by JPL's New Millennium Program, is Space Technology 5 (ST5).

Can groups of nanosats maintain formation as they fly through space? Will their internal systems-miniaturized versions of full-sized satellite components-satisfy the demands of both the harsh space environment and critical science measurements? Is Frisbee-tossing as much fun in orbit as it is on Earth?

ST5 will provide the answers.

Read about ST5 at:

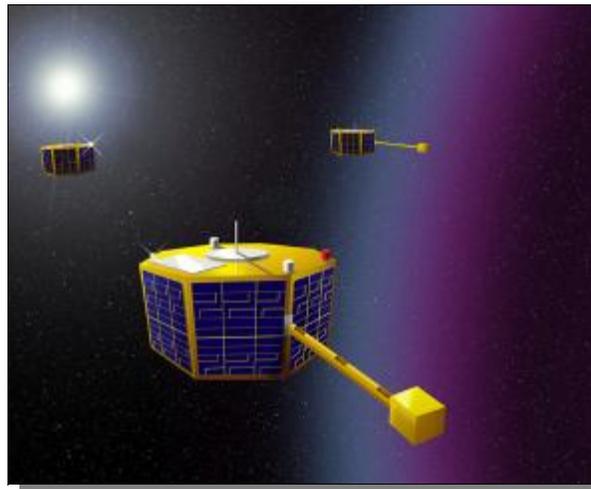
<http://nmp.nasa.gov/st5>

Budding young astronomers can learn more at:

http://spaceplace.nasa.gov/st5/st5_tortillas1.htm

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

Editors Note: "NASA's Space Place" is a new column we are adding to the newsletter. If you enjoyed this column, please let us know.



Artists rendering of Nanosats

CALENDAR						
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

CALENDAR						
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Calendar of Events

ASTRE Contacts :

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 Jeff Vincent 439-2055 jvincent@acmenet.net

The meetings are usually informal bull sessions where club business is discussed first, followed by either general "what's new," or a predetermined topic or activity. This schedule can change, and it is advisable to contact Alex DeMarco to find out about any last-minute changes.

UPCOMING EVENTS

Note: ASTRE events appear in **bold type**.

- Feb 16th CATO 72 Open Meet
- April 26th ASTRE Sport Launch**
- April 27th CATO 75 Open Meet
- May 17th ASTRE Open Competition / Sport Launch**
- June 7th ASTRE Open Competition / Sport Launch**
- June 14th CATO 77 Open Meet
- July 19th CATO 78 Open Meet
- July 26th ASTRE Open Competition / Sport Launch**
- August 1st—8th NARAM-45 (<http://www.naram45.org>)
- August 23rd ASTRE Open Competition / Sport Launch**

Watch the ASTRE web site

(<http://www.astre471.org>)

or ASTRE471 on eGroups

(<http://groups.yahoo.com/group/ASTRE471>)

for announcements of more meetings/launches.

For more NAR Northeast Region meet info, see:

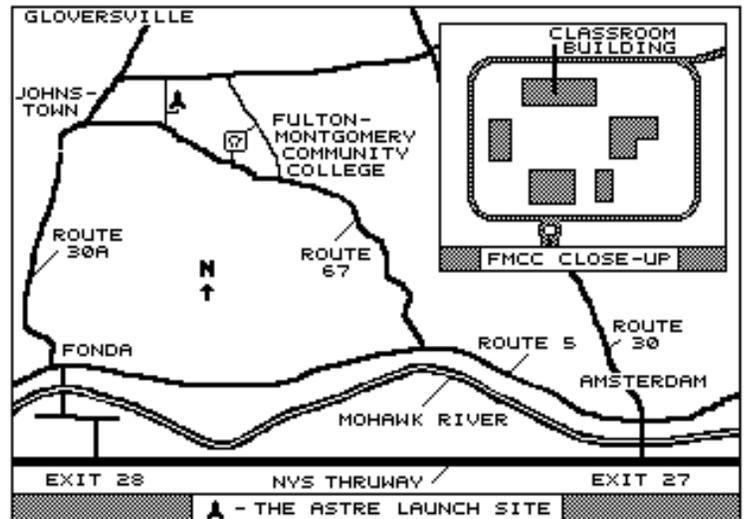
<http://www.acmenet.net/~jvincent/nercb.html>

Is your
Membership
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 Visit www.astre471.org
 to download a form!

How to get to ASTRE's Flying Field

Our field is just outside of Johnstown, NY.

- From the east, take the Amsterdam exit (#27) off the NYS Thruway.
- Take a right and follow Route 30 North for one mile.
- Take a left at the second light after the bridge onto Route 5 West.
- Follow Route 5 for three miles. Take a right onto Route 67.
- Follow Route 67 for 5.5 miles. Shortly after passing FMCC, take a right onto the small road by Ed's RC shop. After one half mile you will see a white fence on your right. Follow the driveway just before the fence, and park in the parking lot. Walk to the range.



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NASA's Space Place—Frisbees in Space

Calendar of Events



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