



The COS-Rocketeer

The Official Journal of the Colorado Springs Rocket Society (COSROCS)

NAR Section #515

2002 LAC AWARD WINNER!



Volume 18, Issue 1-3

January-June 2007



**Dave and Tom pretend to follow
Dr Warren's instructions,
Hobbytown Rocket Build,
May 2007.**

Photo courtesy Jeff Lane/COSROCS website.

Disclaimer: Most of the inputs for this issue were received in email form. Some of the launch logs were compiled from handwritten cards and logs, and were hard to read as a result. The editor did his best to decipher them and apologizes for any inadvertent errors.

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The COS-Rocketeer is the official journal of the Colorado Springs Rocket Society (COSROCS), NAR section #515. This journal, published bi-monthly by members of COSROCS, serves to provide information on all aspects of rocketry. Articles, rocket plans, and photos are always welcome. Items for publication should be submitted to the editor:

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Material appearing in **The COS-Rocketeer** may be reprinted by *Sport Rocketry* magazine or other NAR section newsletters, as long as proper credit is given.

COSROCS' membership dues are \$20.00 per year per family. Junior memberships (under age 18) cost \$5.00 per year. Checks should be made payable to COSROCS. Applications and payment should be mailed to the following address:

COSROCS
P.O. Box 15896
Colorado Springs, CO 80935-5896

The COSROCS phone number is (719)575-0060

If you have access to the Internet, COSROCS has a web site and a listserv. The COSROCS web site is:

<http://www.cosrocs.org>

The e-mail address for the listserv is cosrocs@yahoogroups.com. To subscribe to the listserv, go to <http://www.yahoogroups.com> to register and select COSROCS.

COSROCS is a family-oriented club. Everyone is always welcome at our launches and meetings. Please join us. You'll have a blast!

COSROCS received the NAR's LAC Award (Rockwell Trophy) in 2000 and 2002 for having produced the best NAR Section newsletter.

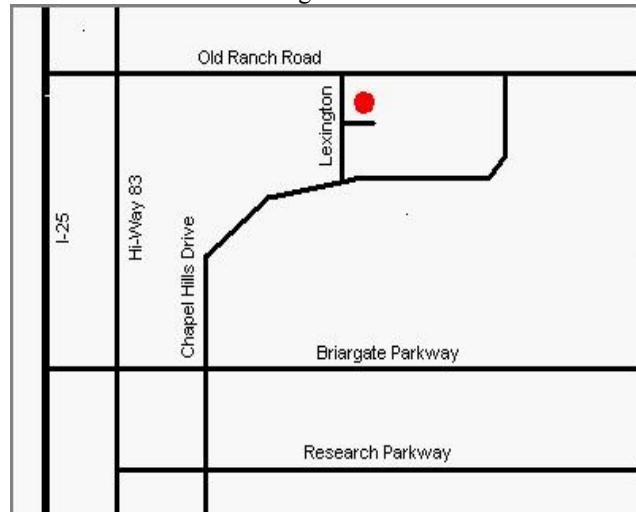
COSROCS Officers (2007)

President:	Dave Virga, virga@datawest.net
Vice President:	Ernie Puckett, ern77ern@yahoo.com
Section Advisor:	Warren Layfield, section515@juno.com
Secretary:	Nadine Kinney, photos.by.nadine@pcisys.net
Treasurer:	Mark James, markjames@pcisys.net
Librarian:	Dave Virga, virga@datawest.net
Contests:	Greg Elder, gelder@pcisys.net
Web Master:	Mark James, markjames@pcisys.net

Launches and Meetings

COSROCS holds a business meeting on the second Wednesday of every month from 7:00PM until 9:00PM. The meeting location is the Gold Hills Police Station at 705 South Nevada Ave., Colorado Springs.

COSROCS holds a sport launch on the second Saturday of each month, weather permitting. The launch is held at the Challenger Middle School, located at Lexington Blvd. in Colorado Springs. The launches begin at 9:00AM and last until approximately 12:00 noon. Our launches are free and open to the public. A one pound weight limit is imposed for rockets launched at Challenger.



COSROCS holds a sport launch on the fourth Saturday of each month at Cape Preble in Peyton, Colorado. The launches begin at 9:00AM. This launch site has a 3.3 pound weight limit for rockets. To get to this launch site, head east on Hwy 24 towards Peyton. Turn left on Peyton Highway, right after the little grocery store. After the curve, bear right onto north bound Peyton Hwy. Drive to Sweet Road, 4th turn on the right. Go approx 2 1/4 miles on Sweet road. On the left, near the bottom of the hill, is a gate to the launch site (21410 Sweet Road). Look for the green ranch gate.

The Nagging Editor

By Tom Dembowski

Finally caught up folks! Only one thing still remains, I continually need material! Jeff has done a superb job of posting stuff on the web site which has been a GREAT help, but I still need more, a lot more, if we are ever going to get back to the six issues per year target.

Judging from my inbox, y'all write enough emails, just shoot me a paragraph or two every time we have an event and we'll be in good shape. We also need to keep track of this stuff for awards time too. I doubt there are many clubs out there doing anything like the community service we provide. We should be blowing away the competition year after year.

We are getting better with the launch logs starting with the last issue. Warren and I have come up with a system to get them to me right away so I can copy them into word format before the little scraps of paper go bye-bye forever. It is not easy, especially since I am not a great typist. Plus reading rocketeer's hurried scribbles is sometimes impossible. So, if your name is mis-spelled or something looks wrong, be aware I did my best transcribing what was on the logs.

The President Speaks!

By Dave Virga, COSROCS President

Hello COSROCKeteers,

I'm thrilled to see that we're continuing last year's momentum into 2007! Thanks in large part to Jeff Lane, we have club t-shirts again!! Jeff has also been leading the public relations charge for the club, writing news articles and expanding our web presence. George Shaifer and Ernie Puckett are working hard on the new launch system; the new components that keep showing up look awesome! Tom Dembowski is breathing new life into the newsletter. Warren keeps beating the bushes, and comes up with a steady stream of schools and groups that need rocketry support. Les and Deanna Mann are doing a superb job with their 4-H rocketry program.

Most exciting though is seeing new families at the launch site; that's right, entire families! I've also seen members bring friends, colleagues and neighbors to rocket launches. This is a fundamental measure of the club's success - people devoting the bulk of their prime Saturday time to practice rocket science with us. Let's keep up the great work!

Do you have a bit of spare time that you could donate to the club? Do you have any special areas of interest or expertise that you think would be useful to a rocket club? Let us know! Our to-do list is long; we can always use extra help. Everything that we do is in support of future generations... Pay forward!

Section News

COSROCS assisted Hobbytown USA on 5 May 2007 with a rocket build and take (see cover photo) on a cool rainy spring day. Lots of families and young rocketeers turned out to learn how to build a generic model rocket. Several joined us at Challenger Middle School to launch a few weeks later. Thanks to the ever present Warren Layfield for coordinating and leading the event.

On 26 June COSROCS turned out to support La Plata Investments in a unique groundbreaking event to celebrate their new Cordera community center. Three hundred rockets blasted into the air with the push of a single button. Seconds before, an Estes Oracle was launch to capture the event. Approximately 350 people attended the ceremony which was emceed by our friend Dave Talbot. For setup and take down, many COSROCS members turned out on a very windy day along with members of the US Army. After the launch, kids from the Briargate YMCA were on hand to retrieve and keep the rockets they helped to build.



Submitted by Warren Layfield

Make Your Own 2-D Flying Nanosat!

Something whizzes past your ear. You turn, leap, and snatch the disk from the air. It's a Frisbee! Frisbees flying through the air are fun to catch and watch. One young Frisbee fan, Pete Rossoni, watched them fly and dreamed of spacecraft flying past planets and stars.

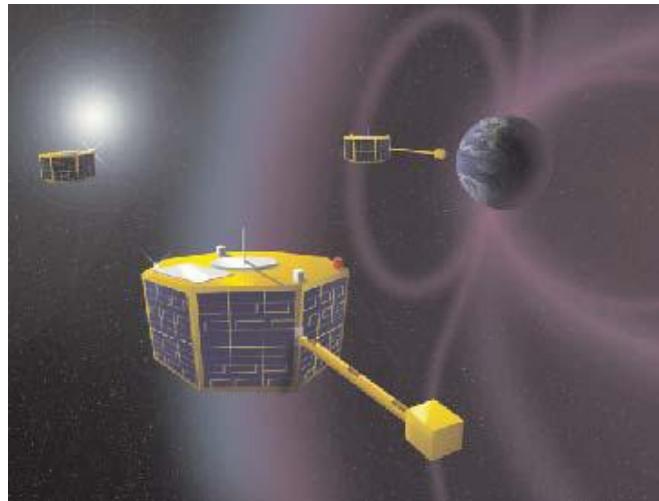
Pete took those dreams and his Frisbee with him to college. At college he studied to become an engineer. Pete wanted to design cars, airplanes and spacecraft. After finishing school, Pete got a job at NASA. "Sometimes your dreams do come true," he says.

At NASA, Pete is working on launching satellites like he used to throw Frisbees. These satellites are small, about the size of a birthday cake. "This wouldn't work with big satellites or heavy spaceships like the shuttle," he says.

Pete has a special name for these cake-sized satellites. "Nano" means tiny, so he calls them "nanosatellites" or "nanosats" for short. Nanosats are a new idea. Usually satellites are big and they cost a lot of money. Sometimes scientists have to save their money for a long time before they can send a satellite into orbit. Nanosats are much cheaper. Because they are so small, one rocket can carry many of them into space. Nanosats ride piggy-back on the rocket. When they reach space, they are flung from the rocket and go spinning into orbit.

This is where Frisbee meets science. Pete has invented a gadget that can fling a nanosat from a rocket. "It's a lot like throwing a Frisbee," explains Pete. "You need to spin the satellite and release it cleanly—all in a fraction of a second."

NASA hopes to launch the first nanosats into Earth orbit in 2004. This mission is called Space Technology 5. Three 8-sided nanosats will ride to space on the back of a rocket, and Pete's invention will throw them off. The nanosats will gather data for scientists about Earth's magnetic field. But this is just extra-credit.



The Space Technology 5 nanosats will test their miniaturized technologies as they study Earth's magnetic field.

Their main mission is to answer some questions: Can nanosats fly in formation? Will their tiny computers (nano-computers!) work? Is Frisbee tossing as much fun in space? NASA plans to find out.

You can make your own 8-sided flying "nanosat" disc out of paper. It also doubles as a "Ninja" 8-pointed star!

Learn More:

Books:

Northern Lights (Nature in Action), by D.M. Souza (ages 4-8), ISBN 0876146299. (The Northern Lights are caused by Earth's magnetic field, which Space Technology 5 will study.) Aurora: A Tale of the Northern Lights, by Mindy Dwyer (ages 4-8), ISBN 0882405497.

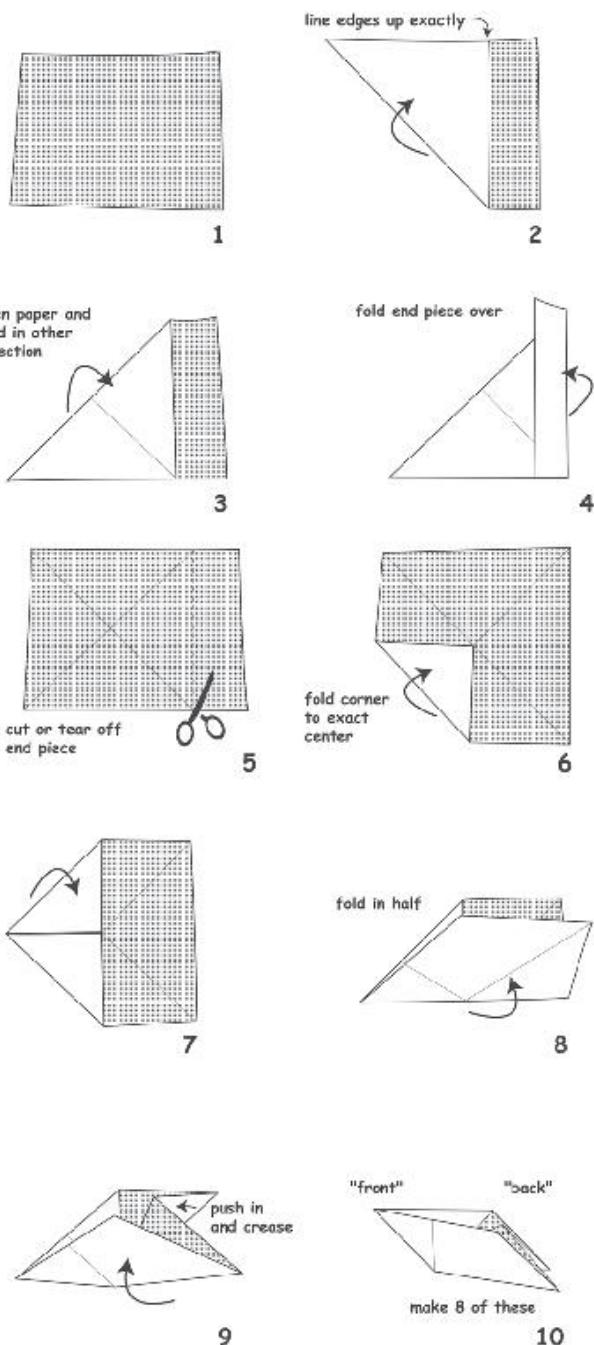
Web Sites:

Ask the Space Scientist: Earth's Magnetic Field and Auroras—image.gsfc.nasa.gov/poetry//ask/aearth.html
The Space Place: Play the Nanosat Flingman Game! spaceplace.nasa.gov/st5/flingman.htm
Space Technology 5 Web site: nmp.nasa.gov/st5

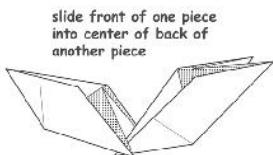
How to Make Your Flying Nanosat and Star:

All you really need are 8 sheets of plain 8 1/2x11-inch paper. Recycled photocopy or printer paper is fine. To make a smaller "Nanosat," you can use 4 sheets of paper, cutting each one in half width-wise first to make 8 smaller sheets. (Where the drawing below shows scissors cutting off one end of the paper, you can crease the paper a few times, then carefully tear off the end piece.)

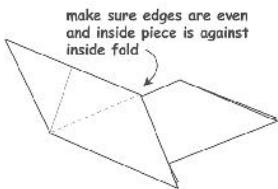
Fold each of the 8 sheets carefully as shown in these pictures. Fold on a table or desk and make those creases sharp!



Connect the 8 folded sheets like this:



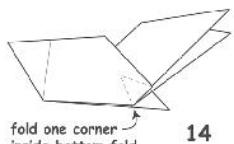
11



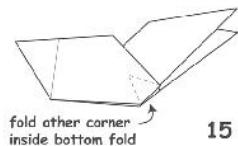
12



13



14

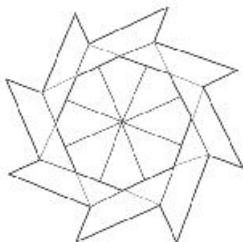
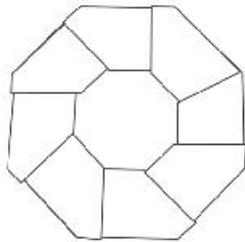


15



16

When all the folded sides are connected, you will end up with an 8-sided disk. If you push in on opposite sides, the points slide out and you can also have an 8-pointed star!



Have fun spinning the “Nanosat” and the star just as the Space Technology 5 nanosats will be tossed into space like Frisbees.

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

COSROCS Items for Sale

COSROCS Pins/T-Shirts. The COSROCS pins are still in. Thanks to Jeff Lane, we now also have the “rocket scientist” and tie-die club tee shirts in stock as well. Contact Warren Layfield if you want to purchase a pin and Jeff for the shirts.

Hawks Hobby Super Cherokee 3D

Submitted by Greg Elder

Hawks Hobby produces upscale versions of several classic model rockets. The Super Cherokee 3D is a large version of the Estes Cherokee D, a favorite model rocket for many Born Again Rocketeers. Standing 40" tall, the Super Cherokee 3D is about twice the size of the original Estes version. Besides its size, the Super Cherokee 3D adds another twist—it uses a 3-engine cluster motor mount (3 X 24mm).

The Super Cherokee 3D comes with quality parts. These include a heavy duty body tube (BT-70 size) that is pre-slotted for the fins; a large balsa nose cone; laser cut basswood fins; basswood centering rings; Kevlar and elastic shock cords; a 24" nylon rip-stop parachute; and water slide decals. Seventeen pages of illustrated instructions are also provided. The instructions, though fairly basic, are easy to follow if you have previously built a mid-powered rocket.



Construction of the Super Cherokee 3D begins with the engine mount. The engine mount consists of three long 24mm engine tubes, engine blocks, engine hooks, and centering rings. The centering rings are very thin at the outer edges near the holes for the engine tubes. A note in the instructions recommends that you coat the centering rings with CA glue to strengthen them. (I did not follow this recommendation. As such, all three of my centering rings broke during construction. I was able to easily repair the damage, but I would suggest that you heed the suggestion and apply CA to strengthen the rings.) The top centering ring contains a small hole for the Kevlar cord used with the recovery system. The Kevlar cord is tied

around the engine tubes behind the top centering ring and the free end of the cord is passed through the small hole. A length of elastic is tied to the free end of the Kevlar cord to complete the shock cord system.

Each fin comes as two pieces that must be glued together. The pieces fit together easily, as the edges that go together are cut with a jagged pattern such that the parts interconnect. The one draw back is that you will need to do quite a bit of filling and sanding afterwards to hide the jagged seam where the two fin pieces connect. I solved this problem by laminating my fins with card stock. This not only eliminated the need to fill and sand the fins, but served to provide additional strength to the fins. To laminate the fins, I first applied a thin layer of wood glue to the fins. I then placed a piece of card stock to the fins and pressed them smooth. Next, I placed a stack of books on the fins to keep them flat while drying. (I allowed the fins to dry for 24 hours.) Once dry, I used a sharp hobby knife to cut away the excess card stock around each fin.

The fins have short tabs that go through the slots in the body tube. With the engine mount placed in the body tube according to the instructions, the fin tabs are not long enough to be glued to the engine tubes. (Most mid-powered rockets that use through-the-wall construction allow for the fins to be glued to the engine tube.) To remedy this situation, I rotated the engine mount slightly so that the fin tabs could be glued to the motor tubes. (I test fitted everything before gluing in the engine mount and attaching the fins.)

The Super Cherokee 3D gives you the choice of using 3/16" or 1/4" launch lugs. I used the 1/4" launch lugs for my kit. You simply cut the launch lug into two equal parts and glue them at either end of the body tube. To complete construction, a large screw eye is glued into the bottom of the nose cone. The elastic shock cord is then tied to the screw eye.

To finish the rocket, I used Elmer's Wood Filler that I thinned with water and applied it to the nose cone. Once dry, I sanded the nose cone smooth. Next, I painted the entire rocket with primer and sanded everything using fine grit sandpaper. Finally, I painted the rocket with the suggested colors—red nose cone and white body. A set of large water slide decals are provided to complete the rocket and to give it the look of the classic Estes Cherokee D. The decals went on easily. Once dry, I gave the rocket a thin layer of clear gloss to protect the decals.

The Super Cherokee 3D can use Estes D and E size engines. Spacers are provided for use with D engines. I launched my Super Cherokee 3D on a cluster of three D12-5 engines. Cluster rockets are a favorite of mine, as they produce lots of fire and smoke at ignition. The Super Cherokee 3D did not disappoint. It flew straight and true, with a picture perfect recovery. No damage occurred to the rocket

upon landing. The ejection delay was a little short. D12-7's would have been a better choice to use.

Overall, this is an excellent kit—quality parts and straight forward construction. The Super Cherokee 3D sells for \$62.99. You can contact Hawks Hobby via their web site to view their on-line catalog and to order kits. The web site URL is <http://www.hawkshobby.com>.

Launch Log for Challenger Middle School 12 May 2007

Mark James	Silver Hawk
Clem Malone	Dragonite
Ryan Trillplett	Alpha
Patrick	Amazon
Logan	Tazer
Eric Allen	Firehawk
Tony	Baby Bertha
Mike	Big Bertha
Paul McCleman	Skywriter
Sean Halligan	Bandito
Eric James	Tres
Jared	Hornet
Leo	Solar Slam
Levi	gnome
Luke	Firehawk
Heather	Fire Streamer
Ceebrie Black	Crossfire
Kevin Black	Bandito
Merlin	Blackbird
Matthew Walter	Big Bertha
Eric	Firehawk
Patrick	Firehawk
Thomas	Firehawk
Andrew	Firestreak SST
Adam	Bomber
Michael Perez	Victor
Paul	Skywriter
Isaac	Bandito
David Steinninger	Wizard
Jeff Lane	Gunslinger
Paul Childress	Alpha
Rob Harsh	Maxi-track
Mike Ricci	Big Bertha
Tony	Baby Bertha
Les	E2X
Peter	E2X
Cedric Berek	Crossfire
Logan	Blackbird
Patrick	Nasa
Ryan	E2X
Josh James	Viking
Luke	Firehawk
Levi	Gnome
Tristan	Speed Freak
Isaac	Bandito

Paul	Skywriter
Bill	E2X
Patrick	Firehawk
Thomas	Firehawk
Julie	Patriot

Mike	Eliminator	E9-6
Tony Diaz	Viper	A8-3
Bdale	Superbird	D12-5

**Launch Log for Stargate, Peyton CO
12May 2007**

Tom Dembowski	Cobra II	C11-5
George Shaiffer	Spool	C6-3
Dillon	Bandito	1/2A3-2T
Ryan	Cosmic Cobra	C6-3
Dillon	Air Force Msl	B6-4
Tom Dembowski	Astron Mark	B4-4
Seth	SR-71	B6-4
Tom Dembowski	Prowler	C6-3
Brent	Sparrow	C6-5
Seth	Viper	B6-4
Robert	Liquidator	D12-3
Jeff Lane	Little Joe 6	C6-3
Ryan	Cosmic Cobra	C6-3
Robert	Courier	?
Tom Dembowski	Maxi V-2	D12-5
Luke	Yankee (yellow)	A8-3
Steve	Baby Bertha	B6-4
Luke Jeseritz	Viper	C6-5
Andrew Jeseritz	Viper	C6-5
Ryan	STS	
Tom Dembowski	American Eagle	C6-5
Bdale	Super Bird	C6-5
Julianne	Blue Ninja	D12-3
Thaozylka	Bosworth	E15-8
Greg Elder	Onyx	F20-7
Tom Dembowski	Maxi V-2	D12-5
Robert	Rip-Roar	D12-0/D12-5
Brent	Chrome Dome	C6-5
Tony	Alpha	A8-3
Thad	Astrocam	C6-3
Dorothy M.	Alpha	A8-3
Katie	Alpha	A8-3
Tom Dembowski	Super Eagle?	C6-3
Thad	Kelator	D12-3
Jeff Lane	RotaRoc	A10-3T
Brent	Spool	D12-3
Luke	Blue Ninja	D12-3
Ernie	Ern 54	E104-9
Jared	Viper	A8-3
Tony	Viper	A8-3
Ernie	Spool	C6-3
Greg Elder	Flechette	3xB6-4
Diane Gormley	High Fly	C6-3
Jackson	Viper	A8-3
Jared Barton	Viper	A8-3
Frank Hoehe	Blue Ninja	D12-3

Launch Log for Challenger 19/20 May 2007

Nathan Sparks	Gnome	1/2A3-2T
Nicholas Branch	Shuttle Express	B6-4
Brandon Lioter	Gnome	A8-3
David Herman	Alpha III	B6-4
Timothy Sparks	Gnome	A8-3
Joseph Friedman	Spitfire	A8-3
Johnny McGovern	Skywriter	B4-4
Andrew Sparks	Viking	A8-3
Justin Giordano	Sizzler	C6-5
Johnny McGovern	Black Brant	D12-3
Jordan Giordano	Big Daddy	C6-5
Jordan Giordano	Triton-X	?
Timothy Sparks	Alpha	A8-3
Dusty Brown	Cosmic Cobra	B6-4
Johnny McGovern	Bumble Bee	B4-4
Nathan Sparks	Gnome	1/2A3-2T
Brandon Lo	Gnome	1/4A3-3T
Andrew Sparks	Viking	A8-3
Nicholas Branch	Shuttle Express	C6-5
Joseph Friedman	Spitfire	C5-3
Jordan Giordano	Big Daddy	D12-3
Timothy Sparks	Gnome	A8-3
Jeff Lane	CC Stage 2	B6-0/B6-2
George Shaiffer	Spool	C11-3
Justin Slaman	Alpha	B6-4
Tristan Gladfelter	Alpha	A8-3
Tyler Didier	Alpha	A8-3
Tyler Didier	Stretch Alpha	A8-3
Samantha Slaman	Alpha	A8-3
Robert Cyarbee	Far Horizon	B6-4
Nick Lorash	Alpha	B6-4
Michael Stein	Alpha	B6-4
Dillon Johnson	Alpha	B6-4
Cole Donovan	?	B6-4
Amanda Greist	Viper	B6-4
Taylor Williams	Alpha	B6-4
Tyler Didier	Alpha	A8-3
Kevin Campbell	Alpha	B6-4
Tyler Didier	V-2 (Maxi?)	D12-5
Robert Garbee	Baby Bertha	B6-4
Bdele Garbee	Super Bowl	C6-5
Dave Virga	UFFO	C6-0
Tyler Didier	V-2 (Maxi?)	D12-5

Launch Log for Challenger 23 June 2007

Mafeo Perez	Astrocams	C6-5
David Polson	E2X	B6-4
Tim Polson	E2X	B6-4
Josh Watt	Patriot	B6-4
Joseph Perez	Alpha	A8-3
Will	Yellow Yankee	A8-3
Ryan	Stretch Alpha	A8-3
Dillon	Dragonite	A8-3
James	E2X	A8-3
Eddie Perez	Yellow Flyer	B6-4
Luke	Blue Ninja	D12-3
Abigail Hessler	Alpha	A8-3
Sean	Beta (yellow)	B6-4
Janet	Beta (green)	B6-4
Tom Dembowski	Alpha III	BH4-4
Syndie	Pip Squeak	A6-4
Tyler	Gamma-Ray	C6-3
Brienne	Screamin' DemnB6-4	
Josh Watt	Patriot	C6-5

Brent Williams	Chrome Dome	C6-5
Dillon	Air Force Msl	B4-4
Tom Dembowski	SpaceShip One	B4-2
Joseph Perez	?	A8-3
Jeff Lane	Saturn Kamerv	F24-4
Tim Polson	E2X	A8-3
Mateo Perez	Cluster B	C6-5
Jeff Lane	Paper Patriot	A3-4T
Josh Watt	Patriot	B6-4
Dave Virga	X-15 RTF	C6-3
Gary Hessler	Porta Pot	C6-5
Ryan	Stretch Alpha	A8-3
David Polson	E2X	A8-3
Dave Virga	Spool	D12-3
Brent Williams	Max Trax	C6-5
Les Mann	Mail Express	B6-4
James Perez	Star Rocket	A8-3
Abigail Hessler	Alpha	A8-3
Mateo Perez	Alpha	A8-3
Tim Polson	E2X	A8-3
David Polson	Camera Rocket	D12-5



"Think this will fly on an F29?" Ernie and Dave Jolly at Challenger MS, 14 April 2007.
(Photo courtesy Jeff Lane/COSROCS)



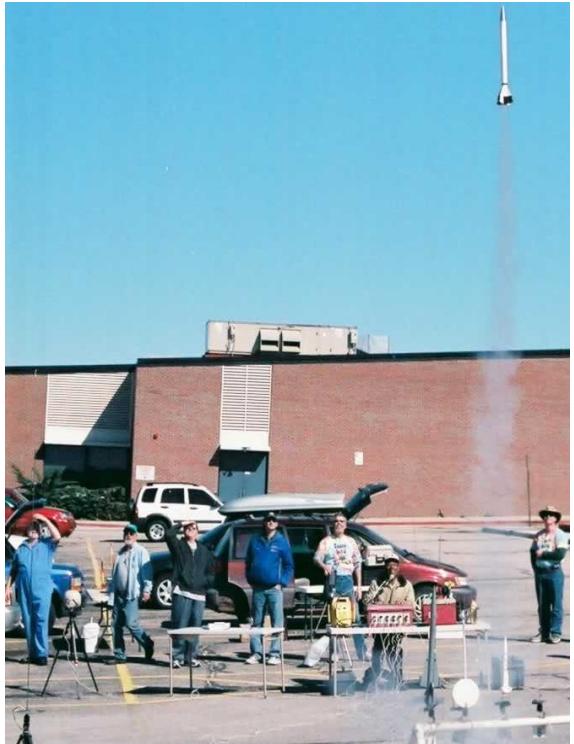
Jeff Lane's Saturn-Komarov at Baikanor, er, Peyton,
(well, it does look like the Russian front), 24 Feb 2007.
(Photo courtesy Jeff Lane/COSROCS)



This V-2 has seconds to live!
Peyton, 26 May 2007
(Photo courtesy Jeff Lane/COSROCS)



Dave Virga's Rip-Roar at Peyton, on perhaps the most perfect of launch days ever...28 April 2007.
(Photo courtesy Jeff Lane/COSROCS)



How many club officers can we get in one photo?
L to R: George, Ernie, Greg, Tom, Dave J., Warren
and Dave V. at Challenger MS, 14 Apr 2007.
(Photo courtesy Jeff Lane/COSROCS)



I can see for miles and miles and miles (Part Two)
Hartsel Launch 9-10 Jun 07.
(Photo courtesy Jeff Lane/COSROCS website)



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